

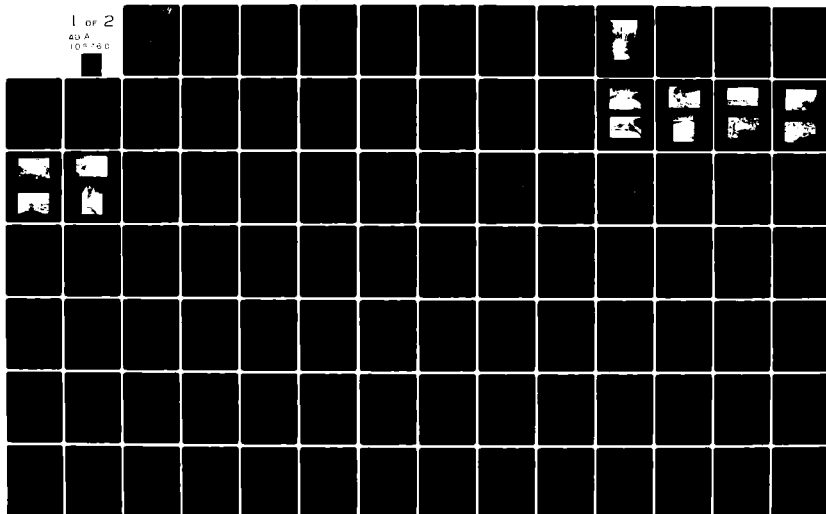
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NEW YORK STATE DEPT OF ENVIRONMENTAL CONSERVATION ALBANY F/G 13/13
NATIONAL DAM SAFETY PROGRAM. SUMMIT STREET LAKE DAM (INVENTORY --ETC(U)
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AD A105760

LOWER HUDSON RIVER BASIN

SUMMIT STREET LAKE DAM

COLUMBIA COUNTY, NEW YORK

INVENTORY NO. N.Y. 847

**PHASE I INSPECTION REPORT
NATIONAL DAM SAFETY PROGRAM**



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NEW YORK DISTRICT CORPS OF ENGINEERS

MARCH, 1981

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This report provides information and analysis on the physical condition of the dam as of the report date. Information and analysis are based on visual inspection of the dam by the performing organization. Visual inspection of this dam and engineering analyses which have been performed revealed that several serious deficiencies exist on this structure.		

Displaced stones have created a number of voids on the downstream face. While most of these voids were about one cubic foot in size, two were substantially larger. There was leakage through and beneath the dam especially in the vicinity of these voids. The slate stones which compose this structure were weathered and in some spots could be broken off by hand.

Using the Corp's of Engineer's Screening criteria for the initial review of spillway adequacy, it has been determined that the structure would be overtopped by all storms exceeding 23% of the Probable Maximum Flood (PMF). Stability analyses performed for this structure indicate that it would not be capable of withstanding overtopping. Since an overtopping failure would significantly increase the hazard to loss of life downstream, the spillway is adjudged as "seriously inadequate" and the dam is assessed as "unsafe, non-emergency".

Immediately upon receipt of this notification, a system for providing around-the-clock surveillance of the dam during periods of unusually heavy precipitation should be developed and implemented. An emergency action plan for the notification of downstream residents should also be developed.

It is recommended that within 3 months of the date of notification of the owner, investigations into the deficiencies on this structure should be commenced. Studies of the stability related deficiencies (including the voids and the leakage) are necessary. Additional hydrologic/hydraulic investigations are also needed to find a method to correct the spillway inadequacy. Remedial measures deemed necessary as a result of these investigations should be completed within 18 months.

Other deficiencies noted on this structure should also be corrected within 18 months. Among the actions required are repairing deteriorated concrete on the spillway crest and removing brush and vines growing on the dam.

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PREFACE

This report is prepared under guidance contained in the Recommended Guidelines for Safety Inspection of Dams, for Phase I Investigations. Copies of these guidelines may be obtained from the Office of Chief of Engineers, Washington, D.C. 20314. The purpose of a Phase I Investigation is to identify expeditiously those dams which may pose hazards to human life or property. The assessment of the general condition of the dam is based upon available data and visual inspections. Detailed investigation, and analyses involving topographic mapping, subsurface investigations, testing, and detailed computational evaluations are beyond the scope of a Phase I Investigation; however, the investigation is intended to identify any need for such studies.

In reviewing this report, it should be realized that the reported condition of the dam is based on observations of field conditions at the time of inspection along with data available to the inspection team. In cases where the reservoir was lowered or drained prior to inspection, such action, while improving the stability and safety of the dam, removes the normal load on the structure and may obscure certain conditions which might otherwise be detectable if inspected under the normal operating environment of the structure.

It is important to note that the condition of a dam depends on numerous and constantly changing internal and external conditions, and is evolutionary in nature. It would be incorrect to assume that the present condition of the dam will continue to represent the condition of the dam at some point in the future. Only through frequent inspections can unsafe conditions be detected and only through continued care and maintenance can these conditions be prevented or corrected.

Phase I inspections are not intended to provide detailed hydrologic and hydraulic analyses. In accordance with the established Guidelines, the Spillway Test flood is based on the estimated "Probable Maximum Flood" for the region (greatest reasonably possible storm runoff), or fractions thereof. Because of the magnitude and rarity of such a storm event, a finding that a spillway will not pass the test flood should not be interpreted as necessarily posing a highly inadequate condition. The test flood provides a measure of relative spillway capacity and serves as an aide in determining the need for more detailed hydrologic and hydraulic studies, considering the size of the dam, its general condition and the downstream damage potential.

PHASE I INSPECTION REPORT
NATIONAL DAM SAFETY PROGRAM
SUMMIT STREET DAM
I.D. No. NY 847
228A-1074
LOWER HUDSON RIVER BASIN
COLUMBIA COUNTY, NEW YORK

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PHASE I REPORT
NATIONAL DAM SAFETY PROGRAM

Name of Dam:	Summit Street Dam (I.D. No. NY 847)
State Located:	New York
County:	Columbia
Watershed:	Lower Hudson River Basin
Stream:	Agawanauck Creek
Date of Inspection:	October 29, 1980.

ASSESSMENT

Visual inspection of this dam and engineering analyses which have been performed revealed that several serious deficiencies exist on this structure.

Displaced stones have created a number of voids on the downstream face. While most of these voids were about one cubic foot in size, two were substantially larger. There was leakage through and beneath the dam especially in the vicinity of these voids. The slate stones which compose this structure were weathered and in some spots could be broken off by hand.

Using the Corp's of Engineer's Screening criteria for the initial review of spillway adequacy, it has been determined that the structure would be overtopped by all storms exceeding 23% of the Probable Maximum Flood (PMF). Stability analyses performed for this structure indicate that it would not be capable of withstanding overtopping. Since an overtopping failure would significantly increase the hazard to loss of life downstream, the spillway is adjudged as "seriously inadequate" and the dam is assessed as "unsafe, non-emergency".

Immediately upon receipt of this notification, a system for providing around-the-clock surveillance of the dam during periods of unusually heavy precipitation should be developed and implemented. An emergency action plan for the notification of downstream residents should also be developed.

It is recommended that within 3 months of the date of notification of the owner, investigations into the deficiencies on this structure should be commenced. Studies of the stability related deficiencies (including the voids and the leakage) are necessary. Additional hydrologic/hydraulic investigations are also needed to find a method to correct the spillway inadequacy. Remedial measures deemed necessary as a result of these investigations should be completed within 18 months.

Other deficiencies noted on this structure should also be corrected within 18 months. Among the actions required are repairing deteriorated concrete on the spillway crest and removing brush and vines growing on the dam.

George Koch

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New York State Department
of Environmental Conservation
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Approved By:

for W.M. Smith Jr.
Col. W.M. Smith Jr.
New York District Engineer

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ate:



OVERVIEW
SUMMIT STREET DAM
I.D. No. NY 847

PHASE I INSPECTION REPORT
NATIONAL DAM SAFETY PROGRAM
SUMMIT STREET DAM
I.D. No. NY 847
228A-1074
LOWER HUDSON RIVER BASIN
COLUMBIA COUNTY, NEW YORK

SECTION 1: PROJECT INFORMATION

1.1 GENERAL

a. Authority

The Phase I inspection reported herein was authorized by the Department of the Army, New York District, Corps of Engineers, to fulfill the requirements of the National Dam Inspection Act, Public Law 92-367.

b. Purpose of Inspection

This inspection was conducted to evaluate the existing conditions of the dam, to identify deficiencies and hazardous conditions, to determine if these deficiencies constitute hazards to life and property, and to recommend remedial measures where required.

1.2 DESCRIPTION OF PROJECT

a. Description of Dam

The Summit Street Dam is laid up stone dam with a concrete crest forming on an overflow spillway section. A sluice at the right end of the dam controlled by stop logs may act as a low level outlet.

The spillway section is 134 feet long and 21 feet high. It extends from a laid up stone abutment at the left end to a rock outcrop at its right end. The crest on this section is 13 feet wide.

The stop log sluice entrance is in a rock cut. It is 3.3 feet wide and has vertical concrete sidewalls. There are stop logs on the outlet end of the sluice. A total of 17.2 feet of stop logs can be placed in this sluice.

b. Location

This dam is located on the Agawamuck Creek in the Village of Philmont. It is approximately 1000 feet south of New York State Route 217.

c. Size Classification

The dam is 21 feet high and has a maximum storage capacity of 264 acre-feet. Therefore, the dam is in the small size category as defined by the "Recommended Guidelines for Safety Inspection of Dams."

d. Hazard Classification

This dam is classified as "high" hazard due to the presence of 10 to 15 houses and mobile homes located approximately 1 mile downstream of the dam near the hamlet of Mellenville.

e. Ownership

The dam is owned by the Village of Philmont. Mr. Clinton Mossman is Mayor of the Village. The address of the Municipal Building is P.O. Box 00, Philmont, New York, 12565. The Village Clerk's office phone number is (518) 672-7032.

f. Purpose of Dam

This dam was constructed about the year 1860 by the High Rock Knitting Company, who used it for industrial purposes. The Village of Philmont assumed ownership of the structure in 1975. The impoundment is now used for recreational purposes.

g. Design and Construction History

This dam was constructed about the year 1860. No design or construction records for the dam could be located.

h. Normal Operation

There are no prescribed operating procedures for this structure.

1.3 PERTINENT DATA

<u>a. Drainage Area</u> (sq. mi.)	21.16
<u>b. Discharge at Dam</u> (cfs)	
Spillway at maximum high water	5413.
Low level outlet at Spillway Crest	385.
<u>c. Elevation</u> (USGS Datum)	
Top of Dam	500.25
Spillway Crest	495.
Invert of Low level outlet channel	480.55
<u>d. Reservoir-Surface Area</u> (acres)	
Top of Dam	24.2
Spillway Crest	16.5
<u>e. Storage Capacity</u> (acre-feet)	
Top of Dam	264.
Spillway Crest	178
<u>f. Dam</u>	
Type: Laid up stone dam with central overflow spillway section; laid up stone forms left abutment; bedrock outcrop forms right abutment.	
Dam length (ft)	160.
Crest width (ft)	13.
<u>g. Spillway</u>	
Type: Center section of dam; laid up stone with concrete on crest; slope of concrete on crest 1 vertical on 7 horizontal; spillway crest length is 134 feet.	

h. Stop Log Sluice

Type: Entrance cut through bedrock with vertical concrete walls; stop logs at downstream end of sluice; overall width is 3.3 feet and there are provisions for up to 17.2 feet of stop logs.

SECTION 2: ENGINEERING DATA

2.1 GEOTECHNICAL DATA

a. Geology

The Summit Street Dam is located in the Taconic Section of the New England Uplands physiographic province of New York State. The bedrock in this area is generally limestone, sandstone and slate altered and broken by the folding and faulting which have characterized the geologic history of this area. Outcrops in the vicinity of the dam consisted of severely folded slates. A review of the "Brittle Structures Map of the State of New York" indicated that there is a high angle reverse fault approximately three quarters of a mile to the west of this dam.

Surficial soils in the area are the results of glaciations during the Cenozoic Era, the last of which was the Wisconsin glaciation.

b. Subsurface Investigations

No records of any subsurface investigations performed for this structure could be located.

2.2 DESIGN RECORDS

There were no design records available for this structure.

2.3 CONSTRUCTION RECORDS

There were no construction records available for this structure. The dam was built about 1860 by the High Rock Knitting Company.

2.4 OPERATION RECORDS

No operation records are maintained on this structure.

2.5 EVALUATION

Data available for the preparation of this report was extremely limited. Information used was obtained from the Department of Environmental Conservation files and from measurements made at the time of the inspection.

SECTION 3: VISUAL INSPECTION

3.1 FINDINGS

a. General

Visual inspection of the Summit Street Dam was conducted on October 29, 1980. The weather was overcast and the temperature was in the mid-forties. The water level at the time of the inspection was 2.75 feet below the spillway crest.

b. Dam-Spillway Section

Visual inspection revealed several deficiencies on this structure. The most serious of these deficiencies were voids created by displaced stones on the downstream face. Most of these voids were relatively small (about 1 foot high by 1 foot wide by 1 foot deep). There was a larger void at the downstream toe near the left end of the structure. This void was approximately 3 feet high by 5 feet wide by 4 feet deep. A void of approximately the same size was noted on the left abutment wall.

Leakage through and beneath the structure was also observed. In several areas, the leakage was emerging from the voids on the downstream face. Water was also exiting along the interface between the dam and bedrock at the right end of the structure.

The stones which make up this dam were predominantly flat pieces of slate. The exterior stones on the downstream face were weathered to such an extent that it was possible to break pieces off using your hands. The bedrock in this area was highly weathered.

The concrete on the crest was cracked and deteriorated. There was some concrete removal along each of the joints across the crest. At one joint, the area of deteriorated concrete extended for about 5 feet with a maximum depth of removal of up to 6 inches.

Brush and vines were growing both on the downstream face and along the crest. There were several trees which were growing through the laid up stone abutment at the left end of the dam.

c. Stop Log Sluice Structure

The stop log sluice structure at the right end of the dam was in satisfactory condition.

3.2 EVALUATION OF OBSERVATIONS

Visual observations revealed several deficiencies on this structure. The following items were noted:

1. Voids created by displaced stones on the downstream face. Voids ranged in size from 1 cubic foot up to 60 cubic feet;
2. Leakage through and beneath the structure;
3. Weathered stones which compose the dam that can be broken off by hand;
4. Deteriorated concrete on the crest of the dam.
5. Brush and vines growing on the dam.

SECTION 4: OPERATION AND MAINTENANCE PROCEDURES

4.1 PROCEDURES

There are no prescribed operating procedures for this dam.

4.2 MAINTENANCE OF DAM

There is no established maintenance plan for the dam.

4.3 WARNING SYSTEM IN EFFECT

No apparent warning system for evacuation of downstream residents is present.

4.4 EVALUATION

The operation and maintenance procedures on this dam are not satisfactory. The deficiencies noted in section 3 indicate that increased maintenance efforts are needed.

SECTION 5: HYDROLOGIC/HYDRAULIC

5.1 DRAINAGE AREA CHARACTERISTICS

The delineation of the contributing watershed to this dam is indicated on the map titled "Drainage Area Map - Summit Street Dam" (Appendix C). The irregular but somewhat rectangular-shaped, north-south oriented watershed of some 21.16 square miles (13,545 acres) is comprised of relatively underdeveloped lands consisting of open cropland, fields and pastures, and forests. Slopes along the primary drainage paths, including the Agawamuck Creek main stem, are flat (less than 3%) to moderate (3% to 8%). However, the adjacent hillsides have steep slopes (greater than 8%). The hills forming the watershed divide range from 300 feet to 1000 feet in elevation above the reservoir. The only significant body of water within the watershed is named Philmont Reservoir and is located on a tributary to the Agawamuck Creek main stem. The Taconic State Parkway traverses the middle of subbasin 4 and then somewhat parallels the Agawamuck Creek main stem along the westerly divide of the watershed.

5.2 ANALYSIS CRITERIA

No hydrologic/hydraulic information was available regarding the original design for this dam. Therefore, the analysis of the floodwater retarding capability of the dam was performed using the Corps of Engineers HEC-1 computer program, Dam Safety version, and data provided by the report titled "Lower Hudson River Basin Hydrologic Flood Routing Model" (Appendix E, ref. 4). The computer program develops inflow hydrographs using the "Snyder Unit Hydrograph" method for each of the subbasins, stream channel routs and combines hydrographs at selected stream junctions, and then reservoir routs the resulting hydrograph using the "Modified Puls" flood routing procedure. The spillway design flood selected for analysis was the Probable Maximum Flood (PMF), in accordance with the Recommended Guidelines of the U.S. Army Corps of Engineers. The PMF event is that hypothetical storm event resulting from the most critical combination of rainfall, minimum soil retention, and direct runoff to a specific site that is considered reasonably possible for a particular watershed.

5.3 SPILLWAY CAPACITY

The single, 134 foot long, ungated spillway extends across the entire dam. It was analyzed for weir flow using a discharge coefficient, C , varying from 2.7 to 3.0. The computed discharge capacity of the spillway is 5413 cfs.

The flood analysis performed for this dam indicates that the spillway does not have sufficient capacity for discharging one-half the PMF. For this storm event, the peak inflow and peak outflow is 11,696 cfs. The PMF peak inflow and peak outflow is 23,587 cfs.

5.4 RESERVOIR CAPACITY

The normal water surface is regulated by the stop log sluice located at the right abutment. Using a 1939 reference and the USGS mapping of the reservoir area, the impounded capacity at elevation 495 (USGS) is 178 acre-feet which is equivalent to a direct runoff depth of 0.08 inches over the watershed. The total storage capacity is 264 acre-feet.

5.5 FLOODS OF RECORD

The date of occurrence of the maximum flood at the dam site is not known. However, a discharge of 3670 cfs was recorded on the Agawamuck Creek main stem near Harlemville on July 5, 1974. This location had a contributing watershed of 5.28 square miles and is near the confluence of subbasins 1 and 2. This large discharge if transposed directly to the dam would have had a flow depth over the spillway of approximately 4.1 feet.

5.6 OVERTOPPING POTENTIAL

Records indicate the reservoir has reached high levels whereby flow has overtopped the perimeter and flowed into the Village of Philmont. The spillway was assessed in 1939 as being inadequate.

Analysis using the PMF and one-half the PMF storm events indicates that the spillway does not have sufficient discharge capacity. The computed depths of overtopping for these two events are 3.71 feet and 1.65 feet respectively. All storm events exceeding 23% of the PMF will result in the dam being overtopped.

5.7 EVALUATION

The spillway does not have sufficient capacity to discharge the peak outflow from one-half the PMF. With the dam composition being that of a laid-up stone structure, the downstream bedrock channel being steep and confining, and residences and mobile homes placed adjacent to the stream channel in the hamlet of Mellenville, it has been determined that failure of the dam from overtopping would significantly increase the hazard to loss of life downstream of the dam from that which would exist just prior to an overtopping failure. Therefore, the spillway is adjudged as "seriously inadequate" and the dam is assessed as "unsafe, non-emergency".

SECTION 6: STRUCTURAL STABILITY

6.1 EVALUATION OF STRUCTURAL STABILITY

a. Visual Observations

Visual observations revealed that there are several structural problems on this dam. Displaced stones have created a number of voids on the downstream face. Most of these voids are about one cubic foot in size but there are two which are substantially larger. Leakage through and beneath the dam was noted at the downstream face. There was deteriorated concrete on the crest of the dam. The stones which compose this structure are predominantly weathered slate. There are places where it is possible to break the stones off with your hands.

b. Data Review and Stability Evaluation

No plans or construction information could be located for this structure. The information used for the stability evaluation was obtained from a 1916 Dam Inspection Report and from measurements made at the time of the inspection.

Since this is a laid-up stone structure, it was assumed that the dam foundation was fully drained and that no uplift pressures would be developed. Safety factors against sliding were computed for each condition analyzed. No overturning analysis was performed, because it would be meaningless for a laid up stone structure.

The results of the analyses are as follows:

<u>Case</u>	<u>Factor of Safety vs. Sliding</u>
a. Normal Conditions, Reservoir level 3 feet below spillway crest	1.70
b. Same as case a. plus ice load of 5,000 lb./ft.	1.26
c. Flood of record; water surface 4.1 feet above spillway crest	1.01
d. 1/2 PMF; water surface 6.9 feet above spillway crest	0.87
e. PMF; water surface 9.0 feet above spillway crest	0.78
f. Normal conditions with seismic coefficient of 0.10	1.21

The stability analyses indicates that the safety factors against sliding are less than desirable for all conditions analyzed. The safety factors fall to critical levels under flood flow conditions.

The computed safety factors are for a failure of the structure as a mass. The nature of the deficiencies on this structure (voids on downstream face and weathering rock within the dam) make a localized failure possible as well.

Further investigations into the stability are required to address both of these potential modes of failure. Based on the results of these studies, repairs and required modifications should be made to improve the stability of the dam.

d. Seismic Stability

This dam is located in Seismic Zone 2. A seismic stability analysis was performed in accordance with Corps of Engineers Guidelines. The seismic analysis was performed for normal conditions with a seismic coefficient of 0.10. The safety factor shown in the table indicates that the dam is marginally stable when subjected to earthquake loading.

SECTION 7: ASSESSMENT/RECOMMENDATIONS

7.1 ASSESSMENT

a. Safety

The Phase I inspection of the Summit Street Dam revealed several deficiencies which affect the safety of this dam. A large void created by displaced stones was noted near the bottom of the downstream face of the dam. There were smaller voids across the entire downstream face. Leakage both through and beneath the structure was observed in several areas.

The inspection also revealed that the spillway capacity is seriously inadequate and outflows from all storms exceeding 23% of the Probable Maximum Flood would overtop the dam. Stability analyses performed for this structure indicate that it would not be capable of withstanding overtopping. Since an overtopping failure would significantly increase the hazard to loss of life, the spillway is adjudged as "seriously inadequate" and the dam is assessed as "unsafe, non-emergency".

b. Adequacy of Information

The information which was available for the preparation of this report was extremely limited. Analyses performed were based on sketches and on measurements taken at the time of the inspection.

c. Need for Additional Investigations

Further investigations of the stability problems on this dam are required. These should include investigation of the voids on the downstream face, the leakage through the dam, and the potential problems caused by weatering stones within the dam.

Additional detailed hydrologic/hydraulic investigations are also necessary to correct the spillway discharge capacity inadequacy. These studies should consider the site specific characteristics of the watershed, such as additional surcharge storage capacity both within the drainage area and at the dam. These studies should be performed in conjunction with the stability analyses to determine the proper mitigating measures needed in response to the seriously inadequate spillway capacity.

d. Urgency

The investigations into the stability problems and the hydrologic/hydraulic studies required for this structure should be commenced within 3 months of the date of notification of the owner. Mitigating measures deemed necessary as a result of the investigations and repairs required to correct other deficiencies which exist on this structure should be completed within 18 months.

7.2 RECOMMENDED MEASURES

- a. After the structural stability analysis has been completed, appropriate remedial work should be undertaken to improve the overall stability of the dam.
- b. Repair voids which exist on the downstream face.
- c. Control leakage through the structure.
- d. After completing hydrologic/hydraulic investigations, mitigating measures dealing with the seriously inadequate spillway capacity should be determined.
- e. Repair deteriorated concrete on the crest of the dam.
- f. Remove brush and vines growing on the dam.
- g. Develop an emergency action plan for the notification of downstream residents.

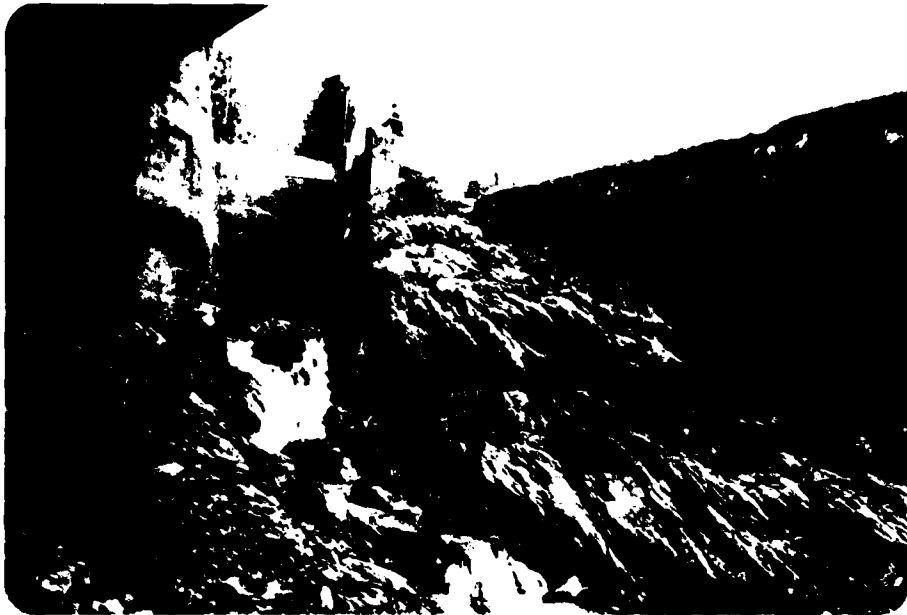
APPENDIX A
PHOTOGRAPHS



Deteriorated Concrete on Spillway Crest; Also
Note Highway Bridge Immediately Downstream of
Dam.



