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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

FLOOD-PLAIN DELINEATION

For

ACCOTINK CREEK BASIN

FAIRFAX COUNTY, VIRGINIA

Open-File Report 76-442

Prepared in cooperation with the

County of Fairfax

1977

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U.S. DEPARTMENT OF THE INTERIOR, GEOLOGICAL SURVEY, WATER RESOURCES DIVISION

ABSTRACT-INDEX SHEET

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Water-surface profiles of the 25-year and 100-year floods and maps on which the 25-, 50-, and 100-year flood limits are delineated for streams in the Accotink Creek basin are presented in this report. Excluded are segments of Accotink Creek within the Fort Belvoir Military Reservation. The techniques used in the computation of the flood profiles and delineation of flood limits are presented, and specific hydraulic problems encountered within the study area are also included.

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CONVERSION FACTORS

Factors for converting English units to metric units are shown to four significant figures. However, in the text the metric equivalents are shown only to the number of significant figures consistent with the values for the English units.

English	Multiply	Metric
acres	4.047×10^{-3}	km^2 (square kilometers)
ft^3/s (cubic feet per second)	2.832×10^{-2}	m^3/s (cubic meters per second)
ft (feet)	3.048×10^{-1}	m (meters)
in (inches)	$2.540 \times 10^{+1}$	mm (millimeters)
mi (miles)	1.609	km (kilometers)
mi^2 (square miles)	2.590	km^2 (square kilometers)

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Flood-Plain Delineation for Accotink Creek Basin

Fairfax County, Virginia

Pat L. Soule

ABSTRACT

Water-surface profiles of the 25-year and 100-year floods and maps on which the 25-, 50-, and 100-year flood limits are delineated for streams in the Accotink Creek basin are presented in this report. Excluded are segments of Accotink Creek within the Fort Belvoir Military Reservation.

The techniques used in the computation of the flood profiles and delineation of flood limits are presented, and specific hydraulic problems encountered within the study area are also included.

INTRODUCTION

Suburban areas in many parts of the United States have experienced remarkable growth over the last decade or so. Much of this growth, which replaced farms and woodlands with streets, housing developments and shopping centers, caused serious environmental problems. Continued growth and increased competition for desirable space have required careful guidance and planning of future development to insure optimum land use.

Fairfax County began to experience such growth during the early 1950's. In 1959 much of Fairfax County was still rural, but the desirability of regulating encroachment into the flood hazard areas had become apparent and appropriate local legislation was being enacted by Fairfax County. For the legislation to be effective, it was necessary to quantify the effect of development on floods and to delineate the boundaries of flood inundation.

The study of Accotink Creek basin, described in this report, was done by the U.S. Geological Survey in cooperation with Fairfax County.

Data collection in Accotink Creek basin began in 1959, and the study continued through the release of maps and a letter report to the county of Fairfax in April 1970.

This report is one of a series summarizing the results of the hydraulic analysis done under the cooperative program between the county of Fairfax, the city of Alexandria and the Geological Survey. The hydrologic analysis has been published separately (Anderson, 1970).

Purpose and scope

The purpose of the Accotink Creek study, was to determine the boundaries of floods having recurrence intervals of 25-,50-, and 100-years under conditions of ultimate development. The flood boundaries were to be delineated on large scale maps that would become a part of the zoning ordinance documents for Fairfax County. The maps also could be used for management, design, and land-use planning.

To achieve the objective of the study, it was necessary to analyze the effects of urbanization upon floodflows and to develop techniques to compute the flood magnitude from measurable basin parameters for any given recurrence interval and for any degree of development. Reasonably accurate methods were available for estimating the magnitude and frequency of floods expected from drainage basins in a rural condition. However, as a drainage basin is changed from rural to a suburban or an urban condition, the magnitude and frequency of flooding also changes. Changes in flood frequency and magnitude resulting from basin development had received only scant study because of the sparse data available.

The cooperative agreement between U.S. Geological Survey and Fairfax County, established a project to study the effects of basin development on floods and to delineate flood limits on specially prepared maps of stream valleys. The scope of the project included all of the basins in Fairfax County having a drainage area greater than 1 square mile. Excepted were the Dogue Creek and Little Hunting Creek basins, the upper tributaries of Cameron Run basin and Tripps Run and Holmes Run above Lake Barcroft. Studies of these basins were made by a private consulting firm. The maps were to have 2 foot (0.60m) contours and be at a scale of 1 inch (2.54 cm) equals 100 feet (30.5m). The project allowed for collection of basic data, for analytical investigation, and for definition of flood-prone areas.

Anderson (1970) described the procedures used and the results obtained in the analysis of the effect of urbanization on flooding. He presented mathematical and graphical relations that may be used to estimate the flood discharge at a given recurrence interval up to 100 years for sites in the Washington Metropolitan area having various degrees of development.

The purpose of this report is to provide a consolidated reference containing a summary of the techniques used in computation of flood profiles, a discussion of specific hydraulic problems encountered within the study area, a graphical presentation and listing of flood profiles, and the maps showing the area inundated by floods having recurrence intervals of 25-, 50-, and 100-years.

Acknowledgments

This report was prepared as a part of a cooperative agreement between Fairfax County and the U.S. Geological Survey. This report is a summary and compilation of data released to Fairfax County in the form of a letter report and on maps. The maps and profile tables presented in this report were prepared under the direction of F. Paul Kapinos of the Geological Survey. The base maps were provided by the U.S. Geological Survey.

Description of Study Area

Fairfax County is in Northern Virginia adjacent to and just west of Washington, D. C. (Fig. 1) Fairfax County was formed by the division of the County of Prince William in 1742. From colonial days until World War II Fairfax County remained primarily rural. Following World War II, with the tremendous growth of Federal Government and influx of light industry, the County has lost its primary agricultural character and became largely residential. The population grew from 41,000 in 1940 to 564,000 in 1974 and it is estimated that by the year 2000 Fairfax County will have a population between 1 and 1.5 million. More than 50 percent of the land area had been developed by 1974. (Written communication, Fairfax County, 1974).

The Accotink Creek basin is in the central part of Fairfax County between latitudes 38°40'N and 38°55'N and longitudes 77°08'N and 77°20'W (Fig. 2).

The basin has a southeasterly orientation with headwaters in the city of Fairfax and mouth at Gunston Cove on the Potomac River. The basin is bounded by Cameron Run and Dogue Creek basins to the east, Difficult Run to the north, and Popes Head Creek and Pohick Creek basins to the southwest. The entire drainage basin has a total area of approximately 51 square miles (132 km^2).

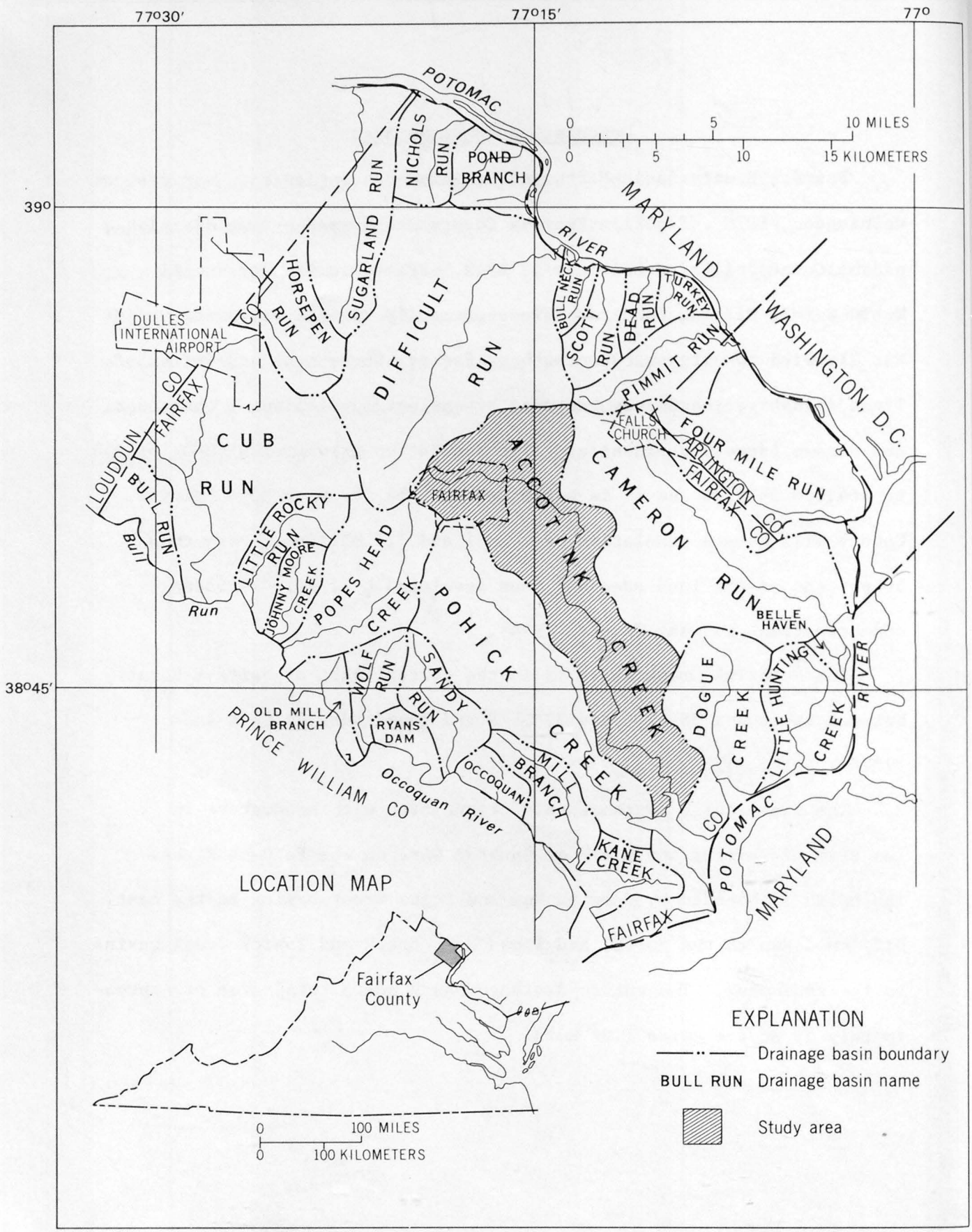


Figure 1.--Location map of the study area

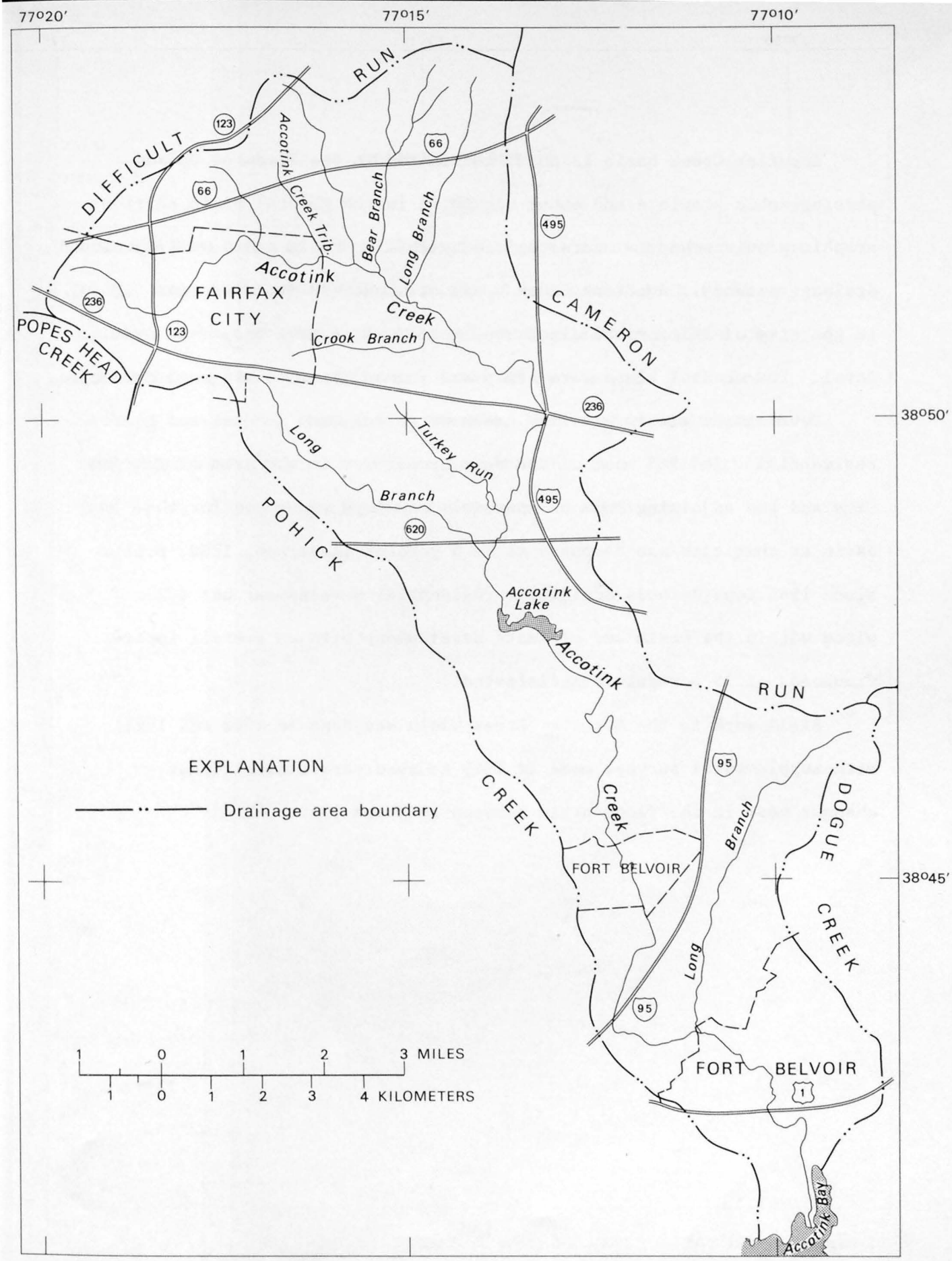


Figure 2.--Map of Accotink Creek basin

Accotink Creek basin is about two thirds in the Piedmont Upland physiographic province and about one third in the Coastal Plain physiographic province and is characterized by rolling hills and a well developed drainage network. Accotink Creek heads at about 410 ft. elevation (125 m) in the city of Fairfax and discharges into Gunston Cove near mean sea level. The channel slopes are steep and stream channels are well developed.

Development within Accotink Creek basin has been gradual and mostly residential. In 1965 most of the development was in the area of Fairfax City and the adjoining town of Annandale and imperviousness for the basin at that time was computed to be 5 percent (Anderson, 1970, p.11). Since 1965 considerable additional residential development has taken place within the basin and ultimate development with an overall imperviousness of 35 percent is anticipated.

Field work in the Accotink Creek basin was done in 1962 and 1963 with supplemental surveys made in 1969 to incorporate significant changes made in the flood plain between 1963 and 1969.

FLOOD-PLAIN MAPPING

Maps

The base maps on which flood limits are delineated have 2-foot (0.60) contour interval and a horizontal scale of 1 inch (2.54 cm) equals 100 feet (30.5m). Natural and manmade features along the stream are shown. The maps were compiled by the U.S. Geological Survey, from aerial photographs taken in 1960 with revisions made from photographs taken in 1963. The maps include a 250-foot (76.2m) grid based on the Virginia coordinate system, north zone.

Discharges

The flood areas delineated are those determined using ultimate-development discharges. Highly developed basins differ from natural basins in that for a given storm (1) runoff is greater, (2) discharge time is much shorter, and (3) floods of comparable magnitude have a higher frequency of occurrence. These factors were analyzed through a study of streamflow and precipitation records, most of which were collected in the vicinity of Washington, D.C. The report, "Effects of Urban Development on Floods in Northern Virginia", (Anderson, 1970) describes the analysis used and summarizes the conclusions of that analysis. The effect of imperviousness with respect to runoff volumes was evaluated by comparing typical runoff coefficients for natural and highly developed basins. Regression analysis was used; first to derive the relation of lag time (the time lapse from the centroid of precipitation excess to the centroid of runoff) as a function of length-slope parameter; and second, to derive the relation of mean annual flood (2.33-year recurrence interval), adjusted for effects of imperviousness, as a function of drainage-basin area and lag time. An analysis of flood and rainfall frequencies was made to derive ratios of 25-, 50-, and 100-year floods to the mean annual flood for any percentage of imperviousness. Using the available information for a basin in the project area, the magnitude of the 2.33, 25-, 50-, and 100-year flood peaks can be computed from measurable basin parameters for any percentage of imperviousness in the ultimate development plan.

The term recurrence interval, as used here, is the average interval of time within which a given flood discharge will be equaled or exceeded once. The recurrence interval is inversely related to the chance of a given flood being equaled or exceeded in any one year. Thus, the 100-year flood has a 1 percent chance of being equalled or exceeded in any one year. No periodicity is implied.

Profile Computation

Having determined the 25-, 50-, and 100-year floods computed as set forth by Anderson (1970) at selected points, the corresponding water-surface profiles were computed using the standard step method of backwater analysis. The method is based on a balance of energy between successive pairs of stream cross-sections. For tranquil flow the computations start at the farthest downstream section, or at a control section, and proceed upstream; but for supercritical flow the computations start at the most upstream section, or critical section, and proceed downstream until flow again becomes tranquil. Peak-discharge magnitudes were changed where necessary, such as above the confluence of a major tributary. The water-surface profile elevations are available for each cross-section. The cross-sections are referenced to an arbitrary base line, drawn to an approximate centroid of flow, and measured in an upstream direction from an arbitrary starting point. Profiles were computed in accordance with accepted methods of the U.S. Geological Survey.

Following are several general items pertaining to the profile computations:

1. Discharge magnitudes greater than that of the 100-year flood may occur. However, the rate of change of stage per unit discharge generally becomes comparatively less as the discharge increases.
2. No factors of safety were used in the computations. Bridges and culverts were assumed to be free of debris. Roughness coefficients (Manning's "n") were selected based on summer vegetation.
3. New construction and channelization work may modify hydraulic properties thus changing the flood profiles in the future.

Delineation of Flood Boundaries

The first step in the delineation of flood areas was the transposing of flood profile elevation, computed at each cross section, onto the base maps on which channel cross-section had initially been located. Delineation was then completed by interpreting elevation between these cross sections and between map contours on a straight-line basis.

The maps generally show the 25- and 100-year flood boundaries except in such areas where it is possible also to show the 50-year flood boundaries without confusion. In areas where topography is steep, there is insufficient space to show both the 25- and 100-year flood boundaries, and only the 100-year flood was delineated.

The delineation represents the average water-surface elevation. During actual floods, the water-surface may not be level across the stream.

FLOOD PROFILES FOR ACCOTINK CREEK BASIN

Flood Profile Data tables on Accotink Creek basin are:

Table 1. Water-surface profile data for Accotink Creek
Table 2. Water-surface profile data for Accotink Creek Tributary
Table 3. Water-surface profile data for Bear Branch.
Table 4. Water-surface profile data for Long Branch near Vienna
Table 5. Water-surface profile data for Crook Branch
Table 6. Water-surface profile data for Turkey Run
Table 7. Water-surface profile data for Long Branch near Annandale
Table 8. Water-surface profile data for Long Branch near Newington

The tables were prepared so that the reader can locate the position for which information is desired on the flood plain maps included in this report, determine base-line stationing from the map by projection to the base line, and using the station number find in the table the nearest section for which information was determined.

For each cross section used in profile computations, tables 1 to 8 summarize: (1) The base-line reference stationing of that section, (2) the imperviousness determined from "Fairfax County, Map of Existing Zoning (Jan., 1963)" and County ultimate development plans used for computing discharge for the different recurrence interval flood at that point, (3) the resulting discharge and the water-surface profile elevations for 25-, 50-, and 100-year floods.

Special Hydraulic Conditions

Special hydraulic conditions are discussed, beginning with Accotink Creek and then each tributary in the order of its listing.

1. Some channel changes (natural and man-made) have occurred in the Accotink Creek basin since the maps were prepared. The construction of new sewer lines along some portions of Accotink Creek and its tributaries has altered the topography along the stream channels. The profile computations were based on cross-sections surveyed prior to 1964 except where noted below.
2. The effect of Lake Accotink storage on reducing flood peaks in the lower reaches of Accotink Creek was studied and determined to be negligible.
3. There may be reverse flow from Accotink Creek through several tributary culverts under the Capital Beltway (Interstate 495) at the Little River Turnpike (State 236) interchange. Delineation of the areas within the cloverleafs and areas east of the interchange were not made because of project limitations.
4. A footbridge and sidewalk were constructed at Long Branch near Annandale just upstream of Braddock Road since the maps were made. The profile computations are for the conditions including the new footbridge.

5. The flood elevations for Long Branch near Newington between Telegraph and Backlick Roads are approximate and subject to continuing changes due to the gravel plant operations.

6. The culvert on Long Branch near Newington under the Fort Belvoir Military Railroad is inadequate to convey the 25-, 50-, and 100-year design peak discharges. The flood areas upstream and downstream of the railroad embankment were delineated without considering the present storage capacity upstream of the embankment that may reduce flood levels.

7. A maintenance yard was constructed on the left bank of Long Branch near Newington just upstream of Newington Road since the maps were made. The profile computations were based on the new cross-section properties which reflect the fill conditions existing after the maintenance yard was constructed.

Accotink Creek Basin

Table 1: Water-surface profile data for Accotink Creek

Section number	Base-line Station (feet)	Imperviousness (per cent)	Discharge, in cubic feet per second			Elevation, in feet			Remarks
			25-year[a]	50-year[a]	100-year[a]	25-year[a]	50-year[a]	100-year[a]	
16	137+30	35	13,400	16,700	20,000	44.4	44.8	45.2	
17	143+20	35	12,300	15,300	18,300	46.1	46.6	47.0	
18	147+70	35	12,300	15,300	18,300	47.4	48.0	48.4	
19	150+80	35	12,300	15,300	18,300	48.9	49.4	49.9	
20	156+48	35	12,300	15,300	18,300	50.1	50.7	51.2	
21	157+00								Telegraph Road (State 611)
22	157+35	35	12,300	15,300	18,300	50.1	50.8	51.3	
23	163+86	35	12,300	15,300	18,300	51.6	52.3	52.8	
24	170+69	35	12,300	15,300	18,300	53.1	53.6	54.1	
25	177+72	35	12,300	15,300	18,300	55.5	55.8	56.1	
26	187+32	35	10,000	12,400	14,700	57.8	58.2	58.6	By-Pass Flow at Left Bank
27	195+65	35	10,000	12,400	14.700	60.2	60.7	61.2	By-Pass Flow at Left Bank
28	203+00	35	10,000	12,400	14,700	61.8	62.5	63.1	By-Pass Flow at Left Bank
29	203+90								R.F. & P. Railroad Bridge
31	205+49	35	12,300	15,300	18,300	68.0	70.8	73.4	
32	210+68	35	12,300	15,300	18,300	68.0	70.8	73.4	
33	211+87								Shirley Hwy (I-95)
34	213+59	35	9,100	9,800	9,800	71.4	72.4	73.5	By-Pass Flow on Left Bank
35	216+23	35	10,800	12,900	14,000	71.7	72.6	73.7	By-Pass Flow on Left Bank
36	220+13	35	12,300	15,300	18,100	72.0	73.0	74.0	By-Pass Flow on Left Bank
37	225+45	35	12,300	15,300	18,300	72.3	73.3	74.4	
38	225+60								Alban Road (State 790)
39	226+71	35	12,300	15,300	18,300	72.8	73.9	74.9	
40	229+16	35	12,300	15,300	18,300	73.0	74.0	75.1	
41	234+02	35	12,300	15,300	18,300	73.5	74.7	75.8	
42	238+39	35	12,300	15,300	18,300	73.9	75.1	76.2	
43	241+31	35	12,300	15,300	18,300	74.2	75.5	76.6	
44	244+53	35	12,300	15,300	18,300	74.7	76.0	77.1	
45	247+85	35	12,300	15,300	18,300	75.5	76.8	78.1	
46	250+41	35	12,300	15,300	18,300	76.5	78.0	79.3	
47	253+62	35	12,300	15,300	18,300	77.7	79.3	80.7	

[a] Recurrence interval

Accotink Creek Basin

Table 1: Water-surface profile data for Accotink Creek - Continued

Section number	Base-line station (feet)	Imperviousness (per cent)	Discharge, in cubic feet per second			Elevation, in feet			Remarks
			25-year[a]	50-year[a]	100-year[a]	25-year[a]	50-year[a]	100-year[a]	
48	256+22	35	12,300	15,300	18,300	78.9	80.5	81.9	
49	258+72	35	12,300	15,300	18,300	79.8	81.4	82.8	
50	260+46	35	12,300	15,300	18,300	80.4	82.0	83.5	
51	262+67	35	12,300	15,300	18,300	81.1	82.7	84.2	
52	265+48	35	12,300	15,300	18,300	82.0	83.6	85.1	
53	268+98	35	12,300	15,300	18,300	84.0	85.9	87.5	
54	272+30	35	12,300	15,300	18,300	85.0	86.8	88.4	
55	274+43	35	12,300	15,300	18,300	86.1	88.0	89.6	
56	276+04	35	12,300	15,300	18,300	86.2	88.1	89.8	
57	278+17	35	12,300	15,300	18,300	86.6	88.4	90.0	
58	281+60	35	12,300	15,300	18,300	89.3	90.9	92.4	
59	284+70	35	12,300	15,300	18,300	91.9	93.4	94.8	
60	286+55	35	12,300	15,300	18,300	93.8	95.4	96.8	
61	288+68	35	12,300	15,300	18,300	95.7	97.1	98.4	
62	290+62	35	12,300	15,300	18,300	98.5	99.9	101.2	
63	291+78	35	12,300	15,300	18,300	99.9	101.3	102.6	
64	293+13	35	12,300	15,300	18,300	102.6	104.1	105.5	
65	294+60	35	12,300	15,300	18,300	104.7	106.4	107.9	
66	296+88	35	12,300	15,300	18,300	106.4	108.1	109.6	
67	299+67	35	12,300	15,300	18,300	108.4	110.0	111.4	
68	302+43	35	12,300	15,300	18,300	110.8	112.5	114.1	
	302+70								Fort Belvoir Military Reservation Boundary

[a] Recurrence interval

Table 1: Water-surface profile data for Accotink Creek - Continued

Section number	Base-line Station (feet)	Imperviousness (per cent)	Discharge, in cubic feet per second			Elevation, in feet			Remarks
			25-year[a]	50-year[a]	100-year[a]	25-year[a]	50-year[a]	100-year[a]	
	400+00								Fort Belvoir Military Reservation Boundary
100	400+32	35	12,000	14,900	17,900	145.5	146.9	147.9	
101	402+13	35	12,000	14,900	17,900	145.8	147.2	148.3	
102	404+29	35	12,000	14,900	17,900	145.9	147.4	148.5	
103	406+88	35	12,000	14,900	17,900	146.1	147.7	148.8	
104	409+03	35	12,000	14,900	17,900	146.3	147.9	149.1	
105	411+54	35	12,000	14,900	17,900	146.5	148.0	149.2	
106	413+11	35	12,000	14,900	17,900	146.8	148.3	149.6	
107	414+73	35	12,000	14,900	17,900	147.0	148.6	150.0	
108	416+77	35	12,000	14,900	17,900	147.5	149.3	150.7	
109	418+84	35	12,000	14,900	17,900	147.8	149.6	151.1	
110	421+45	35	12,000	14,900	17,900	148.0	149.8	151.3	
111	423+65	35	12,000	14,900	17,900	148.2	150.0	151.6	
112	425+44	35	12,000	14,900	17,900	148.8	150.7	152.3	
113	426+61	35	12,000	14,900	17,900	149.0	150.8	152.5	
114	427+26	35	12,000	14,900	17,900	149.0	150.9	152.6	
114A	427+50								Hooes Road (State 636)
115	428+14	35	12,000	14,900	17,900	149.1	151.0	152.7	
116	429+26	35	12,000	14,900	17,900	149.2	151.1	152.8	
117	431+20	35	12,000	14,900	17,900	149.7	151.6	153.3	
118	432+95	35	12,000	14,900	17,900	149.9	151.8	153.5	
119	434+89	35	12,000	14,900	17,900	150.2	152.1	153.9	
120	437+76	35	12,000	14,900	17,900	150.5	152.4	154.2	
121	440+66	35	12,000	14,900	17,900	151.0	152.8	154.6	
122	443+75	35	12,000	14,900	17,900	151.5	153.4	155.2	
123	447+49	35	12,000	14,900	17,900	152.0	153.9	155.7	
124	449+77	35	12,000	14,900	17,900	152.2	154.2	156.0	
125	452+71	35	12,000	14,900	17,900	152.5	154.5	156.3	
126	454+84	35	12,000	14,900	17,900	152.9	154.9	156.6	
127	459+63	35	12,000	14,900	17,900	153.5	155.4	157.1	
128	463+99	35	12,000	14,900	17,900	154.0	155.8	157.6	

[a] Recurrence interval

Table 1: Water-surface profile data for Accotink Creek - Continued

Section number	Base-line Station (feet)	Imperviousness (per cent)	Discharge, in cubic feet per second			Elevation, in feet			Remarks
			25-year[a]	50-year[a]	100-year[a]	25-year[a]	50-year[a]	100-year[a]	
129	469+27	35	12,000	14,900	17,900	154.5	156.3	158.0	
130	476+87	35	11,300	14,100	16,800	155.3	157.0	158.7	
131	483+72	35	11,300	14,100	16,800	156.2	157.8	159.4	
132	487+76	35	11,300	14,100	16,800	156.8	158.4	159.9	
133	488+75								Old Keene Mill Rd (State 644)
134	490+27	35	11,300	14,100	16,800	158.3	160.3	162.0	
135	492+31	35	11,300	14,100	16,800	159.5	161.2	162.8	
136	494+54	35	11,300	14,100	16,800	159.8	161.5	163.0	
137	497+97	35	11,300	14,100	16,800	160.0	161.7	163.2	
138	501+70	35	11,300	14,100	16,800	160.2	161.8	163.3	
139	504+30	35	11,300	14,100	16,800	160.3	161.9	163.4	
140	506+62	35	11,300	14,100	16,800	160.4	162.1	163.5	
141	509+47	35	11,300	14,100	16,800	160.6	162.2	163.7	
142	512+58	35	11,300	14,100	16,800	160.9	162.4	163.9	
143	515+78	35	11,300	14,100	16,800	161.6	163.0	164.3	
144	519+50	35	11,300	14,100	16,800	162.1	163.4	164.7	
145	523+32	35	11,300	14,100	16,800	162.4	163.6	165.0	
146	527+55	35	11,300	14,100	16,800	162.7	163.9	165.2	
147	532+20	35	11,300	14,100	16,800	163.2	164.3	165.6	
148	534+63	35	11,300	14,100	16,800	163.7	164.8	166.0	
149	546+92	35	11,300	14,100	16,800	167.1	168.0	168.8	
150	551+87	35	11,300	14,100	16,800	168.2	169.2	170.0	
151	557+50	35	11,300	14,100	16,800	169.8	170.8	171.8	
152	563+03	35	11,300	14,100	16,800	170.8	171.8	172.8	
153	568+06	35	11,300	14,100	16,800	171.4	172.4	173.4	
154	572+49	35	11,300	14,100	16,800	172.2	173.2	174.2	
155	577+35	35	11,300	14,100	16,800	173.8	174.9	175.9	
156	583+30	35	11,300	14,100	16,800	175.0	176.2	177.2	
157	587+60	35	11,300	14,100	16,800	176.0	177.2	178.2	
158	592+03	35	11,300	14,100	16,800	176.6	177.9	179.0	
159	595+78	35	11,300	14,100	16,800	177.2	178.6	179.8	

[a] Recurrence interval

Table 1: Water-surface profile data for Accotink Creek - Continued

Section number	Base-line Station (feet)	Imperviousness (per cent)	Discharge, in cubic feet per second			Elevation, in feet			Remarks
			25-year[a]	50-year[a]	100-year[a]	25-year[a]	50-year[a]	100-year[a]	
160	598+89	35	11,300	14,100	16,800	177.6	179.0	180.1	
161	602+22	35	11,300	14,100	16,800	178.0	179.5	180.6	
162	606+92	35	11,300	14,100	16,800	178.5	179.9	181.0	
163	610+69	35	11,300	14,100	16,800	179.1	180.5	181.6	
164	612+76	35	11,300	14,100	16,800	179.6	181.0	182.1	
165	613+00								Southern Railway Trestle
166	613+73	35	11,300	14,100	16,800	180.1	181.5	182.6	
167	615+00								Lake Accotink Spillway
168-198						191.1	191.8	192.5	Lake Accotink
199	644+30	35	10,800	13,700	16,400	191.6	192.3	193.1	
200	650+86	35	10,800	13,700	16,400	192.0	192.8	193.5	
201	659+25	35	10,800	13,700	16,400	192.5	193.2	194.0	
202	664+77	35	10,800	13,700	16,400	193.9	194.7	195.5	
203	669+40	35	10,800	13,700	16,400	195.6	196.6	197.4	
204	676+12	35	10,800	13,700	16,400	196.7	197.7	198.5	
205	683+08	35	10,800	13,700	16,400	198.0	199.0	199.8	
206	688+11	35	10,800	13,700	16,400	198.8	199.8	200.6	
207	693+05	35	10,800	13,700	16,400	199.8	200.8	201.6	
208	698+11	35	10,800	13,700	16,400	201.1	202.0	202.8	
209	702+92	35	10,800	13,700	16,400	201.9	202.8	203.6	
210	708+81	35	10,800	13,700	16,400	202.5	203.3	204.0	
211	709+08								Braddock Road (State 620)
212	709+98	35	9,500	11,800	14,100	202.7	203.5	204.1	
213	717+34	35	9,500	11,800	14,100	204.2	204.7	205.2	
214	722+47	35	9,500	11,800	14,100	205.5	206.2	206.8	
215	731+12	35	9,500	11,800	14,100	207.1	207.8	208.4	
216	736+91	35	9,200	11,300	13,500	207.9	208.6	209.3	
217	742+13	35	9,200	11,300	13,500	209.0	209.8	210.4	
218	746+64	35	9,200	11,300	13,500	210.2	210.9	211.6	
219	752+66	35	9,200	11,300	13,500	211.6	212.2	213.0	
220	755+60	35	9,200	11,300	13,500	212.5	213.2	214.0	

[a] Recurrence interval

Table 1: Water-surface profile data for Accotink Creek - Continued

Section number	Base-line Station (feet)	Imperviousness (per cent)	Discharge, in cubic feet per second			Elevation, in feet			Remarks
			25-year[a]	50-year[a]	100-year[a]	25-year[a]	50-year[a]	100-year[a]	
221	759+18	35	9,200	11,300	13,500	214.0	214.8	215.5	
222	762+94	35	9,200	11,300	13,500	215 2	215.9	216.6	
223	768+62	35	9,200	11,300	13,500	216.8	217.5	218.1	
224	772+93	35	9,200	11,300	13,500	217.6	218.2	219.0	
225	777+48	35	9,200	11,300	13,500	218.9	219.8	220.6	
226	780+37	35	9,200	11,300	13,500	220.4	221.2	222 0	
227	785+02	35	9,200	11,300	13,500	221.6	222.5	223.2	
228	788+13	35	9,200	11,300	13,500	222.6	223.5	224.2	
229	793+39	35	9,200	11,300	13,500	224.3	225.3	226.2	
230	797+77	35	9,200	11,300	13,500	225.0	226.0	226.9	
231	801+22	35	9,200	11,300	13,500	225.6	226.6	227.5	
232	804+35	35	9,200	11,300	13,500	225.9	226.8	227.7	
233	804+76	35	9,200	11,300	13,500	225.9	226.8	227.7	
233A	80 5+10								I 495 Ramp
234	804+91	35	9,200	11,300	13,500	225.9	226.8	227.7	
235	808+08	35	9,200	11,300	13,500	228.1	229.1	230.0	
236	809+79	35	9,200	11,300	13,500	229.1	230.3	231.3	
237	810+65								Little River Turnpike (State 236)
238	811+98	35	8,400	10,400	12,400	229.3	230.5	231.5	
239	813+80	35	8,400	10,400	12,400	229.9	231.2	232.4	
240	815+18	35	8,400	10,400	12,400	230.1	231.4	232.5	
241	816+30								I 495 Ramp
242	816+90								I 495 Ramp
244	818+02	35	8,400	10,400	12,400	231.4	233.0	234.4	
245	821+08	35	8,400	10,400	12,400	231.8	233.4	234.7	
246	825+88	35	8,400	10,400	12,400	233.5	234.5	235.5	
247	830+82	35	8,400	10,400	12,400	234.9	235.8	236.6	
248	833+56	35	8,400	10,400	12,400	235.7	236.5	237.4	
249	834+79	35	8,400	10,400	12,400	236.1	236.8	237.6	
250	838+06	35	8,400	10,400	12,400	236.9	237.8	238.6	

Table 1: Water-surface profile data for Accotink Creek - Continued

Section number	Base-line Station (feet)	Imperviousness (per cent)	Discharge, in cubic feet per second			Elevation, in feet			Remarks
			25-year[a]	50-year[a]	100-year[a]	25-year[a]	50-year[a]	100-year[a]	
251	840+14	35	8,400	10,400	12,400	237.6	238.5	239.2	
252	841+95	35	8,400	10,400	12,400	238.2	239.2	240.2	
253	845+23	35	8,400	10,400	12,400	238.9	239.9	240.9	
254	848+08	35	8,400	10,400	12,400	239.8	240.8	241.8	
255	850+55	35	8,400	10,400	12,400	240.9	241.8	242.7	
256	853+14	35	8,400	10,400	12,400	242.3	243.2	244.0	
257	855+35	35	8,400	10,400	12,400	242.9	243.8	244.6	
258	858+55	35	8,400	10,400	12,400	244.0	245.0	245.9	
259	861+54	35	8,400	10,400	12,400	244.6	245.6	246.5	
260	863+89	35	8,400	10,400	12,400	245.4	246.4	247.2	
261	866+58	35	8,400	10,400	12,400	247.0	247.8	248.4	
262	869+35	35	8,400	10,400	12,400	248.1	248.8	249.5	
263	872+39	35	8,400	10,400	12,400	248.8	249.6	250.2	
264	874+52	35	8,400	10,400	12,400	249.2	250.2	251.0	
265	879+42	35	8,400	10,400	12,400	250.0	251.0	251.8	
266	883+22	35	8,400	10,400	12,400	250.4	251.4	252.2	
266A	886+00	35	8,400	10,400	12,400	251.1	252.0	252.8	
267	886+47								King Arthur Road
268	887+95	35	8,400	10,400	12,400	251.9	253.0	253.9	
268A	889+46	35	8,400	10,400	12,400	252.4	253.5	254.4	
269	892+31	35	8,400	10,400	12,400	252.8	253.9	254.8	
270	895+93	35	8,400	10,400	12,400	253.4	254.5	255.4	
271	898+94	35	8,400	10,400	12,400	253.6	254.8	255.6	
272	902+46	35	8,400	10,400	12,400	254.0	255.1	256.0	
273	906+50	35	8,400	10,400	12,400	254.3	255.4	256.3	
274	910+01	35	8,400	10,400	12,400	254.6	255.7	256.5	
275	912+82	35	8,400	10,400	12,400	255.2	256.2	257.0	
276	914+60	35	8,400	10,400	12,400	255.8	256.8	257.6	
277	916+32	35	8,400	10,400	12,400	255.9	256.9	257.8	
278	916+60								Woodburn Road (State 650)
279	917+04	35	8,400	10,400	12,400	256.0	257.0	257.8	

[a] Recurrence interval

Table I: Water-surface profile data for Accotink Creek - Continued

Section number	Base-line Station (feet)	Imperviousness (per cent)	Discharge, in cubic feet per second			Elevation, in feet			Remarks
			25-year[a]	50-year[a]	100-year[a]	25-year[a]	50-year[a]	100-year[a]	
280	919+33	35	8,400	10,400	12,400	256.2	257.2	258.0	
281	926+56	35	7,800	9,700	11,600	256.8	257.8	258.5	
282	930+91	35	7,800	9,700	11,600	257.3	258.2	258.9	
283	936+99	35	7,800	9,700	11,600	258.2	259.0	259.6	
284	943+30	35	7,800	9,700	11,600	259.9	260.5	261.1	
285	947+68	35	7,800	9,700	11,600	261.7	262.3	262.9	
286	949+28	35	7,800	9,700	11,600	262.2	262.9	263.5	
287	950+78	35	7,800	9,700	11,600	263.1	263.8	264.5	
288	953+85	35	7,800	9,700	11,600	263.5	264.3	265.0	
289	956+75	35	7,800	9,700	11,600	263.6	264.4	265.1	
290	962+31	35	7,800	9,700	11,600	263.9	264.7	265.4	
291	962+76								Prosperity Avenue (State 699)
292	963+41	35	7,800	9,700	11,600	264.5	265.0	265.6	
293	968+52	35	7,800	9,700	11,600	265.0	265.5	266.1	
294	977+06	35	7,800	9,700	11,600	266.1	266.6	267.1	
295	984+39	35	6,700	8,200	9,900	267.7	268.0	268.4	
296	990+71	35	6,700	8,200	9,900	270.1	270.5	270.9	
297	995+35	35	6,700	8,200	9,900	272.4	272.8	273.2	
298	998+28	35	6,700	8,200	9,900	273.0	273.5	274.1	
299	998+80								Barkley Drive
300	999+27	35	6,700	8,200	9,900	275.5	275.8	276.2	
301	1004+74	35	6,700	8,200	9,900	275.7	276.0	276.4	
302	1008+12	35	5,800	7,100	8,500	275.9	276.2	276.6	
303	1015+62	35	5,800	7,100	8,500	276.7	277.0	277.4	
303A	1022+82	35	5,000	6,200	7,400	277.8	278.1	278.6	
304	1027+18	35	5,000	6,200	7,400	278.4	278.8	279.3	
305	1033+90	35	5,000	6,200	7,400	280.2	280.5	280.9	
306	1041+82	35	5,000	6,200	7,400	283.0	283.4	283.7	
	1048+30								Fairfax City-Fairfax County Boundary
307	1048+60	35	5,000	6,200	7,400	285.1	285.5	285.8	
	1058+05								Pickett Street

