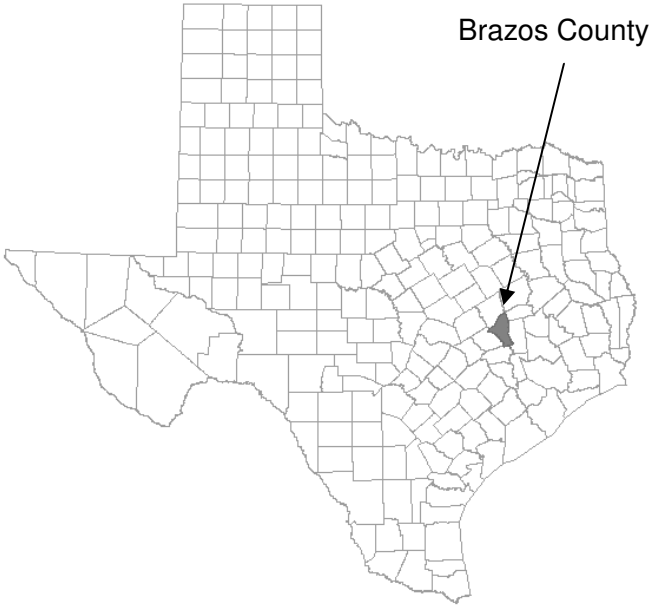
FLOOD INSURANCE STUDY



BRAZOS COUNTY, TEXAS

AND INCORPORATED AREAS

Community Name	Community Number
Brazos County (Unincorporated Areas)	481195
Bryan, City of	480082
College Station, City of	480083
Kurten, Town of*	480589
Wixon Valley, City of	481636

*No Special Flood Hazard Areas Identified

REVISED: April 2, 2014

Federal Emergency Management Agency

Flood Insurance Study Number
48041CV000B

NOTICE TO
FLOOD INSURANCE STUDY USERS

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

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

Initial Countywide FIS Effective Date: July 2, 1992

First Revised Countywide FIS Revision Date: February 9, 2000

Second Revised Countywide FIS Revision Date: May 16, 2012

Third Revised Countywide FIS Revision Date: April 2, 1014

TABLE OF CONTENTS

TABLE OF CONTENTS (Cont'd)

Page

FIGURES

TABLES

EXHIBITS

Exhibit 1 – Flood Profiles

FLOOD INSURANCE STUDY
BRAZOS COUNTY AND INCORPORATED AREAS

1.0 INTRODUCTION

1.1 Purpose of Study

This Flood Insurance Study (FIS) revises and updates information on the existence and severity of flood hazards in the geographic area of Brazos County, including the Cities of Bryan, College Station, and Wixon Valley; the Town of Kurten; and the unincorporated areas of Brazos County (referred to collectively herein as Brazos County), and aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This study has developed flood-risk data for various areas of the community that will be used to establish actuarial flood insurance rates and to assist the community in its efforts to promote sound floodplain management. Minimum floodplain management requirements for participation in the National Flood Insurance Program (NFIP) are set forth in the Code of Federal Regulations at 44 CFR, 60.3.

Please note that the Town of Kurten has no Special Flood Hazard Areas (SFHAs) identified. This does not preclude future determinations of SFHAs that could be necessitated by changed conditions affecting the community (i.e. annexation of new lands) or the availability of new scientific or technical data about flood hazards.

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

1.2 Authority and Acknowledgments

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

This study was prepared to include incorporated communities within Brazos County, as well as the unincorporated areas, into a countywide FIS. Information on the authority and acknowledgements for each jurisdiction included in this countrywide FIS, as compiled from their previously printed FIS report narratives, is shown below.

Unincorporated Areas

The hydrologic and hydraulic analyses for flooding sources within the unincorporated areas of Brazos County were prepared by the Fort Worth District of the U. S. Army Corps of Engineers (USACE) for the Federal Emergency Management Agency (FEMA), under Inter-Agency Agreement No. EMW-86-E-2226, Project Order No. 17. This work was completed in September 1988. Also, in this countywide study, hydrologic and hydraulic analyses for South Fork of Cottonwood Branch, Still Creek, Thompsons Creek, Thompsons Branch, and portions of Cottonwood Branch, were taken from a Floodplain Information Report prepared by the Fort Worth District USACE (Reference 1). This work was completed in December 1975.

City of Bryan

The hydrologic and hydraulic analyses for the study effective November 19, 1980, were prepared by Turner, Collie & Braden for FEMA, under Contract No. H-4568. This work was complete in March 1979.

City of College Station

The hydrologic and hydraulic analyses for the study effective January 2, 1981, were prepared by Turner, Collie & Braden for FEMA under Contract No. H-4568. This work was completed in March 1979. In addition, updated hydrologic and hydraulic analyses for Wolf Pen Creek and Wolf Pen Creek Tributaries A, B, and C, within the City of College Station, were performed by Nathan D. Maier, Consulting Engineers, Inc. That study revised Wolf Pen Creek in its entirety and added detailed hydrologic and hydraulic analyses for its tributaries. This work was completed in March 1988.

Countywide FIS Report Major Revisions

The February 9, 2000 revision incorporated a map revision updating the hydraulic analyses for a portion of Carters Creek within the City of Bryan. These analyses were prepared by the City of Bryan and dated December 5, 1989. An additional map revision in the City of Bryan has been incorporated updating the hydraulic analyses for Tributary B to Burton Creek; also prepared by the City of Bryan. A Letter of Map Revision (LOMR) dated April 30, 1990 has also been incorporated updating the hydraulic analyses for Tributary B to Burton Creek. This LOMR was prepared by Galindo Engineers and Planners.

The February 9, 2000 revision also included a restudy of a portion of Bee Creek and as well as a study of a reach of Foxfire Creek within the City of College Station. The USACE, Fort Worth District, accomplished the revision for FEMA under Inter-Agency Agreement No. EMW-91-E-3529, Project Order No. 5, under the Limited Map Maintenance Program. This work was completed in September 1993. The February 9, 2000 revision also included data from LOMR 99-06-1336P, submitted by the City of College Station and consisted of detailed hydraulic analysis on Spring Creek and its tributaries prepared by LJA Engineering & Surveying, Inc. This work was completed in May 1999.

The May 16, 2012 revision included updated hydraulic models for Alum Creek, Lick Creek, and Stream AC-1 prepared by Carter & Burgess, Inc., for FEMA, under Contract No. EMT-2002-CO-0049, Task Order No. 032. These model updates were completed in July 2008.

The Physical Map Revision (PMR) dated April 2, 2014 includes updates updated hydrologic and hydraulic models for Bee Creek, Bee Creek Tributary A, Bee Creek Tributary B, Bee Creek Tributary B Split Flow Channel, and Unnamed Tributary 2 to Bee Creek Tributary B, prepared by Mitchell & Morgan, for the City of College Station as part of Letter of Map Revision (LOMR) Case Number 10-06-1561P. The revision also includes updates to the hydrologic and hydraulic models for Austins Creek, Carters Creek, Carters Creek Split Channel, Carters Creek Tributary A, Carters Creek Tributary A East Fork, Carters Creek Tributary A West Fork, Carters Creek Tributary B, Carters Creek Tributary C, and Tributary 1 to Carters Creek Split Channel, prepared by Mitchell & Morgan, for the City of Bryan as part of Letter of Map Revision (LOMR) Case Number 10-06-2535P.

Base map information shown on the FIRMs was provided in digital format by the City of Bryan, City of College Station, and Brazos County, produced at a scale of at least 1:12,000, from aerial photography dated 2005 or later.

The projection used in the preparation of the FIRMs was North American Datum of 1983 (NAD 83), Texas State Plane, Zone Central (FIPS 4203), in feet. The vertical datum was the North American Vertical Datum of 1988 (NAVD 88). Differences in datum, projection or State Plane zones used in the projection of the FIRMs for adjacent jurisdictions may result in slight positional differences across jurisdictional boundaries. These differences do not affect the accuracy of these FIRMs.

1.3 Coordination

The dates of the initial and final Consultation Coordination Officer (CCO) meetings held for Brazos County and the incorporated communities within its boundaries prior to May 2012 are not known because they were not documented in the May 2012 countywide revision.

For the May 2012 countywide study, the initial Consultation Coordination Officer (CCO) meeting was held on April 11, 2007, and attended by representatives of FEMA, Comprehensive Flood Risk Resources and Response (CF3R) Joint Venture, Brazos Valley Council of Governments, City of Bryan, City of College Station, and Brazos County. The results of the study were reviewed at the final CCO meeting held on October 28, 2009 and attended by representatives of FEMA, CF3R, Texas Water Development Board, City of Bryan, City of College Station, City of Wixon Valley, Town of Kurten and Brazos County. All problems raised at that meeting have been addressed in this study.

For this PMR, an initial CCO meeting was not held as the scope of this revision includes the incorporation of previously approved LOMRs submitted by each respective community. A final CCO meeting was held on September 13, 2012, and attended by representatives of the community, the study contractor, and FEMA. All problems raised at that meeting have been addressed in this study.

2.0 AREA STUDIED

2.1 Scope of Study

This FIS report covers the geographic area of Brazos County, Texas, including the incorporated communities listed in Section 1.1. The areas studied by detailed methods are shown in Table 1, "Scope of Study," and were selected with priority given to all known flood hazards and areas of projected development or proposed construction.

TABLE 1 – SCOPE OF STUDY

Stream	Limits of Detailed Study
Alum Creek	From its confluence with Lick Creek to a point approximately 100 feet upstream of State Highway 6

TABLE 1 – SCOPE OF STUDY (Continued)

Stream	Limits of Detailed Study
Austins Creek	From its confluence with Carters Creek to Old Reliance Road
Bee Creek	From its confluence with Carters Creek to Dexter Drive
Bee Creek Tributary A	From its confluence with Bee Creek to a point approximately 800 feet upstream of Longmire Drive
Bee Creek Tributary B	From its confluence with Bee Creek to a point approximately 0.6 mile upstream of FM 2818
Bee Creek Tributary B Split Flow Channel	From its confluence with Bee Creek Tributary B to its confluence with Bee Creek Tributary B (800 feet upstream of Nueces Drive)
Briar Creek	From its confluence with Carters Creek to a point approximately 200 feet upstream of Coulter Drive
Burton Creek	From its confluence with Carter Creek to a point approximately 650 feet upstream of Woodland Drive
Burton Creek Tributary C	From its confluence with Burton Creek to a point approximately 0.44 mile upstream
Burton Creek Tributary D	From its confluence with Burton Creek to Williamson Drive
Carters Creek	From its confluence with the Navasota River to a point approximately 1.3 miles upstream of East State Highway 21
Carters Creek Split Channel	From its confluence with Carters Creek to its confluence with Carters Creek (at Briarcrest Drive)
Carters Creek Tributary A	From its confluence with Carters Creek to its confluence with Carters Creek Tributary A East Fork and Carters Creek Tributary A West Fork
Carters Creek Tributary A East Fork	From its confluence with Carters Creek Tributary A to a point 680 feet upstream of Colson Road
Carters Creek Tributary A West Fork	From its confluence with Carters Creek Tributary A to a point 1,000 feet upstream of Colson Road
Carters Creek Tributary B	From its confluence with Carters Creek to a point approximately 400 feet upstream of State Highway 21

TABLE 1 – SCOPE OF STUDY (Continued)

Stream	Limits of Detailed Study
Carters Creek Tributary C	From a point approximately 1,200 feet upstream of its confluence with Carters Creek to a point approximately 1.0 mile upstream
Cottonwood Branch	From its confluence with Still Creek to a point approximately 100 feet upstream of Palasota Drive
Foxfire Creek	From a point approximately 17,500 feet upstream of its confluence with Carters Creek to a point approximately 1,000 feet upstream of Foxfire Drive
Harvey Hillsides Creek	From its confluence with Carters Creek to a point a point approximately 1.75 miles upstream of the confluence with Carters Creek
Hudson Creek	From a point approximately 1,350 feet downstream of FM 158 to a point approximately 400 feet upstream of FM 158
Lick Creek	From its confluence with the Navasota River to State Highway 6
Little Wickson Creek	From its confluence with Wickson Creek to a point approximately 0.7 mile upstream of Dilly Shaw Road
Mathis Creek	From its confluence with Wickson Creek to a point approximately 0.8 mile upstream of U.S. Highway 190
Navasota River	For its entire length within Brazos County
South Fork of Cottonwood Branch	From its confluence with Cottonwood Branch to a point approximately 3.2 miles upstream
South Fork Turkey Creek	From a point approximately 500 feet upstream of the confluence with Turkey Creek to a point approximately 900 feet downstream of Westwood Main Drive
Spring Creek	From its confluence with Lick Creek to approximately 1,600 feet upstream of the confluence of Spring Creek Tributary D
Spring Creek Tributary A	From the confluence with Spring Creek to approximately 1,540 feet upstream of confluence with Spring Creek

TABLE 1 – SCOPE OF STUDY (Continued)

Stream	Limits of Detailed Study
Spring Creek Tributary B	From the confluence with Spring Creek to approximately 3,925 feet upstream of confluence with Spring Creek
Spring Creek Tributary C	From the confluence with Spring Creek to approximately 1,630 feet upstream of confluence with Spring Creek
Spring Creek Tributary D	From the confluence with Spring Creek to approximately 10,900 feet upstream of confluence with Spring Creek
Still Creek	From its confluence with Thompsons Creek to a Old Hearne Rd
Still Creek Tributary A	From its confluence with Still Creek to a point approximately 0.64 mile upstream
Stream AC-1	From its confluence with Alum Creek to State Highway 6
Thompsons Branch	From its confluence with Thompsons Creek to the upstream side of Rabbit Lane
Thompsons Creek	From a point approximately 0.22 mile downstream of Silver Hill Road to U.S. Highway 190
Tributary 1 to Carters Creek Split Channel	From its confluence with Carters Creek Split Channel to its confluence with Carters Creek Split Channel
Tributary to Spring Creek Tributary B	From the confluence with Spring Creek Tributary B to approximately 605 feet upstream of confluence with Spring Creek Tributary B
Tributary to Spring Creek Tributary D	From the confluence with Spring Creek Tributary D to approximately 2,190 feet upstream of confluence with Spring Creek Tributary D
Turkey Creek	From a point approximately 500 feet upstream of the confluence with the Brazos River to a point approximately 1,600 feet downstream of FM 2818
Turkey Creek Tributary B	From a point approximately 900 feet upstream of the confluence with Turkey Creek to a point approximately 2,900 feet upstream of Gabbard Road

TABLE 1 – SCOPE OF STUDY (Continued)

Stream	Limits of Detailed Study
Turkey Creek Tributary B1	From a point approximately 500 feet upstream of the confluence with Turkey Creek Tributary B to a point approximately 1,620 feet upstream of Gabbard Road
Turkey Creek Tributary C	From a point approximately 1,500 feet upstream of the confluence with Turkey Creek to a point approximately 1,550 feet upstream of West Villa Maria Road
Turkey Creek Tributary D	From a point approximately 1,000 feet upstream of the confluence with Turkey Creek to a point approximately 850 feet upstream of the confluence of Unnamed Tributary 2 to Turkey Creek Tributary D
Turkey Creek Tributary D1	From a point approximately 400 feet upstream of the confluence with Turkey Creek Tributary D to a point approximately 2,240 feet upstream of the confluence with Turkey Creek Tributary D
Unnamed Tributary 2 to Bee Creek Tributary B	From its confluence with Bee Creek Tributary B to a point approximately 620 feet upstream of Langford Street
Unnamed Tributary to Bee Creek Tributary B	From its confluence with Bee Creek Tributary B to a point approximately 570 feet upstream
Unnamed Tributary to Burton Creek	From its confluence with Burton Creek to a point approximately 1,000 feet upstream of State Highway 60
Unnamed Tributary to White Creek	From its confluence with White Creek to a point approximately 600 feet upstream of the confluence with Unnamed Tributary to White Creek Tributary 3
Unnamed Tributary to White Creek Tributary 1	From its confluence with Unnamed Tributary to White Creek to a point approximately 1,540 feet upstream
Unnamed Tributary to White Creek Tributary 2	From its confluence with Unnamed Tributary to White Creek to a point approximately 330 feet upstream of FM 2818
Unnamed Tributary to White Creek Tributary 3	From its confluence with Unnamed Tributary to White Creek to a point approximately 310 feet upstream
West Fork Still Creek	From its confluence with Still Creek to a point approximately 50 feet upstream of Stevens Drive

TABLE 1 – SCOPE OF STUDY (Continued)

Stream	Limits of Detailed Study
Wickson Creek	From a point approximately 2.8 miles downstream of Elmo Wheeden Road to a point approximately 800 feet upstream of Dilly Shaw Road
Wolf Pen Creek	From its confluence with Carters Creek to a point approximately 700 feet upstream of Anderson Street
Wolf Pen Creek Tributary A	From its confluence with Wolf Pen Creek to a point approximately 50 feet upstream of Dominik Drive
Wolf Pen Creek Tributary B	From its confluence with Wolf Pen Creek to a point approximately 1,300 feet upstream of State Highway 30
Wolf Pen Creek Tributary C	From its confluence with Wolf Pen Creek to a point approximately 100 feet upstream of Jersey Street

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

TABLE 2 – SCOPE OF REVISION

Stream	Limits of Detailed Study
Austins Creek	From its confluence with Carters Creek to Old Reliance Road
Bee Creek	From its confluence with Carters Creek to Dexter Drive
Bee Creek Tributary A	From its confluence with Bee Creek to a point approximately 800 feet upstream of Longmire Drive
Bee Creek Tributary B	From its confluence with Bee Creek to a point approximately 150 feet upstream of FM 2818
Bee Creek Tributary B Split Flow Channel	From its confluence with Bee Creek Tributary B to its confluence with Bee Creek Tributary B (800 feet upstream of Nueces Drive)
Carters Creek	From a point approximately 1.27 miles downstream of State Highway 30 to a point approximately 1.3 miles upstream of East State Highway 21

TABLE 2 – SCOPE OF REVISION (Continued)

Stream	Limits of Detailed Study
Carters Creek Split Channel	From its confluence with Carters Creek to its confluence with Carters Creek (at Briarcrest Drive)
Carters Creek Tributary A	From its confluence with Carters Creek to its confluence with Carters Creek Tributary A East Fork and Carters Creek Tributary A West Fork
Carters Creek Tributary A East Fork	From its confluence with Carters Creek Tributary A to a point 680 feet upstream of Colson Road
Carters Creek Tributary A West Fork	From its confluence with Carters Creek Tributary A to a point 1,000 feet upstream of Colson Road
Carters Creek Tributary B	From its confluence with Carters Creek to a point approximately 400 feet upstream of State Highway 21
Carters Creek Tributary C	From a point approximately 1,200 feet upstream of its confluence with Carters Creek to a point approximately 1.0 mile upstream
Tributary 1 to Carters Creek Split Channel	From its confluence with Carters Creek Split Channel to its confluence with Carters Creek Split Channel
Unnamed Tributary 2 to Bee Creek Tributary B	From its confluence with Bee Creek Tributary B to a point approximately 620 feet upstream of Langford Street

This FIS also incorporates, where applicable, Letters of Map Revision (LOMRs) issued by FEMA resulting in map changes. The LOMRs which were incorporated for this countywide study, in addition to the LOMRs which initiated the PMR (LOMR Case Numbers 10-06-1561P and 10-06-2535P), have been shown in Table 3, "Letters of Map Revision," and are reflected in Table 9, "Floodway Data," and Exhibit 1, "Flood Profiles."

TABLE 3 – LETTERS OF MAP REVISION

Case Number	Effective Date	Flooding Sources	Community Name	Panel Number
12-06-1841P[1]	5/18/2012	Spring Creek, Spring Creek Tributary A, and Spring Creek Tributary B	City of College Station	48041C0310F, 48041C0325E, and 48041C0350E

[1]LOMR was partially incorporated.

TABLE 3 – LETTERS OF MAP REVISION (Continued)

Case Number	Effective Date	Flooding Sources	Community Name	Panel Number
12-06-1842P	5/18/2012	Wolf Pen Creek	City of College Station	48041C0305F and 48041C0310F
12-06-1843P	5/17/2012	Harvey Hillsides Creek	City of College Station and Brazos County	48041C0220F

All or portions of the flooding sources listed in Table 4 were studied by approximate methods.

TABLE 4 – STREAMS STUDIED BY APPROXIMATE METHODS

Allcorn Creek	Franks Creek	Robertson Branch	Town Branch
Alum Creek	High Prairie Creek	Rocky Creek	Turkey Creek
Bowman Creek	Hulton Mill Branch	Sand Creek	Walker Creek
Brazos River	Iron Creek	Smith Branch	West Fork Still Creek
Briar Creek	Jack Creek	Snake Branch	White Creek
Brushy Creek	Jones Creek	Soggy Creek	Wickson Creek
Burton Creek Tributary D	Little Brazos River	South Fork of Cottonwood Branch	Wolf Pen Creek Tributary A
Cajka Branch	Little Cedar Creek	Sparks Branch	
Cedar Creek	Mathis Creek	Spring Creek	
Clifty Creek	McDonald Creek	Steep Hollow Branch	
Cobb Branch	Millican Creek	Stream AC-l	
Elm Creek	Peach Creek North	Thompsons Branch	
Ferrill Branch	Peach Creek South	Thompsons Creek	
Fin Feather Lake	Pecan Branch	Tiger Branch	

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 Brazos County.

Table 5, "Stream Name Changes" lists those streams whose name has changed or differs from that published in the previous FIS for Brazos County or any of the communities within.

TABLE 5 – STREAM NAME CHANGES

Community	Old Name	New Name
City of Bryan, Unincorporated Area	Carters Creek Tributary 25	Austins Creek
City of College Station	Bee Creek Tributary B.2	Unnamed Tributary 2 to Bee Creek Tributary B
City of Bryan, Unincorporated Area	Carters Creek Tributary 22	Carters Creek Tributary C

2.2 Community Description

Brazos County is located between the Brazos and Navasota Rivers in southeast central Texas, and was created from Robertson and Washington Counties in 1841 and named Navasota County. It was renamed Brazos County in 1842. Brazos County is bordered by the unincorporated areas of Robertson County to the north; Madison and Grimes Counties to the east; Washington County to the south, and Burleson County to the west.

In 1843, Boonsville was established as the first county seat. In 1865, William Joel Bryan donated land three miles west of Boonsville for a town site on the projected extension of the Houston and Texas Central Railroad. In 1866, when the railroad was built, the City of Bryan became the county seat. The population of the county reached 13,000 in 1880, and has consistently increased since. The 2010 population of Brazos County was 194,851 (Reference 2 and 3).

The county has an area of 588 square miles of rolling prairie and woodland. Timber includes post oak, pin oak, live oak, mesquite, and hickory in commercial quantities. Scant supplies of lignite coal and oil have been developed. The soil is alluvial to sandy. The rainfall averages 39.21 inches, and the minimum January temperature is 42 degrees Fahrenheit (°F) and the July maximum temperature is 95°F (References 2 and 4).

The Cities of Bryan and College Station are located in central Brazos County, approximately 90 miles northwest of Houston in south central Texas; and the City of Wixon Valley is located in north central Brazos County, approximately 3.5 miles north of the City of Bryan. The Town of Kurten is located in north central Brazos County, approximately 3 miles northeast of Wixon Valley. The economy of the area is primarily dependent on Texas A&M University, mineral production, agriculture, and light manufacturing.

The Cities of Bryan and College Station are located on a drainage divide separating the basins of the Navasota River to the east and the Brazos River to the west. The primary sources of flooding in the City of Bryan originate in the Thompsons Creek watershed which drains to the Brazos River and the Carters Creek watershed which drains to the Navasota River. The floodplains of both watersheds contain residential and commercial development. The primary sources of flooding in College Station are within the Carters Creek watershed. Carters Creek flows along the northeastern corporate limits in a southeast direction, discharging in the Navasota River approximately 8 miles downstream of the corporate limits of College Station. The primary sources of flooding in the City of Wixon Valley are tributaries of Wickson and Mathis Creeks, which drain to the Navasota River. The Town of Kurten has no SFHAs identified. At present, a significant amount of commercial and residential development exists within the floodplains of Carters Creek tributaries.

2.3 Principal Flood Problems

Major flooding produced by intense rainfall is usually associated with localized thunderstorms. These thunderstorms may occur at any time during the year but are more prevalent in the spring and summer months.

Flooding conditions were reported nine times between 1979 and 1986. The most destructive during that time occurred on October 14, 1981. Flooding caused one death, and property losses ranged from $500,000 to $5 million (References 5 and 6).

Since 1994, twenty-six flooding events have been reported in Brazos County. During these flooding events $7.8 million worth of property damage occurred. In 2000, flash flooding caused $2.5 million of damage in two days. During this flooding event, the City of Bryan and the Town of Kurten experienced most of the damage. In Bryan 2 to 4 feet of water in the streets swept cars off roads and flooded 20 to 30 homes. In Kurten several streets and businesses were flooded (Reference 7).

2.4 Flood Protection Measures

In January 1986, the unincorporated areas of Brazos County entered into the emergency program of the National Flood Insurance Program (NFIP) with FEMA. The Cities of Bryan and College Station have adopted flood hazard prevention ordinances to control development within flood hazard areas. In the City of Bryan, structural flood protection works have been constructed on short reaches of Burton Creek, Briar Creek, tributaries of Carters Creek, Still Creek Tributary A, and the upper reaches of the main stem of Still Creek. In the City of College Station, the channels of Bee Creek and Bee Creek Tributaries A and B have been straightened through urbanized areas. No major flood protection structures exist within this community.

The Texas Water Development Board (TWDB) is the proponent for the NFIP in the State of Texas, and administers the Flood Mitigation Assistance (FMA) Program in Texas on behalf of FEMA. The TWDB also provides the Flood Protection Planning Program which assists in the "evaluation of structural and nonstructural solutions to flooding problems and considers flood protection needs of the entire watershed" (Reference 8). Currently no impoundments are designated as flood control measures or PL-566 reservoirs, and there are no levees within Brazos County.

3.0 ENGINEERING METHODS

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

3.1 Hydrologic Analyses

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

Flood discharges on Bee Creek, Briar Creek, Burton Creek, Carters Creek (upstream of the confluence of Bee Creek), Cottonwood Branch, South Fork of Cottonwood Branch, Still Creek, Thompsons Branch, Thompsons Creek, Turkey Creek, and West Fork Still Creek have been published by the Fort Worth District USACE in previous floodplain information reports, and were reviewed and adopted for this study (References 1, 9, 10, 11, and 12).

Flood discharges for Bee Creek Tributaries A and B, Burton Creek Tributaries C and D, Carters Creek Tributary B, Hudson Creek, and Still Creek Tributary A were developed by Turner, Collie, and Braden using the synthetic unit hydrograph method and the USACE HEC-1 Flood Hydrograph computer program (Reference 13).

The unit hydrograph computations considered rainfall depth-duration-frequency data, rainfall losses, percentage of watershed development, and other pertinent watershed characteristics as determined from published documents and field and office investigation. Rainfall data developed by the U. S. Weather Bureau were used in development of the 10-, 2-, and 1-percent chance storm events (Reference 14). Rainfall loss values and unit hydrograph parameters were based upon the results of previous studies by the USACE in and near Bryan (References 1, 9, 10, and 11). Existing watershed development was determined from the most recently available aerial photographs and from field investigations (Reference 15). Other watershed characteristics were determined from USGS topographic maps (Reference 16).

A revised hydrologic analysis for Wolf Pen Creek and its tributaries was developed by Nathan D. Maier, Consulting Engineers, Inc. Discharges were developed using the Soil Conservation Service synthetic unit hydrograph methodology and the HEC-1 computer program (References 13 and 17).

Discharges for Alum Creek, Carters Creek (downstream of the confluence of Bee Creek), Lick Creek, Little Wickson Creek, Mathis Creek, Stream AC-I, and Wickson Creek were developed using the computer program NUDALLAS (Reference 18). The watershed was divided into sub-basins, and synthetic unit and flood hydrographs were developed at selected locations. National Weather Service Technical Paper No. 40 and National Oceanic and Atmospheric Administration (NOAA) Technical Memorandum NWS Hydro-35 were used in developing the 1- percent chance storms (References 14 and 19). Peak discharge-frequency values were computed for selected locations.

Hydrologic analyses for Foxfire Creek began with investigation for prior studies including the 1981 FIS for the City of College Station and the 1987 Limited Detail Study of nearby Lick Creek, Wickson Creek, and a portion of Carters Creek completed by the Fort Worth District of the USACE. Rainfall-frequency relationships were developed from data from the National Weather Service Technical Paper 40 and from the NOAA (References 14 and 19, respectively). Rainfall depths for the 0.2-percent-annual-chance flood were extrapolated from data in these sources. The development of the discharge-frequency relationships for Foxfire Creek were derived from Snyder unit hydrographs developed for each of the ten subareas. Synthetic excess rainfall, runoff volumes, unit and flood hydrographs were ultimately developed by HEC-l (Reference 13). The entire hydrologic analysis appears as Reference 20.

overbank areas. Cross section data for the main channel and vicinity came from field surveys conducted for the USACE in September 1992. Backwater analyses for both streams were computed using the HEC-2 computer program developed by the Hydrologic Engineering Center of the USACE (Reference 21). All bridge and culvert crossings were field checked to verify current geometry.

For the PMR dated April 2, 2014, new or revised hydrologic analyses were completed for Bee Creek, Bee Creek Tributary A, Bee Creek Tributary B, Bee Creek Tributary B Split Flow Channel, and Unnamed Tributary 2 to Bee Creek Tributary B. Flood discharges for these reaches originated from a previous study performed by Klotz Associates for a 1998 Conditional Letter of Map Prevision (CLOMR) using a documented storm to calibrate the hydrologic parameters and these parameters were used in the current analysis performed by Mitchell & Morgan with some bifurcation to obtain flows along the Unnamed Tributary 2 to Bee Creek Tributary B (Reference 22).

Also for the PMR dated April 2, 2014, new or revised hydrologic analyses for Austins Creek, Carters Creek (at its confluence with Wolf Pen Creek to a point approximately 1.3 miles upstream of East State Highway 21), Carters Creek Split Channel, Carters Creek Tributary A, Carters Creek Tributary A East Fork, Carters Creek Tributary A West Fork, Carters Creek Tributary B, Carters Creek Tributary C, and Tributary 1 to Carters Creek Split Channel. Flood discharges for these reaches were developed by Mitchell & Morgan using HEC-HMS, version 3.1 (Reference 23). Precipitation data was based upon the Natural Resource Conservation Service (NRCS) Type III rainfall distribution with an antecedent moisture condition (AMC) of 2 (Reference 24). Precipitation depth for the 1-percent-annual-chance, 24-hour rainfall event were determined using the TP-40 (Reference 25) rainfall values for Brazos County. Precipitation losses were calculated using the NRCS Curve Number method. Transformation utilized the NRCS Unit Hydrograph method to determine the direct runoff hydrographs. The Modified Puls method was used to route the flow through the channel of the streams being studied.

Peak discharge-drainage area relationships for Brazos County are shown in Table 6, "Summary of Discharges." Please note that the 1 percent-ultimate-annual-chance discharge shown is based on future-conditions.

TABLE 6 - SUMMARY OF DISCHARGES

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance	1% Ultimate Annual Chance
ALUM CREEK						
At confluence with Lick Creek	4.40	---[1]	---[1]	4,500[2]	---[1]	---[1]
At confluence with Stream AC-1	4.00	---[1]	---[1]	5,300	---[1]	---[1]
Approximately 500 feet upstream of the confluence of Stream AC-1	3.08	---[1]	---[1]	4,000	---[1]	---[1]
Approximately 1.25 miles downstream of State Highway 6	2.61	---[1]	---[1]	3,700	---[1]	---[1]
Approximately 2,000 feet upstream of State Highway 6	1.84	---[1]	---[1]	3,600	---[1]	---[1]
AUSTINS CREEK						
Above confluence with Carters Creek	0.89	1,050	1,450	1,650	1,980	---[1]
BEE CREEK						
Approximately 1,000 feet upstream of the confluence with Carters Creek	8.71	4,980	6,720	7,280	8,600	---[1]
Below confluence with Bee Creek Tributary A	7.87	4,640	6,250	6,750	7,930	---[1]
Above confluence with Bee Creek Tributary A	5.63	3,310	4,360	4,710	5,390	---[1]
Below confluence with Bee Creek Tributary B	4.41	2,640	3,480	3,820	4,220	---[1]
Above confluence with Bee Creek Tributary B	1.00	590	800	880	1,160	---[1]
BEE CREEK TRIBUTARY A						
Above confluence with Bee Creek	2.24	1,800	2,380	2,600	3,500	---[1]
At Texas Avenue Bridge	1.80	1,690	2,260	2,450	3,210	---[1]
BEE CREEK TRIBUTARY B						
Above confluence with Bee Creek	4.41	2,090	2,700	2,980	4,050	---[1]
Below the confluence with Bee Creek Tributary B Split Flow Channel	2.90	1,960	2,660	2,910	3,950	---[1]
At approximately 1,000 feet upstream Welsh Avenue	2.78	1,014[3]	1,098[3]	1,105[3]	1,200[3]	---[1]
BEE CREEK TRIBUTARY B SPLIT FLOW CHANNEL						
Above confluence with Bee Creek Tributary B	---[1]	216	471	545	830	---[1]
BRIAR CREEK						
At Villa Maria Road	1.08	2,500	3,300	3,650	5,650	---[1]

Notes:

1 Data not available / Not determined / Not computed

2 Downstream discharge is due to flatter weighted stream slopes and longer stream lengths, resulting in longer unit hydrograph times to peaks and lower discharges

3 Discharge decreases due to split flow at upstream of FM 2818

TABLE 6 – SUMMARY OF DISCHARGES (Continued)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance	1% Ultimate Annual Chance
BURTON CREEK						
Above confluence with Carters Creek	7.26	7,950	10,500	11,600	19,050	---[1]
At Tanglewood Drive	4.32	4,660	6,220	6,900	11,200	---[1]
At Villa Maria Road	1.34	2,750	3,650	4,020	6,200	---[1]
BURTON CREEK TRIBUTARY C						
At confluence with Burton Creek	1.43	2,060	2,720	2,990	3,600	---[1]
Approximately 1,220 feet upstream confluence with Burton Creek	1.04	1,510	1,990	2,200	2,650	---[1]
BURTON CREEK TRIBUTARY D						
At confluence with Burton Creek	1.84	1,510	2,550	3,240	4,800	---[1]
CARTERS CREEK						
Approximately 3.71 miles downstream of Bird Pond Road	53.58	---[1]	---[1]	26,200[2]	---[1]	---[1]
Approximately 1.33 miles downstream of Bird Pond Road	50.42	---[1]	---[1]	28,200[2]	---[1]	---[1]
Approximately 1.23 miles upstream of Bird Pond Road	41.88	---[1]	---[1]	31,100	---[1]	---[1]
At confluence with Bee Creek	34.07	13,900	19,900	22,600	38,380	---[1]
Below confluence with Wolf Pen Creek	32.24	14,050	19,740	22,420	37,960	---[1]
Above confluence with Wolf Pen Creek	28.98	13,800	19,250	21,800	36,830	---[1]
Approximately 1.21 mile upstream of Wolf Pen Creek	27.96	11,690	16,680	19,130	24,210	---[1]
Below confluence of Burton Creek	22.14	9,960	14,450	16,790	21,520	---[1]
Above confluence of Burton Creek	14.64	7,750	11,090	12,730	14,060	---[1]
Above confluence of Briar Creek	10.93	7,050	10,160	11,710	13,030	---[1]
At Briarcrest Drive	10.33	7,270	9,738[3]	10,639[3]	11,486[3]	---[1]
Above confluence of Carters Creek Tributary B	4.59	3,640	5,310	6,170	7,610	---[1]
Approximately 1,250 feet downstream of Old Reliance Road	2.91	2,640	3,760	4,330	5,230	---[1]
Approximately 1,250 feet downstream of San Jacinto Avenue	1.19	600	840	960	1,160	---[1]

Notes:

1 Data not available / Not determined / Not computed

2 Downstream discharge is due to flatter weighted stream slopes and longer stream lengths, resulting in longer unit hydrograph times to peaks and lower discharges

3 Discharge decreases due to diversion at the upstream of Boonville Road

TABLE 6 – SUMMARY OF DISCHARGES (Continued)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance	1% Ultimate Annual Chance
CARTERS CREEK SPLIT CHANNEL						
At divergence from Carters Creek	--- [1]	--- [2]	805	1,552	2,360	--- [1]
Above convergence with Carters Creek	--- [1]	--- [2]	682	1,371	2,123	--- [1]
CARTERS CREEK TRIBUTARY A						
Above confluence with Carters Creek	1.26	1,380	1,840	2,100	2,490	--- [1]
CARTERS CREEK TRIBUTARY A EAST FORK						
Above confluence with Carters Creek	0.25	350	480	520	620	--- [1]
CARTERS CREEK TRIBUTARY A WEST FORK						
Above confluence with Carters Creek	0.49	600	830	950	1,140	--- [1]
CARTERS CREEK TRIBUTARY B						
Above confluence with Carters Creek	3.24	2,900	3,910	4,440	5,080	--- [1]
Just downstream of State Route 6	2.23	2,840	3,810	4,320	5,010	--- [1]
At Old Kurten Road	0.55	770	1,070	1,210	1,460	--- [1]
CARTERS CREEK TRIBUTARY C						
Above confluence with Carters Creek	1.31	1,250	1,740	1,980	2,380	--- [1]
COTTONWOOD BRANCH						
At confluence with Still Creek	6.58	3,700	5,500	6,300	8,300	--- [1]
Below confluence of South Fork of Cottonwood Branch	6.41	3,300	4,900	5,600	7,500	--- [1]
Above confluence of South Fork of Cottonwood Branch	3.86	2,200	3,260	3,700	4,900	--- [1]
At FM 2818	2.47	2,200	3,260	3,700	4,900	--- [1]
At Palasota Drive	0.56	980	1,340	1,500	1,900	--- [1]
FOXFIRE CREEK						
At the edge of the Carters/Bee Creek Valley approximately 4,000 feet downstream of the Frost Street crossing	0.86	1,120	1,690	1,930	2,540	--- [1]
Downstream of Right Bank Tributary approximately 1,200 feet upstream of the Frost Street crossing	0.63	1,220 [1]	1,640 [1]	1,820 [1]	2,270	--- [1]
Downstream of Left Bank Tributary approximately 1,050 feet upstream of the Foxfire Street crossing	0.33	730	950	1,050	1,300	--- [1]

Notes:

1 Downstream discharge decrease due to Modified Puls routing effects

2 No diversion flow since all flows in Carters Creek

TABLE 6 – SUMMARY OF DISCHARGES (Continued)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance	1% Ultimate Annual Chance
HARVEY HILLSIDES CREEK						
Above confluence with Carters Creek	1.13	1,188	1,635	1,875	3,081	--- [1]
At downstream Harvey Road	0.7	820	1,172	1,361	2,119	--- [1]
HUDSON CREEK						
Approximately 700 feet upstream of Copperfield Drive	2.78	1,804	2,725	3,211	4,220	--- [1]
Approximately 760 feet upstream of FM 158	1.99	1,453	2,230	2,645	3,520	--- [1]
LICK CREEK						
At confluence with Navasota River	20.57	--- [1]	--- [1]	11,500 [2]	--- [1]	--- [1]
At Rock Prairie Road	18.28	--- [1]	--- [1]	12,300	--- [1]	--- [1]
At confluence of Alum Creek	14.45	--- [1]	--- [1]	11,500	--- [1]	--- [1]
Approximately 500 feet upstream of the confluence of Alum Creek	10.05	--- [1]	--- [1]	7,900 [2]	--- [1]	--- [1]
At confluence of Spring Creek	8.17	--- [1]	--- [1]	8,300	--- [1]	--- [1]
Approximately 500 feet upstream of the confluence of Spring Creek	4.43	--- [1]	--- [1]	4,500 [2]	--- [1]	--- [1]
Approximately 1.29 miles downstream of State Highway 6	3.25	--- [1]	--- [1]	4,900	--- [1]	--- [1]
Approximately 1.19 miles downstream of State Highway 6	1.72	--- [1]	--- [1]	2,500	--- [1]	--- [1]
LITTLE WICKSON CREEK						
At confluence with Wickson Creek	6.95	--- [1]	--- [1]	6,900 [2]	--- [1]	--- [1]
Approximately 0.60 mile downstream of Dilly Shaw Road	6.18	--- [1]	--- [1]	7,900	--- [1]	--- [1]
Approximately 0.57 mile downstream of Dilly Shaw Road	3.14	--- [1]	--- [1]	4,000	--- [1]	--- [1]
Approximately 1,300 feet upstream of Dilly Shaw Road	2.62	--- [1]	--- [1]	3,800	--- [1]	--- [1]
Approximately 1,500 feet upstream of Dilly Shaw Road	2.28	--- [1]	--- [1]	3,300	--- [1]	--- [1]
Approximately 1.50 miles upstream of Dilly Shaw Road	1.72	--- [1]	--- [1]	3,300	--- [1]	--- [1]

Notes:

1 Data not available / Not determined / Not computed

2 Downstream discharge is due to flatter weighted stream slopes and longer stream lengths, resulting in longer unit hydrograph times to peaks and lower discharges

TABLE 6 – SUMMARY OF DISCHARGES (Continued)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance	1% Ultimate Annual Chance
MATHIS CREEK						
At confluence with Wickson Creek	13.65	--- [1]	--- [1]	8,000[2]	--- [1]	--- [1]
Approximately 1.50 miles downstream of U.S. Highway 190	12.14	--- [1]	--- [1]	8,400	--- [1]	--- [1]
At U.S. Highway 190	10.64	--- [1]	--- [1]	8,300	--- [1]	--- [1]
Approximately 1.50 miles upstream of U.S. Highway 190	8.64	--- [1]	--- [1]	7,500	--- [1]	--- [1]
SOUTH FORK OF COTTONWOOD BRANCH						
At confluence with Cottonwood Branch	2.55	1,300	1,930	2,200	2,950	--- [1]
At a point approximately 3.2 miles upstream of confluence with Cottonwood Branch	0.85	660	940	1,060	1,370	--- [1]
SOUTH FORK TURKEY CREEK						
At confluence with Turkey Creek	1.77	1,156	1,822	2,060	2,645	--- [1]
SPRING CREEK						
Just upstream of confluence of Lick Creek	3.78	2,199	3,036	3,428	5,275	3,889
At State Route 6	2.87	1,802	2,435	2,735	4,291	2,964
Just upstream of confluence with Spring Creek Tributary A	2.56	1,713[3]	2,3003	2,5823	4,1163	2,814
At Arrington Road	2.51	1,870	2,637	3,019	4,410	3,345
Approximately 300 feet upstream of confluence with Spring Creek Tributary B	2.00	1,655	2,320	2,648	3,823	2,957
Approximately 1,270 feet upstream of confluence with Spring Creek Tributary C	1.78	1,402	1,972	2,255	3,256	2,543
Approximately 1,190 feet upstream of confluence with Spring Creek Tributary D	0.93	758	1,058	1,201	1,734	1,438
SPRING CREEK TRIBUTARY A						
Above confluence with Spring Creek	0.19	372	503	558	795	606
SPRING CREEK TRIBUTARY B						
Above confluence with Spring Creek	0.23	460	621	688	984	740
Approximately 860 feet upstream of confluence with Tributary to Spring Creek Tributary B	0.16	312	424	470	673	510

Notes:

1 Data not available / Not determined / Not computed

2 Downstream discharge is due to flatter weighted stream slopes and longer stream lengths, resulting in longer unit hydrograph times to peaks and lower discharges

3 Discharge decreased due to storage effects

TABLE 6 – SUMMARY OF DISCHARGES (Continued)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance	1% Ultimate Annual Chance
SPRING CREEK TRIBUTARY C						
Above confluence with Spring Creek	0.13	108	148	167	241	176
SPRING CREEK TRIBUTARY D						
Above confluence with Spring Creek	0.50	400	568	639	982	676
Approximately 4,330 feet upstream of confluence with Tributary to Spring Creek Tributary D	0.43	371	527	592	909	622
STILL CREEK						
At confluence with Thompsons Creek	16.75	7,200	10,800	12,500	16,600	---[1]
Above confluence of Cottonwood Branch	9.72	4,850	7,100	8,100	10,500	---[1]
Above Pleasant Hill Road	8.92	5,300	7,800	8,900	11,700	---[1]
At Sewage Plant	7.72	5,100	7,400	8,400	11,000	---[1]
At FM 2818	4.33	4,400	6,400	7,300	9,700	---[1]
At Mumford Road	2.66	2,350	3,400	3,850	5,000	---[1]
At Loop 507	1.17	1,170	1,650	1,900	2,400	---[1]
STILL CREEK TRIBUTARY A						
At confluence with Still Creek	1.19	1,650	2,200	2,440	3,000	---[1]
STREAM AC-1						
At confluence with Alum Creek	0.92	---[1]	---[1]	1,750	---[1]	---[1]
Approximately 1.21 miles upstream of the confluence of Alum Creek	0.54	---[1]	---[1]	1,350	---[1]	---[1]
Approximately 1.81 miles upstream of the confluence of Alum Creek	0.27	---[1]	---[1]	850	---[1]	---[1]
THOMPSONS BRANCH						
At confluence with Thompsons Creek	9.10	4,050	5,755	6,543	8,234	---[1]
At U.S. Highway 190	6.01	3,162	4,440	5,018	6,478	---[1]
At Rabbit Lane	1.96	1,324	1,870	2,145	2,648	---[1]
THOMPSON CREEK						
At confluence with Navasota River	53.98	12,700	20,700	24,500	34,800	---[1]
At Silver Hill Road	45.03	11,300	18,500	21,800	31,000	---[1]
Below confluence of Still Creek	42.87	10,800	17,300	20,700	29,000	---[1]
Above confluence of Still Creek	26.12	6,200	10,000	12,000	17,000	---[1]
At FM 1687	18.94	5,300	8,600	10,200	14,500	---[1]
Below confluence with Thompsons Creek	15.28	4,650	7,600	9,000	12,400	---[1]

Notes:

1 Data not available / Not determined / Not computed

TABLE 6 – SUMMARY OF DISCHARGES (Continued)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance	1% Ultimate Annual Chance
THOMPSON CREEK (CONTINUED)						
Above confluence with Thompsons Creek	5.80	1,780	2,750	3,200	4,400	---[1]
At Mumford Road	5.15	1,880	2,900	3,380	4,600	---[1]
At U.S. Highway 190	3.71	1,620	2,500	2,900	4,000	---[1]
TRIBUTARY TO SPRING CREEK TRIBUTARY B						
At confluence with Spring Creek Tributary B	0.07	161	214	235	338	239
TRIBUTARY TO SPRING CREEK TRIBUTARY D						
At confluence with Spring Creek Tributary D	0.08	148	199	220	313	213
TURKEY CREEK						
At confluence with Brazos River	8.74	4,421	6,589	7,303	8,855	---[1]
Above Jones Road	7.63	4,810	5,993	6,635	8,001	---[1]
Below confluence with Turkey Creek Tributary D	6.89	3,829	5,586	6,161	7,482	---[1]
Above confluence with Turkey Creek Tributary D	6.27	3,632	5,300	5,844	7,197	---[1]
Above confluence with Turkey Creek Tributary C	4.94	2,735	3,950	4,356	5,405	---[1]
Above confluence with South Fork Turkey Creek	1.80	1,430	2,094	2,303	2,785	---[1]
Above West Villa Maria Road	1.31	1,123	1,625	1,798	2,197	---[1]
Above F.M. 2818	0.53	504	644	691	860	---[1]
TURKEY CREEK TRIBUTARY B						
Above confluence with Turkey Creek Tributary B1	0.38	600	898	995	1,189	---[1]
Below confluence with Turkey Creek Tributary B1	0.82	1,296	1,954	2,170	2,614	---[1]
TURKEY CREEK TRIBUTARY B1						
At confluence with Turkey Creek Tributary B	0.21	389	580	639	773	---[1]
TURKEY CREEK TRIBUTARY C						
At confluence with Turkey Creek	1.29	1,066	1,618	1,793	2,141	---[1]
TURKEY CREEK TRIBUTARY D						
Above confluence with Turkey Creek Tributary D1	0.22	439	650	717	861	---[1]

Notes:
1 Data not available / Not determined / Not computed

TABLE 6 – SUMMARY OF DISCHARGES (Continued)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance	1% Ultimate Annual Chance
TURKEY CREEK TRIBUTARY D (CONTINUED)						
Below confluence with Turkey Creek Tributary D1	0.60	1,013	1,551	1,724	2,088	--- [1]
TURKEY CREEK TRIBUTARY D1						
At confluence with Turkey Creek Tributary D	0.27	536	795	883	1,064	--- [1]
UNNAMED TRIBUTARY 2 TO BEE CREEK TRIBUTARY B						
Above confluence with Bee Creek Tributary B	0.29	280	370	410	540	--- [1]
UNNAMED TRIBUTARY TO BEE CREEK TRIBUTARY B						
Approximately 1,500 feet upstream of confluence with Bee Creek Tributary B	0.32	279	479	571	837	--- [1]
UNNAMED TRIBUTARY TO BURTON CREEK						
Approximately 1,750 feet upstream of confluence with Burton Creek	0.27	--- [1]	--- [1]	941	--- [1]	--- [1]
UNNAMED TRIBUTARY TO WHITE CREEK						
Approximately 2,200 feet upstream of confluence with White Creek	0.45	832	1,112	1,238	2,019	--- [1]
UNNAMED TRIBUTARY TO WHITE CREEK TRIBUTARY 1						
Above confluence with Unnamed Tributary to White Creek	0.12	194	262	293	436	--- [1]
UNNAMED TRIBUTARY TO WHITE CREEK TRIBUTARY 2						
Above confluence with Unnamed Tributary to White Creek	0.12	256	339	375	626	--- [1]
UNNAMED TRIBUTARY TO WHITE CREEK TRIBUTARY 3						
Above confluence with Unnamed Tributary to White Creek	0.03	68	90	100	175	--- [1]
WEST FORK STILL CREEK						
At confluence with Still Creek	1.01	930	1,190	1,280	1,520	--- [1]
At Stevens Drive	0.68	930	1,300	1,450	1,830	--- [1]
WICKSON CREEK						
Approximately 2.8 miles downstream of Elmo Wheeden Road	66.78	--- [1]	--- [1]	24,515	--- [1]	--- 1

Notes:

1 Data not available / Not determined / Not computed

TABLE 6 – SUMMARY OF DISCHARGES (Continued)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance	1% Ultimate Annual Chance
WICKSON CREEK (CONTINUED)						
Approximately 1,500 feet upstream of Elmo Wheeden Road	59.85	---[1]	---[1]	22,970[2]	---[1]	---[1]
At confluence of Steep Hollow Branch	56.18	---[1]	---[1]	22,655[2]	---[1]	---[1]
Approximately 0.38 mile upstream of FM 1179	51.10	---[1]	---[1]	23,930	---[1]	---[1]
At confluence of Mathis Creek	37.45	---[1]	---[1]	17,275	---[1]	---[1]
Approximately 1,020 feet downstream of Old Reliance Road	32.18	---[1]	---[1]	15,345[2]	---[1]	---[1]
Approximately 0.77 mile downstream of U.S. Highway 190	28.68	---[1]	---[1]	16,335	---[1]	---[1]
At confluence of Little Wickson Creek	21.73	---[1]	---[1]	12,595	---[1]	---[1]
Approximately 0.69 mile upstream of U.S. Highway 190	21.25	---[1]	---[1]	12,160	---[1]	---[1]
At left bank tributary approximately 0.83 mile upstream of U.S. Highway 190	19.84	---[1]	---[1]	11,880	---[1]	---[1]
WOLF PEN CREEK						
At confluence with Carters Creek	3.41	3,941	5,287	5,645	6,822	---[1]
Approximately 900 feet downstream of State Highway 6	2.93	3,236	4,460	4,933	5,762	---[1]
Upstream of confluence with Wolf Pen Creek Tributary A	1.78	1,937	2,613	2,841	3,517	---[1]
Upstream of confluence with Wolf Pen Creek Tributary B	1.45	1,661	2,196	2,406	2,900	---[1]
Upstream of confluence with Wolf Pen Creek Tributary C	0.39	592	800	891	1,085	---[1]
WOLF PEN CREEK TRIBUTARY A						
At confluence with Wolf Pen Creek	0.49	906	1,222	1,357	1,644	---[1]
Just upstream of Domink Drive	0.32	---[1]	---[1]	745	---[1]	---[1]

Notes:

1 Data not available / Not determined / Not computed

2 Downstream discharge is due to flatter weighted stream slopes and longer stream lengths, resulting in longer unit hydrograph times to peaks and lower discharges

TABLE 6 – SUMMARY OF DISCHARGES (Continued)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance	1% Ultimate Annual Chance
WOLF PEN CREEK TRIBUTARY B						
At confluence with Wolf Pen Creek	0.24	375	547	519	755	---[1]
WOLF PEN CREEK TRIBUTARY C						
At confluence with Wolf Pen Creek	0.95	1,065	1,333	1,424	1,707	---[1]

Notes:

1 Data not available / Not determined / Not computed

The stillwater elevations for the 10-, 2-, 1-, and 0.2-percent-annual-chance flood have been determined for an unnamed pond within the City of College Station and is summarized in Table 7, "Summary of Stillwater Elevations".

TABLE 7 – SUMMARY OF STILLWATER ELEVATIONS

FLOODING SOURCE AND LOCATION	ELEVATION (feet) 10% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance	0.2% Ultimate Annual Chance
UNNAMED POND					
Entire shoreline of pond	264.3	267.4	268.2	269.4	268.5

3.2 Hydraulic Analyses

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

For the streams studied in detail within the Cities of Bryan and College Station, field surveys were conducted to obtain channel and valley cross sections as well as bridge and culvert dimensions. Additional cross sections were obtained from the USACE. Average spacing of all cross sections utilized in hydraulic computations was 1,000 feet. For the streams studied in detail within the unincorporated areas of Brazos County, a limited number of cross sections for the backwater analyses were field surveyed and were located at close intervals above and/or below bridges and culverts in order to compute the significant backwater effects of these structures. Additional cross sections were developed using data compiled from USGS topographic maps (Reference 16). Bridge data was obtained by field measurements and by bridge plans from the Texas Department of Highways and Public Transportation.

Water-surface elevations for floods of the selected recurrence intervals for the Navasota River were taken from existing USACE data, which used the USACE LRD-l step-backwater computer program (Reference 26). Computed water-surface elevations at the selected recurrence intervals for Bee Creek below State Highway 6, Briar Creek below Broadmoore Road, Burton Creek, Carters Creek (upstream of the confluence of Bee Creek), Cottonwood Branch, South Fork of Cottonwood Branch, Still Creek below U. S. Highway 190, Thompsons Branch, Thompsons Creek, Turkey Creek, and West Fork Still Creek were adopted from the Fort Worth District USACE Floodplain Information reports (References 1, 9, 10, 11, and 12). Water-surface elevations for floods of the selected recurrence intervals for all remaining streams studied were computed through the use of the USACE HEC-2 step-backwater computer program (Reference 21). Starting water-surface elevations were established with normal depth computations.

The hydraulic analyses for each stream studied in the 1987 Fort Worth District, USACE study (Foxfire Creek, Lick Creek, Wickson Creek, and a portion of Carters Creek), were studied from approximate base flood elevations of Carters Creek using the slope-area method. Floodway embankment options in HEC-2 were used to determine the floodway which met the 1-foot maximum water-surface rise for the 1-percent-annual-chance flood in compliance with FEMA regulations. The 1-percent and 0.2-percent-annual-chance flood boundaries and the floodway encroachment boundaries are shown on the study maps. The floodplain and floodway boundaries were drawn using the flood elevations and top-widths determined by the HEC-2 analyses. Between cross sections, delineations were drawn based on the topographic maps. The floodway encroachment boundaries were drawn using the widths shown in the Floodway Data Table (Table 9) for each cross section, and interpolated to show a reasonable fit between cross sections. All hydraulic analyses for this revision were based on unobstructed flow.

The May 2012 revision included updated hydraulic modeling for Alum Creek, Lick Creek, Spring Creek and Stream AC-1. Updates resulting from the models are present in the Floodway Data Tables (Table 9). Hydraulic analyses were conducted using HEC-RAS Version 4.0 for Alum Creek, Stream AC-1, and Lick Creek, and HEC-GeoRAS was used to assist with the mapping of the computed floodways. For Spring Creek the revised work maps from LOMR 99-06-1336P were digitized and incorporated into the DFIRM and FIS. The effective models provided by the FEMA library were paper copies in HEC-2 format; these models were keyed into a digital format, and then manually converted to HEC–RAS format. Errors and discrepancies were corrected by using FEMA's Floodplain Modeling Manual "*HEC-RAS Procedures for HEC-2 Modelers*". Upon correcting the errors, the HEC-RAS model was run and the results reconciled with the HEC-2 output. The HEC-RAS model was georeferenced by locating known cross section locations such as roadway crossings then adjusting the locations of the intervening cross sections according to the channel downstream reach lengths that are in the model. This modeling effort of Alum Creek, Stream AC-1, Lick Creek, and Spring Creek produced results that are in general agreement with the prior detail studies of these flood sources. Impetus for the restudy developed from the lack of regulatory floodways for the affected flooding sources and multiple LOMCs on some streams.

As part of the PMR dated April 2, 2014, new or revised hydraulic analyses were completed for Bee Creek, Bee Creek Tributary A, Bee Creek Tributary B, Bee Creek Tributary B Split Flow Channel, and Unnamed Tributary 2 to Bee Creek Tributary B using HEC-RAS Version 4.0. At SH 6 along Bee Creek, the floodplains from Bee Creek and Bee Creek Tributary A merge into one during major rainfall events. Traditional steady flow modeling does not consider storage in its computations and as a result, cannot properly account for the volume

transferred from one tributary to the other over FM 2818 when the floodplains merge. Due to the complex flow conditions at SH 6, both steady state and unsteady state hydraulic models were generated for Bee Creek and its tributaries. This analysis required both upstream and downstream boundary conditions as well as internal boundary conditions at flow change locations. Flow hydrographs from the HEC-1 model was utilized as much as possible to maintain consistency with the Klotz modeling while using HEC-DSS (data storage system).The unsteady flow analysis produced a peak discharge at each section studied and after the unsteady analysis was compete, a steady flow analysis was performed using the discharges generated through unsteady analysis. Starting water-surface elevations were established with normal depth computations.

