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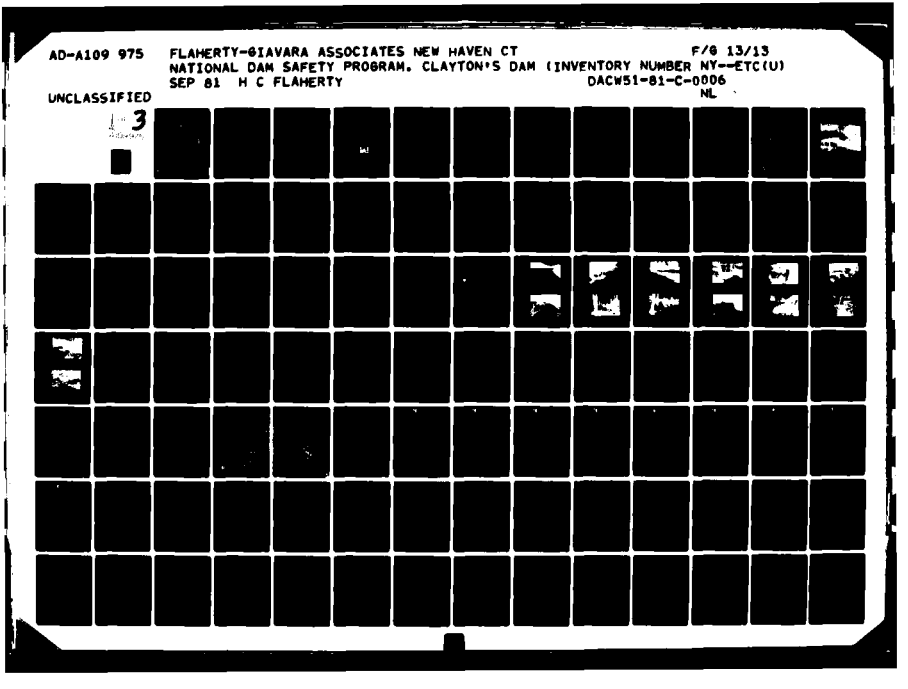

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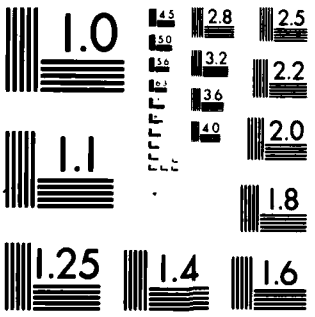

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Clayton Dam
Madison County, NY
Susquehanna River Basin

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 orgainzation.

Examination of available documents and visual inspections of the dam did not reveal conditions which constitute an immediate hazard to human life or property. However, the dam has some deficiencies that need to be evaluated and remedied.

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SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

Using the Corps of Engineers' screening criteria for the initial review of spillway adequacy, it has been determined that the embankment would be overtopped by all storms exceeding 16 percent of the Probable Maximum Flood (PMF). Dam overtopping, the resulting erosion of the embankment and hence, dam breaching would cause water surface levels downstream to reach depths which would pose significant danger to residents. Therefore, the spillway is adjudged to be seriously inadequate and the dam is assessed as unsafe, nonemergency.

The classification "unsafe" applied to a dam because of a seriously inadequate spillway is not meant to connote the same degree of emergency as would be associated with an "unsafe" classification applied for a structural deficiency. It does mean that there appears to be a serious deficiency in spillway capacity and if a severe storm were to occur, overtopping and failure of the dam could take place, significantly increasing the hazard to life downstream of the dam.

It should be noted that Eaton Brook Reservoir Dam is located approximately 2.2 miles upstream of Clayton's Dam on Eaton Brook. Its spillway has also been adjudged to be seriously inadequate and the dam assessed as unsafe, nonemergency (Refer to the Phase I Inspection Report on Eaton Brook Reservoir Dam - NY 352 prepared by the New York State Department of Environmental Conservation Dam Safety Section). Due to the appreciable size of Eaton Reservoir, the breaching of that dam would undoubtedly have a serious effect on Clayton's Dam. Similarly, the failure of either of these dams would have a serious effect on two small dams also on Eaton Brook, located 0.5 miles and 1.7 miles downstream of Clayton's Dam.

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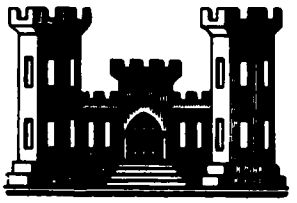
SUSQUEHANNA RIVER BASIN

CLAYTON'S DAM

MADISON COUNTY, NEW YORK
INVENTORY No. NY 1460

PHASE I INSPECTION REPORT
NATIONAL DAM SAFETY PROGRAM



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NEW YORK DISTRICT, CORPS OF ENGINEERS
JUNE 1981

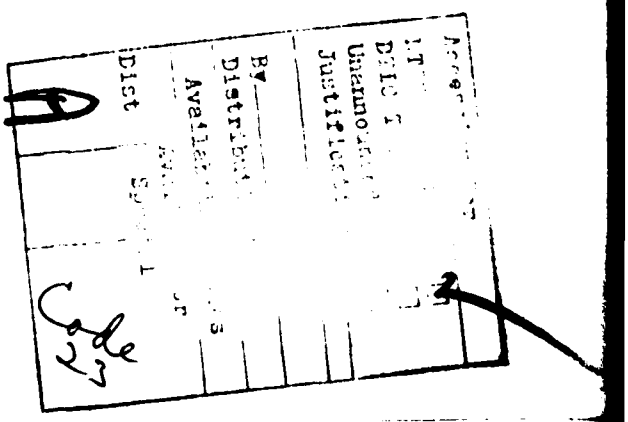
PREFACE

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 aid 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.



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PHASE I INSPECTION REPORT
NATIONAL DAM SAFETY PROGRAM
CLAYTON'S DAM
INVENTORY NO. NY 1460
SUSQUEHANNA RIVER BASIN
MADISON COUNTY, NEW YORK

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PHASE I INSPECTION REPORT
NATIONAL DAM SAFETY PROGRAM

Name of Dam:	Clayton's Dam
State Located:	New York
County:	Madison
Watershed:	Susquehanna River Basin
Watercourse:	Eaton Brook
Dates of Inspection:	March 11 and 13, 1981

ASSESSMENT

Examination of available documents and visual inspections of the dam did not reveal conditions which constitute an immediate hazard to human life or property. However, the dam has some deficiencies that need to be evaluated and remedied.

Using the Corps of Engineers' screening criteria for the initial review of spillway adequacy, it has been determined that the embankment would be overtopped by all storms exceeding 16 percent of the Probable Maximum Flood (PMF). Dam overtopping, the resulting erosion of the embankment and hence, dam breaching would cause water surface levels downstream to reach depths which would pose significant danger to residents. Therefore, the spillway is adjudged to be seriously inadequate and the dam is assessed as unsafe, nonemergency.

The classification "unsafe" applied to a dam because of a seriously inadequate spillway is not meant to connote the same degree of emergency as would be associated with an "unsafe" classification applied for a structural deficiency. It does mean that there appears to be a serious deficiency in spillway capacity and if a severe storm were to occur, overtopping and failure of the dam could take place, significantly increasing the hazard to life downstream of the dam.

It should be noted that Eaton Brook Reservoir Dam is located approximately 2.2 miles upstream of Clayton's Dam on Eaton Brook. Its spillway has also been adjudged to be seriously inadequate and the dam assessed as unsafe, nonemergency. (Refer to the Phase I Inspection Report on Eaton Brook Reservoir Dam - NY 352 prepared by the New York State Department of Environmental Conservation Dam Safety Section). Due to the appreciable size of Eaton Reservoir, the breaching of that dam would undoubtedly have a serious effect on Clayton's Dam. Similarly, the failure of either of these dams

would have a serious effect on two small dams also on Eaton Brook, located 0.5 miles and 1.7 miles downstream of Clayton's Dam.

It is recommended that the following additional investigations be performed by a registered professional engineer engaged by the owner:

1. Conduct a detailed hydrologic and hydraulic analysis to more accurately determine the site specific characteristics of the watershed.

2. Confirmation of the static structural stability of the dam cannot be made without knowledge of the embankment material; consequently, there is a need to determine its character by explorations at the site so that the assessment of the stability of the downstream slope can be made.

3. No design or construction data was available; therefore, conduct field investigations to determine the extent of embedment in bedrock, the quality of the bedrock and more conclusive information on the principal spillway and then, perform a more complete structural stability analysis.

4. The crest and embankment slopes have a heavy cover of brush and trees; therefore, evaluate the need for the removal of individual stumps and backfilling procedures that are necessary to restore crest and embankment integrity.

5. Active seepage was emerging into a wet area at the toe of the downstream slope near the left abutment; therefore, monitor this seepage including observation during high and low pond levels, evaluate the cause and recommend remedial measures, if appropriate.

6. Water was observed flowing from beneath the downstream end of the auxiliary spillway outlet pipe; therefore, investigate this flow, evaluate the cause and recommend remedial measures, if appropriate. In addition, determine the inlet and outlet invert elevations of the auxiliary spillway conduit.

It is recommended that within 3 months of the final approval date of this report, all of the additional investigations should be initiated and within 18 months, appropriate remedial measures should be completed. In the interim, a plan for providing around-the-clock surveillance of the dam during periods of unusually heavy precipitation should be developed and implemented.

The following remedial measures should be completed within 12 months to correct existing deficiencies:

1. Clear the brush and trees from the embankment, including stump removal and backfilling, establish a vegetative cover, and cut grass and weeds on the embankment at least once a year.

2. Repair the deteriorated concrete of the principal spillway weir and the auxiliary spillway inlet structure.

3. Regrade the major ruts and local erosion on the crest and slopes of the embankment to restore a uniform dam cross section and reestablish vegetative cover.

4. Repair the upstream stone masonry wall.

5. Clear the brush and debris from the auxiliary spillway discharge channel.

6. Develop and implement a flood warning and emergency evacuation plan to alert downstream residents in the event conditions occur which could result in failure of the dam.

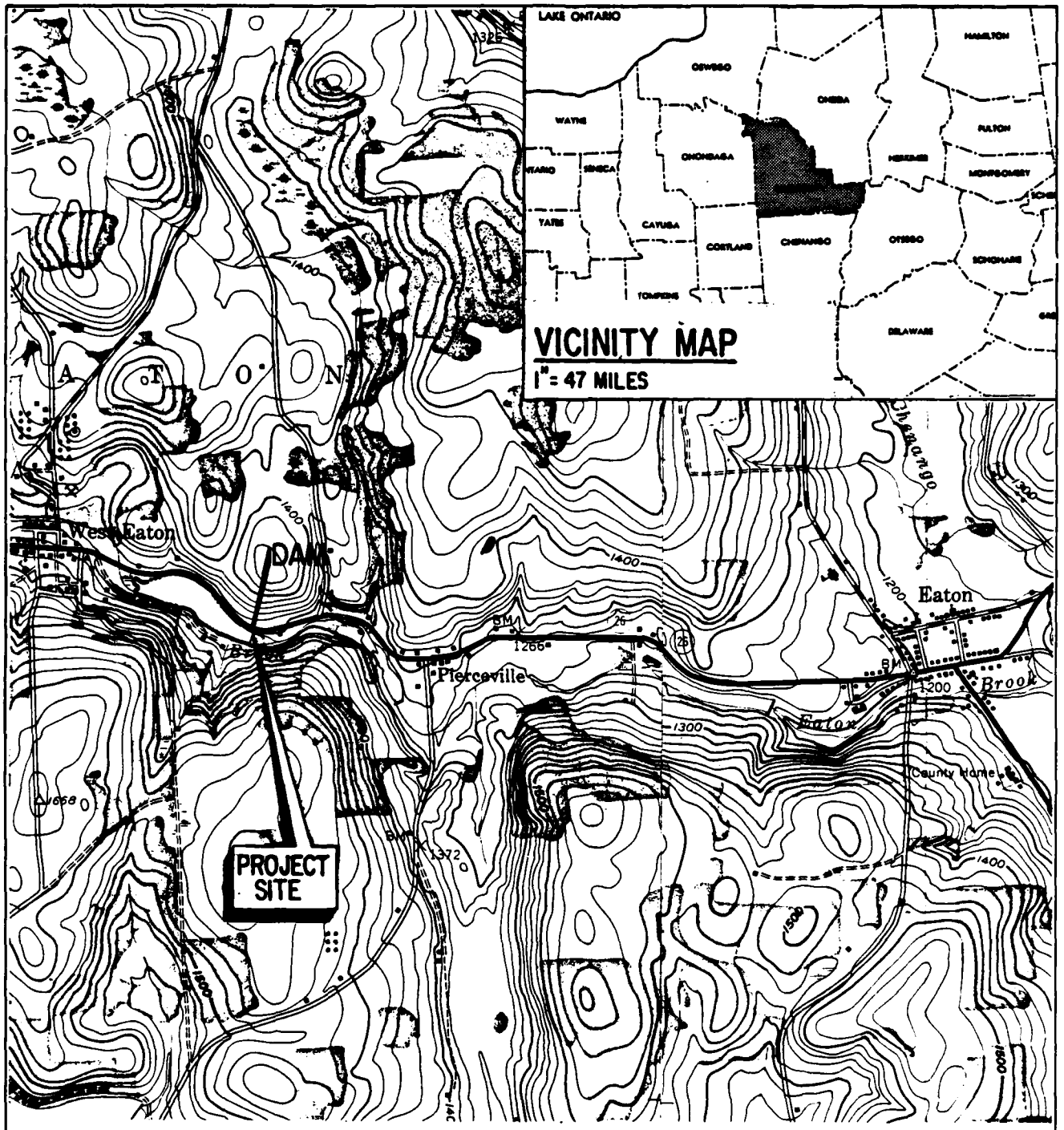
The dam should <u>not</u> be operated with a higher reservoir level than was observed during the site examination until the recommended additional investigations and remedial measures have been completed.

Submitted by: FLAHERTY GIAVARA ASSOCIATES, P.C.

Hugh C. Flaherty, P.E. & L.S.
Chairman of the Board
New York License No. 58508

Approved by: Col. W. M. Smith, Jr.
New York District Engineer

Date: 15 Sep 81



LOCATION MAP

CLAYTONS DAM
INVENTORY No. NY 1460

SUSQUEHANNA RIVER BASIN
MADISON COUNTY
EATON, NEW YORK

N

0 2000 4000

SCALE IN FEET

FLAHERTY · GIAVARA ASSOCIATES, P.C.

PHOTO # 1: Overview of Clayton's Dam
Inventory No. NY 1460

NATIONAL DAM SAFETY PROGRAM
PHASE I INSPECTION REPORT
CLAYTON'S DAM
INVENTORY NO. NY 1460
D.E.C. NO. 104C-713
SUSQUEHANNA RIVER BASIN
MADISON 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. Flaherty Giavara Associates, P.C. has been retained by the New York District to inspect and report on selected dams in the State of New York. Authorization and notice to proceed was issued to Flaherty Giavara Associates, P.C. under a letter of December 24, 1980 from W. M. Smith Jr., Colonel, Corps of Engineers. Contract No. DACW 51-81-C-0006 has been assigned by the Corps of Engineers for this work.

b. Purpose

Evaluation of the existing conditions of the subject dam to identify deficiencies and hazardous conditions, determine if they constitute hazards to life and property and recommend remedial measures where necessary.

1.2 DESCRIPTION OF PROJECT

a. Description of Dam and Appurtenances

Clayton's Dam consists of an earthfill and/or rockfill embankment with a concrete and stone masonry principal spillway at the right abutment and a steel pipe auxiliary spillway located near the left abutment. A sketch plan (Photo Location Map) prepared from the inspection records is included on page A-1 in Appendix A.

The dam embankment is approximately 315 feet long and a maximum of 21 feet high. It has a somewhat irregular cross section with a downstream slope as steep as 1.4 horizontal to 1 vertical, an 11 to 12 foot wide crest sloping toward the impoundment, and a short upstream slope with a stone masonry wall. The embankment material is not known; however, from the extensive vegetation it

would appear to be earth, but 1917 and 1980 inspection reports refer to "rockfill" and "stone", respectively. Some rock is evident in the downstream slope.

The 23.5 foot wide spillway at the right abutment is cut into bedrock, which forms the right side of the upstream and downstream channels. Concrete walls of a former gate structure extend a short distance into the embankment on the left and the abutment slope on the right. Except for the concrete section at the gate location, the left spillway wall is of stone masonry construction; a curving upstream extension apparently forms one of two stone masonry abutments of a former bridge over the spillway approach channel.

Near the left end of the embankment the concrete headwall of the auxiliary spillway inlet structure has reportedly been filled in. The 1917 inspection report indicates a 10 foot by 10 foot gate at this location. Approximately 80 feet downstream from the headwall, a 30 inch diameter steel pipe outlets into a 6 foot wide channel that apparently once served a small power plant.

b. Location

Clayton's Dam is located off New York Route 26 approximately 0.6 miles east of the village of West Eaton in the Town of Eaton, New York. The dam is located at latitude north 42°-51.1' and longitude west 75°-38.8' on the U.S. Geological Survey 7.5 minute series topographic map "West Eaton, New York". The Location Map on page i indicates where the dam is situated.

c. Size Classification

The maximum height of the dam is 21 feet and the maximum storage capacity is 130 acre-feet. Therefore, Clayton's Dam is classified as a "Small" dam as defined by the Recommended Guidelines for Safety Inspection of Dams.

d. Hazard Classification

There are three roads and approximately 10 buildings within the dam failure flood hazard area. Therefore, the dam is in the "High" hazard category as defined by the Recommended Guidelines for Safety Inspection of Dams.

e. Ownership

The dam is owned by Katherine W. Mackie of West Eaton, New York. Her address and telephone number are as follows:

Owner

Contact: Katherine W. Mackie
P.O. Box 1
West Eaton, New York 13484

Telephone: (315) 684-9252

f. Purpose

Historical records indicate the dam was in existence at least as far back as 1806 when it provided hydropower for a saw mill. In 1849, it supplied power for a woolen mill. Then in 1887, the woolen mill was torn down and a grist mill was constructed. In 1921, the dam was utilized to produce hydroelectric power (see page D-2 of Appendix D) and later was bought by New York State Gas and Electric. However, its only apparent present use is to maintain the water level of the pond for recreational use.

g. Design and Construction History

The dam was constructed sometime prior to 1806 and in 1917 the spillway was washed out and subsequently rebuilt. No other design or construction history data is known.

h. Normal Operating Procedure

There are no regular operating procedures for this dam. The normal water level in the reservoir is maintained by the crest elevation of the principal spillway at approximately 1300.0 (NGVD).

1.3 PERTINENT DATA

a. Drainage Area (Square Miles)	11.50
b. Discharge at Dam Site (CFS)	
- Top of Dam	1306
- Crest of Principal Spillway	-
- Crest of Auxiliary Spillway	-
c. Elevations (NGVD - estimated)	
- Top of Dam	1307.0
- Crest of Principal Spillway	1300.0
- Crest of Auxiliary Spillway	-

d. Reservoir Surface Area (Acres)

- Top of Dam	15
- Crest of Principal Spillway	13
- Crest of Auxiliary Spillway	-

e. Storage (Acre-Feet)

- Top of Dam	130
- Crest of Principal Spillway	110
- Crest of Auxiliary Spillway	-

f. Dam

- Type: Earthfill and/or rockfill	
- Length (Feet)	315
- Upstream Slope (H:V)	1.5-2.0:1
- Downstream Slope (H:V)	less than 1.4:1
- Crest Width (Feet)	12

g. Principal Spillway

- Type: Concrete and stone weir	
- Length (Feet)	23.5
- Width (Feet)	3±
- Side Slopes (H:V)	vertical
- Control: None	

h. Auxiliary Spillway

- Type: 30 inch diameter steel pipe	
- Length (Feet)	80±
- Control: None	

i. Principal Spillway Discharge Channel

- Type: Excavated into bedrock	
- Length (Feet)	100±
- Bottom Width (Feet)	25
- Side Slopes (H:V)	varies
- Channel Bottom Slope (Feet/Foot)	-
- Control: None	

j. Auxiliary Spillway Discharge Channel

- Type: Excavated into earth	
- Length (Feet)	250±
- Bottom Width (Feet)	6
- Side Slopes (H:V)	-

- Channel Bottom Slope (Feet/Foot)

- Control: None

k. Reservoir Drain

No reservoir drain is known to exist.

SECTION 2 - ENGINEERING DATA

2.1 GEOTECHNICAL DATA

a. Geology

Clayton's Dam is located on Eaton Brook, an easterly flowing tributary to the Chenango River, about 0.6 miles east of the village of West Eaton in the Allegheny Plateau physiographic province of New York State.

The topography in the area ranges from elevation 1280 in the streambed downstream of the dam to elevation 1640 atop the hills to the north and south of the dam. Unlike the deeply scoured Chenango Valley, the valley of Eaton Brook has been only moderately affected by glacial erosion.

Bedrock in the vicinity of the site consists of the Skaneateles Formation, belonging to the Middle Devonian Hamilton group. Exposed bedrock at the site is probably the Chenango Sandstone member of the Skaneateles Formation, a medium to thick, cross-bedded gray to buff, weathered silty sandstone, with occasional fossils and ripple marks. This unit was deposited in a shallow, near-shore setting of the Catskill Delta complex that prograded across the state approximately from east to west.

Where the bedrock is not exposed, the valley bottom may be mantled with glacial till (a heterogeneous mixture of clay, silt, sand, gravel and cobbles) deposited at the base of ice sheets which once covered the region. This in turn may be overlain by well-sorted sands and gravels deposited first by glacial meltwater streams and later by Eaton Brook and subsidiary tributary streams.

b. Subsurface Conditions

There are no known records of subsurface explorations at the site of Clayton's Dam.

2.2 DESIGN RECORDS

No records were obtained concerning the original design of the dam.

2.3 CONSTRUCTION RECORDS

This dam is known to have been in existence at least as far back as 1806; however, no construction records were available.

2.4 OPERATION RECORDS

No operation records were obtained for this dam.

2.5 EVALUATION OF DATA

The data presented herein was obtained primarily from the files of the New York State Department of Environmental Conservation (DEC). This information appears to be reliable and adequate for the purposes of a Phase I Inspection Report.

SECTION 3 - VISUAL INSPECTION

3.1 FINDINGS

a. General

Visual inspections of Clayton's Dam were conducted on March 11 and 13, 1981. The weather was mostly overcast and the temperature was 35±°F. At the time of the inspection, there were small patches of snow on the ground and water was flowing over the principal spillway weir (See Photo No. 8).

b. Dam

The earthfill embankment of the dam is generally in fair condition (See Photos No. 4, 5, 6 and 7). The irregular configuration tended to obscure any evidence of lateral movement, settlement or erosion, but active seepage was apparent.

The following specific items were noted:

1. There was active seepage emerging into a wet area at the toe of the downstream slope near the left abutment; soil movement was not evident (See Photos No. 14 and 15). This seepage may have been related to leakage from or around the pipe that apparently extends along the left abutment slope from the auxiliary spillway outlet.

2. The crest and slopes were moderately irregular, with wheel ruts on the crest (See Photo No. 3) and apparently eroded depressions on the upstream slope, both to a maximum depth of approximately 6 inches.

3. The stone masonry wall along the upstream face of the dam was badly deteriorated (See Photos No. 4 and 6). The wall varied from nearly vertical to what appeared to be a toppled slope. The top of the wall was generally 3 to 4 feet below the crest and the horizontal alignment varied by 1 to 2 feet from a straight line. Deterioration was particularly severe near the auxiliary spillway inlet structure.

4. The crest and slopes of the embankment had a heavy cover of brush and trees (some dead) ranging up to about 36 inches in diameter (See Photos No. 3, 4, 5, 6 and 7). Trees were overhanging the upstream stone masonry wall.

c. Principal Spillway

1. Principal Spillway Weir

The broad-crested weir is constructed of concrete and is excavated into bedrock at the right abutment (See Photo No. 8). Severe deterioration of the concrete was observed exposing the steel reinforcing (See Photo No. 10) and creating voids in the downstream face of the weir (See Photo No. 9). The approach channel was free of debris and in good condition.

2. Principal Spillway Discharge Channel

The 25± foot wide discharge channel is excavated into bedrock and is in good condition except for some minor erosion of the right side slope. It discharges into the natural channel of Eaton Brook approximately 100 feet downstream of the principal spillway weir.

d. Auxiliary Spillway

1. Inlet Structure

This concrete structure consists of a 10 foot long headwall with two 5 foot wingwalls at right angles to the headwall. The concrete is severely deteriorated (See Photo No. 12) and the entrance is filled in, preventing observation of the pipe invert.

2. Auxiliary Spillway Conduit

The 30 inch diameter steel pipe appeared to be in good condition; however, water was observed flowing from beneath the outlet pipe invert (See Photo No. 13).

3. Auxiliary Spillway Discharge Channel

The earthen discharge channel has a bottom width of 6 feet and a length of approximately 250 feet and is heavily overgrown and partially blocked with debris (See Photo No. 13).

e. Downstream Channel

The natural channel downstream of the dam has a width of 20± feet and a depth of 12 inches. The streambed consists of gravel and appeared to be stable at the time of inspection (See Photo No. 11).

f. Reservoir - Storage Pool Area

The reservoir area is bordered by moderate to steep valley slopes with New York State Route 26 following the north edge of the impoundment (See Photo No. 2). There is no significant probability of landslides into the storage pool affecting the safety of the dam. Sedimentation is not considered to be a factor in the the safety of this dam.

3.2 EVALUATION OF OBSERVATIONS

Visual inspections revealed some deficiencies on this structure. The following items were noted:

a. Active seepage was observed emerging into a wet area at the downstream toe of the slope near the left abutment.

b. Severe deterioration of the concrete of the principal spillway weir was observed exposing the steel reinforcing and creating voids in the downstream face of the weir.

c. Water was noted flowing from beneath the auxiliary spillway pipe outlet.

d. The stone masonry wall along the upstream slope was deteriorated, particularly near the inlet structure to the auxiliary spillway.

e. The concrete of the auxiliary spillway inlet structure is severely deteriorated.

f. The crest and slopes of the embankment had a heavy cover of brush and tres and were moderately irregular due to wheel ruts on the crest and depressions on the upstream slope.

g. The auxiliary spillway discharge channel is heavily overgrown and partially blocked with debris.

SECTION 4 - OPERATION AND MAINTENANCE PROCEDURES

4.1 PROCEDURES

The normal water surface level is maintained by the crest of the broad-crested weir of the principal spillway at elevation 1300.0 (NGVD). No operational procedures are in effect at this time.

4.2 MAINTENANCE OF DAM

There was no evidence that any maintenance operations had been performed at Clayton's Dam for quite some time.

4.3 WARNING SYSTEM

No warning system is presently in effect.

4.4 EVALUATION

Presently, no operation or maintenance procedures are in effect for this dam. Therefore, a program of regular operation and maintenance procedures should be implemented.

SECTION 5 - HYDROLOGIC/HYDRAULIC

5.1 DRAINAGE AREA CHARACTERISTICS

The dam is located in the Town of Eaton on Eaton Brook, approximately 13,100 feet upstream of the Chenango River. Eaton Brook joins the Chenango River at the village of Eaton, approximately seventy-three miles upstream of the Susquehanna River at Binghamton, New York.

The watershed (shown on the Watershed Map on Page C-5 in Appendix C) consists of 7,360 acres (11.50 square miles) of rolling to hilly uplands with typical slopes of 5 to 10 percent. Land within the watershed is primarily agricultural with extensive open fields. Eaton Reservoir, a major impoundment having a surface area of 270± acres and three subwatersheds, is located within the drainage area approximately 2.2 miles upstream of Clayton's Dam on Eaton Brook. There is also a significant wetland area of 25± acres about 2.5 miles upstream of Eaton Brook Reservoir Dam.

The watercourse upon which the reservoir is located, is a perennial stream with a typical flow width of 20 feet and a typical flow depth of 12 inches.

5.2 ANALYSIS CRITERIA

The purpose of the hydrologic/hydraulic analysis is to evaluate the spillway capacity and the potential for overtopping. The analysis of the spillway capacity of the dam and storage of the reservoir was performed using the Corps of Engineers' HEC-1 Computer Model - Dam Safety Version. The procedure included determining the Probable Maximum Flood (PMF) runoff from the watershed and routing the inflow hydrograph through the impoundment to determine the outflow hydrograph. The unit hydrograph was defined by the Snyder Synthetic Unit Hydrograph method, and the Modified Puls routing procedure was incorporated.

The initial rainfall loss was assumed to be 1.0 inches, and the uniform rainfall loss was assumed to be 0.1 inches per hour. In accordance with recommended guidelines of the Corps of Engineers, the Probable Maximum Precipitation (PMP) was 20.0 inches (24 hour duration, 200 square mile area).

Due to the existence of a major impoundment within the watershed, an outflow hydrograph had to be developed by combining the inflow hydrographs from the three subwatersheds and routing them through Eaton Reservoir. This outflow hydrograph was then combined with the inflow hydrograph for Clayton's Dam and routed through its impoundment.

The analysis was conducted for both the full PMF and for several fractional PMF conditions. The PMF inflow of 18,506 CFS was routed through the reservoir and the peak outflow was determined to be 18,506 CFS.

5.3 SPILLWAY CAPACITY

The total outlet capacity is the sum of the discharges from the principal spillway and the auxiliary spillway. However, the discharge from the auxiliary spillway was indeterminable due to the inaccessibility of the inlet. Therefore, for the purpose of this analysis and to be conservative, it was assumed no flow would pass through the auxiliary spillway.

The principal spillway consists of a 23.5 foot long broad-crested concrete weir.

The auxiliary spillway consists of a concrete inlet structure, a 30 inch diameter steel pipe and an excavated earthen discharge channel.

The stage discharge data for the principal spillway was calculated for the stages tabulated below:

Stage (Feet)	Discharge Capacity (CFS)	Element of Structure
1300.0	0	Principal Spillway Crest
1301.0	71	--
1302.0	199	--
1303.0	366	--
1304.0	564	--
1305.0	788	--
1306.0	1036	--
1307.0	1306	Top of Dam

The total spillway capacity at the top of dam is 1306 CFS.

5.4 RESERVOIR CAPACITY

The storage capacity of the reservoir was calculated for the stages indicated below:

Stage (Feet)	Storage (Acre-Feet)	Storage (Inches of Runoff)
1300.0	110	0.18
1307.0	130	0.22

5.5 FLOODS OF RECORD

No data regarding flood levels was obtained for this dam.

5.6 OVERTOPPING POTENTIAL

The results of the HEC-1 DB computer analysis indicate that the crest of the dam is overtopped by all storms exceeding 16 percent of the PMF event. The PMF discharge rate of 18,506 cubic feet per second (CFS) would occur at a peak flood stage of 1314.5 feet, which is 7.5 feet above the crest of the dam.

The results of the analysis are tabulated below:

Flood Condition	Peak Inflow (CFS)	Peak Outflow (CFS)	Maximum Stage Elevation (NGVD)
0.5 PMF	5090	5090	1309.6
1.0 PMF	18506	18506	1314.5

5.7 EVALUATION

Using the Corps of Engineers' screening criteria for the initial review of spillway adequacy, it has been determined that the capacity of the principal spillway is not adequate to pass one half the PMF; only approximately 16 percent of the PMF can be safely passed before overtopping will occur (assuming the worst condition; i.e., no flow passes through the auxiliary spillway). The PMF event would overtop the dam for a duration of 22.5 hours and the maximum depth of flow over the crest would be 7.5 feet. It is estimated that breaching of the dam as a resulting of overtopping, would cause water surface levels downstream to reach depths which would pose significant danger to residents. Therefore, the spillway is adjudged to be seriously inadequate and the dam is assessed as unsafe, nonemergency.

It should be noted that Eaton Brook Reservoir Dam is located approximately 2.2 miles upstream of Clayton's Dam on Eaton Brook. Its spillway has also been adjudged to be seriously inadequate and the dam assessed as unsafe, nonemergency (Refer to the Phase I Inspection Report on Eaton Brook Reservoir Dam - NY 352 prepared by the New York State Department of Environmental Conservation - Dam Safety Section). Due to the appreciable size of Eaton Reservoir, the breaching of that dam would undoubtedly have a serious effect on Clayton's Dam. Similarly, the failure of either of these dams would have a serious effect on two small dams also on Eaton Brook, located 0.5 miles and 1.7 miles downstream of Clayton's Dam.

SECTION 6 - STRUCTURAL STABILITY

6.1 EVALUATION OF STRUCTURAL STABILITY

a. Visual Observations

There was no visible evidence of major settlement, lateral movement or overall structural instability of the dam during the site examination, although slight indications could have been masked by the general surface irregularities. With the pond level approximately 6 feet below the top of the dam embankment, there was no evidence of erosion or piping in the seepage area near the left abutment. The conditions that were observed do not indicate static structural instability of the dam embankment.

b. Design and Construction Data

Except for the 1917 inspection report references (included in Appendix D) to "masonry", "blue slate rock" foundations, and "rockfill", there are neither design drawings nor construction data which show the embankment cross section and the physical properties of the material in the embankment. The lack of overall seepage does indicate that the dam has some form of cutoff, apparently to rock, and the steep downstream slope with locally exposed rock fragments is compatible with rockfill.

Without knowledge of the material in the dam, the configuration alone does not provide confirmation of embankment stability. The apparent satisfactory performance of the embankment in the years since 1806± indicates that there has been some safety margin with respect to stability under static loading conditions.

c. Operating Records

No operating records were obtained for Clayton's Dam.

d. Post Construction Changes

Post construction changes could not be determined due to the absence of construction records.

6.2 STRUCTURAL STABILITY ANALYSIS

Design drawings, construction records and rehabilitation documents were not available for any portion of this dam or its appurtenant structures. Due to the conditions existing at the site, many structural defects could not be measured accurately. As part of the present study, stability computations of the principal spillway have been performed. Since no drawings of the spillway were available and physical mea-

surements were limited, a number of assumptions had to be made. The resulting stability determinations are therefore directly related to the verifiability of these assumptions.

The stability analysis is presented in Appendix E. The results of the stability computations are summarized in the following table:

Loading Condition (Spillway Section)	[1]Factors of Safety: Over-turning	[2]Sliding	[3]Location of Resultant Passing Through Base
1. Normal operating condition: water level at 1 foot above spillway crest	1.94	5.00	0.37b
2. Maximum operating condition: water level at top of dam (7.0 feet above spillway crest)	0.98	2.70	*
3. 0.5 PMF condition: water level at El. 1309.6 (9.6 feet above spillway crest)	0.81	2.25	*
4. Ice loading condition: 5.0 Kips per foot acting at top of spillway	0.40	2.07	*

[1]These factors of safety indicate the ratio of moments resisting overturning to those moments causing overturning, and the ratio of forces resisting sliding to those causing sliding.

[2]As determined applying the friction-shear method

[3]Indicated in terms of the base dimension of the dam (b), measured from the toe of the dam

*Location of the resultant falls outside of the spillway width

Note: All loading conditions include an uplift force equal to 2/3 the height of the principal spillway multiplied by the hydrostatic pressure acting upon it which was applied in conjunction with all overturning and sliding forces.

The analysis performed indicates that the safety factors against overturning are seriously deficient. The resultant force falls outside of the middle third of the base for nearly all conditions analyzed. The safety factors against sliding are generally adequate if the section is embedded in bedrock as assumed.

The analysis was performed for the principal spillway section only. Although concrete abutments flanking the spillway had existed at one time, extensive deterioration has reduced their effect on the spillway. A more complete stability analysis is required which includes additional field investigations to determine the extent of embedment in rock, the quality of rock and more conclusive spillway data. Based on the results of this evaluation, it should be determined whether modifications to the structure are required.

Clayton's Dam is located in Seismic Zone 2. However, since there was not enough data available to determine the parameters of the embankment material, it was not possible to perform a seismic stability analysis.

SECTION 7 - ASSESSMENT/RECOMMENDATIONS

7.1 ASSESSMENT

a. Condition

On the basis of the visual examination, Clayton's Dam has a number of serious deficiencies. However, there were no signs of impending structural failure or other conditions which would warrant urgent remedial action.

b. Adequacy of Information

Since there were no drawings available, the evaluation of this dam is based primarily on visual examination, limited measurements at the site, approximate hydraulic and hydrologic computations, and application of engineering judgement. While the visual examination was somewhat hampered by weather conditions, the available information that was obtained is adequate for the purposes of a Phase I assessment.

c. Need for Additional Investigations

It is recommended that the following additional investigations be performed by a registered professional engineer engaged by the owner:

1. Conduct a detailed hydrologic and hydraulic analysis to more accurately determine the site specific characteristics of the watershed.

2. Confirmation of the static structural stability of the dam cannot be made without knowledge of the embankment material; consequently, there is a need to determine its character by explorations at the site so that the assessment of the stability of the downstream slope can be made.

3. No design or construction data was available; therefore, conduct field investigations to determine the extent of embedment in bedrock, the quality of the bedrock and more conclusive data on the principal spillway and then, perform a more complete structural stability analysis.

4. The crest and embankment slopes have a heavy cover of brush and trees; therefore, evaluate the need for the removal of individual stumps and backfilling procedures that are necessary to restore crest and embankment integrity.

5. Active seepage was emerging into a wet area at the toe of the downstream slope near the left abutment; therefore, monitor this seepage including observation during high and low pond levels, evaluate the cause and recommend remedial measures, if appropriate.

6. Water was observed flowing from beneath the downstream end of the auxiliary spillway outlet pipe; therefore, investigate this flow, evaluate the cause and recommend remedial measures, if appropriate. In addition, determine the inlet and outlet invert elevations of the auxiliary spillway conduit.

d. Urgency

It is recommended that within 3 months of the final approval date of this report, all of the additional investigations should be initiated and within 18 months, appropriate remedial measures should be completed. In the interim, a plan for providing around-the-clock surveillance of the dam should be developed and implemented. The corrective measures listed in Section 7.2 should be accomplished within 12 months of final approval.

7.2 RECOMMENDED MEASURES

It is considered important that the following items be accomplished in addition to any items required as a result of the additional investigations recommended in Section 7.1c:

a. Clear the brush and trees from the embankment, including stump removal and backfilling, establish a vegetative cover, and cut grass and weeds on the embankment at least annually.

b. Repair the deteriorated concrete of the principal spillway weir and the auxiliary spillway inlet structure.

c. Regrade the major ruts and local erosion on the crest and slopes of the embankment to restore a uniform dam cross section and reestablish vegetative cover.

d. Repair the upstream stone masonry wall.

e. Clear the brush and debris from the auxiliary spillway discharge channel.

f. Develop and implement a flood warning and emergency evacuation plan to alert downstream residents in the event conditions occur which could result in failure of the dam.

The dam should not be operated with a higher reservoir level than was observed during the site examination until the recommended additional investigations and remedial measures have been completed.

APPENDIX A

PHOTOGRAPHS

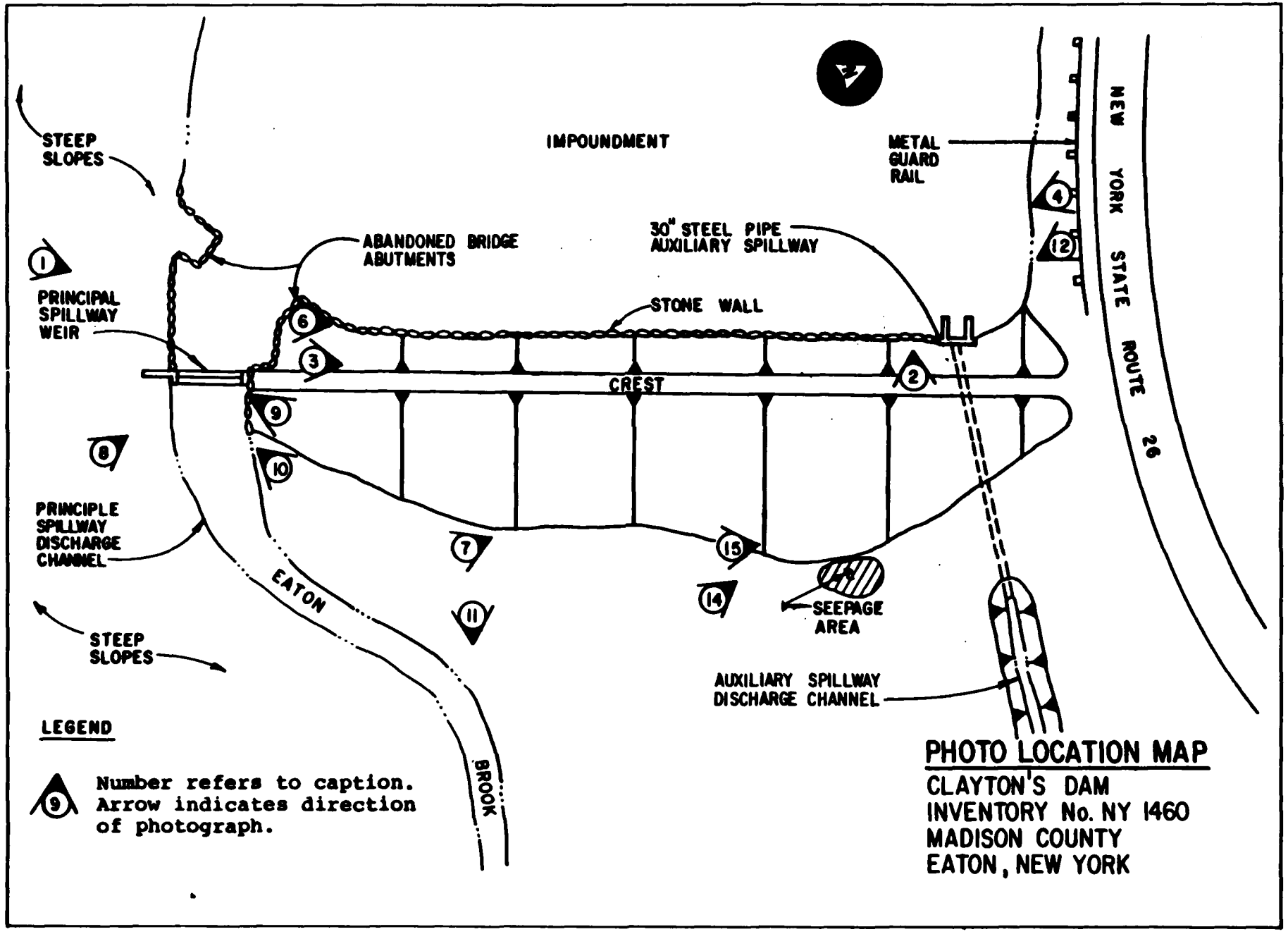

STEEP SLOPES
IMPOUNDMENT
METAL GUARD RAIL
NEW YORK STATE ROUTE 26
ABANDONED BRIDGE ABUTMENTS
30" STEEL PIPE AUXILIARY SPILLWAY
PRINCIPAL SPILLWAY WEIR
STONE WALL
CREST
PRINCIPLE SPILLWAY DISCHARGE CHANNEL
EATON BROOK
SEEPAGE AREA
AUXILIARY SPILLWAY DISCHARGE CHANNEL
STEEP SLOPES
LEGEND
Number refers to caption. Arrow indicates direction of photograph.
PHOTO LOCATION MAP
CLAYTON'S DAM
INVENTORY No. NY 1460
MADISON COUNTY
EATON, NEW YORK

PHOTO #2: Overview of impoundment

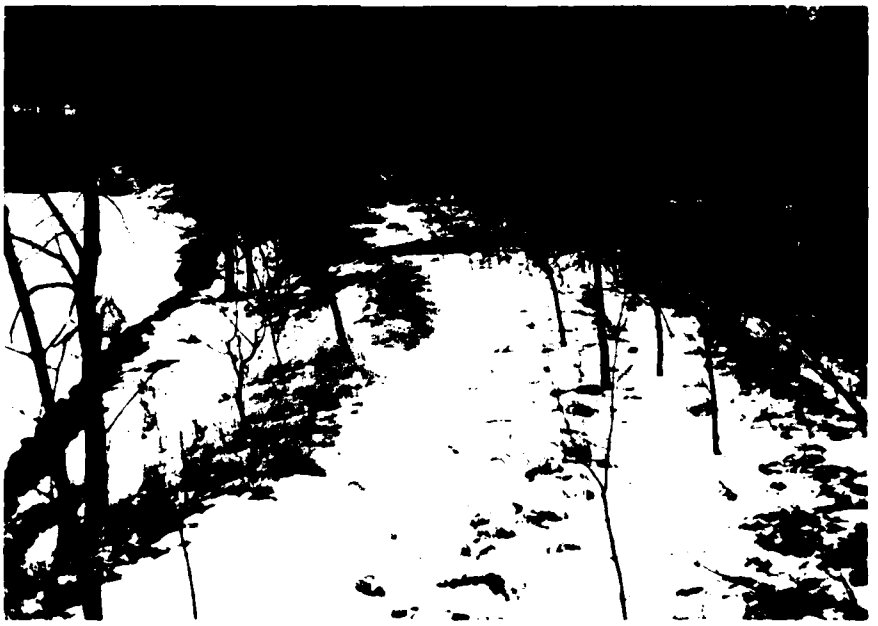


PHOTO #3: Crest of dam looking toward left abutment

PHOTO #4: Overview of upstream face of dam

PHOTO #5: Overview of downstream face of dam

PHOTO #6: Upstream face of dam

PHOTO #7: Downstream face of dam

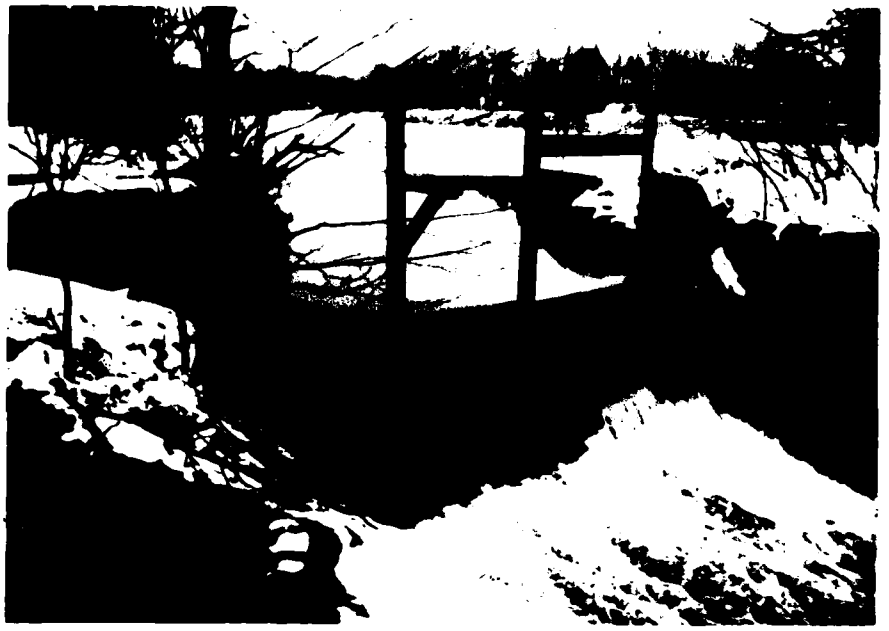


PHOTO #8: Principal spillway from downstream

PHOTO #9: Close-up of left side of principal spillway (white area indicates a void)

PHOTO #10: Deteriorated concrete at the right side of the principal spillway

PHOTO #11: Downstream channel conditions

PHOTO #12: Auxiliary spillway inlet structure

PHOTO #13: Auxiliary spillway outlet (30 inch steel pipe)

PHOTO #14: Seepage area at the left downstream toe of slope

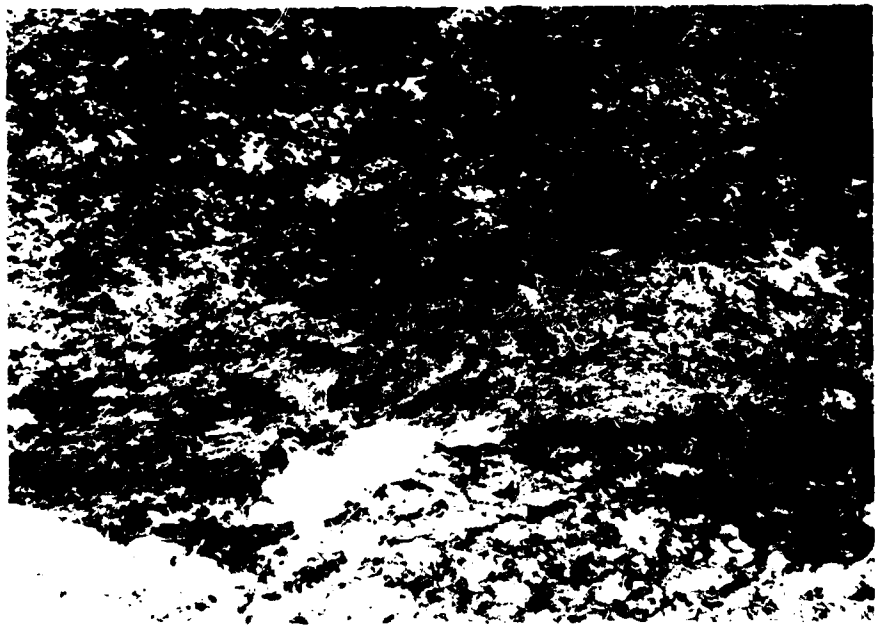


PHOTO #15: Close-up of seepage area

APPENDIX B

VISUAL INSPECTION CHECKLIST

VISUAL INSPECTION CHECKLIST

1) Basic Data

a. General

Name of Dam Clayton's Dam

Fed. I.D. # NY 1460 **DEC Dam No.** 104C-713

River Basin Susquehanna

Location: Town Eaton **County** Madison

Stream Name Eaton Brook

Tributary of Chenango River

Latitude (N) 42° -51.1' **Longitude (W)** 75° -38.8'

Type of Dam Earthen embankment

Hazard Category High

Date(s) of Inspection March 11 and March 13, 1981

Weather Conditions Overcast, 35°± F.

Reservoir Level at Time of Inspection Elevation 1300.1± (NGVD)

b. Inspection Personnel

R.C. Smith, T.L. Ward & R.A. Criscuolo of Flaherty Giavara Associates, P.C.; P.L. LeCount & J.J. Rixner of Haley & Aldrich, Inc.; E. Thomas of Salmon Associates.

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

Katherine W. Mackie

P.O. Box 1

West Eaton, New York 13484

(315) 684-9252

d. History:

Date Constructed 1806± **Date(s) Reconstructed** 1917±

Designer Unknown

Constructed By Unknown

Owner Katherine W. Mackie

2) **Embankment**

a. **Characteristics**

(1) **Embankment Material** Unknown

(2) **Cutoff Type** Unknown

(3) **Impervious Core** Unknown

(4) **Internal Drainage System** None observed

(5) **Miscellaneous** No comments

b. **Crest**

(1) **Vertical Alignment** Good; slightly irregular including wheel ruts, but no obvious settlement.

(2) **Horizontal Alignment** Good; however, alignment varies about 1 to 2 feet from a straight line as it approaches the principal spillway weir

(3) **Surface Cracks** None observed

(4) **Miscellaneous** At one time, the crest was used for a roadway as evidenced by the existence of the stone abutments.

c. **Upstream Slope**

(1) **Slope (Estimate - V:H)** Varies from 1:1.5 to 1:2.0

(2) **Undesirable Growth or Debris, Animal Burrows** Grass, weeds, brush, and trees up to 30 inches in diameter

(3) **Sloughing, Subsidence or Depressions** Local minor depressions to 6 inches deep behind upstream stone face (not active)

(4) **Slope Protection** Stone wall with a varying batter, stones from cobble size to 1 foot by 3 foot by 3 foot and irregular alignment with stones locally dislodged

(5) **Surface Cracks or Movement at Toe** None evident

d. **Downstream Slope**

(1) **Slope (Estimate - V:H)** 1:1.4

(2) **Undesirable Growth or Debris, Animal Burrows** Ground cover, weeds, brush, tree stumps, and trees (some dead) up to 36 inches in diameter; some small diameter burrows, apparently mice.

(3) **Sloughing, Subsidence or Depressions** Irregular steep slope, but no evidence of active movement

(4) **Surface Cracks or Movement at Toe** None obvious through patchy snow cover

(5) **Seepage** Active slow seepage from an area near the left abutment; no apparent soil movement

(6) **External Drainage System (Ditches, Trenches, Blanket)** None observed

(7) **Condition Around Outlet Structure** Concrete of the principal spillway weir is severely deteriorated

(8) **Seepage Beyond Toe** None evident

e. **Abutments - Embankment Contact**

Right: good condition

Left: good condition

(1) **Erosion at Contact** None apparent

(2) **Seepage Along Contact** None observed

3) **Drainage System**

a. **Description of System** Broad-crested concrete weir and discharge conveyance channel excavated into bedrock

b. **Condition of System** Fair; concrete of principal spillway weir is severely deteriorated exposing steel reinforcing rods and creating voids in the weir

c. **Discharge from Drainage System** Approximately 7 foot drop from weir to bedrock discharge channel.

4) **Instrumentation** (Monumentation/Surveys, Observation Wells, Weirs, Peizometers, Etc.)

None observed

5) **Reservoir**

a. **Slopes** Moderate to steep valley slopes with New York State Route 26 following the north edge of the impoundment

b. **Sedimentation** No apparent problems

c. **Unusual Conditions Which Affect Dam** Eaton Brook Reservior Dam (NY 352), which is classified unsafe, is located 2.2± miles upstream.

6) **Area Downstream of Dam**

a. **Downstream Hazard (No. of Homes, Highways, etc.)** Approximately 10 buildings and three roads are within the dam failure flood hazard area

b. **Seepage, Unusual Growth** None observed

c. **Evidence of Movement Beyond Toe of Dam** None evident

d. **Condition of Downstream Channel** Good; presently stable, no aggradation or degradation

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

Principal spillway, auxiliary spillway and discharge conveyance channels

a. **General** Principal spillway and discharge conveyance channel handle normal flows while the auxiliary spillway and discharge conveyance channel convey undetermined additional flow

b. **Condition of Principal Spillway** Fair; severe deterioration of the concrete has occurred exposing steel reinforcing and creating voids in the weir

c. **Condition of** Auxiliary **Spillway** Fair; water is flowing beneath the 30 inch steel pipe and the inlet structure is badly silted.

d. **Condition of Discharge Conveyance Channel** Principal spillway: good condition, presently stable; auxiliary spillway: good condition, but overgrown.

8) Reservoir Drain/Outlet

Type: Pipe None **Conduit** None **Other** None

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 _____ Uncontrolled _____

Present Condition (Describe): _____

9) **Structural**

a. **Concrete Surfaces** Concrete of the auxiliary spillway inlet structure and the principal spillway weir has suffered severe deterioration.

b. **Structural Cracking** No evidence of any structural cracks

c. **Movement - Horizontal & Vertical Alignment (Settlement)** None observed

d. **Junctions with Abutments or Embankments** Concrete abutments at both ends of the principal spillway are severely eroded and deteriorated (See sketch on page B-10).

e. **Drains - Foundation, Joint, Face** None evident

f. **Water Passages, Conduits, Sluices** None observed

g. **Seepage or Leakage** No signs of seepage or leakage

h. **Joints - Construction, etc.** Not applicable

i. **Foundation** Inaccessible

j. **Abutments** See 9)d above

k. **Control Gates** None observed

l. **Approach & Outlet Channels** Not applicable

m. **Energy Dissipators (Plunge Pool, etc.)** None observed

n. **Intake Structures** Not applicable

o. **Stability** Appears to be stable

p. **Miscellaneous** No comments

10) Appurtenant Structures (Power House, Lock, Gatehouse, Other)

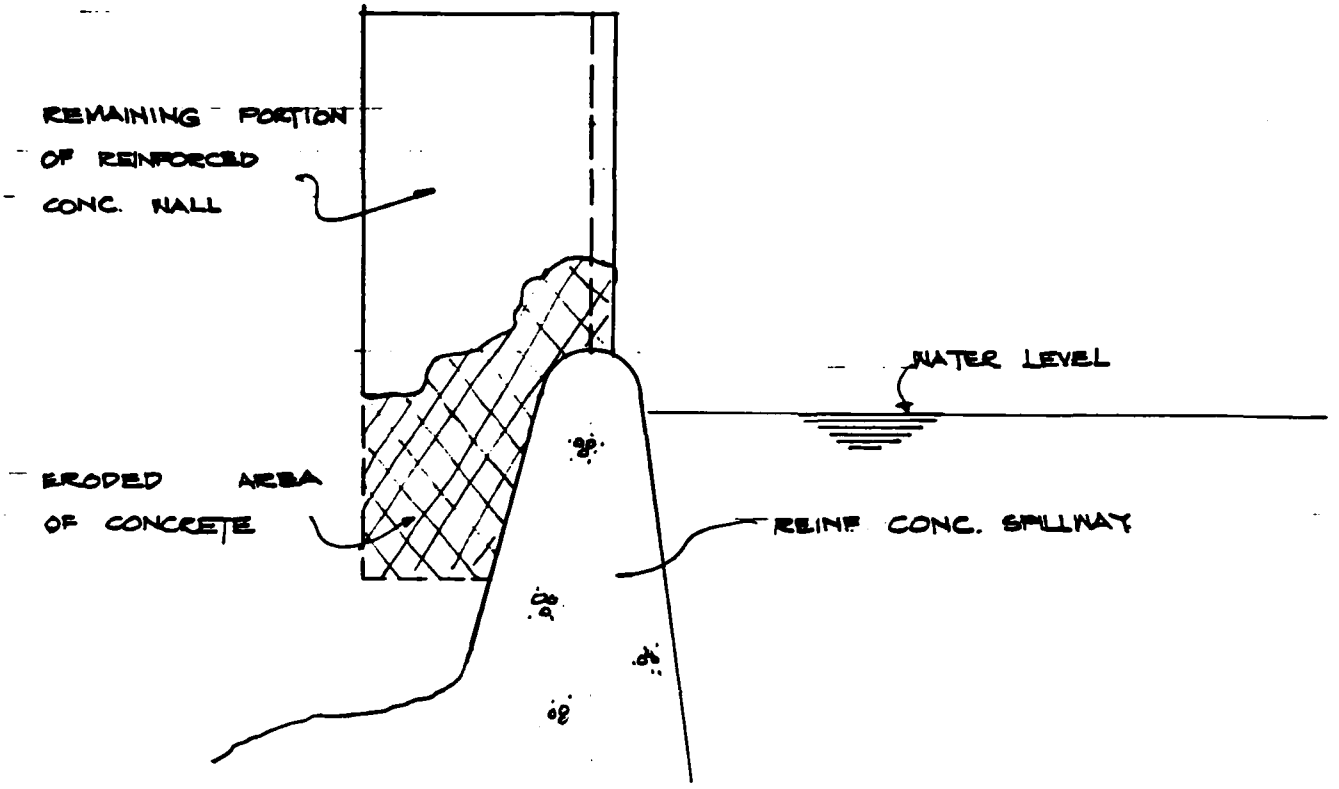
a. Description and Condition None observed

NAME OF DAM : CLAYTONS DAM.

FED. ID. NO : 1460

NOTE

EROSION IS SAME AT BOTH ENDS OF CONC. SPILLWAY.



SECTION AT PRINCIPAL SPILLWAY

APPENDIX C

HYDROLOGIC/HYDRAULIC ENGINEERING DATA AND COMPUTATIONS

CHECK LIST FOR DAMS
HYDROLOGIC AND HYDRAULIC
ENGINEERING DATA

AREA-CAPACITY DATA:

	Elevation (ft.)	Surface Area (acres)	Storage Capacity (acre-ft.)
1) Top of Dam	1307.0	15	130
2) Design High Water (Max. Design Pool)	--	--	--
3) Auxiliary Spillway Crest	Unknown	Unknown	Unknown
4) Pool Level with Flashboards	--	--	--
5) Principal Spillway Crest	1300.0	13	110

DISCHARGES:

	Volume (cfs)
1) Average Daily	Unknown
2) Principal Spillway @ Maximum High Water (Top of Dam)	1306
3) Auxiliary Spillway @ Maximum High Water (Top of Dam)	Unknown
4) Principal Spillway @ Emergency Spillway Crest	--
5) Low Level Outlet @ Principal Spillway Crest	--
6) Total (of all facilities) @ Maximum High Water	1306
7) Maximum Known Flood	Unknown
8) At Time of Inspection	6±

CREST: **ELEVATION:** 1307.0± (NGVD)

Type Earthen embankment

Width 12 feet **Length** 315 feet

Spillover Concrete spillway weir

Location Right abutment

SPILLWAY:

PRINCIPAL		AUXILIARY
1300.0 (NGVD)	**Elevation**	Unknown
Broad-crested weir	**Type**	Pipe
5+ feet	**Width**	--
	Type of Control	
Weir	**Uncontrolled**	Orifice
--	**Controlled**	--
None	**Type: (Flashboards; gate)**	None
One	**Number**	One
23.5 foot long weir	**Size/Length**	30 inch/80 feet
Concrete	**Invert Material**	Steel
Continuously	**Anticipated Length of Operating Service**	Unknown
Unknown	**Chute Length**	Unknown
Unknown	**Height Between Spillway Crest & Approach Channel Invert (Weir Flow)**	Unknown

Type:

Location:

Records:

Date Unknown

Max. Reading Unknown

FLOOD WATER CONTROL SYSTEM:

Warning System None in effect

Method of Controlled Releases (mechanisms) None

DRAINAGE AREA: 7190 acres = 11.23 square miles

DRAINAGE BASIN RUNOFF CHARACTERISTICS:

Land Use - Type Rural, agriculture

Terrain - Relief Rolling to hilly uplands

Surface - Soil Glacial till

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

Primarily open fields with scattered woodlands; glacial till soils; average watershed slope is 5 to 10 percent; a number of residential homes (West Eaton) and roadways.

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

Possible surface erosion from agricultural fields during fallow periods

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

None

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

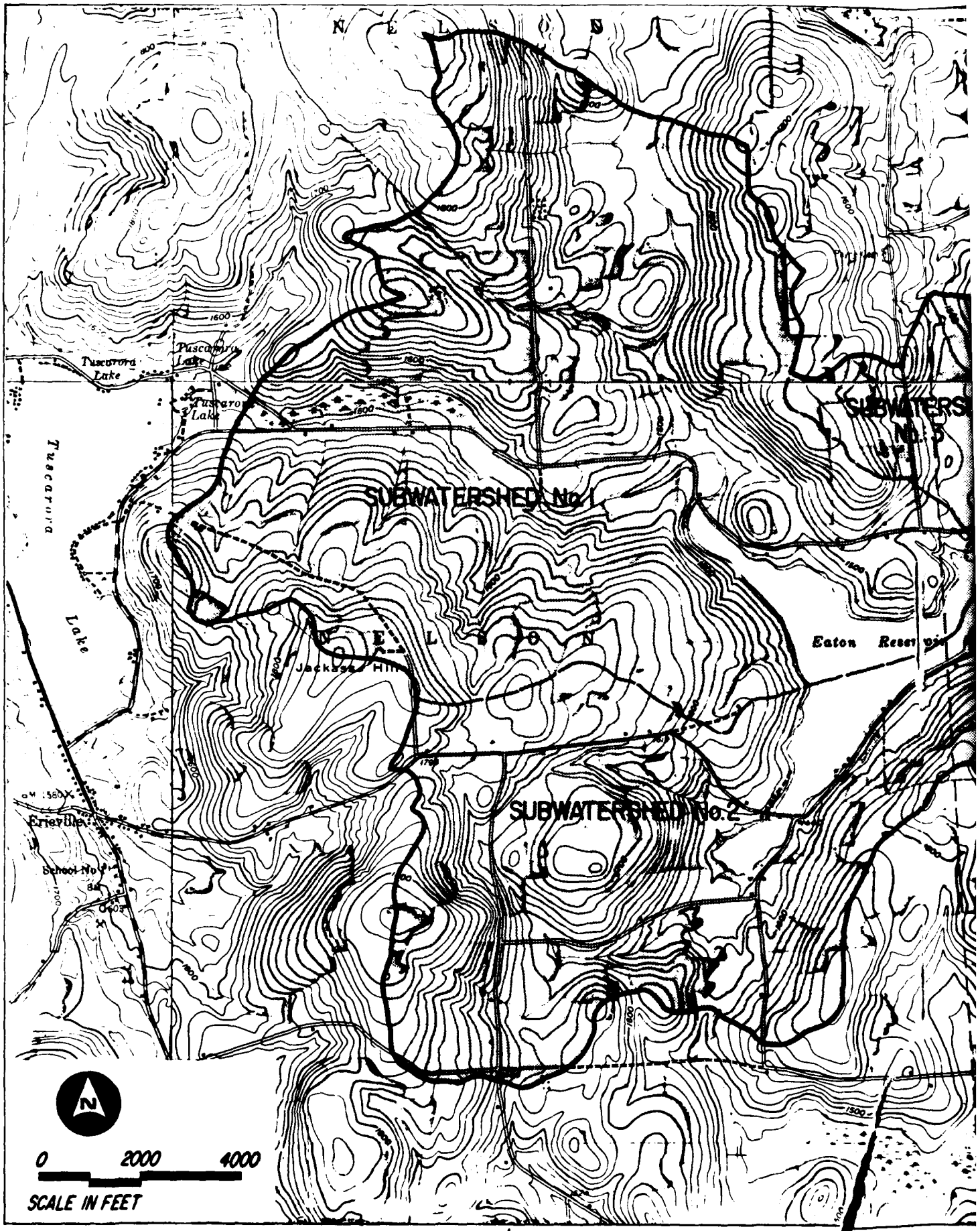
Location: None

Elevation:

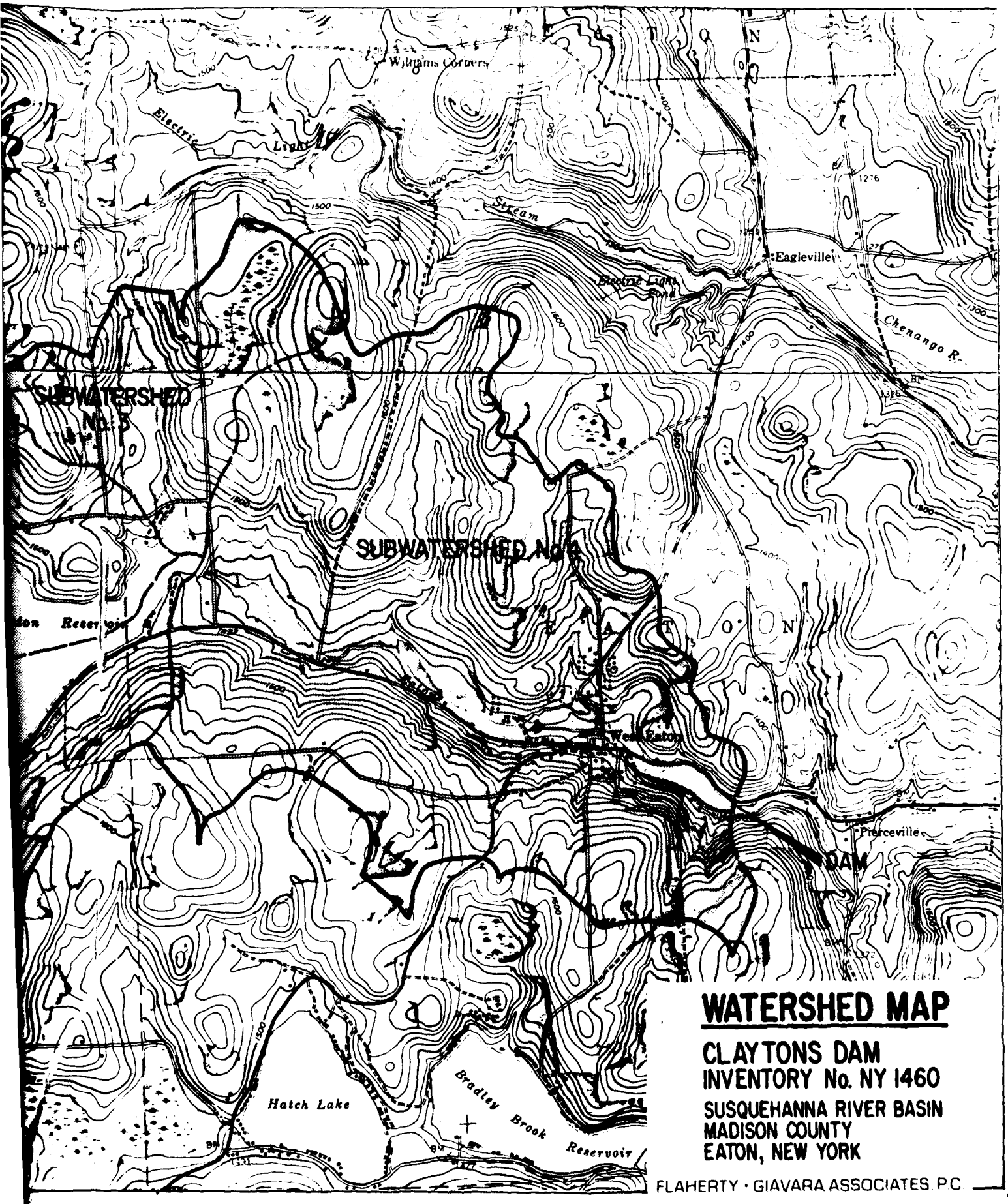
Reservoir:

Length @ Maximum Pool 2000± feet = 0.4 miles **(Miles)**

Length of Shoreline (@ Spillway Crest) 4300± feet = 0.8 miles **(Miles)**



SUBWATERSHED No.1
SUBWATERSHED No.2
SUBWATERSHED No.3
Tuscarora Lake
Tuscarora Lake
Tuscarora Lake
Tuscarora Lake
Jackass Hill
Eaton Reservoir
Erieville
School No.
0 2000 4000
SCALE IN FEET



WATERSHED MAP

CLAYTONS DAM
INVENTORY No. NY 1460

SUSQUEHANNA RIVER BASIN
MADISON COUNTY
EATON, NEW YORK

FLAHERTY · GIAVARA ASSOCIATES P.C.