[a] Recurrence interval

Accotink Creek Basin

Table 2: Water-surface profile data for Accotink Creek Tributary

Section number	Base-line Station (feet)	Imperviousness (percent)	Discharge, in cubic feet per second			Elevation, in feet			Remarks
			25-year[a]	50-year[a]	100-year[a]	25-year[a]	50-year[a]	100-year[a]	
898	6+50	30	1,700	2,100	2,500	277.2	277.6	278.0	
899	7+96	30	1,700	2,100	2,500	279.4	279.6	279.7	
900	10+00	30	1,700	2,100	2,500	280.6	280.8	281.1	
901	13+90	30	1,700	2,100	2,500	284.2	284.6	284.9	
902	15+70	30	1,700	2,100	2,500	285.0	285.4	285.7	
903	16+37								Arlington Blvd. (US 50)
904	17+16	30	1,700	2,100	2,500	288.6	289.0	289.4	
905	20+59	30	1,700	2,100	2,500	288.8	289.1	289.5	
906	25+40	30	1,700	2,100	2,500	289.3	289.7	290.0	
907	29+97	30	1,700	2,100	2,500	292.3	292.6	292.8	
908	34+18	30	1,700	2,100	2,500	295.3	295.6	295.8	
909	36+89	30	1,700	2,100	2,500	297.0	296.4	297.6	
910	40+59	30	1,700	2,100	2,500	300.5	300.8	301.2	
911	43+45	30	1,700	2,100	2,500	301.8	302.2	302.5	
912	44+07								Lee Highway (US 29-211)
913	44+57	30	1,400	1,800	2,100	305.9	306.3	306.6	
914	47+79	30	1,400	1,800	2,100	306.0	306.4	306.8	
915	51+75	30	1,400	1,800	2,100	306.5	306.9	307.3	
916	54+54	30	1,400	1,800	2,100	307.2	307.7	308.1	
917	57+27	30	1,400	1,800	2,100	308.4	308.8	309.2	
918	59+85	30	1,400	1,800	2,100	310.0	310.4	310.8	
919	63+11	30	1,400	1,800	2,100	311.8	312.2	312.5	
920	66+08	30	1,400	1,800	2,100	313.0	313.4	313.7	
921	67+76	30	1,400	1,800	2,100	313.8	314.1	314.4	
922	69+14	30	1,400	1,800	2,100	314.6	315.2	315.5	
923	70+96	30	1,400	1,800	2,100	318.5	319.0	319.4	
924	72+76	30	1,400	1,800	2,100	319.4	320.1	320.6	
925	74+20								Highway I-66
926	75+56	30	1,400	1,800	2,100	321.2	322.6	323.6	
927	78+61	30	1,400	1,800	2,100	321.5	322.8	323.7	
928	82+46	30	1,400	1,800	3,100	323.2	323.7	324.3	
929	85+73	30	1,400	1,800	2,100	325.6	325.9	326.0	
930	89+01	30	1,400	1,800	2,100	327.4	327.7	328.0	
931	91+12	30	1,400	1,800	2,100	327.9	328.2	328.5	
	94+50								Nutley Road

[a] Recurrence interval

Accotink Creek Basin

Table 3: Water-surface profile data for Bear Branch

Section number	Base-line Station (feet)	Imperviousness (per cent)	Discharge, in cubic feet per second			Elevation, in feet			Remarks
			25-year[a]	50-year[a]	100-year[a]	25-year[a]	50-year[a]	100-year[a]	
806	13+92	30	1,900	2,400	2,800	275.7	276.0	276.4	
807	16+08	30	1,900	2,400	2,800	276.6	276.8	277.1	
808	19+13	30	1,900	2,400	2,800	277.8	278.1	278.2	
809	21+06	30	1,900	2,400	2,800	278.4	278.8	279.0	
810	23+25	30	1,900	2,400	2,800	279.2	279.5	279.8	
811	24+98	30	1,900	2,400	2,800	280.2	280.5	280.7	
812	26+71	30	1,900	2,400	2,800	281.0	281.2	281.5	
813	27+30								Arlington Blvd. (U.S 50)
814	28+06	30	1,900	2,400	2,800	287.0	287.4	287.7	
815	29+67	30	1,900	2,400	2 800	287.0	287.4	287.7	
816	31+35	30	1,900	2,400	2,800	287.0	287.4	287.7	
817	33+57	30	1,900	2,400	2,800	287.0	287.4	287.7	
818	36+20	30	1,900	2,400	2,800	287.3	287.7	288.1	
819	39+29	30	1,900	2,400	2,800	288.3	288.6	288.8	
820	41+29	30	1,900	2,400	2,800	289.1	289.3	289.5	
821	43+22	30	1,900	2,400	2,800	290.5	290.7	290.8	
822	45+50	30	1,900	2,400	2,800	291.8	292.0	292.2	
823	47+33	30	1,900	2,400	2,800	292.8	293.0	293.2	
824	49+21	30	1,900	2,400	2,800	293.9	294.2	294.4	
825	51+02	30	1,900	2,400	2,800	295.2	295.5	295.7	
826	53+91	30	1,900	2,400	2,800	297.0	297.4	297.6	
827	56+37	30	1,900	2,400	2,800	298.5	298.8	299.0	
828	56+88								Lee Highway (U.S. 29-211)
829	57+40	30	1,900	2,400	2,800	302.0	302.5	302.8	
830	59+19	30	1,900	2,400	2 800	302.1	302.6	302.9	
831	60+48	30	1,900	2,400	2,800	302.2	302 8	303.0	
832	61+99	30	1,900	2,400	2,800	302.3	302.9	303.2	
834	63+25								Hunter Road
835	63+65	30	1,900	2,400	2 800	302.5	303.1	303.4	
836	66+40	30	1,900	2,400	2,800	303.0	303.5	303.8	
837	68+58	30	1,900	2,400	2,800	303.6	304.0	304.2	
838	70+09	30	1,900	2,400	2,800	304.4	304.7	304.9	
839	72+60	30	1,900	2,400	2,800	307.4	307.6	307.8	
840	75+49	30	1,900	2,400	2,800	308.2	308.6	308.7	

[a] Recurrence interval

Accotink Creek Basin

Table 4: Water-surface profile data for Long Branch near Vienna

Section number	Base-line Station (feet)	Imperviousness (per cent)	Discharge, in cubic feet per second			Elevation, in feet			Remarks
			25-year[a]	50-year[a]	100-year[a]	25-year[a]	50-year[a]	100-year[a]	
703	12+48	40	2,100	2,600	3,100	266.9	267.3	267.6	
704	15+62	40	2,100	2,600	3,100	268.9	269.2	269.4	
705	18+19	40	2,100	2,600	3,100	270.4	270.7	271.0	
706	20+92	40	2,100	2,600	3,100	272.1	272.4	272.7	
707	23+48	40	2,100	2,600	3,100	273.2	273.5	273.8	
708	25+80	40	2,100	2,600	3,100	274.3	274.6	274.9	
709	28+72	40	2,100	2,600	3,100	276.4	276.8	277.0	
710	31+00	40	2,100	2,600	3,100	277.6	277.9	278.2	
711	32+40	40	2,100	2,600	3,100	278.8	279.0	279.2	
712	34+15	40	2,100	2,600	3,100	279.5	279.8	280.0	
713	35+35	40	2,100	2,600	3,100	279.8	280.1	280.3	
714	37+70	40	2,100	2,600	3,100	281.8	282.1	282.4	
715	40+55	40	2,100	2,600	3,100	283.4	283.7	284.0	
716	42+34	40	2,100	2,600	3,100	284.6	284.9	285.2	
717	44+15	40	2,100	2,600	3,100	285.9	286.2	286.6	
718	46+41	40	2,100	2,600	3,100	287.0	287.3	287.6	
719	47+10								Arlington Blvd. (U.S. 50)
720	47+92	40	2,100	2,600	3,100	291.1	291.4	291.8	
721	49+64	40	2,100	2,600	3,100	291.1	291.5	291.8	
722	51+58	40	1,500	1,800	2,200	291.2	291.5	291.8	
723	54+27	40	1,500	1,800	2,200	291.2	291.6	291.9	
724	56+49	40	1,500	1,800	2,200	292.2	292.5	292.8	
725	59+23	40	1,500	1,800	2,200	294.0	294.3	294.6	
726	61+20	40	1,500	1,800	2,200	295.2	295.5	295.8	
727	63+09	40	1,500	1,800	2,200	296.1	296.5	296.8	
728	65+81	40	1,500	1,800	2,200	297.8	298.2	298.6	
729	68+64	40	1,500	1,800	2,200	298.5	298.7	298.8	
730	70+58	40	1,500	1,800	2,200	302.3	303.2	304.6	
731	72+03	40	1,500	1,800	2,200	302.5	303.2	304.8	
732	73+87	40	1,500	1,800	2,200	302.8	303.5	304.9	

[a] Recurrence interval

Table 4: Water-surface profile data for Long Branch near Vienna - Continued

Section number	Base-line Station (feet)	Imperviousness (per cent)	Discharge, in cubic feet per second			Elevation, in feet			Remarks
			25-year[a]	50-year[a]	100-year[a]	25-year[a]	50-year[a]	100-year[a]	
733	75+49	40	1,500	1,800	2,200	304.1	304.4	305.2	
734	77+29	40	1,500	1,800	2,200	305.6	305.9	306.2	
735	77+39								Private Road
737	77+95	40	1,500	1,800	2,200	306.0	306.2	306.6	
738	78+42								Lee Highway(U.S. 29-211)
739	79+30	40	1,500	1,800	2,200	309.8	311.1	312.8	
740	80+21	40	1,500	1,800	2,200	309.8	311.2	312.8	
741	81+65	40	1,500	1,800	2,200	309.8	311.2	312.8	
742	81+90								Old Lee Highway
743	82+18	40	1,500	1,800	2,200	311.7	312.3	313.0	
744	84+25	40	1,500	1,800	2,200	311.7	312.3	313.0	
745	85+59	40	1,500	1,800	2,200	311.8	312.4	313.0	
746	87+49	40	1,500	1,800	2,200	311.8	312.4	313.1	
747	89+62	40	1,500	1,800	2,200	312.4	313.0	313.5	
748	91+62	40	1,500	1,800	2,200	313.5	313 8	314.4	
749	92+05								Hilltop Road

[a] Recurrence interval

Accotink Creek Basin

Table 5: Water-surface profile data for Crook Branch

Section number	Base-line Station (feet)	Imperviousness (per cent)	Discharge, in cubic feet per second			Elevation, in feet			Remarks
			25-year[a]	50-year[a]	100-year[a]	25-year[a]	50-year[a]	100-year[a]	
650	10+98	30	1,800	2,200	2,700	256.8	257 8	258.5	
651	13+99	30	1,800	2,200	2,700	261.2	261.3	261.4	
652	14+20								Morningside Drive
653	16+00	30	1,800	2,200	2,700	262.8	263.1	263.5	
654	18+50	30	1,800	2,200	2,700	263.9	264.2	264.5	
655	21+07	30	1,800	2,200	2,700	264.7	265.0	265.3	
656	22+24	30	1,800	2,200	2,700	265.5	265.9	266.2	
657	25+03	30	1,800	2,200	2,700	267.8	268.1	268.5	
658	26+98	30	1,800	2,200	2,700	268.3	268.6	269.0	
658A	29+72								Prosperity Ave. (State 699)
659	30+38	30	1,800	2,200	2,700	270.3	270.5	270.7	
660	33+89	30	1,800	2,200	2,700	273.1	273.4	273.6	
661	35+95	30	1,800	2,200	2,700	274.2	274.4	274.7	
662	38+19	30	1,800	2,200	2,700	277.0	277.2	277.5	
663	41+71	30	1,800	2,200	2,700	280.0	280.3	280.6	
664	45+12	30	1,800	2,200	2,700	281.2	281.4	281.7	
665	48+58	30	1,800	2,200	2,700	283.9	284.1	284.3	
666	51+12	30	1,800	2,200	2,700	285.7	286.1	286.5	
667	54+76	30	1,800	2,200	2,700	289.5	289.8	290.0	
668	56+64	30	1,800	2,200	2,700	293.0	293.2	293.5	
669	58+59	30	1,800	2,200	2,700	294.0	294.2	294.6	
670	60+58	30	1,800	2,200	2,700	295.8	296.1	296.4	
671	63+78	30	1,800	2,200	2,700	298.8	299.2	299.5	
672	66+30	30	1,800	2,200	2,700	301.4	301.7	302.0	

[a] Recurrence interval

Accotink Creek Basin

Table 6: Water-surface profile data for Turkey Run

Section number	Base-line Station (feet)	Imperviousness (per cent)	Discharge, in cubic feet per second			Elevation, in feet			Remarks
			25-year	50-year	100-year	25-year	50-year	100-year	
600	9+13								Dam and Spillway
601	10+13	30	1,200	1,500	1,800	223.9	224.1	224.3	
602	13+85	30	1,200	1,500	1,800	223.9	224.1	224.3	
603	17+01	30	1,200	1,500	1,800	223 9	224.1	224.3	
604	20+03	30	1,200	1,500	1,800	224.0	224.2	224.6	
605	20+37								Private Lane
606	20+81	30	1,200	1,500	1,800	232.4	232.6	232.9	
607	22+24	30	1,200	1,500	1,800	232.4	232.7	233.0	
608	23+80	30	1,200	1,500	1,800	232.4	232.7	233.0	
609	25+50	30	1,200	1,500	1,800	232.4	232.8	233.1	
610	26+94	30	1,200	1,500	1,800	232.5	232.8	233.2	
611	28+10	30	1,200	1,500	1,800	232.7	233.1	233.4	
612	30+05	30	1,200	1,500	1,800	233.6	233.9	234.3	
613	32+54	30	1,200	1,500	1,800	235.9	236.2	236.5	
614	34+44	30	1,200	1,500	1,800	238.8	239.2	239.5	
615	37+31	30	1,200	1,500	1,800	242.5	242.8	243.1	
616	39+10	30	1,200	1,500	1,800	243.5	243.8	244.0	
617	39+50								Wakefield Chapel Rd.(State 650)
618	40+03	30	1,100	1,300	1,600	248.2	248.4	248.8	
619	41+61	30	1,100	1,300	1,600	248.2	248.4	248.8	
620	44+22	30	1,100	1,300	1,600	249.0	249.3	249.7	
621	46+70	30	1,100	1,300	1,600	253.5	253.6	253.8	
622	49+39	30	1,100	1,300	1,600	256.1	256.3	256.5	
623	52+60	30	1,100	1,300	1,600	259.0	259.2	259.6	
624	54+89	30	1,100	1,300	1,600	261.0	261.2	261.6	
625	57+26	30	1,100	1,300	1,600	263.3	263.5	263.8	
626	60+70	30	1,100	1,300	1,600	266.1	266.3	266.5	
627	62+40	30	1,100	1,300	1,600	267.4	267.6	267.8	
628	65+09	30	1,100	1,300	1,600	269.8	270.0	270.2	
629	67+49	30	1,100	1,300	1,600	274.0	274.2	274.5	
630	70+00	30	1,100	1,300	1,600	277.8	277.9	278.2	
631	72+57	30	1,100	1,300	1,600	281.0	281.2	281.4	
632	74+57	30	1,100	1,300	1,600	283.6	283.8	284.0	
633	76+75	30	1,100	1,300	1,600	286.6	286.8	287.0	
634	79+20	30	1,100	1,300	1,600	288.1	288.3	288.6	

[a] Recurrence interval

Accotink Creek Basin

Table 7: Water-surface profile data for Long Branch near Annandale

Section number	Base-line station (feet)	Imperviousness (per cent)	Discharge, in cubic feet per second			Elevation, in feet			Remarks
			25-year[a]	50-year[a]	100-year[a]	25-year[a]	50-year[a]	100-year[a]	
500	13+70								Braddock Road (State 620)
501	14+25	30	2,800	3,500	4,200	207.9	208.6	209.2	
501A	15+05	30	2,800	3,500	4,200	207.9	208.6	209.2	
502	16+06	30	2,800	3,500	4,200	208.4	208 8	209.4	
503	18+51	30	2,800	3,500	4,200	208.7	209.0	209.5	
504	21+15	30	2,800	3,500	4,200	211.7	212.0	212.2	
505	23+82	30	2,800	3,500	4,200	213.4	213.7	214.0	
506	26+22	30	2,800	3,500	4,200	215.2	215.6	215.9	
507	28+07	30	2,800	3,500	4,200	216.1	216.4	216.6	
508	33+48	30	2,800	3,500	4,200	218.6	218.8	219.1	
509	37+07	30	2,800	3,500	4,200	221.0	221.3	221.6	
510	40+78	30	2,800	3,500	4,200	224.2	224.6	224.9	
511	44+46	30	2,800	3,500	4,200	226.6	227.1	227.4	
512	47+59	30	2,800	3,500	4,200	228.1	228.5	228.9	
513	50+63	30	2,800	3,500	4,200	230.2	230.6	231.0	
514	53+32	30	2,800	3,500	4,200	232.5	232.9	233.3	
515	58+02	30	2,800	3,500	4,200	235.1	235.6	236.0	
516	62+62	30	2,800	3,500	4,200	238.0	238.3	238.6	
517	66+59	30	2,800	3,500	4,200	240.9	241.2	241.4	
518	71+25	30	2,800	3,500	4,200	243.6	244.0	244.4	
519	72+96	30	2,800	3,500	4,200	244.6	245.0	245.4	
520	73+50	30	2,800	3,500	4,200	245.0	245.2	245.6	
520A	74+00								Woodland Way
521	75+17	30	2,800	3,500	4,200	246.8	248.2	249.5	
522	77+44	30	2,400	3,000	3,700	247.8	248.8	249.9	
523	81+30	30	2,400	3,000	3,700	249.6	250.0	250.6	
524	83+08	30	2,400	3,000	3,700	251.7	252.0	252.2	
525	86+24	30	2,400	3,000	3,700	253.8	254.2	254.6	
526	88+63	30	2,400	3,000	3,700	255.4	255.7	256.0	
527	91+49	30	2,400	3,000	3,700	256.5	256.9	257.2	

[a] Recurrence interval

Accotink Creek Basin

Table 7: Water-surface profile data for Long Branch near Annandale - Continued

Section number	Base-line Station (feet)	Imperviousness (per cent)	Discharge, in cubic feet per second			Elevation, in feet			Remarks
			25-year[a]	50-year[a]	100-year[a]	25-year[a]	50-year[a]	100-year[a]	
528	95+06	30	2,400	3,000	3,700	259.1	259.4	259.7	
529	97+89	30	2,400	3,000	3,700	260.7	261.0	261.4	
530	102+29	30	2,400	3,000	3,700	263.7	264.1	264.4	
531	105+26	30	2,400	3,000	3,700	266.0	266.2	266.6	
532	108+77	30	2,400	3,000	3,700	268.7	269.0	269.3	
533	111+03	30	2,400	3,000	3,700	270.6	270.9	271.2	
534	113+11	30	2,400	3,000	3,700	272.4	272.7	273.0	
535	114+70	30	2,400	3,000	3,700	273.8	274.1	274.5	
536	115+95	30	2,400	3,000	3,700	274.8	275.2	275.6	
537	118+14	30	2,400	3,000	3,700	275 8	276.2	276.6	
538	120+11	30	2,400	3,000	3,700	277.5	278.1	278.6	
539	122+56	30	2,400	3,000	3,700	280.0	280.2	280.5	
540	124+50	30	2,400	3,000	3,700	280.9	281.2	281.6	
541	126+41	30	2,400	3,000	3,700	282.3	282.6	283.0	
542	126+75								Guinea Road (State 651)
543	127+07	30	2,400	3,000	3,700	283.9	284.2	284.5	
544	129+00	30	1,600	2,000	2,400	284.2	284.5	284.8	
545	130+83	30	1,600	2,000	2,400	285.1	285.2	285.5	
546	133+69	30	1,600	2,000	2,400	287.5	287.7	287.8	
547	137+09	30	1,600	2,000	2,400	290.9	291.1	291.4	
548	140+60	30	1,600	2,000	2,400	295.2	295.5	295.7	
549	143+75	30	1,600	2,000	2,400	297.2	297.5	297.7	
550	147+68	30	1,600	2,000	2,400	300.5	300.8	301.0	
551	150+38	30	1,600	2,000	2,400	303.1	303.4	303.6	
552	150+62								Olley Lane (State 787)
553	150+94	30	1,600	2,000	2,400	306.6	307.0	307.3	
554	153+22	30	1,600	2,000	2,400	306.7	307.0	307.4	
555	155+51	30	1,600	2,000	2,400	307.1	307.5	307.8	
556	158+93	30	1,600	2,000	2,400	311.3	311.6	311.8	
557	161+90	30	1,600	2,000	2,400	313 2	313.5	313.7	
558	164+84	30	1,600	2,000	2,400	314.8	315.1	315.3	

[a] Recurrence interval

Table 7: Water-surface profile data for Long Branch near Annandale - Continued

Section number	Base-line station (feet)	Imperviousness (per cent)	Discharge, in cubic feet per second			Elevation, in feet			Remarks
			25-year[a]	50-year[a]	100-year[a]	25-year[a]	50-year[a]	100-year[a]	
559	167+80	30	1,600	2,000	2,400	317.6	317.9	318.2	
560	171+30	30	1,600	2,000	2,400	320.7	321.1	321.3	
561	174+29	30	1,600	2,000	2,400	322.6	322.9	323.1	
562	177+09	30	1,600	2,000	2,400	326.0	326.3	326.5	
563	179+42	30	1,600	2,000	2,400	330.0	330.4	330.6	
564	181+69	30	1,600	2,000	2,400	331.6	332.0	332.3	
565	183+59	30	1,600	2,000	2,400	332.8	333.2	333.6	
566	185+60	30	1,600	2,000	2,400	335.8	336.1	336.3	
567	187+95	30	1,600	2,000	2,400	337.8	338.2	338.5	
568	189+65	30	1,600	2,000	2,400	338.8	339.1	339.4	
569	191+95	30	1,600	2,000	2,400	340.5	340.9	341.2	
570	194+12	30	1,600	2,000	2,400	341.4	341.7	342.0	
571	196+08	30	1,600	2,000	2,400	343.9	344.1	344.2	
572	198+25	30	1,600	2,000	2,400	346.6	347.0	347.3	
573	201+49	30	1,600	2,000	2,400	349.2	349.6	349.9	
574	203+74	30	1,600	2,000	2,400	350.9	351.2	351.5	

[a] Recurrence interval

Accotink Creek Basin

Table 8: Water-surface profile data for Long Branch near Newington

Section number	Base-line station (feet)	Imperviousness (per cent)	Discharge, in cubic feet per second			Elevation, in feet			Remarks
			25-year[a]	50-year[a]	100-year[a]	25-year[a]	50-year[a]	100-year[a]	
400	20+27								Telegraph Road (State 611)
401	21+19	35	3,200	3,900	4.700	48.9	49.2	49.4	
401A	24+63	35	3,200	3,900	4,700	51.4	52.2	52.9	
402	27+27	35	3,200	3,900	4,700	55 8	56.4	57.1	
403	31+92	35	3,200	3,900	4,600	59.8	60.4	61.2	By-pass Flow at Left Bank
404	34+75	35	2,400	2,700	3,100	60.4	60.9	61.7	
404A	36+38	35	1,900	2,100	2,300	60.7	61.2	61.8	
405	36+78								Backlick Road (State 617)
406	37+30	35	3,200	3,900	4,700	64.8	65.1	65.5	
407	39+96	35	3,200	3,900	4,700	64.8	65.2	65.6	
408	43+62	35	3,200	3,900	4,700	65.0	65.4	65.8	
409	46+68	35	3,200	3,900	4,700	65.6	66.0	66.4	
410	50+43	35	3,200	3,800	4,500	67.1	67.3	67.6	By-pass Flow at Left Bank
411	52+02	35	3,100	3,500	3,800	69.3	69.5	69.6	
412	54+37	35	3,100	3,500	3,700	71.9	72.1	72.2	
413	55+00	35	3,100	3,500	3,700	73.8	73.9	74 0	
414	55+66								Ft. Belvoir Military R.R.
415	56+40	35	3,200	3,900	4,700	84.4	84.9	85.2	
416	59+05	35	3,200	3,900	4,700	84.4	84.9	85.2	
417	63+13	35	3,200	3,900	4,700	84.4	84.9	85.2	
419	66+53								Newington Road (State 637)
420	66+84	35	3,200	3,900	4,700	84.4	84.9	85.3	
421	69+72	35	3,200	3,900	4,700	84.8	85.3	85.7	
422	72+62	35	3,200	3,900	4,700	85.6	86.1	86.6	
423	74+95	35	3,200	3,900	4,700	86.8	87.2	87.6	
424	77+22	35	3,200	3,900	4,700	88.2	88.5	88.8	
425	80+91	35	3,200	3,900	4,700	89.8	90.1	90.3	
426	84+61	35	3,200	3,900	4,700	92.6	92.9	93.2	
427	88+90	35	3,200	3,900	4,700	95.1	95.4	95.6	
428	92+17	35	3,200	3,900	4,700	96.7	97.0	97.2	

[a] Recurrence interval

Table 8: Water-surface profile data for Long Branch near Newington - Continued

Section number	Base-line Station (feet)	Imperviousness (per cent)	Discharge, in cubic feet per second			Elevation, in feet			Remarks
			25-year[a]	50-year[a]	100-year[a]	25-year[a]	50-year[a]	100-year[a]	
429	95+27	35	3,200	3,900	4,700	99.4	99.7	100.0	
430	96+68	35	3,200	3,900	4,700	101.2	101.5	101.8	
431	100+39	35	3,200	3,900	4,700	104.3	104.8	105.1	
432	102+90	35	3,200	3,900	4,700	105.4	105.8	106.2	
433	105+92	35	3,200	3,900	4,700	108.5	108.9	109.2	
434	108+50	35	3,200	3,900	4,700	109.0	109.4	109.8	
435	112+27	40	2,800	3,500	4,100	110.5	110.8	111.1	
436	116+00	40	2,800	3,500	4,100	112.1	112.4	112.6	
437	120+07	40	2,800	3,500	4,100	114.7	115.0	115.2	
438	123+42	40	2,800	3,500	4,100	118.1	118.4	118.6	
439	126+49	40	2,800	3,500	4,100	120.6	121.0	121.2	
440	131+25	40	2,800	3,500	4,100	123.7	124.1	124.5	
441	135+56	40	2,800	3,500	4,100	126.4	126.8	127.1	
442	138+41	40	2,800	3,500	4,100	128.9	129.2	129.4	
443	143+72	40	2,800	3,500	4,100	132.2	132.7	133.0	
444	149+54	40	2,800	3,500	4,100	133.8	134.2	134.5	
445	152+99	40	2,800	3,500	4,100	135.3	135.6	135.8	
446	156+35	40	2,800	3,500	4,100	137.8	138.0	138.1	
447	159+42	40	2,800	3,500	4,100	140.0	140.3	140.6	
448	162+79	40	2,500	3,100	3,600	142.9	143.4	143.7	
449	166+69	40	2,500	3,100	3,600	144.6	144.9	145.2	
450	170+51	40	2,500	3,100	3,600	146.7	146.9	147.2	
451	173+13	40	2,500	3,100	3,600	149.2	149.5	149.7	
452	176+27	40	2,500	3,100	3,600	151.7	152.1	152.4	
453	179+66	40	2,500	3,100	3,600	154.2	154.5	154.8	
454	182+74	40	2,500	3,100	3,600	157.8	158.1	158.2	
455	186+49	40	2,500	3,100	3,600	160.5	160.7	160.9	
456	189+42	40	2,500	3,100	3,600	162.5	162.7	162.9	
457	192+76	40	2,500	3,100	3,600	165.6	165.9	166.1	
458	194+08	40	2,500	3,100	3,600	167.7	168.1	168.4	
459	195+69	40	2,500	3,100	3,600	171.1	171.4	171.6	
	196+95								Richmond Fredricksburg & Potomac R.R.

[a] Recurrence interval

Flood profiles (figs. 3-14) are included in this report presenting graphically those water-surface profiles computed for the 25-year and 100-year floods and the channel bed profile along the thalweg of the stream. The 25-year flood profile was omitted in cases where it is very close to the 100-year profile and showing both would cause confusion.

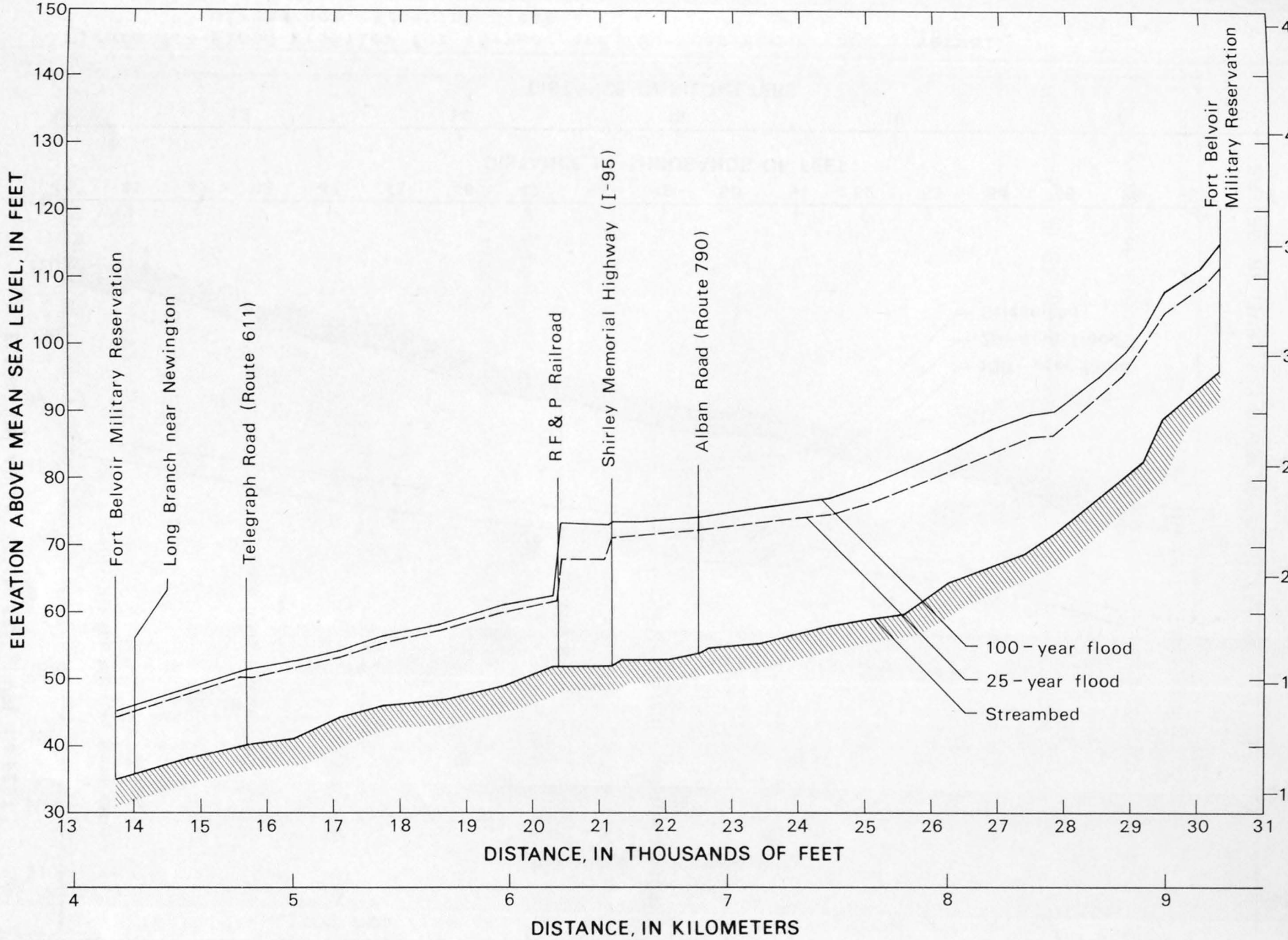


Figure 3.--Flood profiles for 25-year and 100-year recurrence interval discharges, Accotink Creek

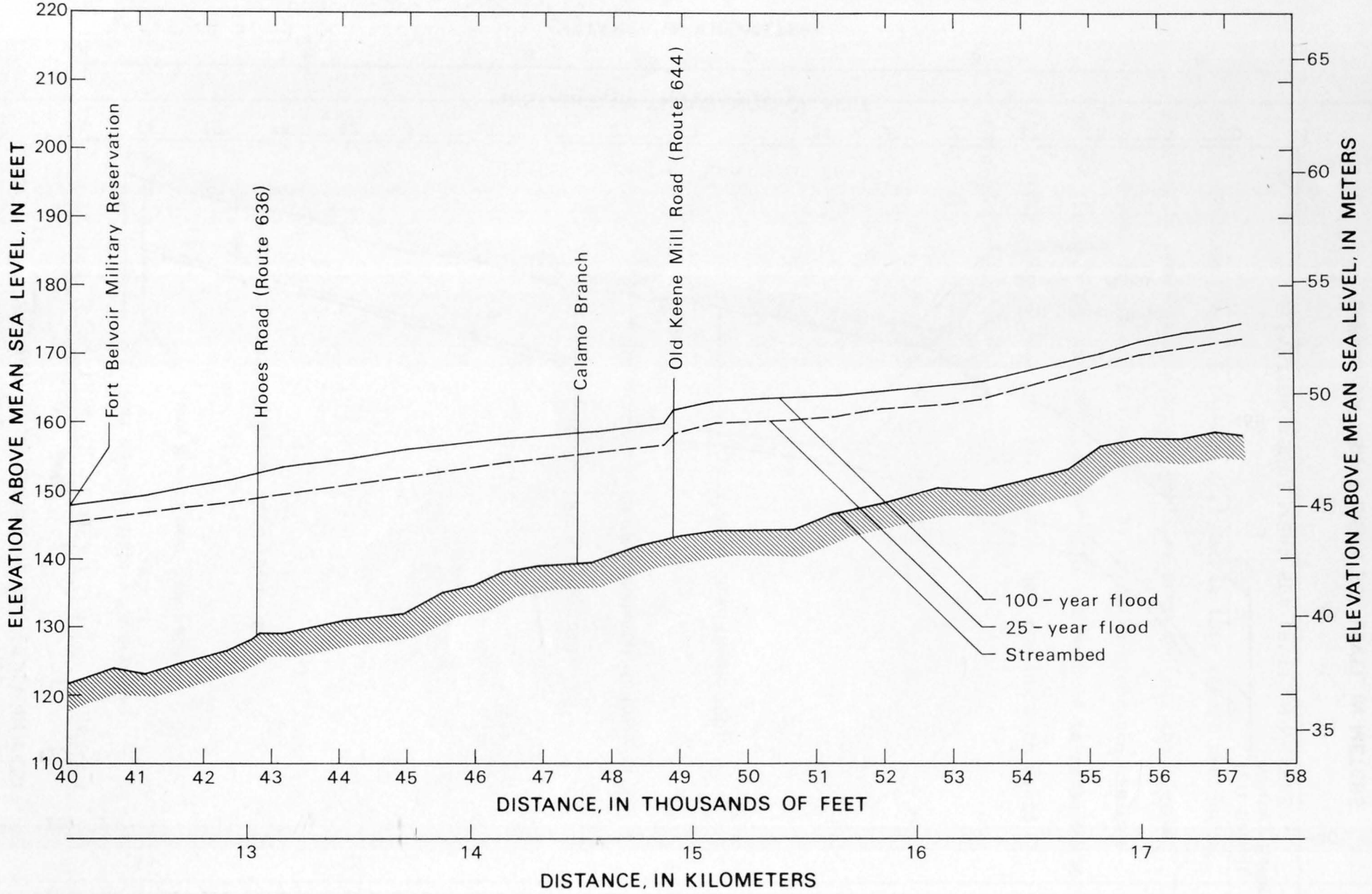


Figure 4.--Flood profiles for 25-year and 100-year recurrence interval discharges, Accotink Creek

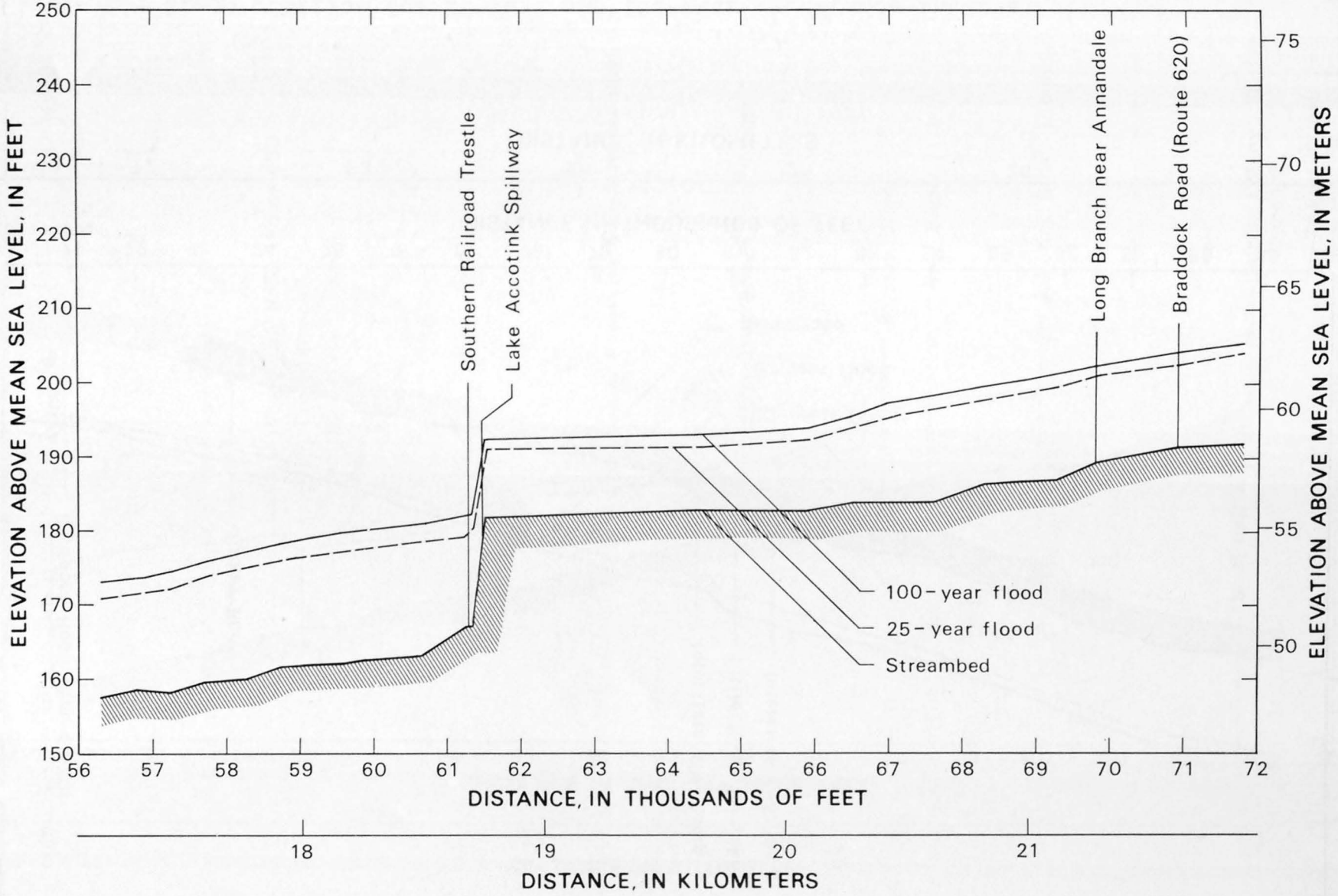


Figure 5.--Flood profiles for 25-year and 100-year recurrence interval discharges, Accotink Creek

