AD-A128 014 SPECIAL FLOOD HAZARD EVALUATION REPORT TONAWANDA CREEK GENESEE COUNTY NEW..(U) CORPS OF ENGINEERS BUFFALO NY BUFFALO DISTRICT R W WADE FEB 83 1/1

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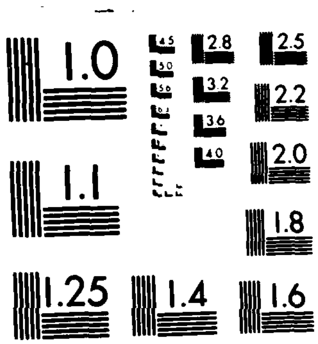

MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

Special Flood Hazard Evaluation Report

(12)

Tonawanda Creek

Genesee County
New York

Prepared For
Town Of Batavia

US Army Corps
of Engineers
Buffalo District

February 1983

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

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Flood Profiles
Floodway
Flood Plain Management
Flood Boundaries

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

This report provides information on the flood plain, floodway, and flood profiles for a selected reach of Tonawanda Creek within the town of Batavia, NY for use in a flood plain management program.

SPECIAL FLOOD HAZARD
EVALUATION REPORT

TONAWANDA CREEK
TOWN OF BATAVIA
GENESEE COUNTY, NY

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SPECIAL FLOOD HAZARD EVALUATION REPORT

TONAWANDA CREEK
TOWN OF BATAVIA
GENESEE COUNTY, NY

INTRODUCTION

This Special Flood Hazard Evaluation Report, prepared at the request of the town of Batavia, investigates the potential flood situation along Tonawanda Creek in the town of Batavia west of the city of Batavia corporate limits. Most of the area along the stream is agricultural or residential. Although large floods have occurred, studies indicate that even larger floods are possible.

Because a knowledge of potential floods and flood hazards is important in land use planning, this report includes a history of flooding along Tonawanda Creek and identifies those areas that are subject to possible future floods, with special emphasis given to those floods through the use of maps and water surface profiles. While the report does not provide solutions to flood problems, it does furnish a suitable basis for the adoption of land use controls to guide flood plain development and thereby prevents intensification of the flood loss problem. It will also aid in the development of other flood damage reduction techniques to modify flooding and reduce flood damages which might be embodied in an overall Flood Plain Management (FPM) program. Other types of studies, such as those of environmental attributes and the current and future land use role of the flood plain as part of its surroundings, would also profit from this information.

Additional copies of this report can also be obtained from the New York State Department of Environmental Conservation, and the National Technical Information Service of the U.S. Dept. of Commerce, Springfield, VA 22161. The Buffalo District Corps of Engineers will provide technical assistance and guidance to planning agencies in the interpretation and use of the data.

PAST FLOODS

Major floods on Tonawanda Creek occurred in July 1902, March 1916, March 1942, March 1956, January 1957, January 1959, and March 1960, September 1977, and March 1979. Hydrologic data on these floods is presented in Table 1.

In the past, major flooding has occurred in the late winter or spring and has been caused by snowmelt augmented by rainfall. Major flooding caused by ice jams has been rare.

FUTURE FLOODS

Floods of the same or larger magnitude as those that have occurred in the past are likely to occur in the future. Floods larger than those on Tonawanda Creek have been experienced in the past on streams with similar geographical and physiographical characteristics as those found in the study area. Similar combinations of rainfall, snowmelt, and runoff which caused these floods could occur within the study area. To assess the flooding potential of the study area, it is necessary to consider storms and floods that have occurred in regions with the same topography, watershed cover, and physical characteristics.

Table 1 - Hydrologic Data on Major Floods of Tonawanda Creek

Year	Date	Peak Discharge at Batavia (cfs)	Rainfall (ins)	Runoff (ins)	Duration of Flooding (hrs)	Snow on Ground (ins)	Temperature Max. (°F)	Temperature Min. (°F)
1902	6 Jul	5,350 (1)	4.2	(2)	(2)	0	(2)	(2)
1916	28 Mar	7,050 (1)	0.4	(2)	(2)	(2)	58	40
1942	17 Mar	6,000 (1)	1.5	(2)	36	(2)	59	33
1956	7 Mar	6,480	2.5	1.9	26	1-2	46	22
1957	23 Jan	6,090	1.8	2.1	23	12-18	55	12
1959	22 Jan	5,230	1.5	1.7	10	12-18	52	12
1960	31 Mar	7,200	0.2	3.3	40	23 (3)	61	33
1977	25 Sep	5,120	7.7	5.5	-	0	69	56
1979	5 Mar	5,570	0.3	3.0	-	11-18	52	35

(1) Corps of Engineers estimate based on high water marks and backwater analysis.
(2) Unknown.
(3) Average value from snow survey made by Corps of Engineers. Water content of snow was 5.2 inches.

SOURCES: Interim Report on Feasibility of Flood Management in Tonawanda Creek Watershed, May 1981, Buffalo District; National Weather Service and U.S. Geological Survey Water Resources Data for New York.

Flood Magnitudes and Their Frequencies

Floods are classified on the basis of their frequency or return period. A 100-year flood is an event whose magnitude can be expected to be equaled or exceeded on the average of once every hundred years. The 100-year event has a 1 percent chance of occurrence in any given year. It is important to note that, while on a long-term basis the occurrence averages out to once per hundred years, floods of this magnitude can occur in any given year or even in consecutive years and within any given time interval. The 100-year flood is also known as the "Base Flood."

Similarly, the 10, 50, and 500-year flood events are those floods whose magnitudes can, in the long term, be expected to occur on the average of once in every 10, 50, or 500 years.

It should be noted that there is a greater than 50 percent probability that a 100-year flood event will occur during a 70-year lifetime. Additionally, a house which is built at the 100-year flood level has about a one in four chance of being flooded in a 30-year mortgage life.

Table 2 is a summary of peak discharges for two recurrence intervals (in years).

Table 2 - Peak Flows on Tonawanda Creek

Location	Drainage Area (sq. mi.)	100-Year Flood Discharge (cfs)	500-Year Discharge (cfs)
Tonawanda Creek at New York State Thruway	20.6	9,600	11,000
Tonawanda Creek at Confluence of Bowen Creek	18.2	8,800	10,100

A 500-year frequency flood is defined as a flood having an average frequency of occurrence in the order of once in 500 years at a designated location, or a flood having a 0.2 percent chance of occurrence in any given year. It is generally recognized as an upper level of anticipated flooding that should be used in community planning of critical structures. A flood of this magnitude is usually catastrophic, especially when it occurs in developed stream valleys.

Hazards and Damages of Large Floods

The extent of damage caused by any flood depends on the topography of the flooded area, the depth and duration of flooding, the velocity of flow, the rate of rise in water surface elevation, and development of the flood plain. Deep water flowing at a high velocity and carrying floating debris would create conditions hazardous to persons and vehicles which attempt to cross the flood plain. Generally, water 3 or more feet deep which flows at a velocity of 3 or more feet per second could easily sweep an adult off his feet and create definite danger of injury or drowning. Rapidly rising and swiftly flowing floodwater may trap persons in homes that are ultimately destroyed or in vehicles that are ultimately submerged or floated. Since waterlines can be ruptured by deposits of debris and by the force of flood waters, there is the possibility of contaminated domestic water supplies. Damaged sanitary sewer lines and sewage treatment plants could result in the pollution by floodwaters and could create health hazards. Isolation of areas by floodwater could create hazards in terms of medical, fire, or law enforcement emergencies.

Flooded Areas

Plate 1 shows water surface profiles for the 500 and 100-year floods. Depth of flow in the channel can be estimated from this plate. The town of Batavia section maps 6, 8, and 11 show the flooded area. The areas that would be inundated by the 100-year and 500-year floods are shown in detail on those plates. The actual limits of these overflow areas may vary somewhat from those shown on the maps because the scale of the maps does not permit precise plotting of the boundaries of the flooded area. In several locations the flooded areas along Tonawanda Creek had to be matched to nearby flooded areas shown on the Flood Hazard Boundary Maps prepared by the Federal Insurance Administration (FIA), dated 26 September 1975. The flooded areas shown on the FIA maps were done by methods of approximation, not to the level of detail as the flooded areas along Tonawanda Creek.

Table 3 is a list of elevation reference marks. The list is furnished as an aid to local interests in setting minimum elevations for future development or establishing other elevations necessary to flood plain planning. All elevations in this report are on the National Geodetic Vertical Datum of 1929.