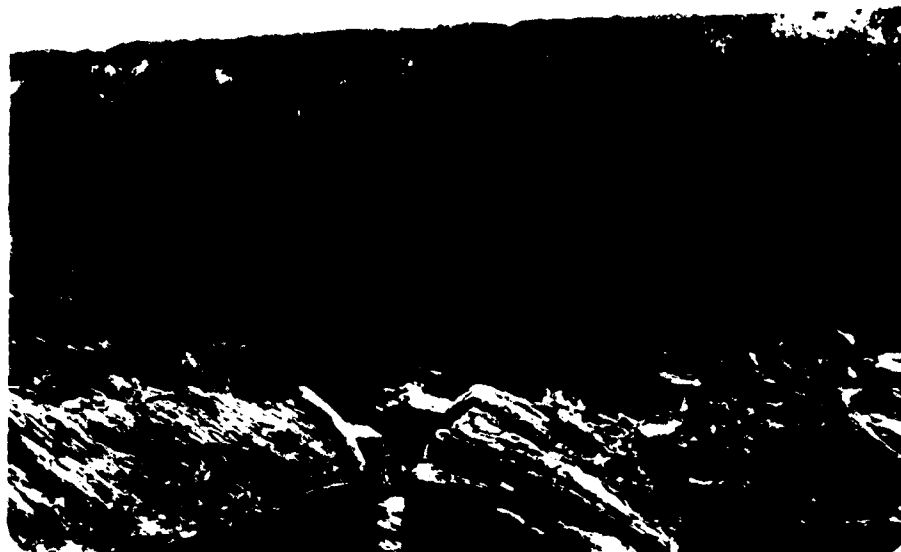
Close-up View of Area of Worst Deterioration
on Spillway Crest



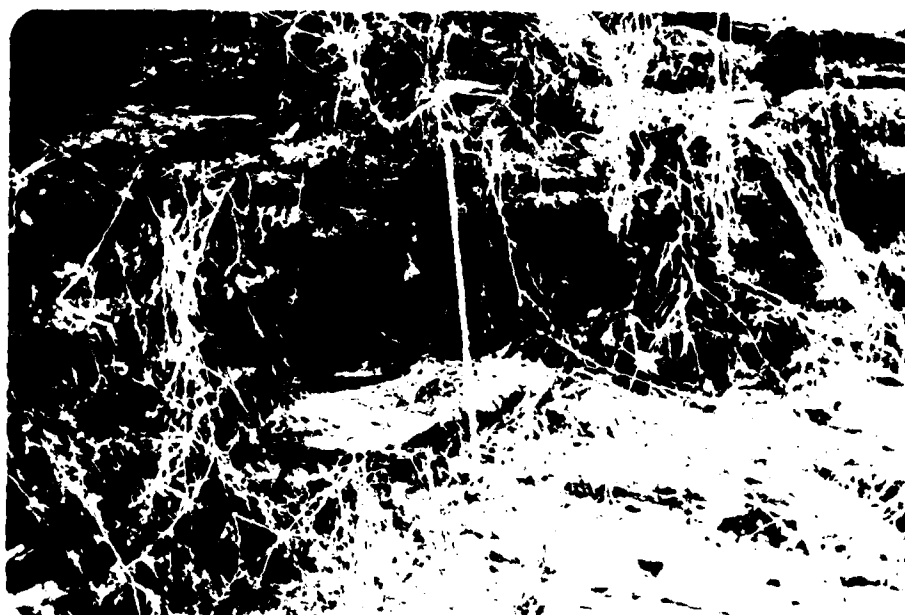
Right Abutment; Note Folded, Deteriorated Bedrock



Spillway and Left Abutment; Note trees Growing Out of Abutment



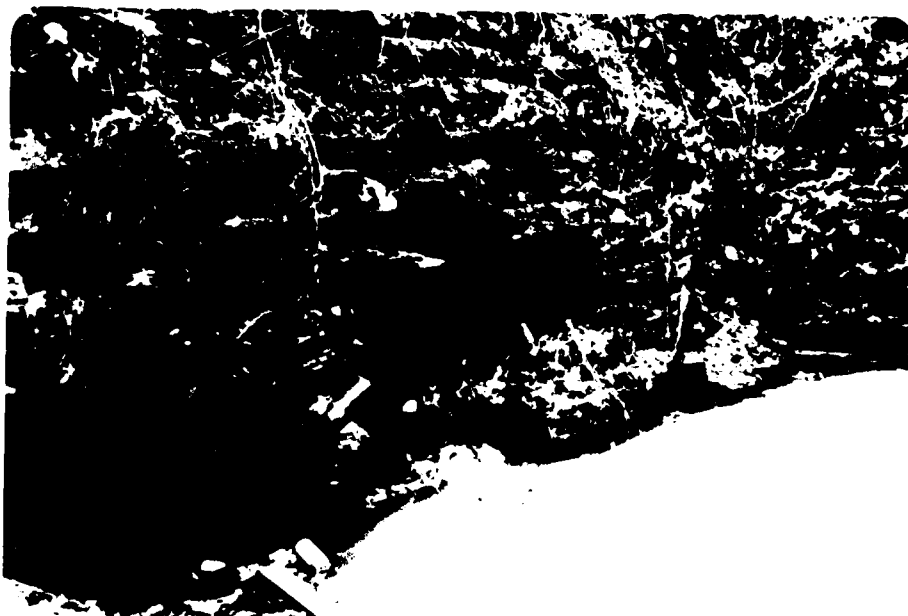
Downstream Face of Dam; Note Brush
Growing out of face



Close-up View of One of the Small (1 Cu. Ft.)
voids



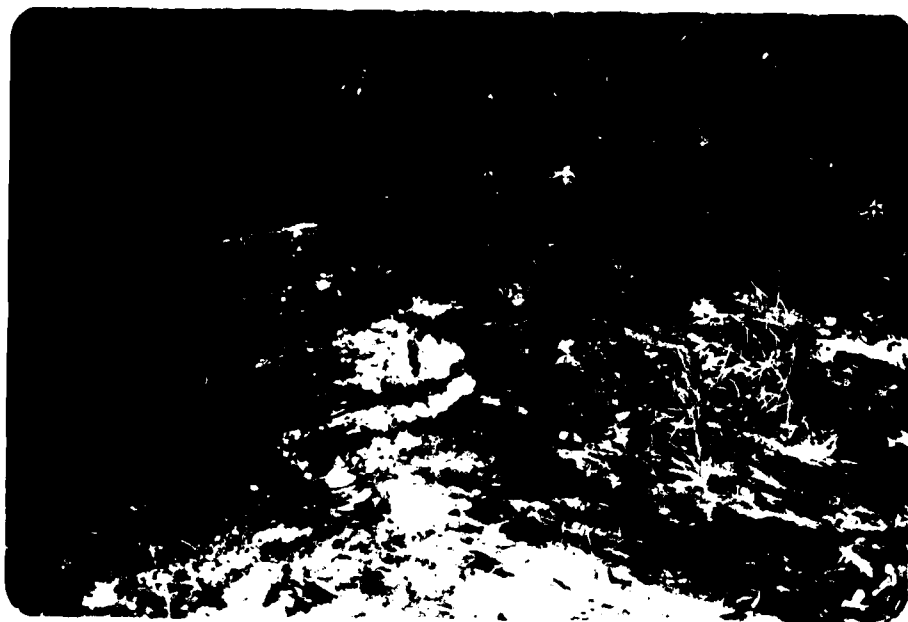
Two Large Voids at Downstream Toe on
Left End of Structure.



Close-up View of Largest Void; Note
Leakage Flowing at Bottom



Leakage Exiting at Downstream Toe; Water
Flowing along Bedrock Foundation; Note
Small Voids above Leakage



Leakage Exiting at Downstream Toe



Stop Log Sluice; Cut in Rock at
Right end of Dam



Downstream End of Stop Log Sluice

APPENDIX B

VISUAL INSPECTION CHECKLIST

VISUAL INSPECTION CHECKLIST1) Basic Data

a. General

Name of Dam SUMMIT STREET DAM
Fed. I.D. # 847 DEC Dam No. 228A-1074
River Basin LOWER HUDSON
Location: Town PHILMONT County COLUMBIA
Stream Name AGAWAMUCK CREEK
Tributary of CLAVERACK CREEK
Latitude (N) 42° 14.8' Longitude (W) 73° 38.9'
Type of Dam LAIN UP STONE & CONCRETE
Hazard Category C
Date(s) of Inspection 10/29/80
Weather Conditions OVERCAST 45°
Reservoir Level at Time of Inspection 0.2' ABOVE TOP OF STOPLOGS

b. Inspection Personnel R. WARRENDER ; W. LYNICK

c. Persons Contacted (Including Address & Phone No.) _____

d. History:

Date Constructed AROUND 1860 Date(s) Reconstructed _____

Designer _____

Constructed By _____

Owner VILLAGE OF PHILMONT

93-15-3(9/80)

(1) Erosion at Contact _____

(2) Seepage Along Contact _____

3) Drainage System

a. Description of System NONE

b. Condition of System _____

c. Discharge from Drainage System _____

4) Instrumentation (Monumentation/Surveys, Observation Wells, Weirs, Piezometers, Etc.) _____

NONE

5) Reservoir

- a. Slopes FAIRLY STEEP - NUMEROUS ROCK OUTCROPS
- b. Sedimentation EARTH FILL AGAINST UP STREAM FACE TO WITHIN A COUPLE OF FEET OF SPILLWAY CREST
- c. Unusual Conditions Which Affect Dam AREA WHERE FLOW WENT INTO VILLAGE DURING HIGH WATER IS NOW BEACH & WATER CAN NO LONGER EXIT HERE

6) Area Downstream of Dam

- a. Downstream Hazard (No. of Homes, Highways, etc.) 10-15 HOUSES AND TRAILERS IN MELLENVILLE
- b. Seepage, Unusual Growth NONE DOWNSTREAM
- c. Evidence of Movement Beyond Toe of Dam NO - BED ROCK FOUNDATION
- d. Condition of Downstream Channel BEDROCK - GOES UNDER A HIGHWAY BRIDGE

7) Spillway(s) (Including Discharge Conveyance Channel)

- MAIN OVERFLOW SPILLWAY SECTION IN CENTER STOP LOG SLUICE STRUCTURE AT RIGHT END
- a. General _____
- b. Condition of ~~Spillway~~^{OVERFLOW} CRACKED CONCRETE ON CREST SOME CONCRETE REMOVAL - ALONG EACH OF THE JOINTS AT ONE JOINT NEAR MIDDLE DETERIORATED AREA EXTENDS FOR 5' WITH MAX. DEPTH OF REMOVAL OF 6". GRASS & WEEDS GROWING THROUGH CRACKS

c. Condition of ^{STOP LOG SCORE} ~~Spillway~~ Spillway STOP LOGS 5.7' DOWN FROM
TOP OF DAM - CONCRETE WALLS ON SPILLWAY CHANNEL
APPEARED TO BE IN GOOD CONDITION

d. Condition of Discharge Conveyance Channel

ROCK CHANNEL - SLATE - TILTED & FOLDED;
SOMEWHAT WEATHERED

8) Reservoir Drain/Outlet NONE

Type: Pipe _____ Conduit _____ Other _____

Material: Concrete _____ Metal _____ Other _____

Size: _____ Length _____

Invert Elevations: Entrance _____ Exit _____

Physical Condition (Describe): _____ Unobservable _____

Material: _____

Joints: _____ Alignment _____

Structural Integrity: _____

Hydraulic Capability: _____

Means of Control: Gate _____ Valve _____ Uncontrolled _____

Operation: Operable _____ Inoperable _____ Other _____

Present Condition (Describe): _____

9) Structural

- a. Concrete Surfaces DETERIORATED & SPALLED CONCRETE
ON SPILLCREST OTHER CONCRETE OKAY
ONE AREA IN CENTER OF SPILLWAY WHERE CONCRETE HAS
BEEN REMOVED TO AS MUCH AS 6" & PATCHED WITH ROUGH CONCRETE
- b. Structural Cracking SOME CRACKING ALONG SPILLCREST
- c. Movement - Horizontal & Vertical Alignment (Settlement) NONE
- d. Junctions with Abutments or Embankments TIED TO ROCK - SOME
SEEPAGE ALONG INTERFACE
- e. Drains - Foundation, Joint, Face NONE
- f. Water Passages, Conduits, Sluices CHANNEL AT RIGHT END
OF DAM IS OKAY
- g. Seepage or Leakage ALL ALONG DOWNSTREAM TOE IN VARIOUS SPOTS
LEAKAGE NOT RIGHT AT INTERFACE BUT SLIGHTLY ABOVE IN SEVERAL
SPOTS - ^{LEAKAGE} ~~SEEPAGE~~ MOSTLY IN VOID AREAS - WORST
AREA OF ~~SEE~~ LEAKAGE COMING OUT OF LARGEST
VOID.

Laid-up stone structure - Dam composed of small, flat, pieces of slate - slate is weathered & deteriorating - in some places you can break it off in your hand

There are a number of voids on the downstream face - most are about 1' & spherical the worst void is at base of dam at left end - it is 5' wide x 4' deep x 3' high there is another slightly smaller void on left abutment wall. All voids are caused by displaced stones - ~~see~~ leakage emerging at the base of a number of the voids

APPENDIX C

HYDROLOGIC/HYDRAULIC
ENGINEERING DATA AND COMPUTATIONS

SUMMIT ST. DAM
NY-847

1

CHECK LIST FOR DAMS
HYDROLOGIC AND HYDRAULIC
ENGINEERING DATA

AREA-CAPACITY DATA:

	(RELATIVE) Elevation (ft.)	Surface Area (acres)	Storage Capacity (acre-ft.)
1) Top of Dam (LEFT ABUTMENT)	5.25	—	264
2) Design High Water (Max. Design Pool)	N/A	—	—
3) Auxiliary Spillway Crest	N/A	—	—
4) Pool Level with Flashboards	N/A	—	—
5) Service Spillway Crest	0.0	16.5	178

DISCHARGES

	DISCHARGE (cfs)
1) Average Daily	N/A
2) Spillway @ Maximum High Water	5413
3) Spillway @ Design High Water	N/A
4) Spillway @ Auxiliary Spillway Crest Elevation	N/A
5) STOPLOG SLUICE - ALL STOPLOGS REMOVED	385 (WATER @ EL. 0.0)
6) Total (of all facilities) @ Maximum High Water	5800
7) Maximum Known Flood (7/5/74)	≥ 3670
8) At Time of Inspection	1.0

SUMMIT ST. DAM
NY-847

2

CREST: (LEFT ABUTMENT)

(RELATIVE)
ELEVATION: 5.25

Type: LAID-UP STONE w/ EARTH BACKFILL

Width: 19.5' (+) Length: 50' (+)

Spillover LAID-UP STONE w/ CONCRETE CAP

Location NEARLY ENTIRE LENGTH OF DAM

SPILLWAY:

SERVICE

(RELATIVE)
Elevation

N/A

0.0
(USGS $\approx$ 495)

OVERFLOW WEIR

Type

13'

Width

Type of Control

STOPLOG SLUICE

✓

Uncontrolled

Controlled:

N/A

Type

STOPLOGS

(Flashboards; gate)

N/A

Number

HT = 17.2' (FROM 2.75' ABOVE SPILL CREST
TO 14.45' BELOW ")

134'

Length 2.72' CLEAR
SPAN

Invert Material

Anticipated Length
of operating service

N/A

N/A

Chute Length

N/A

$\pm$ 2.5'

Height Between Spillway Crest
& Approach Channel Invert
(Weir Flow)

SUMMIT ST. DAM
NY-847

3

HYDROMETEROLOGICAL GAGES:

Type : NONE @ PRESENT ; SEE SHTS 7/ & 8/

Location: _____

Records:

Date - _____

Max. Reading - _____

FLOOD WATER CONTROL SYSTEM:

Warning System: NONE

Method of Controlled Releases (mechanisms):

STOPLOG SLUICE CAN FUNCTION AS RESV. DRAIN

DRAINAGE AREA: 21.16 SQ MI OR 13545 ACRES

DRAINAGE BASIN RUNOFF CHARACTERISTICS:

Land Use - Type: UNDEVELOPED ; CROPLAND, OPEN FIELDS, PASTURE, FORESTS

Terrain - Relief: DRAINAGE WAYS - FLAT TO MODERATE SLOPES
ADJACENT HILLSIDES - STEEP HILLTOPS RANGE 300'-1000'

Surface - Soil: GRAVELS ; LOAM ABOVE RESERVOIR

Runoff Potential (existing or planned extensive alterations to existing
(surface or subsurface conditions)

N/A

Potential Sedimentation problem areas (natural or man-made; present or future)

N/A

Potential Backwater problem areas for levels at maximum storage capacity
including surcharge storage:

NONE APPARENT

Dikes - Floodwalls (overflow & non-overflow) - Low reaches along the
Reservoir perimeter:

Location: ADJACENT LEFT ABUTMENT ; 1000'-1500' RIGHT OF RIGHT ABUT.

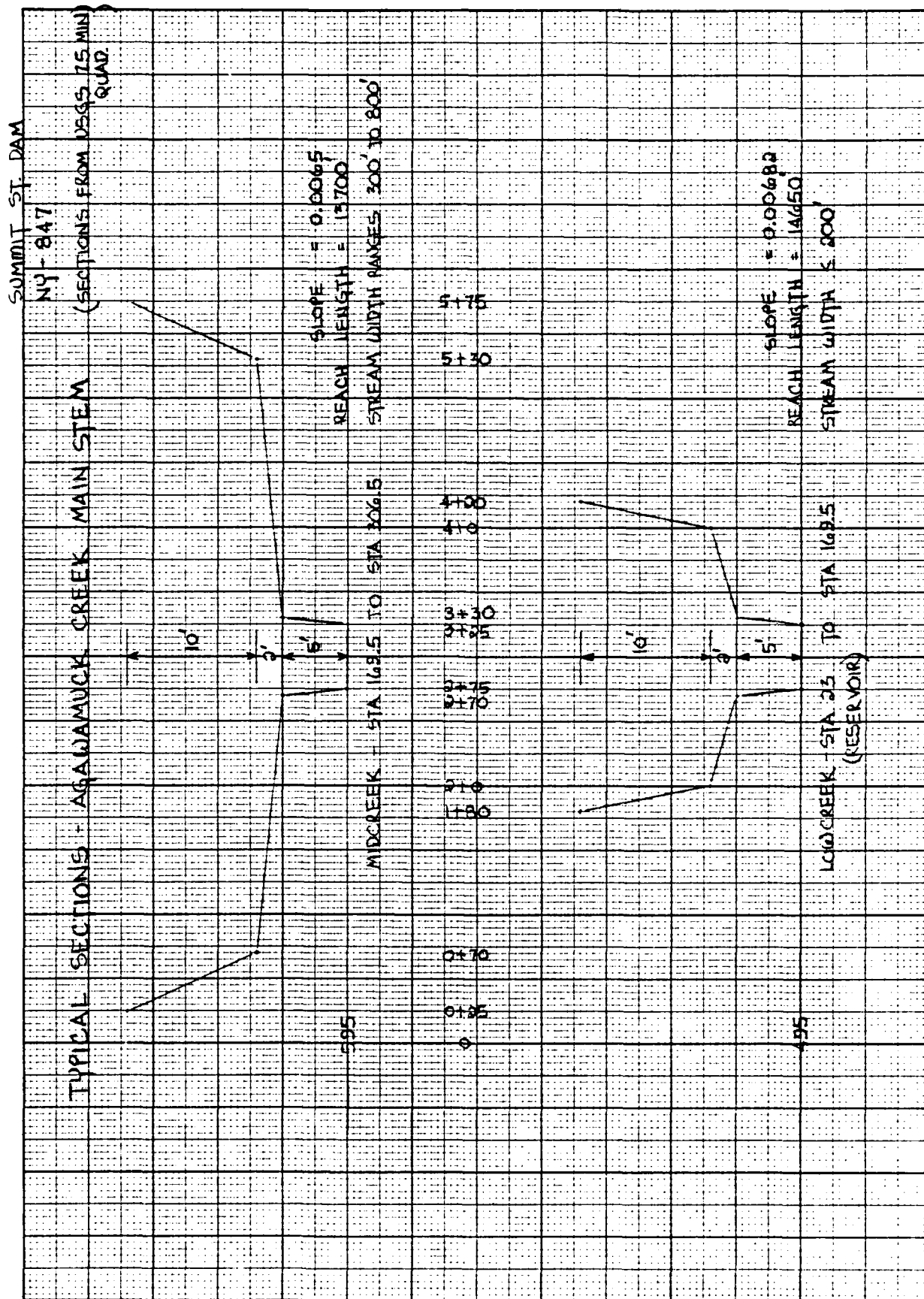
(RELATIVE) Elevation: +6' - +7' ; +6' - +7'
OVERFLOW ONTO ROAD ; OVERFLOW MAY LEAD TO VILLAGE
Reservoir: DIRECTLY

Length @ Maximum Pool ± 4600' ± 0.87 (Miles)

Length of Shoreline (@ Spillway Crest) ± 1.75 (Miles)

PROJECT GRID

JOB SUMMIT ST. DAM NY - 847		SHEET NO. 1/		CHECKED BY		DATE	
SUBJECT WATERSHED PARAMETERS				COMPUTED BY WCL		DATE 1/12/81	
AGAWAMUCK CREEK - MAIN STEM:							
LOCATION	DISTANCE (ΔL)	FLOW TIME (ΔT)	TOTAL (SEC)	TIME (HRS)	TOTAL (FT)	DIST. (MILES)	
DAM			—	—			
	2300	90			2300	0.436	
UPPER END - RESV.			90	0.025			
	14650	20100			16950	3.210	
BOUNDARY - SUBBASINS 4 & 3			20190	5.608			
	6250	6041			23800	4.507	
STREAM JUNCT - SUBBASIN 3 (MAIN STEM)			26231	7.286			
	6850	5460			30650	5.805	
BOUNDARY - SUBBASINS 3, 2 & 1			31691	8.803			



PROJECT GRID

JOB		SHEET NO.		CHECKED BY		DATE	
SUMMIT ST DAM		2/					
SUBJECT				COMPUTED BY		DATE	
WATERSHED PARAMETERS				WCL		1/13/31	
DRAINAGE AREA - FROM 7.5 MIN. USGS QUAD SHEETS:							
1" = 5000'							
(1.0 SQ IN. = 91.827 ACRES)							
SHEET NAME	SUBBASIN	PLANIMETERED AREA - SQ IN.	ACRES	SQ. MI.			
CLAYBROOK	4	15.38					
STOTTVILLE	4	11.30					
CHATHAM	4	2.66					
HILLSDALE	4	17.33					
		36.67	→	3367.3	→	5.26	
HILLSDALE	3	24.86					
CHATHAM	3	16.17					
		41.03	→	3767.6	→	5.89	
HILLSDALE	2	0.03					
CHATHAM	2	41.97					
		42.00	→	3856.7	→	6.02	
CHATHAM	1	27.80	→	2552.8	→	3.99	
TOTAL		147.50	→	13544.5	→	21.16	
RESERVOIR SURFACE @ 495		ELEV.					
CLAYBROOK		0.18	→	16.5			

PROJECT GRID

JOB SUMMIT ST. DAM		SHEET NO. 3/		CHECKED BY	DATE
SUBJECT WATERSHED PARAMETERS				COMPUTED BY WCL	DATE 1/13/81

SNYDER UNIT HYDROGRAPH:		4	3	2	1
(CORPS OF ENGINEERS					
REF.	LOWER HUDSON RIVER BASIN				
HYDROLOGIC FLOOD ROUTING					
MODEL					
(SUBAREA #10)					
	C_t	2.3	2.3	2.3	2.3
LAG TIME (HRS):	L	28900'	29300'	27650'	24300'
	(MILES)	5.473	5.549	5.237	4.697
$t_p = C_t (L \times L_{CA})^{0.3}$	L_{CA}	9850'	13700'	14700'	13450'
	(MILES)	1.865	2.595	2.784	2.547
	(HRS) t_p	4.62	5.12	5.14	4.84
UNIT RAINFALL DURATION (HRS):					
$t_r = \frac{t_p}{5.5}$	(HRS) t_r	0.84	0.93	0.93	0.88
USE $\rightarrow$	t_R	1.0	1.0	1.0	1.0
ADJUSTED LAG TIME (HRS):					
$TP = t_p + 0.25(t_R - t_r)$	TP	4.66	5.14	5.16	4.87
	(HRS)				
PEAKING COEFFICIENT:					
REF. - SAME AS ABOVE					
$640 C_p = 359$	C_p	0.56	0.56	0.56	0.56

SNYDER PARAMETERS

PROJECT GRID

JOB SUMMIT ST. DAM		SHEET NO. 4/		CHECKED BY	DATE
SUBJECT WATERSHED PARAMETERS				COMPUTED BY WCL	DATE 1/13/81
REF. - SAME AS SHT 3/ : LOWER HUDSON RIVER BASIN STUDY		SUBBASIN			
	4	3	2	1	
DRAINAGE AREA (SQ MI.) - SHT 3/		5.26	5.89	6.02	3.99
BASE FLOW @ 1 CSM = 1 cfs/SQ MI		5	6	6	4
QRCN		15	18	18	12
↳ = 3 X BASE FLOW					
RTIOR		3	3	3	3
LOSSES (SOIL INFILTRATION):					
REF. - SAME AS SHT 3/ : LOWER HUDSON RIVER BASIN STUDY		INITIAL = 1.0 IN		← USE	
		CONSTANT = 0.05 IN/HR			
RAINFALL - PMP					
REF - HMR #33					
ZONE 1 INDEX PMP = 20"		(200 SQ MI / 24 HR)			
OVER ENTIRE WATERSHED -		DURATION (HRS) → 6 12 24 48			
ADJUSTMENT FOR TIME & DA		% OF INDEX = 102 115 125 134			

PROJECT GRID

JOB SUMMIT ST. DAM		SHEET NO. 5/		CHECKED BY	DATE
SUBJECT STAGE - STORAGE DATA				COMPUTED BY WCL	DATE 1/13/81
REF: 11/27/39 LETTER:					
STORAGE VOLUME = 58×10^6 GALS $\rightarrow$ 178 AC-FT (@ SPILLCREST) ELEV.) USE					
REF: SHT 2/ SURFACE AREA @ USGS ELEV 495 = 16.5 ACRES					
ELEV	H	(ACRES) AREA	(AC-FT) VOL.		
495	—	16.5	178		
	5.25		86		
500.25		16.5	264		
STOPLOG DISCHARGES : ALL STOPLOSS REMOVED WATER LEVEL @ SPILL CREST					
$Q = CLH^{3/2}$ $C = 2.6$ $L = 2.7$ $H = 14.45'$					
$Q = (2.6)(2.7)(14.45)^{1.5} = 385 \text{ cfs}$					

PROJECT GRID

JOB SUMMIT ST. DAM		SHEET NO. 6/		CHECKED BY	DATE
SUBJECT SPILLWAY DISCHARGES				COMPUTED BY WCL	DATE 1/14/81

REF: HANDBOOK OF HYDRAULICS
KING & BRATER 5TH ED
TABLES 5-5 & 5-7

$Q = CLH^{3/2}$

L - VARIES w/ H
C = 2.7 H = 0 TO 0.7'
C = 3.02 H = 0.7' +

ELEV.	H	L	C	Q
US65 495	—	134	2.7	—
	0.5	134	2.7	128
	0.7	134	3.02	237
	1	137		413
	2	140		1195
	3	143		2244
	4	146		3527
	5	149		5030
TOP DAM	5.25	149		5413
	6	149	3.02	60613

TOP OF DAM - OVERTOPPING FLOWS:

$Q = CLH^{3/2}$ C = 2.63
L = 650' (600' RT & 50' LT)

PROJECT GRID

JOB		SHEET NO.		CHECKED BY		DATE	
SUMMIT STREET DAM		7/					
SUBJECT				COMPUTED BY		DATE	
GAGE DATA - CLAVERACK CREEK WATERSHED				WCL		1/19/81	
REF: USGS SURFACE WATER RECORDS (FOR WATER YEARS INDICATED):							
WATER YEAR	GAGE #	LOCATION	DRAINAGE AREA	MAX. Q (cfs)	DATE	CEE/ 1/52 MI.	
—	1-3612	@CLAVERACK	60.6	1940	2/26/61	32.0	
1960 - 1968 OPERATED AS A CONTINUOUS RECORD STATION							
1968	1-3612	SAME	60.6	1280	4/25/68	21.1	
IN 1969 — OPERATED AS A CREST-STAGE PARTIAL-RECORD STATION							
1969	3612	SAME	60.6	1940	3/25/69	32.0	
1970	01361200	"	"	680	4/3/70	11.2	
1971	SAME	"	"	684	5/4/71	11.3	
1972	"	"	"	1740	6/22/72	28.7	
1973	"	"	"	4960	6/30/73	81.8	
1974	01361020	AGAWAMUCK CREEK @ HARLEMVILLE	5.28	3670	7/5/74	695	
1975	01361200		60.6	1620	9/26/75	26.7	
1975	01361102	CLAVERACK CREEK @ MELLENNVILLE	—	42 (BASE FLOW)	6/11/75	—	
1976	01361200		60.6	3290	1/28/76	54.3	
1977	"		"	1040	3/14/77	17.2	
1979	"		"	2710	1/2/79	44.7	

RECORDED PRECIPITATION @ GAGE - HUDSON STATE SCHOOL (LAT. 42°-15'; LONG. 73°-48')
7.4 MILES WEST OF DAM SITE

T = TRACE

PEAK DISCHARGE - CLAVACK CREEK - GAGE # 01361200 (DA = 60.6 SQ. MI.)