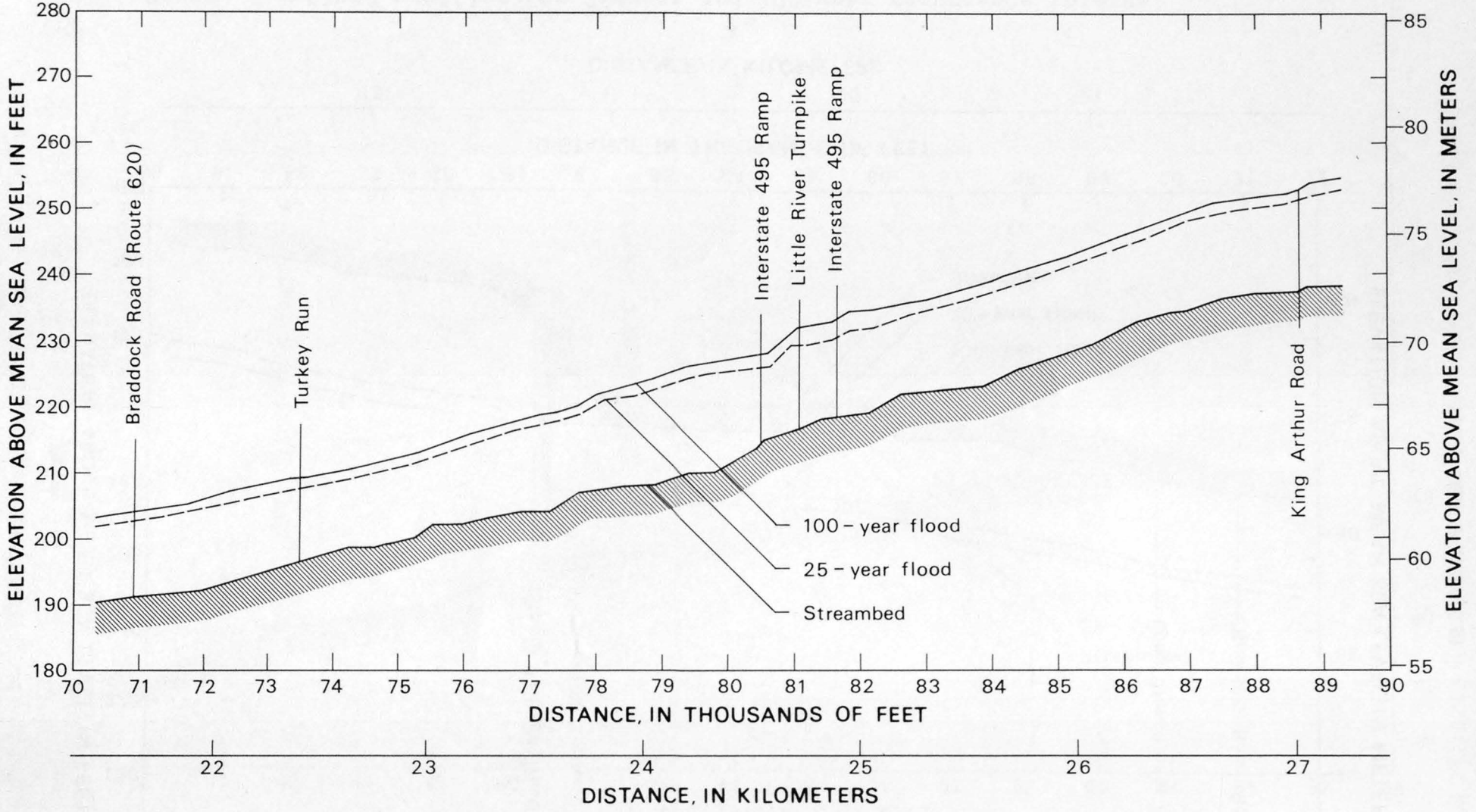


Figure 6.--Flood profiles for 25-year and 100-year recurrence interval discharges, Accotink Creek

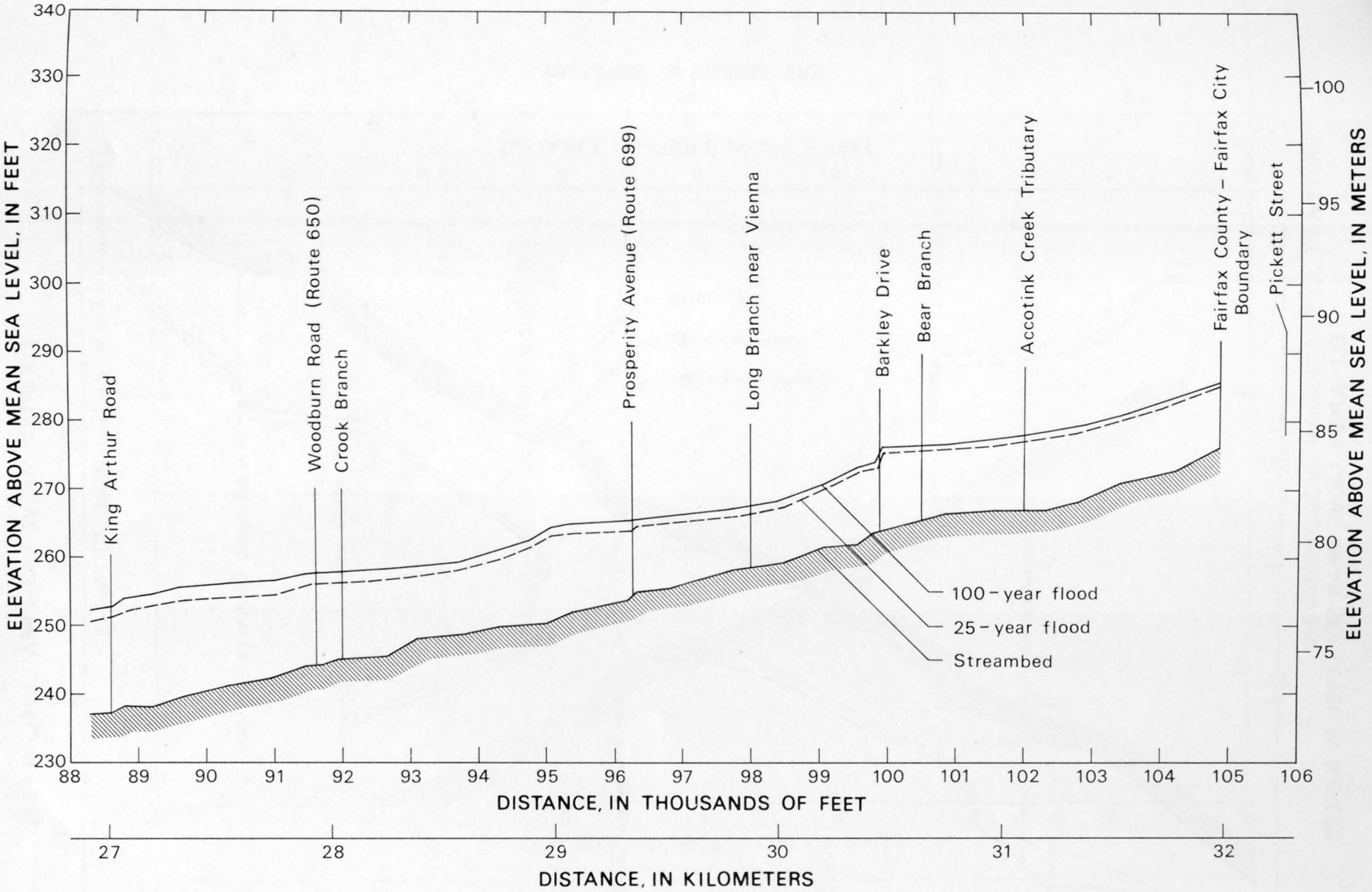


Figure 7.--Flood profiles for 25-year and 100-year recurrence interval discharges, Accotink Creek

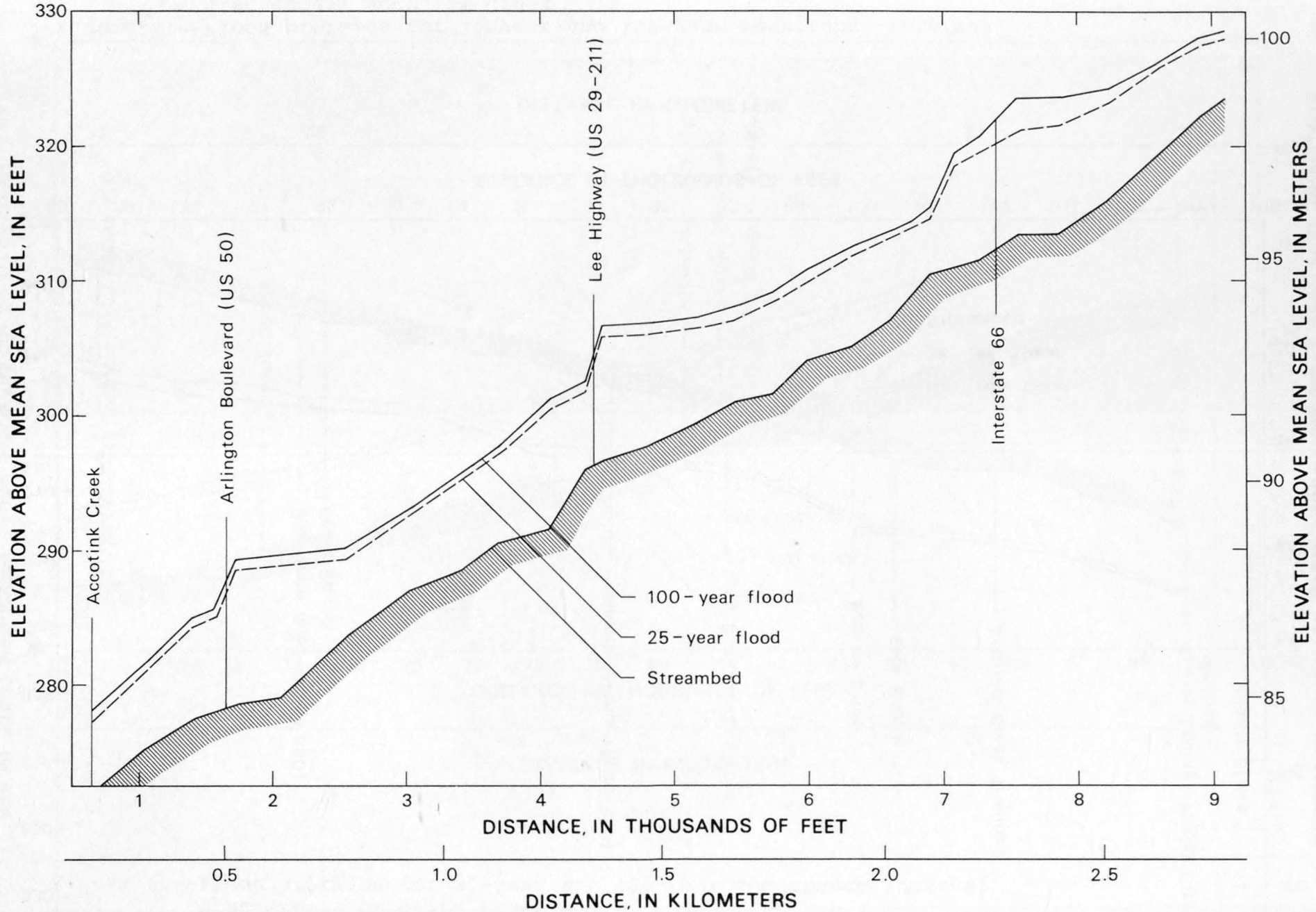


Figure 8.--Flood profiles for 25-year and 100-year recurrence interval discharges, Accotink Creek Tributary

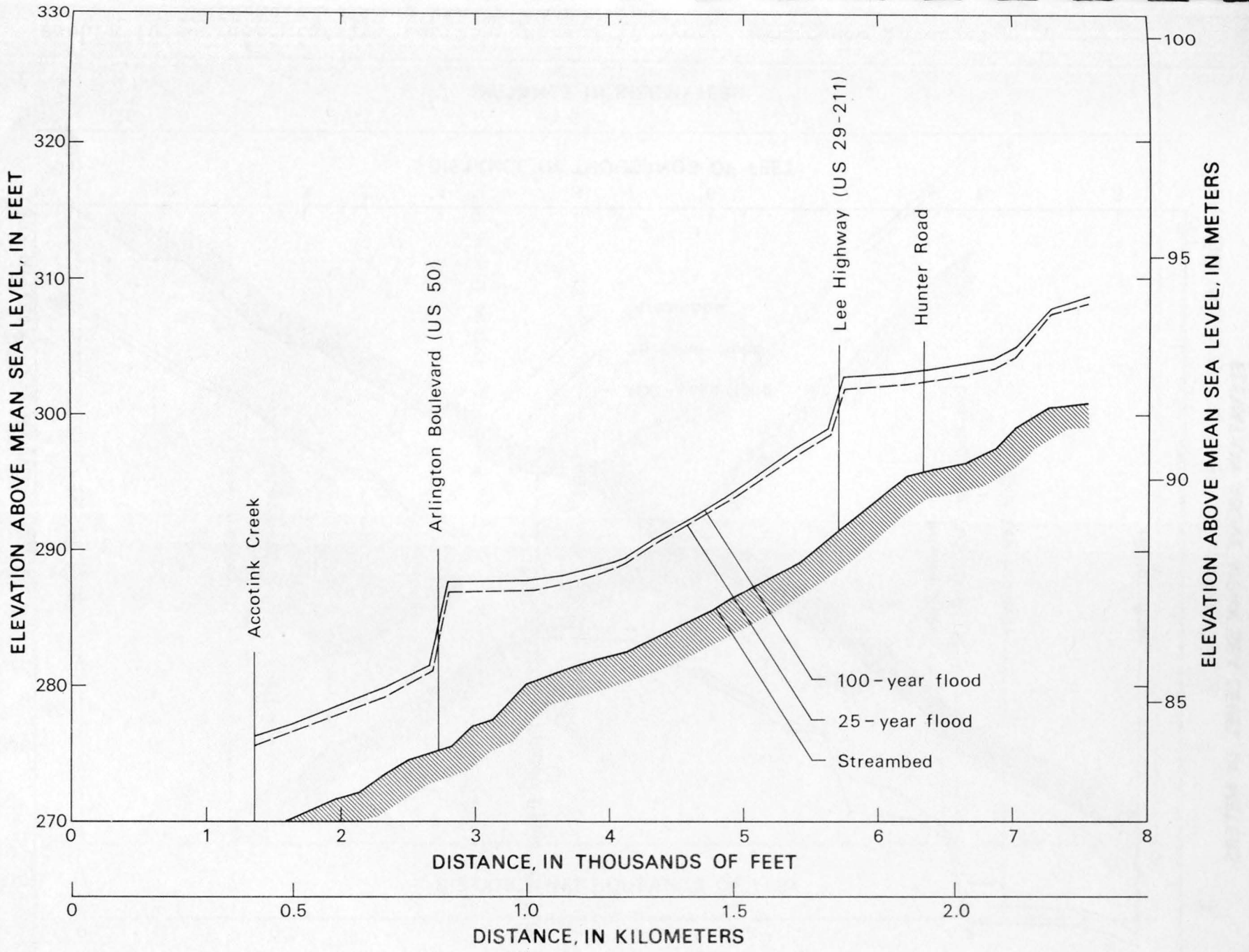


Figure 9.--Flood profiles for 25-year and 100-year recurrence interval discharges, Bear Branch

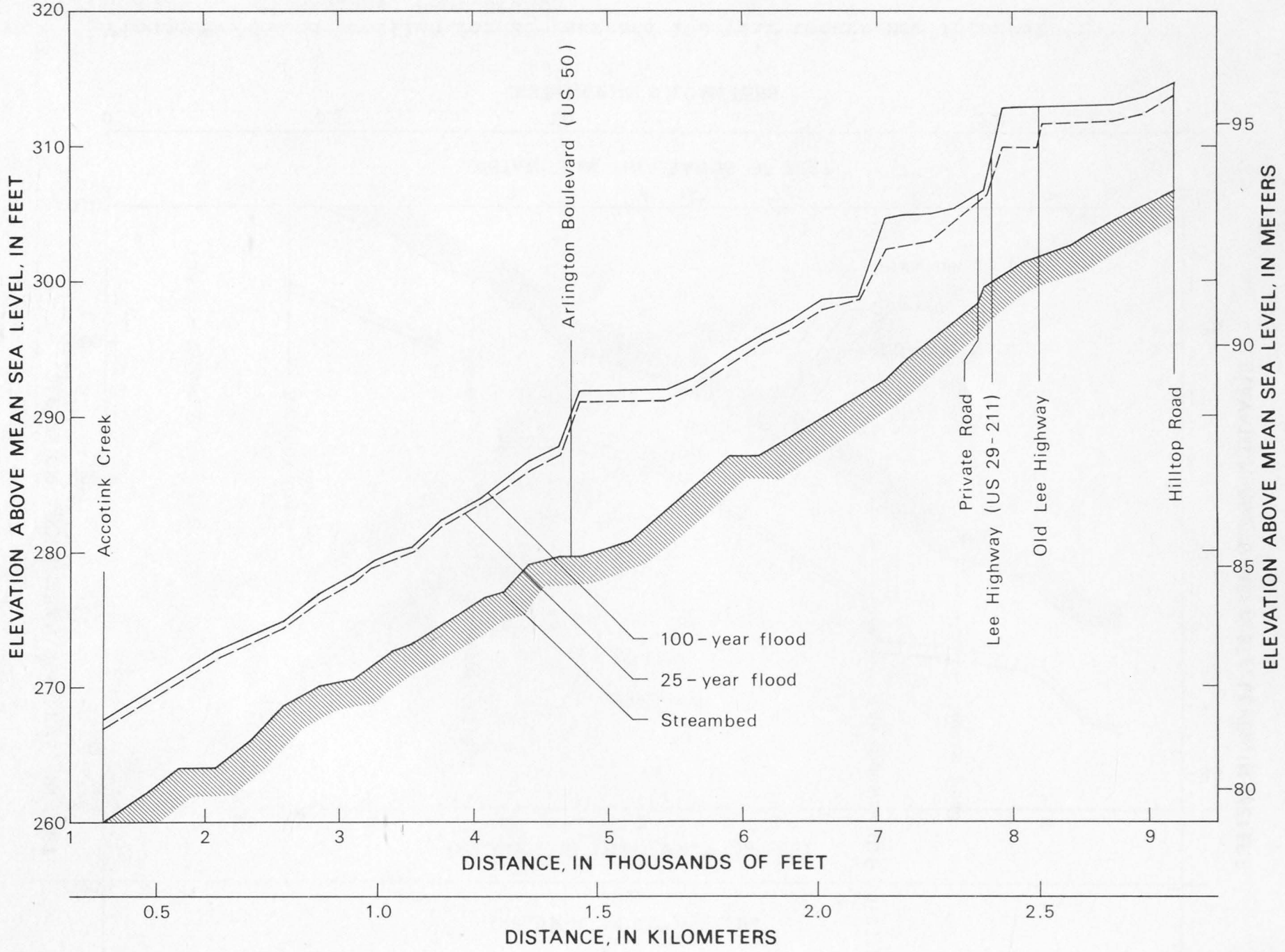


Figure 10.--Flood profiles for 25-year and 100-year recurrence interval discharges, Long Branch near Vienna

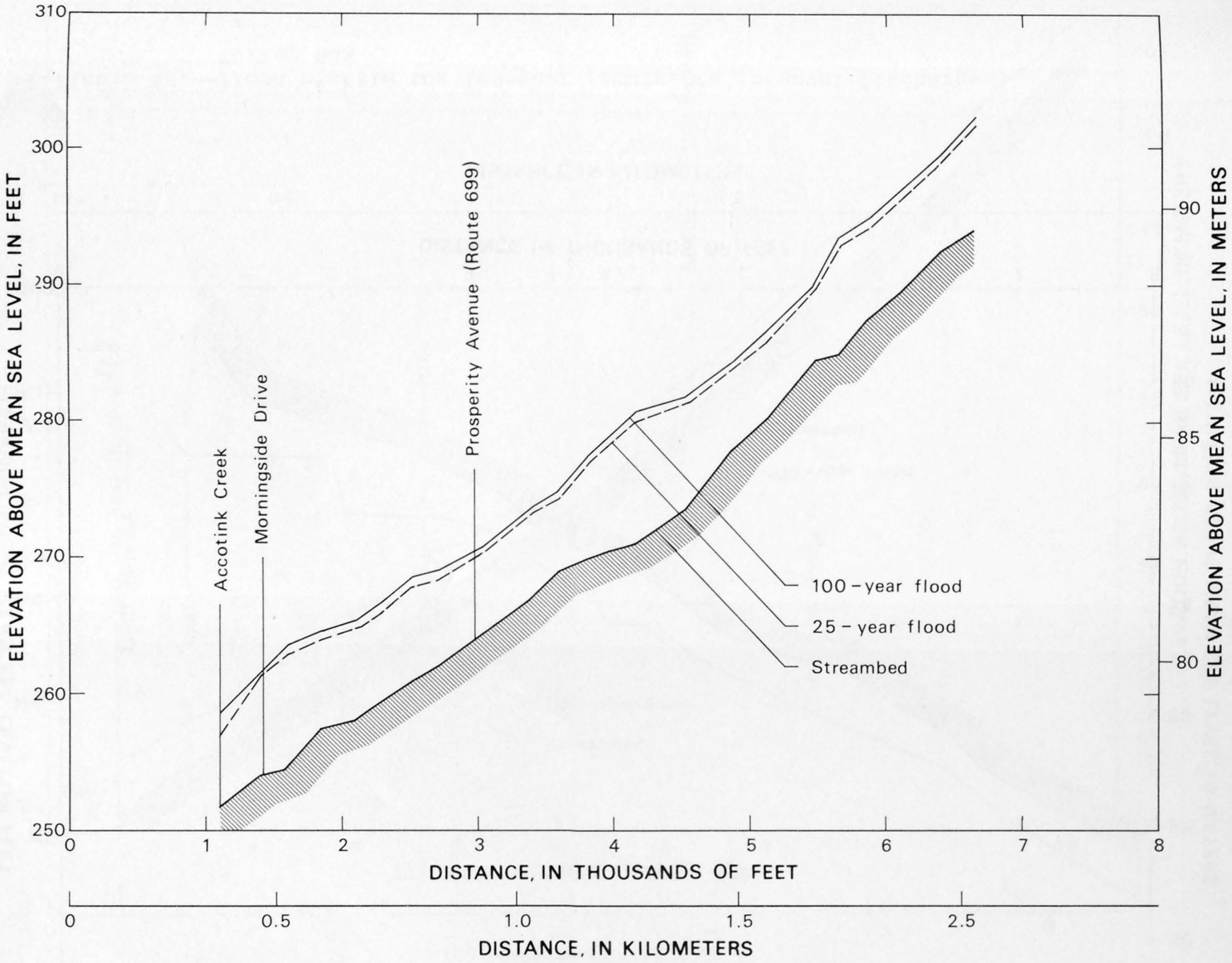


Figure 11.--Flood profiles for 25-year and 100-year recurrence interval discharges, Crook Branch

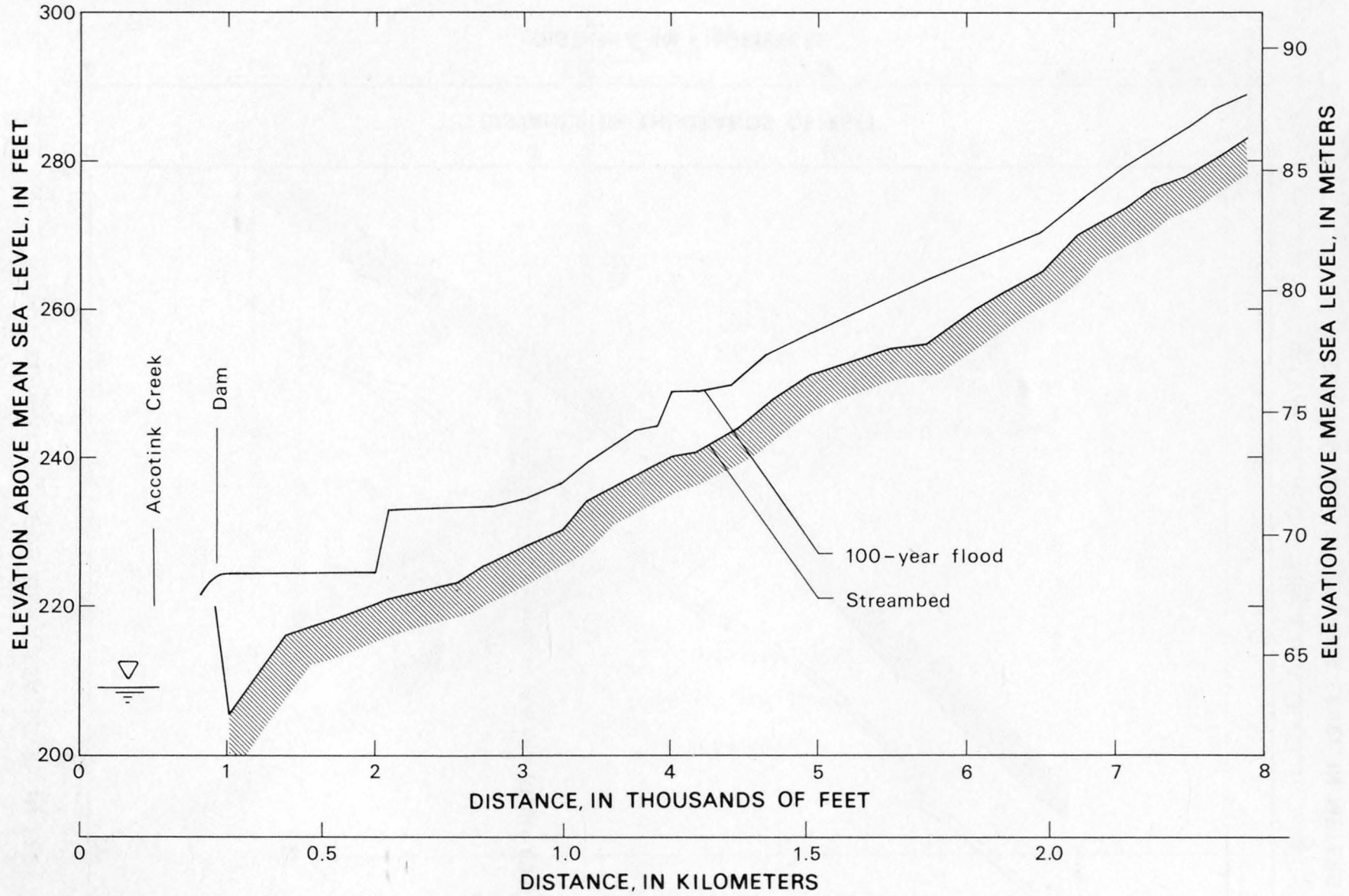


Figure 12.--Flood profile for 100-year recurrence interval discharges, Turkey Run

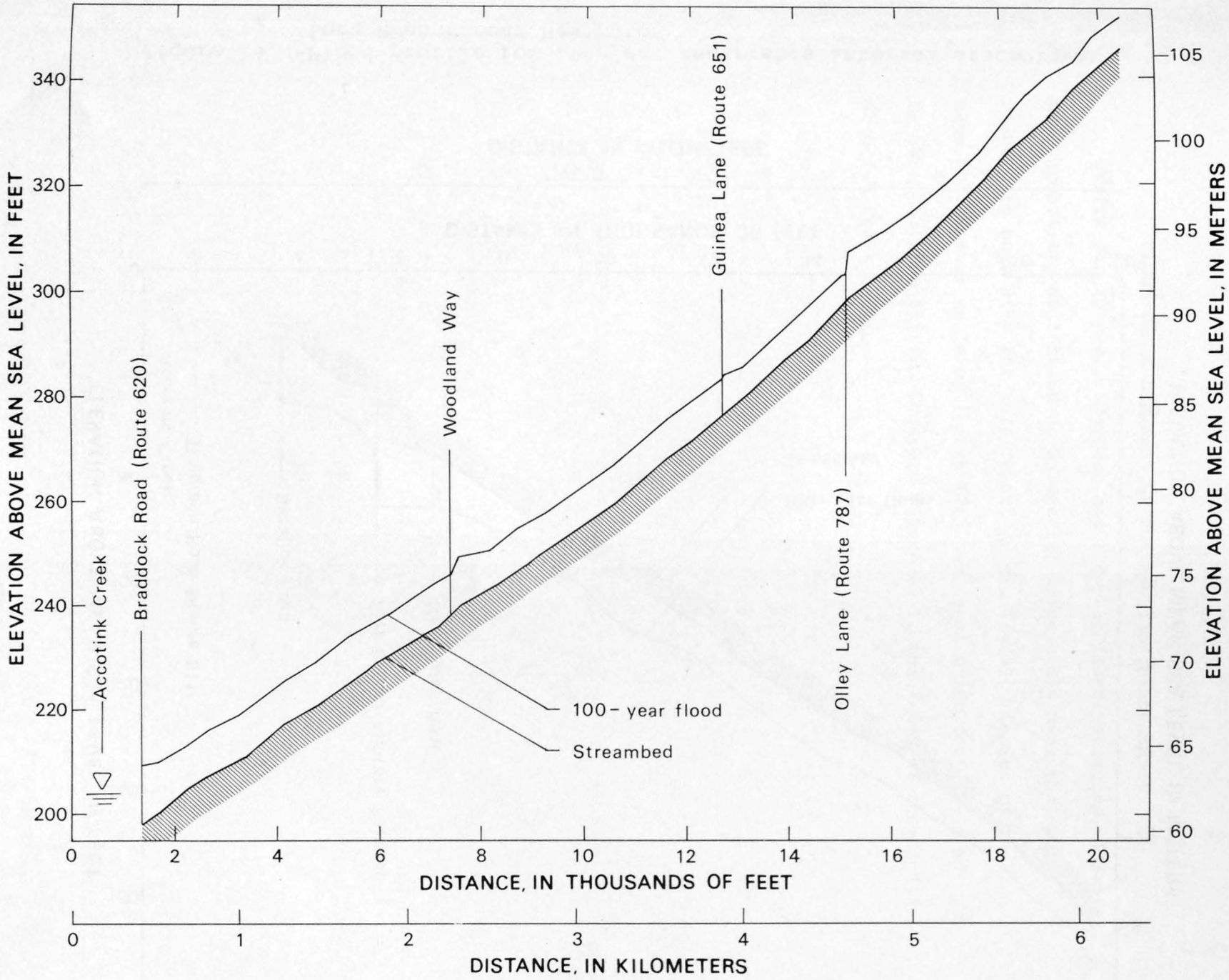


Figure 13.--Flood profile for 100-year recurrence interval discharges, Long Branch near Annandale

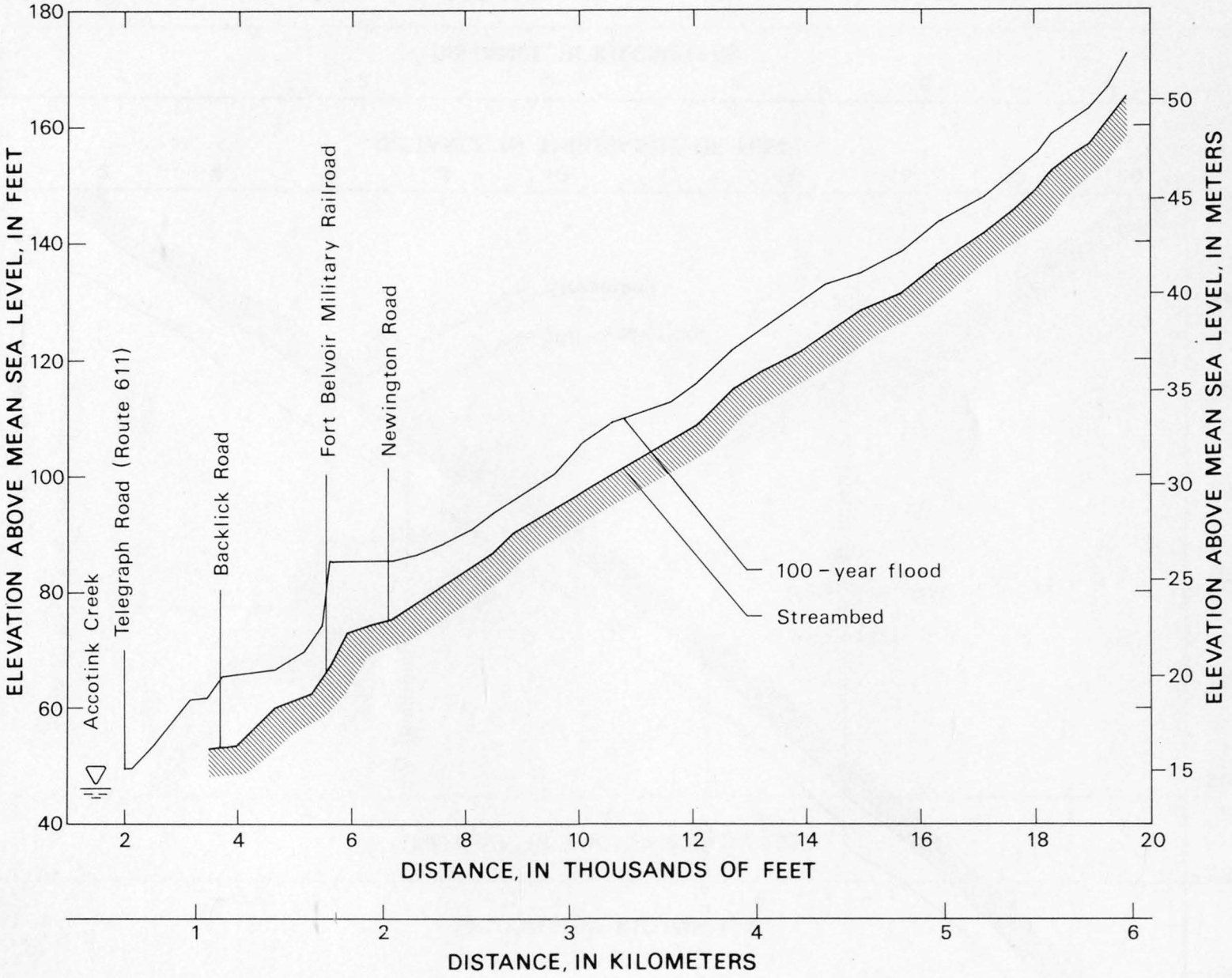


Figure 14.--Flood profile for 100-year recurrence interval discharges, Long Branch near Newington

FLOOD-PLAIN DELINEATION FOR ACCOTINK CREEK BASIN

Limits for 25-year, 50-year, and 100-year floods assuming ultimate development are delineated on 59 special large scale maps that were reduced to page size for this report (Figs. 16-74). Copies of the maps at original scale of 1 inch (2.54 cm) equals 100 feet (30.5 m) can be obtained from Fairfax County. Figure 15 is the index of sheets for Accotink Creek basin.

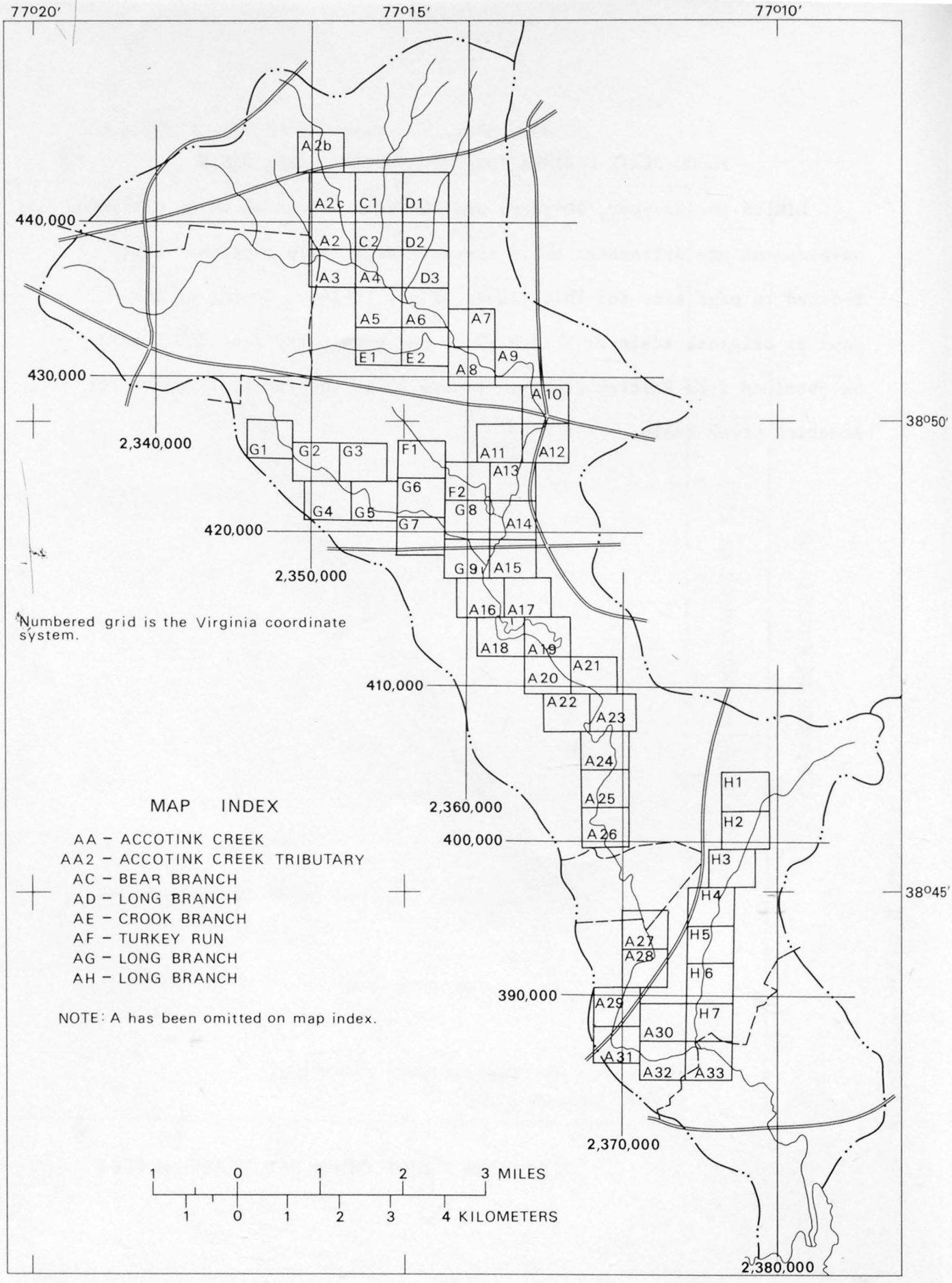


Figure 15.--Index of flood maps

DELINEATION OF FLOOD AREAS

ACCOTINK CREEK BASIN

Flood plain delineation by U.S. Geological Survey
in cooperation with the County of Fairfax as a part
of a study of urbanization effects upon flood discharges.

Topography from aerial photographs taken 1960 & 1963
250-foot grid based on Virginia coordinate system
north zone.

Maps compiled by photogrammetric methods.
Control and photogrammetric surveys are in accordance
with National Map Accuracy Standards.