Table 3 - Elevation Reference Marks in the
Town of Batavia Study Area

Reference Mark	Elevation (NGVD) (1) (feet)	Description of Location
RM 1	864.61	A chiseled L to form a square, top southeast corner of northwest abutment of Read Road Bridge over Tonawanda Creek, in East Pembroke.
RM 2	878.53	A chisled X in southeast corner of Iroquois Gas shutoff main in front of East Pembroke Fire Station.
RM 3	868.37	A chisled L to form a square, top southwest corner of northwest corner of bridge on concrete bridge seat, 1.0± feet higher than stone bridge abutment. Powers Road Bridge over Tonawanda Creek 200, feet north of intersection with West Main.
RM 4	870.65	North bonnet bolt in hydrant south side of West Main St., marked W.M. 29, about 800± feet west of Bowen Creek.
RM 5	873.60	Southeast corner of New York State Telephone Junction Box No. 102 on southeast corner of Powers Road and Stegman Road.
RM 6	872.17	Niagara Mohawk Power Pole No. 2,821, north side of Stegman Road, PK nail in pole 2± feet above ground on south side.

Table 3 - Elevation Reference Marks in the Town of Batavia Study Area (Cont'd)

Reference Mark	Elevation (NGVD) (1) (feet)	Description of Location
RM 7	868.02	Niagara Mohawk Power Pole No. 2,937, north side of Stegman Road, PK nail in pole 2± feet above ground on south side.
RM 8	874.10	A chiseled L to form a square, top northwest corner of west headwall of culvert under Miller Road north of Stegman Road.
RM 9	881.76	A 2-inch chiseled square, top northeast corner at angle point of concrete bridge abutment West Main Street (Route 5) over Tonawanda Creek. Bridge abutment with wingwall same elevation as highway, being 3.2± feet west of start of declining portion of wingwall.
RM 10	882.01	A chisled X on south bonnet bolt in hydrant, north side of West Main Street, marked W.M. 16, across from Mill Road.
RM 11	882.23	A chisled X on south bonnet bolt in hydrant, north of West Main Street, marked W.M. 11, across from House No. 3678.
RM 12	884.71	A chisled X on south bonnet bolt in hydrant, north side of West Main Street, marked W.M. 9, east of La Siesta Motel.
RM 13 and BM 26 (2)	887.76 887.76	South bonnet bolt in hydrant, north side of West Main Street, marked W.M. 7, in front of Gravely Tractor Sales.
BM 25	886.28	South bonnet bolt in hydrant, north side of West Main Street, in front of Hawkes Volkswagon, marked W.M. 6.
BM 24	887.46	South bonnet bolt in hydrant, north side of West Main Street, between House Nos. 3959 and 3927, marked W.M. 5.
BM 23	894.03	South bonnet bolt in hydrant, north side of West Main Street, in front of "Dirk's Motor Court."
BM 21	893.71	East bonnet bolt in hydrant, north side West Main Street, in front of House No. 4085.
BM 18A	894.89	RR spike in utility pole, marked N.M. 4162, south side of West Main Street across from Batavia Town Hall.
BM 894.573	894.90	Brass plug set in top of granite post bearing two brass plates inscribed "City of Batavia" and "USG Survey BM 894.573."

(1) Elevation reference marks used in the study are shown on the map.
(2) Bench marks elevation furnished by the firm of Tallamy, Van Kuren, Gertis Associates, the Town Engineer.

Obstructions

During floods, debris collecting on bridges could decrease their flow-carrying capacity and cause greater water depths (backwater effect) upstream of these structures. Since the occurrence and amount of debris are indeterminate factors, only the physical characteristics of the structures were considered in preparing the profiles. No reduction in the carrying capacity from clogging or jamming was considered. Similarly, maps of the flooded area show the backwater effect of obstructive bridges, but do not reflect increased water surface elevations that could be caused by debris collecting against the structures.

UNIFIED FLOOD PLAIN MANAGEMENT PROGRAMS

Historically, the alleviation of flood damage has been accomplished almost exclusively by the construction of protective works such as reservoirs, channel improvements, and floodwalls and levees. However, in spite of the billions of dollars that have already been spent for construction of well-designed and efficient flood control works, annual flood damages continue to accelerate because the number of persons and structures occupying floodprone lands is increasing faster than protective works can be provided.

Recognition of this trend in recent years has forced a reassessment of the flood control concept and resulted in the broadened concept of unified flood plain management programs. Legislative and administrative policies frequently cite two approaches: structural and nonstructural, for adjusting to the flood hazard. In this context, "structural" is usually intended to mean adjustments that modify the behavior of floodwaters through the use of measures such as public works dams and channel work. "Nonstructural" is usually intended to include all other adjustments in the way society acts when occupying or modifying a flood plain (e.g., regulations, floodproofing, insurance, etc.). Both structural and nonstructural tools are used for achieving desired future flood plain conditions. There are three basic strategies which may be applied individually or in combination: (1) modifying the susceptibility to flood damage and disruption, (2) modifying the floods themselves, and (3) modifying (reducing) the adverse impacts of floods on the individual and the community.

Modify Susceptibility to Flood Damage and Disruption

The strategy to modify susceptibility to flood damage and disruption consists of actions to avoid dangerous, economically, undesirable, or unwise use of the flood plain. Responsibility for implementing such actions rests largely with the non-Federal sector.

These actions include restrictions in the mode and the time of occupancy; in the ways and means of access; in the pattern, density, and elevation of structures and in the character of their materials (structural strength, absorptiveness, solubility, corrodibility); in the shape and type of buildings and in their contents; and in the appurtenant facilities and landscaping of the grounds. The strategy may also necessitate changes in the interdependencies between flood plains and surrounding areas not subject to flooding, especially interdependencies regarding utilities and commerce. Implementing tools for these actions include land use regulations, development and redevelopment policies, floodproofing, disaster preparedness and response plans, and flood forecasting and warning systems. Different tools may be more suitable for developed or underdeveloped flood plains or to urban or rural areas. The information contained in this report is particularly useful for the preparation of flood plain regulations.

a. Flood Plain Regulations.

Flood plain regulations apply to the full range of ordinances and other means designed to control land use and construction within floodprone areas. The term encompasses zoning ordinances, subdivision regulations, building and housing codes, encroachment line statutes, open area regulations, and other similar methods of management which affect the use and development of floodprone areas.

Flood plain land use management does not prohibit use of floodprone areas; to the contrary, flood plain land use management seeks the best use of flood plain lands. The flooded area maps and the water surface profiles contained in this report can be used to guide development in the flood plain. The elevations shown on the profiles should be used to determine flood heights because they are more accurate than the outlines of flooded areas. Development in areas susceptible to frequent flooding should consist of construction which has a low damage potential such as parking areas and golf courses. If high value construction such as buildings are considered for areas subject to frequent flooding, the land should be elevated to minimize damages. If it is uneconomical to elevate the land in these areas, means of floodproofing the structures should be given careful consideration.

b. Development Zones.

A flood plain consists of two useful zones. The first zone is the designated "floodway" or that cross sectional area required for carrying or discharging the anticipated flood waters with a maximum 1-foot increase in flood level. Velocities are the greatest and most damaging in the floodway. Regulations essentially maintain the flow-conveying capability of the floodway to minimize inundation of additional adjacent areas. Uses which are acceptable for floodways include parks, parking areas, open spaces, etc.

The second zone of the flood plain is termed the "floodway fringe" or restrictive zone, in which inundation might occur but where depths and velocities are generally low. Such areas can be developed provided structures are placed high enough or floodproofed to be reasonably free from flood damage during the Base (100-year) Flood.

c. Formulation of Flood Plain Regulations

Formulation of flood plain regulations in a simplified sense involves selecting the type and degree of control to be exercised for each specific flood plain. In principal, the form of the regulations is not as important as a maintained adequacy of control. The degree of control normally varies with the flood hazard as measured by depth of inundation, velocity of flow, frequency of flooding, and the need for available land. Considerable planning and research is required for the proper formulation of flood plain regulations. Where formulation of flood plain regulations is envisioned to require a lengthy period of time during which development is likely to occur, temporary regulations should be adopted to be amended later as necessary.

