Scope

The purpose of this report is to comply with the provisions of the Village of Canton Flood Damage prevention Law and 6 NYCRR 502, Floodplain Management Criteria for State Projects, to determine potential impacts on Federal Emergency Management Agency (FEMA) floodplains within the project area.

Existing Floodplain Mapping

The proposed project is located in the Village of Canton on an island in the Grass River and is included in the FEMA Flood Insurance Study (FIS) for Village of Canton, New York, St. Lawrence County dated May 2nd, 1994 (Appendix C). In order to provide a common standard, FEMA's National Flood Insurance Program (NFIP) has adopted a baseline probability called the base flood. The base flood has a 1 percent chance of occurring in any given year, and the base flood elevation (BFE) is the elevation of surface water resulting from the 1 percent annual chance flood. For the purposes of this report, the 1 percent annual chance flood is referred to as the 100-year flood event. The Special Flood Hazard Areas (SFHA) is the area inundated by flooding during the 100-year flood event.

Flood Insurance Rate Maps (FIRM) have been developed for the project location and are included in Appendix A of this report. As noted in the proceeding discussion, the project location falls within FEMA Zone AE (BFE determined). A FEMA Base Level Engineering (BLE) Study was also completed for the Grass River, and the hydraulic modeling was obtained from NYSDEC to produce an updated 100-year flood event inundation map which is included in Appendix B of this report.

The project is located in Willow Island Park which is situated on an island in the Grass River south of Main Street (County Route 68/State Route 11). A majority of the proposed project lies within FEMA's SFHA identified as Zone AE (BFE determined) as indicated by FEMA on FIRM Map Number 3606970002C (See Appendix B). The BFE is 343 feet (NAVD 88) in the northern portion of the project area along Main Street, and 344 feet (NAVD 88) in the remaining project area towards the southern portion of the island.

Evaluation of Alternatives

Concept 1: This concept plan positions a stage and stone seating area towards the north end of the island near Main Street. The FIRM Map indicates this area as out of the SFHA, which would make any structures or earthwork in this area suitable and not subject to no-rise criteria. The BLE inundation map also shows this area as being excluded from the 100-year inundation area. Concept 1 will likely not increase the BFE and therefore comply with Village of Canton Flood Damage prevention Law and 6 NYCRR 502, Floodplain Management Criteria for State Projects.

Concept 2: This concept plan positions a stage and stone seating area towards the south end of the island. The stone seating would be placed near the banks and would require some fill. The FIRM Map indicates this area as within the SFHA identified as Zone AE Floodway, which would make any structures or earthwork in this area subject to no-rise criteria. Concept 2 will likely increase the BFE and would require re-grading in other areas to comply with no-rise criteria.

Appendices:

A – National Flood Insurance Program Flood Insurance Rate Map (FIRM) for the Village of Canton, New York, St. Lawrence County. Panel Number 3606370002C. Map Revised May 2, 1994.

B – Willow Island Park 100-Year Inundation Map generated from a Base Level Engineering (BLE) study completed in 2019.

C – Flood Insurance Study (FIS) for the Village of Canton, New York, St. Lawrence County. Community Number 360697. Initial FIS effective date May 1, 1985 (Flood Insurance Rate Map only). FIS revised May 2, 1994.

