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DELAWARE RIVER BASIN
TRIBUTARY TO WEST BRANCH LACKAWAXEN RIVER
WAYNE COUNTY

PENNSYLVANIA

LEVEL II

ROSNER POND DAM

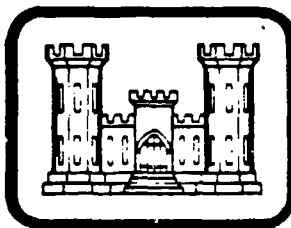
NDI ID NO. PA-01111
DER ID NO. 64-190

OTIS ROSNER

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PHASE I INSPECTION REPORT NATIONAL DAM INSPECTION PROGRAM

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DEPARTMENT OF THE ARMY
Baltimore District, Corps of Engineers
Baltimore, Maryland 21203

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DELAWARE RIVER BASIN
TRIB. TO WEST BRANCH OF LACKAWAXEN RIVER, WAYNE COUNTY
PENNSYLVANIA

ROSNER POND DAM

NDI ID No. PA 01111
DER ID No. 64-190

Mr. Otis Rosner

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Justification	<i>Not on file</i>
By _____	
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PHASE I INSPECTION REPORT
NATIONAL DAM INSPECTION PROGRAM

Prepared By:

DEPARTMENT OF THE ARMY
Baltimore District, Corps of Engineers
Baltimore, Maryland 21203

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.

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 design flood is based on the estimated "Probable Maximum Flood" for the region (greatest reasonably possible storm runoff), or fractions thereof. The spillway design 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.

NDI ID No. PA-01111, DER ID No. 64-190

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PHASE I INSPECTION REPORT
NATIONAL DAM INSPECTION PROGRAM

BRIEF ASSESSMENT OF GENERAL CONDITION
AND
RECOMMENDED ACTION

Name of Dam: Rosner Pond Dam
NDI ID No. PA 01111
DER ID No. 64-190

Size: Small (24.5 feet high; 380 acre-feet)

Hazard Classification: High

Owner: Mr. Otis Rosner
Aldenville, PA 18401

State Located: Pennsylvania

County Located: Wayne

Stream: Tributary to West Branch of the Lackawaxen River

Date of Inspection: 25 March 1981

The visual inspection and review of available data indicate that Rosner Pond Dam is in poor condition. The lack of a spillway and the poor condition of the outlet works are the primary deficiencies which cause concern for the safety of this facility. In accordance with the recommended guidelines, the spillway design flood (SDF) for this facility is in the range of 1/2 PMF to full PMF. Based on the size of the dam and degree of downstream hazard, the selected SDF is the 1/2 PMF.

The hydrologic and hydraulic computations indicate that the combination of reservoir storage and outlet works discharge capacity will not pass the SDF (1/2 PMF) prior to overtopping the embankment. Under present conditions, the discharge/storage capacity is 11% of the PMF prior to overtopping. In accordance with the criteria outlined and evaluated in Section 5.5 of this report, the discharge capacity for Rosner Pond Dam is considered to be seriously inadequate. The dam in its present condition is considered to be unsafe, non-emergency.

The following recommendations should be implemented immediately:

- a. The owner should retain a qualified professional engineer experienced in dam design and construction to perform a detailed hydrologic and hydraulic analysis of the dam for the purpose of determining measures required to

ROSNER POND DAM

provide an adequate discharge capacity. The existing outlet works should be evaluated by the engineer as part of this study. Remedial measures recommended by the engineer at the conclusion of his investigations should be implemented immediately by the owner.

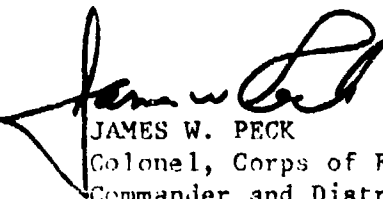
b. The trees and brush should be cleared from the embankment under the guidance of a qualified engineer.

c. A formal surveillance and downstream emergency warning system should be developed for use during periods of heavy or prolonged precipitation.

d. An operation and maintenance manual or plan should be prepared for use as a guide in the operation and maintenance of the dam during normal and emergency conditions.

e. A schedule of regular inspection by a qualified engineer should be developed.

APPROVED BY:
DEPARTMENT OF THE ARMY
BALTIMORE DISTRICT, CORPS OF ENGINEERS



JAMES W. PECK
Colonel, Corps of Engineers
Commander and District Engineer

DATE: 28 July 81

ROSSER POOL DASH



ROSSER POOL DASH

PHASE I INSPECTION REPORT

NATIONAL DAM INSPECTION PROGRAM

ROSNER POND DAM

NDI ID No. PA 01111

DER ID No. 64-190

SECTION 1

PROJECT INFORMATION

1.1 General

a. Authority. The Dam Inspection Act, Public Law 92-367, authorized the Secretary of the Army, through the Corps of Engineers, to initiate a program of inspection of non-federal dams throughout the United States.

b. Purpose. The purpose of this inspection is to determine if the dam constitutes a hazard to human life and property.

1.2 Description of Project.

a. Description of Dam and Appurtenances. Rosner Pond Dam is an earthfill structure approximately 24.5 feet high and 392 feet in length. There is no spillway facility provided for this dam. A rock culvert, which extends through the embankment at its maximum section, is evaluated as an outlet works for the purposes of this report. The culvert is horseshoe shaped and measures approximately four feet wide by eight feet high. Two 14 inch diameter cast iron pipes are visible from the downstream end of the culvert. These pipes extend an unknown distance into the embankment. A roadway passes over the entire length of the embankment.

Note: The U.S.G.S 7.5 minute Quadrangle Sheet (Aldenville, Pa) indicates a reservoir elevation of 1289.0, which is used as the reference elevation for this report.

- b. Location: Clinton Township, Wayne County, Pa.
U.S.G.S. Quadrangle - Aldenville, Pa.
Latitude 41° 39.1'; Longitude 75° 21.2'
Refer to Plates I & II, App. E.

- c. Size Classification: Small: Height 24.5 feet, Storage 380 acre feet
- d. Hazard Classification: High (Refer to Section 3.1.e)
- e. Ownership: Mr. Otis Rosner
Aldenville, Pa 18401
- f. Purpose: Recreation
- g. Design and Construction History:

No information concerning the design and construction of the dam is known to exist other than a statement by the owner that it was originally built as a holding reservoir for the Delaware and Hudson canal system.

- h. Normal Operating Procedure

No formal operating procedures exist. Inflow which exceeds the capacity of the outlet works will be stored until it overflows the low point of the embankment.

1.3 Pertinent Data.

- a. Drainage Area (square miles)

From files:	2.20
Computed for this report:	2.26
Use:	2.26

- b. Discharge at Damsite (cubic feet per second)

Maximum known flood	unknown
Outlet works with maximum pool (El. 1297.0)	40

- c. Elevations (feet above mean sea level)

Top of Dam	
Design	unknown
Existing	1297.0
Normal pool	unknown
Assumed normal pool	1289
Outlet Works	
Upstream invert	unknown
Downstream invert	1273.5
Streambed at toe	1272.5

- d. Reservoir Length (feet)

Normal pool	unknown
Assumed normal pool (El. 1289)	2000
Maximum pool (El. 1297.0)	2400

e. Storage (acre-feet)

Normal pool	unknown
Assumed normal pool (El. 1289)	125
Maximum pool (El. 1297.0)	380

f. Reservoir Surface (acres)

Normal pool	unknown
Assumed normal pool (El. 1289)	25
Maximum pool (El. 1297.0)	40

g. Dam

Note: Refer to Appendix A for profile and section

<u>Type</u>	Random earthfill
<u>Length</u>	392 feet
<u>Top Width</u>	13 feet
<u>Height</u>	24.5 feet
<u>Side Slopes</u>	
Upstream	1V:1.6H
Downstream	Varies, 3V:1H for upper 8.5 feet, 1V:0.8H below
<u>Zoning</u>	Unknown
<u>Cutoff</u>	Unknown
<u>Grouting</u>	Unknown

h. Outlet Works

<u>Type</u>	Two 14 inch cast iron pipes discharge into rock culvert
<u>Closure</u>	None observed or reported

SECTION 2
ENGINEERING DATA

2.1 Design.

The available data for Rosner Pond Dam consist of an inventory form and one inspection report provided by PennDER. The dam has only recently been placed on PennDER's inventory. No other data are known to exist.

2.2 Construction.

No information concerning construction of the dam is known to exist.

2.3 Operation.

No formal records of operation or maintenance exist.

2.4 Evaluation.

a. Availability. All available written information was contained in the files provided by PennDER.

b. Adequacy. The available data, including that collected during the recent detailed visual inspection, are considered to be adequate to make a reasonable assessment of the dam.

SECTION 3

VISUAL INSPECTION

3.1 Observations.

a. General. The overall appearance and general condition of the dam and appurtenances are poor. The facility does not have a spillway and the outlet works are clogged with stones. These and other noteworthy deficiencies are discussed below. The visual inspection checklist, field sketch, and profile are provided in Appendix A. Photographs taken during the inspection are reproduced in Appendix C.

The reservoir pool was approximately 13 feet below the top of dam on the day of the inspection. Present during part of the inspection was John Chernesky of the Pennsylvania Department of Environmental Resources (PennDER).

b. Embankment. A dirt road crosses the crest which curves slightly at both ends. Vehicular traffic on this road is causing some rutting and minor erosion of the crest. The crest is low in the center portion and rises toward the abutments. The upstream face slopes at 1V:1.6H above the water. This slope is covered with dumped rock except for the area over the outlet works where it is hand-placed. This hand-placed area, which is about twenty feet wide, appears to be about one foot lower than the adjacent slopes. This depression may have resulted from poor alignment during construction or settlement of the fill. The downstream face slopes at 3V:1H for the upper 8.5 feet and 1V:0.8H below. This entire slope consists of hand-placed stones. Several large trees and some brush are growing on both the upstream and downstream slopes. The junctions of the embankment and the abutments are good. No signs of cracking, sloughing or erosion, except as noted above, are evident.

c. Appurtenant Structures. This facility does not have a spillway. The only appurtenant structure is a rock culvert which passes through the maximum embankment section. This structure is classified as the outlet works for the purposes of this report. The rock culvert is horseshoe-shaped and measures four feet wide by about eight feet high. The hand-placed stones are in fair condition. There is no evidence of movement or distress within the structure; however, this formal culvert extends only about 20 feet into the embankment, as measured from the downstream toe, before ending in a pile of rocks. Two 14 inch cast iron pipes project from the rocks. The pipe on the right is clogged with stones approximately ten feet upstream of the outfall. This pipe is discharging flow to a depth of about 0.2 foot. The pipe on the left is almost completely filled with rocks and discharges only a small amount of flow. It is assumed that these pipes were added sometime after the rock culvert was constructed. Settlement of the rockfill has pushed these pipes sideways and out of line with the culvert. Pieces of broken cast iron pipe are evident within and downstream of the rock pile. No intake structure for these pipes is visible on the upstream side of the dam. Water can be seen entering the rocks and logs on the upstream face of the dam, but the size of the opening could not be determined. It appears that this intake is being progressively blocked with logs and debris deposited by beavers. At the outlet end of the

rock culvert, water is flowing under the rocks at the toe immediately adjacent to the culvert. The discharge channel is the natural stream which is naturally lined with 6-10 inch stone.

d. Reservoir. The partially wooded reservoir slopes are flat to moderately sloping. These slopes appear stable with no potential for massive slides that would seriously affect reservoir storage. Long Pond Dam, DER No. 64-41, is approximately 0.7 mile upstream of Rosner Pond Dam. This structure is currently breached and impounds no water above the natural lake level. Long Pond, a natural lake, is located 100 feet upstream of the breached structure.

e. Downstream Channel. The first 1,000 feet of channel below the dam is confined with moderate slopes. The floodplain area increases slightly in width through the next 1,200 feet. An improved dirt road crosses this unnamed tributary to the West Branch of Lackawaxen River 1,400 feet below the dam. Less than 100 feet beyond this road is one house within 60 feet of the stream. The first floor of this structure is 6 feet above the streambed. The proximity of this structure to the streambed and the dam together with the confined channel above the house creates the potential for the loss of more than a few lives and property damage should the dam fail. A high hazard classification is appropriate for Rosner Pond Dam. Pennsylvania Route 170 crosses the stream 1.2 miles downstream of the dam. The West Branch of the Lackawaxen River is joined 0.1 mile beyond. Approximately 4.7 miles downstream is Prompton Lake Dam, a 140 foot high flood control structure maintained by the U.S. Army Corps of Engineers. Failure of Rosner Pond Dam would not adversely affect this downstream dam.

f. Evaluation. The lack of a spillway and formal outlet works causes concern for the safety of this structure during a flood event. The outlet works needs extensive rehabilitation or replacement in order to provide a reliable means to draw down the lake when needed and to maintain a normal pool. The trees and brush should be removed from the embankment. In addition, a determination of the cause of the apparent depression on the upstream face at the outlet works is required.

SECTION 4

OPERATIONAL PROCEDURES

4.1 Normal Operating Procedure. The facility has essentially no regulating controls or devices. No spillway exists and the two 14-inch outlet pipes found in the rock-arch culvert (see Appendix C) were discharging a small amount of water. No normal pond would be appropriate as outflow from the reservoir is restricted to evapotranspiration and minor flow through the obstructed outlet pipes. All inflow in excess of the outflow capacity of the pipes would be stored until reaching the top of dam. Large volume inflows would overtop the embankment. No formal operations manual exists.

4.2 Maintenance of Dam. The condition of the dam as observed by the inspection team is indicative of a general lack of maintenance. The embankment has heavy tree growth on both the upstream and downstream faces. Vehicular traffic has rutted the crest of the embankment. No formal maintenance manual exists.

4.3 Maintenance of Operating Facilities. The outlet pipes are partially obstructed and thereby are prevented from operating as intended.

4.4 Warning System. No formal warning system exists.

4.5 Evaluation. No spillway exists at the facility. This condition raises a serious concern for the safety of the dam during a flood event. A spillway should be provided to prevent flows from overtopping the embankment. The outlet works should be made fully operational. Formal manuals of maintenance and operation are recommended to ensure that all needed maintenance is identified and performed regularly. In addition, a formal warning system for the protection of downstream inhabitants should be developed. Included in the plan should be provisions for around-the-clock surveillance of the facility during periods of unusually heavy precipitation.

SECTION 5

HYDROLOGIC/HYDRAULIC EVALUATION

5.1 Design Data. No formal design reports, drawings or calculations are known to exist for the facility.

5.2 Experience Data. Records of reservoir levels and/or spillway discharges are not available. No records of performance are available.