Modify Flooding

The traditional strategy of modifying floods through the construction of dams, dikes, levees, and floodwalls, channel alternations, high flow diversions and spillways, and land treatment measures has repeatedly demonstrated its effectiveness for protecting property and saving lives, and it will continue to be a strategy of flood plain management. However, in the future, reliance solely upon a flood modification strategy is neither possible nor desirable. Although the large capital investment required by flood modifying tools has been provided largely by the Federal Government, sufficient funds from Federal sources have not been, and are not likely to be available to meet all situations for which flood modifying measures would be both effective and economically feasible. Another consideration is that the cost of maintaining and operating flood control structures fall upon local governments except for major Federal reservoirs with flood control storage.

Flood modifications acting alone leave a residual flood loss potential and can encourage an unwarranted sense of security leading to inappropriate use of lands in the areas that are directly protected or in adjacent areas. For this reason, measures to modify possible floods should usually be accompanied by measures to modify the susceptibility to flood damage, particularly by land use regulations.

Flood modifying tools permit changes in the volume of runoff, in the peak stage of the flood, in the time of rise and duration, in the extent of the area flooded, in the velocity and depth of floodwaters, and consequently in the amount of debris, sediment, and pollutants that floods carry.

Modify the Impact of Flooding on Individuals and the Community

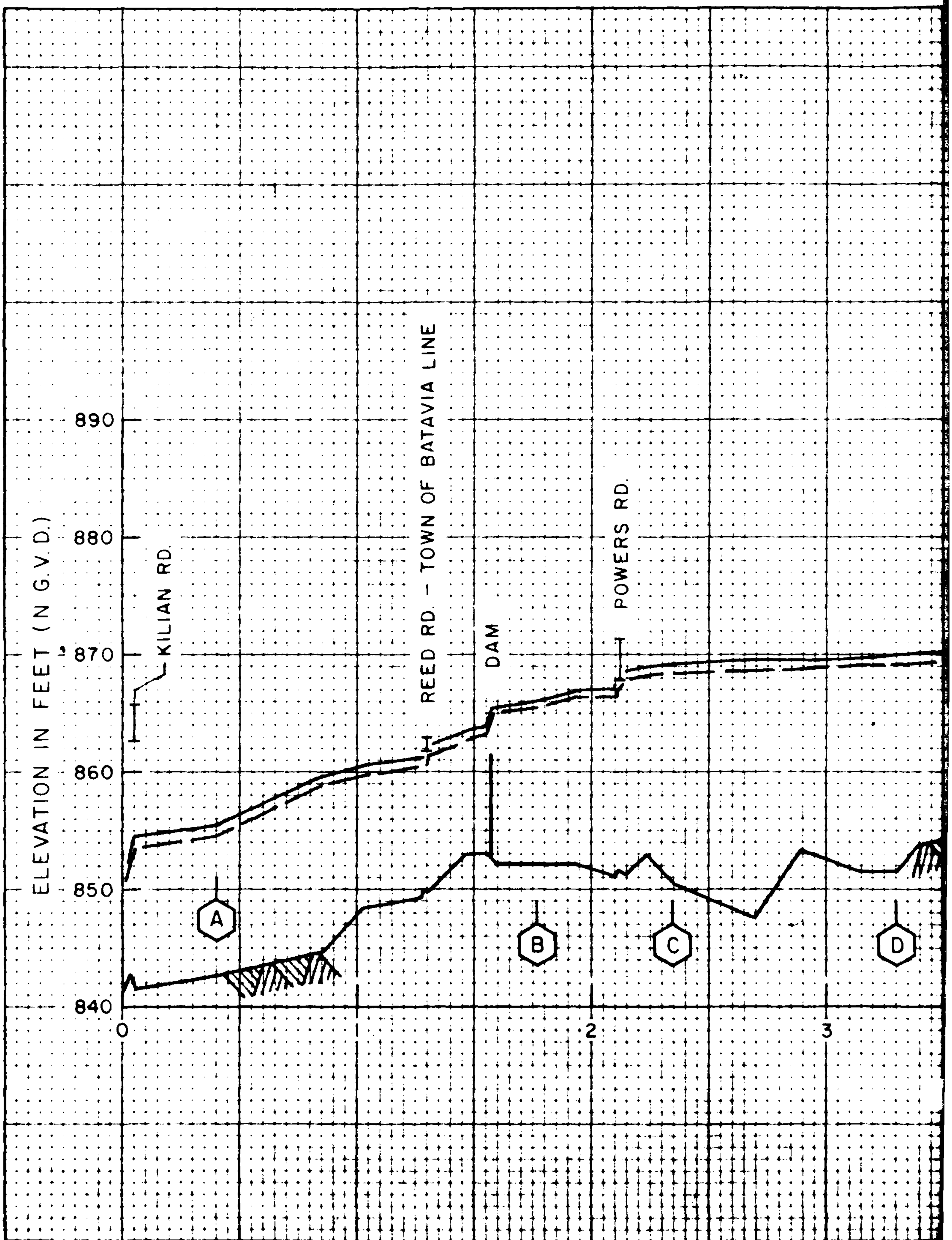
A third strategy for mitigating flood losses consists of actions designed to assist individuals and communities in their preparatory, survival, and recovery responses to floods. Tools include information dissemination and education, arrangements for spreading the costs of the loss over time, and purposeful transfer of some of the individual's loss to the community.

The distinction between a resonable and unreasonable transfer of costs from the individual to the community can also be regulated and is a key to effective flood plain management.

