FLOOD INSURANCE STUDY

VOLUME 2 OF 2

SAN MATEO COUNTY CALIFORNIA

AND INCORPORATED AREAS

Community Name	Community Number
ATHERTON, TOWN OF [1]	060312
BELMONT, CITY OF	065016
BRISBANE, CITY OF	060314
BURLINGAME, CITY OF	065019
COLMA, TOWN OF	060316
DALY CITY, CITY OF	060317
EAST PALO ALTO, CITY OF	060708
FOSTER CITY, CITY OF	060318
HALF MOON BAY, CITY OF	060319
HILLSBOROUGH, TOWN OF	060320
MENLO PARK, CITY OF	060321
MILLBRAE, CITY OF	065045
PACIFICA, CITY OF	060323
PORTOLA VALLEY, TOWN OF	065052
REDWOOD CITY, CITY OF	060325
SAN BRUNO, CITY OF	060326
SAN CARLOS, CITY OF	060327
SAN MATEO COUNTY (UNINCORPORATED AREAS)	060311
SAN MATEO, CITY OF	060328
SOUTH SAN FRANCISCO, CITY OF	065062
WOODSIDE, TOWN OF	060330

[1]No Special Flood Hazard Areas Identified

PRELIMINARY
8/13/2015

REVISED
Month Day, Year

Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER
06081CV002C

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.

The Federal Emergency Management Agency (FEMA) may revise and republish part or all of this FIS report at any time. In addition, FEMA may revise part of this FIS report by the Letter of Map Revision process, which does not involve republication or redistribution of the FIS report. Therefore, users should consult with community officials and check the Community Map Repository to obtain the most current FIS report components.

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 (FBFM) 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
B	X
C	X

This FIS report was revised on Month xx, 201x. Users should refer to Section 10.0, Revision Descriptions, for further information. Section 10.0 is intended to present the most up-to-date information for specific portions of this FIS report. Therefore, users of this FIS report should be aware that the information presented in Section 10.0 supersedes information in Sections 1.0 through 9.0 of this FIS report.

Initial Countywide FIS Effective Date: October 16, 2012

First Revised Countywide FIS Date: July 16, 2015

Second Revised Countywide FIS Date: Month xx, 201x

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Exhibit 1 – Flood Profiles

Brittan Creek	Panels	01P-04P
Colma Creek	Panel	05P
Cordilleras Creek	Panels	06P-09P
Corte Madera Creek	Panels	10P-15P
Denniston Creek	Panels	16P-17P
Devonshire Branch of Pulgas Creek	Panel	18P
El Granada Creek	Panels	19P-20P
Harbor Industrial District Channel	Panels	21P-22P
La Honda Creek	Panels	23P-24P
Montara Creek	Panels	25P-26P
Pescadero Creek	Panels	27P-31P
Pulgas Creek	Panels	32P-36P
San Gregorio Creek	Panels	37P-39P
San Mateo Creek	Panels	40P-42P
San Vicente Creek	Panels	43P-44P
Sausal Creek	Panels	45P-48P
West Union Creek	Panels	49P-50P
Woodhams Creek	Panels	51P-53P
16th Avenue Drainageway Channel	Panels	54P-55P
19th Avenue Drainageway Channel	Panel	56P
Laurel Creek	Panels	57P-59P

Exhibit 2 – Flood Insurance Rate Map Index (Published Separately)
Flood Insurance Rate Maps (Published Separately)

10.0 REVISION DESCRIPTIONS

This section has been added to provide information regarding significant revisions made since the original Flood Insurance Study was printed. Future revisions may be made that do not result in the republishing of the Flood Insurance Study report. To ensure that any user is aware of all revisions, it is advisable to contact the community repository of flood hazard data.

10.1 First Revision (July 16, 2015)

This study was revised on July 16, 2015, by BakerAECOM in accordance with the scope of work developed under Task Order 0003 for Contract No. HSFEHQ-09-D-0368. This project was initiated to create a Physical Map Revision (PMR) to incorporate the interior drainage mapping from the San Mateo Bayfront Levee accreditation analysis report "Interior Drainage Analysis: South of San Mateo Creek" dated October 2009 and prepared by Schaaf & Wheeler Consulting Civil Engineers (Reference 88). The interior drainage analysis was approved by FEMA on March 15, 2013, and the study includes the following drainages: San Mateo Creek, 16th Avenue Drainageway Channel, 19th Avenue Drainageway Channel, and Laurel Creek. In addition, Schaaf & Wheeler provided a new Zone X Protected by Levee SFHA delineation that was incorporated. The water surface elevation profile for San Mateo Creek (levee segments only) was revised and was included in this revision of the FIS. Additionally, Marina Lagoon was re-delineated according to the BFE included in the "Interior Drainage Analysis: South of San Mateo Creek" report (Reference 88) and a static BFE has been included on the revised FIRM panels. The Central Lagoon was re-delineated using a BFE from the Foster City Central Lagoon Base Flood Elevation report (Reference 95), and the lagoon SFHA designation will be changed from Zone A to a Zone AE with a static BFE. The Redwood Shoes lagoon was re-delineated using a BFE from the Redwood City Levee certification report (Reference 91), but the lagoon SFHA is a Zone A. All BFEs for the lagoons will be reported in Table 9: Summary of Stillwater Elevations table in the FIS. Also, LOMR 12-09-2887P (Reference 94) will be incorporated along with any other LOMRs that occur on the PMR panels.

For this revision, the final CCO meeting was held on April 29, 2014. The meeting was attended by representatives of FEMA Region IX, the communities affected by this PMR, and the study contractor.

<u>Incorporation of the Interior Drainage Analysis fron the San Mateo Levee Certification Study</u>

Certification documentation for levee segments in the cities of Foster City, Redwood City, San Carlos, and San Mateo was provided to FEMA for review during the countywide mapping process (Study 07-09-1035S), resulting in FEMA approval letters being issued on July 23, 2007, January 28, 2011 and March 15, 2012, respectively. These letters indicated that the submitted levee certification documents met the criteria of the Code of Federal Regulations, Title 44, Section 65.10 (44 CFR 65.10) and the areas landward of the levee were mapped as Zone X shaded on October 16, 2012, effective FIRM panels.

An interior drainage analysis for the San Mateo Bayfront Levee was included in the 44 CFR 65.10 documentation. Due to schedule limitations, the interior drainage information for the city of San Mateo levee system was not incorporated into the October 16, 2012,

FIRM panels. FEMA initiated this Physical Map Revision (PMR) to incorporate the interior drainage flood hazards. The interior drainage flooding sources that will be included in the PMR are: Laurel Creek, 16th Avenue Drainageway Channel, and 19th Avenue Drainageway Channel. See Figure 2 for the locations of these flooding sources. In addition, an updated Zone X Protected by Levee SFHA was incorporated.

Re-delineation of Effective Special Flood Hazard Areas

The re-delineation tasks were completed using the 2006 2-foot LiDAR-derived topographic data received from San Mateo County (Reference 90). Acquisition of the LiDAR data began in October 2005 and a second flight was required in January 2006 to fill in gaps and areas of minimal coverage. The data is projected in California State Plane Coordinates, Zone 3, NAD83 and NAVD88. BakerAECOM determined that the LiDAR data met FEMA's quality standards for use as 2-foot contour data. BakerAECOM generated 2-foot contour data based on the LiDAR data.

In conjunction with the San Mateo County LiDAR data, the re-delineation task was completed using the base map that will be used for this PMR. The base map for this project is composed of data from the Base Map Acquisition tasks for the California Coastal Analysis and Mapping Project/San Francisco Bay Area Coastal (CCAMP/BAC) Study (Case Number 11-09-1227S). Initially, BakerAECOM was going to request base map information from the communities affected by the PMR but using the CCAMP/BAC study base map is more efficient because that project's base map information will eventually supersede the PMR's base map data. The base map from the CCAMP/BAC study meets FEMA's Guidelines and Specifications.

Marina Lagoon Re-delineation

Based on the BFE included in the "Interior Drainage Analysis – South of San Mateo Creek" study (Reference 88), Marina Lagoon was re-delineated using the San Mateo County LiDAR data. The report states, "the results of the hydrologic modeling show that the one-percent runoff to Marina Lagoon is contained at elevation 2.5 feet NAVD88 without inundating surrounding areas. Marina Lagoon is currently designated as a Zone A on the October 16, 2012, FIRM, and FEMA revised the SFHA designation to a Zone AE with the 2.5 foot (3 foot) BFE. The BFE will have to be listed as a whole number on the FIRM panel, and the BFE was added to Table 9: Summary of Stillwater Elevations table in this FIS. The city of San Mateo submitted certification statements confirming that no development will be allowed within the Marina Lagoon and that the 1-percent- annual-chance flood event is contained within the lagoon. As a result, special notes have been added to the FIRM panels and to Table 9 in the FIS to denote the 1-percent-annual-chance chance flood event is contained in the Marina Lagoon.

Central Lagoon Re-delineation

For the March 21, 2014, preliminary FIRM and FIS report, the BFE included in the "City of Foster City - Report of Analysis of Foster City Levees" (Reference 89), dated 1987, the Central Lagoon (referred to as the Foster City Lagoon in the report) was re-delineated using a BFE of 3.03 feet in NAVD88 datum. During the appeal period for this PMR, the city and their contractor, Schaaf & Wheeler Consulting Civil Engineers, submitted information (Reference 95) to contest the BFE in the 1987 report. Subsequently, FEMA

approved the appeal and the BFE on the FIRM panels and in the FIS report will now be reported as 1.9 feet (2 feet).The BFE will have to be listed as a whole number on the FIRM panel, and the BFE was added to Table 9: Summary of Stillwater Elevations table in this FIS.

Central Lagoon is currently designated as a Zone A on the October 16, 2012, FIRM, and the SFHA designation will be changed to a Zone AE with a static elevation of 2.0 feet NAVD88 datum. The city of Foster City and Schaaf & Wheeler Consulting Civil Engineers submitted certification statements confirming that no development will be allowed within the Central Lagoon and that the 1- percent-annual-chance flood event is contained within the lagoon. As a result, special notes have been added to the FIRM panels and to Table 9 in the FIS to denote the 1-percent-annual-chance chance flood event is contained in the Central Lagoon.

Belmont Creek Reservoir Re-delineation

The Belmont Creek Reservoir is mapped as a Zone A on the effective FIRMs, and the flooding source was re-delineated using a BFE from the original work maps to better match the topography. The Belmont Creek reaches downstream of the reservoir were not re-delineated and the effective mapping has not been revised.

Redwood Shores Lagoon Re-delineation

The portions of Redwood Shores Lagoon on FIRM panels 06081C0167F and 06081C0169F along with a floodplain delineation for a smaller lagoon that was not included in the October 12, 2012, FIRM revision were re-delineated using a BFE included in the report "Redwood Shores Levee System Certification compiled by the City of Redwood City" (Reference 91) dated May 12, 2010. The report cites 2.8 feet as the BFE for a 72-hour storm event which is "0.7 feet below the lowest elevation within the developed portion of Redwood Shores". The SFHA for Redwood Shores Lagoon will not be revised to be a Zone AE because the entire Redwood Shores Lagoon area is not being re-delineated with this PMR. The BFE for the Redwood Shores Lagoon was added to Table 9: Summary of Stillwater Elevations table in this FIS. The city of Redwood City and the city's contractor, BKF Engineers, submitted certification statements confirming that no development will be allowed within the Redwood Shores Lagoon and that the 1-percent-annual-chance flood event is contained within the lagoon. As a result, special notes have been added to the FIRM panels and to Table 9 in the FIS to denote the 1-percent-annual-chance chance flood event is contained in the Redwood Shores Lagoon.

Incorporation of LOMCs

BakerAECOM incorporated LOMR Case Number 12-09-2887P effective date March 4, 2013 in the City of San Mateo on FIRM panels 06081C0166F and 06081C0168F. The case is an update to Laurel Creek and the study extents are from just upstream of County Road 82 to approximately 340 feet upstream of Alameda de Las Pulgas Road.

10.2 Second Revision (Month, Date, Year)

Coastal Hazard Analyses

For San Francisco Bay, storm surge, swell-wave and wind-waves were modeled at a regional scale using numerical models to deterministically predict water levels and wave conditions in the bay. Coastal flooding hazards were then evaluated with one-dimensional (1D) transect-based models.

The regional modeling of San Francisco Bay was conducted in two phases. The first phase focused on the North and Central Bay and was completed in 2012 (DHI, 2011); the second phase focused on the South Bay and was completed in 2012 (DHI, 2012). Results from the North and Central Bay regional study are used in the coastal flood hazard analysis from the northern border of San Mateo County to the San Mateo – Hayward Bridge (transect 1-31); the South Bay regional study results are used from the San Mateo – Hayward Bridge to the southern San Mateo border (transects 32-53). The North/Central Bay study simulated a 31-yr period from 1973 to 2003 and modeled both Pacific Ocean swell and locally generated wind-waves (seas). The South Bay study simulated a 53-yr period from 1956 to 2009 and only modeled the locally generated wind-waves. The South Bay study did not model swell waves because swell from the Pacific Ocean do not penetrate into the south San Francisco Bay.

All water level and wave parameters used in the 1D transect-based analyses come directly, or were derived from, the regional hydrodynamic and wave modeling effort for South San Francisco Bay (DHI, 2012). The water levels from DHI included the effects of tide, storm surge, and riverine discharge. Wave setup was not included as a component of the regional hydrodynamic modeling, but was included in the 1D wave hazard analysis. Wave setup, runup, overtopping, and overland wave propagation were analyzed for 22 transects along the San Mateo County coastline. Transects are shown on the FIRM panels and are depicted in the Transect Location Maps (Figures X-XX). Transect profile elevations were based on the U.S. Geological Survey (USGS) 2010 Southern San Francisco Bay Area LiDAR (USGS, 2010). USGS managed the recent topographic LiDAR data collection in Southern San Francisco Bay under the California Coastal Mapping Program (CCMP). The South Bay LiDAR data were collected in June, October, and November 2010 and provide complete coverage of the coastal areas, up to the 16-foot (5-meter) elevation contour within the southern San Mateo County study area. The National Oceanic and Atmospheric Administration (NOAA) managed additional LiDAR collection for CCMP in northern San Francisco Bay, outside of the study area for this project.

The MIKE 21 Flow Model (HD) and MIKE 21 Spectral Wave (SW) model developed by DHI Water & Environment were used for the regional surge and wave modeling. The hydrodynamic model included the effects of tide, storm surge, and riverine discharge.

The frequency and magnitude of storm surge and wave heights were derived statistically from the synthesized 31- or 54-year records.

Water level and wave information from the regional hydrodynamic and wave models was used as input to the 1D flood hazard analyses. Wave setup, runup, overtopping, and overland wave propagation were analyzed at representative transects. Transects are shown on the FIRM panels and depicted in the Transect Location Maps (Figures X-X).

Transect profile elevations were based on the National Oceanic and Atmospheric Administration (NOAA) 2010 Central San Francisco Bay Area LiDAR, collected February to April, 2010. Bathymetric information was derived from USACE dredging surveys and NOAA/ National Ocean Service (NOS) Geophysical Data System (GEODAS) bathymetric data. In areas where the two datasets overlapped, the USACE data was given priority.

Levee crest elevations for transects 27 and 28 were obtained from the as-built Bayfront Levee Containment plan, entitled "City of San Mateo Bayfront Levee Profile B Alignment," signed by Mr. Charles D. Anderson, P.E., and dated January 25, 2012. Data from surveys performed by Wilsey Ham Civil Engineers between June 2008 and March 2011 were provided by the City of Foster City for crest elevations of the levee pedway surrounding the city. These data were used to supplement the LiDAR data to more accurately reflect the existing conditions of the levee pedway.

Spot elevations capturing the Foster City levee system were incorporated into the profile data for transects 1000, 1001, and 1002 from the as-built topographic survey conducted by Wilsey Ham Engineering in March, 2011 (Wilsey Ham, 2011). These data were used to supplement the LiDAR data to more accurately reflect the existing conditions of the levee system.

Topographic survey information capturing the Redwood Shores levee system were incorporated into the profile data for transects 35, 36, 37, 38, and 39 from as-built drawings prepared by Bohley Consulting in September, 2010 (Bohley, 2010) and BKF in October, 2010 (BKF, 2010). These data were used to supplement the LiDAR data to more accurately reflect the existing conditions of the levee system.

FEMA's Wave Height Analysis for Flood Insurance Studies (WHAFIS) model within the Coastal Hazard Analysis Modeling Program (CHAMP), version 2.0 (FEMA, 1988; FEMA, 2007), was utilized to assess overland wave propagation for transects where the prevailing ground was inundated by the Stillwater flood level along. WHATFIS solves the wave action conservation equation and incorporates wind-generated wave growth and dissipation by marsh grasses. Rigid blockages to wave growth, such as buildings or rigid vegetation, are also included within the formulations. Eighteen of the 22 transects were analyzed for overland wave propagation hazards. Of the 18 transects, 6 were evaluated for runup hazards inland along the transect.

Wave runup was calculated for transects with coastal armoring or steeply sloping ground profiles in the vicinity of the flooded shoreline. Runup was calculated using one of two methods, depending on shoreline characteristics. The Direct Integration Method (FEMA, 2005) was used to calculate runup for transects with natural, gently sloping ($m < 0.125$) profiles. The Technical Advisory Committee for Water Retaining Structures (TAW) (van der Meer 2002) method was used for shorelines with shore protection structures and steeply sloping ($m \geq 0.125$) natural shorelines. The total runup elevation is also referred to as the total water level (TWL). Annual TWL maxima were selected from the hindcast time series, and the generalized extreme value (GEV) distribution was employed to determine the 1-percent-annual-chance TWL from the annual maxima at each transect. Wave overtopping was evaluated for transects where the runup elevation exceeded the barrier crest.

Table 14: Transect Data

Transect	XY Coordinates (Geographic Latitude/Longitude)		Stillwater Elevation (feet NAVD 88)[1]				Zone	BFE
			10% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance		
B1	-122.393	37.69998	8.93	9.80	10.26	11.61	VE	14[2]
B2	-122.389	37.68289	8.94	9.82	10.29	11.69	VE AE	13[2] 10
B3	-122.384	37.67729	8.93	9.81	10.28	11.69	VE AE	10[2] 10
B4	-122.388	37.67019	8.98	9.87	10.35	11.82	VE	14[2]
B5	-122.381	37.66622	8.98	9.87	10.35	11.82	VE AE	14[2] 11
B6	-122.381	37.6618	8.99	9.87	10.36	11.83	AE	11[2]
B7	-122.38	37.65962	9.00	9.91	10.41	11.95	VE AE	13[2] 10
B8	-122.377	37.6563	9.00	9.91	10.41	11.94	AE AE	11[2] 10
B9	-122.378	37.65341	9.01	9.92	10.43	11.99	VE	12[2]
B10	-122.38	37.6502	9.02	9.94	10.45	12.03	VE	14[2]
B11	-122.383	37.64801	9.03	9.95	10.47	12.06	AE	11[2]
B12	-122.392	37.64601	9.02	9.94	10.46	12.04	AE	10
B13	-122.39	37.6413	9.02	9.94	10.46	12.05	VE AE	13[2] 10
B14	-122.362	37.59475	9.04	9.79	10.18	11.26	AE AE	11[2] 10
B15	-122.355	37.59214	9.04	9.79	10.18	11.26	AE	11[2]
B16	-122.351	37.59203	9.05	9.80	10.20	11.31	VE	12[2]
B17	-122.345	37.59209	9.05	9.81	10.20	11.33	VE	12[2]
B18	-122.336	37.59209	9.05	9.82	10.22	11.37	VE	12[2]
B19	-122.331	37.5882	9.05	9.82	10.23	11.39	AE AE	12[2] 10
B20	-122.322	37.5917	9.06	9.83	10.24	11.42	VE	16[2]
B21	-122.314	37.5889	9.07	9.87	10.30	11.55	VE AE	11 10-11
B22	-122.315	37.58521	9.08	9.88	10.31	11.58	VE AE	11 10-11
B23	-122.315	37.58344	9.08	9.88	10.31	11.58	VE AE	12[2] 10
B24	-122.312	37.5806	9.08	9.88	10.32	11.60	VE AE	12[2] 10
B25	-122.308	37.57741	9.08	9.89	10.33	11.63	VE AE	12[2] 10
B26	-122.3	37.57557	9.08	9.90	10.34	11.66	VE	12[2]
B27	-122.296	37.57149	9.09	9.91	10.36	11.70	VE	12[2]
B28	-122.289	37.57449	9.09	9.92	10.37	11.72	VE AE	11 11-12
B29	-122.281	37.5743	9.10	9.93	10.38	11.74	VE AE	13[2] 10
B30	-122.276	37.57135	9.11	9.94	10.39	11.77	VE	13
B31	-122.269	37.57175	9.12	9.95	10.41	11.80	VE	13[2]
B32	-122.252778	37.571635	*	*	10.2	11.0	VE	13[2]
B33	-122.246139	37.564282	*	*	10.2	11.0	VE	13[2]

*Data Not Available
[1]North American Vertical Datum of 1988
[2]Wave runup elevation

Table 14: Transect Data, continued

Transect	XY Coordinates (Geographic Latitude/Longitude)		Stillwater Elevation (feet NAVD 88)[1]				Zone	BFE
			10% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance		
B34	-122.240066	37.557708	*	*	10.2	11.1	AE	10[2]
B35	-122.236296	37.561521	*	*	10.2	11.1	VE AE	13 11-13
B36	-122.229810	37.556178	*	*	10.2	11.1	VE AE	12-13 11-13
B37	-122.221364	37.551735	*	*	10.3	11.2	VE AE AE	12 11 13
B38	-122.222873	37.544801	*	*	10.3	11.2	AE	11[2]
B39	-122.224632	37.543697	*	*	10.3	11.2	VE AE	12 11-12
B40	-122.210508	37.542158	*	*	10.3	11.2	VE AE	12 10-12
B41	-122.200669	37.539394	*	*	10.4	11.3	VE AE	12 10-12
B42	-122.194004	37.524773	*	*	10.4	11.4	VE AE	12 10-12
B43	-122.194004	37.524773	*	*	10.4	11.4	VE AE	12 10-12
B44	-122.184018	37.519997	*	*	10.4	11.4	VE AE	12 10-12
B45	-122.166279	37.506301	*	*	10.5	11.5	VE AE	12 11
B46	-122.155051	37.505213	*	*	10.8	12.2	VE AE	12 11-12
B47	-122.152526	37.505332	*	*	10.8	12.2	VE AE	12 11-12
B48	-122.132328	37.506278	*	*	10.9	12.4	VE AE	12 11-12
B49	-122.121785	37.500715	*	*	10.9	12.4	VE AE	12 11-12
B50	-122.119059	37.484292	*	*	11.0	12.5	VE AE	11 11
B51	-122.117783	37.480719	*	*	11.0	12.5	VE AE	11 11
B52	-122.114253	37.474021	*	*	11.0	12.6	VE AE	11 11
B53	-122.107367	37.469902	*	*	11.0	12.6	VE AE	11 11

*Data Not Available
[1]North American Vertical Datum of 1988
[2]Wave runup elevation

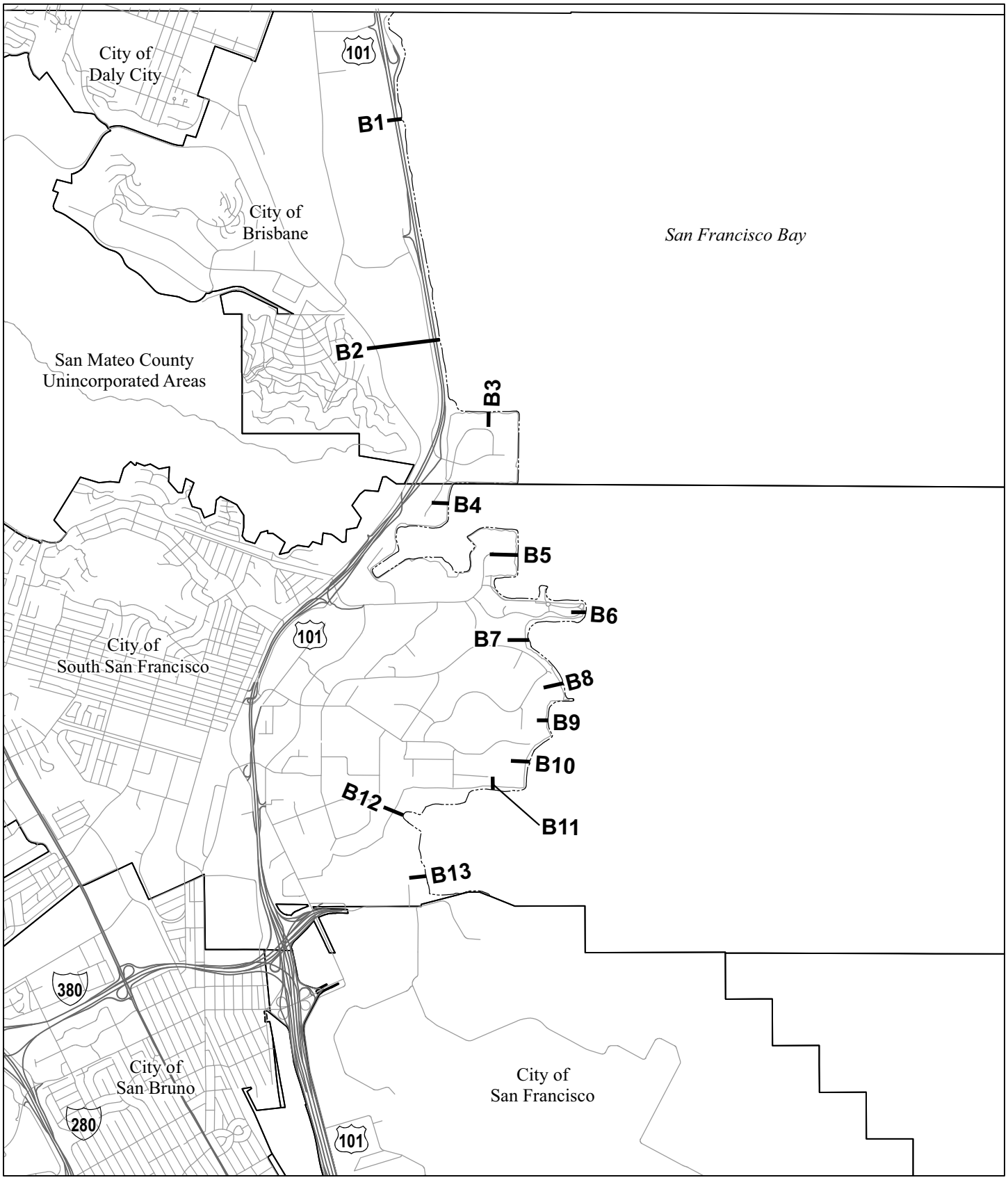

FIGURE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CALIFORNIA

0 0.25 0.5 1 1.5 Miles

N

TRANSECT LOCATION MAP

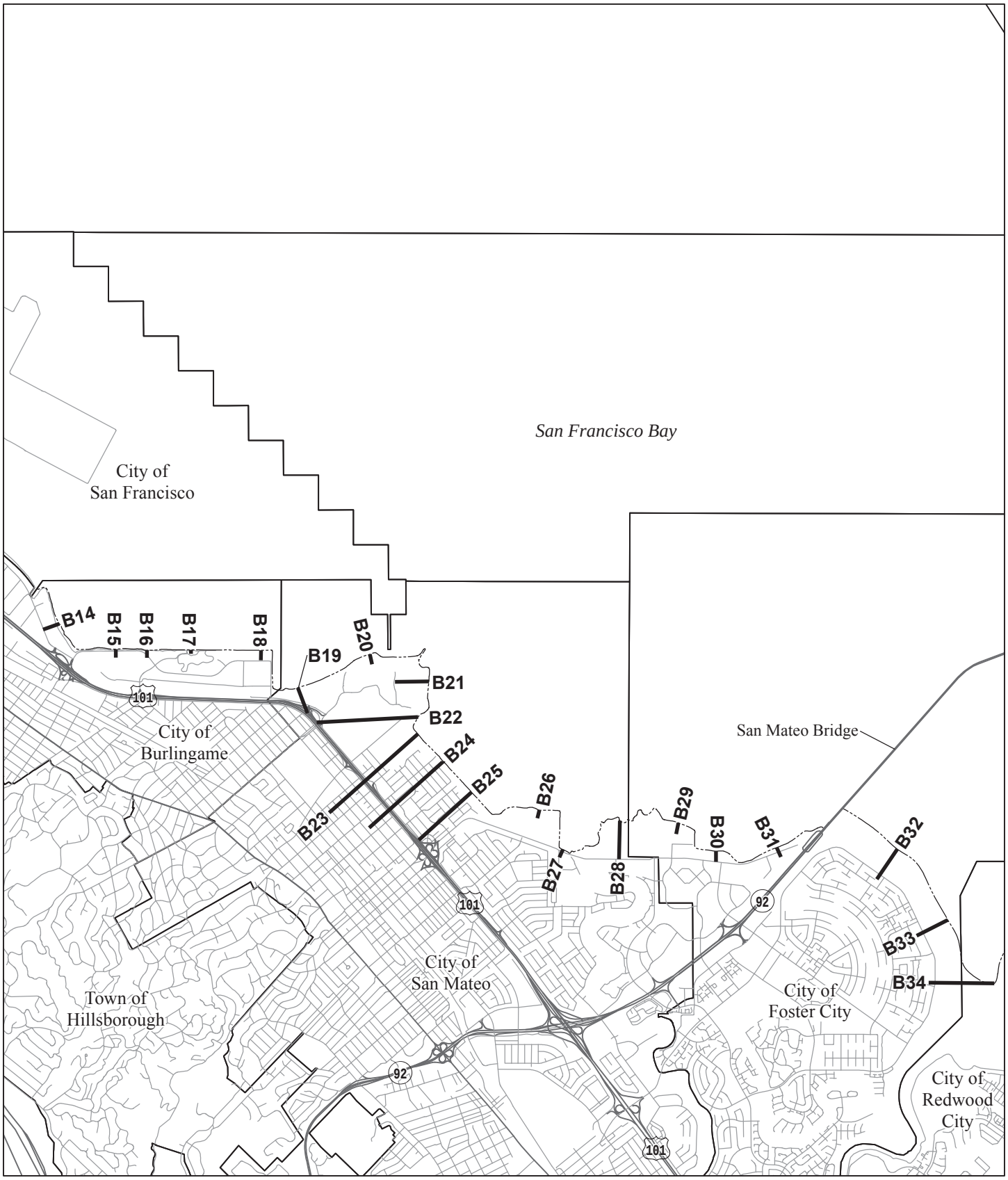

FIGURE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CALIFORNIA

0 0.25 0.5 1 1.5 Miles

N

TRANSECT LOCATION MAP

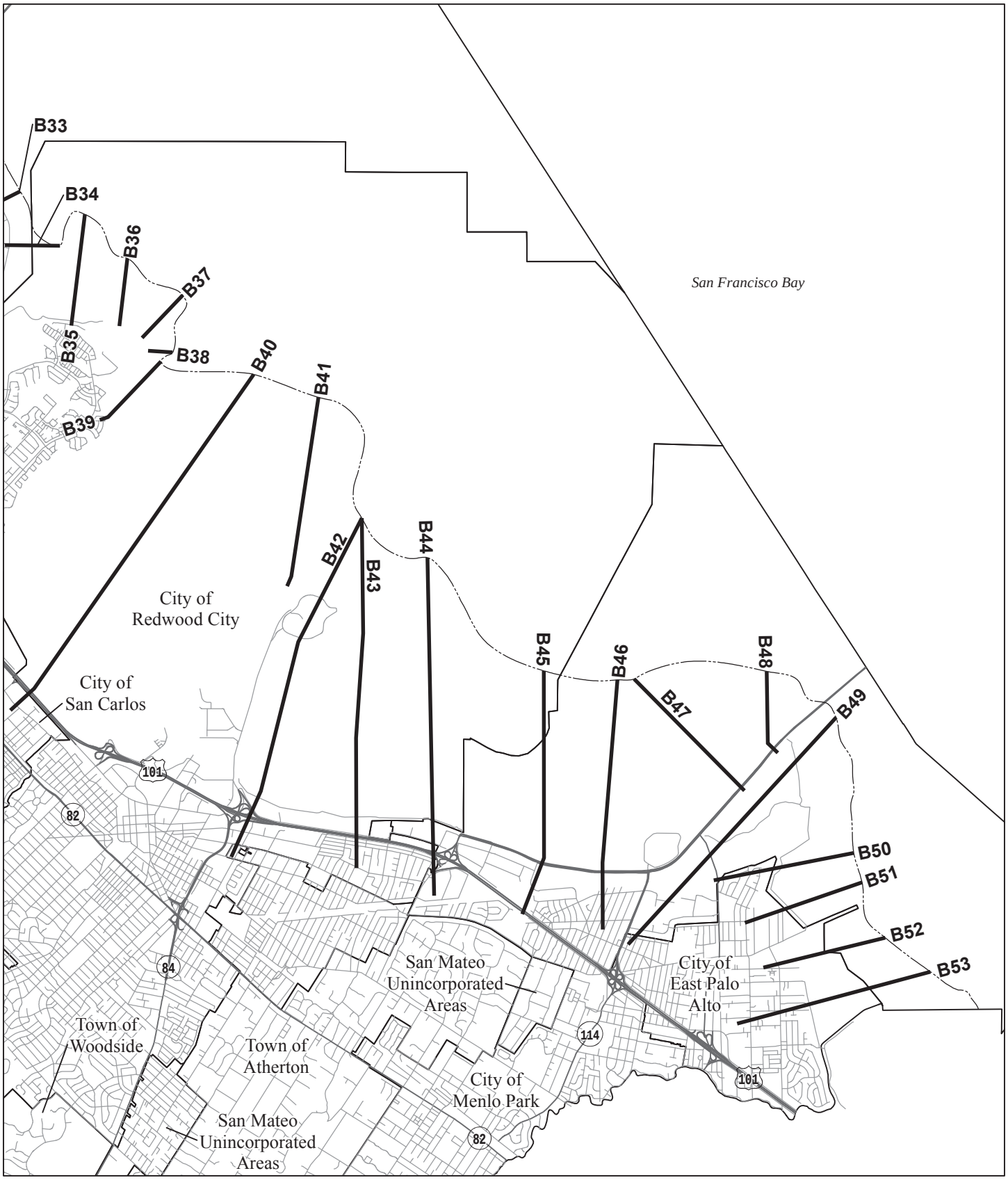

FIGURE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CALIFORNIA

0 0.3 0.6 1.2 1.8 Miles

N

TRANSECT LOCATION MAP

Floodplain Boundaries

For this FIS, new flood zones were developed and mapped for the updated San Francisco Bay coastal hazard analysis described in Section 3.3. Detailed flood hazard boundaries along San Francisco Bay were delineated using the USGS 2010 San Francisco Bay Area LiDAR, collected June to November 2010 (USGS, 2010) and the NOAA 2010 San Francisco Bay Area LiDAR, collected February to April 2010 (NOAA, 2010).