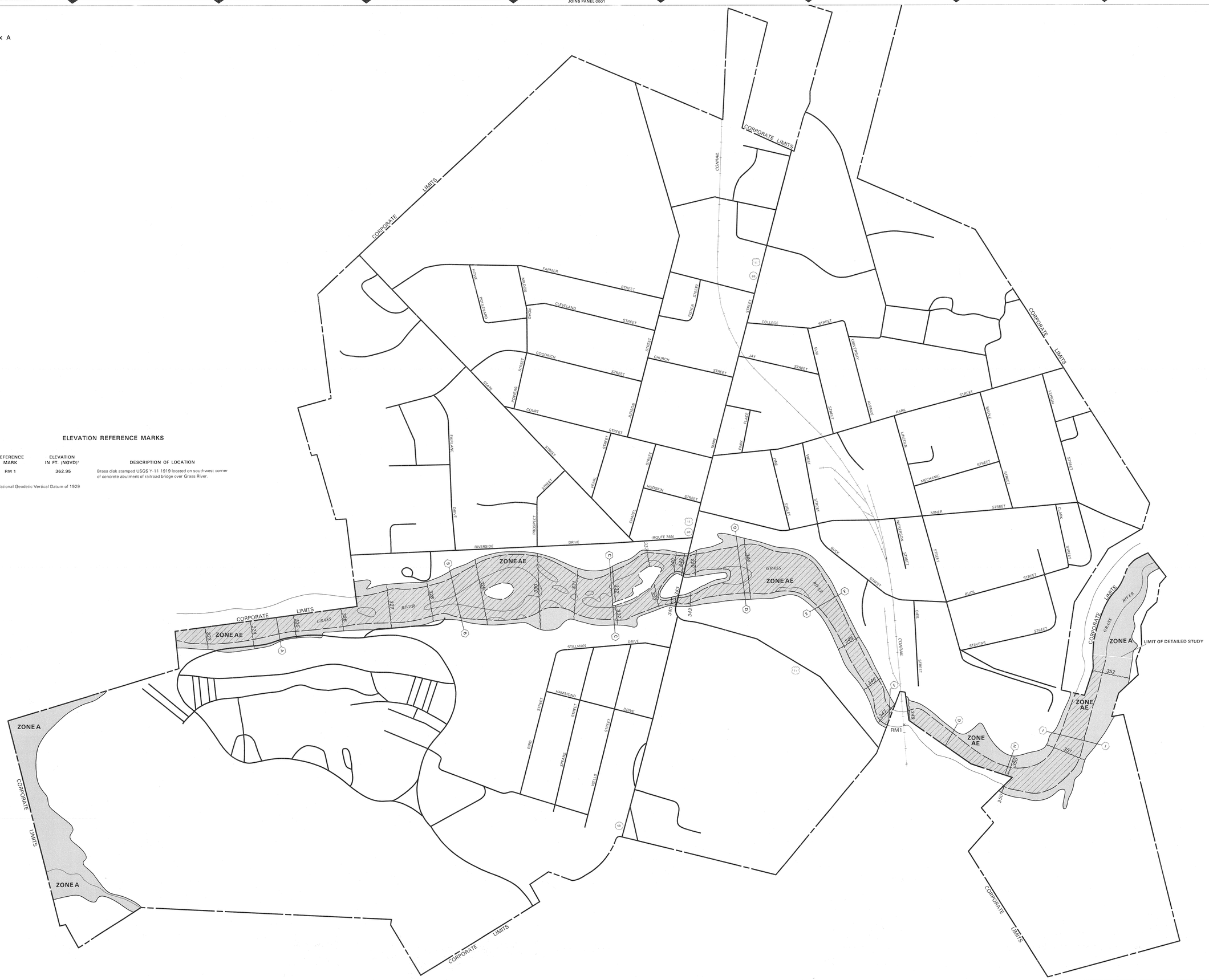
Appendix A

JOINS PANEL 0001

ELEVATION REFERENCE MARKS

REFERENCE MARK	ELEVATION IN FT. (NGVD)[1]	DESCRIPTION OF LOCATION
RM 1	362.95	Brass disk stamped USGS Y-11 1919 located on southwest corner of concrete abutment of railroad bridge over Grass River.

[1]National Geodetic Vertical Datum of 1929



LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

- **ZONE A** No base flood elevations determined.
- **ZONE AE** Base flood elevations determined.
- **ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
- **ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- **ZONE A99** To be protected from 100-year flood by Federal flood protection system under construction; no base flood elevations determined.
- **ZONE V** Coastal flood with velocity hazard (wave action); no base flood elevations determined.
- **ZONE VE** Coastal flood with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

- **ZONE X** Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage area less than 1 square mile; and areas protected by levees from 100-year flood.

OTHER AREAS

- **ZONE X** Areas determined to be outside 500-year floodplain.
- **ZONE D** Areas in which flood hazards are undetermined.

UNDEVELOPED COASTAL BARRIERS†

Identified 1983 | Identified 1990 | Otherwise Protected Areas

†Coastal barrier areas are normally located within or adjacent to special flood hazard areas.

- Floodplain Boundary
- Floodway Boundary
- Zone D Boundary
- Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones.
- 513 — Base Flood Elevation Line; Elevation in Feet*
- (D) — (D) Cross Section Line
- (EL 987) Base Flood Elevation in Feet Where Uniform Within Zone*
- RM 7× Elevation Reference Mark
- •M1.5 River Mile

*Referenced to the National Geodetic Vertical Datum of 1929

NOTES

This map is for use in administering the National Flood Insurance Program; it does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size, or all planimetric features outside Special Flood Hazard Areas. The community map repository should be consulted for possible updated flood hazard information prior to use of this map for property purchase or construction purposes.

Coastal base flood elevations apply only landward of 0.0 NGVD, and include the effects of wave action; these elevations may also differ significantly from those developed by the National Weather Service for hurricane evacuation planning.

Areas of special flood hazard (100-year flood) include Zones A, AE, AH, AO, A99, V, and VE.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures.

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the Federal Emergency Management Agency.

Floodway widths in some areas may be too narrow to show to scale. Floodway widths are provided in the Flood Insurance Study Report.

MAP REPOSITORY
Canton Municipal Building, 60 Main Street, Canton, New York 13617
(Maps available for reference only, not for distribution.)

