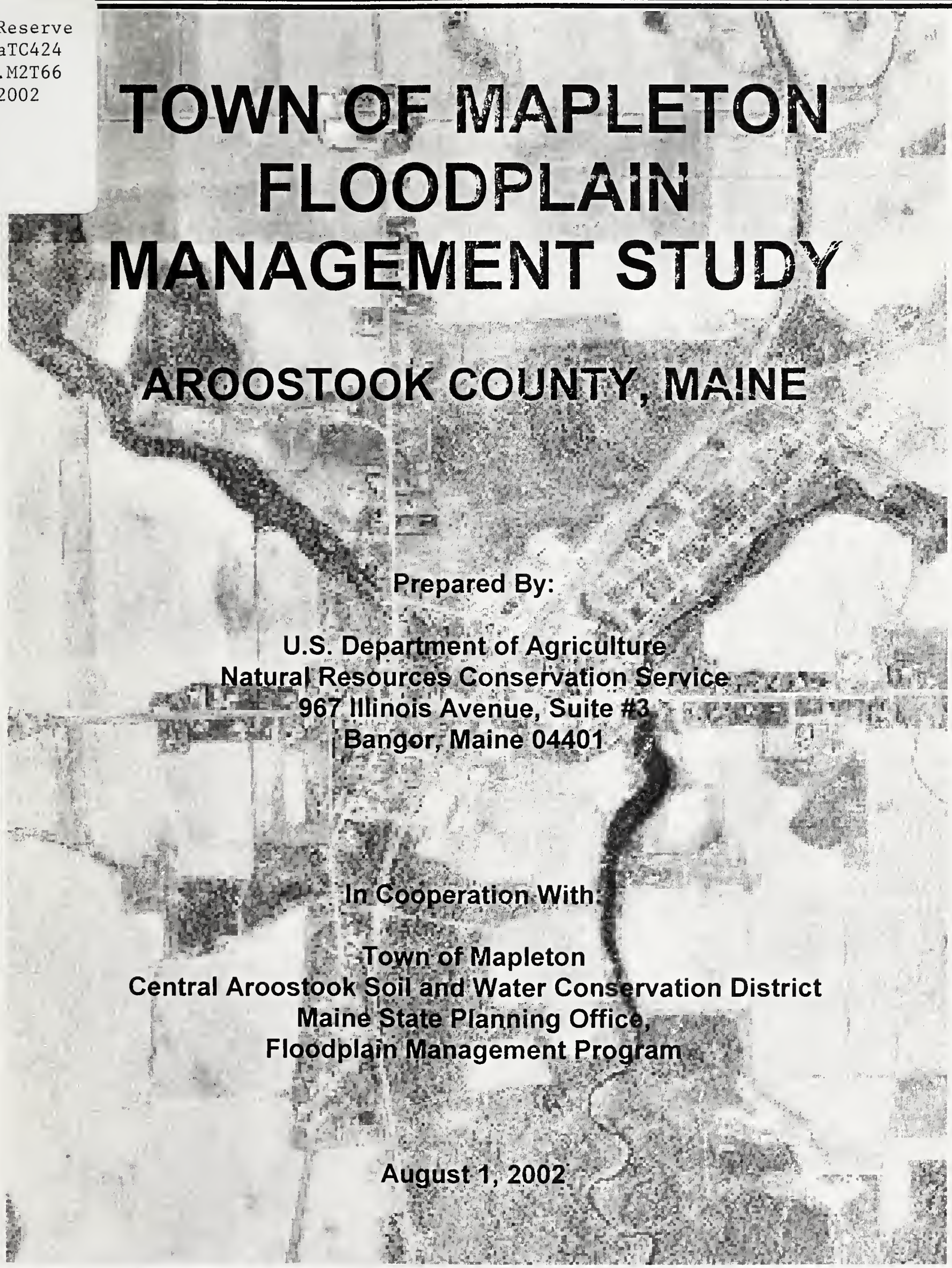

TOWN OF MAPLETON FLOODPLAIN MANAGEMENT STUDY

AROOSTOOK COUNTY, MAINE

Prepared By:

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In Cooperation With:

Town of Mapleton
Central Aroostook Soil and Water Conservation District
Maine State Planning Office,
Floodplain Management Program

August 1, 2002

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- Central Aroostook Soil and Water Conservation District (CASWCD), Presque Isle, ME
- Federal Emergency Management Agency (FEMA), Boston, MA
- Maine Department of Transportation (MDOT), Augusta, ME
- Maine State Planning Office, Floodplain Management Program, Augusta, ME
- National Oceanic and Atmospheric Administration (NOAA), National Weather Service (NWS), Asheville, NC
- Town of Mapleton, ME
- United States Army Corps of Engineers (USACE), Concord, MA
- United States Geological Survey (USGS), Augusta, ME

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INTRODUCTION

This Floodplain Management Study (FPMS) report presents floodplain information for Presque Isle Stream, North Branch Presque Isle Stream, Libby Brook, Teakettle Brook, Hanson Brook, Hanson Lake, Clayton Brook, and an unnamed tributary of Presque Isle Stream within the Town of Mapleton, Maine. Data generated consists of a flood hazard evaluation, including floodplain maps and flood profiles, and options for floodplain management.

Technical information and recommendations provided in this report will be useful to the Town in development of its comprehensive plan, identifying floodplain areas, as a guide for developing or improving a floodplain management program for the areas studied, and to update the Town's codes and zoning ordinances. The data generated from this study also will be useful to local, state, and Federal agencies, planning groups, engineers, consultants, and others involved in community planning and the design of hydraulic structures, channels, roads, bridges, culverts, and other community facilities.

This report will facilitate more effective and consistent administration of the community's floodplain management ordinance. Such regulations are needed to minimize loss of life and property damage from future floods, prevent degradation of the watershed's environmental resources, and ensure orderly community growth in areas suitable for development. The report also provides information needed to comply with Maine's 'Mandatory Zoning and Subdivision Control Law', which applies to shoreland areas.

NRCS conducted this study in response to a request by the Town of Mapleton to the Central Aroostook Soil and Water Conservation District (CASWCD). Mapleton submitted a formal application for Federal assistance in developing a FPMS to the Maine State Planning Office, Floodplain Management Program, which establishes study priorities throughout Maine.

NRCS carries out these studies under provisions of Section 6 of Public Law 83-566, the Watershed Protection and Flood Prevention Act of 1954, as amended. Participants cooperated in developing a Plan of Work (POW) dated October 1999.

STUDY AREA

The Town of Mapleton is a small, rural community located along the North Branch of Presque Isle Stream in northeastern Maine. It is situated 6 miles west of the City of Presque Isle, Aroostook County's largest city (see Figure 1, Location and Study Area Map). Maine Routes 163, and 227, major east west links in central Aroostook County, pass through the Town of Mapleton. The 2000 U.S. Census indicates the town has a resident population of 1,889.

The total land area of the town is approximately 34.6 square miles. Land use is 55 percent forestland, 45 percent is open land including agriculture, and 5 percent is urban and residential.

Mapleton is located entirely within the Aroostook River watershed, which is a major sub-basin of the St. John River. The NRCS Hydrologic Unit Codes for the study area are 01010004120010-080.

The town's topography consists mostly of rolling hills with bogs and fairly broad floodplains in the valleys along Presque Isle Stream, North Branch Presque Isle Stream, Teakettle Brook, and Clayton Brook. Elevation extremes in Mapleton range from 915 feet atop Haines Hill in the northeastern corner of town, to about 418 feet where the Aroostook River crosses the Mapleton - Presque Isle town line (also in the northeastern corner of town).

Mapleton's economy is closely tied to agricultural activities, and to retailing and manufacturing in the greater Presque Isle area.

The soils in the Town of Mapleton have been mapped by the NRCS and a soil survey report has been published. Interested individuals may obtain soils information by visiting, writing, or calling the following NRCS field office:

USDA, Natural Resources Conservation Service
Presque Isle Service Center
99 Fort Fairfield Road
Presque Isle, Maine 04769-2270
Telephone (207) 764-4153.

The Mapleton area receives a mean annual precipitation of 35 inches, which includes the water equivalent of 91 inches of snow. The precipitation is distributed evenly throughout the year; however, snowmelt accounts for a large part of the runoff. The mean annual temperature is approximately 40.1 degrees Fahrenheit (^{o}F). Monthly mean temperatures range from a low of 11.7^{o}F in January to a high of 66.3^{o}F in July.

NRCS studied the following streams within the community in detail (see Figure 1, Location and Study Area Map):

- Presque Isle Stream - for its entire length within the community, from the Presque Isle town line to the Chapman town line, 3.6 miles; drainage area 184.7 square miles.

- North Branch Presque Isle Stream - for its entire length within the community, from its confluence with Presque Isle Stream in Mapleton to the Chapman town line, 8.0 miles; drainage area 42.8 square miles.

- Libby Brook - for its entire length within the community, from its confluence with North Branch Presque Isle Stream in Mapleton to the Castle Hill town line, 1.2 miles; drainage area 3.6 square miles.

- Teakettle Brook (also known as Spring Brook) - from its confluence with North Branch Presque Isle Stream in Mapleton to the Griffin Ridge Road, at Boone Road, and at State Route 227, 0.5 miles; drainage area 9.4 square miles.

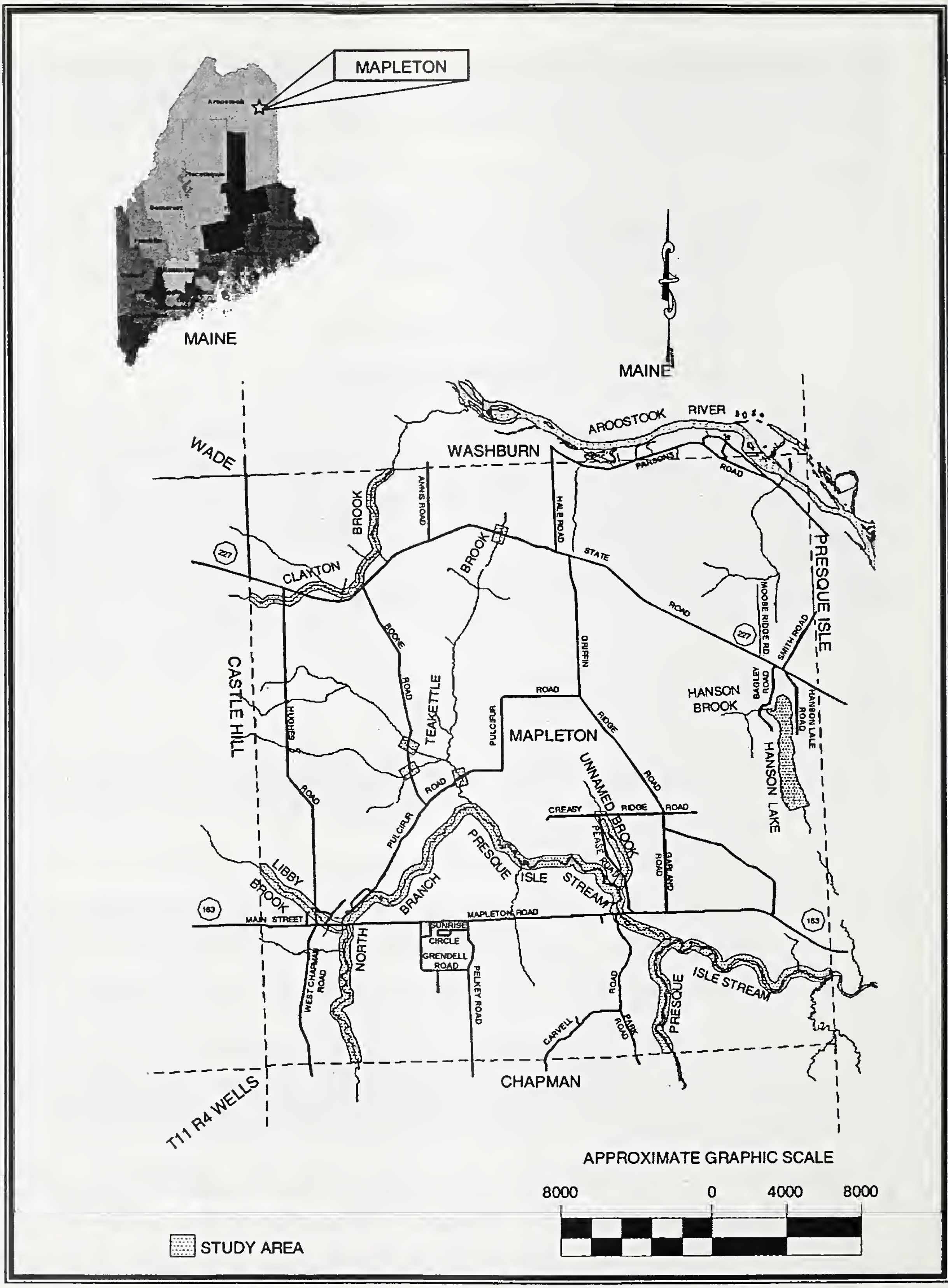

Figure 1 -- Location and Study Area Map
Mapleton, Maine

- Unnamed Tributary – from its confluence with Presque Isle Stream to the Creasy Ridge Road, about 0.9 miles, drainage area 1.7 square miles.

- Clayton Brook - for its entire length within the community, from the Washburn town line to the Castle Hill town line, 3.2 miles; drainage area 5.1 square miles.

- Hanson Brook - from Hanson Lake to the Bagley Road, 0.1 mile, drainage area 2.7 square miles.

- Hanson Lake - its entire shoreline, about 2.8 miles; drainage area 3.8 square miles.

Development is heaviest in and around the village center of Mapleton, and along State Routes 163 and 227. Within the floodplains studied development consists of single family homes, commercial buildings, recreational properties, farmland, a park, roads, and bridges. The demand for land suitable for development has increased in recent years, resulting in additional pressures to develop floodplain property.

Presque Isle Stream, a major tributary flowing northeasterly to the Aroostook River, has a length of 26.6 miles and a drainage area of 197.4 square miles at its confluence with the Aroostook River in Presque Isle.

North Branch Presque Isle Stream, a major tributary flowing northeasterly to Presque Isle Stream, has a length of 13.7 miles and a drainage area of 42.8 square miles at its confluence with Presque Isle Stream in Mapleton.

Treated sewage is currently discharged into North Branch Presque Isle Stream in Mapleton. This discharge will be eliminated by July 31st, 2003 when a new treatment facility will be completed.

Libby Brook, a tributary flowing southeasterly to North Branch Presque Isle Stream, has a length of 3.6 miles and a drainage area of 3.6 square miles at its confluence with North Branch Presque Isle Stream in Mapleton village.

Unnamed Brook, a tributary flowing southeasterly to North Branch Presque Isle Stream, has a length of 1.5 miles and a drainage area of 1.7 square miles at its confluence with North Branch Presque Isle Stream in Mapleton. Teakettle Brook, a tributary flowing southerly to North Branch Presque Isle Stream, has a length of 2.8 miles and a drainage area of 9.4 square miles at its confluence with North Branch Presque Isle Stream in Mapleton.

Hanson Brook, a tributary flowing southeasterly to Presque Isle Stream, has a length of 1.2 miles and a drainage area of 4.7 square miles at its confluence with Presque Isle Stream in Presque Isle.

Clayton Brook, a tributary flowing northeasterly to the Aroostook River, has a length of 6.3 miles and a drainage area of 8.1 square miles at its confluence with Presque Isle Stream in Washburn.

Hanson Lake is located on Hanson Brook in eastern Mapleton. It has a surface area of 118 acres and a drainage area of 2.7 square miles.

There are twenty-six bridges and culverts on the streams studied in Mapleton. These include six on North Branch Presque Isle Stream, three on Libby Brook, two on Unnamed Brook, four on Teakettle Brook, one on Hanson Brook, and ten on Clayton Brook (see Table 4, Bridge and Culvert Data, for further information).

There are currently two dams located on the streams studied in Mapleton:

- a rock filled timber crib dam located on North Branch Presque Isle Stream just below Main Street. It is known as the Mapleton Dam and is owned by the Town of Mapleton.

- an earthfill gravity dam located on Hanson Brook at the outlet of Hanson Lake. It is known as the Hanson Lake Dam and is owned by the City of Presque Isle.

Natural Values

Today's uses of the streams in Mapleton are primarily agricultural and recreational and include cropland irrigation, fishing, boating, canoeing, hunting, trapping, and swimming.

Other popular activities in the area are small and big game hunting, cross-country skiing, bicycling, canoeing, snowmobiling, picnicking, hiking, fall foliage touring, camping, photography, and nature study. The watersheds of the streams studied support a wide variety of wildlife, birds, and fish, and provide a source of water for homes, businesses, agriculture, and fire protection.

Flood Problems

Mapleton's flood history indicates that damages can occur at any time during the year, but particularly in the winter and early spring months following heavy rainfall on snow-covered or frozen ground; in summer following intense thunderstorms; and in summer and fall during tropical hurricanes.

The most destructive flood, in the Presque Isle Stream Watershed, is considered to be that of September 1954. Other floods are known to have occurred in 1923, 1932, 1937, 1958, and 1961. Damage caused by those floods and others has been to single family residences, recreational property, farmland, utilities, roads, and bridges. Stream bank erosion is also a problem during flood events.

Tables 1 and 2 summarize the approximate extent of flooding caused by the 100-, and 500-year events to structures and floodplain land.

Table 1 -- APPROXIMATE NUMBER OF STRUCTURES IN FLOODPLAINS STUDIED

STRUCTURE TYPE	100-YR.	500-YR.
RESIDENTIAL	7	8
OTHER	4	4
TOTAL	11	12

Table 2 -- APPROXIMATE FLOODPLAIN AREAS (ACRES) [1]

LOCATION / LAND USE	100-YR.	500-YR.
PRESQUE ISLE STREAM		
Forest	273	296
Wetlands	569	579
NORTH BRANCH PRESQUE ISLE STREAM		
Openland	40	49
Forest	243	292
Wetlands	351	353
Urban		1
LIBBY BROOK		
Openland		1
Forest	14	14
Wetlands	7	7
Urban	1	1
UNNAMED TRIBUTARY		
Openland	8	8
Forest	14	14
Wetlands	5	5
TEAKETTLE BROOK		
Openland	1	1
Forest	2	2
HANSON BROOK		
Forest	2	2
HANSON LAKE		
Openland	5	5
Forest	2	3
Wetlands	128	130
CLAYTON BROOK		
Openland	3	6
Forest	71	79
Wetlands	60	66
TOTAL	1,799	1,914

[1] *Classified by apparent primary land use. Does not include normal stream area. Urban areas include commercial, municipal, residential, and recreational properties, and roads and bridges.*

ENGINEERING METHODS

For the flooding sources studied in Mapleton, NRCS used standard hydrologic and hydraulic study methods to determine the elevation and areal extent of floods. Flood events of a magnitude that are expected to be equaled or exceeded once on the average during any 10-, 50-, 100-, or 500-year period (recurrence interval) were selected as having special significance for floodplain management in the town. The common terms for these floods are the 10-, 50-, 100-, and 500-year frequency floods. Although this frequency designation does represent the long term average time between floods of a specific magnitude, floods do not occur at regular, predictable intervals. The more correct terms for these floods are the 10-, 2-, 1-, and 0.2-percent chance flood events, but this report generally will use the long-established and widely recognized ‘frequency’ designation.

Rare floods could occur at short intervals or even within the same year. When one considers periods greater than 1 year, the risk or probability of experiencing a rare flood increases. For example, the probability of having a flood that equals or exceeds the 1-percent chance (100-year) in any 50-year period is approximately 40 percent (4 in 10), and for any 90-year period, the risk increases to approximately 60 percent (6 in 10.) The analyses reported herein reflect flooding potentials existing at the completion of field surveys for the study.

Hydrologic Analyses

NRCS conducted detailed hydrologic analyses to establish the peak discharge-frequency relationships for each flooding source affecting the community. There are no stream gaging stations within the watersheds studied, and no meaningful surface water flow records exist.

Routine manual or computer-aided computations for subwatershed times of concentration and flood routing reach lengths were made with the aid of 7.5’ topographic maps. NRCS developed composite runoff curve numbers based on existing land use.

NRCS used the Technical Release Number 20 (TR-20) hydrologic evaluation model (USDA, SCS, 1983) to compute discharges on each stream studied in Mapleton. TR-20 is the designation for a watershed computer model entitled Computer Program for Project Formulation – Hydrology. The program is a physically based event model that computes direct runoff resulting from any synthetic or natural rainstorm. It takes into account conditions having a bearing on runoff, develops a hydrograph, and routes the flow through stream channels, reservoirs, and natural storage areas. It combines routed hydrographs with those from other tributaries. The program includes provisions for hydrograph separation by branching or diversion of flow and the addition of baseflow. There is no provision for recovery of initial abstraction or infiltration during periods of no rainfall during an event. TR-20 does not have a groundwater component.

The program can compute peak discharges, their times of occurrence, volumes of runoff, water surface elevations, and duration of flows at any desired cross section or structure. It conducts detailed hydrologic analyses to establish the peak discharge-frequency relationships for each flooding source studied.

The TR-20 model used historical rainfall data for all evaluated frequencies. Modeled storms had a 24-hour duration and an NRCS Type I rainfall distribution.

Table 3, Summary of Discharges, shows a summary of the relationships of drainage area to peak discharge for each stream studied in Mapleton.

NRCS used the TR-20 reservoir routing procedure to obtain water-surface elevations for Hanson Lake. Table 4, **Summary of Stillwater Elevations**, summarizes the 10-, 50-, 100-, and 500-year flood elevations for Hanson Lake.

The hydraulic analyses for this study assumed that flow was unobstructed. The analyses did not consider the effect of ice jams. The flood elevations shown on the profiles are thus valid only if hydraulic structures remain unobstructed, and do not fail.

The reference for all elevations is the National Geodetic Vertical Datum of 1929 (NGVD). Flood Hazard Area Maps show the locations of elevation reference marks used in this study. Table 5, Elevation Reference Marks, contains reference mark descriptions.

Table 3 -- SUMMARY OF DISCHARGES

FLOODING SOURCE AND LOCATION	DRAINAGE AREA ($MI.^2$)	PEAK DISCHARGES (CFS) 10-YR.	50-YR.	100-YR.	500-YR.
PRESQUE ISLE STREAM					
At Downstream Town Line	184.7	6,820	10,245	11,555	14,500
At Upstream Town Line	121.6	4,935	8,230	9,740	13,290
NORTH BRANCH PRESQUE ISLE STREAM					
State Route 163	42.2	2,585	3,950	4,285	5,725
Bangor and Aroostook R.R.	42.0	2,580	3,945	4,275	5,715
Bangor and Aroostook R.R.	27.5	1,540	2,425	2,690	3,610
State Route 163, Main Street	26.7	1,510	2,400	2,665	3,595
LIBBY BROOK					
Private Road	3.6	605	895	1,035	1,360
State Route 163, Main Street	3.6	600	895	1,030	1,355
Hughes Road	3.5	585	875	1,010	1,330
UNNAMED TRIBUTARY					
Pease Road	1.7	345	560	650	865
Creasy Ridge Road	1.2	280	450	520	685
TEAKETTLE BROOK					
Griffin Ridge Road (Segment1)	9.3	1,215	1,950	2,275	3,035
State Route 227 (Segment 2)	0.3	195	290	330	420
Boone Road (Segment 3)	2.0	460	685	775	985
Boone Road (Segment 4)	2.0	270	435	500	665
HANSON BROOK					
Bagley Road	2.7	660	1,035	1,190	1,555
HANSON LAKE					
Hanson Lake Dam	3.8	40	60	75	95
CLAYTON BROOK					
Old Railroad Grade	5.0	720	1,125	1,300	1,740
Old Railroad Grade	4.8	700	1,095	1,270	1,695
Farm Road	4.8	700	1,090	1,260	1,685
Farm Road	4.0	625	980	1,135	1,510
Old Railroad Grade	3.9	610	955	1,105	1,475
Farm Road	3.9	610	955	1,105	1,475
Farm Road	3.8	600	940	1,085	1,450
State Route 227	2.4	445	710	820	1,090
Farm Road	1.7	350	560	650	860
Hughes Road	1.7	345	555	645	855

Table 4 -- SUMMARY OF STILLWATER ELEVATIONS (entire shoreline within community)				
	ELEVATION IN FEET (NGVD)			
FLOODING SOURCE	10-YR.	50-YR.	100-YR.	500-YR.
HANSON LAKE	502.4	503.6	504.2	505.2

Hydraulic Analyses and Floodplain Delineation

Detailed hydraulic studies were conducted to provide estimates of the elevations of floods of the selected recurrence intervals on each stream studied in Mapleton. NRCS's Computer Program for Water Surface Profiles (WSP2), (USDA, SCS, 1993) provided information on elevation, discharge, flow area, and flooded area at specified locations along stream valleys. The program can compute up to 15 water surface profiles in one pass through the watershed. It uses the standard step method, with some modifications, to compute profiles between valley cross-sections. At a road crossing, it calculates head loss through a bridge opening, culverts, or a combination of them. It can compute flow profiles for subcritical and critical flow. The TR-20 program uses valley cross-section hydraulic ratings and structure ratings generated by WSP2 to reach-route flood hydrographs through valley reaches and reservoir route through storage areas.

NRCS conducted field surveys to obtain cross section data for all streams studied in Mapleton. Crews surveyed all bridges, dams, and culverts to obtain elevation data and structural geometry (see Table 4, Bridge and Culvert Data).

The Flood Profiles and Flood Hazard Area Maps show the locations of selected cross sections used in the hydraulic analyses.

