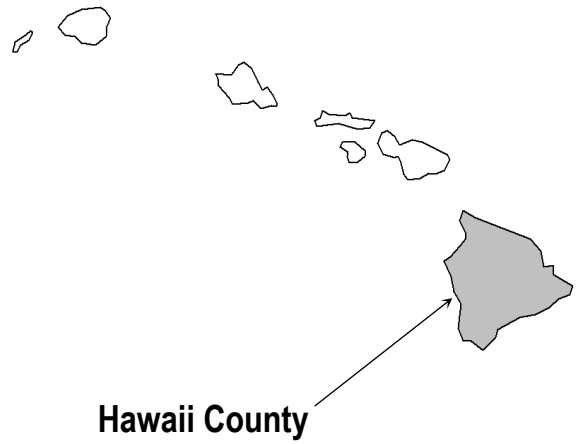
FLOOD INSURANCE STUDY

VOLUME 4 OF 11

HAWAII COUNTY, HAWAII



REVISED: September 29, 2017

Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER
155166V004B

NOTICE TO

FLOOD INSURANCE STUDY USERS

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

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

Initial FIS Effective Date:	May 3, 1982
First Revised FIS Date:	September 16, 1988 (FIRM panels only)
Second Revised FIS Date:	July 16, 1990
Third Revised FIS Date:	May 16, 1994
Fourth Revised FIS Date:	June 2, 1995
Fifth Revised FIS Date:	April 2, 2004
Sixth Revised FIS Date:	September 29, 2017

TABLE OF CONTENTS

VOLUME 1 – September 29, 2017

Page

1.0 INTRODUCTION 1

1.1 Purpose of Study 1
1.2 Authority and Acknowledgments 1
1.3 Coordination 3

2.0 AREA STUDIED 4

2.1 Scope of Study 4
2.2 Community Description 9
2.3 Principal Flood Problems 13
2.4 Flood Protection Measures 18
2.5 Levees 21

3.0 ENGINEERING METHODS 23

3.1 Hydrologic Analyses 23
3.2 Hydraulic Analyses 55
3.3 Vertical Datum 89

FIGURES

Figure 1: Hurricane tracklines within a 200 nautical mile radius of the Hawaiian Islands 14
Figure 2: Division of Stations, Windward and Leeward Groups 25
Figure 3: Stillwater Station Location Map 47
Figure 4: Transect Schematic 63
Figure 5: Transect Location Maps 65

TABLES

Table 1: Letters of Map Change 8
Table 2: Levees 22
Table 3: Summary of Discharges 27
Table 4: Summary of Historical Storm Events Selected for Development of Hurricane Storm Surge Elevations 41
Table 5: Summary of Coastal Hurricane Stillwater Elevations 42
Table 6: Transect Descriptions 73
Table 7: Transect Data 82

VOLUME 2 – September 29, 2017

FIGURES (Continued)

Figure 6: Floodway Schematic 151

TABLE OF CONTENTS (continued)
VOLUME 2 – September 29, 2017

TABLES (Continued)

Table 8: Floodway Data Tables 93
Table 9: Additional Information 155

4.0 FLOODPLAIN MANAGEMENT APPLICATIONS 90

4.1 Floodplain Boundaries 90
4.2 Floodways 91
4.3 Tsunami Inundation Boundaries 152

5.0 INSURANCE APPLICATIONS 153

6.0 FLOOD INSURANCE RATE MAP 154

7.0 OTHER STUDIES 154

8.0 LOCATION OF DATA 155

9.0 BIBLIOGRAPHY AND REFERENCES 156

VOLUME 3 – September 29, 2017

EXHIBITS

Exhibit 1 – Flood Profiles

Ainako Stream	Panels	01P-04P
Alenaio Stream	Panels	05P-21P
Auwaiakeakua Gulch	Panel	22P
Captain Cook Watercourse No. 1	Panels	23P-27P
Captain Cook Watercourse No. 1 Overflow	Panels	28P-30P
Four Mile Creek	Panels	31P-33P
Four Mile Creek (Shallow Flooding)	Panels	34P-40P
Four Mile Creek Tributary No. 1	Panels	41P-45P
Four Mile Creek Tributary No. 3	Panel	46P
Gulch 2 - Hapuna	Panels	47P-48P
Gulch 3 - Hapuna	Panel	49P
Gulch 4 - Puako	Panels	50P-51P
Hienaloli Drainageway	Panels	52P-67P
Hienaloli Draingeway Splitflow	Panel	68P
Holualoa Drainageway	Panels	69P-94P

VOLUME 4 – September 29, 2017

Exhibit 1 – Flood Profiles (continued)

Holualoa Drainageway Splitflow	Panel	95P

TABLE OF CONTENTS (continued)
VOLUME 4 – September 29, 2017 (Continued)

Exhibit 1 – Flood Profiles (continued)

Holualoa Drainageway Tributary	Panels	96P-99P
Holualoa Drainageway Tributary Splitflow	Panels	100P
Honokaa Drainage A	Panels	101P-103P
Honokaa Drainage B	Panel	104P
Honokaa Drainage C	Panel	105P
Honokaa Drainage D	Panel	106P
Honokaa Drainage No. 1	Panels	107P-111P
Honokaa Drainage No. 2	Panels	112P-116P
Honokaa Drainage No. 3	Panels	117P-122P
Horseshoe Bend Drainageway	Panels	123P-134P
Kaluiiki Branch	Panels	135P-140P
Kamakoa Gulch	Panels	141P-143P
Kamuela Stream	Panel	144P
Kaumalumalu Drainageway	Panels	145P-157P
Keopu Drainageway	Panels	158P-168P
Keopu Drainageway Overflow	Panels	169P-170P
Keopu Drainageway Overflow Tributary	Panel	171P
Kupulau Flood Ditch	Panel	172P
Lower Lanimaumau Stream	Panels	173P-176P
Mohouli Street Drainage	Panels	177P-178P
Ninole Gulch	Panels	179P-180P

VOLUME 5 – September 29, 2017

Exhibit 1 – Flood Profiles (continued)

Palai Stream*	Panels	181P-192P
Palai Stream A*	Panels	193P-194P
Palai Stream A Splitflow No. 3	Panel	195P
Palai Stream C (Downstream of Kupalau Flood Ditch)	Panels	196P-197P
Palai Stream C (Upstream of Kupulau Flood Ditch)	Panel	198P
Palai Stream D	Panels	199P-200P
Palai Stream E	Panel	201P
Palai Stream F	Panel	202P
Queen Kaahumanu Highway Split Flow	Panel	203P-207P
Queen Kaahumanu Highway Tributary	Panel	208P-209P
South Kona Watercourse No. 1	Panels	210P-241P
South Kona Watercourse No. 2	Panels	242P-257P

VOLUME 6 – September 29, 2017

Exhibit 1 – Flood Profiles (continued)

South Kona Watercourse No. 3	Panels	258P-273P
South Kona Watercourse No. 4	Panels	274P-284P
South Kona Watercourse No. 5	Panels	285P-303P
South Kona Watercourse No. 5A	Panels	304P-305P
South Kona Watercourse No. 6	Panels	306P-325P
South Kona Watercourse No. 7	Panels	326P-342P

*Profiles for Palai Stream 188P(a) and Palai Stream A 193P not printed

TABLE OF CONTENTS (continued)

VOLUME 7 – September 29, 2017

Exhibit 1 – Flood Profiles (continued)

South Kona Watercourse No. 8	Panels	343P-363P
South Kona Watercourse No. 8A	Panel	364P
South Kona Watercourse No.9	Panels	365P-374P
South Kona Watercourse No. 10	Panels	375P-387P
South Kona Watercourse No. 11	Panels	388P-402P
South Kona Watercourse No. 12	Panels	403P-423P

VOLUME 8 – September 29, 2017

Exhibit 1 – Flood Profiles (continued)

South Kona Watercourse No. 13	Panels	424P-437P
South Kona Watercourse No. 14	Panels	438P-445P
South Kona Watercourse No. 15	Panels	446P-451P
South Kona Watercourse No. 16	Panels	452P-457P
South Kona Watercourse No.17	Panels	458P-470P
South Kona Watercourse No.18	Panels	471P-475P
South Kona Watercourse No. 19	Panels	476P-480P
South Kona Watercourse No. 20	Panels	481P-491P
South Kona Watercourse No. 21	Panels	492P-502P
South Kona Watercourse No. 22	Panels	503P-509P

VOLUME 9 – September 29, 2017

Exhibit 1 – Flood Profiles (continued)

South Kona Watercourse No. 23	Panels	510P-516P
South Kona Watercourse No. 24	Panels	517P-520P
South Kona Watercourse No. 25	Panels	521P-536P
Tributary 1 to Ainako Stream	Panels	537P-538P
Tributary 2 to Ainako Stream	Panels	539P-540P
Tributary 3 to Ainako Stream	Panels	541P-543P
Tributary 4 to Ainako Stream	Panel	544P
Tributary 1 to Waiakea Tributary No. 3A	Panel	545P
Tributary 2 to Waiakea Tributary No. 3A	Panel	546P
Tributary 3 to Waiakea Tributary No. 3A	Panels	547P-548P
Tributary 4 to Waiakea Tributary No. 3A	Panels	549P-550P
Tributary 1 to Waiakea Tributary No. 3B	Panel	551P
Tributary 2 to Waiakea Tributary No. 3B	Panel	552P
Tributary 1 to Waipahoehoe Stream	Panels	553P-555P
Tributary to Mohouli Street Drainage	Panel	556P
Unnamed Stream No. 1	Panels	557P-561P
Unnamed Stream No. 3	Panels	562P-565P
Unnamed Tributary to Alenaio Stream	Panels	566P-571P
Upper Lanimaumau Stream	Panels	572P-579P

TABLE OF CONTENTS (continued)

VOLUME 10 – September 29, 2017

Exhibit 1 – Flood Profiles (continued)

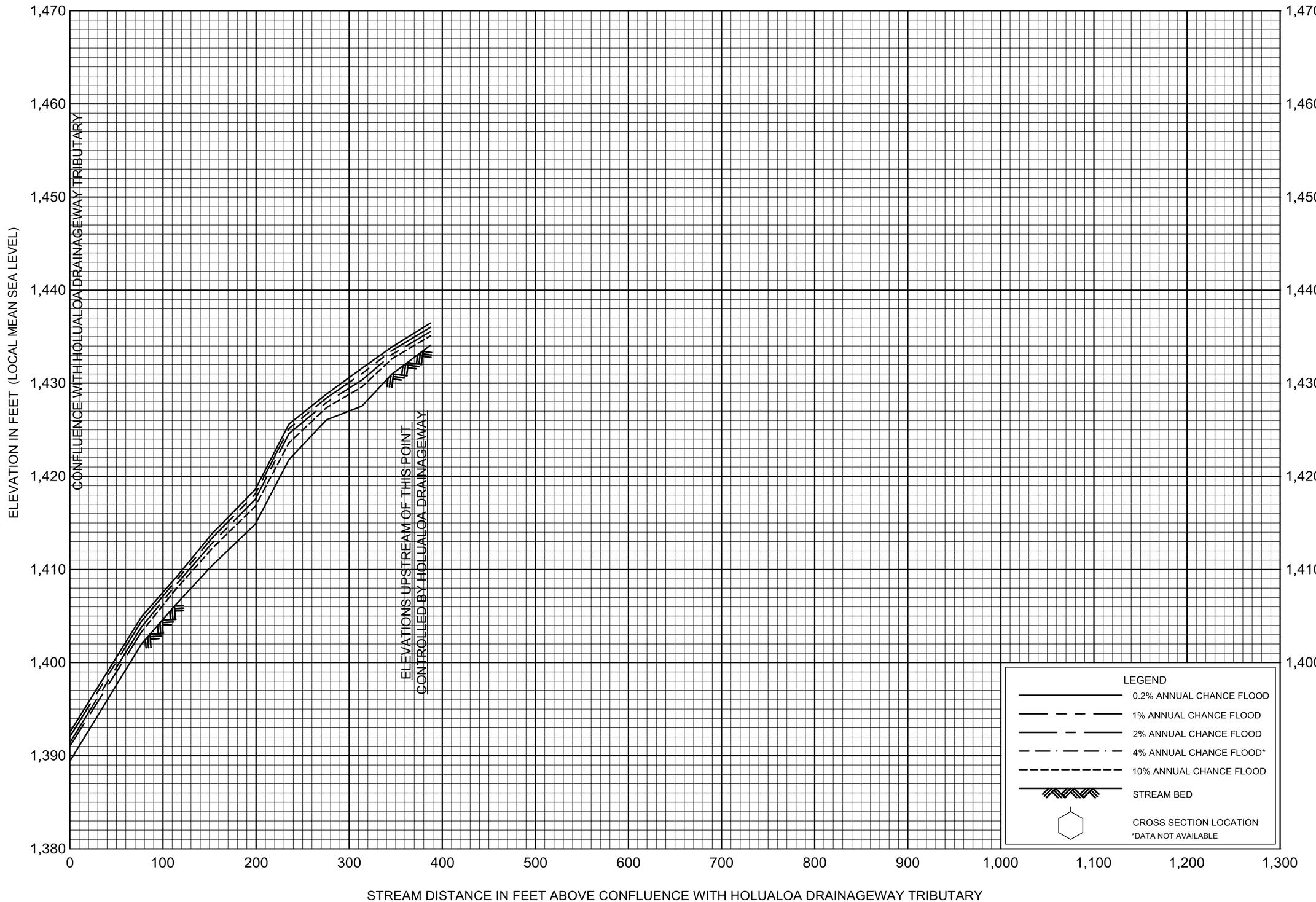
Waiaha Drainageway	Panels	580P-612P
Waiaha Drainageway Splitflow No. 1	Panels	613P-614P
Waiaha Drainageway Splitflow No. 2	Panels	615P-622P
Waiaha Drainageway Splitflow No.2 Loop One	Panel	623P
Waiaha Drainageway Splitflow No. 2 Loop Two	Panel	624P
Waiaha Drainageway Splitflow No. 3	Panel	625P
Waiaha Drainageway Splitflow No. 6	Panels	626P-627P
Waiaha Drainageway Tributary	Panels	628P-633P
Waiakea Stream	Panels	634P-650P
Waiakea Tributary No. 1	Panels	651P-652P
Waiakea Tributary No. 2	Panels	653P-655P
Waiakea Tributary No. 3	Panels	656P-657P
Waiakea Tributary No. 3A	Panels	658P-663P
Waiakea Tributary No. 3B	Panels	664P-668P

VOLUME 11 – September 29, 2017

Waikoloa Stream	Panels	669P-674P
Waikoloa Stream Split Flow	Panel	675P
Waikoloa Stream Tributary	Panels	676P-678P
Waipahoehoe Stream	Panels	679P-680P

Exhibit 2 – Tsunami Coastline Profile Panels 01T-13T

Exhibit 3 – Flood Insurance Rate Map Index (Published Separately)
Flood Insurance Rate Map (Published Separately)

