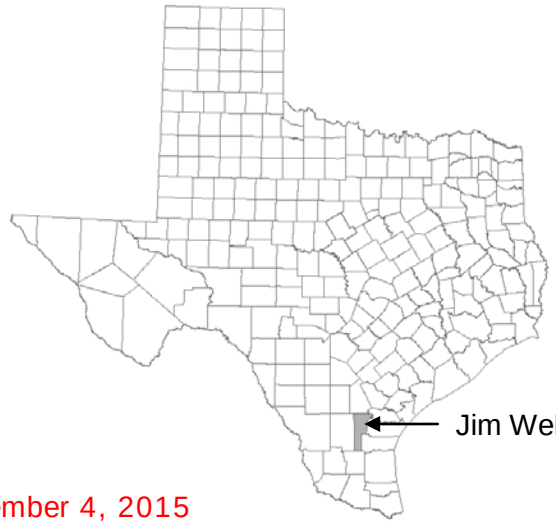
FLOOD INSURANCE STUDY

JIM WELLS COUNTY, TEXAS

AND INCORPORATED AREAS

COMMUNITY NAME	COMMUNITY NUMBER
ALICE, CITY OF	480394
JIM WELLS COUNTY (UNINCORPORATED AREAS)	481258
ORANGE GROVE, CITY OF*	480395
PREMONT, CITY OF	480396
SAN DIEGO, CITY OF	481199

*No Special Flood Hazard Areas Identified



Revised Preliminary September 4, 2015

Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER

48249CV000A

NOTICE TO
FLOOD INSURANCE STUDY USERS

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

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

Old Zone(s)	New Zone
Al through A30	AE
VI through V30	VE
B	X
C	X

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

ATTENTION: On FIRM panels 0240, 0245, 0305, and 0310, the San Diego Creek Levee has not been demonstrated by the community or levee owner(s) to meet the requirements of Section 65.10 of the NFIP regulations in 44 CFR as it relates to the levee's capacity to provide 1-percent-annual-chance flood protection. The subject areas are identified on FIRM panels (with notes and bounding lines) and in the FIS report as potential areas of flood hazard data changes based on further review.

FEMA has updated the levee analysis and mapping protocols for non-accredited levees. Until such time as FEMA is able to initiate a new flood risk project to apply the new procedures, the flood hazard information on the aforementioned FIRM panel that are affected by the San Diego Creek Levee are being added as a snapshot of the prior effective information presented on the FIRMs and FIS reports dated March 1, 1984 for the City of Alice and May 2, 1983 for the unincorporated areas of Jim Wells County. As indicated above, it is expected that affected flood hazard data within the subject area could be significantly revised. This may result in floodplain boundary changes, 1-percent-annual-chance flood elevation changes, and/or changes to flood hazard zone designations.

The effective FIRM panels (and the FIS) will again be revised to update the flood hazard information associated with the San Diego Creek Levee when FEMA is able to initiate and complete a new flood risk project to apply the updated levee analysis and mapping procedures.

Initial Countywide FIS Effective Date: _____

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FLOOD INSURANCE STUDY
JIM WELLS 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 Jim Wells County, including the Cities of Alice, Orange Grove, Premont, and San Diego; and the unincorporated areas of Jim Wells County (referred to collectively herein as Jim Wells 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 City of San Diego is geographically located in Duval and Jim Wells Counties. See the separately published FIS report and Flood Insurance Rate Map (FIRM) for additional flood-hazard information.

Please note that on the effective date of this study the City of Orange Grove does not have any identified Special Flood Hazard Areas (SFHAs). 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.

Please also note that FEMA has identified one or more levees in this jurisdiction that have not been demonstrated by the community or levee owner(s) to meet the requirements of 44 CFR Section 65.10 of the NFIP regulations (44CFR65.10) as it relates to the levee's capacity to provide 1-percent annual chance flood protection. As such, there are temporary actions being taken until such time as FEMA is able to initiate a new flood risk project to apply new levee analysis and mapping procedures. Please refer to the Notice to Flood Insurance Study Users at the front of this FIS report for more information.

1.2 Authority and Acknowledgments

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

Information on the authority and acknowledgements for each jurisdiction included in this countywide FIS, as compiled from their previously printed FIS reports, is shown below:

Alice, City of:	The hydrologic and hydraulic analyses for this study were performed by URS/Forrest and Cotton, Inc. Consulting Engineers, Austin, Texas, for Federal Emergency Management Agency (FEMA), under Contract No. H-4643. This work was completed in March 1980 (Reference 1).
Jim Wells County (Unincorporated Areas):	The hydrologic and hydraulic analyses for this study were performed by URS/Forrest and Cotton, Inc. Consulting Engineers, Austin, Texas, for Federal Emergency Management Agency (FEMA), under Contract No. H-4643. This work was completed in March 1980 (Reference 2).
San Diego, City of	The hydrologic and hydraulic analyses for this study were performed by Soil Conservation Service (SCS), for Federal Emergency Management Agency (FEMA), under Inter-Agency Agreement Contract No. EMW-90-E-3289, Project No. 1. This work was completed in September 1990 (Reference 3).

The floodplain mapping and redelineation for this countywide revision were performed by Mapping Alliance Partnership VI (MAPVI) for FEMA Region VI, under Task Order HSTO032 of Contract No. EMT-2002-CO-0052. These revisions were completed in August 2010.

Additional work to update the FIS and FIRMs with information about deaccredited levees was done by Risk Assessment and Mapping and Planning Partners (RAMPP) under contract No. HSFE06-12-J001 in July 2015.

Base map information shown on this FIRM was derived from multiple sources. This information was compiled from the U.S. Geological Survey, 1989, National Geodetic Survey, 2004, and the Texas Natural Resources Information System, 2006. Additional information was photogrammetrically compiled at a scale of 1:6,000 from National Agriculture Imagery Program aerial photography dated 2014.

The projection used in the preparation of this map was Texas State Plane, South Zone (FIPS Zone 4205). The horizontal datum was NAD 83, GRS 80 Spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

1.3 Coordination

An initial meeting is held with representatives from FEMA, the community, and the study contractor to explain the nature and purpose of a FIS, and to identify the streams to be studied or restudied. A final meeting is held with representatives from FEMA, the community, and the study contractor to review the results of the study.

The initial and final meeting dates for previous FIS reports for Jim Wells County and its communities are listed in Table 1, “Initial and Final Consultation Coordinated Officer’s (CCO) Meetings”.

Table 1 – Initial and Final CCO Meetings

Community	Initial Meeting	Final Meeting
Alice, City, of	May 1, 2007	
Jim Wells County	May 1, 2007	
San Diego, City of	May 1, 2007	

An initial meeting was held with representatives from FEMA, the community, and the study contractor to explain the nature and purpose of a FIS, and to identify the streams to be studied or restudied. A final meeting is held with representatives from FEMA, the community, and the study contractor to review the results of the study.

The results of the study were reviewed at the final meeting held on _____, and attended by representatives of the Communities, 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 covers the geographic area of Jim Wells County, Texas, including the incorporated communities listed in Section 1.1.

Approximate analyses were used to study those areas having low development potential or minimal flood hazards. The scope and methods of study were proposed to and agreed upon by FEMA and Jim Wells County.

All or portions of the flooding sources listed in Table 2, "Scope of Study," were previously studied by detailed methods. Those limits of detailed study are indicated on the Flood Profiles (Exhibit 1) and on the FIRM (Exhibit 3).

A new detailed study was conducted by MAPVI on the Nueces River. All other flooding sources listed in Table 2 had been previously studied by detailed methods. These study streams were redelineated. This process consisted of updating the floodplain boundaries based on the most current topographic data. New hydrologic and hydraulic analyses were not performed on the redelineated flooding sources.

Table 2 – Scope of Study

Stream Name	Description of Detailed Studied Streams
Chiltipin Creek	From approximately 2,320 feet downstream of State Highway 44 to approximately 2,460 feet west from U.S. Highway 281
Lattas Creek	From approximately 50 feet downstream of FM 665 to approximately 330 feet upstream of South Gulf Street
Lattas Creek Tributary	From approximately 50 feet downstream of FM 1352 to approximately 70 feet downstream of U.S. Highway 281
Nueces River	From a point approximately 7 miles above the confluence with Nueces Bay to Nueces County Road 103.
Quinta Creek	From approximately 6,140 feet upstream of County Road 354 to approximately 2,030 feet downstream of County Road 313
Resaca De Enmedio	From approximately 4,580 feet upstream of State Highway 44 to approximately 1,520 feet north of County Road 118
Resaca De Enmedio Tributary 1	From approximately 1,500 feet west of North Texas Blvd to approximately 1,400 feet north of County Road 116
Resaca De Enmedio Tributary 2	From approximately 725 feet east of U.S. Highway 281 to approximately 30 feet downstream County Road 119
San Diego Creek (at Alice)	From approximately 2,330 feet upstream of State Highway 44 to approximately 270 feet upstream of U.S. Highway 281
San Diego Creek (at San Diego)	From approximately 1,060 feet upstream of FM 111 to approximately 2,040 feet downstream of County Road 1601
San Fernando Creek	From approximately 1,930 feet east of County Road 125 to 2,330 feet upstream of State Highway 44
San Fernando Creek Tributary	From approximately 150 feet north of Texas Mexican Railway to approximately 1,340 feet downstream of Coyote Trail
Unnamed Creek (at Ben Bolt)	From approximately 275 feet upstream of Southern Pacific Railroad to approximately 2,310 feet downstream of County Road 461

The following tabulation presents Letters of Map Correction (LOMCs) incorporated into this countywide study:

Table 3 – LOMCs

LOMC	Case Number	Date Issued	Project Identifier
LOMR	98-06-317P	December 17, 1997	Adams Presnall Farm Tracts along San Fernando Creek and San Fernando Creek Tributary.

2.2 Community Description

Jim Wells County is located in south Texas. Jim Wells County is bordered to the north by Live Oak County, Texas, to the northeast by San Patricio County, Texas, to the east by Nueces County and Kleberg County, Texas, to the south by the Brooks County, Texas, and to the west by Duval County, Texas (Reference 4). The 2000 population in the county was 40,839 persons (Reference 5).

Jim Wells County occupies approximately 868.22 square miles (Reference 6). Jim Wells County has a subtropical climate characterized by hot, humid summers and mild winters. Temperatures range from an average minimum of 44°F in January to an average maximum of 96°F in July and August. The average annual temperature is approximately 72°F. The highest recorded temperature was 111°F in 1939 and the lowest recorded temperature was 12°F in 1962. Rainfall averages 27 inches a year. The maximum monthly average of rain in inches occurs in September with 4.52 inches of rain, respectively, and the minimum monthly average occurs in January and December with 1.21 inches of rain, respectively (Reference 7).

The county's economy is dominated by oil and gas production and agri-business (beef and dairy cattle, hogs, poultry, cotton, flaxseed, sorghums, corn, and vegetables). The major surface transportation arteries include U.S. Highway 281, State Highways 44 and 359, the Southern Pacific Railroad and the Texas-Mexican Railroad (Reference 8).

Topography of the area is nearly level to gently rolling and is dominated by deep, predominantly calcareous, clay and loamy soils (Lattas Opelika-Clareville Association). Elevations vary from 100 to 400 feet. The topography of the area is nearly level to gently sloping (Reference 8).

The City of Alice is the main population center of the County. It is located 45 miles west of Corpus Christi and is the county seat. The population of Alice was 19,104 in 2010.

The City of San Diego is 54 miles west of Corpus Christi on the Jim Wells/Duval County Boundary. The City's economy is dominated by ranching and oil and gas production. The population of San Diego was 4,488 in 2010.

The City of Premont is located in southern Jim Wells county, approximately 25 miles south of the City of Alice. The population of Premont was 2,653 in 2010 (Reference 5).

The City of Orange Grove is located 16 miles northeast of the City of Alice. Population of the Orange Grove was 1,318 in 2010 (Reference 5).

2.3 Principal Flood Problems

The areas studied in Jim Wells County experience flooding predominantly from Chiltipin Creek, Lattas Creek, Quinta Creek, San Diego Creek, San Fernando Creek, and an Unnamed Creek (at Ben Bolt). Past major flooding occurred in 1897, 1919, 1939, 1941, 1949, 1951, and 1967 (Reference 9).

Chiltipin Creek drains a watershed of 156 square miles into Lake Alice just north of the City of Alice. The capacity of Lake Alice is 3,110 acre-feet when water-surface elevations reach the spillway crest elevation of 196.5 feet above NGVD (Reference 10). There are presently no flood gates in the Lake Alice Dam; therefore, floodwaters discharge uncontrolled through the spillway, often times creating flooding conditions in the downstream reaches of Chiltipin Creek and San Fernando Creek. During extreme flooding conditions, collapsible flashboards installed in the dam will release a surge of floodwater when water elevations behind the dam reach 199.0 feet NGVD (Reference 10).

Floodwaters from Lattas Creek are restricted by U.S. Highway 281 and, as a result, overflow into the watershed of the Lattas Creek Tributary to the south. Because there is no defined channel for the tributary in this area, overflows from Lattas Creek spread out to create flooding west of U.S. Highway 281.

San Diego Creek drains 310 square miles at its intersection with U.S. Highway 281 and is the source of some shallow flooding.

The flooding in the City of San Diego is limited to the areas adjacent to San Diego Creek. The area prone to flood damages has been greatly reduced by the flood control measures implemented through the San Diego-Rosita Creeks Watershed Work Plan (Reference 11). Several residences south of San Diego Creek may still experience moderate flood damage, while some areas north of the creek may suffer damages from localized flooding due to inadequate drainage outlets.

Prior to the implementation of the work plan, large floods occurred on the average of once every four to five years damaging residences along the stream banks. In the thirty year period, from 1924 to 1953, that the watershed work plan was studied by the SCS, seven major floods and 52 smaller floods occurred. The major storms occurring in 1949, 1951, 1953, 1955, and 1957 inundated large areas of the floodplain, but caused only moderate damages due to the low damageable value of the floodplain in the rural areas.

On July 17, 1990, 9.4 inches of rainfall were recorded in the City of San Diego. No flooding of streets and lawns occurred due to inadequate drainage outlets. Damages were slight with no residences being significantly affected.

Even though levees have been constructed along much of the creek, floodwaters do escape the main channel along reaches where only natural banks exist. The resulting shallow flooding occurs mainly in San Diego Creek's north overbank, while the floodwaters spreading out upstream of Texas Boulevard flow south towards more densely populated areas. Shallow flooding also occurs along San Diego Creek as a result of restrictions to flow at the U.S. Highway 281 and Southern Pacific Railroad crossing.

2.4 Flood Protection Measures

Lake Alice Dam, completed in March of 1965, was constructed on Chiltipin Creek north of the City of Alice to store water for use by the city. The dam is the property of the Alice Water Authority. Because Lake Alice was formed for use as a water storage reservoir, little capacity exists for flood retention. However, upstream of the Lake Alice Dam there are seven floodwater retarding structures constructed by the Soil Conservation Service (SCS). These structures were built during the early 1960's as part of the SCS's Watershed Protection and Flood Prevention Work Plan for Chiltipin and San Fernando Creeks (Reference 12).

San Diego Creek and its watershed has also been the object of flood protection measures. The SCS, as part of its Watershed Protection and Flood Prevention Work Plan for San Diego Creek and Rosita Creek, has constructed a total of ten floodwater retarding structures on these two creeks (Reference 11). Rosita Creek is a tributary of San Diego Creek and forms its confluence with San Diego Creek at the City of San Diego.

In 1991, a dike was constructed under the same watershed project to provide protection to the City of San Diego from the 1-percent–annual-chance flood. This dike extends, parallel to the north bank of San Diego Creek from the Texas-Mexican Railroad grade on the west side of town to the eastern city limits (Reference 13). This dike does not provide protection against the 1-percent annual chance flood.

In addition, in 1955, the U.S. Army Corps of Engineers (USACE) completed approximately 3.4 miles of channel improvement and flood protection levees along San Diego Creek north of the City of Alice (Reference 9).

In 1953, the County completed the straightening and lining of Lattas Creek channel between South Cameron Street and South Aransas Street in the City of Alice (Reference 9). Also, in 1955, the USACE completed a project along San Diego Creek in which segments of the creek's channel were analyzed and flood protection levees constructed.

Within this jurisdiction, there are one or more levees that have not been demonstrated by the communities or levee owner(s)to meet the requirements of 44 CFR Part 65.10 of the NFIP regulations as it relates to the levee's capacity to provide 1-percent- annual -chance flood protection. Please refer to the Notice to Flood Insurance Study Users page at the front of this FIS report for more information.

3.0 ENGINEERING METHODS

For the flooding sources studied 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 are expected to be equaled or exceeded once on the average during any 10-, 50-, 100-, or 500-year (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-, or 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 (100-year) 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 will be amended periodically to reflect future changes.

Note: Within this jurisdiction there are one or more levees that have not been demonstrated by the community or levee owner to meet the requirements of 44CFR 65.10 as it relates to the levee's capacity to provide 1-percent- annual -chance flood protection. Please refer to the Notice to Flood Insurance Study Users page at the front of this FIS report for more information.

3.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish peak discharge-frequency relationships for each flooding source studied.

Pre-Countywide Analysis:

The procedures used by the SCS were adopted as the preferred method to compute peak discharges (Q) for the selected drainage areas associated with Quinta Creek at Orange Grove; the Unnamed Creek (at Ben Bolt); and Lattas Creek and its Tributary; Resaca de Enmedio; San Diego Creek (at San Diego) and the Tributary to San Fernando Creek (Reference 14). Rainfall and watershed data, including soil properties, are included as hydrologic parameters in calculating peak flows. Soils are divided into four groups based on the minimum rate of infiltration obtained for a soil after prolonged wetting. Surface conditions are evaluated by land use and treatment classifications. Time of travel, peak flows, and accumulated runoff ratios from SCS dimensionless hydrographs are used to tabulate the design flood hydrographs and peak discharges for the 10-, 2-, and 1-percent-annual-chance storms. The 0.2 percent-annual-chance discharge is determined by a log-normal extrapolation of the 10-, 2-, and 1- percent-annual-chance flows**.**

It is possible that Lattas Creek may receive overflows from San Diego Creek outside the limits of this study. Only the runoff from Lattas Creek watershed was included in this analysis.

The physical parameters of soil type and group classification were determined following a field reconnaissance of each watershed and the use of the General Soil Map of Jim Wells County (Reference 15). Each watershed was divided into the percentage of contributing soil group classification and land use cover, and a calculated composite curve number which describes the physical parameters was used to modify the unit hydrograph tabulations.

Curve numbers ranging from 76 in rural areas to 88 in urban areas were used in this study. The additional parameters of drainage area and stream length were determined from topographic maps of the drainage basin (Reference 16).

The SCS method was not adequate for determining the flows of San Diego Creek, Chiltipin Creek, and San Fernando Creek because of their watershed size, flood control structures involved, and lack of soil information.

Therefore, the U.S. Army Corps of Engineers (USACE) HEC-1 Flood Hydrograph computer program was selected as the preferred method for estimating flows of the desired frequencies (Reference 17). Point rainfall data utilized in HEC-1 was obtained from the U.S. Weather Bureau (Reference 18). Because of the large drainage areas of these watersheds, the rainfall data was reduced by factors from an area-depth curve.

Table 4, "Summary of Discharges," shows peak flows for the 10-, 2-, 1-, and 0.2 percent-annual-chance frequency storms (as derived from the SCS method and the HEC-1 computer program) at selected locations along each creek being studied. Because of the movement of floodwaters between watersheds at several locations within the limits of this study the flows shown in the Table do not always coincide with the flows used to derive floodwater surface elevations. Also, these hydrologic analyses do not reflect potential movement of floodwaters between watersheds upstream of the limits of this study.

For this Countywide Revision:

Gage Analysis for the Nueces River using the PeakFQ software was conducted (References 19-20).

Table 4 – Summary of Discharges

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. mi.)	PEAK DISCHARGES (cfs) 10% - Annual-Chance	2% - Annual-Chance	1% - Annual-Chance	0.2% - Annual-Chance
CHILTIPIN CREEK					
At Southern Pacific Railroad	190.0	4,083[1]	16,000	24,250	35,250
Downstream Lake Alice Dam	156.0	4,083[1]	10,144	12,366	14,482
At 6000 feet downstream U.S. Highway 281	152.0	6,450	9,600	11,200	14,400
LATTAS CREEK					
State Highway 665	10.8	1,700	2,350	2,650	3,350
2540 downstream	9.6	1,300	1,500	1,600	1,800
Texas Boulevard	8.6	900[1]	900[2]	1,200[2]	1,200[2]
U.S. Highway 281 – State Highway 44 Junction	7.6	2,600	3,900	4,450	5,800
LATTAS CREEK TRIBUTARY					
State Highway 1352; Old Kingsville Road	1.3[3]	762	1,069	1,138	1,428
South Reynolds Street	2.6	750[4]	750[4]	750[4]	750[4]
U.S. Highway 281	2.3	1,700	3,000	3,550	4,900[5]
NUECES RIVER					
2,000 ft. downstream of Missouri Pacific Railroad (Nueces County)	16,892	47,820	111,170	145,100	237,690

[1] Reduced flow resulting from storage behind Lake Alice Dam
[2] Maximum flow through U.S. Highway 281 - State Highway 44 Bridge at selected frequency
[3] Area contributing to runoff from the drainage basin downstream U.S. Highway 281
[4] Maximum flow through Southern Pacific Railroad Bridge
[5] Overflow from Lattas Creek

Table 4 - Summary of Discharges (continued)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. mi.)	PEAK DISCHARGES (cfs) 10% - Annual-Chance	2% - Annual-Chance	1% - Annual-Chance	0.2% - Annual-Chance
RESACA DE ENMEDIO					
Confluence with San Diego Creek	16.3	4,300	6,160	7,050	8,950
Upstream confluence of Resaca De Enmedio Tributary 1	16.0	3,150	4,550	5,250	6,650
60 ft. downstream U.S. Highway 281	14.2	2,800	4,300	4,950	6,450
RESACA DE ENMEDIO TRIBUTARY 1					
Confluence with Resaca de Enmedio	7.0	2,000	6,000[1]	7,100[1]	9,900[1]
RESACA DE ENMEDIO TRIBUTARY 2					
Confluence with Resaca de Enmedio	1.4	650	1,300	1,470	2,100
QUINTA CREEK					
At upstream limit of detailed study, 100 ft. downstream of Unnamed Road	2.6	1,210	1,950	2,240	2,970
At County Road, 1,200 ft. upstream from FM 783	3.9	1,485	2,300	2,640	3,450
FM 783	5.1	1,940	3,010	3,450	4,515
State Highway 359	7.0	2,240	4,145	4,760	6,610

[1] Overflow from San Diego Creek

Table 4 - Summary of Discharges (continued)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. mi.)	PEAK DISCHARGES (cfs) 10% - Annual-Chance	2% - Annual-Chance	1% - Annual-Chance	0.2% - Annual-Chance
SAN DIEGO CREEK (AT ALICE)					
Confluence with Chiltipin Creek	310.0	18,750	18,750[1]	18,750[1]	18,750[1]
5,900 feet upstream Highway 281 (Station 26600)	310.0	18,750	25,700[2]	29,200[2]	36,500[2]
12,370 feet upstream of Highway 281 (Station 33070)	310.0	18,750	28,200	33,050	42,700
SAN DIEGO CREEK (AT SAN DIEGO)					
At the confluence of Rosita Creek at the Texas-Mexican Railroad	287.8	14,833	25,547	28,885	39,988
Texas-Mexican Railroad	290.0	16,850	25,300	29,700	38,350
SAN FERNANDO CREEK					
Limit of detailed study at confluence with Pintas Creek	502.0	20,400	34,600	43,000	54,000
SAN FERNANDO CREEK TRIBUTARY					
Confluence with San Fernando Creek	2.2	1,200	1,700	2,000	2,500

[1] Reduced flow resulting from overflow into the adjacent watershed to the north upstream of U.S. Highway 281

[2] Reduced flow resulting from overflow into Resaca de Enmedio Tributary 1 to the north

Table 4 - Summary of Discharges (continued)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. mi.)	PEAK DISCHARGES (cfs) 10% - Annual-Chance	2% - Annual-Chance	1% - Annual-Chance	0.2% - Annual-Chance
UNNAMED CREEK (AT BEN BOLT)					
10,350 ft. upstream of U.S. Highway 281	13.8	3,970	5,910	6,790	8,740
1,540 ft. upstream of U.S. Highway 281	15.5	4,288	6,260	7,161	9,146
Downstream limit of detailed study: U.S. Highway 281	15.7	1,950[1]	2,900[1]	3,300[1]	4,200[1]

[1] Discharge remaining after overflow occurring approximately 1,500 ft. upstream of U.S. Highway 281

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.

The hydraulic analyses for this study are based on the assumption of unobstructed flow. Therefore, flood elevations as shown on the profiles are considered valid only if hydraulic structures remain unobstructed and operate properly.

Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles (Exhibit 1). Selected cross section locations are also shown on the Flood Boundary and Floodway Map (Exhibit 2).

Channel roughness factors (Mannings "n") used in the hydraulic computations were chosen by engineering judgment and based on field inspection of the stream and flood plain areas. These factors are shown in Table 5.

Table 5 – Manning "n" Roughness Values

Stream	Main Channel	Overbanks
Chiltipin Creek	0.030-0.060	0.040-0.050
Lattas Creek	0.030-0.045	0.042-0.060
Lattas Creek Tributary	0.040-0.050	0.040-0.080
Nueces River	.035	0.1-0.17
Quinta Creek	0.045-0.050	0.040-0.045
Resaca de Enmedio	0.035-0.060	0.035-0.050
Resaca de Enmedio, Tributary I	0.030-0.055	0.040
Resaca de Enmedio, Tributary 2	0.030-0.050	0.035-0.050
San Diego Creek (at Alice)	0.030-0.060	0.020-0.055
San Diego Creek (at San Diego)	0.035-0.040	0.040-0.050
San Fernando Creek	0.030-0.043	0.040-0.050
San Fernando Creek Tributary	0.030-0.055	0.040
Unnamed Creek (at Ben Bolt)	0.040-0.060	0.040-0.050

Pre-Countywide Analysis:

These elevations were computed through use of the U.S. Army Corps of Engineers (USACE) HEC-2 Step-Backwater computer program (Reference 21). Starting water-surface elevations were calculated using the slope-area method except for Chiltipin Creek. Starting Flood elevations for Chiltipin Creek were developed as a continuation of the Flood Profiles for San Fernando Creek. Flood profiles were drawn showing computed water-surface elevations for floods of the selected recurrence intervals.

Cross sections for the backwater analyses of the creeks studied in detail in this report were obtained from aerial photographs provided at a scale of 1.0 inch equals 500 feet by International Aerial Mapping Company and flown in January 1979 (Reference 22). Horizontal and vertical ground control was established by field surveying, using 3rd-order accuracy. The stream bed elevations below the water-surface were obtained by field measurements. All bridges and culverts were field checked to obtain elevation data and structural geometry.

It was determined through these hydraulic calculations that shallow flooding in certain areas of the City of Alice would occur as a result of the overflow of floodwaters from San Diego Creek (At Alice). These overflows occur in three places into the adjacent watershed to the north, drained by Tributary 1 to Resaca De Enmedio. These "break-outs" occur west of the City of Alice approximately 2.3 miles and 1.0 mile upstream of U.S. Highway 281 and just upstream of U.S. 281. These "break-outs" and the bridge restriction at U.S. 281 result in only the 10-percent-annual-chance flood profile being plotted along San Diego Creek above Texas Boulevard as this is the maximum flow along this reach which can be contained within the channel.

Overflows were also found to occur from the Lattas Creek Watershed west of Alice into the adjacent watershed to the south which is drained by the Lattas Creek Tributary. Because the culvert at the intersection of U.S. Highway 281 and State Highway 44 is inadequate to pass floodwaters from Lattas Creek, overland flow occurs upstream of U.S. Highway 281 towards the south.

Hydraulic calculations indicate that floodwaters from the Unnamed Creek (at Ben Bolt) will overflow to the south into the watershed drained by San Andres Creek. This “break-out” begins at an unnamed road approximately 2,500 feet upstream of U.S. Highway 281.

For this Countywide Revision:

The Nueces River study reach flows through agricultural fields before entering Nueces Bay. The channel is entirely earthen with varying amounts of vegetation including grass, brush, and trees and has been constructed such that it flows in long curved sections. The area is topographically flat with a total elevation change of approximately 20 feet over the 32-mile length of the reach. The normal depth method was used to determine the starting water surface elevation.

The Nueces River was studied using 2 ft. contour derived from Light Detection and Ranging (LiDAR) for areas of Nueces County. This date was used to create a TIN in the WISE software (References 23-24) for placing cross-sections. These cross sections were placed approximately 500 feet apart. Hydraulic modeling was then carried out in HEC-RAS 4.0 (Reference 25).

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 in use for newly created or revised FIS reports and FIRMs was the National Geodetic Vertical Datum of 1929 (NGVD). With the finalization of the North American Vertical Datum of 1988 (NAVD), many FIS reports and FIRMs are being 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 NAVD. The datum conversion factor from NGVD to NAVD in Jim Wells County is *-0.273 feet*.

