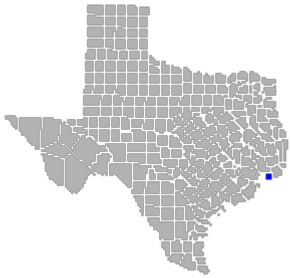
FLOOD INSURANCE STUDY

FEDERAL EMERGENCY MANAGEMENT AGENCY

VOLUME 2 of 3



CHAMBERS COUNTY, TX

AND INCORPORATED AREAS

COMMUNITY NAME	NUMBER
CITY OF ANAHUAC	480120
CITY OF BAYTOWN	485456
CITY OF BEACH CITY	480121
CHAMBERS COUNTY, UNINCORPORATED AREAS	480119
CITY OF COVE	481510
CITY OF MONT BELVIEU	480122
CITY OF OLD RIVER-WINFREE	481637

FEMA

REVISED

PRELIMINARY

SEPTEMBER 30, 2015

FLOOD INSURANCE STUDY NUMBER
48071CV002B

Version Number 2.3.3.2

TABLE OF CONTENTS

VOLUME 1 -

	Page
SECTION 1.0 – INTRODUCTION	1
1.1 The National Flood Insurance Program	1
1.2 Purpose of this Flood Insurance Study Report	2
1.3 Jurisdictions Included in the Flood Insurance Study Report	2
1.4 Considerations for using this Flood Insurance Study Report	5
SECTION 2.0 – FLOODPLAIN MANAGEMENT APPLICATIONS	15
2.1 Floodplain Boundaries	15
2.2 Floodways	15
2.3 Base Flood Elevations	17
2.4 Non-Encroachment Zones	23
2.5 Coastal Flood Hazard Areas	23
2.5.1 Water Elevations and the Effects of Waves	23
2.5.2 Floodplain Boundaries and BFEs for Coastal Areas	25
2.5.3 Coastal High Hazard Areas	26
2.5.4 Limit of Moderate Wave Action	27
SECTION 3.0 – INSURANCE APPLICATIONS	28
3.1 National Flood Insurance Program Insurance Zones	28
3.2 Coastal Barrier Resources System	28
SECTION 4.0 – AREA STUDIED	29
4.1 Basin Description	29
4.2 Principal Flood Problems	30
4.3 Non-Levee Flood Protection Measures	35
4.4 Levees	35
SECTION 5.0 – ENGINEERING METHODS	36
5.1 Hydrologic Analyses	36
5.2 Hydraulic Analyses	42
5.3 Coastal Analyses	48
5.3.1 Total Stillwater Elevations	50
5.3.2 Waves	51
5.3.3 Coastal Erosion	52
5.3.4 Wave Hazard Analyses	52
5.4 Alluvial Fan Analyses	67
SECTION 6.0 – MAPPING METHODS	67
6.1 Vertical and Horizontal Control	67
6.2 Base Map	68
6.3 Floodplain and Floodway Delineation	69
6.4 Coastal Flood Hazard Mapping	88
6.5 FIRM Revisions	94
6.5.1 Letters of Map Amendment	94
6.5.2 Letters of Map Revision Based on Fill	95
6.5.3 Letters of Map Revision	95
6.5.4 Physical Map Revisions	96
6.5.5 Contracted Restudies	96

	Page
6.5.6 Community Map History	96
SECTION 7.0 – CONTRACTED STUDIES AND COMMUNITY COORDINATION	98
7.1 Contracted Studies	98
7.2 Community Meetings	99
SECTION 8.0 – ADDITIONAL INFORMATION	101
SECTION 9.0 – BIBLIOGRAPHY AND REFERENCES	102

Figures

Figure 1: FIRM Panel Index	7
Figure 2: FIRM Notes to Users	8
Figure 3: Map Legend for FIRM	11
Figure 4: Floodway Schematic	16
Figure 5: Wave Runup Transect Schematic	25
Figure 6: Coastal Transect Schematic	27
Figure 7: Frequency Discharge-Drainage Area Curves	42
Figure 8: 1% Annual Chance Total Stillwater Elevations for Coastal Areas	50
Figure 9: Transect Location Map	66

Tables

Table 1: Listing of NFIP Jurisdictions	3
Table 2: Flooding Sources Included in this FIS Report	18
Table 3: Flood Zone Designations by Community	28
Table 4: Coastal Barrier Resources System Information	29
Table 5: Basin Characteristics	29
Table 6: Principal Flood Problems	30
Table 7: Historic Flooding Elevations	32
Table 8: Non-Levee Flood Protection Measures	35
Table 9: Levees	36
Table 10: Summary of Discharges	37
Table 11: Summary of Non-Coastal Stillwater Elevations	42
Table 12: Stream Gage Information used to Determine Discharges	42
Table 13: Summary of Hydrologic and Hydraulic Analyses	43
Table 14: Roughness Coefficients	48
Table 15: Summary of Coastal Analyses	49
Table 16: Tide Gage Analysis Specifics	50
Table 17: Coastal Transect Parameters	54
Table 18: Summary of Alluvial Fan Analyses	67
Table 19: Results of Alluvial Fan Analyses	67
Table 20: Countywide Vertical Datum Conversion	68
Table 21: Stream-Based Vertical Datum Conversion	68
Table 22: Base Map Sources	68
Table 23: Summary of Topographic Elevation Data used in Mapping	69
Table 24: Floodway Data	71

	Page
Table 25: Flood Hazard and Non-Encroachment Data for Selected Streams	88
Table 26: Summary of Coastal Transect Mapping Considerations	89
Table 27: Incorporated Letters of Map Change	96
Table 28: Community Map History	97
Table 29: Summary of Contracted Studies Included in this FIS Report	98
Table 30: Community Meetings	100
Table 31: Map Repositories	101
Table 32: Additional Information	102
Table 33: Bibliography and References	103

EXHIBITS

VOLUME 2 –

Exhibit 1 - Flood Profiles

Barrow Slough	Panel 01P
Cedar Bayou	Panels 02P-04P
Cedar Gully	Panel 05P
Cotton Bayou	Panel 06P
Double Bayou East Fork	Panels 07P-10P
Double Bayou West Fork	Panels 11P-12P
Hackberry Gully	Panels 13P-14P
Horsepen Bayou	Panel 15P
Labbit Creek	Panel 16P
Lee Gully	Panel 17P
Little Caney Creek	Panel 18P
Old River	Panels 19P-23P
Oyster Bayou	Panels 24P-25P
Sawpit Gully	Panel 26P
Smith Gully	Panels 27P-28P
Spindletop Bayou	Panel 29P
Spring Branch	Panels 30P-31P
Trinity River	Panel 32P
Turtle Whites Bayou	Panels 33P-34P
Whites Bayou	Panels 35P-36P

Exhibit 2 - 0.2 Percent Annual Chance Wave Envelopes

Transect 1	Panel 01P
Transect 2	Panel 02P
Transect 3	Panel 03P
Transect 4	Panels 04P-05P
Transect 5	Panels 06P-07P

EXHIBITS

VOLUME 2 continued–

Exhibit 2 - 0.2 Percent Annual Chance Wave Envelopes

Transect 6	Panel 08P
Transect 7	Panel 09P
Transect 8	Panel 10P
Transect 9	Panel 11P
Transect 10	Panel 12P
Transect 11	Panel 13P
Transect 12	Panel 14P
Transect 13	Panel 15P
Transect 14	Panel 16P
Transect 15	Panel 17P
Transect 16	Panel 18P
Transect 17	Panel 19P
Transect 18	Panel 20P
Transect 19	Panels 21P-22P
Transect 20	Panels 23P-24P
Transect 21	Panels 25P-26P
Transect 22	Panels 27P-28P
Transect 23	Panels 29P-31P
Transect 24	Panels 32P-34P
Transect 25	Panels 35P-36P
Transect 26	Panels 37P-39P
Transect 27	Panels 40P-41P
Transect 28	Panel 42P
Transect 29	Panels 43P-44P
Transect 30	Panel 45P
Transect 31	Panel 46P
Transect 32	Panel 47P
Transect 33	Panel 48P
Transect 34	Panel 49P
Transect 35	Panel 50P
Transect 36	Panel 51P
Transect 37	Panel 52P
Transect 38	Panel 53P
Transect 39	Panels 54P-55P
Transect 40	Panels 56P-57P
Transect 41	Panels 58P-59P

EXHIBITS

VOLUME 3 – May 4, 2015

Exhibit 2 - 0.2 Percent Annual Chance Wave Envelopes

Transect 42	Panels 60P-62P
Transect 43	Panels 63P-64P

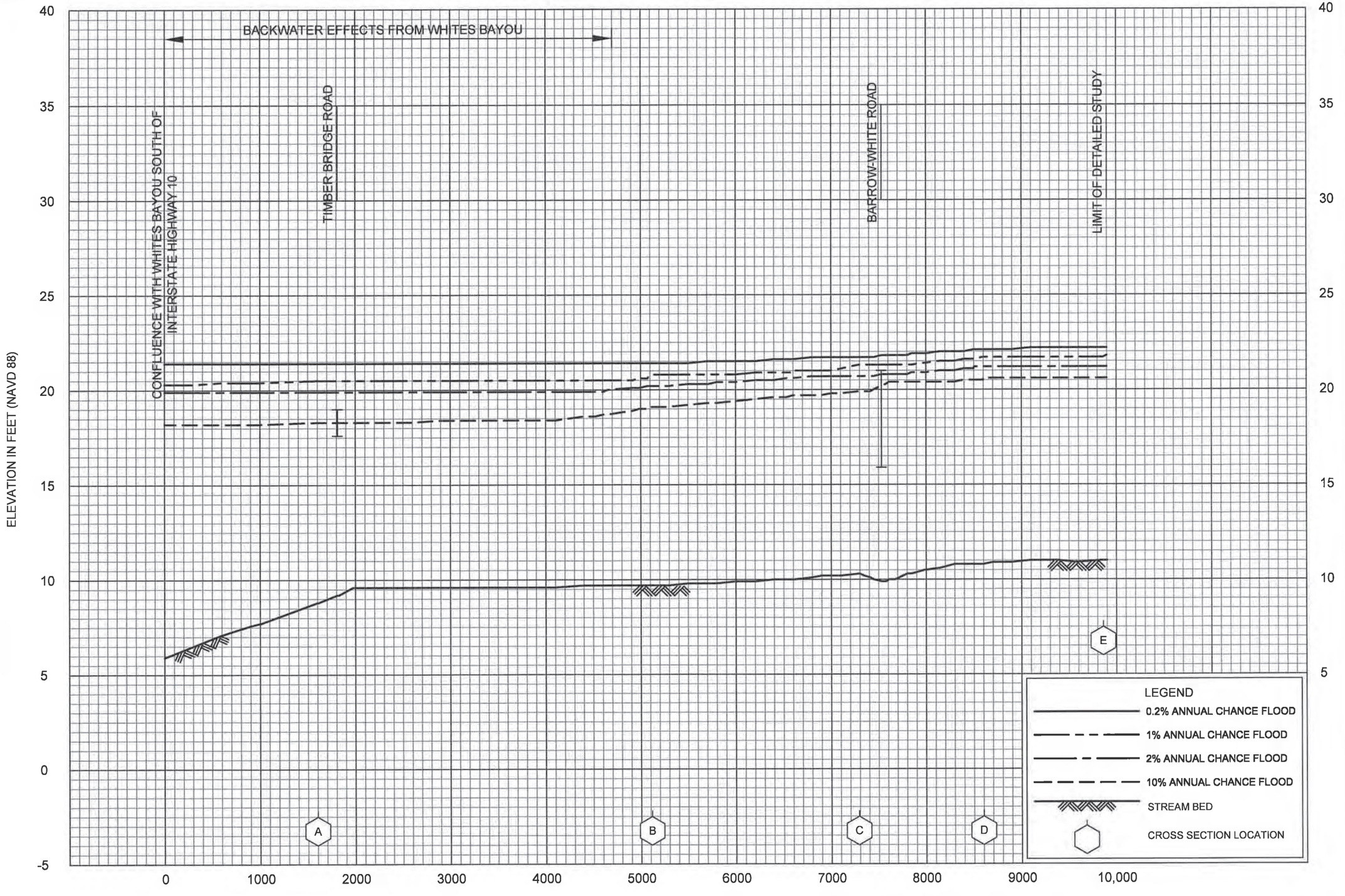
EXHIBITS

VOLUME 3 continued – May 4, 2015

Exhibit 2 - 0.2 Percent Annual Chance Wave Envelopes

Transect 44	Panels 65P-66P
Transect 45	Panel 67P
Transect 46	Panel 68P
Transect 47	Panel 69P
Transect 48	Panel 70P
Transect 49	Panel 71P
Transect 50	Panel 72P
Transect 51	Panel 73P
Transect 52	Panel 74P
Transect 53	Panel 75P
Transect 54	Panel 76P
Transect 55	Panel 77P
Transect 56	Panel 78P
Transect 57	Panel 79P
Transect 58	Panels 80P-81P
Transect 59	Panels 82P-83P
Transect 60	Panels 84P-85P
Transect 61	Panels 86P-87P
Transect 62	Panels 88P-89P
Transect 63	Panels 90P-92P
Transect 64	Panels 93P-95P
Transect 65	Panels 96P-98P
Transect 66	Panels 99P-102P
Transect 67	Panels 103P-105P
Transect 68	Panels 106P-108P
Transect 69	Panels 109P-111P
Transect 70	Panels 112P-114P
Transect 71	Panels 115P-117P
Transect 72	Panels 118P-120P
Transect 73	Panels 121P-123P
Transect 74	Panels 124P-126P