Areas inundated by Stillwater flooding with minimal wave hazard effects were mapped as Zone AE and the flood hazard boundary is located at the point where the ground elevation equals the stillwater elevation. In areas subject to wave runup, the flood hazard boundary is located at the point where the ground elevation equals the runup elevation, or where overtopping occurs, the boundary is located at the inland extent of overtopping. The Base Flood Elevation (BFE) in these areas is rounded to the nearest whole-foot, though the boundary is mapped using precision to the tenth of a foot. Inundation flooding is mapped inland to the point where it meets continuous high ground or encounters flooding from another flooding source. Salt marsh berms are not considered barriers to flood inundation regardless of height or continuity since they are not structures that are designed for and accredited with providing protection from the base flood.

Two Letters of Map Revision have been incorporated as part of this PMR.

LOMR Case Number 13-09-1038P, effective September 9, 2013, affects the Colma Creek Navigable Slough (San Bruno Channel) in the City of South San Francisco. This LOMR has been redelineated downstream of the railroad to better align with the coastal conditions represented by the San Francisco Bay Area LiDAR.

LOMR Case Number 15-09-0526P, effective August 6, 2015, affects Marina Lagoon in the Cities of San Mateo and Foster City. This LOMR has been incorporated into the FIS, and has been incorporated only on revised panels 06081C0158G and 06081C0167G. The remainder of this LOMR remains effective.

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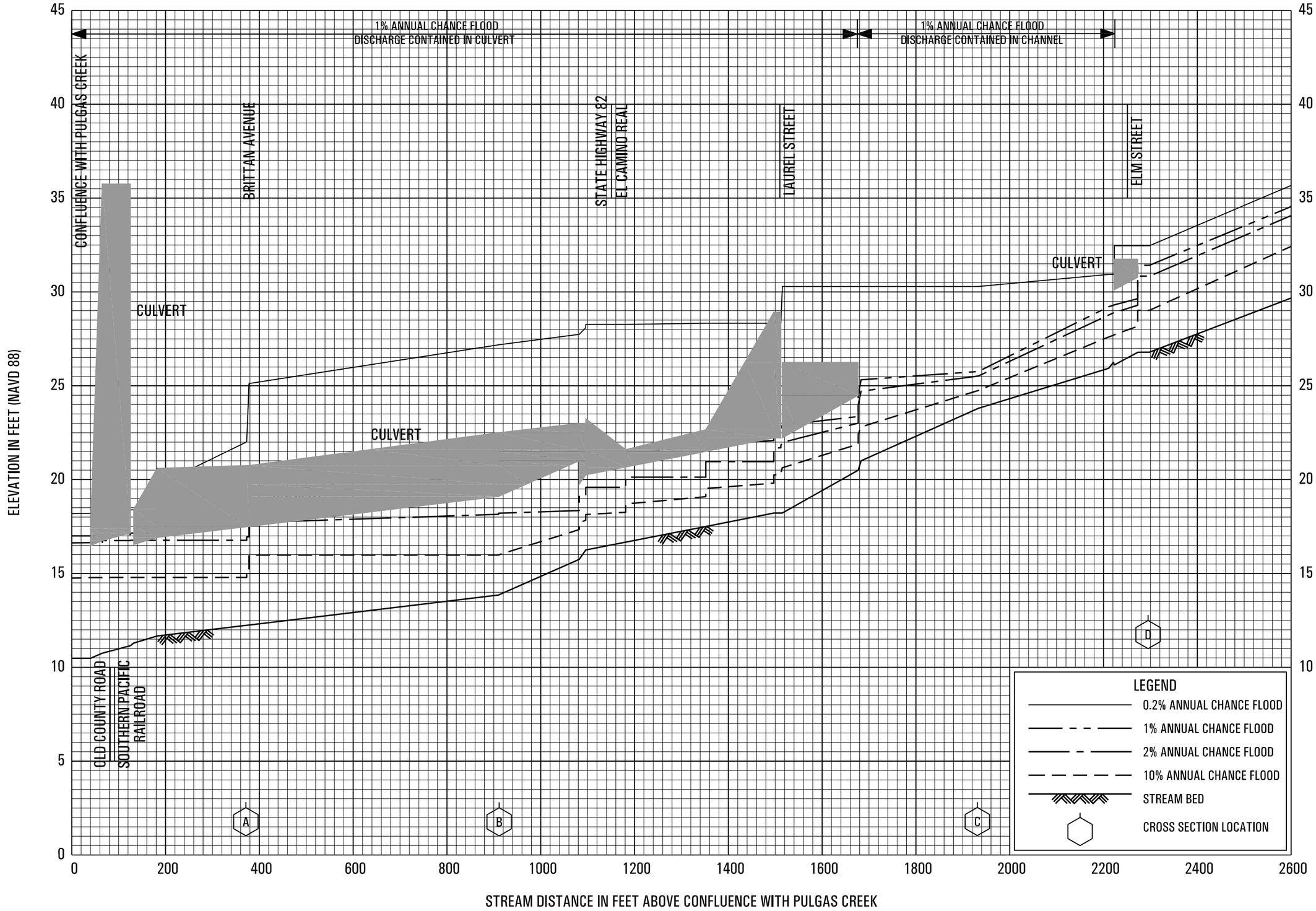


FLOOD PROFILES

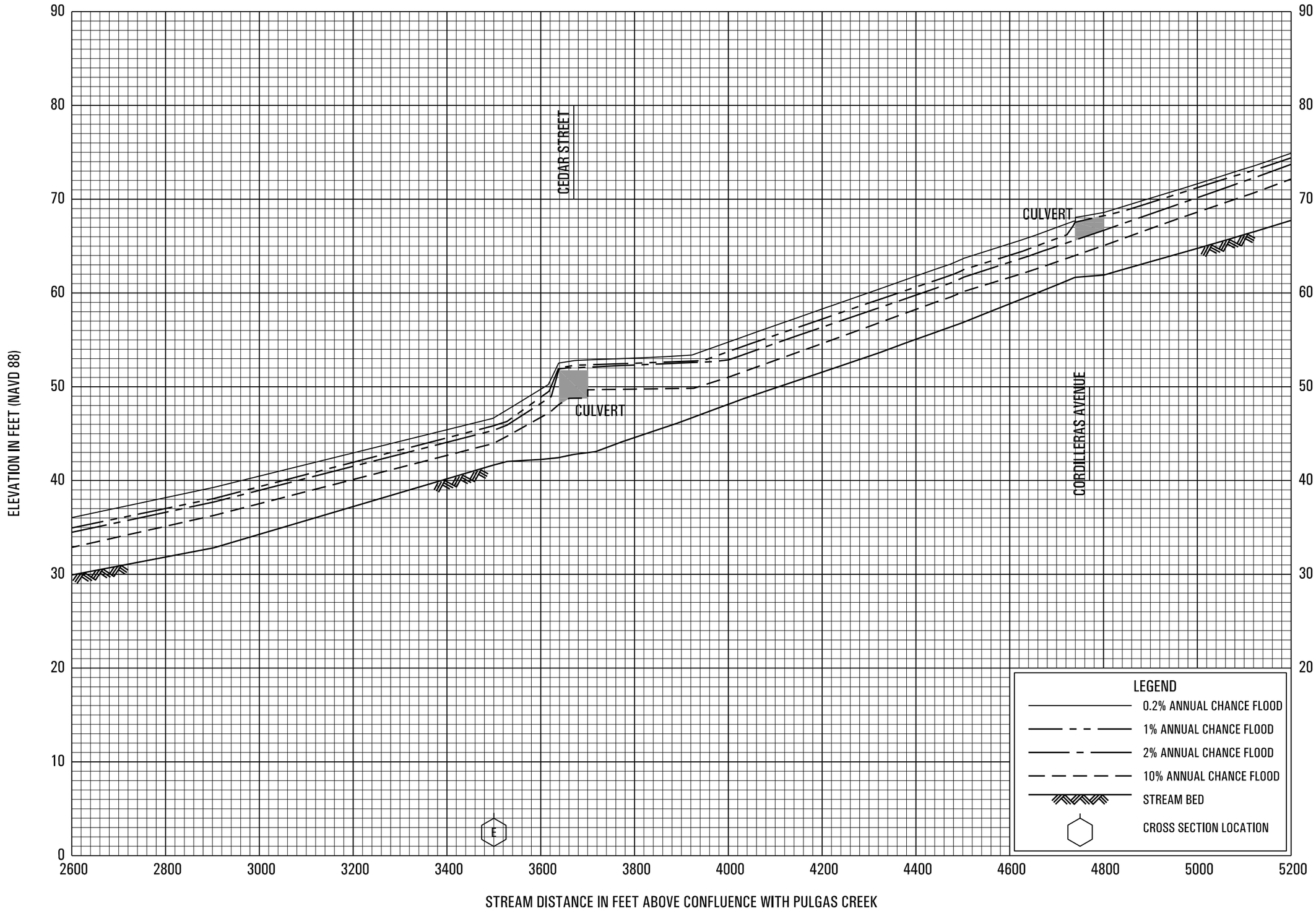
BRITTAN CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS

01P



FLOOD PROFILES

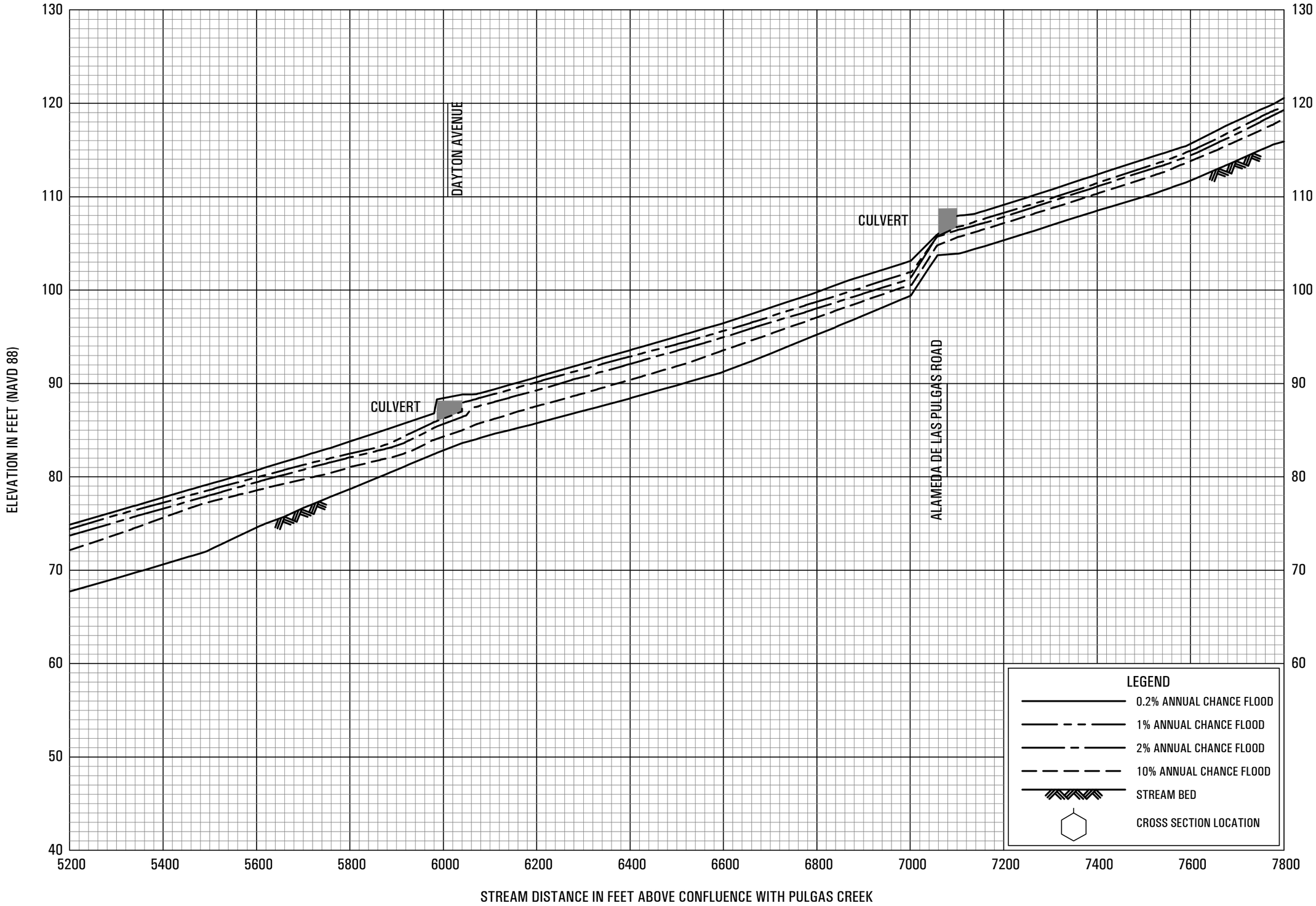
BRITTAN CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS

02P



FLOOD PROFILES

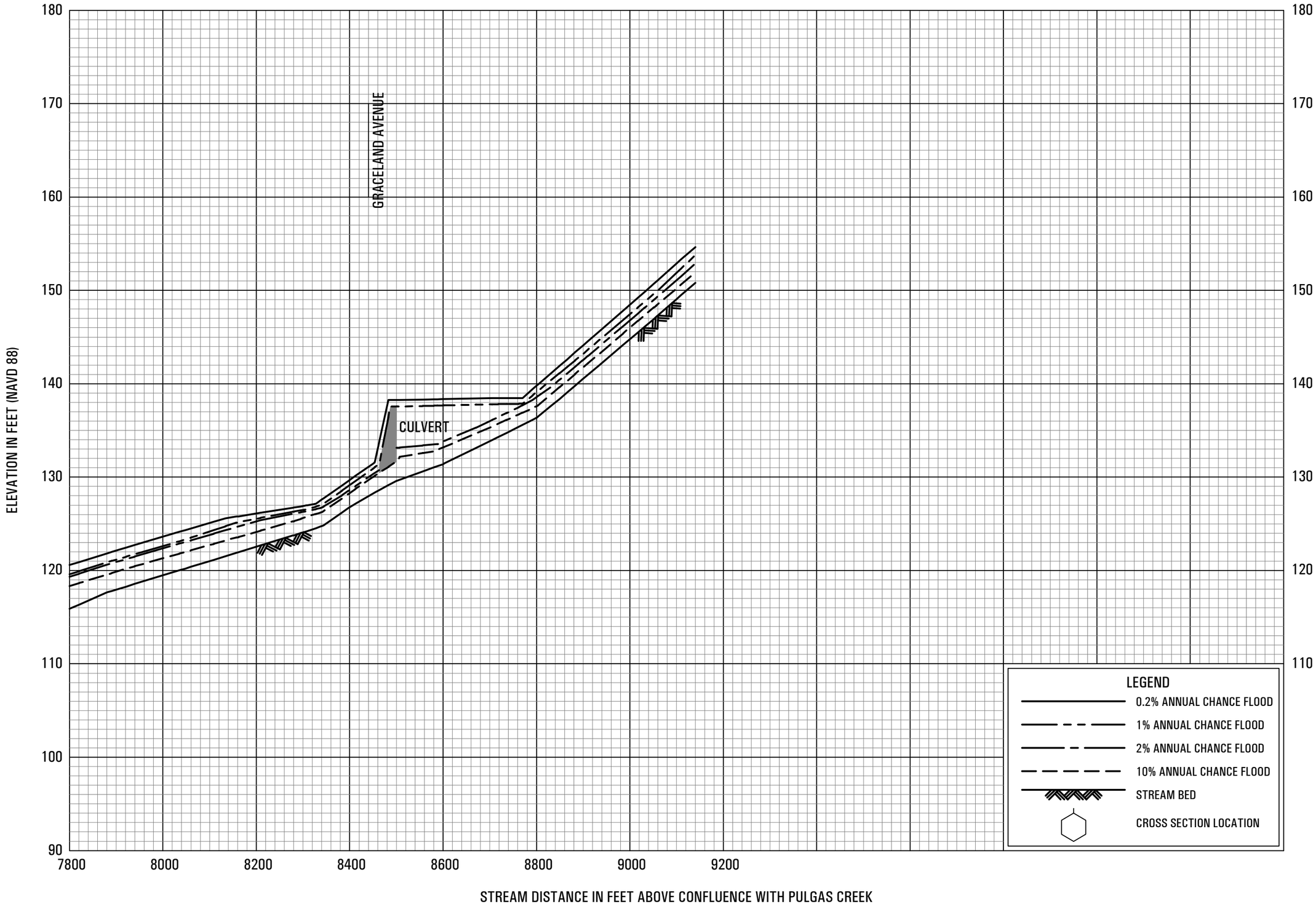
BRITTAN CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS

03P



FLOOD PROFILES

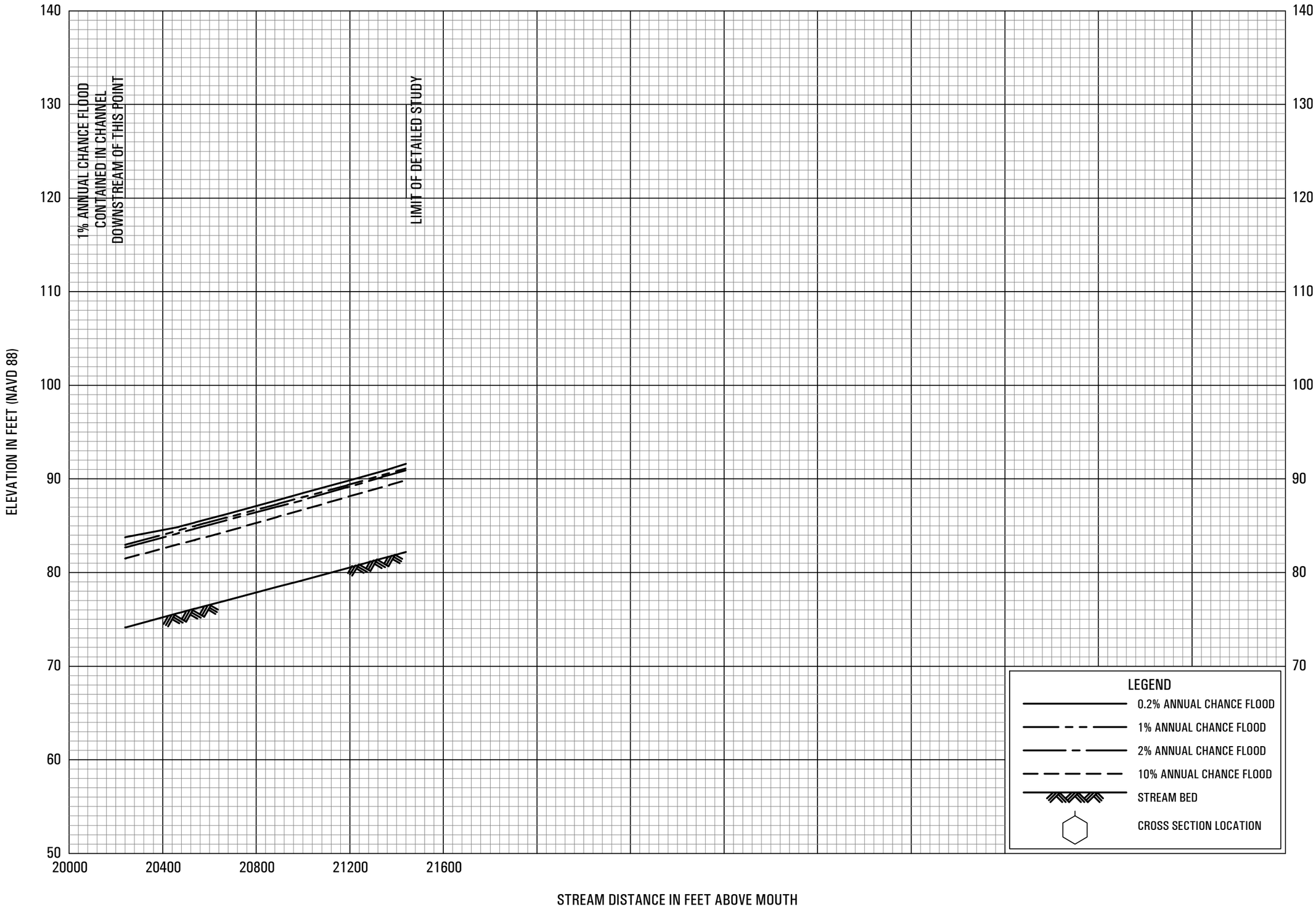
BRITTAN CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS

04P



FLOOD PROFILES

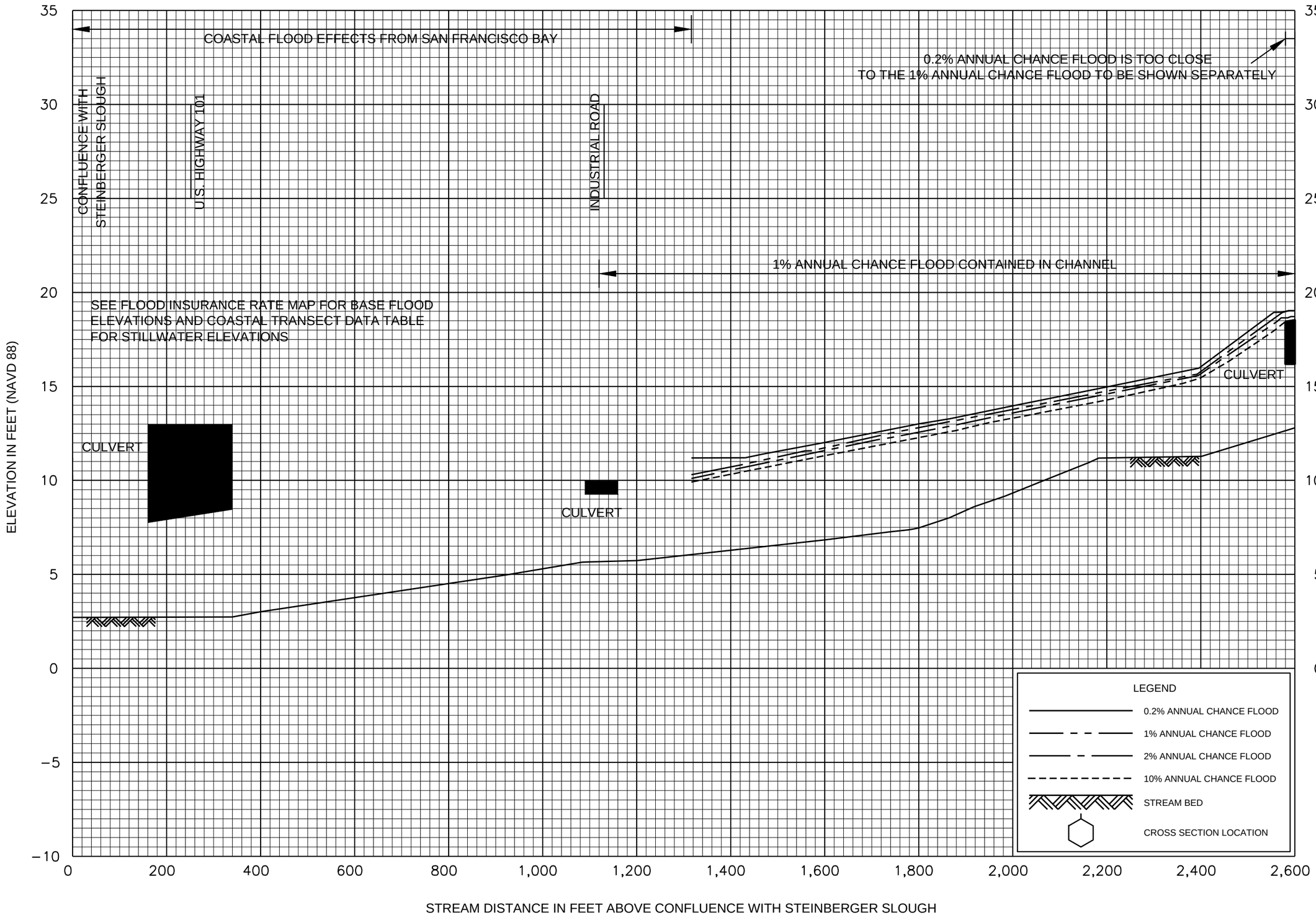
COLMA CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS

05P



FLOOD PROFILES

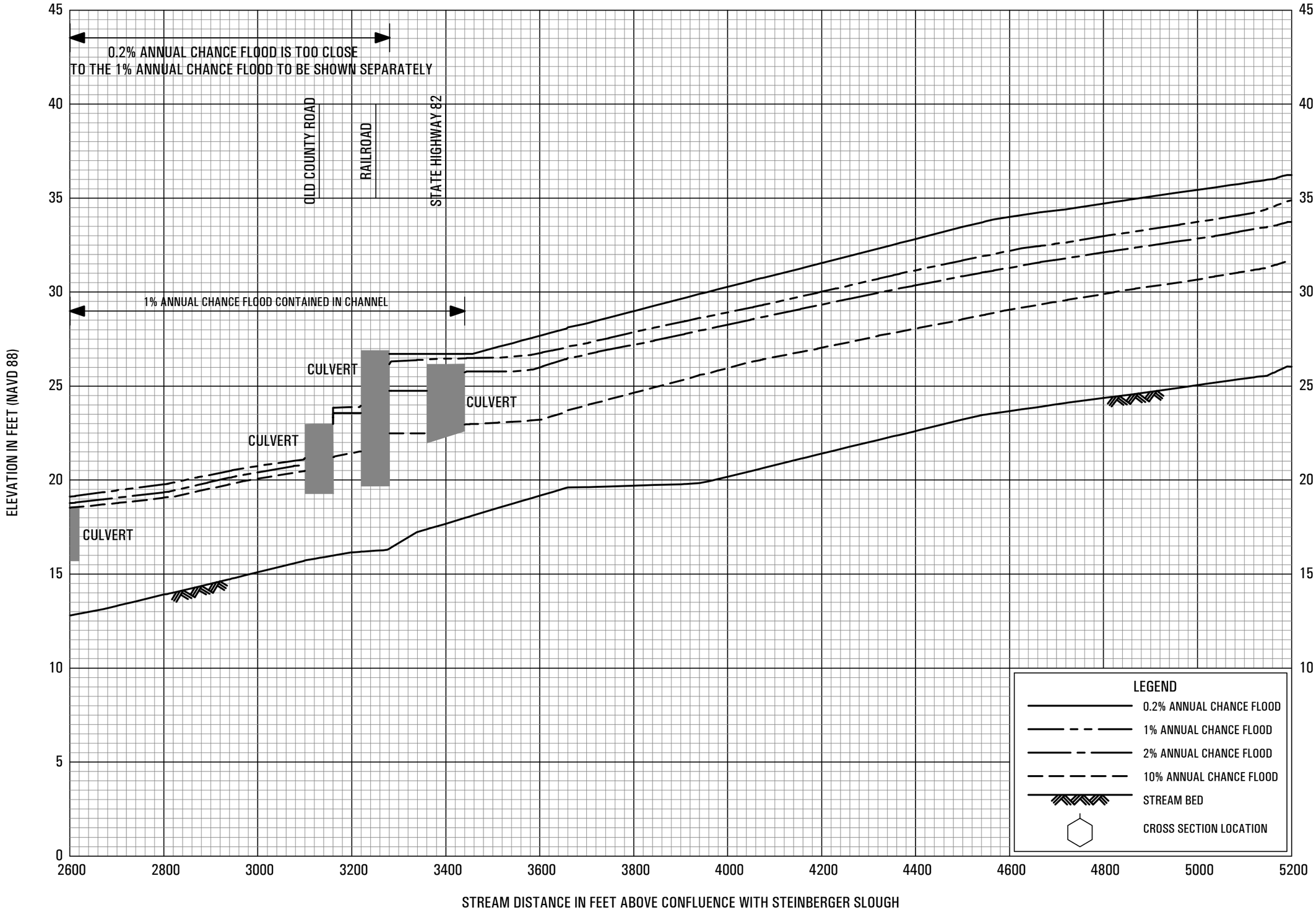
CORDILLERAS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS

06P



FLOOD PROFILES

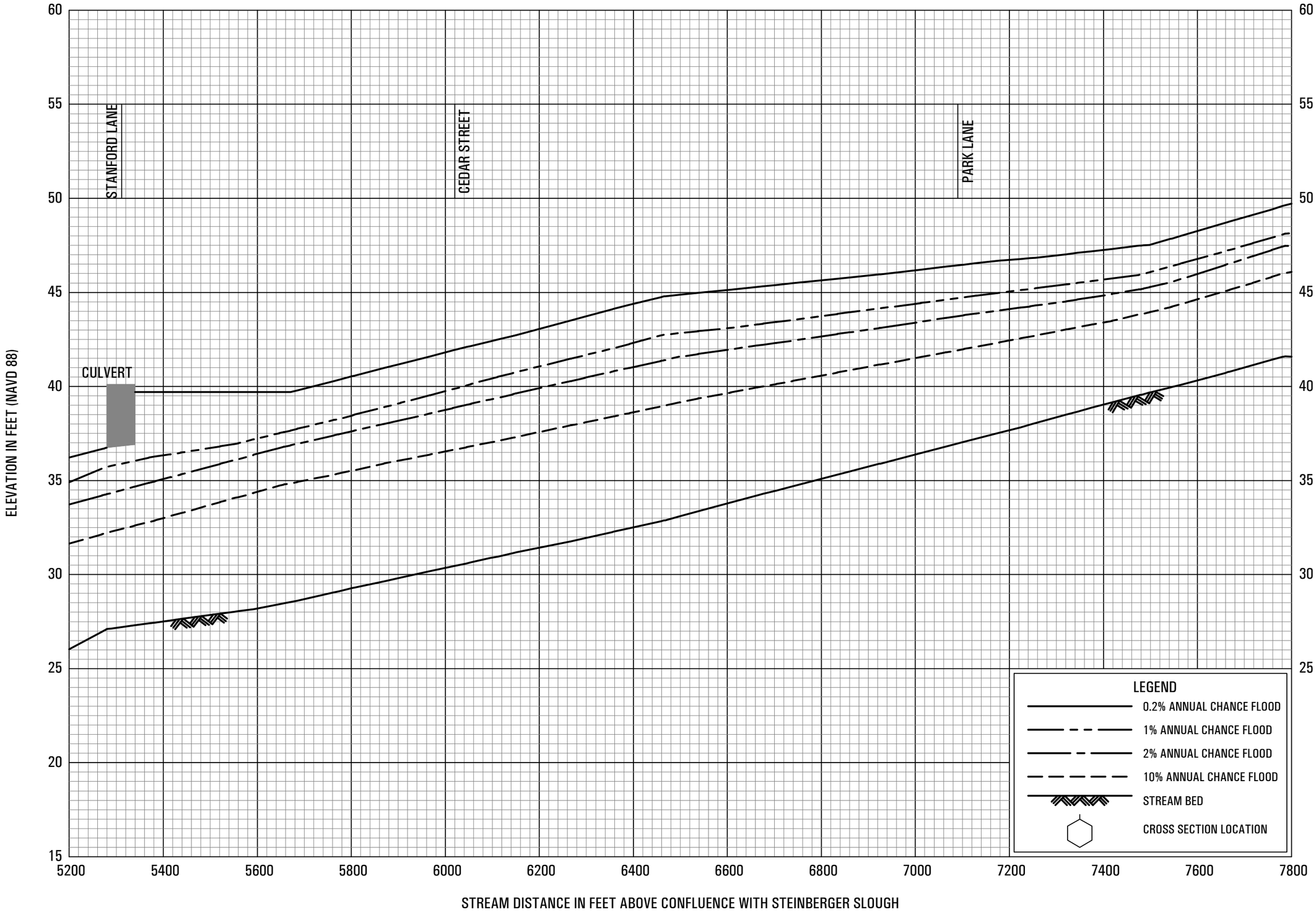
CORDILLERAS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS

07P



FLOOD PROFILES

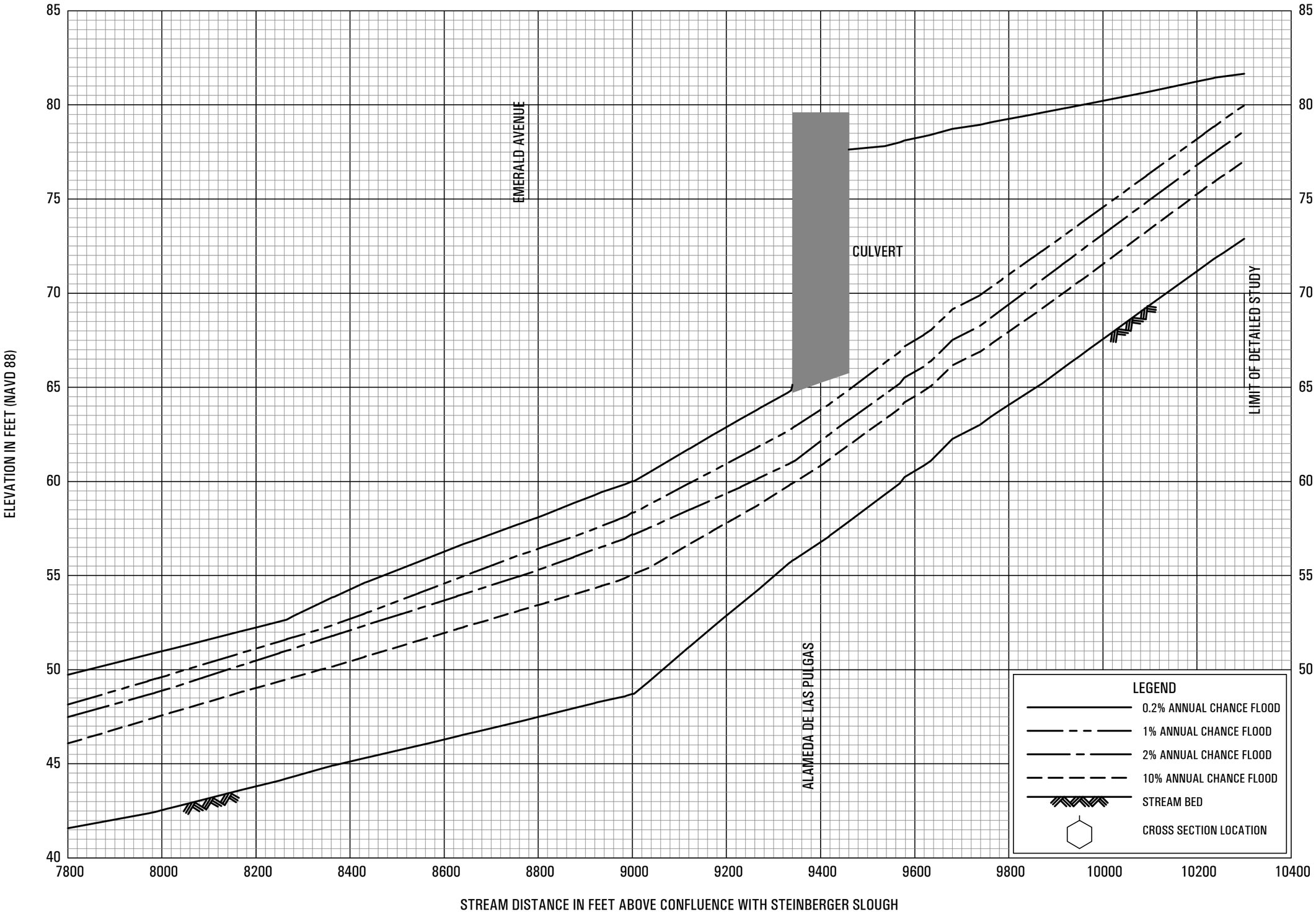
CORDILLERAS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS

08P



FLOOD PROFILES

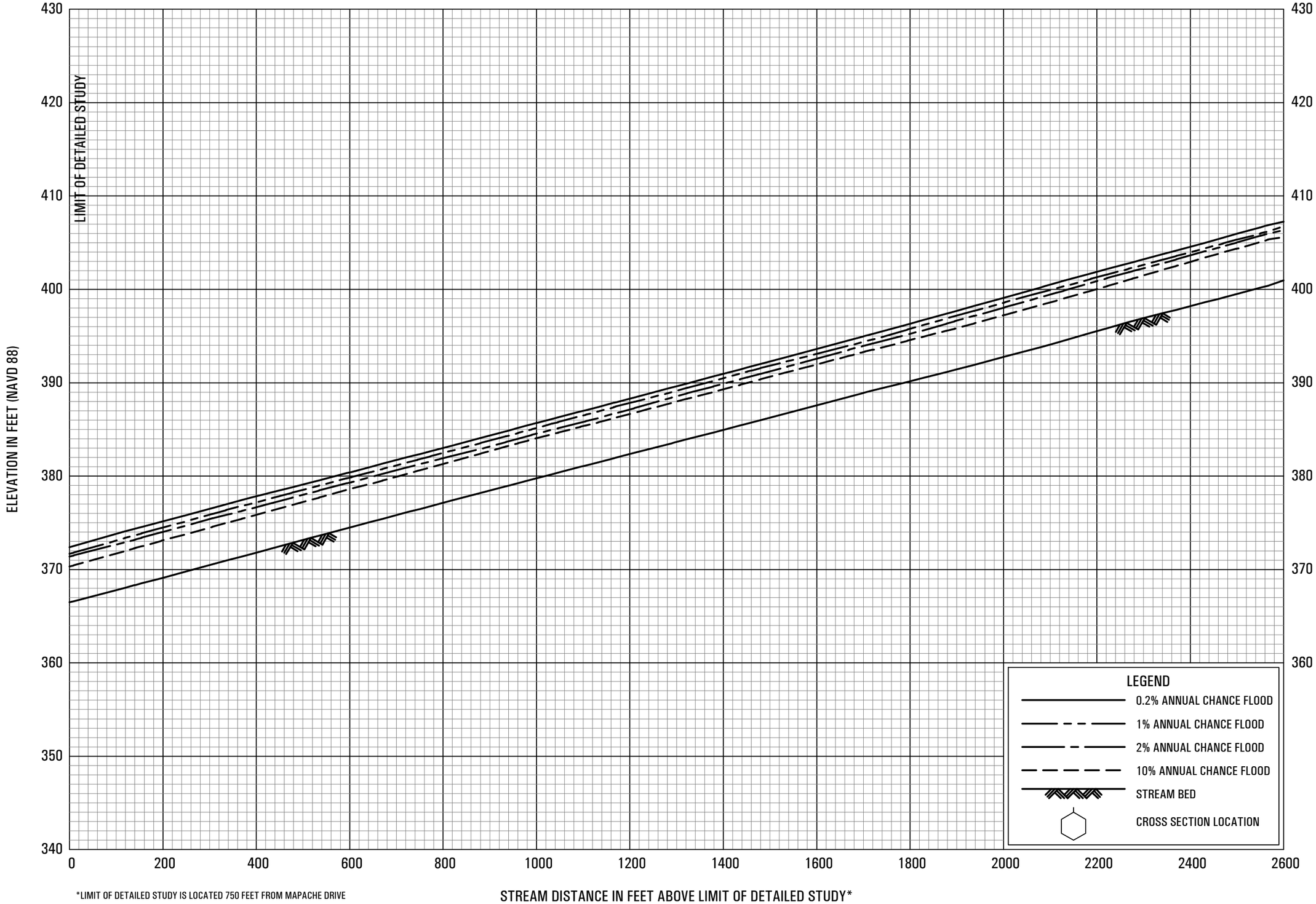
CORDILLERAS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS

09P



*LIMIT OF DETAILED STUDY IS LOCATED 750 FEET FROM MAPACHE DRIVE

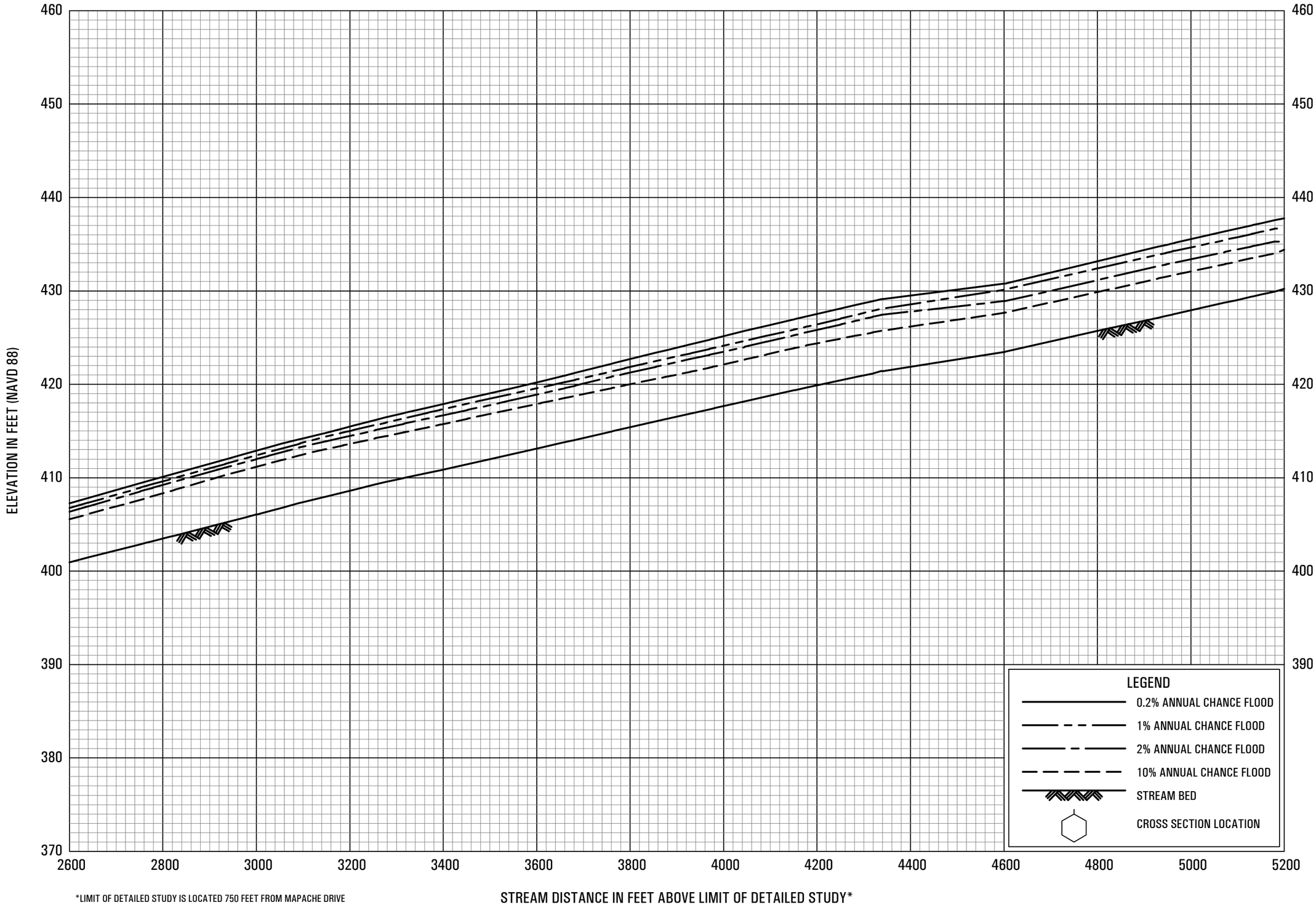
FLOOD PROFILES

CORTE MADERA CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS



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FLOOD PROFILES

CORTE MADERA CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

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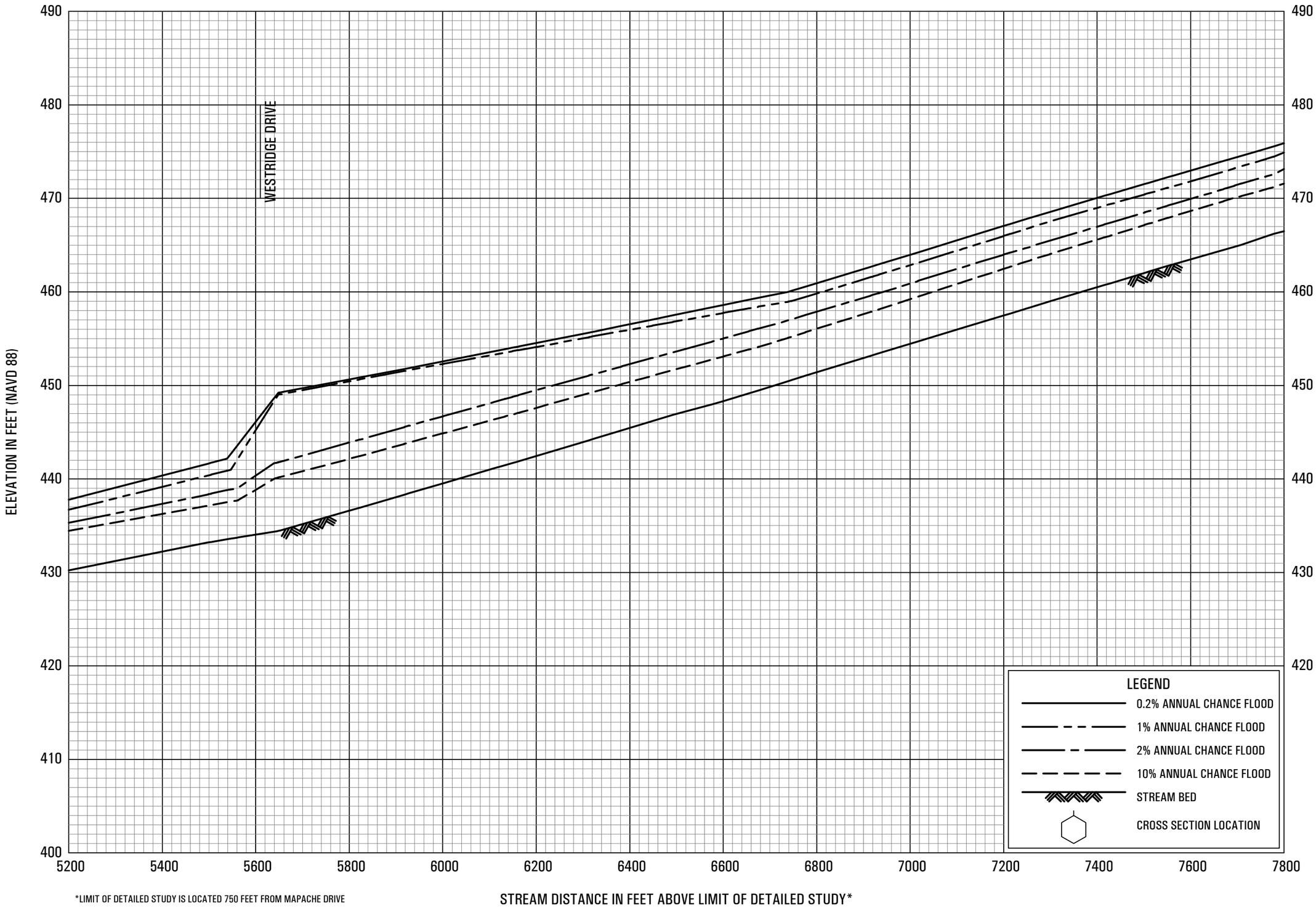

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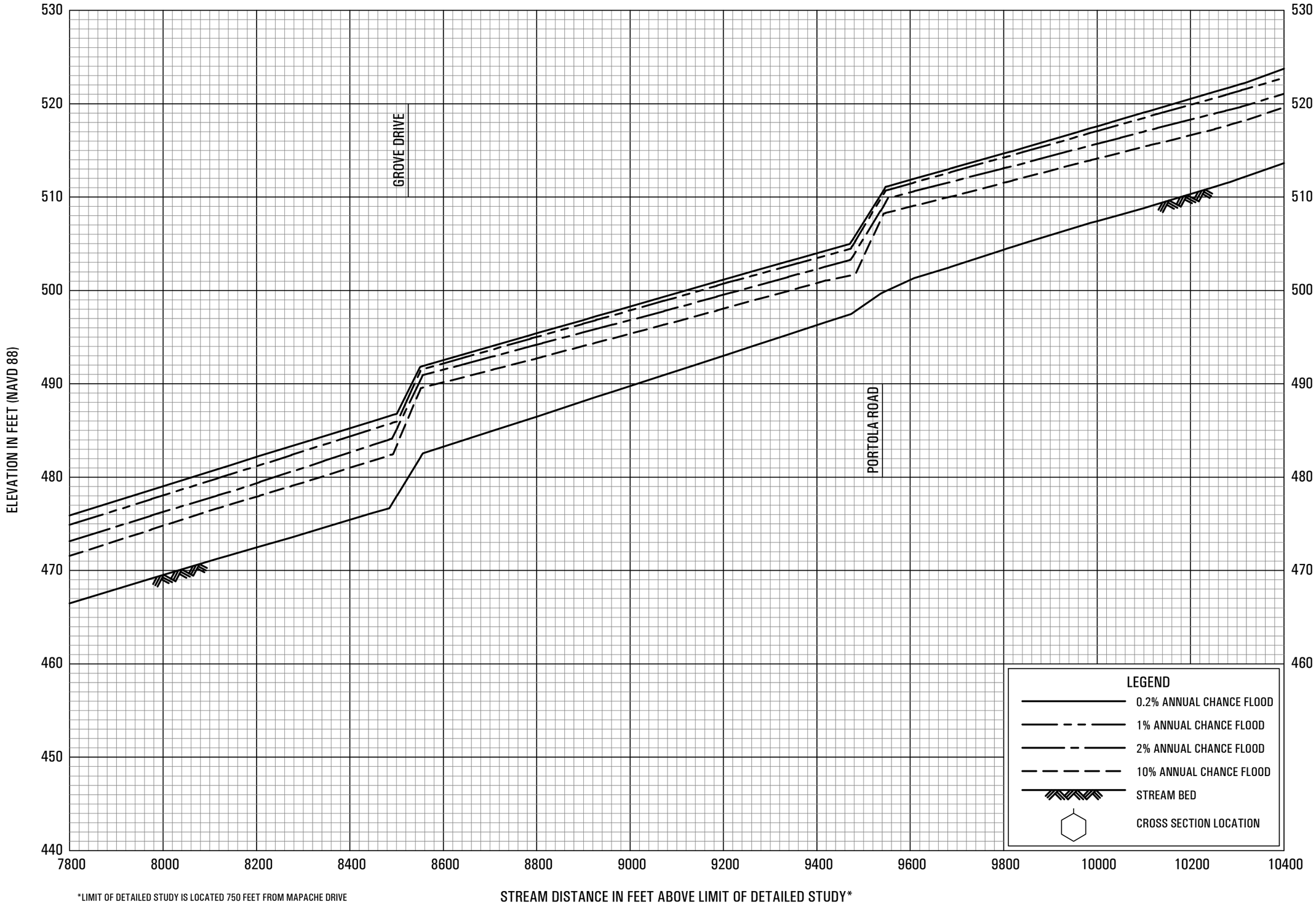
FLOOD PROFILES

CORTE MADERA CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS



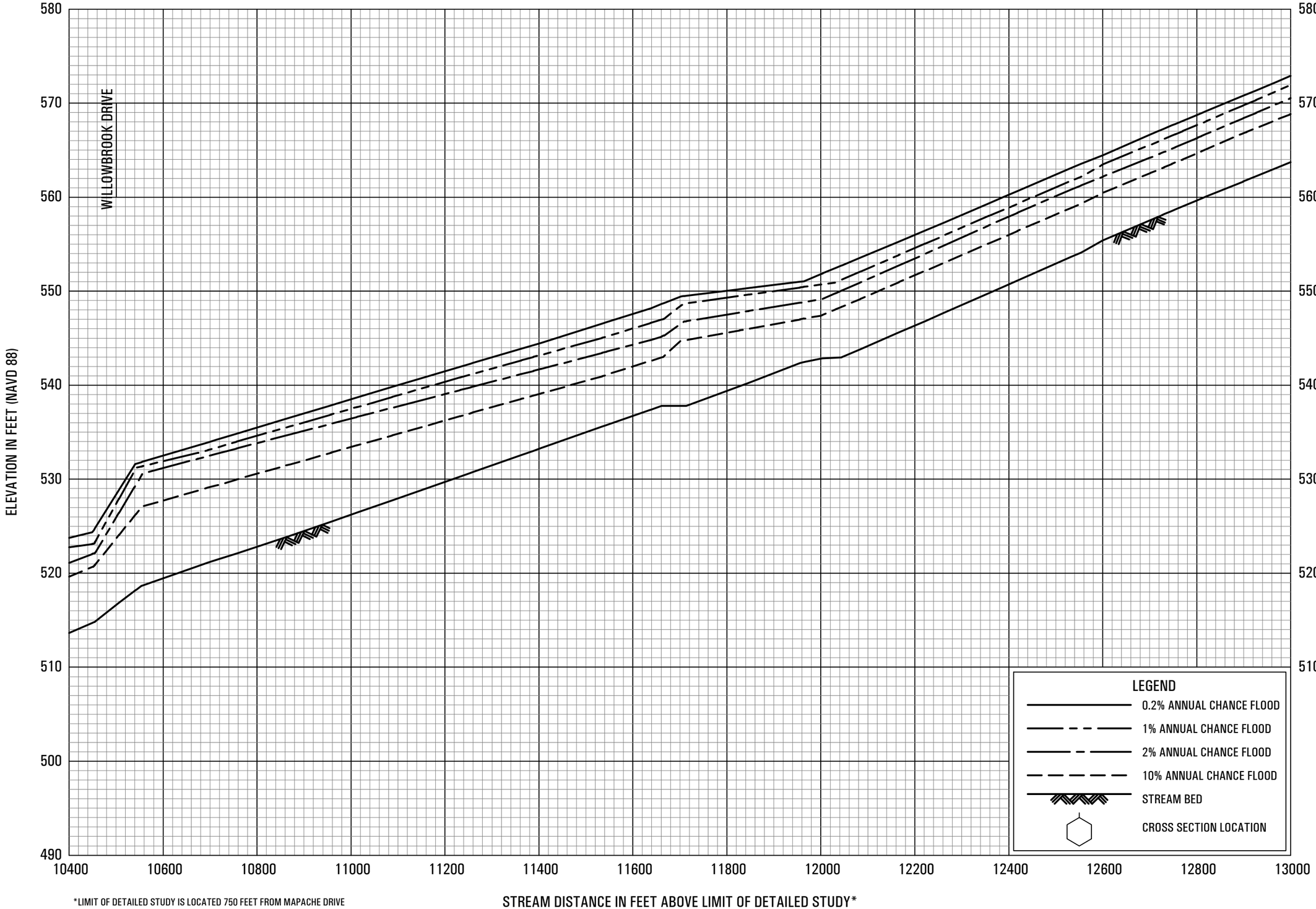
FLOOD PROFILES

CORTE MADERA CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS



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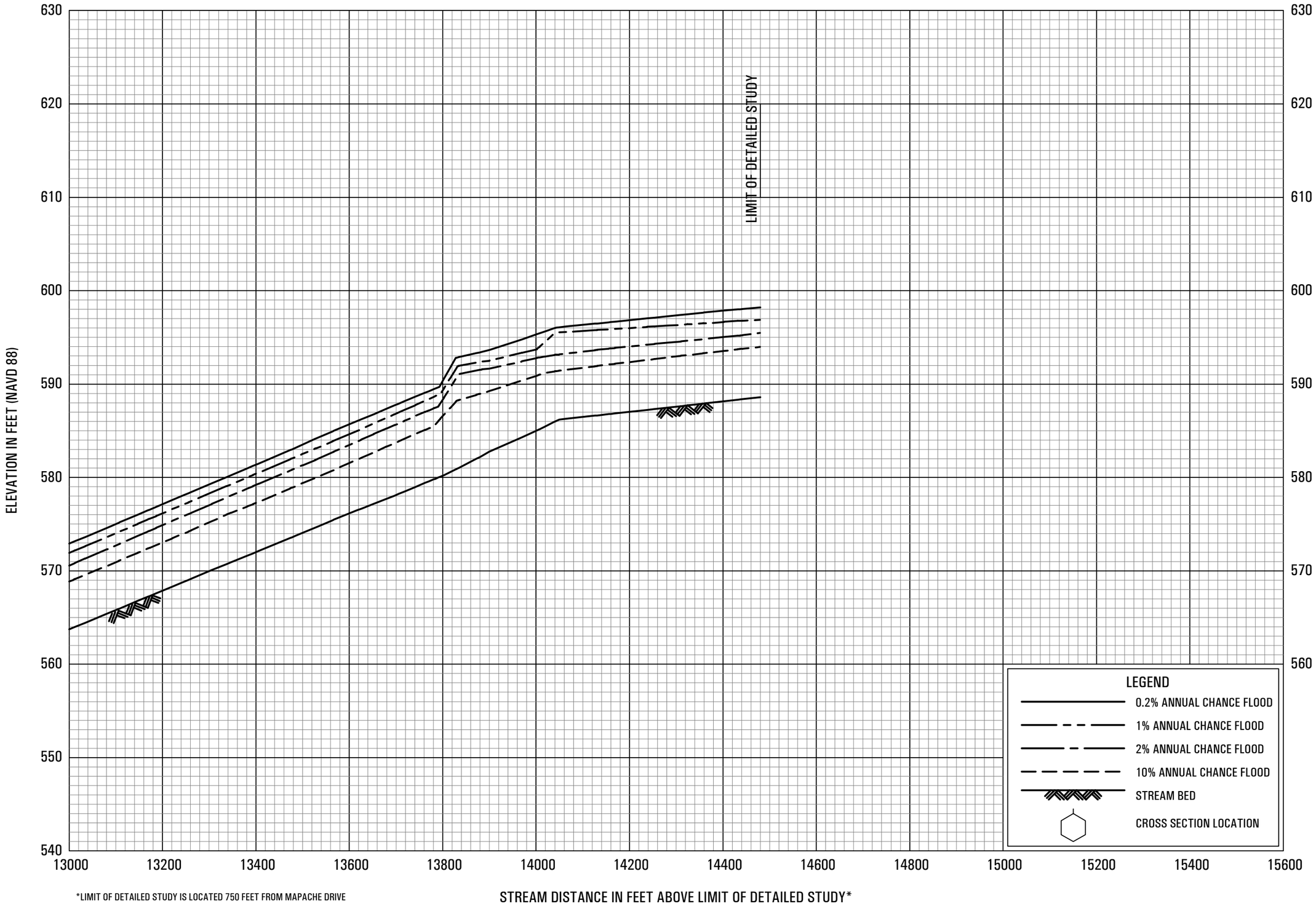
FLOOD PROFILES

CORTE MADERA CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS



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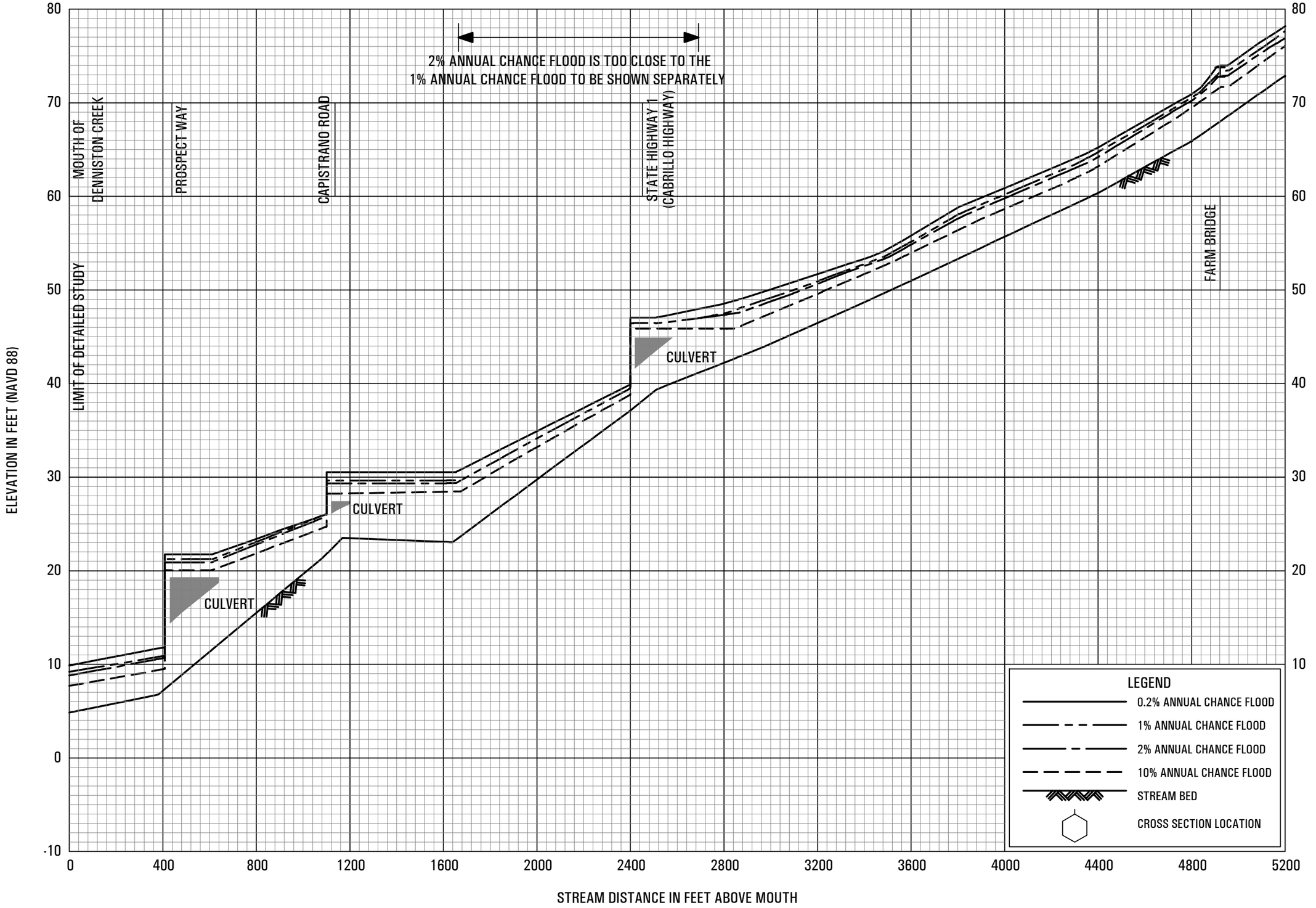
FLOOD PROFILES

