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NATIONAL DAM SAFETY PROGRAM. FINCH HOLLOW WATERSHED PROJECT, SI--ETC(U)
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Finch Hollow Watershed Project, Site 1. Inventory Number NY-697
Susquehanna River Basin. Broome County,
New York. Phase 1 Inspection Report,

(10) George /Koch (12) 97

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Finch Hollow Watershed Project-Site 1
Broome County

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

This report provides information and analysis on the physical condition of the dam as of the report date. Information and analysis are based on visual inspection of the dam by the performing organization.
Finch Hollow Watershed Project-Site 1 did not reveal conditions which pose a hazard to humanlife or property. Total spillway discharge capacity is adequate for the PMF. An immediate investigation is required to ascertain the flooding potential of homes located between the dam and the highway embankment. Subsequent remedial measures must be completed within 1 year of notification.

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CONT

Several remedial actions during construction season are required.

PREFACE

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

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

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

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

SUSQUEHANNA RIVER BASIN
FINCH HOLLOW WATERSHED PROJECT - SITE I
NY 697
PHASE I INSPECTION REPORT

TABLE OF CONTENTS

PHASE I REPORT
NATIONAL DAM SAFETY PROGRAM

Name of Dam:	Finch Hollow Watershed Project - Site 1 I.D. No. NY 697
State Located:	New York
County Located:	Broome
Watershed:	Susquehanna River Basin
Stream:	Unnamed tributary of Little Choconut Creek
Date of Inspection:	July 23, 1979

ASSESSMENT

The examination of documents and visual inspection of the Finch Hollow Site 1 dam and appurtenant structures did not reveal conditions which constitute a hazard to human life or property.

The total discharge capacity of the spillways is adequate for the Probable Maximum Flood (PMF).

Although the dam and appurtenances do not present conditions considered to be hazardous in nature, the location of a highway embankment immediately downstream; coupled with a box culvert of low capacity (as compared to the auxiliary spillway capacity) may promote flooding of the homes located between the dam and the highway embankment during periods of unusually heavy runoff. Therefore, an immediate investigation is required to ascertain the flooding potential in this area. Remedial measures resulting from this investigation must be completed with 1 year from notification.

The following remedial actions are required during this construction season:

1. Remove the tree growth at the entrance and exit of the auxiliary spillway channel to permit the unimpeded flow of discharge water;

2. Repair the bolting units of the principal spillway riser grating;

3. Remove the debris surrounding the principal spillway riser intake. Provide a program of periodic inspection and maintenance of the dam and appurtenances, including operation and lubrication of the slide gate mechanism. Document this information for future reference;

4. Develop an emergency action plan for notification of downstream residents and the proper authorities.

George Koch

George Koch
Chief, Dam Safety Section
New York State Department of
Environmental Conservation
NY License No. 45937

Approved By:

Clark H. Benn

Col. Clark H. Benn
New York District Engineer

Date:

24 Septem 79

Overview of Finch Hollow Site 1 Dam
Photo #1

PHASE I INSPECTION REPORT
NATIONAL DAM SAFETY PROGRAM
FINCH HOLLOW WATERSHED PROJECT - SITE I
I.D. No. NY 697
DEC #96A-3852
SUSQUEHANNA RIVER BASIN
BROOME COUNTY, NEW YORK

SECTION 1: PROJECT INFORMATION

1.1 GENERAL

a. Authority

The Phase 1 inspection reported herein was authorized by the Department of the Army, New York District, Corps of Engineers, to fulfill the requirements of the National Dam Inspection Act, Public Law 92-367.

b. Purpose of Inspection

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

The Site 1 dam consists of a 750-foot long zoned earth embankment, 62 feet high, with a principal and auxiliary spillway. The embankment has 2 zones, the primary being composed of gravelly silt and the second zone located on the downstream side of the dam being composed of gravelly silt containing oversized material up to 16 inches in diameter. The upstream slope is 1 vertical on 3 horizontal with a 20-foot wide bench at elevation 974.5 and the downstream slope is 1 on 2.5 with a 10-foot wide bench at elevation 964.7. The crest width is 19 feet.

An internal drainage system is located under the downstream portion of the dam to control the phreatic surface and provide a safe outlet for seepage. A cut-off trench is located at the dam centerline to reduce seepage.