SYMBOLS

●	MANHOLE
●—	UTILITY POLE
—×—×—×—	FENCE
—— - - —— - - ——	STREAM
⊠	TRANSMISSION TOWER
— — —25— — —	FLOOD-DELINEATION LINE

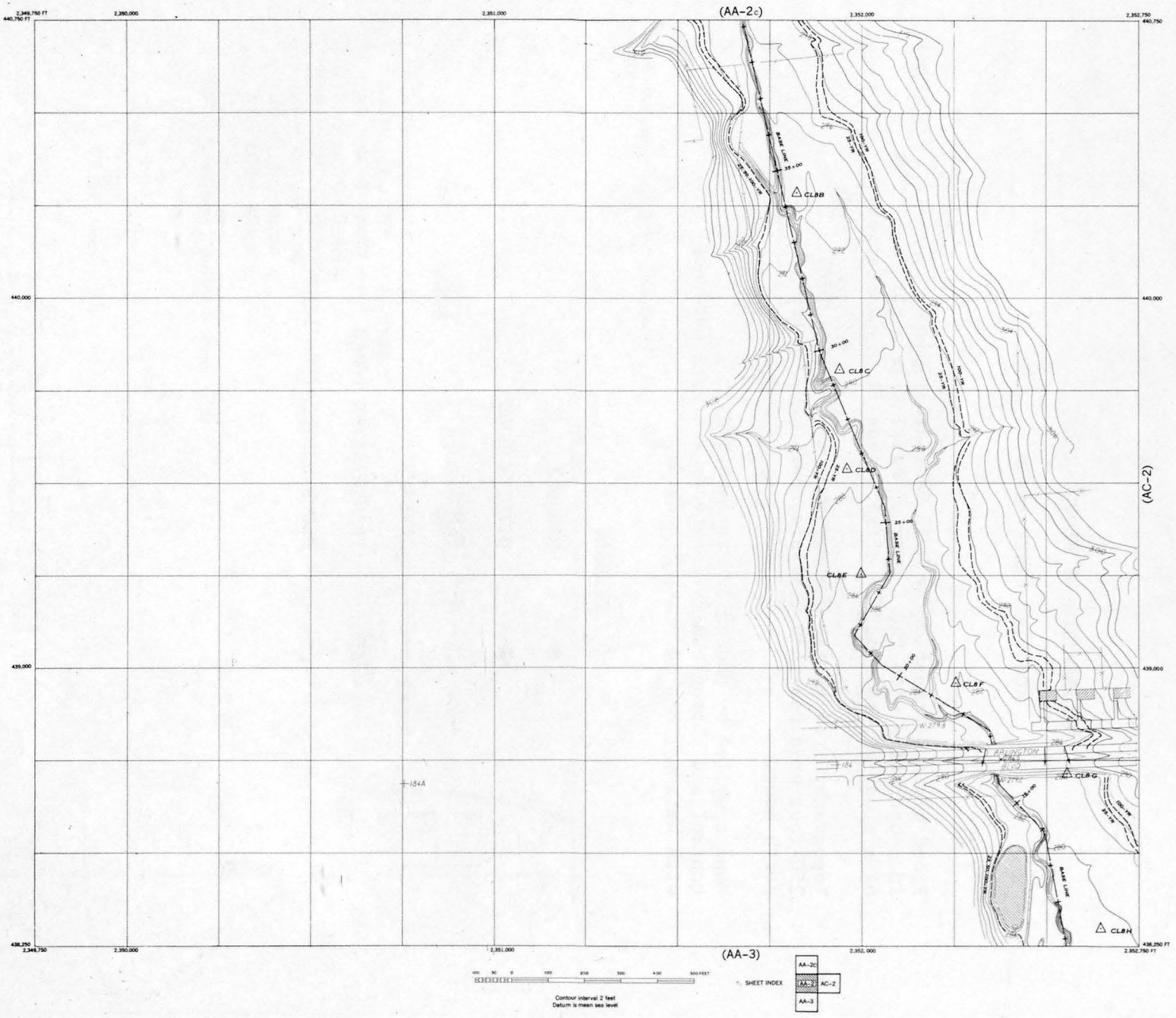


Figure 16.--Topographic map of stream valley showing flood boundary delineation, Accotink Creek; AA-2

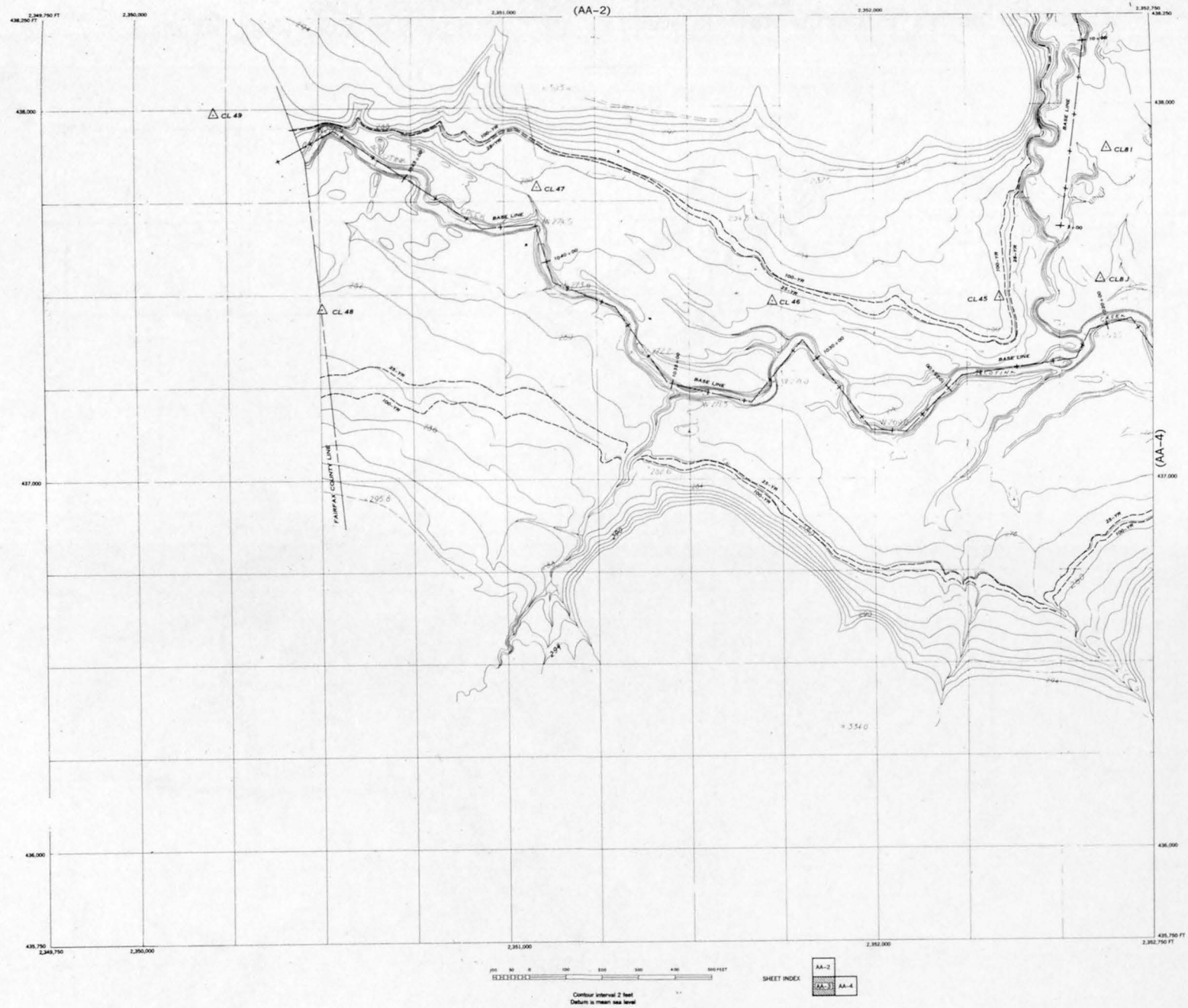


Figure 17.--Topographic map of stream valley showing flood boundary delineation, Accotink Creek; AA-3

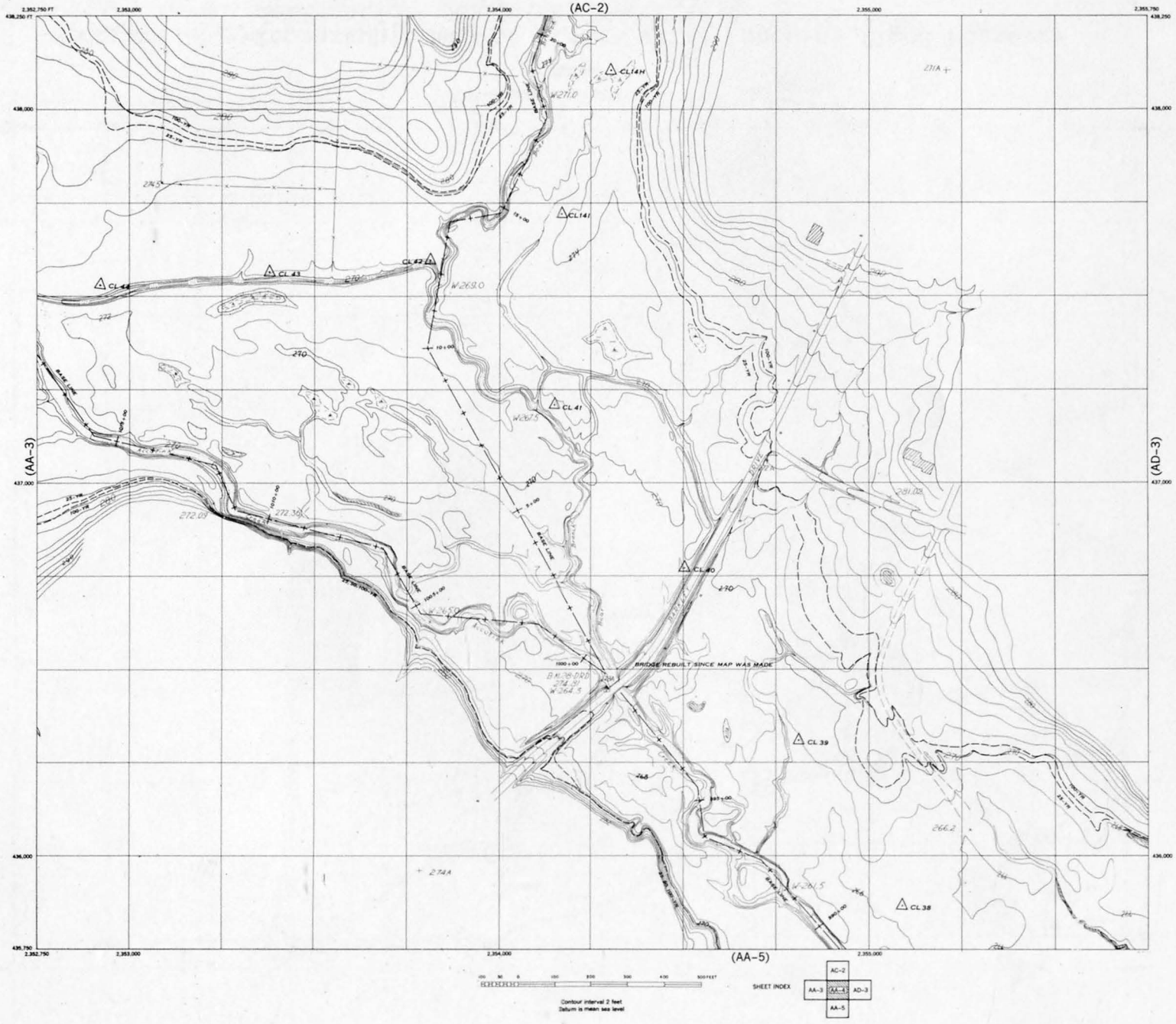


Figure 18.--Topographic map of stream valley showing flood boundary delineation, Accotink Creek; AA-4

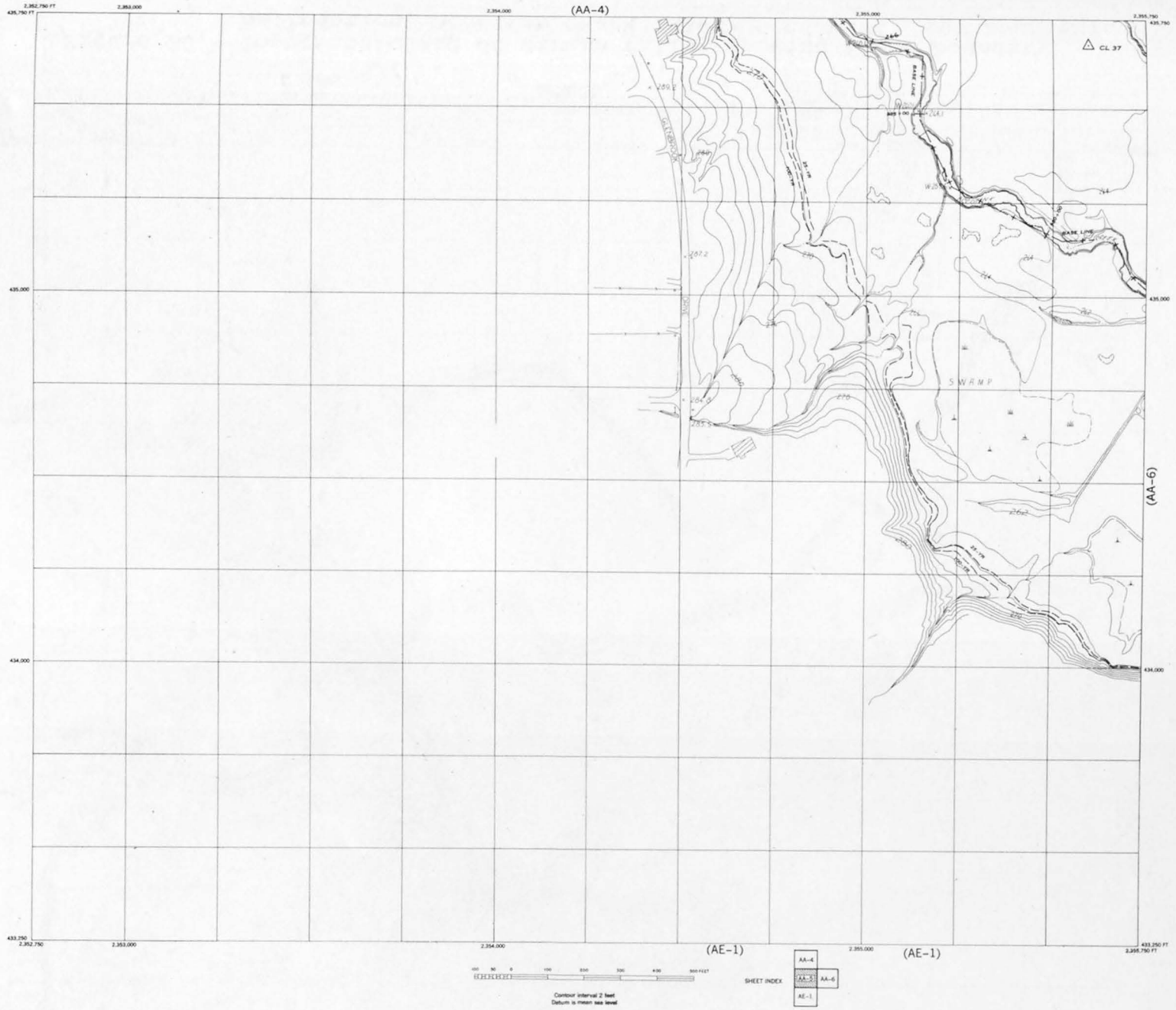


Figure 19.--Topographic map of stream valley showing flood boundary delineation, Accotink Creek; AA-5

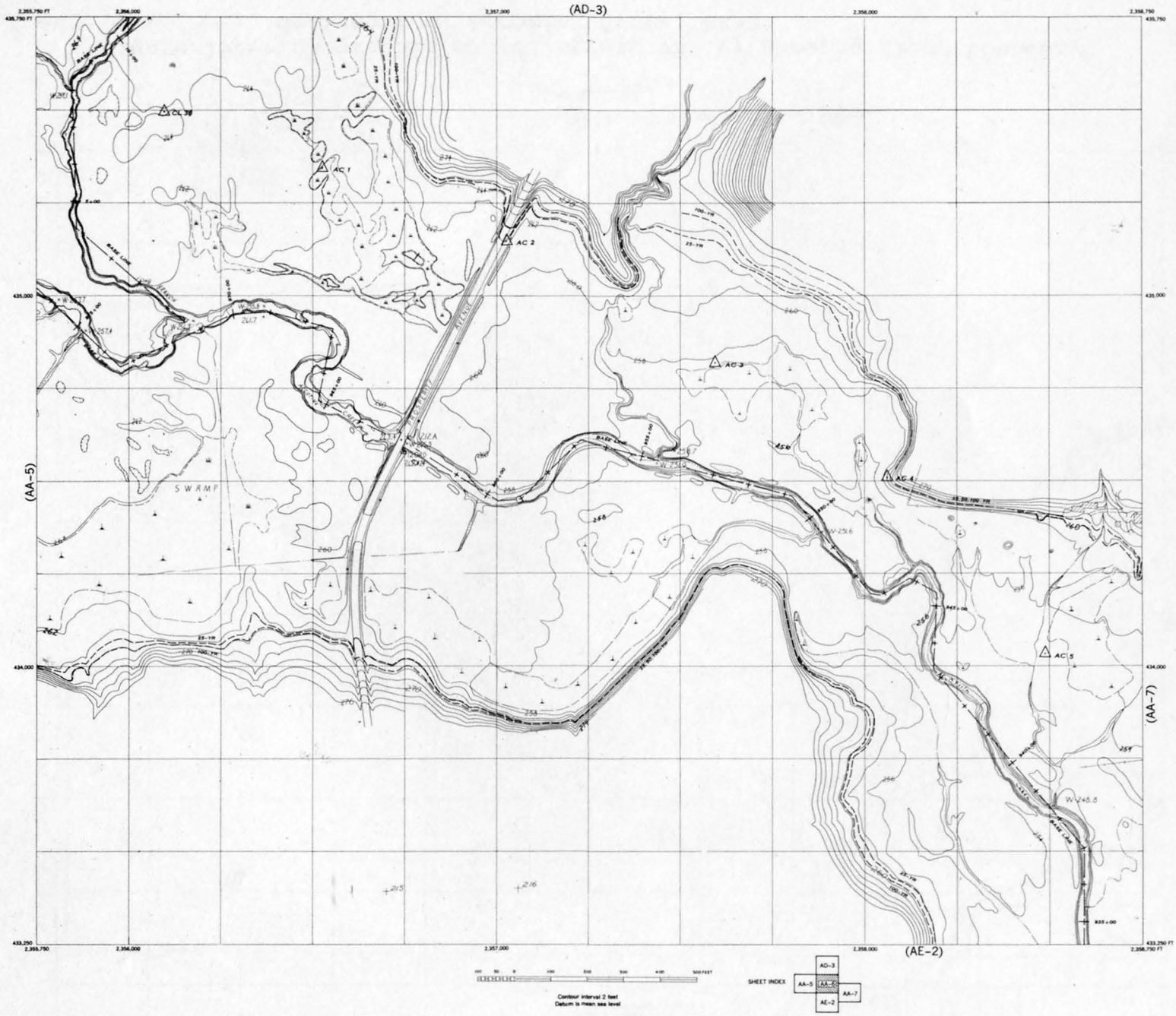


Figure 20.--Topographic map of stream valley showing flood boundary delineation, Accotink Creek; AA-6

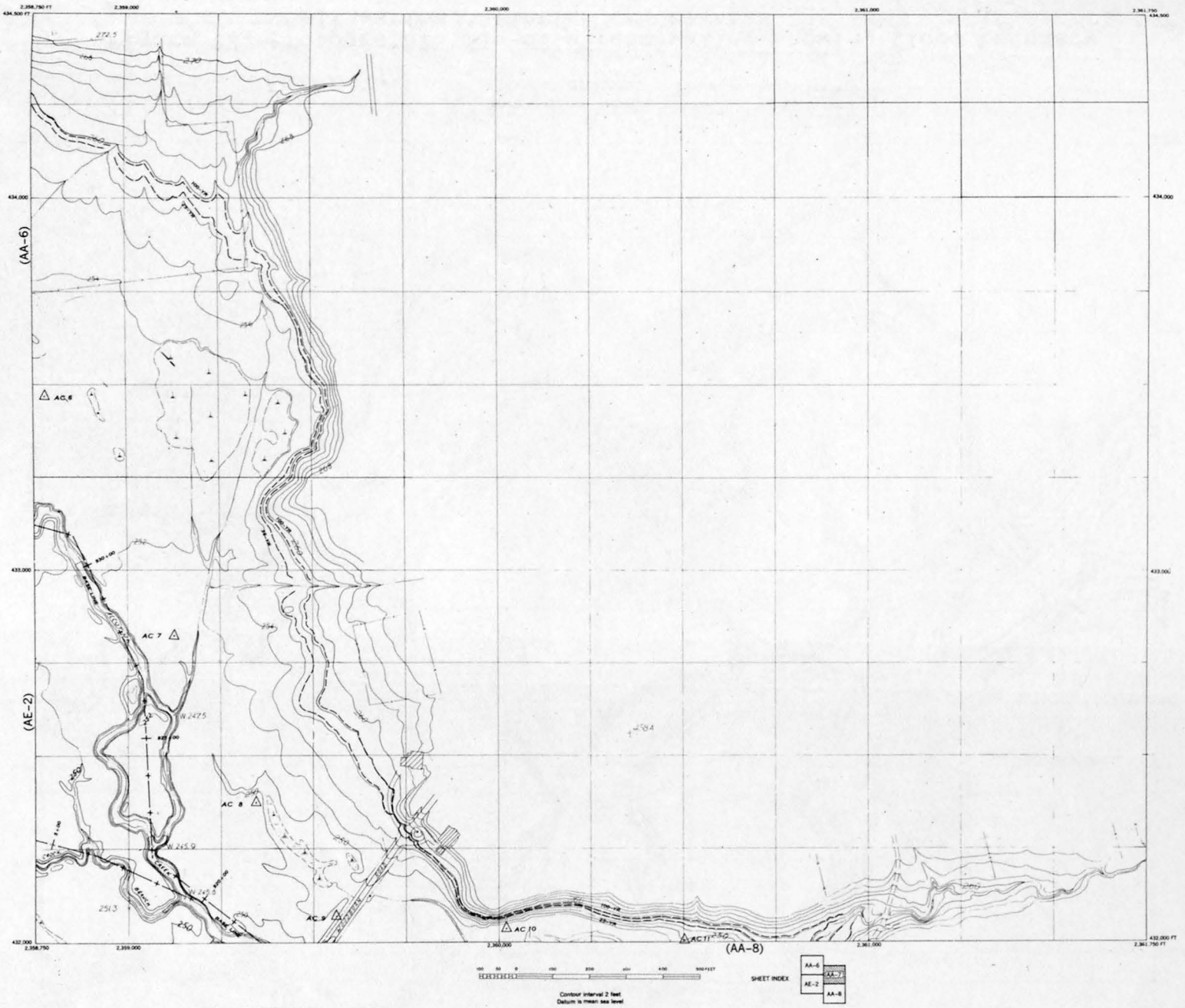


Figure 21.--Topographic map of stream valley showing flood boundary delineation, Accotink Creek; AA-7

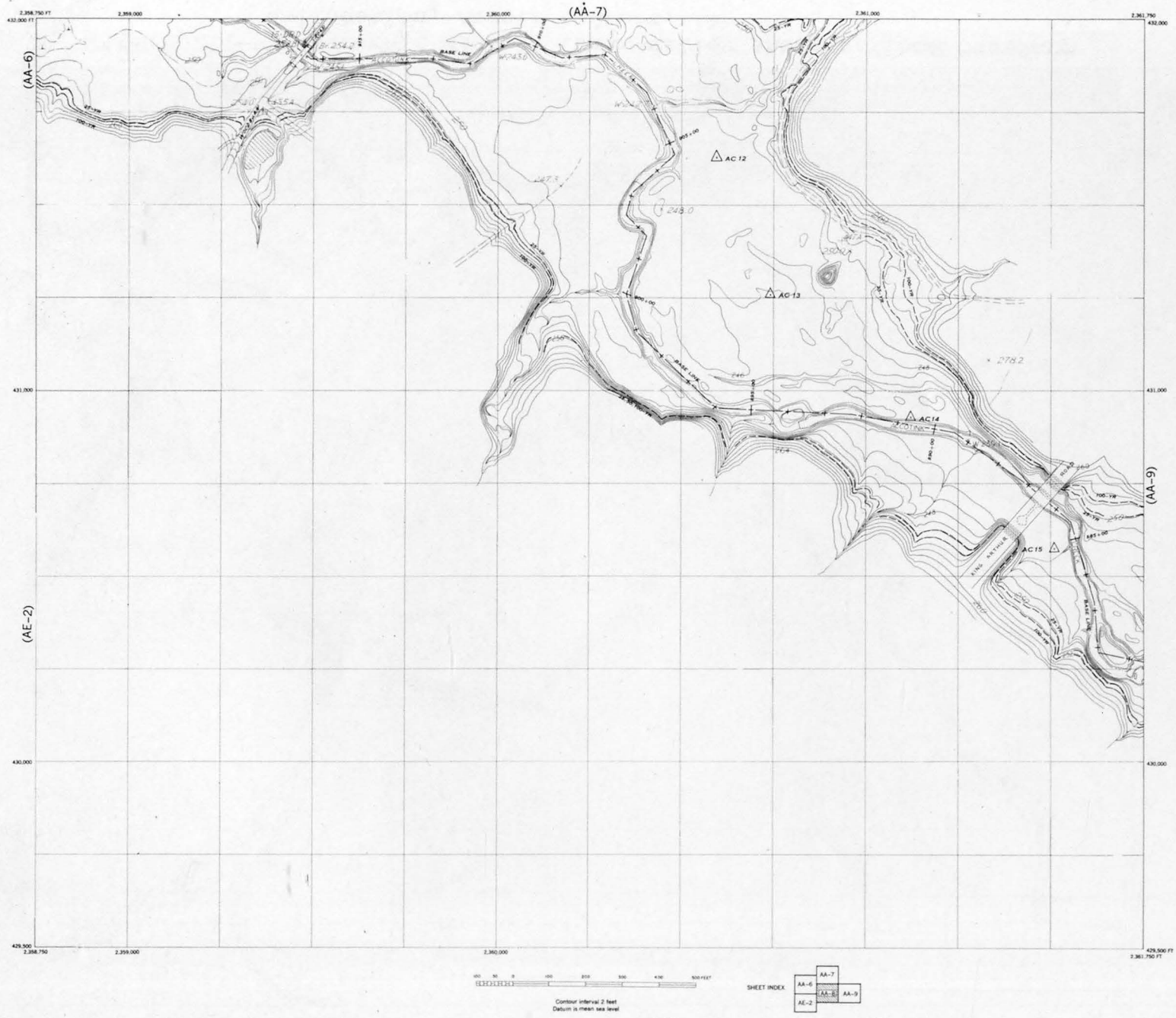


Figure 22.--Topographic map of stream valley showing flood boundary delineation, Accotink Creek; AA-8

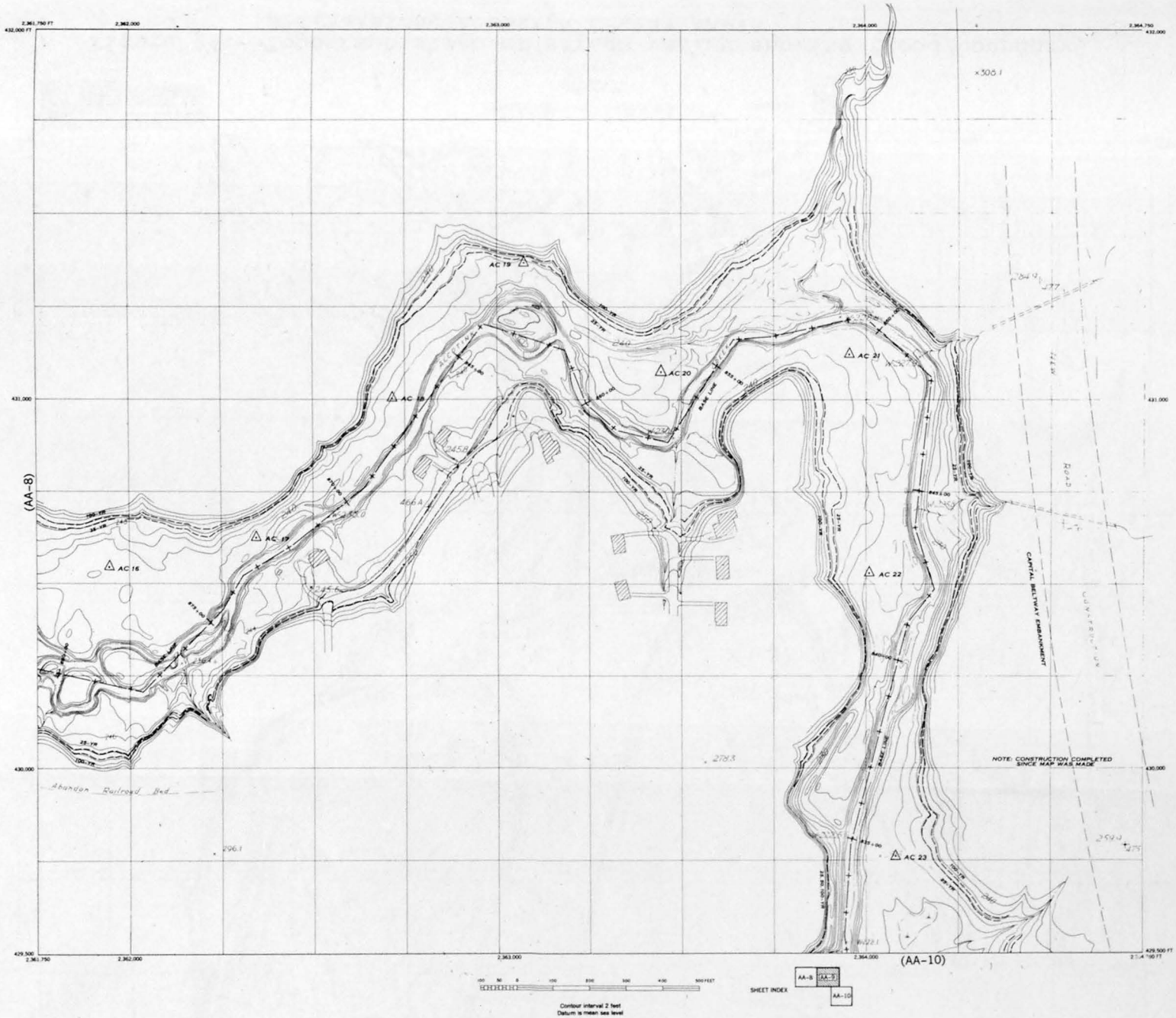


Figure 23.--Topographic map of stream valley showing flood boundary delineation, Accotink Creek; AA-9

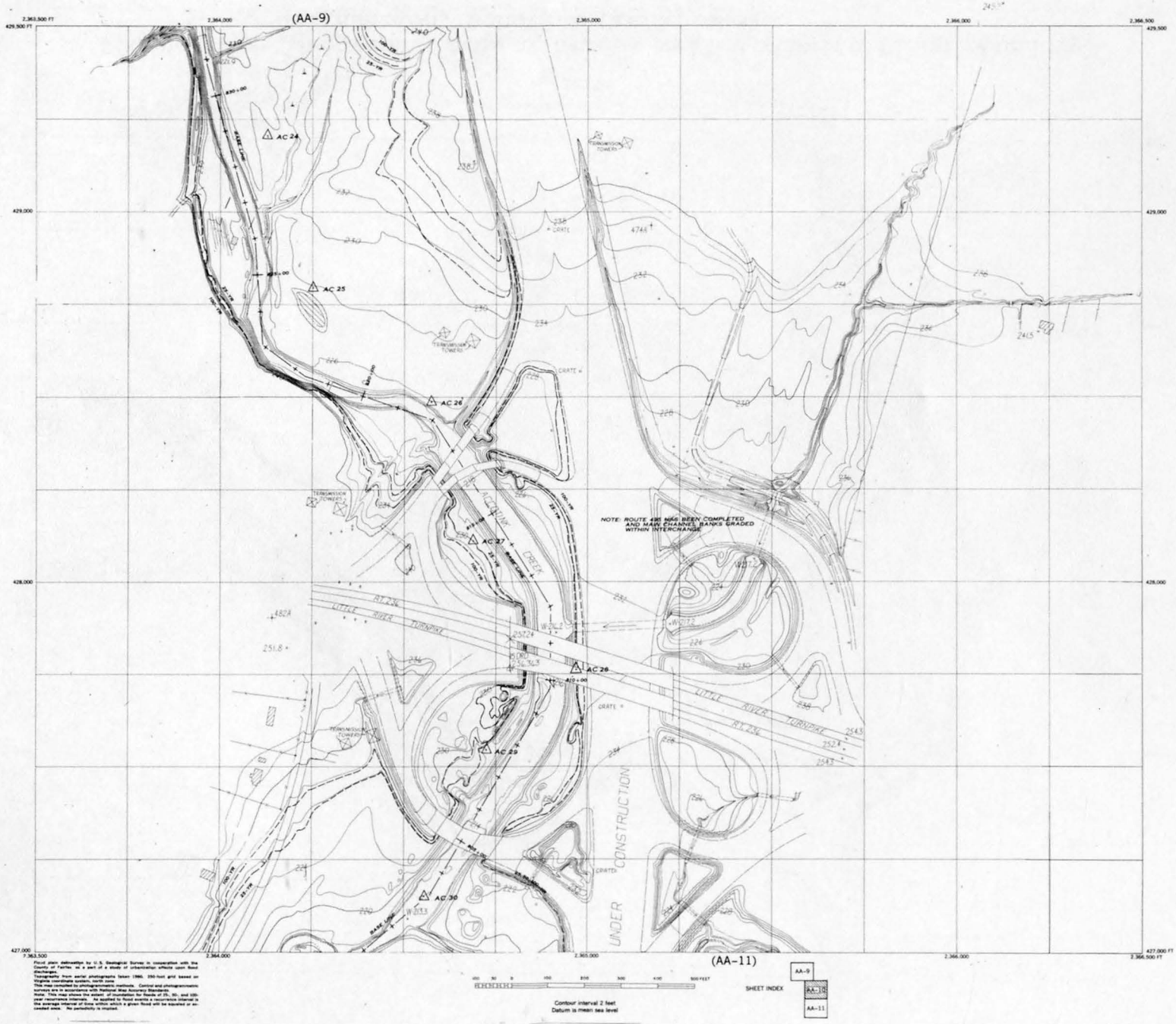


Figure 24.--Topographic map of stream valley showing flood boundary delineation, Accotink Creek; AA-10

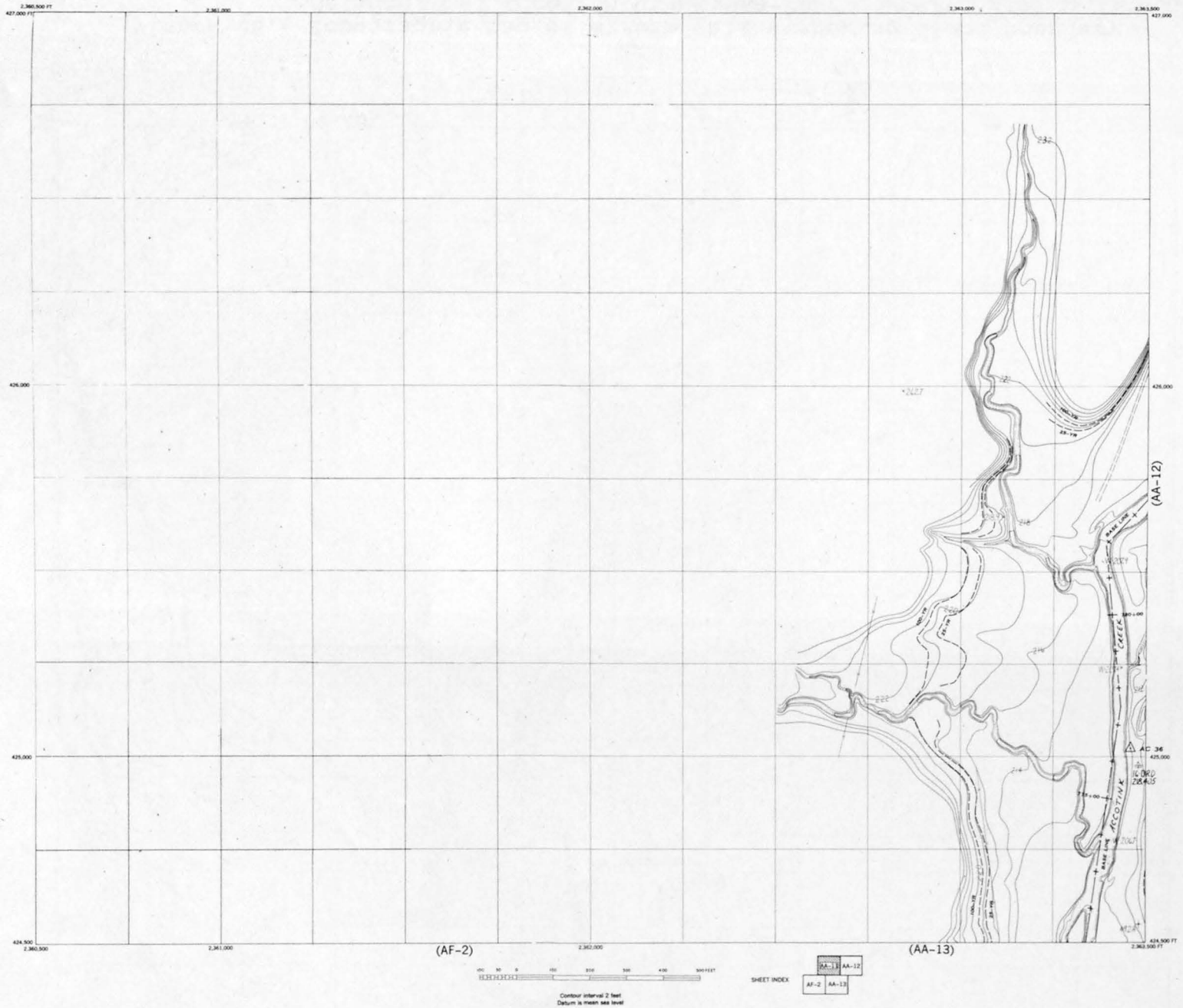


Figure 25.--Topographic map of stream valley showing flood boundary delineation, Accotink Creek; AA-11

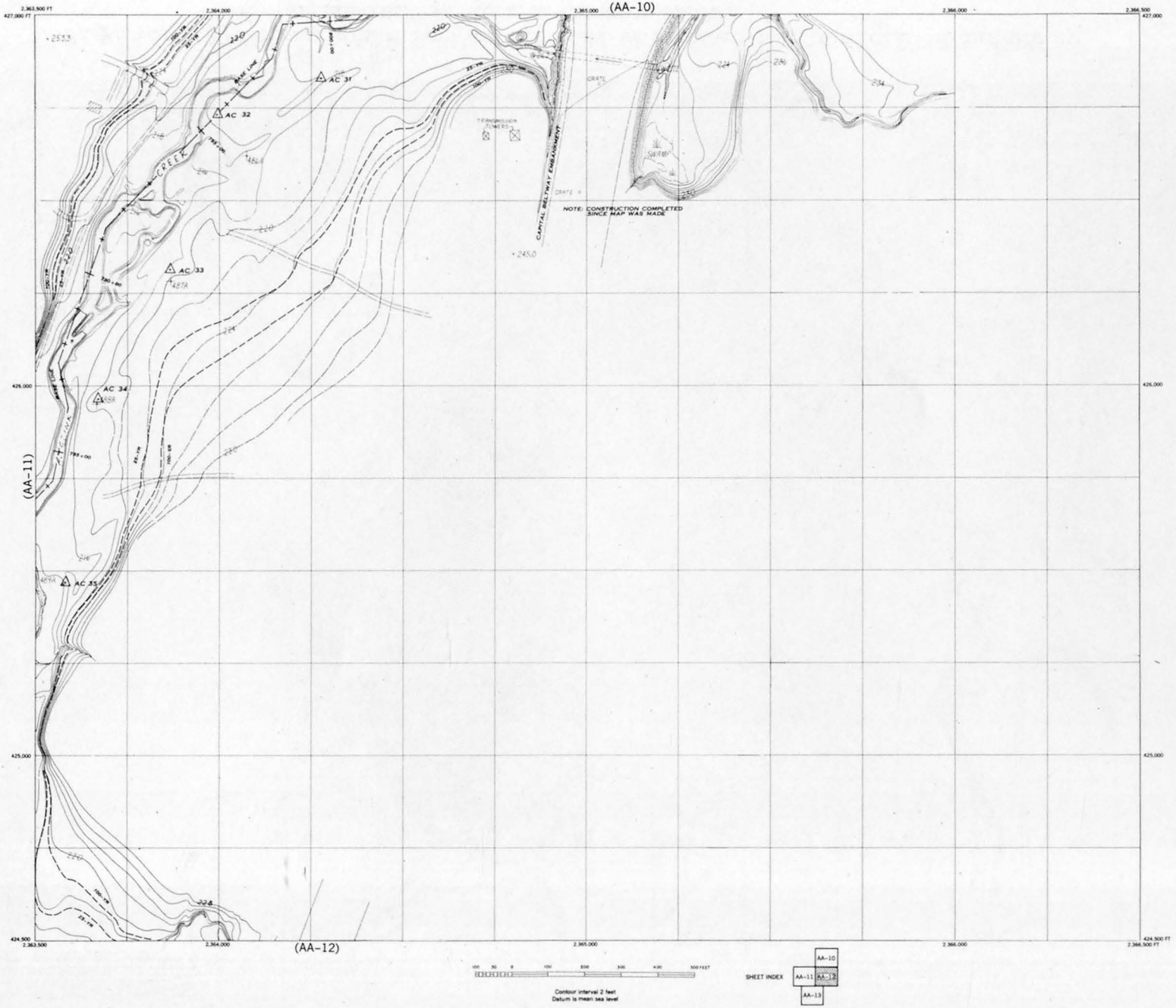


Figure 26.--Topographic map of stream valley showing flood boundary delineation, Accotink Creek; AA-12



Figure 27.--Topographic map of stream valley showing flood boundary delineation, Accotink Creek; AA-13