Table 6 – Vertical Datum Conversion

Quad Name	Corner	Latitude	Longitude	Conversion from NGVD29 to NAVD88 (ft.)
Clegg	SE	28.000	-98.250	-0.089
Anna Rose	SE	28.000	-98.125	-0.135
Rosita NE	SE	27.875	-98.250	-0.164
Midway	SE	28.000	-98.000	-0.197
Shaeffer Ranch	SE	27.875	-98.125	-0.223
Rosita SE	SE	27.750	-98.250	-0.262
Benavides NE	SE	27.625	-98.250	-0.269
Sandia	SE	28.000	-97.875	-0.276
San Diego	SE	27.750	-98.125	-0.279
San Diego NE	SE	27.875	-98.000	-0.282
San Jose	SE	27.500	-98.250	-0.299
Ben Bolt NW	SE	27.625	-98.125	-0.308
Alice South	SE	27.625	-98.000	-0.315
Laguna Del Toro	SE	27.250	-98.250	-0.322
Alice North	SE	27.750	-98.000	-0.328
Premont West	SE	27.250	-98.125	-0.331
Concepcion	SE	27.375	-98.250	-0.335
Seeligson Ranch	SE	27.375	-98.125	-0.338
Palito Blanco	SE	27.500	-98.125	-0.344
Mathis	SE	28.000	-97.750	-0.354
			AVERAGE	**-0.273 feet**

All models created for this FIS report are referenced to NAVD. Structure and ground elevations in the community must, therefore, be referenced to NAVD. It is important to note that adjacent communities may be referenced to NGVD.

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

Vertical Network Branch, N/CG13
National Geodetic Survey, NOAA
Silver Spring Metro Center 3
1315 East-West Highway
Silver Spring, Maryland 20910
(301) 713-3191

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

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

4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

The NFIP encourages State and local governments to adopt sound floodplain management programs. Therefore, each FIS provides 1-percent-annual-chance (100-year) flood elevations and delineations of the 1- and 0.2-percent-annual-chance (500-year) floodplain boundaries and 1-percent-annual-chance floodway to assist communities in developing floodplain management measures. This information is presented on the FIRM and in many components of the FIS report, including Flood Profiles, Floodway Data Table, and Summary of Stillwater Elevations Table. Users should reference the data presented in the FIS report as well as additional information that may be available at the local 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, although none were mapped for this study.

For the streams studied by detailed methods, cross sections were obtained from aerial photographs provided at a scale of 1.0 inch equals 500 feet by International Aerial Mapping Company and flown in January 1979 (Reference 22). Between modeled cross sections, the boundaries were originally interpolated using topographic maps at a scale of 1:24,000, with a contour interval of 10 feet (Reference 16).

For this countywide revision all streams previously studied by detailed methods were redelineated based on USGS 10 meter DEMs (Reference 26). The Nueces River floodplain was delineated using 2 foot contours derived from LiDAR (Reference 23).

For the streams studied by approximate methods, only the 1-percent-annual-chance floodplain boundary is shown on the FIRM (Exhibit 2).

Within this jurisdiction there are one or more levees that have not been demonstrated by the community or levee owner(s) to meet the requirements of 44CFR Part 65.10 of the NFIP regulations as it relates to the levee's capacity to provide 1 percent annual chance flood protection. As such, the floodplain boundaries in this area were taken directly from the previously effective FIRM and are subject to change. Please refer to

the Notice to Flood Insurance Study Users page at the front of this FIS report for more information on how this may affect the floodplain boundaries shown on the FIRM.

4.2 Floodways

Encroachment on floodplains, such as structures and fill, reduces flood-carrying capacity, increases flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard. For purposes of the NFIP, a floodway is used as a tool to assist local communities in this aspect of floodplain management. Under this concept, the area of the 1-percent-annual-chance floodplain is divided into a floodway and a floodway fringe. The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment so that the 1-percent-annual-chance flood can be carried without substantial increases in flood heights. Minimum Federal standards limit such increases to 1 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 7, Floodway Data). In cases where the floodway and 1-percent-annual-chance floodplain boundaries are either close together or collinear, only the floodway boundary is shown.

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.

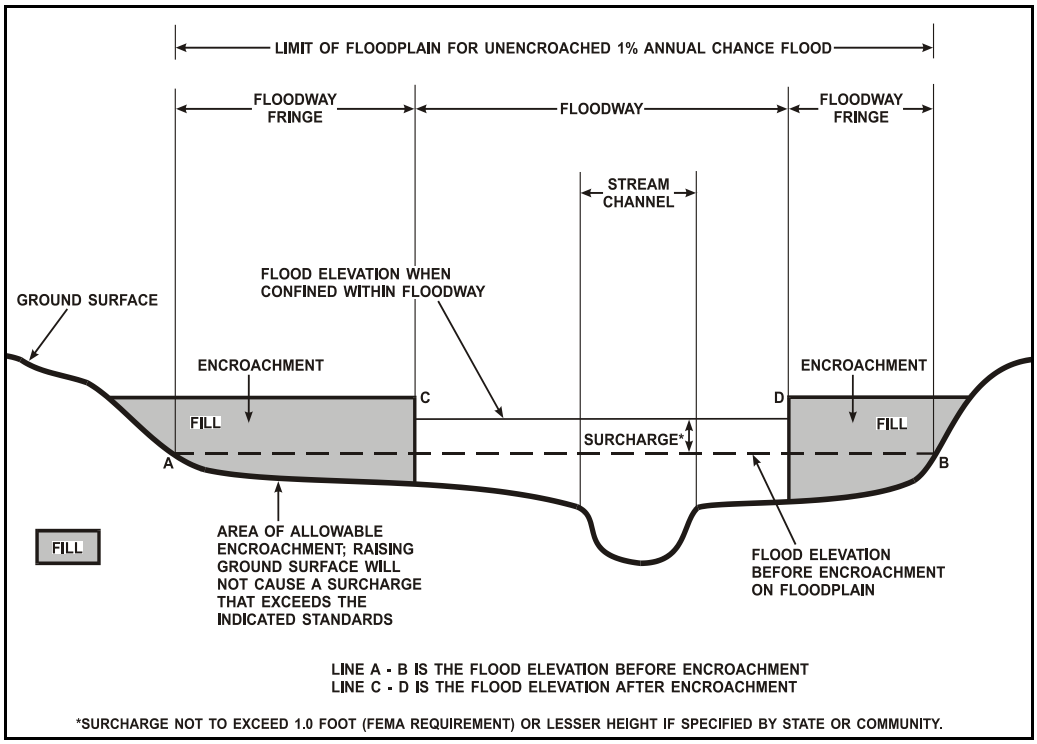

Figure 1 - Floodway Schematic

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Chiltipin Creek								
A	1,450	2,905	17,656	2.4	184.9	184.9	185.8	0.9
B	3,050	3,610	24,420	1.8	185.6	185.6	186.5	0.9
C	4,460	3,650	21,396	2.0	186.3	186.3	187.2	0.9
D	6,350	3,400	19,368	2.2	187.5	187.5	188.3	0.8
E	16,820	1,255	5,096	2.2	198.5	198.5	199.4	0.9
F	18,480	1,197	5,588	2.0	198.6	198.6	199.4	0.8
G	19,850	1,060	3,759	3.0	199.7	199.7	200.4	0.7
H	23,100	900	5,436	2.1	202.5	202.5	203.5	1.0
I	24,210	870	2,721	4.1	203.1	203.1	204.1	1.0

[1] Feet above confluence with San Fernando Creek

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

JIM WELLS COUNTY, TX

AND INCORPORATED AREAS

FLOODWAY DATA

CHILTIPIN CREEK

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Lattas Creek								
A	2,310[1]	79	322	8.2	176.6	176.6	177.6	1.0
B	4,360[1]	88	520	5.1	185.0	185.0	185.0	0.0
C[2]	5,470[1]	92	447	5.9	187.5	187.5	187.5	0.0
D[2]	6,600[1]	94	506	6.2	190.1	190.1	190.1	0.0
E[2]	7,740[1]	54	271	5.9	191.9	191.9	191.9	0.0
F[2]	9,350[1]	112	432	2.8	195.0	195.0	195.0	0.0
G[2]	10,340[1]	114	431	2.8	195.9	195.9	195.9	0.0
H[2]	11,190[1]	120	598	2.0	199.5	199.5	199.5	0.0
I[2]	12,270[1]	90	297	4.0	200.1	200.1	200.1	0.0
J[2]	13,630[1]	228	1,115	1.1	205.5	205.5	205.5	0.0
K	16,450[1]	31	111	10.8	210.0	210.0	210.0	0.0
L	17,450[1]	170	788	5.7	212.9	212.9	213.9	1.0
Lattas Creek Tributary								
A	50[3]	330	781	1.5	189.8	189.8	190.4	0.6
B	3,450[3]	291	277	4.1	195.8	195.8	195.9	0.1
C	6,800[3]	331	812	0.9	201.5	201.5	202.2	0.7

[1] Feet above State Highway 665
[2] This cross-section lies within an area that has not been updated on the FIRM at this time due to the presence of one or more levees that have not been demonstrated to meet the requirements of 44CFR Part Section 65.10 of the NFIP regulations. Please refer to the Notice to Flood Insurance Study Users page at the front of the FIS report for more information.
[3] Feet above the downstream edge of FM Road 1352

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

JIM WELLS COUNTY, TX
AND INCORPORATED AREAS

FLOODWAY DATA

LATTAS CREEK – LATTAS CREEK TRIBUTARY

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)[2]	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Nueces River								
A – AT[3]								
AU	197,237	9,550/0	119,638	1.2	50.5	50.5	51.1	0.6
AV	202,569	8,810/1,475	86,492	1.7	52.4	52.4	52.8	0.4
AW	205,082	8,560/3,178	96,056	1.5	53.4	53.4	54.1	0.7
AX	207,707	6,780/3,643	67,785	2.1	54.1	54.1	55.1	1.0
AY	209,604	6,100/3,851	72,271	2.0	56.6	56.6	57.1	0.5

[1] Feet above the confluence with Nueces Bay
[2] Total width/Width within County Limits
[3] Cross Sections located in Nueces and San Patricio Counties

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

JIM WELLS COUNTY, TX
AND INCORPORATED AREAS

FLOODWAY DATA

NUECES RIVER

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Quinta Creek								
A	90	940	4,035	1.2	166.1	166.1	166.7	0.6
B	1,020	561	1,882	2.5	166.3	166.3	166.9	0.6
C	2,150	465	1,601	3.0	167.5	167.5	168.2	0.7
D	3,620	378	1,030	4.6	170.4	170.4	171.2	0.8
E	4,470	595	2,473	1.1	174.0	174.0	174.7	0.7
F	5,930	506	1,372	1.9	174.2	174.2	175.2	1.0
G	8,000	400	1,106	2.4	176.0	176.0	176.9	0.9
H	10,300	385	7,88	3.4	180.1	180.1	181.1	1.0
I	11,810	223	7,76	3.4	184.4	184.4	185.1	0.7
J	13,180	249	6,89	3.8	186.8	186.8	187.7	0.9

[1] Feet above State Highway 359

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

JIM WELLS COUNTY, TX

AND INCORPORATED AREAS

FLOODWAY DATA

QUINTA CREEK

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Resaca de Enmedio								
A	5,800[1]	454	1,915	3.7	192.1	192.1	193.0	0.9
B	8,160[1]	748	2,937	1.8	193.6	193.6	194.6	1.0
C	9,900[1]	550	1,279	4.1	195.2	195.2	195.9	0.7
D	11,350[1]	875	1,919	2.7	198.2	198.2	199.2	1.0
E	12,920[1]	1,623	2,432	2.2	200.7	200.7	201.6	0.9
F	14,020[1]	2,372	10,842	0.5	206.4	206.4	206.8	0.4
G	15,800[1]	700	1,008	5.2	206.4	206.4	206.8	0.4
H	18,030[1]	578	2,293	2.3	211.6	211.6	212.5	0.9
I	20,580[1]	305	1,226	4.3	216.0	216.0	216.5	0.5
Resaca de Enmedio Tributary 1								
A	2,120[1]	530	2124	3.3	194.7	194.7	195.7	1.0
B	3,590[1]	626	2354	3.0	196.1	196.1	197.0	0.9
C	5,650[1]	600	4067	1.7	201.2	201.2	202.1	0.9
D	7,350[1]	755	3273	2.2	201.5	201.5	202.5	1.0
E	9,480[1]	603	1686	4.2	203.5	203.5	204.4	0.9
F	11,960[1]	432	2011	3.5	209.3	209.3	210.3	1.0

[1] Feet above confluence with Chiltipin Creek
[2] Feet above confluence with Resaca De Enmedio

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

JIM WELLS COUNTY, TX
AND INCORPORATED AREAS

FLOODWAY DATA

RESACA DE ENMEDIO – RESACA DE ENMEDIO TRIBUTARY 1

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Resaca de Enmedio Tributary 2								
A	3,280[1]	185	420	3.5	207.1	207.1	207.4	0.3
B	6,700[1]	317	460	3.2	211.9	211.9	212.6	0.7
San Diego Creek (At Alice)								
A	2,180[2]	2,950	17,656	2.4	184.9	184.9	185.8	0.9
B	3,900[2]	3,610	24,427	1.8	185.6	185.6	186.5	0.9
C	5,870[2]	3,650	21,396	2.0	186.3	186.3	187.2	0.9
D	7,330[2]	3,400	19,368	2.2	187.5	187.5	188.3	0.8
E	10,000[2]	329	1,550	12.1	193.7	193.7	193.7	0.0
F	11,650[2]	322	1,815	10.3	197.8	197.8	198.2	0.4
G	14,250[2]	506	4,305	4.4	205.9	205.9	206.5	0.6
H	15,920[2]	230	2,562	7.3	206.9	206.9	207.6	0.7
I	17,550[2]	214	2,048	9.2	209.7	209.7	210.0	0.3
J	18,100[2]	220	3,529	5.3	211.8	211.8	212.0	0.2
K	18,310[2]	250	3,840	4.9	213.2	213.2	213.4	0.2
L	20,500[2]	290	321	8.1	213.6	213.6	213.7	0.1
M	20,780[2]	250	620	7.2	215.3	215.3	215.3	0.0
N	22,520[2]	438	530	9.5	215.3	215.3	215.3	0.0

[1] Feet above confluence with Resaca De Enmedio
[2] Feet above confluence with San Fernando Creek

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

JIM WELLS COUNTY, TX

AND INCORPORATED AREAS

FLOODWAY DATA

RESACA DE ENMEDIO TRIBUTARY 2 – SAN DIEGO CREEK (AT ALICE)

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
San Diego Creek (At Alice) (Continued)								
O	24,870[1]	340	2,282	8.2	218.0	218.0	218.0	0.0
P	26,600[1]	210	2,006	9.3	221.1	221.1	221.1	0.0
Q	29,470[1]	371	3,151	6.0	225.4	225.4	225.4	0.0
San Diego Creek (At San Diego)								
A	205[2]	395	5,449	5.5	280.0	280.0	280.4	0.4
B	1,100[2]	589	7,612	3.9	280.6	280.6	281.2	0.6
C	1,500[2]	565	4,075	7.3	280.6	280.6	281.2	0.6
D	2,580[2]	915	6,718	4.4	282.6	282.6	283.6	1.0
E	3,680[2]	587	5,487	5.4	284.0	284.0	285.0	1.0
F	5,035[2]	483	5,496	5.4	286.3	296.3	297.3	1.0
G	6,295[2]	385	5,034	5.9	288.4	288.4	289.4	1.0
H	8,045[2]	728	7,274	4.1	290.8	290.8	291.8	1.0
I	9,165[2]	504	5,500	5.4	291.8	291.8	292.7	0.9
J	10,340[2]	315	4,353	6.8	293.6	293.6	294.5	0.9
K	11,900[2]	322	4,910	6.2	296.1	296.1	297.1	1.0

[1] Feet above confluence with San Fernando Creek
[2] Feet above Texas – Mexican Railroad

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

JIM WELLS COUNTY, TX
AND INCORPORATED AREAS

FLOODWAY DATA

SAN DIEGO CREEK (AT ALICE)
SAN DIEGO CREEK (AT SAN DIEGO)

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
San Fernando Creek								
A	20[1]	1,730	8,947	4.8	167.9	167.9	168.9	1.0
B	2,400[1]	950	6,759	6.4	171.8	171.8	172.6	0.8
C	8,600[1]	2,300	14,159	3.0	178.2	178.2	179.2	1.0
D	11,000[1]	1,448	12,210	3.5	179.2	179.2	180.2	1.0
E	11,250[1]	1,449	11,841	3.6	180.5	180.5	181.0	0.5
F	13,570[1]	2,620	8,808	4.9	182.0	182.0	182.8	0.8
San Fernando Creek Tributary								
A	11,880[2]	356	555	3.6	179.5	179.5	180.1	0.6
B	13,640[2]	400	867	2.3	183.6	183.6	183.6	0.0
C	15,690[2]	410	677	3.0	187.6	187.6	188.4	0.8

[1] Feet above confluence with Pintas Creek
[2] Feet above confluence with San Fernando Creek

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

JIM WELLS COUNTY, TX
AND INCORPORATED AREAS

FLOODWAY DATA

SAN FERNANDO CREEK – SAN FERNANDO CREEK TRIBUTARY

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Unnamed Creek (at Ben Bolt)								
A	300	1,601	1,787	1.8	175.1	175.1	175.1	0.0
B	970	498	886	3.7	176.5	176.5	176.5	0.0
C	1,790	1,918	3,730	1.9	177.8	177.8	177.8	0.0
D	2,840	400	1,765	4.1	179.1	179.1	179.5	0.4
E	3,900	340	1,647	4.3	180.3	180.3	181.3	1.0
F	6,600	665	2,385	3.0	184.2	184.2	185.0	0.8
G	8,320	850	2,264	3.2	186.6	186.6	187.2	0.6
H	9,900	720	2,146	3.3	188.6	188.6	189.6	1.0
I	10,690	2,170	10,795	0.6	191.9	191.9	192.9	1.0
J	12,750	1,815	7,980	0.9	192.1	192.1	193.0	0.9
K	13,970	1,855	8,179	0.8	192.2	192.2	193.1	0.9
L	15,080	1,614	6,391	1.1	192.3	192.3	193.3	1.0

[1] Feet above downstream limit of Detailed Study (100 feet downstream of U.S. Highway 281)

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

JIM WELLS COUNTY, TX

AND INCORPORATED AREAS

FLOODWAY DATA

UNNAMED CREEK (AT BEN BOLT)

5.0 INSURANCE APPLICATIONS

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

Zone A

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

Zone AE

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

Zone AH

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

Zone AO

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

Zone X

Zone X is the flood insurance risk 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, and areas protected from the 1-percent-annual-chance flood by levees. 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 risk zones as described in Section 5.0. Insurance agents use the zones 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.

The countywide FIRM presents flooding information for the entire geographic area of Jim Wells County. Previously, FIRMs were prepared for each incorporated community and the

unincorporated areas of the County identified as flood-prone. Historical data relating to the maps prepared for each community are presented in Table 7.

Within this jurisdiction there are one or more levees that have not been demonstrated by the community or levee owner(s) to meet the requirements of 44CFR Part 65.10 of the NFIP regulations as it relates to the levee's capacity to provide 1 annual chance flood protection. Please refer to the Notice to Flood Insurance Study Users page at the front of this FIS report for more information on how this may affect the FIRM.

7.0 OTHER STUDIES

Previous studies have been prepared for the City of Alice, Jim Wells County (unincorporated areas), and City of San Diego.

No previous studies have been prepared for the Cities of Orange Grove and Premont.

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

8.0 LOCATION OF DATA

Information concerning the pertinent data used in the preparation of this study can be obtained by contacting:

FEMA, Federal Insurance and Mitigation Division,
Federal Regional Center,
800 North Loop 288,
Denton, Texas 76209.

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISION DATE	FIRM EFFECTIVE DATE	FIRM REVISION DATE
Alice, City of	December 28, 1973	June 25, 1976 December 6, 1977	March 1, 1984	None
Jim Wells County	June 10, 1977	June 17, 1980	May 2, 1983	None
Orange Grove, City of [1,2]	Not Applicable			
Premont, City of	June 28, 1974	February 20, 1976	September 1, 1987	None
San Diego, City of	October 29, 1976	None	March 1, 1987	February 3, 1993

[1] No special flood hazard areas identified
[2] Community did not have a FIRM prior to the first countywide FIRM for Jim Wells County

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

JIM WELLS COUNTY, TX
AND INCORPORATED AREAS

COMMUNITY MAP HISTORY

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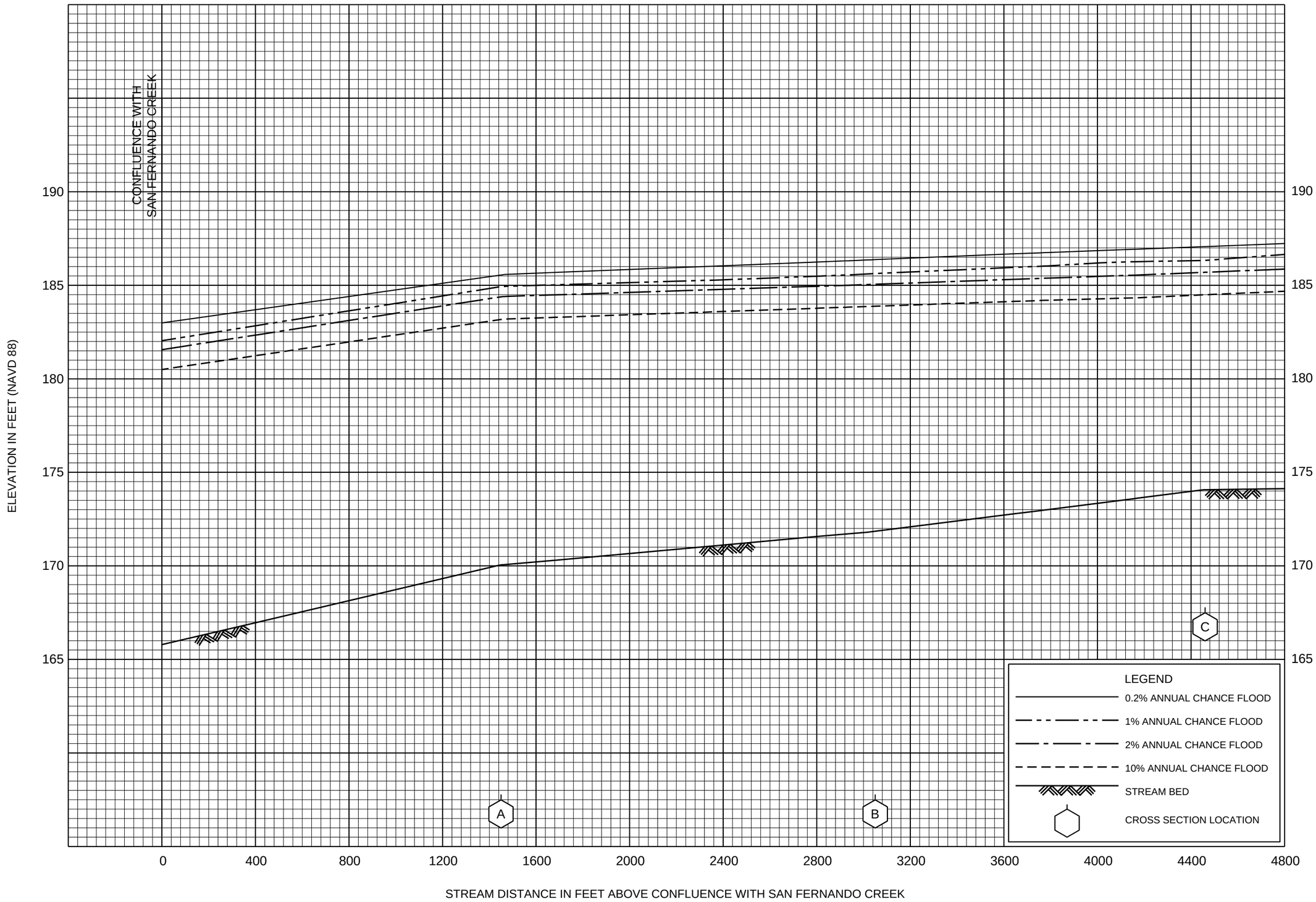

FLOOD PROFILES

CHILTIPIN CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

JIM WELLS COUNTY, TX

AND INCORPORATED AREAS

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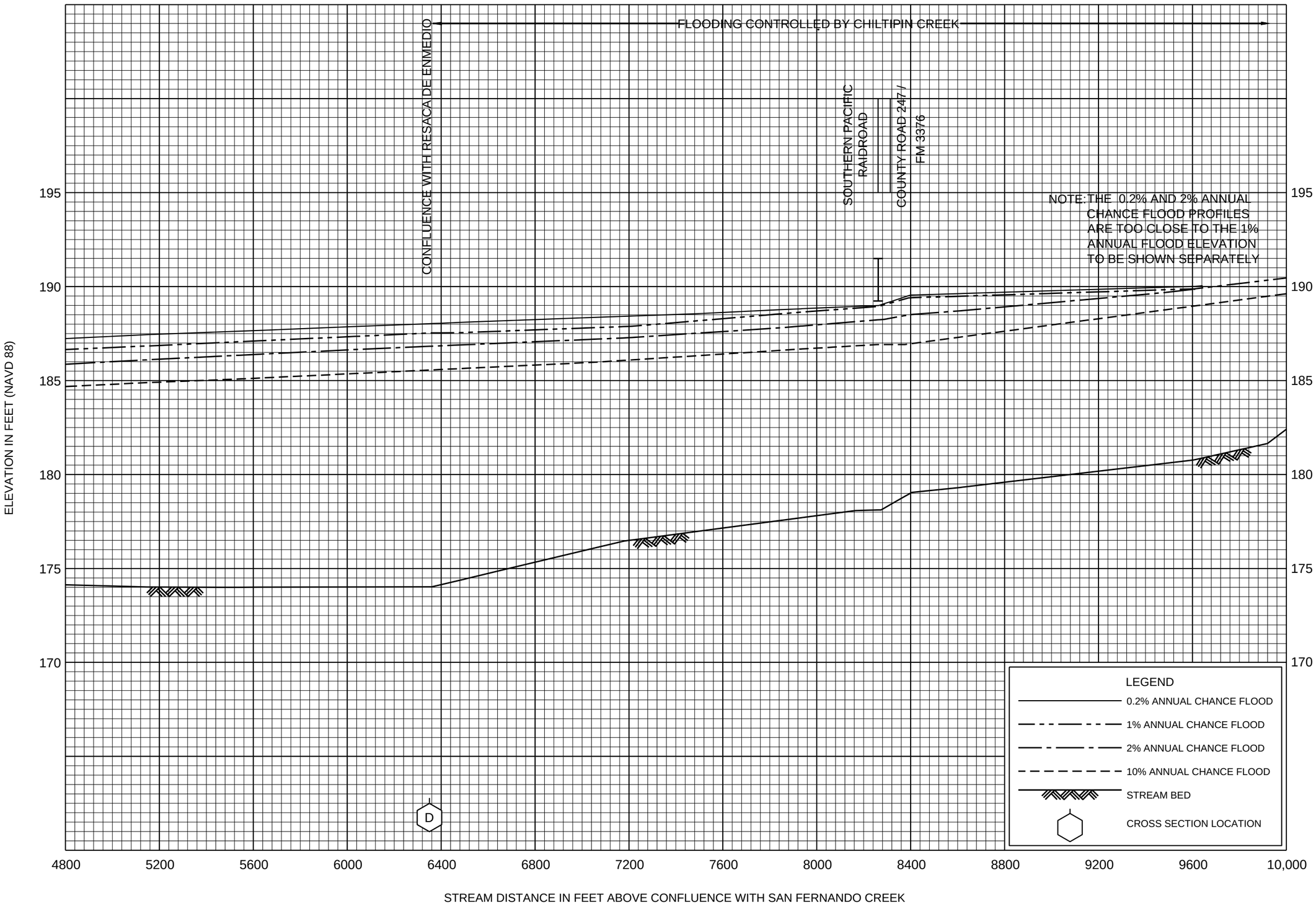