CALCULATIONS

Watershed Data for HEC-1 Snyder Hydrograph

1) Route Through Eaton Reservoir

Time To Peak - Sub Watershed No.1

$L = 16{,}000$ ft $= 3.03$ miles
$L_c = 7{,}000$ ft $= 1.33$ miles
$C_T = 2.0$ for average slopes

$T_p = 2.0 (3.03 \times 1.33)^{0.3} = 3.04$ Hours

$t_r = \frac{T_p}{5.5} = \frac{3.04}{5.5} = 0.55$ ∴ USE $t_R = 0.5$

$t_{pR} = t_p + 0.25 (t_R - t_r)$

$= 3.04 + 0.25 (0.5 - 0.55)$

$= 3.03$ Hours

Time To Peak - Sub Watershed No. 2

$L = 10{,}000$ ft $= 1.89$ miles
$L_c = 5{,}000$ ft $= 0.95$ miles
$C_t = 2.0$ for average slopes

$T_p = 2.0 (1.89 \times 0.95)^{0.3} = 2.38$ Hours

$t_r = \frac{t_p}{5.5} = \frac{2.38}{5.5} = 0.43$ USE $t_R = 0.5$

$t_{pR} = t_p + 0.25 (t_R - t_r)$

$= 2.38 + 0.25 (0.5 - 0.43)$

$= 2.40$ Hours

Time To Peak - Sub Watershed No. 3

$L = 7{,}000$ ft $= 1.33$ miles
$L_c = 3{,}000$ ft $= 0.57$ miles
$C_T = 2.0$ for average slopes

$$T_P = C_t (L L_c)^{0.3}$$

$$T_P = 2.0(1.33 \times 0.57)^{0.3} = 1.84 \text{ Hours}$$

$$t_r = \frac{T_P}{5.5} = \frac{1.84}{5.5} = 0.33$$

USE $t_R = 0.5$

$$t_{PR} = t_p + 0.25(t_R - t_r)$$

$$= 1.84 + 0.25(0.5 - 0.33)$$

$$= 1.88 \text{ Hours}$$

ROUTE THROUGH EATON RESERVOIR CONT.

2) % IMPERVIOUS

SUB WATERSHED NO. 1

ROADS 25,000 LF x 25' = 625,000 ft²
HOUSES 20 @ 1000 ft² = 20,000 ft²
645,000 ft²

645,000 ft² = 14.8 acres

$\frac{14.8}{2736.5} = 0.005$

SUB WATERSHED NO. 2

ROADS 30,000 LF x 25 ft = 759,000 ft²
HOUSES 40 @ 1000 ft² = 49000 ft²
790,000 ft²

790,000 ft² = 18.1 acres

$\frac{18.1}{1680.4} = 0.011$

SUB WATERSHED NO. 3

ROADS 11,000 LF x 25 ft = 275,000 ft²
HOUSES 18 @ 1000 ft² = 18,000 ft²
293,000 ft²

293,000 ft² = 6.7 acres

$\frac{6.7}{505.1} = 0.013$

3) Cp = 0.63 FOR HIGHLAND AREA

FLAHERTY-GIAVARA ASSOCIATES
ENVIRONMENTAL DESIGN CONSULTANTS
ONE COLUMBUS PLAZA, NEW HAVEN, CONN. 06510/203/789-1260

ROUTE THROUGH EATON RESERVOIR CONT.

4) WATERSHED AREA

SUB WATERSHED NO. 1

$2792.0\ Ac / 640 = 4.37$ Square miles

SUB WATERSHED NO. 2

$1735.9\ Ac / 640 = 2.71$ Square miles

SUB WATERSHED NO. 3

$560.6\ Ac / 640 = 0.88$ Square miles

WATERSHED DATA FOR HEC-1 SNYDER HYDROGRAPH CONT. TO CLAYTON'S DAM

5) TIME TO PEAK $T_P = C_T (L L_c)^{0.3}$

$L = 16{,}000' = 3.03$ miles
$L_c = 3{,}500' = 0.66$ miles
$C_T = 2.0$ for average slopes

$T_P = 2.0 (3.03 \times 0.66)^{0.3} = 2.46$ HOURS

$t_r = \frac{t_p}{5.5} = \frac{2.46}{5.5} = 0.45$ USE $t_R = 0.5$

$t_{pR} = t_p + 0.25 (t_R - t_R)$
$= 2.46 + 0.25 (0.5 - 0.45)$
$= 2.47$ HOURS

6) $C_P = 0.63$ for HIGHLAND AREA

7) % IMPERVIOUS

ROADS 42,000 LF $\times$ 25' = 1,050,000 ft^2
HOUSES ± 90 @ 1000 ft^2 = 90,000 ft^2
1,140,000 ft^2

1,140,000 ft^2 = 26.2 acres

$\frac{26.2 \text{ acres}}{2268.1 \text{ acres}} = 1.16\%$

8) WATERSHED AREA

2268.1 acres / 640 = 3.54 Square miles

BASED ON 1" = 2000' USGS Map

9) Rainfall Data - (From Hydrometeorological Report No. 33)

24 Hour PMP = 20.0 inches for 200 square miles

Duration (Hours)	Adj Factor %
6	111
12	122
24	133
48	143

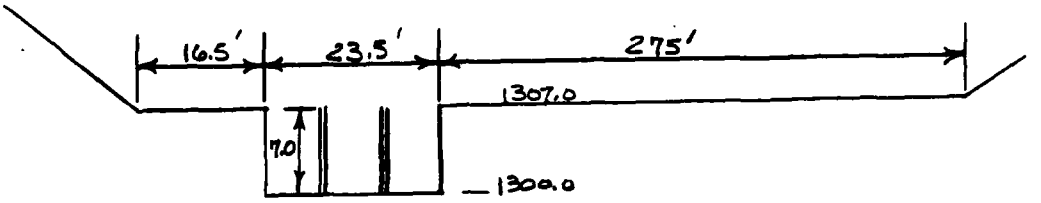
PROJECT Corps Dams
NY 1460

FLAHERTY-GIAVARA ASSOCIATES
ENVIRONMENTAL DESIGN CONSULTANTS
ONE COLUMBUS PLAZA, NEW HAVEN, CONN 06510/203/789-1260

SHEET NO. 7 OF 9
BY RAC DATE 6-2-81
CHK'D. BY TLW DATE 6-22-81

Stage Discharge Data

NTS



Stage	$Q=(3)LH^{1.5}$	$Q=(2.5)LH^{1.5}$	Discharge
1300			0
1301	$(3)(23.5)(1)^{1.5}$		70.5
1302	$(3)(23.5)(2)^{1.5}$		199.4
1303	$(3)(23.5)(3)^{1.5}$		366.3
1304	$(3)(23.5)(4)^{1.5}$		564.0
1305	$(3)(23.5)(5)^{1.5}$		788.2
1306	$(3)(23.5)(6)^{1.5}$		1036.1
1307	$(3)(23.5)(7)^{1.5}$	—	1305.7
1308	$(3)(23.5)(8)^{1.5}$	$(2.5)(291.5)(1)^{1.5}$	2324.0
1309	$(3)(23.5)(9)^{1.5}$	$(2.5)(291.5)(2)^{1.5}$	3964.7
1310	$(3)(23.5)(10)^{1.5}$	$(2.5)(291.5)(3)^{1.5}$	6016.1

PROJECT CORPS DAMS
NY 1460
CLAYTONS DAM

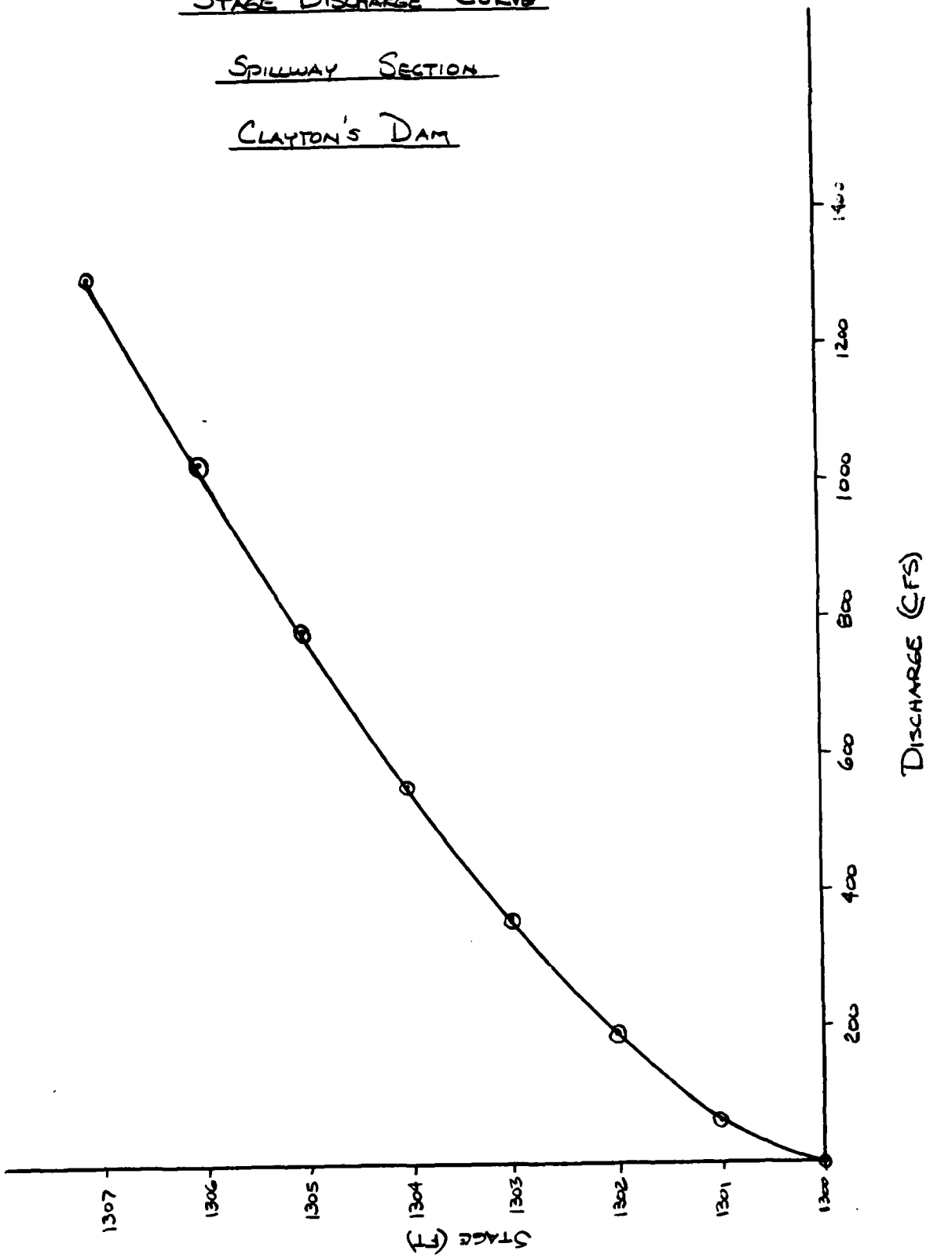
FLAHERTY-GIAVARA ASSOCIATES
ENVIRONMENTAL DESIGN CONSULTANTS
ONE COLUMBUS PLAZA, NEW HAVEN, CONN. 06510/203/789-1260

SHEET NO. 8 OF 9
BY RAC DATE 6-8-81
CHK'D. BY TLW DATE 6-22-81

STAGE DISCHARGE CURVE

SPILLWAY SECTION

CLAYTON'S DAM



PROJECT Corps Dams
NY 460
Clayton's Dam

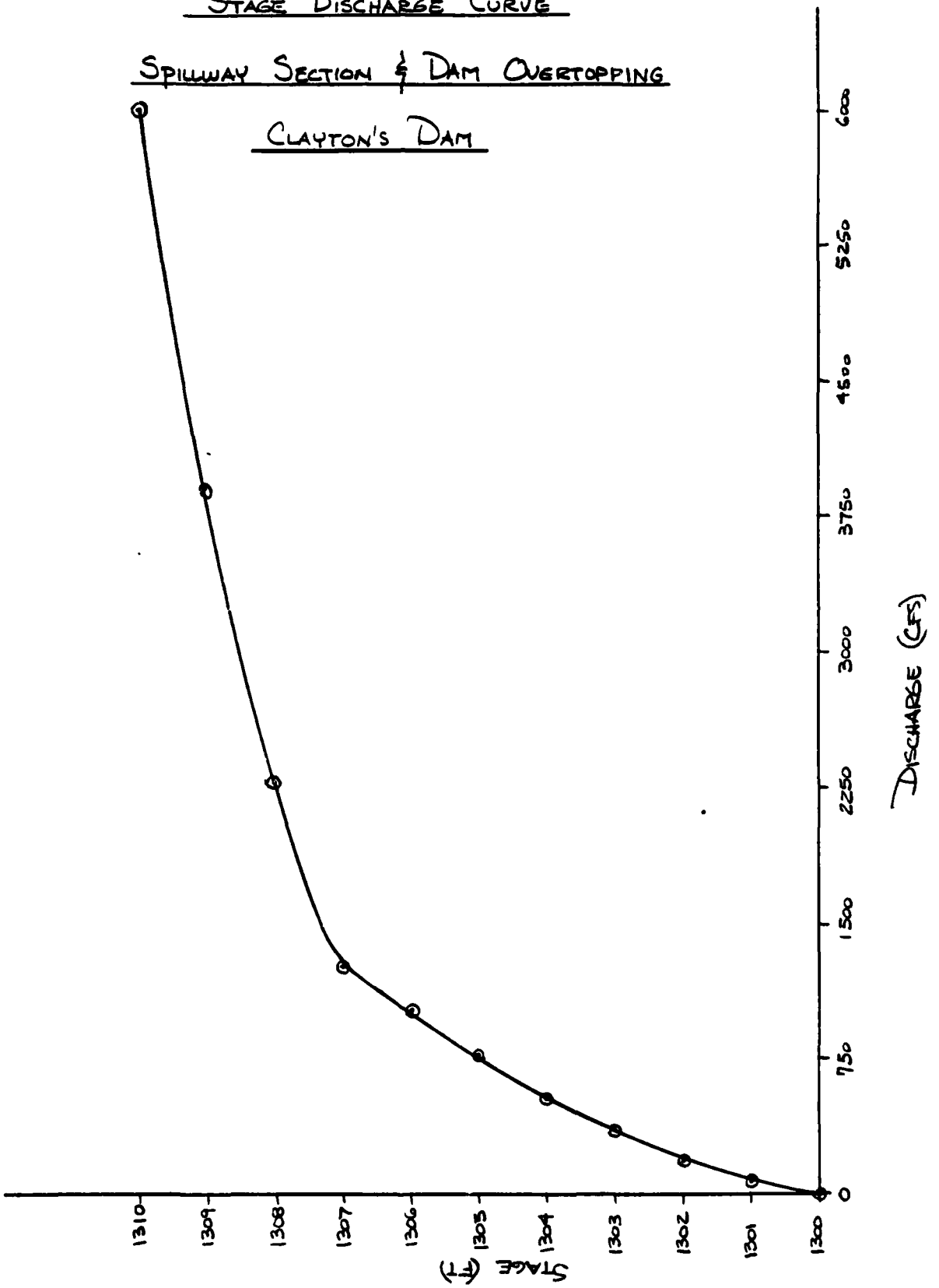
FLAHERTY-GIAVARA ASSOCIATES
ENVIRONMENTAL DESIGN CONSULTANTS
ONE COLUMBUS PLAZA, NEW HAVEN, CONN. 06510/203/789-1260

SHEET NO. 9 OF 9
BY RAC DATE 6-8-81
CHK'D. BY TLW DATE 6-22-81

Stage Discharge Curve

Spillway Section & Dam Overtopping

Clayton's Dam



HEC-1 FLOOD HYDROGRAPH COMPUTATIONS

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FLAHERTY GIAVARA ASSOCIATES, P.C.
**********************************
FLOOD HYDROGRAPH PACKAGE (HEC-1)
DAM SAFETY VERSION     JULY 1978
  LAST MODIFICATION  26 FEB 79
**********************************
     1                A1  NATIONAL DAM INSPECTION PROGRAM, PHASE I REPORT, CORPS OF ENGINEERS - NEW YORK DISTRICT
     2                A2  DAM INVENTORY NO. NY 1460, CLAYTON'S DAM, MADISON COUNTY, NEW YORK, APRIL 21, 1981
     3                A3  PREPARED BY FLAHERTY GIAVARA ASSOCIATES, P.C., ONE COLUMBUS PLAZA, NEW HAVEN, CONNECTICUT
     4                B     120       0      30       0       0       0       0       2       0       0
     5                B1      5
     6                J       1       9       1
     7                J1  0.10    0.15    0.16    0.17    0.18    0.19    0.20    0.50    1.00
     8                K       0       1                               0       1       0
     9                K1  INFLOW HYDROGRAPH, SNYDER METHOD - EATON RESERVOIR (SUBWATERSHED NO. 1)
    10                M       1       1    4.37            7.96       0                       1
    11                P       0    20.0     111     122     133     143
    12                T                                                       1     0.1           0.005
    13                W    3.03    0.63
    14                X    -2.0   -0.10     1.5
    15                K       0       1                       0       0       1       0
    16                K1  INFLOW HYDROGRAPH, SNYDER METHOD - EATON RESERVOIR (SUBWATERSHED NO. 2)
    17                M       1       1    2.71            7.96       0                       1
    18                P       0    20.0     111     122     133     143
    19                T                                                       1     0.1           0.011
    20                W    2.40    0.63
    21                X    -2.0   -0.10     1.5
    22                K       0       1                       0       0       1       0
    23                K1  INFLOW HYDROGRAPH, SNYDER METHOD - EATON RESERVOIR (SUBWATERSHED NO. 3)
    24                M       1       1    0.88            7.96       0                       1
    25                P       0    20.0     111     122     133     143
    26                T                                                       1     0.1           0.013
    27                W    1.88    0.63
    28                X    -2.0   -0.10     1.5
    29                K       3       1                       0       0       1       0
    30                K1  INFLOW HYDROGRAPHS, COMBINING EATON RESERVOIR SUBWATERSHEDS NO. 1, 2 AND 3
    31                K       1       2                       0       0       1       0
    32                K1  EATON RESERVOIR ROUTING - MODIFIED PULS METHOD
    33                Y                       1       1
    34                Y1      1                                               0      -1
    35                Y41434.9  1435.0  1436.0  1437.0  1438.0  1439.0  1440.0  1441.0  1442.0  1443.0
    36                Y41444.0  1445.0
    37                Y5   36.8    37.9   124.2   237.3   382.6   553.5   747.2   960.6  1192.7  1441.7
    38                Y51706.6  1986.3
    39                $A 275.0   346.0   525.0
    40                $E1434.9  1442.0  1460.0
    41                $$1434.9
    42                $D1442.0     2.5     1.5   800.0
    43                K       0       2                       0       0       1       0
    44                K1  INFLOW HYDROGRAPH, SNYDER METHOD - CLAYTON'S DAM
    45                M       1       1    3.54                    0                       1
    46                P       0    20.0     111     122     133     143
    47                T                                                       1     0.1          0.0116
    48                W    2.47    0.63
    49                X    -2.0   -0.10     1.5
    50                K       2       2                       0       0       1       0
    51                K1  OUTFLOW FROM EATON RESERVOIR COMBINED WITH INFLOW AT CLAYTON'S DAM
    52                K       1       2                       0       0       1       0
```

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      53                K1  CLAYTON'S DAM ROUTING MODIFIED PULS METHOD
      54                Y                    1                1
      55                Y1                                                  0          -1
      56                Y41300.0  1301.0  1302.0  1303.0  1304.0  1305.0  1306.0  1307.0  1308.0  1309.0
      57                Y41310.0
      58                Y5     0    70.5   199.4   366.3   564.0   788.2  1036.1  1305.7  1595.2  1903.5
      59                Y52229.4
      60                $5   110     130     528
      61                $E1300.0  1307.0  1320.0
      62                $$1300.0
      63                $D1307.0     2.5     1.5   291.5
      64                K     99
                                PREVIEW OF SEQUENCE OF STREAM NETWORK CALCULATIONS
                                RUNOFF HYDROGRAPH AT            1
                                RUNOFF HYDROGRAPH AT            1
                                RUNOFF HYDROGRAPH AT            1
                                COMBINE  3 HYDROGRAPHS AT       1
                                ROUTE HYDROGRAPH TO             2
                                RUNOFF HYDROGRAPH AT            2
                                COMBINE  2 HYDROGRAPHS AT       2
                                ROUTE HYDROGRAPH TO             2
                                END OF NETWORK

     ********************************
     FLOOD HYDROGRAPH PACKAGE (HEC-1)
     DAM SAFETY VERSION      JULY 1978
       LAST MODIFICATION  26 FEB 79
     ********************************

     RUN  DATE: 8/22/
          TIME: 9:57 AM

                    NATIONAL DAM INSPECTION PROGRAM, PHASE I REPORT, CORPS OF ENGINEERS - NEW YORK DISTRICT
                    DAM INVENTORY NO. NY 1460, CLAYTON'S DAM, MADISON COUNTY, NEW YORK, APRIL 21, 1981
                    PREPARED BY FLAHERTY GIAVARA ASSOCIATES, P.C., ONE COLUMBUS PLAZA, NEW HAVEN, CONNECTICUT

                                                JOB SPECIFICATION
                          NQ      NHR     NMIN     IDAY     IHR     IMIN    METRC     IPLT     IPRT    NSTAN
                         120        0       30        0       0        0        0        2        0        0
                                                   JOPER      NWT    LROPT    TRACE
                                                       5        0        0        0

                                          MULTI-PLAN ANALYSES TO BE PERFORMED
                                                NPLAN= 1 NRTIO= 9 LRTIO= 1
                              RTIOS=   0.10    0.15    0.16    0.17    0.18    0.19    0.20    0.50    1.00

     **********          **********          **********          **********          **********

                                          SUB-AREA RUNOFF COMPUTATION

                    INFLOW HYDROGRAPH, SNYDER METHOD - EATON RESERVOIR (SUBWATERSHED NO. 1)
                                  ISTAQ    ICOMP    IECON    ITAPE     JPLT     JPRT    INAME   ISTAGE    IAUTO
                                      1        0        0        0        0        0        1        0        0
```

HYDROGRAPH DATA

IHYDG	IUHG	TAREA	SNAP	TRSDA	TRSPC	RATIO	ISNOW	ISAME	LOCAL
1	1	4.37	0.00	7.96	0.00	0.000	0	1	0

PRECIP DATA

SPFE	PMS	R6	R12	R24	R48	R72	R96
0.00	20.00	111.00	122.00	133.00	143.00	0.00	0.00

TRSPC COMPUTED BY THE PROGRAM IS 0.800

LOSS DATA

LROPT	STRKR	DLTKR	RTIOL	ERAIN	STRKS	RTIOK	STRTL	CNSTL	ALSMX	RTIMP
0	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.10	0.00	0.00

UNIT HYDROGRAPH DATA
TP= 3.03 CP=0.63 NTA= 0

RECESSION DATA
STRTG= -2.00 GRCSN= -0.10 RTIOR= 1.50

APPROXIMATE CLARK COEFFICIENTS FROM GIVEN SNYDER CP AND TP ARE TC= 6.93 AND R= 5.41 INTERVALS

UNIT HYDROGRAPH 33 END-OF-PERIOD ORDINATES, LAG= 3.01 HOURS, CP= 0.63 VOL= 1.00

37.	135.	267.	409.	525.	589.	588.	522.	434.	360.
299.	249.	207.	172.	143.	119.	98.	82.	68.	56.
47.	39.	32.	27.	22.	19.	15.	13.	11.	9.
7.	6.	5.							

END-OF-PERIOD FLOW

MO. DA HR. MN	PERIOD	RAIN	EXCS	LOSS	COMP Q	MO. DA HR. MN	PERIOD	RAIN	EXCS	LOSS	COMP Q
1.01 0.30	1	0.00	0.00	0.00	8.	1.02 6.30	61	0.15	0.10	0.05	47.
1.01 1.00	2	0.00	0.00	0.00	8.	1.02 7.00	62	0.15	0.10	0.05	61.
1.01 1.30	3	0.00	0.00	0.00	8.	1.02 7.30	63	0.15	0.10	0.05	86.
1.01 2.00	4	0.00	0.00	0.00	7.	1.02 8.00	64	0.15	0.10	0.05	122.
1.01 2.30	5	0.00	0.00	0.00	7.	1.02 8.30	65	0.15	0.10	0.05	168.
1.01 3.00	6	0.00	0.00	0.00	7.	1.02 9.00	66	0.15	0.10	0.05	221.
1.01 3.30	7	0.00	0.00	0.00	7.	1.02 9.30	67	0.15	0.10	0.05	273.
1.01 4.00	8	0.00	0.00	0.00	6.	1.02 10.00	68	0.15	0.10	0.05	319.
1.01 4.30	9	0.00	0.00	0.00	6.	1.02 10.30	69	0.15	0.10	0.05	357.
1.01 5.00	10	0.00	0.00	0.00	6.	1.02 11.00	70	0.15	0.10	0.05	389.
1.01 5.30	11	0.00	0.00	0.00	6.	1.02 11.30	71	0.15	0.10	0.05	416.
1.01 6.00	12	0.00	0.00	0.00	5.	1.02 12.00	72	0.15	0.10	0.05	438.
1.01 6.30	13	0.01	0.00	0.01	5.	1.02 12.30	73	0.87	0.84	0.05	484.
1.01 7.00	14	0.01	0.00	0.01	5.	1.02 13.00	74	0.89	0.84	0.05	599.
1.01 7.30	15	0.01	0.00	0.01	5.	1.02 13.30	75	1.07	1.02	0.05	817.
1.01 8.00	16	0.01	0.00	0.01	5.	1.02 14.00	76	1.07	1.02	0.05	1155.
1.01 8.30	17	0.01	0.00	0.01	5.	1.02 14.30	77	1.33	1.28	0.05	1610.
1.01 9.00	18	0.01	0.00	0.01	4.	1.02 15.00	78	1.33	1.28	0.05	2163.
1.01 9.30	19	0.01	0.00	0.01	4.	1.02 15.30	79	1.62	1.57	0.05	2780.
1.01 10.00	20	0.01	0.00	0.01	4.	1.02 16.00	80	5.13	5.08	0.05	3554.
1.01 10.30	21	0.01	0.00	0.01	4.	1.02 16.30	81	1.24	1.19	0.05	4532.
1.01 11.00	22	0.01	0.00	0.01	4.	1.02 17.00	82	1.24	1.19	0.05	5583.
1.01 11.30	23	0.01	0.00	0.01	4.	1.02 17.30	83	0.98	0.93	0.05	6580.
1.01 12.00	24	0.01	0.00	0.01	4.	1.02 18.00	84	0.98	0.93	0.05	7357.
1.01 12.30	25	0.07	0.00	0.07	3.	1.02 18.30	85	0.09	0.04	0.05	7771.
1.01 13.00	26	0.07	0.00	0.07	3.	1.02 19.00	86	0.09	0.04	0.05	7738.
1.01 13.30	27	0.08	0.00	0.08	3.	1.02 19.30	87	0.09	0.04	0.05	7255.
1.01 14.00	28	0.08	0.00	0.08	3.	1.02 20.00	88	0.09	0.04	0.05	6517.
1.01 14.30	29	0.10	0.00	0.10	3.	1.02 20.30	89	0.09	0.04	0.05	5713.
1.01 15.00	30	0.10	0.00	0.10	4.	1.02 21.00	90	0.09	0.04	0.05	4901.

1.01	19.30	31	0.12	0.00	0.12	4.	1.02	21.30	91	0.09	0.04	0.05	4137.
1.01	16.00	32	0.39	0.16	0.22	10.	1.02	22.00	92	0.09	0.04	0.05	3474.
1.01	16.30	33	0.09	0.04	0.05	28.	1.02	22.30	93	0.09	0.04	0.05	2923.
1.01	17.00	34	0.09	0.04	0.05	55.	1.02	23.00	94	0.09	0.04	0.05	2464.
1.01	17.30	35	0.07	0.02	0.05	87.	1.02	23.30	95	0.09	0.04	0.05	2083.
1.01	18.00	36	0.07	0.02	0.05	123.	1.03	0.00	96	0.09	0.04	0.05	1767.
1.01	18.30	37	0.01	0.00	0.01	150.	1.03	0.30	97	0.00	0.00	0.00	1503.
1.01	19.00	38	0.01	0.00	0.01	164.	1.03	1.00	98	0.00	0.00	0.00	1279.
1.01	19.30	39	0.01	0.00	0.01	162.	1.03	1.30	99	0.00	0.00	0.00	1087.
1.01	20.00	40	0.01	0.00	0.01	148.	1.03	2.00	100	0.00	0.00	0.00	921.
1.01	20.30	41	0.01	0.00	0.01	131.	1.03	2.30	101	0.00	0.00	0.00	777.
1.01	21.00	42	0.01	0.00	0.01	112.	1.03	3.00	102	0.00	0.00	0.00	746.
1.01	21.30	43	0.01	0.00	0.01	94.	1.03	3.30	103	0.00	0.00	0.00	718.
1.01	22.00	44	0.01	0.00	0.01	79.	1.03	4.00	104	0.00	0.00	0.00	688.
1.01	22.30	45	0.01	0.00	0.01	65.	1.03	4.30	105	0.00	0.00	0.00	661.
1.01	23.00	46	0.01	0.00	0.01	55.	1.03	5.00	106	0.00	0.00	0.00	634.
1.01	23.30	47	0.01	0.00	0.01	46.	1.03	5.30	107	0.00	0.00	0.00	607.
1.02	0.00	48	0.01	0.00	0.01	38.	1.03	6.00	108	0.00	0.00	0.00	585.
1.02	0.30	49	0.06	0.01	0.05	32.	1.03	6.30	109	0.00	0.00	0.00	562.
1.02	1.00	50	0.06	0.01	0.05	28.	1.03	7.00	110	0.00	0.00	0.00	539.
1.02	1.30	51	0.06	0.01	0.05	26.	1.03	7.30	111	0.00	0.00	0.00	518.
1.02	2.00	52	0.06	0.01	0.05	26.	1.03	8.00	112	0.00	0.00	0.00	497.
1.02	2.30	53	0.06	0.01	0.05	28.	1.03	8.30	113	0.00	0.00	0.00	478.
1.02	3.00	54	0.06	0.01	0.05	31.	1.03	9.00	114	0.00	0.00	0.00	459.
1.02	3.30	55	0.06	0.01	0.05	34.	1.03	9.30	115	0.00	0.00	0.00	440.
1.02	4.00	56	0.06	0.01	0.05	37.	1.03	10.00	116	0.00	0.00	0.00	423.
1.02	4.30	57	0.06	0.01	0.05	39.	1.03	10.30	117	0.00	0.00	0.00	406.
1.02	5.00	58	0.06	0.01	0.05	41.	1.03	11.00	118	0.00	0.00	0.00	390.
1.02	5.30	59	0.06	0.01	0.05	43.	1.03	11.30	119	0.00	0.00	0.00	374.
1.02	6.00	60	0.06	0.01	0.05	44.	1.03	12.00	120	0.00	0.00	0.00	360.
									SUM	22.88	19.19	3.69	114623.
										(581.)	(488.)	(94.)	(2845.76)

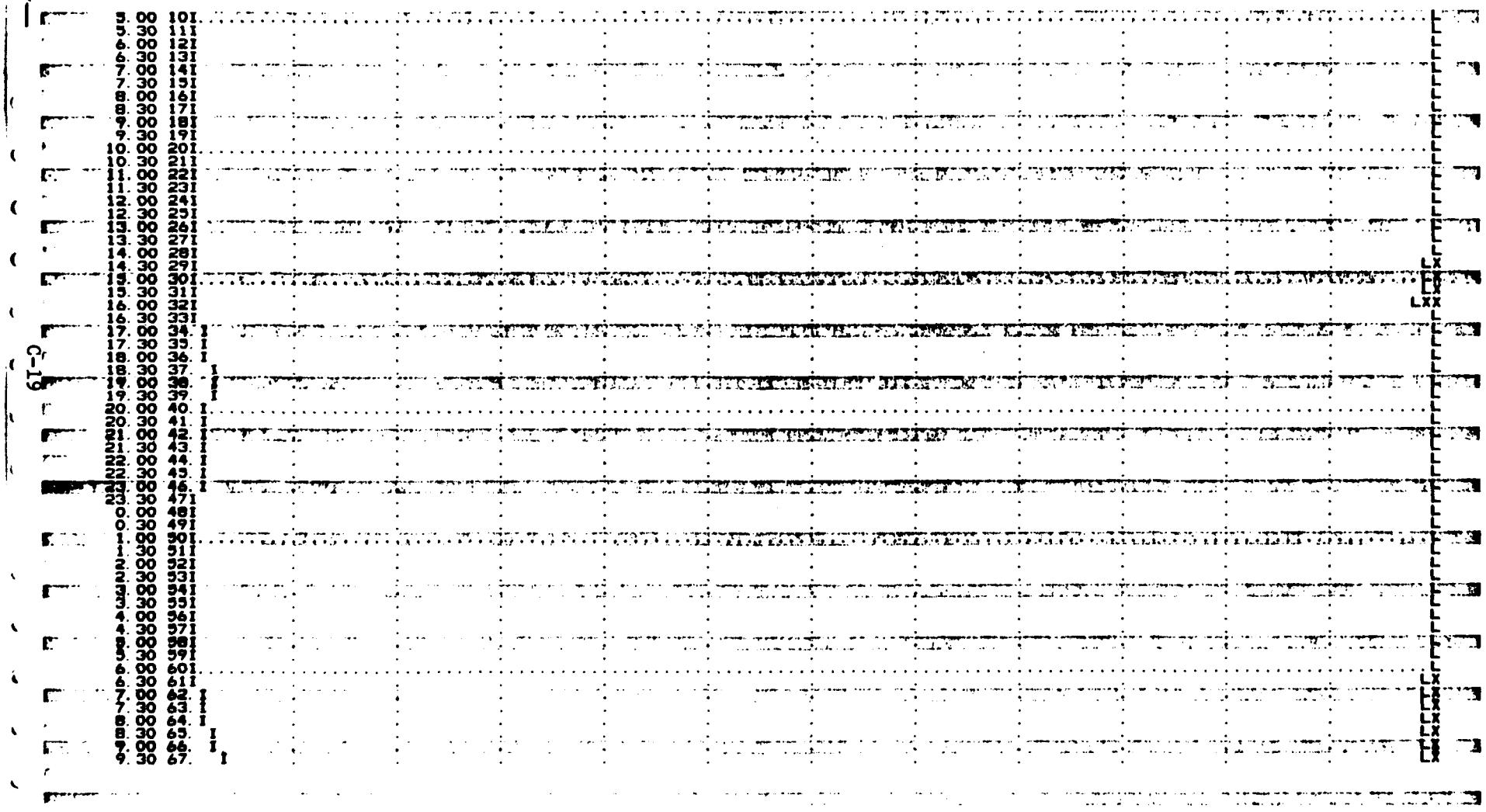
	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	7771.	5967.	2286.	954.	114441.
CMS	220.	169.	65.	27.	3241.
INCHES		12.70	19.46	20.30	20.30
MM		322.60	494.41	515.64	515.64
AC-FT		2959.	4534.	4729.	4729.
THOUS CU M		3649.	5593.	5833.	5833.

OVF

STATION 1

INFLOW(I), OUTFLOW(O) AND OBSERVED FLOW(#)

	0.	1000.	2000.	3000.	4000.	5000.	6000.	7000.	8000.	0.	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	PRECIP(L) AND EXCESS(X) 4.	2.	0.
0.30	11												
1.00	21												
1.30	31												
2.00	41												
2.30	51												
3.00	61												
3.30	71												
4.00	81												
4.30	91												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6.00 121
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8.00 161
8.30 171
9.00 181
9.30 191
10.00 201
10.30 211
11.00 221
11.30 231
12.00 241
12.30 251
13.00 261
13.30 271
14.00 281
14.30 291
15.00 301
15.30 311
16.00 321
16.30 331
17.00 34. I
17.30 35. I
18.00 36. I
18.30 37. I
19.00 38. I
19.30 39. I
20.00 40. I
20.30 41. I
21.00 42. I
21.30 43. I
22.00 44. I
22.30 45. I
23.00 46. I
23.30 471
0.00 481
0.30 491
1.00 501
1.30 511
2.00 521
2.30 531
3.00 541
3.30 551
4.00 561
4.30 571
5.00 581
5.30 591
6.00 601
6.30 611
7.00 62. I
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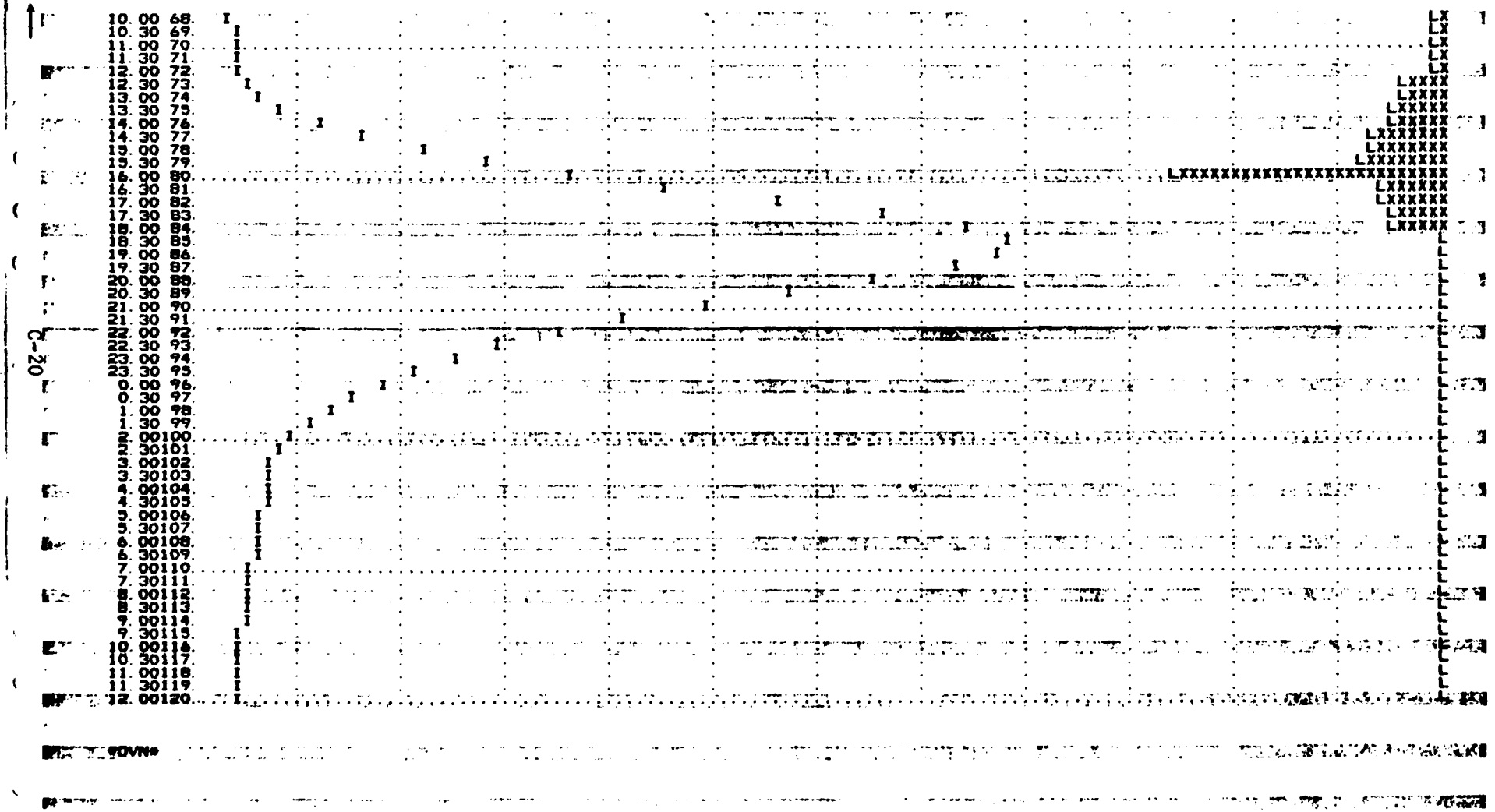
8.00 64. I
8.30 65. I
9.00 66. I
9.30 67. I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14.30 77.
15.00 78.
15.30 79.
16.00 80.
16.30 81.
17.00 82.
17.30 83.
18.00 84.
18.30 85.
19.00 86.
19.30 87.
20.00 88.
20.30 89.
21.00 90.
21.30 91.
22.00 92.
22.30 93.
23.00 94.
23.30 95.
0.00 96.
0.30 97.
1.00 98.
1.30 99.
2.00100.
2.30101.
3.00102.
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4.00104.
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5.00106.
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7.30111.
8.00112.
8.30113.
9.00114.
9.30115.
10.00116.
10.30117.
11.00118.
11.30119.
12.00120.
90VN*

HYDROGRAPH AT STA 1 FOR PLAN 1, RTIO 1

1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	1.	3.	6.	9.	12.	15.	16.	16.	15.
13.	11.	9.	8.	7.	5.	5.	4.	3.	3.
3.	3.	3.	3.	3.	4.	4.	4.	4.	4.
5.	6.	9.	12.	17.	22.	27.	32.	36.	39.
42.	44.	48.	60.	82.	115.	161.	216.	278.	339.
453.	558.	658.	736.	777.	774.	725.	652.	571.	490.
414.	347.	292.	246.	208.	177.	150.	128.	109.	92.
78.	75.	72.	69.	66.	63.	61.	58.	56.	54.
52.	50.	48.	46.	44.	42.	41.	39.	37.	36.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	777.	597.	229.	95.	11444.
CMS	22.	17.	6.	3.	324.
INCHES		1.27	1.99	2.03	2.03
MM		32.26	49.44	51.56	51.56
AC-FT		296.	453.	473.	473.
THOUS CU M		369.	559.	583.	583.

HYDROGRAPH AT STA 1 FOR PLAN 1, RTIO 2

1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	4.	8.	13.	18.	23.	25.	24.	22.
20.	17.	14.	12.	10.	8.	7.	6.	5.	4.
4.	4.	4.	5.	5.	6.	6.	6.	6.	7.
7.	9.	13.	18.	25.	33.	41.	48.	54.	58.
62.	66.	73.	90.	123.	173.	242.	324.	417.	533.
680.	837.	987.	1104.	1166.	1161.	1088.	978.	857.	735.
621.	521.	438.	370.	312.	263.	223.	192.	163.	138.
117.	112.	107.	103.	99.	95.	91.	88.	84.	81.
78.	75.	72.	69.	66.	63.	61.	58.	56.	54.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	1166.	895.	343.	143.	17166.
CMS	33.	25.	10.	4.	486.
INCHES		1.91	2.72	3.03	3.03
MM		48.39	74.16	77.35	77.35
AC-FT		444.	680.	709.	709.
THOUS CU M		547.	839.	875.	875.

HYDROGRAPH AT STA 1 FOR PLAN 1, RTIO 3

1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	2.	4.	9.	14.	20.	24.	26.	26.	24.
21.	18.	15.	13.	10.	9.	7.	6.	5.	5.
4.	4.	4.	5.	5.	6.	6.	7.	7.	7.
8.	10.	14.	20.	27.	35.	44.	51.	57.	62.
67.	70.	77.	96.	131.	185.	258.	346.	445.	569.
725.	893.	1053.	1177.	1243.	1238.	1161.	1043.	914.	784.
662.	556.	468.	394.	333.	283.	240.	205.	174.	147.
124.	119.	115.	110.	106.	101.	97.	94.	90.	86.

83.	80.	76.	73.	70.	68.	65.	62.	60.	58.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	2.	5.	9.	15.	21.	26.	28.	28.	25.
4.	4.	5.	5.	6.	6.	7.	7.	7.	8.
8.	10.	15.	21.	29.	37.	46.	54.	61.	66.
71.	74.	82.	102.	139.	196.	274.	368.	473.	604.
771.	747.	1119.	1291.	1321.	1316.	1233.	1100.	971.	833.
703.	591.	497.	419.	354.	300.	255.	217.	185.	157.
132.	127.	122.	117.	112.	108.	104.	99.	95.	92.
88.	85.	81.	78.	75.	72.	69.	66.	64.	61.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	1321.	1014.	389.	162.	19455.
CMS	37.	29.	11.	5.	551.
INCHES		2.16	3.31	3.43	3.43
MM		54.84	84.05	87.66	87.66
AC-FT		503.	771.	804.	804.
THOUS CU M		620.	951.	992.	992.

HYDROGRAPH AT STA 1 FOR PLAN 1, RTIO 5

2.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	2.	5.	10.	16.	22.	27.	30.	29.	27.
24.	20.	17.	14.	12.	10.	8.	7.	6.	5.
9.	9.	9.	6.	6.	7.	7.	7.	8.	8.
9.	11.	15.	22.	30.	40.	49.	57.	64.	70.
73.	79.	87.	108.	147.	208.	270.	389.	500.	640.
816.	1005.	1184.	1324.	1399.	1393.	1306.	1173.	1028.	882.
745.	625.	526.	444.	379.	318.	270.	230.	196.	166.
140.	134.	129.	124.	119.	114.	110.	105.	101.	97.
93.	90.	86.	83.	79.	76.	73.	70.	67.	65.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	1399.	1074.	411.	172.	20599.
CMS	40.	30.	12.	5.	583.
INCHES		2.29	3.50	3.65	3.65
MM		58.07	88.99	92.81	92.81
AC-FT		533.	816.	851.	851.
THOUS CU M		657.	1007.	1050.	1050.

HYDROGRAPH AT STA 1 FOR PLAN 1, RTIO 6

2.	2.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	2.	5.	10.	17.	23.	29.	31.	31.	28.
25.	21.	18.	15.	12.	10.	9.	7.	6.	5.
5.	5.	5.	6.	6.	7.	7.	8.	8.	8.
9.	12.	16.	23.	32.	42.	52.	61.	68.	74.
79.	83.	92.	114.	155.	219.	306.	411.	528.	675.
861.	1061.	1250.	1398.	1477.	1470.	1378.	1238.	1039.	931.
786.	660.	555.	468.	396.	336.	286.	243.	207.	175.
148.	142.	136.	131.	129.	121.	116.	111.	107.	102.
98.	94.	91.	87.	84.	80.	77.	74.	71.	68.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	1477.	1134.	434.	181.	21744.
CMS	42.	32.	12.	5.	616.
INCHES		2.41	3.70	3.86	3.86
MM		61.29	93.94	97.97	97.97
AC-FT		562.	862.	898.	898.
THOUS CU M		693.	1063.	1108.	1108.

HYDROGRAPH AT STA 1 FOR PLAN 1, RTIO 7

2.	2.	2.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	2.	6.	11.	18.	25.	30.	33.	32.	30.
26.	22.	19.	16.	13.	11.	9.	8.	6.	6.
9.	9.	8.	6.	7.	7.	8.	8.	9.	9.
10.	12.	17.	24.	34.	44.	55.	64.	71.	78.
83.	88.	97.	120.	163.	231.	322.	433.	556.	711.
906.	1117.	1316.	1471.	1554.	1548.	1451.	1303.	1143.	980.
827.	695.	589.	493.	417.	353.	301.	256.	217.	184.
155.	149.	143.	138.	132.	127.	122.	117.	112.	108.
104.	99.	96.	92.	88.	85.	81.	78.	75.	72.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	1554.	1193.	457.	191.	22888.
CMS	44.	34.	13.	5.	648.
INCHES		2.54	3.89	4.06	4.06
MM		64.52	98.88	103.13	103.13
AC-FT		592.	907.	946.	946.
THOUS CU M		730.	1119.	1167.	1167.

HYDROGRAPH AT STA 1 FOR PLAN 1, RTIO 8

4.	4.	4.	4.	4.	3.	3.	3.	3.	3.
3.	3.	3.	3.	2.	2.	2.	2.	2.	2.
2.	2.	2.	2.	2.	2.	2.	2.	2.	2.
2.	5.	14.	28.	45.	62.	75.	82.	81.	74.
66.	56.	47.	39.	33.	27.	23.	19.	16.	14.
13.	13.	14.	15.	17.	18.	20.	21.	21.	22.
24.	31.	43.	61.	84.	110.	136.	159.	179.	195.
208.	219.	242.	300.	408.	577.	805.	1081.	1390.	1777.
2266.	2792.	3290.	3679.	3886.	3869.	3627.	3259.	2836.	2450.
2069.	1737.	1461.	1232.	1042.	883.	751.	640.	544.	461.
388.	373.	358.	344.	330.	317.	305.	292.	281.	270.
259.	249.	239.	229.	220.	211.	203.	195.	187.	180.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	3886.	2983.	1143.	477.	57220.
CMS	110.	84.	32.	14.	1620.
INCHES		6.35	9.73	10.15	10.15
MM		161.30	247.20	257.82	257.82
AC-FT		1479.	2267.	2364.	2364.
THOUS CU M		1825.	2796.	2917.	2917.

HYDROGRAPH AT STA 1 FOR PLAN 1, RTIO 9

8.	8.	8.	7.	7.	7.	7.	6.	6.	6.
6.	5.	5.	5.	5.	5.	5.	4.	4.	4.
4.	4.	4.	4.	3.	3.	3.	3.	3.	4.
4.	10.	28.	55.	89.	123.	150.	164.	162.	148.
131.	112.	94.	79.	65.	55.	46.	38.	32.	28.
26.	26.	28.	31.	34.	37.	39.	41.	43.	44.
49.	61.	86.	122.	168.	221.	273.	319.	357.	389.
416.	438.	484.	599.	817.	1155.	1610.	2163.	2780.	3554.
4532.	5583.	6580.	7357.	7771.	7738.	7255.	6517.	5713.	4901.
4137.	3474.	2923.	2464.	2083.	1767.	1503.	1279.	1087.	921.
777.	746.	716.	688.	661.	634.	609.	585.	562.	539.
518.	497.	478.	459.	440.	423.	406.	390.	374.	360.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	7771.	5967.	2286.	954.	114440.
CMS	220.	169.	65.	27.	3241.
INCHES		12.70	19.46	20.30	20.30
MM		322.60	494.40	515.63	515.63
AC-FT		2959.	4534.	4729.	4729.
THOUS CU M		3649.	5593.	5833.	5833.

C=24

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SUB-AREA RUNOFF COMPUTATION

INFLOW HYDROGRAPH, SNYDER METHOD - EATON RESERVOIR (SUBWATERSHED NO. 2)

ISTAQ	ICOMP	IECON	ITAPE	JPLT	JPRT	INAME	ISTAGE	IAUTO
1	0	0	0	0	0	1	0	0

HYDROGRAPH DATA

IHYDO	IUHG	TAREA	SNAP	TRSDA	TRSPC	RATIO	ISNOW	ISAME	LOCAL
1	1	2.71	0.00	7.96	0.00	0.000	0	1	0

PRECIP DATA

SPFE	PMS	R6	R12	R24	R48	R72	R96
0.00	20.00	111.00	122.00	133.00	143.00	0.00	0.00

TRSPC COMPUTED BY THE PROGRAM IS 0.800

LOSS DATA

LROPT	STRKR	DLTKR	RTIOL	ERAIN	STRKS	RTIOK	STRTL	CNSTL	ALSMX	RTIMP
0	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.10	0.00	0.01

UNIT HYDROGRAPH DATA

TP= 2.40 CP=0.63 NTA= 0

RECESSION DATA
STRTQ= -2.00 QRCSN= -0.10 RTIOR= 1.50
APPROXIMATE CLARK COEFFICIENTS FROM GIVEN SNYDER CP AND TP ARE TC= 5.49 AND R= 4.30 INTERVALS

UNIT HYDROGRAPH 26 END-OF-PERIOD ORDINATES, LAG= 2.39 HOURS, CP= 0.63 VOL= 1.00

40.	145.	281.	401.	461.	438.	360.	285.	226.	179.							
142.	112.	89.	70.	56.	44.	35.	28.	22.	17.							
14.	11.	9.	7.	5.	4.											

0 END-OF-PERIOD FLOW

MO.	DA	HR.	MN	PERIOD	RAIN	EXCS	LOSS	COMP Q	MO.	DA	HR.	MN	PERIOD	RAIN	EXCS	LOSS	COMP Q
1.	01	0.	30	1	0.00	0.00	0.00	5.	1.	02	6.	30	61	0.15	0.10	0.05	33.
1.	01	1.	00	2	0.00	0.00	0.00	5.	1.	02	7.	00	62	0.15	0.10	0.05	46.
1.	01	1.	30	3	0.00	0.00	0.00	5.	1.	02	7.	30	63	0.15	0.10	0.05	72.
1.	01	2.	00	4	0.00	0.00	0.00	5.	1.	02	8.	00	64	0.15	0.10	0.05	107.
1.	01	2.	30	5	0.00	0.00	0.00	4.	1.	02	8.	30	65	0.15	0.10	0.05	148.
1.	01	3.	00	6	0.00	0.00	0.00	4.	1.	02	9.	00	66	0.15	0.10	0.05	187.
1.	01	3.	30	7	0.00	0.00	0.00	4.	1.	02	9.	30	67	0.15	0.10	0.05	219.
1.	01	4.	00	8	0.00	0.00	0.00	4.	1.	02	10.	00	68	0.15	0.10	0.05	244.
1.	01	4.	30	9	0.00	0.00	0.00	4.	1.	02	10.	30	69	0.15	0.10	0.05	264.
1.	01	5.	00	10	0.00	0.00	0.00	4.	1.	02	11.	00	70	0.15	0.10	0.05	280.
1.	01	5.	30	11	0.00	0.00	0.00	4.	1.	02	11.	30	71	0.15	0.10	0.05	292.
1.	01	6.	00	12	0.00	0.00	0.00	3.	1.	02	12.	00	72	0.15	0.10	0.05	302.
1.	01	6.	30	13	0.01	0.00	0.01	3.	1.	02	12.	30	73	0.89	0.84	0.05	340.
1.	01	7.	00	14	0.01	0.00	0.01	3.	1.	02	13.	00	74	0.89	0.84	0.05	453.
1.	01	7.	30	15	0.01	0.00	0.01	3.	1.	02	13.	30	75	1.07	1.02	0.05	674.
1.	01	8.	00	16	0.01	0.00	0.01	3.	1.	02	14.	00	76	1.07	1.02	0.05	1001.
1.	01	8.	30	17	0.01	0.00	0.01	3.	1.	02	14.	30	77	1.33	1.28	0.05	1406.
1.	01	9.	00	18	0.01	0.00	0.01	3.	1.	02	15.	00	78	1.33	1.28	0.05	1843.
1.	01	9.	30	19	0.01	0.00	0.01	3.	1.	02	15.	30	79	1.62	1.57	0.05	2280.
1.	01	10.	00	20	0.01	0.00	0.01	3.	1.	02	16.	00	80	5.13	5.08	0.05	2859.
1.	01	10.	30	21	0.01	0.00	0.01	3.	1.	02	16.	30	81	1.24	1.19	0.05	3644.
1.	01	11.	00	22	0.01	0.00	0.01	3.	1.	02	17.	00	82	1.24	1.19	0.05	4489.
1.	01	11.	30	23	0.01	0.00	0.01	3.	1.	02	17.	30	83	0.98	0.93	0.05	5166.
1.	01	12.	00	24	0.01	0.00	0.01	2.	1.	02	18.	00	84	0.98	0.93	0.05	5505.
1.	01	12.	30	25	0.07	0.00	0.07	2.	1.	02	18.	30	85	0.09	0.04	0.05	5394.
1.	01	13.	00	26	0.07	0.00	0.07	2.	1.	02	19.	00	86	0.09	0.04	0.05	4925.
1.	01	13.	30	27	0.08	0.00	0.08	3.	1.	02	19.	30	87	0.09	0.04	0.05	4313.
1.	01	14.	00	28	0.08	0.00	0.08	3.	1.	02	20.	00	88	0.09	0.04	0.05	3651.
1.	01	14.	30	29	0.10	0.00	0.10	3.	1.	02	20.	30	89	0.09	0.04	0.05	2998.
1.	01	15.	00	30	0.10	0.00	0.10	3.	1.	02	21.	00	90	0.09	0.04	0.05	2412.
1.	01	15.	30	31	0.12	0.00	0.12	4.	1.	02	21.	30	91	0.09	0.04	0.05	1938.
1.	01	16.	00	32	0.39	0.17	0.22	10.	1.	02	22.	00	92	0.09	0.04	0.05	1562.
1.	01	16.	30	33	0.09	0.04	0.05	30.	1.	02	22.	30	93	0.09	0.04	0.05	1265.
1.	01	17.	00	34	0.09	0.04	0.05	58.	1.	02	23.	00	94	0.09	0.04	0.05	1029.
1.	01	17.	30	35	0.07	0.02	0.05	89.	1.	02	23.	30	95	0.09	0.04	0.05	843.
1.	01	18.	00	36	0.07	0.02	0.05	114.	1.	03	0.	00	96	0.09	0.04	0.05	695.
1.	01	18.	30	37	0.01	0.00	0.01	123.	1.	03	0.	30	97	0.00	0.00	0.00	577.
1.	01	19.	00	38	0.01	0.00	0.01	118.	1.	03	1.	00	98	0.00	0.00	0.00	534.
1.	01	19.	30	39	0.01	0.00	0.01	105.	1.	03	1.	30	99	0.00	0.00	0.00	513.
1.	01	20.	00	40	0.01	0.00	0.01	89.	1.	03	2.	00	100	0.00	0.00	0.00	493.
1.	01	20.	30	41	0.01	0.00	0.01	73.	1.	03	2.	30	101	0.00	0.00	0.00	473.
1.	01	21.	00	42	0.01	0.00	0.01	58.	1.	03	3.	00	102	0.00	0.00	0.00	454.
1.	01	21.	30	43	0.01	0.00	0.01	46.	1.	03	3.	30	103	0.00	0.00	0.00	436.
1.	01	22.	00	44	0.01	0.00	0.01	37.	1.	03	4.	00	104	0.00	0.00	0.00	419.
1.	01	22.	30	45	0.01	0.00	0.01	29.	1.	03	4.	30	105	0.00	0.00	0.00	402.
1.	01	23.	00	46	0.01	0.00	0.01	24.	1.	03	5.	00	106	0.00	0.00	0.00	386.

1.01	23.30	47	0.01	0.00	0.01	19.	1.03	5.30	107	0.00	0.00	0.00	371.
1.02	0.00	48	0.01	0.00	0.01	15.	1.03	6.00	108	0.00	0.00	0.00	356.
1.02	0.30	49	0.06	0.01	0.05	12.	1.03	6.30	109	0.00	0.00	0.00	342.
1.02	1.00	50	0.06	0.01	0.05	12.	1.03	7.00	110	0.00	0.00	0.00	329.
1.02	1.30	51	0.06	0.01	0.05	12.	1.03	7.30	111	0.00	0.00	0.00	315.
1.02	2.00	52	0.06	0.01	0.05	14.	1.03	8.00	112	0.00	0.00	0.00	303.
1.02	2.30	53	0.06	0.01	0.05	17.	1.03	8.30	113	0.00	0.00	0.00	291.
1.02	3.00	54	0.06	0.01	0.05	20.	1.03	9.00	114	0.00	0.00	0.00	279.
1.02	3.30	55	0.06	0.01	0.05	23.	1.03	9.30	115	0.00	0.00	0.00	268.
1.02	4.00	56	0.06	0.01	0.05	25.	1.03	10.00	116	0.00	0.00	0.00	258.
1.02	4.30	57	0.06	0.01	0.05	27.	1.03	10.30	117	0.00	0.00	0.00	247.
1.02	5.00	58	0.06	0.01	0.05	27.	1.03	11.00	118	0.00	0.00	0.00	238.
1.02	5.30	59	0.06	0.01	0.05	28.	1.03	11.30	119	0.00	0.00	0.00	228.
1.02	6.00	60	0.06	0.01	0.05	29.	1.03	12.00	120	0.00	0.00	0.00	219.
									SUM	22.88	19.22	3.66	73001.
										(581.)	(488.)	(93.)	(2067.16)

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	5505.	3956.	1450.	607.	72894.
CMS	156.	112.	41.	17.	2064.
INCHES		13.58	19.91	20.85	20.85
MM		344.88	505.82	529.62	529.62
AC-FT		1961.	2877.	3012.	3012.
THOUS CU M		2419.	3548.	3715.	3715.

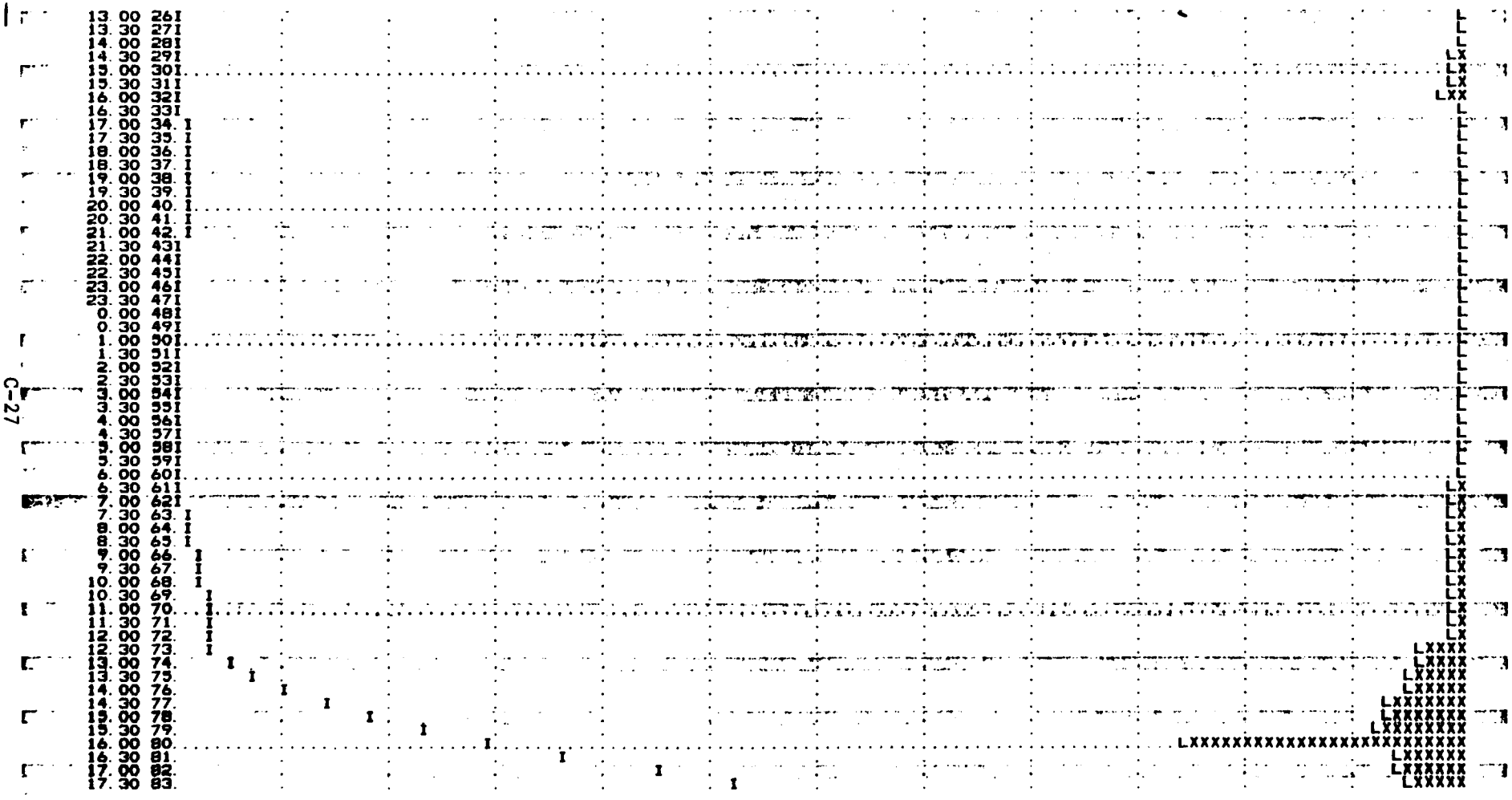
OVF

STATION 1

INFLOW(I), OUTFLOW(O) AND OBSERVED FLOW(#)

PRECIP(L) AND EXCESS(X)

	0.	1000.	2000.	3000.	4000.	5000.	6000.	0.	0.	0.	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.	4.	2.	0.
0.30	11												
1.00	21												
1.30	31												
2.00	41												
2.30	51												
3.00	61												
3.30	71												
4.00	81												
4.30	91												
5.00	101												
5.30	111												
6.00	121												
6.30	131												
7.00	141												
7.30	151												
8.00	161												
8.30	171												
9.00	181												
9.30	191												
10.00	201												
10.30	211												
11.00	221												
11.30	231												
12.00	241												
12.30	251												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13.30 27
14.00 28
14.30 29
15.00 30
15.30 31
16.00 32
16.30 33
17.00 34.
17.30 35.
18.00 36.
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22.30 45
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3.00 54
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7.30 63.
8.00 64.
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12.30 73.
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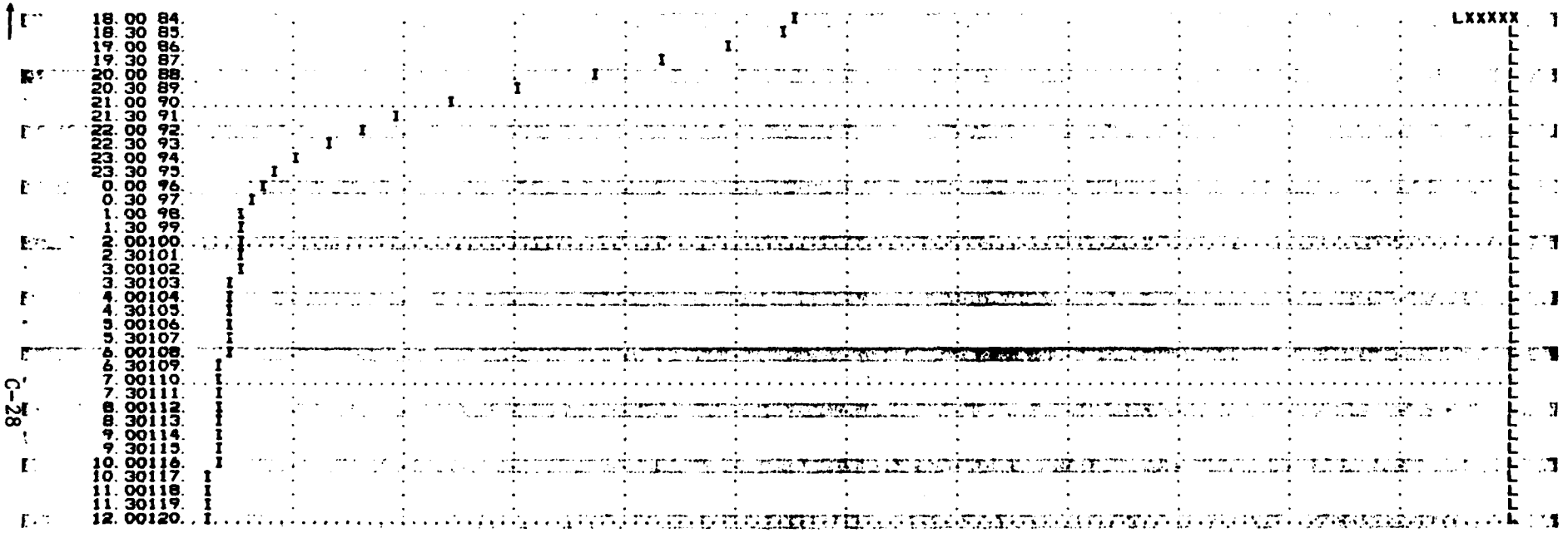
17.30 83.



