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CORPS OF ENGINEERS BUFFALO N Y BUFFALO DISTRICT
FLOOD INSURANCE STUDY, GARFIELD HEIGHTS, OHIO.(U)
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FLOOD INSURANCE STUDY

GARFIELD HEIGHTS

OHIO



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PREPARED FOR THE
FEDERAL INSURANCE ADMINISTRATION

BY THE

DEPARTMENT OF THE ARMY
BUFFALO DISTRICT, CORPS OF ENGINEERS
BUFFALO, NEW YORK 14207

MAY 1971

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Garfield Heights encompasses an area approximately four square miles and has a population of about 41,500 people. Mill Creek, Wolf Creek, Andover Creek and their tributaries provide drainage for most of the city. The city has a history of periodic flooding from these streams and also significant flooding from local runoff accumulation and ponding which enters have been taken by the city government to alleviate the various flood problems by providing a system of open and subsurface drains. However, these measures have only a partical effect on the local runoff that would be produced → cont.		

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cont. during the 100 and 500 year floods. Hilly terrain, lack of a complete drainage system, a combined storm and sanitary sewer system in some locations, lengthy culverts, are the main reasons for the flooding problems.



FLOOD INSURANCE STUDY
GARFIELD HEIGHTS, OHIO

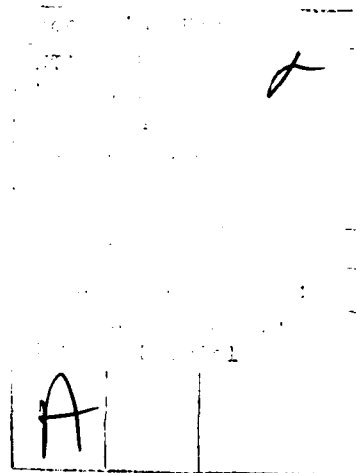
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	<u>Number</u>
Profiles	
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FLOOD INSURANCE STUDY
GARFIELD HEIGHTS, OHIO

1. AUTHORITY FOR STUDY

This study was prepared at the request of the Federal Insurance Administration, U.S. Department of Housing and Urban Development, in accordance with the National Flood Insurance Act, Public Law 90-448, dated 1 August 1968, and subsequent criteria. This study provides data required for a Type-10 study in Garfield Heights, Ohio. Flood insurance rates for Garfield Heights will be developed, using data contained in this report, by the Federal Insurance Administration. Authority for the Buffalo District to prepare this study is provided by letter from the Office of the Chief of Engineers, ENGCW-PF, subject: Type-10 Flood Insurance Studies, dated 23 December 1970.

2. FINANCING OF STUDY

This study was financed by the Federal Insurance Administration by reimbursement of funds to the Corps of Engineers (Inter-Agency Agreement (IAA) - H - 8 - 71, Project Order No. 8).

3. DESCRIPTION OF THE AREA

Garfield Heights is an incorporated city within Cuyahoga County.

The City encompasses an area of approximately four square miles and has a population of about 41,500 people. Mill Creek, Wolf Creek, Andover Creek and their tributaries provide drainage for most of the city. The City has a history of periodic flooding from these streams and also significant flooding from local runoff accumulation and ponding which enters into residences through sewers. Some measures have been taken by the city government to alleviate the various flood problems by providing a system of open and subsurface drains. However, these measures have only a partial effect on the local runoff that would be produced during the 100- and 500-year floods. Hilly terrain, lack of a complete drainage system, a combined storm and sanitary sewer system in some locations, local restrictive obstructions, such as walls and lengthy culverts, are the main reasons for the flooding problems. The best method to prevent flood damage to future development in the study area would be to restrict first floor elevations to above flood levels and to develop a system of separate sanitary and storm sewers.

4. DESCRIPTION OF WORK

The work performed in producing the information and data contained in this report is in accordance with the criteria set forth in the "Guidelines for Flood Insurance Studies" published by the Corps of Engineers in January 1970 and subsequent directives.

a. Hydrologic Studies - The frequency of flood stages for the study area was developed from discharge - frequency relationships based on hydrologic studies by the Corps of Engineers.

b. Structure and Content Classification - Symbol designation and procedures used in this study are in accordance with those recommended by the Federal Insurance Administration. These designations are listed in Exhibit 1.

c. Depth - Damage Relationship Development - Depth-damage relationships were developed by determining average house criteria for the various structure and content designations considered as representative of the study area. Content and structural damage were estimated for the various levels of flooding. Damage estimates were based on observed and computed damage information already on file in the Buffalo District Office. Exhibits 2 through 16 show the depth-damage relationships in both tabular and graphical form.

d. Elevation-Frequency Relationship Development - Utilizing hydrologic data, U.S. Geological Survey maps, Cuyahoga County, Ohio, Sanitary Engineering Department topographic maps and field investigations elevation-frequency relationships were determined for seven index points on Mill Creek and five index points on

Wolf Creek. This information was plotted as a smooth curve at each index point as shown on Exhibits 17 through 28. Also shown on these exhibits is the flood hazard factor which most closely resembles each elevation frequency curve as shown in the Federal Insurance Administration publication dated September 1970. A profile indicated the 500-year flood, Base Flood, 10-year flood and the approximate ground elevations for Mill Creek and Wolf Creek are shown on plates 1 through 3.

e. Reaches and Zones - The flood zones were delineated by first determining the overflow limits for the desired flood and then extending the zone to the higher verifiable line, such as a street or bluff line, when possible. When physical boundaries were not available the zone limit is dimensioned from the nearest physical location. The study area consists primarily of an "A" zone, which is subject to flooding by the Base Flood. A "B" zone, which is the area subject to flooding by the 500-year flood but not the base flood, is not shown on the zone maps as the horizontal distance is not significant. The area in the "C" zone shown does not have an apparent flood problem. The "CB" zones shown do have apparent flood problems but a flood hazard factor was not determined. The zone maps for Garfield Heights are shown on plates 4 through 6.

EXHIBIT 1

CLASSES OF STRUCTURES AND CONTENTS

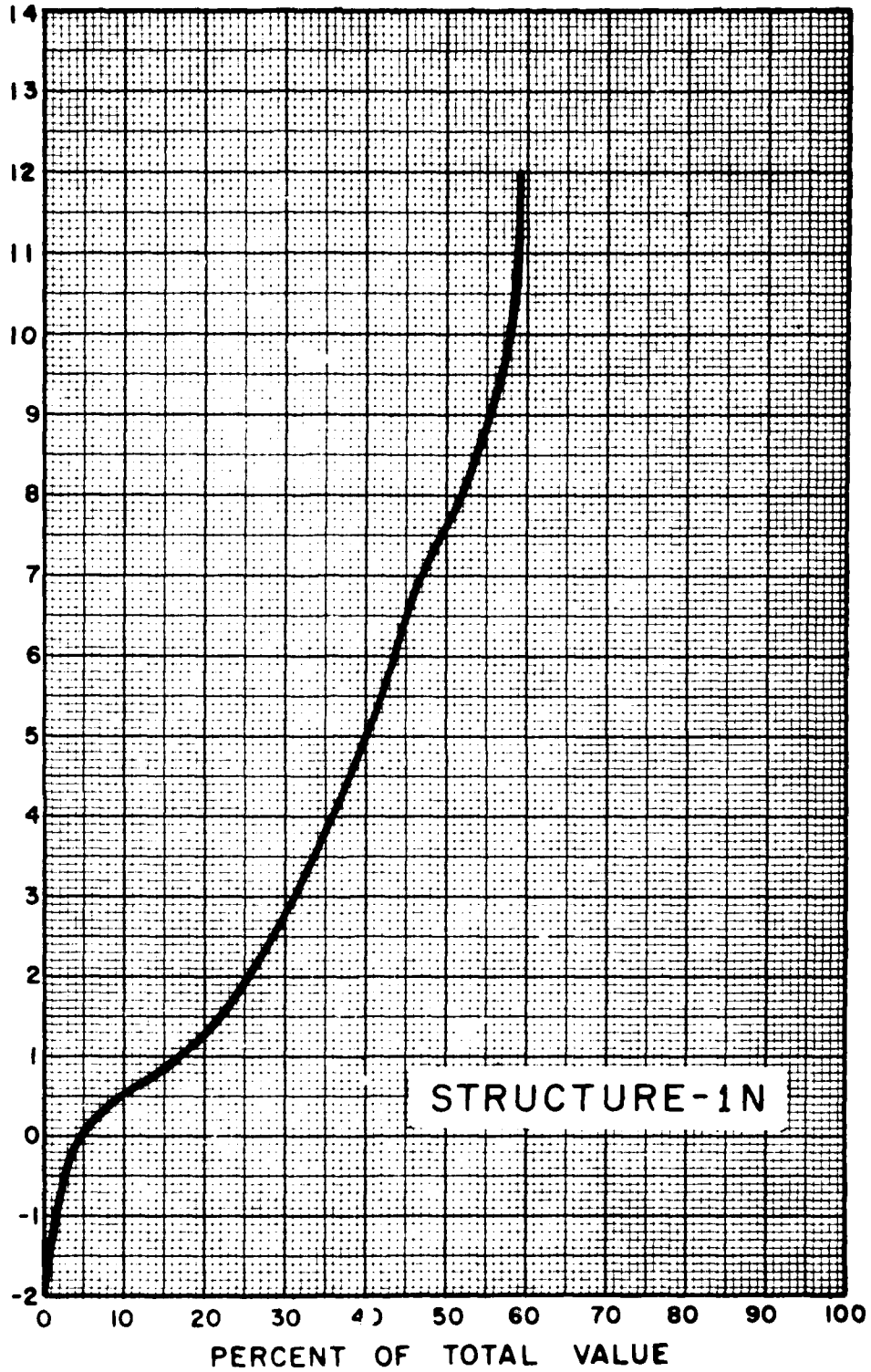
Class of Structure Designations

Kind or Type of Structure 1-4 Families	Basement
1 (One Story)	B (Basement)
2 (Two Stories)	N (No Basement)
3 (Split Level)	
4 (Mobile home on foundation)	

CLASS OF CONTENTS DESIGNATION

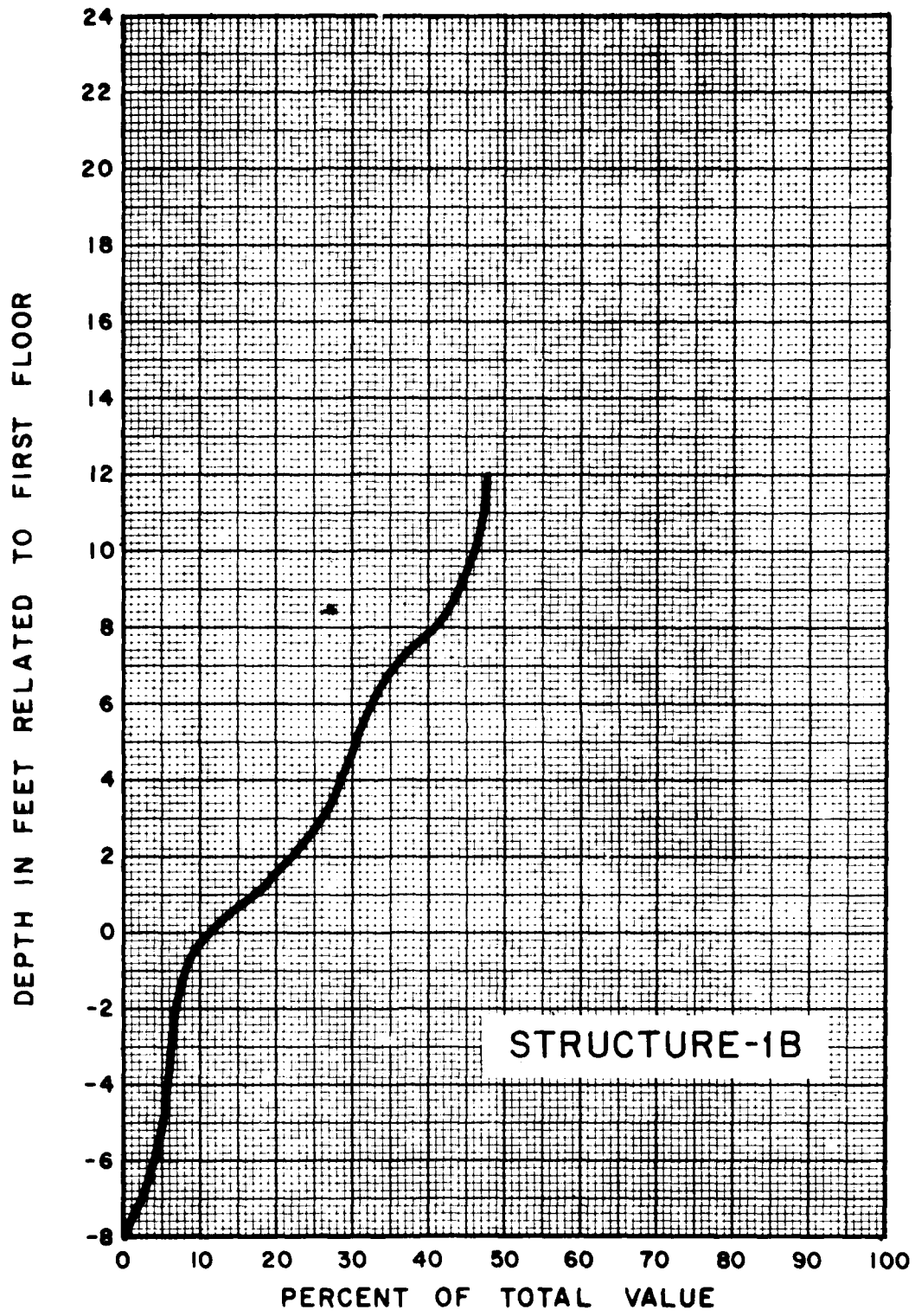
F (All on first floor)
S (All on second floor)
FS (On first and second floor)
B (All in basement)
BF (Basement and first floor)
BFS (Basement, first and second floor)
TN (Split level without basement)
TB (Split level with basement)
M (Mobile home on foundation)