FLOOD PROFILES

CHILTIPIN CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

JIM WELLS COUNTY, TX

AND INCORPORATED AREAS

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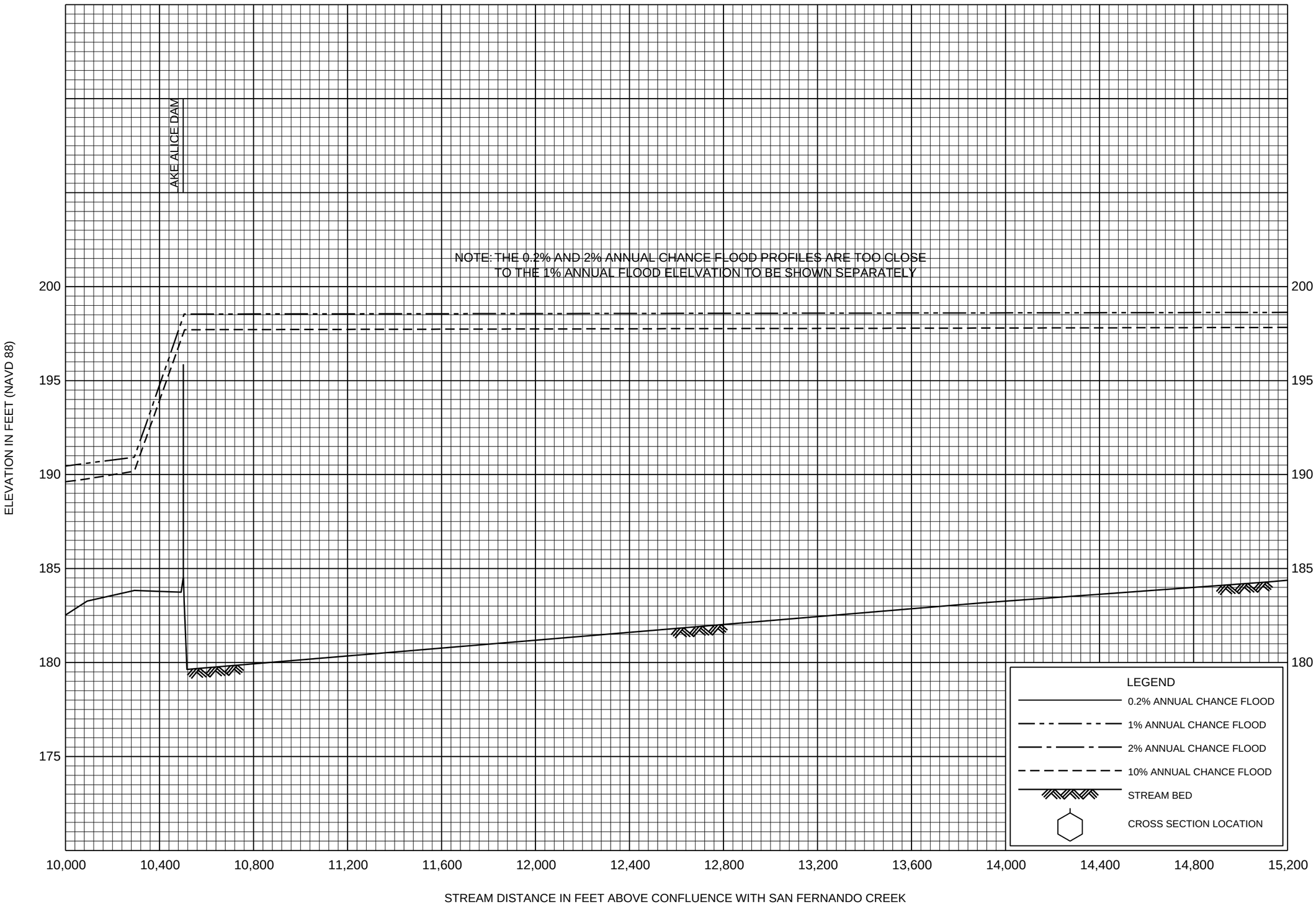

FLOOD PROFILES

CHILTIPIN CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

JIM WELLS COUNTY, TX

AND INCORPORATED AREAS

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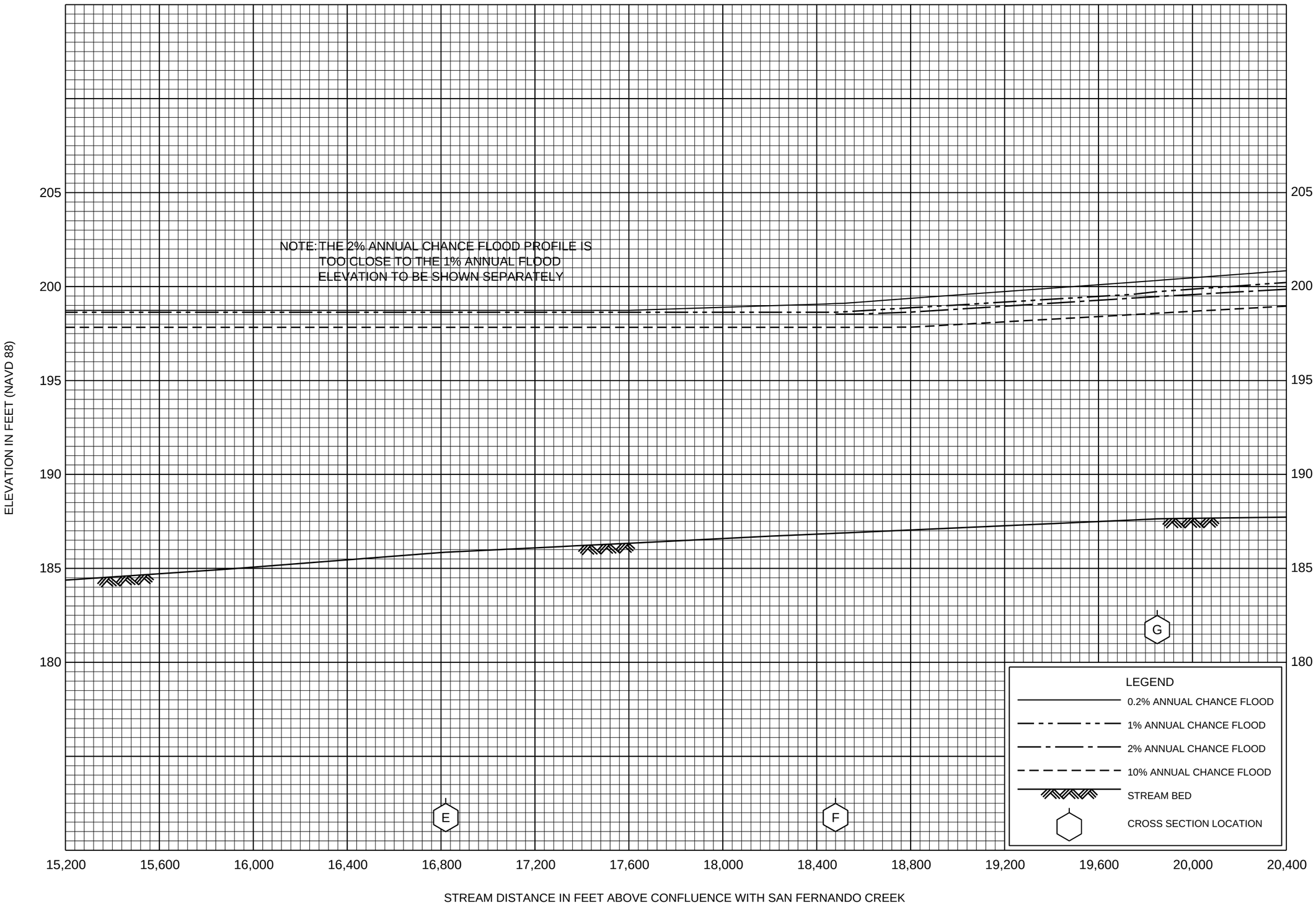

FLOOD PROFILES

CHILTIPIN CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

JIM WELLS COUNTY, TX

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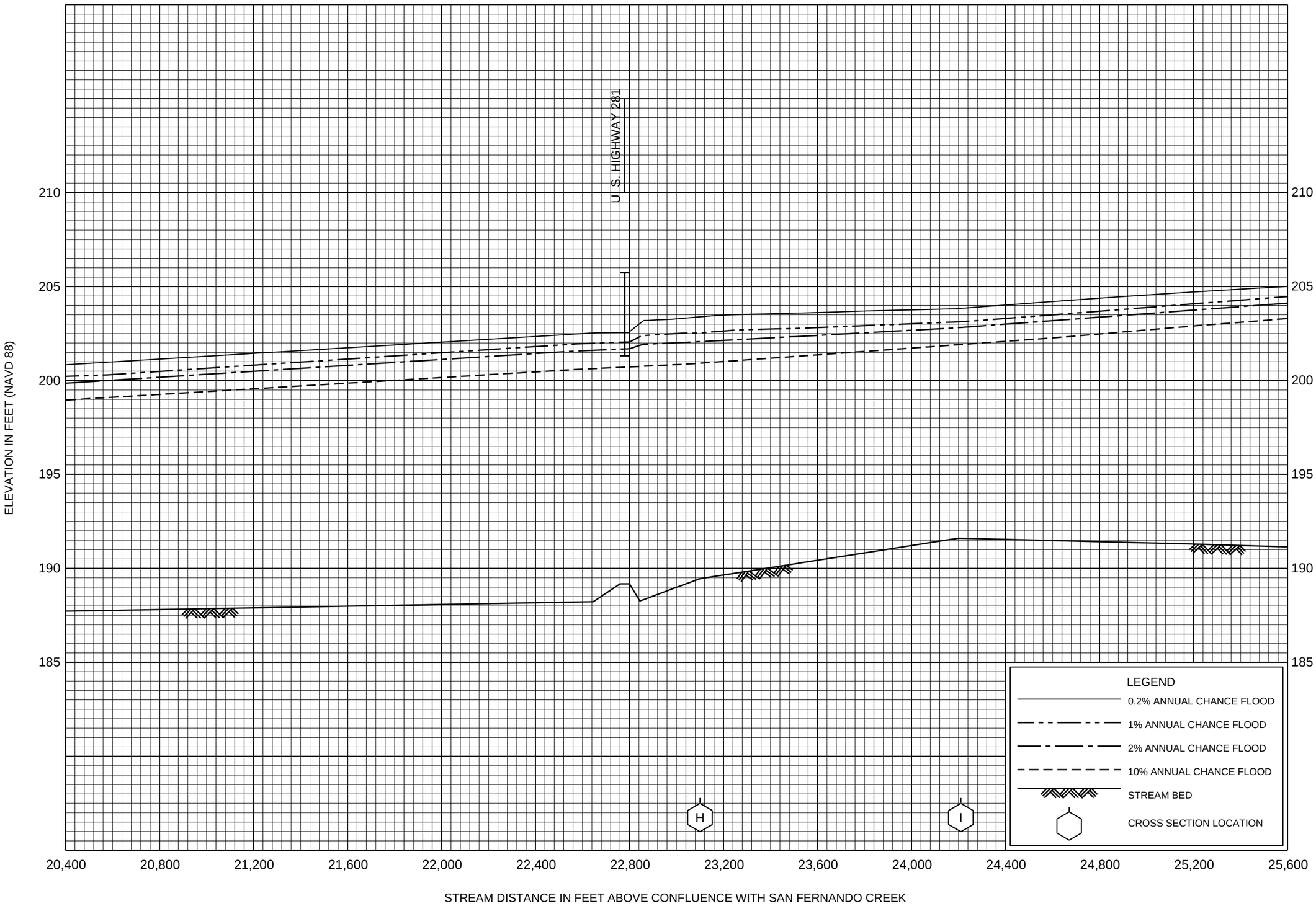

FLOOD PROFILES

CHILTIPIN CREEK

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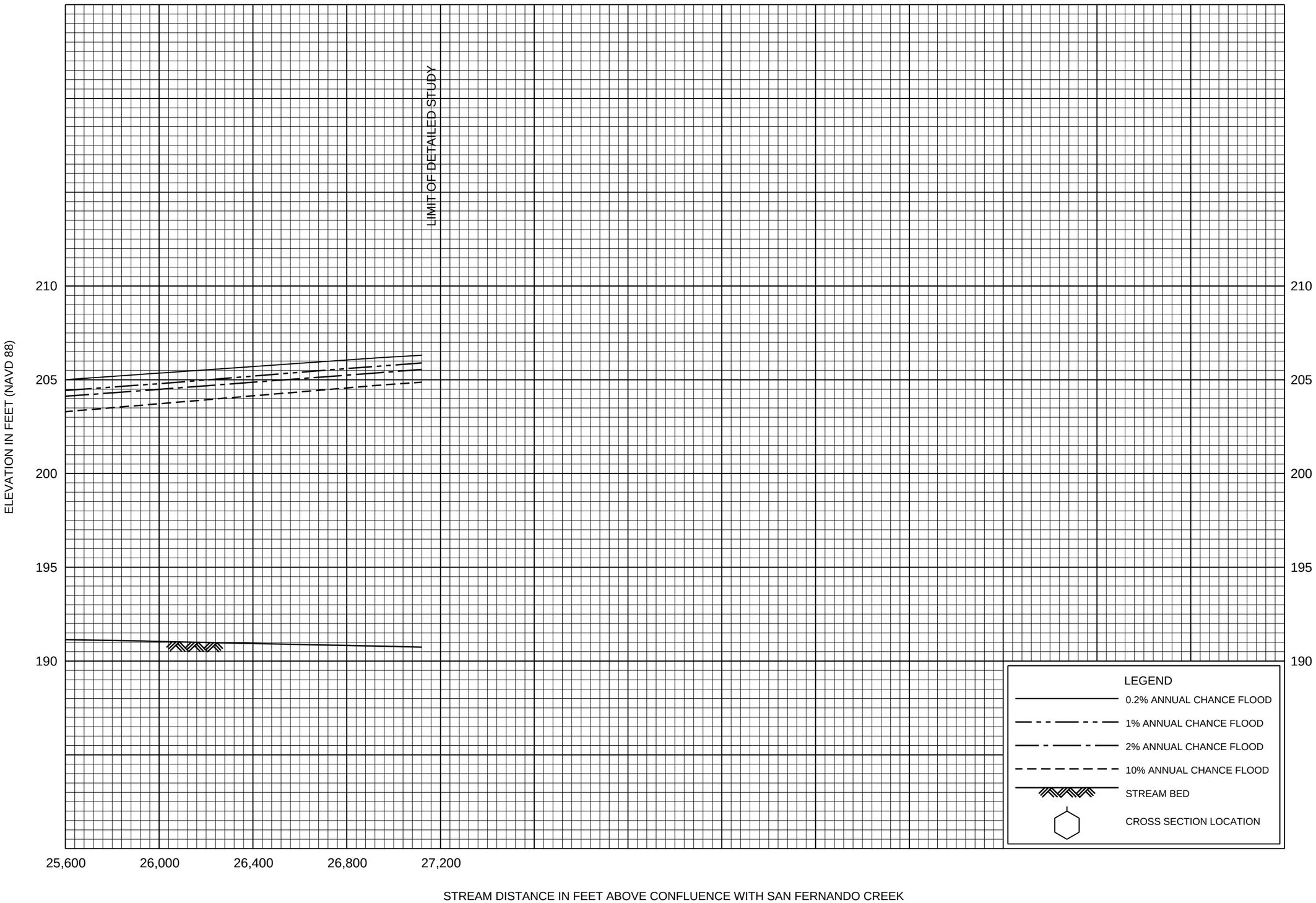

FLOOD PROFILES

CHILTIPIN CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

JIM WELLS COUNTY, TX

AND INCORPORATED AREAS

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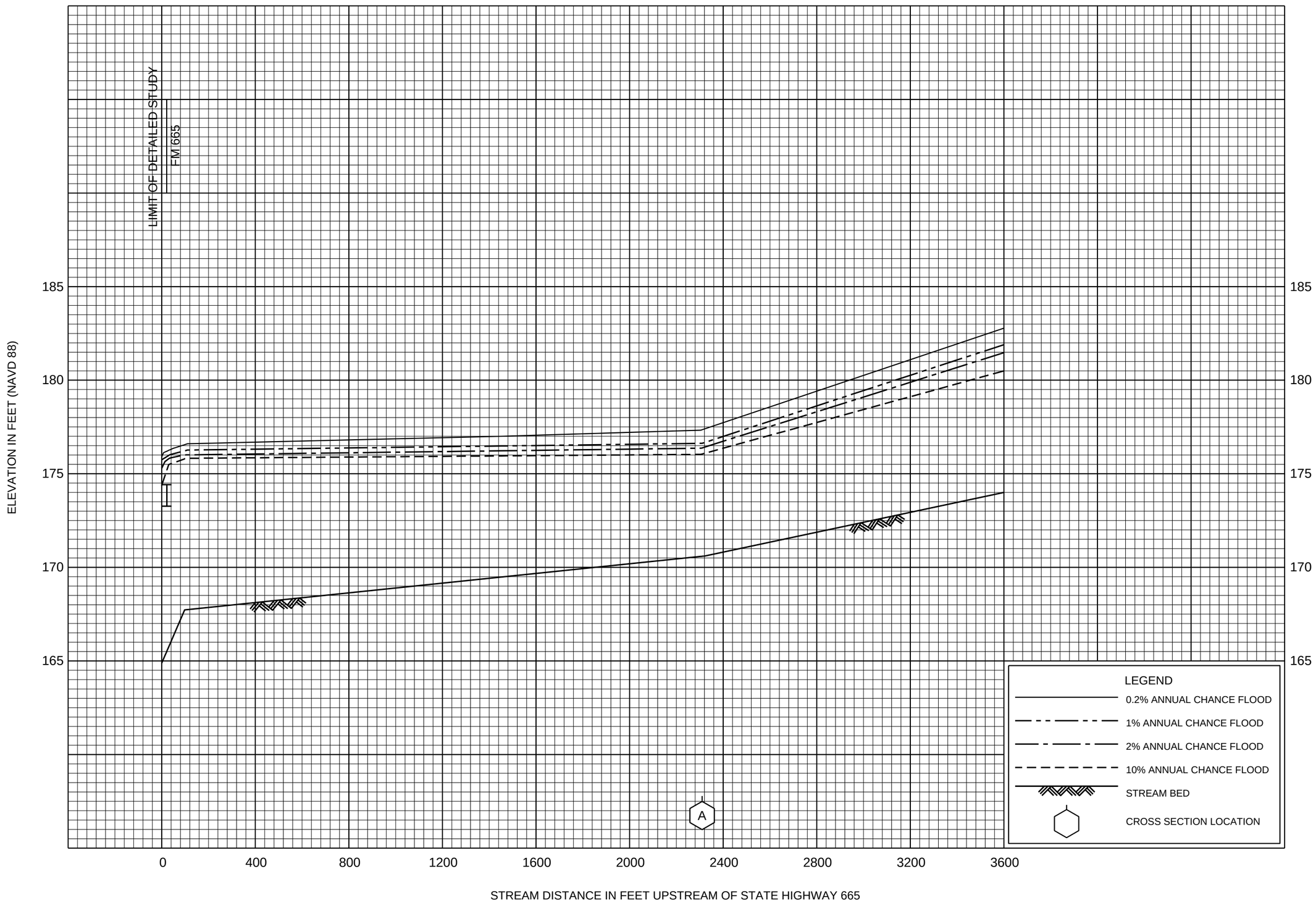

FLOOD PROFILES

LATTAS CREEK

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JIM WELLS COUNTY, TX

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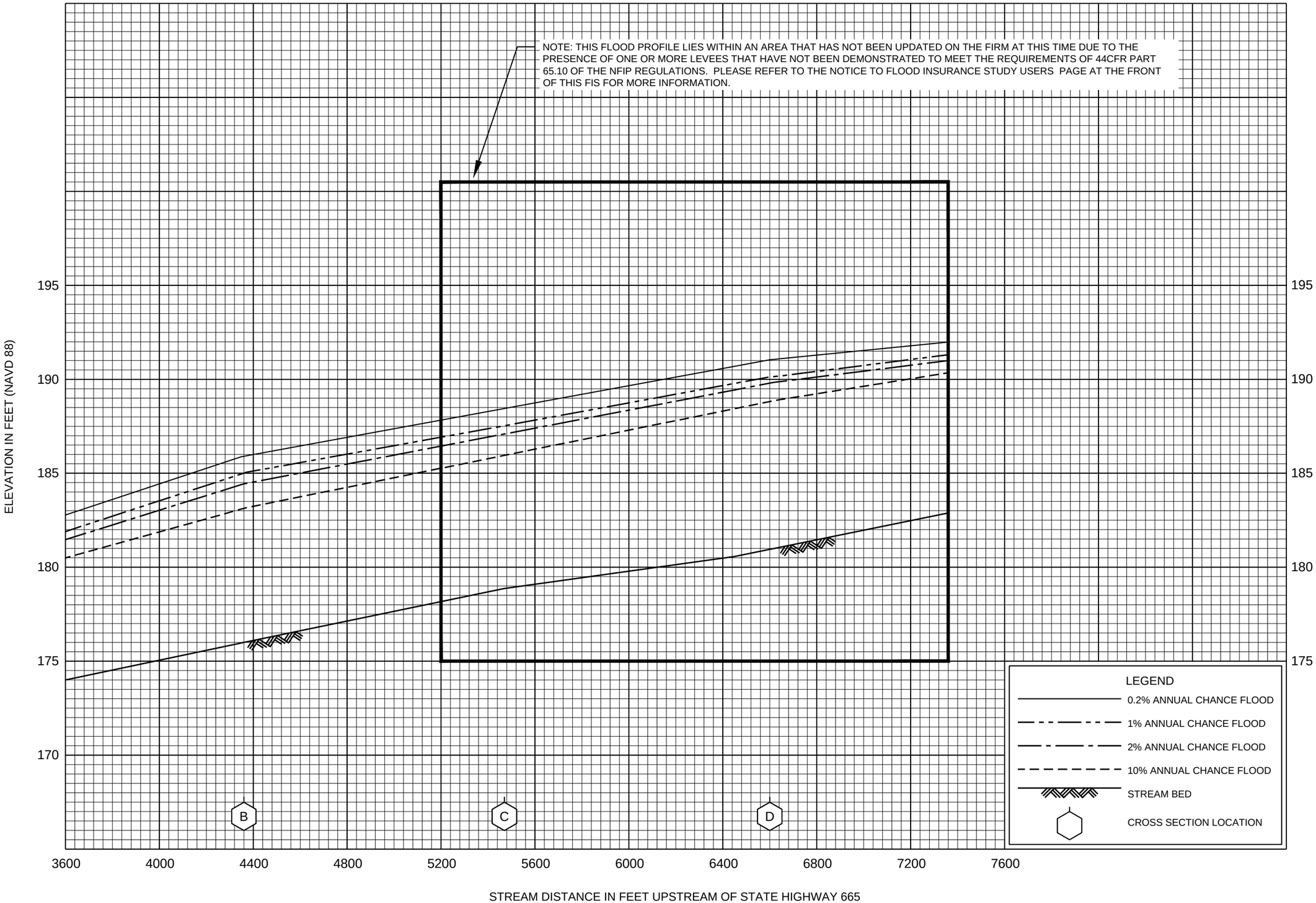

FLOOD PROFILES

LATTAS CREEK

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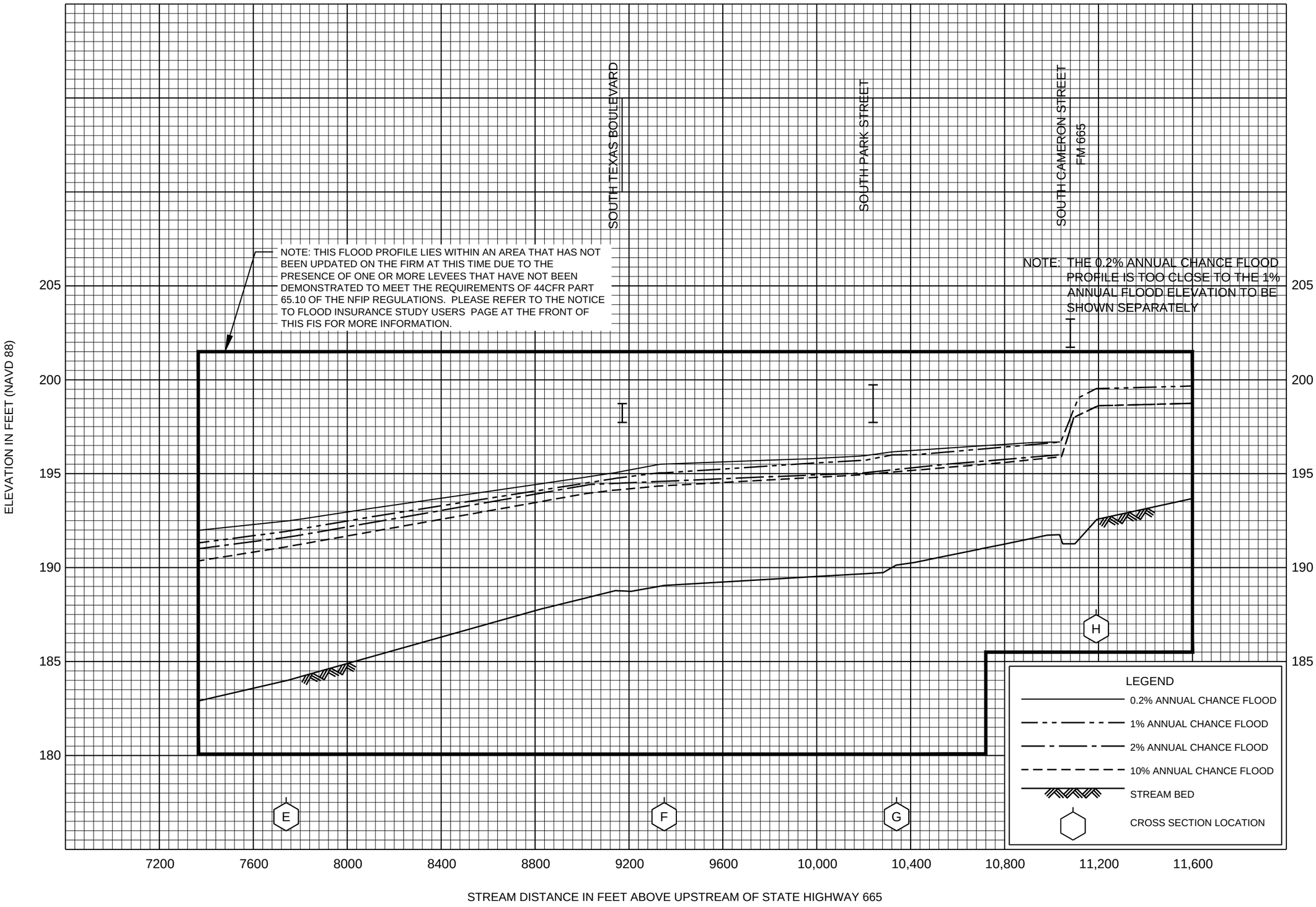

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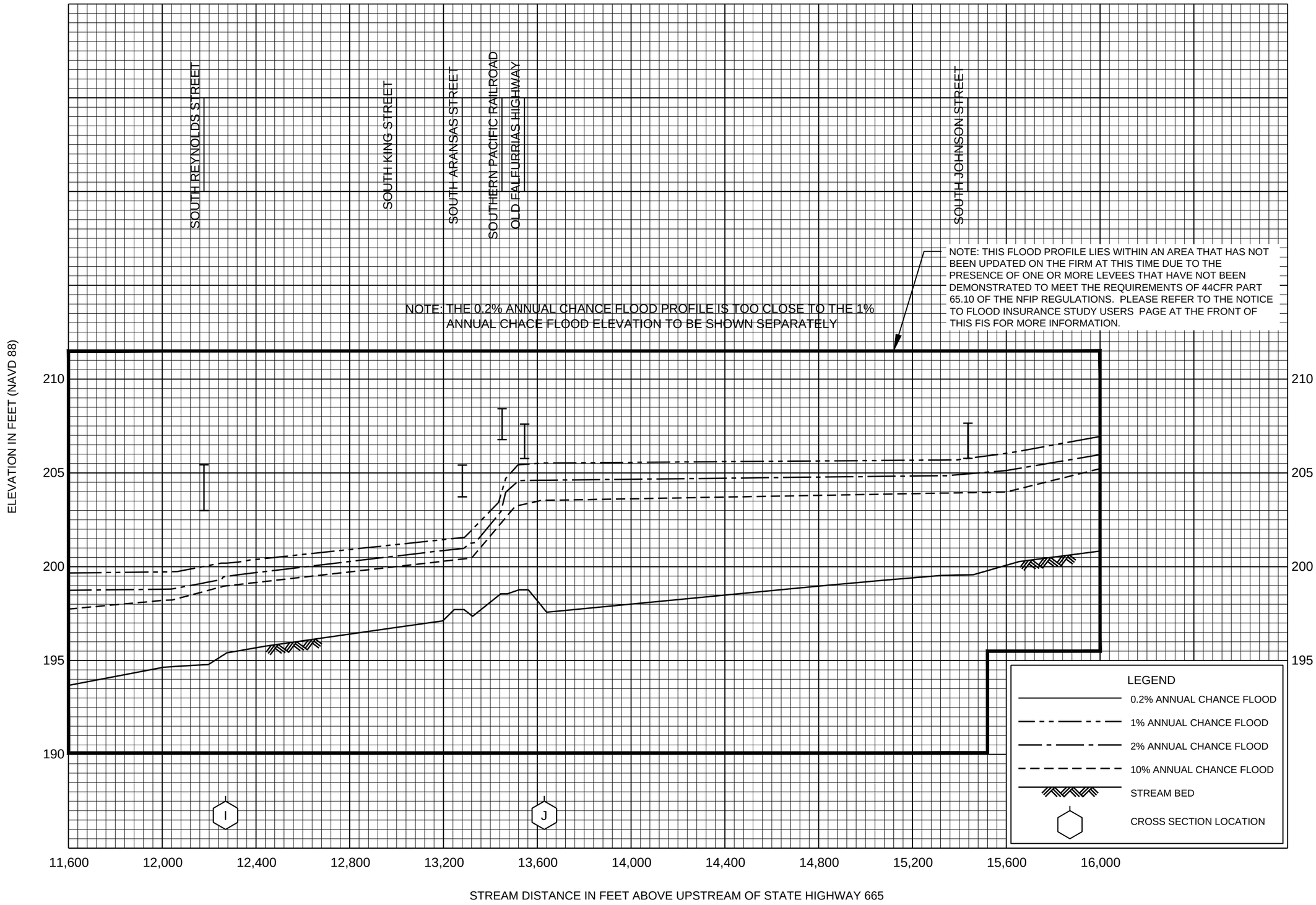