5.3 Visual Observations. On the date of the inspection, two major problems were observed that would prevent the facility from operating safely during a flood event. As noted in Section 4, no spillway exists at the facility. This condition raises a serious concern for the safety of the dam during a flood event. Also, the outlet pipes in the culvert are severely obstructed and are greatly reduced in capacity. Since no spillway is provided at the facility, large volume inflow would exceed the capacity of the outlets, fill the storage to top of dam, and overtop the embankment. See Appendix C for photographs of the outlet pipes, rock arch culvert, and overview pictures of the embankment.

5.4 Method of Analysis. The facility has been analyzed in accordance with procedures and guidelines established by the U.S. Army Corps of Engineers, Baltimore District, for Phase I hydrologic and hydraulic evaluations. This analysis has been performed using a modified version of the HEC-1 computer program developed by the U.S. Army Corps of Engineers, Hydrologic Engineering Center, Davis, California. Capabilities of the program are briefly outlined in the preface contained in Appendix D.

5.5 Summary of Analysis.

a. Spillway Design Flood (SDF). In accordance with the procedures and guidelines contained in the National Guidelines for Safety Inspection of Dams for Phase I Investigations, the SDF for Rosner Pond Dam ranges between the $\frac{1}{2}$ Probable Maximum Flood (PMF) and the full PMF. This classification is based on the relative size of the dam (small) and the potential hazard of failure to downstream development (high). Due to the small storage (380 ac-ft) and small height (24.5 feet), the SDF selected was the $\frac{1}{2}$ PMF.

b. Results of the Analysis. Rosner Pond Dam was evaluated under near normal operating conditions. Based on tree line growth and debris deposited in the lake, it was assumed that the starting lake elevation during a flood event would be elevation 1289. For this study the outlet works was assumed blocked. Since the facility has no spillway, runoff would be stored in the lake until the embankment was overtopped.

Spillway Capacity at Top of Dam	0 cfs
SDF ($\frac{1}{2}$ PMF) peak inflow	2100 cfs
Available Storage - Inches of Runoff	2.2 inches

The overtopping analysis (using HEC-1DB) indicated that the storage capacity of Rosner Pond Dam is 11% of the PMF prior to overtopping the embankment. Under one-half PMF conditions, the dam is overtopped for 8.3

hours to a maximum height of 2.2 feet. Since the SDF for this dam is one-half PMF, it can be concluded that Rosner Pond Dam has a high potential for overtopping, and thus, for breaching by floods of less than SDF magnitude.

To determine if the spillway is seriously inadequate, these conditions must be met:

(i) There is a high hazard to loss of life from large flows downstream of the dam.

(ii) The spillway is not capable of passing one-half PMF without overtopping the dam and causing failure.

(iii) Dam failure resulting from overtopping would significantly increase the hazard to loss of life downstream of the dam from that which would exist just before overtopping.

Since Rosner Pond Dam meets the first two conditions, the third condition must be evaluated and; therefore, a breach analysis was performed.

The modified HEC-1 computer program was used for the breaching analysis. It was assumed that the dam could withstand up to 0.5 foot of overtopping for short durations. The water surface elevation selected to cause failure was elevation 1297.5.

Four breach models were analyzed under conditions that would approximate 0.5 foot of overtopping. The flood selected to cause breaching was 13% of the PMF. Plan 1 was a non-breach analysis used to provide a means of direct comparison between failure and non-failure conditions at downstream locations for the same flood event. Failure times in the three remaining plans were 0.33 hr (Plan 2), 1.00 hr (Plan 3), and 2.00 hrs (Plan 4). Downstream damage elevations and locations are shown in Appendix D and E of this report. Page D-11 of Appendix D provides peak outflows and changes in stage at downstream damage centers. As indicated in the table, failure conditions significantly increase the hazard to loss of life when compared to non-failure conditions. Breach geometry and location are also discussed in Appendix D.

5.6 Spillway Adequacy. Under existing conditions Rosner Pond Dam can accommodate 11% of the PMF prior to overtopping the embankment. Should an event in excess of this occur, the dam would be overtopped and could possibly fail. Since the failure of this dam would significantly increase the hazard to loss of life and property damage at the existing downstream residence, the flood discharge capacity is considered to be seriously inadequate.

SECTION 6

STRUCTURAL STABILITY

6.1 Evaluation of Structural Stability

a. Visual Observations

(1) Embankment. Visual observations of Rosner Pond Dam indicate that the dam is in poor condition. The 24.5 foot high embankment is constructed of random fill. It has dry laid stone on the downstream slope and dumped stone on the upstream slope, except at the outlet works where the stone is hand placed. The left end of the upstream slope is not protected by riprap; however, erosion is not a problem. Brush and several large trees are growing on the embankment. No seepage was observed. The embankment slopes are steep; however, no signs of instability were noted.

(2) Appurtenant Structures. Rosner Pond Dam has no spillway. It appears that the dam was originally built as a road embankment with a hand placed arched-rock culvert at the base of the embankment. The rock culvert is judged to be sound; no signs of instability or deterioration were observed. Two cast iron pipes, estimated to be 14 inches in diameter, discharge into the upstream end of the culvert approximately 4.5 feet above the base. Apparently, the function of these pipes is to regulate the lake elevation. However, it could not be determined if the pipes have an upstream cutoff. The flow through these pipes is restricted enough that the lake elevation is usually about 5 feet higher than it was the day of the inspection.

b. Design and Construction Data

(1) Embankment. None.

(2) Appurtenant Structures. None.

c. Operating Records. None.

d. Post Construction Changes. No information exists to determine if changes were made. It appears that the dam was constructed as a road embankment as noted in 6.1a(2) and later was used as a dam.

e. Seismic Stability. The dam is located in Seismic Zone 1. Based on visual observations, it is statically stable. Therefore, the seismic stability is considered adequate.

SECTION 7

ASSESSMENT AND RECOMMENDATIONS

7.1 Dam Assessment.

a. Safety. The visual inspection and review of available data indicate that Rosner Pond Dam is in poor condition. The lack of a spillway and the poor condition of the outlet works are the primary deficiencies which cause concern for the safety of this facility. In accordance with the recommended guidelines, the spillway design flood (SDF) for this facility is in the range of 1/2 PMF to full PMF. Based on the size of the dam and degree of downstream hazard, the selected SDF is the 1/2 PMF.

The hydrologic and hydraulic computations indicate that the combination of reservoir storage and outlet works discharge capacity will not pass the SDF (1/2 PMF) prior to overtopping the embankment. Under present conditions, the discharge/storage capacity is 11% of the PMF prior to overtopping. In accordance with the criteria outlined and evaluated in Section 5.5, the discharge capacity for Rosner Pond Dam is considered to be seriously inadequate. The dam in its present condition is considered to be unsafe, non-emergency.

b. Adequacy of Information. The data contained in PennDER files, in conjunction with data collected during the recent visual inspection, are considered to be adequate for making a reasonable assessment of this dam.

c. Urgency. The recommendations presented below should be implemented immediately.

d. Necessity for Additional Studies. The results of this inspection indicate a need for additional studies by a qualified professional engineer to perform a detailed hydrologic and hydraulic analysis for the purpose of providing an adequate discharge capacity for this dam.

7.2 Recommendations.

a. The owner should immediately retain a qualified professional engineer experienced in dam design and construction to perform a detailed hydrologic and hydraulic analysis of the dam for the purpose of determining measures required to provide an adequate discharge capacity. The existing outlet works should be evaluated by the engineer as part of this study. Remedial measures recommended by the engineer at the conclusion of his investigations should be implemented immediately by the owner.

b. The trees and brush should be cleared from the embankment under the guidance of a qualified engineer.

c. A formal surveillance and downstream emergency warning system should be developed for use during periods of heavy or prolonged precipitation.

d. An operation and maintenance manual or plan should be prepared for use as a guide in the operation and maintenance of the dam during normal and emergency conditions.

e. A schedule of regular inspection by a qualified engineer should be developed.

APPENDIX A

CHECKLIST - VISUAL INSPECTION

Check List
Visual Inspection
Phase I

Name Dam Rosner Pond DER ID No. 64-190 County Wayne State Pennsylvania

Date(s) Inspection 25 Mar 81 Weather Cloudy Temperature 40°

Pool Elevation at Time of Inspection 1284 M.S.L. Tailwater at Time of Inspection 1273 M.S.L.

Inspection Personnel:

J. Bianco, C.O.E. E. Hecker, C.O.E.

B. Cortright, C.O.E. J. Chernesky, PennDER

J. Evans, C.O.E.

B. Cortright Recorder

EMBANKMENT

OBSERVATIONS

VISUAL EXAMINATION OF

Any Noticeable Seepage None.

Junction of Embankment with:

Abutments Abutments - Good
Spillway Spillway - None

Surface Cracks None.

Crest Alignment:

Vertical Vertical - Low in middle; rises toward abutments
Horizontal Horizontal - Fair; curves near both ends

Unusual Movement or Cracking at or beyond the toe

None.

EMBANKMENT

VISUAL EXAMINATION OF OBSERVATIONS

Sloughing or Erosion:

Embankment Crest/Slopes

Minor erosion of crest due to vehicular traffic.

Abutment Slopes

Riprap

Dumped rock on upstream slope except hand placed at culvert area. Hand placed on downstream face.

Staff Gage and Recorder

None.

Instrumentation

None.

Miscellaneous

Trenches on u/s and d/s slopes.

OUTLET WORKS

VISUAL EXAMINATION OF

OBSERVATIONS

Intake Structure

None. Water seen flowing into rocks and logs below waterline; in line with conduit

Outlet Conduit

Two 14 inch cast iron pipes in poor condition and blocked with rocks on upstream portion. Pipes discharge into rock culvert in fair condition. Flowing 0.5 foot deep.

Outlet Structure

Portal of rock culvert; fair condition.

Emergency Gate

None observed or reported.

Outlet Channel

Original streambed; natural rock and earth bottom.
No obstructions

SPILLWAY

VISUAL EXAMINATION OF	OBSERVATIONS
Approach Channel	N/A
Weir	Dam does not have a spillway.
Bridge and Piers	None.
Discharge Channel	N/A

RESERVOIR

VISUAL EXAMINATION OF

OBSERVATIONS

Slopes

Slopes are moderate and wooded. Appear stable.

Sedimentation

None apparent.

DOWNSTREAM CHANNEL

VISUAL EXAMINATION OF

OBSERVATIONS

Condition:

Obstructions, Debris, etc.

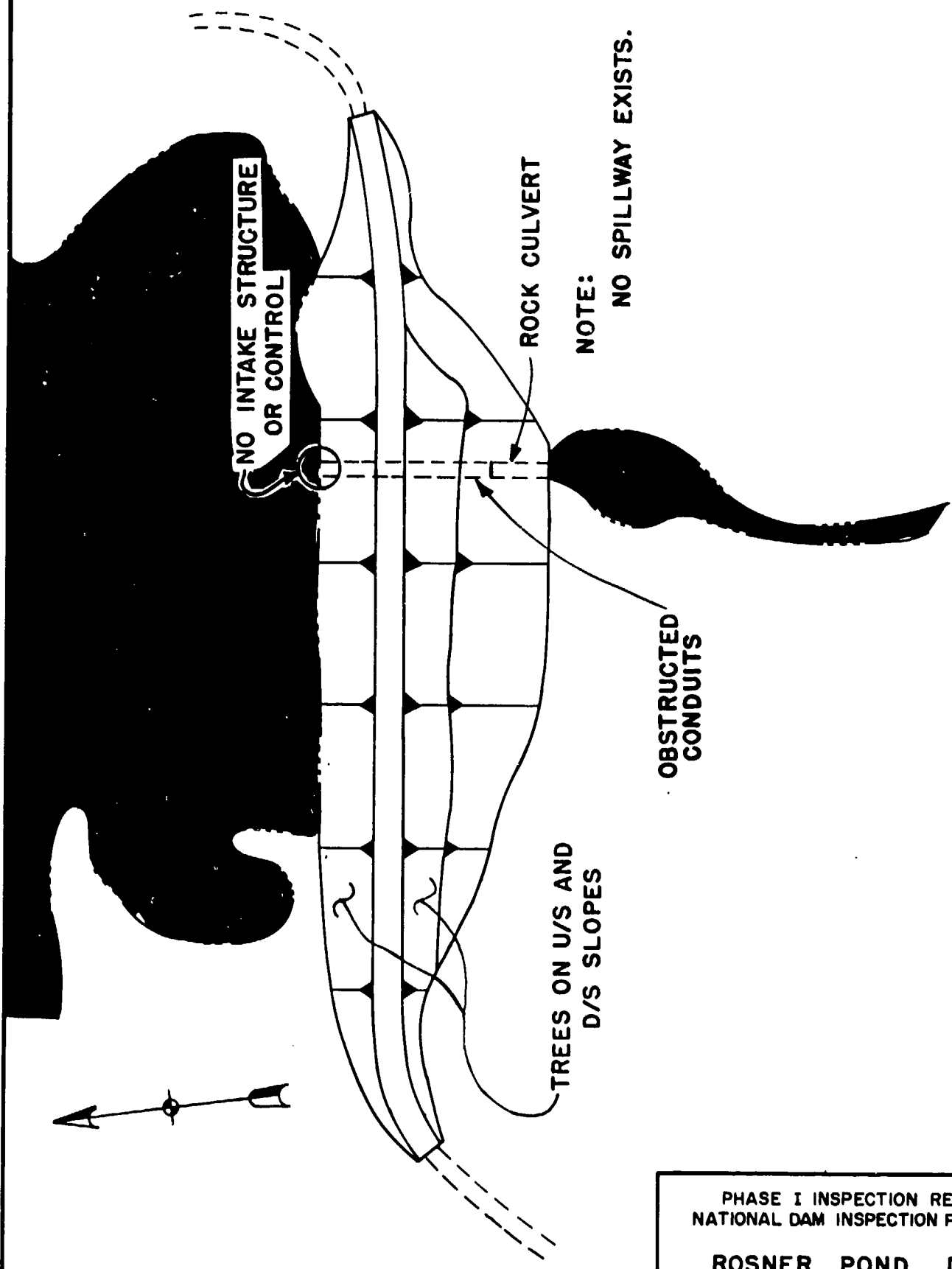
Improved dirt road crosses stream 1,500 feet below dam.
Pa. Route 170 is 1.2 miles d/s. Joins W. Branch
Lackawaxen River 1.3 miles from dam. Prompton Lake Dam
4.7 miles d/s.

Slopes

Moderate channel slope. Moderate to steep side slopes.

Approximate Number
of Homes

One home 1,600 feet below dam; within 50 feet of channel.
First floor 6 feet above streambed.