C-28

DVN

HYDROGRAPH AT STA 1 FOR PLAN 1, RTIO 1

1.	1.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	1.	3.	6.	9.	11.	12.	12.	10.	9.
7.	6.	5.	4.	3.	2.	2.	2.	1.	1.
1.	1.	2.	2.	2.	3.	3.	3.	3.	3.
3.	5.	7.	11.	15.	19.	22.	24.	26.	28.
29.	30.	34.	43.	67.	100.	141.	184.	228.	286.
365.	449.	517.	550.	539.	492.	431.	365.	300.	241.
194.	156.	126.	103.	84.	70.	58.	93.	91.	49.
47.	45.	44.	42.	40.	39.	37.	36.	34.	33.
32.	30.	29.	28.	27.	26.	25.	24.	23.	22.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	550.	396.	145.	61.	7289.

CMS	16.	11.	4.	2.	206.	
INCHES		1.36	1.99	2.09	2.09	
MM		34.49	50.58	52.96	52.96	
AC-FT		196.	288.	301.	301.	
THOUS CU M		242.	355.	372.	372.	

HYDROGRAPH AT STA 1 FOR PLAN 1, RTIO 2

1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1.	2.	4.	9.	13.	17.	18.	18.	16.	13.
11.	9.	7.	6.	4.	4.	3.	2.	2.	2.
2.	2.	3.	3.	3.	4.	4.	4.	4.	4.
5.	7.	11.	16.	22.	28.	33.	37.	40.	42.
44.	45.	51.	68.	101.	150.	211.	276.	342.	429.
947.	673.	775.	826.	809.	739.	647.	548.	449.	362.
291.	234.	190.	154.	126.	104.	86.	80.	77.	74.
71.	68.	65.	63.	60.	58.	56.	53.	51.	49.
47.	45.	44.	42.	40.	39.	37.	36.	34.	33.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	826.	593.	218.	91.	10934.
CMS	23.	17.	6.	3.	310.
INCHES		2.04	2.77	3.13	3.13
MM		51.73	70.87	79.44	79.44
AC-FT		294.	432.	452.	452.
THOUS CU M		363.	532.	557.	557.

HYDROGRAPH AT STA 1 FOR PLAN 1, RTIO 3

1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	1.
1.	2.	5.	9.	14.	18.	20.	19.	17.	14.
12.	9.	7.	6.	5.	4.	3.	2.	2.	2.
2.	2.	3.	3.	4.	4.	4.	4.	3.	3.
5.	7.	11.	17.	24.	30.	35.	39.	42.	45.
47.	48.	54.	73.	108.	160.	229.	295.	365.	458.
384.	718.	827.	881.	863.	788.	690.	584.	479.	386.
310.	250.	202.	169.	139.	111.	92.	86.	82.	79.
76.	73.	70.	67.	64.	62.	59.	57.	55.	53.
50.	48.	47.	45.	43.	41.	40.	38.	36.	35.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	881.	633.	232.	97.	11663.
CMS	25.	18.	7.	3.	330.
INCHES		2.17	3.19	3.34	3.34
MM		55.18	80.93	84.74	84.74
AC-FT		314.	460.	482.	482.
THOUS CU M		387.	568.	594.	594.

HYDROGRAPH AT STA 1 FOR PLAN 1, RTIO 4

1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	1.	1.
1.	2.	5.	10.	15.	19.	21.	20.	18.	15.

12.	10.	8.	6.	5.	4.	3.	3.	2.	2.
2.	2.	3.	3.	4.	4.	5.	5.	5.	5.
6.	8.	12.	18.	25.	32.	37.	41.	45.	48.
50.	51.	58.	77.	119.	170.	239.	313.	388.	486.
620.	763.	878.	936.	917.	837.	733.	621.	509.	410.
329.	266.	215.	175.	143.	118.	98.	91.	87.	84.
80.	77.	74.	71.	68.	66.	63.	61.	58.	56.
54.	51.	49.	47.	46.	44.	42.	40.	39.	37.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	936.	672.	247.	103.	12392.
CMS	26.	19.	7.	3.	351.
INCHES		2.31	3.39	3.54	3.54
MM		58.63	85.99	90.04	90.04
AC-FT		333.	489.	512.	512.
THOUS CU M		411.	603.	632.	632.

HYDROGRAPH AT STA 1 FOR PLAN 1, RTIO 9

1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	0.
0.	0.	0.	0.	0.	0.	0.	1.	1.
1.	2.	3.	11.	16.	20.	22.	21.	19.	16.
13.	10.	8.	7.	5.	4.	3.	3.	2.	2.
2.	3.	3.	4.	4.	3.	3.	3.	3.	3.
6.	8.	13.	19.	27.	34.	39.	44.	48.	50.
53.	54.	61.	82.	121.	180.	293.	332.	410.	515.
657.	808.	930.	991.	971.	886.	776.	657.	539.	434.
349.	281.	228.	185.	152.	125.	104.	96.	92.	89.
85.	82.	79.	75.	72.	70.	67.	64.	62.	59.
57.	55.	52.	50.	48.	46.	45.	43.	41.	39.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	991.	712.	261.	109.	13121.
CMS	28.	20.	7.	3.	372.
INCHES		2.44	3.58	3.75	3.75
MM		62.08	91.05	95.33	95.33
AC-FT		393.	518.	542.	542.
THOUS CU M		435.	639.	669.	669.

HYDROGRAPH AT STA 1 FOR PLAN 1, RTIO 6

1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	0.	0.	0.	0.	0.	0.	1.	1.
1.	2.	6.	11.	17.	22.	23.	22.	20.	17.
14.	11.	9.	7.	6.	4.	4.	3.	2.	2.
2.	3.	3.	4.	4.	5.	5.	5.	5.	6.
6.	9.	14.	20.	28.	36.	42.	46.	50.	53.
56.	57.	65.	86.	128.	190.	267.	350.	433.	543.
693.	853.	982.	1046.	1025.	936.	819.	694.	569.	458.
368.	297.	240.	196.	160.	132.	110.	102.	98.	94.
90.	86.	83.	80.	76.	73.	70.	68.	65.	62.
60.	58.	55.	53.	51.	49.	47.	45.	43.	42.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	1046.	752.	276.	115.	13850.
CMS	30.	21.	8.	3.	392.

INCHES		2.58	3.78	3.96	3.96				
MM		65.53	96.11	100.63	100.63				
AC-FT		373.	547.	572.	572.				
THOUS CU M		460.	674.	706.	706.				

HYDROGRAPH AT STA 1 FOR PLAN 1, RTIO 7

1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	0.	0.	0.	1.	1.	1.	1.
1.	2.	6.	12.	18.	23.	25.	24.	21.	18.
15.	12.	9.	7.	6.	5.	4.	3.	2.	2.
2.	3.	3.	4.	5.	5.	5.	5.	6.	6.
7.	9.	14.	21.	30.	37.	44.	49.	53.	56.
58.	60.	68.	91.	135.	200.	281.	369.	456.	572.
730.	898.	1033.	1101.	1079.	985.	863.	730.	599.	482.
388.	312.	253.	206.	169.	139.	115.	107.	103.	99.
95.	91.	87.	84.	80.	77.	74.	71.	68.	66.
63.	61.	58.	56.	54.	52.	49.	48.	46.	44.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	1101.	791.	290.	121.	14579.
CMS	31.	22.	8.	3.	413.
INCHES		2.72	3.98	4.17	4.17
MM		68.98	101.16	105.92	105.92
AC-FT		392.	575.	602.	602.
THOUS CU M		484.	710.	743.	743.

HYDROGRAPH AT STA 1 FOR PLAN 1, RTIO 8

3.	3.	2.	2.	2.	2.	2.	2.	2.	2.
2.	2.	2.	2.	2.	2.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	2.
2.	5.	15.	29.	45.	57.	62.	59.	52.	45.
36.	29.	23.	18.	15.	12.	9.	8.	6.	6.
6.	7.	9.	10.	12.	13.	13.	14.	14.	15.
17.	23.	36.	54.	74.	93.	109.	122.	132.	140.
146.	151.	170.	227.	337.	500.	703.	921.	1140.	1430.
1824.	2245.	2583.	2752.	2697.	2462.	2156.	1825.	1498.	1206.
969.	781.	632.	515.	421.	348.	288.	267.	257.	246.
237.	227.	218.	209.	201.	193.	186.	178.	171.	164.
158.	151.	145.	140.	134.	129.	124.	119.	114.	110.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	2752.	1978.	725.	304.	36447.
CMS	78.	56.	21.	9.	1032.
INCHES		6.79	9.96	10.43	10.43
MM		172.44	252.91	264.81	264.81
AC-FT		981.	1438.	1506.	1506.
THOUS CU M		1210.	1774.	1858.	1858.

HYDROGRAPH AT STA 1 FOR PLAN 1, RTIO 9

5.	5.	5.	5.	4.	4.	4.	4.	4.	4.
4.	3.	3.	3.	3.	3.	3.	3.	3.	3.
3.	3.	3.	2.	2.	2.	3.	3.	3.	3.
4.	10.	30.	58.	89.	114.	123.	118.	105.	89.
73.	58.	46.	37.	29.	24.	19.	15.	12.	12.

12.	14.	17.	20.	23.	25.	27.	27.	28.	29.
33.	46.	72.	107.	148.	187.	219.	244.	264.	280.
292.	302.	340.	453.	674.	1001.	1406.	1843.	2280.	2859.
3649.	4489.	5166.	5505.	5394.	4925.	4313.	3651.	2995.	2412.
1938.	1562.	1265.	1029.	843.	695.	577.	934.	913.	493.
473.	454.	436.	419.	402.	386.	371.	356.	342.	329.
315.	303.	291.	279.	268.	258.	247.	238.	228.	219.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	5505.	3956.	1450.	607.	72893.
CMS	156.	112.	41.	17.	2064.
INCHES		13.58	19.91	20.85	20.85
MM		344.88	505.82	529.62	529.62
AC-FT		1961.	2877.	3012.	3012.
THOUS CU M		2419.	3548.	3715.	3715.

********** ********** ********** ********** **********

SUB-AREA RUNOFF COMPUTATION

INFLOW HYDROGRAPH, SNYDER METHOD - EATON RESERVOIR (SUBWATERSHED NO. 3)

ISTAQ	ICOMP	IECON	ITAPE	JPLT	JPRT	INAME	ISTAGE	IAUTO
1	0	0	0	0	0	1	0	0

HYDROGRAPH DATA

IHYDO	IUHO	TAREA	SNAP	TRSDA	TRSPC	RATIO	ISNOW	ISAME	LOCAL
1	1	0.88	0.00	7.96	0.00	0.000	0	1	0

PRECIP DATA

SPFE	PMS	R6	R12	R24	R48	R72	R96
0.00	20.00	111.00	122.00	133.00	143.00	0.00	0.00

TRSPC COMPUTED BY THE PROGRAM IS 0.800

LOSS DATA

LROPT	STRKR	DLTKR	RTIOL	ERAIN	STRKS	RTIOR	STRTL	CNSTL	ALSMX	RTIMP
0	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.10	0.00	0.01

UNIT HYDROGRAPH DATA

TP= 1.88 CP=0.63 NTA= 0

RECESSION DATA

STRTQ= -2.00 QRCSN= -0.10 RTIOR= 1.30

APPROXIMATE CLARK COEFFICIENTS FROM GIVEN SNYDER CP AND TP ARE TC= 4.32 AND R= 3.36 INTERVALS

UNIT HYDROGRAPH 21 END-OF-PERIOD ORDINATES, LAG= 1.87 HOURS, CP= 0.63 VOL= 1.00

23.	83.	150.	189.	179.	134.	99.	73.	54.	40.
30.	22.	16.	12.	9.	7.	5.	4.	3.	2.
1.									

Q

END-OF-PERIOD FLOW

MO. DA	HR. MN	PERIOD	RAIN	EXCS	LOSS	COMP Q	MO. DA	HR. MN	PERIOD	RAIN	EXCS	LOSS	COMP Q
1.01	0.30	1	0.00	0.00	0.00	2.	1.02	6.30	61	0.15	0.10	0.05	12.
1.01	1.00	2	0.00	0.00	0.00	2.	1.02	7.00	62	0.15	0.10	0.05	20.
1.01	1.30	3	0.00	0.00	0.00	2.	1.02	7.30	63	0.15	0.10	0.05	33.
1.01	2.00	4	0.00	0.00	0.00	2.	1.02	8.00	64	0.15	0.10	0.05	50.

1.01	2.30	5	0.00	0.00	0.00	1.	1.02	8.30	65	0.15	0.10	0.05	83.
1.01	3.00	6	0.00	0.00	0.00	1.	1.02	9.00	66	0.15	0.10	0.05	77.
1.01	3.30	7	0.00	0.00	0.00	1.	1.02	9.30	67	0.15	0.10	0.05	86.
1.01	4.00	8	0.00	0.00	0.00	1.	1.02	10.00	68	0.15	0.10	0.05	92.
1.01	4.30	9	0.00	0.00	0.00	1.	1.02	10.30	69	0.15	0.10	0.05	97.
1.01	5.00	10	0.00	0.00	0.00	1.	1.02	11.00	70	0.15	0.10	0.05	100.
1.01	5.30	11	0.00	0.00	0.00	1.	1.02	11.30	71	0.15	0.10	0.05	103.
1.01	6.00	12	0.00	0.00	0.00	1.	1.02	12.00	72	0.15	0.10	0.05	105.
1.01	6.30	13	0.01	0.00	0.01	1.	1.02	12.30	73	0.87	0.84	0.05	124.
1.01	7.00	14	0.01	0.00	0.01	1.	1.02	13.00	74	0.89	0.84	0.05	186.
1.01	7.30	15	0.01	0.00	0.01	1.	1.02	13.30	75	1.07	1.02	0.05	302.
1.01	8.00	16	0.01	0.00	0.01	1.	1.02	14.00	76	1.07	1.02	0.05	457.
1.01	8.30	17	0.01	0.00	0.01	1.	1.02	14.30	77	1.33	1.28	0.05	620.
1.01	9.00	18	0.01	0.00	0.01	1.	1.02	15.00	78	1.33	1.28	0.05	775.
1.01	9.30	19	0.01	0.00	0.01	1.	1.02	15.30	79	1.62	1.57	0.05	927.
1.01	10.00	20	0.01	0.00	0.01	1.	1.02	16.00	80	5.13	5.08	0.05	1160.
1.01	10.30	21	0.01	0.00	0.01	1.	1.02	16.30	81	1.24	1.19	0.05	1506.
1.01	11.00	22	0.01	0.00	0.01	1.	1.02	17.00	82	1.24	1.19	0.05	1846.
1.01	11.30	23	0.01	0.00	0.01	1.	1.02	17.30	83	0.98	0.93	0.05	2027.
1.01	12.00	24	0.01	0.00	0.01	1.	1.02	18.00	84	0.98	0.93	0.05	1967.
1.01	12.30	25	0.07	0.00	0.07	1.	1.02	18.30	85	0.09	0.04	0.05	1797.
1.01	13.00	26	0.07	0.00	0.07	1.	1.02	19.00	86	0.09	0.04	0.05	1506.
1.01	13.30	27	0.08	0.00	0.08	1.	1.02	19.30	87	0.09	0.04	0.05	1232.
1.01	14.00	28	0.08	0.00	0.08	1.	1.02	20.00	88	0.09	0.04	0.05	959.
1.01	14.30	29	0.10	0.00	0.10	1.	1.02	20.30	89	0.09	0.04	0.05	729.
1.01	15.00	30	0.10	0.00	0.10	1.	1.02	21.00	90	0.09	0.04	0.05	548.
1.01	15.30	31	0.12	0.00	0.12	1.	1.02	21.30	91	0.09	0.04	0.05	417.
1.01	16.00	32	0.39	0.17	0.22	5.	1.02	22.00	92	0.09	0.04	0.05	320.
1.01	16.30	33	0.07	0.04	0.03	16.	1.02	22.30	93	0.09	0.04	0.05	249.
1.01	17.00	34	0.09	0.04	0.05	31.	1.02	23.00	94	0.09	0.04	0.05	202.
1.01	17.30	35	0.07	0.02	0.05	43.	1.02	23.30	95	0.09	0.04	0.05	194.
1.01	18.00	36	0.07	0.02	0.05	47.	1.03	0.00	96	0.09	0.04	0.05	186.
1.01	18.30	37	0.01	0.00	0.01	45.	1.03	0.30	97	0.00	0.00	0.00	178.
1.01	19.00	38	0.01	0.00	0.01	39.	1.03	1.00	98	0.00	0.00	0.00	171.
1.01	19.30	39	0.01	0.00	0.01	32.	1.03	1.30	99	0.00	0.00	0.00	165.
1.01	20.00	40	0.01	0.00	0.01	25.	1.03	2.00	100	0.00	0.00	0.00	158.
1.01	20.30	41	0.01	0.00	0.01	18.	1.03	2.30	101	0.00	0.00	0.00	152.
1.01	21.00	42	0.01	0.00	0.01	14.	1.03	3.00	102	0.00	0.00	0.00	146.
1.01	21.30	43	0.01	0.00	0.01	10.	1.03	3.30	103	0.00	0.00	0.00	140.
1.01	22.00	44	0.01	0.00	0.01	8.	1.03	4.00	104	0.00	0.00	0.00	134.
1.01	22.30	45	0.01	0.00	0.01	6.	1.03	4.30	105	0.00	0.00	0.00	127.
1.01	23.00	46	0.01	0.00	0.01	5.	1.03	5.00	106	0.00	0.00	0.00	124.
1.01	23.30	47	0.01	0.00	0.01	5.	1.03	5.30	107	0.00	0.00	0.00	119.
1.02	0.00	48	0.01	0.00	0.01	4.	1.03	6.00	108	0.00	0.00	0.00	114.
1.02	0.30	49	0.06	0.01	0.05	4.	1.03	6.30	109	0.00	0.00	0.00	110.
1.02	1.00	50	0.06	0.01	0.05	4.	1.03	7.00	110	0.00	0.00	0.00	105.
1.02	1.30	51	0.06	0.01	0.05	4.	1.03	7.30	111	0.00	0.00	0.00	101.
1.02	2.00	52	0.06	0.01	0.05	5.	1.03	8.00	112	0.00	0.00	0.00	97.
1.02	2.30	53	0.06	0.01	0.05	6.	1.03	8.30	113	0.00	0.00	0.00	93.
1.02	3.00	54	0.06	0.01	0.05	7.	1.03	9.00	114	0.00	0.00	0.00	90.
1.02	3.30	55	0.06	0.01	0.05	8.	1.03	9.30	115	0.00	0.00	0.00	86.
1.02	4.00	56	0.06	0.01	0.05	9.	1.03	10.00	116	0.00	0.00	0.00	83.
1.02	4.30	57	0.06	0.01	0.05	9.	1.03	10.30	117	0.00	0.00	0.00	79.
1.02	5.00	58	0.06	0.01	0.05	10.	1.03	11.00	118	0.00	0.00	0.00	76.
1.02	5.30	59	0.06	0.01	0.05	10.	1.03	11.30	119	0.00	0.00	0.00	73.
1.02	6.00	60	0.06	0.01	0.05	10.	1.03	12.00	120	0.00	0.00	0.00	70.
									SUM	22.88	19.22	3.66	24301.

(581.)(488.)(93.)(688.13)

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	2027.	1361.	481.	202.	24267.
CMS	57.	39.	14.	6.	687.
INCHES		14.39	20.35	21.38	21.38
MM		365.54	516.94	542.98	542.98
AC-FT		675.	955.	1003.	1003.
THOUS CU M		833.	1178.	1237.	1237.

OVF

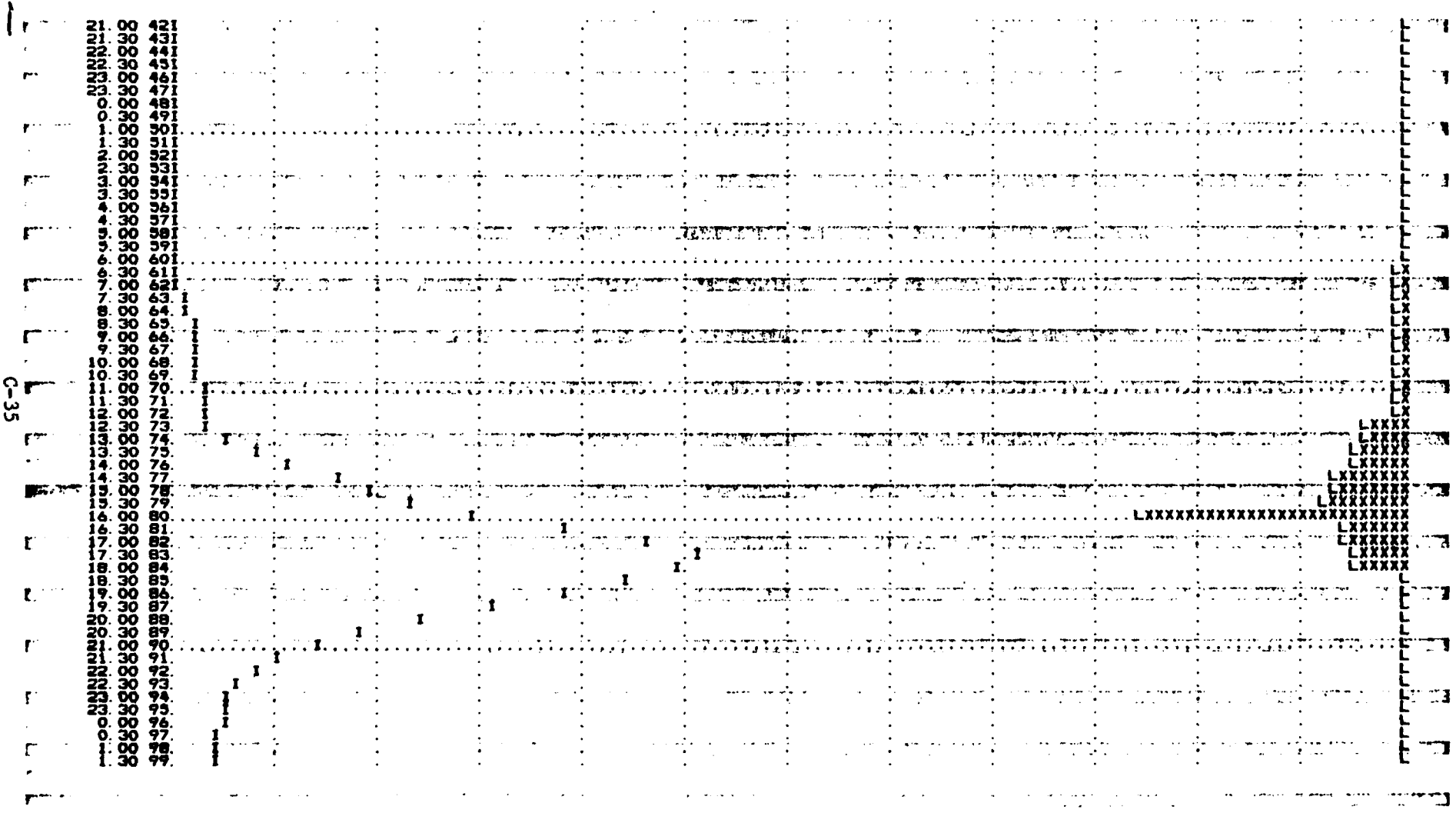
STATION 1

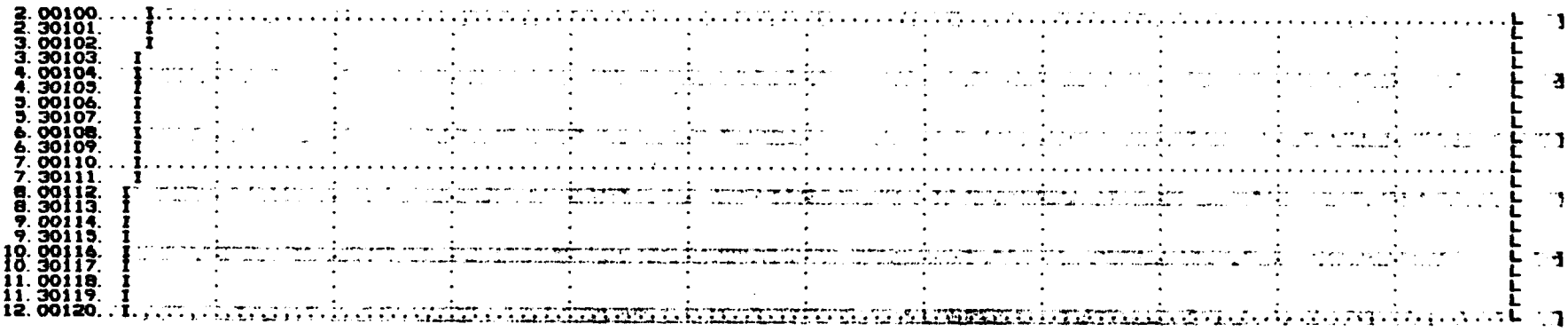
INFLOW(I); OUTFLOW(O) AND OBSERVED FLOW(#)

0. 400. 800. 1200. 1600. 2000. 2400. 0. 0. 0. 0. 0. 0.

0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 8. 4. 2. 0. PRECIP(L) AND EXCESS(X)

0.30	11	
1.00	21	
1.30	31	
2.00	41	
2.30	51	
3.00	61	
3.30	71	
4.00	81	
4.30	91	
5.00	101	
5.30	111	
6.00	121	
6.30	131	
7.00	141	
7.30	151	
8.00	161	
8.30	171	
9.00	181	
9.30	191	
10.00	201	
10.30	211	
11.00	221	
11.30	231	
12.00	241	
12.30	251	
13.00	261	
13.30	271	
14.00	281	
14.30	291	
15.00	301	
15.30	311	
16.00	321	
16.30	331	
17.00	34. I	
17.30	35. I	
18.00	36. I	
18.30	37. I	
19.00	38. I	
19.30	39. I	
20.00	40. I	
20.30	411	


21.00 421
21.30 431
22.00 441
22.30 451
23.00 461
23.30 471
0.00 481
0.30 491
1.00 501
1.30 511
2.00 521
2.30 531
3.00 541
3.30 551
4.00 561
4.30 571
5.00 581
5.30 591
6.00 601
6.30 611
7.00 621
7.30 63.
8.00 64.
8.30 65.
9.00 66.
9.30 67.
10.00 68.
10.30 69.
11.00 70.
11.30 71.
12.00 72.
12.30 73.
13.00 74.
13.30 75.
14.00 76.
14.30 77.
15.00 78.
15.30 79.
16.00 80.
16.30 81.
17.00 82.
17.30 83.
18.00 84.
18.30 85.
19.00 86.
19.30 87.
20.00 88.
20.30 89.
21.00 90.
21.30 91.
22.00 92.
22.30 93.
23.00 94.
23.30 95.
0.00 96.
0.30 97.
1.00 98.
1.30 99.



#OVN#

HYDROGRAPH AT STA 1 FOR PLAN 1, RTIO 1

0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	1.	2.	3.	4.	5.	4.	4.	3.	2.
2.	1.	1.	1.	1.	0.	0.	0.	0.	0.
0.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	2.	3.	5.	7.	8.	9.	9.	10.	10.
10.	10.	12.	19.	30.	46.	62.	78.	93.	116.
151.	185.	203.	197.	176.	151.	123.	96.	72.	55.
42.	32.	25.	20.	17.	15.	13.	12.	11.	10.
13.	15.	14.	13.	13.	12.	12.	11.	11.	10.
10.	10.	9.	9.	9.	8.	8.	8.	7.	7.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	203.	136.	48.	20.	2427.
CMS	6.	4.	1.	1.	69.
INCHES		1.44	2.04	2.14	2.14
MM		36.59	51.69	54.30	54.30
AC-FT		68.	95.	100.	100.
THOUS CU M		83.	118.	124.	124.

HYDROGRAPH AT STA 1 FOR PLAN 1, RTIO 2

0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	1.	2.	3.	6.	7.	7.	6.	5.	4.
3.	2.	2.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	2.
2.	3.	5.	7.	10.	12.	13.	14.	15.	15.
15.	16.	19.	28.	45.	69.	93.	116.	139.	174.

226.	277.	304.	295.	264.	226.	185.	144.	109.	82.
63.	48.	37.	30.	29.	28.	27.	26.	25.	24.
23.	22.	21.	20.	19.	19.	18.	17.	16.	16.
15.	15.	14.	13.	13.	12.	12.	11.	11.	11.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	304.	204.	72.	30.	3640.
CMS	9.	6.	2.	1.	103.
INCHES		2.16	3.05	3.21	3.21
MM		54.83	77.54	81.45	81.45
AC-FT		101.	143.	150.	150.
THOUS CU M		125.	177.	186.	186.

HYDROGRAPH AT STA 1 FOR PLAN 1, RTIO 3

0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	1.	3.	5.	7.	8.	7.	6.	5.	4.
3.	2.	2.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	2.	2.	2.
2.	3.	5.	8.	10.	12.	14.	15.	16.	16.
16.	17.	20.	30.	48.	73.	99.	124.	148.	186.
241.	295.	324.	315.	281.	241.	197.	153.	116.	88.
67.	51.	40.	32.	31.	30.	29.	27.	26.	25.
24.	23.	22.	21.	21.	20.	19.	18.	18.	17.
16.	16.	15.	14.	14.	13.	13.	12.	12.	11.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	324.	218.	77.	32.	3883.
CMS	9.	6.	2.	1.	110.
INCHES		2.30	3.26	3.42	3.42
MM		58.49	82.71	86.88	86.88
AC-FT		108.	153.	160.	160.
THOUS CU M		133.	188.	198.	198.

HYDROGRAPH AT STA 1 FOR PLAN 1, RTIO 4

0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	1.	3.	5.	7.	8.	8.	7.	5.	4.
3.	2.	2.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	2.	2.	2.	2.	2.
2.	3.	6.	8.	11.	13.	15.	16.	16.	17.
18.	18.	21.	32.	51.	78.	105.	132.	158.	197.
256.	314.	345.	334.	299.	256.	209.	163.	123.	93.
71.	54.	42.	34.	33.	32.	30.	29.	28.	27.
26.	25.	24.	23.	22.	21.	20.	19.	19.	18.
17.	17.	16.	15.	15.	14.	13.	13.	12.	12.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	345.	231.	82.	34.	4125.
CMS	10.	7.	2.	1.	117.
INCHES		2.45	3.46	3.63	3.63
MM		62.14	87.88	92.31	92.31
AC-FT		115.	162.	170.	170.
THOUS CU M		142.	200.	210.	210.

HYDROGRAPH AT STA 1 FOR PLAN 1, RTIO 5

0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	1.	3.	6.	8.	9.	8.	7.	6.	4.
3.	2.	2.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	2.	2.	2.	2.	2.
2.	4.	6.	9.	12.	14.	15.	17.	17.	18.
19.	19.	22.	33.	54.	82.	112.	140.	167.	209.
272.	332.	365.	354.	316.	271.	222.	173.	130.	99.
75.	58.	45.	36.	30.	33.	32.	31.	30.	28.
27.	26.	25.	24.	23.	22.	21.	20.	20.	19.
18.	17.	17.	16.	15.	15.	14.	14.	13.	13.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	365.	245.	87.	36.	4368.
CMS	10.	7.	2.	1.	124.
INCHES		2.59	3.66	3.85	3.85
MM		65.90	93.09	97.74	97.74
AC-FT		122.	172.	181.	181.
THOUS CU M		150.	212.	223.	223.

HYDROGRAPH AT STA 1 FOR PLAN 1, RTIO 6

0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	1.	3.	6.	8.	9.	8.	7.	6.	5.
3.	3.	2.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	2.	2.	2.	2.	2.	2.
2.	4.	6.	9.	12.	15.	16.	17.	18.	19.
20.	20.	23.	35.	57.	87.	118.	147.	176.	220.
287.	351.	385.	374.	334.	286.	234.	182.	138.	104.
79.	61.	47.	38.	37.	35.	34.	33.	31.	30.
29.	28.	27.	26.	25.	24.	23.	22.	21.	20.
19.	18.	18.	17.	16.	16.	15.	14.	14.	13.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	385.	259.	91.	38.	4611.
CMS	11.	7.	3.	1.	131.
INCHES		2.73	3.87	4.06	4.06
MM		69.45	98.22	103.17	103.17
AC-FT		128.	181.	191.	191.
THOUS CU M		158.	224.	235.	235.

HYDROGRAPH AT STA 1 FOR PLAN 1, RTIO 7

0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	1.	3.	6.	9.	9.	9.	8.	6.	5.
4.	3.	2.	2.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	2.	2.	2.	2.	2.	2.
2.	4.	7.	10.	13.	15.	17.	18.	19.	20.
21.	21.	29.	37.	60.	91.	124.	155.	189.	232.
302.	369.	405.	393.	351.	301.	246.	192.	145.	110.

83.	64.	50.	40.	39.	37.	36.	34.	33.	32.
30.	29.	28.	27.	26.	25.	24.	23.	22.	21.
20.	19.	19.	18.	17.	17.	16.	15.	15.	14.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	405.	272.	96.	40.	4853.
CMS	11.	8.	3.	1.	137.
INCHES		2.88	4.07	4.28	4.28
MM		73.11	103.39	108.60	108.60
AC-FT		135.	191.	201.	201.
THOUS CU M		167.	236.	247.	247.

HYDROGRAPH AT STA 1 FOR PLAN 1, RTIO 8

1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	1.	1.	1.
1.	3.	8.	15.	22.	24.	22.	19.	16.	12.
9.	7.	5.	4.	3.	2.	2.	2.	2.	2.
2.	3.	3.	4.	4.	4.	5.	5.	5.	5.
6.	10.	17.	25.	33.	38.	43.	48.	48.	50.
52.	52.	62.	93.	151.	229.	310.	388.	463.	580.
754.	723.	1014.	784.	879.	753.	616.	479.	362.	274.
209.	160.	124.	101.	97.	93.	89.	86.	82.	79.
76.	73.	70.	67.	65.	62.	59.	57.	55.	53.
51.	49.	47.	45.	43.	41.	40.	38.	37.	35.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	1014.	681.	241.	101.	12134.
CMS	29.	19.	7.	3.	344.
INCHES		7.20	10.18	10.69	10.69
MM		182.77	258.47	271.49	271.49
AC-FT		338.	477.	501.	501.
THOUS CU M		416.	589.	618.	618.

HYDROGRAPH AT STA 1 FOR PLAN 1, RTIO 9

2.	2.	2.	2.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	5.	16.	31.	43.	47.	45.	39.	32.	25.
18.	14.	10.	8.	6.	5.	5.	4.	4.	4.
4.	5.	6.	7.	8.	9.	9.	10.	10.	10.
12.	20.	33.	50.	65.	77.	86.	92.	97.	100.
103.	109.	124.	186.	302.	457.	620.	775.	927.	1160.
1508.	1846.	2027.	1967.	1757.	1506.	1232.	959.	725.	548.
417.	320.	249.	202.	194.	186.	178.	171.	169.	158.
152.	146.	140.	134.	129.	124.	119.	114.	110.	105.
101.	97.	93.	90.	86.	83.	79.	76.	73.	70.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	2027.	1361.	481.	202.	24267.
CMS	57.	39.	14.	6.	687.
INCHES		14.39	20.35	21.38	21.38
MM		365.54	516.94	542.98	542.98
AC-FT		675.	955.	1003.	1003.
THOUS CU M		833.	1178.	1237.	1237.

****

COMBINE HYDROGRAPHS

INFLOW HYDROGRAPHS, COMBINING EATON RESERVOIR SUBWATERSHEDS NO. 1, 2 AND 3

ISTAG	ICOMP	IECON	ITAPE	JPLT	JPRT	INAME	ISTAGE	IAUTO
1	3	0	0	0	0	1	0	0

SUM OF 3 HYDROGRAPHS AT 1 PLAN 1 RTIO 1

2.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	3.	7.	14.	22.	28.	32.	32.	30.	26.
22.	18.	15.	12.	10.	8.	7.	6.	5.	4.
4.	5.	5.	6.	7.	7.	8.	8.	8.	8.
9.	13.	19.	28.	38.	48.	58.	66.	72.	77.
81.	85.	93.	124.	179.	261.	384.	478.	599.	737.
969.	1192.	1377.	1483.	1492.	1417.	1280.	1113.	943.	786.
649.	536.	444.	369.	312.	269.	226.	198.	177.	157.
140.	135.	129.	124.	119.	114.	110.	106.	101.	97.
93.	90.	86.	83.	79.	76.	73.	70.	88.	85.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	1492.	1119.	422.	176.	21160.
CMS	42.	32.	12.	5.	599.
INCHES		1.31	1.97	2.06	2.06
MM		33.23	50.07	52.34	52.34
AC-FT		555.	836.	874.	874.
THOUS CU M		685.	1032.	1079.	1079.

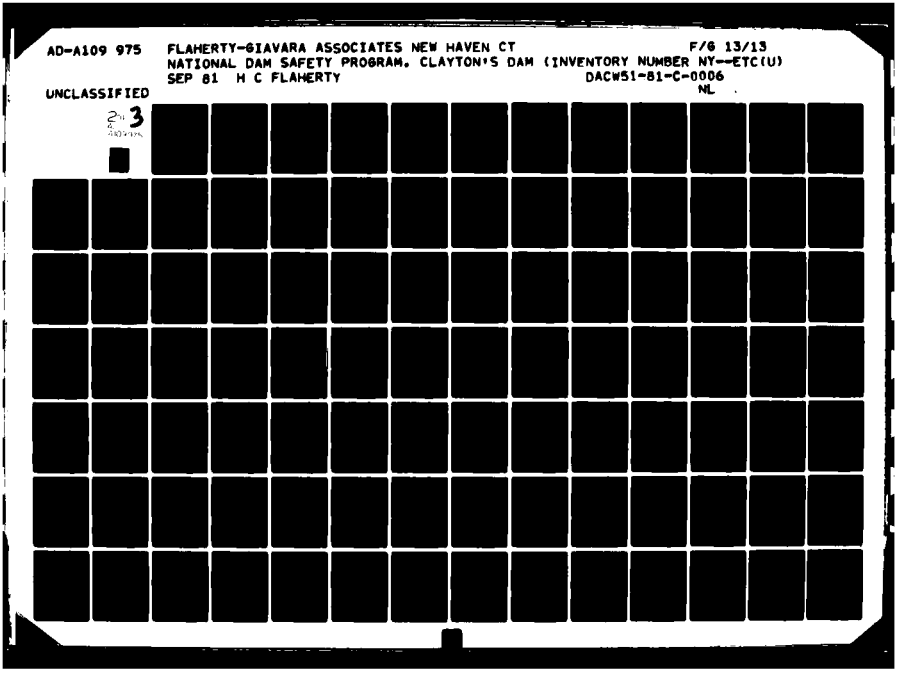
OVF

STATION 1

INFLOW(I), OUTFLOW(O) AND OBSERVED FLOW(#)

		0.	200.	400.	600.	800.	1000.	1200.	1400.	1600.	0.	0.	0.	0.
0	30	11												
1	00	21												
1	30	31												
2	00	41												
2	30	51												
3	00	61												
3	30	71												
4	00	81												
4	30	91												
5	00	101												
5	30	111												
6	00	121												
6	30	131												
7	00	141												
7	30	151												
8	00	161												
8	30	171												
9	00	181												
9	30	191												

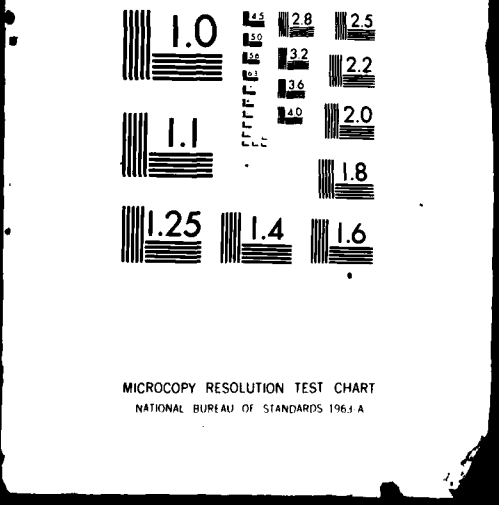
AD-A109 975 FLAHERTY-GIAVARA ASSOCIATES NEW HAVEN CT F/G 13/13
NATIONAL DAM SAFETY PROGRAM. CLAYTON'S DAM (INVENTORY NUMBER NY--ETC(U)
SEP 81 H C FLAHERTY DACW51-81-C-0006
UNCLASSIFIED NL

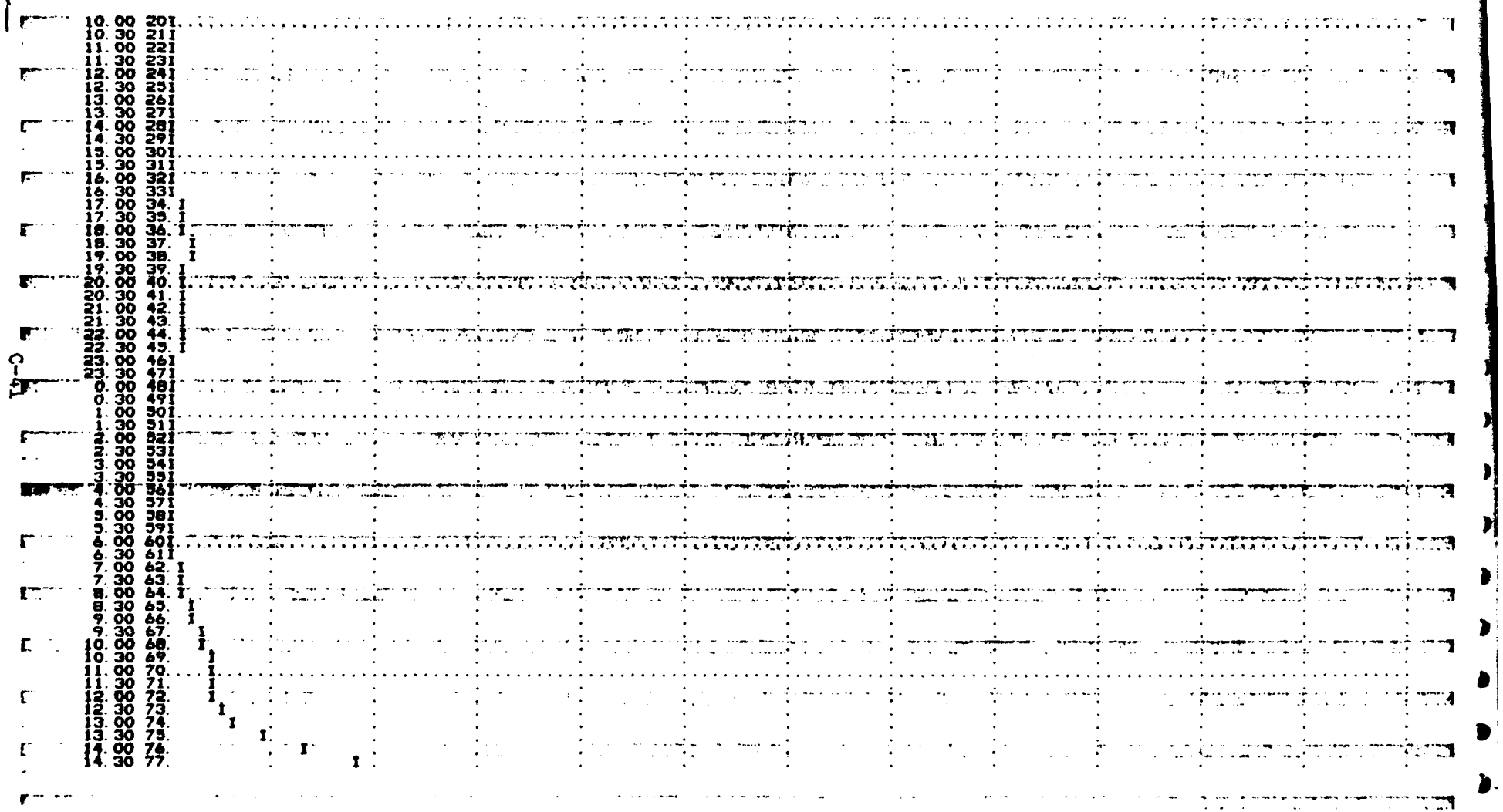


UNCLASSIFIED

2 OF 3

AD A109 975

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15.30 311
16.00 321
16.30 331
17.00 34.
17.30 35.
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19.30 39.
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22.00 44.
22.30 45.
23.00 461
23.30 471
0.00 481
0.30 491
1.00 501
1.30 511
2.00 521
2.30 531
3.00 541
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6.00 601
6.30 611
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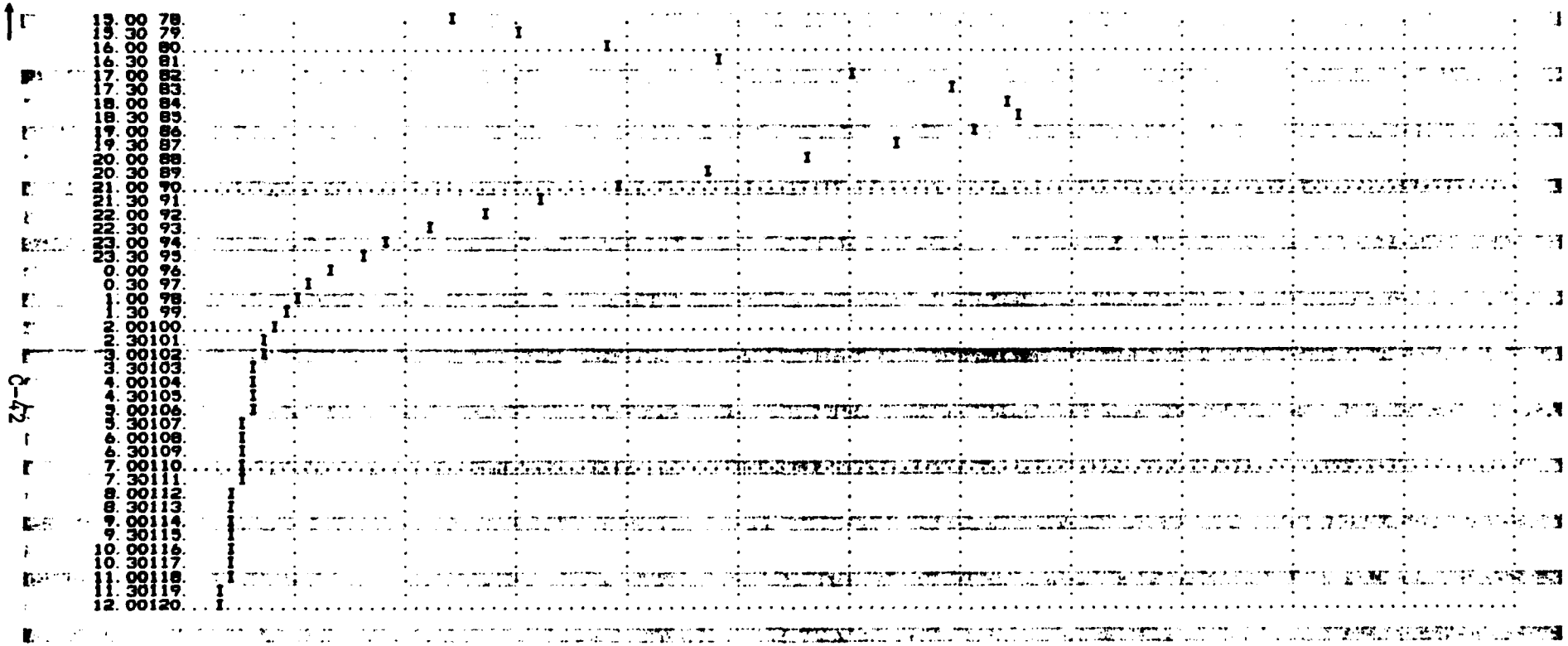
C-4



OVN

SUM OF 3 HYDROGRAPHS AT I PLAN 1 RTIO 2

2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	
2.	2.	1.	1.	1.	1.	1.	1.	1.	1.	
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	
1	4.	11.	22.	33.	43.	48.	48.	45.	39.	
33.	28.	23.	18.	15.	12.	10.	9.	7.	7.	
6.	7.	8.	9.	10.	11.	11.	12.	12.	12.	
14.	19.	27.	42.	97.	73.	87.	98.	108.	119.	
122.	127.	142.	186.	269.	392.	545.	717.	898.	1136.	

1493.	1788.	2066.	2224.	2238.	2125.	1920.	1669.	1415.	1179.	
974.	803.	665.	554.	468.	397.	339.	298.	265.	236.	
210.	202.	194.	186.	179.	172.	165.	158.	152.	146.	
140.	135.	129.	124.	119.	114.	110.	106.	101.	97.	

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	2238.	1679.	633.	269.	31740.
CMS	63.	48.	18.	7.	899.
INCHES		1.96	2.96	3.09	3.09
MM		49.84	75.10	78.51	78.51
AC-FT		833.	1255.	1312.	1312.
THOUS CU M		1027.	1548.	1618.	1618.

OVF

STATION 1

INFLOW(I), OUTFLOW(O) AND OBSERVED FLOW(W)

		0.	400.	800.	1200.	1600.	2000.	2400.	0.	0.	0.	0.	0.	0.
0.	30	11												
1.	00	21												
1.	30	31												
2.	00	41												
2.	30	51												
3.	00	61												
3.	30	71												
4.	00	81												
4.	30	91												
5.	00	101												
5.	30	111												
6.	00	121												
6.	30	131												
7.	00	141												
7.	30	151												
8.	00	161												
8.	30	171												
9.	00	181												
9.	30	191												
10.	00	201												
10.	30	211												
11.	00	221												
11.	30	231												
12.	00	241												
12.	30	251												
13.	00	261												
13.	30	271												
14.	00	281												
14.	30	291												
15.	00	301												
15.	30	311												
16.	00	321												
16.	30	331												
17.	00	34.	I											
17.	30	35.	I											
18.	00	36.	I											
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19.	00	38.	I											
19.	30	39.	I											
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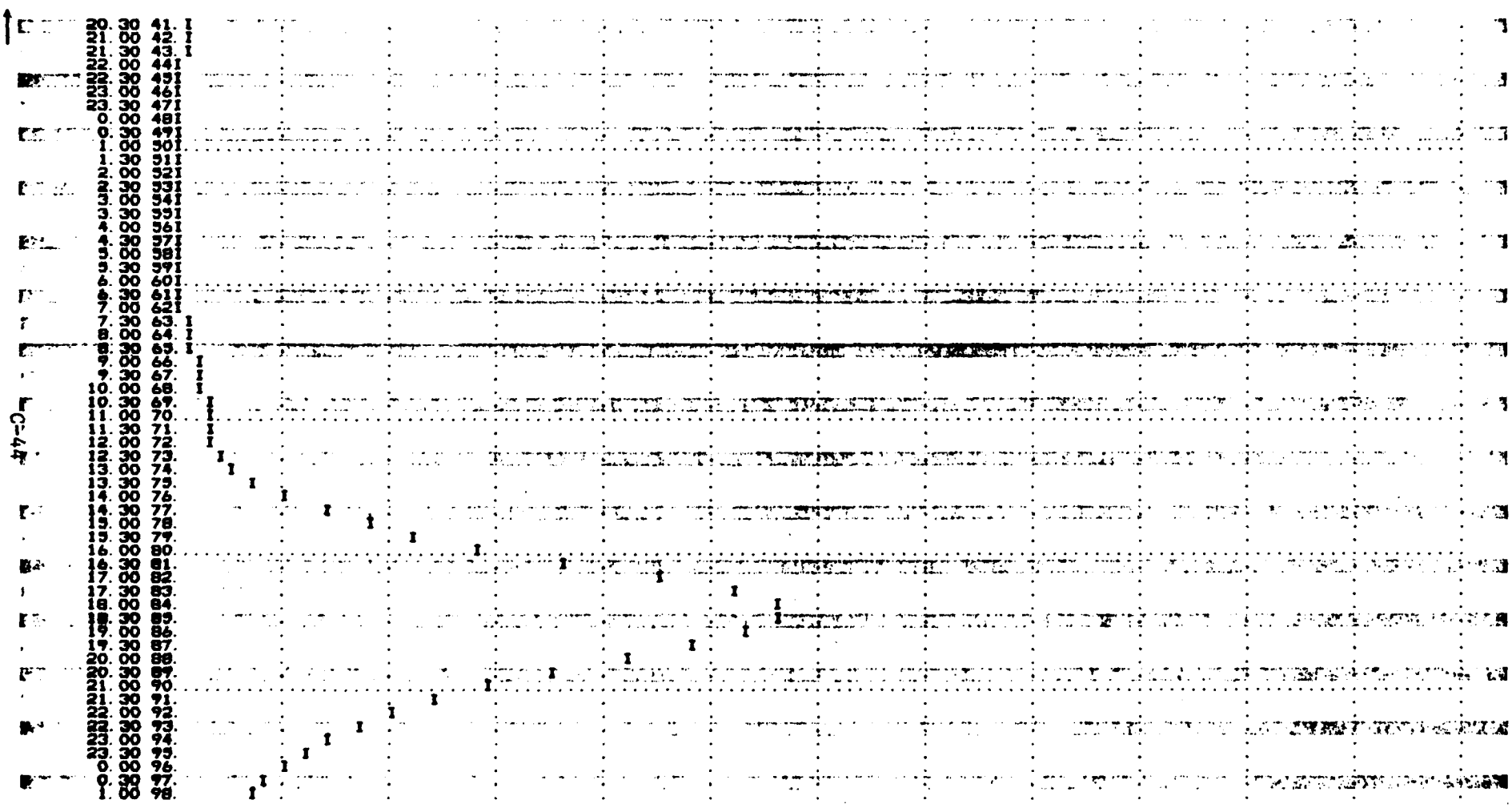
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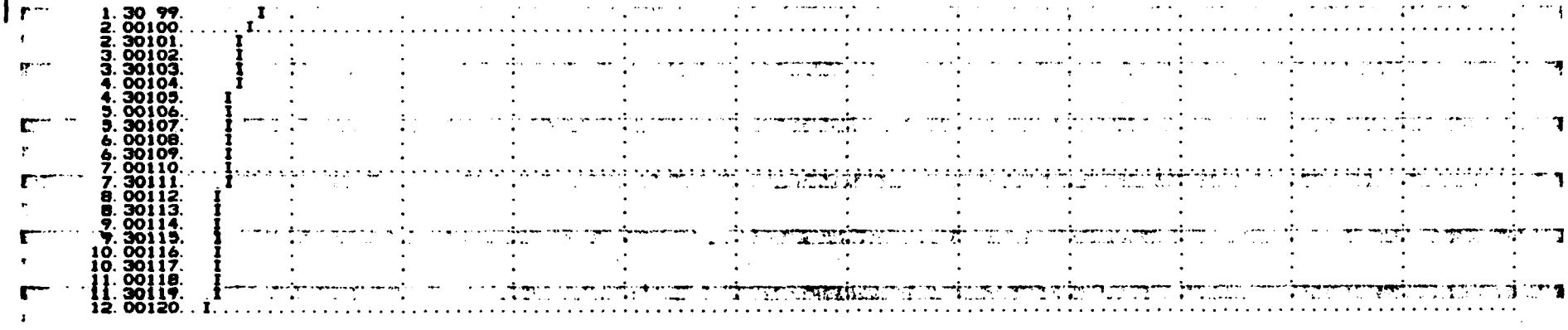

OVN

SUM OF 3 HYDROGRAPHS AT I PLAN 1 RTIO 3

2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	
2.	2.	2.	2.	1.	1.	1.	1.	1.	1.	
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	
1.	4.	12.	23.	35.	59.	91.	91.	48.	42.	
36.	29.	24.	20.	16.	13.	11.	9.	8.	7.	
7.	7.	8.	9.	10.	11.	12.	12.	13.	13.	
15.	20.	30.	45.	61.	78.	92.	105.	115.	123.	
130.	135.	152.	198.	287.	419.	582.	765.	956.	1212.	
1550.	1907.	2204.	2373.	2388.	2267.	2048.	1780.	1509.	1258.	
1039.	857.	710.	591.	499.	424.	361.	318.	282.	251.	
224.	215.	207.	199.	191.	183.	176.	169.	162.	154.	
150.	144.	138.	132.	127.	122.	117.	113.	108.	104.	

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	2388.	1791.	675.	282.	33856.
CMS	68.	51.	19.	8.	959.
INCHES		2.09	3.15	3.30	3.30
MM		53.17	80.11	83.75	83.75
AC-FT		888.	1338.	1399.	1399.
THOUS CU M		1096.	1651.	1726.	1726.

OVF

STATION 1

INFLOW(I), OUTFLOW(O) AND OBSERVED FLOW(*)

0. 400. 800. 1200. 1600. 2000. 2400. 0. 0. 0. 0. 0. 0.

0.30 11
1.00 21
1.30 31

2.00	41	
2.30	51	
3.00	61	
3.30	71	
4.00	81	
4.30	91	
5.00	101	
5.30	111	
6.00	121	
6.30	131	
7.00	141	
7.30	151	
8.00	161	
8.30	171	
9.00	181	
9.30	191	
10.00	201	
10.30	211	
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11.30	231	
12.00	241	
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13.30	271	
14.00	281	
14.30	291	
15.00	301	
15.30	311	
16.00	321	
16.30	331	
17.00	34. I	
17.30	35. I	
18.00	36. I	
18.30	37. I	
19.00	38. I	
19.30	39. I	
20.00	40. I	
20.30	41. I	
21.00	42. I	
21.30	43. I	
22.00	441	
22.30	451	
23.00	461	
23.30	471	
0.00	481	
0.30	491	
1.00	501	
1.30	511	
2.00	521	
2.30	531	
3.00	541	
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5.30	591	
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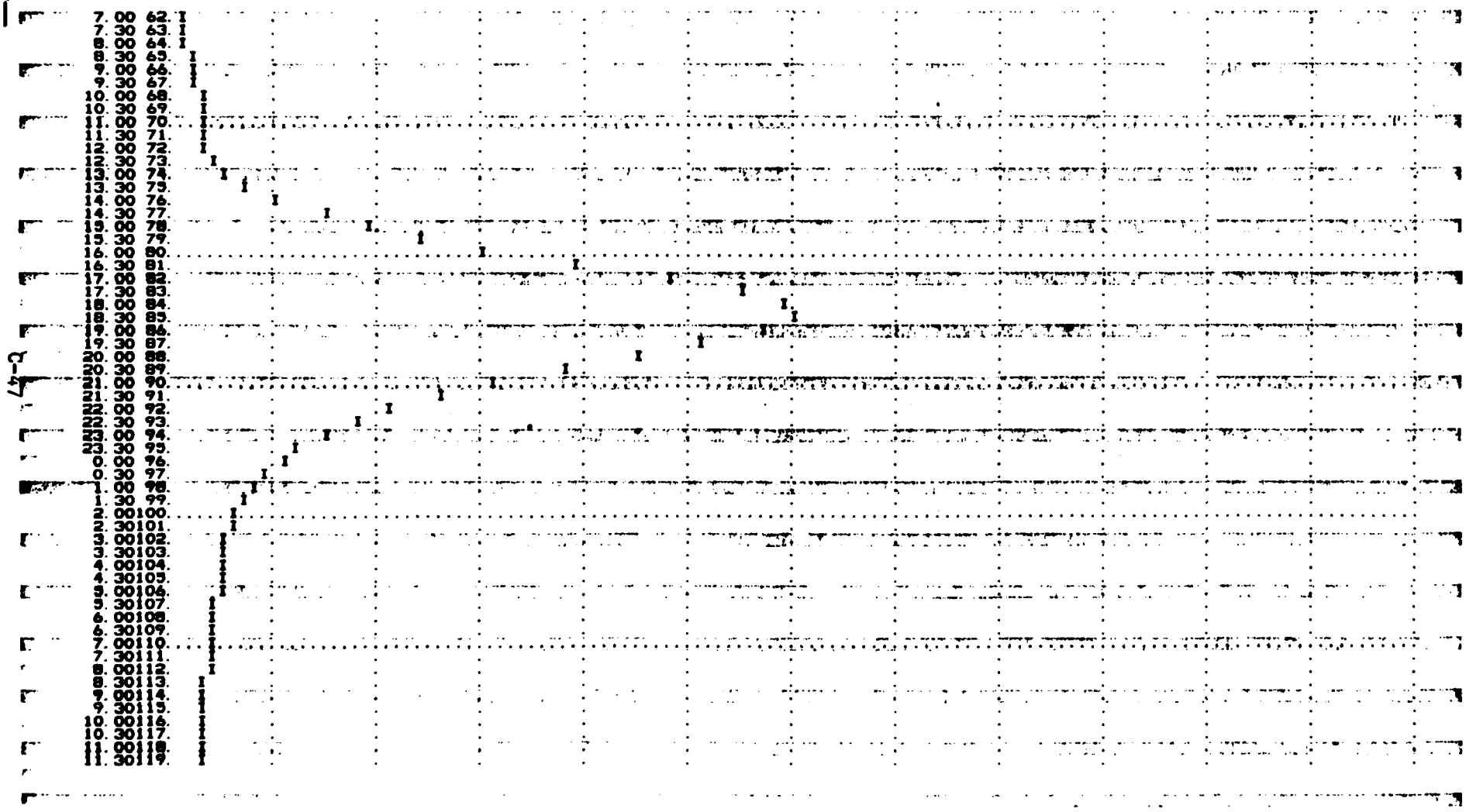
6.30	611	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11.30119.

12.00120...I.....

OVN

SUM OF 3 HYDROGRAPHS AT 1 PLAN 1 RTIO 4

3.	2.	2.	2.	2.	2.	2.	2.	2.	2.	
2.	2.	2.	2.	2.	1.	1.	1.	1.	1.	
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	
1.	4.	12.	25.	38.	48.	54.	55.	51.	45.	
38.	31.	26.	21.	17.	14.	12.	10.	8.	7.	
7.	8.	9.	10.	11.	12.	13.	13.	14.	14.	
16.	22.	32.	47.	65.	82.	98.	111.	122.	131.	
138.	144.	161.	211.	305.	444.	618.	813.	1018.	1288.	
1647.	2026.	2341.	2521.	2537.	2409.	2178.	1872.	1604.	1336.	
1104.	911.	754.	628.	530.	450.	384.	337.	300.	267.	
238.	229.	220.	211.	203.	193.	187.	179.	172.	165.	
159.	153.	146.	141.	135.	130.	125.	120.	115.	110.	

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	2537.	1903.	717.	300.	35972.
CMS	72.	54.	20.	8.	1019.
INCHES		2.82	3.39	3.80	73.80
MM		56.49	85.11	88.98	88.98
AC-FT		944.	1422.	1486.	1486.
THOUS CU M		1164.	1754.	1834.	1834.

OVF

STATION 1

INFLOW(I), OUTFLOW(O) AND OBSERVED FLOW(*)

		0.	400.	800.	1200.	1600.	2000.	2400.	2800.	0.	0.	0.	0.	0.
0.	30	11												
1.	00	21												
1.	30	31												
2.	00	41												
2.	30	51												
3.	00	61												
3.	30	71												
4.	00	81												
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5.	00	101												
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9.	00	181												
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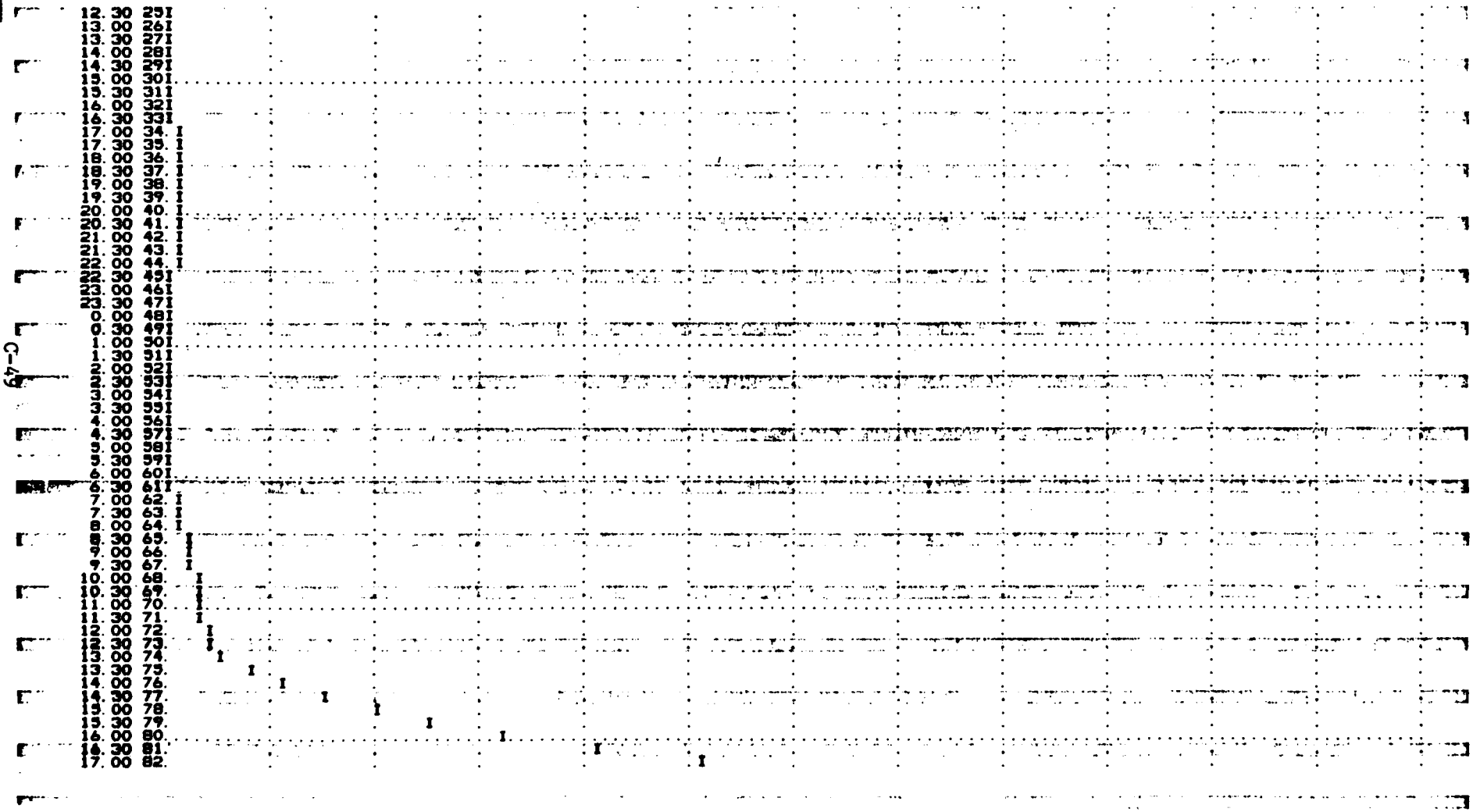
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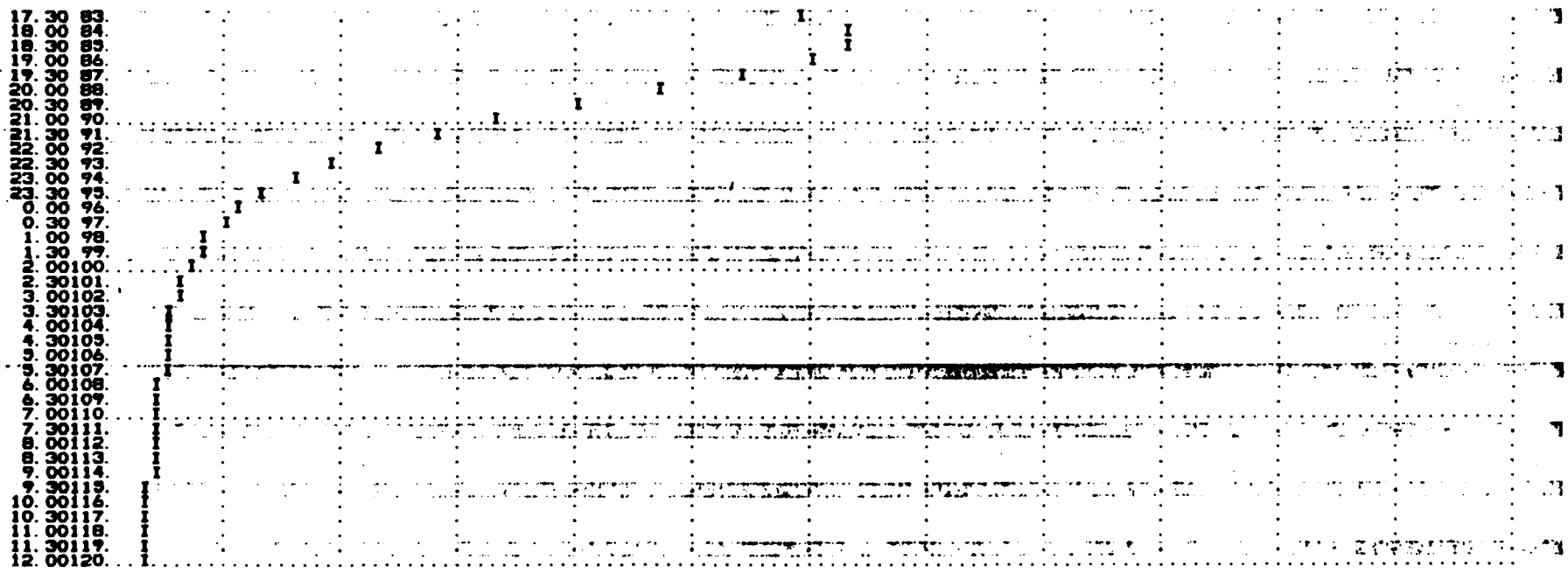

DVN

SUM OF 3 HYDROGRAPHS AT I PLAN 1 RTIO 3

3.	3.	3.	2.	2.	2.	2.	2.	2.	2.	2.
2.	2.	2.	2.	2.	2.	2.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
2.	9.	13.	26.	40.	51.	57.	58.	54.	47.	39.
40.	33.	27.	22.	18.	15.	12.	10.	9.	8.	7.
8.	8.	9.	11.	12.	13.	14.	14.	15.	15.	15.
17.	23.	34.	50.	69.	87.	104.	118.	129.	139.	146.
146.	152.	171.	223.	323.	470.	659.	860.	1078.	1303.	1513.
1744.	2145.	2479.	2669.	2686.	2550.	2304.	2003.	1698.	1415.	1169.
1169.	964.	798.	669.	562.	477.	406.	357.	318.	283.	252.
252.	242.	233.	223.	215.	206.	198.	190.	182.	175.	168.
168.	162.	159.	149.	143.	137.	132.	127.	122.	117.	