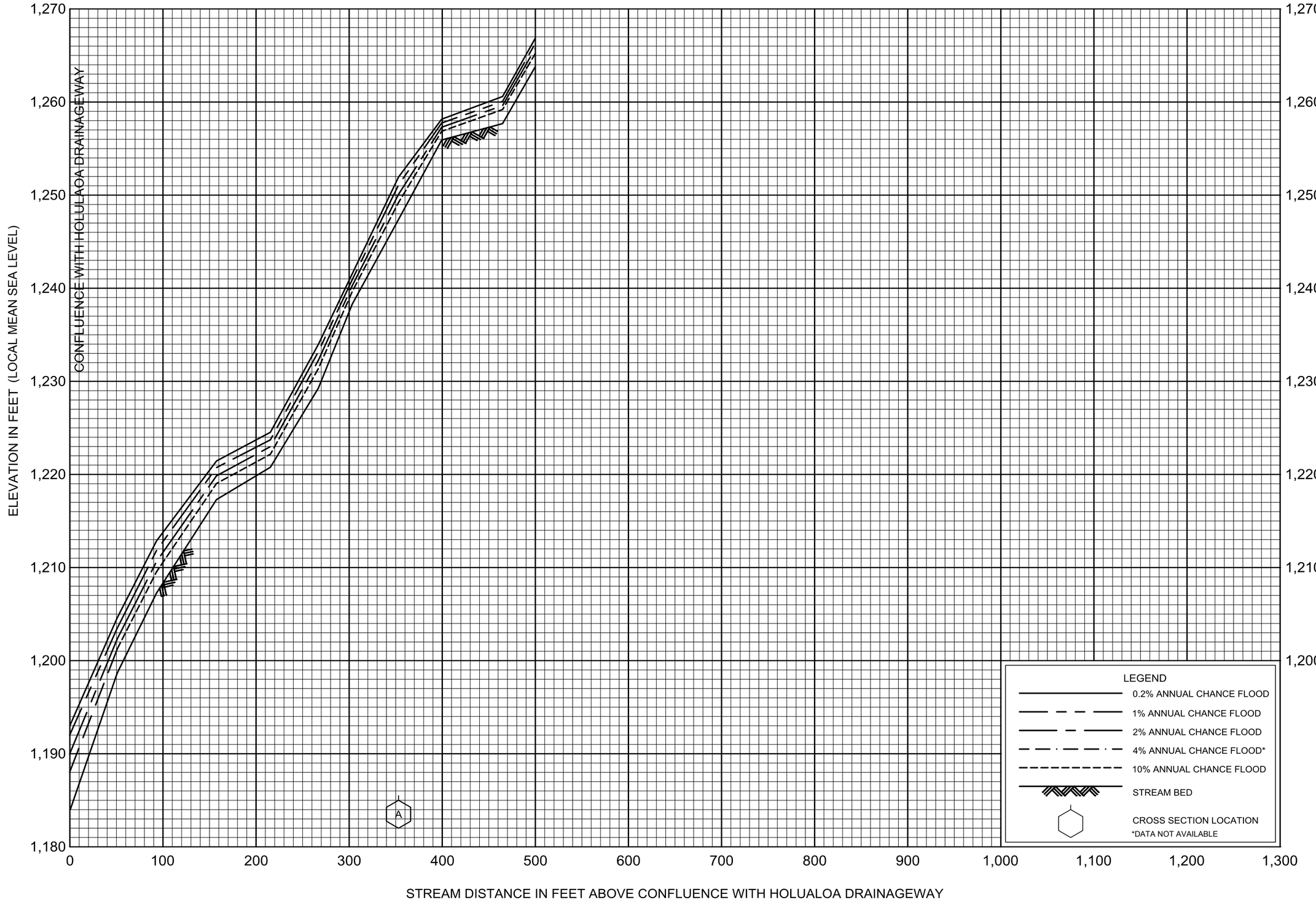


FLOOD PROFILES

HOLUALOA DRAINAGEWAY SPLITFLOW

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

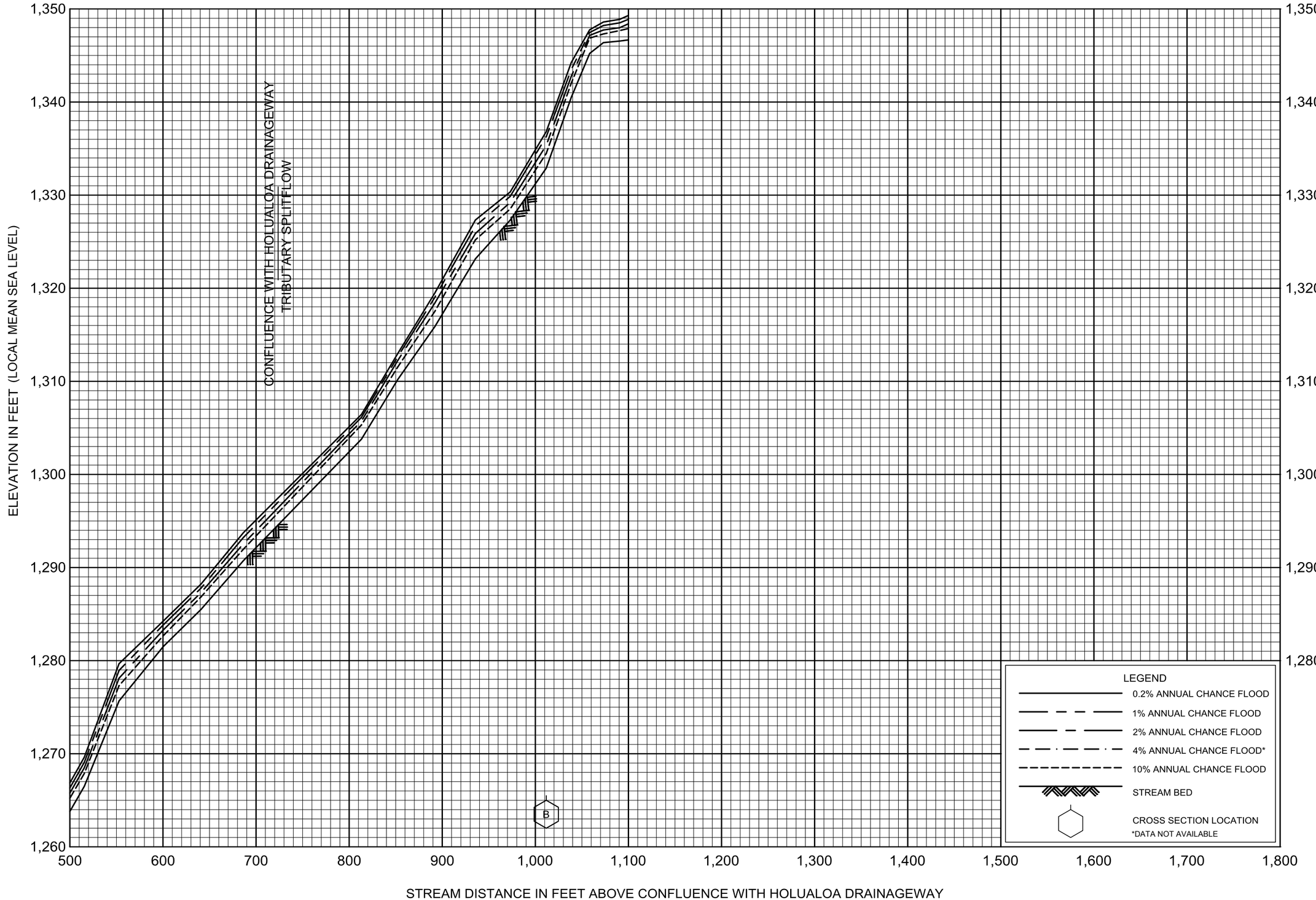


FLOOD PROFILES

HOLUALOA DRAINAGEWAY TRIBUTARY

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

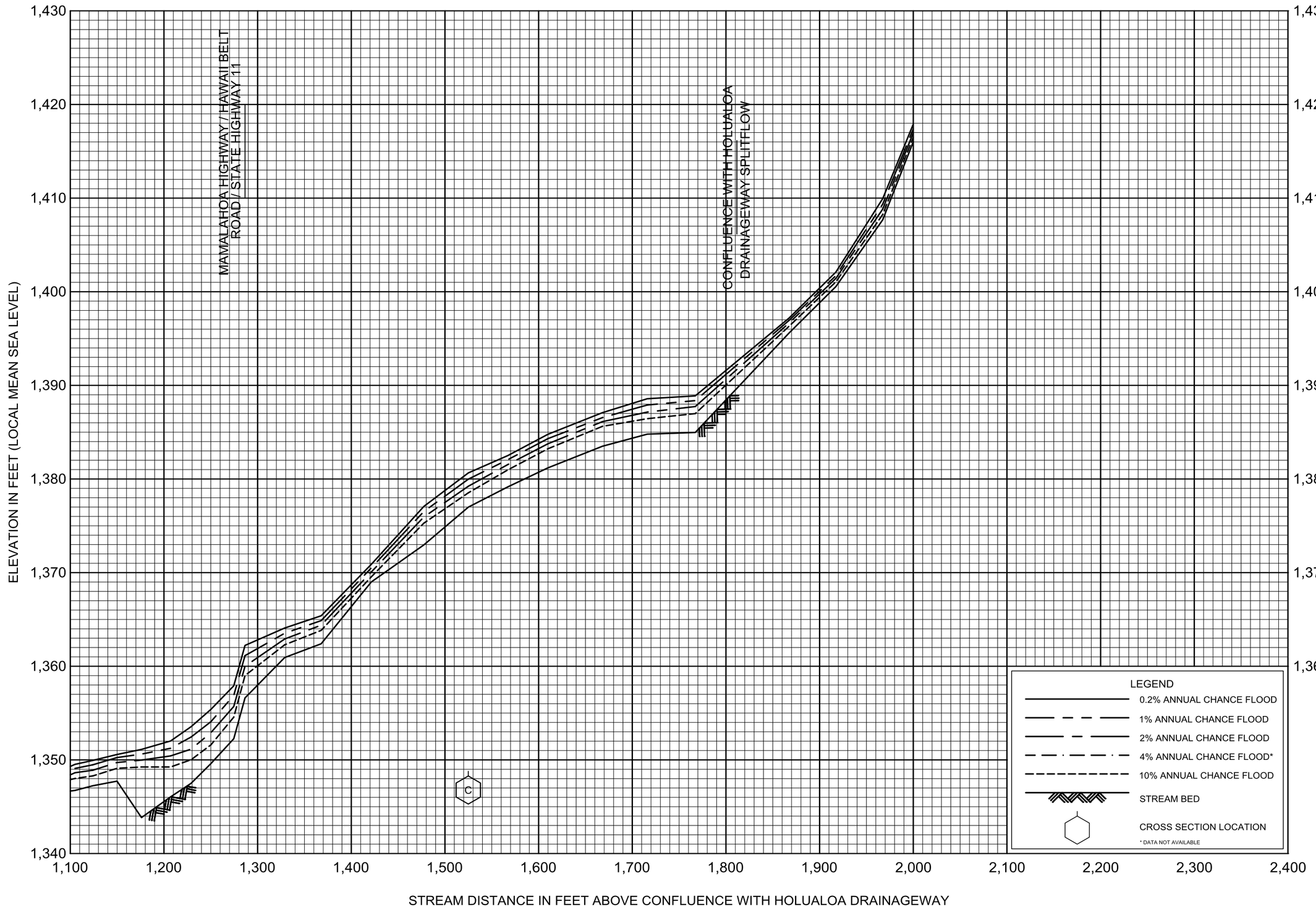


FLOOD PROFILES

HOLUALOA DRAINAGEWAY TRIBUTARY

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI



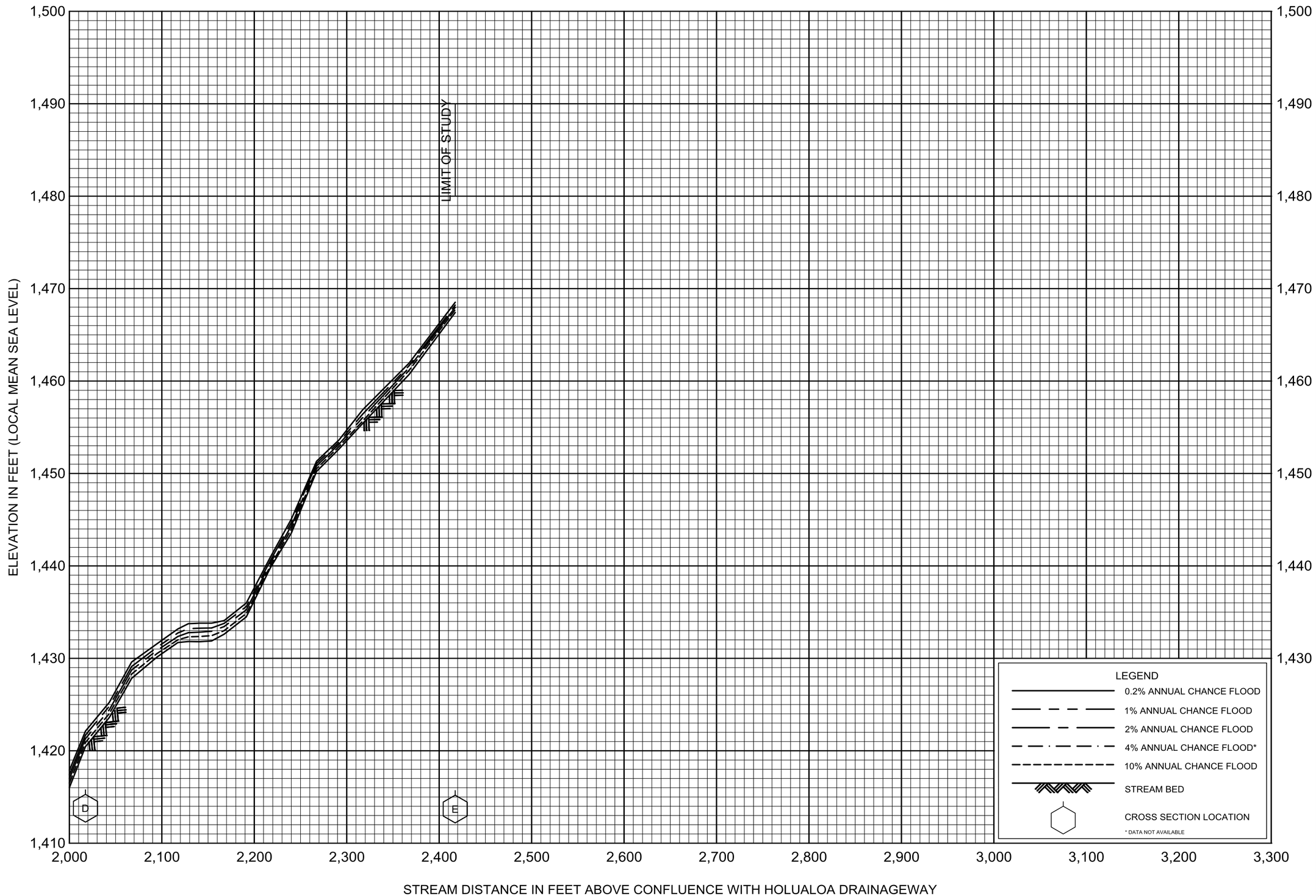
FLOOD PROFILES

HOLUALOA DRAINAGEWAY TRIBUTARY

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

98P

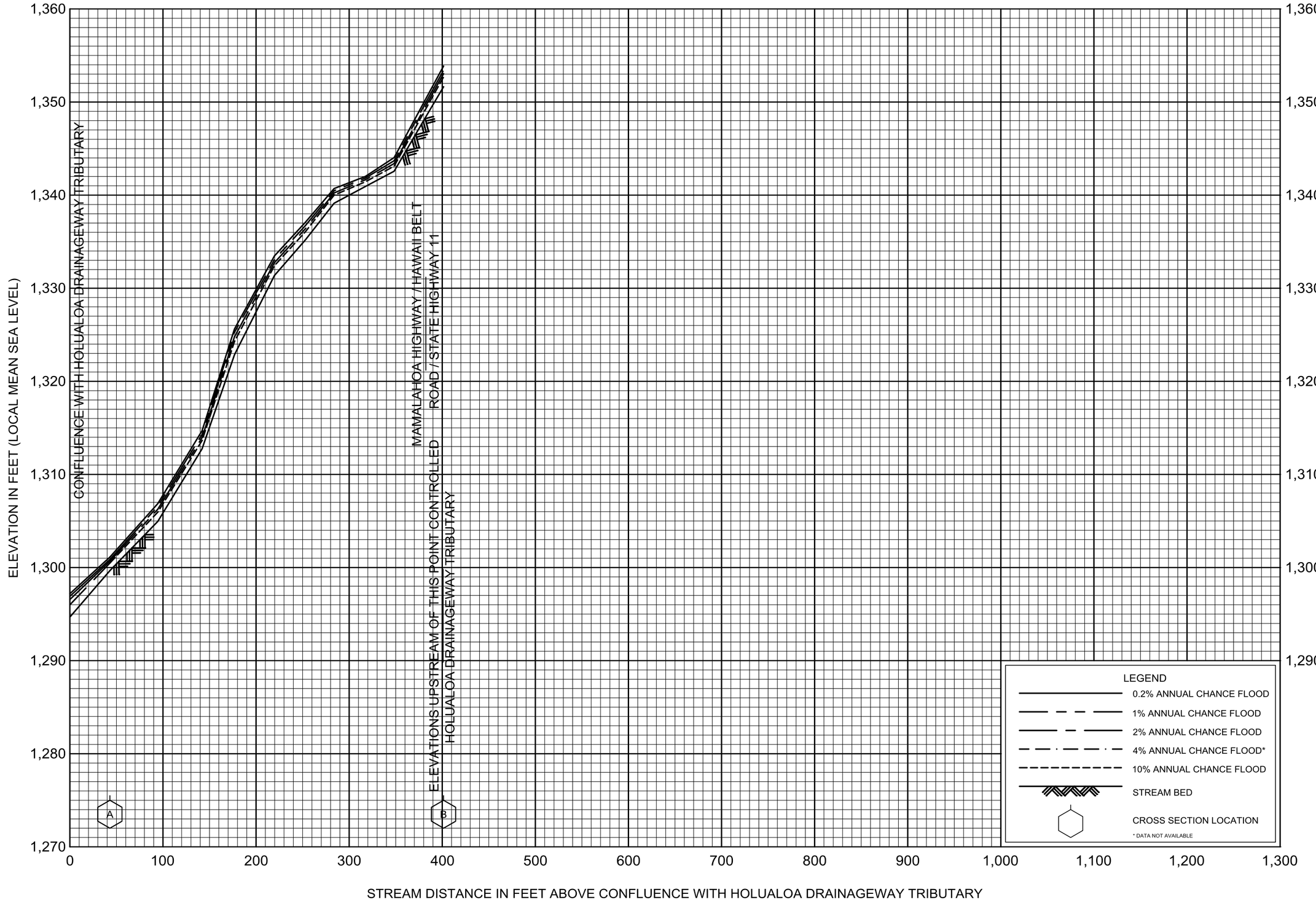


FLOOD PROFILES

HOLUALOA DRAINAGEWAY TRIBUTARY

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI



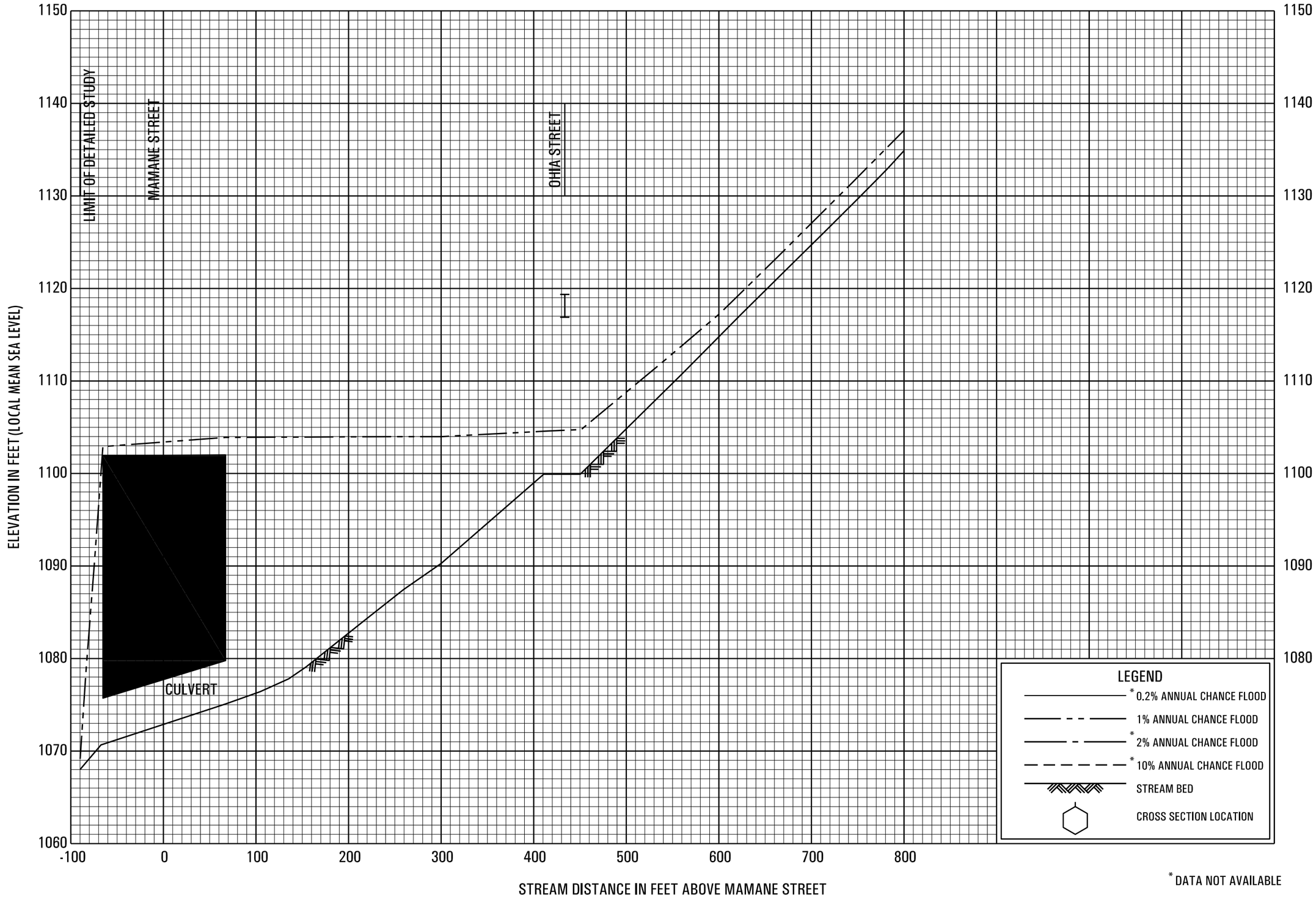
FLOOD PROFILES

HOLUALOA DRAINAGEWAY TRIBUTARY SPLITLFOW

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

100P



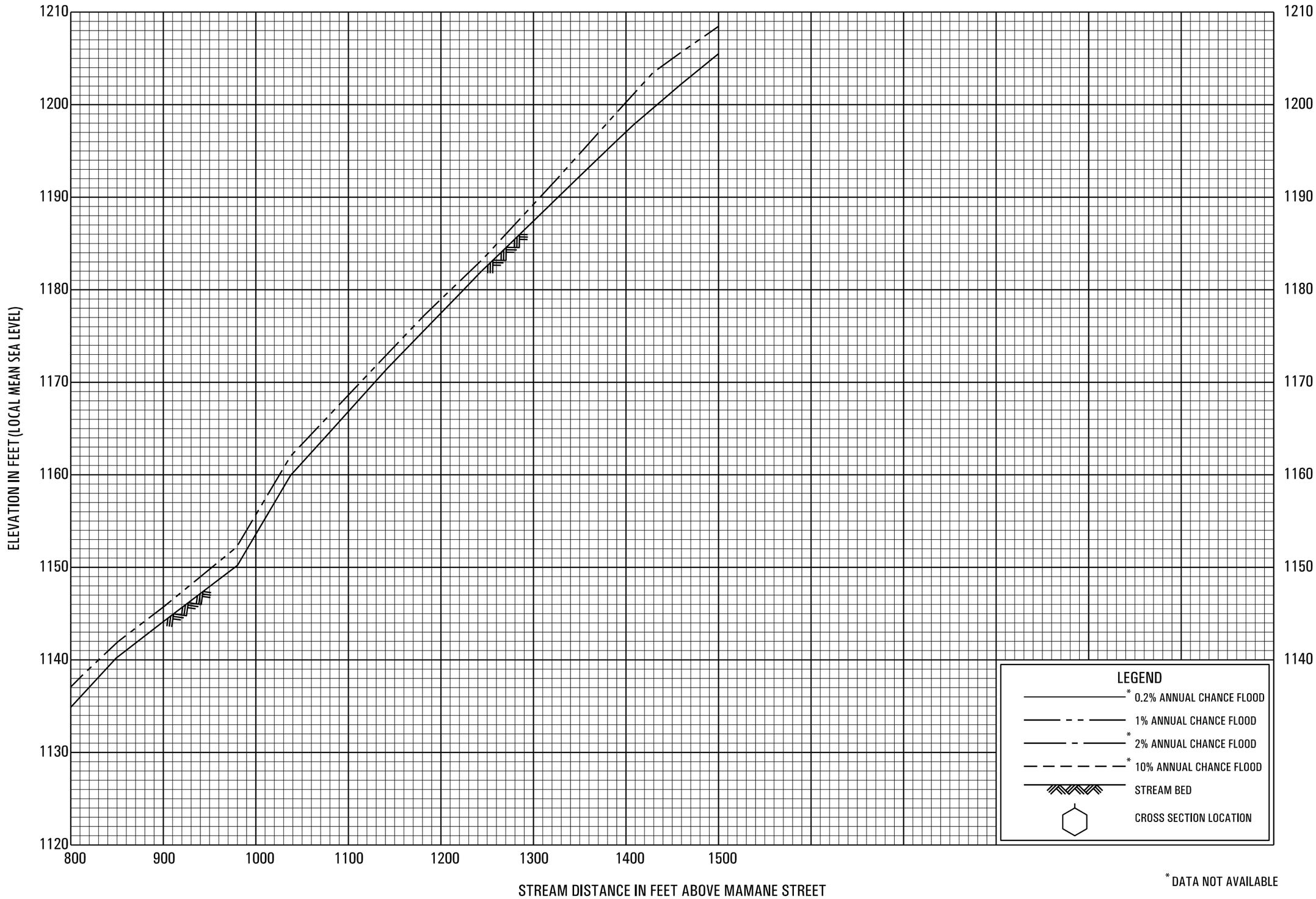
FLOOD PROFILES

HONOKAA DRAINAGE A

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

101P



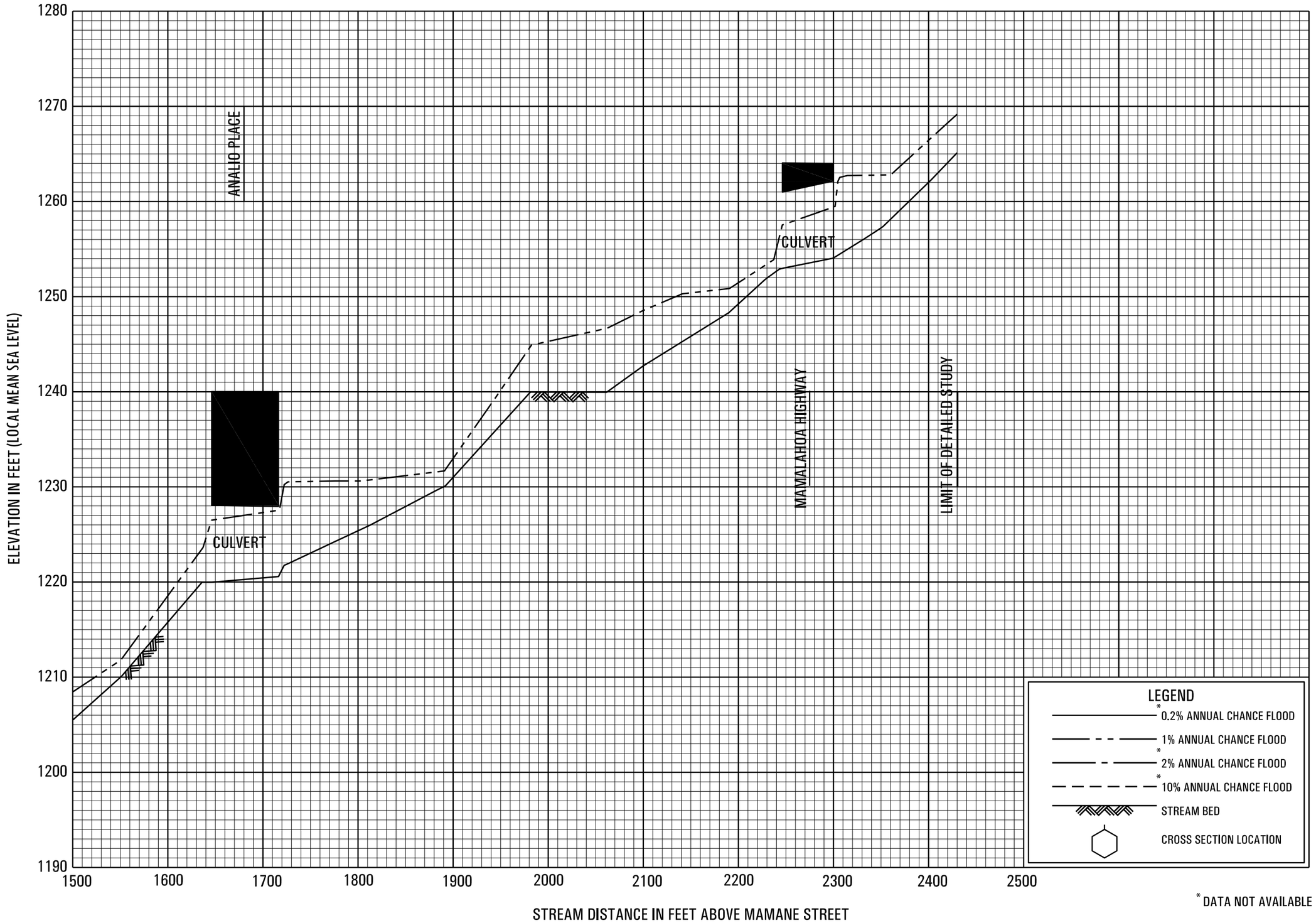
FLOOD PROFILES

HONOKAA DRAINAGE A

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

102P

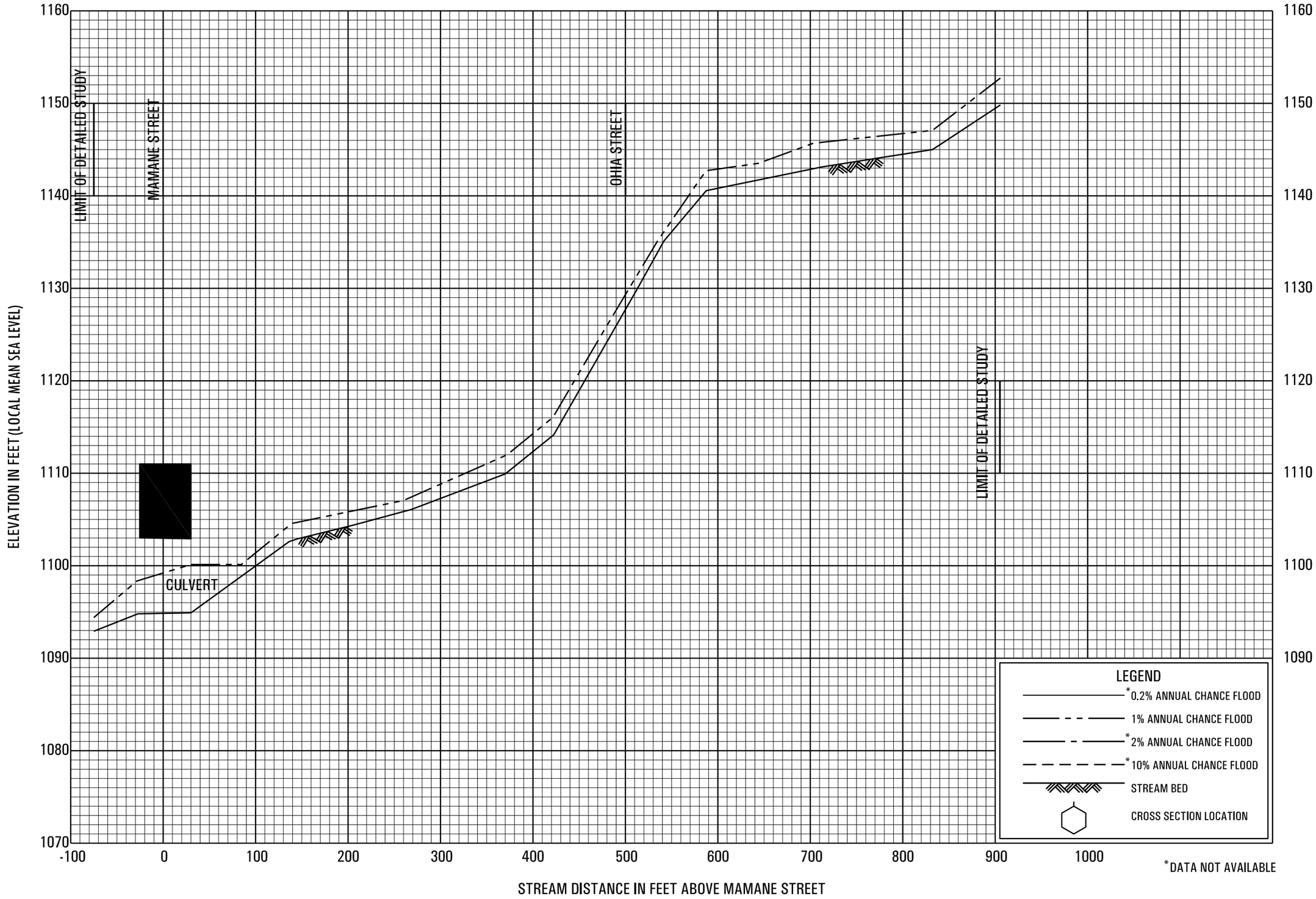


FLOOD PROFILES

HONOKAA DRAINAGE A

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI



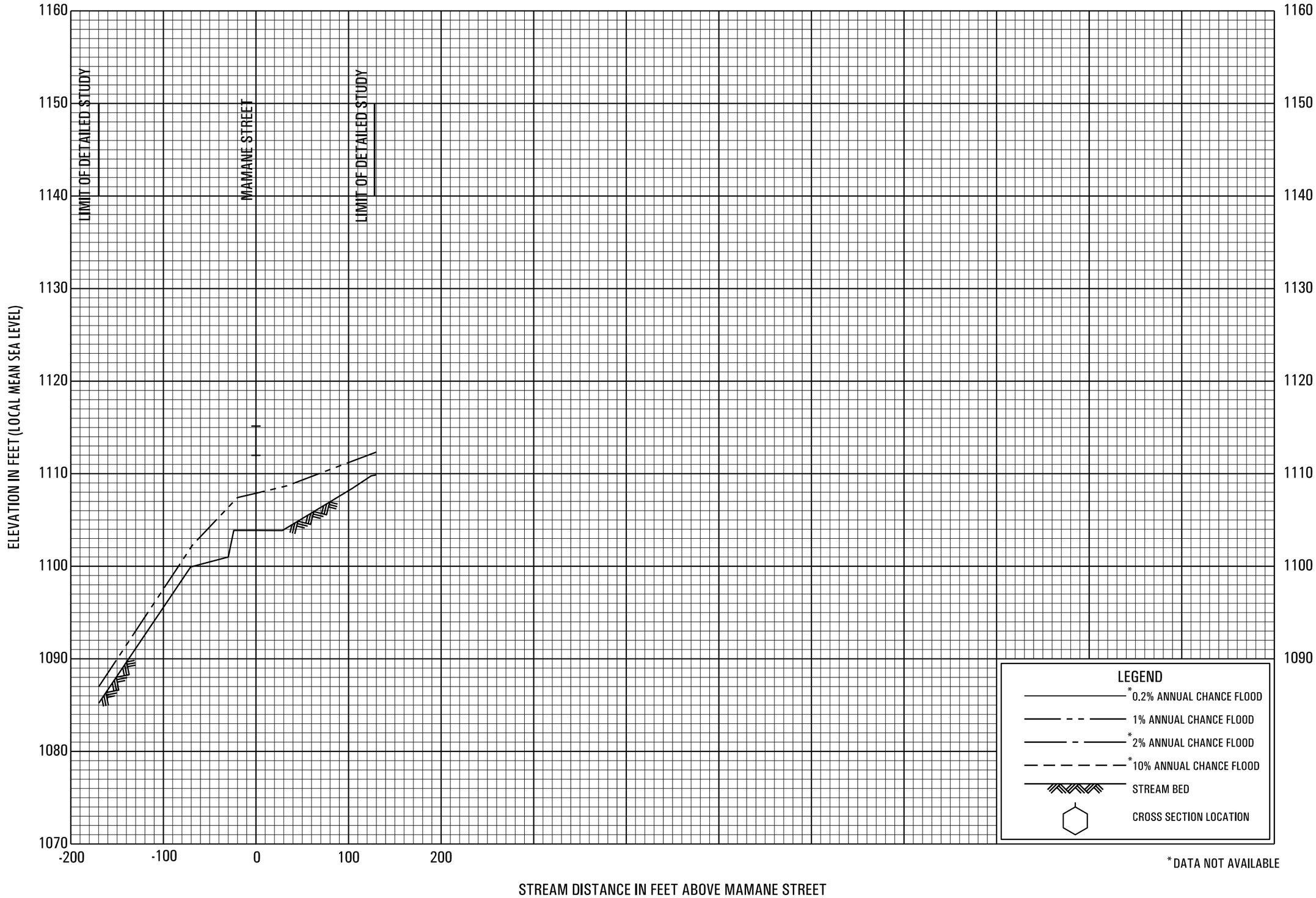
FLOOD PROFILES

HONOKAA DRAINAGE B

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

104P



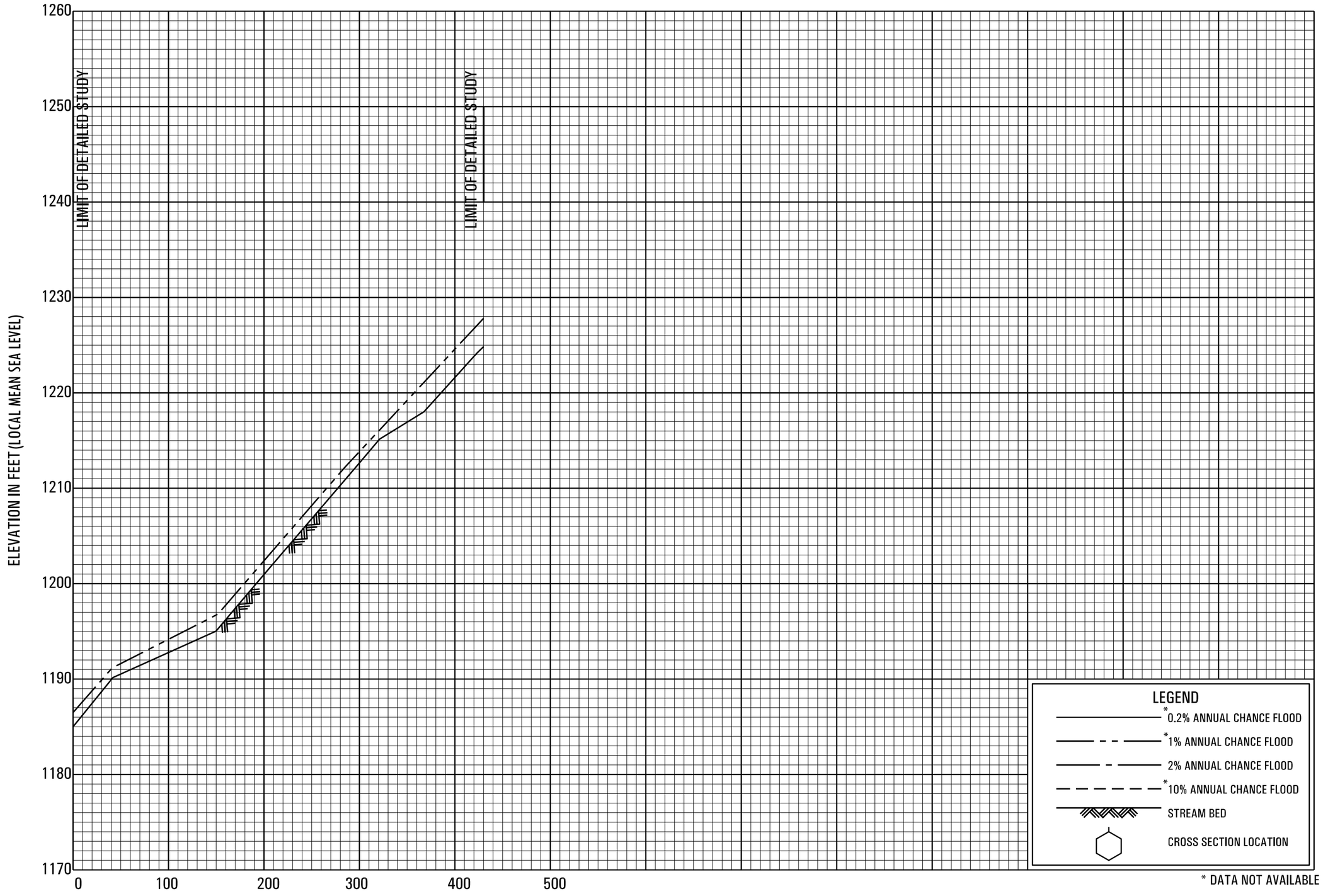
FLOOD PROFILES

HONOKAA DRAINAGE C

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

105P



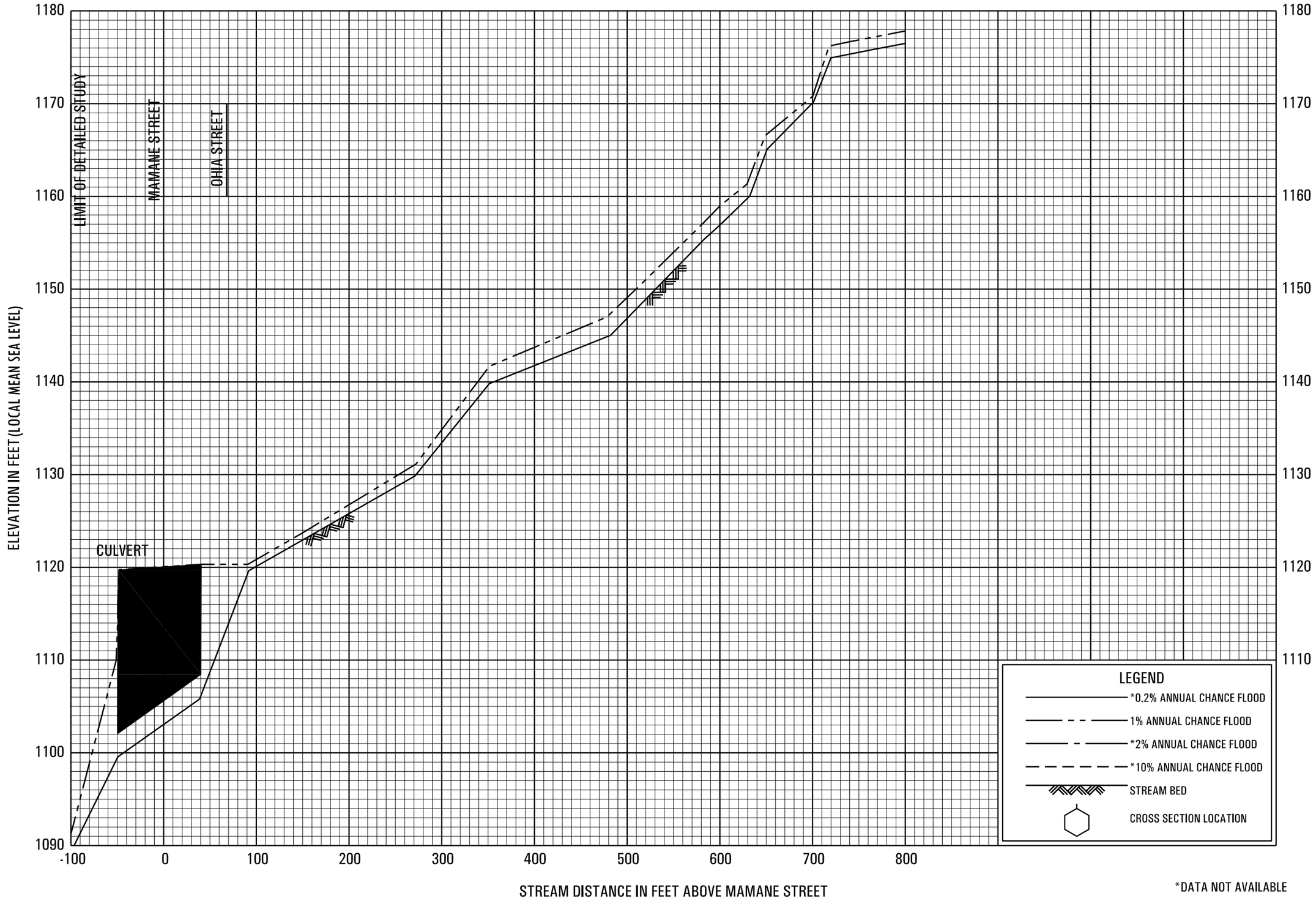
FLOOD PROFILES

HONOKAA DRAINAGE D

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

106P

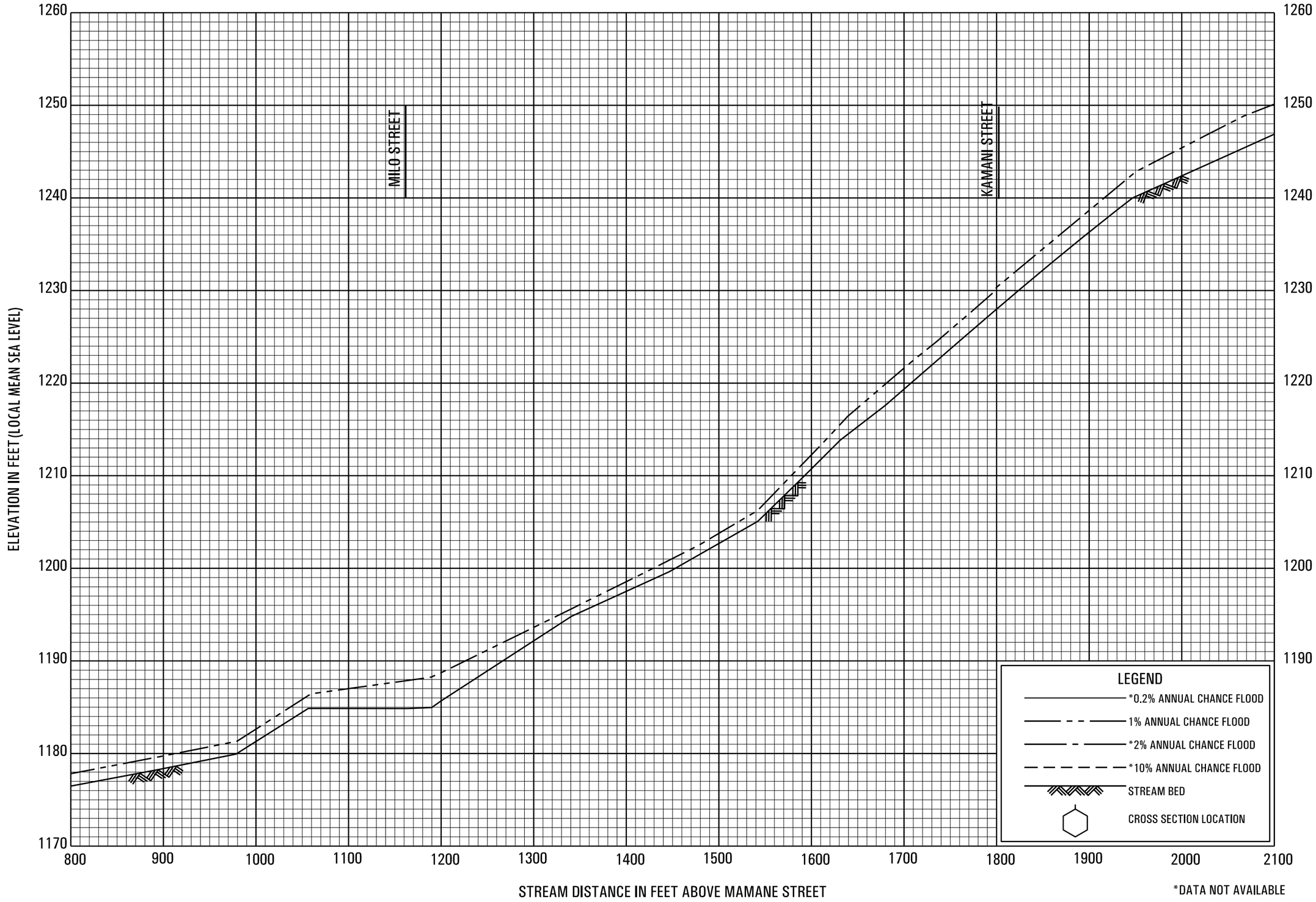


FLOOD PROFILES