DEPTH IN FEET RELATED TO FIRST FLOOR



STRUCTURE-1N

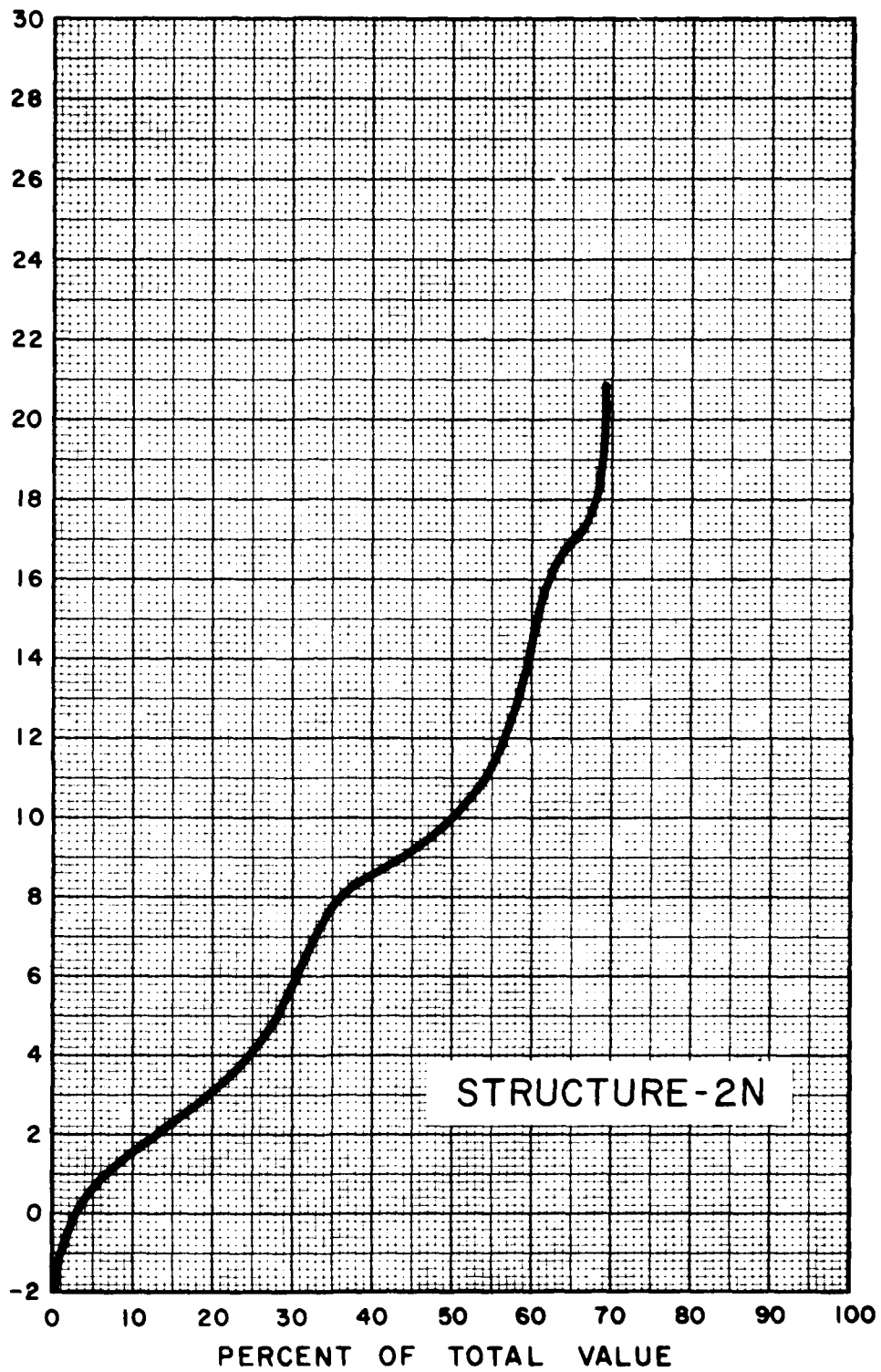
DEPTH - PERCENT DAMAGE CURVE



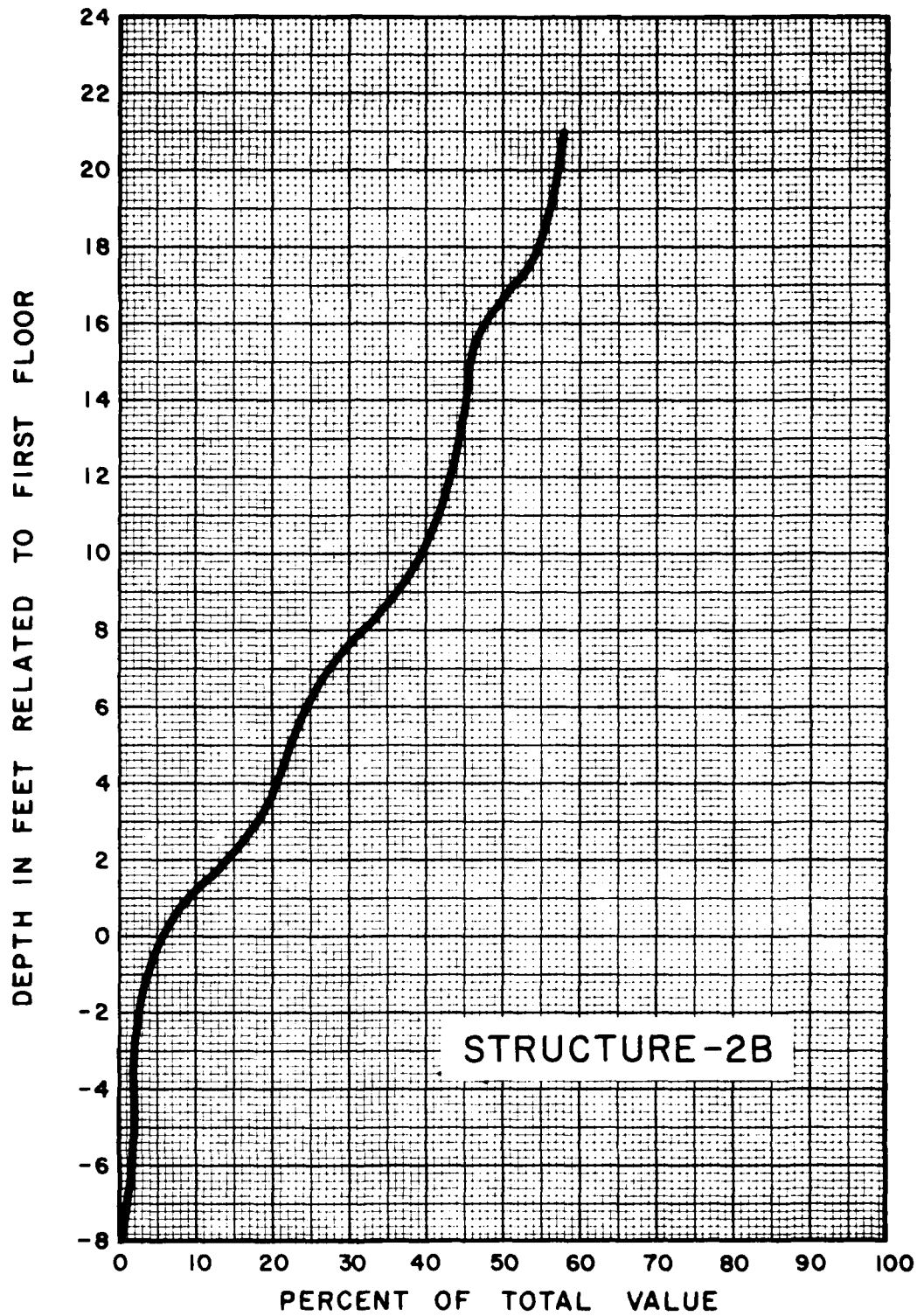
STRUCTURE-1B

DEPTH - PERCENT DAMAGE CURVE

DEPTH IN FEET RELATED TO FIRST FLOOR



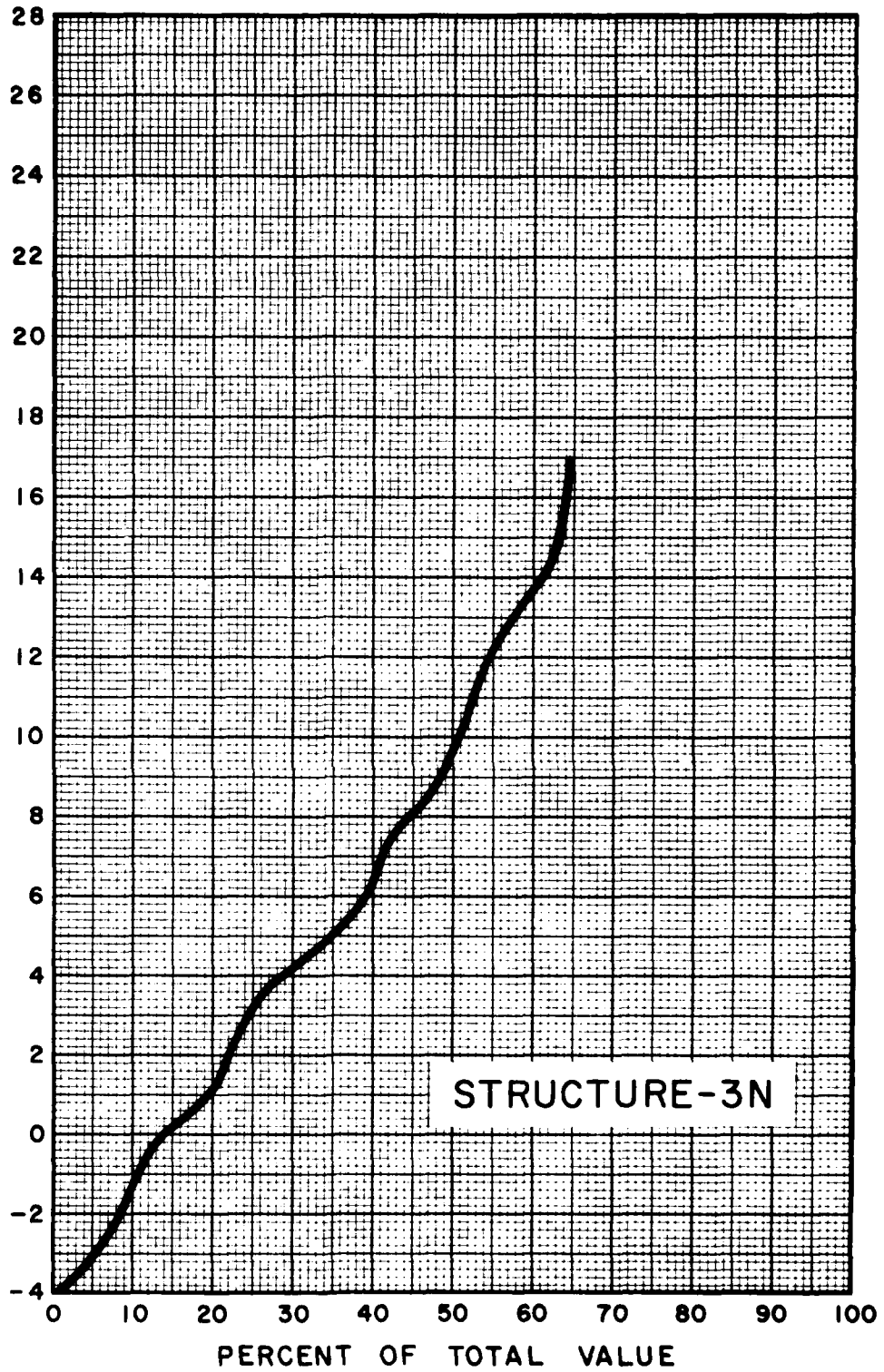
DEPTH-PERCENT DAMAGE CURVE



STRUCTURE -2B

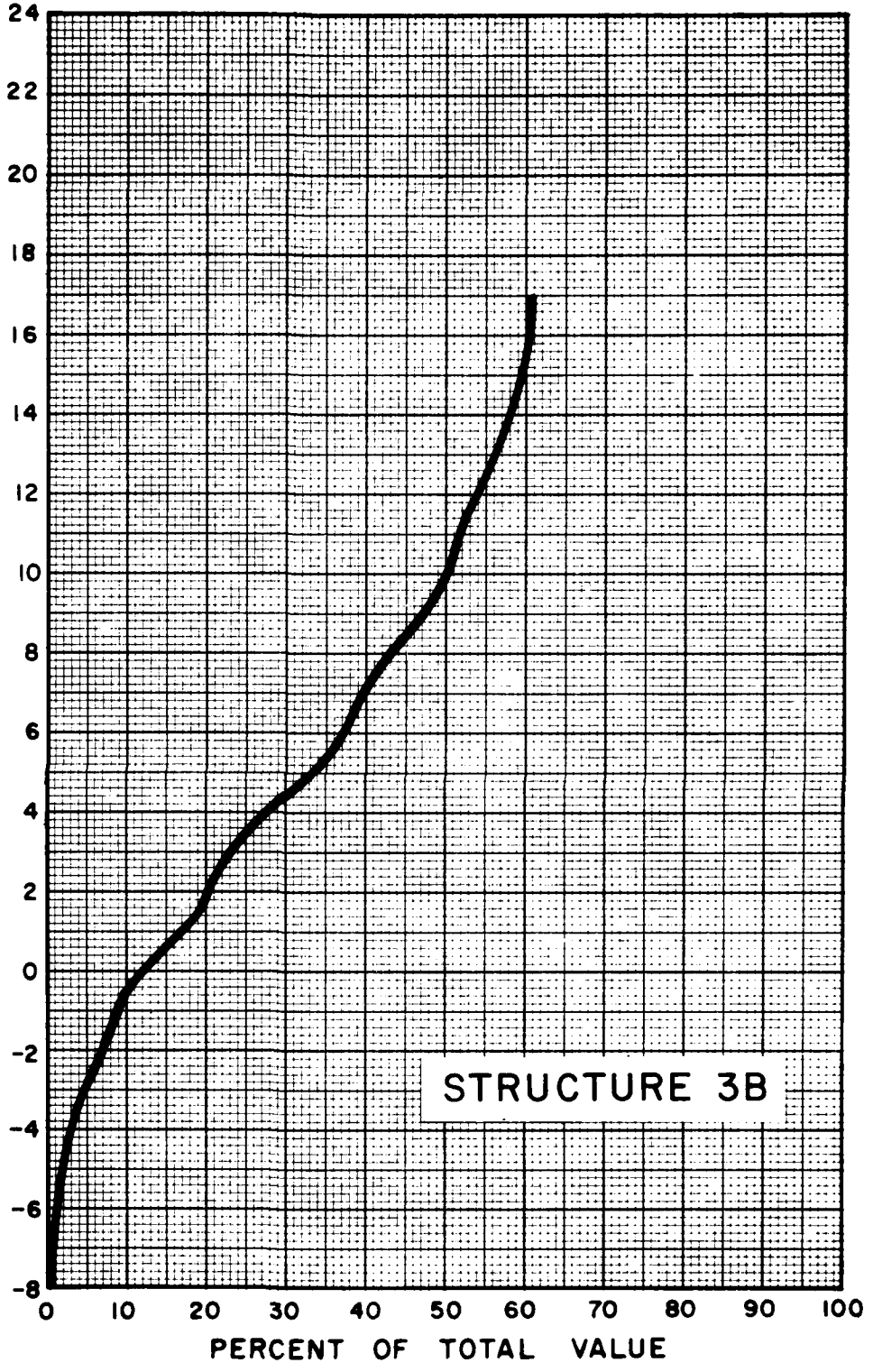
DEPTH-PERCENT DAMAGE CURVE

DEPTH IN FEET RELATED TO FIRST FLOOR



DEPTH-PERCENT DAMAGE CURVE

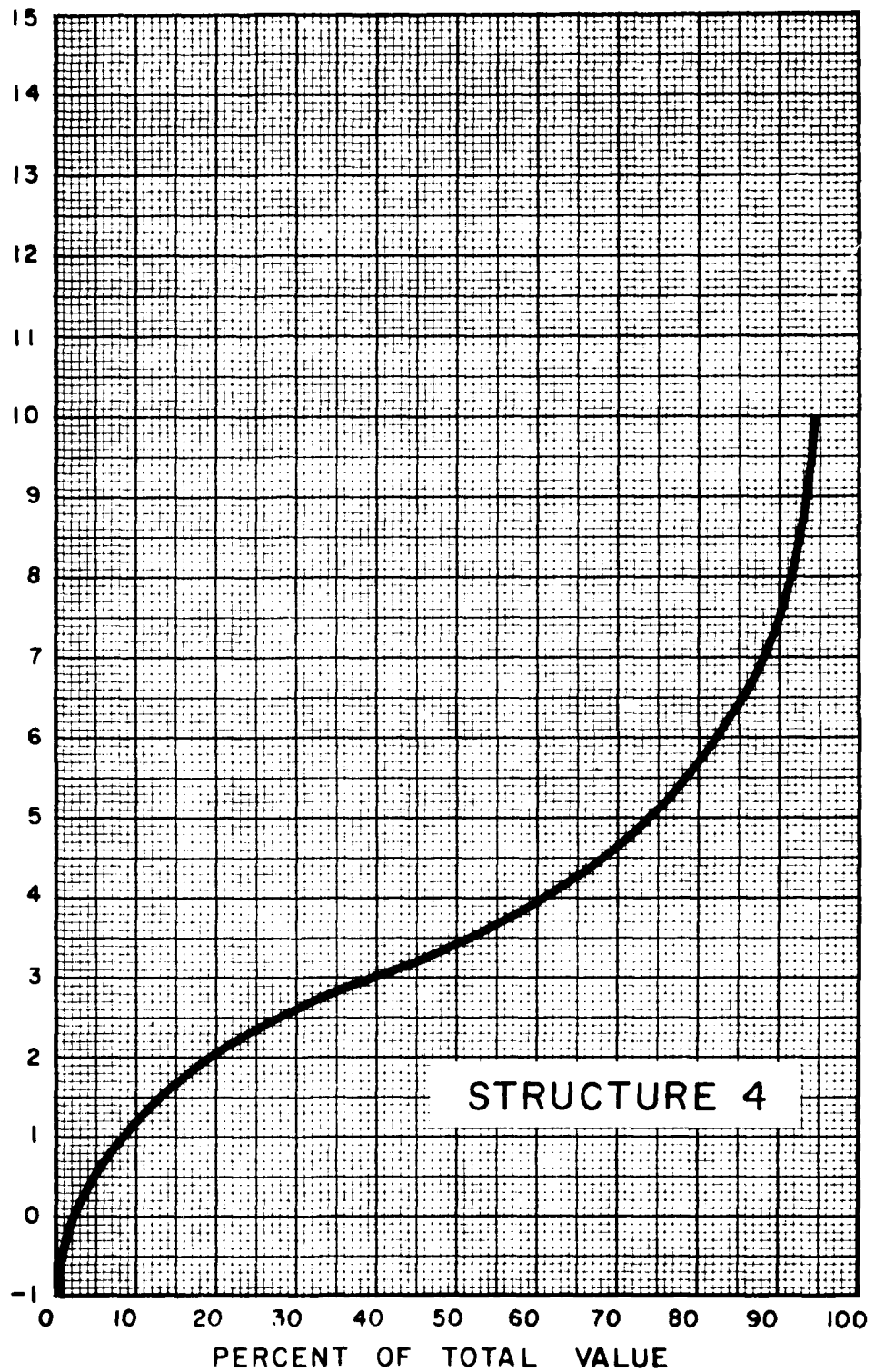
DEPTH IN FEET RELATED TO FIRST FLOOR



STRUCTURE 3B

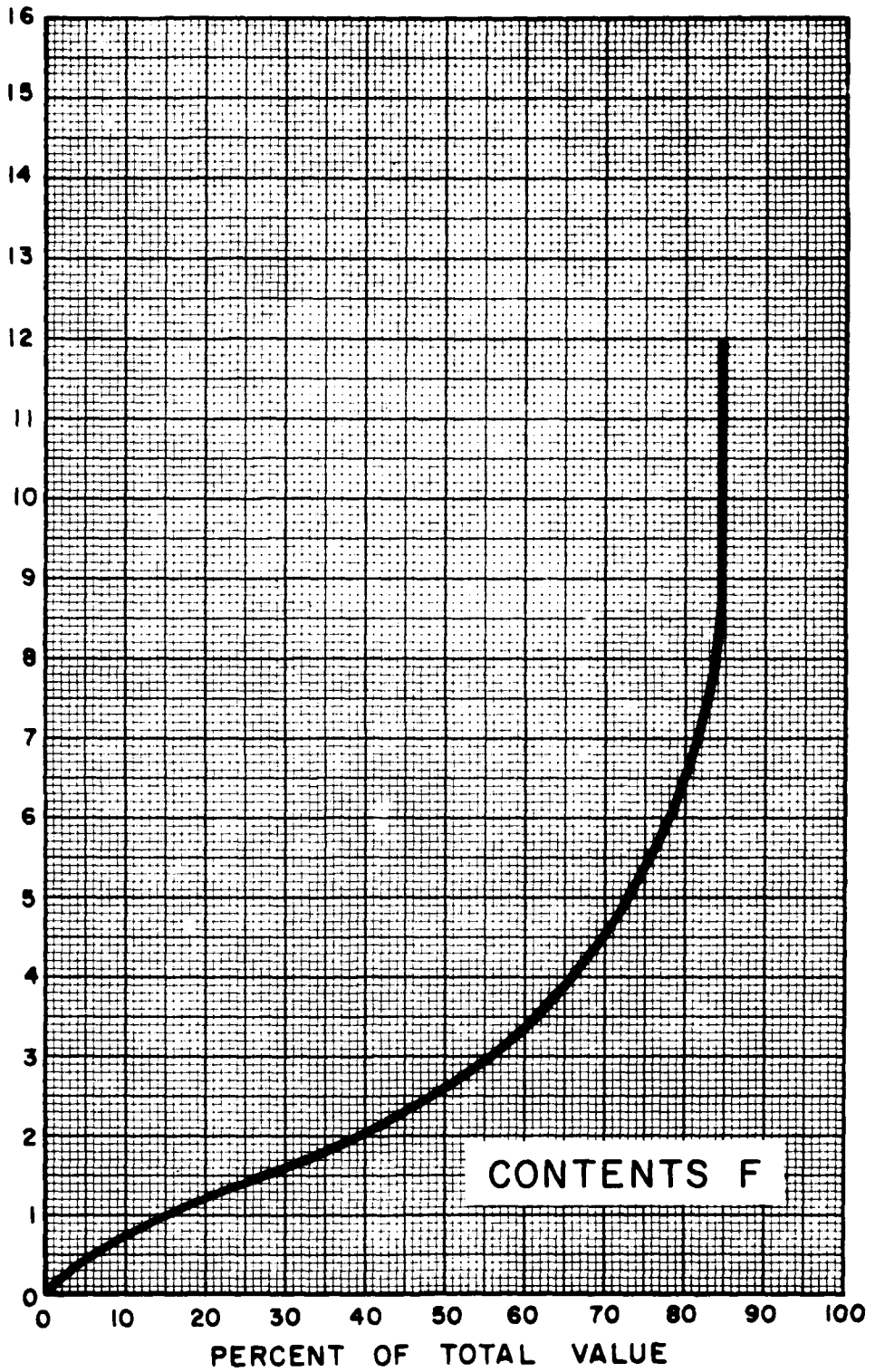
DEPTH - PERCENT DAMAGE CURVE

DEPTH IN FEET RELATED TO FIRST FLOOR



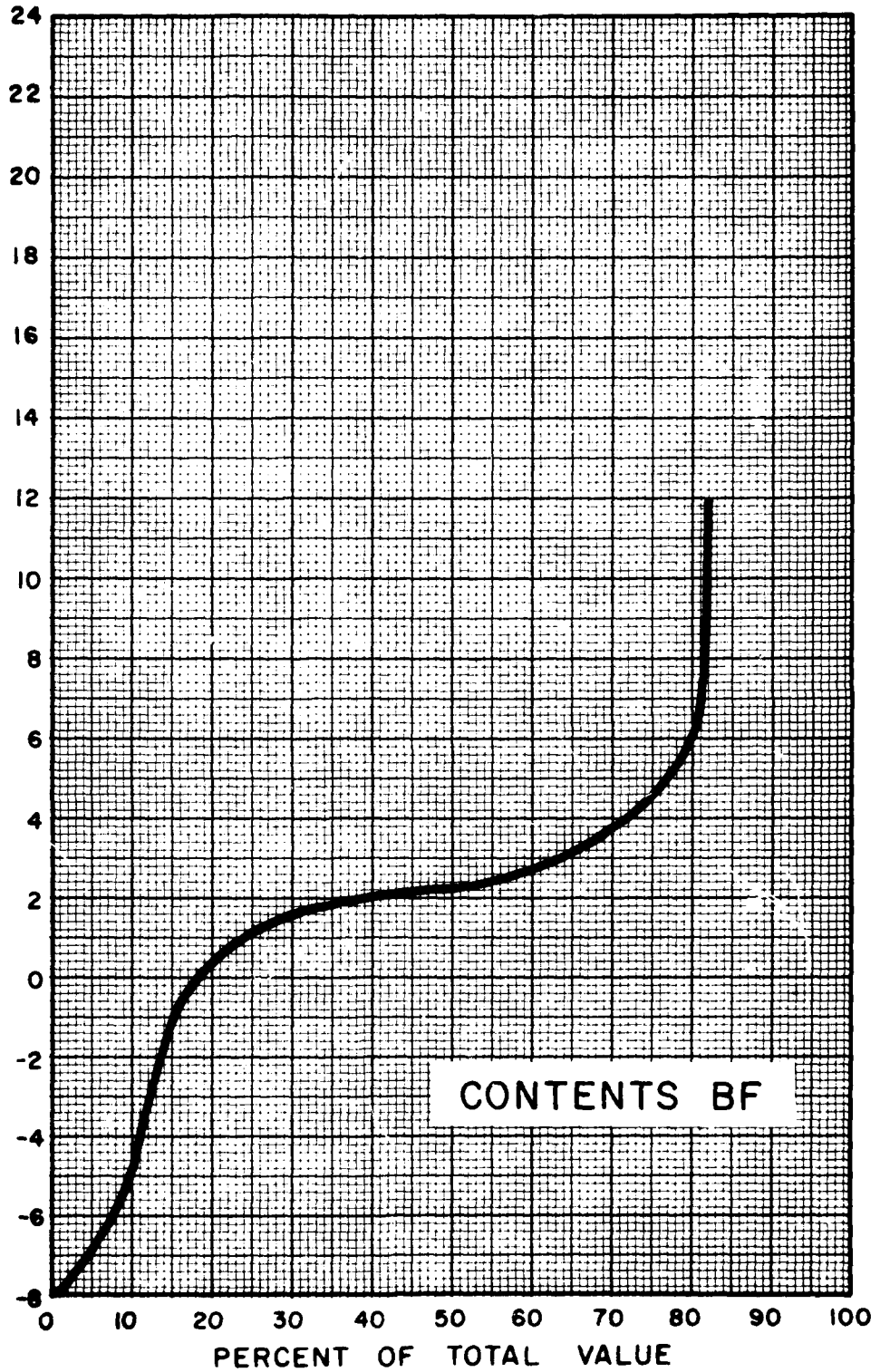
DEPTH - PERCENT DAMAGE CURVE

DEPTH IN FEET RELATED TO FIRST FLOOR



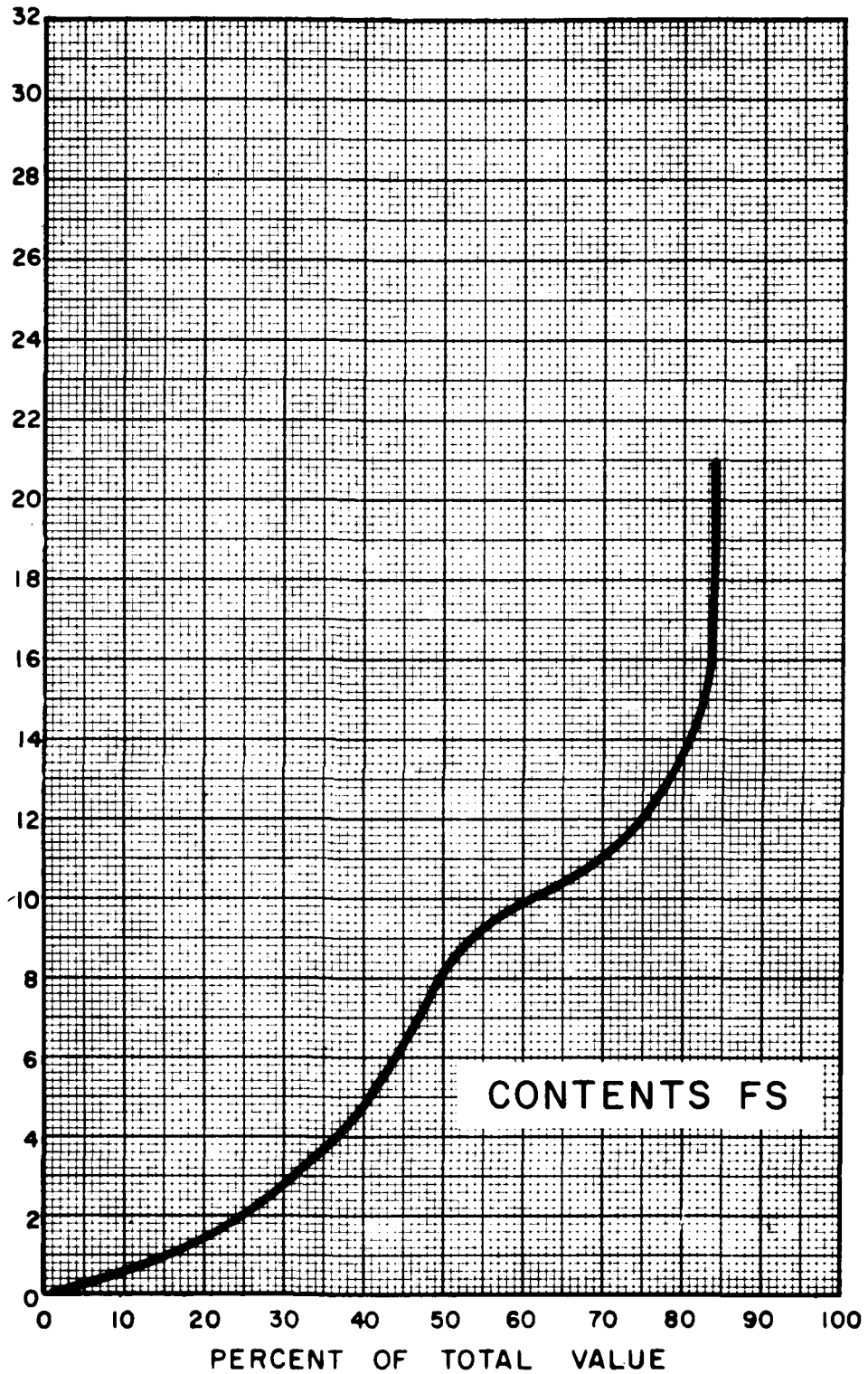
DEPTH - PERCENT DAMAGE CURVE

DEPTH IN FEET RELATED TO FIRST FLOOR



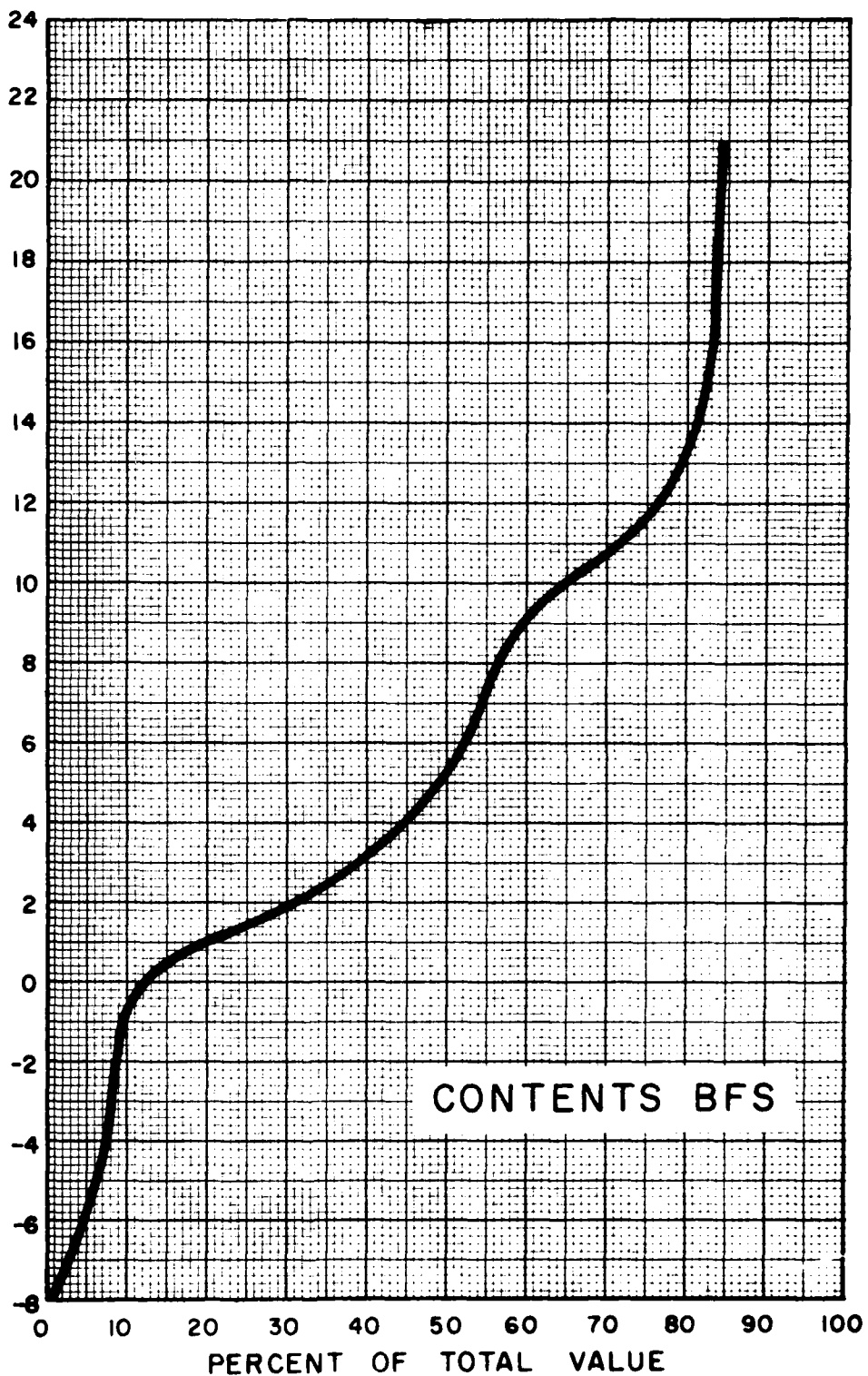
DEPTH - PERCENT DAMAGE CURVE

DEPTH IN FEET RELATED TO FIRST FLOOR

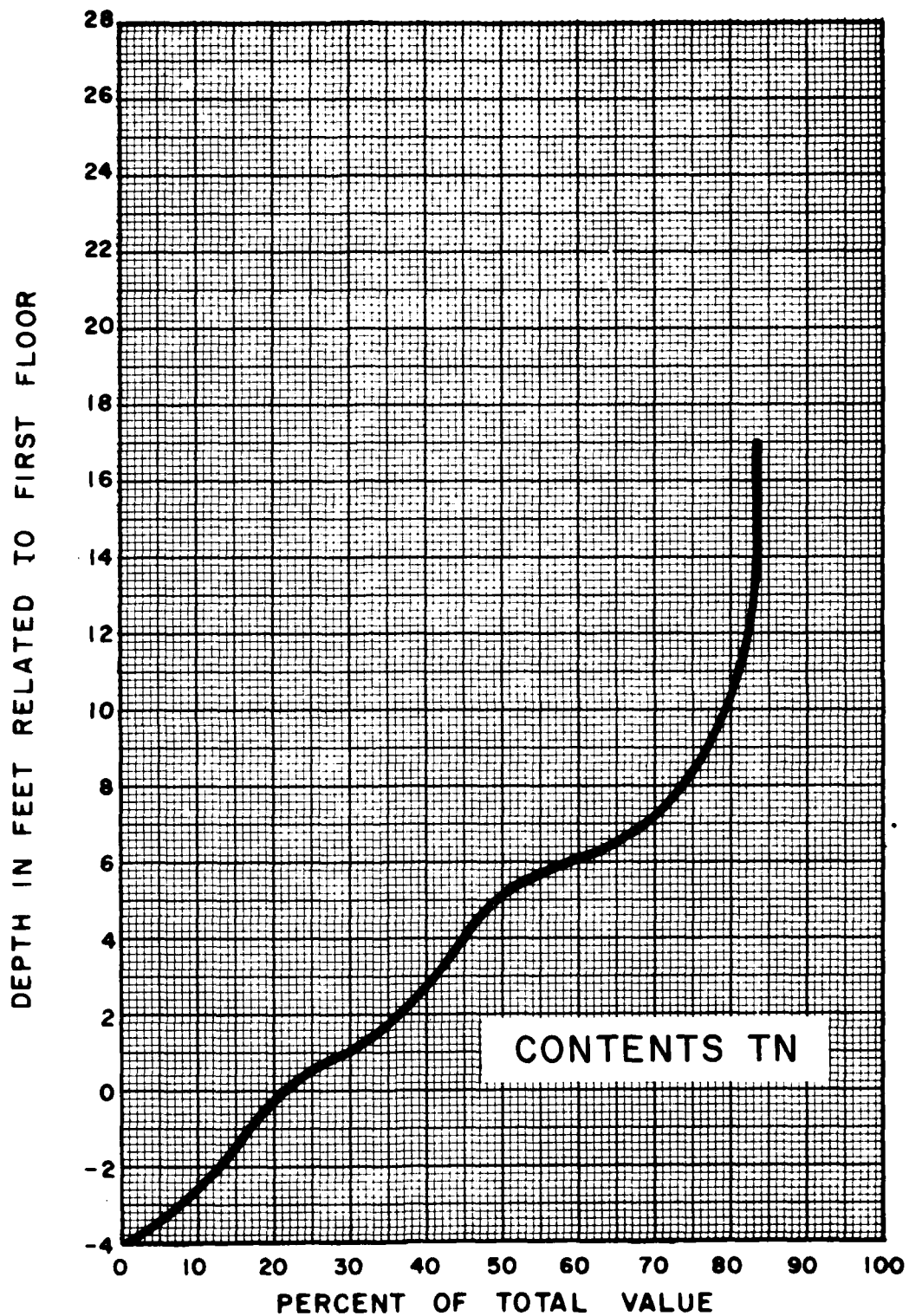


DEPTH - PERCENT DAMAGE CURVE

DEPTH IN FEET RELATED TO FIRST FLOOR

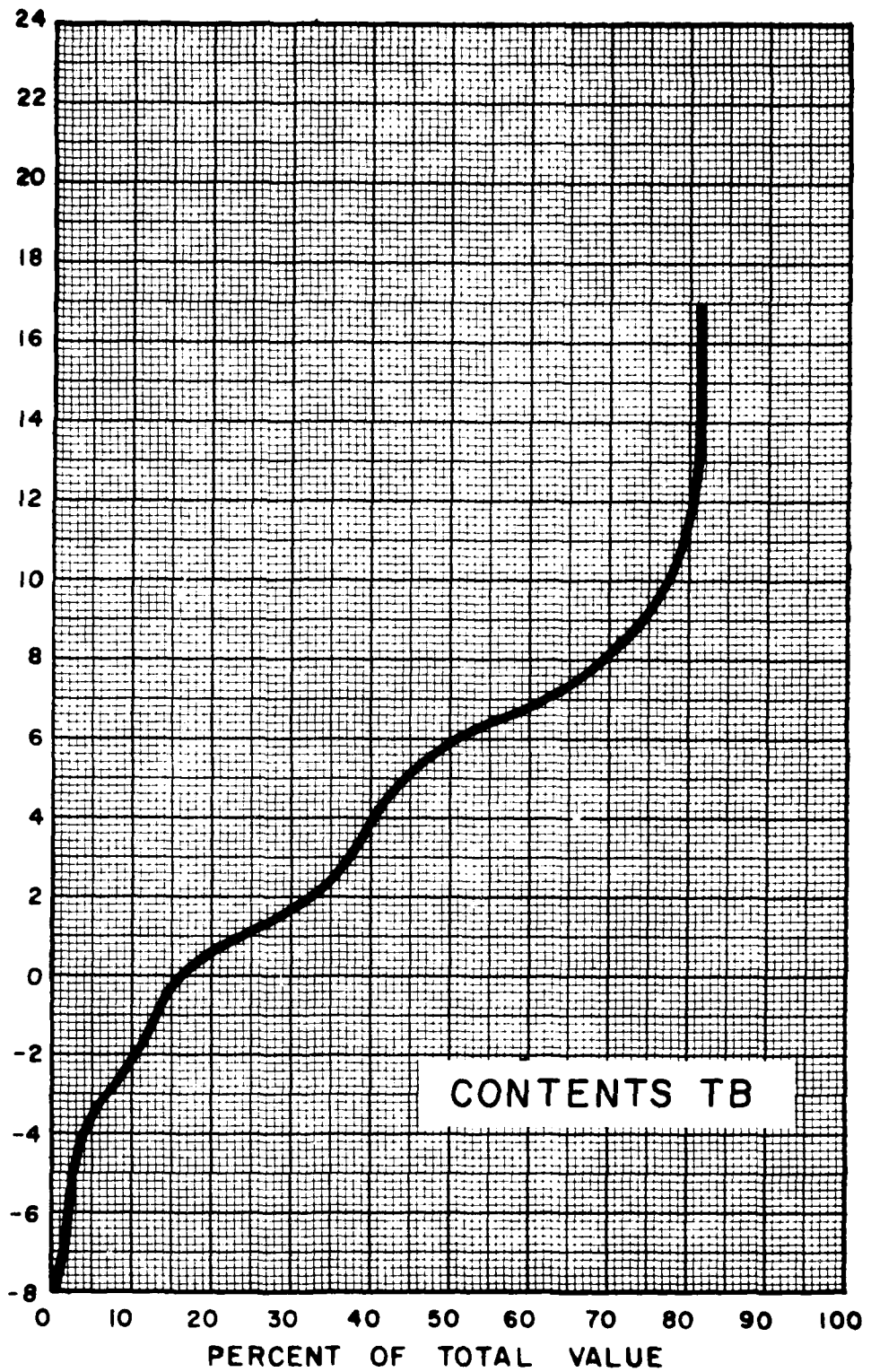


DEPTH - PERCENT DAMAGE CURVE



DEPTH - PERCENT DAMAGE CURVE

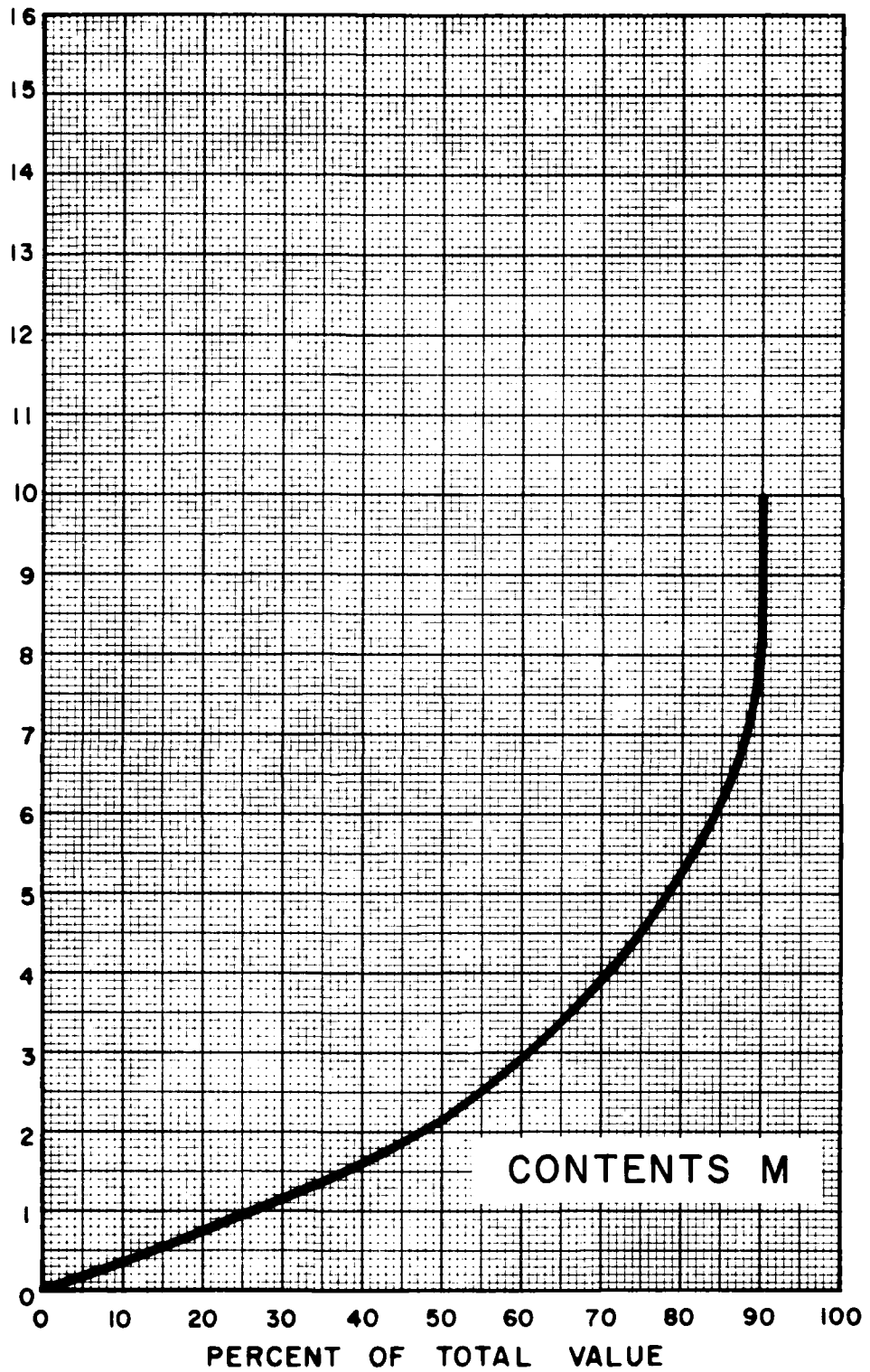
DEPTH IN FEET RELATED TO FIRST FLOOR



CONTENTS TB

DEPTH - PERCENT DAMAGE CURVE

DEPTH IN FEET RELATED TO FIRST FLOOR



DEPTH-PERCENT DAMAGE CURVE

EXHIBIT 16
DEPTH-PERCENT DAMAGE DATA

STRUCTURE

Depth in feet	CLASS						
	1N	1B	2N	2B	3N	3B	4
-8.0		0.0		0.0		0.0	
-7.5		1.1		0.4		0.4	
-7.0		2.0		0.8		0.8	
-6.5		2.8		1.0		1.0	
-6.0		3.6		1.2		1.2	
-5.5		4.2		1.3		1.4	
-5.0		4.8		1.5		1.6	
-4.5		5.2		1.7		1.9	
-4.0		5.6		1.9	0.0	2.5	
-3.5		5.9		2.0	3.8	3.5	
-3.0		6.2		2.1	5.7	4.8	
-2.5		6.5		2.2	7.1	5.8	
-2.0	0.0	6.8	0.0	2.5	8.2	6.3	
-1.5	0.8	7.0	0.3	3.0	9.1	7.0	
-1.0	1.4	7.5	1.0	3.7	10.1	8.0	0.0
-0.5	2.5	8.3	1.9	4.6	11.4	9.4	0.7
0.0	4.3	10.0	3.0	5.9	13.5	11.7	2.3
0.5	9.1	13.1	4.8	7.5	17.1	14.5	4.8
1.0	17.0	17.0	6.9	9.6	19.3	17.1	8.2
1.5	22.0	20.0	9.5	11.9	20.9	18.9	13.0
2.0	25.7	22.3	13.0	14.3	22.0	20.2	19.3
2.5	28.8	24.2	16.6	16.6	23.1	21.4	28.0
3.0	31.6	25.8	19.9	18.3	24.3	22.6	40.5
3.5	34.0	27.2	22.3	19.6	25.6	24.3	52.0
4.0	36.3	28.5	24.5	20.7	27.8	26.9	61.0
4.5	38.2	29.7	26.3	21.7	31.5	30.2	68.3
5.0	40.2	30.7	28.0	22.5	34.8	33.1	74.0
5.5	42.0	31.7	29.2	23.5	37.0	35.2	78.7
6.0	43.7	32.8	30.5	24.5	39.0	36.8	82.5