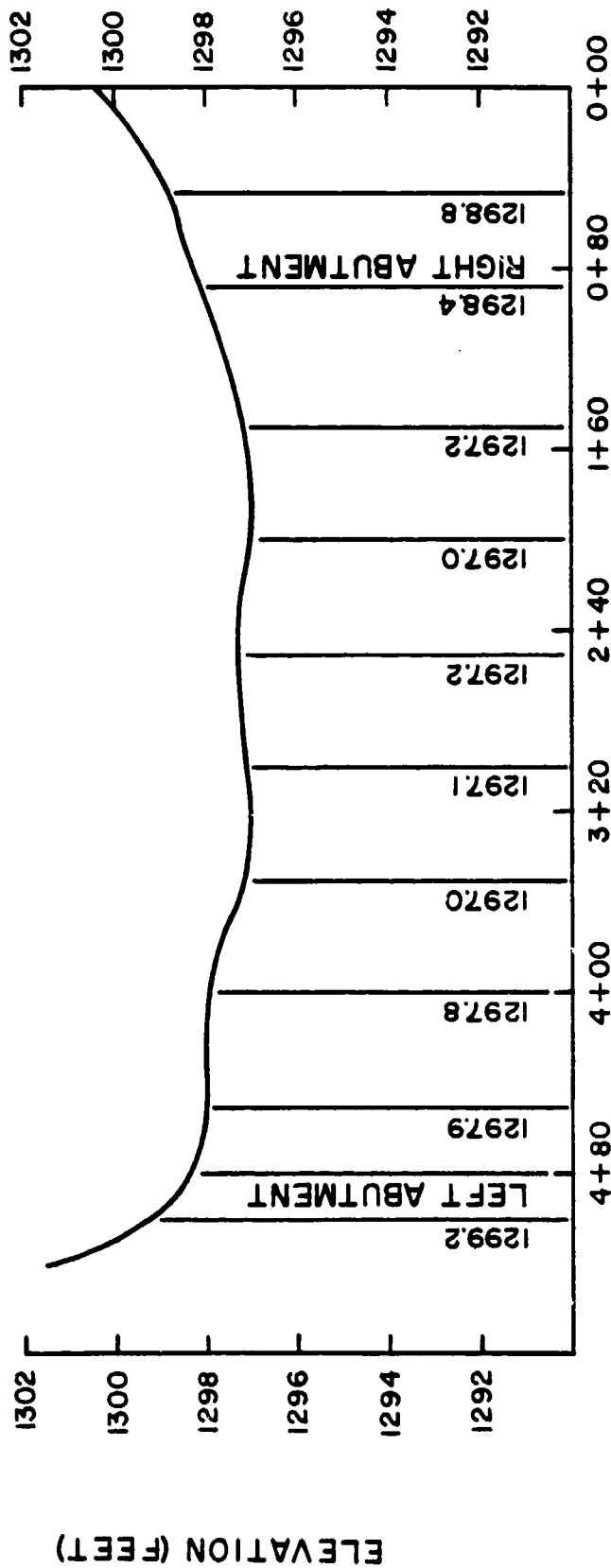


NOT TO SCALE

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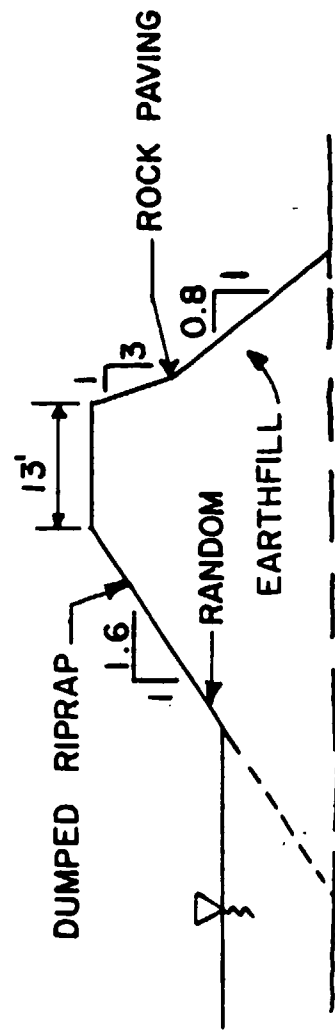
ROSNER POND DAM
 OTIS ROSNER
 FIELD SKETCH

JULY 1981 EXHIBIT A-1



TOP OF DAM - PROFILE

HORIZ.: 1 IN. = 80 FT.
SCALE - VERT.: 1 IN. = 4 FT.



SECTION
SCALE 1 IN = 20 FT.

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ROSNER POND DAM
OTIS ROSNER

PROFILE AND SECTION

JULY 1981

EXHIBIT A-2

APPENDIX B

CHECKLIST - ENGINEERING DATA

Check List
Design, Construction, Operation
Phase I

ITEM	REMARKS
As-built Drawings	None.
Regional Vicinity Map	U.S.G.S. Quadrangle - Aldenville, PA, 7 1/2 minute quad sheet. See Appendix E, Plate E-II.
Construction History	No data available.
Typical Sections of Dam	None.
Outlets - Plan Detail Constraints Discharge Ratings	No data. Two 14" cast iron pipes are means of regulating pool level, which are contained within a rock culvert.
Rainfall/Reservoir Records	None.

ITEM	REMARKS
Design Reports	None.
Geology Reports	None.
Design Computations Hydrology & Hydraulics Dam Stability Seepage Studies	None.
Materials Investigations Boring Records Laboratory Field	None.
Post-Construction Surveys of Dam	No data exists to determine if post construction changes have been made.
Borrow Sources	No data.

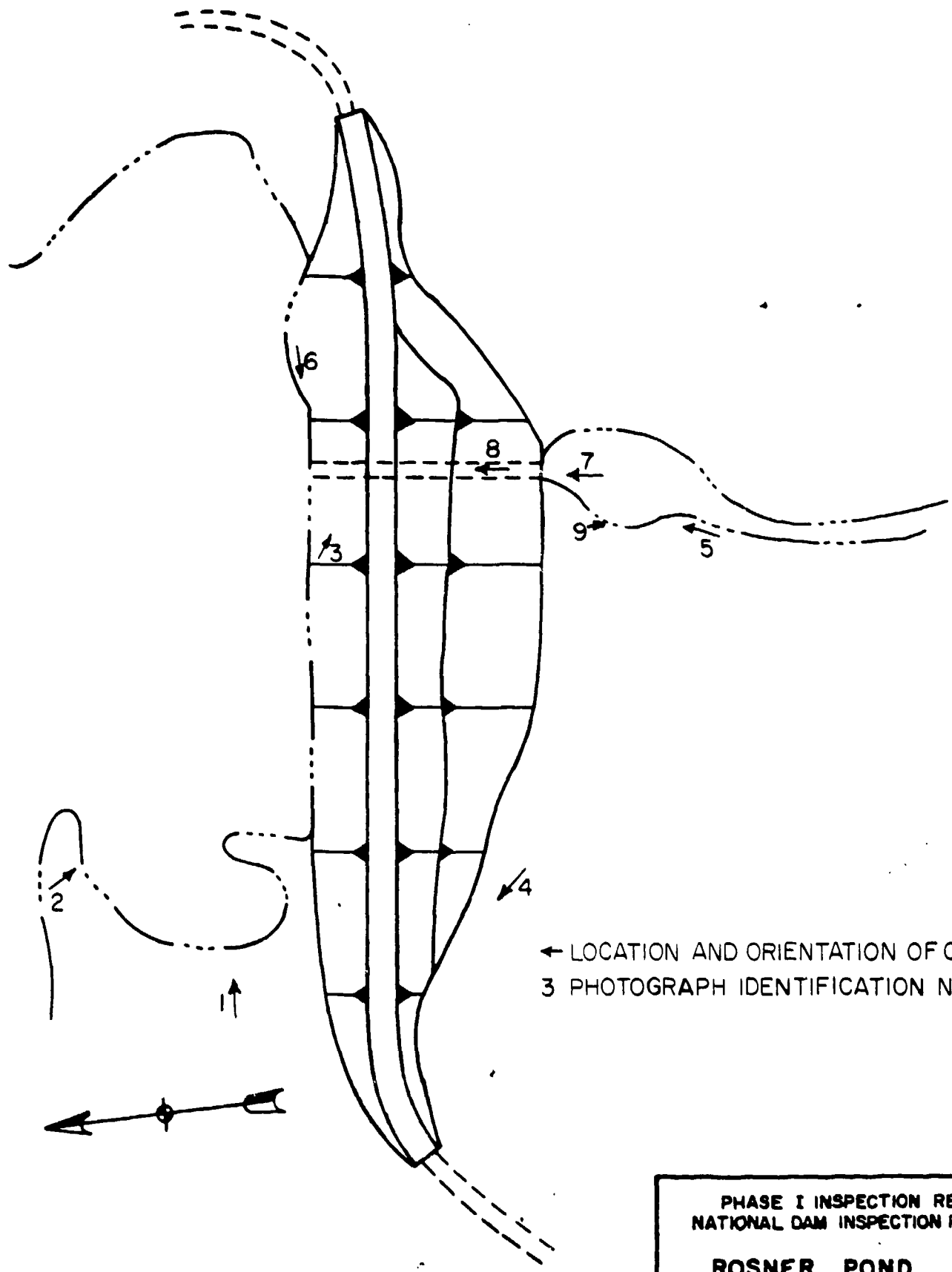
ITEM	REMARKS
Monitoring Systems	None.
Modifications	No data exists to determine if changes have been made.
High Pool Records	None.
Post-Construction Engineering Studies and Reports	None.
Prior Accidents or Failure of Dam Description Reports	N/A.
Maintenance Operation Records	None.

ITEM	REMARKS
Spillway Plan Sections Details	N/A.
Operating Equipment Plans & Details	N/A.
Specifications	No data.
Miscellaneous	Inspection reports by PennDer in July 1972.

APPENDIX C

PHOTOGRAPHS

NOT TO SCALE



← LOCATION AND ORIENTATION OF CAMERA
3 PHOTOGRAPH IDENTIFICATION NUMBER

PHASE I INSPECTION REPORT
NATIONAL DAM INSPECTION PROGRAM

ROSNER POND DAM
OTIS ROSNER
PHOTOGRAPH LOCATION
PLAN

NOT TO SCALE

JULY 1981

EXHIBIT C-1

ROCKY POINT DAM



VIEW OF THE DAM FROM THE WEST



VIEW OF THE DAM FROM THE WEST
IN THE AFTERNOON

REVEREND DAM



3. View of dam structure and rock work
upstream from the dam with concrete



4. Downstream face of dam right abutment.



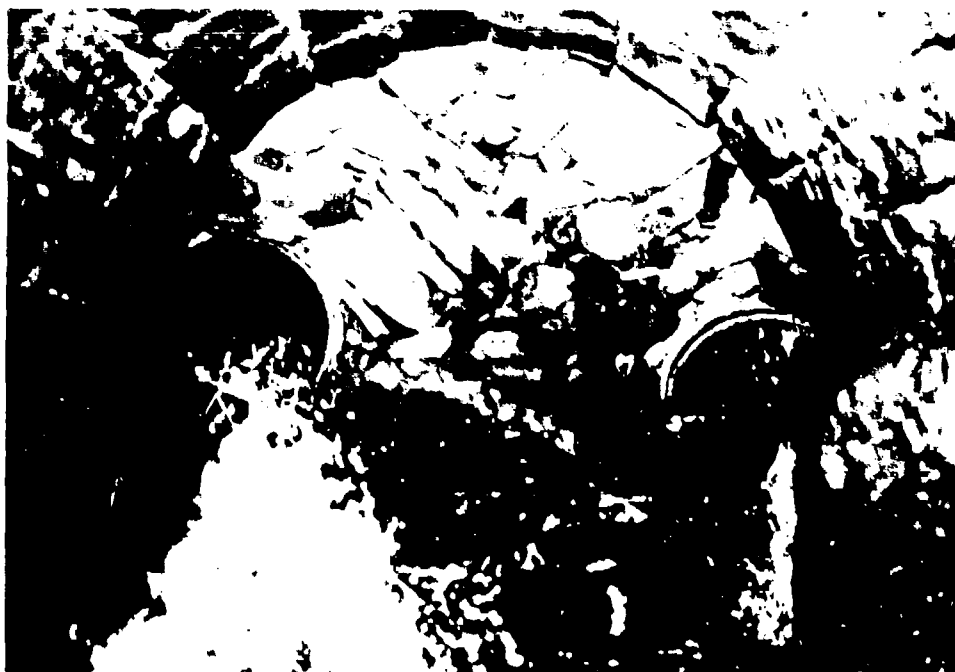
5. Downstream face at center of dam.



6. Location of upstream face where water is entering embankment. (Apparent source of culvert discharge)



7. - Fracture in rock face at base of cliff.



8. - Rock face and cast-iron pipe at
aperture of tunnel at base of cliff.

ROSNER POND DAM



9. Downstream channel 100 feet beyond rock.



10. Downstream hazied. Streambed in foreground.

APPENDIX D

HYDROLOGY AND HYDRAULICS

PREFACE

The modified HEC-1 program is capable of performing two basic types of hydrologic analyses: 1) the evaluation of the overtopping potential of the dam; and 2) the estimation of the downstream hydrologic-hydraulic consequences resulting from assumed structural failures of the dam. Briefly, the computational procedures typically used in the dam overtopping analysis are as follows:

- a. Development of an inflow hydrograph(s) to the reservoir.
- b. Routing of the inflow hydrograph(s) through the reservoir to determine if the event(s) analyzed would overtop the dam.
- c. Routing of the outflow hydrograph(s) from the reservoir to desired downstream locations. The results provide the peak discharge(s), time(s) of the peak discharge(s), and the maximum stage(s) of each routed hydrograph at the downstream end of each reach.

The evaluation of the hydrologic-hydraulic consequence resulting from an assumed structural failure (breach) of the dam is typically performed as shown below.

- a. Development of an inflow hydrograph(s) to the reservoir.
- b. Routing of the inflow hydrograph(s) through the reservoir.
- c. Development of a failure hydrograph(s) based on specified breach criteria and normal reservoir outflow.
- d. Routing of the failure hydrograph(s) to desired downstream locations. The results provide estimates of the peak discharge(s), time(s) to peak and maximum water surface elevations of failure hydrographs for each location.

HYDROLOGY & HYDRAULIC ANALYSIS
DATA BASE

NAME OF DAM: ROSNER POND DAM

PROBABLE MAXIMUM PRECIPITATION (PMP) = 21.5 INCHES/24 HOURS (1)

DELAWARE RIVER BASIN

STATION	1	2	3
STATION DESCRIPTION	ROSNER POND DAM		
DRAINAGE AREA (SQUARE MILES)	2.26		
CUMULATIVE DRAINAGE AREA (SQUARE MILES)	2.26		
ADJUSTMENT OF PMF FOR (1)	ZONE 1		
6 HOURS	111		
12 HOURS	123		
24 HOURS	133		
48 HOURS	142		
72 HOURS			
SNYDER HYDROGRAPH PARAMETERS			
Zone (2)	1		
C _p (3)	0.45		
C _t (3)	1.23		
L ^t (MILES) (4)	3.37		
L _{ca} (MILES) (4)	1.80		
tp = C _t (L · L _{ca}) 0.3 (HOURS)	2.11		
SPILLWAY DATA			
CREST LENGTH (FEET)	N/A		
FREEBOARD (FEET)			

(1) HYDROMETEOROLOGICAL REPORT - 33, U. S. Army Corps of Engineers, 1956, AND U.S. WEATHER BUREAU.