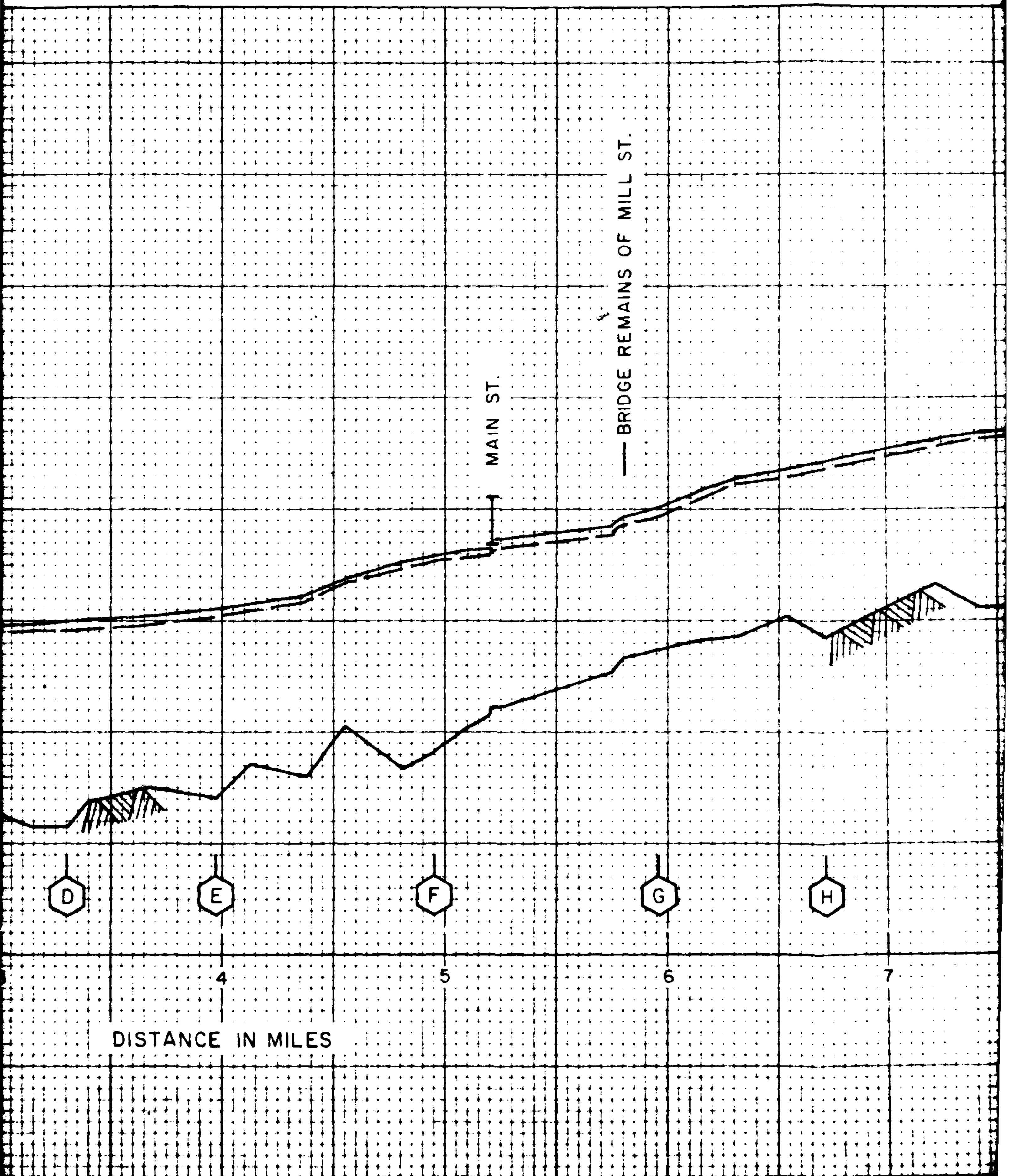
GLOSSARY

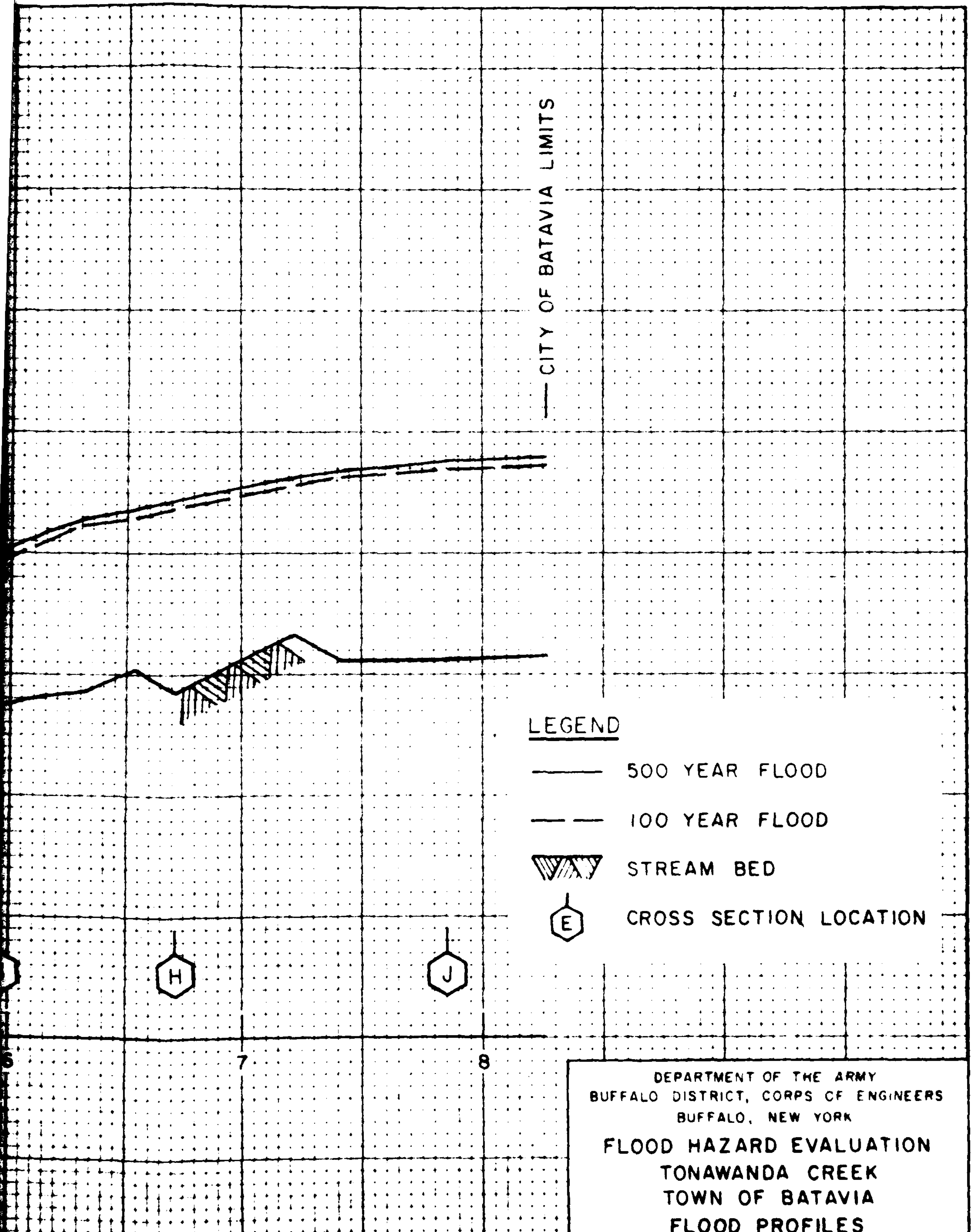
BACKWATER	The resulting high water surface in a given stream due to a downstream obstruction or high stages in an intersecting stream.
BASE FLOOD	A flood which has an average frequency of occurrence in the order of once in 100 years, although the flood may occur in any year. It is based on statistical analysis of streamflow records available for the watershed and analysis of rainfall and runoff characteristics in the general region of the watershed. It is commonly referred to as the "100-year flood."
DISCHARGE	The quantity of flow in a stream at any given time, usually measured in cubic feet per second (cfs).
FLOOD	An overflow of lands not normally covered by water. Floods have two essential characteristics: The inundation of land is temporary and the lands are adjacent to and inundated by overflow from a river, stream, ocean, lake, or other body of standing water. Normally a "flood" is considered as any temporary rise in streamflow or stage, but not the ponding of surface water that results in significant adverse effects in the vicinity. Adverse effects may include damages from overflow of land areas, temporary backwater effects in sewers and local drainage channels, creation of unsanitary conditions or other unfavorable situations by deposition of materials in stream channels during flood recessions, and rise of groundwater coincident with increased streamflow.
FLOOD CREST	The maximum stage or elevation reached by floodwaters at a given location.
FLOOD FREQUENCY	A statistical expression of the average time period between floods equaling or exceeding a given magnitude. For example, a 100-year flood has a magnitude expected to be equaled or exceeded on the average of once every hundred years. Such a flood has a 1 percent chance of being equaled or exceeded in any given year. Often used interchangeably with RECURRENCE INTERVAL.
FLOOD PLAIN	The areas adjoining a river, stream, watercourse, ocean, lake, or other body of standing water that have been or may be covered by floodwater.

FLOOD PROFILE	A graph showing the relationship of water surface elevation to location; the latter generally expressed as distance upstream from mouth for a stream of water that flows in an open channel. It is generally drawn to show surface elevation for the crest of a specific flood, but may be prepared for conditions at a given time or stage.
FLOOD STAGE	The stage or elevation at which overflow of the natural banks of a stream or body of water begins in the reach or area in which the elevation is measured.
FLOODWAY	The channel of a watercourse and those portions of the adjoining flood plain required to provide for the passage of the selected flood (normally the 100-year flood) with an insignificant increase in the flood levels above that of natural conditions. As used in the National Flood Insurance Program, floodways must be large enough to pass the 100-year flood without causing an increase in elevation of more than a specified amount (1 foot in most areas).
LOW CHORD	The elevation at the top of the opening of a bridge or other structure through which water may flow along a watercourse.
RECURRENCE INTERVAL	A statistical expression of the average time between floods equaling or exceeding a given magnitude (see FLOOD FREQUENCY).



ELEVATION IN FEET (N G.V.D.)
890
880
870
860
850
840
0
2
3
KILIAN RD.
REED RD. – TOWN OF BATAVIA LINE
DAM
POWERS RD.
A
B
C
D