DATE: JUNE 30, 1973
4960 cfs

JAN. 28, 1976
3290 cfs

JULY 5, 1974
3670 cfs @ GAGE # 01361020
(DA = 5.28 SQ. MI.)

DATE: 24-HOUR AMT.

6/25	0.24
26	T
27	0.15
28	—
29	0.84
30	3.04
7/1	—

3.88"

DATE: 24-HOUR AMT.

1/19	—
20	T
21	—
22	0.17
23	T
24	0.07
25	T
26	0.82
27	—
28	0.99
29	T
1/30	—

DATE: 24-HOUR AMT.

6/24	—
25	0.19
26	0.34
27	0.01
28	0.01
29	0.01
6/30	0.10
7/1	0.19
2	—
3	1.93
4	T
5	1.16
6	0.63
7	—

0.85"

1.79"

NOAA INDEX # 1483 } JUNE, 1973
RAINFALL @ CHURCHTOWN RESERVOIR (DA = 1.07 SQ. MI.)
6.6 MILES SOUTHWEST OF DAM SITE

DATE: 24-HOUR AMT.

6/27	—
28	0.12
29	2.30
6/30	2.92
7/1	—

5.34"

SUMMIT ST. DAM
NY-847

HUDSON RIVER BASIN

1-3612. Claverack Creek at Claverack, N. Y.

Location.--Lat 42°12'54", long 73°43'46", on right bank, 70 ft ups from bridge on State Highway 9H, 0.5 mile south of Claverack, Columbia County, and 2.2 miles upstream from Taghkanic Creek.

Drainage area.--60.6 sq mi.

Records available.--March 1960 to September 1962, March 1963 to September 1968 (no winter record prior to October 1965) (discontinued).

Gage.--Water-stage recorder and crest-stage gage. Datum of gage is 139.77 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year, 1,280 cfs Apr. 25 (gage height, 6.18 ft); minimum, 4.9 cfs Sept. 30, 1960-68; Maximum discharge, 1,940 cfs Feb. 26, 1961 (gage height, 7.68 ft); minimum, 0.8 cfs Nov. 19, 1964; minimum daily, 1.8 cfs Aug. 15, 1961.

Remarks.--Records fair except those for the winter period, which are poor. Occasional slight diurnal fluctuation at low flow caused by mill above station.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.8	9.0	17	35	60	27	130	101	52	66	16	7.2
2	4.1	9.0	14	34	140	24	127	85	50	56	14	7.2
3	4.1	13	34	31	440	20	105	77	54	51	12	7.7
4	7.7	12	74	30	250	23	97	89	60	49	11	4.1
5	7.7	14	50	24	170	24	101	77	50	45	11	7.7
6	8.1	14	43	27	130	20	89	66	44	42	11	4.8
7	4.1	13	34	27	100	18	82	61	40	37	11	4.9
8	7.2	12	34	30	94	18	77	57	36	36	13	7.7
9	7.7	12	40	24	70	23	75	55	33	33	17	6.8
10	11	12	36	24	60	29	64	54	31	31	16	7.2
11	14	11	33	27	54	40	65	49	31	30	14	11
12	12	11	211	26	50	37	61	72	41	34	11	4.9
13	11	11	255	26	46	32	60	77	68	41	10	7.2
14	9.2	9.0	131	26	42	30	57	64	52	31	10	6.3
15	4.8	11	97	25	39	31	55	57	44	24	9.4	6.3
16	4.1	4.8	7.7	24	37	54	51	54	69	26	8.4	5.8
17	4.1	4.8	6.6	23	35	524	49	66	215	24	9.4	6.3
18	4.1	4.8	6.1	22	32	726	46	66	150	24	7.0	6.3
19	6.0	11	60	22	30	544	45	74	107	27	7.4	5.8
20	4.8	9.0	56	21	24	404	43	80	105	30	4.2	5.8
21	4.8	6.0	51	21	27	362	44	74	77	25	9.4	5.8
22	4.1	6.0	51	20	26	344	43	65	65	23	10	5.8
23	4.1	15	50	20	25	540	41	60	54	21	10	5.8
24	4.8	33	42	20	24	653	59	71	51	24	9.4	5.8
25	6.2	36	40	20	24	526	805	64	50	22	8.8	5.8
26	26	4.2	40	20	23	225	326	56	114	21	7.4	5.8
27	17	35	37	20	23	174	144	51	127	14	7.2	5.8
28	12	30	36	20	24	150	143	48	114	14	7.4	5.8
29	11	25	36	23	24	153	117	55	55	14	7.2	5.8
30	4.8	22	36	30	-----	114	101	71	79	14	7.7	5.4
31	4.8	-----	36	32	-----	103	-----	57	-----	17	7.2	-----
TOTAL	513	4403	1046	606	1537	1545	3350	1053	2114	964	1207	2074
MEAN	10.1	16.0	60.8	26.0	81.3	180	112	66.2	72.6	31.2	10.3	6.91
MAX	26	42	255	52	640	726	805	101	215	66	17	11
MIN	7.2	8.6	14	23	23	18	41	48	31	17	7.2	5.4
CFSM	.17	.26	1.00	.43	1.34	2.97	1.85	1.09	1.23	.51	.17	.12
IN.	.19	.30	1.16	.49	1.45	3.43	2.06	1.26	1.34	.59	.20	.13

CAL YR 1967 TOTAL 27,508.6 MEAN 75.4 MAX 774 MIN 7.2 CFSM 1.24 IN 16.88
WTR YR 1968 TOTAL 20,505.1 MEAN 56.0 MAX 805 MIN 5.4 CFSM .92 IN 12.58

PEAK DISCHARGE (BASE, 700 CFS)

DATE	TIME	G.H.T.	DISCHARGE	DATE	TIME	G.H.T.	DISCHARGE
2-3	0400	5.69	1,100	3-23	2300	5.60	1,070
3-18	0800	4.84	806	4-25	0600	6.18	1,280

FLOODS IN NEW YORK, 1973 and 1974

By

F. Luman Robison, William N. Embree, and Bernard Dunn

ABSTRACT

Widespread flooding and flood damage in New York State occurred in calendar years 1973 and 1974. A discussion of specific floods includes a description of the precipitation events and flood damages, location maps, and tables listing peak stages and discharges.

The greatest flooding damage in New York State in 1973 was caused by lakeshore flooding of Lake Ontario on March 18 and 19 and by heavy rainfall in the eastern and southeastern regions June 28-30.

Gale-force winds on Lake Ontario created waves that caused considerable shoreline damage from Niagara County to Jefferson County on March 18 and 19, 1973.

On June 28-30, 1973, a heavy rainfall drenched Sullivan and Delaware Counties and caused the most serious flooding since 1947, then moved through the rest of the Catskills and lower Hudson Valley. Rainfall averaged between 4 and 7 inches (100 and 180 millimetres). At Claverack, in Columbia County, Claverack Creek had the highest discharge of record (4,960 cubic feet per second or 140 cubic metres per second) on June 30.

On May 16 and 17, 1974, a nearly stationary weather front over most of central and Western New York State produced widespread showers and thunderstorms. Albion in Orleans County and Rochester in Monroe County were the hardest hit communities.

Thunderstorms July 2 and 3, 1974 caused much flooding from the eastern Finger Lakes through the Mohawk River to the Schoharie Valley. Rainfall exceeded 4 inches (100 millimetres) in 12 hours at many reporting stations. Considerable flooding occurred in Syracuse, Utica, and other communities in Onondaga and Oneida Counties.

On July 5, a series of brief, violent storms occurred in Columbia County. About 4 inches (100 millimetres) caused as much flooding and damage as in the flood of June 1972.

On October 29, 1974, the floor of an elevated section of the Barge Canal collapsed into a sewer project tunnel being bored under it near Bushnell's Basin in Monroe County.

Minor floods within the State are reported by region for each year.

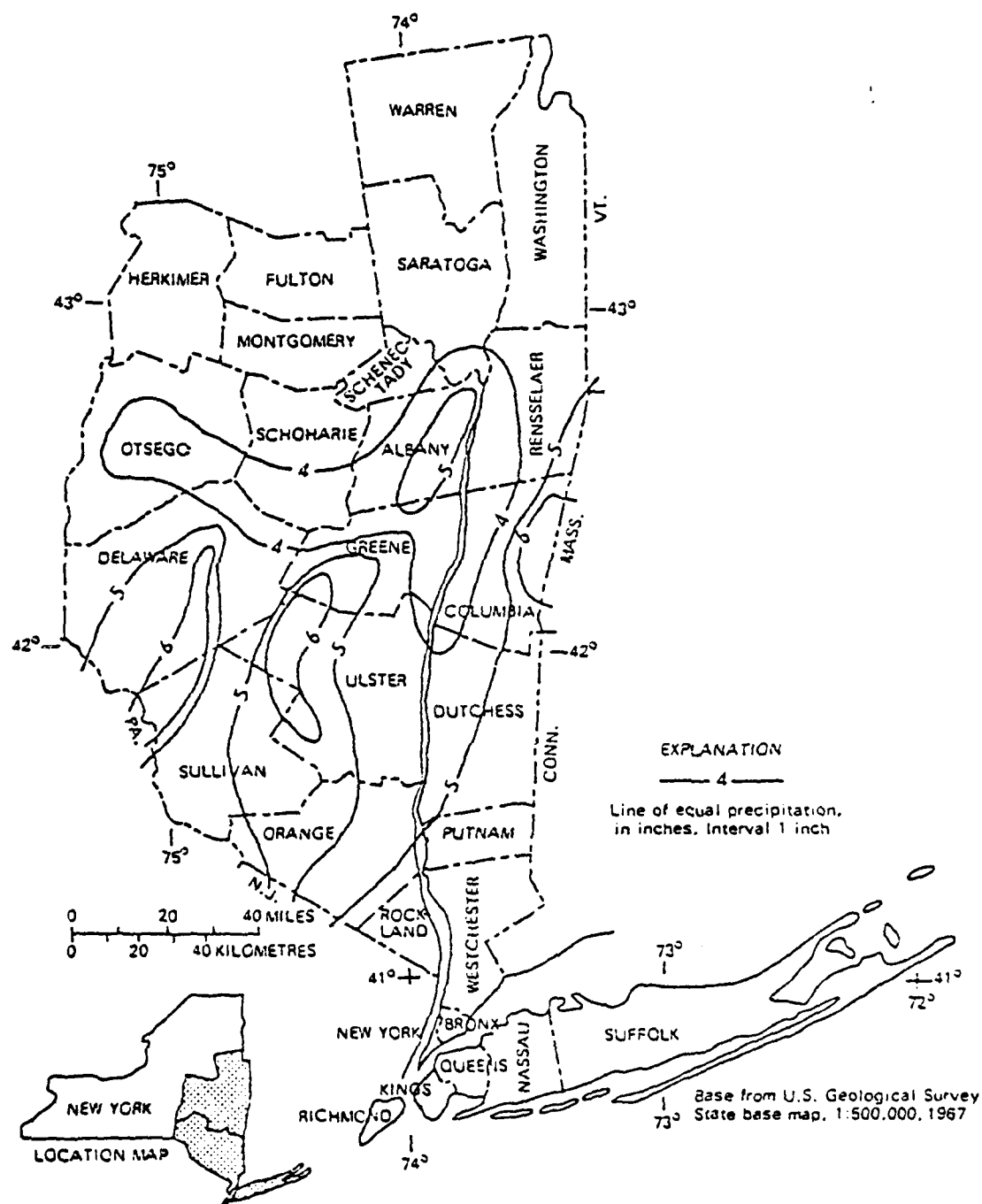


Figure 4.--Rainfall in the eastern and southeastern regions of New York, June 28-30, 1973. (Daily precipitation data furnished by National Weather Service.)

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

291

Annual maximum discharge at crest-stage partial-record stations during water year 1973--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Date	Annual maximum gage height (feet)	Discharge (cfs)
Hudson River basin--Continued							
01354300	Plotter Kill at Rynex Corners,	Lat 42°19'16", long 74°04'20", Schenectady County, at bridge on State Highway 159, at Rynex Corners.	3.70	1958, 1960-68, 1970-73	4- 4-73	4.60	252
01361200	Claverack Creek near Claverack, N. Y.	Lat 42°12'54", long 73°43'46", Columbia County, on right bank, 70 ft upstream from bridge on State Highway 9H, 0.5 mile south of Claverack.	60.6	1960-68 1969-73	6-30-73	12.38	4,960
* 01361900	Shingle Kill at Cairo, N. Y.	Lat 42°18'22", long 74°00'15", Greene County, at bridge on town road at Cairo, about 100 ft east of State Highway 32, and 0.8 mile upstream from mouth.	13.9	1953, 1960, 1967-73	6-30-73	4.94	358
01362100	Roeliff Jansen Kill near Hilledale, N. Y.	Lat 42°09'13", long 73°31'19", Columbia County, at bridge on county highway off State Highway 22, 1.8 miles south of Hilledale.	27.5	1958-60# 1963-64 1968-73	6-30-73	9.78	3,280
01364400	Plattekill Creek at Mount Marion, N. Y.	Lat 42°02'24", long 73°59'57", Ulster County, on downstream left wingwall of bridge on town road just off Glasco Turnpike, 0.6 mile west of Mt. Marion, and 2.6 miles upstream from mouth.	36.6	1962-64, 1968-73	6-30-73	5.02	+
01366950	Coxing Kill near High Falls, N. Y.	Lat 41°49'54", long 74°06'38", Ulster County, on bridge on Coxing Kill Road off State Highway 213, 1.0 mile east of High Falls.	12.6	1962-64 1966, 1968-73	6-30-73	4.80	+
01368713	Wawayanda Creek at Durland, N. Y.	Lat 41°16'44", long 74°18'20", Orange County, on bridge on State School Road, at Durland, 0.1 mile downstream from Wickham Lake, and 2.5 miles northeast of Warwick.	5.15	1971-73	6-30-73	15.83	51
01368724	Long House Creek at Bellvale, N. Y.	Lat 41°15'10", long 74°18'30", Orange County, at bridge on Iron Forge Road, at Bellvale, and 1.9 miles upstream from mouth.	11.8	1971-73	6-30-73	16.99	345
01372040	Crum Elbow Creek at Hyde Park, N. Y.	Lat 41°47'24", long 73°55'53", Dutchess County, at bridge on Hyde Park-East Park Road, at Hyde Park, and 0.3 mile east of U.S. Highway 9.	18.6	1959-62# 1963-73	6-30-73	4.06	373
01374460	South Branch Miniscogongo Creek at Letchworth Village, N. Y.	Lat 41°12'15", long 74°01'54", Rockland County, 200 ft downstream from Letchworth Village road and pond, and 1,000 ft downstream from Palisades Interstate Parkway, at Letchworth Village.	5.83	1960-73	6-30-73	3.86	237
01376570	New City Brook near New City, N. Y.	Lat 41°10'09", long 73°58'46", Rockland County, at bridge on road north of Christie Airport, 0.5 mile east of Zukov Road, 0.8 mile upstream from mouth, and 1.1 miles north of New City.	2.39	1972-73	2- 2-73	7.50	1,450
Hackensack River basin							
01376600	Hackensack River at Brookside Park, N. Y.	Lat 41°10'18", long 73°58'24", Rockland County, at Brookside Park, 400 ft upstream from State Highway 304, 1,300 ft upstream from DeForest Lake, 0.8 mile downstream from unnamed tributary, and 1.2 miles from Lake Lucille.	13.2	1959-63# 1967-73	2- 2-73	7.42	1,350
01376690	East Branch Hackensack River near Congers, N. Y.	Lat 41°07'32", long 73°57'24", Rockland County, about 0.1 mile downstream from small pond, half a mile upstream from DeForest Lake, and 2 miles south of Congers.	6.86	1960, 1968-69 1971-73	8-19-60 5-29-68 8- 5-69 9-14-71 6-22-72 2- 2-73	9.12 9.29 9.21 9.79 9.95 10.43	148 186 167 346 415 691
01377180	Pascack Brook at Spring Valley, N.Y.	Lat 41°06'45", long 74°02'00", Rockland County, on road to Orange and Rockland Utilities substation, and 0.7 mile east of Spring Valley.	2.13	1972-73	2- 2-73	5.63	684

* Operated as a continuous-record gaging station.

+ Discharge not determined.

* Also a low-flow partial record station.

Discharge measurements made at miscellaneous sites during water year 1974--Continued

Stream	Tributary to	Location	Drainage area (sq mi)	Measured precipitation (water year)	Measurements	
					Date	Discharge (cfs)
Hudson River basin--Continued						
01359830 Onondaga Creek	Onondaga Creek	Lat 42°53'48", long 73°55'47", Albany County, at bridge on State Highway 32, and 1.8 miles (2.9 km) southeast of Clarksville.	17.8	1952, 1970 1973	8-8-74	*1.5
01359494 Feurl Spruvt	Coeymans Creek	Lat 42°31'40", long 73°50'50", Albany County, at bridge on County Highway 101, 0.2 mile (0.4 km) south of South Bethlehem.	-	1970 1973	8-9-74	0
01359915 Hannacrois Creek	Hudson River	Lat 42°29'49", long 73°58'46", Albany County, at bridge on State Highway 32 and 1.4 miles (2.3 km) upstream from Silver Creek, 0.8 mile (1.3 km) east of Dornansville, and 0.8 mile (1.3 km) upstream from Alceve Reservoir.	13.2	1963, 1973	8-12-74	*1.4
01359916 Silver Creek	Hannacrois Creek	Lat 42°28'22", long 73°59'17", Albany County, at culvert on Boomhower Road near Dornansville.	-	1970 1973	8-12-74	0
01359917 Silver Creek Tributary	Silver Creek	Lat 42°29'01", long 73°59'47", Albany County, at culvert on Boomhower Road at Dornansville.	1.50	1970 1973	8-9-74	*0.24
01361020 Sawamuck Creek	Hudson River	Lat 42°16'11", long 73°38'44", Columbia County, at bridge on town road, 0.4 mile (0.6 km) east of Harrisonville, and 1.0 mile (1.6 km) upstream from Baker Point outfall.	5.25		7-8-74	0.070
01361465 Fox Creek	Catskill Creek	Lat 42°27'46", long 74°10'51", Albany County, at bridge on Pearson Road, 1.9 miles upstream from mouth, and 1.9 miles northeast of Preston Hollow.	3.43	1970, 73	8-12-74	*1.5
01361480 Catskill Creek Tributary	Catskill Creek	Lat 42°26'11", long 74°09'08", Albany County, at bridge on Miles Road, 1.0 mile from and west of Medusa.	6.18	1970 1973	8-12-74	*1.47
01362003 Bell Brook	Catskill Creek	Lat 42°16'03", long 73°57'40", Greene County, 0.5 mile (0.8 km) upstream from unnamed tributary, 0.7 mile (1.1 km) south of South Cairo, 0.6 mile (1.0 km) upstream from old State Highway 23, and 1.8 mile (3.1 km) upstream from mouth.	1.13	1972-73	10-16-73 12-7-73	7 120
01362004 Bell Brook	Catskill Creek	Lat 42°16'10", long 73°57'42", Greene County, 0.4 mile (0.6 km) upstream from unnamed tributary, 0.4 mile (0.6 km) upstream from old State Highway 23, 0.5 mile (0.8 km) south of South Cairo, and 0.6 mile (1.0 km) upstream from mouth.		1972-73	10-16-73 12-7-73	0 7
01362005 Bell Brook	Catskill Creek	Lat 42°16'19", long 73°57'29", Greene County, 0.1 mile (0.2 km) upstream from unnamed tributary, 0.3 mile (0.5 km) south of South Cairo, 1.3 mile (2.1 km) upstream from old State Highway 23, and 0.4 mile (0.6 km) upstream from mouth.	1.31	1971-73	10-16-73 12-7-73	7 120
01362482 Beaver Kill	Esopus Creek	Lat 42°04'03", long 74°13'54", Ulster County, at bridge on State Highway 212, 0.6 mile (1.0 km) southwest of Willow, and 3.1 miles (5.3 km) upstream from mouth.	14.4		12-21-73	4,130
01368495 Indigot Creek Tributary	Indigot Creek	Lat 41°25'16", long 74°31'08", Orange County, at bridge on Manning Road (Town of Mt. Hope, Route 12), 1.3 miles (2.1 km) upstream from mouth, and 1.6 miles (2.6 km) south of Mount Hope.	5.78	1973	4-12-74 5-30-74 7-10-74 9-10-74	21 1.6 11 1.5
01368705 Wickham Lake Tributary	Wickham Lake	Lat 41°17'18", long 74°17'11", Orange County, at bridge on Kings Highway at Lake, 0.6 mile (1.0 km) upstream from mouth, and 4.2 miles (6.8 km) northeast of Warwick.	0.68	1971-73	11-30-73 2-2-74 4-8-74 5-18-74 7-23-74 9-4-74	7 1.9 1.8 11 0 130

* Base flow.
T Trace.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at miscellaneous sites during water year 1975--Continued

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
Hudson River basin--Continued						
01359915 Hannacrois Creek	Hudson River	Lat 42°19'49", long 73°58'46", Albany County, at bridge on State Highway 32 and 143, 0.2 mi (0.3 km) upstream from Silver Creek, 0.8 mi (1.3 km) east of Dormanville, and 0.8 mi (1.3 km) upstream from Alcove Reservoir.	13.2	1963 1970 1973-74	9- 2-75	* 2.6
01359916 Silver Creek	Hannacrois Creek	Lat 42°28'24", long 73°59'17", Albany County, at culvert on Boomhower Road near Dormanville.	-	1970 1973-74	9- 2-75	* <.1
01359917 Silver Creek Tributary	Silver Creek	Lat 42°29'01", long 73°59'37", Albany County, at culvert on Boomhower Road at Dormanville.	.60	1970 1973-74	9- 2-75	* .40
01361102 Claverack Creek	Stockport Creek	Lat 42°15'10", long 73°39'56", Columbia County, 20 ft (6.1 m) downstream from confluence of Agawamuck and North Creeks in Mellenville.	-	-	6-11-75	*42
01361200 Claverack Creek	Stockport Creek	Lat 42°12'54", long 73°43'46", Columbia County, 70 ft (21.3 m) upstream from bridge on State Highway 9H, 0.5 mi (0.8 km) south of Claverack, and 2.2 mi (3.5 km) upstream from Taghkanic Creek.	60.6	1971 1973	6-10-75 6-11-75	56 *49
01361300 Taghkanic Creek	Claverack Creek	Lat 42°12'59", long 73°45'35", Columbia County, at bridge on County Highway 29, 0.2 mi (0.3 km) upstream from Loomis Creek, 0.9 mi (1.4 km) upstream from mouth and 1.5 mi (2.4 km) southwest of Claverack.	83.0	1947a 1956-61a 1964-65a	6-11-75	*44
01361340 Claverack Creek	Stockport Creek	Lat 42°18'44", long 73°44'34", Columbia County, at bridge on county road in Stockport, and 0.4 mi (0.6 km) upstream from mouth.	-	1971	6-11-75	126
01361465 Fox Creek	Catskill Creek	Lat 42°27'46", long 74°10'53", Albany County, at bridge on Pearson Road, 1.9 mi (3.1 km) upstream from mouth, and 1.9 mi (3.1 km) northeast of Preston Hollow.	3.43	1970 1973-74	9-10-75	* .08
01361480 Catskill Creek Tributary	Catskill Creek	Lat 42°26'11", long 74°09'08", Albany County, at bridge on Niles Road, 1.0 mi (1.6 km) west of Medusa.	6.58	1970 1973-74	9-10-75	* .07
01368495 Indigot Creek Tributary	Indigot Creek	Lat 41°25'16", long 74°31'08", Orange County, at bridge on Manning Road (Town of Mt. Hope, Route 12), 1.3 mi (2.1 km) upstream from mouth, and 1.6 mi (2.6 km) south of Mount Hope.	5.78	1973-74	10- 9-74 12-31-74 2-19-75 3-31-75 5- 8-75 6-20-75 7-31-75 8-11-75	1.7 8.1 5.3 20 8.4 3.6 1.1 .88
01368705 Wickham Lake Tributary	Wickham Lake	Lat 41°17'38", long 74°17'33", Orange County, at bridge on Kings Highway, at Lake, 0.6 mi (1.0 km) upstream from mouth, and 4.2 mi (6.8 km) northeast of Warwick.	0.68	1971-74	3-10-75 4-30-75 6-16-75 7-22-75 8-22-75	.27 .17 .06 .72 0
01368713 Wawayanda Creek	Pochuck Creek	Lat 41°16'44", long 74°18'20", Orange County, at bridge on State School Road, at Durland, 0.1 mi (0.2 km) downstream from Wickham Lake, and 2.5 mi (4.0 km) northeast of Warwick.	5.15	1967 1971-74	3-10-75 5- 2-75 6-16-75 7-22-75 8-22-75	10 4.9 3.9 18 1.5
01368722 Long House Creek	Wawayanda Creek	Lat 41°12'53", long 74°20'02", Orange County, at bridge on Cascade Road, 1.0 mi (1.6 km) downstream from Cascade Lake, and 3.0 mi (4.8 km) southwest of Bellvale.	8.35	1973-74	3-10-75 5- 1-75 6-16-75 7-22-75 8-29-75	12 6.6 13 51 5.9
01368724 Long House Creek	Wawayanda Creek	Lat 41°15'10", long 74°18'30", Orange County, at bridge on Iron Forge Road, at Bellvale, and 1.9 mi (3.1 km) upstream from mouth.	11.8	1971-74	3-10-75 5- 1-75 6-16-75 7-21-75 8-22-75	18 11 15 77 * 1.9
01368740 Warwick Reservoir Outlet Tributary	Warwick Reservoir Outlet	Lat 41°14'31", long 74°21'14", Orange County, at bridge on Ball Road, 0.5 mi (0.8 km) upstream from mouth, and 1.0 mi (1.6 km) from Warwick.	.56	1971-74	2-27-75 5- 2-75 6-11-75 7-21-75 8-20-75	5.1 .55 .29 1.7 .13

* Base flow measurement.