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	2686.	2015.	759.	317.	38088.
CMS	76.	57.	21.	9.	1079.
INCHES		2.35	3.55	3.71	3.71
MM		59.81	90.12	94.22	94.22
AC-FT		999.	1506.	1574.	1574.
THOUS CU M		1232.	1857.	1941.	1941.

DVF

STATION 1

INFLOW(I), OUTFLOW(O) AND OBSERVED FLOW(*)

0. 400. 800. 1200. 1600. 2000. 2400. 2800. 0. 0. 0. 0. 0.

0.	30	11
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1.	30	31
2.	00	41
2.	30	51
3.	00	61
3.	30	71
4.	00	81
4.	30	91
5.	00	101
5.	30	111
6.	00	121
6.	30	131
7.	00	141
7.	30	151
8.	00	161
8.	30	171
9.	00	181
9.	30	191
10.	00	201
10.	30	211
11.	00	221
11.	30	231
12.	00	241
12.	30	251
13.	00	261
13.	30	271
14.	00	281
14.	30	291
15.	00	301
15.	30	311
16.	00	321
16.	30	331
17.	00	34 I
17.	30	35 I
18.	00	36 I
18.	30	37 I
19.	00	38 I
19.	30	39 I
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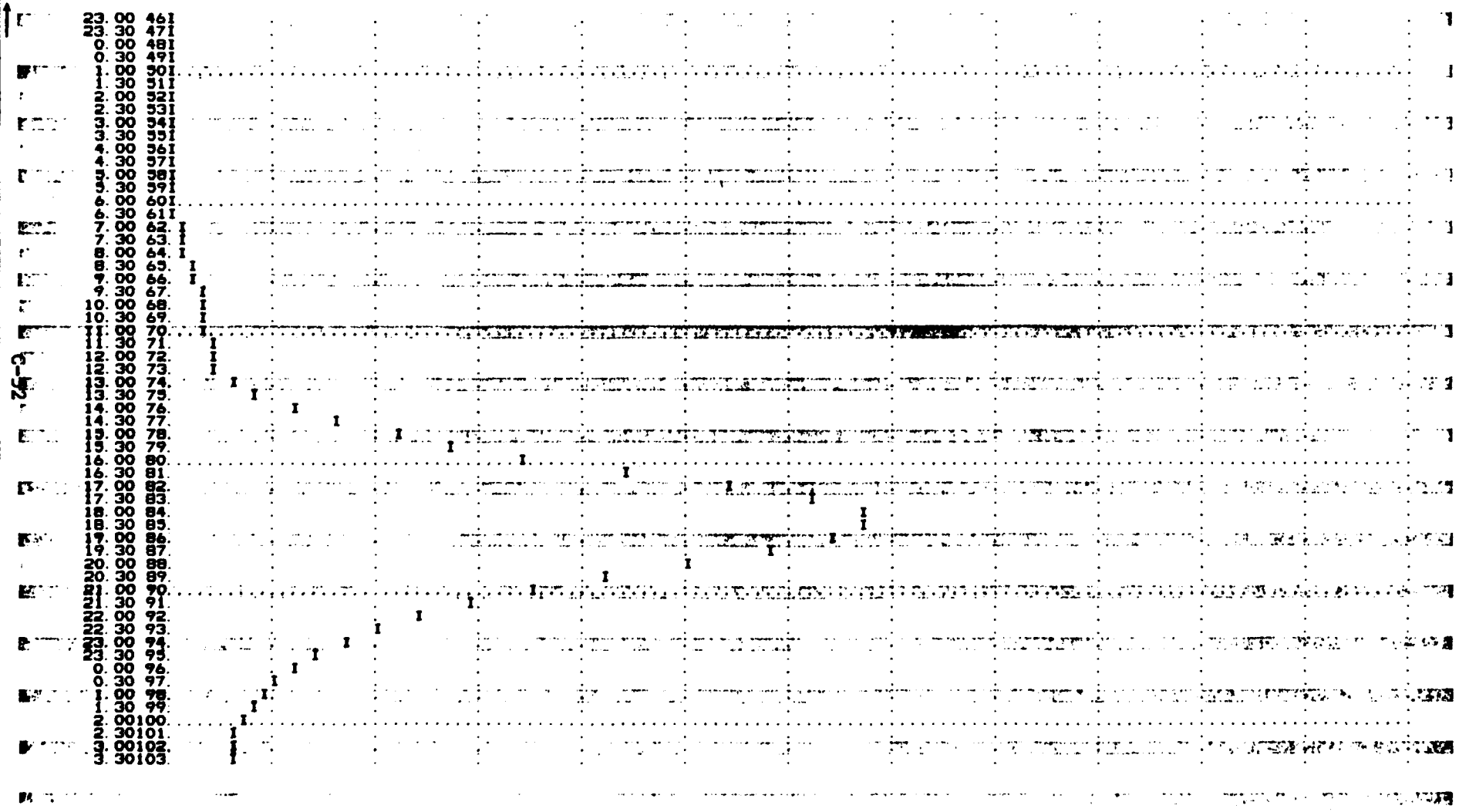
22.	30	451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14.30 77.
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16.30 81.
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2.00100.
2.30101.
3.00102.
3.30103.

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 8.00112.    I
 8.30113.    I
 9.00114.    I
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10.00116.    I
10.30117.    I
11.00118.    I
11.30119.    I
12.00120.    I
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OVN

SUM OF 3 HYDROGRAPHS AT 1 PLAN 1 RTIO 6

3.	3.	3.	3.	2.	2.	2.	2.	2.	2.	2.
2.	2.	2.	2.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	57.	52.	50.
4.	3.	14.	27.	42.	54.	60.	61.	9.	8.	8.
8.	5.	29.	23.	19.	16.	13.	17.	15.	16.	16.
18.	35.	10.	11.	12.	13.	14.	15.	136.	146.	146.
154.	9.	36.	53.	73.	92.	110.	124.	1137.	1439.	1494.
1841.	161.	180.	235.	341.	496.	691.	908.	1798.	1494.	299.
1234.	2269.	2817.	2818.	2839.	2872.	2892.	2114.	335.	299.	185.
266.	1018.	843.	702.	593.	503.	429.	377.	193.	185.	123.
178.	296.	246.	236.	226.	217.	209.	201.	128.	123.	
	170.	164.	157.	151.	145.	139.	134.			

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	2839.	2127.	801.	335.	40204.
CMS	80.	60.	23.	9.	1138.
INCHES		2.47	3.78	3.92	3.92
MM		63.14	95.13	99.45	99.45
AC-FT		1055.	1589.	1661.	1661.
THOUS CU M		1301.	1960.	2049.	2049.

OVF

STATION 1

INFLOW(I), OUTFLOW(O) AND OBSERVED FLOW(*)

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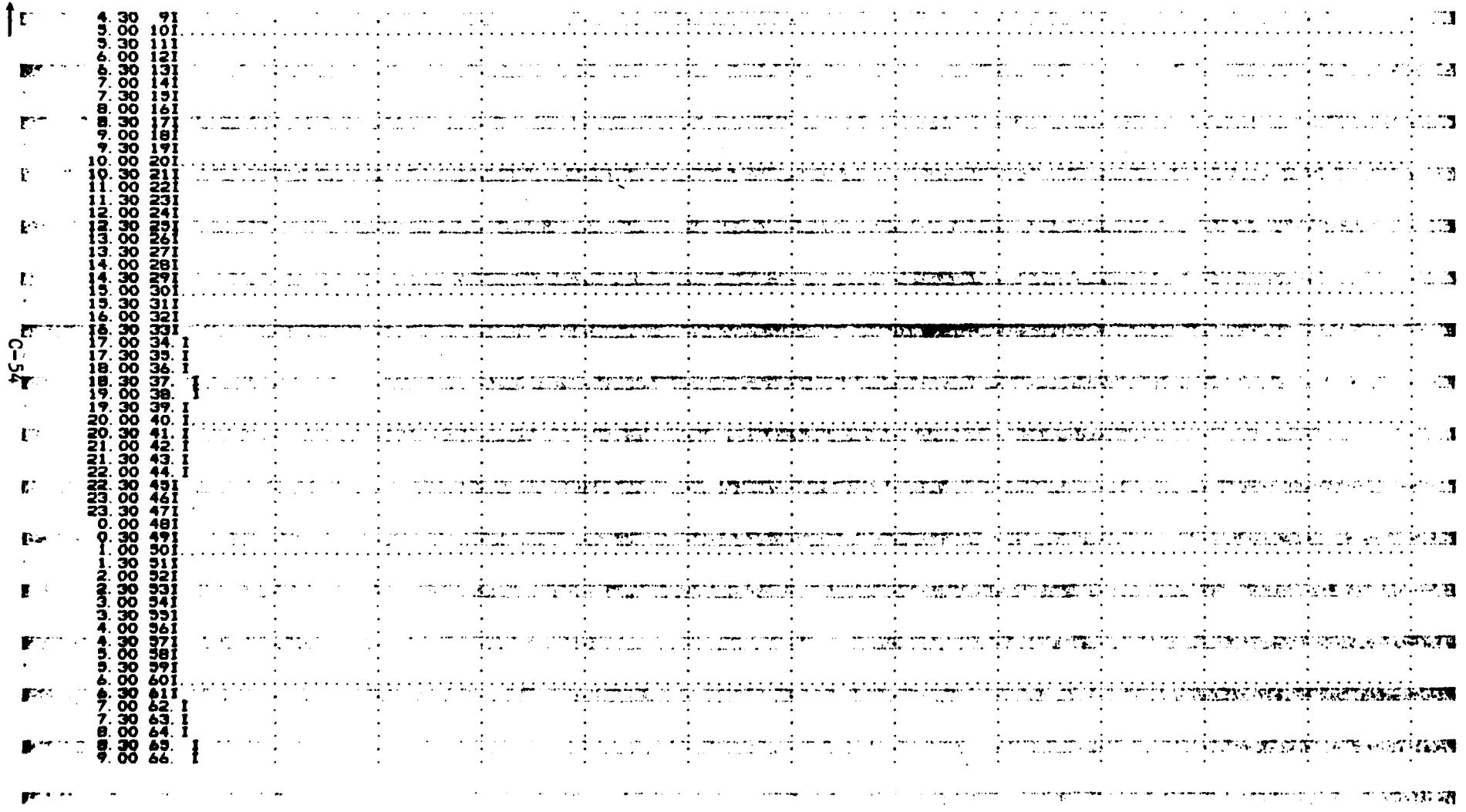
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15.00 301
15.30 311
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18.30 37.
19.00 38.
19.30 39.
20.00 40.
20.30 41.
21.00 42.
21.30 43.
22.00 44.
22.30 451
23.00 461
23.30 471
0.00 481
0.30 491
1.00 501
1.30 511
2.00 521
2.30 531
3.00 541
3.30 551
4.00 561
4.30 571
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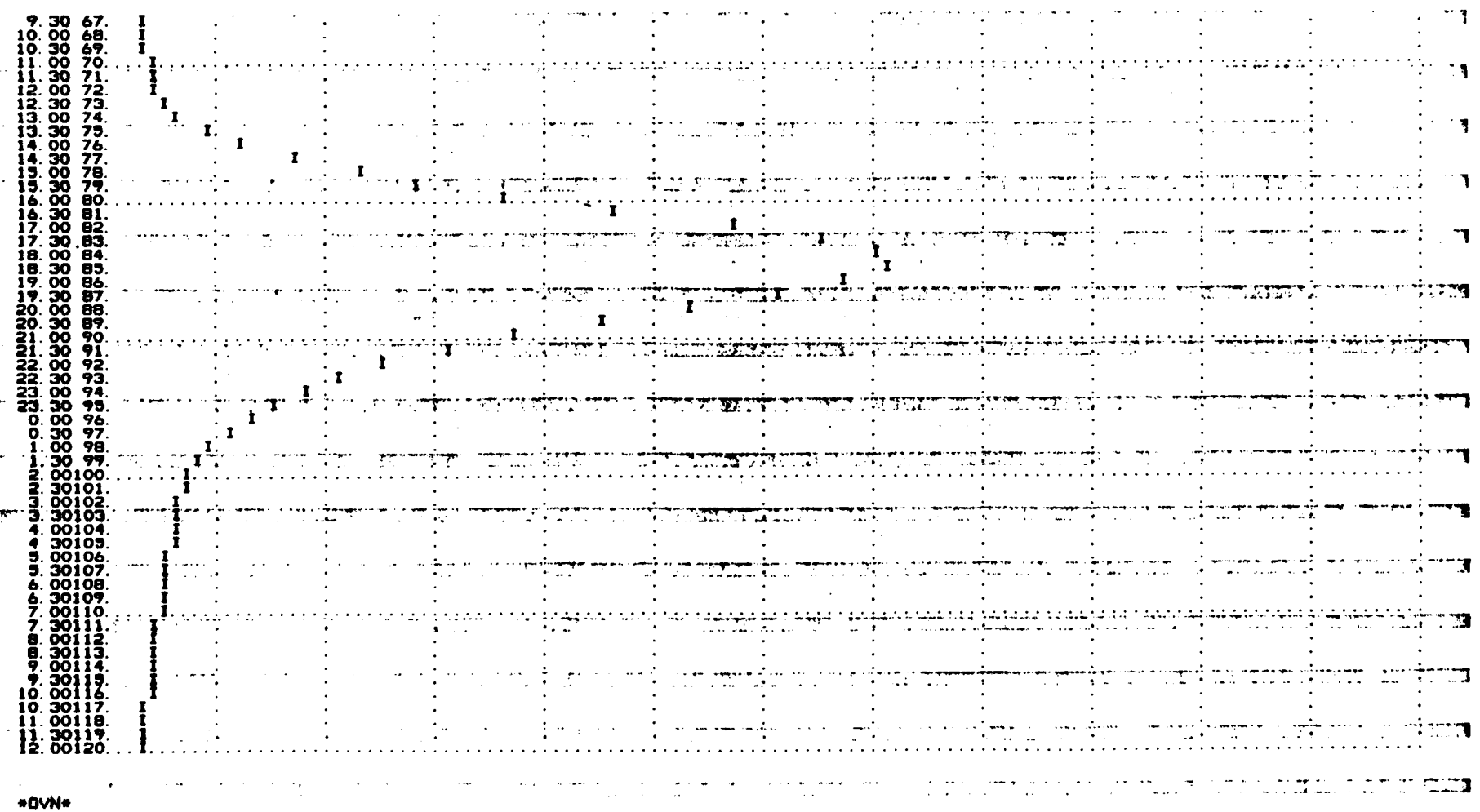
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1.00 98.
1.30 99.
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5.00106.
5.30107.
6.00108.
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8.00112.
8.30113.
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10.00116.
10.30117.
11.00118.
11.30119.
12.00120.

DVN

SUM OF 3 HYDROGRAPHS AT 1 PLAN 1 RTIO 7

3.	3.	3.	3.	3.	2.	2.	2.	2.	2.
2.	2.	2.	2.	2.	2.	2.	2.	2.	2.
2.	1.	1.	1.	1.	1.	1.	2.	2.	2.
2.	9.	19.	29.	44.	57.	64.	64.	60.	52.
44.	37.	30.	25.	20.	17.	14.	11.	10.	9.
8.	9.	10.	12.	13.	14.	15.	16.	16.	17.
19.	26.	38.	56.	76.	97.	119.	131.	144.	154.
162.	169.	189.	248.	359.	523.	727.	956.	1197.	1515.
1938.	2384.	2755.	2966.	2985.	2834.	2560.	2225.	1887.	1572.
1298.	1071.	887.	737.	624.	530.	452.	397.	353.	314.
280.	269.	259.	248.	238.	229.	220.	211.	203.	195.
187.	179.	172.	165.	159.	153.	147.	141.	135.	130.

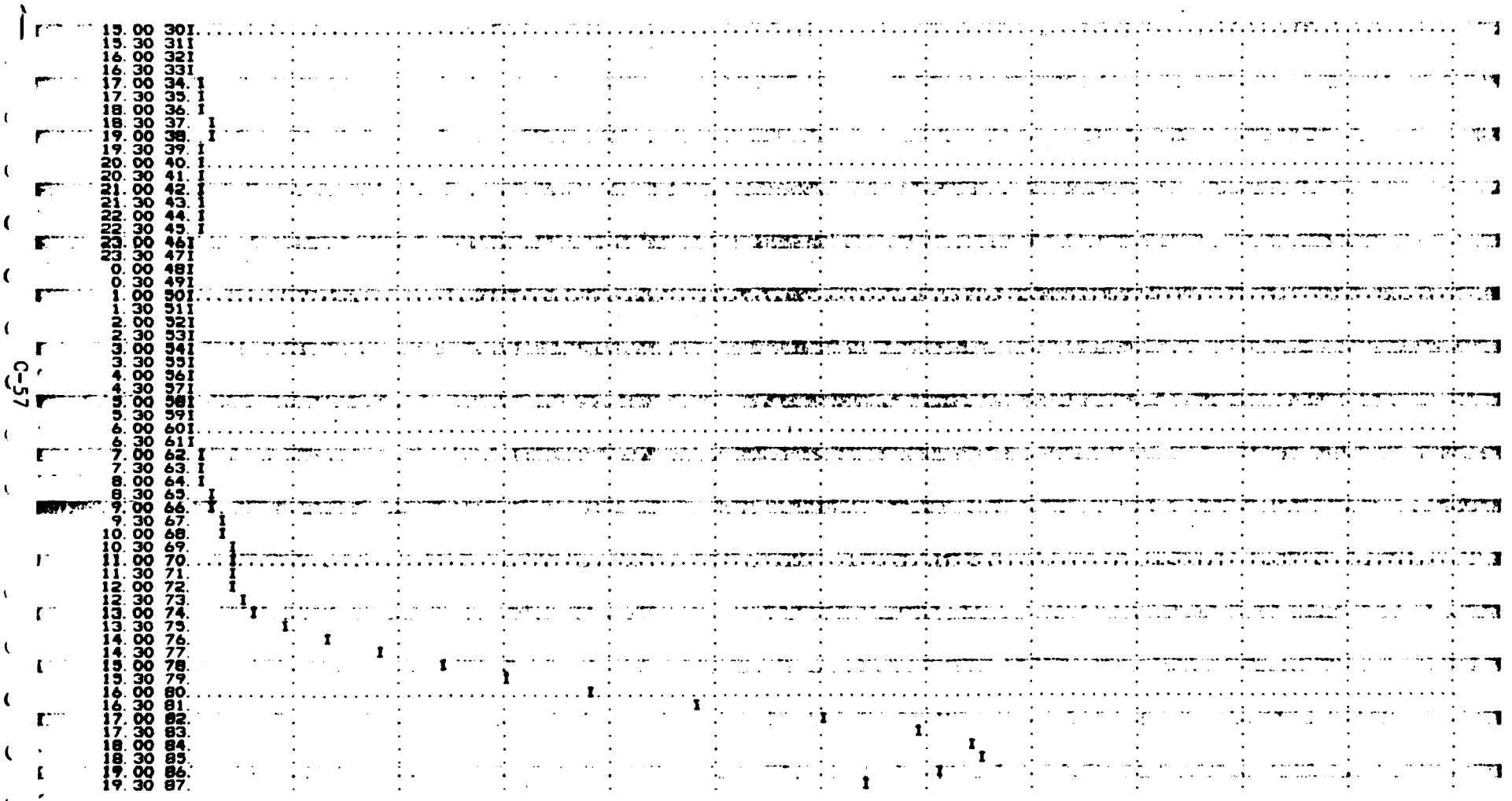
	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	2985.	2239.	843.	353.	42320.
CMS	85.	63.	24.	10.	1198.
INCHES		2.62	3.94	4.12	4.12
MM		66.46	100.13	104.68	104.68
AC-FT		1110.	1673.	1749.	1749.
THOUS CU M		1369.	2063.	2157.	2157.

#OVF#

STATION 1

INFLOW(I), OUTFLOW(O) AND OBSERVED FLOW(#)

		0.	400.	800.	1200.	1600.	2000.	2400.	2800.	3200.	0.	0.	0.	0.
0.	30	11												
1.	00	21												
1.	30	31												
2.	00	41												
2.	30	51												
3.	00	61												
3.	30	71												
4.	00	81												
4.	30	91												
5.	00	101												
5.	30	111												
6.	00	121												
6.	30	131												
7.	00	141												
7.	30	151												
8.	00	161												
8.	30	171												
9.	00	181												
9.	30	191												
10.	00	201												
10.	30	211												
11.	00	221												
11.	30	231												
12.	00	241												
12.	30	251												
13.	00	261												
13.	30	271												
14.	00	281												
14.	30	291												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18.00 361
18.30 371
19.00 381
19.30 391
20.00 401
20.30 411
21.00 421
21.30 431
22.00 441
22.30 451
23.00 461
23.30 471
0.00 481
0.30 491
1.00 501
1.30 511
2.00 521
2.30 531
3.00 541
3.30 551
4.00 561
4.30 571
5.00 581
5.30 591
6.00 601
6.30 611
7.00 621
7.30 631
8.00 641
8.30 651
9.00 661
9.30 671
10.00 681
10.30 691
11.00 701
11.30 711
12.00 721
12.30 731
13.00 741
13.30 751
14.00 761
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15.00 781
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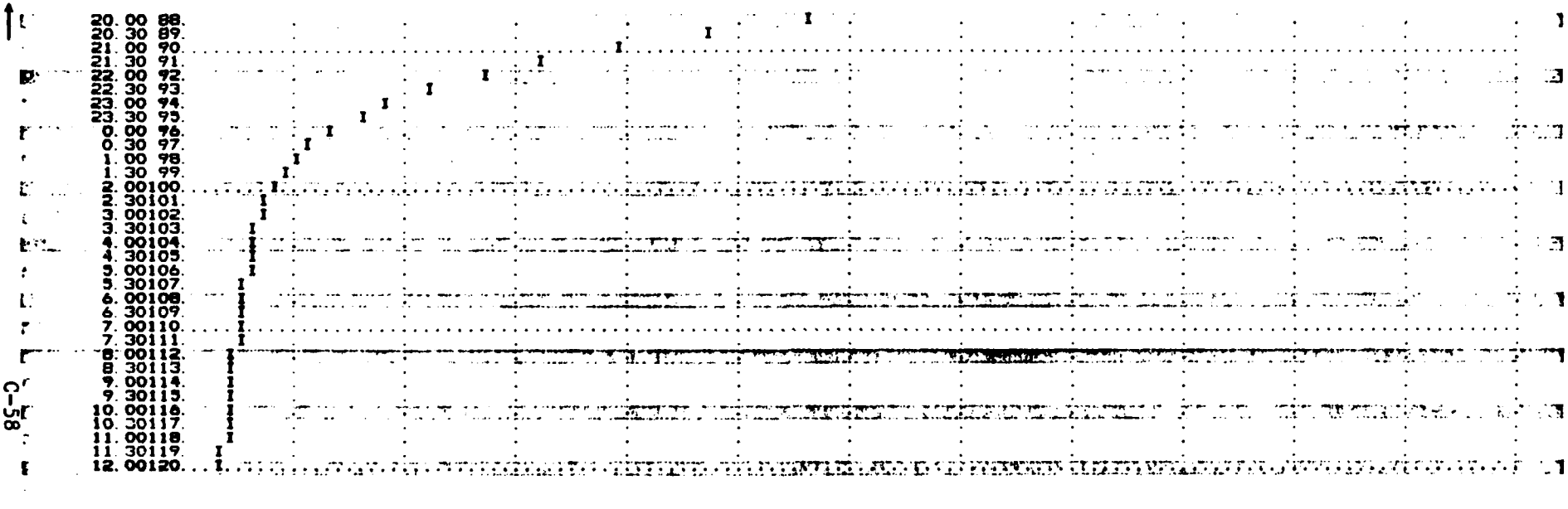

OVN

SUM OF 3 HYDROGRAPHS AT 1 PLAN 1 RTIO 8

8.	7.	7.	7.	7.	6.	6.	6.	6.	5.
5.	5.	5.	5.	5.	4.	4.	4.	4.	4.
4.	4.	4.	3.	3.	3.	3.	4.	4.	4.
4.	13.	37.	72.	111.	142.	159.	160.	149.	131.
111.	92.	79.	62.	50.	41.	34.	29.	24.	22.
21.	23.	26.	29.	33.	35.	38.	39.	40.	42.
47.	64.	93.	140.	191.	242.	289.	328.	359.	385.
406.	423.	474.	619.	897.	1306.	1818.	2390.	2993.	3787.
4849.	3960.	6888.	7415.	7461.	7084.	6400.	5563.	4717.	3930.
3246.	2678.	2218.	1847.	1560.	1324.	1129.	992.	883.	786.
701.	673.	646.	621.	596.	572.	550.	528.	507.	487.
467.	449.	431.	414.	397.	382.	366.	352.	338.	324.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	7461.	5597.	2108.	882.	105801.
CMS	211.	158.	60.	25.	2996.
INCHES		6.94	9.86	10.30	10.30
MM		166.15	250.34	261.71	261.71

AC-FT	2776.	4182.	4372.	4372.
THOUS CU M	3424.	5158.	5393.	5393.

OVF

STATION 1

INFLOW(I), OUTFLOW(O) AND OBSERVED FLOW(*)

0. 1000. 2000. 3000. 4000. 5000. 6000. 7000. 8000. 0. 0. 0. 0.

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2.30 51
3.00 61
3.30 71
4.00 81
4.30 91
5.00 101
5.30 111
6.00 121
6.30 131
7.00 141
7.30 151
8.00 161
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15.30 311
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20.30 41. I
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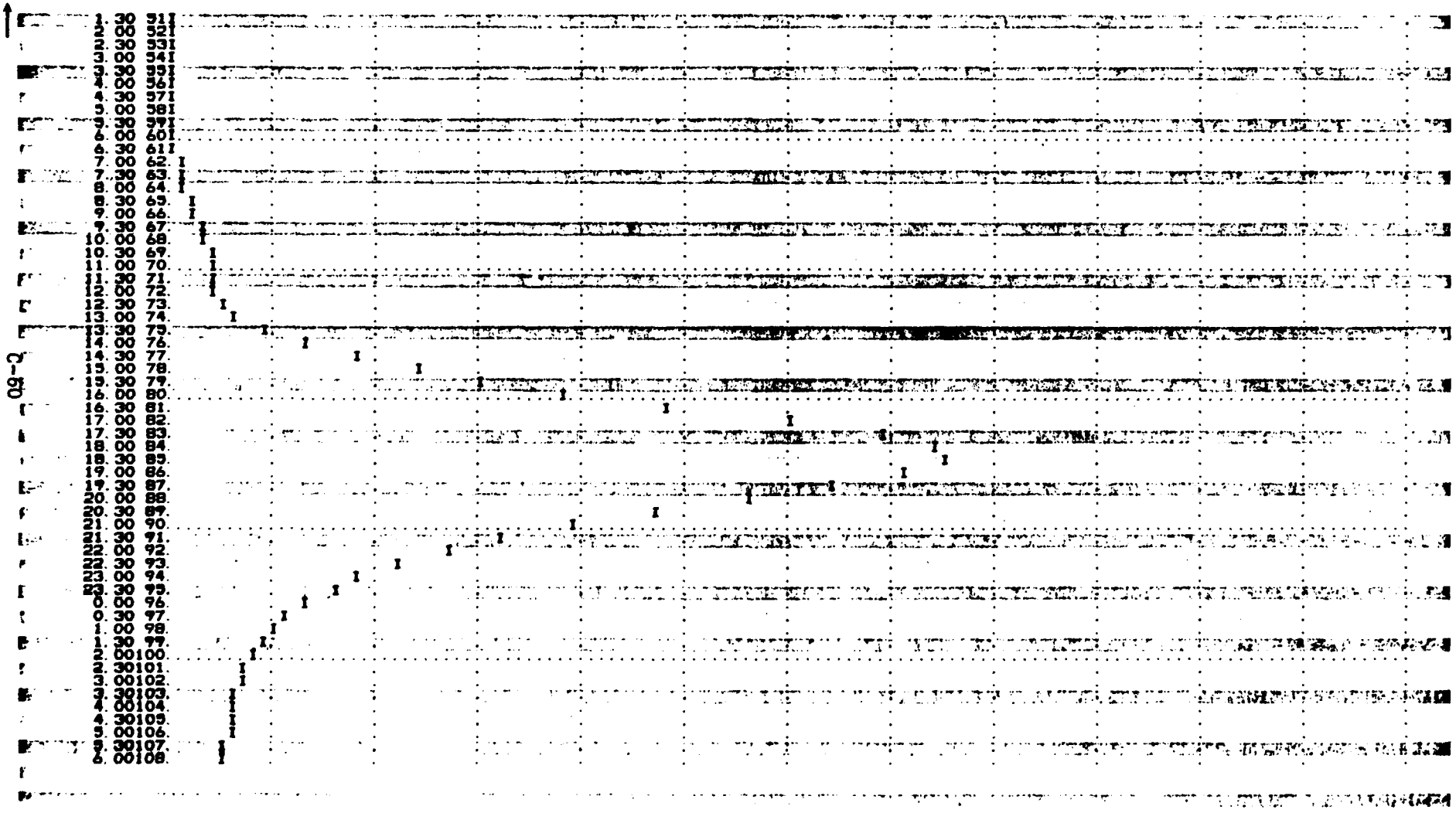
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12.00120.  I
```

OVN

SUM OF 3 HYDROGRAPHS AT I PLAN 1 PTIO 9

15.	15.	14.	14.	13.	[illegible]	12.	12.	11.	11.
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8.	7.	7.	7.	7.	[illegible]	[illegible]	7.	8.	8.
9.	26.	73.	144.	222.	[illegible]	[illegible]	321.	299.	262.
222.	184.	151.	123.	101.	[illegible]	[illegible]	57.	49.	44.
42.	46.	52.	59.	65.	[illegible]	[illegible]	78.	81.	83.
94.	128.	190.	279.	382.	484.	[illegible]	655.	718.	770.
812.	846.	947.	1239.	1793.	2613.	[illegible]	4781.	5987.	7574.
9689.	11919.	13773.	14829.	14923.	14169.	12799.	11126.	9433.	7861.
6492.	5356.	4436.	3695.	3119.	2648.	2258.	1985.	1765.	1572.
1402.	1346.	1293.	1241.	1192.	1145.	1099.	1055.	1013.	973.
934.	897.	862.	827.	795.	763.	733.	704.	676.	649.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	14923.	11195.	4217.	1763.	211601.
CMS	423.	317.	119.	50.	5992.
INCHES		13.08	19.71	20.61	20.61
MM		332.29	500.67	523.42	523.42
AC-FT		5551.	8364.	8744.	8744.
THOUS CU M		6847.	10317.	10785.	10785.

OVF

STATION 1

INFLOW(I), OUTFLOW(O) AND OBSERVED FLOW(*)

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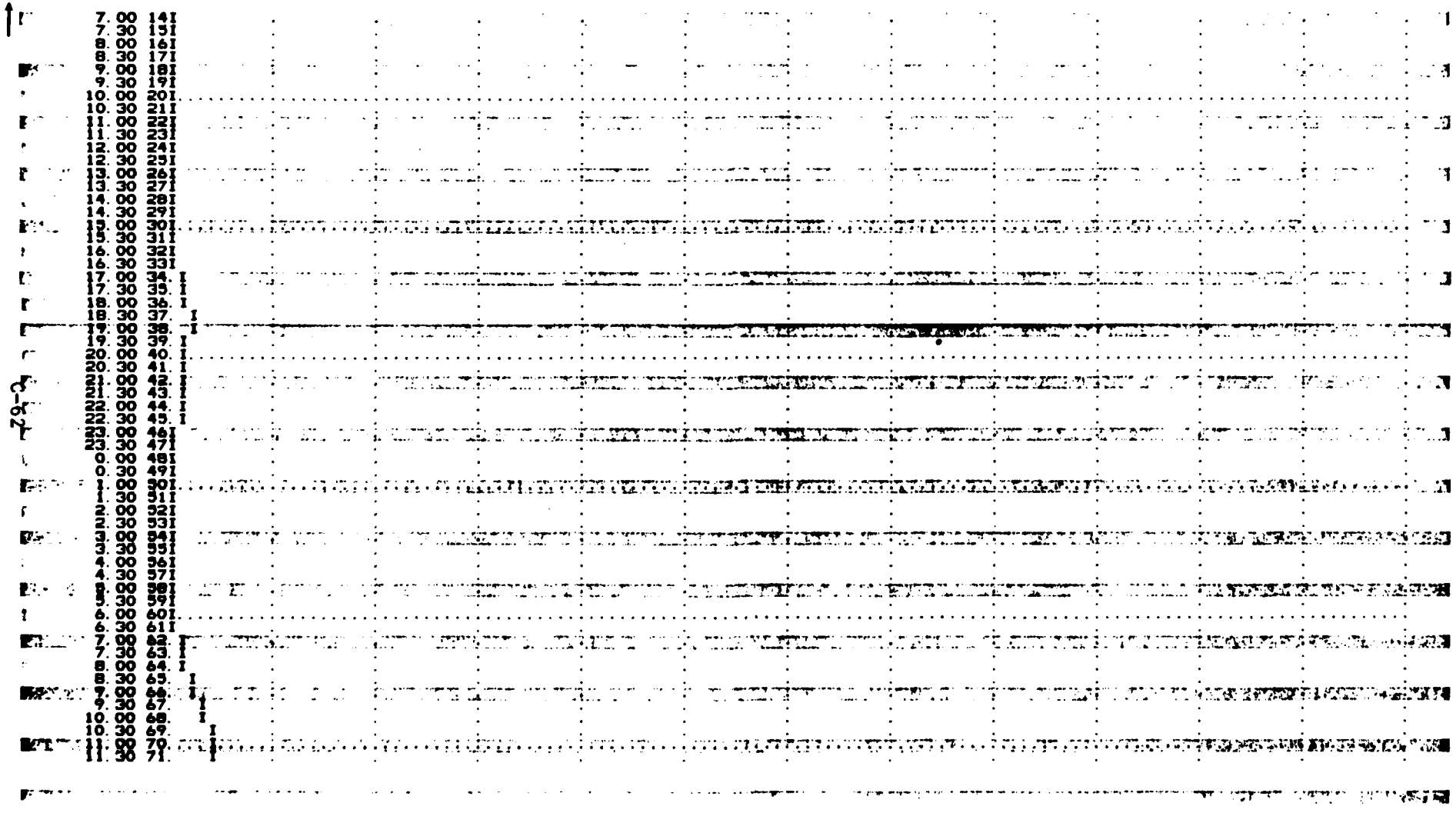
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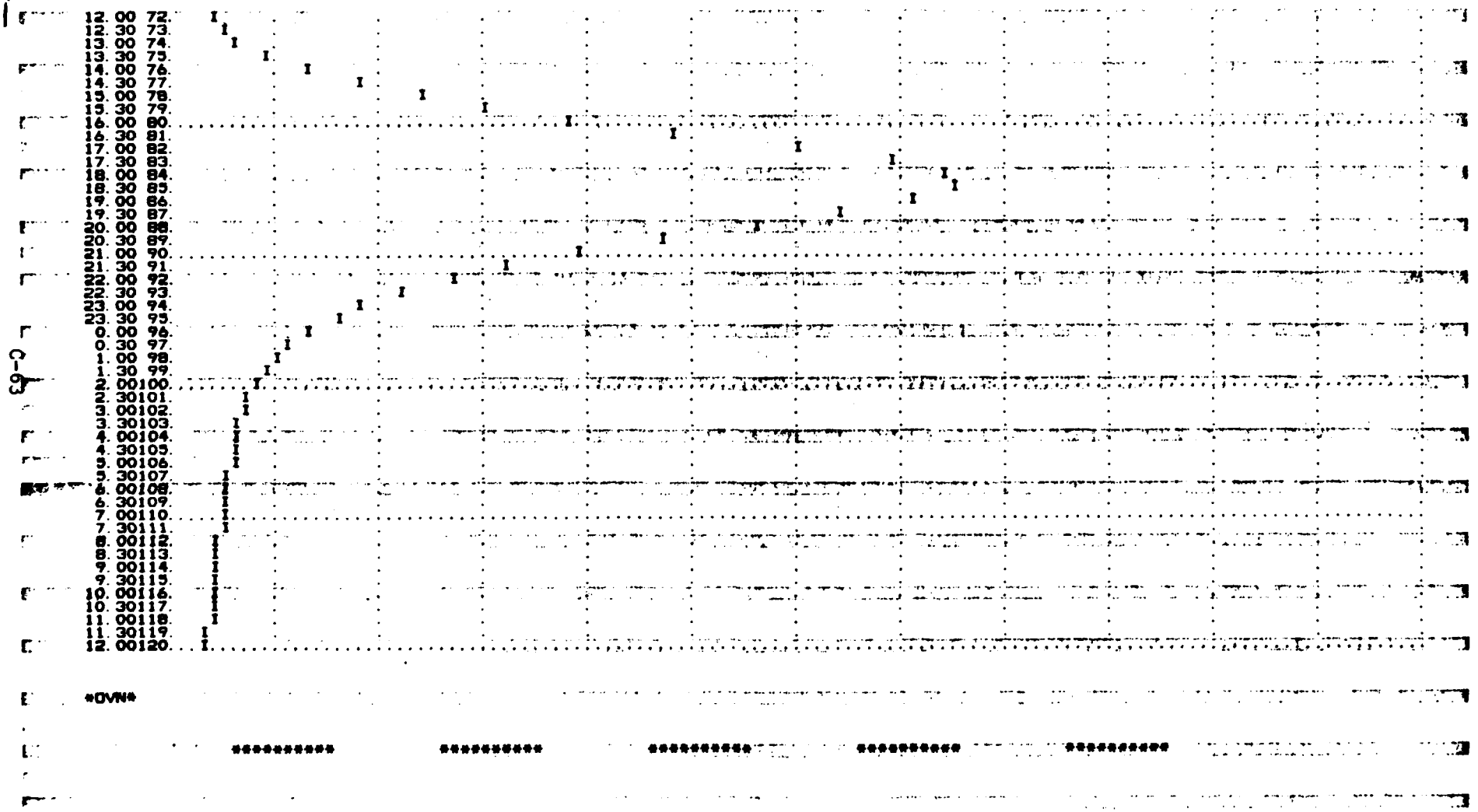
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0.00 96.
0.30 97.
1.00 98.
1.30 99.
2.00100.
2.30101.
3.00102.
3.30103.
4.00104.
4.30105.
5.00106.
5.30107.
6.00108.
6.30109.
7.00110.
7.30111.
8.00112.
8.30113.
9.00114.
9.30115.
10.00116.
10.30117.
11.00118.
11.30119.
12.00120.
OVN

HYDROGRAPH ROUTING

EATON RESERVOIR ROUTING MODIFIED PULS METHOD

ISTAQ	ICOMP	IECON	ITAPE	JPLT	JPRT	INAME	ISTAGE	IAUTO
2	1	0	0	0	0	1	0	0

ROUTING DATA

GLOSS	CLOSS	AVQ	IRES	ISAME	IOPT	IPMP	LSTR
0.0	0.000	0.00	1	1	0	0	0

NSTPS	NSTDL	LAG	AMSKK	X	TSK	STORA	ISPRAT
1	0	0	0.000	0.000	0.000	0.	-1

STAGE	1431.70	1433.00	1436.00	1437.00	1438.00	1439.00	1440.00	1441.00	1442.00	1443.00
	1444.00	1445.00								
FLOW	56.80	57.90	124.20	237.30	382.60	553.50	747.20	960.60	1192.70	1441.70
	1706.80	1786.90								
SURFACE AREA=	275.	346.	525.							
CAPACITY=	0.	2200.	7983.							
ELEVATION=	1435.	1442.	1460.							

CREL	SPNID	COQW	EXPW	ELEVC	COQL	EXPL
1434.9	0.0	0.0	0.0	0.0	0.0	0.0

DAM DATA

TOPEL	COQD	EXPD	DAMWID
1442.0	2.5	1.5	800.

STATION 2, PLAN 1, RATIO 1

END-OF-PERIOD HYDROGRAPH ORDINATES

OUTFLOW

0.	57.	0.	57.	0.	57.	0.	57.	0.	57.
0.	57.	0.	57.	0.	57.	0.	57.	0.	57.
0.	57.	0.	57.	0.	57.	0.	57.	0.	57.
0.	57.	0.	57.	0.	57.	57.	57.	57.	0.
57.	0.	57.	0.	57.	0.	57.	0.	57.	0.
57.	0.	57.	0.	57.	0.	57.	0.	57.	0.
57.	0.	57.	0.	57.	57.	57.	57.	57.	57.
57.	57.	57.	57.	57.	57.	58.	62.	66.	72.
80.	90.	101.	114.	129.	151.	170.	186.	200.	210.
218.	224.	228.	231.	233.	234.	234.	233.	233.	232.
230.	229.	227.	226.	224.	222.	221.	219.	217.	215.
213.	211.	209.	207.	205.	203.	201.	199.	197.	195.

STORAGE

0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	1.	1.
2.	3.	4.	7.	11.	17.	28.	43.	62.	87.

120.	161.	210.	265.	321.	379.	424.	466.	501.	528.
549.	564.	575.	582.	587.	589.	589.	588.	586.	584.
580.	576.	572.	568.	564.	560.	555.	550.	546.	541.
536.	531.	526.	521.	515.	510.	505.	499.	494.	489.

STAGE

1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9
1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9
1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9
1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9
1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9
1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9
1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9
1434.9	1434.9	1434.9	1434.9	1434.9	1435.0	1435.0	1435.1	1435.1	1435.2
1435.3	1435.5	1435.7	1435.8	1436.0	1436.2	1436.4	1436.5	1436.7	1436.8
1436.8	1436.9	1436.9	1436.9	1437.0	1437.0	1437.0	1437.0	1437.0	1436.9
1436.9	1436.9	1436.9	1436.9	1436.9	1436.9	1436.9	1436.8	1436.8	1436.8
1436.8	1436.8	1436.8	1436.7	1436.7	1436.7	1436.7	1436.7	1436.6	1436.6

PEAK OUTFLOW IS 234. AT TIME 48.50 HOURS

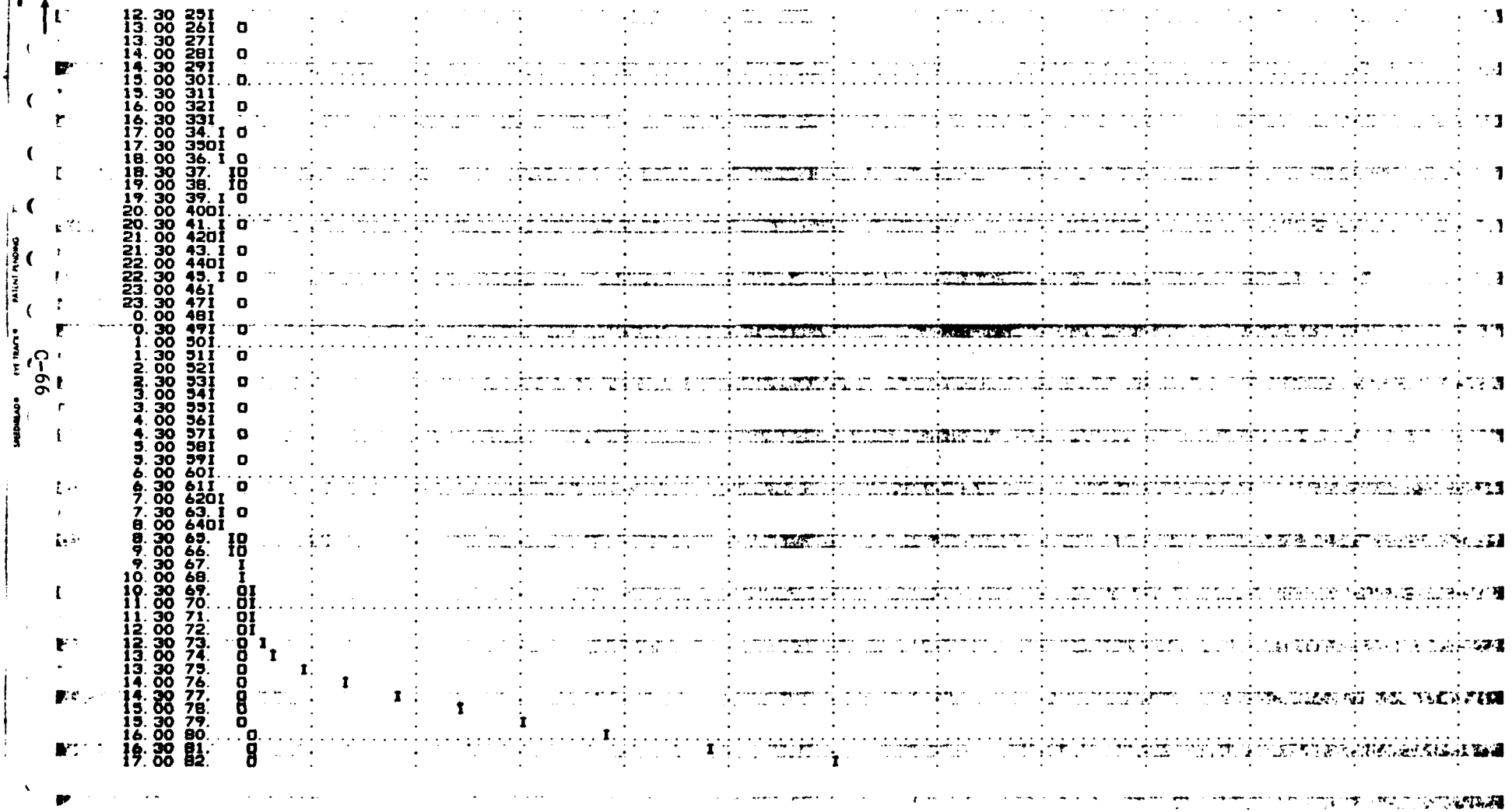
	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	234.	231.	175.	89.	10720.
CMS	7.	7.	5.	3.	304.
INCHES		0.27	0.82	1.04	1.04
MM		6.85	20.83	26.52	26.52
AC-FT		114.	348.	443.	443.
THOUS CU M		141.	429.	546.	546.

OVF

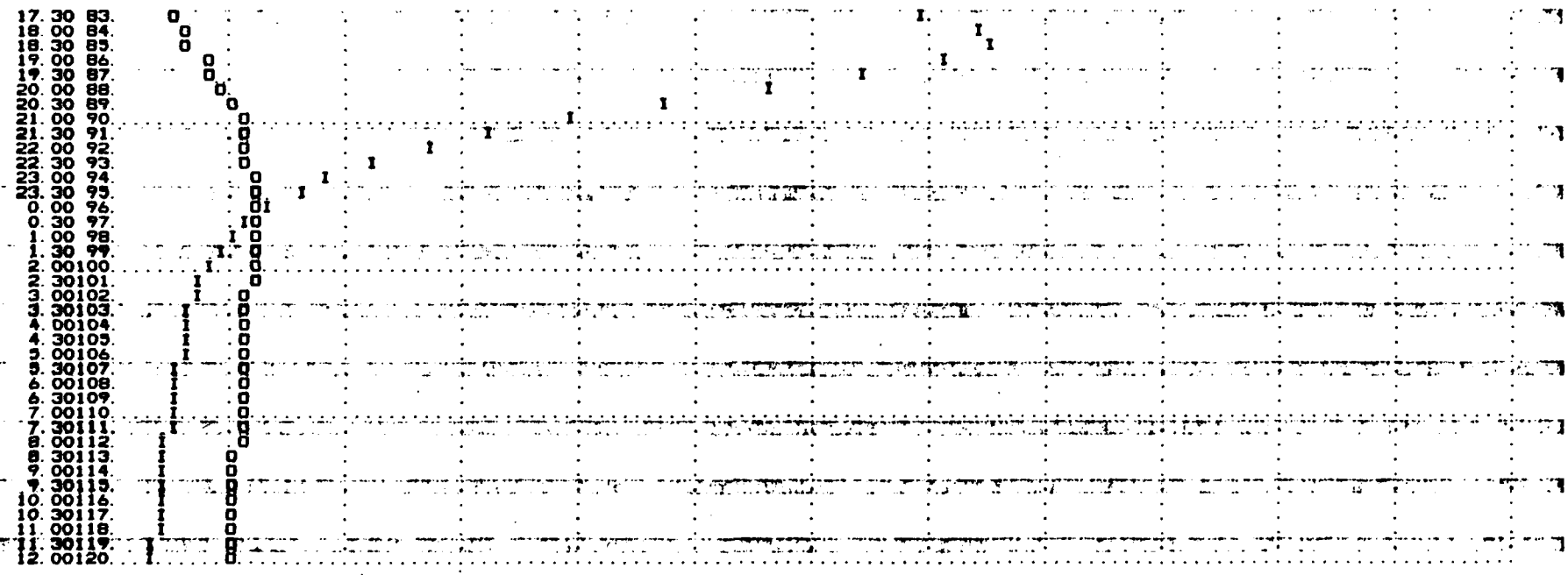
STATION 2

INFLOW(I)) OUTFLOW(O) AND OBSERVED FLOW(*).

		0.	200.	400.	600.	800.	1000.	1200.	1400.	1600.	0.	0.	0.	0.
0.30	11													
1.00	21	O												
1.30	31													
2.00	41	O												
2.30	51													
3.00	61	O												
3.30	71													
4.00	81	O												
4.30	91													
5.00	101	O												
5.30	111													
6.00	121	O												
6.30	131													
7.00	141	O												
7.30	151													
8.00	161	O												
8.30	171													
9.00	181	O												
9.30	191													
10.00	201	O												
10.30	211													
11.00	221	O												
11.30	231													
12.00	241	O												


12.30 251
13.00 261 O
13.30 271
14.00 281 O
14.30 291
15.00 301 O
15.30 311
16.00 321 O
16.30 331
17.00 34. I O
17.30 3501
18.00 36. I O
18.30 37. IO
19.00 38. IO
19.30 39. I O
20.00 4001
20.30 41. I O
21.00 4201
21.30 43. I O
22.00 4401
22.30 45. I O
23.00 461
23.30 471 O
0.00 481
0.30 491 O
1.00 501
1.30 511 O
2.00 521
2.30 531 O
3.00 541
3.30 551 O
4.00 561
4.30 571 O
5.00 581
5.30 591 O
6.00 601
6.30 611 O
7.00 6201
7.30 63. I O
8.00 6401
8.30 69. IO
9.00 66. IO
9.30 67. I
10.00 68. I
10.30 69. OI
11.00 70. OI
11.30 71. OI
12.00 72. OI
12.30 73. O I
13.00 74. O I
13.30 75. O I
14.00 76. O I
14.30 77. O I
15.00 78. O I
15.30 79. O I
16.00 80. O I
16.30 81. O I
17.00 82. O I

C-66



DVN

STATION 2, PLAN 1, RATIO 2

END-OF-PERIOD HYDROGRAPH ORDINATES

OUTFLOW

0.	57.	0.	57.	0.	57.	0.	57.	0.	57.
0.	57.	0.	57.	0.	57.	0.	57.	0.	57.
0.	57.	0.	57.	0.	57.	0.	57.	0.	57.
0.	57.	0.	57.	0.	57.	57.	57.	57.	57.
57.	57.	0.	57.	0.	57.	0.	57.	0.	57.
0.	57.	0.	57.	0.	57.	0.	57.	0.	57.
0.	57.	0.	57.	57.	57.	57.	57.	57.	57.
57.	57.	57.	58.	58.	60.	64.	70.	77.	86.
98.	113.	134.	147.	199.	231.	265.	295.	320.	339.
354.	364.	371.	376.	379.	380.	380.	378.	376.	374.

371.	368.	364.	361.	357.	354.	350.	346.	343.	339.	
335.	331.	327.	323.	319.	315.	311.	307.	303.	299.	

STORAGE

0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	
0.	0.	0.	0.	0.	0.	1.	3.	5.	7.	
9.	12.	15.	20.	27.	38.	54.	78.	108.	147.	
176.	299.	333.	416.	900.	982.	655.	717.	769.	808.	
838.	860.	875.	885.	891.	893.	892.	890.	886.	880.	
874.	867.	861.	853.	846.	839.	831.	823.	815.	807.	
799.	791.	783.	775.	766.	758.	750.	741.	733.	725.	

STAGE

1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	
1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	
1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	
1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	
1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	
1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	
1434.9	1434.9	1435.0	1435.0	1435.0	1435.0	1435.1	1435.2	1435.3	1435.4	
1435.6	1435.8	1436.1	1436.4	1436.7	1436.9	1437.2	1437.4	1437.6	1437.7	
1437.8	1437.9	1437.9	1438.0	1438.0	1438.0	1438.0	1438.0	1438.0	1437.9	
1437.9	1437.9	1437.9	1437.9	1437.8	1437.8	1437.8	1437.8	1437.7	1437.7	
1437.7	1437.6	1437.6	1437.6	1437.6	1437.5	1437.5	1437.5	1437.5	1437.4	

PEAK OUTFLOW IS 380. AT TIME 48.00 HOURS

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	380.	373.	271.	129.	15444.
CMS	11.	11.	8.	4.	437.
INCHES		0.44	1.27	1.90	1.90
MM		11.08	32.23	38.20	38.20
AC-FT		185.	538.	638.	638.
THOUS CU M		228.	664.	787.	787.

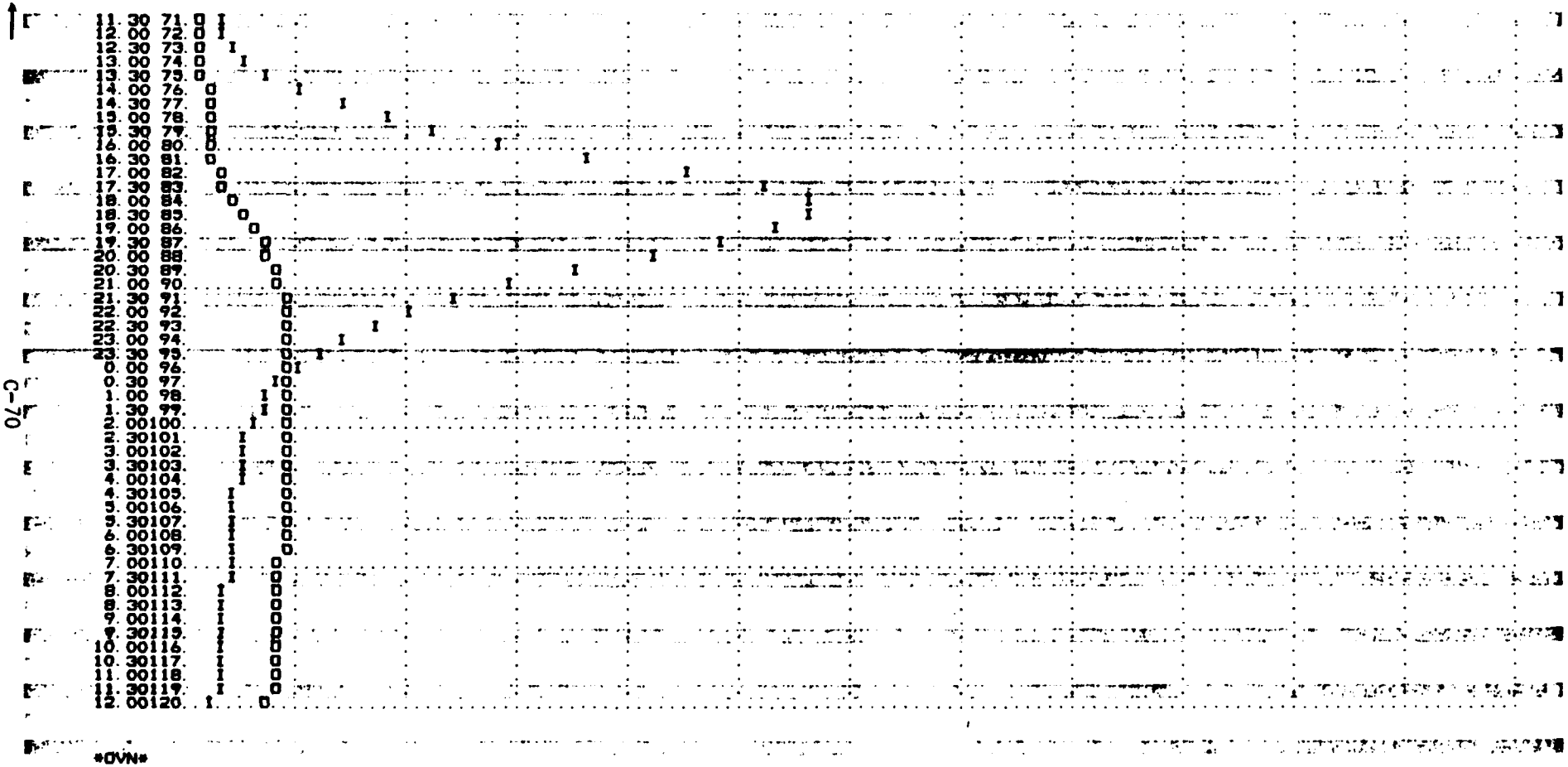
#DVF#

STATION 2

INFLOW(I), OUTFLOW(O) AND OBSERVED FLOW(*)

		0.	400.	800.	1200.	1600.	2000.	2400.	0.	0.	0.	0.	0.	0.
0.30	11													
1.00	210													
1.30	31													
2.00	410													
2.30	51													
3.00	610													
3.30	71													
4.00	810													
4.30	91													
5.00	1010													
5.30	111													
6.00	1210													

6.30 131
7.00 1410
7.30 151
8.00 1610
8.30 171
9.00 1810
9.30 191
10.00 2010
10.30 211
11.00 2210
11.30 231
12.00 2410
12.30 251
13.00 2610
13.30 271
14.00 2810
14.30 291
15.00 3010
15.30 311
16.00 3210
16.30 331
17.00 34. I
17.30 3501
18.00 36. I
18.30 37. I
19.00 38. I
19.30 39. I
20.00 40. I
20.30 41. I
21.00 42. I
21.30 4301
22.00 4410
22.30 451
23.00 4610
23.30 471
0.00 4810
0.30 491
1.00 5010
1.30 511
2.00 5210
2.30 531
3.00 5410
3.30 551
4.00 5610
4.30 571
5.00 5810
5.30 591
6.00 6010
6.30 611
7.00 6210
7.30 6301
8.00 64. I
8.30 65. I
9.00 66. 01
9.30 67. 01
10.00 68. 01
10.30 69. 0 I
11.00 70. 0. I



11.30	71.	O	I
12.00	72.	O	I
12.30	73.	O	I
13.00	74.	O	I
13.30	75.	O	I
14.00	76.	O	I
14.30	77.	O	I
15.00	78.	O	I
15.30	79.	O	I
16.00	80.	O	I
16.30	81.	O	I
17.00	82.	O	I
17.30	83.	O	I
18.00	84.	O	I
18.30	85.	O	I
19.00	86.	O	I
19.30	87.	O	I
20.00	88.	O	I
20.30	89.	O	I
21.00	90.	O	I
21.30	91.	O	I
22.00	92.	O	I
22.30	93.	O	I
23.00	94.	O	I
23.30	95.	O	I
0.00	96.	O	I
0.30	97.	O	I
1.00	98.	O	I
1.30	99.	O	I
2.00	100.	O	I
2.30	101.	O	I
3.00	102.	O	I
3.30	103.	O	I
4.00	104.	O	I
4.30	105.	O	I
5.00	106.	O	I
5.30	107.	O	I
6.00	108.	O	I
6.30	109.	O	I
7.00	110.	O	I
7.30	111.	O	I
8.00	112.	O	I
8.30	113.	O	I
9.00	114.	O	I
9.30	119.	O	I
10.00	116.	O	I
10.30	117.	O	I
11.00	118.	O	I
11.30	119.	O	I
12.00	120.	O	I

OVN

STATION 2, PLAN 1, RATIO 3

END-OF-PERIOD HYDROGRAPH ORDINATES

OUTFLOW

0.	57.	0.	57.	0.	57.	0.	57.	0.	57.
0.	57.	0.	57.	0.	57.	0.	57.	0.	57.
0.	57.	0.	57.	0.	57.	0.	57.	0.	57.
0.	57.	0.	57.	57.	57.	57.	57.	57.	57.
57.	57.	0.	57.	0.	57.	0.	57.	0.	57.
0.	57.	0.	57.	0.	57.	0.	57.	0.	57.
0.	57.	0.	57.	57.	57.	57.	57.	57.	57.
57.	57.	58.	58.	58.	61.	66.	72.	79.	89.
102.	117.	144.	178.	213.	249.	287.	320.	346.	366.
381.	394.	403.	408.	412.	413.	412.	410.	408.	405.
401.	397.	392.	388.	384.	380.	376.	372.	368.	364.
359.	355.	351.	347.	342.	338.	334.	329.	325.	321.

STORAGE

0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	1.	2.	3.	6.	8.
11.	14.	18.	22.	30.	42.	60.	85.	117.	159.
212.	279.	358.	446.	536.	623.	701.	767.	821.	864.
896.	919.	935.	945.	950.	952.	951.	948.	944.	938.
931.	924.	916.	908.	900.	892.	884.	876.	867.	859.
850.	841.	833.	824.	815.	806.	797.	788.	779.	770.

STAGE

1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9
1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9
1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9
1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9
1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9
1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9
1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9
1434.9	1435.0	1435.0	1435.0	1435.0	1435.1	1435.1	1435.2	1435.3	1435.5
1435.7	1435.9	1436.2	1436.5	1436.8	1437.1	1437.3	1437.6	1437.7	1437.9
1438.0	1438.1	1438.1	1438.2	1438.2	1438.2	1438.2	1438.2	1438.1	1438.1
1438.1	1438.1	1438.1	1438.0	1438.0	1438.0	1438.0	1437.7	1437.7	1437.7
1437.8	1437.8	1437.8	1437.8	1437.7	1437.7	1437.7	1437.6	1437.6	1437.6

PEAK OUTFLOW IS 413. AT TIME 48.00 HOURS

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	413.	404.	292.	137.	16472.
CMS	12.	11.	8.	4.	466.
INCHES		0.47	1.36	1.60	1.60
MM		12.00	34.63	40.74	40.74
AC-FT		200.	578.	681.	681.
THOUS CU M		247.	714.	840.	840.

OVF

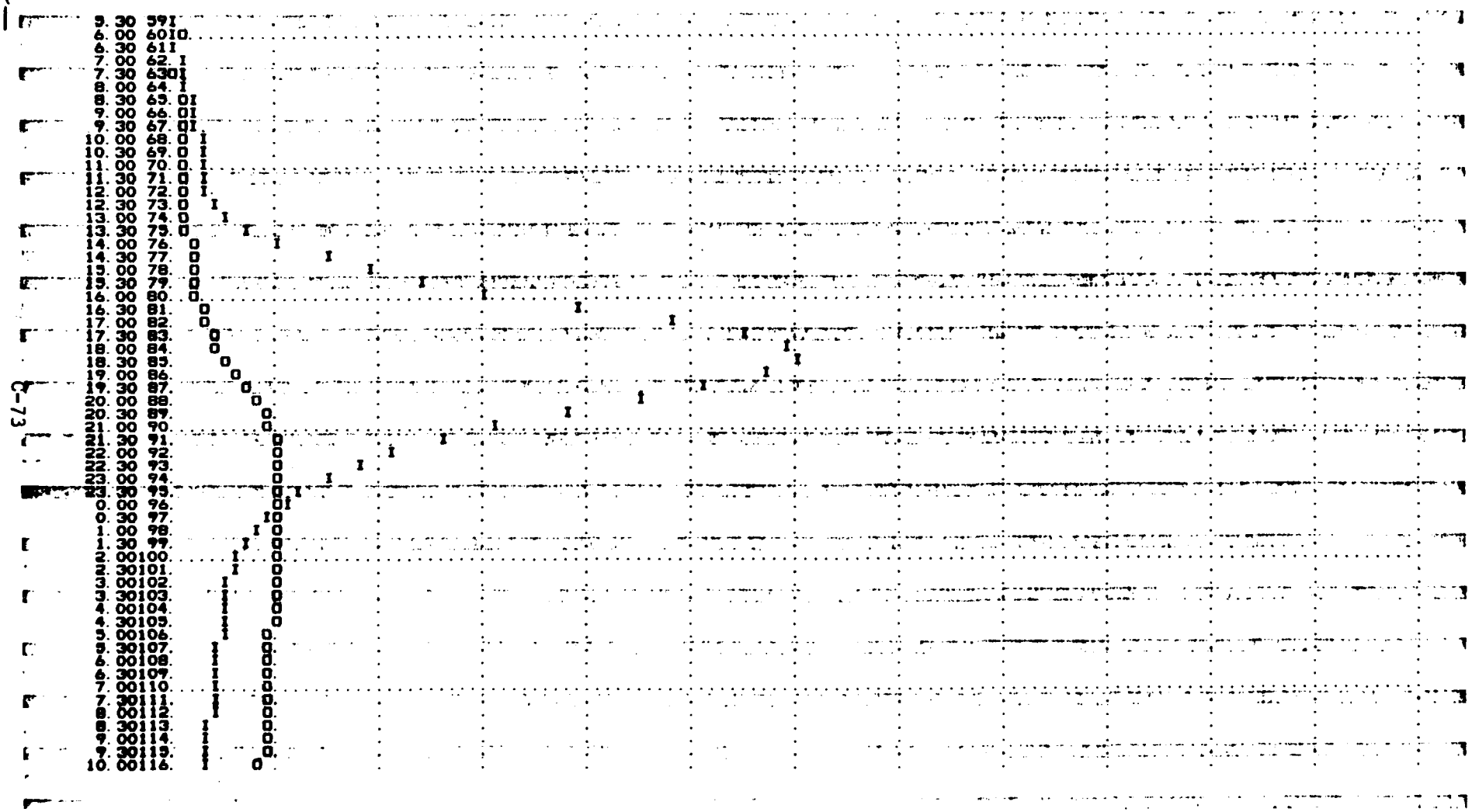
STATION 2

INFLOW(I), OUTFLOW(O) AND OBSERVED FLOW(*)

0. 400. 800. 1200. 1600. 2000. 2400. 0. 0. 0. 0. 0. 0.

0.	30	11
1.	00	210
1.	30	31
2.	00	410
2.	30	51
3.	00	610
3.	30	71
4.	00	810
4.	30	91
5.	00	1010
5.	30	111
6.	00	1210
6.	30	131
7.	00	1410
7.	30	151
8.	00	1610
8.	30	171
9.	00	1810
9.	30	191
10.	00	2010
10.	30	211
11.	00	2210
11.	30	231
12.	00	2410
12.	30	251
13.	00	2610
13.	30	271
14.	00	2810
14.	30	291
15.	00	3010
15.	30	311
16.	00	3210
16.	30	331
17.	00	34. 1
17.	30	35. 1
18.	00	36. 1
18.	30	37. 1
19.	00	38. 1
19.	30	39. 1
20.	00	40. 1
20.	30	41. 1
21.	00	42. 1
21.	30	4301
22.	00	4410
22.	30	451
23.	00	4610
23.	30	471
0.	00	4810
0.	30	491
1.	00	5010
1.	30	511
2.	00	5210
2.	30	531
3.	00	5410
3.	30	551
4.	00	5610
4.	30	571
5.	00	5810

C-12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9.30 67.OI
10.00 68.O I
10.30 69.O I
11.00 70.O I
11.30 71.O I
12.00 72.O I
12.30 73.O I
13.00 74.O I
13.30 79.O I
14.00 76. O I
14.30 77. O I
15.00 78. O I
15.30 79. O I
16.00 80. O I
16.30 81. O I
17.00 82. O
17.30 83. O
18.00 84. O
18.30 85. O
19.00 86. O
19.30 87. O
20.00 88. O
20.30 89. O
21.00 90. O
21.30 91. O
22.00 92. O
22.30 93. O
23.00 94. O
23.30 95. O
0.00 96. O
0.30 97. O
1.00 98. O
1.30 99. O
2.00100. O
2.30101. O
3.00102. O
3.30103. O
4.00104. O
4.30105. O
5.00106. O
5.30107. O
6.00108. O
6.30109. O
7.00110. O
7.30111. O
8.00112. O
8.30113. O
9.00114. O
9.30115. O
10.00116. O