HONOKAA DRAINAGE NO. 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI



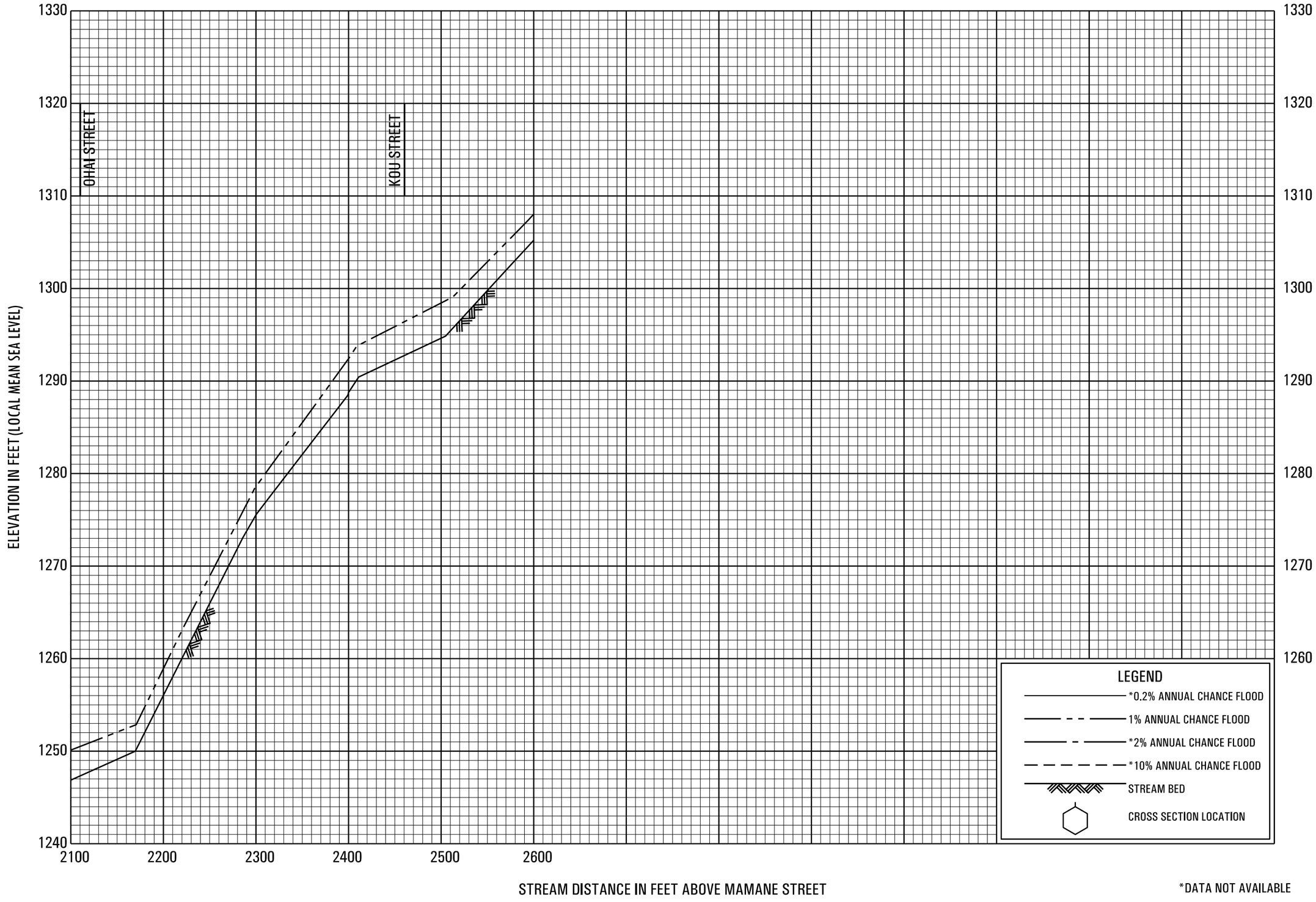
FLOOD PROFILES

HONOKAA DRAINAGE NO. 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

108P



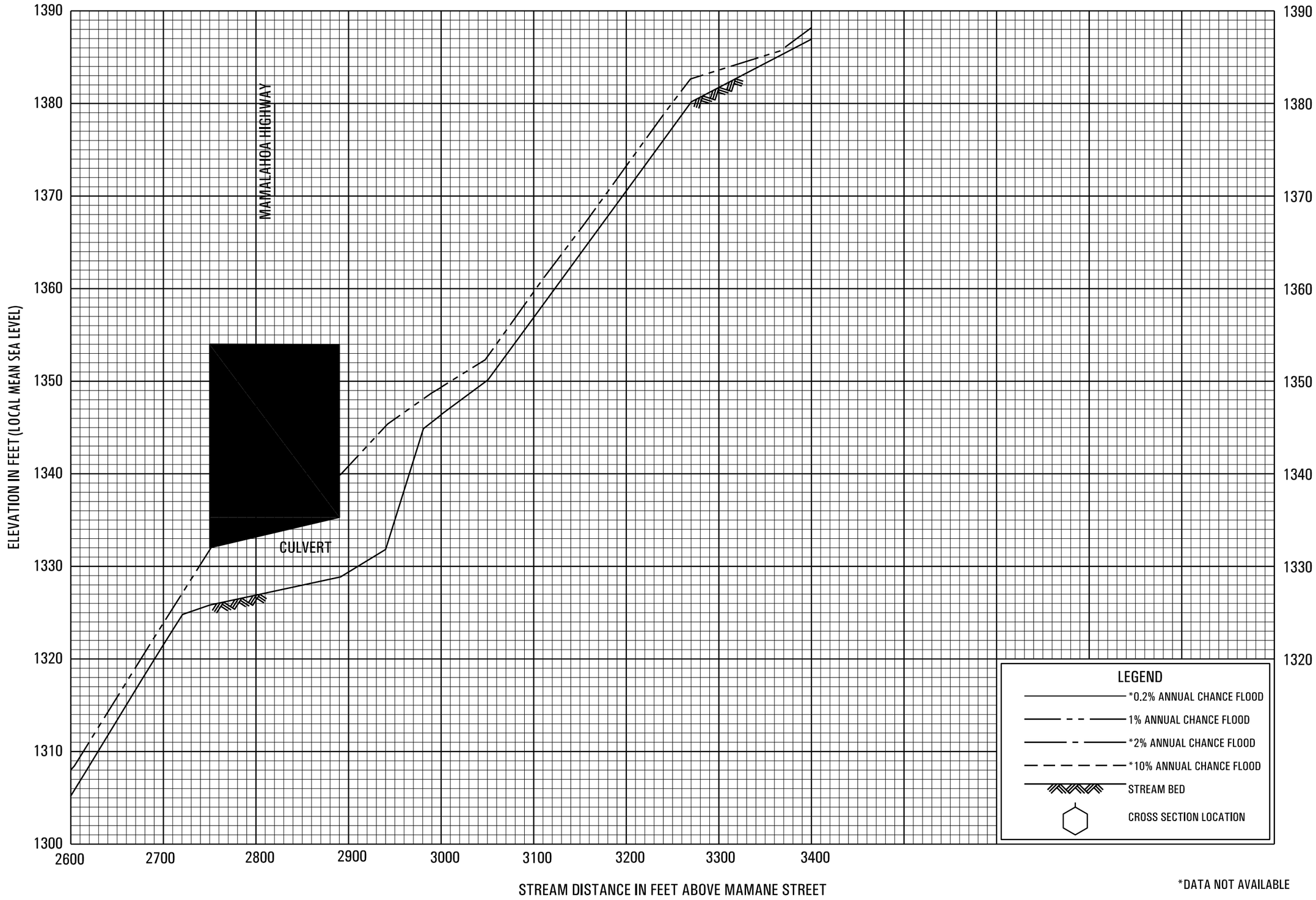
*DATA NOT AVAILABLE

FLOOD PROFILES

HONOKAA DRAINAGE NO. 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI



*DATA NOT AVAILABLE

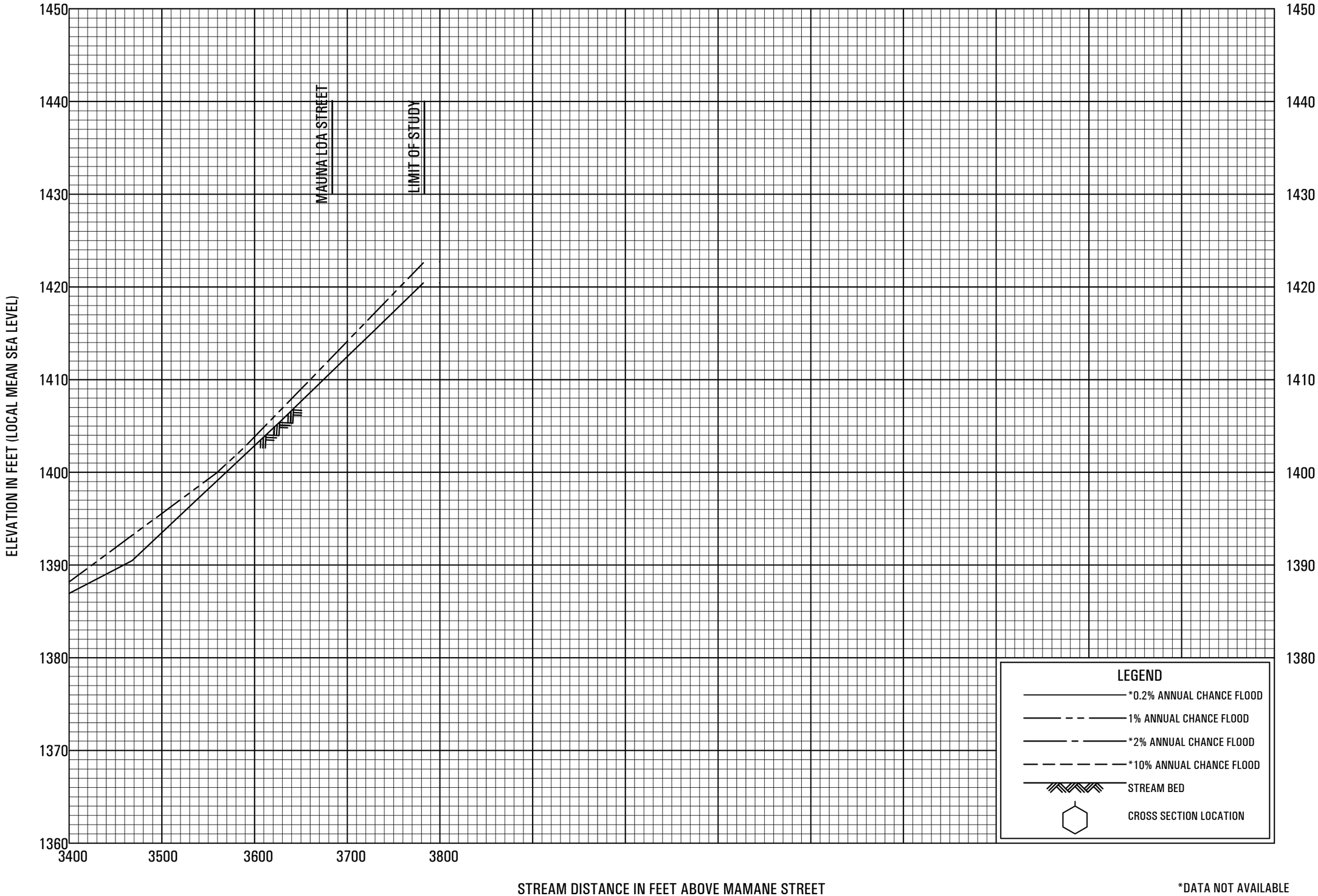
FLOOD PROFILES

HONOKAA DRAINAGE NO. 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

110P



*DATA NOT AVAILABLE

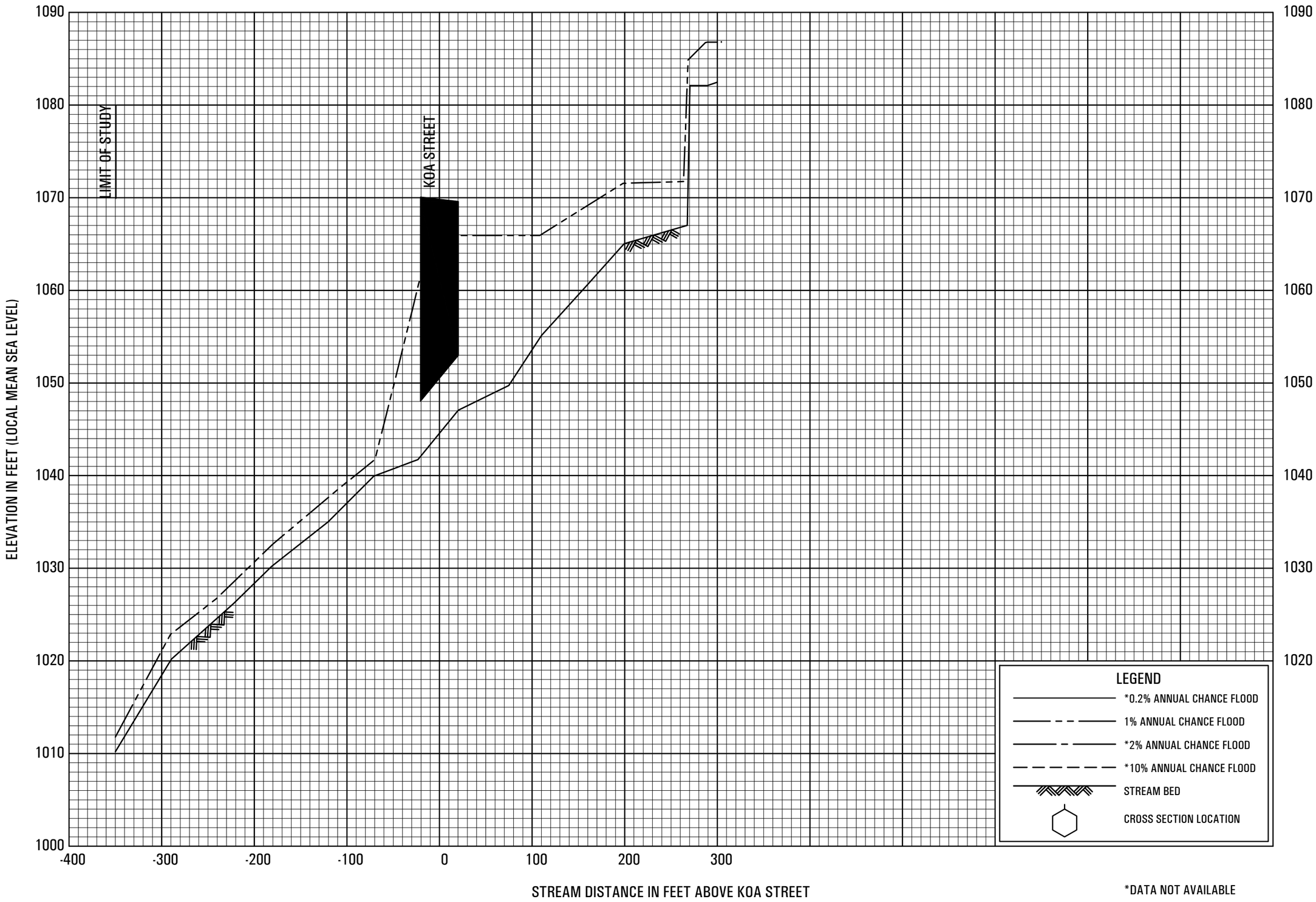
FLOOD PROFILES

HONOKAA DRAINAGE NO. 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

111P

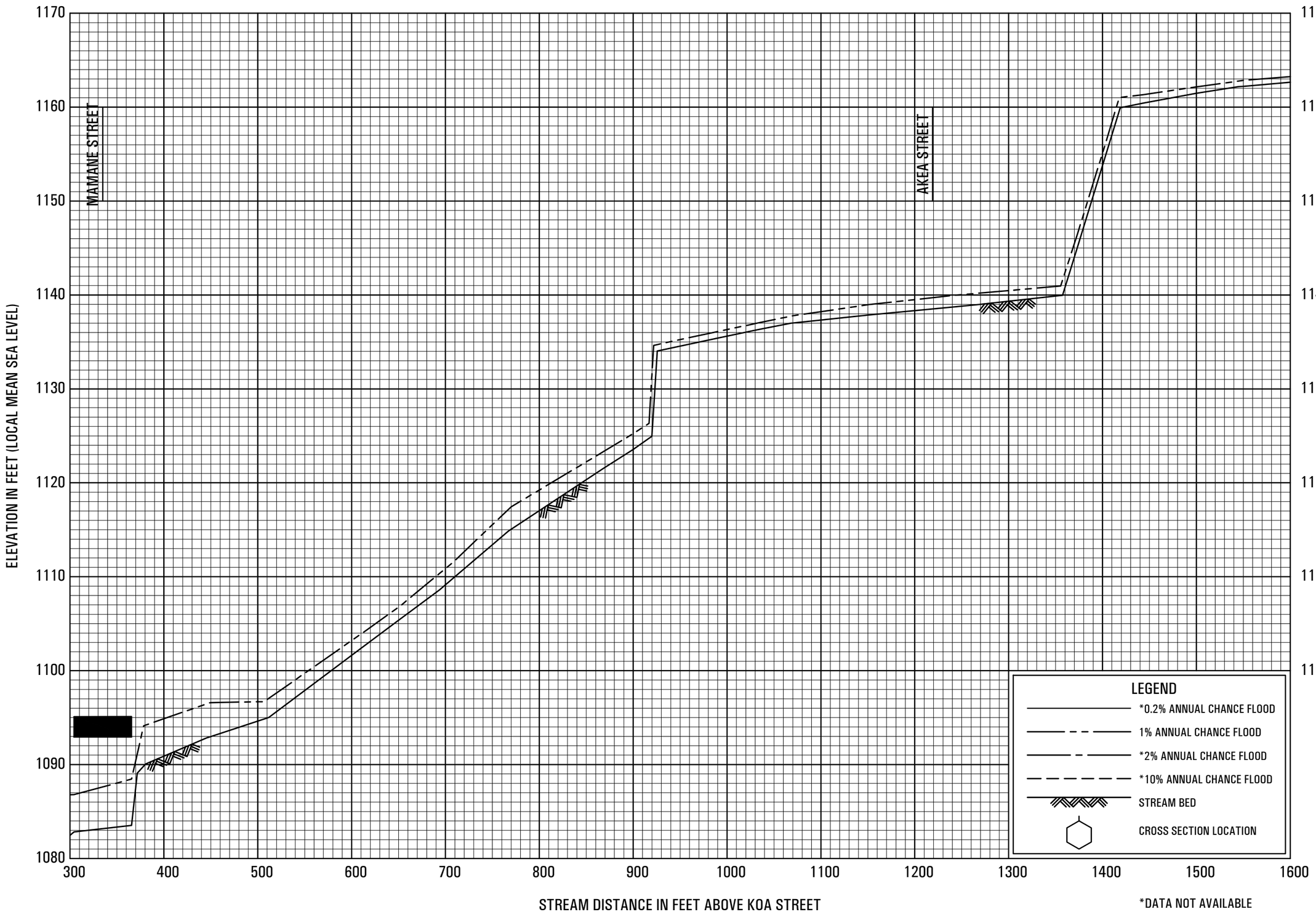


FLOOD PROFILES

HONOKAA DRAINAGE NO. 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

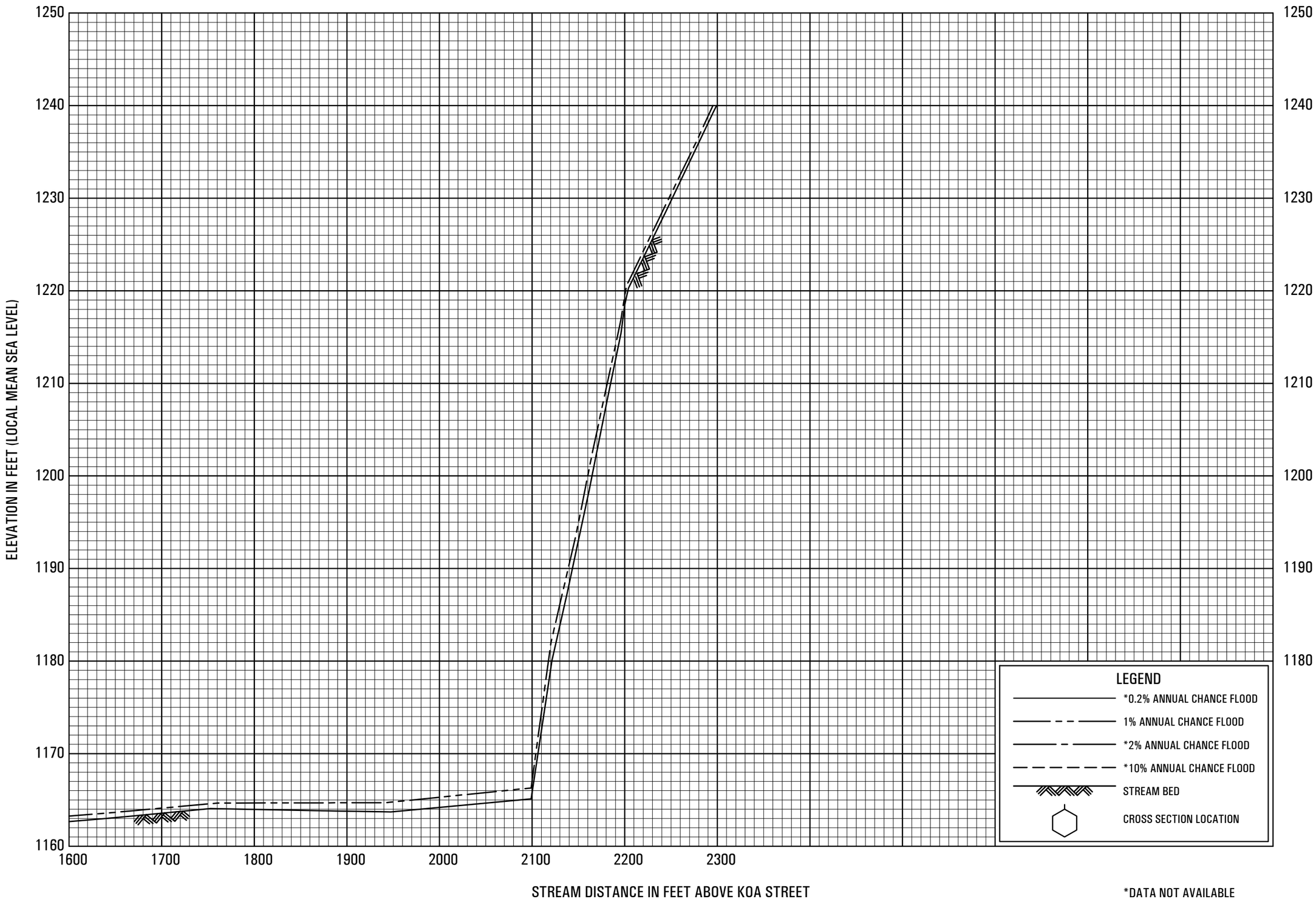


FLOOD PROFILES

HONOKAA DRAINAGE NO. 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI



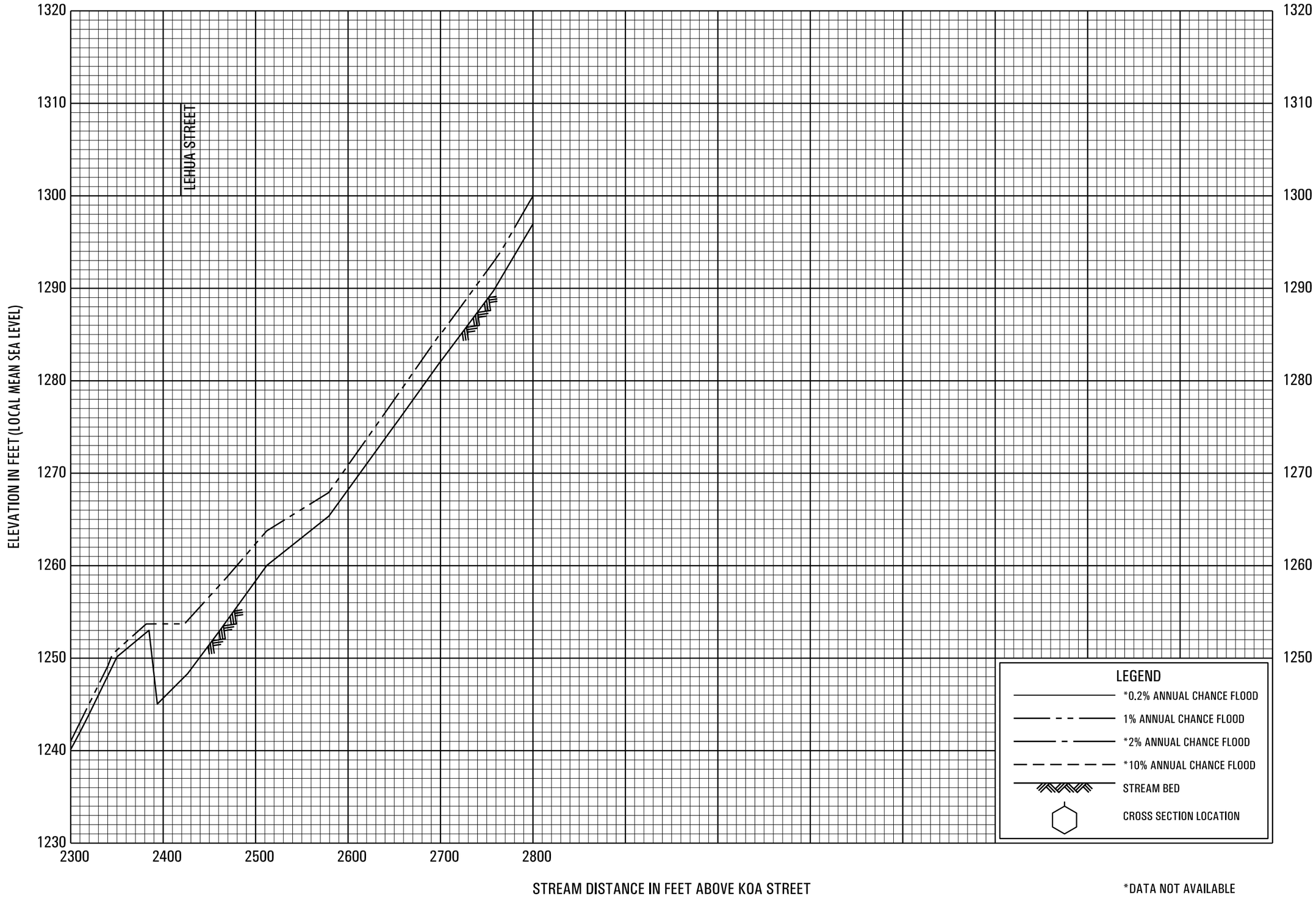
FLOOD PROFILES

HONOKAA DRAINAGE NO. 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

114P



*DATA NOT AVAILABLE

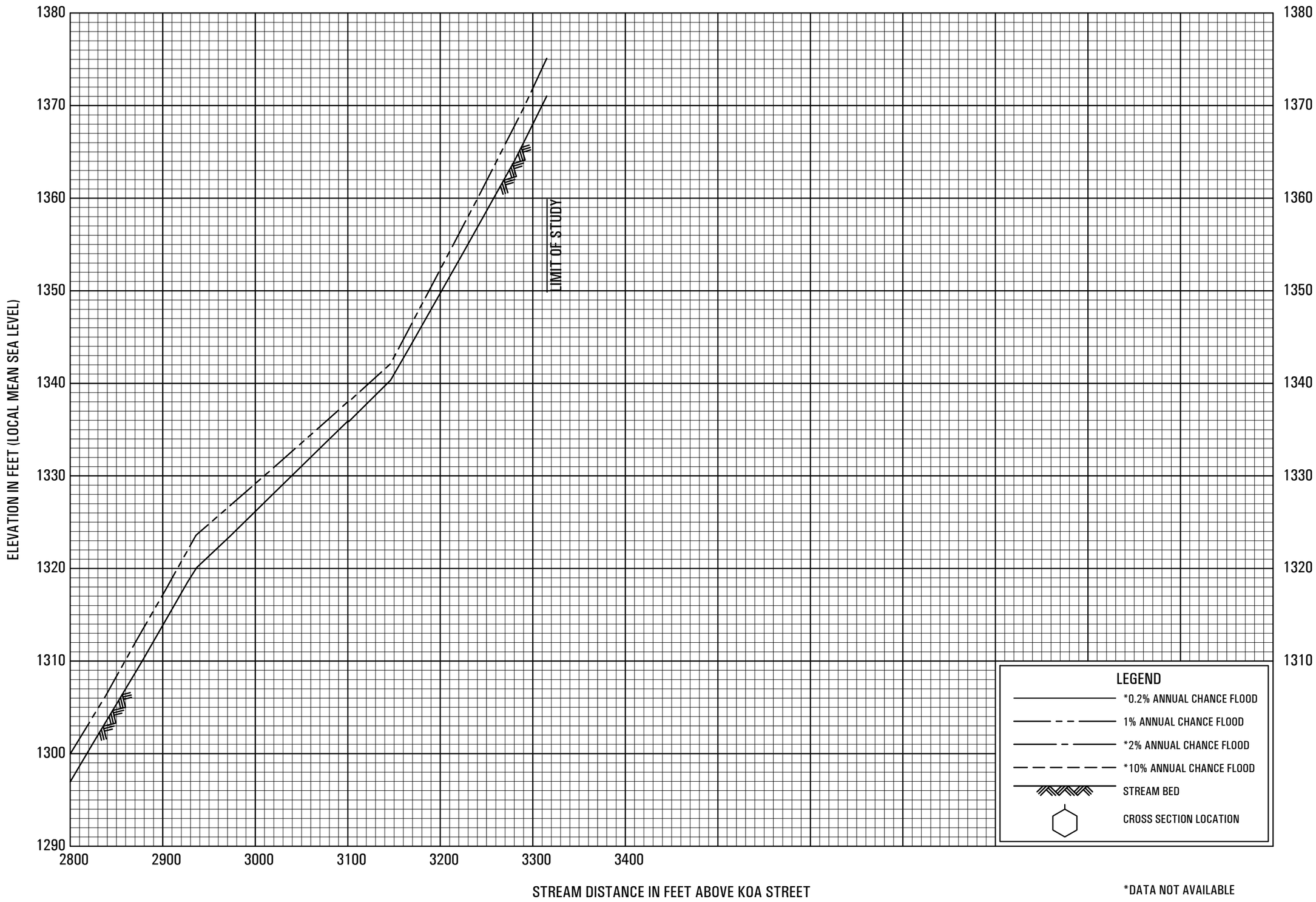
FLOOD PROFILES

HONOKAA DRAINAGE NO. 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

115P



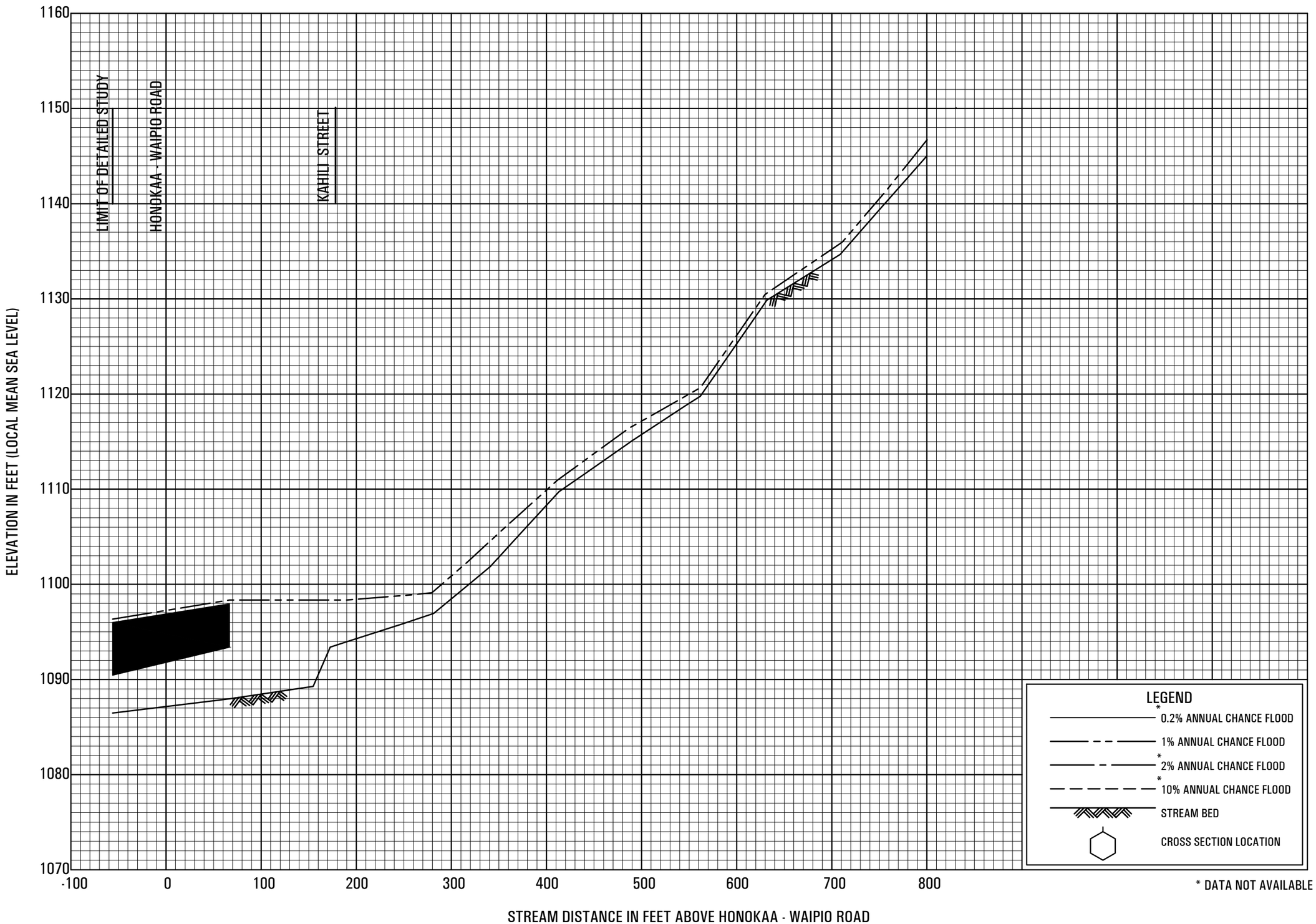
FLOOD PROFILES

HONOKAA DRAINAGE NO. 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

116P

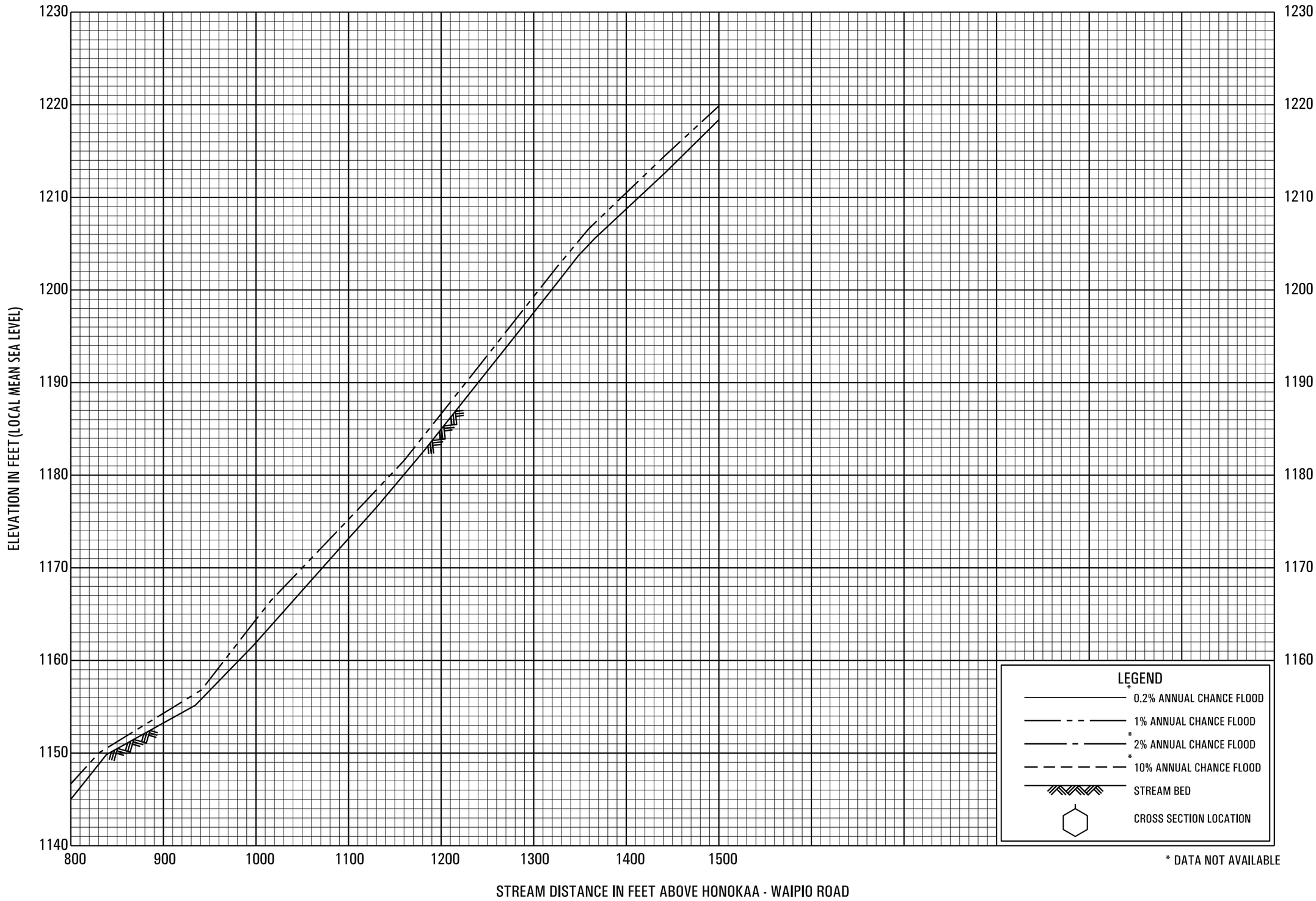


FLOOD PROFILES

HONOKAA DRAINAGE NO. 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI



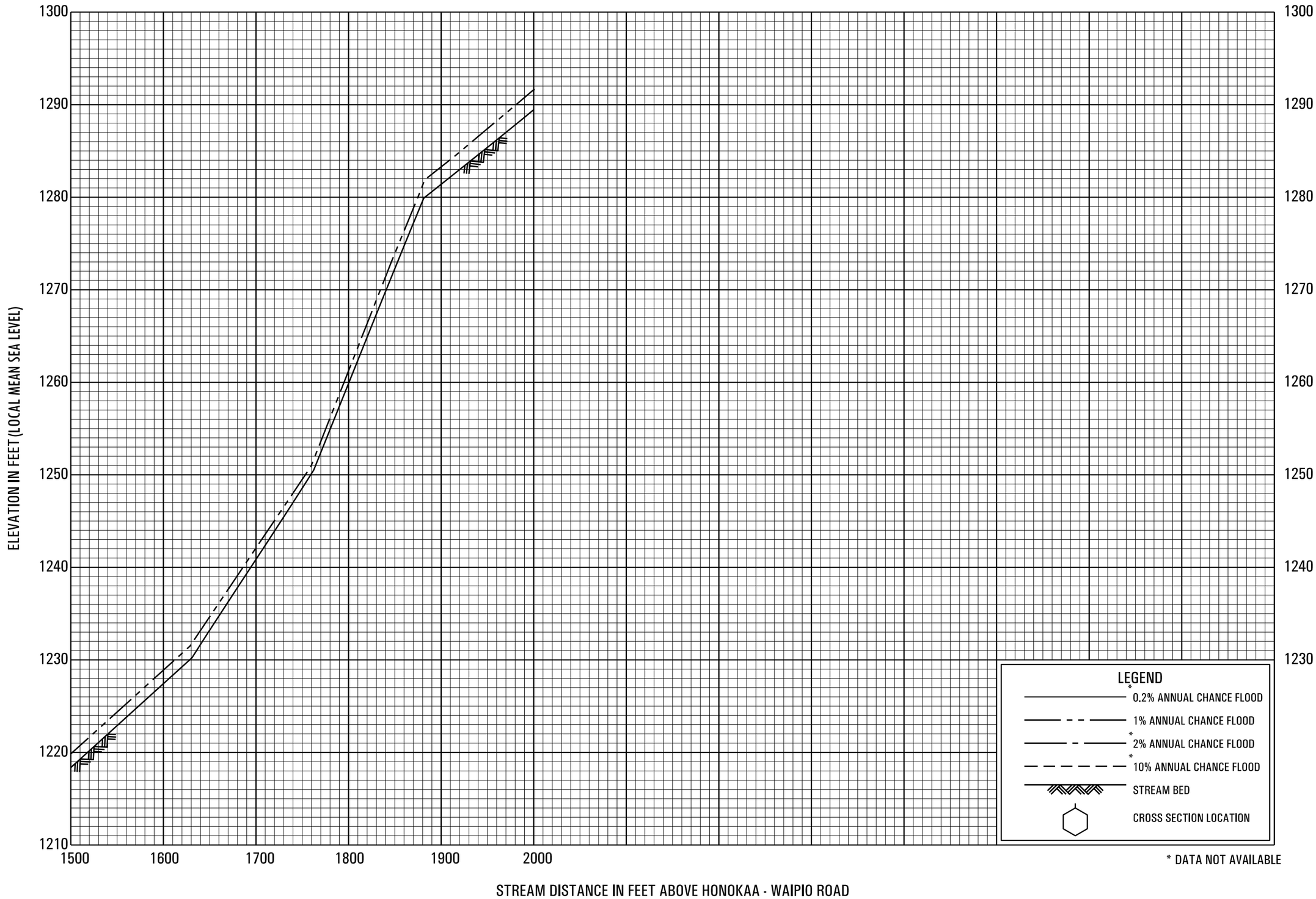
FLOOD PROFILES

HONOKAA DRAINAGE NO. 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

118P



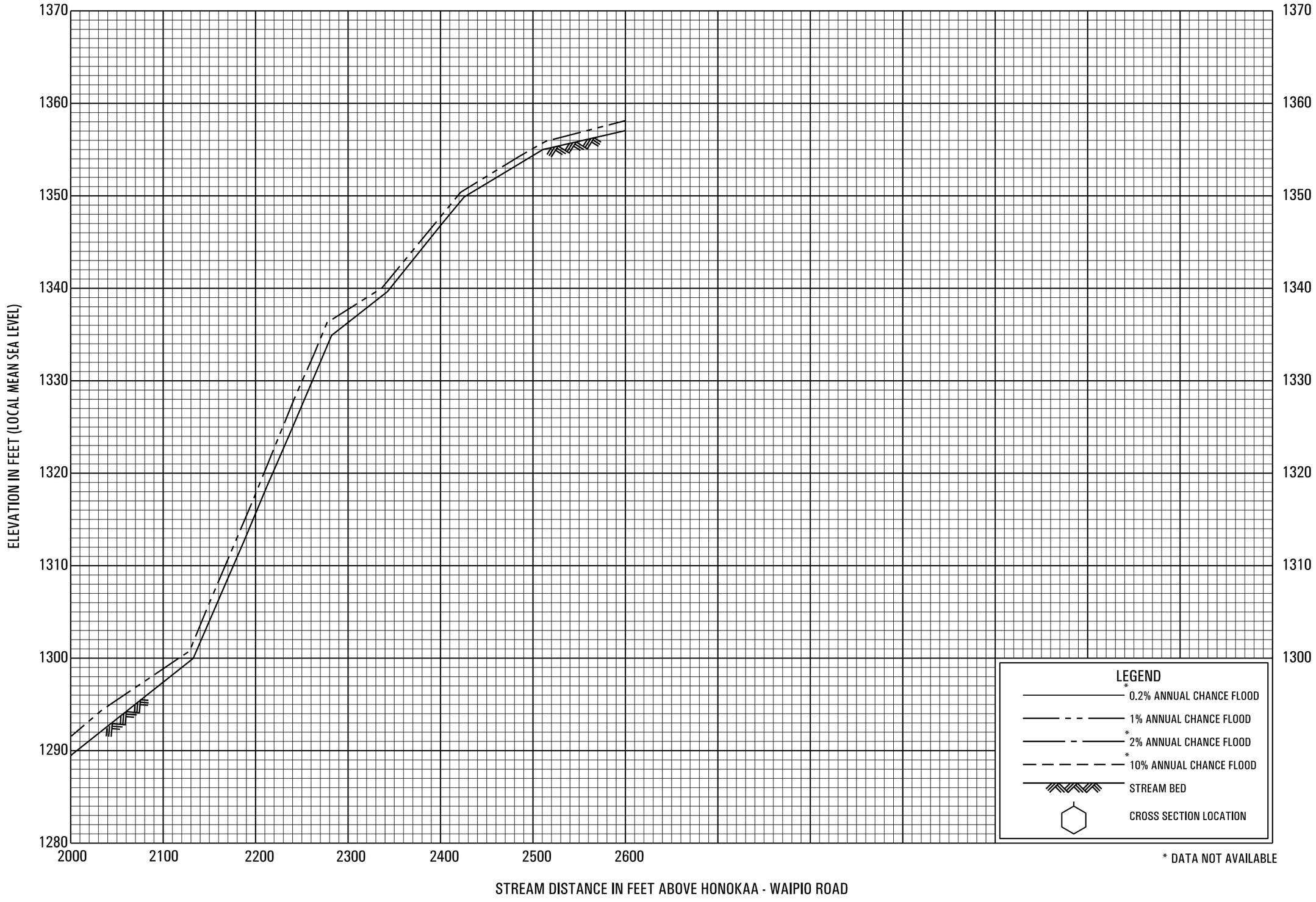
FLOOD PROFILES

HONOKAA DRAINAGE NO. 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