6.5	45.2	34.1	31.5	25.8	40.3	38.2	85.5
7.0	46.8	35.7	32.5	27.4	41.4	39.5	88.0
7.5	48.9	37.9	33.7	29.3	42.4	40.6	90.0
8.0	51.7	40.7	35.8	31.8	44.6	42.7	91.6
8.5	54.0	42.7	39.0	34.1	47.1	45.2	92.7
9.0	55.7	44.2	43.0	36.5	48.8	47.6	93.5
9.5	56.9	45.3	47.1	38.3	50.0	49.0	93.9
10.0	57.9	46.1	50.2	39.7	50.8	50.0	94.0
10.5	58.4	46.8	52.6	40.8	51.6	50.8	
11.0	58.9	47.3	54.2	41.8	52.3	51.5	
11.5	59.0	47.8	55.5	42.6	53.1	52.2	
12.0	59.0	48.0	56.6	43.2	54.0	53.0	
12.5			57.4	43.9	55.4	54.0	
13.0			58.3	44.3	57.3	55.6	
13.5			59.0	44.8	59.6	57.0	
14.0			59.5	45.1	61.2	58.0	
14.5			60.0	45.5	62.3	58.7	
15.0			60.5	45.9	63.2	59.3	
15.5			61.2	46.4	63.8	59.7	

EXHIBIT 16 (Con't)
DEPTH-PERCENT DAMAGE DATA

STRUCTURE

Depth in feet	CLASS						4
	1N	1B	2N	2B	3N	3B	
16.0			62.1	47.3	64.2	60.0	
16.5			63.3	49.0	64.3	60.3	
17.0			65.0	51.3	64.4	60.5	
17.5			67.0	53.2			
18.0			68.4	54.7			
18.5			68.8	55.7			
19.0			69.0	56.3			
19.5			69.1	56.9			
20.0			69.2	57.2			
20.5			69.3	57.6			
21.0			69.4	57.8			

EXHIBIT 16 (Con't)
DEPTH-PERCENT DAMAGE DATA

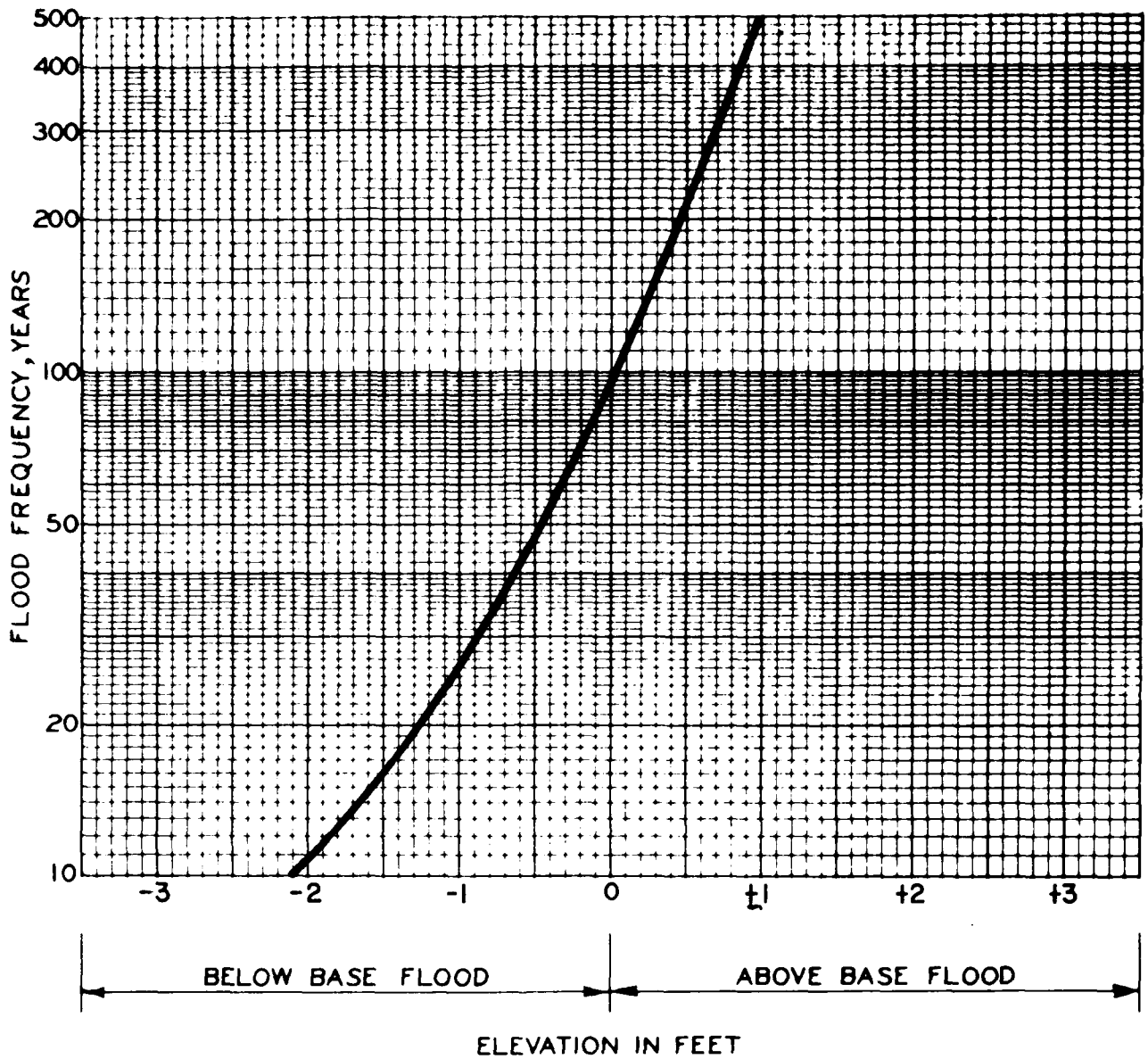
CONTENTS

Depth in feet	F	BF	FS	CLASS BFS	TN	TB	M
-8.0		0.0		0.0		0.0	
-7.5		2.8		1.7		0.9	
-7.0		4.8		2.9		1.3	
-6.5		6.3		3.9		1.6	
-6.0		7.7		4.7		1.9	
-5.5		8.8		5.3		2.0	
-5.0		9.8		6.0		2.1	
-4.5		10.7		6.5		2.7	
-4.0		11.4		7.0	0.0	3.6	
-3.5		12.2		7.5	5.2	5.2	
-3.0		12.9		8.0	8.8	7.2	
-2.5		13.3		8.4	11.3	9.0	
-2.0		14.0		8.8	13.3	10.7	
-1.5		14.7		9.2	15.0	12.0	
-1.0		15.7		9.7	16.8	13.0	
-0.5		17.0		10.2	18.5	14.0	
0.0	0.0	18.8	0.0	12.0	20.7	15.3	0.0
0.5	6.0	21.0	9.0	15.0	24.2	18.2	13.5
1.0	15.0	24.1	15.5	19.5	29.5	23.7	26.0
1.5	28.5	29.0	21.0	25.5	34.2	29.0	37.0
2.0	40.0	43.5	25.3	31.0	37.3	32.9	46.5
2.5	48.7	55.2	29.0	35.3	39.6	35.3	54.3
3.0	55.7	62.5	32.0	39.0	41.3	37.3	61.0
3.5	61.2	67.6	34.5	42.2	43.0	39.0	66.3
4.0	65.9	71.5	36.9	45.1	44.7	40.6	71.0
4.5	69.5	74.4	39.0	47.4	46.6	42.3	74.9
5.0	72.8	77.0	40.8	49.4	48.9	44.3	78.2
5.5	75.5	78.7	42.5	51.0	52.6	47.0	81.2
6.0	77.8	80.0	44.2	52.3	59.1	51.0	83.6
6.5	79.6	80.9	45.7	53.4	64.9	56.0	85.7
7.0	81.1	81.3	47.2	54.5	69.0	61.3	87.6
7.5	82.4	81.6	48.6	55.4	72.0	65.5	89.0
8.0	83.3	81.7	50.0	56.4	74.3	69.0	89.8
8.5	83.9	81.8	51.5	57.7	76.1	71.9	89.9
9.0	84.0	81.9	53.6	59.3	77.4	74.0	89.9
9.5	84.1	81.9	56.5	61.5	78.5	75.6	89.9
10.0	84.2	82.0	61.5	64.9	79.6	77.0	89.9
10.5	84.3	82.0	66.5	68.5	80.3	78.1	