Exhibit 3 – Flood Insurance Rate Map



FLOOD PROFILES

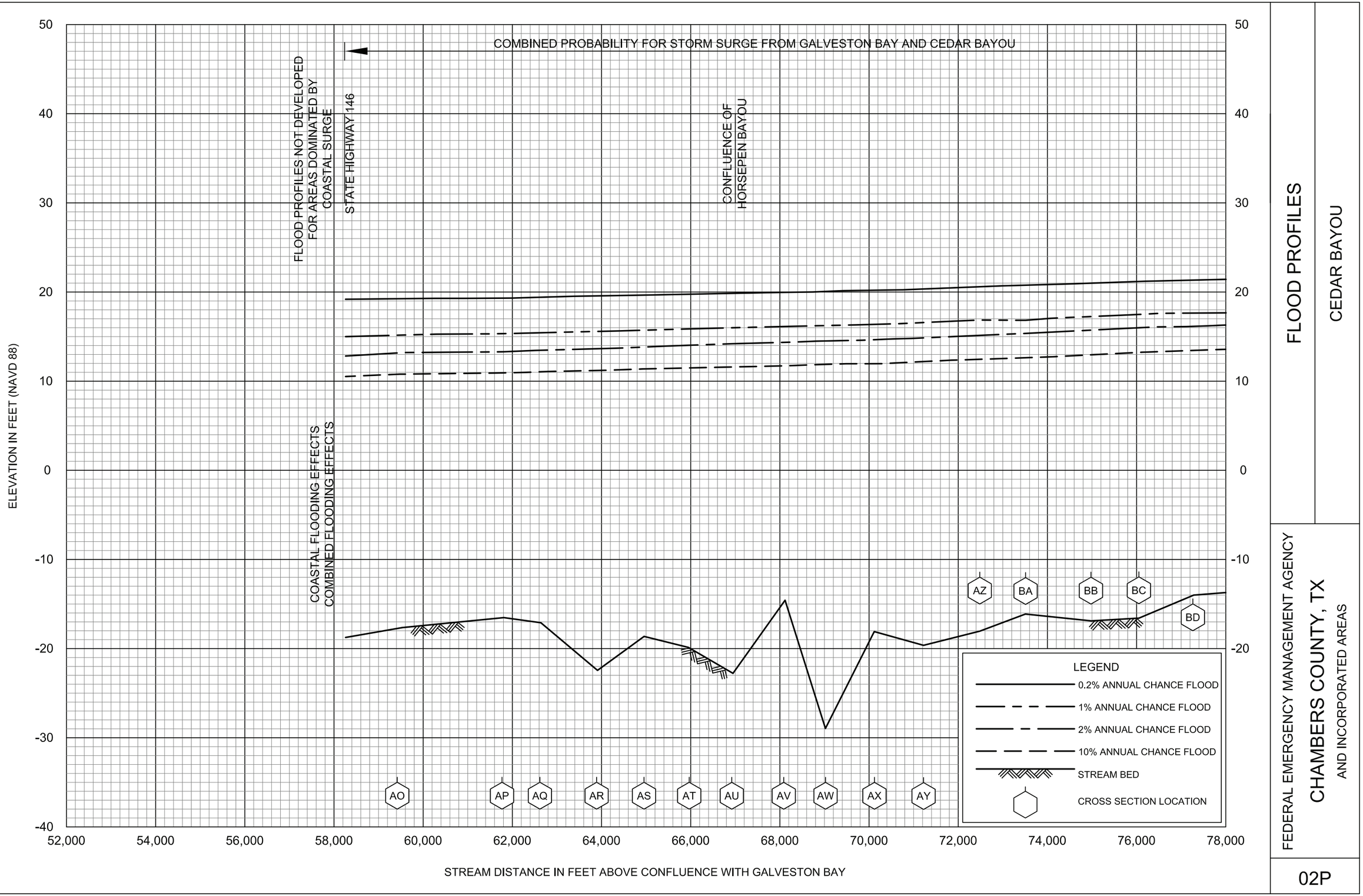
BARROW SLOUGH

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHAMBERS COUNTY, TX

AND INCORPORATED AREAS

01P



FLOOD PROFILES

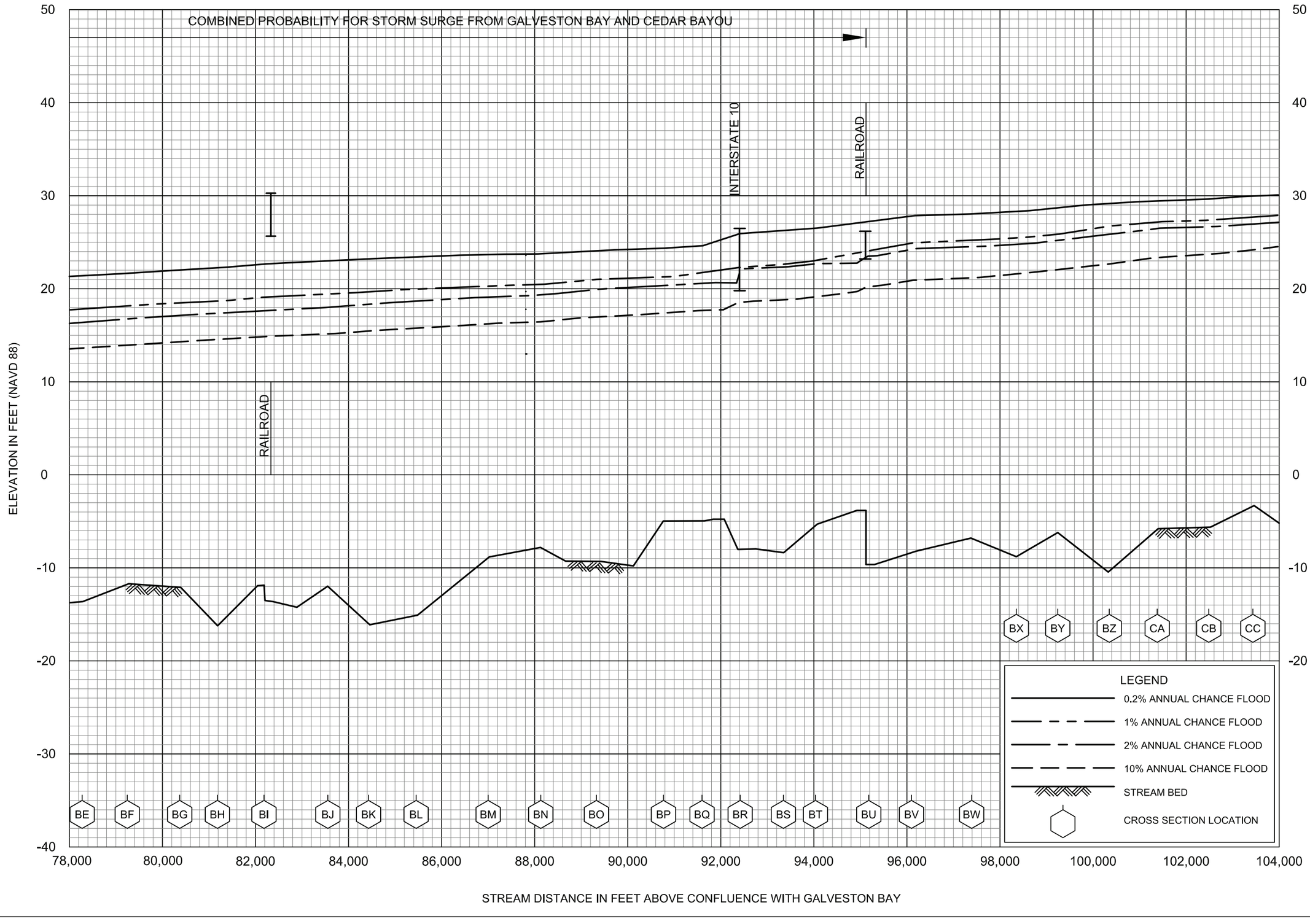
CEDAR BAYOU

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHAMBERS COUNTY, TX

AND INCORPORATED AREAS

02P



FLOOD PROFILES

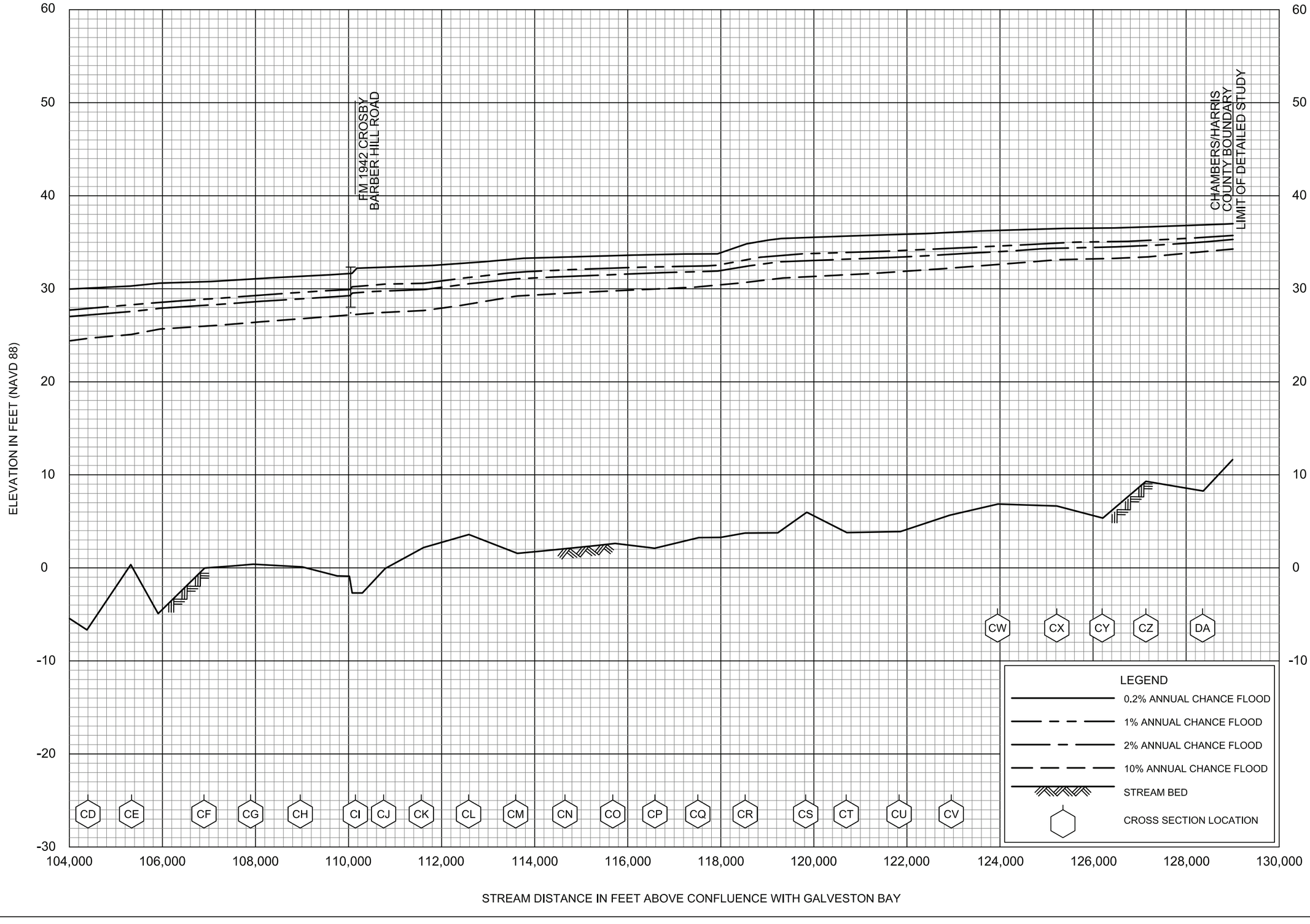
CEDAR BAYOU

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHAMBERS COUNTY, TX

AND INCORPORATED AREAS

03P



FLOOD PROFILES

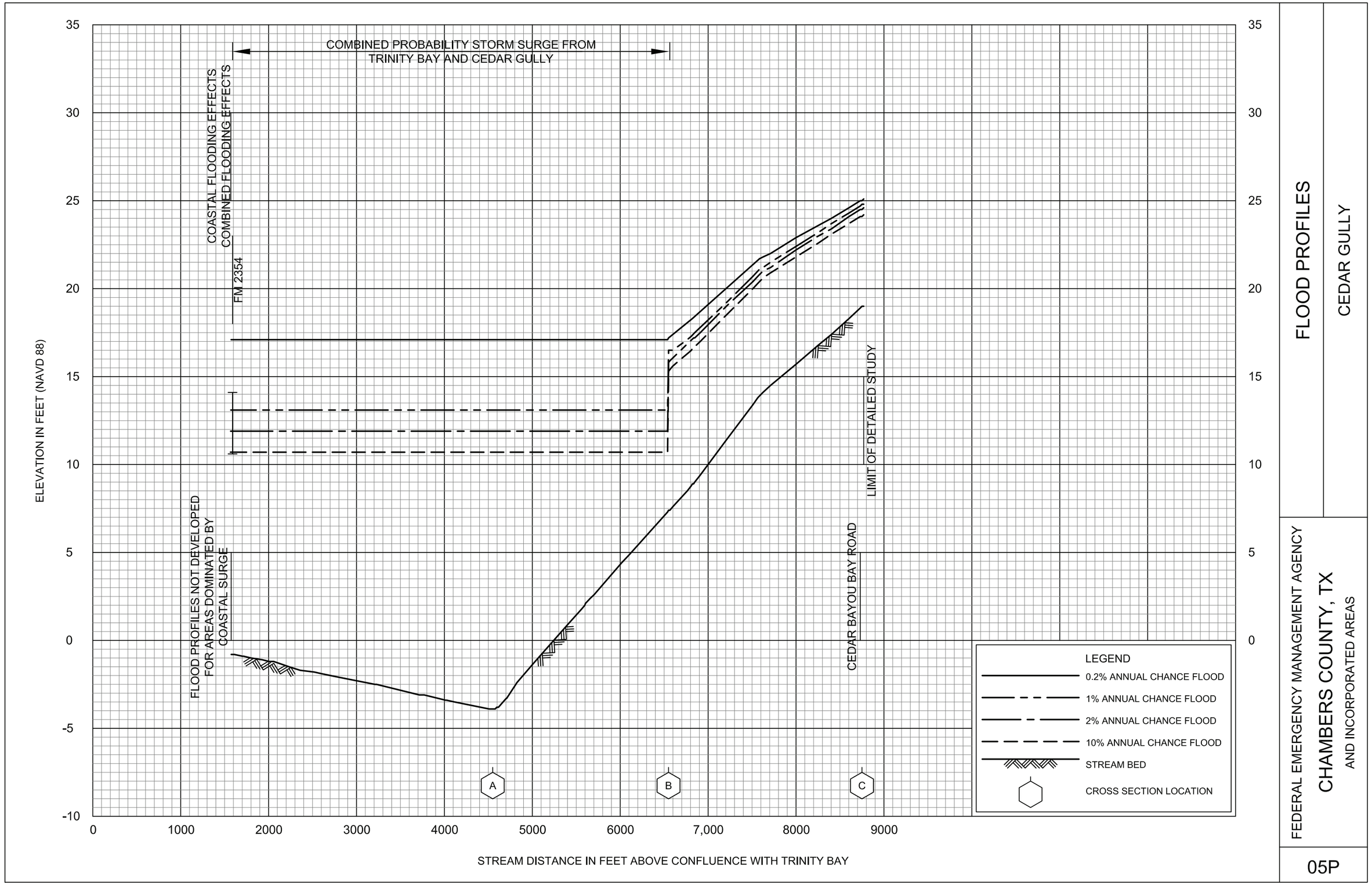
CEDAR BAYOU

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHAMBERS COUNTY, TX

AND INCORPORATED AREAS

04P



FLOOD PROFILES

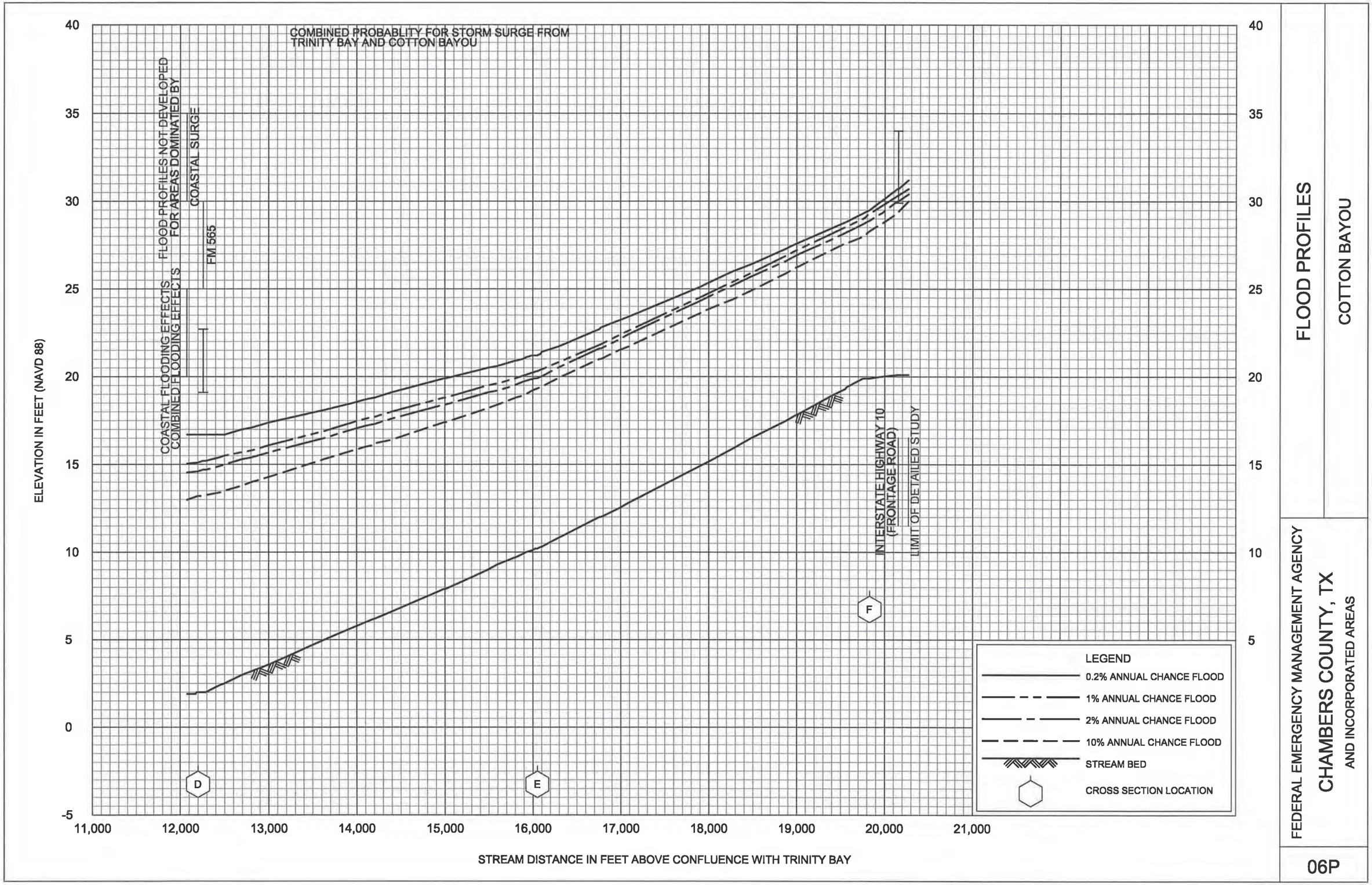
CEDAR GULLY

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHAMBERS COUNTY, TX

AND INCORPORATED AREAS

05P



FLOOD PROFILES

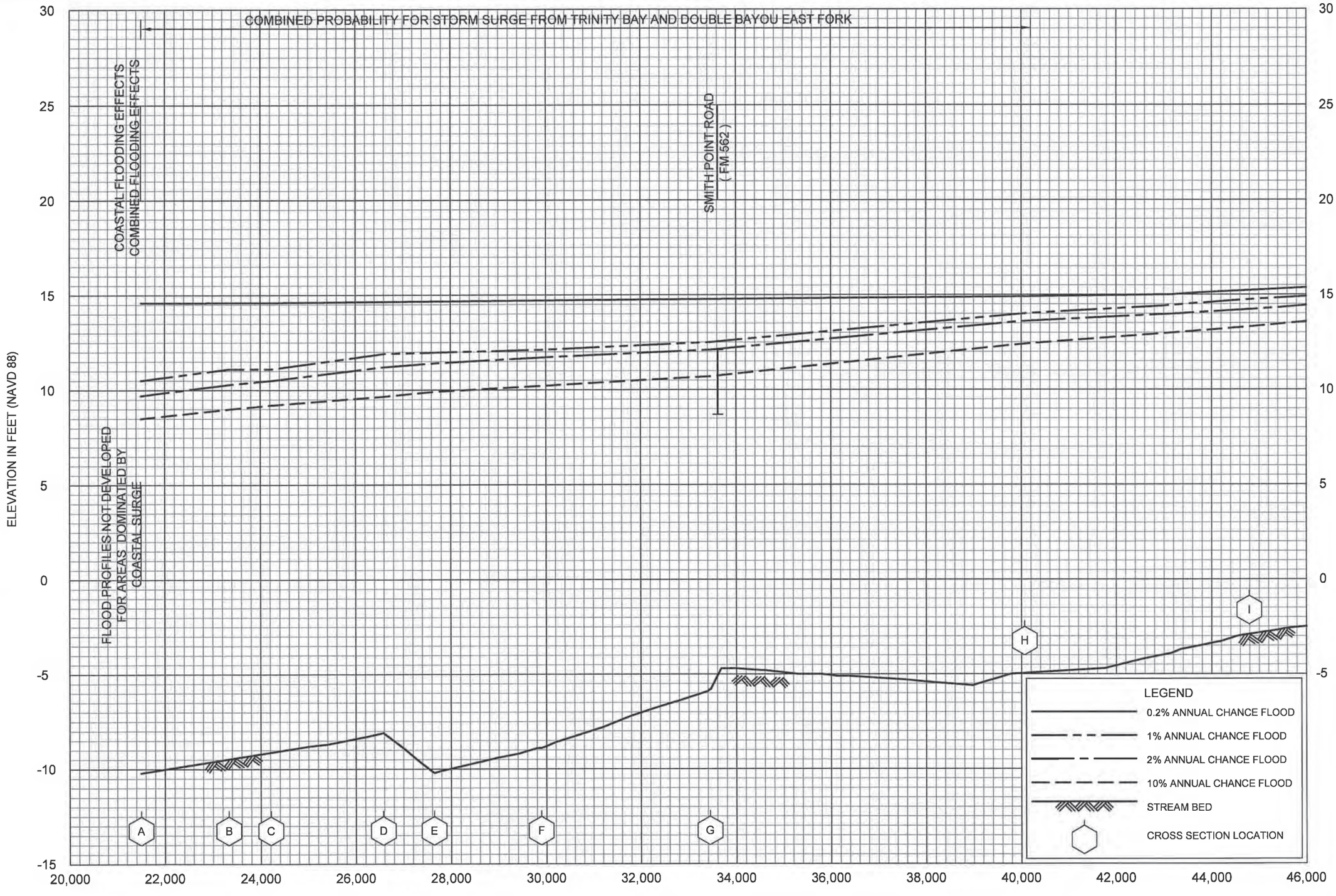
COTTON BAYOU

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHAMBERS COUNTY, TX

AND INCORPORATED AREAS

06P



FLOOD PROFILES

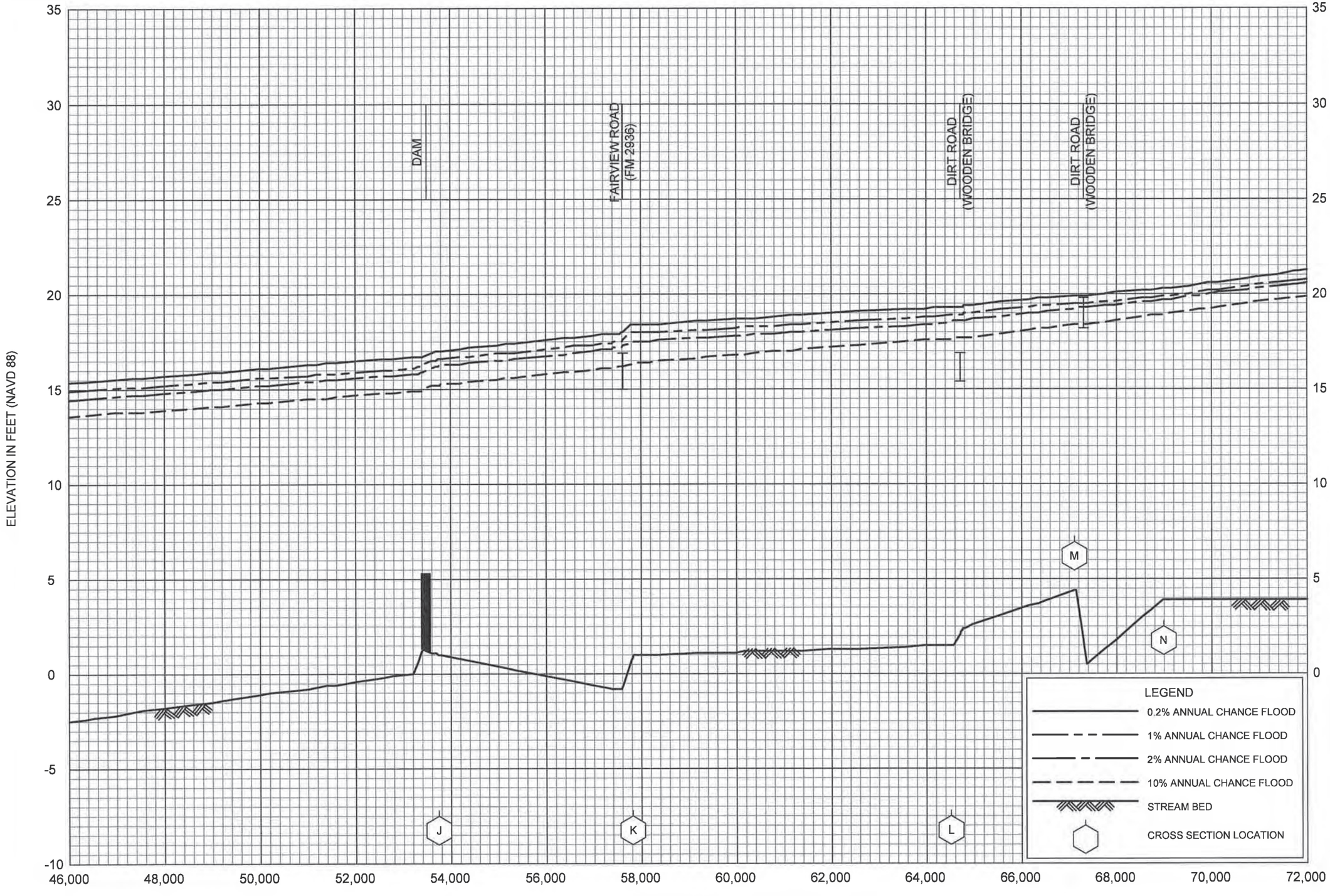
DOUBLE BAYOU EAST FORK

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHAMBERS COUNTY, TX

AND INCORPORATED AREAS

07P



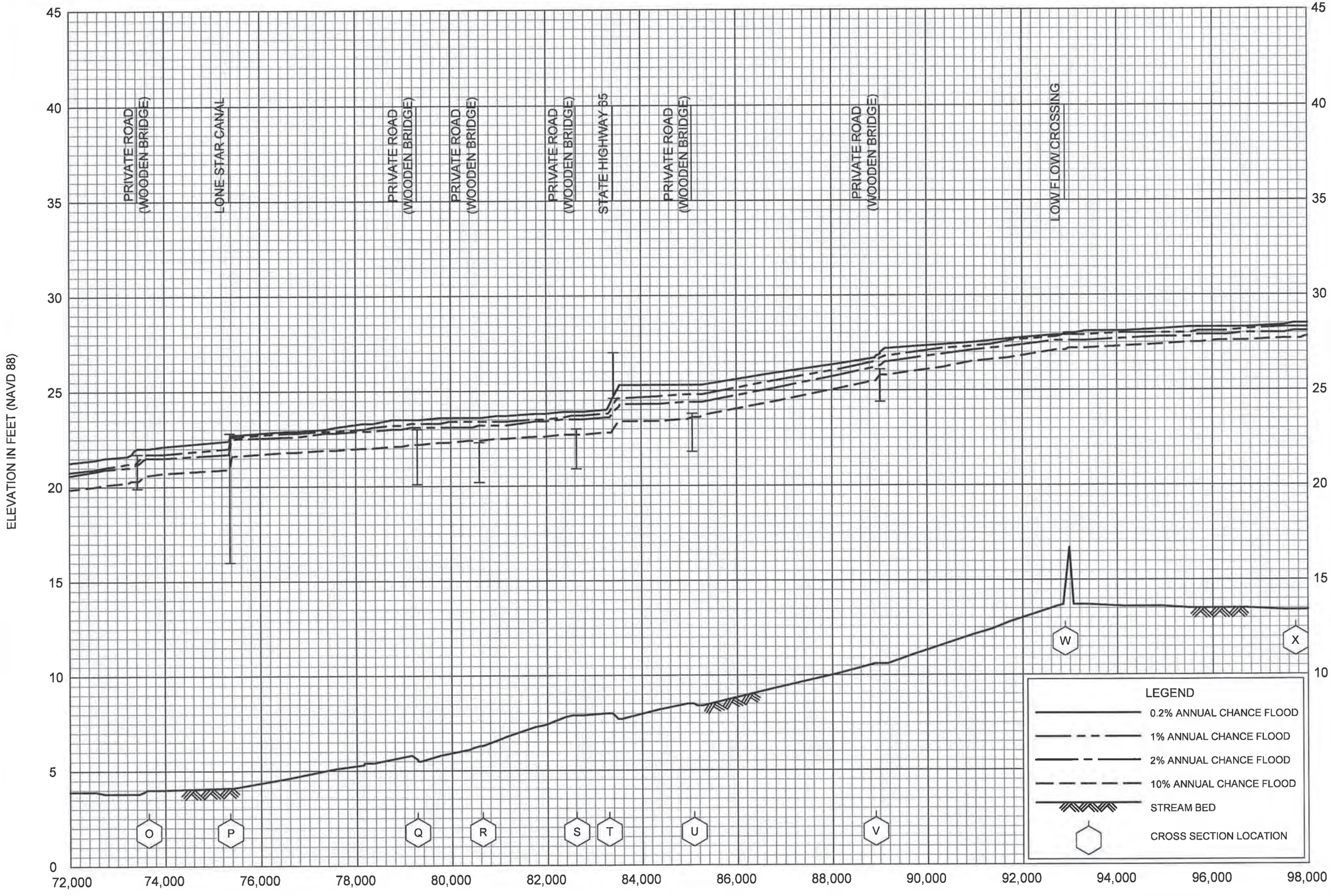
FLOOD PROFILES

DOUBLE BAYOU EAST FORK

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHAMBERS COUNTY, TX

AND INCORPORATED AREAS



FLOOD PROFILES

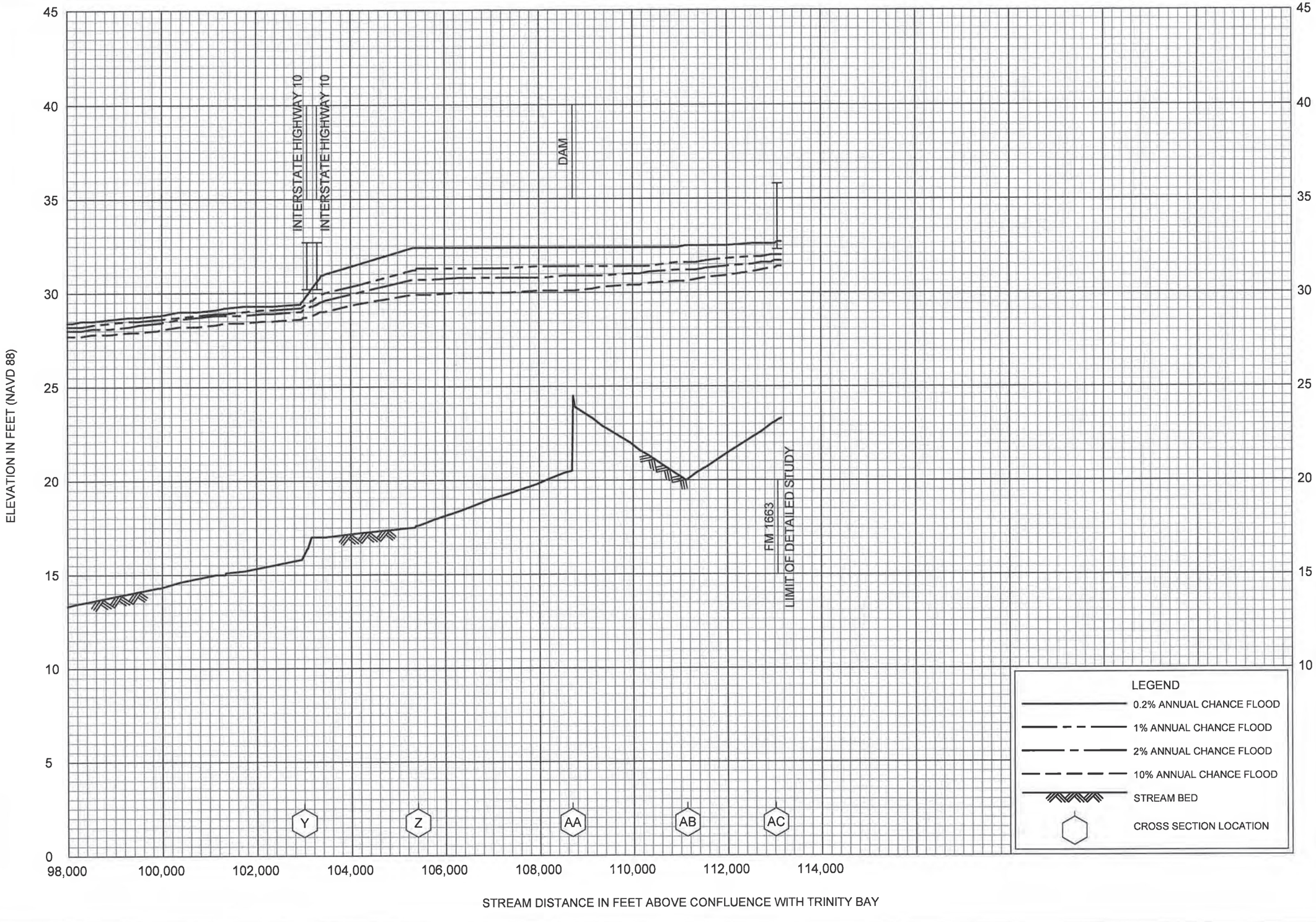
DOUBLE BAYOU EAST FORK

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHAMBERS COUNTY, TX

AND INCORPORATED AREAS

09P



FLOOD PROFILES

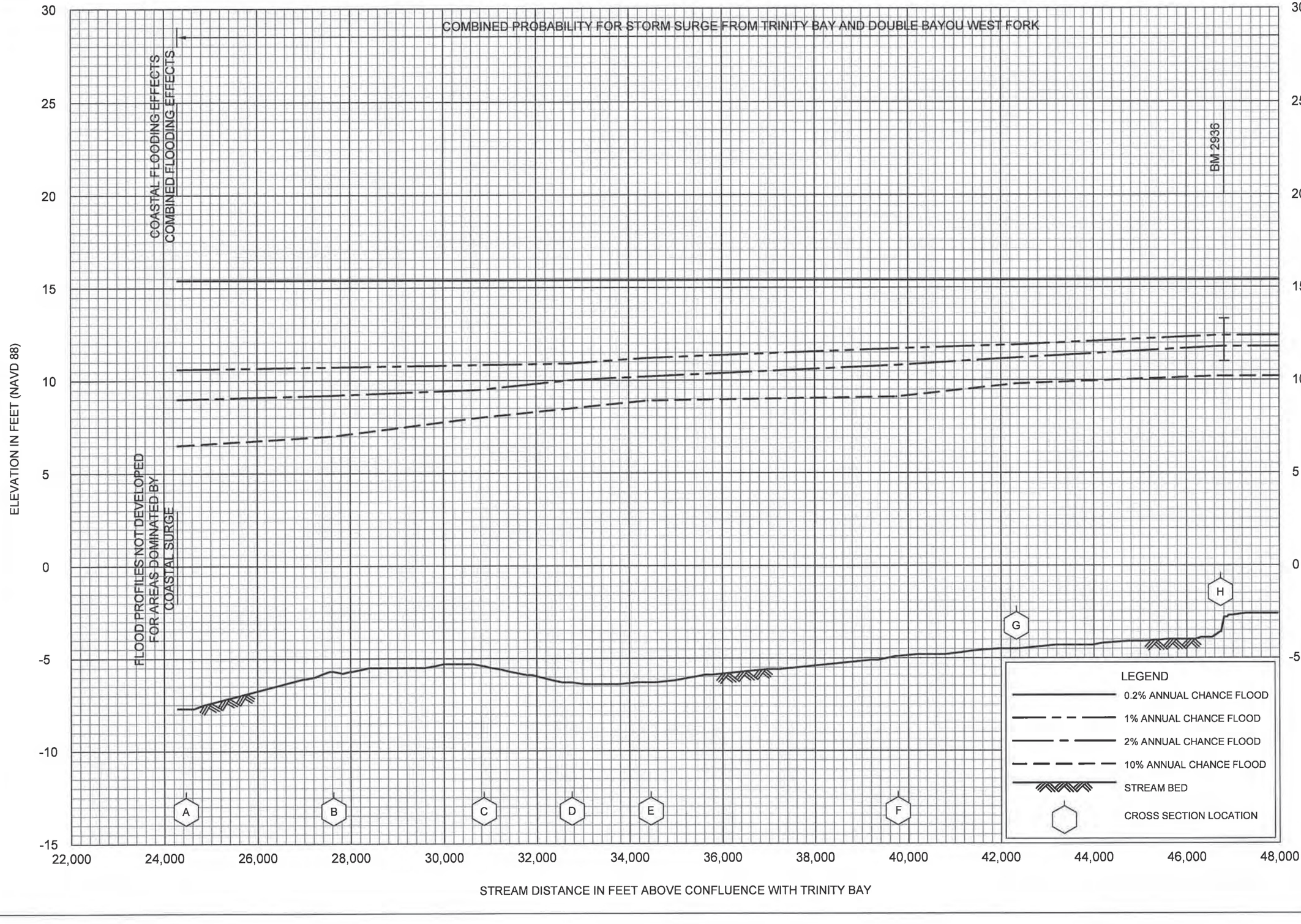
DOUBLE BAYOU EAST FORK

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHAMBERS COUNTY, TX

AND INCORPORATED AREAS

10P



FLOOD PROFILES

DOUBLE BAYOU WEST FORK

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHAMBERS COUNTY, TX

AND INCORPORATED AREAS

11P

COMBINED PROBABILITY FOR STORM SURGE FROM TRINITY BAY AND DOUBLE BAYOU WEST FORK

TIMBER BRIDGE

FM 562

LIMIT OF DETAILED STUDY

ELEVATION IN FEET (NAVD 88)

30
25
20
15
10
5
0
-5
-10
-15

48,000 50,000 52,000 54,000 56,000 58,000 60,000 62,000 64,000 66,000 68,000 70,000 72,000

STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH TRINITY BAY

I J K L M

LEGEND

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

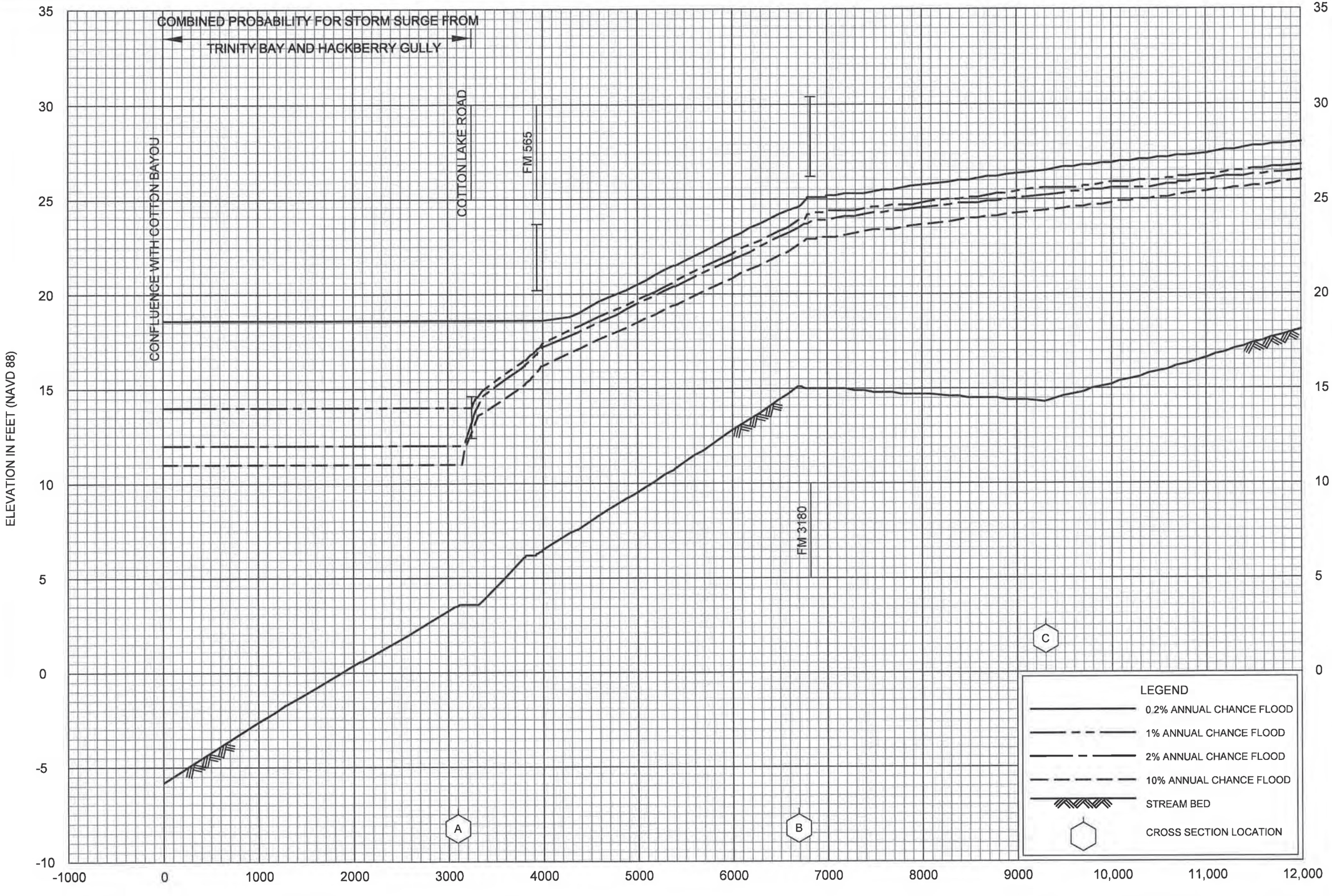
FLOOD PROFILES

DOUBLE BAYOU WEST FORK

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHAMBERS COUNTY, TX

AND INCORPORATED AREAS



FLOOD PROFILES

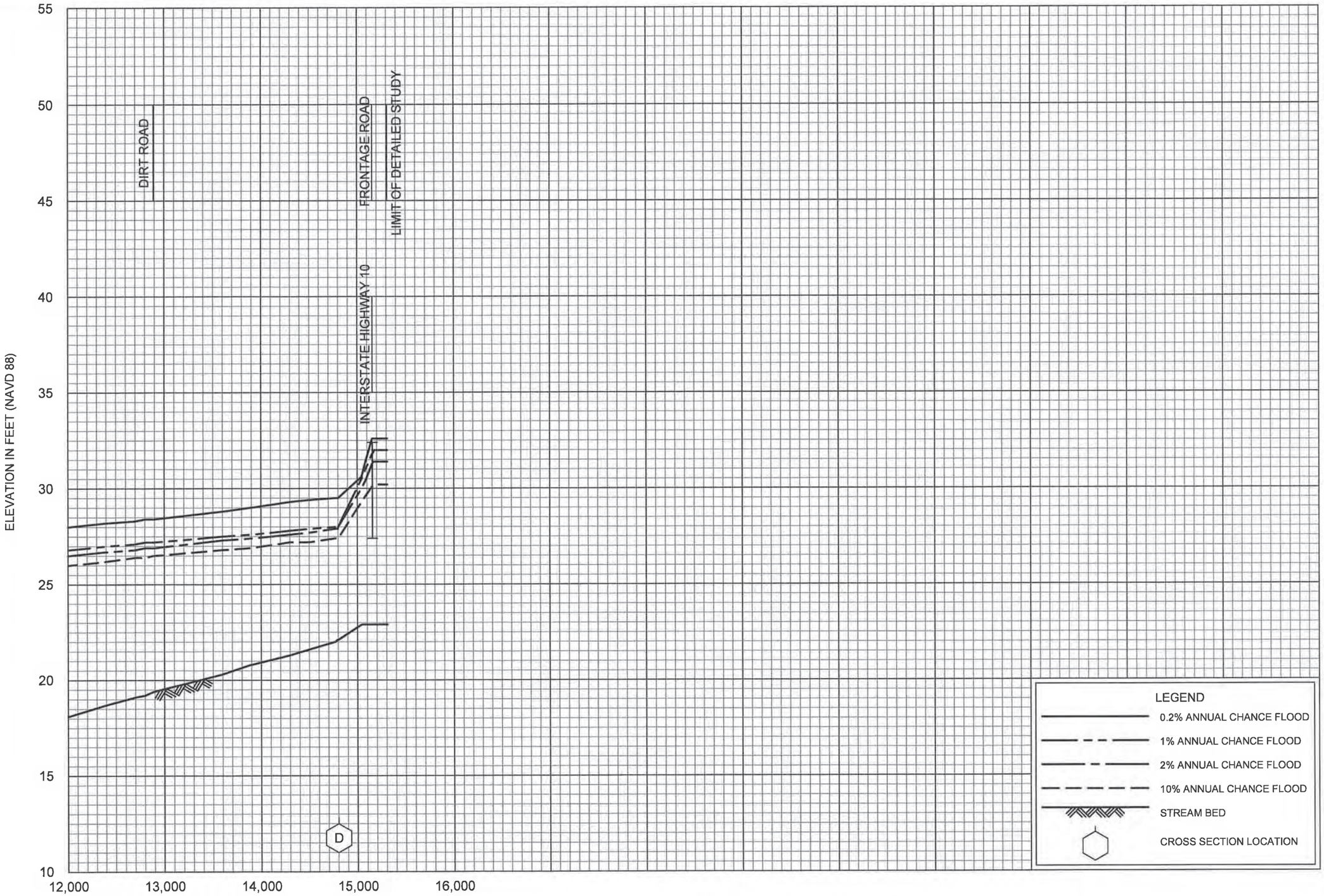
HACKBERRY GULLY

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHAMBERS COUNTY, TX

AND INCORPORATED AREAS

13P



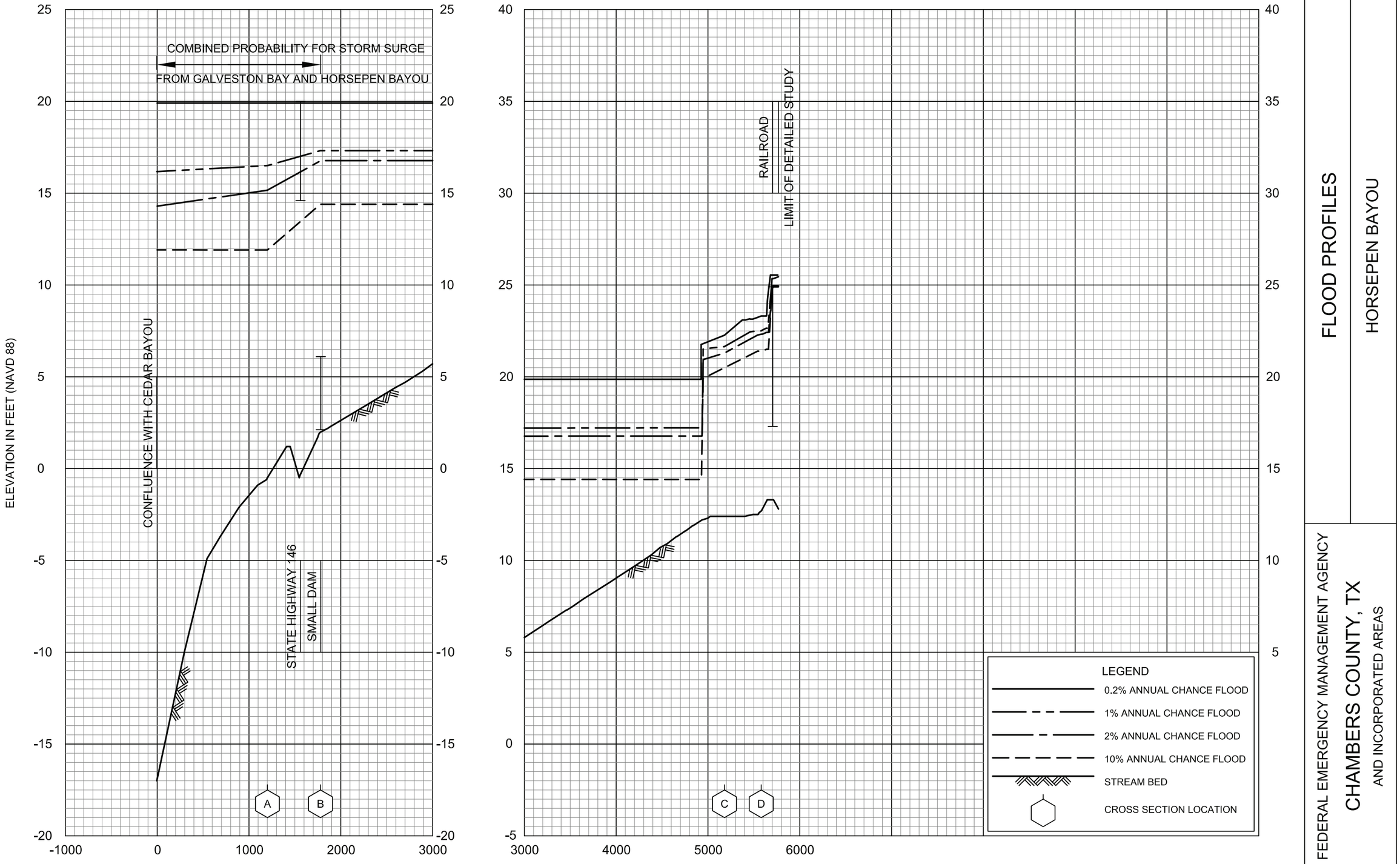
FLOOD PROFILES

HACKBERRY GULLY

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHAMBERS COUNTY, TX

AND INCORPORATED AREAS



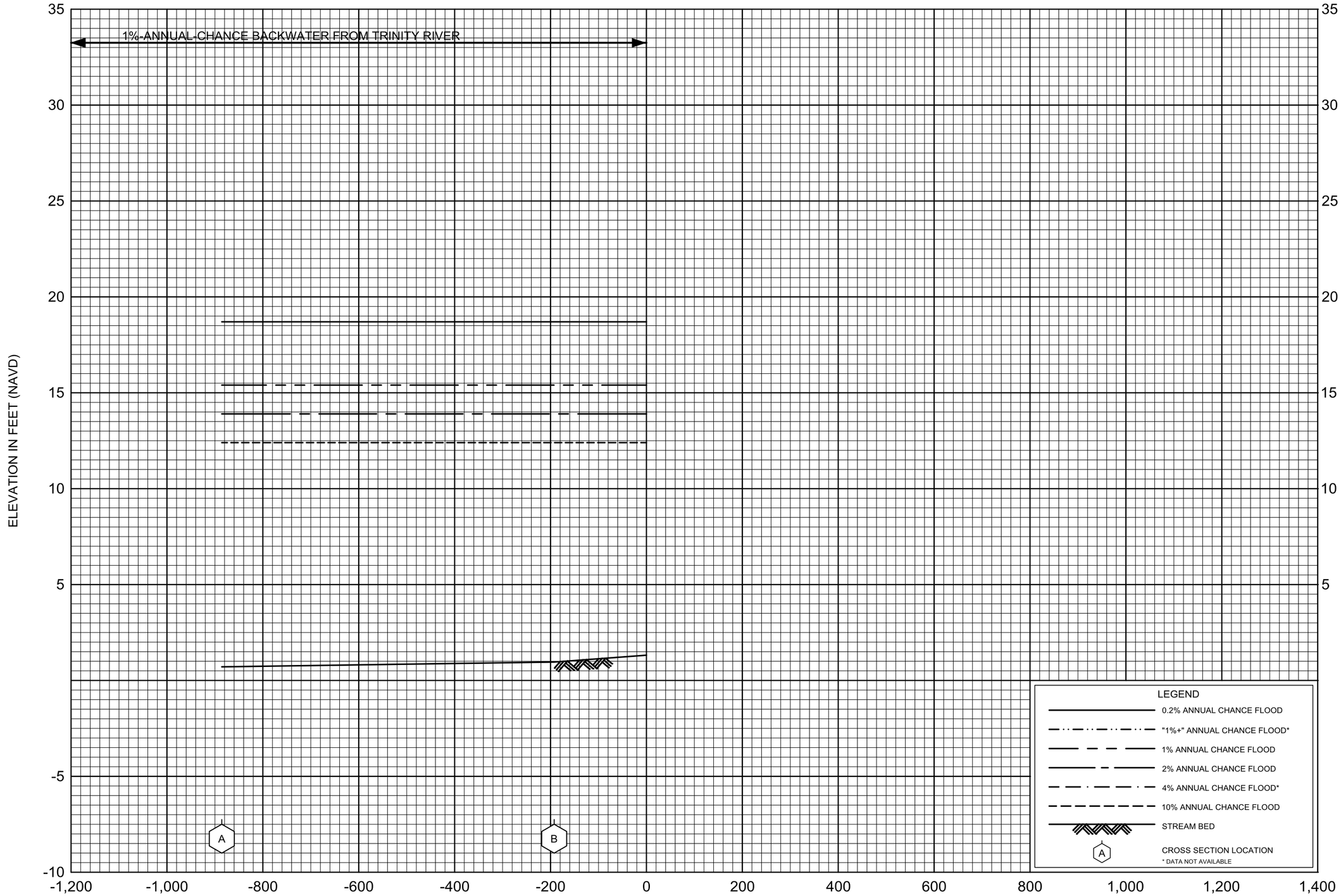
FLOOD PROFILES

HORSEPEN BAYOU

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHAMBERS COUNTY, TX

AND INCORPORATED AREAS



FLOOD PROFILES

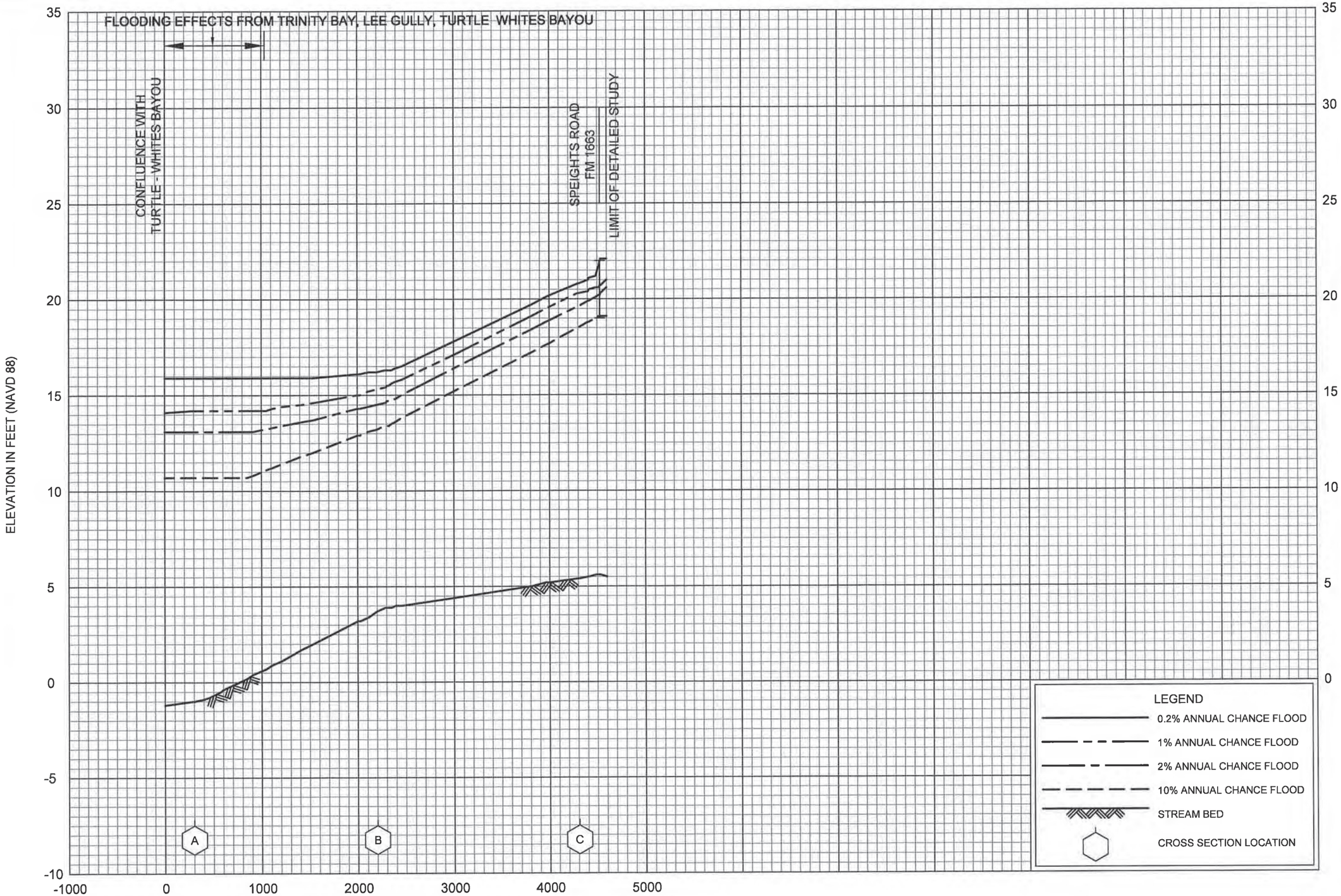
LABBIT CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

LIBERTY, TX

AND INCORPORATED AREAS

16P



FLOOD PROFILES

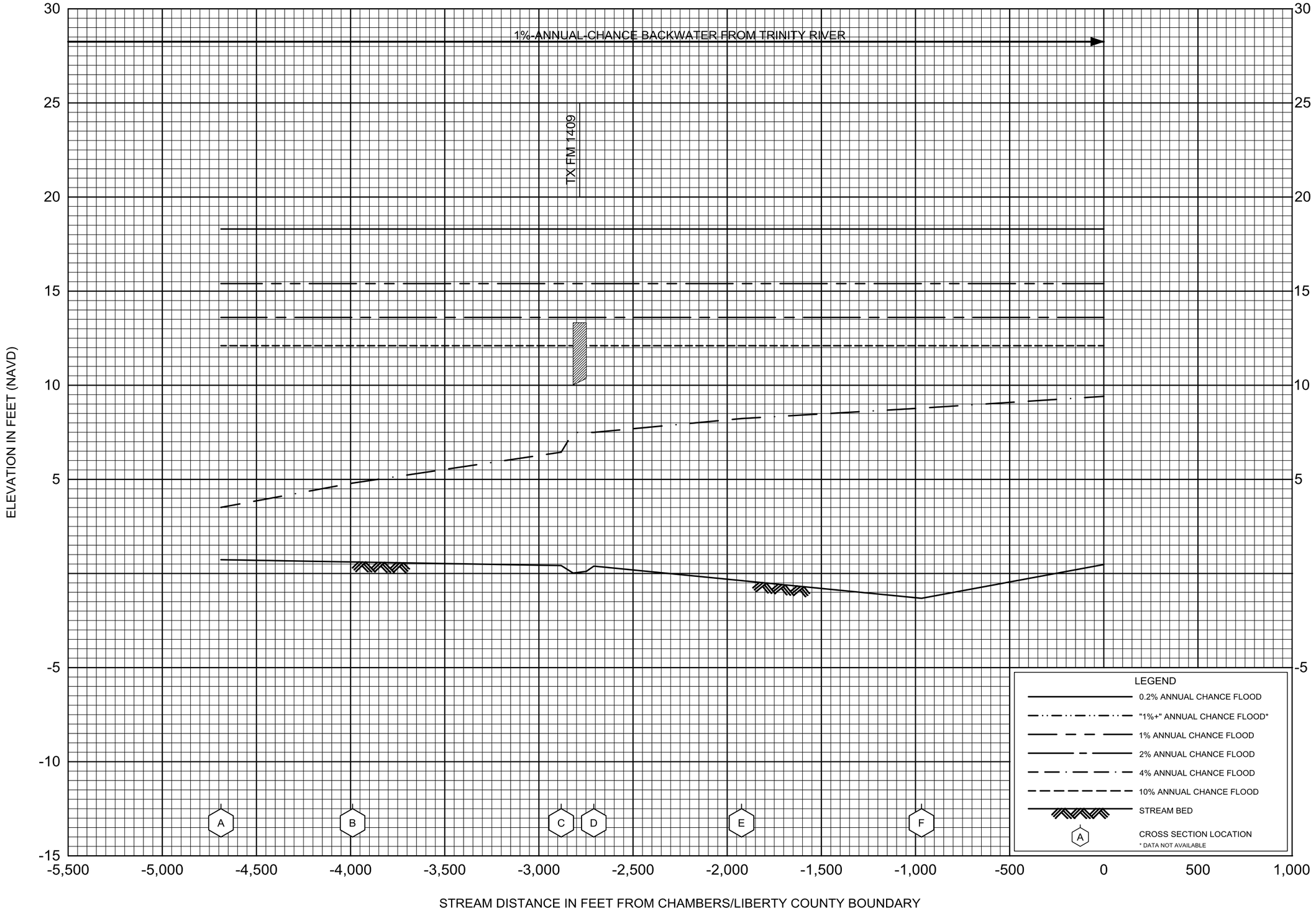
LEE GULLY

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHAMBERS COUNTY, TX

AND INCORPORATED AREAS

17P



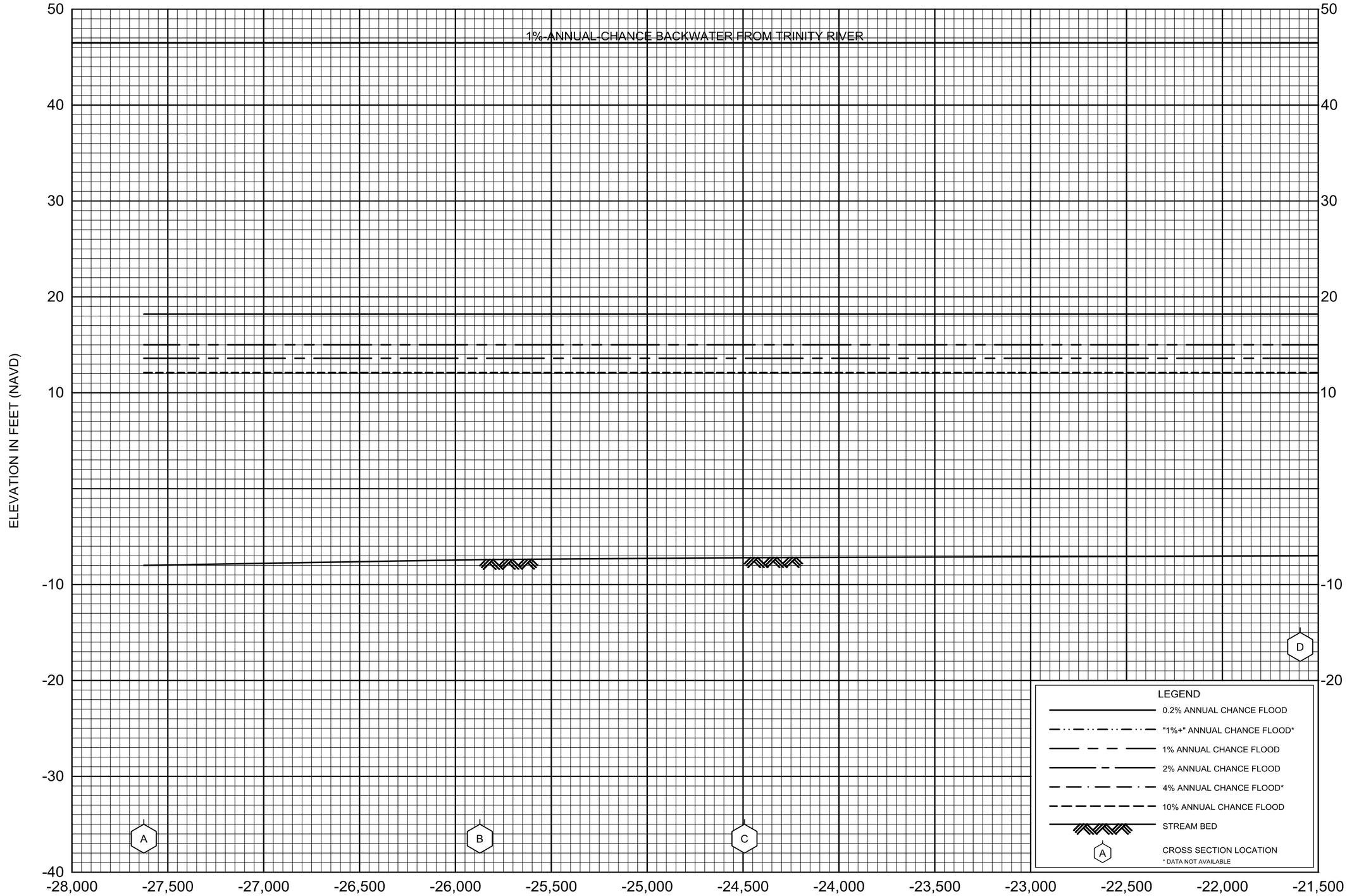
FLOOD PROFILES

LITTLE CANEY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

LIBERTY , TX

AND INCORPORATED AREAS



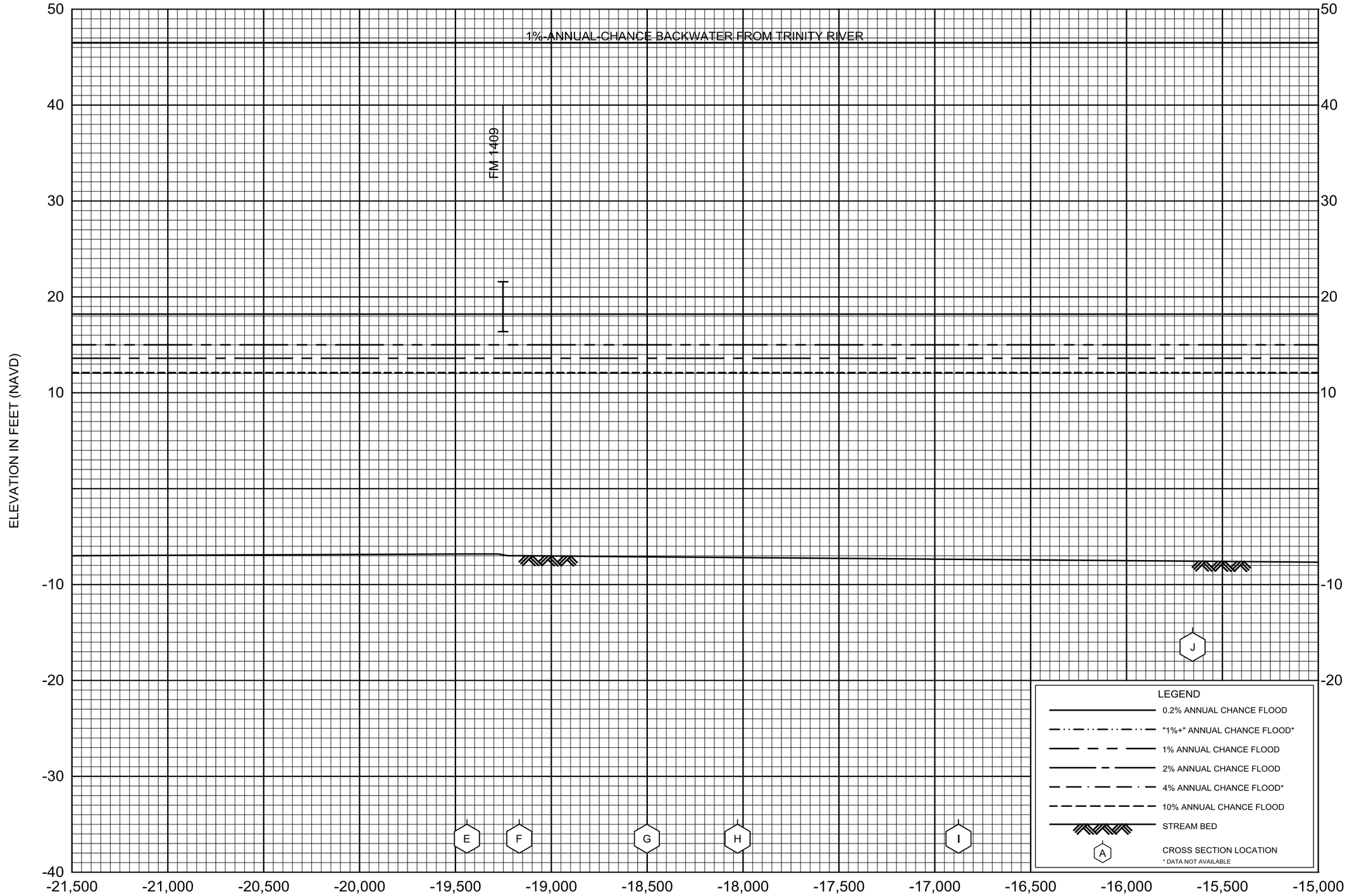
FLOOD PROFILES

OLD RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LIBERTY, TX

AND INCORPORATED AREAS



FLOOD PROFILES

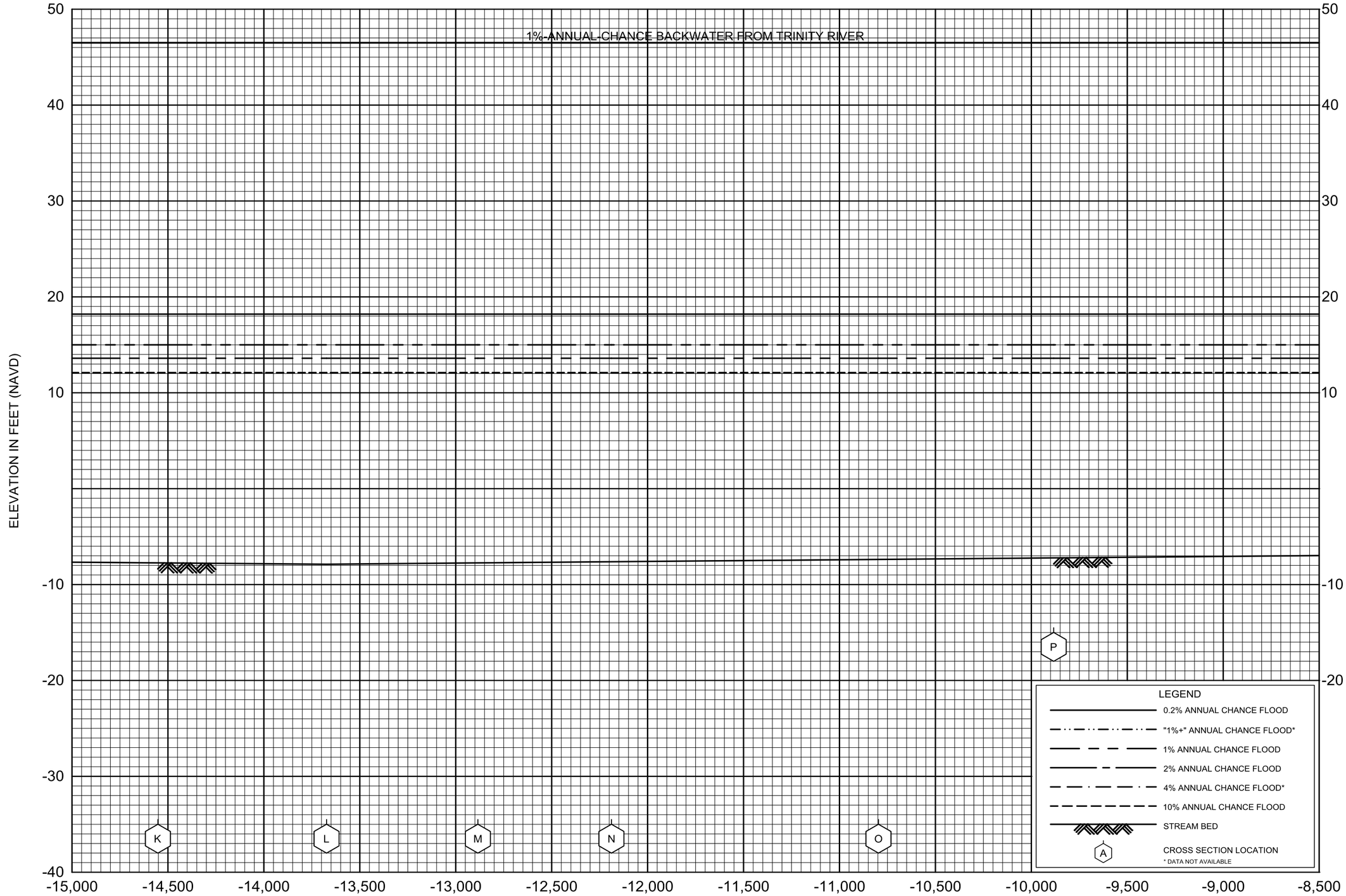
OLD RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LIBERTY, TX