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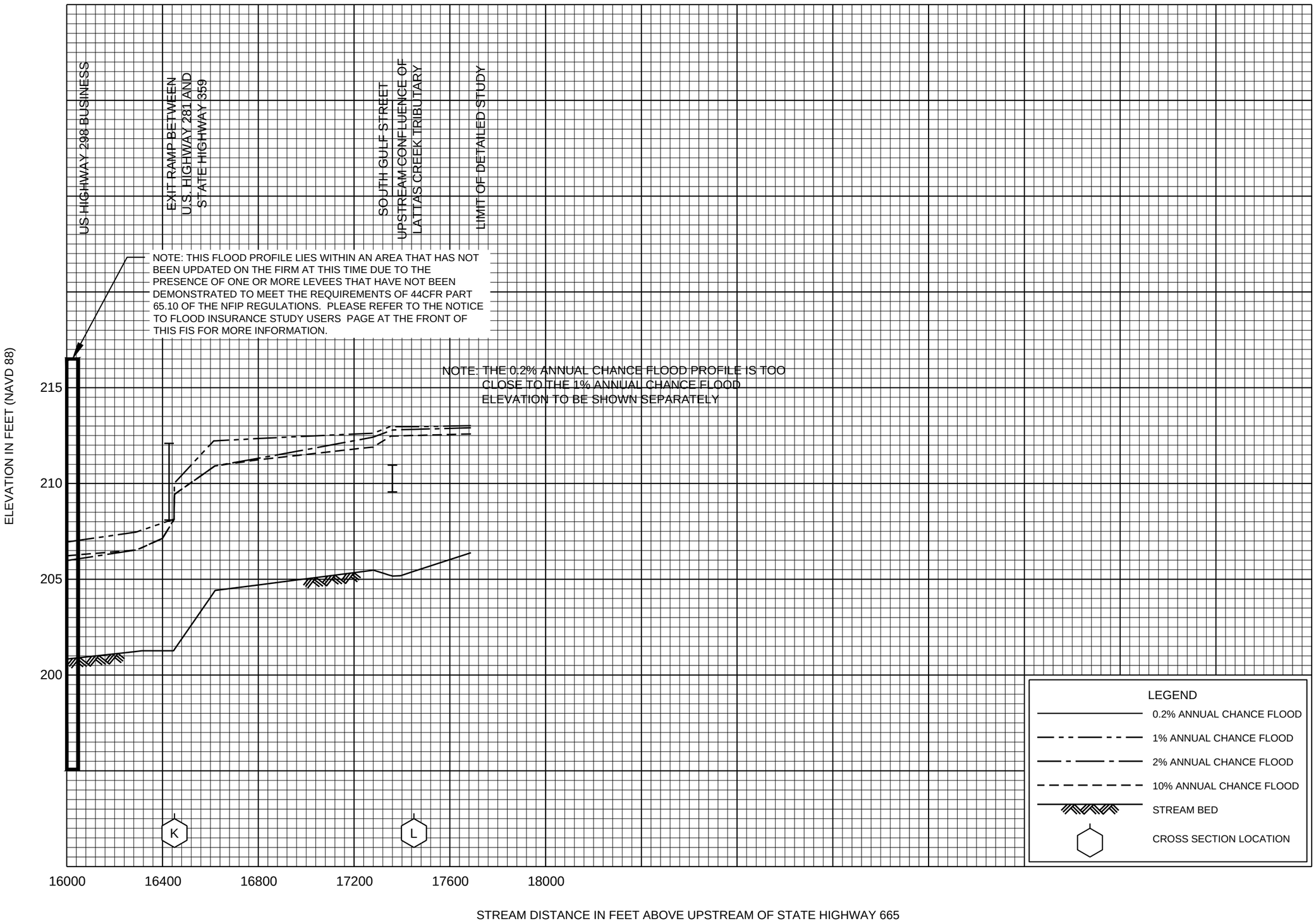

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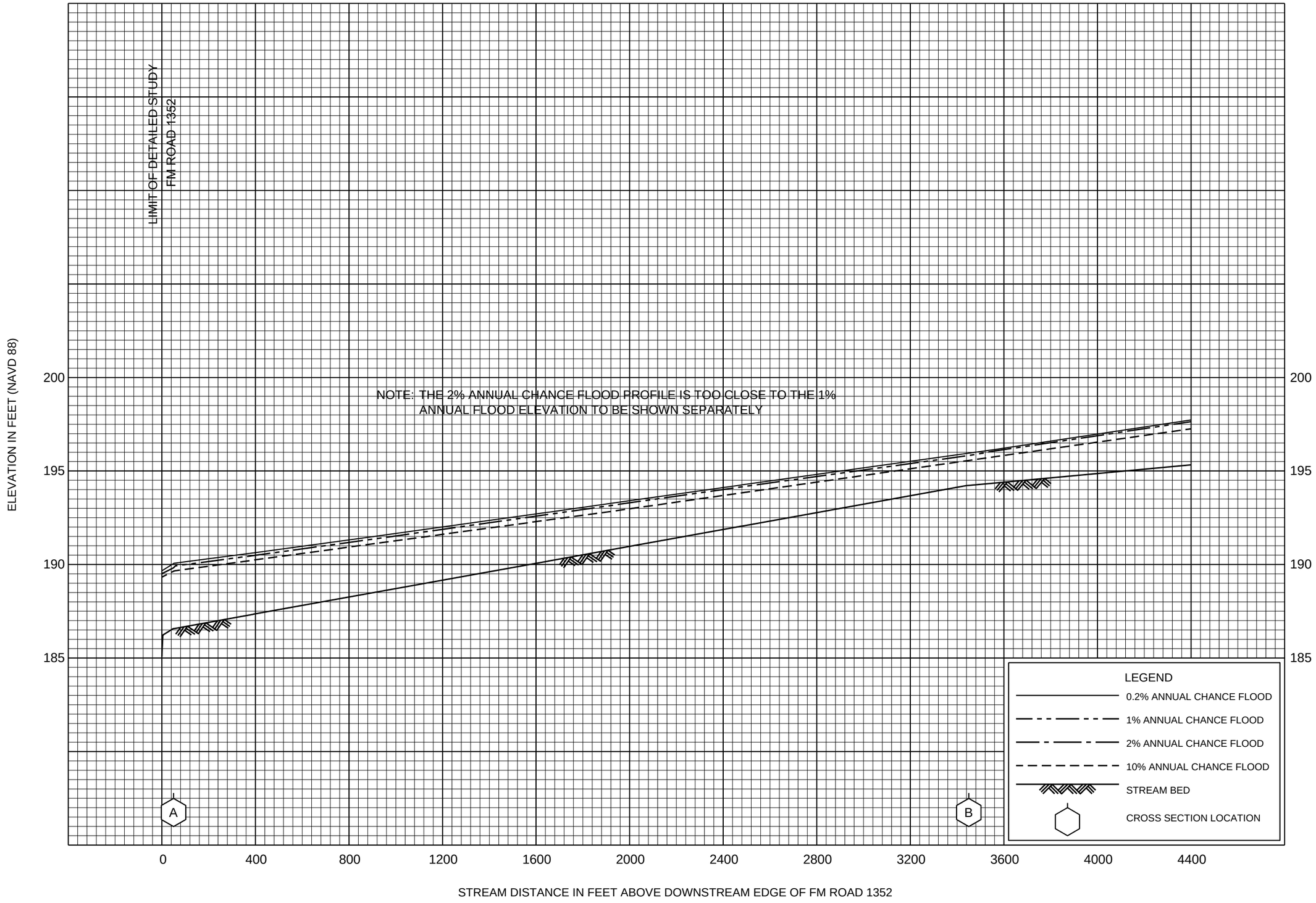


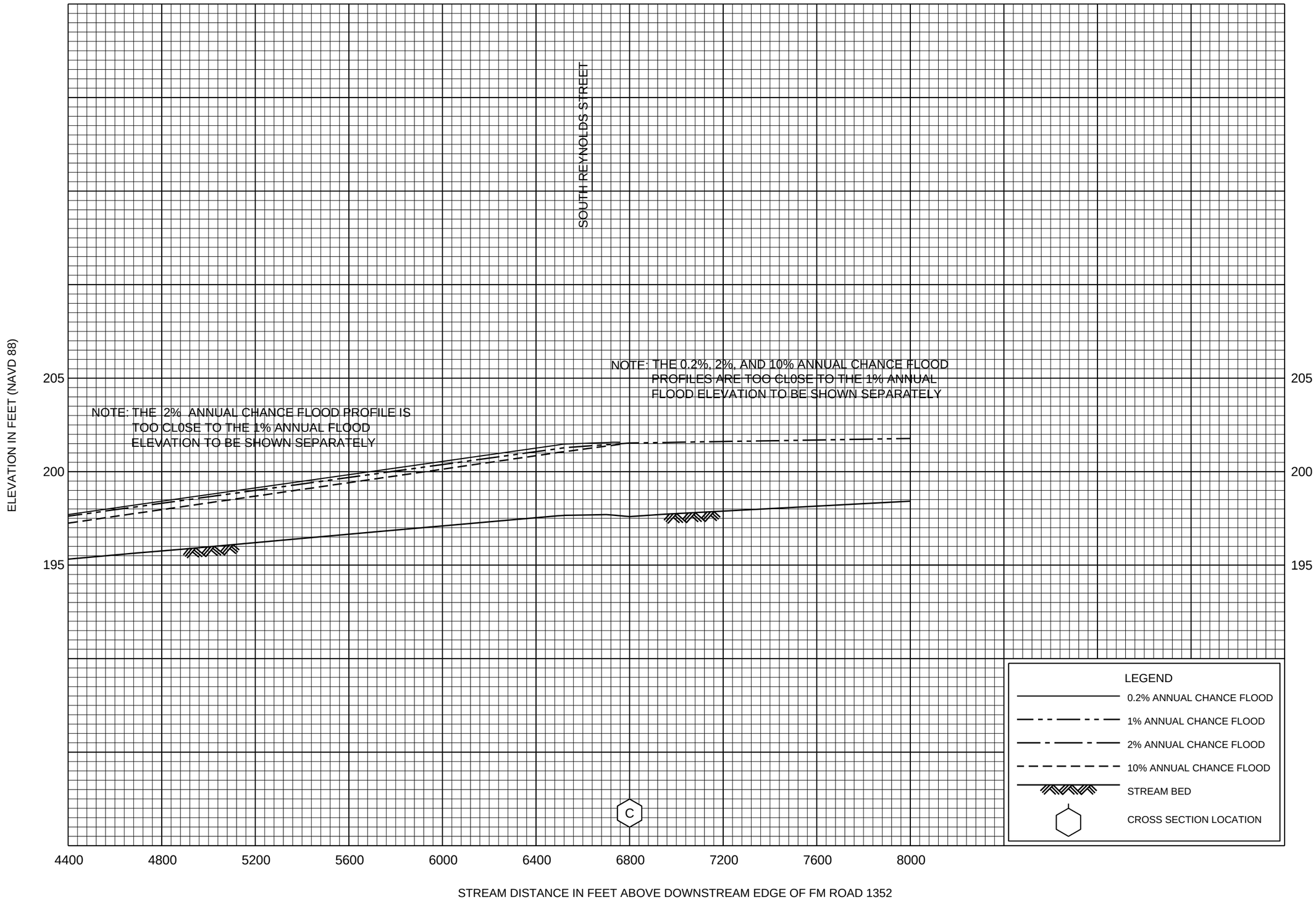
FLOOD PROFILES

LATTAS CREEK TRIBUTARY

FEDERAL EMERGENCY MANAGEMENT AGENCY

JIM WELLS COUNTY, TX

AND INCORPORATED AREAS



FLOOD PROFILES

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JIM WELLS COUNTY, TX

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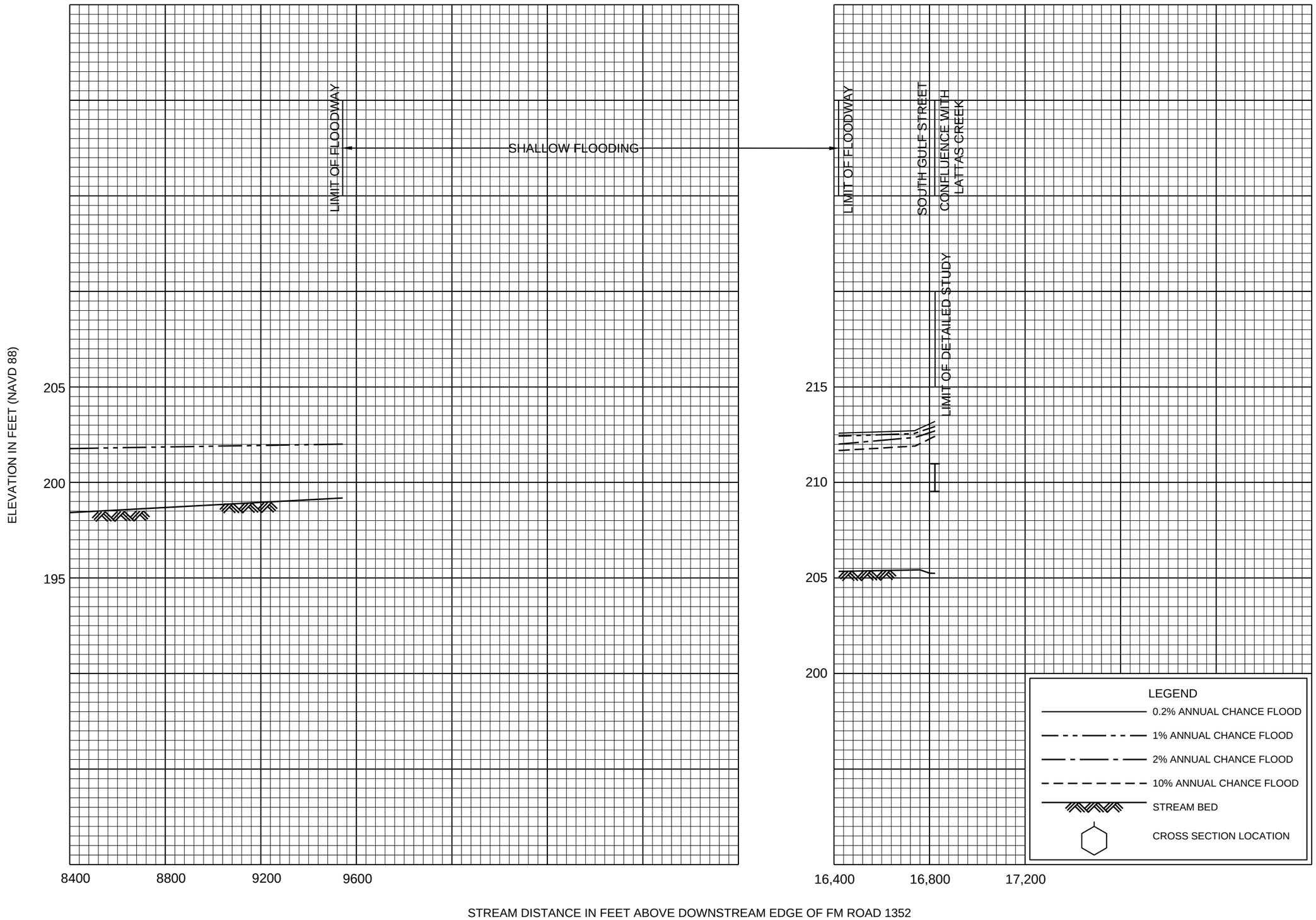

FLOOD PROFILES

LATTAS CREEK TRIBUTARY

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JIM WELLS COUNTY, TX

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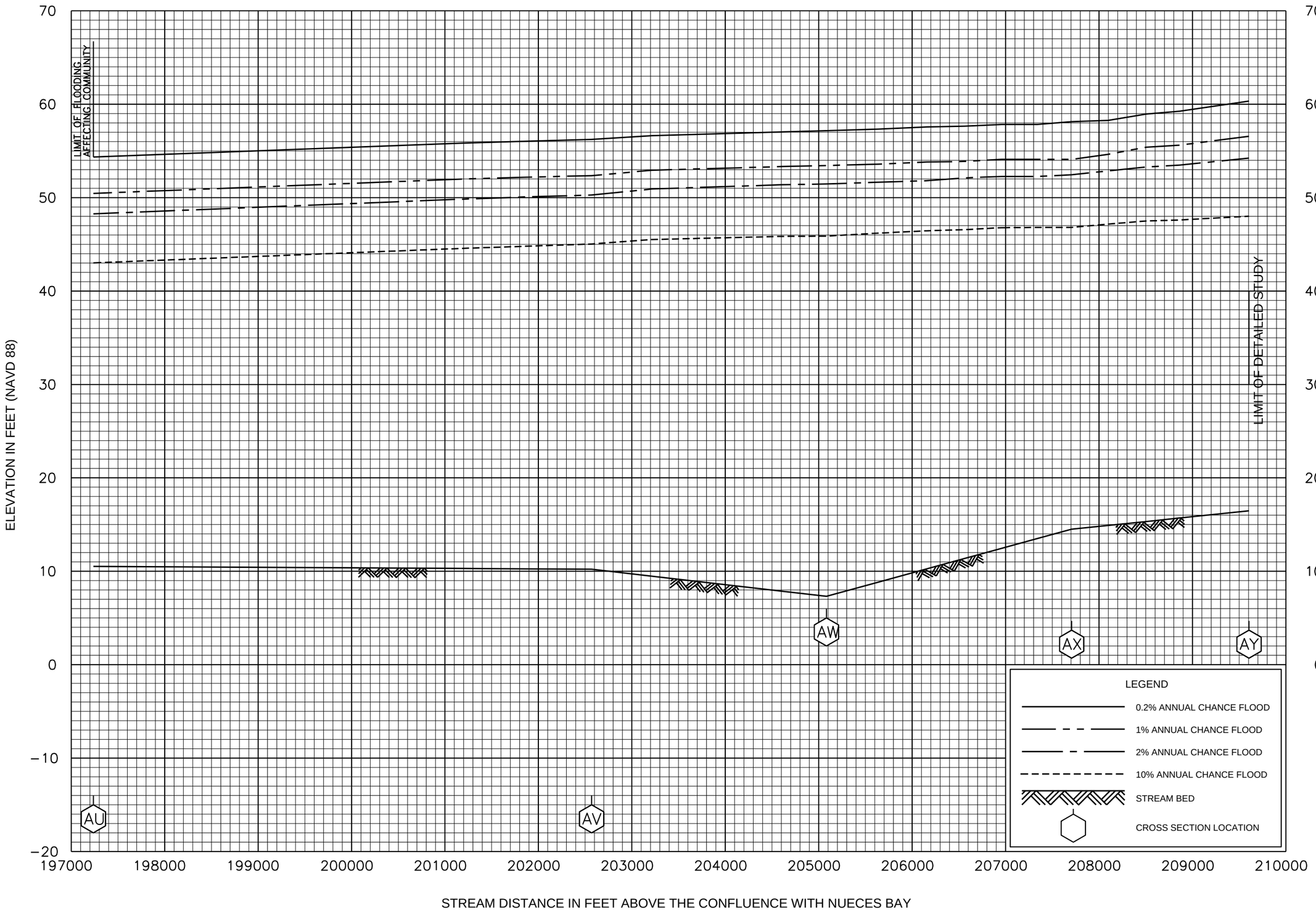


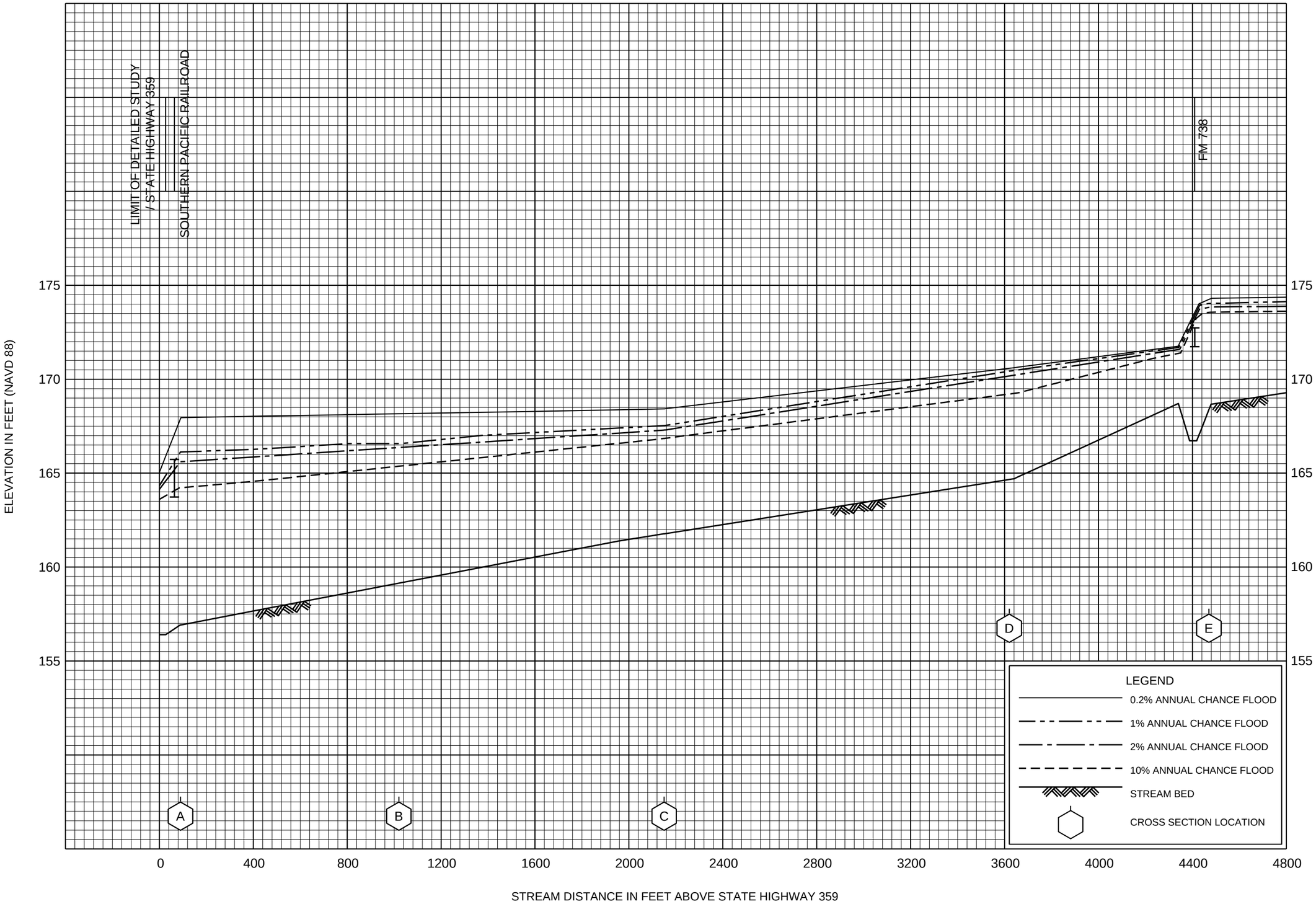
FLOOD PROFILES

NUECES RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

JIM WELLS COUNTY, TX

AND INCORPORATED AREAS



FLOOD PROFILES

QUINTA CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

JIM WELLS COUNTY, TX

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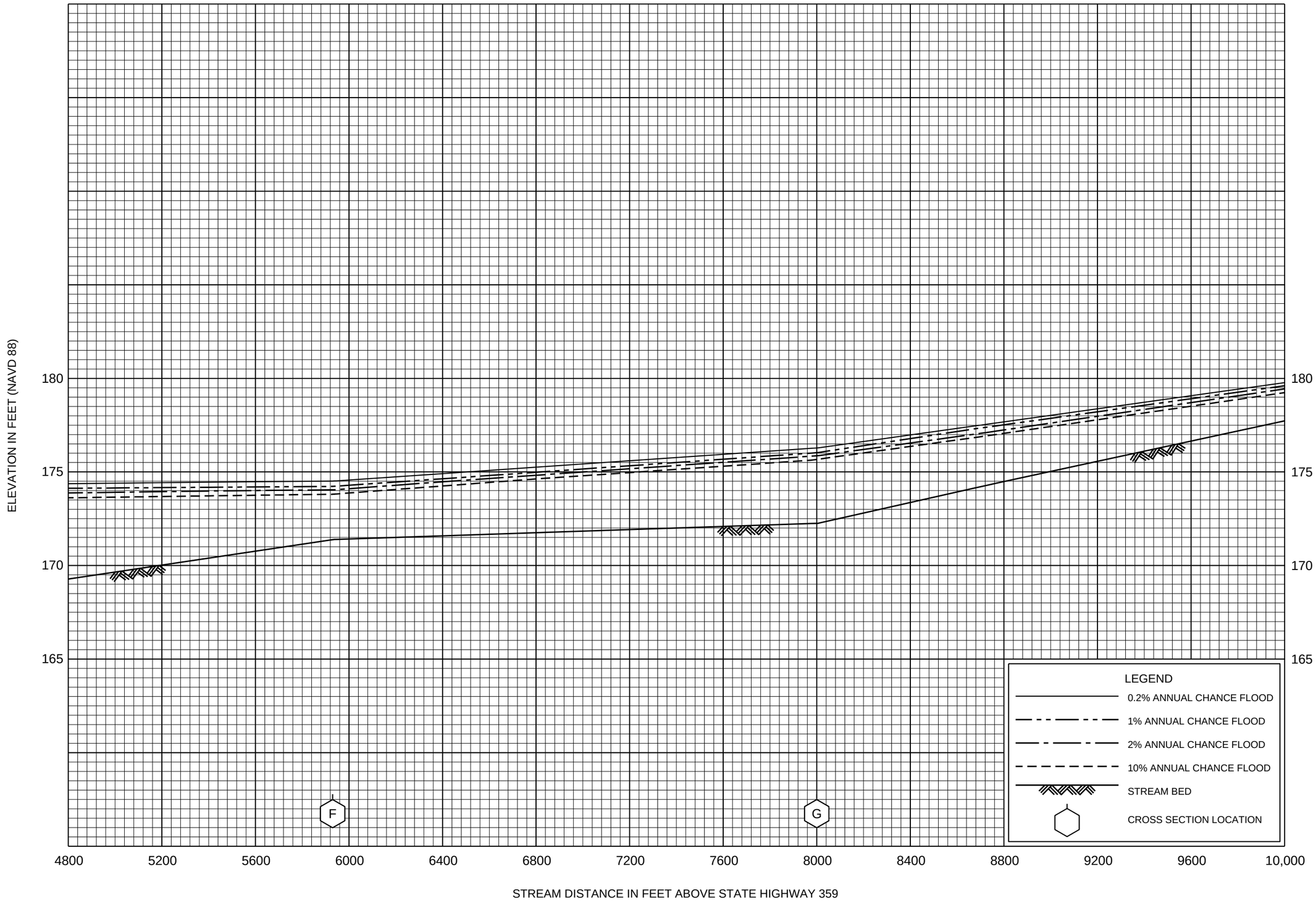