EXHIBIT 16 (Con't)
DEPTH-PERCENT DAMAGE DATA

CONTENTS

Depth in feet	F	BF	FS	<u>CLASS</u> BFS	TN	TB	M
11.0	84.3	82.0	70.7	71.9	81.0	79.2	
11.5	84.4	82.0	73.6	74.6	81.5	80.1	
12.0	84.4	82.0	75.8	77.0	82.0	80.9	
12.5			77.6	78.7	82.3	81.5	
13.0			79.0	79.9	82.6	81.8	
13.5			80.2	80.8	82.8	81.8	
14.0			81.3	81.6	82.9	81.8	
14.5			82.0	82.1	83.0	81.8	
15.0			82.7	82.6	83.0	81.8	
15.5			83.1	83.0	83.0	81.8	
16.0			83.5	83.2	83.0	81.8	
16.5			83.8	83.4	83.0	81.8	
17.0			83.9	83.6	83.0	81.8	
17.5			84.0	83.7			
18.0			84.0	83.8			
18.5			84.0	83.9			
19.0			84.0	84.0			
19.5			84.0	84.0			
20.0			84.0	84.0			
20.5			84.0	84.0			
21.0			84.0	84.0			

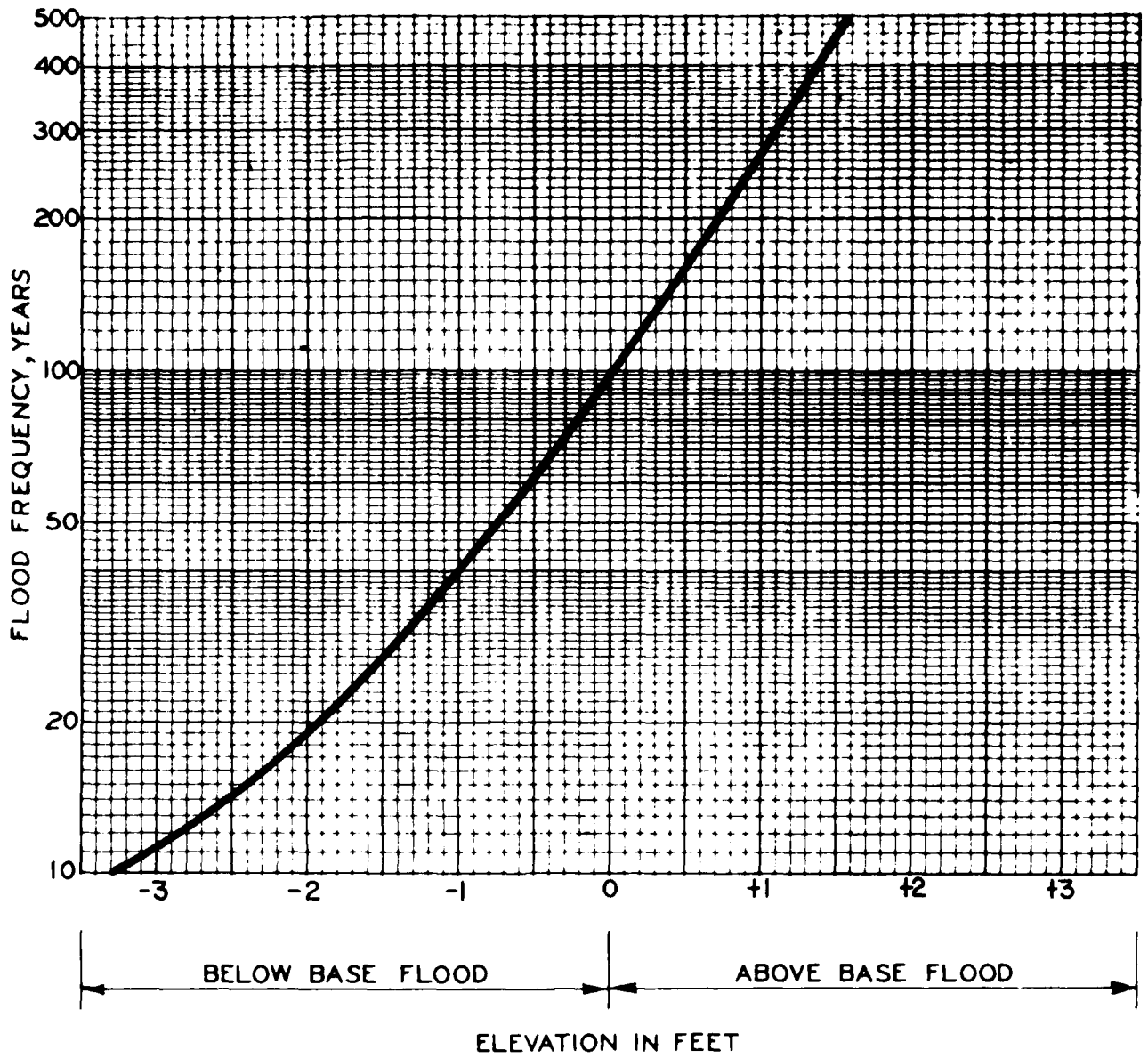


NOTES:

- 1 CURVE CORRESPONDS TO FLOOD HAZARD FACTOR NUMBER 020A
- 2 CURVE DEVELOPED FOR INDEX NUMBER 1 MILE 3.45

PLOTTING DATA	
FREQUENCY YEARS	FLOOD ELEVATION
SPF	
500	794.5
100	793.5
25	
10	791.4

FLOOD INSURANCE STUDY
 GARFIELD HEIGHTS, OHIO
 MILL CREEK
**ELEVATION FREQUENCY
 RELATIONSHIP**
 CORPS OF ENGINEERS, U.S. ARMY
 BUFFALO, NEW YORK, DISTRICT
 PREPARED FOR
 FEDERAL INSURANCE ADMINISTRATION
 MAY 1971

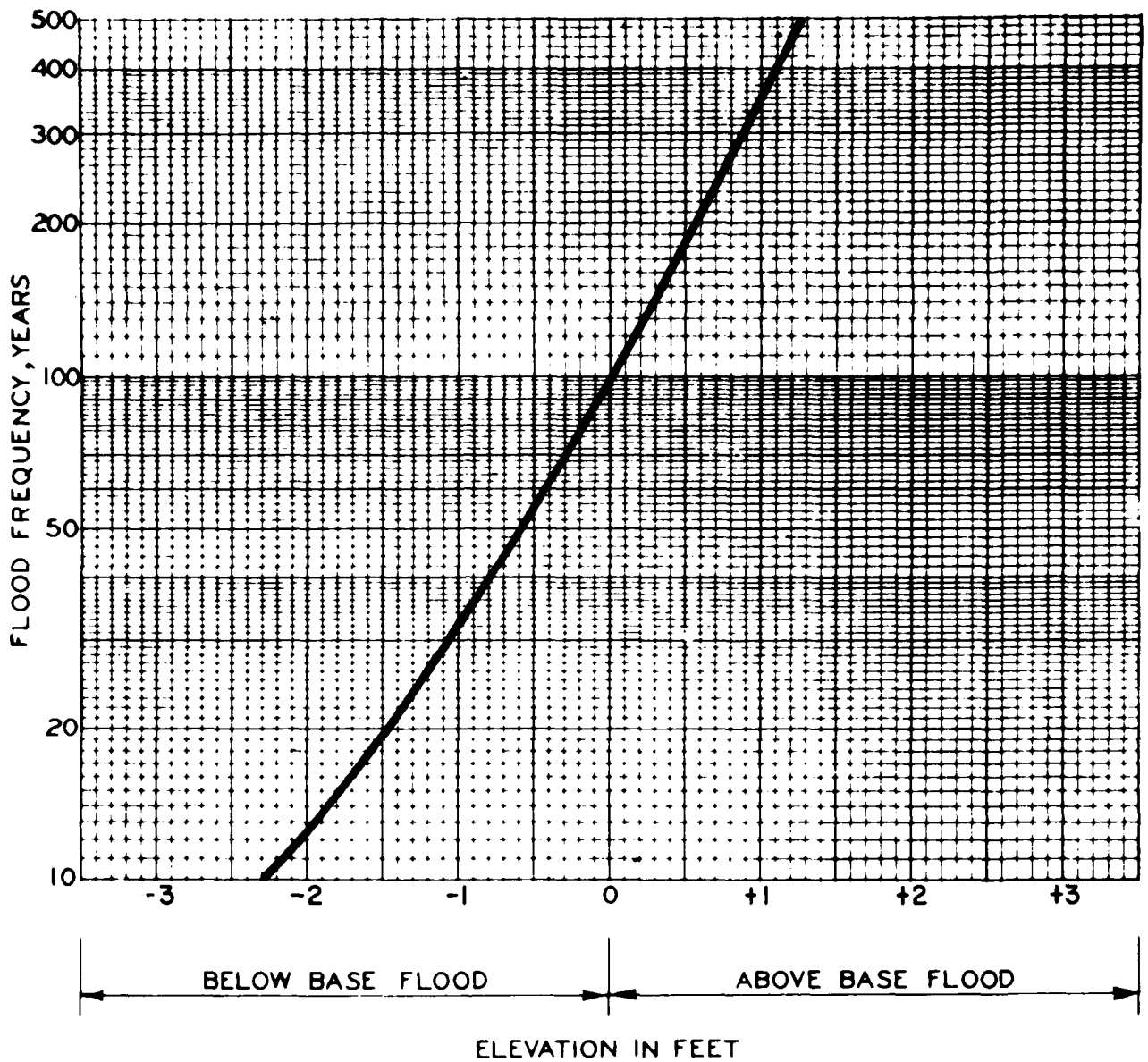


NOTES:

- 1. CURVE CORRESPONDS TO FLOOD HAZARD FACTOR NUMBER .035A
- 2. CURVE DEVELOPED FOR INDEX NUMBER .2 MILE 3.65

PLOTING DATA	
FREQUENCY YEARS	FLOOD ELEVATION
SPF	
500	801.6
100	800.0
25	
10	796.7

FLOOD INSURANCE STUDY
GARFIELD HEIGHTS, OHIO
MILL CREEK
ELEVATION FREQUENCY
RELATIONSHIP
 CORPS OF ENGINEERS, U.S. ARMY
 BUFFALO, NEW YORK, DISTRICT
 PREPARED FOR
 FEDERAL INSURANCE ADMINISTRATION
 MAY 1971

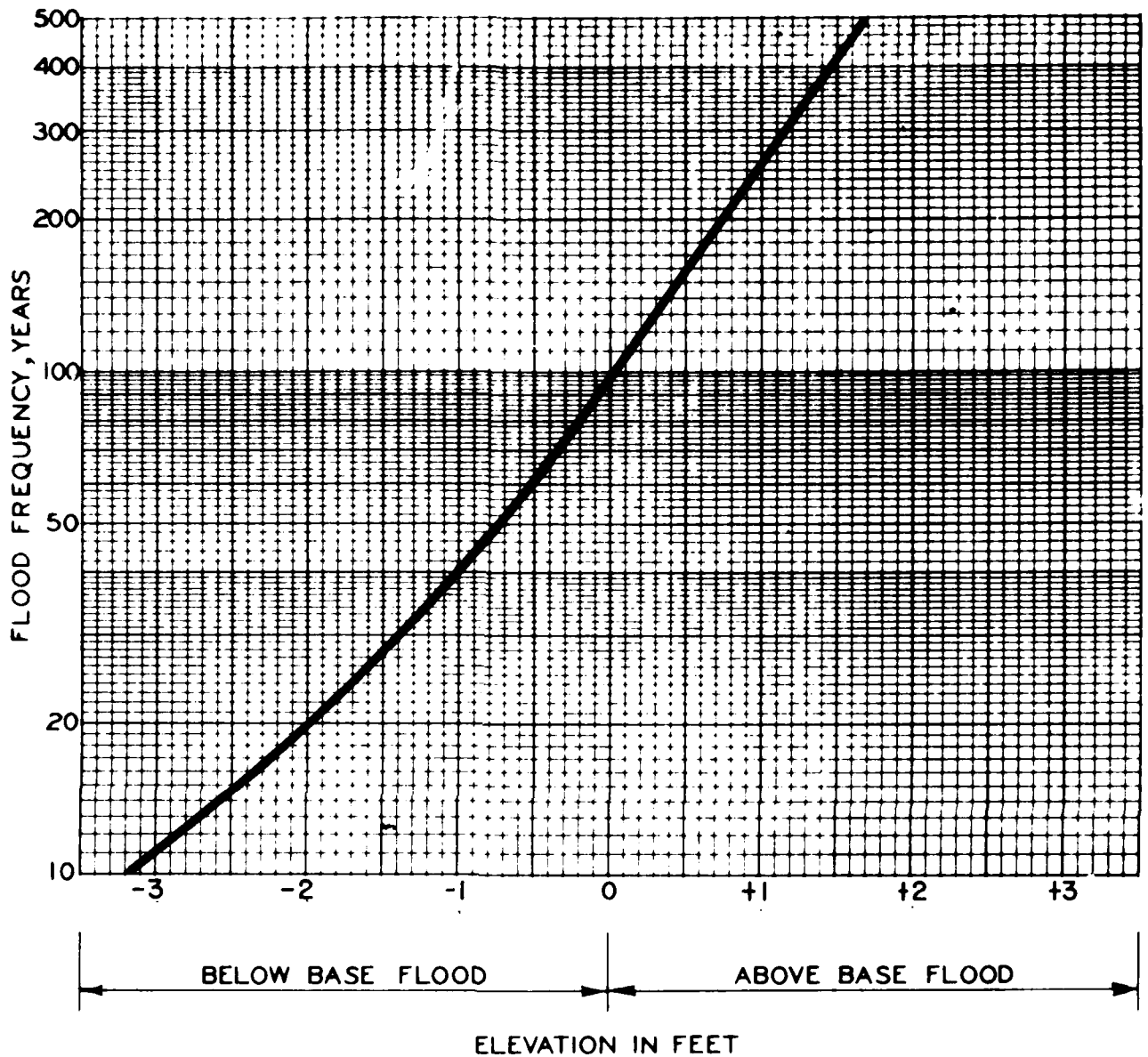


NOTES:

- 1 CURVE CORRESPONDS TO FLOOD HAZARD FACTOR NUMBER. 025A
- 2 CURVE DEVELOPED FOR INDEX NUMBER 3 MILE 3.85

PLOTING DATA	
FREQUENCY YEARS	FLOOD ELEVATION
SPF	
500	806.7
100	805.4
25	
10	803.1

FLOOD INSURANCE STUDY
 GARFIELD HEIGHTS, OHIO
 MILL CREEK
**ELEVATION FREQUENCY
 RELATIONSHIP**
 CORPS OF ENGINEERS, U.S. ARMY
 BUFFALO, NEW YORK, DISTRICT
 PREPARED FOR
 FEDERAL INSURANCE ADMINISTRATION
 MAY 1971

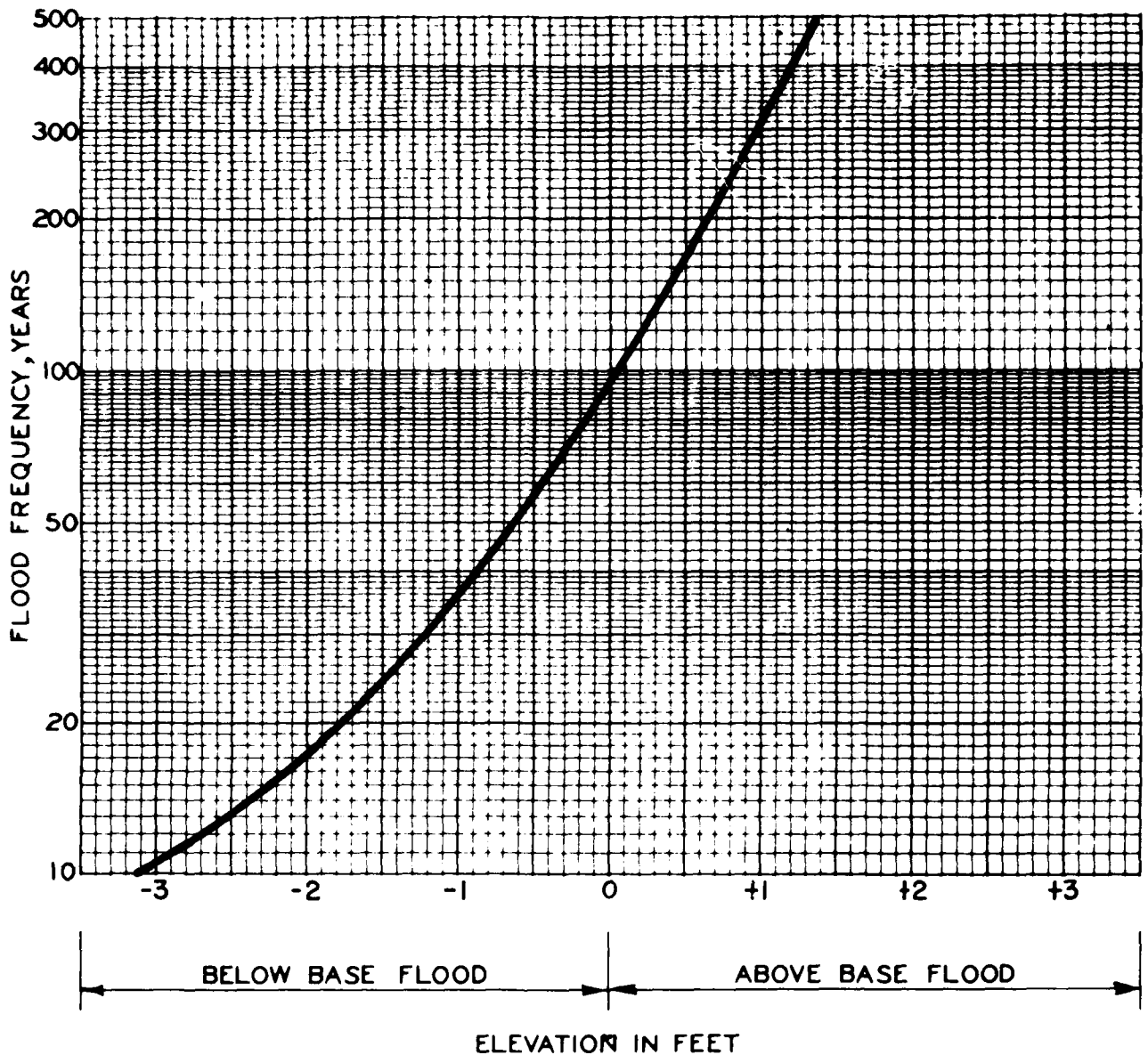


NOTES:

- 1 CURVE CORRESPONDS TO FLOOD HAZARD FACTOR NUMBER .0308
- 2 CURVE DEVELOPED FOR INDEX NUMBER .4 MILE 4.05

PLOTTING DATA	
FREQUENCY YEARS	FLOOD ELEVATION
SPF	
500	812.4
100	810.7
25	
10	807.5

FLOOD INSURANCE STUDY
GARFIELD HEIGHTS, OHIO
MILL CREEK
ELEVATION FREQUENCY
RELATIONSHIP
 CORPS OF ENGINEERS, U.S. ARMY
 BUFFALO, NEW YORK, DISTRICT
 PREPARED FOR
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 MAY 1971

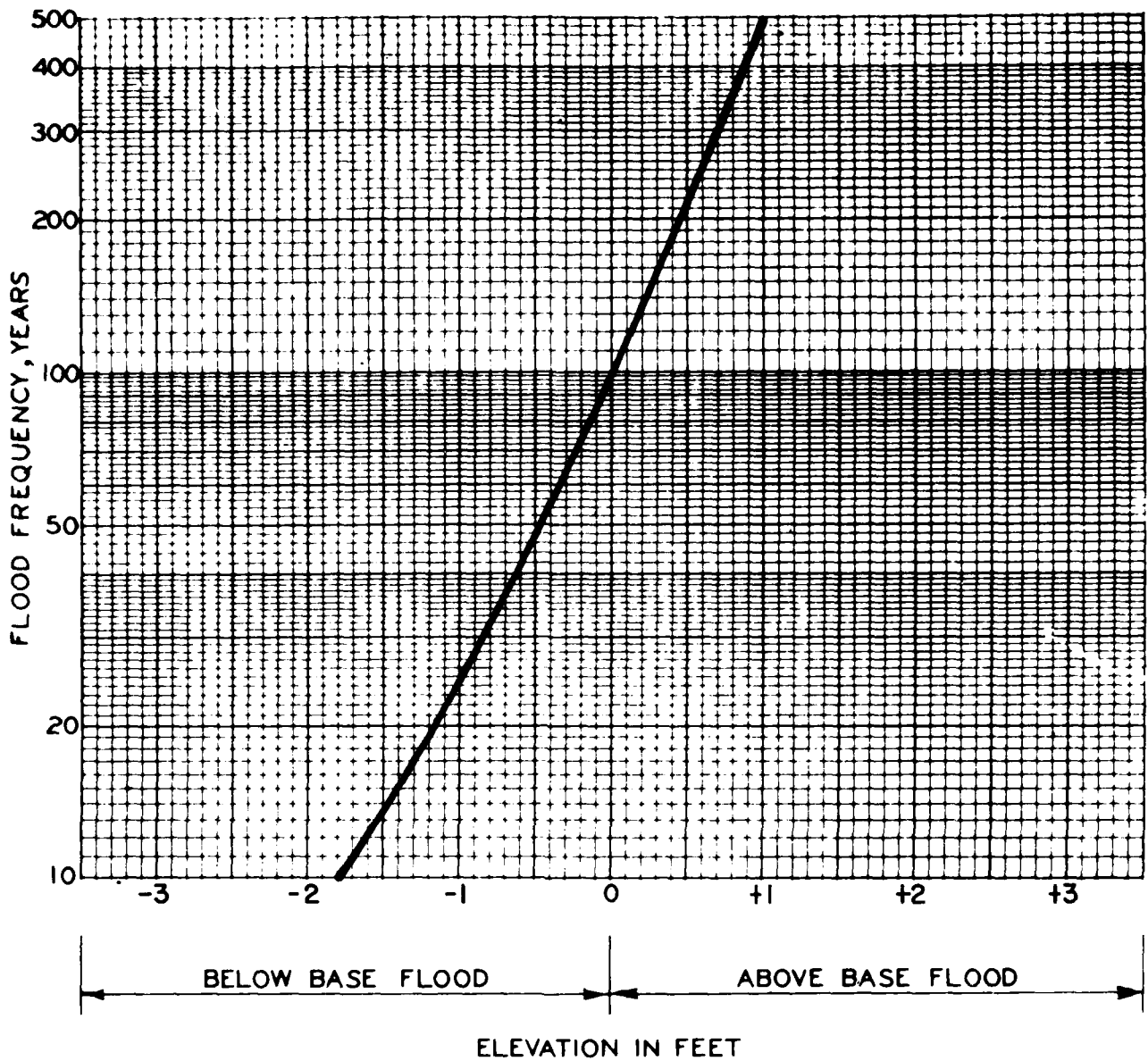


NOTES:

1. CURVE CORRESPONDS TO FLOOD HAZARD FACTOR NUMBER .030A
2. CURVE DEVELOPED FOR INDEX NUMBER 5-MILE 4.50

PLOTING DATA	
FREQUENCY YEARS	FLOOD ELEVATION
SPF	
500	824.4
100	823.0
25	
10	819.8

FLOOD INSURANCE STUDY
GARFIELD HEIGHTS, OHIO
MILL CREEK
ELEVATION FREQUENCY
RELATIONSHIP
 CORPS OF ENGINEERS, U.S. ARMY
 BUFFALO, NEW YORK, DISTRICT
 PREPARED FOR
 FEDERAL INSURANCE ADMINISTRATION
 MAY 1971

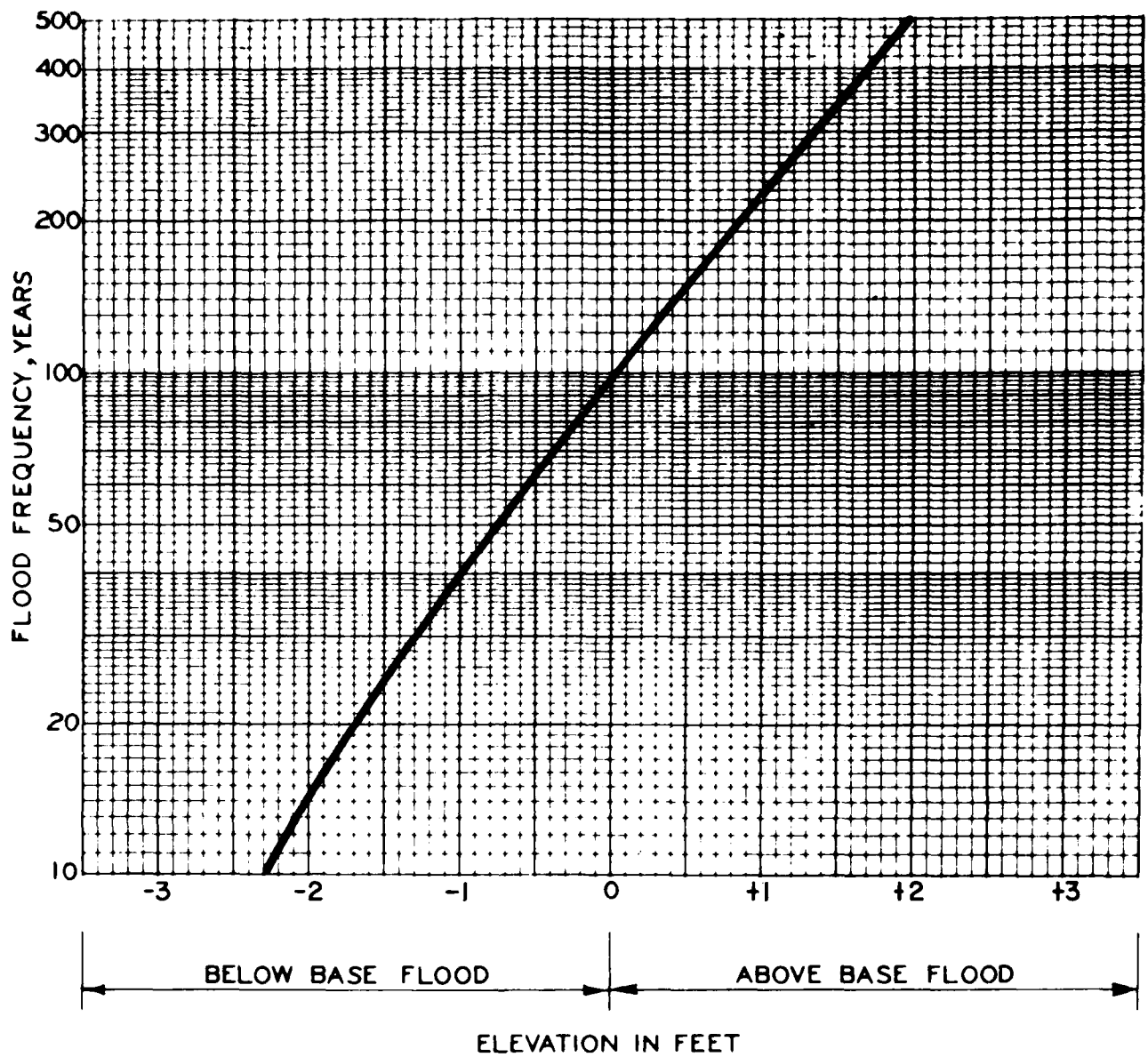


NOTES:

1. CURVE CORRESPONDS TO FLOOD HAZARD FACTOR NUMBER. 020A
2. CURVE DEVELOPED FOR INDEX NUMBER. 6-MILE 4.80

PLOTTING DATA	
FREQUENCY YEARS	FLOOD ELEVATION
SPF	
500	832.6
100	831.6
25	
10	829.8

FLOOD INSURANCE STUDY
 GARFIELD HEIGHTS, OHIO
 MILL CREEK
**ELEVATION FREQUENCY
 RELATIONSHIP**
 CORPS OF ENGINEERS, U.S. ARMY
 BUFFALO, NEW YORK, DISTRICT
 PREPARED FOR
 FEDERAL INSURANCE ADMINISTRATION
 MAY 1971



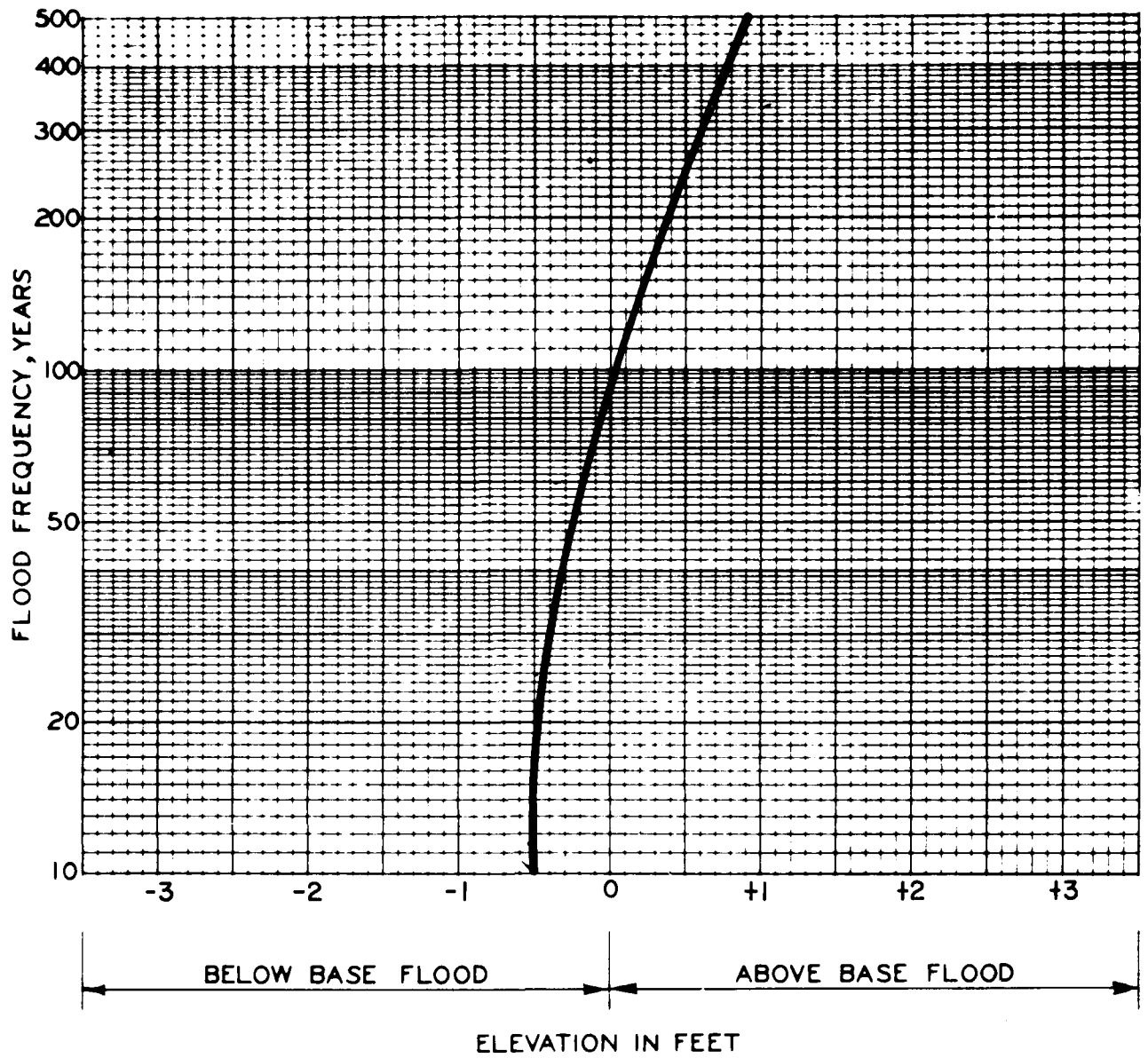
NOTES:

- 1 CURVE CORRESPONDS TO FLOOD HAZARD FACTOR NUMBER 025C
- 2 CURVE DEVELOPED FOR INDEX NUMBER 7-MILE 5.10

PLOTING DATA	
FREQUENCY YEARS	FLOOD ELEVATION
SPF	
500	839.9
100	837.9
25	
10	835.6

FLOOD INSURANCE STUDY
GARFIELD HEIGHTS, OHIO
MILL CREEK
ELEVATION FREQUENCY
RELATIONSHIP

CORPS OF ENGINEERS, U.S. ARMY
BUFFALO, NEW YORK, DISTRICT
PREPARED FOR
FEDERAL INSURANCE ADMINISTRATION
MAY 1971

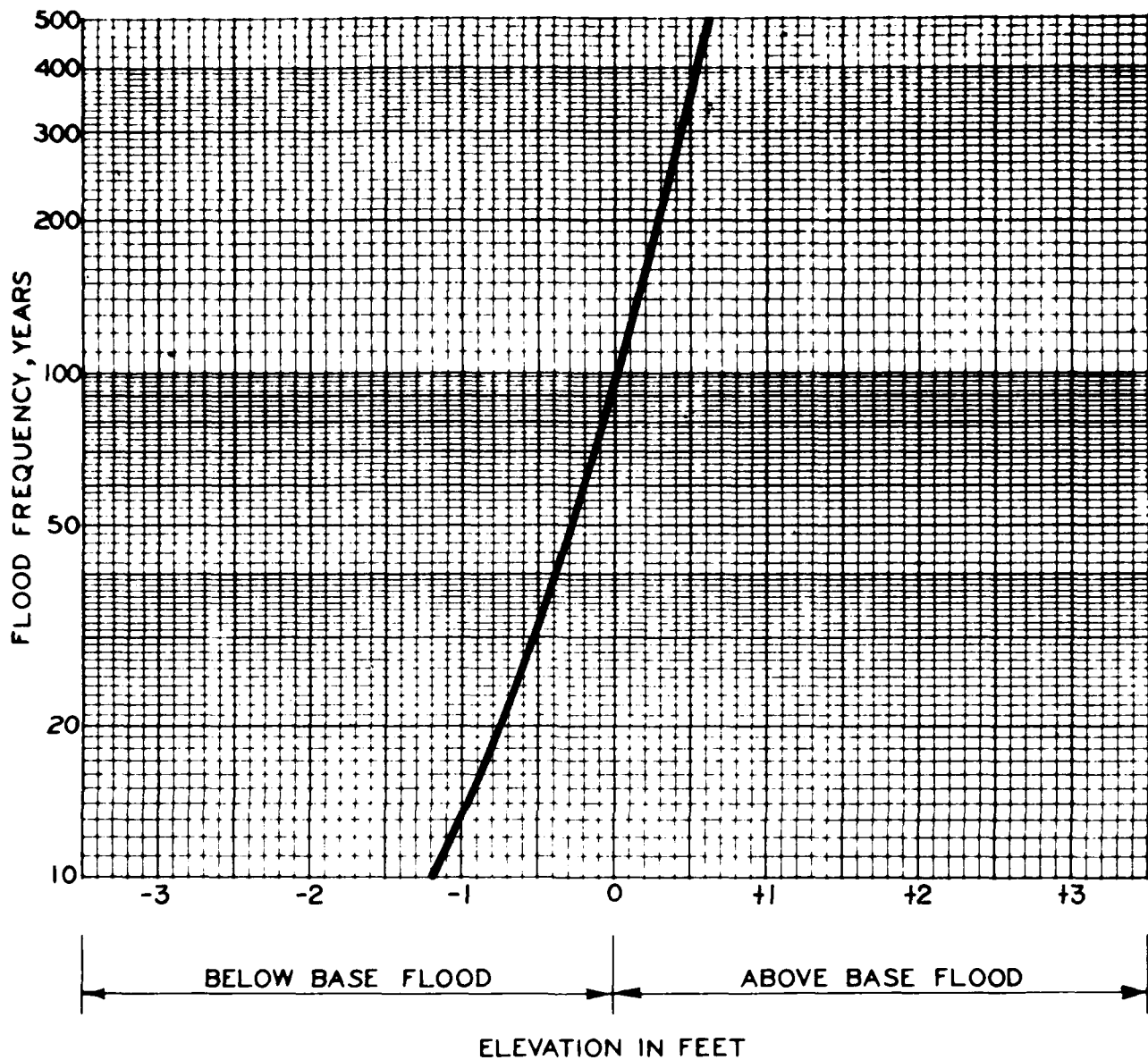


NOTES:

1. CURVE CORRESPONDS TO FLOOD HAZARD FACTOR NUMBER.005D
2. CURVE DEVELOPED FOR INDEX NUMBER.1-400 FEET

PLOTING DATA	
FREQUENCY YEARS	FLOOD ELEVATION
SPF	
500	818.0
100	817.1
25	
10	816.6

FLOOD INSURANCE STUDY
 GARFIELD HEIGHTS, OHIO
 WOLF CREEK
**ELEVATION FREQUENCY
 RELATIONSHIP**
 CORPS OF ENGINEERS, U.S. ARMY
 BUFFALO, NEW YORK, DISTRICT
 PREPARED FOR
 FEDERAL INSURANCE ADMINISTRATION
 MAY 1971

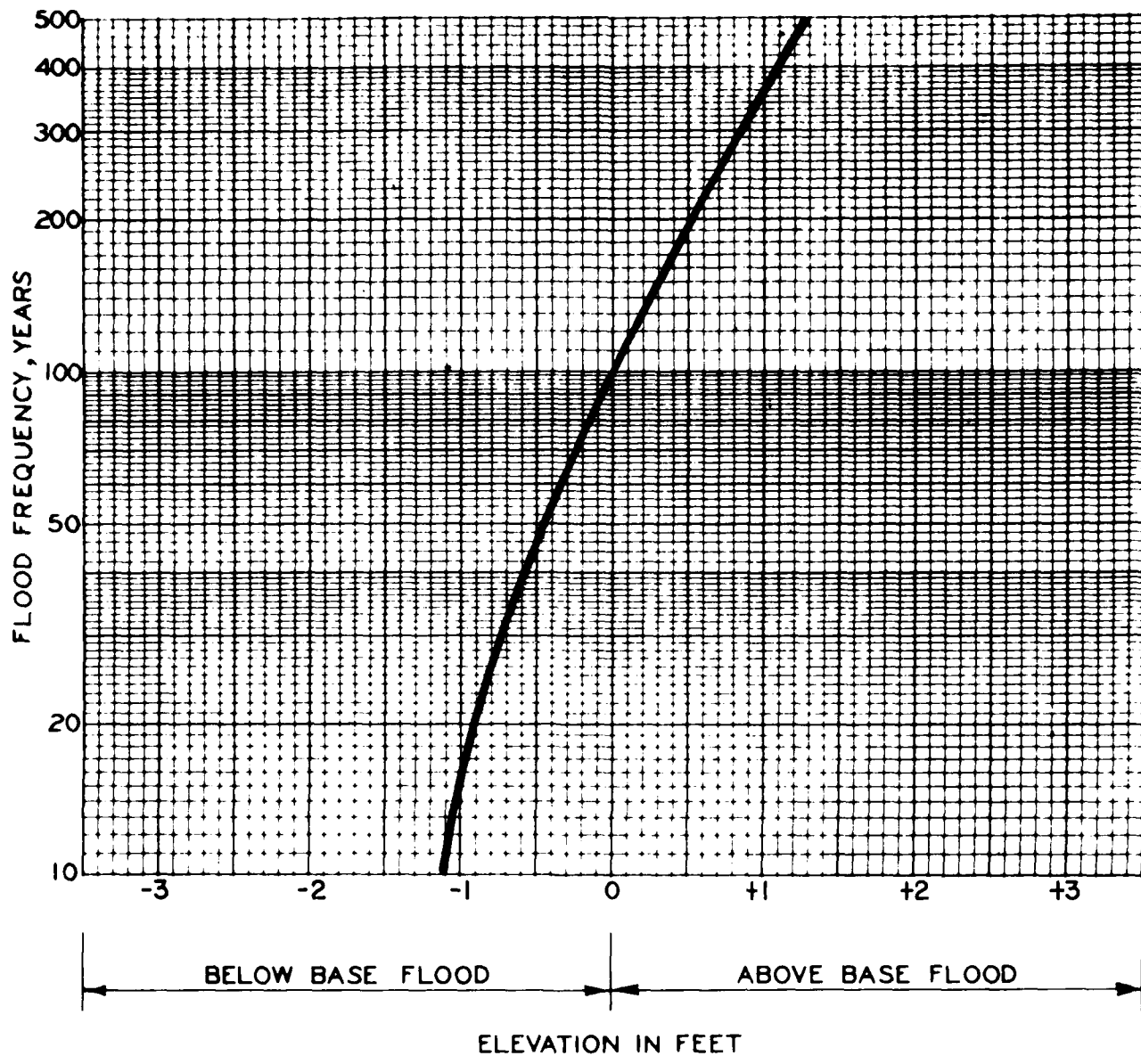


NOTES:

- 1. CURVE CORRESPONDS TO FLOOD HAZARD FACTOR NUMBER .010B
- 2. CURVE DEVELOPED FOR INDEX NUMBER 2-1400 FEET

PLOTING DATA	
FREQUENCY YEARS	FLOOD ELEVATION
SPF	
500	830.1
100	829.5
25	
10	828.3

FLOOD INSURANCE STUDY
 GARFIELD HEIGHTS, OHIO
 WOLF CREEK
**ELEVATION FREQUENCY
 RELATIONSHIP**
 CORPS OF ENGINEERS, U.S. ARMY
 BUFFALO, NEW YORK, DISTRICT
 PREPARED FOR
 FEDERAL INSURANCE ADMINISTRATION
 MAY 1971

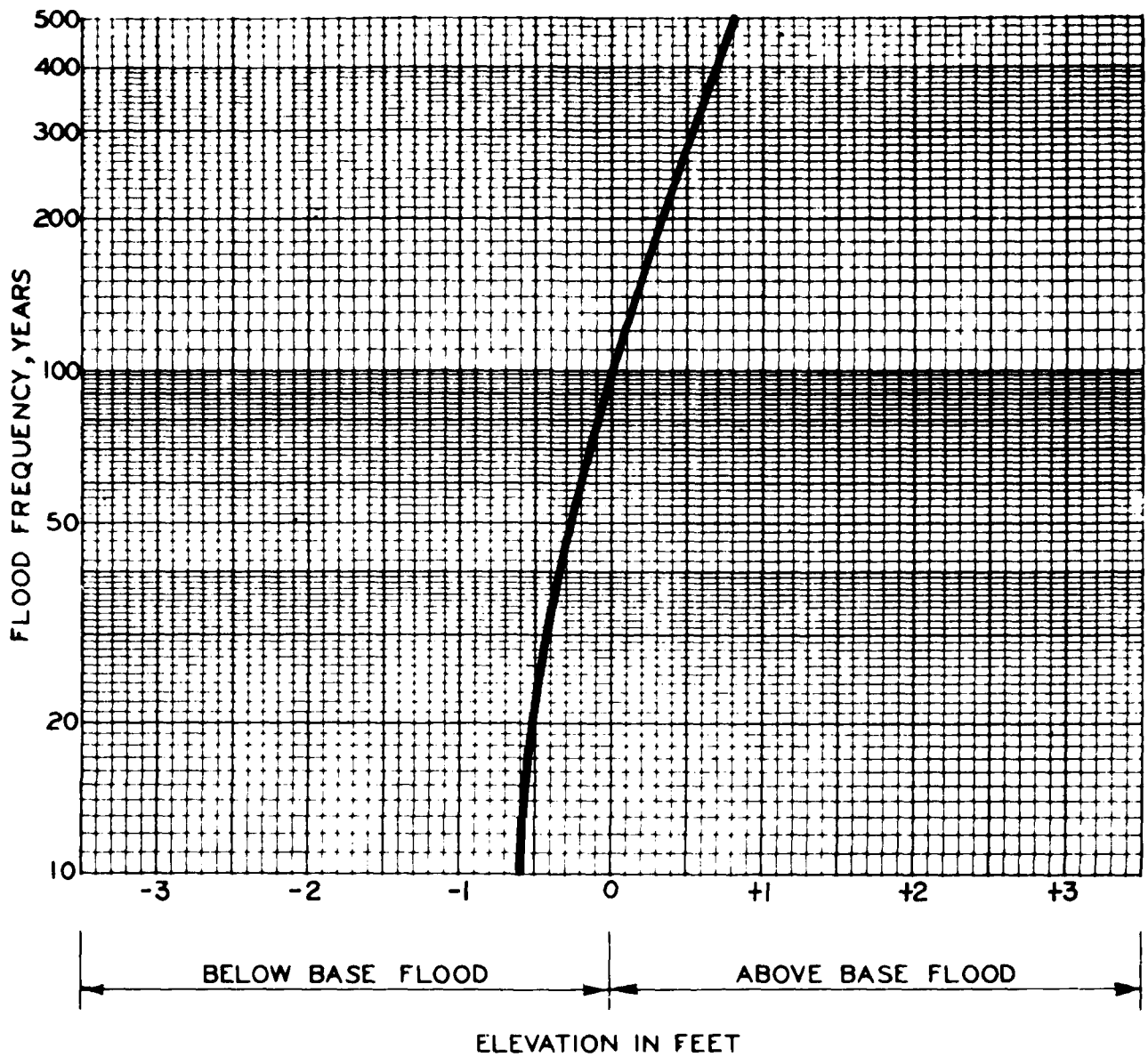


NOTES:

- 1 CURVE CORRESPONDS TO FLOOD HAZARD FACTOR NUMBER 010D
- 2 CURVE DEVELOPED FOR INDEX NUMBER 3-2800 FEET

PLOTING DATA	
FREQUENCY YEARS	FLOOD ELEVATION
SPF	
500	851.8
100	850.5
25	
10	849.4

FLOOD INSURANCE STUDY
GARFIELD HEIGHTS, OHIO
WOLF CREEK
ELEVATION FREQUENCY
RELATIONSHIP
 CORPS OF ENGINEERS, U S ARMY
 BUFFALO, NEW YORK, DISTRICT
 PREPARED FOR
 FEDERAL INSURANCE ADMINISTRATION
 MAY 1971