< Less than.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Annual maximum discharge at crest-stage partial-record stations during water year 1979--Continued

Station No.	Station name	Location	Drainage area (mi ²)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (ft ³ /s)
Hudson River basin--Continued							
01349360	Van Wie Creek tributary near Randall, NY	Lat 42°54'11", long 74°25'55", Montgomery County, at culvert on Brumley Road, 0.3 mi (0.5 km) south of intersection with Argisinger Road, and 0.9 mi (1.4 km) southwest of Randall.	1.03	1974-79	10-17-77 3-6-79	3.77 3.56	67 61
01349850	Batavia Kill at Hensonville, NY	Lat 42°17'17", long 74°12'55", Greene County, on County Highway 40, at Hensonville, 0.7 mi (1.1 km) upstream from Silver Lake Outlet, and 1.8 mi (2.9 km) upstream from Nauvo Stream.	13.5	1955, 1960 1961-66, 1972, 1974, 1976, 1979	3-24-79	3.35	-
01350900	Beaverdam Creek near Knox, NY	Lat 42°38'57", long 74°07'56", Albany County, 250 ft (76 m) downstream from bridge, 1.2 mi (1.9 km) south of Knox, and 1.7 mi (2.7 km) upstream from mouth.	6.91	1963-64, 1966, 1967-74, 1976-77, 1979	1-2-79	5.45	608
01354200	Sandsea Kill at Pattersonville, NY	Lat 42°53'20", long 74°04'42", Schenectady County, at bridge on State Highway 55, in village of Pattersonville.	9.56	1961, 1965-67, 1971-74, 1976-79	3-5-79	4.44	-
01354300	Plotter Kill at Rynex Corners, NY	Lat 42°49'16", long 74°04'20", Schenectady County, at bridge on State Highway 159, in hamlet of Rynex Corners.	3.70	1958, 1960-68, 1970-74, 1976-79	3-6-79	5.05	-
01355405	Indian Kill near Glenville Center, NY	Lat 42°53'40", long 73°57'27", Schenectady County, 1.1 mi (1.7 km) east of Glenville Center, and 1.3 mi (2.1 km) west of East Glenville.	2.39	1974-79	3-6-79	16.32	59
01361200	Claverack Creek near Claverack, NY	Lat 42°12'54", long 73°43'46", Columbia County, on right bank, 70 ft (21 m) upstream from bridge on State Highway 9H, 0.5 mi (0.9 km) south of Claverack.	60.6	1960-68†, 1969-73 1975-79	1-2-79	8.63	2,710
01361453	Catskill Creek tributary at Franklinton, NY	Lat 42°31'35", long 74°18'33", Schoharie County, at culvert on town road, 0.15 mi (0.3 km) upstream from mouth, and 0.5 mi (0.8 km) northwest of Franklinton.	3.64	1968-72, 1974-79	3-24-79	6.96	263
01361900	Shingle Kill at Cairo, NY	Lat 42°18'22", long 74°00'15", Greene County, at bridge on town road at Cairo, southeast of State Highway 32, about 400 ft (122 m) south of State Highway 23, and 0.8 mi (1.3 km) upstream from mouth.	13.9	1953, 1966, 1967-74, 1976-79	3-6-79	5.50	-
01362100	Roeliff Jansen Kill near Hillsdale, NY	Lat 42°09'13", long 73°31'14", Columbia County, at bridge on county highway off State Highway 22, 1.8 mi (2.9 km) south of Hillsdale.	27.3	1958-60†, 1963-64, 1968-79	3-5-79	6.16	1,380
01362197	Bushnellville Creek at Shandaken, NY	Lat 42°07'25", long 74°24'04", Ulster County, along State Highway 42, 0.4 mi (0.6 km) upstream from Esopus Creek, and 0.6 mi (0.97 km) northwest of Shandaken.	11.4	1951, 1956, 1972, 1976-79	3-5-79	8.40	-
01363388	Dry Brook at West Shokan, NY	Lat 41°58'22", long 74°17'50", Ulster County, at bridge on town road, 0.6 mi (1.0 km) northwest of West Shokan, and 1.2 mi (1.9 km) upstream from mouth.	1.67	1978-79	9-6-79	4.28	225

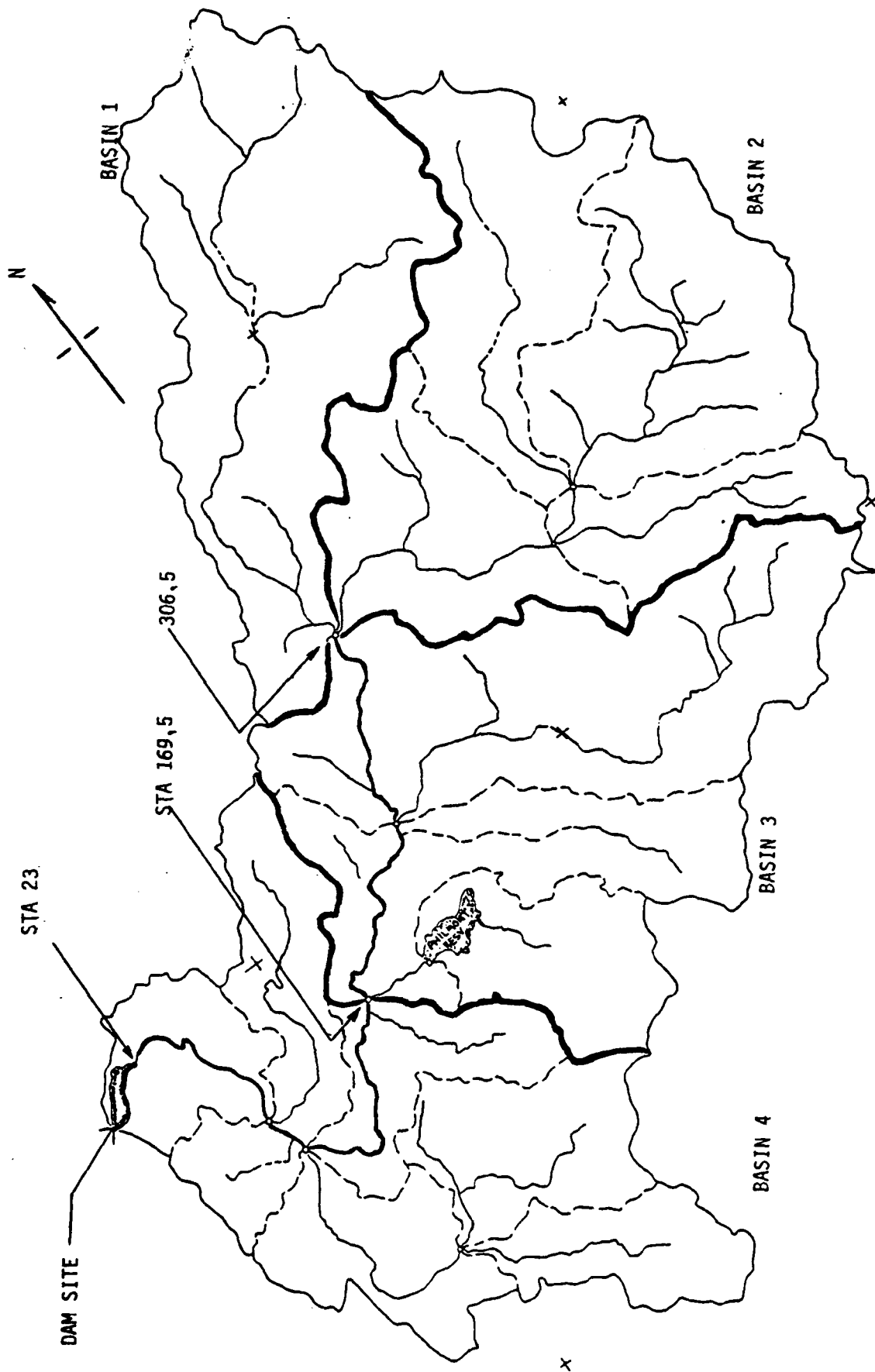
† Op rated as a continuous-record gaging station.

Table 2.--(Continued)

Station number	Station name	Latitude	Longitude	Co. code	Drainage area 1/ (mi ²)	Date	Discharge 2/ (ft ³ /s)
01359017	Silver Creek tributary at Dormansville.....	42 29 01	73 59 37	001	.60	8-19-70 9-25-70 10- 3-72 8- 8-73 8- 9-74 9- 2-75 6-26-63 7-10-63 6-26-63 7-10-63 6-26-63 7-10-63 6-26-63 7-10-63	*.14 *.10 *.06 *.70 *.24 *.40 *.12 *.08 *.22 *.15 *.46 *.26
	Coxsackie Creek near Climax.....	42 19 44	73 51 02	039			
	Bronck lake outlet near Climax.....	42 20 59	73 51 07	039			
	Coxsackie Reservoir outlet at Climax.....	42 21 57	73 51 15	039			
	Coxsackie Reservoir outlet near West Coxsackie.....	42 21 19	73 50 17	039		6-26-63 7-10-63 6-26-63 7-10-63	*.24 *.28 *.35 *.61
	Coxsackie Creek at West Coxsackie.....	42 21 45	73 49 46	039		7-10-63 8-30-62 10-24-61 6-21-49 7- 6-49 10-26-49 7-11-55 7-11-55	*.34 *.09 12.6 5.43 4.64 10
	Valatie Kill near Nassau.....	42 32 59	73 35 44	083	11.6		9.3
	Roberts Hill Brook at East Nassau.....	42 30 13	73 29 41	083	.53	10-24-61	*.97
	Kinderhook Creek at Stephentown.....	42 32 23	73 21 37	083	16.7	6-21-49 7- 6-49 10-26-49 7-11-55 7-11-55	.64 2.96 3.73 1.38 *.18
	Black River near Cherry Plain.....	42 37 20	73 24 39	083		7-11-55 10-24-61 2-10-53 3-12-53 4-15-53 5-11-53 6-10-53 10-28-71	1.38 *.18 *.12 *.41 *.20 *.26 *.18 *.72 *.61 *.17
01360350	Kinderhook Creek at Valatie.....	42 24 25	73 41 26	021		6-24-63 8-23-63 6-24-63 8-23-63 6-24-63 8-23-63 10-28-63	*.25 *.16 *.45 *.24 *.86 *.26 *.67 *.99 *.23
	Sand Pit Brook at Martindale.....	42 13 16	73 38 06	021			
	Sand Pit Brook at Philmont.....	42 14 02	73 37 59	021			
	Agawamuck Creek at Philmont.....	42 14 01	73 37 51	021			
01361010	Spring (at gravel pit) at Philmont.....	42 13 42	73 38 01	021			
	Agawamuck Creek near Philmont.....	42 15 00	73 36 32	021			
	Agawamuck Creek at Philmont.....	42 15 02	73 38 19	021			
01361060	Agawamuck Creek at Mellenville.....	42 15 10	73 39 54	021			

1/ County code is listed on page 51

2/ * - base flow; a - estimate; T - trace



DRAINAGE AREA MAP - SUMMIT STREET DAM NY-847

 IND HYDROGRAPH PACKAGE (HFC-1)
 15-PHY VERSION JULY 1978
 LAST MODIFICATION 26 FEB 79
 OUTFIELD FOR HONEYWELL APR 79

 NEW YORK STATE
 DEPT OF ENVIRONMENTAL CONSERVATION
 FLOOD PROTECTION BUREAU

 LOWER HUDSON RIVER BASIN
 COLUMBIA COUNTY
 SNYDER LN WITH SUBBASINS
 C 0 0 0

 SHERIDAN STREET DAM
 DEC 22BA-1074 LM -- AGAMAHUCK CREEK
 VILLAGE OF PHILMONT
 1 0 0 0

1 A NY-P47

2 A
 3 A 10C
 4 B
 5 B1

6 J 1 1

7 J1 0.20 0.21 0.22 0.23 0.24 0.25 0.50 1

8 K C RSN-1

9 K1 INFLOW HYDROGRAPH -- SUBBASIN 1

10 H 1 1 3.99 21.16 1

11 P 20 102 115 125 134

12 T 1.0 0.05

13 W 4.87 0.56

14 X 4 12 3

15 K C RSN-2

16 K1 INFLOW HYDROGRAPH -- SUBBASIN 2

17 H 1 1 6.02 21.16 1

18 P 20 102 115 125 134

19 T 1.0 0.05

20 W 5.16 0.56

21 X 4 12 3

22 K 2 300.5

23 K1 HYDROGRAPH -- SUBBASINS 1 AND 2

24 K 1 MIDCRR

25 K1 CHAPFL ROUTING OF HYDROGRAPH TO STATION 169.5 - AGAMAHUCK CREEK

26 Y 1 1

27 Y1 3

28 Y6 0.04 0.04 595 512 13700 0.0063

29 Y7 24 70 602 270 600 275 595 325 575

30 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0

[illegible]

PREVIEW OF SEQUENCE OF STREAM NETWORK CALCULATIONS

RUNOFF HYDROGRAPH AT BSN-1
RUNOFF HYDROGRAPH AT BSN-2
COMBINE 2 HYDROGRAPHS AT 306.5
ROUTE HYDROGRAPH TO MIOCKK
RUNOFF HYDROGRAPH AT BSN-3
COMBINE 2 HYDROGRAPHS AT 169.5
ROUTE HYDROGRAPH TO LOWCRK
RUNOFF HYDROGRAPH AT BSN-4
COMBINE 2 HYDROGRAPHS AT 23
ROUTE HYDROGRAPH TO DAM
END OF NETWORK

NEW YORK STATE
DEPT OF ENVIRONMENTAL CONSERVATION
Pesticide Protection Bureau

SUB CITY STREET DAN
 ENC 229A-1074 Lb -- AGA-JAHUCK CREEK
 VILLAGE OF PHILMONT

LOWER HUDSON RIVER BASIN
COLUMBIA COUNTY
SNYCEK UP WITH SUBBASIN'S

JOB SPECIFICATION	
DAY	TIME
1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	0
9	0
10	0
11	0
12	0
13	0
14	0
15	0
16	0
17	0
18	0
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21	0
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89	0
90	0
91	0
92	0
93	0
94	0
95	0
96	0
97	0
98	0
99	0
100	0

MULTI-PLAN ANALYSES TO BE PERFORMED

KTICS=	0.20	0.21	0.22	0.23	0.24	0.25	0.50	1.00
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[illegible]

SUB-AREA KUNIFF COMPUTATION

INFLUX HYDROGRAPH	-- SUBBASIN 1	JPLT	JPRY	INAME	ISTAGE	IAUTO
IStaQ	IcCnIP	0	0	1	0	0
BSN-1	0	0	0			

HYDROGRAPH DATA									
HYDC	TIME	TAREA	SNAP	TPSDA	TRSPC	RATIC	ISMLW	ISALF	LOCAL
1	1	3.99	0.	21.16	C.	C.	0	1	0

SPFE	PMS	P6	PRECIP DATA
C.	20.00	102.00	R12 R24
			115.00 125.00

R72 R96
C. C.

LFSS DATA										
LF,PT	STOCK	ULT-R	RTIOL	ERAIN	STAKS	RTIOK	STRTL	CNSTL	ALSLX	RTTTP
0	C.	0.	1.00	0.	0.	1.00	1.00	0.05	0.	0.