INITIAL IDENTIFICATION:
AUGUST 16, 1974

FLOOD HAZARD BOUNDARY MAP REVISIONS:
AUGUST 6, 1976

FLOOD INSURANCE RATE MAP EFFECTIVE:
MAY 1, 1985

FLOOD INSURANCE RATE MAP REVISIONS:
May 2, 1994 - to update corporate limits, to add base flood elevations, to change special flood hazard areas and zone designations, and to update map format.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at (800) 638-6620.

APPROXIMATE SCALE
400 0 400 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

VILLAGE OF
CANTON,
NEW YORK
ST. LAWRENCE COUNTY

ONLY PANEL PRINTED

MAP LOCATOR DIAGRAM

*PANEL NOT PRINTED: NO SPECIAL FLOOD HAZARD AREAS

COMMUNITY-PANEL NUMBER
360697 0002 C

MAP REVISED:
MAY 2, 1994

Federal Emergency Management Agency

100-year Inundation Boundary data derived from NYSDEC/FEMA Base Level Engineering (BLE).

Data Source:
Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

SHUMAKER
Consulting Engineering & Land Surveying, D.P.C.

0 200 400 800
Feet

WILLOW ISLAND PARK
FLOODPLAIN MAP
BASE LEVEL ENGINEERING DATA

VILLAGE OF CANTON
ST LAWRENCE COUNTY, NY

DATE: 11/29/2022

FIGURE: B

Document Path: E:\2022\22061 Willow Island Park\Water Resources\GIS\Willow_Island_Inundation.mxd

FLOOD INSURANCE STUDY

VILLAGE OF CANTON, NEW YORK

ST. LAWRENCE COUNTY

MAY 2, 1994

Federal Emergency Management Agency

COMMUNITY NUMBER - 360697

NOTICE TO
FLOOD INSURANCE STUDY USERS

Communities participating in the National Flood Insurance Program (NFIP) have established repositories of flood hazard data for floodplain management and flood insurance purposes. This Flood Insurance Study may not contain all data available within the repository. It is advisable to contact the community repository for any additional data.

Part or all of this FIS may be revised and republished at any time. In addition, part of this FIS may be revised by the Letter of Map Revision process, which does not involve republication or redistribution of the FIS. It is, therefore, the responsibility of the user to consult with community officials and to check the community repository to obtain the most current FIS components.

Initial FIS Effective Date: May 1, 1985 (Flood Insurance Rate Map only)

Revised FIS Dates: May 2, 1994

TABLE OF CONTENTS

TABLE OF CONTENTS - continued

FLOOD INSURANCE STUDY
VILLAGE OF CANTON, ST. LAWRENCE COUNTY, NEW YORK

1.0 INTRODUCTION

1.1 Purpose of Study

This Flood Insurance Study (FIS) revises and updates a previous FIS/Flood Insurance Rate Map (FIRM) for the Village of Canton, St. Lawrence County, New York. This information will be used by the Village of Canton to update existing floodplain regulations as part of the Regular Phase of the National Flood Insurance Program (NFIP). The information will also be used by local and regional planners to further promote sound land use and floodplain development.

In some states or communities, floodplain management criteria or regulations may exist that are more restrictive or comprehensive than the minimum Federal requirements. In such cases, the more restrictive criteria take precedence and the state (or other jurisdictional agency) will be able to explain them.

1.2 Authority and Acknowledgments

The sources of authority for this FIS are the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

The hydrologic and hydraulic analyses for the Grass River were prepared by Leonard Jackson Associates for the Federal Emergency Management Agency (FEMA), under Contract No. EMW-90-C-3127. This work was completed in September 1992.

1.3 Coordination

The Village of Canton was recommended for study by the New York State Department of Environmental Conservation (NYSDEC) in April 1990, and representatives of FEMA and Leonard Jackson Associates met with NYSDEC to discuss the scope of the FIS.

Information concerning the history of flooding in the study area was provided by Village of Canton officials and residents, NYSDEC, and the U.S. Geological Survey (USGS).

A final Consultation Coordination Officer's meeting was held on April 21, 1993, to review the results of the study. This meeting was attended by representatives of NYSDEC, the Village of Canton, and FEMA.

2.0 AREA STUDIED

2.1 Scope of Study

This FIS covers the incorporated area of the Village of Canton, St. Lawrence County, New York.

In this revision, the Grass River was studied by detailed methods from approximately 1 mile downstream of the State Route 68 bridge to approximately 0.55 mile upstream of the CONRAIL railroad bridge.

Limits of detailed study are indicated on the Flood Profiles (Exhibit 1) and on the FIRM (Exhibit 2). The areas studied by detailed methods were selected with priority given to all known flood hazard areas and areas of projected development and proposed construction through September 1997.

Portions of the Grass River were studied by approximate methods. Approximate analyses were used to study those areas having a low development potential or minimal flood hazards. The scope and methods of study were proposed to, and agreed upon by, FEMA and the Village of Canton.