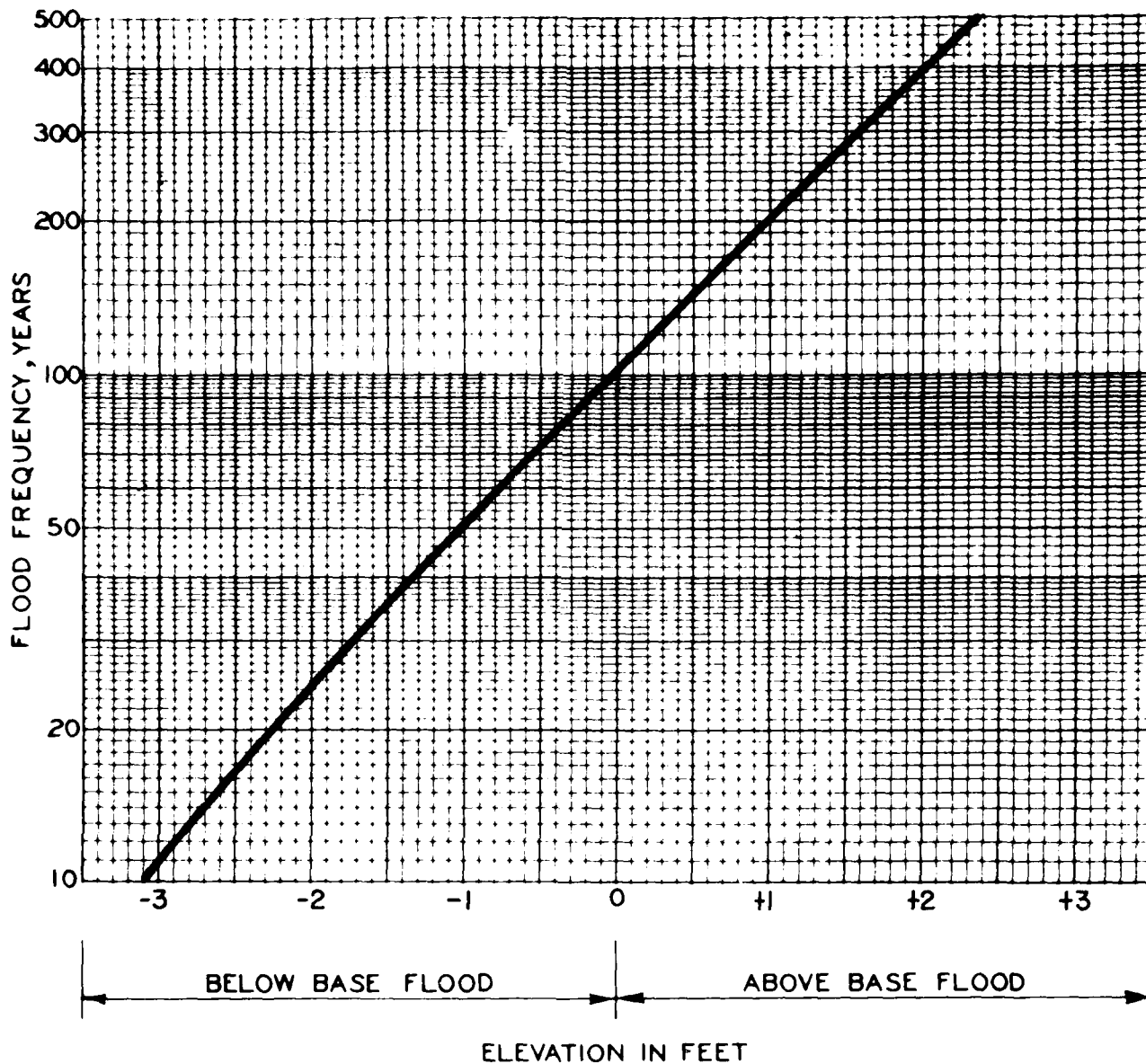


NOTES:

- 1 CURVE CORRESPONDS TO FLOOD HAZARD FACTOR NUMBER .005D
- 2 CURVE DEVELOPED FOR INDEX NUMBER 4-3800 FEET

PLOTTING DATA	
FREQUENCY YEARS	FLOOD ELEVATION
SPF	
500	863.0
100	861.2
25	
10	859.6

FLOOD INSURANCE STUDY
 GARFIELD HEIGHTS, OHIO
 WOLF CREEK
**ELEVATION FREQUENCY
 RELATIONSHIP**
 CORPS OF ENGINEERS, U.S. ARMY
 BUFFALO, NEW YORK, DISTRICT
 PREPARED FOR
 FEDERAL INSURANCE ADMINISTRATION
 MAY 1971

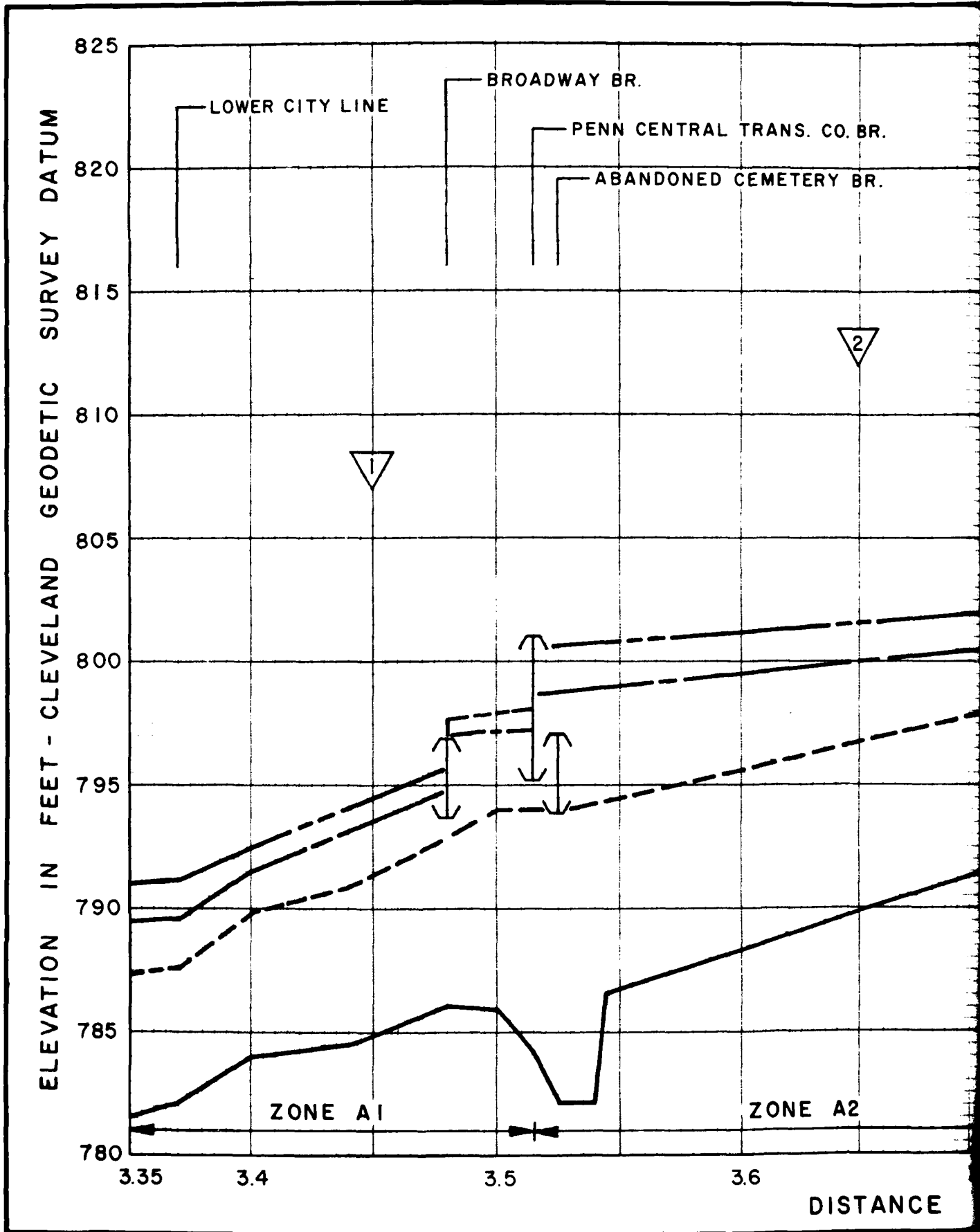


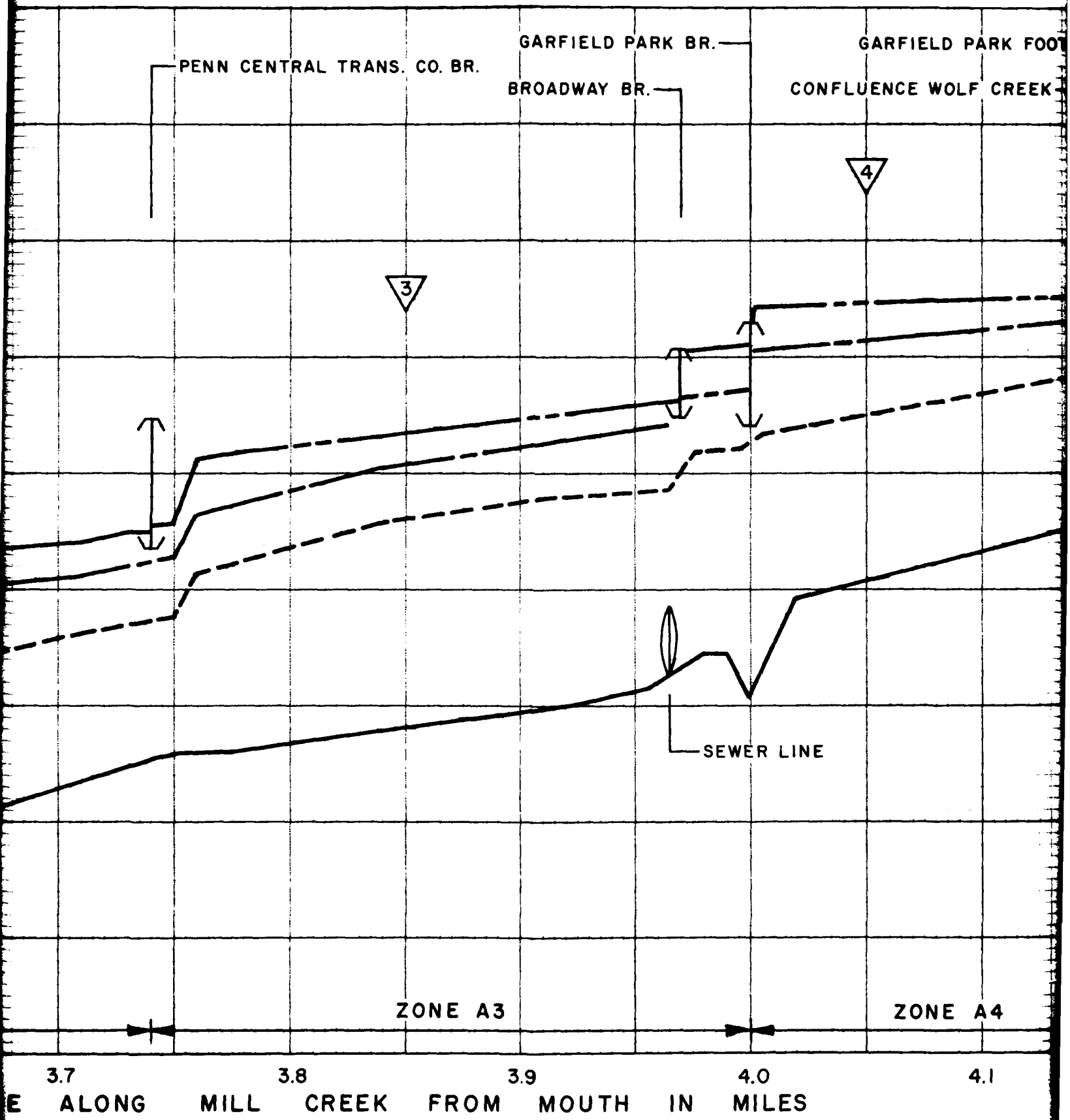
NOTES:

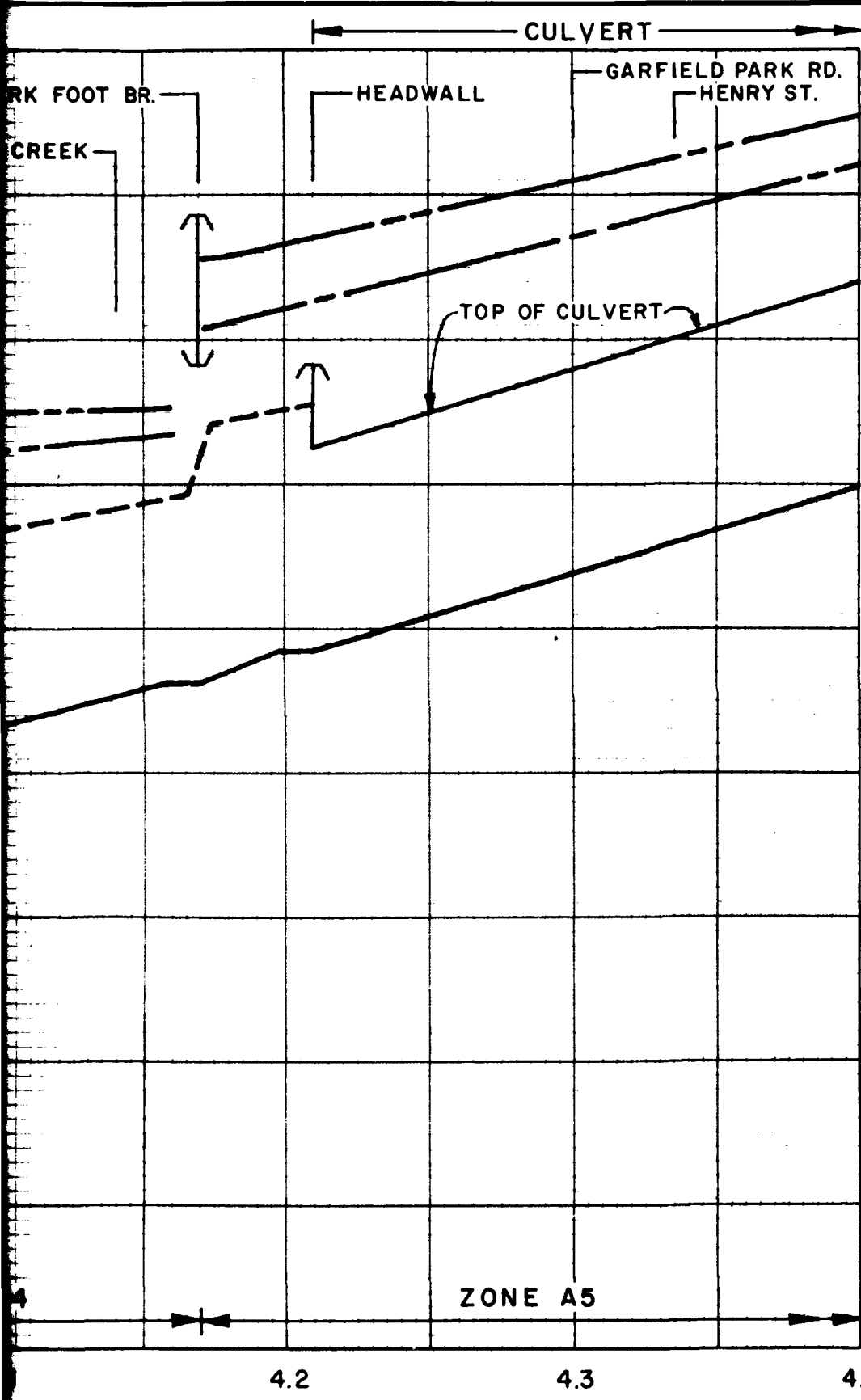
- 1 CURVE CORRESPONDS TO FLOOD HAZARD FACTOR NUMBER 030C
- 2 CURVE DEVELOPED FOR INDEX NUMBER 5-4600 FEET

PLOTING DATA	
FREQUENCY YEARS	FLOOD ELEVATION
SPF	
500	871.2
100	868.8
25	
10	865.7

FLOOD INSURANCE STUDY
 GARFIELD HEIGHTS, OHIO
 WOLF CREEK
**ELEVATION FREQUENCY
 RELATIONSHIP**
 CORPS OF ENGINEERS, U.S. ARMY
 BUFFALO, NEW YORK, DISTRICT
 PREPARED FOR
 FEDERAL INSURANCE ADMINISTRATION
 MAY 1971







LEGEND:

- 500 YEAR FLOOD
- 100 YEAR FLOOD
- 10 YEAR FLOOD
- APPROXIMATE STREAM
- ↕ APPROXIMATE FLOOD
- ↕ APPROXIMATE LOW
- ▽ INDEX POINT

NOTES:

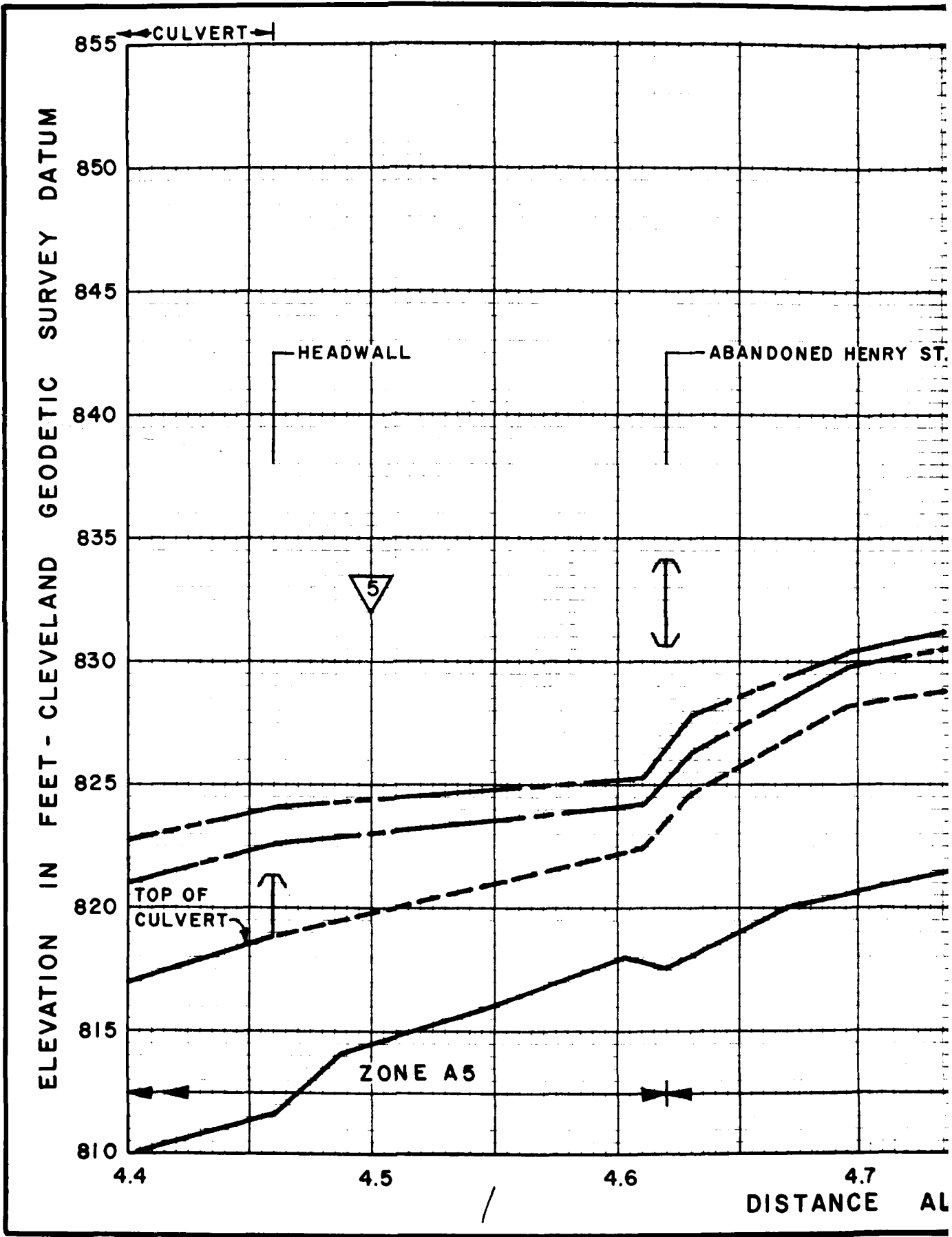
- CREST PROFILES ARE BASED ON THE FOLLOWING:
1. EXISTING CHANNEL CONDITIONS
 2. EXISTING STRUCTURES
 3. EXISTING CONDITIONS OF THE AREA
- LARGE SCALE FILLING WILL BE REQUIRED UNLESS SUFFICIENT FLOODWAY IS PROVIDED.