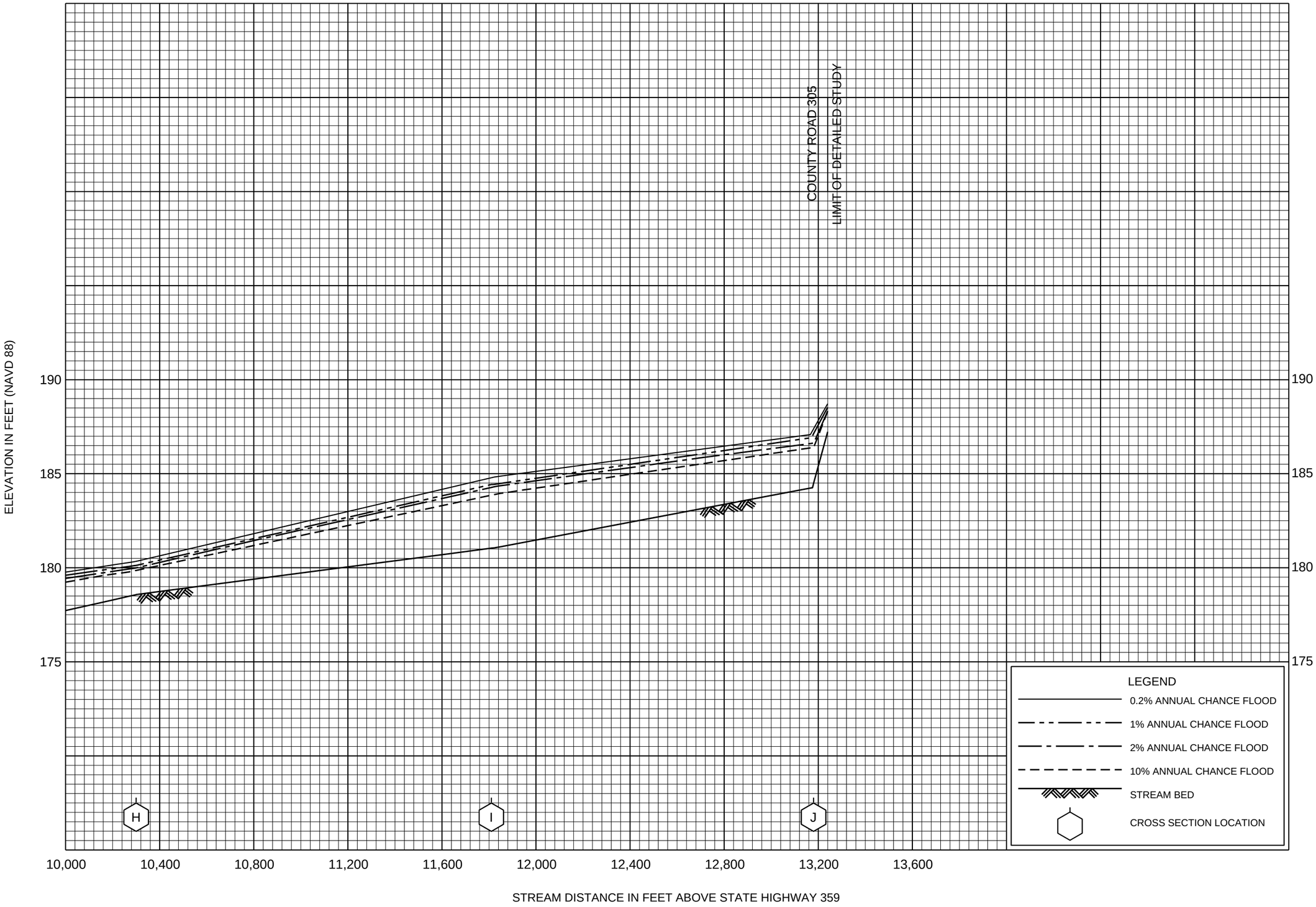
FLOOD PROFILES

QUINTA CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

JIM WELLS COUNTY, TX

AND INCORPORATED AREAS



FLOOD PROFILES

QUINTA CREEK

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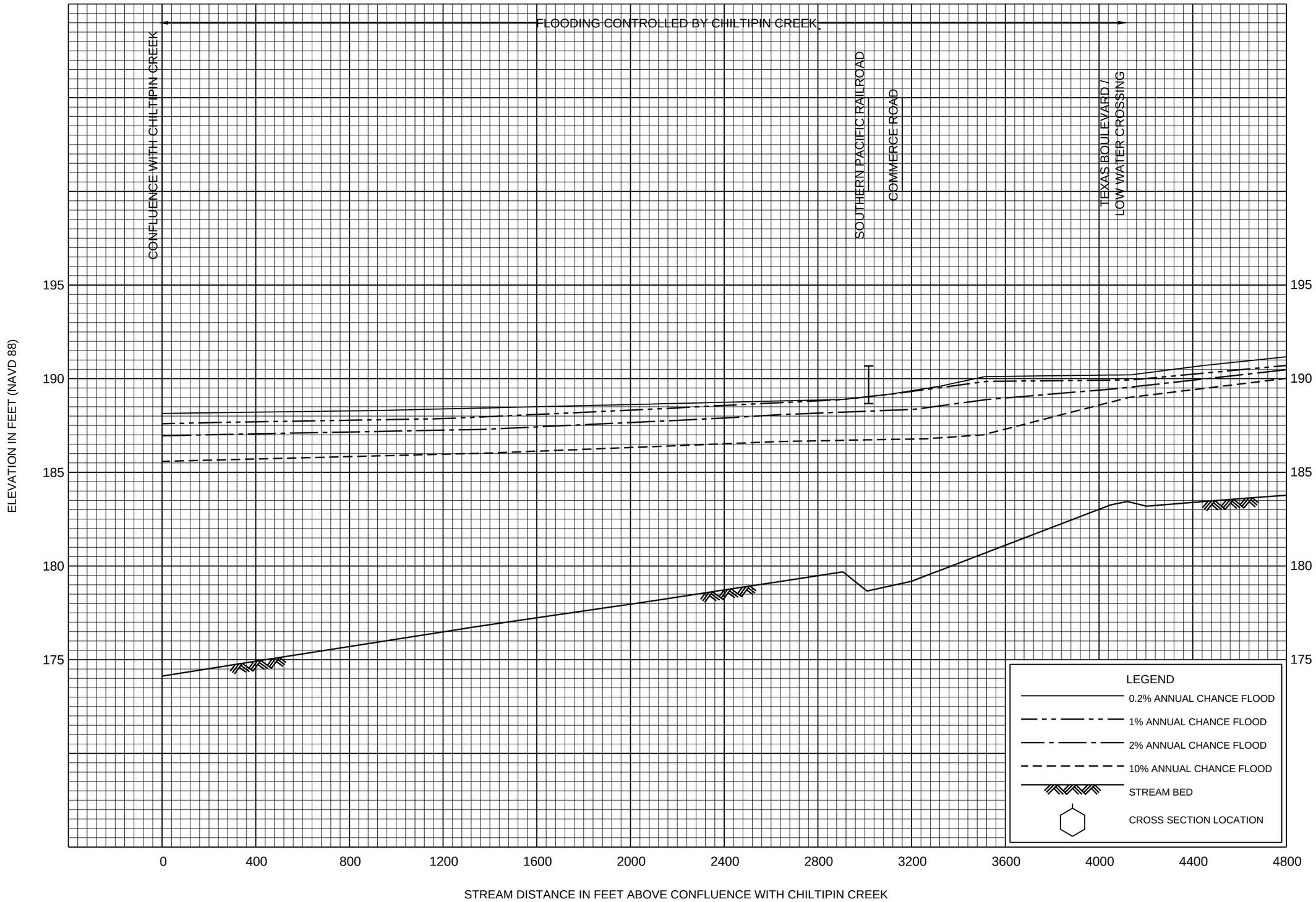


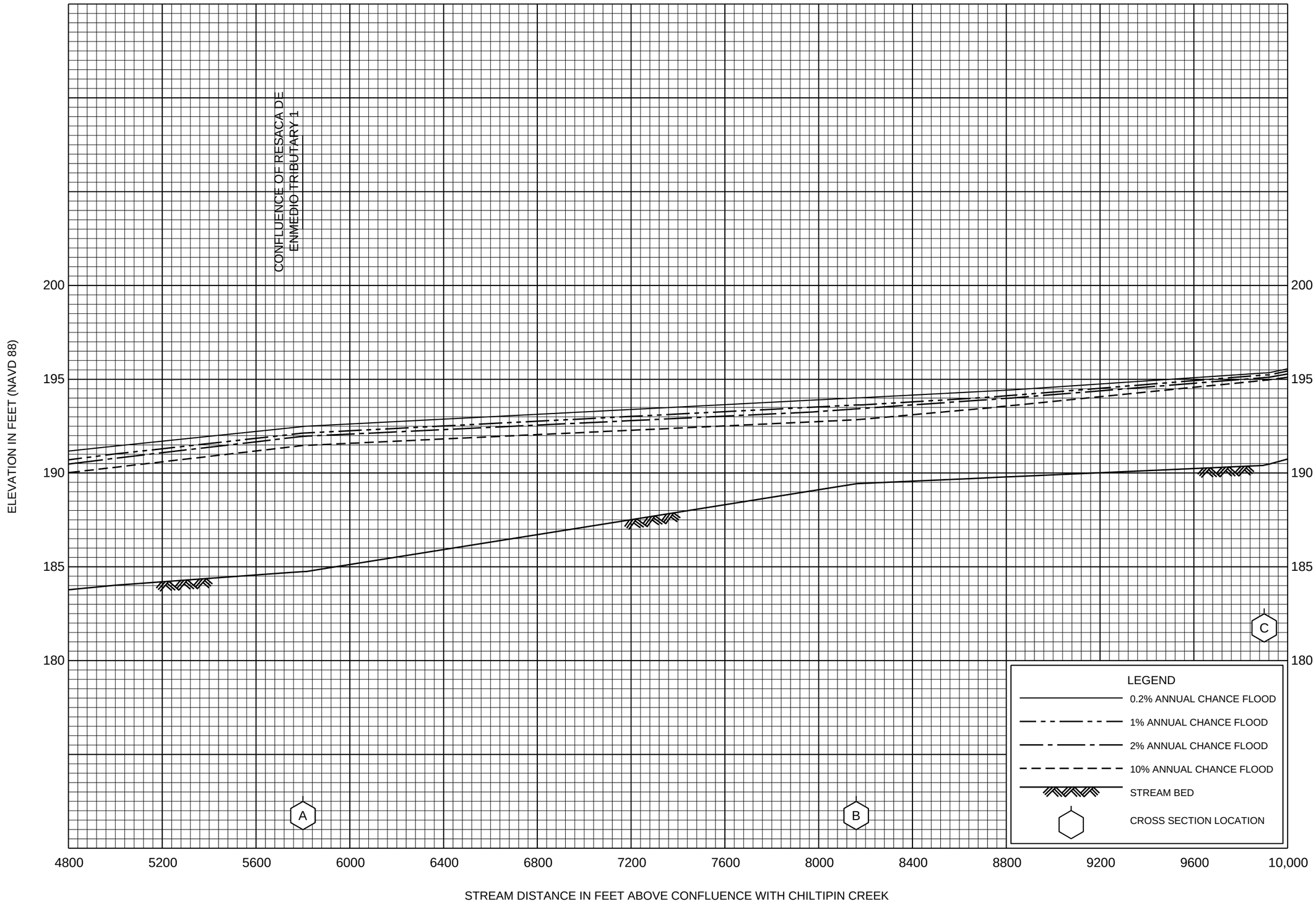
FLOOD PROFILES

RESACA DE ENMEDIO

FEDERAL EMERGENCY MANAGEMENT AGENCY

JIM WELLS COUNTY, TX

AND INCORPORATED AREAS



FLOOD PROFILES

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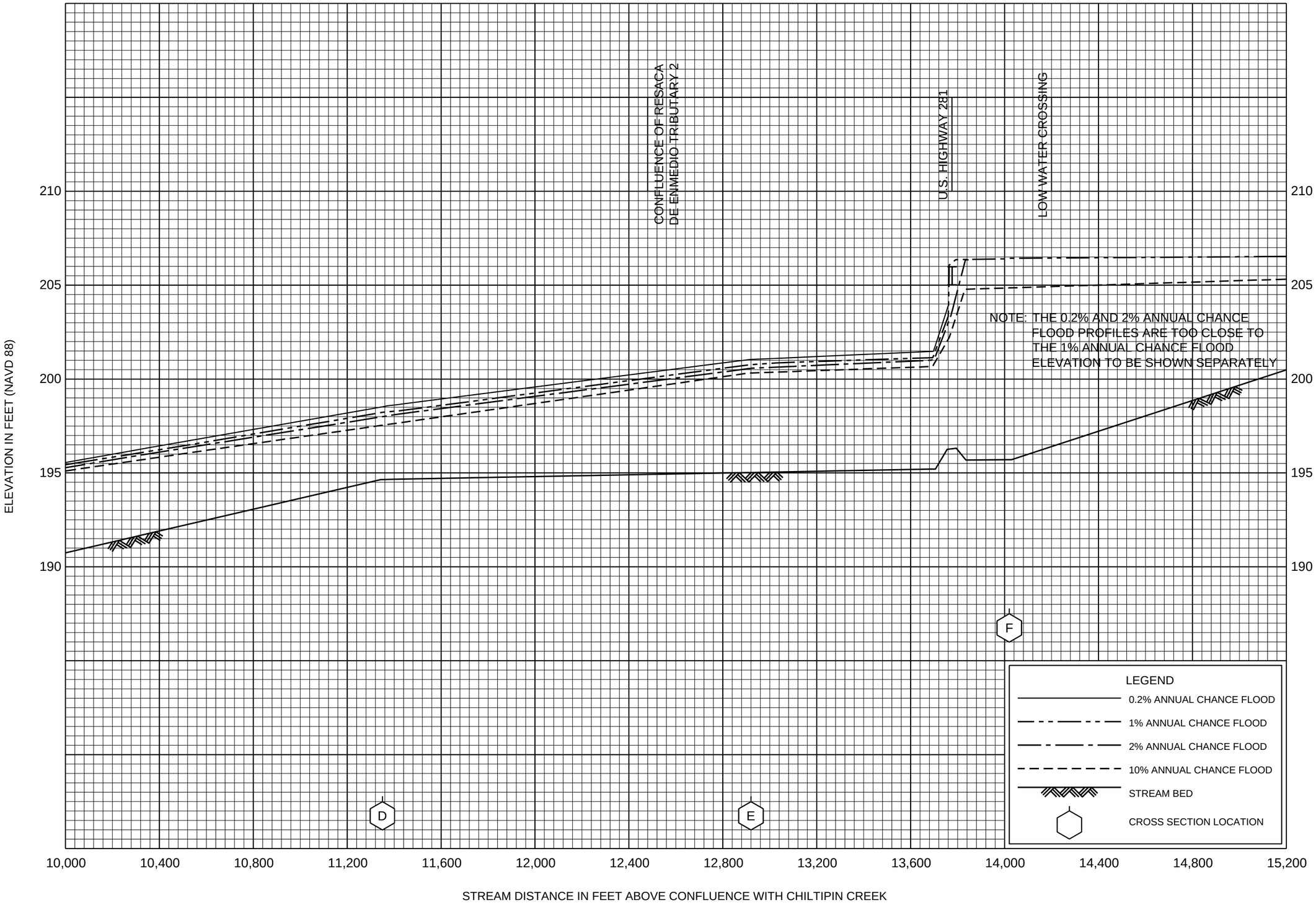

FLOOD PROFILES

RESACA DE ENMEDIO

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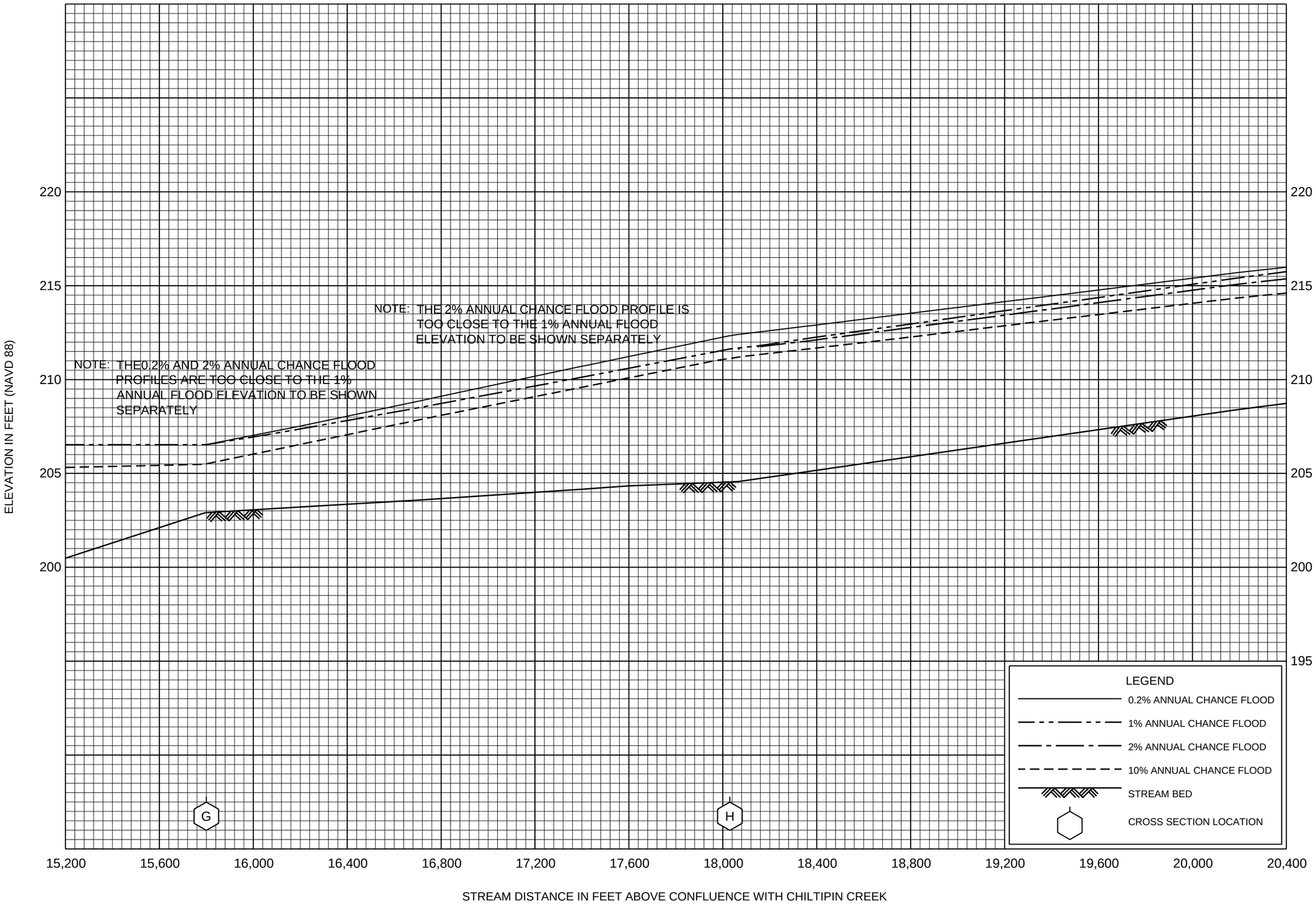

FLOOD PROFILES

RESACA DE ENMEDIO

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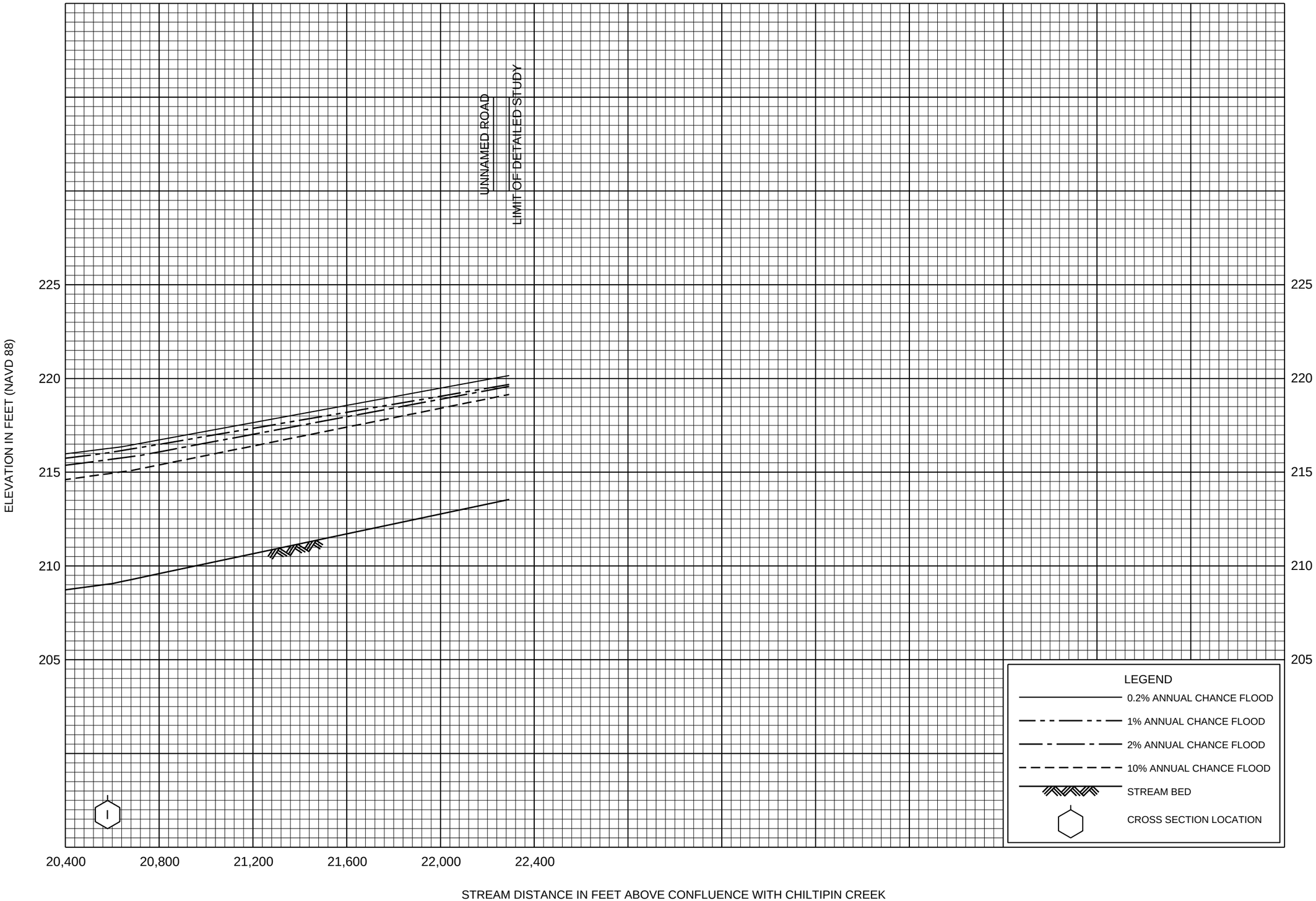

FLOOD PROFILES

RESACA DE ENMEDIO

FEDERAL EMERGENCY MANAGEMENT AGENCY

JIM WELLS COUNTY, TX

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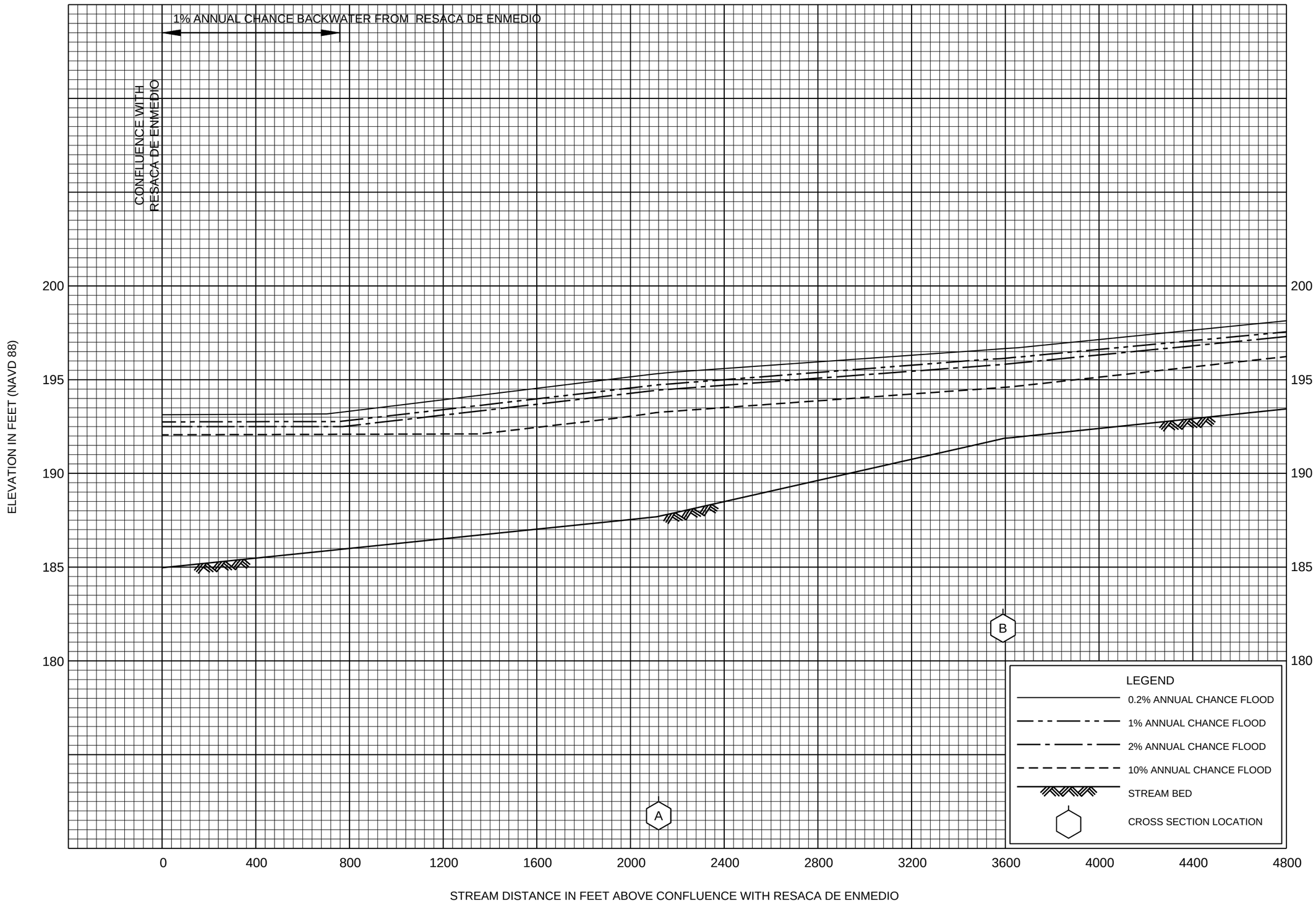


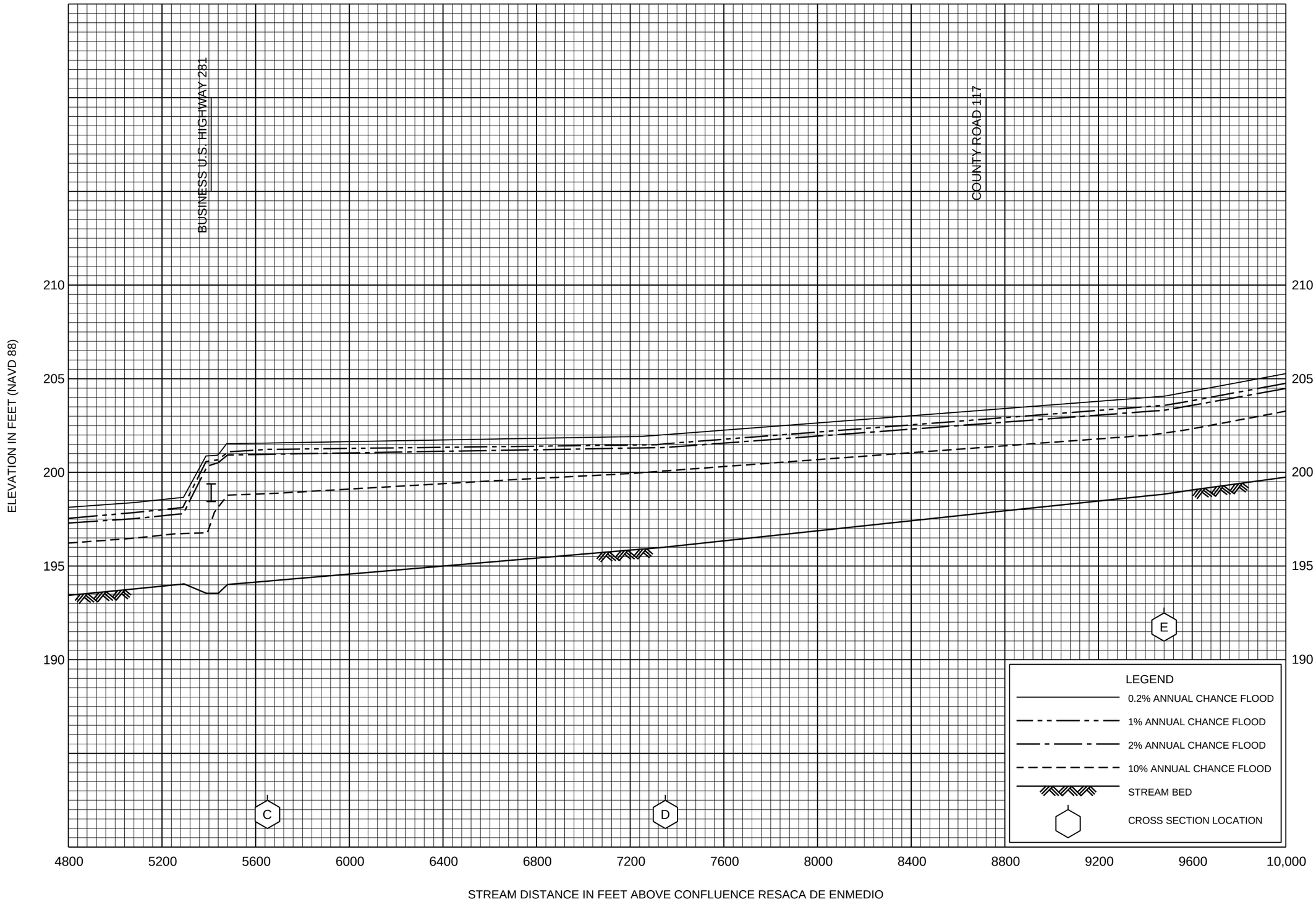
FLOOD PROFILES

RESACA DE ENMEDIO TRIBUTARY 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