2.2 Community Description

The Village of Canton is located in the central portion of St. Lawrence County, in northern New York. The village lies approximately 55 miles northeast of the City of Watertown and approximately 20 miles south of the Canadian border. The Village of Canton is entirely surrounded by the Town of Canton.

The Village of Canton was incorporated in 1845. It presently covers an area of 2.54 square miles, which includes recently annexed commercial and industrial properties along the easterly and southwesterly corporate limits. Much of the village is developed with residential uses in the center, and commercial and industrial uses on the perimeter. The village also includes the State University of New York Agricultural and Technical College and St. Lawrence University. The village had a population of 6,379 in 1990 (References 1 and 2).

The climate of the area is typical of the Adirondack Region of New York State, with cold winters of moderate to heavy snowfall and warm, humid summers. The mean annual precipitation is approximately 35 inches and the mean annual snowfall is approximately 78 inches. Mean daily temperatures range from 16 degrees Fahrenheit in January to 69 degrees Fahrenheit in July (Reference 3).

2.3 Principal Flood Problems

Flooding can occur in the study area during all seasons, but usually occurs in late winter and early spring, when the ground is still frozen and snowmelt adds to heavy rainfall to produce increased runoff. There is no major flooding problem reported, and the excessive runoff occasionally inundates open fields and parks without causing damage. USGS gage No. 04265000 is located at Pyrites, New York.

2.4 Flood Protection Measures

The Village of Canton has no structural flood protection measures. The village has adopted a Zoning Ordinance which includes restrictions on land use and construction in flood prone areas.

3.0 ENGINEERING METHODS

For the flooding source studied in detail in the community, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this study. Flood events of a magnitude which are expected to be equaled or exceeded once on the average during any 10, 50-, 100-, or 500-year period (recurrence interval) have been selected as having special significance for floodplain management and for flood insurance rates. These events, commonly termed the 10-, 50-, 100-, and 500-year floods, have a 10, 2, 1, and 0.2 percent chance, respectively, of being equaled or exceeded during any year. Although the recurrence interval represents the long term average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than 1 year are considered. For example, the risk of having a flood which equals or exceeds the 100-year flood (1 percent chance of annual exceedence) 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 based on conditions existing in the community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

3.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish the peak discharge-frequency relationships for the flooding source studied in detail affecting the community.

The hydrologic analysis for Grass River was prepared by the New York State Department of Transportation in conjunction with the rehabilitation of the U.S. Route 11 bridges in 1977 and 1978. Peak discharges were developed utilizing a log-Pearson Type III flood frequency analysis on data from USGS gage No. 04265000 at Pyrites, New York.

A summary of the drainage area-peak discharge relationships for the stream studied by detailed methods is shown in Table 1, "Summary of Discharges."

TABLE 1 - SUMMARY OF DISCHARGES

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 100-YEAR
GRASS RIVER		
Approximately one mile downstream of State Route 68 bridge	501	15,000

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the source studied were carried out to provide estimates of the elevations of floods of the selected recurrence intervals.

Cross sections for the flooding source studied by detailed methods were obtained from field surveys. All bridges, dams, and culverts were field surveyed to obtain elevation data and structural geometry.

Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles (Exhibit 1). For stream segments for which a floodway was computed (Section 4.2), selected cross-section locations are also shown on the FIRM (Exhibit 2).

Water-surface elevations of floods of the selected recurrence intervals were computed using the U.S. Army Corps of Engineers HEC-2 step-backwater computer program (Reference 4). Starting water-surface elevations were calculated using the HEC-2 step-backwater computer program and the slope/area method. Flood profiles were drawn showing computed water-surface elevations for floods of the selected recurrence intervals.

Channel roughness factors (Manning's "n") used in the hydraulic computations were chosen by engineering judgment and based on field observations of the stream and floodplain areas. The channel "n" value for the Grass River was 0.035, and the overbank "n" values ranged from 0.045 to 0.060.

The hydraulic analyses for this study were based on unobstructed flow. The flood elevations shown on the profiles are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

All elevations are referenced to the National Geodetic Vertical Datum of 1929. Elevation reference marks used in this study, and their descriptions, are shown on the maps.

4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

The NFIP encourages State and local governments to adopt sound floodplain management programs. Therefore, each FIS provides 100-year flood elevations and delineations of the 100- and 500-year floodplain boundaries and 100-year floodway to assist in developing floodplain management measures.

4.1 Floodplain Boundaries

To provide a national standard without regional discrimination, the 1 percent annual chance (100-year) flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2 percent annual chance (500-year) flood is employed to indicate additional areas of flood risk in the community. For the stream studied in detail, the 100- and 500-year floodplain boundaries have been delineated using the flood elevations determined at each cross section. Between cross sections, the boundaries were interpolated using topographic maps at a scale of 1:24,000 with a contour interval of 20 feet and construction plans for Hudson Engineering Corporation's co-generation facility (References 5, 6, and 7).