For the PMR dated April 2, 2014, new or revised hydraulic analyses for Austins Creek, Carters Creek (at its confluence with Wolf Pen Creek to a point approximately 1.3 miles upstream of East State Highway 21), Carters Creek Split Channel, Carters Creek Tributary A, Carters Creek Tributary A East Fork, Carters Creek Tributary A West Fork, Carters Creek Tributary B, Carters Creek Tributary C, and Tributary 1 to Carters Creek Split Channel using HEC-RAS Version 4.0. A flow interpolation method was used to determine the steady flow rate at the majority of the model cross sections for each recurrence interval. This method is detailed in a memorandum from Dodson & Associates, Inc. and was taken from the Tropical Storm Allison Recovery Project (TSARP) website technical white papers discussing stage-discharge relationships between HEC-HMS and HEC-RAS (Reference 27). Starting water-surface elevations were established with normal depth computations except for the new study along Carters Creek and Carters Creek Tributaries A and B.

Roughness factors (Manning's "n") used in the hydraulic computations were chosen by engineering judgment and based on field observations of the streams and floodplain areas. Table 8, "Summary of Roughness Coefficients," shows the ranges of the channel and overbank roughness factors used in the hydraulic computations for the streams studied by detailed methods.

TABLE 8 — SUMMARY OF ROUGHNESS COEFFICIENTS

Stream	Overbank "n"	Channel "n"
Alum Creek	0.085	0.06
Austins Creek	0.05-0.12	0.033-0.550
Bee Creek	0.040 – 0.11	0.018 – 0.075
Bee Creek Tributary A	0.015 – 0.09	0.025 – 0.05
Bee Creek Tributary B	0.040 – 0.12	0.030 – 0.055
Bee Creek Tributary B Split Flow Channel	0.035 – 0.04	0.03 – 0.035
Briar Creek	0.060 – 0.090	0.041 – 0.065
Burton Creek	0.014 – 0.090	0.014 – 0.080
Burton Creek Tributary C	0.060 – 0.090	0.014 – 0.065
Burton Creek Tributary D	0.015 – 0.090	0.014 – 0.090
Carters Creek	0.014 – 0.15	0.013 – 0.12
Carters Creek Split Channel	0.03 – 0.055	0.018 – 0.14

TABLE 8 — SUMMARY OF ROUGHNESS COEFFICIENTS (Continued)

Stream	Overbank "n"	Channel "n"
Carters Creek Tributary A	0.05 – 0.15	0.05 – 0.065
Carters Creek Tributary A East Fork	0.05 – 0.12	0.065
Carters Creek Tributary A West Fork	0.05 – 0.12	0.065
Carters Creek Tributary B	0.04 – 0.15	0.035 – 0.065
Carters Creek Tributary C	0.045 – 0.12	0.045 – 0.05
Cottonwood Branch	0.060 – 0.090	0.014 – 0.065
Foxfire Creek	0.080 – 0.090	0.065 – 0.075
Hudson Creek	0.060 – 0.090	0.014 – 0.065
Lick Creek	0.060 – 0.090	0.050 – 0.070
Little Wickson Creek	0.060 – 0.085	0.050 – 0.065
Mathis Creek	0.060 – 0.085	0.050 – 0.065
South Fork of Cottonwood Branch	0.060 – 0.090	0.014 – 0.065
Spring Creek	0.040 – 0.100	0.015 – 0.060
Still Creek	0.060 – 0.090	0.014 – 0.065
Still Creek Tributary A	0.060 – 0.090	0.014 – 0.065
Stream AC-1	0.065 – 0.085	0.050 – 0.055
Thompsons Branch	0.060 – 0.090	0.014 – 0.065
Thompsons Creek	0.060 – 0.090	0.014 – 0.065
Tributary 1 to Carters Creek Split Channel	0.018 – 0.065	0.018 – 0.035
Turkey Creek	0.060 – 0.090	0.014 – 0.065
Unnamed Tributary 2 to Bee Creek Tributary B	0.08	0.03
West Fork Still Creek	0.060 – 0.090	0.014 – 0.065
Wickson Creek	0.060 – 0.085	0.050 – 0.075
Wolf Pen Creek	0.050 – 0.085	0.040 – 0.065
Wolf Pen Creek Tributary A	0.060 – 0.090	0.014 – 0.065
Wolf Pen Creek Tributary B	0.060 – 0.090	0.014 – 0.065
Wolf Pen Creek Tributary C	0.060 – 0.090	0.014 – 0.065

For this countywide FIS, 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).

Flood Profiles were drawn showing computed water-surface elevations for floods of the selected recurrence intervals. The hydraulic analyses for this study were based on unobstructed flow. The flood elevations shown on the Flood Profiles (Exhibit 1) are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

3.3 Vertical Datum

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

Flood elevations shown in this FIS report and on the FIRM are referenced to the NAVD. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. Some of the data used in this revision were taken from the prior effective FIS reports and FIRMs and adjusted to NAVD88. The datum conversion factor from NGVD29 to NAVD88 in Brazos County is +0.09 feet.

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

NGS Information Services
NOAA, N/CG12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

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

For FIRM panels dated July 16, 2004, or later, qualifying bench marks within a given jurisdiction that are cataloged by 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 the frost line); and

- 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 benchmarks shown on this map, please contact the Information Services Branch of the NGS at (301) 713-3242, or visit their website at www.ngs.noaa.gov.

4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

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

4.1 Floodplain Boundaries

To provide a national standard without regional discrimination, the 1-percent-annual-chance flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2-percent-annual-chance flood is employed to indicate additional areas of flood risk in the community. For each stream studied by detailed methods, the 1- and 0.2-percent-annual-chance floodplain boundaries have been delineated using the flood elevations determined at each cross section. Between cross sections, the boundaries were interpolated. For the City of Bryan, city topographic maps at a scale of 1:4,800 with a contour interval of two feet were used (Reference 28). For the City of College Station, city topographic maps at a scale of 1:7,200 with a contour interval of 10 feet were used (Reference 29). Within the City of College Station, boundaries for Wolf Pen Creek and its tributaries were interpolated using topographic maps at a scale of 1:1,200 with a contour interval of two feet (Reference 30). For the unincorporated areas of Brazos County and the City of Wixon Valley, boundaries were interpolated using topographic maps at a scale of 1:24,000 with a contour interval of 10 and 20 feet (Reference 16).

The 1- and 0.2-percent-annual-chance floodplain boundaries are shown on the FIRM. On this map, the 1-percent-annual-chance floodplain boundary corresponds to the boundary of the areas of special flood hazards (Zones A and AE), and the 0.2-percent-annual-chance floodplain boundary corresponds to the boundary of areas of moderate flood hazards. In cases where the 1- and 0.2-percent-annual-chance floodplain boundaries are close together, only the 1-percent-annual-chance floodplain boundary has been shown. Small areas within the floodplain boundaries may lie

above the flood elevations, but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data.

Redelineation of floodplain boundaries derived by approximate methods used a technique of elevation transfer to digital format. Floodplain boundary elevation extraction utilizes two points of equal elevation from a USGS 7.5 quadrangle map (Reference 16), which formed a line perpendicular to theoretical floodplain flow; and this water surface isopleth is coincident at either end of the FIRM floodplain boundary. Water surface Triangulated Irregular Networks (TINs) are created from a collection of the isopleths. Redelineation of the areas by approximate method did not involve any restudy.

For the streams studied by approximate methods, only the 1-percent-annual-chance floodplain boundary is shown on the FIRM. Approximate 1-percent-annual-chance floodplain boundaries in some portions of the study area were delineated using the previously printed Flood Insurance Studies for the county (References 31, 32, and 33).

4.2 Floodways

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

The floodways presented in this study 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 (see Table 9, "Floodway Data"). Due to excessive velocities between cross sections F and H on Burton Creek and between miles 0.22 and 0.36 on Burton Creek Tributary D, floodway computations were not made. Instead, the floodway boundary was made equal to the boundary of the effective flow area of the 1-percent-annual flood. 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.

The area between the floodway and 1-percent-annual-chance floodplain boundaries is termed the floodway fringe. The floodway fringe encompasses the portion of the floodplain that could be completely obstructed without increasing the water-surface elevation (WSEL) of the base flood more than 1 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to floodplain development are shown in Figure 1.

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	**DISTANCE**	**WIDTH (FEET)**	**SECTION AREA (SQUARE FEET)**	**MEAN VELOCITY (FEET PER SECOND)**	**REGULATORY (FEET NAVD 88)**	**WITHOUT FLOODWAY (FEET NAVD 88)**	**WITH FLOODWAY (FEET NAVD 88)**	**INCREASE (FEET)**
Alum Creek								
A	2,810 [1]	390	1,385	3.8	220.6	220.6	221.3	0.7
B	4,018 [1]	325	1,683	3.2	225.4	225.4	226.3	0.9
C	5,130 [1]	370	1,692	2.4	227.3	227.3	228.2	0.9
D	8,480 [1]	405	1,799	2.1	231.8	231.8	232.8	1.0
E	10,865 [1]	655	1,876	1.9	238.3	238.3	239.3	1.0
F	11,916 [1]	435	1,556	2.3	240.9	240.9	241.9	1.0
G	13,226 [1]	320	1,557	2.3	243.6	243.6	244.5	0.9
H	15,270 [1]	320	1,786	2.0	246.0	246.0	246.7	0.7
I	16,934 [1]	395	2,422	1.5	247.9	247.9	248.9	1.0
J	17,033 [1]	155	1,245	3.3	247.8	247.8	248.8	1.0
Austins Creek								
A	1,299 [2]	140	266	5.7	296.5	296.5	296.5	0.0
B	2,713 [2]	137	805	1.7	301.6	301.6	302.5	0.9
C	2,864 [2]	100	607	2.2	303.6	303.6	304.3	0.7
D	4,151 [2]	63	334	3.6	307.0	307.0	307.5	0.5
E	5,236 [2]	80	223	4.9	310.3	310.3	310.4	0.1
F	6,199 [2]	93	184	5.4	314.3	314.3	314.3	0.0
G	7,113 [2]	69	328	2.7	317.4	317.4	317.9	0.5
H	7,659 [2]	135	514	1.6	321.6	321.6	321.9	0.3

[1] Feet above confluence with Lick Creek

[2] Feet above confluence with Carters Creek

TABLE 9

FEDERAL EMERGENCY MANAGEMENT AGENCY
BRAZOS COUNTY, TEXAS
AND INCORPORATED AREAS

FLOODWAY DATA

ALUM CREEK - AUSTINS CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	**DISTANCE**	**WIDTH (FEET)**	**SECTION AREA (SQUARE FEET)**	**MEAN VELOCITY (FEET PER SECOND)**	**REGULATORY (FEET NAVD 88)**	**WITHOUT FLOODWAY (FEET NAVD 88)**	**WITH FLOODWAY (FEET NAVD 88)**	**INCREASE (FEET)**
Bee Creek								
A	4,773 [1]	874	1,459	5.0	237.9	236.1 [2]	236.1 [2]	0.0
B	6,379 [1]	688	2,822	2.6	241.4	241.4	242.0	0.6
C	7,256 [1]	578	3,319	2.2	245.4	245.4	246.0	0.6
D	10,136 [1]	374	3,770	1.3	248.5	248.5	249.0	0.5
E	11,875 [1]	861	2,312	2.0	252.5	252.5	252.9	0.4
F	15,281 [1]	137	1,489	2.8	261.6	261.6	262.3	0.7
G	17,045 [1]	92	675	5.7	262.3	262.3	262.9	0.6
H	18,696 [1]	42	149	5.9	264.0	264.0	264.3	0.3
I	20,107 [1]	35	200	4.4	274.6	274.6	274.6	0.0
J	21,810 [1]	38	210	4.2	283.5	283.5	283.6	0.1
K	22,651 [1]	80	469	1.9	294.0	294.0	294.9	0.9
L	23,717 [1]	50	250	3.5	300.6	300.6	301.4	0.8
M	24,620 [1]	68	125	7.0	305.2	305.2	305.4	0.2
Bee Creek Tributary A								
A	2,233 [3]	461	1,843	1.4	255.0	255.0	255.1	0.1
B	3,601 [3]	262	751	3.4	256.9	256.9	257.3	0.4
C	5,343 [3]	454	1,166	2.1	262.2	262.2	262.6	0.4
D	6,299 [3]	100	395	6.2	264.9	264.9	265.0	0.1
E	7,154 [3]	42	217	11.3	266.2	266.2	266.5	0.3

[1] Feet above confluence with Carters Creek

[2] Elevations computed without consideration of influence from Carters Creek

[3] Feet above confluence with Bee Creek

TABLE 9

FEDERAL EMERGENCY MANAGEMENT AGENCY
BRAZOS COUNTY, TEXAS
AND INCORPORATED AREAS

FLOODWAY DATA

BEE CREEK - BEE CREEK TRIBUTARY A

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	**DISTANCE**	**WIDTH (FEET)**	**SECTION AREA (SQUARE FEET)**	**MEAN VELOCITY (FEET PER SECOND)**	**REGULATORY (FEET NAVD 88)**	**WITHOUT FLOODWAY (FEET NAVD 88)**	**WITH FLOODWAY (FEET NAVD 88)**	**INCREASE (FEET)**
Bee Creek Tributary B								
A	625 [1]	55	331	9.0	263.0	262.7 [2]	263.0 [2]	0.3
B	1,542 [1]	68	467	6.4	265.6	265.6	266.0	0.4
C	3,400 [1]	35	410	6.9	276.1	276.1	276.4	0.3
D	5,019 [1]	160	978	2.8	277.3	277.3	277.7	0.4
E	5,663 [1]	110	488	2.3	278.4	278.4	279.0	0.6
F	6,725 [1]	75	387	4.7	281.5	281.5	281.8	0.3
G	8,870 [1]	47	218	5.3	285.8	285.8	286.5	0.7
H	9,965 [1]	64	288	3.9	288.3	288.3	289.2	0.9
I	10,655 [1]	74	277	3.7	290.8	290.8	291.6	0.8
J	11,235 [1]	75	156	9.8	291.9	291.9	292.4	0.5
Bee Creek Tributary B Split Flow Channel								
A	431 [3]	56	88	6.2	274.9	274.9	275.0	0.1
B	1,308 [3]	80	134	5.4	279.2	279.2	279.6	0.4
Briar Creek								
A	0.61 [4]	83	746	4.9	279.9	279.9	280.5	0.6
B	0.67 [4]	60	517	7.1	280.8	280.8	281.7	0.9
C	0.85 [4]	60	638	5.8	283.1	283.1	283.8	0.7
D	0.96 [4]	87	896	4.1	284.6	284.6	285.1	0.5
E	1.01 [4]	175	1,242	3.0	286.1	286.1	286.5	0.4
F	1.25 [4]	219	840	4.4	287.2	287.2	287.8	0.6
G	1.27 [4]	265	477	7.7	288.3	288.3	288.6	0.3
H	1.45 [4]	145	610	6.0	290.9	290.9	291.5	0.6
I	1.77 [4]	350	1,529	2.4	295.8	295.8	296.5	0.7
J	1.89 [4]	255	1,181	3.1	297.2	297.2	297.9	0.7
K	2.12 [4]	215	1,168	3.2	300.0	300.0	300.9	0.9
L	2.37 [4]	185	792	4.6	303.9	303.9	304.6	0.7
M	2.78 [4]	205	887	4.1	312.9	312.9	313.2	0.3
N	3.15 [4]	140	600	4.0	320.9	320.9	321.6	0.7

[1] Feet above confluence with Bee Creek

[2] Elevations computed without consideration of backwater effects from Bee Creek

[3] Feet above confluence with Bee Creek Tributary B

[4] Miles above confluence with Carters Creek

TABLE 9

FEDERAL EMERGENCY MANAGEMENT AGENCY
BRAZOS COUNTY, TEXAS
AND INCORPORATED AREAS

FLOODWAY DATA

BEE CREEK TRIBUTARY B -
BEE CREEK TRIBUTARY B SPLIT FLOW CHANNEL - BRIAR CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	**DISTANCE**	**WIDTH (FEET)**	**SECTION AREA (SQUARE FEET)**	**MEAN VELOCITY (FEET PER SECOND)**	**REGULATORY (FEET NAVD 88)**	**WITHOUT FLOODWAY (FEET NAVD 88)**	**WITH FLOODWAY (FEET NAVD 88)**	**INCREASE (FEET)**
Burton Creek								
A	0.37 [1]	911	6,096	1.9	268.9	268.9	269.0	0.1
B	0.75 [1]	492	3,699	3.1	270.0	270.0	270.5	0.5
C	1.22 [1]	861	4,283	2.7	278.3	278.3	279.0	0.7
D	1.44 [1]	700	3,509	3.3	279.9	279.9	280.9	1.0
E	1.65 [1]	500	2,202	3.1	282.8	282.8	283.8	1.0
F	1.95 [1]	*	*	*	282.8	282.8	*	*
G	2.39 [1]	*	*	*	284.9	284.9	*	*
H	2.49 [1]	*	*	*	286.5	286.5	*	*
I	2.80 [1]	100	616	6.5	293.1	293.1	293.9	0.8
J	3.08 [1]	120	880	4.6	299.1	299.1	299.7	0.6
K	3.31 [1]	90	773	5.2	304.5	304.5	305.3	0.8
L	3.37 [1]	85	981	4.1	305.2	305.2	306.1	0.9
M	3.48 [1]	134	857	3.7	308.3	308.3	308.7	0.4
N	3.74 [1]	70	448	7.0	313.2	313.2	313.7	0.5
O	4.32 [1]	60	324	5.1	328.7	328.7	328.9	0.2
P	4.44 [1]	60	258	6.4	335.0	335.0	335.9	0.9
Burton Creek Tributary C								
A	0.07 [2]	100	524	5.7	281.7	280.3 [3]	280.5 [3]	0.2
B	0.20 [2]	208	896	2.5	283.1	283.1	283.4	0.3
C	0.44 [2]	90	377	5.8	285.3	285.3	286.2	0.9
Burton Creek Tributary D								
A+	0.15 [2]	43	400	8.1	290.1	290.1	290.1	0.0
B+	0.32 [2]	43	390	8.3	291.9	291.9	291.9	0.0
C	0.44 [2]	225	127	2.9	297.1	297.1	297.4	0.3
D	0.54 [2]	250	992	3.3	298.0	298.0	298.6	0.6
E	0.63 [2]	330	868	7.5	300.6	300.6	301.0	0.4
F	0.72 [2]	230	935	3.5	302.5	302.5	302.7	0.2
G	0.80 [2]	200	464	7.0	305.3	305.3	305.4	0.1
H	0.83 [2]	140	721	4.5	307.6	307.6	308.3	0.7

[1] Miles above confluence with Carters Creek

[2] Miles above confluence with Burton Creek

[3] Elevations computed without consideration of influence from Burton Creek

* Data not computed

+ No floodway between Cross Sections A and B, 1% annual chance flood contained in culvert

TABLE 9

FEDERAL EMERGENCY MANAGEMENT AGENCY
BRAZOS COUNTY, TEXAS
AND INCORPORATED AREAS

FLOODWAY DATA

BURTON CREEK - BURTON CREEK TRIBUTARY C - BURTON CREEK TRIBUTARY D

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	**DISTANCE [1]**	**WIDTH (FEET)**	**SECTION AREA (SQUARE FEET)**	**MEAN VELOCITY (FEET PER SECOND)**	**REGULATORY (FEET NAVD 88)**	**WITHOUT FLOODWAY (FEET NAVD 88)**	**WITH FLOODWAY (FEET NAVD 88)**	**INCREASE (FEET)**
Carters Creek								
A	8.82	1,695	10,913	2.1	239.7	239.7	240.3	0.6
B	9.58	1,490	9,296	2.4	242.7	242.7	243.5	0.8
C	10.11	1,450	9,082	2.5	245.7	245.7	246.5	0.8
D	10.96	970	5,429	3.5	251.1	251.1	251.7	0.6
E	11.64	1,543	8,474	2.3	254.5	254.5	255.2	0.7
F	11.66	1,576	9,463	2.0	255.0	255.0	255.7	0.7
G	12.11	1,155	5,849	3.3	255.9	255.9	256.3	0.4
H	12.47	1,488	6,038	3.2	258.8	258.8	259.4	0.6
I	12.67	1,497	4,472	4.3	260.9	260.9	261.2	0.3
J	12.71	1,478	5,003	3.8	262.4	262.4	262.6	0.2
K	12.79	1,567	9,017	2.1	262.8	262.8	263.0	0.2
L	12.94	1,250	6,498	2.0	263.6	263.6	263.9	0.3
M	13.83	1,020	5,124	2.5	267.6	267.6	268.6	1.0
N	14.49	750	4,253	3.0	274.0	274.0	274.3	0.3
O	14.98	917	4,876	2.4	275.9	275.9	276.9	1.0
P	15.45	170	1,179	9.0	279.0	279.0	279.7	0.7
Q	15.48	170	1,889	5.6	280.8	280.8	281.2	0.4
R	15.66	174	1,606	6.5	282.1	282.1	283.0	0.9
S	15.69	220	2,138	4.9	284.5	284.5	285.1	0.6
T	16.04	800	7,106	1.7	285.7	285.7	286.6	0.9
U	17.09	1,131	6,839	1.5	287.8	287.8	288.6	0.8
V	17.63	110	999	6.0	291.0	291.0	291.5	0.5
W	18.13	446	2,854	2.1	295.6	295.6	296.4	0.8
X	18.63	275	1,343	3.3	298.7	298.7	299.1	0.4
Y	19.08	686	2,520	1.7	305.1	305.1	305.9	0.8
Z	19.09	614	2,024	2.1	305.8	305.8	306.1	0.3
AA	19.33	182	701	5.8	308.4	308.4	309.2	0.8
AB	19.63	487	840	2.0	312.7	312.7	313.7	1.0
AC	19.86	237	925	1.1	314.2	314.2	314.8	0.6
AD	20.08	202	517	1.9	319.5	319.5	319.7	0.2
AE	20.42	67	229	3.7	326.6	326.6	326.8	0.2
AF	20.40	100	136	6.2	326.1	326.1	326.4	0.3
AG	20.85	80	218	3.2	335.3	335.3	335.3	0.0

[1] Miles above confluence with Navasota River

TABLE 9

FEDERAL EMERGENCY MANAGEMENT AGENCY
BRAZOS COUNTY, TEXAS
AND INCORPORATED AREAS

FLOODWAY DATA

CARTERS CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	**DISTANCE**	**WIDTH (FEET)**	**SECTION AREA (SQUARE FEET)**	**MEAN VELOCITY (FEET PER SECOND)**	**REGULATORY (FEET NAVD 88)**	**WITHOUT FLOODWAY (FEET NAVD 88)**	**WITH FLOODWAY (FEET NAVD 88)**	**INCREASE (FEET)**
Carters Creek Split Channel								
A	491 [1]	160	1,572	0.9	278.5	278.5	279.4	0.9
B	2,041 [1]	50	186	1.1	280.8	280.8	281.3	0.5
C	2,968 [1]	150	925	1.7	285.5	285.5	286.1	0.6
Carters Creek Tributary A								
A	341 [1]	130	464	4.7	314.1	314.1	314.2	0.1
B	2,234 [1]	140	718	2.8	321.0	321.0	321.9	0.9
C	3,520 [1]	225	681	2.8	325.6	325.6	326.3	0.7
D	3,639 [1]	84	566	3.4	326.8	326.8	327.5	0.7
E	4,251 [1]	90	443	4.2	329.2	329.2	329.7	0.5
Carters CreekTributary A East Fork								
A	309 [2]	100	284	1.9	330.2	330.2	331.2	1.0
B	804 [2]	65	169	2.9	333.8	333.8	334.3	0.5
C	1,225 [2]	44	178	2.5	335.8	335.8	336.5	0.7
D	1,293 [2]	62	329	1.3	337.4	337.4	337.9	0.5
E	1,916 [2]	80	140	2.7	338.9	338.9	339.0	0.1
Carters CreekTributary A West Fork								
A	44 [2]	300	1,087	0.9	329.8	329.8	329.9	0.1
B	1,077 [2]	145	368	2.2	332.3	332.3	332.4	0.1
C	1,825 [2]	100	290	2.5	336.8	336.8	337.4	0.6
D	2,783 [2]	100	156	3.8	340.2	340.2	340.2	0.0
E	2,833 [2]	46	248	2.4	341.5	341.5	342.0	0.5
F	3,789 [2]	48	123	3.9	344.9	344.9	345.0	0.1

[1] Feet above confluence with Carters Creek

[2] Feet above confluence with Carters Creek Tributary A

TABLE 9

FEDERAL EMERGENCY MANAGEMENT AGENCY
BRAZOS COUNTY, TEXAS
AND INCORPORATED AREAS

FLOODWAY DATA

CARTERS CREEK SPLIT CHANNEL - CARTERS CREEK TRIBUTARY A - CARTERS CREEK TRIBUTARY A EAST FORK - CARTERS CREEK TRIBUTARY A WEST FORK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	**DISTANCE [1]**	**WIDTH (FEET)**	**SECTION AREA (SQUARE FEET)**	**MEAN VELOCITY (FEET PER SECOND)**	**REGULATORY (FEET NAVD 88)**	**WITHOUT FLOODWAY (FEET NAVD 88)**	**WITH FLOODWAY (FEET NAVD 88)**	**INCREASE (FEET)**
Carters Creek Tributary B								
A	138 1	450	2,236	2.0	288.3	288.3	289.2	0.9
B	1,130	300	1,530	2.9	290.5	290.5	291.4	0.9
C	2,910	206	1,870	2.3	293.3	293.3	294.2	0.9
D	3,084	161	1,570	2.8	294.0	294.0	294.9	0.9
E	4,160	590	2,348	1.84	296.2	296.2	297.1	0.9
F	6,933	475	2,257	1.91	301.2	301.2	301.9	0.7
G	7,981	268	1,102	3.88	302.8	302.8	303.7	0.9
H	8,547	500	3,132	1.34	306.3	306.3	307.3	1.0
I	9,343	230	1,458	2.7	307.8	307.8	308.7	0.9
J	9,405	233	1,284	3.1	307.8	307.8	308.8	1.0
K	10,256	220	1,057	3.4	310.3	310.3	310.9	0.6
L	10,311	220	885	4.0	310.1	310.1	310.9	0.8
M	10,562	195	899	3.8	311.1	311.1	311.9	0.8
N	10,608	200	918	3.71	311.2	311.2	312.2	1.0
O	11,197	140	750	4.17	312.7	312.7	313.3	0.6
P	12,037	86	552	4.99	315.8	315.8	316.3	0.5
Q	12,107	190	925	2.93	316.9	316.9	317.3	0.4
R	13,257	150	797	2.8	320.1	320.1	320.6	0.5
S	14,770	110	438	3.6	325.8	325.8	326.3	0.5
T	15,625	171	620	2.0	328.8	328.8	329.6	0.8
U	15,666	110	450	2.7	329.9	329.9	330.7	0.8
V	16,055	110	396	2.9	332.0	332.0	332.7	0.7
W	16,106	155	600	1.9	332.4	332.4	333.3	0.9
X	16,870	58	200	5.3	335.4	335.4	335.7	0.3
Y	16,927	150	540	2.0	338.9	338.9	339.3	0.4
Z	17,538	28	101	9.6	342.1	342.1	342.1	0.0
AA	17,568	28	101	9.6	343.2	343.2	344.2	1.0
AB	17,625	100	431	2.2	345.9	345.9	346.5	0.6
AC	17,945	100	394	2.3	346.3	346.3	347.2	0.9

[1] Feet above confluence with Carters Creek

TABLE 9

FEDERAL EMERGENCY MANAGEMENT AGENCY
BRAZOS COUNTY, TEXAS
AND INCORPORATED AREAS

FLOODWAY DATA

CARTERS CREEK TRIBUTARY B

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	**DISTANCE**	**WIDTH (FEET)**	**SECTION AREA (SQUARE FEET)**	**MEAN VELOCITY (FEET PER SECOND)**	**REGULATORY (FEET NAVD 88)**	**WITHOUT FLOODWAY (FEET NAVD 88)**	**WITH FLOODWAY (FEET NAVD 88)**	**INCREASE (FEET)**
Carters Creek Tributary C								
A	1,190 [1]	450	1,681	1.2	287.2	287.2	288.2	1.0
B	1,883 [1]	300	498	3.7	289.1	289.1	289.7	0.6
C	2,906 [1]	250	815	2.0	294.9	294.9	295.4	0.5
D	4,367 [1]	110	357	3.7	299.1	299.1	299.6	0.5
Cottonwood Branch								
A-B*	*	*	*	*	*	*	*	*
C	4.56 [2]	280	1,602	2.3	297.9	297.9	298.8	0.9
D	5.70 [2]	165	618	3.5	310.7	310.7	311.5	0.8
E	5.80 [2]	205	795	2.7	312.4	312.4	313.3	0.9
F	6.25 [2]	200	245	6.1	319.8	319.8	319.9	0.1
Foxfire Creek								
A	18,057 [1]	146	537	3.6	236.1	235.4 [3]	236.3 [3]	0.9
B	18,532 [1]	116	510	3.8	237.0	237.0	237.9	0.9
C	19,272 [1]	171	1,062	1.8	241.0	241.0	241.8	0.8
D	19,747 [1]	187	619	3.2	242.3	242.3	243.0	0.7
E	20,275 [1]	197	733	2.7	244.8	244.8	245.8	1.0
F	20,592 [1]	188	563	3.5	246.8	246.8	246.8	0.0
G	21,014 [1]	190	954	2.0	248.1	248.1	249.0	0.9
H	21,436 [1]	171	636	3.0	249.3	249.3	250.1	0.8
I	22,176 [1]	213	1,308	1.4	255.3	255.3	256.3	1.0
J	23,020 [1]	156	614	3.0	256.4	256.4	257.3	0.9
K	23,812 [1]	68	336	4.1	258.9	258.9	259.7	0.8
L	24,340 [1]	54	288	3.9	261.2	261.2	262.0	0.8
M	24,816 [1]	76	394	2.8	264.0	264.0	264.7	0.7
N	24,974 [1]	83	445	2.5	266.1	266.1	267.1	1.0
O	25,608 [1]	55	350	3.2	267.2	267.2	268.1	0.9
P	25,977 [1]	48	305	3.4	268.1	268.1	269.0	0.9

[1] Feet above confluence with Carters Creek

[2] Miles above confluence with Still Creek

[3] Elevations computed without consideration of backwater from Carters Creek

* Data not computed

TABLE 9

FEDERAL EMERGENCY MANAGEMENT AGENCY
BRAZOS COUNTY, TEXAS
AND INCORPORATED AREAS

FLOODWAY DATA

CARTERS CREEK TRIBUTARY C - COTTONWOOD BRANCH - FOXFIRE CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	**DISTANCE**	**WIDTH (FEET)**	**SECTION AREA (SQUARE FEET)**	**MEAN VELOCITY (FEET PER SECOND)**	**REGULATORY (FEET NAVD 88)**	**WITHOUT FLOODWAY (FEET NAVD 88)**	**WITH FLOODWAY (FEET NAVD 88)**	**INCREASE (FEET)**
Harvey Hillsides Creek								
A	2,845 [1]	160	593	6.6	256.8	256.8	257.6	0.8
B	4,290 [1]	240	1,203	3.4	261.6	261.6	262.5	0.9
C	5,125 [1]	130	800	4.7	263.5	263.5	264.5	1.0
D	6,500 [1]	170	589	5.6	269.4	269.4	270.3	0.9
E	8,020 [1]	90	391	7.0	275.7	275.7	276.2	0.5
F	9,255 [1]	40	415	5.7	282.8	282.8	283.6	0.8
Hudson Creek								
A	4,220 [1]	693	2,310	3.6	266.5	266.5	267.4	0.9
B	6,400 [1]	451	1,632	2.2	273.0	273.0	273.6	0.6
C	7,900 [1]	192	884	4.1	277.0	277.0	277.8	0.8
D	9,500 [1]	499	4,171	1.3	286.4	286.4	287.0	0.6
Lick Creek								
A	8,750 [2]	1,400	12,533	0.9	205.8	205.8	206.8	1.0
B	14290 [2]	700	7,117	1.6	205.9	205.9	206.9	1.0
C	17,930 [2]	1,270	6,269	1.8	206.2	206.2	207.2	1.0
D	22,640 [2]	1,255	5,152	2.2	209.9	209.9	210.9	1.0
E	26,340 [2]	1,295	4,722	1.7	213.4	213.4	214.3	0.9
F	29,910 [2]	820	3,172	2.5	217.7	217.7	218.7	1.0
G	34,200 [2]	370	2,745	3.0	226.9	226.9	227.8	0.9
H	39,222 [2]	620	3,063	2.7	233.9	233.9	234.9	1.0
I	42,584 [2]	123	1,013	4.4	240.8	240.8	241.7	0.9
J	45,020 [2]	275	1,288	3.5	243.5	243.5	244.5	1.0
K	49,120 [2]	270	1,459	3.1	252.0	252.0	252.9	0.9
L	51,932 [2]	190	1,190	4.1	259.2	259.2	260.0	0.8
M	56,000 [2]	240	1,605	1.6	267.1	267.1	268.1	1.0
N	57,300 [2]	130	951	2.6	268.1	268.1	269.0	0.9
O	61,960 [2]	160	711	3.5	274.1	274.1	274.7	0.6

[1] Feet above confluence with Carters Creek

[2] Feet above confluence with Navasota River

TABLE 9

FEDERAL EMERGENCY MANAGEMENT AGENCY
BRAZOS COUNTY, TEXAS
AND INCORPORATED AREAS

FLOODWAY DATA

HARVEY HILLSIDES CREEK - HUDSON CREEK - LICK CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	**DISTANCE**	**WIDTH (FEET)**	**SECTION AREA (SQUARE FEET)**	**MEAN VELOCITY (FEET PER SECOND)**	**REGULATORY (FEET NAVD 88)**	**WITHOUT FLOODWAY (FEET NAVD 88)**	**WITH FLOODWAY (FEET NAVD 88)**	**INCREASE (FEET)**
South Fork Turkey Creek								
A	1,194 [1]	202	1,274	1.6	263.0	263.0	263.3	0.3
B	3,063 [1]	81	1,232	1.7	267.6	267.6	268.0	0.4
C	4,277 [1]	35	500	4.1	269.6	269.6	270.1	0.5
D	5,473 [1]	99	491	4.2	278.7	278.7	279.5	0.8
Spring Creek								
A	597 [2]	627	1,765	1.6	243.5	243.5	243.5	0.0
B	2,379 [2]	241	844	3.2	245.4	245.4	246.0	0.6
C	4,203 [2]	422	1,390	2.0	248.0	248.0	248.8	0.8
D	6,763 [2]	80	457	6.0	251.7	251.7	252.4	0.7
E	8,087 [2]	257	990	2.8	254.9	254.9	255.6	0.7
F	11,080 [2]	110	678	4.0	262.5	262.5	263.1	0.6
Still Creek								
A-B*	*	*	*	*	*	*	*	*
C	3.68 [3]	650	3,378	2.5	276.9	276.9	276.9	0.0
D	3.88 [3]	650	3,835	2.2	277.9	277.9	278.2	0.3
E	4.01 [3]	120	1,133	7.4	279.4	279.4	280.3	0.9
F	4.27 [3]	615	3,062	2.7	281.8	281.8	282.6	0.8
G	4.45 [3]	260	1,747	4.8	284.6	284.6	285.4	0.8
H	4.57 [3]	400	2,740	3.1	287.1	287.1	288.0	0.9
I	4.76 [3]	295	1,753	4.8	288.7	288.7	289.6	0.9
J	5.00 [3]	550	3,652	2.0	291.2	291.2	292.1	0.9
K	5.37 [3]	300	1,928	3.8	295.2	295.2	296.1	0.9
L	5.73 [3]	195	1,466	2.6	299.6	299.6	300.5	0.9
M	6.02 [3]	772	2,188	1.8	302.7	302.7	303.2	0.5
N	6.20 [3]	210	725	5.3	306.1	306.1	306.5	0.4
O	6.40 [3]	295	1,639	2.3	309.2	309.2	310.2	1.0
P	6.72 [3]	80	679	5.7	313.6	313.6	314.4	0.8
Q	7.22 [3]	129	677	3.5	318.8	318.8	318.9	0.1
R	7.39 [3]	79	483	3.9	319.6	319.6	319.8	0.2
S	7.49 [3]	70	213	8.9	322.1	322.1	322.1	0.0

[1] Feet above confluence with Turkey Creek

[2] Feet above confluence with Lick Creek

[3] Miles above confluence with Thompsons Creek

* Data not computed

TABLE 9

FEDERAL EMERGENCY MANAGEMENT AGENCY
BRAZOS COUNTY, TEXAS
AND INCORPORATED AREAS

FLOODWAY DATA

SOUTH FORK TURKEY CREEK - SPRING CREEK - STILL CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	**DISTANCE**	**WIDTH (FEET)**	**SECTION AREA (SQUARE FEET)**	**MEAN VELOCITY (FEET PER SECOND)**	**REGULATORY (FEET NAVD 88)**	**WITHOUT FLOODWAY (FEET NAVD 88)**	**WITH FLOODWAY (FEET NAVD 88)**	**INCREASE (FEET)**
Still Creek (continued)								
T	7.63 [1]	50	347	5.5	324.1	324.1	324.7	0.6
U	7.76 [1]	30	238	8.0	326.2	326.2	326.6	0.4
V	7.95 [1]	147	240	6.4	331.1	331.1	331.7	0.6
W	8.10 [1]	100	219	7.0	335.2	335.2	335.2	0.0
X	8.25 [1]	70	254	6.0	337.7	337.7	338.3	0.6
Still Creek Tributary A								
A	0.10 [2]	187	1,037	2.4	299.0	297.8 [3]	298.8 [3]	1.0
B	0.38 [2]	200	1,090	2.2	300.3	300.3	301.0	0.7
C	0.56 [2]	189	994	2.5	302.8	302.8	303.5	0.7
Stream AC-1								
A	1,940 [4]	180	630	2.6	234.4	234.4	235.4	1.0
B	4,460 [4]	150	458	3.1	240.3	240.3	241.2	0.9
C	5,122 [4]	80	313	4.5	243.5	243.5	244.5	1.0
D	5,755 [4]	80	274	4.9	248.3	248.3	249.1	0.8
E	7,088 [4]	95	310	4.2	258.6	258.6	259.6	1.0
F	8,200 [4]	80	282	3.9	266.9	266.9	267.9	1.0
G	9,590 [4]	65	251	3.4	277.2	277.2	278.1	0.9
Thompsons Branch								
A	0.94 [5]	458	2,453	4.5	280.7	280.7	281.6	0.9
B	1.52 [5]	693	2,833	4.4	287.4	287.4	288.2	0.8
C	2.12 [5]	593	3,115	3.9	293.3	293.3	294.0	0.7
D	2.77 [5]	436	2,884	4.2	299.0	299.0	299.8	0.8
E	3.29 [5]	460	3,140	3.5	304.8	304.8	305.1	0.3
F	3.86 [5]	580	4,208	1.8	308.9	308.9	309.7	0.8
G	4.97 [5]	250	1,310	3.5	312.7	312.7	313.4	0.7
H	5.82 [5]	175	718	5.6	321.7	321.7	322.6	0.9

[1] Miles above confluence with Thompsons Creek

[2] Miles above confluence with Still Creek

[3] Elevations computed without consideration of backwater from Still Creek

[4] Feet above confluence with Alum Creek

[5] Miles above confluence with Thompsons Creek

TABLE 9

FEDERAL EMERGENCY MANAGEMENT AGENCY
BRAZOS COUNTY, TEXAS
AND INCORPORATED AREAS

FLOODWAY DATA

STILL CREEK - STILL CREEK TRIBUTARY A - STREAM AC-1 - THOMPSONS BRANCH

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	**DISTANCE**	**WIDTH (FEET)**	**SECTION AREA (SQUARE FEET)**	**MEAN VELOCITY (FEET PER SECOND)**	**REGULATORY (FEET NAVD 88)**	**WITHOUT FLOODWAY (FEET NAVD 88)**	**WITH FLOODWAY (FEET NAVD 88)**	**INCREASE (FEET)**
Tributary 1 to Carters Creek Split Channel								
A	342 [1]	150	354	2.3	280.1	280.1	281.1	1.0
B	850 [1]	122	185	4.4	281.2	281.2	282.1	0.9
Turkey Creek								
A	0.94 [2]	600	5,307	1.4	226.6	226.6	227.5	0.9
B	1.36 [2]	220	3,528	2.1	227.1	227.1	227.9	0.8
C	1.94 [2]	290	2,742	2.7	227.9	227.9	228.7	0.8
D	2.26 [2]	116	1,117	5.9	230.9	230.9	231.8	0.9
E	2.82 [2]	175	1,755	3.5	239.2	239.2	239.9	0.7
F	3.04 [2]	289	2,669	1.6	240.5	240.5	241.2	0.7
G	3.35 [2]	245	1,658	2.6	242.8	242.8	243.2	0.4
H	3.88 [2]	408	3,810	1.1	249.8	249.8	250.6	0.8
I	4.23 [2]	324	1,948	2.1	251.1	251.1	251.8	0.7
J	4.48 [2]	71	617	6.6	254.9	254.9	255.1	0.2
K	4.72 [2]	187	1,405	2.9	261.0	261.0	261.2	0.2
L	5.06 [2]	82	340	6.8	263.6	263.6	264.1	0.5
M	5.34 [2]	63	466	5.0	269.1	269.1	269.9	0.8
N	5.62 [2]	140	965	2.4	273.9	273.9	274.6	0.7
O	5.92 [2]	95	606	3.0	276.1	276.1	276.6	0.5
P	6.37 [2]	221	1,213	1.5	282.6	282.6	283.2	0.6
Q	6.65 [2]	45	301	6.0	291.3	291.3	291.4	0.1
R	6.95 [2]	32	286	6.3	298.4	298.4	298.6	0.2
S	7.25 [2]	48	144	4.8	306.9	306.9	307.0	0.1
T	7.50 [2]	29	148	4.7	320.5	320.5	321.4	0.9
U	7.65 [2]	25	258	3.2	333.8	333.8	334.2	0.4

[1] Feet above confluence with Carters Creek Split Channel

[2] Miles above confluence with Brazos River

TABLE 9

FEDERAL EMERGENCY MANAGEMENT AGENCY
BRAZOS COUNTY, TEXAS
AND INCORPORATED AREAS

FLOODWAY DATA

TRIBUTARY 1 TO CARTERS CREEK SPLIT CHANNEL - TURKEY CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	**DISTANCE**	**WIDTH (FEET)**	**SECTION AREA (SQUARE FEET)**	**MEAN VELOCITY (FEET PER SECOND)**	**REGULATORY (FEET NAVD 88)**	**WITHOUT FLOODWAY (FEET NAVD 88)**	**WITH FLOODWAY (FEET NAVD 88)**	**INCREASE (FEET)**
Turkey Creek Tributary B								
A	1,098 [1]	49	284	7.6	253.0	253.0	253.5	0.5
B	2,858 [1]	70	445	4.9	262.0	262.0	262.9	0.9
C	3,837 [1]	87	553	1.8	268.3	268.3	269.1	0.8
D	5,273 [1]	23	166	6.0	278.8	278.8	279.0	0.2
E	6,037 [1]	19	84	11.9	286.5	286.5	286.8	0.3
Turkey Creek Tributary B1								
A	645 [2]	30	127	5.0	270.1	270.1	270.4	0.3
B	1,730 [2]	70	95	6.7	280.3	280.3	280.3	0.0
Turkey Creek Tributary C								
A	1,994 [1]	65	296	6.0	240.6	240.6	241.3	0.7
B	3,578 [1]	70	464	3.9	250.7	250.7	251.5	0.8
C	4,329 [1]	172	1,355	1.3	254.9	254.9	255.6	0.7
D	5,497 [1]	119	604	3.0	256.8	256.8	257.3	0.5
Turkey Creek Tributary D								
A	1,281 [1]	130	547	3.2	240.5	240.5	240.7	0.2
B	2,583 [1]	75	485	3.6	252.2	252.2	253.1	0.9
C	3,629 [1]	48	117	6.1	260.8	260.8	261.2	0.4
D	4,704 [1]	57	206	3.5	272.1	272.1	272.3	0.2

[1] Feet above confluence with Turkey Creek

[2] Feet above confluence with Turkey Creek Tributary B

TABLE 9

FEDERAL EMERGENCY MANAGEMENT AGENCY
BRAZOS COUNTY, TEXAS
AND INCORPORATED AREAS

FLOODWAY DATA

TURKEY CREEK TRIBUTARY B - TURKEY CREEK TRIBUTARY B1 - TURKEY CREEK TRIBUTARY C - TURKEY CREEK TRIBUTARY D

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	**DISTANCE**	**WIDTH (FEET)**	**SECTION AREA (SQUARE FEET)**	**MEAN VELOCITY (FEET PER SECOND)**	**REGULATORY (FEET NAVD 88)**	**WITHOUT FLOODWAY (FEET NAVD 88)**	**WITH FLOODWAY (FEET NAVD 88)**	**INCREASE (FEET)**
Turkey Creek Tributary D1								
A	521 [1]	44	219	4.0	253.8	253.8	254.3	0.5
B	1,572 [1]	68	132	6.7	260.6	260.6	260.6	0.0
Unnamed Tributary 2 to Bee Creek Tributary B								
A	133 [2]	15	90	4.5	266.7	266.7	267.4	0.7
B	483 [2]	11	66	6.2	268.6	268.6	269.1	0.5
C	833 [2]	20	62	6.6	270.9	270.9	271.4	0.5
Unnamed Tributary to Bee Creek Tributary B								
A	262 [2]	36	109	5.2	291.0	290.6 [3]	290.9 [3]	0.3
Unnamed Tributary to Burton Creek								
A	2,710 [4]	65	219	6.0	275.4	275.4	276.0	0.6
B	4,090 [4]	24	127	3.4	286.4	286.4	286.6	0.2

[1] Feet above confluence with Turkey Creek Tributary D

[2] Feet above confluence with Bee Creek Tributary B

[3] Elevations computed without consideration of backwater effects from Bee Creek Tributary B

[4] Feet above confluence with Burton Creek

TABLE 9

FEDERAL EMERGENCY MANAGEMENT AGENCY
BRAZOS COUNTY, TEXAS
AND INCORPORATED AREAS

FLOODWAY DATA

TURKEY CREEK TRIBUTARY D1 - UNNAMED TRIBUTARY 2 TO BEE CREEK TRIBUTARY B - UNNAMED TRIBUTARY TO BEE CREEK TRIBUTARY B - UNNAMED TRIBUTARY TO BURTON CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	**DISTANCE**	**WIDTH (FEET)**	**SECTION AREA (SQUARE FEET)**	**MEAN VELOCITY (FEET PER SECOND)**	**REGULATORY (FEET NAVD 88)**	**WITHOUT FLOODWAY (FEET NAVD 88)**	**WITH FLOODWAY (FEET NAVD 88)**	**INCREASE (FEET)**
Unnamed Tributary to White Creek								
A	2,200 [1]	30	179	9.8	276.6	276.6	277.4	0.8
B	2,850 [1]	124	488	4.1	281.0	281.0	281.4	0.4
C	3,810 [1]	80	373	4.8	287.7	287.7	288.1	0.4
D	4,850 [1]	100	205	5.3	291.2	291.2	291.8	0.6
E	5,850 [1]	76	332	2.1	296.2	296.2	296.6	0.4
F	6580 [1]	27	126	3.2	299.5	299.5	299.5	0.0
G	7,270 [1]	36	83	3.9	301.9	301.9	302.0	0.1
Unnamed Tributary to White Creek Tributary 1								
A	591 [2]	25	68	5.1	291.2	291.2	292.2	1.0
B	1,074 [2]	25	35	5.1	298.7	298.7	298.9	0.2
C	1,473 [2]	21	69	2.6	299.7	299.7	300.2	0.5
Unnamed Tributary to White Creek Tributary 2								
A	120 [2]	34	52	7.2	296.1	296.0 [3]	296.4 [3]	0.4
B	595 [2]	72	699	0.7	308.3	308.3	309.2	0.9
Unnamed Tributary to White Creek Tributary 3								
A	129 [2]	29	41	2.4	300.7	300.7	300.7	0.0
B	307 [2]	17	29	3.4	303.6	303.6	304.5	0.9
West Fork Still Creek								
A	0.30 [4]	33	115	11.1	321.8	321.8	321.8	0.0
B	0.43 [4]	50	293	5.6	324.5	324.5	325.4	0.9
C	0.55 [4]	100	493	2.9	327.3	327.3	328.1	0.8
D	0.70 [4]	75	318	4.6	331.2	331.2	331.9	0.7

[1] Feet above confluence with White Creek

[2] Feet above confluence with Unnamed Tributary to White Creek

[3] Elevation computed without consideration of backwater effects from Unnamed Tributary to White Creek

[4] Miles above confluence with Still Creek

TABLE 9

FEDERAL EMERGENCY MANAGEMENT AGENCY
BRAZOS COUNTY, TEXAS
AND INCORPORATED AREAS

FLOODWAY DATA

UNNAMED TRIBUTARY TO WHITE CREEK - UNNAMED TRIBUTARY TO WHITE CREEK TRIBUTARY 1 - UNNAMED TRIBUTARY TO WHITE CREEK TRIBUTARY 2 - UNNAMED TRIBUTARY TO WHITE CREEK TRIBUTARY 3 - WEST FORK STILL CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	**DISTANCE**	**WIDTH (FEET)**	**SECTION AREA (SQUARE FEET)**	**MEAN VELOCITY (FEET PER SECOND)**	**REGULATORY (FEET NAVD 88)**	**WITHOUT FLOODWAY (FEET NAVD 88)**	**WITH FLOODWAY (FEET NAVD 88)**	**INCREASE (FEET)**
Wolf Pen Creek								
A	2,630 [1]	366	1,968	2.9	247.5	247.5	248.4	0.9
B	3,730 [1]	336	2,481	2.3	248.5	248.5	249.4	0.9
C	4,920 [1]	265	1,577	3.6	250.1	250.1	251.0	0.9
D	6,270 [1]	350	2,257	2.2	252.1	252.1	253.0	0.9
E	8,080 [1]	321	2,354	2.1	261.8	261.8	262.0	0.2
F	8,815 [1]	187	1,334	3.7	262.7	262.7	263.0	0.3
G	9,190 [1]	175	1,268	3.9	263.4	263.4	263.8	0.4
H	10,660 [1]	99	1,082	4.2	265.1	265.1	265.7	0.6
I	11,757 [1]	92	962	4.7	267.6	267.6	268.3	0.7
J	16,647 [1]	235	1,060	2.6	278.8	278.8	279.3	0.5
K	17,947 [1]	65	563	4.3	284.7	284.7	285.3	0.6
L	18,357 [1]	177	855	2.7	285.5	285.5	286.3	0.8
M	18,969 [1]	64	405	5.8	287.5	287.5	287.7	0.2
N	19,499 [1]	49	497	4.6	289.1	289.1	289.3	0.2
O	19,969 [1]	87	555	4.1	289.8	289.8	290.4	0.6
P	20,769 [1]	31	114	7.8	290.2	290.2	290.7	0.5
Q	20,994 [1]	37	181	4.9	292.8	292.8	293.2	0.4
R	21,174 [1]	26	137	6.5	293.5	293.5	294.2	0.7
S	22,212 [1]	88	421	1.5	302.6	302.6	302.8	0.2
Wolf Pen Creek Tributary A								
A	570 [2]	205	987	1.4	275.8	275.8	276.1	0.3
B	775 [2]	163	717	1.9	275.9	275.9	276.2	0.3
C	1,075 [2]	386	1,251	1.1	279.5	279.5	279.5	0.0
D	1,260 [2]	314	1,047	1.3	279.5	279.5	279.5	0.0
E	1,650 [2]	198	488	2.8	279.8	279.8	279.8	0.0
F	1,790 [2]	186	479	2.8	280.0	280.0	280.0	0.0
G	1,915 [2]	208	269	5.0	285.0	285.0	285.1	0.1
H	2,400 [2]	100	678	2.0	285.8	285.8	286.3	0.5
I	2,730 [2]	17	99	13.7	285.9	285.9	285.9	0.0
J	2,900 [2]	104	698	1.9	289.8	289.8	289.8	0.0

[1] Feet above confluence with Carters Creek

[2] Feet above confluence with Wolf Pen Creek

TABLE 9

FEDERAL EMERGENCY MANAGEMENT AGENCY
BRAZOS COUNTY, TEXAS
AND INCORPORATED AREAS

FLOODWAY DATA

WOLF PEN CREEK -WOLF PEN CREEK TRIBUTARY A

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	**DISTANCE[1]**	**WIDTH (FEET)**	**SECTION AREA (SQUARE FEET)**	**MEAN VELOCITY (FEET PER SECOND)**	**REGULATORY (FEET NAVD 88)**	**WITHOUT FLOODWAY (FEET NAVD 88)**	**WITH FLOODWAY (FEET NAVD 88)**	**INCREASE (FEET)**
Wolf Pen Creek Tributary B								
A	230	70	332	2.4	284.1	284.1	284.1	0.0
B	730	155	484	2.1	289.3	289.3	289.3	0.0
C	1,055	89	250	3.9	289.7	289.7	289.7	0.0
D	1,355	51	180	4.4	290.6	290.6	290.6	0.0
E	1,605	46	162	5.0	291.5	291.5	291.5	0.0
Wolf Pen Creek Tributary C								
A	230	47	669.0	4.9	290.0	285.7 [2]	286.7 [2]	1.0
B	345	98	560.0	3.2	290.0	289.2 [2]	290.1	0.9
C	550	51	448.0	4.3	290.0	289.6 [2]	290.5	0.9
D	685	68	698.0	4.0	291.0	291.0	292.0	1.0
E	1,295	43	444.0	7.0	292.0	292.0	292.6	0.6
F	1,495	70	617.0	2.4	294.6	294.6	294.8	0.2

[1] Feet above confluence with Wolf Pen Creek

TABLE 9

FEDERAL EMERGENCY MANAGEMENT AGENCY
BRAZOS COUNTY, TEXAS
AND INCORPORATED AREAS

FLOODWAY DATA

WOLF PEN CREEK TRIBUTARY B - WOLF PEN CREEK TRIBUTARY C

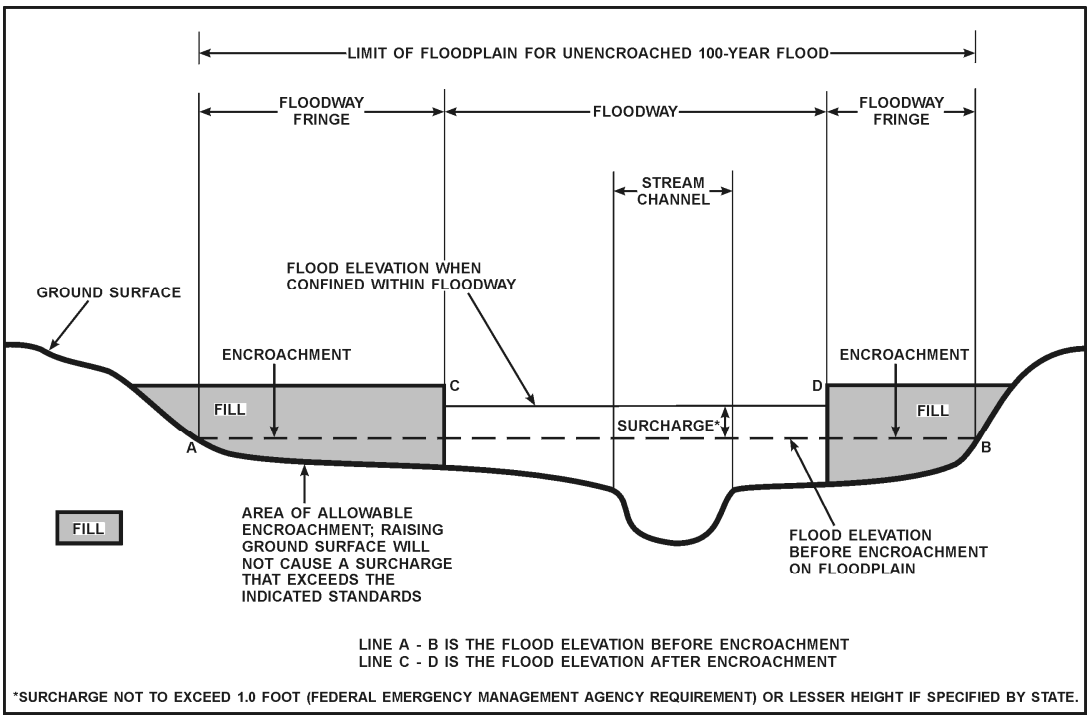


Figure 1 Floodway Schematic

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 8 for certain downstream cross sections of Bee Creek Tributary B, Burton Creek Tributary C, Still Creek Tributary A, and Wolf Pen Creek Tributary B are lower than the regulatory flood elevations in that area, which must take into account the 1-percent-annual flooding due to backwater from other sources.

Floodways were not calculated for the following streams due to the limited nature of the study: Little Wickson Creek, Mathis Creek, the Navasota River, South Fork of Cottonwood Branch, Spring Creek Tributary A, Spring Creek Tributary B, Spring Creek Tributary C, Spring Creek Tributary D, Thompsons Creek, Tributary to Spring Creek Tributary B, Tributary to Spring Creek Tributary D, and Wickson Creek.