CORTE MADERA CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS



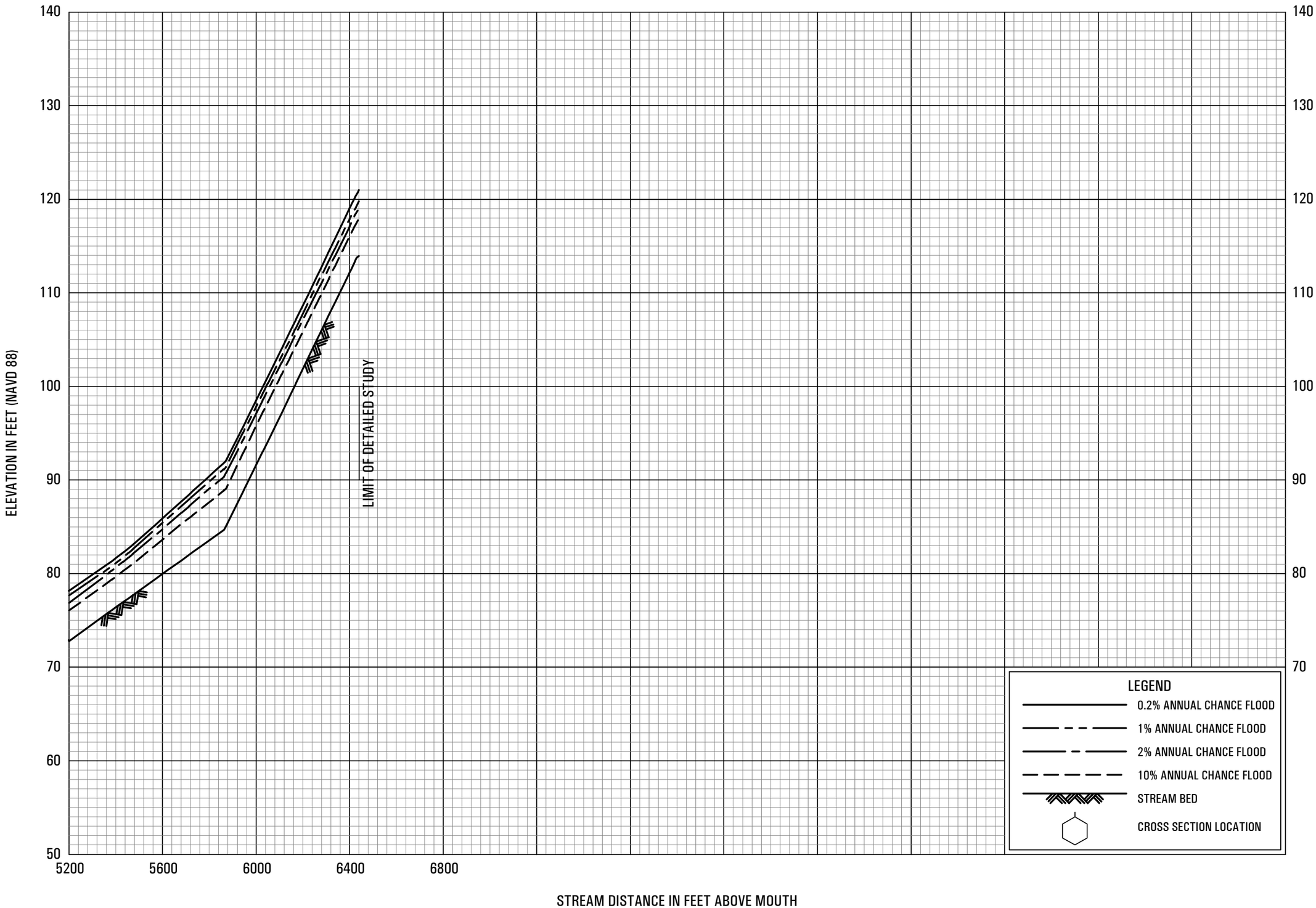
FLOOD PROFILES

DENNISTON CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS



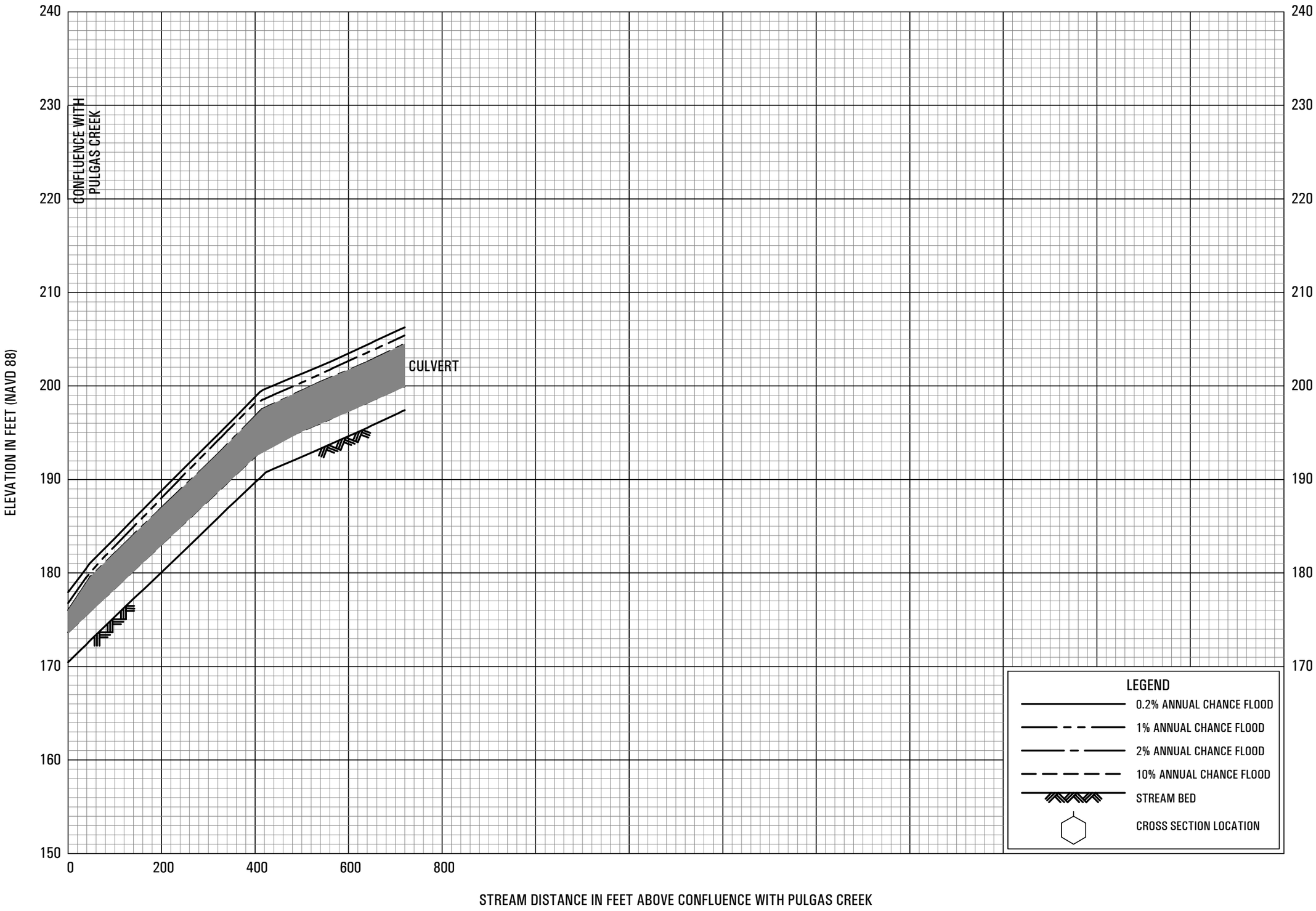
FLOOD PROFILES

DENNISTON CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS



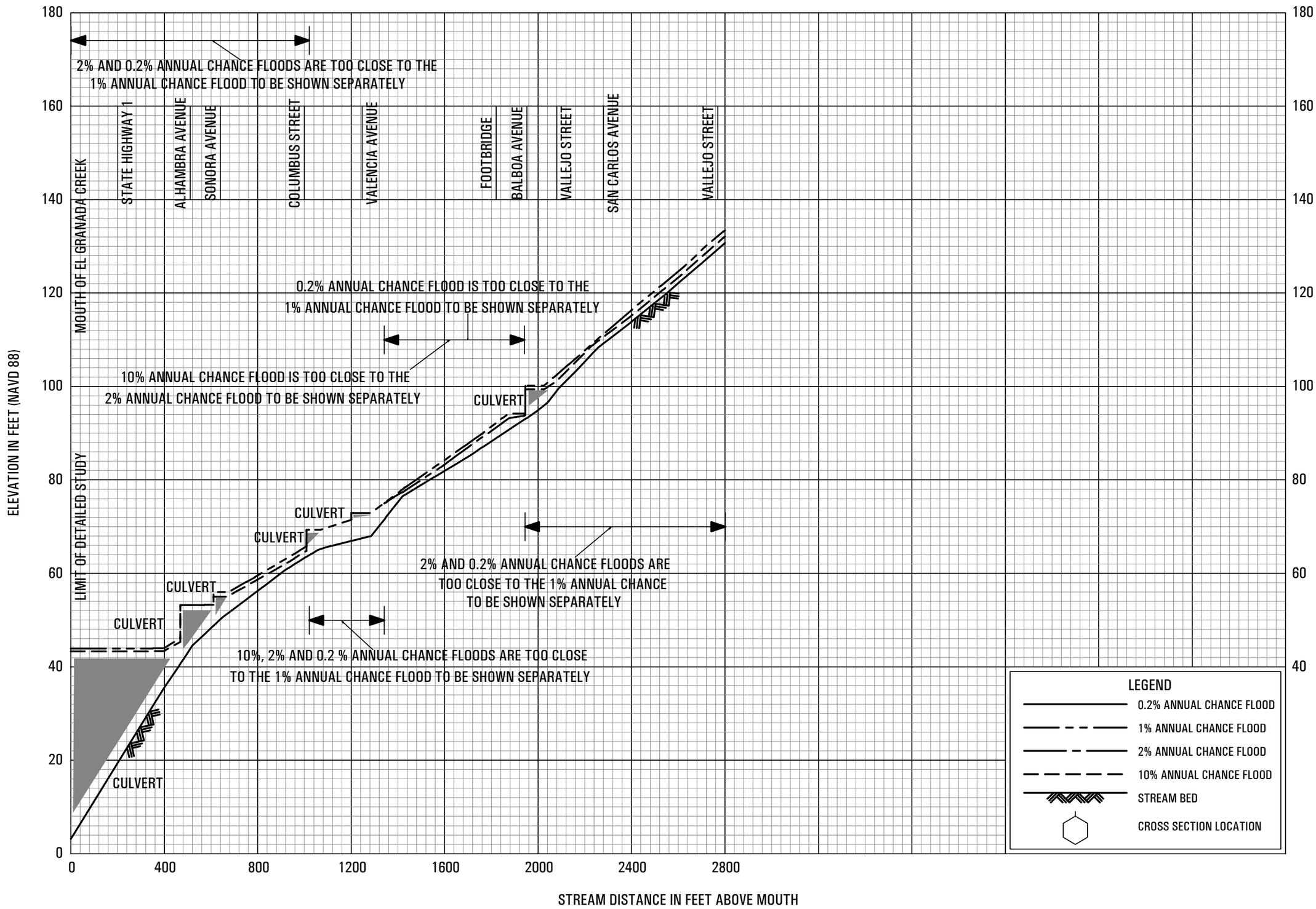
FLOOD PROFILES

DEVONSHIRE BRANCH OF PULGAS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS



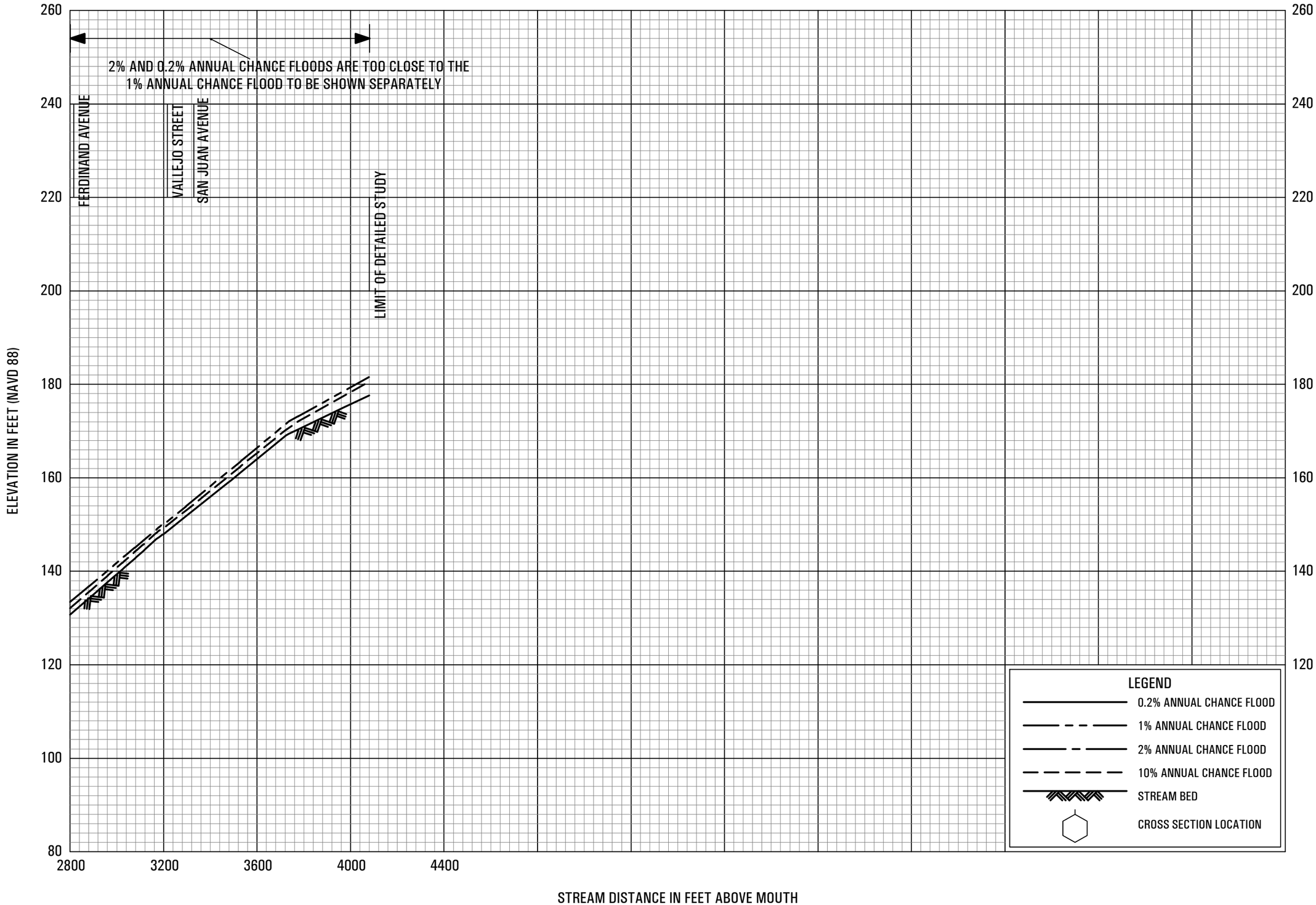
FLOOD PROFILES

EL GRANADA CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS



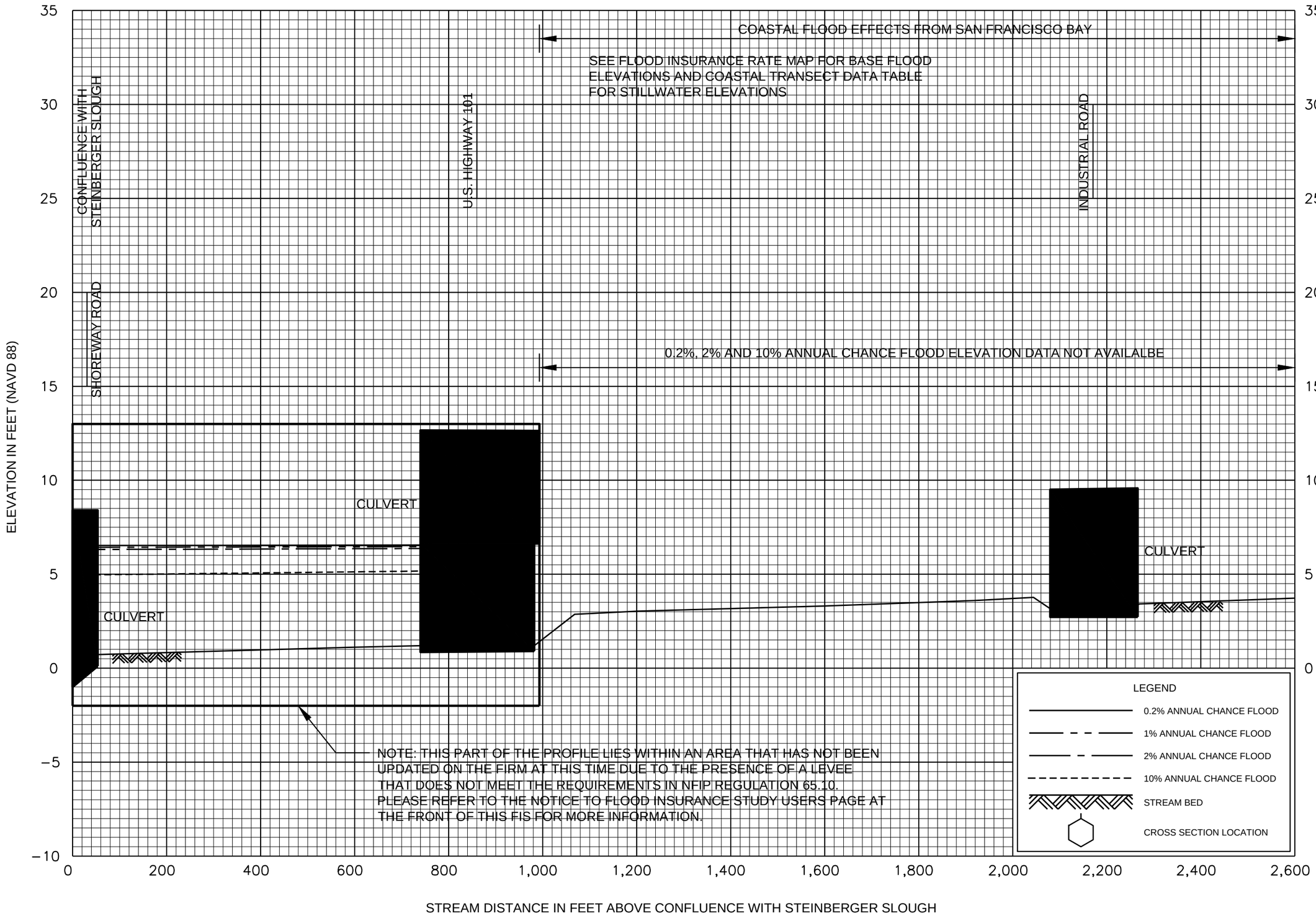
FLOOD PROFILES

EL GRANADA CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS

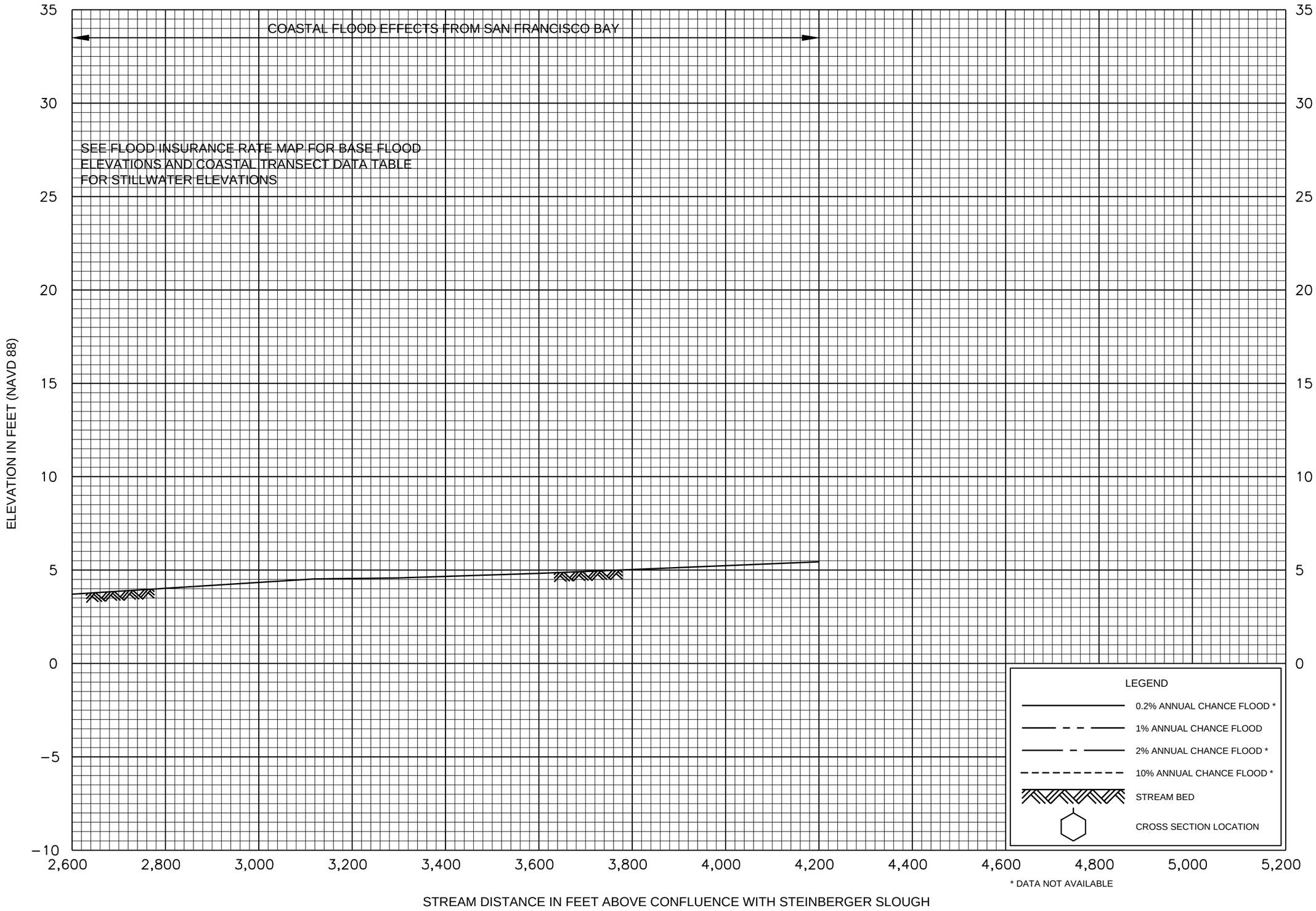


FLOOD PROFILES

HARBOR INDUSTRIAL DISTRICT CHANNEL

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA
AND INCORPORATED AREAS

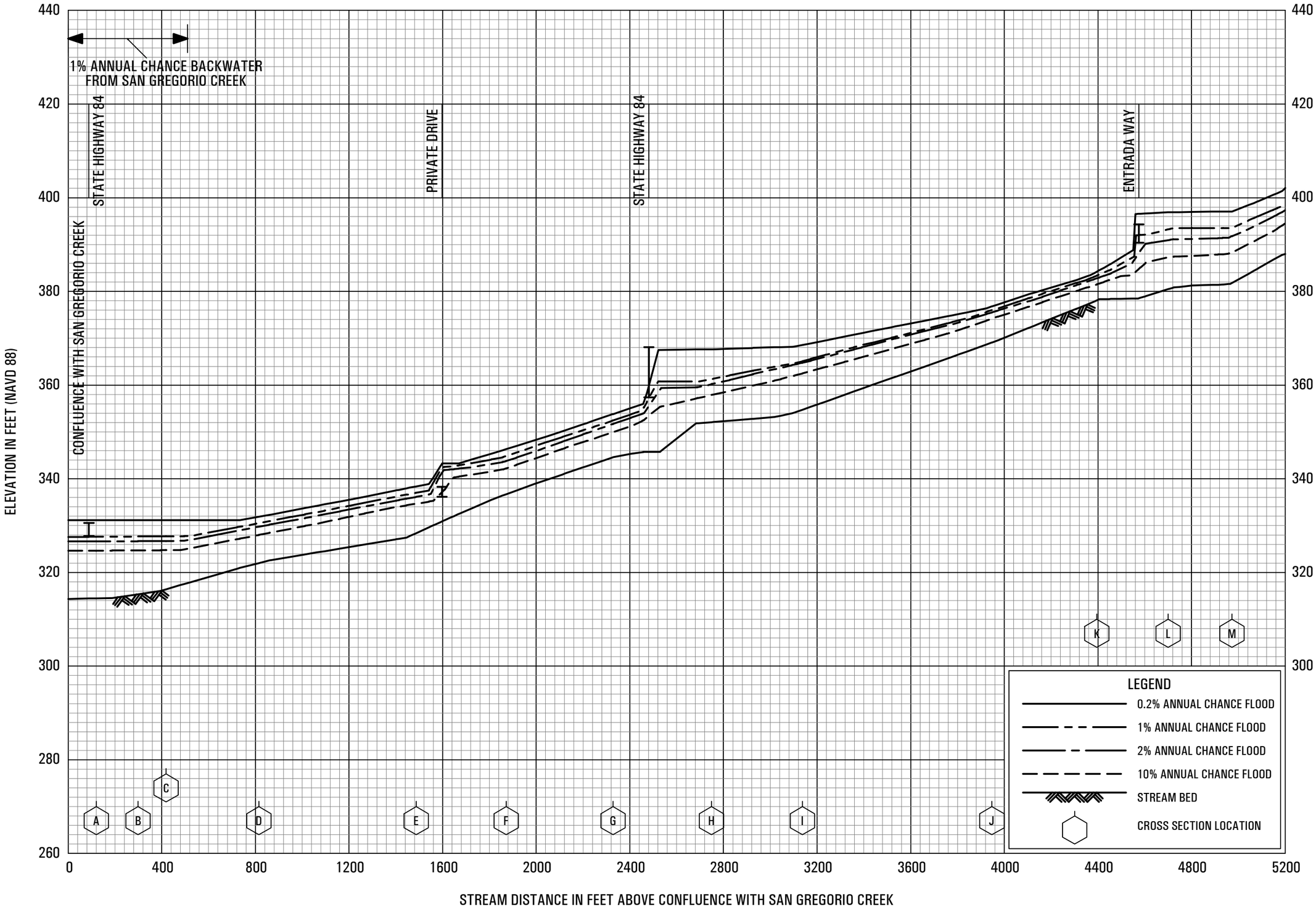


FLOOD PROFILES

HARBOR INDUSTRIAL DISTRICT CHANNEL

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA
AND INCORPORATED AREAS



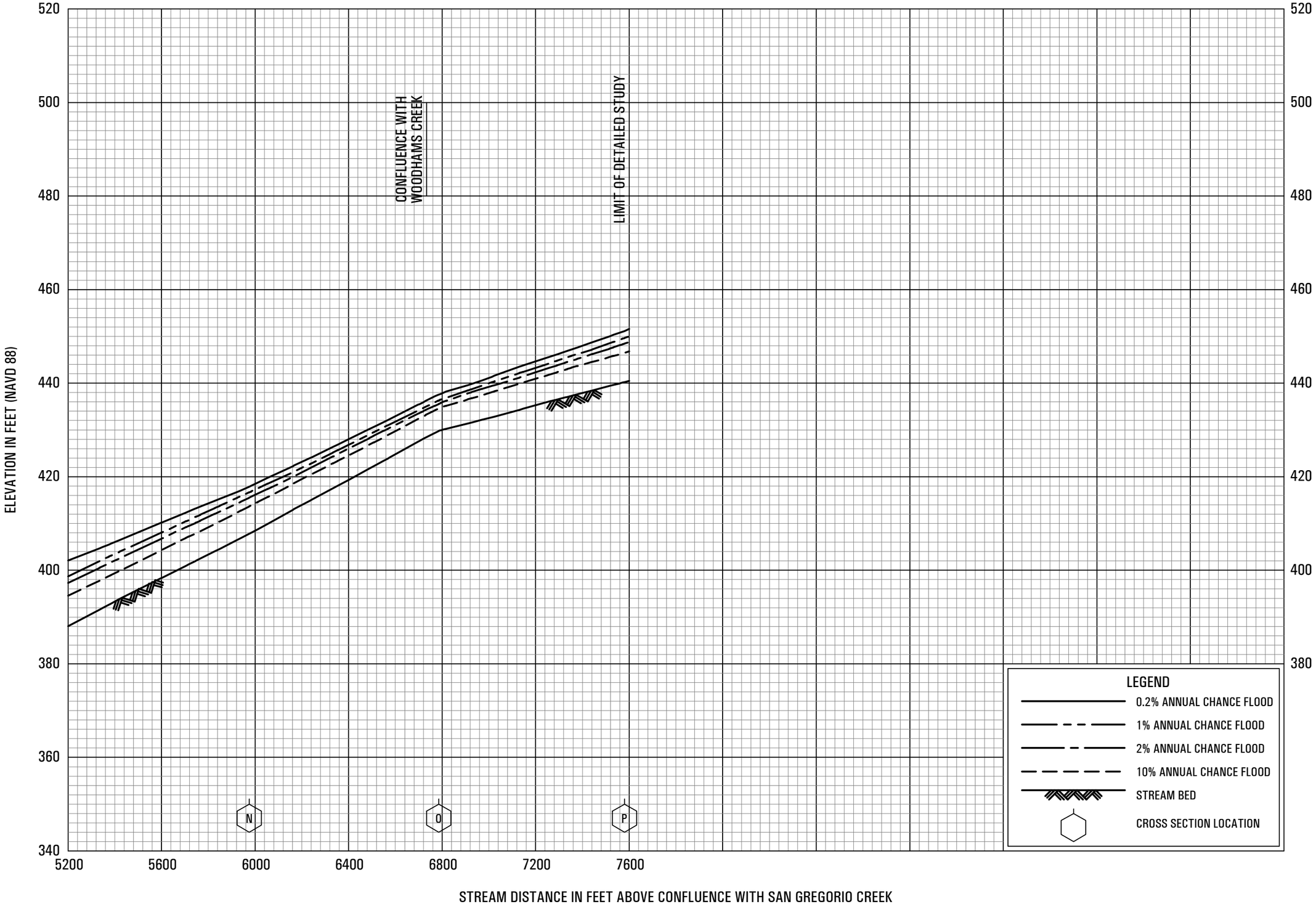
FLOOD PROFILES

LA HONDA CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS



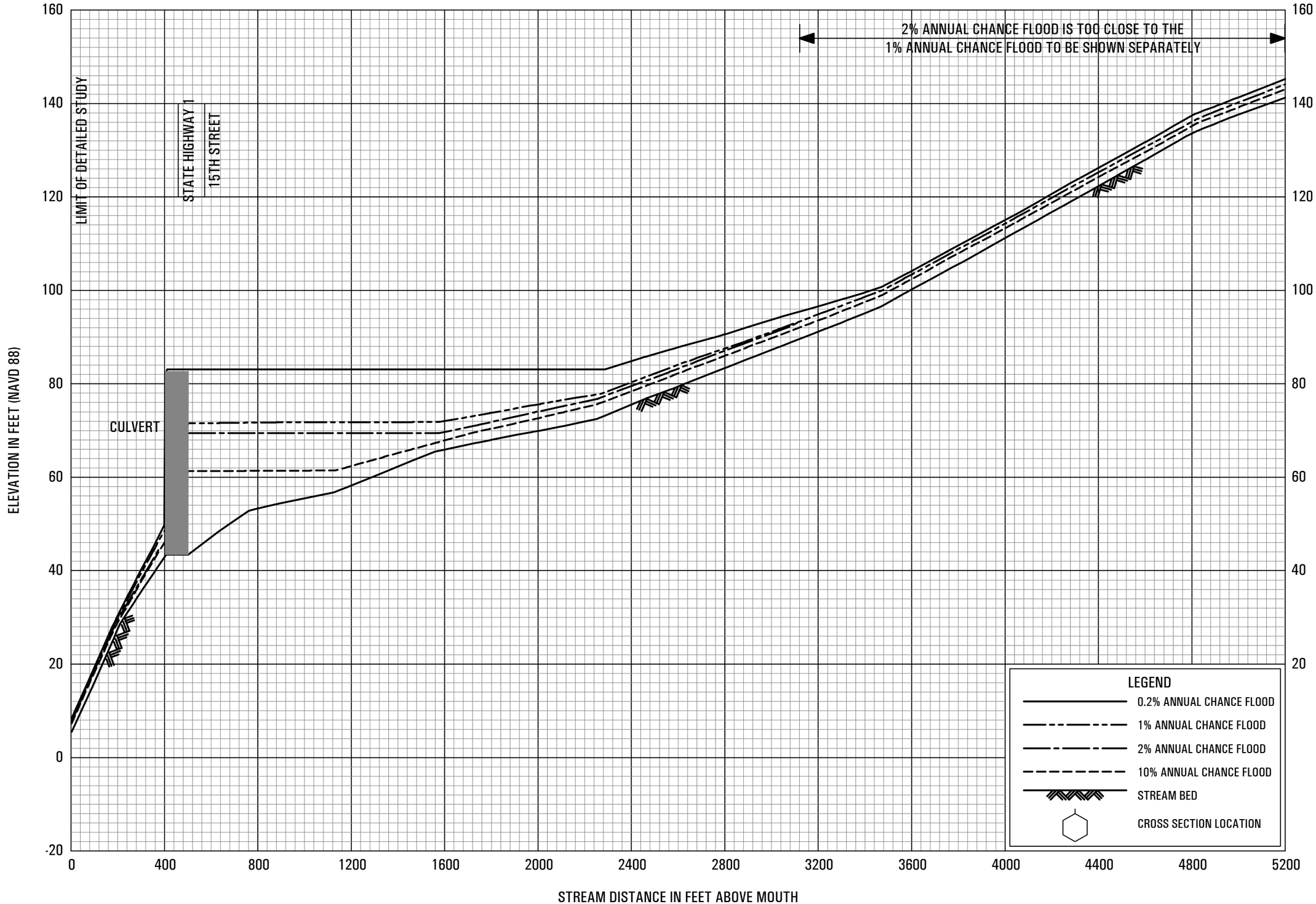
FLOOD PROFILES

LA HONDA CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS



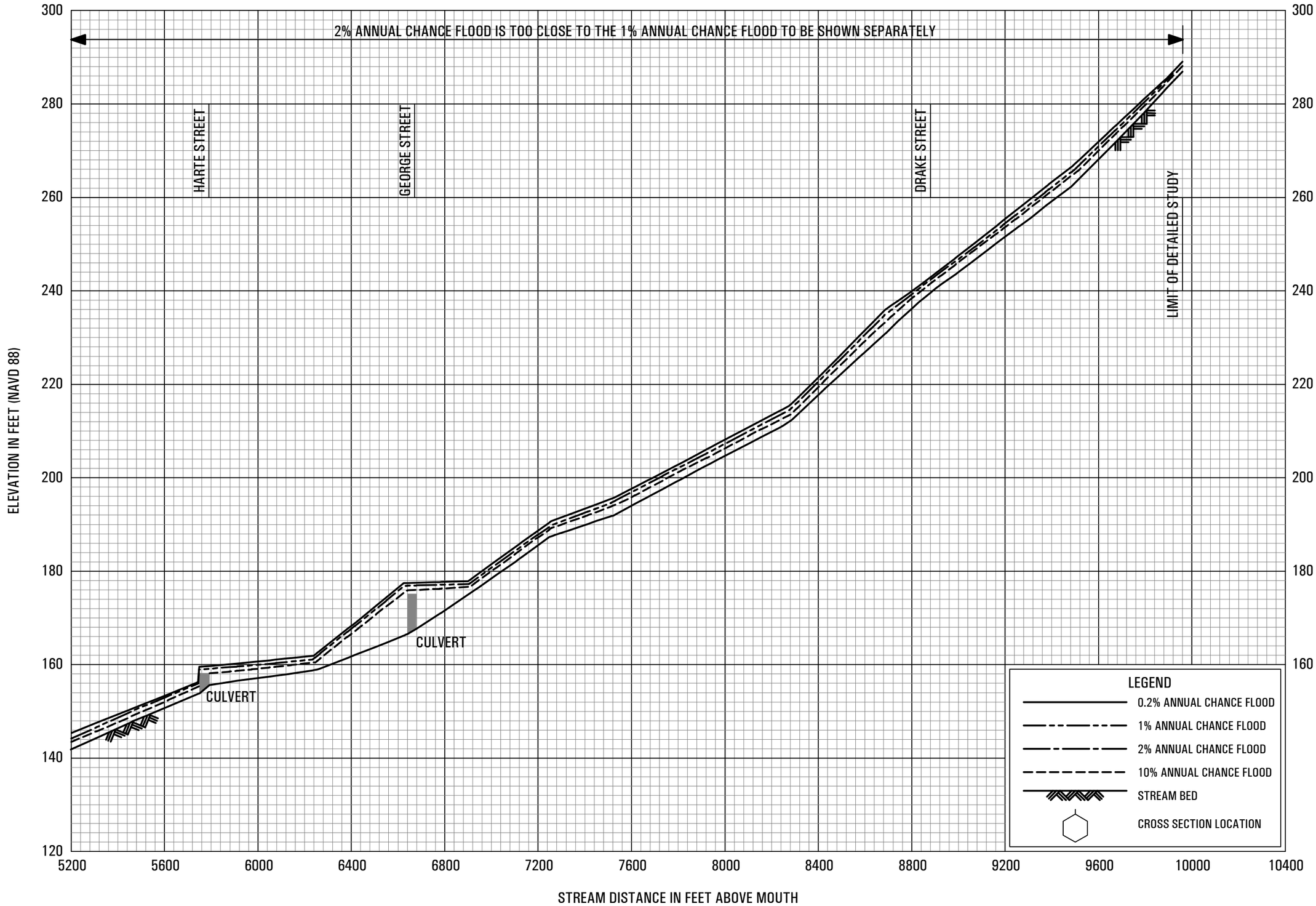
FLOOD PROFILES

MONTARA CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS



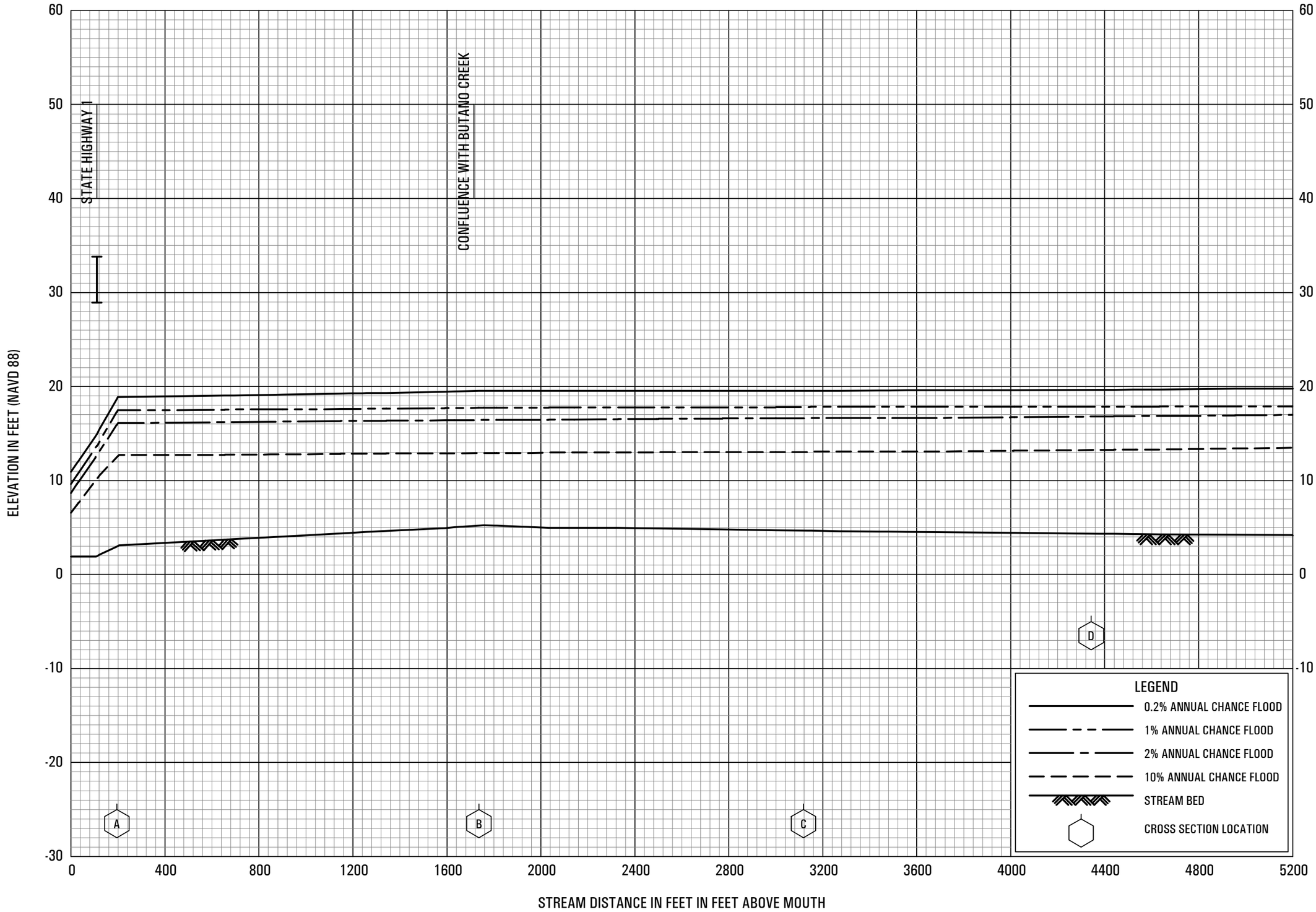
FLOOD PROFILES

MONTARA CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS



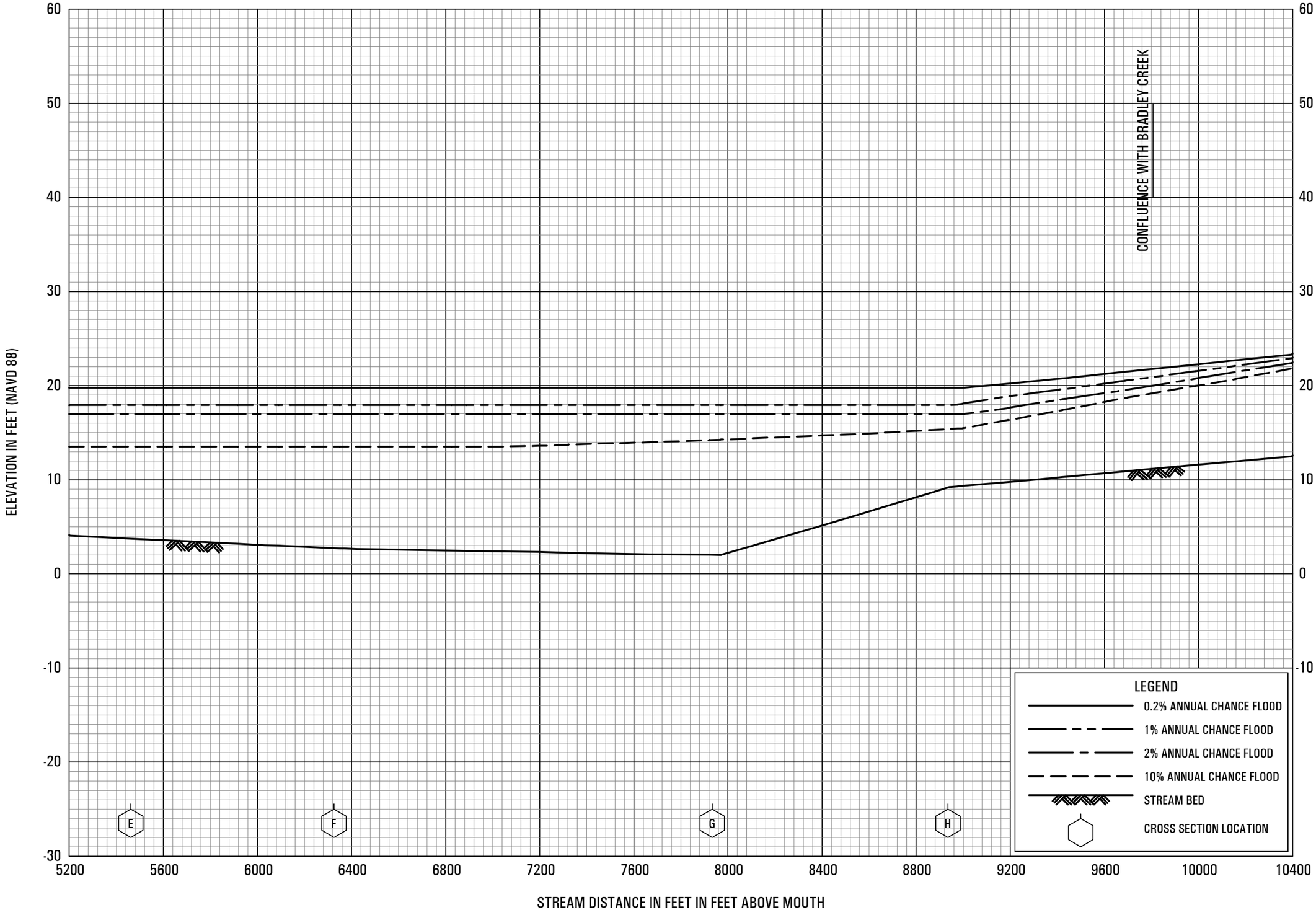
FLOOD PROFILES

PESCADERO CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS



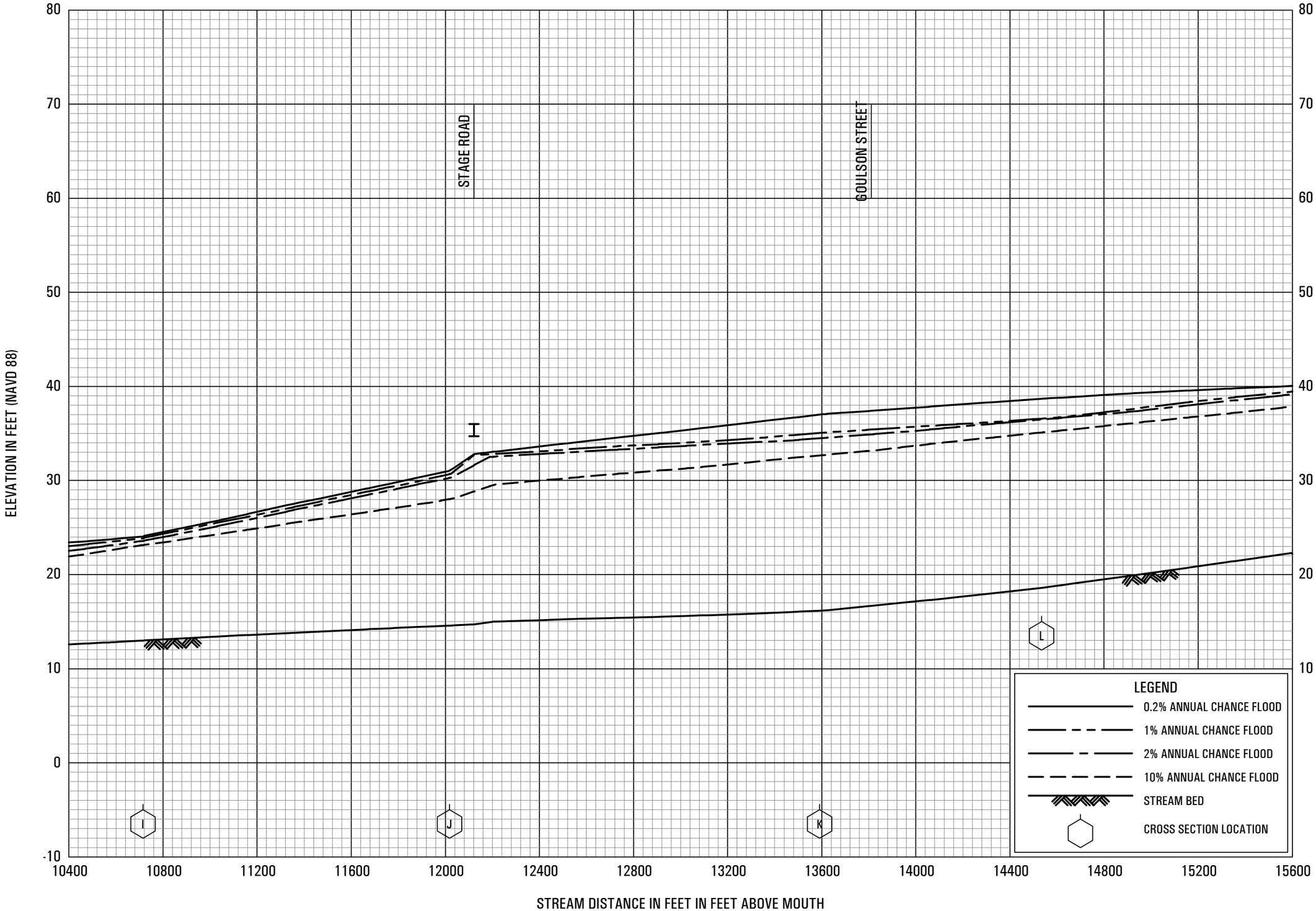
FLOOD PROFILES

PESCADERO CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS



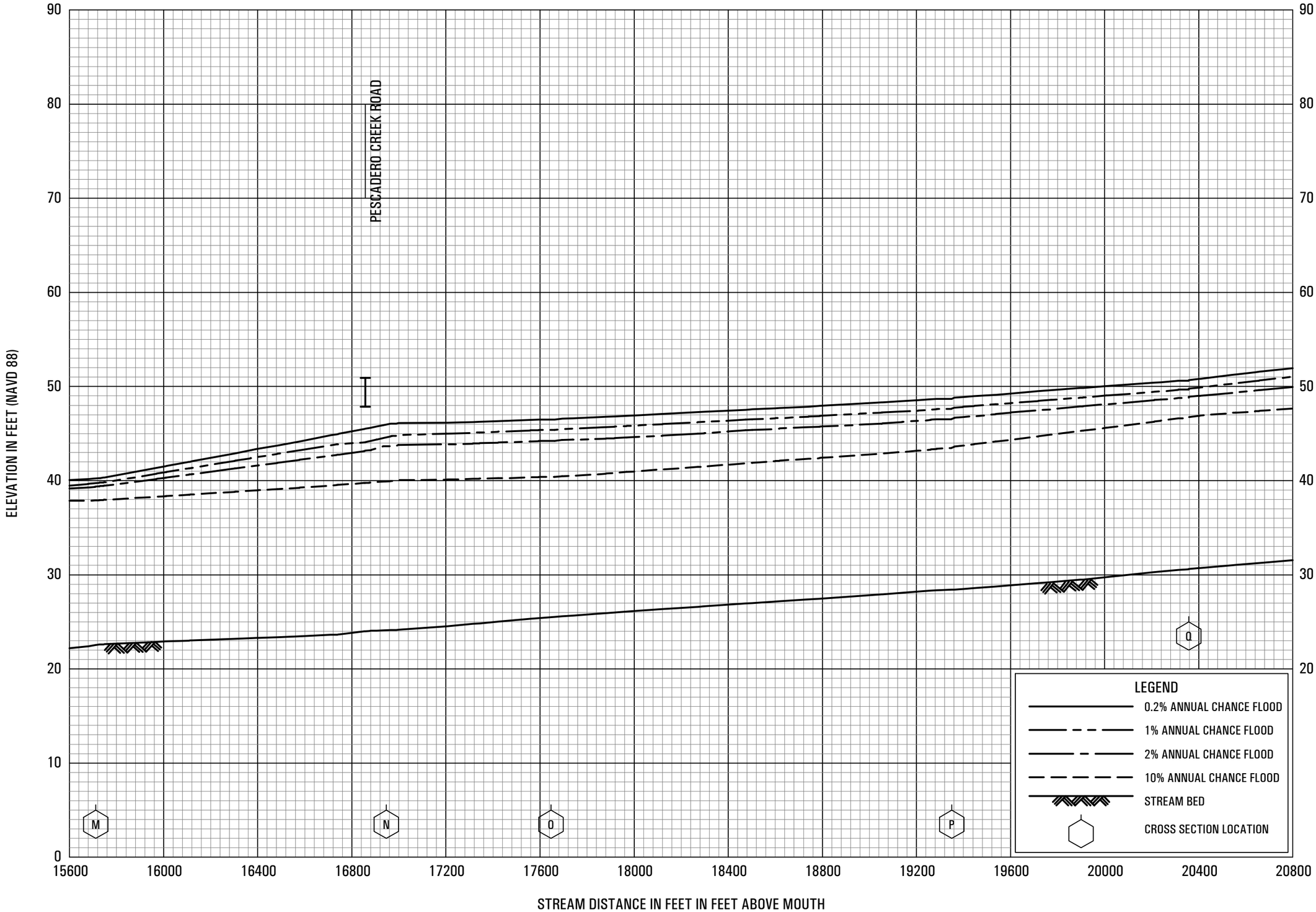
FLOOD PROFILES

PESCADERO CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS



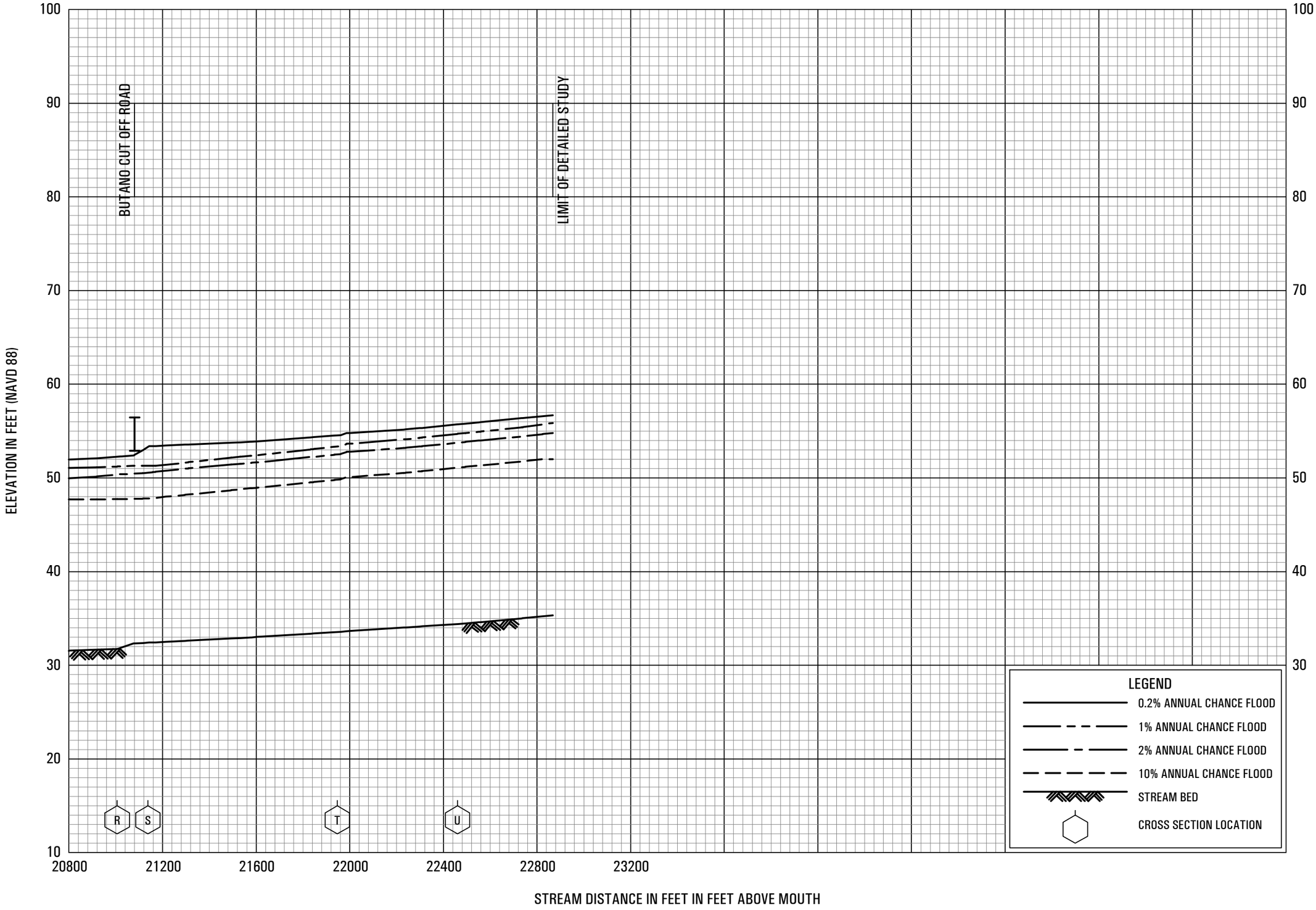
FLOOD PROFILES

PESCADERO CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS



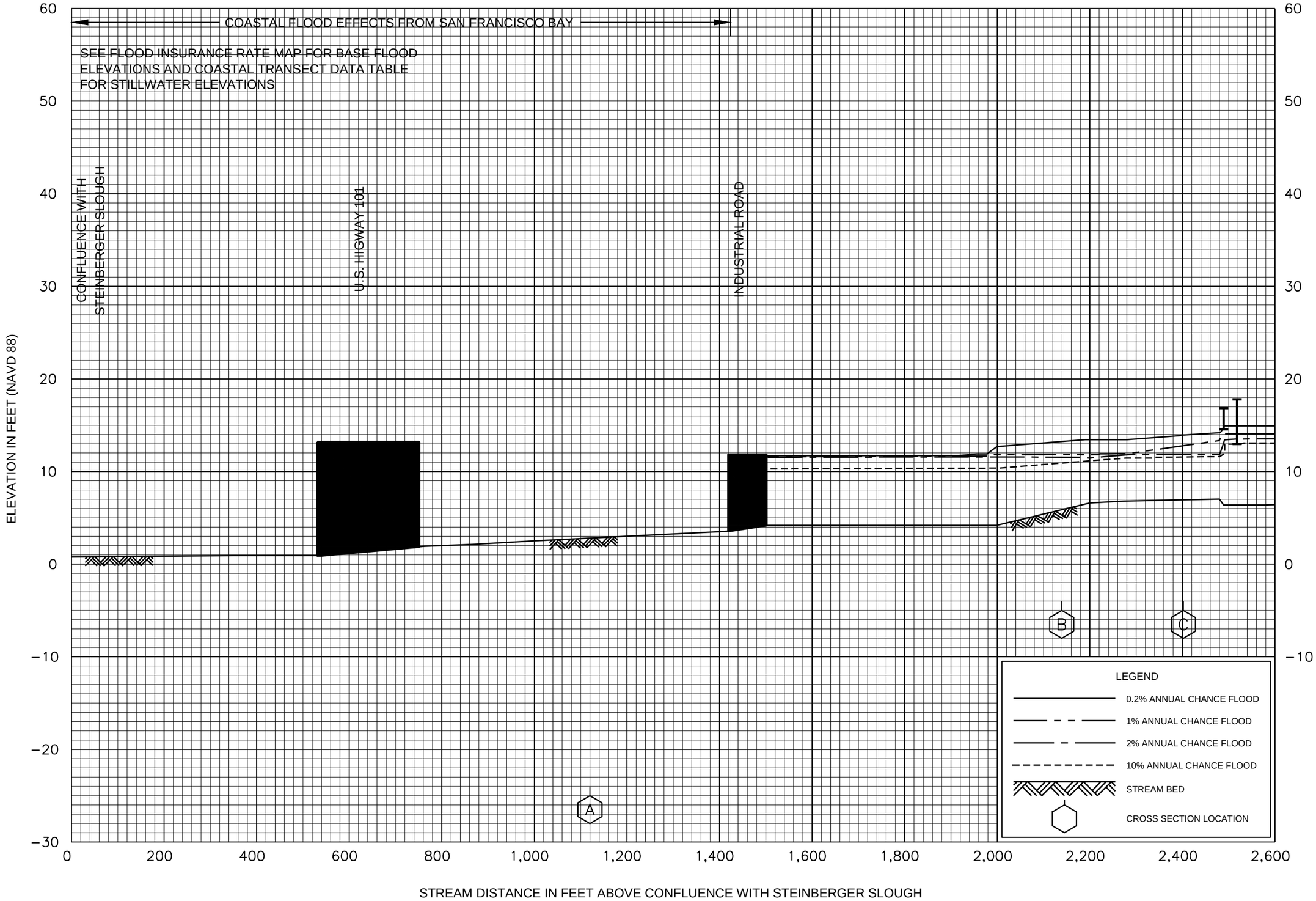
FLOOD PROFILES

PESCADERO CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS

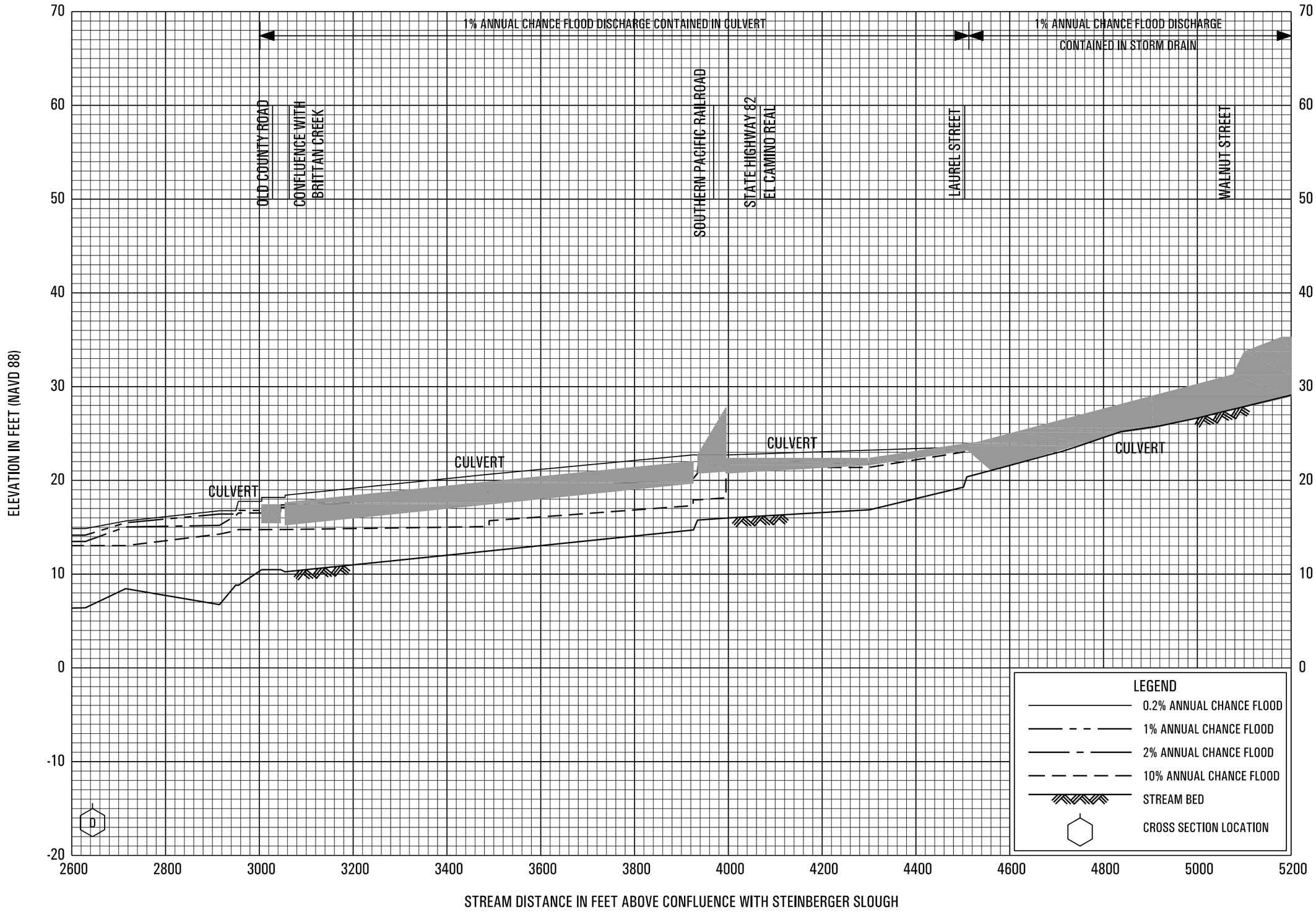


FLOOD PROFILES

PULGAS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA
AND INCORPORATED AREAS