Table 4- BRIDGE AND CULVERT DATA [1]

LOCATION	CHANNEL BOTTOM ELEV.	LOW CHORD ELEV.	ROAD OVERFLOW ELEV.	FLOOD ELEVATIONS 10-YR.	50-YR.	100-YR.	500-YR.
NORTH BRANCH PRESQUE ISLE STREAM							
State Route 163	436.1	447.4	452.0	447.5	450.7	451.9	453.9
Bangor and Aroostook R.R.	439.3	457.7	462.9	453.3	457.3	458.3	458.5
Sleepy Hollow (Snowmobile Trail)	445.3	450.8	452.8	454.6	458.1	458.9	459.5
North Branch (Snowmobile Trail)	472.8	477.4	477.4	481.3	482.2	482.4	483.0
Bangor and Aroostook R.R.	479.5	490.7	512.3	489.8	494.8	496.6	504.2
State Route 163, Main Street	511.8	525.8	528.5	521.8	524.0	524.7	526.4
LIBBY BROOK							
Private Road	521.0	526.5	526.8	528.2	528.6	528.7	529.1
State Route 163, Main Street	526.8	531.3	535.1	535.4	536.5	536.8	537.3
Hughes Road	540.2	546.7	546.6	547.9	548.4	548.6	549.0
UNNAMED BROOK							
Pease Road	462.4	466.4	471.1	471.8	472.1	472.3	472.5
Creasy Ridge Road	502.5	506.5	507.6	508.3	508.4	508.6	508.9
TEAKETTLE BROOK							
Griffin Ridge Road (Segment 1)	462.8	468.8	468.8	469.9	470.3	470.4	470.7
State Route 227 (Segment2)	517.2	518.7	520.3	520.7	520.8	520.8	520.9
Boone Road (Segment 3)	473.6	479.6	479.8	480.8	481.0	481.1	481.3
Boone Road (Segment 4)	477.3	481.3	481.0	481.7	482.2	482.3	482.6
HANSON BROOK							
Bagley Road	504.2	512.2	513.7	514.7	515.3	515.5	515.9
CLAYTON BROOK							
Old Railroad Grade	483.0	489.0	493.3	493.5	494.3	494.4	494.8
Old Railroad Grade	492.5	497.5	499.9	500.3	500.6	500.7	500.8
Farm Road	495.4	497.4	497.3	500.7	501.2	501.4	501.8
Farm Road	506.7	508.9	509.7	511.1	511.6	511.8	512.3
Old Railroad Grade	516.6	521.6	521.4	521.9	522.1	522.2	522.4
Farm Road	515.6	520.6	522.4	523.6	523.7	523.9	
Farm Road	521.2	526.2	526.8	527.9	528.3	528.5	528.9
State Route 163, State Road	540.2	544.2	546.2	547.0	547.3	547.4	547.6
Farm Road	557.3	559.5	560.5	561.7	562.1	562.3	562.6
Hughes Road	560.4	564.9	566.3	566.5	566.8	566.8	567.0

[1] *Elevations in feet NGVD, at upstream end of bridge or culvert opening.*

Table 5 - ELEVATION REFERENCE MARKS (RM)

RM #	ELEV. [1]	DESCRIPTION OF LOCATION
RM 1	438.618	USC&GS standard tablet, stamped "W 36 1935", about 2.0 miles west along the Bangor and Aroostook Railroad from the station at Presque Isle, on top of the south headwall of a 5 foot by 10 foot concrete box culvert, 8 inches from the east end.
RM 2	449.842	USC&GS standard tablet, stamped "V 36 1935", about 3.0 miles west along the Bangor and Aroostook Railroad from the station at Presque Isle, on top of the northeast headwall of a concrete cattle underpass, 1 foot from the northeast end.
RM 3	448.68	Top of the north end of a 12-inch CMP culvert under driveway to cabin on Presque Isle Stream, 50 feet southwest of the southwest corner of the cabin.
RM 4	441.75	Horizontal nail in steel disk, at the Baptist Park canoe landing on Presque Isle Stream, in the base of a 12 inch diameter spruce tree, approximately 20 feet west of the stream and 40 feet north of the centerline of the landing access road, on the southeast side of the tree, about 0.2 feet above ground level.
RM 5	462.965	USC&GS standard tablet, stamped "U 36 1935", on top of the north end of the east concrete abutment of the Bangor and Aroostook Railroad trestle over North Branch Presque Isle Stream, approximately 312 yards west of the centerline of the crossing of State Route 163.
RM 6	529.98	Chiseled square, painted orange, on top of the northeast corner of the west concrete abutment of the State Route 163 bridge over North Branch Presque Isle Stream in Mapleton village.
RM 7	550.547	USGS standard tablet, stamped "R 49 (USGS) RESET 1954", along the Bangor and Aroostook Railroad, at the State Route 163 underpass in Mapleton, on top of the northwest end of the southwest concrete abutment.

[1] *National Geodetic Vertical Datum of 1929.*

Table 5 - ELEVATION REFERENCE MARKS (RM)		
RM #	**ELEV.** [1]	**DESCRIPTION OF LOCATION**
RM 8	542.381	USC&GS standard tablet, stamped "R 36 1935", about 0.7 miles south along the Bangor and Aroostook Railroad from the State Route 163 underpass at Mapleton, on top of the west headwall of a 4 foot by 9 foot concrete box culvert, 8 inches from the south end.
RM 9	547.48	Chiseled square, painted orange, on top of the southeast corner of the south end of the east concrete headwall of a concrete box culvert at the Hughes Road crossing of Libby Brook
RM 10	506.60	Stamped "103", painted orange, on top of the north end of a 48 inch CMP culvert at the Creasy Ridge Road crossing of an unnamed brook.
RM 11	470.66	Horizontal nail in steel disk, along Pulcifur Road at its crossing of Teakettle Brook (Segment 1), in the base of a 24 inch diameter spruce tree, approximately 60 feet southeast of the centerline of the road and 100 feet northeast of the brook, on the northwest side of the tree about 3.0 feet above ground level.
RM 12	518.00	Stamped "500", painted orange, on top of the south end of an 18 inch CMP culvert at the State Route 227 crossing of Teakettle Brook (Segment 2).
RM 13	479.59	Stamped "111", painted orange, on top of the east end of a 6 foot diameter CMP culvert at the Boone Road crossing of Teakettle Brook (Segment 3).
RM 14	481.26	Stamped "112", painted orange, on top of the east end of a 4 foot diameter CMP culvert at the Boone Road crossing of Teakettle Brook (Segment 4).
RM 15	511.88	Stamped "500", painted orange, on top of the east end of an 8 foot diameter CMP culvert at the Bagley Road crossing of Hanson Brook.

[1] *National Geodetic Vertical Datum of 1929.*

Table 5 - ELEVATION REFERENCE MARKS (RM)		
RM #	ELEV. [1]	DESCRIPTION OF LOCATION
RM 16	505.44	At the south end of Hanson Lake, on top of the southeast corner of the concrete riser cover of Hanson Lake Dam.
RM 17	492.12	Stamped "83", painted orange, on top of the west end of the northernmost of two 48 inch CMP culverts at an old railroad grade crossing of Clayton Brook.
RM 18	499.89	Chiseled square, painted orange, on top of the southeast corner of the south end of the east concrete headwall of a concrete box culvert at an old railroad grade crossing of Clayton Brook.
RM 19	523.06	Chiseled square, painted orange, on top of the southwest corner of the south end of the west concrete headwall of a concrete box culvert at an old railroad grade crossing of Clayton Brook.
RM 20	544.11	Stamped "101, painted orange, on top of the northeast end of the northwest 48 inch CMP culvert at the State Route 227 crossing of Clayton Brook
RM 21	567.59	Chiseled square, painted orange, on top of the southwest corner of the south end of the west concrete headwall of a concrete box culvert at the Hughes Road crossing of Clayton Brook

1 National Geodetic Vertical Datum of 1929.

The boundaries of the 100-, and 500-year floods shown on the Flood Hazard Area Maps were delineated from elevations determined at each cross section. Between cross sections, the flood boundaries were interpolated using topographic maps at a scale of 1:24,000 and contour interval of 10 feet, and aerial photography. Maps are based on UTM projection, Zone 19, NAD 83. Map information is available as shape files.

Field survey information, engineering computations, and other data pertinent to the study are on file and available for review at the following location:

USDA, Natural Resources Conservation Service
967 Illinois Avenue, Suite #3
Bangor, Maine 04401
Telephone (207) 990-9100.

FLOODPLAIN MANAGEMENT

The watershed topography dictates to a large extent the flood problems that occur in Mapleton. Natural drainageways on the hills form numerous tributaries to the streams studied. The steepness of their watersheds produces very quick flood peaks.

Natural channels draining the uplands erode and become deeper due to steep channel gradients and high velocities. Flatter gradients and lower velocities in the valleys deposit the eroded materials in the channel. As a result of the erosion and deposition process, and debris and ice jams, valley channels tend to fill in and become wider.

Historically, transportation systems tend to follow streams and rivers because of ease of access and construction. Towns develop along streams at sites where major roads converge. The transportation system and towns are subject to flood damage when they lie within the floodplain. Development in outlying areas usually occurs along existing roads. This is the case in the Town of Mapleton.

Flood Damages

The streams studied in Mapleton have experienced flooding on numerous occasions. Flooding occurs at least annually and sometimes two or three times per year. Flooding usually occurs during heavy rains in winter and spring. Ice and debris jams further compound the problem.

Damage in the study areas is primarily to homes, farmland, roads, bridges, and recreational properties.

Flood damages consist of two main types:

- losses resulting from direct contact with flood water; and

- losses resulting from people being isolated due to the flooding of roads.

Damages resulting from direct contact with flood water include residential, agricultural, road, and recreational vehicle trail damages. Residential damage consists of flood water and deposition in cellars and incidental damage to lawns and out buildings. Table 1 shows the approximate number of buildings within the floodplain. All houses in the floodplain are in low hazard areas as defined by FEMA (see Glossary for definition of high hazard area). Agricultural damage consists of streambank erosion, deposition of sediment and debris on fields, and fence damage. Damages to state, town, and farm roads, and recreational vehicle trails consist of debris and ice jam deposition, scour holes in the pavement, and washed out fill, bridges, and culverts.

Floodplain Management Options

The management options that follow provide general information on the various means of flood protection and the reduction of monetary loss caused by floods. These options fall into two major categories: nonstructural and structural. Not all options will apply in Mapleton. With further study, the Town or individuals may find viable options to reduce flood losses. Considerations in this evaluation include:

- whether the area is in a high or low hazard area;

- engineering feasibility;

- economics;

- effect on flooding elsewhere (induced flood damages); and

- social acceptability.

Nonstructural Measures

Nonstructural measures cannot prevent flooding, but they can help reduce future problems and monetary loss. The implementation of nonstructural measures should have little to no effect on the environment.

1. Floodproofing

Floodproofing is any measure that property owners may take to minimize flood damage to their property. The following are some of the more common means used to floodproof buildings:

- elevating the building above expected flood levels;
- application of waterproof sealant to foundations and permanent closing and sealing of lower openings;
- construction of earthen dikes or masonry floodwalls around the building to prevent water from entering it;
- installing water tight closures that can be quickly and easily placed over doors and windows;
- protection of appliances and utilities, such as furnaces, washers, dryers, and electrical and plumbing systems. Elevate the appliance or place it in a water proof bag to protect it from rising flood water.

Several buildings in Mapleton could benefit from floodproofing. Property owners should consider the following when selecting the most appropriate measure or combination of measures:

- the depth, velocity, and duration of flood flows;
- the benefit-to-cost ratio of the measure;
- engineering feasibility;
- soil types; and

- local codes and building restrictions.

The Federal Emergency Management Agency's (FEMA) publication, Design Manual for Retrofitting Flood-prone Structures, FEMA 114, 1986 contains additional information on floodproofing. Interested parties can order the publication at no cost by writing to the following address:

Federal Emergency Management Agency
P.O. Box 70274
Washington, DC 20024
Attn: Publications.

2. Purchase or Relocation

In areas where all other means of flood protection are ineffective or impractical, federal and state funds may be available to buy properties or relocate buildings and their occupants. After removal of the buildings, use the land for recreation or some other purpose not significantly affected by floodwater.

This option applies to existing houses in the floodplain. This approach is most desirable from a floodplain management perspective, but it may not be socially acceptable.

3. Land Use Regulation

Use this option to keep future development out of the floodplain. The Town can acquire conservation, scenic, or flood control restrictions or easements in flood hazard areas where little or no development is desirable. Land use restrictions prevent development that is incompatible with public objectives, while allowing continued private ownership of the land. Certain future land rights, such as construction of buildings in the floodplain, could be purchased from present landowners. Permitted uses could be farming, wildlife, low intensity recreation, and woodland. Land use restrictions may also result in a lowering of the landowner's tax assessment.

In 1971 the State of Maine enacted the Mandatory Zoning and Subdivision Control Law, Chapter 424, Sections 4811 through 4814 of the Maine Statutes. The law requires all municipal units of government to adopt zoning and subdivision control ordinances for shoreland areas. Shoreland areas include land within 250 feet of the normal high water mark of any pond, river, or salt water body. This includes a major portion of the floodplain.

The Town has zoned the flood prone area to prevent future development.

The Town should consider the preparation of an overall land use plan to enhance the natural and recreational values of the areas studied in Mapleton. The plan would set integrated objectives for public access, historic sites, recreational facilities, and the preservation of significant wildlife habitat areas.

Other general recommendations include:

- maintain wetland and floodplain vegetation buffers to reduce sedimentation and delivery of chemicals to the water body;

- support agricultural and forestry practices that minimize nutrient flows into water bodies;

- support proper use of pesticides and fertilizer;

- minimize soil erosion on land within, or adjacent to, floodplains, on forest road systems, and at timber harvesting operations; and

- dispose of spoil and waste material in a manner that would not contaminate ground and surface water or significantly change land contours.

Additional technical information on voluntary natural resource protection measures is available from the local Central Aroostook SWCD office located at the Harley D. Welch Agriculture Building, 744 Main Street, in Presque Isle, telephone (207) 764-4770.

4. Flood Insurance

Mapleton has been a participant in the 'regular' phase of the National Flood Insurance Program (NFIP) since 1985. This program enables existing home owners within the 100-year floodplain to buy up to $245,000 worth of flood insurance on their home and contents at subsidized rates. Up to $550,000 worth of insurance can be obtained for multifamily homes and small businesses.

As part of the program, the Town must require a building permit for all proposed construction within flood-prone areas and review the permit to ensure that the site is reasonably free from flooding. It also must require that structures in flood-prone areas be properly anchored and that recommended construction materials and methods be used to minimize flood damage.

Home owners in flood prone areas should protect themselves from monetary loss with flood insurance. The Town should ensure that property owners in or next to the floodplain are aware of the availability of Federally subsidized flood insurance under the NFIP. Policies and information on coverage and rates are available from most insurance agents.

5. Floodways

Any encroachment in the floodplain will reduce its flood carrying capacity. Examples of encroachment include the placement of earthfill and the construction of buildings in the floodplain. The reduced capacity caused by the encroachment results in increased velocities and flood heights. Flood hazards, both upstream and downstream of the encroachment itself, generally increase.
One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood damages. Under this concept, the 100-year floodplain is divided into a floodway and a floodway fringe.

The floodway is the main channel of the watercourse plus any adjacent floodplain areas that must be clear to pass the 100-year flood without substantial increases in flood heights. FEMA minimum standards limit such increases in flood heights to 1.0 foot, provided that hazardous velocities do not result.

The floodway fringe includes the remainder of the floodplain that can be obstructed without increasing the 100-year flood elevation by more than 1.0 foot. This approach allows some development while protecting the existing floodplain. Typical relationships between the floodway the floodway fringe and their significance to floodplain management are shown in Figure 2.

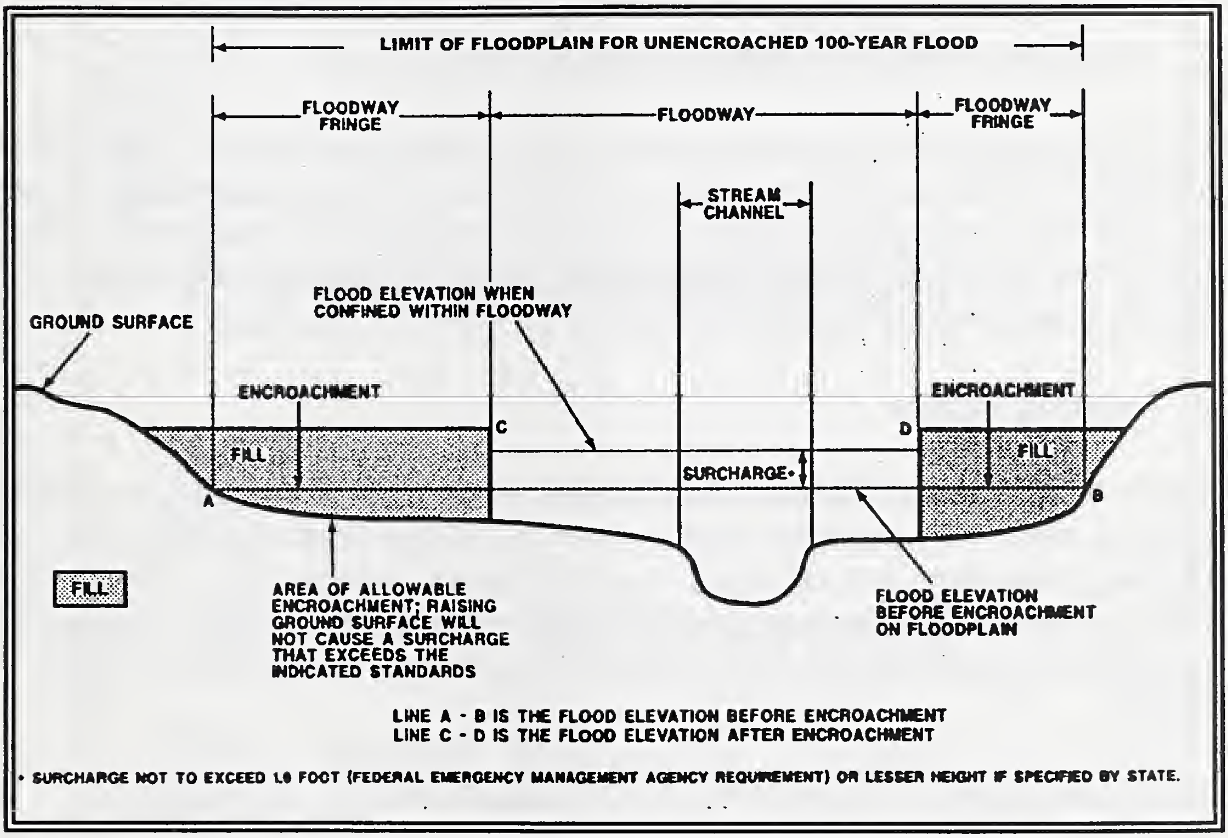

Figure 2 – Floodway Schematic

NRCS computed theoretical floodways for each of the streams studied in Mapleton considering equal flow reduction from each side of the floodplain. Floodway widths were computed at each cross section. Between cross sections, the floodway boundaries were interpolated. The computed floodways are shown on the Flood Hazard Area Maps (Appendix A). In cases where the floodway and 100-year floodplain boundaries are either close together or collinear, only the floodway boundary is shown.

Floodway data for selected cross sections is presented in Table 6, Floodway Data.

6. Warning Signs and Flood Markers

One proven method of discouraging floodplain development is to erect flood warning signs or markers in floodprone areas or to prominently post previous or predicted flood levels. This is a viable option for some stream crossings in Mapleton. These markers carry no enforcement, but simply serve to inform the public that a significant flood hazard exists.

7. Flood Warning and Response Systems

Flood warning and response systems use rainfall and channel water level information from upstream areas to predict flood stages downstream and provide early warning of a flood. This provides time for residents in the floodplain and emergency management agencies to evacuate people, animals, and belongings and otherwise prepare for the flood.

8. Existing Roads

Table 4, Bridge and Culvert Data, shows the effects of flooding on bridges and culverts. Any planned road, culvert, or bridge work must involve detailed modeling of flood flows to determine the effects of flood heights on planned improvements and existing buildings in the floodplain. Raising roads may induce higher flood heights on buildings located next to the road.

The Town needs to explore the cost-to-benefit ratio for any planned roadwork.

Table 6 - FLOODWAY DATA

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE	SECTION WIDTH (FEET)	AREA (SQ FT)	MEAN VELOCITY (FPS)	REGULATORY	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE
PRESQUE ISLE STREAM								
A	1,915[1]	2,112	16,245	1.4	441.2	441.2	441.6	0.4
B	6,115[1]	998	7,898	2.5	442.0	442.0	442.5	0.5
C	9,895[1]	426	4,125	4.3	444.2	444.2	444.9	0.7
D	14,165[1]	1,085	9,594	1.2	446.5	446.5	447.2	0.7
E	17,475[1]	556	4,845	2.4	448.1	448.1	448.9	0.8
NORTH BRANCH PRESQUE ISLE STREAM								
A	4,220[2]	230	2,595	1.9	451.9	451.9	452.3	0.4
B	5,070[2]	361	4,110	1.5	458.3	458.3	458.3	0.0
C	6,130[2]	188	1,769	3.2	458.6	458.6	458.6	0.0
D	8,150[2]	131	1,193	4.4	461.1	461.1	461.7	0.6
E	17,185[2]	327	2,054	2.8	468.1	468.1	469.0	0.9
F	21,720[2]	102	539	6.6	481.7	481.7	482.4	0.7
G	22,640[2]	64	467	6.8	486.0	486.0	486.8	0.8
H	25,360[2]	86	686	4.9	500.9	500.9	501.6	0.7
I	26,610[2]	71	515	6.8	505.3	505.3	506.1	0.8
J	29,000[2]	73	542	5.2	514.2	514.2	515.1	0.9
K	29,175[2]	158	1,997	1.3	524.7	524.7	524.7	0.0
L	31,310[2]	115	1,197	2.4	525.0	525.0	525.1	0.1
M	35,175[2]	417	2,596	1.9	526.2	526.2	526.7	0.5

[1] Feet above town line.
[2] Feet above confluence with Presque Isle Stream.

Table 6 - FLOODWAY DATA

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	SECTION WIDTH (FEET)	AREA (SQ FT)	MEAN VELOCITY (FPS)	REGULATORY	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE
LIBBY BROOK								
A	757[1]	50	177	7.2	527.3	527.3	527.8	0.5
B	1,195[1]	41	193	6.2	531.4	531.4	532.1	0.7
C	1,375[1]	29	222	4.9	536.8	536.8	537.7	0.9
D	2,089[1]	38	178	6.9	547.8	547.8	548.6	0.8
E	2,855[1]	43	237	4.7	552.9	552.9	553.9	1.0
UNNAMED BROOK								
A	905[1]	18	84	7.8	466.1	466.1	466.4	0.3
B	3,535[1]	75	189	3.2	496.1	496.1	497.0	0.9
C	4,670[1]	193	1,110	0.5	508.6	508.6	509.4	0.8
TEAKETTLE BROOK								
SEGMENT1								
A	2,446[1]	299	1,346	1.9	468.4	468.4	469.3	0.9
SEGMENT 2								
A	86[2]	254	777	0.5	520.8	520.8	521.0	0.2
SEGMENT 3								
A	110[2]	116	779	1.1	481.1	481.1	481.7	0.6
SEGMENT 4								
A	75[2]	55	201	2.8	482.3	482.3	483.3	1.0
HANSON BROOK								
A	399[3]	165	1,586	0.8	515.5	515.5	515.7	0.2

[1]Feet above confluence with North Branch Presque Isle Stream.
[2]Feet from centerline of the road.
[1]Feet above confluence with Hanson Lake.

Table 6 - FLOODWAY DATA

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NGVD)			
CROSS SECTION	DISTANCE[1]	SECTION WIDTH (FEET)	AREA (SQ FT)	MEAN VELOCITY (FPS)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
CLAYTON BROOK								
A	1,003	76	722	2.3	494.5	494.5	495.4	0.9
B	2,483	51	282	4.5	498.7	498.7	499.4	0.7
C	3,407	114	750	1.8	501.2	501.2	502.2	1.0
D	7,244	188	501	2.3	511.5	511.5	511.6	0.1
E	8,556	110	324	4.6	519.2	519.2	520.2	1.0
F	9,619	81	381	3.4	528.6	528.6	529.5	0.9
G	11,306	88	514	1.8	547.5	547.5	548.3	0.8
H	13,489	92	225	3.7	564.3	564.3	564.7	0.4

[1]Feet above town line.

Structural Measures

Structural measures generally include such options as dams, channel work, removal of channel restrictions, and dikes. They require in-depth engineering, environmental, and economic analyses beyond the scope of this study to determine feasibility. Structural measures tend to have significant environmental impacts. The following discussion considers each measure as it might apply to Mapleton.

1. Dams

Dams control flood flows by temporarily storing storm runoff in a reservoir and releasing it slowly after the storm has passed. Dams are expensive to build and have significant environmental impacts. Hanson Lake Dam, a multi-purpose floodwater retarding dam, was constructed on Hanson Brook in 1966 as part of the Presque Isle Stream Watershed Project. The dam was built with the assistance of the NRCS, through the Small Watershed Program, PL-566. The Hanson Lake Dam is located in Mapleton, just above the Presque Isle corporate limits, and is owned by the City of Presque Isle. A second dam, in Mapleton, was planned for North Branch Presque Isle Stream but was not built due to prohibitive costs Four additional dams, located outside the Mapleton corporate limits, were constructed as part of the watershed project.

2. Channel Work

The purpose of channel work is to improve the flood carrying capacity and reduce flood damage along a given stream segment. This work can involve changing the alignment, widening, deepening, or lining the channel.

Major channel work of any kind would be difficult to permit in Maine because of severe environmental impacts. Historically, such efforts have resulted in controversy over the effects on fishery resources. Close coordination with interested agencies and groups would be required to determine the feasibility of this option.

3. Removal of Channel Restrictions

Bridges and culverts are the primary restrictions on the streams in Mapleton. Many are undersized or have inefficient inlet configurations and act as barriers to flood flows. The result is increased flow depths upstream of the bridge or culvert. As improvement funds become available, the Town and state should take action to increase bridge and culvert openings to increase discharge capacities.

Table 3, Summary of Discharges, provides peak discharge data at bridge and culvert locations. Table 4, Bridge and Culvert Data, compares flood elevations to the low chord and road overflow elevations. The data shows that improvements are necessary, particularly on the smaller streams. The Flood Profiles provide a graphical presentation of the effects of these restrictions on upstream flood elevations.

State and local road maintenance crews should remove trees, sediment, ice or other debris from all bridges and culverts before spring runoff. Particular attention should be paid to the smaller stream crossings that have a history of flood problems.

4. Dikes

A dike is an earthen embankment used as a barrier to protect structures from flood water. Any planned dike work must involve detailed modeling of flood flows to determine the effects of flood heights on existing structures in the floodplain.