5.0 INSURANCE APPLICATION

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

Zone A

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

Zone AE

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

Zone X

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

Zone X (Future Base Flood)

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

6.0 FLOOD INSURANCE RATE MAP

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

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

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

The countywide FIRM presents flooding information for the entire geographic area of Brazos County. Previously, FIRMs were prepared for each incorporated community and the unincorporated areas of the County identified as flood-prone. This countywide FIRM also includes flood-hazard information that was presented separately on Flood Boundary and Floodway Maps (FBFMs), where applicable. Historical data relating to the maps prepared for each community are presented in Table 10, “Community Map History.”

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISIONS DATE	FIRM EFFECTIVE DATE	FIRM REVISIONS DATES
Brazos County Unincorporated Areas	October 18, 1977	None	July 2, 1992	
Bryan, City of	March 15, 1974	July 18, 1975	May 19, 1981	
College Station, City of	May 31, 1974	September 12, 1975	July 2, 1981	
Kurten, Town of*	None	None	None	
Wixon Valley, City of	July 2, 1992	None	July 2, 1992	

* No Special Flood Hazard Areas identified

TABLE 10

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TEXAS AND INCORPORATED AREAS

COMMUNITY MAP HISTORY

7.0 OTHER STUDIES

The USACE completed two studies of the area in December 1973 and December 1975, entitled Flood Plain Information, Carters Creek and Tributaries, Bryan and College Station, Texas, and Flood Plain Information, Thompsons Creek and Tributaries, Bryan, Texas (References 9 and 1). These reports investigated the flooding potential on portions of Bee Creek, Briar Creek, Burton Creek, Carters Creek, Cottonwood Branch, South Fork of Cottonwood Branch, Still Creek, Thompsons Branch, Thompsons Creek, West Fork Still Creek, and Wolf Pen Creek.

Flood Insurance Studies have been prepared for the unincorporated areas of Madison, Grimes, and Burleson Counties (References 34, 35, and 36).

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

8.0 LOCATION OF DATA

Information concerning the pertinent data used in the preparation of this study can be obtained by contacting Federal Insurance and Mitigation Division, FEMA Region VI, Federal Regional Center, 800 North Loop 288, Denton, Texas 76201-3698.

9.0 BIBLIOGRAPHY AND REFERENCES

1. U. S. Army Corps of Engineers, Fort Worth District, Flood Plain Information, Thompsons Creek and Tributaries, Bryan, Texas, December 1975.

2. The Texas State Historical Association, The Handbook of Texas, 1952 and 1976.

3. U.S. Department of Commerce, U.S. Census Bureau, American Fact Finder, 2012. http://factfinder2.census.gov.

4. Texas Almanac, Dallas Morning News, 1986—1987.

5. U. S. Army Corps of Engineers, Fort Worth District, Problem Identification Study, Brazos River Basin, Texas, September 1987.

6. U. S. Army Corps of Engineers, Fort Worth District, Flood Problems Identification Study, Brazos River Basin, Texas, December 1987.

7. U.S. Department of Commerce, National Climatic Data Center, National Oceanic and Atmospheric Administration, National Environmental Satellite, Data, and Information Service, Storm Events, Asheville, North Carolina, National Climatic Center, http://www4.ncdc.noaa.gov/cgi-win/wwcgi.dll?wwEvent~storms.

8. Texas Water Development Board, Water Resources Planning and Information, Austin, Texas, May 5, 2008, http://www.twdb.state.tx.us/home/index.asp.

9. U. S. Army Corps of Engineers, Fort Worth District, Flood Plain Information, Carters Creek and Tributaries, Bryan and College Station, Texas, December 1973.

10. U. S. Army Corps of Engineers, Fort Worth District, Hydrology Memorandum, Carters Creek Flood Plain Study, 1975.

11. U. S. Army Corps of Engineers, Fort Worth District, Special Flood Hazard Information, Turkey Creek, Bryan, Texas, December 1975.

12. U. S. Army Corps of Engineers, Port Worth District, Hydrology Memorandum, Thompsons Creek and Tributaries, Brazos County, 1975.

13. U. S. Army Corps of Engineers, Hydrologic Engineering Center, Flood Hydrograph Package, Generalized Computer Program 723-010, Davis, California, November 1976.

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

15. Texas State Department of Highways and Public Transportation, Uncontrolled Mosaic Aerial Photograph, Bryan-College Station, Brazos County, scale 1:12,000, February 1977.

16. U. S. Department of the Interior, Geological Survey, 7.5-Minute Series Topographic Maps, Scale 1:24,000, Contour Interval 10 and 20 Feet: Washington, Texas, 1967; Navasota, Texas, 1967; Millican, Texas, 1967; Weilborn, Texas, 1967; Ferguson Crossing, Texas, 1967; Bryan East, Texas, 1967; Bryan West, Texas, 1967; Reliance, Texas, 1967; Kurten, Texas, 1967; Clear Lake, Texas, 1967; Canary, Texas, 1967.

17. U. S. Department of Agriculture, Soil Conservation Service, National Engineering Handbook, Section 4, Hydrology, Washington D.C., 1985.

18. U. S. Army Corps of Engineers, Fort Worth District, Computer Program NUDALLAS, revised September 1982.

19. National Oceanic and Atmospheric Administration, National Weather Service, Technical Memorandum NWS Hydro-35, Five to 60 Minute Precipitation Frequency for the Eastern and Central United States, June 1977.

20. U.S. Army Corps of Engineers, Fort Worth District, College Station. Texas Special Study, September 1993.

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

22. Mitchell & Morgan, Bee Creek Main, Bee Creek Tributary A, Bee Creek Tributary B, Lancelot Tributary Flood Hazard Study, College Station, Texas, February 2011.

23. U.S. Army Corps of Engineers, Hydrologic Engineering Center, HEC-HMS Hydrologic Modeling System Version 3.1.0, Davis, California, December 2005.

24. McCuen, Richard H., A Guide to Hydrologic Analysis Using SCS Methods, Prentice-Hall, Inc., 1982.

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

26. U. S. Army Corps of Engineers, Fort Worth District, Navasota River Proposed Dam Site, Phase I Planning Report, November 1979.

27. Recommendations for Developijng Station-Discharge Relationships with HEC-HMS and HEC-RAS, TSARP.org, February 2002.

28. United Aerial Mapping Company of San Antonio, Texas, City of Bryan, Topographic Maps, scale 1:4,800, contour interval 2 feet, July 1971.

29. City of College Station, Topographic Map, scale 1:7,200, contour interval 10 feet.

30. Joe Orr, Inc., Northeast College Station Topographic Map, scale 1:1,200, contour interval 2 feet, 1973.

31. Federal Emergency Management Agency, Federal Insurance Administration, Flood Insurance Study, City of Bryan, Brazos County, Texas, Washington, D. C., Flood Insurance Study report dated November 19, 1980, Flood Insurance Rate Map dated May 19, 1981.

32. Federal Emergency Management Agency, Federal Insurance Administration, Flood Insurance Study, City of College Station, Brazos County, Texas, Washington, D.C., Flood Insurance Study report dated January 2, 1981, Flood Insurance Rate Map dated July 2, 1981.

33. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map. Unincorporated Areas of Brazos County, Texas, October 18, 1977.

34. Federal Emergency Management Agency, Flood Insurance Study. Unincorporated Areas of Madison County, Texas, Washington, D.C., September 27, 1991.

35. Federal Emergency Management Agency, Flood Insurance Study, Unincorporated Areas of Grimes County, Texas, Washington, D.C., August 1, 1989.

36. Federal Emergency Management Agency, Flood Insurance Study. Unincorporated Areas of Burleson County. Texas, Washington, D.C., January 18, 1989.

CITY OF COLLEGE STATION

BACKWATER FROM LICK CREEK

CONFLUENCE WITH LICK CREEK

ELEVATION IN FEET (NAVD 88)

230
225
220
215
210
205
200

0.0 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 5.5 6.0 6.5

STREAM DISTANCE IN THOUSANDS OF FEET ABOVE CONFLUENCE WITH LICK CREEK

A B C

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

ALUM CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX
AND INCORPORATED AREAS

01P

CITY OF COLLEGE STATION

CONFLUENCE OF STREAM AG-1

ELEVATION IN FEET (NAVD 88)

245
240
235
230
225
220
215

6.5 7.0 7.5 8.0 8.5 9.0 9.5 10.0 10.5 11.0 11.5 12.0 12.5 13.0

STREAM DISTANCE IN THOUSANDS OF FEET ABOVE CONFLUENCE WITH LICK CREEK

D E F

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

ALUM CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX
AND INCORPORATED AREAS

02P

CITY OF COLLEGE STATION

STATE HIGHWAY 6

LIMIT OF DETAILED STUDY

ELEVATION IN FEET (NAVD 88)

255
250
245
240
235
230

13.0 13.5 14.0 14.5 15.0 15.5 16.0 16.5 17.0 17.5

STREAM DISTANCE IN THOUSANDS OF FEET ABOVE CONFLUENCE WITH LICK CREEK

G H I J

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

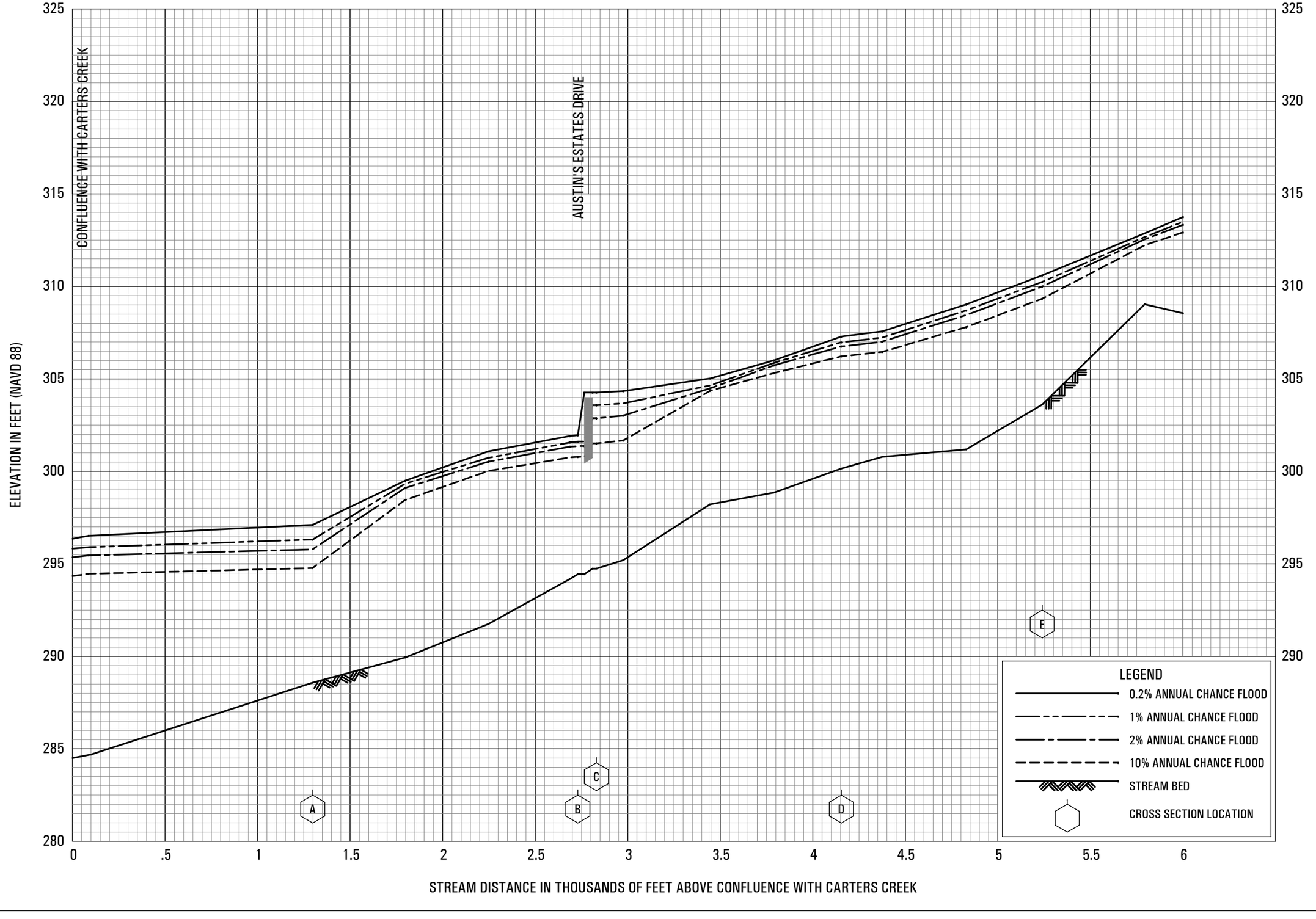
ALUM CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS

03P



FLOOD PROFILES

AUSTINS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS

04P

ELEVATION IN FEET (NAVD 88)

340
335
330
325
320
315
310
305
300
295

LIMIT OF STUDY

F
G
H

6
6.5
7
7.5
8

STREAM DISTANCE IN THOUSANDS OF FEET ABOVE CONFLUENCE WITH CARTERS CREEK

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

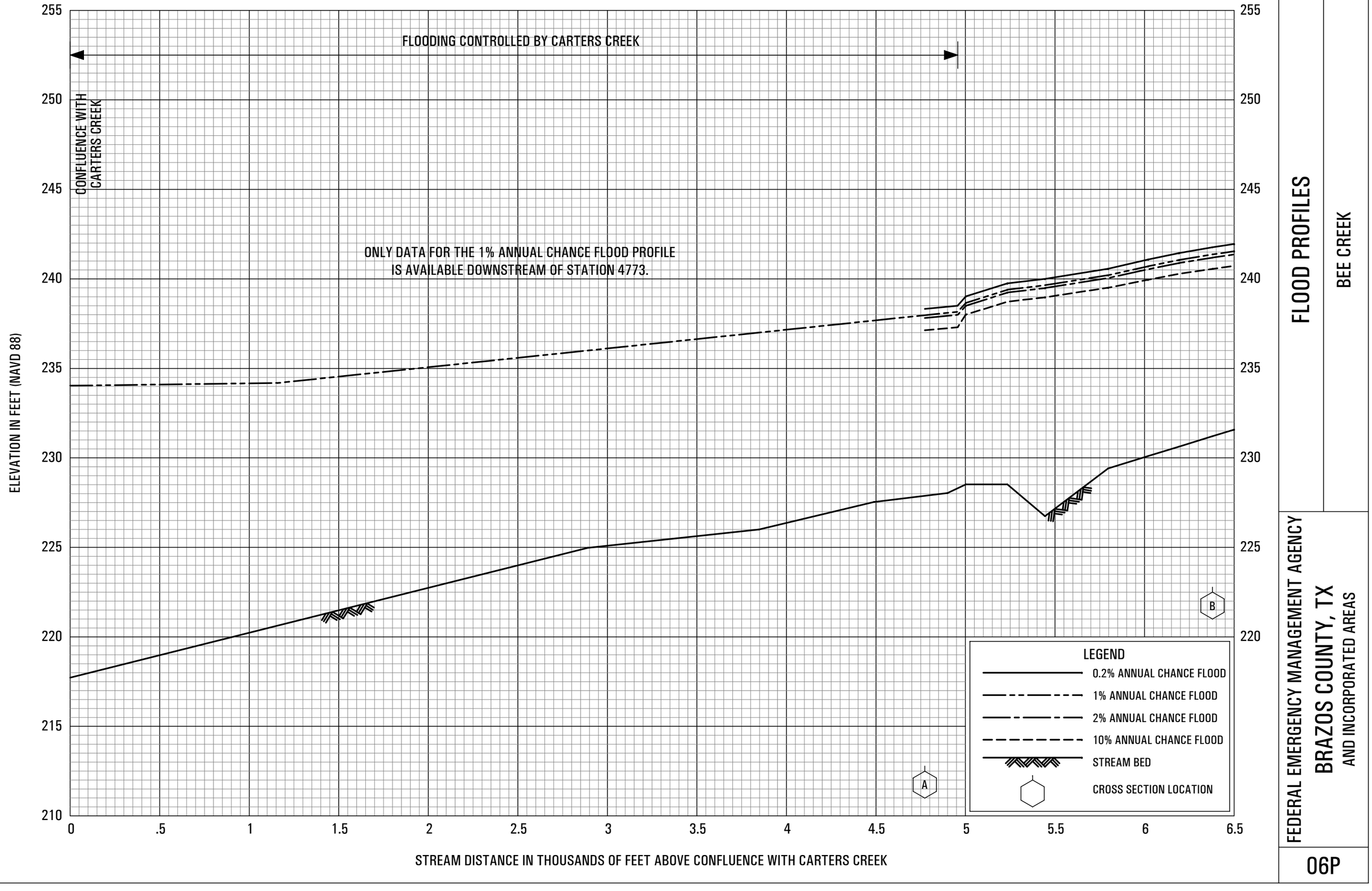
AUSTINS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS

05P



FLOOD PROFILES

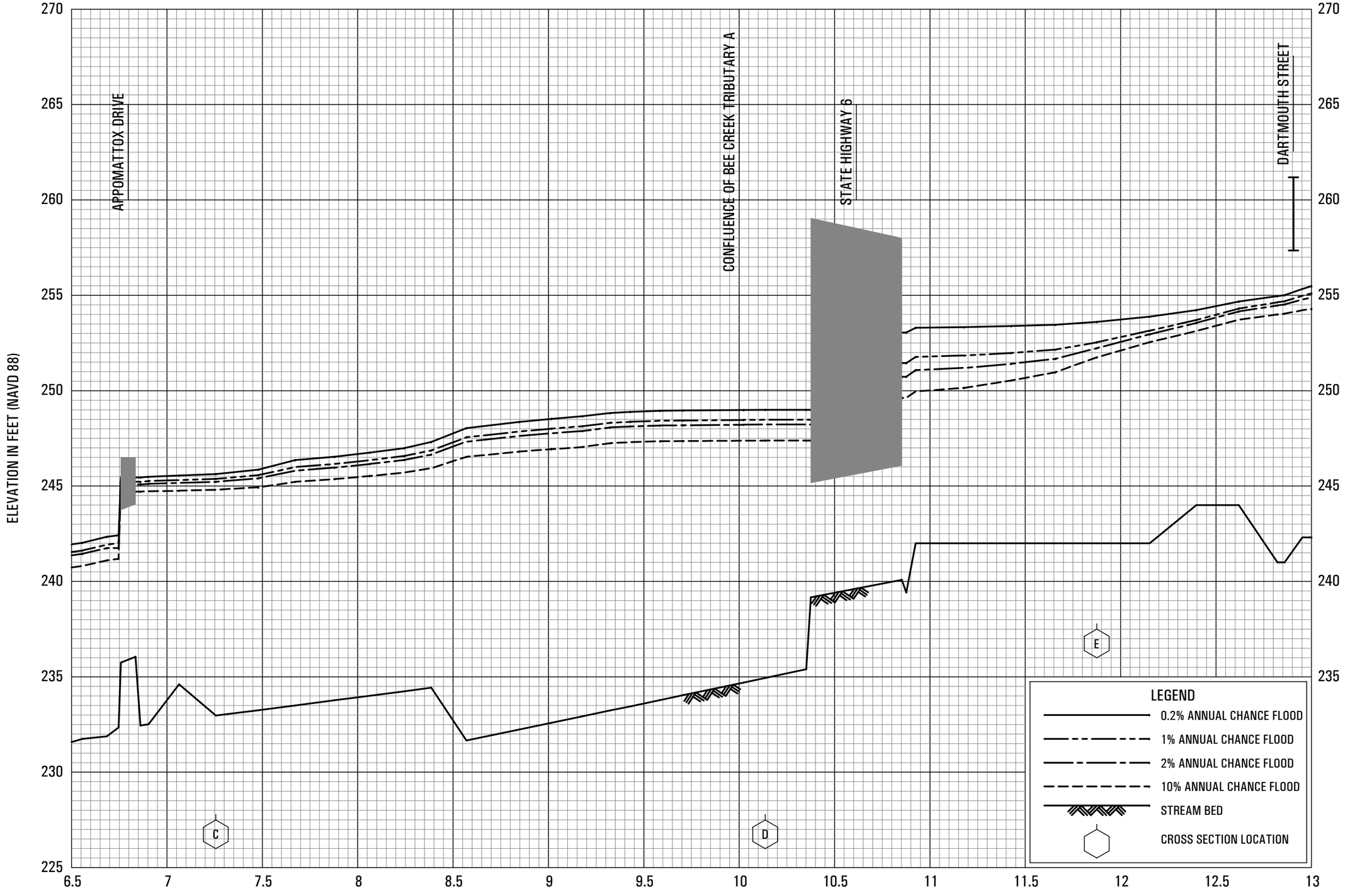
BEE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS

06P



FLOOD PROFILES

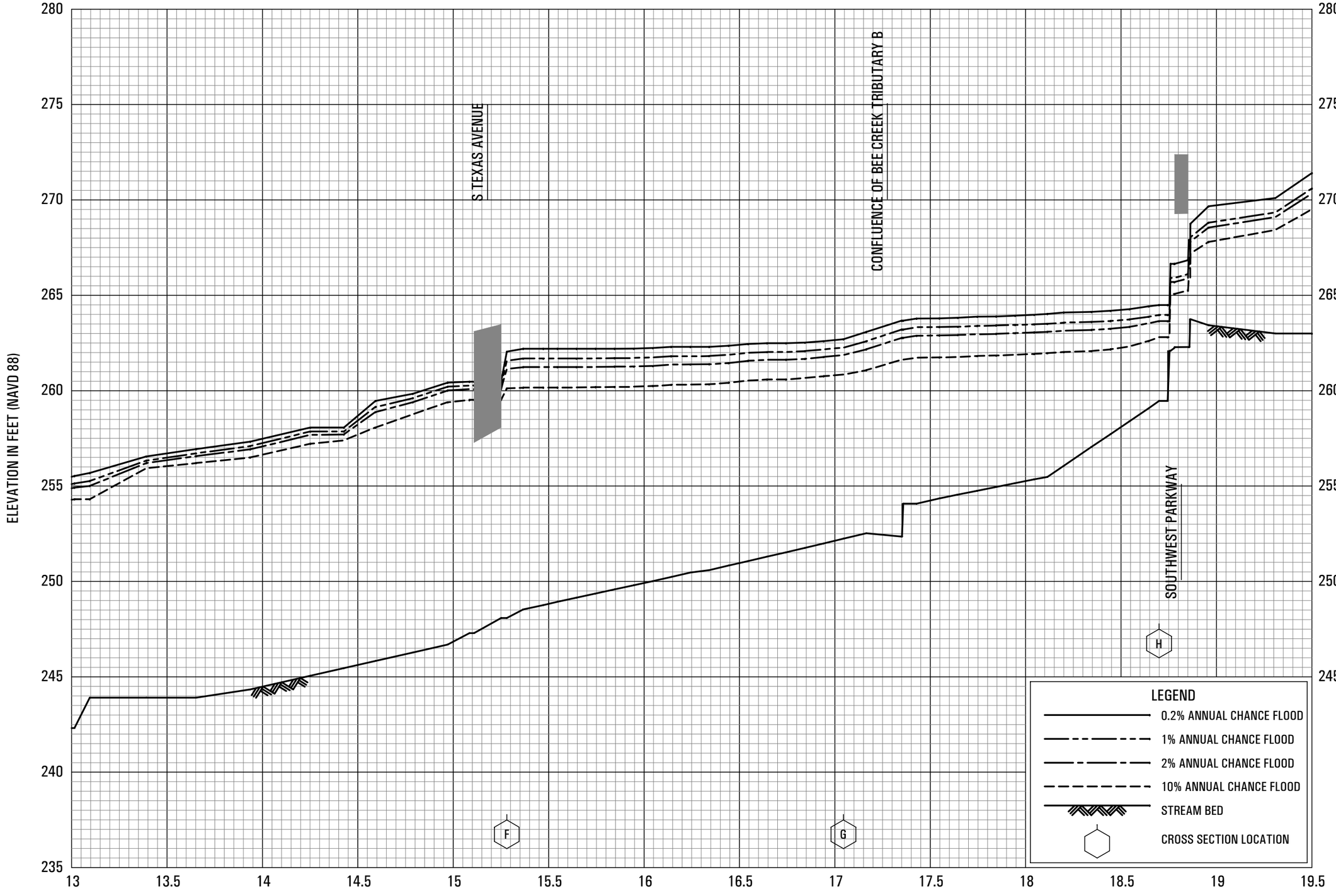
BEE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS

07P



FLOOD PROFILES

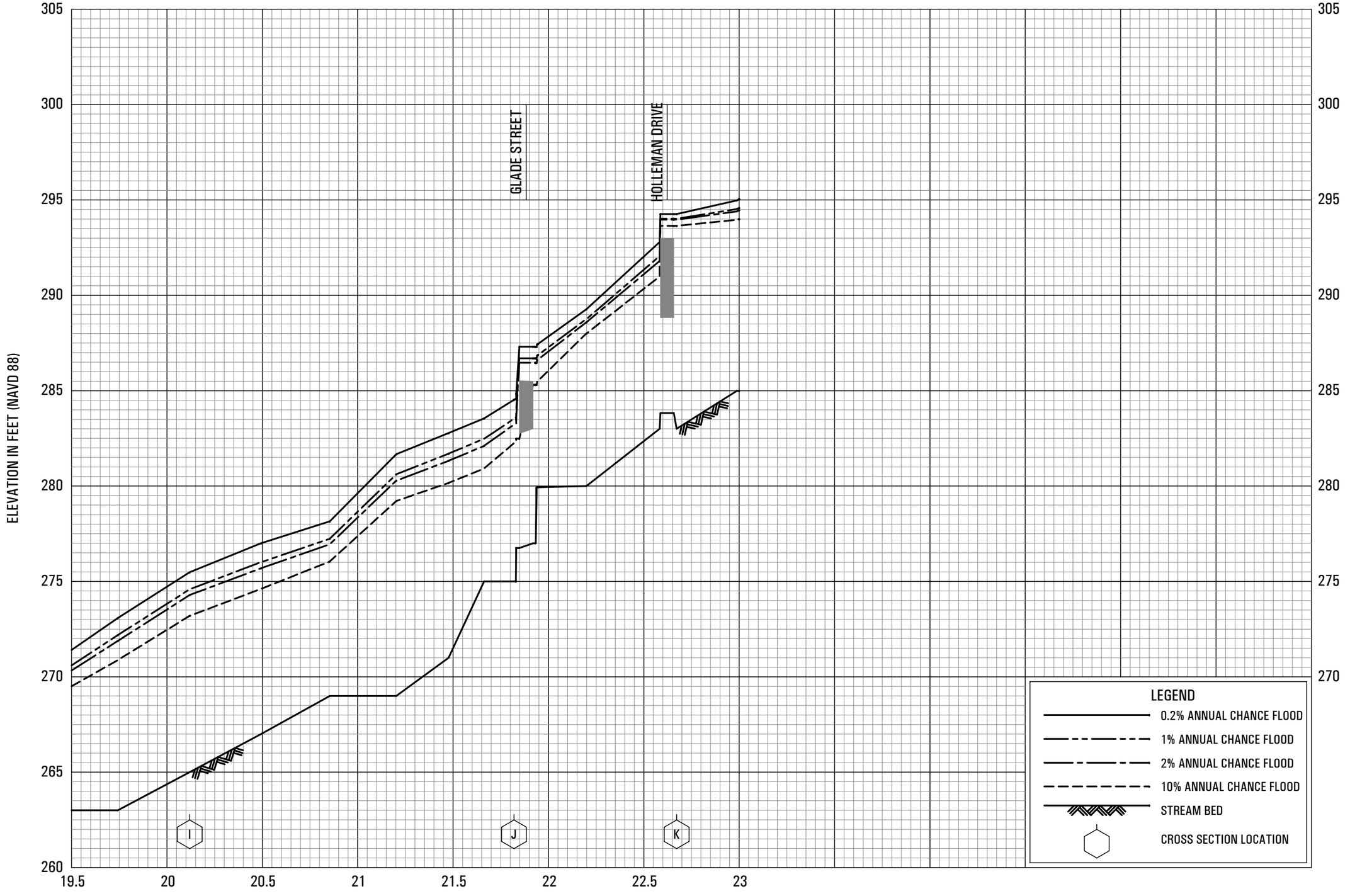
BEE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS

08P



FLOOD PROFILES

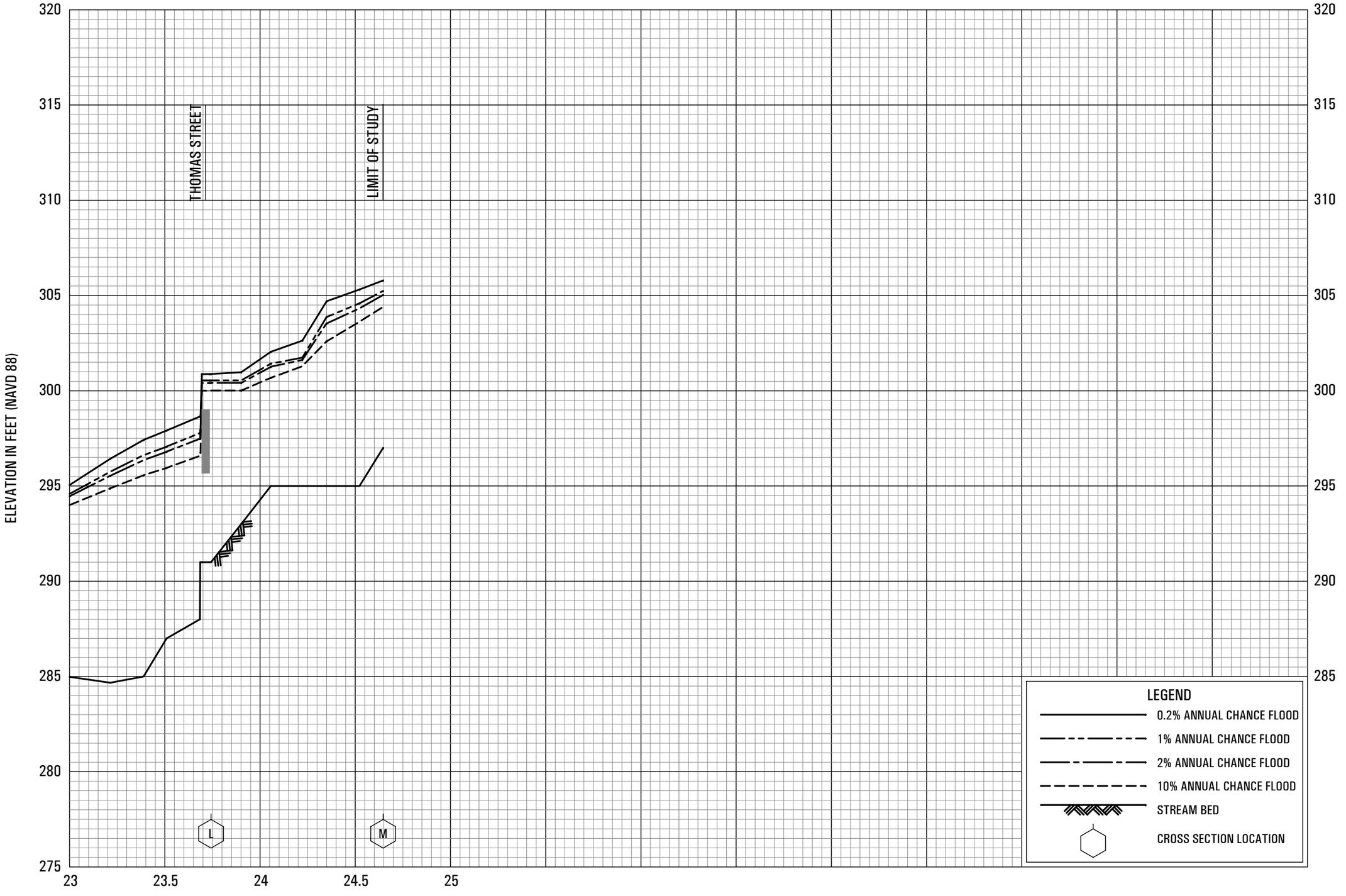
BEE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS

09P



FLOOD PROFILES

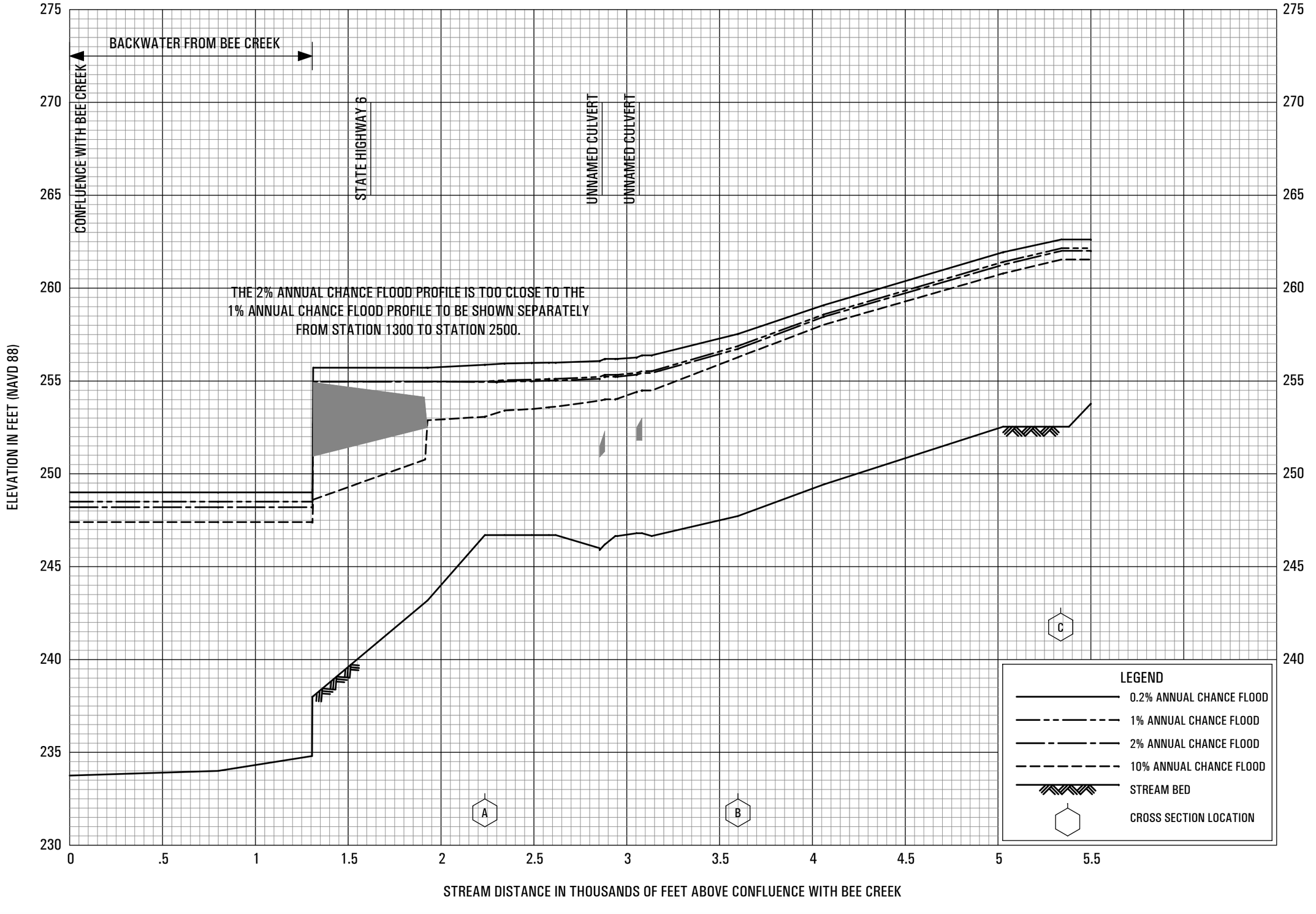
BEE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS

10P



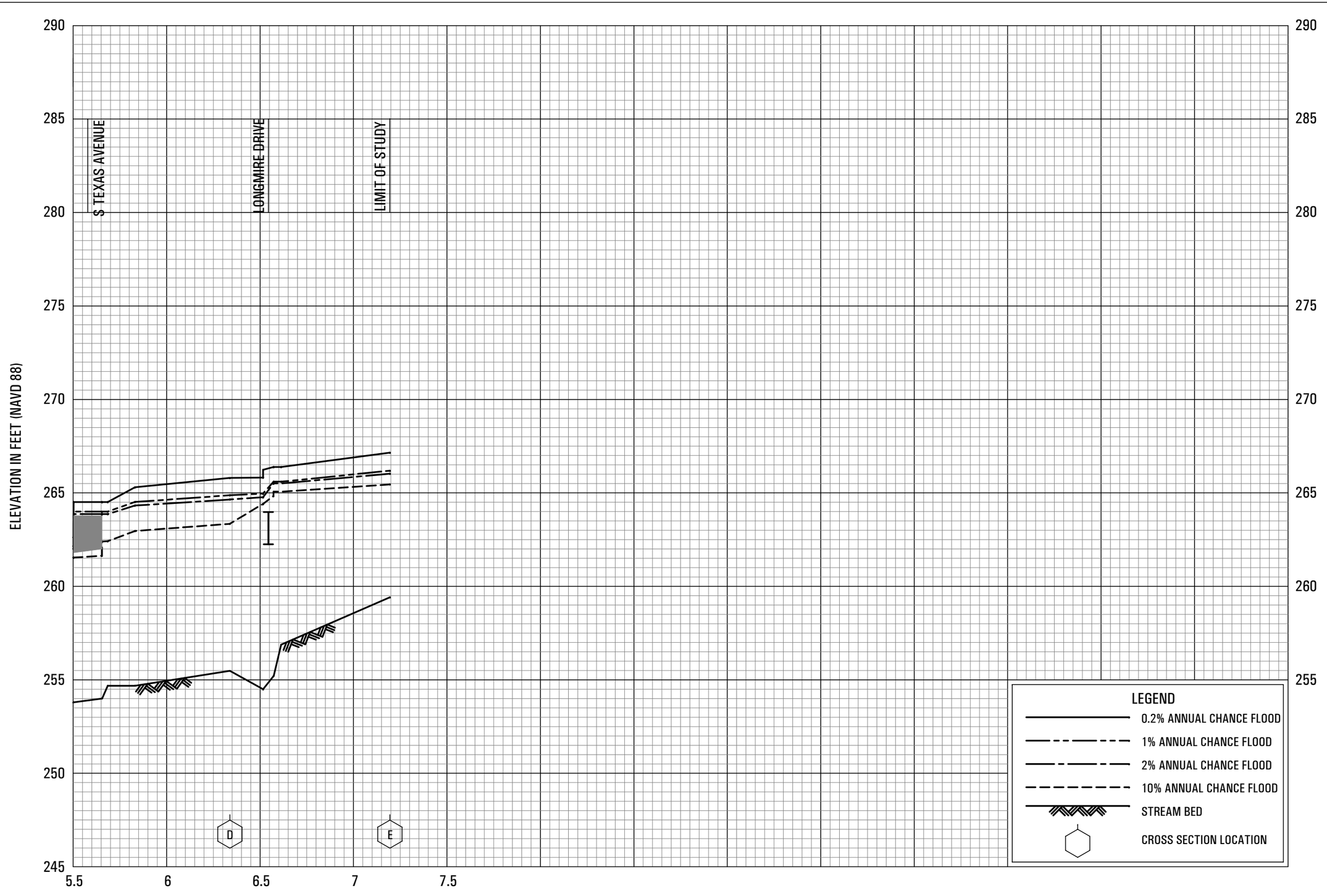
FLOOD PROFILES

BEE CREEK TRIBUTARY A

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS



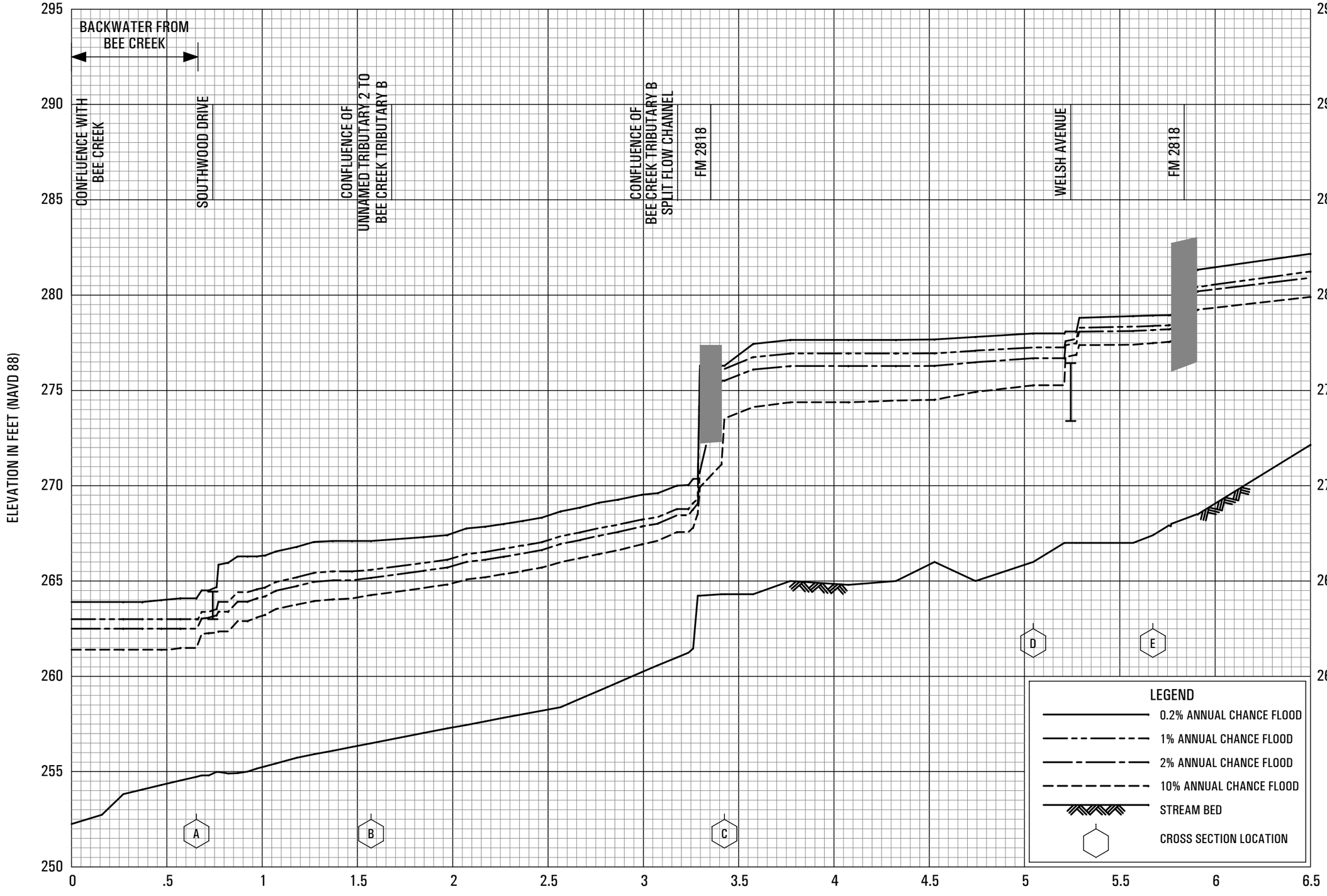
FLOOD PROFILES

BEE CREEK TRIBUTARY A

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS



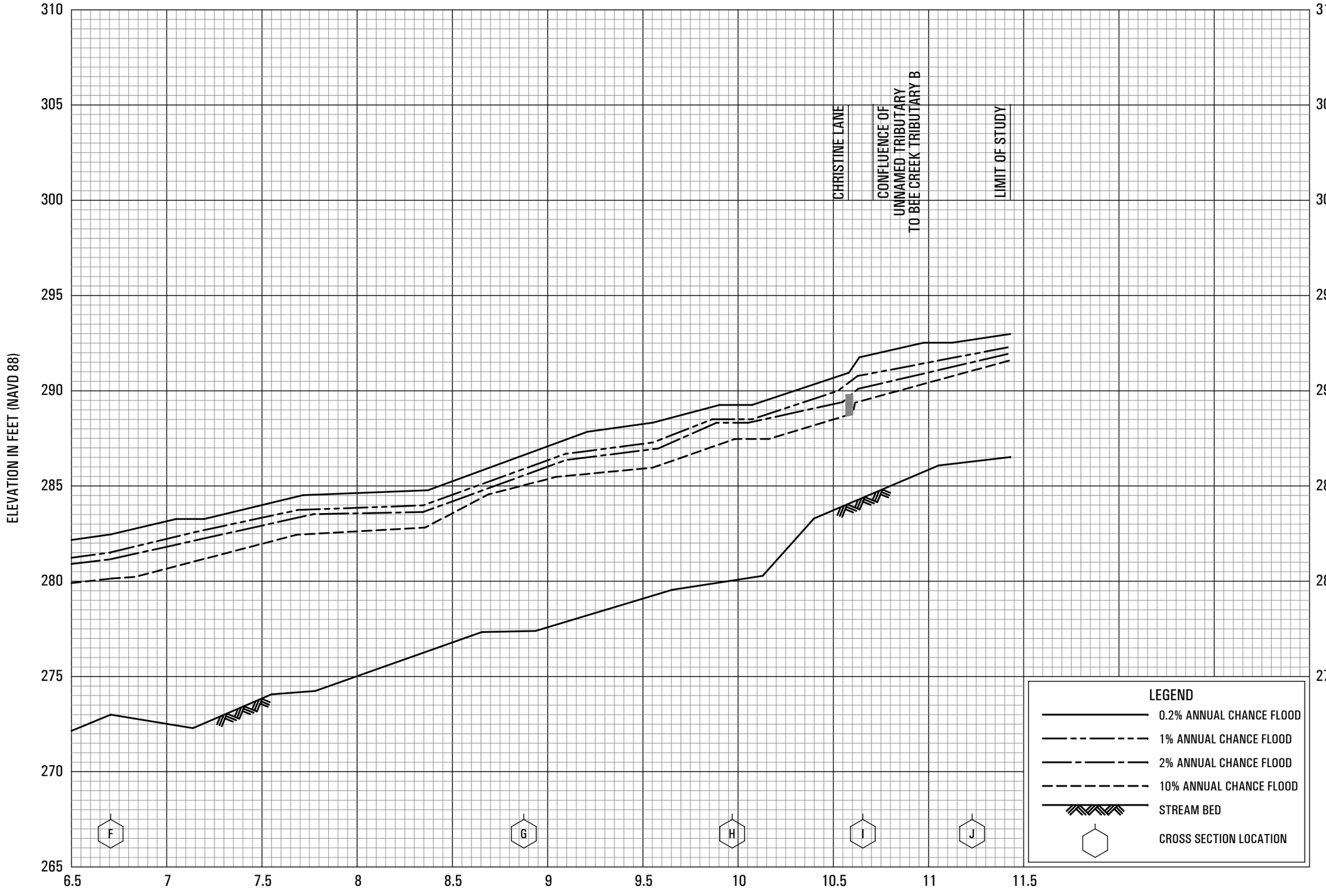
FLOOD PROFILES

BEE CREEK TRIBUTARY B

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS



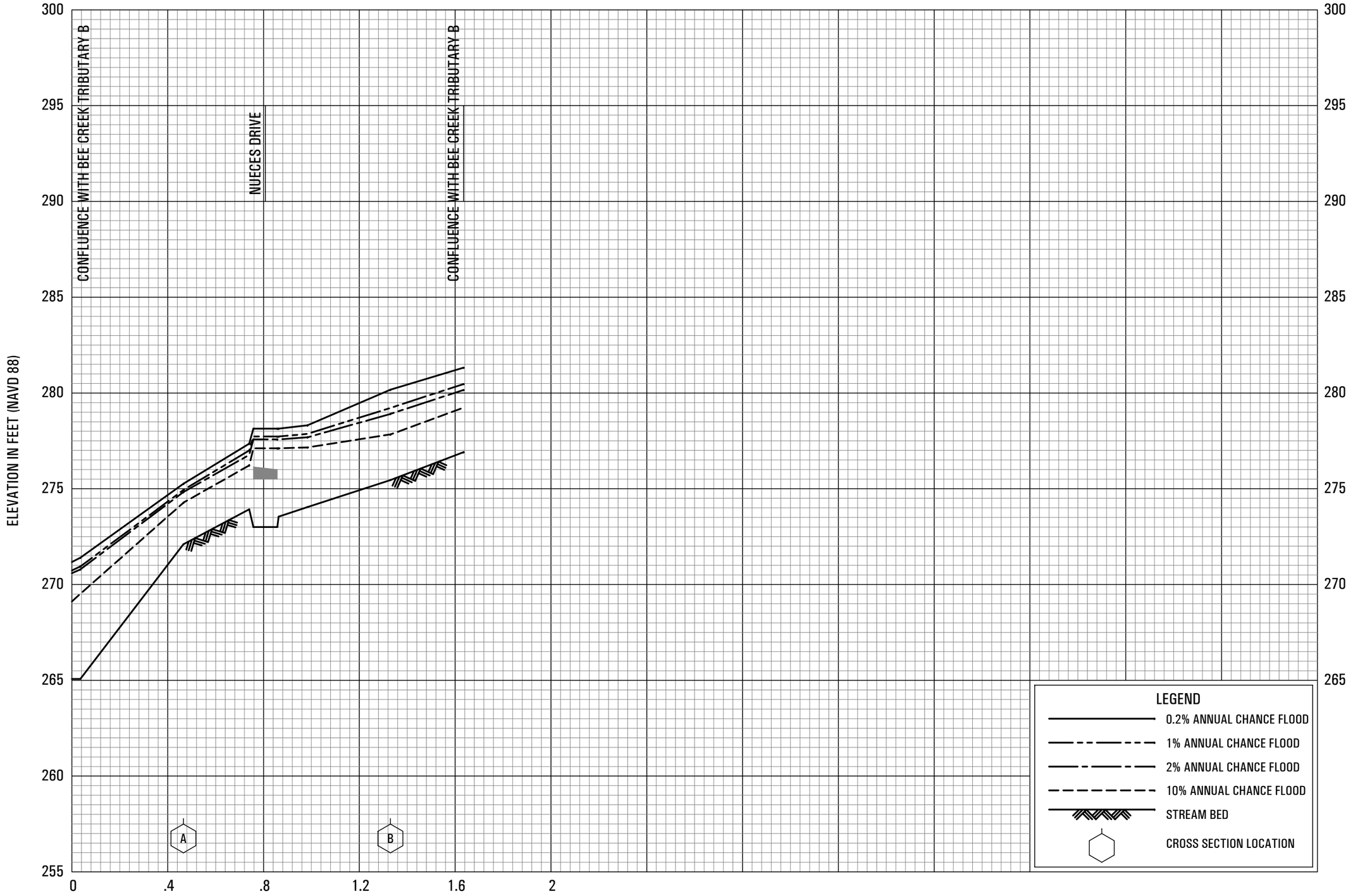
FLOOD PROFILES

BEE CREEK TRIBUTARY B

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS



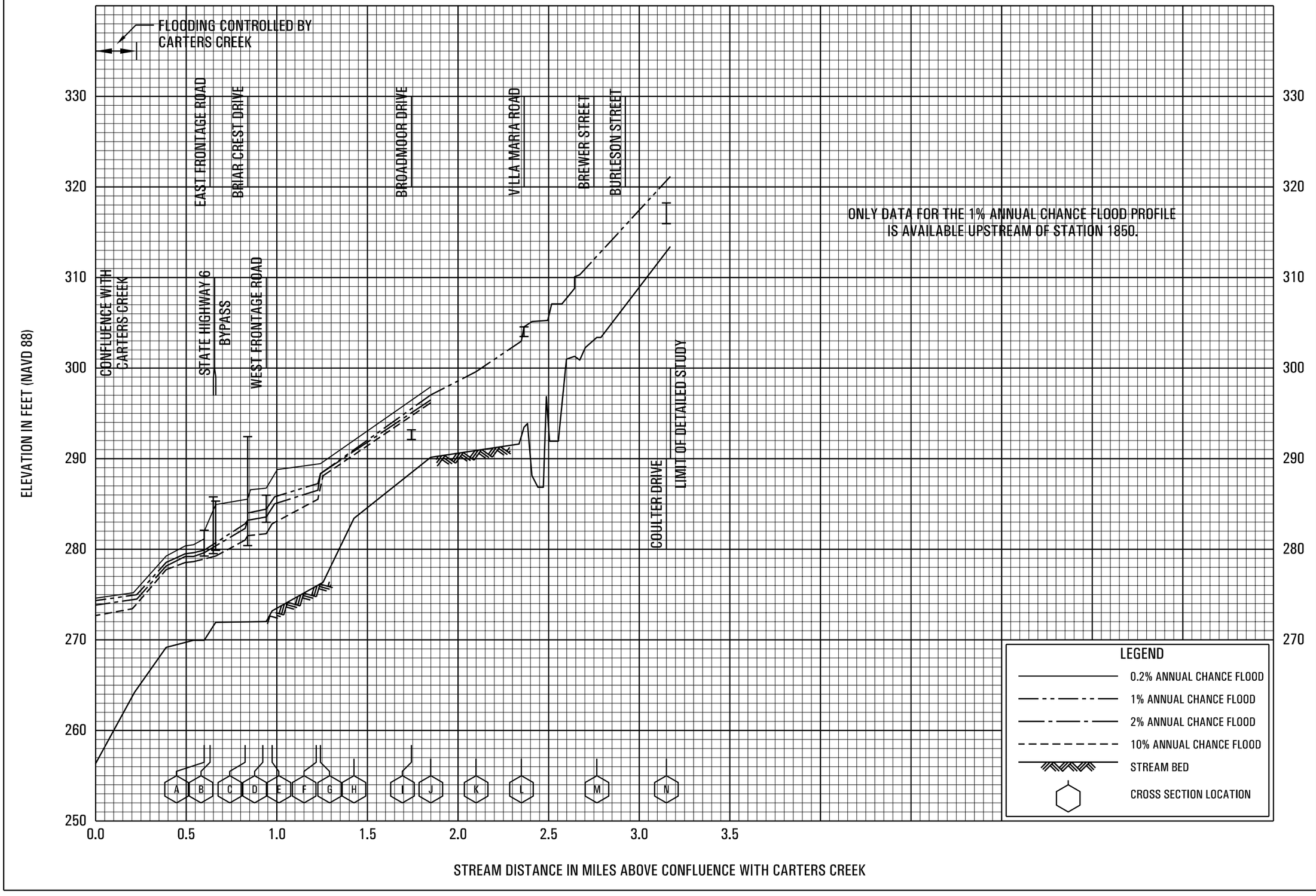
FLOOD PROFILES

BEE CREEK TRIBUTARY B SPLIT FLOW CHANNEL

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS



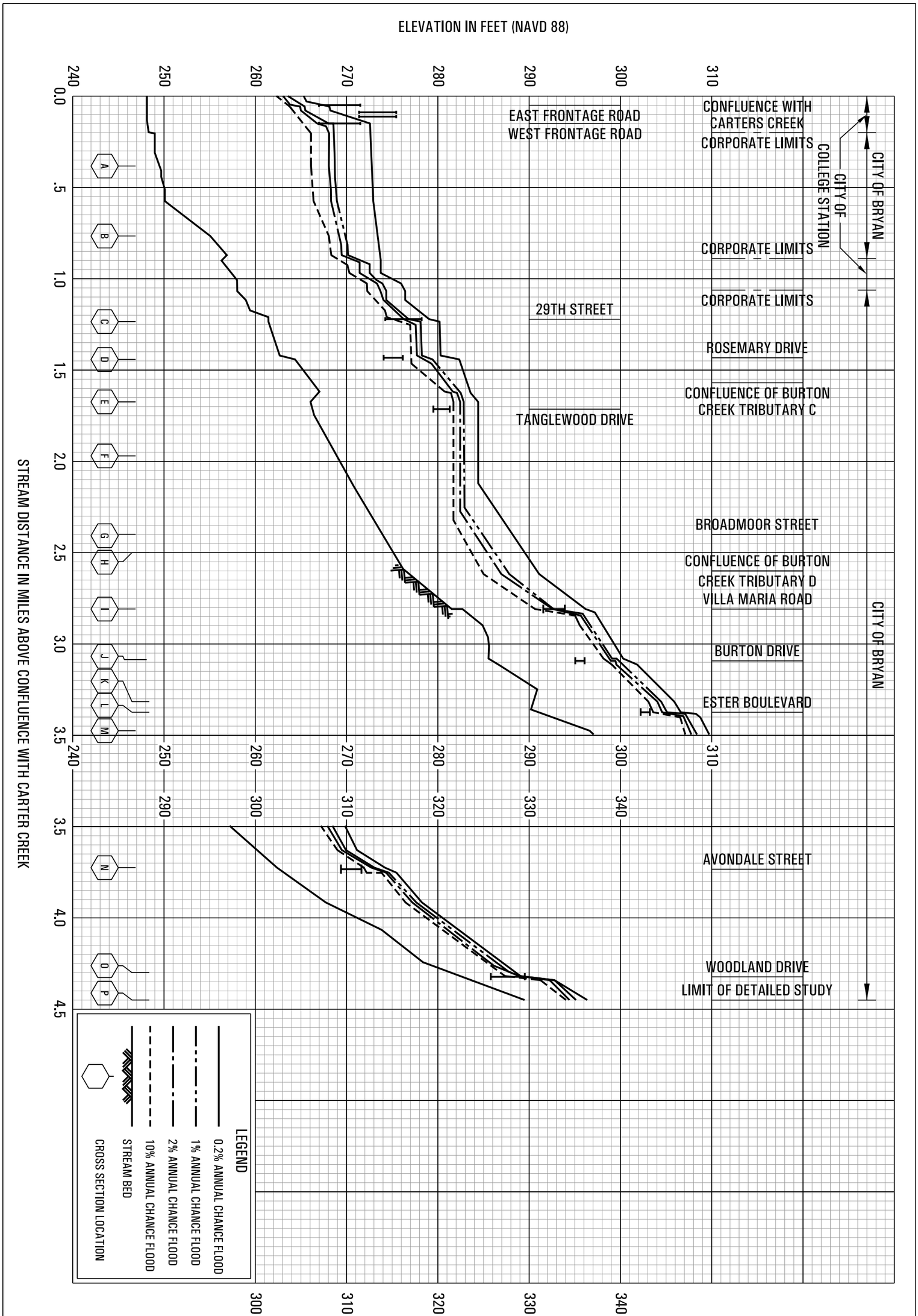
FLOOD PROFILES

BRIAR CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX
AND INCORPORATED AREAS