AND INCORPORATED AREAS

20P



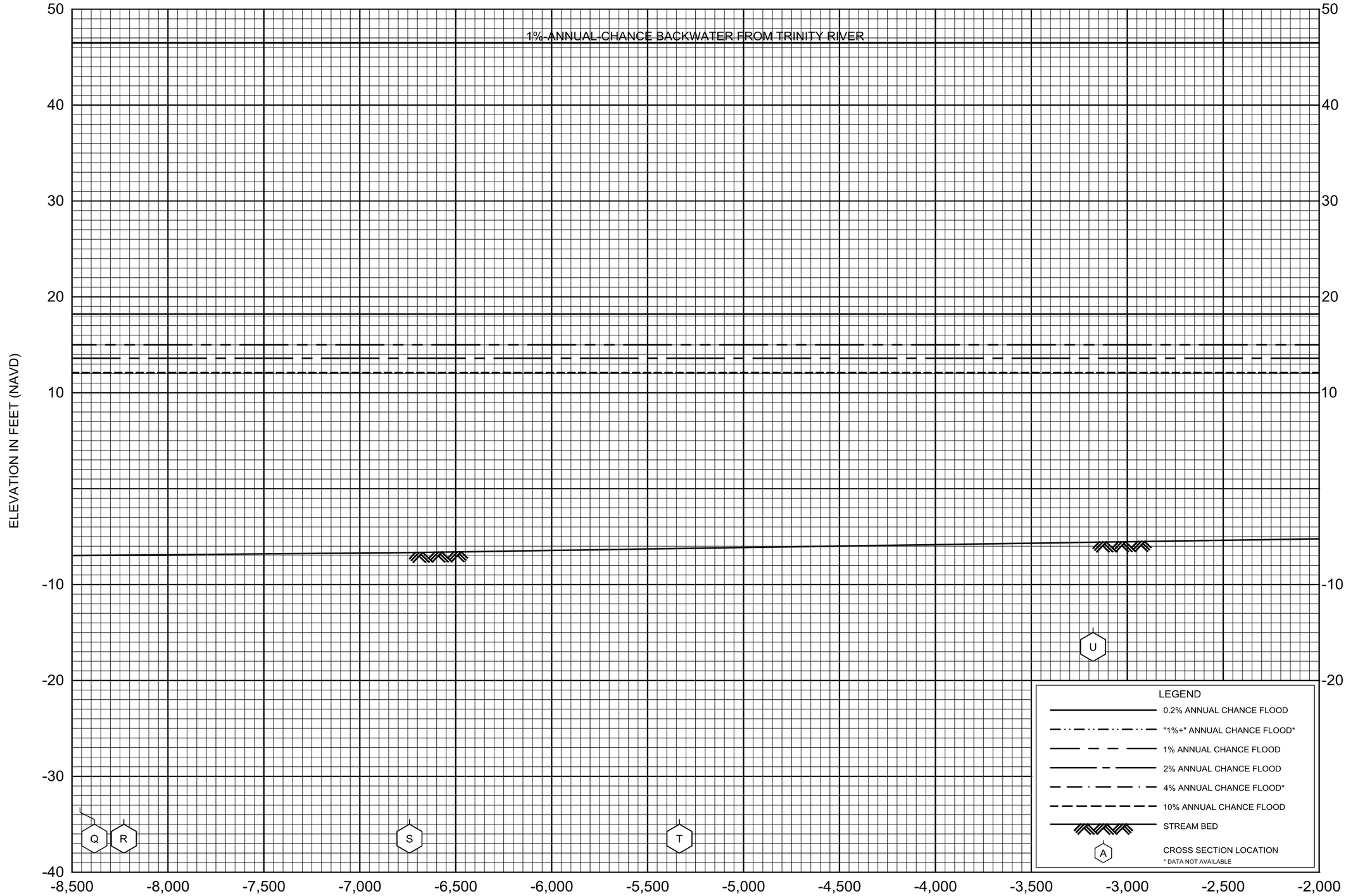
FLOOD PROFILES

OLD RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LIBERTY, TX

AND INCORPORATED AREAS



FLOOD PROFILES

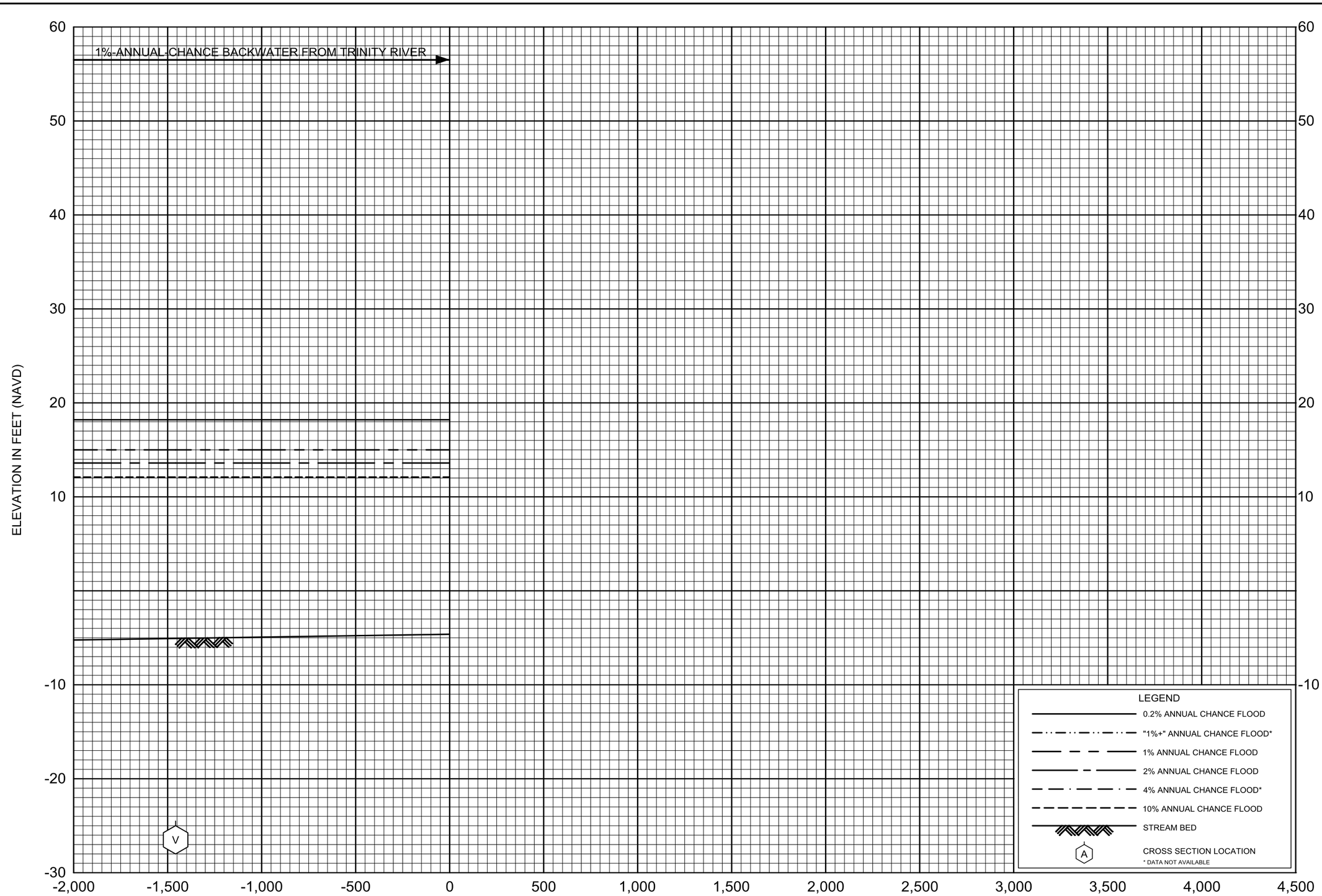
OLD RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LIBERTY, TX

AND INCORPORATED AREAS

22P



FLOOD PROFILES

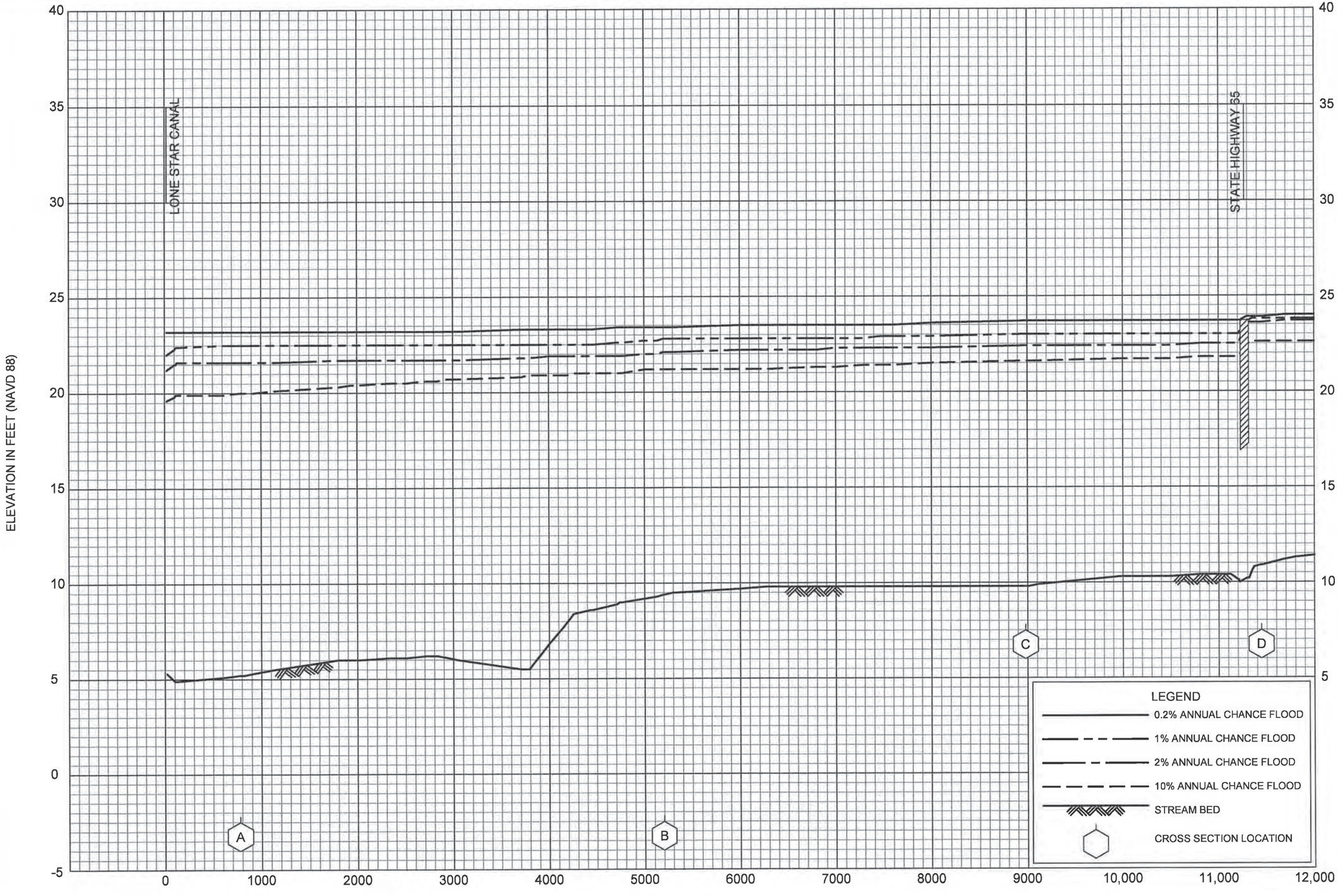
OLD RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

LIBERTY, TX

AND INCORPORATED AREAS

23P



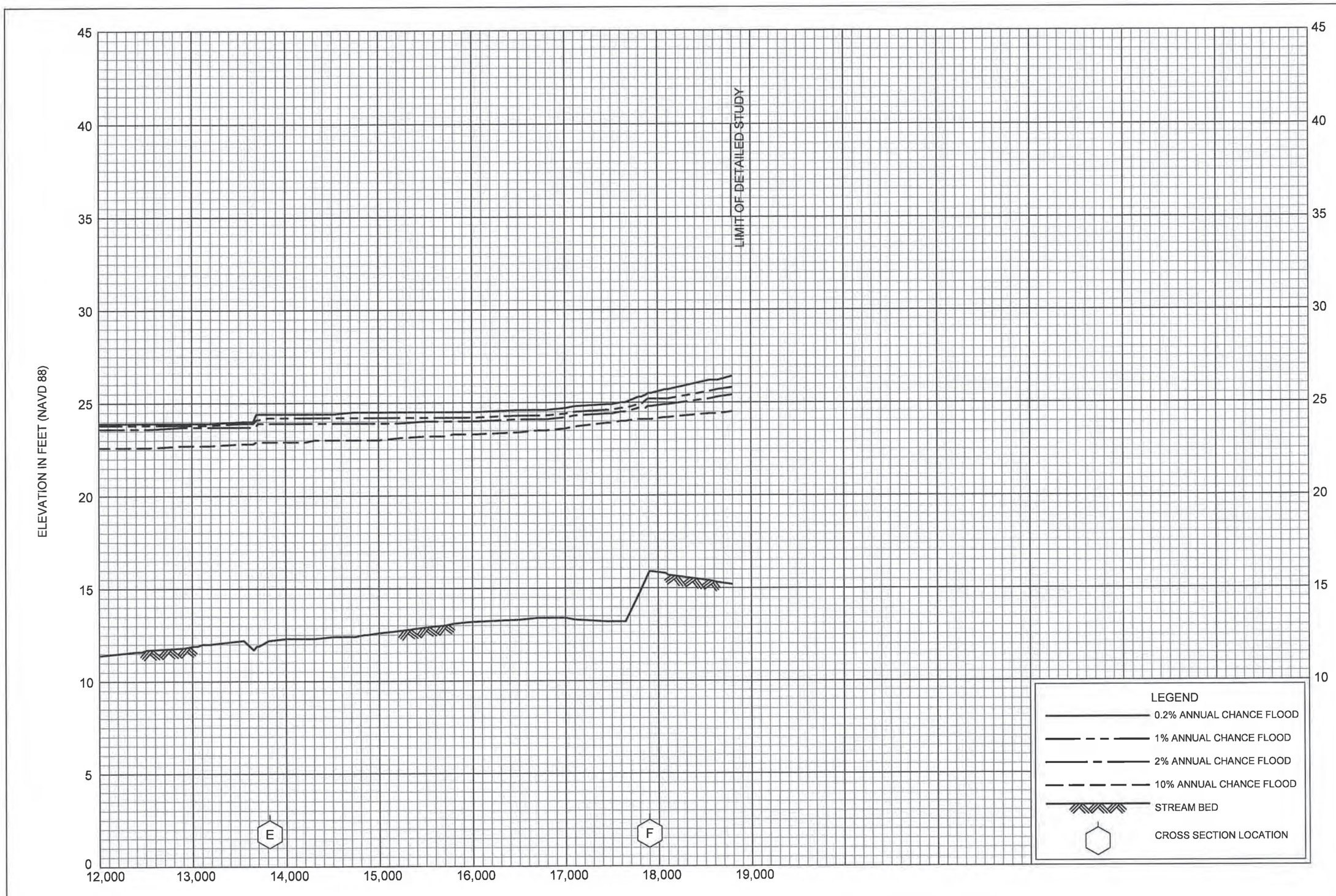
FLOOD PROFILES

OYSTER BAYOU

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHAMBERS COUNTY, TX

AND INCORPORATED AREAS



FLOOD PROFILES

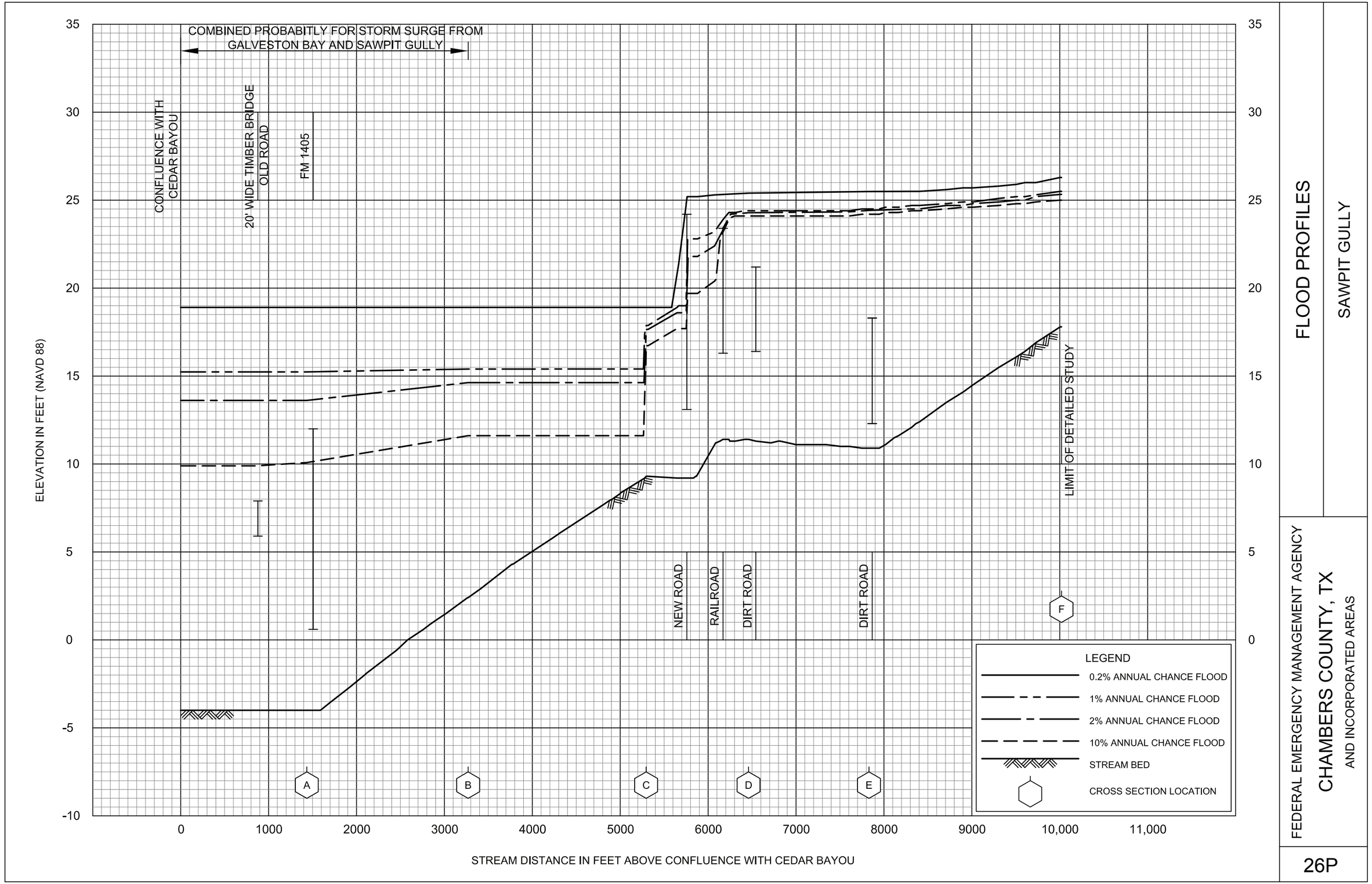
OYSTER BAYOU

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHAMBERS COUNTY, TX

AND INCORPORATED AREAS

25P



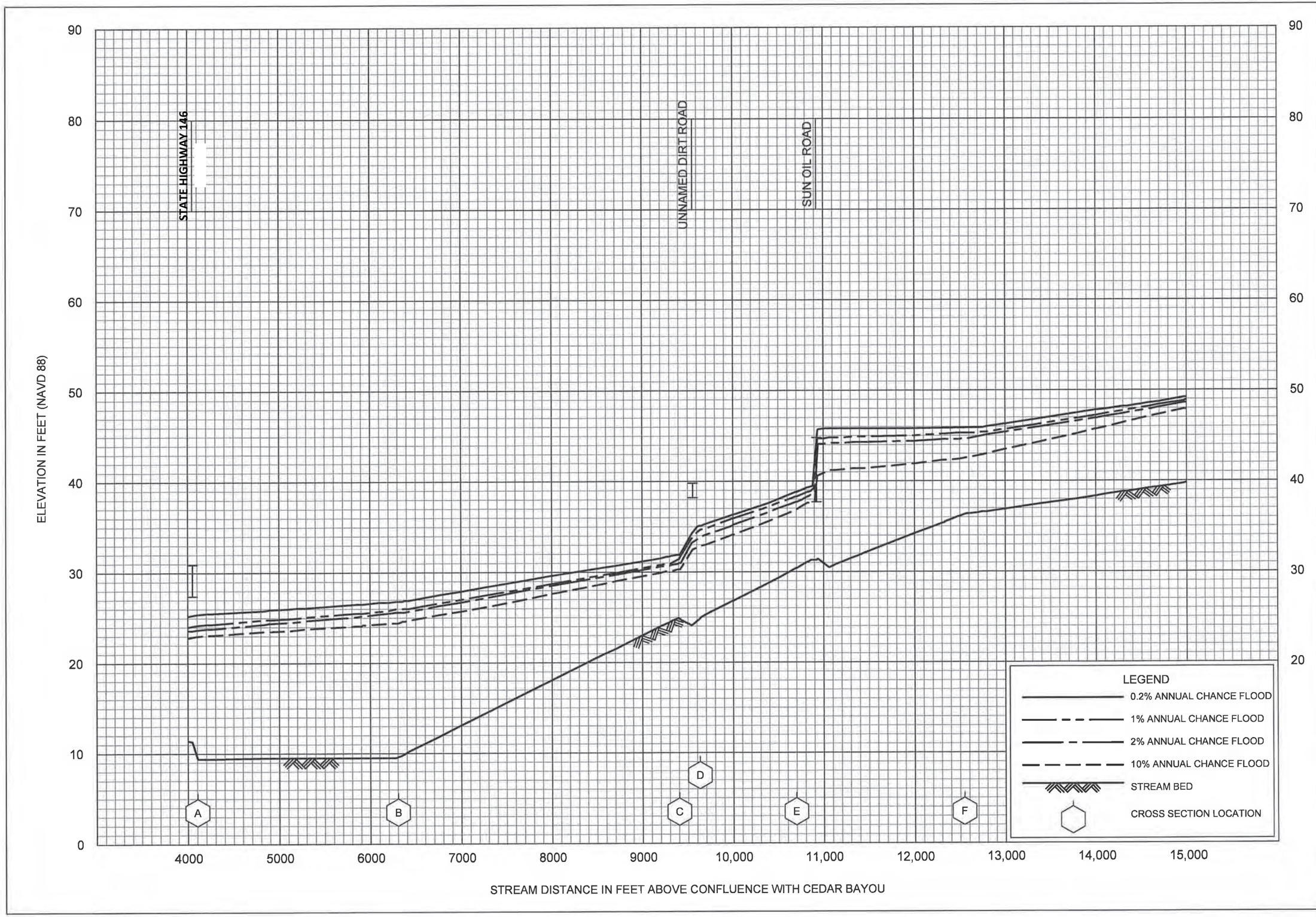
FLOOD PROFILES

SAWPIT GULLY

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHAMBERS COUNTY, TX

AND INCORPORATED AREAS



FLOOD PROFILES

SMITH GULLY

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHAMBERS COUNTY, TX

AND INCORPORATED AREAS

27P

ELEVATION IN FEET (NAVD 88)

100
90
80
70
60
50
40
30
20
10

FM 565

COVE ROAD

WINFREE STREET

LIMIT OF DETAILED STUDY

G

H

15,000
16,000
17,000
18,000
19,000

STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH CEDAR BAYOU

LEGEND

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

FLOOD PROFILES

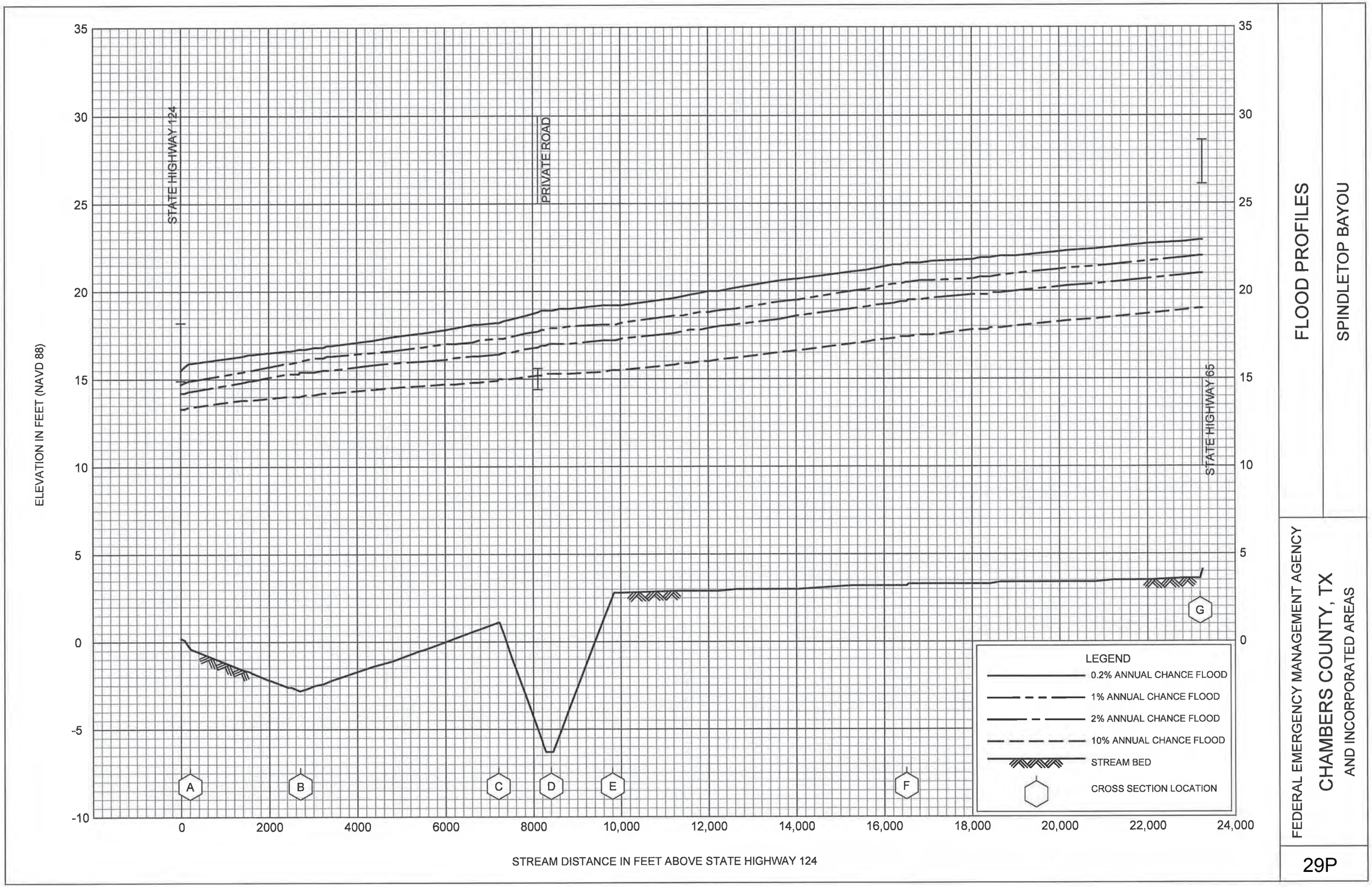
SMITH GULLY

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHAMBERS COUNTY, TX

AND INCORPORATED AREAS

28P



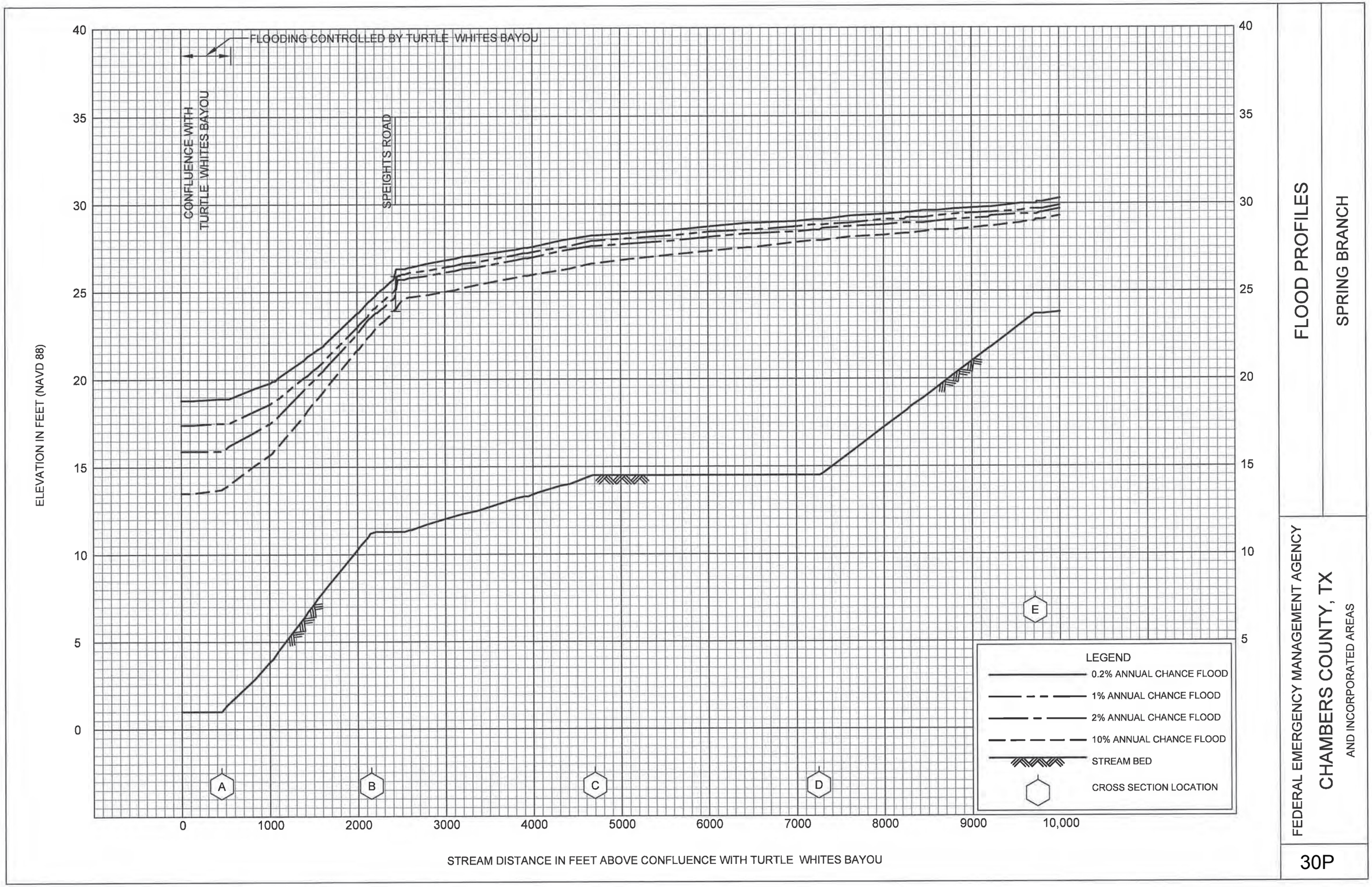
FLOOD PROFILES

SPINDLETOP BAYOU

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHAMBERS COUNTY, TX

AND INCORPORATED AREAS



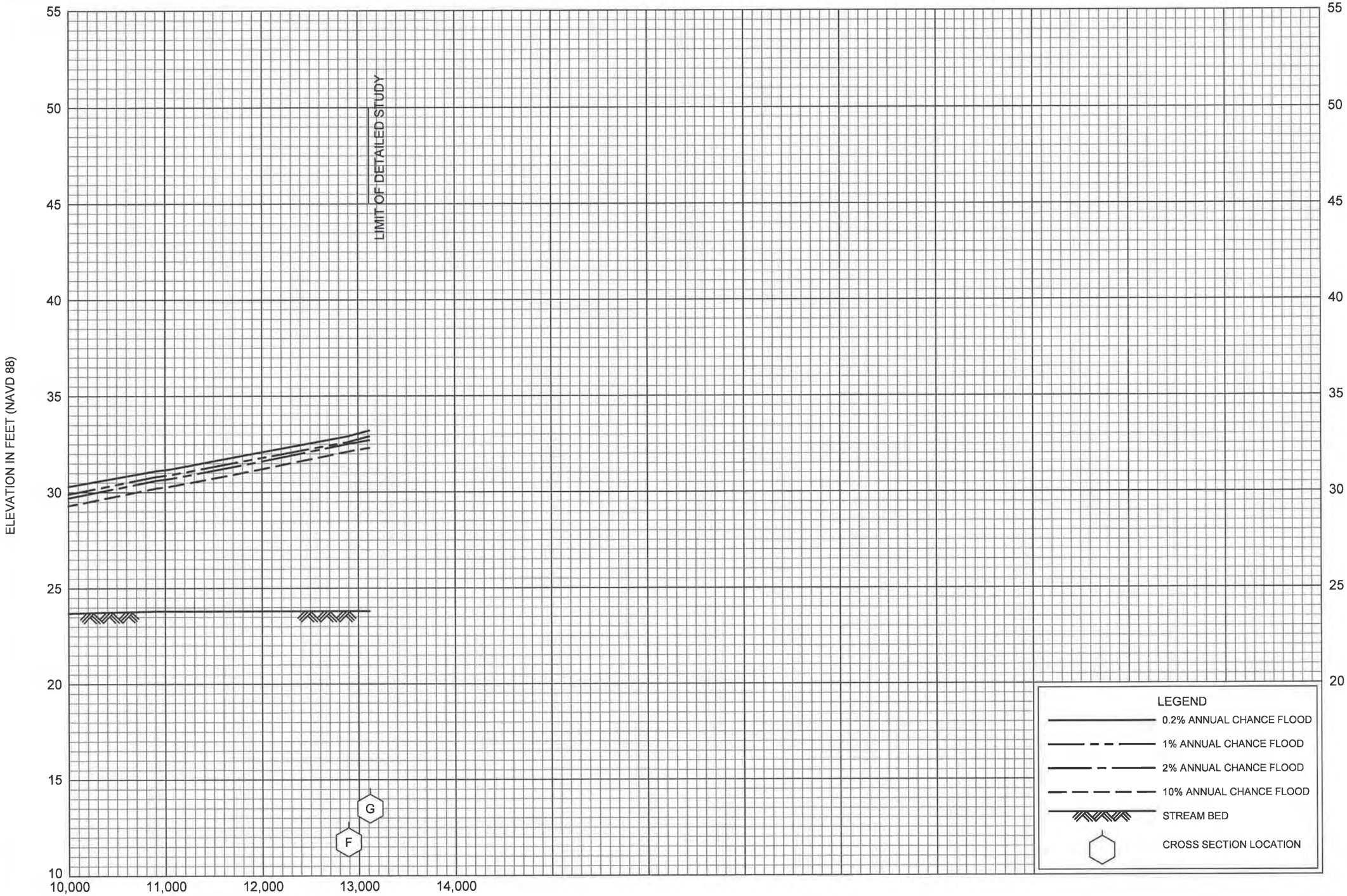
FLOOD PROFILES

SPRING BRANCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHAMBERS COUNTY, TX

AND INCORPORATED AREAS



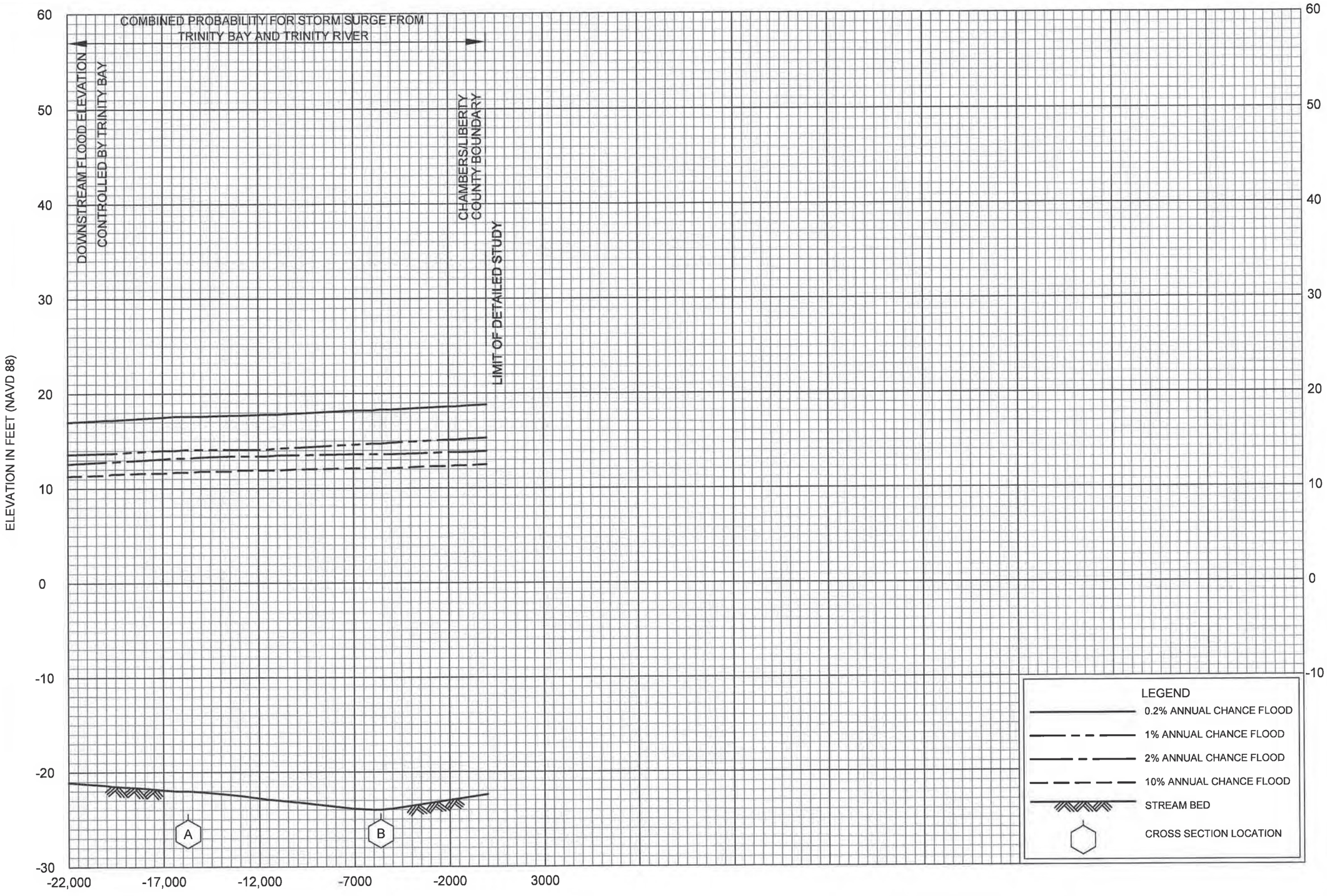
FLOOD PROFILES

SPRING BRANCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHAMBERS COUNTY, TX

AND INCORPORATED AREAS



FLOOD PROFILES

TRINITY RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHAMBERS COUNTY, TX

AND INCORPORATED AREAS

COMBINED PROBABILITY STROM SURGE FROM TRINITY BAY AND WHITES BAYOU

CONFLUENCE WITH LAKE ANAHUAC
FM 583
CONFLUENCE OF WHITES BAYOU
INTERSTATE HIGHWAY 10
12' WIDE TIMBER BRIDGE LOUGH ROAD
CONFLUENCE OF LEE GULLY

ELEVATION IN FEET (NAVD 88)