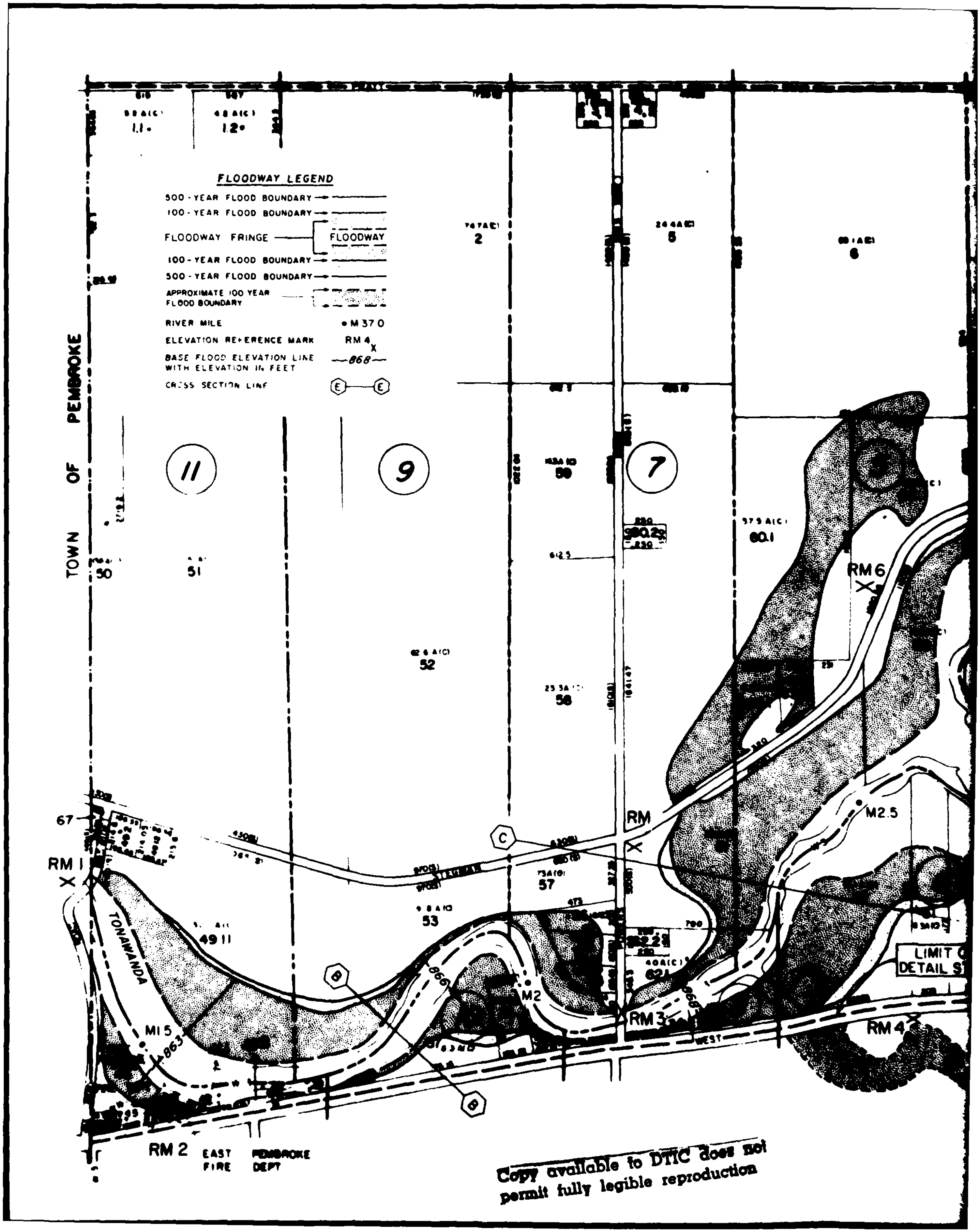

BRIDGE REMAINS OF MILL ST.
MAIN ST.
D
E
F
G
H
4
5
6
7
DISTANCE IN MILES

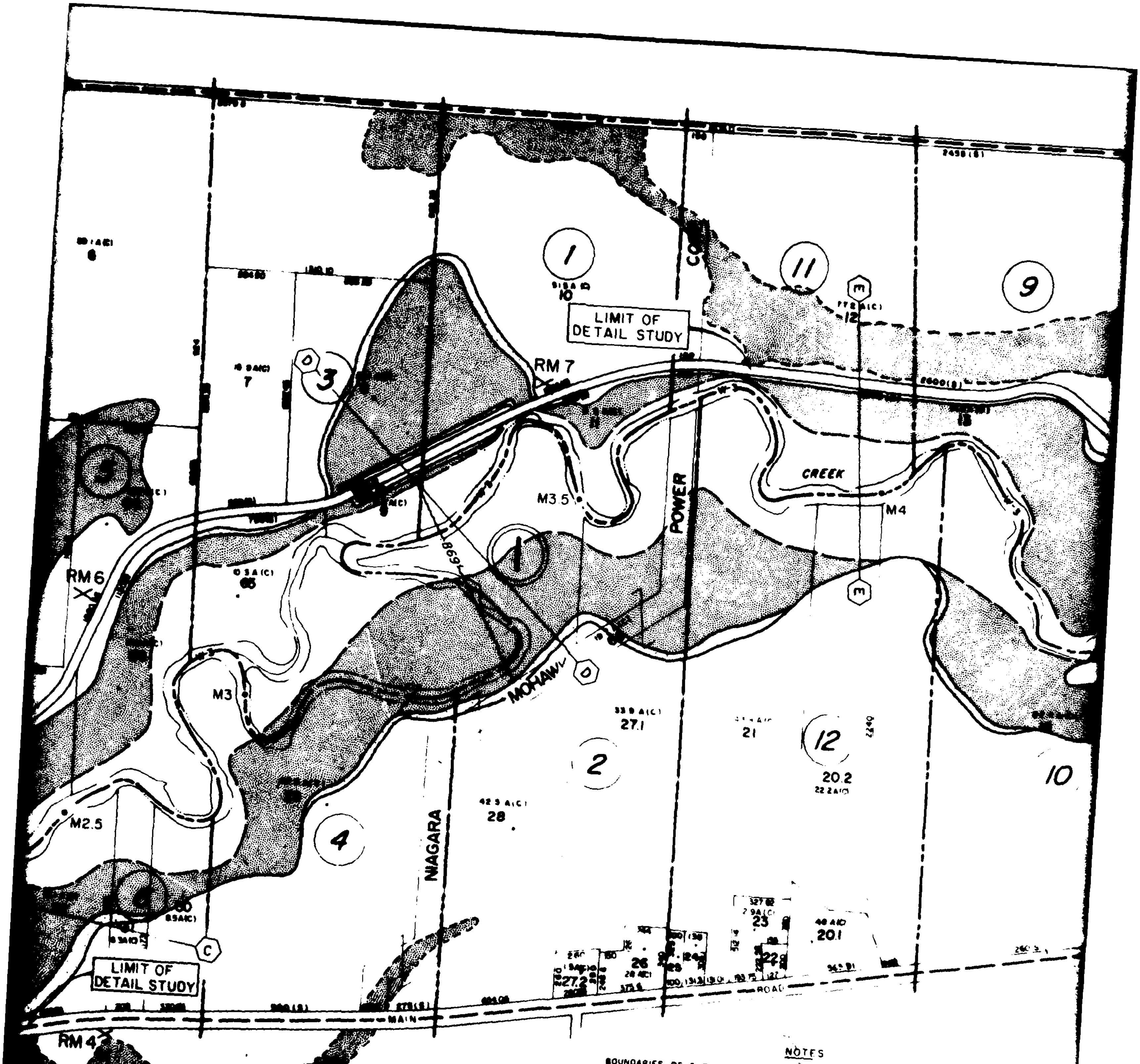


DEPARTMENT OF THE ARMY
BUFFALO DISTRICT, CORPS OF ENGINEERS
BUFFALO, NEW YORK

FLOOD HAZARD EVALUATION
TONAWANDA CREEK
TOWN OF BATAVIA
FLOOD PROFILES

JANUARY 1983


FLOODWAY LEGEND
500-YEAR FLOOD BOUNDARY
100-YEAR FLOOD BOUNDARY
FLOODWAY FRINGE
FLOODWAY
100-YEAR FLOOD BOUNDARY
500-YEAR FLOOD BOUNDARY
APPROXIMATE 100 YEAR FLOOD BOUNDARY
RIVER MILE
M 37.0
ELEVATION REFERENCE MARK
RM 4
BASE FLOOD ELEVATION LINE WITH ELEVATION IN FEET
868
CROSS SECTION LINE
E
TOWN OF PEMBROKE
11
9
7
RM 6
RM
C
M2.5
RM 1
TONAWANDA
M1.5
863
866
M2
RM 3
868
B
RM 4
LIMIT OF DETAIL ST
RM 2
EAST FIRE
PEMBROKE DEPT
WEST