GLOSSARY

CFS or cfs - Cubic feet per second. Used to describe the amount of flow passing a given point in a stream channel. One cubic foot per second is equivalent to approximately 7.5 gallons per second.

Channel - A natural or artificial watercourse with definite bed and banks to conduct and confine flowing water.

Cross Section - A graph or plot of ground elevation across a stream valley or a portion of it, usually along a line perpendicular to the stream or direction of flow.

Erosion - The group of processes whereby soil or rock material becomes loosened or dissolved and removed from any part of the earth's surface.

Flood - An overflow or inundation onto land areas not normally covered by water that are used or usable by people. Floods usually are characterized as temporarily inundating land areas which are adjacent to a body of water such as an ocean, lake, stream, or river.

Flood Crest - The maximum stage or elevation reached by the waters of a flood at any location.

Floodplain - The relatively flat area of lowlands adjoining the channel of a river, stream, watercourse, ocean, lake, or other body of standing water that has been or may be covered by floodwater.

Floodplain Management - The operation of a program intended to lessen the damaging effects of floods, maintain and enhance natural values, and make effective use of water and land resources within the floodplain. It is an attempt to balance values obtainable from use of floodplains with potential losses arising from such use. Floodplain management stresses consideration of a full range of the measures potentially useful in achieving its objectives.

Flood Hazard Area Map - A map showing the lateral extent of flooding. Maps in this report show the 100-, and 500-year floodplains.

Flood Profile - A graph that shows the relationship of water surface elevation to distance along the centerline of the channel. This report uses profiles to show the crest elevations of 10-, 50-, 100-, and 500-year floods.

Floodproofing - A combination of structural changes or adjustments to new or existing structures and facilities, their contents or their sites for the purpose of reducing or eliminating flood damages by protecting against structural failure, keeping water out, or reducing the effect of water entry.

Flood Warning - The issuance and dissemination of information about an imminent or current flood.

Floodway - That portion of the main stream channel plus any adjacent floodplain areas that must be kept free of encroachment in order that the 100-year flood can be carried without substantial increases in flood heights.

Floodway Fringe - That part of the floodplain that can be completely obstructed without increasing the 100-year flood elevation by more than 1.0 foot at any point.

Frequency - A statistical measure of how often a flood event of a given size or magnitude should, on the average, be equaled or exceeded.

Head - The height of water above any plane of reference.

Head Loss - The effect of obstructions, such as narrow bridge openings or buildings, that limit the area through which water must flow, raising the surface of the water upstream of the obstruction.

High Hazard Zone - An area, normally nearest the stream, where flooding may pose a significant risk to life and property. Areas having any one of the following conditions generally are considered high hazard:

- Areas where flood velocities exceed 5 feet per second (fps).

- Areas where flood depths are greater than 3 feet.

- Areas where the product of the velocity (in fps) and the depth (in feet) of the flood water exceeds seven.

Low Chord - The elevation at which a bridge girder first begins to reduce the flow area of the channel.

Low Hazard Zone - The area between the high hazard zone and the maximum extent of the 100-year frequency flood where the potential for loss of life and property damage is low.

Natural Values of Floodplains - The desirable qualities of, or functions served by, floodplains including, but not limited to: water resources values (e.g. -- moderation of floods, water quality maintenance, and ground water recharge); living resource values (e.g. -- fish, wildlife, plant resources, and habitat); cultural resource values (e.g. -- open space, natural beauty, scientific study, outdoor education, and recreation); and cultivated resources values (e.g. -- agricultural, aquacultural, and forestry).

NGVD - National Geodetic Vertical Datum, formerly Mean Sea Level (MSL) 1929.

Nonstructural Measures - All floodplain management measures except structural flood control works. Examples of nonstructural measures are flood warning and preparedness systems, relocation, floodproofing, regulation, land acquisition, and public investment policy.

Relocation - Moving a building from a flood prone area by physically placing it on a vehicle and transporting it from the floodplain.

Road Overflow - The elevation of the point at which water first starts to flow over a road.

Shoreland Areas - Land within 250 feet of the normal high water mark of any pond, river, or salt water body, including a major portion of the floodplain.

Station - Distance in feet along the centerline of the existing channel, increasing in an upstream direction.

Structural Measure - Flood control works such as dams and reservoirs, dikes and floodwalls, channel alterations, and diversion channels which are designed to keep water away from specific developments or populated areas, or to reduce flooding in such areas.

Wetland - Areas that have a predominance of hydric soils and that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and under normal circumstances do support a prevalence of hydrophytic vegetation typically adapted for life in saturated soil conditions.

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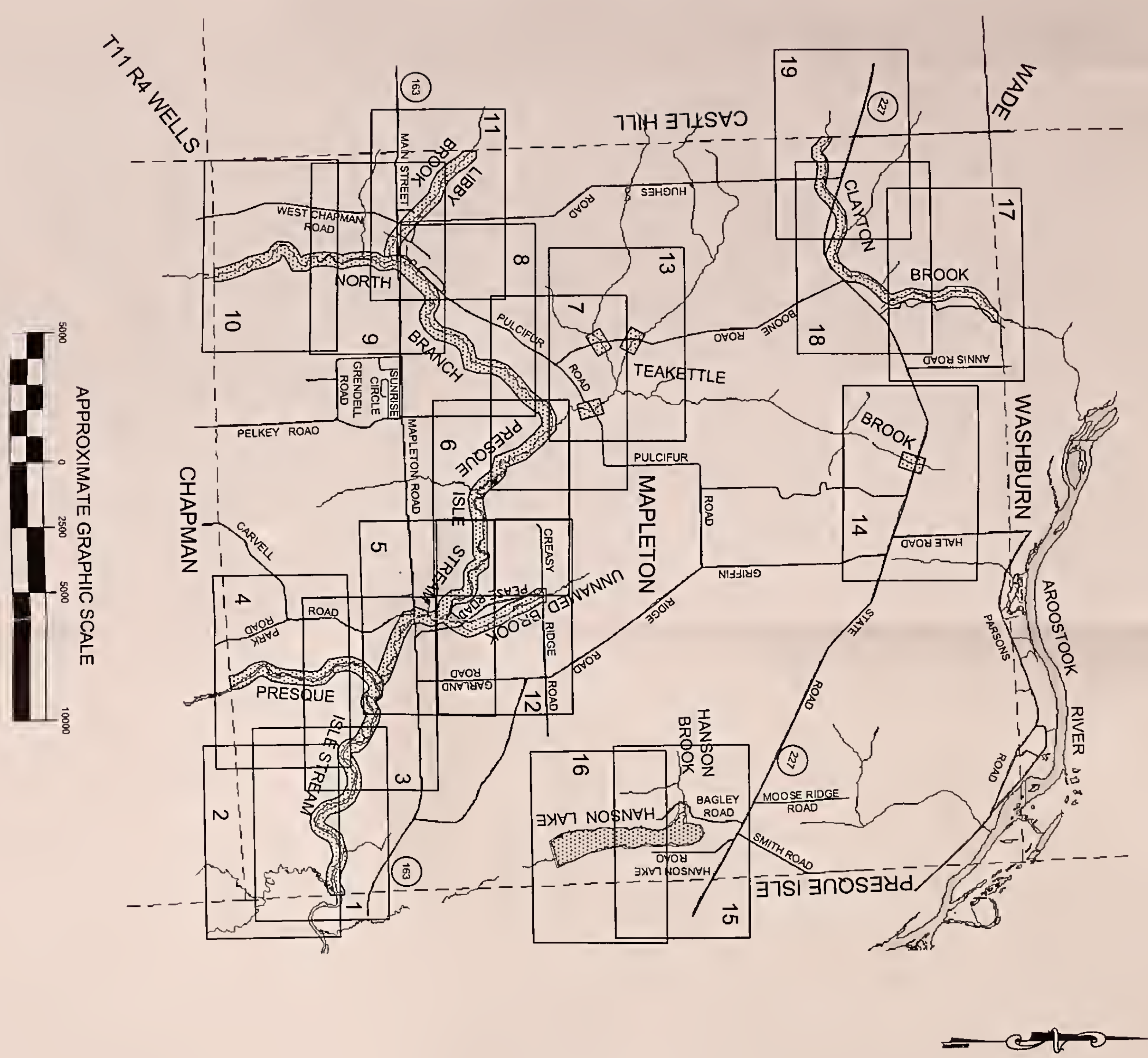
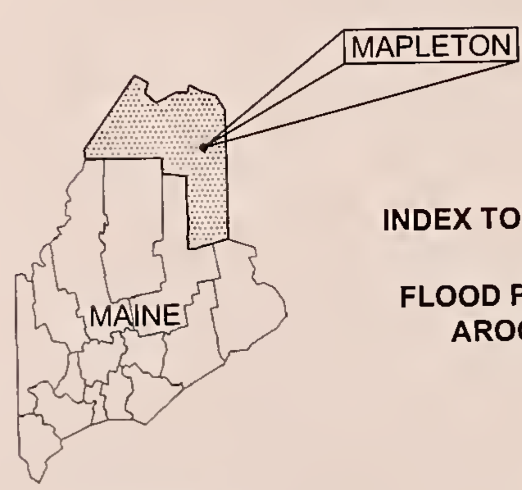
Civil Rights Impact Analysis

The NRCS official responsible for the civil rights impact analysis for this FPMS has determined that civil rights impacts have been identified and adequately addressed. No protected groups will be negatively or disproportionately impacted as a result of recommendations included in this study.

APPENDIX A
FLOOD HAZARD AREA MAPS



1	SHEET COVERAGE
(symbol)	STREAM REACH STUDIED

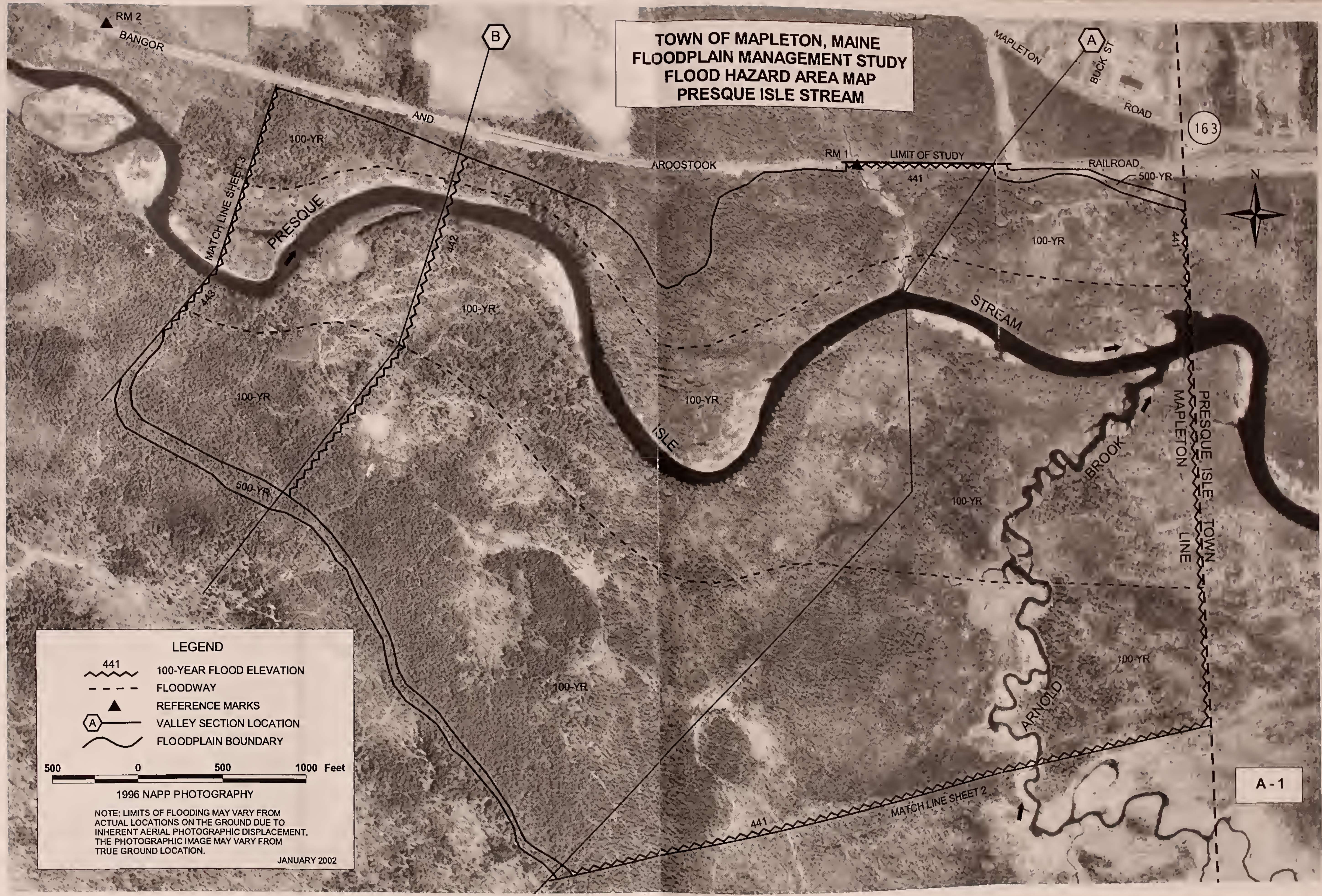


LOCATION MAP

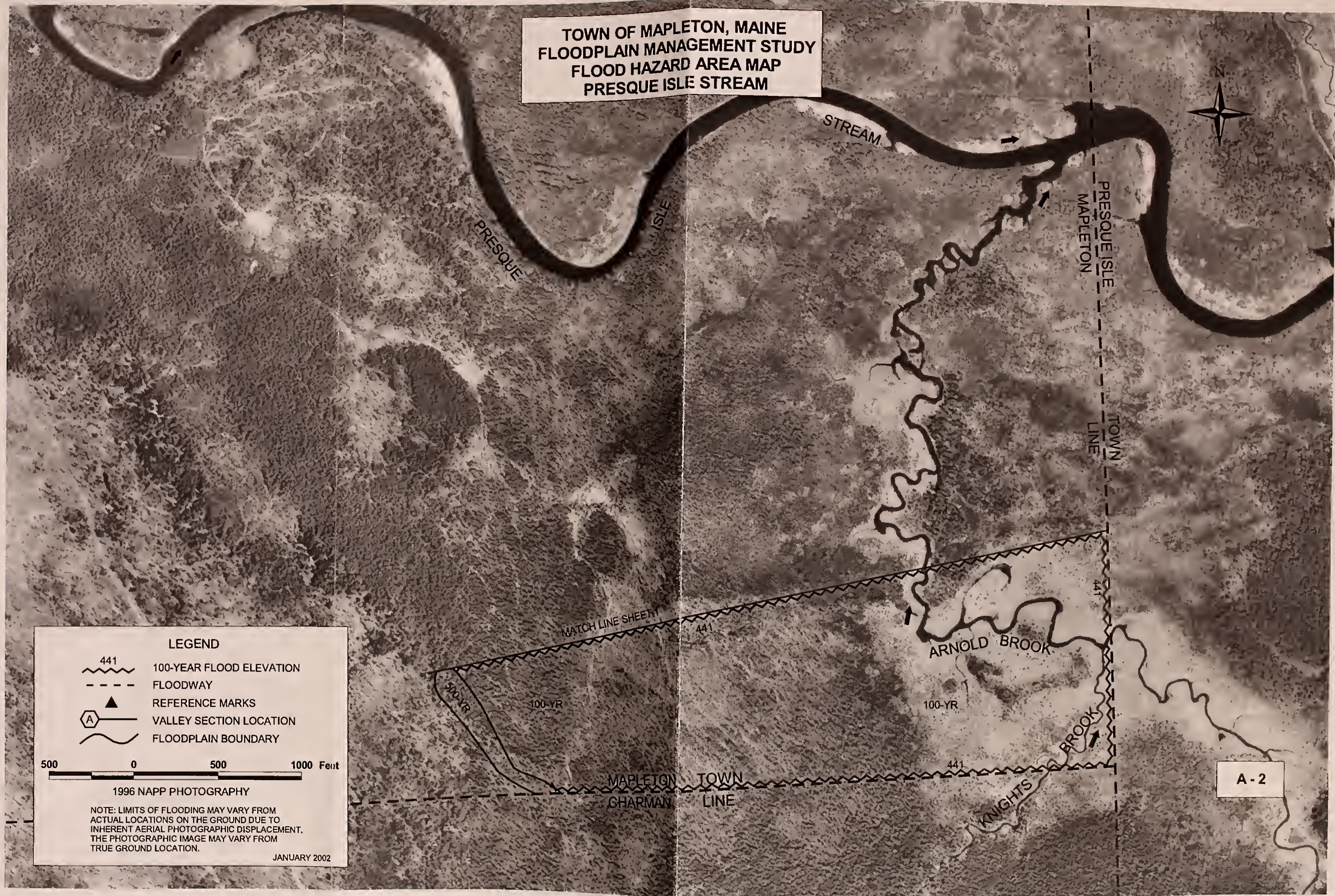
INDEX TO FLOOD HAZARD AREA MAPS
MAPLETON
FLOOD PLAIN MANAGEMENT STUDY
AROOSTOOK COUNTY, MAINE

SOURCE:
BASE COMPILED FROM 1:24,000 USGS QUADRANGLES

FEBRUARY 2002



TOWN OF MAPLETON, MAINE
FLOODPLAIN MANAGEMENT STUDY
FLOOD HAZARD AREA MAP
PRESQUE ISLE STREAM
RM 2
BANGOR
AND
AROOSTOOK
RAILROAD
RM 1
LIMIT OF STUDY
MAPLETON
BUCK ST
ROAD
163
500-YR
441
442
443
100-YR
MATCH LINE SHEET 3
MATCH LINE SHEET 2
PRESQUE
ISLE
STREAM
ARNOLD
BROOK
MAPLETON
PRESQUE ISLE TOWN
LINE
N
A
B
LEGEND
100-YEAR FLOOD ELEVATION
FLOODWAY
REFERENCE MARKS
VALLEY SECTION LOCATION
FLOODPLAIN BOUNDARY
500
0
500
1000 Feet
1996 NAPP PHOTOGRAPHY
NOTE: LIMITS OF FLOODING MAY VARY FROM ACTUAL LOCATIONS ON THE GROUND DUE TO INHERENT AERIAL PHOTOGRAPHIC DISPLACEMENT. THE PHOTOGRAPHIC IMAGE MAY VARY FROM TRUE GROUND LOCATION.
JANUARY 2002
A - 1


TOWN OF MAPLETON, MAINE
FLOODPLAIN MANAGEMENT STUDY
FLOOD HAZARD AREA MAP
PRESQUE ISLE STREAM
PRESQUE
ISLE
STREAM
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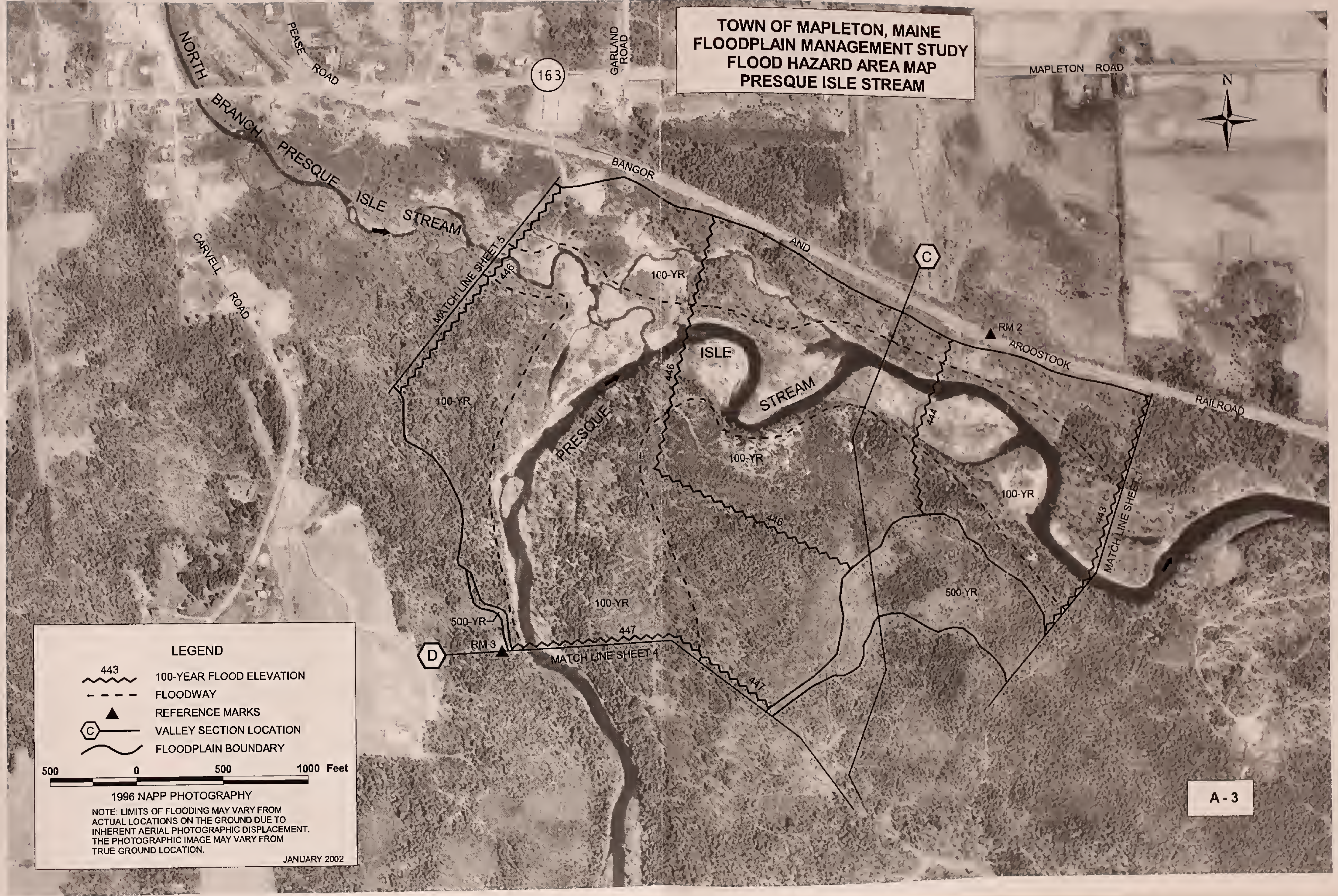
PRESQUE ISLE
MAPLETON
TOWN
LINE
MATCH LINE SHEET 1
441
ARNOLD BROOK
100-YR
500-YR
KNIGHTS
BROOK
MAPLETON
CHARMAN
TOWN
LINE
A - 2
LEGEND
441
100-YEAR FLOOD ELEVATION
FLOODWAY
REFERENCE MARKS
A
VALLEY SECTION LOCATION
FLOODPLAIN BOUNDARY
500
0
500
1000 Feet
1996 NAPP PHOTOGRAPHY
NOTE: LIMITS OF FLOODING MAY VARY FROM ACTUAL LOCATIONS ON THE GROUND DUE TO INHERENT AERIAL PHOTOGRAPHIC DISPLACEMENT. THE PHOTOGRAPHIC IMAGE MAY VARY FROM TRUE GROUND LOCATION.
JANUARY 2002