JIM WELLS COUNTY, TX

AND INCORPORATED AREAS



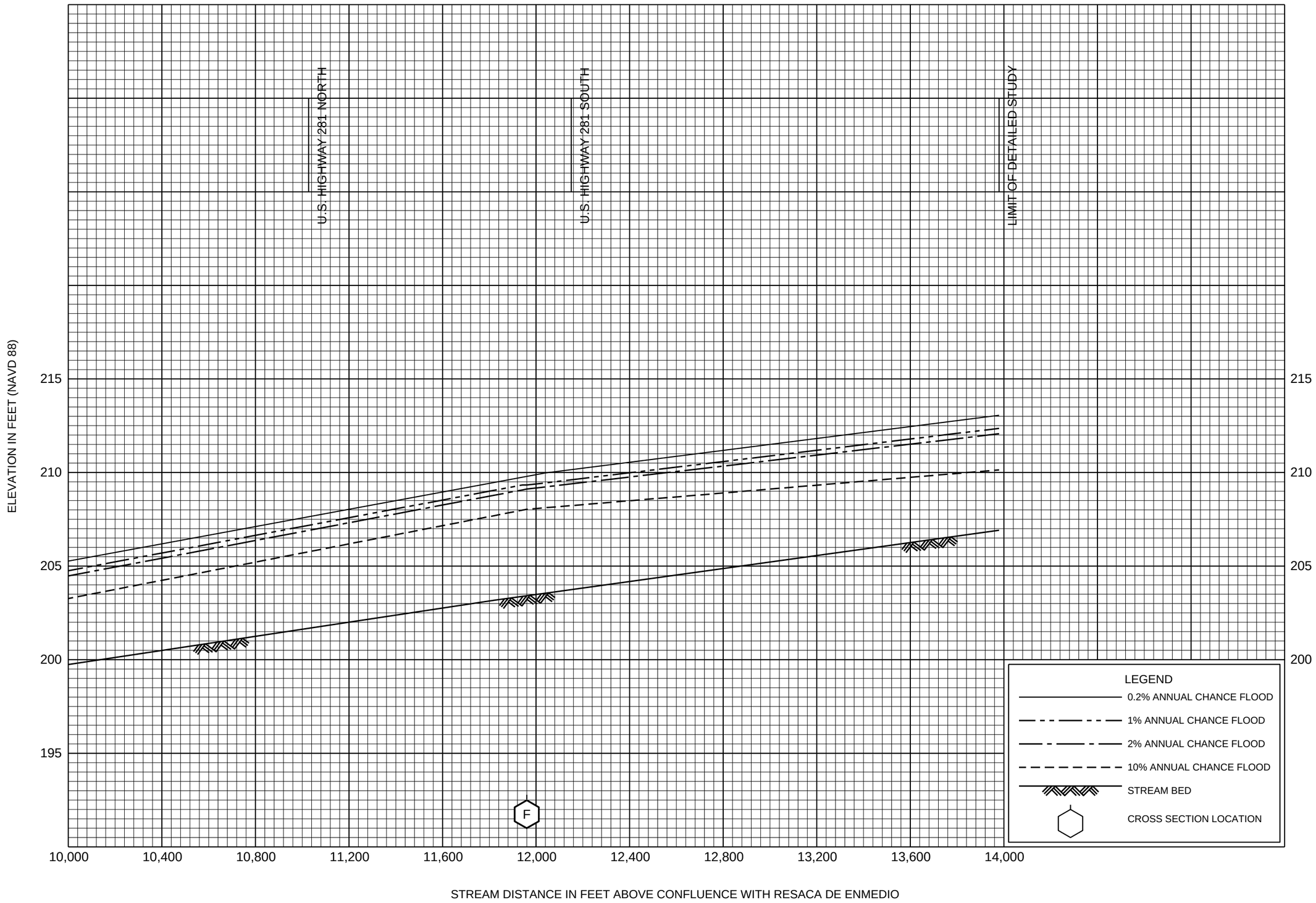
FLOOD PROFILES

RESACA DE ENMEDIO TRIBUTARY 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

JIM WELLS COUNTY, TX

AND INCORPORATED AREAS



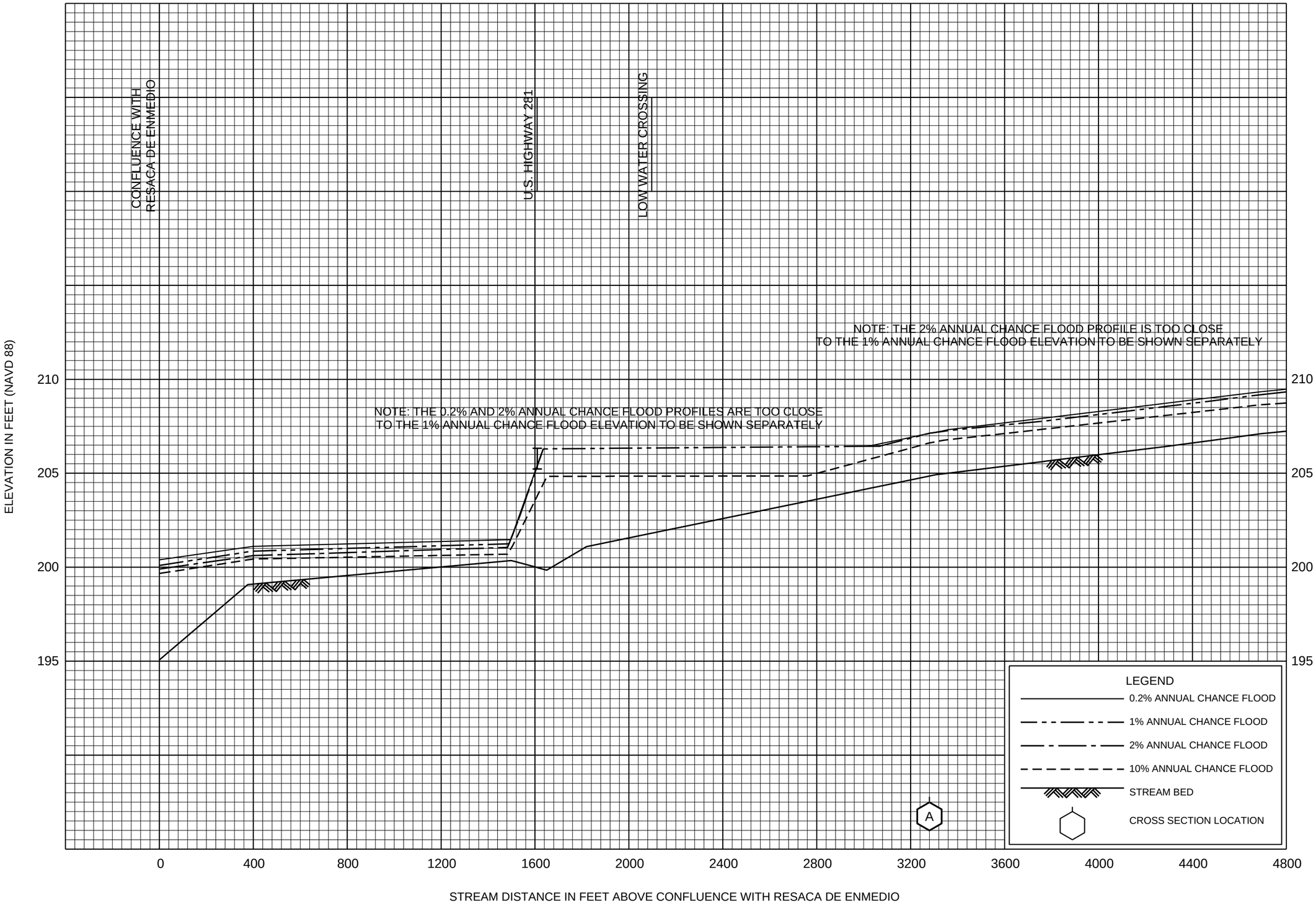
FLOOD PROFILES

RESACA DE ENMEDIO TRIBUTARY 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

JIM WELLS COUNTY, TX

AND INCORPORATED AREAS



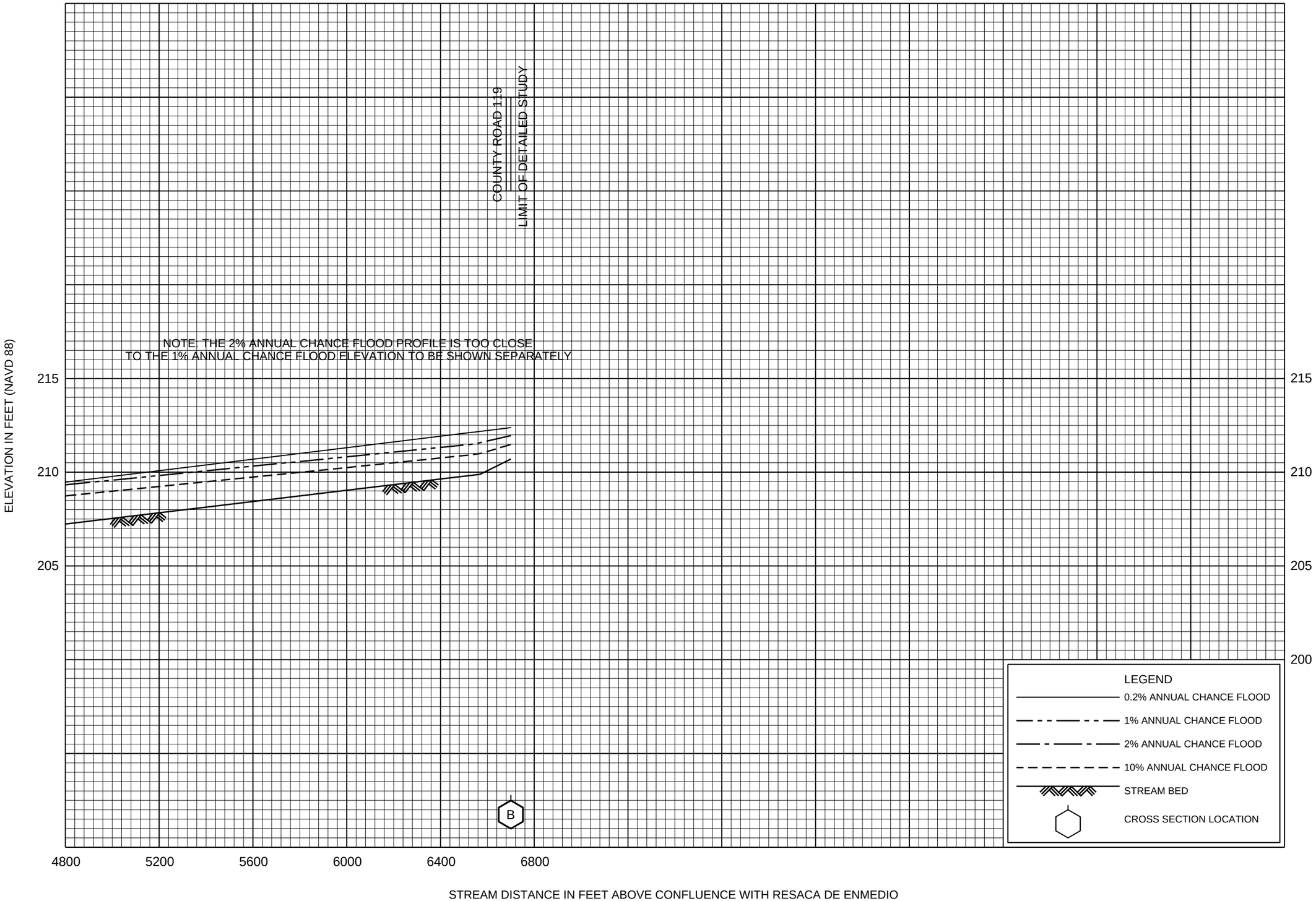
FLOOD PROFILES

RESACA DE ENMEDIO TRIBUTARY 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

JIM WELLS COUNTY, TX

AND INCORPORATED AREAS



FLOOD PROFILES

RESACA DE ENMEDIO TRIBUTARY 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

JIM WELLS COUNTY, TX

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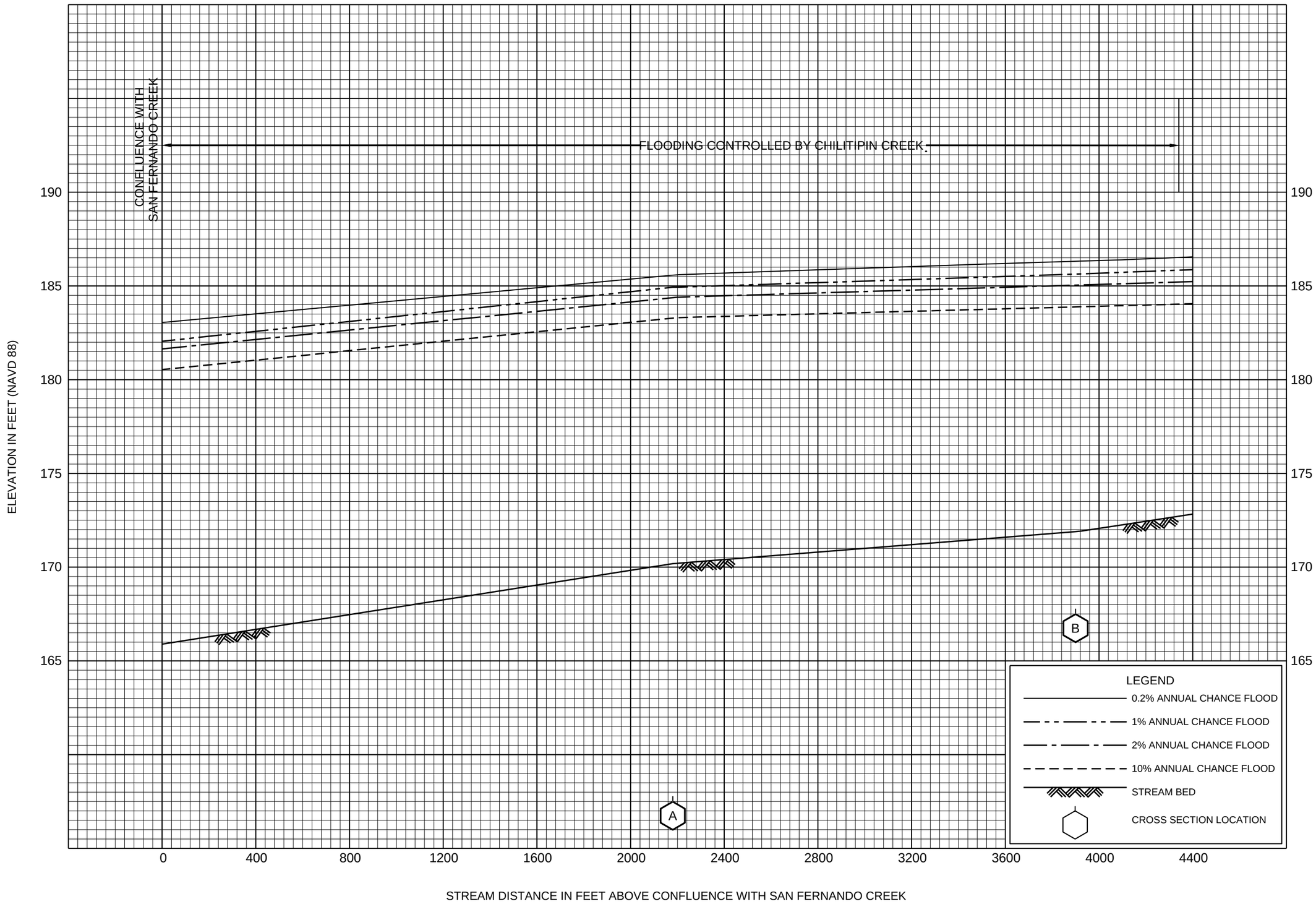

FLOOD PROFILES

SAN DIEGO CREEK AT ALICE

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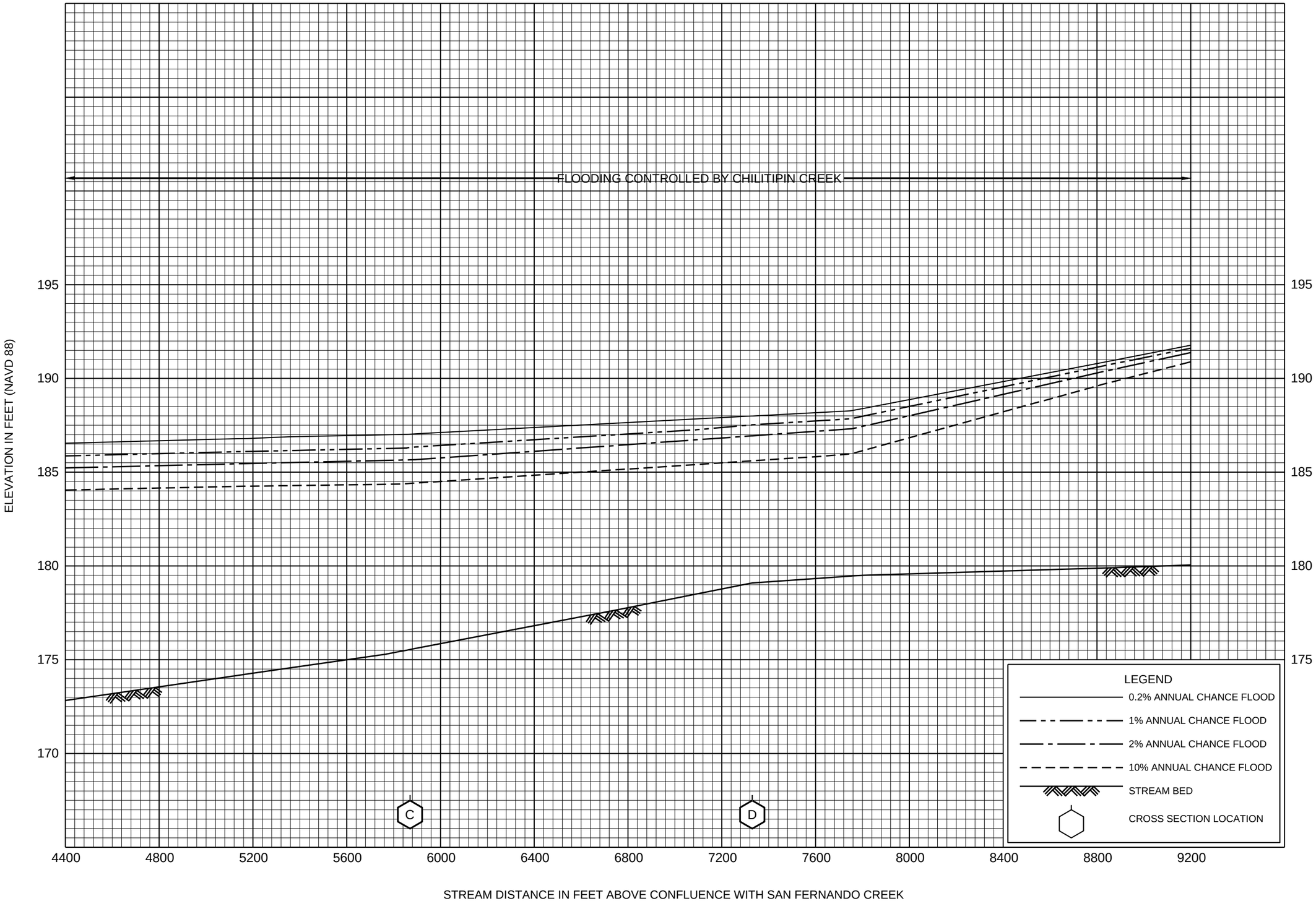

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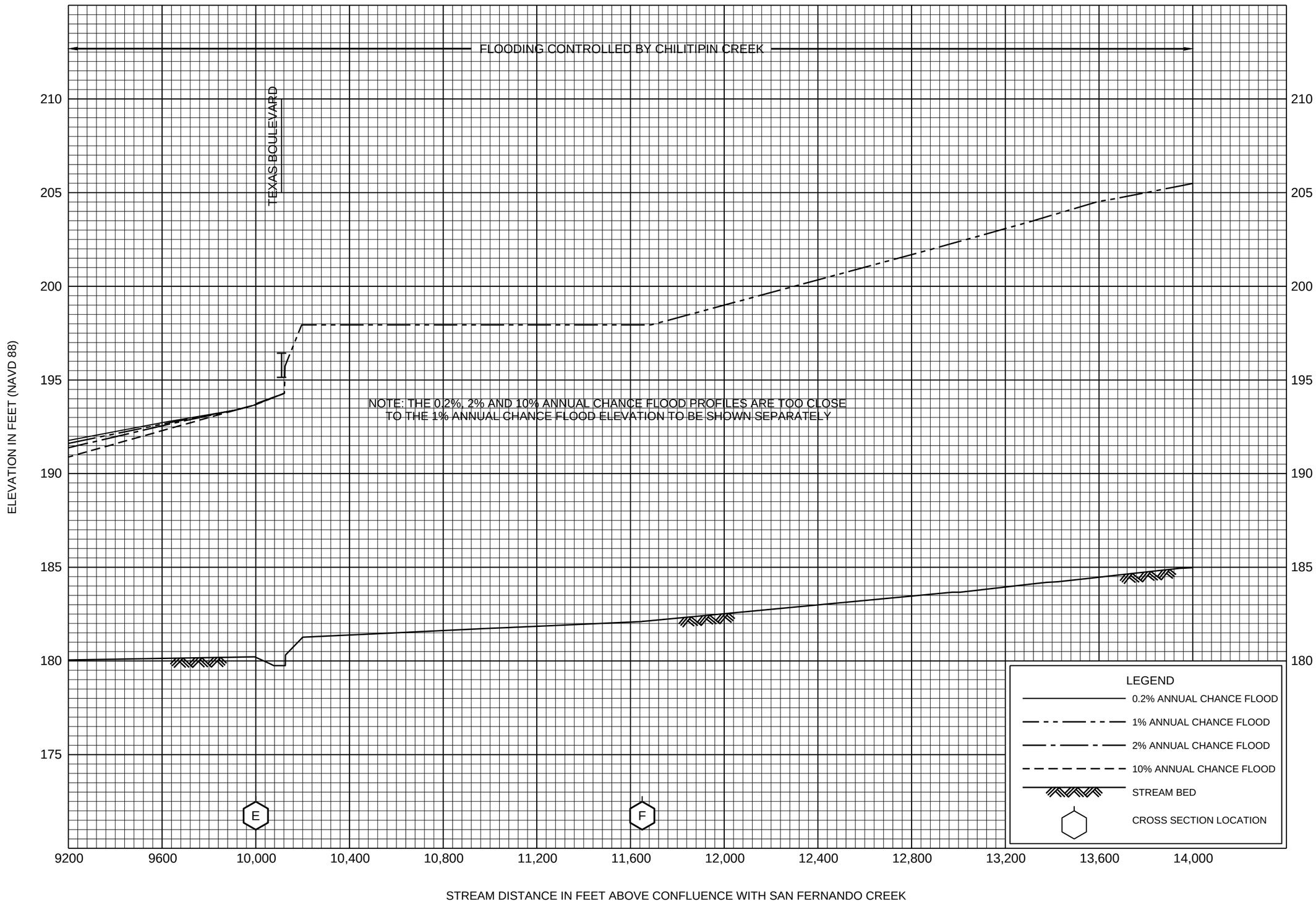

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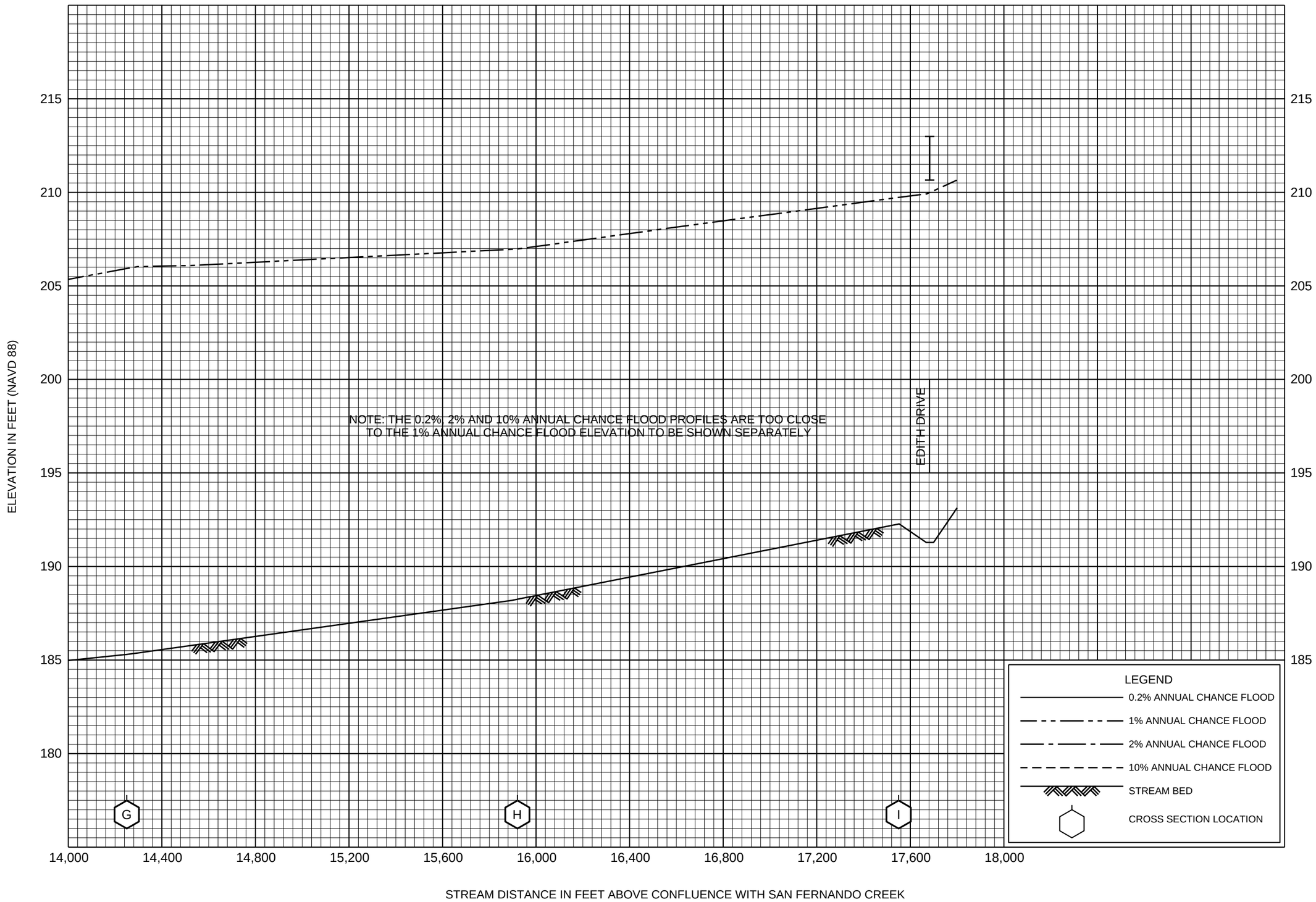

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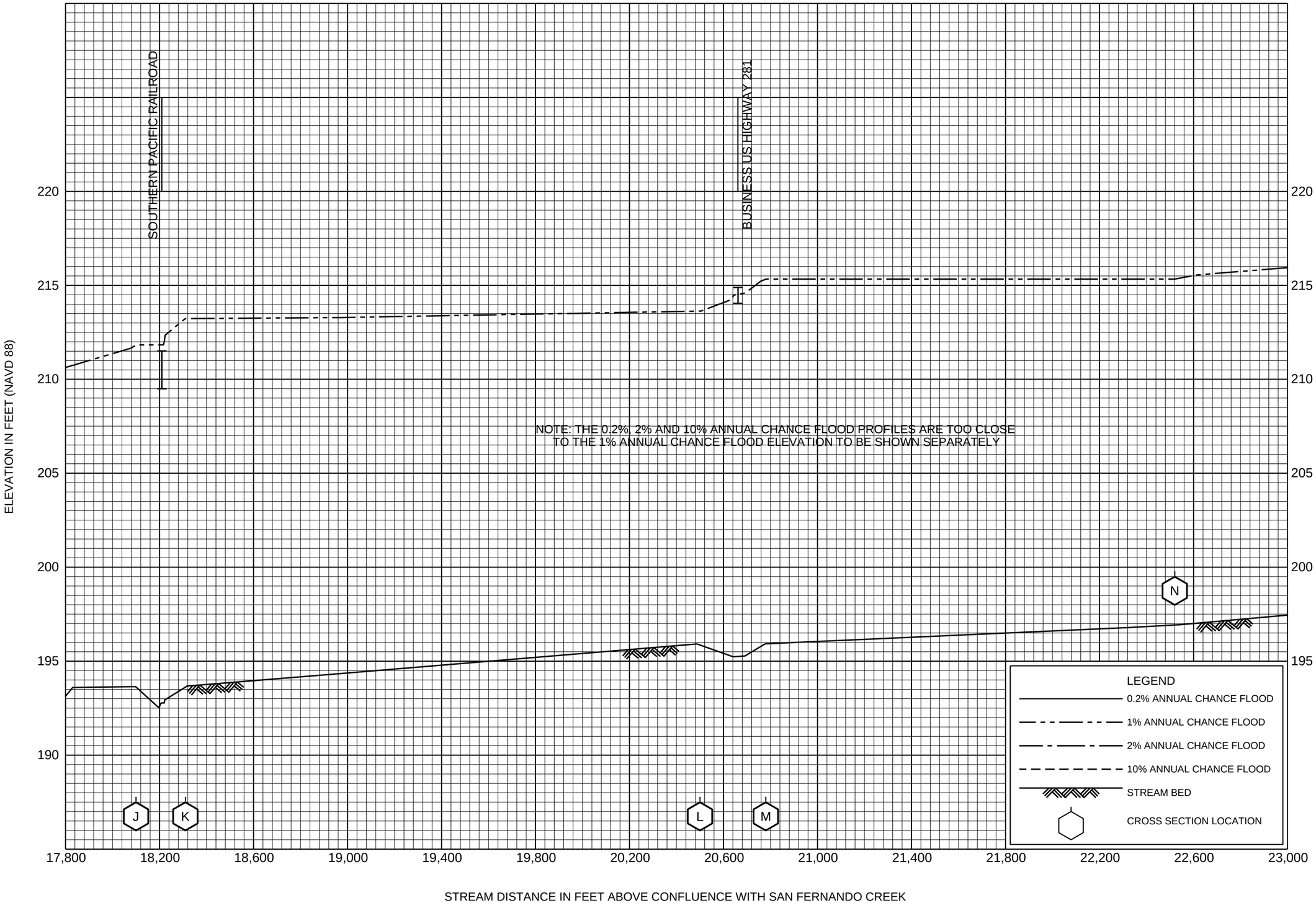