UNIT HYDROGRAPH DATA
TP= 4.97 CP=0.96 NTA= C

```

APPROXIMATE CARRY COEFFICIENTS ARE:
STF TO= 4.00      QRCST= 12.00      RTICR= 3.00
REFLECTION DATA
GIVEN SINGLER CP AND TP ARE TC= 5.46 AND R= 5.36 INTERVALS

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UNIT	PERIOD	PERIOD	UPDATES	LAG	4.5C	FEELS	CP	C.5.6	VCL
6	174	251	255	258	247	247	205	170	141
17	174	67	54	40	38	38	37	26	22
18	13	10	7	7	6	6	5	4	3

[illegible]

1.	1.	3.	3.	22.	18.	15.	9.
0.	0.	2.	2.	2.	1.	1.	1.
1.	1.	1.	1.	1.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.
PEAK							
906.	795.	390.	141.	10130.			
26.	11.	3.64	3.53	287.			
	1.85	92.47	99.80	99.90			
	47.05	774.	837.	837.			
	394.	955.	1032.	1033.			
	486.						
TOTAL VOLUME							
10130.							
287.							
99.90							
837.							
1033.							

HYDROGRAPH AT STA BSN-1 FOR PLAN 1, RTIO 2

1.	1.	0.	0.	0.	0.	0.	0.
0.	0.	0.	1.	1.	3.	6.	6.
1.	1.	11.	10.	11.	13.	13.	13.
16.	13.	70.	46.	106.	144.	210.	329.
39.	54.	939.	851.	736.	624.	528.	446.
800.	951.	182.	151.	125.	104.	86.	71.
263.	215.	28.	23.	15.	16.	12.	9.
45.	34.	2.	2.	2.	1.	1.	1.
3.	2.	1.	1.	1.	0.	0.	0.
1.	1.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.
TOTAL VOLUME							
10637.							
301.							
4.13							
104.50							
879.							
1084.							

PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
951.	834.	410.	148.	10637.
27.	24.	12.	4.	301.
	1.94	5.82	4.13	4.13
	49.40	97.10	104.89	104.50
	414.	813.	879.	879.
	510.	1003.	1083.	1084.

HYDROGRAPH AT STA BSN-1 FOR PLAN 1, RTIO 3

1.	1.	1.	0.	0.	0.	0.	0.
0.	0.	0.	1.	1.	3.	7.	7.
1.	1.	12.	11.	12.	14.	14.	14.
17.	14.	73.	90.	111.	131.	220.	345.
30.	56.	983.	891.	771.	654.	553.	468.
23.	997.	195.	158.	131.	109.	90.	75.
529.	229.	29.	24.	20.	16.	13.	10.
331.	35.	2.	2.	2.	1.	1.	1.
52.	2.	1.	1.	1.	0.	0.	0.
3.	1.	0.	0.	0.	0.	0.	0.
1.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.
TOTAL VOLUME							
11143.							
316.							
4.33							
109.89							
921.							
1126.							

PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
997.	874.	429.	155.	11143.
28.	25.	12.	4.	316.
	2.04	4.00	4.33	4.33
	51.75	101.72	109.89	109.89
	434.	852.	920.	921.
	535.	1051.	1135.	1126.

HYDROGRAPH AT STA BSN-1 FOR PLAN 1, RTIO 4

1.	1.	1.	0.	0.	0.	0.	0.
0.	0.	0.	1.	1.	3.	7.	7.
1.	1.	12.	11.	12.	14.	14.	14.
17.	14.	77.	94.	116.	158.	230.	361.
30.	59.	1028.	932.	806.	654.	578.	485.
529.	229.	197.	165.	137.	114.	94.	78.
331.	35.	2.	2.	2.	1.	1.	1.
52.	2.	1.	1.	1.	0.	0.	0.
3.	1.	0.	0.	0.	0.	0.	0.
1.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.
TOTAL VOLUME							
11143.							
316.							
4.33							
109.89							
921.							
1126.							

PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
1042.	914.	449.	162.	1150.
30.	26.	13.	5.	30.
	2.13	4.19	4.52	4.53
	54.11	106.35	114.88	114.96
	453.	690.	942.	943.
	559.	1078.	1187.	1188.

HYDROGRAPH AT STA PSN-1 FOR PLAN 1, RTIC 5

PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
1087.	953.	468.	169.	12156.
31.	27.	13.	5.	344.
	2.22	4.37	4.72	4.72
	50.46	110.97	119.88	119.94
	473.	929.	1004.	1005.
	563.	1146.	1238.	1239.

HYDROGRAPH AT STA BSN-1 FOR PLAN 1, RTIC 6

PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
1133.	953.	488.	176.	12663.
32.	28.	14.	5.	359.
	2.32	4.55	4.52	4.92
	58.81	115.59	124.87	124.93
	492.	968.	1046.	1047.
	607.	1194.	1290.	1291.

HYDROGRAPH AT STA PSN-1 FOR PLAN 1, RTIC 7

PEAK	0-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
1133.	953.	488.	176.	12663.
32.	28.	14.	5.	359.
	2.32	4.55	4.52	4.92
	58.81	115.59	124.87	124.93
	492.	968.	1046.	1047.
	607.	1194.	1290.	1291.

15-25.
 717.
 9-24
 249-252
 2053.
 25-27.

HYDROGRAPH AT STA PS'-1 FOR PLAN 1, RTIC 2

1.	1.	1.
53.	53.	74.
74.	74.	68.
	1002.	1568.
	2514.	2126.
	410.	340.
	58.	45.
	6.	5.
	2.	2.
	1.	1.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL	VOLUME
CFS	4530.	3973.	1952.	703.	5061.	
CS	128.	112.	55.	20.	1434.	
LOCES		9.26	18.20	19.67	19.68	
FM		235.25	465.37	499.49	499.61	
FC-FT		1970.	3872.	4183.	4166.	
FC-FC		2430.	4776.	5155.	5163.	

廣東省立第一中學

◆◆◆◆◆

大英欽命駐劄廣東領事官

黃梅縣志卷之六

我大德也

SUR-AREA RUNOFF COMPUTATION

TULCO HYDROGRAPH		SUBBASIN 2					
ISTAQ	ICOMP	IFCOH	ITAPE	JPLT	JPRT	JNAME	ISTAGE
USN-2	0	0	0	0	0	1	0
							IAUTO
							0

HYDROGRAPH DATA				RATIE		ISNEW		ISAME		LUCAL	
TAREA		SNAP		TRSDA		TRSPC					
1	6.02	0.	0.	1	6.02	0.	0.	1	6.02	0.	0.

PRECIP DATA		R46		R72		R96	
		P15	R6	P12	R24	C.	U.
1.	102.00	102.00	115.00	125.00	134.00		
2.	20.00						

TRSPC COMPUTED BY THE PROGRAM IS 0.925

LOSS DATA										
LEAD	STPR	UTPR	KTINL	ERAIN	STKS	RTIOK	STRTL	CNSTL	ALSMX	RTIMP
1	0	0	1.00	0	0	1.00	1.00	0.00	0	0

UNIT HYDROGRAPH DATA
TP= 5.16 CP=0.56 NT

APPROXIMATE (LAST) PARTICIPATION FOR
GIVEN SYNTER CP AND TP ARE TC= 5.89 AND R= 5.62 INTERVALS
RTICR= 3.00
STATQ= 6.00
RFCESSION DATA
GRCSH= 13.00

TIME	NUMBER OF END-OF-PERIOD UPDATES	LAG	5.15 FLURS	CP	C.5.7	VCL
31.	328.	425.	302.	310.	267.	223.
32.	338.	410.	302.	310.	267.	223.
33.	348.	410.	302.	310.	267.	223.
34.	358.	410.	302.	310.	267.	223.
35.	368.	410.	302.	310.	267.	223.
36.	378.	410.	302.	310.	267.	223.
37.	388.	410.	302.	310.	267.	223.
38.	398.	410.	302.	310.	267.	223.
39.	408.	410.	302.	310.	267.	223.
40.	418.	410.	302.	310.	267.	223.
41.	428.	410.	302.	310.	267.	223.
42.	438.	410.	302.	310.	267.	223.
43.	448.	410.	302.	310.	267.	223.
44.	458.	410.	302.	310.	267.	223.
45.	468.	410.	302.	310.	267.	223.
46.	478.	410.	302.	310.	267.	223.
47.	488.	410.	302.	310.	267.	223.
48.	498.	410.	302.	310.	267.	223.
49.	508.	410.	302.	310.	267.	223.
50.	518.	410.	302.	310.	267.	223.
51.	528.	410.	302.	310.	267.	223.
52.	538.	410.	302.	310.	267.	223.
53.	548.	410.	302.	310.	267.	223.
54.	558.	410.	302.	310.	267.	223.
55.	568.	410.	302.	310.	267.	223.
56.	578.	410.	302.	310.	267.	223.
57.	588.	410.	302.	310.	267.	223.
58.	598.	410.	302.	310.	267.	223.
59.	608.	410.	302.	310.	267.	223.
60.	618.	410.	302.	310.	267.	223.
61.	628.	410.	302.	310.	267.	223.
62.	638.	410.	302.	310.	267.	223.
63.	648.	410.	302.	310.	267.	223.
64.	658.	410.	302.	310.	267.	223.
65.	668.	410.	302.	310.	267.	223.
66.	678.	410.	302.	310.	267.	223.
67.	688.	410.	302.	310.	267.	223.
68.	698.	410.	302.	310.	267.	223.
69.	708.	410.	302.	310.	267.	223.
70.	718.	410.	302.	310.	267.	223.
71.	728.	410.	302.	310.	267.	223.
72.	738.	410.	302.	310.	267.	223.
73.	748.	410.	302.	310.	267.	223.
74.	758.	410.	302.	310.	267.	223.
75.	768.	410.	302.	310.	267.	223.
76.	778.	410.	302.	310.	267.	223.
77.	788.	410.	302.	310.	267.	223.
78.	798.	410.	302.	310.	267.	223.
79.	808.	410.	302.	310.	267.	223.
80.	818.	410.	302.	310.	267.	223.
81.	828.	410.	302.	310.	267.	223.
82.	838.	410.	302.	310.	267.	223.
83.	848.	410.	302.	310.	267.	223.
84.	858.	410.	302.	310.	267.	223.
85.	868.	410.	302.	310.	267.	223.
86.	878.	410.	302.	310.	267.	223.
87.	888.	410.	302.	310.	267.	223.
88.	898.	410.	302.	310.	267.	223.

MO,DA	TIME	EXCS	LOSS	COMP	MO,DA	PR,PN	PERIOD	EXCS	LCSS	CEIP, C
1.01	1.00	0.	0.01	5.	1.03	3.00	51	0.	0.	2064.
1.01	2.00	0.	0.01	5.	1.03	4.00	52	0.	0.	2422.
1.01	3.00	0.	0.01	4.	1.03	5.00	53	0.	0.	2030.
1.01	4.00	0.	0.01	4.	1.03	6.00	54	0.	0.	1708.
1.01	5.00	0.	0.01	3.	1.03	7.00	55	0.	0.	1429.
1.01	6.00	0.	0.01	3.	1.03	8.00	56	0.	0.	1190.
1.01	7.00	0.	0.03	3.	1.03	9.00	57	0.	0.	1000.
1.01	8.00	0.	0.03	2.	1.03	10.00	58	0.	0.	637.
1.01	9.00	0.	0.03	2.	1.03	11.00	59	0.	0.	700.
1.01	10.00	0.	0.03	2.	1.03	12.00	60	0.	0.	585.
1.01	11.00	0.	0.03	2.	1.03	13.00	61	0.	0.	449.
1.01	12.00	0.	0.03	2.	1.03	14.00	62	0.	0.	409.
1.01	13.00	0.	0.12	1.	1.03	15.00	63	0.	0.	342.
1.01	14.00	0.	0.15	1.	1.03	16.00	64	0.	0.	235.
1.01	15.00	0.	0.18	1.	1.03	17.00	65	0.	0.	230.
1.01	16.00	0.10	0.36	4.	1.03	18.00	66	0.	0.	153.
1.01	17.00	0.12	0.65	16.	1.03	19.00	67	0.	0.	162.
1.01	18.00	0.12	0.05	40.	1.03	20.00	68	0.	0.	137.
1.01	19.00	0.	0.01	71.	1.03	21.00	69	0.	0.	114.
1.01	20.00	0.	0.01	100.	1.03	22.00	70	0.	0.	50.
1.01	21.00	0.	0.01	120.	1.03	23.00	71	0.	0.	69.
1.01	22.00	0.	0.01	123.	1.04	0.	72	0.	0.	50.
1.01	23.00	0.	0.01	113.	1.04	1.00	73	0.	0.	22.
1.02	0.	0.	0.01	57.	1.04	2.00	74	0.	0.	17.
1.02	1.00	0.06	0.05	83.	1.04	3.00	75	0.	0.	15.
1.02	2.00	0.06	0.05	77.	1.04	4.00	76	0.	0.	14.
1.02	3.00	0.06	0.05	79.	1.04	5.00	77	0.	0.	12.
1.02	4.00	0.06	0.05	90.	1.04	6.00	78	0.	0.	11.
1.02	5.00	0.06	0.05	107.	1.04	7.00	79	0.	0.	10.
1.02	6.00	0.06	0.05	126.	1.04	8.00	80	0.	0.	9.
1.02	7.00	0.31	0.05	151.	1.04	9.00	81	0.	0.	8.
1.02	8.00	0.31	0.05	194.	1.04	10.00	82	0.	0.	7.
1.02	9.00	0.31	0.05	263.	1.04	11.00	83	0.	0.	6.
1.02	10.00	0.31	0.05	357.	1.04	12.00	84	0.	0.	5.
1.02	11.00	0.31	0.05	467.	1.04	13.00	85	0.	0.	5.
1.02	12.00	0.31	0.05	579.	1.04	14.00	86	0.	0.	5.
1.02	13.00	1.63	0.05	721.	1.04	15.00	87	0.	0.	4.
1.02	14.00	1.07	0.05	968.	1.04	16.00	88	0.	0.	4.
1.02	15.00	2.47	0.05	1395.	1.04	17.00	89	0.	0.	3.
1.02	16.00	6.34	0.05	2157.	1.04	18.00	90	0.	0.	3.
1.02	17.00	2.31	0.05	3297.	1.04	19.00	91	0.	0.	3.
1.02	18.00	1.80	0.05	4611.	1.04	20.00	92	0.	0.	2.
1.02	19.00	0.11	0.05	5777.	1.04	21.00	93	0.	0.	2.
1.02	20.00	0.11	0.05	6487.	1.04	22.00	94	0.	0.	2.
1.02	21.00	0.11	0.05	6598.	1.04	23.00	95	0.	0.	2.
1.02	22.00	0.11	0.05	6151.	1.05	0.	96	0.	0.	2.
1.02	23.00	0.11	0.05.	5414.	1.05	1.00	97	0.	0.	1.
1.03	0.	0.	0.05	4647.	1.05	2.00	98	0.	0.	1.
1.03	1.00	0.	0.	3957.	1.05	3.00	99	0.	0.	1.
1.03	2.00	0.	0.	3369.	1.05	4.00	100	0.	0.	1.

SLP 22.11 19.72 2.38 76387.
(561.1) (501.1) (61.1) (2163.04)

PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
6598.	5643.	2930.	1060.	76386.
107.	105.	32.	30.	2161.
	7.03	18.11	19.66	19.67
	29.33	400.03	497.25	497.25
	20.57	5012.	6306.	6311.
	2.06	7154.	7715.	7715.

26.	0.	0.	1.	3.	0.	14.	20.
27.	23.	19.	17.	15.	16.	21.	25.
28.	30.	53.	93.	116.	144.	279.	431.
29.	650.	1155.	1297.	1230.	1083.	791.	674.
30.	470.	404.	342.	239.	200.	140.	117.
31.	42.	68.	57.	40.	33.	23.	16.
32.	17.	5.	3.	3.	2.	2.	2.
33.	1.	1.	1.	1.	1.	1.	1.
34.	1.	0.	1.	0.	0.	0.	0.
35.	1.	0.	1.	0.	0.	0.	0.

HYDROGRAPH AT STA 851-2 FOR PLAN 1, RTIC 2

PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
1320.	1169.	586.	212.	15277.
37.	33.	17.	6.	421.
	1.31	3.62	3.93	9.89
	45.84	92.01	99.85	59.84
	579.	1162.	1262.	1263.
	715.	1434.	1556.	1557.

1.	1.	1.	1.	1.	0.	0.	0.
2.	0.	0.	1.	1.	15.	21.	21.
3.	0.	0.	1.	1.	22.	26.	26.
4.	26.	20.	17.	16.	293.	453.	453.
5.	35.	75.	91.	122.	831.	707.	707.
6.	1213.	1362.	1292.	1137.	147.	123.	123.
7.	429.	359.	251.	210.	24.	19.	19.
8.	72.	60.	42.	35.	2.	2.	2.
9.	5.	4.	3.	3.	1.	1.	1.
10.	1.	1.	1.	1.	0.	0.	0.
11.	0.	0.	0.	0.	0.	0.	0.

HYDROGRAPH AT STA 851-2 FOR PLAN 1, RTIC 3

PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
1386.	1227.	615.	223.	16041.
39.	35.	17.	6.	454.
	1.90	3.80	4.13	4.13
	48.16	96.61	104.84	104.84
	608.	1221.	1325.	1326.
	740.	1505.	1634.	1635.

1.	1.	1.	1.	1.	0.	0.	0.
2.	0.	0.	1.	1.	16.	22.	22.
3.	0.	0.	1.	1.	24.	28.	28.
4.	25.	21.	17.	17.	307.	475.	475.
5.	33.	78.	127.	159.	870.	741.	741.
6.	1271.	1452.	1353.	1191.	154.	129.	129.
7.	443.	376.	263.	220.	23.	20.	20.
8.	75.	63.	44.	36.	2.	2.	2.
9.	5.	4.	3.	3.	1.	1.	1.
10.	1.	1.	1.	1.	0.	0.	0.
11.	0.	0.	0.	0.	0.	0.	0.

HYDROGRAPH AT STA 851-2 FOR PLAN 1, RTIC 4

PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
1452.	1285.	645.	233.	16865.
41.	30.	18.	7.	475.
	1.99	3.58	4.32	4.32
	50.45	101.21	109.64	109.64
	637.	1279.	1386.	1386.
	706.	1577.	1712.	1712.

1.	1.	1.	1.	1.	1.	1.	1.
2.	0.	0.	1.	1.	15.	21.	21.
3.	0.	0.	1.	1.	22.	26.	26.
4.	26.	20.	17.	16.	293.	453.	453.
5.	35.	75.	91.	122.	831.	707.	707.
6.	1213.	1362.	1292.	1137.	147.	123.	123.
7.	429.	359.	251.	210.	24.	19.	19.
8.	72.	60.	42.	35.	2.	2.	2.
9.	5.	4.	3.	3.	1.	1.	1.
10.	1.	1.	1.	1.	0.	0.	0.
11.	0.	0.	0.	0.	0.	0.	0.

SUM OF 2 HYDROGRAPHS AT 306.5 PLAN 1 RTIC 5

2.	2.	2.	1.	1.	1.	1.	1.
1.	1.	1.	0.	2.	2.	17.	42.
30.	30.	30.	33.	30.	30.	34.	51.
71.	71.	147.	192.	237.	295.	257.	854.
120.	2370.	2644.	2654.	2449.	2140.	1629.	1315.
1117.	777.	661.	551.	459.	303.	319.	222.
129.	107.	87.	74.	74.	61.	41.	32.
16.	6.	5.	5.	5.	5.	4.	2.
3.	2.	2.	2.	2.	2.	1.	1.
1.	1.	1.	1.	1.	1.	0.	0.

PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
2650.	2350.	1172.	423.	30429.
75.	47.	33.	12.	863.
	2.19	4.36	4.72	4.72
	55.67	110.63	119.84	119.94
	1168.	2324.	2518.	2520.
	1441.	2867.	3105.	3108.

FIGURE 5

SUM OF 2 HYDROGRAPHS AT 306.5 PLAN 1 RTIC 6

2.	2.	2.	1.	1.	1.	1.	1.
1.	1.	1.	0.	2.	2.	17.	44.
31.	31.	34.	34.	32.	33.	28.	53.
103.	112.	153.	207.	247.	307.	413.	531.
1424.	2754.	2767.	2551.	2230.	1805.	1618.	1374.
1154.	423.	573.	478.	395.	277.	231.	277.
123.	111.	93.	77.	64.	53.	43.	34.
25.	7.	6.	5.	5.	4.	4.	3.
3.	2.	2.	2.	2.	1.	1.	1.
1.	1.	1.	1.	1.	0.	0.	0.

PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
2767.	2454.	1221.	441.	31759.
70.	63.	35.	12.	859.
	2.23	4.54	4.51	4.52
	57.92	115.24	124.84	124.94
	1217.	2421.	2623.	2625.
	1501.	2986.	3235.	3234.

FIGURE 6

SUM OF 2 HYDROGRAPHS AT 306.5 PLAN 1 RTIC 7

2.	2.	2.	1.	1.	1.	1.	1.
4.	4.	3.	1.	3.	2.	2.	2.
102.	102.	79.	63.	63.	14.	35.	87.
123.	123.	306.	401.	474.	66.	74.	107.
2851.	3577.	5509.	5534.	5101.	414.	327.	1863.
2227.	1643.	1375.	1147.	957.	4459.	3809.	2747.
306.	223.	185.	154.	127.	798.	685.	463.
51.	17.	12.	11.	10.	127.	106.	67.
2.	2.	4.	4.	3.	10.	9.	7.
2.	2.	1.	1.	1.	3.	3.	2.
					1.	1.	1.

PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
5234.	495.	2441.	881.	63519.
157.	132.	65.	25.	1759.
	4.24	9.07	9.83	9.84
	115.34	230.48	249.67	249.89
	2434.	4842.	5245.	5245.
	5075.	5075.	4477.	4475.

FIGURE 7

1.	7.	6.	6.	5.	4.	3.
2.	2.	2.	2.	7.	124.	174.
3.	187.	159.	135.	126.	132.	214.
4.	450.	612.	801.	989.	1248.	3725.
5.	7534.	11013.	11003.	10202.	8918.	2455.
6.	3292.	2750.	2294.	1913.	1596.	525.
7.	535.	646.	373.	307.	255.	135.
8.	34.	27.	24.	22.	19.	14.
9.	10.	9.	3.	7.	6.	5.
10.	3.	3.	3.	2.	2.	2.

PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
11068.	9815.	4882.	1763.	127037.
313.	278.	136.	50.	3897.
1.0005	9.12	18.15	19.66	19.64
4M	231.68	460.96	499.35	499.77
AC-FT	4867.	9684.	10490.	10459.
THIS CL 4	6003.	11945.	12939.	12350.

HYDROGRAPH ROUTING

CHANNEL ROUTING OF HYDROGRAPH TO STATION 169.5 - AGAWAMUCK CREEK

ISTAQ	ICOMP	IECCN	ITAPE	JPLT	JPR7	INAME	ISTAGE	IAUTO
MIDCRK	1	0	0	0	0	1	0	0

ROUTING DATA

ROUTING	CLASS	AVG	IRFS	ISAME	IOPT	IPMP	LSTR
0.	0.	0.	1	1	0	0	0

INSTPS NSTOL LAG AMSKK X TSK STCA ISPRAT

3	0	0	0.	0.	0.	0.	0
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NORMAL DEPTH CHANNEL ROUTING

ELVT	ELMAX	RLTH	SEL
595.0	612.0	137.0	0.00650