The principal spillway is a drop inlet structure consisting of a single stage reinforced concrete riser, 36-inch diameter reinforced concrete pipe conduit, an impact basin, and an excavated outlet channel.

The 350-foot wide auxiliary spillway, located beyond the left (east) abutment, is designed as an earth cut with vegetation. Side slopes are 1 on 3.0.

A 16-inch diameter cast iron pipe with reinforced concrete inlet serves as a reservoir drain. The drain is controlled by a 16-inch diameter flat frame slide gate, the stem of which extends to the top of the riser having stem guides located on the inside of the riser.

b. Location

The dam is located in Finch Hollow north of Johnson City, New York, along an unnamed tributary of Little Choconut Creek which is a tributary of the Susquehanna River.

c. Size Classification

The dam is 62 feet high and is classified as "intermediate" in size (40 to 100 feet in height).

d. Hazard Classification

The dam is classified as high hazard, because of its location immediately above approximately 20 homes and above Johnson City.

e. Ownership

The dam is owned and operated by the County of Broome, New York.

f. Purpose of the Dam

The dam is a flood water retarding structure.

g. Design and Construction History

The dam was designed by the U.S. Department of Agriculture, Soil Conservation Service (SCS). Construction of the dam was completed in July 1973 by Jones and Meade Construction, Appalachin, New York. The SCS office located at the Broome County Airport has all design and construction information.

h. Normal Operating Procedures

Normal flows are discharged through the principal spillway. This structure has sufficient capacity to store and discharge a 100 year flood without use of the auxiliary spillway. For storms in excess of this flood, the auxiliary spillway will outlet the discharge.

1.3 PERTINENT DATA

a. Drainage Area (sq. mi.)	2.7
b. Discharge at Dam (cfs)	
Principal spillway at maximum high water	220
Principal spillway at auxiliary spillway crest elevation	207
Reservoir drain at principal spillway crest elevation	20
Maximum known flood: 9/25/75	161
Auxiliary spillway at maximum high water	26,050
c. Elevation (USGS Datum)	
Top of dam	1,009.6
Auxiliary spillway crest	1,001.2
Principal spillway crest	974.5
Reservoir drain, invert elevation	952.0

d. Reservoir (acres)

Surface area at top of dam	32
Surface area at crest of auxiliary spillway	22
Surface area at crest of principal spillway	5

e. Storage Capacity (acre-feet)

Top of dam	460
Auxiliary spillway crest	224
Principal spillway crest	41

f. Dam

Embankment Type: 2 zoned earth with keyed earth cut-off trench and drain parallel to axis of dam

Embankment length (ft.) 750

Slopes	Upstream	1 vertical on 3 horizontal
	Downstream	1 vertical on 2.5 horizontal
Benches	Upstream	1 - 20 feet wide at elevation 974.5
	Downstream	1 - 10 feet wide at elevation 964.7

Credt width (ft.) 19

g. Principal Spillway

Type: Ungated, reinforced concrete drop inlet (3.0 x 9.0 ft.), rising 25.5 feet above the 36-inch diameter reinforced concrete pipe invert; length of pipe 288 feet; reinforced concrete impact basin

Weir length (ft.) 16.33

h. Auxiliary Spillway (Emergency)

Type: Single grass-lined earth channel having trapezoidal cross-section.

Bottom width (ft.)	350
Side slopes (vert.:horiz.)	1:3.0
Length of level section (in profile) (ft.)	50
Exit slope (ft./ft.)	0.027

i. Reservoir Drain

Type: 16-inch diameter cast iron pipe with reinforced concrete inlet

Control: Manually operated vertical slide gate mounted along the inside of the principal spillway riser

SECTION 2: ENGINEERING DATA

2.1 GEOLOGY

The Finch Hollow Watershed Project Site 1 Dam is located in the glaciated portion of the Appalachian uplands (norther extreme of the Appalachian Plateau) physiographic province of New York State. These uplands were formed by dissection of the uplifted but flat lying sandstones and shales of the Middle and Upper Devonian Catskill Delta. The plateau surface is represented by flat-topped divides with drainage generally southwest toward the Susquehanna River system.