50
40
30
20
10
0
-10
-20
-30

A
B
C
D
E
F

0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10,000
11,000
12,000

STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH LAKE ANAHUAC

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

FLOOD PROFILES

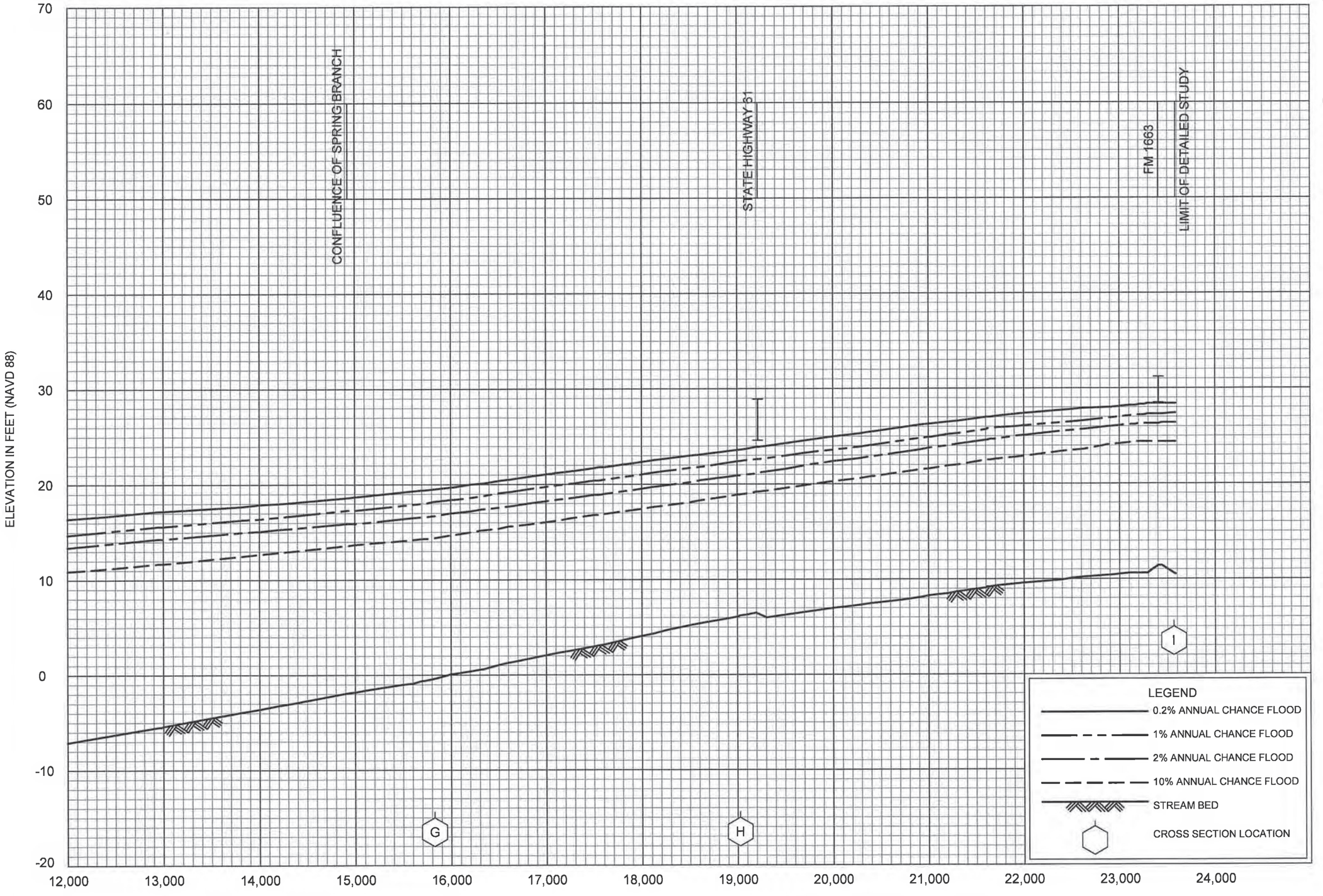
TURTLE WHITES BAYOU

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHAMBERS COUNTY, TX

AND INCORPORATED AREAS

33P



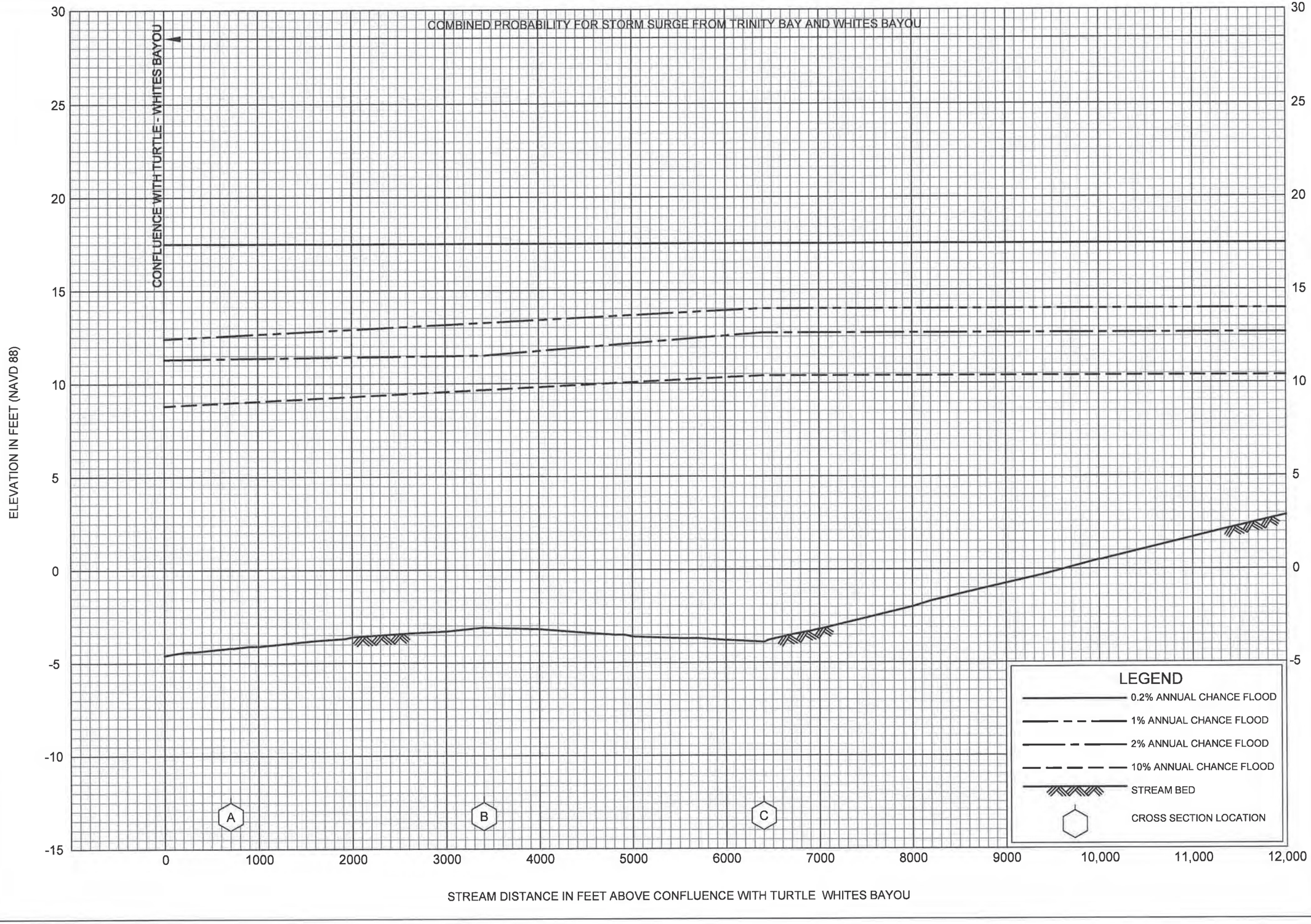
FLOOD PROFILES

TURTLE WHITES BAYOU

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHAMBERS COUNTY, TX

AND INCORPORATED AREAS



FLOOD PROFILES

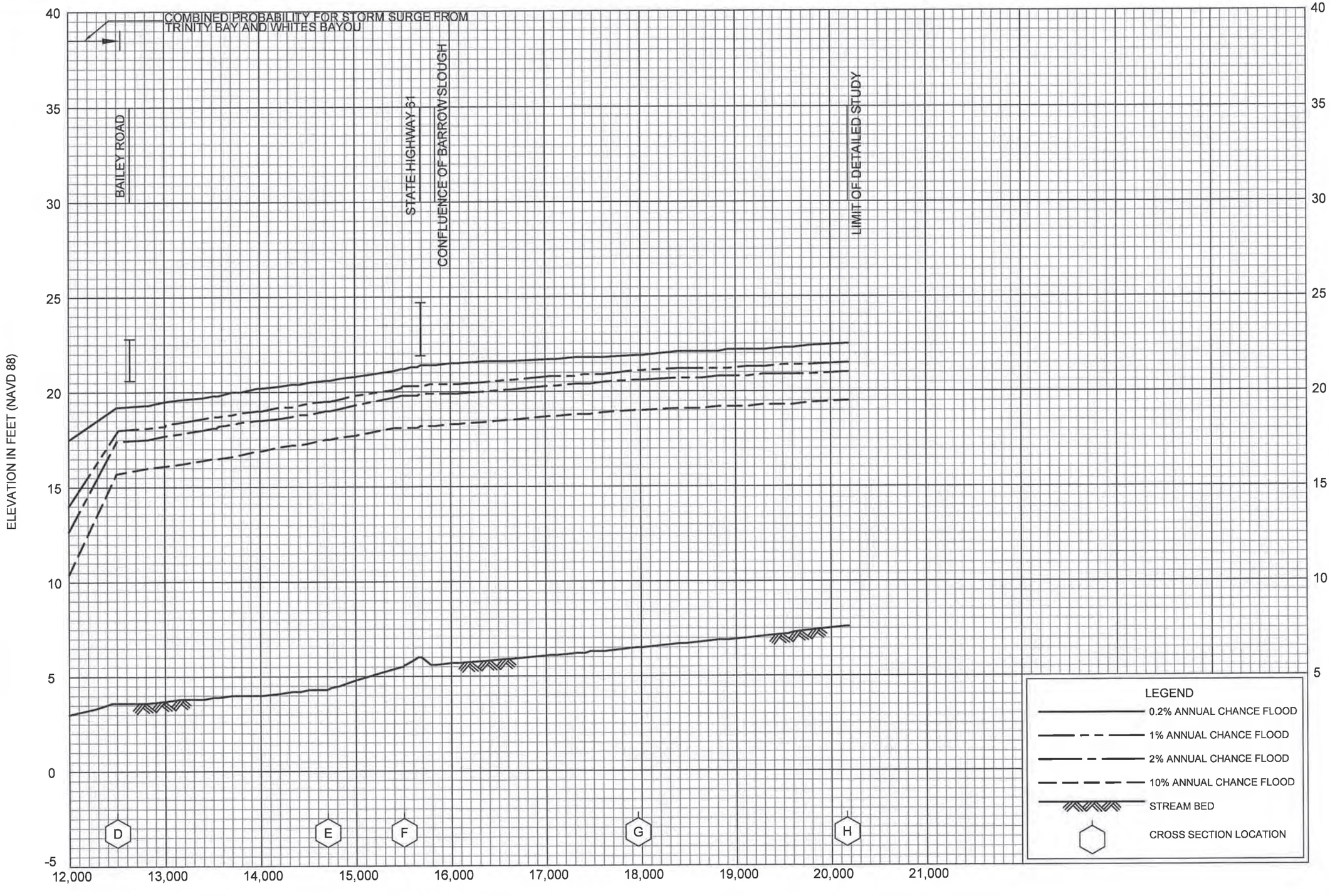
WHITES BAYOU

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHAMBERS COUNTY, TX

AND INCORPORATED AREAS

35P



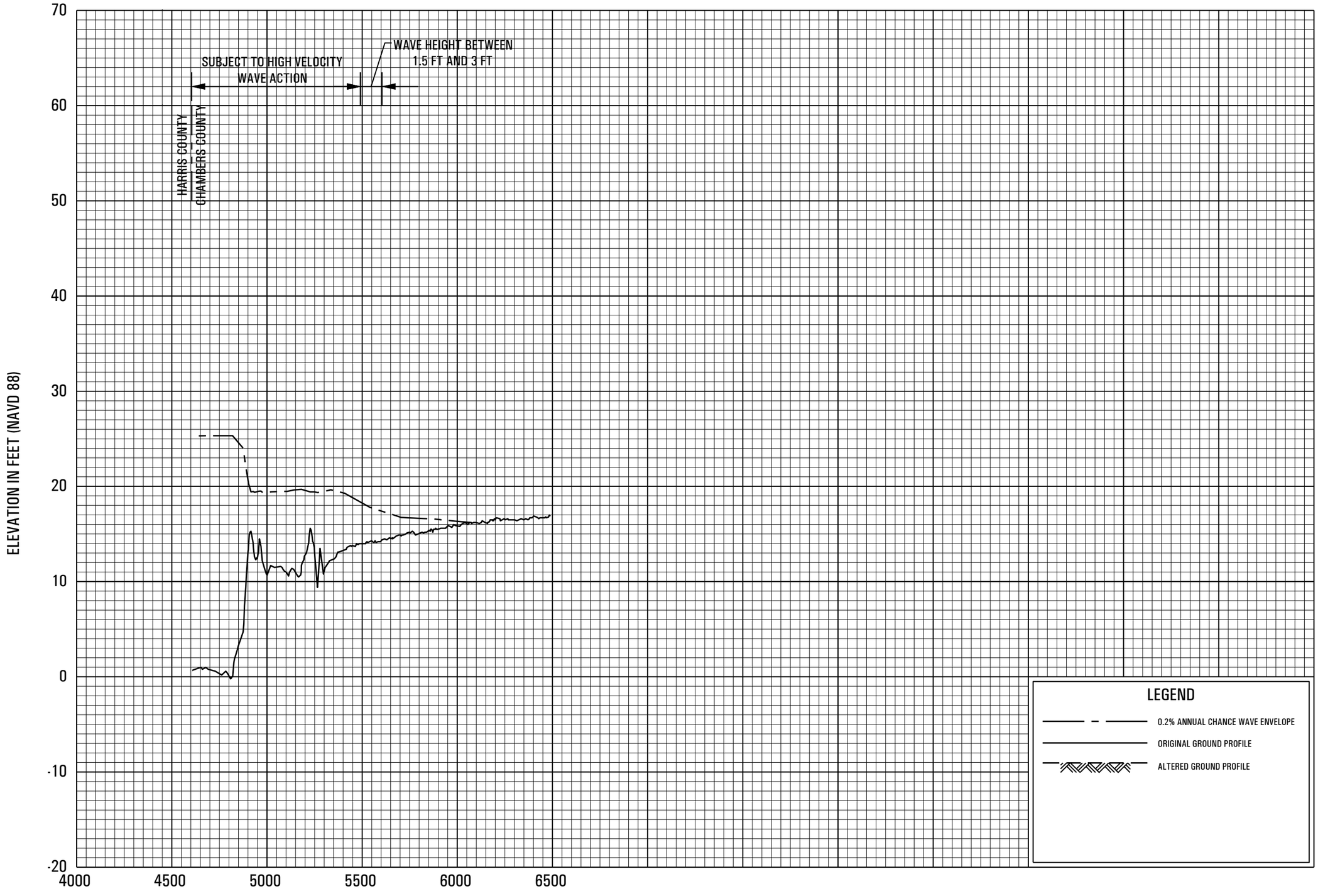
FLOOD PROFILES

WHITES BAYOU

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHAMBERS COUNTY, TX

AND INCORPORATED AREAS



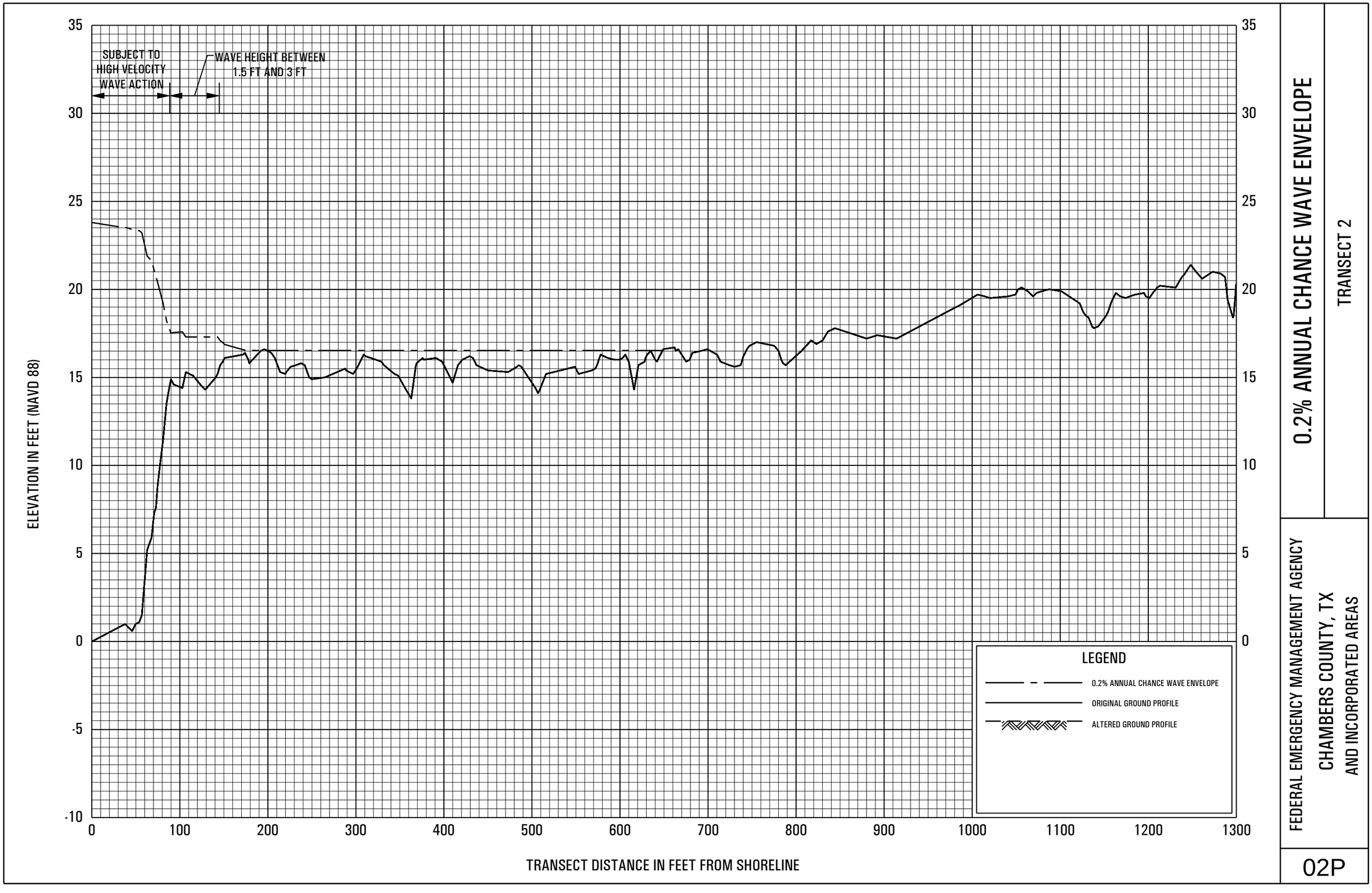
0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHAMBERS COUNTY, TX
AND INCORPORATED AREAS

01P

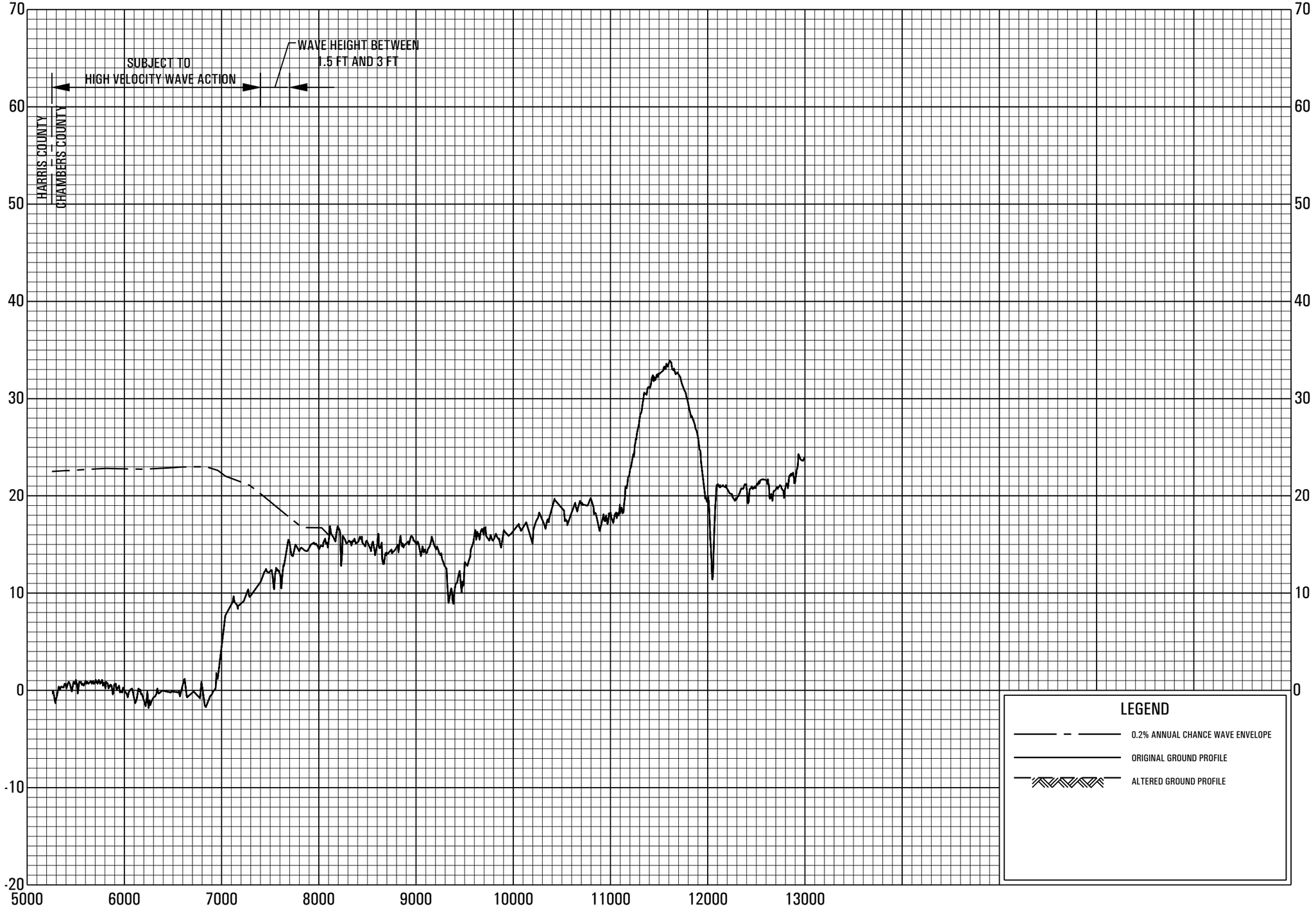


0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 2

FEDERAL EMERGENCY MANAGEMENT AGENCY
CHAMBERS COUNTY, TX
AND INCORPORATED AREAS

02P

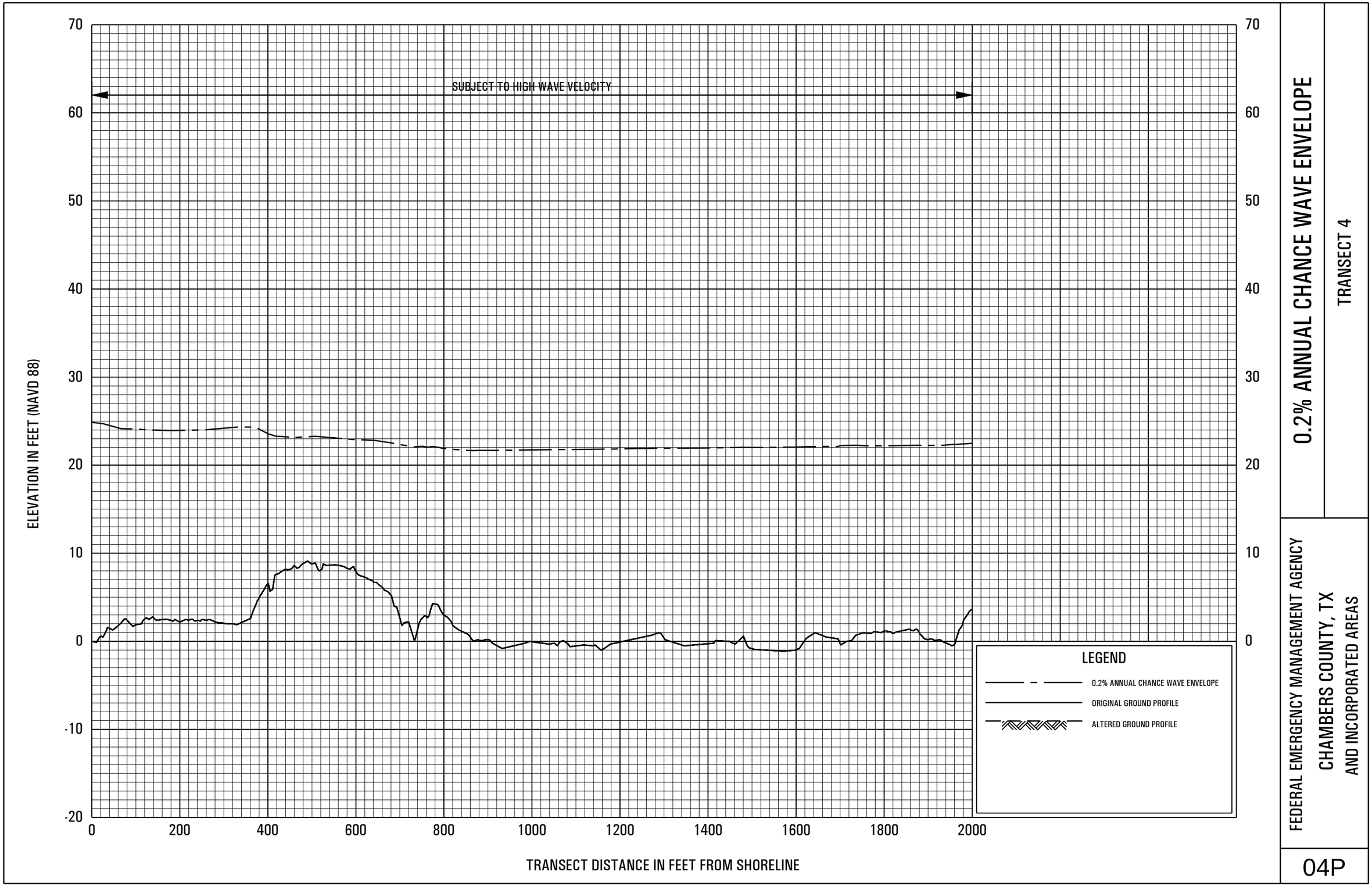


0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 3

FEDERAL EMERGENCY MANAGEMENT AGENCY
CHAMBERS COUNTY, TX
AND INCORPORATED AREAS

03P



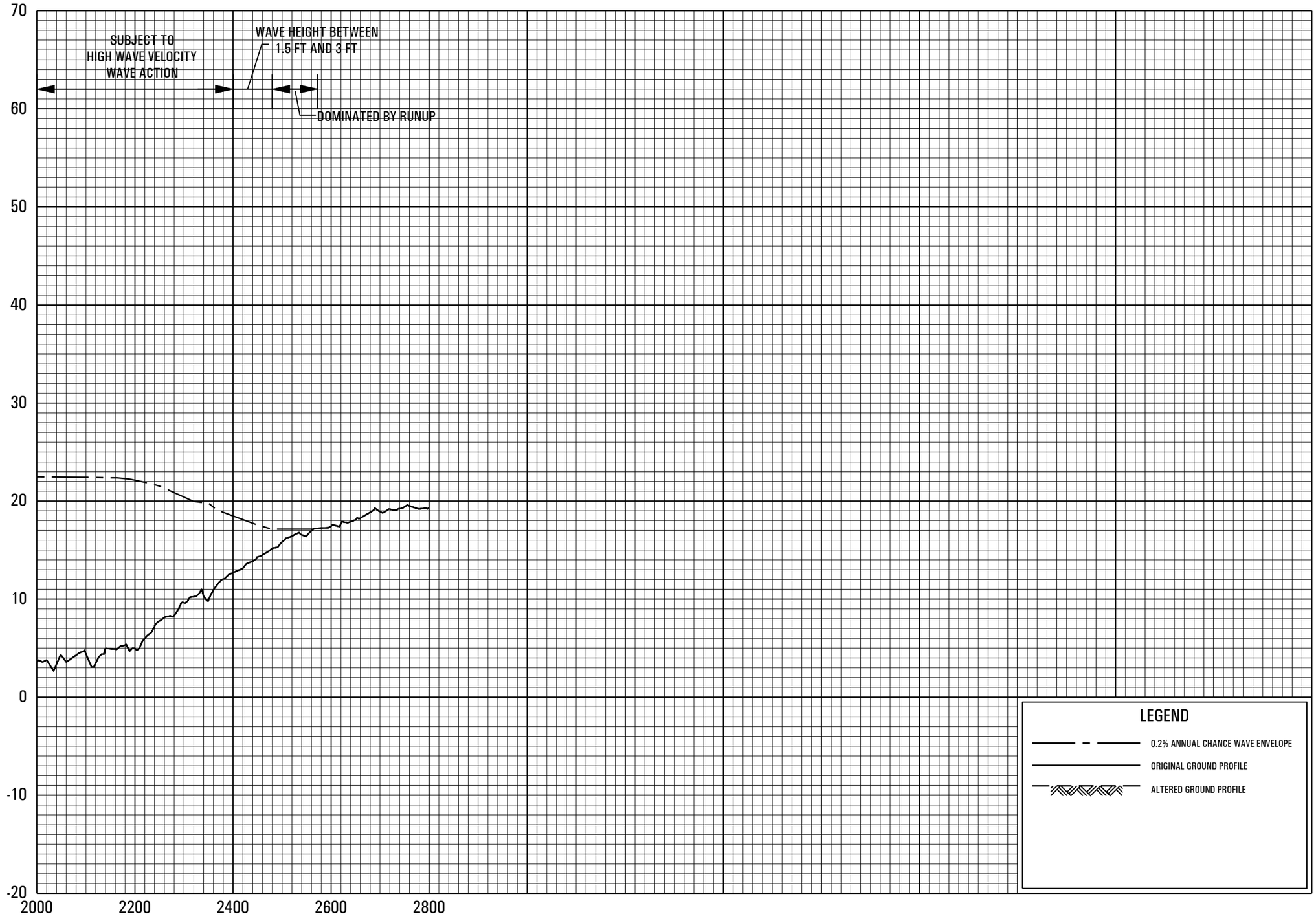
0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHAMBERS COUNTY, TX
AND INCORPORATED AREAS

04P

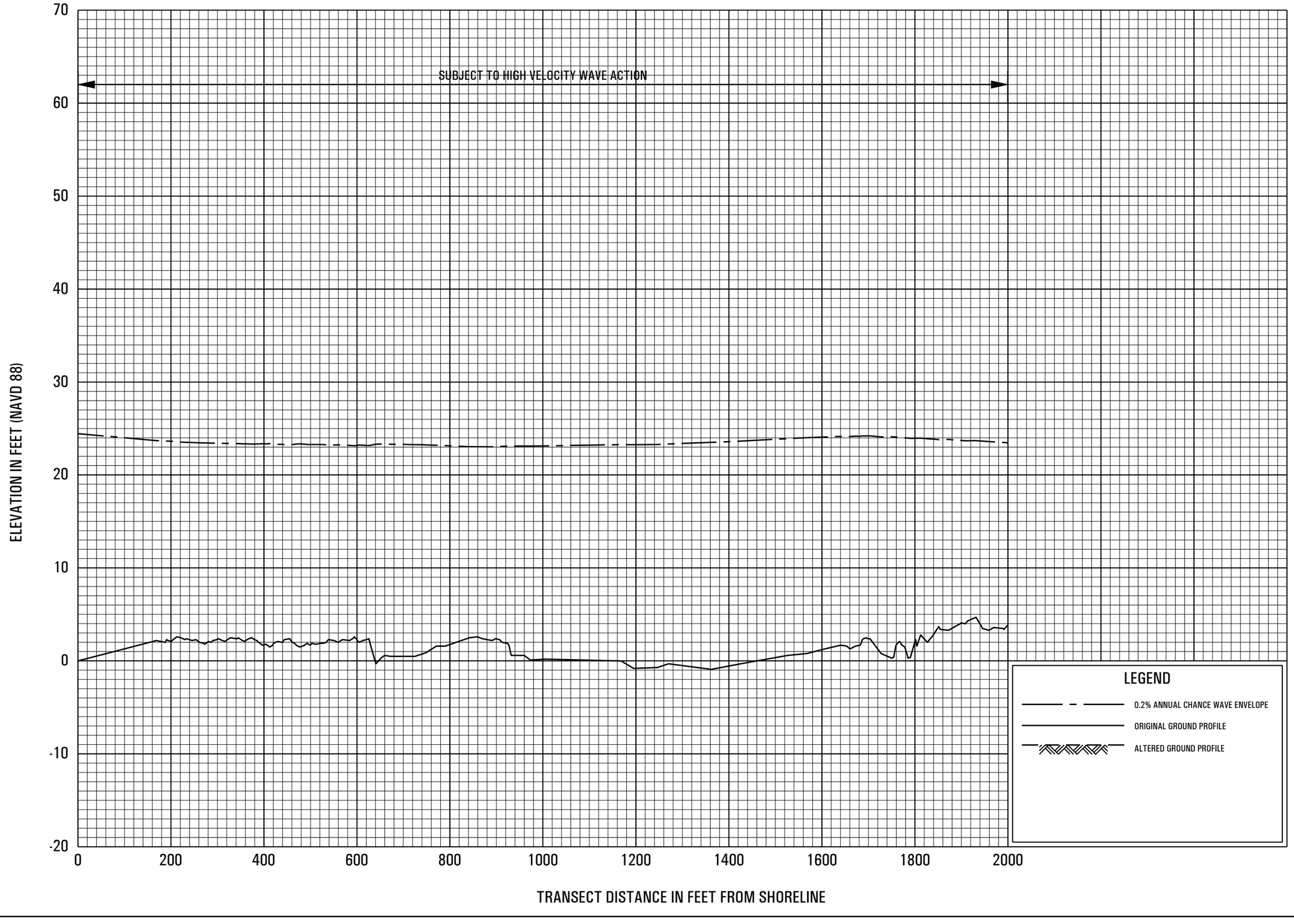


0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 4

FEDERAL EMERGENCY MANAGEMENT AGENCY
CHAMBERS COUNTY, TX
AND INCORPORATED AREAS

05P

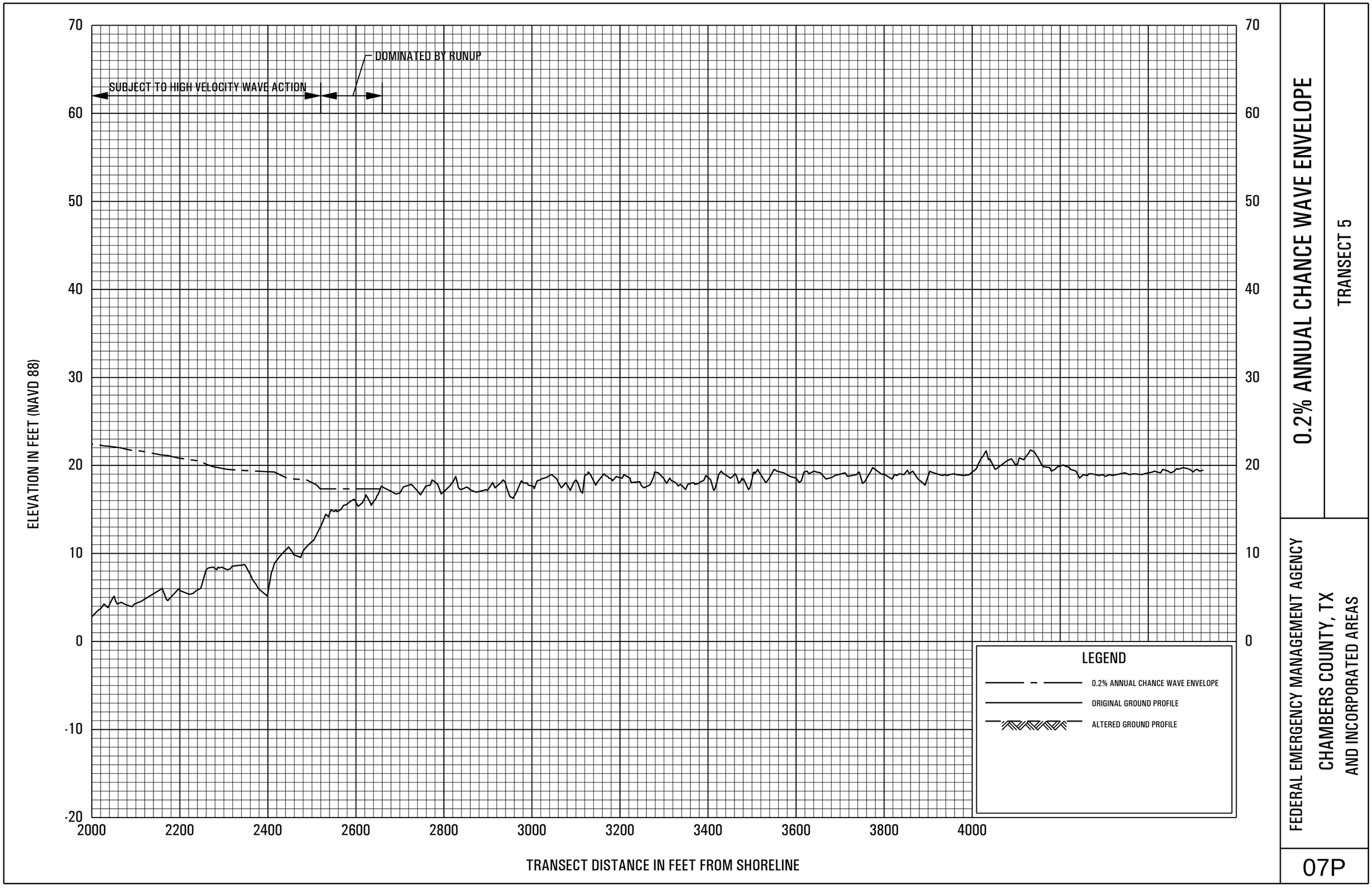


0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 5

FEDERAL EMERGENCY MANAGEMENT AGENCY
CHAMBERS COUNTY, TX
AND INCORPORATED AREAS

06P

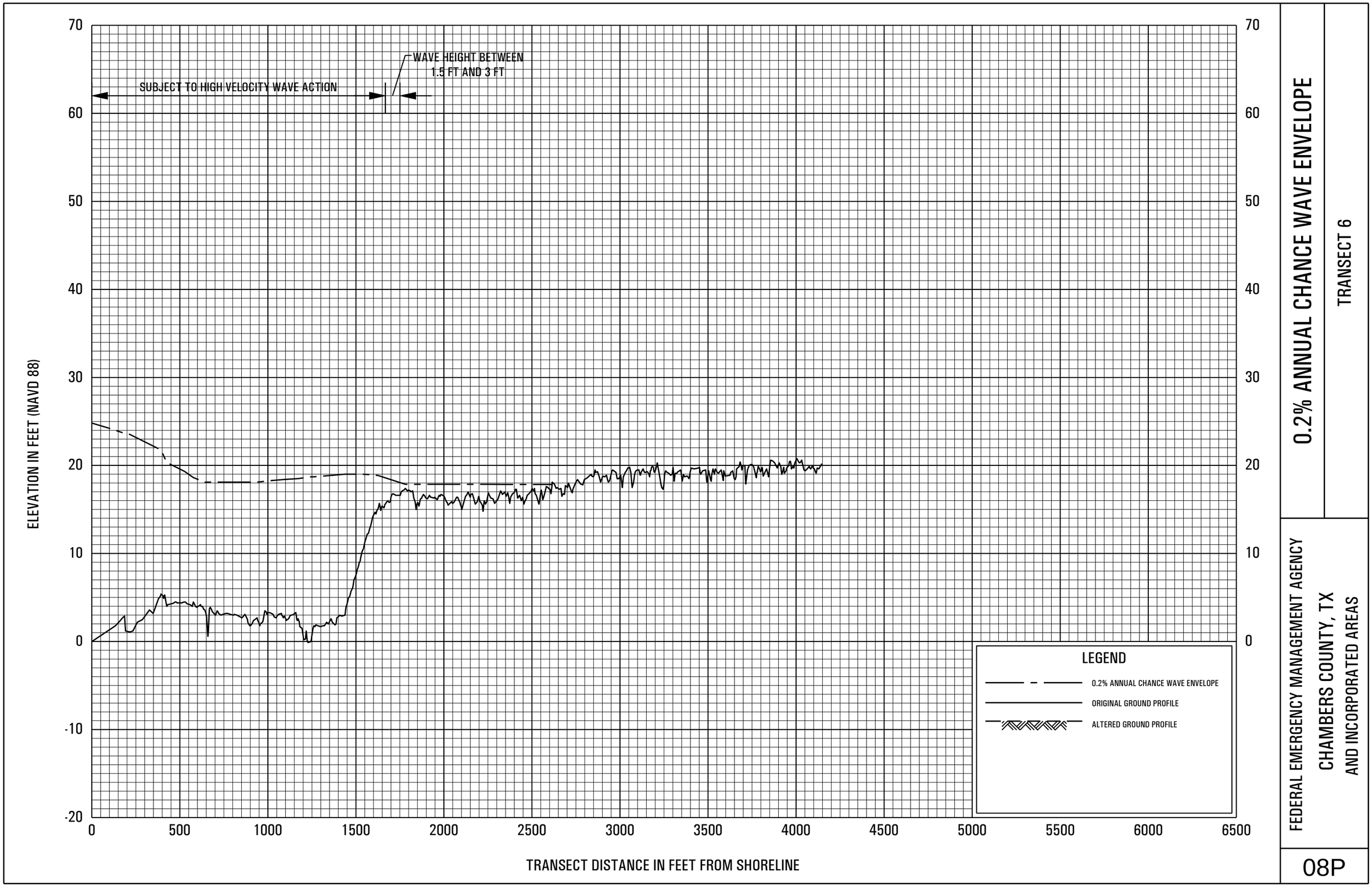


0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 5

FEDERAL EMERGENCY MANAGEMENT AGENCY
CHAMBERS COUNTY, TX
AND INCORPORATED AREAS

07P

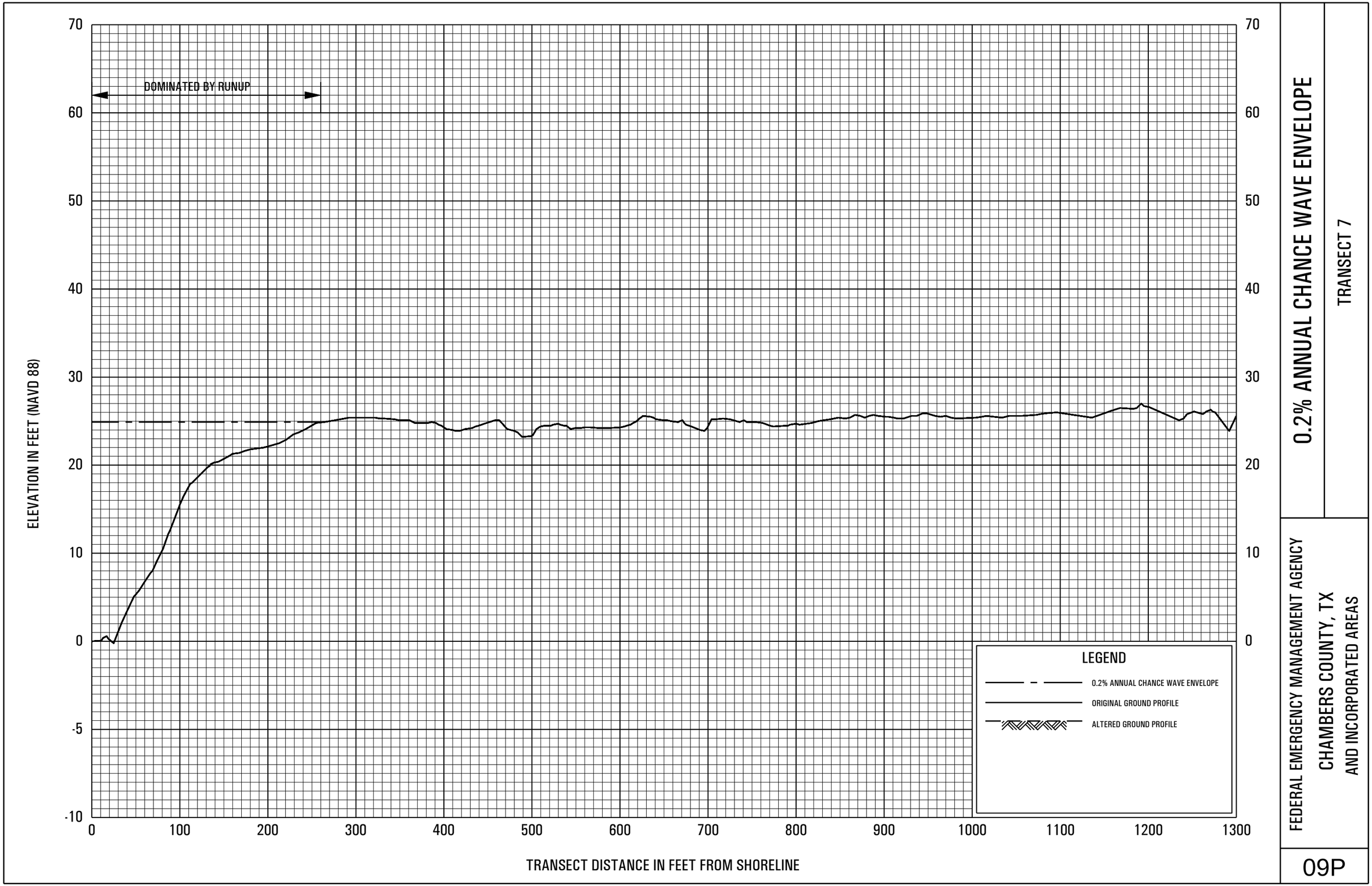


0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 6

FEDERAL EMERGENCY MANAGEMENT AGENCY
CHAMBERS COUNTY, TX
AND INCORPORATED AREAS

08P



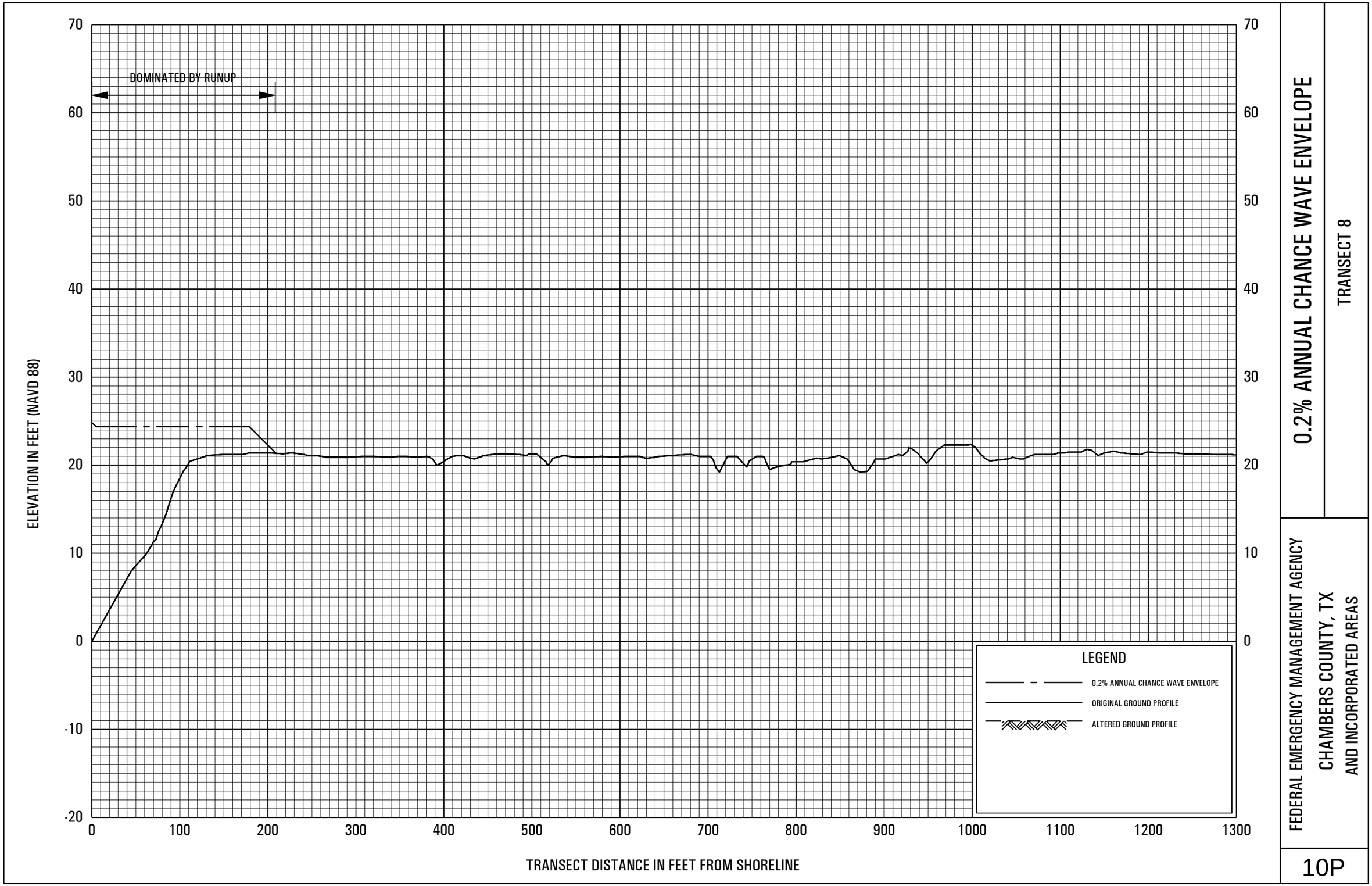
0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHAMBERS COUNTY, TX
AND INCORPORATED AREAS