For the stream studied by approximate methods, the 100-year floodplain was taken from the FIS for the Town of Canton and the previously printed FIRM for the Village of Canton (References 8 and 9).

The 100- and 500-year floodplain boundaries are shown on the FIRM (Exhibit 2). On this map, the 100-year floodplain boundary corresponds to the boundary of the areas of special flood hazards (Zones A and AE), and the 500-year floodplain boundary corresponds to the boundary of areas of moderate flood hazards. In cases where the 100- and 500-year floodplain boundaries are close together, only the 100-year floodplain boundary has been shown. Small areas within the floodplain boundaries may lie above the flood elevations but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data.

For the stream studied by approximate methods, only the 100-year floodplain boundary is shown on the FIRM (Exhibit 2).

4.2 Floodways

Encroachment on floodplains, such as structures and fill, reduces flood-carrying capacity, increases flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard. For purposes of the NFIP, a floodway is used as a tool to assist local communities in this aspect of floodplain management. Under this concept, the area of the 100-year floodplain is divided into a floodway and a floodway fringe. The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment so that the 100-year flood can be carried without substantial increases in flood heights. Minimum federal standards limit such increases to 1.0 foot, provided that hazardous velocities are not produced. The floodway in this study is presented to local agencies as a minimum standard that can be adopted directly or that can be used as a basis for additional floodway studies.

The floodway presented in this study was computed for certain stream segments on the basis of equal conveyance reduction from each side of the floodplain. Floodway widths were computed at cross sections. Between cross sections, the floodway boundaries were interpolated. The results of the floodway computations are tabulated for selected cross sections (Table 2). The computed floodway is shown on the FIRM (Exhibit 2). In cases where the floodway and 100-year floodplain boundaries are either close together or collinear, only the floodway boundary is shown. Portions of the floodway for the Grass River extend beyond the corporate limits.

Encroachment into areas subject to inundation by floodwaters having hazardous velocities aggravates the risk of flood damage, and heightens potential flood hazards by further increasing velocities. A listing of stream velocities at selected cross sections is provided in Table 2, "Floodway Data." In order to reduce the risk of property damage in areas where the stream velocities are high, the community may wish to restrict development in areas outside the floodway.

The area between the floodway and 100-year floodplain boundaries is termed the floodway fringe. The floodway fringe encompasses the portion of the floodplain that could be completely obstructed without increasing the water-surface elevation of the 100-year flood by more than 1.0 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to floodplain development are shown in Figure 1.

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
					(FEET NGVD)			
Grass River								
A	1,000	300/135[2]	2,263	6.6	324.5	324.5	325.1	0.6
B	2,800	417	2,841	5.3	328.5	328.5	328.9	0.4
C	4,530	482	1,675	9.0	331.8	331.8	331.9	0.1
D	5,900	474	3,653	4.1	344.0	344.0	344.8	0.8
E	6,925	210	1,865	8.0	344.0	344.0	344.9	0.9
F	8,225	190/150[2]	1,980	7.6	346.8	346.8	347.4	0.6
G	8,865	275/145[2]	3,239	4.6	349.4	349.4	349.8	0.4
H	9,565	185/80[2]	1,940	7.7	350.0	350.0	350.5	0.5
I	10,475	250	2,514	6.0	351.3	351.3	352.1	0.8