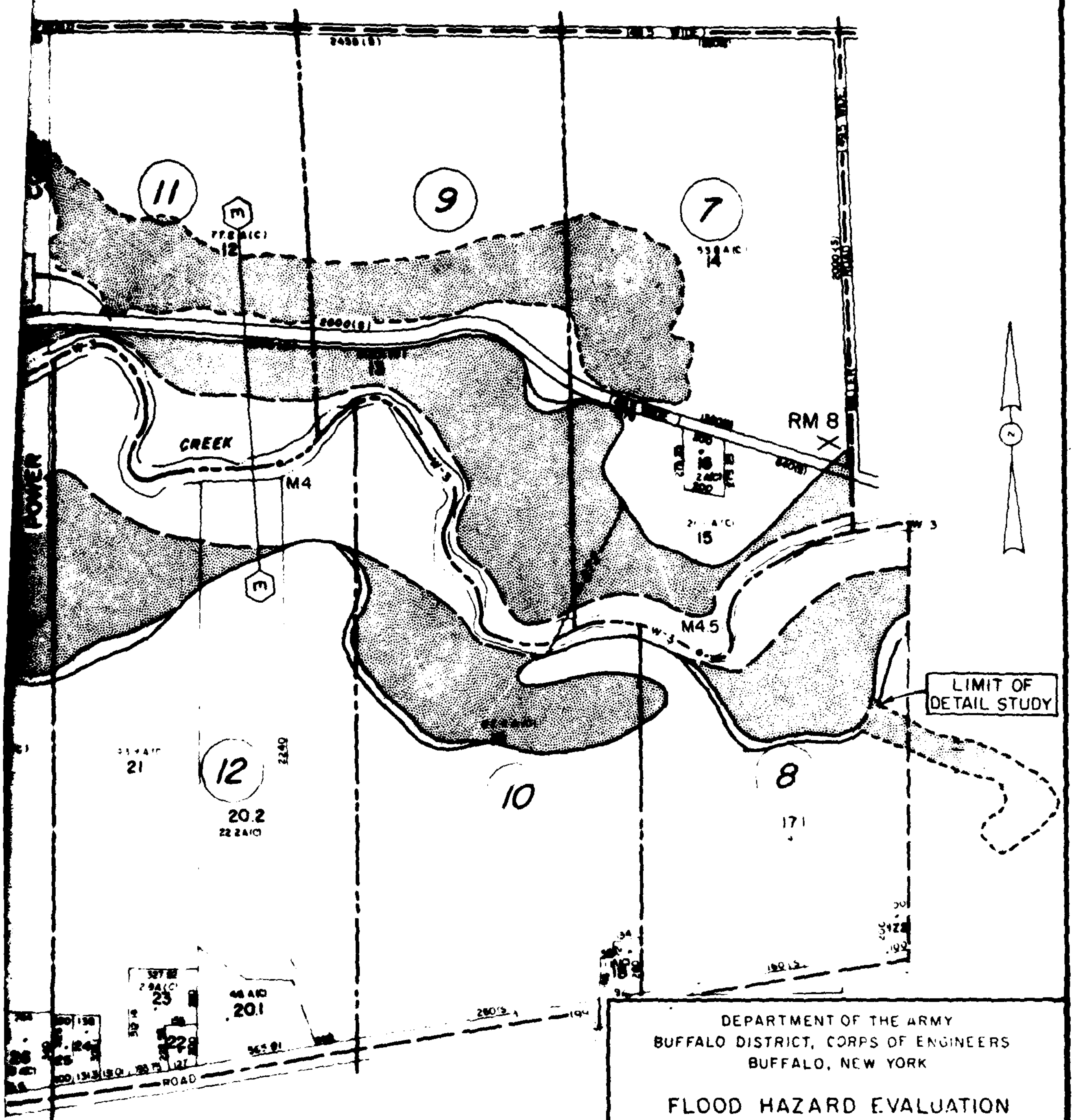
NOTES

BOUNDARIES OF THE FLOODWAYS WERE COMPUTED AT CROSS SECTIONS AND INTERPOLATED BETWEEN CROSS SECTIONS

THIS MAP WAS PREPARED TO FACILITATE FLOOD PLAIN MANAGEMENT ACTIVITIES ONLY

LEGEND

PROPERTY LINE	BLOCK LINE	TAX MAP BLOCK NO
ORIGINAL LOT LINE	GREAT LOT LINE	TAX MAP PARCEL NO
RAILROAD	SCHOOL DISTRICT LINE	FILED PLAN LOT NO
STREAM OR DITCH	FIRE DISTRICT LINE	GREAT LOT NO
ROAD OR RAILROAD R.O.W.	WATER DISTRICT LINE	CALCULATED ACREAGE
COUNTY LINE	DENOTES COMMON OWNER	DEED ACREAGE
TOWN LINE		SCALED DIMENSION
VILLAGE & CITY LINE		DEED DIMENSION



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

FLOOD HAZARD EVALUATION
TONAWANDA CREEK
TOWN OF BATAVIA, NEW YORK
FLOODED AREAS

JANUARY 1983

NOTES

...NDARIES OF THE FLOODWAYS WERE COMPUTED AT CROSS SECTIONS AND ...RAPOLATED BETWEEN CROSS SECTIONS

...S MAP WAS PREPARED TO FACILITATE FLOOD PLAIN MANAGEMENT ...IVITIES ONLY.

LEGEND

BLOCK LIMIT	TAX MAP BLOCK NO
GREAT LOT LINE	TAX MAP PARCEL NO
SCHOOL DISTRICT LINE	FILED MAP LOT NO
FIRE DISTRICT LINE	GREAT LOT NO
WATER DISTRICT LINE	CALCULATED ACREAGE
DENOTES COMMON OWNER	DEED ACREAGE
	SCALED DIMENSION
	DEED DIMENSION