09P

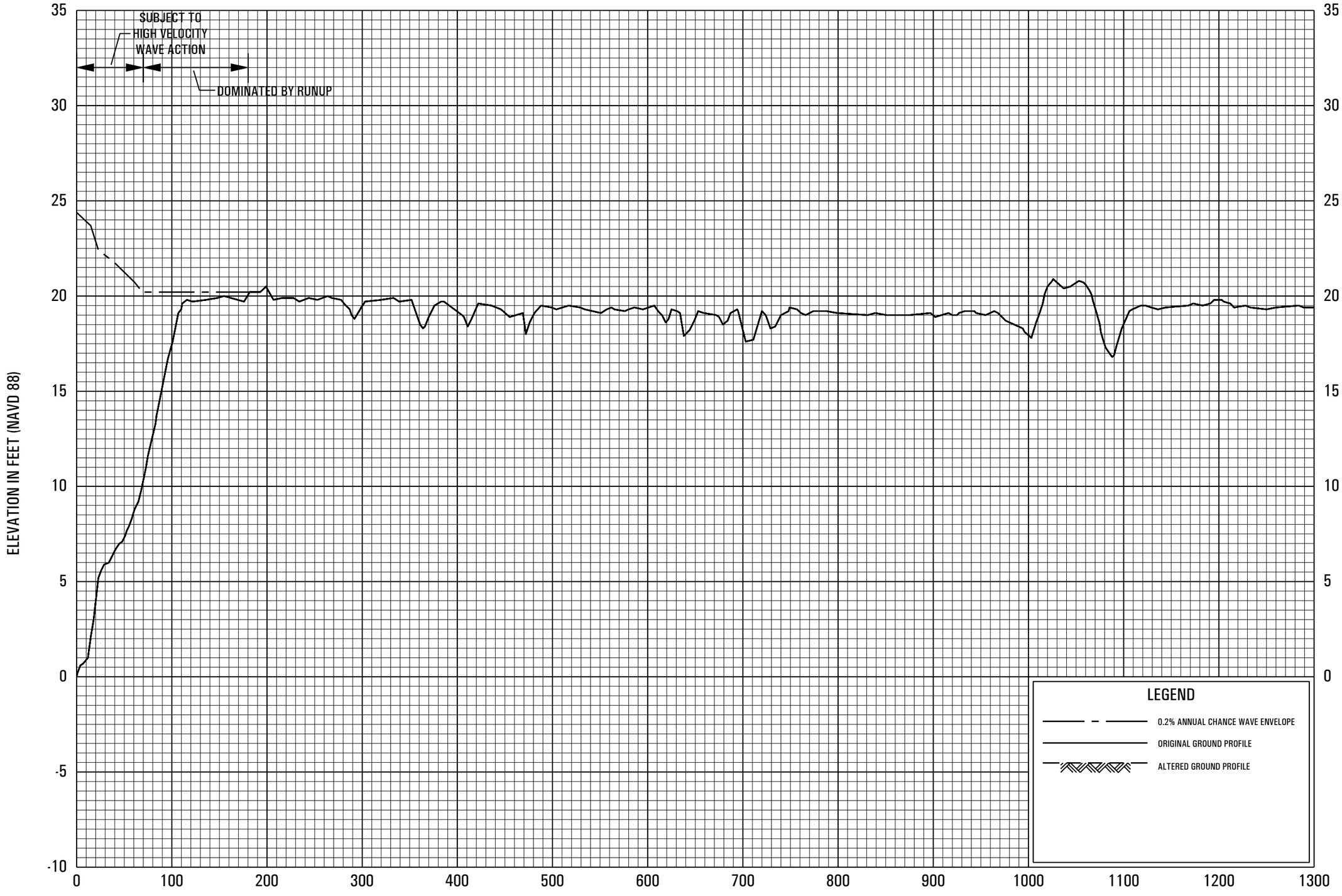


0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHAMBERS COUNTY, TX
AND INCORPORATED AREAS

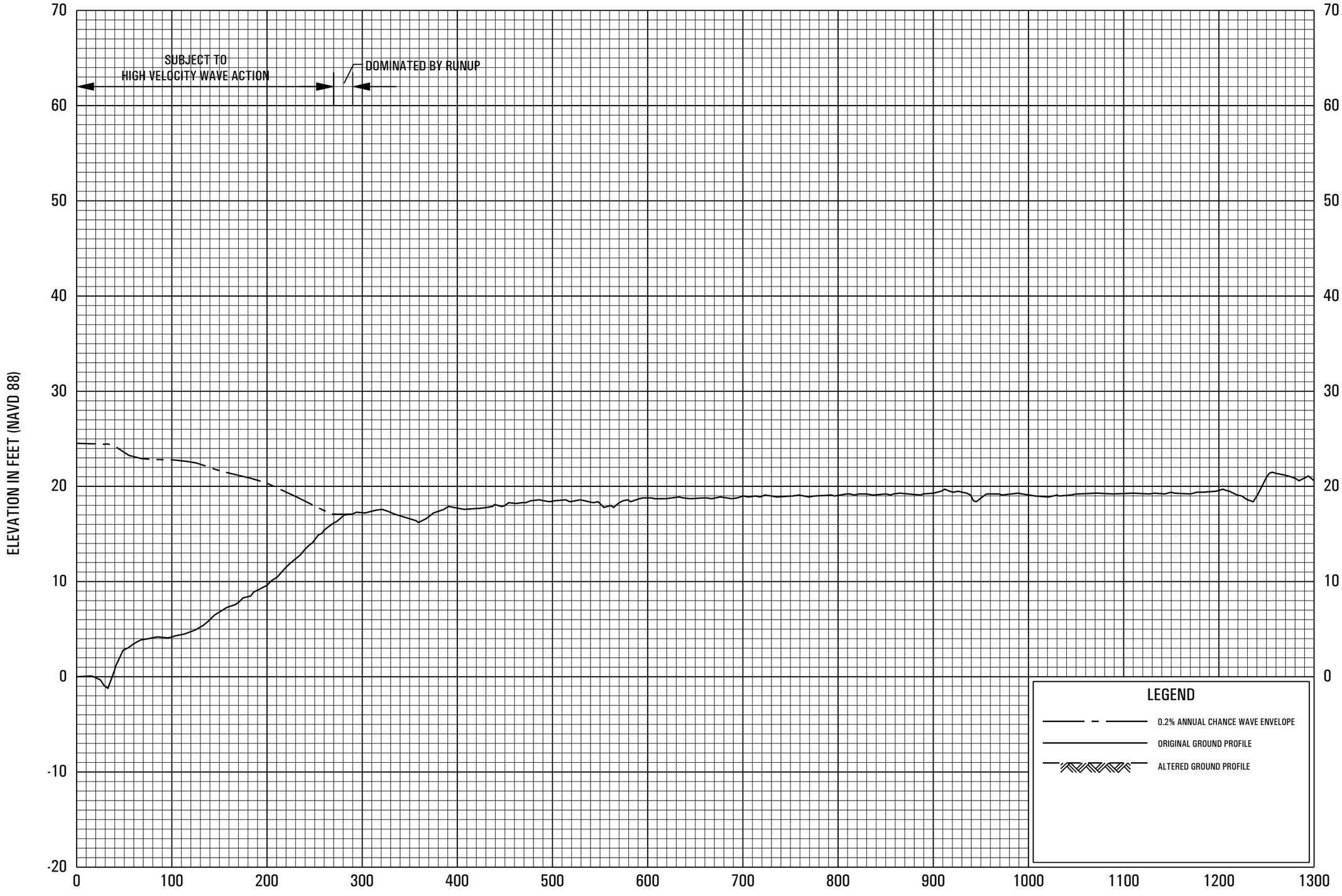


0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 9

FEDERAL EMERGENCY MANAGEMENT AGENCY
CHAMBERS COUNTY, TX
AND INCORPORATED AREAS

11P

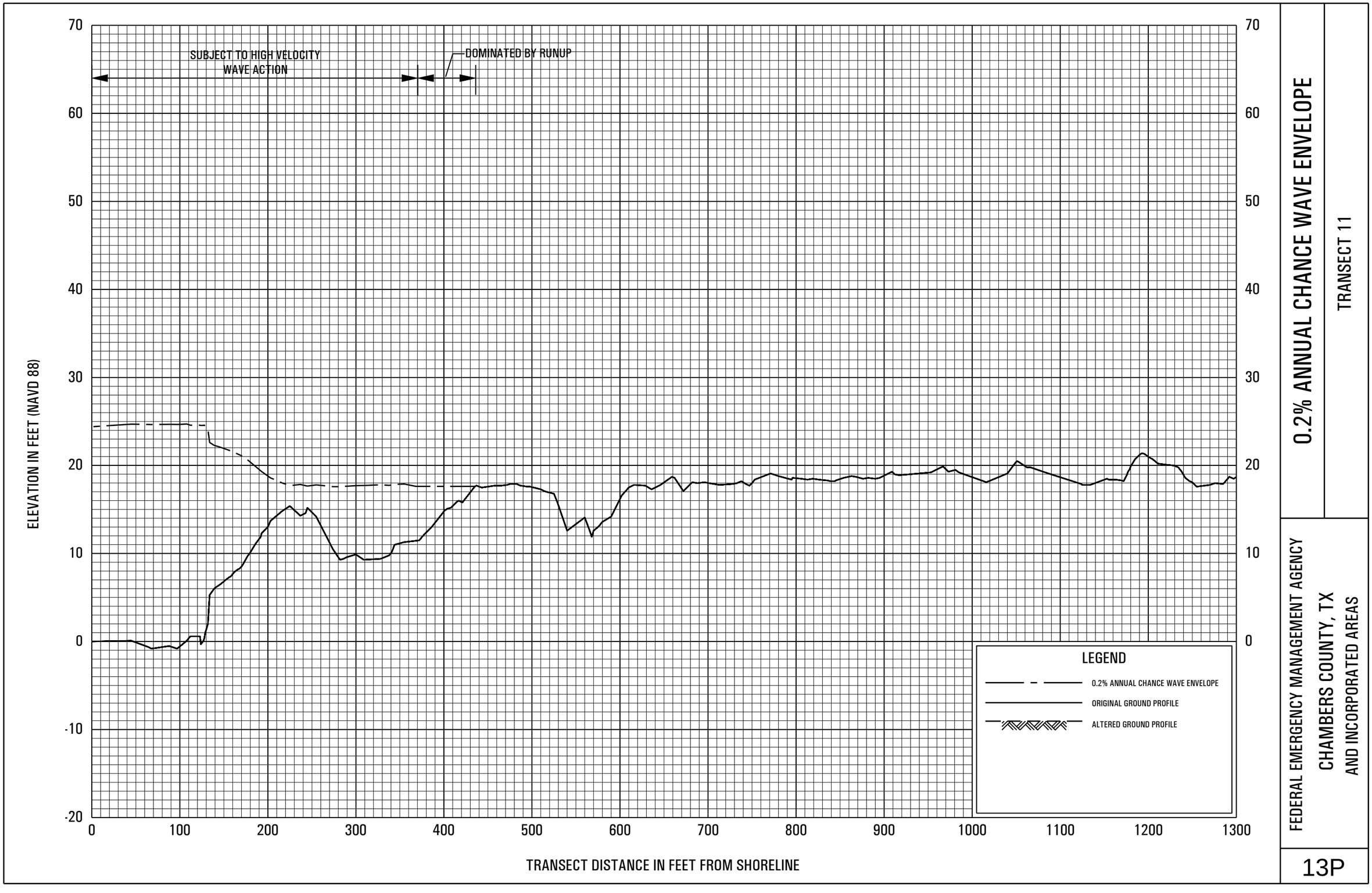


0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 10

FEDERAL EMERGENCY MANAGEMENT AGENCY
CHAMBERS COUNTY, TX
AND INCORPORATED AREAS

12P

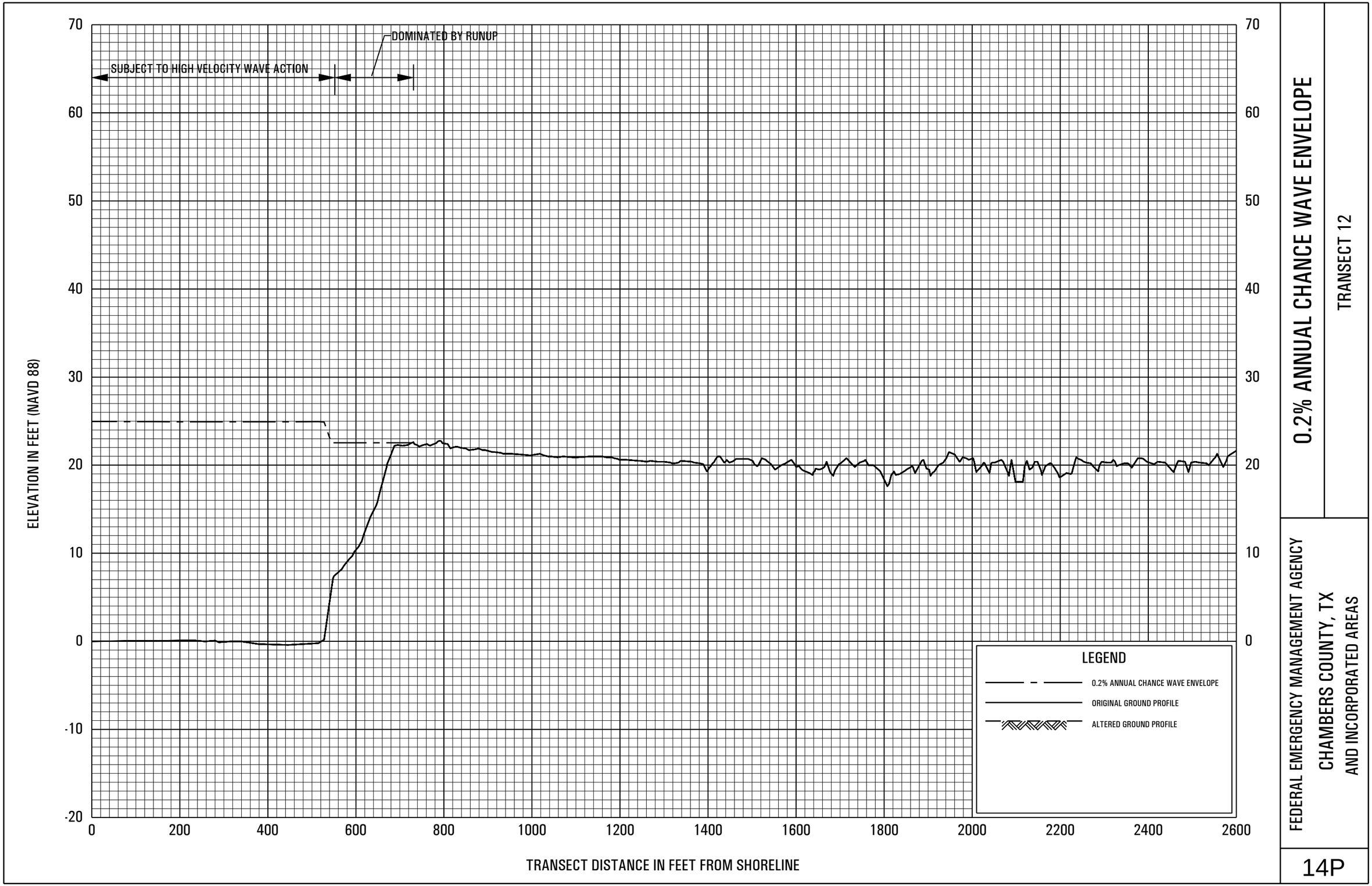


0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 11

FEDERAL EMERGENCY MANAGEMENT AGENCY
CHAMBERS COUNTY, TX
AND INCORPORATED AREAS

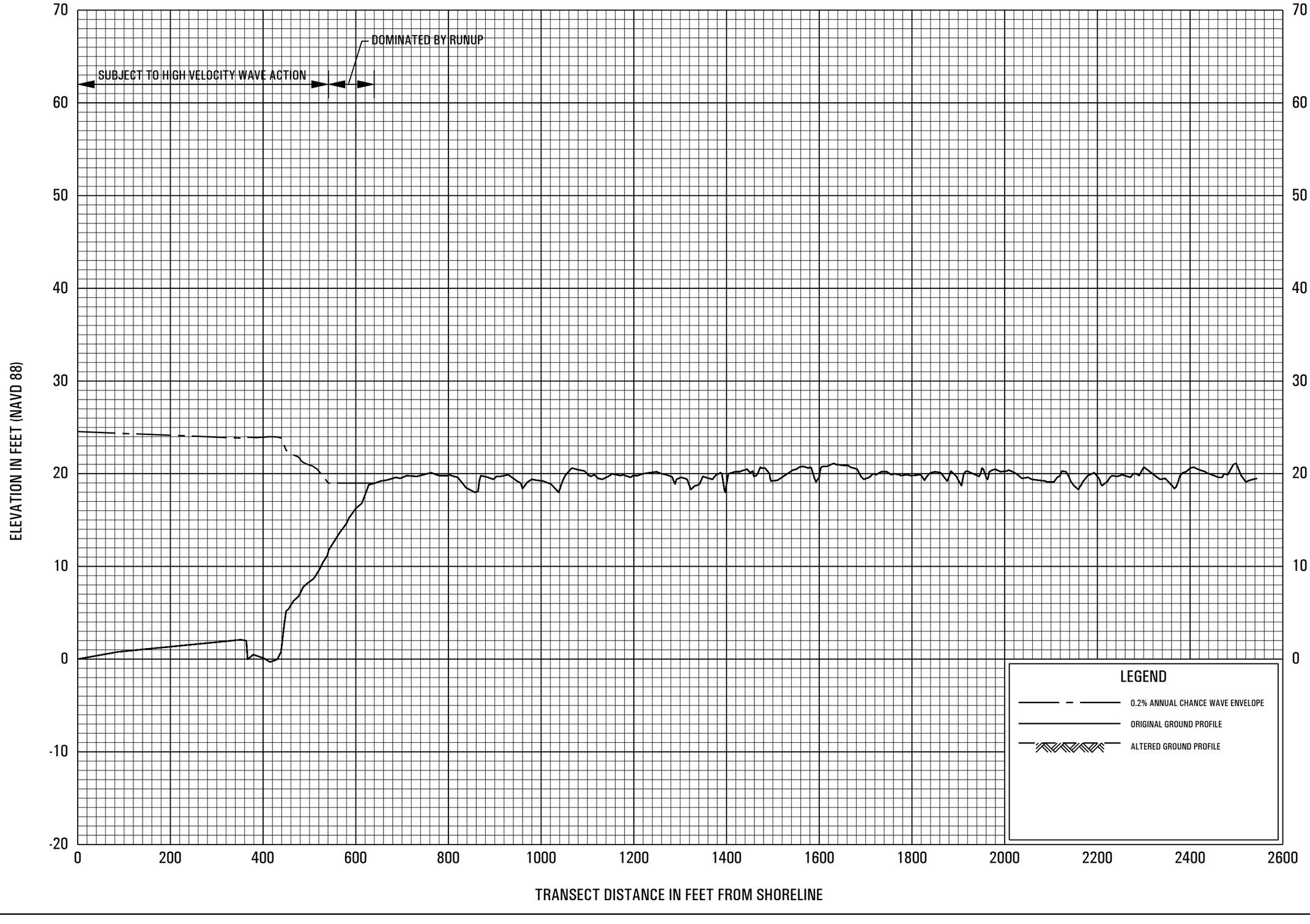
13P



0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 12

FEDERAL EMERGENCY MANAGEMENT AGENCY
CHAMBERS COUNTY, TX
AND INCORPORATED AREAS



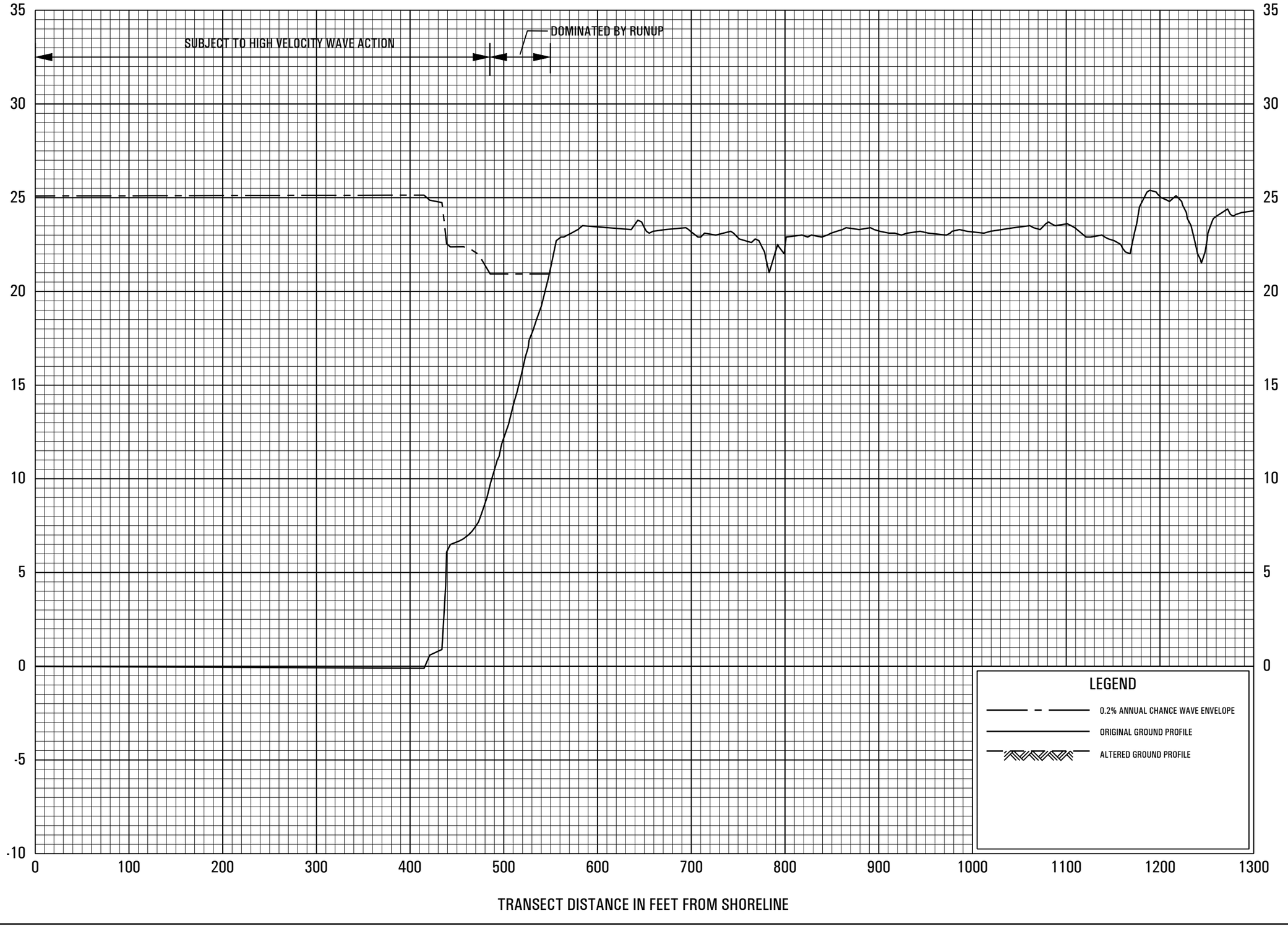
0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 13

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHAMBERS COUNTY, TX
AND INCORPORATED AREAS

15P

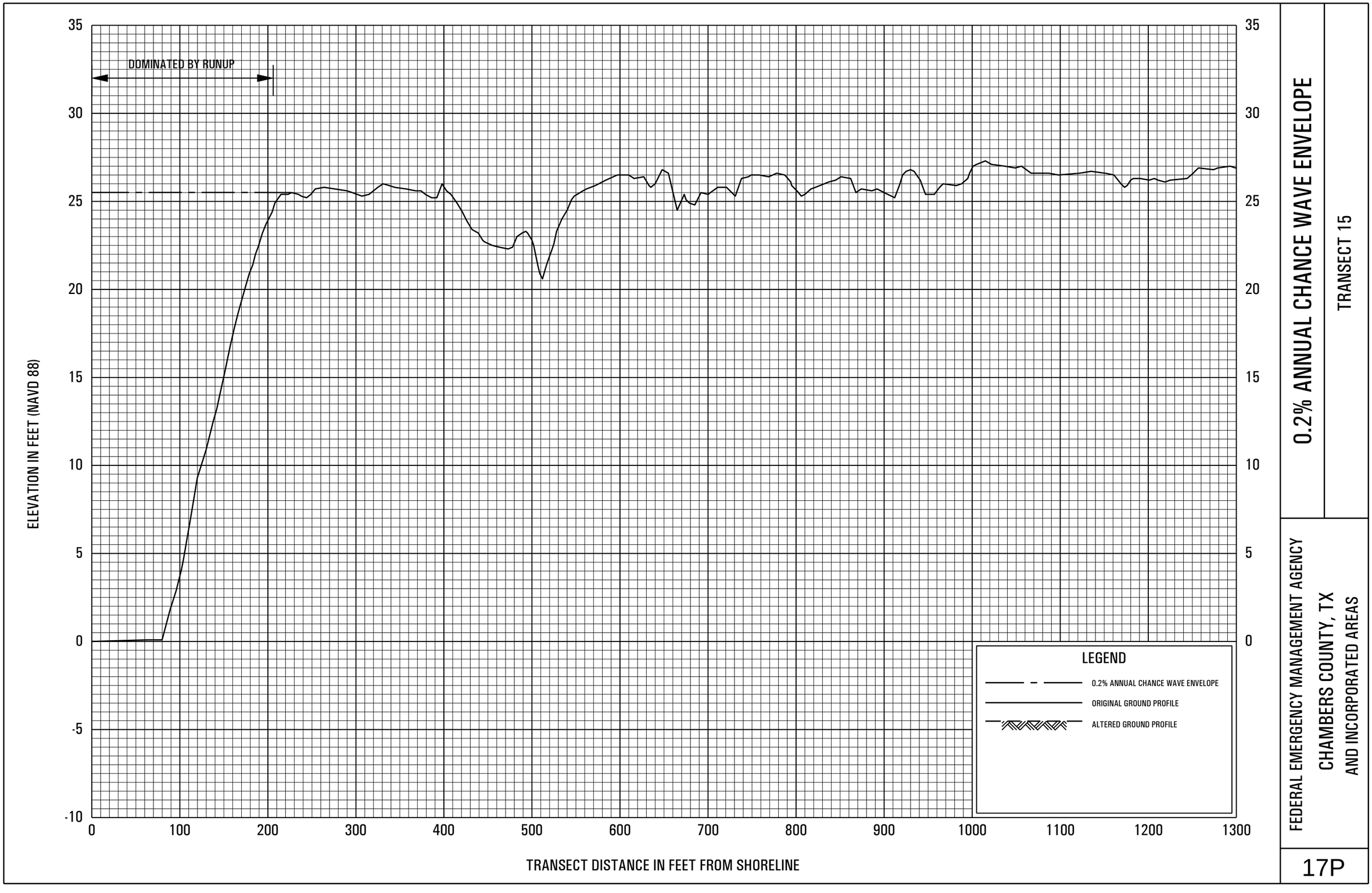


0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 14

FEDERAL EMERGENCY MANAGEMENT AGENCY
CHAMBERS COUNTY, TX
AND INCORPORATED AREAS

16P



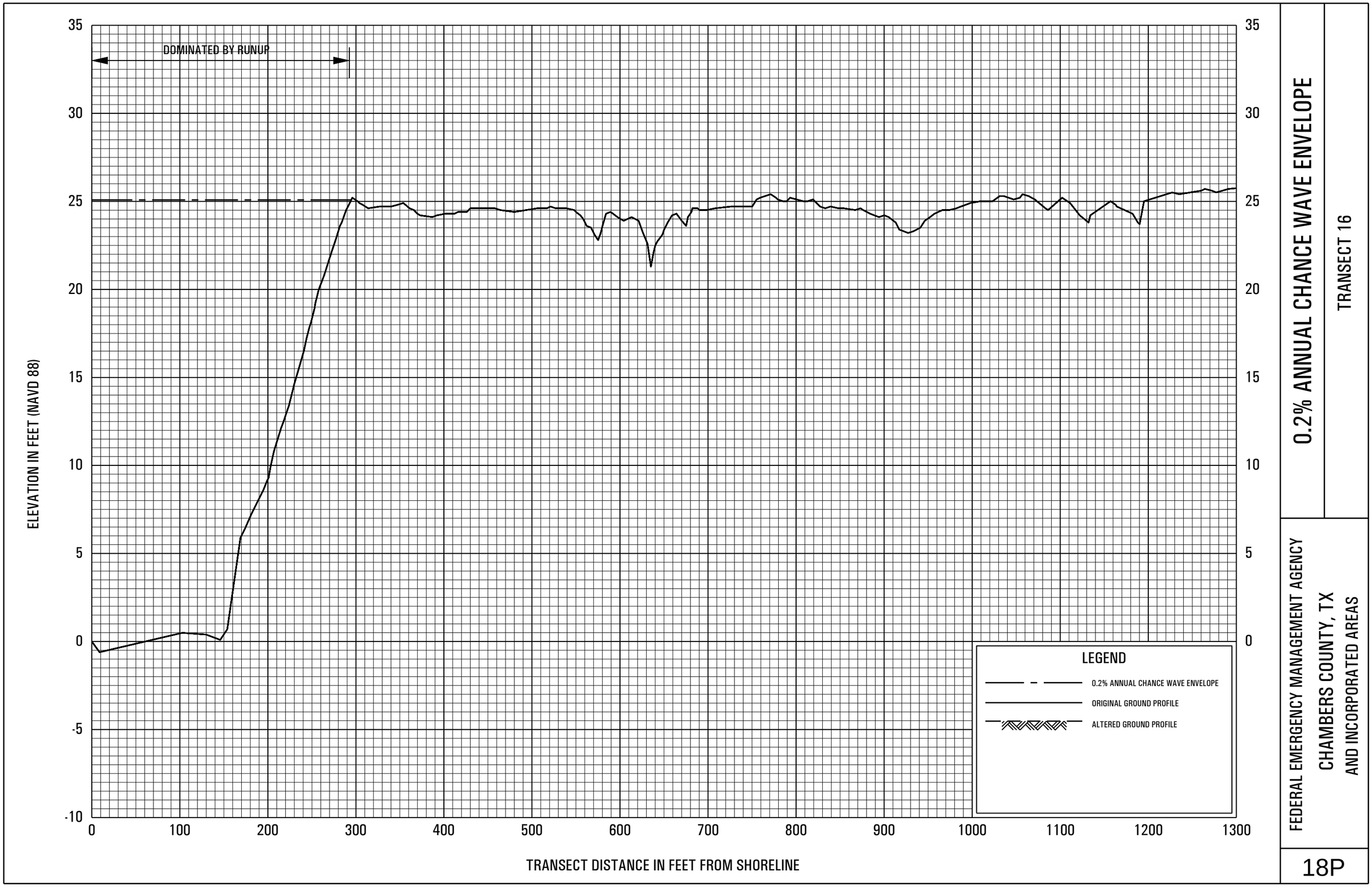
0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 15

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHAMBERS COUNTY, TX
AND INCORPORATED AREAS

17P

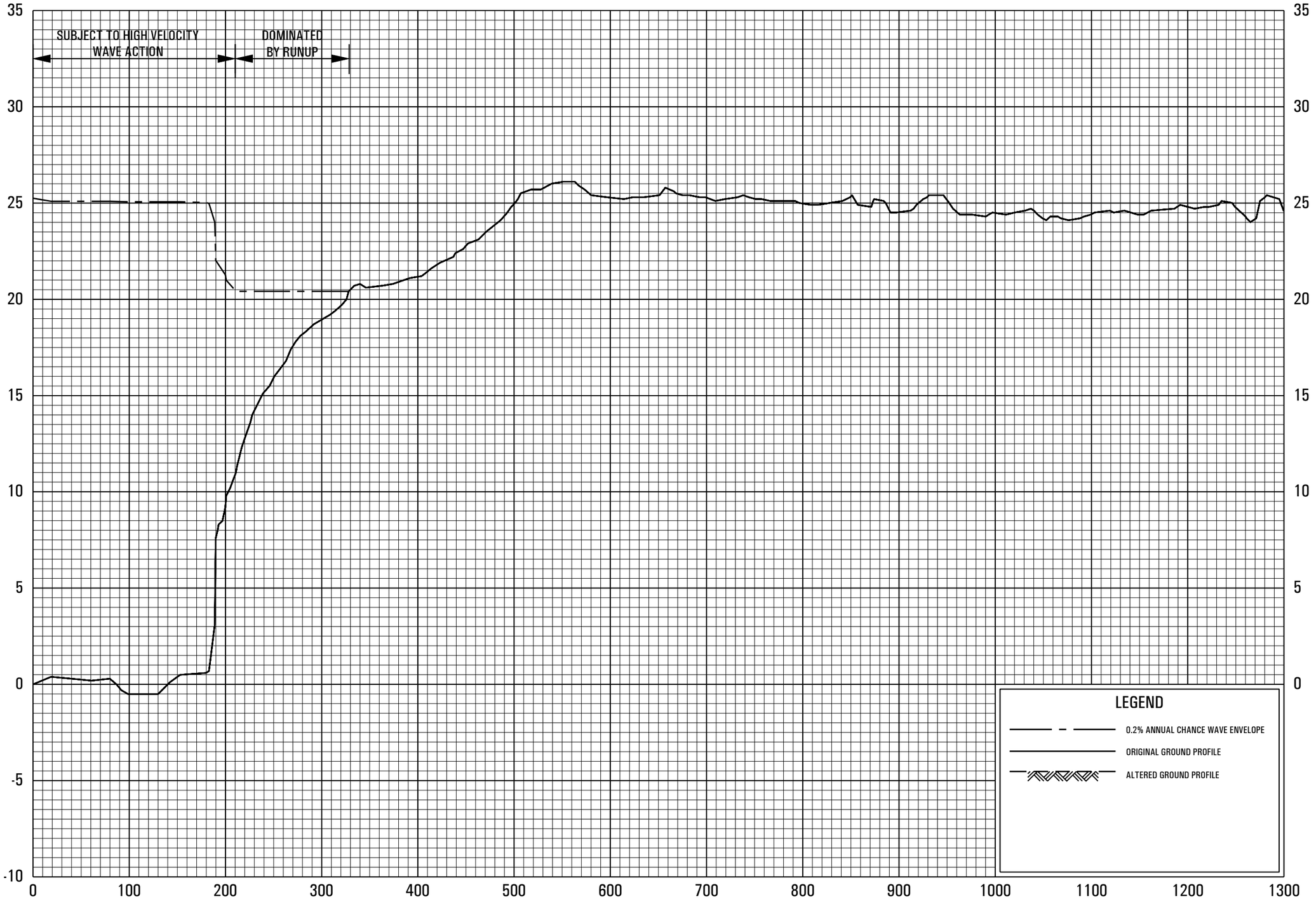


0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 16

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHAMBERS COUNTY, TX
AND INCORPORATED AREAS

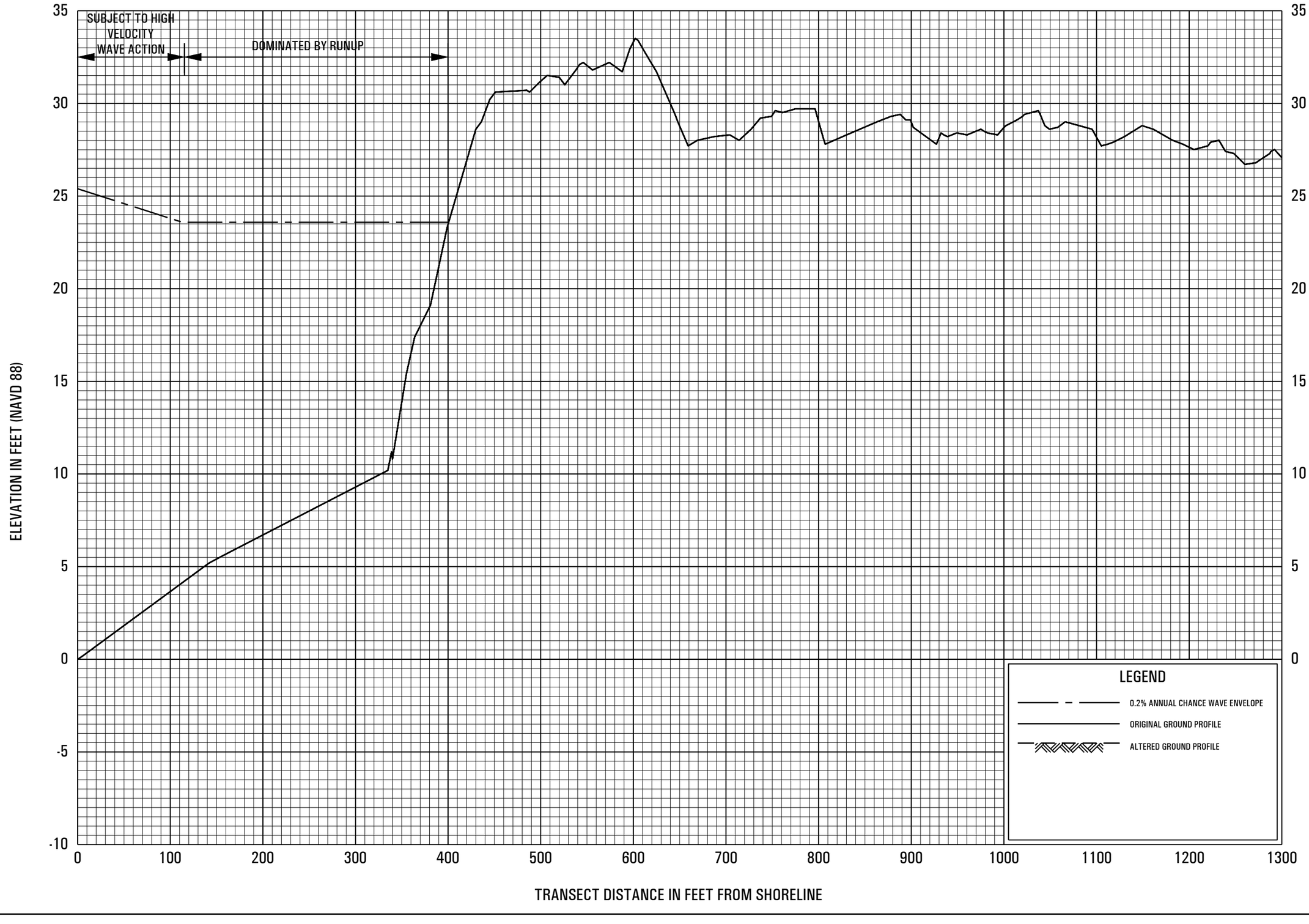


0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 17

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHAMBERS COUNTY, TX
AND INCORPORATED AREAS