```
 10.30117   I    0
 11.00118   I    0
 11.30119   I    0
 12.00120   I    0

*OVN*
```

STATION 2, PLAN 1, RATIO 4

END-OF-PERIOD HYDROGRAPH ORDINATES

OUTFLOW

0.	57.	0.	57.	0.	57.	0.	57.	0.	57.
0.	57.	0.	57.	0.	57.	0.	57.	0.	57.
0.	57.	0.	57.	0.	57.	0.	57.	0.	57.
0.	57.	0.	57.	57.	57.	57.	57.	57.	57.
57.	57.	57.	0.	57.	0.	57.	0.	57.	0.
57.	0.	57.	0.	57.	0.	57.	0.	57.	0.
57.	0.	57.	57.	57.	57.	57.	57.	57.	57.
57.	57.	58.	58.	59.	62.	67.	73.	82.	92.
105.	122.	154.	190.	227.	269.	309.	344.	371.	394.
413.	426.	436.	441.	444.	445.	445.	443.	440.	436.
432.	428.	423.	418.	414.	407.	404.	397.	393.	388.
383.	379.	374.	370.	365.	360.	356.	351.	347.	342.

STORAGE

0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	1.	2.	4.	6.	9.
12.	16.	20.	25.	33.	46.	65.	92.	127.	171.
227.	298.	383.	476.	572.	664.	746.	817.	874.	919.
953.	977.	994.	1004.	1010.	1011.	1010.	1007.	1002.	995.
988.	980.	971.	963.	954.	945.	936.	927.	918.	909.
900.	890.	881.	871.	862.	852.	843.	833.	824.	814.

STAGE

1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9
1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9
1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9
1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9
1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9
1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9
1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9
1434.9	1435.0	1435.0	1435.0	1435.0	1435.1	1435.1	1435.2	1435.4	1435.5
1435.7	1436.0	1436.3	1436.6	1436.9	1437.2	1437.5	1437.7	1437.9	1438.1
1438.2	1438.3	1438.3	1438.3	1438.4	1438.4	1438.4	1438.4	1438.3	1438.3
1438.3	1438.3	1438.2	1438.2	1438.2	1438.2	1438.1	1438.1	1438.1	1438.0
1438.0	1438.0	1437.9	1437.9	1437.9	1437.8	1437.8	1437.8	1437.8	1437.7

PEAK OUTFLOW IS 445. AT TIME 48.00 HOURS

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME

CFS	449.	436.	312.	146.	17528.
CMS	13.	12.	9.	4.	496.
INCHES		0.51	1.46	1.71	1.71
MM		12.95	37.10	43.36	43.36
AC-FT		216.	620.	724.	724.
THOUS CU M		267.	764.	893.	893.

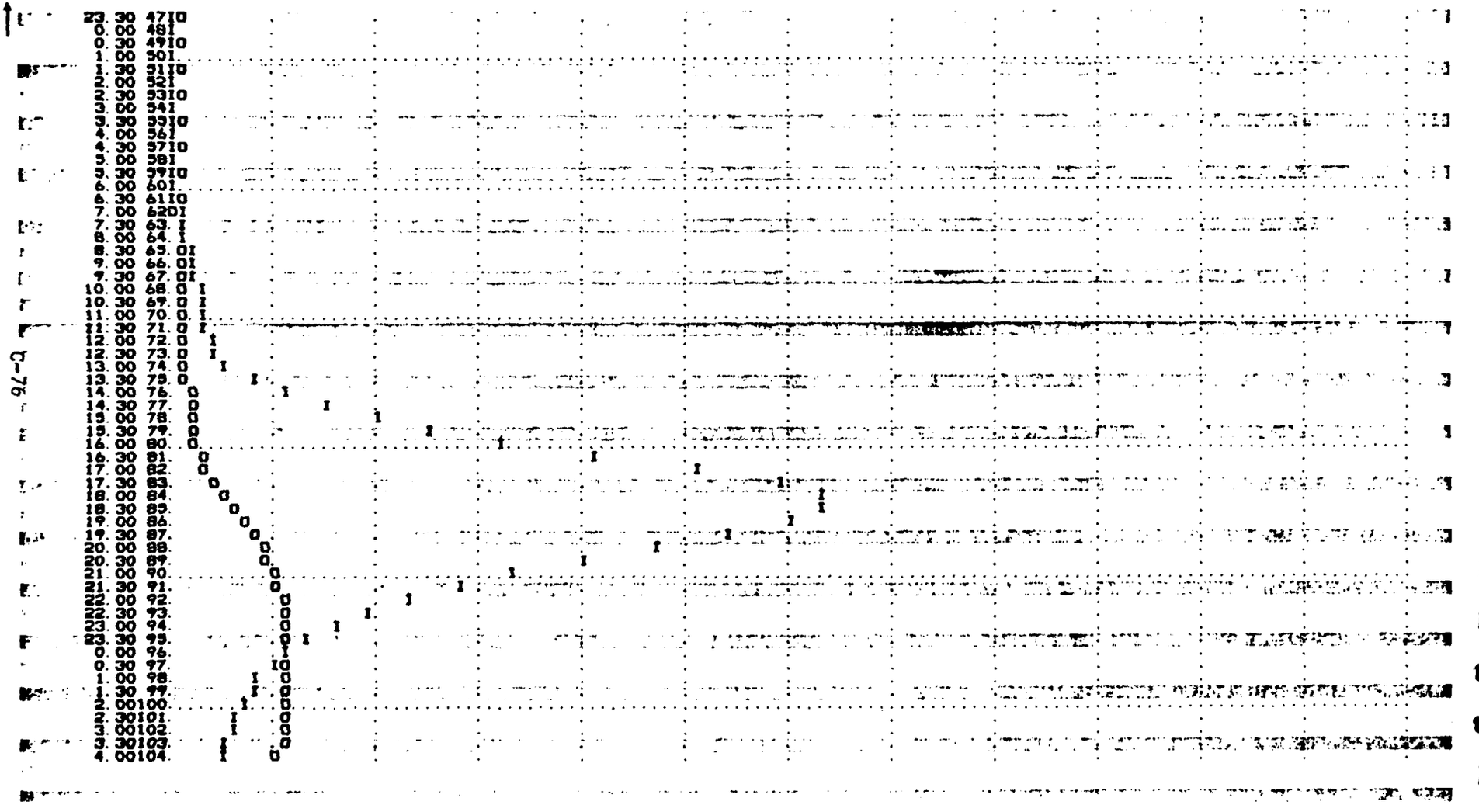
OVF

STATION 2

INFLOW(I), OUTFLOW(O) AND OBSERVED FLOW(*)

0. 400. 800. 1200. 1600. 2000. 2400. 2800. 0. 0. 0. 0. 0.

0.30	1I
1.00	2IO
1.30	3I
2.00	4IO
2.30	5I
3.00	6IO
3.30	7I
4.00	8IO
4.30	9I
5.00	10IO
5.30	11I
6.00	12IO
6.30	13I
7.00	14IO
7.30	15I
8.00	16IO
8.30	17I
9.00	18IO
9.30	19I
10.00	20IO
10.30	21I
11.00	22IO
11.30	23I
12.00	24IO
12.30	25I
13.00	26IO
13.30	27I
14.00	28IO
14.30	29I
15.00	30IO
15.30	31I
16.00	32IO
16.30	33I
17.00	34.I
17.30	35.I
18.00	36.I
18.30	37.I
19.00	38.I
19.30	39.I
20.00	40.I
20.30	41.I
21.00	42.I
21.30	43.I
22.00	44OI
22.30	45IO
23.00	46I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1.30 51IO
2.00 52I
2.30 53IO
3.00 54I
3.30 55IO
4.00 56I
4.30 57IO
5.00 58I
5.30 59IO
6.00 60I
6.30 61IO
7.00 62OI
7.30 63.I
8.00 64.I
8.30 65.OI
9.00 66.OI
9.30 67.OI
10.00 68.O I
10.30 69.O I
11.00 70.O I
11.30 71.O I
12.00 72.O I
12.30 73.O I
13.00 74.O I
13.30 75.O I
14.00 76. O I
14.30 77. O I
15.00 78. O I
15.30 79. O I
16.00 80. O I
16.30 81. O I
17.00 82. O I
17.30 83. O I
18.00 84. O I
18.30 85. O I
19.00 86. O I
19.30 87. O I
20.00 88. O I
20.30 89. O I
21.00 90. O I
21.30 91. O I
22.00 92. O I
22.30 93. O I
23.00 94. O I
23.30 95. O I
0.00 96. I
0.30 97. IO
1.00 98. I O
1.30 99. I O
2.00100. I O
2.30101. I O
3.00102. I O
3.30103. I O
4.00104. I O

```
 4.30105.   I   O
 5.00106.   I   O
 5.30107.   I   O
 6.00108.  I    O
 6.30109.  I    O
 7.00110.  I    O
 7.30111.  I    O
 8.00112.  I   O
 8.30113.  I   O
 9.00114.  I   O
 9.30115.  I   O
10.00116.  I   O
10.30117.  I   O
11.00118.  I   O
11.30119.  I   O
12.00120.  I   O
```

OVN

STATION 2, PLAN 1, RATIO 5

END-OF-PERIOD HYDROGRAPH ORDINATES

OUTFLOW

0.	57.	0.	57.	0.	57.	0.	57.	0.	57.
0.	57.	0.	57.	0.	57.	0.	57.	0.	57.
0.	57.	0.	57.	0.	57.	0.	57.	0.	57.
0.	57.	0.	57.	57.	57.	57.	57.	57.	57.
57.	57.	57.	0.	57.	0.	57.	0.	57.	0.
57.	0.	57.	0.	57.	0.	57.	0.	57.	0.
57.	0.	57.	57.	57.	57.	57.	57.	57.	57.
57.	58.	58.	58.	60.	63.	68.	75.	84.	95.
109.	128.	163.	202.	242.	289.	332.	367.	399.	425.
445.	459.	468.	474.	477.	478.	477.	475.	472.	468.
464.	459.	454.	448.	443.	438.	433.	427.	422.	416.
411.	405.	399.	394.	388.	382.	377.	373.	368.	363.

STORAGE

0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	1.	2.	5.	7.	10.
14.	18.	22.	28.	37.	50.	71.	99.	136.	183.
242.	318.	407.	506.	608.	705.	792.	867.	927.	975.
1010.	1035.	1052.	1063.	1069.	1071.	1069.	1065.	1059.	1052.
1044.	1035.	1026.	1017.	1008.	998.	988.	978.	969.	959.
949.	938.	928.	918.	908.	898.	888.	878.	867.	857.

STAGE

1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9
1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9
1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9
1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9

1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	
1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	
1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	
1435.0	1435.0	1435.0	1435.0	1435.0	1435.1	1435.2	1435.3	1435.4	1435.6	
1435.8	1436.0	1436.3	1436.7	1437.0	1437.4	1437.6	1437.9	1438.1	1438.2	
1438.4	1438.4	1438.5	1438.5	1438.6	1438.6	1438.6	1438.5	1438.5	1438.5	
1438.3	1438.4	1438.4	1438.4	1438.4	1438.3	1438.3	1438.3	1438.2	1438.2	
1438.2	1438.1	1438.1	1438.1	1438.0	1438.0	1438.0	1437.9	1437.9	1437.9	

PEAK OUTFLOW IS 478. AT TIME 48.00 HOURS

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	478.	468.	334.	159.	18548.
CMS	14.	13.	9.	4.	525.
INCHES		0.55	1.56	1.81	1.81
MM		13.90	39.62	45.88	45.88
AC-FT		232.	662.	766.	766.
THOUS CU M		286.	816.	945.	945.

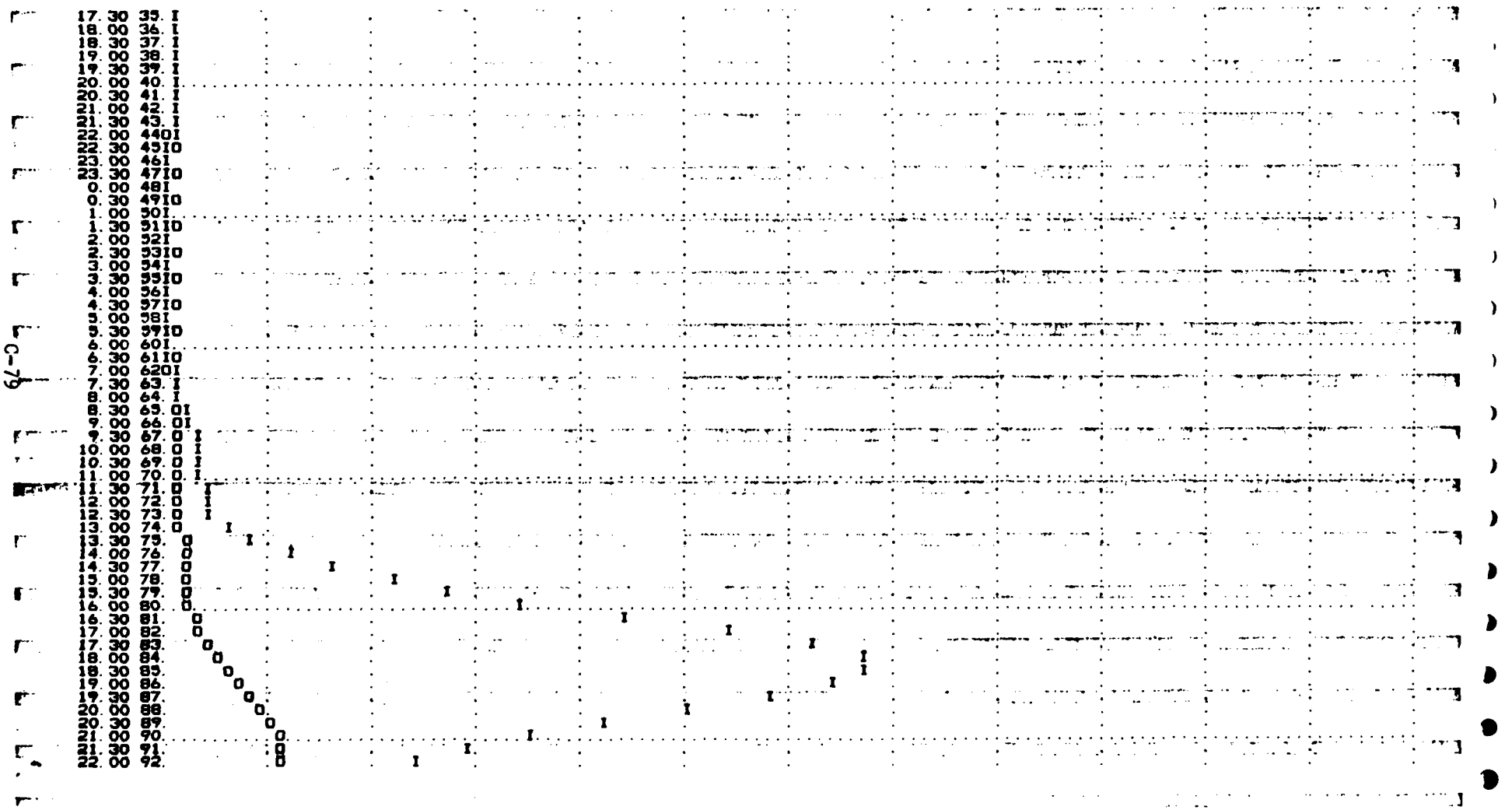
OVF

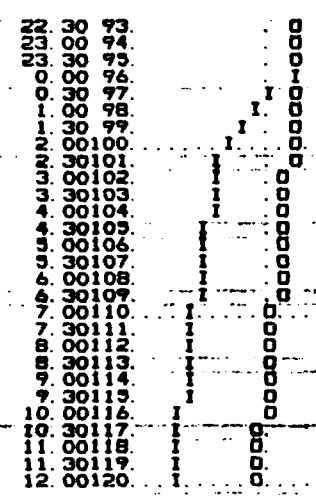
STATION 2

INFLOW(I), OUTFLOW(O) AND OBSERVED FLOW(*)

0. 400. 800. 1200. 1600. 2000. 2400. 2800. 0. 0. 0. 0. 0.

0.30	1I
1.00	2IO
1.30	3I
2.00	4IO
2.30	5I
3.00	6IO
3.30	7I
4.00	8IO
4.30	9I
5.00	10IO
5.30	11I
6.00	12IO
6.30	13I
7.00	14IO
7.30	15I
8.00	16IO
8.30	17I
9.00	18IO
9.30	19I
10.00	20IO
10.30	21I
11.00	22IO
11.30	23I
12.00	24IO
12.30	25I
13.00	26IO
13.30	27I
14.00	28IO
14.30	29I
15.00	30IO
15.30	31I
16.00	32IO
16.30	33I
17.00	34.I


17.30 35. I
18.00 36. I
18.30 37. I
19.00 38. I
19.30 39. I
20.00 40. I
20.30 41. I
21.00 42. I
21.30 43. I
22.00 44OI
22.30 45IO
23.00 46I
23.30 47IO
0.00 48I
0.30 49IO
1.00 50I
1.30 51IO
2.00 52I
2.30 53IO
3.00 54I
3.30 55IO
4.00 56I
4.30 57IO
5.00 58I
5.30 59IO
6.00 60I
6.30 61IO
7.00 62OI
7.30 63. I
8.00 64. I
8.30 65. OI
9.00 66. OI
9.30 67. O I
10.00 68. O I
10.30 69. O I
11.00 70. O. I
11.30 71. O I
12.00 72. O I
12.30 73. O I
13.00 74. O I
13.30 75. O I
14.00 76. O I
14.30 77. O I
15.00 78. O I
15.30 79. O I
16.00 80. O I
16.30 81. O I
17.00 82. O I
17.30 83. O I
18.00 84. O I
18.30 85. O I
19.00 86. O I
19.30 87. O I
20.00 88. O I
20.30 89. O I
21.00 90. O I
21.30 91. O I
22.00 92. O I



OVN

STATION 2, PLAN 1, RATIO 6

END-OF-PERIOD HYDROGRAPH ORDINATES

OUTFLOW

0.	57.	0.	57.	0.	57.	0.	57.	0.	57.
0.	57.	0.	57.	0.	57.	0.	57.	0.	57.
0.	57.	0.	57.	0.	57.	0.	57.	0.	57.
0.	57.	0.	57.	57.	57.	57.	57.	57.	57.
57.	57.	57.	0.	57.	0.	57.	0.	57.	0.
57.	0.	57.	0.	57.	0.	57.	0.	57.	0.
57.	0.	57.	57.	57.	57.	57.	57.	57.	57.
57.	58.	58.	59.	61.	64.	70.	77.	86.	98.
112.	136.	173.	213.	259.	309.	354.	392.	428.	455.
476.	490.	500.	506.	510.	510.	509.	507.	504.	499.
493.	487.	484.	478.	473.	467.	461.	456.	450.	444.
438.	432.	426.	420.	414.	408.	402.	395.	389.	383.

STORAGE

0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

0.	0.	0.	0.	0.	1.	3.	5.	8.	12.
16.	20.	24.	31.	40.	55.	76.	106.	145.	195.
258.	338.	432.	536.	643.	746.	838.	916.	980.	1030.
1067.	1093.	1111.	1122.	1128.	1129.	1128.	1123.	1117.	1109.
1100.	1091.	1081.	1071.	1061.	1051.	1040.	1030.	1019.	1008.
998.	987.	976.	965.	954.	943.	932.	922.	911.	900.

STAGE

1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9
1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9
1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9
1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9
1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9
1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9
1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9
1435.0	1435.0	1435.0	1435.0	1435.0	1435.1	1435.2	1435.3	1435.4	1435.6
1435.8	1436.1	1436.4	1436.8	1437.2	1437.5	1437.8	1438.1	1438.3	1438.4
1438.5	1438.6	1438.7	1438.7	1438.7	1438.7	1438.7	1438.7	1438.7	1438.7
1438.7	1438.6	1438.6	1438.6	1438.5	1438.5	1438.5	1438.4	1438.4	1438.4
1438.3	1438.3	1438.3	1438.2	1438.2	1438.1	1438.1	1438.1	1438.0	1438.0

PEAK OUTFLOW IS 510. AT TIME 48.00 HOURS

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	510.	500.	355.	163.	19586.
CMS	14.	14.	10.	5.	555.
INCHES		0.58	1.66	1.91	1.91
MM		14.84	42.19	48.45	48.45
AC-FT		248.	705.	809.	809.
THOUS CU M		306.	869.	998.	998.

OVF

STATION 2

INFLOW(I), OUTFLOW(O) AND OBSERVED FLOW(*)

	0.	400.	800.	1200.	1600.	2000.	2400.	2800.	3200.	0.	0.	0.	0.
0.30	1I												
1.00	2IO												
1.30	3I												
2.00	4IO												
2.30	5I												
3.00	6IO												
3.30	7I												
4.00	8IO												
4.30	9I												
5.00	10IO												
5.30	11I												
6.00	12IO												
6.30	13I												
7.00	14IO												
7.30	15I												
8.00	16IO												
8.30	17I												
9.00	18IO												
9.30	19I												
10.00	20IO												
10.30	21I												
11.00	22IO												

C=82

```
11.30 23I
12.00 24IO
12.30 25I
13.00 26IO
13.30 27I
14.00 28IO
14.30 29I
15.00 30IO
15.30 31I
16.00 32IO
16.30 33I
17.00 34.I
17.30 35.I
18.00 36.I
18.30 37.OI
19.00 38.OI
19.30 39.I
20.00 40.I
20.30 41.I
21.00 42.I
21.30 43.I
22.00 44OI
22.30 45IO
23.00 46I
23.30 47IO
0.00 48I
0.30 49IO
1.00 50I
1.30 51IO
2.00 52I
2.30 53IO
3.00 54I
3.30 55IO
4.00 56I
4.30 57IO
5.00 58I
5.30 59IO
6.00 60I
6.30 61IO
7.00 62OI
7.30 63.I
8.00 64.I
8.30 65.OI
9.00 66.OI
9.30 67.O I
10.00 68.O I
10.30 69.O I
11.00 70.O I
11.30 71.O I
12.00 72.O I
12.30 73.O I
13.00 74.O I
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15.00 78.O I
15.30 79.O I
16.00 80.O I
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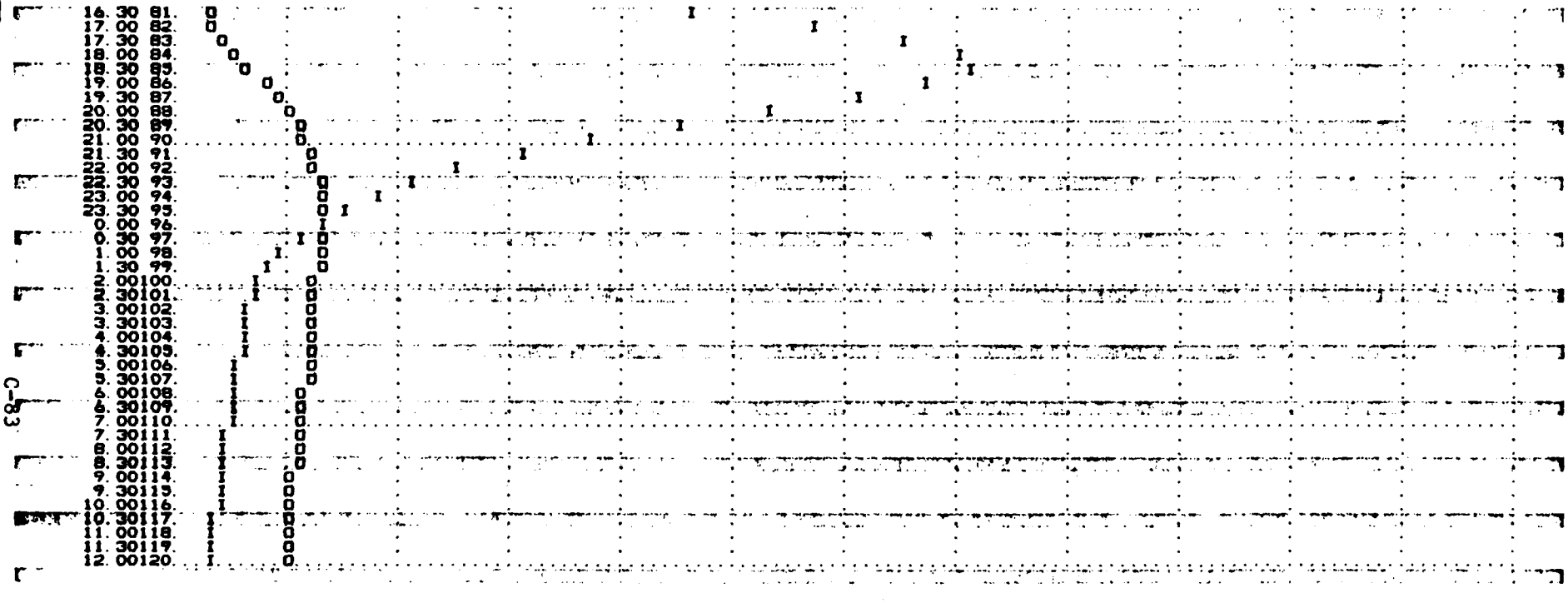

OVN

STATION 2, PLAN 1, RATIO 7

END-OF-PERIOD HYDROGRAPH ORDINATES

OUTFLOW

0.	57.	0.	57.	0.	57.	0.	57.	0.	57.
0.	57.	0.	57.	0.	57.	0.	57.	0.	57.
0.	57.	0.	57.	0.	57.	0.	57.	0.	57.
0.	57.	0.	57.	57.	57.	57.	57.	57.	57.
57.	57.	57.	0.	57.	0.	57.	0.	57.	0.
57.	0.	57.	0.	57.	0.	57.	0.	57.	0.
57.	0.	57.	57.	57.	57.	57.	57.	57.	57.
57.	58.	58.	59.	62.	65.	71.	78.	88.	100.

116.	144.	183.	225.	277.	329.	375.	420.	457.	486.
507.	522.	532.	538.	542.	542.	541.	539.	535.	530.
525.	520.	514.	508.	502.	496.	490.	484.	478.	471.
465.	459.	452.	446.	439.	433.	426.	420.	414.	407.

STORAGE

0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	1.	1.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	2.	4.	6.	10.	13.
17.	22.	27.	33.	43.	59.	82.	114.	155.	207.
273.	357.	457.	566.	679.	787.	883.	966.	1033.	1085.
1123.	1151.	1170.	1181.	1187.	1188.	1186.	1181.	1174.	1166.
1157.	1146.	1136.	1125.	1114.	1103.	1092.	1081.	1070.	1058.
1047.	1035.	1024.	1012.	1000.	989.	977.	966.	954.	943.

STAGE

1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9
1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9
1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9
1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9
1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9
1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9
1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9
1435.0	1435.0	1435.0	1435.0	1435.1	1435.1	1435.2	1435.3	1435.5	1435.6
1436.9	1436.2	1436.5	1436.7	1437.3	1437.8	1438.0	1438.2	1438.4	1438.6
1438.7	1438.8	1438.9	1438.9	1438.9	1438.9	1438.9	1438.9	1438.9	1438.9
1438.8	1438.8	1438.8	1438.7	1438.7	1438.7	1438.6	1438.6	1438.6	1438.5
1438.5	1438.4	1438.4	1438.4	1438.3	1438.3	1438.3	1438.2	1438.2	1438.1

PEAK OUTFLOW IS 542. AT TIME 48.00 HOURS

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	942.	831.	377.	178.	20626.
CMS	15.	15.	11.	5.	584.
INCHES		0.62	1.76	2.01	2.01
MM		15.78	44.76	51.02	51.02
AC-FT		264.	748.	852.	852.
THOUS CU M		325.	922.	1051.	1051.

DVF

STATION 2

INFLOW(I), OUTFLOW(O) AND OBSERVED FLOW(*)

0. 400. 800. 1200. 1600. 2000. 2400. 2800. 3200. 0. 0. 0. 0.

0.30	II
1.00	2IO
1.30	3I
2.00	4IO
2.30	5I
3.00	6IO
3.30	7I
4.00	8IO
4.30	9I
5.00	10IO

```
 5.30 111
 6.00 1210
 6.30 131
 7.00 1410
 7.30 151
 8.00 1610
 8.30 171
 9.00 1810
 9.30 191
10.00 2010
10.30 211
11.00 2210
11.30 231
12.00 2410
12.30 251
13.00 2610
13.30 271
14.00 2810
14.30 291
15.00 3010
15.30 311
16.00 3210
16.30 331
17.00 34. I
17.30 35. I
18.00 36. I
18.30 37. 01
19.00 38. 01
19.30 39. I
20.00 40. I
20.30 41. I
21.00 42. I
21.30 43. I
22.00 4401
22.30 45. I
23.00 461
23.30 4710
 0.00 481
 0.30 4910
 1.00 501
 1.30 5110
 2.00 521
 2.30 5310
 3.00 541
 3.30 5510
 4.00 561
 4.30 5710
 5.00 581
 5.30 5910
 6.00 601
 6.30 6110
 7.00 6201
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 8.30 65. 01
 9.00 66. 01
 9.30 67. 0 I
10.00 68. 0 I
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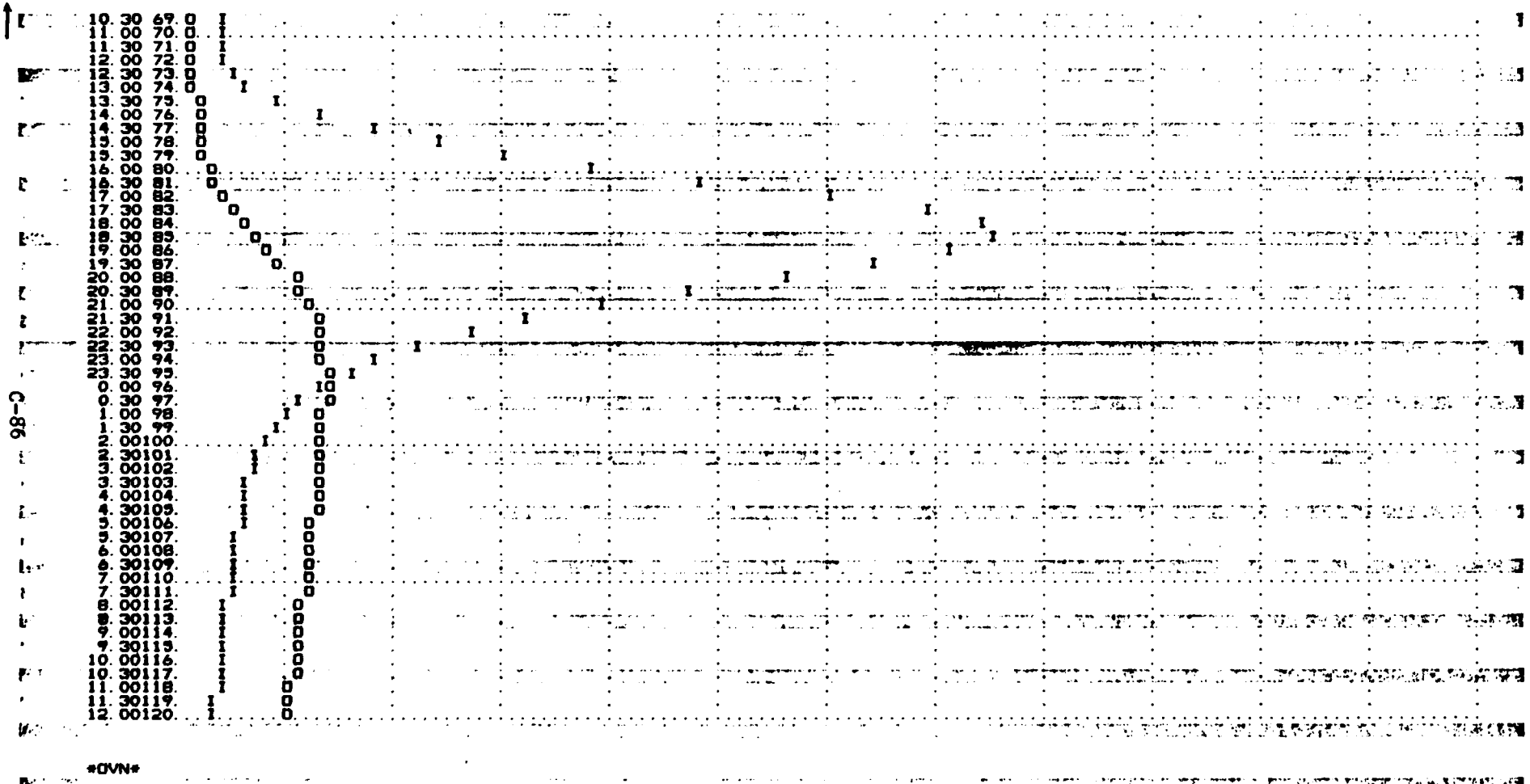


OVN

STATION 2, PLAN 1, RATIO 8

END-OF-PERIOD HYDROGRAPH ORDINATES

OUTFLOW

0.	57.	0.	57.	0.	57.	0.	57.	0.	57.
0.	57.	0.	57.	0.	57.	0.	57.	0.	57.
0.	57.	0.	57.	0.	57.	0.	57.	0.	57.
0.	57.	0.	57.	57.	57.	57.	57.	57.	58.
58.	58.	58.	58.	58.	58.	58.	58.	58.	58.
58.	58.	57.	57.	57.	57.	57.	57.	57.	57.
57.	57.	57.	57.	57.	58.	59.	61.	64.	67.
70.	74.	77.	82.	89.	98.	112.	137.	178.	229.
308.	412.	547.	710.	885.	1098.	1271.	2250.	3069.	3458.
3499.	3328.	3057.	2754.	2457.	2187.	1948.	1744	1575.	1435.
1323.	1239.	1192.	1176.	1161.	1145.	1129.	1113.	1096.	1080.
1063.	1046.	1029.	1012.	995.	978.	961.	945.	930.	914.

STORAGE

0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	1.	2.	5.	9.	13.	17.	21.
23.	25.	26.	26.	26.	26.	25.	24.	22.	21.
19.	18.	16.	15.	14.	13.	12.	11.	11.	10.
9.	9.	10.	12.	17.	23.	32.	42.	53.	64.
80.	94.	109.	129.	156.	198.	258.	340.	444.	576.
743.	952.	1197.	1467.	1741.	2001.	2232.	2406.	2508.	2552.
2556.	2538.	2507.	2471.	2434.	2397.	2362.	2330.	2300.	2272.
2246.	2221.	2198.	2176.	2155.	2129.	2105.	2081.	2057.	2032.
2008.	1983.	1958.	1934.	1909.	1884.	1860.	1835.	1811.	1786.

STAGE

1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9
1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9
1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9
1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1435.0	1435.0
1435.0	1435.0	1435.0	1435.0	1435.0	1435.0	1435.0	1435.0	1435.0	1435.0
1435.0	1435.0	1435.0	1435.0	1435.0	1434.9	1434.9	1434.9	1434.9	1434.9
1434.9	1434.9	1434.9	1434.9	1435.0	1435.0	1435.0	1435.1	1435.1	1435.1
1435.2	1435.2	1435.3	1435.4	1435.5	1435.6	1435.8	1436.1	1436.5	1436.9
1437.5	1438.2	1439.0	1439.8	1440.6	1441.4	1442.1	1442.6	1442.9	1443.0
1443.0	1443.0	1442.9	1442.8	1442.7	1442.6	1442.5	1442.4	1442.3	1442.2
1442.1	1442.1	1442.0	1441.9	1441.9	1441.8	1441.7	1441.7	1441.6	1441.5
1441.4	1441.4	1441.3	1441.2	1441.1	1441.1	1441.0	1440.9	1440.9	1440.8

PEAK OUTFLOW IS 3499. AT TIME 45.50 HOURS

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	3499.	2998.	1251.	527.	63227.
CMS	99.	74.	35.	15.	1790.
INCHES		3.04	5.85	6.16	6.16
MM		77.12	148.57	156.40	156.40
AC-FT		1288.	2482.	2613.	2613.
THOUS CU M		1589.	3061.	3223.	3223.

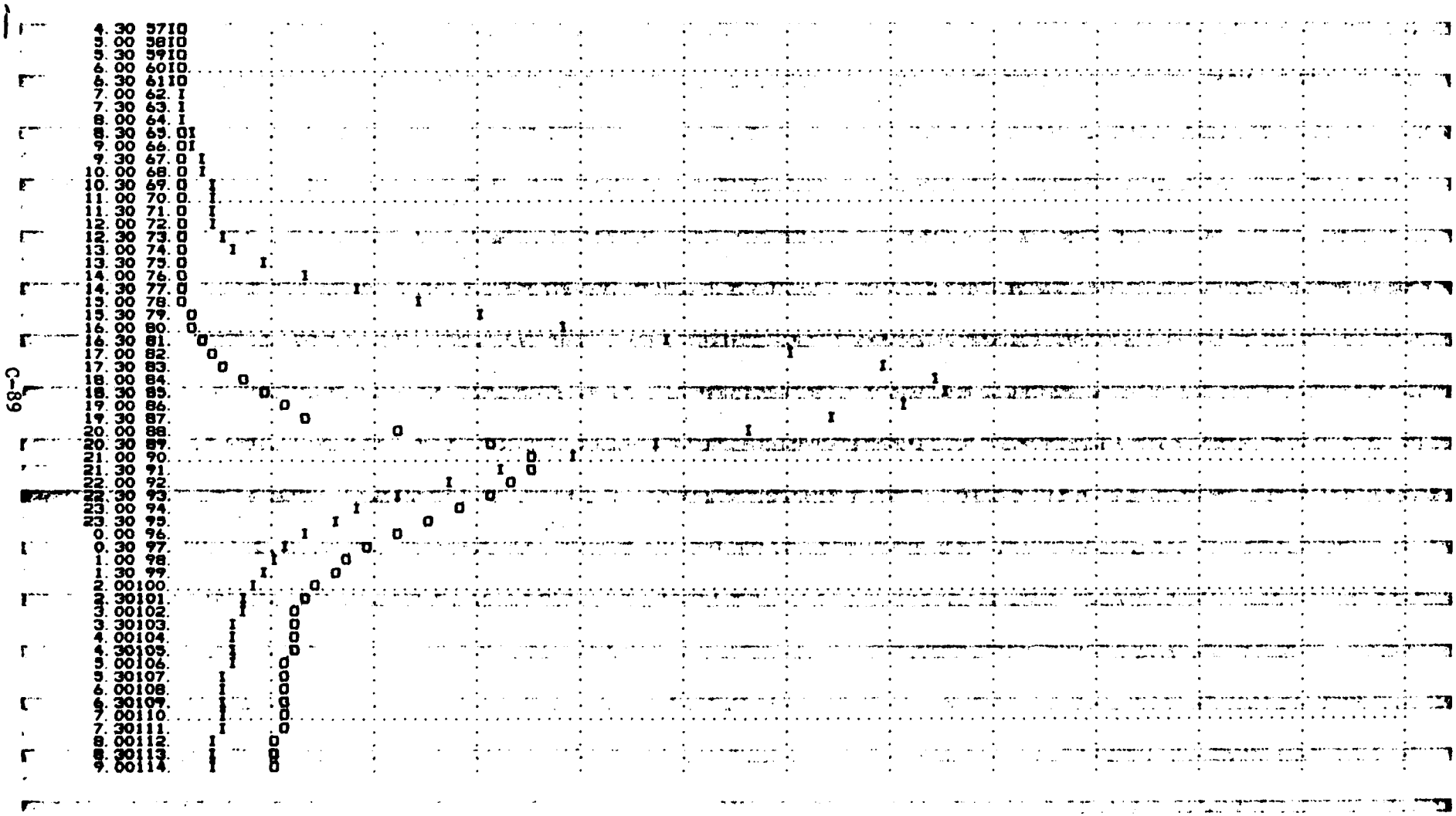
OVF

STATION 2

INFLOW(I), OUTFLOW(O) AND OBSERVED FLOW(*)

0. 1000. 2000. 3000. 4000. 5000. 6000. 7000. 8000. 0. 0. 0. 0.

0.30	11
1.00	210
1.30	31
2.00	410
2.30	51
3.00	610
3.30	71
4.00	810
4.30	91
5.00	1010
5.30	111
6.00	1210
6.30	131
7.00	1410
7.30	151
8.00	1610
8.30	171
9.00	1810
9.30	191
10.00	2010
10.30	211
11.00	2210
11.30	231
12.00	2410
12.30	251
13.00	2610
13.30	271
14.00	2810
14.30	291
15.00	3010
15.30	311
16.00	3210
16.30	331
17.00	34. I
17.30	35. I
18.00	36. I
18.30	37. OI
19.00	38. OI
19.30	39. I
20.00	40. I
20.30	41. I
21.00	42. I
21.30	43. I
22.00	44. I
22.30	45. I
23.00	4610
23.30	4710
0.00	4810
0.30	4910
1.00	5010
1.30	5110
2.00	5210
2.30	5310
3.00	5410
3.30	5510
4.00	5610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6.00 60I0
6.30 61I0
7.00 62. I
7.30 63. I
8.00 64. I
8.30 65. OI
9.00 66. OI
9.30 67. O I
10.00 68. O I
10.30 69. O I
11.00 70. O I
11.30 71. O I
12.00 72. O I
12.30 73. O I
13.00 74. O I
13.30 75. O I
14.00 76. O I
14.30 77. O I
15.00 78. O I
15.30 79. O I
16.00 80. O I
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21.30 91. O I
22.00 92. O I
22.30 93. O I
23.00 94. O I
23.30 95. O I
0.00 96. O I
0.30 97. O I
1.00 98. O I
1.30 99. O I
2.00100. O I
2.30101. O I
3.00102. O I
3.30103. O I
4.00104. O I
4.30105. O I
5.00106. O I
5.30107. O I
6.00108. O I
6.30109. O I
7.00110. O I
7.30111. O I
8.00112. O I
8.30113. O I
9.00114. O I

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 9.30115.   I    O
10.00116.   I    O
10.30117.   I    O
11.00118.   I    O.
11.30119.   I    O.
12.00120.   I    O.
```

OVN

STATION 2, PLAN 1, RATIO 9

END-OF-PERIOD HYDROGRAPH ORDINATES

OUTFLOW

0.	57.	0.	57.	0.	57.	0.	57.	0.	57.
0.	57.	0.	57.	0.	57.	0.	57.	0.	57.
0.	57.	0.	57.	0.	57.	0.	57.	0.	57.
0.	57.	57.	57.	57.	57.	58.	60.	62.	65.
66.	68.	69.	69.	70.	70.	70.	70.	70.	69.
69.	69.	69.	69.	68.	68.	69.	69.	69.	69.
69.	69.	70.	72.	74.	78.	82.	88.	93.	100.
106.	113.	121.	134.	156.	189.	236.	314.	419.	563.
763.	1032.	2373.	6421.	9959.	12033.	12707.	[illegible]	11400.	10160.
8857.	7622.	6524.	5577.	4779.	4115.	3562.	3109.	2741.	2440.
2188.	1985.	1829.	1704.	1603.	1517.	1445.	1382.	1328.	1281.
1240.	1208.	1190.	1181.	1171.	1160.	1149.	1137.	1125.	1112.

STORAGE

0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	2.	7.	15.	25.	36.	46.	55.
63.	68.	72.	75.	77.	78.	78.	78.	77.	76.
75.	74.	73.	72.	72.	72.	72.	72.	72.	73.
74.	76.	79.	86.	97.	111.	130.	152.	176.	203.
231.	261.	293.	333.	390.	474.	594.	756.	964.	1224.
1553.	1962.	2423.	2832.	3108.	3255.	3301.	3277.	3211.	3123.
3026.	2930.	2840.	2758.	2685.	2621.	2563.	2513.	2470.	2431.
2397.	2368.	2344.	2323.	2305.	2289.	2274.	2260.	2247.	2234.
2222.	2209.	2196.	2182.	2167.	2151.	2135.	2117.	2099.	2080.

STAGE

1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9
1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9
1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9	1434.9
1434.9	1434.9	1434.9	1434.9	1434.9	1435.0	1435.0	1435.0	1435.1	1435.1
1435.1	1435.1	1435.2	1435.2	1435.2	1435.2	1435.2	1435.2	1435.2	1435.2
1435.2	1435.2	1435.2	1435.2	1435.2	1435.2	1435.2	1435.2	1435.2	1435.2
1435.2	1435.2	1435.2	1435.2	1435.2	1435.3	1435.4	1435.4	1435.5	1435.6
1435.7	1435.8	1435.9	1436.1	1436.3	1436.6	1437.0	1437.5	1438.2	1439.0
1440.1	1441.3	1442.6	1443.8	1444.5	1444.9	1445.1	1445.0	1444.8	1444.6
1444.3	1444.1	1443.8	1443.6	1443.4	1443.2	1443.0	1442.9	1442.8	1442.7
1442.6	1442.5	1442.4	1442.4	1442.3	1442.3	1442.2	1442.2	1442.1	1442.1
1442.1	1442.0	1442.0	1441.9	1441.9	1441.9	1441.8	1441.8	1441.7	1441.7

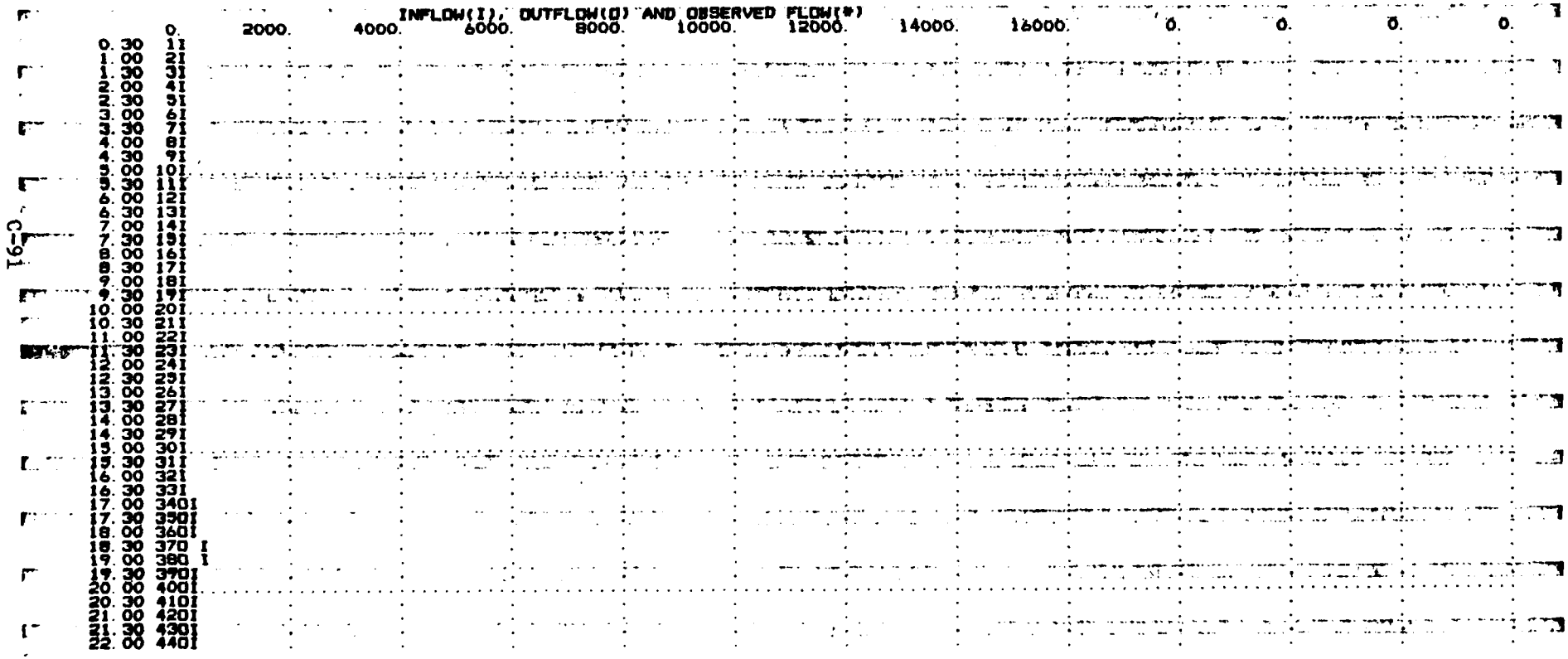
PEAK OUTFLOW IS 12707. AT TIME 43.50 HOURS

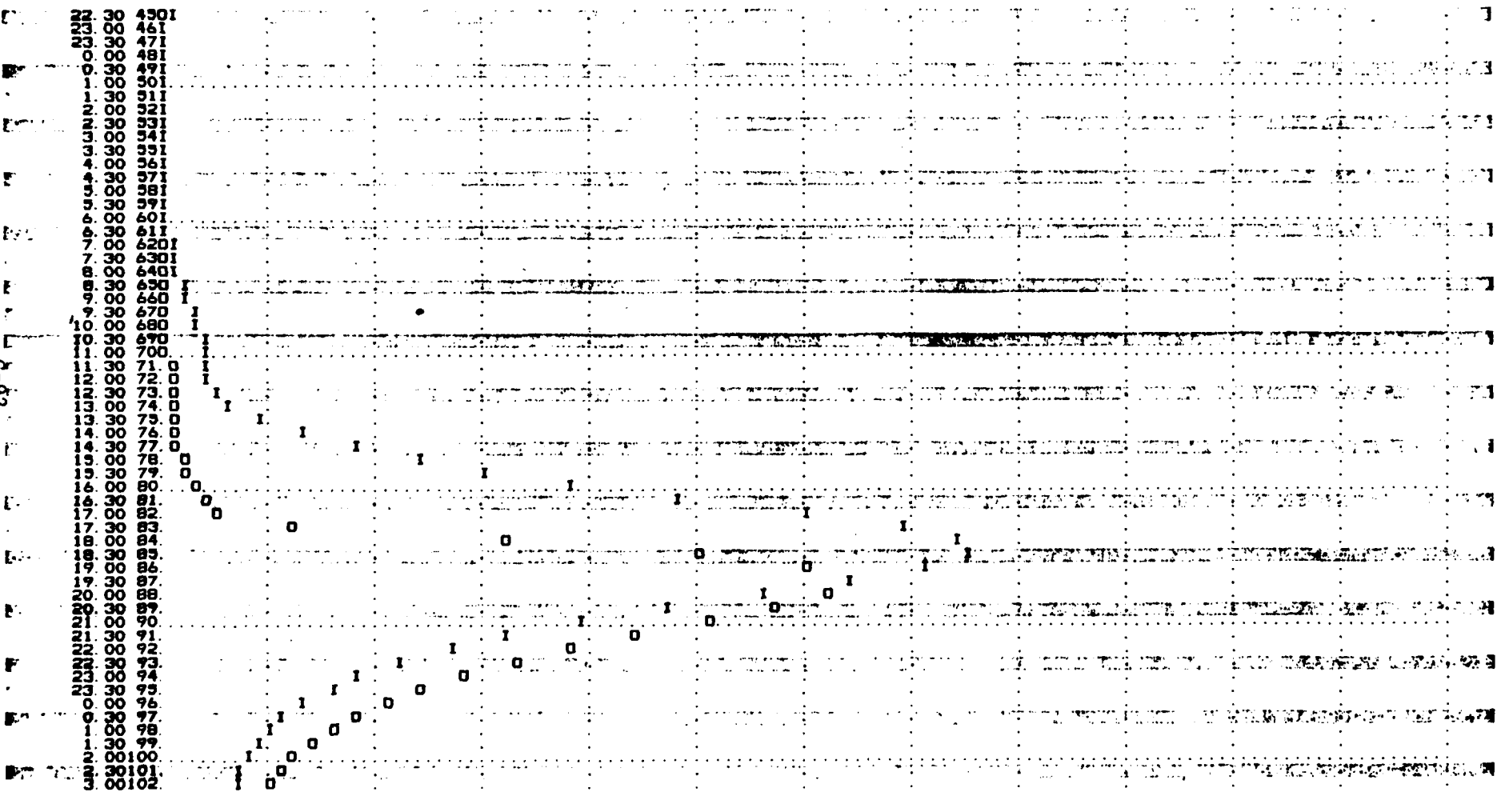
	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	12707.	8937.	3294.	1348.	161814.
CMS	360.	253.	93.	38.	4582.
INCHES		10.44	15.40	15.76	15.76
MM		265.28	391.07	400.26	400.26
AC-FT		4432.	6533.	6687.	6687.
THOUS CU M		5466.	8058.	8248.	8248.

DVF

STATION 2

INFLOW(I), OUTFLOW(O) AND OBSERVED FLOW(*)

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2.30 530
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3.30 550
4.00 560
4.30 570
5.00 580
5.30 590
6.00 600
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21.00 90.0
21.30 91.0
22.00 92.0
22.30 93.0
23.00 94.0
23.30 95.0
0.00 96.0
0.30 97.0
1.00 98.0
1.30 99.0
2.00100.0
2.30101.0
3.00102.0

```
 3.30103.     I  O.
 4.00104.     I  O.
 4.30105.     I O .
 5.00106.     I O .
 5.30107.    I O .
 6.00108.    I C .
 6.30109.    I O .
 7.00110.    IO.
 7.30111.    IO .
 8.00112.   I O .
 8.30113.   I O .
 9.00114.   I O .
 9.30115.   I O .
10.00116.   I O .
10.30117.   I O .
11.00118.   I O .
11.30119.  I  O .
12.00120.  I  O .

*OVN*

          **********        **********        **********        **********        **********

                                  SUB-AREA RUNOFF COMPUTATION
                 INFLOW HYDROGRAPH, SNYDER METHOD - CLAYTON'S DAM
                          ISTAQ   ICOMP   IECON   ITAPE    JPLT    JPRT   INAME  ISTAGE   IAUTO
                              2       0       0       0       0       0       1       0       0

                                          HYDROGRAPH DATA
                 IHYDG    IUHG   TAREA    SNAP   TRSDA   TRSPC   RATIO   ISNOW   ISAME   LOCAL
                     1       1    3.54    0.00    3.54    0.00   0.000       0       1       0

                                          PRECIP DATA
                          SPFE     PMS      R6     R12     R24     R48     R72     R96
                          0.00   20.00  111.00  122.00  133.00  143.00    0.00    0.00
TRSPC COMPUTED BY THE PROGRAM IS 0.800

                                          LOSS DATA
              LROPT   STRKR   DLTKR   RTIOL   ERAIN   STRKS   RTIOK   STRTL   CNSTL   ALSMX   RTIMP
                  0    0.00    0.00    1.00    0.00    0.00    1.00    1.00    0.10    0.00    0.01

                                      UNIT HYDROGRAPH DATA
                                  TP=  2.47    CP=0.63    NTA=  0

                                          RECESSION DATA
                              STRTQ=   -2.00    QRCSN=   -0.10    RTIOR= 1.50
APPROXIMATE CLARK COEFFICIENTS FROM GIVEN SNYDER CP AND TP ARE TC= 5.69 AND R= 4.39 INTERVALS

                 UNIT HYDROGRAPH 27 END-OF-PERIOD ORDINATES, LAG=   2.45 HOURS, CP= 0.63  VOL= 1.00
              49.      176.      344.      496.      581.      569.      481.      382.      304.      242.
             192.      153.      122.       97.       77.       61.       49.       39.       31.       25.
              20.       16.       12.       10.        8.        6.        5.
```

O

END-OF-PERIOD FLOW

MO.	DA	HR.	MN	PERIOD	RAIN	EXCS	LOSS	COMP Q	MO.	DA	HR.	MN	PERIOD	RAIN	EXCS	LOSS	COMP Q
1.	01	0.	30	1	0.00	0.00	0.00	7.	1.	02	6.	30	61	0.15	0.10	0.05	43.
1.	01	1.	00	2	0.00	0.00	0.00	7.	1.	02	7.	00	62	0.15	0.10	0.05	59.
1.	01	1.	30	3	0.00	0.00	0.00	7.	1.	02	7.	30	63	0.15	0.10	0.05	79.
1.	01	2.	00	4	0.00	0.00	0.00	6.	1.	02	8.	00	64	0.15	0.10	0.05	134.
1.	01	2.	30	5	0.00	0.00	0.00	6.	1.	02	8.	30	65	0.15	0.10	0.05	186.
1.	01	3.	00	6	0.00	0.00	0.00	6.	1.	02	9.	00	66	0.15	0.10	0.05	236.
1.	01	3.	30	7	0.00	0.00	0.00	5.	1.	02	9.	30	67	0.15	0.10	0.05	279.
1.	01	4.	00	8	0.00	0.00	0.00	5.	1.	02	10.	00	68	0.15	0.10	0.05	313.
1.	01	4.	30	9	0.00	0.00	0.00	5.	1.	02	10.	30	69	0.15	0.10	0.05	340.
1.	01	5.	00	10	0.00	0.00	0.00	5.	1.	02	11.	00	70	0.15	0.10	0.05	361.
1.	01	5.	30	11	0.00	0.00	0.00	5.	1.	02	11.	30	71	0.15	0.10	0.05	378.
1.	01	6.	00	12	0.00	0.00	0.00	5.	1.	02	12.	00	72	0.15	0.10	0.05	392.
1.	01	6.	30	13	0.01	0.00	0.01	4.	1.	02	12.	30	73	0.89	0.84	0.05	439.
1.	01	7.	00	14	0.01	0.00	0.01	4.	1.	02	13.	00	74	0.89	0.84	0.05	578.
1.	01	7.	30	15	0.01	0.00	0.01	4.	1.	02	13.	30	75	1.07	1.02	0.05	848.
1.	01	8.	00	16	0.01	0.00	0.01	4.	1.	02	14.	00	76	1.07	1.02	0.05	1253.
1.	01	8.	30	17	0.01	0.00	0.01	4.	1.	02	14.	30	77	1.33	1.28	0.05	1763.
1.	01	9.	00	18	0.01	0.00	0.01	4.	1.	02	15.	00	78	1.33	1.28	0.05	2323.
1.	01	9.	30	19	0.01	0.00	0.01	4.	1.	02	15.	30	79	1.62	1.57	0.05	2891.
1.	01	10.	00	20	0.01	0.00	0.01	4.	1.	02	16.	00	80	5.13	5.08	0.05	3632.
1.	01	10.	30	21	0.01	0.00	0.01	4.	1.	02	16.	30	81	1.24	1.19	0.05	4628.
1.	01	11.	00	22	0.01	0.00	0.01	3.	1.	02	17.	00	82	1.24	1.19	0.05	5693.
1.	01	11.	30	23	0.01	0.00	0.01	3.	1.	02	17.	30	83	0.78	0.73	0.05	6378.
1.	01	12.	00	24	0.01	0.00	0.01	3.	1.	02	18.	00	84	0.98	0.93	0.05	7066.
1.	01	12.	30	25	0.07	0.00	0.07	3.	1.	02	18.	30	85	0.09	0.04	0.05	7013.
1.	01	13.	00	26	0.07	0.00	0.07	3.	1.	02	19.	00	86	0.09	0.04	0.05	6473.
1.	01	13.	30	27	0.08	0.00	0.08	3.	1.	02	19.	30	87	0.09	0.04	0.05	5704.
1.	01	14.	00	28	0.08	0.00	0.08	4.	1.	02	20.	00	88	0.09	0.04	0.05	4866.
1.	01	14.	30	29	0.10	0.00	0.10	4.	1.	02	20.	30	89	0.09	0.04	0.05	4026.
1.	01	15.	00	30	0.10	0.00	0.10	4.	1.	02	21.	00	90	0.09	0.04	0.05	3263.
1.	01	15.	30	31	0.12	0.00	0.12	5.	1.	02	21.	30	91	0.09	0.04	0.05	2632.
1.	01	16.	00	32	0.39	0.17	0.22	13.	1.	02	22.	00	92	0.09	0.04	0.05	2129.
1.	01	16.	30	33	0.09	0.04	0.05	37.	1.	02	22.	30	93	0.09	0.04	0.05	1730.
1.	01	17.	00	34	0.09	0.04	0.05	72.	1.	02	23.	00	94	0.09	0.04	0.05	1412.
1.	01	17.	30	35	0.07	0.02	0.05	111.	1.	02	23.	30	95	0.09	0.04	0.05	1159.
1.	01	18.	00	36	0.07	0.02	0.05	143.	1.	03	0.	00	96	0.09	0.04	0.05	957.
1.	01	18.	30	37	0.01	0.00	0.01	158.	1.	03	0.	30	97	0.00	0.00	0.00	795.
1.	01	19.	00	38	0.01	0.00	0.01	153.	1.	03	1.	00	98	0.00	0.00	0.00	697.
1.	01	19.	30	39	0.01	0.00	0.01	138.	1.	03	1.	30	99	0.00	0.00	0.00	607.
1.	01	20.	00	40	0.01	0.00	0.01	118.	1.	03	2.	00	100	0.00	0.00	0.00	643.
1.	01	20.	30	41	0.01	0.00	0.01	98.	1.	03	2.	30	101	0.00	0.00	0.00	617.
1.	01	21.	00	42	0.01	0.00	0.01	79.	1.	03	3.	00	102	0.00	0.00	0.00	593.
1.	01	21.	30	43	0.01	0.00	0.01	63.	1.	03	3.	30	103	0.00	0.00	0.00	569.
1.	01	22.	00	44	0.01	0.00	0.01	50.	1.	03	4.	00	104	0.00	0.00	0.00	547.
1.	01	22.	30	45	0.01	0.00	0.01	40.	1.	03	4.	30	105	0.00	0.00	0.00	525.
1.	01	23.	00	46	0.01	0.00	0.01	32.	1.	03	5.	00	106	0.00	0.00	0.00	504.
1.	01	23.	30	47	0.01	0.00	0.01	26.	1.	03	5.	30	107	0.00	0.00	0.00	484.
1.	02	0.	00	48	0.01	0.00	0.01	21.	1.	03	6.	00	108	0.00	0.00	0.00	465.
1.	02	0.	30	49	0.06	0.01	0.05	17.	1.	03	6.	30	109	0.00	0.00	0.00	446.
1.	02	1.	00	50	0.06	0.01	0.05	16.	1.	03	7.	00	110	0.00	0.00	0.00	429.
1.	02	1.	30	51	0.06	0.01	0.05	16.	1.	03	7.	30	111	0.00	0.00	0.00	412.
1.	02	2.	00	52	0.06	0.01	0.05	19.	1.	03	8.	00	112	0.00	0.00	0.00	395.
1.	02	2.	30	53	0.06	0.01	0.05	22.	1.	03	8.	30	113	0.00	0.00	0.00	379.
1.	02	3.	00	54	0.06	0.01	0.05	26.	1.	03	9.	00	114	0.00	0.00	0.00	364.
1.	02	3.	30	55	0.06	0.01	0.05	30.	1.	03	9.	30	115	0.00	0.00	0.00	350.
1.	02	4.	00	56	0.06	0.01	0.05	32.	1.	03	10.	00	116	0.00	0.00	0.00	336.

1.02	4.30	57	0.06	0.01	0.05	35.	1.03	10.30	117	0.00	0.00	0.00	323.
1.02	5.00	58	0.06	0.01	0.05	36.	1.03	11.00	118	0.00	0.00	0.00	310.
1.02	5.30	59	0.06	0.01	0.05	37.	1.03	11.30	119	0.00	0.00	0.00	298.
1.02	6.00	60	0.06	0.01	0.05	38.	1.03	12.00	120	0.00	0.00	0.00	286.
									SUM	22.88	19.22	3.66	95118.
										(581.)	(488.)	(93.)	(2693.44)

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	7066.	5142.	1890.	791.	94971.
CMS	200.	146.	54.	22.	2689.
INCHES		13.51	19.87	20.80	20.80
MM		343.20	504.69	528.24	528.24
AC-FT		2550.	3749.	3924.	3924.
THOUS CU M		3145.	4629.	4841.	4841.