119P



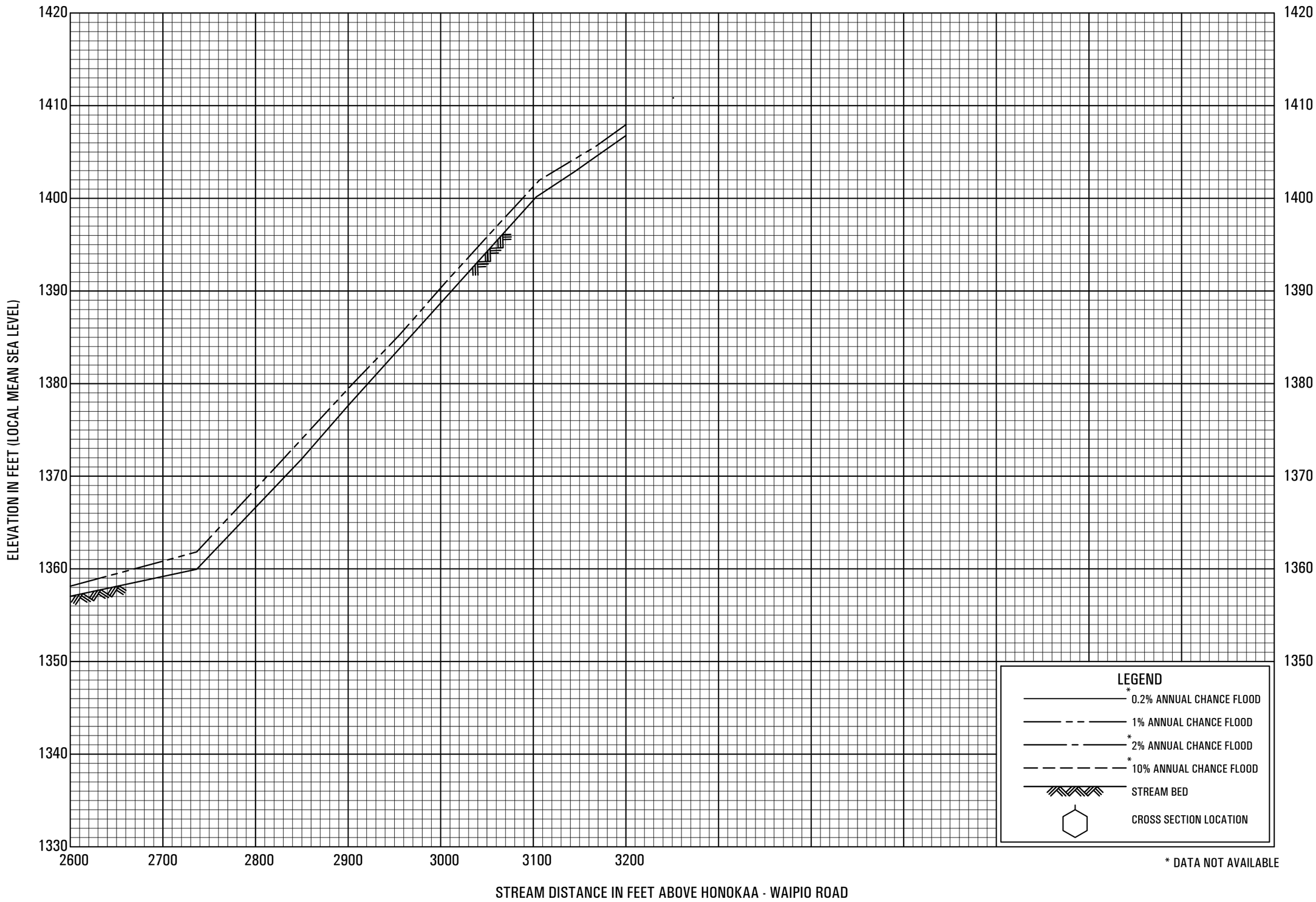
FLOOD PROFILES

HONOKAA DRAINAGE NO. 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

120P



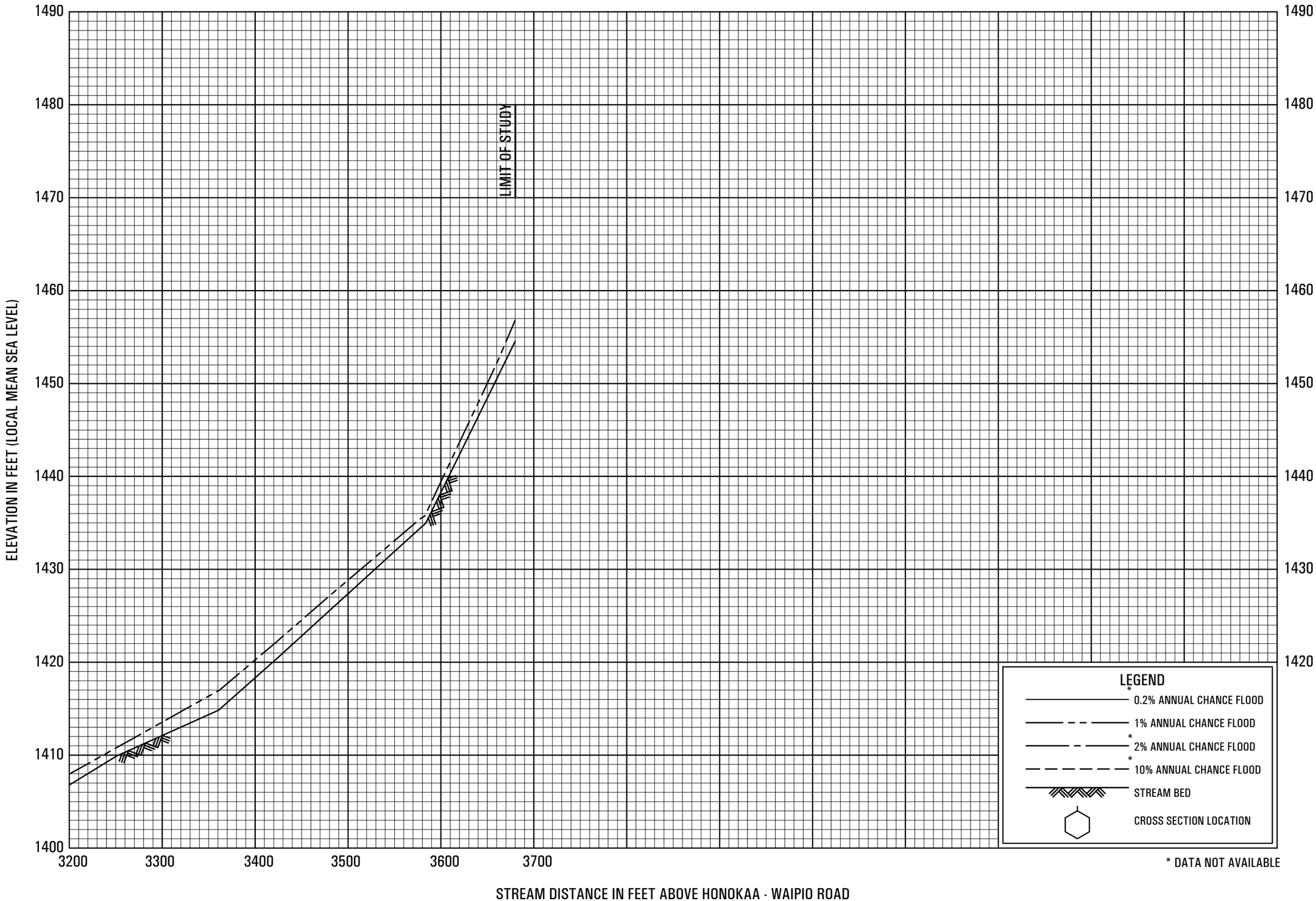
FLOOD PROFILES

HONOKAA DRAINAGE NO. 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

121P



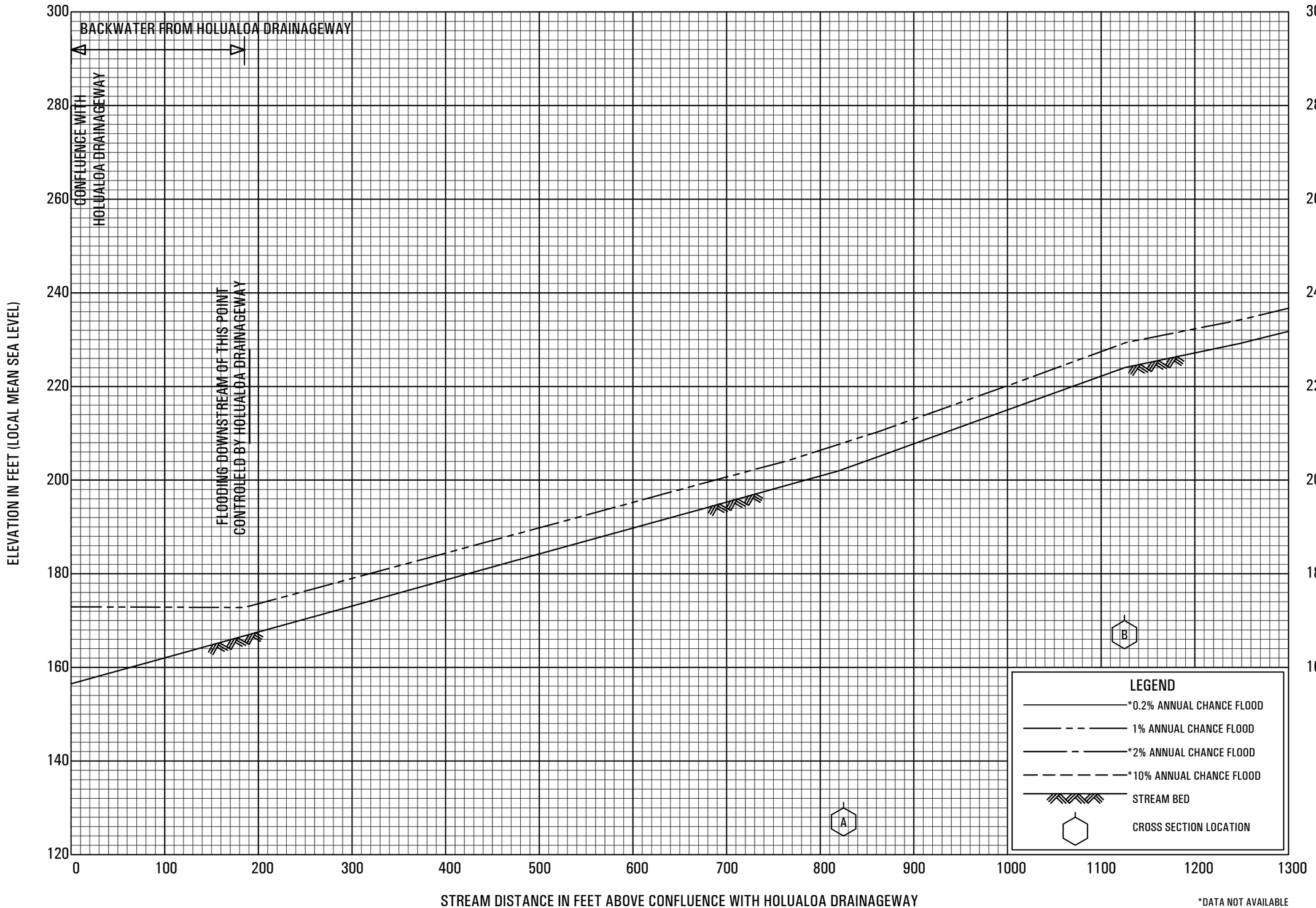
FLOOD PROFILES

HONOKAA DRAINAGE NO. 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

122P



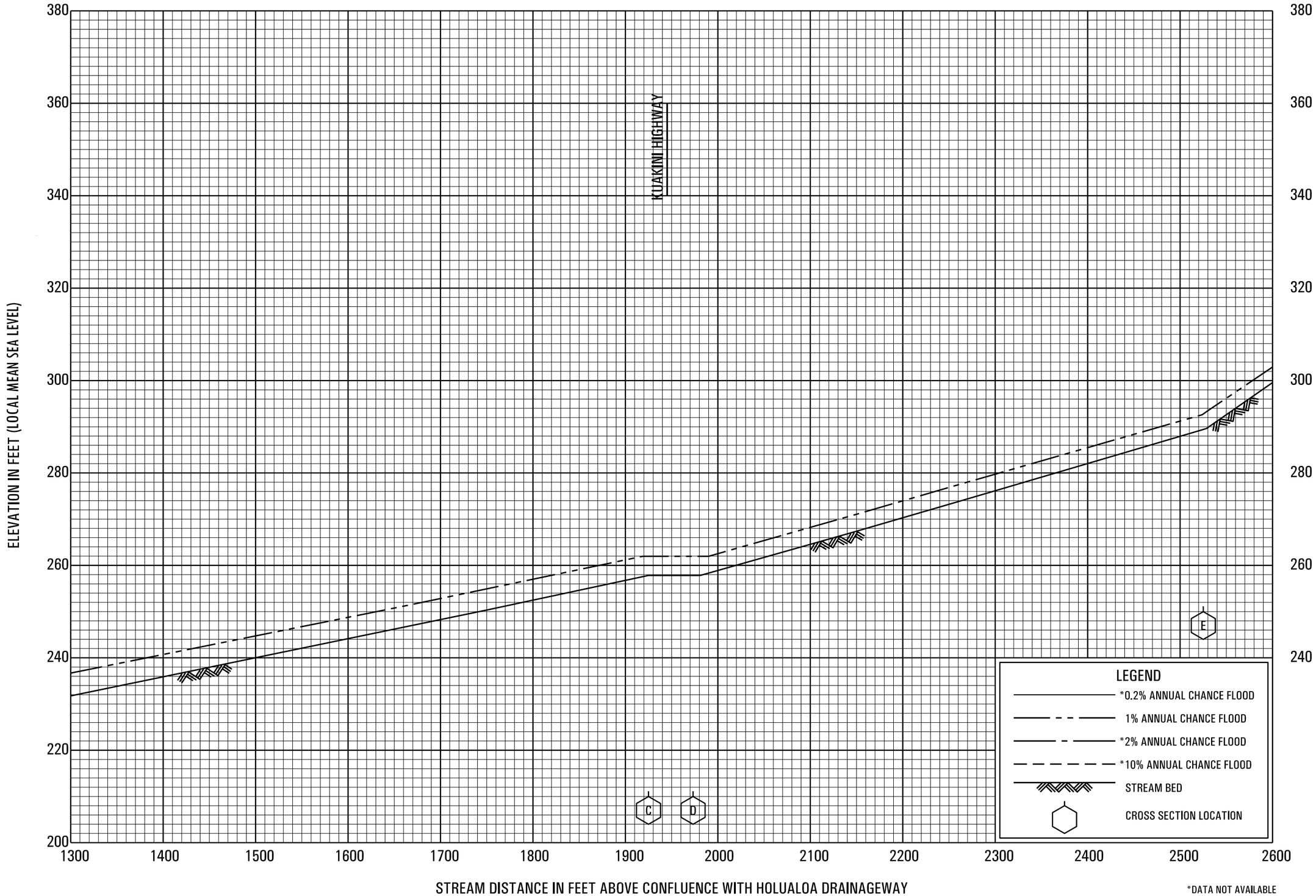
*DATA NOT AVAILABLE

FLOOD PROFILES

HORSESHOE BEND DRAINAGEWAY

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

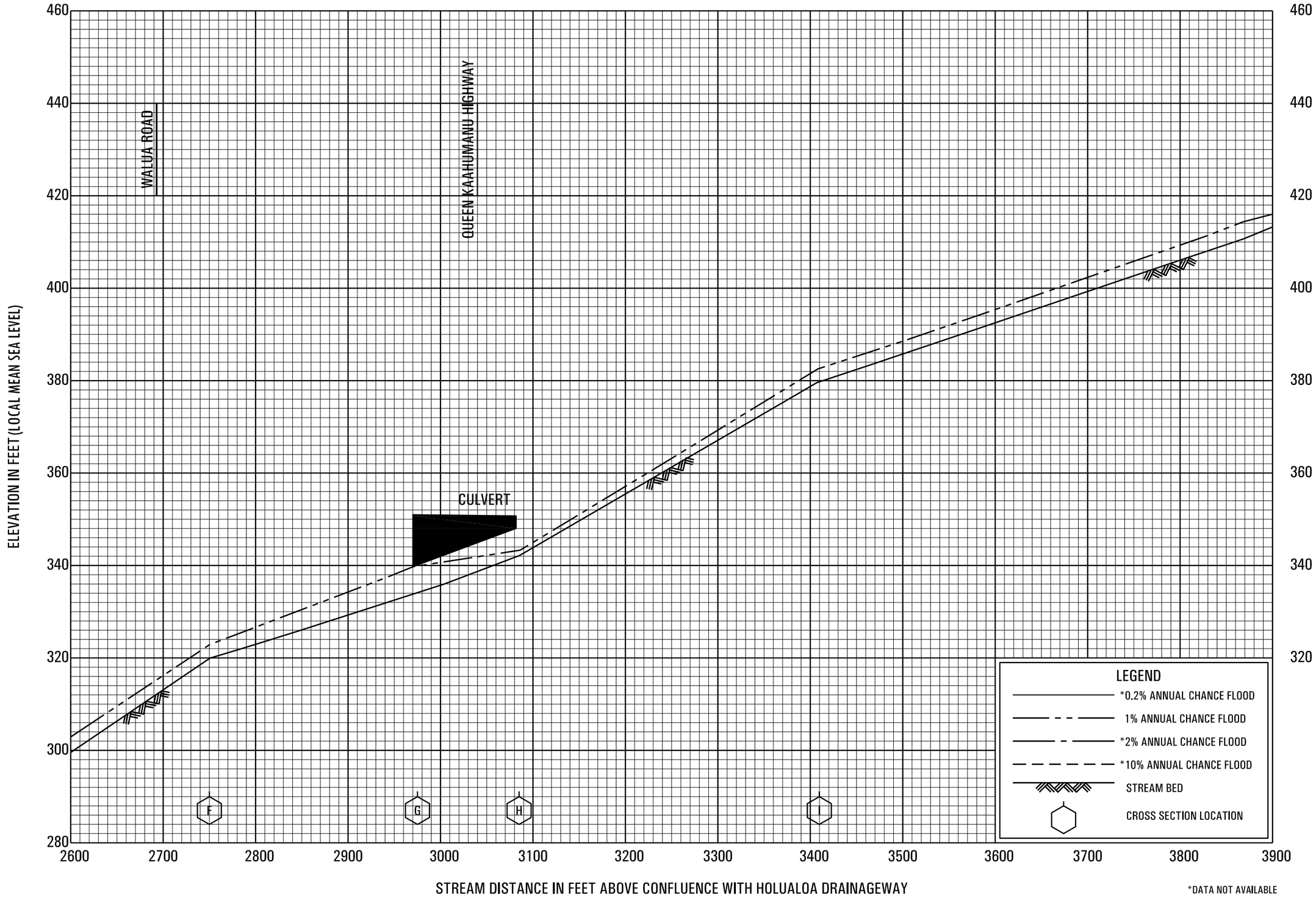


FLOOD PROFILES

HORSESHOE BEND DRAINAGEWAY

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

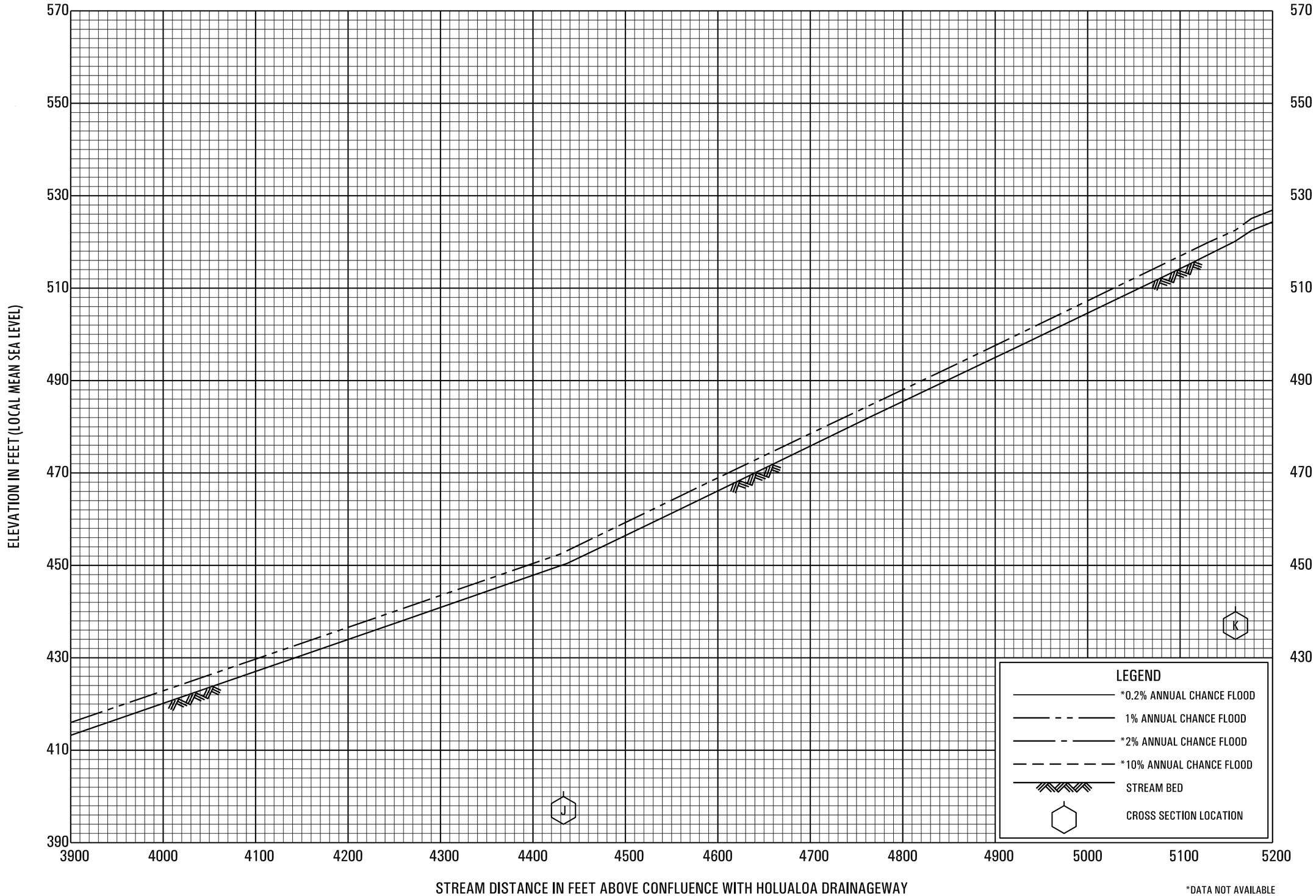


FLOOD PROFILES

HORSESHOE BEND DRAINAGEWAY

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI



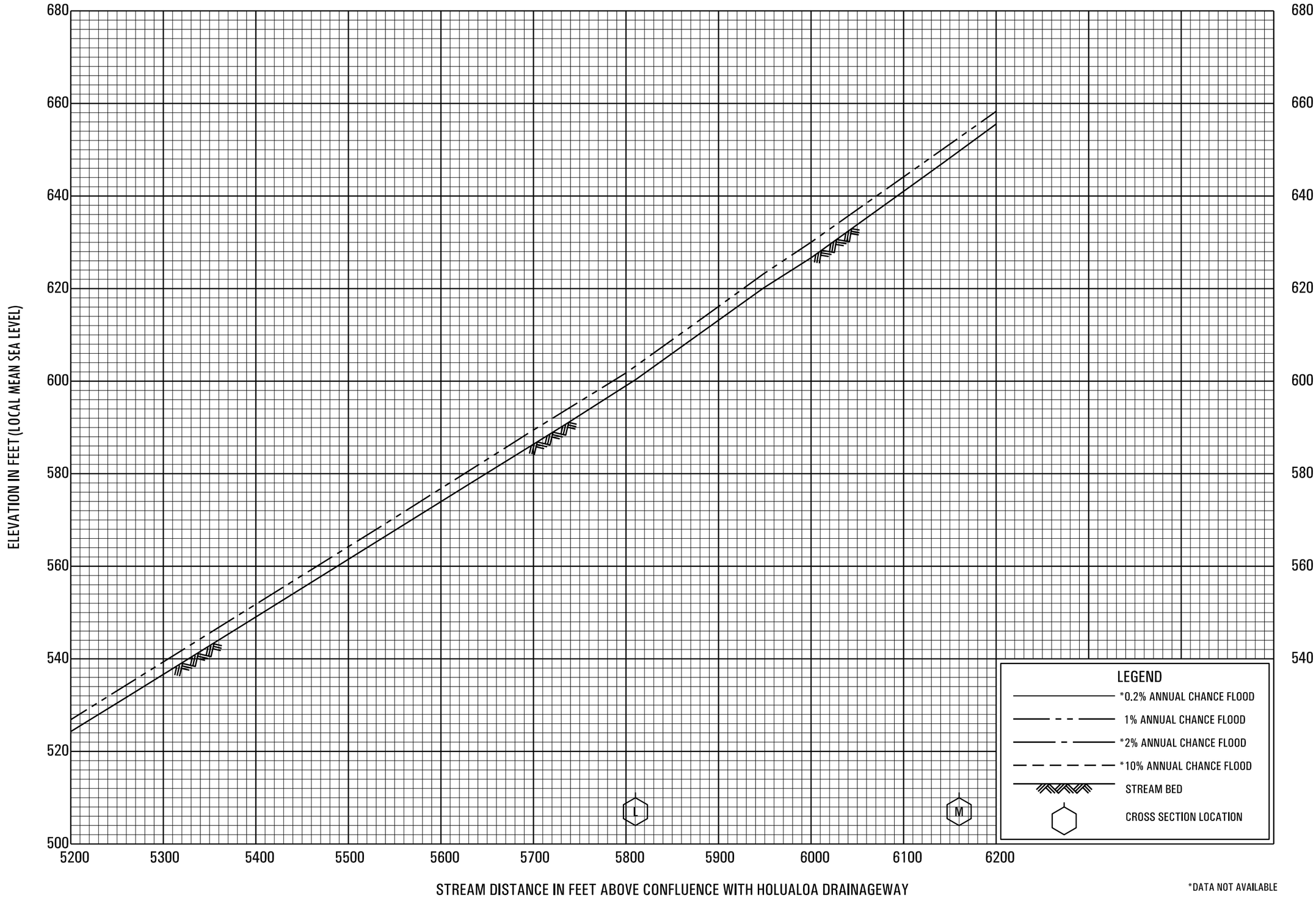
*DATA NOT AVAILABLE

FLOOD PROFILES

HORSESHOE BEND DRAINAGEWAY

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI



*DATA NOT AVAILABLE

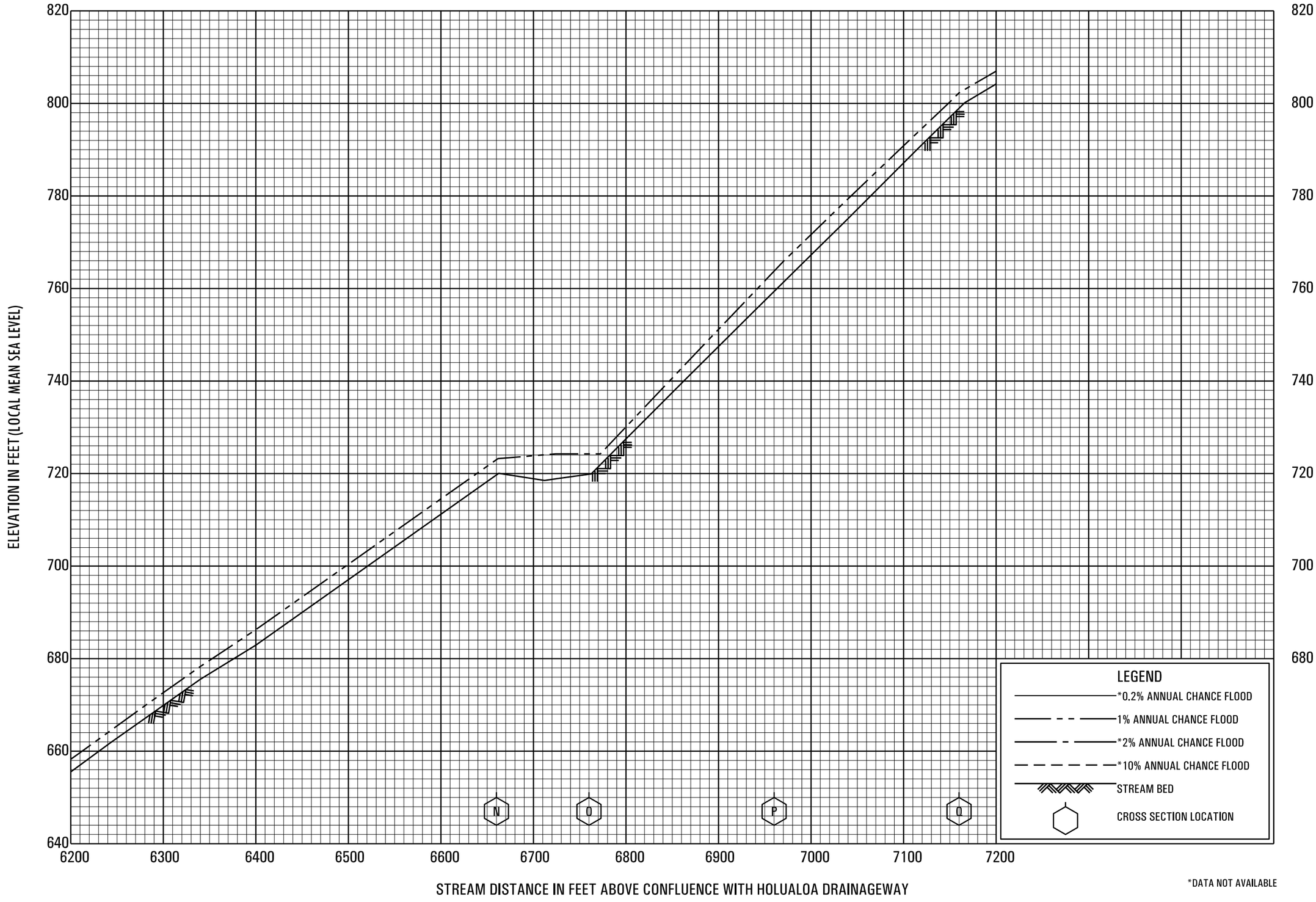
FLOOD PROFILES

HORSESHOE BEND DRAINAGEWAY

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

127P

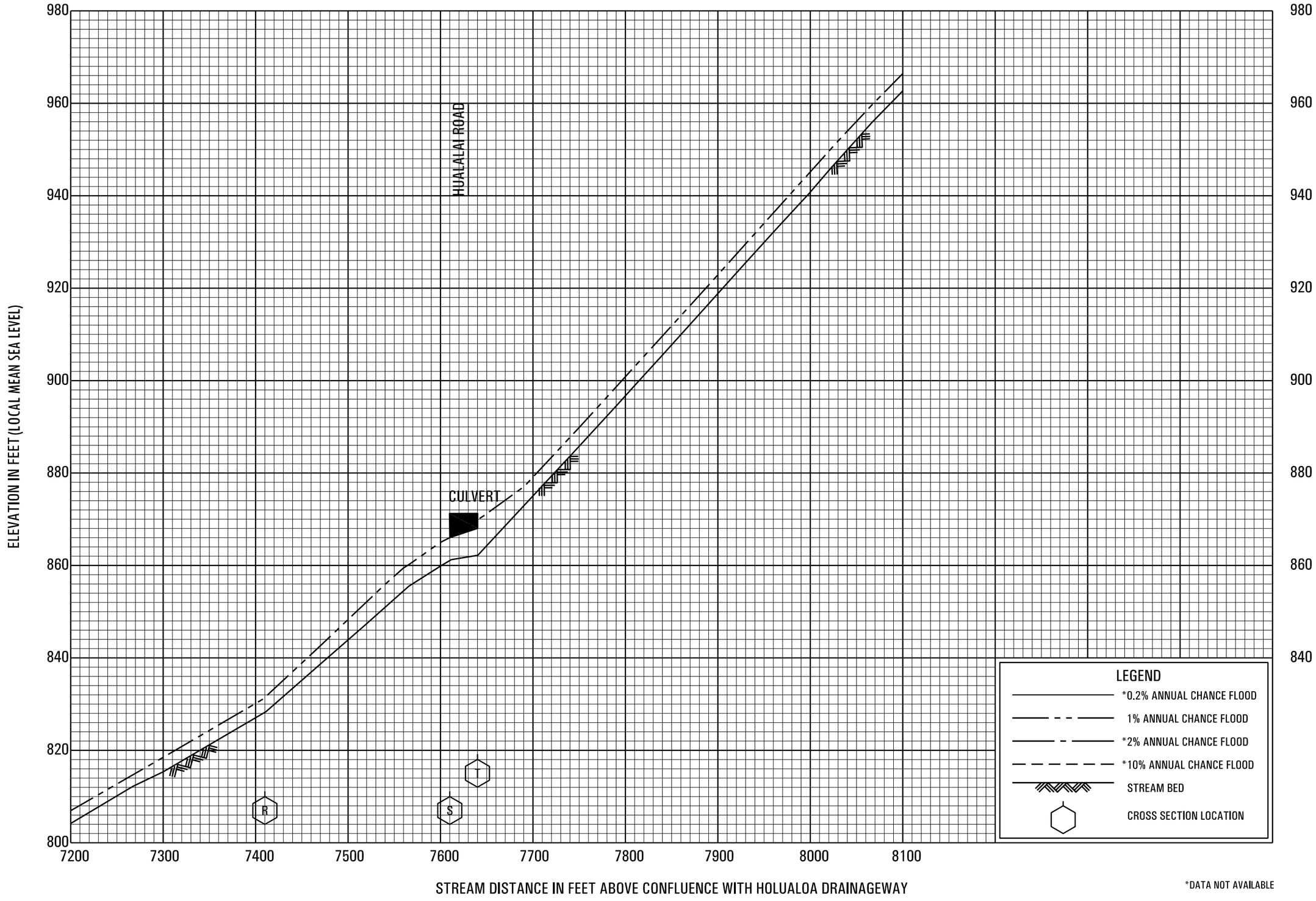


FLOOD PROFILES

HORSESHOE BEND DRAINAGEWAY

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

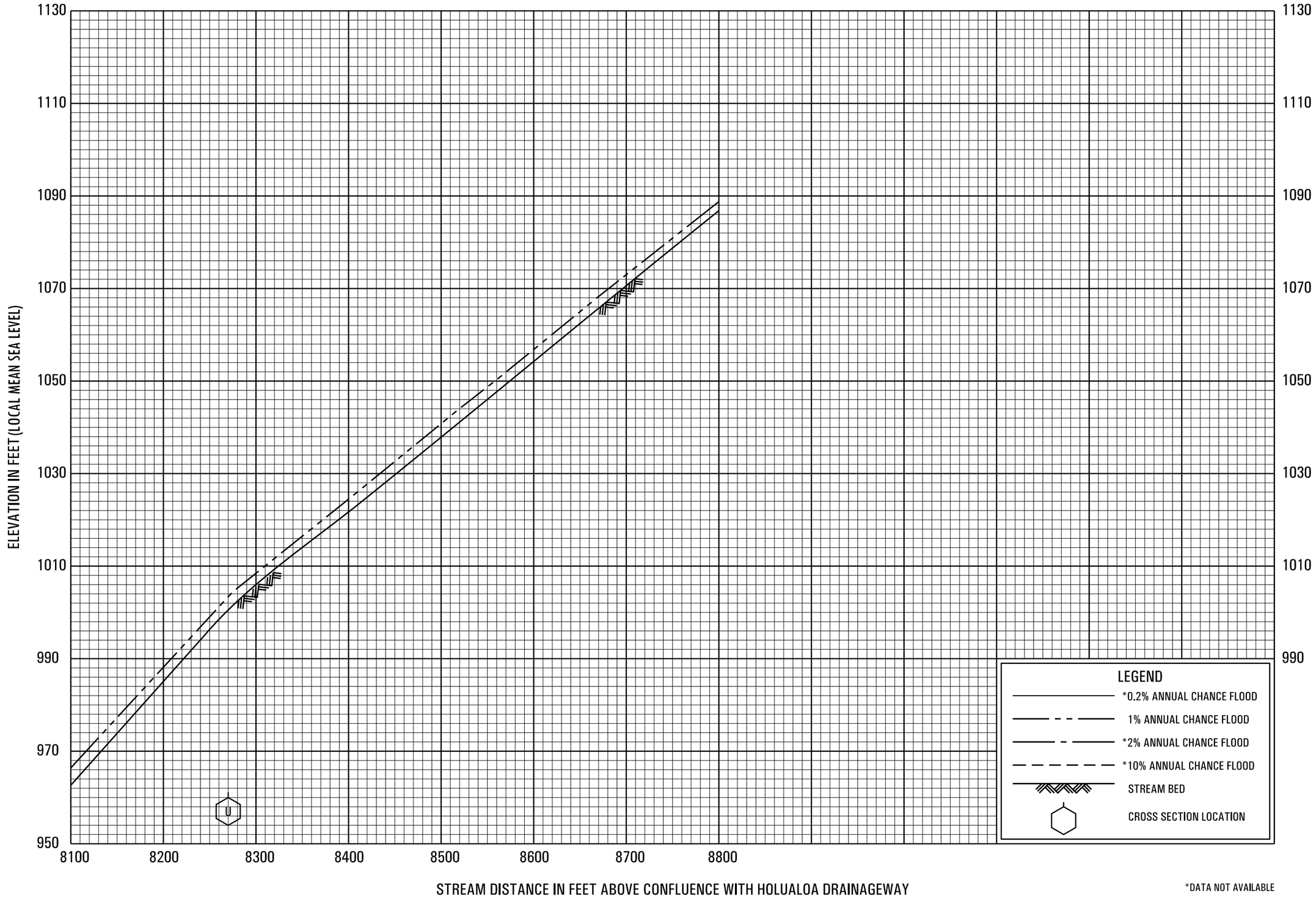


FLOOD PROFILES

HORSESHOE BEND DRAINAGEWAY

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

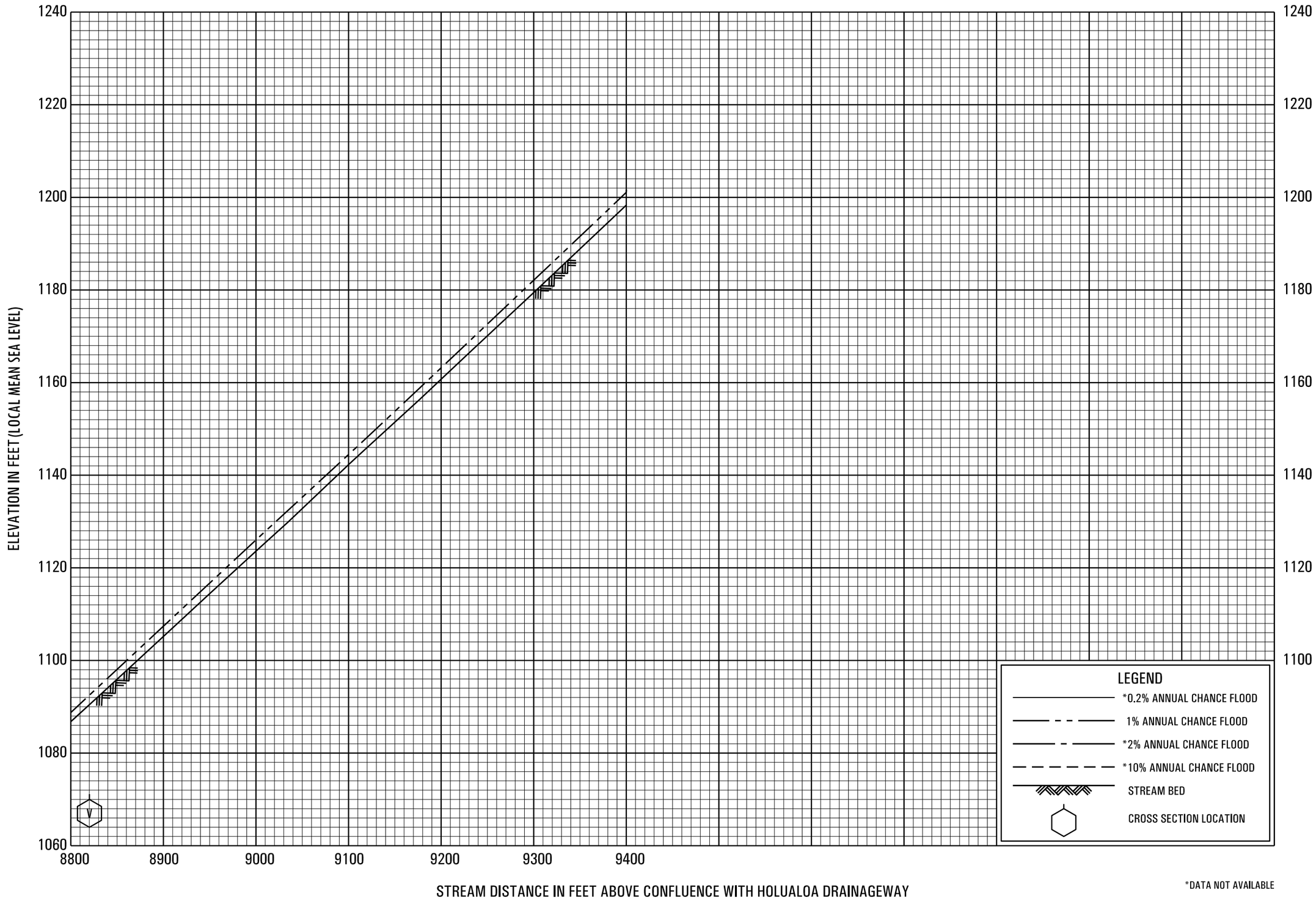


FLOOD PROFILES

HORSESHOE BEND DRAINAGEWAY

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI



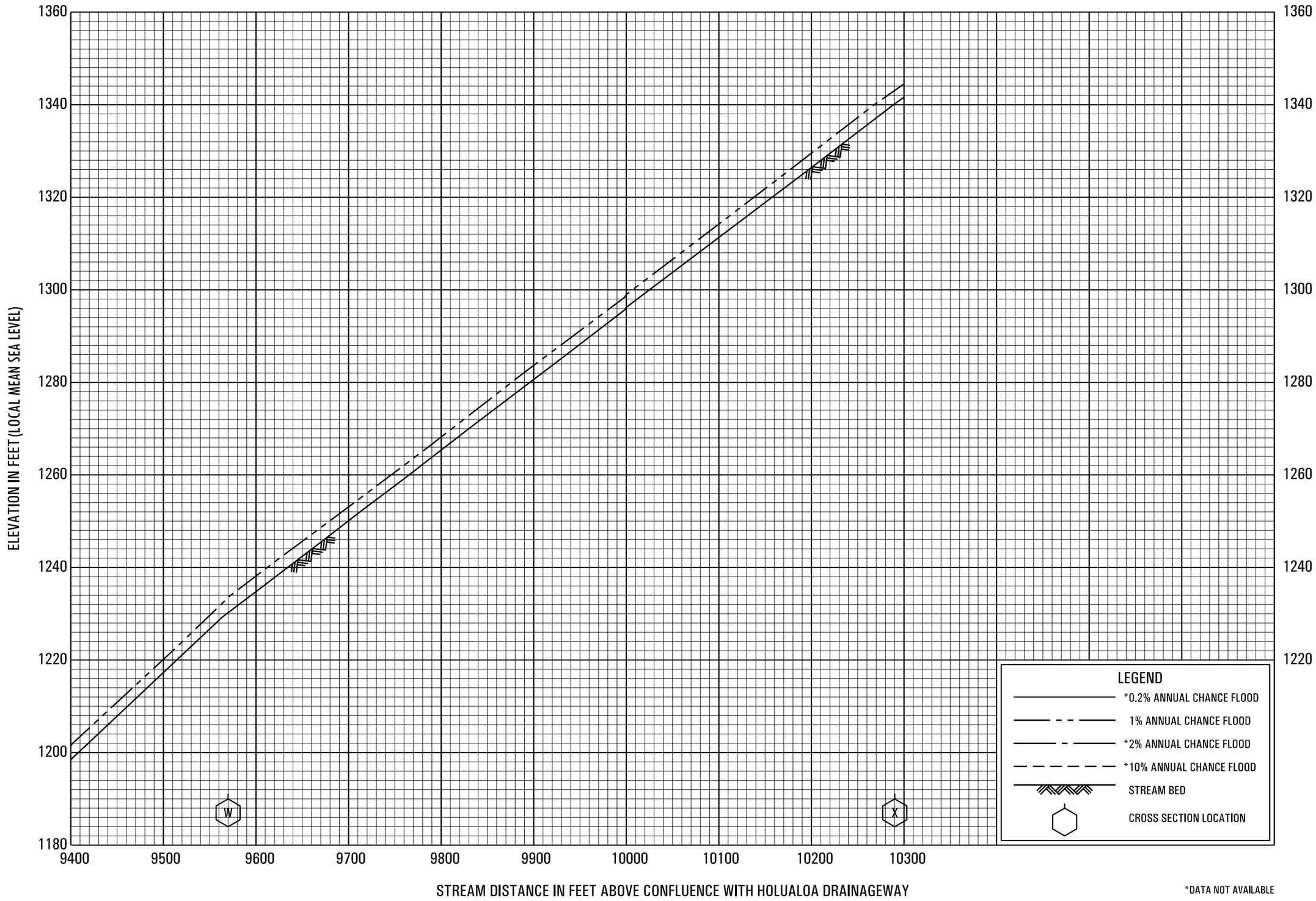
FLOOD PROFILES

HORSESHOE BEND DRAINAGEWAY

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

131P