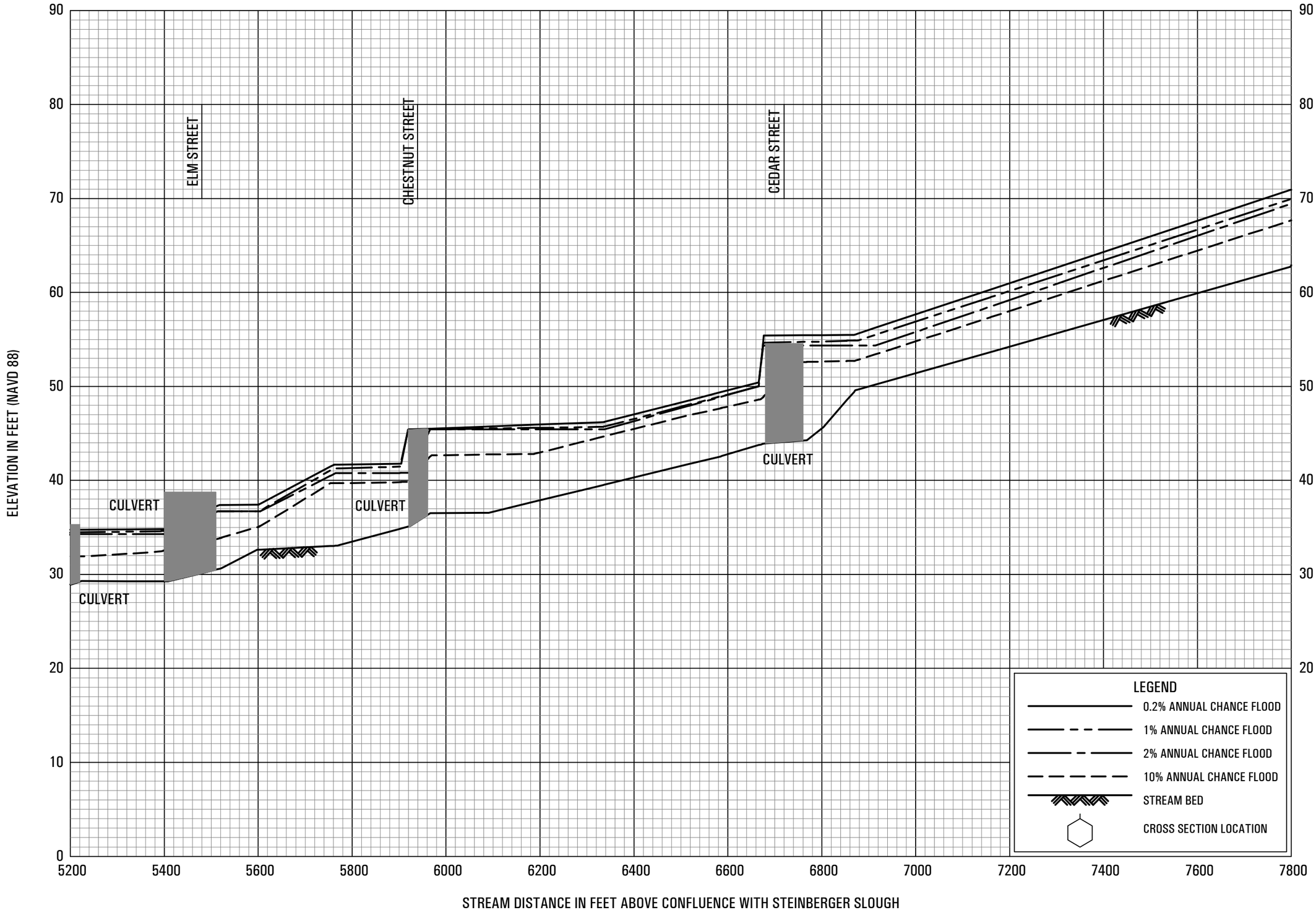
FLOOD PROFILES

PULGAS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS



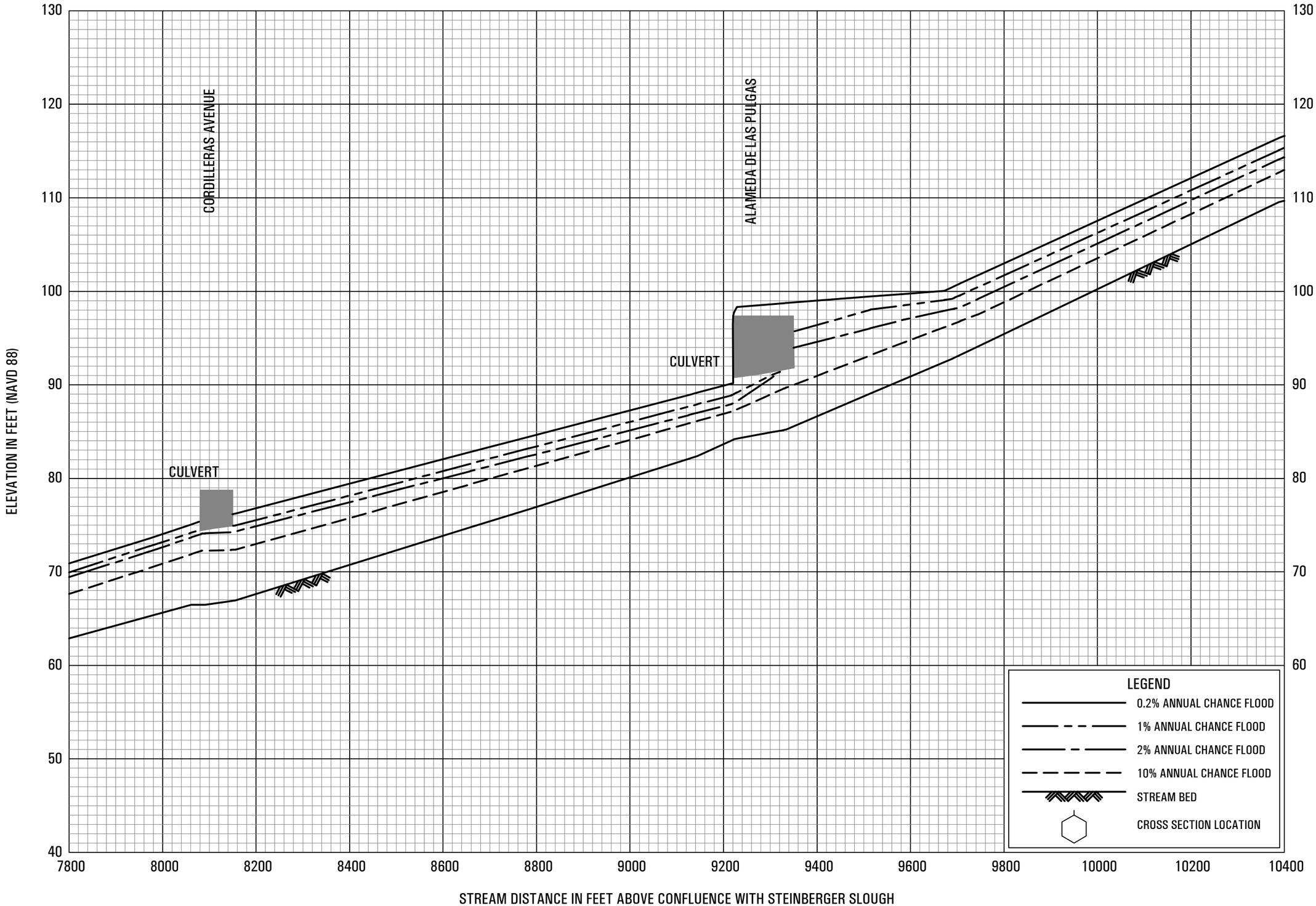
FLOOD PROFILES

PULGAS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS



FLOOD PROFILES

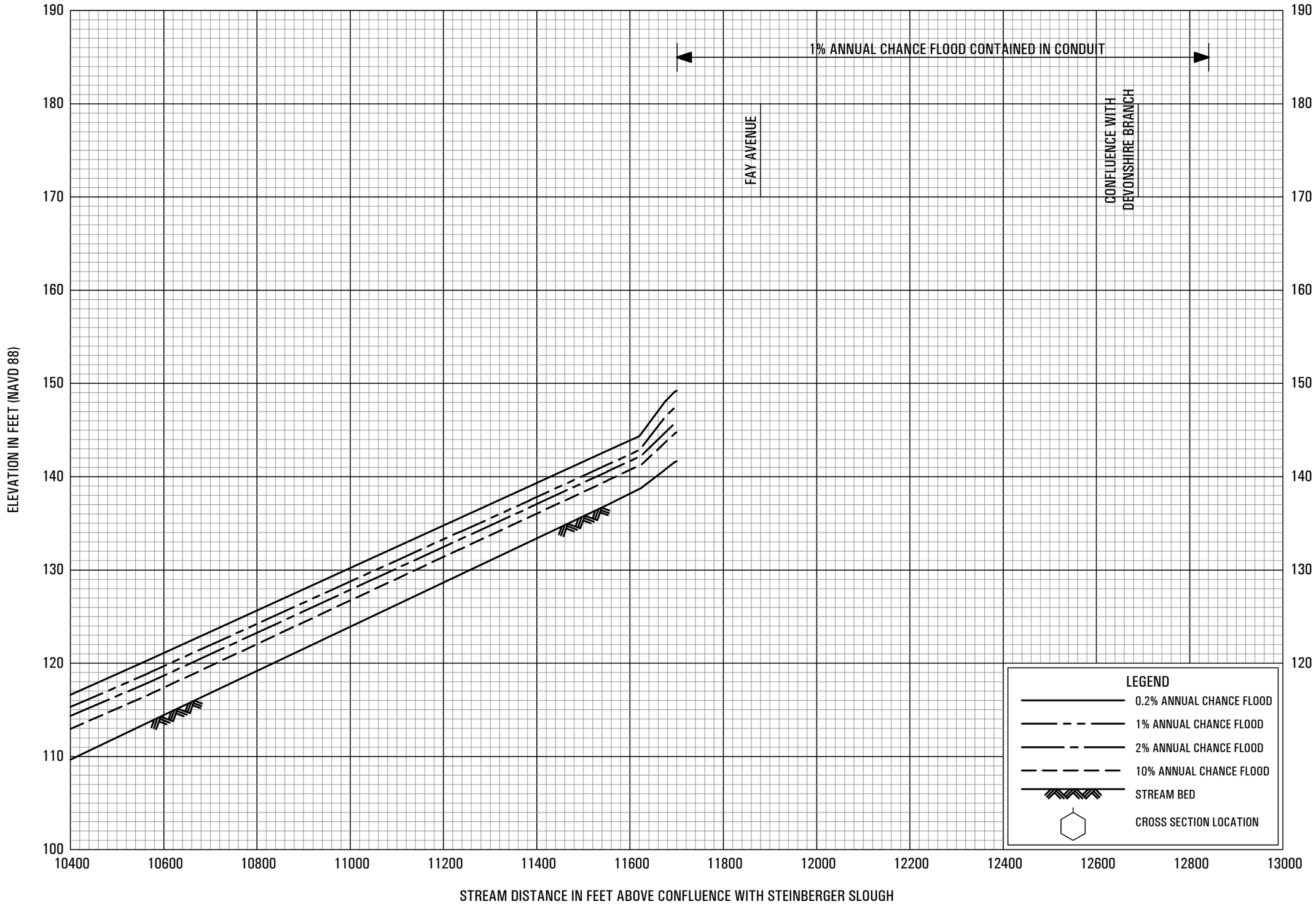
PULGAS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS

35P



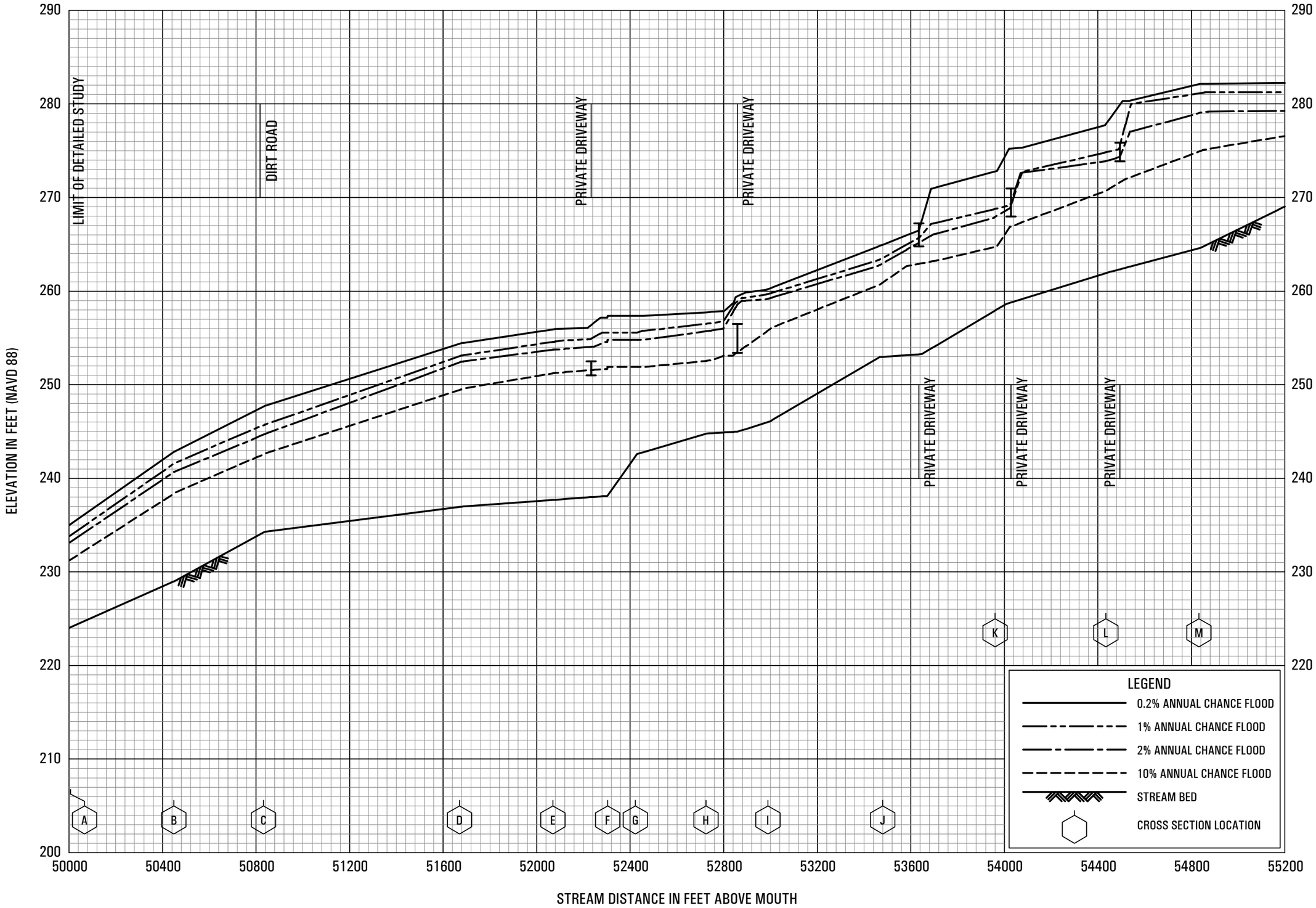
FLOOD PROFILES

PULGAS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS



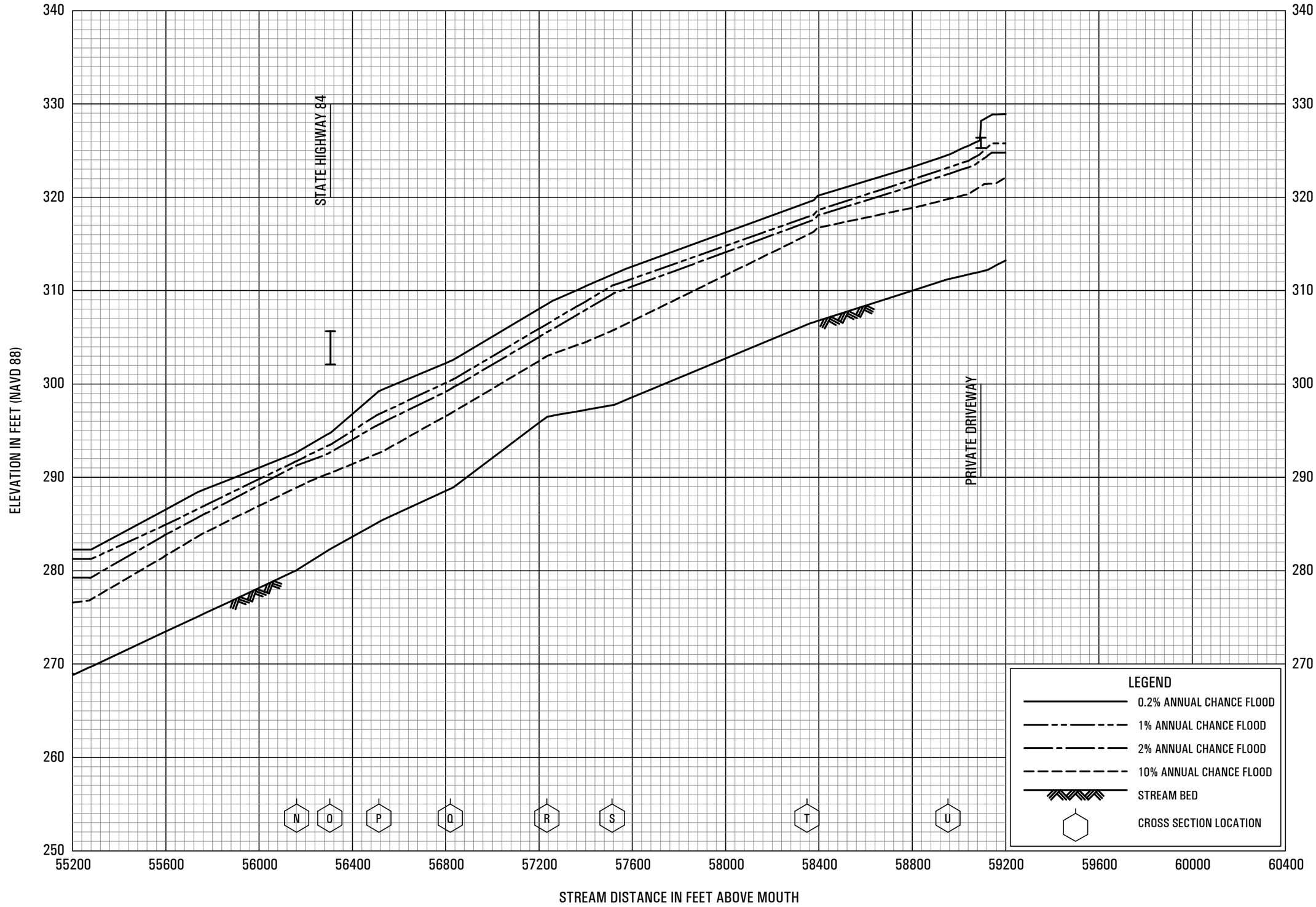
FLOOD PROFILES

SAN GREGORIO CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS



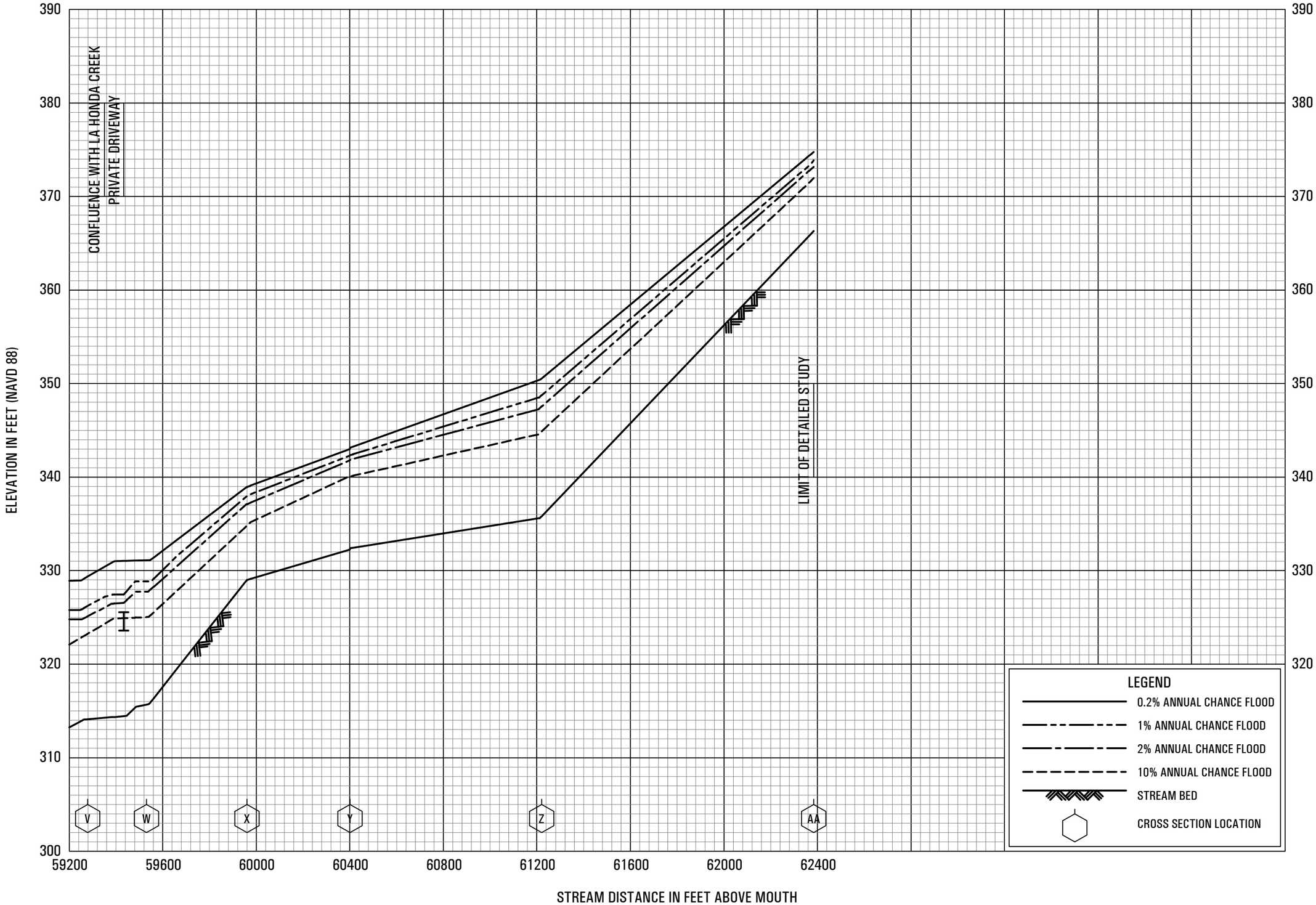
FLOOD PROFILES

SAN GREGORIO CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS



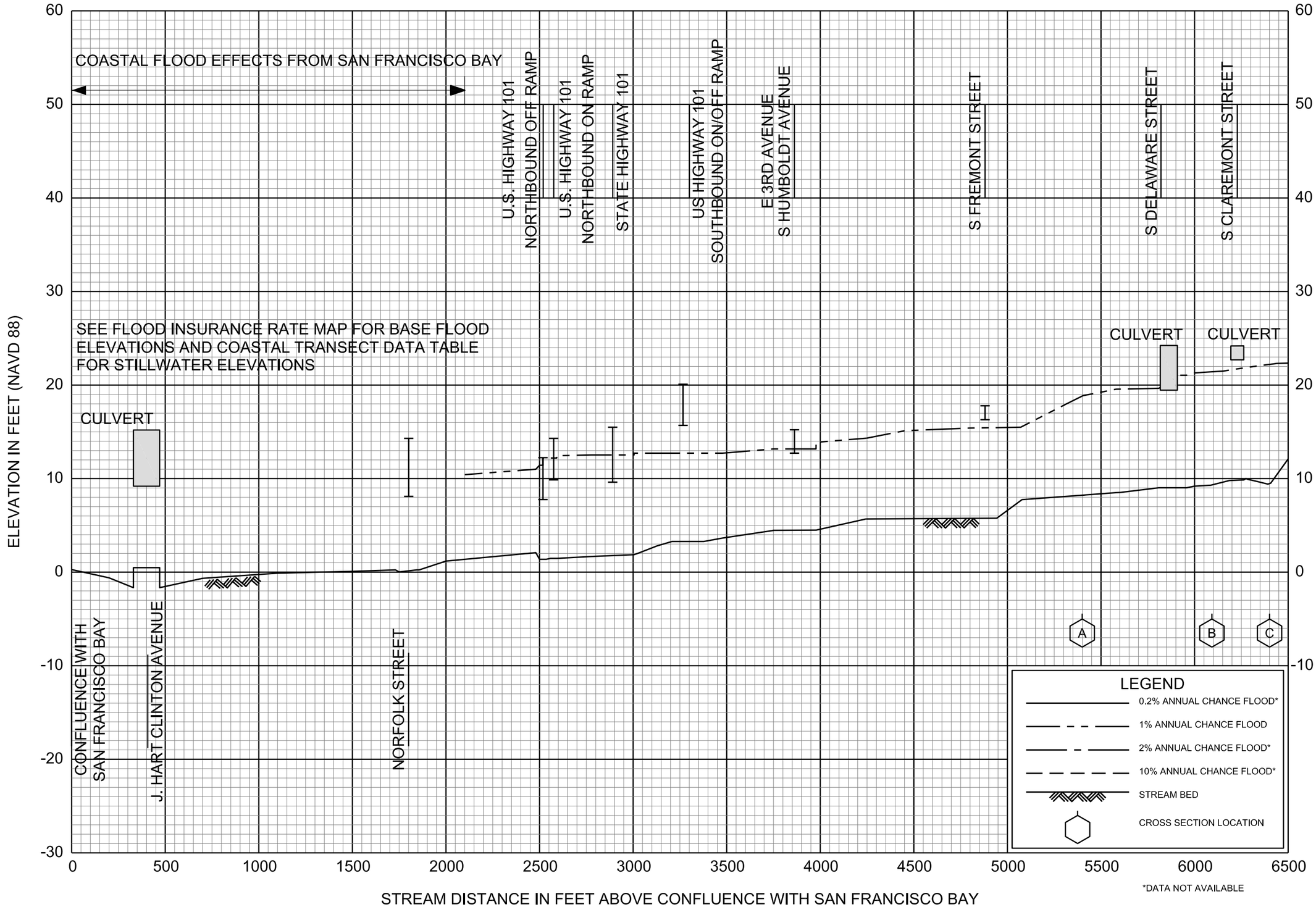
FLOOD PROFILES

SAN GREGORIO CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS

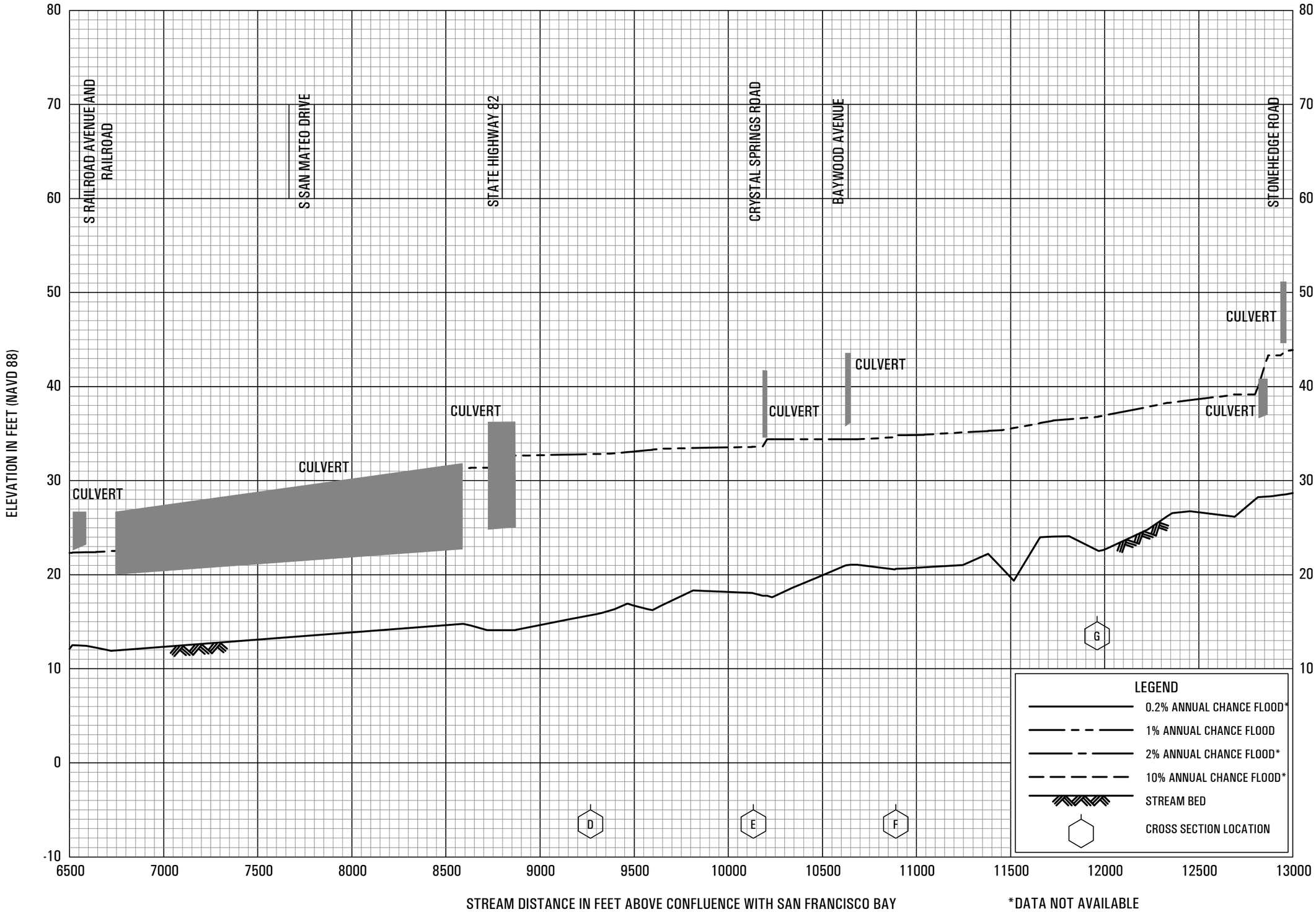


FLOOD PROFILES

SAN MATEO CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA
AND INCORPORATED AREAS