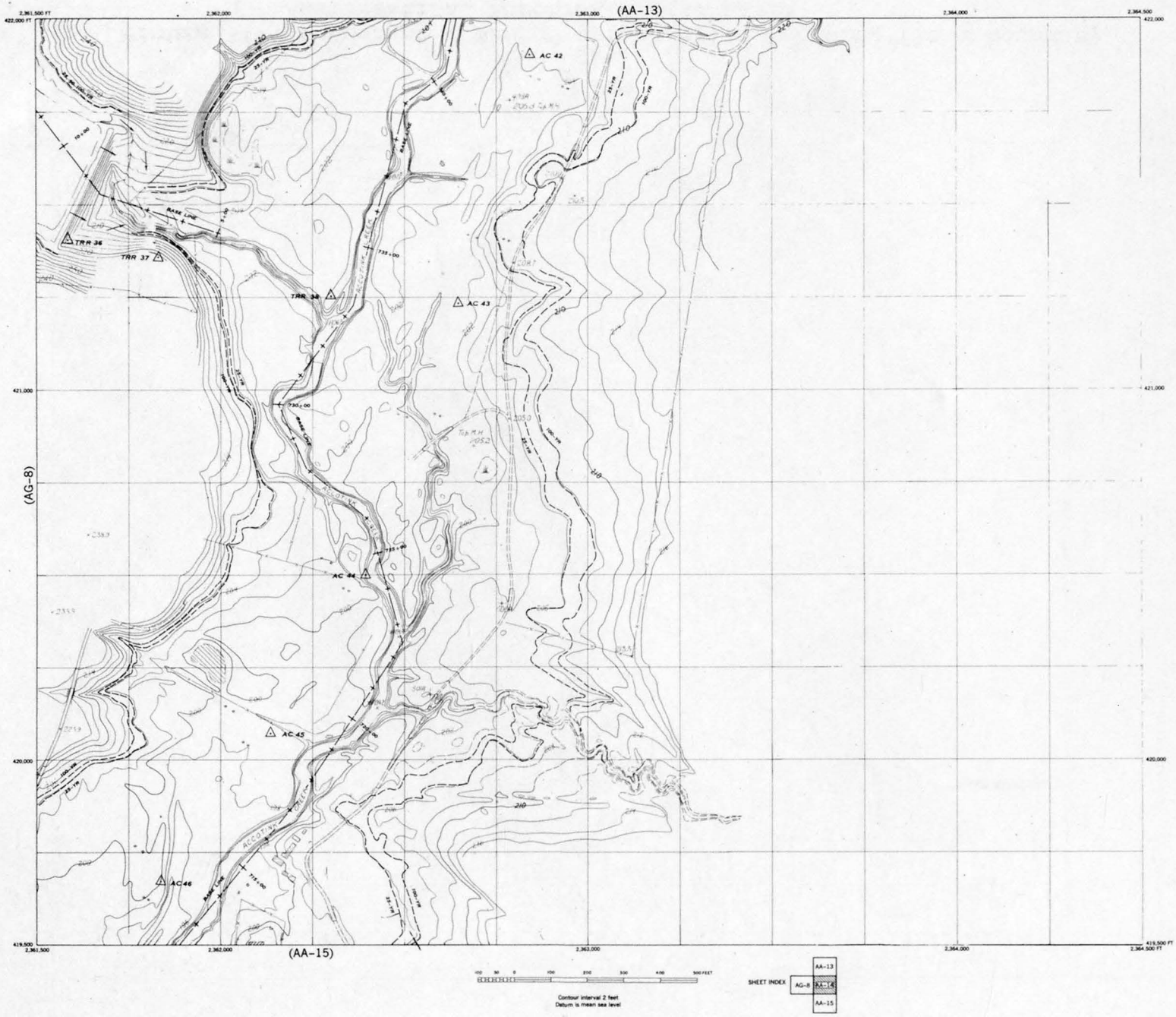


Figure 28.--Topographic map of stream valley showing flood boundary delineation, Accotink Creek; AA-14

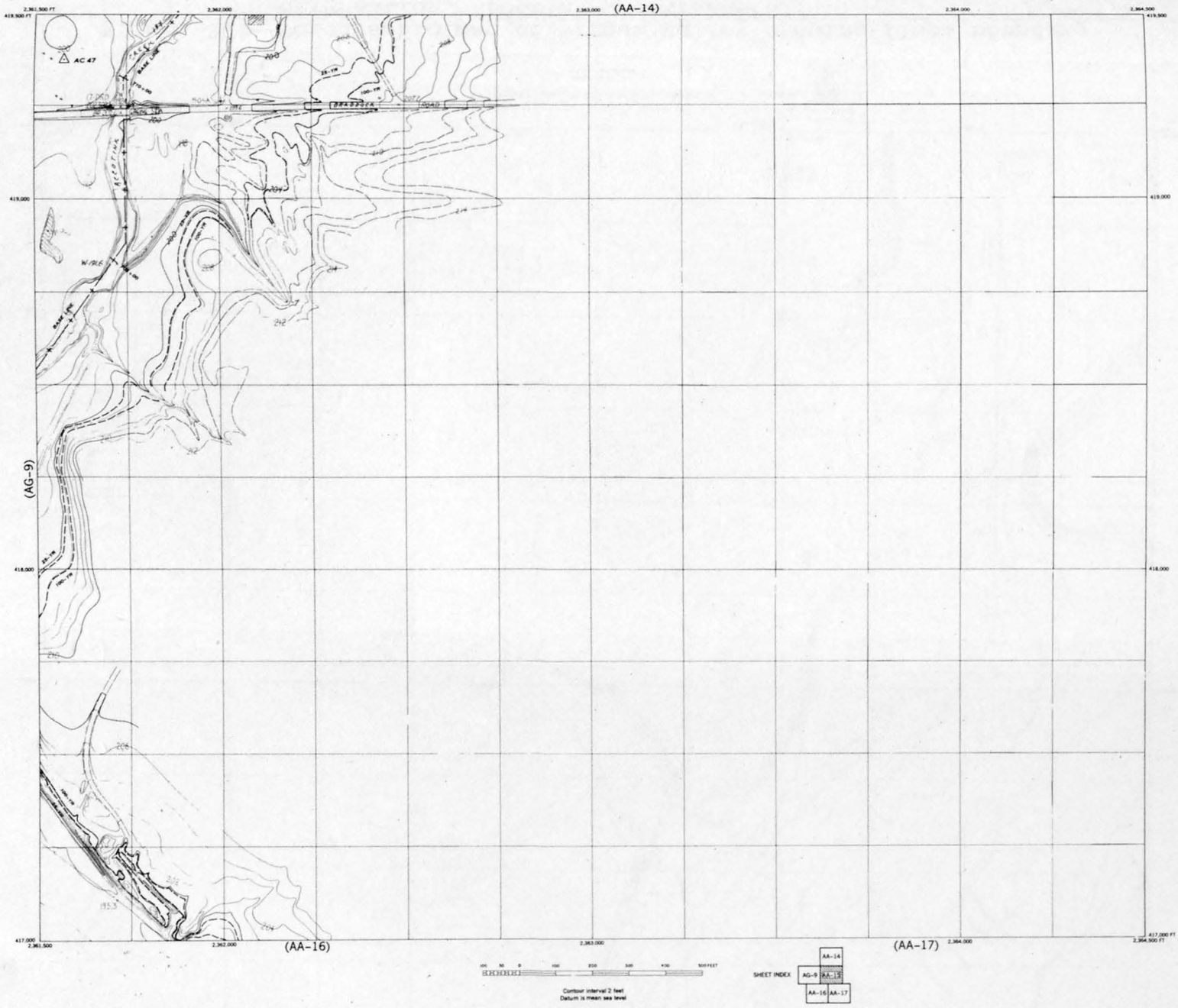


Figure 29.--Topographic map of stream valley showing flood boundary delineation, Accotink Creek; AA-15

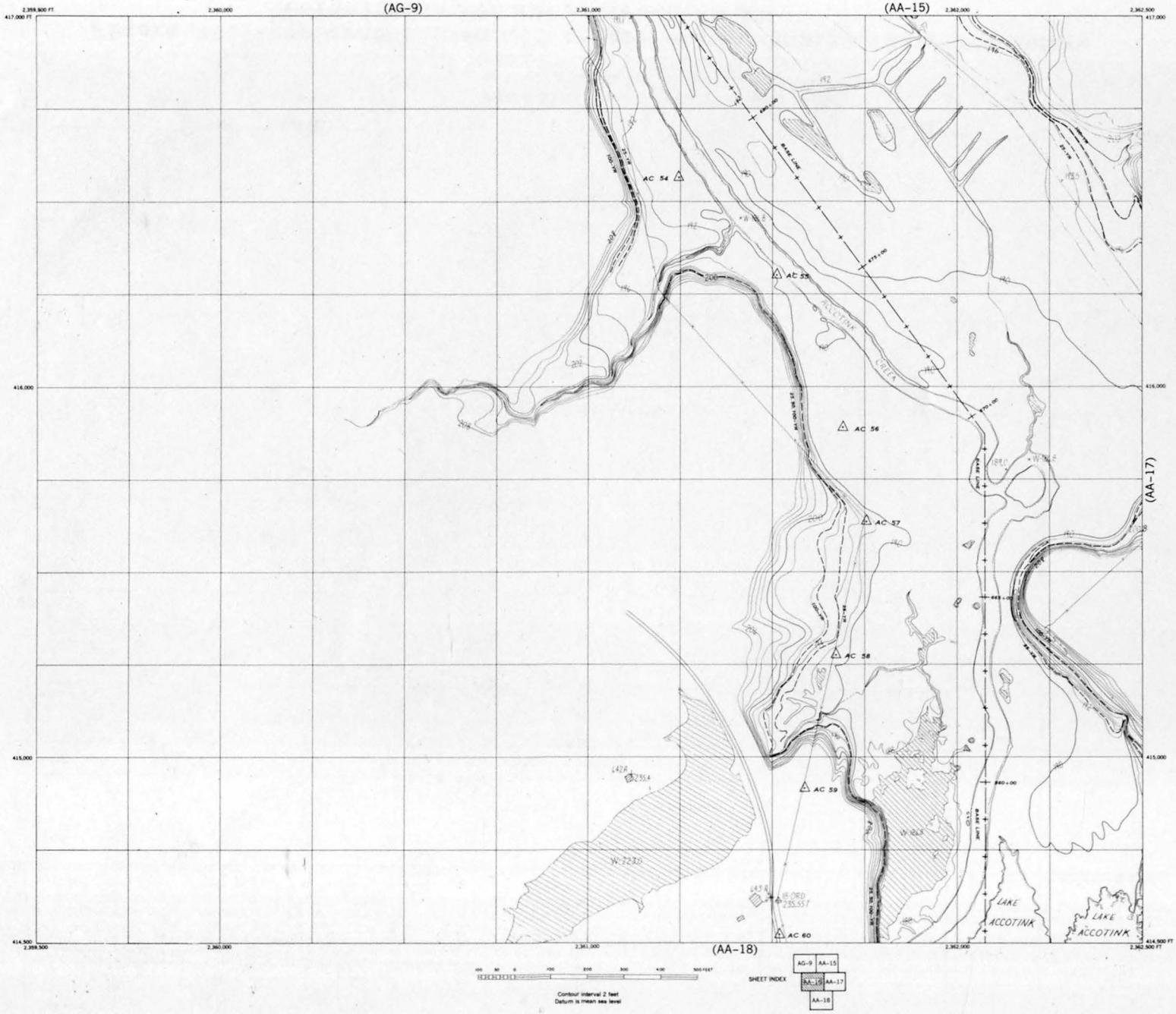


Figure 30.--Topographic map of stream valley showing flood boundary delineation, Accotink Creek; AA-16

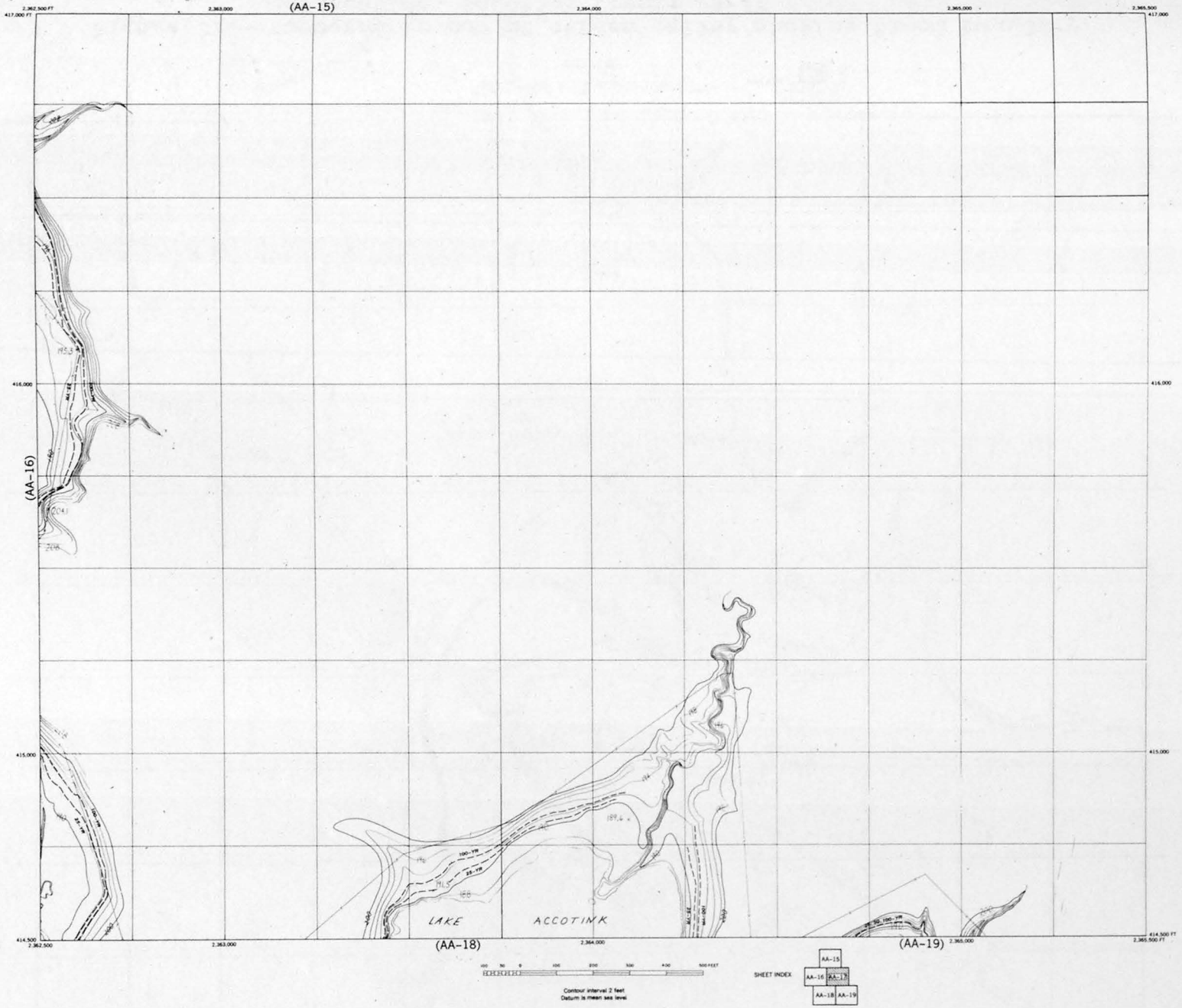


Figure 31.--Topographic map of stream valley showing flood boundary delineation, Accotink Creek; AA-17

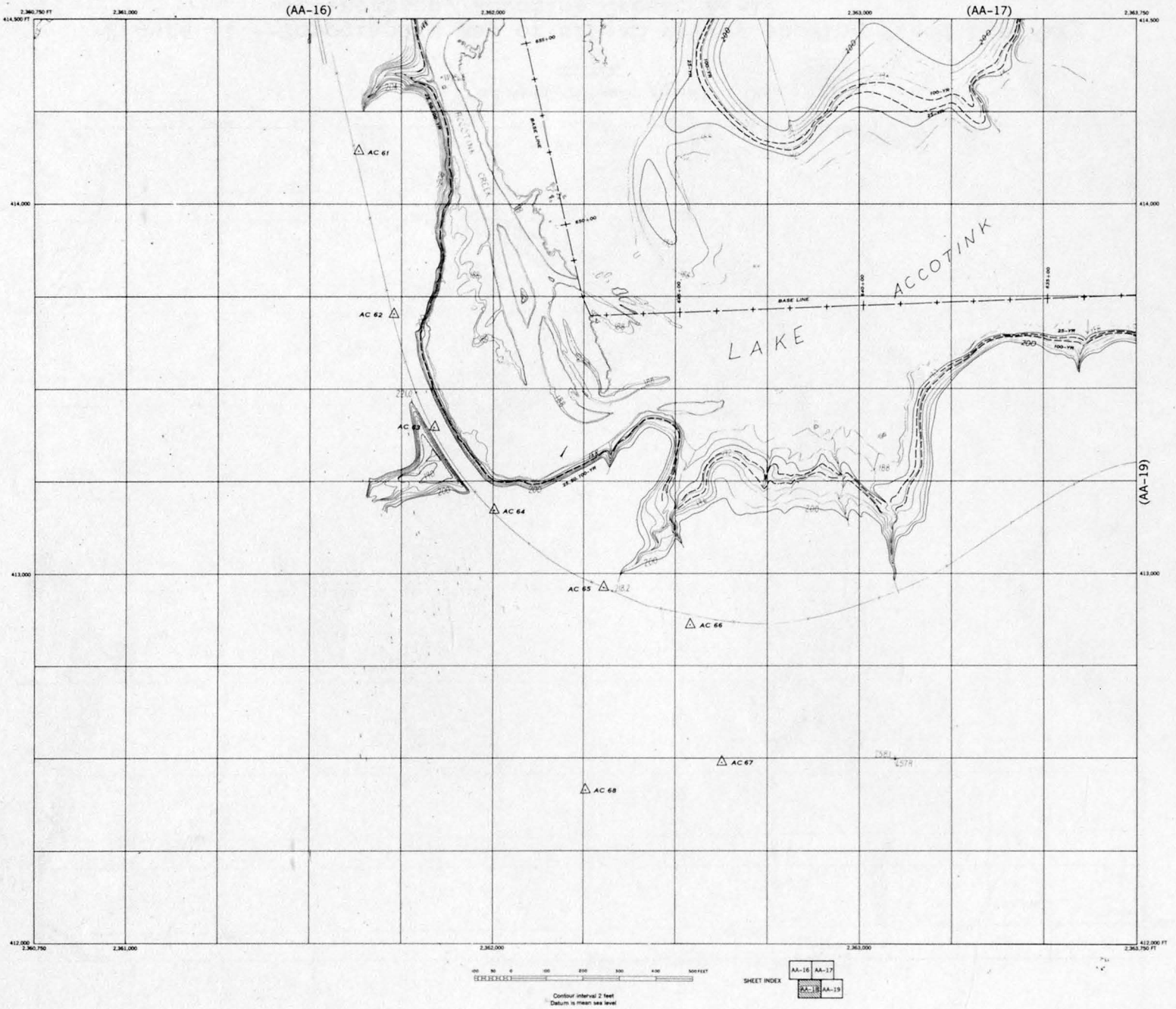


Figure 32.--Topographic map of stream valley showing flood boundary delineation, Accotink Creek; AA-18

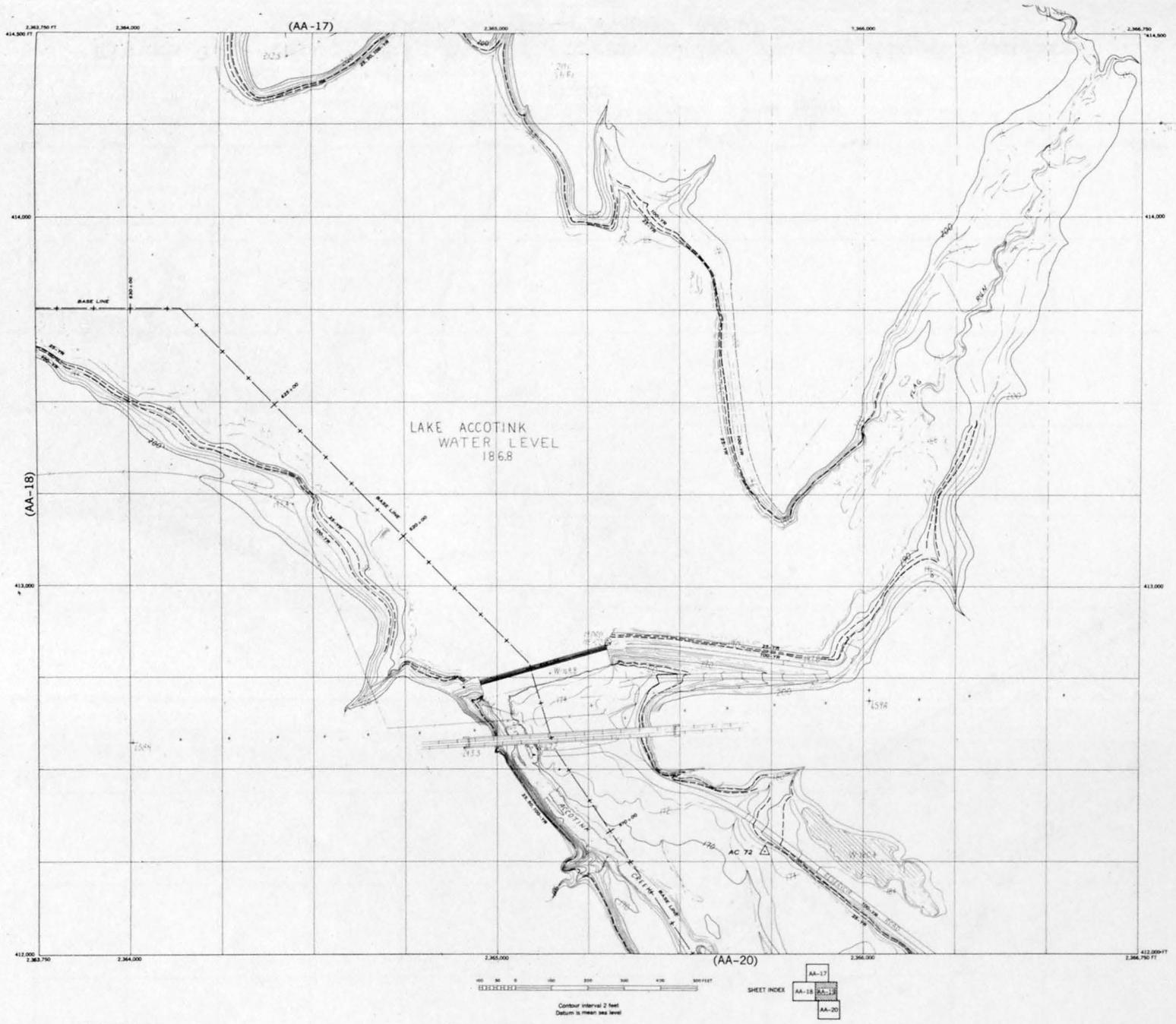


Figure 33.--Topographic map of stream valley showing flood boundary delineation, Accotink Creek; AA-19

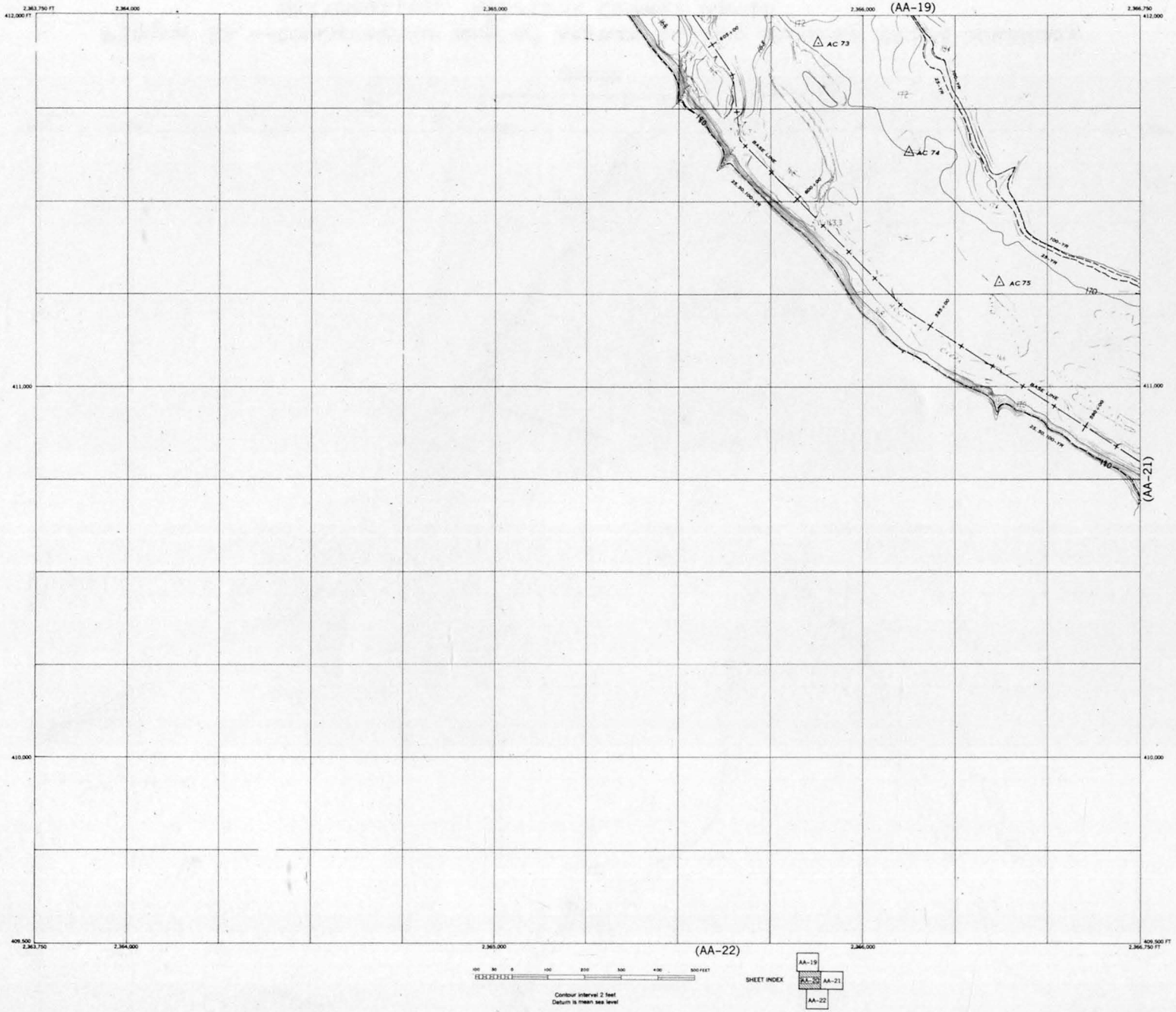


Figure 34.--Topographic map of stream valley showing flood boundary delineation, Accotink Creek; AA-20

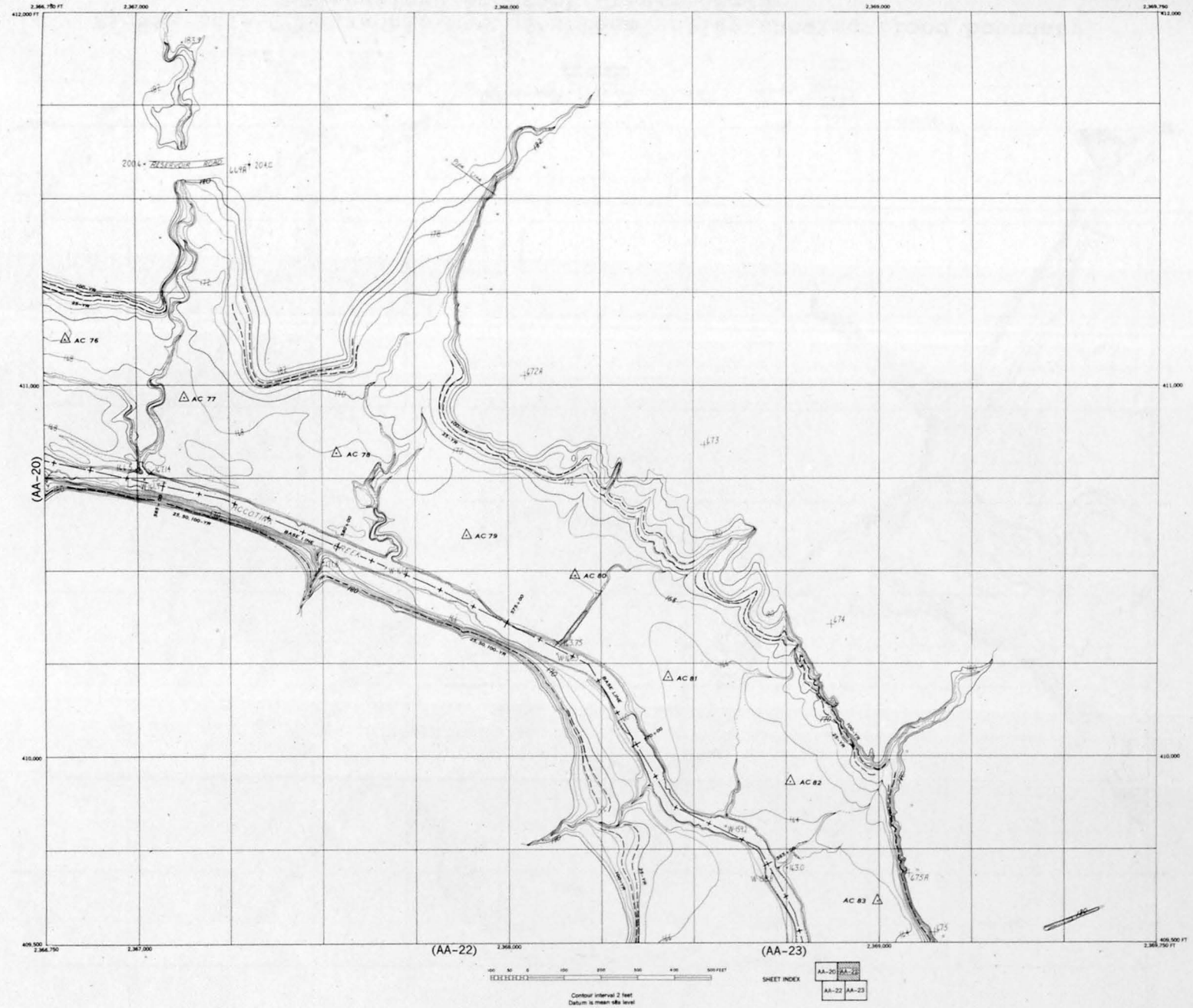


Figure 35.--Topographic map of stream valley showing flood boundary delineation, Accotink Creek; AA-21

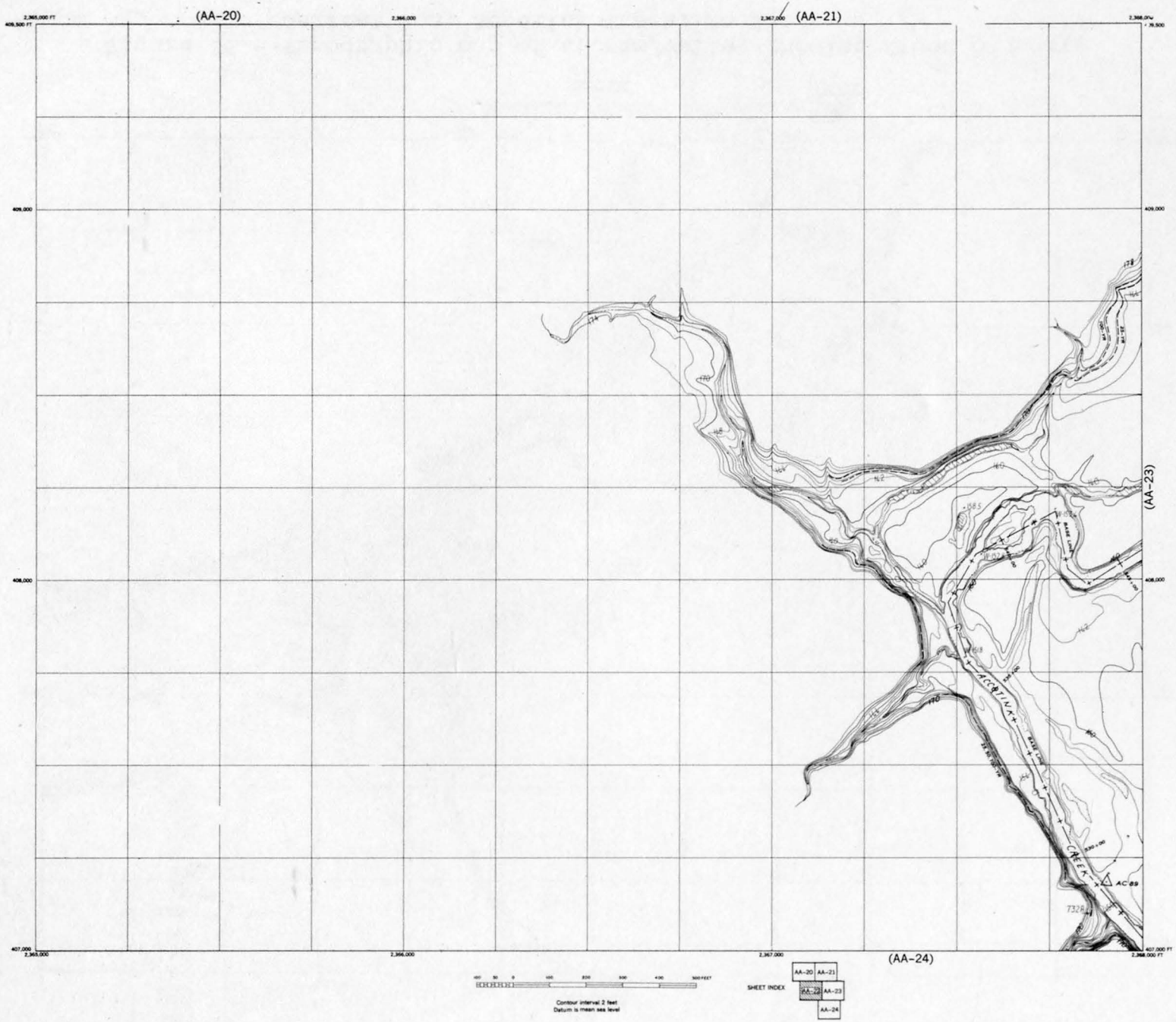


Figure 36.--Topographic map of stream valley showing flood boundary delineation, Accotink Creek; AA-22



Figure 37.--Topographic map of stream valley showing flood boundary delineation, Accotink Creek; AA-23

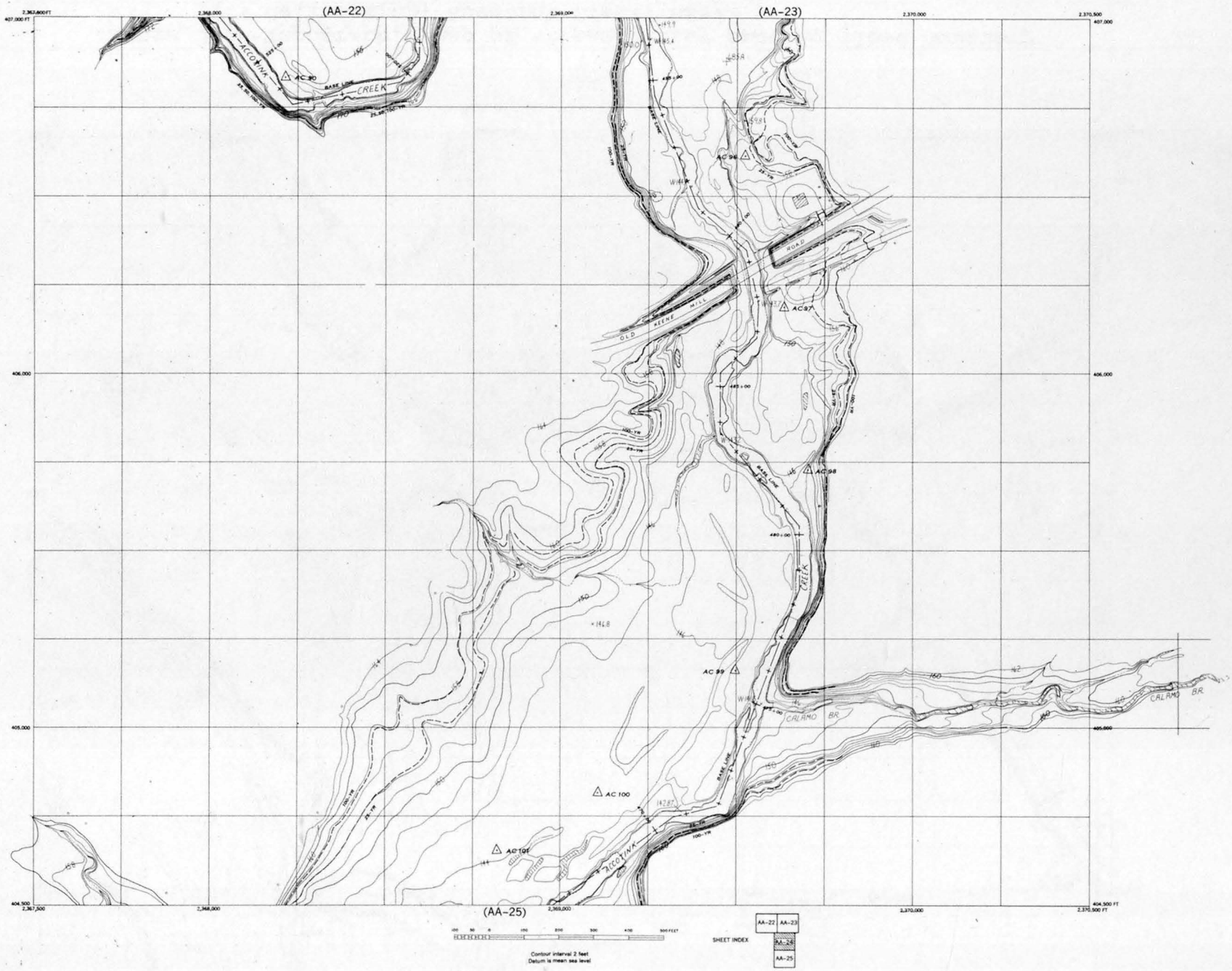


Figure 38.--Topographic map of stream valley showing flood boundary delineation, Accotink Creek; AA-24

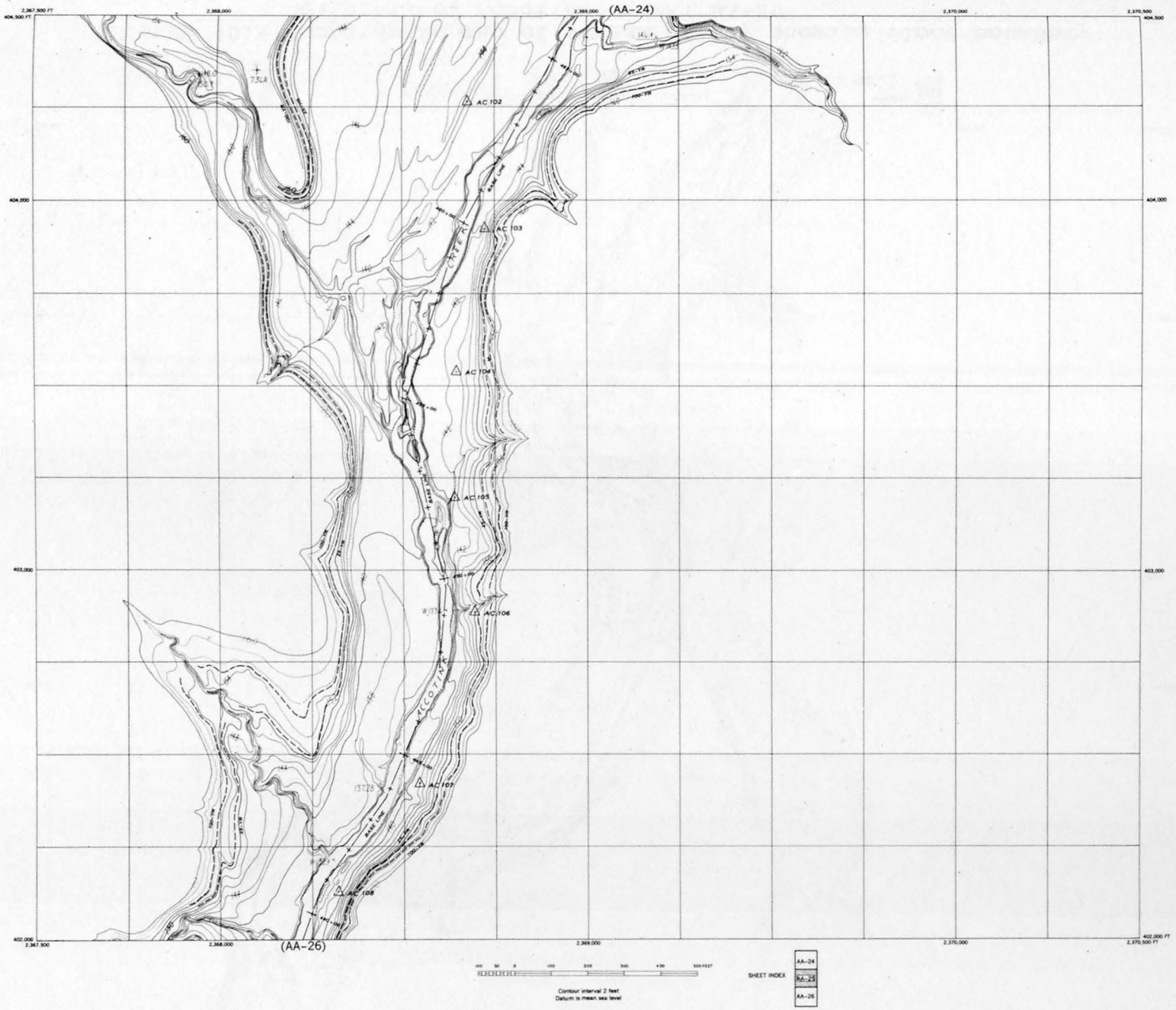


Figure 39.--Topographic map of stream valley showing flood boundary delineation, Accotink Creek; AA-25