TOWN OF MAPLETON, MAINE
FLOODPLAIN MANAGEMENT STUDY
FLOOD HAZARD AREA MAP
PRESQUE ISLE STREAM
NORTH BRANCH PRESQUE ISLE STREAM
PEASE ROAD
163
GARLAND ROAD
MAPLETON ROAD
N
BANGOR AND AROOSTOOK RAILROAD
CARVELL ROAD
MATCH LINE SHEET 5
446
100-YR
C
RM 2
ISLE
STREAM
PRESQUE
446
444
100-YR
100-YR
100-YR
446
443
MATCH LINE SHEET 3
500-YR
100-YR
500-YR
447
D
RM 3
MATCH LINE SHEET 4
447
LEGEND
443
100-YEAR FLOOD ELEVATION
FLOODWAY
REFERENCE MARKS
VALLEY SECTION LOCATION
FLOODPLAIN BOUNDARY
500 0 500 1000 Feet
1996 NAPP PHOTOGRAPHY
NOTE: LIMITS OF FLOODING MAY VARY FROM ACTUAL LOCATIONS ON THE GROUND DUE TO INHERENT AERIAL PHOTOGRAPHIC DISPLACEMENT. THE PHOTOGRAPHIC IMAGE MAY VARY FROM TRUE GROUND LOCATION.
JANUARY 2002
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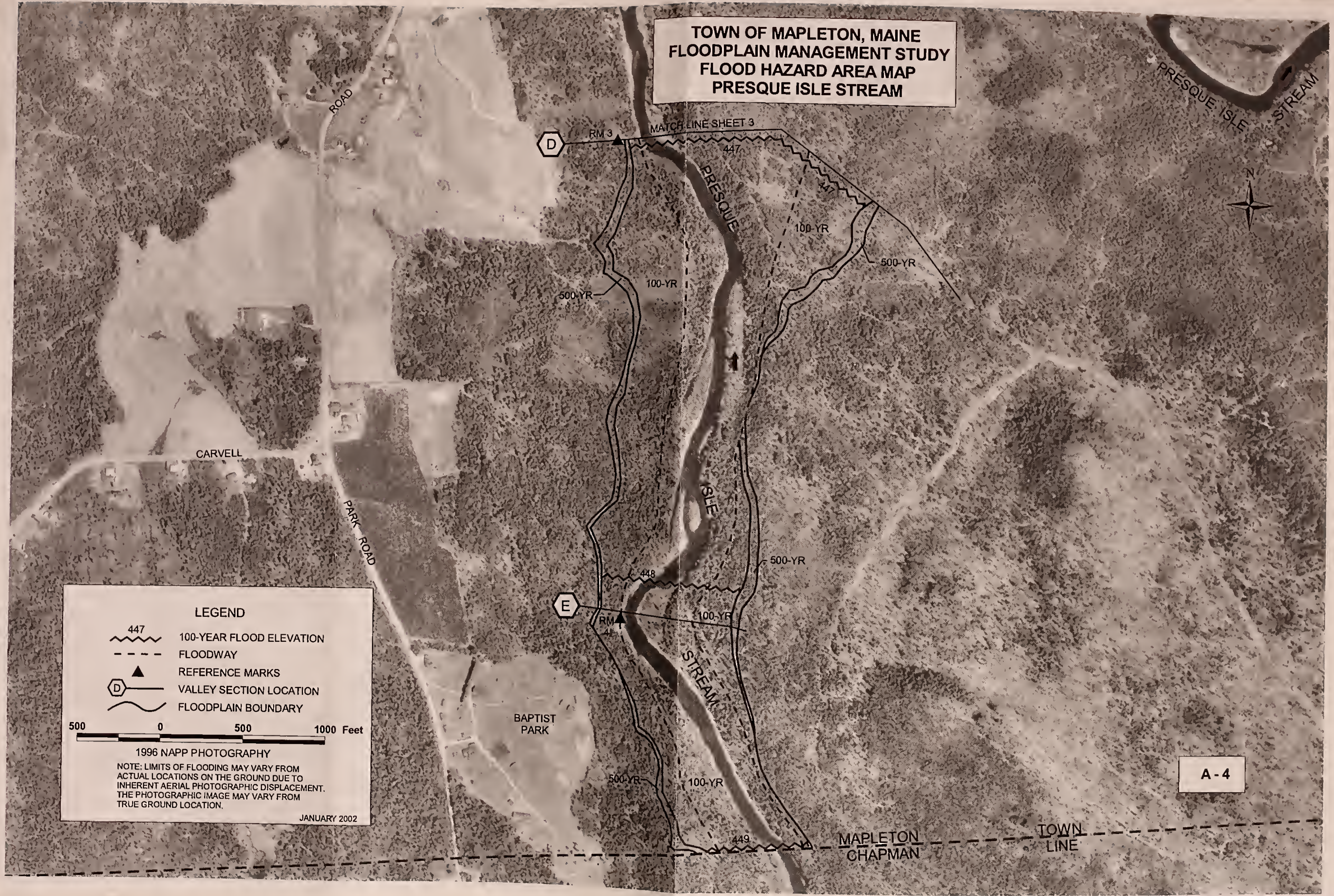
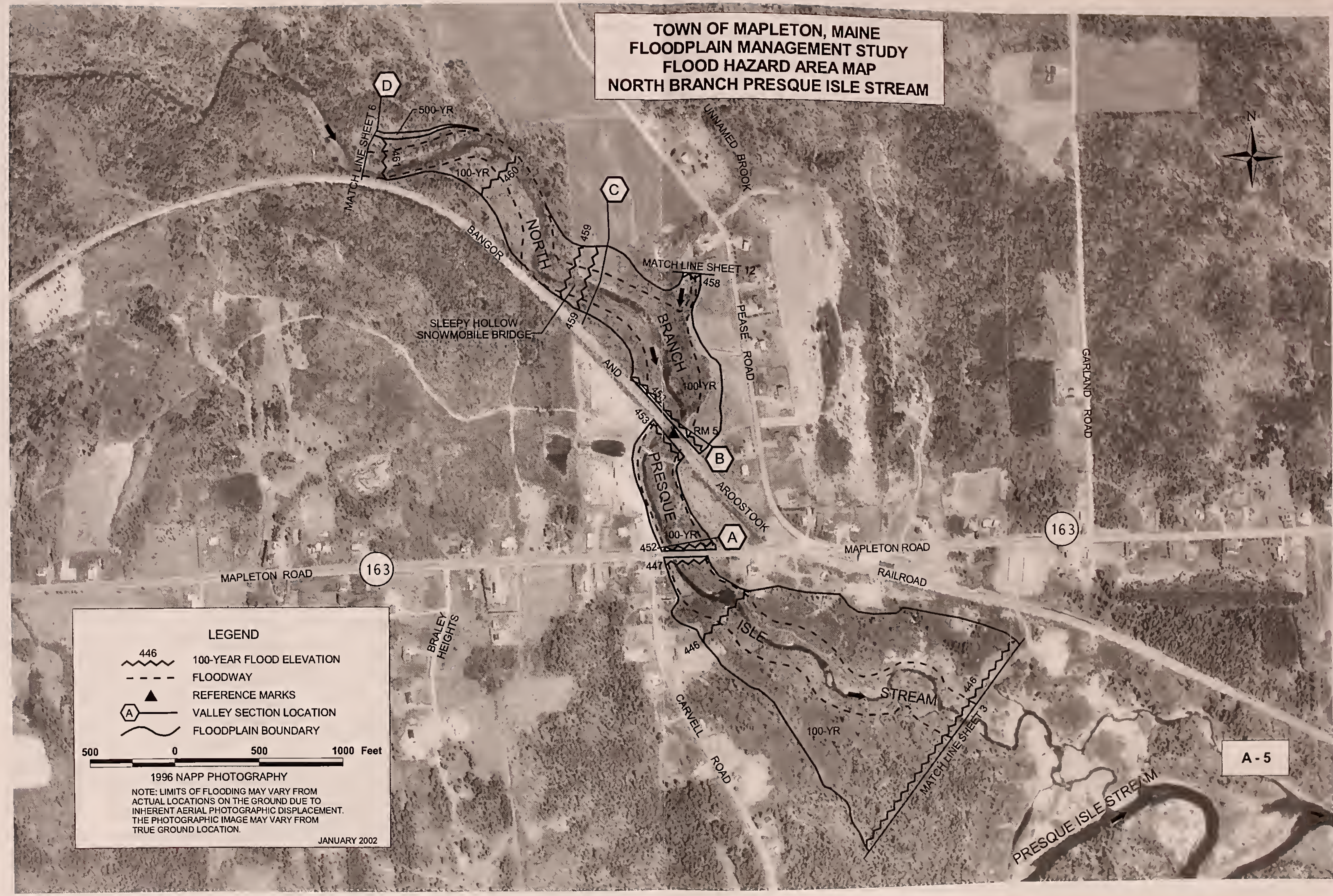
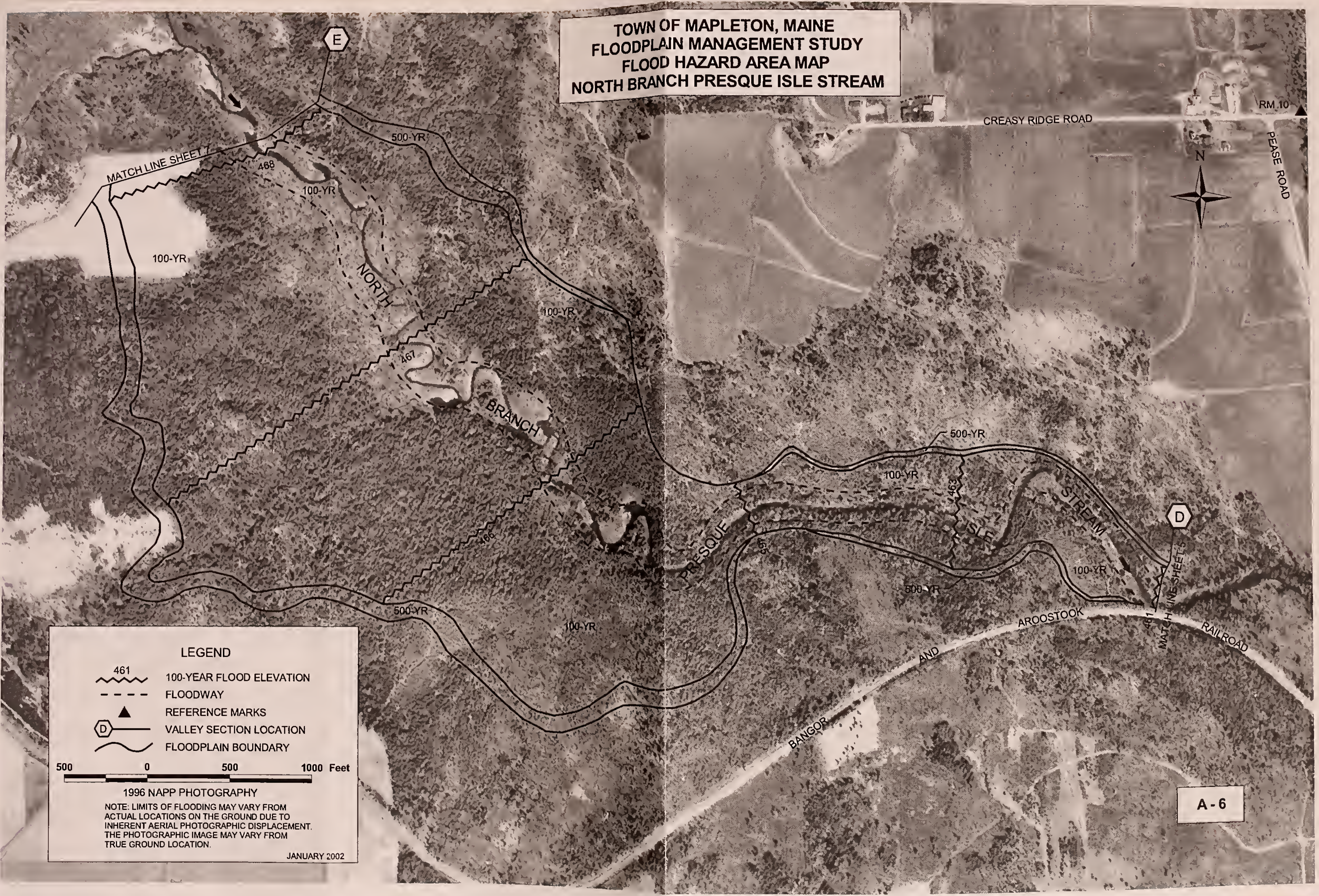


TOWN OF MAPLETON, MAINE
FLOODPLAIN MANAGEMENT STUDY
FLOOD HAZARD AREA MAP
PRESQUE ISLE STREAM
MATCH LINE SHEET 3
RM 3
447
100-YR
500-YR
PRESQUE ISLE STREAM
ROAD
CARVELL
PARK ROAD
448
100-YR
500-YR
RM 4
BAPTIST PARK
449
MAPLETON
CHAPMAN
TOWN LINE
N
LEGEND
447 100-YEAR FLOOD ELEVATION
FLOODWAY
REFERENCE MARKS
VALLEY SECTION LOCATION
FLOODPLAIN BOUNDARY
500 0 500 1000 Feet
1996 NAPP PHOTOGRAPHY
NOTE: LIMITS OF FLOODING MAY VARY FROM ACTUAL LOCATIONS ON THE GROUND DUE TO INHERENT AERIAL PHOTOGRAPHIC DISPLACEMENT. THE PHOTOGRAPHIC IMAGE MAY VARY FROM TRUE GROUND LOCATION.
JANUARY 2002
A - 4


TOWN OF MAPLETON, MAINE
FLOODPLAIN MANAGEMENT STUDY
FLOOD HAZARD AREA MAP
NORTH BRANCH PRESQUE ISLE STREAM
D
C
B
A
500-YR
100-YR
MATCH LINE SHEET 6
461
460
459
458
457
453
452
447
446
NORTH BRANCH
PRESQUE ISLE STREAM
MATCH LINE SHEET 12
MATCH LINE SHEET 3
UNNAMED BROOK
BANGOR AND AROOSTOOK RAILROAD
SLEEPY HOLLOW SNOWMOBILE BRIDGE
PEASE ROAD
GARLAND ROAD
MAPLETON ROAD
163
RM 5
BRALEY HEIGHTS
CARVELL ROAD
N
A - 5
LEGEND
446
100-YEAR FLOOD ELEVATION
FLOODWAY
REFERENCE MARKS
VALLEY SECTION LOCATION
FLOODPLAIN BOUNDARY
500 0 500 1000 Feet
1996 NAPP PHOTOGRAPHY
NOTE: LIMITS OF FLOODING MAY VARY FROM ACTUAL LOCATIONS ON THE GROUND DUE TO INHERENT AERIAL PHOTOGRAPHIC DISPLACEMENT. THE PHOTOGRAPHIC IMAGE MAY VARY FROM TRUE GROUND LOCATION.
JANUARY 2002


TOWN OF MAPLETON, MAINE
FLOODPLAIN MANAGEMENT STUDY
FLOOD HAZARD AREA MAP
NORTH BRANCH PRESQUE ISLE STREAM
E
D
RM 10
CREASY RIDGE ROAD
PEASE ROAD
N
MATCH LINE SHEET 7
MATCH LINE SHEET 5
500-YR
100-YR
468
467
466
465
463
461
NORTH
BRANCH
PRESQUE
ISLE
STREAM
BANGOR AND AROOSTOOK RAILROAD
LEGEND
461
100-YEAR FLOOD ELEVATION
FLOODWAY
REFERENCE MARKS
VALLEY SECTION LOCATION
FLOODPLAIN BOUNDARY
500 0 500 1000 Feet
1996 NAPP PHOTOGRAPHY
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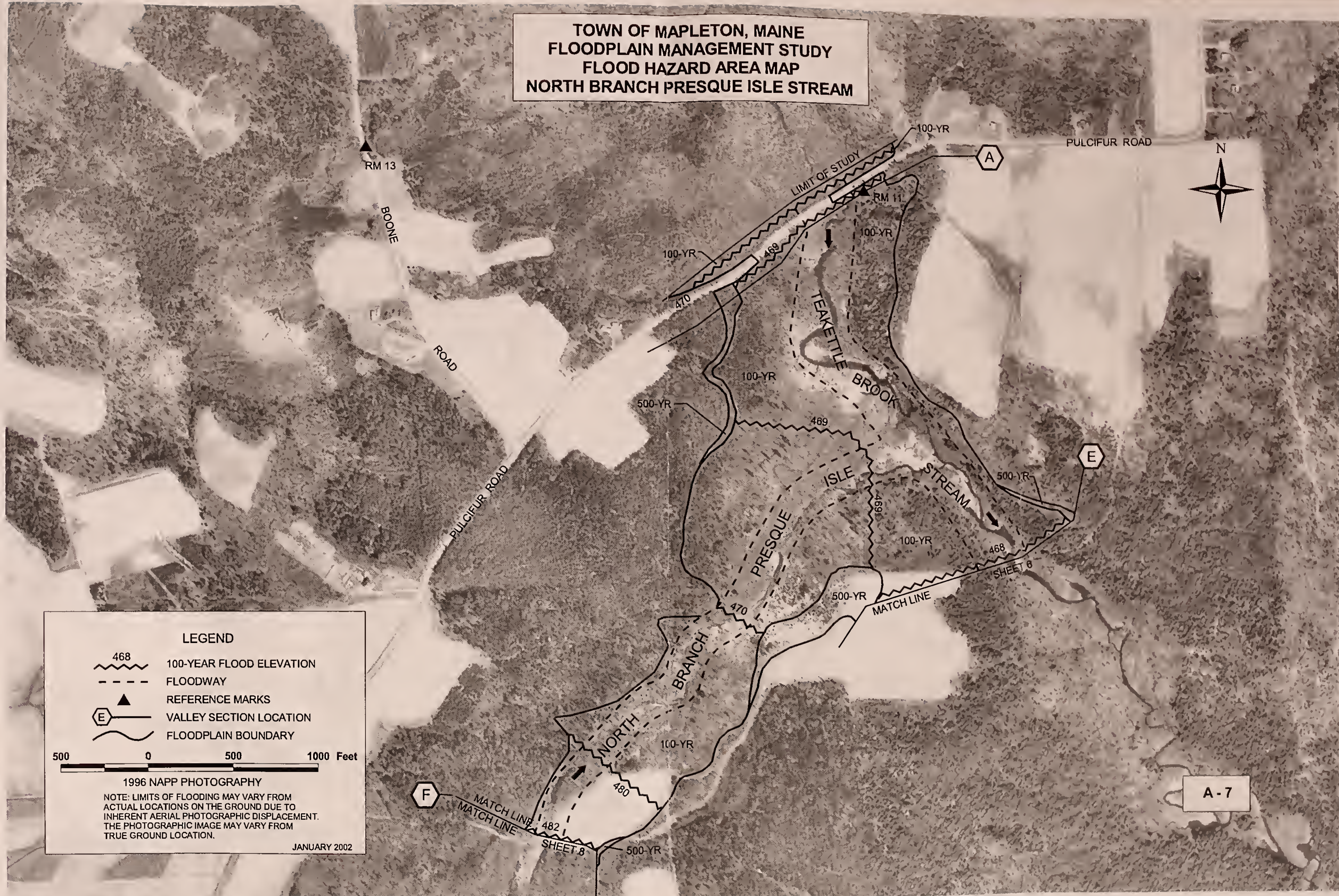
JANUARY 2002
A - 6


TOWN OF MAPLETON, MAINE
FLOODPLAIN MANAGEMENT STUDY
FLOOD HAZARD AREA MAP
NORTH BRANCH PRESQUE ISLE STREAM
PULCIFUR ROAD
BOONE ROAD
PULCIFUR ROAD
RM 13
RM 11
LIMIT OF STUDY
100-YR
500-YR
470
469
468
480
482
TEAKETTLE BROOK
NORTH BRANCH PRESQUE ISLE STREAM
MATCH LINE SHEET 8
MATCH LINE
MATCH LINE
SHEET 8
A
E
F
N
LEGEND
468
100-YEAR FLOOD ELEVATION
FLOODWAY
REFERENCE MARKS
E
VALLEY SECTION LOCATION
FLOODPLAIN BOUNDARY
500 0 500 1000 Feet
1996 NAPP PHOTOGRAPHY
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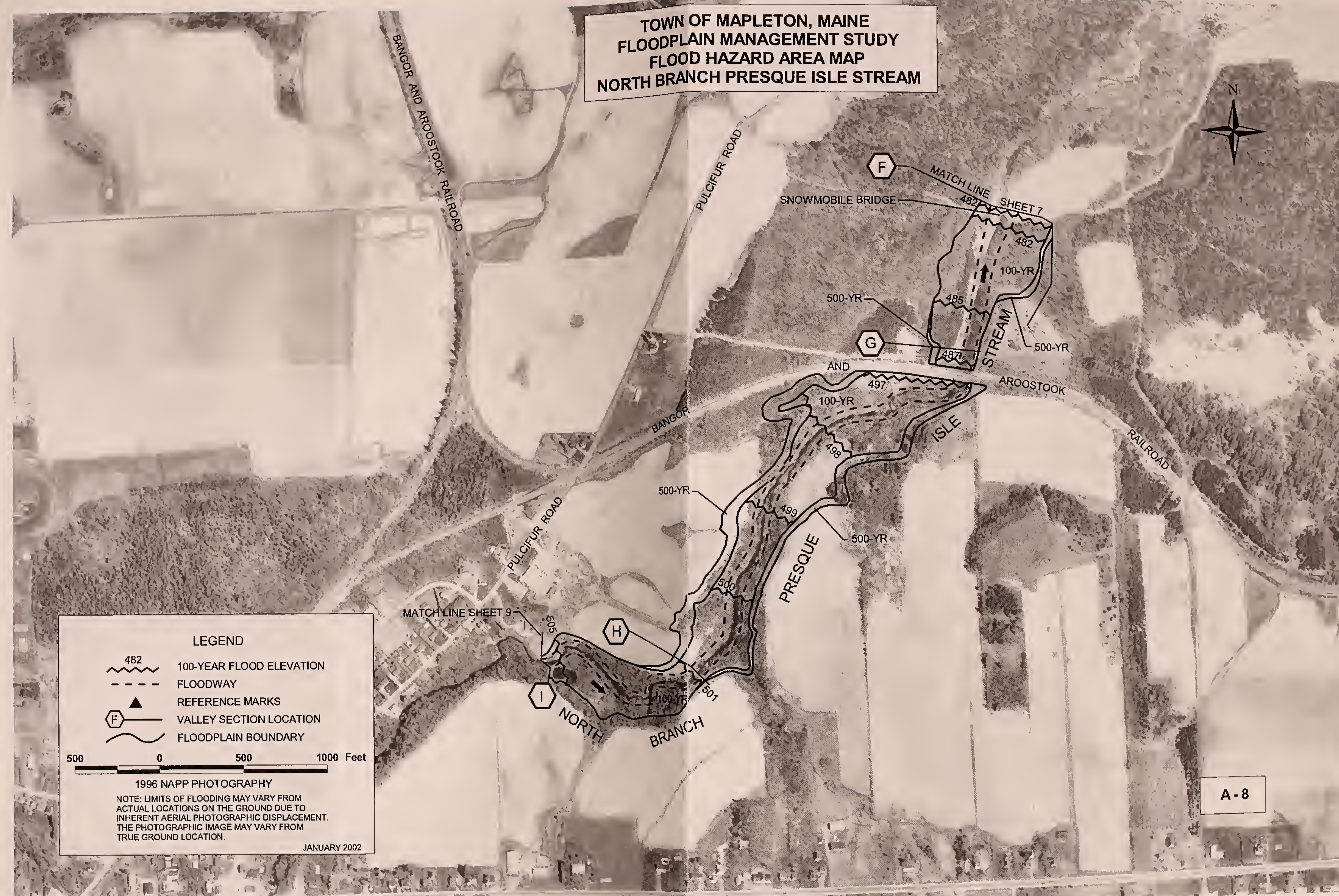
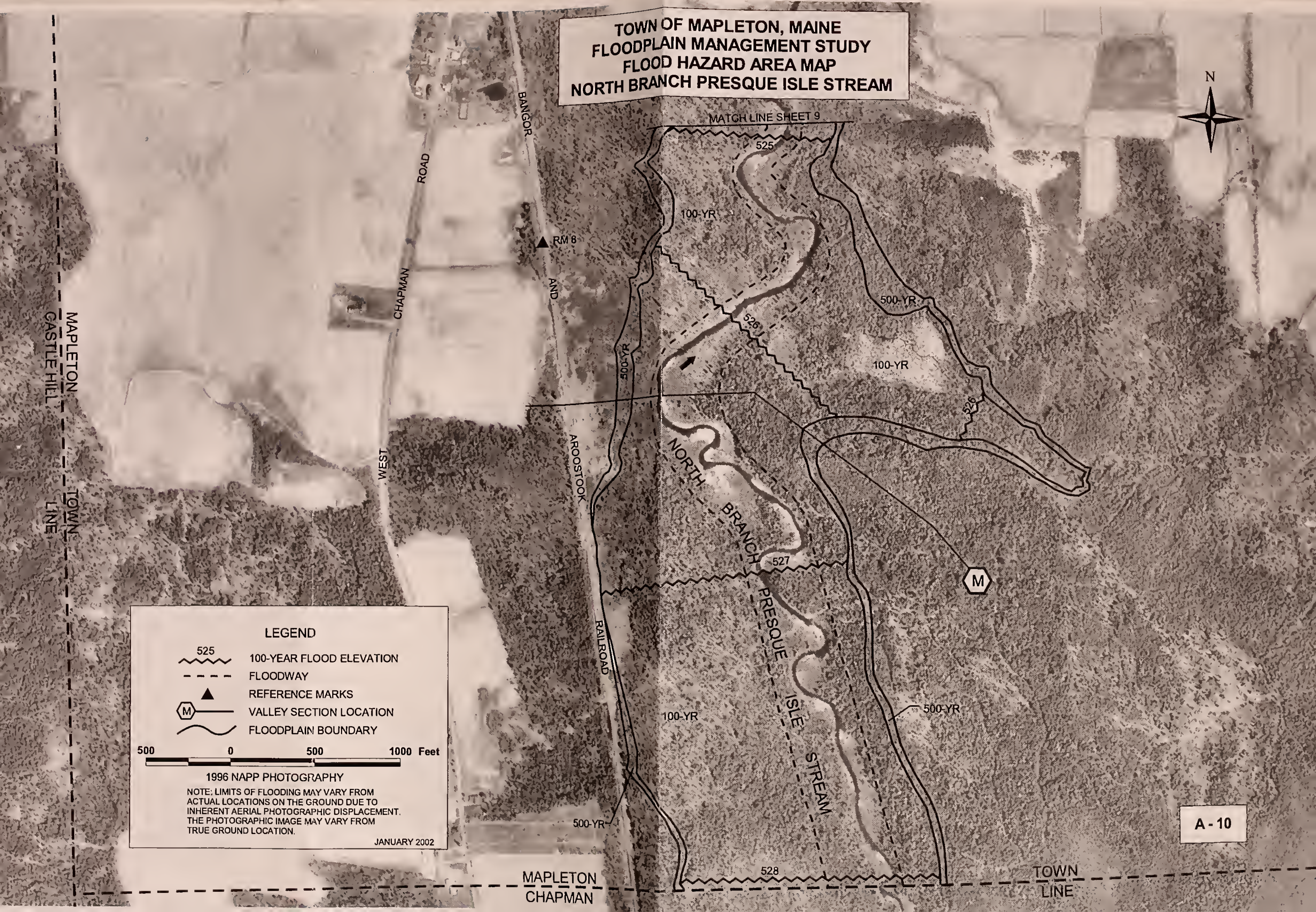
JANUARY 2002
A - 7