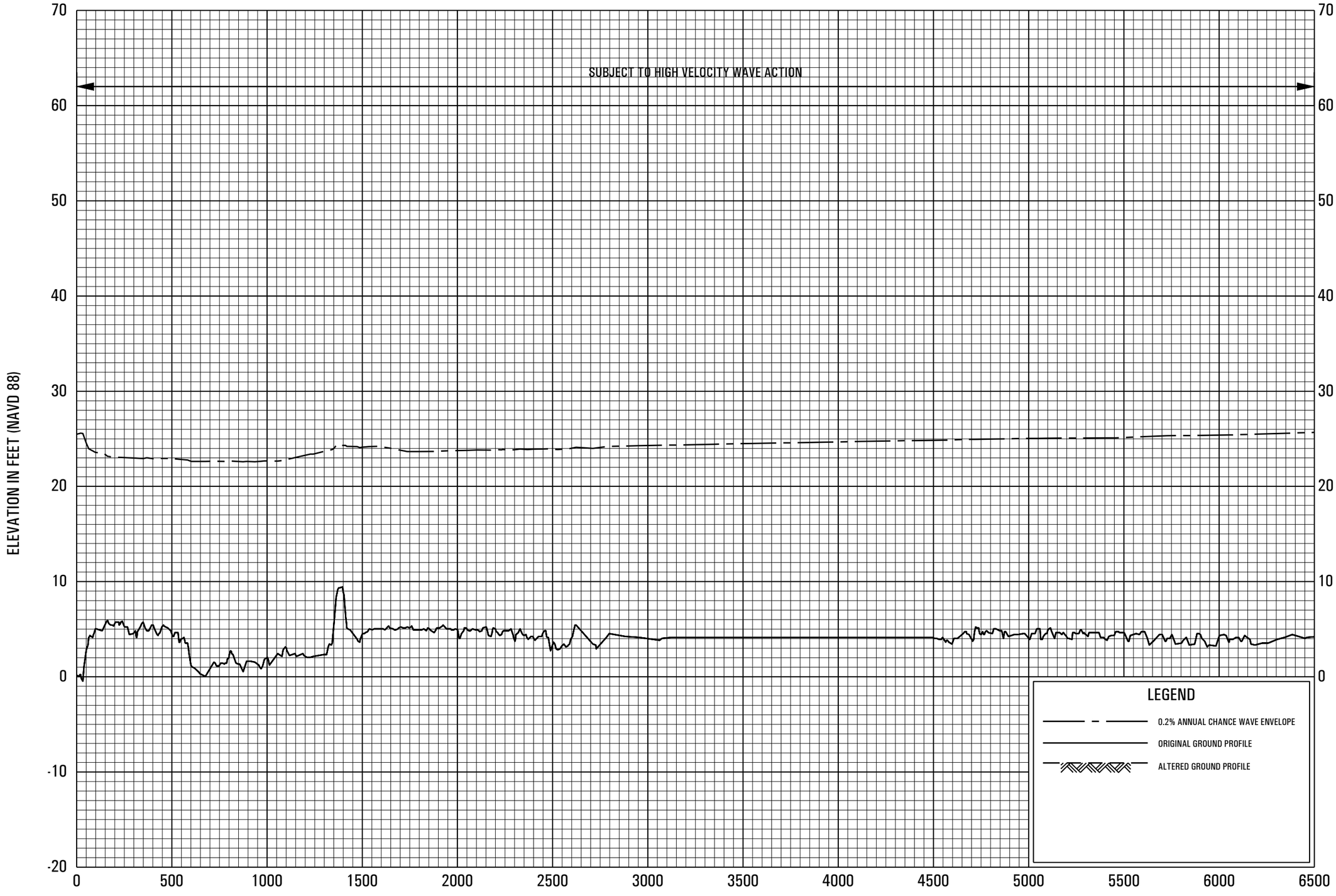


0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 18

FEDERAL EMERGENCY MANAGEMENT AGENCY

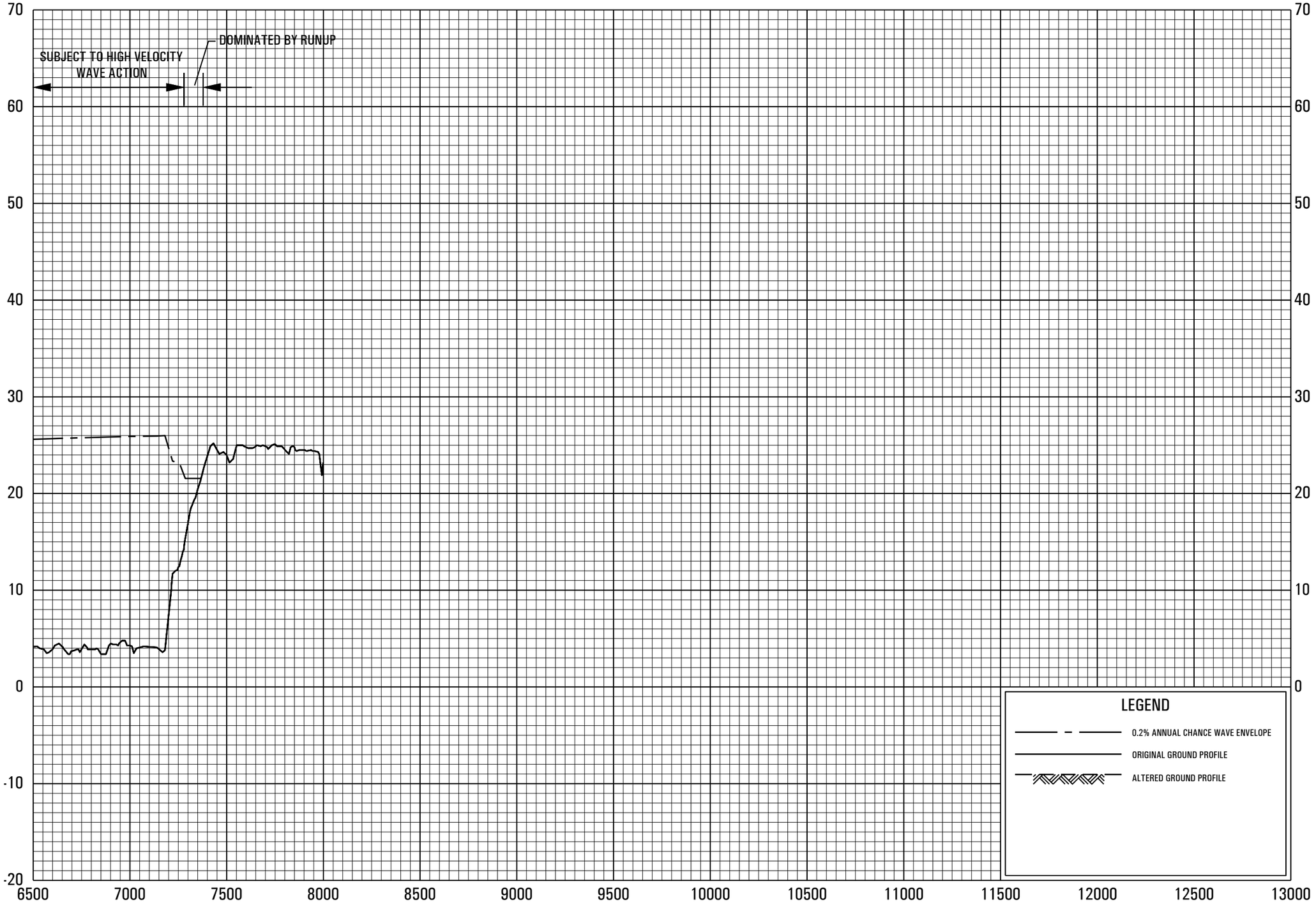
CHAMBERS COUNTY, TX
AND INCORPORATED AREAS



0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 19

FEDERAL EMERGENCY MANAGEMENT AGENCY
CHAMBERS COUNTY, TX
AND INCORPORATED AREAS

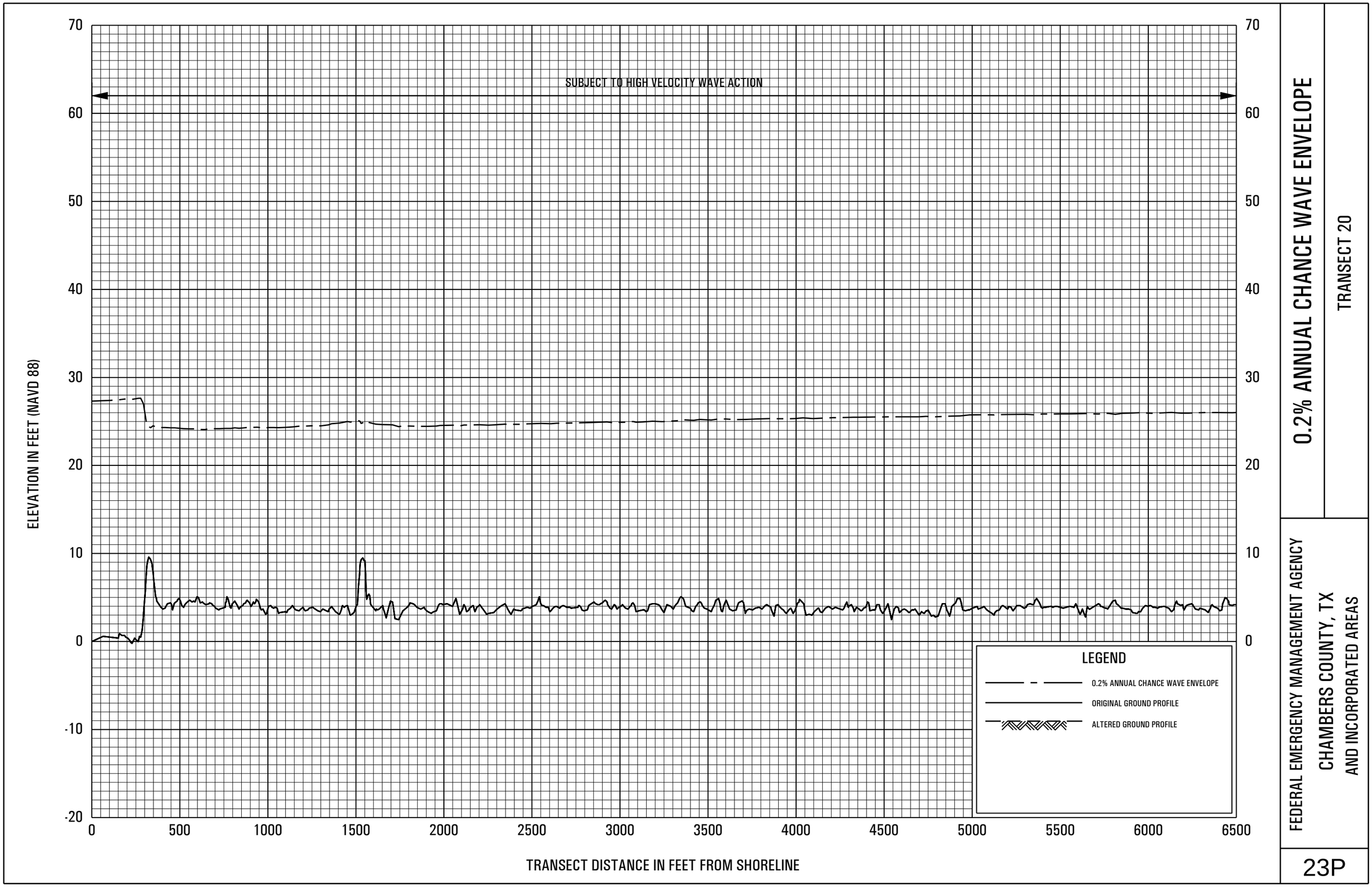


0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 19

FEDERAL EMERGENCY MANAGEMENT AGENCY

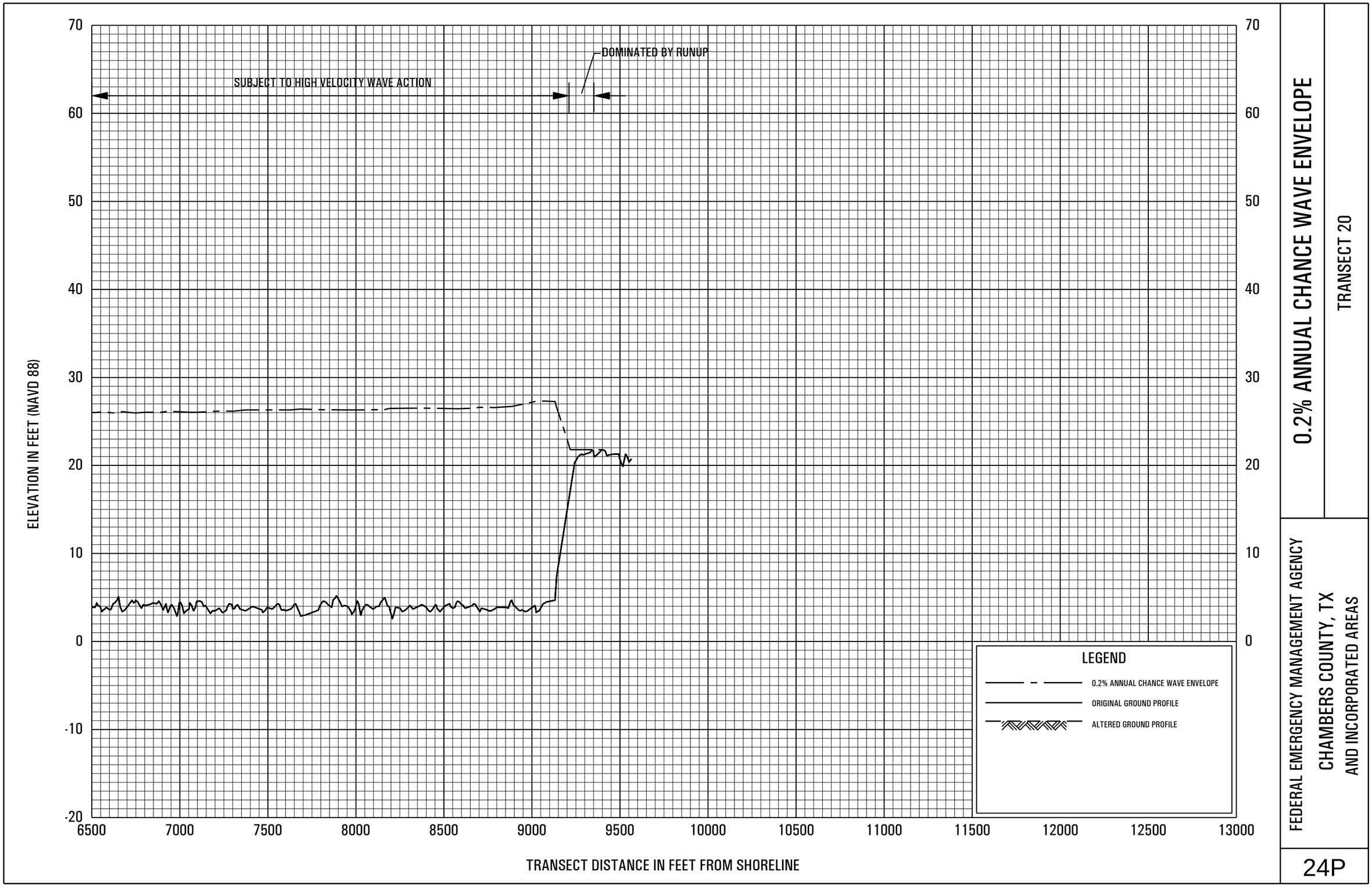
CHAMBERS COUNTY, TX
AND INCORPORATED AREAS



0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 20

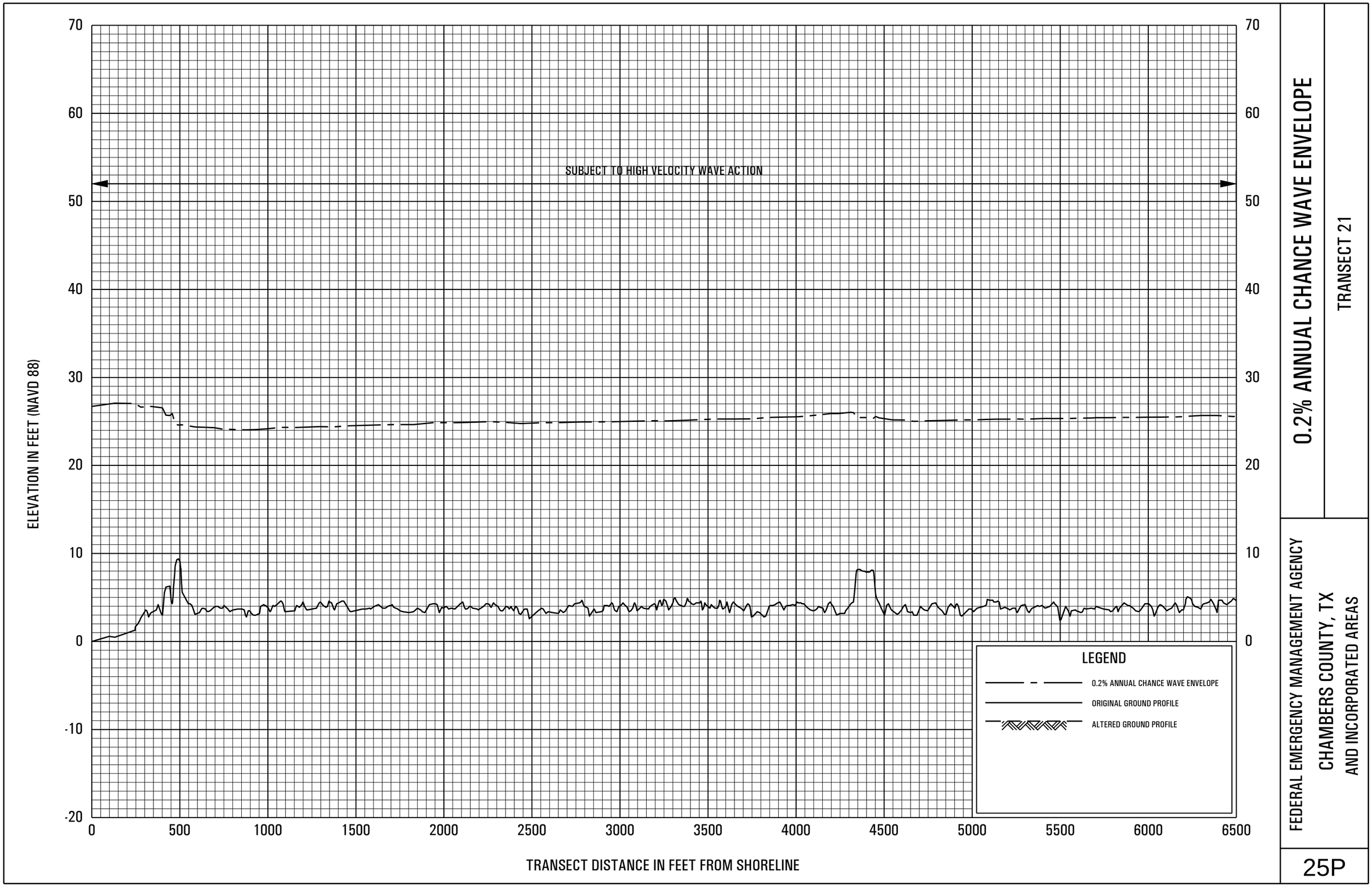
FEDERAL EMERGENCY MANAGEMENT AGENCY
CHAMBERS COUNTY, TX
AND INCORPORATED AREAS



0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 20

FEDERAL EMERGENCY MANAGEMENT AGENCY
CHAMBERS COUNTY, TX
AND INCORPORATED AREAS

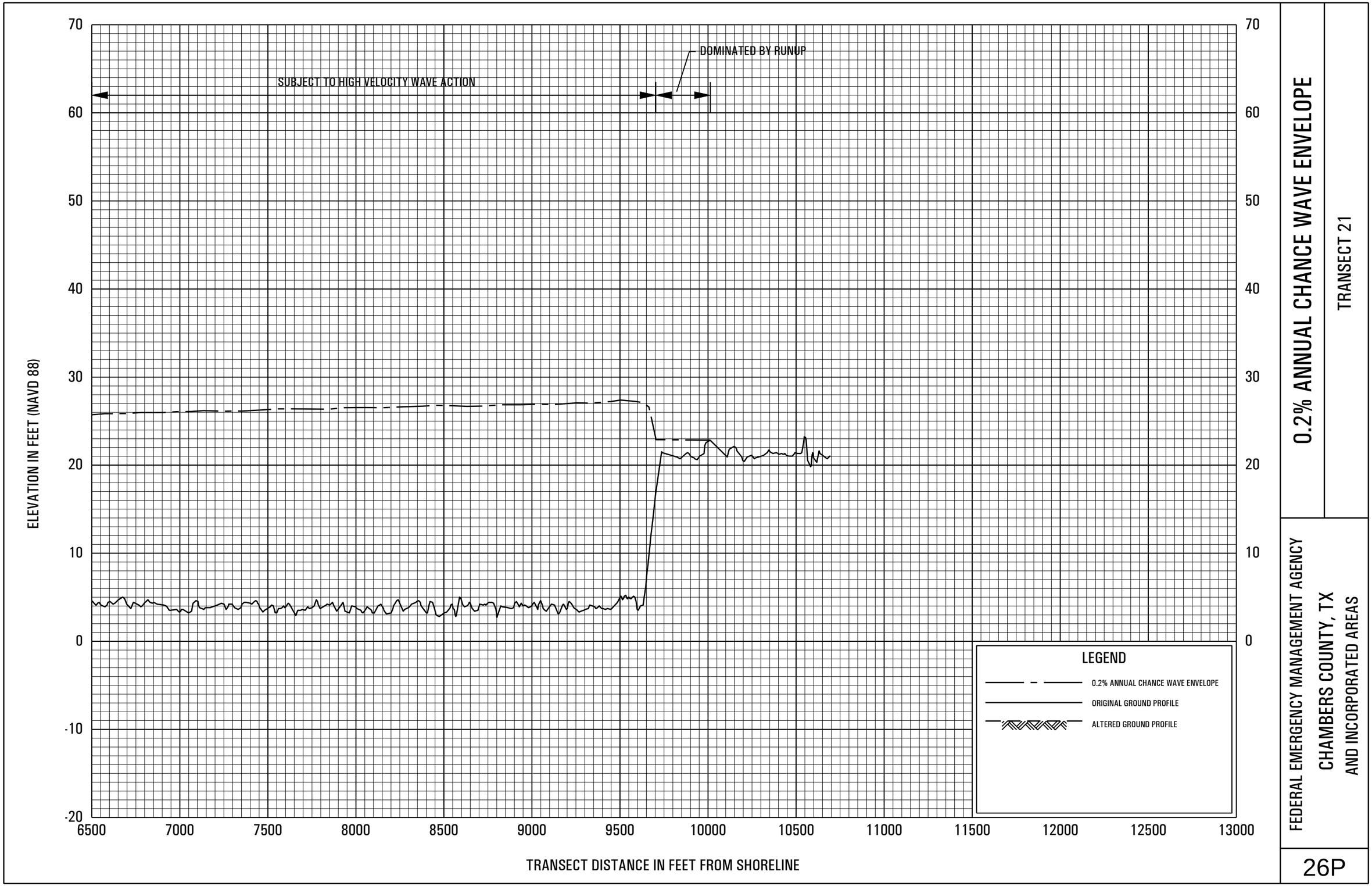


0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 21

FEDERAL EMERGENCY MANAGEMENT AGENCY
CHAMBERS COUNTY, TX
AND INCORPORATED AREAS

25P

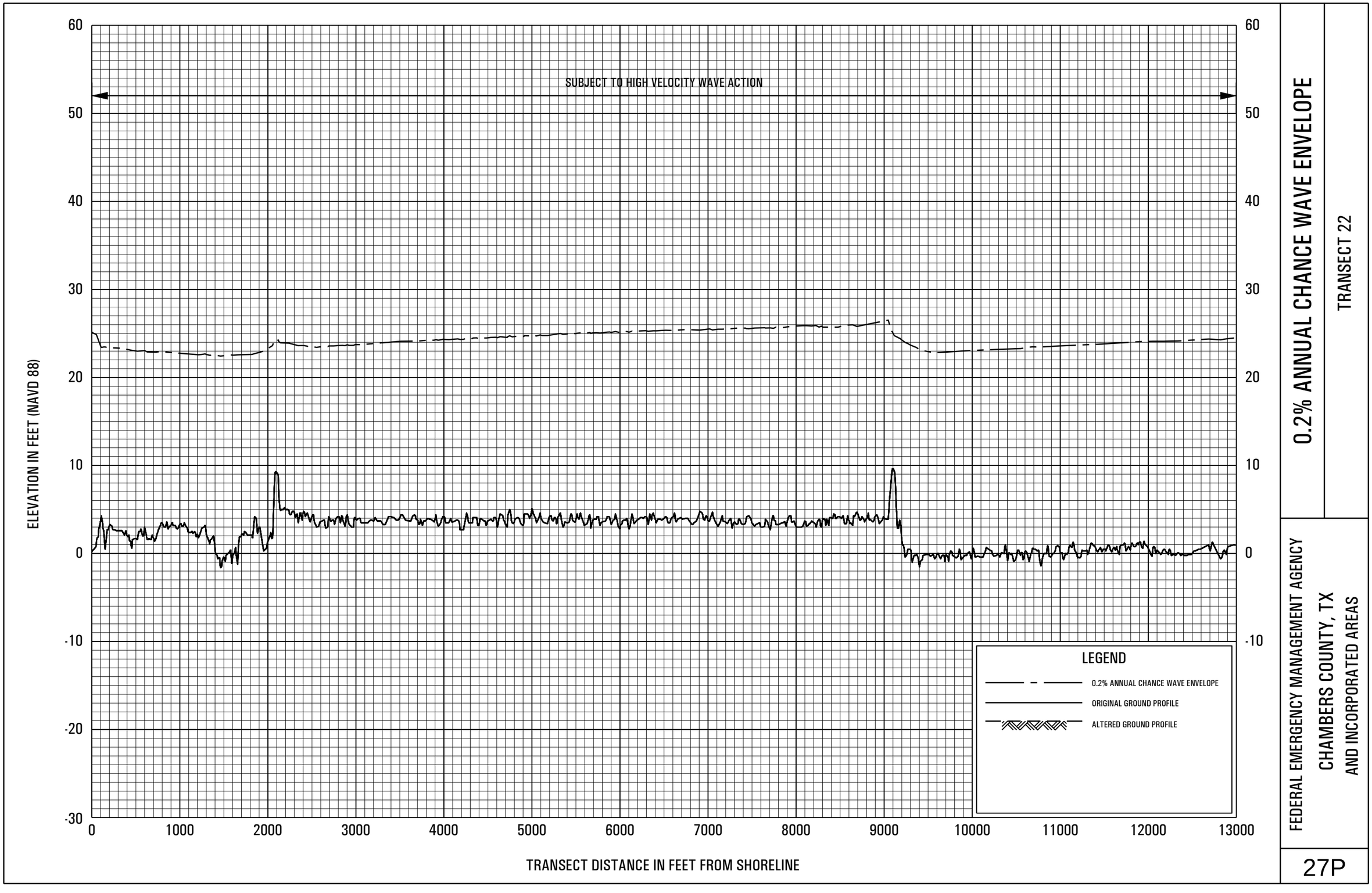


0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 21

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHAMBERS COUNTY, TX
AND INCORPORATED AREAS

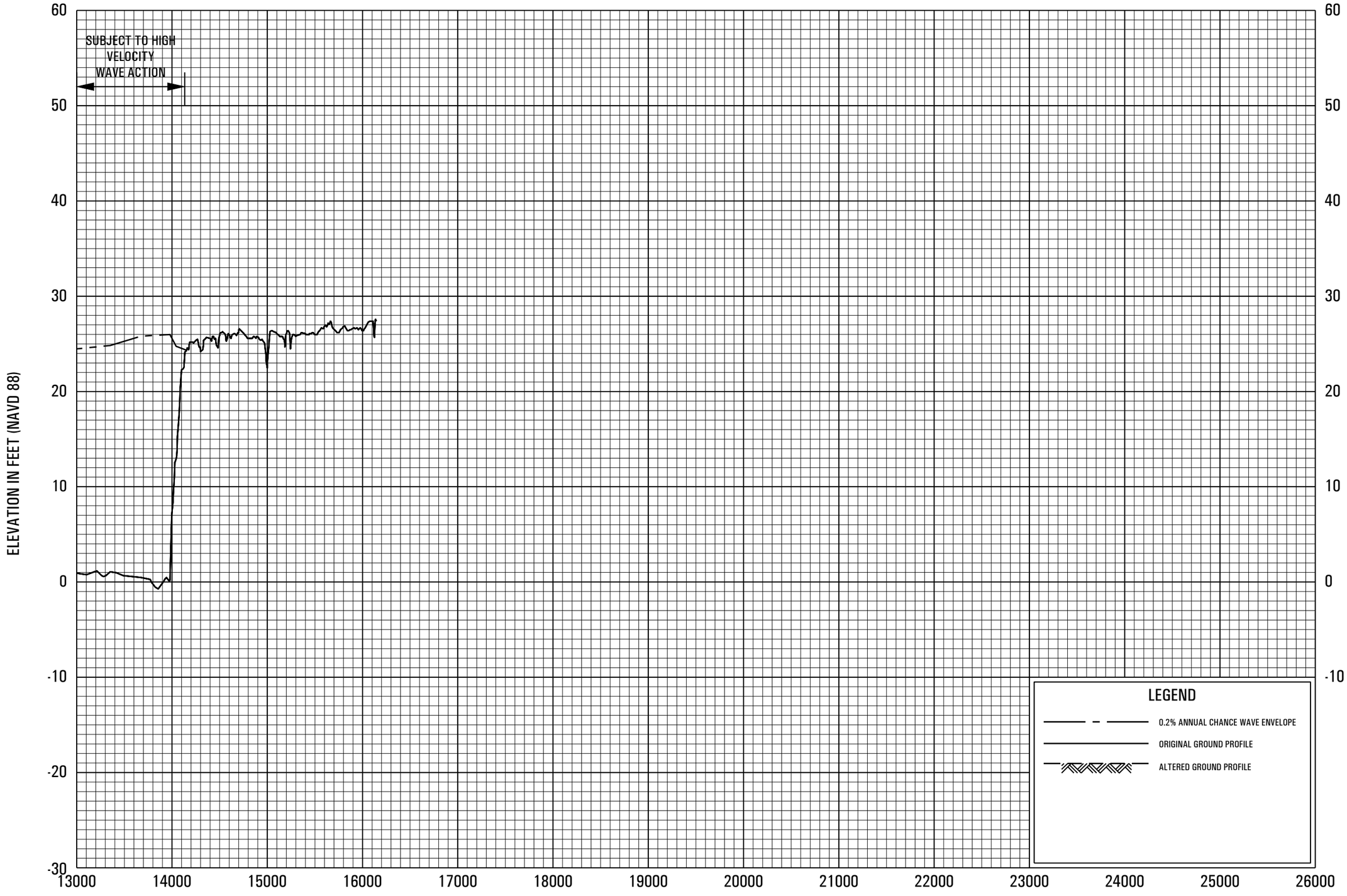


0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 22

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHAMBERS COUNTY, TX
AND INCORPORATED AREAS



0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 22

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHAMBERS COUNTY, TX
AND INCORPORATED AREAS

SUBJECT TO HIGH VELOCITY WAVE ACTION

ELEVATION IN FEET (NAVD 88)

60
50
40
30
20
10
0
-10
-20

0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
6500

TRANSECT DISTANCE IN FEET FROM SHORELINE

LEGEND

- 0.2% ANNUAL CHANCE WAVE ENVELOPE
- ORIGINAL GROUND PROFILE
- ALTERED GROUND PROFILE

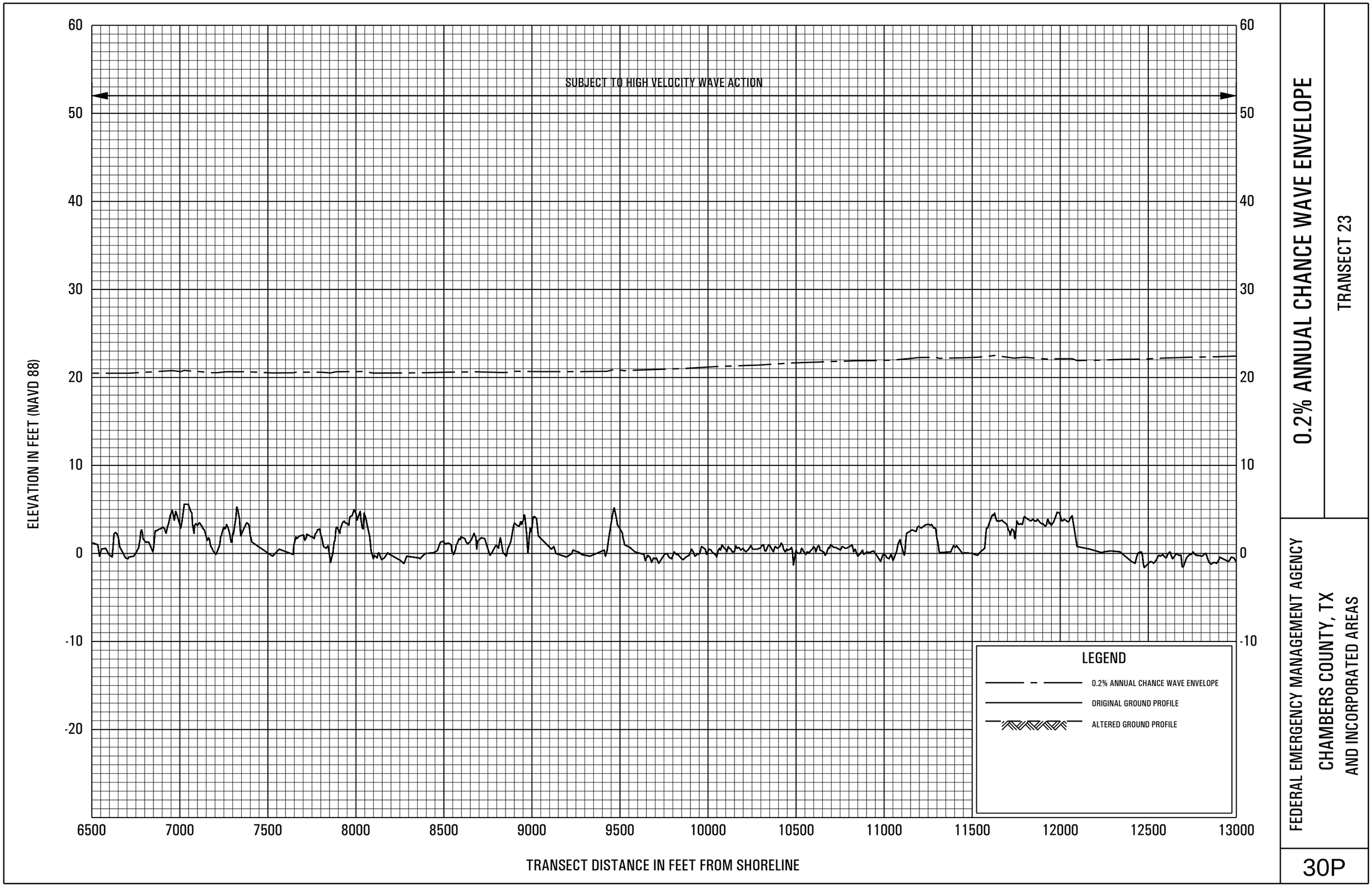
0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 23

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHAMBERS COUNTY, TX
AND INCORPORATED AREAS

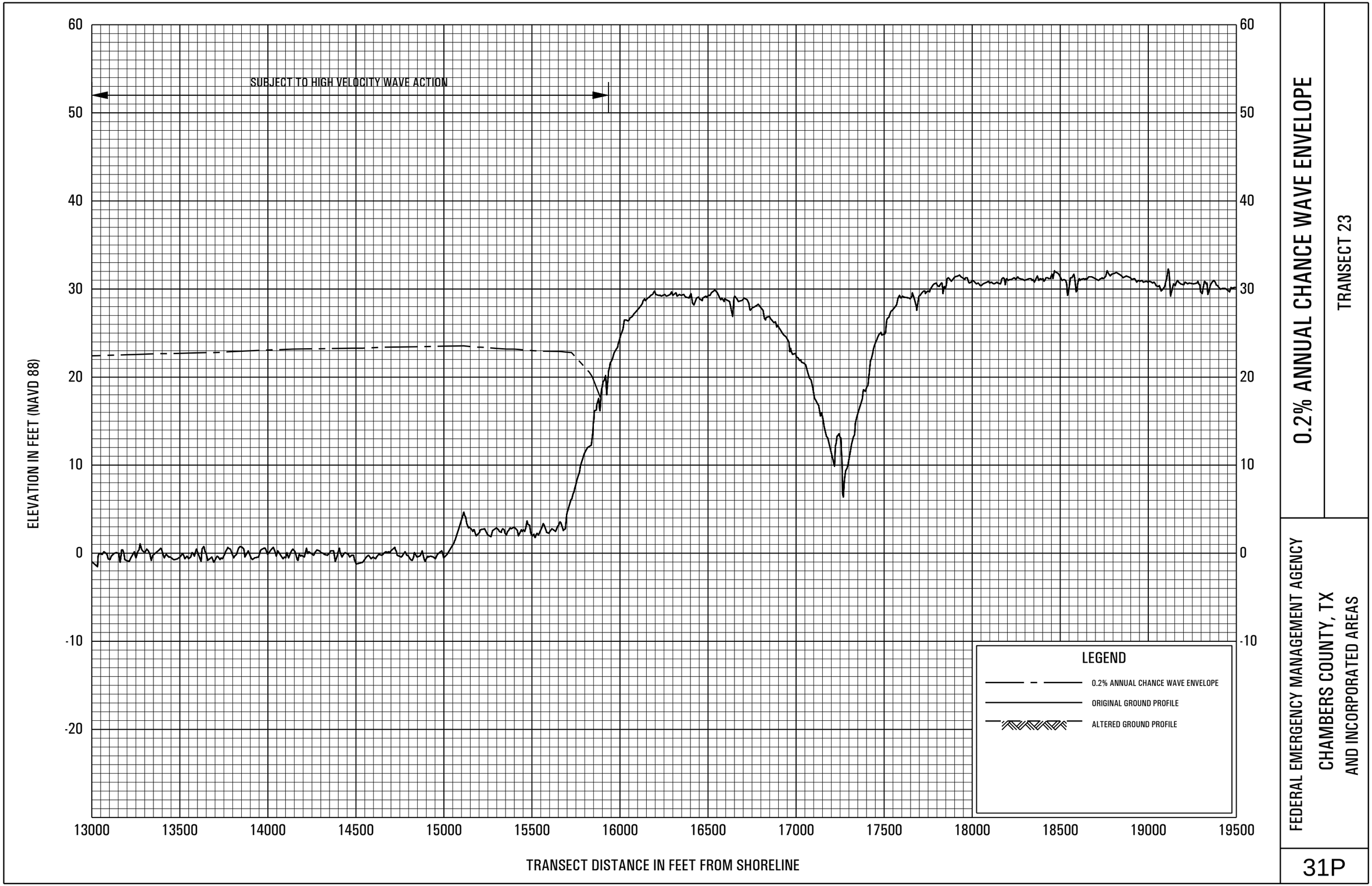
29P



0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 23

FEDERAL EMERGENCY MANAGEMENT AGENCY
CHAMBERS COUNTY, TX
AND INCORPORATED AREAS



0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 23

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHAMBERS COUNTY, TX
AND INCORPORATED AREAS

SUBJECT TO HIGH VELOCITY WAVE ACTION

ELEVATION IN FEET (NAVD 88)

30
25
20
15
10
5
0
-5
-10
-15

0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
11000
12000
13000

TRANSECT DISTANCE IN FEET FROM SHORELINE

LEGEND

0.2% ANNUAL CHANCE WAVE ENVELOPE

ORIGINAL GROUND PROFILE

ALTERED GROUND PROFILE

0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 24

FEDERAL EMERGENCY MANAGEMENT AGENCY
CHAMBERS COUNTY, TX
AND INCORPORATED AREAS

SUBJECT TO HIGH VELOCITY WAVE ACTION

ELEVATION IN FEET (NAVD 88)

30
25
20
15
10
5
0
-5
-10
-15

13000 14000 15000 16000 17000 18000 19000 20000 21000 22000 23000 24000 25000 26000

TRANSECT DISTANCE IN FEET FROM SHORELINE

LEGEND

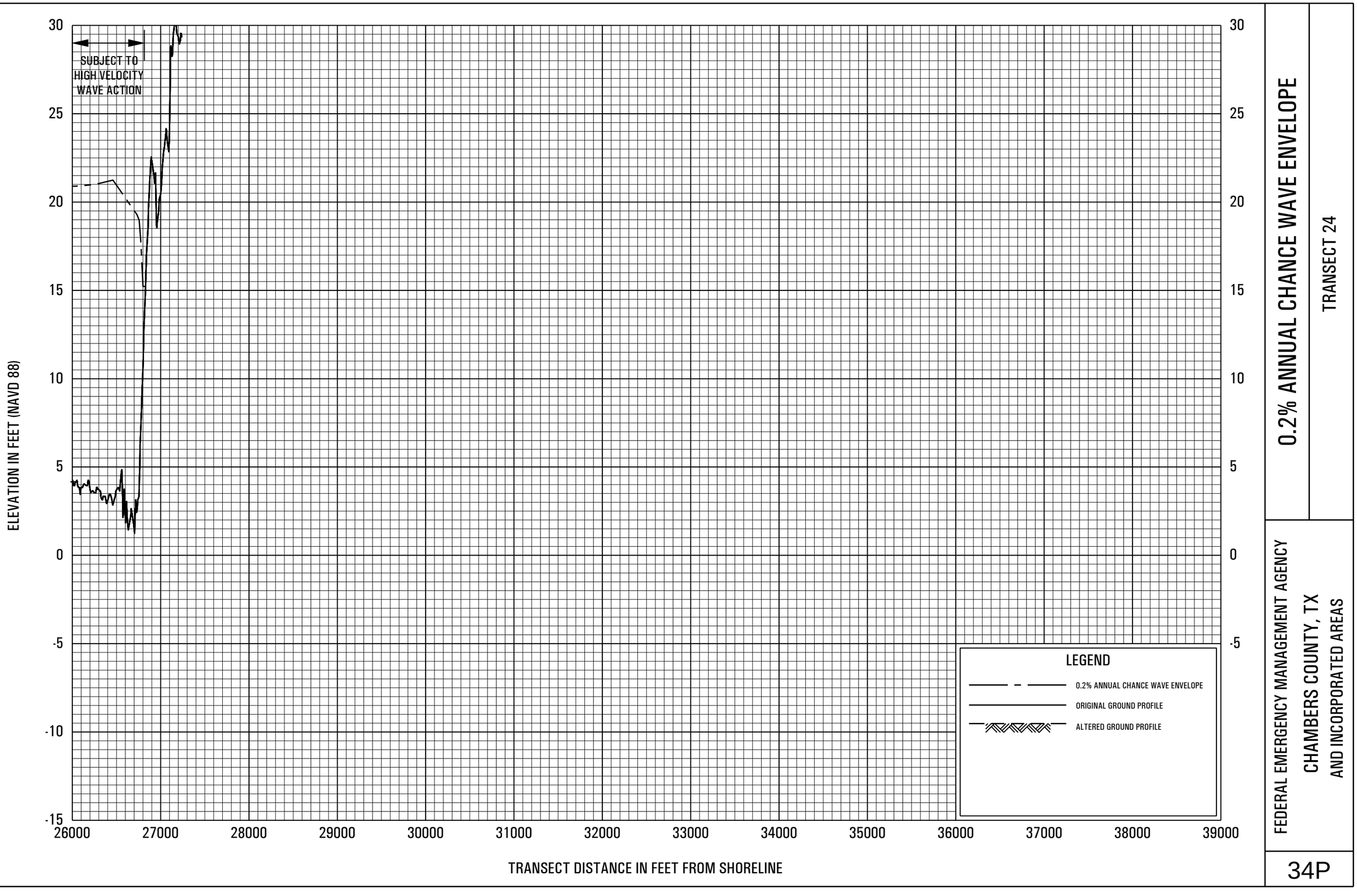
- 0.2% ANNUAL CHANCE WAVE ENVELOPE
- ORIGINAL GROUND PROFILE
- ALTERED GROUND PROFILE