TAX MAP

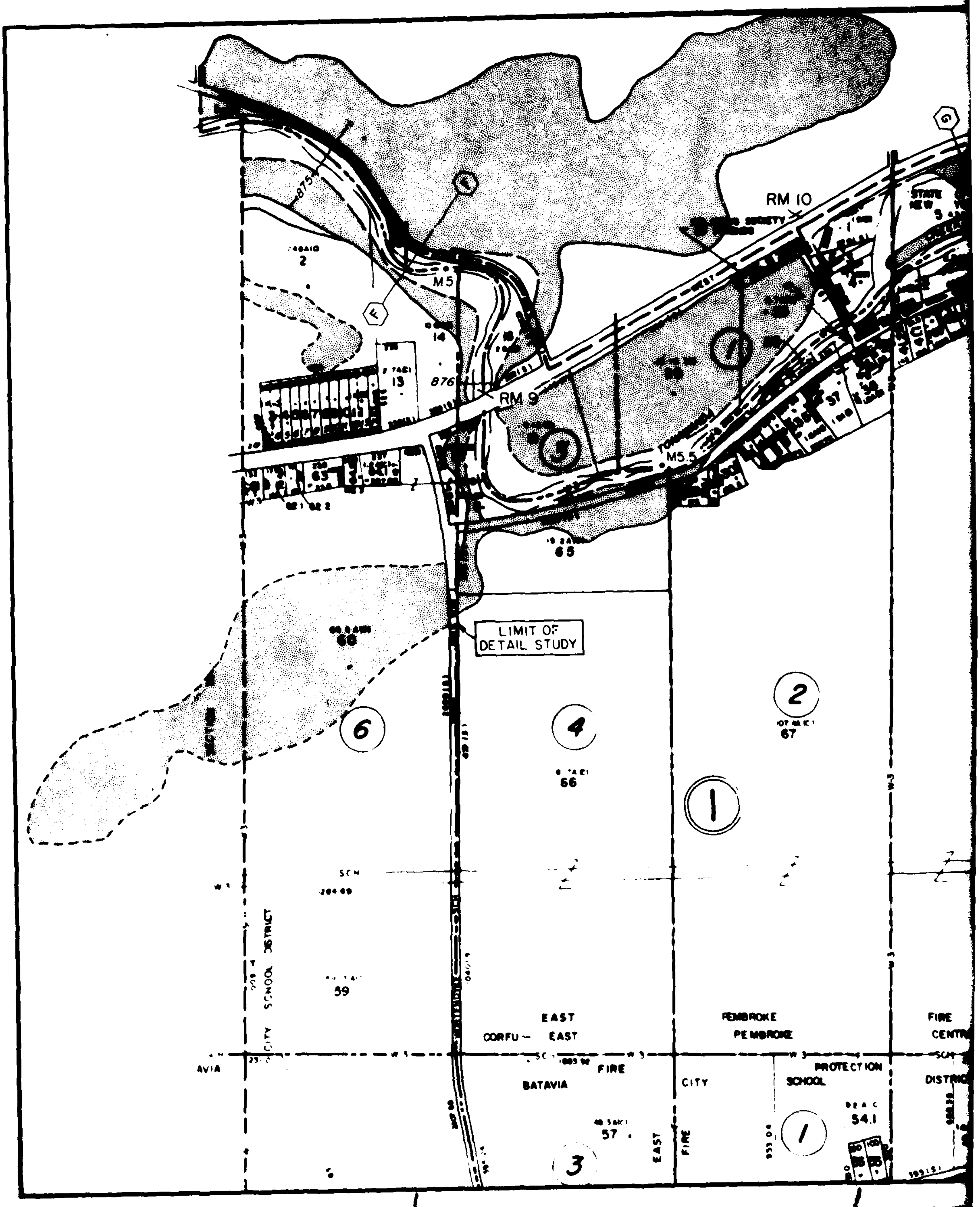
TOWN OF BATAVIA

GENESEE COUNTY NEW YORK

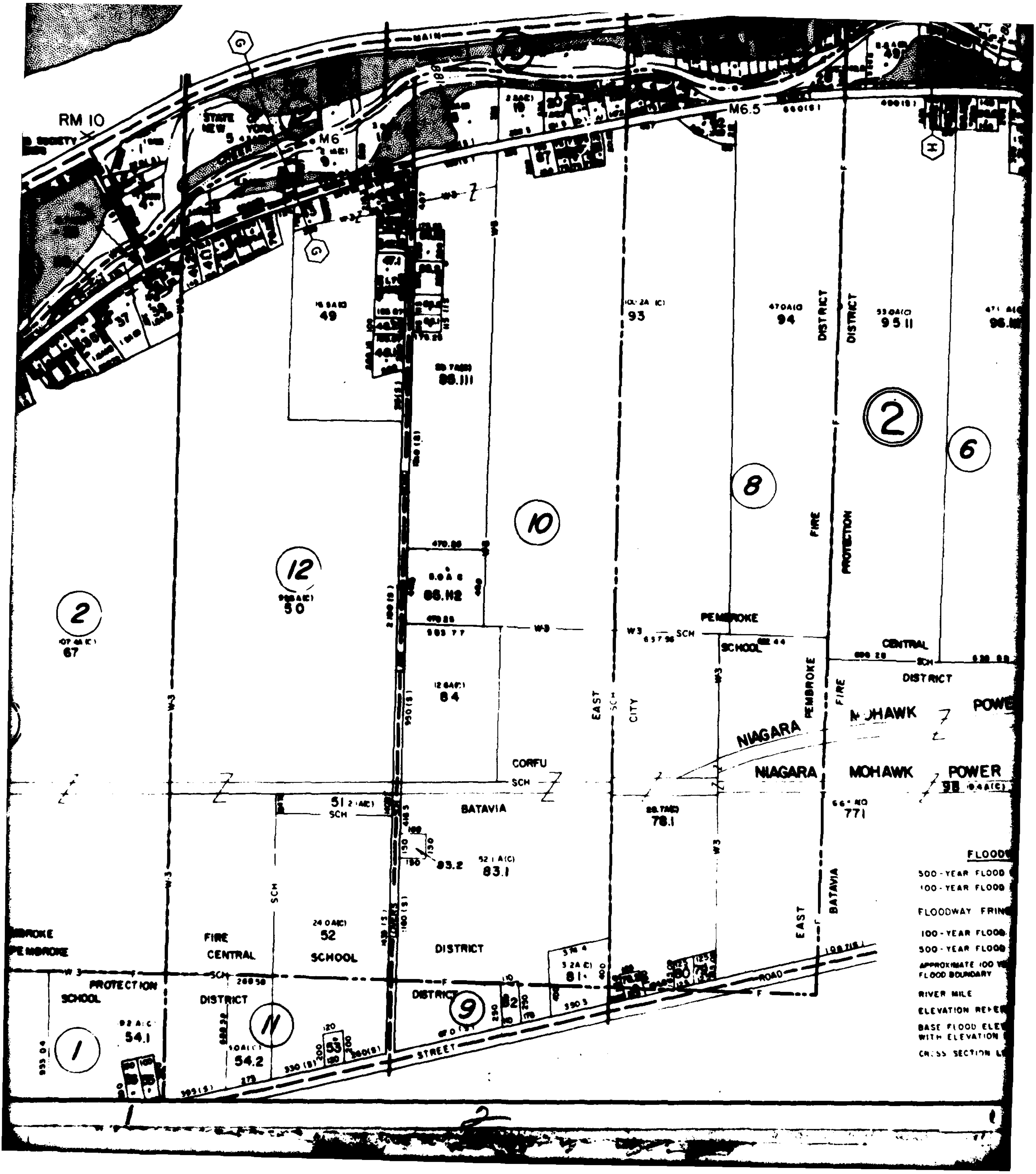
6

1

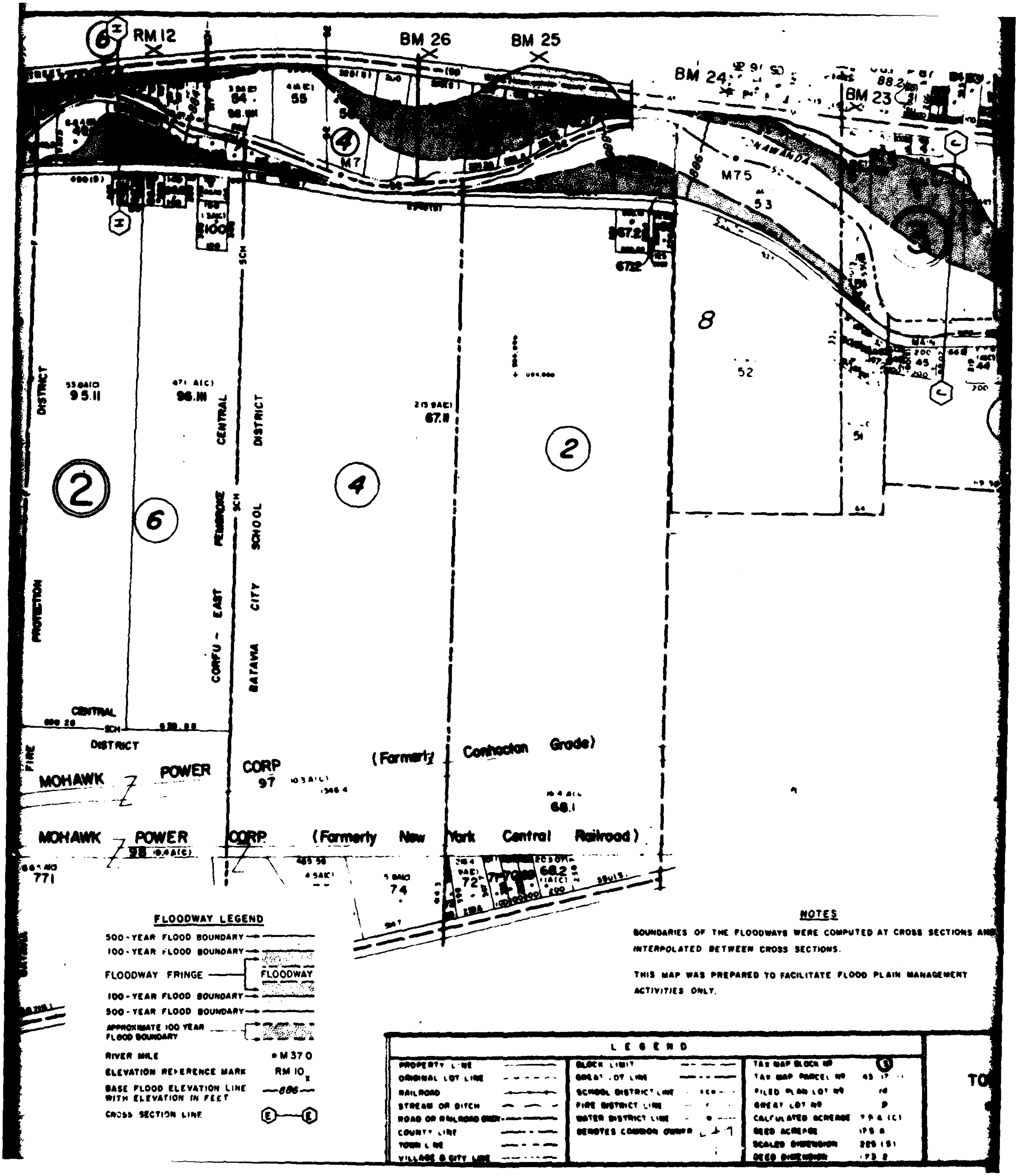
3



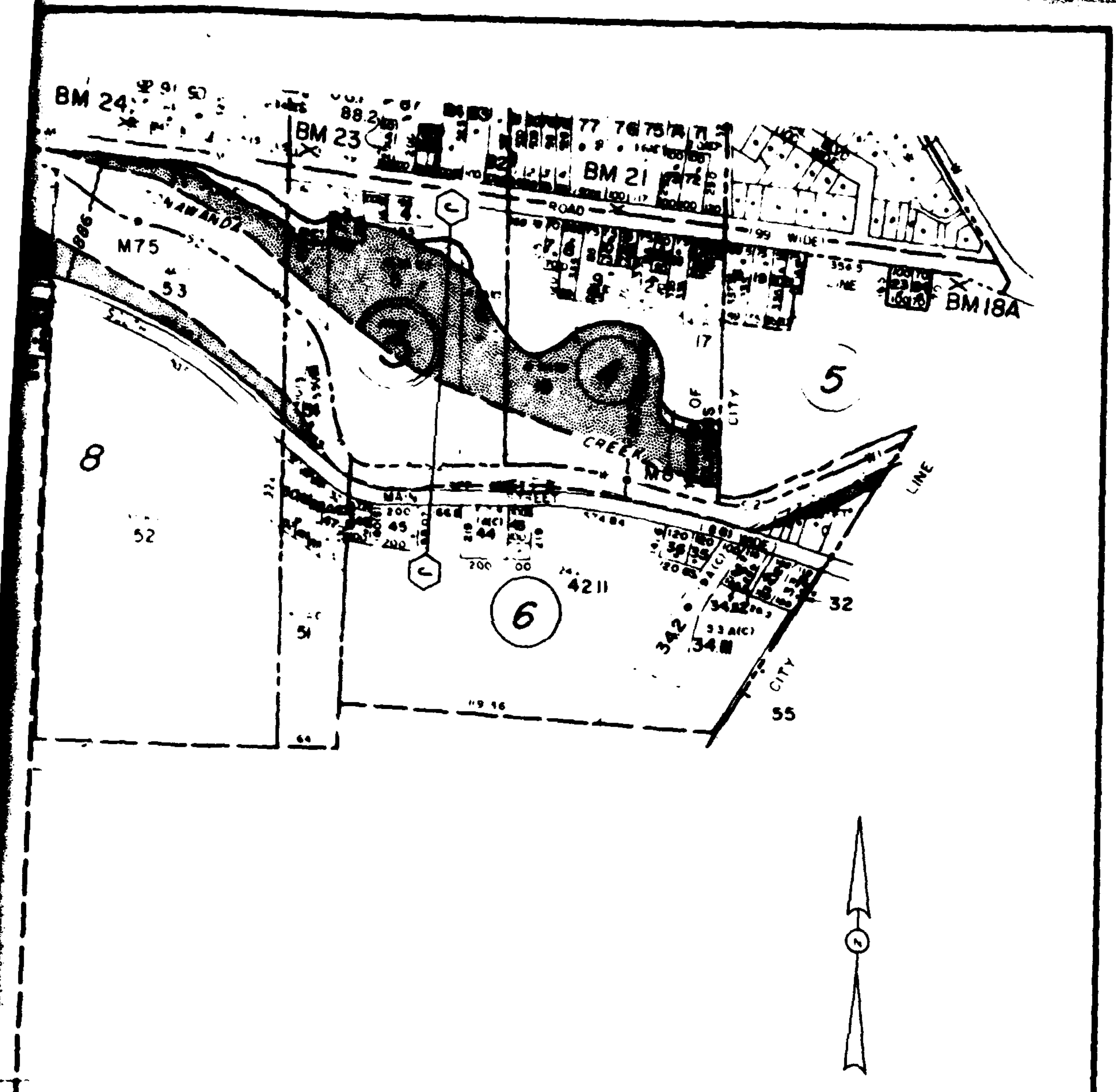
RM 10
RM 9
M5
M5.5
875
876
LIMIT OF
DETAIL STUDY
2
13
14
65
66
67
59
57
54.1
EAST
CORFU – EAST
FIRE
BATAVIA
CITY
PEMBROKE
PEMBROKE
PROTECTION
SCHOOL
CITY SCHOOL DISTRICT



RM 10
M6
M6.5
STATE OF NEW YORK
49
93
94
95.11
88.111
2
6
8
10
12
50
67
88.112
84
PEMBROKE SCHOOL
CENTRAL SCH DISTRICT
EAST SCH CITY
PEMBROKE FIRE DISTRICT
FIRE PROTECTION DISTRICT
NIAGARA MOHAWK POWER
CORFU SCH
BATAVIA
78.1
77.1
83.2
83.1
52
SCHOOL
DISTRICT
FIRE
CENTRAL
SCH
PROTECTION
SCHOOL
DISTRICT
81
80
82
54.1
54.2
53
1
11
9
STREET
ROAD
EAST
BATAVIA
FLOODWAY
500-YEAR FLOOD
100-YEAR FLOOD
FLOODWAY FRINGE
100-YEAR FLOOD
500-YEAR FLOOD
APPROXIMATE 100 YEAR FLOOD BOUNDARY
RIVER MILE
ELEVATION REFERENCE
BASE FLOOD ELEVATION WITH ELEVATION
CROSS SECTION



RM 12
BM 26
BM 25
BM 24
BM 23
M7
M75
NAWANDA
8
52
53
95.11
96.111
67.11
2
4
6
DISTRICT
PROTECTION
CORFU - EAST PEMBROKE CENTRAL SCH
BATAVIA CITY SCHOOL DISTRICT
CENTRAL
SCH
DISTRICT
FIRE
MOHAWK POWER CORP 97 (Formerly Canhocton Grade)
68.1
MOHAWK POWER CORP (Formerly New York Central Railroad)
98
771
74
72
68.2
FLOODWAY LEGEND
500-YEAR FLOOD BOUNDARY
100-YEAR FLOOD BOUNDARY
FLOODWAY FRINGE
FLOODWAY