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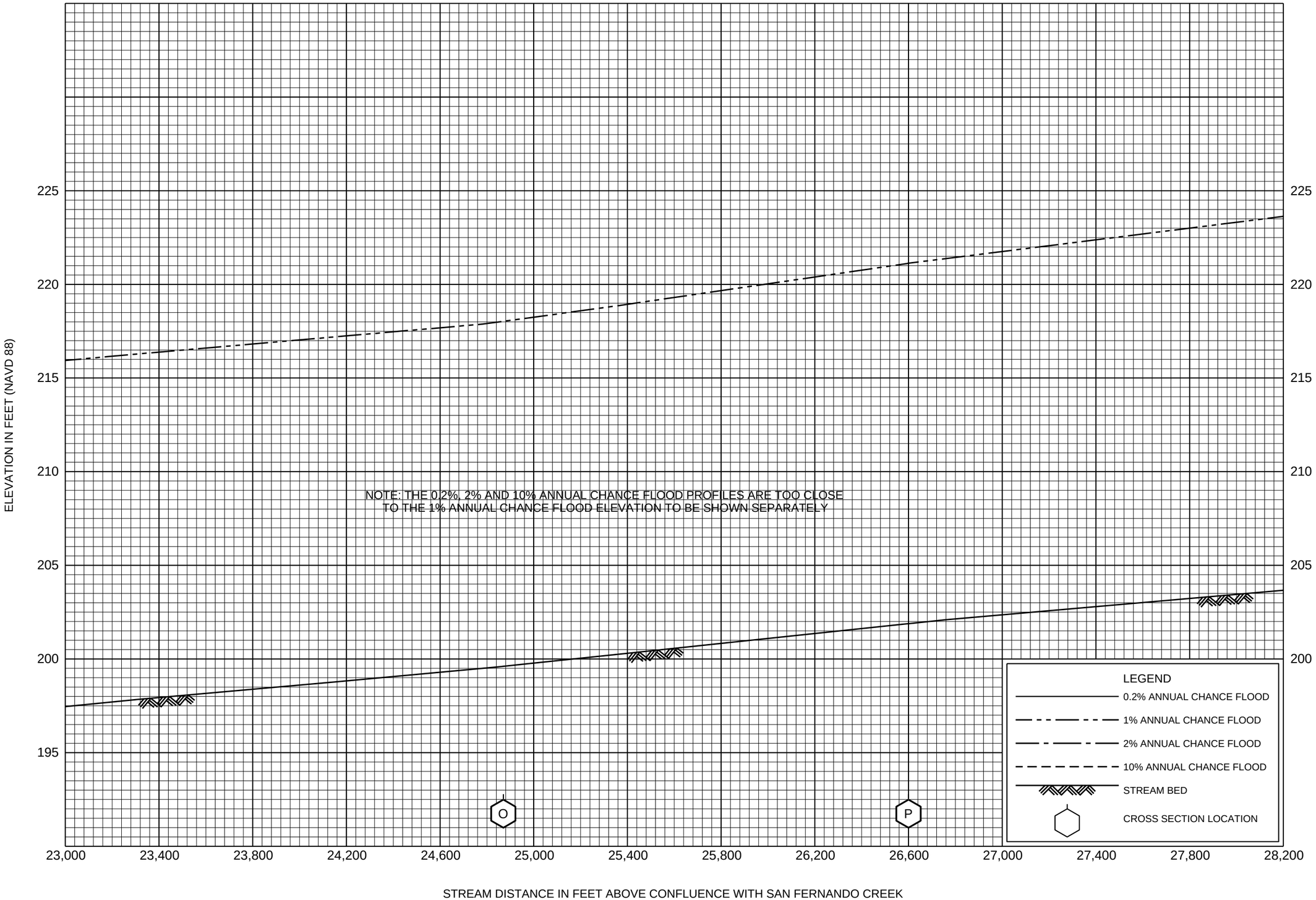

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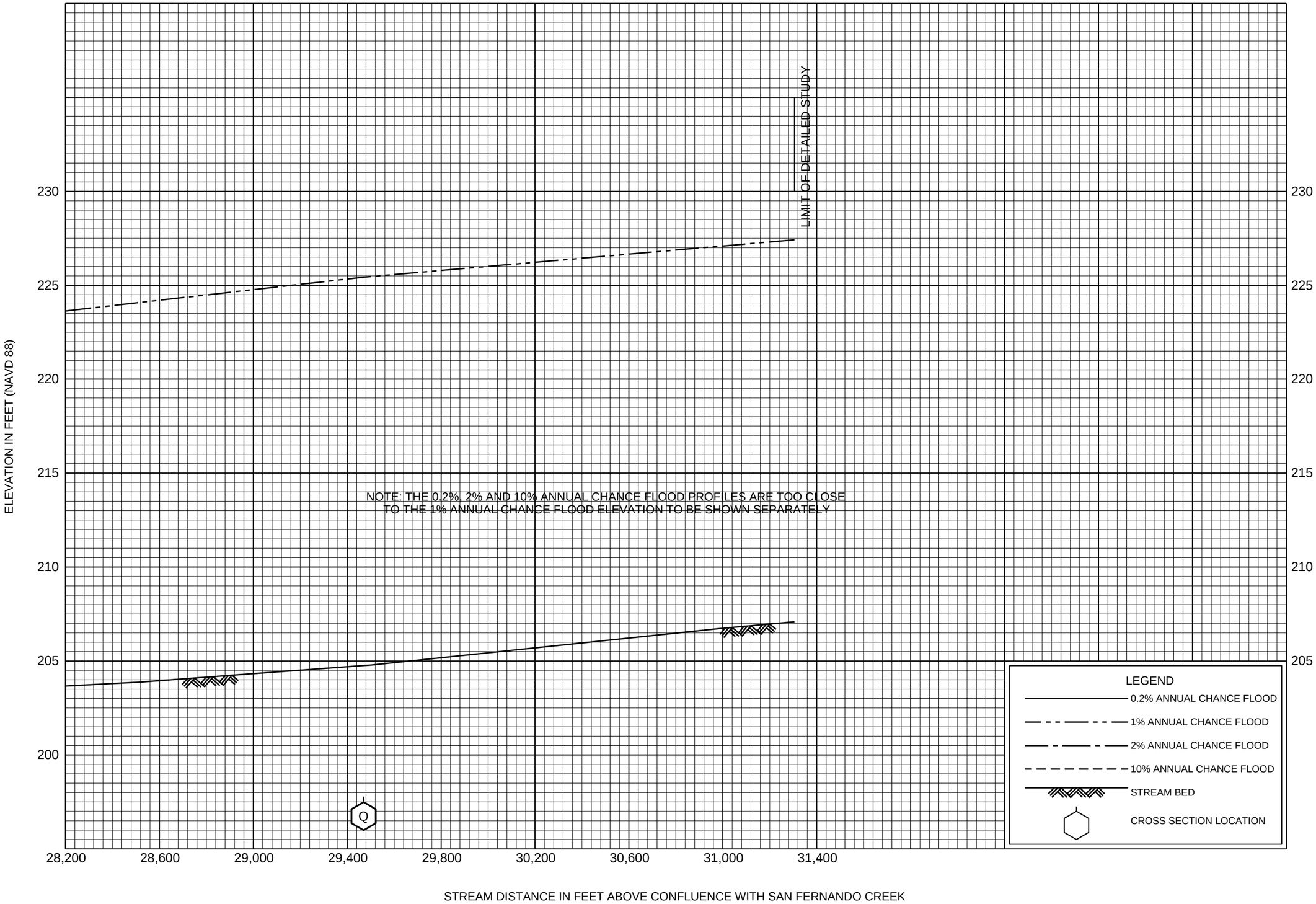

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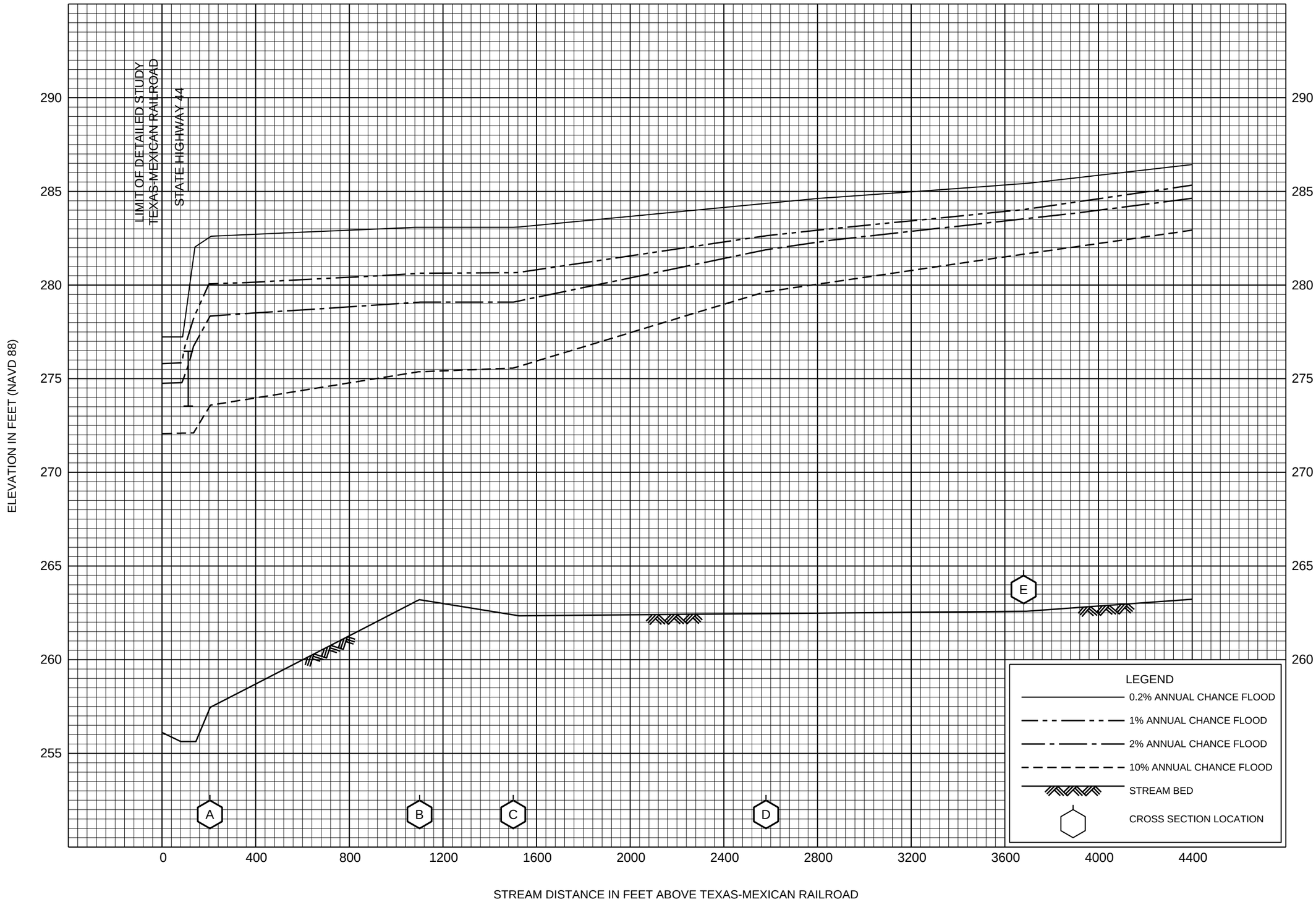

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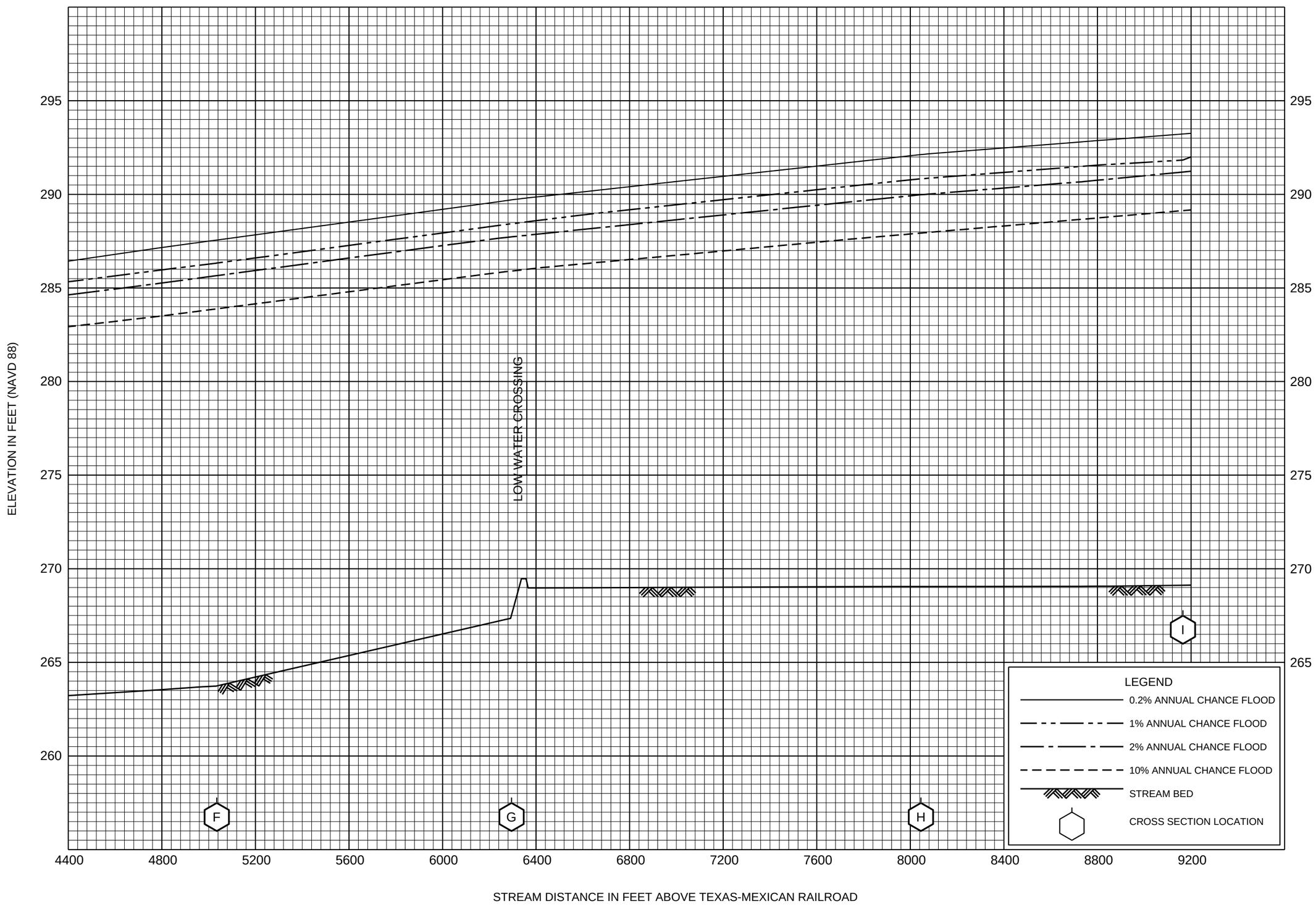

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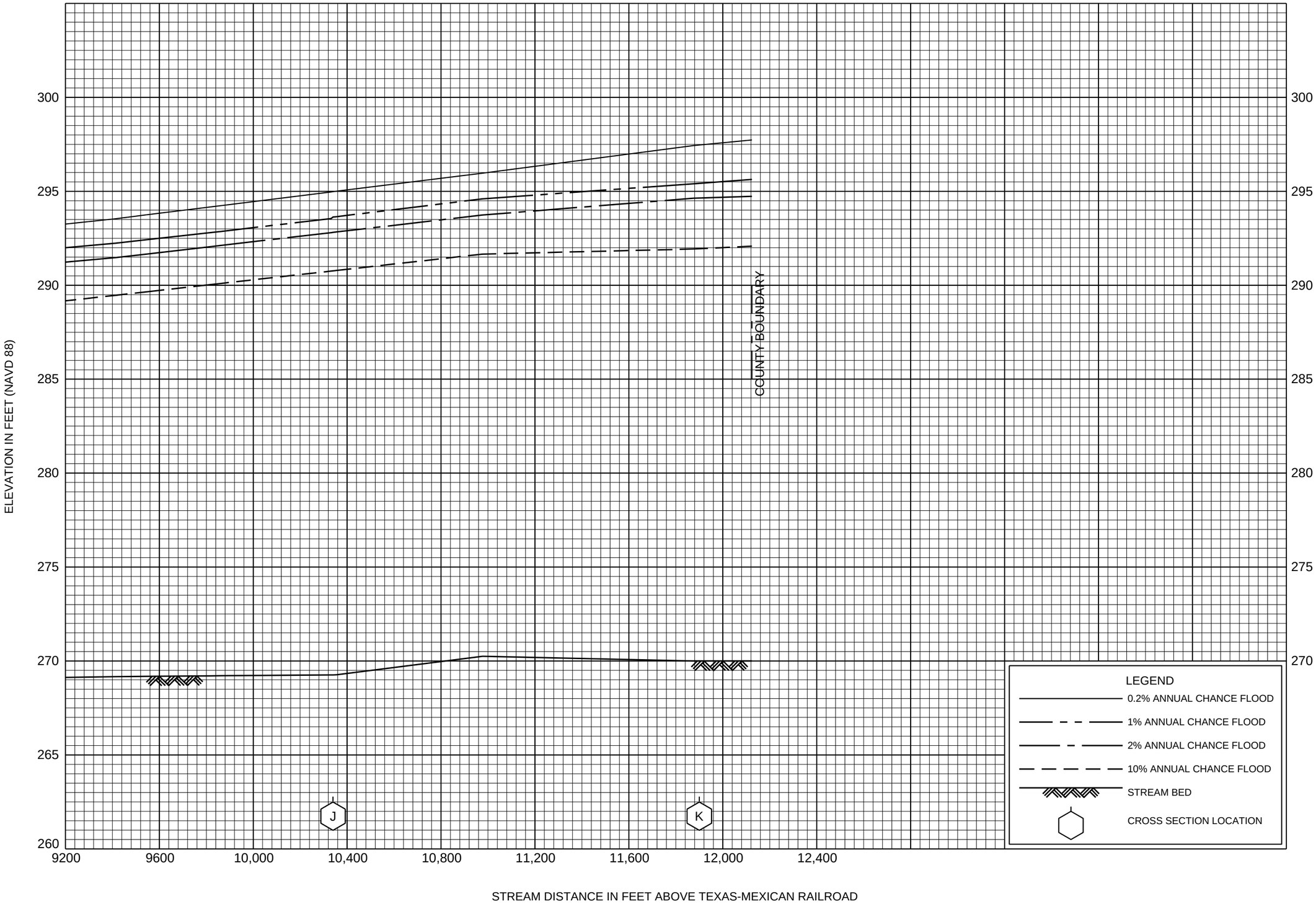

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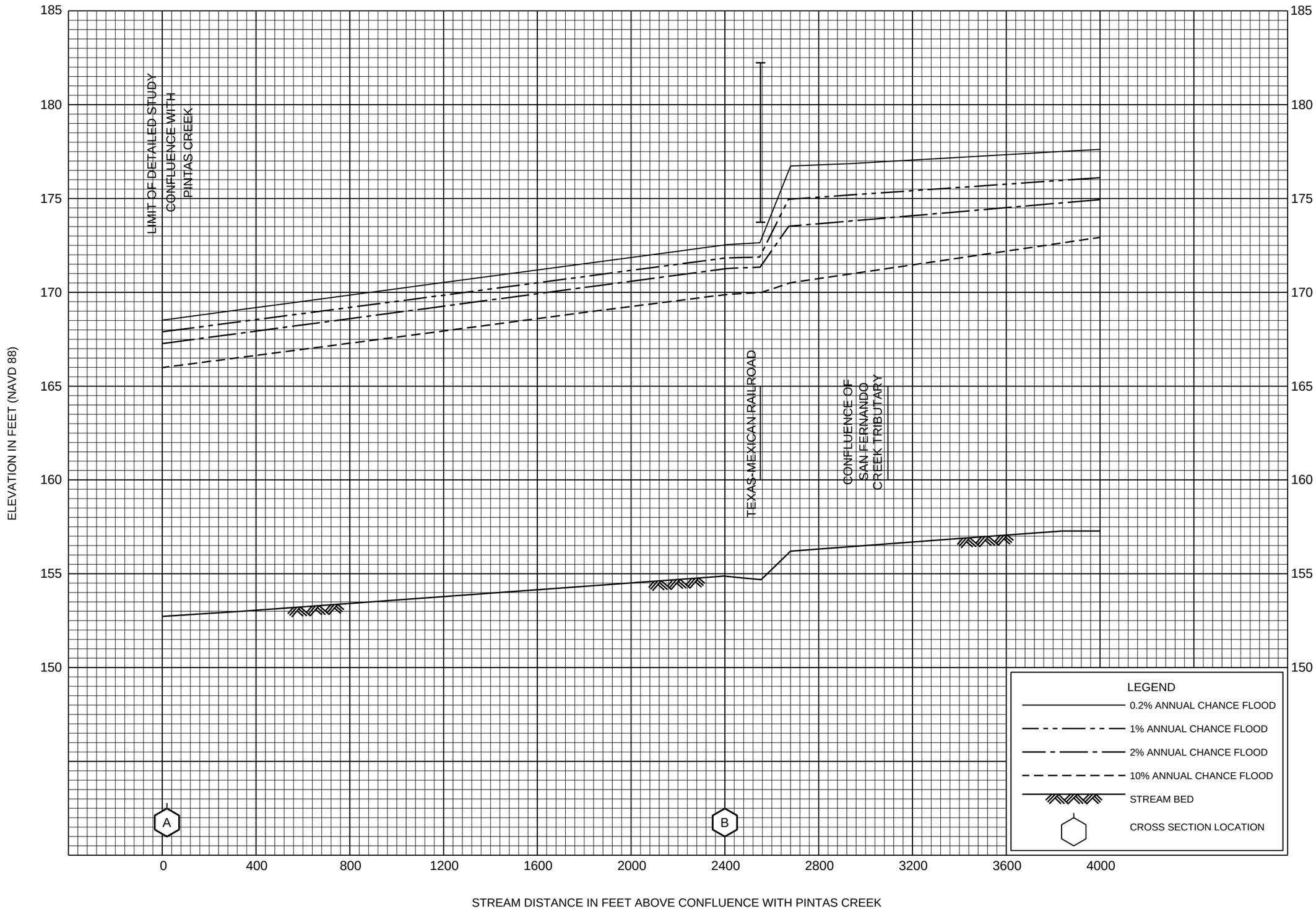

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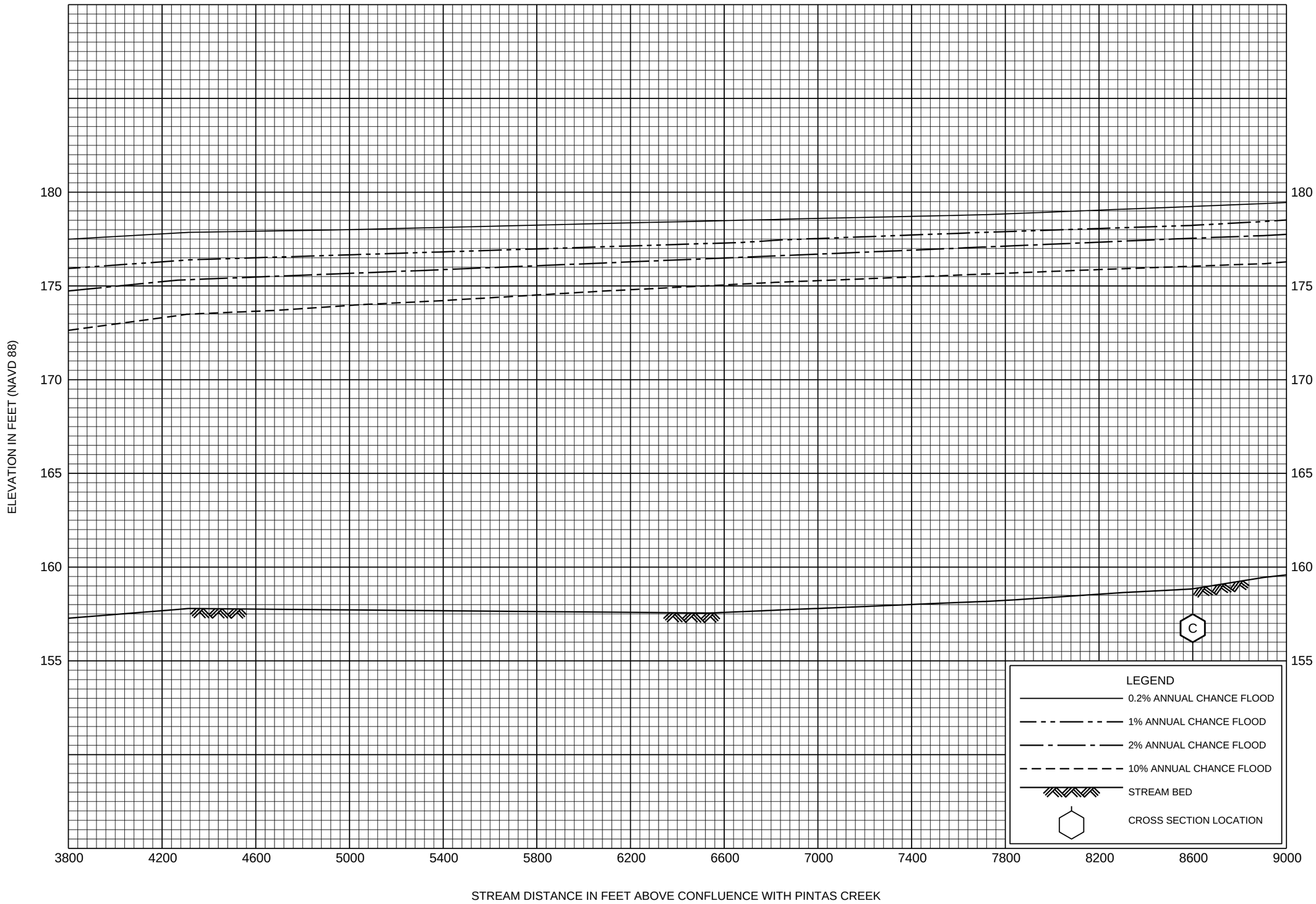