Figure 40.--Topographic map of stream valley showing flood boundary delineation, Accotink Creek; AA-26

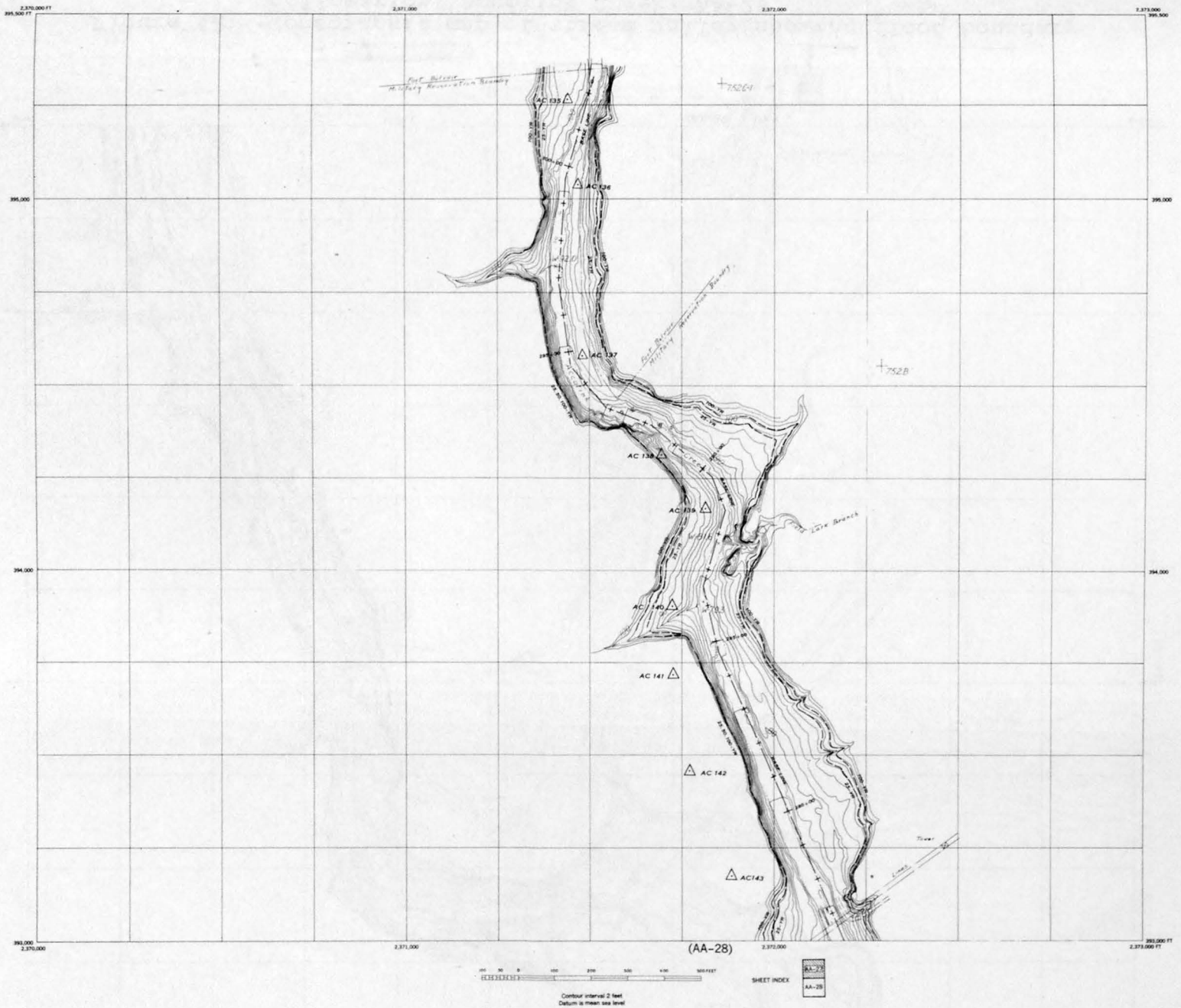


Figure 41.--Topographic map of stream valley showing flood boundary delineation, Accotink Creek; AA-27

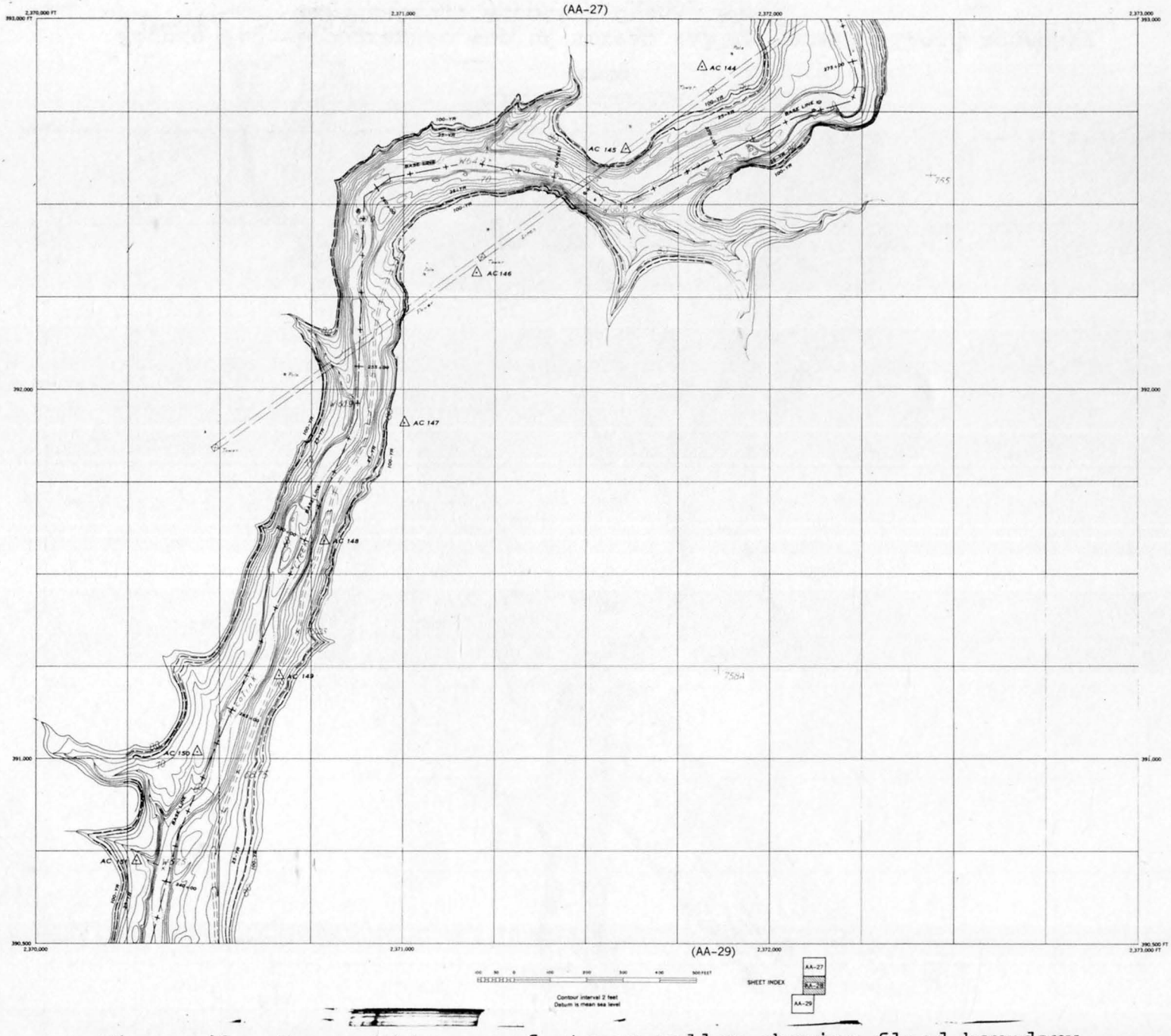


Figure 42.--Topographic map of stream valley showing flood boundary delineation, Accotink Creek; AA-28

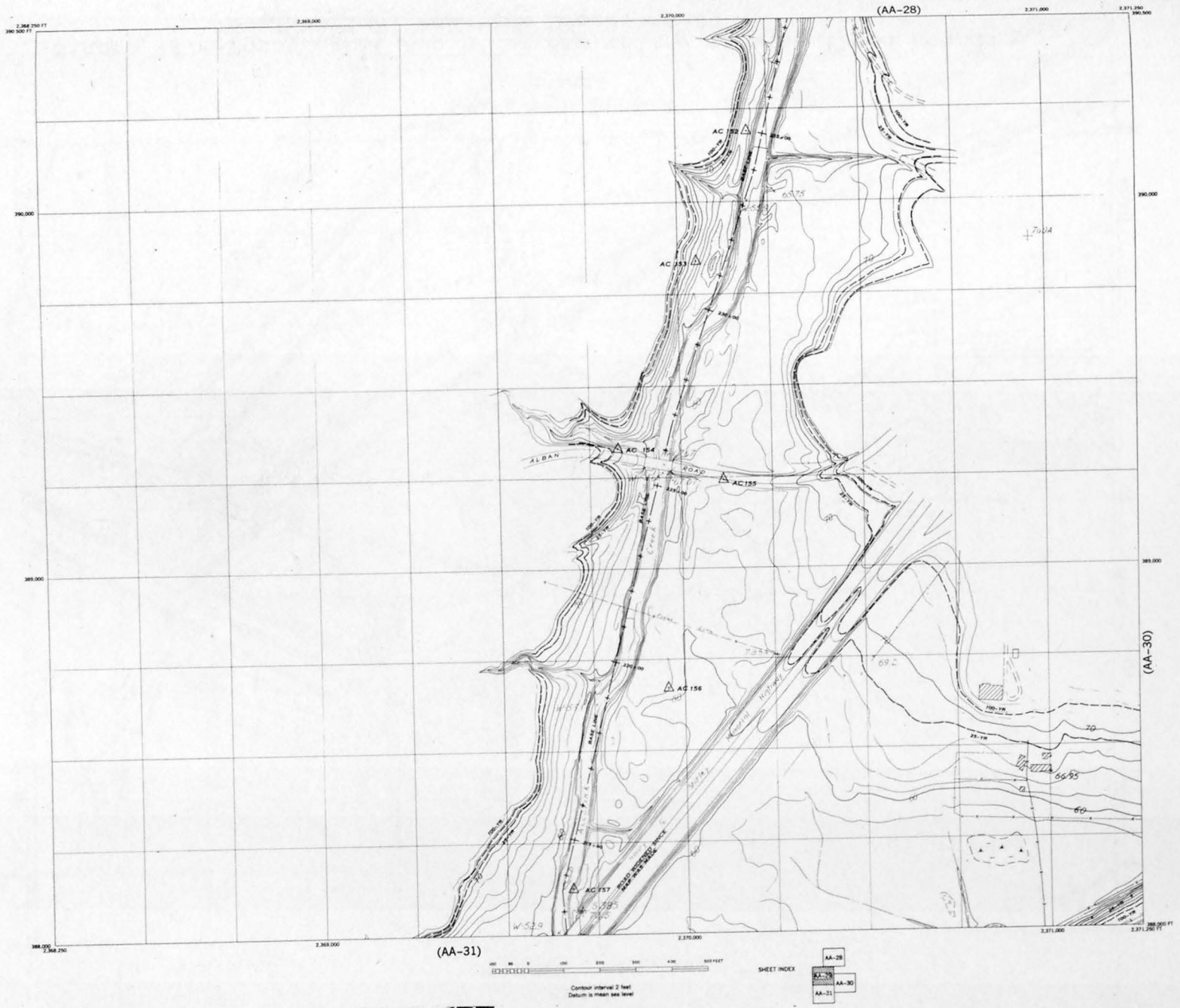


Figure 43.--Topographic map of stream valley showing flood boundary delineation, Accotink Creek; AA-29

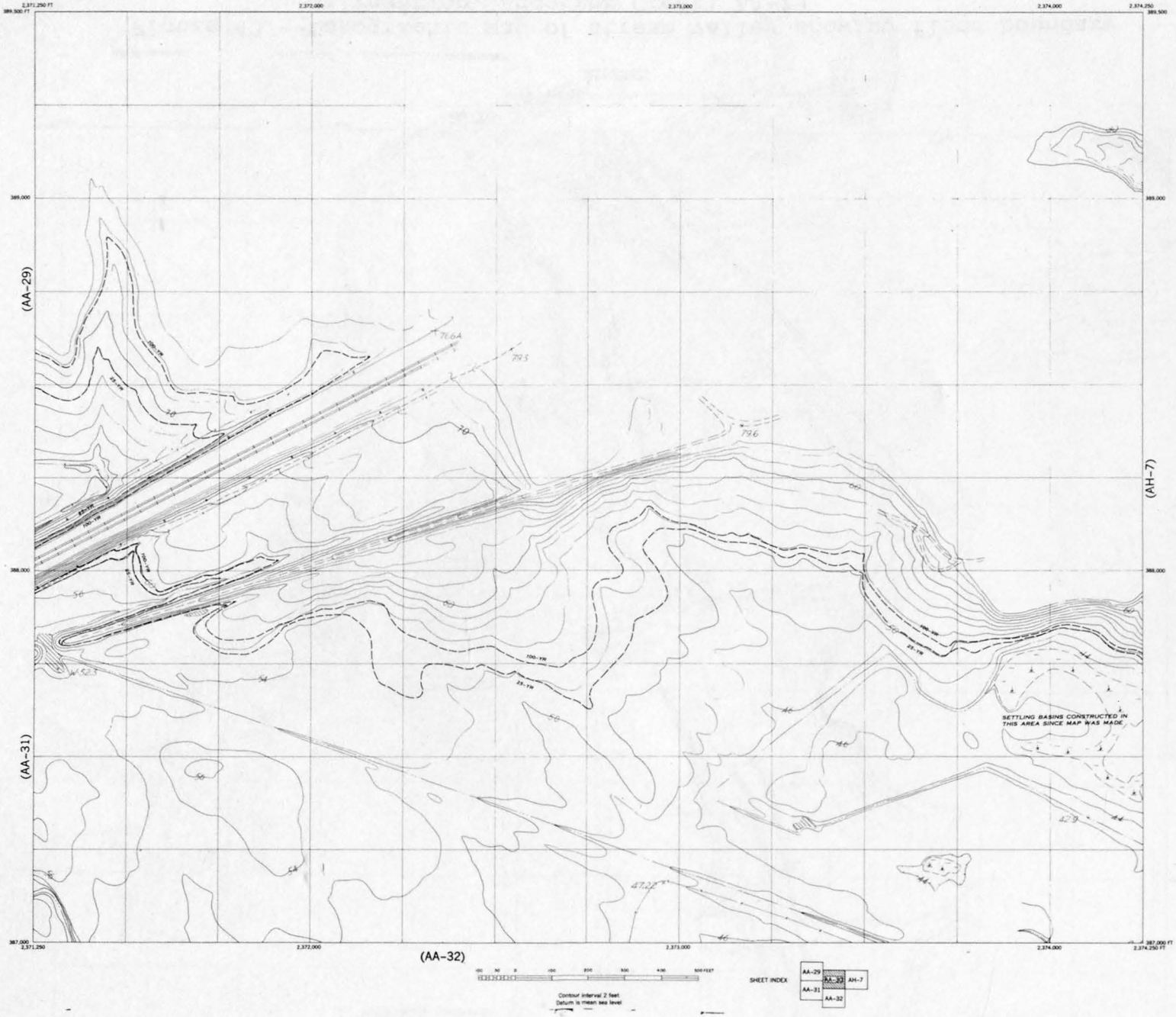


Figure 44.--Topographic map of stream valley showing flood boundary delineation, Accotink Creek; AA-30

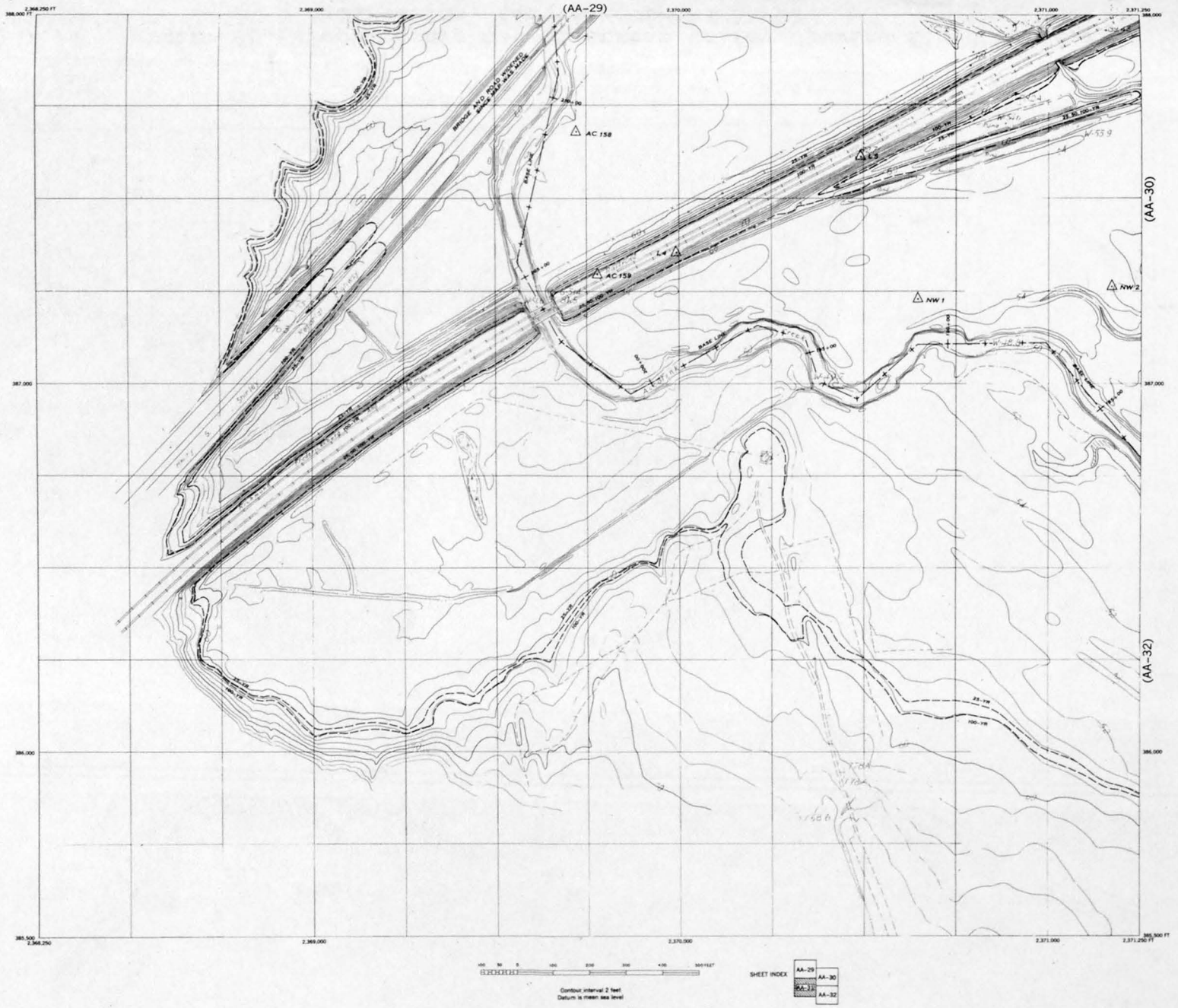


Figure 45.--Topographic map of stream valley showing flood boundary delineation, Accotink Creek; AA-31

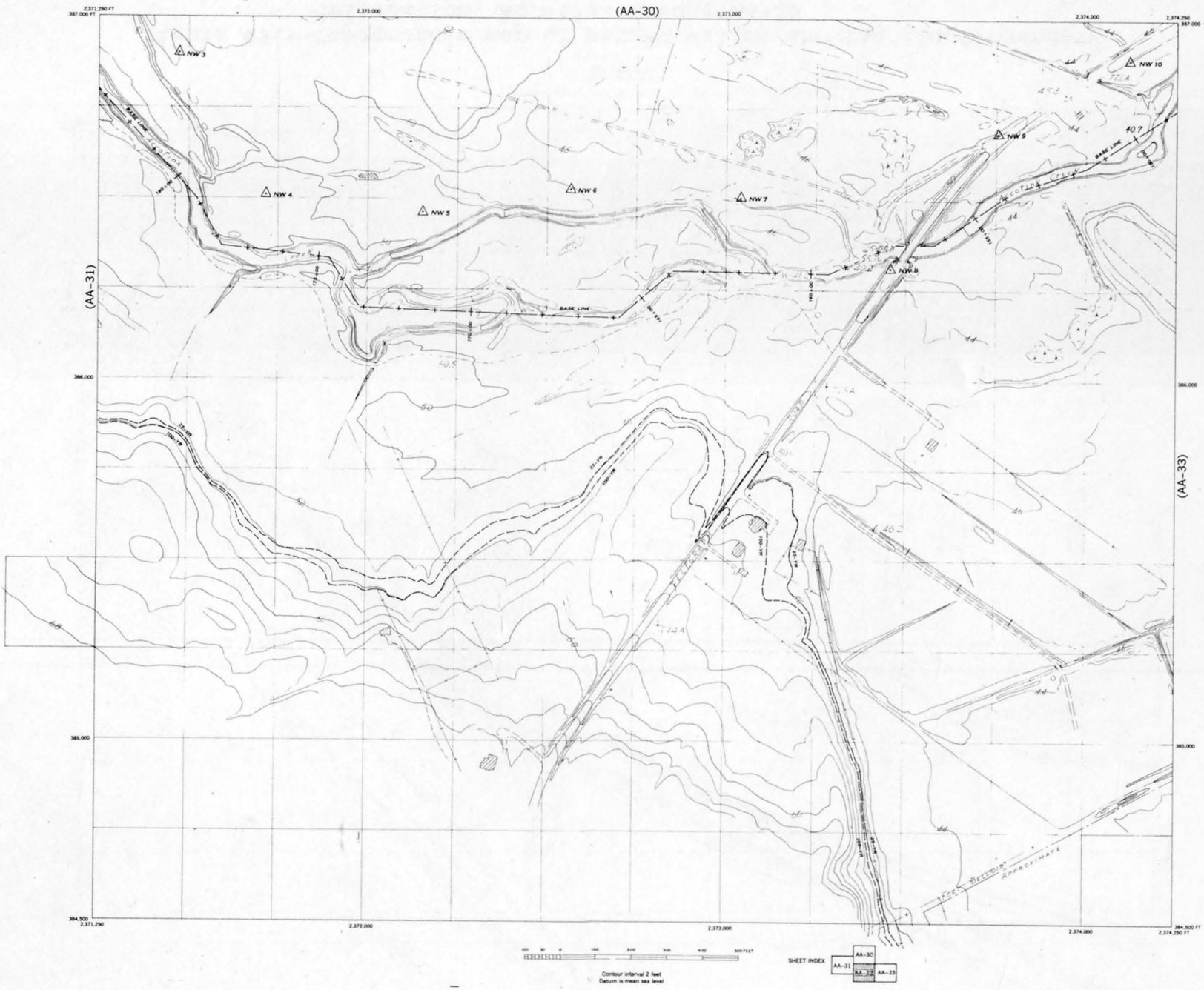


Figure 46.--Topographic map of stream valley showing flood boundary delineation, Accotink Creek; AA-32

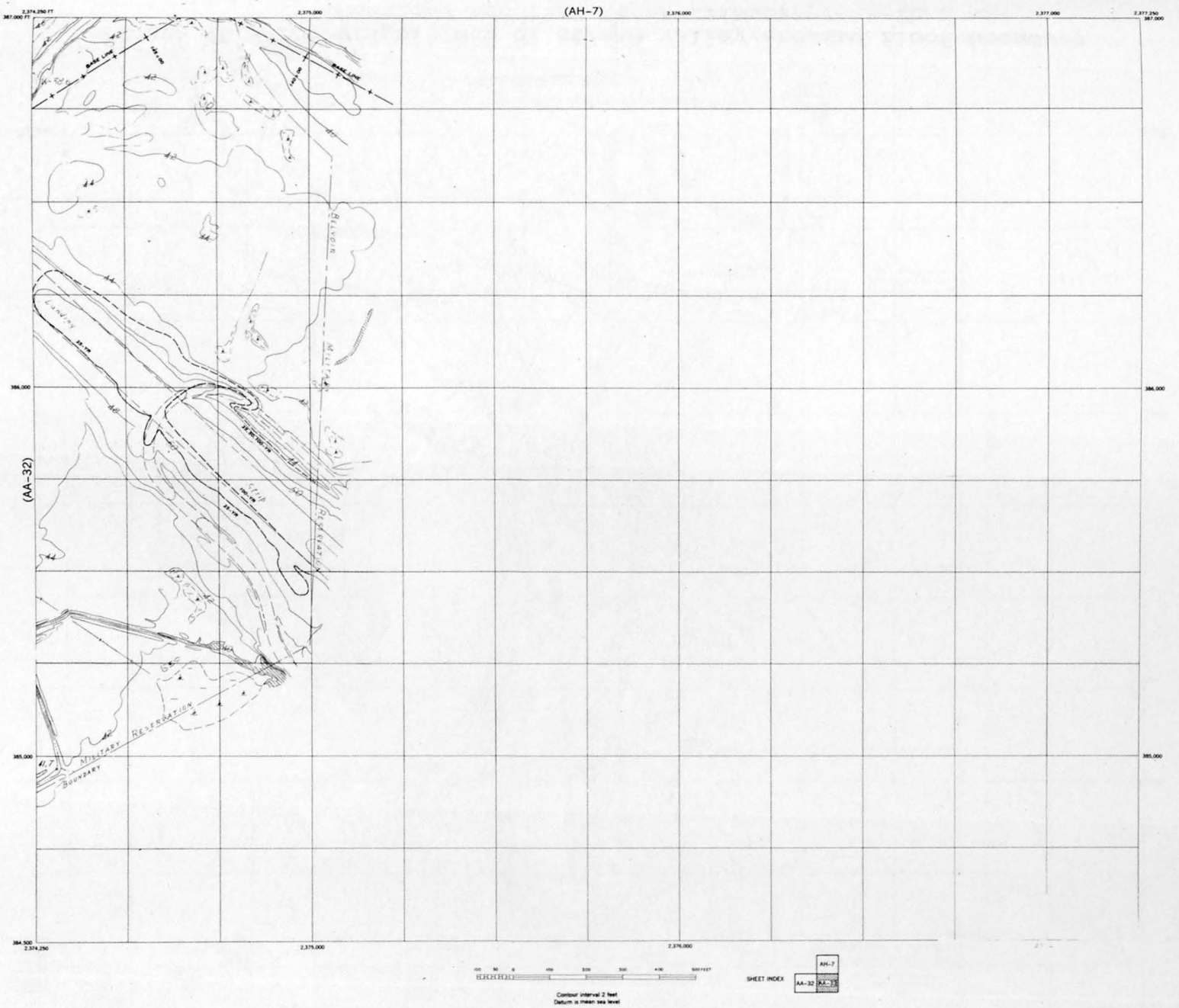


Figure 47.--Topographic map of stream valley showing flood boundary delineation, Accotink Creek; AA-33

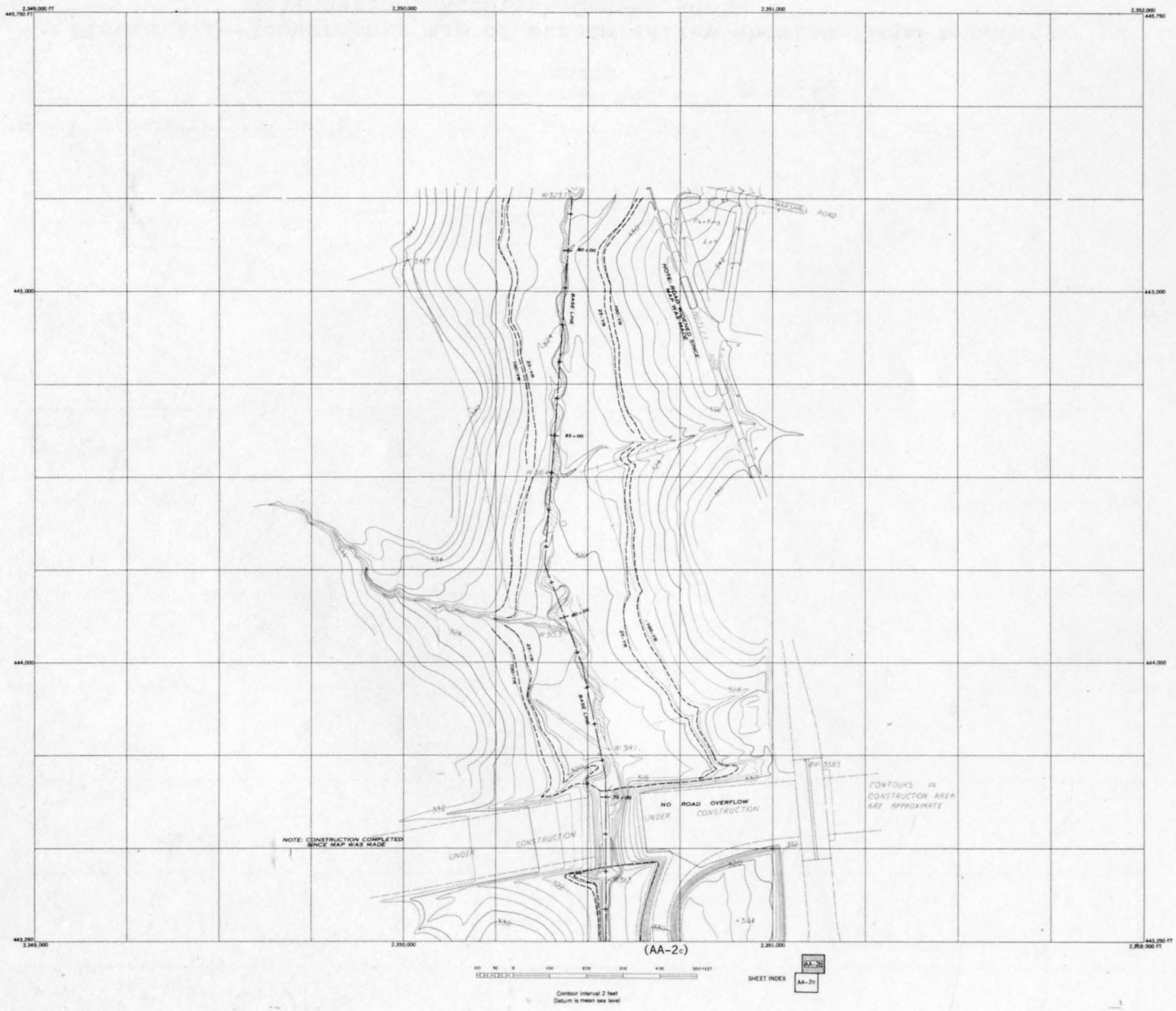


Figure 48.--Topographic map of stream valley showing flood boundary delineation, Accotink Creek Tributary; AA-2b

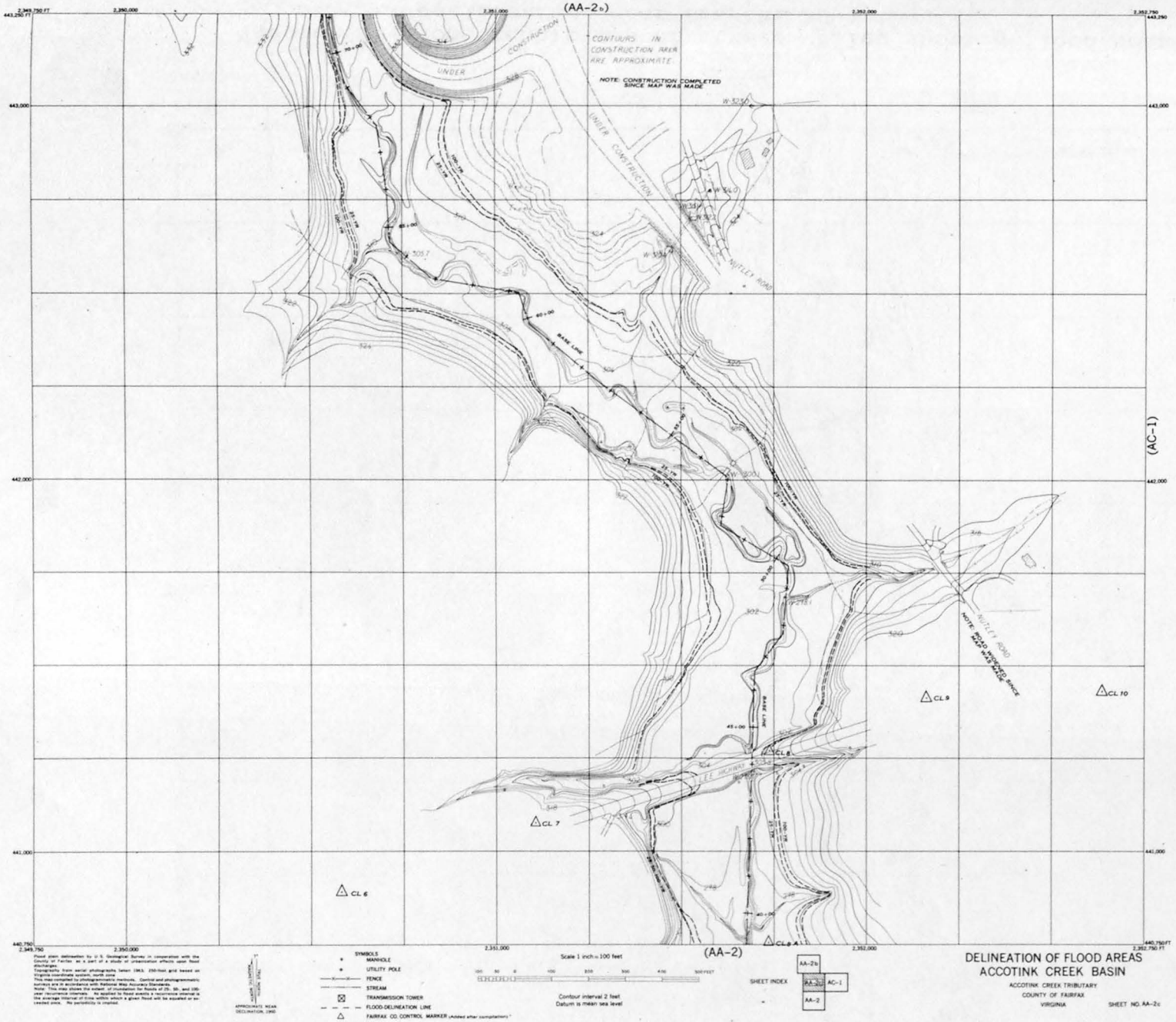


Figure 49.--Topographic map of stream valley showing flood boundary delineation, Accotink Creek Tributary; AA-2c

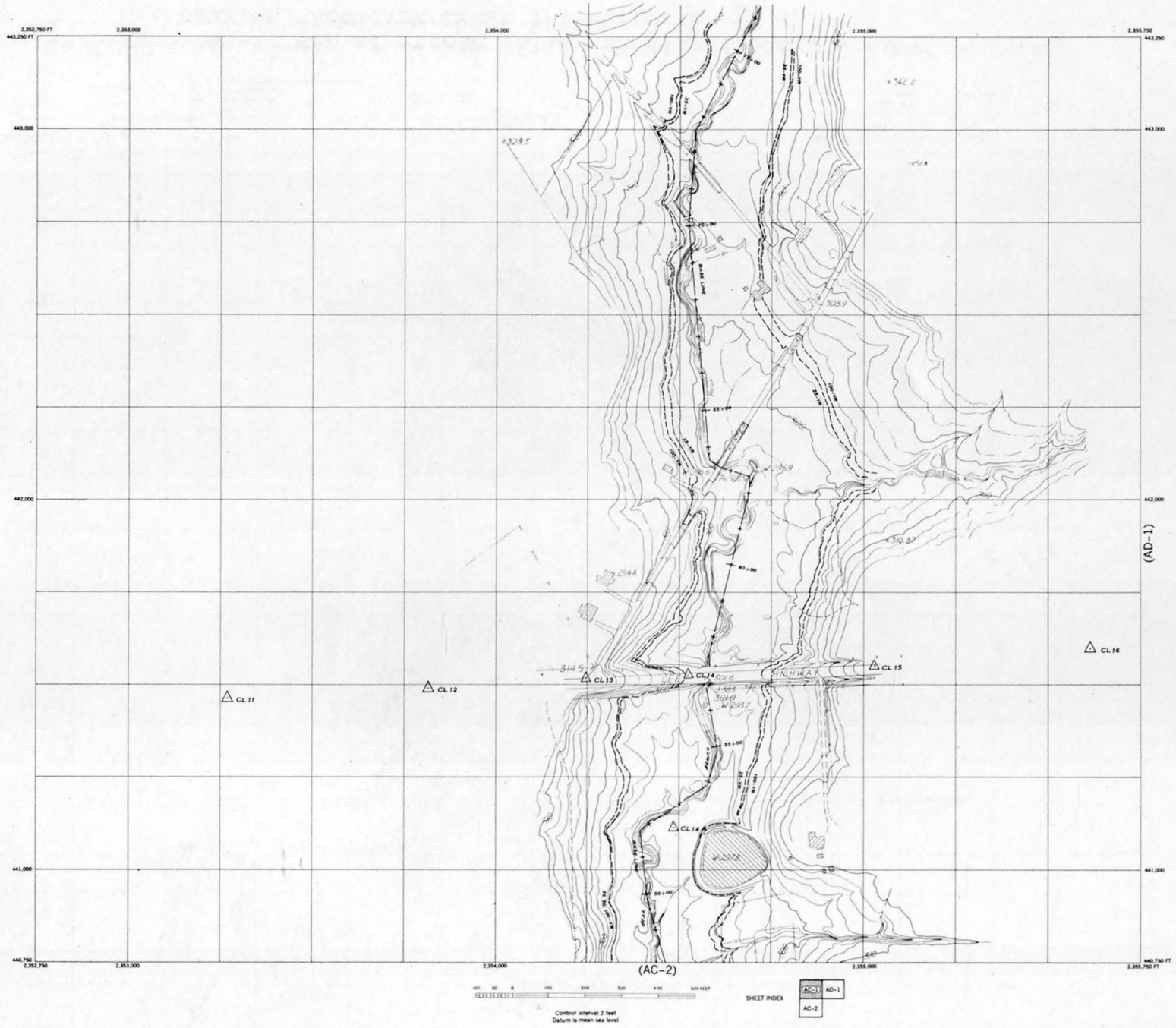


Figure 50.--Topographic map of stream valley showing flood boundary delineation, Bear Branch; AC-1

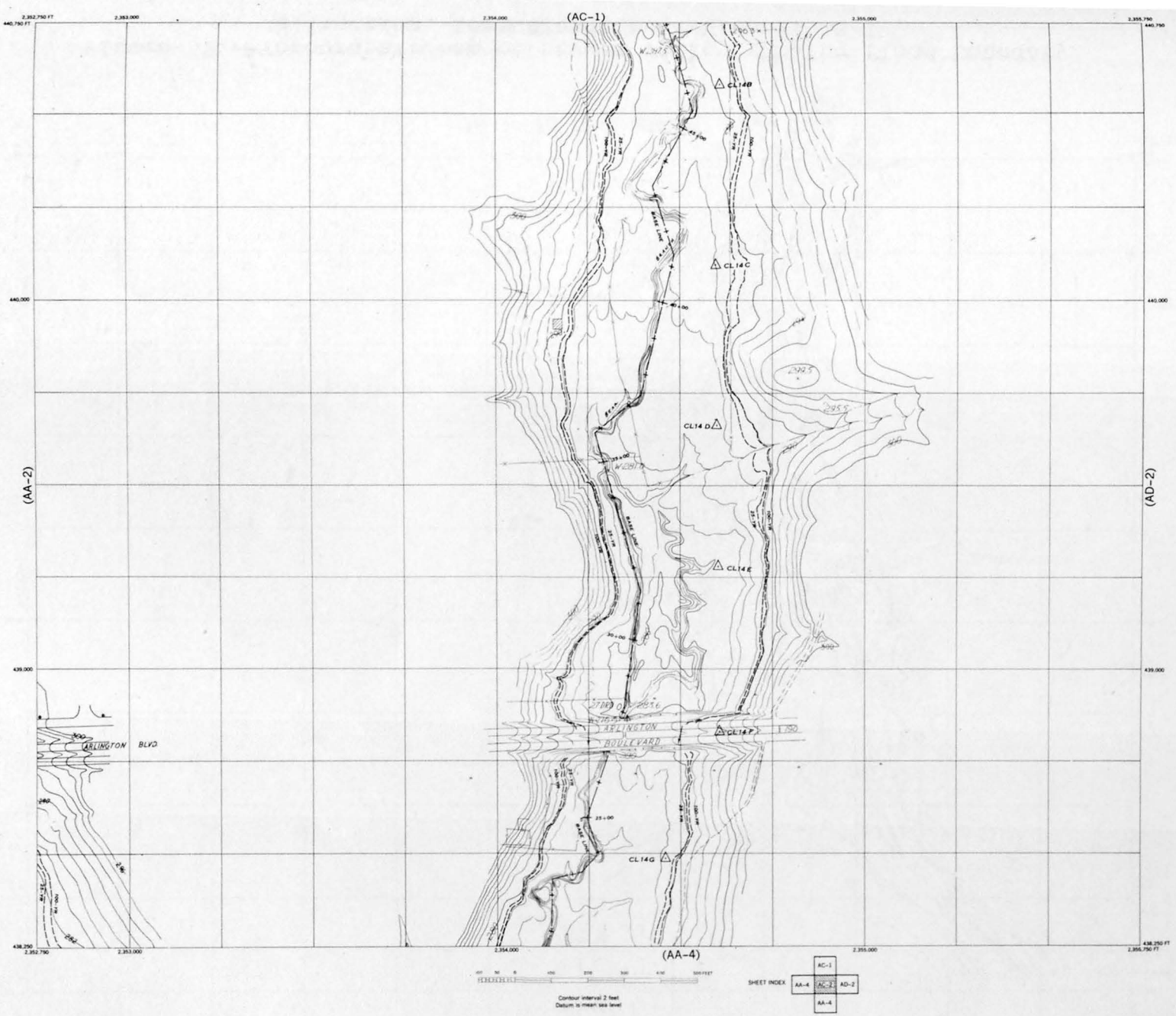


Figure 51.--Topographic map of stream valley showing flood boundary delineation, Bear Branch; AC-2