Glacial cover is generally thin, although some north-south valleys are so thick that they are completely buried. The present surficial deposits have resulted primarily from glaciations during the Cenozoic Era, the last of which was the Wisconsin glaciation, approximately 11,000 years ago.

2.2 SUBSURFACE INVESTIGATION

A sufsurface investigation was conducted by SCS in 1966. This program consisted of 19 drill holes and 23 test pits at locations along the dam, auxiliary spillway, structural elements, and borrow area. Applicable subsurface information is included in Appendix G, Drawings #21 and 22.

In general, the soils in the vicinity of the dam are of glacial till origin, gravelly silts and silts overlying a shaly silt - stone bedrock from 10 to 30 feet below the original ground surface. The depth to bedrock in the vicinity of the abutments is in excess of 40 feet. With the exception of those soils having high gravel contents, the soils are of low or very low permeability.

2.3 EMBANKMENT AND APPURTENANT STRUCTURES

The dam was designed and constructed under the supervision of SCS. "As-Built" drawings of this dam are on file at the SCS office in Broome County. Selected drawings of the dam and appurtenances are included in Appendix G. The dam is composed of 2 zones of compacted earth fill (max. height 62 feet), a cut-off trench having side slopes of 1 on 2, and an internal drain parallel to the axis of the dam approximately 60 feet from the downstream toe and outletting in the walls of the impact basin. A reinforced concrete riser with a 36-inch diameter reinforced concrete pipe conduit and impact basin serves as the principal spillway.

The auxiliary spillway is a 350-foot wide vegetated earth channel located at the left (east) abutment. A 16-inch diameter cast iron pipe with a manually operated slide gate serves as a reservoir drain.

2.4 CONSTRUCTION RECORDS

Complete construction records are available from the SCS office in Broome County. No major changes were incorporated during construction.

2.5 OPERATION RECORD

Since the dam is an ungated floodwater retarding structure, no operating records are maintained regarding water levels. During periods of extreme rainfall, SCS personnel do monitor the reservoir.

2.6 EVALUATION OF DATA

The data presented in this report has been compiled from information obtained from Mr. Gary Page, Project Engineer for SCS in Broome County and Mr. Donald Lake, Head of the SCS Design Section in Syracuse, New York. This information appears adequate and reliable for Phase I inspection purposes.

SECTION 3: VISUAL INSPECTION

3.1 FINDINGS

a. General

Visual inspection of the Site 1 Dam was conducted on July 23, 1979. The weather was partly cloudy and the temperature ranged in the eighties. The water surface was at the inlet elevation of the principal spillway (974.5).

b. Embankment

No signs of distress were observed in the earth embankment and no evidence of seepage, misalignment, sloughing, subsidence, depressions, surface cracking, or undesirable growth were noted in connection with the embankment. Riprap was in place on the upstream slope in the vicinity of the normal pool level for wave protection. (See photos #1, 2, & 12)

An internal drainage system composed of 2-10 inch diameter pipes surrounded by "drain fill" material and extending parallel to the axis of the dam provide drainage at the embankment-subgrade contact. These pipes exit through the concrete walls of the impact basin (See photo #6). No discharge was apparent.

c. Principal Spillway

The principal spillway consists of a vertical drop inlet structure, a reinforced concrete pipe through the embankment, an impact basin at the toe of the embankment, and an outlet channel.(See photos #3, 4, 6, 7, & 11). These components appear to be in satisfactory condition with the following exceptions:

1. The riser top grating is loose and the bolting units require repair. (See photo #5);

2. Considerable debris is surrounding the intake of the principal spillway. This debris should be removed with periodic removals conducted in the future. (See photos #3 & 4).

d. Auxiliary Spillway

The vegetated auxiliary spillway (earth cut section) is located beyond the left (east) abutment of the embankment (See photos #8, 9, & 10). The channel is in good condition, however, the following problem areas were noted:

1. Extensive tree growth is completely blocking the entrance and exit to the auxiliary spillway. If use of this spillway is required during significant storms, clogging of the channel may cause excessive water levels and overtopping of the dam. (See photos #2 & 8 for trees at entrance and photos #10, 12, & 13 for exit);

2. The exit of the auxiliary spillway is directed such that all flow will be concentrated immediately below the dam. This is standard design procedure.