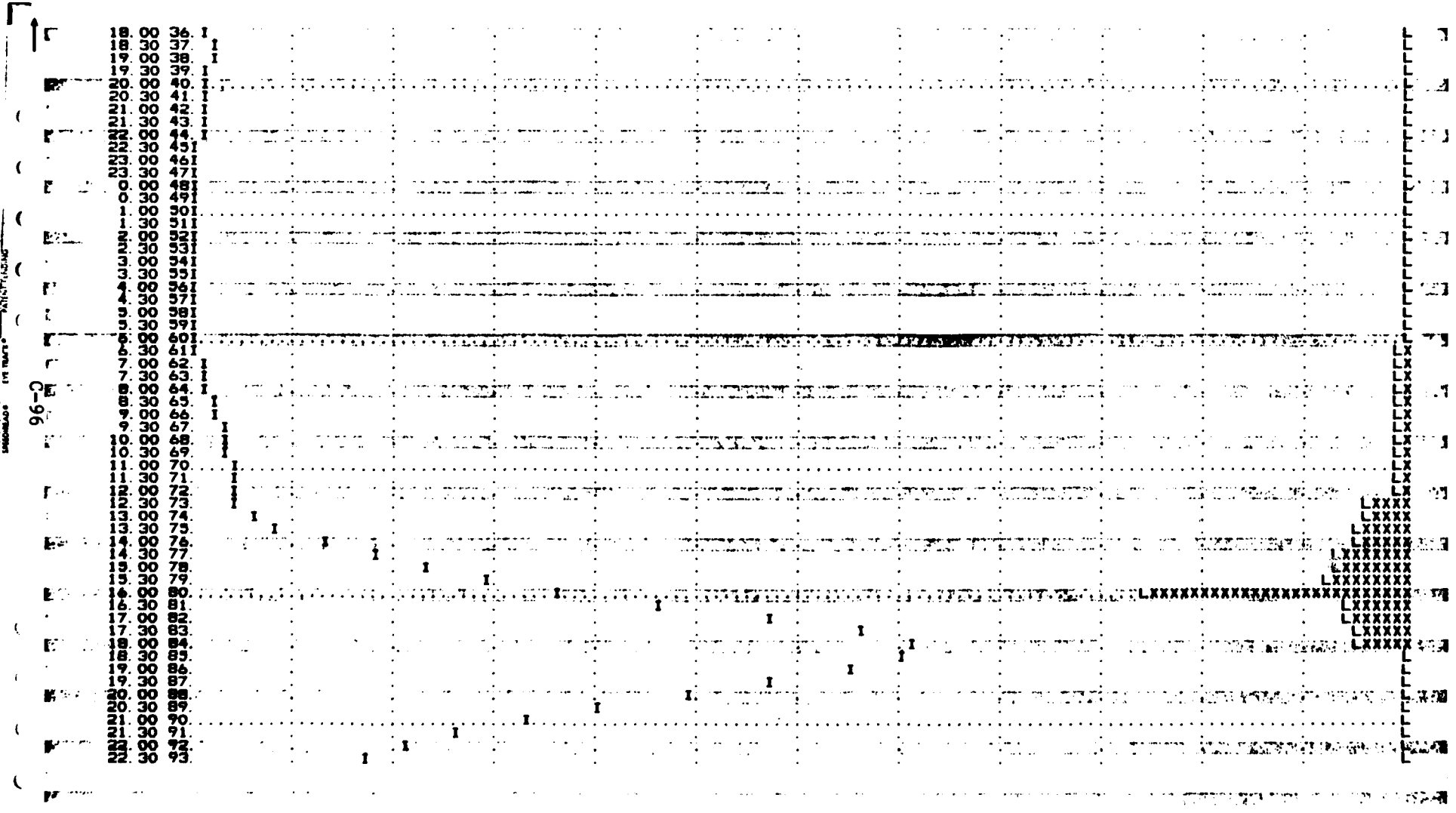
OVF

STATION 2

INFLOW(I), OUTFLOW(O) AND OBSERVED FLOW(*)

PRECIP(L) AND EXCESS(X)

	0.	1000.	2000.	3000.	4000.	5000.	6000.	7000.	8000.	0.	0.	0.	0.
	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.	4.	2.	0.
0.30	11												
1.00	21												
1.30	31												
2.00	41												
2.30	51												
3.00	61												
3.30	71												
4.00	81												
4.30	91												
5.00	101												
5.30	111												
6.00	121												
6.30	131												
7.00	141												
7.30	151												
8.00	161												
8.30	171												
9.00	181												
9.30	191												
10.00	201												
10.30	211												
11.00	221												
11.30	231												
12.00	241												
12.30	251												
13.00	261												
13.30	271												
14.00	281												
14.30	291												
15.00	301												
15.30	311												
16.00	321												
16.30	331												
17.00	34 I												
17.30	35 I												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18.30 37.
19.00 38.
19.30 39.
20.00 40.
20.30 41.
21.00 42.
21.30 43.
22.00 44.
22.30 45
23.00 46
23.30 47
0.00 48
0.30 49
1.00 50
1.30 51
2.00 52
2.30 53
3.00 54
3.30 55
4.00 56
4.30 57
5.00 58
5.30 59
6.00 60
6.30 61
7.00 62.
7.30 63.
8.00 64.
8.30 65.
9.00 66.
9.30 67.
10.00 68.
10.30 69.
11.00 70.
11.30 71.
12.00 72.
12.30 73.
13.00 74.
13.30 75.
14.00 76.
14.30 77.
15.00 78.
15.30 79.
16.00 80.
16.30 81.
17.00 82.
17.30 83.
18.00 84.
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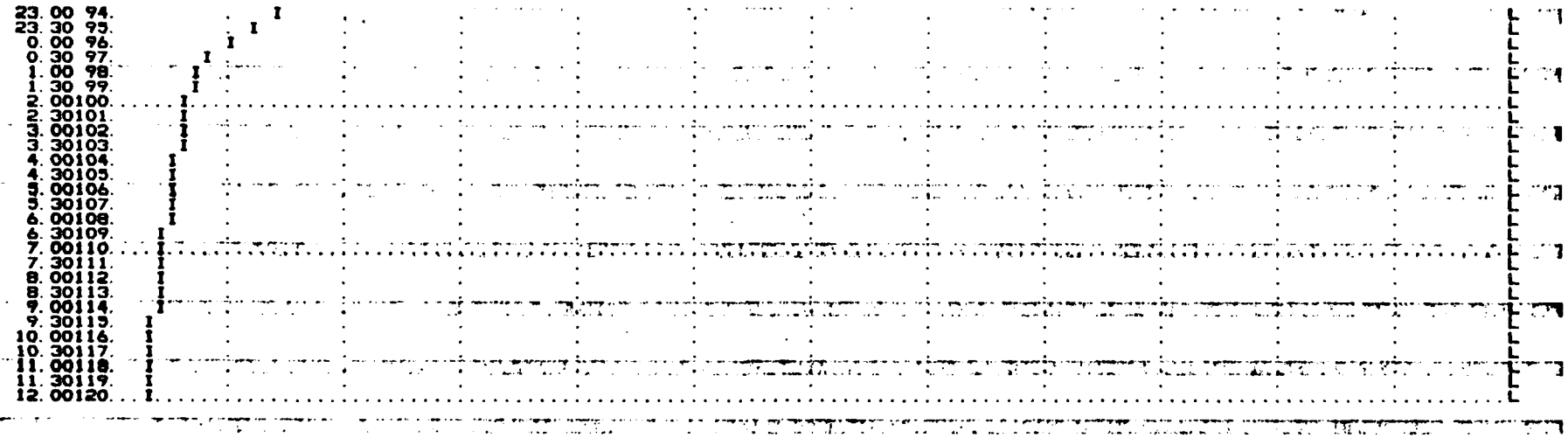
22.00 92.
22.30 93.



C-9

OVN

HYDROGRAPH AT STA 2 FOR PLAN 1, RTIO 1

1.	1.	1.	1.	1.	1.	1.	1.	1.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	1.	4.	7.	11.	14.	16.	15.	14.	12.
10.	8.	6.	5.	4.	3.	3.	2.	2.	2.
2.	2.	2.	3.	3.	3.	3.	4.	4.	4.
4.	6.	9.	13.	19.	24.	28.	31.	34.	36.
38.	39.	44.	58.	85.	125.	176.	232.	289.	363.
463.	569.	658.	707.	701.	647.	570.	487.	403.	326.
263.	213.	173.	141.	116.	96.	80.	70.	67.	64.
62.	59.	57.	55.	52.	50.	48.	46.	45.	43.
41.	40.	38.	36.	35.	34.	32.	31.	30.	29.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	707.	514.	189.	79.	9497.
CMS	20.	15.	5.	2.	269.
INCHES		1.35	1.99	2.08	2.08
MM		34.32	50.47	52.82	52.82
AC-FT		255.	375.	392.	392.
THOUS CU M		315.	462.	484.	484.

HYDROGRAPH AT STA 2 FOR PLAN 1, RTIO 2

1.	1.	1.	1.	1.	1.	1.	1.	1.	1.

1.	1.	0.	0.	0.	0.	0.	1.	1.	1.
1.	2.	5.	11.	17.	21.	24.	23.	21.	18.
15.	12.	9.	8.	6.	5.	4.	3.	3.	2.
2	3.	3	4.	4.	5.	5.	5.	6.	6.
6.	9.	14.	20.	28.	35.	42.	47.	51.	54.
57.	59.	66.	87.	127.	188.	264.	348.	434.	545.
694.	854.	987.	1060.	1052.	971.	856.	730.	604.	490.
395.	319.	259.	212.	174.	144.	119.	105.	100.	96.
73.	87.	85.	82.	79.	76.	73.	70.	67.	64.
62.	59.	57.	55.	52.	50.	48.	46.	45.	43.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	1060.	771.	284.	119.	14246.
CMS	30.	22.	8.	3.	403.
INCHES		2.03	2.98	3.12	3.12
MM		51.48	75.70	79.24	79.24
AC-FT		382.	562.	589.	589.
THOUS CU M		472.	694.	726.	726.

HYDROGRAPH AT STA 2 FOR PLAN 1, RTIO 3

1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	2.	8.	12.	18.	23.	29.	29.	22.	19.
16.	13.	10.	8.	6.	5.	4.	3.	3.	3.
3.	3.	4.	4.	5.	5.	6.	6.	6.	6.
7.	9.	14.	21.	30.	38.	45.	50.	54.	58.
61.	63.	70.	92.	136.	200.	282.	372.	463.	581.
740.	911.	1092.	1131.	1122.	1036.	913.	779.	644.	522.
421.	341.	277.	226.	185.	153.	127.	112.	107.	103.
99.	93.	91.	87.	84.	81.	77.	74.	71.	69.
66.	63.	61.	58.	56.	54.	52.	50.	48.	46.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	1131.	823.	302.	127.	15195.
CMS	32.	23.	9.	4.	430.
INCHES		2.16	3.18	3.33	3.33
MM		54.91	80.75	84.52	84.52
AC-FT		408.	600.	628.	628.
THOUS CU M		503.	740.	775.	775.

HYDROGRAPH AT STA 2 FOR PLAN 1, RTIO 4

1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	2.	6.	12.	19.	24.	27.	26.	23.	20.
17.	13.	11.	9.	7.	5.	4.	4.	3.	3.
3.	3.	4.	4.	5.	6.	6.	6.	6.	6.
7.	10.	15.	23.	32.	40.	47.	53.	58.	61.
64.	67.	75.	98.	144.	213.	300.	395.	491.	617.
787.	968.	1118.	1201.	1192.	1100.	970.	827.	684.	538.
447.	362.	294.	240.	197.	163.	135.	119.	114.	109.
105.	101.	97.	93.	89.	86.	82.	79.	76.	73.
70.	67.	65.	62.	59.	57.	55.	53.	51.	49.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME

CFS	1201.	874.	321.	135.	16145.	
CMS	34.	25.	9.	4.	457.	
INCHES		2.30	3.38	3.54	3.54	
MM		58.34	85.80	89.80	89.80	
AC-FT		433.	637.	667.	667.	
THOUS CU M		535.	786.	823.	823.	

HYDROGRAPH AT STA 2 FOR PLAN 1, RTIO 5

1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	2.	7.	13.	20.	26.	28.	28.	25.	21.
18.	14.	11.	9.	7.	6.	5.	4.	3.	3.
3.	3.	4.	5.	5.	6.	6.	7.	7.	7.
8.	11.	16.	24.	33.	43.	50.	56.	61.	65.
68.	71.	79.	104.	153.	226.	317.	418.	520.	634.
833.	1025.	1184.	1272.	1262.	1165.	1027.	876.	725.	587.
474.	383.	311.	254.	209.	172.	143.	125.	120.	116.
111.	107.	102.	98.	94.	91.	87.	84.	80.	77.
74.	71.	68.	66.	63.	60.	58.	56.	54.	51.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	1272.	926.	340.	142.	17095.
CMS	36.	26.	10.	4.	484.
INCHES		2.43	3.58	3.74	3.74
MM		61.78	90.84	95.08	95.08
AC-FT		459.	675.	706.	706.
THOUS CU M		566.	832.	871.	871.

HYDROGRAPH AT STA 2 FOR PLAN 1, RTIO 6

1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	2.	7.	14.	21.	27.	30.	29.	26.	23.
19.	15.	12.	10.	8.	6.	5.	4.	3.	3.
3.	4.	4.	5.	6.	6.	7.	7.	7.	7.
8.	11.	17.	26.	35.	45.	53.	59.	65.	69.
72.	74.	83.	110.	161.	238.	335.	441.	549.	690.
879.	1082.	1250.	1342.	1333.	1230.	1084.	925.	769.	620.
500.	405.	329.	268.	220.	182.	151.	132.	127.	122.
117.	113.	108.	104.	100.	96.	92.	88.	85.	81.
78.	75.	72.	69.	66.	64.	61.	59.	57.	54.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	1342.	977.	359.	150.	18045.
CMS	38.	28.	10.	4.	511.
INCHES		2.57	3.78	3.95	3.95
MM		65.21	95.89	100.37	100.37
AC-FT		484.	712.	746.	746.
THOUS CU M		598.	879.	920.	920.

HYDROGRAPH AT STA 2 FOR PLAN 1, RTIO 7

1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
1.	1.	1.	1.	1.	1.	1.	1.	1.	1.

1.	3.	7.	14.	22.	29.	32.	31.	28.	24.
20.	16.	13.	10.	8.	6.	5.	4.	3.	3.
3.	4.	4.	5.	6.	6.	7.	7.	7.	8.
9.	12.	18.	27.	37.	47.	56.	63.	68.	72.
76.	78.	88.	116.	170.	291.	393.	465.	578.	726.
926.	1139.	1315.	1413.	1403.	1295.	1141.	973.	805.	653.
526.	426.	346.	282.	232.	191.	159.	139.	134.	129.
123.	119.	114.	109.	105.	101.	97.	93.	89.	86.
82.	79.	76.	73.	70.	67.	65.	62.	60.	57.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	1413.	1028.	378.	158.	18994.
CMS	40.	29.	11.	4.	538.
INCHES		2.70	3.97	4.16	4.16
MM		68.64	100.94	105.65	105.65
AC-FT		510.	750.	785.	785.
THOUS CU M		629.	929.	968.	968.

HYDROGRAPH AT STA 2 FOR PLAN 1, RTIO 8

3.	3.	3.	3.	3.	3.	3.	3.	3.	2.
2.	2.	2.	2.	2.	2.	2.	2.	2.	2.
2.	2.	2.	2.	2.	2.	2.	2.	2.	2.
2.	7.	18.	36.	55.	71.	79.	77.	69.	59.
47.	39.	31.	25.	20.	18.	13.	10.	9.	8.
8.	9.	11.	13.	15.	16.	17.	18.	18.	19.
22.	30.	49.	67.	93.	118.	139.	156.	170.	181.
189.	196.	219.	289.	424.	627.	881.	1162.	1446.	1816.
2314.	2847.	3287.	3533.	3507.	3236.	2852.	2433.	2013.	1632.
1316.	1065.	865.	706.	579.	479.	398.	349.	335.	321.
309.	296.	285.	273.	262.	252.	242.	232.	223.	214.
206.	198.	190.	182.	5.	168.	161.	155.	149.	143.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	3533.	2571.	945.	396.	47486.
CMS	100.	73.	27.	11.	1345.
INCHES		6.76	9.93	10.40	10.40
MM		171.60	252.34	264.12	264.12
AC-FT		1275.	1875.	1962.	1962.
THOUS CU M		1573.	2312.	2420.	2420.

HYDROGRAPH AT STA 2 FOR PLAN 1, RTIO 9

7.	7.	6.	6.	6.	6.	5.	5.	5.	5.
5.	5.	4.	4.	4.	4.	4.	4.	4.	4.
4.	3.	3.	3.	3.	3.	3.	4.	4.	4.
5.	13.	37.	72.	111.	143.	168.	153.	138.	118.
98.	79.	63.	50.	40.	32.	26.	21.	17.	16.
16.	19.	22.	26.	30.	32.	35.	36.	37.	38.
43.	59.	90.	134.	186.	236.	279.	313.	340.	361.
378.	392.	439.	578.	848.	1293.	1763.	2323.	2891.	3631.
4628.	5693.	6577.	7066.	7013.	6473.	5704.	4866.	4026.	3263.
2632.	2129.	1730.	1412.	1159.	957.	795.	697.	669.	643.
617.	593.	569.	547.	525.	504.	484.	465.	446.	429.
412.	395.	379.	364.	350.	336.	323.	310.	298.	286.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	7066.	5142.	1890.	791.	94971.

CMS	200.	146.	54.	22.	2689.
INCHES		13.91	19.87	20.80	20.80
MM		343.20	504.69	528.24	528.24
AC-FT		2550.	3749.	3924.	3924.
THOUS CU M		3145.	4625.	4841.	4841.

********** ********** ********** ********** **********

COMBINE HYDROGRAPHS

OUTFLOW FROM EATON RESERVOIR COMBINED WITH INFLOW AT CLAYTON'S DAM

ISTAG	ICOMP	IECON	ITAPE	JPLT	JPRT	INAME	ISTAGE	IAUTO
2	2	0	0	0	0	1	0	0

SUM OF 2 HYDROGRAPHS AT 2 PLAN 1 RTIO 1

1.	57.	1.	57.	1.	57.	1.	57.	1.	57.
0.	57.	0.	57.	0.	57.	0.	57.	0.	57.
0.	57.	0.	57.	0.	57.	0.	57.	0.	57.
0.	58.	4.	64.	11.	71.	73.	72.	71.	12.
67.	8.	63.	5.	61.	3.	59.	2.	59.	2.
58.	2.	57.	3.	60.	3.	60.	4.	60.	4.
61.	6.	66.	13.	75.	80.	85.	88.	91.	93.
95.	96.	101.	115.	142.	183.	234.	294.	359.	435.
543.	659.	739.	821.	831.	798.	740.	673.	602.	537.
481.	437.	401.	378.	349.	329.	313.	303.	300.	298.
292.	288.	284.	280.	277.	273.	269.	265.	262.	258.
254.	251.	247.	244.	240.	237.	233.	230.	227.	224.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	831.	657.	364.	168.	20217.
CMS	24.	19.	10.	5.	572.
INCHES		0.53	1.18	1.36	1.36
MM		13.49	29.92	34.62	34.62
AC-FT		326.	722.	835.	835.
THOUS CU M		402.	891.	1030.	1030.

OVF

STATION 2

INFLOW(I), OUTFLOW(O) AND OBSERVED FLOW(*)

0. 100. 200. 300. 400. 500. 600. 700. 800. 900. 0. 0. 0.

0.30	11	
1.00	2.	I
1.30	31	
2.00	4.	I
2.30	51	
3.00	6.	I
3.30	71	
4.00	8.	I
4.30	91	
5.00	10.	I
5.30	111	
6.00	12.	I
6.30	131	

```
 7.00 14.      I
 7.30 15I
 8.00 16.      I
 8.30 17I
 9.00 18.      I
 9.30 19I
10.00 20.      I
10.30 21I
11.00 22.      I
11.30 23I
12.00 24.      I
12.30 25I
13.00 26.      I
13.30 27I
14.00 28.      I
14.30 29I
15.00 30.      I
15.30 31I
16.00 32.      I
16.30 33I
17.00 34.      I
17.30 35. I
18.00 36.       I
18.30 37.       I
19.00 38.       I
19.30 39.       I
20.00 40. I
20.30 41.       I
21.00 42. I
21.30 43.      I
22.00 44. I
22.30 45.      I
23.00 46I
23.30 47.      I
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 0.30 49.      I
 1.00 50I
 1.30 51.      I
 2.00 52I
 2.30 53.      I
 3.00 54I
 3.30 55.      I
 4.00 56I
 4.30 57.      I
 5.00 58I
 5.30 59.      I
 6.00 60I
 6.30 61.      I
 7.00 62. I
 7.30 63.       I
 8.00 64. I
 8.30 65.        I
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 9.30 67.        I
10.00 68.         I
10.30 69.         I
11.00 70.         I
11.30 71.         I
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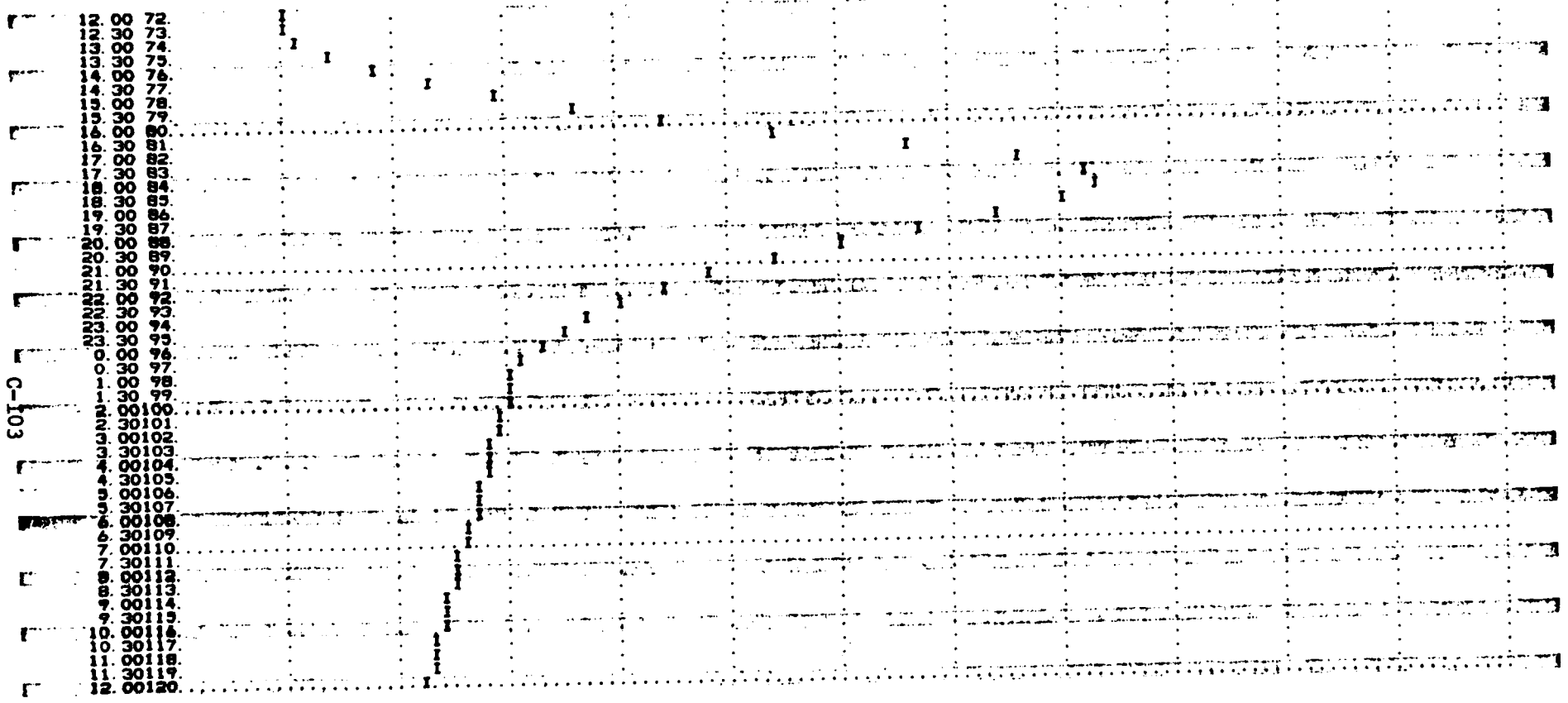

C-103

OVN

SUM OF 2 HYDROGRAPHS AT 2 PLAN 1 RTIO 2

1:	98.	1:	98.	1:	98.	1:	98.	1:	98.	1:	98.	
1:	57.	1:	57.	1:	57.	1:	57.	1:	57.	1:	57.	

	1.	57.	0.	57.	0.	57.		57.	1.	57.
	1.	59.	5.	68.	17.	78.	80.	80.	78.	75.
	71.	69.	9.	64.	6.	62.	4.	60.	3.	59.
	2.	60.	3.	61.	4.	62.	5.	62.	6.	62.
	9.	66.	14.	77.	83.	98.	99.	104.	108.	111.
	114.	116.	123.	144.	185.	248.	329.	418.	511.	631.
	792.	967.	1121.	1226.	1251.	1202.	1121.	1029.	924.	829.
	749.	684.	631.	588.	553.	523.	499.	483.	477.	470.
	464.	437.	430.	443.	436.	429.	423.	416.	410.	403.
	397.	390.	384.	378.	372.	366.	360.	354.	348.	342.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	1251.	987.	994.	247.	87687.
CMS	35.	28.	16.	7.	841.
INCHES		0.80	1.79	2.00	2.00
MM		20.31	45.56	50.83	50.83
AC-FT		490.	1100.	1227.	1227.
THOUS CU M		605.	1356.	1513.	1513.

OVF STATION B

INFLOW(I), OUTFLOW(O) AND OBSERVED FLOW(*)

0. 200. 400. 600. 800. 1000. 1200. 1400. 0. 0. 0. 0. 0.

0.30	11	I
1.00	2.	I
1.30	31	
2.00	4.	I
2.30	51	
3.00	6.	I
3.30	71	
4.00	8.	I
4.30	91	
5.00	10.	I
5.30	111	
6.00	12.	I
6.30	131	
7.00	14.	I
7.30	151	
8.00	16.	I
8.30	171	
9.00	18.	I
9.30	191	
10.00	20.	I
10.30	211	
11.00	22.	I
11.30	231	
12.00	24.	I
12.30	251	
13.00	26.	I
13.30	271	
14.00	28.	I
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15.00	30.	I
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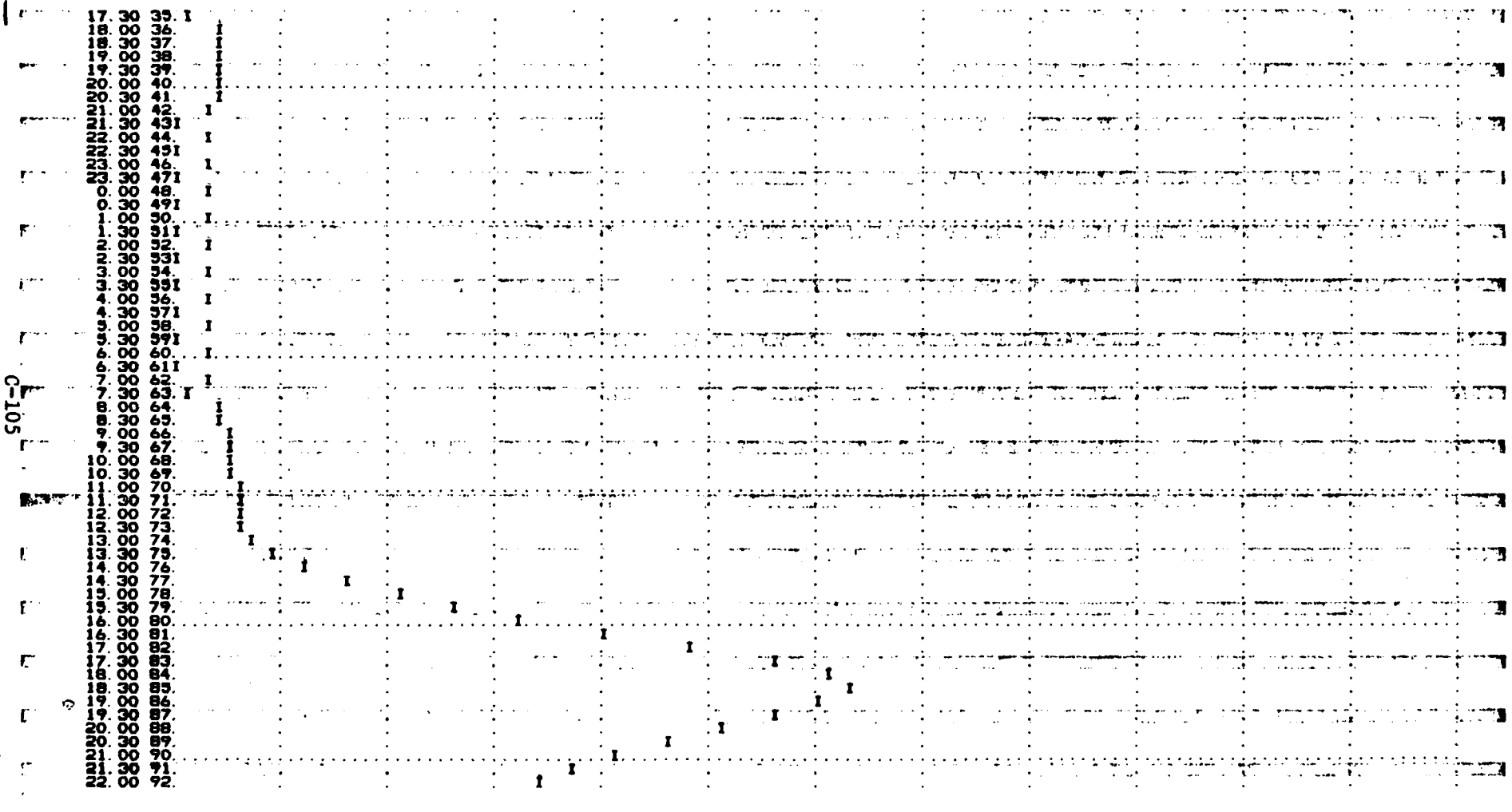
16.00	32.	I
16.30	331	
17.00	34.	I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23.30 47
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0.30 49
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1.30 51
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2.30 53
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5.30 59
6.00 60.
6.30 61
7.00 62.
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9.30 67.
10.00 68.
10.30 69.
11.00 70.
11.30 71.
12.00 72.
12.30 73.
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14.00 76.
14.30 77.
15.00 78.
15.30 79.
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16.30 81.
17.00 82.
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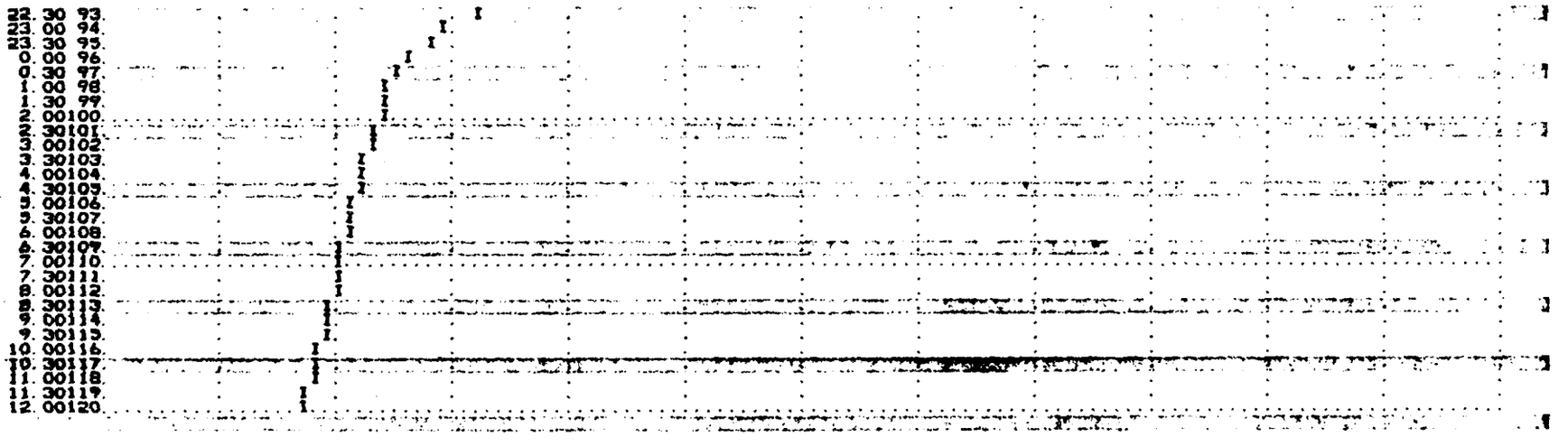
22.00 92.



DVN

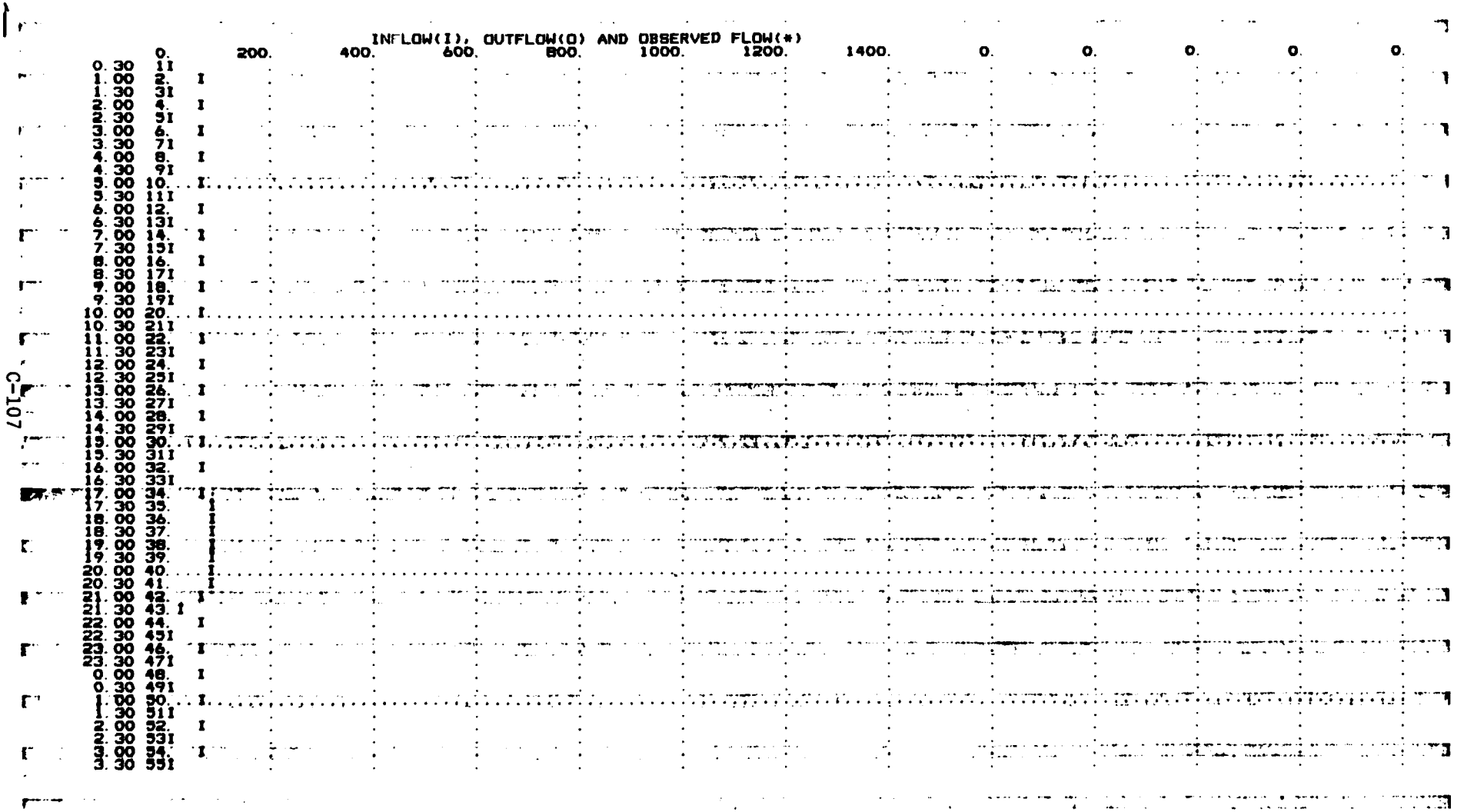
SUM OF 2 HYDROGRAPHS AT 2 PLAN 1 RTIO 3

1.	38.	1.	38.	1.	38.	1.	38.	1.	38.
1.	38.	1.	37.	1.	37.	1.	37.	1.	37.
1.	37.	1.	37.	1.	37.	1.	37.	1.	37.
1.	39.	6.	68.	73.	80.	82.	81.	79.	76.
72.	69.	10.	65.	6.	62.	4.	60.	3.	59.
3.	60.	4.	61.	5.	62.	6.	63.	6.	63.
7.	66.	14.	78.	87.	95.	101.	107.	111.	115.
118.	120.	128.	150.	194.	262.	348.	443.	542.	670.
842.	1028.	1196.	1309.	1335.	1285.	1200.	1098.	990.	888.
802.	735.	680.	634.	597.	566.	539.	522.	513.	508.
500.	492.	484.	476.	468.	460.	453.	446.	439.	432.
425.	418.	412.	405.	398.	392.	385.	379.	373.	367.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	1335.	1056.	593.	264.	31667.
CMS	38.	30.	17.	7.	897.
INCHES		0.85	1.92	2.13	2.13
MM		21.70	48.77	54.22	54.22
AC-FT		524.	1177.	1309.	1309.
THOUS CU M		646.	1452.	1614.	1614.

DVP

STATION 2


INFLOW(I), OUTFLOW(O) AND OBSERVED FLOW(*)
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1.30 3I
2.00 4. I
2.30 5I
3.00 6. I
3.30 7I
4.00 8. I
4.30 9I
5.00 10. I
5.30 11I
6.00 12. I
6.30 13I
7.00 14. I
7.30 15I
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8.30 17I
9.00 18. I
9.30 19I
10.00 20. I
10.30 21I
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19.00 38. I
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22.00 44. I
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23.00 46. I
23.30 47I
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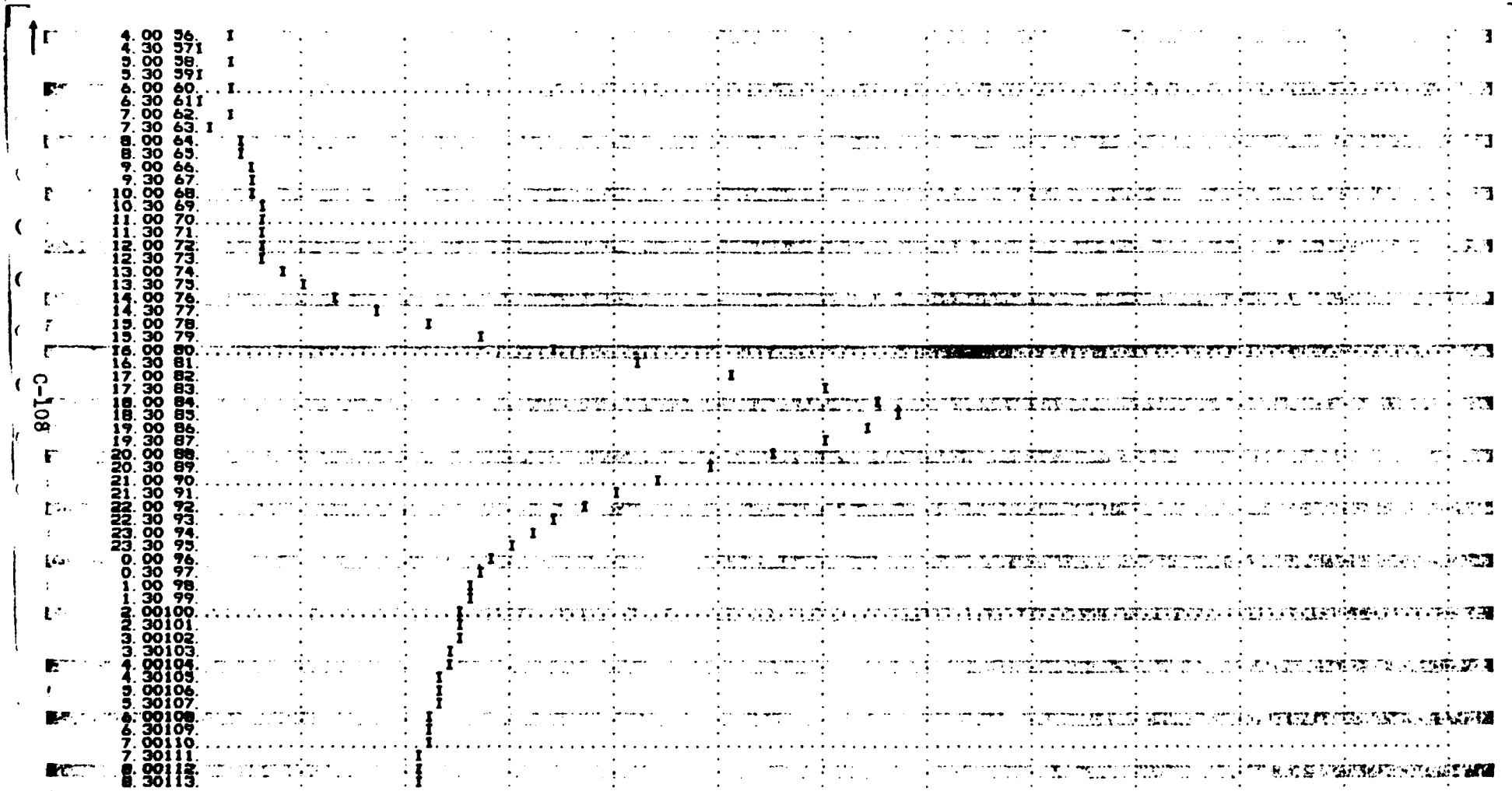
3.30 55I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0.30 97.
1.00 98.
1.30 99.
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5.30107.
6.00108.
6.30109.
7.00110.
7.30111.
8.00112.
8.30113.

C-108

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 9.00114.                I
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10.00116.                I
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11.00118.               I.
11.30119.               I.
12.00120.              I.
```

OVN

SUM OF 2 HYDROGRAPHS AT 2 PLAN 1 RTIO 4

1.	58.	1.	58	1.	58.	1.	58.	1.	58.
1.	58.	1.	58.	1.	57.	1.	57.	1.	57.
1.	57.	1.	57.	1.	57.	1.	57.	1.	58.
1.	59.	6.	69.	76.	81.	84.	83.	80.	77.
73.	70.	67.	9.	64.	5.	61.	4.	60.	3.
60.	3.	61.	4.	62.	6.	63.	6.	63.	6.
64.	10.	72.	80.	88.	97.	104.	110.	115.	119.
122.	124.	132.	156.	203.	275.	367.	468.	573.	709.
892.	1090.	1272.	1391.	1419.	1370.	1279.	1171.	1055.	949.
860.	788.	730.	681.	641.	608.	580.	561.	554.	546.
537.	529.	520.	511.	503.	494.	486.	478.	469.	461.
453.	446.	439.	432.	425.	418.	411.	404.	397.	391.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	1419.	1125.	633.	281.	33673.
CMS	40.	32.	18.	8.	954.
INCHES		0.91	2.05	2.27	2.27
MM		23.11	52.03	57.65	57.65
AC-FT		558.	1256.	1391.	1391.
THOUS CU M		688.	1549.	1716.	1716.