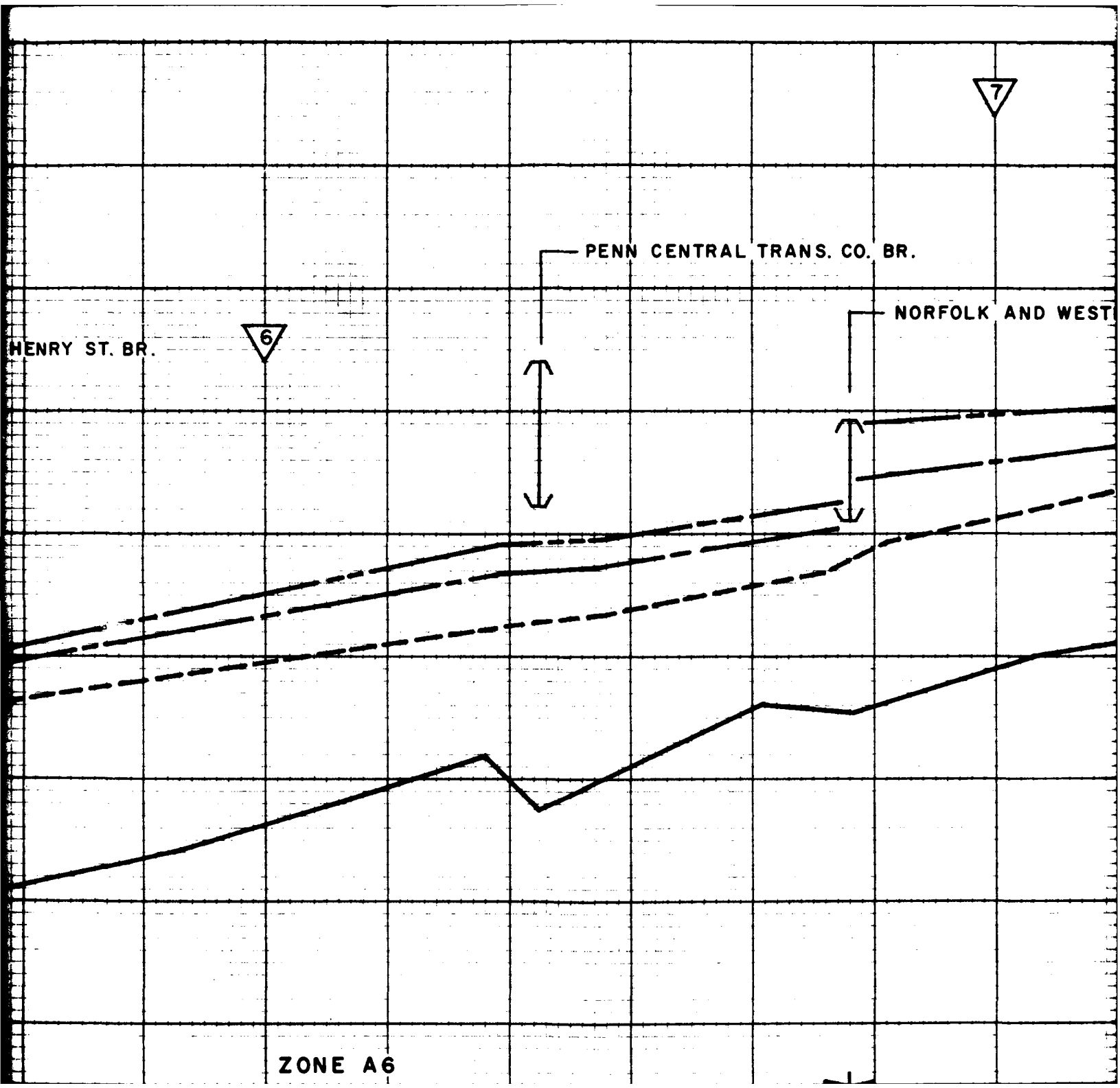
FLOOD INSURANCE
 GARFIELD HILL
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E FLOOR ELEVATION
E LOW STEEL ELEVATION
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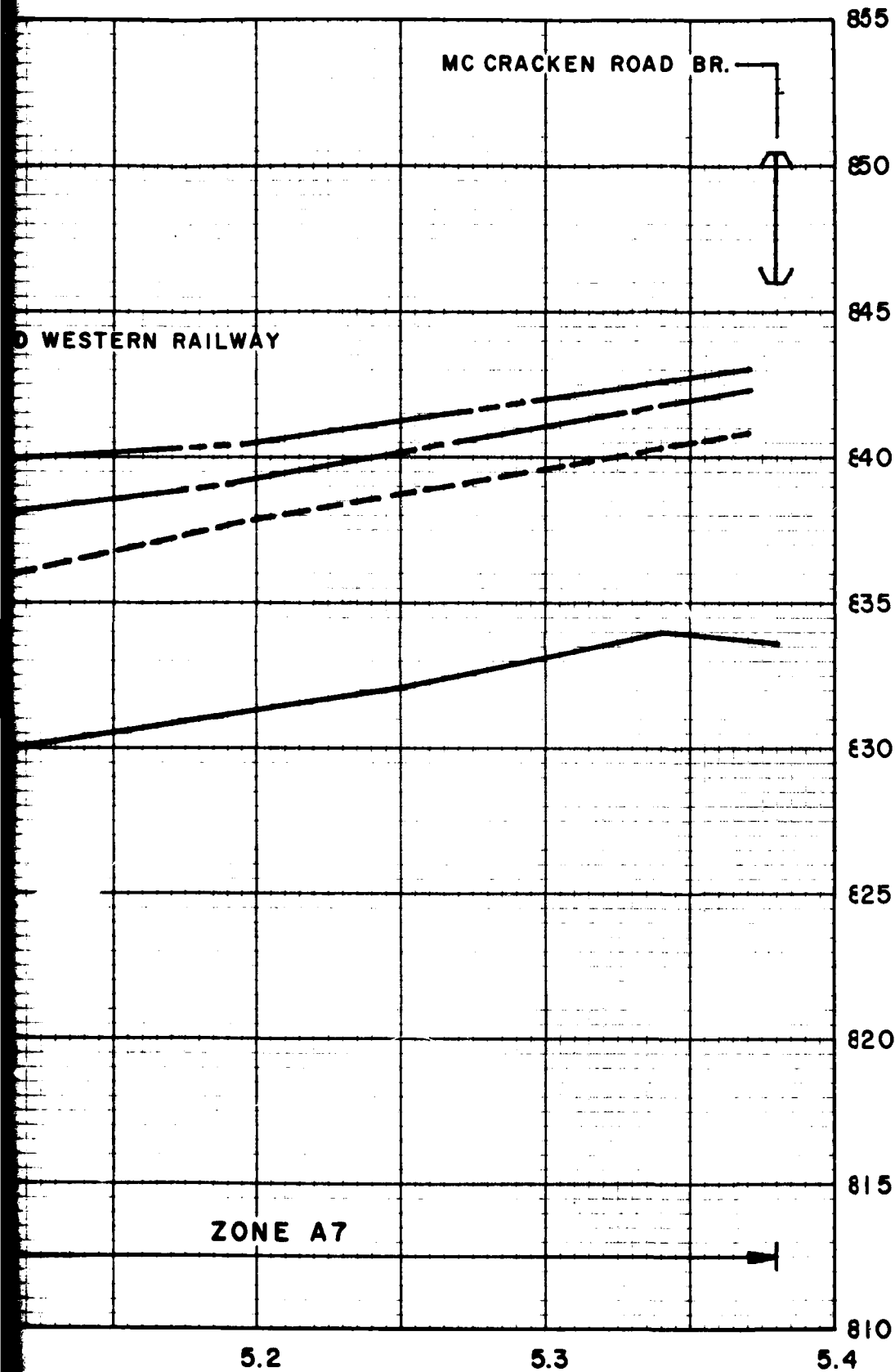
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OODWAY IS PROVIDED.

OD INSURANCE STUDY
FIELD HEIGHTS, OHIO
MILL CREEK
PROFILES
ENGINEER DISTRICT, BUFFALO
MAY 1971





ZONE A6



LEGEND:

- 500 YEAR FLOOD
- - - - 100 YEAR FLOOD
- - - - 10 YEAR FLOOD
- APPROXIMATE STREAM BED ELEVATION
- ↕ APPROXIMATE FLOOR ELEVATION
- ↕ APPROXIMATE LOW STREAM BED ELEVATION
- ▽ 7 INDEX POINT

NOTES:

- CREST PROFILES ARE BASED ON THE FOLLOWING:
1. EXISTING CHANNEL CONDITIONS
 2. EXISTING STRUCTURES
 3. EXISTING CONDITIONS OF THE CHANNEL
- LARGE SCALE FILLING WILL BE REQUIRED UNLESS SUFFICIENT FLOODWAY IS PROVIDED.

FLOOD INSURANCE
 GARFIELD HEIGHTS
 MILL CREEK
 PROFILE
 U.S. ARMY ENGINEER DISTRICT
 MAY 1954

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STREAM BED

FLOOR ELEVATION

LOW STEEL ELEVATION

BASED ON THE

L CONDITIONS

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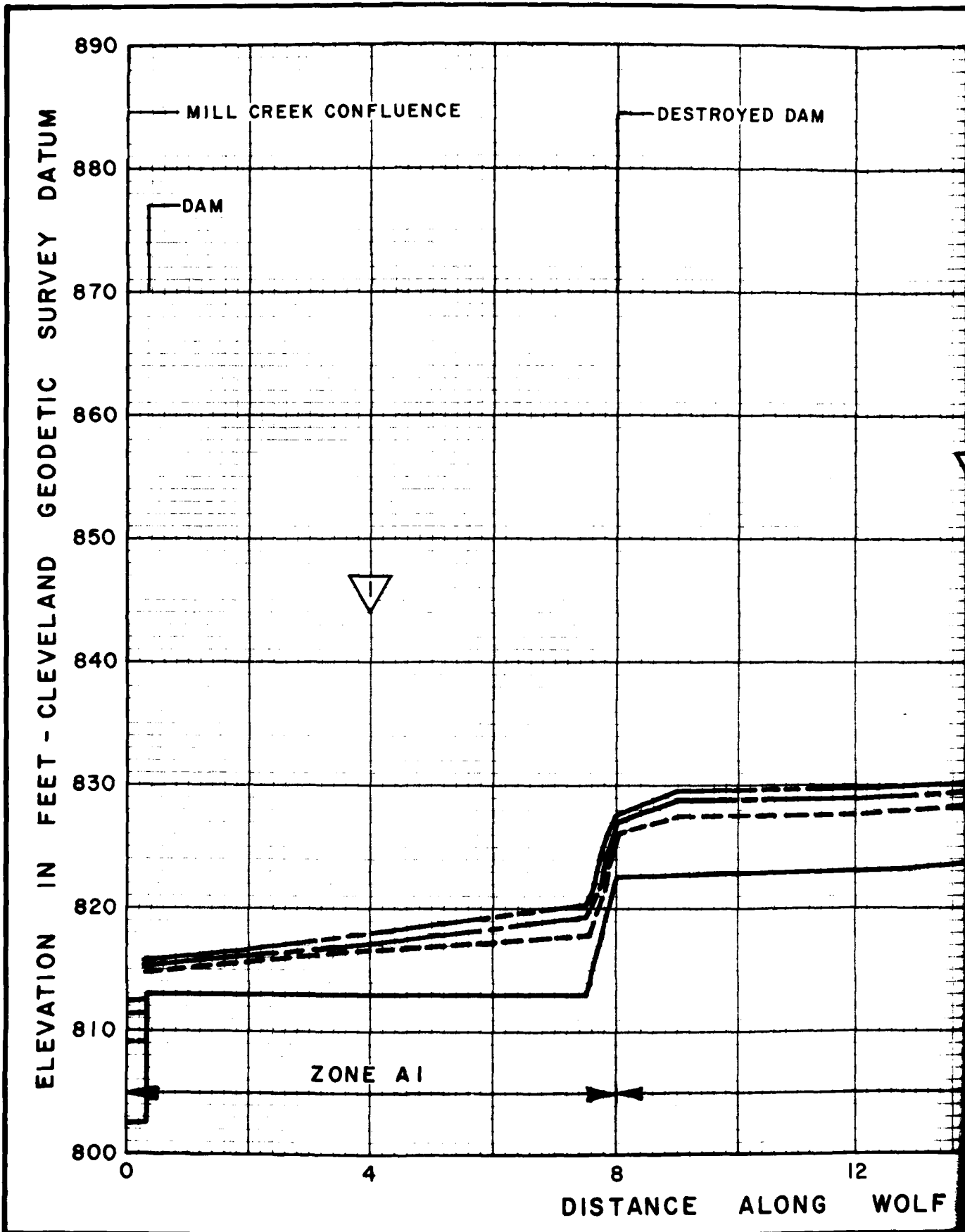
ONS OF DEVELOPMENT

WILL RAISE PROFILES
OWAY IS PROVIDED.

INSURANCE STUDY
LD HEIGHTS, OHIO
ILL CREEK

ROFILES

INEER DISTRICT, BUFFALO
MAY 1971



GARFIELD

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ZONE A2

ZONE A3

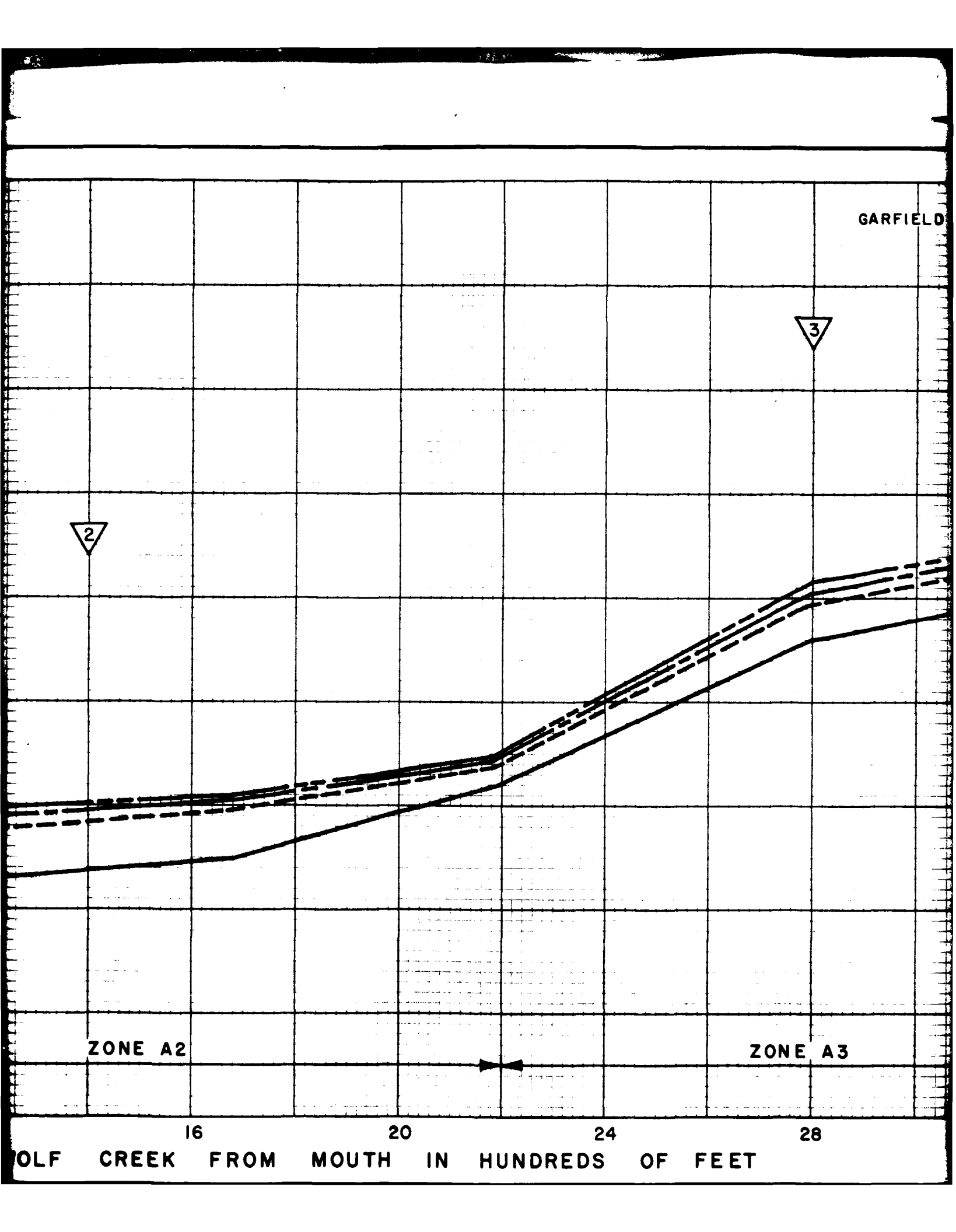
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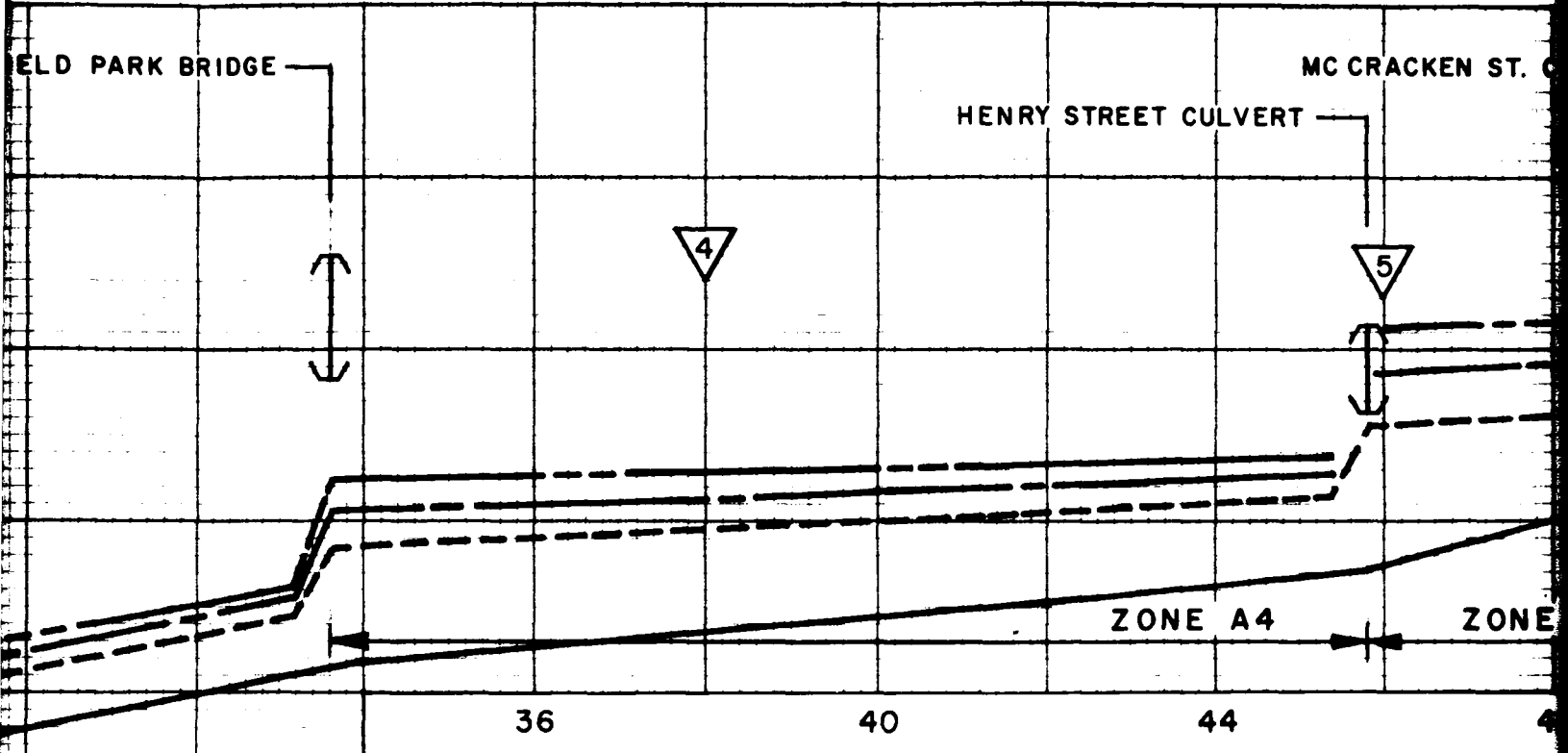
20

24

28

GOLF CREEK FROM MOUTH IN HUNDREDS OF FEET





LEGEND:

- 500 YEAR FLOOD
- . - . - . 100 YEAR FLOOD
- _____ 10 YEAR FLOOD
- _____ APPROXIMATE STREAM BED
- ↑ ↓ APPROXIMATE FLOOR ELEVATION
- ▽ 2 APPROXIMATE LOW STEEL ELEVATION INDEX POINT

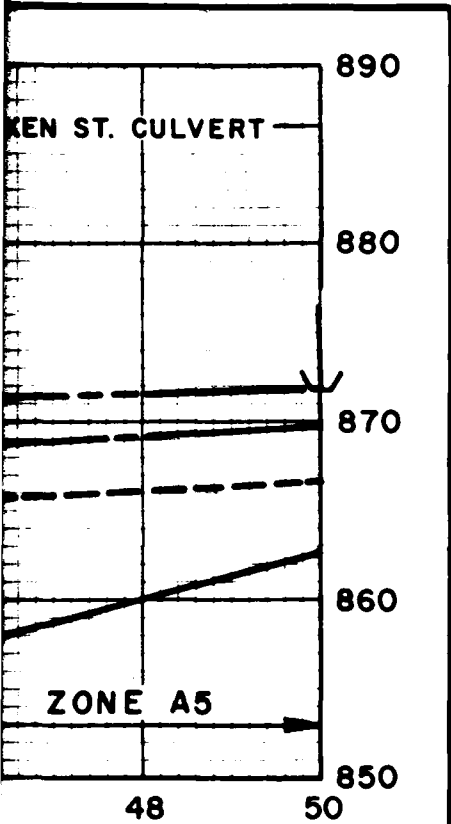
NOTES:

CREST PROFILES ARE BASED ON THE FOLLOWING:

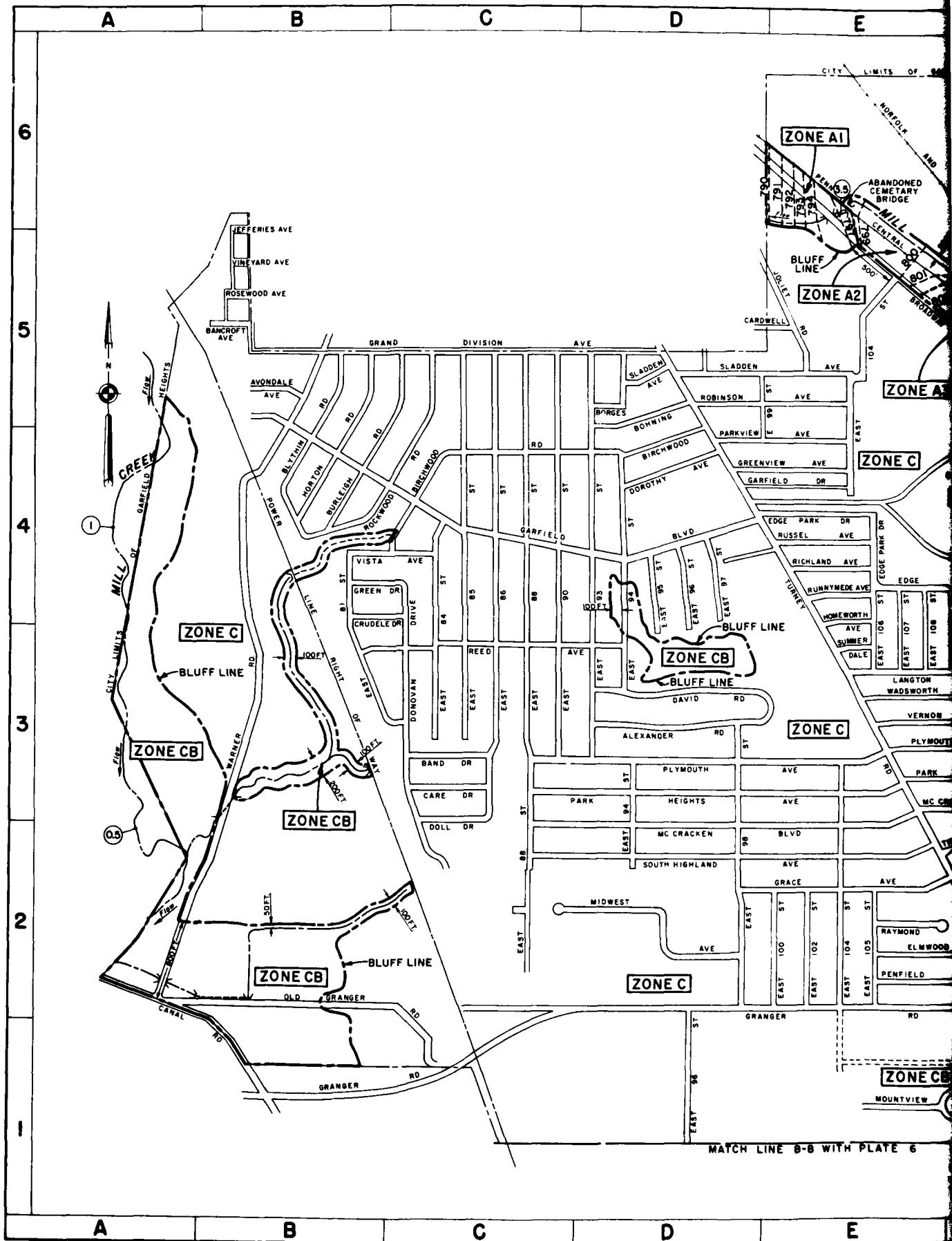
1. EXISTING CHANNEL CONDITIONS
2. EXISTING STRUCTURES
3. EXISTING CONDITIONS OF DEVELOPMENT.