CROSS SECTION CHARACTERISTICS--STA, ELEV, STA, ELEV--ETC

25.00	612.00	27.00	600.00	275.00	595.00	325.00	595.00
330.00	595.00	530.00	575.00	612.00			

STAGE	0.	14.32	29.15	44.48	60.31	76.65	97.71	160.51	272.51
	537.14	612.00	810.42	950.46	1092.77	1237.35	1314.19	1533.29	1644.67
OUTFLOW	0.	124.13	393.92	772.98	1247.78	1810.12	2402.55	3022.80	3674.71
	1337.3	1563.17	24468.73	31147.02	38537.73	46414.28	55470.71	64780.57	73374.51
STAGE	0.	14.32	29.15	44.48	60.31	76.65	97.71	160.51	272.51
	537.14	612.00	810.42	950.46	1092.77	1237.35	1314.19	1533.29	1644.67

17.	27.	30.	31.	6.	27.	10.	15.
18.	28.	31.	32.	30.	28.	22.	20.
19.	29.	32.	33.	31.	29.	23.	21.
20.	30.	33.	34.	32.	30.	24.	22.
21.	31.	34.	35.	33.	31.	25.	23.
22.	32.	35.	36.	34.	32.	26.	24.
23.	33.	36.	37.	35.	33.	27.	25.
24.	34.	37.	38.	36.	34.	28.	26.
25.	35.	38.	39.	37.	35.	29.	27.
26.	36.	39.	40.	38.	36.	30.	28.
27.	37.	40.	41.	39.	37.	31.	29.
28.	38.	41.	42.	40.	38.	32.	30.
29.	39.	42.	43.	41.	39.	33.	31.
30.	40.	43.	44.	42.	40.	34.	32.
31.	41.	44.	45.	43.	41.	35.	33.
32.	42.	45.	46.	44.	42.	36.	34.
33.	43.	46.	47.	45.	43.	37.	35.
34.	44.	47.	48.	46.	44.	38.	36.
35.	45.	48.	49.	47.	45.	39.	37.
36.	46.	49.	50.	48.	46.	40.	38.
37.	47.	50.	51.	49.	47.	41.	39.
38.	48.	51.	52.	50.	48.	42.	40.
39.	49.	52.	53.	51.	49.	43.	41.
40.	50.	53.	54.	52.	50.	44.	42.
41.	51.	54.	55.	53.	51.	45.	43.
42.	52.	55.	56.	54.	52.	46.	44.
43.	53.	56.	57.	55.	53.	47.	45.
44.	54.	57.	58.	56.	54.	48.	46.
45.	55.	58.	59.	57.	55.	49.	47.
46.	56.	59.	60.	58.	56.	50.	48.
47.	57.	60.	61.	59.	57.	51.	49.
48.	58.	61.	62.	60.	58.	52.	50.
49.	59.	62.	63.	61.	59.	53.	51.
50.	60.	63.	64.	62.	60.	54.	52.
51.	61.	64.	65.	63.	61.	55.	53.
52.	62.	65.	66.	64.	62.	56.	54.
53.	63.	66.	67.	65.	63.	57.	55.
54.	64.	67.	68.	66.	64.	58.	56.
55.	65.	68.	69.	67.	65.	59.	57.
56.	66.	69.	70.	68.	66.	60.	58.
57.	67.	70.	71.	69.	67.	61.	59.
58.	68.	71.	72.	70.	68.	62.	60.
59.	69.	72.	73.	71.	69.	63.	61.
60.	70.	73.	74.	72.	70.	64.	62.
61.	71.	74.	75.	73.	71.	65.	63.
62.	72.	75.	76.	74.	72.	66.	64.
63.	73.	76.	77.	75.	73.	67.	65.
64.	74.	77.	78.	76.	74.	68.	66.
65.	75.	78.	79.	77.	75.	69.	67.
66.	76.	79.	80.	78.	76.	70.	68.
67.	77.	80.	81.	79.	77.	71.	69.
68.	78.	81.	82.	80.	78.	72.	70.
69.	79.	82.	83.	81.	79.	73.	71.
70.	80.	83.	84.	82.	80.	74.	72.
71.	81.	84.	85.	83.	81.	75.	73.
72.	82.	85.	86.	84.	82.	76.	74.
73.	83.	86.	87.	85.	83.	77.	75.
74.	84.	87.	88.	86.	84.	78.	76.
75.	85.	88.	89.	87.	85.	79.	77.
76.	86.	89.	90.	88.	86.	80.	78.
77.	87.	90.	91.	89.	87.	81.	79.
78.	88.	91.	92.	90.	88.	82.	80.
79.	89.	92.	93.	91.	89.	83.	81.
80.	90.	93.	94.	92.	90.	84.	82.
81.	91.	94.	95.	93.	91.	85.	83.
82.	92.	95.	96.	94.	92.	86.	84.
83.	93.	96.	97.	95.	93.	87.	85.
84.	94.	97.	98.	96.	94.	88.	86.
85.	95.	98.	99.	97.	95.	89.	87.
86.	96.	99.	100.	98.	96.	90.	88.
87.	97.	100.	101.	99.	97.	91.	89.
88.	98.	101.	102.	100.	98.	92.	90.
89.	99.	102.	103.	101.	99.	93.	91.
90.	100.	103.	104.	102.	100.	94.	92.
91.	101.	104.	105.	103.	101.	95.	93.
92.	102.	105.	106.	104.	102.	96.	94.
93.	103.	106.	107.	105.	103.	97.	95.
94.	104.	107.	108.	106.	104.	98.	96.
95.	105.	108.	109.	107.	105.	99.	97.
96.	106.	109.	110.	108.	106.	100.	98.
97.	107.	110.	111.	109.	107.	101.	99.
98.	108.	111.	112.	110.	108.	102.	100.
99.	109.	112.	113.	111.	109.	103.	101.
100.	110.	113.	114.	112.	110.	104.	102.
101.	111.	114.	115.	113.	111.	105.	103.
102.	112.	115.	116.	114.	112.	106.	104.
103.	113.	116.	117.	115.	113.	107.	105.
104.	114.	117.	118.	116.	114.	108.	106.
105.	115.	118.	119.	117.	115.	109.	107.
106.	116.	119.	120.	118.	116.	110.	108.
107.	117.	120.	121.	119.	117.	111.	109.
108.	118.	121.	122.	120.	118.	112.	110.
109.	119.	122.	123.	121.	119.	113.	111.
110.	120.	123.	124.	122.	120.	114.	112.
111.	121.	124.	125.	123.	121.	115.	113.
112.	122.	125.	126.	124.	122.	116.	114.
113.	123.	126.	127.	125.	123.	117.	115.
114.	124.	127.	128.	126.	124.	118.	116.
115.	125.	128.	129.	127.	125.	119.	117.
116.	126.	129.	130.	128.	126.	120.	118.
117.	127.	130.	131.	129.	127.	121.	119.
118.	128.	131.	132.	130.	128.	122.	120.
119.	129.	132.	133.	131.	129.	123.	121.
120.	130.	133.	134.	132.	130.	124.	122.
121.	131.	134.	135.	133.	131.	125.	123.
122.	132.	135.	136.	134.	132.	126.	124.
123.	133.	136.	137.	135.	133.	127.	125.
124.	134.	137.	138.	136.	134.	128.	126.
125.	135.	138.	139.	137.	135.	129.	127.
126.	136.	139.	140.	138.	136.	130.	128.
127.	137.	140.	141.	139.	137.	131.	129.
128.	138.	141.	142.	140.	138.	132.	130.
129.	139.	142.	143.	141.	139.	133.	131.
130.	140.	143.	144.	142.	140.	134.	132.
131.	141.	144.	145.	143.	141.	135.	133.
132.	142.	145.	146.	144.	142.	136.	134.
133.	143.	146.	147.	145.	143.	137.	135.
134.	144.	147.	148.	146.	144.	138.	136.
135.	145.	148.	149.	147.	145.	139.	137.
136.	146.	149.	150.	148.	146.	140.	138.
137.	147.	150.	151.	149.	147.	141.	139.
138.	148.	151.	152.	150.	148.	142.	140.
139.	149.	152.	153.	151.	149.	143.	141.
140.	150.	153.	154.	152.	150.	144.	142.
141.	151.	154.	155.	153.	151.	145.	143.
142.	152.	155.	156.	154.	152.	146.	144.
143.	153.	156.	157.	155.	153.	147.	145.
144.	154.	157.	158.	156.	154.	148.	146.
145.	155.	158.	159.	157.	155.	149.	147.
146.	156.	159.	160.	158.	156.	150.	148.
147.	157.	160.	161.	159.	157.	151.	149.
148.	158.	161.	162.	160.	158.	152.	150.
149.	159.	162.	163.	161.	159.	153.	151.
150.	160.	163.	164.	162.	160.	154.	152.
151.	161.	164.	165.	163.	161.	155.	153.
152.	162.	165.	166.	164.	162.	156.	154.
153.	163.	166.	167.	165.	163.	157.	155.
154.	164.	167.	168.	166.	164.	158.	156.
155.	165.	168.	169.	167.	165.	159.	157.
156.	166.	169.	170.	168.	166.	160.	158.
157.	167.	170.	171.	169.	167.	161.	159.
158.	168.	171.	172.	170.	168.	162.	160.
159.	169.	172.	173.	171.	169.	163.	161.
160.	170.	173.	174.	172.	170.	164.	162.
161.	171.	174.	175.	173.	171.	165.	163.
162.	172.	175.	176.	174.	172.	166.	164.
163.	173.	176.	177.	175.	173.	167.	165.
164.	174.	177.	178.	176.	174.	168.	166.
165.	175.	178.	179.	177.	175.	169.	167.
166.	176.	179.	180.	178.	176.	170.	168.
167.	177.	180.	181.	179.	177.	171.	169.
168.	178.	181.	182.	180.	178.	172.	170.
169.	179.	182.	183.	181.	179.	173.	171.
170.	180.	183.	184.	182.	180.	174.	172.
171.	181.	184.	185.	183.	181.	175.	173.
172.	182.	185.	186.	184.	182.	176.	174.
173.	183.	186.	187.	185.	183.	177.	175.
174.	184.	187.	188.	186.	184.	178.	176.
175.	185.	188.	189.	187.	185.	179.	177.
176.	186.	189.	190.	188.	186.	180.	178.
177.	187.	190.	191.	189.	187.	181.	179.
178.	188.	191.	192.	190.	188.	182.	180.
179.	189.	192.	193.	191.	189.	183.	181.
180.	190.	193.	194.	192.	190.	184.	182.
181.	191.	194.	195.	193.	191.	185.	183.
182.	192.	195.	196.	194.	192.	186.	184.
183.	193.	196.	197.	195.	193.	187.	185.
184.	194.	197.	198.	196.	194.	188.	186.
185.	195.	198.	199.	197.	195.	189.	187.
186.	196.	199.	200.	198.	196.	190.	188.
187.	197.	200.	201.	199.	197.	191.	189.
188.	198.	201.	202.	200.	198.	192.	190.
189.	199.	202.	203.	201.	199.	193.	191.
190.	200.	203.	204.	202.	200.	194.	192.
191.	201.	204.	205.	203.	201.	195.	193.
192.	202.	205.	206.	204.	202.	196.	194.
193.	203.	206.	207.	205.	203.	197.	195.
194.	204.	207.	208.	206.	204.	198.	196.
195.	205.	208.	209.	207.	205.	199.	197.
196.	206.	209.	210.	208.	206.	200.	198.
197.	207.	210.	211.	209.	207.	201.	199.
198.	208.	211.	212.	210.	208.	202.	200.
199.	209.	212.	213.	211.	209.	203.	201.
200.	210.	213.	214.	212.	210.	204.	202.
201.	211.	214.	215.	213.	211.	205.	203.
202.	212.	215.	216.	214.	212.	206.	204.
203.	213.	216.	217.	215.	213.	207.	205.
204.	214.	217.	218.	216.	214.		

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STATION: "IPC"K, PLAN 1, RTIC 5

[illegible]

STAGE

[illegible]

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL	VOLUME
CFS	2647.	2348.	1171.	423.	30450.	30450.
CIS	75.	67.	33.	12.	864.	864.
PCRES		2,010	4,35	4,72	4,72	4,72
FM		55.43	110.57	119.84	116.65	116.65
AC+1		1145.	2323.	2518.	2520.	2520.
TRUS CU		1436.	2865.	3105.	3105.	3105.

MAXIMUM STORAGE = 35.

STATION: BICK, PLAN 1, RTIC 6

[illegible]

STATION 111

MAXIMUM STORAGE = 156.

MAXIMUM STAGE IS

卷之四
 卷之五
 卷之六
 卷之七
 卷之八
 卷之九
 卷之十
 卷之十一
 卷之十二
 卷之十三
 卷之十四
 卷之十五
 卷之十六
 卷之十七
 卷之十八
 卷之十九
 卷之二十
 卷之二十一
 卷之二十二
 卷之二十三
 卷之二十四
 卷之二十五
 卷之二十六
 卷之二十七
 卷之二十八
 卷之二十九
 卷之三十
 卷之三十一
 卷之三十二
 卷之三十三
 卷之三十四
 卷之三十五
 卷之三十六
 卷之三十七
 卷之三十八
 卷之三十九
 卷之四十
 卷之四十一
 卷之四十二
 卷之四十三
 卷之四十四
 卷之四十五
 卷之四十六
 卷之四十七
 卷之四十八
 卷之四十九
 卷之五十
 卷之五十一
 卷之五十二
 卷之五十三
 卷之五十四
 卷之五十五
 卷之五十六
 卷之五十七
 卷之五十八
 卷之五十九
 卷之六十
 卷之六十一
 卷之六十二
 卷之六十三
 卷之六十四
 卷之六十五
 卷之六十六
 卷之六十七
 卷之六十八
 卷之六十九
 卷之七十
 卷之七十一
 卷之七十二
 卷之七十三
 卷之七十四
 卷之七十五
 卷之七十六
 卷之七十七
 卷之七十八
 卷之七十九
 卷之八十
 卷之八十一
 卷之八十二
 卷之八十三
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 卷之八十五
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 卷之九十
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 卷之九十三
 卷之九十四
 卷之九十五
 卷之九十六
 卷之九十七
 卷之九十八
 卷之九十九
 卷之一百

SUB-AKFA RUNOFF COMPUTATION

TITLE=HYDROGRAPH	-- SUBBASIN 3	JPLT	JPR7	INAE	ISTAGE	IAUTO
ISTAT	TRCN	ITAPE	C	1	9	0
ICOMP	Q	Q				
SSN=3						

HYDROGRAPH DATA

AREA	SNAP	TRSD4	TRSPC	RATIC	ISNLW	ISALE	LOCAL
100.0	0.0	21.16	0.0	0.0	0	1	0
100.0	0.0	0.80	0.0	0.0	0	1	0

PRECIP DATA .

	p'S	R6	R12	R24	R48	R72	R96
Spec.							
0.	20.00	102.00	115.00	125.00	134.00	C.	C.

TRSPC COMPUTED BY THE PROGRAM IS 0.025

LOSS DATA

EXPLOSIVE	SYNTH	OLIVER	RTINOL	EPAIN	STKS	RTICK	STRTL	CESTL	ALSHX	RTIMP
1	1	1	1.00	0.	0.	1.00	1.00	0.00	0.	0.

UNIT HYDROGRAPH DATA

TP= 5.14 CP=0.56 NTA= C

REGRESSION DATA

APPROXIMATE CLASS COEFFICIENTS FROM GIVEN SPINER CV AND TP ARE TC = 5.86 AND N = 5.58 INTERVALS
STRQ = 6.00 GPCIN = 18.00 RTICR = 3.00
REGRESSION DATA

UNIT HYDROGRAPH	33 END-OF-PERIOD ORDINATES, LAG=	5.13 FCUKS, CP= C.56	VOL= 1.00						
31.	116.	226.	334.	405.	417.	374.	312.	261.	218.
32.	127.	106.	127.	83.	74.	62.	57.	43.	36.
33.	20.	41.	18.	15.	12.	10.	9.	7.	6.
34.	4.	3.							

Q	MO. DA	PERIOD	RAIN	EXCS	LCSS	COMP. C
1	1.00	1	0.01	0.	0.	2785.
2	2.00	2	0.01	0.	0.	2353.
3	3.00	3	0.01	0.	0.	1978.
4	4.00	4	0.01	0.	0.	1656.
5	5.00	5	0.01	0.	0.	1383.
6	6.00	6	0.01	0.	0.	1156.
7	7.00	7	0.03	0.	0.	960.
8	8.00	8	0.03	0.	0.	807.
9	9.00	9	0.03	0.	0.	674.
10	10.00	10	0.03	0.	0.	563.
11	11.00	11	0.03	0.	0.	470.
12	12.00	12	0.03	0.	0.	393.
13	13.00	13	0.12	0.	0.	320.
14	14.00	14	0.15	0.	0.	273.
15	15.00	15	0.15	0.	0.	227.

1.03	0.01	116.	1.03	23.00	71	0.	0.	66.
1.03	0.01	121.	1.04	0.	72	0.	0.	40.
1.03	0.01	111.	1.04	1.00	73	0.	0.	21.
1.03	0.01	95.	1.04	2.00	74	0.	0.	17.
1.03	0.05	61.	1.04	3.00	75	0.	0.	15.
1.03	0.05	75.	1.04	4.00	76	0.	0.	13.
1.03	0.05	77.	1.04	5.00	77	0.	0.	12.
1.03	0.05	88.	1.04	6.00	78	0.	0.	11.
1.03	0.05	105.	1.04	7.00	79	0.	0.	10.
1.03	0.05	124.	1.04	8.00	80	0.	0.	9.
1.03	0.05	149.	1.04	9.00	81	0.	0.	8.
1.03	0.05	191.	1.04	10.00	82	0.	0.	7.
1.03	0.05	259.	1.04	11.00	83	0.	0.	6.
1.03	0.05	352.	1.04	12.00	84	0.	0.	5.
1.03	0.05	460.	1.04	13.00	85	0.	0.	4.
1.03	0.05	571.	1.04	14.00	86	0.	0.	4.
1.03	0.05	710.	1.04	15.00	87	0.	0.	4.
1.03	0.05	954.	1.04	16.00	88	0.	0.	4.
1.03	0.05	1376.	1.04	17.00	89	0.	0.	3.
1.03	0.05	2130.	1.04	18.00	90	0.	0.	3.
1.03	0.05	3257.	1.04	19.00	91	0.	0.	3.
1.03	0.05	4553.	1.04	20.00	92	0.	0.	2.
1.03	0.05	5697.	1.04	21.00	93	0.	0.	2.
1.03	0.05	6387.	1.04	22.00	94	0.	0.	2.
1.03	0.05	6480.	1.04	23.00	95	0.	0.	2.
1.03	0.05	6026.	1.05	0.	96	0.	0.	1.
1.03	0.05	5294.	1.05	1.00	97	0.	0.	1.
1.03	0.05	4537.	1.05	2.00	98	0.	0.	1.
1.03	0.05	3659.	1.05	3.00	99	0.	0.	1.
1.03	0.	3282.	1.05	4.00	100	0.	0.	1.

SUM 22.11 19.72 2.38 74750.
(501.1) (501.1) (61.1) (2116.85)

PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
6480.	5738.	2869.	1037.	74750.
183.	102.	81.	29.	2117.
	9.06	18.13	19.66	19.66
	230.10	460.44	499.37	499.80
	2642.	5692.	6173.	6173.
	3510.	7020.	7614.	7621.

HYDROGRAPH AT STA RSU-3 FOR PLAN 1, RTIC 1

1.	1.	1.	1.	0.	0.	0.
0.	0.	0.	1.	1.	14.	20.
24.	22.	19.	10.	15.	21.	25.
35.	52.	70.	92.	114.	275.	426.
511.	1139.	1277.	1295.	1205.	772.	656.
557.	331.	277.	231.	193.	135.	113.
74.	55.	45.	38.	31.	22.	17.
10.	3.	3.	3.	2.	2.	2.
1.	1.	1.	1.	1.	1.	1.
1.	0.	0.	0.	0.	0.	0.

24-HOUR	72-HOUR	TOTAL VOLUME
5738.	2869.	74750.
102.	81.	2117.
9.06	18.13	19.66
230.10	460.44	499.80
2642.	5692.	6173.
3510.	7020.	7621.

SUM OF 2 HYDROGRAPHS AT 169.5 PLAN 1 RTIC 3

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.	31.	32.	33.	34.	35.	36.	37.	38.	39.	40.	41.	42.	43.	44.	45.	46.	47.	48.	49.	50.	51.	52.	53.	54.	55.	56.	57.	58.	59.	60.	61.	62.	63.	64.	65.	66.	67.	68.	69.	70.	71.	72.	73.	74.	75.	76.	77.	78.	79.	80.	81.	82.	83.	84.	85.	86.	87.	88.	89.	90.	91.	92.	93.	94.	95.	96.	97.	98.	99.	100.
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.	31.	32.	33.	34.	35.	36.	37.	38.	39.	40.	41.	42.	43.	44.	45.	46.	47.	48.	49.	50.	51.	52.	53.	54.	55.	56.	57.	58.	59.	60.	61.	62.	63.	64.	65.	66.	67.	68.	69.	70.	71.	72.	73.	74.	75.	76.	77.	78.	79.	80.	81.	82.	83.	84.	85.	86.	87.	88.	89.	90.	91.	92.	93.	94.	95.	96.	97.	98.	99.	100.
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.	31.	32.	33.	34.	35.	36.	37.	38.	39.	40.	41.	42.	43.	44.	45.	46.	47.	48.	49.	50.	51.	52.	53.	54.	55.	56.	57.	58.	59.	60.	61.	62.	63.	64.	65.	66.	67.	68.	69.	70.	71.	72.	73.	74.	75.	76.	77.	78.	79.	80.	81.	82.	83.	84.	85.	86.	87.	88.	89.	90.	91.	92.	93.	94.	95.	96.	97.	98.	99.	100.

PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL	VELOCITY
3681.	3415.	1705.	616.	4435.	1257.
110.	97.	48.	17.	1257.	4.13
	2.00	3.59	4.33	109.86	3060.
	50.75	101.34	109.86	4525.	
	1654.	3381.	3666.		
	2089.	4171.	4522.		

SUM OF 2 HYDROGRAPHS AT 169.5 PLAN 1 RTIC 4

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.	31.	32.	33.	34.	35.	36.	37.	38.	39.	40.	41.	42.	43.	44.	45.	46.	47.	48.	49.	50.	51.	52.	53.	54.	55.	56.	57.	58.	59.	60.	61.	62.	63.	64.	65.	66.	67.	68.	69.	70.	71.	72.	73.	74.	75.	76.	77.	78.	79.	80.	81.	82.	83.	84.	85.	86.	87.	88.	89.	90.	91.	92.	93.	94.	95.	96.	97.	98.	99.	100.
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.	31.	32.	33.	34.	35.	36.	37.	38.	39.	40.	41.	42.	43.	44.	45.	46.	47.	48.	49.	50.	51.	52.	53.	54.	55.	56.	57.	58.	59.	60.	61.	62.	63.	64.	65.	66.	67.	68.	69.	70.	71.	72.	73.	74.	75.	76.	77.	78.	79.	80.	81.	82.	83.	84.	85.	86.	87.	88.	89.	90.	91.	92.	93.	94.	95.	96.	97.	98.	99.	100.
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.	31.	32.	33.	34.	35.	36.	37.	38.	39.	40.	41.	42.	43.	44.	45.	46.	47.	48.	49.	50.	51.	52.	53.	54.	55.	56.	57.	58.	59.	60.	61.	62.	63.	64.	65.	66.	67.	68.	69.	70.	71.	72.	73.	74.	75.	76.	77.	78.	79.	80.	81.	82.	83.	84.	85.	86.	87.	88.	89.	90.	91.	92.	93.	94.	95.	96.	97.	98.	99.	100.

PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL	VELOCITY
4037.	3570.	1782.	644.	4643.	1216.
114.	101.	50.	18.	1216.	4.53
	2.09	4.17	4.52	114.85	3020.
	53.06	105.54	114.85	4721.	
	1770.	3535.	3832.		
	2104.	4361.	4727.		

SUM OF 2 HYDROGRAPHS AT 169.5 PLAN 1 RTIC 5

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.	31.	32.	33.	34.	35.	36.	37.	38.	39.	40.	41.	42.	43.	44.	45.	46.	47.	48.	49.	50.	51.	52.	53.	54.	55.	56.	57.	58.	59.	60.	61.	62.	63.	64.	65.	66.	67.	68.	69.	70.	71.	72.	73.	74.	75.	76.	77.	78.	79.	80.	81.	82.	83.	84.	85.	86.	87.	88.	89.	90.	91.	92.	93.	94.	95.	96.	97.	98.	99.	100.
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.	31.	32.	33.	34.	35.	36.	37.	38.	39.	40.	41.	42.	43.	44.	45.	46.	47.	48.	49.	50.	51.	52.	53.	54.	55.	56.	57.	58.	59.	60.	61.	62.	63.	64.	65.	66.	67.	68.	69.	70.	71.	72.	73.	74.	75.	76.	77.	78.	79.	80.	81.	82.	83.	84.	85.	86.	87.	88.	89.	90.	91.	92.	93.	94.	95.	96.	97.	98.	99.	100.
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.	31.	32.	33.	34.	35.	36.	37.	38.	39.	40.	41.	42.	43.	44.	45.	46.	47.	48.	49.	50.	51.	52.	53.	54.	55.	56.	57.	58.	59.	60.	61.	62.	63.	64.	65.	66.	67.	68.	69.	70.	71.	72.	73.	74.	75.	76.	77.	78.	79.	80.	81.	82.	83.	84.	85.	86.	87.	88.	89.	90.	91.	92.	93.	94.	95.	96.	97.	98.	99.	100.

PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL	VELOCITY
4202.	3726.	1840.	672.	4643.	1216.
117.	103.	52.	19.	1216.	4.53
	2.09	4.17	4.52	114.85	3020.
	53.06	105.54	114.85	4721.	
	1770.	3535.	3832.		
	2104.	4361.	4727.		

CARD	ROUTING OF HYDROGRAPH TO STATION 23 AT RESERVOIR	JPLT	INAME	ISTAGE	IAUTO
INSTAD	ICOMP	JPLY	IC	Q	Q

CLASS	CLASS	AVG	IKES	ISAME	IDPT	IPPP	LSTP
1.	0.	0.	1	1	0	0	0

THE UNIVERSITY OF CHICAGO

STATION	DATE	TIME	EL (M)	EL (M)	EL (M)	REL. TH	SEL
101	10/10/82	08:30	495.0	512.0	1465.0	0.99682	

CHASS SECTION	COORDINATES--STA	ELEV--ETC		
180.00	512.00	205.00	502.00	270.00 500.00
220.00	500.00	430.00	502.00	420.00 512.00
				275.00 495.00 325.00 455.00

STAGE	%	47,56	64,49	61,96	136,76	190,57
	31,17	505,90	572,19	639,51	777,54	848,12
	440,66					
UNFLUX		791,78	1278,13	1854,14	3476,09	4795,06
	403,40	17564,92	21081,94	24682,16	33348,21	37992,23
	14351,81					
STAGE	%	497,68	498,58	499,47	501,26	502,16
	496,79	506,63	507,53	508,42	510,21	511,11
	505,74					
FLUX		791,78	1278,13	1854,14	3476,09	4795,06
	403,40	17564,92	21081,94	24682,16	33348,21	37992,23
	14351,81					

STATION LOWCRK. PLANK L, RTIC ?

[illegible]

PEAK	3685.	1627.	588.	4247.
CFS	3247.	1627.	588.	4247.
C/S	92.	46.	17.	1200.
1000'S	1.90	3.81	4.13	4.13
1000'S	48.25	96.73	104.86	104.86
AC-FT	1610.	3228.	3499.	3502.
1000'S	1986.	3961.	4316.	4320.

MAXIMUM STORAGE = 24.

MAXIMUM STAGE IS 1.14

STATION LOWCRK, PLAN 1, RYIC 3

OUTFLOW		STOR	
1.	2.	1.	2.
1.	1.	0.	0.
3.	1.	0.	0.
68.	59.	0.	0.
116.	259.	1.	1.
3543.	3801.	2.	5.
1108.	776.	23.	17.
197.	148.	10.	6.
29.	12.	3.	2.
4.	3.	0.	0.
1.	1.	0.	0.

STAGE		TOTAL VOLUME	
1.	2.	1.	2.
1.	1.	0.	0.
3.	1.	0.	0.
68.	59.	1.	1.
116.	259.	5.	9.
3543.	3801.	23.	15.
1108.	776.	10.	5.
197.	148.	3.	2.
29.	12.	0.	0.
4.	3.	0.	0.
1.	1.	0.	0.

PEAK	3862.	1705.	616.	4436.
CFS	3402.	1705.	616.	4436.
C/S	109.	48.	17.	1257.
1000'S	1.99	3.99	4.32	4.32
1000'S	50.55	101.34	109.85	109.85
AC-FT	1257.	3301.	3506.	3506.
1000'S	25.1.	417.	4506.	4506.

STATION WU'CK, PLAN 1, RYIC 8

OUTFIELD		STOCK	
1.	12.	0.	0.
2.	4.	0.	0.
3.	309.	4.	4.
4.	745.	8.	8.
5.	16723.	81.	81.
6.	5110.	33.	33.
7.	322.	8.	8.
8.	113.	2.	2.
9.	19.	0.	0.
10.	6.	0.	0.
11.	11.	0.	0.
12.	4.	0.	0.
13.	226.	0.	0.
14.	1358.	3.	3.
15.	17020.	11.	11.
16.	3576.	82.	82.
17.	587.	23.	23.
18.	57.	6.	6.
19.	15.	1.	1.
20.	5.	0.	0.
21.	10.	0.	0.
22.	7.	0.	0.
23.	326.	0.	0.
24.	535.	4.	4.
25.	1325.	6.	6.
26.	1575.	72.	72.
27.	1575.	35.	35.
28.	7125.	9.	9.
29.	536.	3.	3.
30.	1104.	0.	0.
31.	130.	0.	0.
32.	24.	0.	0.
33.	8.	0.	0.
34.	12.	0.	0.
35.	4.	0.	0.
36.	259.	0.	0.
37.	1049.	0.	0.
38.	17623.	9.	9.
39.	4353.	85.	85.
40.	696.	29.	29.
41.	55.	7.	7.
42.	17.	2.	2.
43.	6.	0.	0.
44.	11.	0.	0.
45.	4.	0.	0.
46.	204.	3.	3.
47.	1703.	13.	13.
48.	15232.	76.	76.
49.	2851.	19.	19.
50.	489.	6.	6.
51.	42.	1.	1.
52.	11.	0.	0.
53.	5.	0.	0.
54.	10.	0.	0.
55.	4.	0.	0.
56.	20.	3.	3.
57.	15.	15.	15.
58.	29.	20.	20.
59.	62.	62.	62.
60.	14.	14.	14.
61.	5.	5.	5.
62.	1.	1.	1.
63.	0.	0.	0.
64.	0.	0.	0.
65.	0.	0.	0.
66.	0.	0.	0.
67.	0.	0.	0.
68.	0.	0.	0.
69.	0.	0.	0.
70.	0.	0.	0.
71.	0.	0.	0.
72.	0.	0.	0.
73.	0.	0.	0.
74.	0.	0.	0.
75.	0.	0.	0.
76.	0.	0.	0.
77.	0.	0.	0.
78.	0.	0.	0.
79.	0.	0.	0.
80.	0.	0.	0.
81.	0.	0.	0.
82.	0.	0.	0.
83.	0.	0.	0.
84.	0.	0.	0.
85.	0.	0.	0.
86.	0.	0.	0.
87.	0.	0.	0.
88.	0.	0.	0.
89.	0.	0.	0.
90.	0.	0.	0.
91.	0.	0.	0.
92.	0.	0.	0.
93.	0.	0.	0.
94.	0.	0.	0.
95.	0.	0.	0.
96.	0.	0.	0.
97.	0.	0.	0.
98.	0.	0.	0.
99.	0.	0.	0.
100.	0.	0.	0.

STAGE

[illegible]

NETAL VELLE

	PFAK	6-HOUR	24-HOUR	72-HOUR
C.F.S.	17628.	15423.	7748.	2800.
C.H.S.	499.	437.	219.	79.
1 C+ES		9.02	18.13	19.66
11		229.20	460.54	499.34
2C+FT		7648.	15367.	16662.
2-11S C.H.S.		9434.	18956.	20552.

MAXIMUM STORAGE = 85.

MAXIMUM STAGE IS 336.

AD-A105 760

NEW YORK STATE DEPT OF ENVIRONMENTAL CONSERVATION ALBANY F/6 13/13
NATIONAL DAM SAFETY PROGRAM. SUMMIT STREET LAKE DAM (INVENTORY --ETC(U)
MAY 81 G KOCH DACW51-79-C-0001

UNCLASSIFIED

NL

2 of 2

AD A
10 2 10 0

END

DATE
FILMED

11-81

DTIC

[illegible]

SLM	22.11	19.72	2.38	66737.
	(561.)	(501.)	(61.)	(1889.78)

	PEAK	6-HMR	24-HMR	72-HMR	TOTAL	CELLS
CPS	6130.	5281.	2578.	926.	6673.	6673.
CPS	174.	150.	73.	26.	1450.	1450.
PCPS		9.34	18.24	19.66	19.67	19.67
NR		237.23	463.24	499.26	499.64	499.64
AC+I		2619.	5114.	5511.	5516.	5516.
THUS CO		3230.	6308.	6798.	6803.	6803.

HYDROGRAPH AT STA RS-4 FCR PLAN 1, RTIC 1

[illegible]

	PEAK	6-HRUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	1226.	1056.	516.	185.	13343.
CUS	35.	30.	15.	5.	378.
1-CUS		1.87	3.65	3.93	3.93
2-CUS		47.45	92.65	99.85	55.93
AC+I		274.	1023.	1102.	1103.
THOUS CUS		546.	1262.	1360.	1361.

HYDROGRAPH AT STA BS'4-4 FOR PLAN 1, RTIO 2

[illegible]

23

2

SUM OF 2 HYDROGRAPHS AT

23 PLAN 1 RTIC 1

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.	31.	32.	33.	34.	35.	36.	37.	38.	39.	40.	41.	42.	43.	44.	45.	46.	47.	48.	49.	50.	51.	52.	53.	54.	55.	56.	57.	58.	59.	60.	61.	62.	63.	64.	65.	66.	67.	68.	69.	70.	71.	72.	73.	74.	75.	76.	77.	78.	79.	80.	81.	82.	83.	84.	85.	86.	87.	88.	89.	90.	91.	92.	93.	94.	95.	96.	97.	98.	99.	100.
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.	31.	32.	33.	34.	35.	36.	37.	38.	39.	40.	41.	42.	43.	44.	45.	46.	47.	48.	49.	50.	51.	52.	53.	54.	55.	56.	57.	58.	59.	60.	61.	62.	63.	64.	65.	66.	67.	68.	69.	70.	71.	72.	73.	74.	75.	76.	77.	78.	79.	80.	81.	82.	83.	84.	85.	86.	87.	88.	89.	90.	91.	92.	93.	94.	95.	96.	97.	98.	99.	100.
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.	31.	32.	33.	34.	35.	36.	37.	38.	39.	40.	41.	42.	43.	44.	45.	46.	47.	48.	49.	50.	51.	52.	53.	54.	55.	56.	57.	58.	59.	60.	61.	62.	63.	64.	65.	66.	67.	68.	69.	70.	71.	72.	73.	74.	75.	76.	77.	78.	79.	80.	81.	82.	83.	84.	85.	86.	87.	88.	89.	90.	91.	92.	93.	94.	95.	96.	97.	98.	99.	100.

PEAK

6-HOUR

24-HOUR

72-HOUR

TOTAL VOLUME

CFS

4133.

2063.

745.

5370.

CFS

117.

58.

21.

1521.

CFS

1.82

3.63

3.93

2.94

CFS

40.16

92.15

99.86

54.05

CFS

2050.

4092.

4435.

4027.

CFS

2226.

5047.

5470.

5475.

SUM OF 2 HYDROGRAPHS AT

23 PLAN 1 RTIC 2

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.	31.	32.	33.	34.	35.	36.	37.	38.	39.	40.	41.	42.	43.	44.	45.	46.	47.	48.	49.	50.	51.	52.	53.	54.	55.	56.	57.	58.	59.	60.	61.	62.	63.	64.	65.	66.	67.	68.	69.	70.	71.	72.	73.	74.	75.	76.	77.	78.	79.	80.	81.	82.	83.	84.	85.	86.	87.	88.	89.	90.	91.	92.	93.	94.	95.	96.	97.	98.	99.	100.
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.	31.	32.	33.	34.	35.	36.	37.	38.	39.	40.	41.	42.	43.	44.	45.	46.	47.	48.	49.	50.	51.	52.	53.	54.	55.	56.	57.	58.	59.	60.	61.	62.	63.	64.	65.	66.	67.	68.	69.	70.	71.	72.	73.	74.	75.	76.	77.	78.	79.	80.	81.	82.	83.	84.	85.	86.	87.	88.	89.	90.	91.	92.	93.	94.	95.	96.	97.	98.	99.	100.
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.	31.	32.	33.	34.	35.	36.	37.	38.	39.	40.	41.	42.	43.	44.	45.	46.	47.	48.	49.	50.	51.	52.	53.	54.	55.	56.	57.	58.	59.	60.	61.	62.	63.	64.	65.	66.	67.	68.	69.	70.	71.	72.	73.	74.	75.	76.	77.	78.	79.	80.	81.	82.	83.	84.	85.	86.	87.	88.	89.	90.	91.	92.	93.	94.	95.	96.	97.	98.	99.	100.

PEAK

6-HOUR

24-HOUR

72-HOUR

TOTAL VOLUME

CFS

4328.

2166.

783.

5051.

CFS

123.

61.

22.

1557.

CFS

1.91

3.81

4.13

4.13

CFS

48.44

96.75

104.85

164.05

CFS

2151.

4297.

4656.

4061.

CFS

2653.

5300.

5743.

5743.

SUM OF 2 HYDROGRAPHS AT

23 PLAN 1 RTIC 3

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.	31.	32.	33.	34.	35.	36.	37.	38.	39.	40.	41.	42.	43.	44.	45.	46.	47.	48.	49.	50.	51.	52.	53.	54.	55.	56.	57.	58.	59.	60.	61.	62.	63.	64.	65.	66.	67.	68.	69.	70.	71.	72.	73.	74.	75.	76.	77.	78.	79.	80.	81.	82.	83.	84.	85.	86.	87.	88.	89.	90.	91.	92.	93.	94.	95.	96.	97.	98.	99.	100.
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.	31.	32.	33.	34.	35.	36.	37.	38.	39.	40.	41.	42.	43.	44.	45.	46.	47.	48.	49.	50.	51.	52.	53.	54.	55.	56.	57.	58.	59.	60.	61.	62.	63.	64.	65.	66.	67.	68.	69.	70.	71.	72.	73.	74.	75.	76.	77.	78.	79.	80.	81.	82.	83.	84.	85.	86.	87.	88.	89.	90.	91.	92.	93.	94.	95.	96.	97.	98.	99.	100.
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.	31.	32.	33.	34.	35.	36.	37.	38.	39.	40.	41.	42.	43.	44.	45.	46.	47.	48.	49.	50.	51.	52.	53.	54.	55.	56.	57.	58.	59.	60.	61.	62.	63.	64.	65.	66.	67.	68.	69.	70.	71.	72.	73.	74.	75.	76.	77.	78.	79.	80.	81.	82.	83.	84.	85.	86.	87.	88.	89.	90.	91.	92.	93.	94.	95.	96.	97.	98.	99.	100.

PEAK

6-HOUR

24-HOUR

72-HOUR

TOTAL VOLUME

CFS

2226.

5047.

5470.

5475.

CFS

117.

58.

21.

1521.

CFS

1.82

3.63

3.93

2.94

CFS

40.16

92.15

99.86

54.05

CFS

2050.

4092.

4435.

4027.

CFS

2226.

5047.

5470.

5475.

CRCL	SPNID	CUON	EXP4	ELEVEL	CCCL	CANID	EXPL
000	00	00	00	00	00	00	00

STATION	DAMP PLAN 1	RATIC 1
TCPL	COND	EXP
500.3	2.6	1.5
		ASC
		DAMIC

END-OF-PERIOD HYDROGRAPH CALCULATES

STATION DAM, PLAN 1, RATIC 1

DATE	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.	31.	32.	33.	34.	35.	36.	37.	38.	39.	40.	41.	42.	43.	44.	45.	46.	47.	48.	49.	50.	51.	52.	53.	54.	55.	56.	57.	58.	59.	60.	61.	62.	63.	64.	65.	66.	67.	68.	69.	70.	71.	72.	73.	74.	75.	76.	77.	78.	79.	80.	81.	82.	83.	84.	85.	86.	87.	88.	89.	90.	91.	92.	93.	94.	95.	96.	97.	98.	99.	100.
1.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.	31.	32.	33.	34.	35.	36.	37.	38.	39.	40.	41.	42.	43.	44.	45.	46.	47.	48.	49.	50.	51.	52.	53.	54.	55.	56.	57.	58.	59.	60.	61.	62.	63.	64.	65.	66.	67.	68.	69.	70.	71.	72.	73.	74.	75.	76.	77.	78.	79.	80.	81.	82.	83.	84.	85.	86.	87.	88.	89.	90.	91.	92.	93.	94.	95.	96.	97.	98.	99.	100.

[illegible][illegible]

DEPT. OF THE ARMY 13 4619. AT TIME 45.00 HOURS

CFS
CMS
INCHES
AC-FT
F-015 CCM

PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL	VOLUME
670.	4115.	2063.	745.	53709.	1.21.
132.	117.	58.	21.	1.94.	1.94.
	1.01	3.63	3.93	1.95.	1.95.
	45.95	92.15	95.00	4.30.	4.30.
	2041.	4092.	4415.	1.00.	1.00.
	2517.	5044.	5435.	1.00.	1.00.

100

SECRET

ESTRUC

[illegible]

PEAK OUTFLOW IS 5153. AT TIME 45.00 HOURS

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL	WELL-14E
CFS	5153.	4325.	2270.	820.		5900.
CNS	146.	128.	64.	23.		1673.
1-CHES		1.99	3.59	4.32		4.43
HM		50.52	101.37	109.85		169.95
AC-F		2244.	4503.	4878.		4463.
CUM		2767.	5553.	6017.		6623.

STATION DAM, PLAN 1, RATIC 4

END-OF-PERIOD HYDROGRAPH COORDINATES

OUTFLOW	
1.	3.
2.	1.
3.	87.
4.	187.
5.	5025.
6.	1493.
7.	266.
8.	43.
9.	57.
10.	6.
11.	2.
12.	3.
13.	1.
14.	87.
15.	263.
16.	3384.
17.	1267.
18.	226.
19.	31.
20.	5.
21.	2.
22.	3.
23.	1.
24.	82.
25.	370.
26.	5223.
27.	1059.
28.	194.
29.	106.
30.	15.
31.	21.
32.	5.
33.	2.
34.	1.
35.	87.
36.	187.
37.	5025.
38.	1493.
39.	266.
40.	43.
41.	57.
42.	6.
43.	2.
44.	3.
45.	1.
46.	82.
47.	370.
48.	5223.
49.	1059.
50.	194.
51.	106.
52.	15.
53.	21.
54.	5.
55.	2.
56.	1.
57.	87.
58.	263.
59.	3384.
60.	1267.
61.	226.
62.	31.
63.	5.
64.	2.
65.	3.
66.	1.
67.	82.
68.	370.
69.	5223.
70.	1059.
71.	194.
72.	106.
73.	15.
74.	21.
75.	5.
76.	2.
77.	1.
78.	87.
79.	263.
80.	3384.
81.	1267.
82.	226.
83.	31.
84.	5.
85.	2.
86.	3.
87.	1.
88.	82.
89.	370.
90.	5223.
91.	1059.
92.	194.
93.	106.
94.	15.
95.	21.
96.	5.
97.	2.
98.	1.
99.	87.
100.	263.
101.	3384.
102.	1267.
103.	226.
104.	31.
105.	5.
106.	2.
107.	3.
108.	1.
109.	82.
110.	370.
111.	5223.
112.	1059.
113.	194.
114.	106.
115.	15.
116.	21.
117.	5.
118.	2.
119.	1.
120.	87.
121.	263.
122.	3384.
123.	1267.
124.	226.
125.	31.
126.	5.
127.	2.
128.	3.
129.	1.
130.	82.
131.	370.
132.	5223.
133.	1059.
134.	194.
135.	106.
136.	15.
137.	21.
138.	5.
139.	2.
140.	1.
141.	87.
142.	263.
143.	3384.
144.	1267.
145.	226.
146.	31.
147.	5.
148.	2.
149.	3.
150.	1.
151.	82.
152.	370.
153.	5223.
154.	1059.
155.	194.
156.	106.
157.	15.
158.	21.
159.	5.
160.	2.
161.	1.
162.	87.
163.	263.
164.	3384.
165.	1267.
166.	226.
167.	31.
168.	5.
169.	2.
170.	3.
171.	1.
172.	82.

17.	178.	17A.	17B.	17C.
17.	179.	17B.	17C.	17D.
18.	183.	18A.	18B.	18C.
18.	186.	18B.	18C.	18D.
19.	192.	19A.	19B.	19C.
19.	193.	19B.	19C.	19D.
20.	202.	20A.	20B.	20C.
20.	203.	20B.	20C.	20D.
21.	212.	21A.	21B.	21C.
21.	213.	21B.	21C.	21D.

STAGE

PEAK OUTFLOW IS 23587. AT TIME 45.00 HOURS

PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL
CFS	23587.	10322.	3726.	288541.
CMS	668.	584.	106.	76C4.
INCHES	9.07	18.15	19.68	196C4.
MM	230.45	461.02	499.31	459.77
AC-FT	10234.	26473.	22173.	22153.
T-ULS CU M	16253.	17350.	21375.	21375.

中國書畫史綱要

公 務 員 考 試 考 場

吳昌碩書畫印學論叢

發售處：各書局、各書報社

普魯士國歌

PEAK FLOW AND STORAGE (END OF PERIOD) SUMMARY FORMULTIPLE PLAN-RATIO ECCENTRIC COMPUTATIONS
 FLOWS IN CUBIC FEET PER SECOND (CUBIC METERS PER SECOND)
 AREA IN SQUARE MILES (SQUARE KILOMETERS)

OPERATION	STATION	AREA (26732.91)	PLAN	RATIOS APPLIED TO FLOWS							
				RATIO 1	RATIO 2	RATIO 3	RATIO 4	RATIO 5	RATIO 6	RATIO 7	RATIO 8
				0.20	0.21	0.22	0.23	0.24	0.25	0.50	1.00
HYDROGRAPH AT	BSN-1	3.99 (26732.91)	1	906. (25.66)	951. (26.94)	997. (28.22)	1042. (29.51)	1087. (30.79)	1133. (32.07)	2263. (64.14)	4530. (128.49)
HYDROGRAPH AT	BSN-2	6.02 (26732.91)	1	1320. (37.37)	1386. (39.23)	1452. (41.10)	1518. (42.97)	1584. (44.84)	1649. (46.71)	3295. (93.42)	6598. (186.83)