(2) Hydrologic zone defined by Corps of Engineers, Baltimore District, For Determination of Snyder Coefficients (C_p and C_t).

(3) Snyder Coefficients

(4) L = Length of longest watercourse from dam to basin divide.

L_{ca} = Length of longest watercourse from dam to point opposite basin centroid.

SUBJECT DAM SAFETY ANALYSISCOMPUTATIONS ROSKER POND DAM SHEET 1 OF _____ SHEETSCOMPUTED BY MB CHECKED BY _____ DATE 4-22-81DAM CLASSIFICATION :

SIZE OF DAM	-	SMALL
HAZARD	-	HIGH
REQUIRED SAF	-	1/2 PMF TO FULL PMF

DAM STATISTICS :

HEIGHT OF DAM	-	24.5 FEET
STORAGE AT NORMAL POOL	-	undetermined
STORAGE AT TOP OF DAM	-	380 AC-FT
DRAINAGE AREA ABOVE DAMSITE	-	2.26 MI ²

ELEVATIONS : (MSL)

TOP OF DAM LOW POINT (FIELD)	-	1297.0
NORMAL POOL	-	UNDETERMINED
STREAMBED AT TOE	-	1272.5

HYDROGRAPH PARAMETERS :

RIVER BASIN - DELEWARE RIVER BASIN
 ZONE - 1

SYNDER COEFFICIENTS :

$$C_p = 0.45$$

$$C_t = 1.23$$

MEASURED PARAMETERS :*

L = LENGTH OF LONGEST WATERCOURSE	L = 17800ft.
L _{CA} = LENGTH OF LONGEST WATERCOURSE TO CENTROID OF THE BASIN	L = 3337 miles L _{CA} = 9500ft L _{CA} = 1.80 miles

* - FROM U.S.G.S. QUAD SHEET ENTITLED ALDENVILLE, PA.
 7 1/2 MINUTE SERIES, SCALE 1:24000

SUBJECT DAM SAFETY ANALYSISCOMPUTATIONS ROSENEF POND DAM SHEET 2 OF _____ SHEETSCOMPUTED BY gpb CHECKED BY _____ DATE 4-22-81

NOTE: ELEVATIONS ARE REFERENCED TO TOPOGRAPHIC DATA IN AREA OF EMBANKMENT. CONTOUR LINES IN VICINITY OF DAM INDICATE TOP OF DAM VERY CLOSE TO ELEVATION 1300.0. ASSUME STARTING POOL AT ELEVATION 1289 AS GIVEN ON QUAD SHEET.

$L_p =$ SYNDERS BASIN LAG TIME

$$L_p = C_L (L L C_A)^{0.3}$$

$$= 1.23 (3.37 (1.80))^{0.3} = 2.11 \text{ HOURS}$$

RESERVOIR CAPACITY:

- SURFACE AREA AT STARTING POOL (1289) - 25 ACRES (FROM QUAD SHEET)
- SURFACE AREA AT ELEVATION (1300) - 50 ACRES

ASSUME CONICAL METHOD APPLIES TO FIND LOW POINT IN POOL, BELOW STARTING POOL

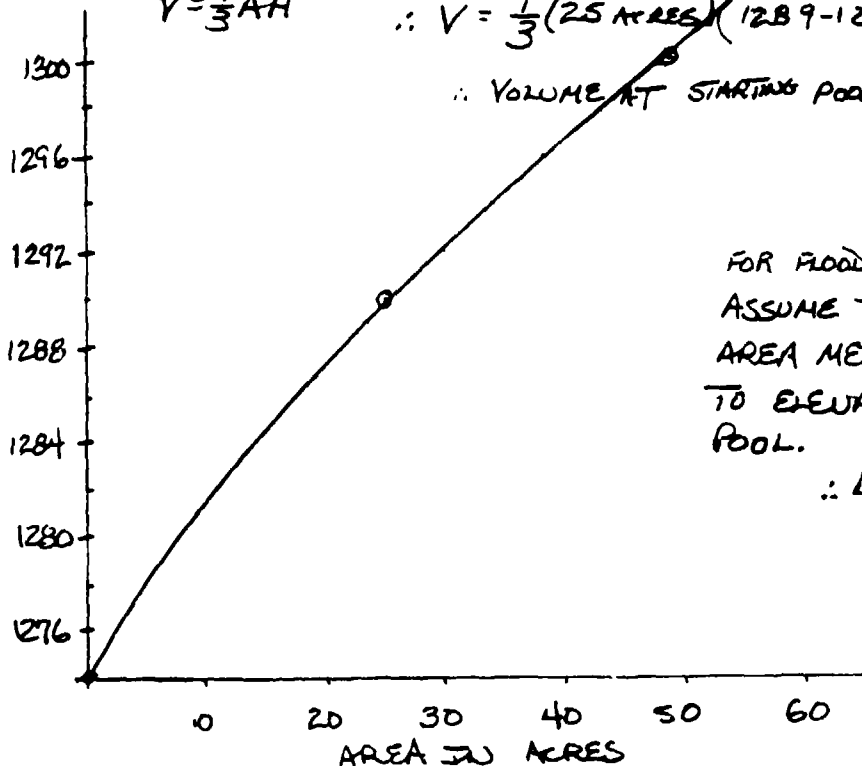
VOLUME AT STARTING POOL - TO BE COMPUTED

ASSUME BOTTOM OF POOL AT ELEVATION 1274.0

$$V = \frac{1}{3} A H \quad \therefore V = \frac{1}{3} (25 \text{ ACRES}) (1289 - 1274) = 125 \text{ AC-FT}$$

\therefore VOLUME AT STARTING POOL $\approx 125 \text{ AC-FT}$

ELEVATION - FEET ABOVE MSL



FOR FLOOD ROUTING PURPOSES ASSUME THE AVERAGE END AREA METHOD IS SUITABLE TO ELEVATIONS ABOVE STARTING POOL.

$$\therefore \Delta V = \left(\frac{A_1 + A_2}{2} \right) \Delta H$$

SUBJECT DAM SAFETY ANALYSISCOMPUTATIONS ROSWER POND DAMSHEET 3 OF _____ SHEETSCOMPUTED BY JPB

CHECKED BY _____

DATE 4-28-81ELEVATION - STORAGE TABLE:

ELEVATION (MSL)	AREA (ACRES)	ΔH (FT)	$\Delta V = \left(\frac{A_1 + A_2}{2}\right) \Delta H$ (AC-FT)	CUMULATIVE VOLUME (AC-FT)
1274	0	-	0	0
1289	25	-	125	125
1290	27	1	26	151
1292	30	2	57	208
1294	34	2	64	272
1296	38	2	72	344
1297 * (TOO)	40	1	39	383
1298	43	1	41.5	424.5
1300	50	2	93	517.5
1305	64	5	285	802.5

NOTE DRAINAGE AREA ABOVE DAM IS 226 MI².

ELEVATION (MSL)	STORAGE (AC-FT)
1274	0
1289	125
1290	150
1292	210
1294	270
1296	340
1297 (TOO)	380
1298	420
1300	520
1305	800

THIS DATA TO
BE INPUT ON
42 Y5 CARDS.↑
ROUNDED VALUES

*(TOO) - TOP OF DAM

SUBJECT DAM SAFETY ANALYSISCOMPUTATIONS ROSNER POND DAM SHEET 4 OF _____ SHEETSCOMPUTED BY JPB CHECKED BY _____ DATE 4-23-81IMP CALCULATIONS:

- APPROXIMATE RAINFALL INDEX = 21.5 INCHES
(CORRESPONDS TO A DURATION OF 24 HOURS AND A DRAINAGE AREA OF 200 mi²)
- DELAWARE RIVER BASIN
- DEPTH-AREA-DURATION ZONE 1 : FROM HYDROMET #33
- RECALL DRAINAGE AREA = 2.26 mi²

<u>DURATION</u>	<u>PERCENT OF INDEX RAINFALL</u>
6	111
12	123
24	133
48	142

NOTE: HOP BROOK FACTOR IS INTERNALLY COMPUTED BY THE HEC1DB PROGRAM. FOR A DRAINAGE AREA OF 226 mi² THE ADJUSTMENT FACTOR = 0.80. THIS ADJUSTMENT IS FOR BASIN SHAPE AND FOR THE LESSER LIKELIHOOD OF A SEVERE STORM CENTERING OVER A SMALL BASIN.

THE ABOVE VALUES ASSUME THE VALUES CORRESPONDING TO A 10 mi² AREA MAY BE APPLIED TO THIS AREA.

SDF:

BASED ON THE HEIGHT OF DAM (23.5 FEET) AND THE STORAGE (380 AC-FT) THE SDF SELECTED FOR THIS DAM IS 1/2 THE PROBABLE MAXIMUM FLOOD (PMF).

SUBJECT DAM SAFETY ANALYSISCOMPUTATIONS ROSNER POND DAMSHEET 5 OF _____ SHEETSCOMPUTED BY JPB CHECKED BY _____ DATE 4-28-81EMERGENCY SPILLWAY CAPACITY:

SINCE THERE IS NO FORMAL SPILLWAY STRUCTURE THERE ARE NO CALCULATIONS. THE ENTIRE DAM ACTS AS A BROAD-CRESTED WEIR AND IS COMPUTED IN THE FOLLOWING SECTION.

EMBANKMENT RATING CURVE:

THIS ANALYSIS ASSUMES THAT THE EMBANKMENT BEHAVES AS A BROAD-CRESTED WEIR IF OVERTOPPING OCCURS. DISCHARGE CAN BE ESTIMATED BY:

$$Q = C L H_w^{3/2}$$

WHERE:

- Q = DISCHARGE OVER EMBANKMENT, IN CFS
 L_w = LENGTH OF EMBANKMENT, OVERFLOW IN FEET
 H_w = WEIGHTED HEAD IN FEET, AVERAGE FLOW AREA WEIGHTED ABOVE LOW POINT OF DAM
 C = COEFFICIENT OF DISCHARGE

C = 2.85 FROM VARNELL & WAGLER FOR BROAD-CRESTED WEIR

LENGTH OF EMBANKMENT INUNDATED VS. RESERVOIR ELEVATION:

<u>RESERVOIR ELEVATION (MSL)</u>	<u>EMBANKMENT LENGTH (FT)</u>
1297	0
1298	300
1299	392 *
1300	392 *
1305	392 *
1310	392 *

* MAXIMUM LENGTH OF EMBANKMENT. DOES NOT INCLUDE FLOW OVER OVBANKS.

SUBJECT DAM SAFETY ANALYSISCOMPUTATIONS ROSNER POND DAMSHEET 6 OF _____ SHEETSCOMPUTED BY GPB CHECKED BY _____ DATE 4-29-81EMBANKMENT RATING TABLE:

C = 2.85

RESERVOIR ELEVATION (MSL)	L ₁ (ft)	L ₂ (ft)	INCREMENTAL HEAD, H _i (ft)	INCREMENTAL FLOW AREA, A _i (ft ²)	TOTAL FLOW AREA, A _T (ft ²)	WEIGHTED HEAD, H _W (ft)	Q (CFS)
1297	0	-	-	-	-	-	0
1298	300	0	1.0	150	150	0.50	302
1299	392	300	1.0	346	496	1.27	1598
1300	392	392	1.0	392	888	2.27	3820
1305	392	392	5.0	1960	2848	7.26	21854
1310	392	392	5.0	1960	4808	12.26	47960

① $A_i = H_i [(L_1 + L_2) / 2]$

② $H_W = A_T / L$

③ $Q = C L H_W^{3/2}$

TOTAL FACILITY RATING CURVE:

RESERVOIR ELEVATION (MSL)	Q _{SPILLWAY} (CFS)	Q _{EMBANKMENT} (CFS)	Q _{TOTAL} (CFS)
1297	0	0	0
1298	0	300	300
1299	0	1600	1600
1300	0	3820	3820
1305	0	21900	21900
1310	0	48000	48000

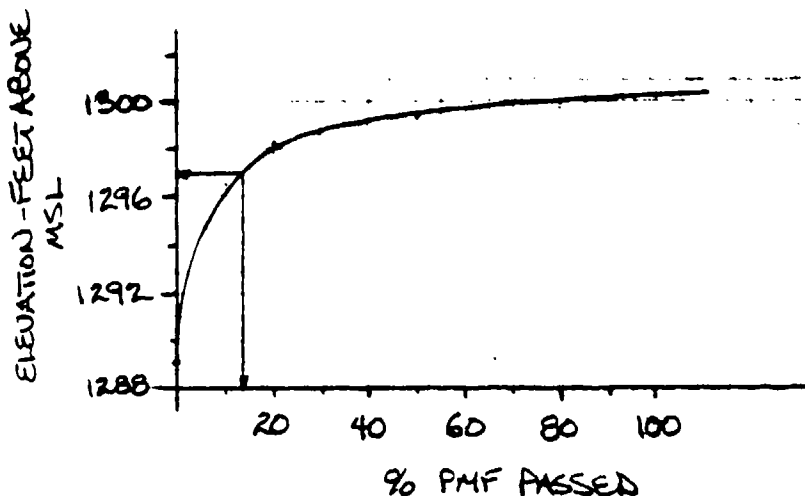
THE ABOVE VALUES WILL BE INPUT ON Y4 + Y5 CARDS.

SUBJECT DAM SAFETY ANALYSISCOMPUTATIONS ROSWER POND DAMSHEET 7 OF _____ SHEETSCOMPUTED BY gpb

CHECKED BY _____

DATE 4-29-81RESULTS OF OVERTOPPING ANALYSIS:

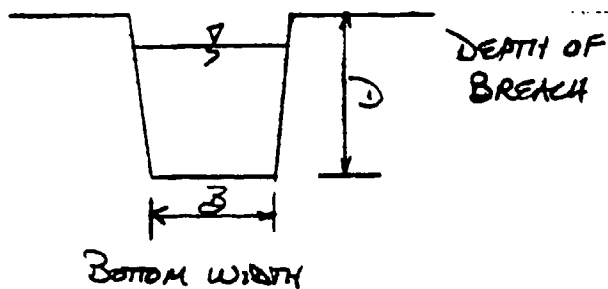
FROM PAGE A- , THE FOLLOWING CURVE CAN BE DRAWN FROM THE SUMMARY TABLE OF THIS APPENDIX.