16P



17P

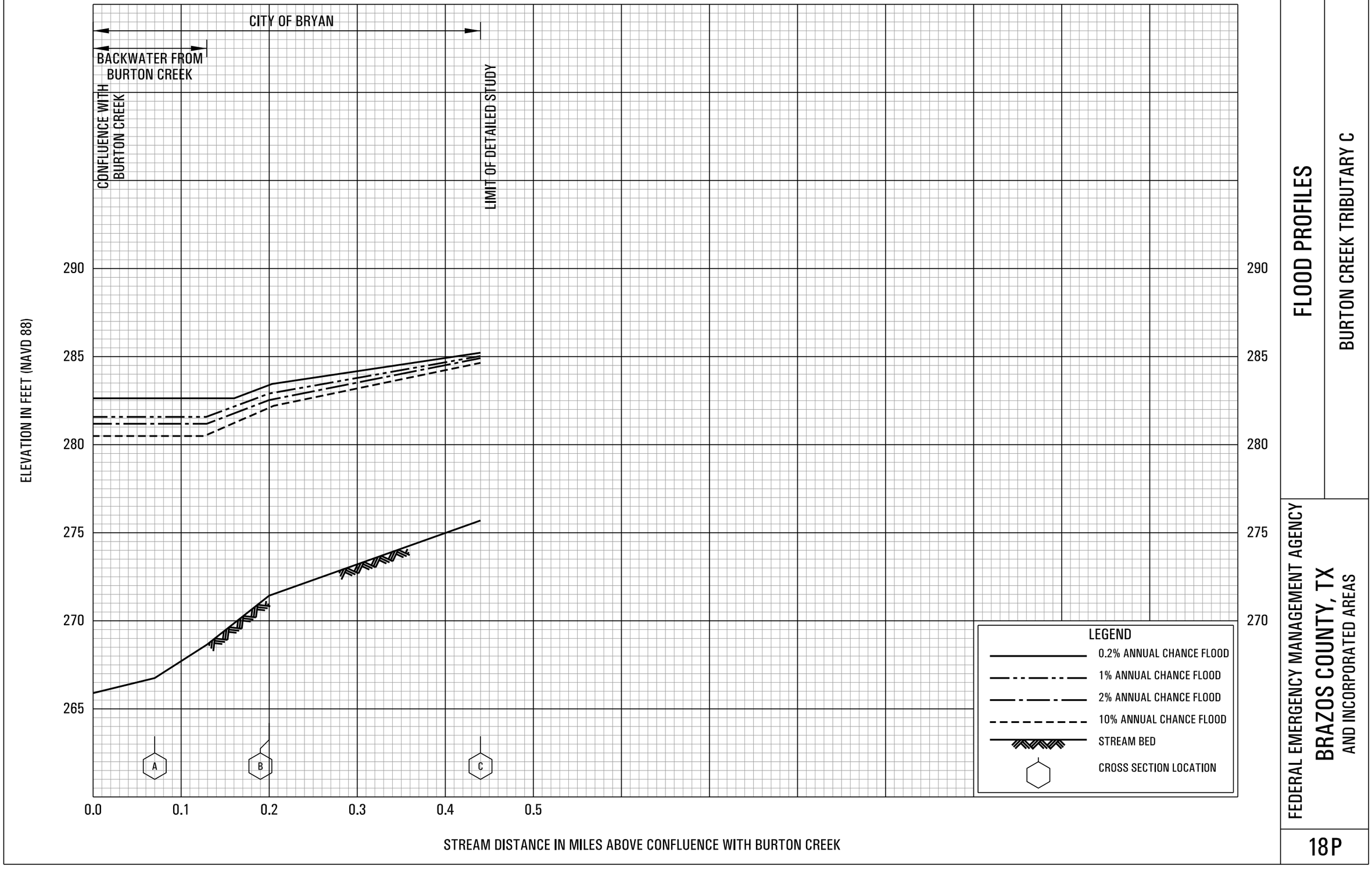
FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS

FLOOD PROFILES

BURTON CREEK

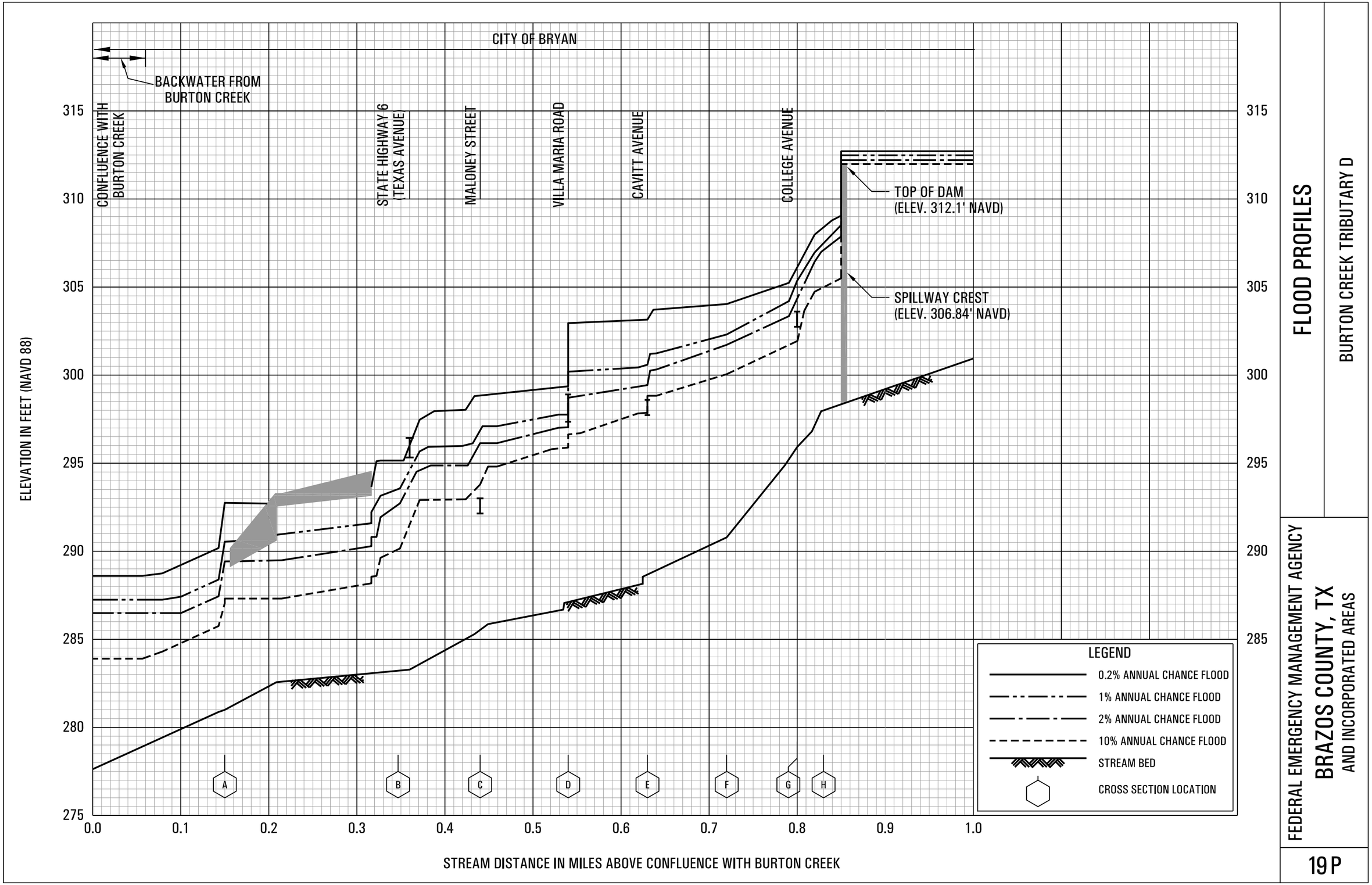


FLOOD PROFILES

BURTON CREEK TRIBUTARY C

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX
AND INCORPORATED AREAS

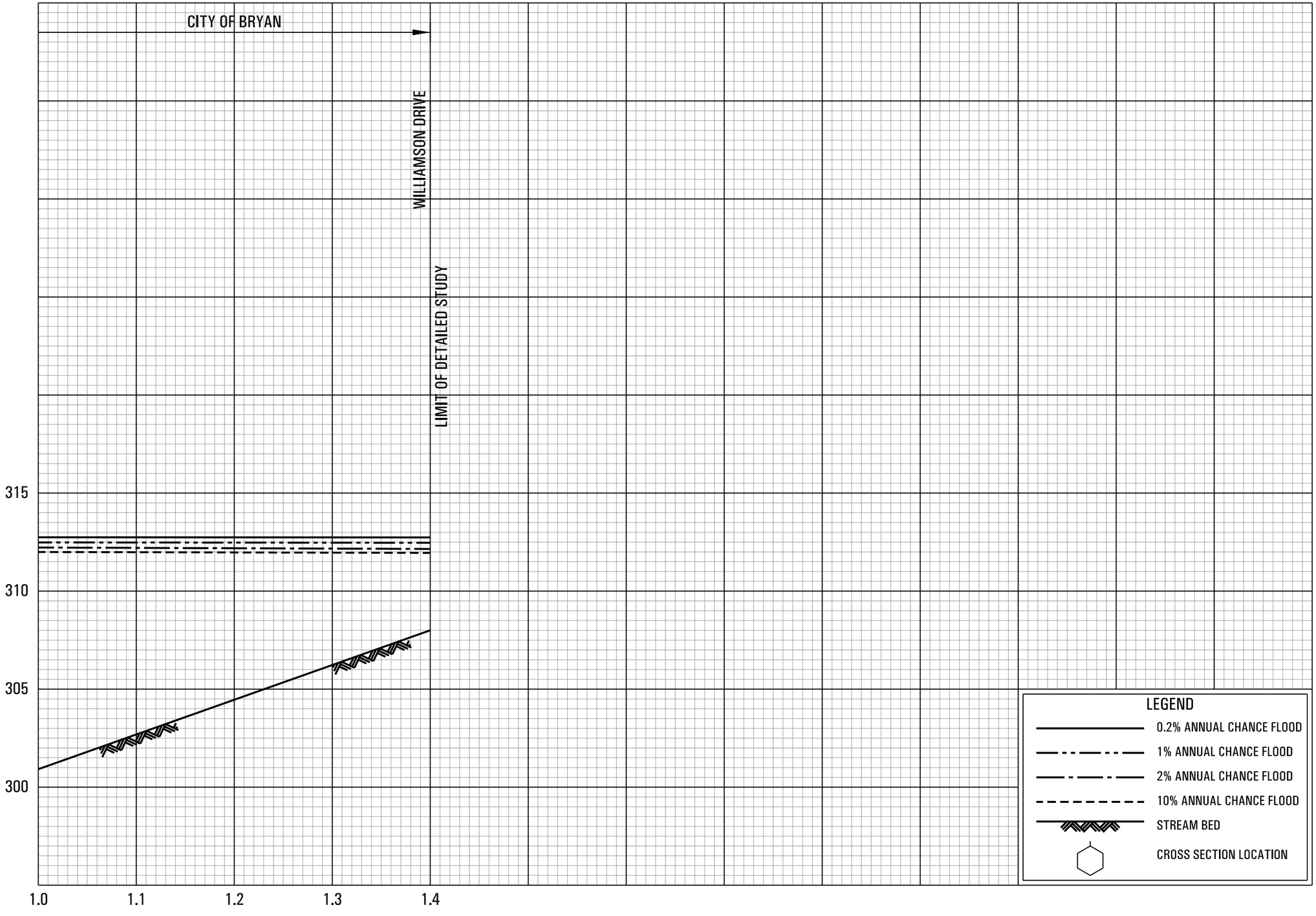


FLOOD PROFILES

BURTON CREEK TRIBUTARY D

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX AND INCORPORATED AREAS

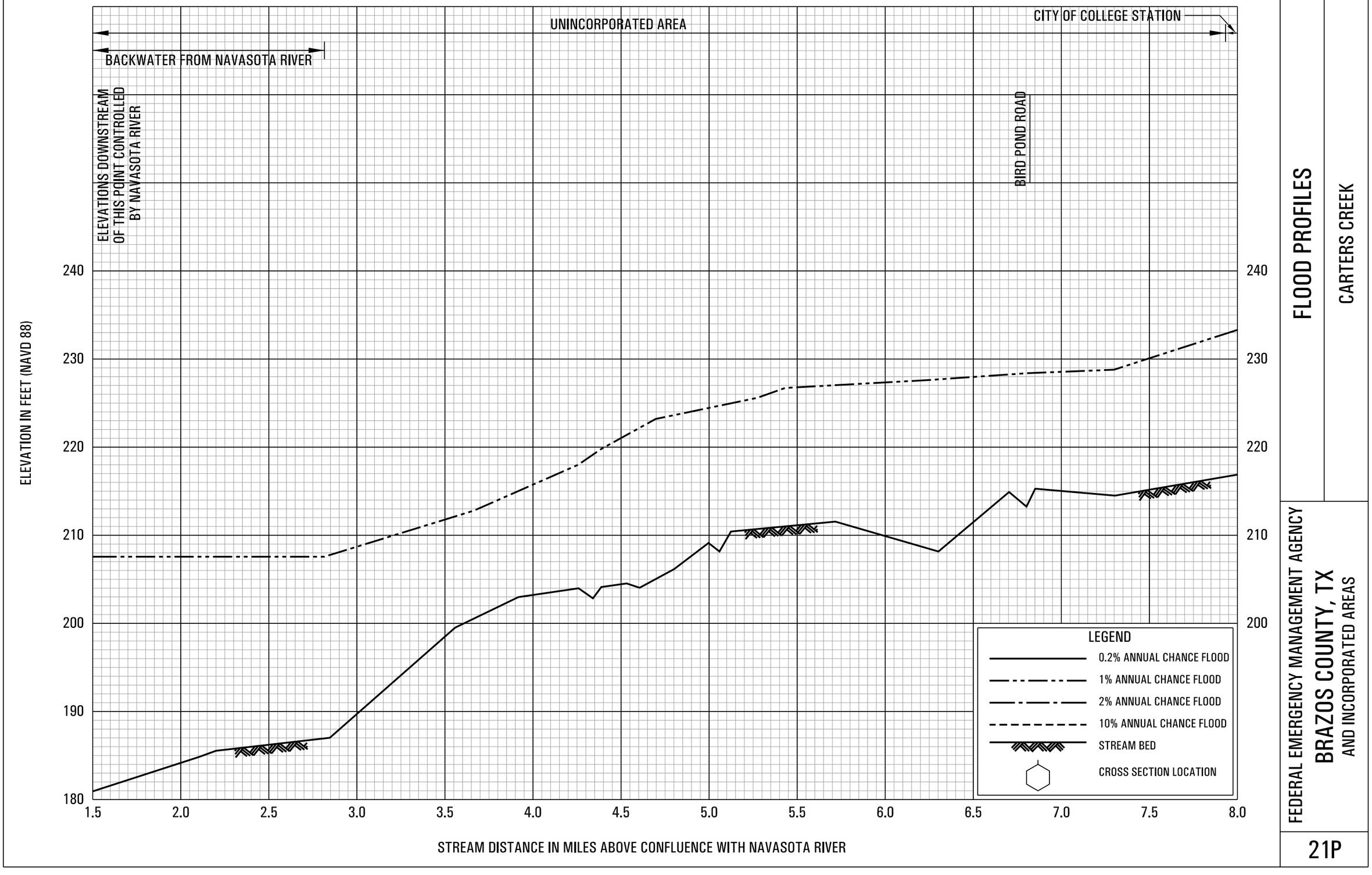


FLOOD PROFILES

BURTON CREEK TRIBUTARY D

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX
AND INCORPORATED AREAS

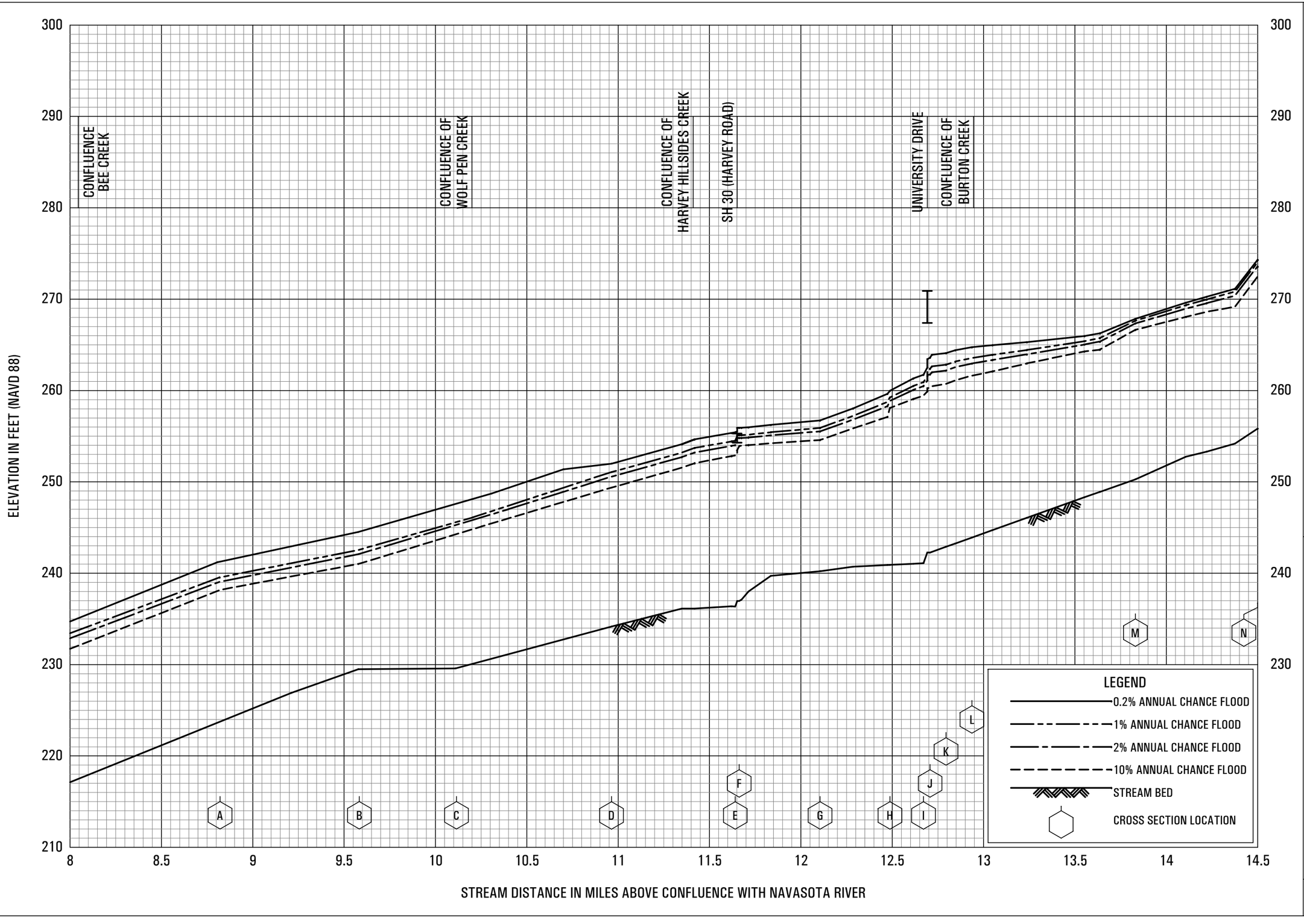


FLOOD PROFILES

CARTERS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX
AND INCORPORATED AREAS



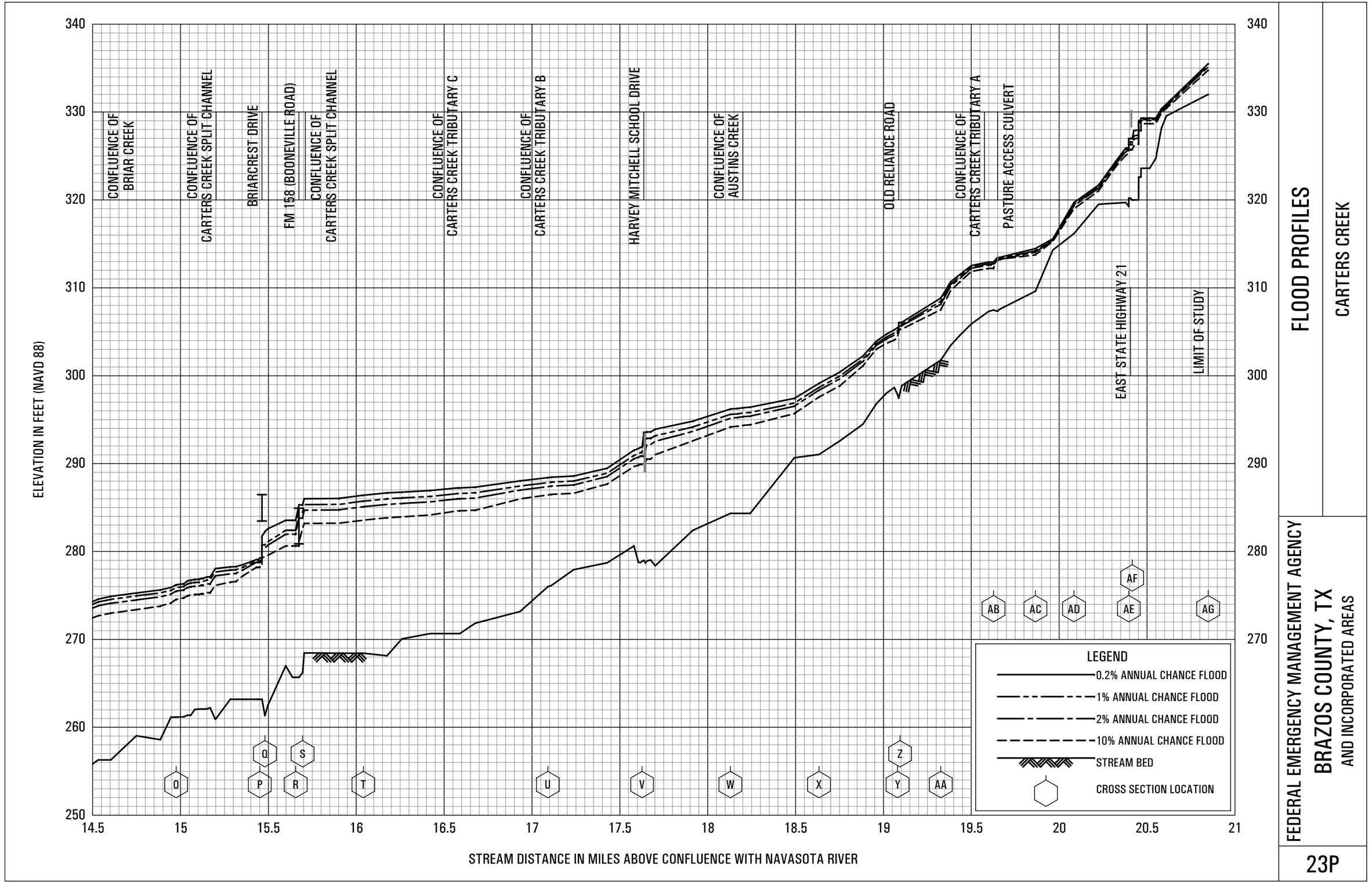
FLOOD PROFILES

CARTERS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS



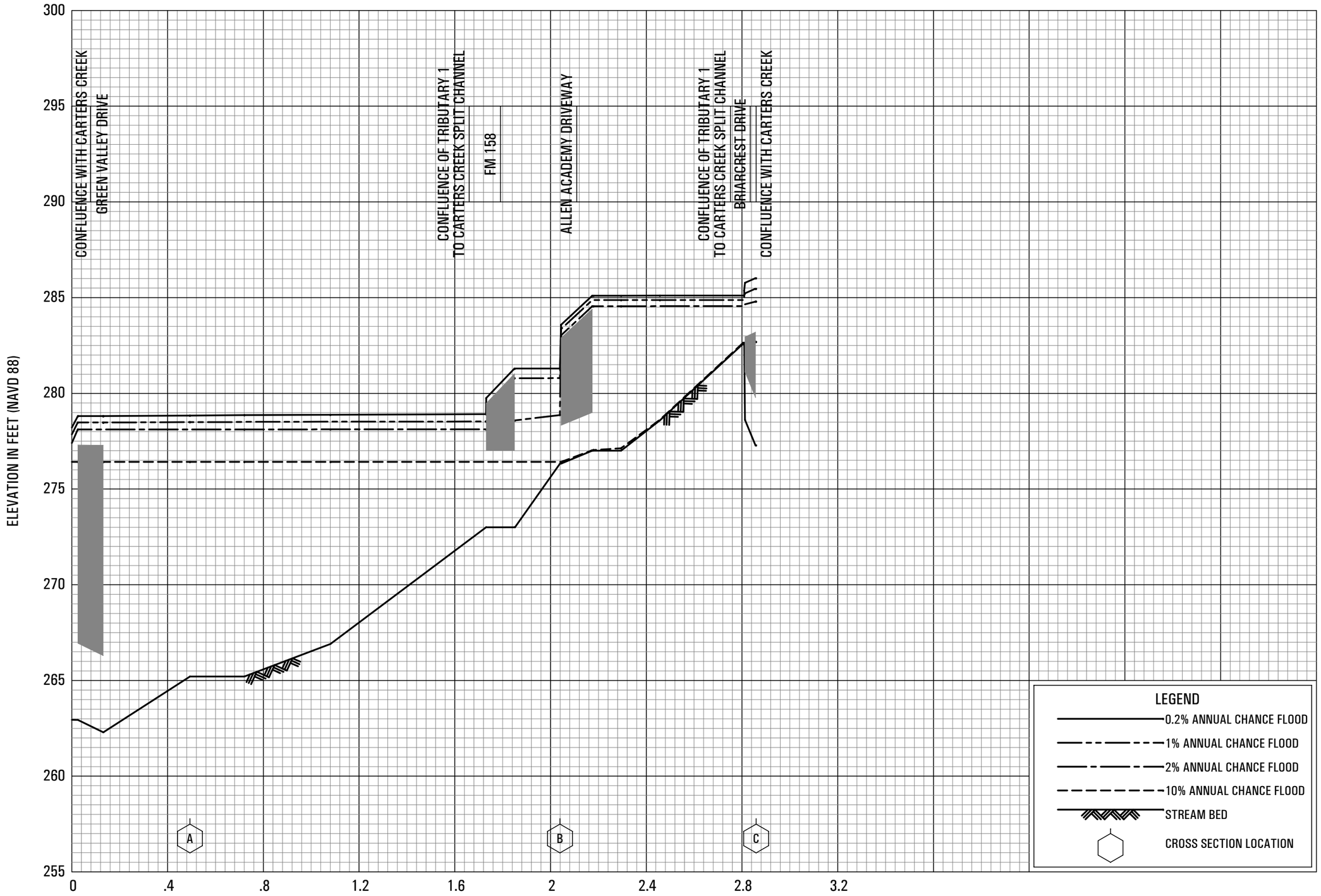
FLOOD PROFILES

CARTERS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS



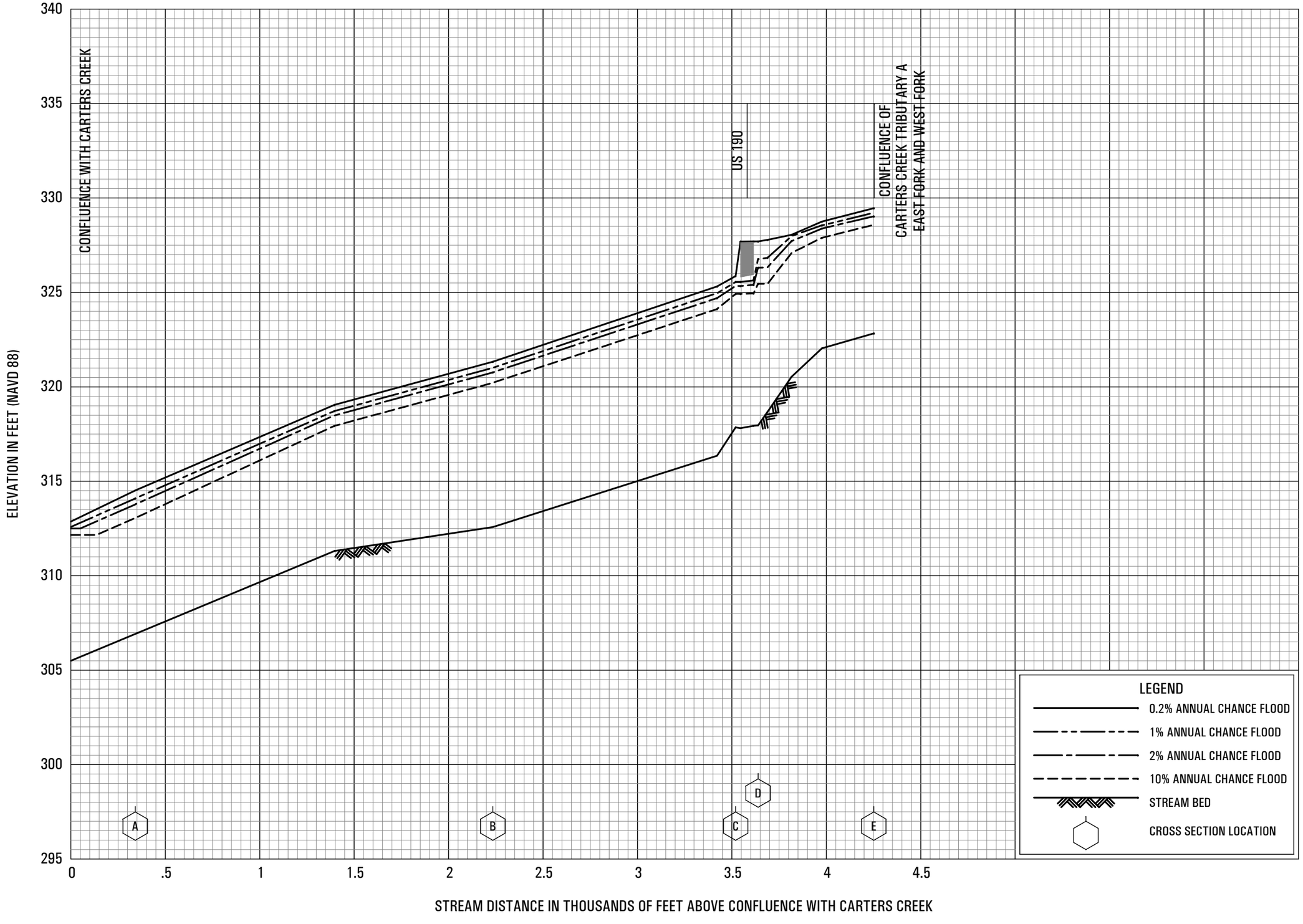
FLOOD PROFILES

CARTERS CREEK SPLIT CHANNEL

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS



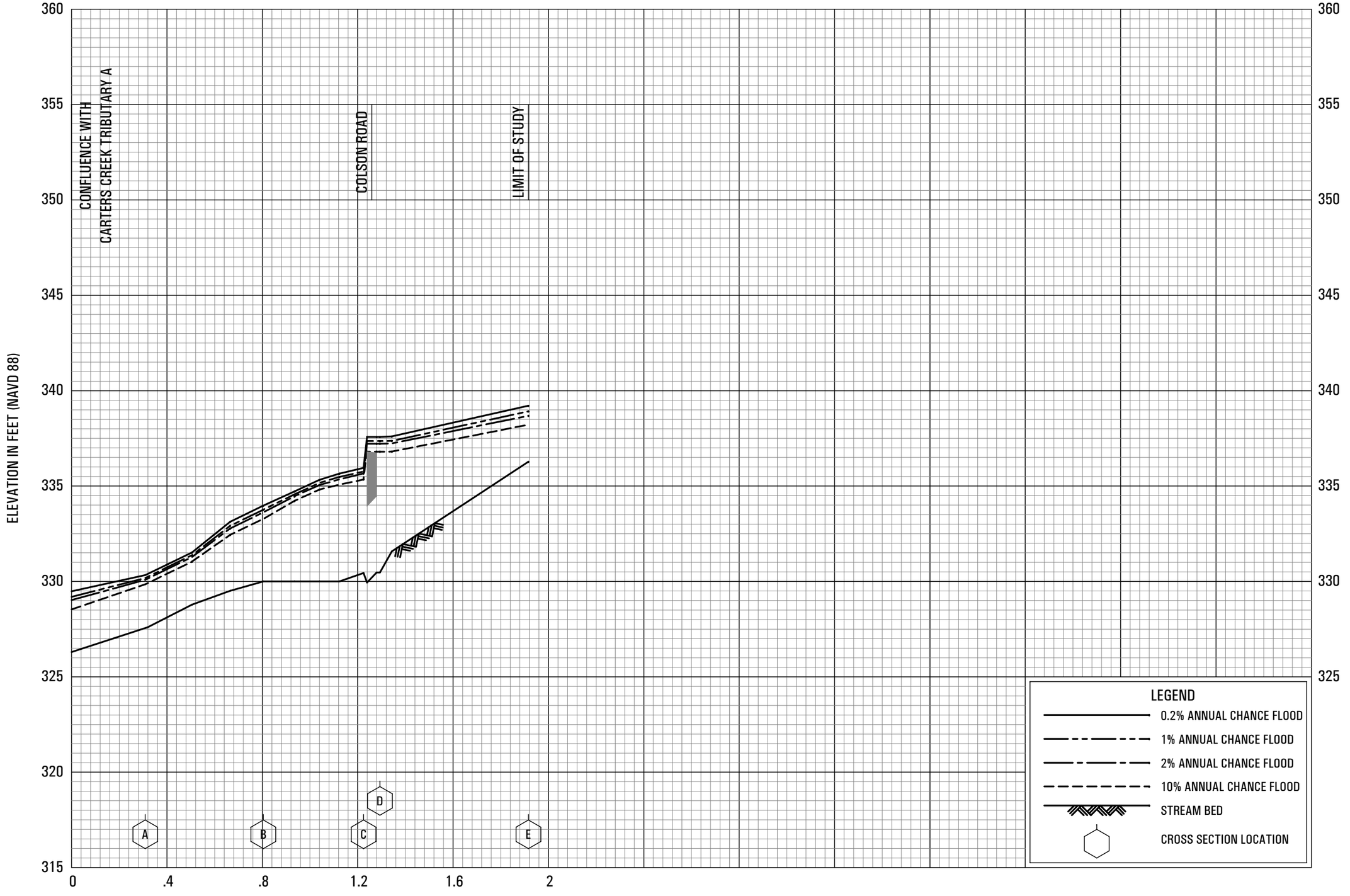
FLOOD PROFILES

CARTERS CREEK TRIBUTARY A

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS



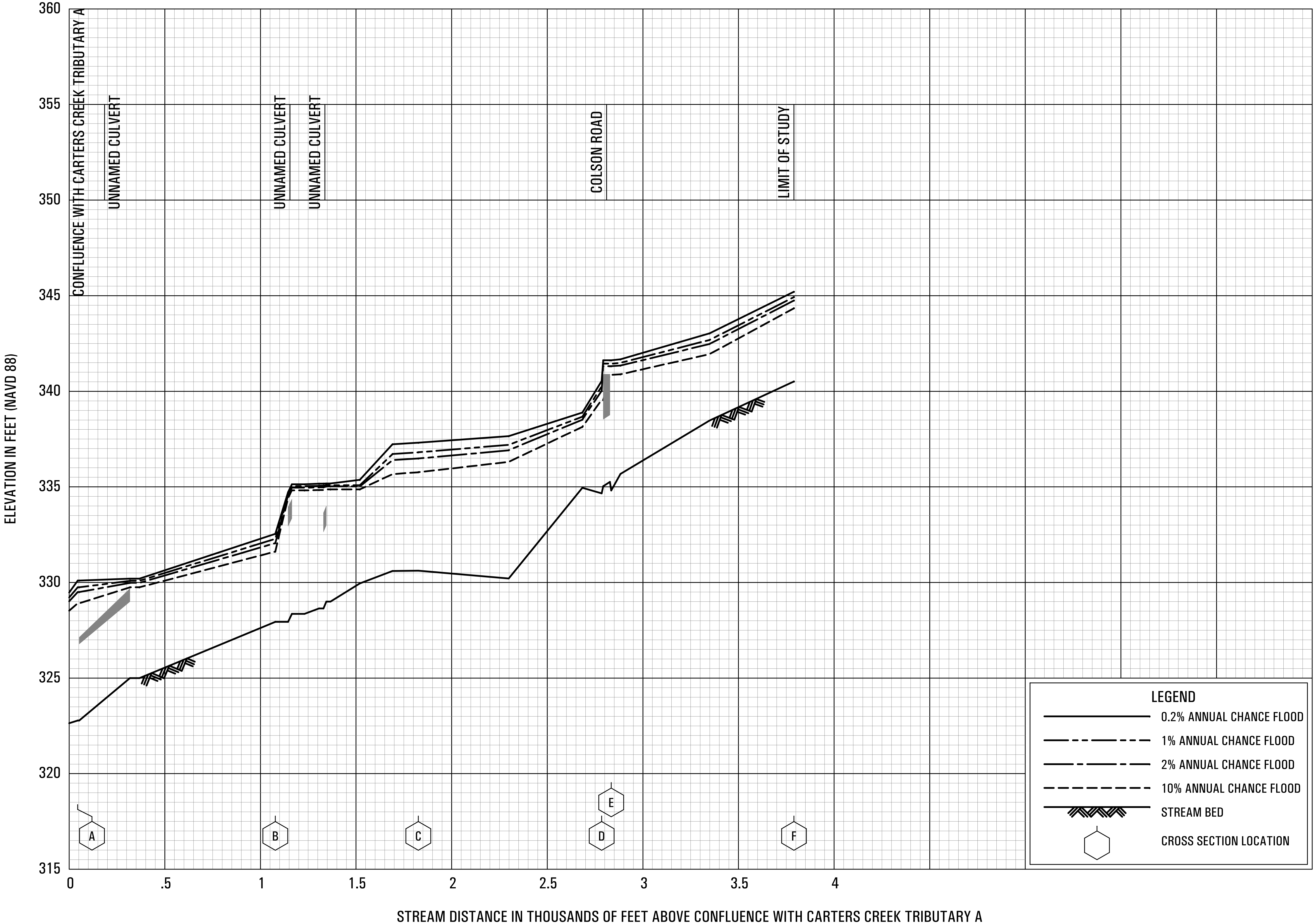
FLOOD PROFILES

CARTERS CREEK TRIBUTARY A EAST FORK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS



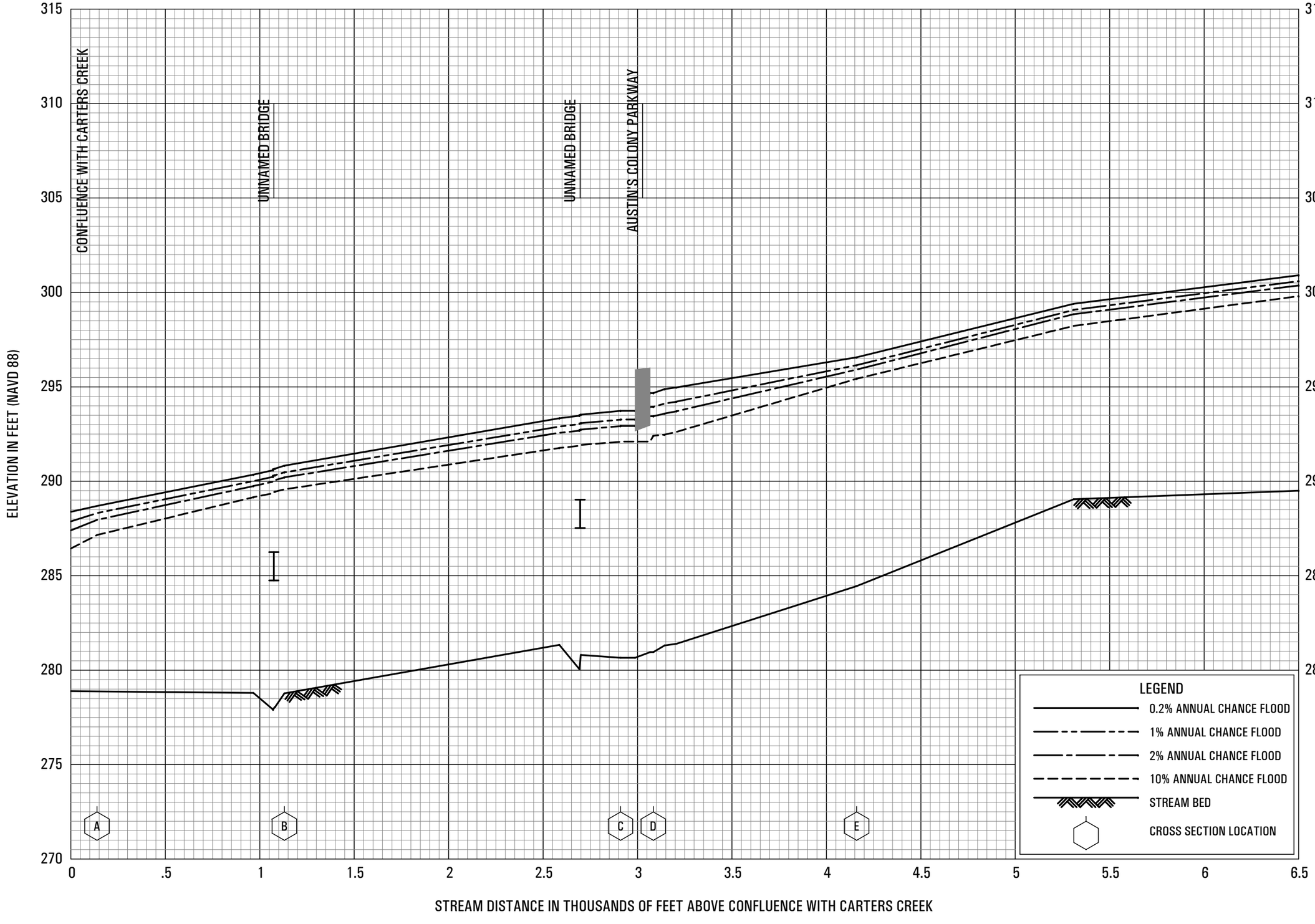
FLOOD PROFILES

CARTERS CREEK TRIBUTARY A WEST FORK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS



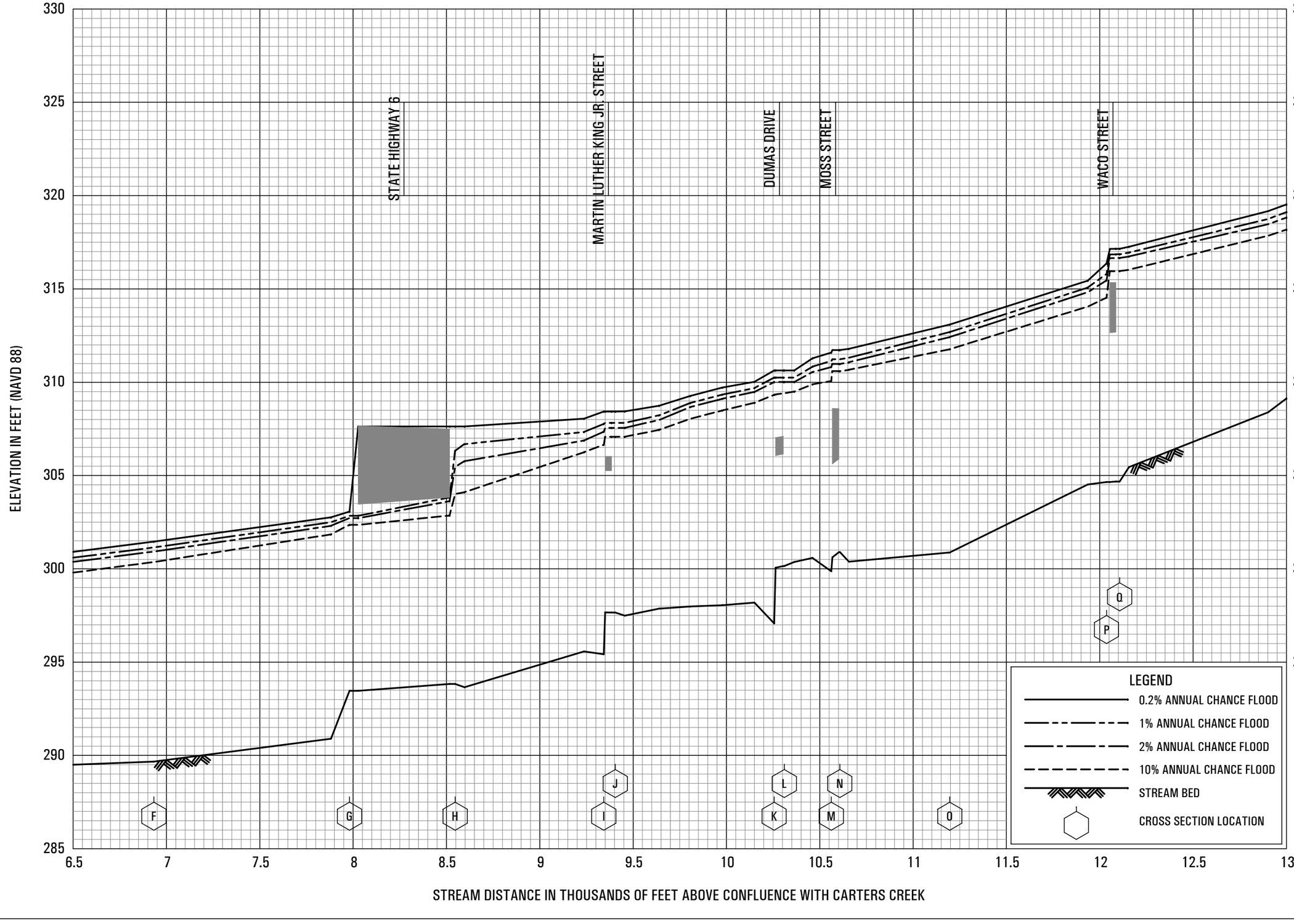
FLOOD PROFILES

CARTERS CREEK TRIBUTARY B

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS



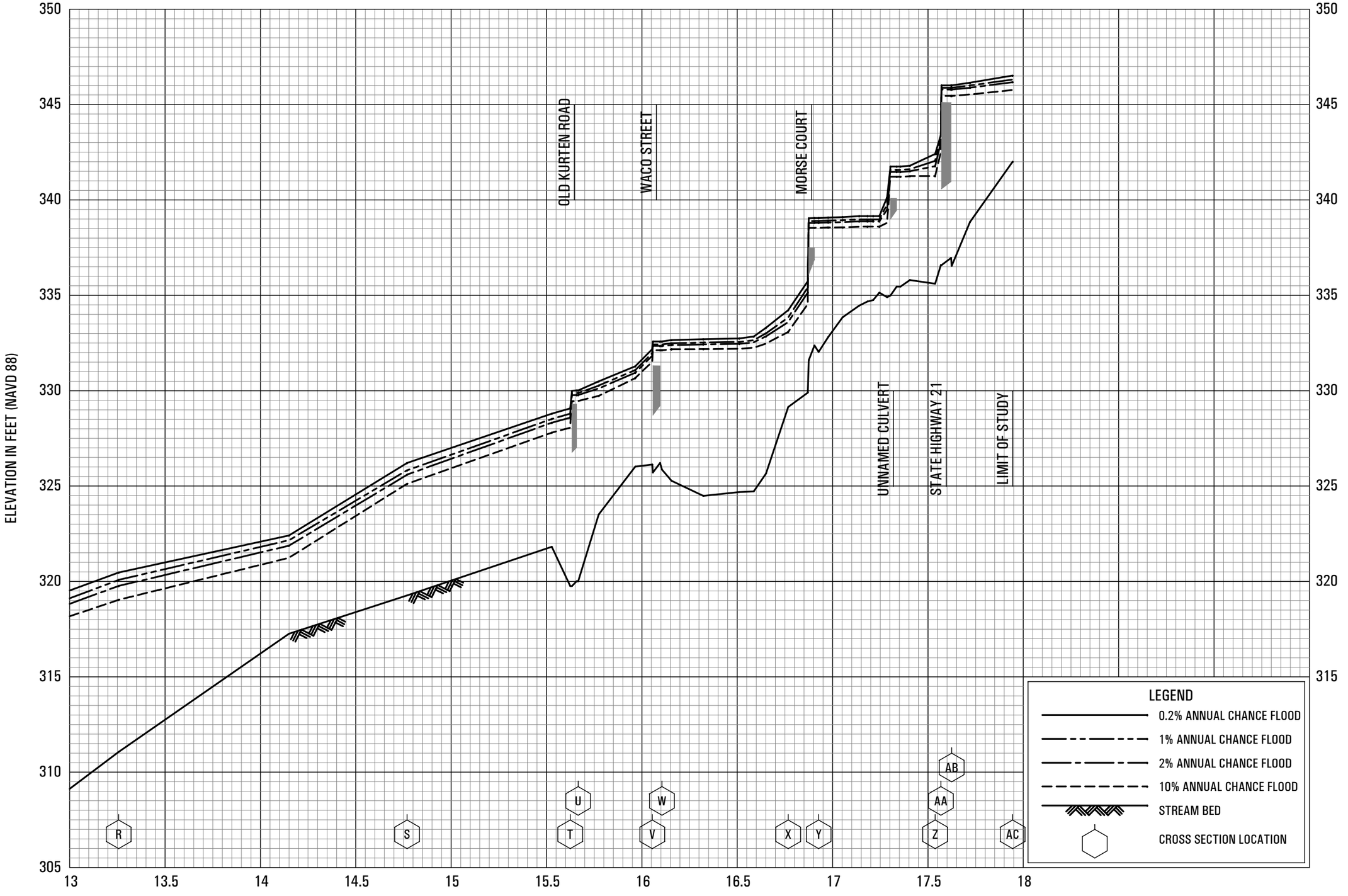
FLOOD PROFILES

CARTERS CREEK TRIBUTARY B

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS



FLOOD PROFILES

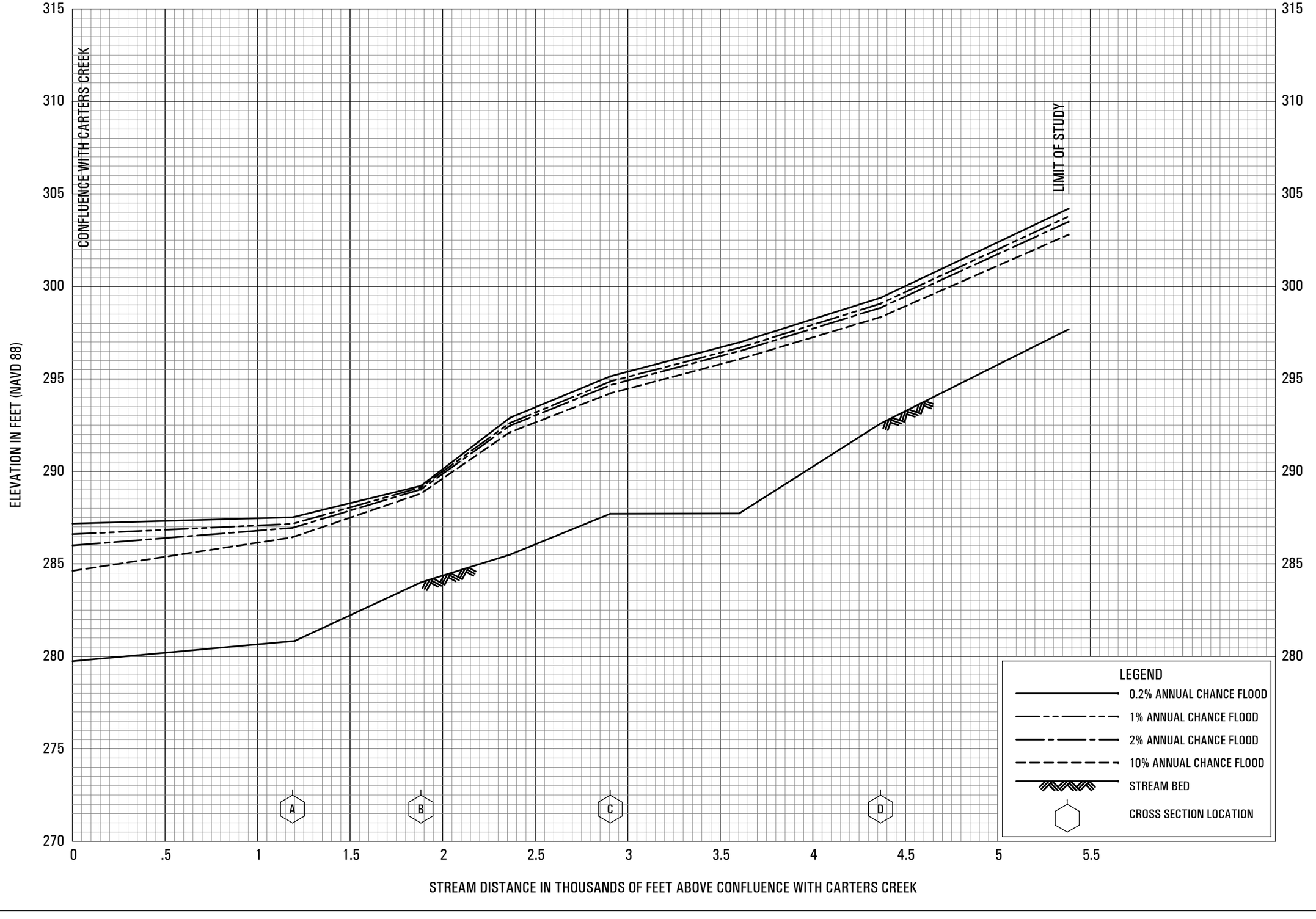
CARTERS CREEK TRIBUTARY B

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS

30P



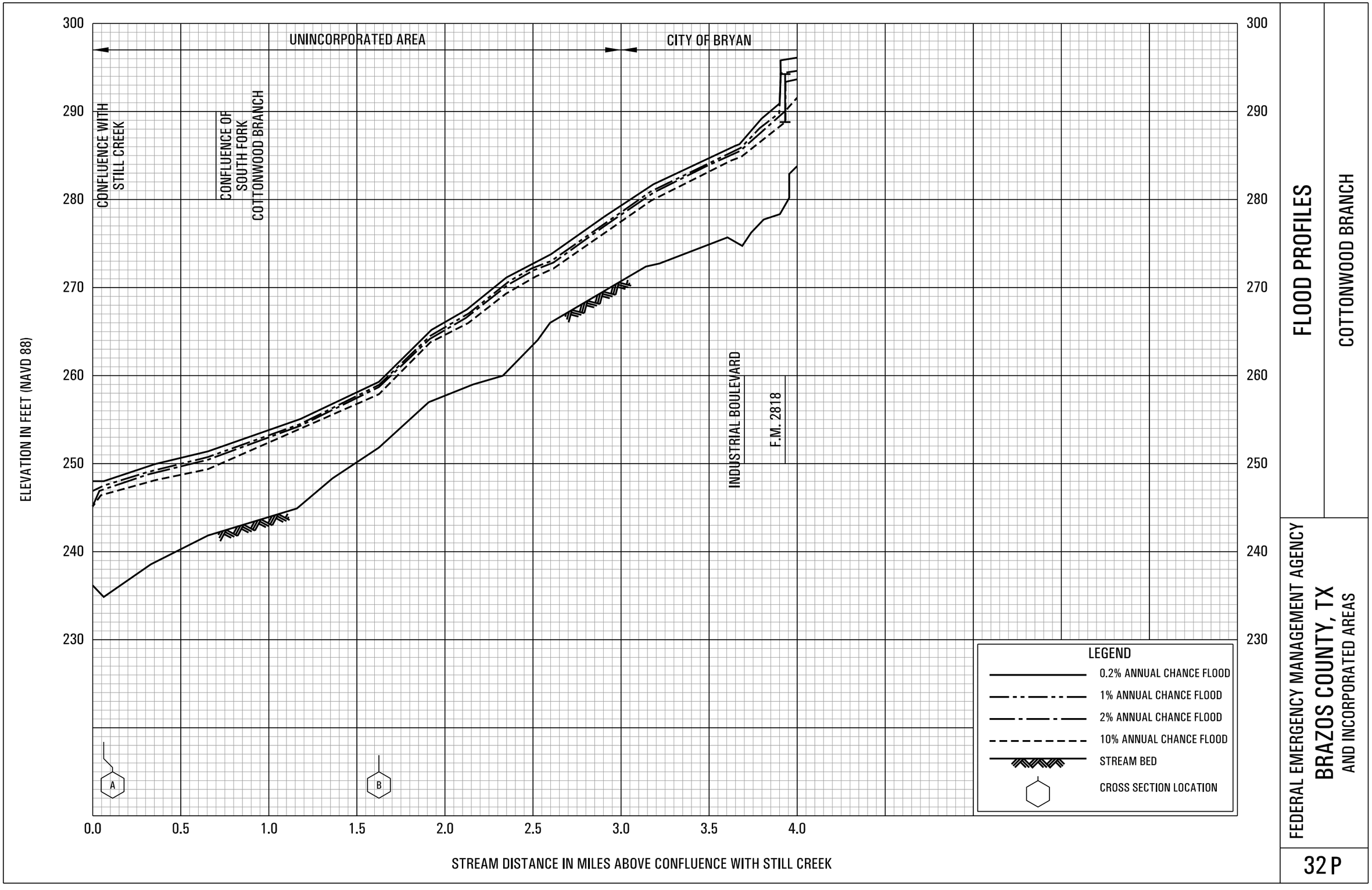
FLOOD PROFILES

CARTERS CREEK TRIBUTARY C

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS



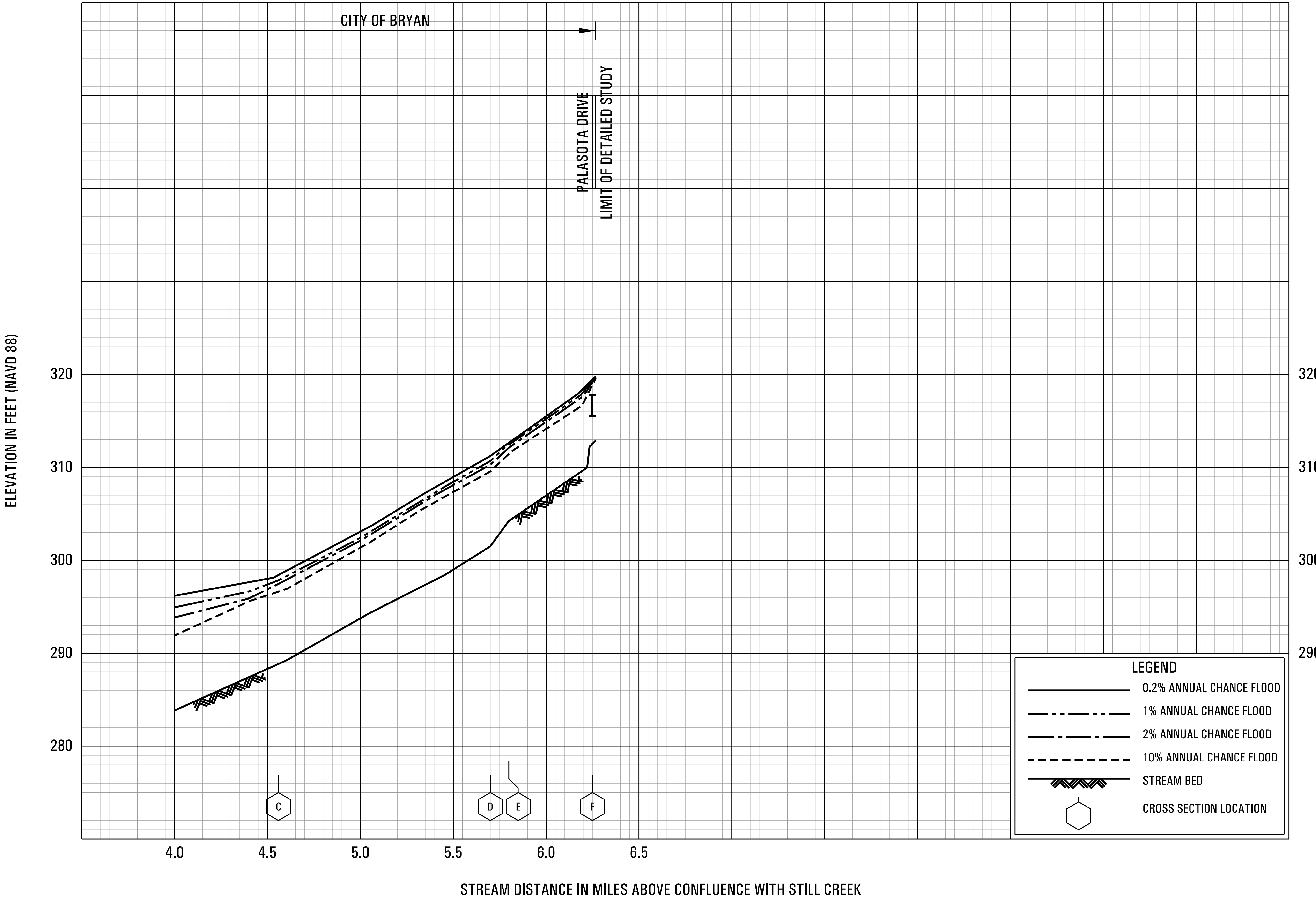
FLOOD PROFILES

COTTONWOOD BRANCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS



FLOOD PROFILES

COTTONWOOD BRANCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS

33P

UNINCORPORATED AREA

CITY OF COLLEGE STATION

INFLUENCE FROM CARTERS CREEK

FOX FIRE DRIVE

FROST DRIVE

ELEVATION IN FEET (NAVD 88)