[1]Feet above downstream corporate limits
[2]Width/width within corporate limits

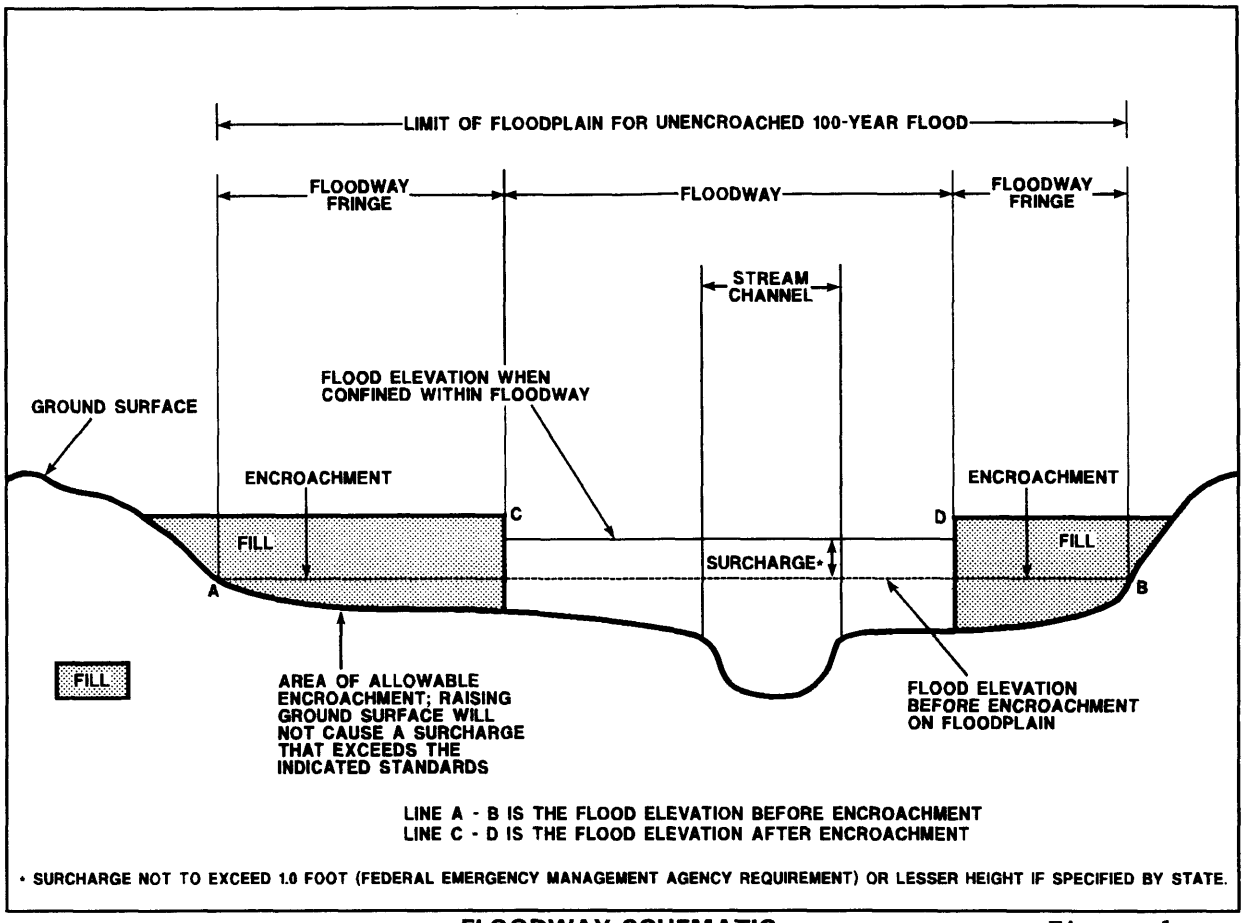
TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

VILLAGE OF CANTON, NY
(ST. LAWRENCE CO.)

FLOODWAY DATA

GRASS RIVER



FLOODWAY SCHEMATIC Figure 1

5.0 INSURANCE APPLICATIONS

For flood insurance rating purposes, flood insurance zone designations are assigned to a community based on the results of the engineering analyses. The zones are as follows:

Zone A

Zone A is the flood insurance rate zone that corresponds to the 100-year floodplains that are determined in the FIS by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no base flood elevations or depths are shown within this zone.

Zone AE

Zone AE is the flood insurance rate zone that corresponds to the 100-year floodplains that are determined in the FIS by detailed methods. In most instances, whole-foot base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone AH

Zone AH is the flood insurance rate zone that corresponds to the areas of 100-year shallow flooding (usually areas of ponding) where average depths are between 1 and 3 feet. Whole-foot base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone AO

Zone AO is the flood insurance rate zone that corresponds to the areas of 100-year shallow flooding (usually sheet flow on sloping terrain) where average depths are between 1 and 3 feet. Average whole-depths derived from the detailed hydraulic analyses are shown within this zone.

Zone A99

Zone A99 is the flood insurance rate zone that corresponds to areas of the 100-year floodplain that will be protected by a Federal flood protection system where construction has reached specified statutory milestones. No base flood elevations or depths are shown within this zone.

Zone V

Zone V is the flood insurance rate zone that corresponds to the 100-year coastal floodplains that have additional hazards associated with storm waves. Because approximate hydraulic analyses are performed for such areas, no base flood elevations are shown within this zone.

Zone VE

Zone VE is the flood insurance rate zone that corresponds to the 100-year coastal floodplains that have additional hazards associated with storm waves. Whole-foot base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone X

Zone X is the flood insurance rate zone that corresponds to areas outside the 500-year floodplain, areas within the 500-year floodplain, and to areas of 100-year flooding where average depths are less than 1 foot, areas of 100-year flooding where the contributing drainage area is less than 1 square mile, and areas protected from the 100-year flood by levees. No base flood elevations or depths are shown within this zone.

Zone D

Zone D is the flood insurance rate zone that corresponds to unstudied areas where flood hazards are undetermined, but possible.

6.0 FLOOD INSURANCE RATE MAP

The FIRM is designed for flood insurance and floodplain management applications.

For flood insurance applications, the map designates flood insurance rate zones as described in Section 5.0 and, in the 100-year floodplains that were studied by detailed methods, shows selected whole-foot base flood elevations or average depths. Insurance agents use the zones and base flood elevations in conjunction with information on structures and their contents to assign premium rates for flood insurance policies.