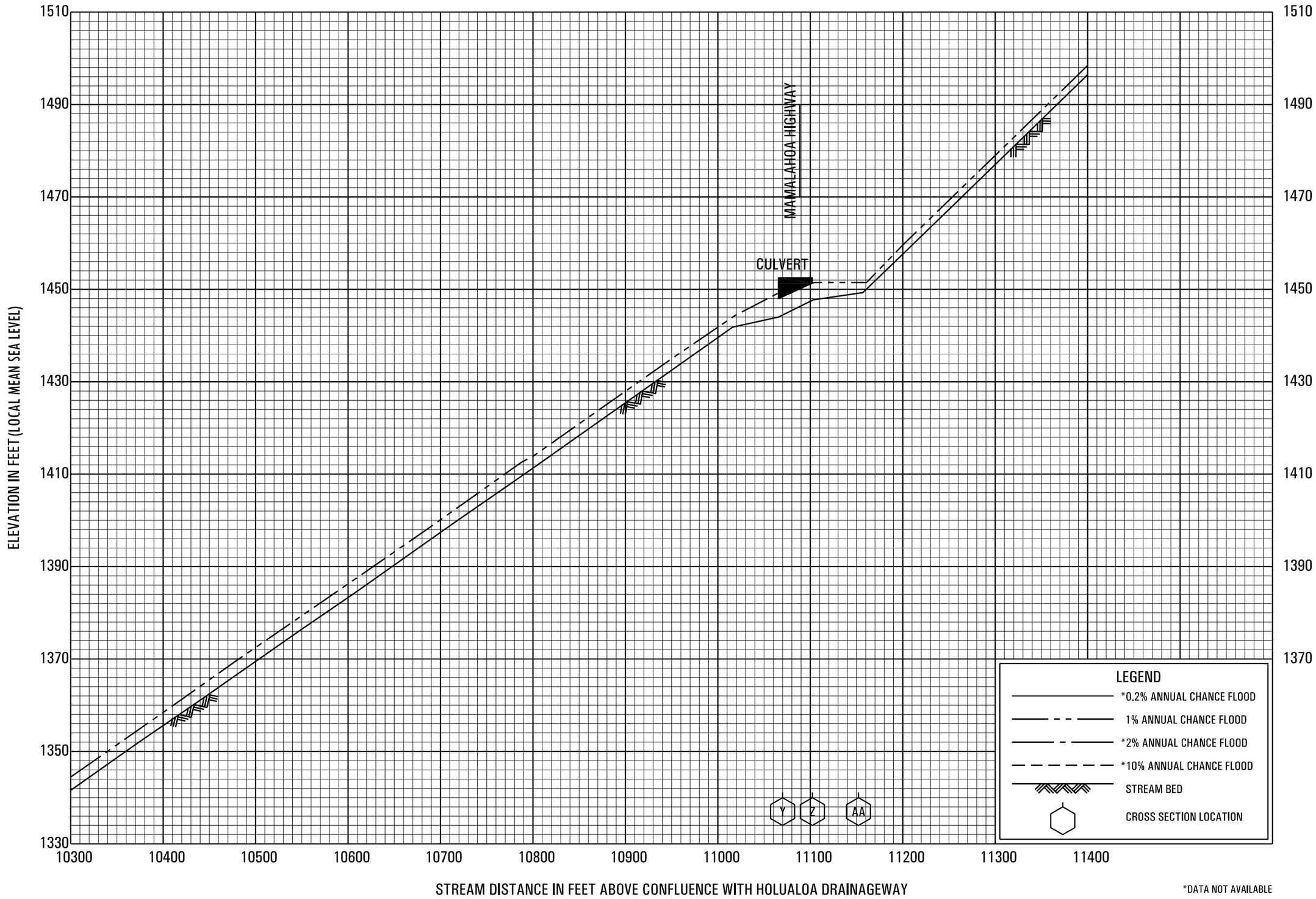
FLOOD PROFILES

HORSESHOE BEND DRAINAGEWAY

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

132P



*DATA NOT AVAILABLE

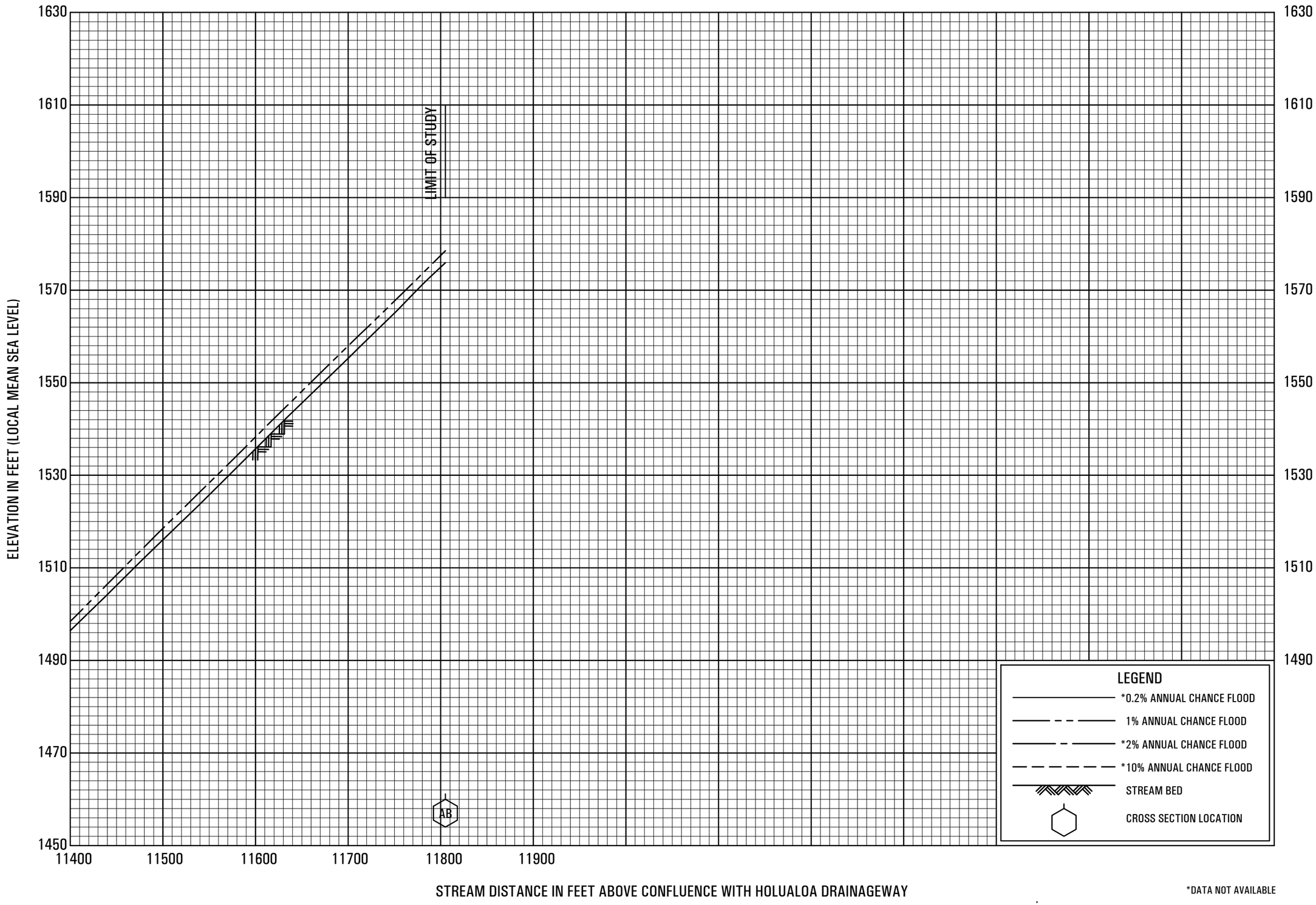
FLOOD PROFILES

HORSESHOE BEND DRAINAGEWAY

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

133P

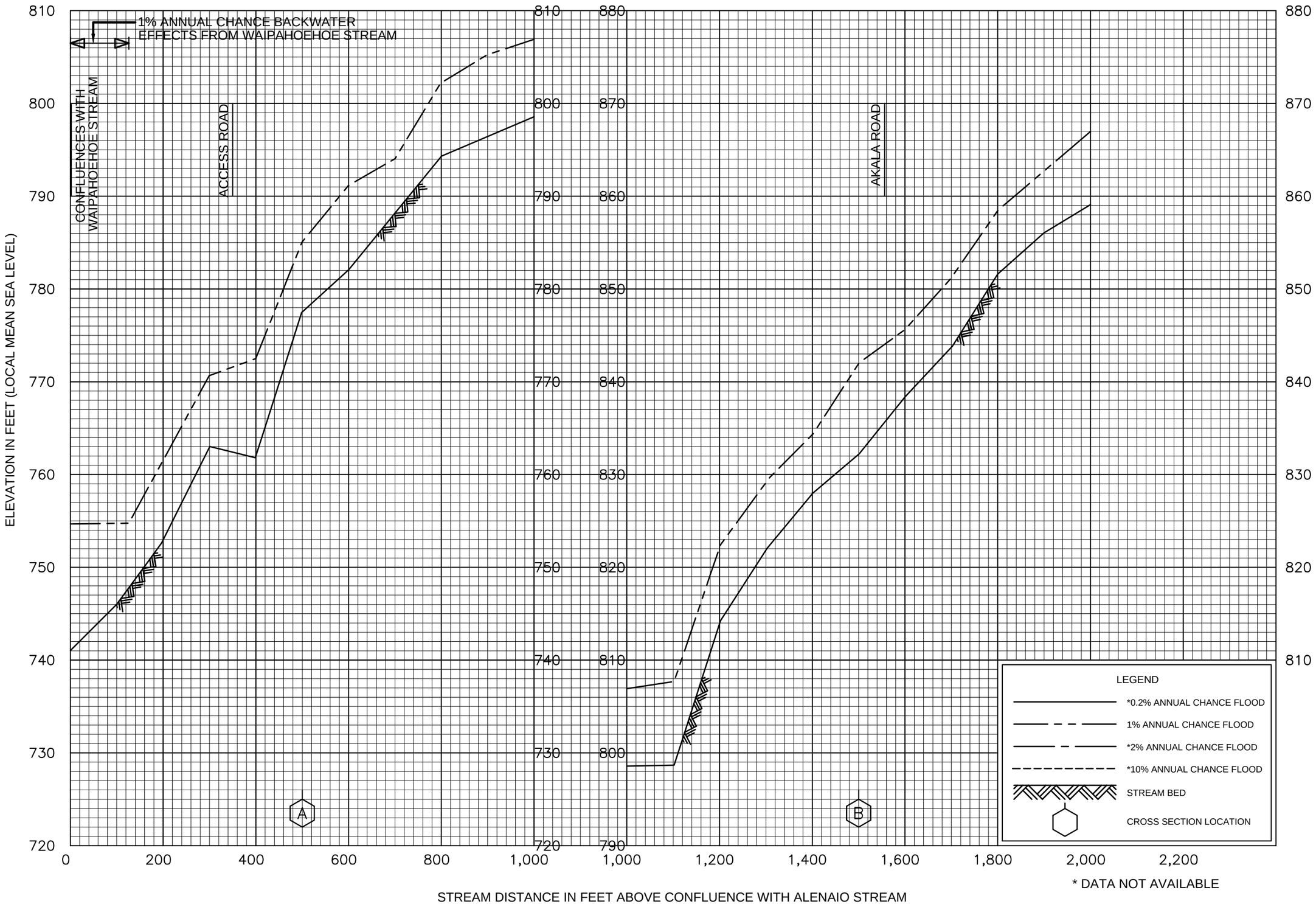


FLOOD PROFILES

HORSESHOE BEND DRAINAGEWAY

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI



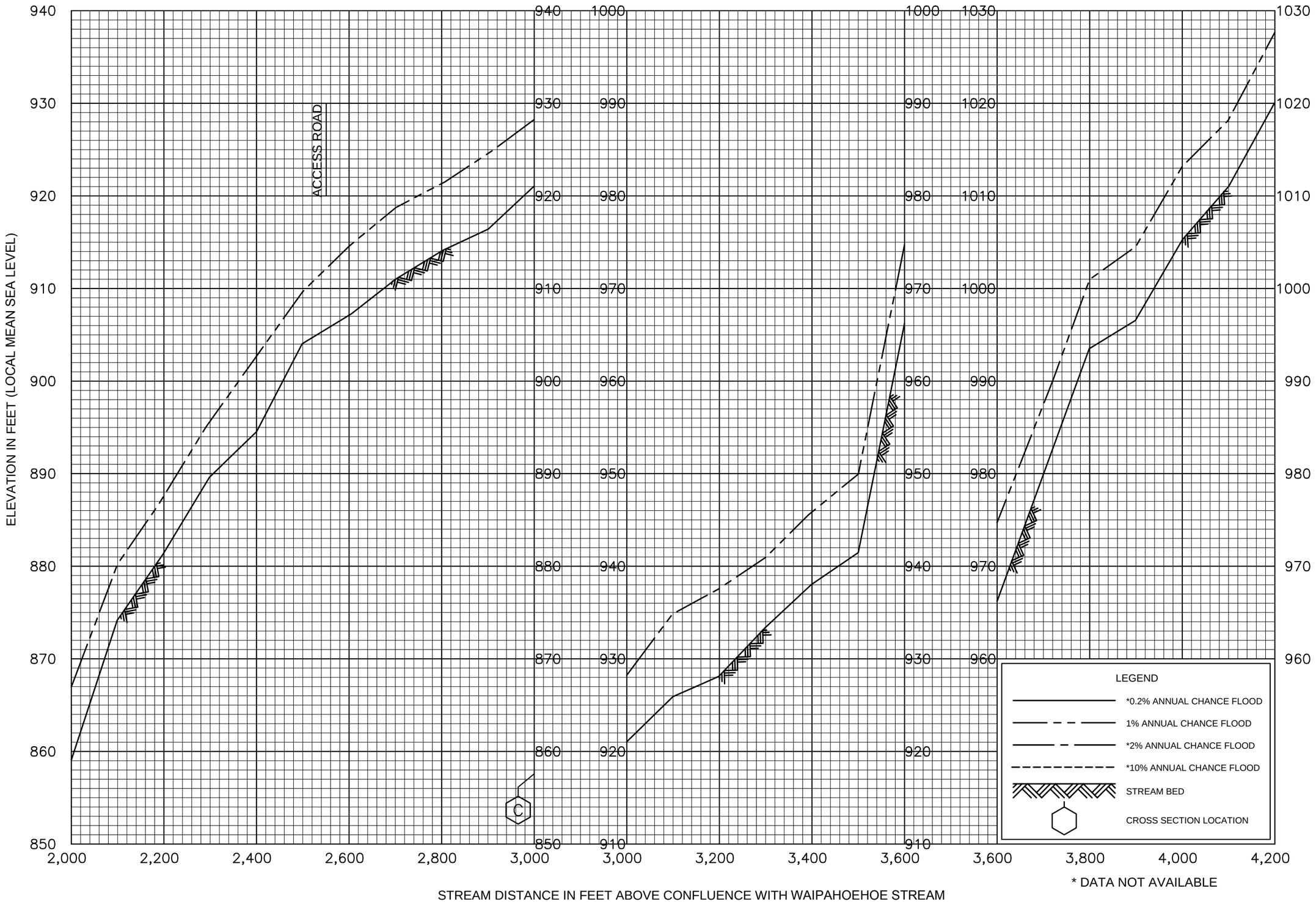
FLOOD PROFILES

KALUIIKI BRANCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

135P



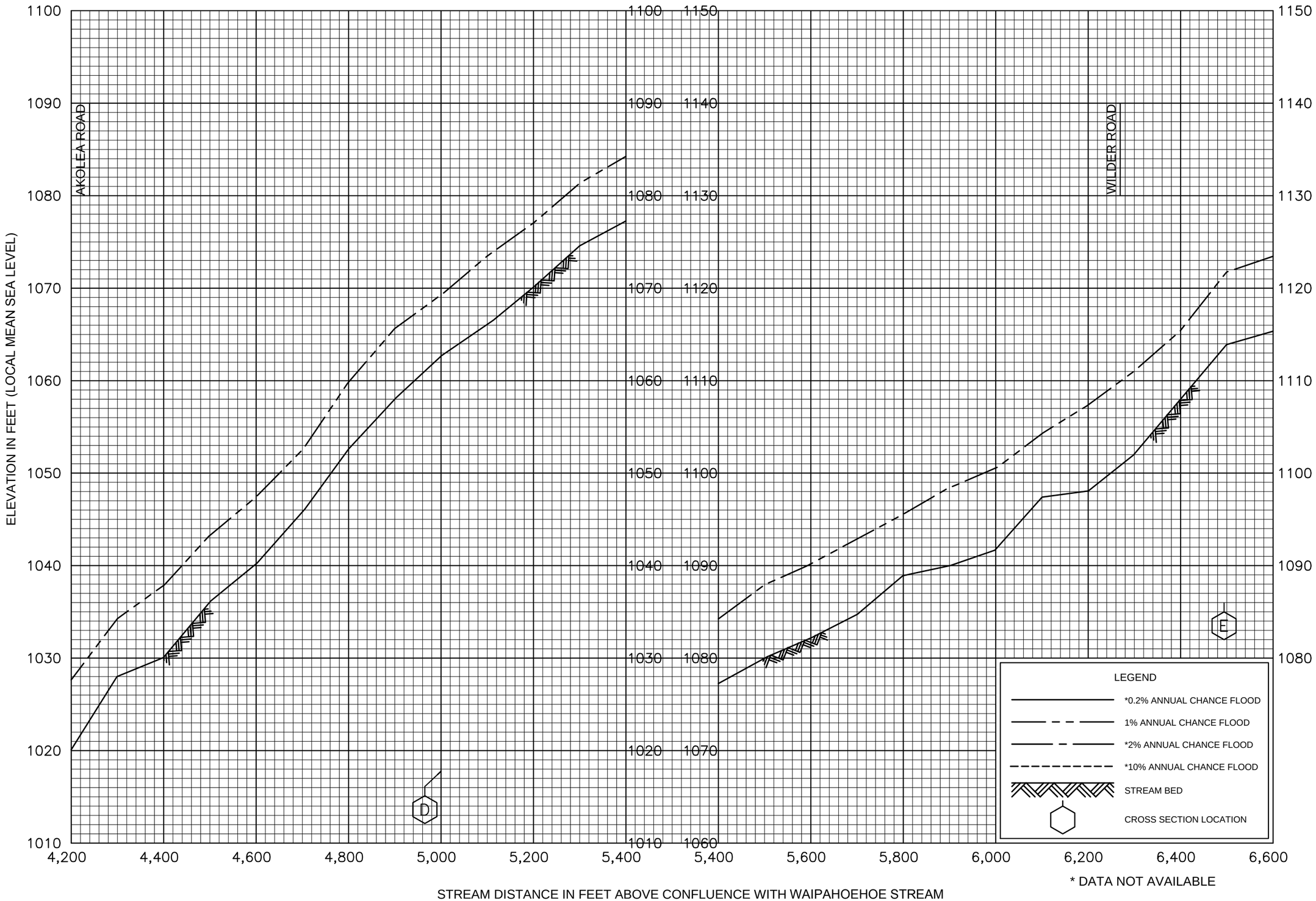
FLOOD PROFILES

KALUIIKI BRANCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

136P



* DATA NOT AVAILABLE

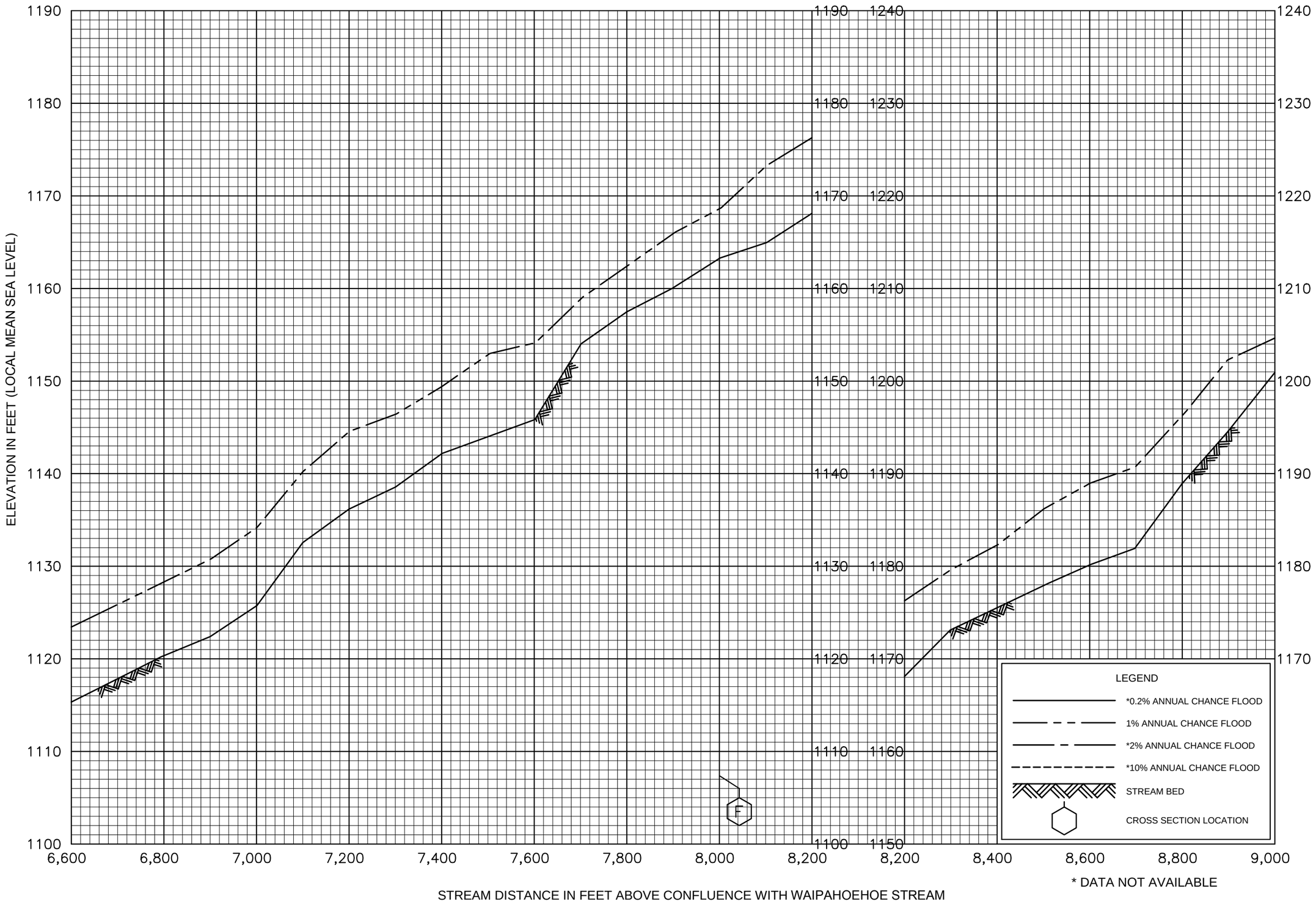
FLOOD PROFILES

KALUIIKI BRANCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

137P



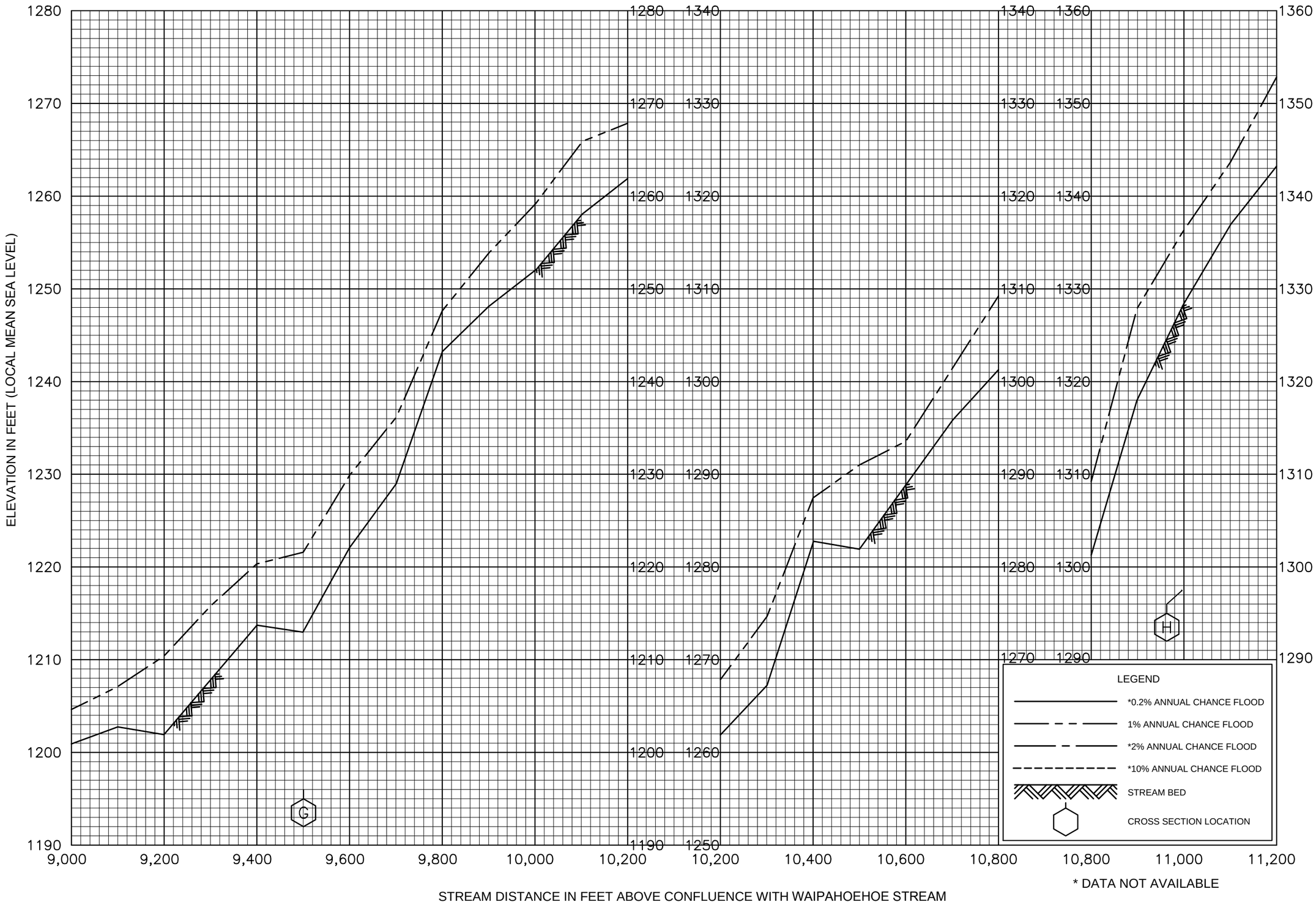
FLOOD PROFILES

KALUIIKI BRANCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

138P



* DATA NOT AVAILABLE

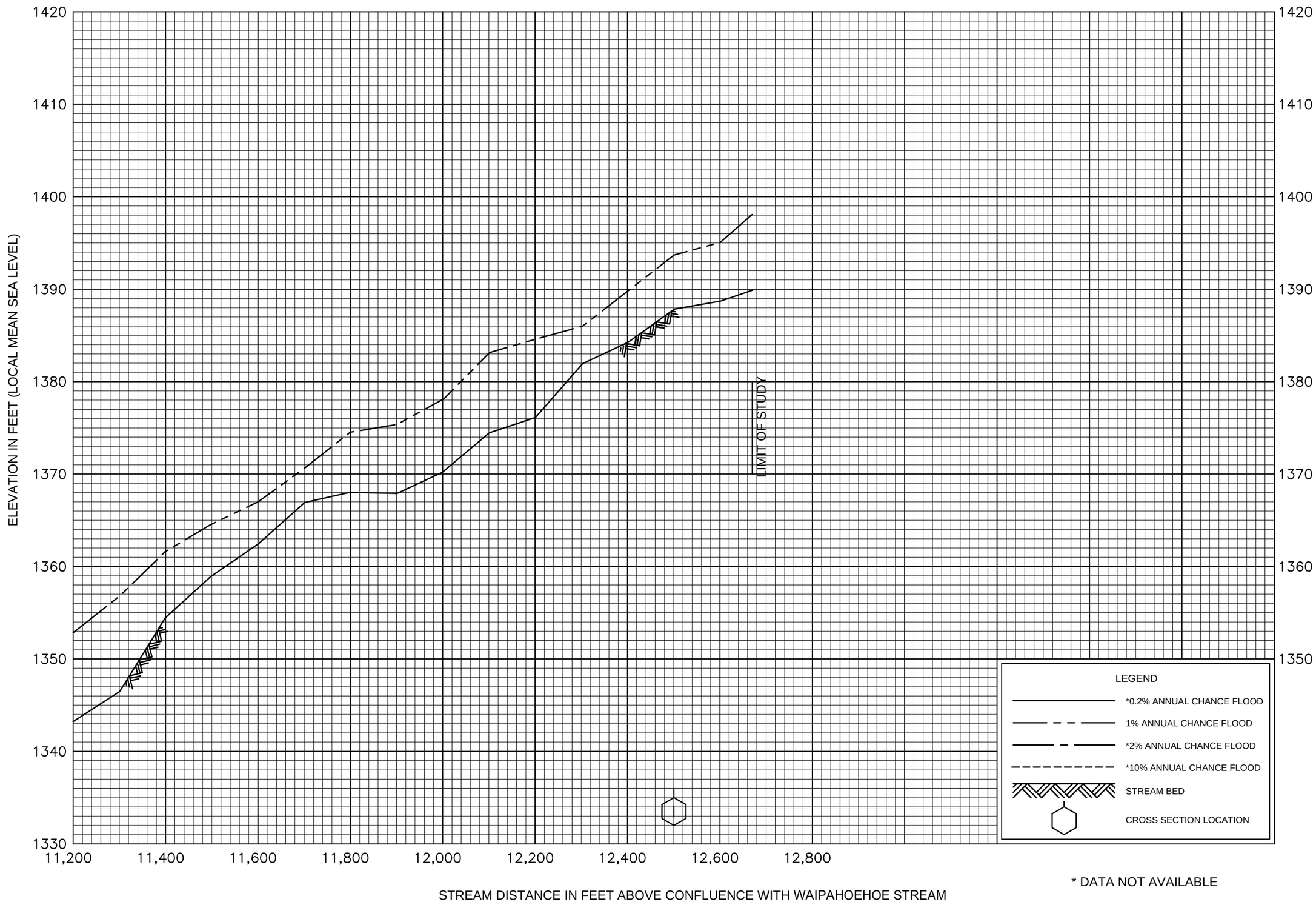
FLOOD PROFILES

KALUIIKI BRANCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

139P



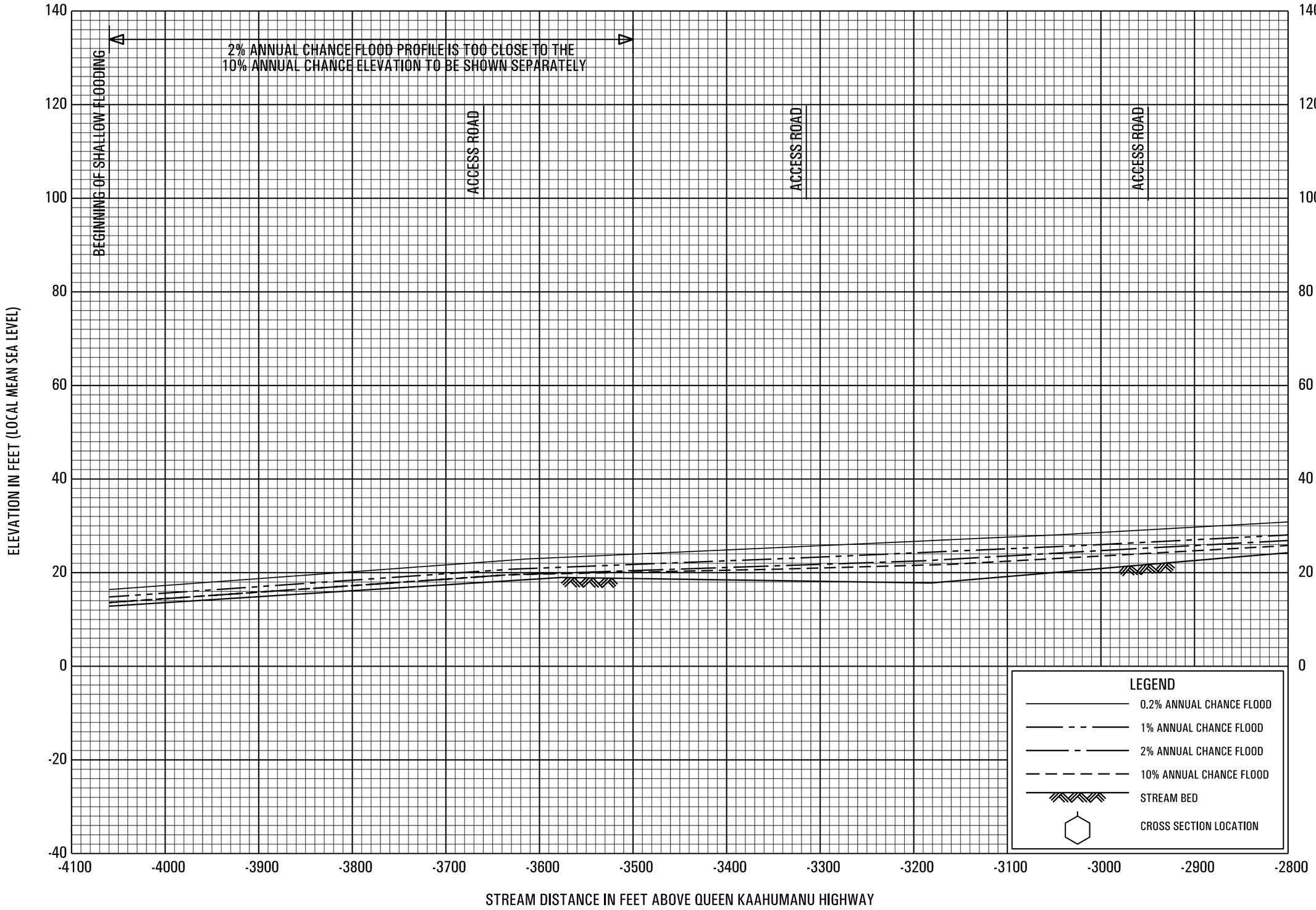
FLOOD PROFILES

KALUIIKI BRANCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

140P



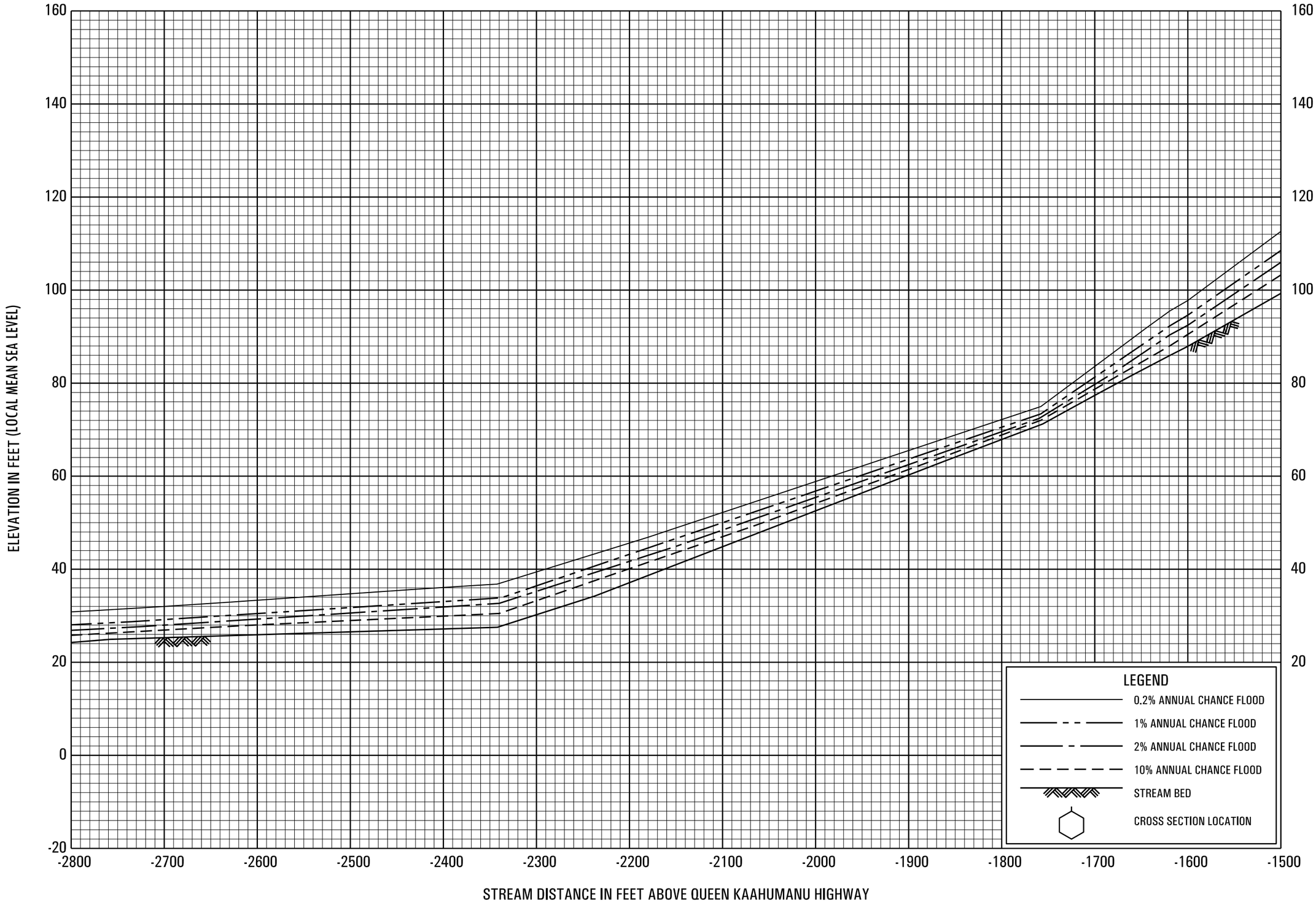
FLOOD PROFILES

KAMAKOA GULCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

141P

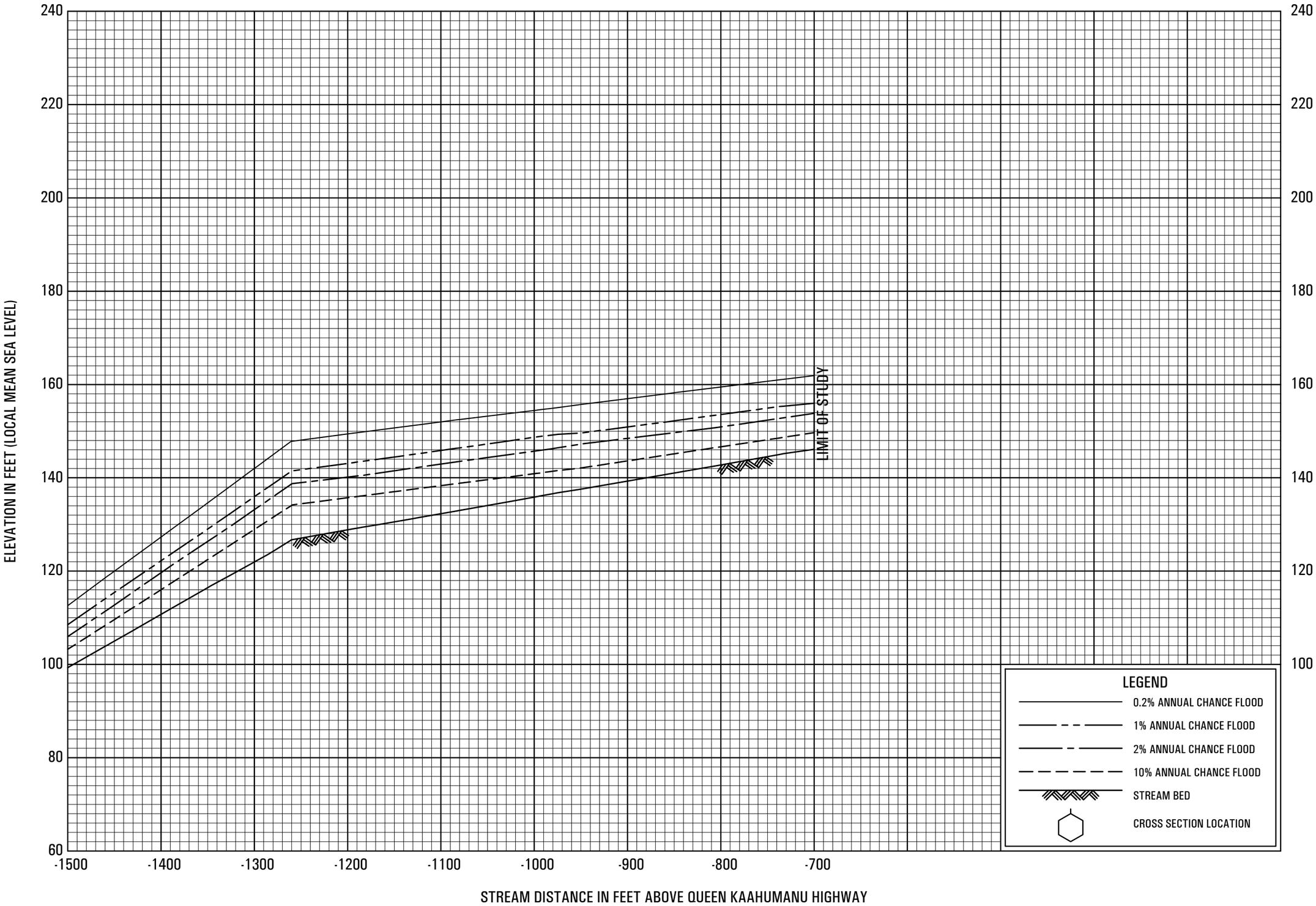


FLOOD PROFILES

KAMAKOA GULCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

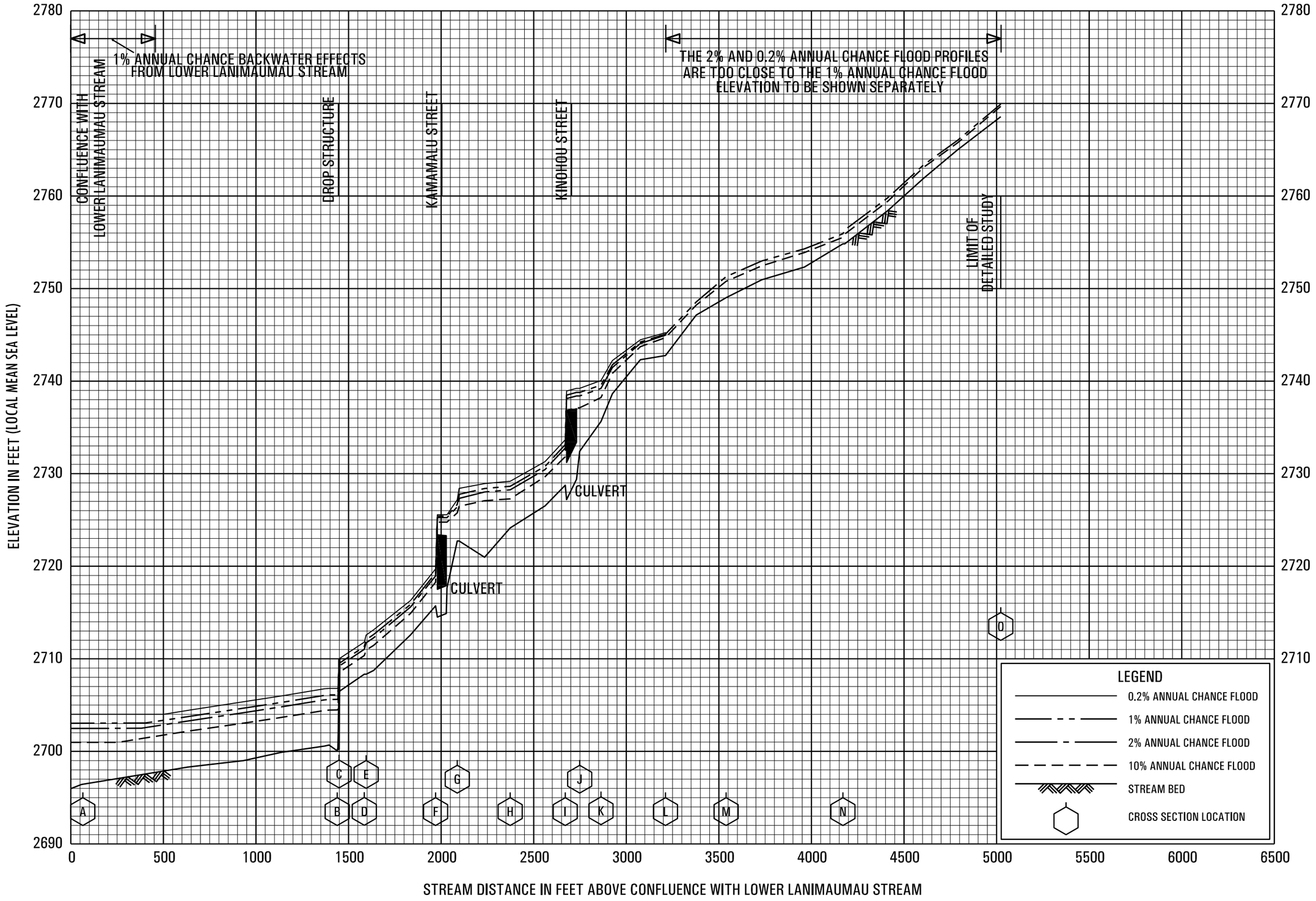


FLOOD PROFILES

KAMAKOA GULCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

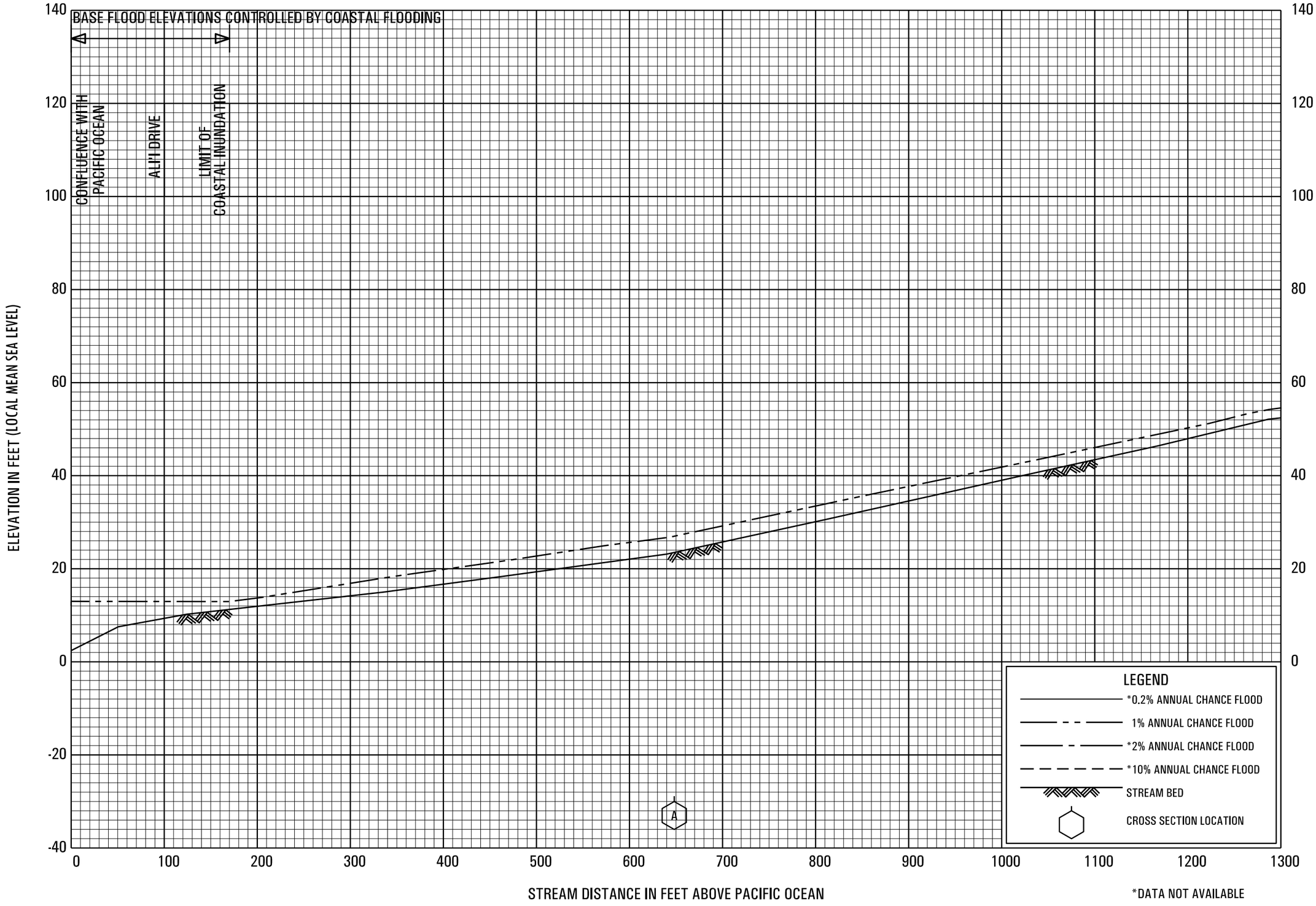


FLOOD PROFILES

KAMUELA STREAM

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