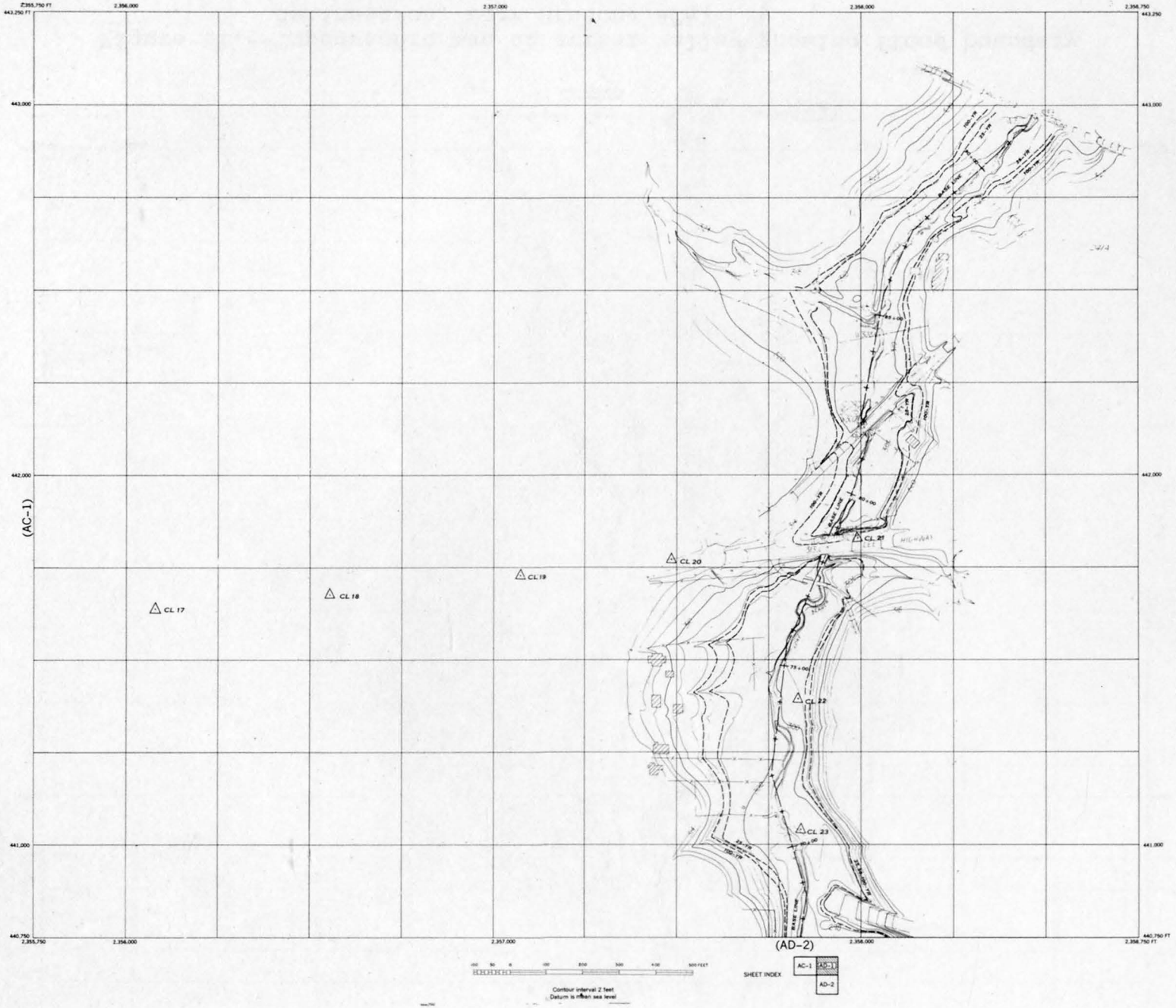


Figure 52.--Topographic map of stream valley showing flood boundary delineation, Long Branch near Vienna; AD-1

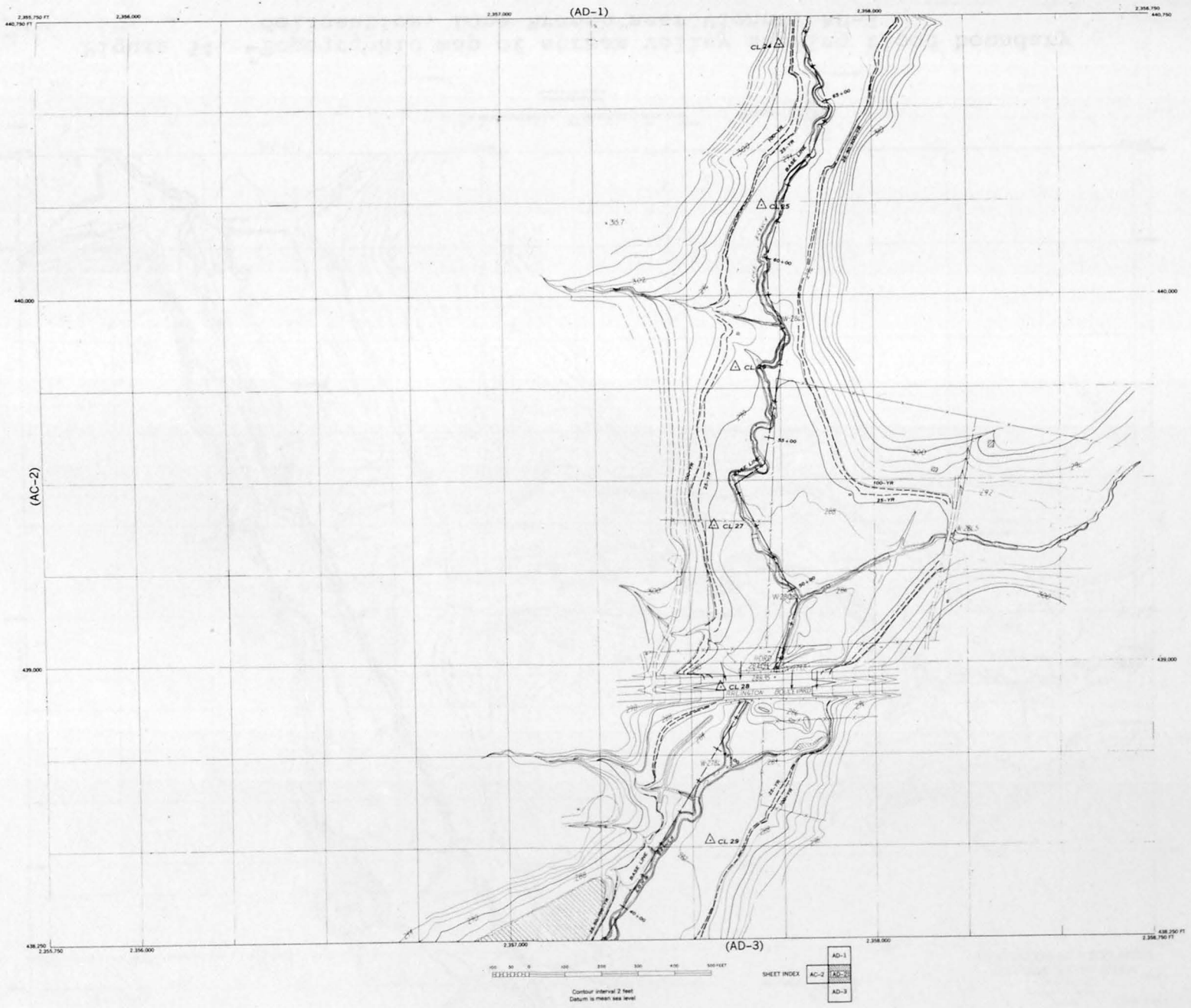


Figure 53.--Topographic map of stream valley showing flood boundary delineation, Long Branch near Vienna; AD-2



Figure 54.--Topographic map of stream valley showing flood boundary delineation, Long Branch near Vienna; AD-3

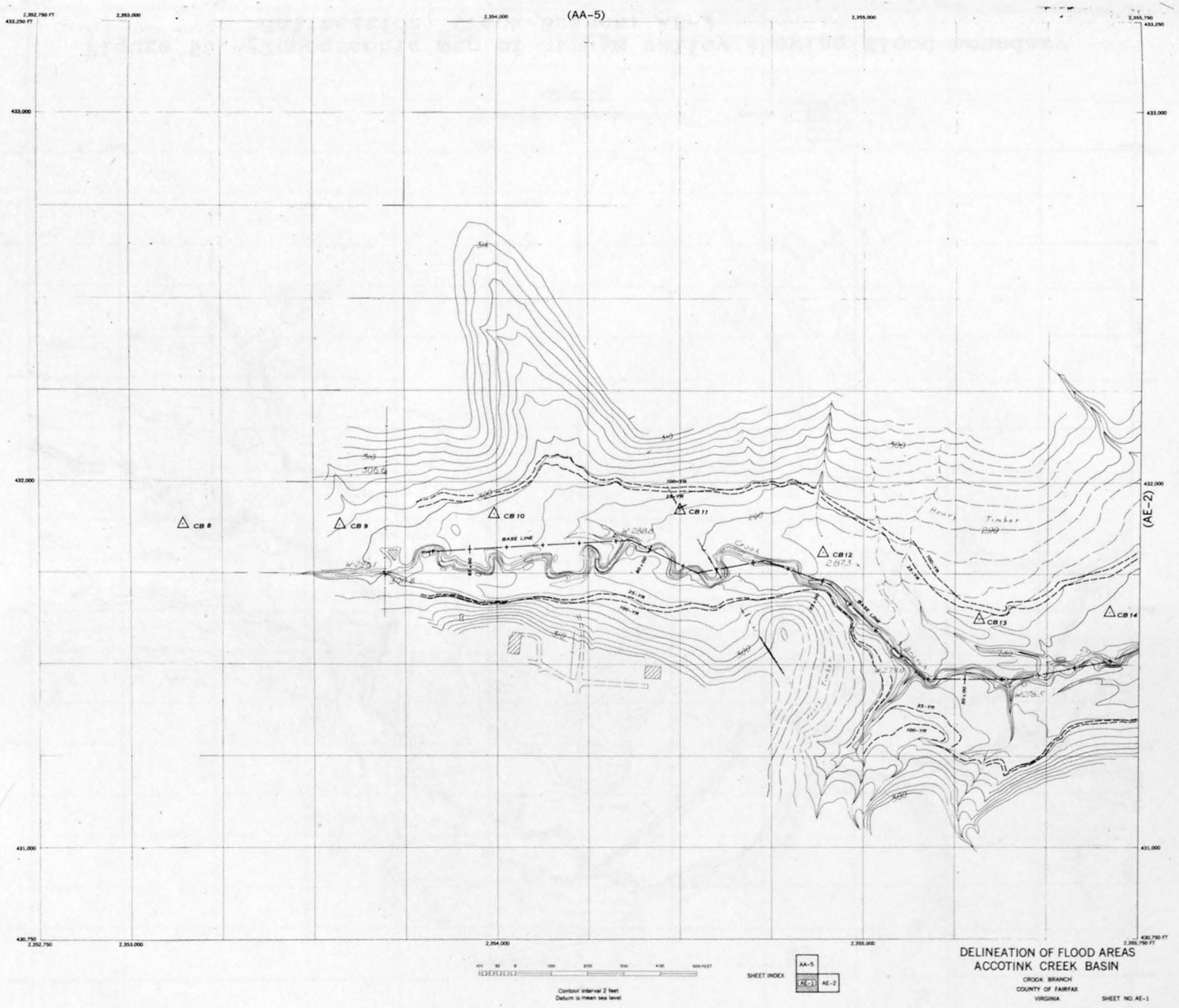


Figure 55.--Topographic map of stream valley showing flood boundary delineation, Crook Branch; AE-1

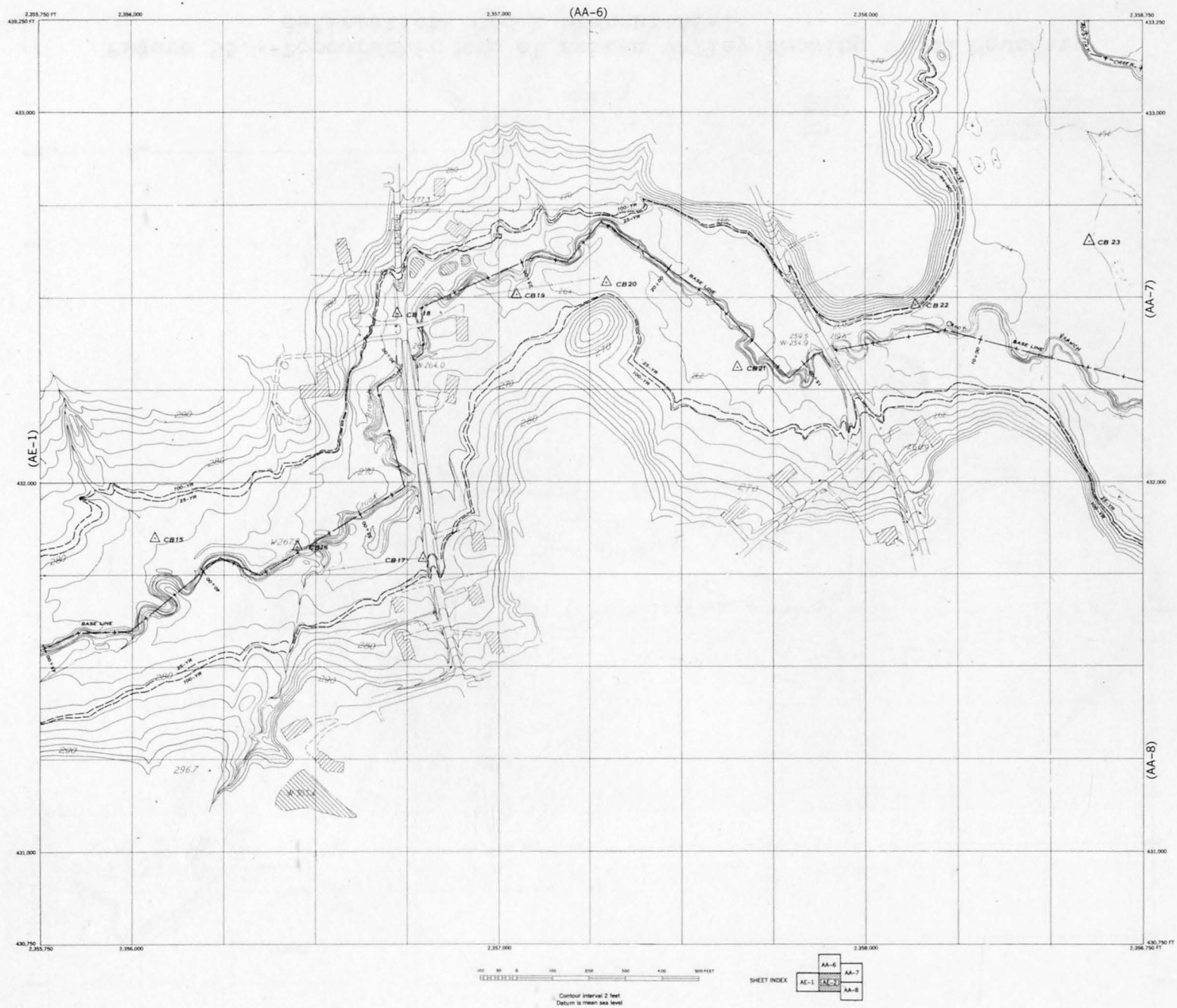


Figure 56.--Topographic map of stream valley showing flood boundary delineation, Crook Branch; AE-2

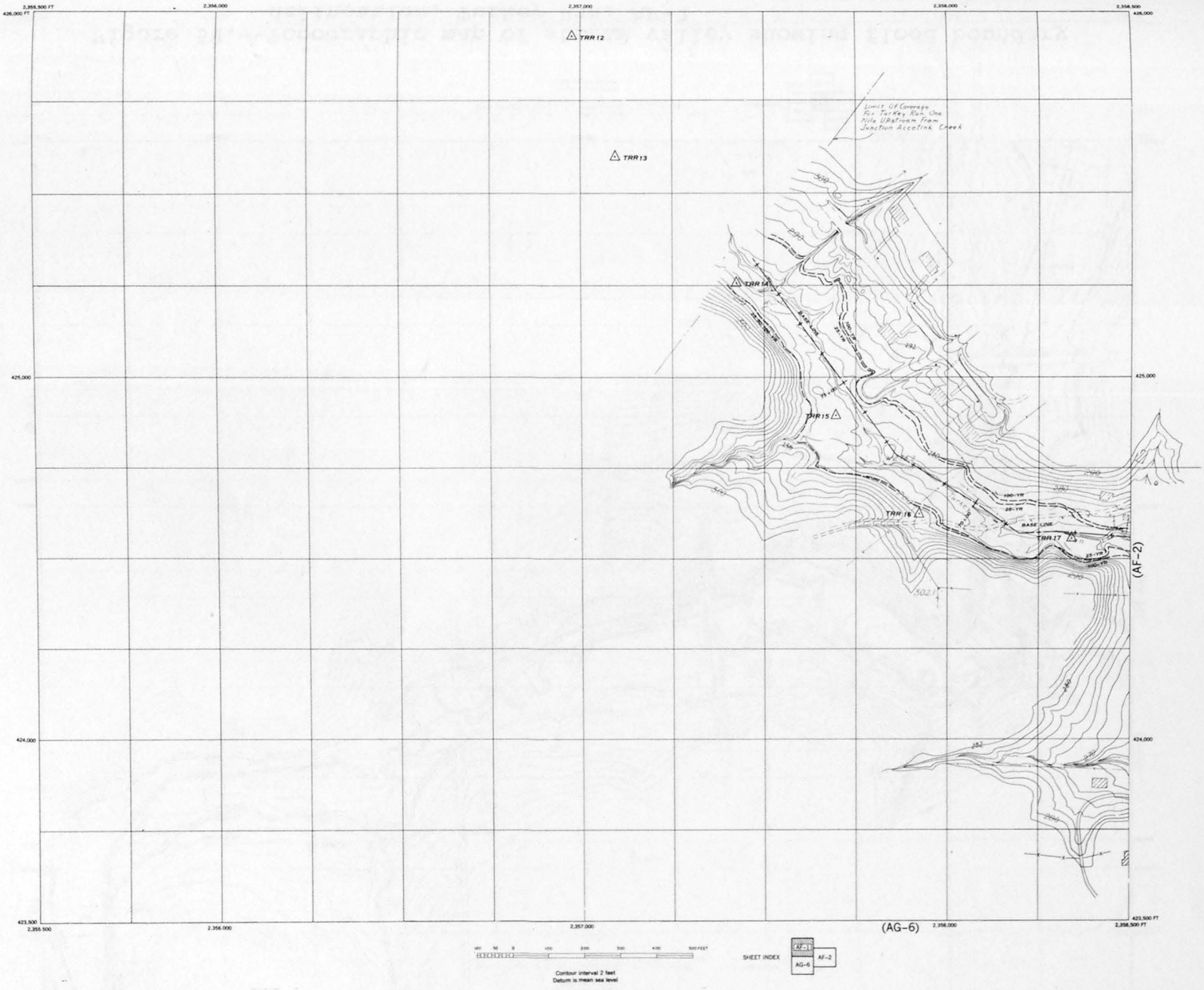


Figure 57.--Topographic map of stream valley showing flood boundary delineation, Turkey Run; AF-1

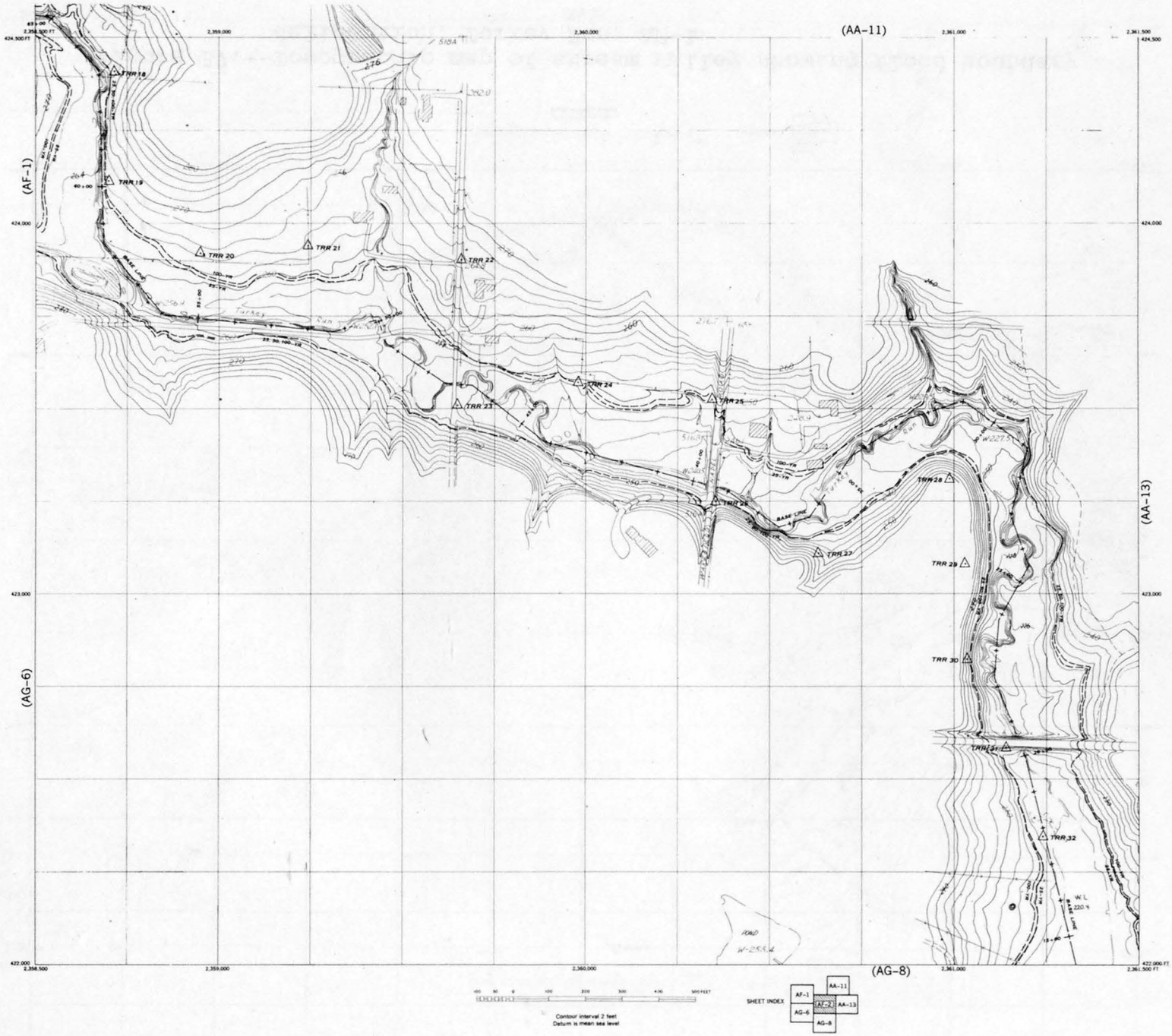


Figure 58.--Topographic map of stream valley showing flood boundary delineation, Turkey Run; AF-2

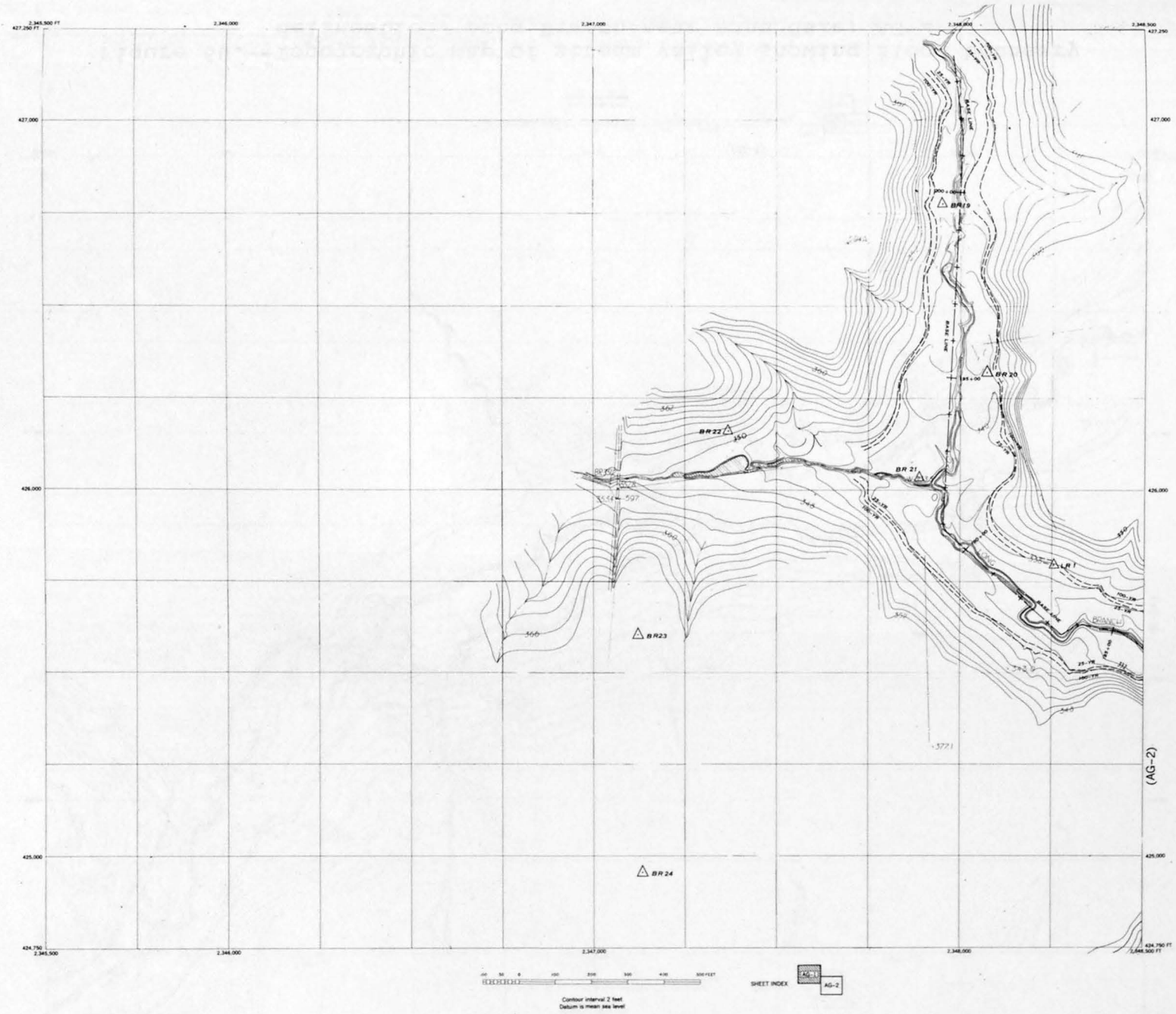


Figure 59.--Topographic map of stream valley showing flood boundary delineation, Long Branch near Annandale; AG-1

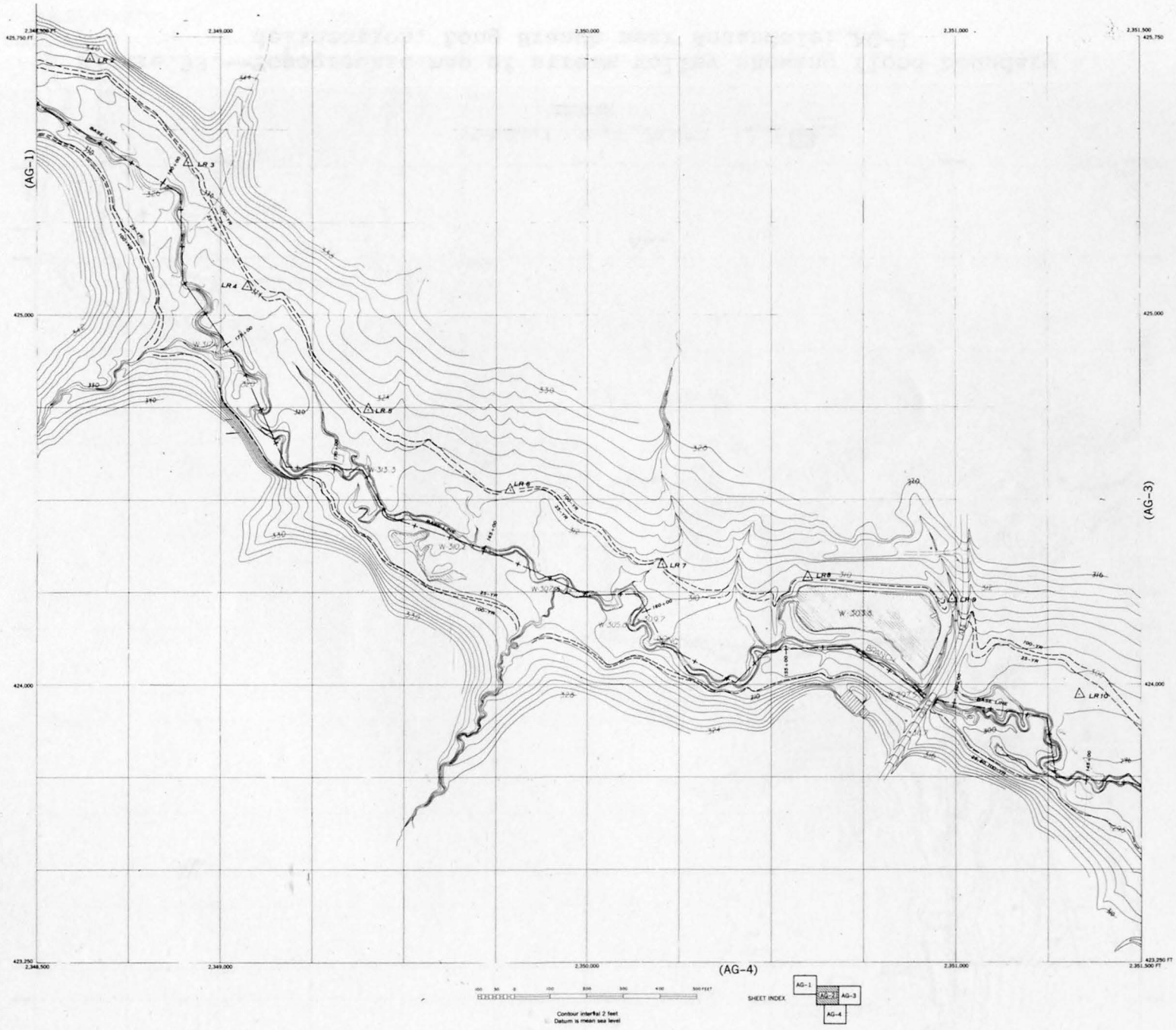


Figure 60.--Topographic map of stream valley showing flood boundary delineation, Long Branch near Annandale; AG-2

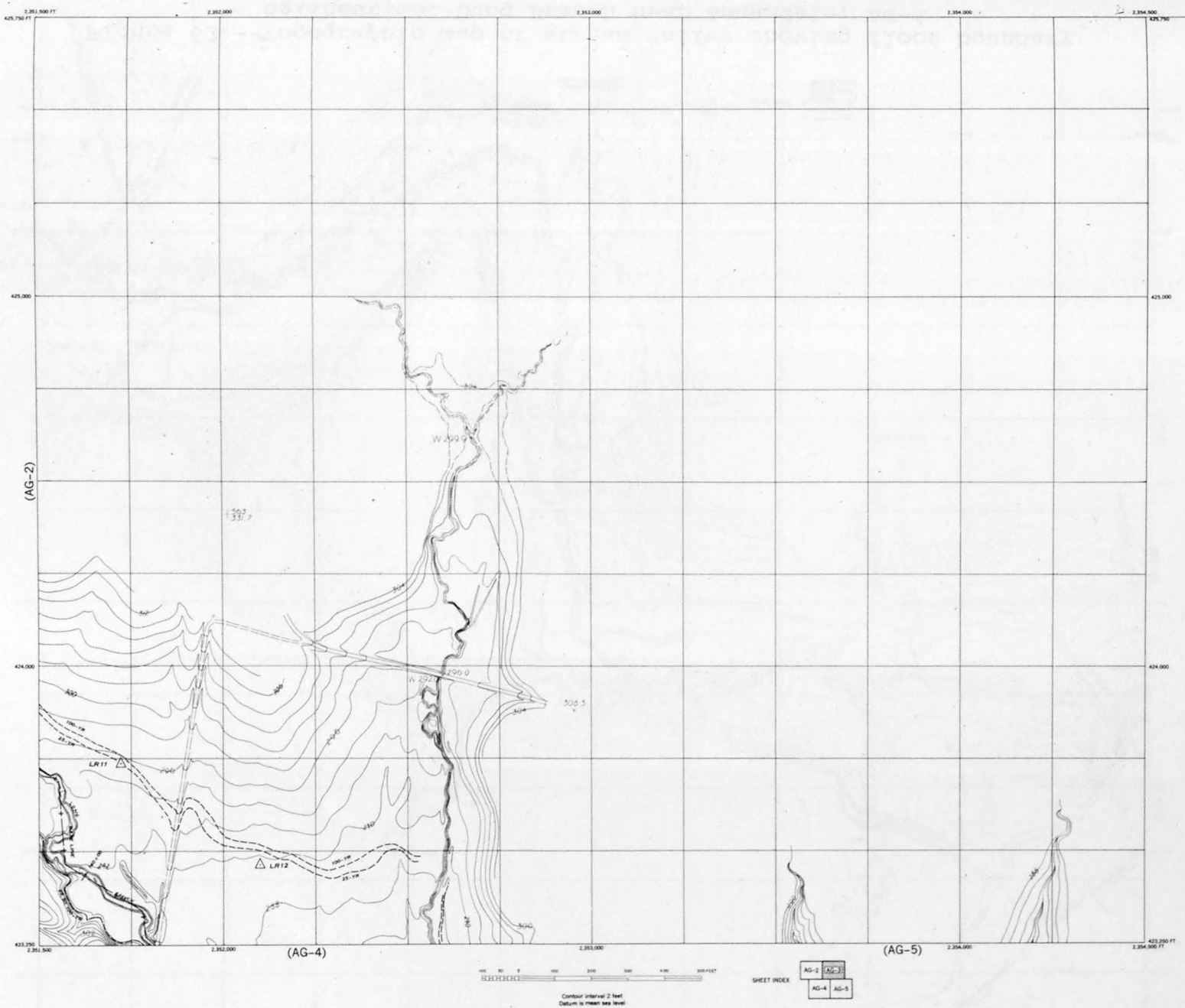


Figure 61.--Topographic map of stream valley showing flood boundary delineation, Long Branch near Annandale; AG-3

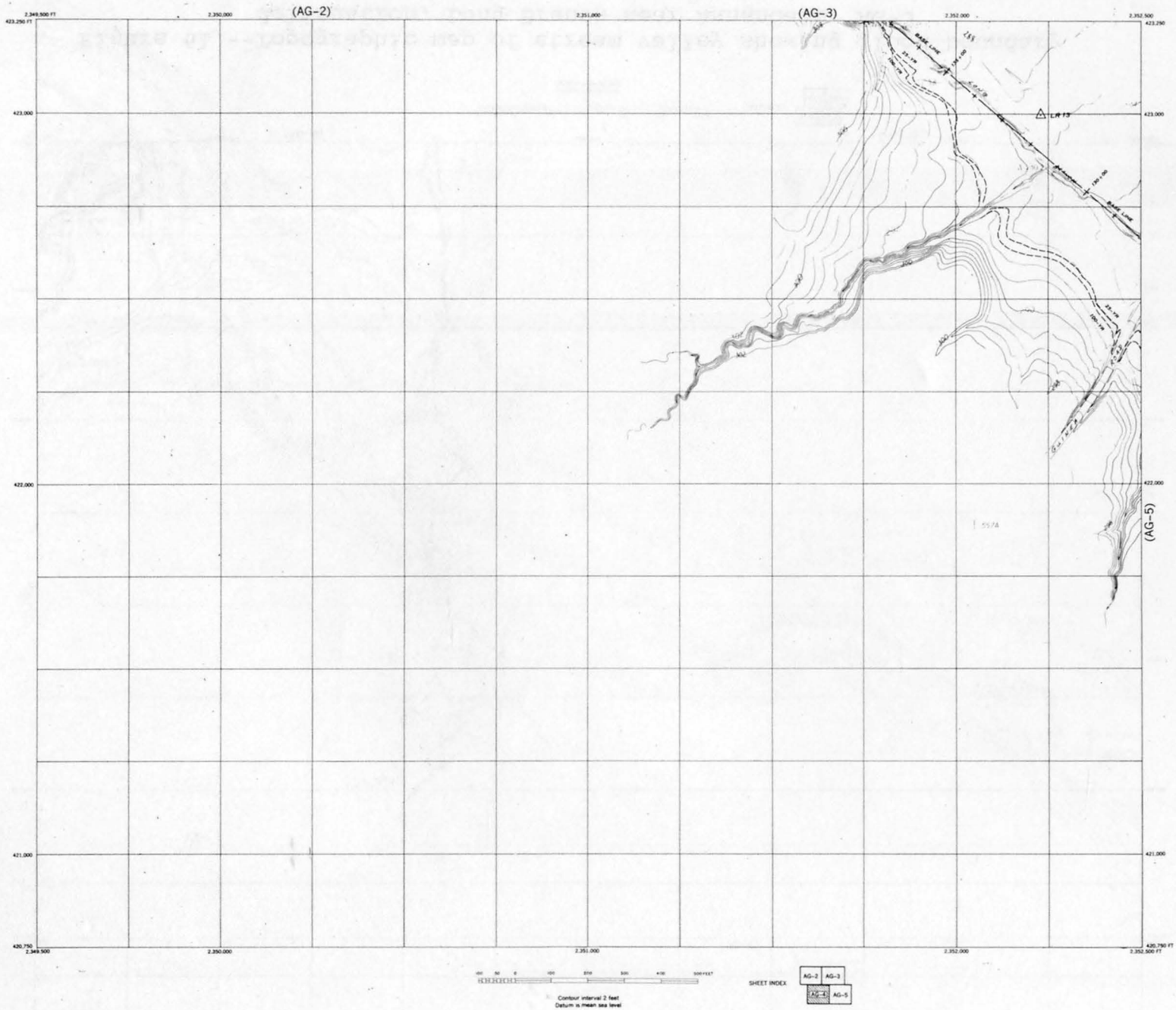


Figure 62.--Topographic map of stream valley showing flood boundary delineation, Long Branch near Annandale; AG-4