0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 24

FEDERAL EMERGENCY MANAGEMENT AGENCY
CHAMBERS COUNTY, TX
AND INCORPORATED AREAS

33P

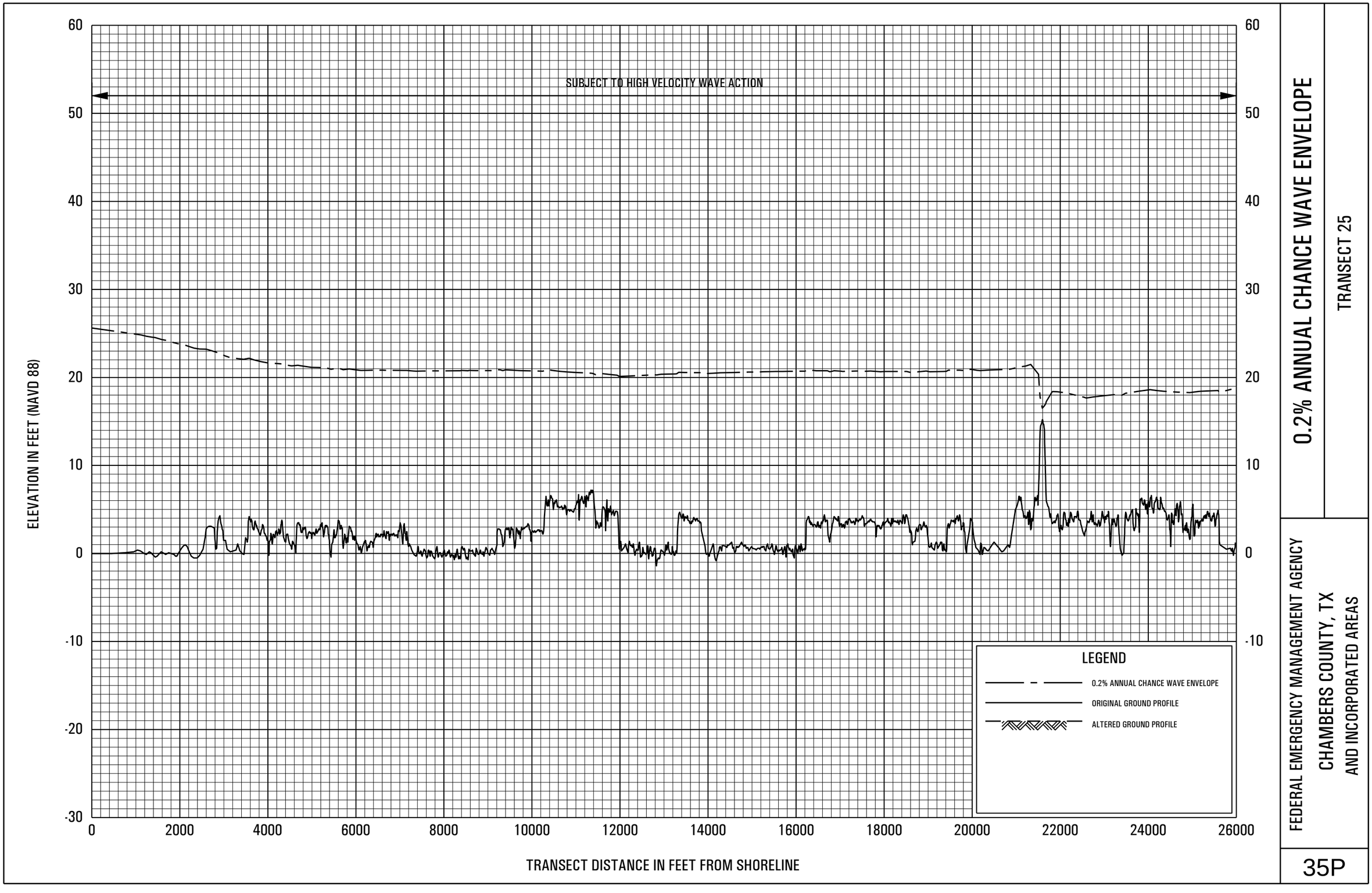


0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 24

FEDERAL EMERGENCY MANAGEMENT AGENCY
CHAMBERS COUNTY, TX
AND INCORPORATED AREAS

34P

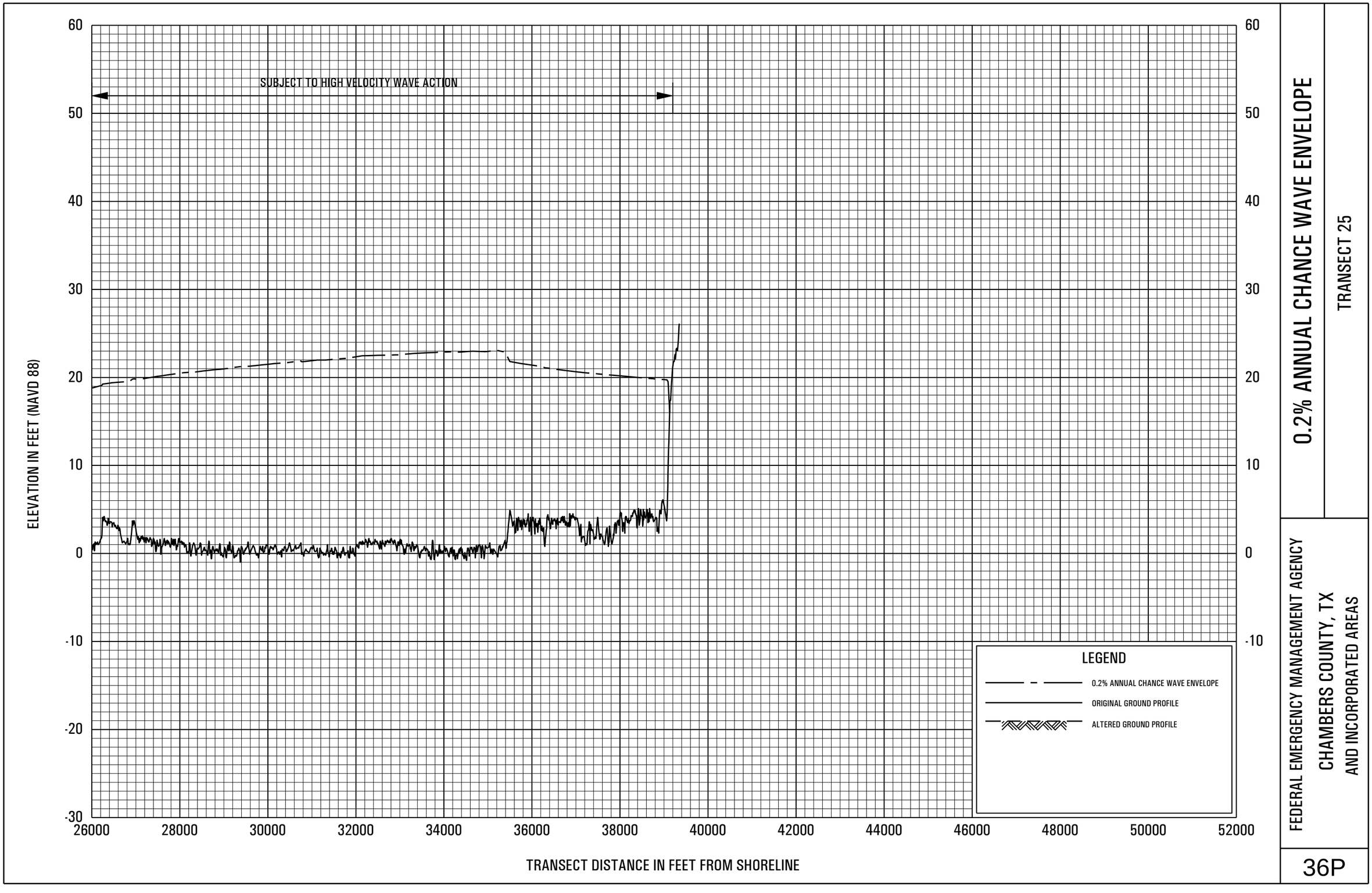


0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 25

FEDERAL EMERGENCY MANAGEMENT AGENCY
CHAMBERS COUNTY, TX
AND INCORPORATED AREAS

35P



0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 25

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHAMBERS COUNTY, TX
AND INCORPORATED AREAS

SUBJECT TO HIGH VELOCITY WAVE ACTION

ELEVATION IN FEET (NAVD 88)

60
50
40
30
20
10
0
-10
-20
-30

0
2000
4000
6000
8000
10000
12000
14000
16000
18000
20000
22000
24000
26000

TRANSECT DISTANCE IN FEET FROM SHORELINE

LEGEND

0.2% ANNUAL CHANCE WAVE ENVELOPE

ORIGINAL GROUND PROFILE

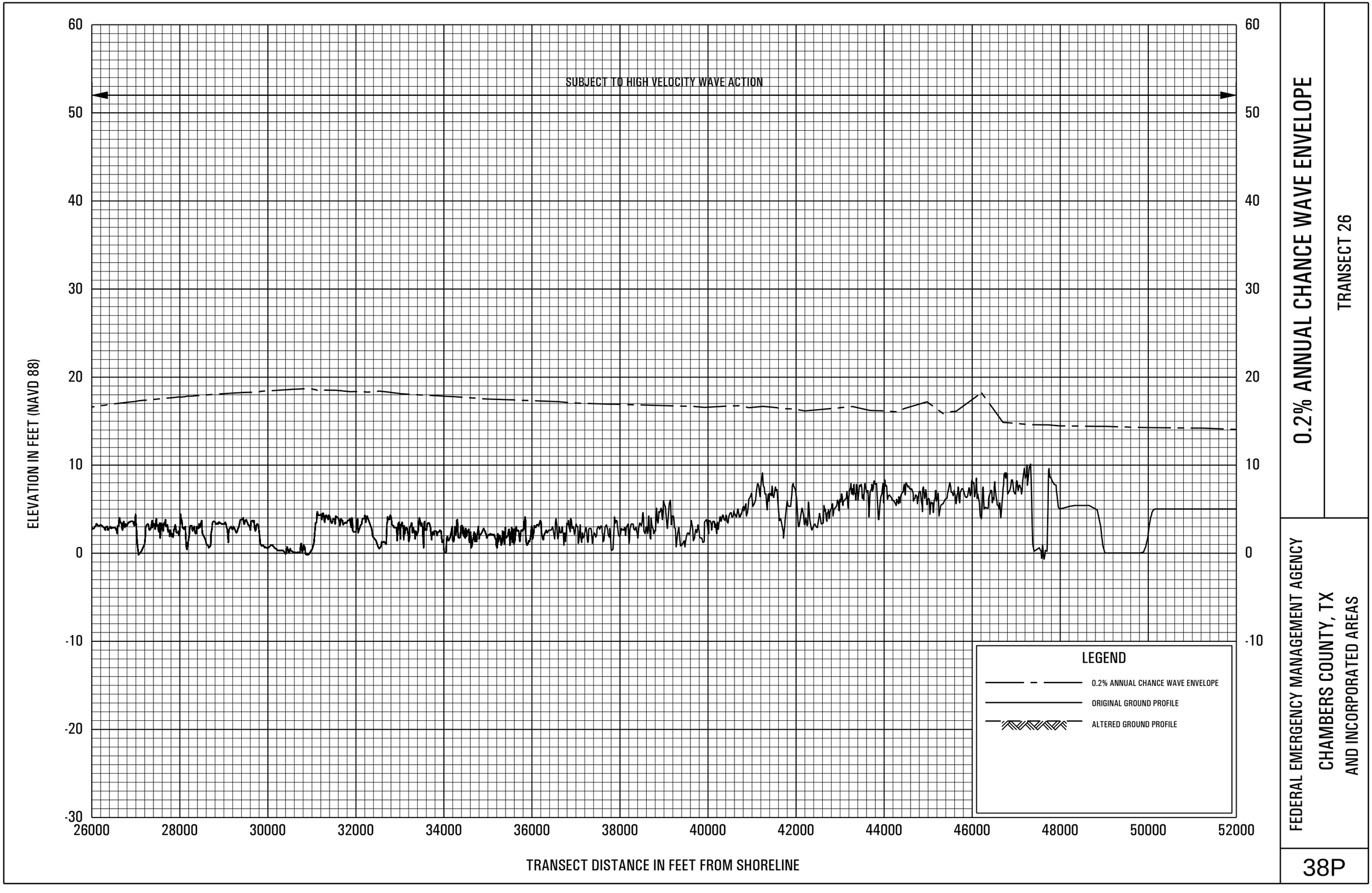
ALTERED GROUND PROFILE

0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 26

FEDERAL EMERGENCY MANAGEMENT AGENCY
CHAMBERS COUNTY, TX
AND INCORPORATED AREAS

37P

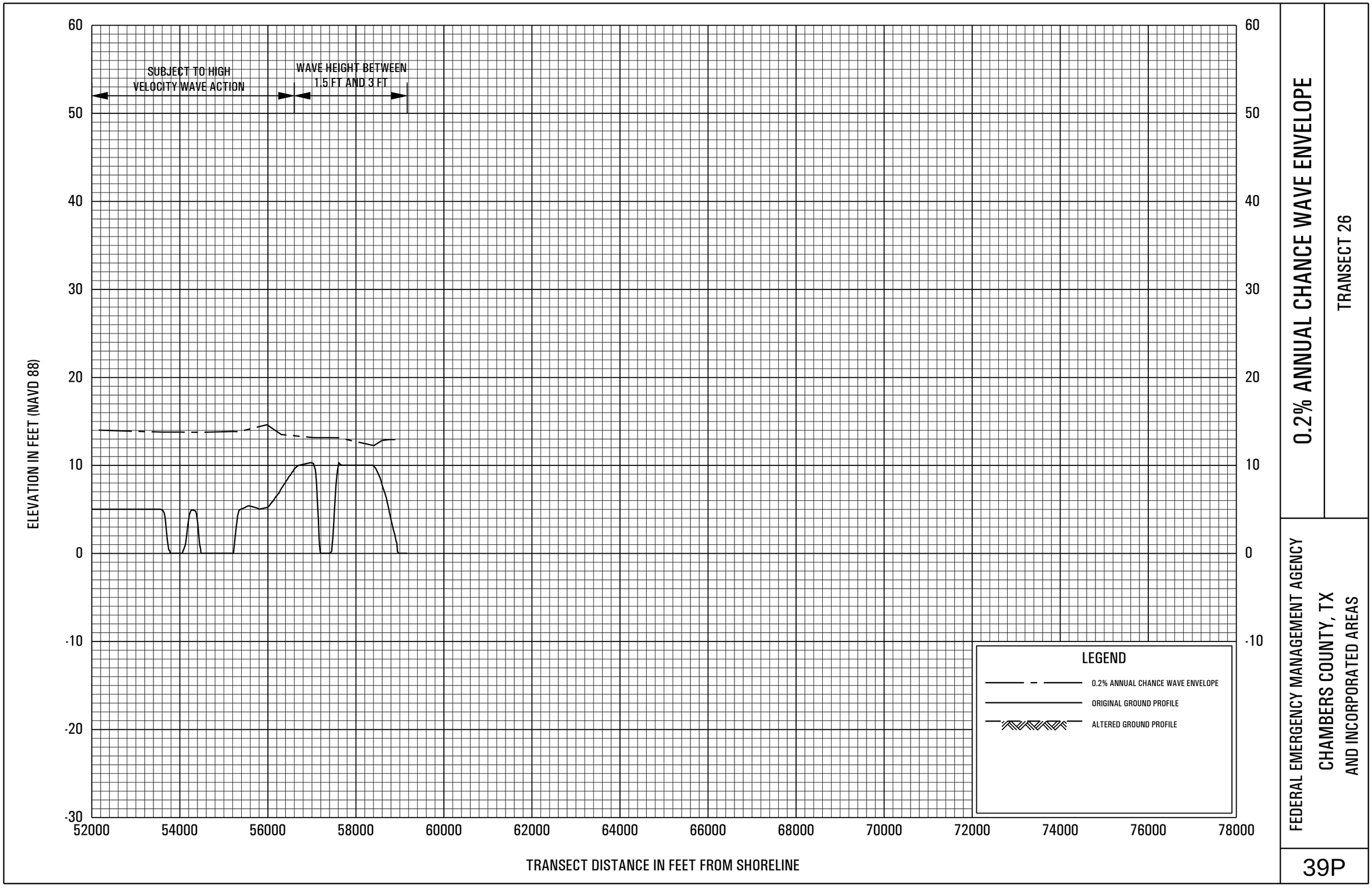


0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 26

FEDERAL EMERGENCY MANAGEMENT AGENCY

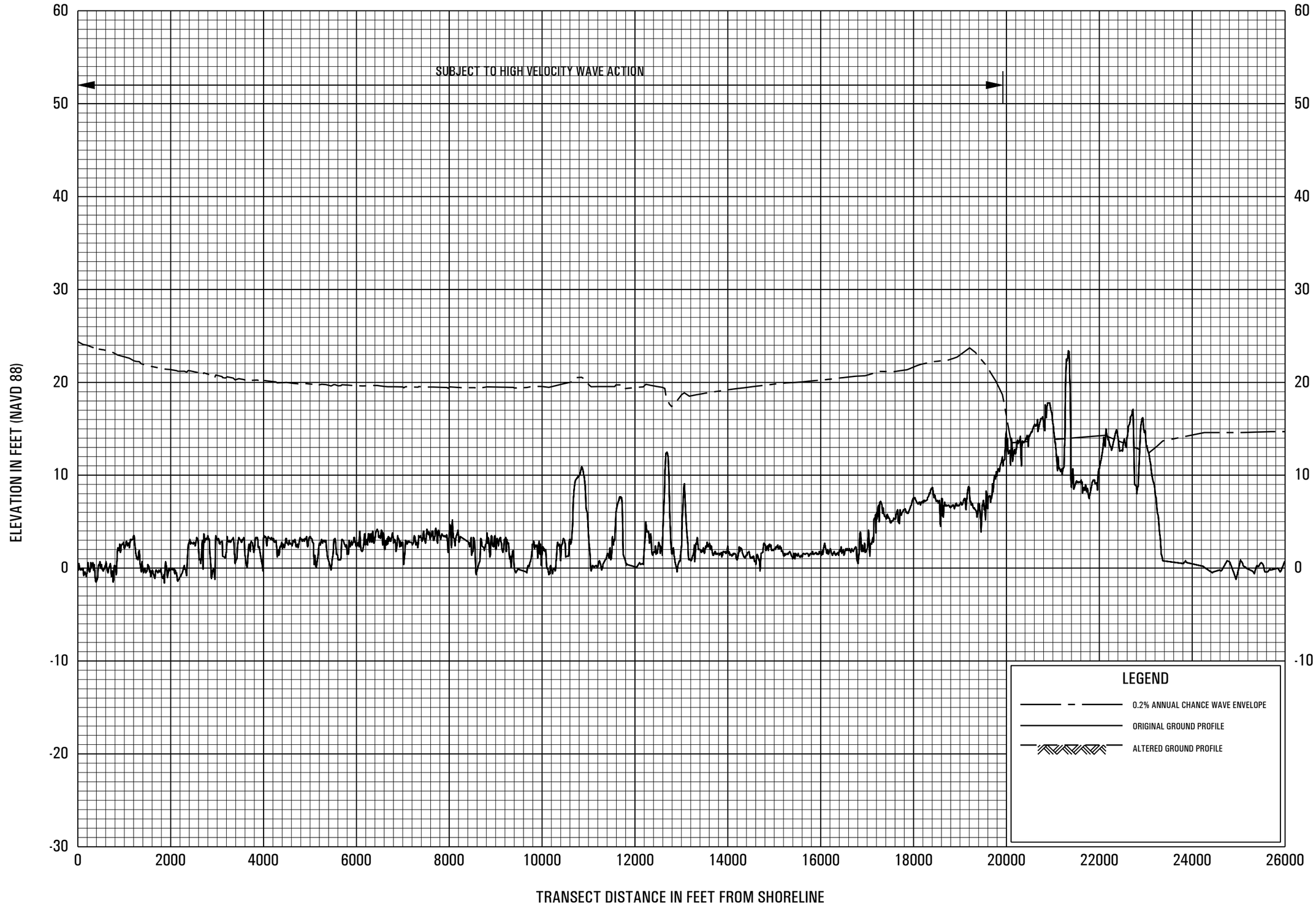
CHAMBERS COUNTY, TX
AND INCORPORATED AREAS



0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 26

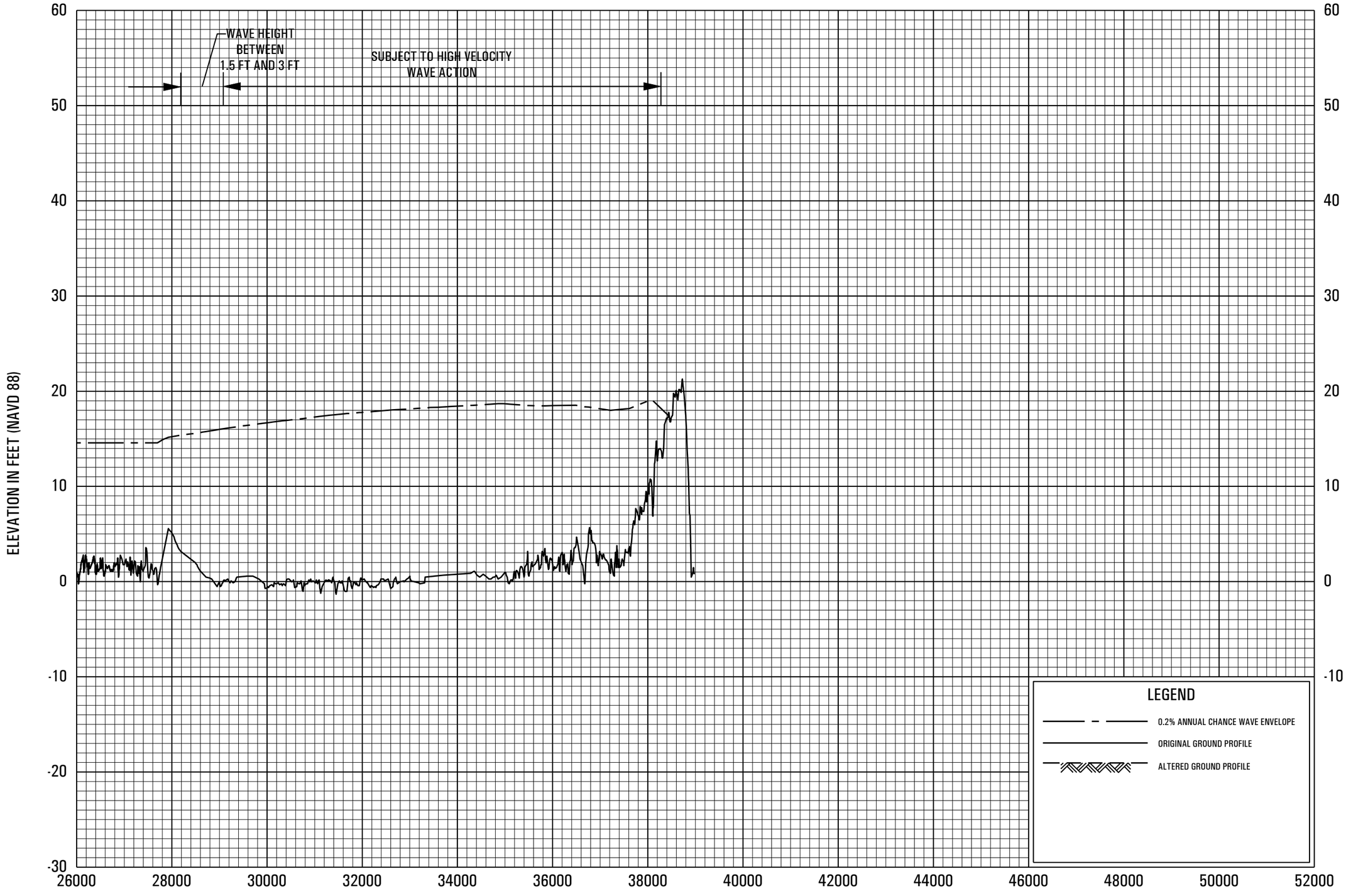
FEDERAL EMERGENCY MANAGEMENT AGENCY
CHAMBERS COUNTY, TX
AND INCORPORATED AREAS



0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 27

FEDERAL EMERGENCY MANAGEMENT AGENCY
CHAMBERS COUNTY, TX
AND INCORPORATED AREAS

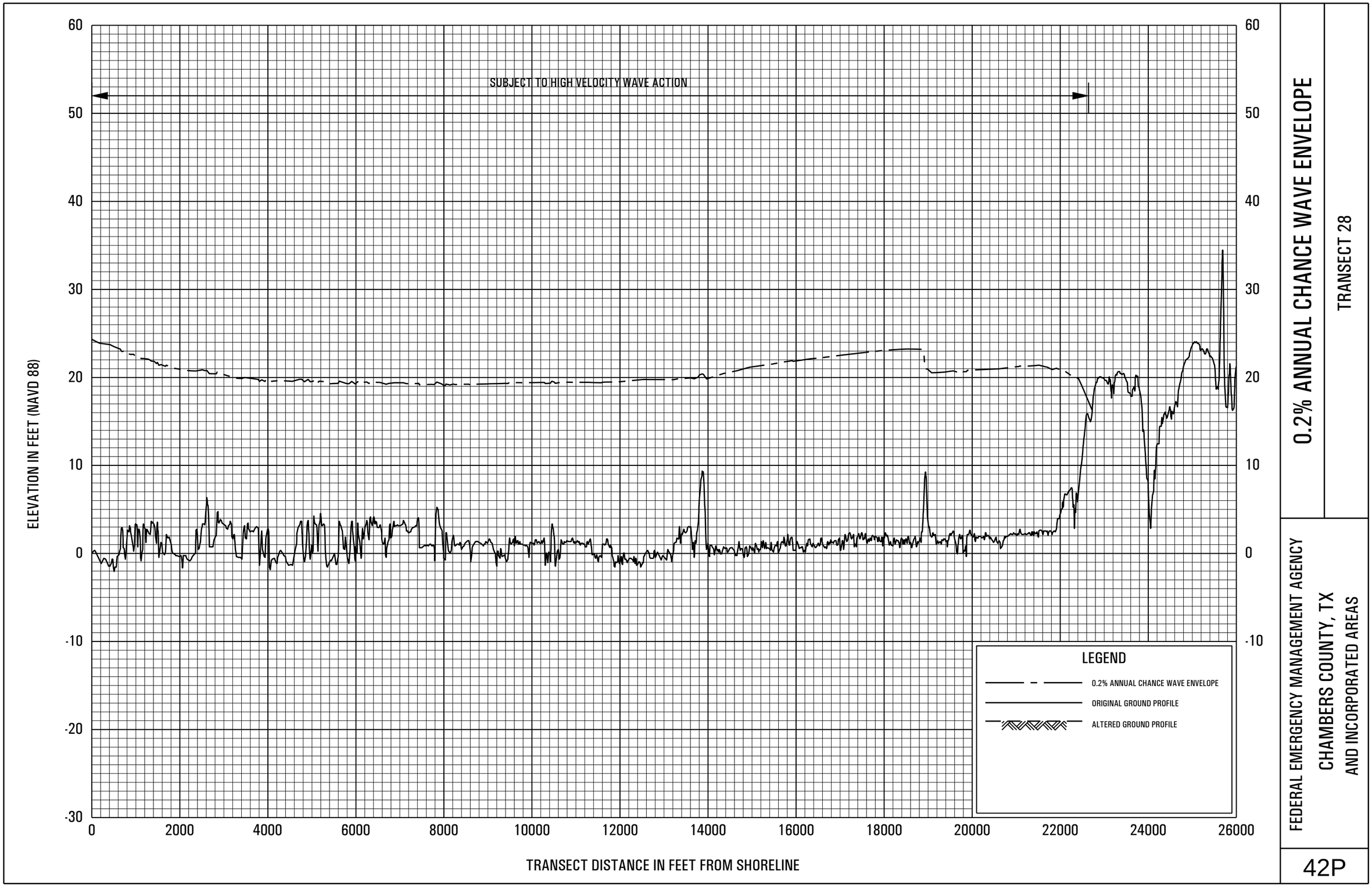


0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 27

FEDERAL EMERGENCY MANAGEMENT AGENCY
CHAMBERS COUNTY, TX
AND INCORPORATED AREAS

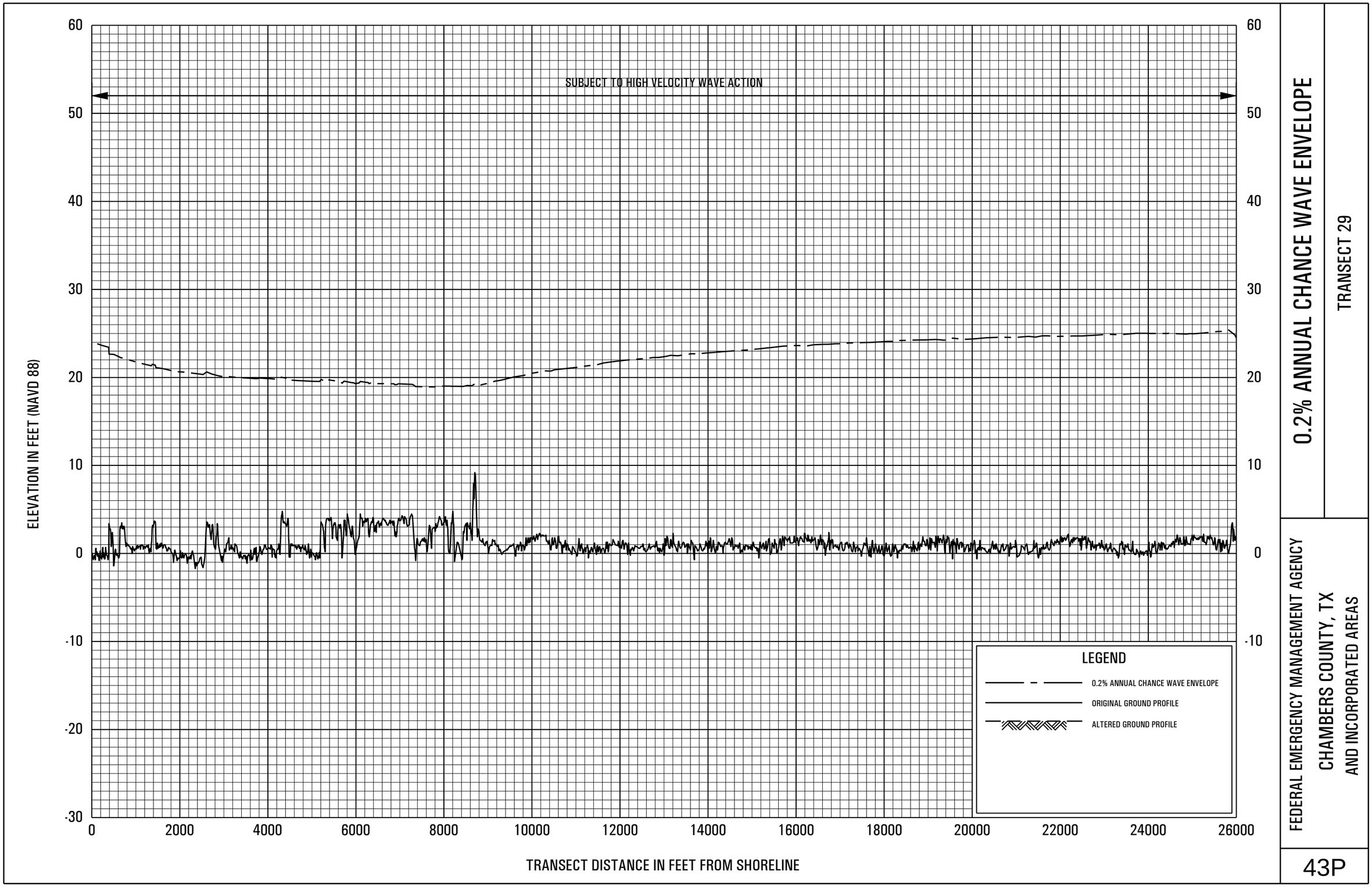
41P



0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 28

FEDERAL EMERGENCY MANAGEMENT AGENCY
CHAMBERS COUNTY, TX
AND INCORPORATED AREAS



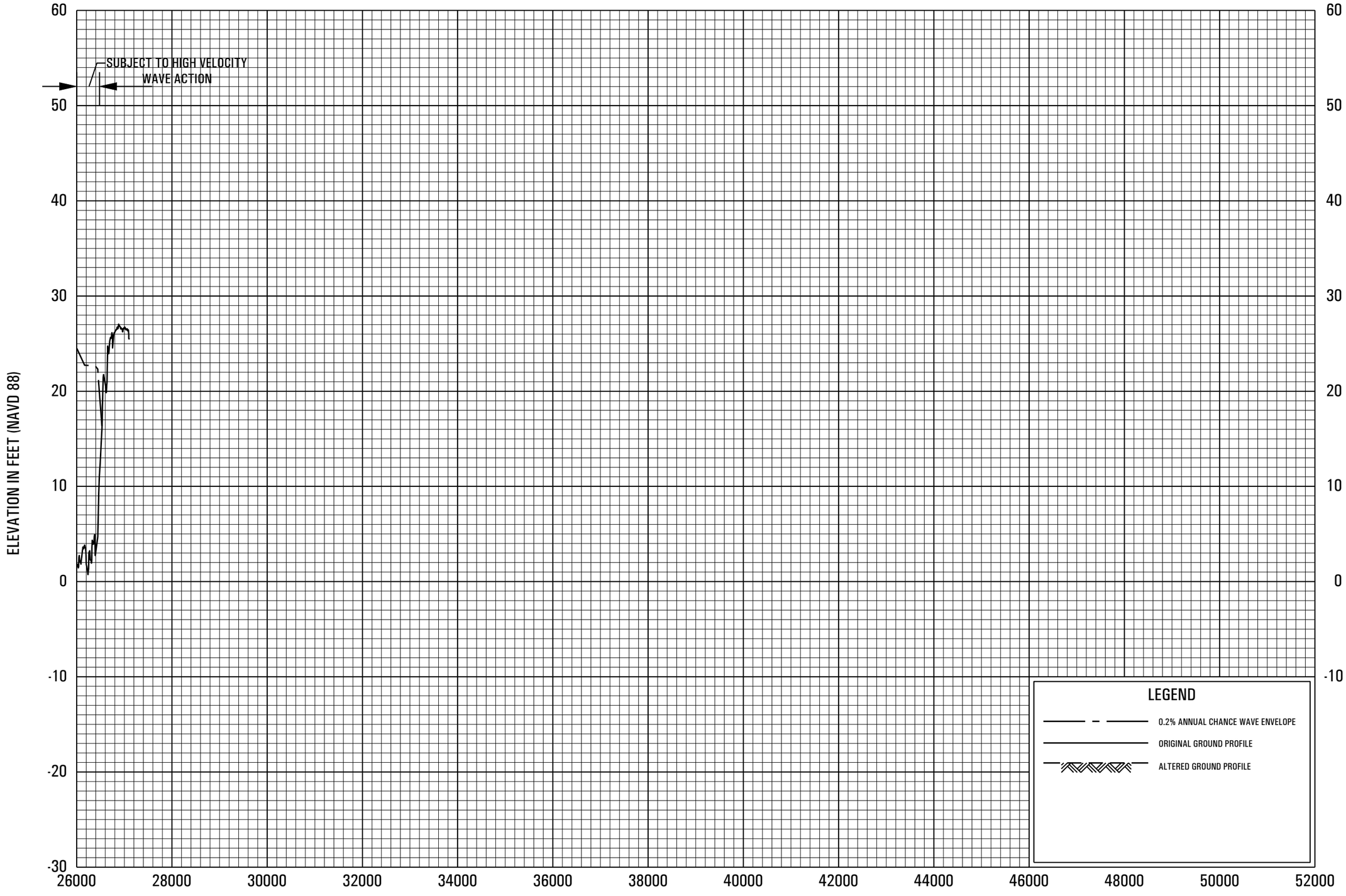
0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 29

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHAMBERS COUNTY, TX
AND INCORPORATED AREAS

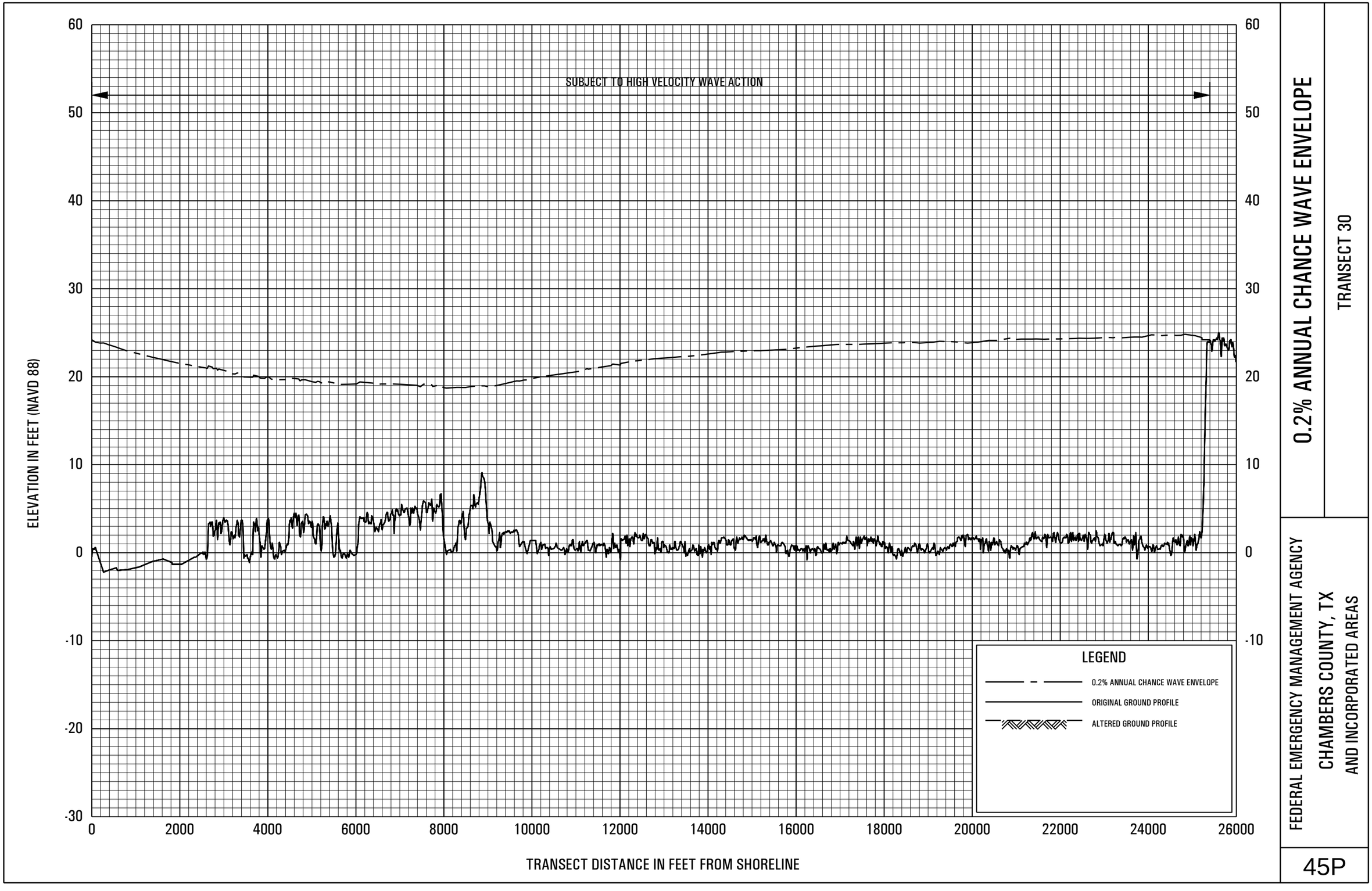
43P



0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 29

FEDERAL EMERGENCY MANAGEMENT AGENCY
CHAMBERS COUNTY, TX
AND INCORPORATED AREAS



0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 30

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHAMBERS COUNTY, TX
AND INCORPORATED AREAS

SUBJECT TO HIGH VELOCITY WAVE ACTION

ELEVATION IN FEET (NAVD 88)

70
60
50
40
30
20
10
0
-10
-20

0
2000
4000
6000
8000
10000
12000
14000
16000
18000
20000
22000
24000
26000

TRANSECT DISTANCE IN FEET FROM SHORELINE

LEGEND

0.2% ANNUAL CHANCE WAVE ENVELOPE
ORIGINAL GROUND PROFILE
ALTERED GROUND PROFILE

0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 31

FEDERAL EMERGENCY MANAGEMENT AGENCY
CHAMBERS COUNTY, TX
AND INCORPORATED AREAS

SUBJECT TO HIGH VELOCITY WAVE ACTION

ELEVATION IN FEET (NAVD 88)