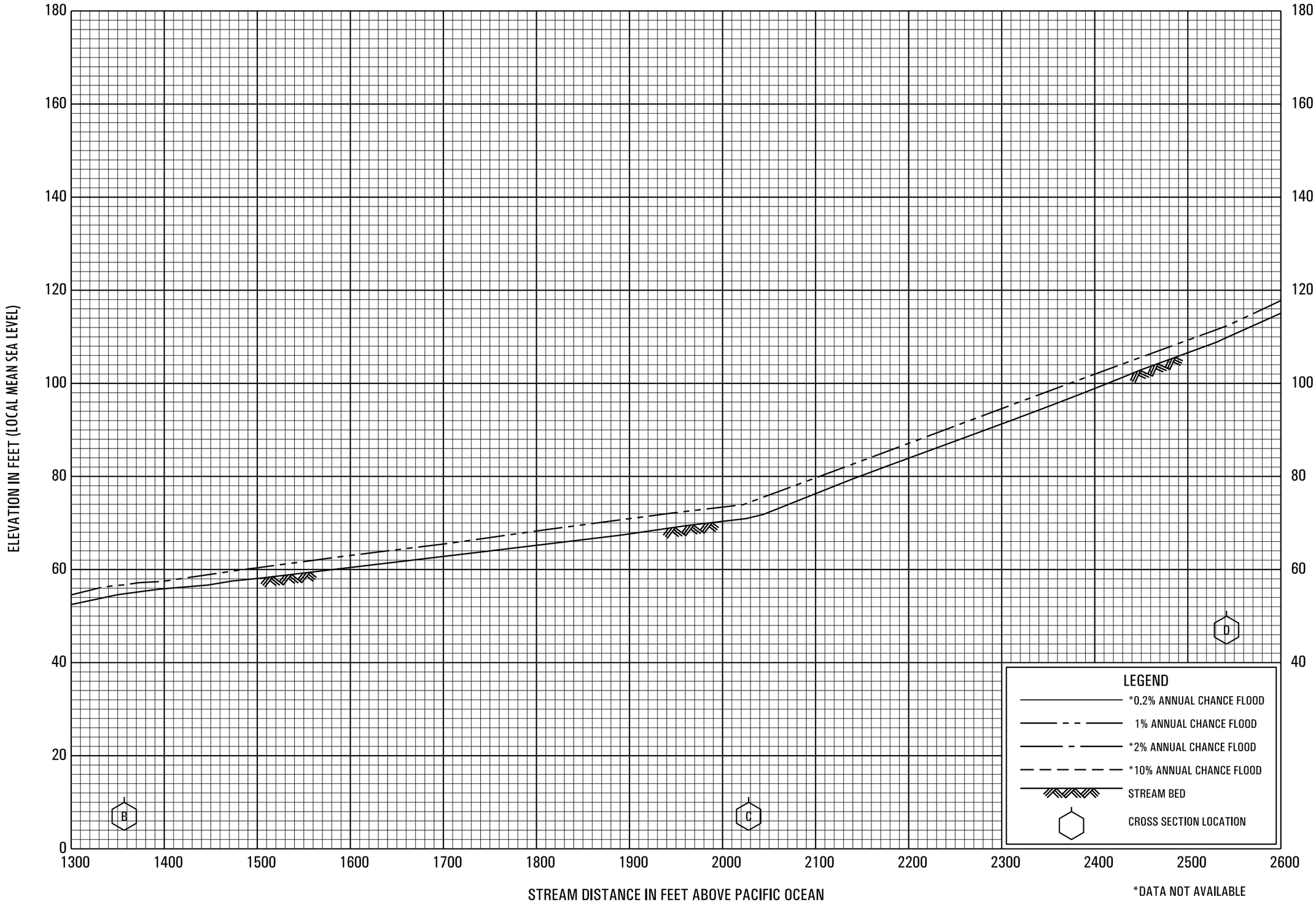


FLOOD PROFILES

KAUMALUMALU DRAINAGEWAY

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

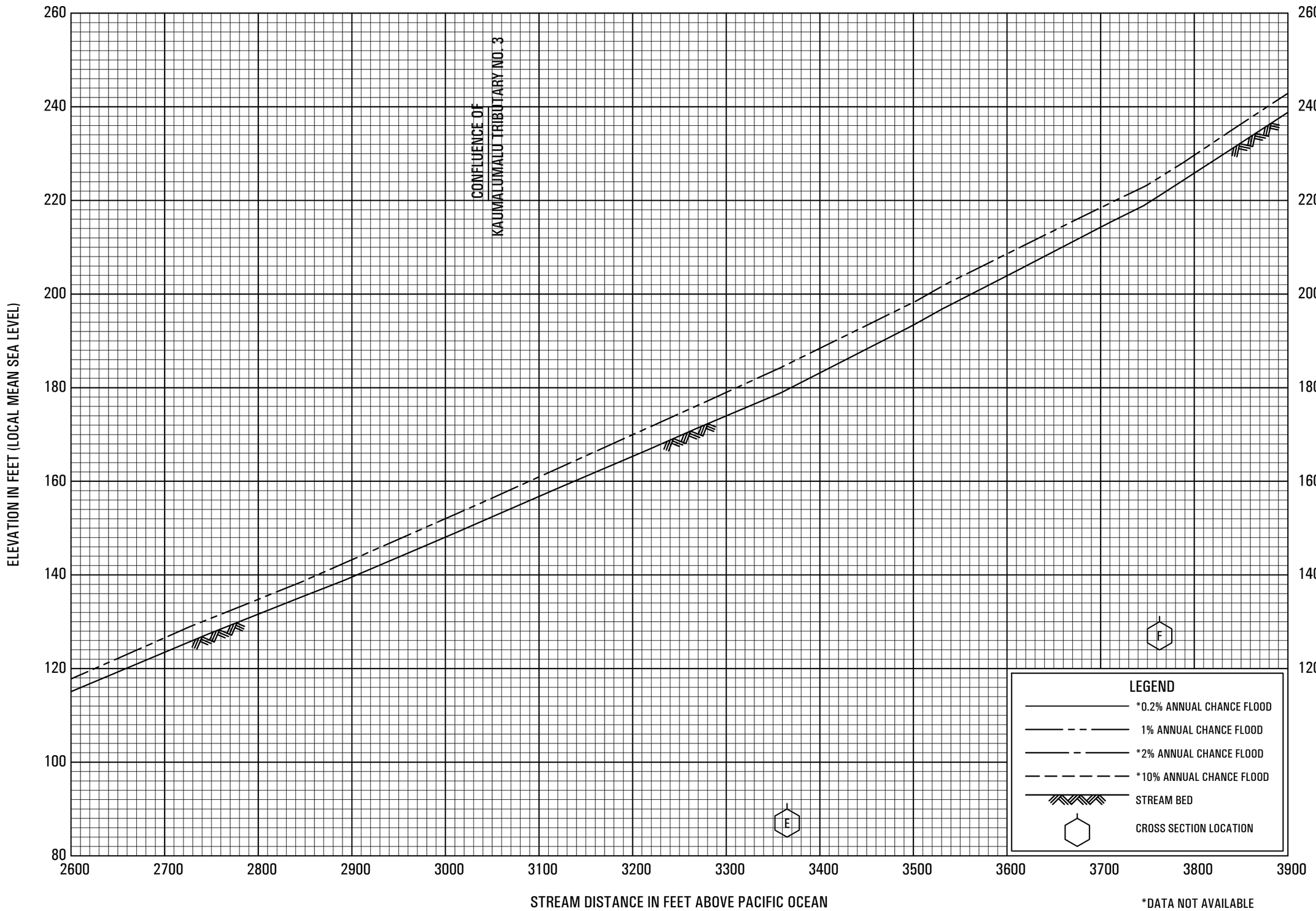


FLOOD PROFILES

KAUMALUMALU DRAINAGEWAY

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI



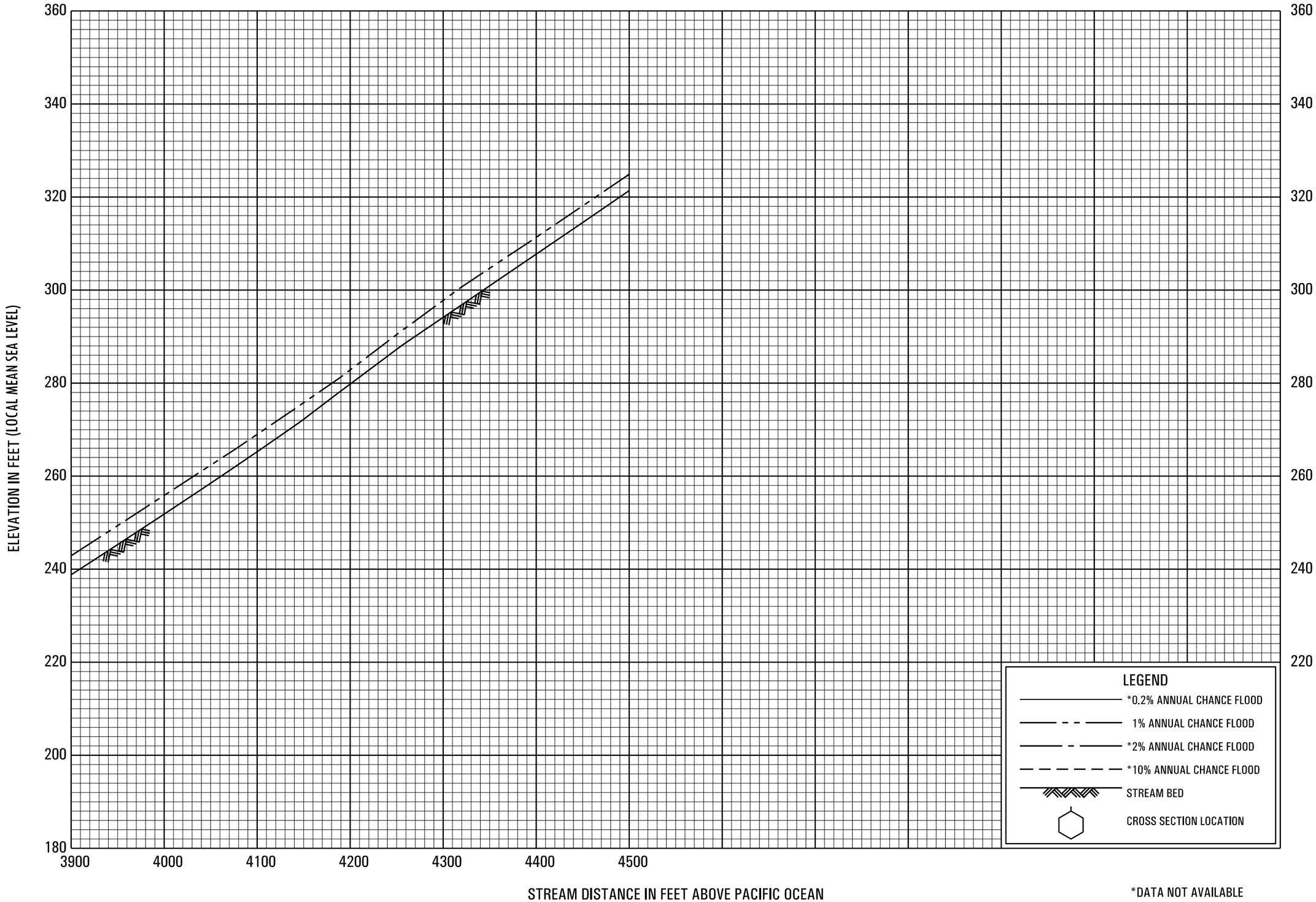
*DATA NOT AVAILABLE

FLOOD PROFILES

KAUMALUMALU DRAINAGEWAY

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI



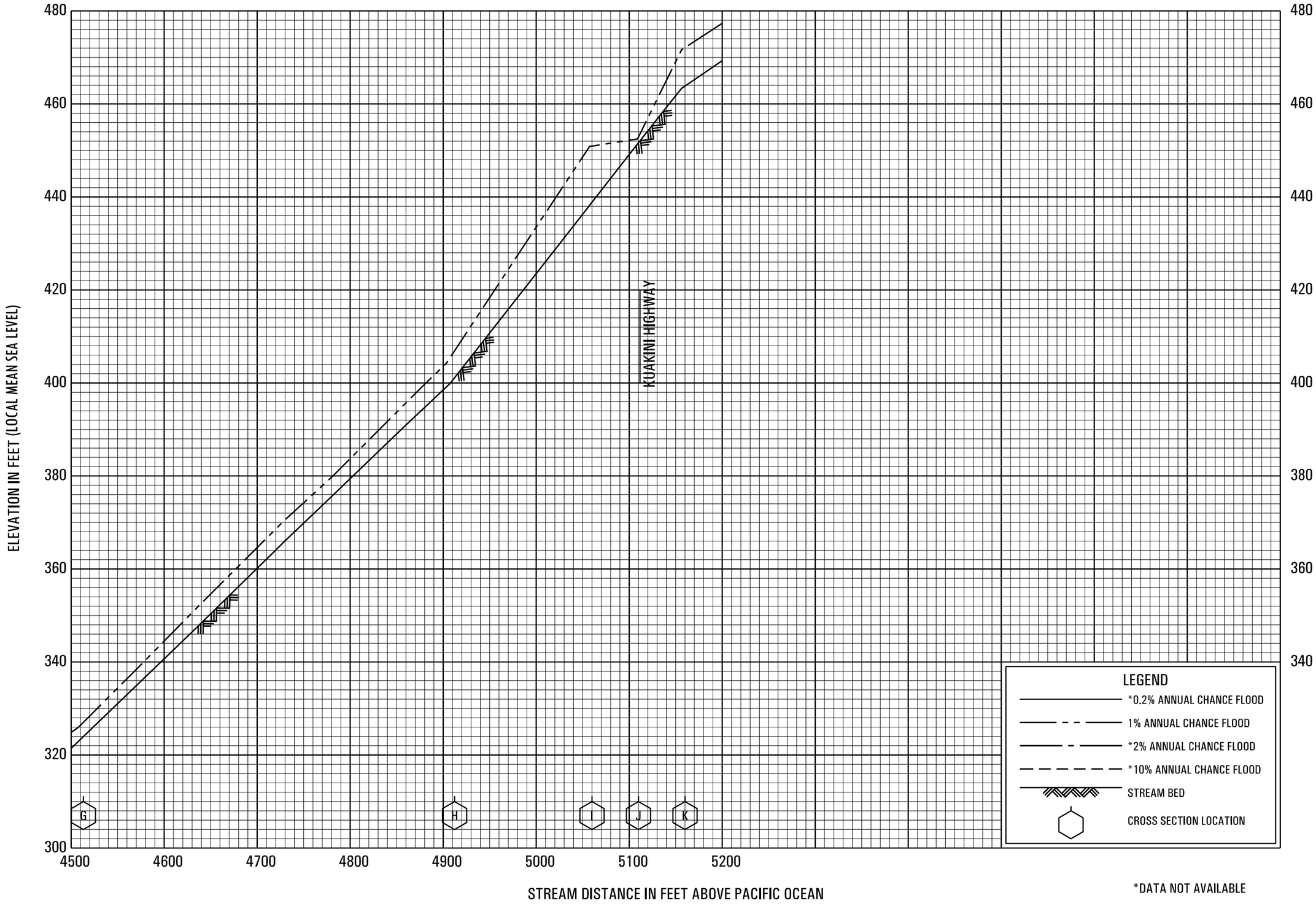
*DATA NOT AVAILABLE

FLOOD PROFILES

KAUMALUMALU DRAINAGEWAY

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI



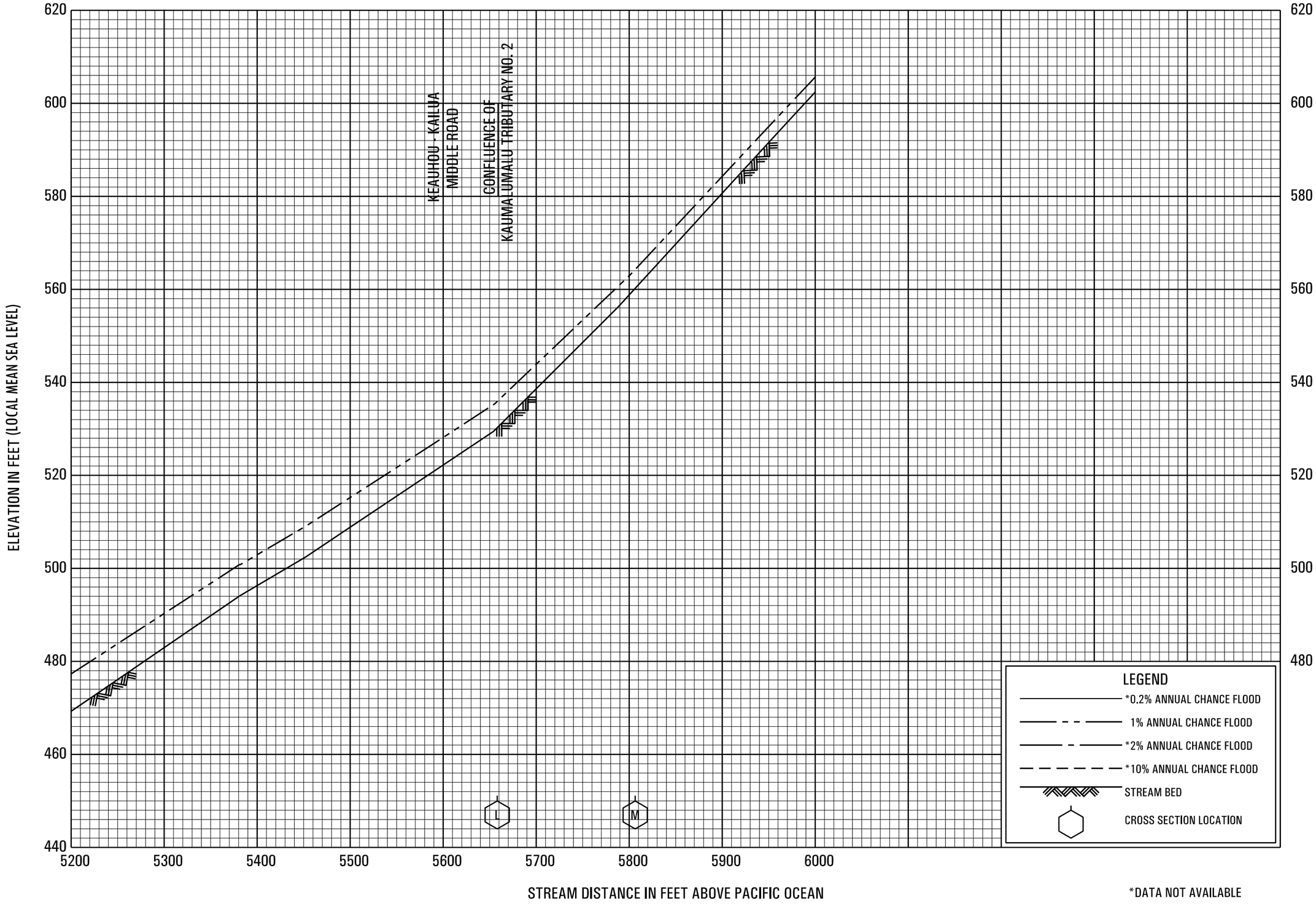
*DATA NOT AVAILABLE

FLOOD PROFILES

KAUMALUMALU DRAINAGEWAY

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI



*DATA NOT AVAILABLE

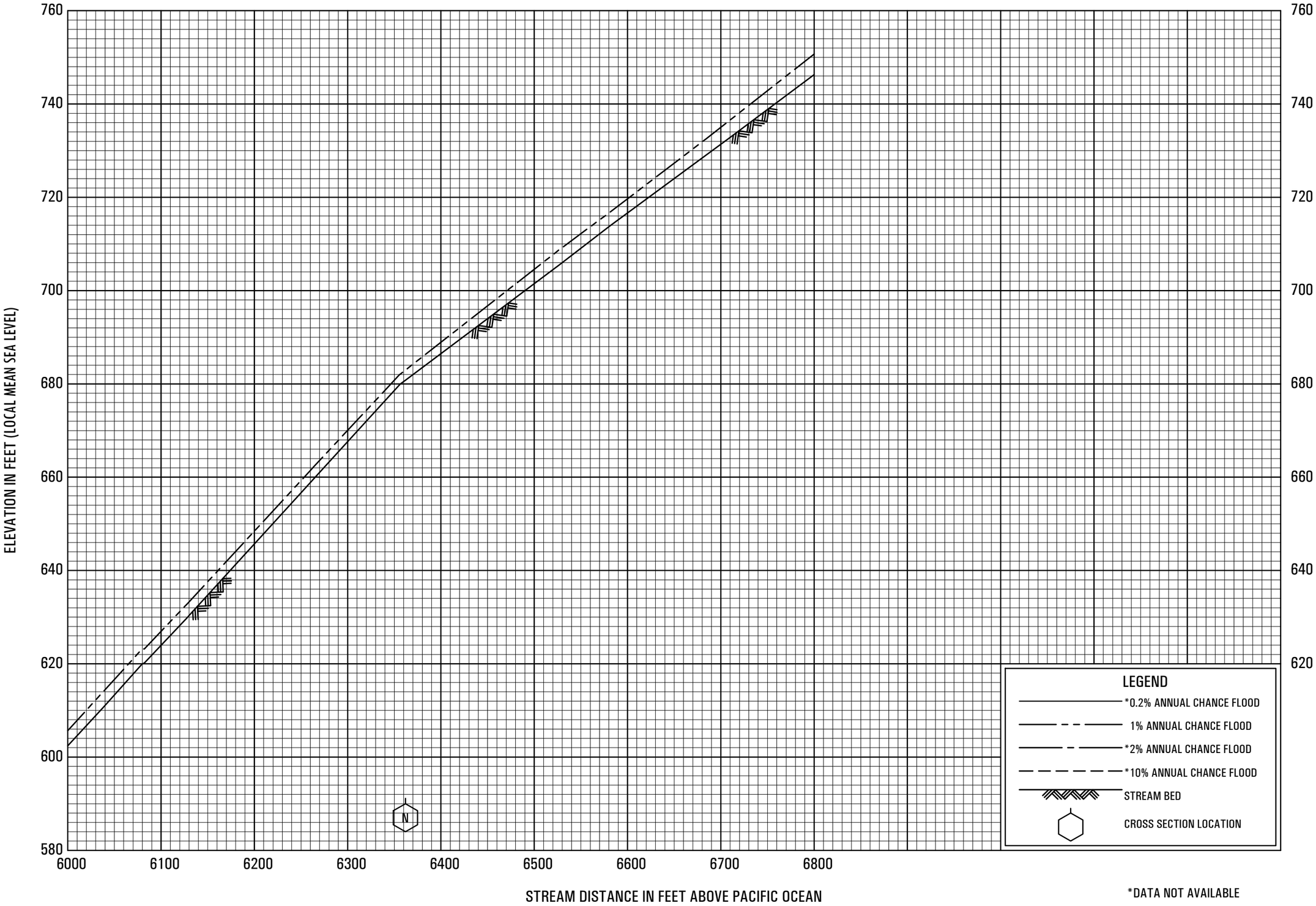
FLOOD PROFILES

KAUMALUMALU DRAINAGEWAY

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

150P



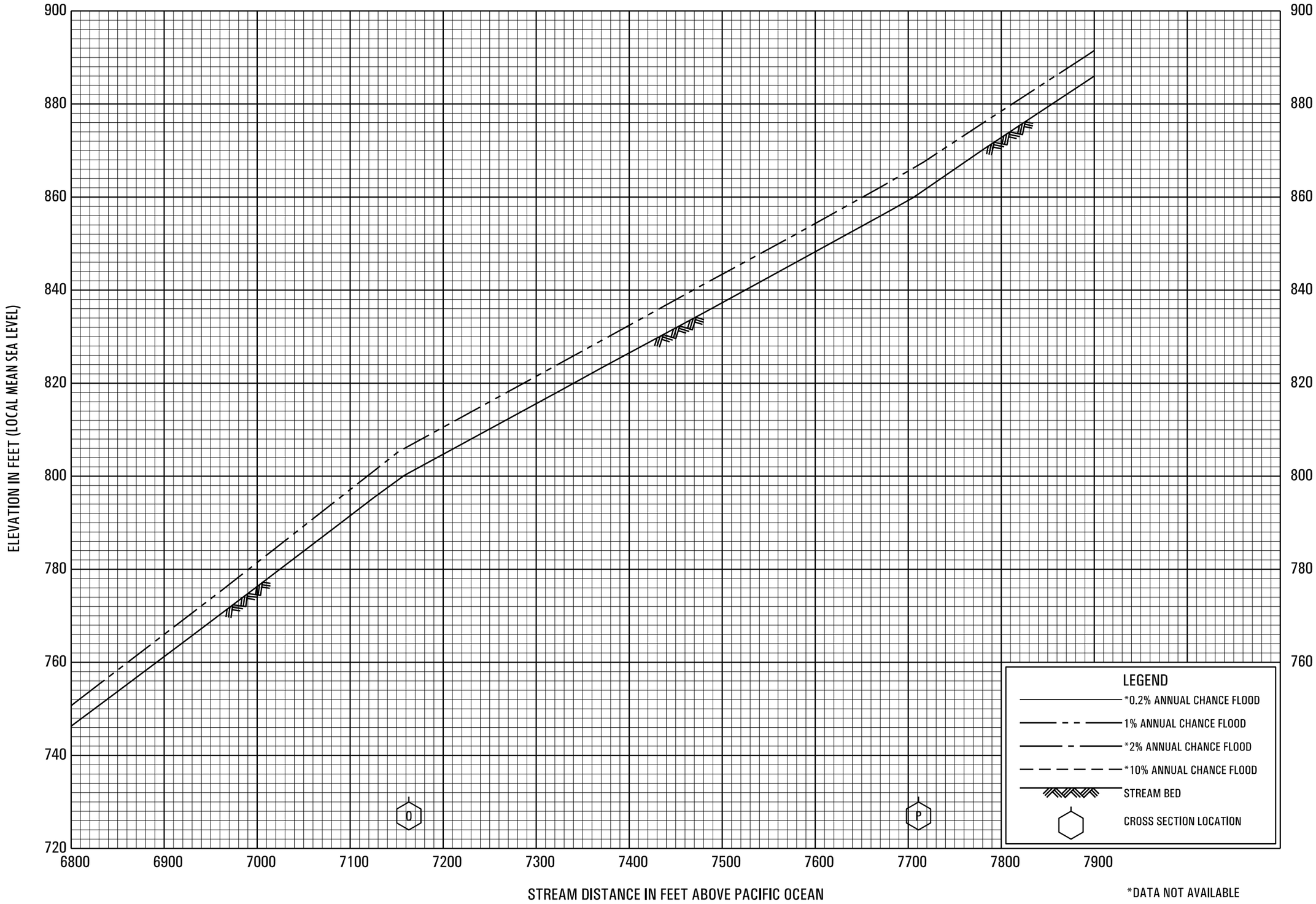
FLOOD PROFILES

KAUMALUMALU DRAINAGEWAY

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

151P



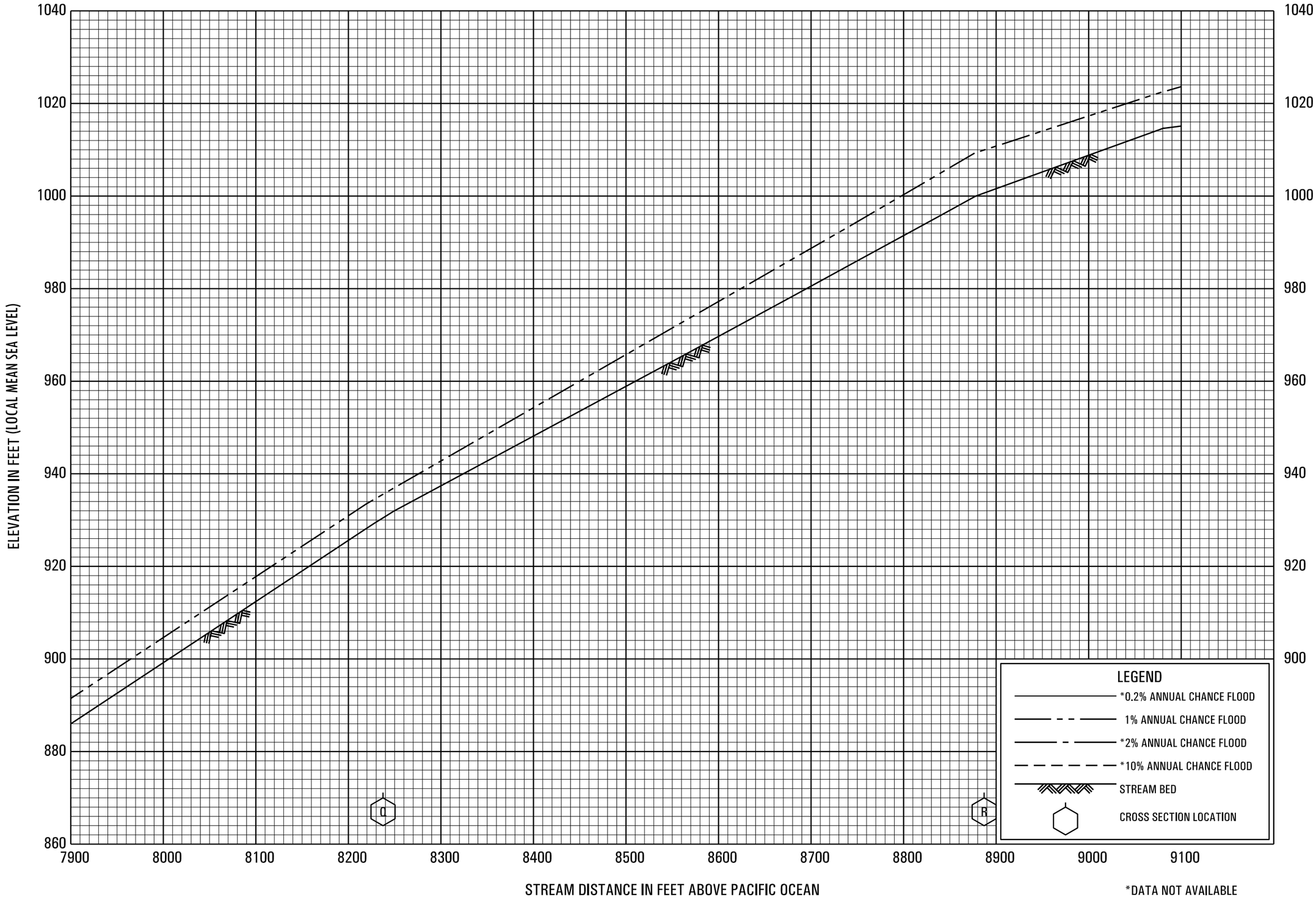
*DATA NOT AVAILABLE

FLOOD PROFILES

KAUMALUMALU DRAINAGEWAY

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

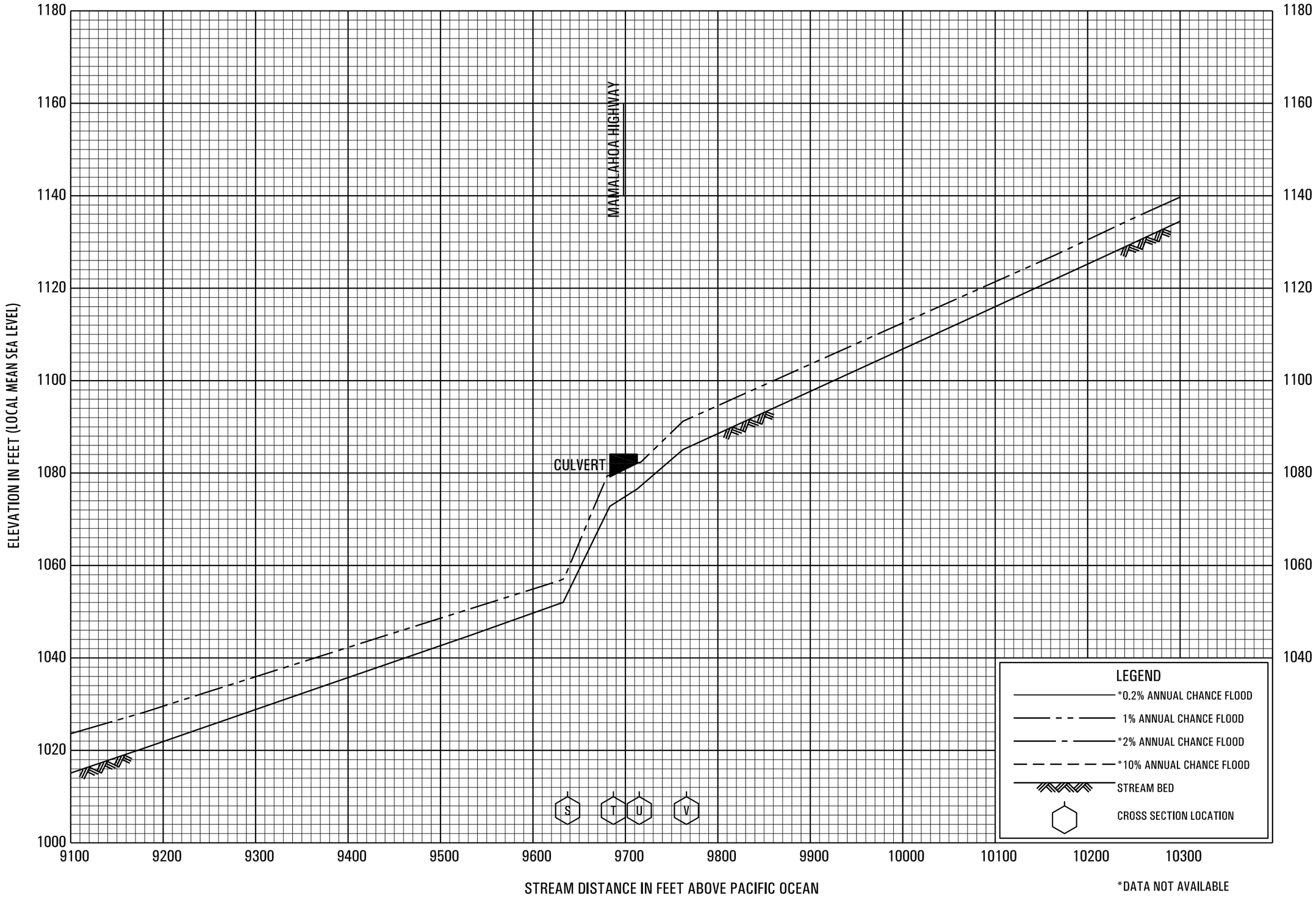


FLOOD PROFILES

KAUMALUMALU DRAINAGEWAY

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI



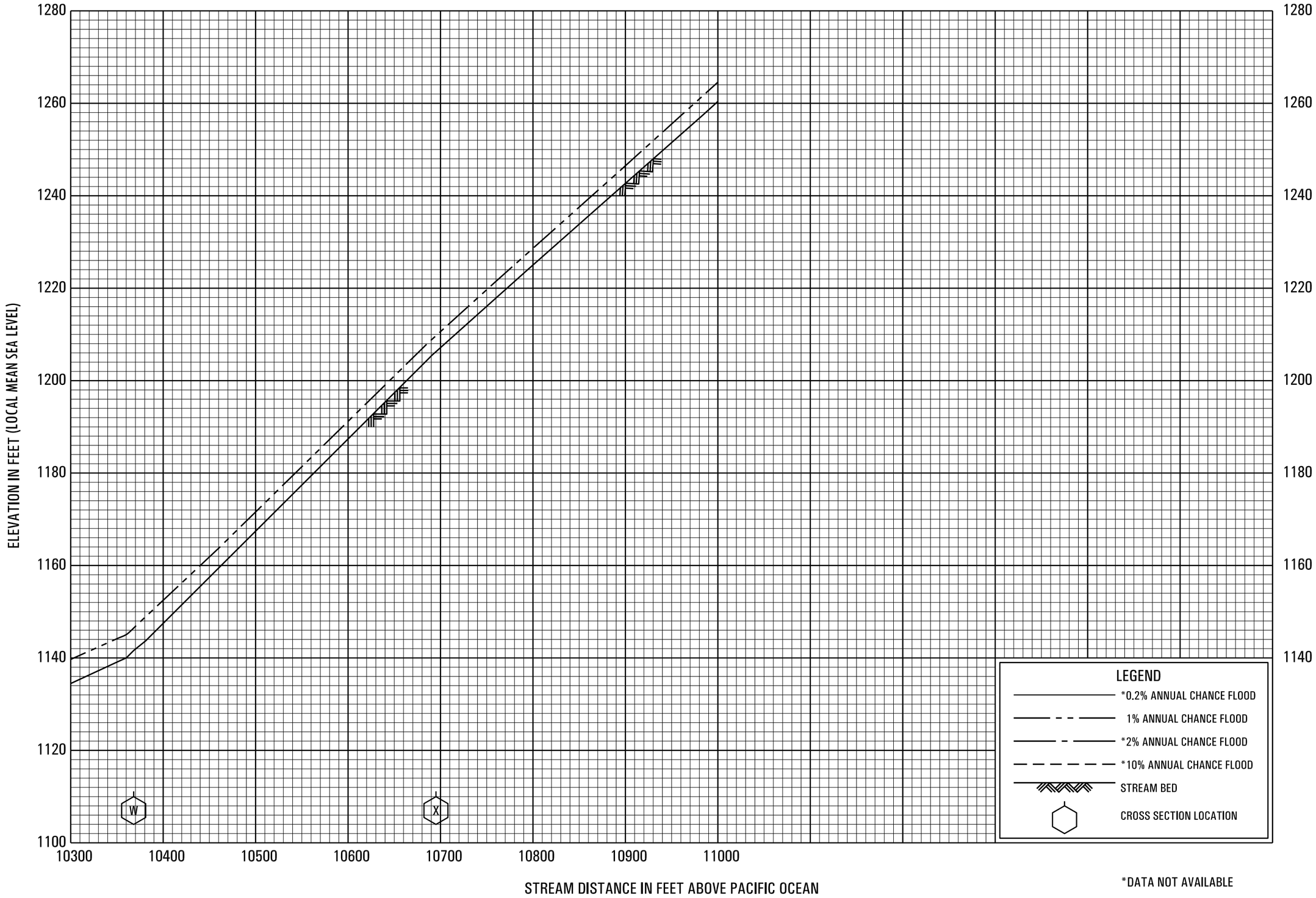
FLOOD PROFILES

KAUMALUMALU DRAINAGEWAY

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

154P



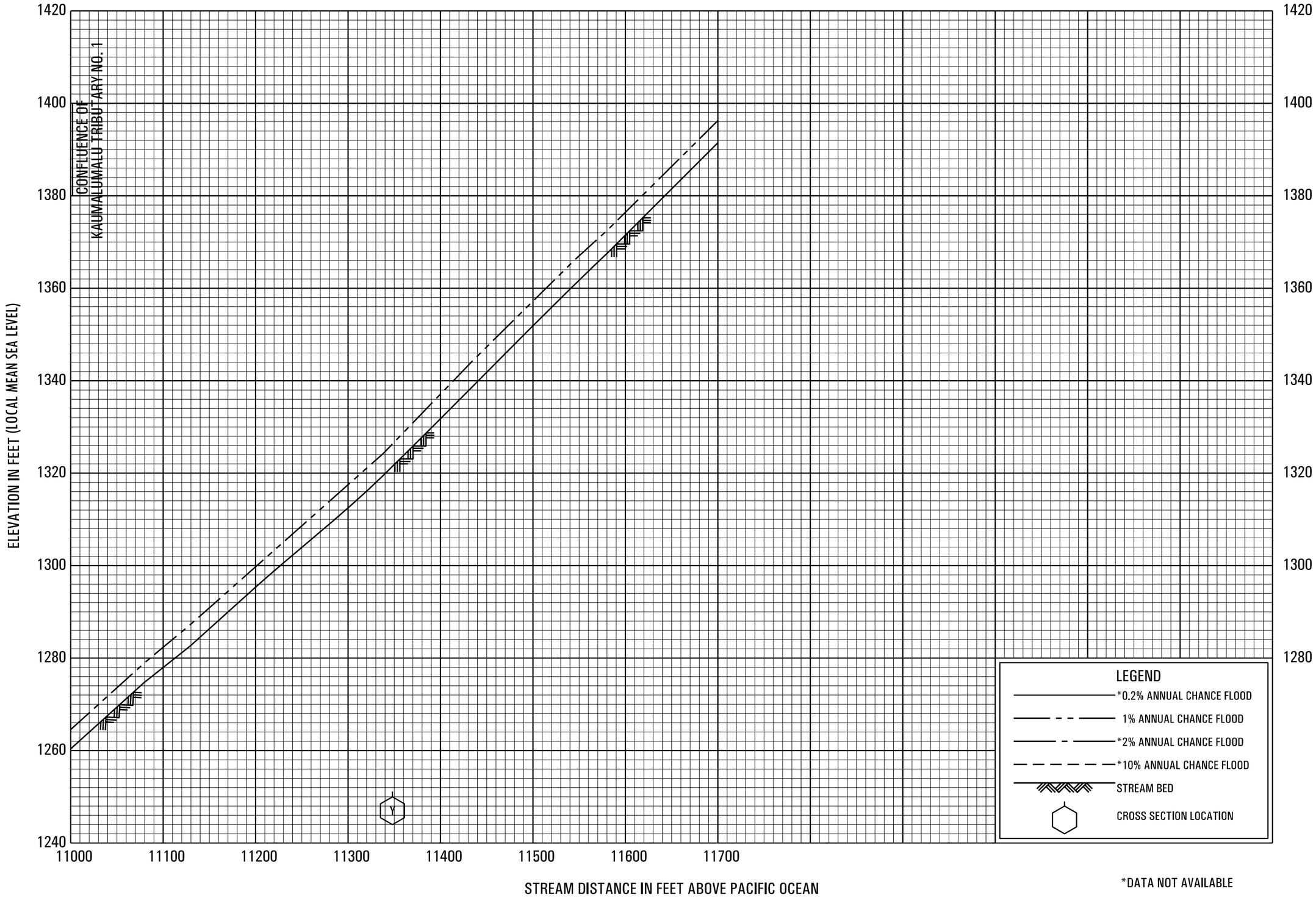
FLOOD PROFILES

KAUMALUMALU DRAINAGEWAY

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

155P



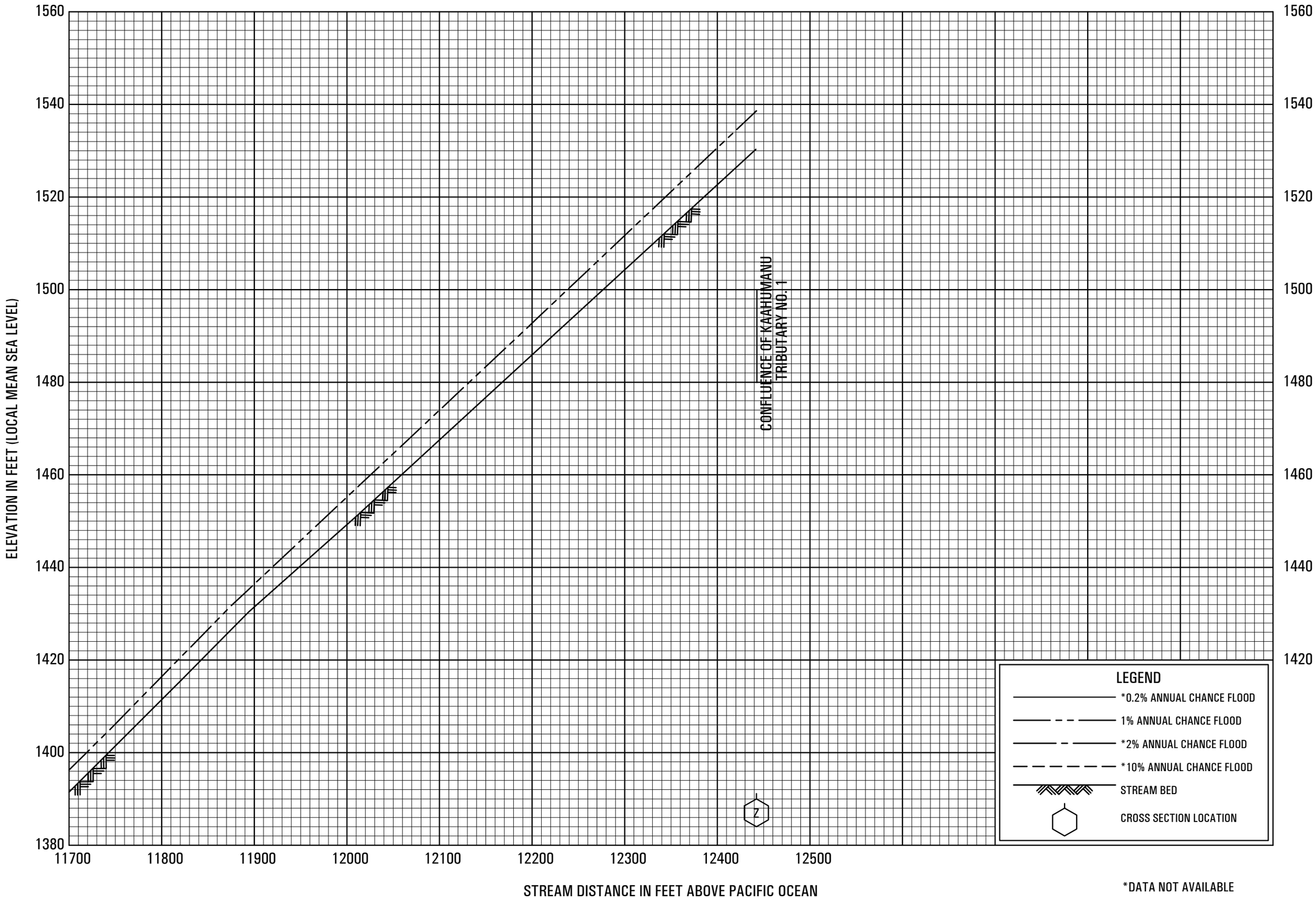
FLOOD PROFILES

KAUMALUMALU DRAINAGEWAY

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