100-YEAR FLOOD BOUNDARY
500-YEAR FLOOD BOUNDARY
APPROXIMATE 100 YEAR FLOOD BOUNDARY
RIVER MILE
ELEVATION REFERENCE MARK
RM 10
BASE FLOOD ELEVATION LINE WITH ELEVATION IN FEET
886
CROSS SECTION LINE
NOTES
BOUNDARIES OF THE FLOODWAYS WERE COMPUTED AT CROSS SECTIONS AND INTERPOLATED BETWEEN CROSS SECTIONS.
THIS MAP WAS PREPARED TO FACILITATE FLOOD PLAIN MANAGEMENT ACTIVITIES ONLY.
LEGEND
PROPERTY LINE
ORIGINAL LOT LINE
RAILROAD
STREAM OR DITCH
ROAD OR RAILROAD ROW
COUNTY LINE
TOWN LINE
VILLAGE & CITY LINE
BLOCK LIMIT
GREAT LOT LINE
SCHOOL DISTRICT LINE
FIRE DISTRICT LINE
WATER DISTRICT LINE
DENOTES COMMON OWNER
TAX MAP BLOCK NO
TAX MAP PARCEL NO
FILED PLAN LOT NO
GREAT LOT NO
CALCULATED ACREAGE
DEED ACREAGE
SCALED DIMENSION
DEED DIMENSION



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

FLOOD HAZARD EVALUATION
TONAWANDA CREEK
TOWN OF BATAVIA, NEW YORK
FLOODED AREAS

JANUARY 1983

NOTES

...NDARIES OF THE FLOODWAYS WERE COMPUTED AT CROSS SECTIONS AND ...ERPOLATED BETWEEN CROSS SECTIONS.

...S MAP WAS PREPARED TO FACILITATE FLOOD PLAIN MANAGEMENT ...IVITIES ONLY.

...END

TAX MAP BLOCK NO	8
TAX MAP PARCEL NO	43 17
FILED PLAN LOT NO	14
GREAT LOT NO	9
CALCULATED ACREAGE	[illegible] (C)
DEED ACREAGE	17.5 A
SCALED DIMENSION	229 (S)
DEED DIMENSION	[illegible]

TAX MAP

TOWN OF BATAVIA

GENESEE COUNTY, NEW YORK

GRAPHIC SCALE

MAP (NO) 11

8

SECTION MAP

1

4