OVF

STATION 2

INFLOW(I), OUTFLOW(O) AND OBSERVED FLOW(*)

```
      0.      200.     400.     600.     800.    1000.    1200.    1400.    1600.      0.      0.      0.      0.
0.30  1I
1.00  2.  I
1.30  3I
2.00  4.  I
2.30  5I
3.00  6.  I
3.30  7I
4.00  8.  I
4.30  9I
5.00 10.  I
5.30 11I
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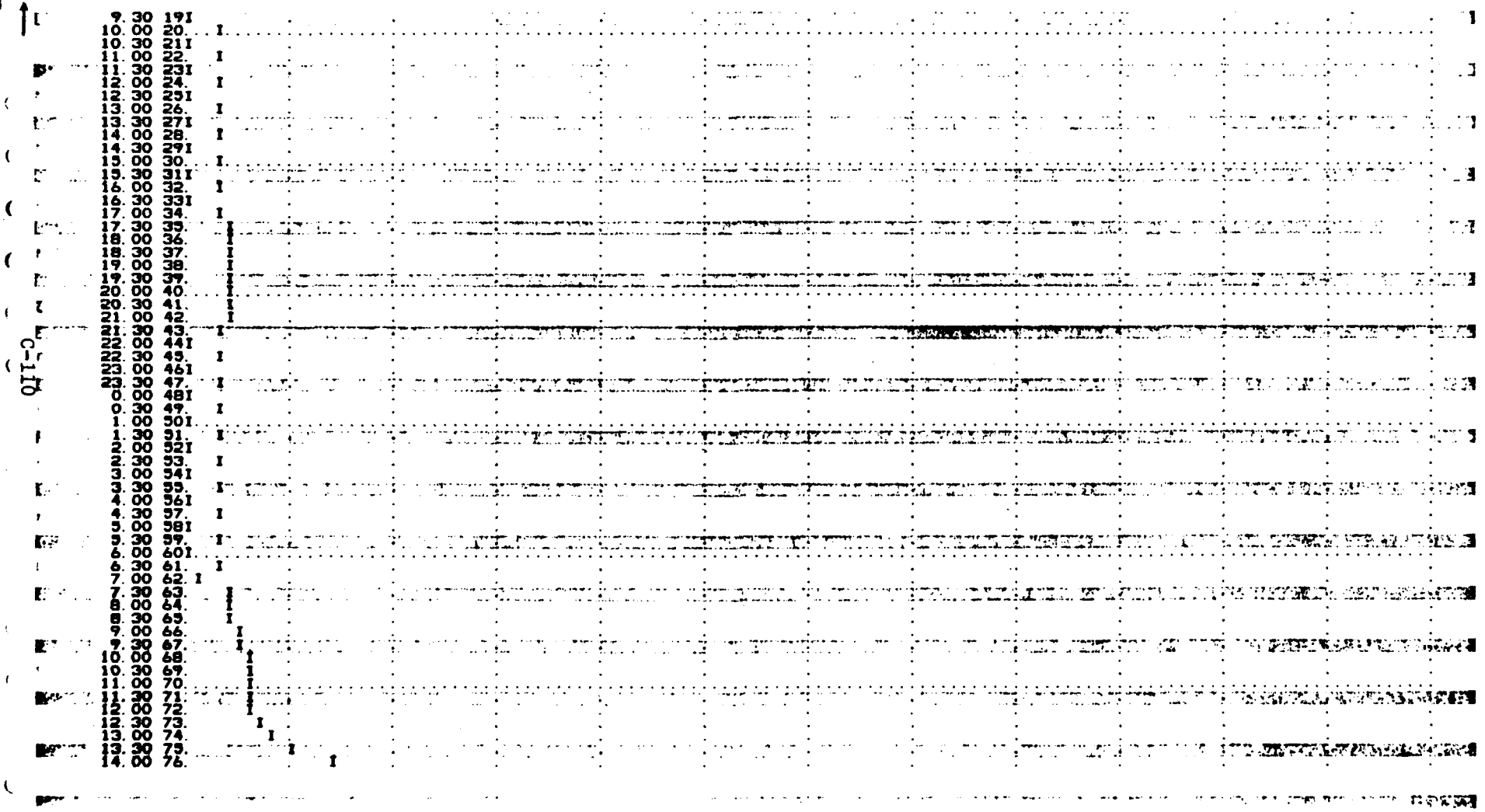
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23.30 47.
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8.30 65.
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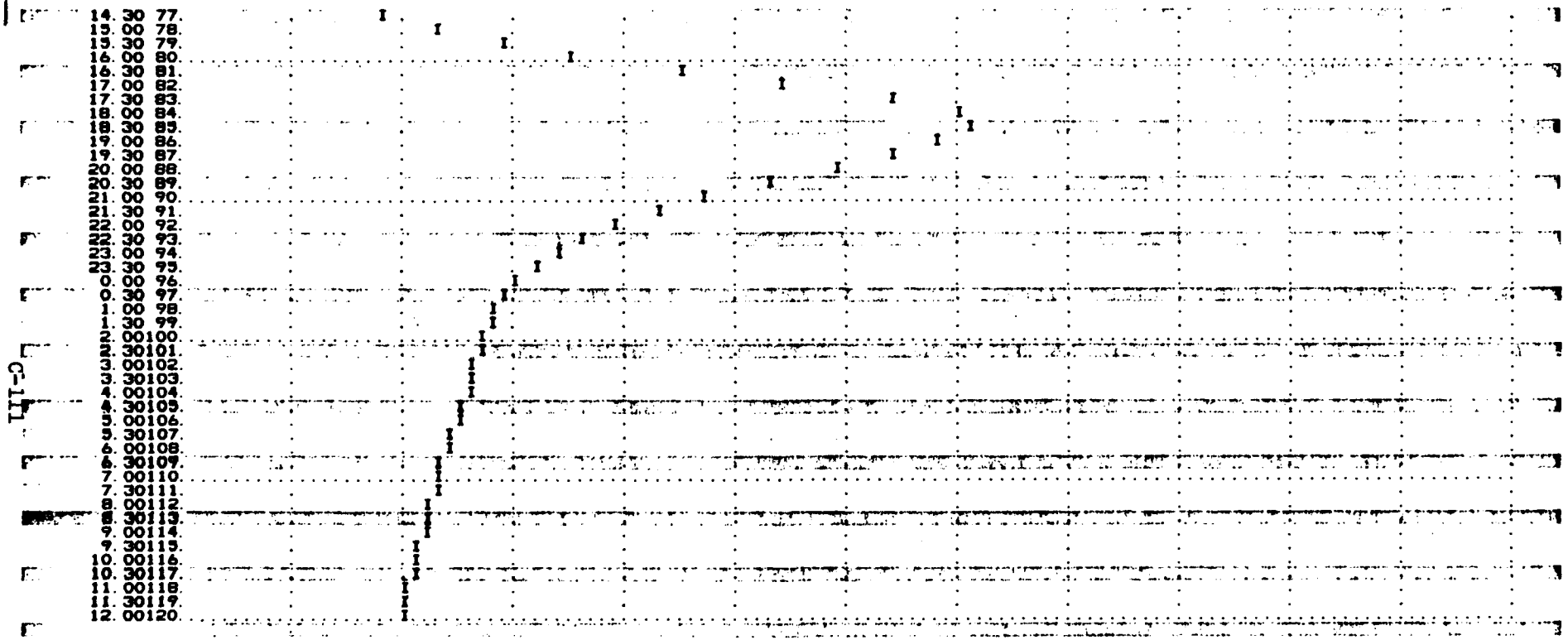

C-111

#OVN#

SUM OF 2 HYDROGRAPHS AT 2 PLAN 1 RTIO 5

1.	58.	1.	58.	1.	58.	1.	58.	1.	58.
1.	58.	1.	58.	1.	58.	1.	57.	1.	57.
1.	57.	1.	57.	1.	57.	1.	57.	1.	58.
1.	59.	7.	70.	77.	82.	85.	84.	82.	78.
74.	71.	68.	9.	64.	6.	61.	4.	60.	3.
60.	3.	61.	5.	62.	4.	63.	7.	63.	7.
65.	11.	73.	81.	90.	99.	107.	113.	118.	122.

125.	128.	137.	162.	213.	289.	386.	493.	604.	748.
942.	1153.	1347.	1474.	1504.	1454.	1358.	1243.	1123.	1012.
918.	842.	779.	728.	686.	650.	620.	601.	592.	584.
575.	565.	556.	547.	538.	529.	520.	511.	502.	493.
485.	476.	468.	459.	451.	443.	435.	428.	421.	414.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	1504.	1194.	673.	297.	35642.
CMS	43.	34.	19.	8.	1009.
INCHES		0.97	2.18	2.40	2.40
MM		24.53	55.33	61.03	61.03
AC-FT		592.	1335.	1473.	1473.
THOUS CU M		730.	1647.	1817.	1817.

OVF

STATION 2

INFLOW(I), OUTFLOW(O) AND OBSERVED FLOW(*)

0. 200. 400. 600. 800. 1000. 1200. 1400. 1600. 0. 0. 0. 0.

0.30	11		
1.00	2.	I	
1.30	31		
2.00	4.	I	
2.30	51		
3.00	6.	I	
3.30	71		
4.00	8.	I	
4.30	91		
5.00	10.	I	
5.30	111		
6.00	12.	I	
6.30	131		
7.00	14.	I	
7.30	151		
8.00	16.	I	
8.30	171		
9.00	18.	I	
9.30	191		
10.00	20.	I	
10.30	211		
11.00	22.	I	
11.30	231		
12.00	24.	I	
12.30	251		
13.00	26.	I	
13.30	271		
14.00	28.	I	
14.30	291		
15.00	30.	I	
15.30	311		
16.00	32.	I	
16.30	331		
17.00	34.	I	
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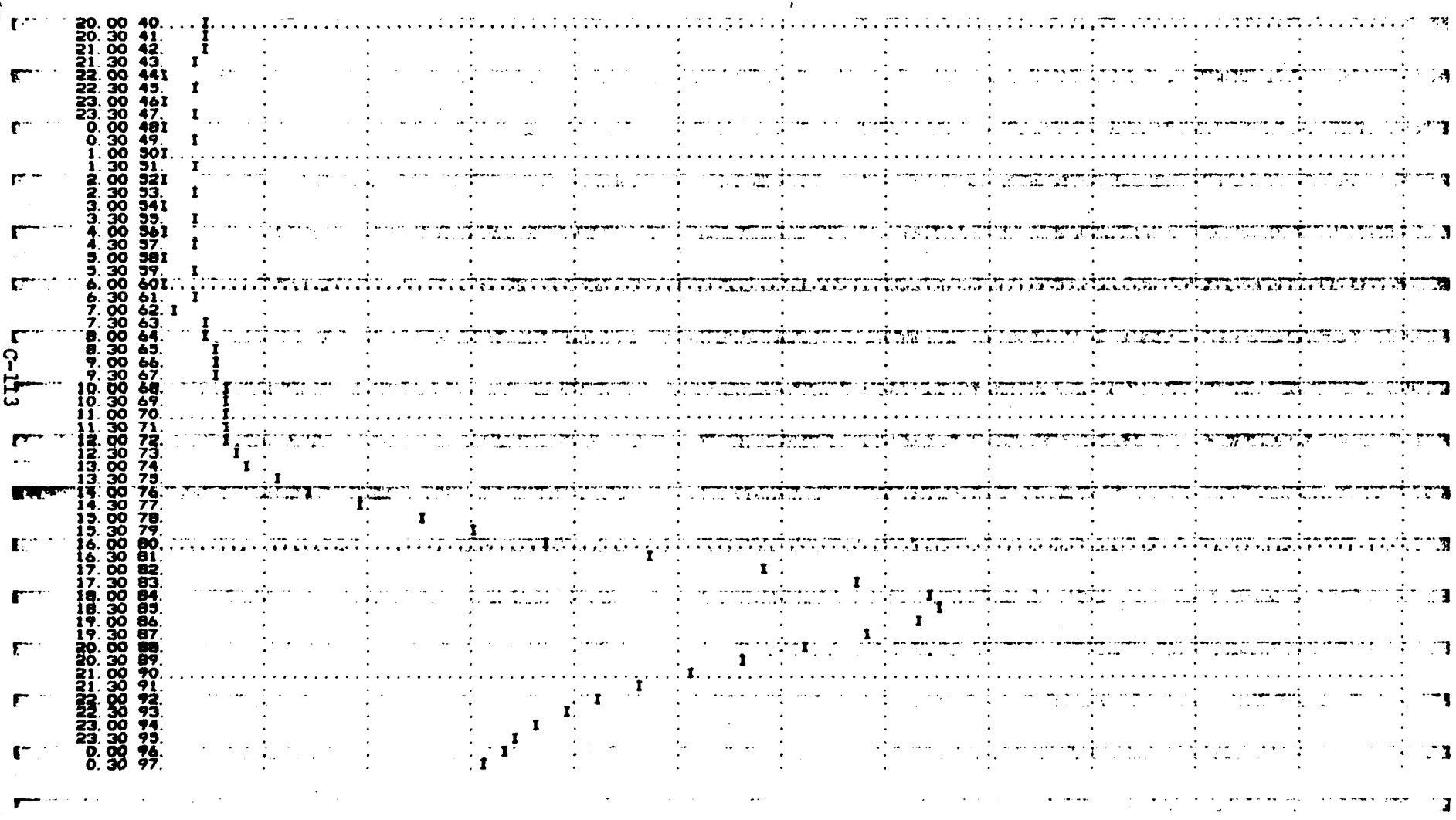
19.30	39.	I	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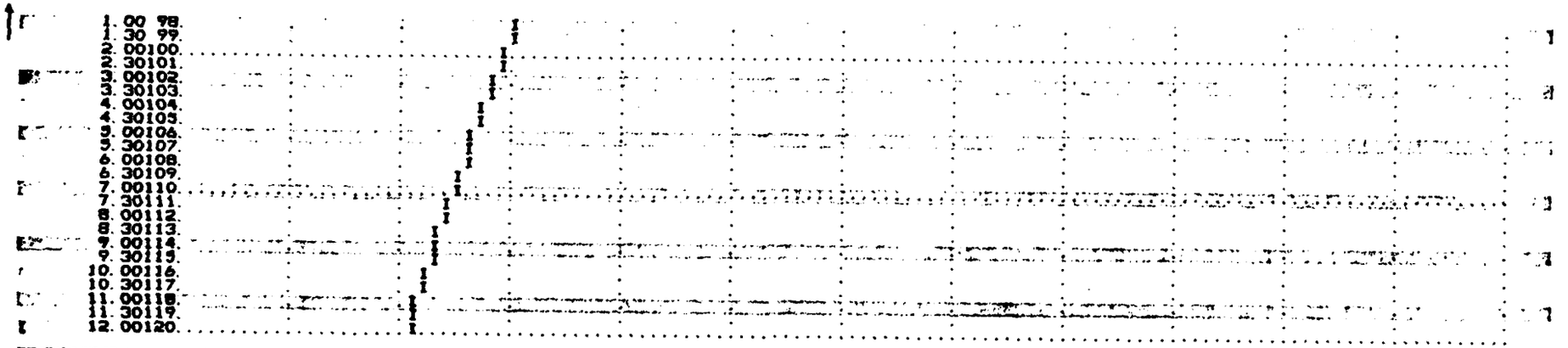
0.30 97



#OVN#

SUM OF 2 HYDROGRAPHS AT 2 PLAN 1 RTIO 6

1.	58.	1.	58.	1.	58.	1.	58.	1.	58.	1.	58.
1.	58.	1.	58.	1.	58.	1.	58.	1.	58.	1.	57.
1.	57.	1.	57.	1.	57.	1.	57.	1.	57.	1.	88.
1.	59.	7.	70.	78.	84.	87.	86.	83.	79.		
75.	72.	69.	10.	64.	6.	62.	4.	60.	3.		
60.	4.	61.	5.	62.	6.	63.	7.	64.	7.		
65.	11.	79.	82.	92.	102.	110.	118.	122.	126.		
129.	132.	141.	168.	222.	302.	404.	518.	635.	788.		
972.	1217.	1423.	1556.	1592.	1539.	1437.	1317.	1193.	1076.		
976.	895.	829.	775.	730.	692.	660.	639.	631	622.		
612.	602.	592.	582.	573	563	553.	544.	534.	525.		
516.	507.	498.	489.	480.	471.	463.	454.	446.	438.		

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	1592.	1263.	714.	314.	37630.
CMS	45.	36.	20.	9.	1066.
INCHES		1.02	2.31	2.94	2.94
MM		25.95	58.66	64.43	64.43
AC-FT		626.	1416.	1599.	1599.
THOUS CU M		773.	1746.	1918.	1918.

#OVF#

STATION 2

INFLOW(I), OUTFLOW(O) AND OBSERVED FLOW(#)

0. 200. 400. 600. 800. 1000. 1200. 1400. 1600. 0. 0. 0. 0.

0.30 1I
1.00 2. I

1.30 3I
2.00 4. I
2.30 5I
3.00 6. I
3.30 7I
4.00 8. I
4.30 9I
5.00 10. I
5.30 11I
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6.30 13I
7.00 14. I
7.30 15I
8.00 16. I
8.30 17I
9.00 18. I
9.30 19I
10.00 20. I
10.30 21I
11.00 22. I
11.30 23I
12.00 24. I
12.30 25I
13.00 26. I
13.30 27I
14.00 28. I
14.30 29I
15.00 30. I
15.30 31I
16.00 32. I
16.30 33I
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18.00 36. I
18.30 37. I
19.00 38. I
19.30 39. I
20.00 40. I
20.30 41. I
21.00 42. I
21.30 43. I
22.00 44I
22.30 45. I
23.00 46I
23.30 47. I
0.00 48I
0.30 49. I
1.00 50I
1.30 51. I
2.00 52I
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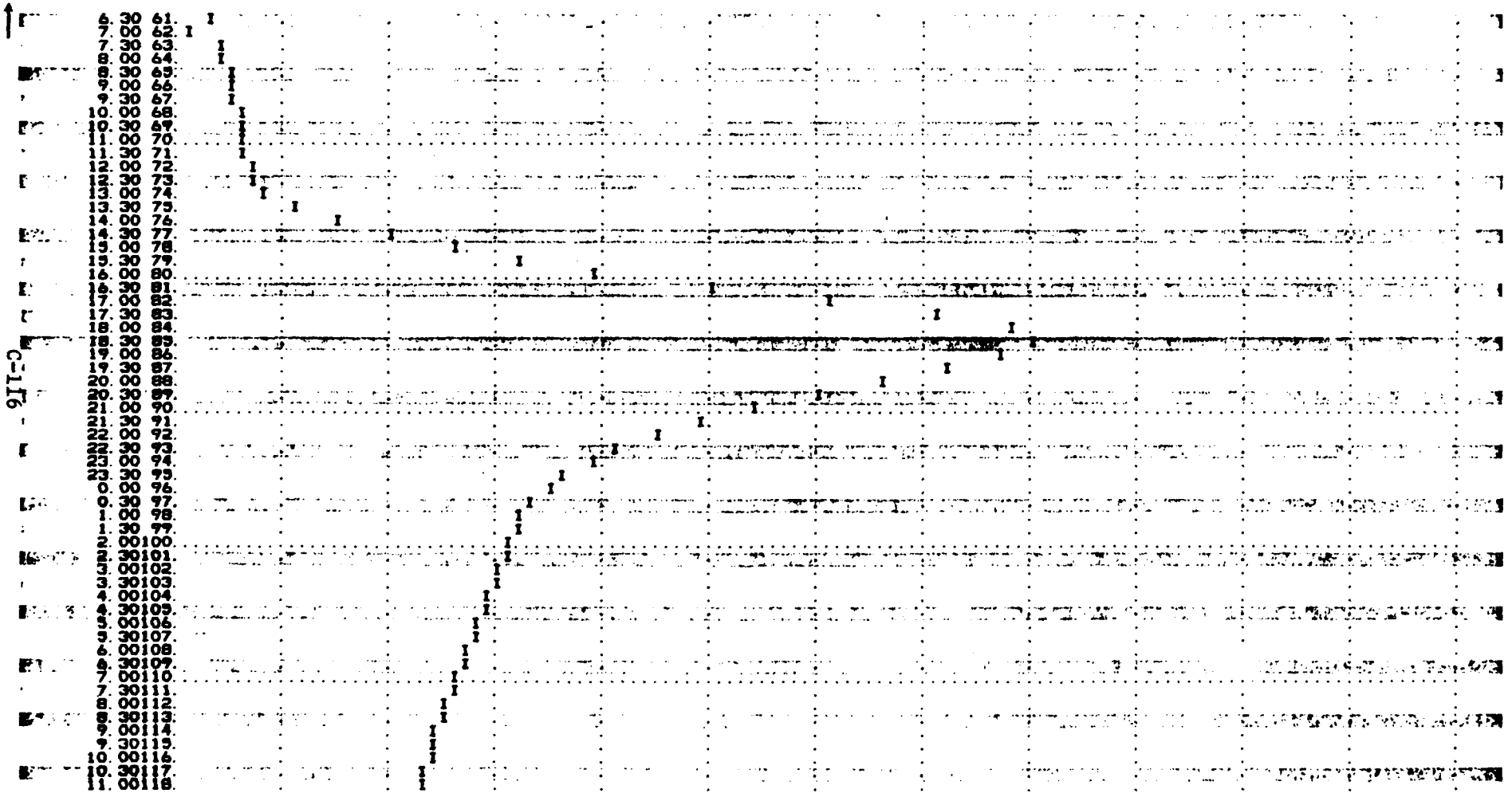
6.00 60I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3.30103.
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5.30107.
6.00108.
6.30109.
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7.30111.
8.00112.
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10.30117.
11.00118.

C-1F6

11.30119.
12.00120.

OVN

SUM OF 2 HYDROGRAPHS AT 2 PLAN 1 RTIO 7

1.	58.	1.	58.	1.	58.	1.	58.	1.	58.	
1.	58.	1.	58.	1.	58.	1.	58.	1.	58.	
1.	57.	1.	57.	1.	57.	1.	58.	1.	58.	
1.	59.	7.	71.	79.	85.	88.	88.	84.	81.	
76.	73.	69.	10.	65.	6.	62.	4.	60.	3.	
60.	4.	61.	9.	63.	6.	64.	7.	64.	8.	
65.	12.	75.	84.	94.	104.	113.	120.	125.	130.	
133.	136.	146.	179.	231.	316.	423.	543.	666.	827.	
1042.	1282.	1498.	1638.	1679.	1623.	1516.	1393.	1262.	1138.	
1033.	948.	878.	821.	773.	734.	700.	678.	669.	659.	
649.	638.	628.	617.	607.	597.	587.	577.	567.	557.	
547.	538.	528.	519.	509.	500.	491.	482.	473.	464.	

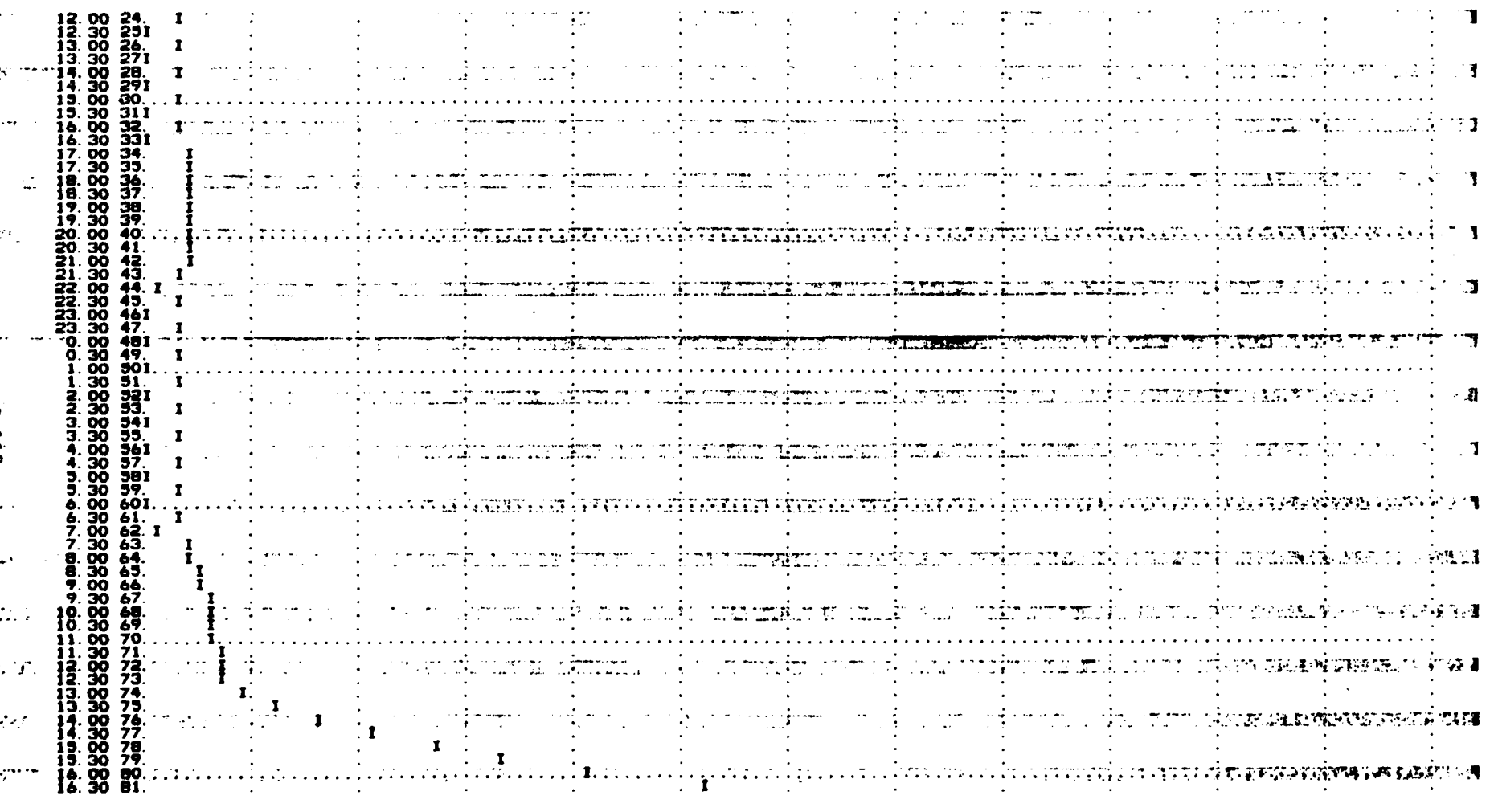
	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	1679.	1333.	754.	330.	39620.
CMS	48.	38.	21.	9.	1122.
INCHES		1.08	2.44	2.67	2.67
MM		27.38	61.99	67.84	67.84
AC-FT		661.	1496.	1637.	1637.
THOUS CU M		819.	1845.	2019.	2019.

OVF

STATION 2

INFLOW(I), OUTFLOW(O) AND OBSERVED FLOW(*)

	0.	200.	400.	600.	800.	1000.	1200.	1400.	1600.	1800.	0.	0.	0.
0.30	11												
1.00	2.	I											
1.30	31												
2.00	4.	I											
2.30	51												
3.00	6.	I											
3.30	71												
4.00	8.	I											
4.30	91												
5.00	10.	I											
5.30	111												
6.00	12.	I											
6.30	131												
7.00	14.	I											
7.30	151												
8.00	16.	I											
8.30	171												
9.00	18.	I											
9.30	191												
10.00	20.	I											
10.30	211												
11.00	22.	I											
11.30	231												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4:30 97.
5:00 98
5:30 59.
6:00 60
6:30 61.
7:00 62.
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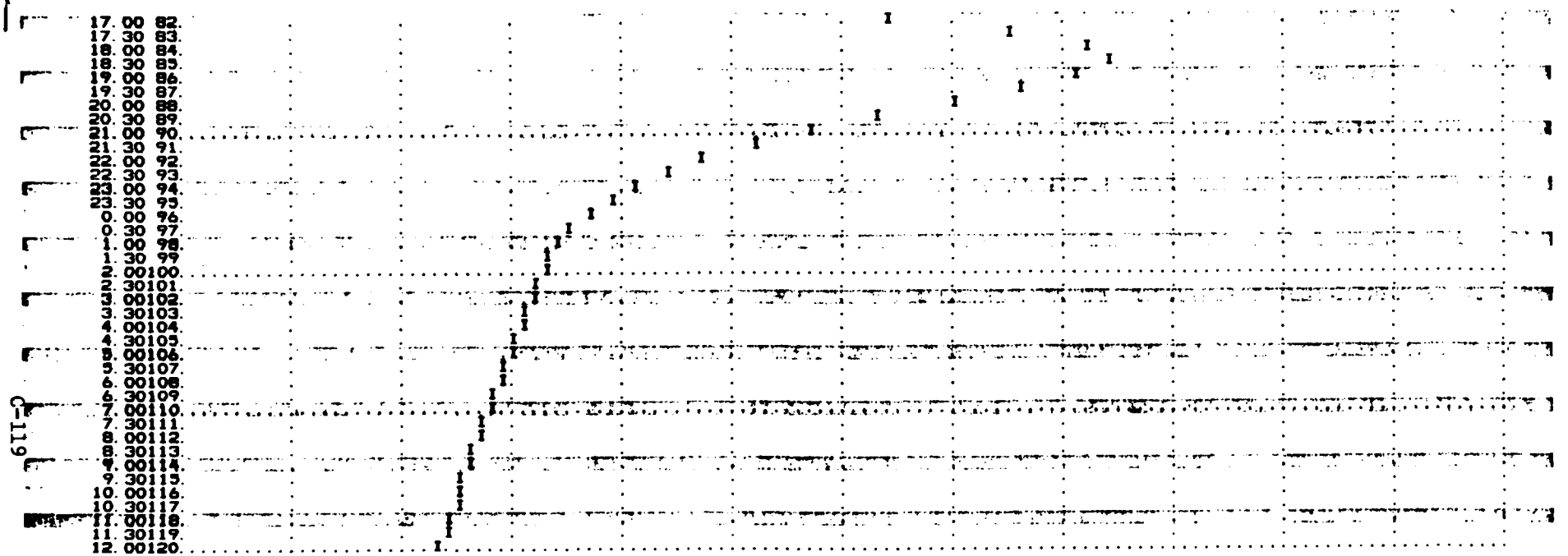
C-118



DVN

SUM OF 2 HYDROGRAPHS AT 2 PLAN 1 RTIO 8

3.	60.	3.	60.	3.	60.	3.	59.	3.	59.
2.	59.	2.	59.	2.	59.	2.	59.	2.	59.
2.	59.	2.	58.	2.	58.	2.	59.	2.	59.
2.	63.	18.	93.	112.	128.	136.	134.	127.	117.
107.	97.	87.	83.	78.	74.	71.	68.	66.	66.
66.	67.	69.	71.	72.	74.	75.	75.	76.	76.
79.	87.	102.	124.	150.	176.	198.	218.	234.	248.
259.	270.	297.	371.	513.	725.	994.	1298.	1623.	2044.
2622.	3239.	3836.	4243.	4392.	4295.	4124.	4683.	5082.	5090.
4815.	4393.	3922.	3460.	3037.	2666.	2346.	2092.	1909.	1757.
1632.	1536.	1478.	1450.	1423.	1397.	1371.	1345.	1319.	1294.
1269.	1244.	1219.	1194.	1170.	1146.	1122.	1100.	1078.	1057.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	5090.	4353.	2194.	923.	110712.
CMS	144.	123.	62.	26.	3135.
INCHES		3.92	7.10	7.46	7.46
MM		89.43	180.35	189.56	189.56
AC-FT		2158.	4353.	4575.	4575.
THOUS CU M		2662.	5369.	5643.	5643.

OVF

STATION 2

INFLOW(I), OUTFLOW(O) AND OBSERVED FLOW(*)

0. 500. 1000. 1500. 2000. 2500. 3000. 3500. 4000. 4500. 5000. 5500. 0.

0.30	11	I
1.00	2.	I
1.30	31	I
2.00	4.	I
2.30	51	I
3.00	6.	I
3.30	71	I
4.00	8.	I
4.30	91	I
5.00	10.	I
5.30	11I	
6.00	12.	I
6.30	131	I
7.00	14.	I
7.30	151	I
8.00	16.	I
8.30	171	I
9.00	18.	I
9.30	191	I
10.00	20.	I
10.30	211	I
11.00	22.	I
11.30	231	I
12.00	24.	I
12.30	251	I
13.00	26.	I
13.30	271	I
14.00	28.	I
14.30	291	I
15.00	30.	I
15.30	311	I
16.00	32.	I
16.30	331	I
17.00	34.	I
17.30	35.	I
18.00	36.	I
18.30	37.	I
19.00	38.	I
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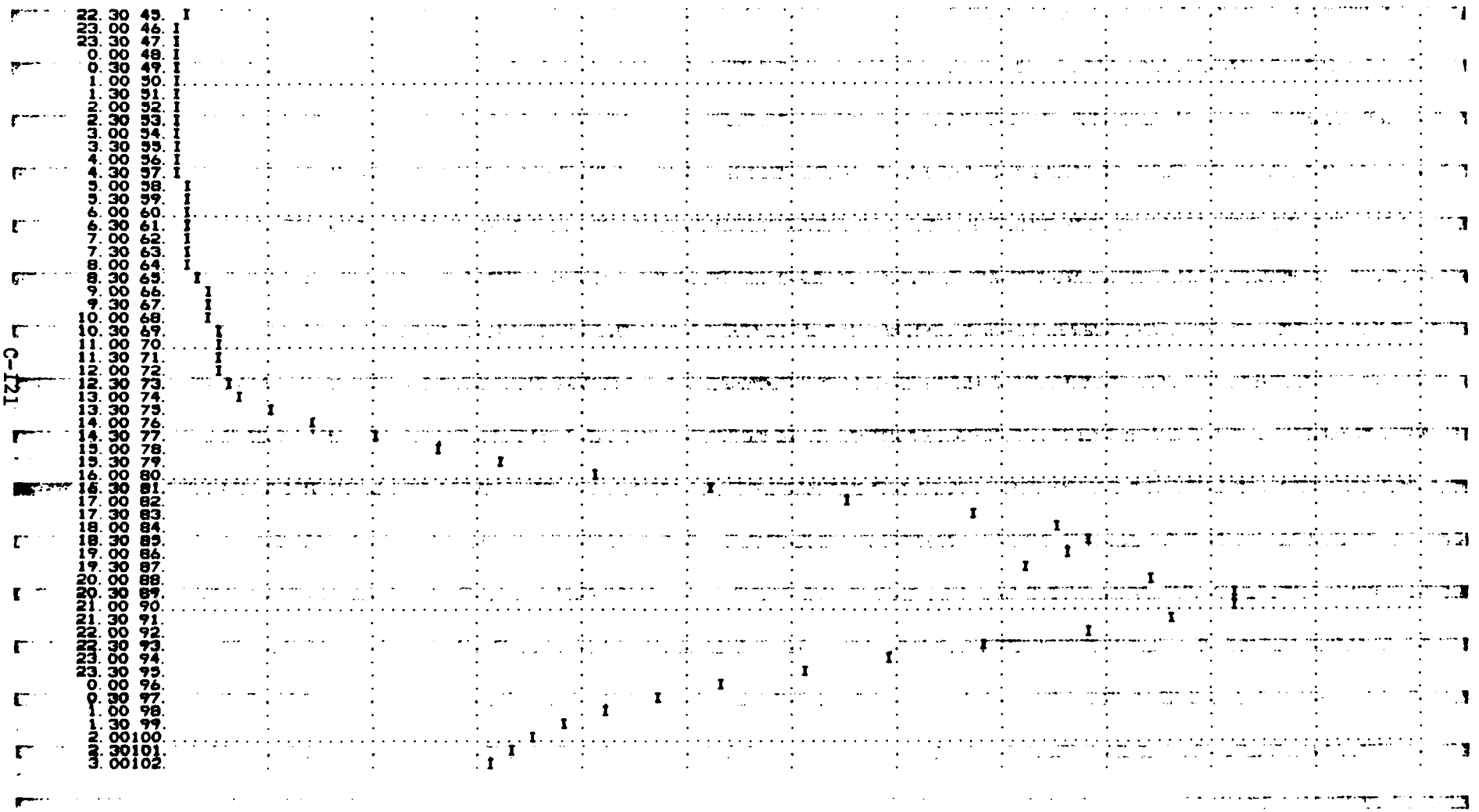
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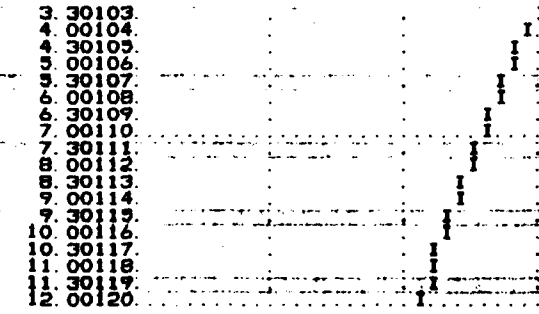
C-121



OVN

SUM OF 2 HYDROGRAPHS AT 2 PEAK 1 RTIO 1

7.	63.	6.	63.	6.	62.	5.	62.	5.	62.
5.	61.	4.	61.	4.	61.	4.	61.	4.	60.
4.	60.	3.	60.	3.	60.	3.	60.	4.	61.
3.	70.	93.	129.	168.	200.	216.	213.	201.	183.
164.	146.	132.	120.	110.	102.	96.	91.	87.	85.
85.	88.	91.	95.	98.	101.	103.	105.	106.	107.
112.	129.	160.	206.	260.	314.	361.	400.	433.	461.
484.	903.	339.	712.	1009.	1442.	1778.	2637.	3310.	4174.
5391.	6725.	8950.	13487.	16972.	18506.	18411.	17225.	15426.	13423.
11489.	9752.	8253.	6988.	5937.	5072.	4358.	3806.	3411.	3082.
2805.	2577.	2398.	2251.	2127.	2021.	1929.	1847.	1774.	1709.
1652.	1603.	1570.	1549.	1521.	1496.	1471.	1447.	1422.	1398.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	18506.	13229.	5180.	2140.	256785.
CMS	524.	375.	147.	61.	7271.
INCHES		10.70	16.75	17.31	17.31
MM		271.81	425.71	439.66	439.66
AC-FT		6560.	10274.	10611.	10611.
THOUS CU M		8092.	12673.	13088.	13088.

OVF

STATION 2

INFLOW(I), OUTFLOW(O) AND OBSERVED FLOW(*)

		0.	2000.	4000.	6000.	8000.	10000.	12000.	14000.	16000.	18000.	20000.	0.	0.
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1. 00	21													
1. 30	31													
2. 00	41													
2. 30	51													
3. 00	61													
3. 30	71													

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21.30 43.I
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22.30 45.I
23.00 46.I
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0.30 49I
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1.30 51I
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2.30 53I
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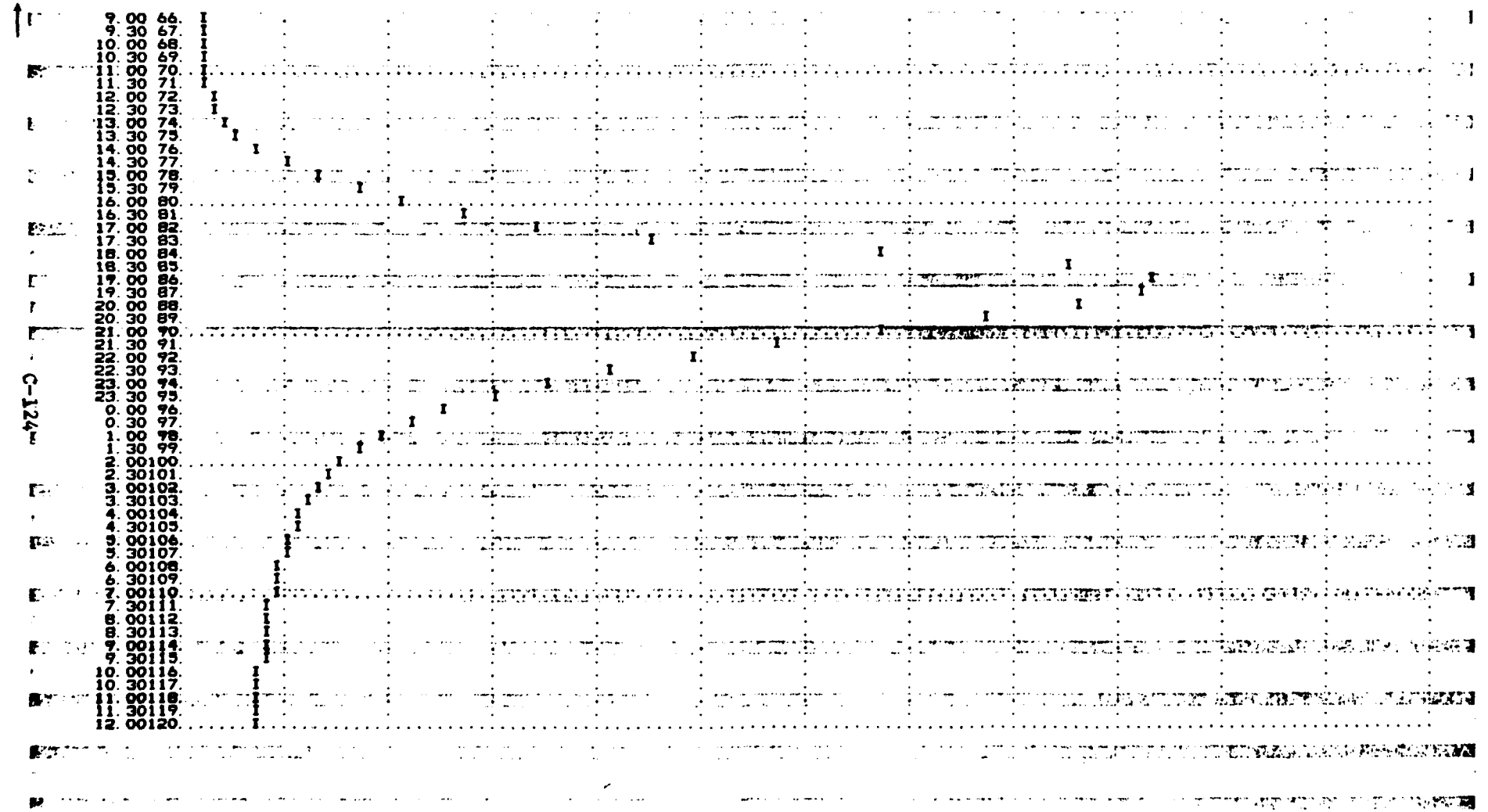
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14.30 77.
15.00 78.
15.30 79.
16.00 80.
16.30 81.
17.00 82.
17.30 83.
18.00 84.
18.30 85.
19.00 86.
19.30 87.
20.00 88.
20.30 89.
21.00 90.
21.30 91.
22.00 92.
22.30 93.
23.00 94.
23.30 95.
0.00 96.
0.30 97.
1.00 98.
1.30 99.
2.00100.
2.30101.
3.00102.
3.30103.
4.00104.
4.30105.
5.00106.
5.30107.
6.00108.
6.30109.
7.00110.
7.30111.
8.00112.
8.30113.
9.00114.
9.30115.
10.00116.
10.30117.
11.00118.
11.30119.
12.00120.

C-124

DVN

********** ********** ********** ********** **********

HYDROGRAPH ROUTING

CLAYTON'S DAM ROUTING MODIFIED PULS METHOD

ISTAQ	ICOMP	IECON	ITAPE	JPLT	JPRT	INAME	ISTAGE	IAUTO
2	1	0	0	0	0	1	0	0

ROUTING DATA

GLOSS	CLOSS	AVG	IRES	ISAME	IOPT	IPMP	LSTR
0.0	0.000	0.00	1	1	0	0	0

NSTPS	NSTDL	LAG	AMSKK	X	TSK	STORA	ISPRAT
1	0	0	0.000	0.000	0.000	0.	1

STAGE	1300.00	1301.00	1302.00	1303.00	1304.00	1305.00	1306.00	1307.00	1308.00	1309.00
	1310.00									
FLOW	0.00	70.50	199.40	366.30	564.00	788.20	1036.10	1305.70	1595.20	1903.50
	2229.40									

CAPACITY= 110. 130. 528.

ELEVATION= 1300. 1307. 1320.

CREL	SPRID	COGW	EXPW	ELEVL	COGL	CAREA	EXPL
1300.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

DAM DATA

TOPEL	COGD	EXPD	DAMWID
1307.0	2.5	1.5	292.

STATION 2, PLAN 1, RATIO 1

END-OF-PERIOD HYDROGRAPH ORDINATES

OUTFLOW

0.	20.	26.	28.	29.	29.	29.	29.	29.	29.
29.	29.	29.	29.	29.	29.	29.	29.	29.	29.
29.	29.	29.	29.	29.	29.	29.	29.	29.	29.
29.	29.	30.	33.	36.	39.	61.	69.	70.	51.
43.	39.	37.	35.	34.	33.	32.	31.	31.	30.
30.	30.	30.	31.	31.	31.	32.	32.	32.	32.
32.	33.	35.	38.	42.	66.	80.	86.	89.	92.
94.	95.	98.	107.	128.	161.	208.	269.	330.	404.
504.	621.	730.	805.	832.	809.	759.	694.	624.	557.
500.	452.	413.	382.	357.	337.	320.	307.	301.	297.
294.	290.	286.	282.	278.	274.	271.	267.	263.	259.
256.	252.	249.	245.	242.	238.	235.	231.	228.	225.

STORAGE

110.	111.	111.	111.	111.	111.	111.	111.	111.	111.
111.	111.	111.	111.	111.	111.	111.	111.	111.	111.
111.	111.	111.	111.	111.	111.	111.	111.	111.	111.
111.	111.	111.	111.	111.	112.	112.	113.	113.	112.

112.	112.	111.	111.	111.	111.	111.	111.	111.	111.	
111.	111.	111.	111.	111.	111.	111.	111.	111.	111.	
111.	111.	111.	112.	112.	113.	113.	113.	113.	113.	
113.	113.	113.	114.	114.	115.	116.	117.	118.	119.	
121.	122.	124.	124.	123.	125.	124.	123.	122.	121.	
121.	120.	119.	119.	118.	118.	118.	118.	117.	117.	
117.	117.	117.	117.	117.	117.	117.	117.	117.	117.	
117.	117.	117.	116.	116.	116.	116.	116.	116.	116.	

STAGE

1300.0	1300.3	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4
1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4
1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4
1300.4	1300.4	1300.4	1300.5	1300.5	1300.6	1300.9	1301.0	1301.0	1300.7
1300.6	1300.6	1300.5	1300.5	1300.5	1300.5	1300.4	1300.4	1300.4	1300.4
1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.5	1300.5	1300.5
1300.9	1300.9	1300.9	1300.9	1300.6	1300.9	1301.1	1301.1	1301.1	1301.2
1301.2	1301.2	1301.2	1301.3	1301.4	1301.7	1302.1	1302.4	1302.8	1303.2
1303.7	1304.3	1304.7	1305.1	1305.2	1305.1	1304.9	1304.6	1304.3	1304.0
1303.7	1303.4	1303.2	1303.1	1302.9	1302.8	1302.7	1302.6	1302.6	1302.6
1302.6	1302.5	1302.5	1302.5	1302.5	1302.4	1302.4	1302.4	1302.4	1302.4
1302.3	1302.3	1302.3	1302.3	1302.3	1302.2	1302.2	1302.2	1302.2	1302.2

PEAK OUTFLOW IS 832. AT TIME 42.50 HOURS

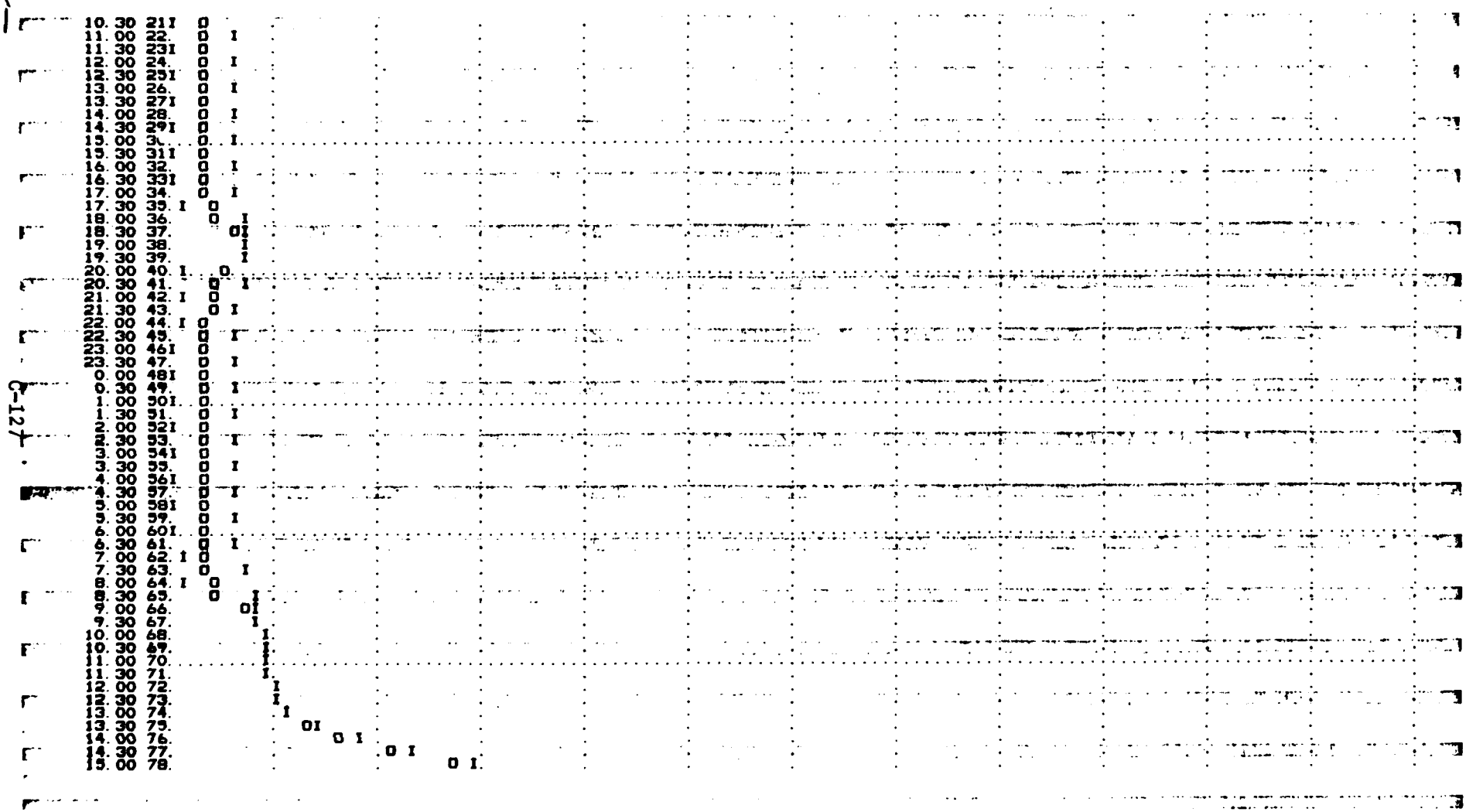
	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	832.	655.	363.	167.	20067.
CMS	24.	19.	10.	5.	568.
INCHES		0.93	1.17	1.39	1.39
MM		13.46	29.80	34.36	34.36
AC-FT		325.	719.	829.	829.
THOUS CU M		401.	887.	1023.	1023.

DVF

STATION 2

INFLOW(I), OUTFLOW(O) AND OBSERVED FLOW(*)

	0.	100.	200.	300.	400.	500.	600.	700.	800.	900.	0.	0.	0.
0.30	1I												
1.00	2. O	I											
1.30	3I O												
2.00	4. O	I											
2.30	5I O												
3.00	6. O	I											
3.30	7I O												
4.00	8. O	I											
4.30	9I O												
5.00	10. O	I											
5.30	11I O												
6.00	12. O	I											
6.30	13I O												
7.00	14. O	I											
7.30	15I O												
8.00	16. O	I											
8.30	17I O												
9.00	18. O	I											
9.30	19I O												
10.00	20. O	I											


10.30 211 O
11.00 22. O I
11.30 231 O
12.00 24. O I
12.30 251 O
13.00 26. O I
13.30 271 O
14.00 28. O I
14.30 291 O
15.00 3(illegible) O I
15.30 311 O
16.00 32. O I
16.30 331 O
17.00 34. O I
17.30 35. I O
18.00 36. O I
18.30 37. OI
19.00 38. I
19.30 39. I
20.00 40. I O
20.30 41. O I
21.00 42. I O
21.30 43. O I
22.00 44. I O
22.30 45. O I
23.00 461 O
23.30 47. O I
0.00 481 O
0.30 49. O I
1.00 501 O
1.30 51. O I
2.00 521 O
2.30 53. O I
3.00 541 O
3.30 55. O I
4.00 561 O
4.30 57. O I
5.00 581 O
5.30 59. O I
6.00 601 O
6.30 61. O I
7.00 62. I O
7.30 63. O I
8.00 64. I O
8.30 65. O I
9.00 66. OI
9.30 67. I
10.00 68. I
10.30 69. I
11.00 70. I
11.30 71. I
12.00 72. I
12.30 73. I
13.00 74. I
13.30 75. OI
14.00 76. O I
14.30 77. O I
15.00 78. O I

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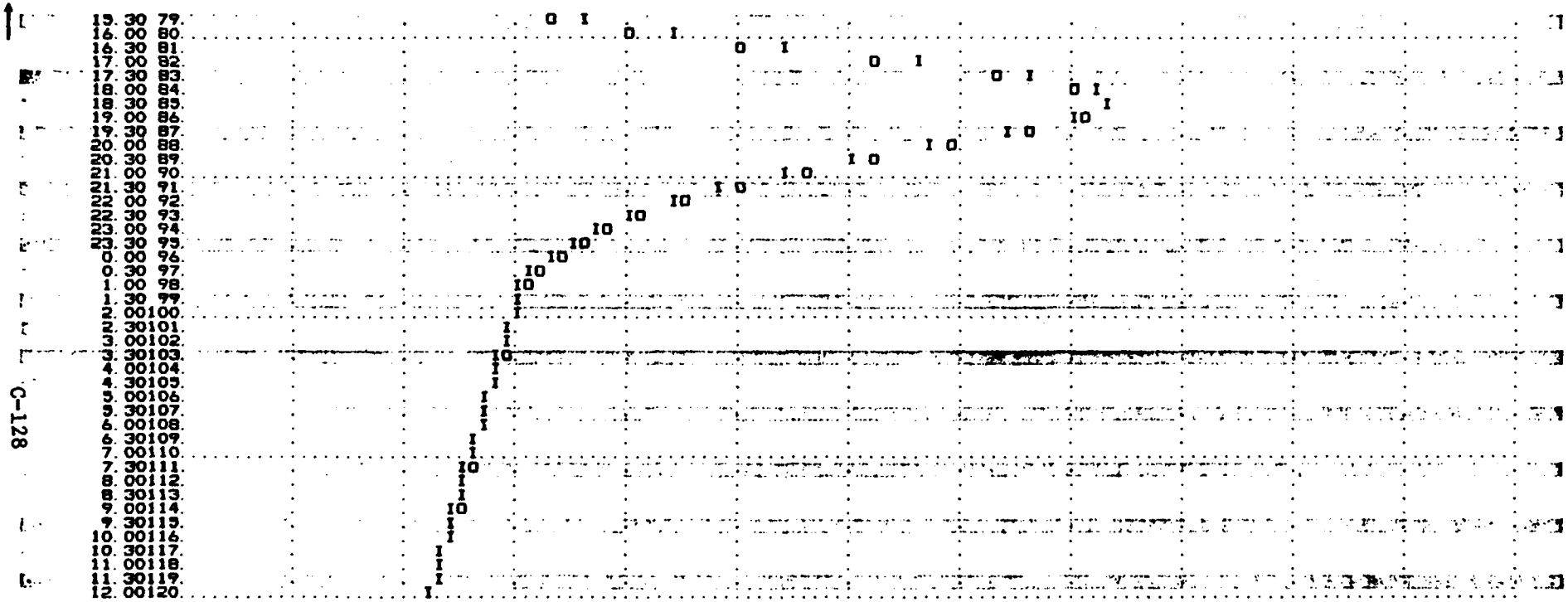

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OVN

STATION 2, PLAN 1, RATIO 2

END-OF-PERIOD HYDROGRAPH ORDINATES

OUTFLOW

1.	20.	26.	28.	29.	29.	29.	29.	29.	29.
29.	29.	29.	29.	29.	29.	29.	29.	29.	29.
29.	29.	29.	29.	29.	29.	29.	29.	29.	29.
29.	30.	31.	35.	40.	45.	68.	79.	79.	76.
73.	70.	49.	41.	37.	35.	33.	32.	32.	31.
31.	31.	31.	32.	32.	33.	33.	34.	34.	34.

34.	35.	38.	43.	69.	87.	95.	101.	106.	109.
112.	115.	119.	133.	164.	217.	295.	382.	479.	588.
741.	917.	1081.	1203.	1250.	1219.	1142.	1051.	953.	855.
771.	703.	646.	601.	563.	534.	507.	488.	478.	473.
466.	459.	452.	445.	439.	432.	425.	418.	412.	405.
399.	393.	386.	380.	374.	368.	362.	356.	350.	344.

STORAGE

110.	111.	111.	111.	111.	111.	111.	111.	111.	111.
111.	111.	111.	111.	111.	111.	111.	111.	111.	111.
111.	111.	111.	111.	111.	111.	111.	111.	111.	111.
111.	111.	111.	111.	112.	112.	113.	113.	113.	113.
113.	113.	112.	112.	112.	111.	111.	111.	111.	111.
111.	111.	111.	111.	111.	111.	111.	111.	111.	111.
111.	111.	112.	112.	113.	113.	113.	114.	114.	114.
114.	114.	114.	114.	115.	116.	117.	119.	120.	122.
124.	126.	128.	129.	129.	129.	128.	127.	126.	125.
124.	123.	122.	122.	121.	121.	121.	120.	120.	120.
120.	120.	120.	120.	120.	120.	119.	119.	119.	119.
119.	119.	119.	119.	119.	119.	118.	118.	118.	118.

STAGE

1300.0	1300.3	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4
1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4
1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4
1300.4	1300.4	1300.4	1300.5	1300.6	1300.6	1301.0	1301.1	1301.1	1301.0
1301.0	1301.0	1300.7	1300.6	1300.5	1300.5	1300.5	1300.4	1300.4	1300.4
1300.4	1300.4	1300.4	1300.5	1300.5	1300.5	1300.5	1300.5	1300.5	1300.5
1300.5	1300.5	1300.5	1300.6	1301.0	1301.1	1301.2	1301.2	1301.3	1301.3
1301.3	1301.3	1301.4	1301.5	1301.7	1302.1	1302.6	1303.1	1303.6	1304.1
1304.8	1305.5	1306.2	1306.6	1306.8	1306.7	1306.4	1306.1	1305.7	1305.3
1304.9	1304.6	1304.4	1304.2	1304.0	1303.8	1303.7	1303.6	1303.6	1303.5
1303.5	1303.5	1303.4	1303.4	1303.4	1303.3	1303.3	1303.3	1303.2	1303.2
1303.2	1303.1	1303.1	1303.1	1303.0	1303.0	1303.0	1302.9	1302.9	1302.9

PEAK OUTFLOW IS 1250. AT TIME 42.50 HOURS

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	1250.	987.	552.	246.	29490.
CMS	35.	28.	16.	7.	835.
INCHES		0.80	1.79	1.99	1.99
MM		20.27	45.38	50.49	50.49
AC-FT		489.	1095.	1219.	1219.
THOUS CU M		603.	1351.	1503.	1503.

OVF

STATION 2

INFLOW(I), OUTFLOW(O) AND OBSERVED FLOW(*)

		0.	200.	400.	600.	800.	1000.	1200.	1400.	0.	0.	0.	0.	0.
0.30	1I													
1.00	2.0 I													
1.30	3IO													
2.00	4.0 I													
2.30	5IO													
3.00	6.0 I													
3.30	7IO													
4.00	8.0 I													

```
 4.30   9I0
 5.00  10.0 I
 5.30  11I0
 6.00  12.0 I
 6.30  13I0
 7.00  14.0 I
 7.30  15I0
 8.00  16.0 I
 8.30  17I0
 9.00  18.0 I
 9.30  19I0
10.00  20.0 I
10.30  21I0
11.00  22.0 I
11.30  23I0
12.00  24.0 I
12.30  25I0
13.00  26.0 I
13.30  27I0
14.00  28.0 I
14.30  29I0
15.00  30.0 I
15.30  31I0
16.00  32.0 I
16.30  33I 0
17.00  34.  0I
17.30  35. I0
18.00  36.  0 I
18.30  37.   0I
19.00  38.    I
19.30  39.    I
20.00  40.    I
20.30  41.    I
21.00  42.   I0
21.30  43I 0
22.00  44.  0I
22.30  45I 0
23.00  46.  0I
23.30  47I 0
 0.00  48.  0I
 0.30  49I 0
 1.00  50.  0I
 1.30  51I 0
 2.00  52.  0I
 2.30  53I 0
 3.00  54.  0I
 3.30  55I 0
 4.00  56.  0I
 4.30  57I 0
 5.00  58.  0I
 5.30  59I 0
 6.00  60.  0I
 6.30  61I 0
 7.00  62.  0I
 7.30  63. I0
 8.00  64.  0 I
 8.30  65.   0I
 9.00  66.   0I
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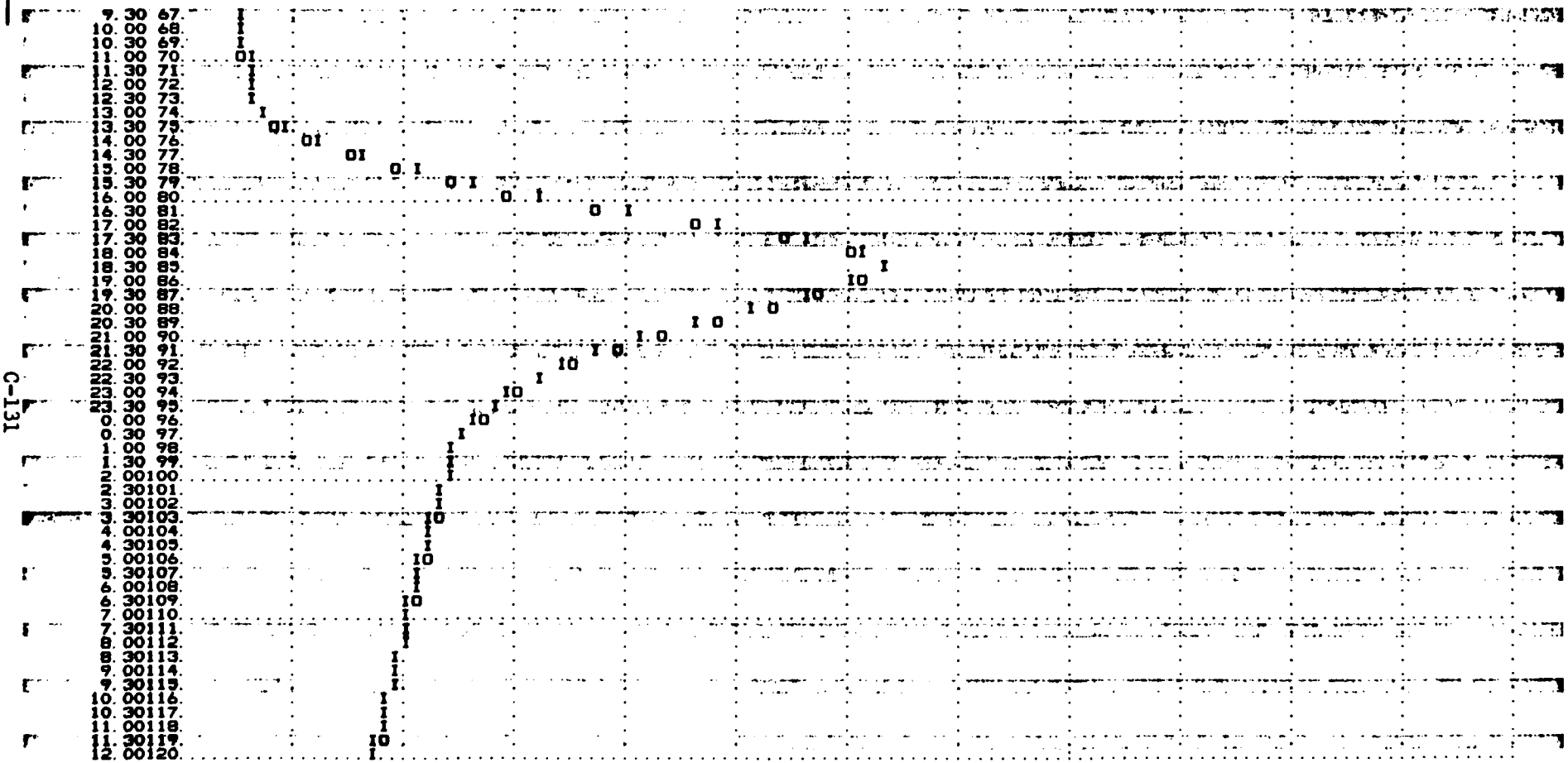
9. 30 67.
10. 00 68.
10. 30 69.
11. 00 70.
11. 30 71.
12. 00 72.
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13. 00 74.
13. 30 75.
14. 00 76.
14. 30 77.
15. 00 78.
15. 30 79.
16. 00 80.
16. 30 81.
17. 00 82.
17. 30 83.
18. 00 84.
18. 30 85.
19. 00 86.
19. 30 87.
20. 00 88.
20. 30 89.
21. 00 90.
21. 30 91.
22. 00 92.
22. 30 93.
23. 00 94.
23. 30 95.
0. 00 96.
0. 30 97.
1. 00 98.
1. 30 99.
2. 00100.
2. 30101.
3. 00102.
3. 30103.
4. 00104.
4. 30105.
5. 00106.
5. 30107.
6. 00108.
6. 30109.
7. 00110.
7. 30111.
8. 00112.
8. 30113.
9. 00114.
9. 30115.
10. 00116.
10. 30117.
11. 00118.
11. 30119.
12. 00120.

OVN

STATION 2; PLAN 1; RATIO 3

END-OF-PERIOD HYDROGRAPH ORDINATES

OUTFLOW

1.	20.	26.	28.	29.	29.	29.	29.	27.	29.
29.	29.	29.	29.	29.	29.	29.	29.	29.	29.
27.	29.	29.	29.	29.	29.	29.	29.	29.	29.
29.	30.	31.	35.	60.	72.	81.	82.	80.	77.
74.	71.	50.	41.	38.	35.	34.	33.	32.	31.
31.	31.	32.	32.	33.	33.	34.	34.	34.	34.
39.	36.	39.	44.	70.	90.	98.	104.	109.	113.
116.	119.	124.	138.	171.	230.	312	406.	508.	626.
787.	977.	1134.	1284.	1315.	1313.	1235.	1121.	1020.	916.
825.	754.	696.	648.	608.	575.	548.	528.	517.	510.
502.	474.	466.	478.	470.	463.	456.	448.	441.	439.
428.	421.	414.	407.	401.	394.	388.	381.	375.	369.

STORAGE

110.	111.	111.	111.	111.	111.	111.	111.	111.	111.
111.	111.	111.	111.	111.	111.	111.	111.	111.	111.
111.	111.	111.	111.	111.	111.	111.	111.	111.	111.
111.	111.	111.	111.	112.	113.	113.	113.	113.	113.
113.	113.	112.	112.	112.	111.	111.	111.	111.	111.
111.	111.	111.	111.	111.	111.	111.	111.	111.	111.
111.	111.	112.	112.	113.	113.	113.	114.	114.	114.
114.	114.	114.	114.	115.	116.	118.	119.	121.	122.
124.	126.	128.	130.	131.	131.	129.	128.	127.	126.
125.	124.	123.	122.	122.	122.	121.	121.	121.	121.
121.	120.	120.	120.	120.	120.	120.	120.	120.	120.
119.	119.	119.	119.	119.	119.	119.	119.	119.	119.

STAGE

1300.0	1300.3	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4
1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4
1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4
1300.4	1300.4	1300.4	1300.5	1300.8	1301.0	1301.1	1301.1	1301.1	1301.1
1301.0	1301.0	1300.7	1300.6	1300.5	1300.5	1300.5	1300.5	1300.5	1300.4
1300.4	1300.4	1300.4	1300.5	1300.5	1300.5	1300.5	1300.5	1300.5	1300.5
1300.9	1300.9	1300.8	1300.8	1301.0	1301.1	1301.2	1301.3	1301.3	1301.3
1301.4	1301.4	1301.4	1301.5	1301.8	1302.2	1302.7	1303.2	1303.7	1304.3
1305.0	1305.8	1306.4	1306.9	1307.0	1307.0	1306.7	1306.3	1305.9	1305.5
1305.1	1304.8	1304.6	1304.4	1304.2	1304.0	1303.9	1303.8	1303.8	1303.7
1303.7	1303.6	1303.6	1303.6	1303.5	1303.5	1303.5	1303.4	1303.4	1303.3
1303.3	1303.3	1303.2	1303.2	1303.2	1303.1	1303.1	1303.1	1303.0	1303.0

PEAK OUTFLOW IS 1315. AT TIME 42.50 HOURS

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	1315.	1059.	591.	262.	31458.
CMS	37.	30.	17.	7.	891.
INCHES		0.89	1.91	2.12	2.12
MM		21.67	48.58	53.86	53.86
AC-FT		523.	1172.	1300.	1300.
THOUS CU M		645.	1446.	1603.	1603.

OVF

STATION 2

INFLOW(I), OUTFLOW(O) AND OBSERVED FLOW(*)

	0.	200.	400.	600.	800.	1000.	1200.	1400.	0.	0.	0.	0.	0.
0.30	1I												
1.00	2.0 I												
1.30	3I0												
2.00	4.0 I												
2.30	5I0												
3.00	6.0 I												
3.30	7I0												
4.00	8.0 I												
4.30	9I0												
5.00	10.0 I												
5.30	11I0												
6.00	12.0 I												
6.30	13I0												
7.00	14.0 I												
7.30	15I0												
8.00	16.0 I												
8.30	17I0												
9.00	18.0 I												
9.30	19I0												
10.00	20.0 I												
10.30	21I0												
11.00	22.0 I												
11.30	23I0												
12.00	24.0 I												
12.30	25I0												
13.00	26.0 I												
13.30	27I0												
14.00	28.0 I												
14.30	29I0												
15.00	30.0 I												
15.30	31I0												
16.00	32.0 I												
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17.00	34. OI												
17.30	35. OI												
18.00	36. I												
18.30	37. I												
19.00	38. I												
19.30	39. I												
20.00	40. I												
20.30	41. I												
21.00	42. IO												
21.30	43. IO												
22.00	44. OI												
22.30	45I O												
23.00	46. OI												
23.30	47I O												
0.00	48. OI												
0.30	49I O												
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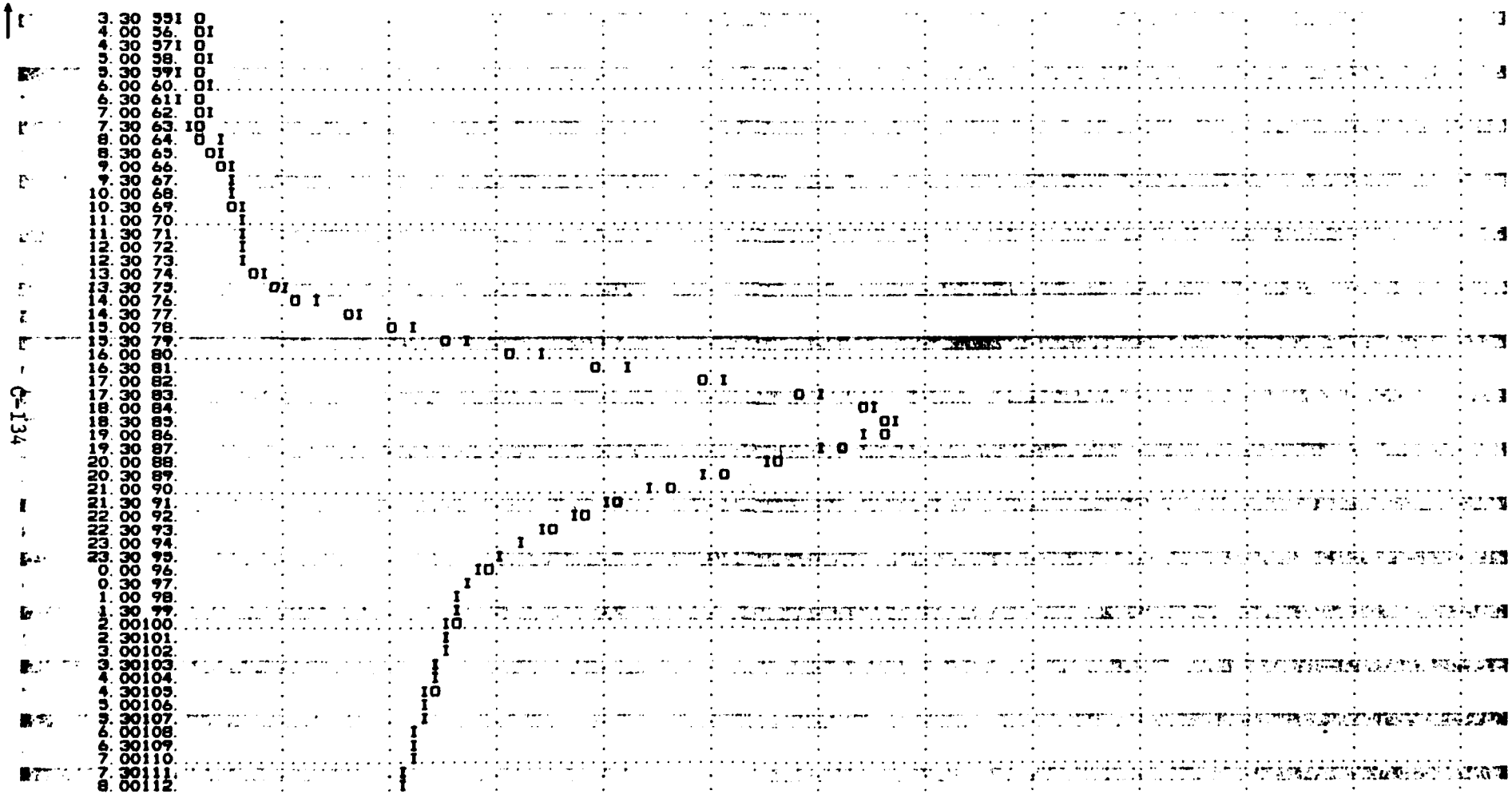
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```
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11.30119.          I
12.00120.          I