260
255
250
245
240
235
230
225

17.5 18.0 18.5 19.0 19.5 20.0 20.5 21.0 21.5 22.0 22.5 23.0

STREAM DISTANCE IN THOUSANDS OF FEET FROM CONFLUENCE WITH CARTERS CREEK

A B C D E F G H I

LEGEND

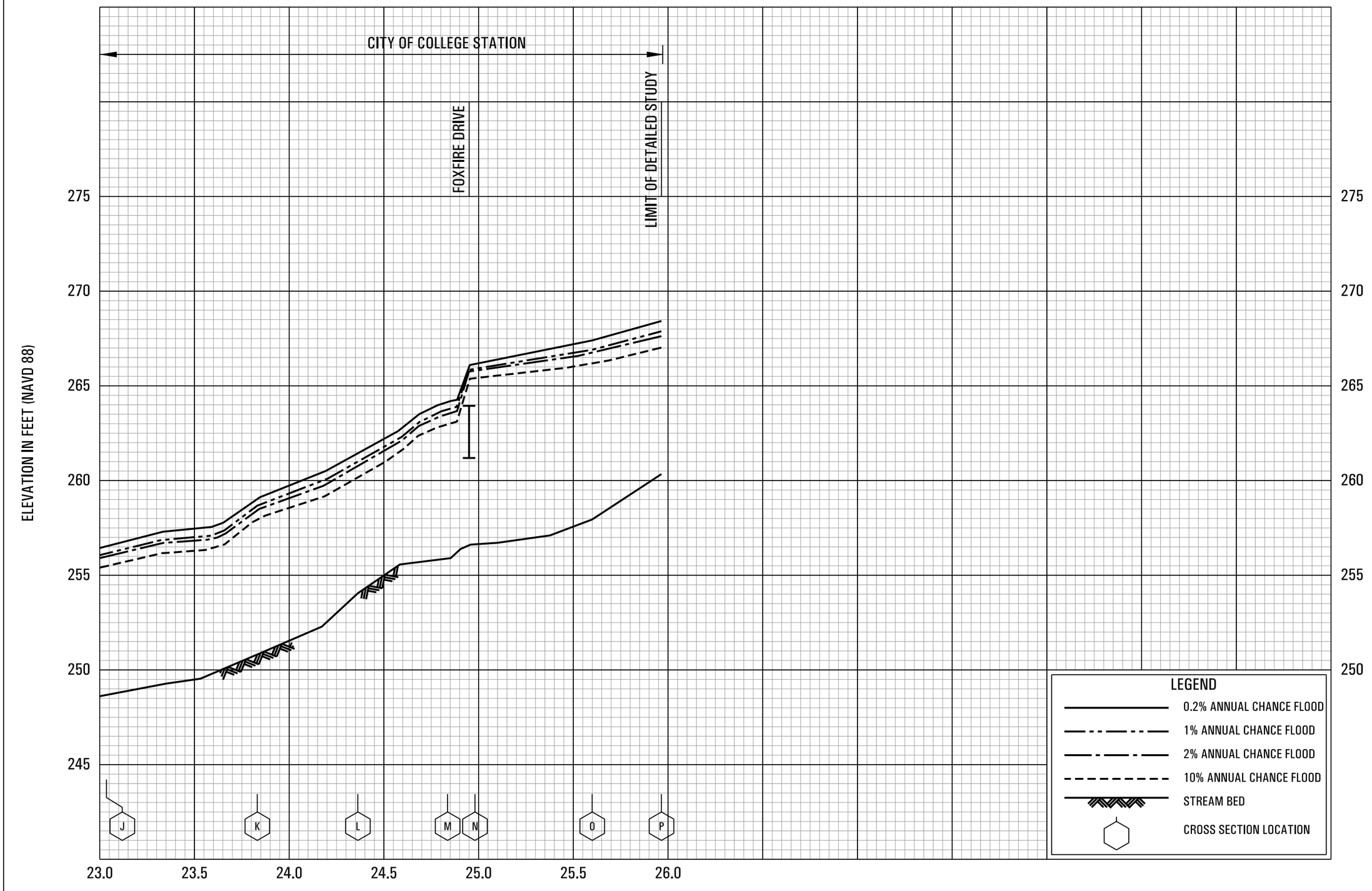
- 0.2% ANNUAL CHANCE FLOOD
- 1% ANNUAL CHANCE FLOOD
- 2% ANNUAL CHANCE FLOOD
- 10% ANNUAL CHANCE FLOOD
- STREAM BED
- CROSS SECTION LOCATION

FLOOD PROFILES

FOXFIRE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX
AND INCORPORATED AREAS



FLOOD PROFILES

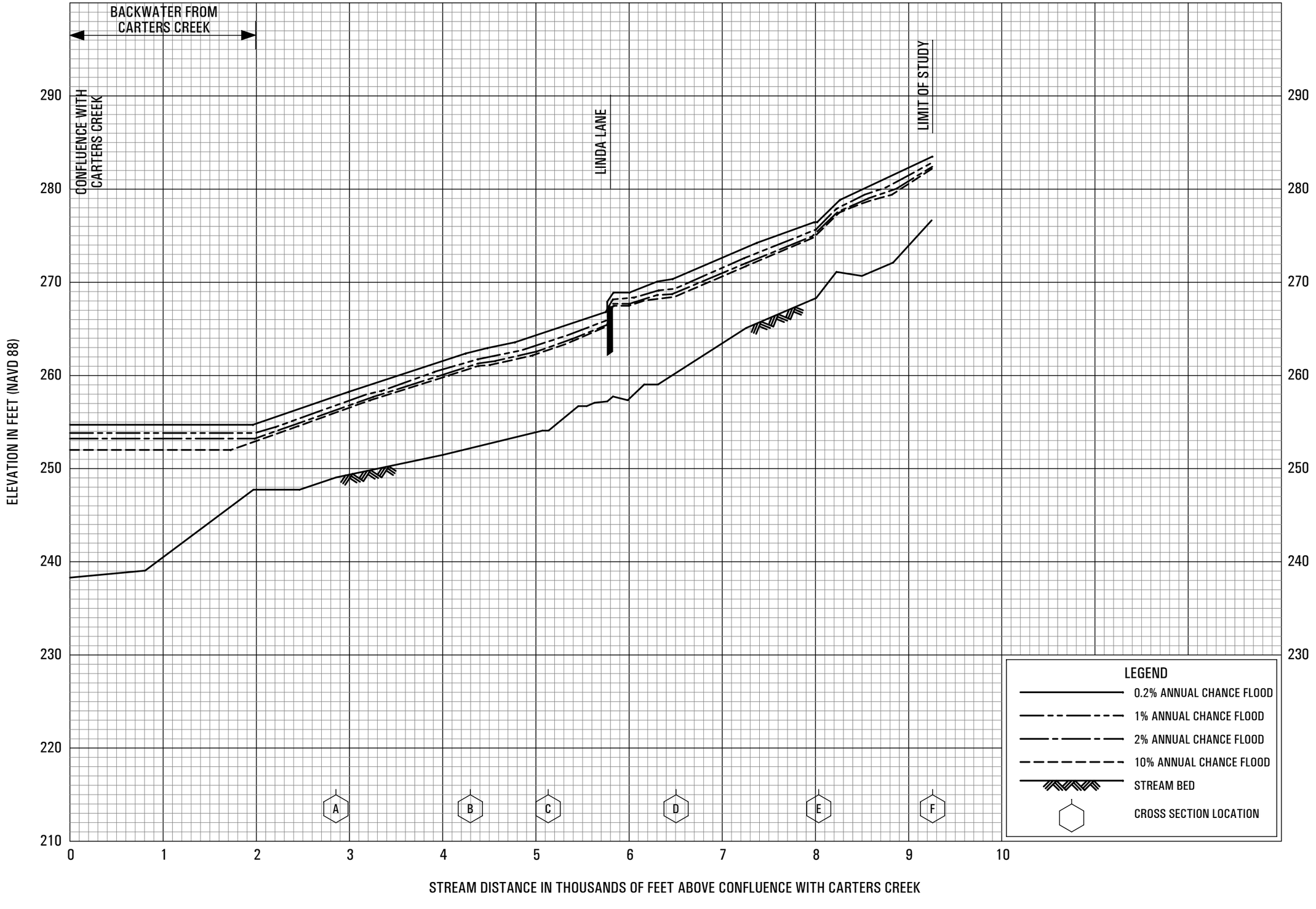
FOXFIRE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS

35P



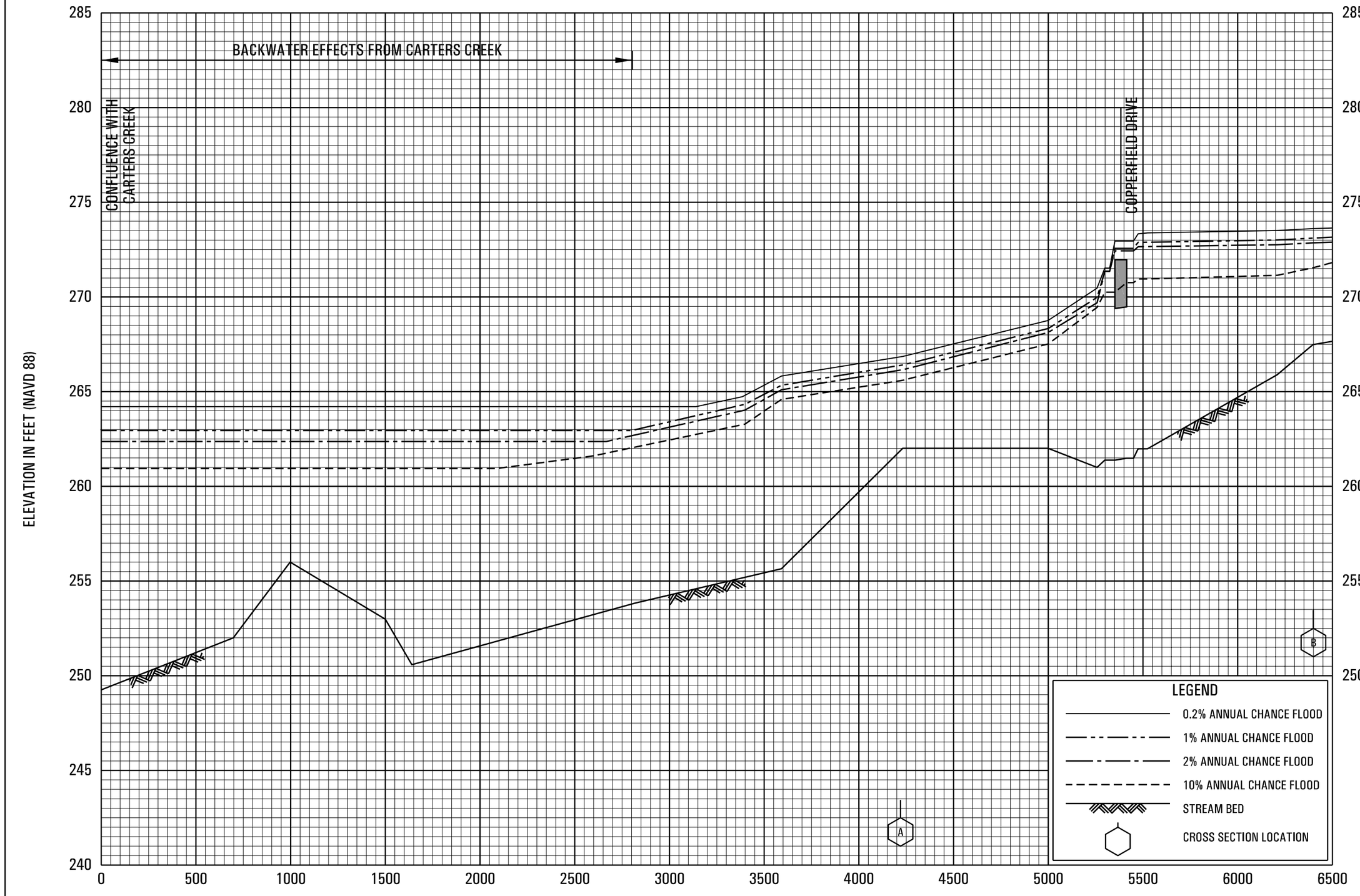
FLOOD PROFILES

HARVEY HILLSIDES CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS



FLOOD PROFILES

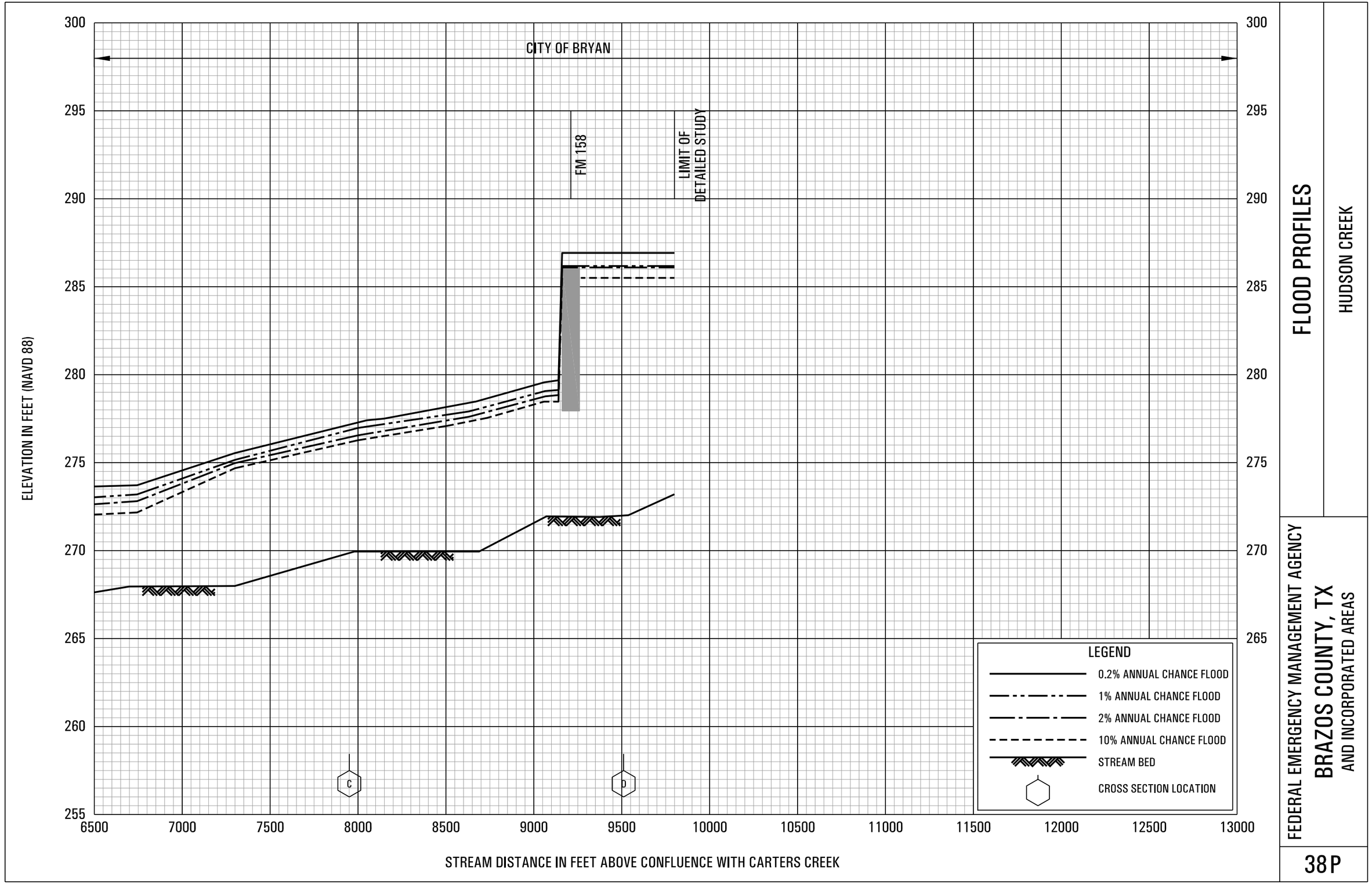
HUDSON CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS

37P



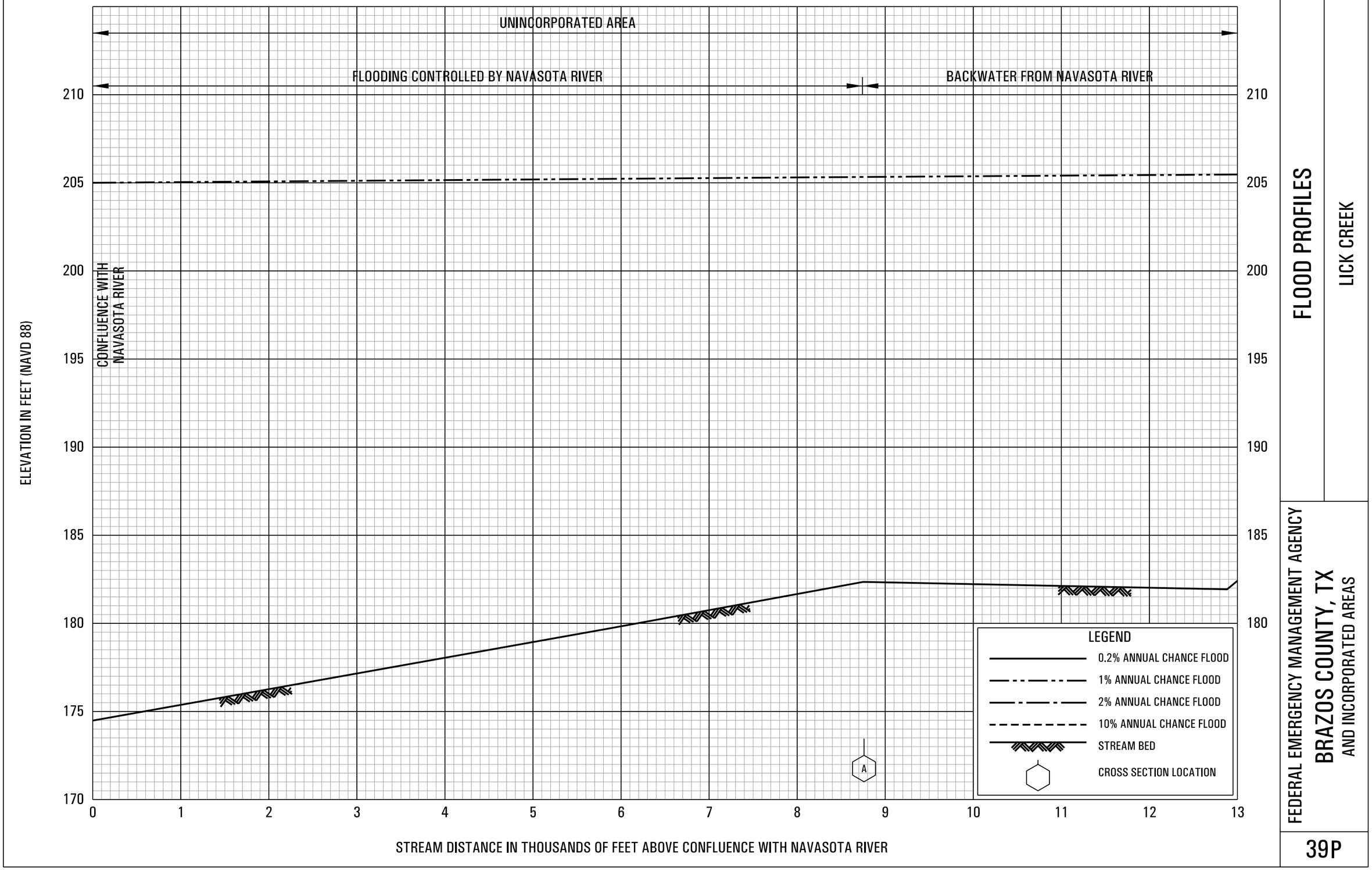
FLOOD PROFILES

HUDSON CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS



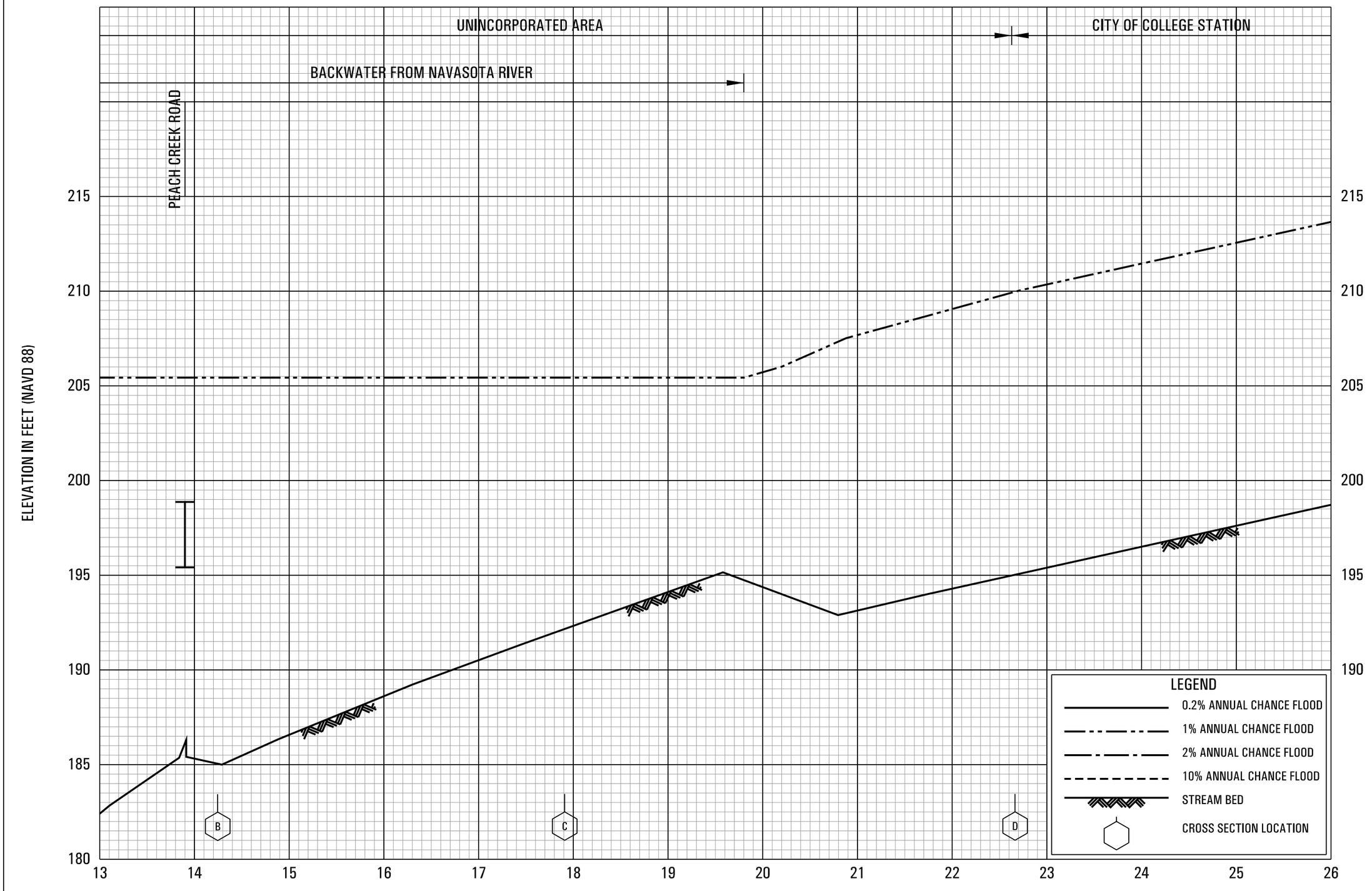
FLOOD PROFILES

LICK CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX
AND INCORPORATED AREAS

39P



FLOOD PROFILES

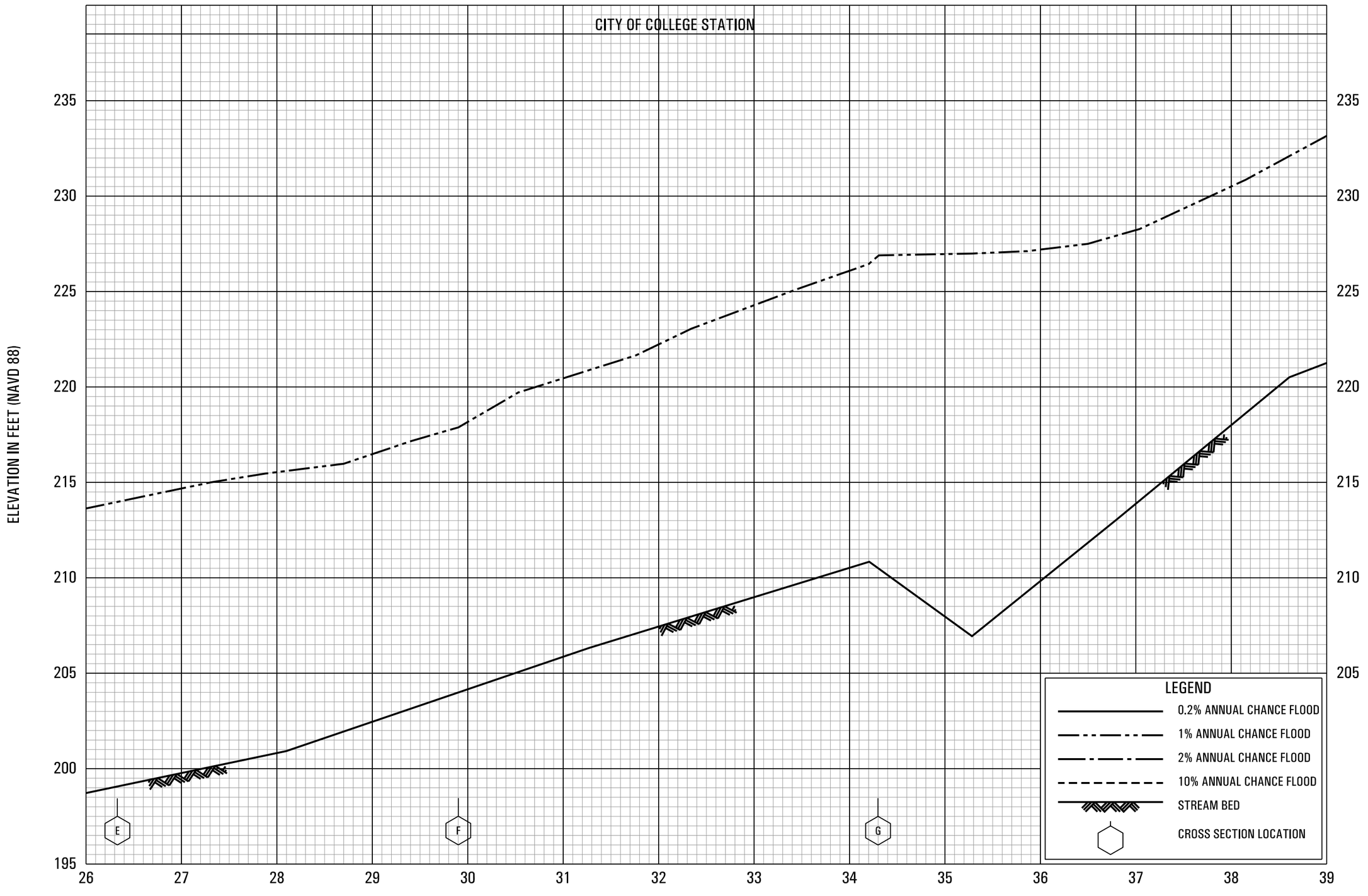
LICK CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS

CITY OF COLLEGE STATION



STREAM DISTANCE IN THOUSANDS OF FEET ABOVE CONFLUENCE WITH NAVASOTA RIVER

FLOOD PROFILES

LICK CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS

41P

CITY OF COLLEGE STATION

WILLIAM D. FITCH ROAD

CONFLUENCE OF SPRING CREEK

ELEVATION IN FEET (NAVD 88)

260
255
250
245
240
235
230
225
220

39 40 41 42 43 44 45 46 47 48 49 50 51 52

STREAM DISTANCE IN THOUSANDS OF FEET ABOVE CONFLUENCE WITH NAVASOTA RIVER

H I J K L

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

LICK CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX
AND INCORPORATED AREAS

CITY OF COLLEGE STATION

LIMIT OF DETAILED STUDY

ELEVATION IN FEET (NAVD 88)

280
275
270
265
260
255
250
245

52 53 54 55 56 57 58 59 60 61 62 63

STREAM DISTANCE IN THOUSANDS OF FEET ABOVE CONFLUENCE WITH NAVASOTA RIVER

M N O

LEGEND

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

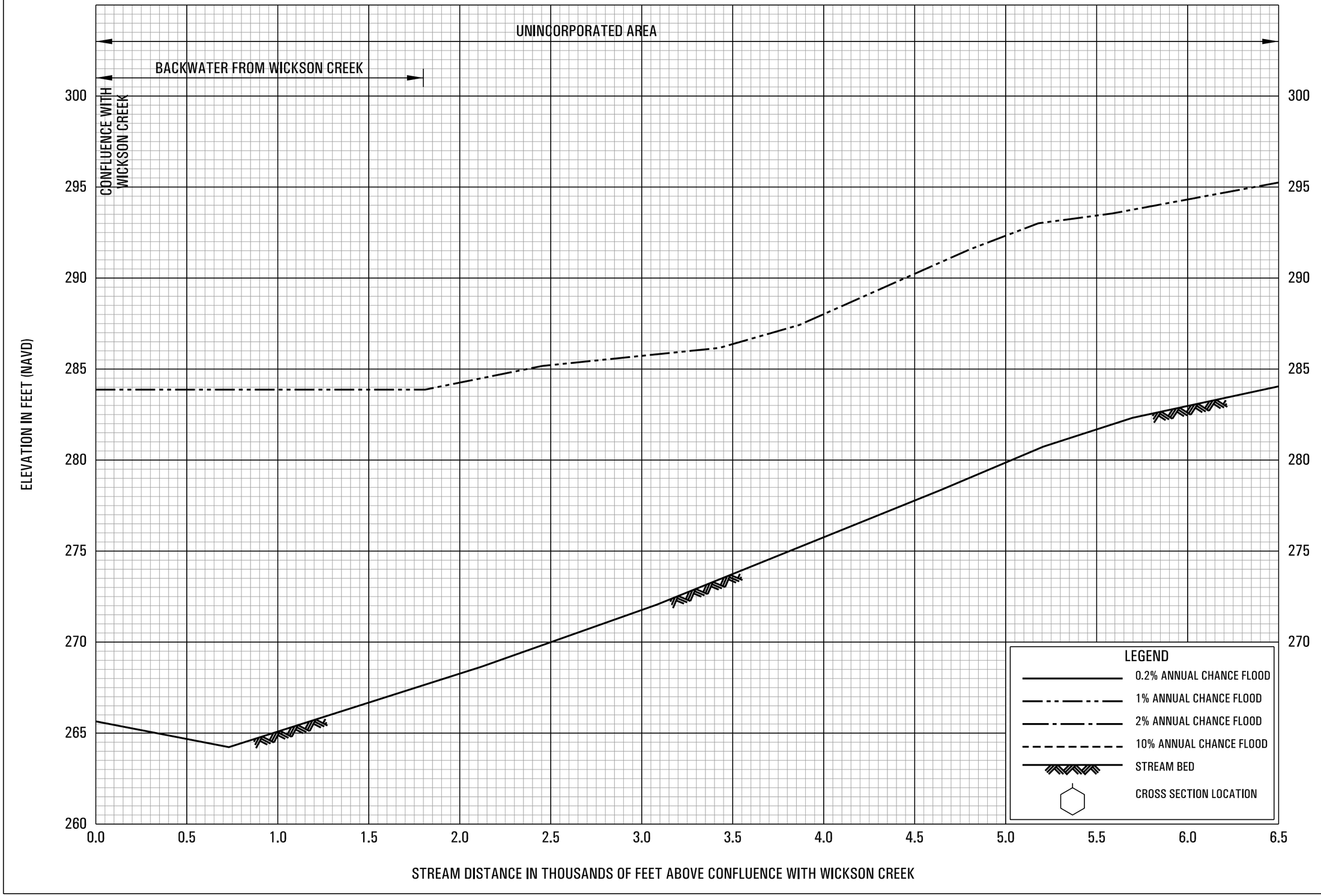
FLOOD PROFILES

LICK CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS



FLOOD PROFILES

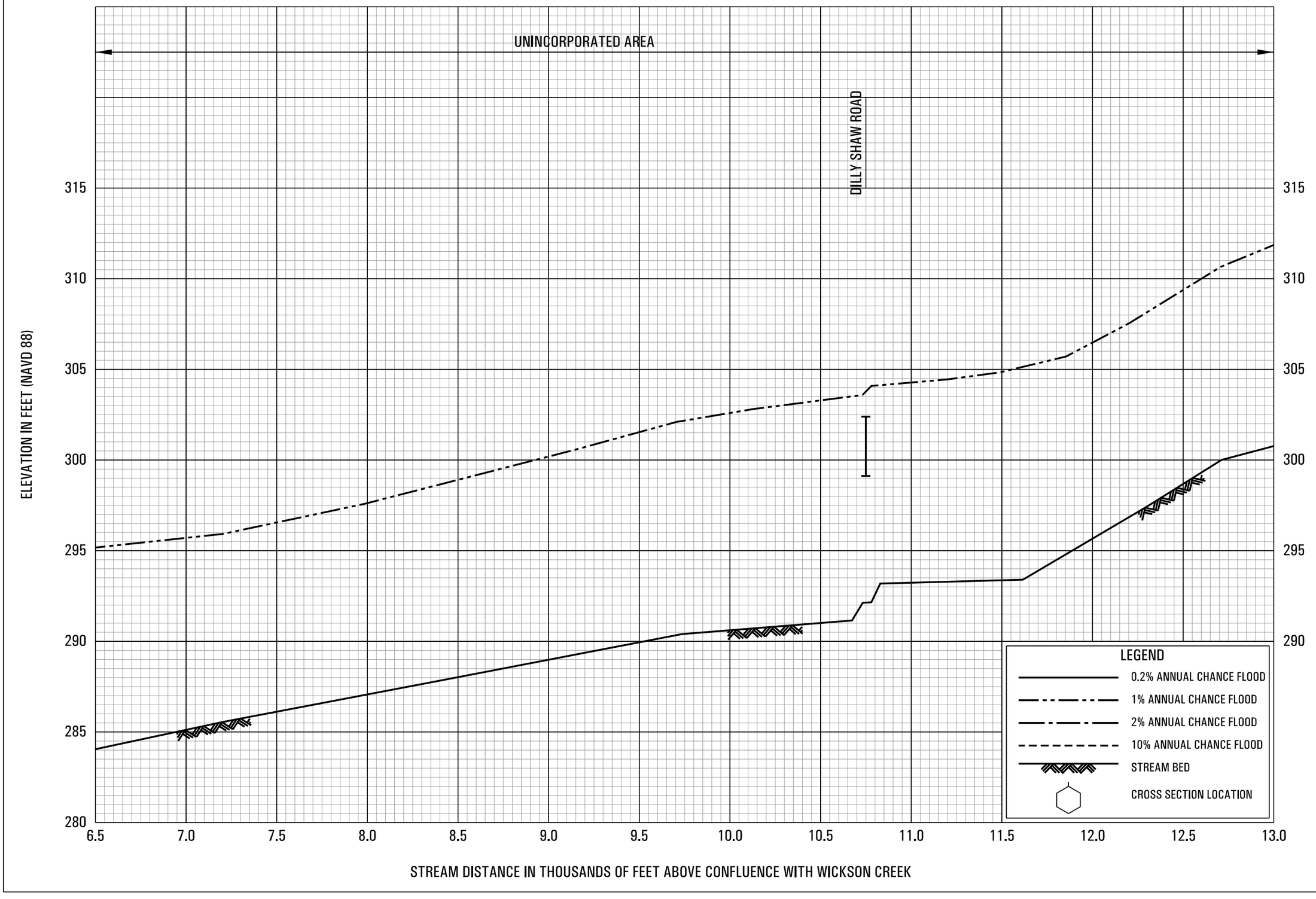
LITTLE WICKSON CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS

44P



FLOOD PROFILES

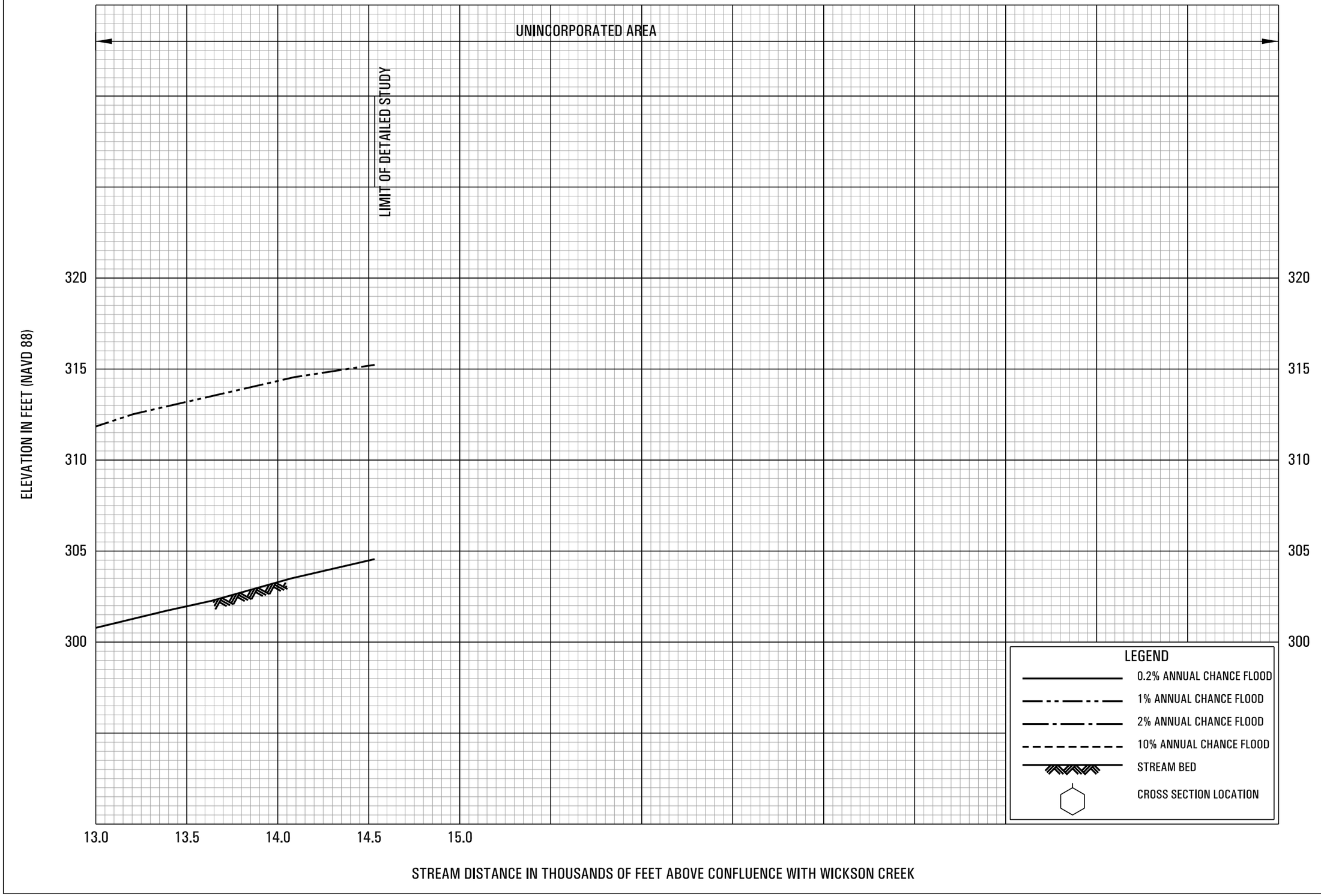
LITTLE WICKSON CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS

45P



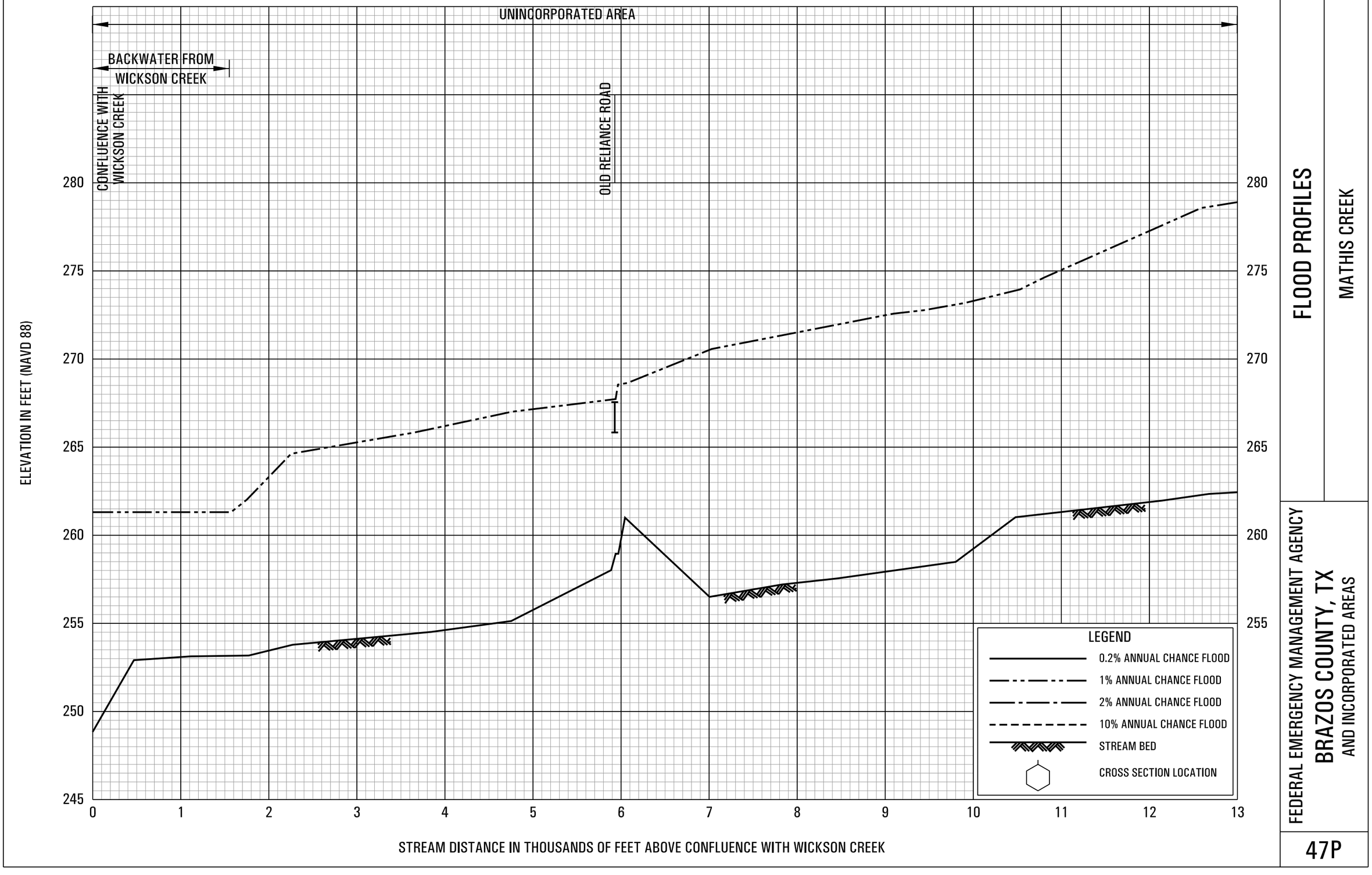
FLOOD PROFILES

LITTLE WICKSON CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS



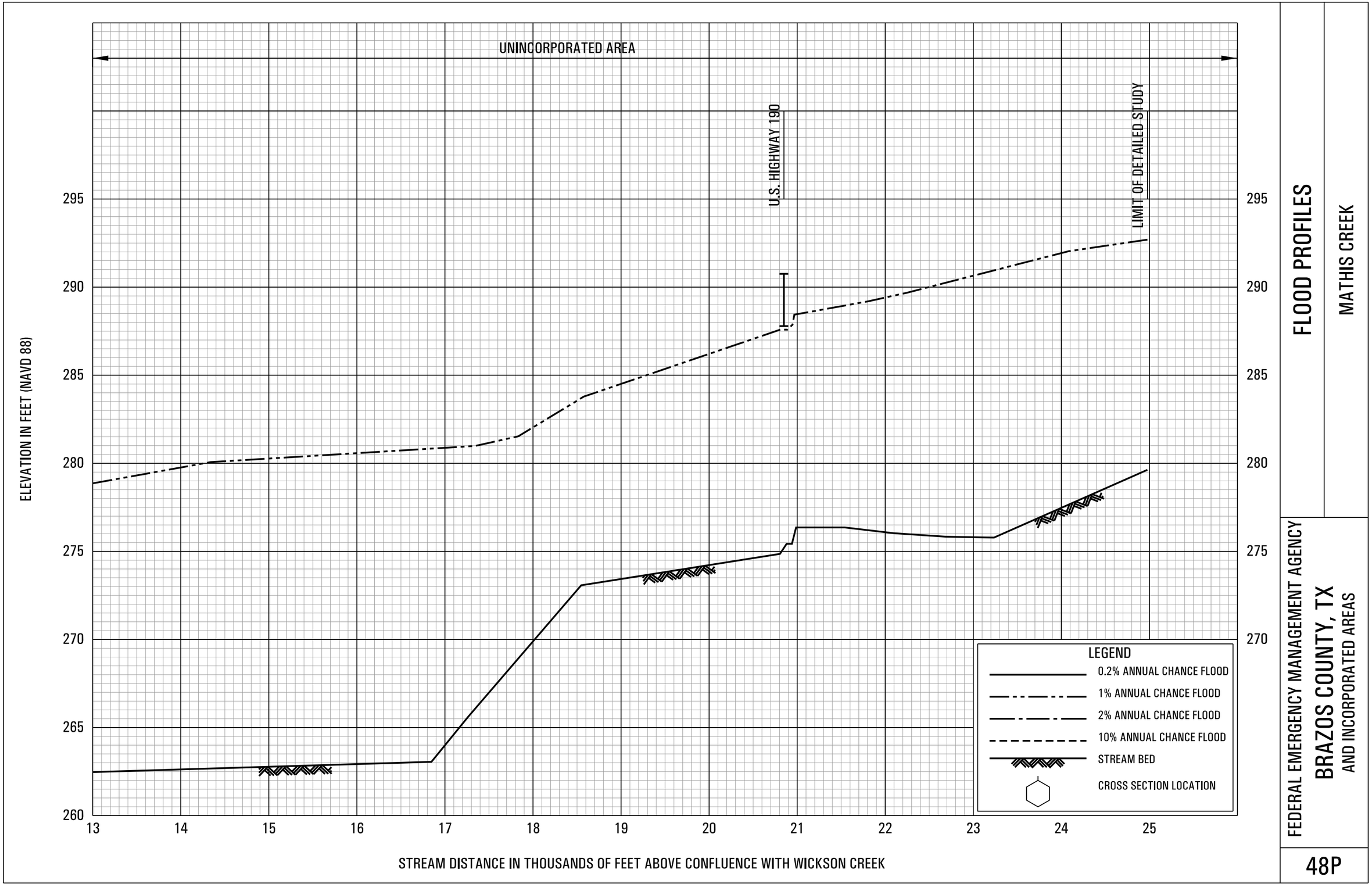
FLOOD PROFILES

MATHIS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS



FLOOD PROFILES

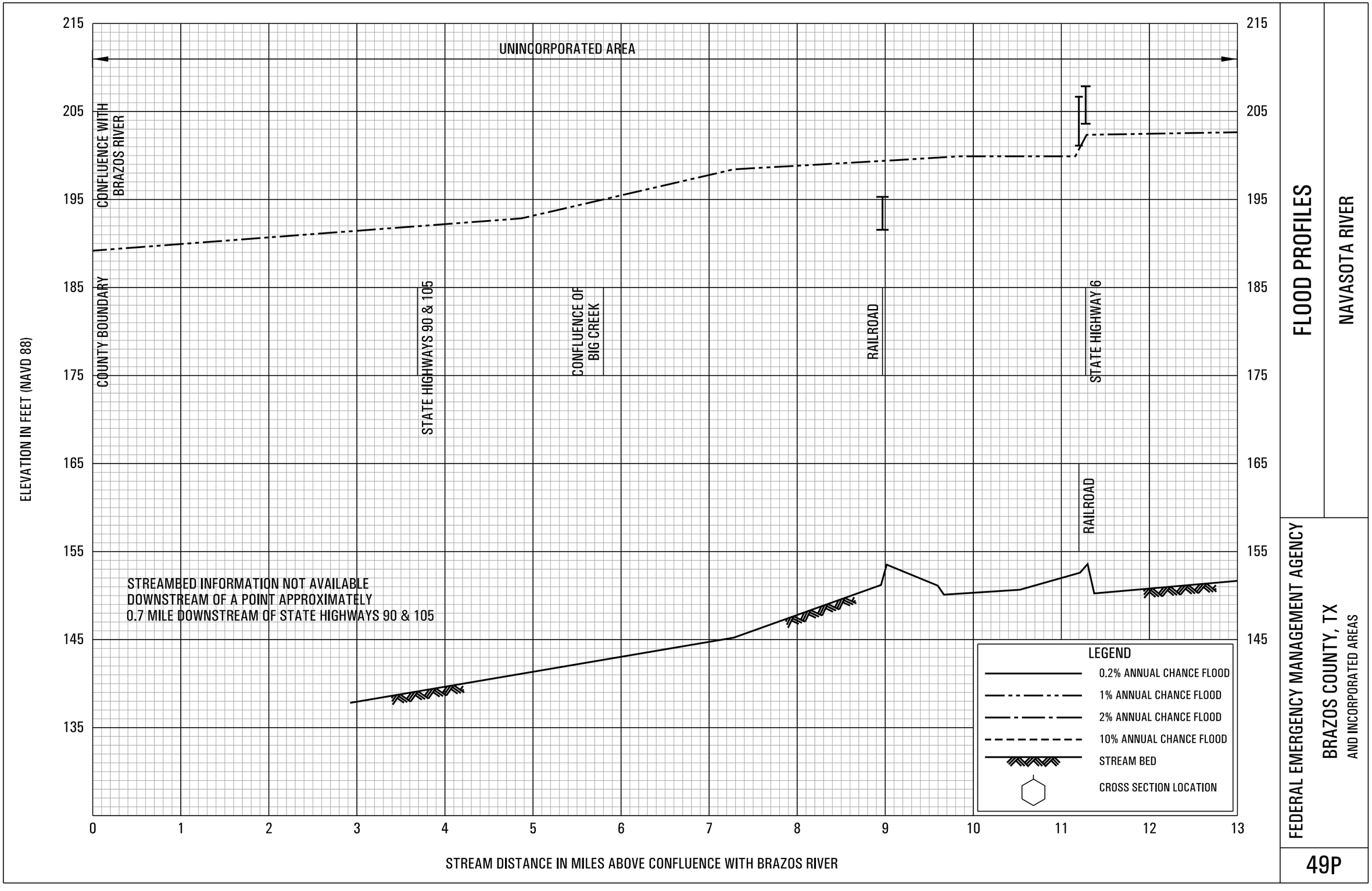
MATHIS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS

48P



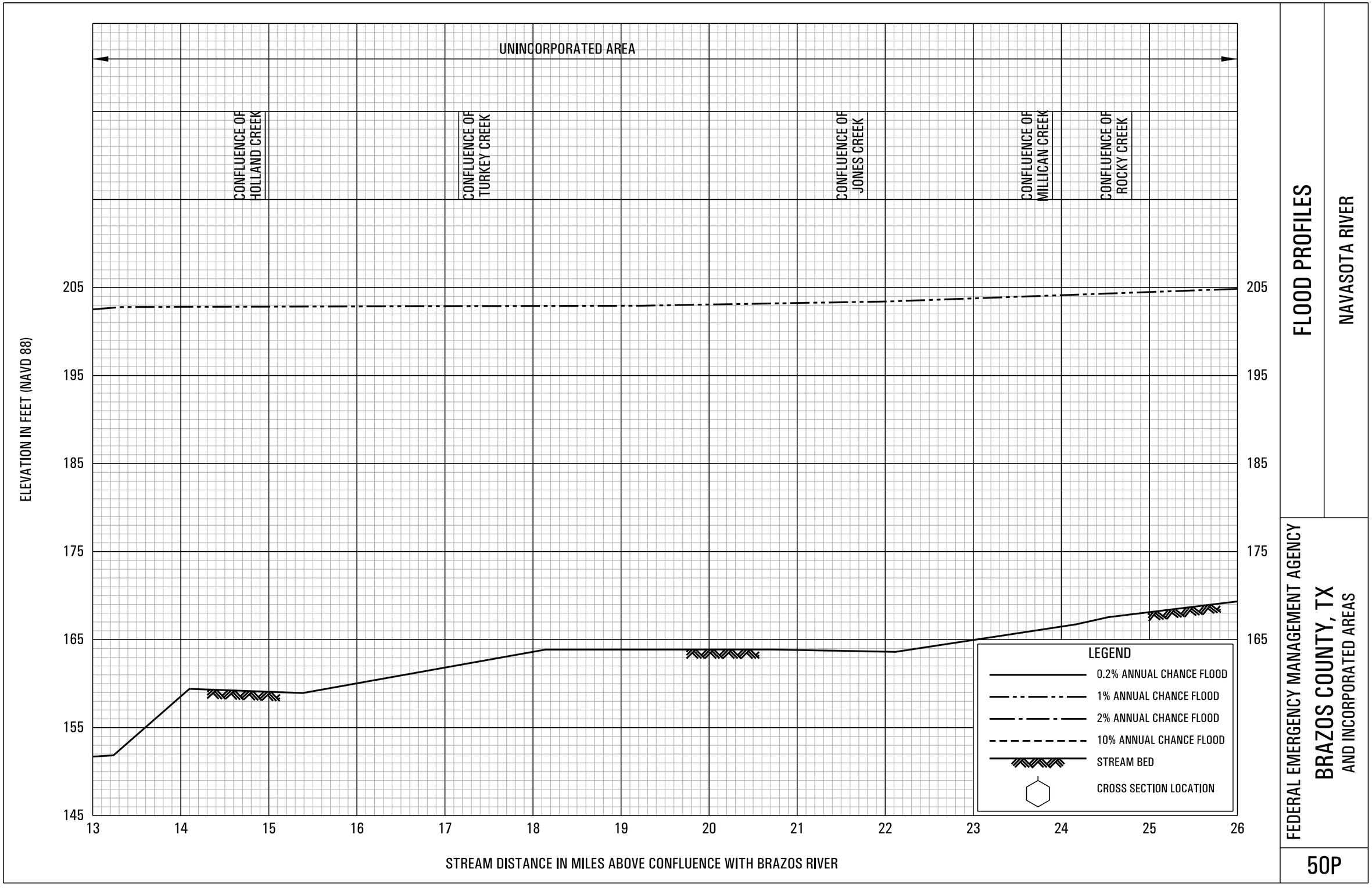
FLOOD PROFILES

NAVASOTA RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS

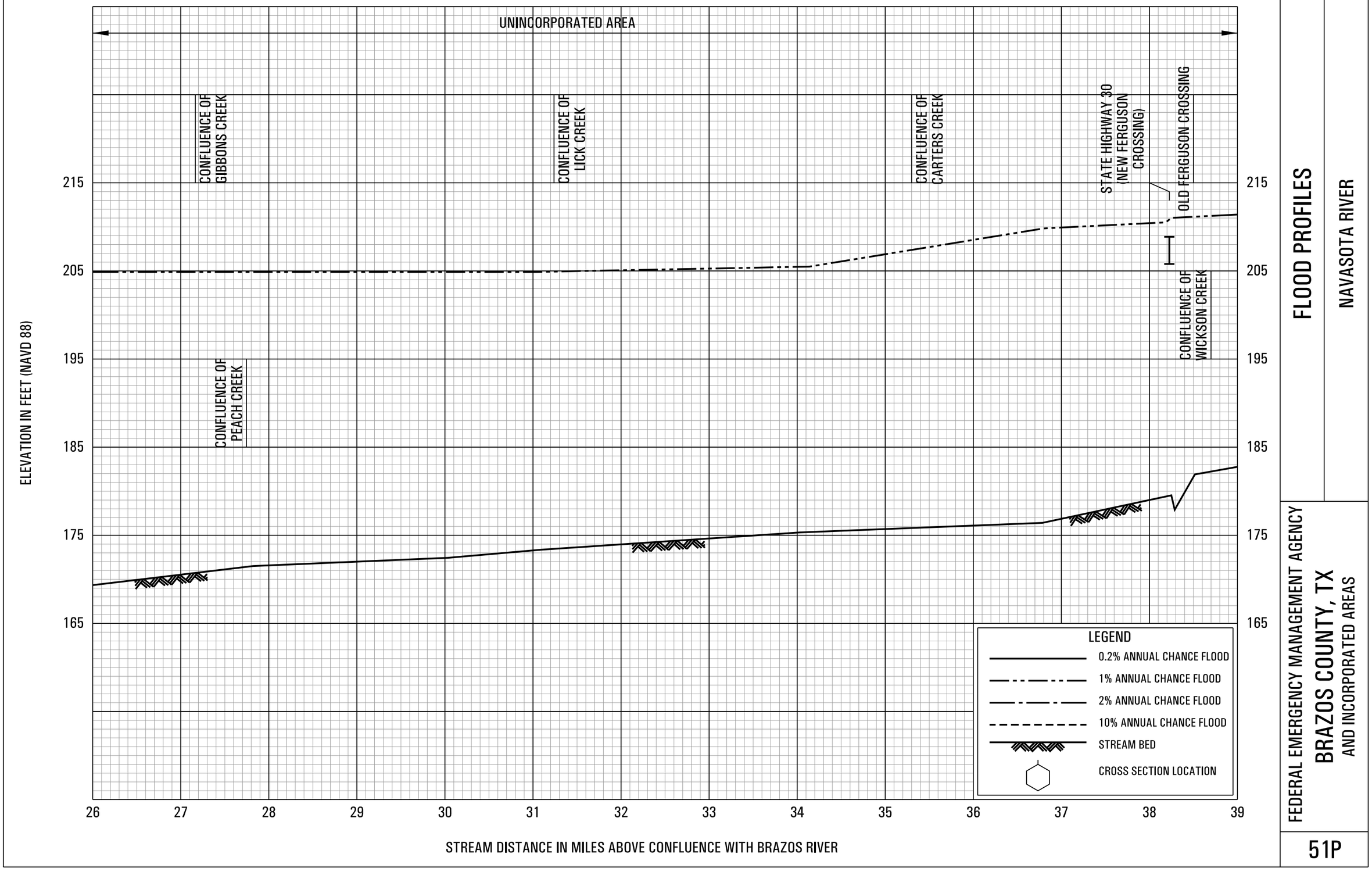


FLOOD PROFILES

NAVASOTA RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX
AND INCORPORATED AREAS



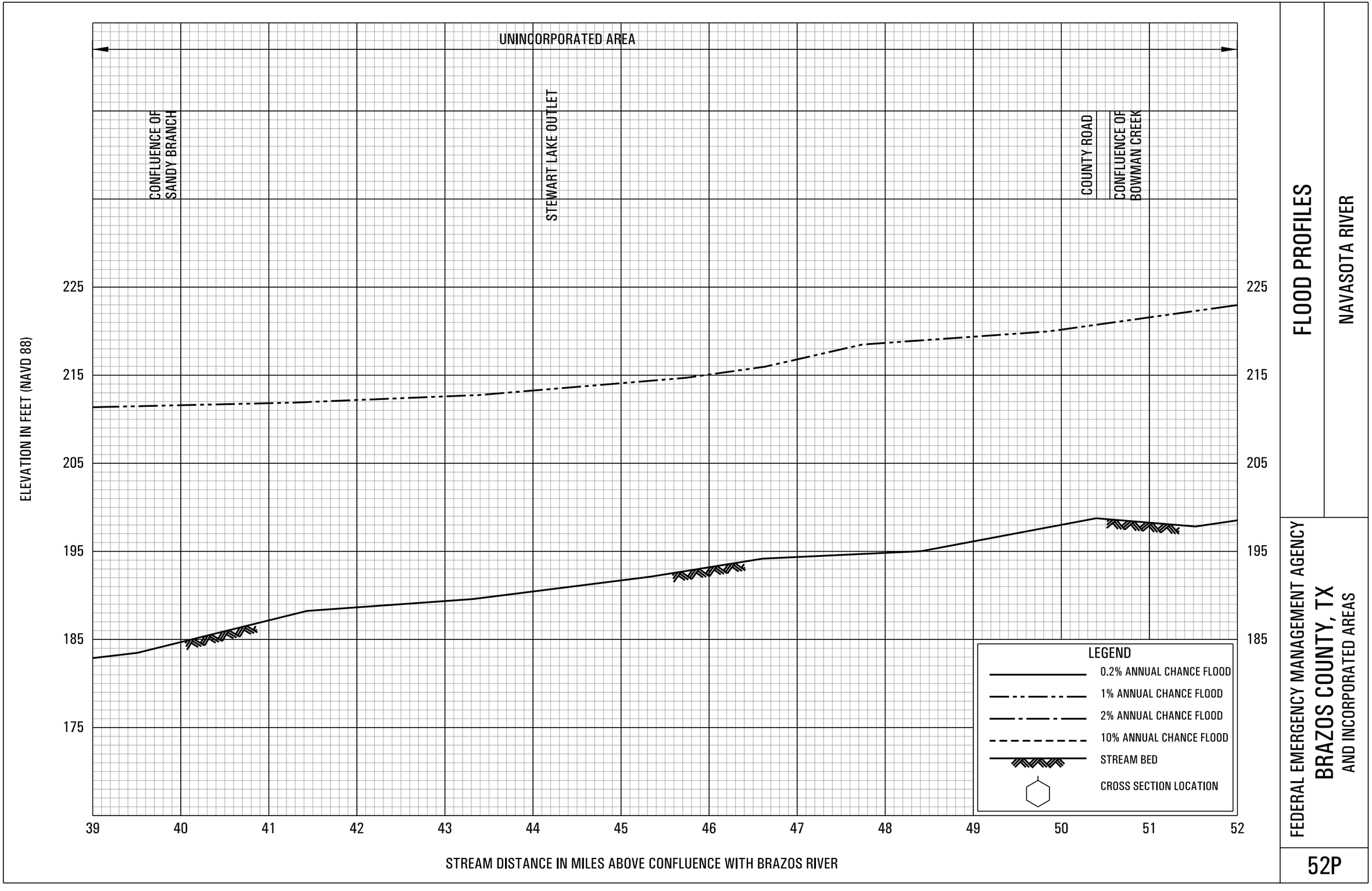
FLOOD PROFILES

NAVASOTA RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX
AND INCORPORATED AREAS

51P

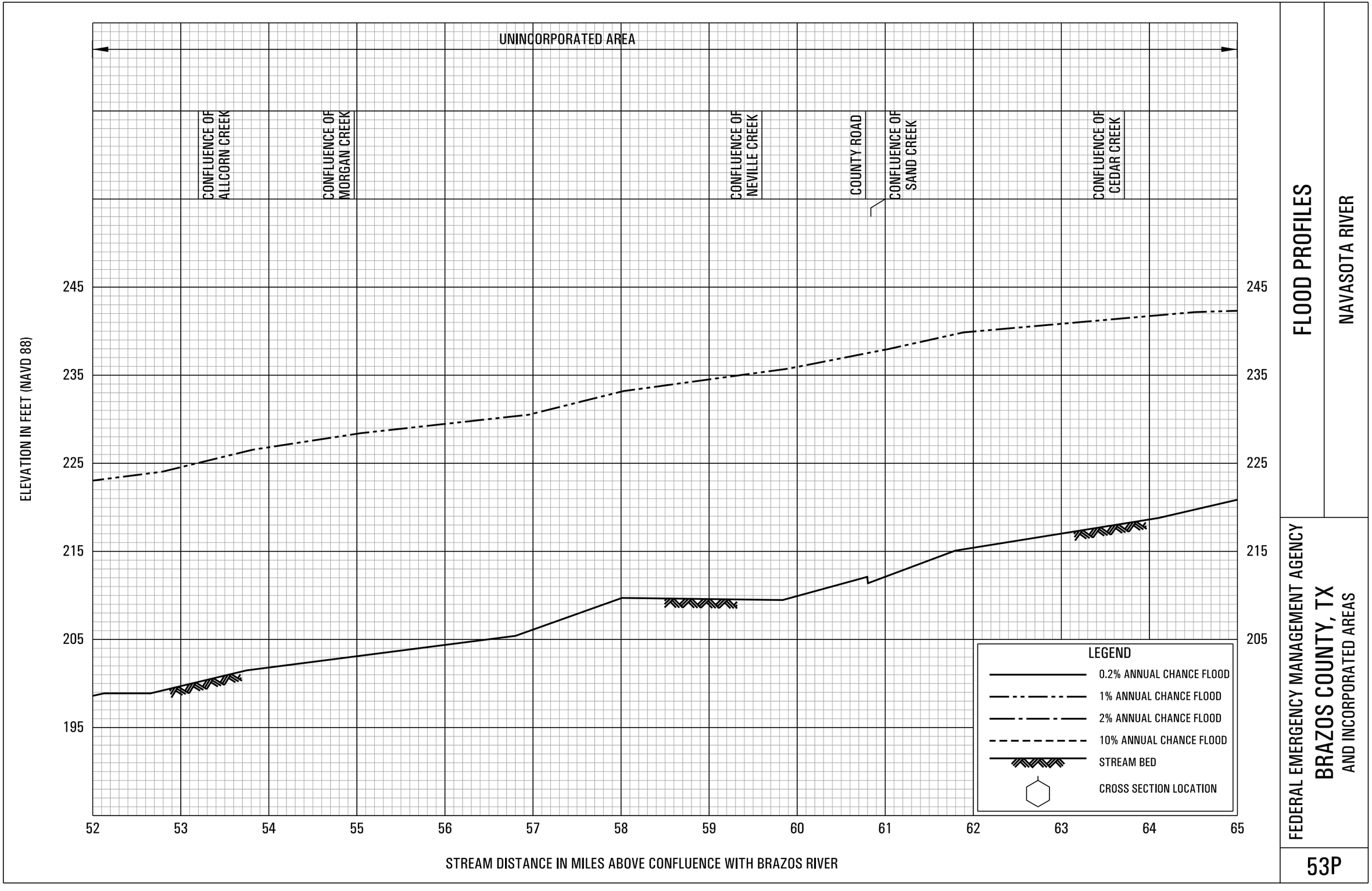


FLOOD PROFILES

NAVASOTA RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX
AND INCORPORATED AREAS

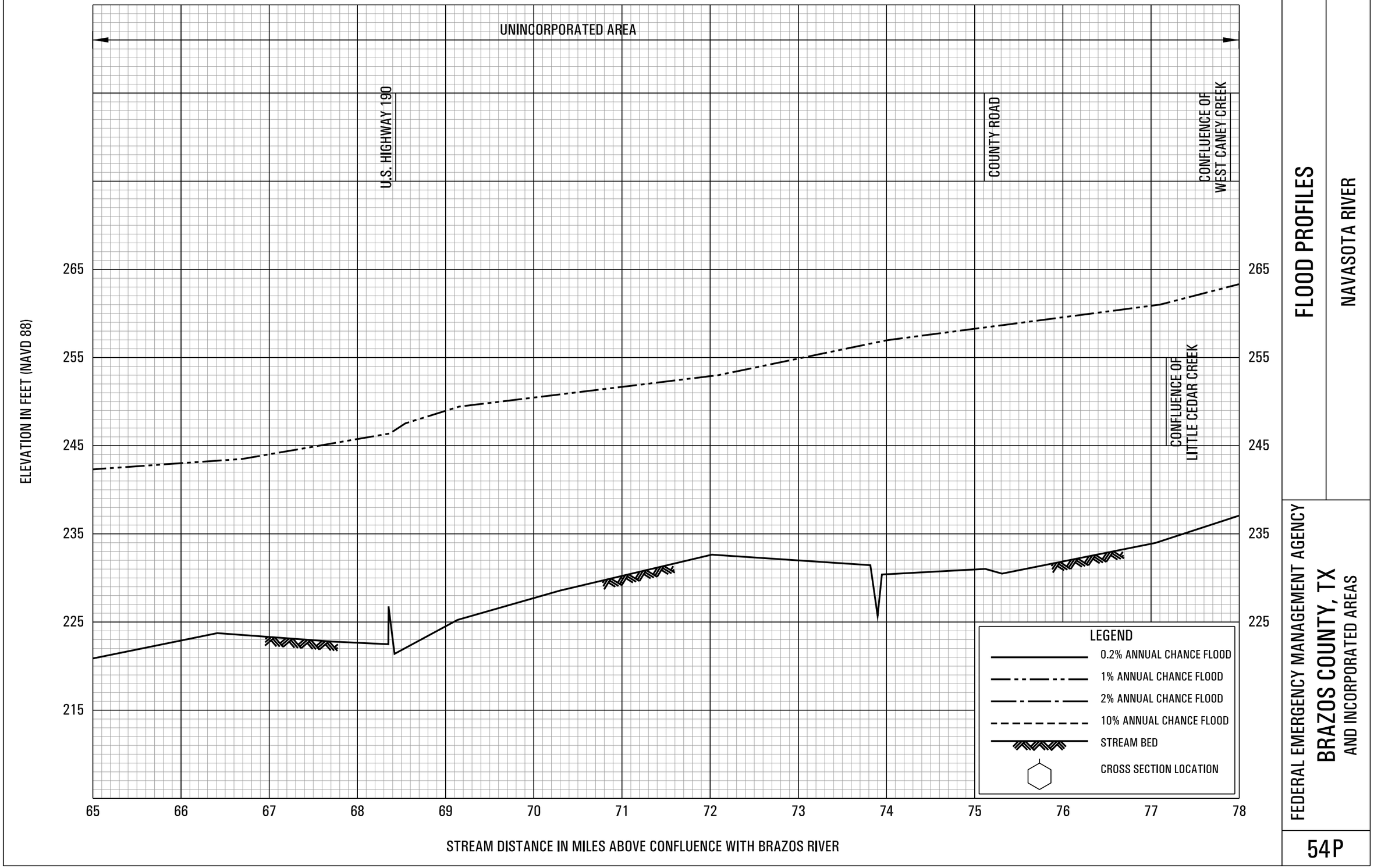


FLOOD PROFILES

NAVASOTA RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX
AND INCORPORATED AREAS



FLOOD PROFILES

NAVASOTA RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX
AND INCORPORATED AREAS

UNINCORPORATED AREA

STATE HIGHWAY OSR
COUNTY BOUNDARY

ELEVATION IN FEET (NAVD 88)

275
265
255
245
235

78
79
80
81
82

STREAM DISTANCE IN MILES ABOVE CONFLUENCE WITH BRAZOS RIVER

LEGEND

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

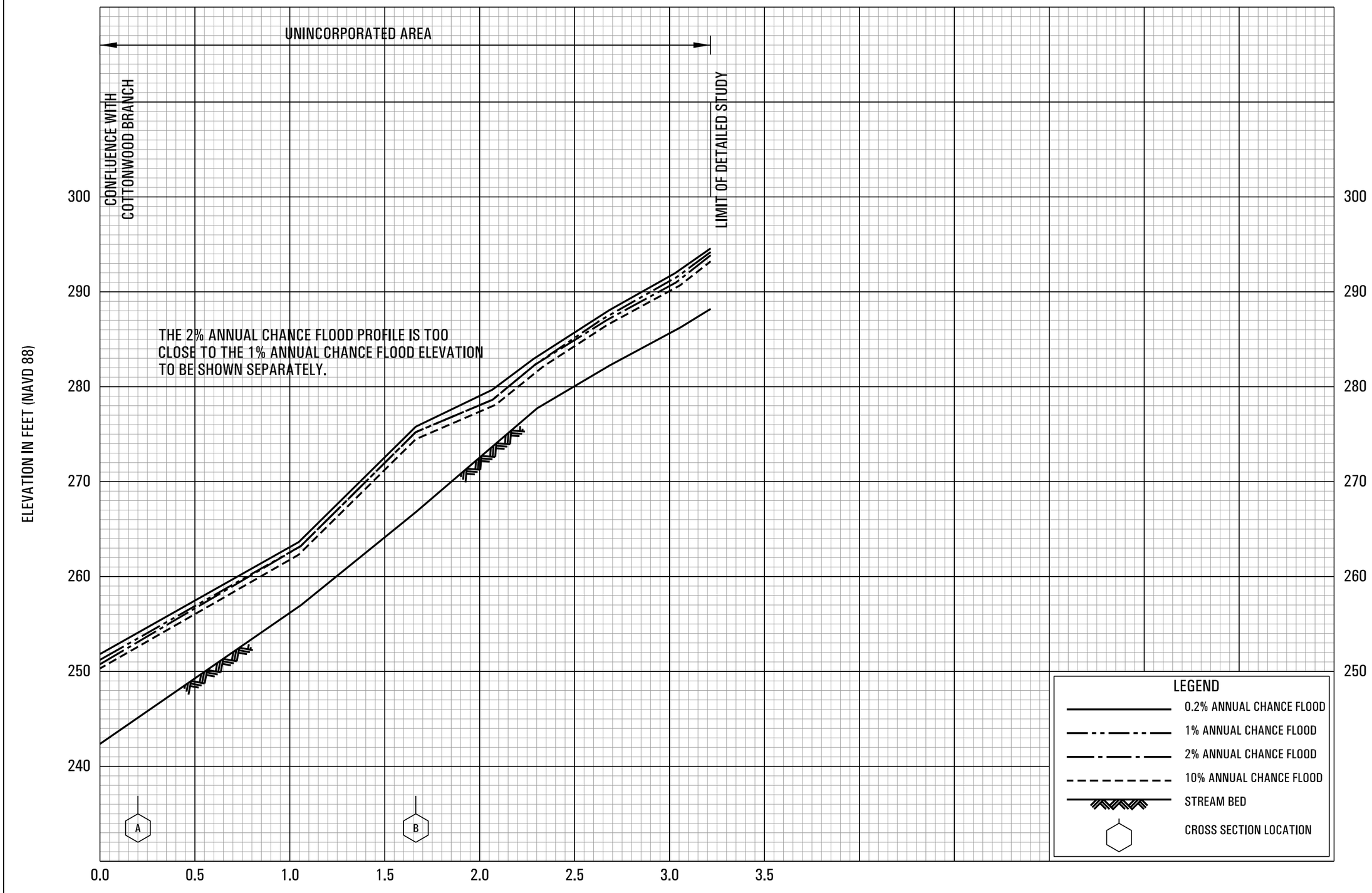
FLOOD PROFILES

NAVASOTA RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX
AND INCORPORATED AREAS

55P



FLOOD PROFILES

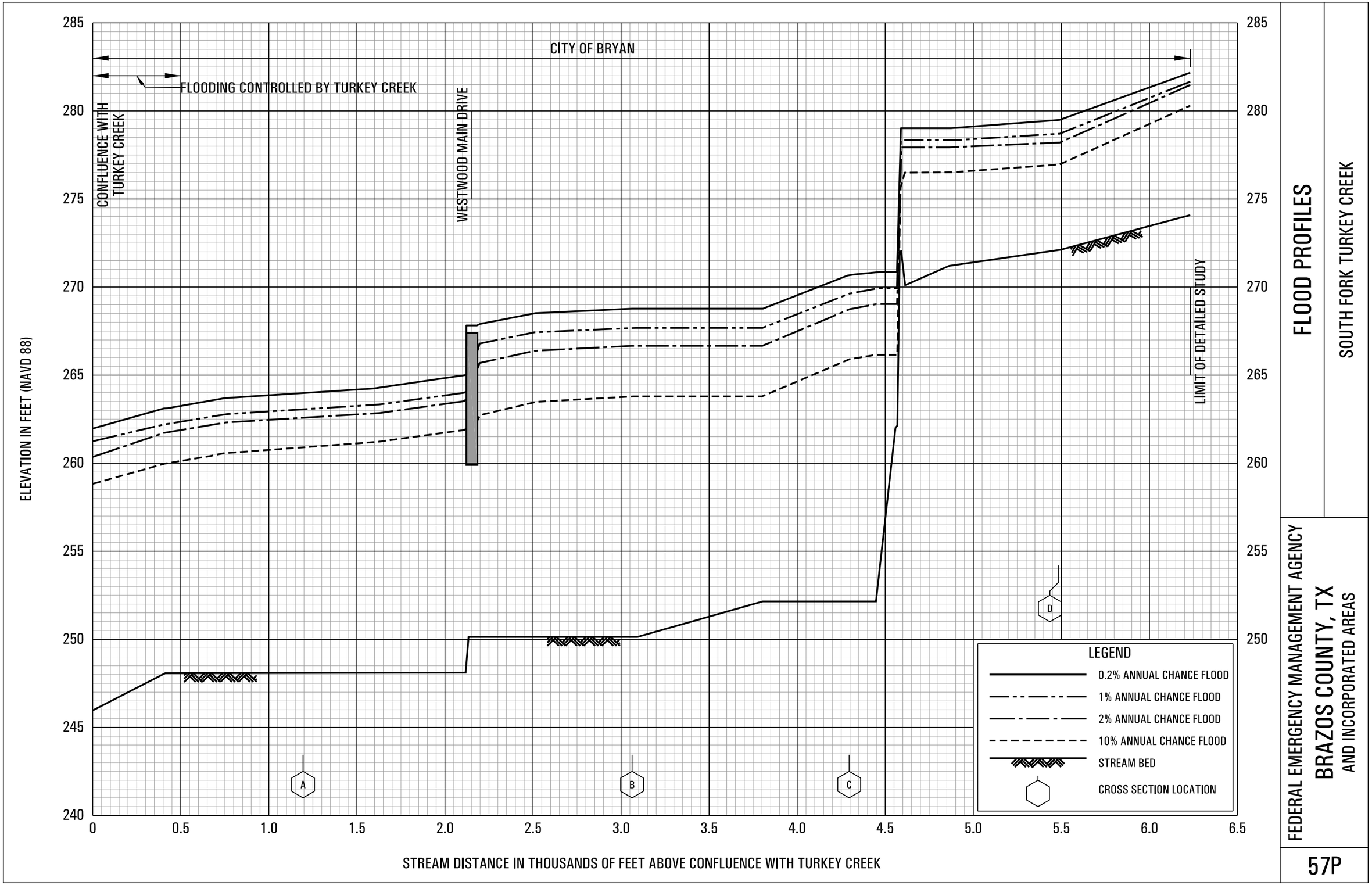
SOUTH FORK OF COTTONWOOD BRANCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS

56P



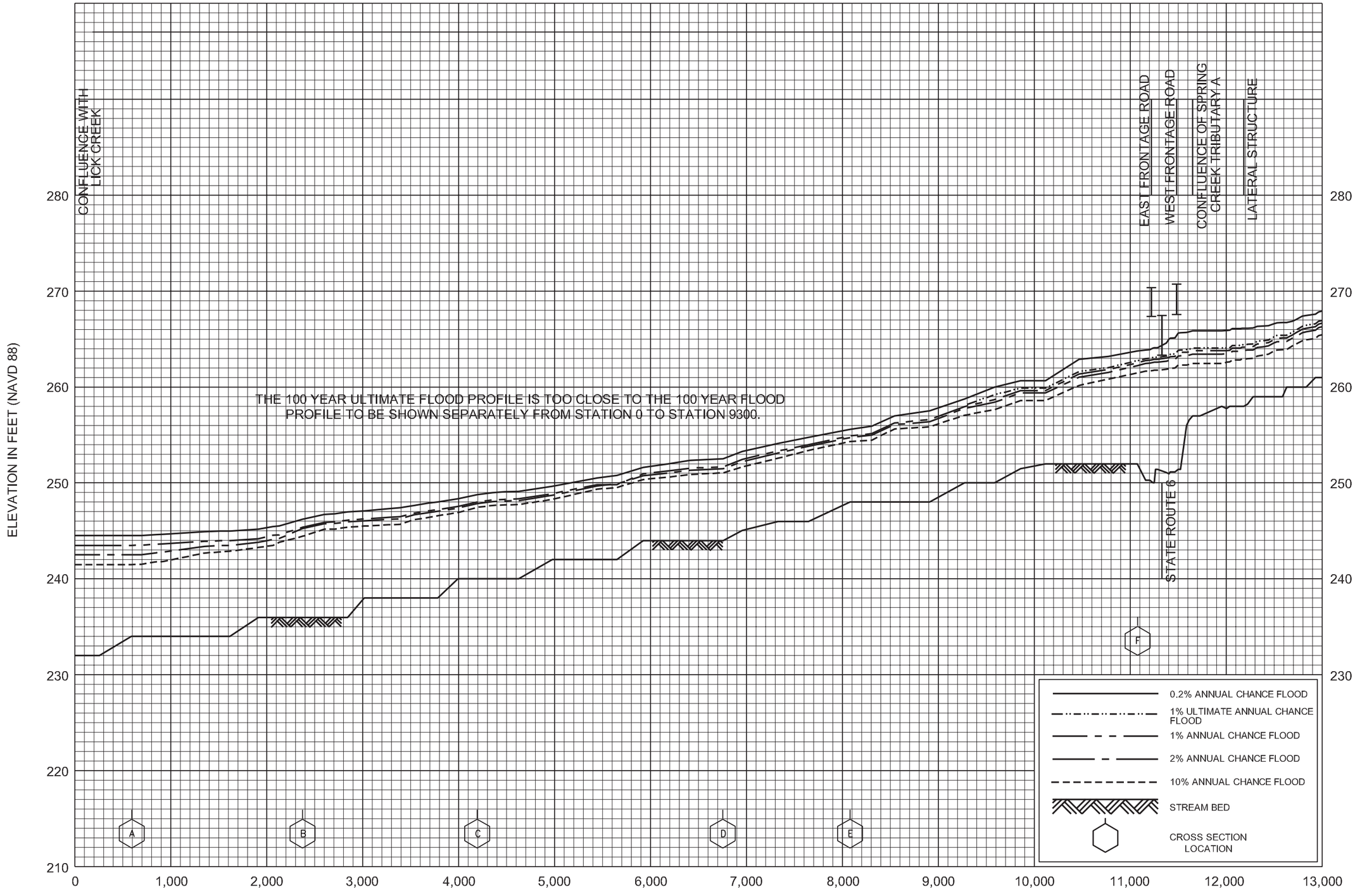
FLOOD PROFILES

SOUTH FORK TURKEY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX
AND INCORPORATED AREAS

57P



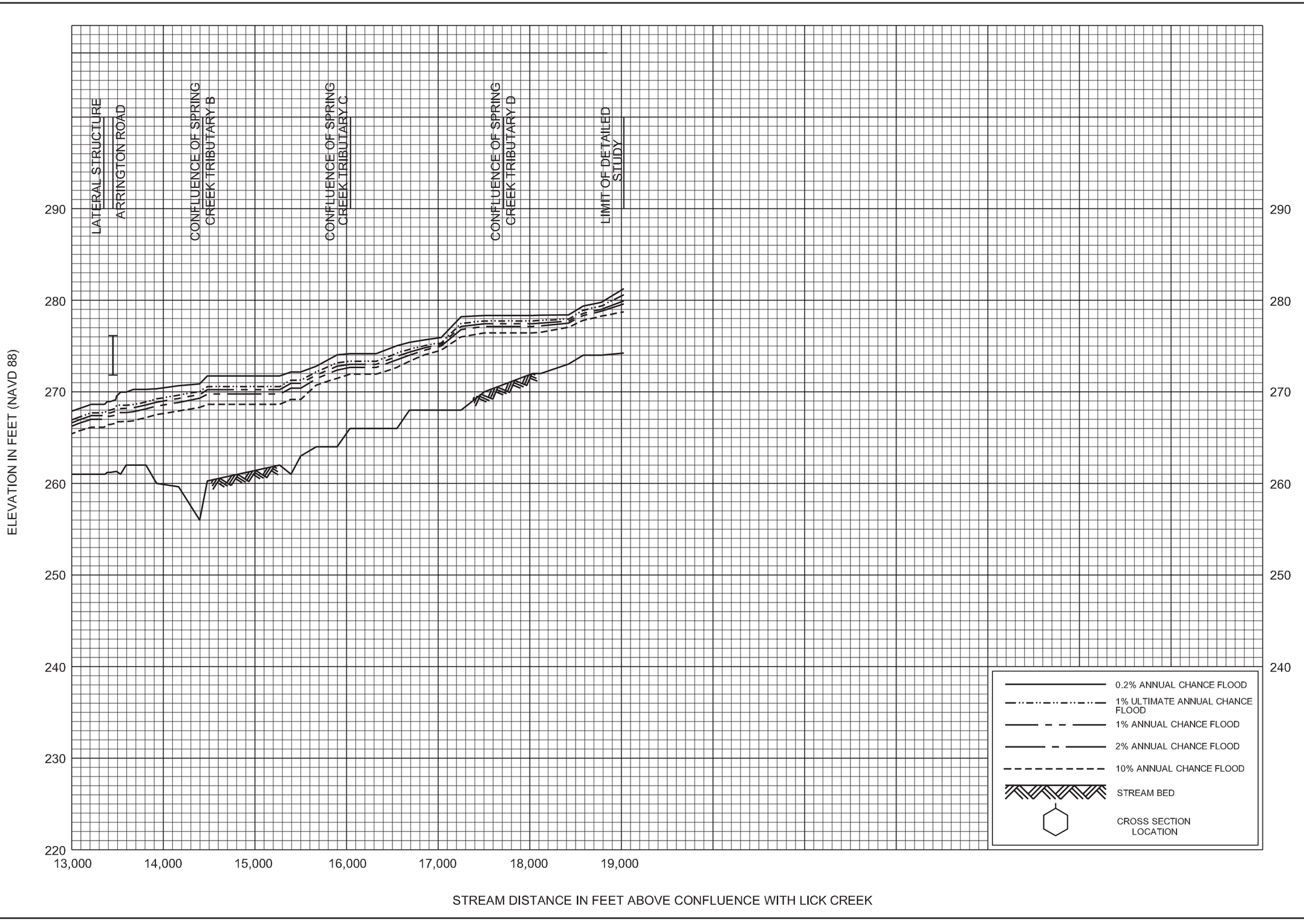
FLOOD PROFILES

SPRING CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX
AND INCORPORATED AREAS

58P



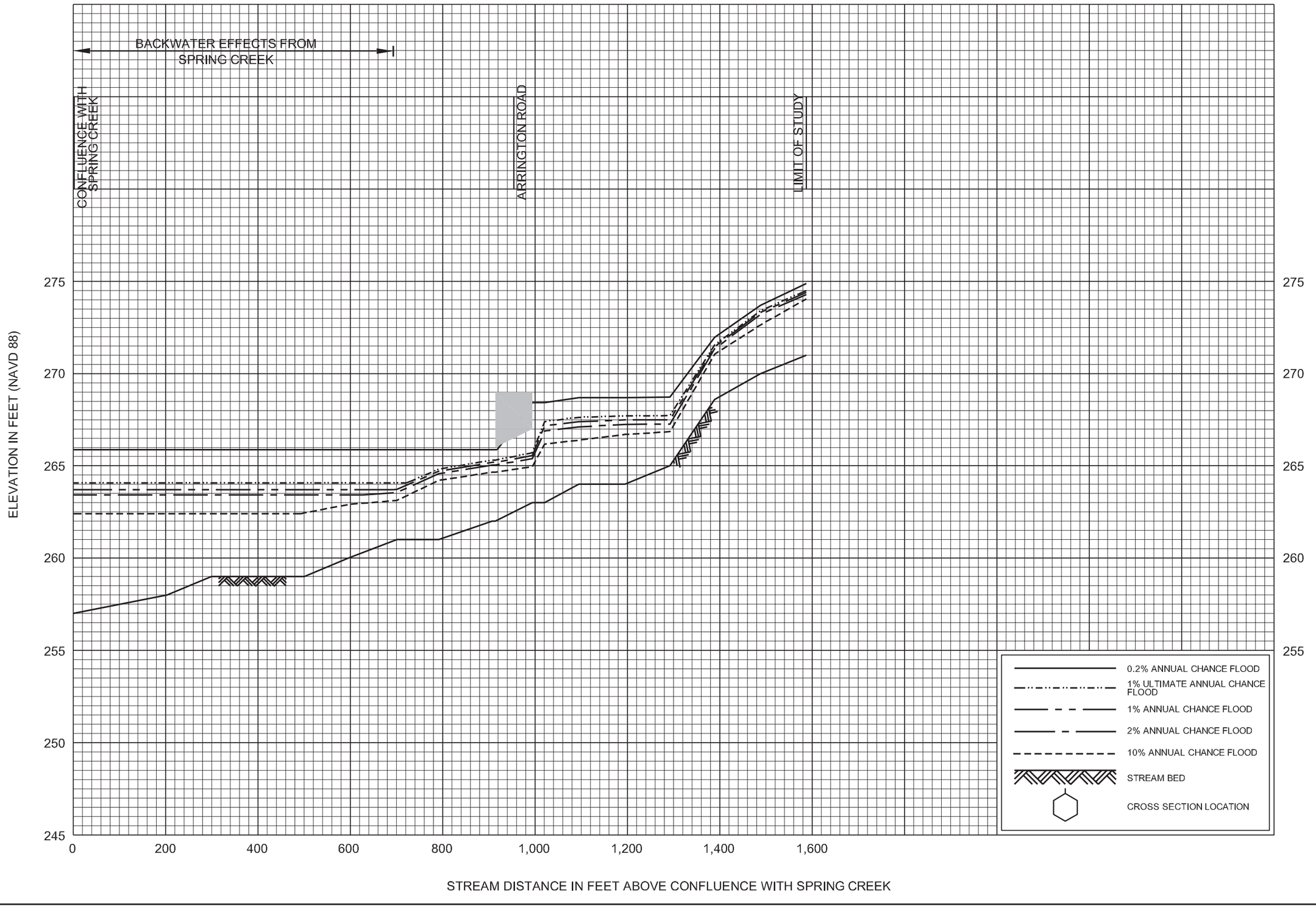
FLOOD PROFILES

SPRING CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX
AND INCORPORATED AREAS

59P



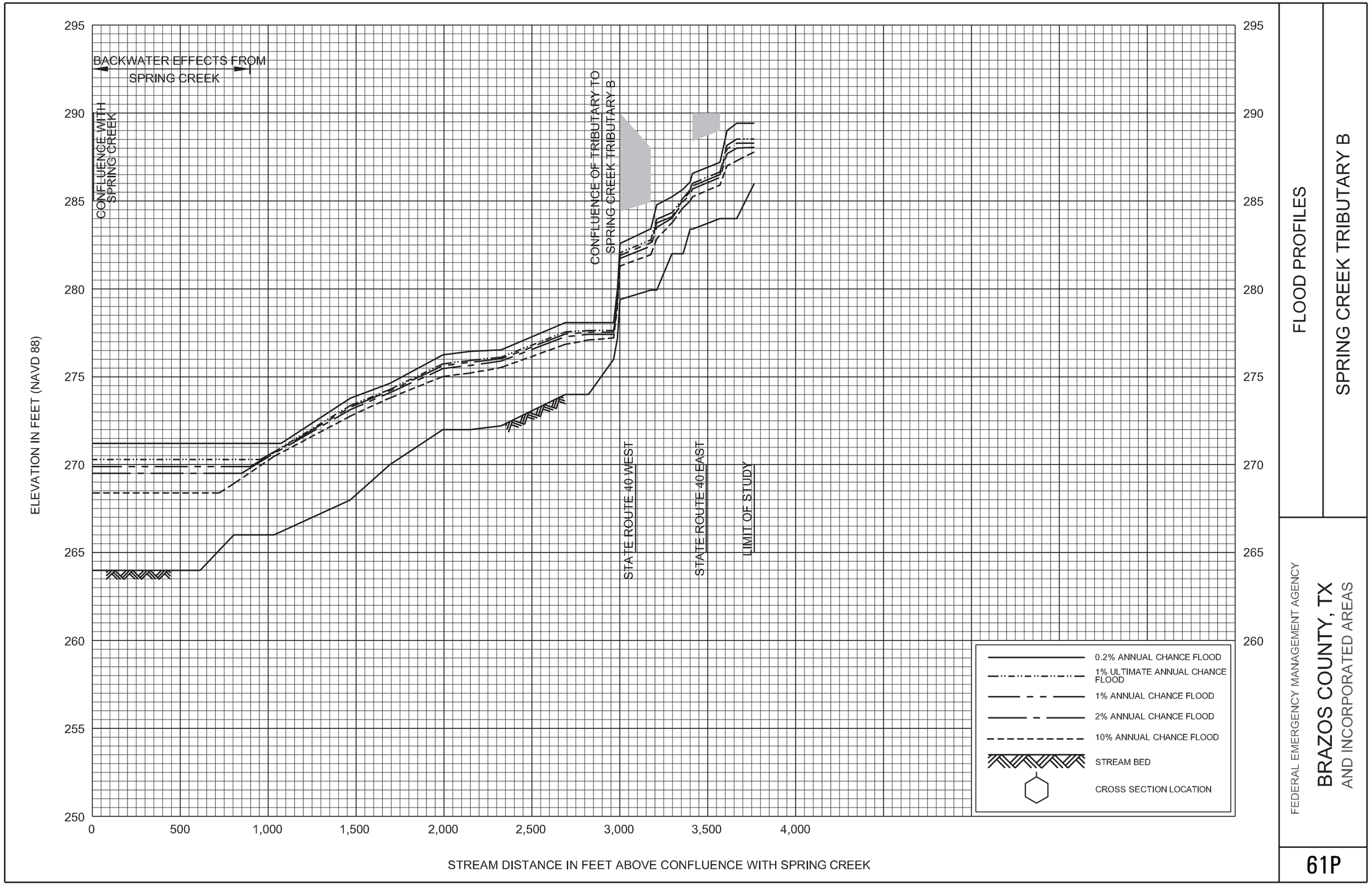
FLOOD PROFILES

SPRING CREEK TRIBUTARY A

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX
AND INCORPORATED AREAS

60P



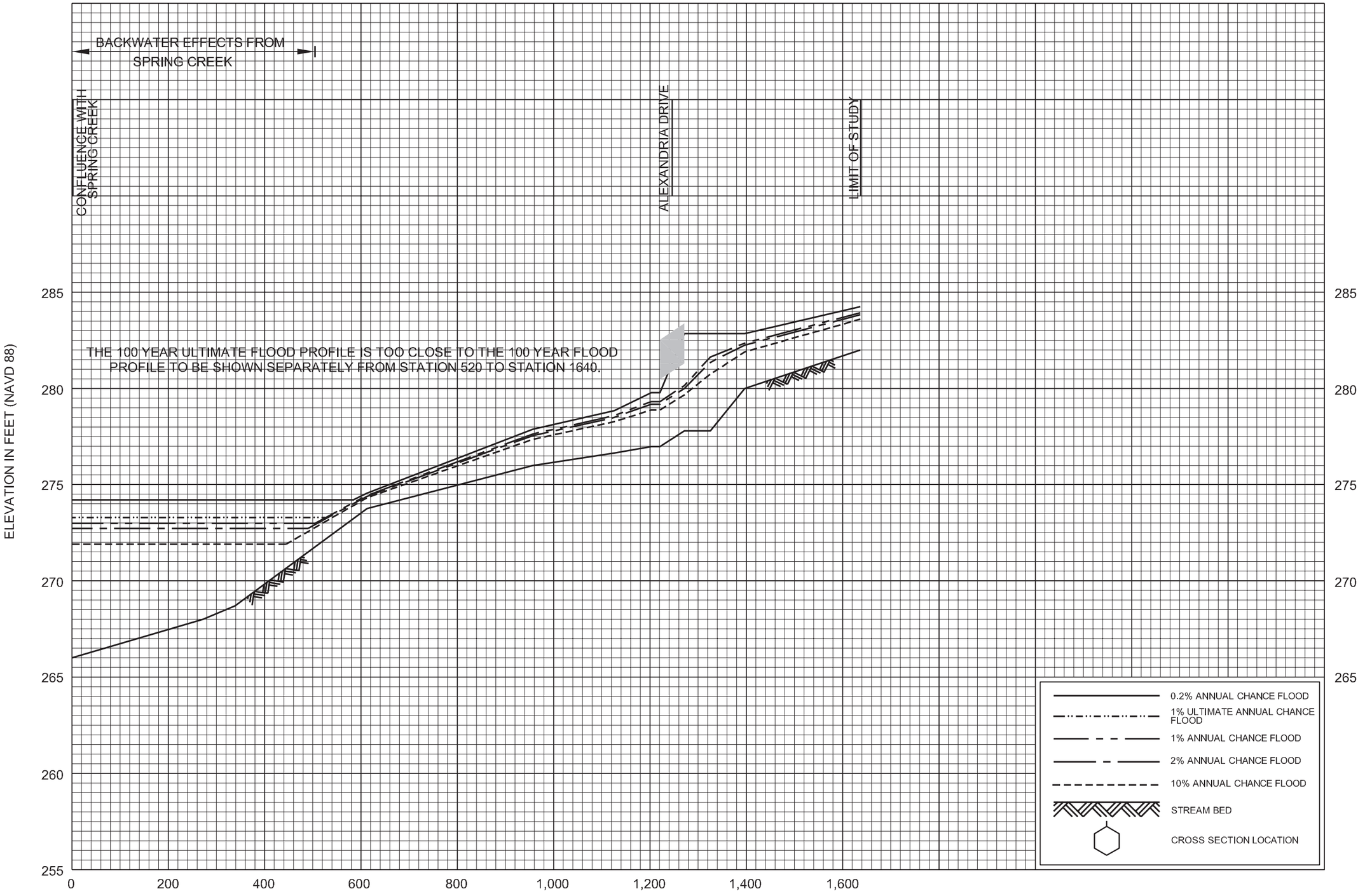
FLOOD PROFILES

SPRING CREEK TRIBUTARY B

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX
AND INCORPORATED AREAS

61P

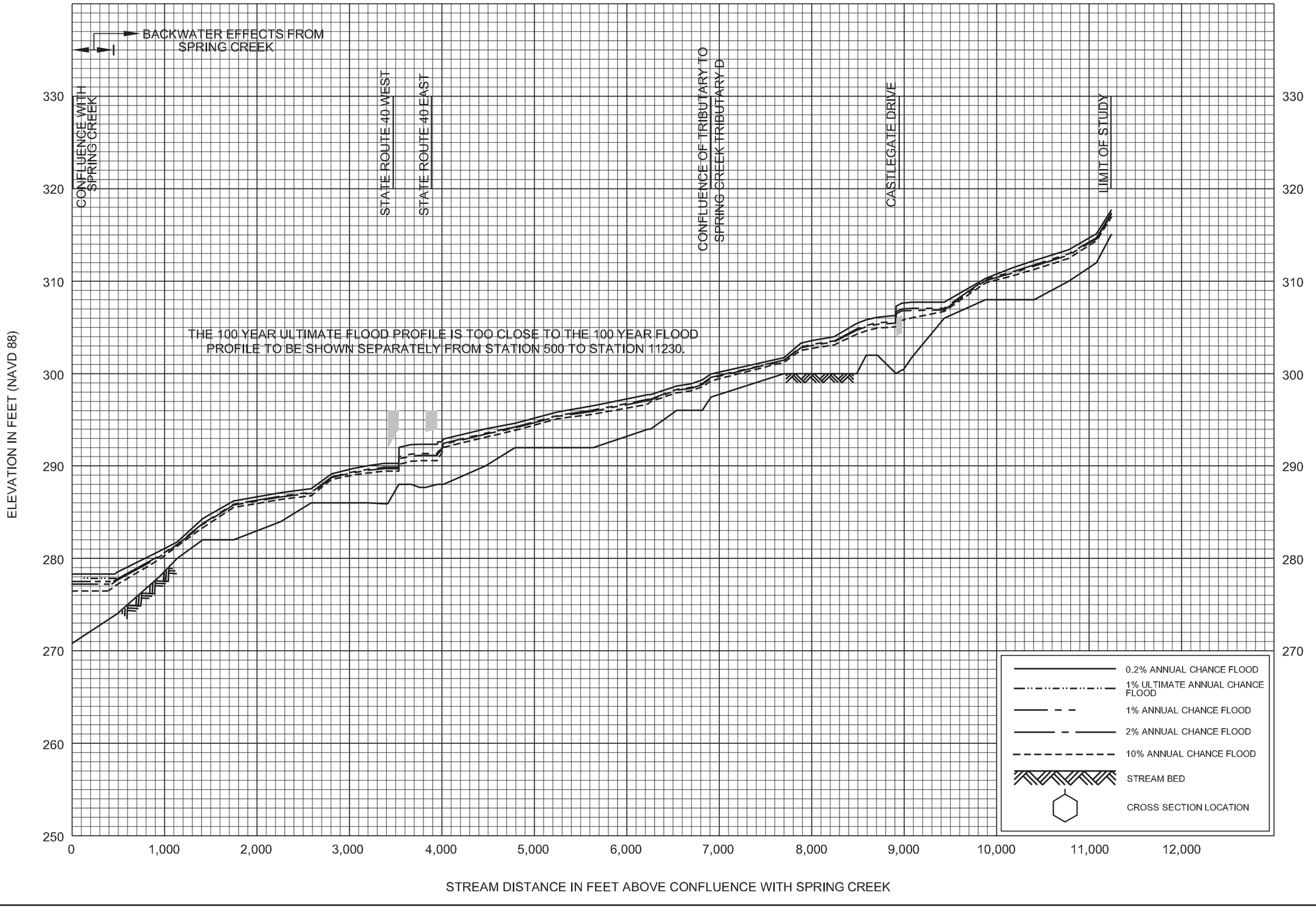


FLOOD PROFILES

SPRING CREEK TRIBUTARY C

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX
AND INCORPORATED AREAS



FLOOD PROFILES

SPRING CREEK TRIBUTARY D

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS

63P

UNINCORPORATED AREA

FLOODING CONTROLLED BY THOMPSONS CREEK

CONFLUENCE WITH THOMPSON CREEK

CONFLUENCE OF COTTONWOOD BRANCH

STATE HIGHWAY 21

RAILROAD

PLEASANT HILL ROAD

PRIVATE DRIVE

ELEVATION IN FEET (NAVD 88)

280
270
260
250
240
230
220

0.0 0.5 1.0 1.5 2.0 2.5 3.0 3.5

STREAM DISTANCE IN MILES ABOVE CONFLUENCE WITH THOMPSONS CREEK

A

B

LEGEND

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

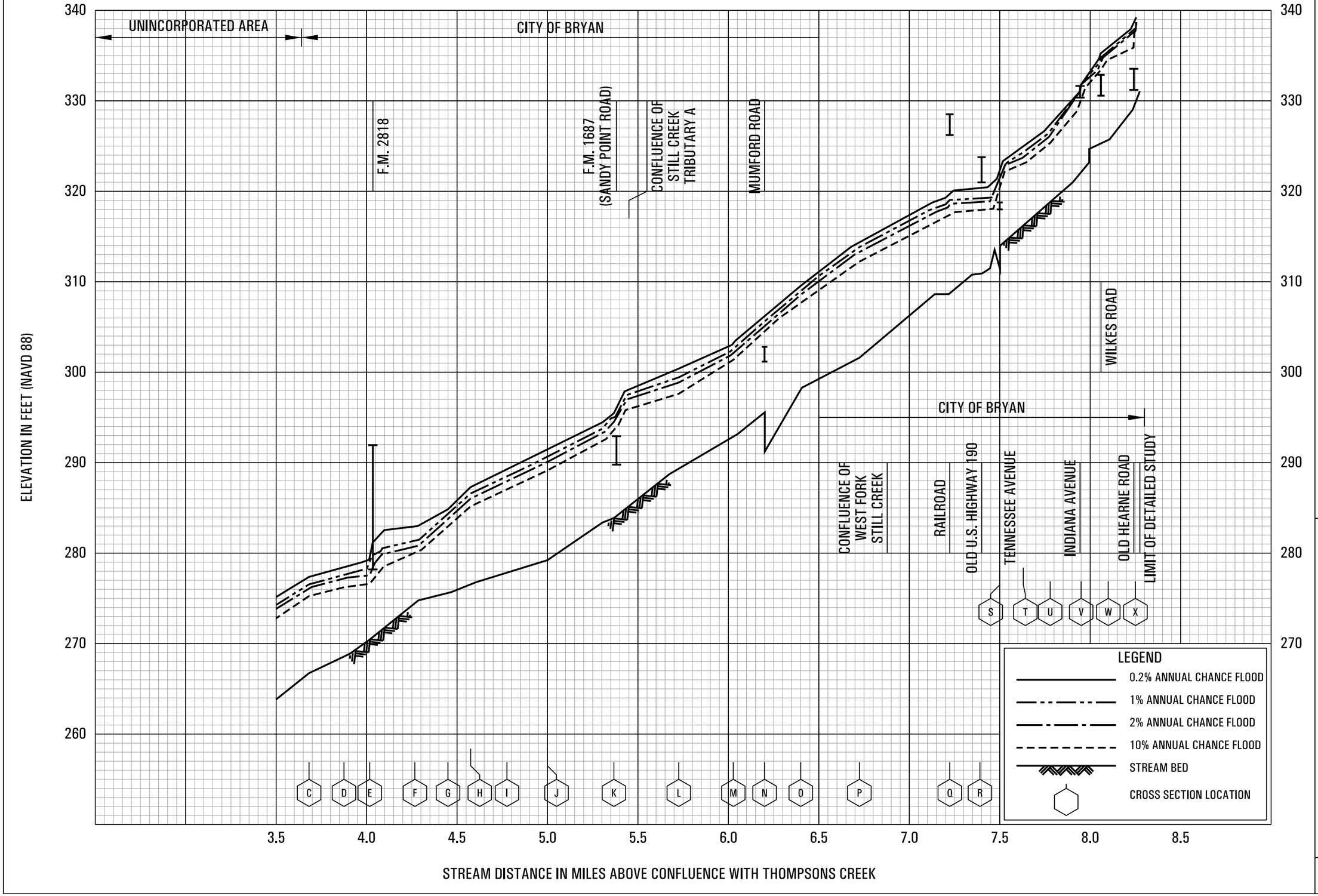
FLOOD PROFILES

STILL CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS



FLOOD PROFILES

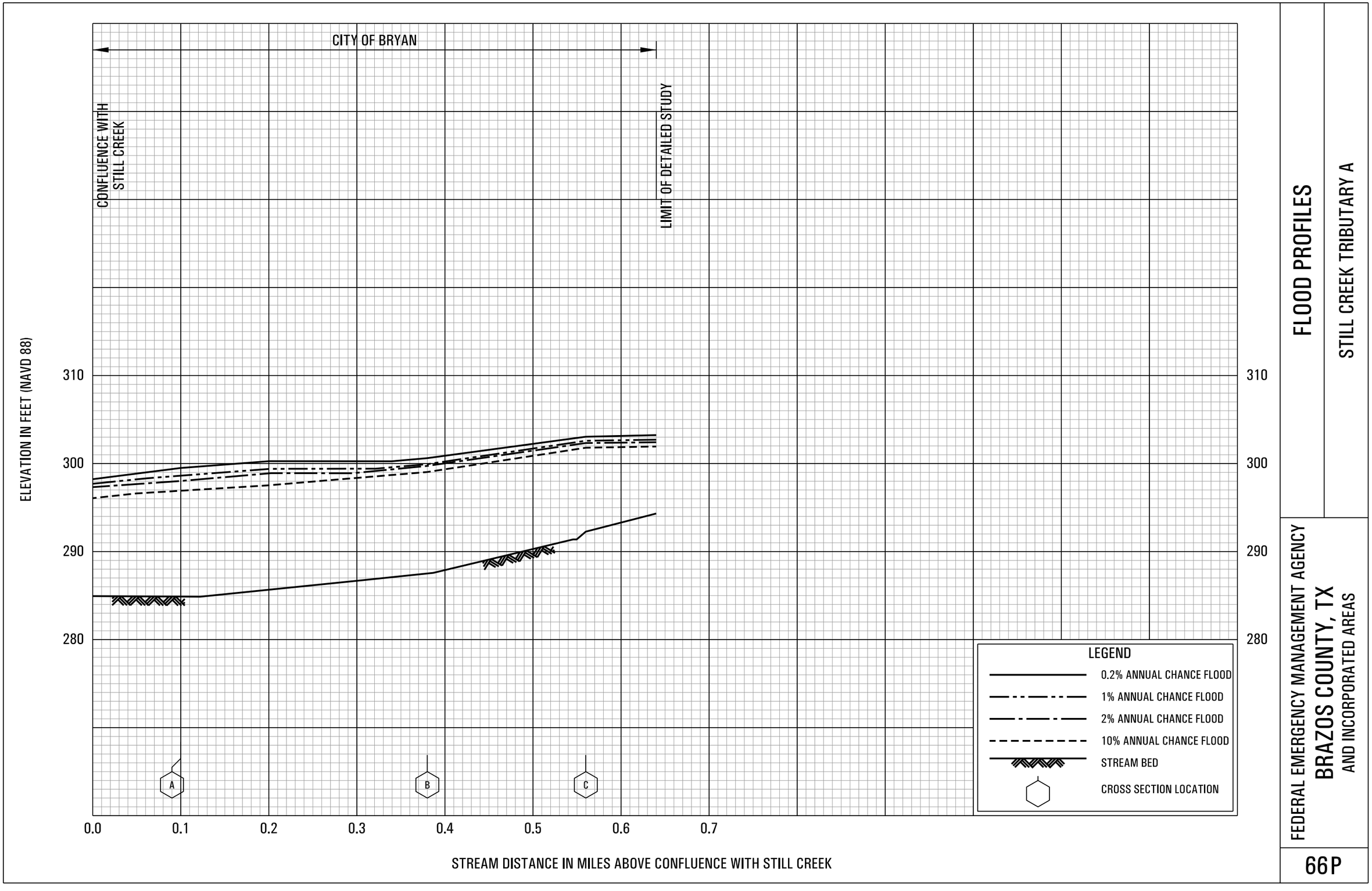
STILL CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS

65P



FLOOD PROFILES

STILL CREEK TRIBUTARY A

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS

66P

CITY OF COLLEGE STATION

BACKWATER FROM ALUM CREEK

CONFLUENCE WITH ALUM CREEK

ELEVATION IN FEET (NAVD 88)