LARGE SCALE FILLING WILL RAISE PROFILES UNLESS SUFFICIENT FLOODWAY IS PROVIDED.

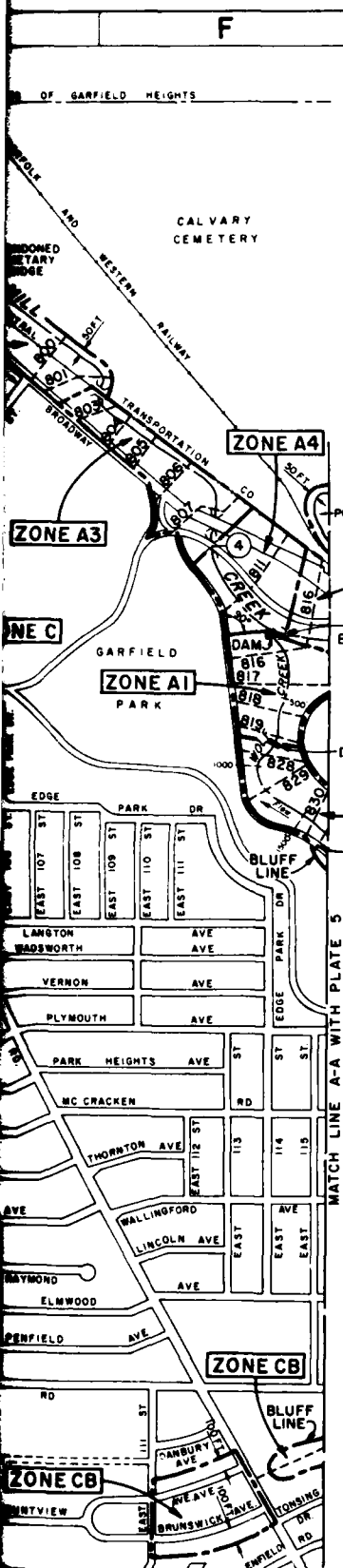
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FLOOD INSURANCE STUDY
 WARFIELD HEIGHTS, OHIO
 WOLF CREEK
 PROFILES
 ARMY ENGINEER DISTRICT, BUFFALO
 MAY 1971



MATCH LINE B-B WITH PLATE 6



STREET INDEX

ALEXANDER RD	D3	GARFIELD BLVD	C4, D4, E4
AYONDALE AVE	B5	GRAND DIVISION AVE	B5, C5
BANDWYTT AVE	B5	GRANGER RD	B1
BANK DR	C3	GREEN DR	B4
BIRCHWOOD RD	C4, D4	GREENVIEW AVE	D4, E4
BLANTHIN RD	B4	HOMEROTH AVE	E4
BOMMING RD	D5	HORTON RD	B4
BORGES	D5	JEFFERIES AVE	B5
BROADWAY	E5	JOLIET RD	E5
BRUNSWICK AVE	F1	LANGTON AVE	E3, F3
BURLEIGH RD	B4	LINCOLN AVE	F2
CANAL RD	A2	MC CRACKEN BLVD	D2, E3, F3
CARDWELL	E5	MIDWEST AVE	D2
CARE DR	C3	MOUNTVIEW AVE	E1
CRUDELE DR	B4	OLD GRANGER RD	B2, D1, E1
DARBURY AVE	F1	PARK HEIGHTS AVE	D2, E3, F3
DAVID RD	D3	PARK VIEW AVE	D4
DELL DR	C2	PENFIELD AVE	E2
DONOVAN DR	C3, C4	PLYMOUTH AVE	D3, E3, F3
DOROTHY AVE	D4	RAYMOND	E1
EAST B1 ST	B3, B4	REED AVE	C3
EAST B4 ST	C3, C4	ROBINSON AVE	D5
EAST B5 ST	C3, C4	RICHLAND AVE	E4
EAST B6 ST	C3, C4	ROCKWOOD RD	B4
EAST B8 ST	C2, C3, C4	ROSEWOOD AVE	B5
EAST B9 ST	C3, C4	RUNNYMEDE	E4
EAST B3 ST	D3, D4	RUSSEL AVE	E4
EAST B4 ST	D3, D4, D5, D2	SLADDER AVE	D5
EAST B5 ST	D3, D4	SOUTH HIGHLAND	D2
EAST B6 ST	D3, D4, D1	SUMMERDALE	E3
EAST B7 ST	D4	THORNTON AVE	F2
EAST B8 ST	D2	TONSING DR	F1
EAST 100 ST	E2	TURKEY RD	E4
EAST 102 ST	E2	VERNON AVE	E3, F3
EAST 104 ST	E2, E5	VINEYARD AVE	B5
EAST 105 ST	E2	VISTA AVE	B4
EAST 106 ST	E3, F3	WADSWORTH AVE	E3, F3
EAST 107 ST	E3, E4	WALLINGFORD AVE	F2
EAST 108 ST	E3, E4	WARNER RD	B2
EAST 109 ST	F3, F4		
EAST 110 ST	F3, F4		
EAST 111 ST	F1, F3, F4		
EAST 112 ST	F2		
EAST 113 ST	F2		
EAST 114 ST	F2		
EAST 115 ST	F2		
EDGE PARK DR	E4, F4, F3		
ELMWOOD AVE	E2		
ENFIELD	F1		

LEGEND:

- LIMITS OF ZONES
- GARFIELD HEIGHTS CITY LIMITS
- - - 805 100-YEAR FLOOD ELEVATION REFERENCE LINE
- (4) DISTANCE FROM MOUTH IN MILES
- 1000' DISTANCE FROM MOUTH IN FEET

NOTE:

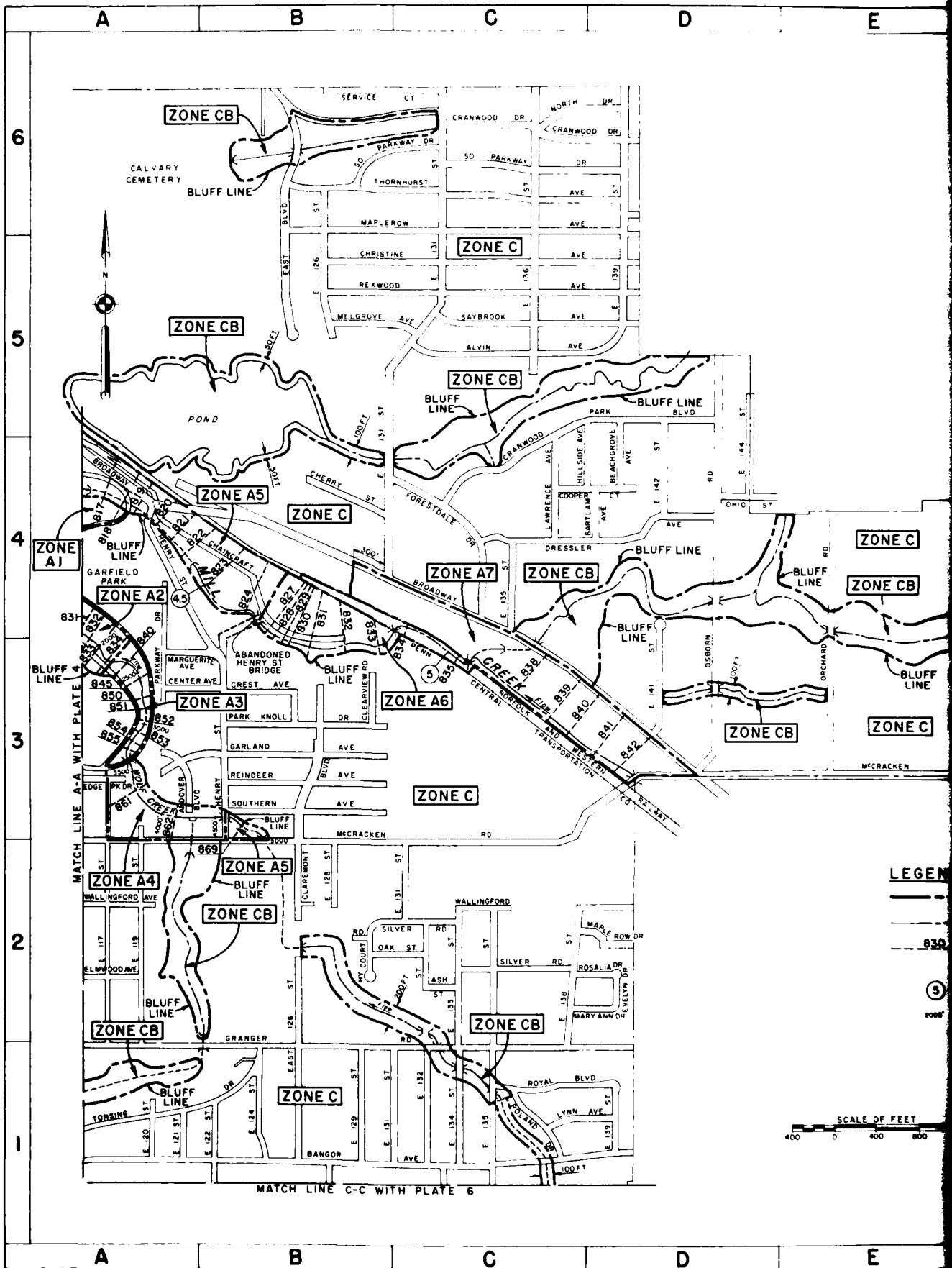
FLOOD INSURANCE STUDY MAP WAS PREPARED FOR THE FEDERAL INSURANCE ADMINISTRATION.

**FLOOD INSURANCE STUDY
GARFIELD HEIGHTS, OHIO
FLOOD INSURANCE STUDY MAP**

U.S. ARMY ENGINEER DISTRICT, BUFFALO

MAY 1971





E F

STREET INDEX

ALYN AVE	F5	FORESTDALE DR	C4
ANGLER BLVD	A3	GARLAND AVE	B3
ASH ST	E2	GRANGER RD	A2 B2
BANUCH AVE	B1	HENRY ST	A4 B3
BANKAM AVE	D4	HILLSIDE AVE	C4
BEALHURVE AVE	D4	HOMESTEAD DR	F3
BLASE AVE	F3	HT COURT	B2
BROADWAY	F3	LAWRENCE AVE	C4
BROADWAY	A4 C4	LYNN AVE	C1
CENTER AVE	A3	MARLE RDW DR	D2
CHARLEHART ST	A4 B4	MARLETON AVE	B6 C6
CHERRY ST	B4	MARGUERITE AVE	A3
CHRISTINE AVE	A5 C5	MARY ANN DR	D2
CLEARVIEW RD	B3	MC CRACKEN RD	A3 E3
COOPER DR	C4	MELGROVE AVE	B5
CRANWOOD DR	F5	NORTH DR	C6
CRANWOOD PARK BLVD	C4 D5	CAV ST	B2
CREST AVE	B3	OHIO ST	D4
DRESSLER AVE	C4	ORCHARD RD	E3
DRIVEWAY	B4	OSBORN RD	D4
EAST BLVD	B5	OVERLOOK DR	B3 B4
EAST 117 ST	A2	PARK HINCLE DR	B3
EAST 119 ST	A2	PARKWAY DR	A3
EAST 120 ST	A1	PLATEAU DR	F3
EAST 121 ST	A1	REINDEER AVE	B3
EAST 122 ST	B1	REXWOOD AVE	B5 C5
EAST 124 ST	B1	ROLAND DR	C1
EAST 126 ST	B2 B5	ROSALIE DR	D2
EAST 128 ST	B2	ROYAL BLVD	C1
EAST 129 ST	B1	ST CLAREMONT	B2
EAST 131 ST	B4 C1 C2 C5	SAYBROOK AVE	C5
EAST 132 ST	C1	SERVICE CT	B6
EAST 133 ST	C2	SILVER RD	B2 C2
EAST 134 ST	C1	SOUTHERN AVE	B3
EAST 135 ST	C1 C4	SOUTH PARKWAY DR	B6 C6
EAST 136 ST	C5	THORNHURST AVE	B6
EAST 138 ST	C2	TONSING DR	A1
EAST 139 ST	D5	WALLINGFORD AVE	A2 C2
EAST 141 ST	D3		
EAST 142 ST	D4		
EAST 144 ST	D4		
EAST 154 ST	E3		
EDGE PARK DR	A3		
ELWOOD AVE	A2		
EVELYN DR	D2		

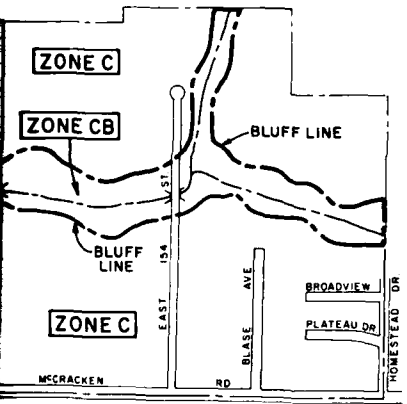
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LEGEND:

- LIMITS OF ZONES
- GARFIELD HEIGHTS CITY LIMITS
- 830 --- 100-YEAR FLOOD ELEVATION REFERENCE LINE
- (5) DISTANCE FROM MOUTH IN MILES
- 2000 DISTANCE FROM MOUTH IN FEET

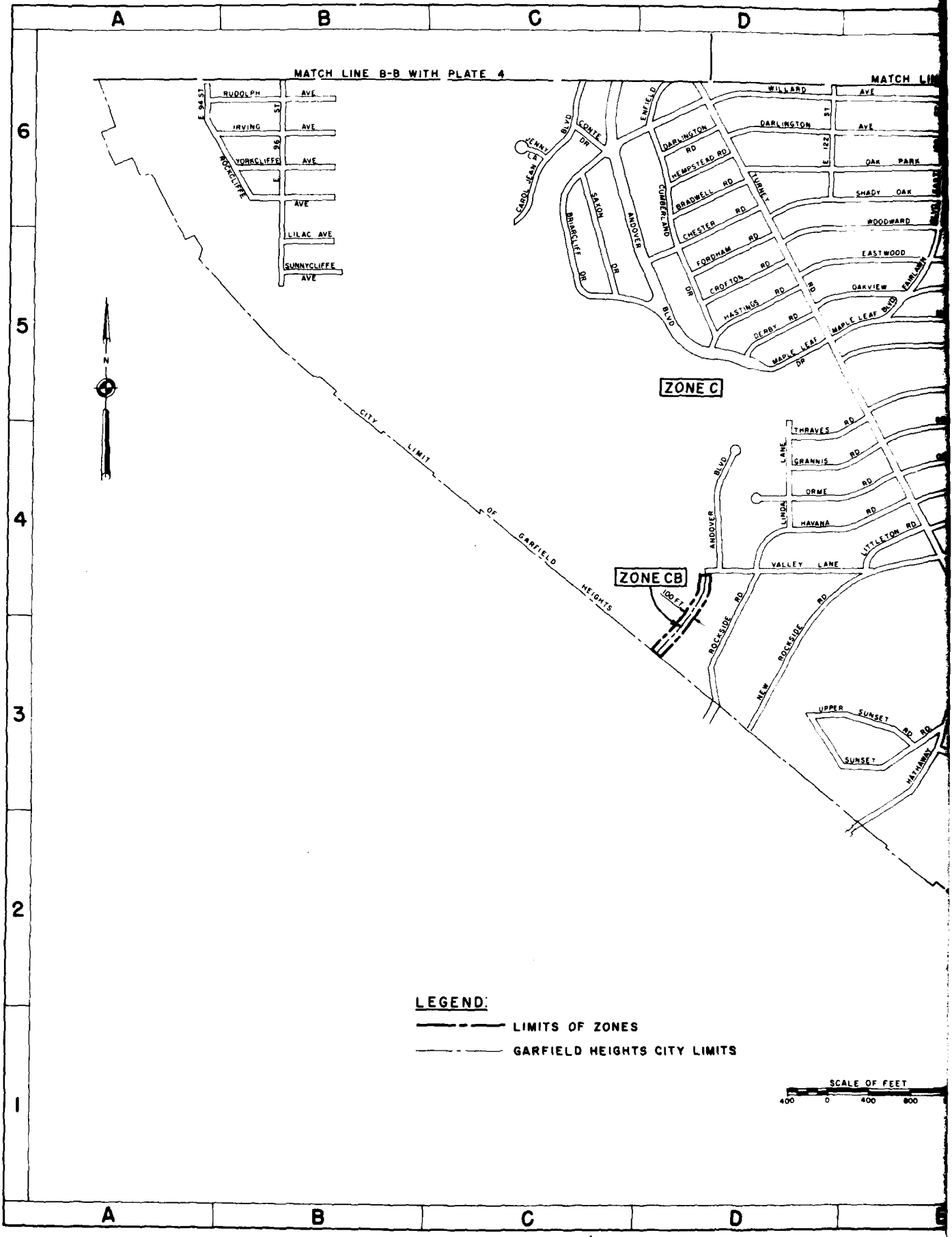
NOTE:
FLOOD INSURANCE STUDY MAP WAS PREPARED FOR THE FEDERAL INSURANCE ADMINISTRATION.

FLOOD INSURANCE STUDY
GARFIELD HEIGHTS, OHIO
FLOOD INSURANCE STUDY MAP
U.S. ARMY ENGINEER DISTRICT, BUFFALO
MAY 1971

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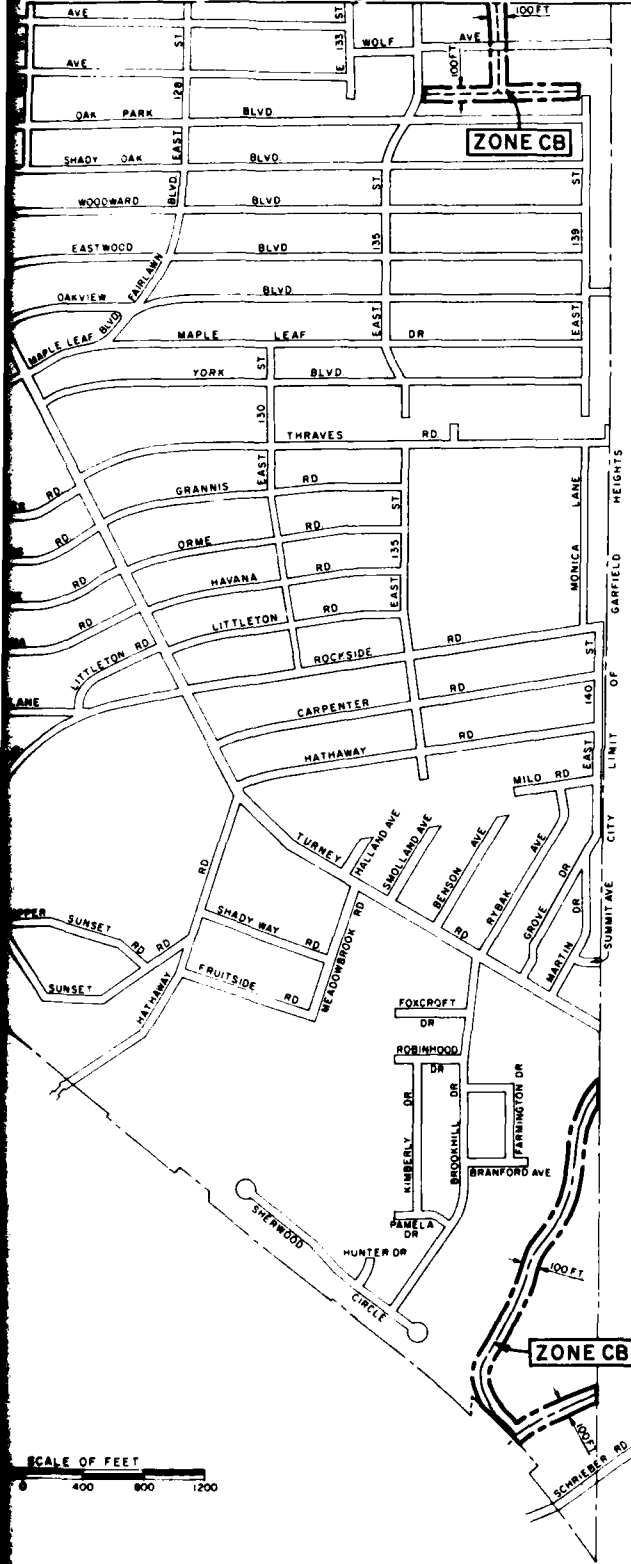
PLATE 6



E

F

MATCH LINE C-C WITH PLATE 5



STREET INDEX

ANDOVER BLVD	08 C5, D4	JENNY LANE	F6
BENSON AVE	F3	KIMBERLY DR	F2
BRADWELL RD	D6	LILAC AVE	B5
BRANFORD AVE	F2	LINGA LANE	D4
BRIARCLIFFE DR	C5	LITTLETON RD	E4
BROOKHILL DR	F2	MAPLE LEAF DR BLVD	F2, E5
LARDI JEAN BLVD	C6	MARTIN DR	F3
CARPENTER RD	E4, F5	WILD RD	F4
CHESTER RD	D5, D6	MONICA LANE	F4
COATE DR	D6	NEW ROCKSIDE RD	D2
CROFTON RD	D5	OAK PARK BLVD	E6
CUMBERLAND DR	D6	OAK VIEW BLVD	E5
DARLINGTON RD	D6	ORME RD	D4
DERBY RD	D5	PAMELA DR	F2
EAST 94 ST	A8	ROCKCLIFFE AVE	B6
EAST 96 ST	B6	ROBINHOOD DR	F3
EAST 122 ST	D6	ROCK SIDE RD	D3, D4, E4, F4
EAST 128 ST	E6	RUDOLPH AVE	B6
EAST 130 ST	E5	RYBAK AVE	F3
EAST 133 ST	E6	SAXON DR	C6
EAST 135 ST	F4, F5	SCHREIBER RD	F1
EAST 139 ST	F5	SHADY OAK BLVD	E6
EAST 140 ST	F4	SHADY WAY BLVD	E6
EASTWOOD BLVD	E5	SHERWOOD CIRCLE	E2
ENFIELD	D6	SMOLAND AVE	F3
FAIRLAWN BLVD	E5	SUMMIT AVE	F3
FARMINGTON DR	F2	SUNNYCLIFFE AVE	B5
FORDHAM DR	D5	SUNSET RD	E3
FOXROFT DR	F3	THRAVES RD	E5
FRUITSIDE RD	E3	TURNER RD	D6, E3
GRANNIS RD	D4	UPPER SUNSET RD	E3
GROVE DR	F3	VALLEY LANE	D4
HASTINGS RD	D5	WILLARD AVE	D6
HALLAND AVE	F3	WOODWARD BLVD	E6
HATHWAY RD	E4, F4	YORK BLVD	E5
HAYANA RD	D4	YORKCLIFFE AVE	B6
HEMPSTEAD RD	D6		
HUNTER DR	F2		
IRVING AVE	B6		

NOTE:

FLOOD INSURANCE STUDY MAP WAS PREPARED FOR THE FEDERAL INSURANCE ADMINISTRATION.

FLOOD INSURANCE STUDY
 GARFIELD HEIGHTS, OHIO
 FLOOD INSURANCE STUDY MAP

U.S. ARMY ENGINEER DISTRICT, BUFFALO

MAY 1971

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