*OVN*
```

STATION 2, PLAN 1, RATIO 4

END-OF-PERIOD HYDROGRAPH ORDINATES

OUTFLOW

1.	20.	26.	28.	29.	29.	29.	29.	29.	29.
29.	29.	29.	29.	29.	29.	29.	29.	29.	29.
29.	29.	29.	29.	29.	29.	29.	29.	29.	29.
29.	30.	32.	36.	60.	73.	82.	83.	82.	79.
75.	72.	69.	48.	40.	36.	34.	33.	32.	31.
31.	31.	32.	32.	33.	33.	34.	34.	34.	35.
35.	36.	40.	64.	81.	92.	100.	107.	112.	117.
120.	123.	128.	144.	178.	242.	328.	430.	537.	665.
835.	1035.	1228.	1326.	1372.	1386.	1348.	1254.	1068.	983.
882.	808.	747.	696.	653.	618.	588.	566.	556.	549.
540.	532.	523.	514.	506.	497.	489.	480.	472.	464.
456.	448.	441.	434.	427.	420.	413.	406.	400.	393.

STORAGE

110.	111.	111.	111.	111.	111.	111.	111.	111.	111.
111.	111.	111.	111.	111.	111.	111.	111.	111.	111.
111.	111.	111.	111.	111.	111.	111.	111.	111.	111.
111.	111.	111.	111.	112.	113.	113.	113.	113.	113.
113.	113.	113.	112.	112.	111.	111.	111.	111.	111.
111.	111.	111.	111.	111.	111.	111.	111.	111.	111.
111.	111.	112.	113.	113.	113.	114.	114.	114.	114.
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121.	121.	121.	121.	121.	120.	120.	120.	120.	120.
120.	120.	120.	120.	119.	119.	119.	119.	119.	119.

STAGE

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1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4
1300.4	1300.4	1300.4	1300.5	1300.9	1301.0	1301.1	1301.1	1301.1	1301.1
1301.0	1301.0	1301.0	1300.7	1300.6	1300.5	1300.5	1300.5	1300.5	1300.4
1300.4	1300.4	1300.4	1300.5	1300.5	1300.5	1300.5	1300.5	1300.5	1300.5
1300.5	1300.5	1300.6	1300.7	1301.1	1301.2	1301.2	1301.3	1301.3	1301.4
1301.4	1301.4	1301.4	1301.6	1301.8	1302.3	1302.8	1303.3	1303.9	1304.4
1305.2	1306.0	1306.7	1307.0	1307.1	1307.1	1307.1	1306.8	1306.1	1305.8
1305.4	1305.1	1304.8	1304.6	1304.4	1304.2	1304.1	1304.0	1304.0	1303.9
1303.7	1303.8	1303.8	1303.7	1303.7	1303.7	1303.6	1303.6	1303.5	1303.5
1303.5	1303.4	1303.4	1303.3	1303.3	1303.3	1303.2	1303.2	1303.2	1303.1

PEAK OUTFLOW IS 1386. AT TIME 43.00 HOURS

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	1386.	1123.	631.	279.	33454.
CMS	39.	32.	18.	8.	947.
INCHES		0.91	2.04	2.26	2.26
MM		23.08	51.83	57.28	57.28
AC-FT		557.	1251.	1382.	1382.
THOUS CU M		687.	1543.	1705.	1705.

OVF

STATION 2

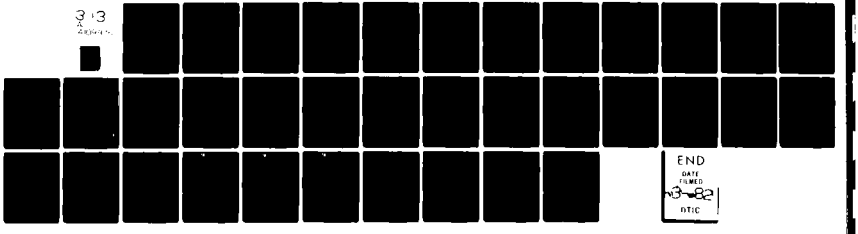
INFLOW(I), OUTFLOW(O) AND OBSERVED FLOW(*)

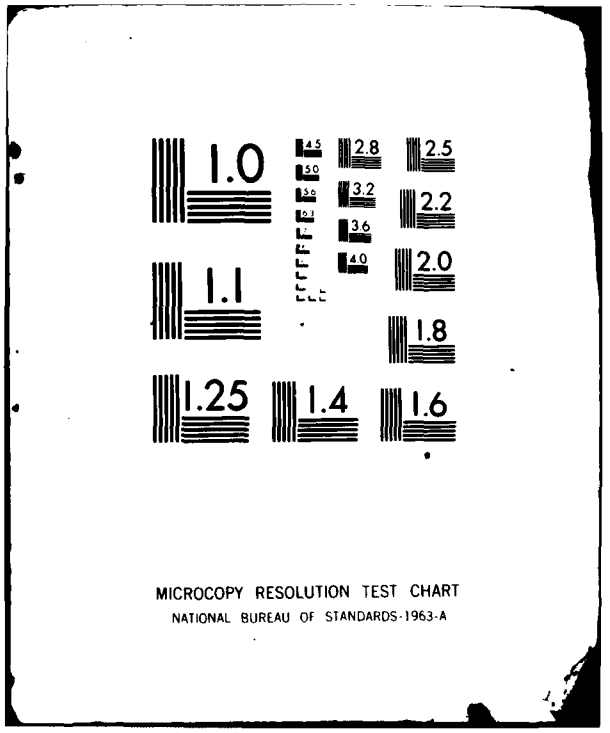
0. 200. 400. 600. 800. 1000. 1200. 1400. 1600. 0. 0. 0. 0.

0.30	1	I
1.00	2.0	I
1.30	3	O
2.00	4.0	I
2.30	9	O
3.00	6.0	I
3.30	7	O
4.00	8.0	I
4.30	9	O
5.00	10.0	I
5.30	11	O
6.00	12.0	I
6.30	13	O
7.00	14.0	I
7.30	15	O
8.00	16.0	I
8.30	17	O
9.00	18.0	I
9.30	19	O
10.00	20.0	I
10.30	21	O
11.00	22.0	I
11.30	23	O
12.00	24.0	I
12.30	29	O
13.00	26.0	I
13.30	27	O
14.00	28.0	I
14.30	29	O
15.00	30.0	I
15.30	31	O
16.00	32.0	I
16.30	33	I O
17.00	34.	OI
17.30	35.	OI
18.00	36.	I
18.30	37.	I
19.00	38.	I
19.30	39.	I
20.00	40.	I
20.30	41.	I
21.00	42.	I

AD-A109 975 FLAHERTY-GIAVARA ASSOCIATES NEW HAVEN CT F/G 13/13
NATIONAL DAM SAFETY PROGRAM. CLAYTON'S DAM (INVENTORY NUMBER NY--ETC(U)
SEP 81 H C FLAHERTY DACW51-81-C-0006

UNCLASSIFIED NL

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1.4
1.6
1.8
2.0
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2.8
3.2
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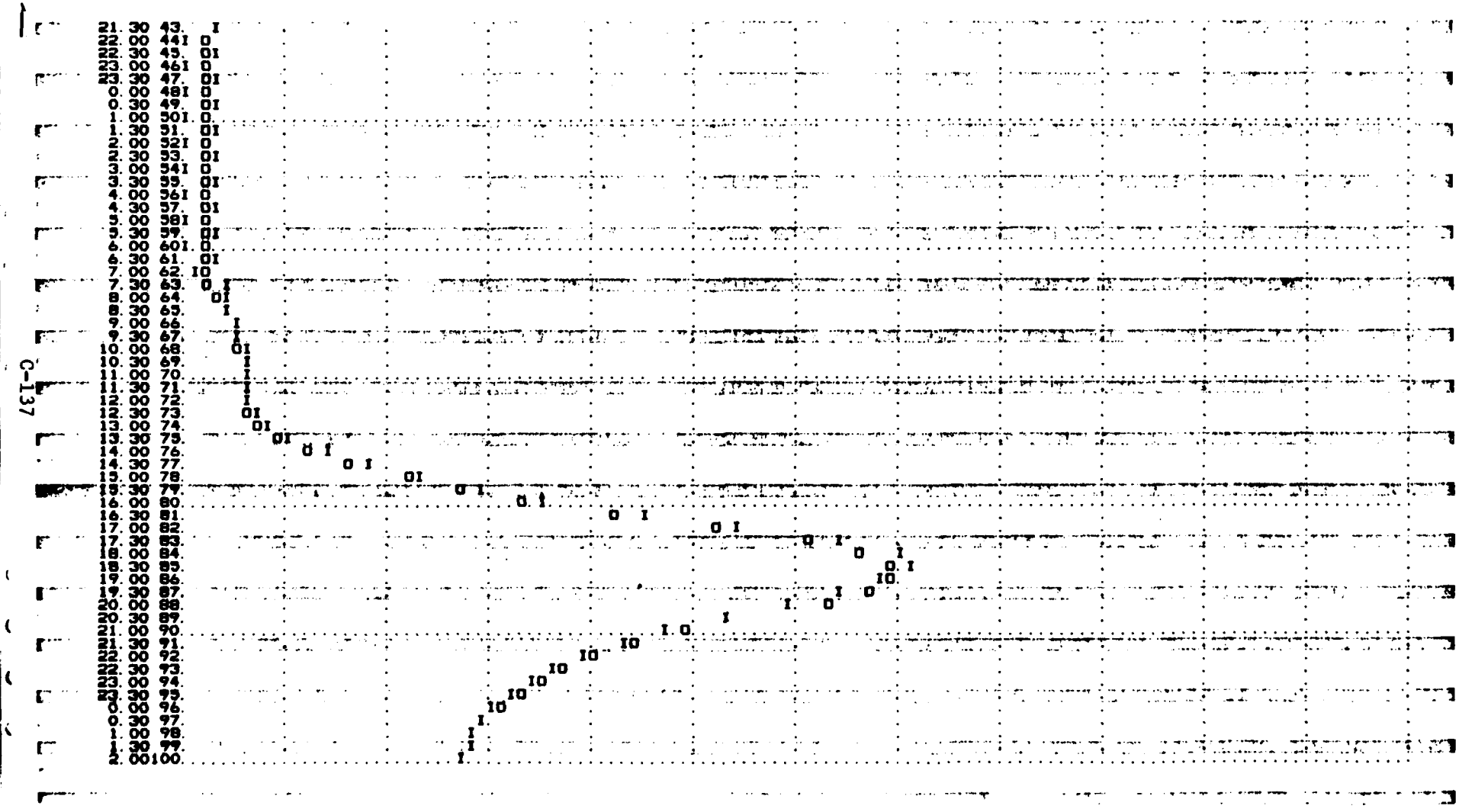
4.5
5.0
5.6
6.3
MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A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22.30 45. OI
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1.30 51. OI
2.00 521 O
2.30 53. OI
3.00 541 O
3.30 55. OI
4.00 561 O
4.30 57. OI
5.00 581 O
5.30 59. OI
6.00 601. O
6.30 61. OI
7.00 62. IO
7.30 63. O I
8.00 64. OI
8.30 65. I
9.00 66. I
9.30 67. I
10.00 68. OI
10.30 69. I
11.00 70. I
11.30 71. I
12.00 72. I
12.30 73. OI
13.00 74. OI
13.30 75. OI
14.00 76. O I
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15.00 78. OI
15.30 79. O I
16.00 80. O I
16.30 81. O I
17.00 82. O I
17.30 83. O I
18.00 84. O I
18.30 85. O I
19.00 86. IO
19.30 87. I O I
20.00 88. I O
20.30 89. I
21.00 90. I O
21.30 91. IO
22.00 92. IO
22.30 73. IO
23.00 94. IO
23.30 95. IO
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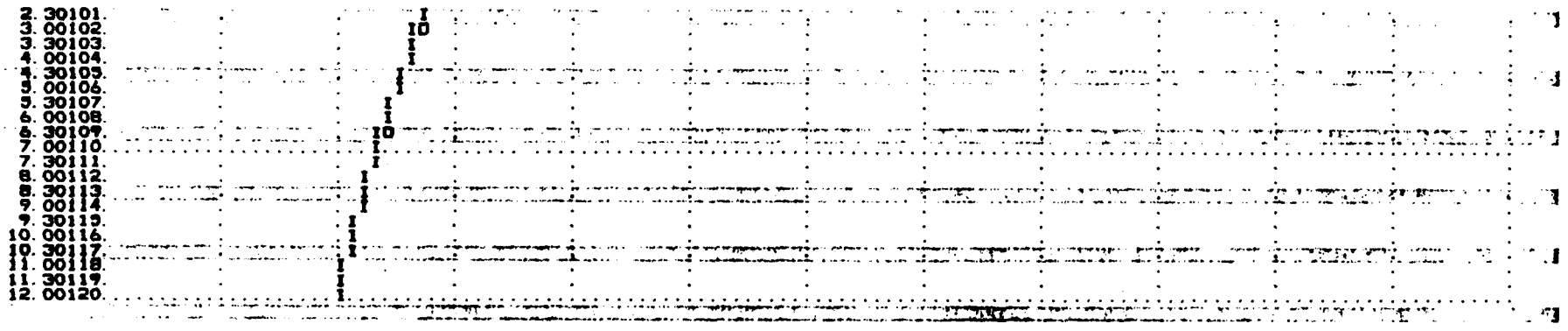
1.30 99. I
2.00100. I



DVN

STATION 2, PLAN 1, RATIO 5

END-OF-PERIOD HYDROGRAPH ORDINATES

OUTFLOW

1.	20.	27.	29.	29.	29.	29.	29.	29.	29.
29.	29.	29.	29.	29.	29.	29.	29.	29.	29.
29.	29.	29.	29.	29.	29.	29.	29.	29.	29.
29.	30.	32.	36.	61.	79.	84.	85.	83.	80.
76.	73.	70.	49.	41.	37.	35.	33.	32.	32.
31.	31.	32.	32.	33.	34.	34.	35.	35.	35.
39.	37.	40.	65.	83.	94.	103.	110.	116.	120.
124.	127.	132.	149.	186.	255.	345.	454.	565.	703.
882.	1096.	1300.	1361.	1445.	1469.	1429.	1346.	1197.	1027.
948.	861.	796.	743.	698.	661.	629.	606.	594.	587.
577.	568.	559.	550.	541.	532.	523.	514.	508.	496.
488.	479.	471.	462.	454.	446.	438.	431.	424.	417.

STORAGE

110.	111.	111.	111.	111.	111.	111.	111.	111.	111.
111.	111.	111.	111.	111.	111.	111.	111.	111.	111.
111.	111.	111.	111.	111.	111.	111.	111.	111.	111.
111.	111.	111.	111.	112.	113.	113.	113.	113.	113.
113.	113.	113.	112.	112.	111.	111.	111.	111.	111.
111.	111.	111.	111.	111.	111.	111.	111.	111.	111.
111.	111.	112.	113.	113.	113.	114.	114.	114.	114.
114.	114.	114.	115.	115.	117.	118.	120.	121.	123.
125.	128.	130.	133.	137.	139.	136.	133.	129.	127.
126.	125.	124.	124.	123.	123.	122.	122.	122.	122.
122.	121.	121.	121.	121.	121.	121.	121.	121.	120.
120.	120.	120.	120.	120.	120.	120.	120.	119.	119.

STAGE

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1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4
1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4
1300.4	1300.4	1300.5	1300.5	1300.9	1301.0	1301.1	1301.1	1301.1	1301.1
1301.0	1301.0	1301.0	1300.7	1300.6	1300.5	1300.5	1300.5	1300.5	1300.4
1300.4	1300.4	1300.5	1300.5	1300.5	1300.5	1300.5	1300.5	1300.5	1300.5
1300.5	1300.5	1300.6	1300.9	1301.1	1301.2	1301.3	1301.3	1301.3	1301.4
1301.4	1301.4	1301.5	1301.6	1301.9	1302.3	1302.9	1303.4	1304.0	1304.6
1305.4	1306.2	1307.0	1307.1	1307.2	1307.2	1307.2	1307.1	1306.6	1306.0
1305.6	1305.3	1305.0	1304.8	1304.6	1304.4	1304.3	1304.2	1304.1	1304.1
1304.1	1304.0	1304.0	1303.9	1303.9	1303.8	1303.8	1303.7	1303.7	1303.7
1303.6	1303.6	1303.5	1303.5	1303.4	1303.4	1303.4	1303.3	1303.3	1303.3

PEAK OUTFLOW IS 1469. AT TIME 43.00 HOURS

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	1469.	1193.	671.	293.	33419.
CMS	42.	34.	19.	8.	1003.
INCHES		0.96	2.17	2.39	2.39
MM		24.51	55.11	60.64	60.64
AC-FT		991.	1330.	1463.	1463.
THOUS CU M		730.	1641.	1805.	1805.

OVF

STATION

INFLOW(I), OUTFLOW(O) AND OBSERVED FLOW(*)

0. 200. 400. 600. 800. 1000. 1200. 1400. 1600. 0. 0. 0. 0.

0.30	1I	
1.00	2.0	I
1.30	3I0	
2.00	4.0	I
2.30	5I0	
3.00	6.0	I
3.30	7I0	
4.00	8.0	I
4.30	9I0	
5.00	10.0	I
5.30	11I0	
6.00	12.0	I
6.30	13I0	
7.00	14.0	I
7.30	15I0	
8.00	16.0	I
8.30	17I0	
9.00	18.0	I
9.30	19I0	
10.00	20.0	I
10.30	21I0	
11.00	22.0	I
11.30	23I0	
12.00	24.0	I
12.30	25I0	
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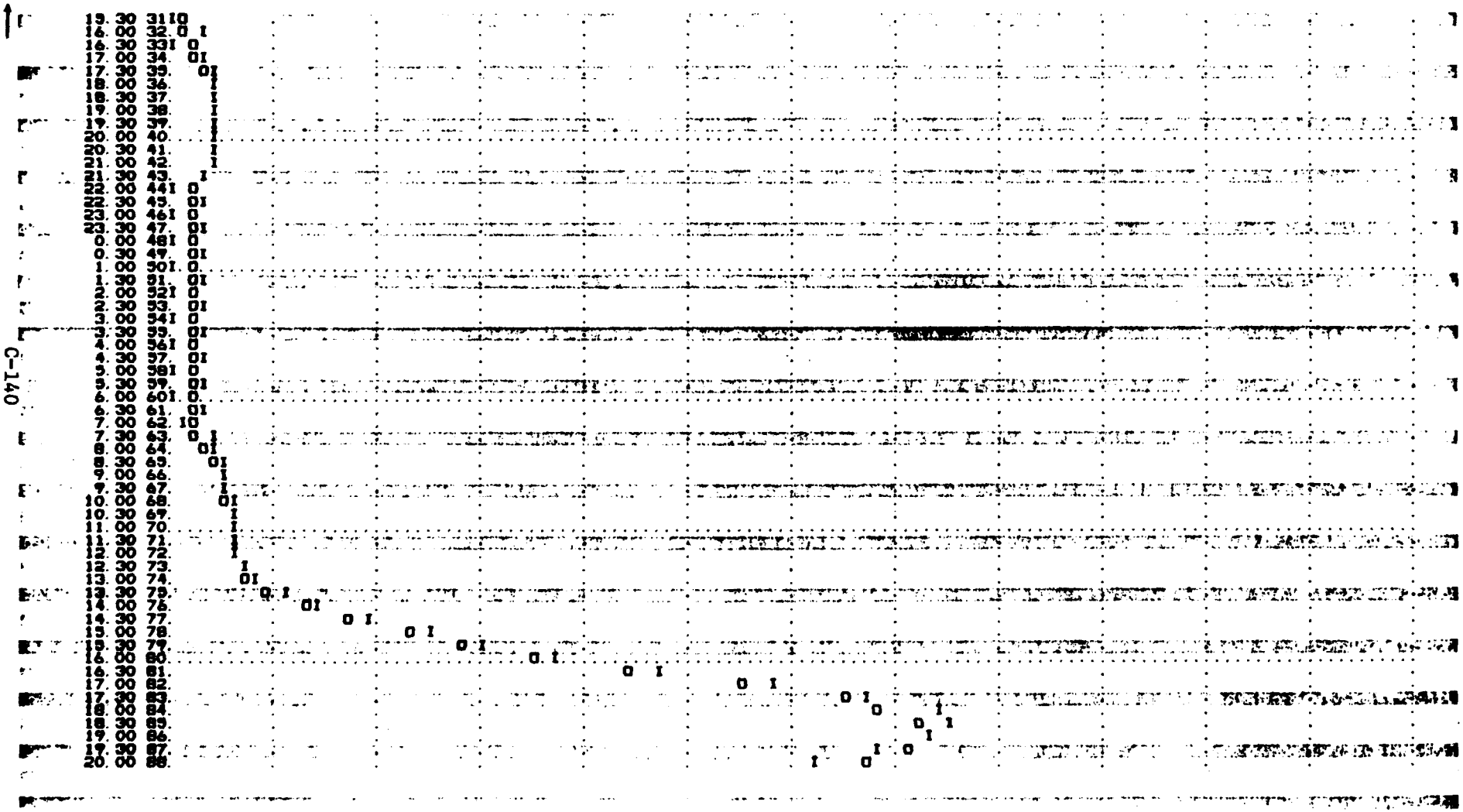
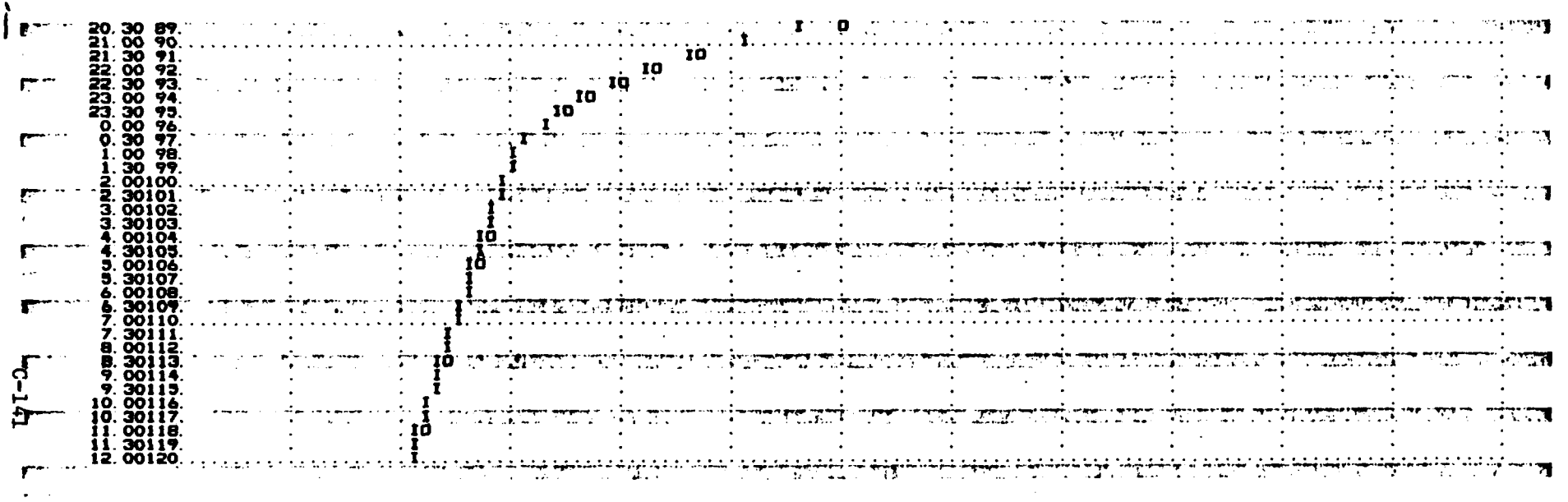
15.00	30.0	I





OVN

STATION 2, PLAN 1, RATIO 6

END-OF-PERIOD HYDROGRAPH ORDINATES

OUTFLOW

1.	20.	27.	29.	29.	29.	29.	29.	29.	29.
29.	29.	29.	29.	29.	29.	29.	29.	29.	29.
29.	29.	29.	29.	29.	29.	29.	29.	29.	29.
29.	30.	32.	37.	62.	77.	85.	86.	85.	81.
77.	74.	70.	49.	41.	37.	35.	34.	33.	32.
32.	32.	32.	33.	33.	34.	34.	35.	35.	35.
36.	37.	41.	66.	85.	96.	105.	113.	119.	124.
127.	131.	136.	154.	194.	268.	361.	479.	596.	739.
931.	1157.	1329.	1429.	1534.	1598.	1605.	1414.	1318.	1101.
1003.	916.	847.	789.	743.	703.	670.	645.	633.	625.
619.	605.	599.	585.	575.	566.	557.	547.	538.	528.
519.	510.	501.	492.	483.	475.	466.	457.	449.	441.

STORAGE

110.	111.	111.	111.	111.	111.	111.	111.	111.	111.
111.	111.	111.	111.	111.	111.	111.	111.	111.	111.

111.	111.	111.	111.	111.	111.	111.	111.	111.	111.	
111.	111.	111.	111.	113.	113.	113.	113.	113.	113.	
113.	113.	113.	112.	112.	112.	111.	111.	111.	111.	
111.	111.	111.	111.	111.	111.	111.	111.	111.	111.	
111.	112.	112.	113.	113.	113.	114.	114.	114.	114.	
114.	114.	114.	115.	116.	117.	118.	120.	122.	124.	
126.	128.	132.	136.	140.	141.	139.	136.	131.	128.	
127.	126.	125.	124.	124.	123.	123.	122.	122.	122.	
122.	122.	122.	122.	122.	121.	121.	121.	121.	121.	
121.	121.	121.	120.	120.	120.	120.	120.	120.	120.	

STAGE

1300.0	1300.3	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4
1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4
1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4
1300.4	1300.4	1300.5	1300.5	1300.9	1301.0	1301.1	1301.1	1301.1	1301.1
1301.1	1301.0	1301.0	1300.7	1300.6	1300.5	1300.5	1300.5	1300.5	1300.5
1300.4	1300.4	1300.5	1300.5	1300.5	1300.5	1300.5	1300.5	1300.5	1300.5
1300.5	1300.5	1300.6	1300.9	1301.1	1301.2	1301.3	1301.3	1301.4	1301.4
1301.4	1301.5	1301.5	1301.6	1302.0	1302.4	1303.0	1303.6	1304.1	1304.8
1305.6	1306.0	1307.1	1307.2	1307.3	1307.3	1307.3	1307.2	1307.0	1306.2
1305.9	1305.5	1305.2	1305.0	1304.8	1304.5	1304.3	1304.4	1304.3	1304.3
1304.2	1304.2	1304.1	1304.1	1304.1	1304.0	1304.0	1303.9	1303.9	1303.8
1303.8	1303.7	1303.7	1303.6	1303.6	1303.5	1303.5	1303.5	1303.4	1303.4

PEAK OUTFLOW IS 1558. AT TIME 43.00 HOURS

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	1558.	1263.	711.	312.	37395.
CMS	44.	36.	20.	9.	1059.
INCHES		1.02	2.30	2.52	2.52
MM		25.94	58.43	64.03	64.03
AC-FT		626.	1410.	1549.	1549.
THOUS CU M		772.	1739.	1906.	1906.

OVF

STATION 2

INFLOW(I), OUTFLOW(O) AND OBSERVED FLOW(*)

0. 200. 400. 600. 800. 1000. 1200. 1400. 1600. 0. 0. 0. 0.

0.30	1I	
1.00	2.0	I
1.30	3I0	
2.00	4.0	I
2.30	5I0	
3.00	6.0	I
3.30	7I0	
4.00	8.0	I
4.30	9I0	
5.00	10.0	I
5.30	11I0	
6.00	12.0	I
6.30	13I0	
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7.30	15I0	
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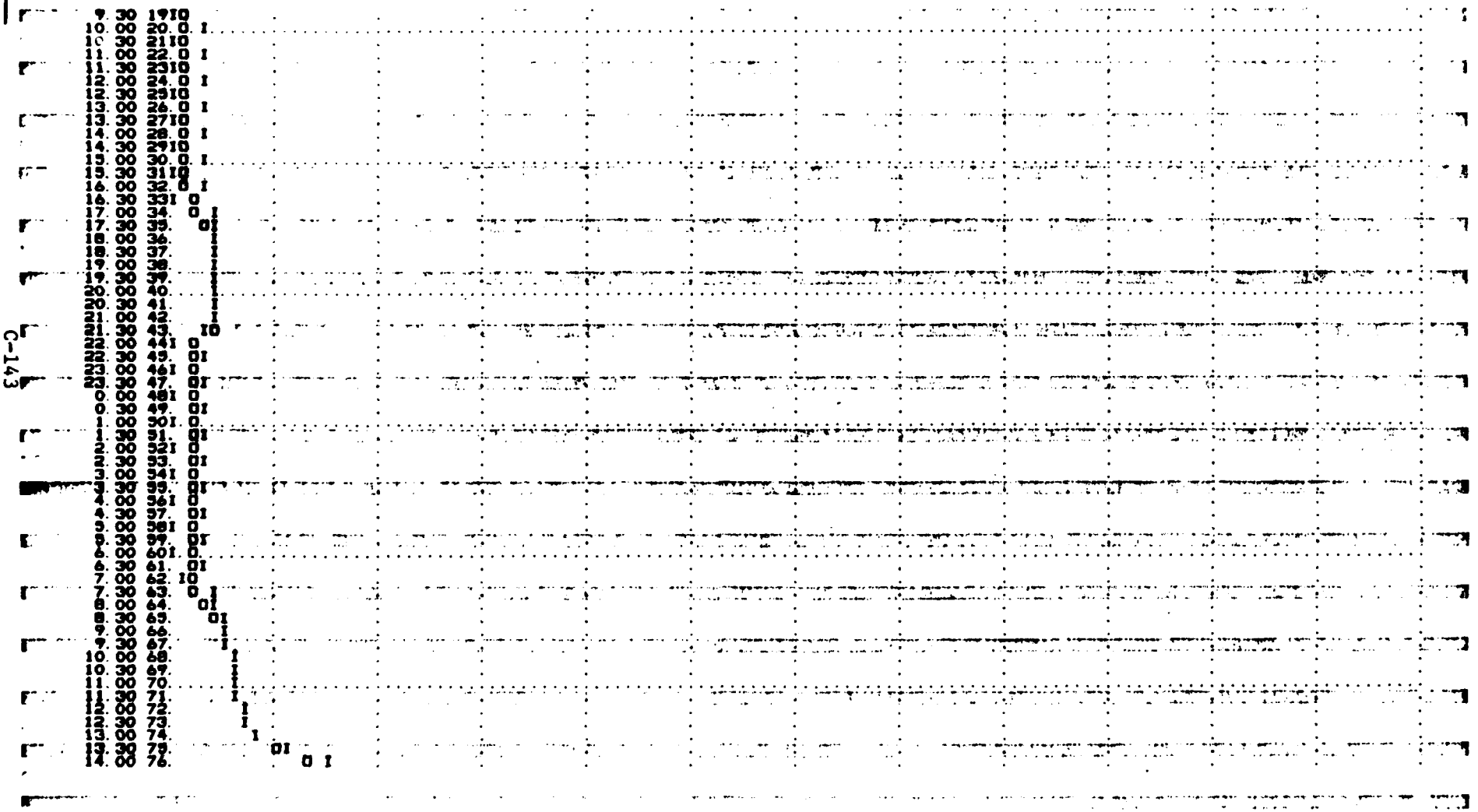

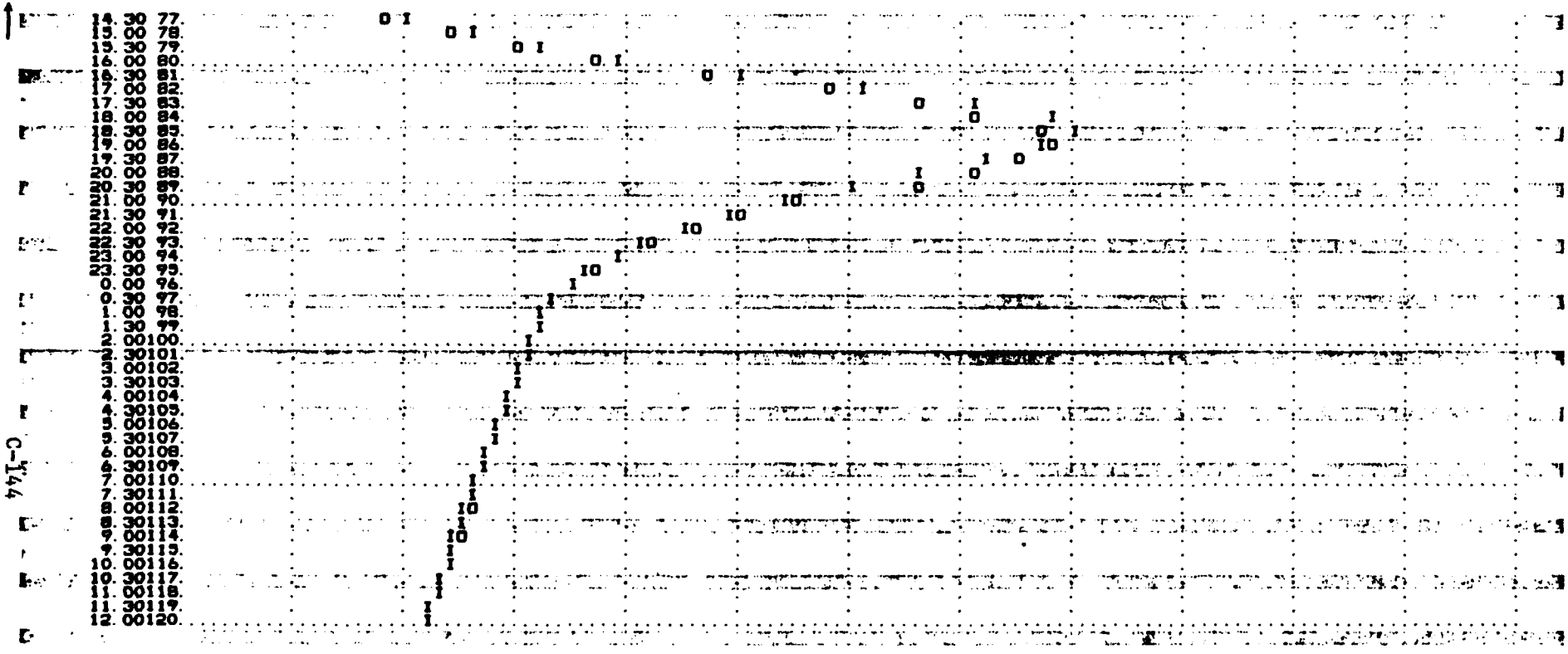

OVN

STATION 2, PLAN 1, RATIO 7

END-OF-PERIOD HYDROGRAPH ORDINATES

OUTFLOW

1.	20.	27.	29.	29.	29.	29.	29.	29.	29.
29.	29.	29.	29.	29.	29.	29.	29.	29.	29.
29.	29.	29.	29.	29.	29.	29.	29.	29.	29.
29.	30.	32.	37.	63.	78.	87.	88.	86.	83.

79.	75.	71.	50.	41.	38.	35.	34.	33.	32.
32.	32.	32.	33.	34.	34.	35.	35.	36.	36.
36.	38.	42.	67.	87.	99.	108.	116.	122.	127.
131.	134.	141.	160.	202.	280.	379.	502.	626.	775.
979.	1219.	1361.	1502.	1624.	1648.	1585.	1486.	1377.	1246.
1034.	978.	895.	837.	786.	746.	710.	684.	671.	662.
652.	641.	631.	621.	610.	600.	590.	580.	570.	560.
551.	541.	531.	522.	513.	503.	494.	485.	476.	467.

STORAGE

110.	111.	111.	111.	111.	111.	111.	111.	111.	111.
111.	111.	111.	111.	111.	111.	111.	111.	111.	111.
111.	111.	111.	111.	111.	111.	111.	111.	111.	111.
111.	111.	111.	111.	113.	113.	113.	113.	113.	113.
113.	113.	113.	112.	112.	112.	111.	111.	111.	111.
111.	111.	111.	111.	111.	111.	111.	111.	111.	111.
111.	112.	112.	113.	113.	113.	114.	114.	114.	114.
114.	114.	114.	115.	116.	117.	119.	121.	122.	124.
126.	129.	133.	139.	143.	143.	142.	138.	134.	129.
127.	126.	126.	125.	124.	124.	123.	123.	123.	123.
123.	122.	122.	122.	122.	122.	122.	122.	122.	121.
121.	121.	121.	121.	121.	121.	120.	120.	120.	120.

STAGE

1300.0	1300.3	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4
1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4
1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4
1300.4	1300.4	1300.5	1300.5	1300.9	1301.1	1301.1	1301.1	1301.1	1301.1
1301.1	1301.0	1301.0	1300.7	1300.6	1300.5	1300.5	1300.5	1300.5	1300.5
1300.5	1300.5	1300.5	1300.5	1300.5	1300.5	1300.5	1300.5	1300.5	1300.5
1300.5	1300.5	1300.6	1301.0	1301.1	1301.2	1301.3	1301.4	1301.4	1301.4
1301.5	1301.5	1301.5	1301.7	1302.0	1302.5	1303.1	1303.7	1304.3	1304.9
1309.8	1306.7	1307.1	1307.3	1307.4	1307.4	1307.4	1307.3	1307.1	1306.8
1306.0	1305.8	1305.4	1305.2	1305.0	1304.8	1304.7	1304.5	1304.5	1304.4
1304.4	1304.3	1304.3	1304.3	1304.2	1304.2	1304.1	1304.1	1304.0	1304.0
1303.9	1303.9	1303.8	1303.8	1303.7	1303.7	1303.6	1303.6	1303.6	1303.5

PEAK OUTFLOW IS 1646. AT TIME 43.00 HOURS

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	1646.	1333.	751.	328.	37379.
CMS	47.	38.	21.	9.	1115.
INCHES		1.08	2.43	2.65	2.65
MM		27.39	61.75	67.42	67.42
AC-FT		661.	1490.	1627.	1627.
THOUS CU M		815.	1838.	2007.	2007.

OVF

STATION 2

INFLOW(I), OUTFLOW(O) AND OBSERVED FLOW(*)

		0.	200.	400.	600.	800.	1000.	1200.	1400.	1600.	1800.	0.	0.	0.
0.30	1I													
1.00	2.0 I													
1.30	310													
2.00	4.0 I													
2.30	910													
3.00	6.0 I													

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 3.30   7I0
 4.00   8.0 I
 4.30   9I0
 5.00  10.0. I
 5.30  11I0
 6.00  12.0 I
 6.30  13I0
 7.00  14.0 I
 7.30  15I0
 8.00  16.0 I
 8.30  17I0
 9.00  18.0 I
 9.30  19I0
10.00  20.0. I
10.30  21I0
11.00  22.0 I
11.30  23I0
12.00  24.0 I
12.30  25I0
13.00  26.0 I
13.30  27I0
14.00  28.0 I
14.30  29I0
15.00  30.0. I
15.30  31I0
16.00  32.0 I
16.30  331 0
17.00  34.  0 I
17.30  39.   0I
18.00  36.    I
18.30  37.    I
19.00  38.    I
19.30  39.    I
20.00  40.    I
20.30  41.    I
21.00  42.    I
21.30  43.   I0
22.00  44. I0
22.30  49.  0I
23.00  461 0
23.30  47.  0I
 0.00  481 0
 0.30  49.  0I
 1.00  501. 0.
 1.30  51.  0I
 2.00  521 0
 2.30  53.  0I
 3.00  541 0
 3.30  59.  0I
 4.00  561 0
 4.30  57.  0I
 5.00  581 0
 5.30  59.  0I
 6.00  601. 0.
 6.30  61.  0I
 7.00  62. I0
 7.30  63.  0 I
 8.00  64.  0I
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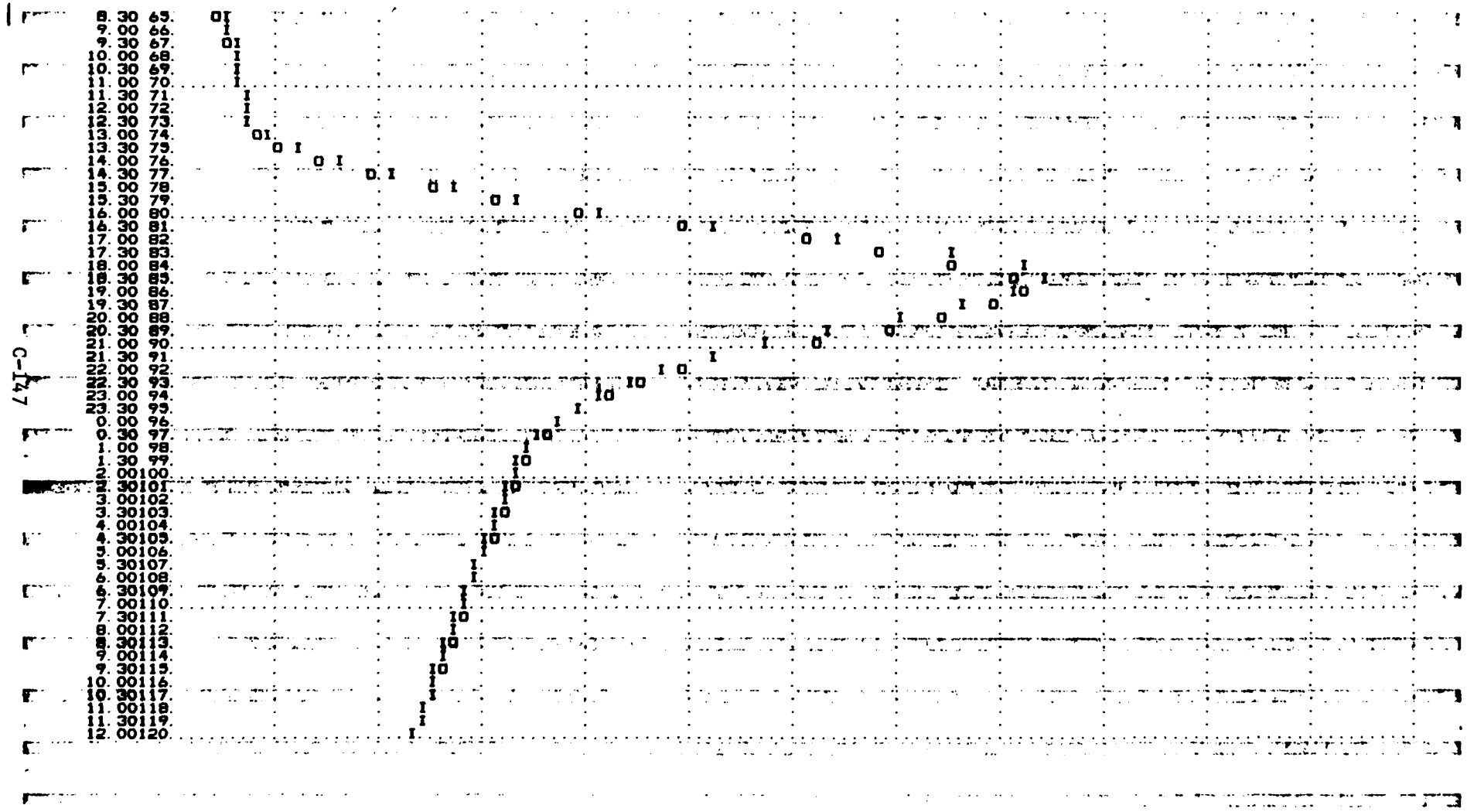
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22.00 92.
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11.00118.
11.30119.
12.00120.

C-147

OVN

STATION 2, PLAN 1, RATIO 8

END-OF-PERIOD HYDROGRAPH ORDINATES

OUTFLOW

2.	22.	27.	30.	31.	31.	31.	31.	31.	31.
31.	31.	31.	31.	31.	30.	30.	30.	30.	30.
30.	30.	30.	30.	30.	30.	30.	30.	30.	30.
31.	32.	38.	50.	92.	119.	132.	135.	130.	122.
112.	102.	94.	86.	81.	76.	72.	70.	68.	67.
66.	66.	67.	69.	70.	73.	74.	75.	75.	76.
77.	83.	94.	113.	137.	162.	186.	208.	228.	242.
255.	265.	285.	338.	458.	652.	913.	1217.	1406.	1735.
2277.	2744.	3587.	4087.	4347.	4342.	4192.	4432.	4951.	5108.
4927.	4554.	4104.	3647.	3217.	2834.	2501.	2226.	2016.	1852.
1716.	1608.	1528.	1480.	1449.	1423.	1397.	1372.	1348.	1329.
1309.	1240.	1228.	1199.	1176.	1152.	1128.	1106.	1084.	1062.

STORAGE

110.	111.	111.	111.	111.	111.	111.	111.	111.	111.
111.	111.	111.	111.	111.	111.	111.	111.	111.	111.
111.	111.	111.	111.	111.	111.	111.	111.	111.	111.
111.	111.	112.	112.	113.	114.	114.	114.	114.	114.
114.	114.	113.	113.	113.	113.	113.	113.	113.	113.
113.	113.	113.	113.	113.	113.	113.	113.	113.	113.
113.	113.	113.	114.	114.	115.	115.	116.	116.	116.
117.	117.	117.	118.	120.	123.	126.	129.	135.	146.
160.	173.	185.	193.	197.	197.	195.	199.	207.	209.
206.	201.	193.	186.	178.	171.	164.	158.	153.	149.
146.	142.	140.	138.	137.	136.	135.	134.	133.	131.
130.	129.	129.	129.	129.	128.	128.	128.	128.	127.

STAGE

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1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4
1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4	1300.4
1300.4	1300.5	1300.5	1300.7	1301.2	1301.4	1301.5	1301.5	1301.5	1301.4
1301.3	1301.2	1301.2	1301.1	1301.1	1301.0	1301.0	1301.0	1301.0	1300.9
1300.9	1300.9	1301.0	1301.0	1301.0	1301.0	1301.0	1301.0	1301.0	1301.0
1301.1	1301.1	1301.2	1301.3	1301.5	1301.7	1301.9	1302.1	1302.2	1302.3
1302.3	1302.4	1302.5	1302.8	1303.5	1304.4	1305.5	1306.7	1307.2	1307.5
1308.0	1308.4	1308.8	1309.1	1309.2	1309.2	1309.1	1309.2	1309.5	1309.6
1309.5	1309.3	1309.1	1308.8	1308.6	1308.3	1308.1	1307.9	1307.8	1307.6
1307.5	1307.4	1307.3	1307.3	1307.2	1307.2	1307.2	1307.1	1307.1	1307.0
1307.0	1306.8	1306.7	1306.6	1306.5	1306.4	1306.3	1306.3	1306.2	1306.1

PEAK OUTFLOW IS 5108. AT TIME 45.00 HOURS

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	5108.	4341.	2189.	919.	110291.
CMS	145.	123.	62.	26.	3123.
INCHES		3.51	7.08	7.43	7.43
MM		89.19	179.91	188.84	188.84
AC-FT		2193.	4342.	4937.	4937.
THOUS CU M		2695.	5356.	5622.	5622.

OVF

STATION 2

INFLOW(I), OUTFLOW(O) AND OBSERVED FLOW(*)

	0.	1000.	2000.	3000.	4000.	5000.	6000.	0.	0.	0.	0.	0.	0.
0.30	11												
1.00	20I												
1.30	31												
2.00	40I												
2.30	51												
3.00	60I												
3.30	71												
4.00	80I												
4.30	91												
5.00	100I												
5.30	111												
6.00	120I												
6.30	131												
7.00	140I												
7.30	151												
8.00	160I												
8.30	171												
9.00	180I												
9.30	191												
10.00	200I												
10.30	211												
11.00	220I												
11.30	231												
12.00	240I												
12.30	251												
13.00	260I												
13.30	271												
14.00	280I												
14.30	291												
15.00	300I												
15.30	311												
16.00	320I												
16.30	331												
17.00	340I												
17.30	35.1												
18.00	36.1												
18.30	37.1												
19.00	38.1												
19.30	39.1												
20.00	40.1												
20.30	41.1												
21.00	42.1												
21.30	43.1												
22.00	44.1												
22.30	45.1												
23.00	46.1												
23.30	47.1												
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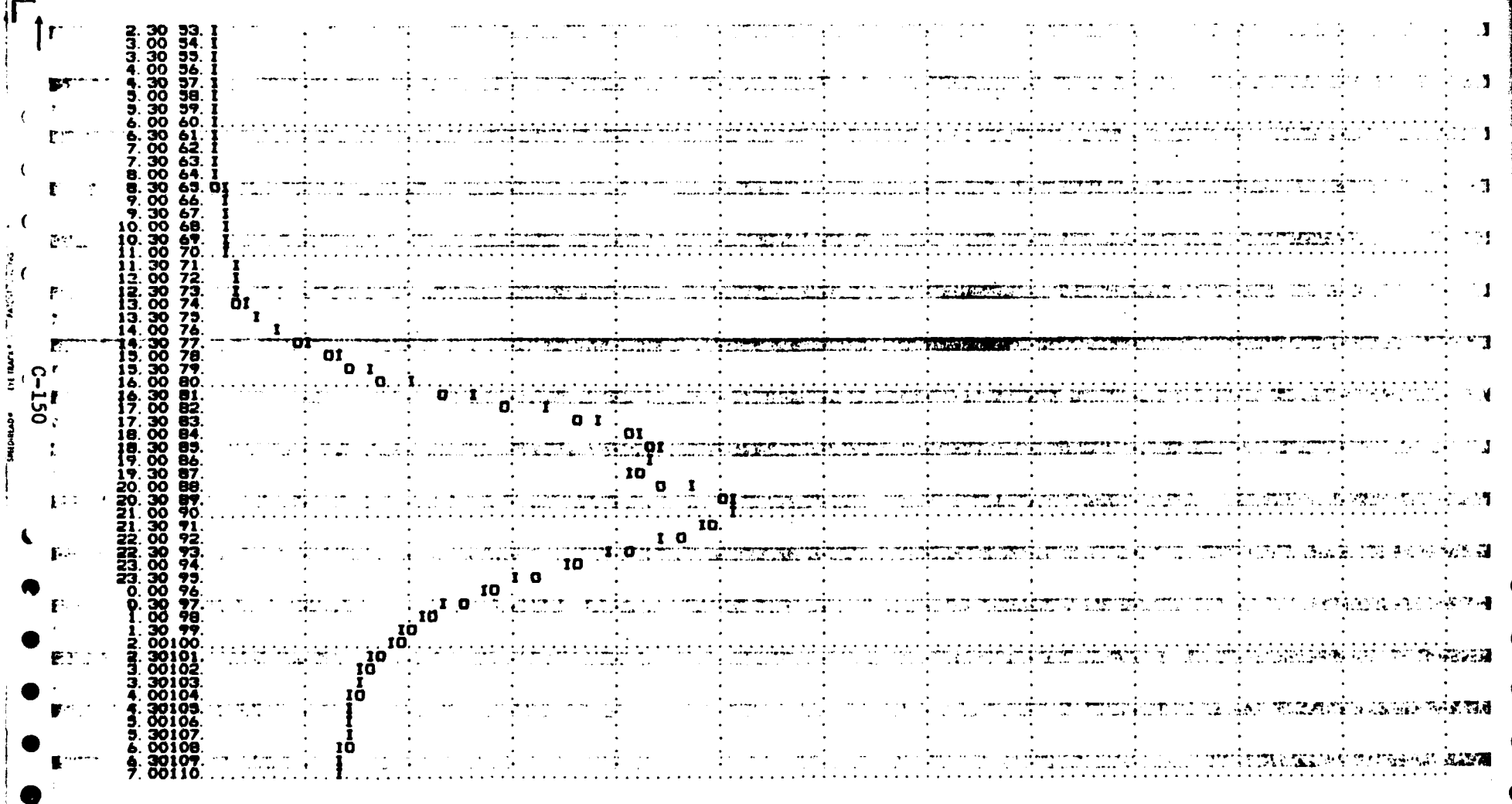
1.00	50.1												
1.30	51.1												
2.00	52.1												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7.00110.

C-150

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11. 00118.    I
11. 30119.    I
12. 00120.    I
```

OVN

STATION 2, PLAN 1, RATIO 9

END-OF-PERIOD HYDROGRAPH ORDINATES

OUTFLOW

9.	29.	32.	35.	34.	34.	34.	34.	34.	33.
33.	33.	33.	33.	33.	33.	32.	32.	32.	32.
32.	32.	32.	32.	32.	32.	32.	32.	32.	32.
33.	36.	67.	108.	147.	183.	208.	215.	206.	191.
174.	156.	140.	126.	115.	106.	99.	94.	89.	86.
85.	87.	89.	93.	96.	99.	102.	104.	105.	106.
109.	120.	144.	182.	236.	292.	342.	386.	422.	451.
476.	498.	538.	657.	910.	1310.	1586.	2231.	2976.	3810.
4929.	6267.	8201.	12087.	16302.	19273.	18528.	17349.	15877.	13717.
11977.	10208.	8668.	7359.	6264.	5358.	4610.	4011.	3567.	3222.
2929.	2684.	2487.	2327.	2195.	2082.	1984.	1898.	1821.	1753.
1692.	1639.	1597.	1566.	1541.	1516.	1492.	1469.	1445.	1421.

STORAGE

110.	111.	111.	111.	111.	111.	111.	111.	111.	111.
111.	111.	111.	111.	111.	111.	111.	111.	111.	111.
111.	111.	111.	111.	111.	111.	111.	111.	111.	111.
111.	111.	113.	114.	115.	115.	116.	116.	116.	116.
115.	115.	114.	114.	114.	114.	113.	113.	113.	113.
113.	113.	113.	113.	113.	113.	114.	114.	114.	114.
114.	114.	114.	115.	116.	117.	118.	119.	119.	120.
120.	120.	121.	123.	126.	130.	142.	159.	174.	189.
206.	225.	250.	279.	337.	356.	358.	349.	333.	314.
293.	274.	256.	240.	225.	213.	201.	192.	185.	178.
173.	168.	164.	161.	158.	155.	153.	150.	148.	147.
145.	143.	142.	141.	140.	139.	138.	138.	137.	136.

STAGE

1300.1	1300.4	1300.4	1300.5	1300.5	1300.5	1300.5	1300.5	1300.5	1300.5
1300.5	1300.5	1300.5	1300.5	1300.5	1300.5	1300.5	1300.5	1300.5	1300.5
1300.5	1300.5	1300.5	1300.4	1300.4	1300.4	1300.4	1300.5	1300.5	1300.5
1300.5	1300.5	1300.9	1301.3	1301.6	1301.9	1302.1	1302.1	1302.0	1301.9
1301.8	1301.7	1301.5	1301.4	1301.3	1301.3	1301.2	1301.2	1301.1	1301.1
1301.1	1301.1	1301.1	1301.2	1301.2	1301.2	1301.2	1301.3	1301.3	1301.3
1301.3	1301.4	1301.6	1301.9	1302.2	1302.6	1302.9	1303.1	1303.3	1303.4
1303.6	1303.7	1303.9	1304.4	1305.5	1307.0	1307.4	1307.9	1308.4	1308.9
1309.3	1310.1	1310.9	1312.4	1313.8	1314.4	1314.5	1314.2	1313.6	1313.0
1312.3	1311.7	1311.1	1310.6	1310.1	1309.7	1309.3	1309.0	1308.8	1308.6

IST-2

1308.4 1308.2 1308.1 1308.0 1307.9 1307.8 1307.7 1307.7 1307.6 1307.5
1307.5 1307.4 1307.4 1307.4 1307.3 1307.3 1307.3 1307.2 1307.2 1307.2

PEAK OUTFLOW IS 18528. AT TIME 43.50 HOURS

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	18528.	13200.	5172.	2135.	256159.
CMS	525.	374.	146.	60.	7254.
INCHES		10.68	16.73	17.27	17.27
MM		271.21	425.07	438.59	438.59
AC-FT		6545.	10259.	10585.	10585.
THOUS CU M		8074.	12654.	13056.	13056.

OVF

STATION 2

INFLOW(I), OUTFLOW(O) AND OBSERVED FLOW(*)

0. 4000. 8000. 12000. 16000. 20000. 0. 0. 0. 0. 0. 0. 0.

0.30	11	
1.00	21	
1.30	31	
2.00	41	
2.30	51	
3.00	61	
3.30	71	
4.00	81	
4.30	91	
5.00	101	
5.30	111	
6.00	121	
6.30	131	
7.00	141	
7.30	151	
8.00	161	
8.30	171	
9.00	181	
9.30	191	
10.00	201	
10.30	211	
11.00	221	
11.30	231	
12.00	241	
12.30	251	
13.00	261	
13.30	271	
14.00	281	
14.30	291	
15.00	301	
15.30	311	
16.00	321	
16.30	331	
17.00	341	
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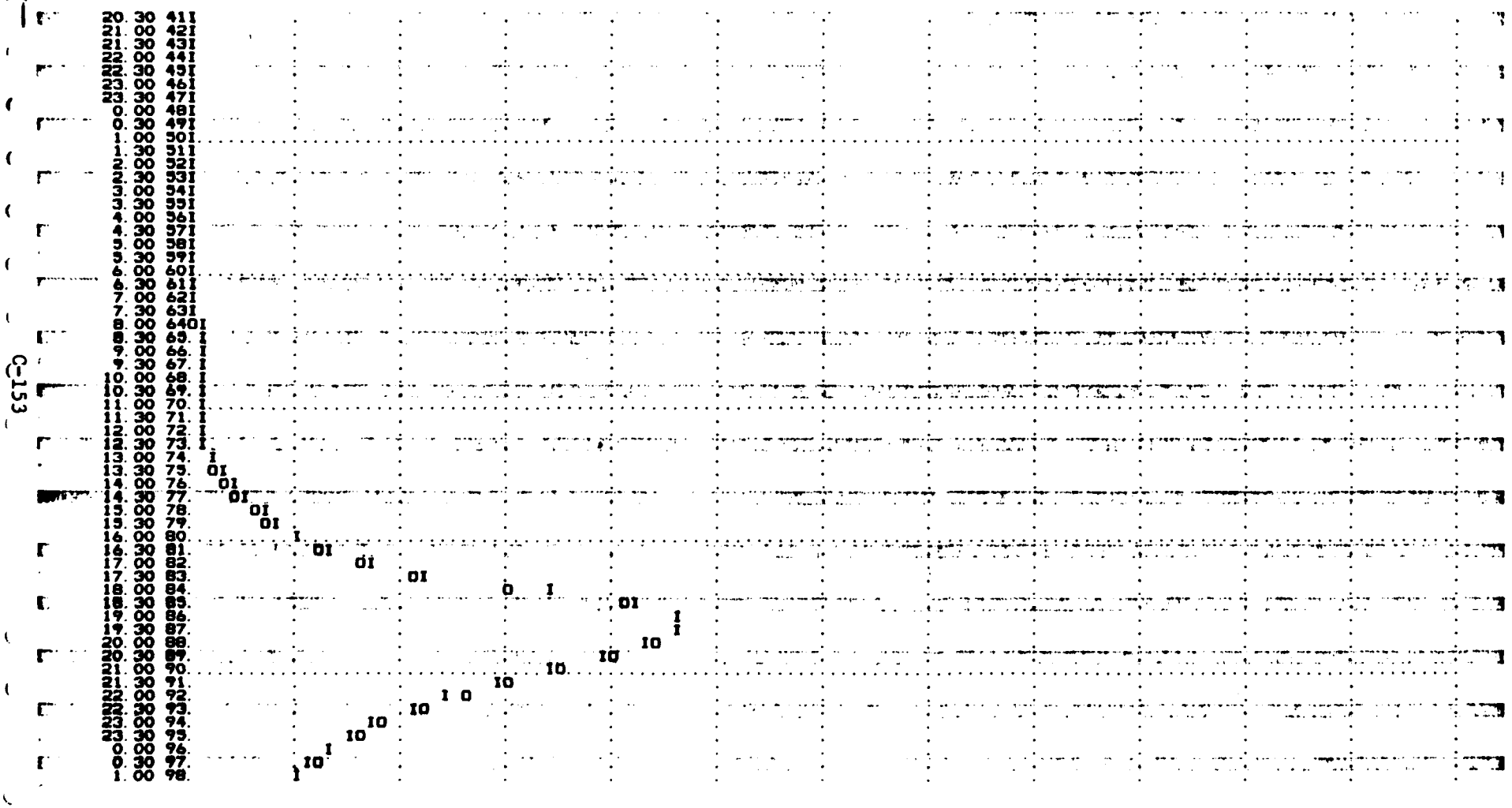
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23.00 461
23.30 471
0.00 481
0.30 491
1.00 501
1.30 511
2.00 521
2.30 531
3.00 541
3.30 551
4.00 561
4.30 571
5.00 581
5.30 591
6.00 601
6.30 611
7.00 621
7.30 631
8.00 6401
8.30 69.
9.00 66.
9.30 67.
10.00 68.
10.30 69.
11.00 70.
11.30 71.
12.00 72.
12.30 73.
13.00 74.
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23.30 95.
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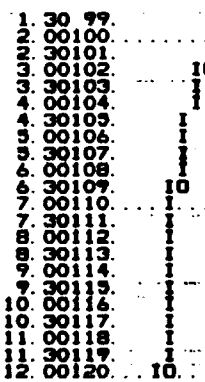
0.30 97.
1.00 98.



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

OPERATION	STATION	AREA	PLAN	RATIOS APPLIED TO FLOWS RATIO 1 0.10	RATIO 2 0.15	RATIO 3 0.16	RATIO 4 0.17	RATIO 5 0.18	RATIO 6 0.19	RATIO 7 0.20	RATIO 8 0.30	RATIO 9 1.00
HYDROGRAPH AT	1	4.37 (11.32)	1	777. (22.01)	1166. (33.01)	1243. (35.21)	1321. (37.41)	1399. (39.61)	1477. (41.81)	1554. (44.01)	3886. (110.03)	7771. (220.05)
HYDROGRAPH AT	1	2.71 (7.02)	1	330. (15.99)	826. (23.38)	881. (24.94)	936. (26.50)	991. (28.06)	1046. (29.62)	1101. (31.17)	2752. (77.94)	5505. (155.87)
HYDROGRAPH AT	1	0.88 (2.28)	1	203. (5.74)	304. (8.61)	324. (9.18)	345. (9.76)	365. (10.33)	385. (10.91)	405. (11.48)	1014. (28.70)	2027. (57.41)
3 COMBINED	1	7.96 (20.62)	1	1492. (42.28)	2238. (63.38)	2388. (67.61)	2537. (71.84)	2686. (76.06)	2835. (80.29)	2985. (84.51)	7461. (211.28)	14923. (422.56)
ROUTED TO	2	7.96 (20.62)	1	234. (6.62)	380. (10.75)	413. (11.68)	445. (12.61)	478. (13.54)	510. (14.45)	542. (15.36)	3499. (99.09)	12707. (359.81)
HYDROGRAPH AT	2	3.54	1	707.	1060.	1131.	1201.	1272.	1342.	1413.	3533.	7066.

		(9.17)		(20.01)	(30.01)	(32.01)	(34.01)	(36.01)	(38.02)	(40.02)	(100.04)	(200.08)
2 COMBINED	2	11.50	1	831.	1251.	1335.	1419.	1504.	1592.	1679.	5090.	18506.
		(29.78)		(23.52)	(35.44)	(37.82)	(40.19)	(42.59)	(45.07)	(47.55)	(144.14)	(524.02)
ROUTED TO	2	11.50	1	832.	1250.	1315.	1386.	1469.	1558.	1646.	5108.	18528.
		(29.78)		(23.55)	(35.41)	(37.23)	(39.24)	(41.60)	(44.11)	(46.60)	(144.65)	(524.66)

SUMMARY OF DAM SAFETY ANALYSIS

PLAN 1

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1434.90	1434.90	1442.00
STORAGE	0.	0.	2200.
OUTFLOW	57.	57.	1193.

RATIO OF PMF	MAXIMUM RESERVOIR W.S. ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
0.10	1436.97	0.00	589.	234.	0.00	48.00	0.00
0.15	1437.98	0.00	893.	380.	0.00	48.00	0.00
0.16	1438.18	0.00	952.	413.	0.00	48.00	0.00
0.17	1438.37	0.00	1011.	445.	0.00	48.00	0.00
0.18	1438.56	0.00	1071.	478.	0.00	48.00	0.00
0.19	1438.75	0.00	1129.	510.	0.00	48.00	0.00
0.20	1438.94	0.00	1188.	542.	0.00	48.00	0.00
0.50	1443.02	1.02	2556.	3499.	8.00	45.50	0.00
1.00	1445.06	3.06	3301.	12707.	15.00	43.50	0.00

SUMMARY OF DAM SAFETY ANALYSIS

PLAN 1

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1300.00	1300.00	1307.00
STORAGE	110.	110.	130.
OUTFLOW	0.	0.	1306.

RATIO OF PMF	MAXIMUM RESERVOIR W.S. ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
0.10	1305.18	0.00	123.	832.	0.00	42.50	0.00
0.15	1306.79	0.00	129.	1250.	0.00	42.50	0.00
0.16	1307.02	0.02	131.	1315.	1.00	42.50	0.00
0.17	1307.14	0.14	134.	1386.	2.00	43.00	0.00
0.18	1307.25	0.25	138.	1469.	2.50	43.00	0.00
0.19	1307.35	0.35	141.	1558.	3.50	43.00	0.00
0.20	1307.44	0.44	143.	1646.	3.50	43.00	0.00
0.50	1309.38	2.38	209.	5108.	16.00	43.00	0.00
1.00	1314.46	7.46	358.	18528.	22.50	43.50	0.00

****
FLOOD HYDROGRAPH PACKAGE (HEC-1)
DAM SAFETY VERSION JULY 1978
LAST MODIFICATION 26 FEB 79
****

APPENDIX D

PREVIOUS INSPECTION REPORTS/AVAILABLE DOCUMENTS

PREVIOUS REPORTS

Form IW31. 11-6-14-1000 (16-1038) Acc. 382

(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

map 104-g DAM REPORT

June 23 (Date), 1917

CONSERVATION COMMISSION,

DIVISION OF INLAND WATERS.

GENTLEMEN:

I have the honor to make the following report in relation to the structure known as the Clayton's Dam.

This dam is situated upon the Eaton Brook (Give name of stream)

in the Town of West Eaton, Eaton County,

about 1 mile (State distance) from the Village or City of West Eaton

The distance up (Up or down) stream from the dam, to the village of West Eaton (Give name of nearest important stream or of a bridge),

is about 3/4 mile (State distance).

The dam is now owned by W. M. Clayton, West Eaton, N. Y. (Give name and address in full)

and was built in or about the year ——, and was extensively repaired or reconstructed during the year ——.

As it now stands, the spillway portion of this dam is built of Timber (State whether of masonry, concrete or timber)

and the other portions are built of masonry (State whether of masonry, concrete, earth or timber with or without rock fill)

As nearly as I can learn, the character of the foundation bed under the spillway portion of the dam is blue slate rock and under the remaining portions such foundation bed is blue slate rock (excellent material)

The total length of this dam is 500 feet. The spillway or waste-weir portion, is about 25 feet long, and the crest of the spillway is about 15 feet below the top of the dam.

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: There is one gate on eastern bank leading to electric light plant and mill

At the time of this inspection the water level above the dam was ——— ft. — in. below / above the crest of the spillway. (Dam had gone out)

(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.)

This dam proper is in good condition on western bank, spillway portion of dam twenty-four feet wide was completely washed away. July 6-17. Wood chute + spill + head gate damaged + rip rap somewhat displaced, + dangerous. A R Mackin

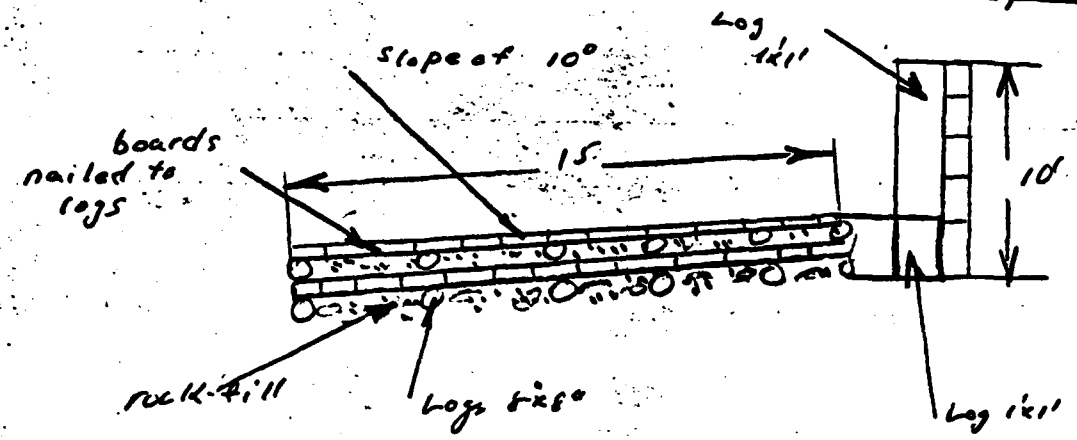
Reported by Willard Botsford
(Signature)

Conservation Commission, Albany, N.Y.
(Address—Street and number, P. O. Box or R. F. D. route)

Oriskany Falls, N.Y.
(Name of place)

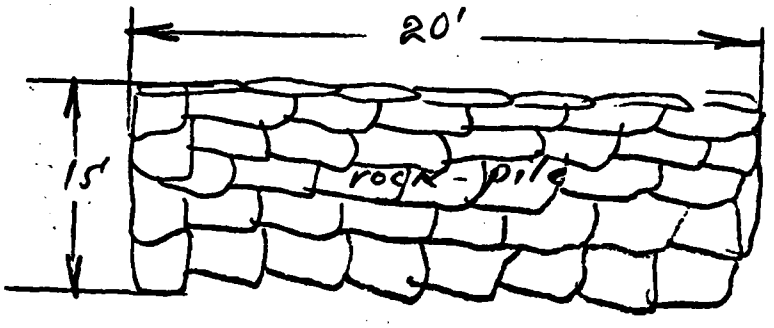
(In the space below, make one sketch showing the form and dimensions of a cross section through the spillway or waste-weir of this dam, and a second sketch showing the same information for a cross section through the other portion of the dam. Show particularly the greatest height of the dam above the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

Cross-section of Dam and Spillway.



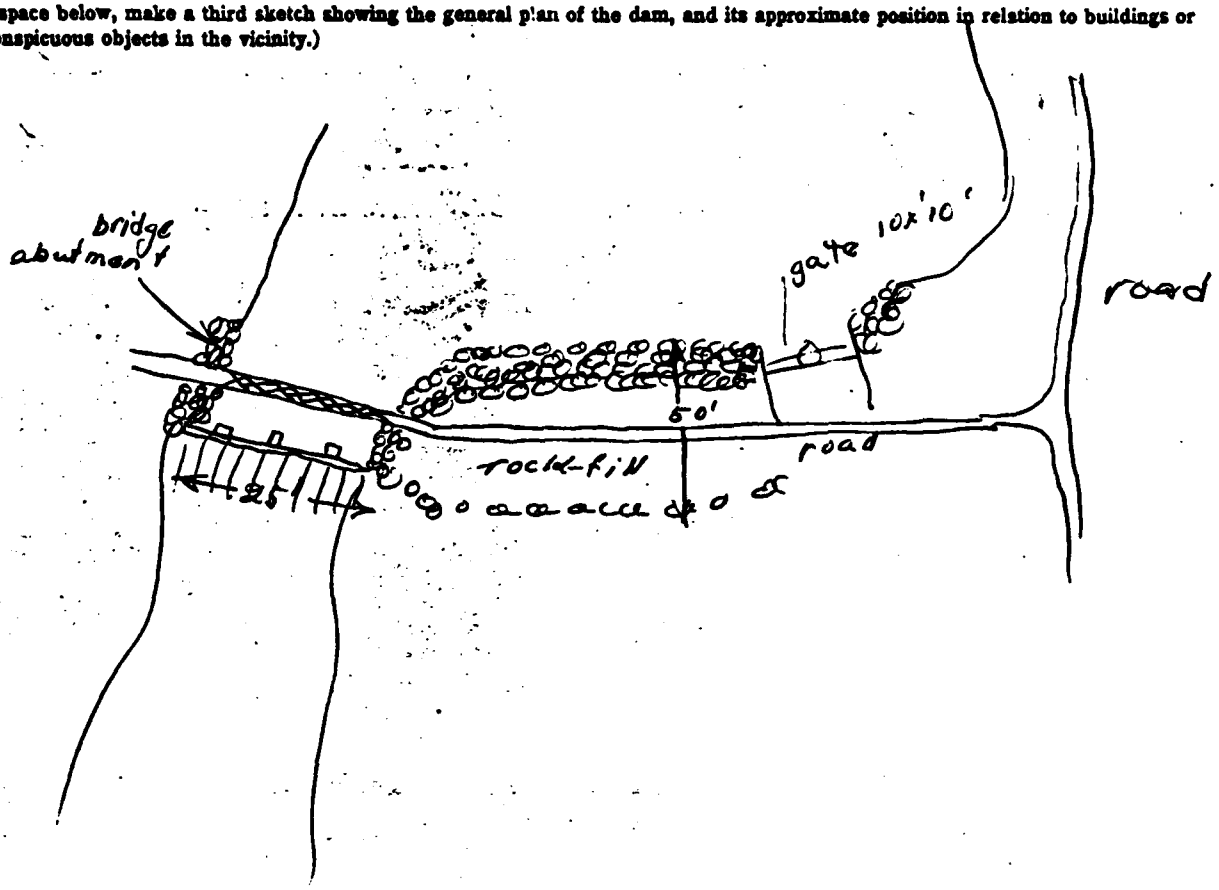
The above dam broke away completely, there is very little left of it.

Plan of Abutment



There is no slope

(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.)



PREVIOUS INSPECTION REPORTS

DEC DAM INSPECTION REPORT

RB	CTY	YR. AP.	DAM NO.	INS. DATE	USE	TYPE
66	27	81	00713	05307 2	002	2

AS BUILT INSPECTION

1	Location of Spillway and outlet	1	Elevations
1	Size of Spillway and outlet	1	Geometry of Non-overflow section

1	**GENERAL CONDITION OF NON-OVERFLOW SECTION**				
2	Settlement	2	Cracks	1	Deflections
2	Joints	2	Surface of Concrete	1	Leakage
1	Undermining	2	Settlement of Embankment	2	Crest of Dam TREES
2	Downstream Slope BRUSH	2	Upstream Slope	2	Toe of Slope BRUSH

1	**GENERAL CONDITION OF SPILLWAY AND OUTLET WORKS**				
4	Auxiliary Spillway	2	Service or Concrete Spillway	2	Stilling Basin
2	Joints	2	Surface of Concrete	1	Spillway Toe
2	Mechanical Equipment	2	Plunge Pool	2	Drain

1	Maintenance	6	Hazard Class
5	Evaluation	-4	Inspector

COMMENTS:

TREES & BRUSH ALONG NON OVERFLOW

1

(By Visual Inspection)

Dam Number	River Basin	Town	County	Hazard Class	Date & Inspector
213	Housatonic	Eaton	Madison	C	8/20/80 CRK

Stream = Eaton Brook Owner = Katherine W. MacKie

Type of Construction

- ☐ Earth w/Concrete Spillway
- ☐ Earth w/Drop Inlet Pipe
- ☐ Earth w/Stone or Riprap Spillway
- ☐ Concrete
- ☒ Stone w/ concrete spillway
- ☐ Timber
- ☐ Other _____

Use

- ☐ Water Supply
- ☐ Power
- ☐ Recreation - ☐ High Density
- ☐ Fish and Wildlife
- ☐ Farm Pond
- ☐ No Apparent Use-Abandoned
- ☐ Flood Control
- ☐ Other _____

Estimated Impoundment Size 12 Acres ## Estimated Height of Dam above Streambed 15 Ft.

Condition of Spillway

- ☒ Service satisfactory
- ☐ In need of repair or maintenance
- ☐ Auxiliary satisfactory
- ☐ In need of repair or maintenance

Explain: Concrete cracking, and leaking

Condition of Non-Overflow Section

- ☐ Satisfactory
- ☒ In need of repair or maintenance

Explain: Trees & Brush

Condition of Mechanical Equipment

- ☒ Satisfactory
- ☐ In need of repair or maintenance

Explain: Rusty

Siltation ☐ High ☒ Low

Explain: Trailer, and house immediately downstream

Remarks: 10' gate on north side, concrete also cracking and scaling

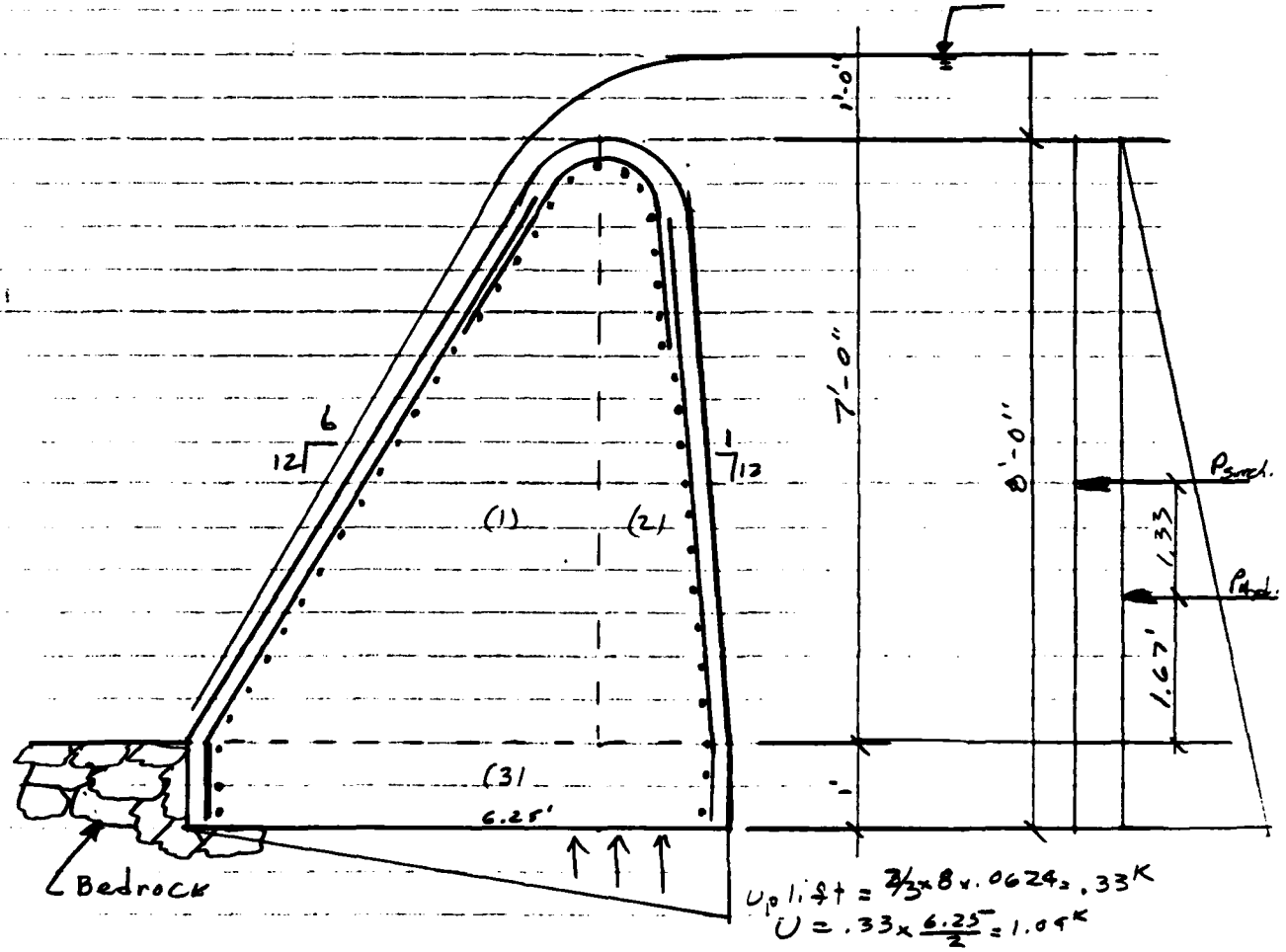
[illegible]

Evaluation (From Visual Inspection)

- ☐ Repairs req'd. beyond normal maint.
- ☒ No defects observed beyond normal maint.

APPENDIX E

STRUCTURAL STABILITY ANALYSIS



Uplift = 2/3 x 8 x .0624 = .33K
U = .33 x 6.25/2 = 1.04K

Section		Wt.	dist.	Mom.
(1)	4'-9" x 7' x .15 / 2 =	2.5K	3.17'	7.91K
(2)	(1 x 7 + .5 x 7 / 2) x .15 =	1.31	(4.75 + .53)	6.93'K
(3)	1 x (4.75 + 1.5) x .15 =	0.94K	3.125'	2.93'K
		4.75K		17.76'K

Hydraulic Loading:

$P_B = 1' \times .0624 \times 8' = .5K$ x 3.0' = Mom. o.T. 1.5'K

$P_H = 8 \times .0624 \times 8/2 = 2K$ x 1.67' = 3.34

$U = 1.04K$ x 4.17' = 4.33'K

E-1

Ice loading:
5K/FT Horiz @ Crest

$P_H = 5^K$ $P_V = 0$ $M_{OT} = 5 \times 7' = 35^{1K}$ (top of bedrock)

Max. Operating Flow Water level at top of dam.

Overtopping Spillway Ht. 7'

$P_S = 7 \times .0624 \times 8 = 3.5^K \times 3' =$ M.O.T. 10.5^{1K}

$P_H = 3.04$ 7.67^{1K}

$\Sigma P_H = 6.54^K$ 18.17^{1K}

Stability Comp's. based on Assumed Sect.

Loading Case (1): Normal Summer Cond.

$F_{SSL} = \frac{P_V + P_{SHEAR}}{P_H} = \frac{4.75 \times \text{Coef. Friction} + 2\frac{12.9^{K/FT}}{12000}}{3.54} \geq 5.0$ F.S.

$F_{S.O.T.} = \frac{M_R}{M_{OT}} = \frac{17.76}{9.11} = 1.94$ Low For Normal Cond.

Loc. of Res. $\frac{17.76 - 9.17}{(4.75 - 1.04)} = 2.32' \div 6.25 = 0.37b$

Loading Case I + Ice

$M_{O.T.} = 35^{1K} + 9.11 = 44.11^{1K}$

$F_H = 5^K + 3.54 = 8.54$

$F_{SO.T.} = \frac{17.76}{44.11} = .4$ Unstable w/out Abutments for add'l stability

$F.S._{SL} = \frac{12.9 + 4.75}{8.54} = 2.07$ OK for ice ldg condition

Loc. of Res. $\frac{17.76 - 44.11}{3.71} = \frac{-7.1}{E\text{-}2} \div 6.25 = -1.14$* Assumes full 1'-0 Rock Embedment

Loading Case : Max. Oper. Flow + Uplift

$F.S._{OT.} = \frac{17.76^{1K}}{18.17^{1K}} = 0.98$ Unstable for max Oper. flow.

$F.S._{SL.} = \frac{.475 \times 1 + 12.9}{6.54} = 2.70$ o.k.

Loc. of Res. $\frac{17.76 - 18.17}{3.71} = -.11 \div 6.25 = -.02$ b

.5 PMF +9.6' above Spillway Crest

$P_6 = 9.6 \times .0624 \times 8' = 4.79^K \times 3' = 14.37^{1K}$

$P_H = 3.04^K$ $\frac{7.67^{1K}}{22.04^{1K}}$

$\Sigma P_H = 7.83^K$

$F_{S\,OT} = \frac{17.76^{1K}}{22.04^{1K}} = 0.81$ Unstable

$F_{S\,SL.} = \frac{4.75 \times 1 + 12.9}{7.83} = 2.25$ o.k. if 1' embedment of Section in rock exist.

Loc. of Res. : $\frac{17.76 - 22.04}{3.71} = -1.15 \div 6.25' = -.18'$

APPENDIX F

REFERENCES

REFERENCES

1. Chow, Ven Te, Editor - Handbook of Applied Hydrology. McGraw-Hill Book Company, New York, New York, 1964.

2. Hydrologic Engineering Center, U.S. Army Corps of Engineers, HEC-1 Flood Hydrograph Package, Users Manual. Davis, California, January 1973.

3. Hydrologic Engineering Center, U.S. Army Corps of Engineers, Flood Hydrograph Package (HEC-1), Users Manual for Dam Safety Investigations, Davis, California, September 1978.

4. King, Horace and Brater, Ernest. Handbook of Hydraulics, 5th Edition. McGraw-Hill Book Company, New York, New York, 1963.

5. Riedel, J.T., Appleby, J.F. and Schloemer, R.W. Seasonal Variation of the Probable Maximum Precipitation East of the 105th Meridian for Areas from 10 to 1000 Square Miles and Durations of 6, 12, 24, and 48 Hours (Hydrometeorological Report No. 33) U.S. Department of Commerce - Weather Bureau and U.S. Department of the Army - Corps of Engineers, Washington, D.C., April 1956.

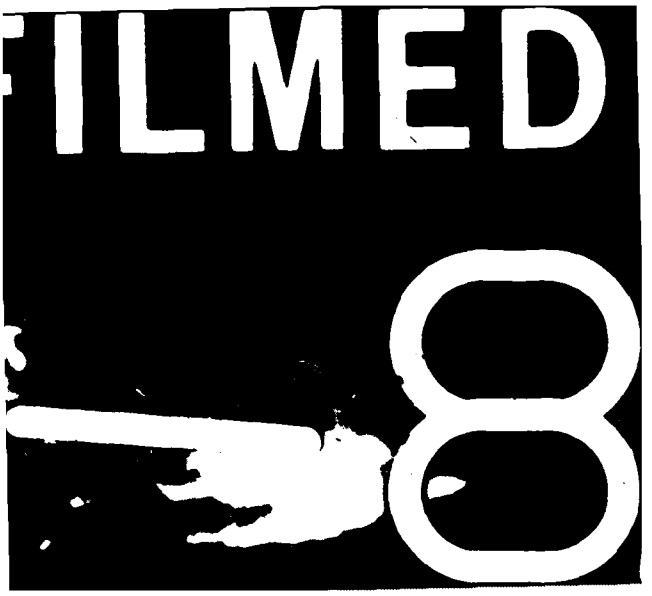
6. U.S. Department of the Interior, Bureau of Reclamation, Design of Small Dams, Second Edition, Washington, D.C., 1973.

7. New York State Department of Environmental Conservation - Dam Safety Section, Phase I Inspection of Eaton Brook Reservoir Dam (NY 352), Albany, New York, January 1980.

APPENDIX G

DRAWINGS

(No DRAWINGS were available for this dam)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