255
250
245
240
235
230
225
220
215

0.0 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 5.5 6.0 6.5

STREAM DISTANCE IN THOUSANDS OF FEET ABOVE CONFLUENCE WITH ALUM CREEK

A B C D

LEGEND

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

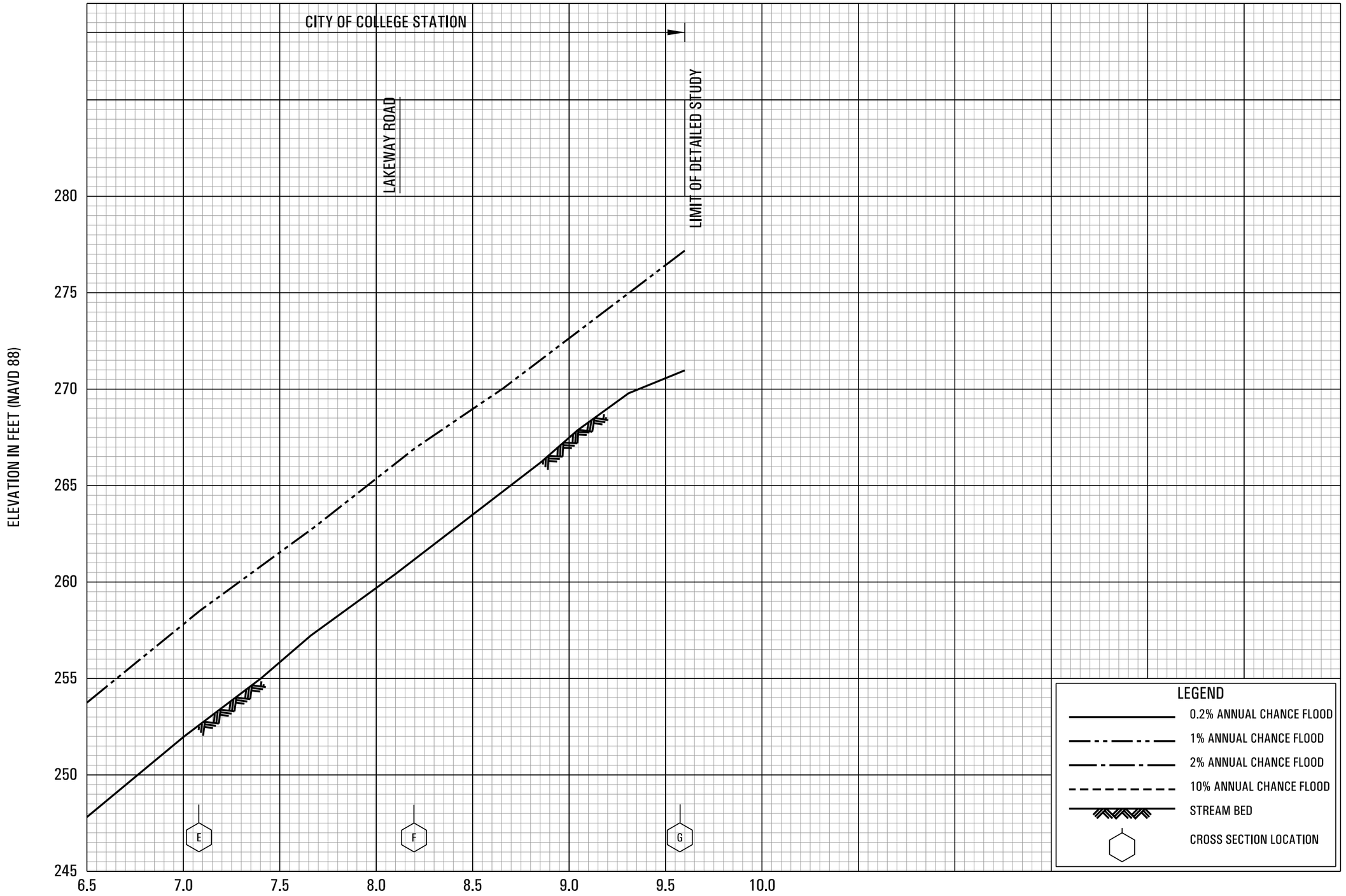
FLOOD PROFILES

STREAM AC-1

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS



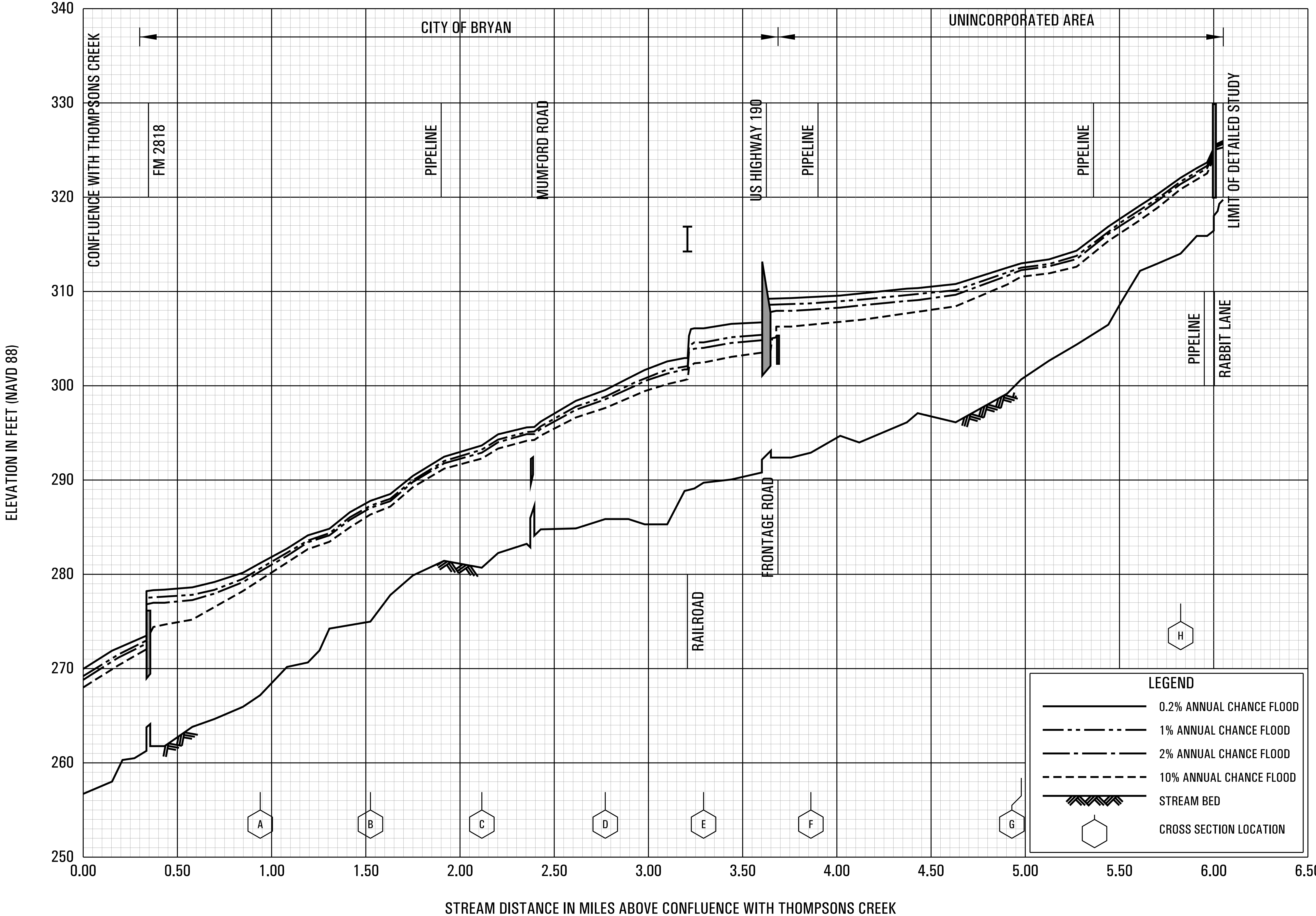
FLOOD PROFILES

STREAM AC-1

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS

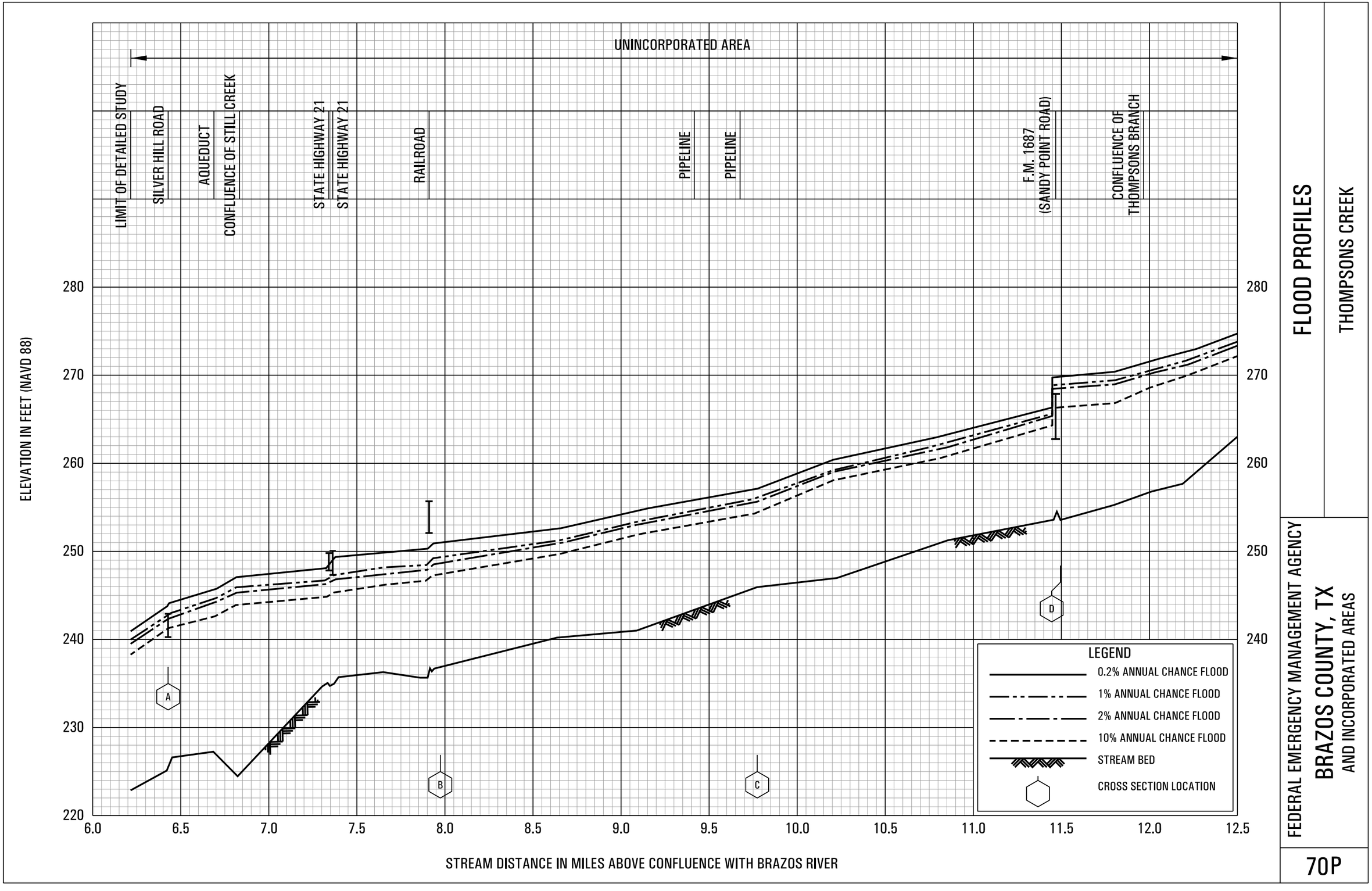


FLOOD PROFILES

THOMPSONS BRANCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX
AND INCORPORATED AREAS



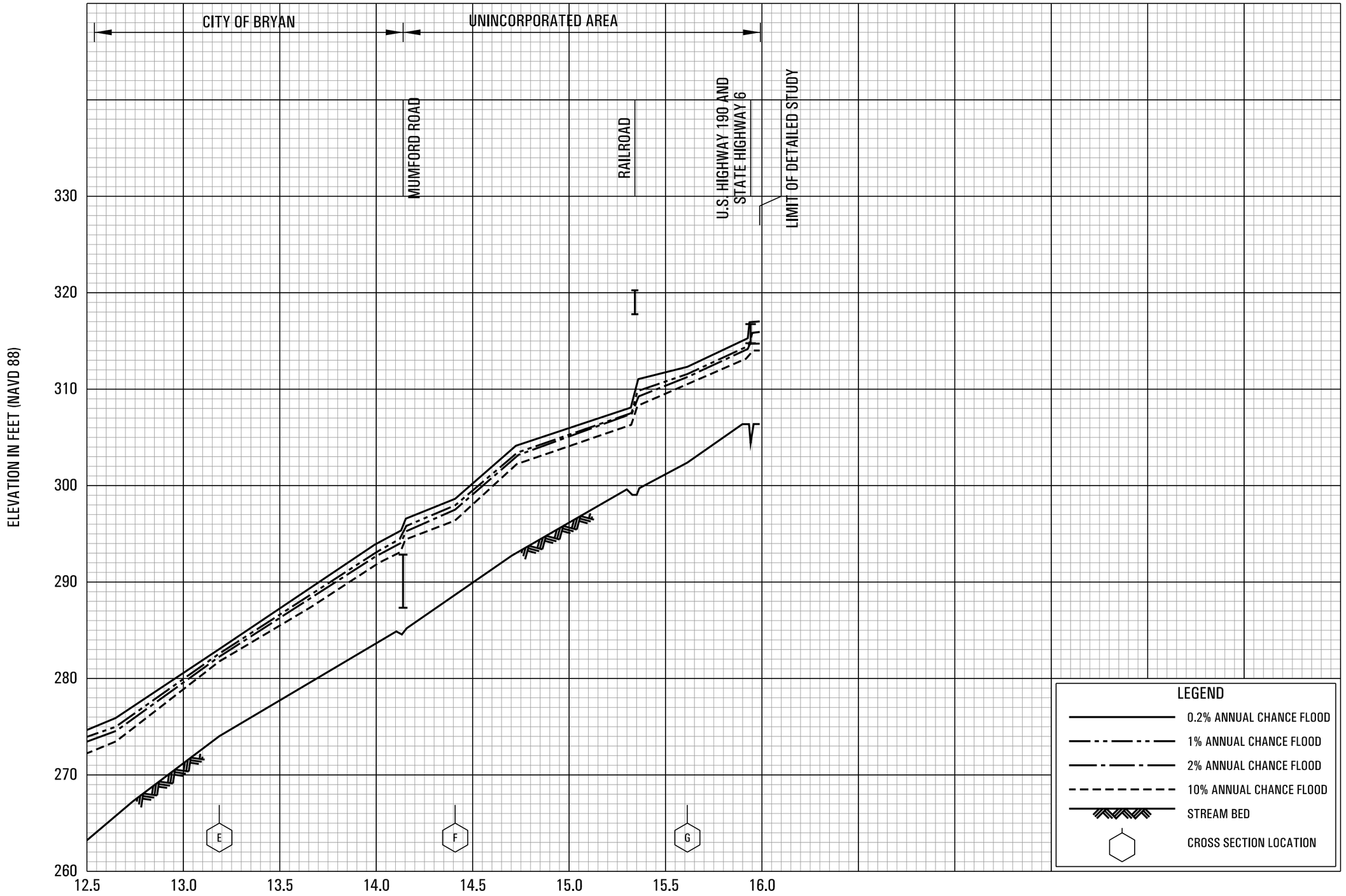
FLOOD PROFILES

THOMPSONS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS



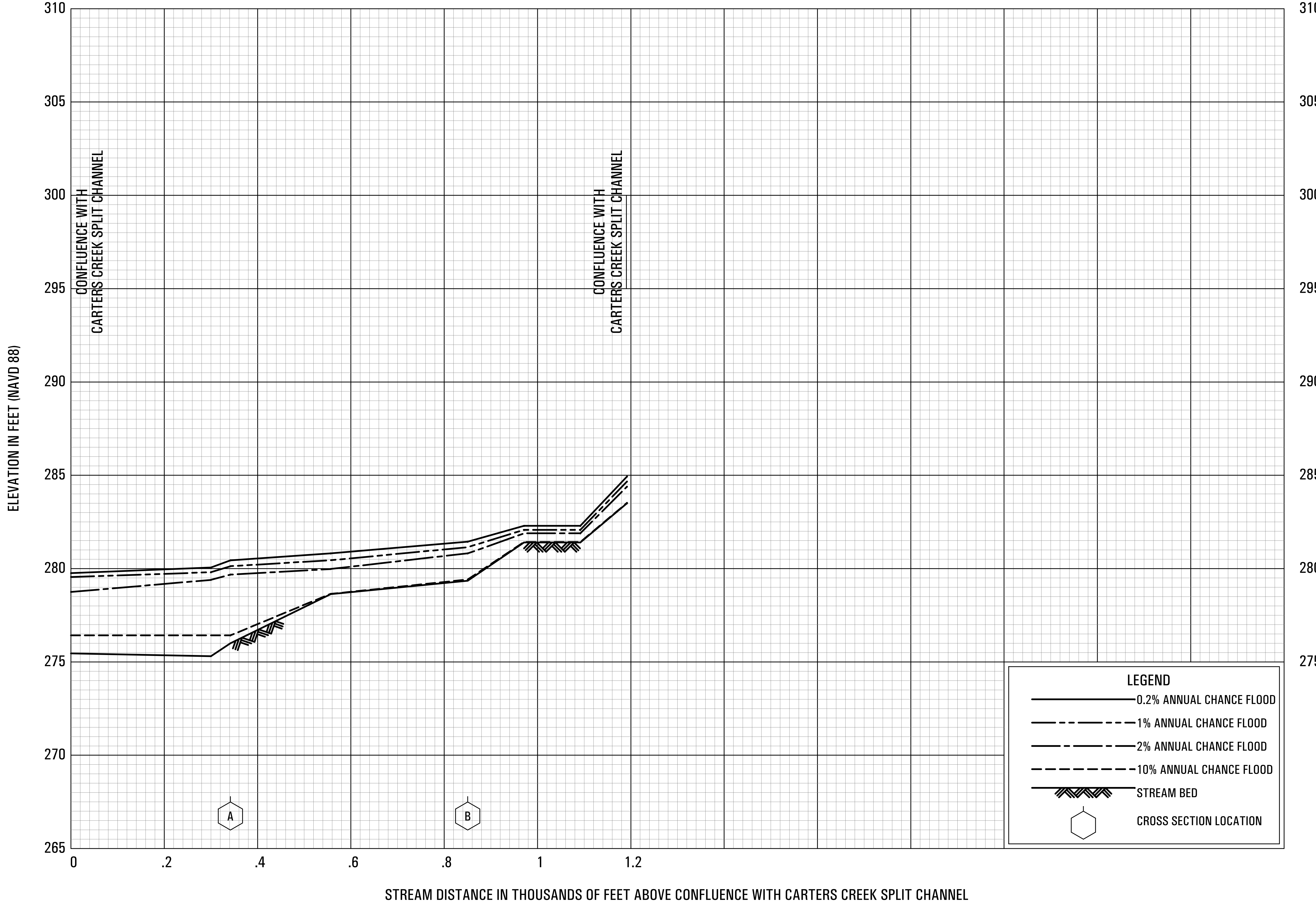
FLOOD PROFILES

THOMPSONS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS



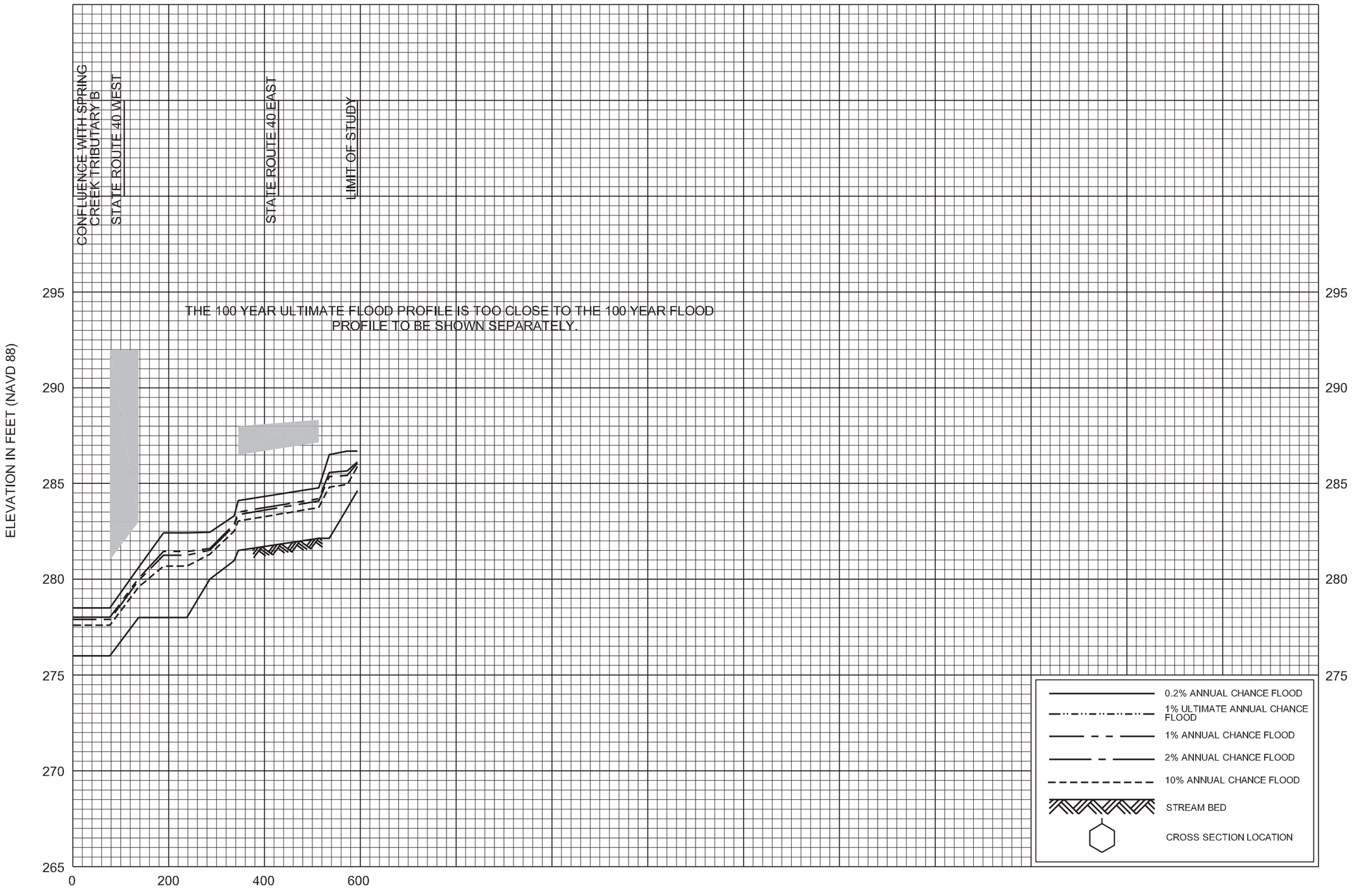
FLOOD PROFILES

TRIBUTARY 1 TO CARTERS CREEK SPLIT CHANNEL

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS



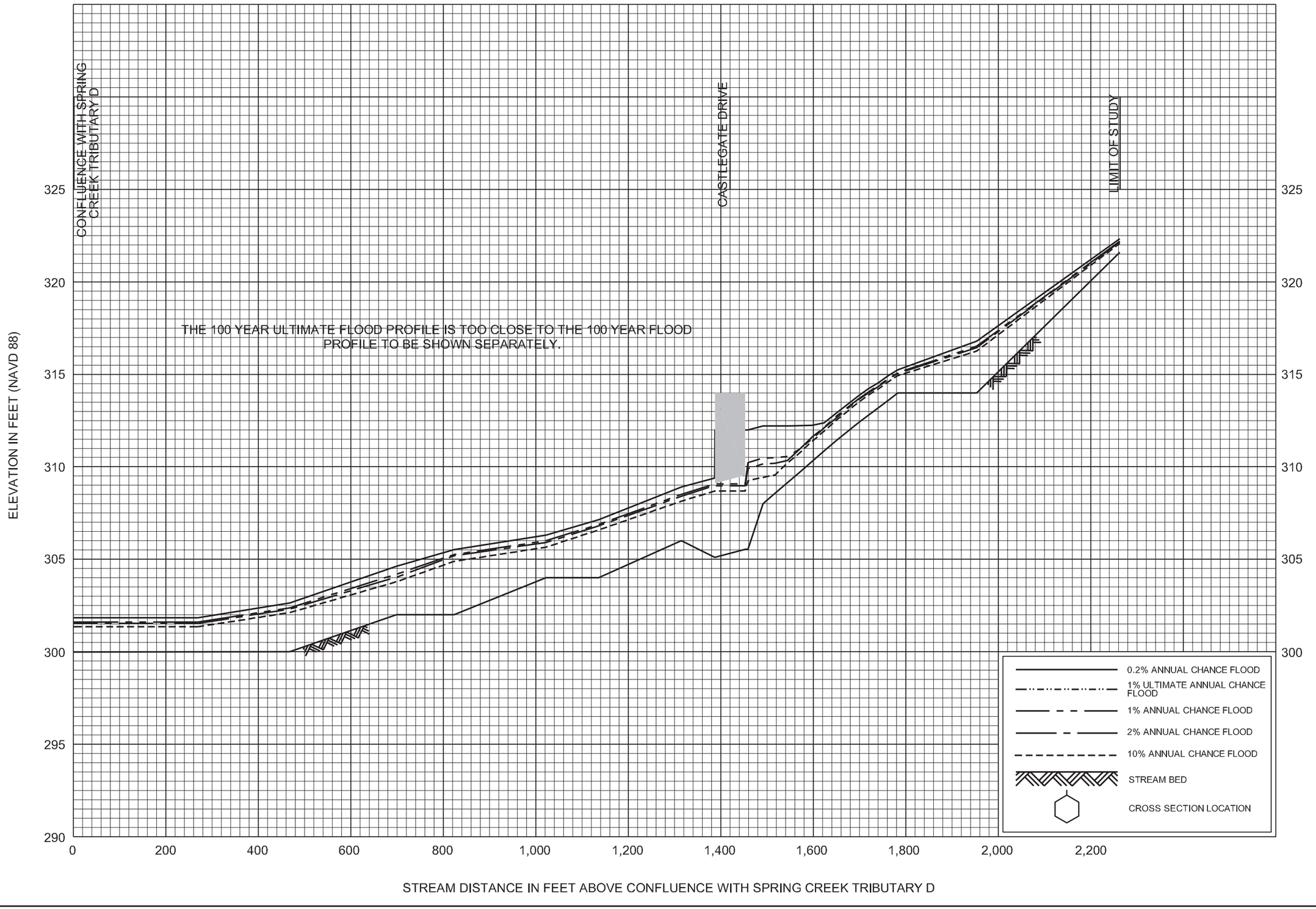
FLOOD PROFILES

TRIBUTARY TO SPRING CREEK TRIBUTARY B

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX
AND INCORPORATED AREAS

73P



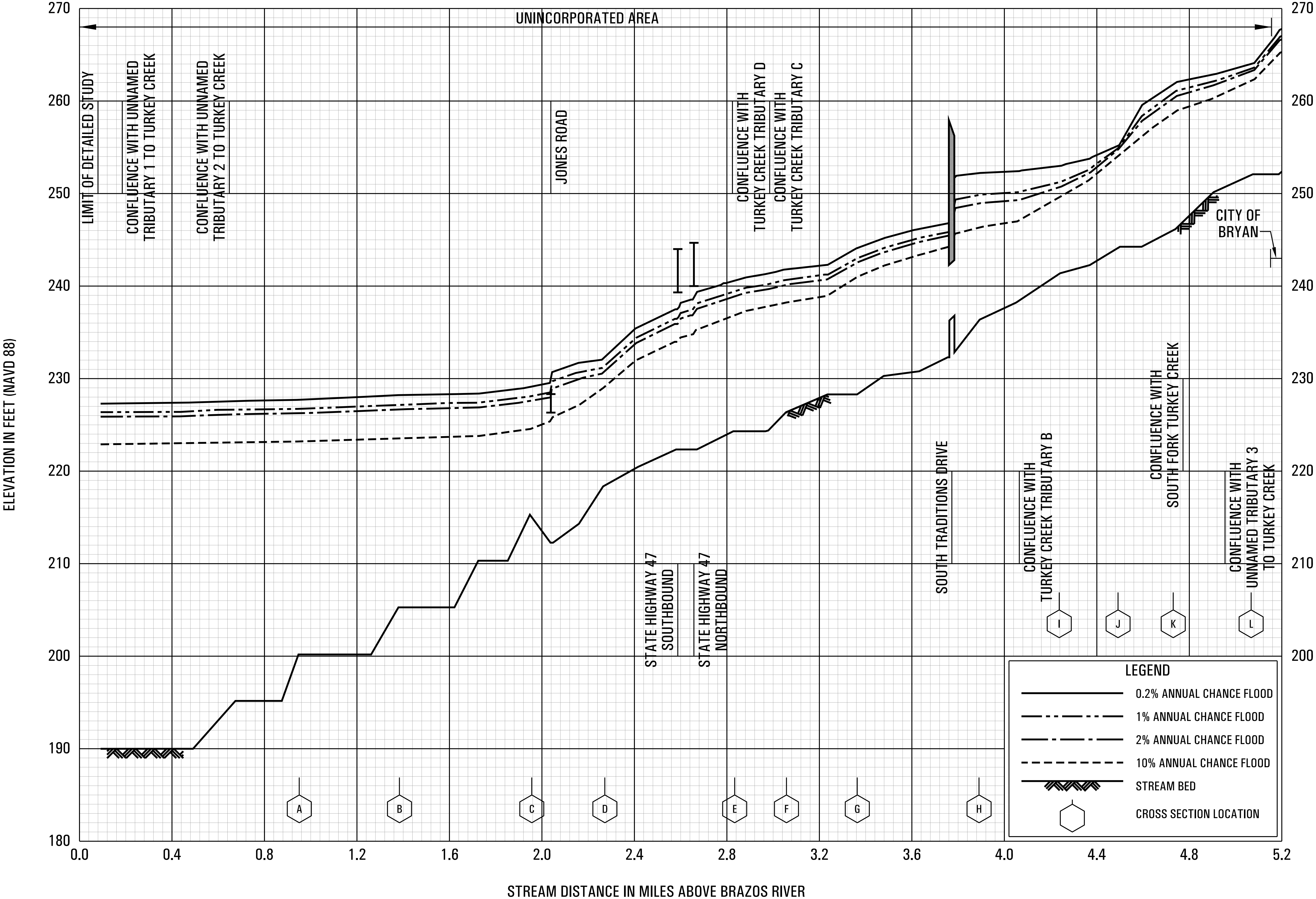
FLOOD PROFILES

TRIBUTARY TO SPRING CREEK TRIBUTARY D

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX
AND INCORPORATED AREAS

74P



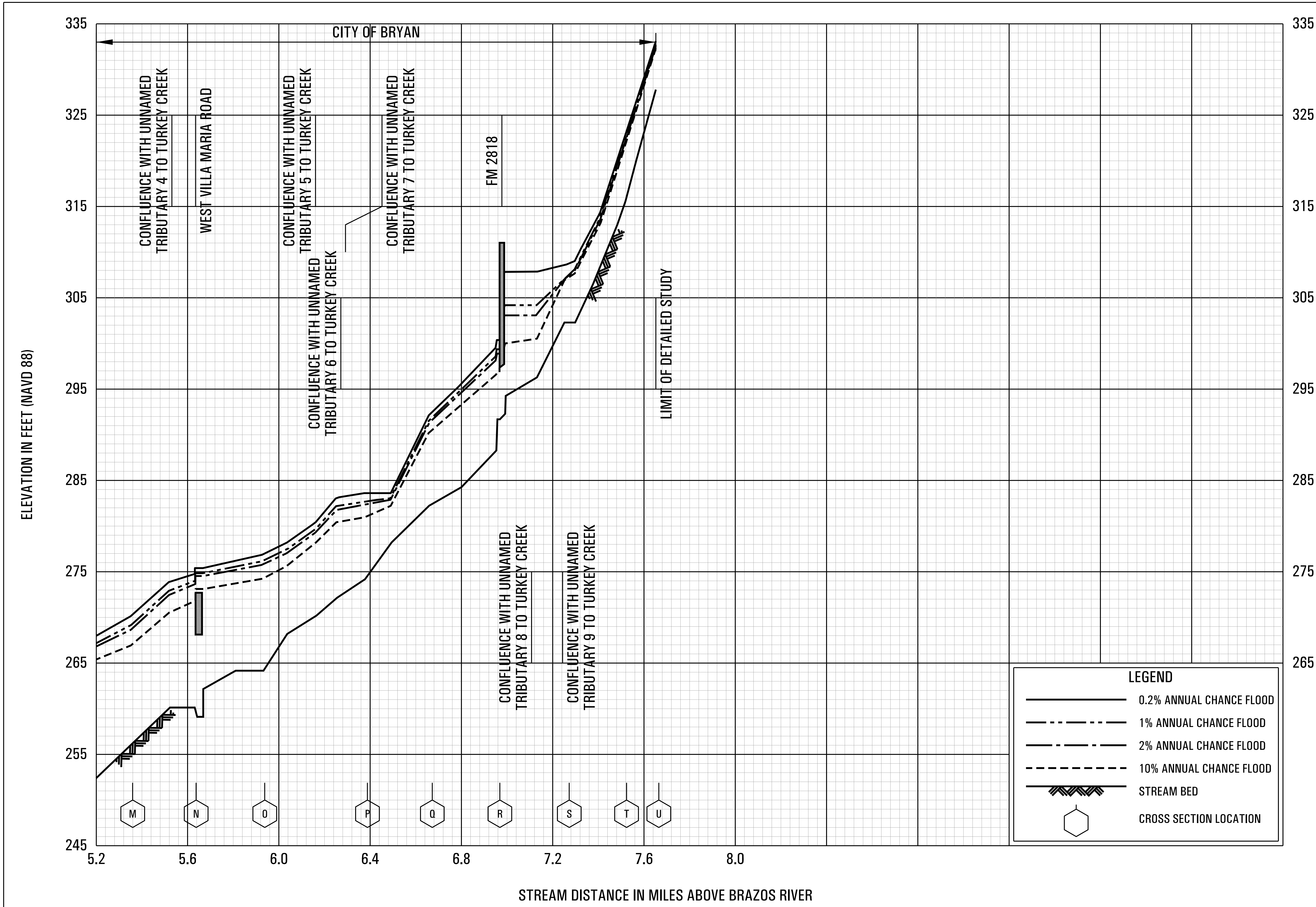
FLOOD PROFILES

TURKEY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS



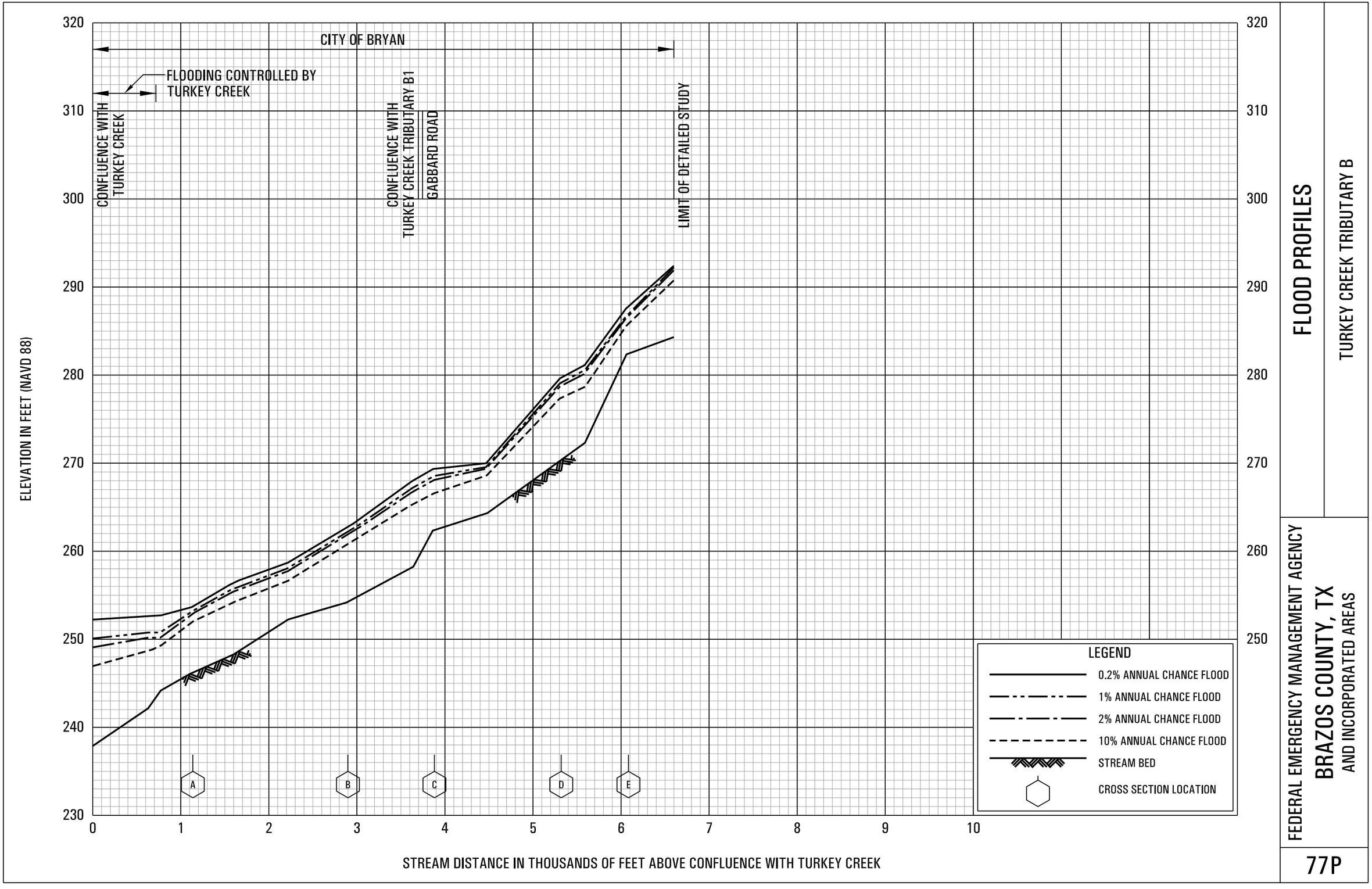
FLOOD PROFILES

TURKEY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS



FLOOD PROFILES

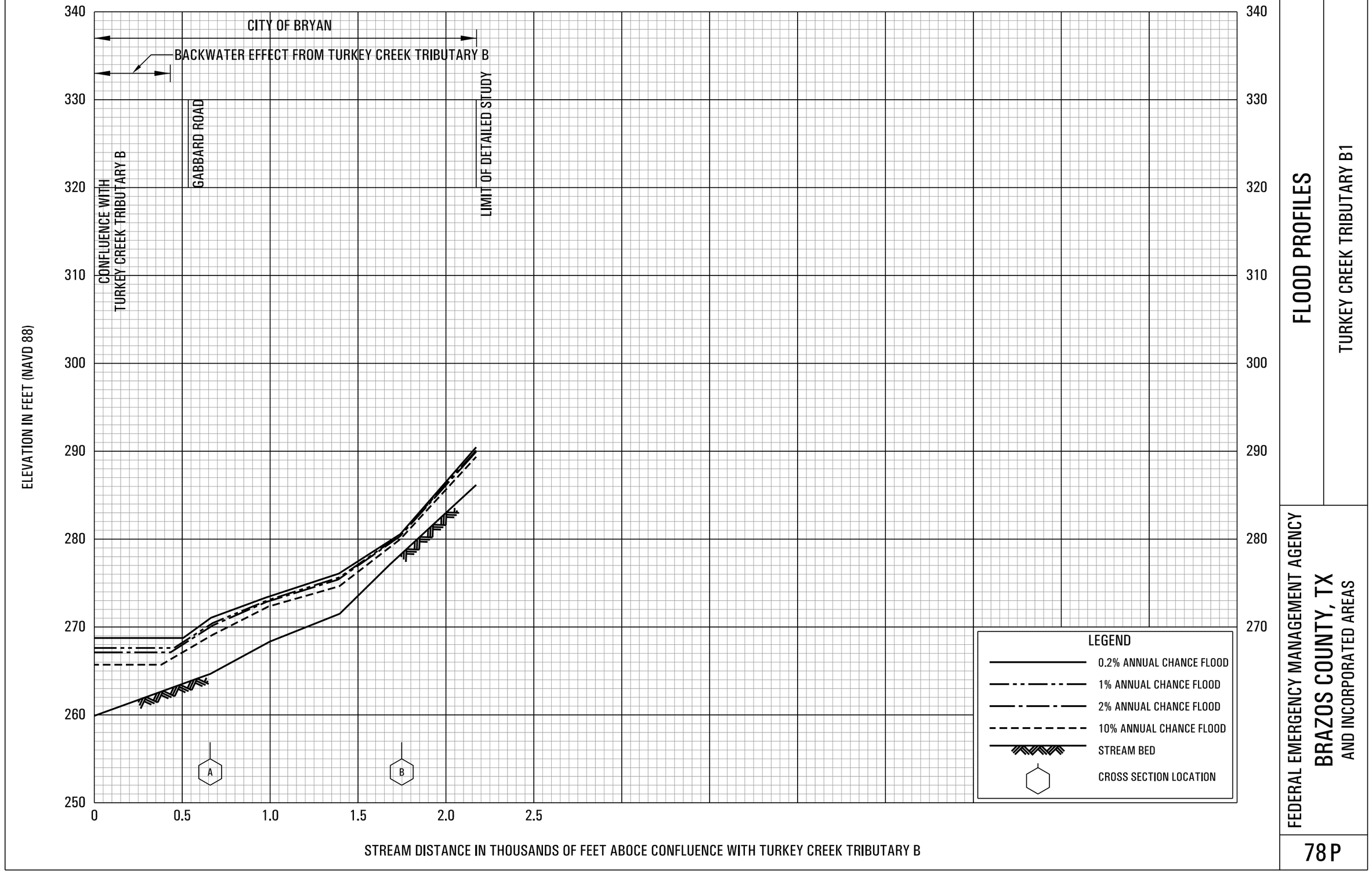
TURKEY CREEK TRIBUTARY B

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS

77P



FLOOD PROFILES

TURKEY CREEK TRIBUTARY B1

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS

CITY OF BRYAN

BACKWATER EFFECTS FROM TURKEY CREEK

CONFLUENCE WITH TURKEY CREEK

CORPORATE LIMITS

WEST VILLA MARIA ROAD

CONFLUENCE WITH UNNAMED TRIBUTARY TO TURKEY CREEK TRIBUTARY C

LIMIT OF DETAILED STUDY

ELEVATION IN FEET (NAVD 88)

300
290
280
270
260
250
240
230
220
210

0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
5.5
6
6.5

STREAM DISTANCE IN THOUSANDS OF FEET ABOVE CONFLUENCE WITH TURKEY CREEK

A
B
C
D

LEGEND

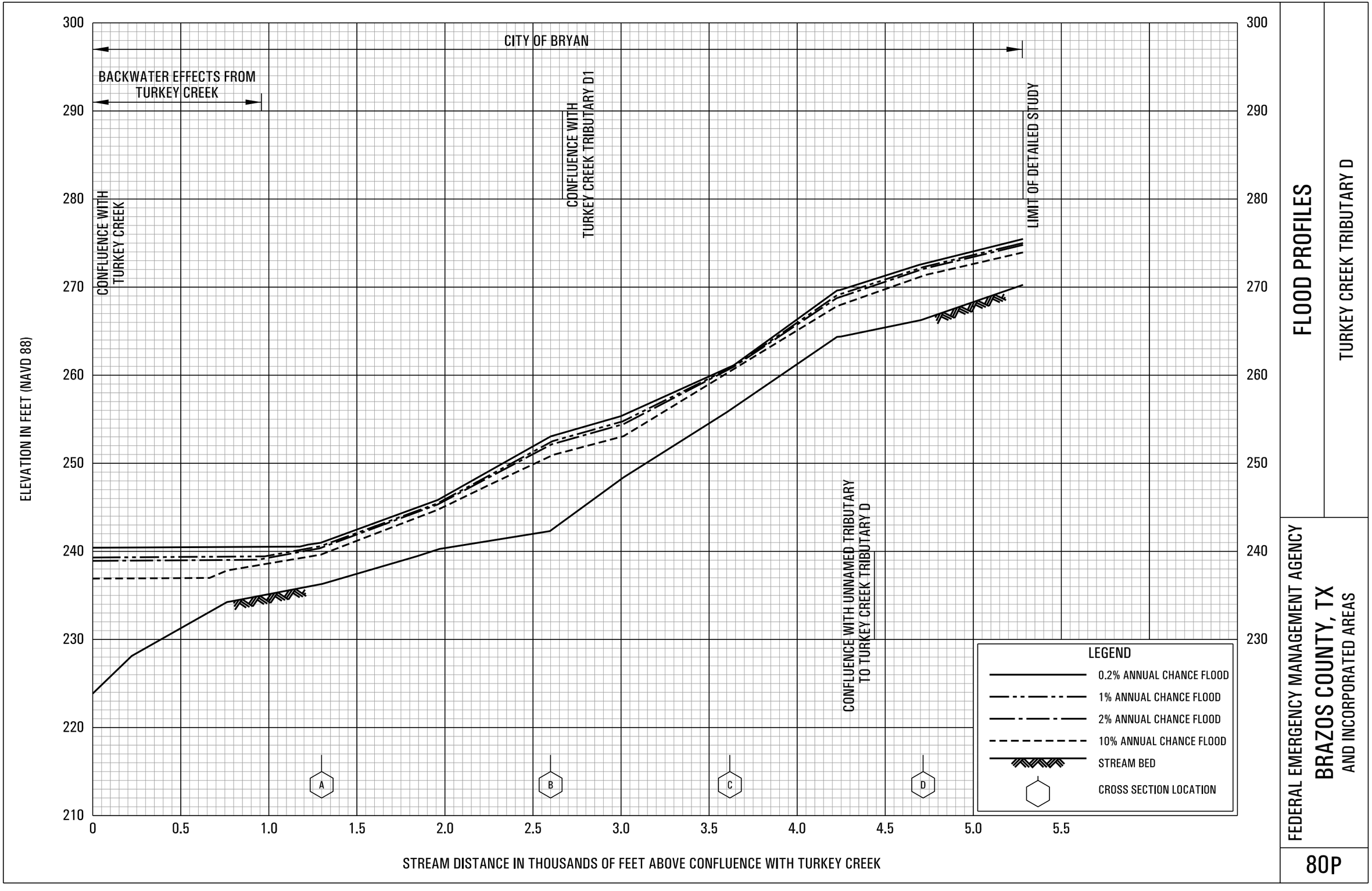
- 0.2% ANNUAL CHANCE FLOOD
- 1% ANNUAL CHANCE FLOOD
- 2% ANNUAL CHANCE FLOOD
- 10% ANNUAL CHANCE FLOOD
- STREAM BED
- CROSS SECTION LOCATION

FLOOD PROFILES

TURKEY CREEK TRIBUTARY C

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX
AND INCORPORATED AREAS



FLOOD PROFILES

TURKEY CREEK TRIBUTARY D

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS

80P

CITY OF BRYAN

BACKWATER EFFECTS FROM TURKEY CREEK TRIBUTARY D

CONFLUENCE WITH TURKEY CREEK TRIBUTARY D

LIMIT OF DETAILED STUDY

ELEVATION IN FEET (NAVD 88)