TOP OF DAM IS AT ELEVATION
1297.0

ROSWER POND DAM CAN PASS
11% OF THE PMF PRIOR TO
OVERTOPPING THE EMBANKMENT.

THIS FACILITY CAN CONTROL 11% OF THE PMF. AT THE SDF ($\frac{1}{2}$ PMF) THE DAM IS OVERTOPPED TO A MAXIMUM HEIGHT OF 2.2 FEET FOR A TOTAL DURATION OF ≈ 8.3 HOURS. SINCE IT IS FELT THAT AT 50% OF THE PMF, THE DAM WOULD FAIL DUE TO OVERTOPPING; THEREFORE, A BREACH ANALYSIS IS REQUIRED.

BREACH ANALYSIS:

RUN BREACH AT ≈ 0.5 FEET
OF OVERTOPPING. FAILURE ELEVATION AT 1297.5, SO USE
FLOOD OF $\approx 13\%$ PMF.

SUBJECT DAM SAFETY ANALYSISCOMPUTATIONS ROSWER POND DAM SHEET 8 OF _____ SHEETSCOMPUTED BY gpb CHECKED BY _____ DATE 5-1-81HEC10B INPUT PARAMETERS FOR BREACH ANALYSIS

FOUR PANS WILL BE USED FOR A DIRECT COMPARISON OF FAILURE VS. NON-FAILURE CONDITIONS. PLAN 1 WILL BE A NON FAILURE PLAN, ALL OTHERS ASSUME FAILURE.

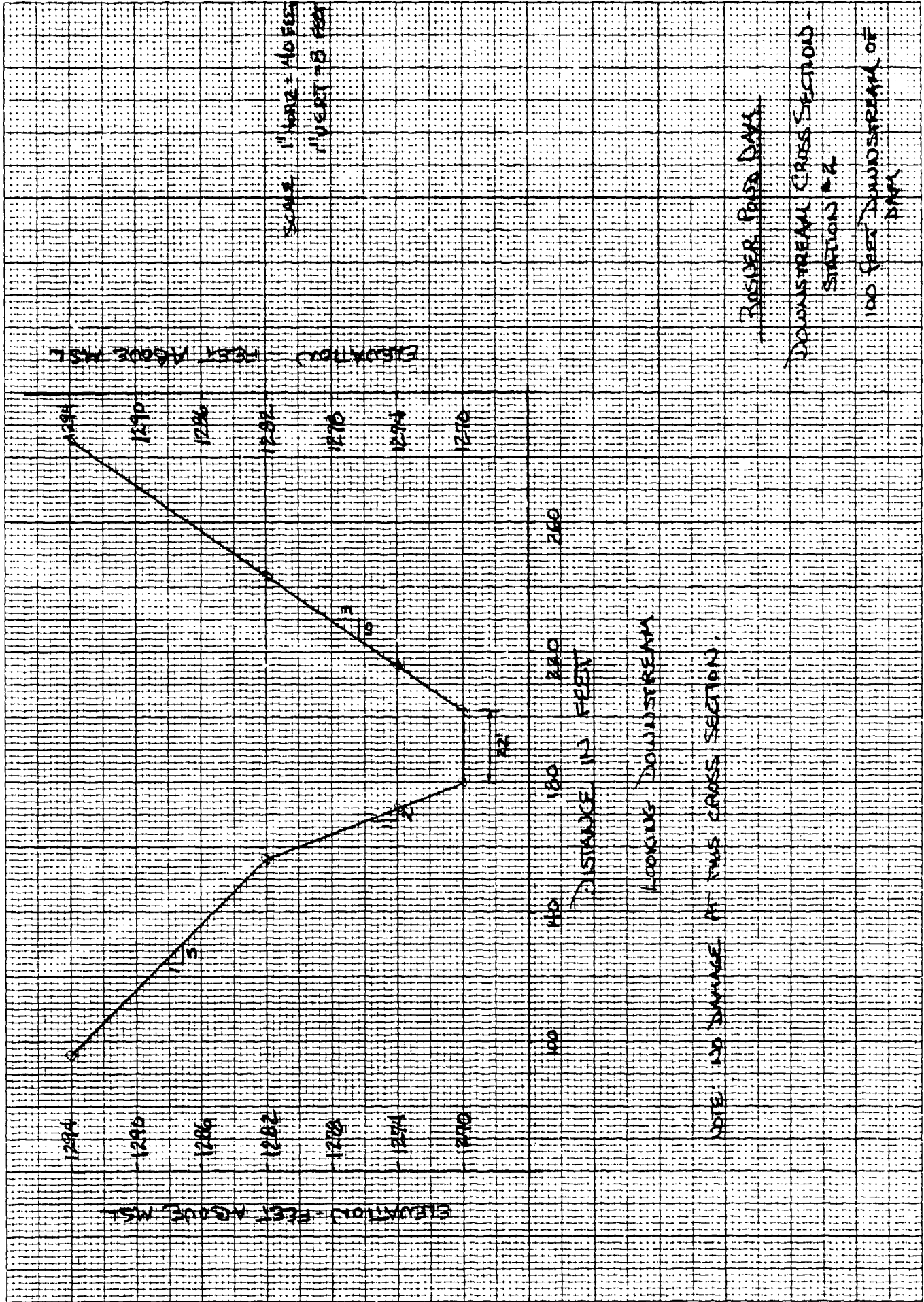
PLAN NUMBER	BREACH BOTTOM WIDTH (FT)	FULL BREACH DEPTH (FT)	SIDESLOPES (H ON V)	TOTAL BREACH TIME (HRS)
1		non-failure plan		
2	75	17.5	1H ON 1V	0.33
3	75	17.5	1H ON 1V	1.00
4	75	17.5	1H ON 1V	2.00

HEC10B OUTPUT:

RESULTS OF BREACH ANALYSIS. AS NOTED ABOVE PLAN 1 IS A NON-FAILURE FOR DIRECT COMPARISON.

PLAN NUMBER	MAXIMUM OUTFLOW OVERDAM AND/OR THRU BREACH (CFS)	DOWNSTREAM DAMAGE CENTER #1	
		STAGE (MSL)	FLOW (CFS)
1	160	1245.5	160
2	13900	1253.7	11400
3	7260	1252.0	7230
4	2610	1249.0	2430

DAMAGE AT DOWNSTREAM CENTER - 1250.0



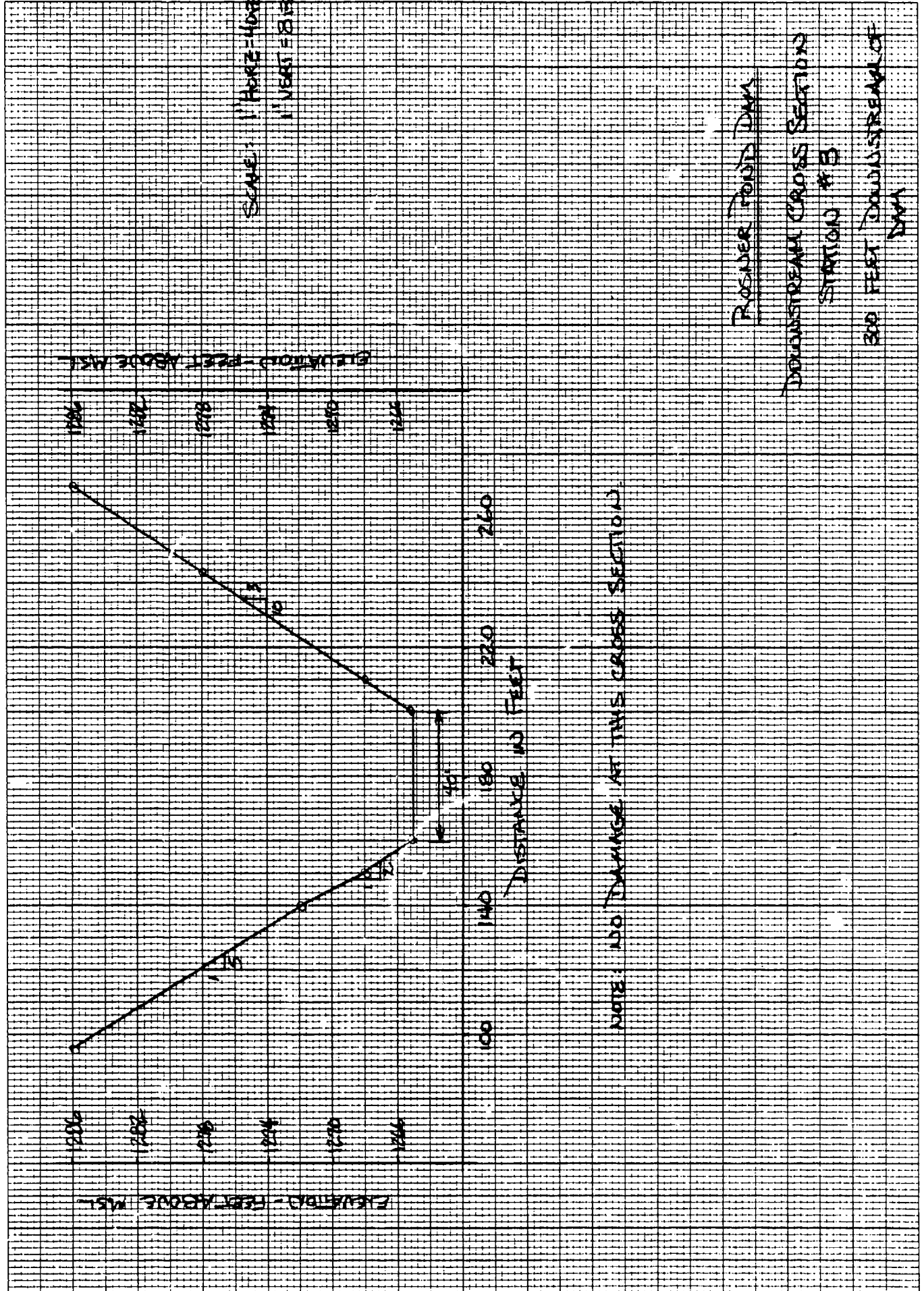
SCALE: 1" HORIZ = 40 FEET
1" VERT = 8 FEET

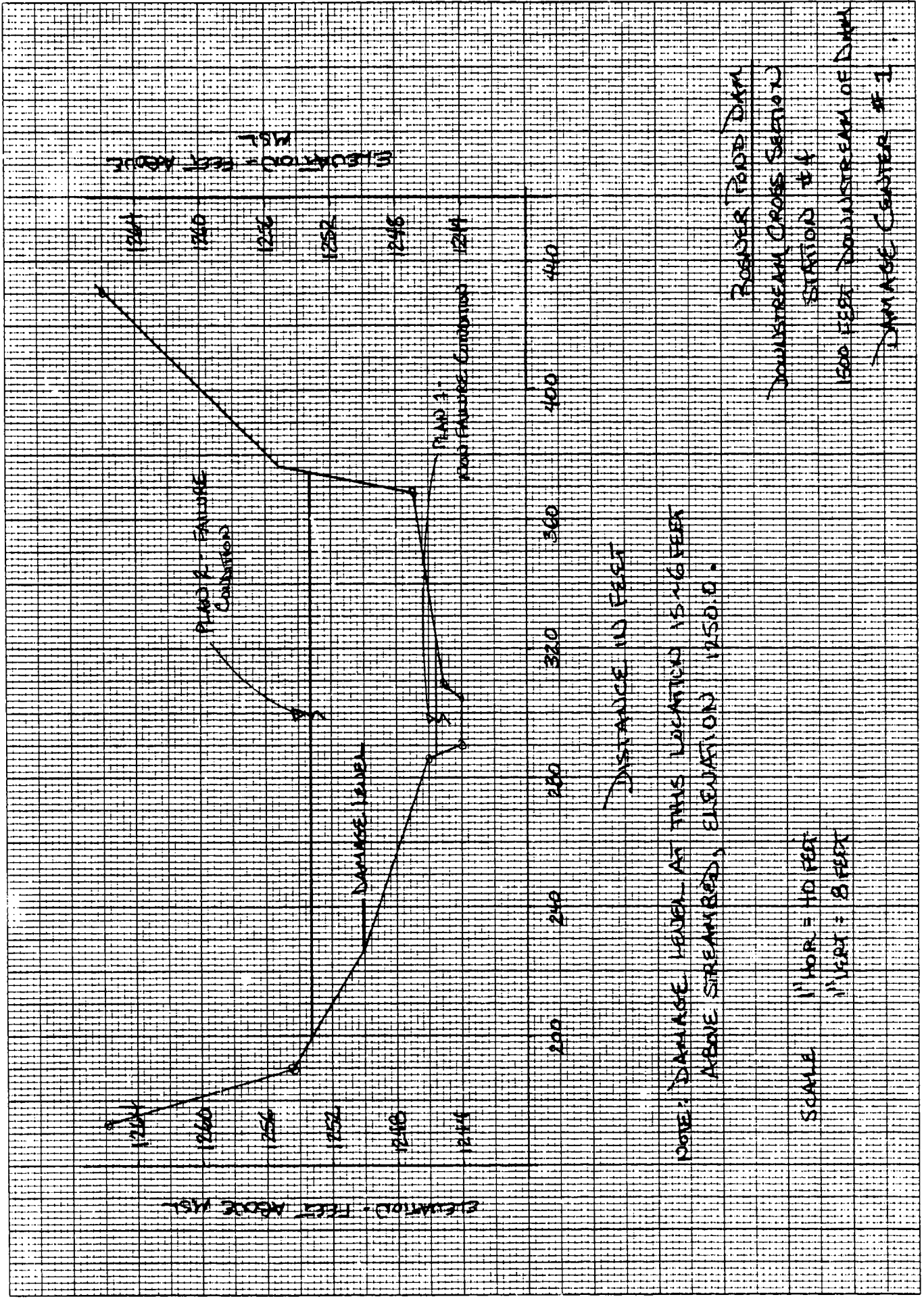
ROSLER POND DATA

DOWNSTREAM CROSS SECTION -
STATION # 2

100 FEET DOWNSTREAM OF
DATA

LOOKING DOWNSTREAM





NOTE: DAMAGE LEVEL AT THIS LOCATION IS 16 FEET ABOVE STREAMBED, ELEVATION 1250.0.