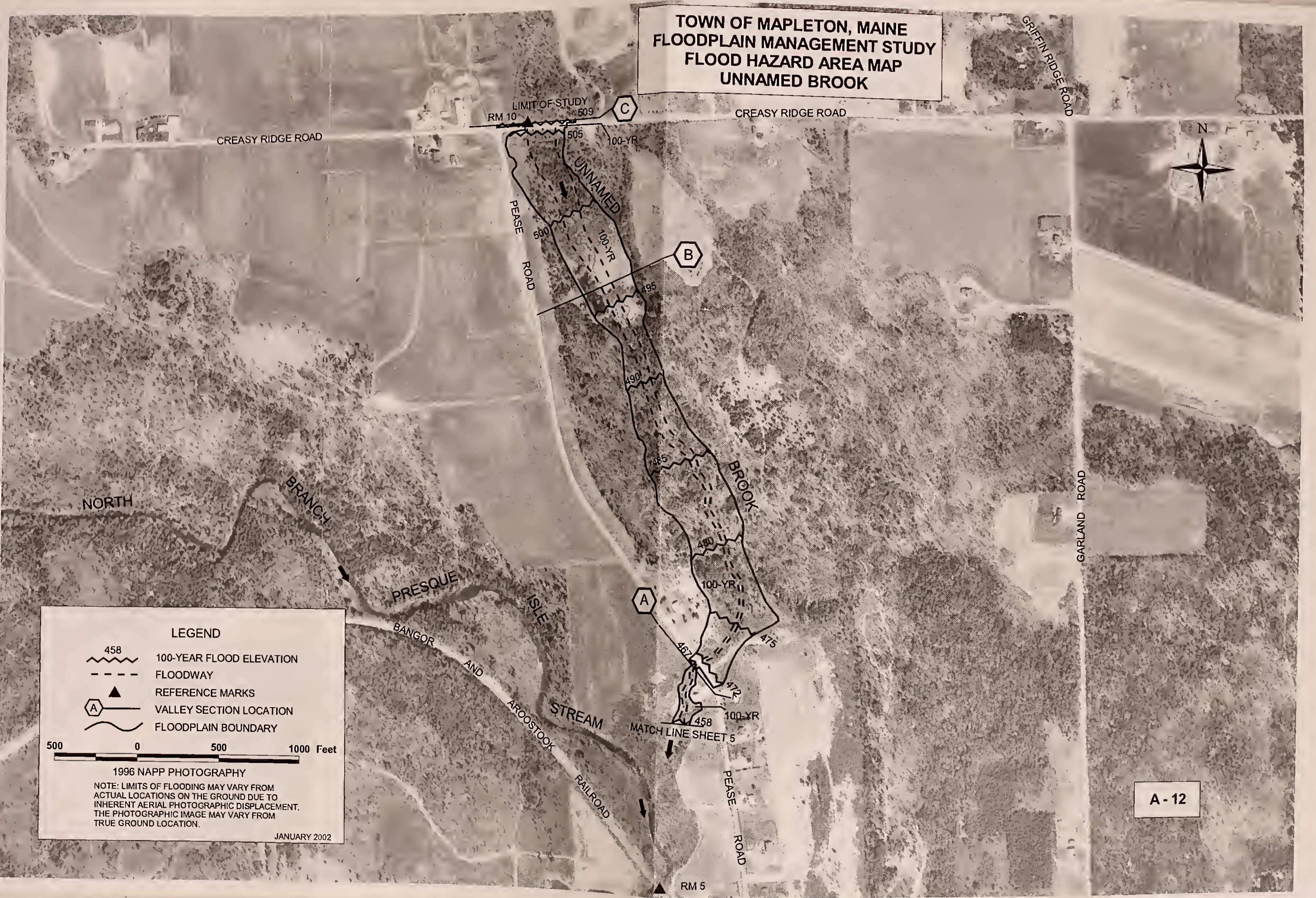
TOWN OF MAPLETON, MAINE
FLOODPLAIN MANAGEMENT STUDY
FLOOD HAZARD AREA MAP
NORTH BRANCH PRESQUE ISLE STREAM
N
BANGOR AND AROOSTOOK RAILROAD
PULCIFUR ROAD
F
MATCH LINE SHEET 7
SNOWMOBILE BRIDGE
482
482
100-YR
500-YR
485
500-YR
G
487
STREAM
AND
AROOSTOOK
RAILROAD
497
100-YR
BANGOR
ISLE
498
500-YR
499
500-YR
PRESQUE
PULCIFUR ROAD
500
MATCH LINE SHEET 9
505
H
I
100-YR
501
NORTH
BRANCH
LEGEND
482
100-YEAR FLOOD ELEVATION
FLOODWAY
REFERENCE MARKS
F
VALLEY SECTION LOCATION
FLOODPLAIN BOUNDARY
500 0 500 1000 Feet
1996 NAPP PHOTOGRAPHY
NOTE: LIMITS OF FLOODING MAY VARY FROM ACTUAL LOCATIONS ON THE GROUND DUE TO INHERENT AERIAL PHOTOGRAPHIC DISPLACEMENT. THE PHOTOGRAPHIC IMAGE MAY VARY FROM TRUE GROUND LOCATION.
JANUARY 2002
A - 8


TOWN OF MAPLETON, MAINE
FLOODPLAIN MANAGEMENT STUDY
FLOOD HAZARD AREA MAP
NORTH BRANCH PRESQUE ISLE STREAM
MAPLETON
CASTLE HILL
TOWN LINE
LIBBY BROOK
HUGHES ROAD
MORRISON STREET
STATION STREET
TURNER ST.
PULCIFUR ROAD
FORDS LANE
POOL STREET
MAPLE STREET
WEST CHAPMAN ROAD
BANGOR AND AROOSTOOK RAILROAD
DOYEN STREET
MAIN STREET
MAPLETON ROAD
163
RM 9
RM 7
RM 6
MAPLETON DAM
MATCH LINE SHEET 8
MATCH LINE SHEET 11
MATCH LINE SHEET 10
PRESQUE ISLE STREAM
NORTH BRANCH
500-YR
100-YR
505
508
510
514
523
525
526
I
J
K
L
N
LEGEND
505 100-YEAR FLOOD ELEVATION
FLOODWAY
REFERENCE MARKS
VALLEY SECTION LOCATION
FLOODPLAIN BOUNDARY
500 0 500 1000 Feet
1996 NAPP PHOTOGRAPHY
NOTE: LIMITS OF FLOODING MAY VARY FROM ACTUAL LOCATIONS ON THE GROUND DUE TO INHERENT AERIAL PHOTOGRAPHIC DISPLACEMENT. THE PHOTOGRAPHIC IMAGE MAY VARY FROM TRUE GROUND LOCATION.
JANUARY 2002
A - 9

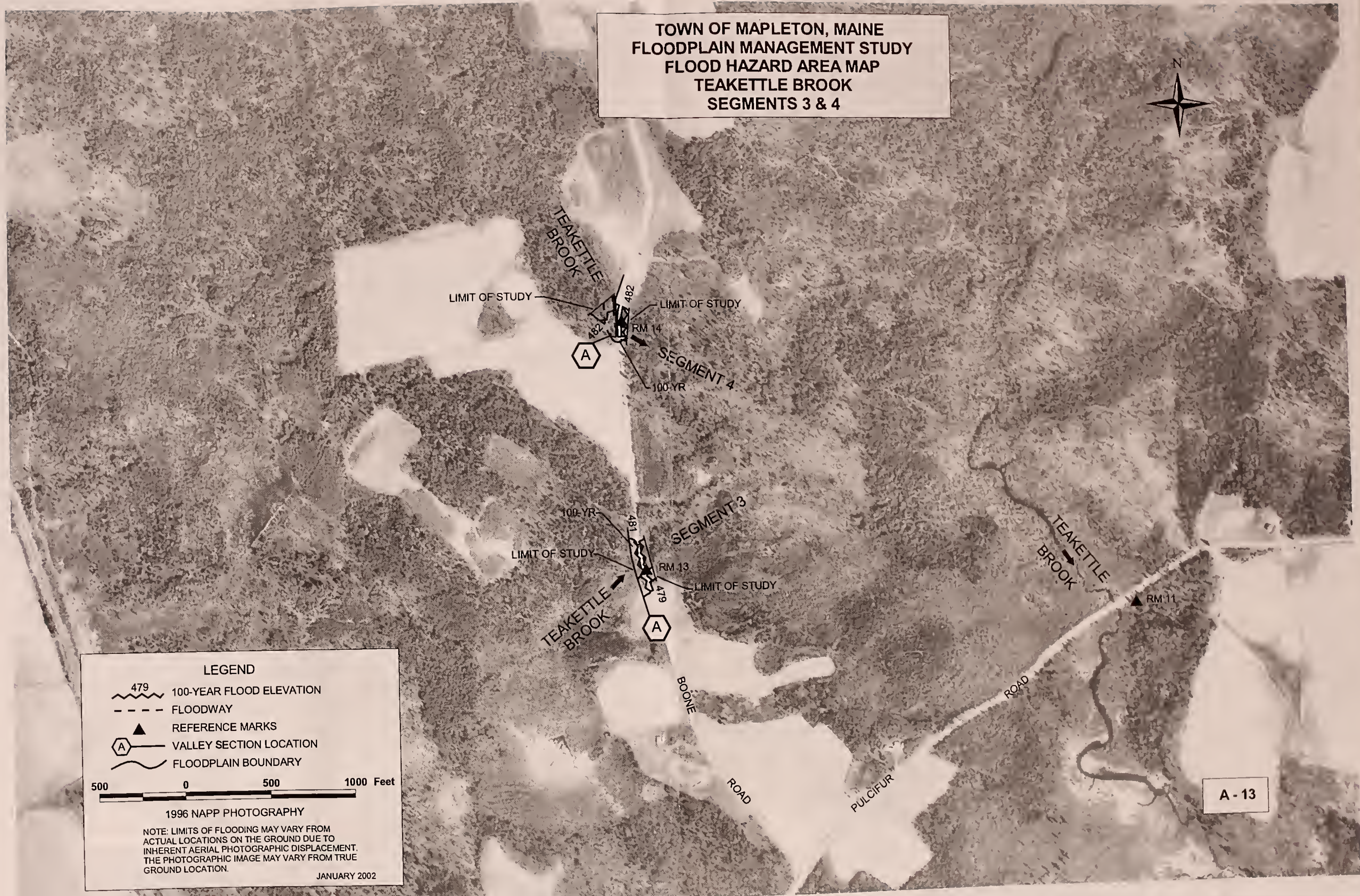


TOWN OF MAPLETON, MAINE
FLOODPLAIN MANAGEMENT STUDY
FLOOD HAZARD AREA MAP
NORTH BRANCH PRESQUE ISLE STREAM
MATCH LINE SHEET 9
N
525
526
527
528
100-YR
500-YR
RM 6
M
BANGOR AND AROOSTOOK RAILROAD
WEST CHAPMAN ROAD
MAPLETON CASTLE HILL TOWN LINE
NORTH BRANCH PRESQUE ISLE STREAM
MAPLETON
CHAPMAN
TOWN LINE
LEGEND
100-YEAR FLOOD ELEVATION
FLOODWAY
REFERENCE MARKS
VALLEY SECTION LOCATION
FLOODPLAIN BOUNDARY
500 0 500 1000 Feet
1996 NAPP PHOTOGRAPHY
NOTE: LIMITS OF FLOODING MAY VARY FROM ACTUAL LOCATIONS ON THE GROUND DUE TO INHERENT AERIAL PHOTOGRAPHIC DISPLACEMENT. THE PHOTOGRAPHIC IMAGE MAY VARY FROM TRUE GROUND LOCATION.
JANUARY 2002
A - 10

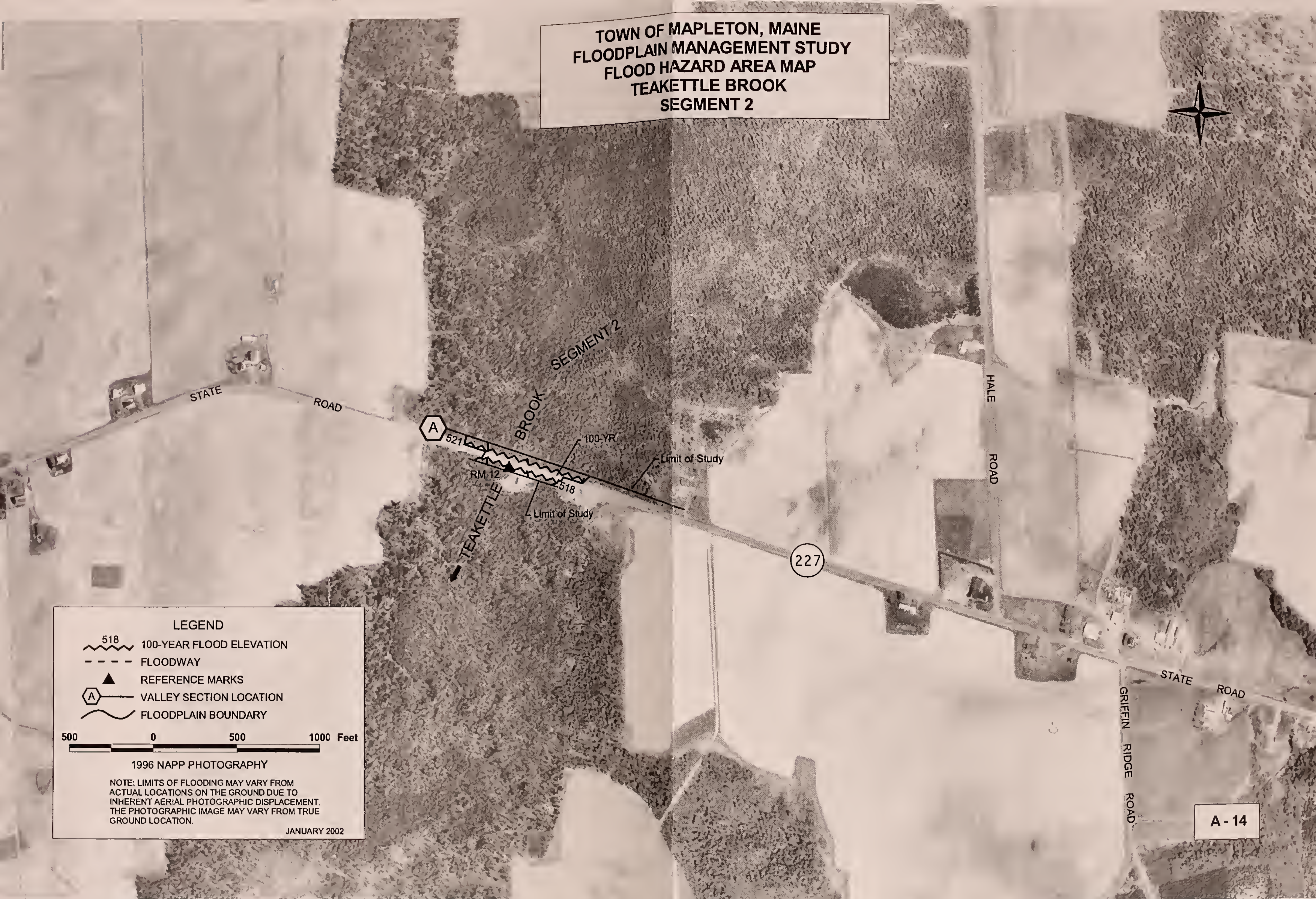

TOWN OF MAPLETON, MAINE
FLOODPLAIN MANAGEMENT STUDY
FLOOD HAZARD AREA MAP
LIBBY BROOK
N
MAPLETON
CASTLE HILL
TOWN LINE
LIBBY
BROOK
585
580
575
570
565
560
555
100-YR
500-YR
E
D
C
B
A
HUGHES ROAD
MAPLETON
MORRISON STREET
STATION STREET
AROOSTOOK
RAILROAD
FORDS LANE
ROAD
PRESQUE ISLE STREAM
549
547
545
541
537
533
529
527
525
RM 9
RM 7
RM 6
PRIVATE DRIVE
PULCIFUR
MAPLETON DAM
NORTH BRANCH
MATCH LINE SHEET 9
163
CHAPMAN ROAD
BANGOR AND DOYEN STREET
LEGEND
525
100-YEAR FLOOD ELEVATION
FLOODWAY
REFERENCE MARKS
VALLEY SECTION LOCATION
FLOODPLAIN BOUNDARY
500 0 500 1000 Feet
1996 NAPP PHOTOGRAPHY
NOTE: LIMITS OF FLOODING MAY VARY FROM ACTUAL LOCATIONS ON THE GROUND DUE TO INHERENT AERIAL PHOTOGRAPHIC DISPLACEMENT. THE PHOTOGRAPHIC IMAGE MAY VARY FROM TRUE GROUND LOCATION.
JANUARY 2002



TOWN OF MAPLETON, MAINE
FLOODPLAIN MANAGEMENT STUDY
FLOOD HAZARD AREA MAP
UNNAMED BROOK
LIMIT OF STUDY
RM 10
509
505
500
495
490
485
480
475
472
467
458
100-YR
CREASY RIDGE ROAD
GRIFFIN RIDGE ROAD
PEASE ROAD
GARLAND ROAD
UNNAMED BROOK
NORTH BRANCH PRESQUE ISLE STREAM
BANGOR AND AROOSTOOK RAILROAD
MATCH LINE SHEET 5
RM 5
N
LEGEND
458
100-YEAR FLOOD ELEVATION
FLOODWAY
REFERENCE MARKS
VALLEY SECTION LOCATION
FLOODPLAIN BOUNDARY
500 0 500 1000 Feet
1996 NAPP PHOTOGRAPHY
NOTE: LIMITS OF FLOODING MAY VARY FROM ACTUAL LOCATIONS ON THE GROUND DUE TO INHERENT AERIAL PHOTOGRAPHIC DISPLACEMENT. THE PHOTOGRAPHIC IMAGE MAY VARY FROM TRUE GROUND LOCATION.
JANUARY 2002
A - 12

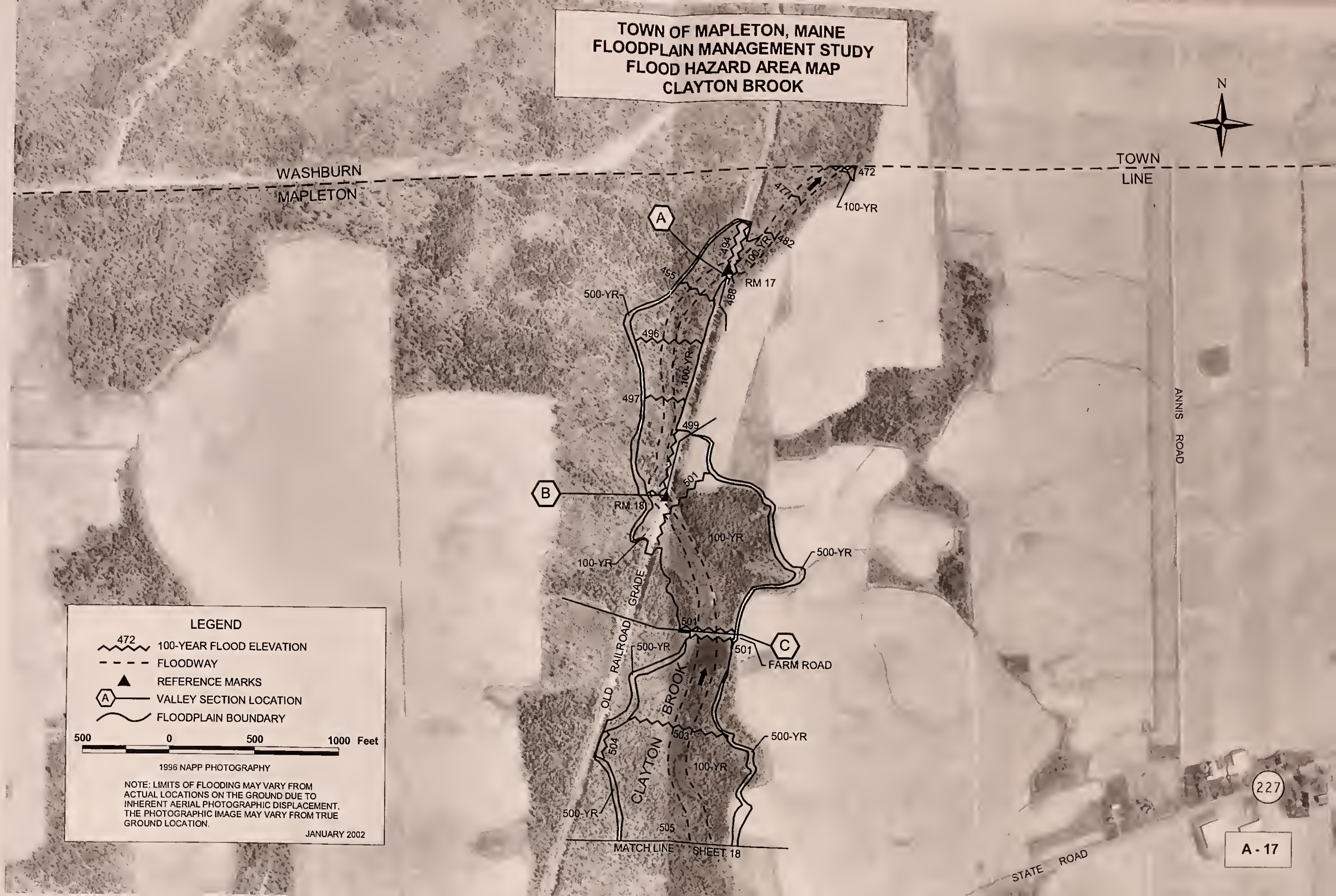


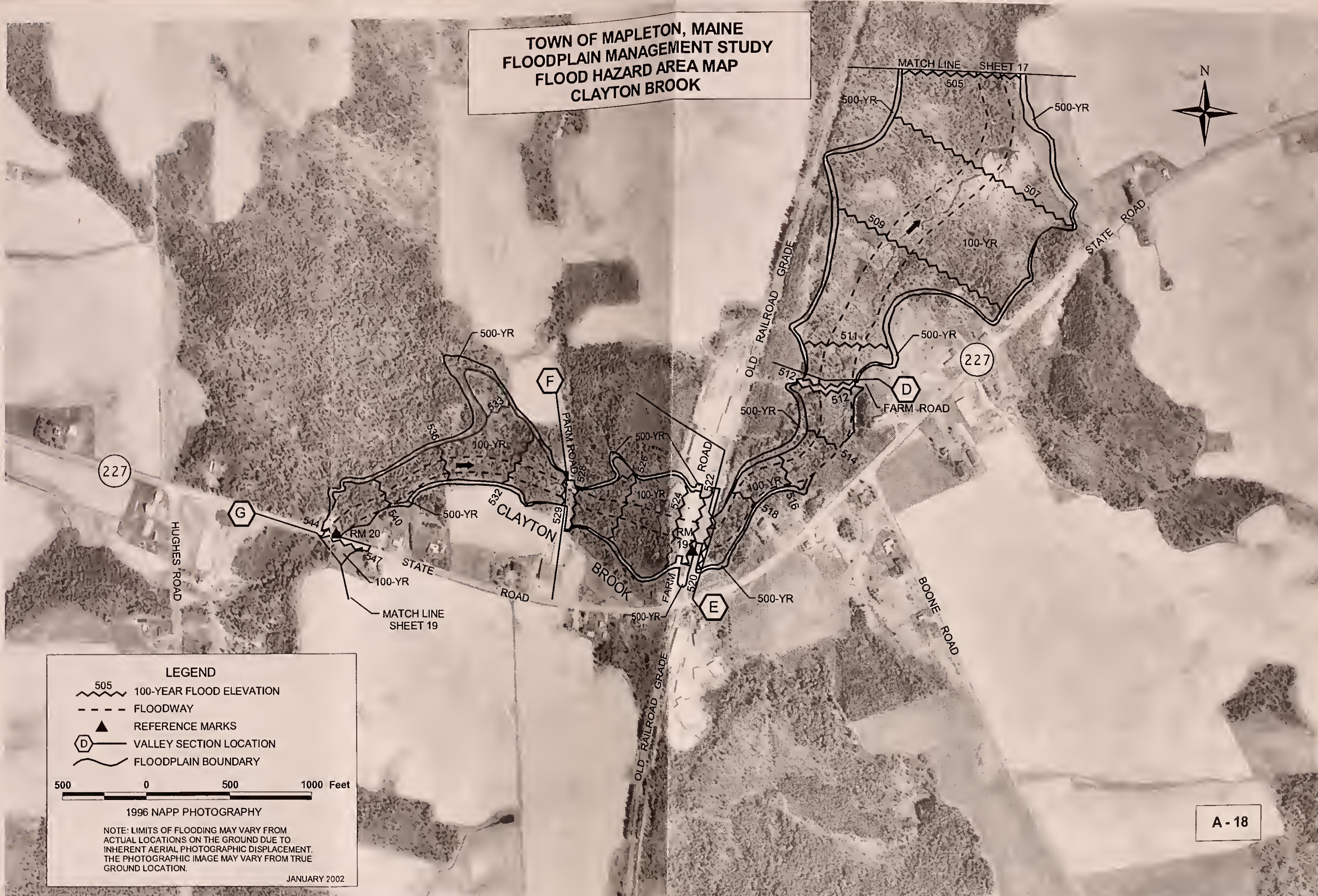
TOWN OF MAPLETON, MAINE
FLOODPLAIN MANAGEMENT STUDY
FLOOD HAZARD AREA MAP
TEAKETTLE BROOK
SEGMENTS 3 & 4
N
TEAKETTLE BROOK
LIMIT OF STUDY
482
LIMIT OF STUDY
482
RM 14
A
SEGMENT 4
100-YR
100-YR
481
SEGMENT 3
LIMIT OF STUDY
RM 13
LIMIT OF STUDY
479
TEAKETTLE BROOK
A
TEAKETTLE BROOK
RM 11
BOONE
ROAD
ROAD
PULCIFUR
LEGEND
479
100-YEAR FLOOD ELEVATION
FLOODWAY
REFERENCE MARKS
A
VALLEY SECTION LOCATION
FLOODPLAIN BOUNDARY
500
0
500
1000 Feet
1996 NAPP PHOTOGRAPHY
NOTE: LIMITS OF FLOODING MAY VARY FROM ACTUAL LOCATIONS ON THE GROUND DUE TO INHERENT AERIAL PHOTOGRAPHIC DISPLACEMENT. THE PHOTOGRAPHIC IMAGE MAY VARY FROM TRUE GROUND LOCATION.
JANUARY 2002
A - 13