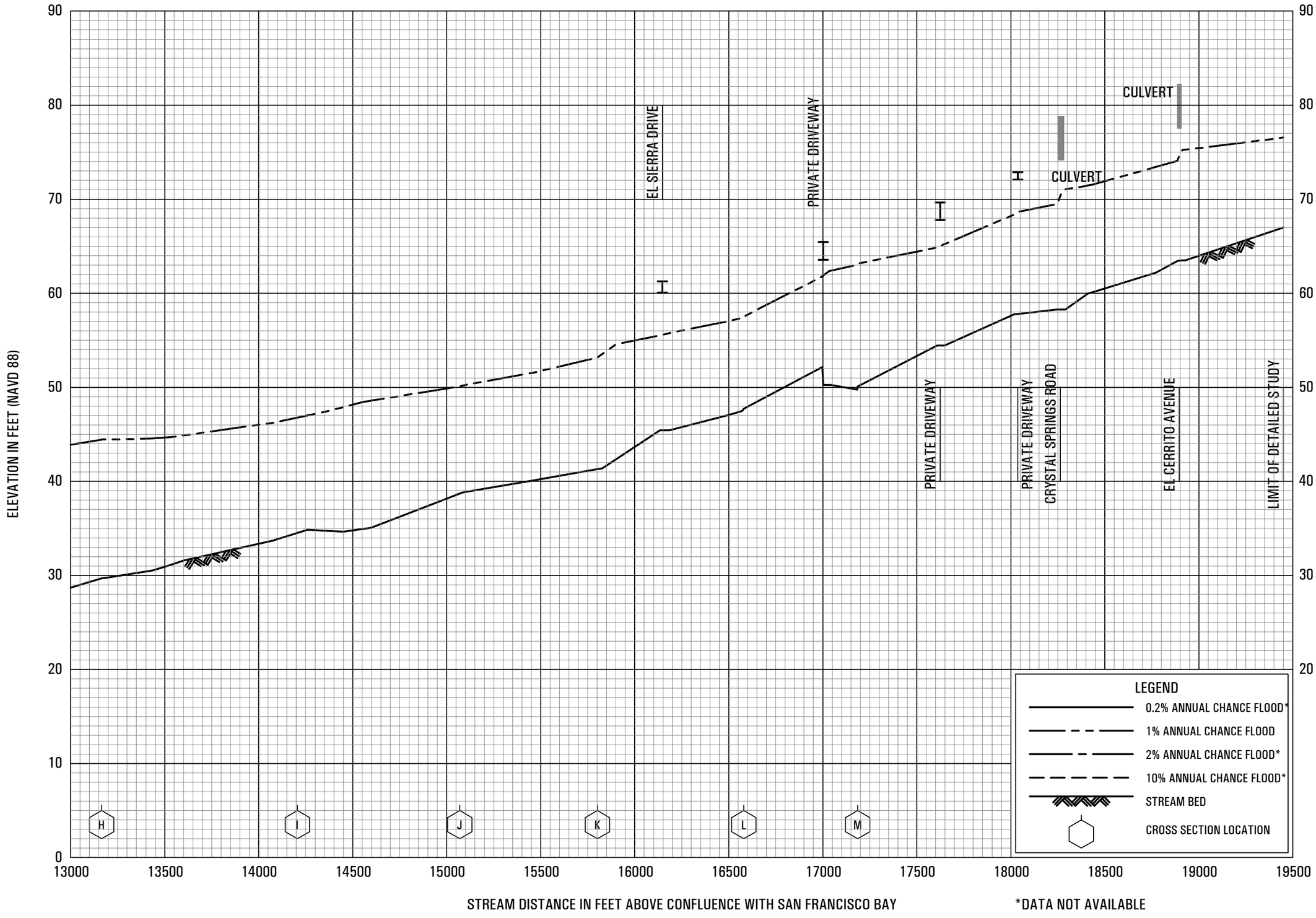
FLOOD PROFILES

SAN MATEO CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS



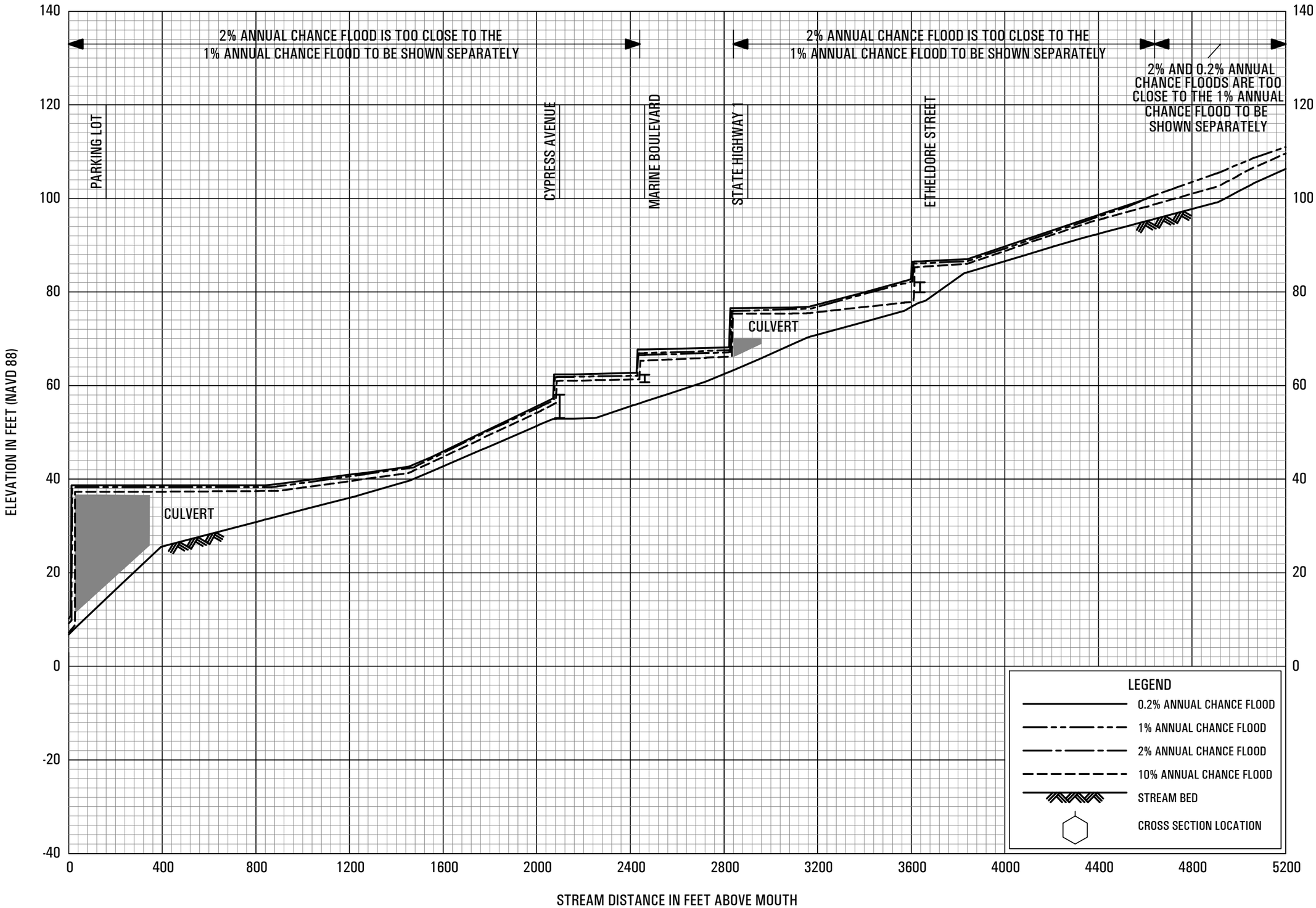
FLOOD PROFILES

SAN MATEO CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS



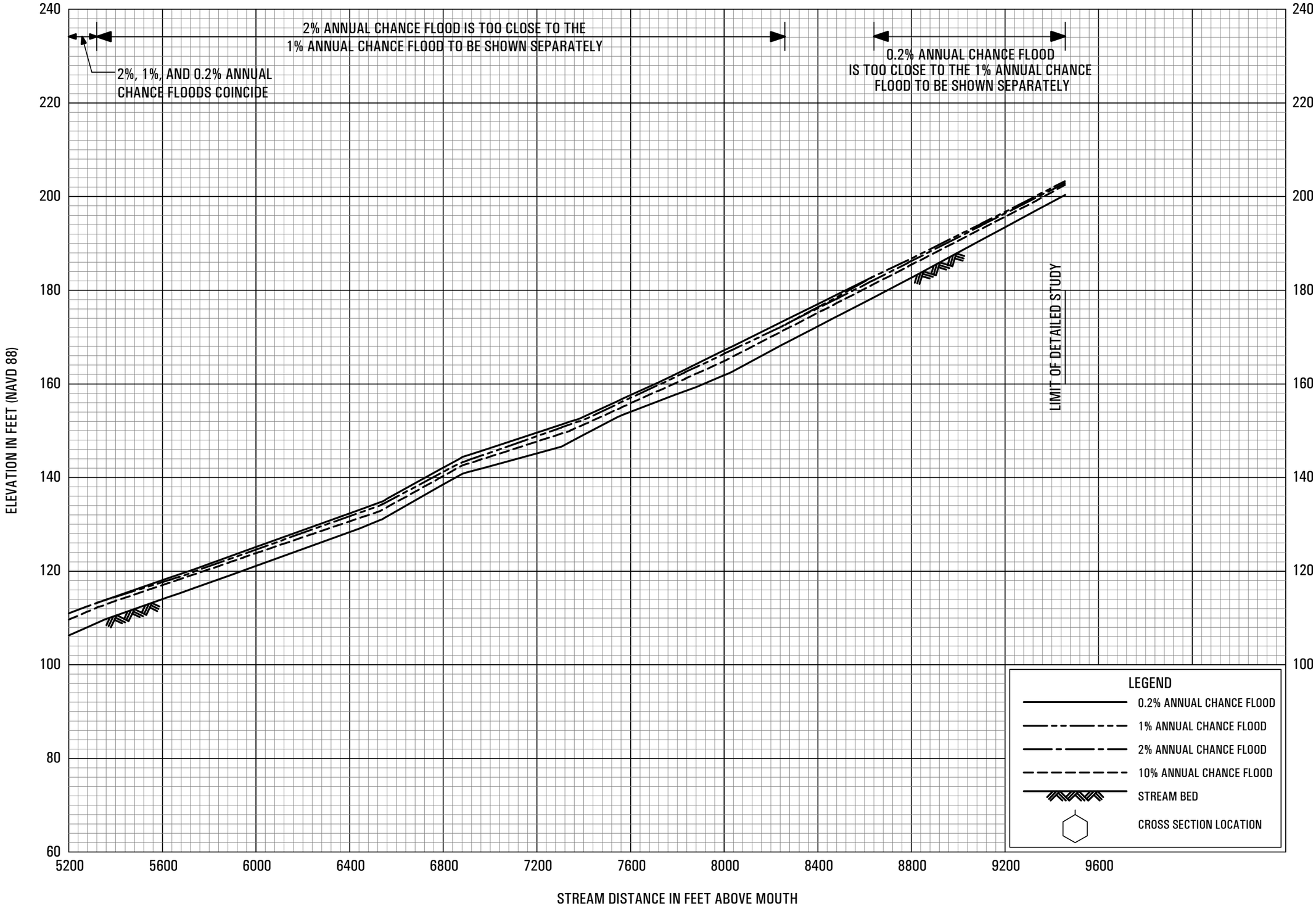
FLOOD PROFILES

SAN VICENTE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS



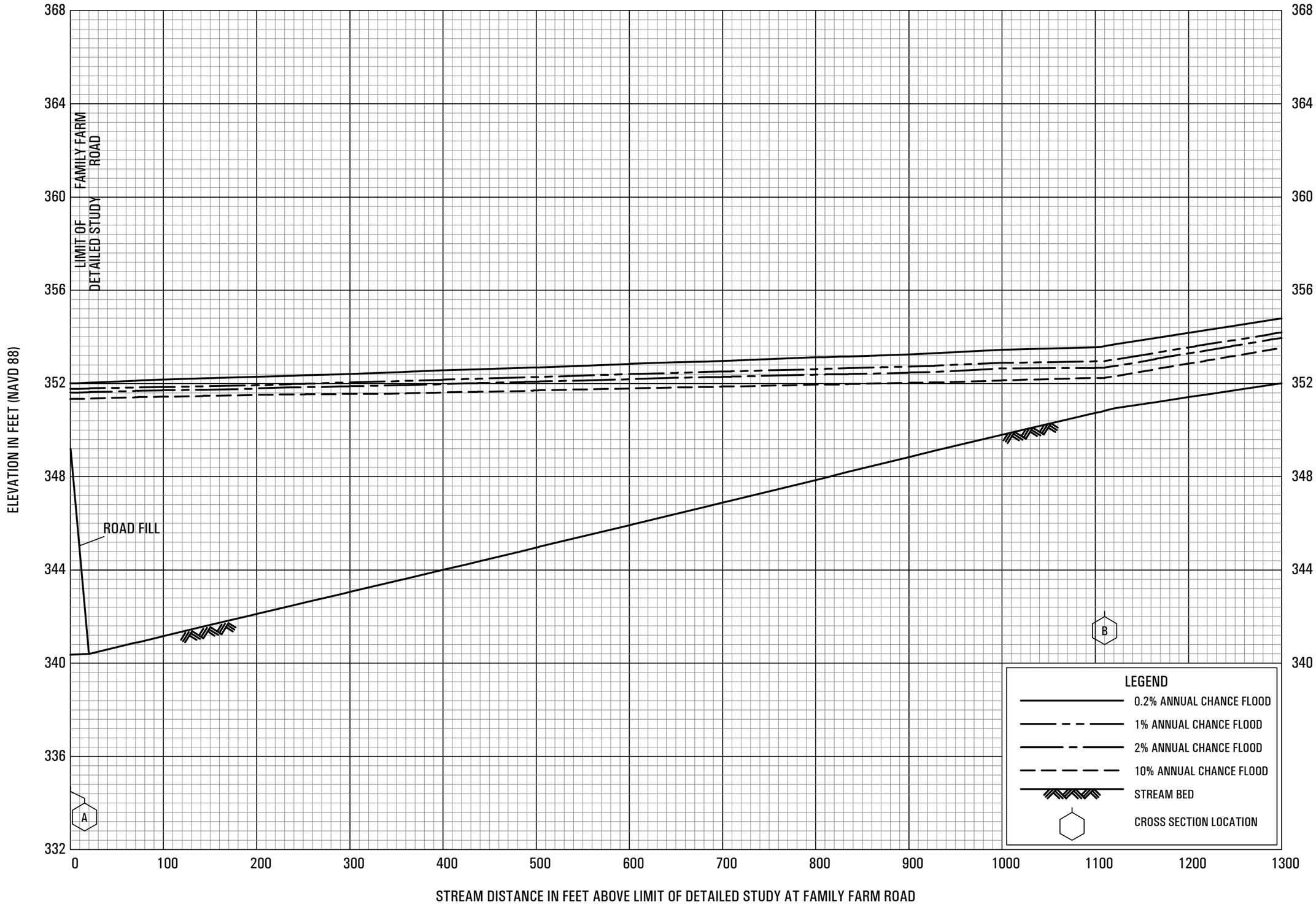
FLOOD PROFILES

SAN VICENTE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS



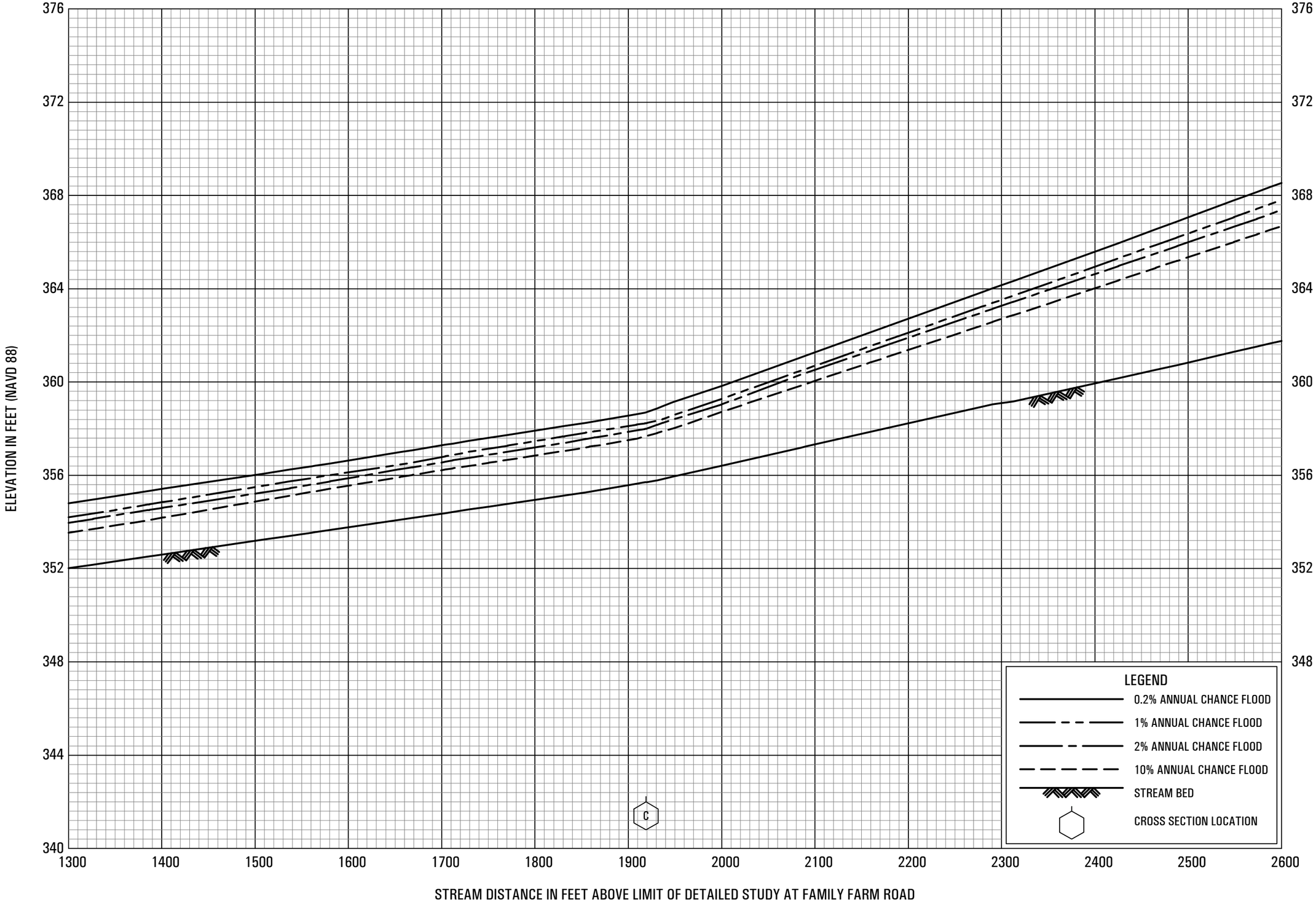
FLOOD PROFILES

SAUSAL CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS



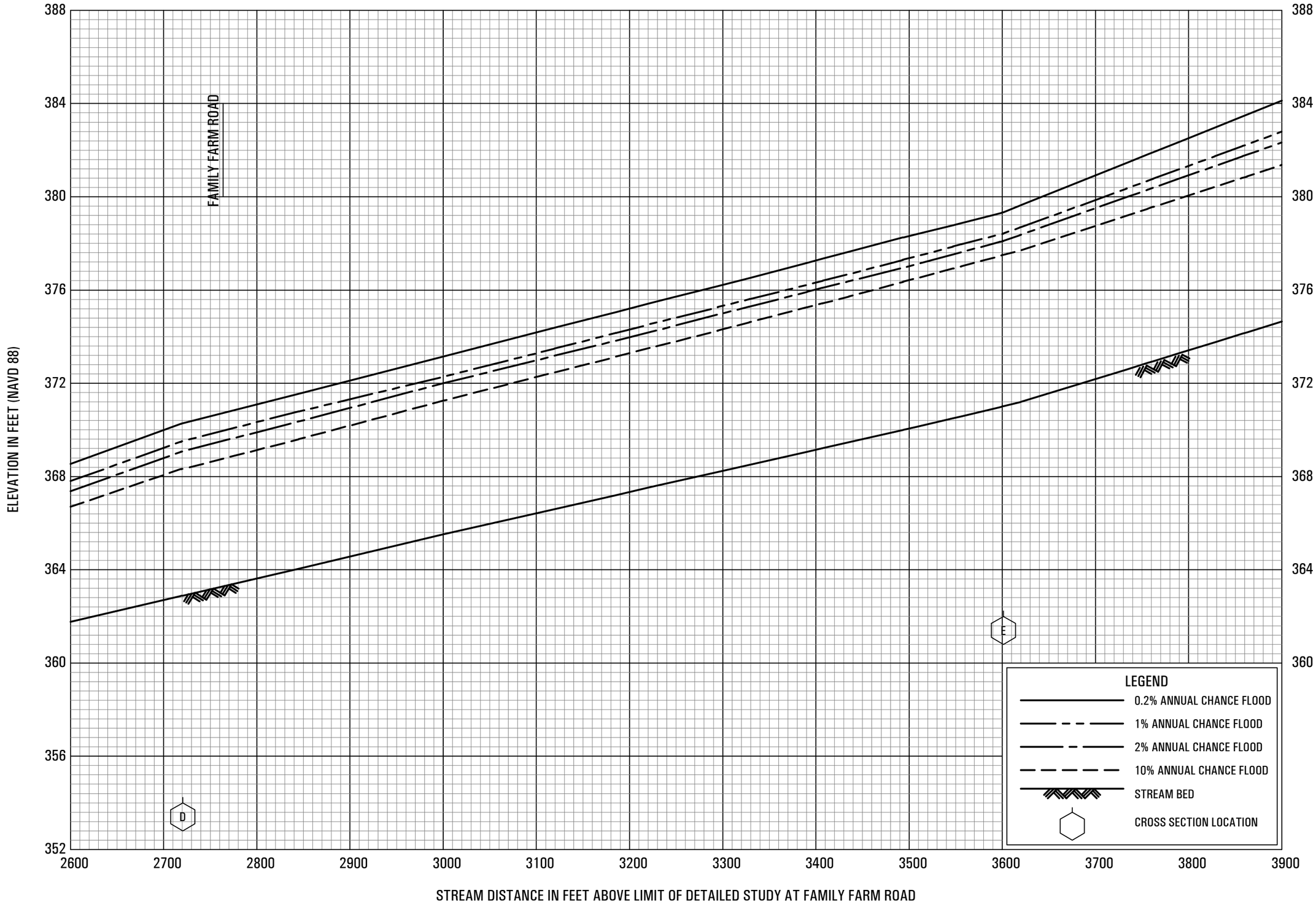
FLOOD PROFILES

SAUSAL CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS



FLOOD PROFILES

SAUSAL CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

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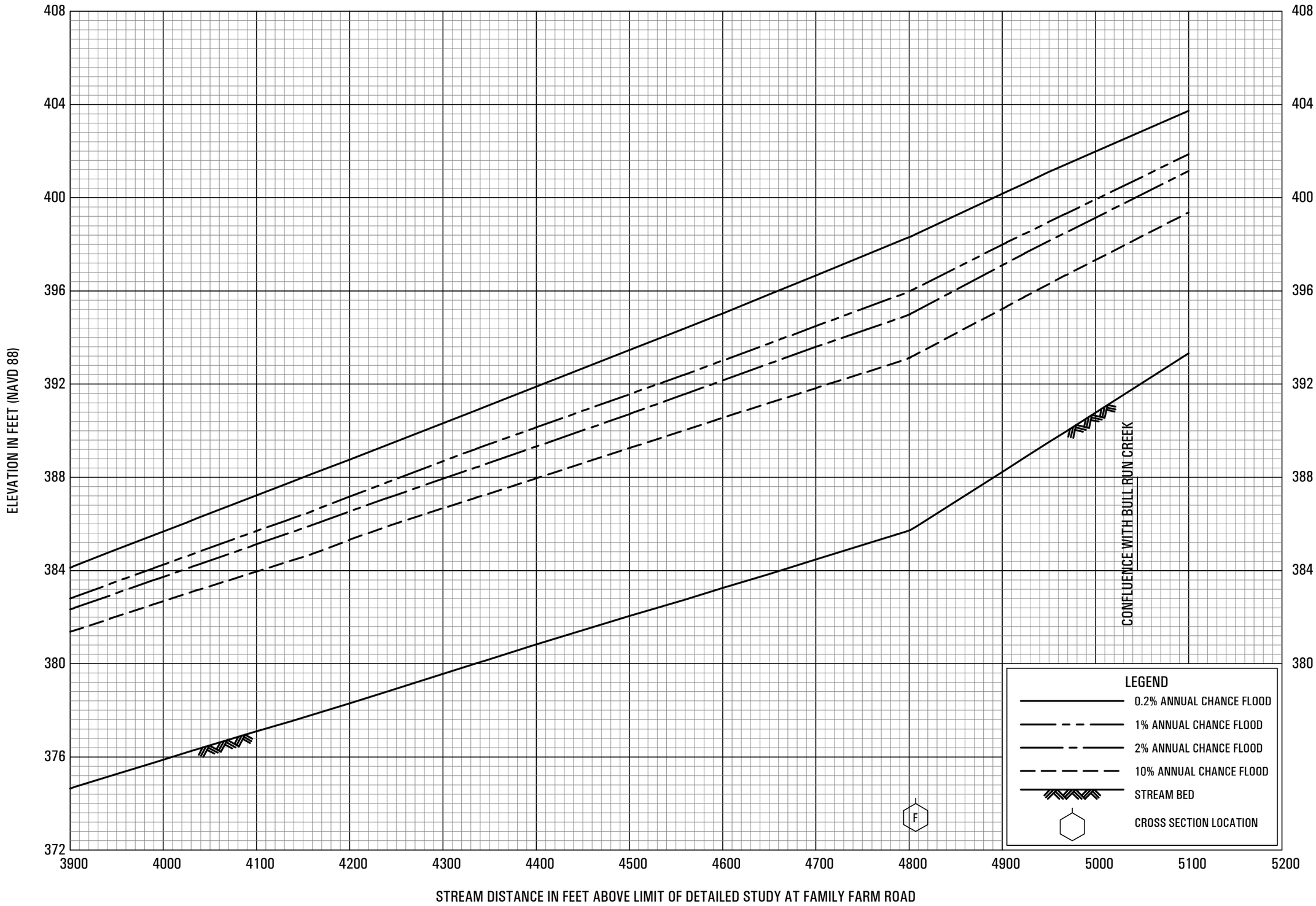

FLOOD PROFILES

SAUSAL CREEK

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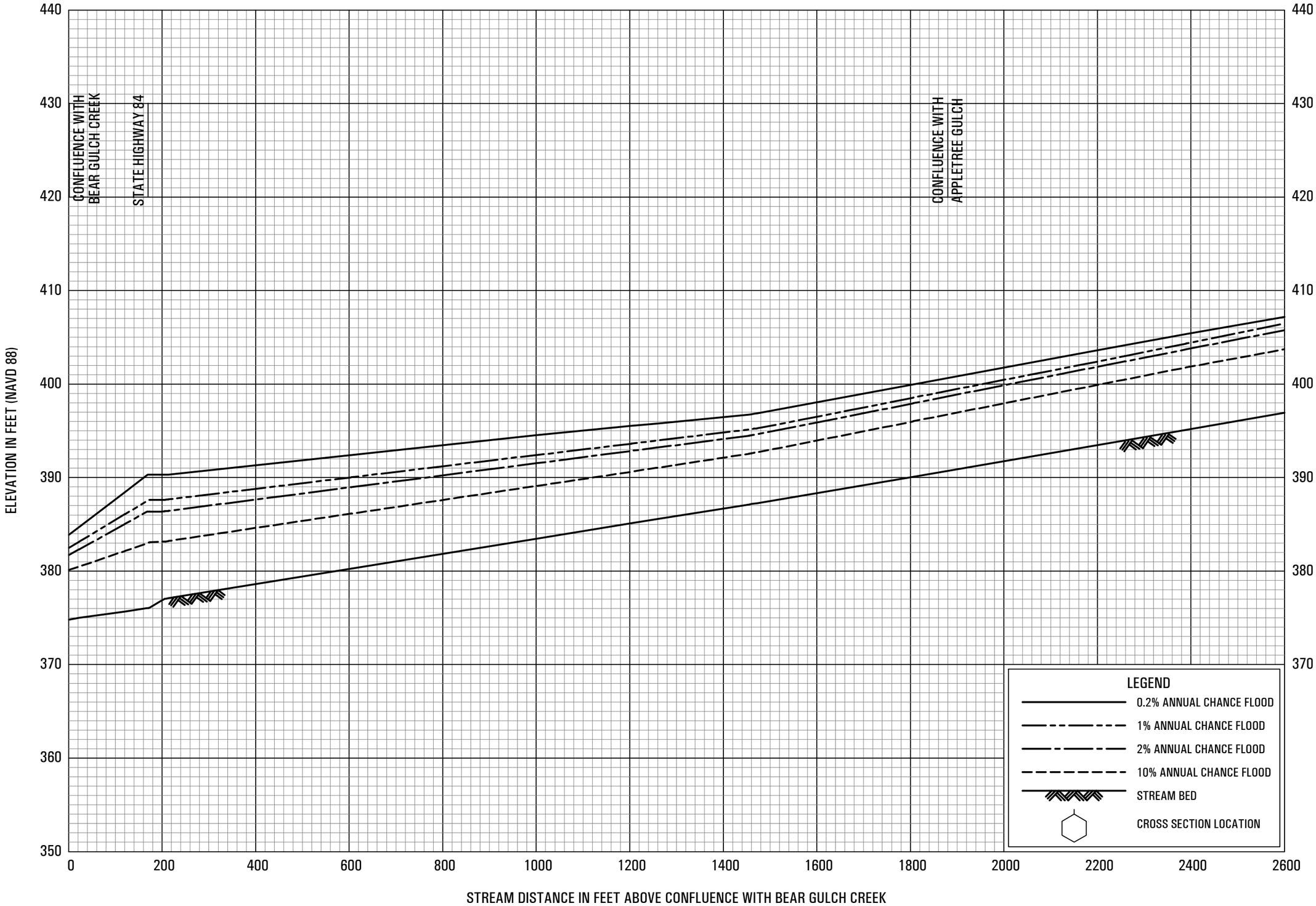
AND INCORPORATED AREAS