SCALE 1" HOR = 10 FEET
1" VERT = 8 FEET

ROSEBUD DAM
DOWNSTREAM CROSS SECTION
STATION #1
100 FEET DOWNSTREAM OF DAM
DAMAGE CENTER #1

SUBJECT DAM SAFETY ANALYSISCOMPUTATIONS ROSWER POND DAM SHEET 9 OF _____ SHEETSCOMPUTED BY JPB CHECKED BY _____ DATE 5-28-81OUTLET WORKS:

THE OUTLET WORKS CONSIST OF 2-14 INCH CAST IRON PIPES WHICH ARE PARTIALLY BLOCKED. A SMALL AMOUNT OF WATER WAS SEEN PASSING THROUGH THE TWO PIPE SYSTEM. DOWNSTREAM INVERT OF THE PIPE IS APPROXIMATELY AT ELEVATION 1278.0. MAXIMUM POOL AT ELEVATION 1297.0.

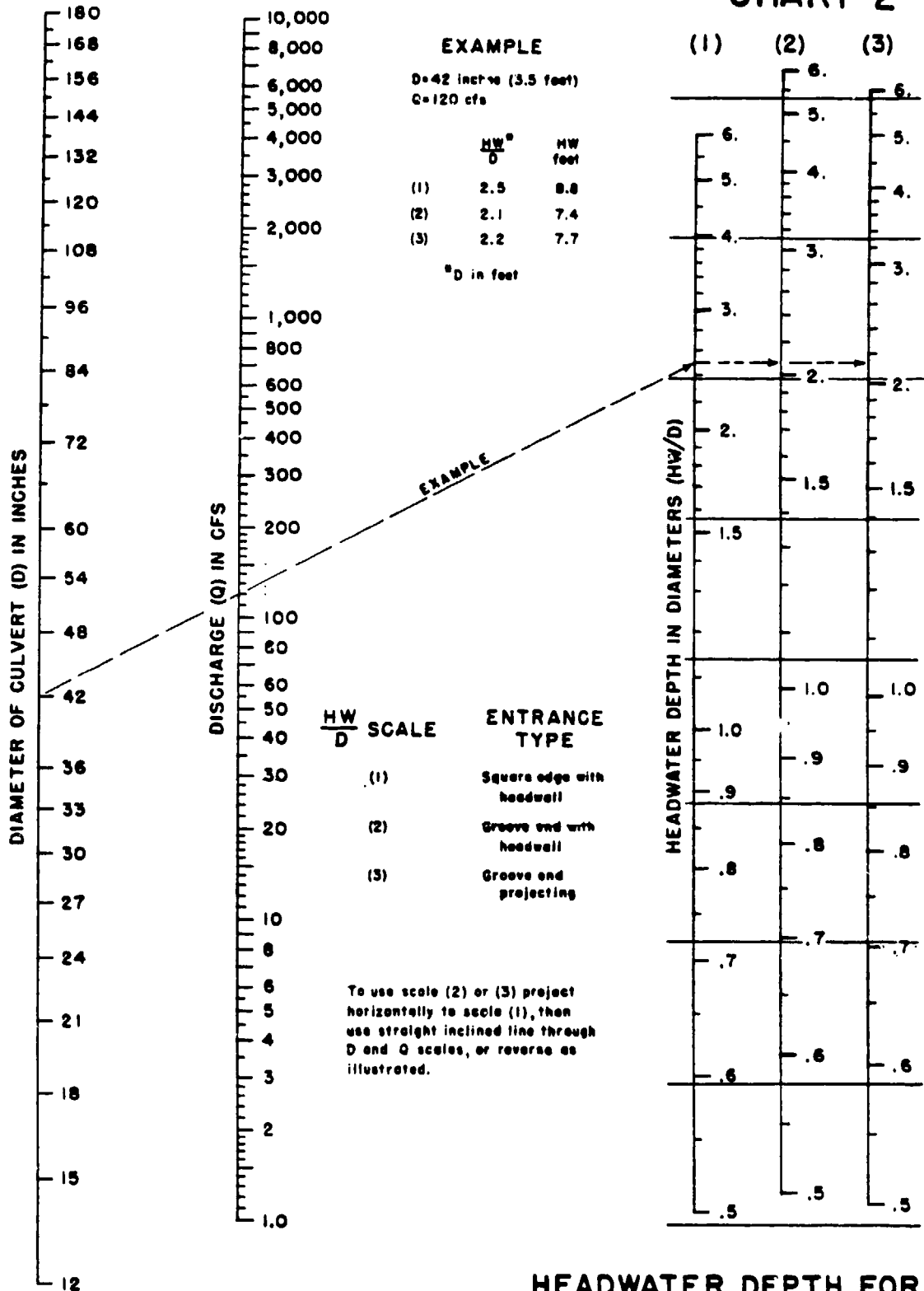
ASSUME $n=0.012$ AND THAT CHART 2 WOULD BE APPLICABLE IN THIS CASE. ALSO ASSUME, GROVE AND PROTECTING.

<u>POOL ELEV.</u>	<u>HW (ft)</u>	<u>D (in)</u>	<u>HW/D</u>	<u>Q, cfs</u>
1297.0	19	1.17	16.3	20

FOR 2 PIPES MAX DISCHARGE ~ 40 cfs

NOTE: DATA FROM U.S. DEPARTMENT OF COMMERCE, BUREAU OF PUBLIC ROADS, JAN. 1963.

CHART 2



HEADWATER DEPTH FOR CONCRETE PIPE CULVERTS WITH INLET CONTROL

HEADWATER SCALES 2 & 3
 REVISED MAY 1964

BUREAU OF PUBLIC ROADS JAN. 1963

 FLOOD HYDROGRAPH PACKAGE (HEC-1)
 DAM SAFETY VERSION JULY 1978
 LAST MODIFICATION 01 APR 80

1	A1	ROSNER DAM DER NO. 90-64-190									
2	A2	DAM SAFETY INSPECTION PROGRAM 4-29-81									
3	A3	OVERTOPPING ANALYSIS *** PRELIMINARY ***									
4	B	144	0	20	0	0	0	0	0	0	0
5	B1	5	0	0	0	0	0	0	0	0	0
6	J	1	5	1							
7	J1	0.10	0.20	0.30	0.50	1.00					
8	K	0	1	0	0	0	0	1	0	0	0
9	K1	RUNOFF FROM DRAINAGE AREA ABOVE ROSNER DAM									
10	M	1	1	2.26	0	2.26	0	0	0	1	0
11	P	0	21.5	111	123	133	142				
12	T	0	0	0	0	0	0	1.0	0.05	0	0
13	W	2.11	0.45								
14	Y	-1.5	-0.05	2							
15	K	1	1	0	0	0	0	1	0	0	0
16	K1	ROUTING ZPMF'S THRU ROSNER DAM *** NO SPILLWAY **									
17	Y	0	0	0	1	1	0	0	0	0	0
18	Y1	1	0	0	0	0	0	-1289.0	-1	0	0
19	Y4	1297	1298	1299	1300	1305	1310				
20	Y5	0	300	1600	3820	21900	48000				
21	%S	0	125	150	210	270	340	380	420	520	800
22	%E	1274	1289	1290	1292	1294	1296	1297	1298	1300	1305
23	\$\$\$	1297.0									
24	\$\$D	1297.0									
25	K	99									

1

PREVIEW OF SEQUENCE OF STREAM NETWORK CALCULATIONS

RUNOFF HYDROGRAPH AT 1
 ROUTE HYDROGRAPH TO 1
 END OF NETWORK

 FLOOD HYDROGRAPH PACKAGE (HEC-1)
 DAM SAFETY VERSION JULY 1978
 LAST MODIFICATION 01 APR 80

RUN DATE* 81/04/29.
 TIME* 11.40.03.

ROSNER DAM DER NO. 90-64-190
 DAM SAFETY INSPECTION PROGRAM 4-29-81
 OVERTOPPING ANALYSIS *** PRELIMINARY ***

JOB SPECIFICATION										
NO	NHR	NMIN	IDAY	IHR	IMIN	METRC	IPLT	IPRT	NSTAN	
144	0	20	0	0	0	0	0	0	0	
			JOPER	NWT	LROPT	TRACE				
			5	0	0	0				

MULTI-PLAN ANALYSES TO BE PERFORMED

NPLAN= 1 NRTIO= 5 LRTIO= 1
 RTIOS= .10 .20 .30 .50 1.00

ROSNER POND DAM
 OVERTOPPING ANALYSIS

SUB-AREA RUNOFF COMPUTATION

RUNOFF FROM DRAINAGE AREA ABOVE ROSNER DAM

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

HYDROGRAPH DATA
 IHYDG 1 IUNG 1 TAREA 2.26 SNAP 0.00 TRSDA 2.26 TRSPC 0.00 RATIO 0.000 ISNOW 0 ISAME 1 LOCAL 0

PRECIP DATA
 SPFE 0.00 PMS 21.50 R6 111.00 R12 123.00 R24 133.00 R48 142.00 R72 0.00 R96 0.00

TRSPC COMPUTED BY THE PROGRAM IS .800

LOSS DATA
 LROPT 0 STRKR 0.00 DLTKR 0.00 RTIOL 1.00 ERAIN 0.00 STRKS 0.00 RTIOK 1.00 STRTL 1.00 CNSTL .05 ALSMX 0.00 RTIMP 0.00

UNIT HYDROGRAPH DATA
 TP= 2.11 CP= .45 NTA= 0

RECESSION DATA
 STRTD= -1.50 GRCSN= -.05 RTIOR= 2.00
 APPROXIMATE CLARK COEFFICIENTS FROM GIVEN SNYDER CP AND TP ARE TC= 6.78 AND R=10.04 INTERVALS

UNIT HYDROGRAPH 57 END-OF-PERIOD ORDINATES, LAG= 2.11 HOURS, CP= .45 VOL= 1.00

17.	62.	126.	197.	260.	301.	312.	294.	266.	241.
218.	197.	179.	162.	146.	132.	120.	108.	98.	89.
80.	73.	66.	60.	54.	49.	44.	40.	36.	33.
30.	27.	24.	22.	20.	18.	16.	15.	13.	12.
11.	10.	9.	8.	7.	7.	6.	5.	5.	4.
4.	4.	3.	3.	3.	2.	2.			

HYDROGRAPH ROUTING

ROUTING XPMF'S THRU ROSNER DAM *** NO SPILLWAY **

ISTAG 1 ICOMP 1 IECON 0 ITAPE 0 JPLT 0 JPRT 0 INAME 1 ISTAGE 0 IAUTO 0
 ROUTING DATA
 GLOSS 0.0 CLOSS 0.000 AVG 0.00 IRES 1 ISAME 1 IOPT 0 IPMP 0 LSTR 0
 NSTPS 1 NSTDL 0 LAG 0 AMSKK 0.000 X 0.000 TSK 0.000 STORA -1289. ISPRAT -1

STAGE	1297.00	1298.00	1299.00	1300.00	1305.00	1310.00			
FLOW	0.00	300.00	1600.00	3820.00	21900.00	48000.00			
CAPACITY=	0.	125.	150.	210.	270.	340.	380.	420.	520. 800.
ELEVATION=	1274.	1289.	1290.	1292.	1294.	1296.	1297.	1298.	1300. 1305.

CREL 1297.0 SPWID 0.0 COOW 0.0 EXPW 0.0 ELEV 0.0 COOL 0.0 CAREA 0.0 EXPL 0.0

DAM DATA
 TOPEL 1297.0 COOD 0.0 EXPD 0.0 DAMWID 0.

STATION 1, PLAN 1, RATIO 1

END-OF-PERIOD HYDROGRAPH ORDINATES

1

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	RATIO 2	RATIO 3	RATIO 4	RATIO 5
				.10	.20	.30	.50	1.00
HYDROGRAPH AT	1	2.26	1	420.	839.	1259.	2098.	4196.
	(	5.85)	(	11.88)	23.76)	35.64)	59.41)	118.82)
ROUTED TO	1	2.26	1	0.	586.	1144.	2069.	4184.
	(	5.85)	(	0.00)	16.60)	32.39)	58.59)	118.49)

1

SUMMARY OF DAM SAFETY ANALYSIS

PLAN 1

ELEVATION	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
STORAGE	1289.00	1297.00	1297.00
OUTFLOW	125.	380.	380.
	0.	0.	0.

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
.10	1296.49	0.00	360.	0.	0.00	0.00	0.00
.20	1298.22	1.22	431.	586.	5.67	44.33	0.00
.30	1298.65	1.65	452.	1144.	7.00	43.00	0.00
.50	1299.21	2.21	481.	2069.	8.33	42.33	0.00
1.00	1300.10	3.10	526.	4184.	10.33	42.00	0.00

 FLOOD HYDROGRAPH PACKAGE (HEC-1)
 DAM SAFETY VERSION JULY 1978
 LAST MODIFICATION 01 APR 80

C)

Rosier Flood Dam

OVERTOPPING ANALYSIS
 Page 3/3

 FLOOD HYDROGRAPH PACKAGE (HEC-1)
 DAM SAFETY VERSION JULY 1978
 LAST MODIFICATION 01 APR 80

	A1	ROSNER DAM DER NO. 90-64-190									
	A2	DAM SAFETY INSPECTION PROGRAM 4-29-81									
	A3	OVERTOPPING ANALYSIS *** PRELIMINARY ***									
1	B	144	0	20	0	0	0	0	0	0	0
2	B1	5	0	0	0	0	0	0	0	0	0
3	J	4	1	1							
4	J1	0.13									
5	K	0	1	0	0	0	0	1	0	0	0
6	K1	RUNOFF FROM DRAINAGE AREA ABOVE ROSNER DAM									
7	M	1	1	2.26	0	2.26	0	0	0	1	0
8	P	0	21.5	111	123	133	142				
9	T	0	0	0	0	0	0	1.0	0.05	0	0
10	W	2.11	0.45								
11	X	-1.5	-0.05	2							
12	K	1	1	0	0	0	0	1	0	0	0
13	K1	ROUTING XPMF'S THRU ROSNER DAM *** NO SPILLWAY **									
14	Y	0	0	0	1	1	0	0	0	0	0
15	Y1	1	0	0	0	0	0	-1289.0	-1	0	0
16	Y4	1297	1298	1299	1300	1305	1310				
17	Y5	0	300	1600	3820	21900	48000				
18	YS	0	125	150	210	270	340	380	420	520	800
19	SE	1274	1289	1290	1292	1294	1296	1297	1298	1300	1305
20		1297.0									
21		1297.0									
22	\$B	75	1	1280	0.33	1289	1310				
23	\$B	75	1	1280	0.33	1289	1297.5				
24	\$B	75	1	1280	1.00	1289	1297.5				
25	\$B	75	1	1280	2.00	1289	1277.5				
26	K	1	2	0	0	0	0			1	
27	K1	ROUTE FLOWS THROUGH 1ST DOWNSTREAM CROSS SECTION									
28	Y	0	0	0	1	1					
29	Y1	1	0	0							
30	Y6	0.07	0.05	0.07	1270	1294	100	0.035			
31	Y7	96	1294	156	1282	172	1274	180	1270	202	1270
32	Y7	216	1274	244	1282	284	1294				
33	K	1	3	0	0	0	0			1	
34	K1	ROUTE FLOWS THROUGH 2ND DOWNSTREAM CROSS SECTION									
35	Y	0	0	0	1	1					
36	Y1	1	0	0							
37	Y6	0.07	0.05	0.07	1265	1286	200	0.025			
38	Y7	94	1286	140	1272	150	1268	160	1265	200	1265
39	Y7	210	1268	244	1278	270	1286				
40	K	1	4	0	0	0	0			1	
41	K1	ROUTE FLOWS THROUGH DAMAGE CENTER									
42	Y	0	0	0	1	1					
43	Y1	1	0	0							
44	Y6	0.07	0.05	0.07	1244	1266	1200	0.0175			
45	Y7	172	1266	190	1254	286	1246	290	1244	305	1244
46	Y7	308	1245	368	1247	430	1266				
47	K	99									

SEE PAGE D-12

SEE PAGE D-13

SEE PAGE D-14 AND PLATE E-II

PREVIEW OF SEQUENCE OF STREAM NETWORK CALCULATIONS

RUNOFF HYDROGRAPH AT 1
 ROUTE HYDROGRAPH TO 1
 ROUTE HYDROGRAPH TO 2
 ROUTE HYDROGRAPH TO 3
 ROUTE HYDROGRAPH TO 4
 END OF NETWORK

 FLOOD HYDROGRAPH PACKAGE (HEC-1)
 DAM SAFETY VERSION JULY 1978
 LAST MODIFICATION 01 APR 80

RUN DATE* 81/04/30.
 TIME* 07.56.06.