For floodplain management applications, the map shows by tints, screens, and symbols, the 100- and 500-year floodplains. Floodways and the locations of selected cross sections used in the hydraulic analyses and floodway computations are shown where applicable.

7.0 OTHER STUDIES

A FIS has been prepared for the Town of Canton (Reference 8).

Because it is based on more up-to-date analyses, this FIS supersedes the previously printed FIRM for the Village of Canton (Reference 9).

8.0 LOCATION OF DATA

Information concerning the pertinent data used in preparation of this study can be obtained by contacting FEMA, the Natural and Technological Hazards Division, 26 Federal Plaza, Room 1351, New York, New York 10278.

9.0 BIBLIOGRAPHY AND REFERENCES

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4. U.S. Army Corps of Engineers, Hydrologic Engineering Center, HEC-2 Water Surface Profiles, Generalized Computer Program, Davis, California, September 1982.

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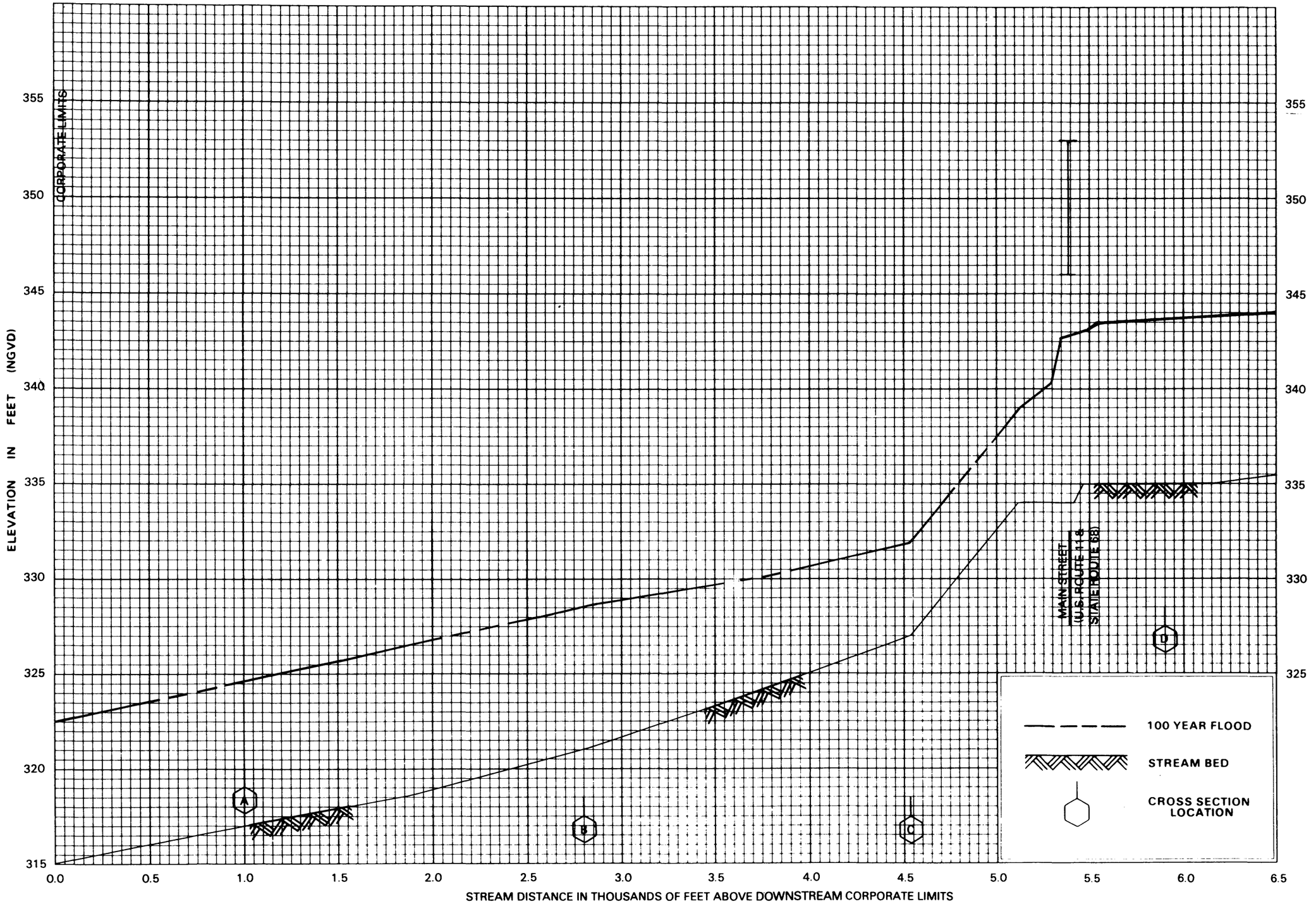
6. Stearns & Wheler, for Hudson Engineering Corporation, Flood Impact Analysis, New Co-generation Facility, Canton, New York, January 1990.