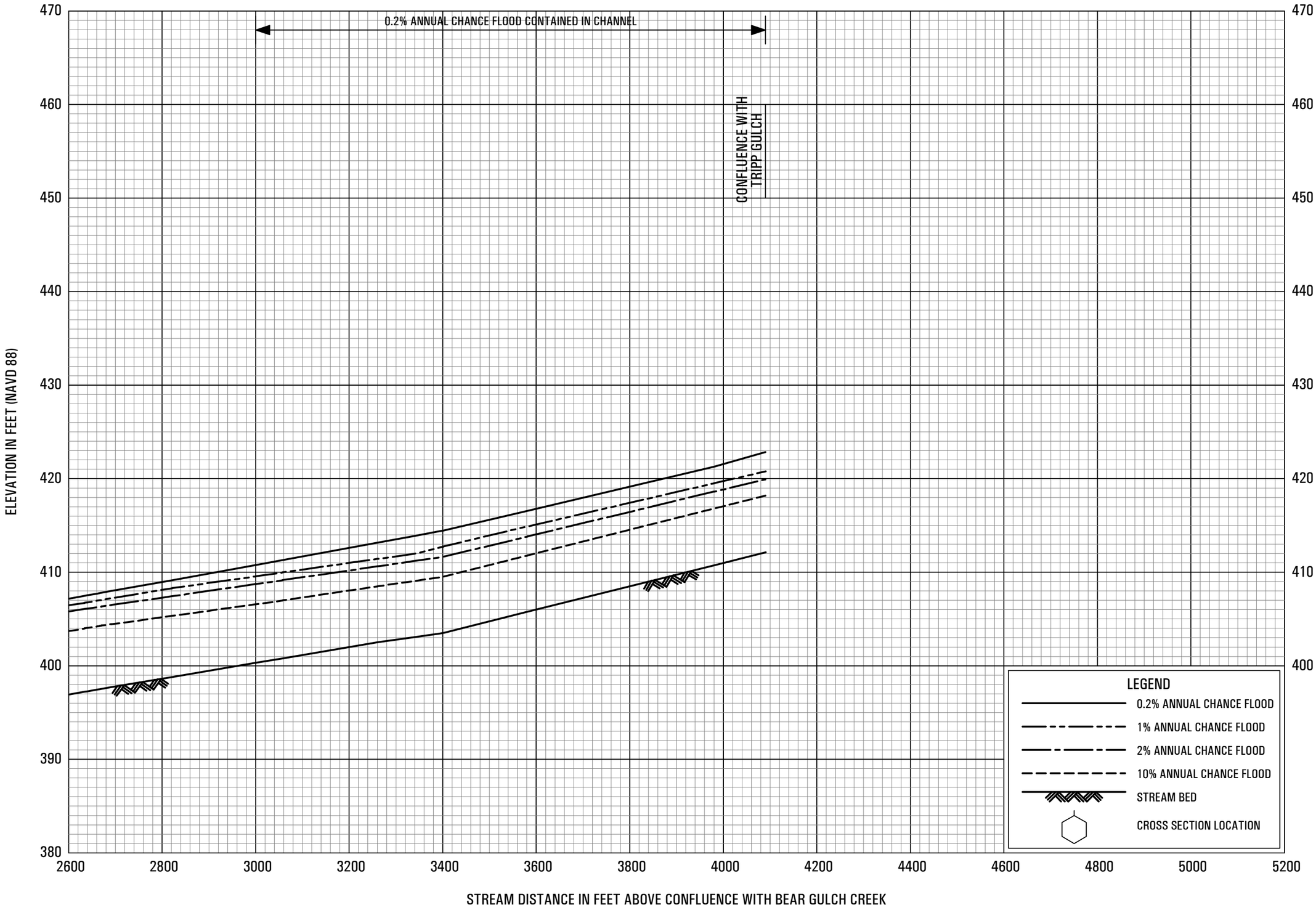
FLOOD PROFILES

WEST UNION CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS



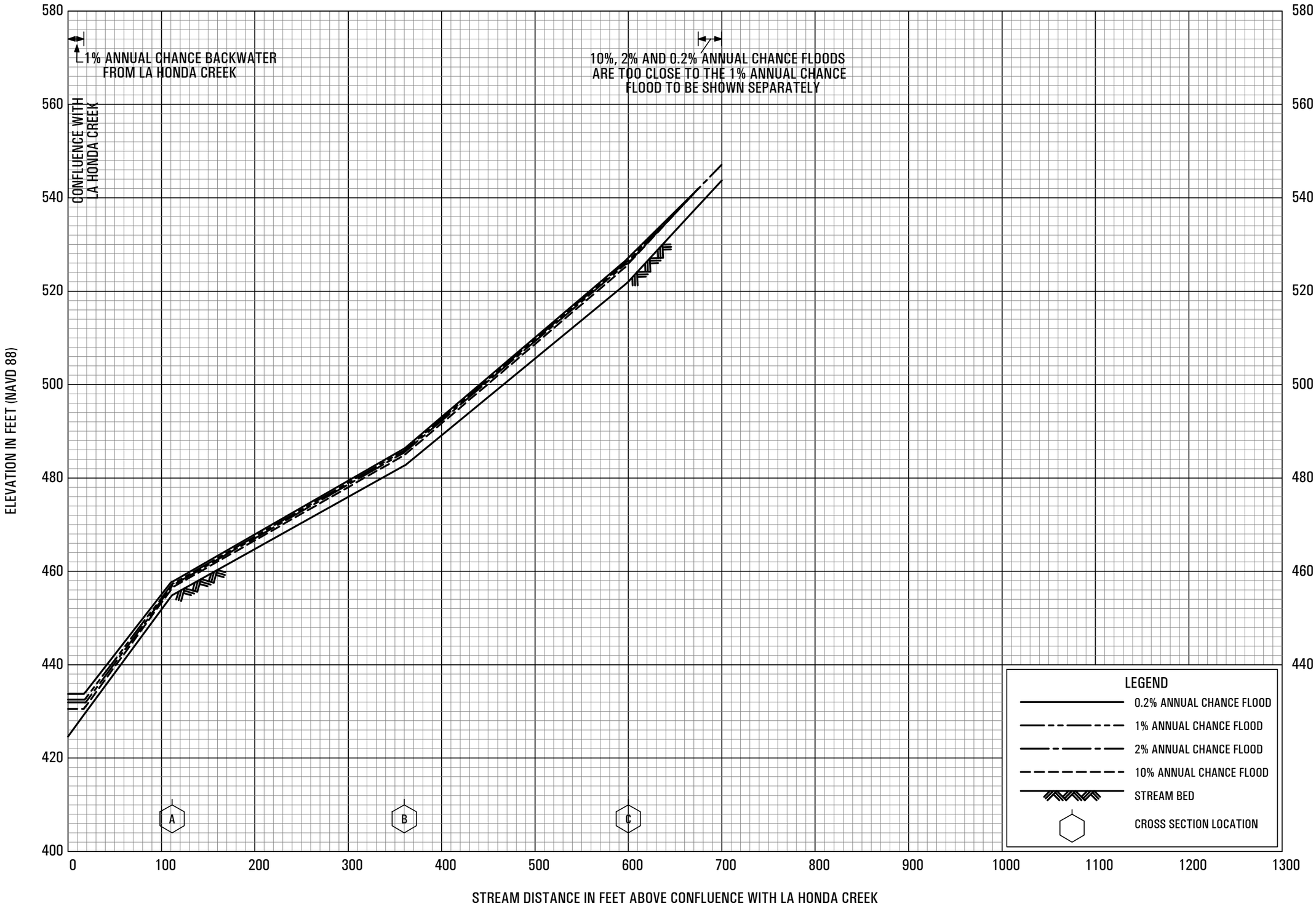
FLOOD PROFILES

WEST UNION CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS



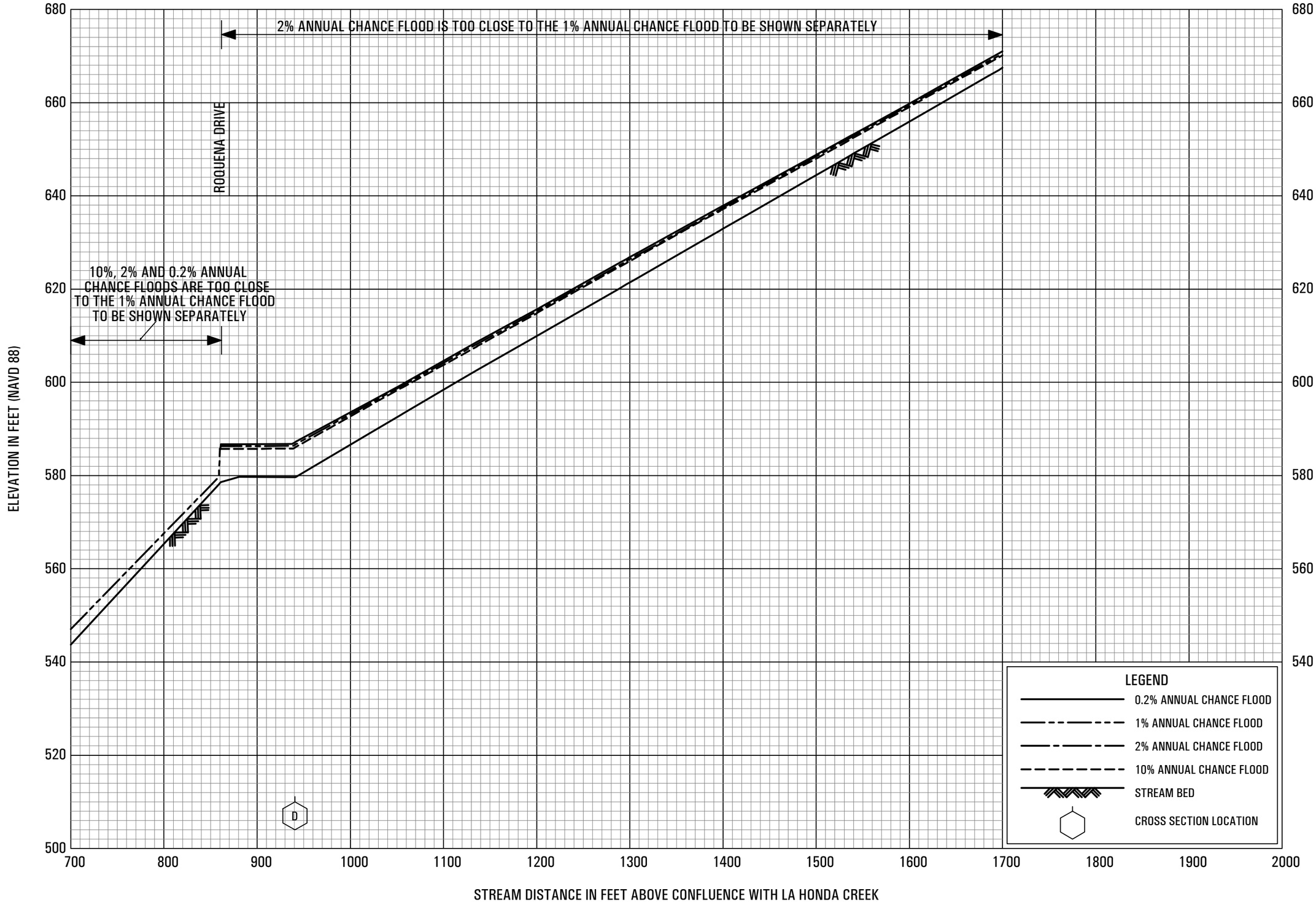
FLOOD PROFILES

WOODHAMS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS



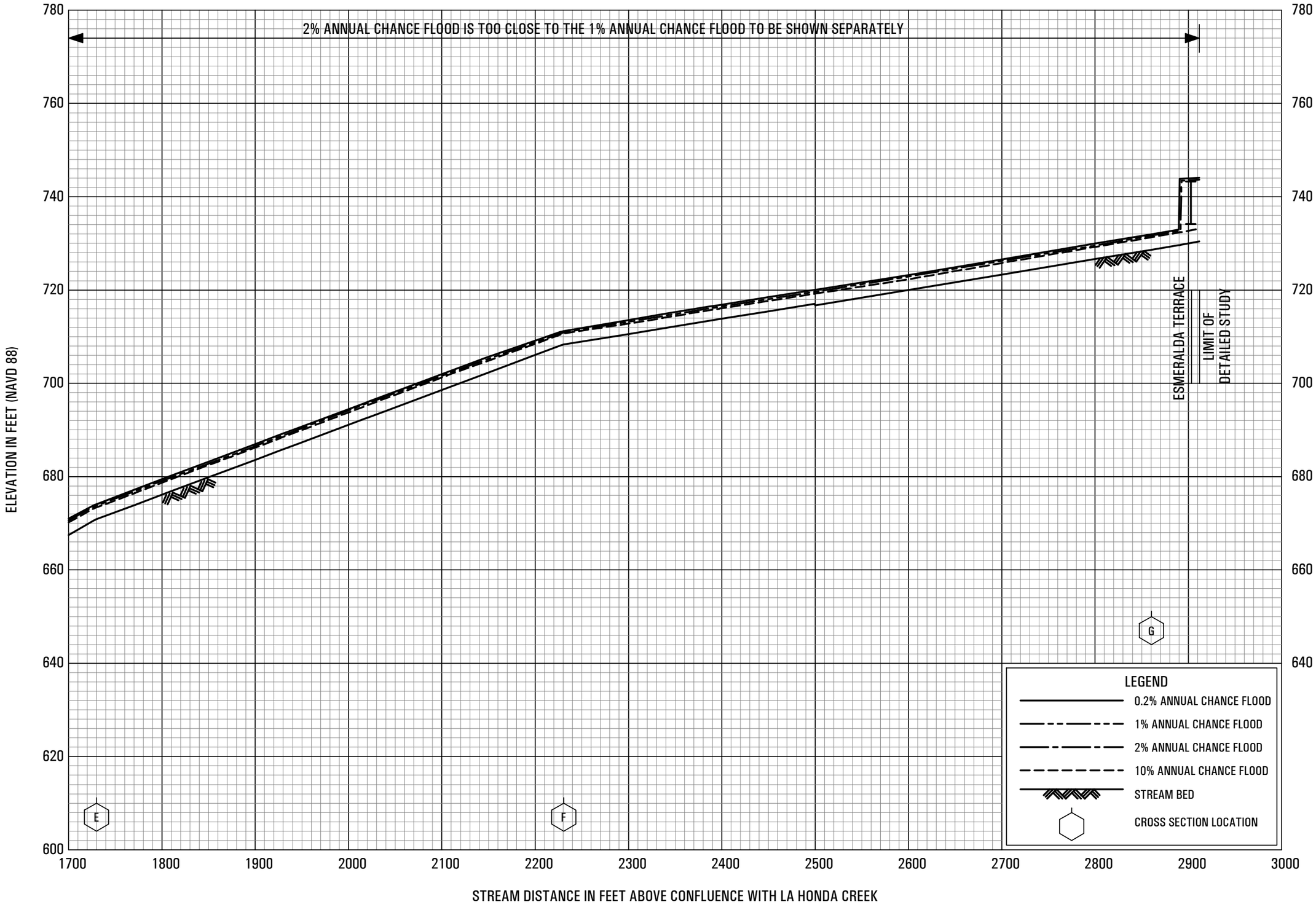
FLOOD PROFILES

WOODHAMS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS



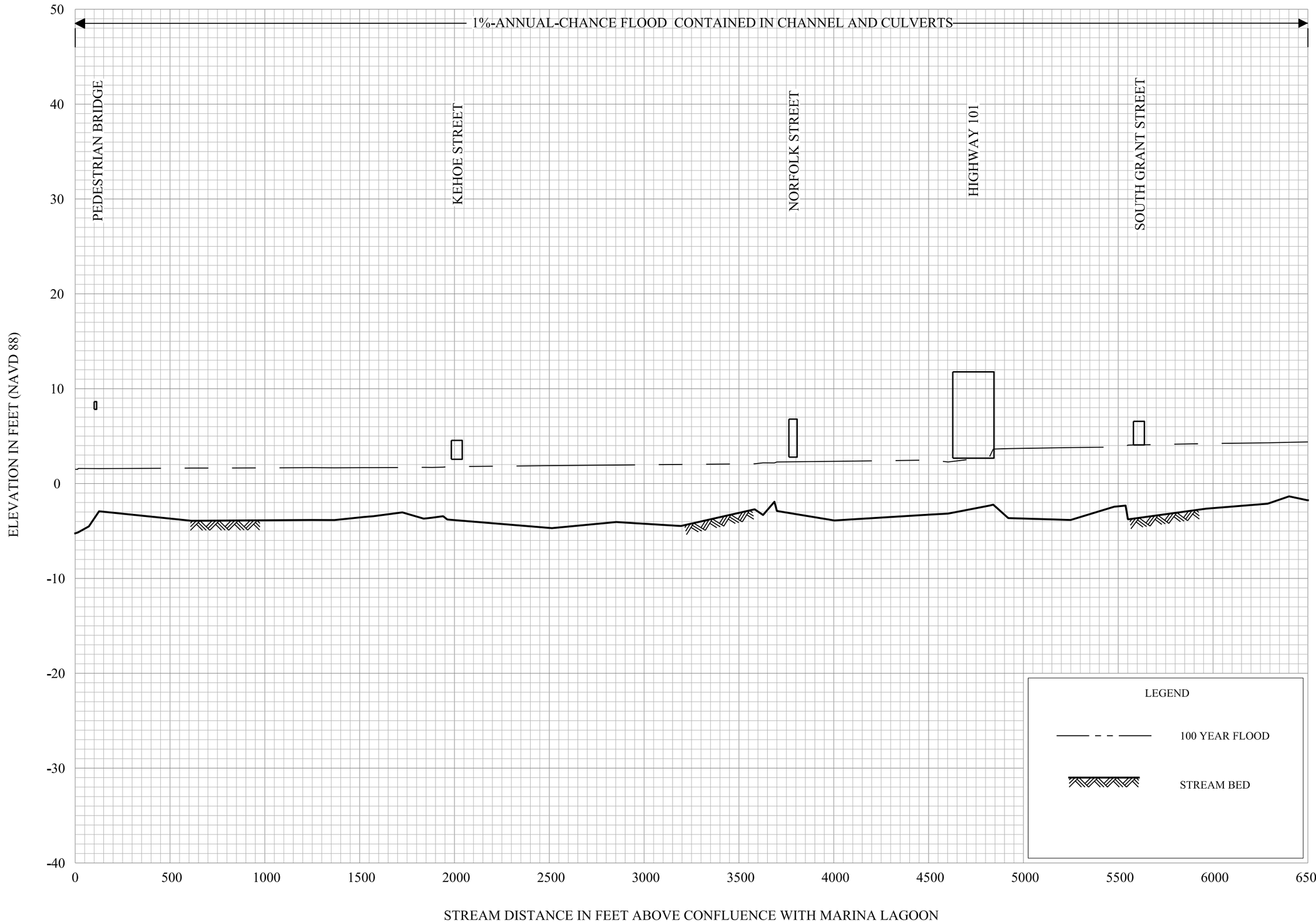
FLOOD PROFILES

WOODHAMS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS



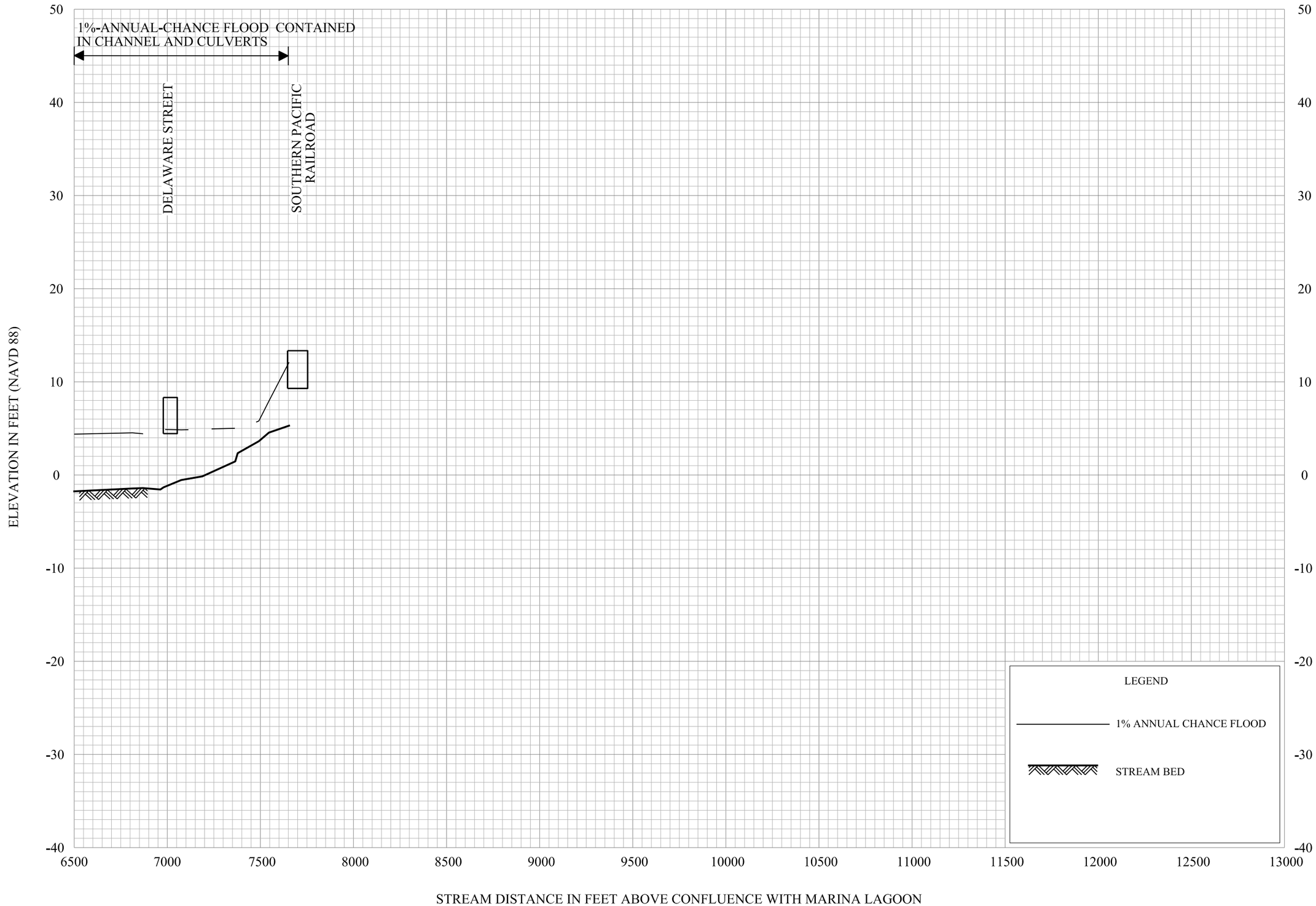
FLOOD PROFILE

16TH AVENUE DRAINAGEWAY CHANNEL

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS



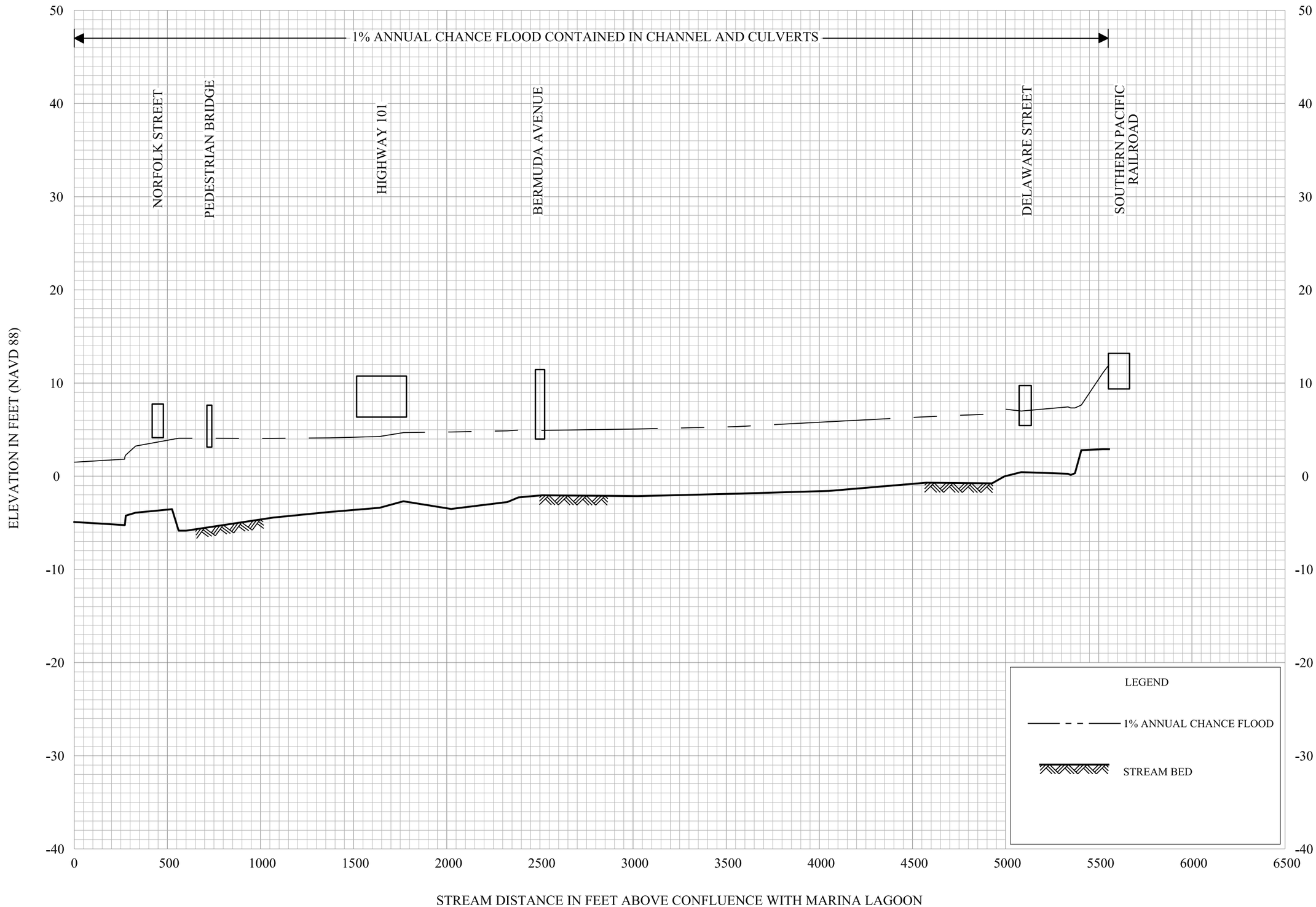
FLOOD PROFILE

16TH AVENUE DRAINAGEWAY CHANNEL

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS



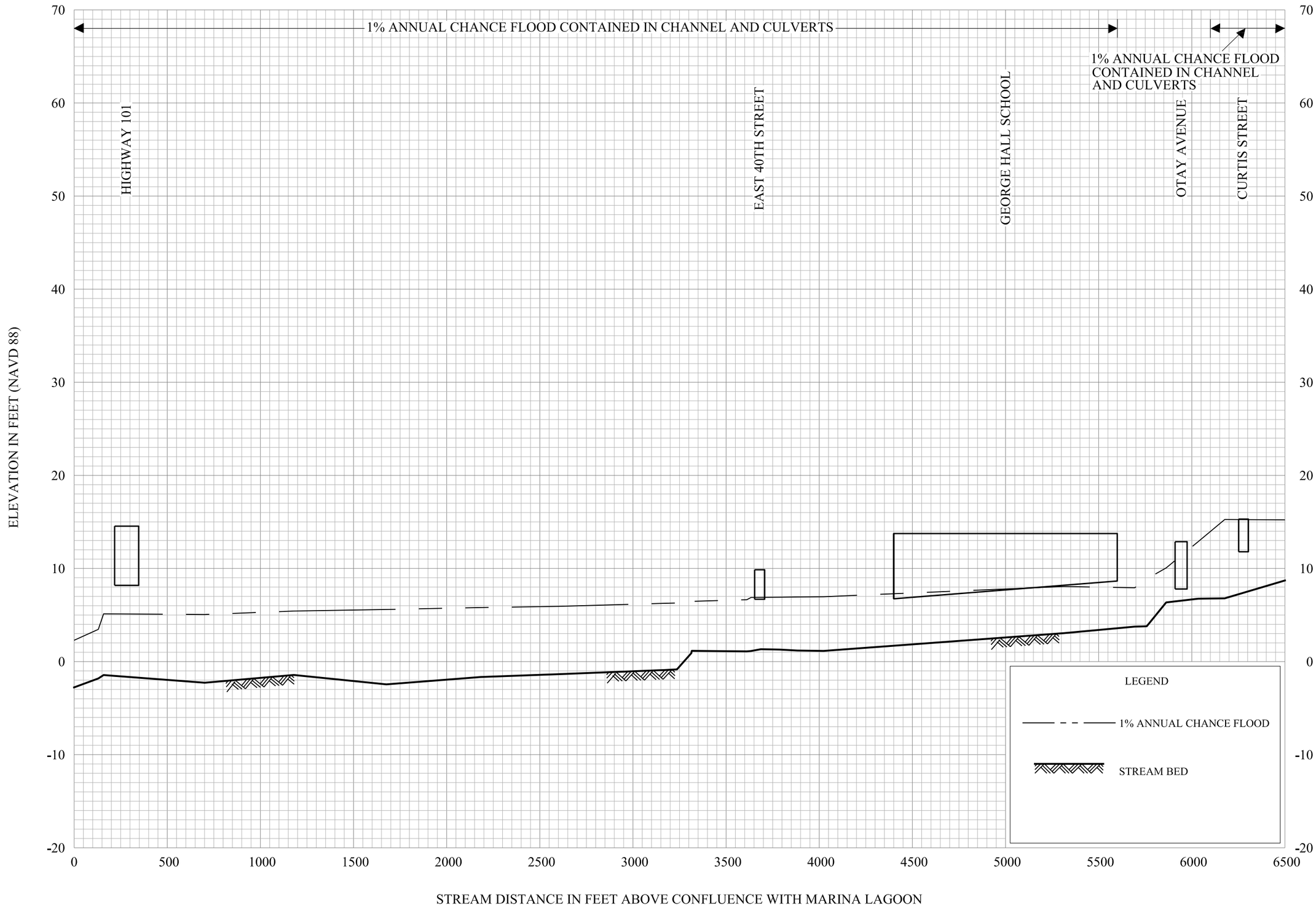
FLOOD PROFILE

19TH AVENUE DRAINAGEWAY CHANNEL

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS



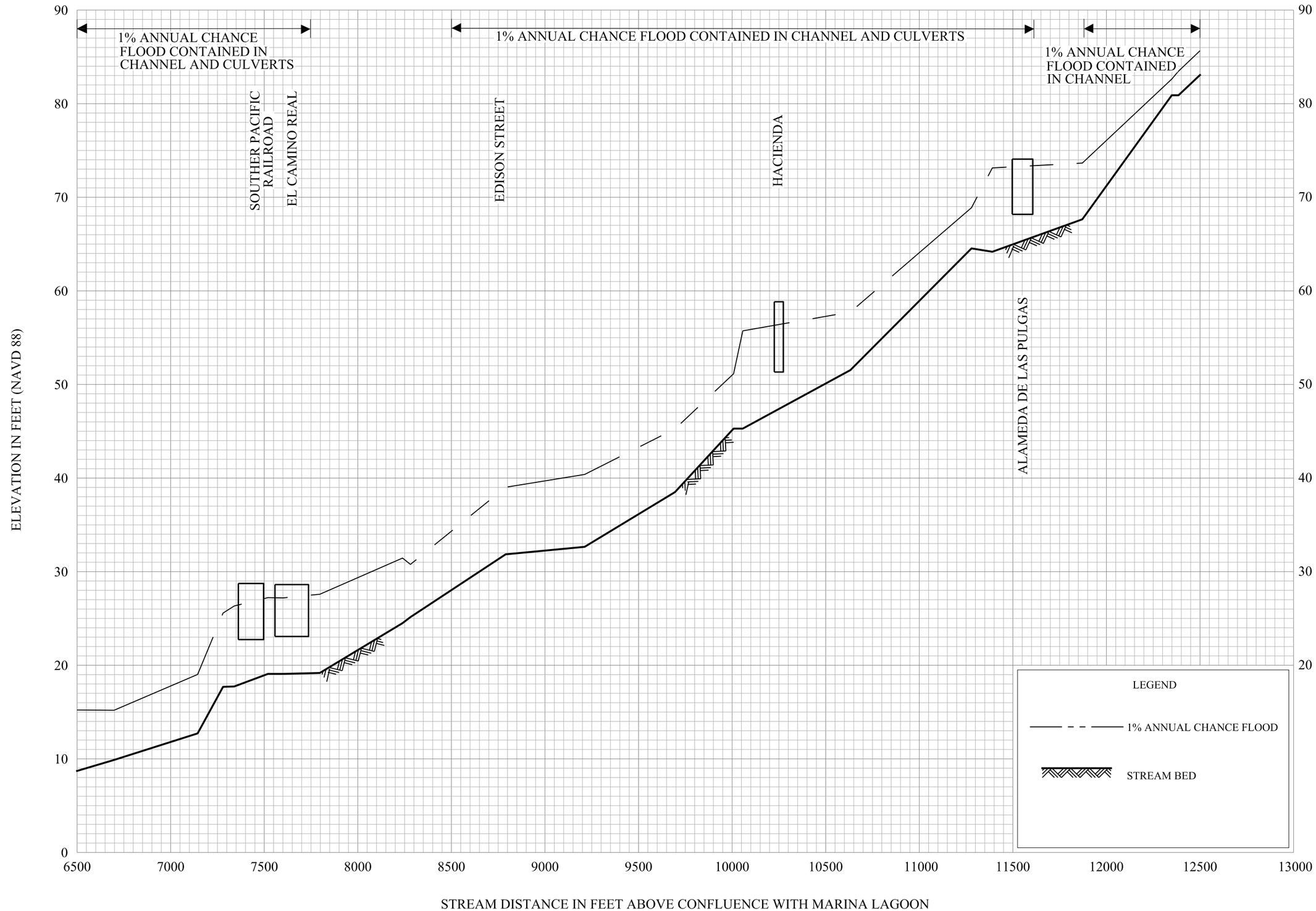
FLOOD PROFILE

LAUREL CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS



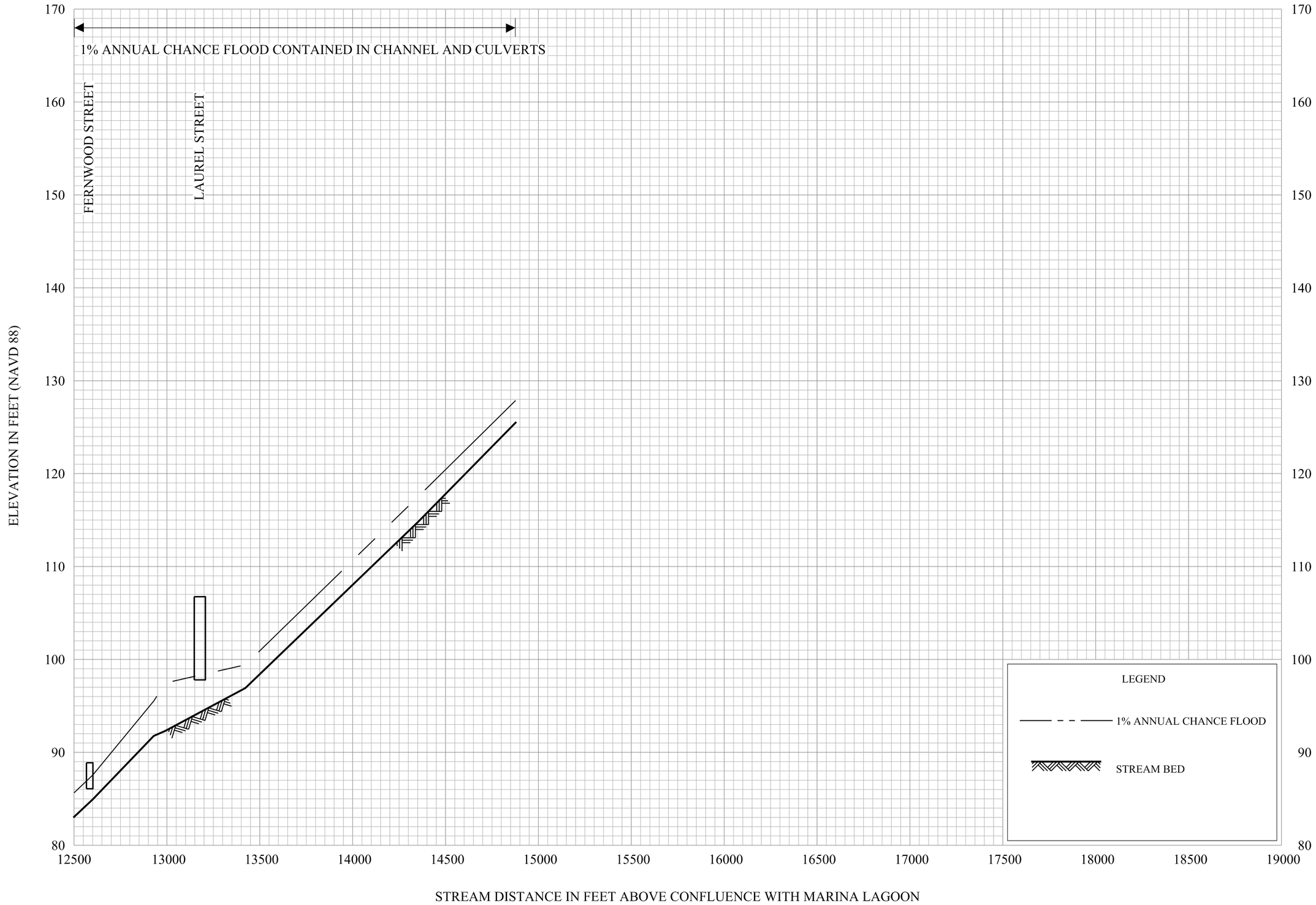
FLOOD PROFILE

LAUREL CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS



FLOOD PROFILE

LAUREL CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN MATEO COUNTY, CA

AND INCORPORATED AREAS