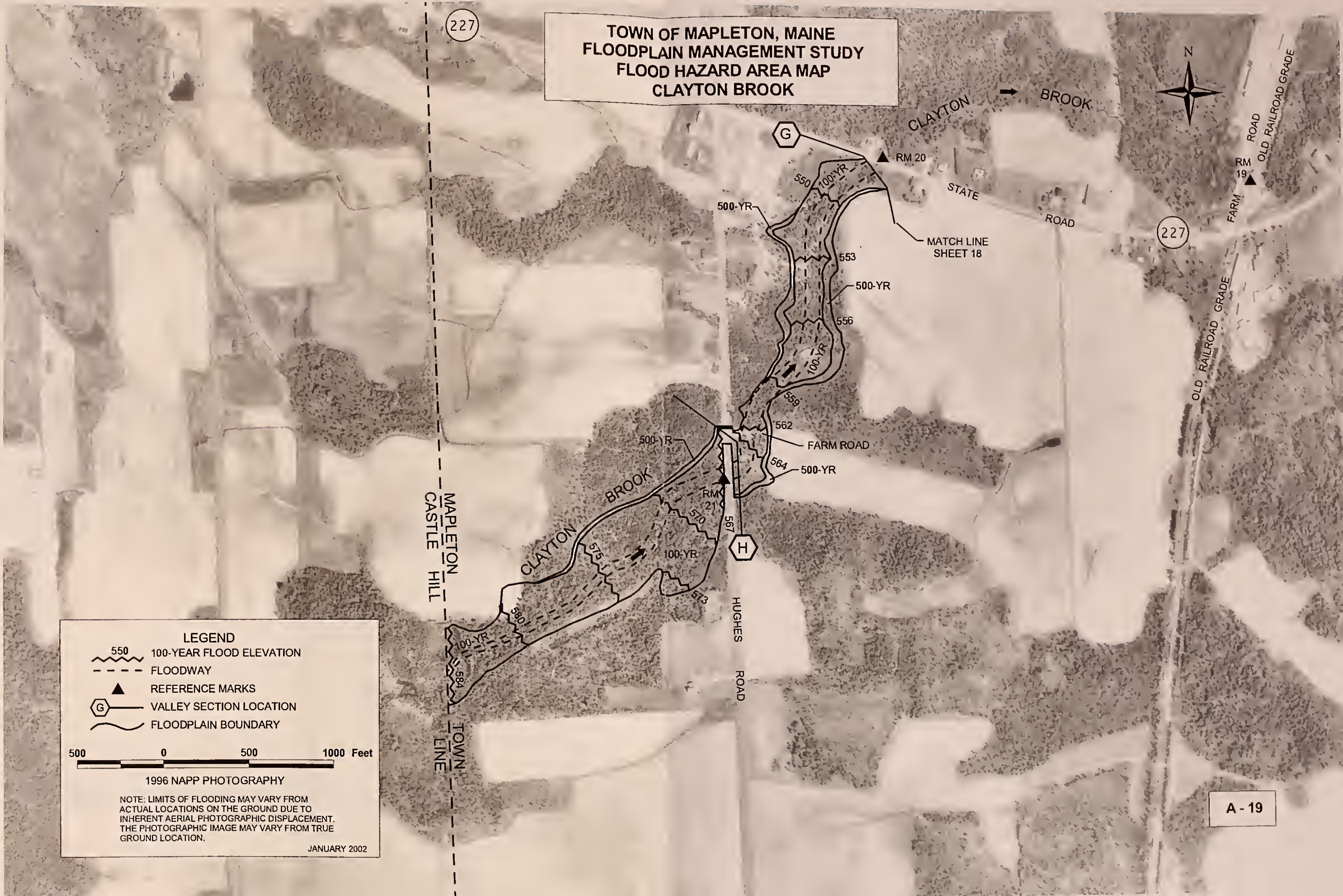

TOWN OF MAPLETON, MAINE
FLOODPLAIN MANAGEMENT STUDY
FLOOD HAZARD AREA MAP
TEAKETTLE BROOK
SEGMENT 2
N
SEGMENT 2
BROOK
TEAKETTLE
STATE
ROAD
A
521
100-YR
Limit of Study
RM 12
518
Limit of Study
HALE
ROAD
227
STATE
ROAD
GRIFFIN
RIDGE
ROAD
LEGEND
518
100-YEAR FLOOD ELEVATION
FLOODWAY
REFERENCE MARKS
A
VALLEY SECTION LOCATION
FLOODPLAIN BOUNDARY
500 0 500 1000 Feet
1996 NAPP PHOTOGRAPHY
NOTE: LIMITS OF FLOODING MAY VARY FROM ACTUAL LOCATIONS ON THE GROUND DUE TO INHERENT AERIAL PHOTOGRAPHIC DISPLACEMENT. THE PHOTOGRAPHIC IMAGE MAY VARY FROM TRUE GROUND LOCATION.
JANUARY 2002

TOWN OF MAPLETON, MAINE
FLOODPLAIN MANAGEMENT STUDY
FLOOD HAZARD AREA MAP
HANSON BROOK
HANSON LAKE
N
STATE ROAD
OLD ROUTE 27
227
500-YR
BAGLEY ROAD
LIMIT OF FLOODWAY
LIMIT OF STUDY
516
RM 15
HANSON BROOK
100-YR
A
508
HANSON LAKE
100-YEAR ELEV. 504
BAGLEY ROAD
HANSON LAKE ROAD
MAPLETON
PRESQUE ISLE
DENNETT HILL ROAD
TOWN LINE
MATCH LINE SHEET 16
LEGEND
504
100-YEAR FLOOD ELEVATION
FLOODWAY
REFERENCE MARKS
A
VALLEY SECTION LOCATION
FLOODPLAIN BOUNDARY
500
0
500
1000 Feet
1996 NAPP PHOTOGRAPHY
NOTE: LIMITS OF FLOODING MAY VARY FROM ACTUAL LOCATIONS ON THE GROUND DUE TO INHERENT AERIAL PHOTOGRAPHIC DISPLACEMENT. THE PHOTOGRAPHIC IMAGE MAY VARY FROM TRUE GROUND LOCATION.
JANUARY 2002
A - 15


TOWN OF MAPLETON, MAINE
FLOODPLAIN MANAGEMENT STUDY
FLOOD HAZARD AREA MAP
HANSON LAKE
N
BAGLEY ROAD
MACTH LINE SHEET 16
HANSON LAKE
100-YEAR ELEV. 504
PRESQUE ISLE — MAPLETON
TOWN LINE
500-YR
500-YR
RM 16
HANSON LAKE DAM
HANSON BROOK
LEGEND
504 100-YEAR FLOOD ELEVATION
FLOODWAY
REFERENCE MARKS
A VALLEY SECTION LOCATION
FLOODPLAIN BOUNDARY
500 0 500 1000 Feet
1996 NAPP PHOTOGRAPHY
NOTE: LIMITS OF FLOODING MAY VARY FROM ACTUAL LOCATIONS ON THE GROUND DUE TO INHERENT AERIAL PHOTOGRAPHIC DISPLACEMENT. THE PHOTOGRAPHIC IMAGE MAY VARY FROM TRUE GROUND LOCATION.
JANUARY 2002
A - 16

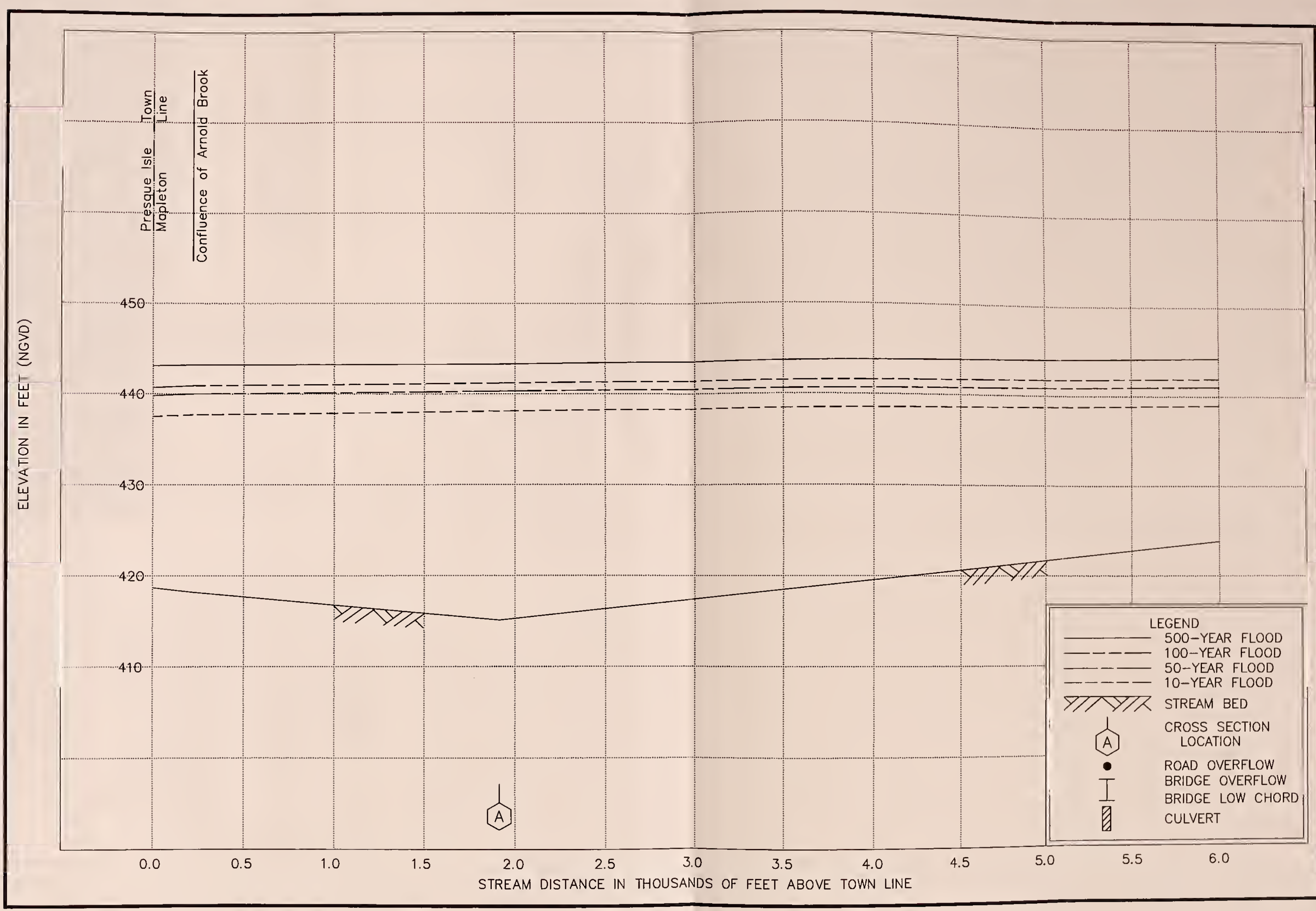

TOWN OF MAPLETON, MAINE
FLOODPLAIN MANAGEMENT STUDY
FLOOD HAZARD AREA MAP
CLAYTON BROOK
N
WASHBURN
MAPLETON
TOWN LINE
472
477
100-YR
A
494
482
RM 17
455
488
500-YR
496
100-YR
497
499
ANNIS ROAD
B
RM 18
501
100-YR
500-YR
100-YR
OLD RAILROAD GRADE
501
501
C
FARM ROAD
500-YR
CLAYTON BROOK
503
500-YR
504
100-YR
500-YR
505
MATCH LINE SHEET 18
227
STATE ROAD
A - 17
LEGEND
472
100-YEAR FLOOD ELEVATION
FLOODWAY
REFERENCE MARKS
A
VALLEY SECTION LOCATION
FLOODPLAIN BOUNDARY
500 0 500 1000 Feet
1996 NAPP PHOTOGRAPHY
NOTE: LIMITS OF FLOODING MAY VARY FROM ACTUAL LOCATIONS ON THE GROUND DUE TO INHERENT AERIAL PHOTOGRAPHIC DISPLACEMENT. THE PHOTOGRAPHIC IMAGE MAY VARY FROM TRUE GROUND LOCATION.
JANUARY 2002


TOWN OF MAPLETON, MAINE
FLOODPLAIN MANAGEMENT STUDY
FLOOD HAZARD AREA MAP
CLAYTON BROOK
MATCH LINE SHEET 17
N
505
507
509
511
512
514
516
518
520
522
524
526
528
529
532
533
536
540
544
547
500-YR
100-YR
RM 20
RM 19
STATE ROAD
227
FARM ROAD
OLD RAILROAD GRADE
ROAD
CLAYTON BROOK
HUGHES ROAD
BOONE ROAD
MATCH LINE SHEET 19
D
E
F
G
LEGEND
505 100-YEAR FLOOD ELEVATION
FLOODWAY
REFERENCE MARKS
D VALLEY SECTION LOCATION
FLOODPLAIN BOUNDARY
500 0 500 1000 Feet
1996 NAPP PHOTOGRAPHY
NOTE: LIMITS OF FLOODING MAY VARY FROM ACTUAL LOCATIONS ON THE GROUND DUE TO INHERENT AERIAL PHOTOGRAPHIC DISPLACEMENT. THE PHOTOGRAPHIC IMAGE MAY VARY FROM TRUE GROUND LOCATION.
JANUARY 2002
A - 18

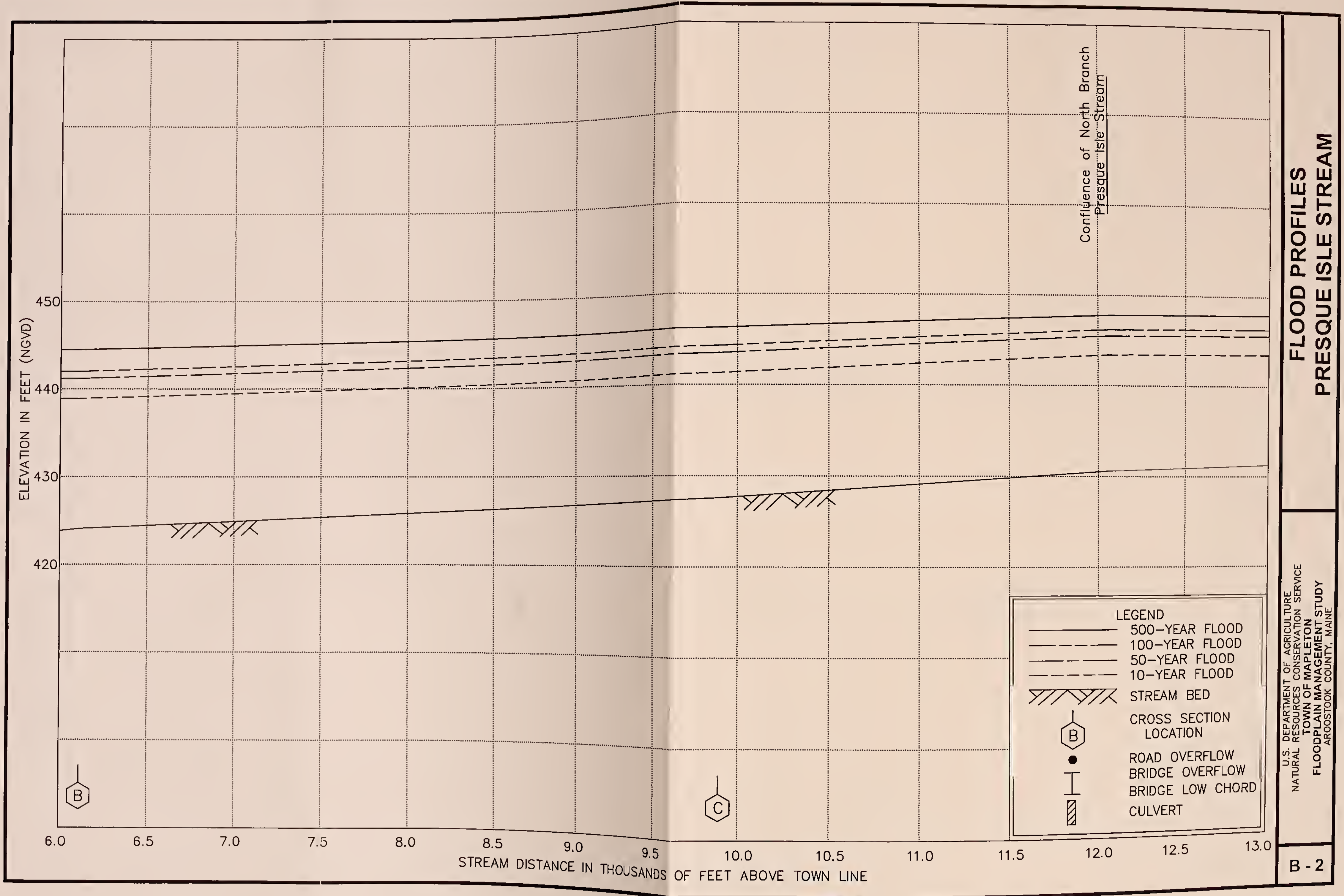

TOWN OF MAPLETON, MAINE
FLOODPLAIN MANAGEMENT STUDY
FLOOD HAZARD AREA MAP
CLAYTON BROOK
227
CLAYTON BROOK
G
RM 20
STATE ROAD
227
MATCH LINE SHEET 18
RM 19
FARM ROAD
OLD RAILROAD GRADE
OLD RAILROAD GRADE
550
100-YR
500-YR
553
500-YR
556
100-YR
559
562
FARM ROAD
564
500-YR
500-YR
CLAYTON BROOK
RM 21
570
567
H
575
100-YR
573
580
100-YR
584
MAPLETON
CASTLE HILL
TOWN LINE
HUGHES ROAD
LEGEND
550 100-YEAR FLOOD ELEVATION
FLOODWAY
REFERENCE MARKS
G VALLEY SECTION LOCATION
FLOODPLAIN BOUNDARY
500 0 500 1000 Feet
1996 NAPP PHOTOGRAPHY
NOTE: LIMITS OF FLOODING MAY VARY FROM ACTUAL LOCATIONS ON THE GROUND DUE TO INHERENT AERIAL PHOTOGRAPHIC DISPLACEMENT. THE PHOTOGRAPHIC IMAGE MAY VARY FROM TRUE GROUND LOCATION.
JANUARY 2002
N

APPENDIX B
FLOOD PROFILES

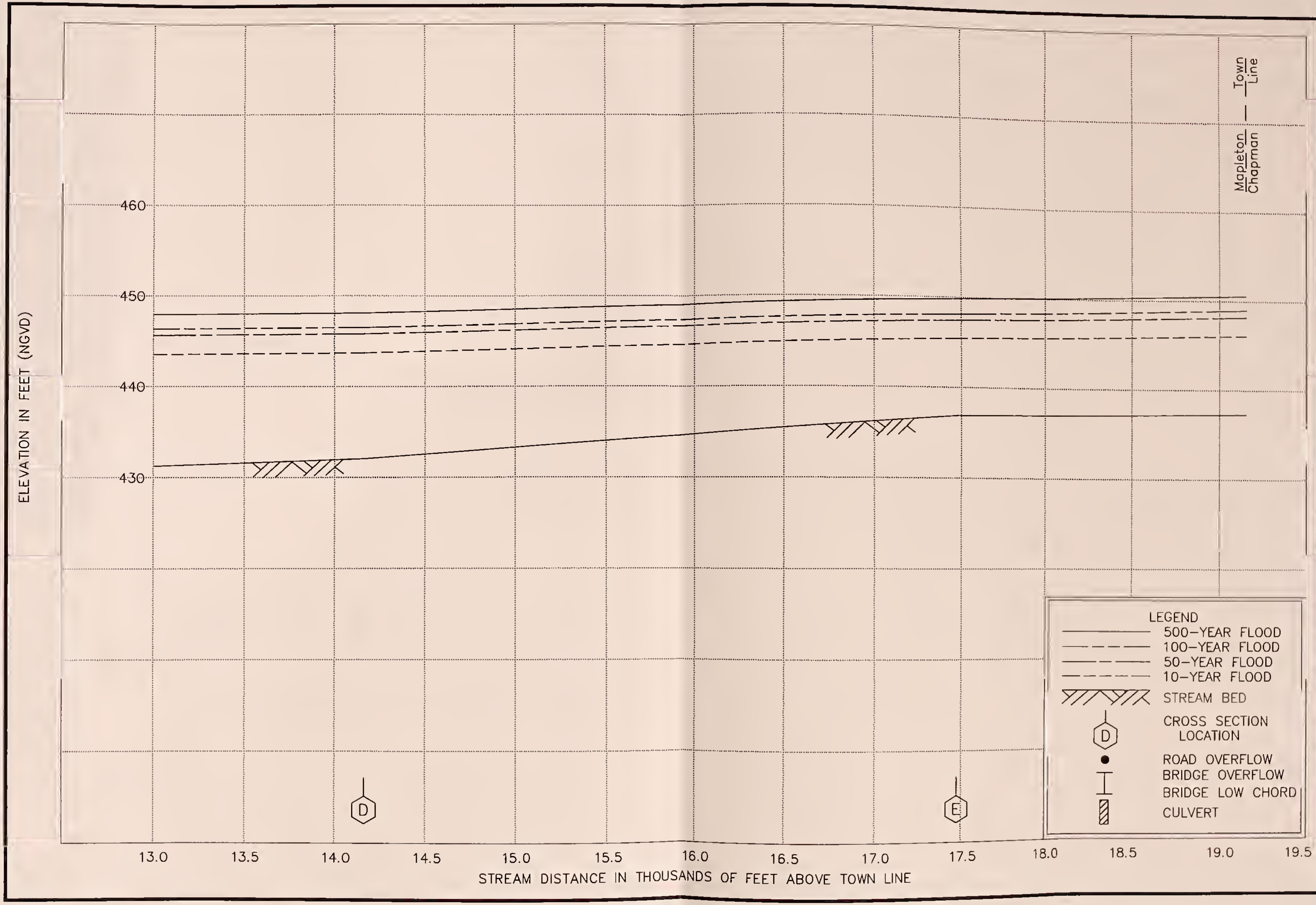
FLOOD PROFILES
PRESQUE ISLE STREAM



U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
TOWN OF MAPLETON
FLOODPLAIN MANAGEMENT STUDY
AROOSTOOK COUNTY, MAINE

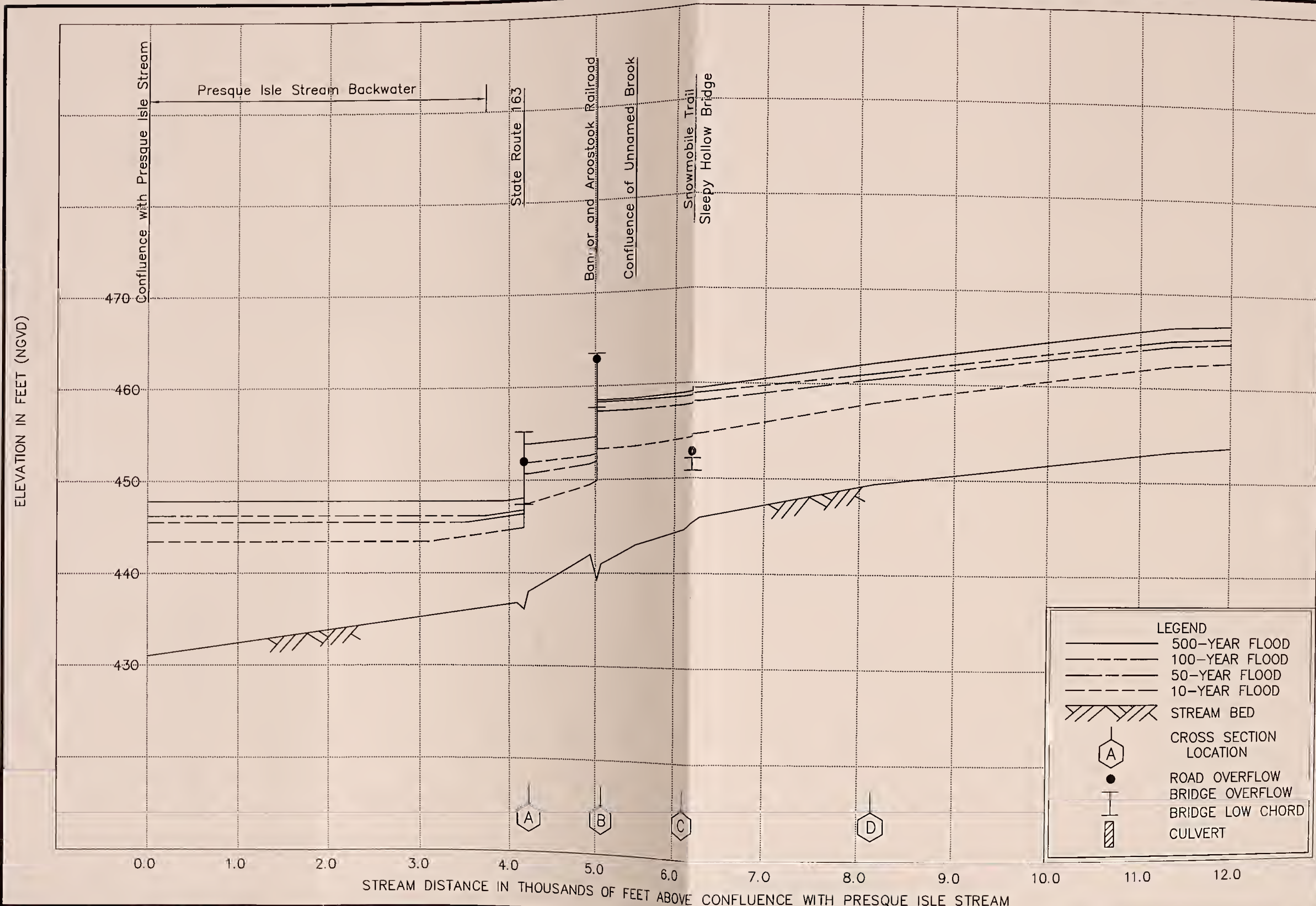


FLOOD PROFILES
PRESQUE ISLE STREAM
U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
TOWN OF MAPLETON
FLOODPLAIN MANAGEMENT STUDY
AROOSTOOK COUNTY, MAINE
B - 2
Confluence of North Branch
Presque Isle Stream
ELEVATION IN FEET (NGVD)
450
440
430
420
6.0
6.5
7.0
7.5
8.0
8.5
9.0
9.5
10.0
10.5
11.0
11.5
12.0
12.5
13.0
STREAM DISTANCE IN THOUSANDS OF FEET ABOVE TOWN LINE
B
C
LEGEND
500–YEAR FLOOD
100–YEAR FLOOD
50–YEAR FLOOD
10–YEAR FLOOD
STREAM BED
CROSS SECTION LOCATION
ROAD OVERFLOW
BRIDGE OVERFLOW
BRIDGE LOW CHORD
CULVERT