156P



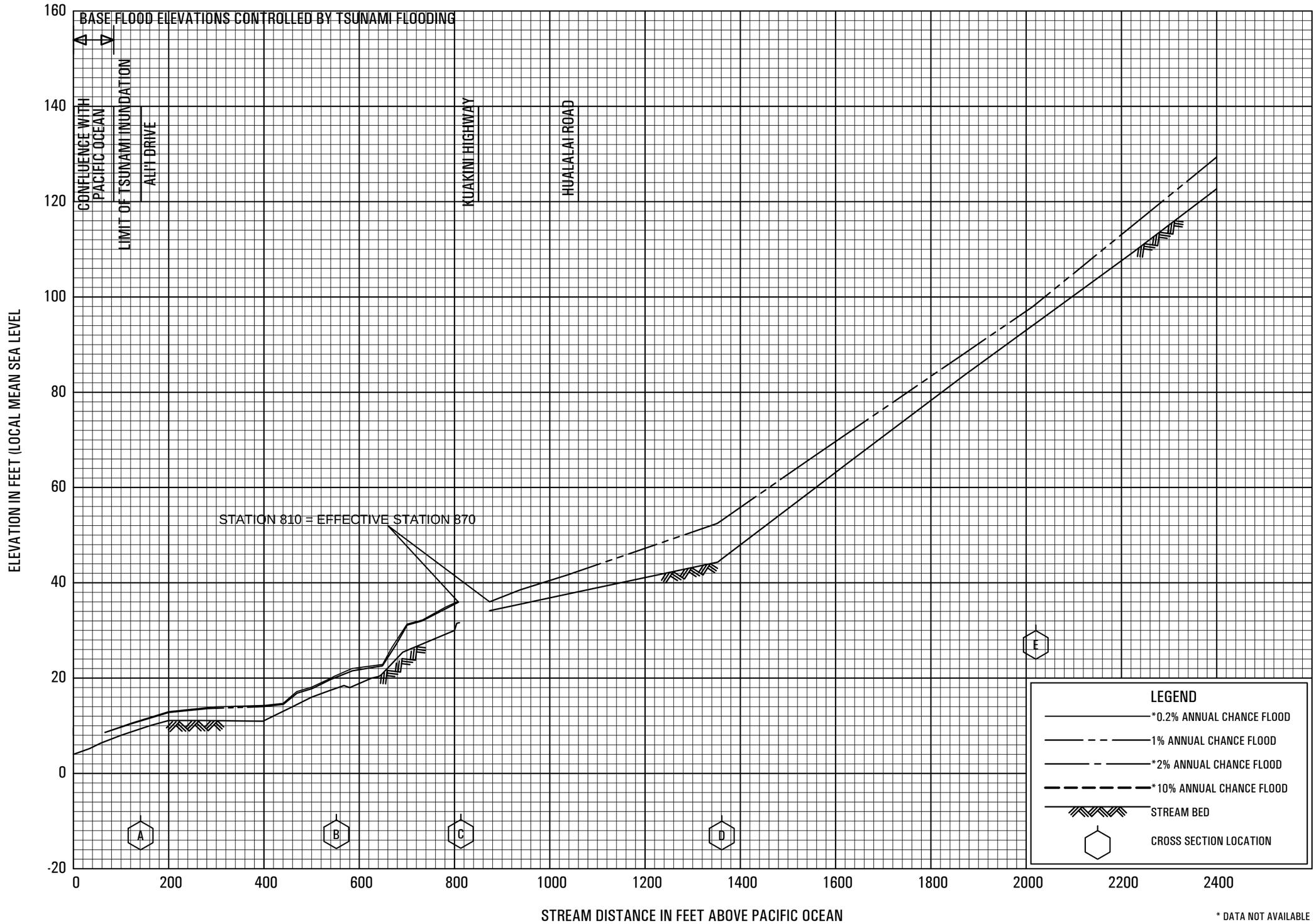
FLOOD PROFILES

KAUMALUMALU DRAINAGEWAY

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

157P

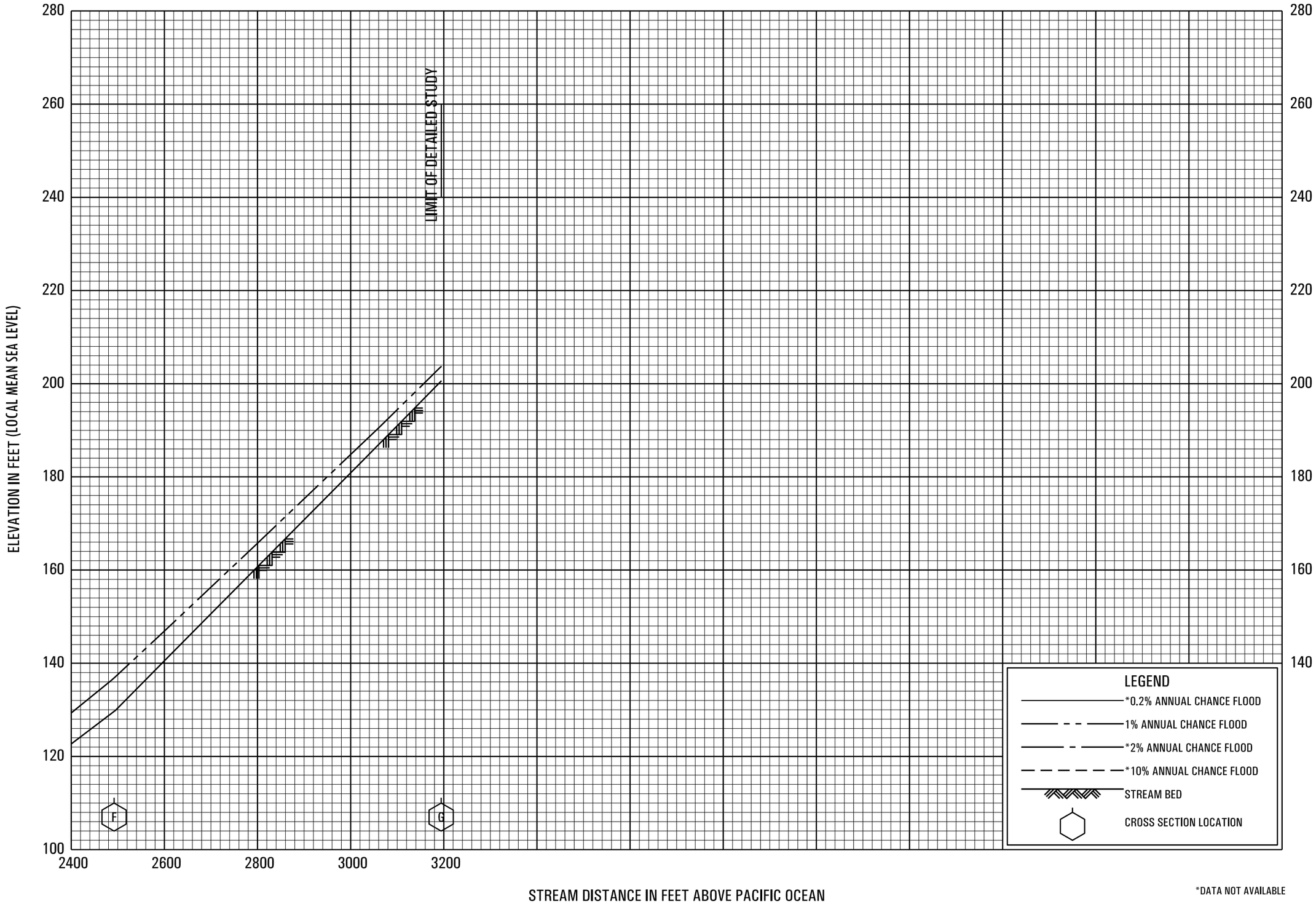


FLOOD PROFILES

KEOPU DRAINAGEWAY

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI



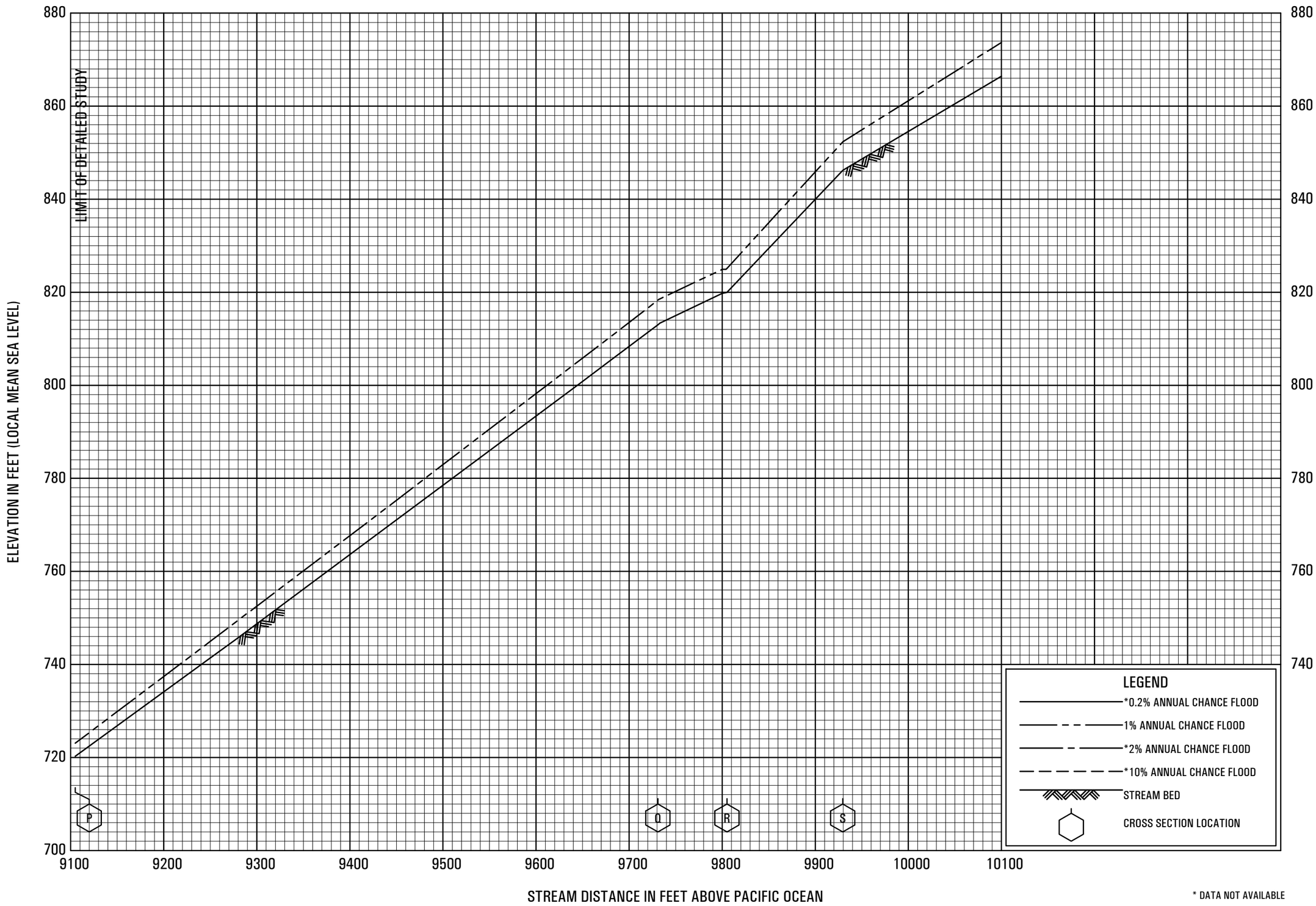
FLOOD PROFILES

KEOPU DRAINAGEWAY

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

159P



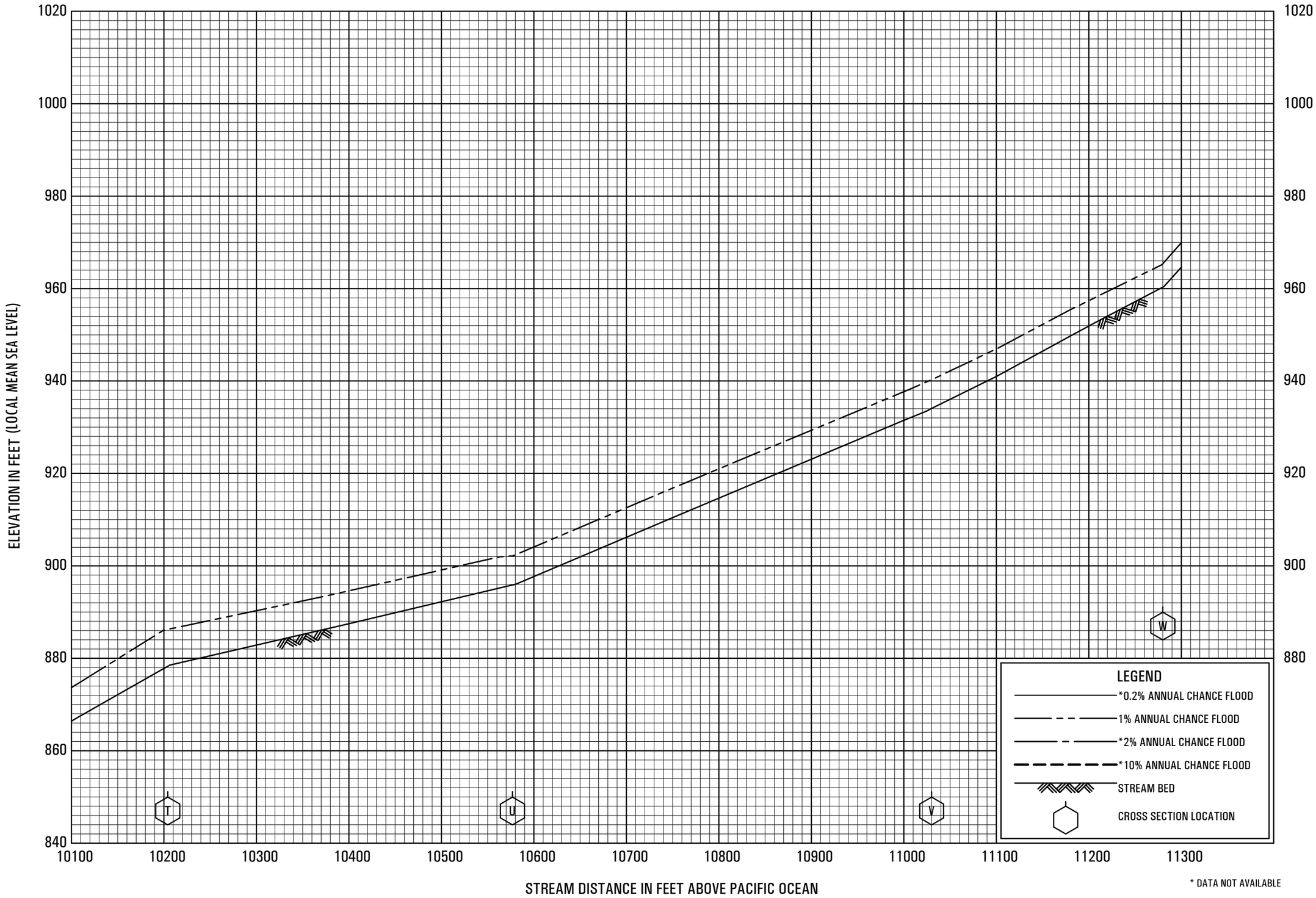
* DATA NOT AVAILABLE

FLOOD PROFILES

KEOPU DRAINAGEWAY

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI



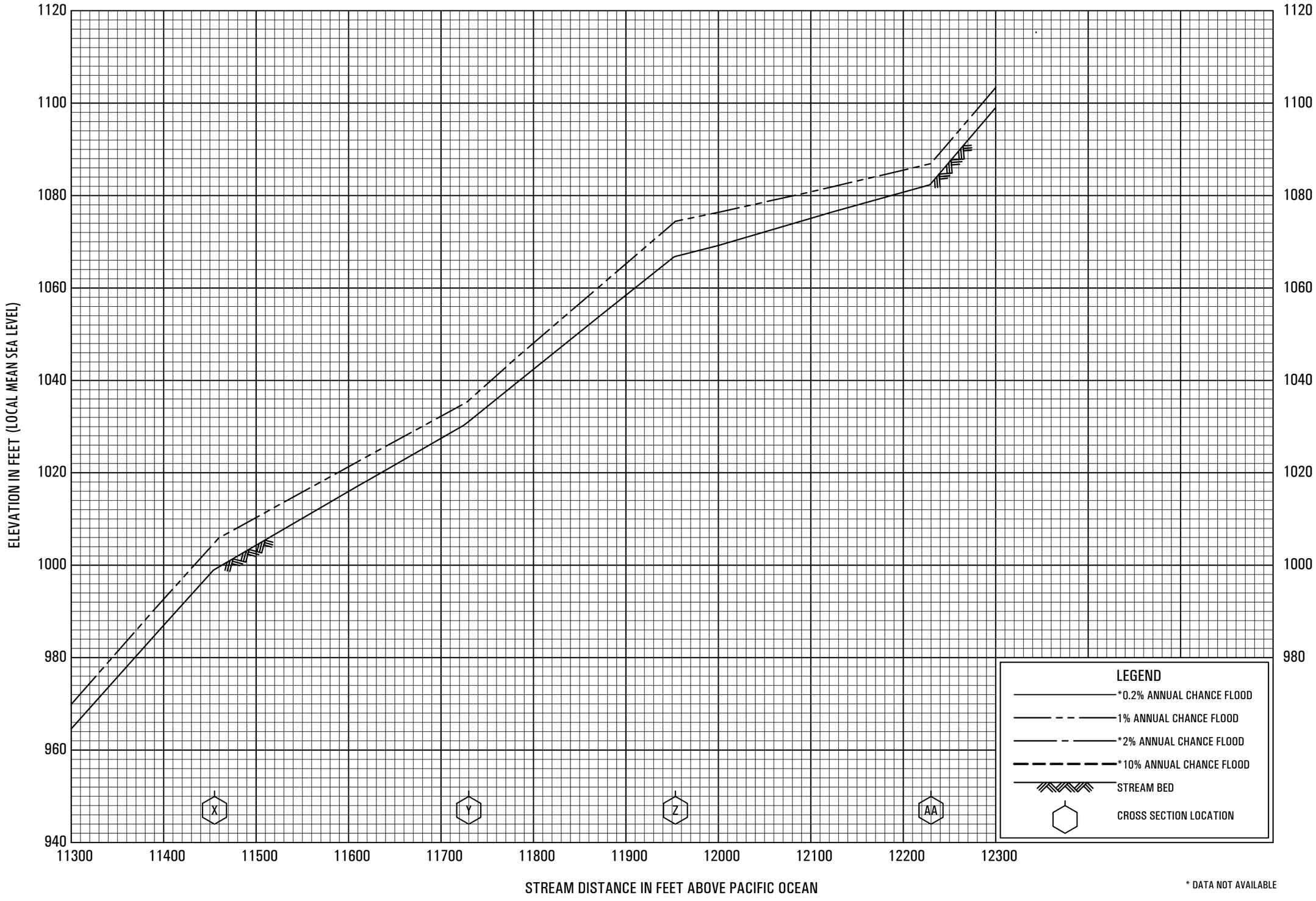
* DATA NOT AVAILABLE

FLOOD PROFILES

KEOPU DRAINAGEWAY

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI



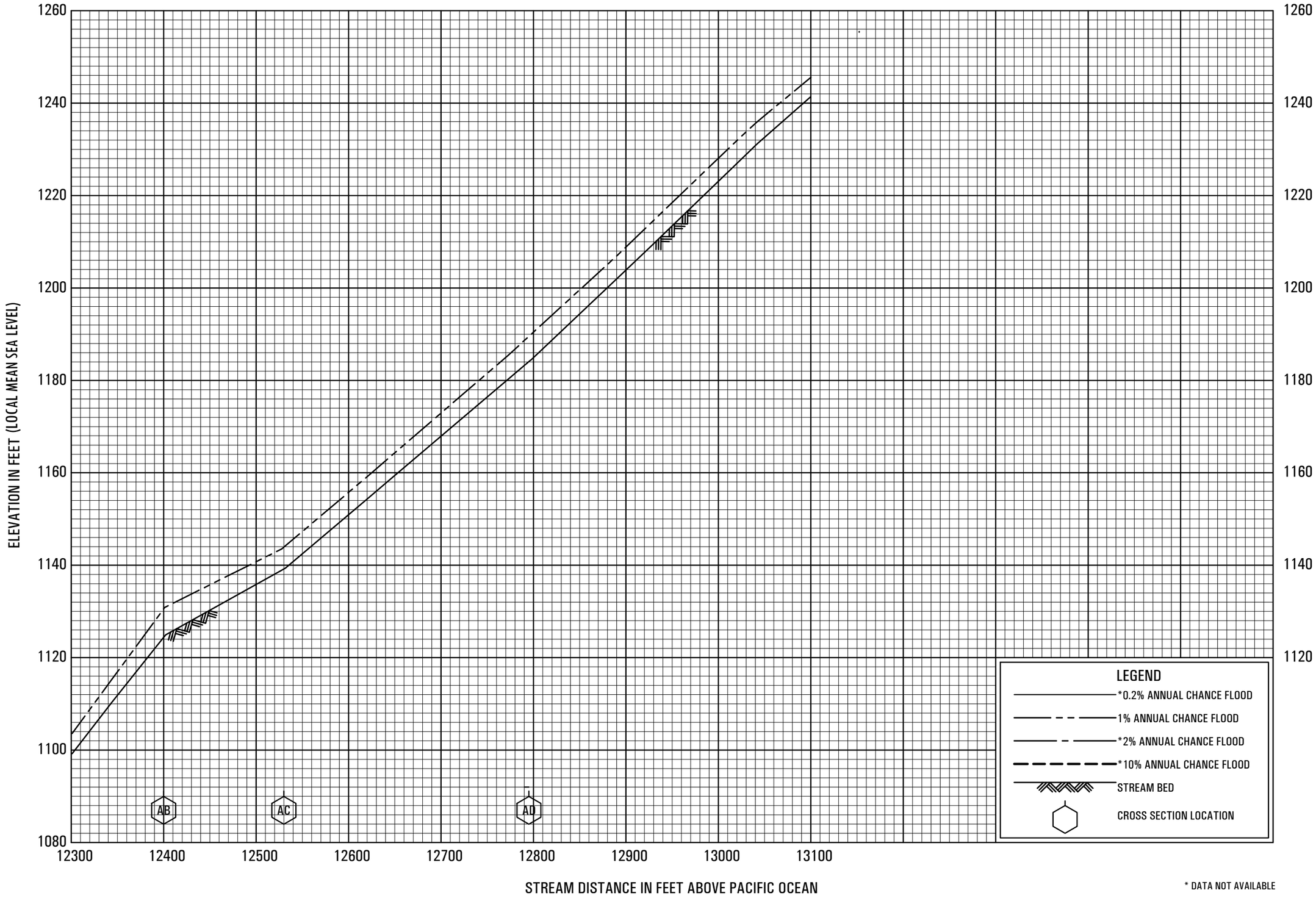
* DATA NOT AVAILABLE

FLOOD PROFILES

KEOPU DRAINAGEWAY

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI



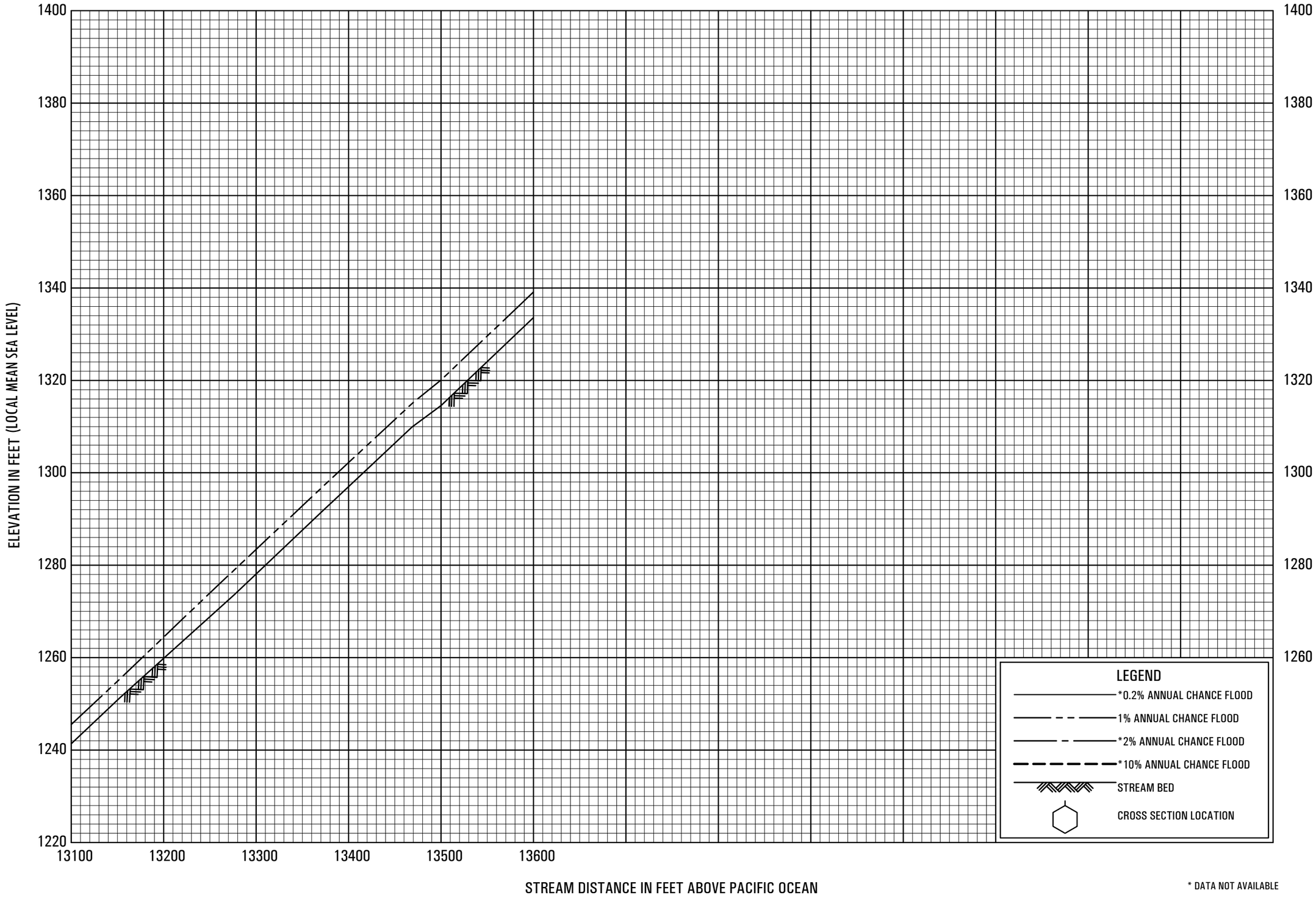
* DATA NOT AVAILABLE

FLOOD PROFILES

KEOPU DRAINAGEWAY

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI



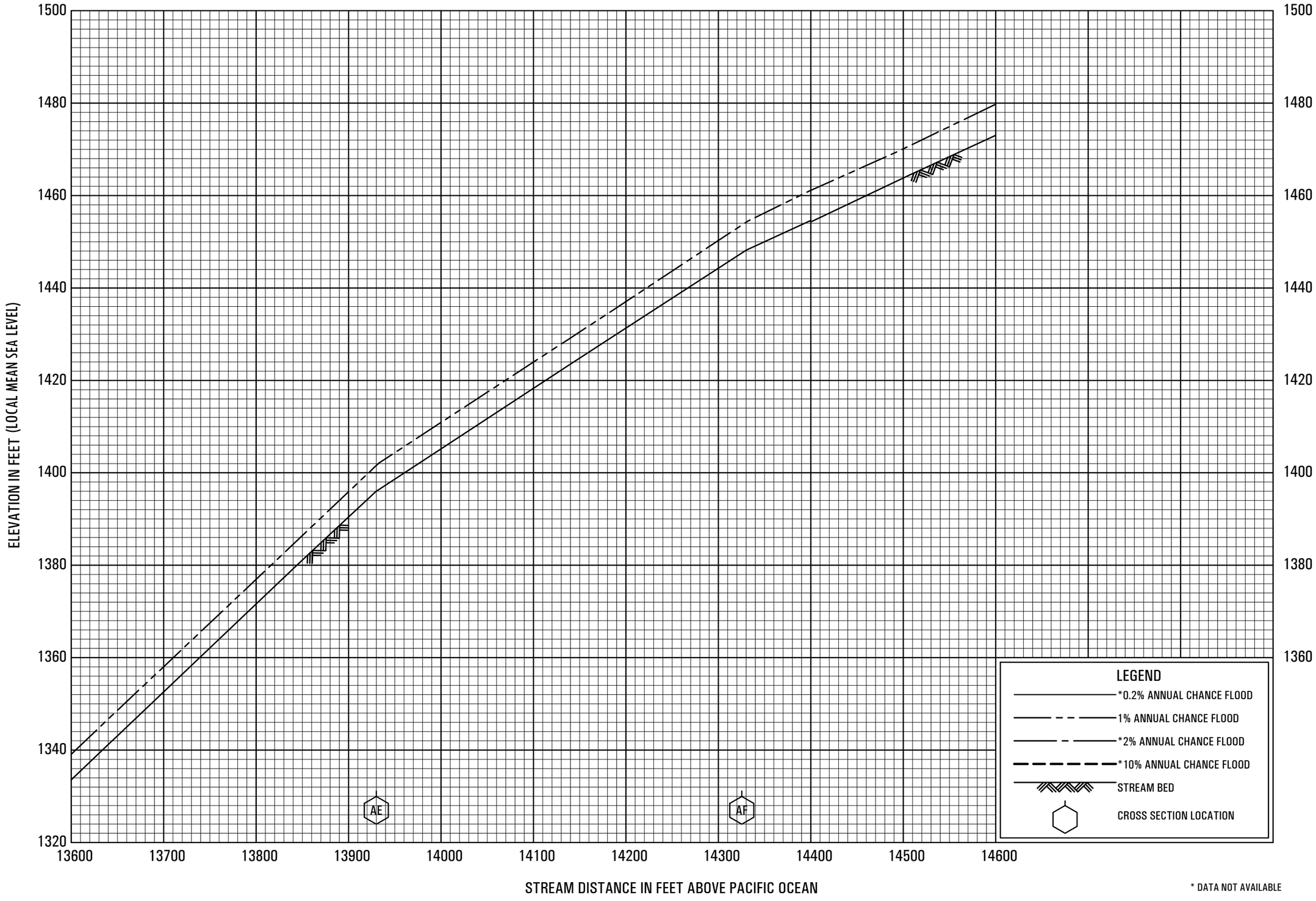
* DATA NOT AVAILABLE

FLOOD PROFILES

KEOPU DRAINAGEWAY

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI



* DATA NOT AVAILABLE

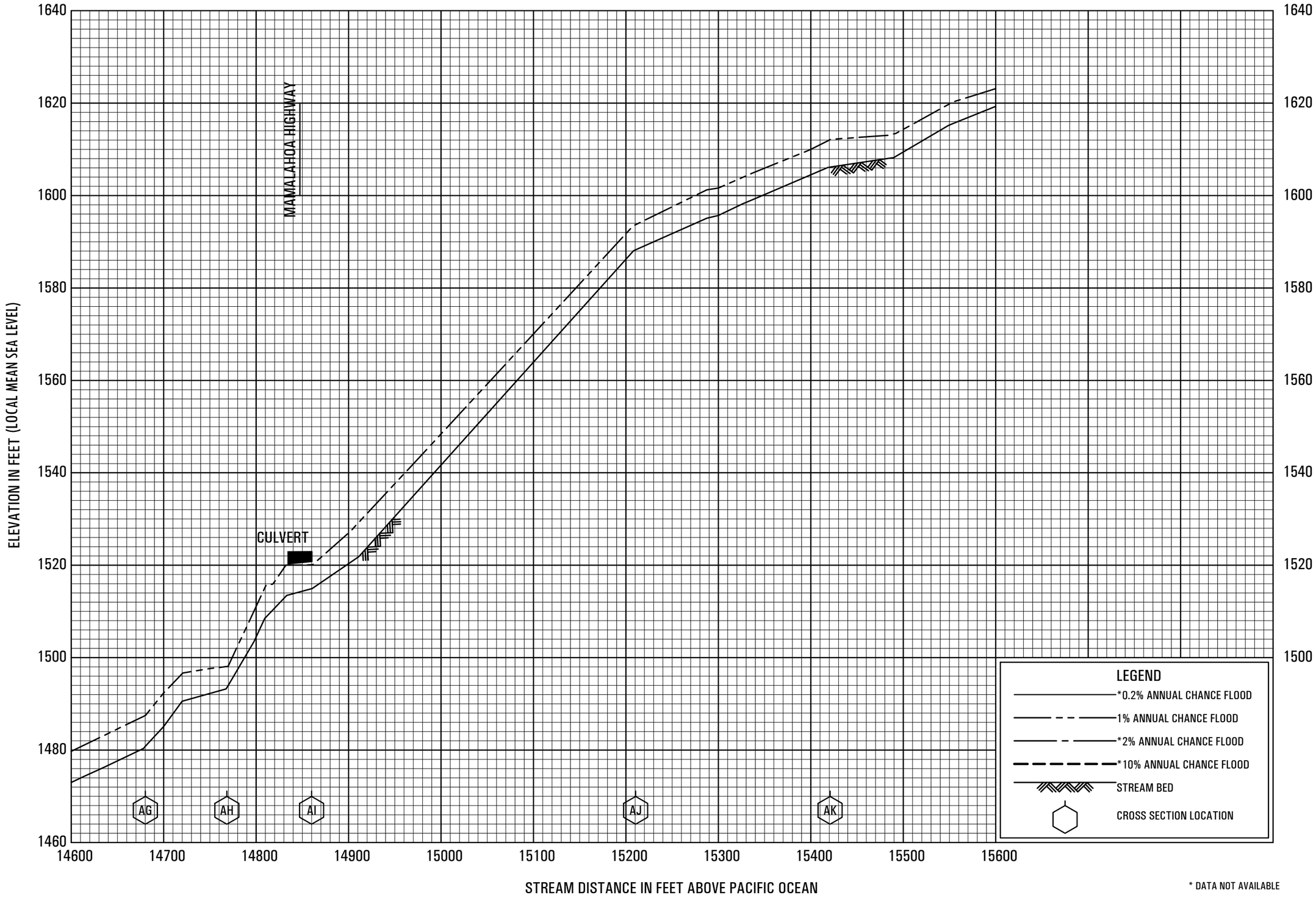
FLOOD PROFILES

KEOPU DRAINAGEWAY

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

165P



* DATA NOT AVAILABLE

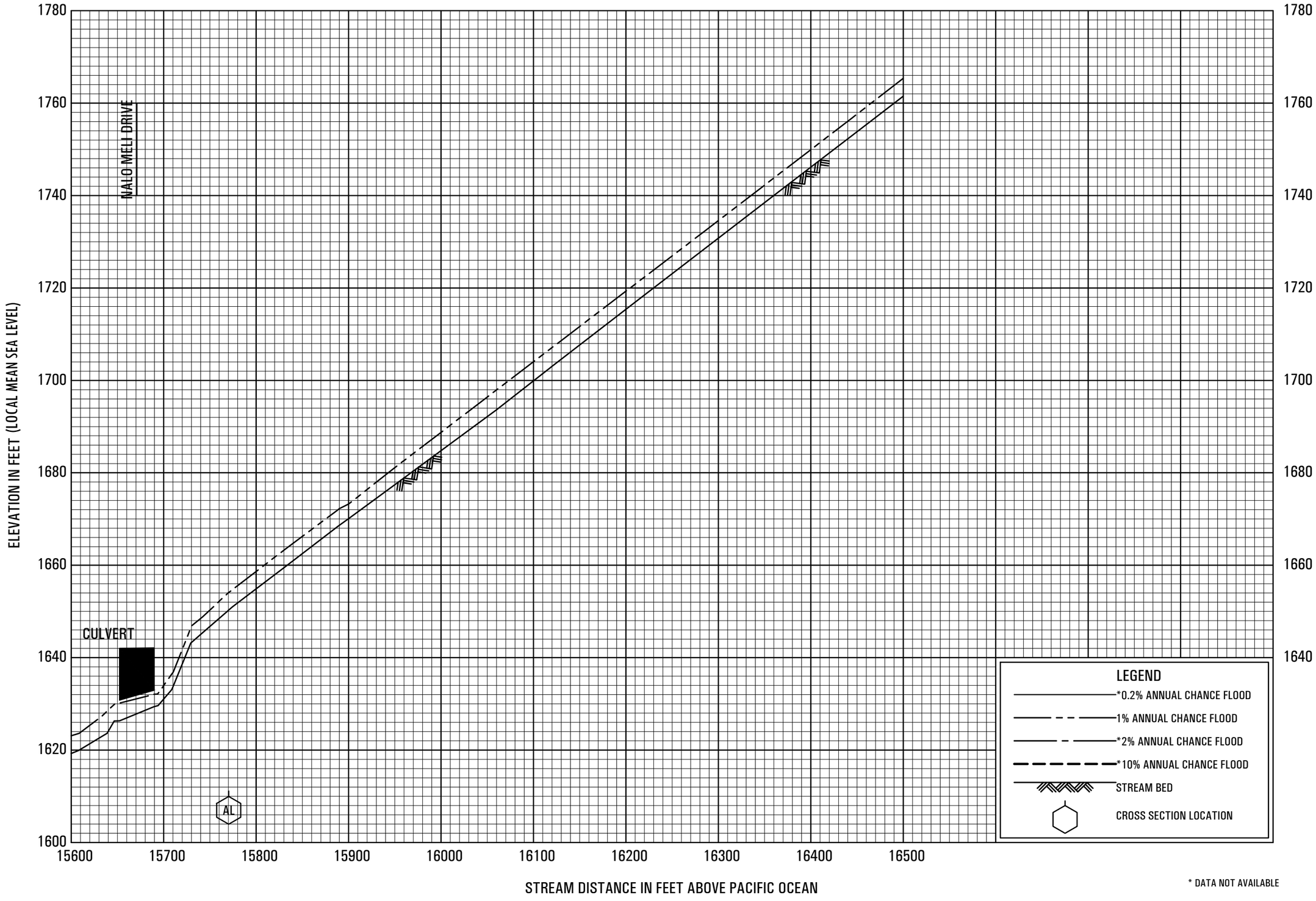
FLOOD PROFILES

KEOPU DRAINAGEWAY

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

166P



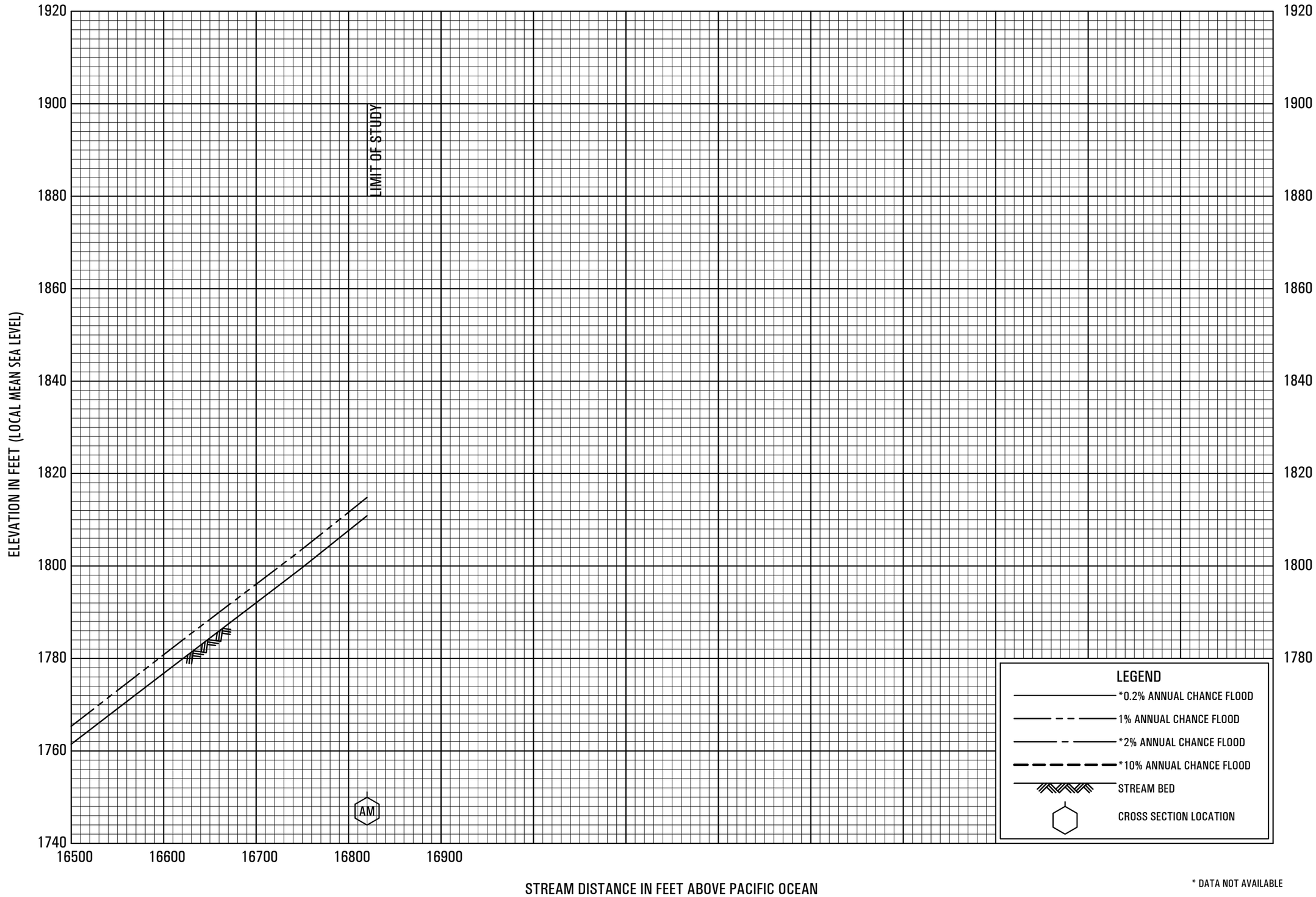
* DATA NOT AVAILABLE

FLOOD PROFILES

KEOPU DRAINAGEWAY

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI



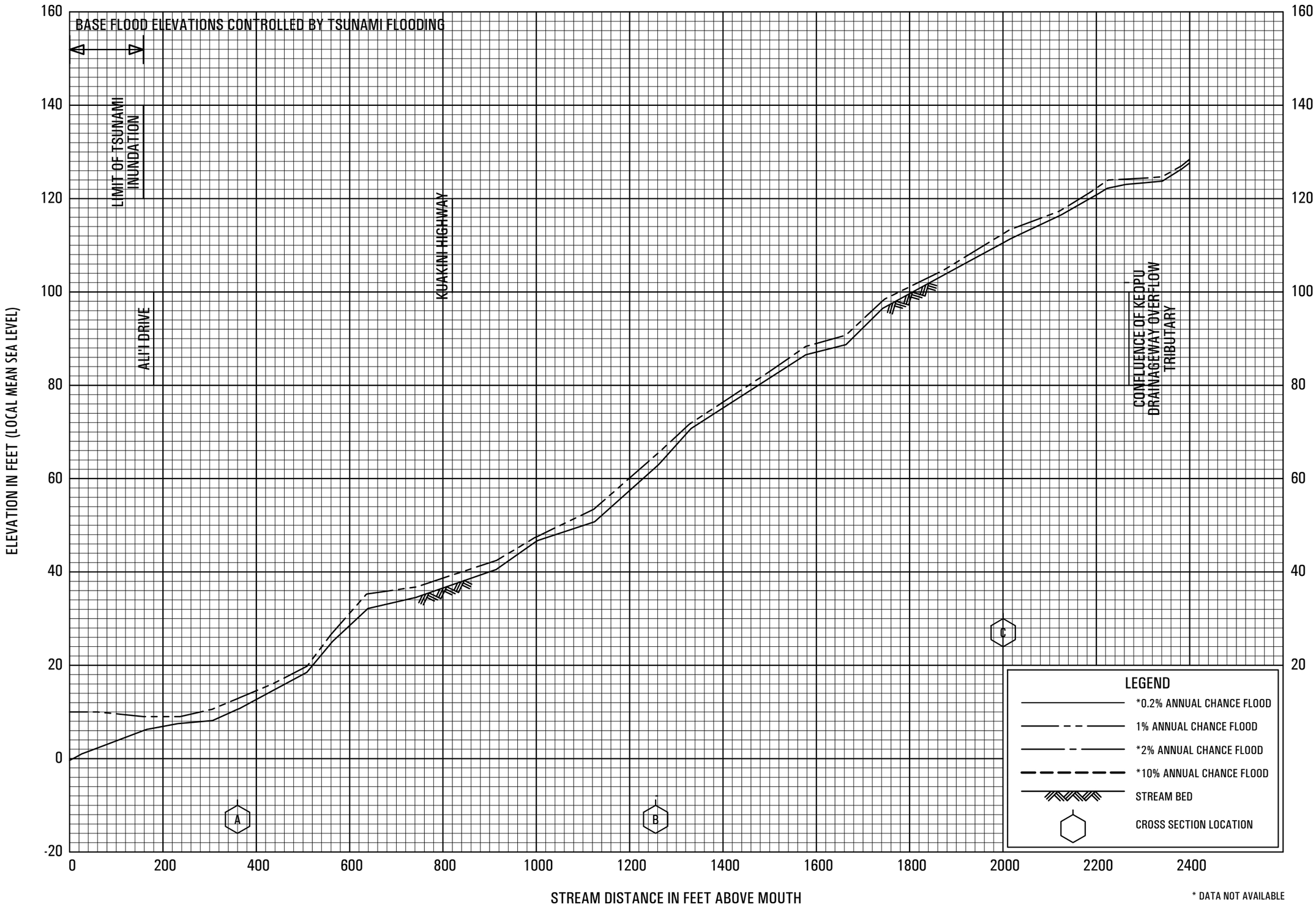
FLOOD PROFILES

KEOPU DRAINAGEWAY

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