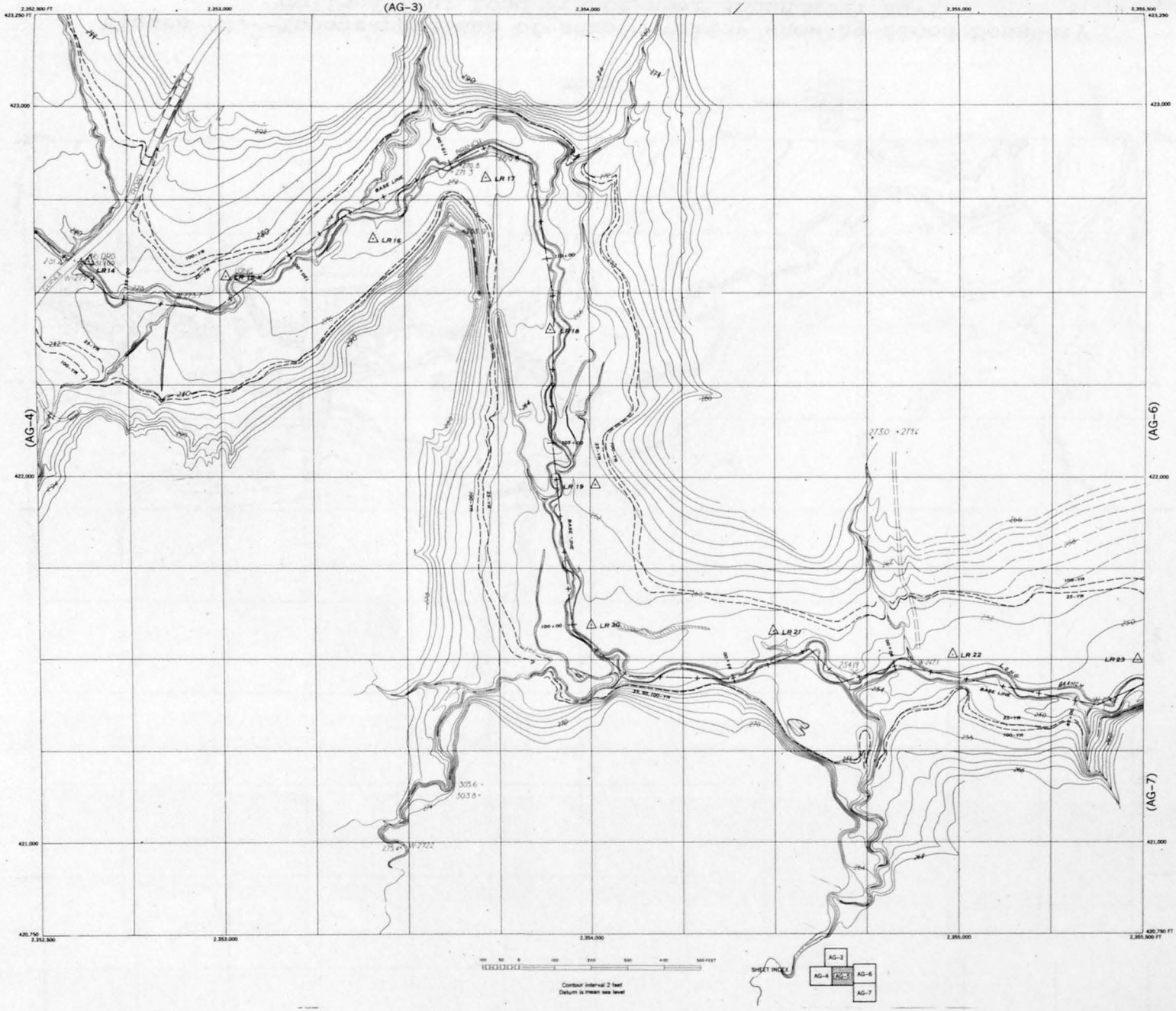


Figure 63.--Topographic map of stream valley showing flood boundary delineation, Long Branch near Annandale; AG-5

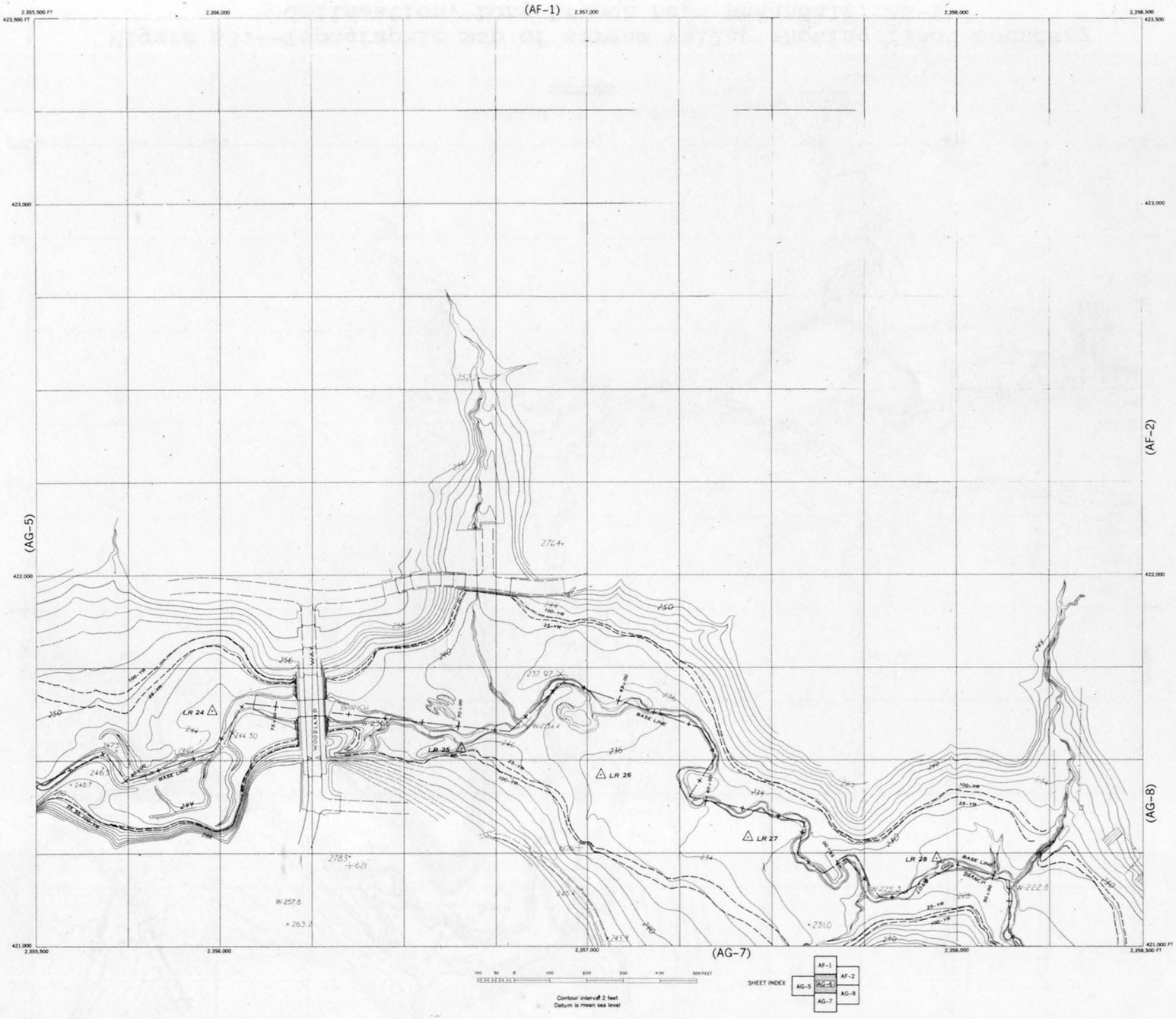


Figure 64.--Topographic map of stream valley showing flood boundary delineation, Long Branch near Annandale; AG-6

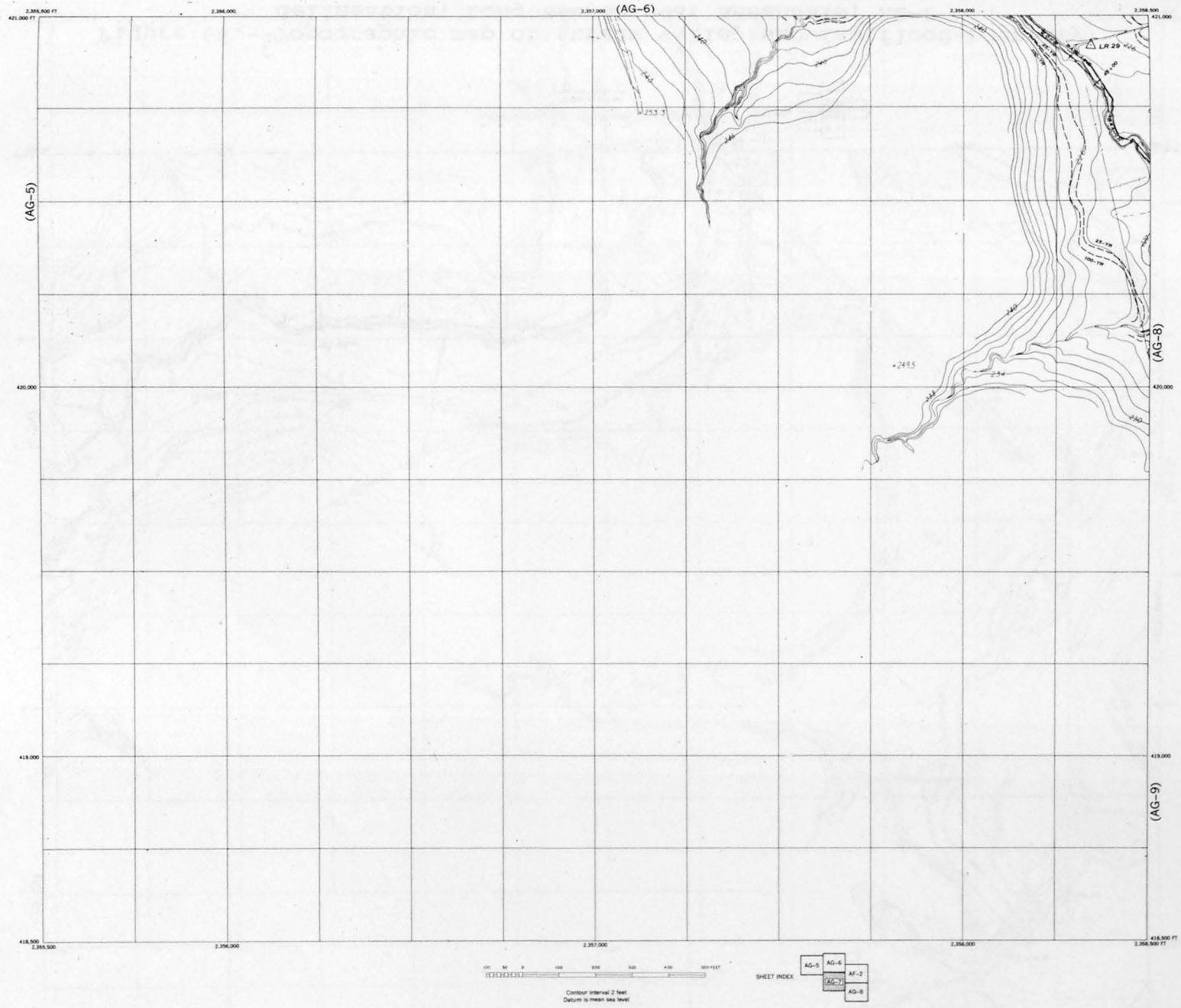


Figure 65.--Topographic map of stream valley showing flood boundary delineation, Long Branch near Annandale; AG-7

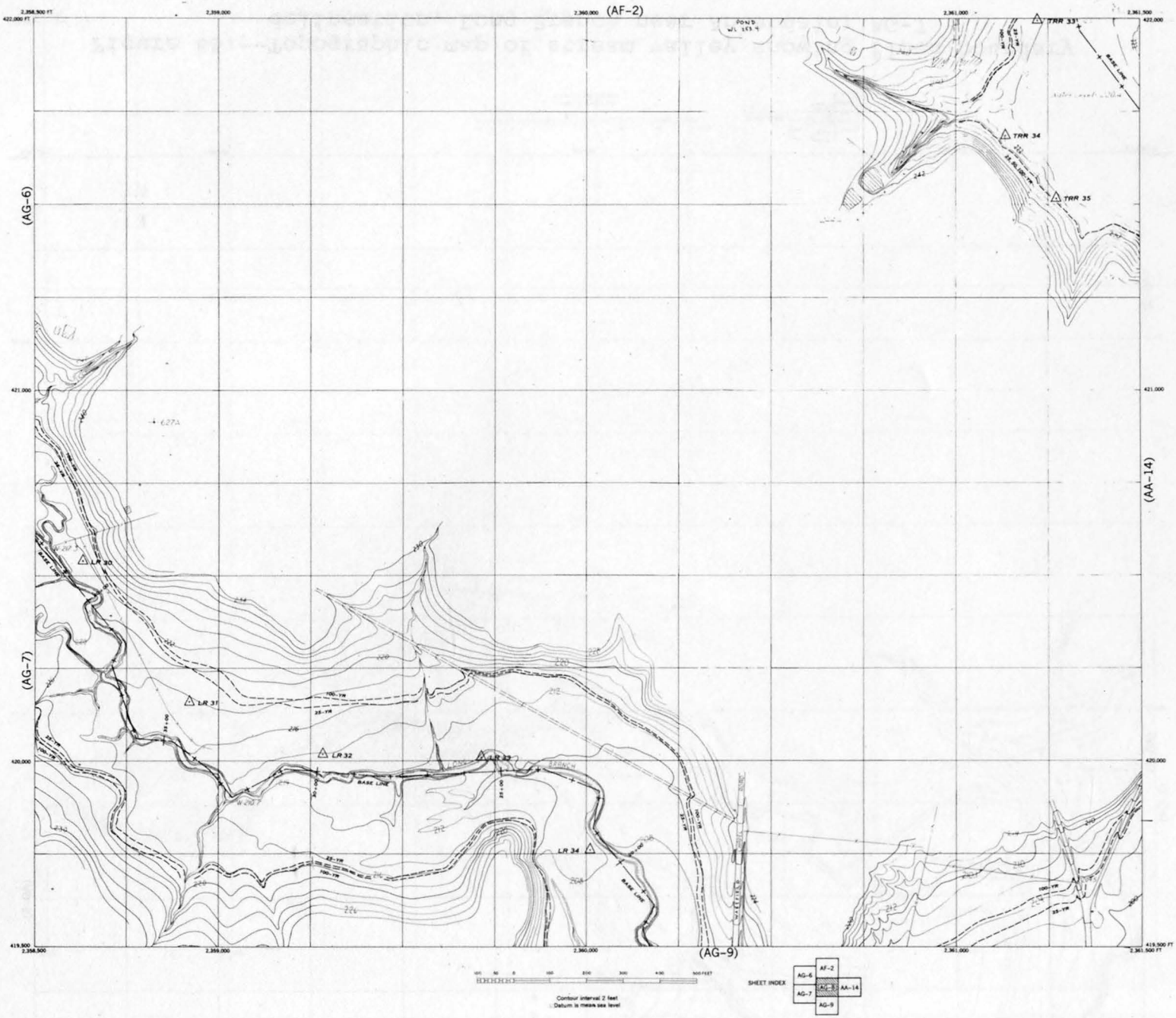


Figure 66.--Topographic map of stream valley showing flood boundary delineation, Long Branch near Annandale; AG-8

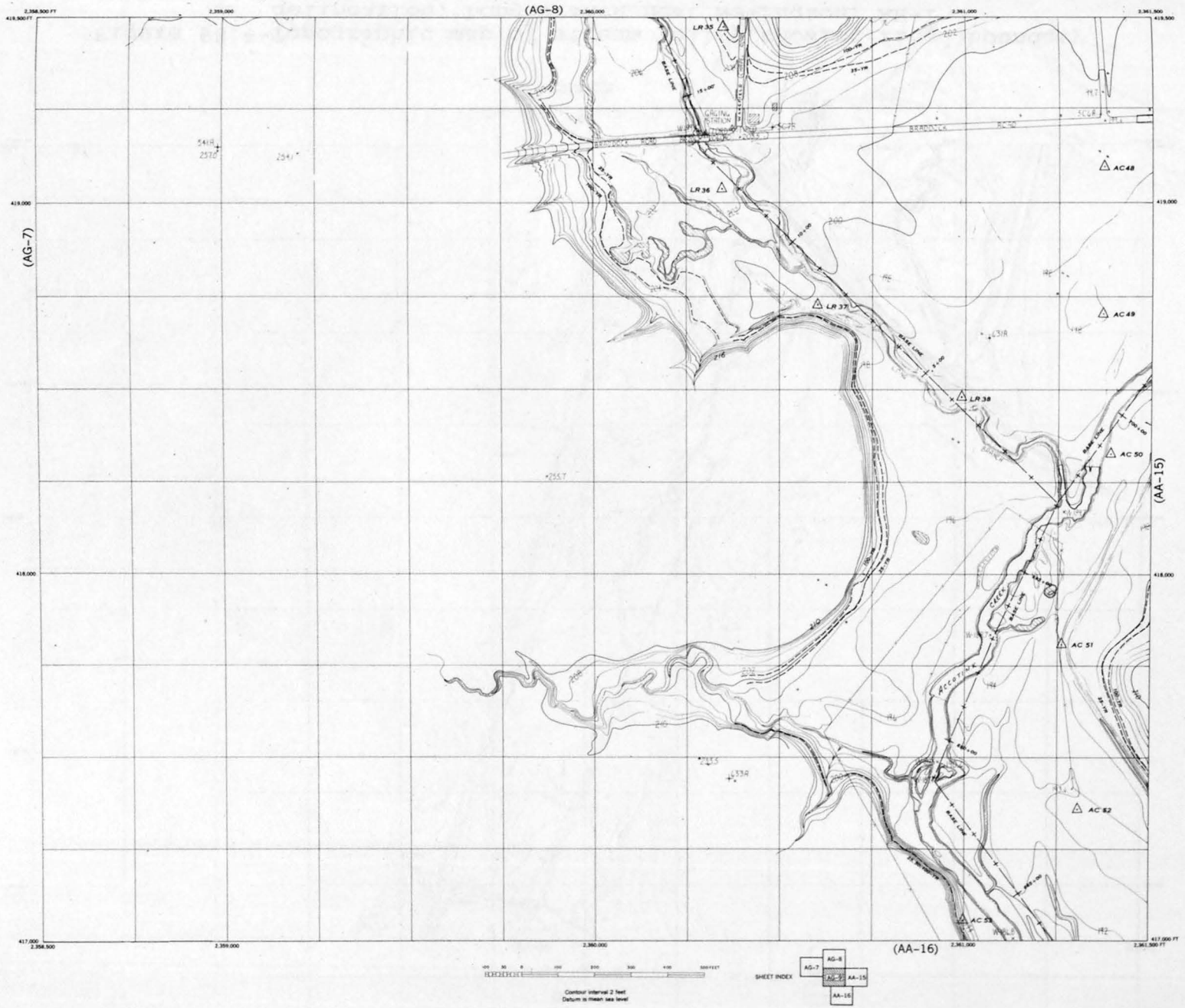


Figure 67.--Topographic map of stream valley showing flood boundary delineation, Long Branch near Annandale; AG-9

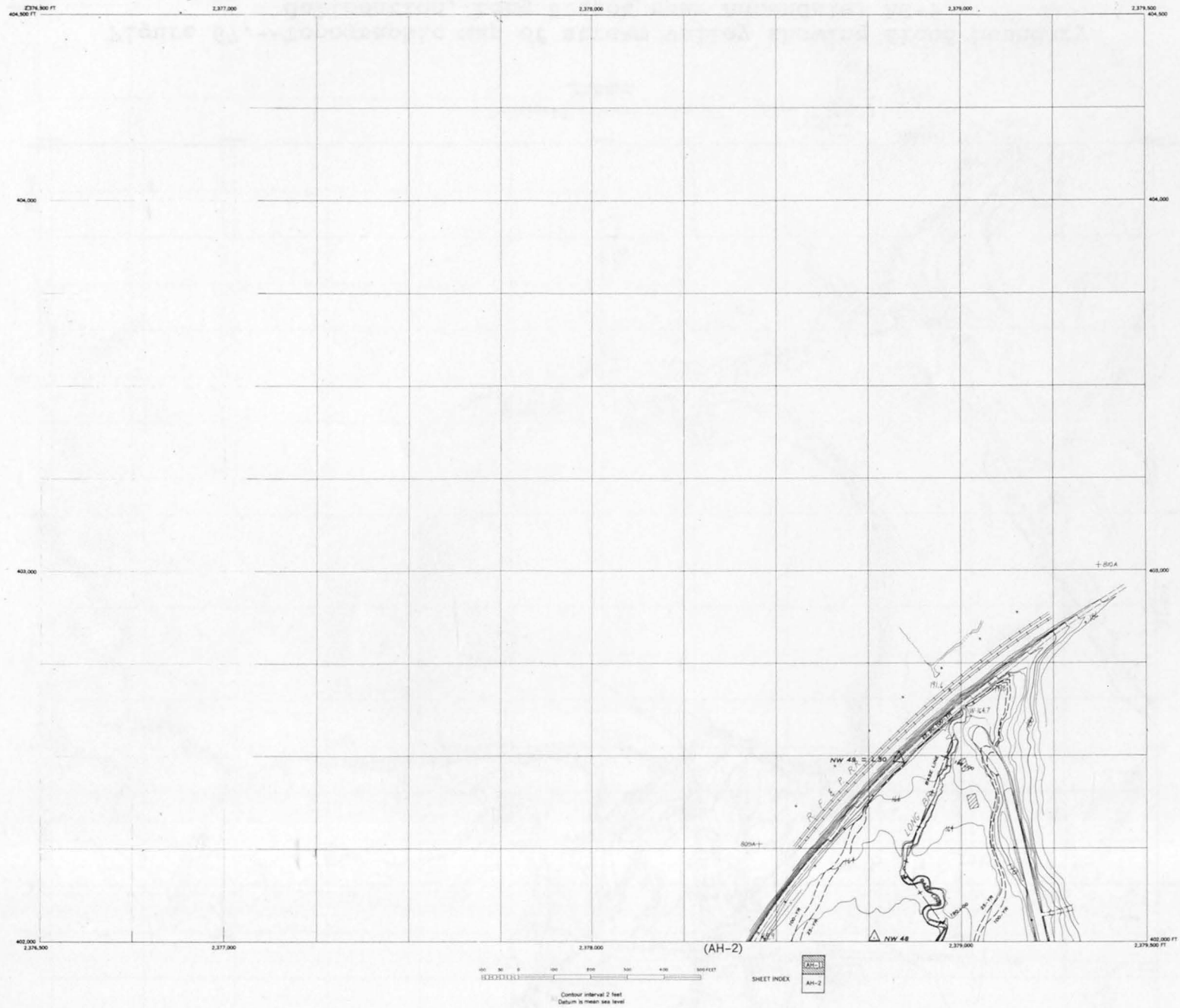


Figure 68.--Topographic map of stream valley showing flood boundary delineation, Long Branch near Newington; AH-1

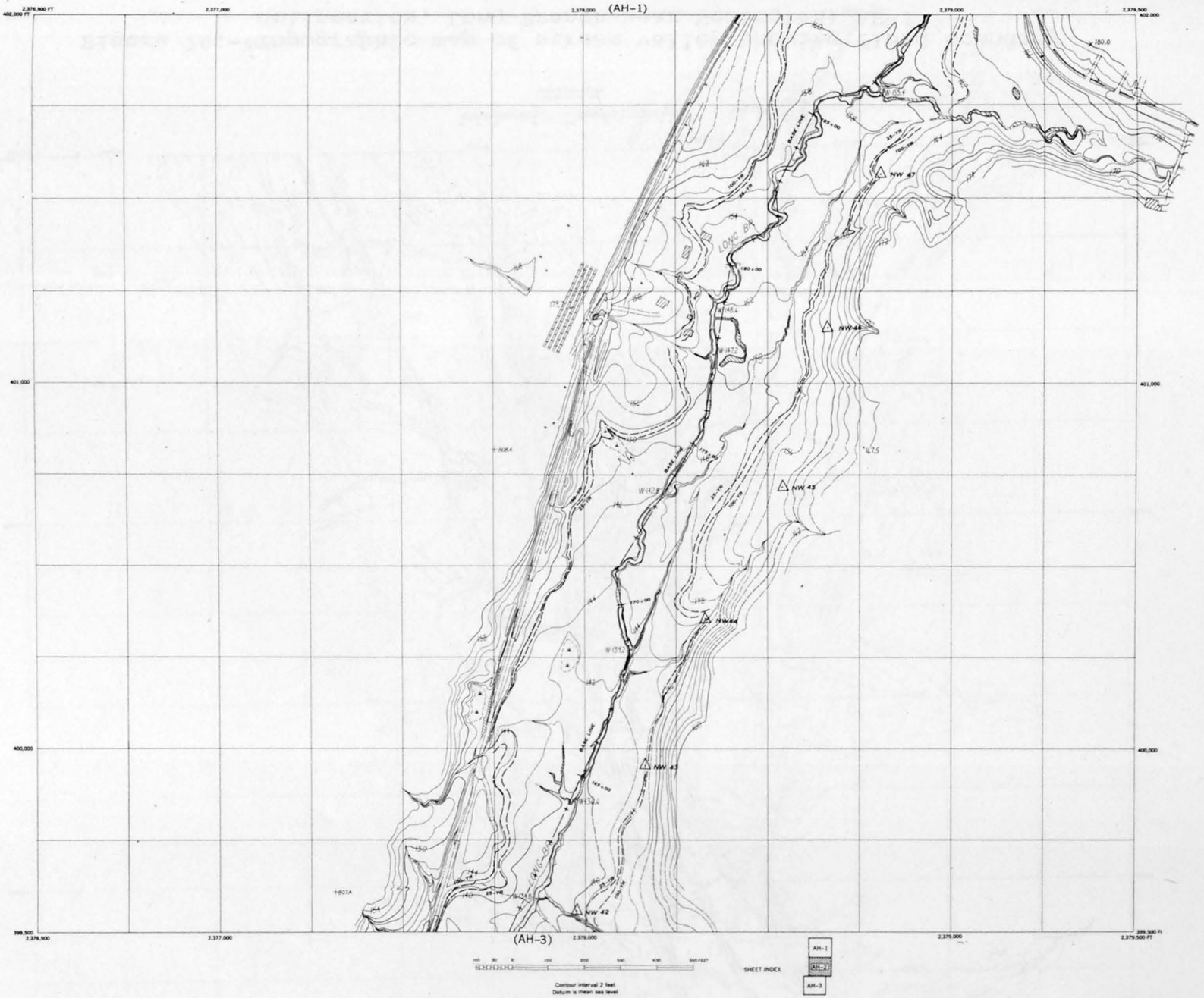


Figure 69.--Topographic map of stream valley showing flood boundary delineation, Long Branch near Newington; AH-2

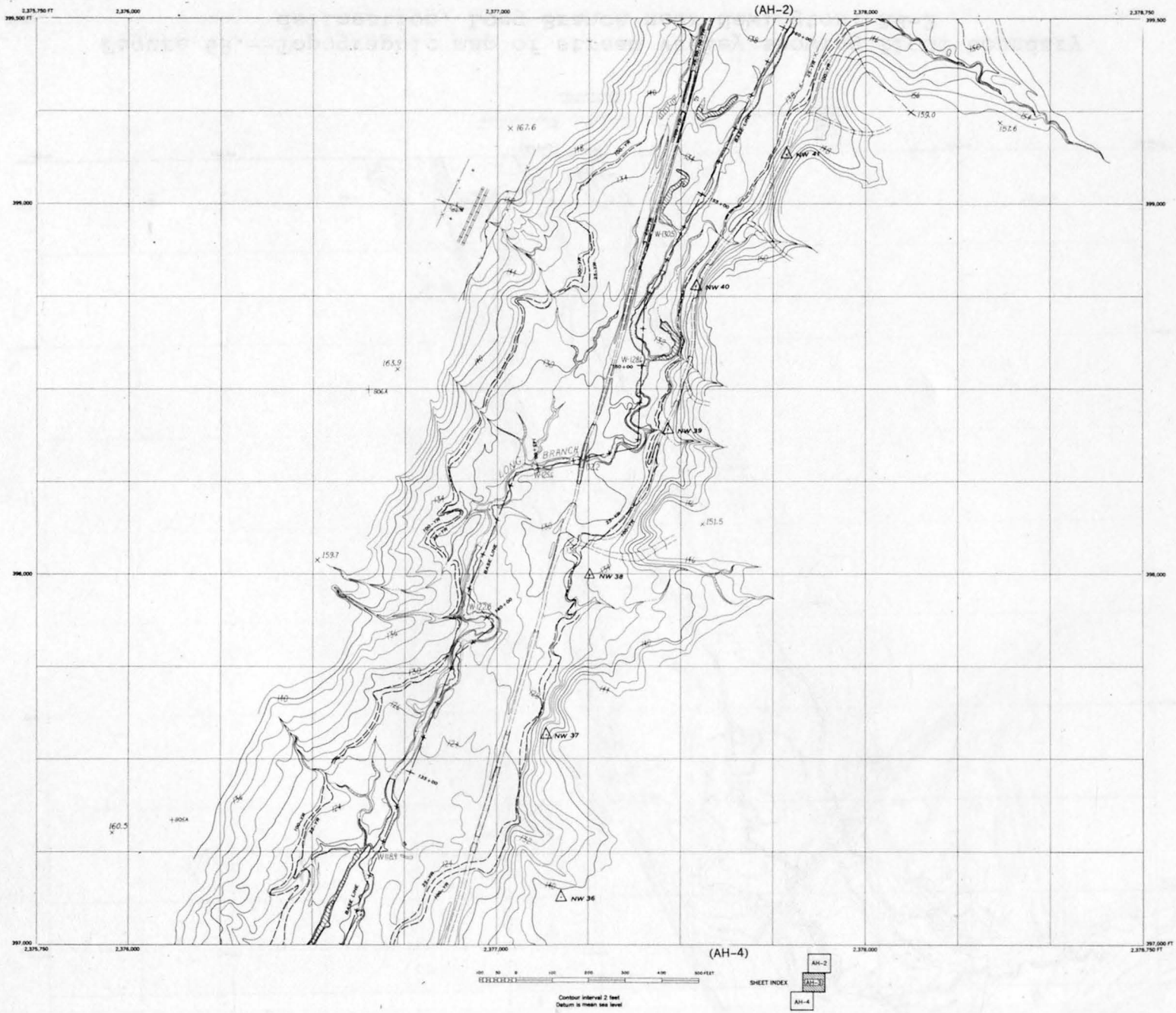


Figure 70.--Topographic map of stream valley showing flood boundary delineation, Long Branch near Newington; AH-3



Figure 71.--Topographic map of stream valley showing flood boundary delineation, Long Branch near Newington; AH-4

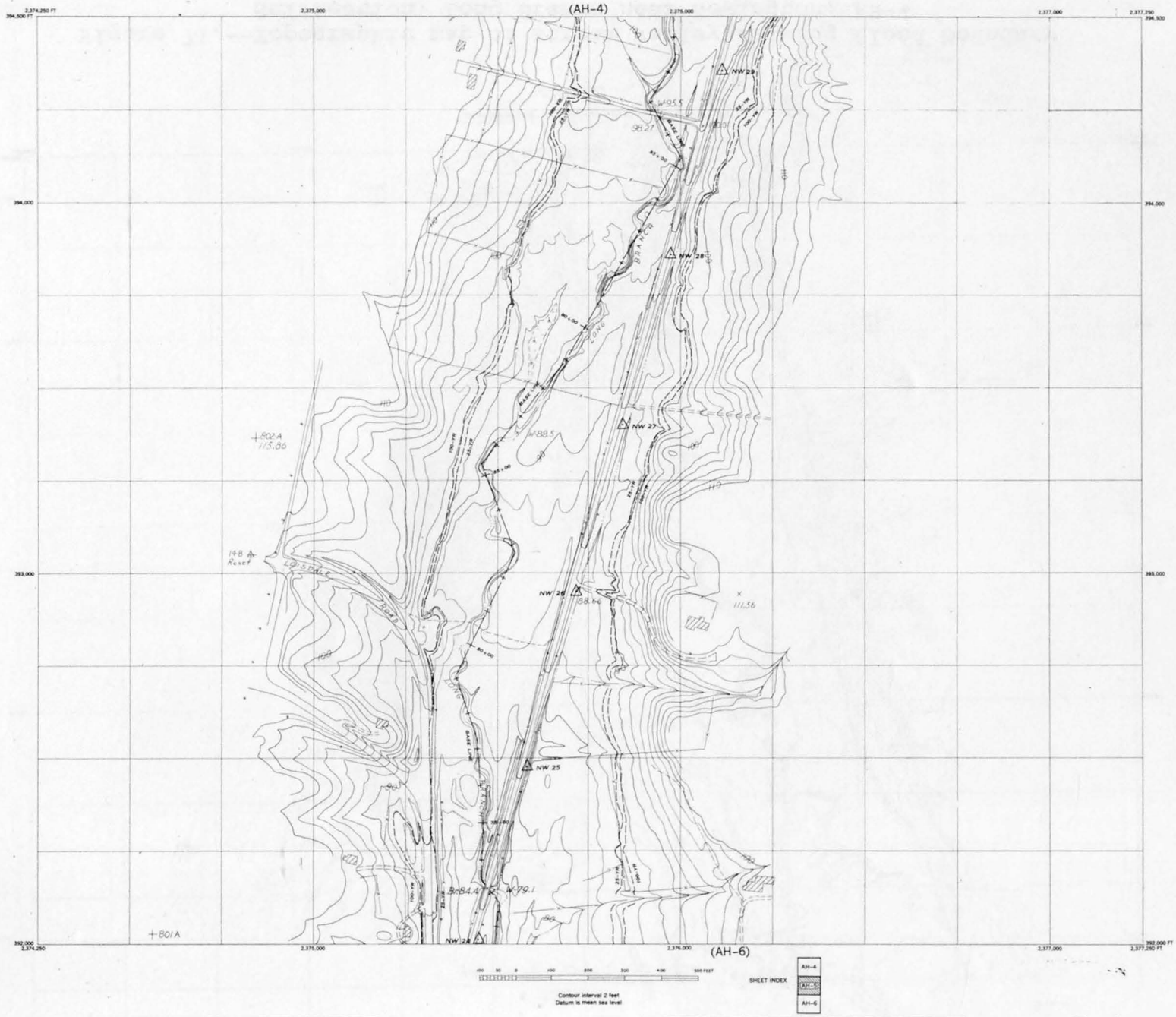


Figure 72.--Topographic map of stream valley showing flood boundary delineation, Long Branch near Newington; AH-5

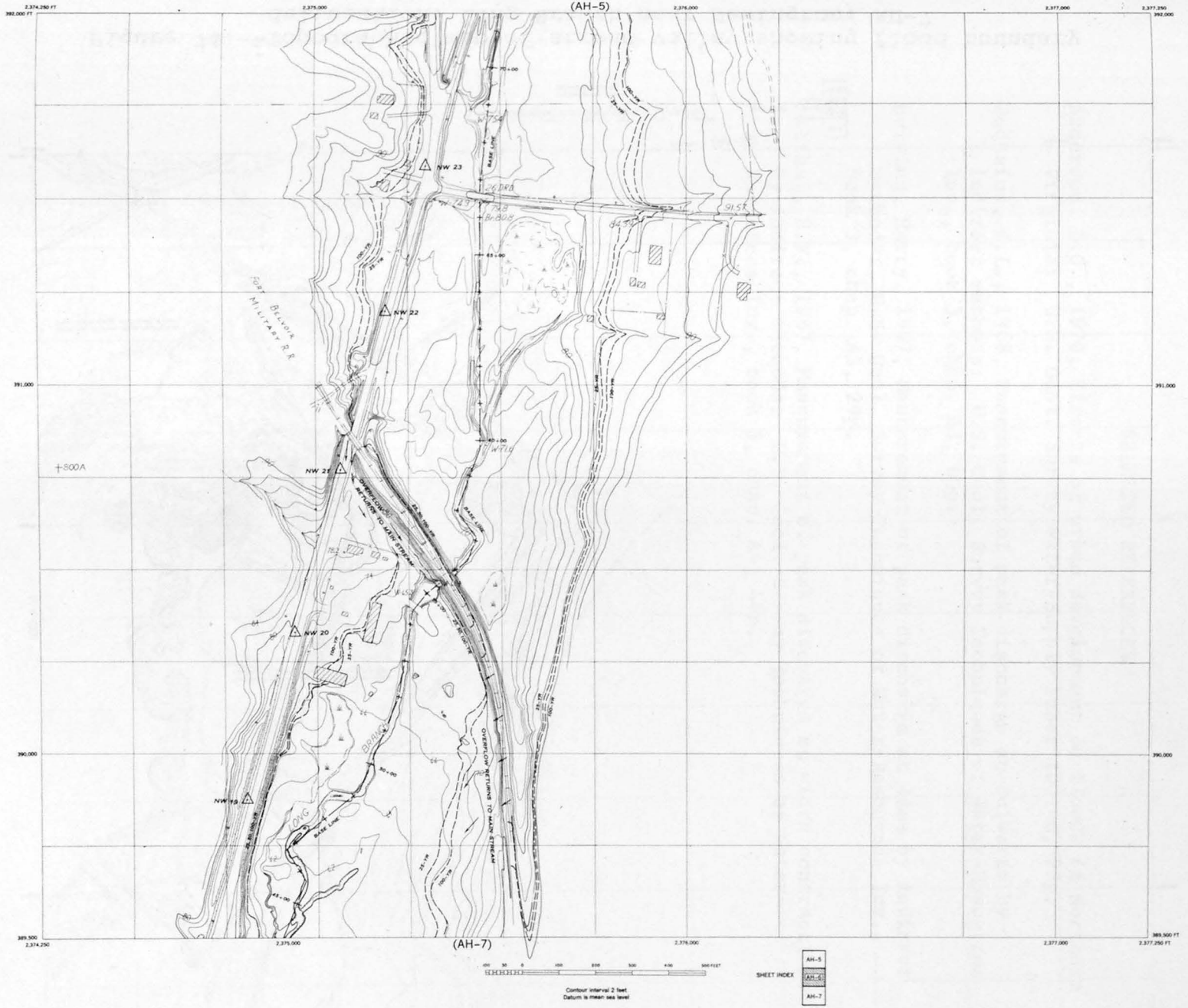


Figure 73.--Topographic map of stream valley showing flood boundary delineation, Long Branch near Newington; AH-6

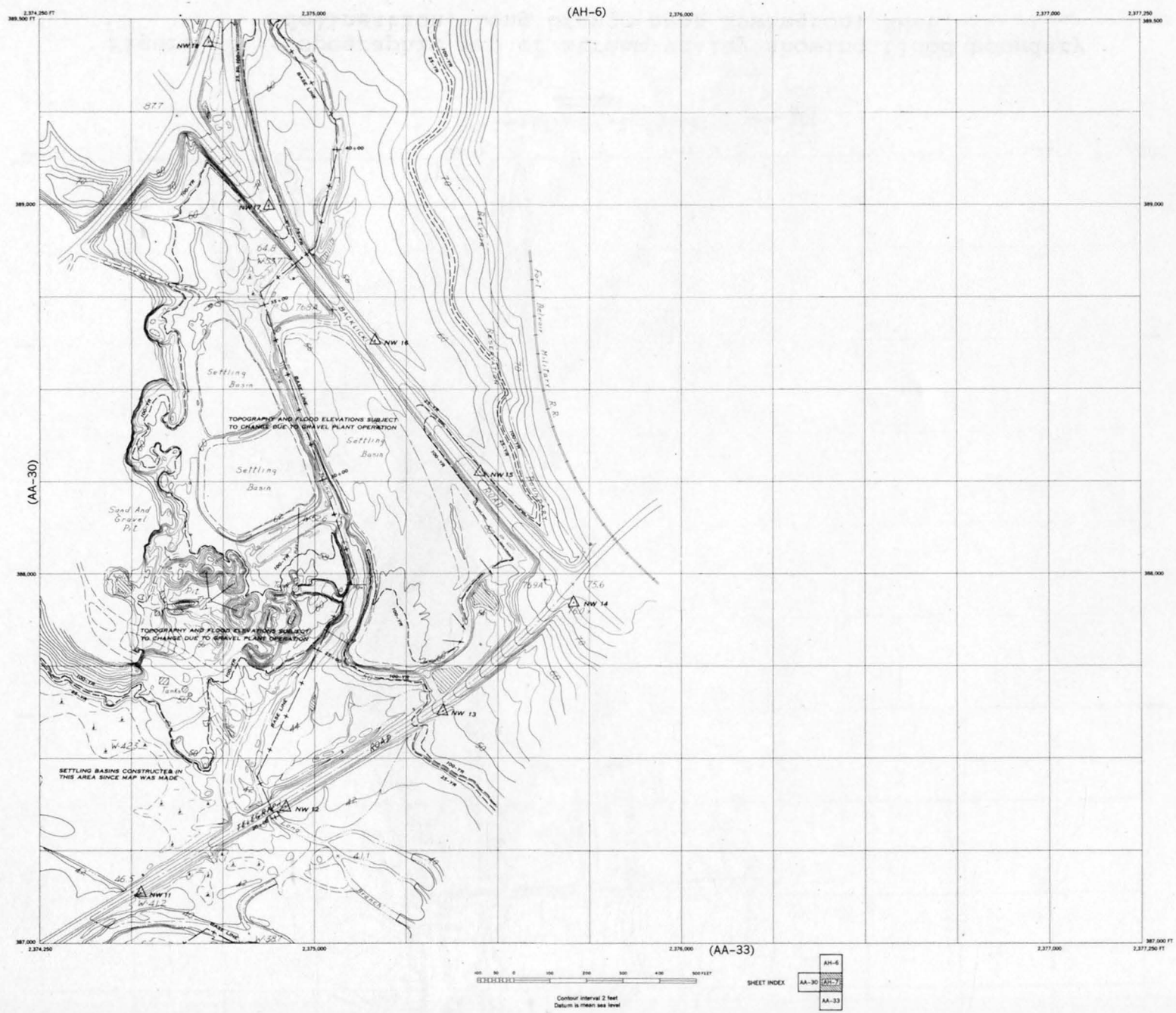


Figure 74.--Topographic map of stream valley showing flood boundary delineation, Long Branch near Newington; AH-7

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