2 COMBINED	306.5	10.01 (26732.91)	1	2214. (62.68)	2324. (65.82)	2435. (69.95)	2546. (72.08)	2656. (75.27)	2767. (78.35)	5534. (156.70)	11068. (313.41)
ROUTED TO	MINCRK	10.01 (26732.91)	1	2232. (63.21)	2344. (66.37)	2455. (69.53)	2547. (72.12)	2647. (74.55)	2754. (77.98)	5533. (156.67)	11157. (315.93)
HYDROGRAPH AT	BSN-3	5.49 (26732.91)	1	1294. (36.70)	1361. (38.53)	1426. (40.37)	1490. (42.20)	1555. (44.04)	1620. (45.87)	3240. (91.74)	6480. (183.48)
2 COMBINED	169.5	15.90 (26732.91)	1	3528. (99.91)	3705. (104.90)	3891. (109.89)	4037. (114.32)	4202. (118.57)	4374. (123.85)	8773. (246.41)	17637. (499.41)
ROUTED TO	LOWCRK	15.90 (26732.91)	1	3513. (99.48)	3685. (104.34)	3862. (109.36)	4029. (114.08)	4179. (118.34)	4331. (122.64)	8740. (247.50)	17628. (499.17)
HYDROGRAPH AT	BSN-4	5.26 (26732.91)	1	1226. (34.72)	1287. (36.45)	1349. (38.19)	1410. (39.92)	1471. (41.65)	1533. (43.40)	3065. (86.80)	6130. (173.55)
2 COMBINED	23	21.16 (26732.91)	1	4694. (132.92)	4925. (139.45)	5161. (146.14)	5387. (152.54)	5590. (158.45)	5807. (164.44)	11693. (331.10)	23533. (666.37)
ROUTED TO	DAH	21.16 (26732.91)	1	4679. (132.48)	4915. (139.16)	5153. (145.92)	5384. (152.44)	5607. (158.77)	5835. (162.24)	11656. (331.20)	23587. (667.92)

PLAN 1 STATION MINCRK

RATIO	MAXIMUM FLOW,CFS	MAXIMUM STAGE,FT	TIME HOURS
0.20	2232.	600.0	45.00
0.21	2344.	600.2	45.00
0.22	2455.	600.3	45.00
0.23	2547.	600.4	45.00
0.24	2647.	600.5	45.00
0.25	2754.	600.6	45.00
0.50	5533.	602.1	45.00
1.00	11157.	603.5	45.00

PLAN 1 STATION LOWCRK

RATIO	MAXIMUM FLOW,CFS	MAXIMUM STAGE,FT	TIME HOURS
0.20	2232.	600.0	45.00
0.21	2344.	600.2	45.00
0.22	2455.	600.3	45.00
0.23	2547.	600.4	45.00
0.24	2647.	600.5	45.00
0.25	2754.	600.6	45.00
0.50	5533.	602.1	45.00
1.00	11157.	603.5	45.00

0.21	3685.	501.4	45.00
0.22	3862.	501.5	45.00
0.23	4029.	501.6	45.00
0.24	4179.	501.7	45.00
0.25	4331.	501.8	45.00
0.50	8740.	503.9	45.00
1.00	17628.	506.6	45.00

SUMMARY OF DAM SAFETY ANALYSIS

PLAN 1	ELEVATION STORAGE OUTFLOW	INITIAL VALUE 495.00 178. 0.	SPILLWAY CREST 495.00 178. 0.	TCP OF DAM 520.25 264. 5413.	TIME OF MAX OUTFLOW HOURS	DURATION OVER TCP HOURS	TIME OF FAILURE HOURS
RATIO OF P/F	MAXIMUM RESERVOIR W. S. ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	MAXIMUM OUTFLOW HOURS	MAXIMUM OUTFLOW HOURS	MAXIMUM OUTFLOW HOURS
0.20	499.77	0.	256.	4679.	0.	45.00	0.
0.21	499.92	0.	259.	4915.	0.	45.00	0.
0.22	500.04	0.	261.	5153.	0.	45.00	0.
0.23	500.23	0.	264.	5384.	0.	45.00	0.
0.24	500.34	0.09	265.	5607.	2.00	45.00	0.
0.25	500.43	0.18	267.	5835.	3.00	45.00	0.
0.50	501.90	1.65	291.	11496.	10.00	45.00	0.
1.00	503.96	3.71	325.	23587.	16.00	45.00	0.

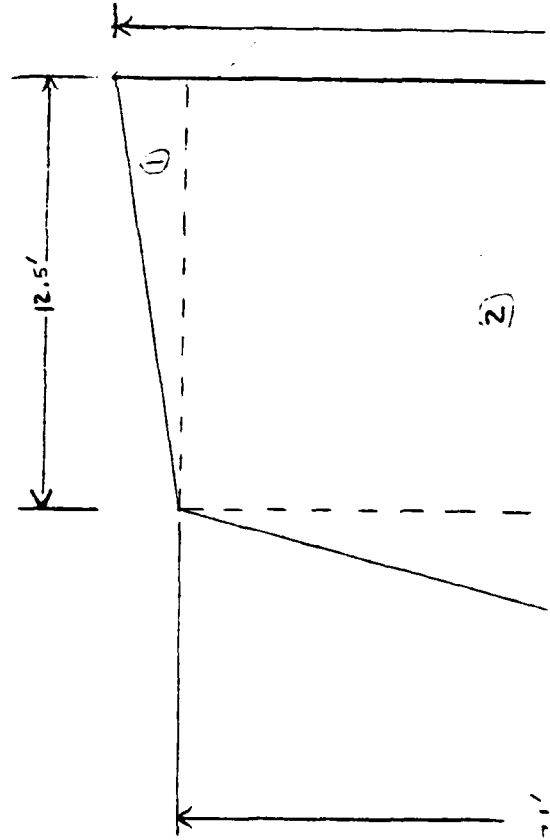
APPENDIX D
STABILITY COMPUTATIONS

SUMMIT STREET DAM

CROSS SECTION BASED ON 1916 INSPECTION REPORT

SCALE 1" = 5'

SEGMENT NO.	AREA	DIST. TO CENTER
1)	$\frac{1}{2}(2)(12.5) = 12.5 \text{ ft}^2$	13.8 ft
2)	$21(12.5) = 262.5$	11.7 ft
3)	$\frac{1}{2}(2)(5.5) = 5.75$	3.7 ft



SUMMIT STREET DAM
STRUCTURAL STABILITY
ANALYSIS CONDITIONS

1. Normal Conditions; Reservoir level 3 feet below spillway crest.
2. Same Conditions as No. 1 plus ice load of 5,000 pounds per linear foot.
3. Flood of record; water surface 4.1 feet above spillway crest
4. 1/2 PMF flood flow; water surface 6.9 feet above spillway crest.
5. PMF flood flow; water surface 9.0 feet above spillway crest.
6. Normal conditions with seismic coefficient of 0.10.

STABILITY ANALYSIS PROGRAM - WORK SHEET

INPUT ENTRY

ANALYSIS CONDITION

		1	2	3	4	5	6
Unit Weight of Dam (K/ft ³)	0	0.135	0.135	0.135	0.135	0.135	0.135
Area of Segment No. 1 (ft ²)	1	12.5	12.5	12.5	12.5	12.5	12.5
Distance from Center of Gravity of Segment No. 1 to Downstream Toe (ft)	2	13.8	13.8	13.8	13.8	13.8	13.8
Area of Segment No. 2 (ft ²)	3	262.5	262.5	262.5	262.5	262.5	262.5
Distance from Center of Gravity of Segment No. 2 to Downstream Toe (ft)	4	11.7	11.7	11.7	11.7	11.7	11.7
Area of Segment No. 3 (ft ²)	5	57.7	57.7	57.7	57.7	57.7	57.7
Distance from Center of Gravity of Segment No. 3 to Downstream Toe (ft)	6	3.7	3.7	3.7	3.7	3.7	3.7
Base Width of Dam (Total) (ft)	7	18	18	18	18	18	18
Height of Dam (ft)	8	23	23	23	23	23	23
Ice Loading (K/L ft.)	9		5				
Coefficient of Sliding	10	0.55		55	55	55	55
Unit Weight of Soil (K/ft ³) (deduct 18)	11	0.055	0.055	0.055	0.055	0.055	0.055
Active Soil Coefficient - Ka	12	0.33	0.33	33	33	33	33
Passive Soil Coefficient - Kp	13						
Height of Water over Top of Dam or Spillway (ft)	14			6.9	9.0	4.1	
Assumed Height of Soil for Active Pressure (ft)	15	15	15	15	15	15	5
Height of Soil for Passive Pressure (ft)	16						
Height of Water in Tailrace Channel (ft)	17						
Weight of Water (K/ft ³)	18	0.0624	0.0624	0.0624	0.0624	0.0624	0.0624
Area of Segment No. 4 (ft ²)	19						
Distance from Center of Gravity of Segment No. 4 to Downstream Toe (ft)	20						
Height of Ice Load or Active Water (ft) (does not include 14)	46	20	20	23	23	23	20
Seismic Coefficient (g)	50						0.1

RESULTS OF ANALYSIS

Factor of Safety vs. Overturning	—	—	—	—	—	—
Distance From Toe to Resultant	—	—	—	—	—	—
Factor of Safety vs. Sliding	1.70	1.26	0.87	0.78	1.01	1.21

APPENDIX E

REFERENCES

APPENDIX
REFERENCES

- 1) J.S. Bixley, Correspondence dated November 27, 1939 to T.F. Farrell.
- 2) M.G. Cline and R.L. Marshall; Soils of New York Landscapes - Information Bulletin 119, New York State College of Agriculture and Life Sciences, Cornell University, August 1977.
- 3) B.B. Eissler; Low-Flow Frequency Analysis of Streams in New York - Bulletin 74, U.S. Geological Survey, 1979.
- 4) T.S. George and R.S. Taylor; Lower Hudson River Basin Hydrologic Flood Routing Model; for the Department of the Army, New York District, Corps of Engineers; Water Resources Engineers Inc., January 1977
- 5) H.W. King and E.F. Brater; Handbook of Hydraulics, 5th Edition, McGraw - Hill, 1963.
- 6) F.L. Robinson, W.N. Embree, and B. Dunn, Floods in New York, 1973 and 1974, Investigation Report RI-15, U.S. Geological Survey, 1976.

U.S. Army Corps of Engineers:

- 7) HEC - 1 Flood Hydrograph Package - Dam Safety Version, September 1978.
- 8) Engineering Manual 1110-2-1405; Flood - Hydrograph Analyses and Computations, August 1959.
- 9) U.S. Department of Agriculture, Soil Conservation Service; National Engineering Handbook; Section 4 - Hydrology, August 1972.
- 10) U.S. Department of Commerce; Weather Bureau:
Hydrometeorological Report No. 33:
Seasonal Variation of the Probable Maximum Precipitation East of the 105th Meridian for Areas from 10 to 1,000 Square Miles and Durations of 6, 12, 24, and 48 Hours, April 1956.

U.S. Geological Survey:

- 11) Water Resources Data for New York - 1968.
- 12) Water Resources Data for New York - 1973.
- 13) Water Resources Data for New York - 1974.
- 14) Water Resources Data for New York - Water Year 1975,
Report NY-75-1.
- 15) Water Resources Data for New York - Water Year 1979;
Report NY-79-1, Volume 1-Excluding Long Island.

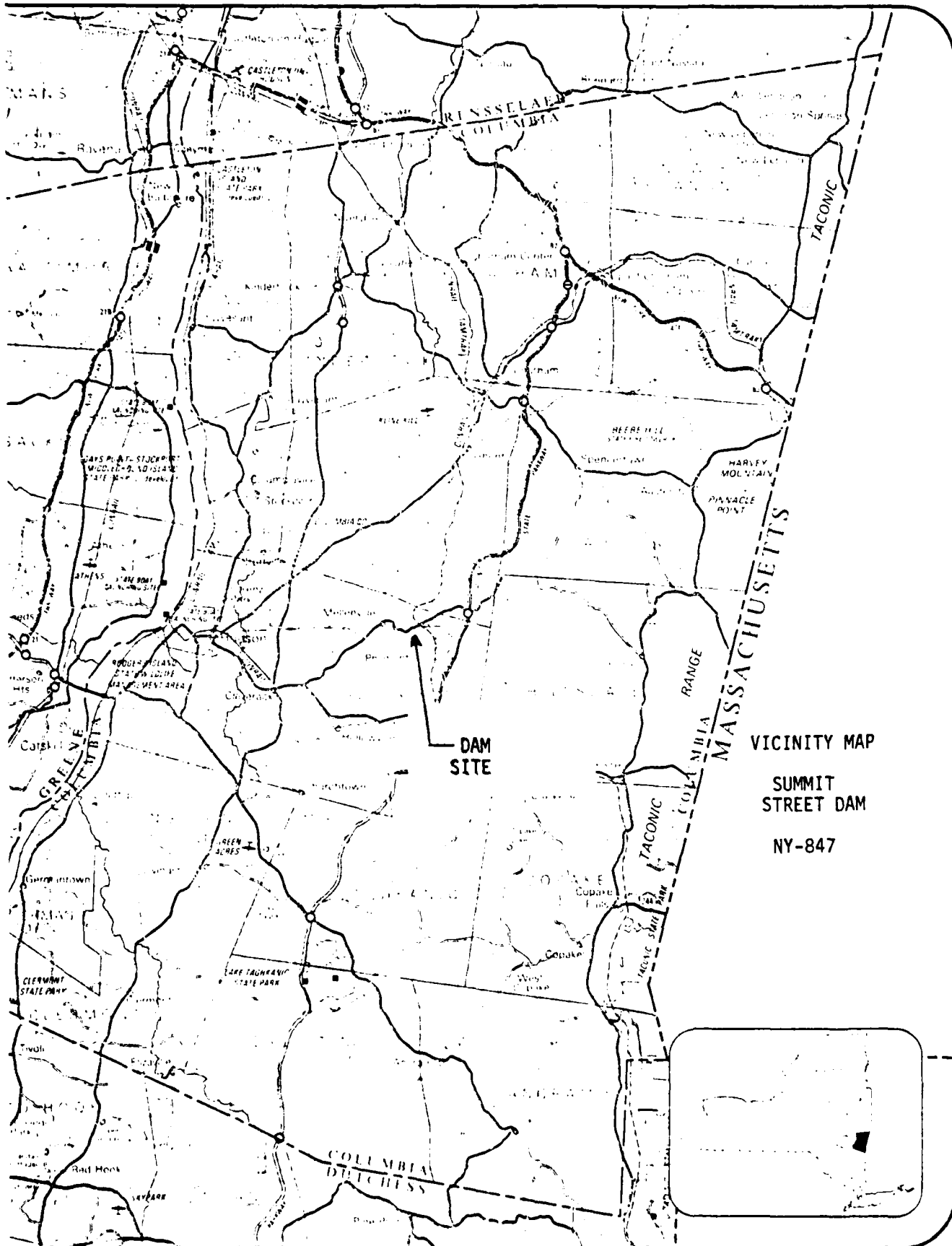
APPENDIX F

DRAWINGS

&

RELATED INFORMATION

COLUMBIA and GREENE COUNTIES

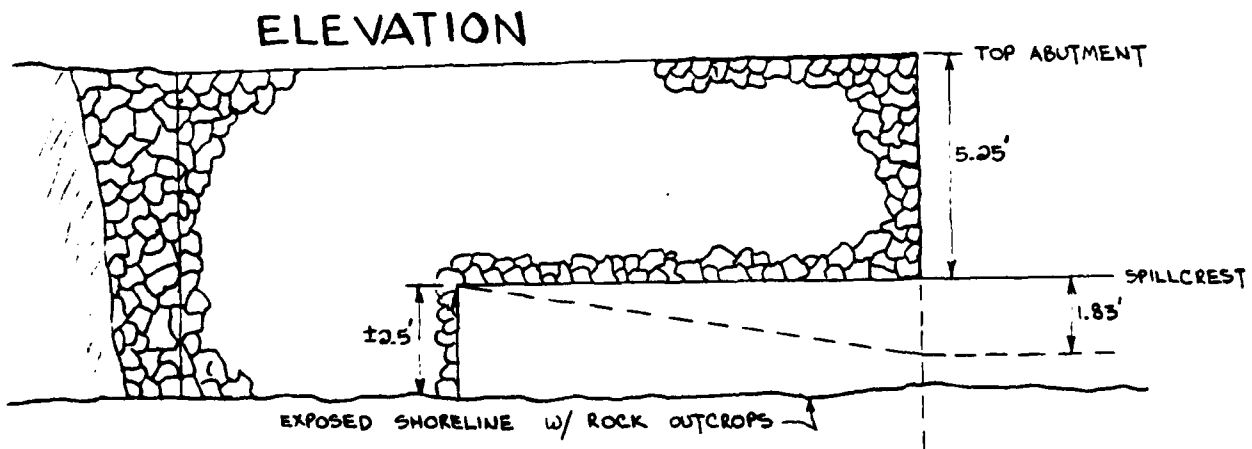
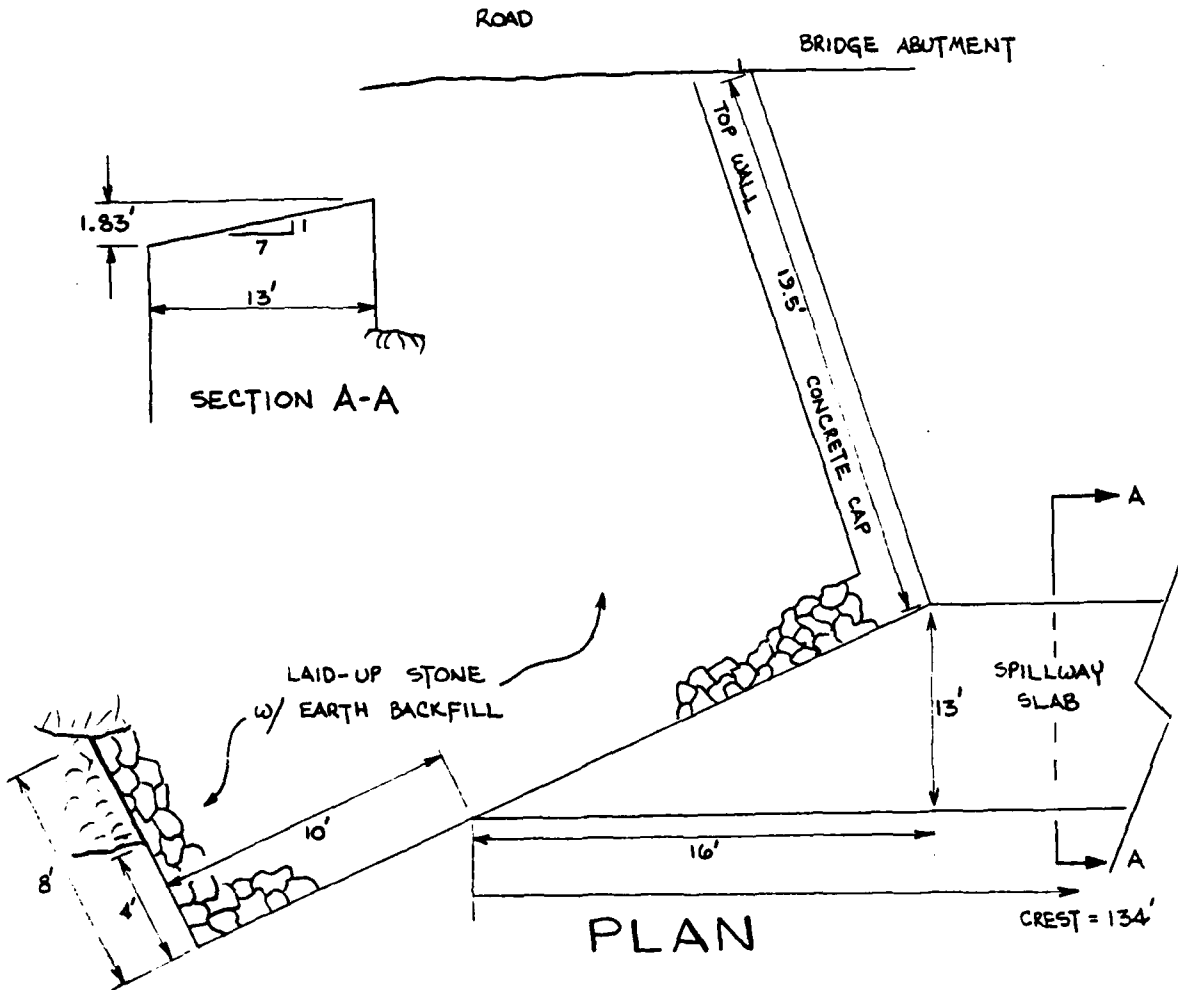


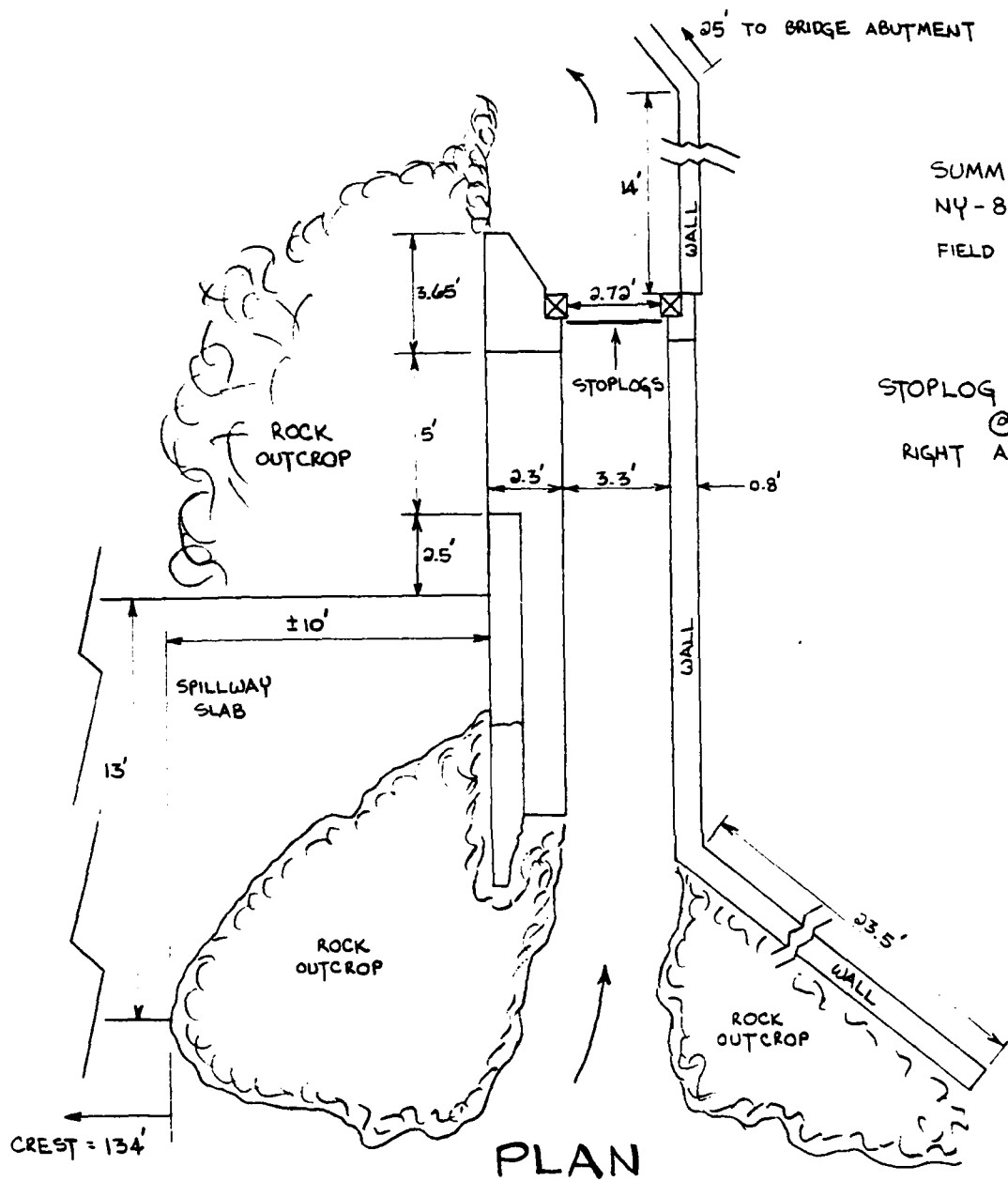
SUMMIT ST. DAM

NY-847

FIELD MEASUREMENTS - 10/80

LEFT ABUTMENT @ DAM

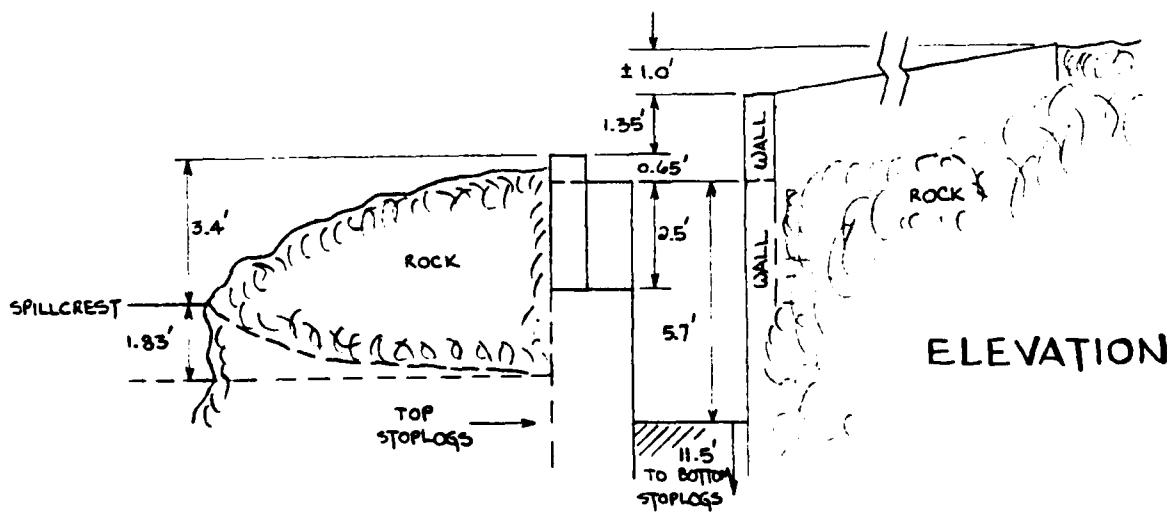




SUMMIT ST. DAM
NY-847

FIELD MEASUREMENTS - 10/80

STOPLOG STRUCTURE
@
RIGHT ABUTMENT



(NOTICE: After filling out one of these forms as completely as possible for each dam in your district, return it at once to the Conservation Commission, Albany.)

STATE OF NEW YORK
CONSERVATION COMMISSION
ALBANY

DAM REPORT

June 23, 1916

CONSERVATION COMMISSION;

DIVISION OF INLAND WATERS.

GENTLEMEN:

I have the honor to make the following report in relation to the structure known as the Reservoir Dam Dam.

This dam is situated upon the Clarendon Creek in the Town of Claverack, Columbia County,

about 4 from the Village or City of Philmont

The distance Down stream from the dam, to the Budgeon Highway

is about 75 feet

The dam is now owned by H. Grock Knitting Co. Philmont N.Y.

and was built in or about the year 1914, and was extensively repaired or reconstructed

during the year 1914

As it now stands, the spillway portion of this dam is built of Masonry Concrete Top

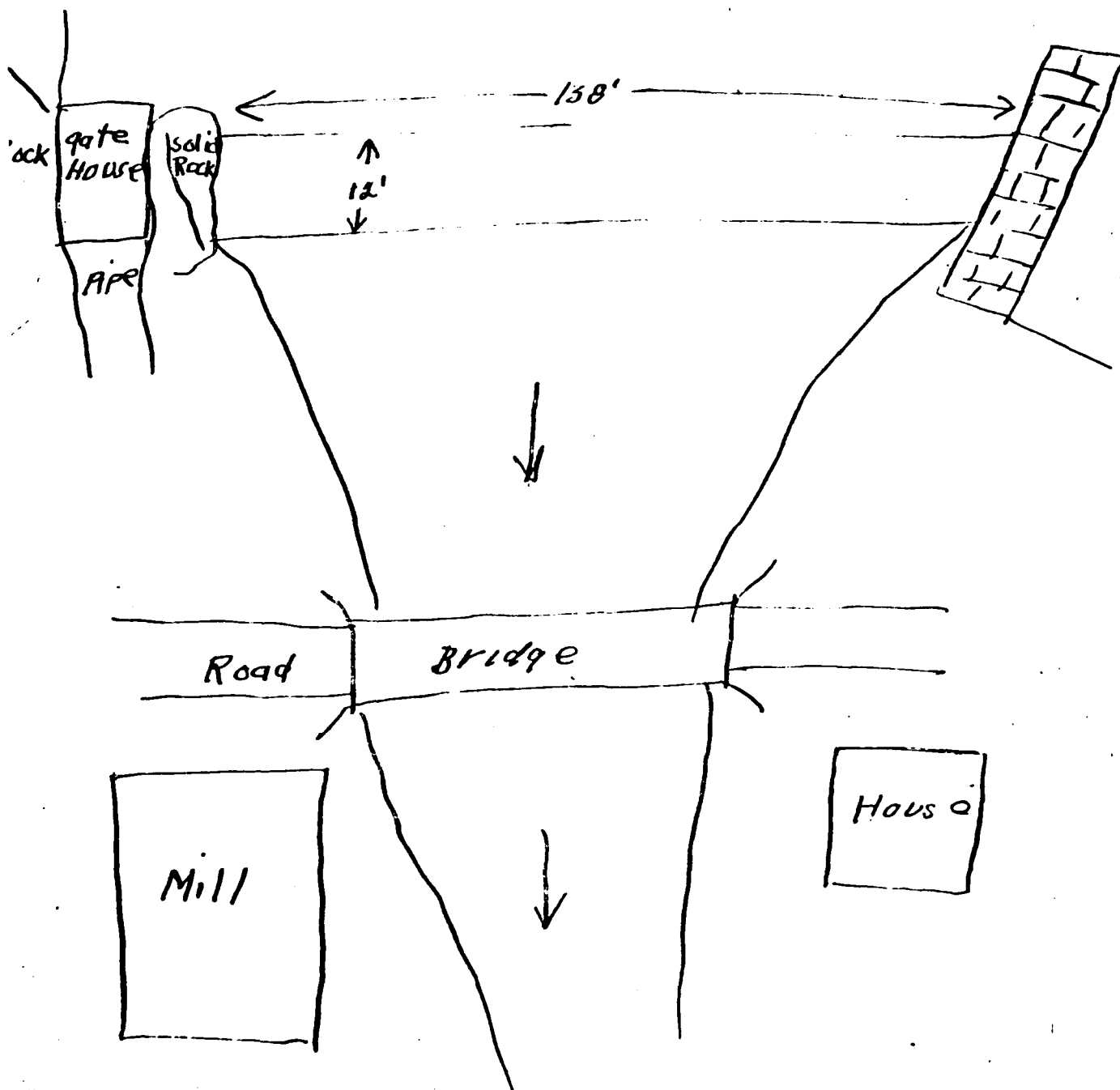
and the other portions are built of Masonry

As nearly as I can learn, the character of the foundation bed under the spillway portion

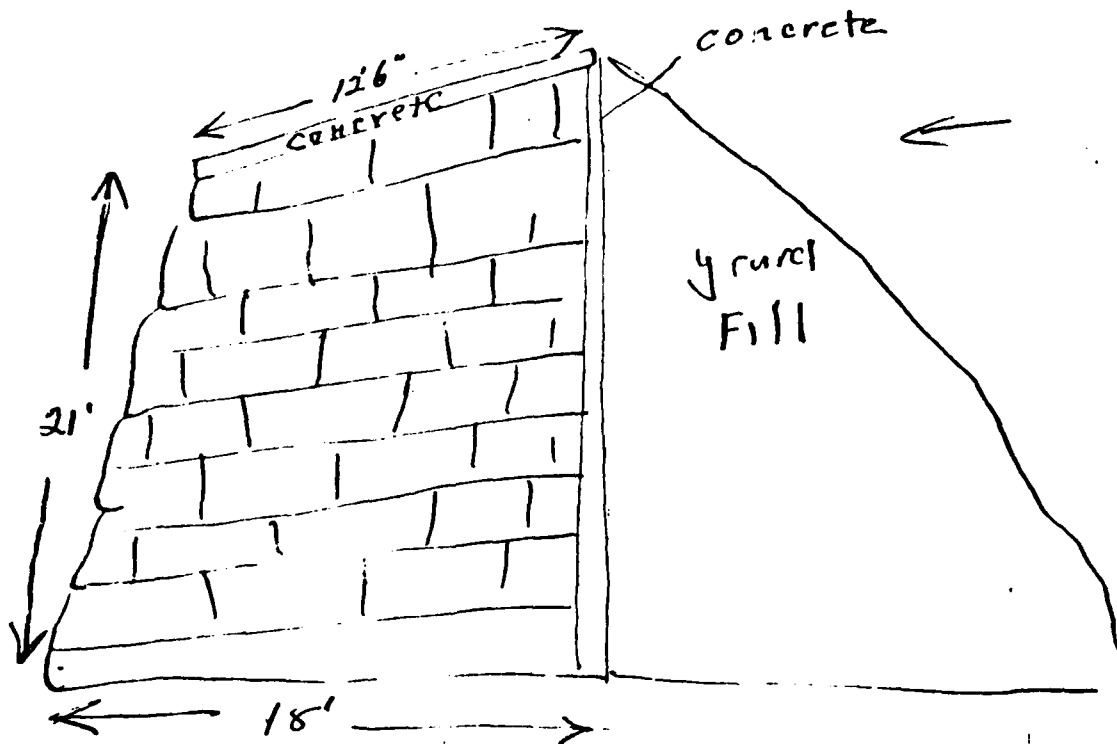
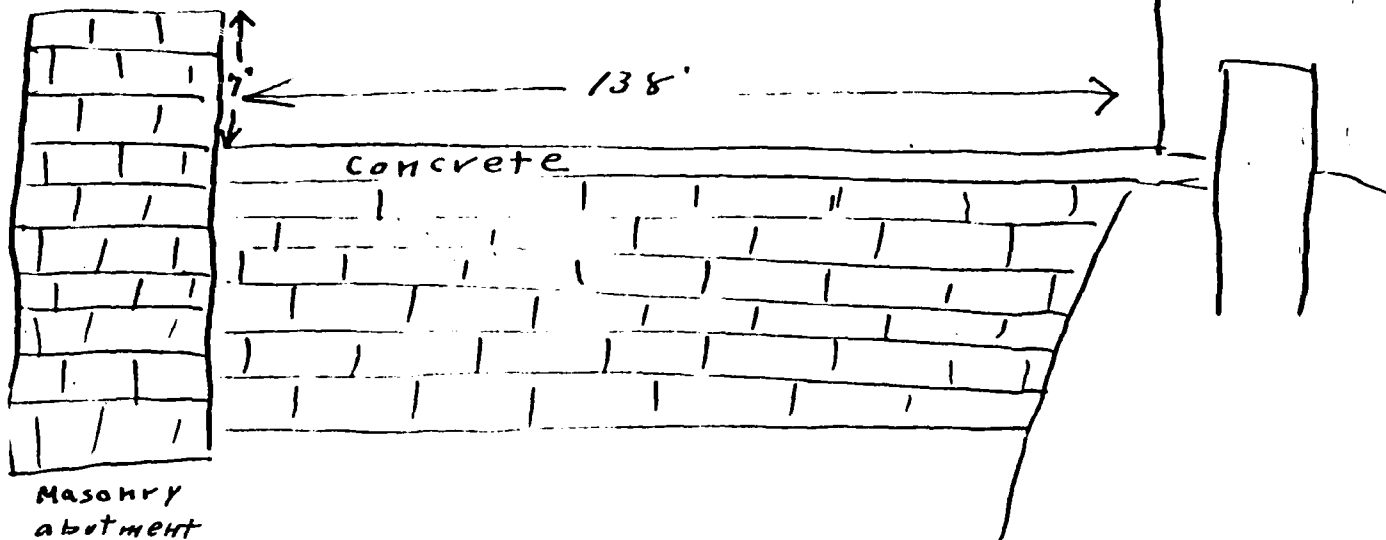
of the dam is Solid Rock and under the remaining portions such

foundation bed is Solid Rock

(In the space below, make a third sketch showing the general plan of the dam, and its approximate position in relation to buildings or other conspicuous objects in the vicinity.)



(In the space below, make one sketch showing the form and dimensions of a cross section through the spillway or waste-weir of this dam, and a second sketch showing the same information for a cross section through the other portion of the dam. Show particularly the greatest height of the dam above the stream bed, its thickness at the top, and thickness at the bottom, as nearly as you can learn.)



The total length of this dam is 138 feet. The spillway or waste-weir portion, is about 138 feet long, and the crest of the spillway is about 7 feet below the top of the dam about

The number, size and location of discharge pipes, waste pipes or gates which may be used for drawing off the water from behind the dam, are as follows: 1, 5" pipe at

right of spillway

At the time of this inspection the water level above the dam was 6 ft. in.
~~below~~
~~above~~ the crest of the spillway.

(State briefly, in the space below, whether, in your judgment, this dam is in good condition, or bad condition, describing particularly any leaks or cracks which you may have observed.)

Good condition

Reported by W. T. Cochrane
(Signature)

(Address—Street and number, P. O. Box or R. P. D. route)

Shinebee Falls
(Name of place)

High Rock Knitting Co. Dam
No. Permit
Town of Claverack
Columbia County

November 27, 1939.

* * * * *

Mr. T. F. Farrell
Chief Engineer
Albany, New York

Dear Sir:-

As ordered in your letter dated Nov. 20, an inspection was made on Nov. 24 of a dam located on Agawamuck branch of Claverack Creek in Village of Philmont. This dam is the middle one of three dams owned by High Rock Knitting Co. and is known as the Summit St. Lake dam. It is the same dam reported in my letter of Nov. 28, 1938, as the Louis Harder dam and noted as having an inadequate spillway.

The High Rock Knitting Co. has been and is in receivership with Louis Harder of Maple Ave., Philmont, N.Y., designated by court as "owner in possession as trustee".

This dam was built about eighty years ago and about sixty years ago it caused a similar flooding of Village of Philmont.

Along about 1918 or 1922, the wooden decked spillway was removed and replaced with stone masonry. Majority opinion is that these repairs resulted in a higher crest of spillway.

As an aftermath of the hurricane of September 1938, floods on Sept. 19-21 of that month caused the Summit St. Lake to overflow its northern shore in two places causing damage to Village of Philmont streets and sidewalks costing, according to Mayor Robert Hover about \$20,000 to repair.

Trustee Harder does not want to lower the spillway. He says the High Rock Knitting Co. will dedicate a R.O.W. along northern shore for a combined dike and road at Lakeside Drive to block the natural flood relief spillway. This treatment might cause other complications. Mr. Harder believes the village should vote monies to build the dike and road and states that the High Rock Knitting Co. carries about half of the full assessments in the Village of Philmont. I am informed that the High Rock Knitting Co. has been in default on taxes continuously since 1933.

T.F.F.

2.

11/27/39

Mayor Robert Hoyer believes that by provisions of Chapter 948 of the Conservation Law, the State Superintendent of Public Works is empowered to order the owner to lower crest of dam at owner's expense. In support of his belief he refers to Page 175 of #164 Miscellaneous Reports on Supreme Court Proceedings which I understand relates to a ruling in May 1937 by Justice MacNaught regarding dam which formed Lake Switzerland on Pottersville Creek branch of the Bushkill and which dam I believe was built in 1906 by one Verrill of Fleischmans, N.Y. Please keep me informed of the Department's action in the present case.

Mr. L. Shadic, C.E. (License #11814 P.E.) of Philmont, N.Y. made a report on the Sept. 1938 flood for the Village of Philmont. He notes the following regarding Summit St. Lake dam:-

- (1) Drainage area = 22.75 sq. mi.
- (2) Dam about 24 ft. high.
- (3) Capacity=58,000,000 gals.

Engr. Shadic states that these three conditions place the reservoir under jurisdiction and supervision of the New York State Department of Public Works.

Furthermore, as follows:

- (4) Crest of Sept. 1938 flood at Elevation 499.49 U.S.C.S. datum.
- (5) At flood crest, the two natural flood relief spillways had a combined cross sectional discharge area of 640 sq. ft. while the water flowing over spillway had a discharge area of 810 sq. ft. with mean height of water over spillway of 5.89 ft. Spillway crest is not quite level.
- (6) At the crest of flood, Ark St. carried 21% of total discharge.
- (7) Waterway under Summit St. bridge is 890 sq. ft. Note this.
- (8) Two artificial structures upstream failed during the flood after having exerted a ponding effect during beginning of flood.
- (9) Shore line higher than in 1922.

Engineer Shadic recommends:-

- (a) Lowering of spillway crest with temporary or automatic type of flashboards to retain present storage capacity except in times of emergency.
- (b) Rock gorge below dam should be enlarged and smoothed and straightened.
- (c) Rebuild present sluice in dam to equal capacity of present flume and provide two gates.
- (d) Build corewall dike to Elevation 502.25 along northern shore of lake and anchored to rock.

I am confirmed in my report of Nov. 28, 1938 that the spillway of Summit St. Lake dam is inadequate.

Very truly yours,

J. S. BIXBY

District Engineer

CAH:ELT

DATE
ILME