168P

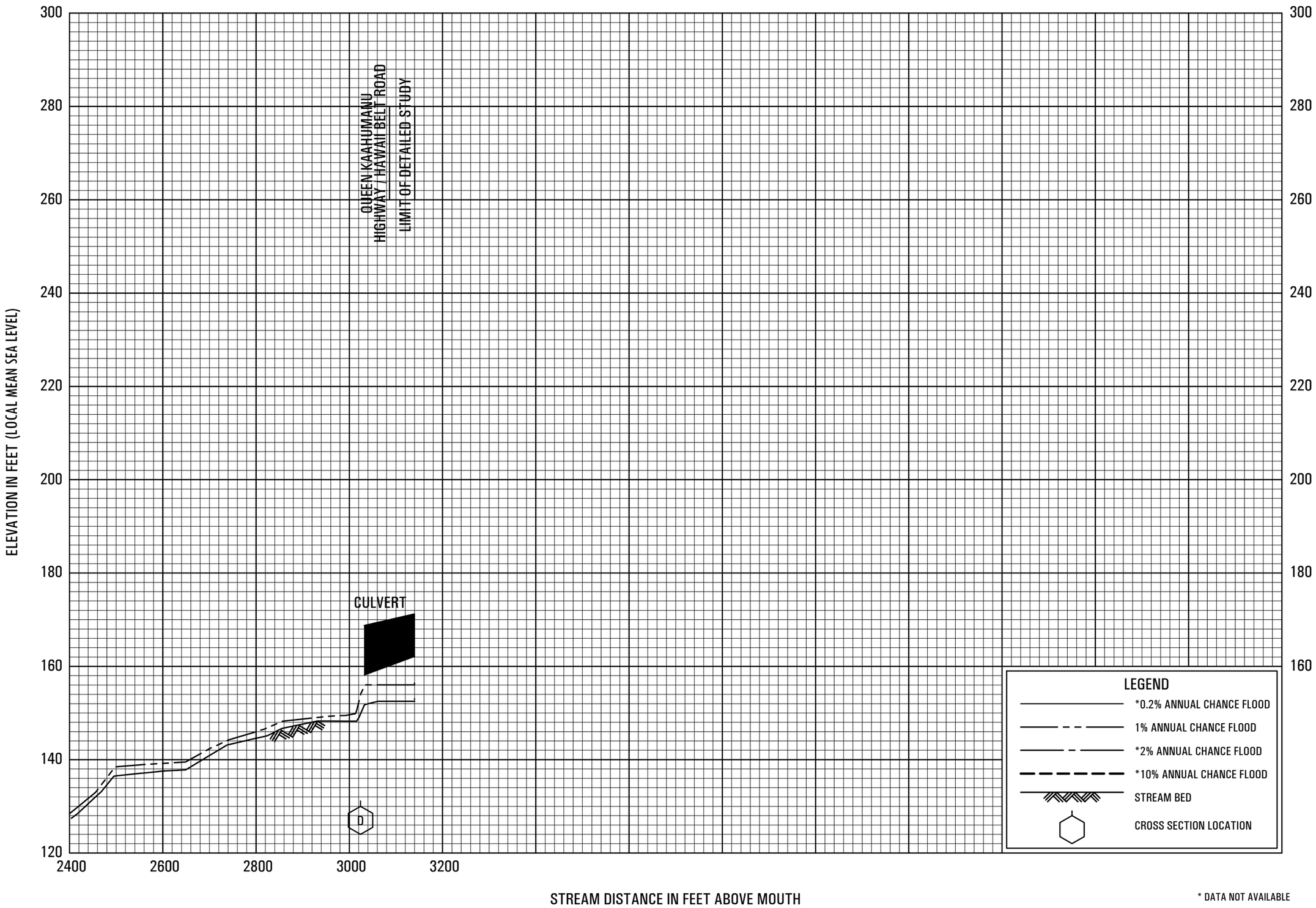


FLOOD PROFILES

KEOPU DRAINAGEWAY OVERFLOW

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI



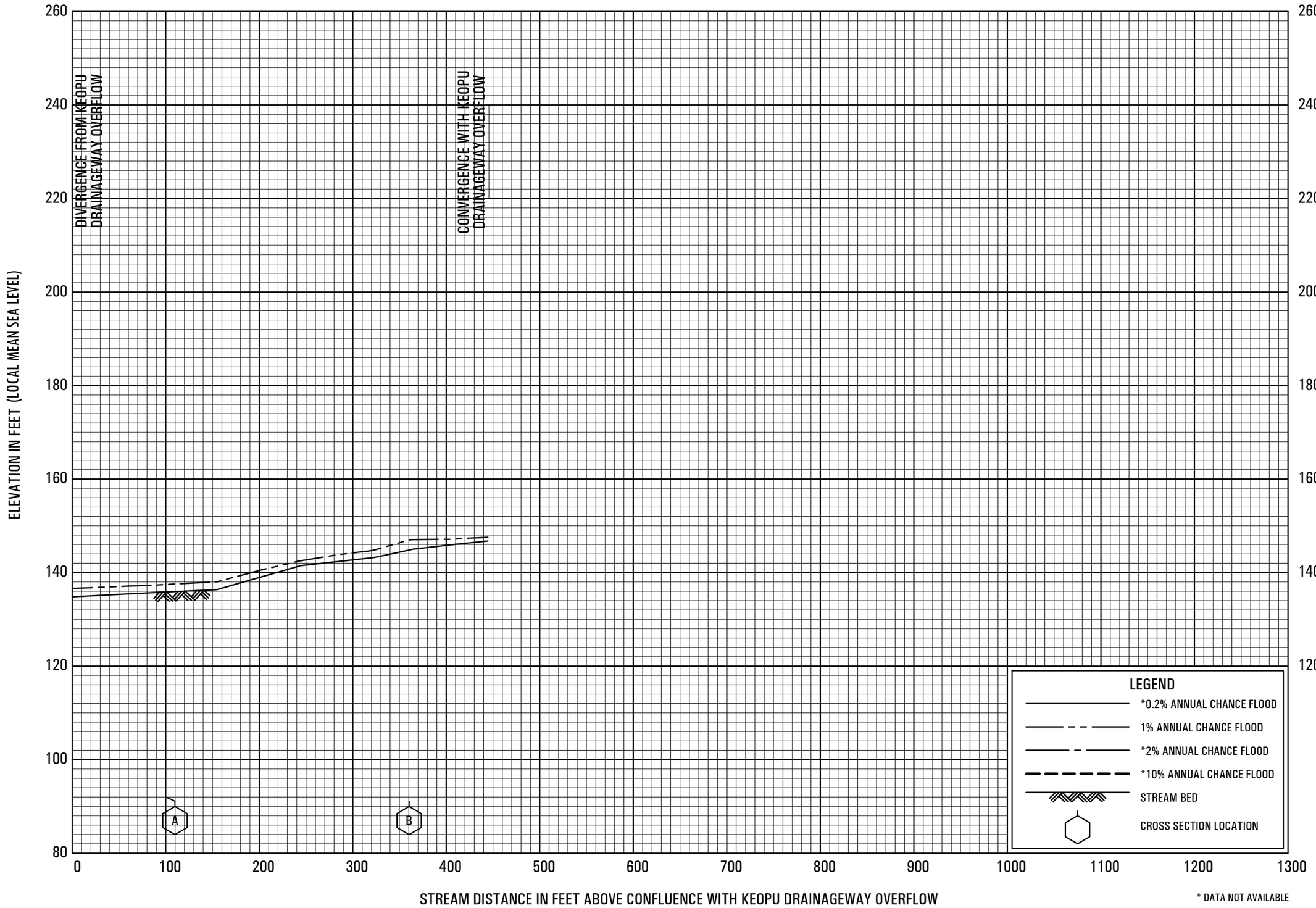
FLOOD PROFILES

KEOPU DRAINAGEWAY OVERFLOW

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

170P



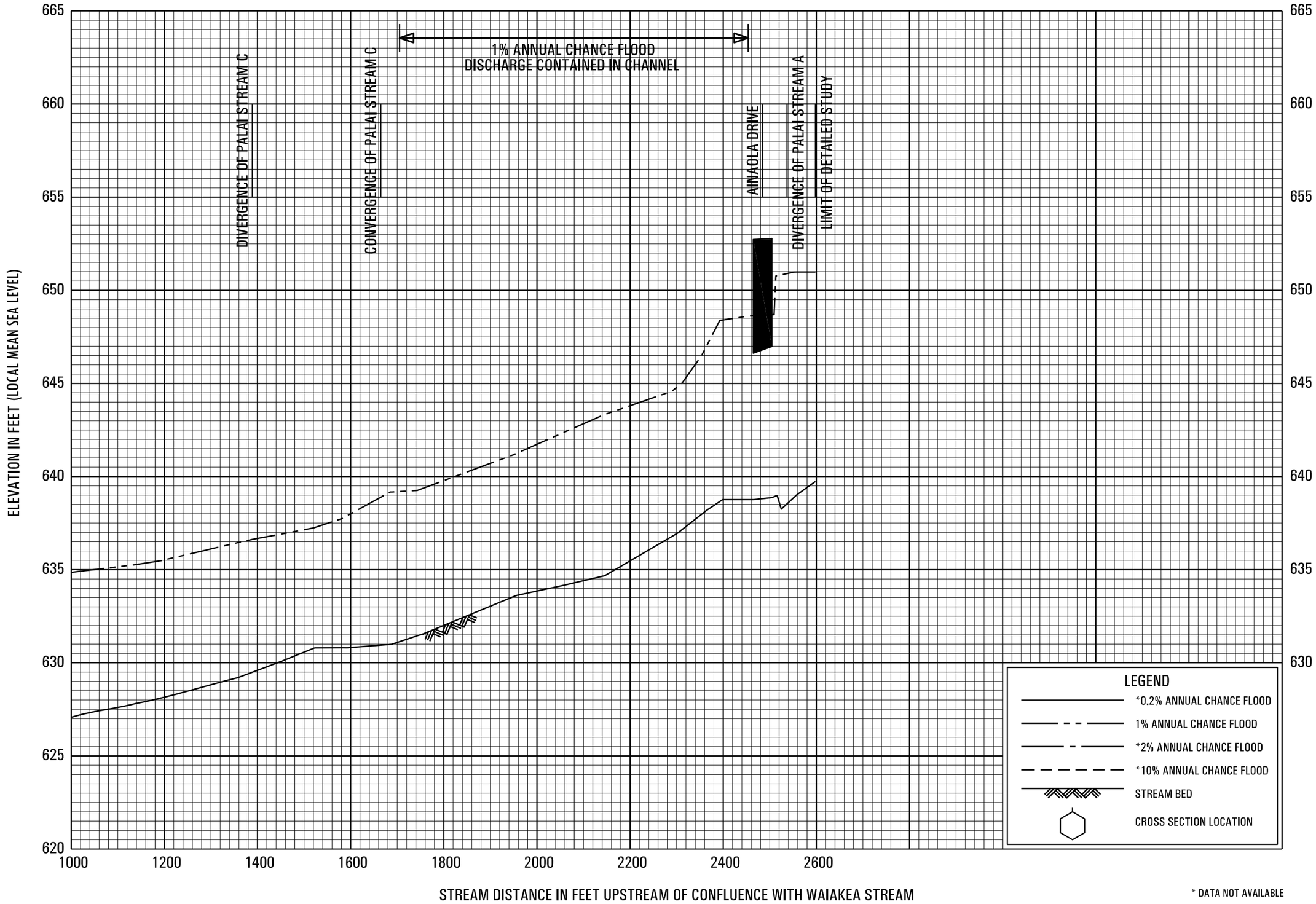
* DATA NOT AVAILABLE

FLOOD PROFILES

KEOPU DRAINAGEWAY OVERFLOW TRIBUTARY

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

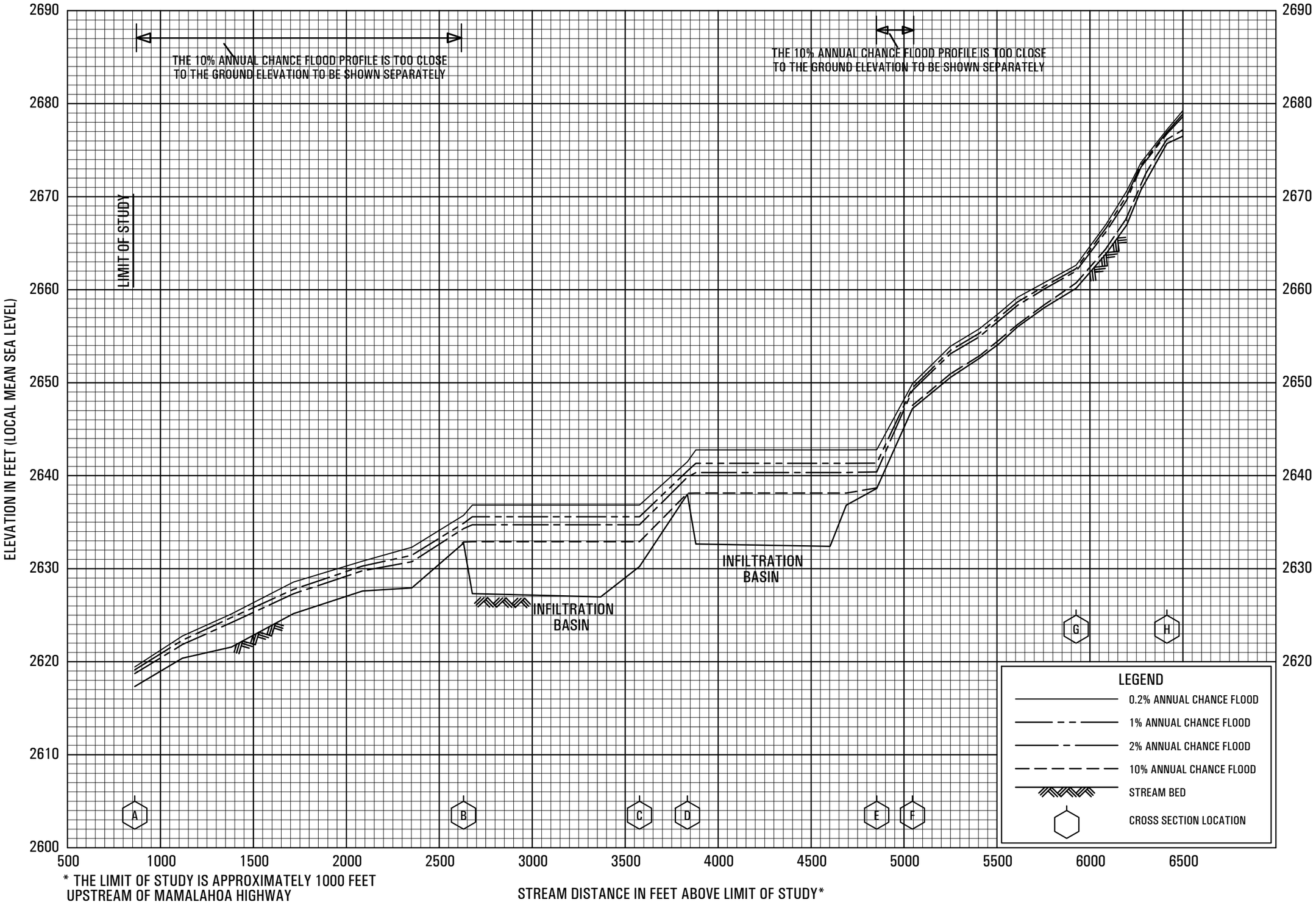


FLOOD PROFILES

KUPULAU FLOOD DITCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI,

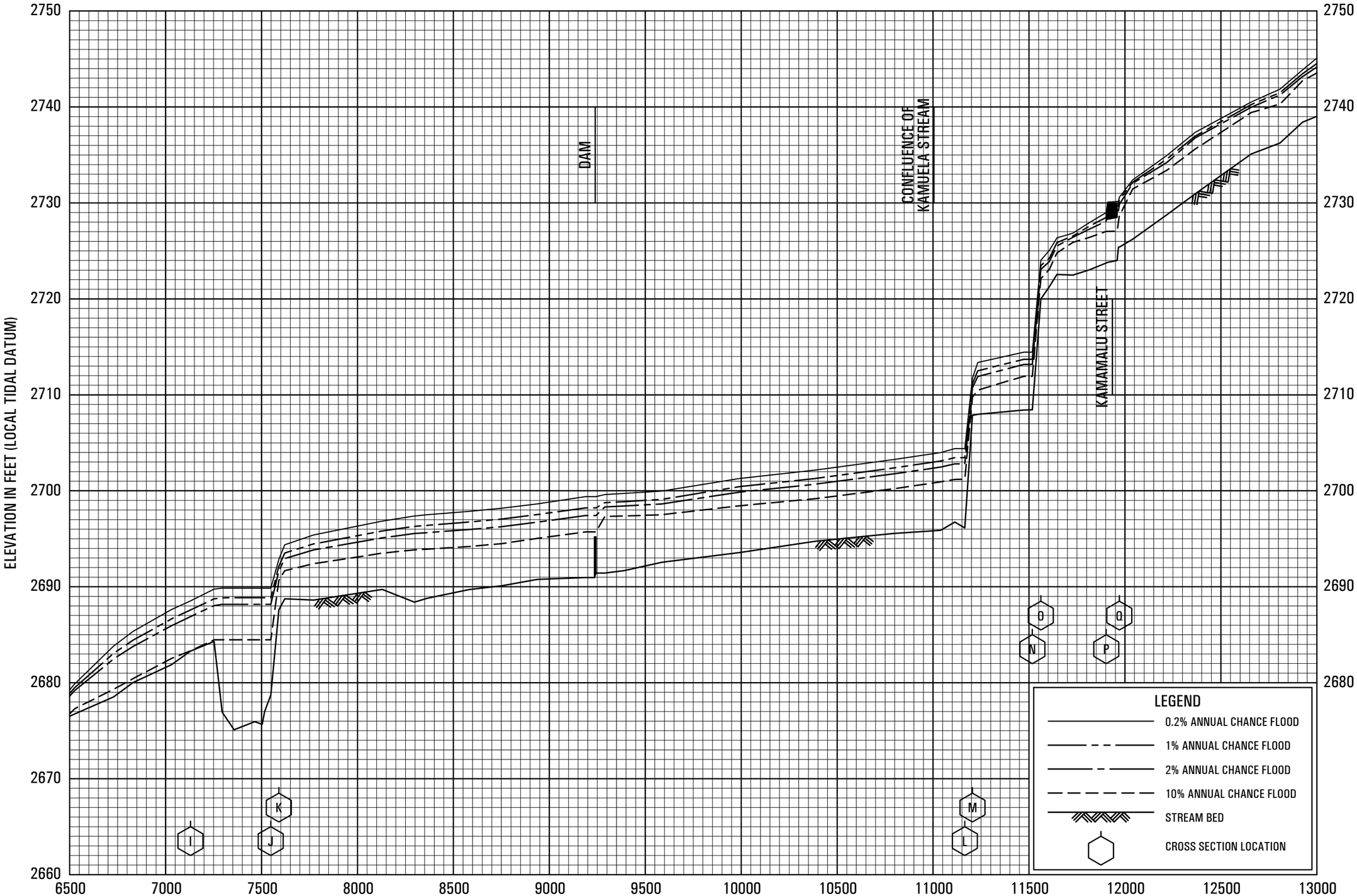


FLOOD PROFILES

LOWER LANIMAUMAU STREAM

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

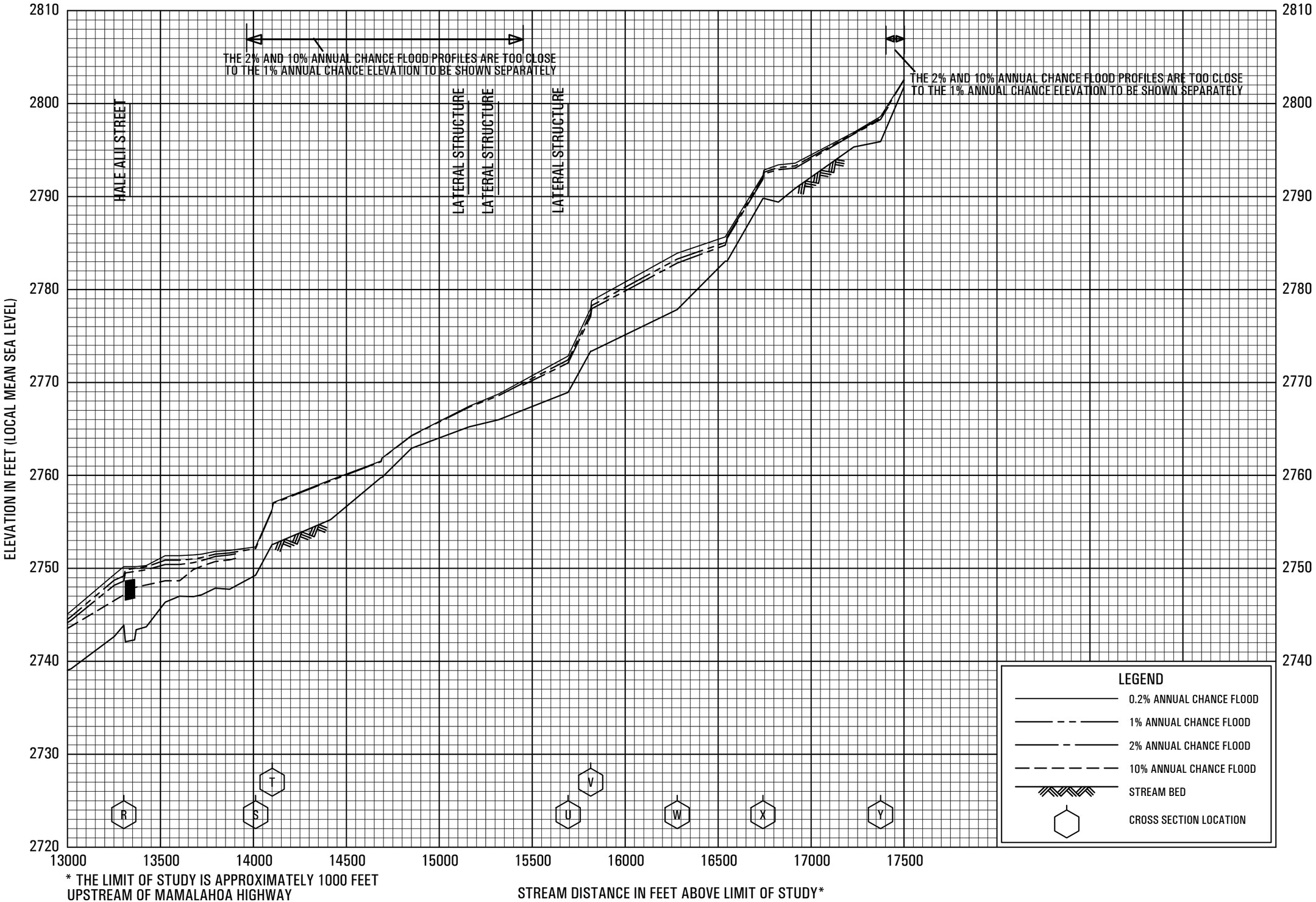


FLOOD PROFILES

LOWER LANIMAUMAU STREAM

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

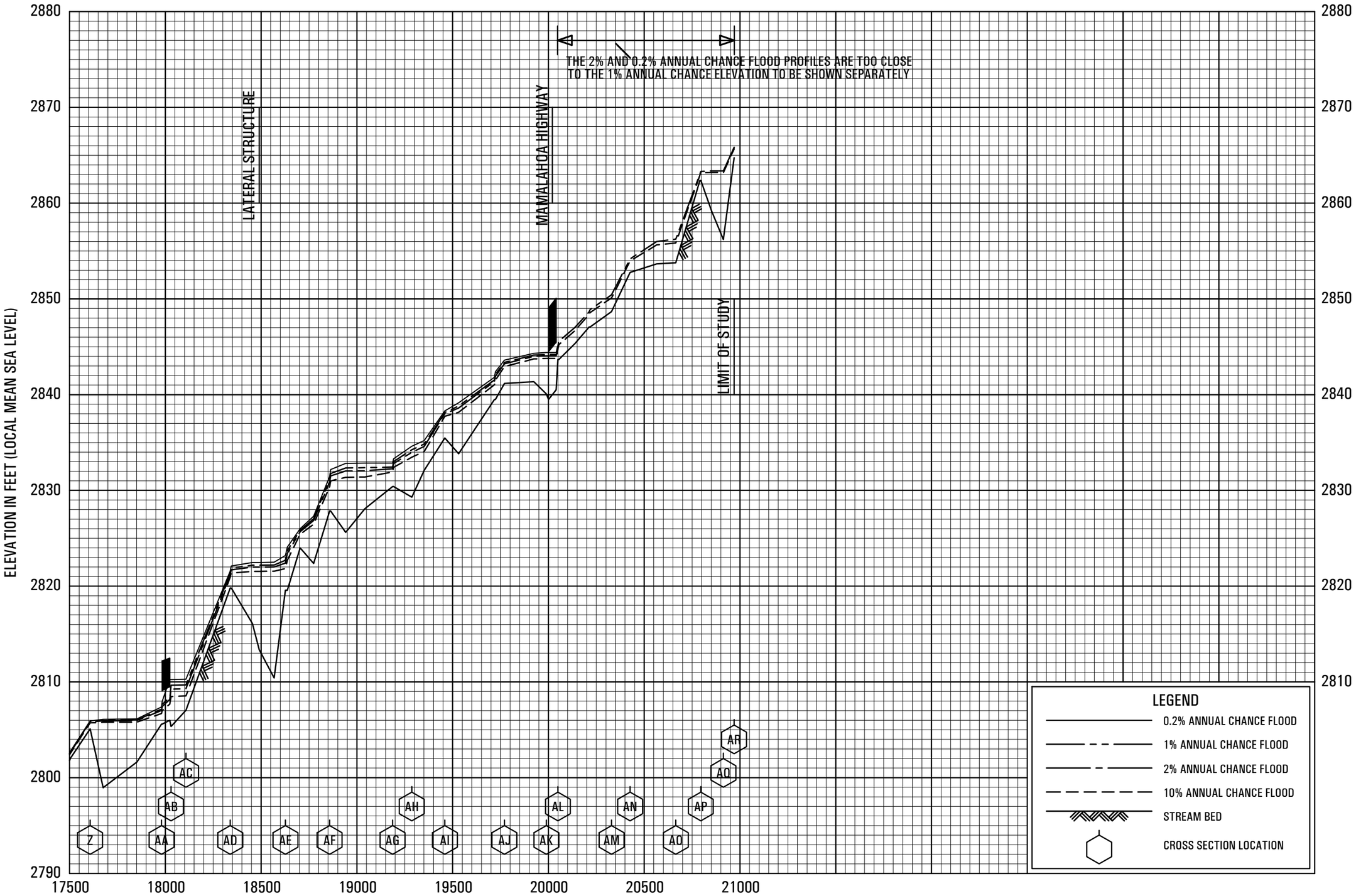


FLOOD PROFILES

LOWER LANIMAUMAU STREAM

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI



* THE LIMIT OF STUDY IS APPROXIMATELY 1000 FEET UPSTREAM OF MAMALAHOA HIGHWAY

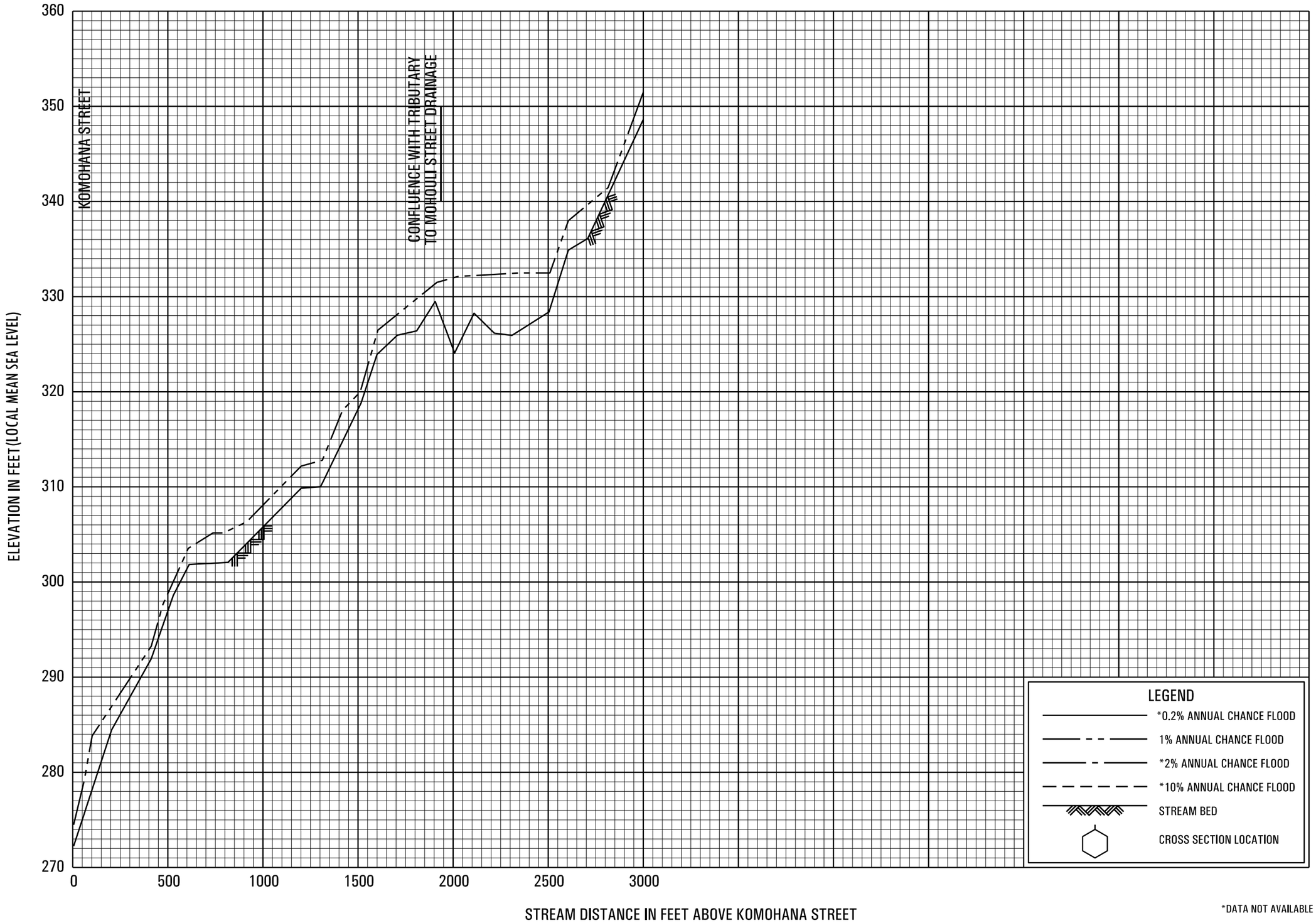
STREAM DISTANCE IN FEET ABOVE LIMIT OF STUDY*

FLOOD PROFILES

LOWER LANIMAUMAU STREAM

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

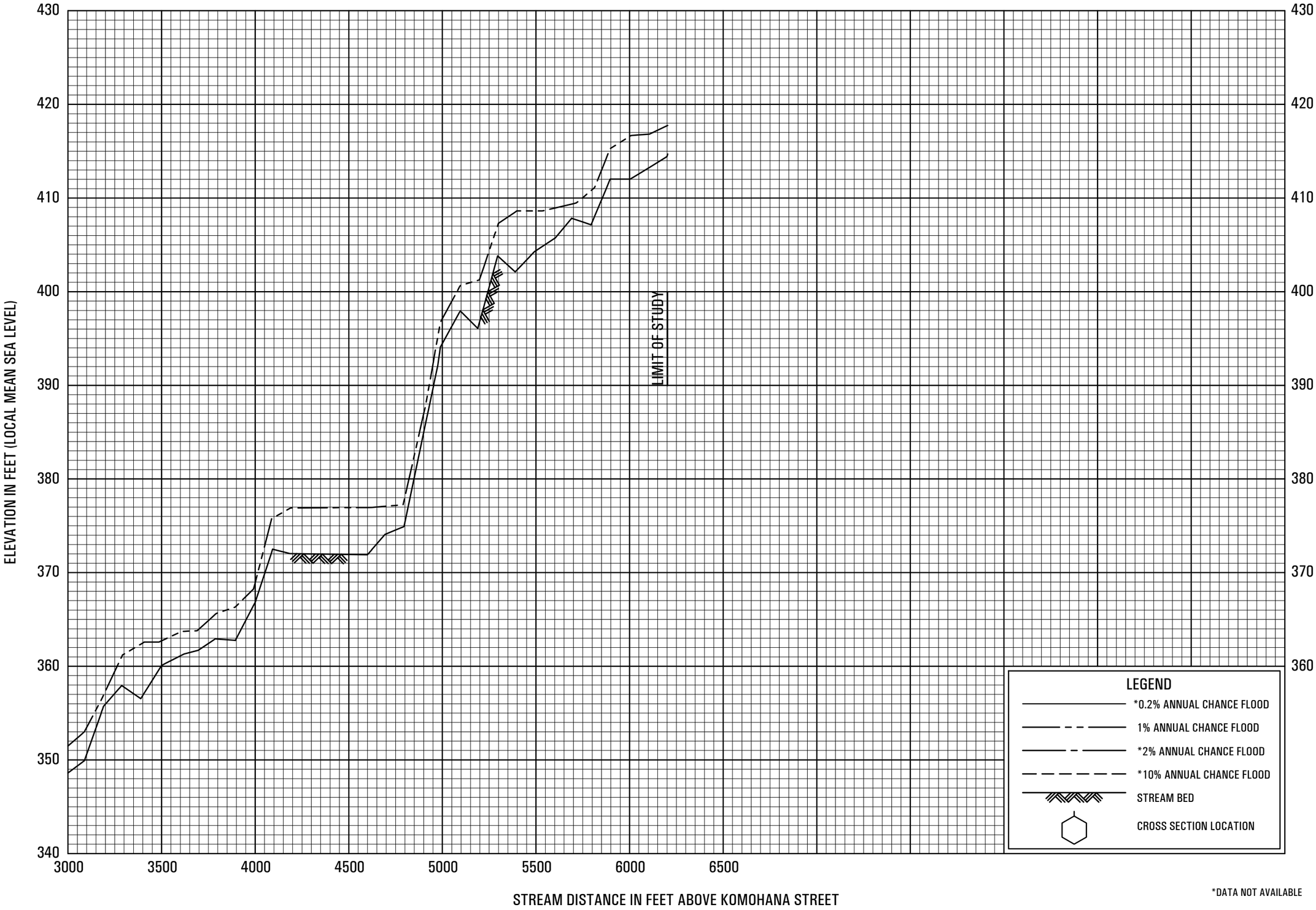


FLOOD PROFILES

MOHOULI STREET DRAINAGE

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI



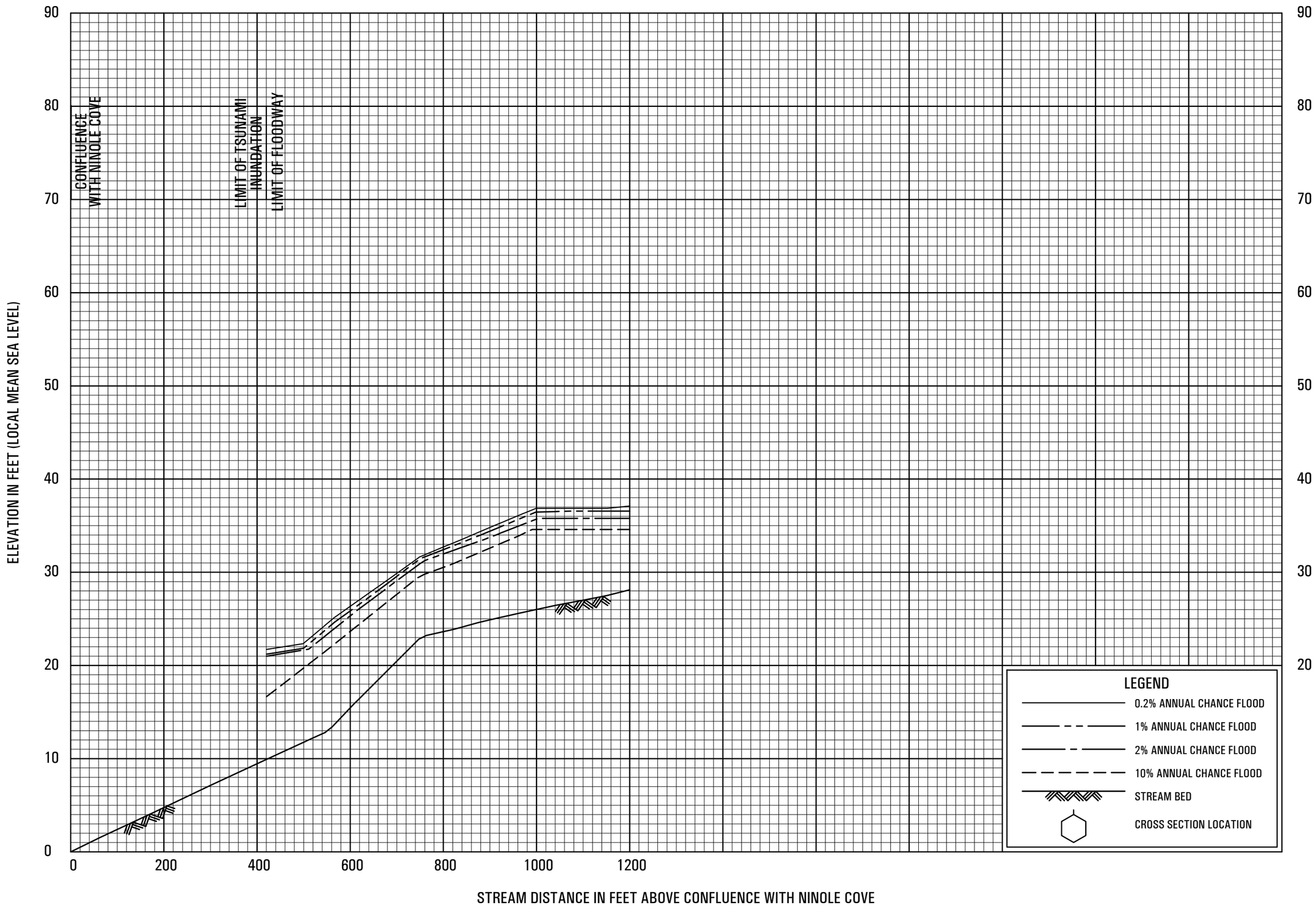
FLOOD PROFILES

MOHOULI STREET DRAINAGE

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI

178P

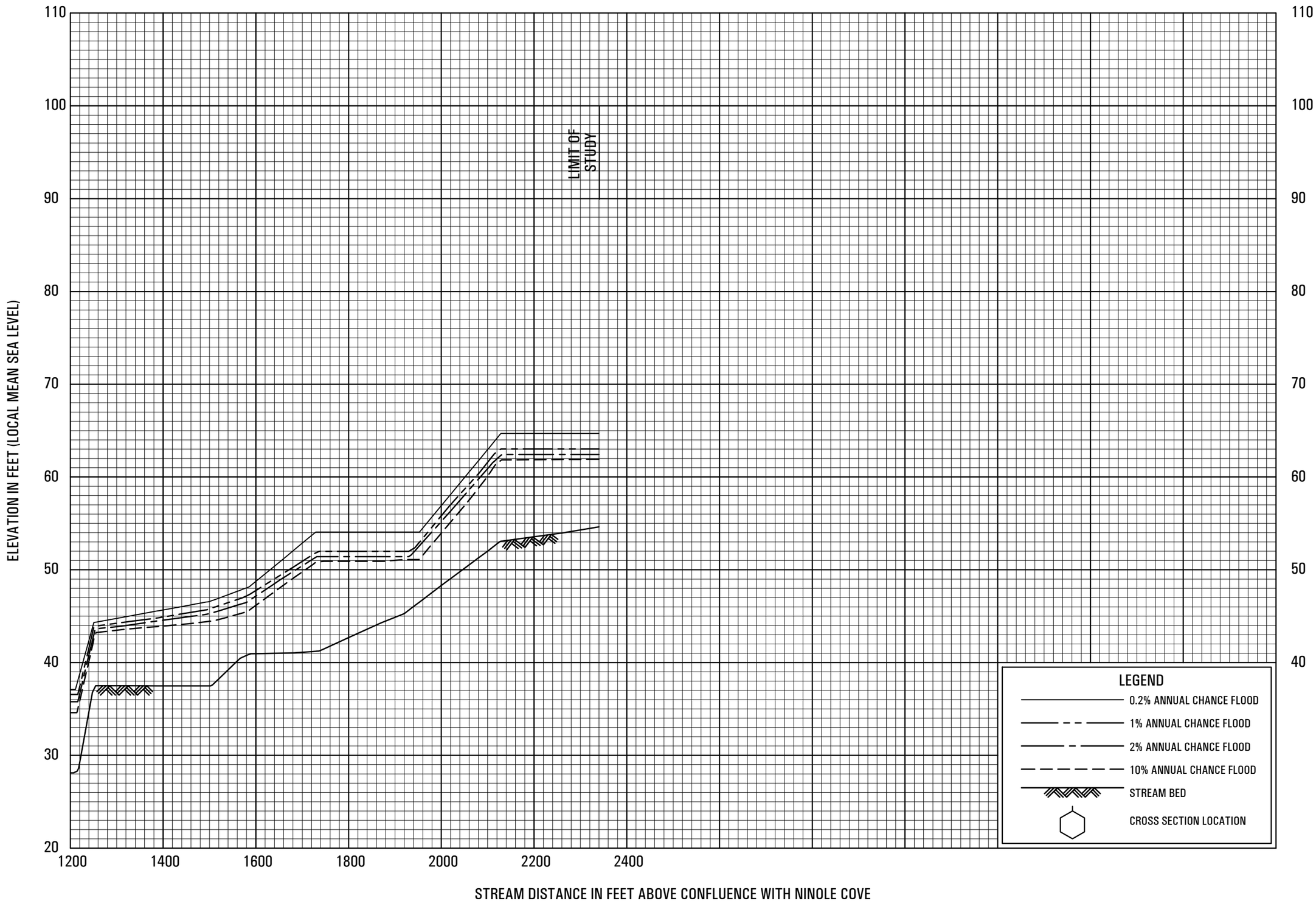


FLOOD PROFILES

NINOLE GULCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI



FLOOD PROFILES

NINOLE GULCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

HAWAII COUNTY, HI