ROSNER DAM DER NO. 90-64-190
 DAM SAFETY INSPECTION PROGRAM 4-29-81
 OVERTOPPING ANALYSIS *** PRELIMINARY ***

JOB SPECIFICATION
 NO NHR NMIN IDAY IHR IMIN METRC IFLT IPRT NSTAN
 144 0 20 0 0 0 0 0 0 0
 JOPER NMT LROPT TRACE
 5 0 0 0

MULTI-PLAN ANALYSES TO BE PERFORMED
 NPLAN= 4 NRTIO= 1 LRTIO= 1

RTIOS= .13

SUB-AREA RUNOFF COMPUTATION

RUNOFF FROM DRAINAGE AREA ABOVE ROSNER DAM

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

HYDROGRAPH DATA

IHYDG IUNG TAREA SNAP TRSDA TRSPC RATIO ISNOW ISAME LOCAL
 1 1 2.25 0.00 2.26 0.00 0.000 0 1 0

PRECIP DATA

SPFE PMS R6 R12 R24 R48 R72 R96
 0.00 21.50 111.00 123.00 133.00 142.00 0.00 0.00

TRSPC COMPUTED BY THE PROGRAM IS .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 .05 0.00 0.00

UNIT HYDROGRAPH DATA

TP= 2.11 CP= .45 NTA= 0

RECESSION DATA

STRIO= -1.50 GRCSN= -.05 RTIOR= 2.00

APPROXIMATE CLARK COEFFICIENTS FROM GIVEN SNYDER CP AND TP ARE TC= 6.78 AND R=10.04 INTERVALS

UNIT HYDROGRAPH 57 END-OF-PERIOD ORDINATES, LAG= 2.11 HOURS, CP= .45 VOL= 1.00

17.	62.	126.	197.	260.	301.	312.	294.	266.	241.
218.	197.	179.	162.	146.	132.	120.	108.	98.	89.
80.	73.	66.	60.	54.	49.	44.	40.	36.	33.
30.	27.	24.	22.	20.	18.	16.	15.	13.	12.
11.	10.	9.	8.	7.	7.	6.	5.	5.	4.
4.	4.	3.	3.	3.	2.	2.			

HYDROGRAPH ROUTING

ROUTING XPMF'S THRU ROSNER DAM *** NO SPILLWAY **

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

ALL PLANS HAVE SAME ROUTING DATA

GLOSS 0.0 CLOSS 0.000 AVG 0.00 IRES 1 ISAME 1 IOPT 0 IPMP 0 LSTR 0
NSTPS 1 NSTDL 0 LAG 0 ANSKK 0.000 X 0.000 TSK 0.000 STORA -1289. ISPRAT -1

Table with columns: STAGE, FLOW, CAPACITY, ELEVATION and values for stages 1297.00 to 1305.00.

CREL 1297.0 SPWID 0.0 COGN 0.0 EXPW 0.0 ELEV 0.0 COGL 0.0 CAREA 0.0 EXPL 0.0

DAM DATA

TOPEL 1297.0 COGD 0.0 EXPD 0.0 DAMWID 0.

DAM BREACH DATA

BRWID 75. Z 1.00 ELBM 1280.00 TFAIL .33 WSEL 1289.00 FAILEL 1310.00

PEAK OUTFLOW IS 157. AT TIME 47.33 HOURS

DAM BREACH DATA

BRWID 75. Z 1.00 ELBM 1280.00 TFAIL .33 WSEL 1289.00 FAILEL 1297.50

STATION 1, PLAN 2, RATIO 1

BEGIN DAM FAILURE AT 47.00 HOURS

PEAK OUTFLOW IS 13851. AT TIME 47.33 HOURS

DAM BREACH DATA

BRWID 75. Z 1.00 ELBM 1280.00 TFAIL 1.00 WSEL 1289.00 FAILEL 1297.50

STATION 1, PLAN 3, RATIO 1

BEGIN DAM FAILURE AT 47.00 HOURS

PEAK OUTFLOW IS 7258. AT TIME 47.98 HOURS

DAM BREACH DATA

BRWID 75. Z 1.00 ELBM 1280.00 TFAIL 2.00 WSEL 1289.00 FAILEL 1297.50

STATION 1, PLAN 4, RATIO 1

BEGIN DAM FAILURE AT 47.00 HOURS

PEAK OUTFLOW IS 2615. AT TIME 48.00 HOURS

ROSNER POND DAM BREACH ANALYSIS

HYDROGRAPH ROUTING

ROUTE FLOWS THROUGH 1ST DOWNSTREAM CROSS SECTION

	ISTAQ	ICOMP	IECON	ITAPE	JPLT	JPRT	INAME	ISTAGE	IAUTO
	2	1	0	0	0	0	1	0	0
ALL PLANS HAVE SAME ROUTING DATA									
GLOSS	CLOSS	AVG	IRES	ISAME	IOPT	IPMP		LSTR	
0.0	0.000	0.00	1	1	0	0		0	
	NSTPS	NSTD	LAG	AMSK	X	TSK	STORA	ISPRAT	
	1	0	0	0.000	0.000	0.000	0.	0	

NORMAL DEPTH CHANNEL ROUTING

GN(1)	GN(2)	GN(3)	ELMVT	ELMAX	RLNTH	SEL
.0700	.0500	.0700	1270.0	1294.0	100.	.03500

CROSS SECTION COORDINATES—STA, ELEV, STA, ELEV—ETC

	96.00	1294.00	156.00	1282.00	172.00	1274.00	180.00	1270.00	202.00	1270.00
	216.00	1274.00	244.00	1282.00	284.00	1294.00				
STORAGE	0.00	.07	.17	.28	.42	.57	.75	.94	1.16	1.39
	1.65	1.93	2.25	2.60	2.97	3.38	3.82	4.29	4.79	5.32
OUTFLOW	0.00	190.42	643.91	1352.71	2478.52	3945.73	5738.64	7868.15	10345.81	13183.62
	16363.05	19935.91	23961.85	28462.39	33460.73	38980.22	45043.94	51674.52	58894.17	66724.64
STAGE	1270.00	1271.26	1272.53	1273.79	1275.05	1276.32	1277.58	1278.84	1280.11	1281.37
	1282.63	1283.89	1285.16	1286.42	1287.68	1288.95	1290.21	1291.47	1292.74	1294.00
FLOW	0.00	190.42	643.91	1352.71	2478.52	3945.73	5738.64	7868.15	10345.81	13183.62
	16363.05	19935.91	23961.85	28462.39	33460.73	38980.22	45043.94	51674.52	58894.17	66724.64

ROSNER FLOODWAY
 BREACH ANALYSIS
 page 4/9

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*****
*****
*****
*****
*****
HYDROGRAPH ROUTING
ROUTE FLOWS THROUGH 2ND DOWNSTREAM CROSS SECTION
ISTAG  ICOMP  IECON  ITAPE  JPLT  JPRT  INAME  ISTAGE  IAUTO
   3      1      0      0      0      0      1      0      0
ALL PLANS HAVE SAME
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.  0

```

NORMAL DEPTH CHANNEL ROUTING

```

GN(1)  GN(2)  GN(3)  ELNVT  ELMAX  RLNTH  SEL
.0700  .0500  .0700  1265.0  1286.0  200.  .02500

```

CROSS SECTION COORDINATES—STA, ELEV, STA, ELEV—ETC