70
60
50
40
30
20
10
0
-10
-20

0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
11000
12000
13000

TRANSECT DISTANCE IN FEET FROM SHORELINE

LEGEND

0.2% ANNUAL CHANCE WAVE ENVELOPE

ORIGINAL GROUND PROFILE

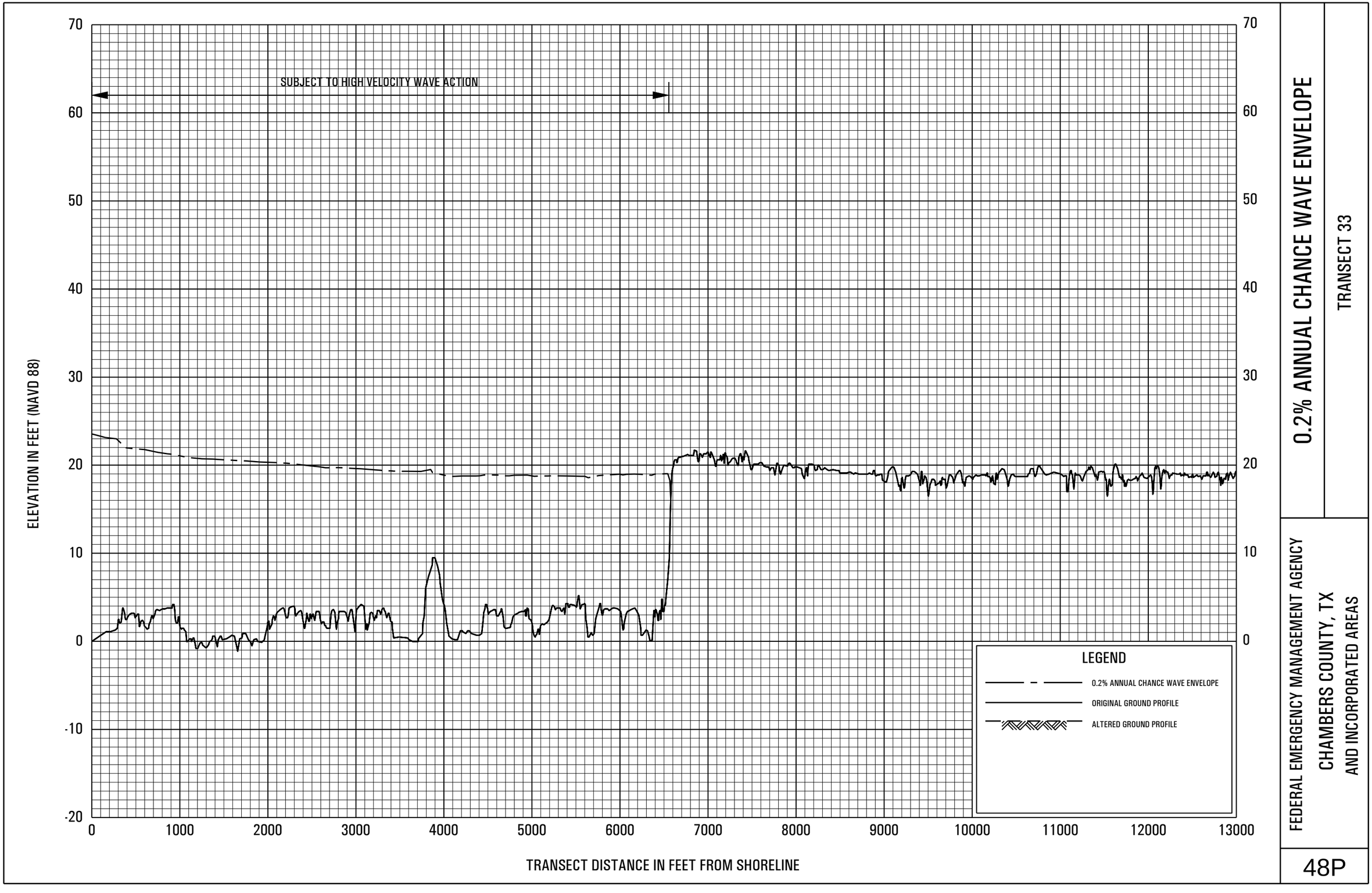
ALTERED GROUND PROFILE

0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 32

FEDERAL EMERGENCY MANAGEMENT AGENCY

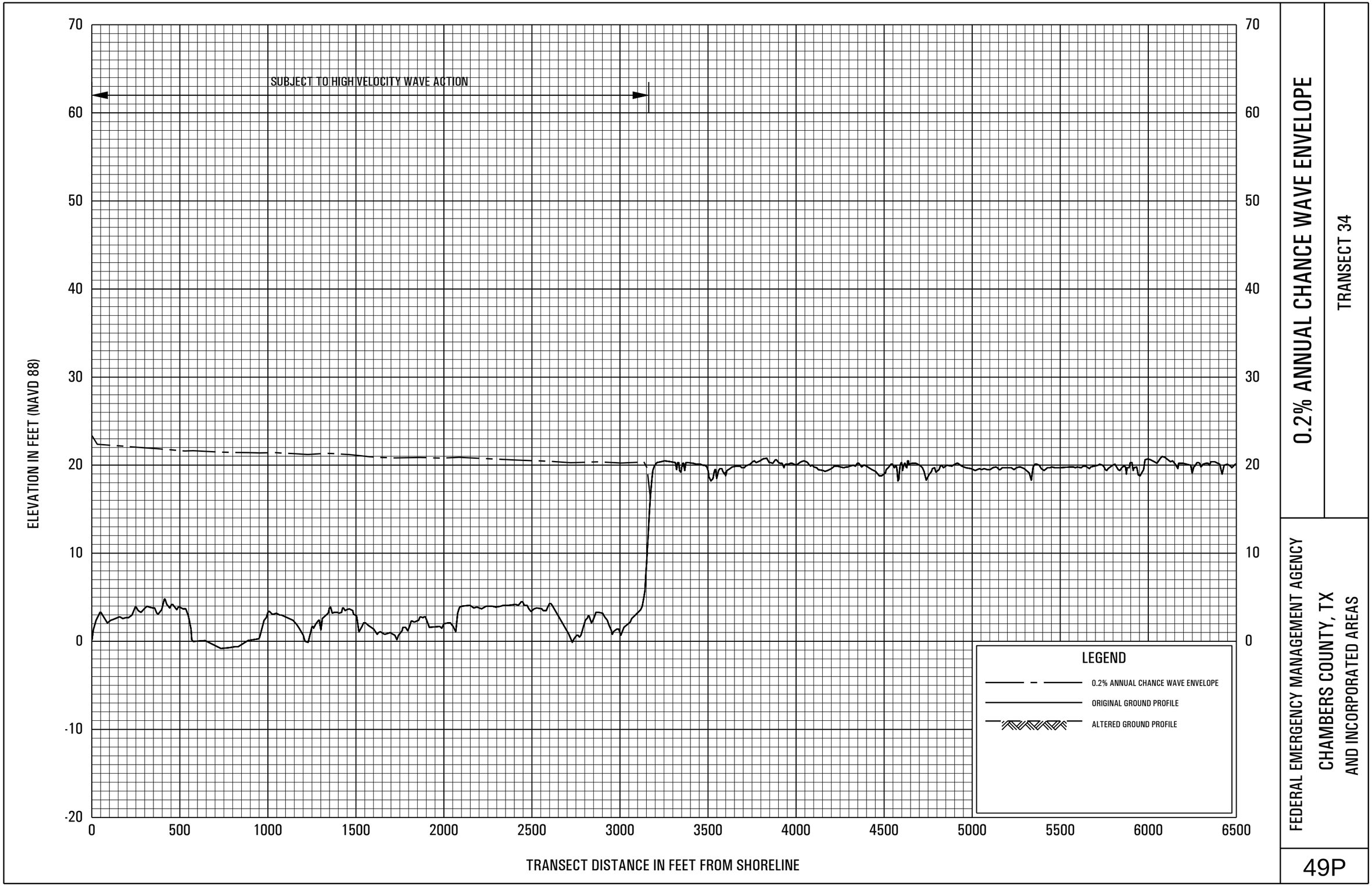
CHAMBERS COUNTY, TX
AND INCORPORATED AREAS



0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 33

FEDERAL EMERGENCY MANAGEMENT AGENCY
CHAMBERS COUNTY, TX
AND INCORPORATED AREAS

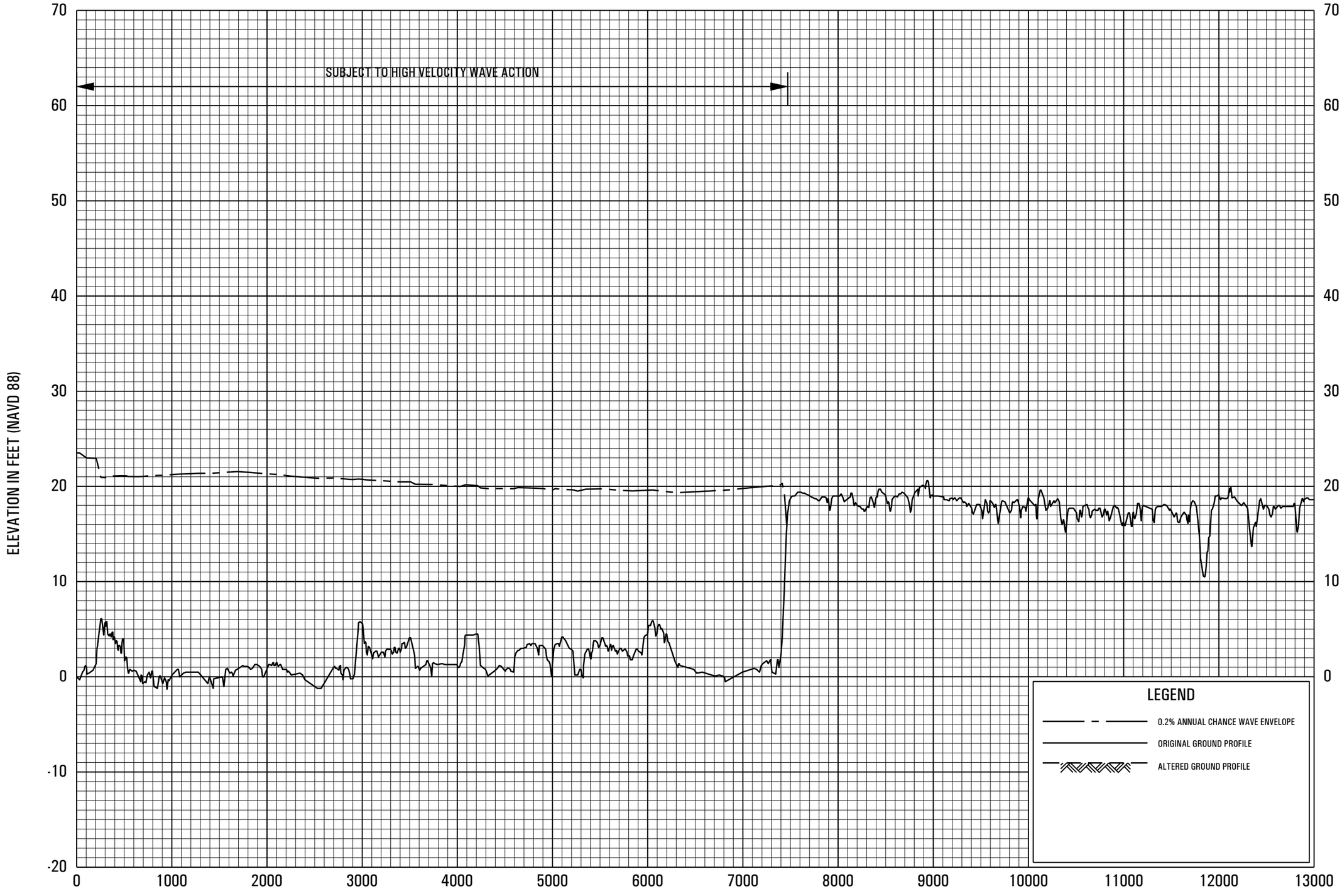


0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 34

FEDERAL EMERGENCY MANAGEMENT AGENCY

CHAMBERS COUNTY, TX
AND INCORPORATED AREAS

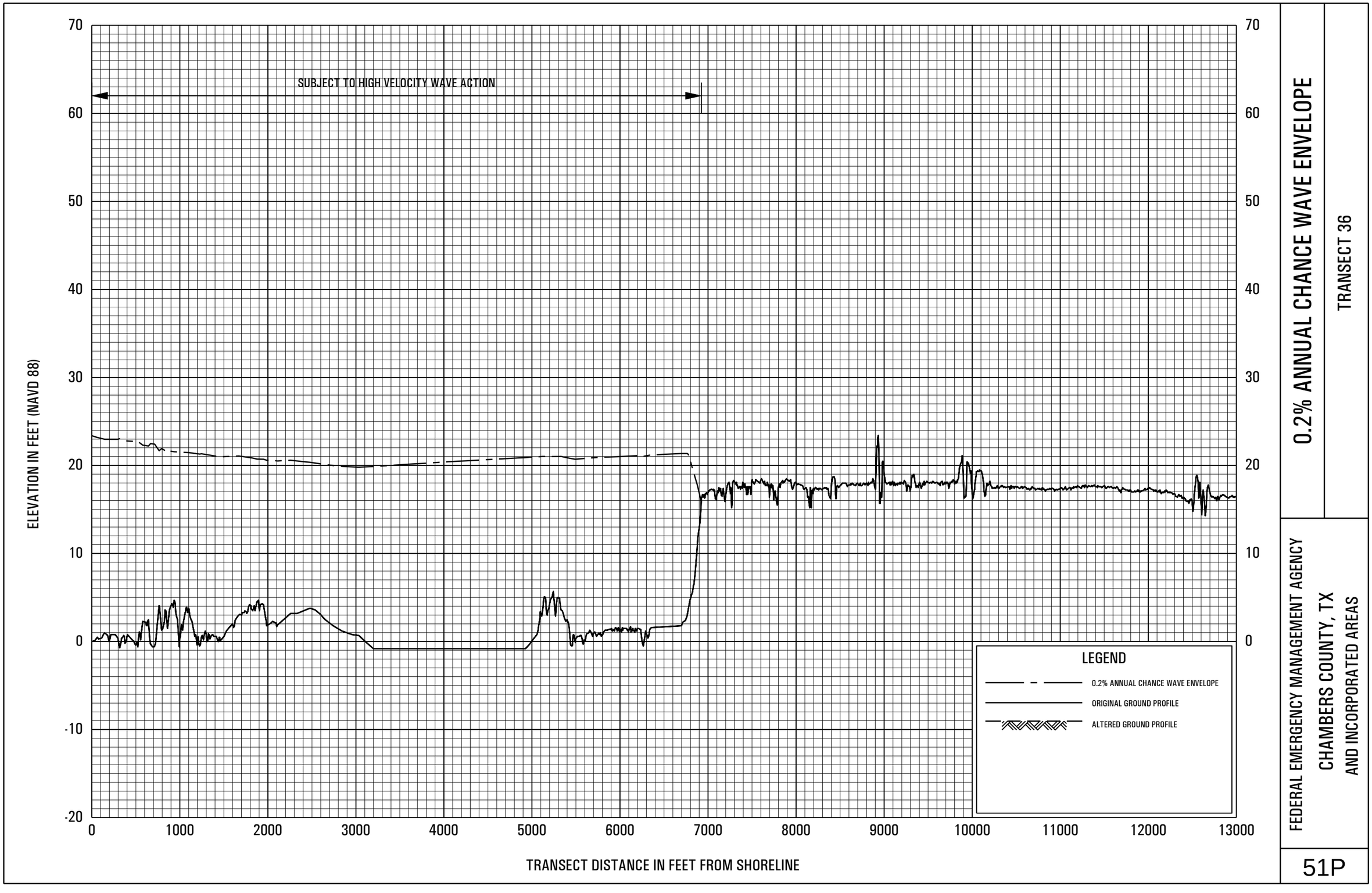


0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 35

FEDERAL EMERGENCY MANAGEMENT AGENCY

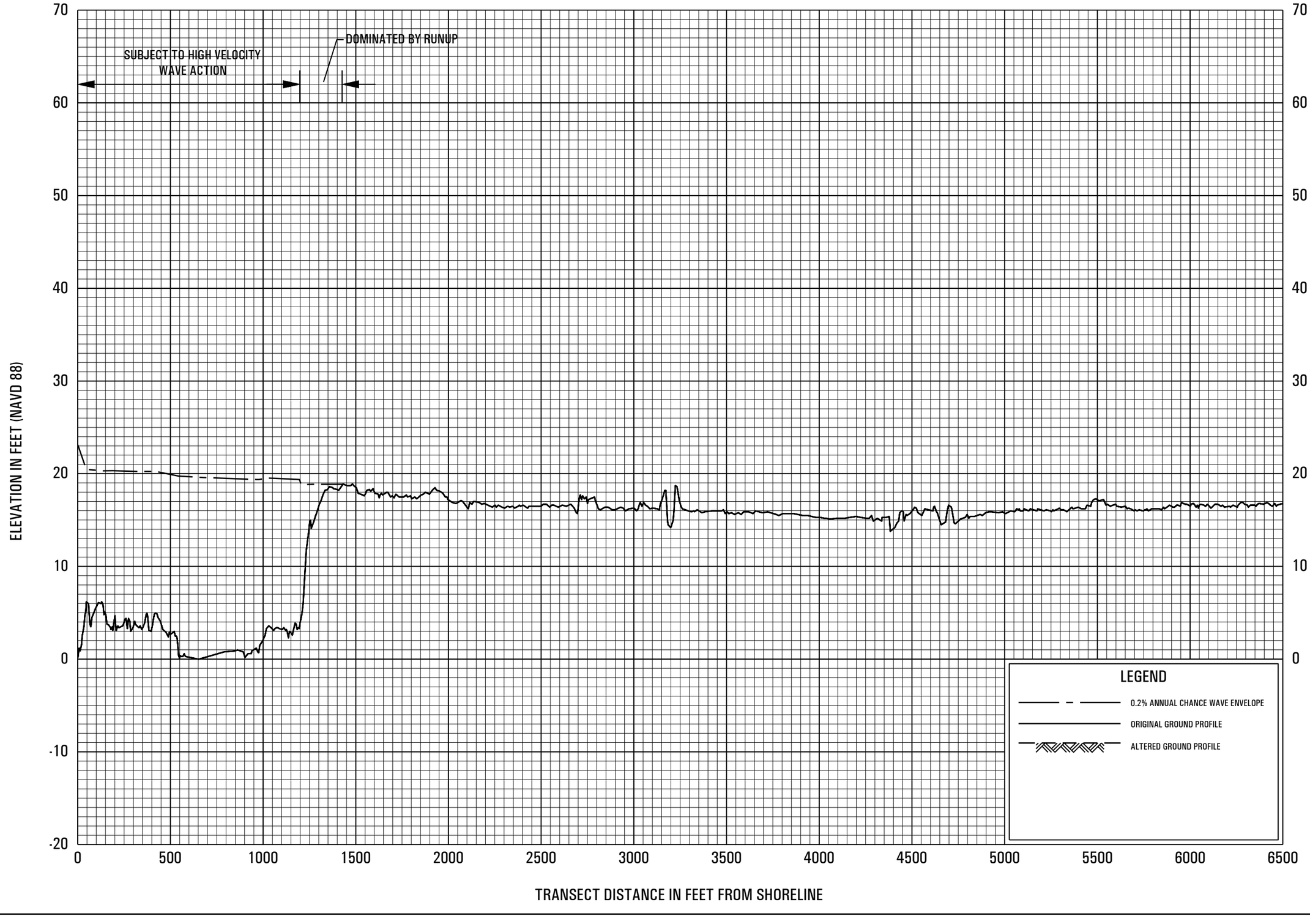
CHAMBERS COUNTY, TX
AND INCORPORATED AREAS



0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 36

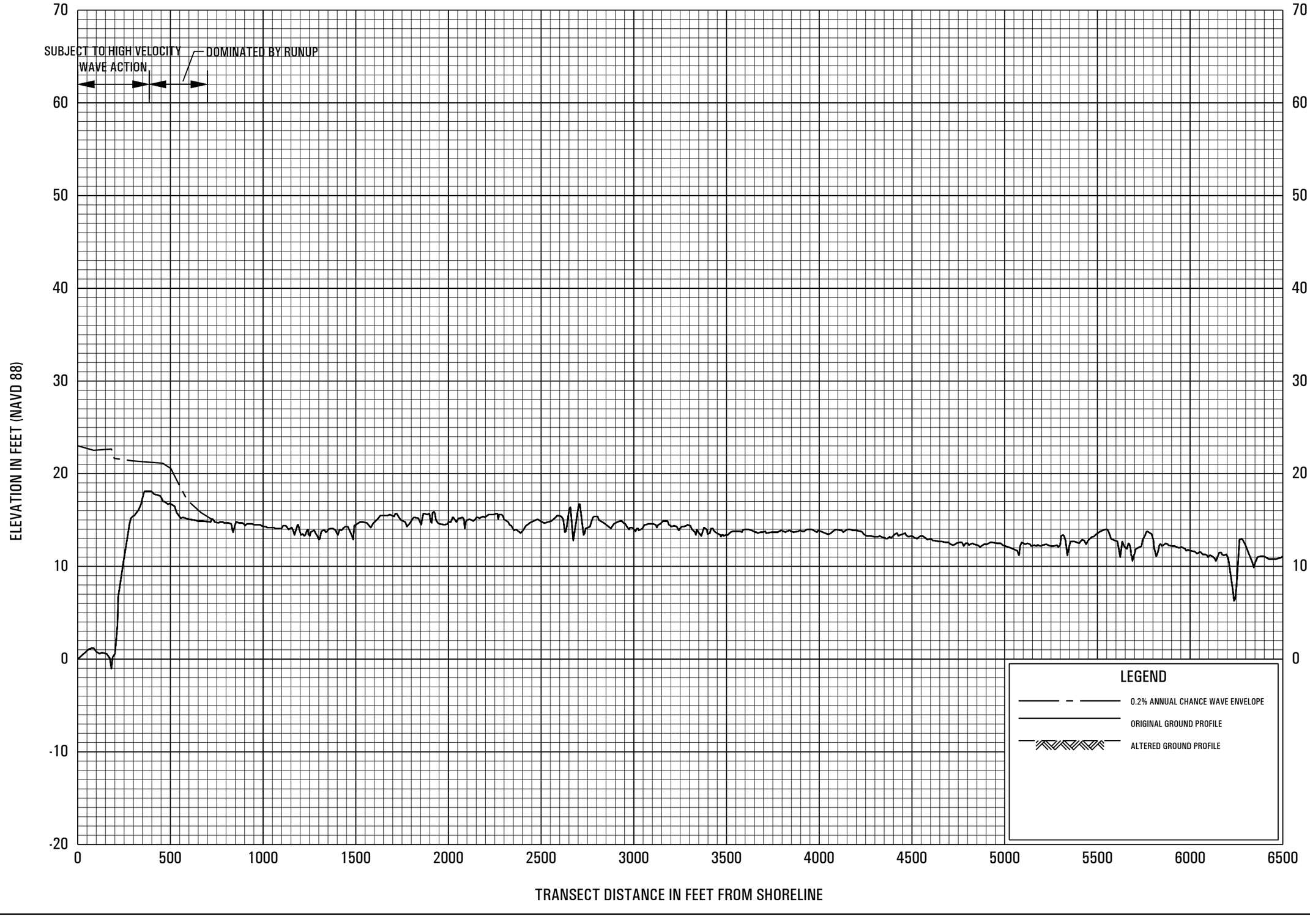
FEDERAL EMERGENCY MANAGEMENT AGENCY
CHAMBERS COUNTY, TX
AND INCORPORATED AREAS



0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 37

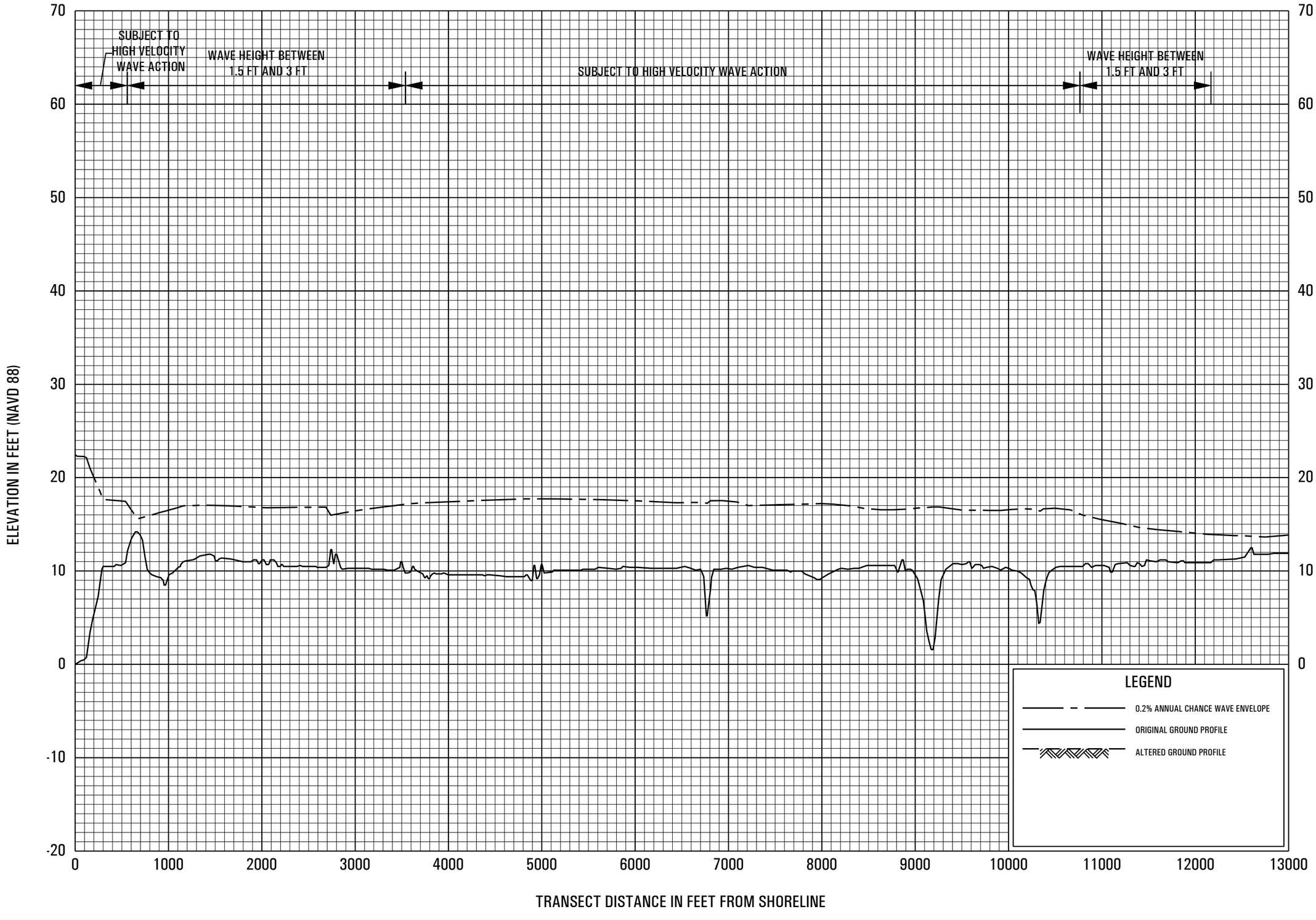
FEDERAL EMERGENCY MANAGEMENT AGENCY
CHAMBERS COUNTY, TX
AND INCORPORATED AREAS



0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 38

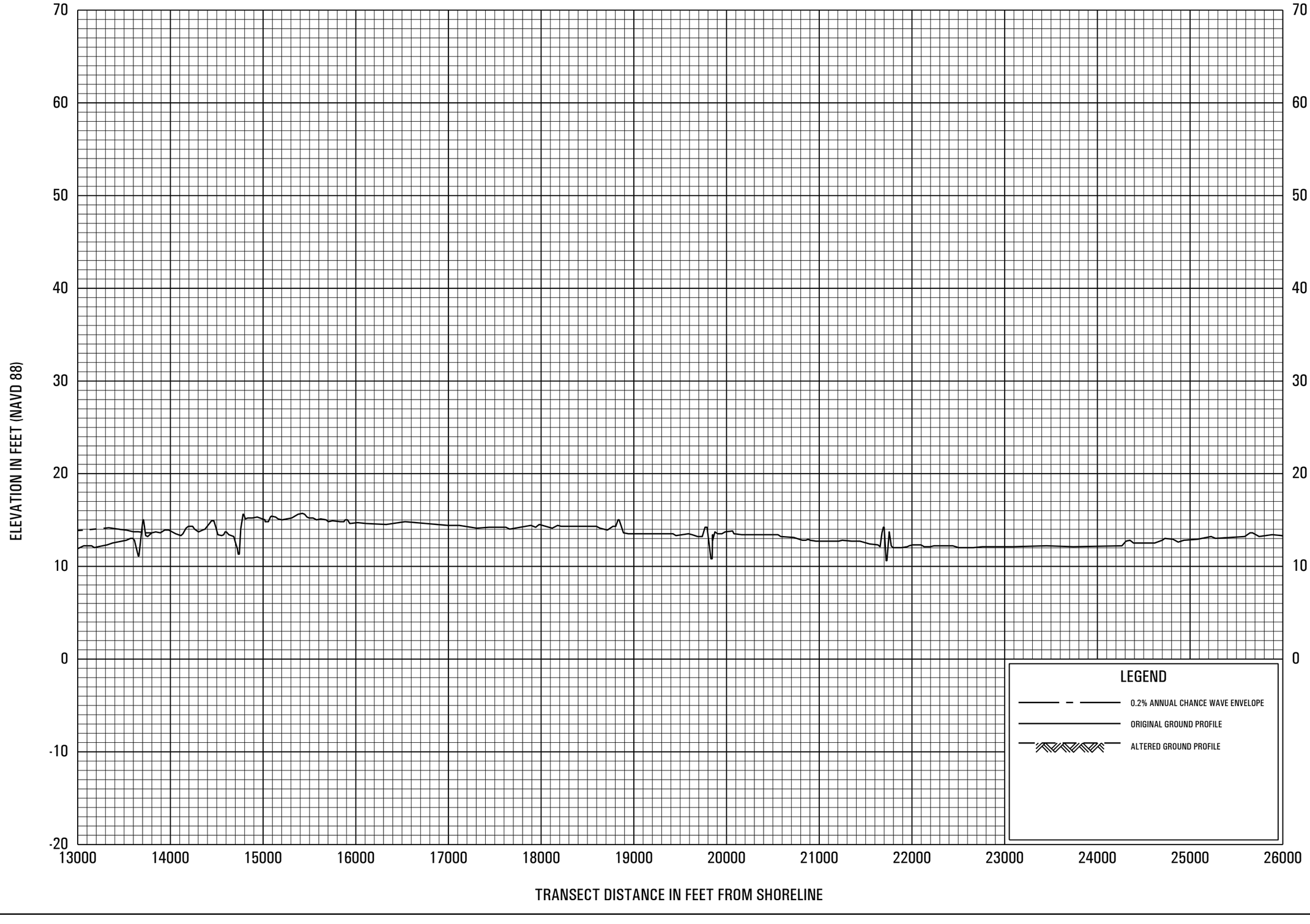
FEDERAL EMERGENCY MANAGEMENT AGENCY
CHAMBERS COUNTY, TX
AND INCORPORATED AREAS



0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 39

FEDERAL EMERGENCY MANAGEMENT AGENCY
CHAMBERS COUNTY, TX
AND INCORPORATED AREAS

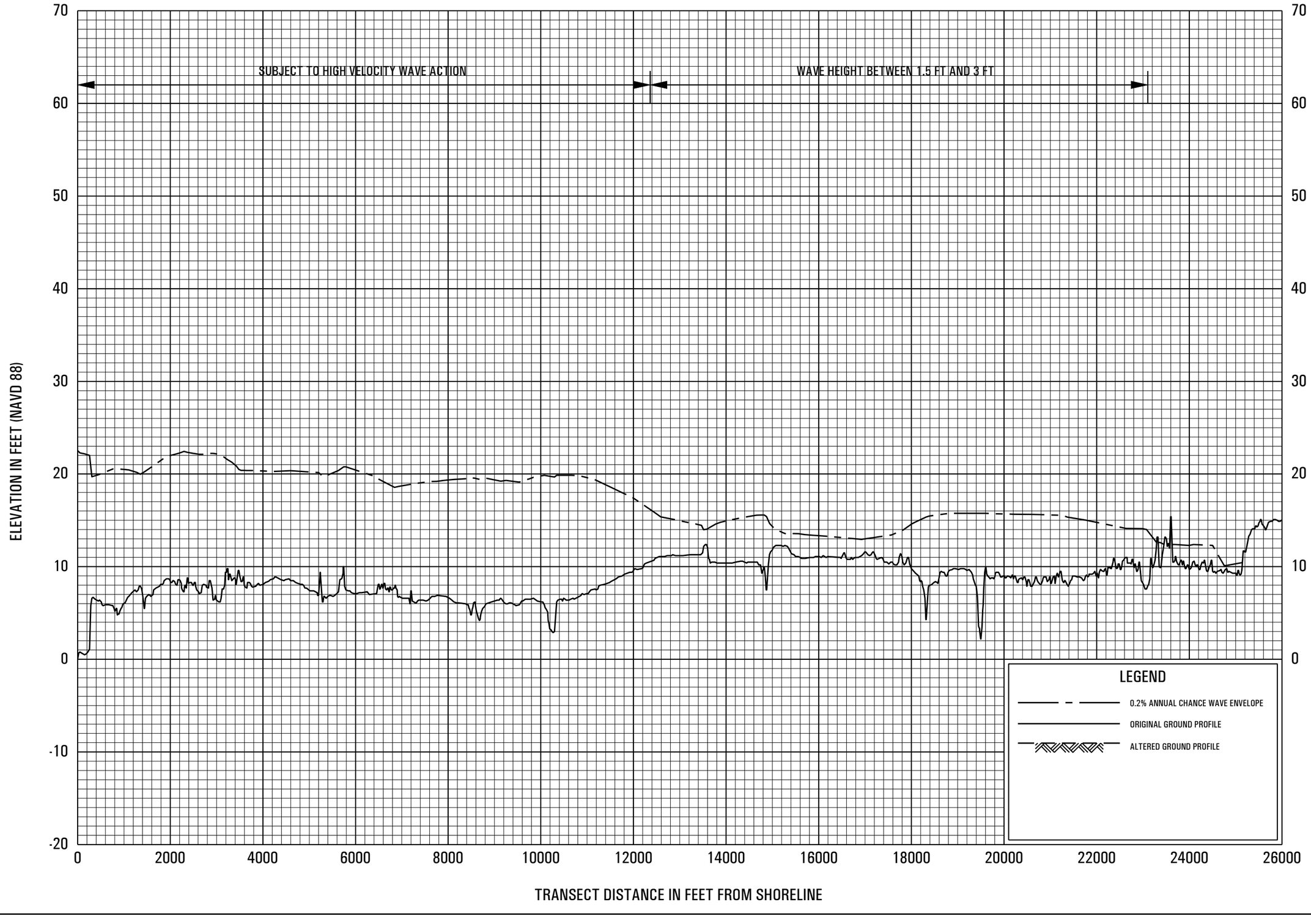


0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 39

FEDERAL EMERGENCY MANAGEMENT AGENCY
CHAMBERS COUNTY, TX
AND INCORPORATED AREAS

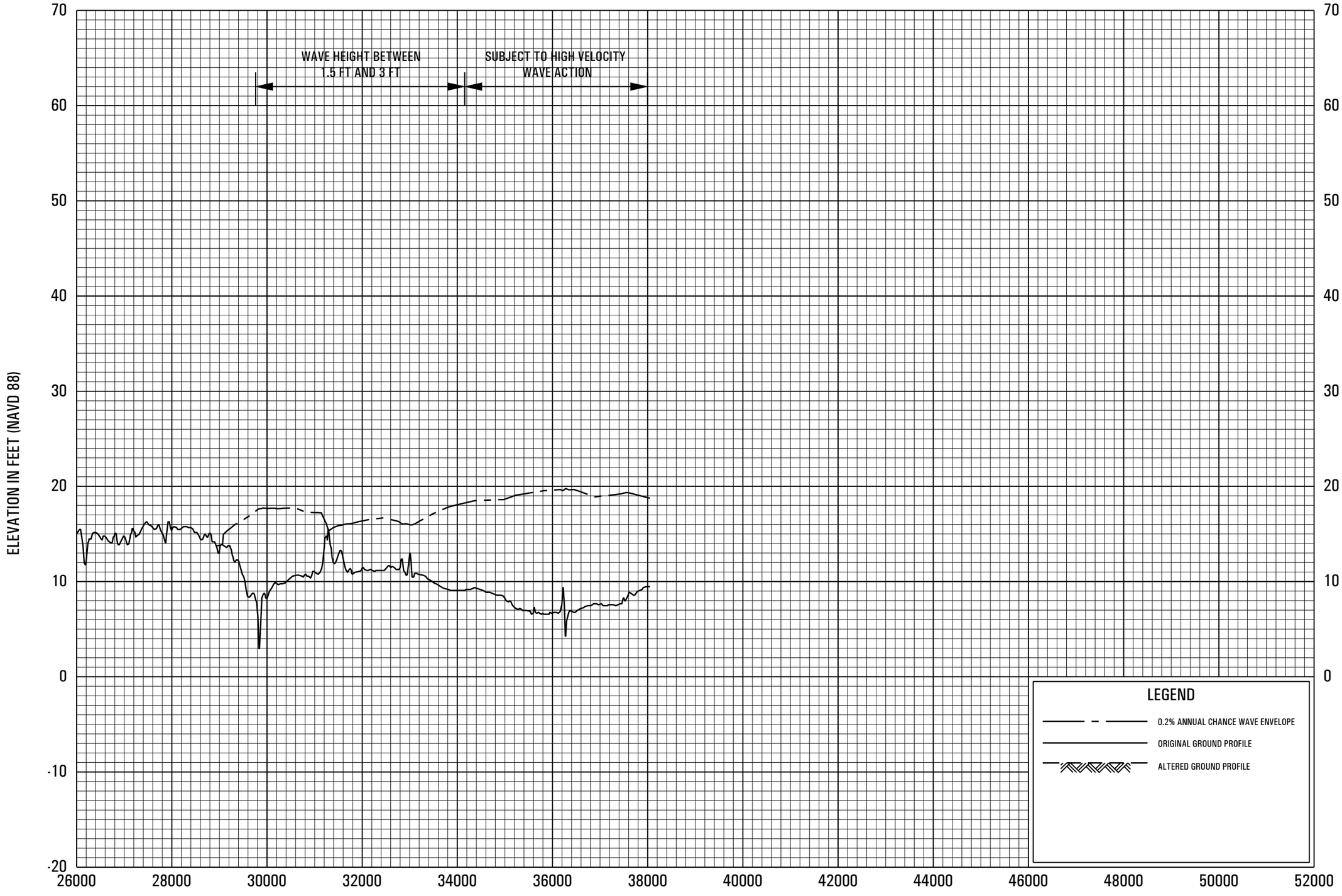
55P



0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 40

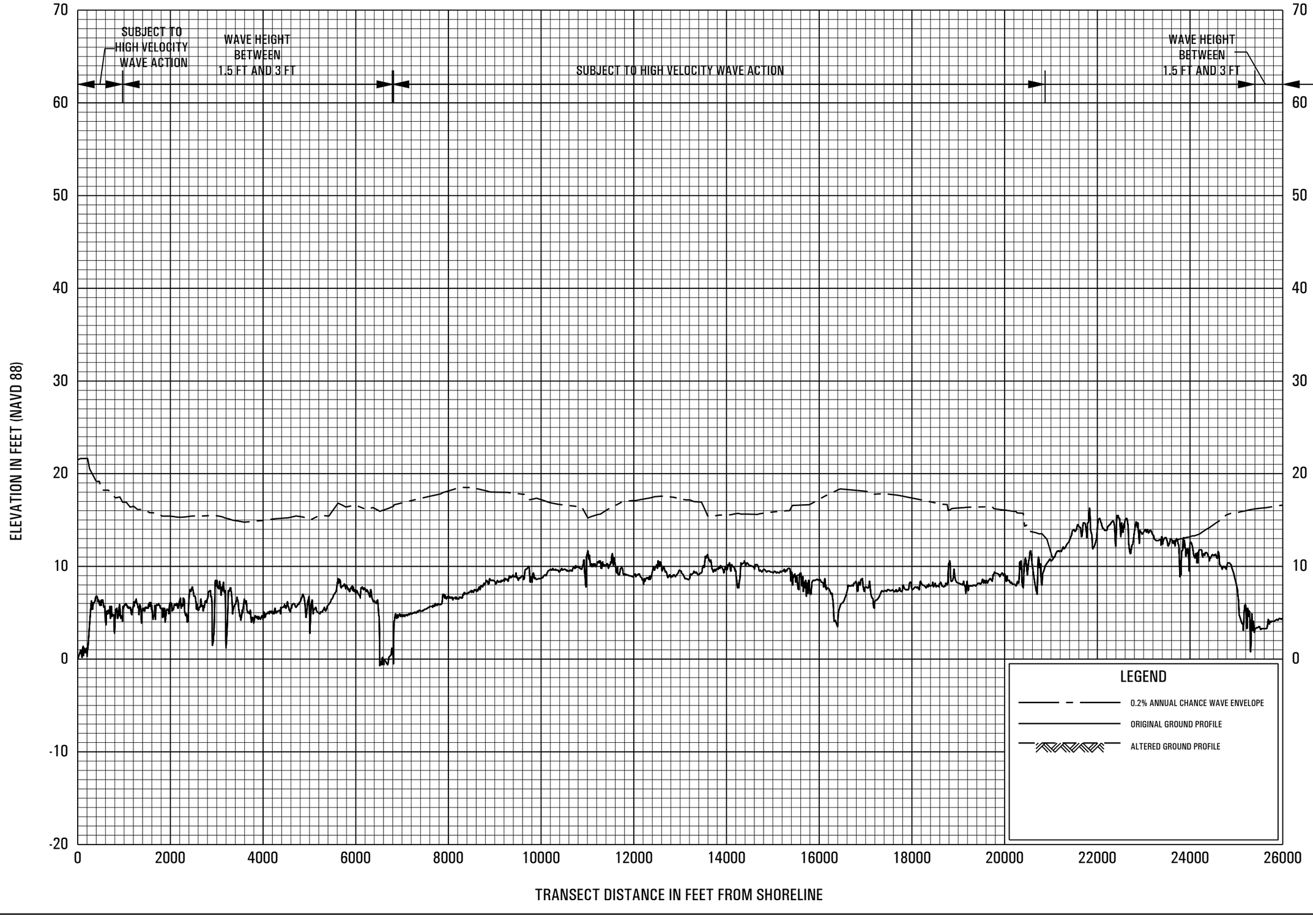
FEDERAL EMERGENCY MANAGEMENT AGENCY
CHAMBERS COUNTY, TX
AND INCORPORATED AREAS



0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 40

FEDERAL EMERGENCY MANAGEMENT AGENCY
CHAMBERS COUNTY, TX
AND INCORPORATED AREAS

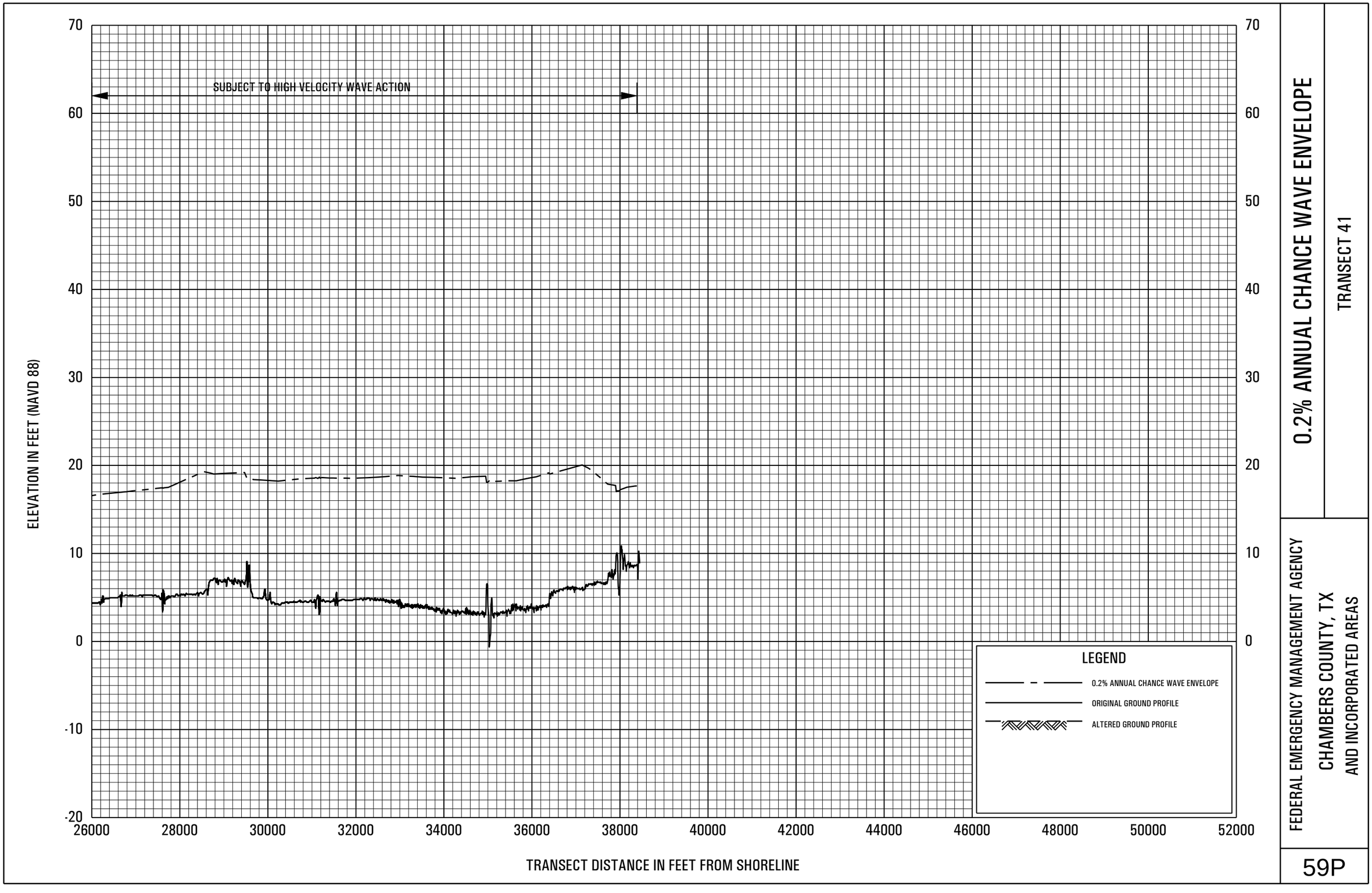


0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 41

FEDERAL EMERGENCY MANAGEMENT AGENCY
CHAMBERS COUNTY, TX
AND INCORPORATED AREAS

58P



0.2% ANNUAL CHANCE WAVE ENVELOPE

TRANSECT 41

FEDERAL EMERGENCY MANAGEMENT AGENCY
CHAMBERS COUNTY, TX
AND INCORPORATED AREAS