7. Megan-Racine Associates, for Hudson Engineering Corporation, Rough Grading Plan, Co-generation Facility, Village of Canton, New York, October 2, 1989.

8. Federal Emergency Management Agency, Flood Insurance Rate Map, Town of Canton, St. Lawrence County, New York, Washington, D.C., June 2, 1993.

9. Federal Emergency Management Agency, Flood Insurance Rate Map, Village of Canton, St. Lawrence County, New York, Washington, D.C., May 1, 1985.



FLOOD PROFILES

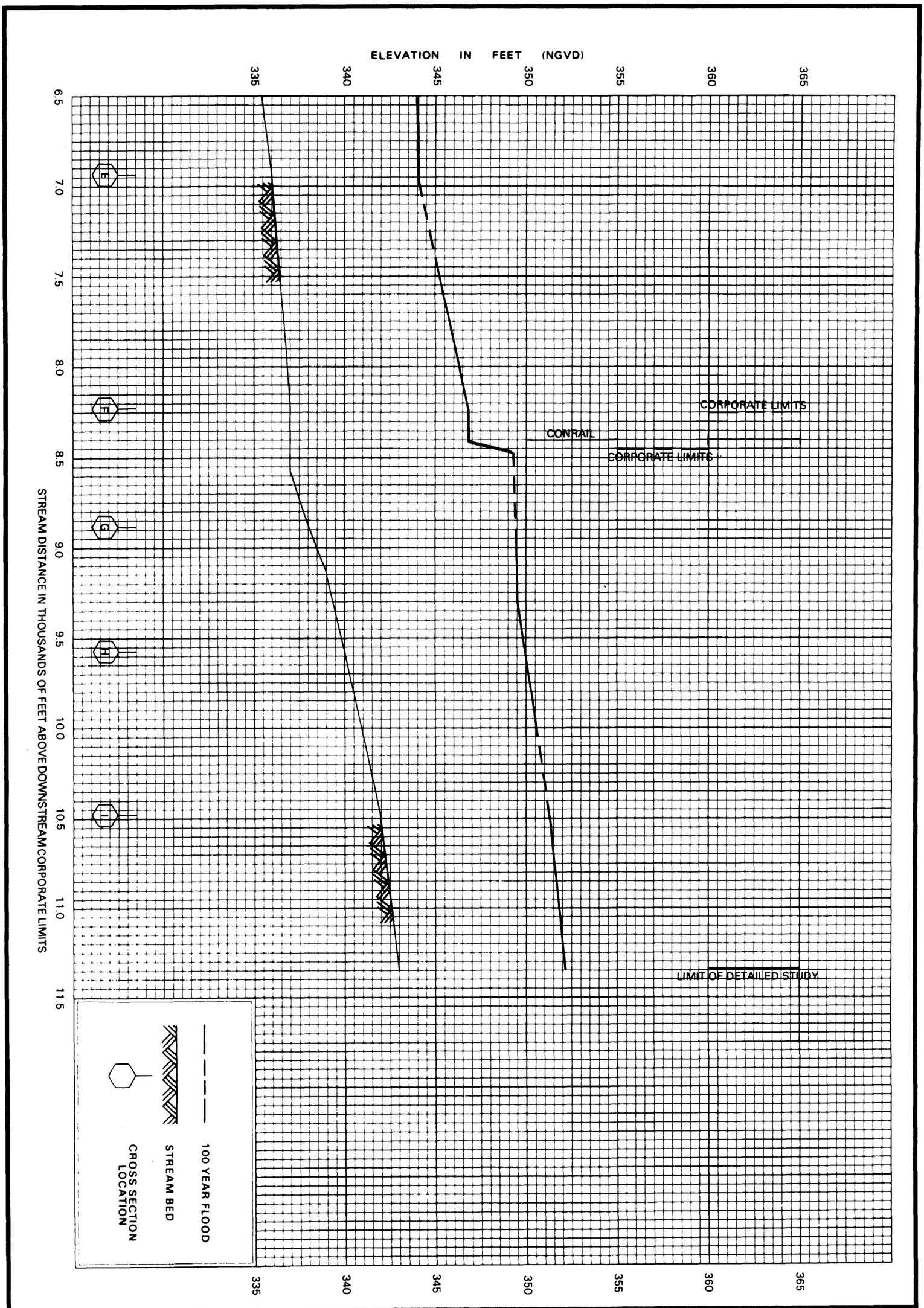
GRASS RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

VILLAGE OF CANTON, NY

(ST. LAWRENCE CO.)

01P



FEDERAL EMERGENCY MANAGEMENT AGENCY

VILLAGE OF CANTON, NY

(ST. LAWRENCE CO.)

FLOOD PROFILES

GRASS RIVER

02P