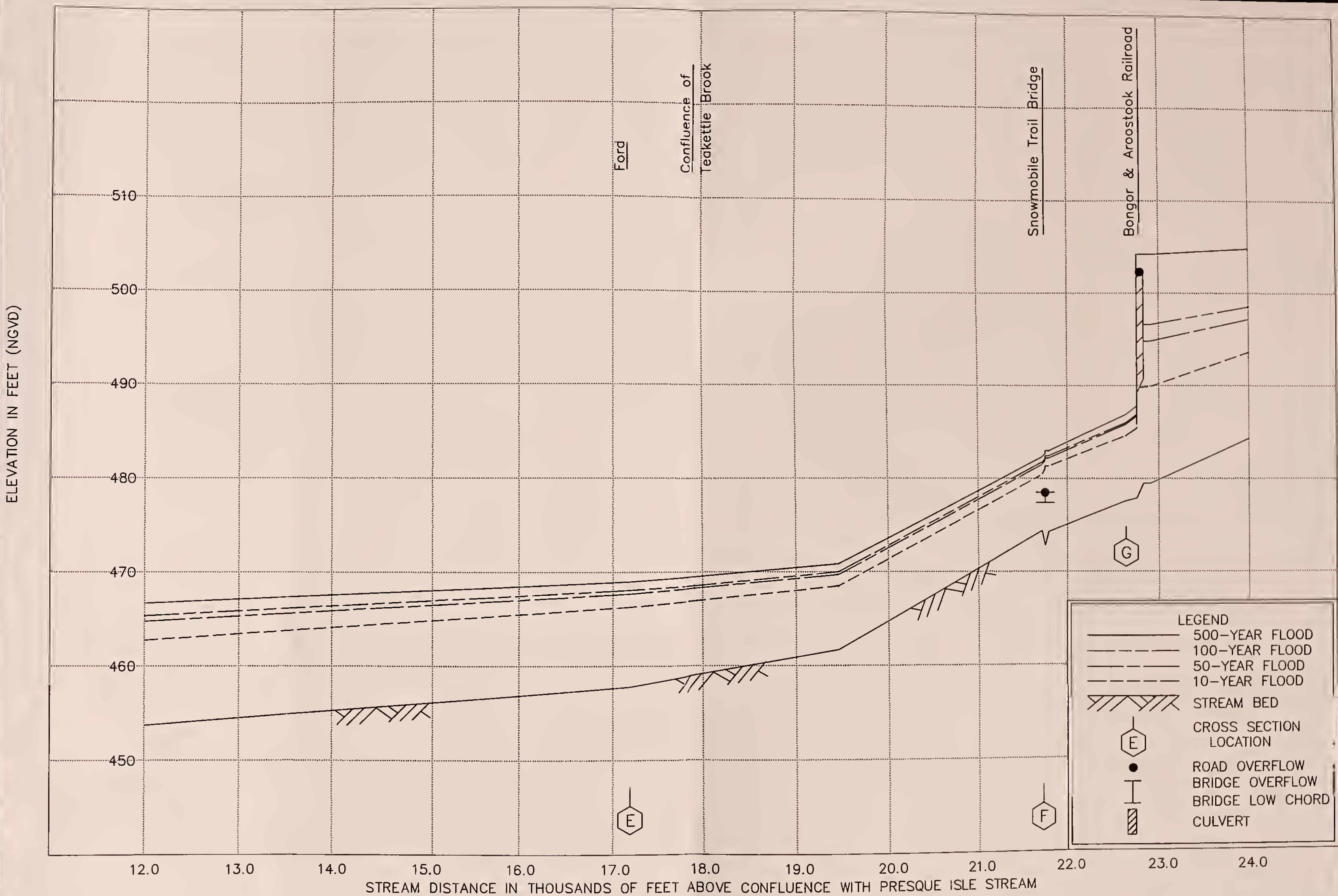
FLOOD PROFILES
PRESQUE ISLE STREAM

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
TOWN OF MAPLETON
FLOODPLAIN MANAGEMENT STUDY
AROOSTOOK COUNTY, MAINE



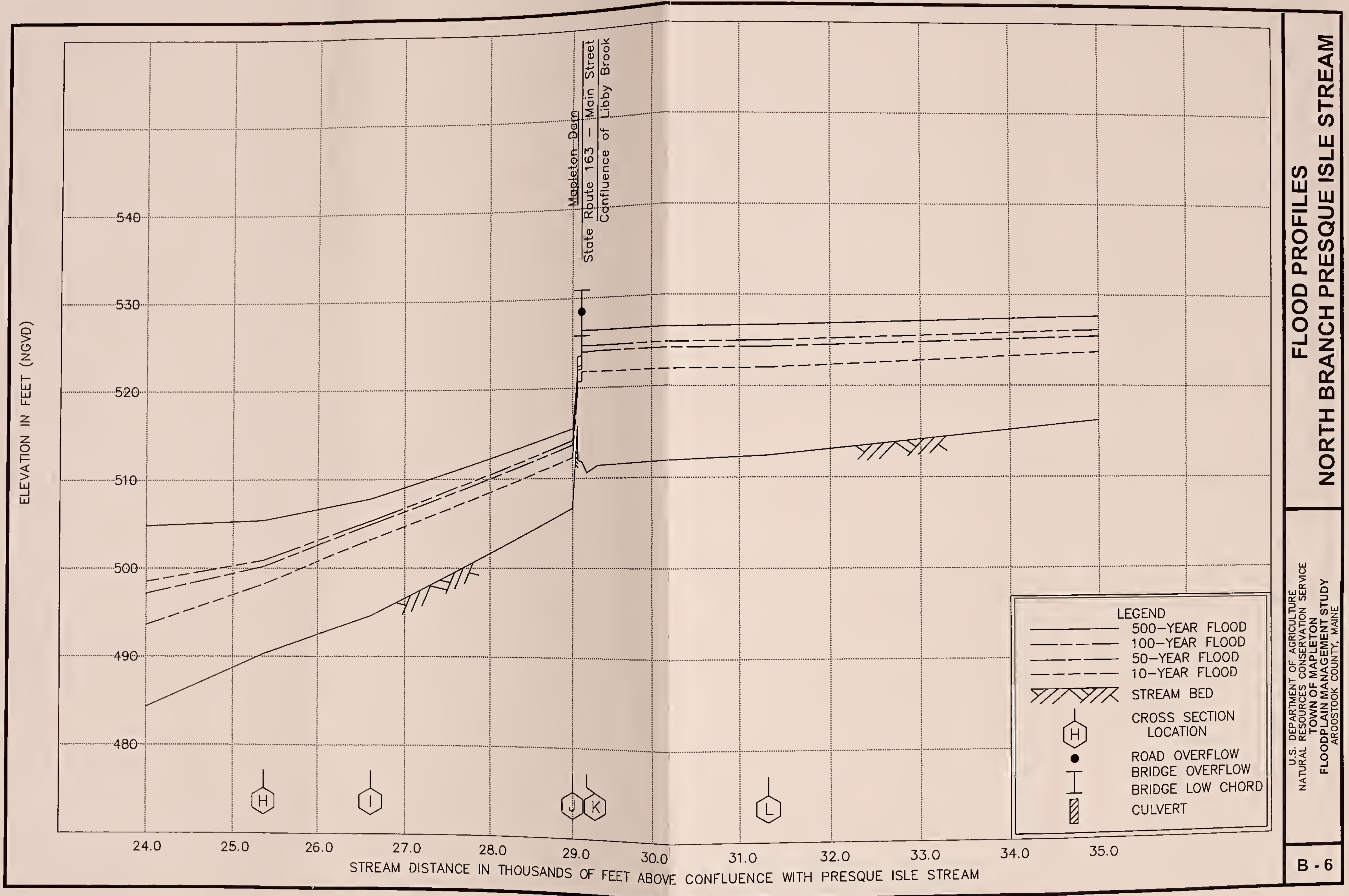
FLOOD PROFILES
NORTH BRANCH PRESQUE ISLE STREAM

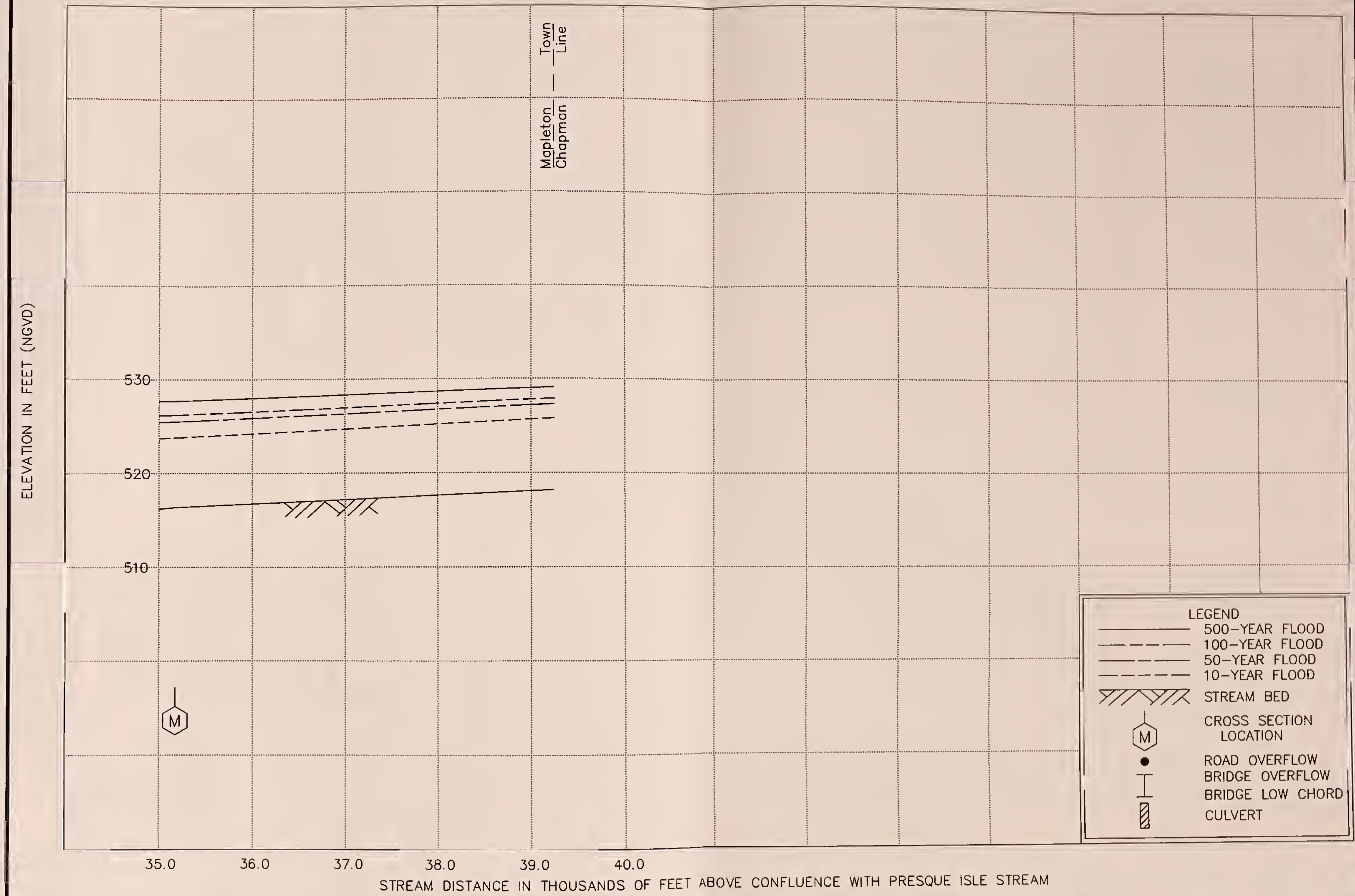
U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
TOWN OF MAPLETON
FLOODPLAIN MANAGEMENT STUDY
AROOSTOOK COUNTY, MAINE



FLOOD PROFILES
NORTH BRANCH PRESQUE ISLE STREAM

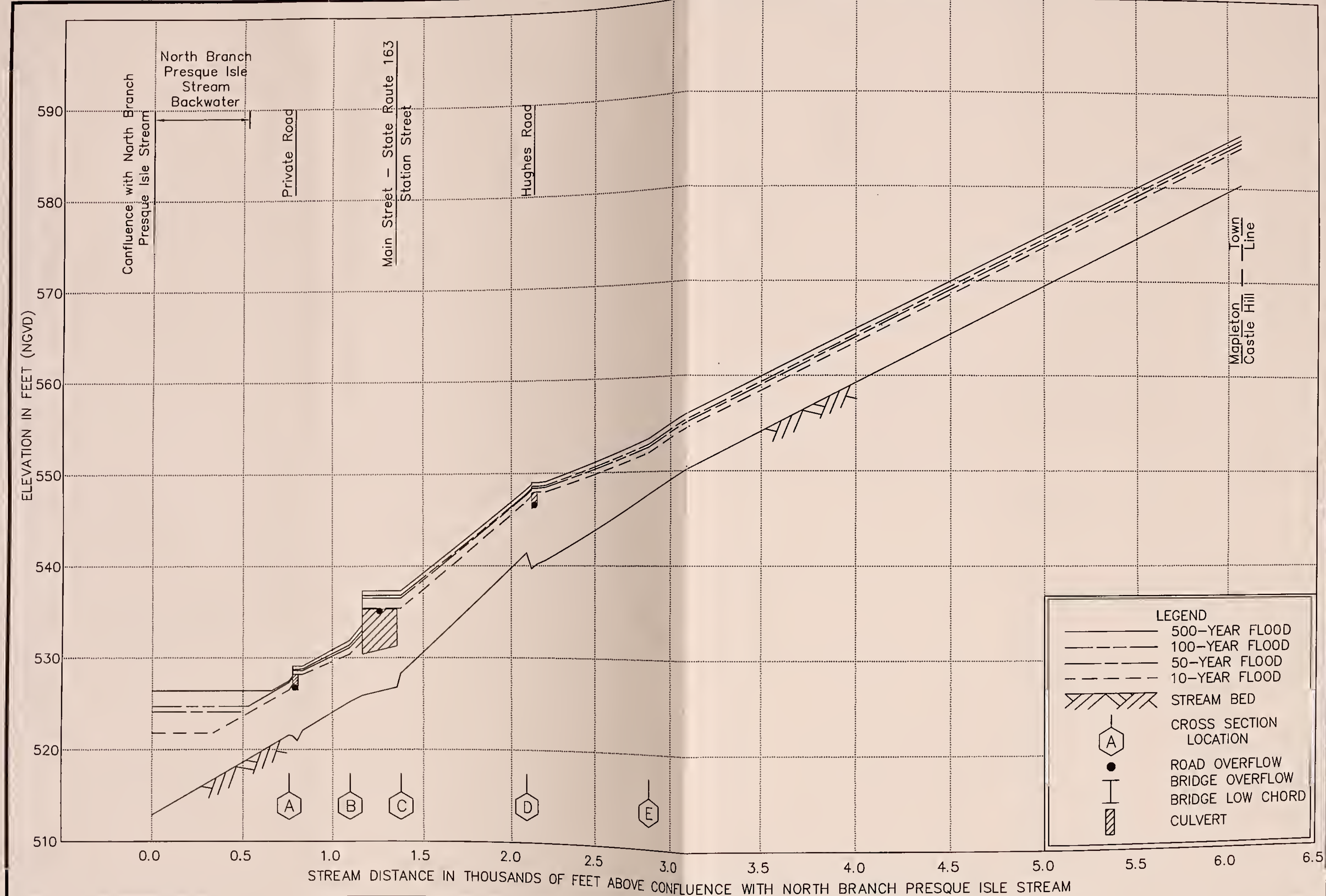
U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
TOWN OF MAPLETON
FLOODPLAIN MANAGEMENT STUDY
AROOSTOOK COUNTY, MAINE


Mapleton Dam
State Route 163 – Main Street
Confluence of Libby Brook
ELEVATION IN FEET (NGVD)
540
530
520
510
500
490
480
H
I
J
K
L
24.0
25.0
26.0
27.0
28.0
29.0
30.0
31.0
32.0
33.0
34.0
35.0
STREAM DISTANCE IN THOUSANDS OF FEET ABOVE CONFLUENCE WITH PRESQUE ISLE STREAM
LEGEND
500–YEAR FLOOD
100–YEAR FLOOD
50–YEAR FLOOD
10–YEAR FLOOD
STREAM BED
CROSS SECTION LOCATION
ROAD OVERFLOW
BRIDGE OVERFLOW
BRIDGE LOW CHORD
CULVERT
FLOOD PROFILES
NORTH BRANCH PRESQUE ISLE STREAM
U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
TOWN OF MAPLETON
FLOODPLAIN MANAGEMENT STUDY
AROOSTOOK COUNTY, MAINE
B - 6



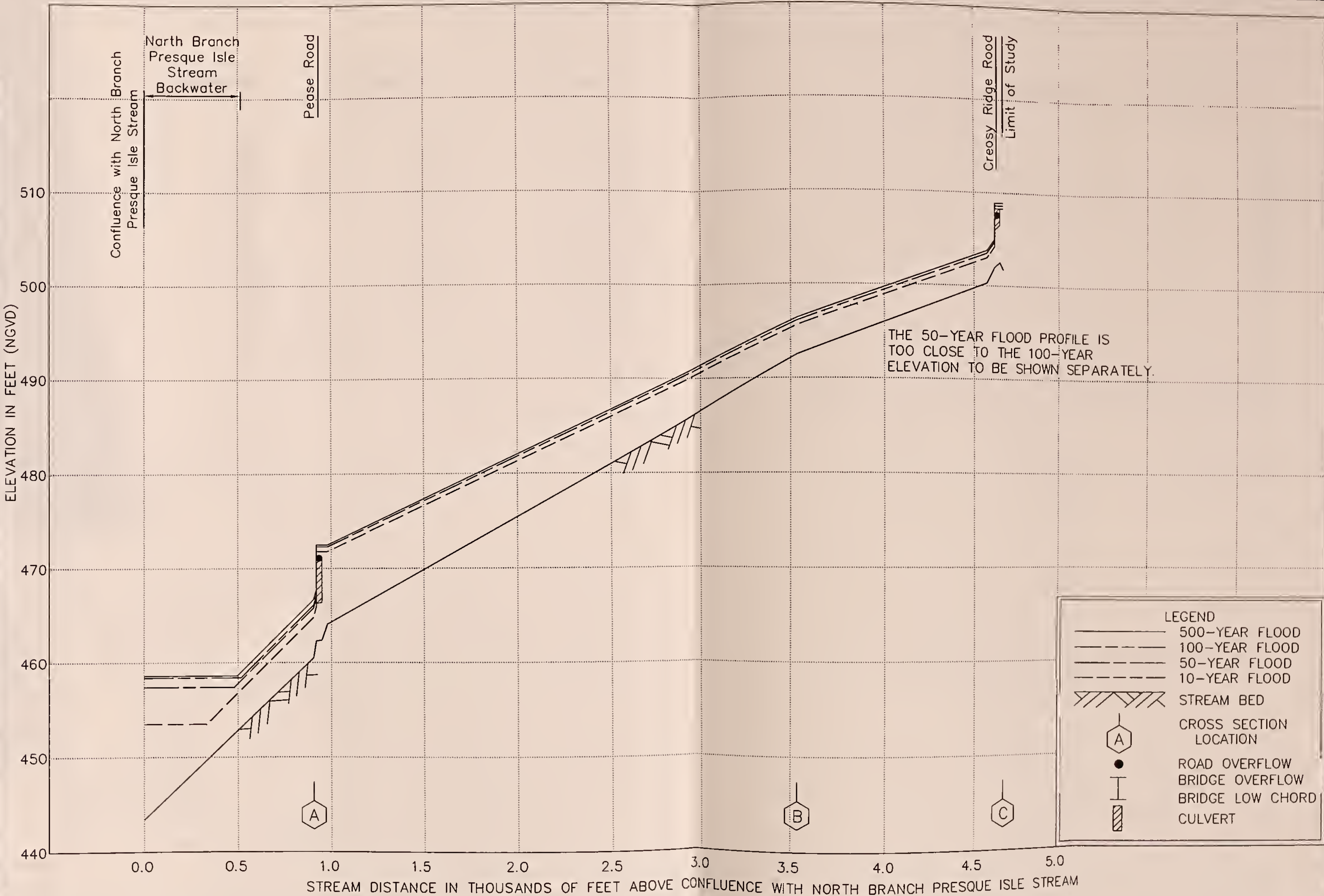
FLOOD PROFILES
NORTH BRANCH PRESQUE ISLE STREAM

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
TOWN OF MAPLETON
FLOODPLAIN MANAGEMENT STUDY
AROOSTOOK COUNTY, MAINE



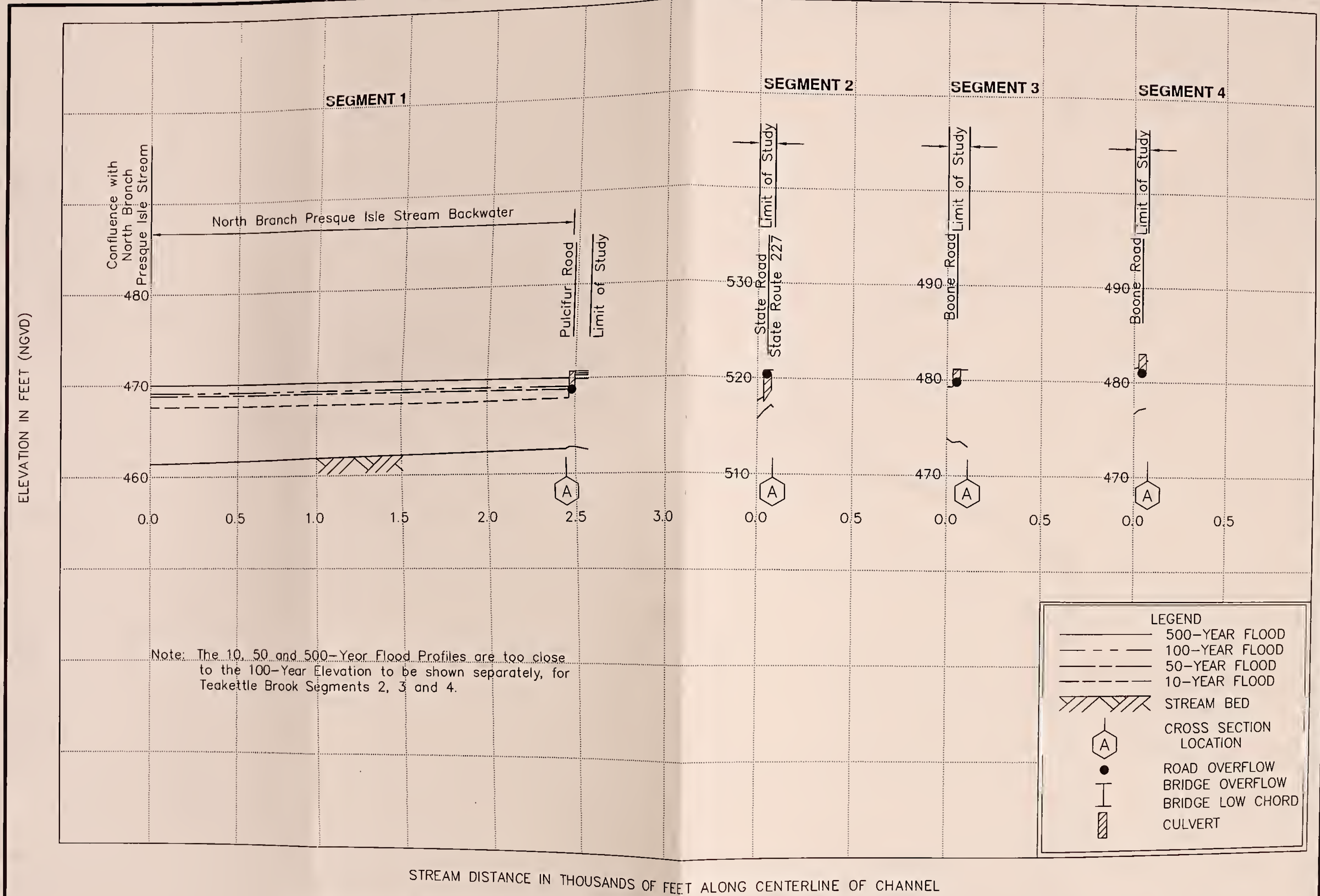
FLOOD PROFILES
LIBBY BROOK

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
TOWN OF MAPLETON
FLOODPLAIN MANAGEMENT STUDY
AROOSTOOK COUNTY, MAINE



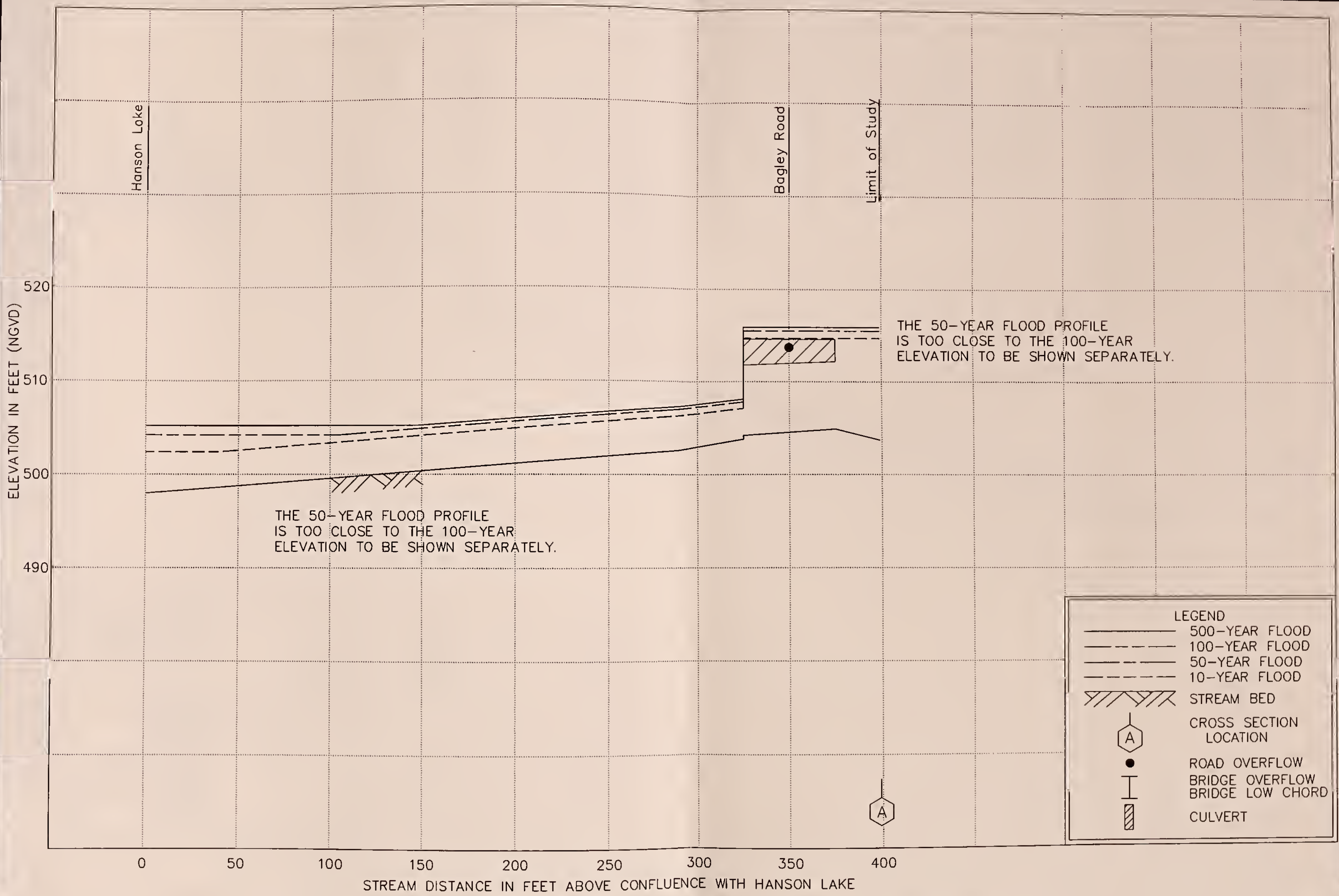
FLOOD PROFILES
UNNAMED BROOK

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
TOWN OF MAPLETON
FLOODPLAIN MANAGEMENT STUDY
AROOSTOOK COUNTY, MAINE