320
310
300
290
280
270
260
250
240
230

0
0.5
1.0
1.5
2.0
2.5
3.0

STREAM DISTANCE IN THOUSANDS OF FEET ABOVE CONFLUENCE WITH TURKEY CREEK TRIBUTARY D

A

B

LEGEND

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

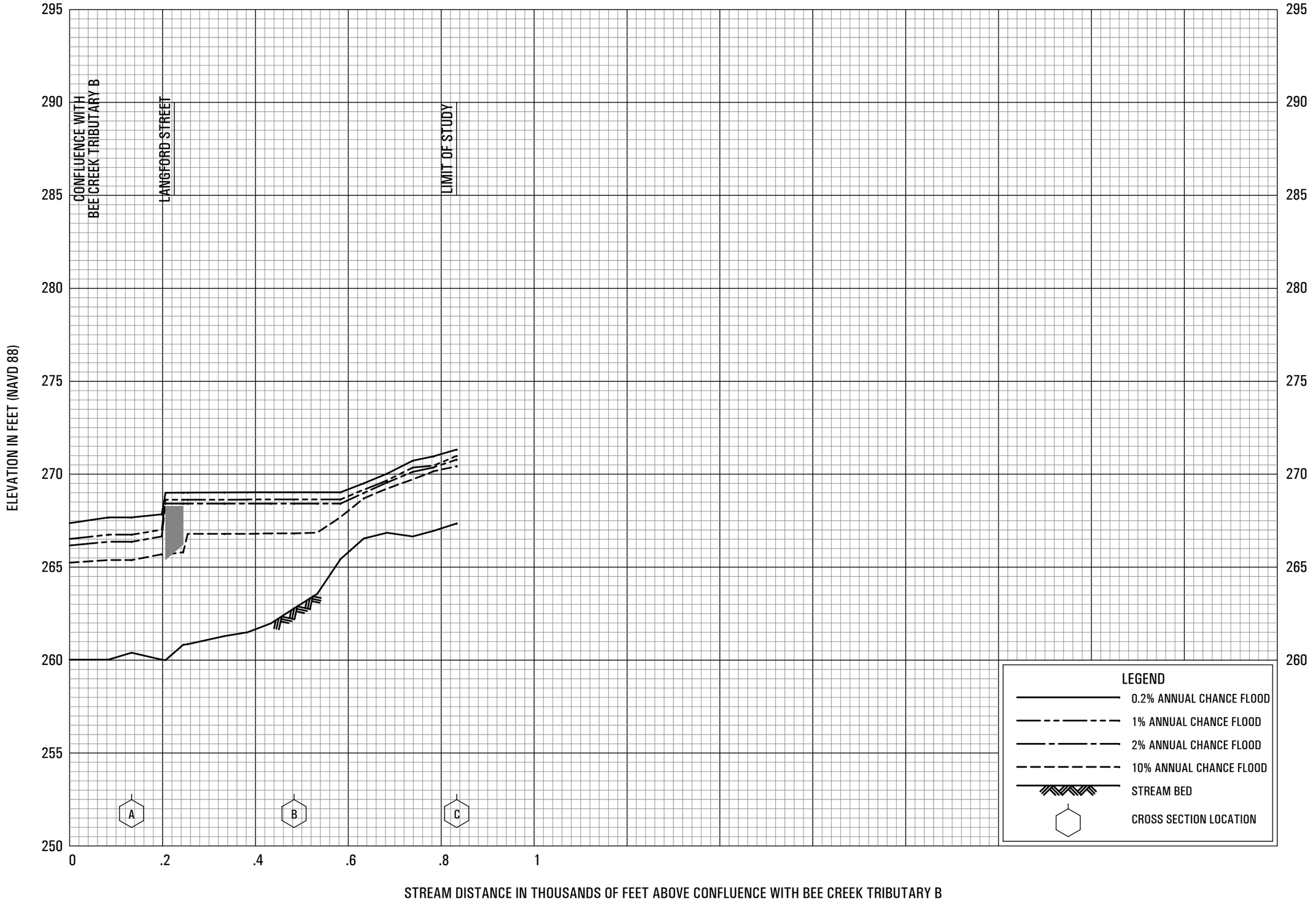
FLOOD PROFILES

TURKEY CREEK TRIBUTARY D1

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX
AND INCORPORATED AREAS

81P



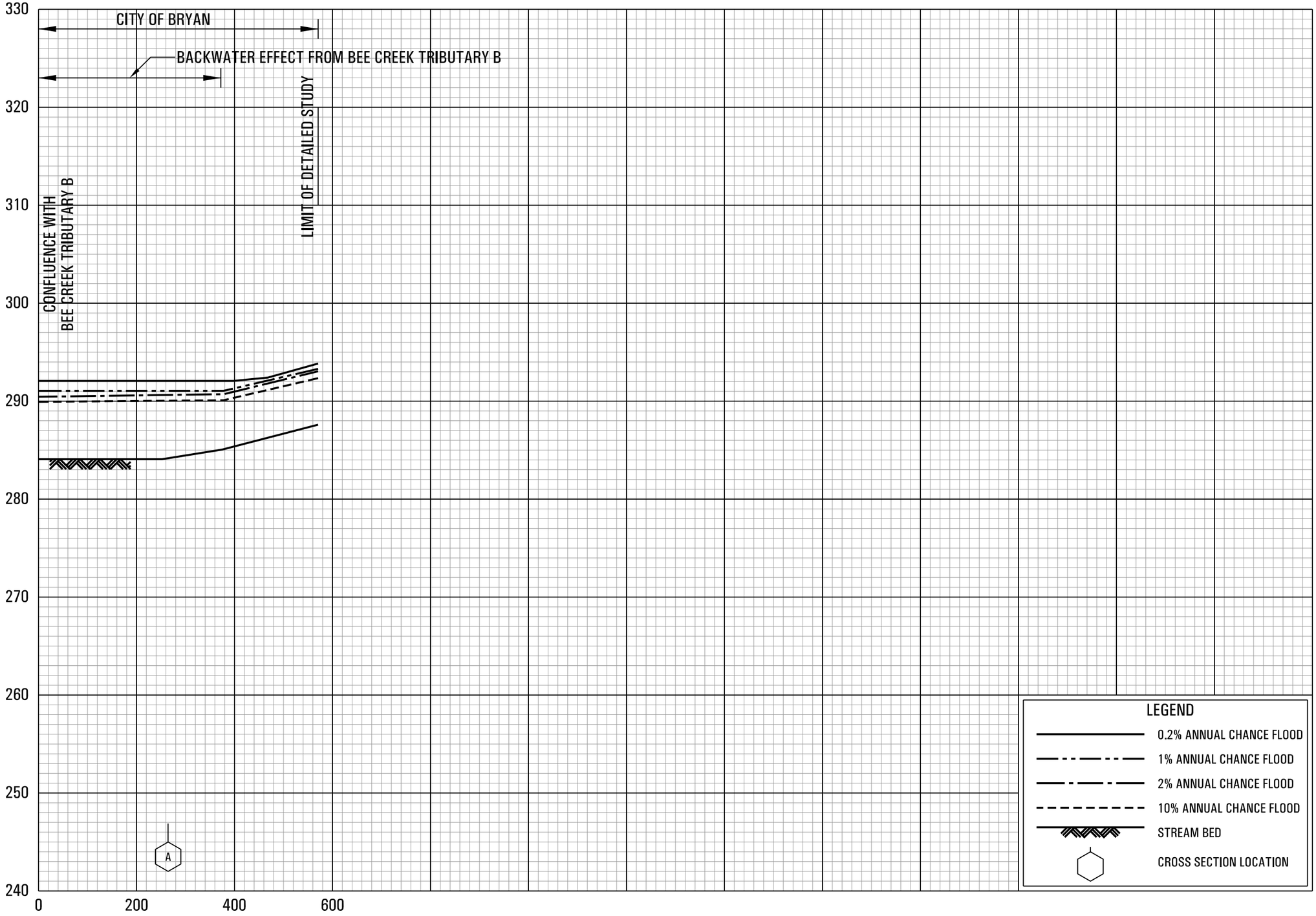
FLOOD PROFILES

UNNAMED TRIBUTARY 2 TO BEE CREEK TRIBUTARY B

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS



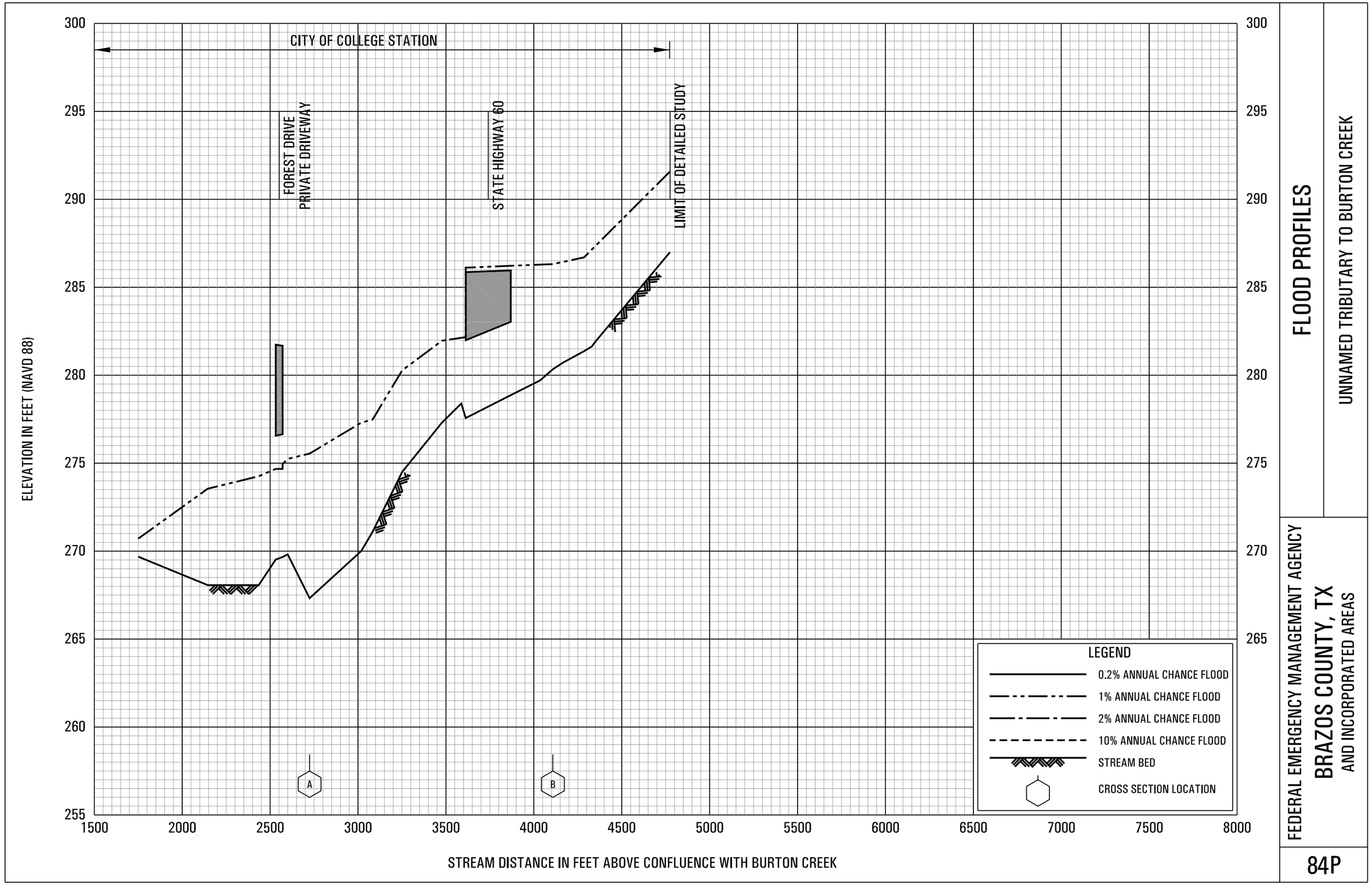
FLOOD PROFILES

UNNAMED TRIBUTARY TO BEE CREEK TRIBUTARY B

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS



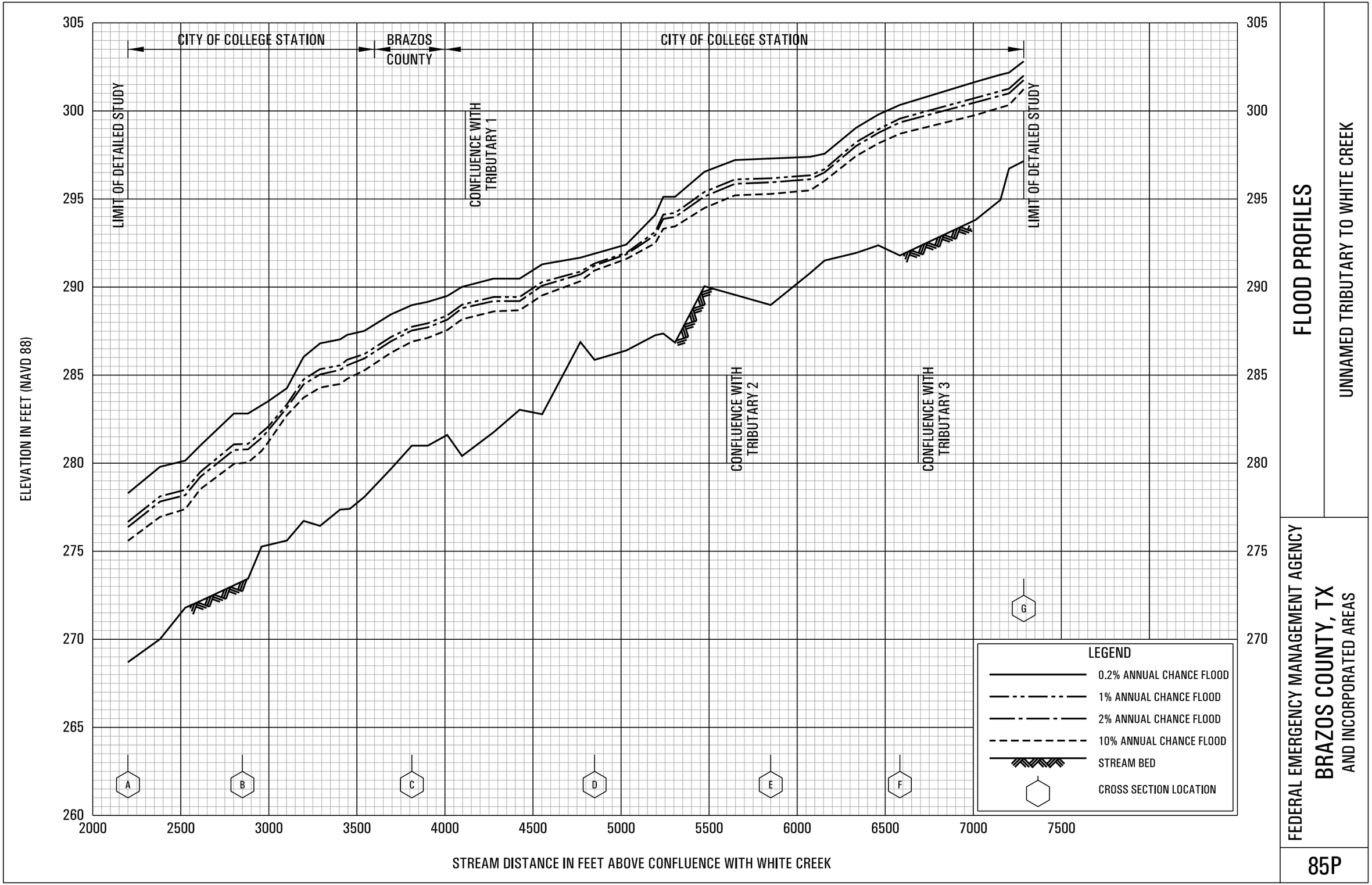
FLOOD PROFILES

UNNAMED TRIBUTARY TO BURTON CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX
AND INCORPORATED AREAS

84P



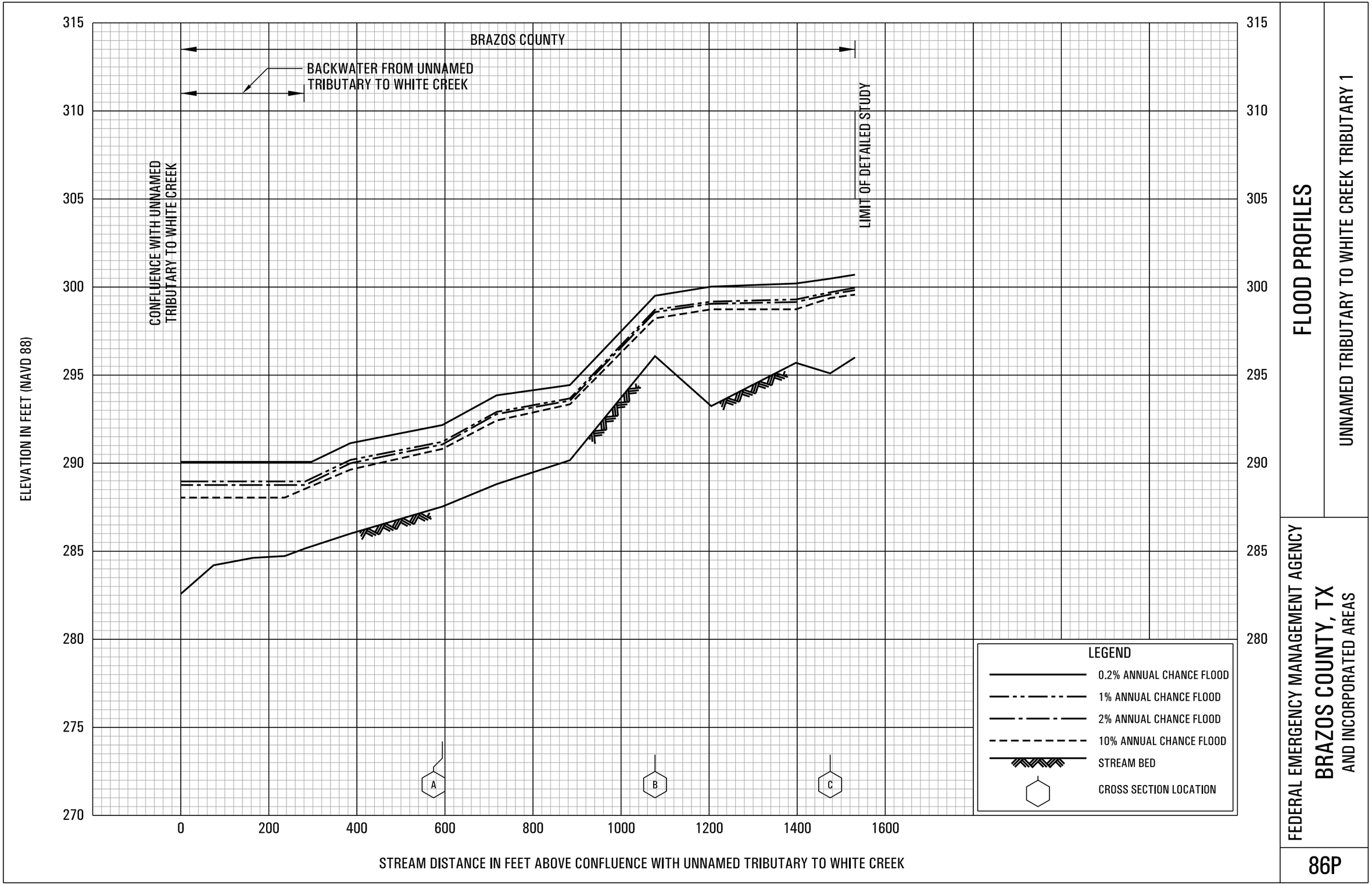
FLOOD PROFILES

UNNAMED TRIBUTARY TO WHITE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX
AND INCORPORATED AREAS

85P



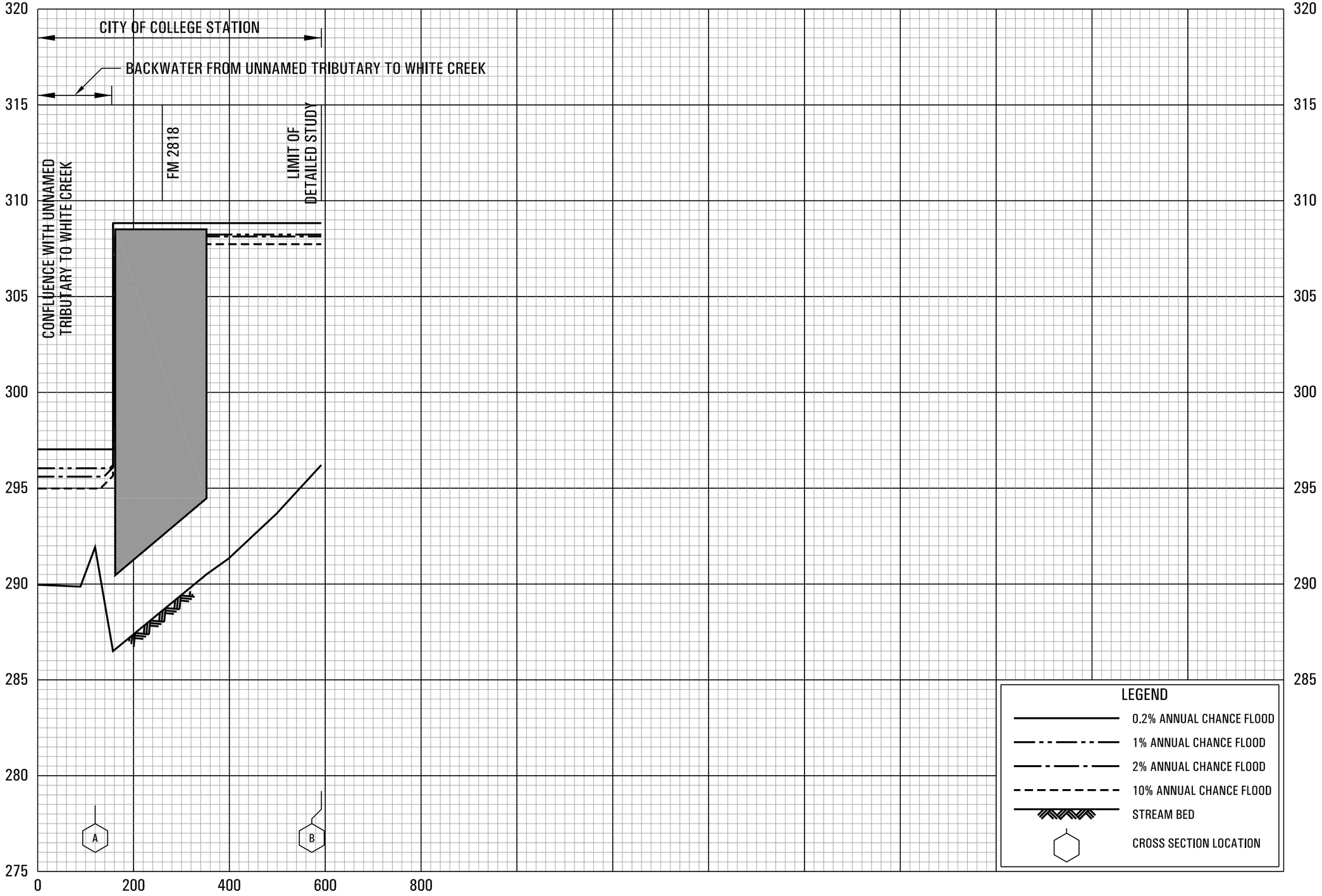
FLOOD PROFILES

UNNAMED TRIBUTARY TO WHITE CREEK TRIBUTARY 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX
AND INCORPORATED AREAS

86P

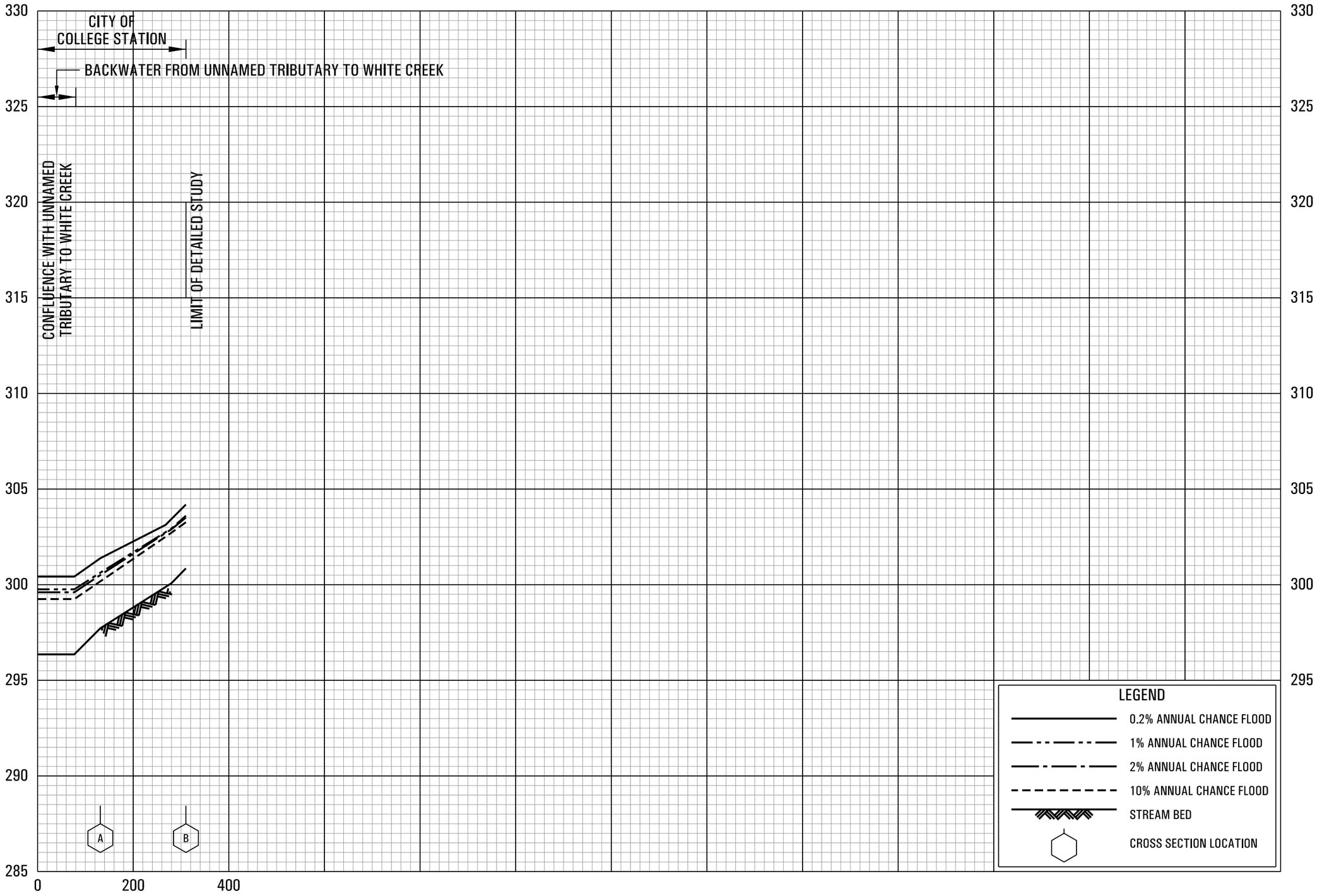


FLOOD PROFILES

UNNAMED TRIBUTARY TO WHITE CREEK TRIBUTARY 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX
AND INCORPORATED AREAS



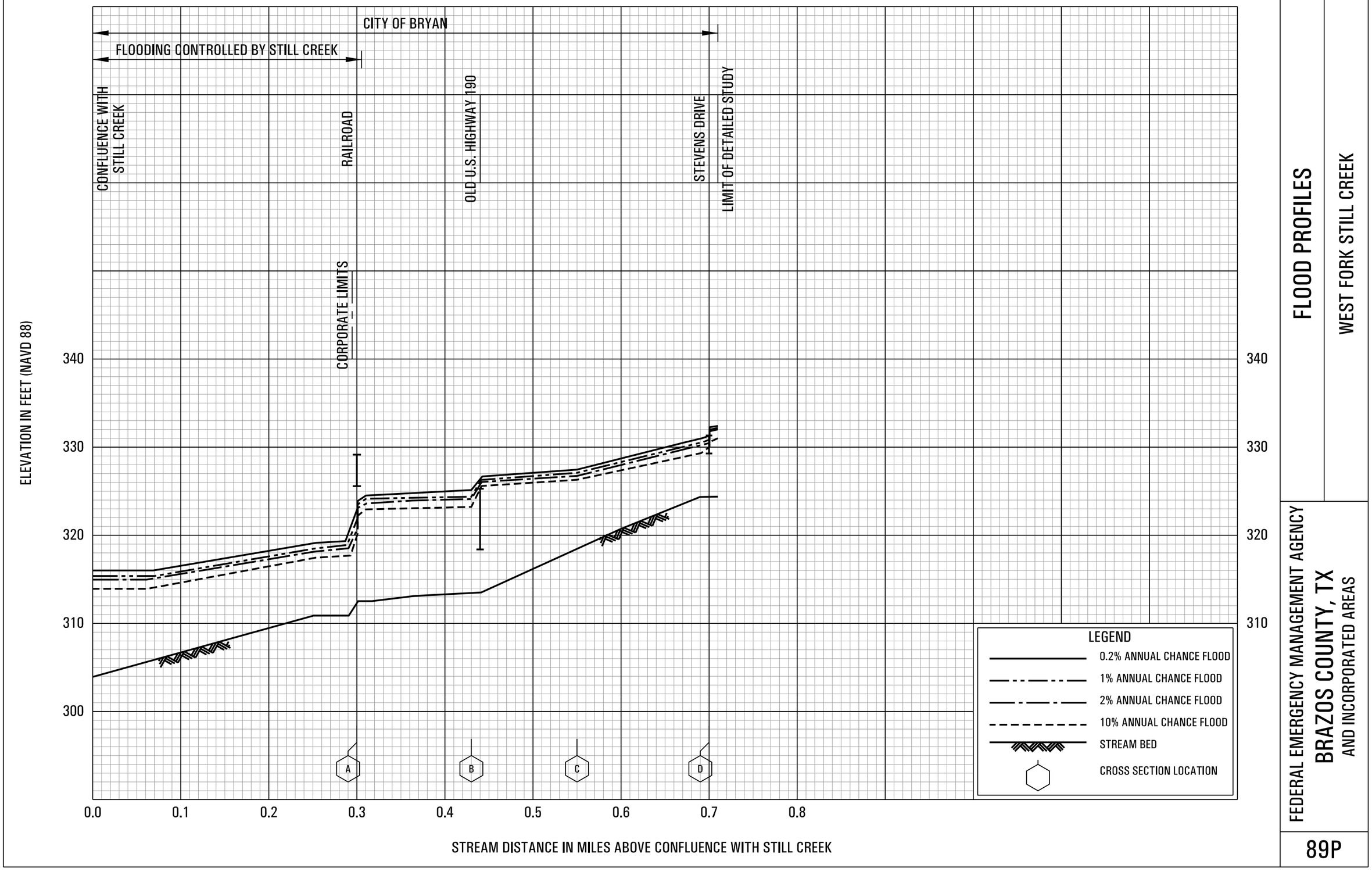
FLOOD PROFILES

UNNAMED TRIBUTARY TO WHITE CREEK TRIBUTARY 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX
AND INCORPORATED AREAS

88P



FLOOD PROFILES

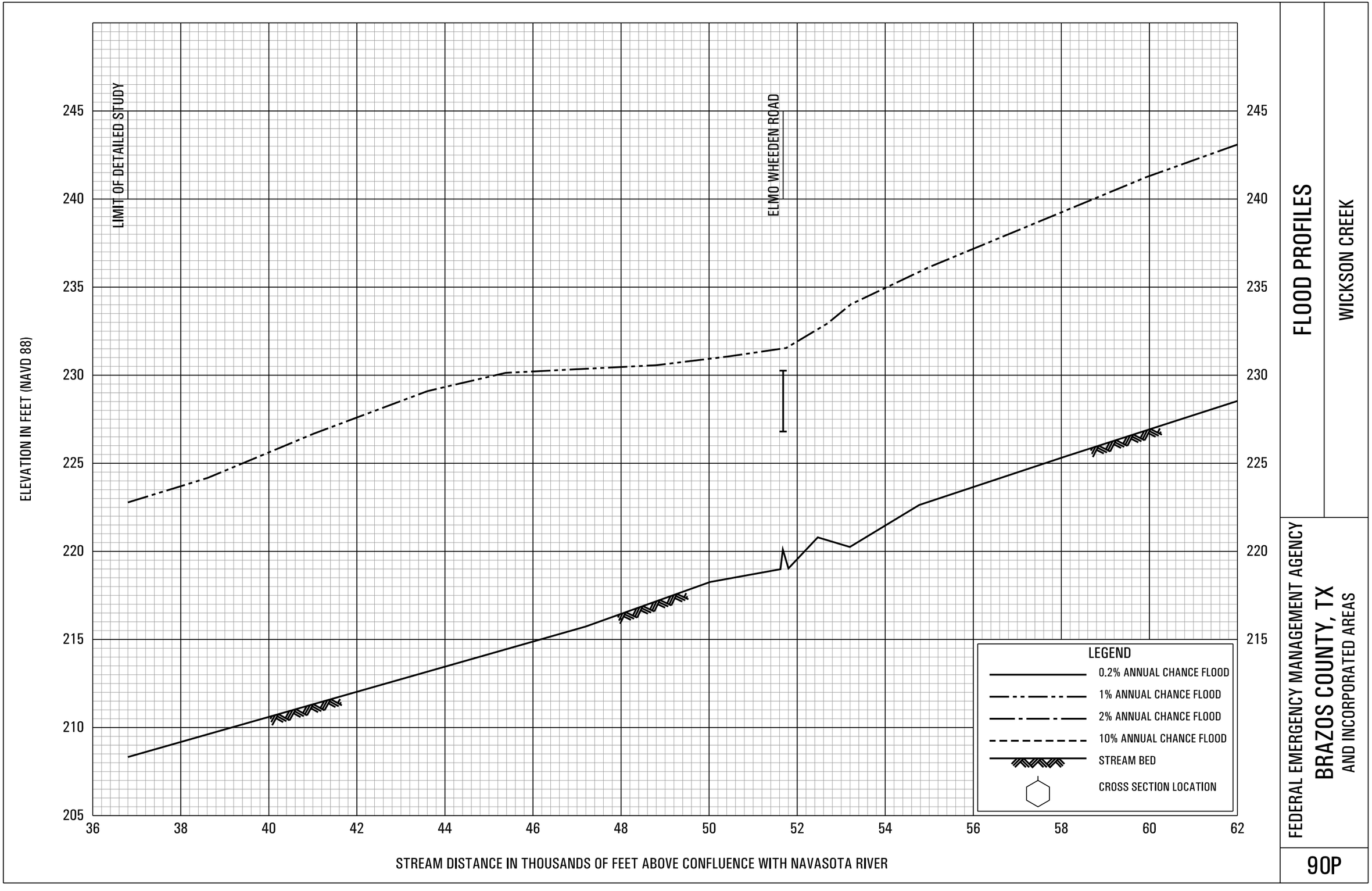
WEST FORK STILL CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS

89P



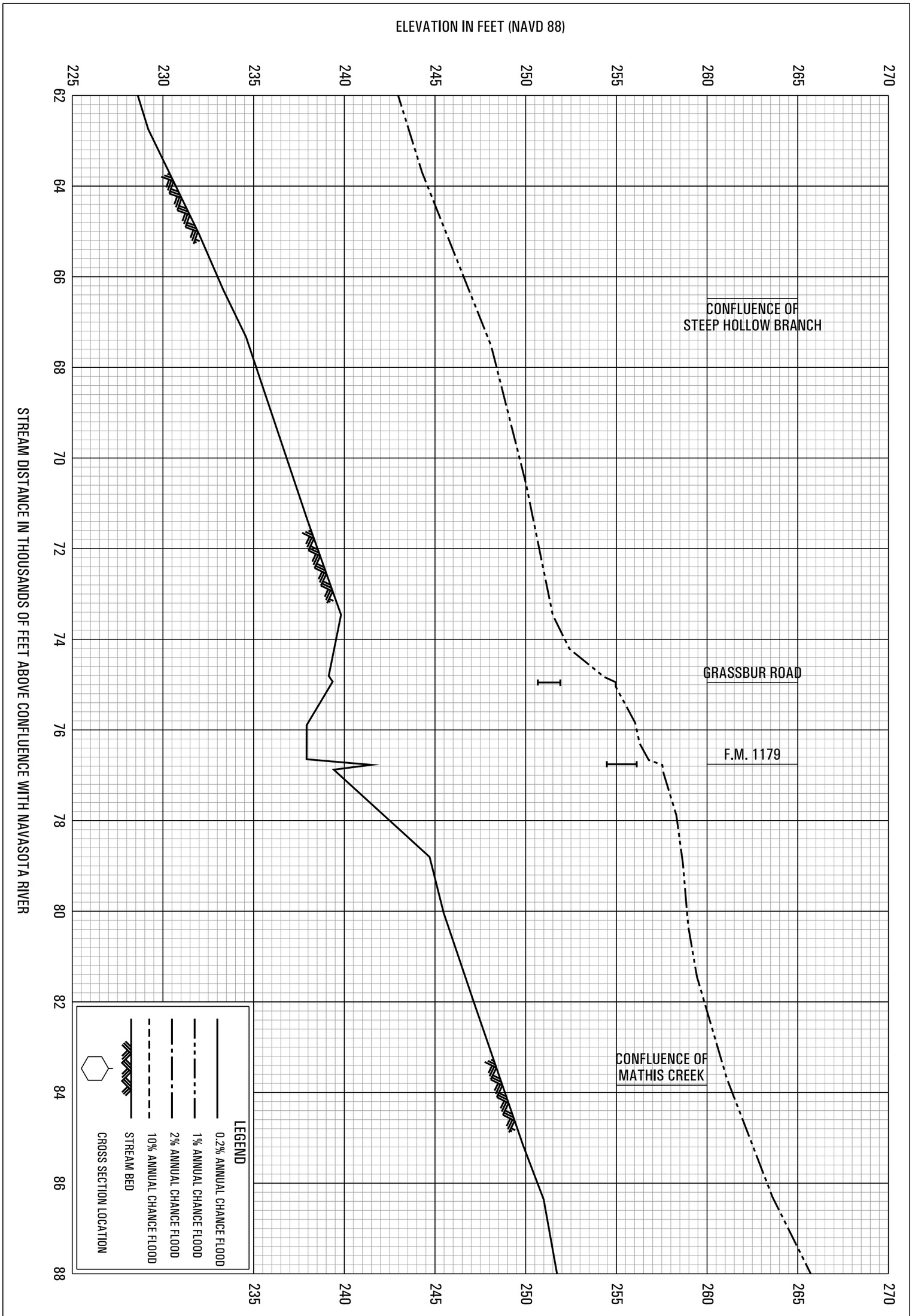
FLOOD PROFILES

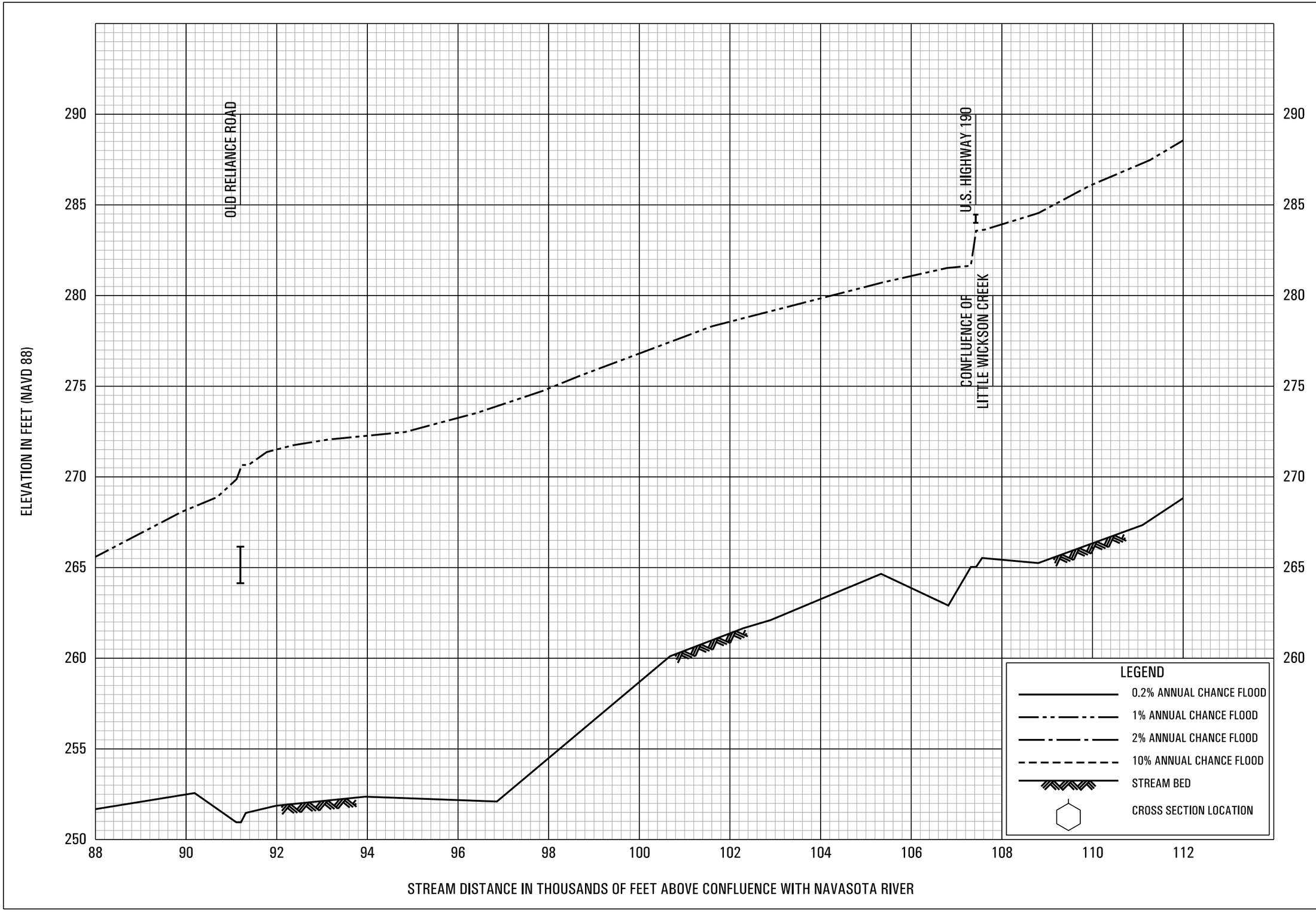
WICKSON CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS


ELEVATION IN FEET (NAVD 88)
225
230
235
240
245
250
255
260
265
270
62
64
66
68
70
72
74
76
78
80
82
84
86
88
CONFLUENCE OF
STEEP HOLLOW BRANCH
GRASSBUR ROAD
F.M. 1179
CONFLUENCE OF
MATHIS CREEK
LEGEND
0.2% ANNUAL CHANCE FLOOD
1% ANNUAL CHANCE FLOOD
2% ANNUAL CHANCE FLOOD
10% ANNUAL CHANCE FLOOD
STREAM BED
CROSS SECTION LOCATION
STREAM DISTANCE IN THOUSANDS OF FEET ABOVE CONFLUENCE WITH NAVASOTA RIVER



FLOOD PROFILES

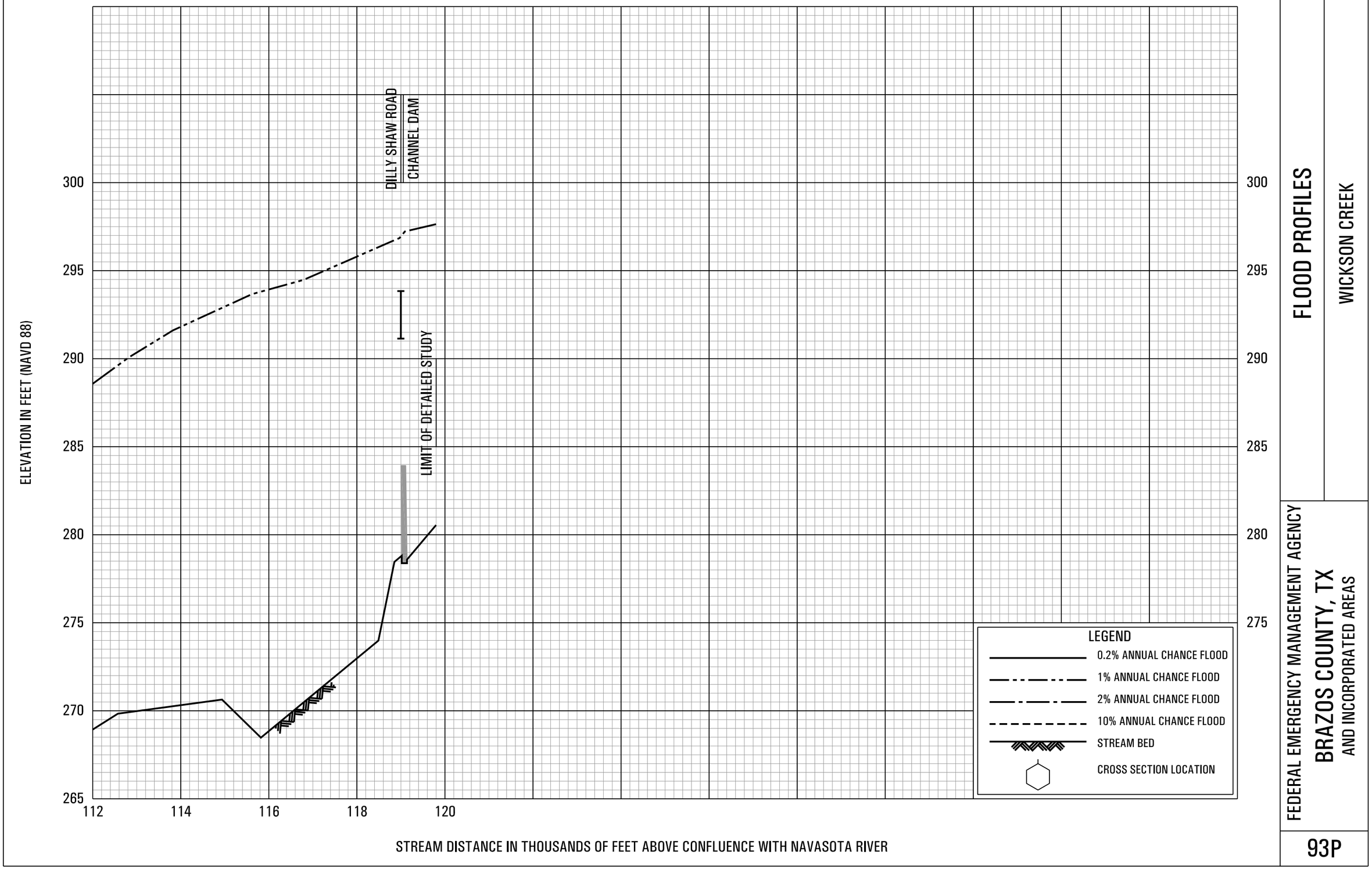
WICKSON CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS

92P



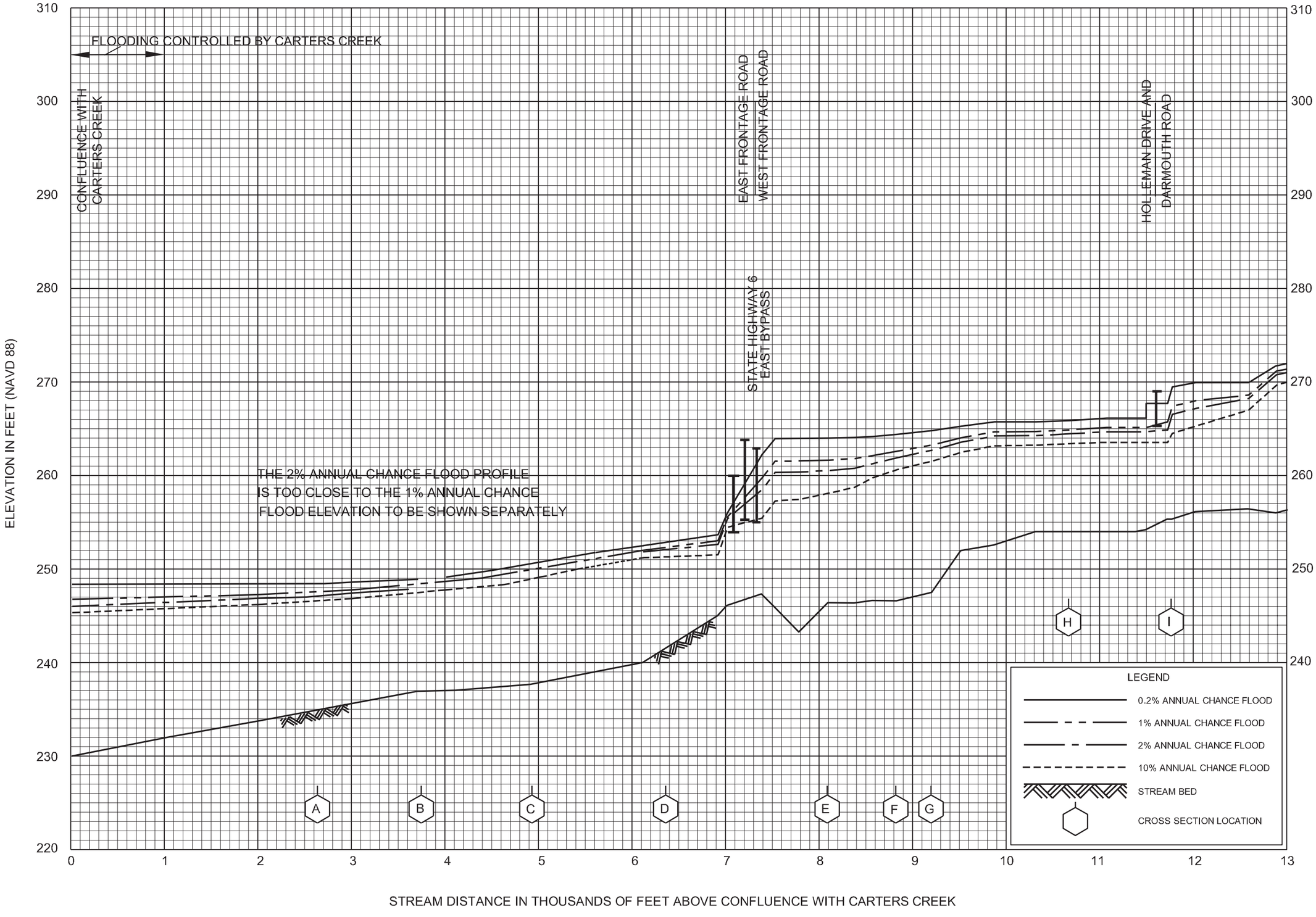
FLOOD PROFILES

WICKSON CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX
AND INCORPORATED AREAS

93P



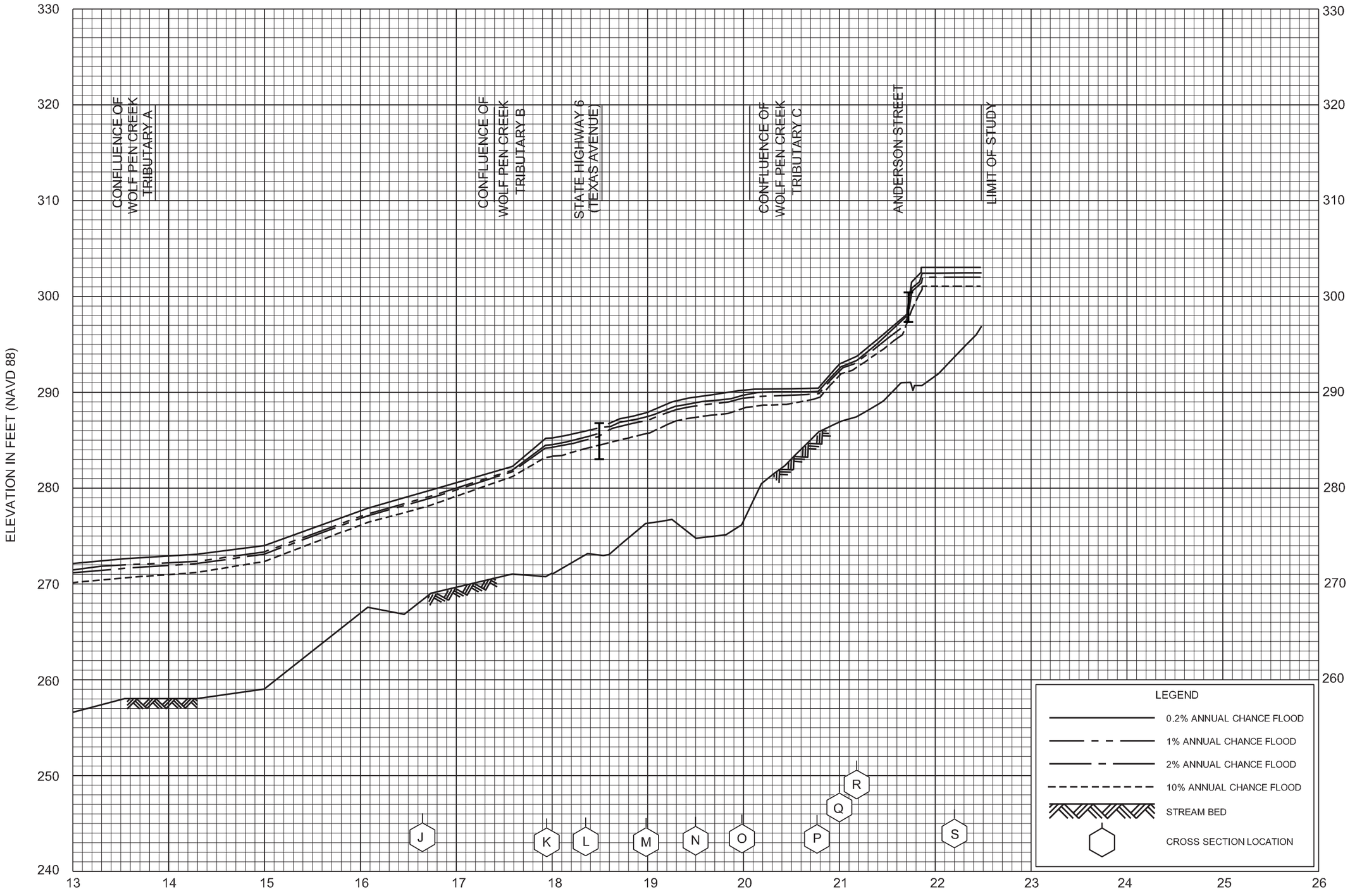
FLOOD PROFILES

WOLF PEN CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX
AND INCORPORATED AREAS

94P



FLOOD PROFILES

WOLF PEN CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX
AND INCORPORATED AREAS

95P

CITY OF COLLEGE STATION

FLOODING CONTROLLED BY WOLF PEN CREEK

CONFLUENCE OF WOLF PEN CREEK

STATE HIGHWAY 30 (HARVEY DRIVE)

UNIVERSITY OAKS BOULEVARD

THE 2% AND 10% ANNUAL CHANCE FLOOD PROFILES ARE TOO CLOSE TO THE 1% ANNUAL CHANCE FLOOD PROFILE TO BE SHOWN SEPARATELY

THE 2% ANNUAL CHANCE FLOOD PROFILE IS TOO CLOSE TO THE 1% ANNUAL CHANCE FLOOD PROFILE TO BE SHOWN SEPARATELY

ELEVATION IN FEET (NAVD 88)

290
285
280
275
270
265
260

0 2 4 6 8 10 12 14 16 18 20 22

STREAM DISTANCE IN HUNDREDS OF FEET ABOVE CONFLUENCE WITH WOLF PEN CREEK

A B C D E F G

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

WOLF PEN CREEK TRIBUTARY A

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX AND INCORPORATED AREAS

96P

CITY OF COLLEGE STATION

DOMINK DRIVE

GILCRIST AVENUE

THE 10% AND 2% ANNUAL CHANCE FLOOD PROFILE ELEVATIONS ARE TOO CLOSE TO THE 1% ANNUAL CHANCE FLOOD PROFILE TO BE SHOWN SEPARATELY

ELEVATION IN FEET (NAVD 88)

305
300
295
290
285
280
275
270
265
260

22 24 26 28 30 32 34 36 38 40 42 44 46 48

STREAM DISTANCE IN HUNDREDS OF FEET ABOVE CONFLUENCE WITH WOLF PEN CREEK

H I J

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

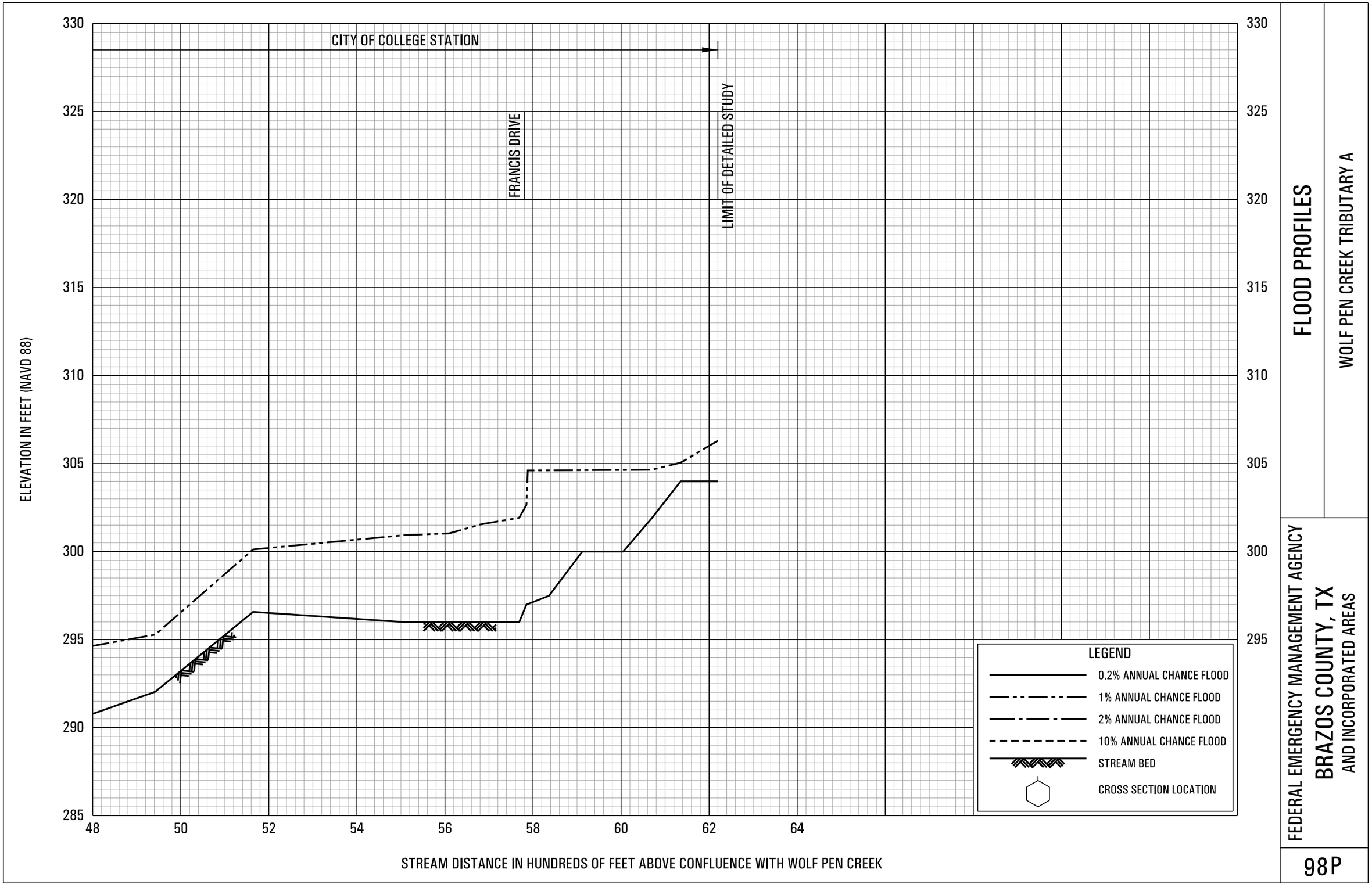
WOLF PEN CREEK TRIBUTARY A

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS

97P



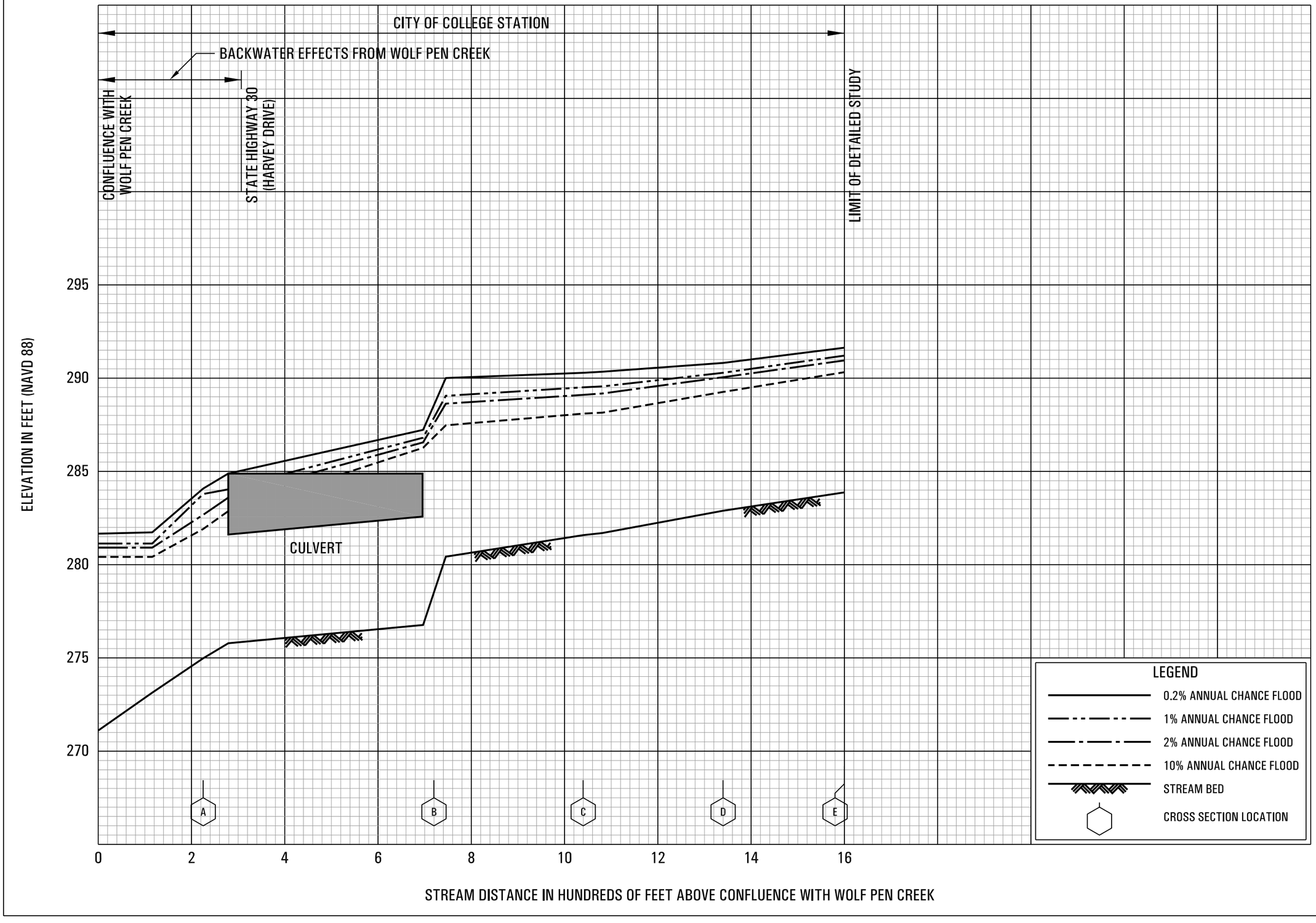
FLOOD PROFILES

WOLF PEN CREEK TRIBUTARY A

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS



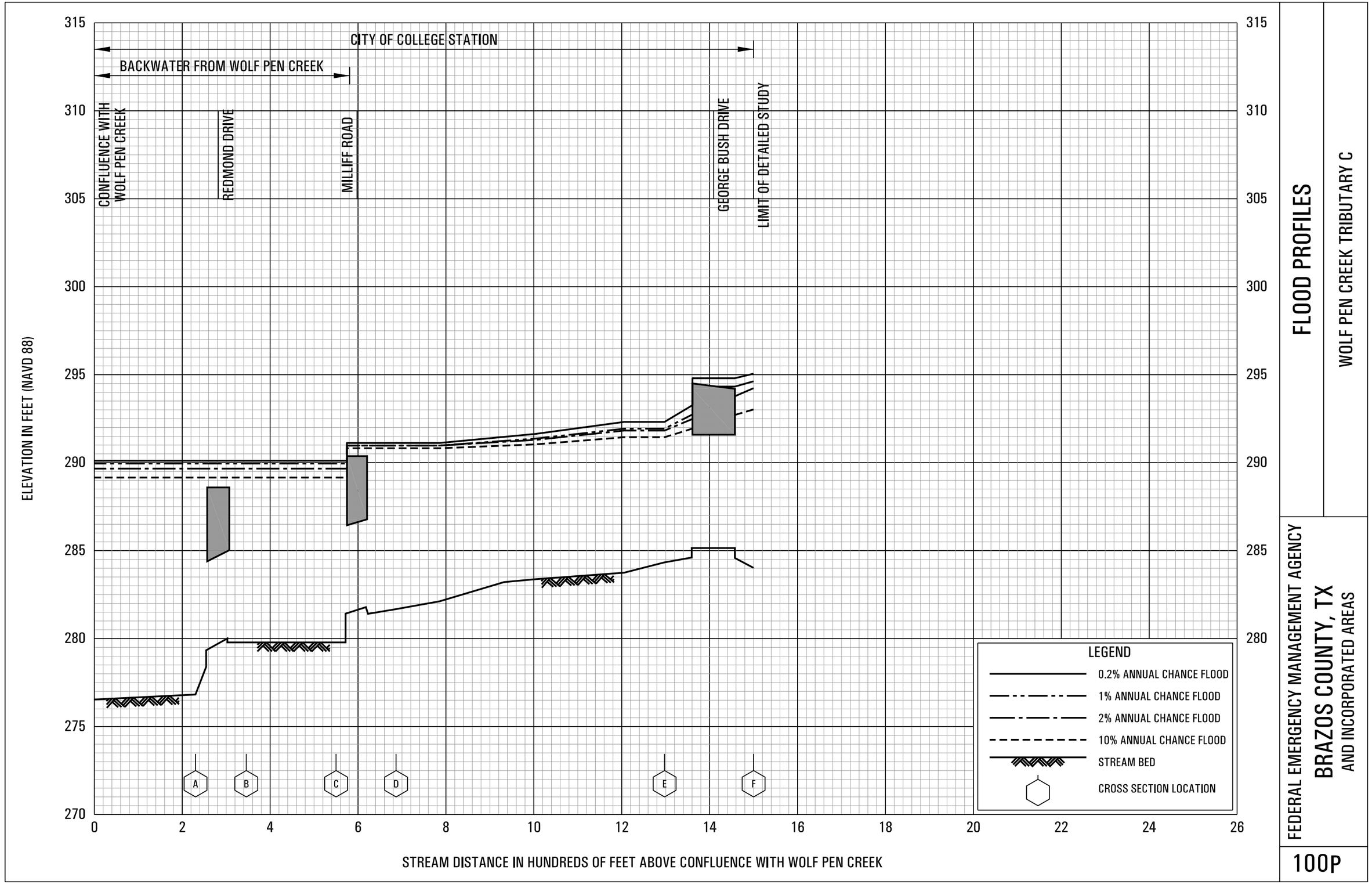
FLOOD PROFILES

WOLF PEN CREEK TRIBUTARY B

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX

AND INCORPORATED AREAS



FLOOD PROFILES

WOLF PEN CREEK TRIBUTARY C

FEDERAL EMERGENCY MANAGEMENT AGENCY

BRAZOS COUNTY, TX
AND INCORPORATED AREAS

100P