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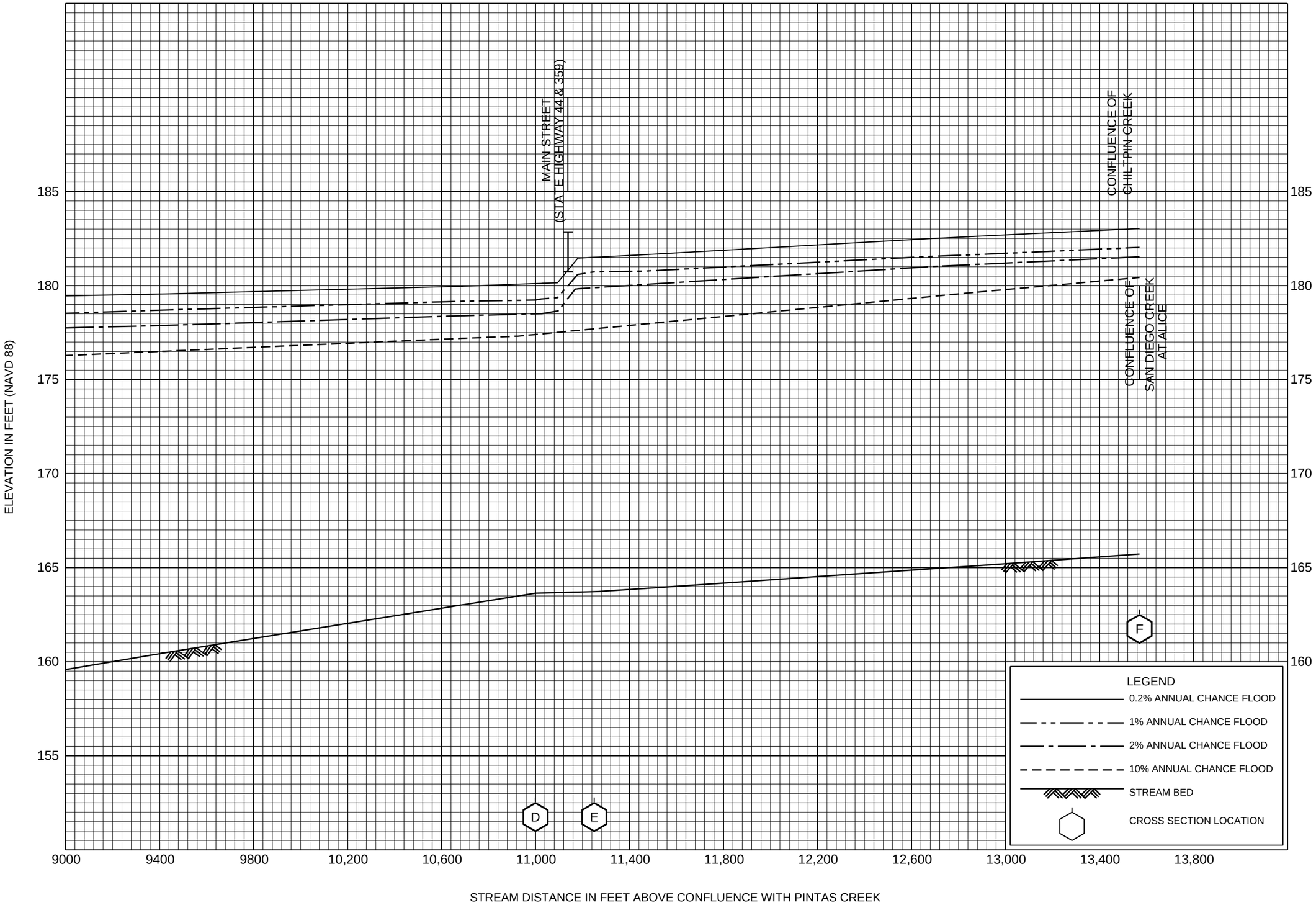

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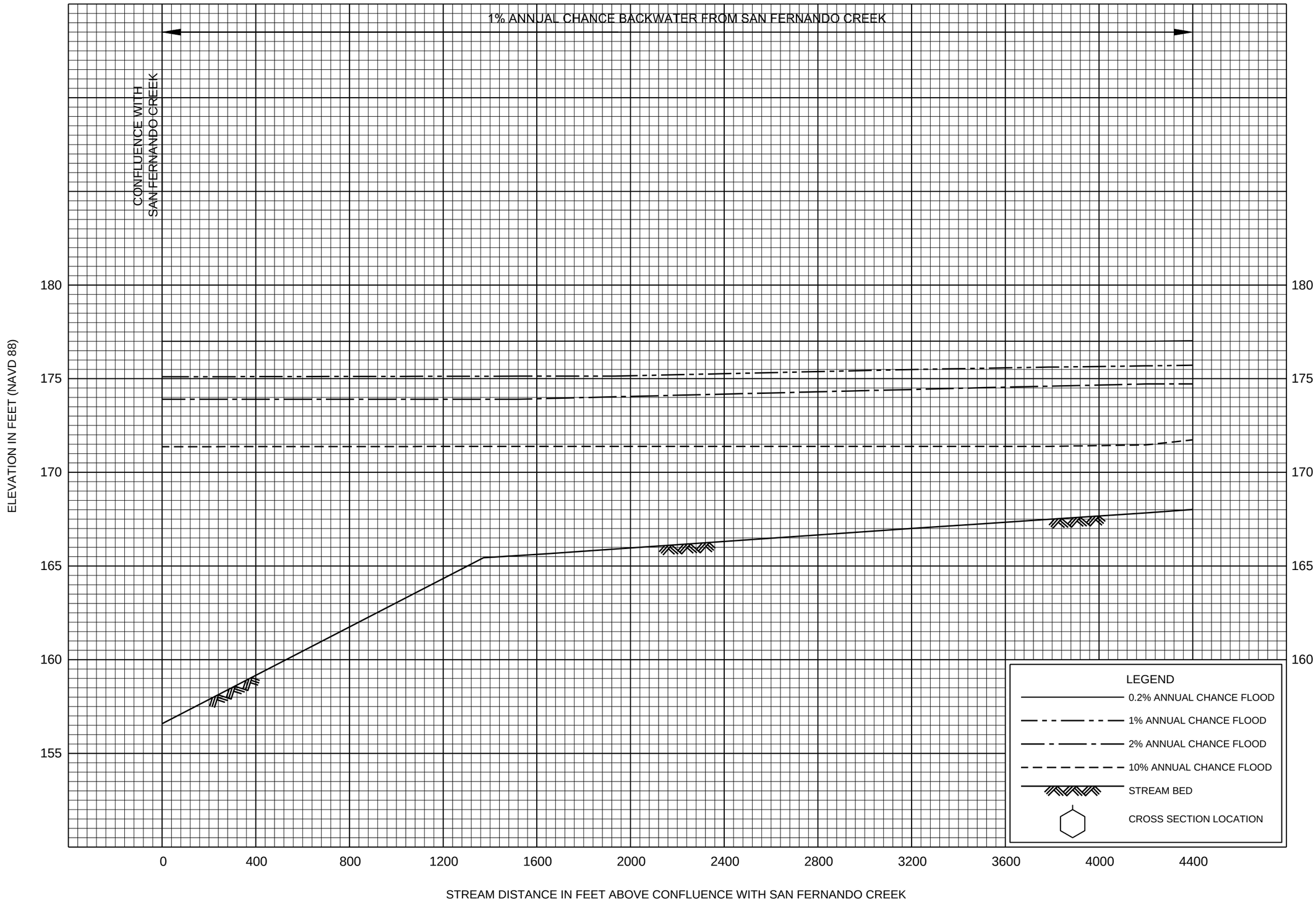

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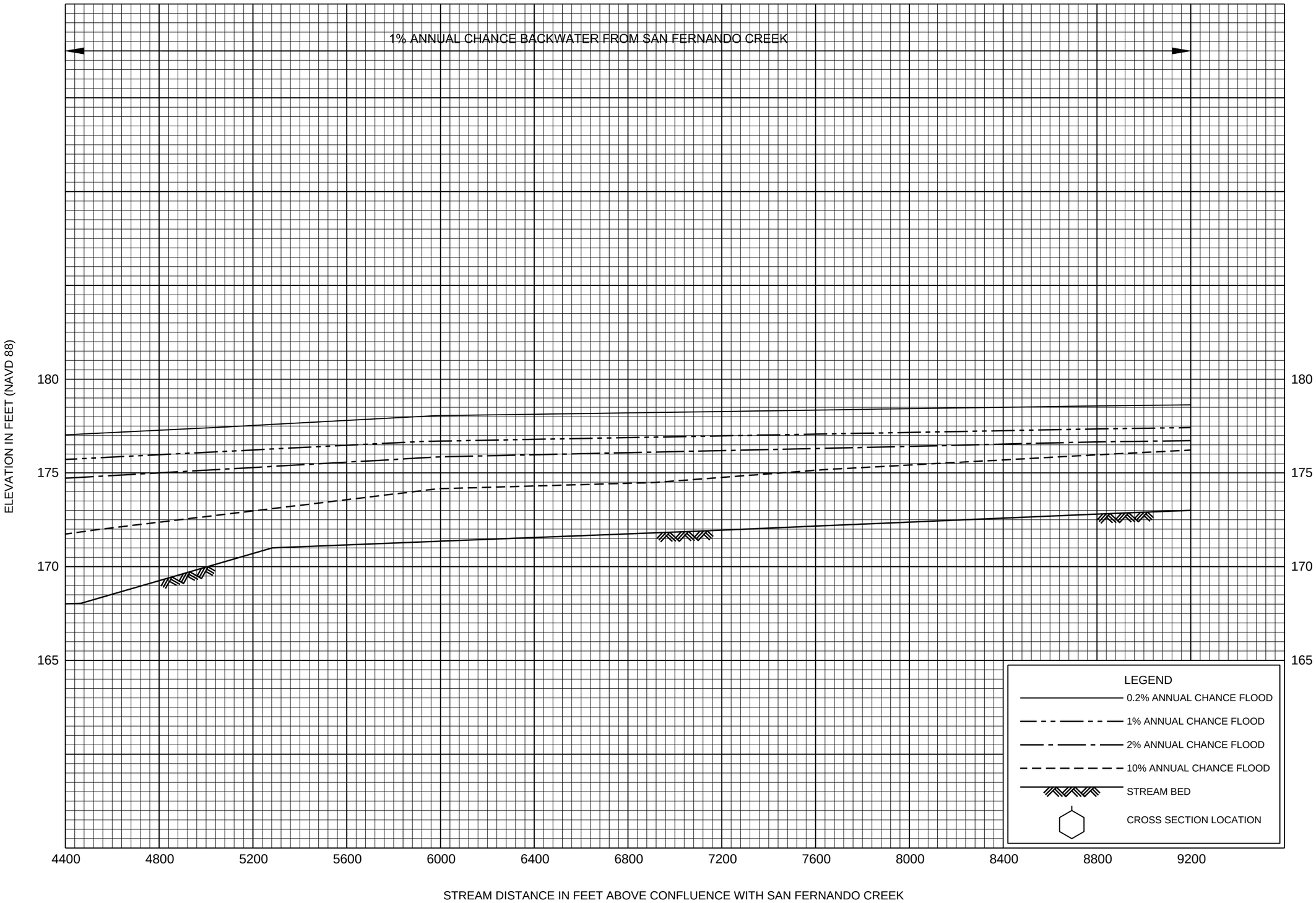

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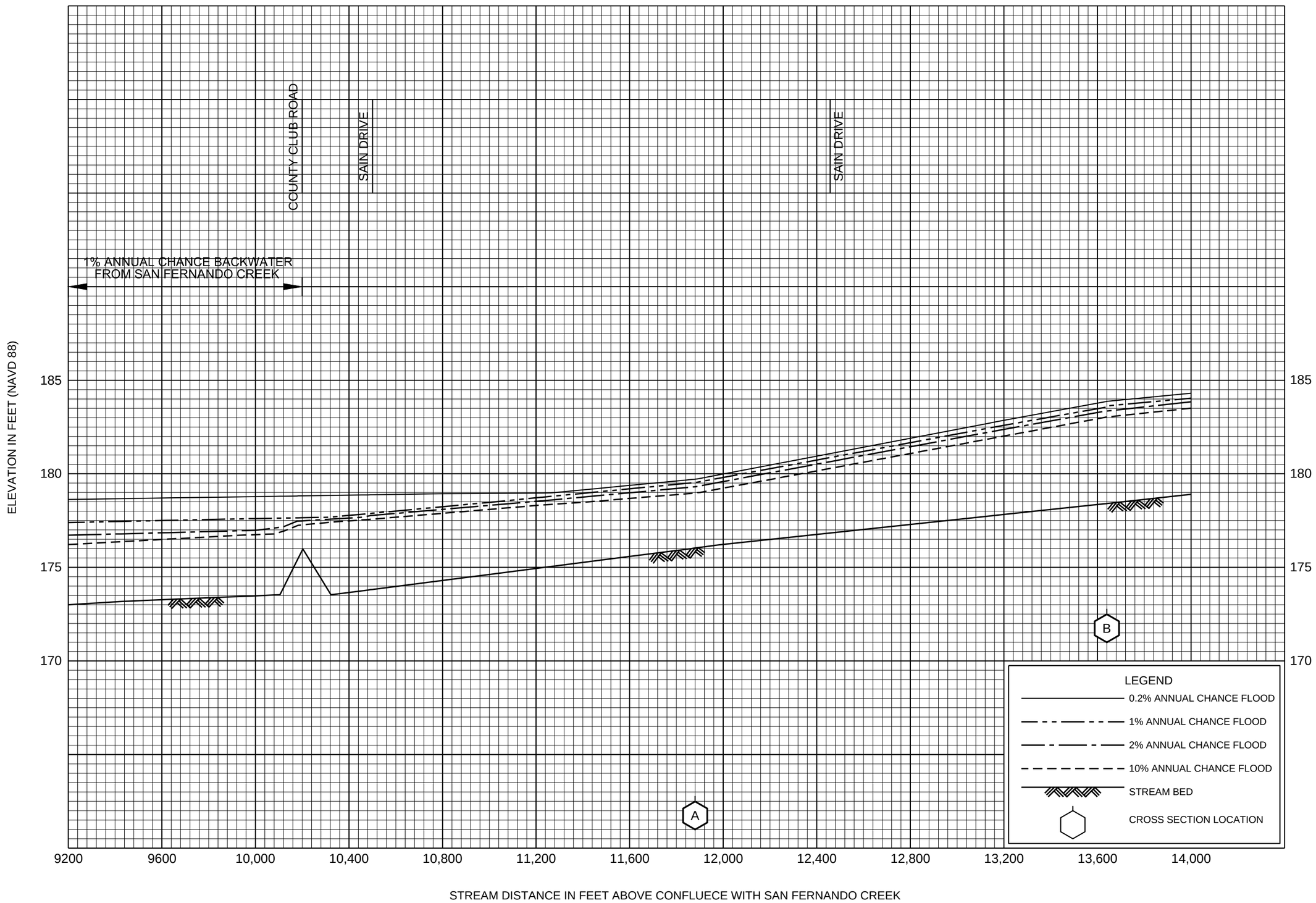

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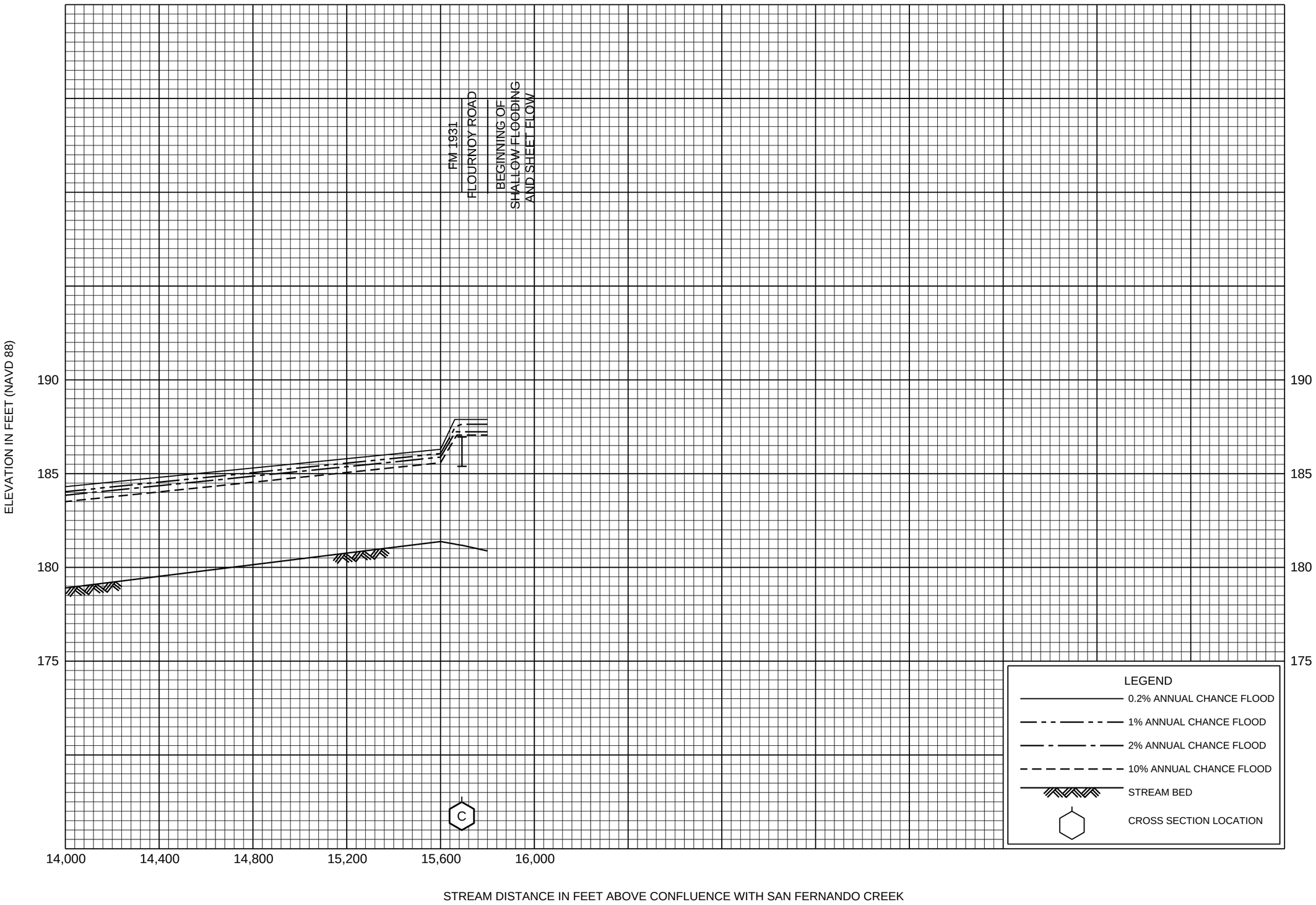

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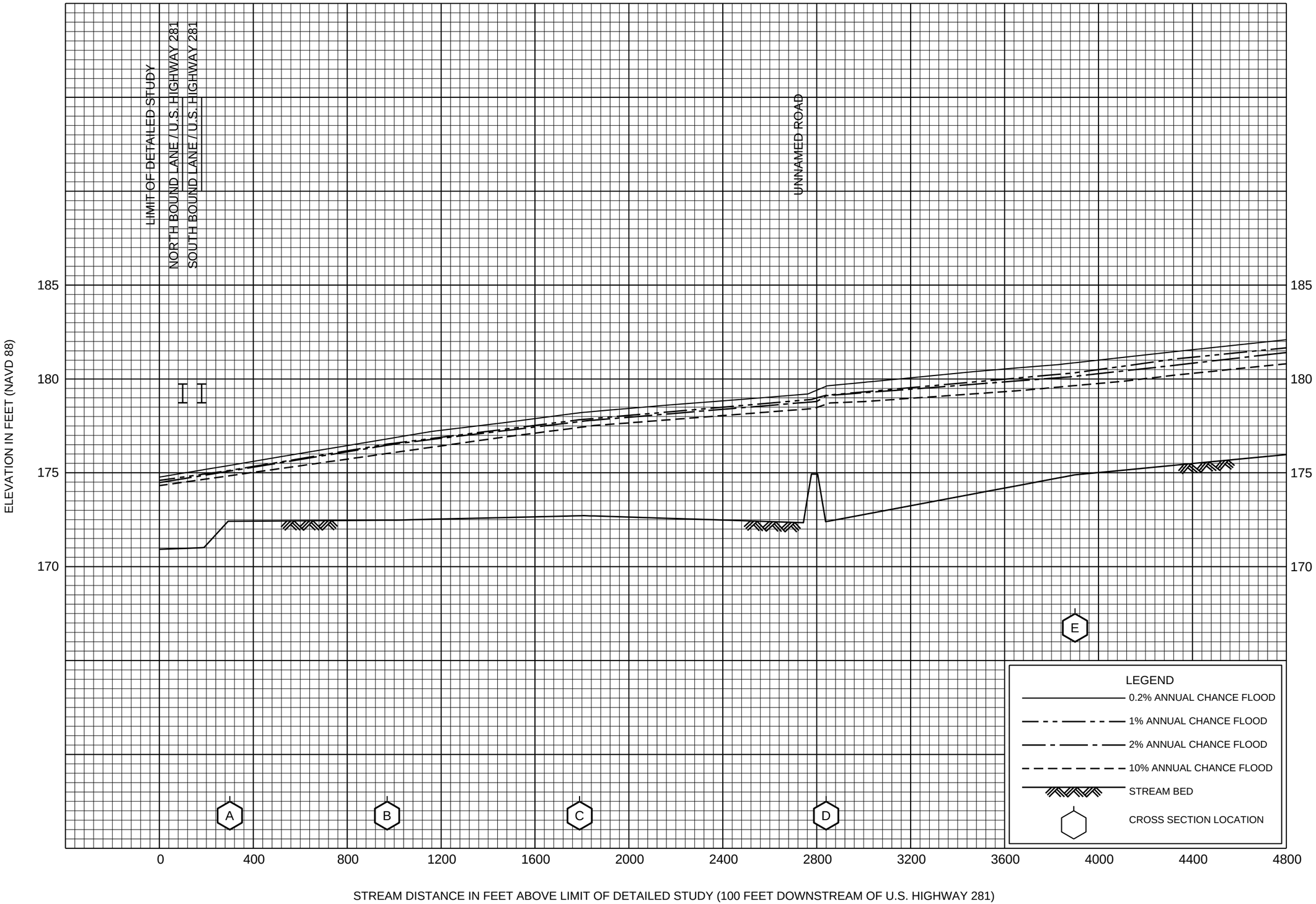

FLOOD PROFILES

UNNAMED CREEK AT BEN BOLT

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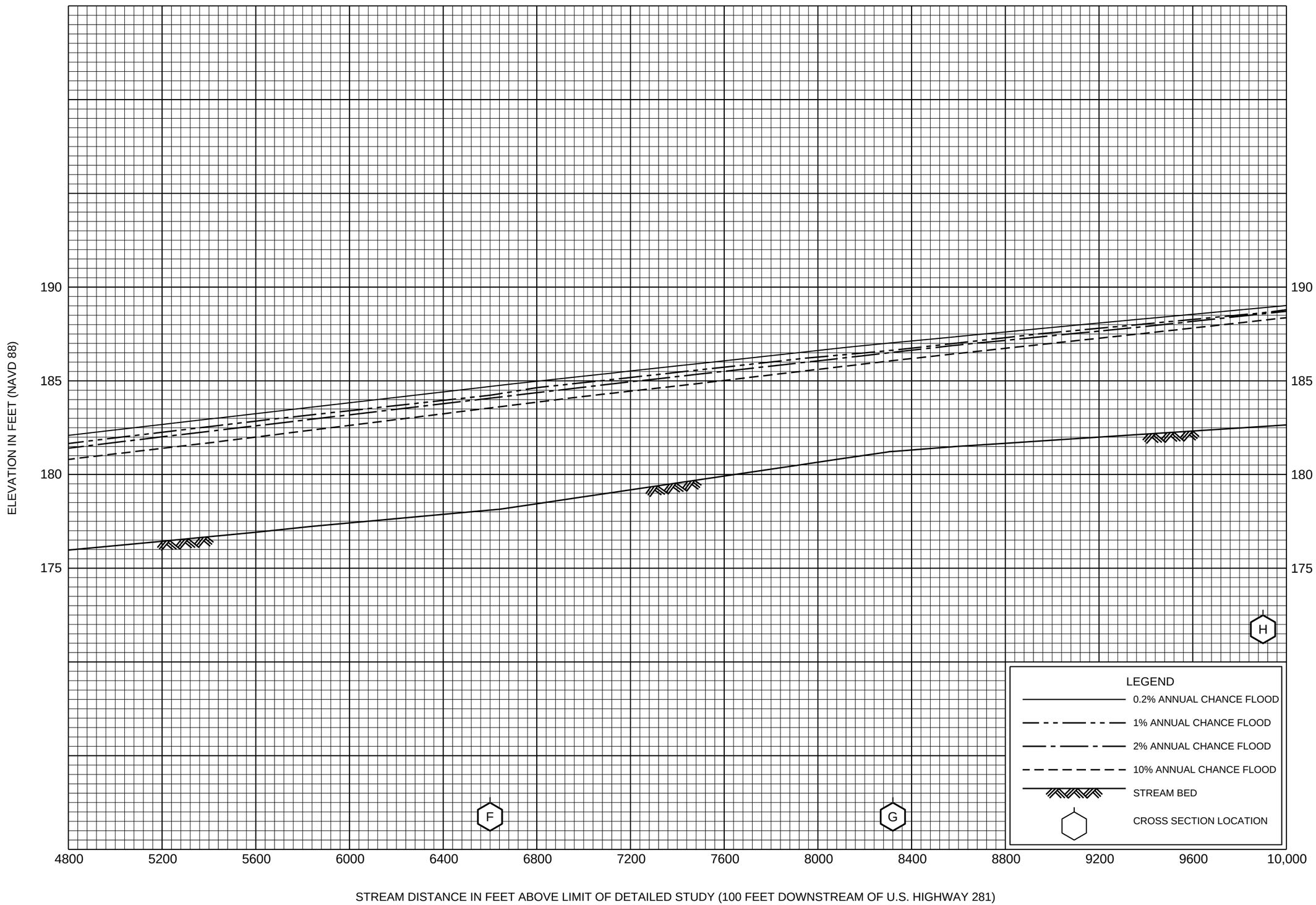

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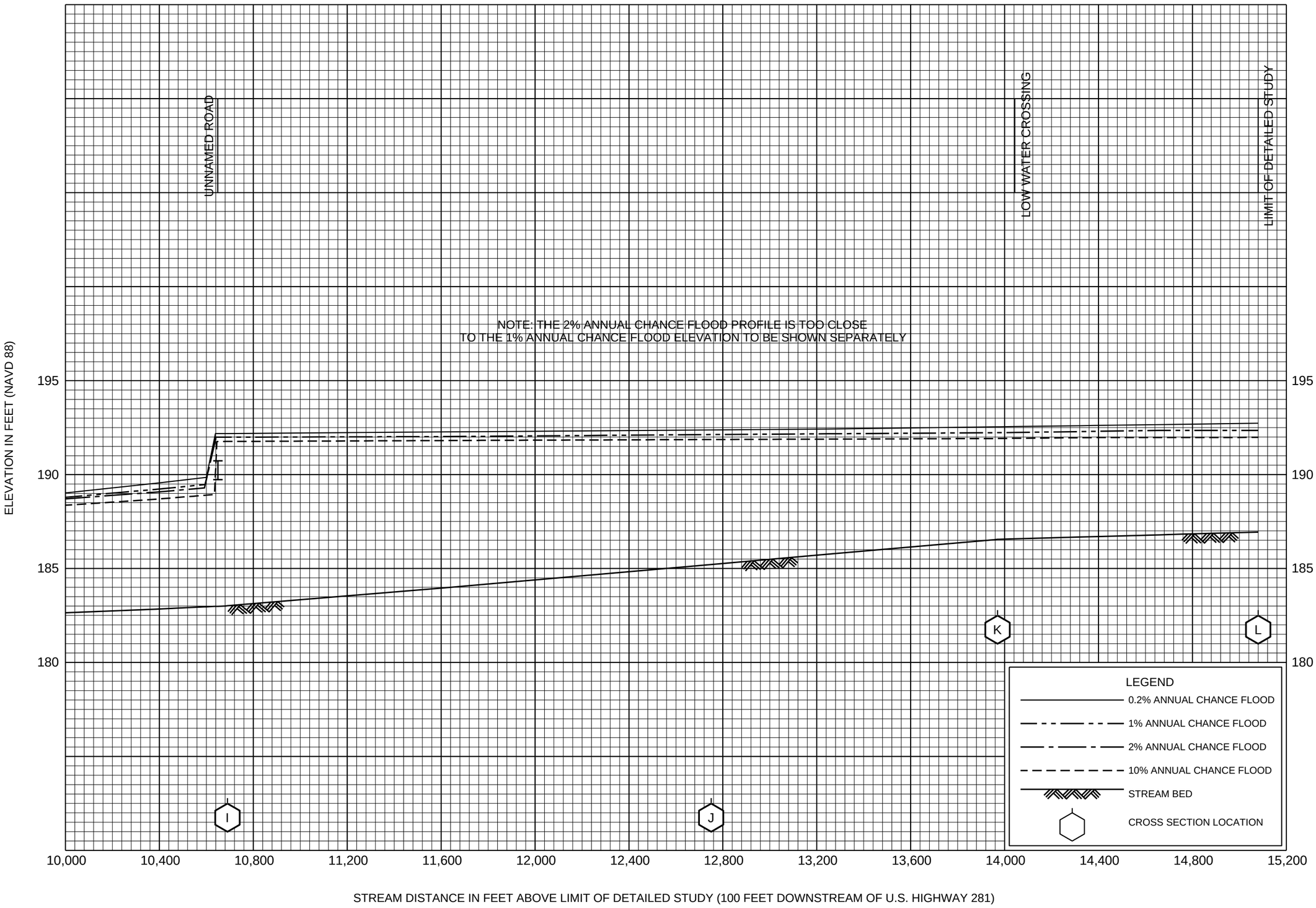

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