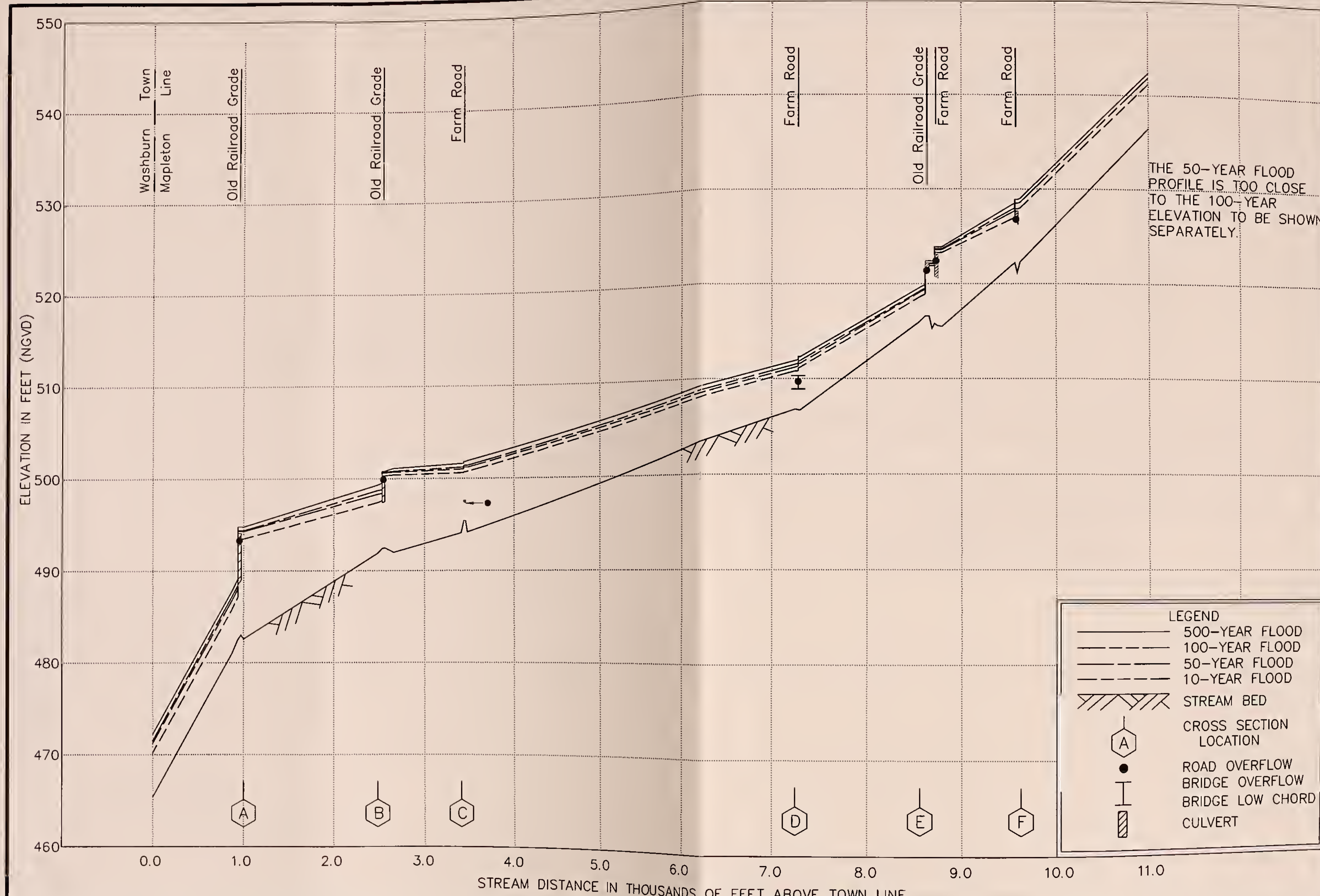
FLOOD PROFILES
TEAKETTLE BROOK

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
TOWN OF MAPLETON
FLOODPLAIN MANAGEMENT STUDY
AROOSTOOK COUNTY, MAINE



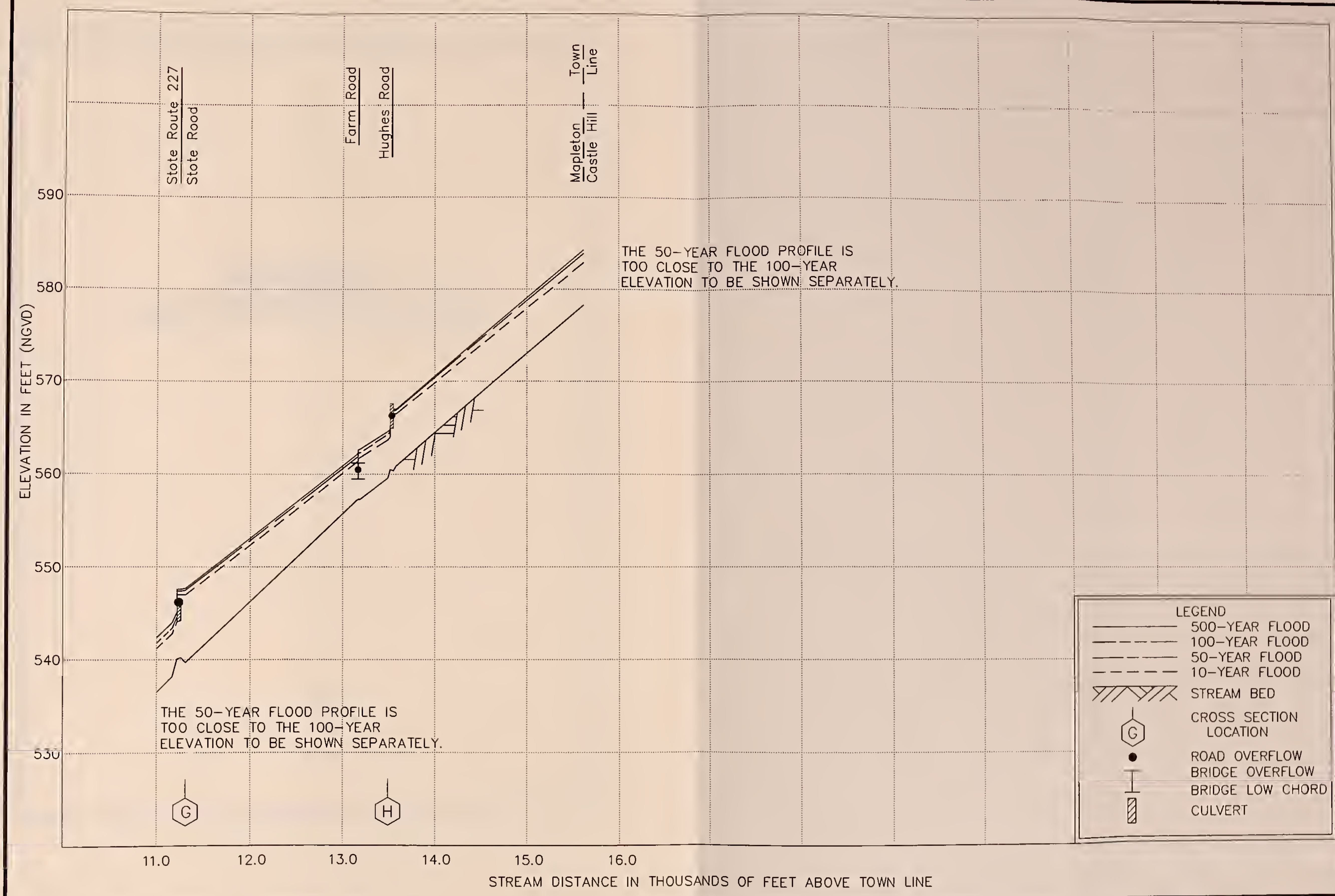
FLOOD PROFILES
HANSON BROOK

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
TOWN OF MAPLETON
FLOODPLAIN MANAGEMENT STUDY
AROOSTOOK COUNTY, MAINE



FLOOD PROFILES
CLAYTON BROOK

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
TOWN OF MAPLETON
FLOODPLAIN MANAGEMENT STUDY
AROOSTOOK COUNTY, MAINE

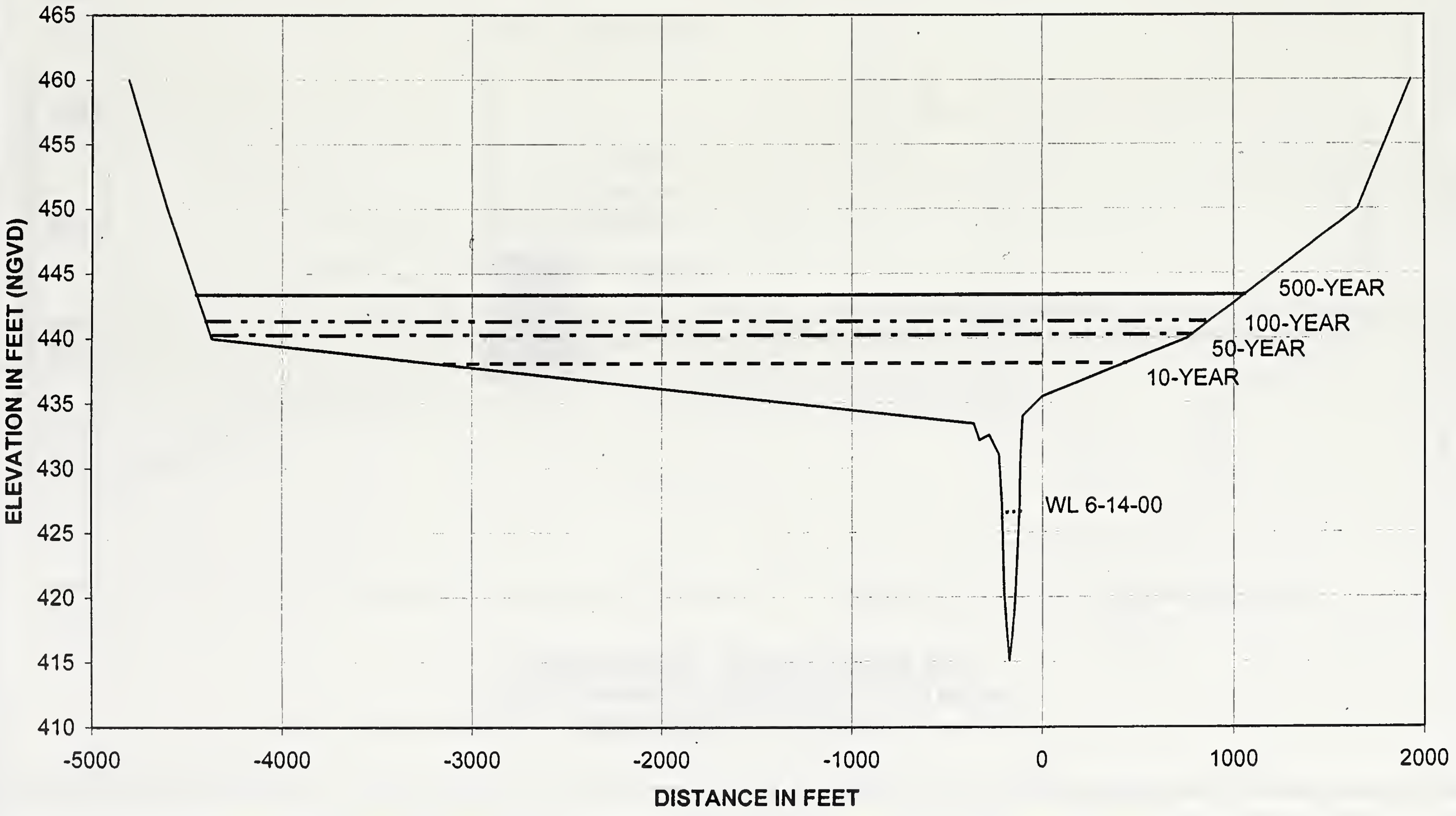


FLOOD PROFILES
CLAYTON BROOK

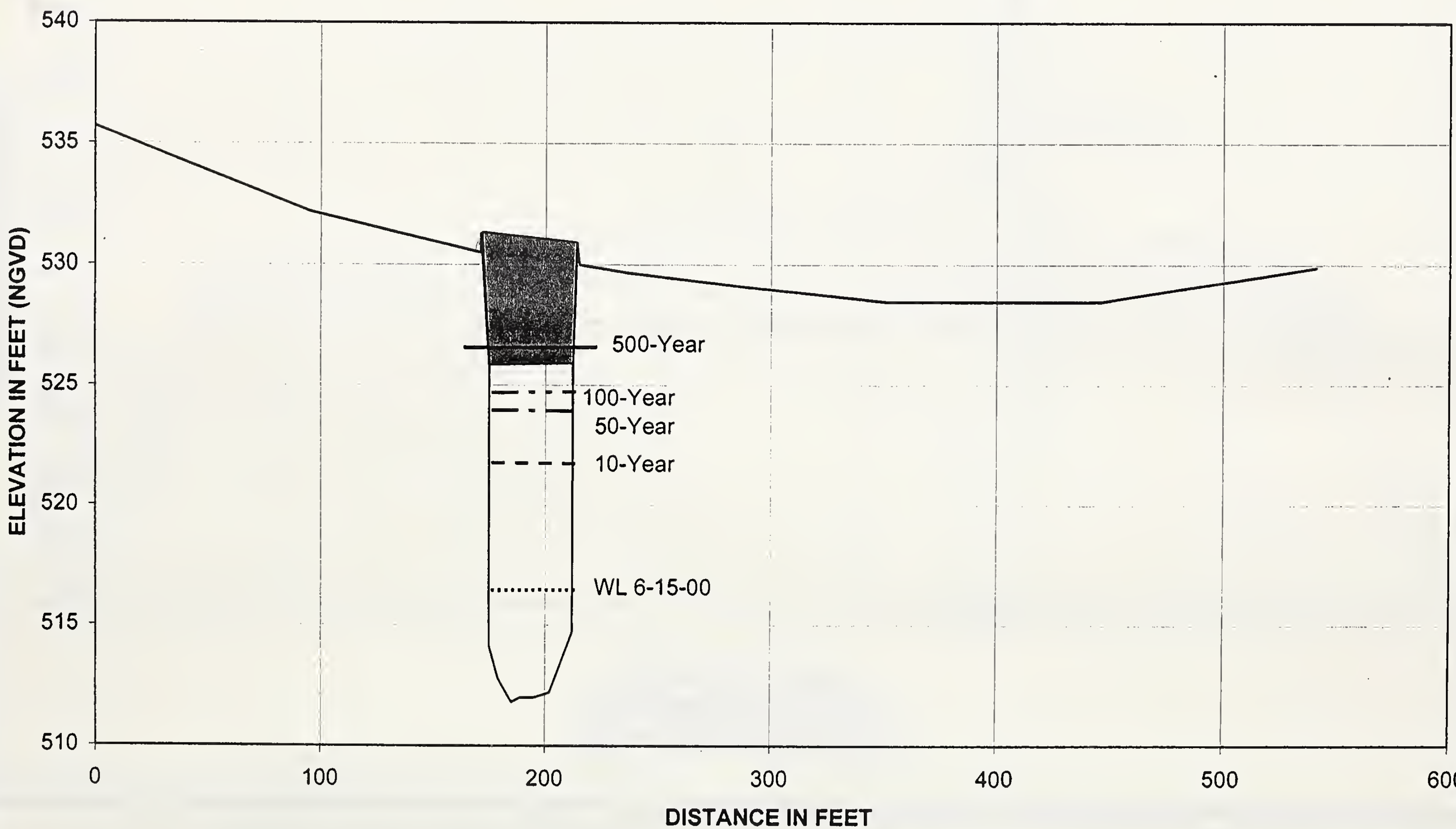
U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
TOWN OF MAPLETON
FLOODPLAIN MANAGEMENT STUDY
AROOSTOOK COUNTY, MAINE

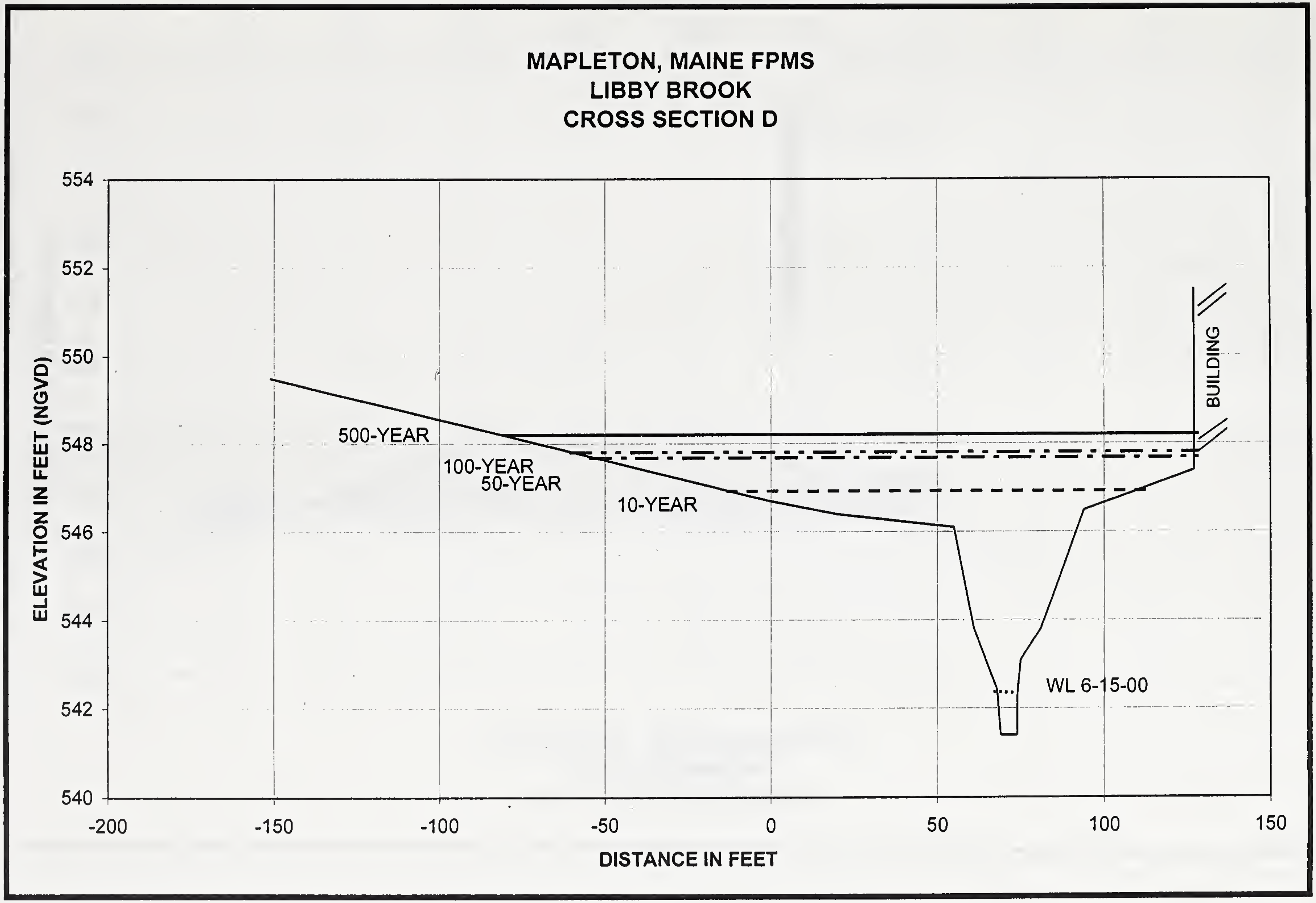
APPENDIX C
SELECTED CROSS SECTIONS

MAPLETON, MAINE FPMS
PRESQUE ISLE STREAM
CROSS SECTION A

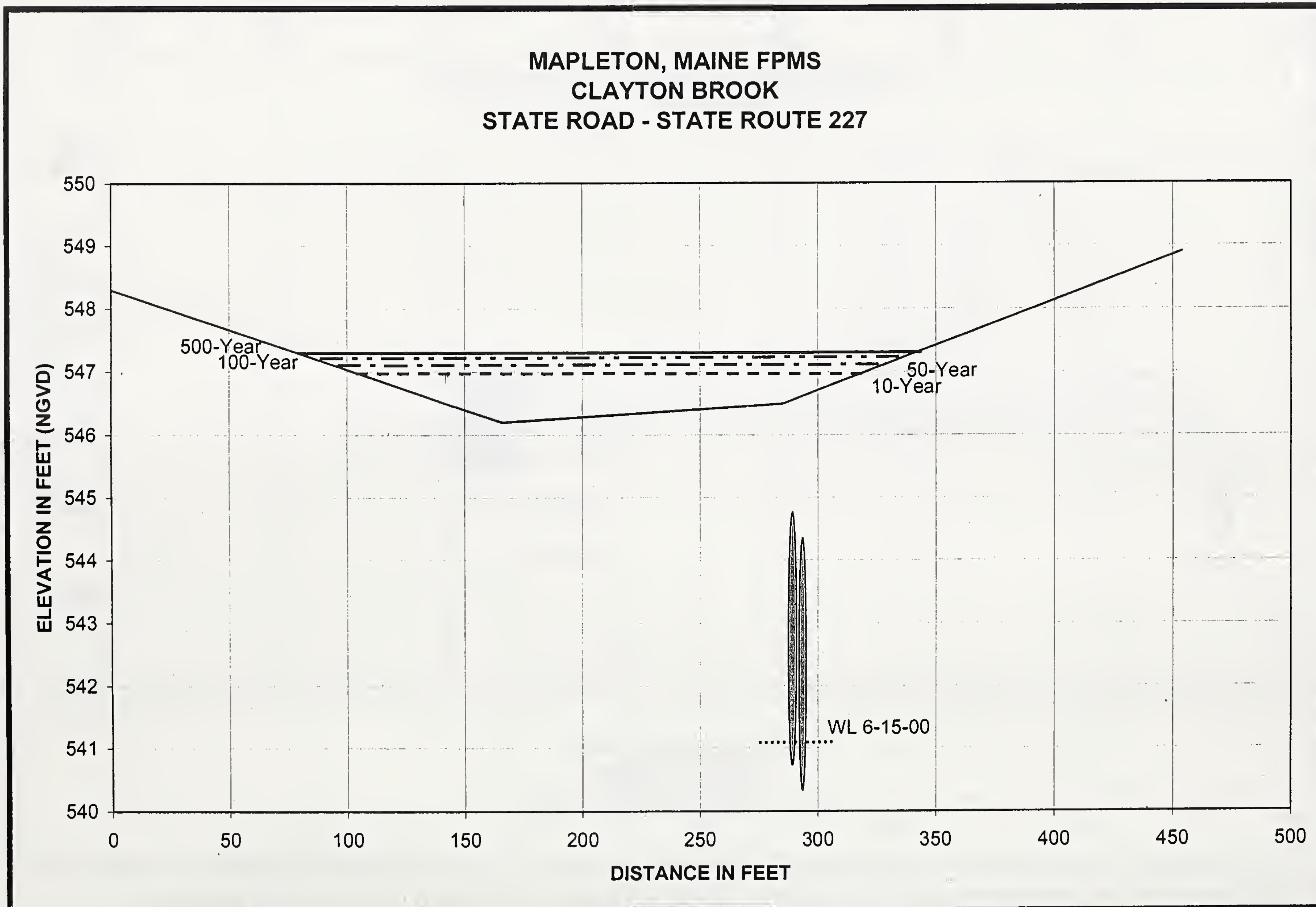


MAPLETON, MAINE FPMS
NORTH BRANCH PRESQUE ISLE STREAM
MAIN STREET - STATE ROUTE 163





MAPLETON, MAINE FPMS
LIBBY BROOK
CROSS SECTION D
ELEVATION IN FEET (NGVD)
554
552
550
548
546
544
542
540
BUILDING
500-YEAR
100-YEAR
50-YEAR
10-YEAR
WL 6-15-00
-200
-150
-100
-50
0
50
100
150
DISTANCE IN FEET


MAPLETON, MAINE FPMS
CLAYTON BROOK
STATE ROAD - STATE ROUTE 227
ELEVATION IN FEET (NGVD)
550
549
548
547
546
545
544
543
542
541
540
500-Year
100-Year
50-Year
10-Year
WL 6-15-00
0
50
100
150
200
250
300
350
400
450
500
DISTANCE IN FEET