```

94.00 1286.00 140.00 1272.00 150.00 1268.00 160.00 1265.00 200.00 1265.00
210.00 1268.00 244.00 1278.00 270.00 1286.00

```

	94.00	140.00	150.00	160.00	200.00	210.00	244.00	270.00	270.00	270.00
STORAGE	0.00 3.81	.22 4.40	.48 5.01	.78 5.67	1.11 6.36	1.47 7.09	1.87 7.85	2.30 8.65	2.77 9.49	3.27 10.37
OUTFLOW	0.00 15812.15	229.37 19053.49	754.33 22621.19	1572.28 26525.10	2745.14 30769.03	4200.59 35360.84	5938.79 40308.41	7959.62 45619.63	10272.99 51302.39	12887.95 57364.55
STAGE	1265.00 1276.05	1266.11 1277.16	1267.21 1278.26	1268.32 1279.37	1269.42 1280.47	1270.53 1281.58	1271.63 1282.68	1272.74 1283.79	1273.84 1284.89	1274.95 1286.00
FLOW	0.00 15812.15	229.37 19053.49	754.33 22621.19	1572.28 26525.10	2745.14 30769.03	4200.59 35360.84	5938.79 40308.41	7959.62 45619.63	10272.99 51302.39	12887.95 57364.55

Rosner Pond Dam
BREACH ANALYSIS
page 5/9

HYDROGRAPH ROUTING

ROUTE FLOWS THROUGH DAMAGE CENTER

	ISTAQ	ICOMP	IECON	ITAPE	JPLT	JPRT	INAME	ISTAGE	IAUTO
	4	1	0	0	0	0	1	0	0
ALL PLANS HAVE SAME 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.	0		

NORMAL DEPTH CHANNEL ROUTING

GN(1)	GN(2)	GN(3)	ELNVT	ELMAX	RLNTH	SEL
.0700	.0500	.0700	1244.0	1266.0	1200.	.01750

CROSS SECTION COORDINATES--STA. ELEV. STA. ELEV--ETC

172.00	1266.00	190.00	1254.00	286.00	1246.00	290.00	1244.00	305.00	1244.00
308.00	1245.00	368.00	1247.00	430.00	1266.00				

STORAGE	0.00	.58	1.98	4.76	8.27	12.34	16.98	22.18	27.95	34.25
	40.81	47.55	54.46	61.54	68.81	76.24	83.86	91.65	99.61	107.75
OUTFLOW	0.00	81.55	340.93	947.36	1974.03	3390.33	5210.47	7453.70	10141.34	13375.55
	17213.61	21496.75	26213.73	31356.63	36919.85	42899.49	49292.98	56098.73	63316.01	70944.70
STAGE	1244.00	1245.16	1246.32	1247.47	1248.63	1249.79	1250.95	1252.11	1253.26	1254.42
	1255.58	1256.74	1257.89	1259.05	1260.21	1261.37	1262.53	1263.68	1264.84	1266.00
FLOW	0.00	81.55	340.93	947.36	1974.03	3390.33	5210.47	7453.70	10141.34	13375.55
	17213.61	21496.75	26213.73	31356.63	36919.85	42899.49	49292.98	56098.73	63316.01	70944.70

Rosner Pond Dam
 BREACH ANALYSIS
 page 49

1

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
					.13
HYDROGRAPH AT	1	2.26 (5.85)	1	545.	
			(	15.45)	
			2	545.	
			(	15.45)	
			3	545.	
			(	15.45)	
			4	545.	
			(	15.45)	
ROUTED TO	1	2.26 (5.85)	1	157.	
			(	4.44)	
			2	13851.	
			(	392.21)	
			3	7232.	
			(	204.80)	
			4	2615.	
			(	74.05)	
ROUTED TO	2	2.26 (5.85)	1	157.	
			(	4.45)	
			2	13751.	
			(	389.38)	
			3	7230.	
			(	204.74)	
			4	2609.	
			(	73.87)	
ROUTED TO	3	2.26 (5.85)	1	157.	
			(	4.45)	
			2	13515.	
			(	382.71)	
			3	7227.	
			(	204.65)	
			4	2592.	
			(	73.40)	
ROUTED TO	4	2.26 (5.85)	1	157.	
			(	4.44)	
			2	11383.	
			(	322.32)	
			3	7232.	
			(	204.79)	
			4	2433.	
			(	68.90)	

ROSNER POND DAM
 BREACH ANALYSIS
 PAGE 7A

1

SUMMARY OF DAM SAFETY ANALYSIS

PLAN	ELEVATION STORAGE OUTFLOW	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM	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
PLAN 1		1289.00 125. 0.	1297.00 380. 0.	1297.00 380. 0.	.13	1297.52	.52	401.	157.	3.00	47.33	0.00
PLAN 2		1289.00 125. 0.	1297.00 380. 0.	1297.00 380. 0.	.13	1297.51	.51	401.	13851.	2.18	47.33	47.00
PLAN 3		1289.00 125. 0.	1297.00 380. 0.	1297.00 380. 0.	.13	1297.51	.51	401.	7258.	2.39	47.98	47.00
PLAN 4		1289.00 125. 0.	1297.00 380. 0.	1297.00 380. 0.	.13	1297.52	.52	401.	2615.	2.67	48.00	47.00

ROSDNER FOUNT DAM
BREACH ANALYSIS
page 8/9

PLAN 1	STATION	2		
RATIO	MAXIMUM FLOW,CFS	MAXIMUM STAGE,FT	TIME HOURS	
.13	157.	1271.0	47.67	

PLAN 3	STATION	3		
RATIO	MAXIMUM FLOW,CFS	MAXIMUM STAGE,FT	TIME HOURS	
.13	7227.	1272.3	48.00	

PLAN 2	STATION	2		
RATIO	MAXIMUM FLOW,CFS	MAXIMUM STAGE,FT	TIME HOURS	
.13	13751.	1281.6	47.33	

PLAN 4	STATION	3		
RATIO	MAXIMUM FLOW,CFS	MAXIMUM STAGE,FT	TIME HOURS	
.13	2592.	1269.3	48.00	

PLAN 3	STATION	2		
RATIO	MAXIMUM FLOW,CFS	MAXIMUM STAGE,FT	TIME HOURS	
.13	7230.	1278.5	48.00	

PLAN 1	STATION	4		
RATIO	MAXIMUM FLOW,CFS	MAXIMUM STAGE,FT	TIME HOURS	
.13	157.	1245.5	47.67	

PLAN 4	STATION	2		
RATIO	MAXIMUM FLOW,CFS	MAXIMUM STAGE,FT	TIME HOURS	
.13	2	1275.2	48.00	

PLAN 2	STATION	4		
RATIO	MAXIMUM FLOW,CFS	MAXIMUM STAGE,FT	TIME HOURS	
.13	11383.	1253.7	47.33	

PLAN 1	STATION	3		
RATIO	MAXIMUM FLOW,CFS	MAXIMUM STAGE,FT	TIME HOURS	
.13	157.	1265.8	47.67	

PLAN 3	STATION	4		
RATIO	MAXIMUM FLOW,CFS	MAXIMUM STAGE,FT	TIME HOURS	
.13	7232.	1252.0	48.00	

PLAN 2	STATION	3		
RATIO	MAXIMUM FLOW,CFS	MAXIMUM STAGE,FT	TIME HOURS	
.13	13515.	1275.2	47.33	

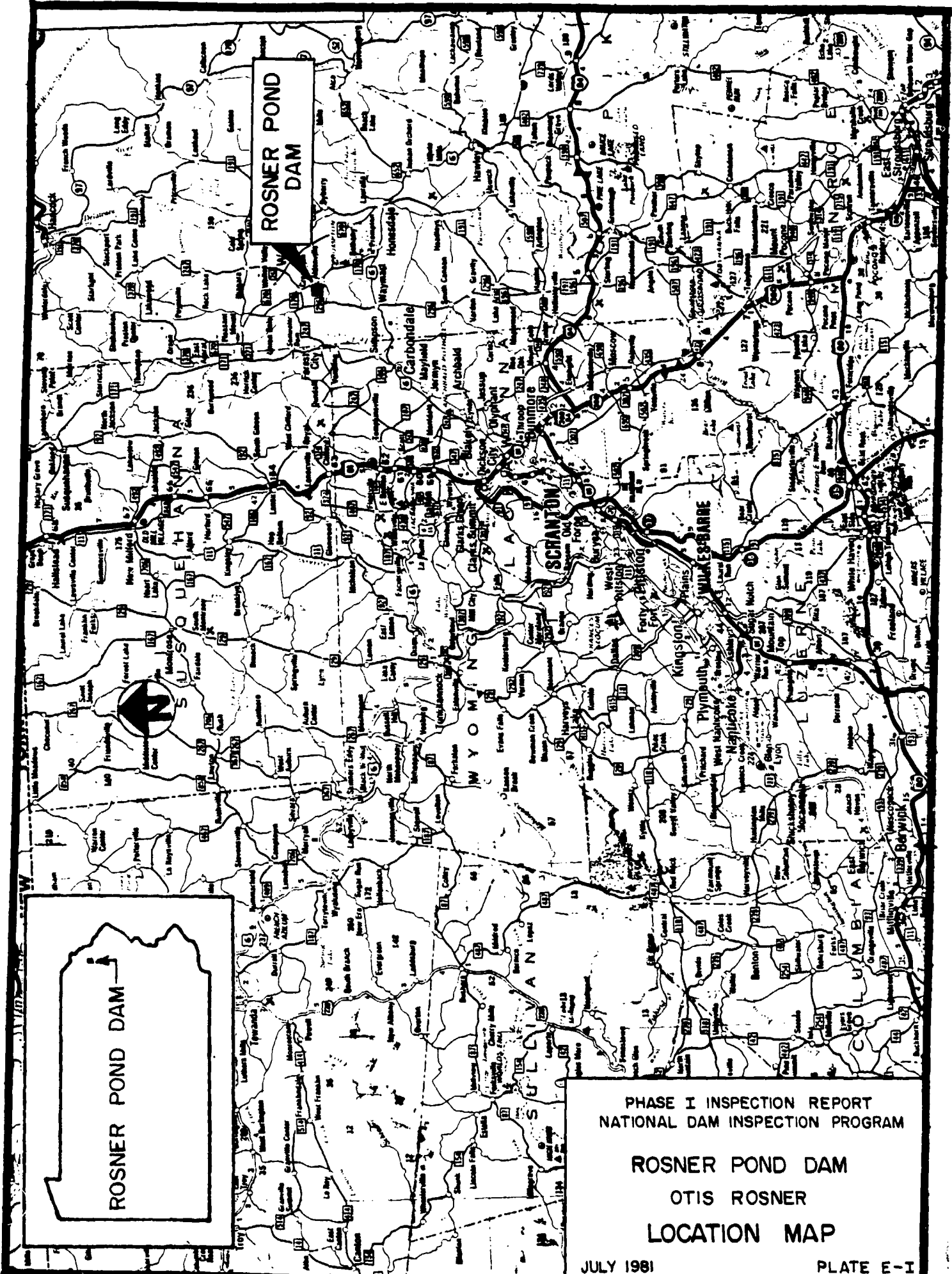
PLAN 4	STATION	4		
RATIO	MAXIMUM FLOW,CFS	MAXIMUM STAGE,FT	TIME HOURS	
.13	2433.	1249.0	48.00	

 FLOOD HYDROGRAPH PACKAGE (HEC-1)
 DAM SAFETY VERSION JULY 1978
 LAST MODIFICATION 01 APR 80

Rosner Pond Dam
 BREAK ANALYSIS
 page 9/1

APPENDIX E

PLATES



**ROSNER POND
DAM**

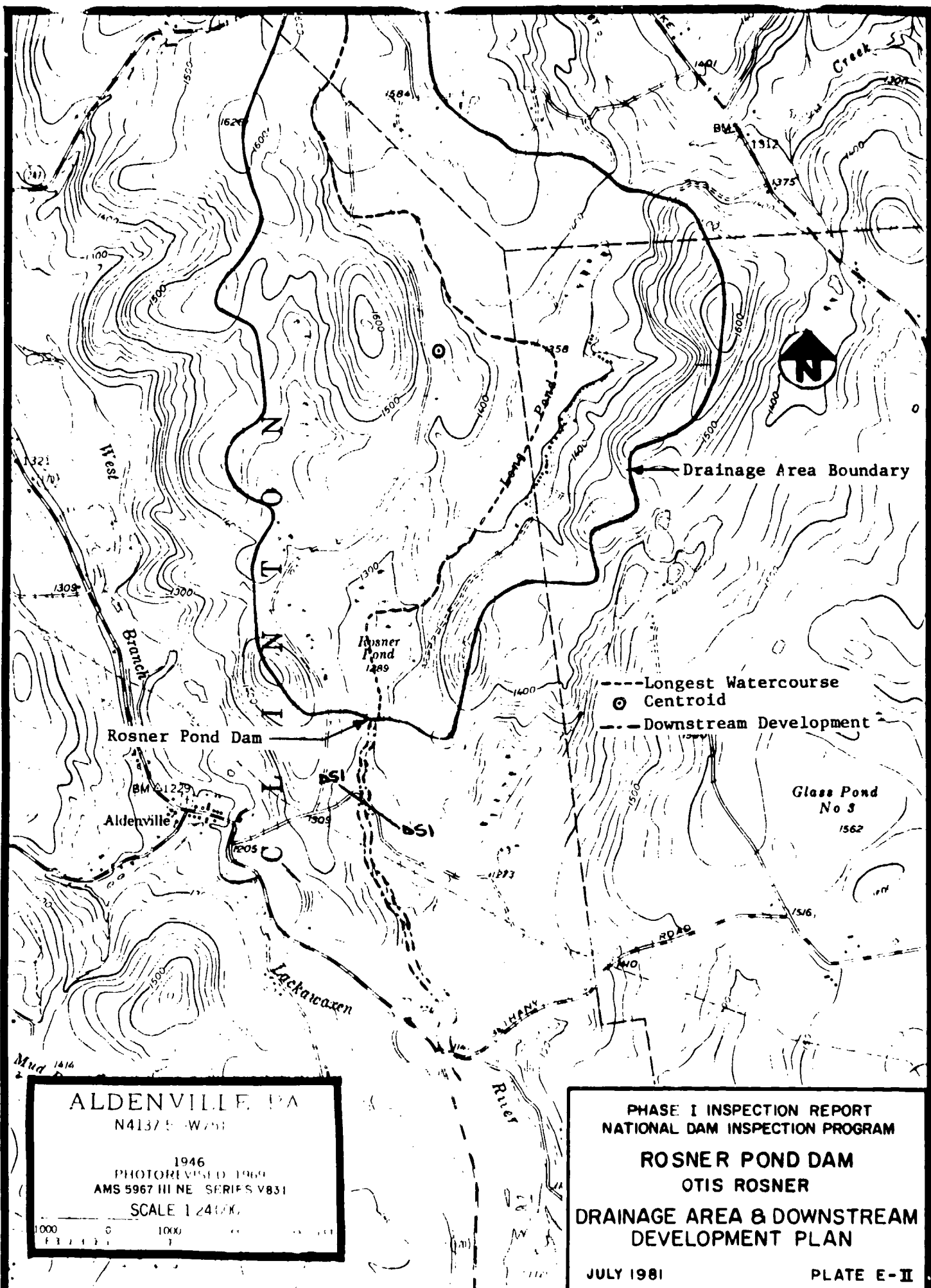
ROSNER POND DAM

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

**ROSNER POND DAM
OTIS ROSNER
LOCATION MAP**

JULY 1981

PLATE E-I



ALDENVILLE, PA
 N41375 W493

1946
 PHOTOREVISED 1969
 AMS 5967 III NE SERIES V831
 SCALE 1:24,000

1000 0 1000

PHASE I INSPECTION REPORT
 NATIONAL DAM INSPECTION PROGRAM

ROSNER POND DAM
OTIS ROSNER

**DRAINAGE AREA & DOWNSTREAM
 DEVELOPMENT PLAN**

JULY 1981

PLATE E-II

APPENDIX F

GEOLOGY

GENERAL GEOLOGY

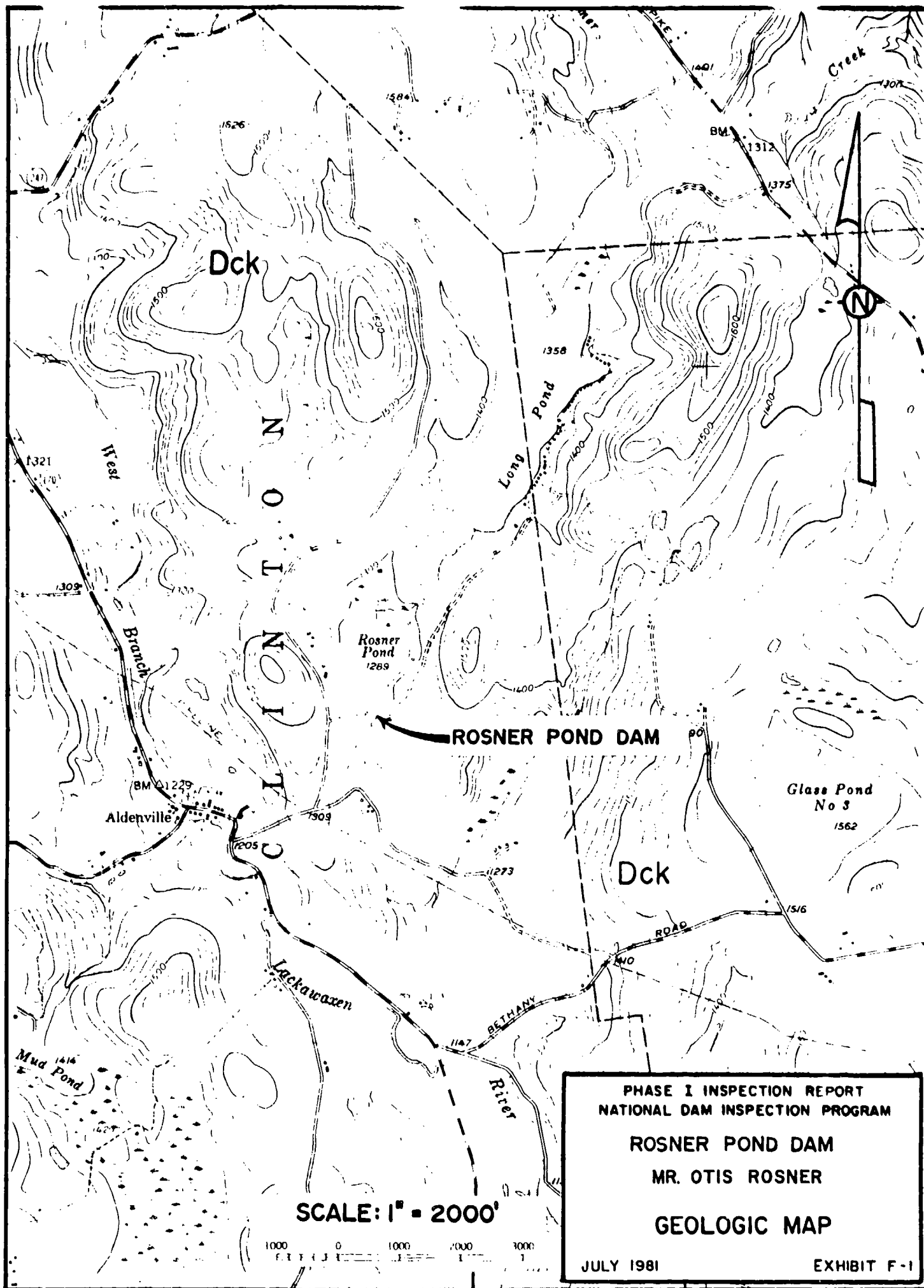
Bedrock at Rosner Pond Dam is reported to be red shale and gray siltstone of the Catskill Formation. It is well bedded in thin to medium beds with closely spaced, well developed joints. Siltstone is moderately resistant to weathering and breaking along joints into tabular and blocky fragments.

The thin covering of soil at this site appears to be in situ material. The large boulders and rocks that litter the valley are greenish sandstone and reddish sandstone.

Legend

(Bedrock)

Dck CATSKILL FORMATION UNDIVIDED - Succession of grayish-red sandstone, siltstone, and shale generally in fining - upward cycles; some gray sandstone and conglomerate.



PHASE I INSPECTION REPORT
 NATIONAL DAM INSPECTION PROGRAM

ROSNER POND DAM
 MR. OTIS ROSNER

GEOLOGIC MAP

JULY 1981

EXHIBIT F-1

SCALE: 1" = 2000'