However, in this case, a highway embankment has been placed downstream from the channel. The only outlet for the flow is through a box culvert approximately 4 x 5 feet located at the base of the highway embankment. (See photo #14) The dam is designed for more than 26,000 cfs discharge without overtopping. This design flow is far in excess of the capacity of the box culvert. Consequently, significant flows resulting from heavy rainfalls will impound water upstream of the highway embankment. Since approximately 20 homes are within this vicinity and of elevations lower than the highway crest, flooding may occur. This problem should be investigated thoroughly. Increased culvert capacity may be required, including trash racks and an emergency action plan.

e. Reservoir Drain

The 16-inch diameter reservoir drain and manually operated slide gate may be used to lower the reservoir. The slide gate control mechanism is located at the top of the riser. This system is reported to be operational.

f. Downstream Channel

The downstream channel below the impact basin is riprapped (See photo #11). The channel appears to be stable. An earth embankment is located approximately 2000 feet downstream from the dam. (See photos #13 & 14) A box culvert approximately 4 x 5 feet controls the flow through the embankment. Since approximately 20 homes could be flooded during periods of high runoff, the capacity of the box culvert should be investigated.

g. Reservoir

There are no visible signs of instability or sedimentation problems within the reservoir area.

3.2 EVALUATION

The problem areas observed during the inspection are listed below in order of importance:

a. Investigate the flooding potential and capacity of the box culvert at the highway embankment;

b. Remove the tree growth at the entrance and exit of the auxiliary spillway channel in order that the spillway will function as designed;

c. Repair the bolting units of the grating at the top of the principal spillway riser;

d. Remove the debris which surrounds the intake of the principal spillway riser. Provide a program of periodic inspection and maintenance of the dam and appurtenances, including lubrication of the slide gate mechanism.

SECTION 4: OPERATION AND MAINTENANCE PROCEDURES

4.1 PROCEDURES

The normal water surface elevation is at the crest elevation of the principal spillway riser. Downstream flows are limited by the 36-inch diameter principal spillway pipe, except during extremely heavy runoff when the auxiliary spillway is in service. The dam provides 340 acre feet of flood storage between normal water level and the crest of the auxiliary spillway.

4.2 MAINTENANCE OF THE DAM

The dam is maintained by the County of Broome, New York. Maintenance is not considered satisfactory as evidenced by the deterioration of the riser grating and debris surrounding the riser. In addition, trees at the entrance and exit of the auxiliary spillway must be removed.

4.3 WARNING SYSTEM IN EFFECT

There is no warning system in effect or in preparation.

4.4 EVALUATION

The dam and appurtenant structures have not been maintained in a satisfactory condition as noted in "Section 3: Visual Inspection".

SECTION 5: HYDROLOGIC/HYDRAULIC

5.1 DRAINAGE AREA CHARACTERISTICS

Delineation of the watershed of the Site 1 dam was made using the USGS 7.5 minute quadrangle for Castle Creek, New York. The watershed consists of woodlands and fields situated in a semi urban section. Relief ranges from moderate to steep. The drainage area is 1745 acres or 2.7 square miles.

5.2 ANALYSIS CRITERIA

The analysis of the spillway capacity of the dam and storage of the reservoir was performed using the Corps of Engineers HEC-1 computer program, incorporating the "Snyder Synthetic Unit Hydrograph" method, and the "Modified Puls" flood routing procedure. The spillway design flood selected for analysis was the PMF in accordance with the recommended "guidelines" of the U.S. Army Corps of Engineers.

5.3 SPILLWAY CAPACITY

The principal and auxiliary spillway are uncontrolled structures. The principal spillway operates under weir or orifice flow conditions depending upon the floodwater inflow to the reservoir pool. The auxiliary spillway was analyzed as a broad-crested weir having a discharge coefficient (c) of 3.087.

The spillways have sufficient capacity for discharging the peak outflow from the PMF. For this storm, the peak inflow is 4408 cfs and the peak outflow is 4320 cfs. When the spillways are discharging the peak outflow, the water surface will be 5.4 feet below the top of the dam. Further information concerning this analysis is included in Appendix D.

5.4 RESERVOIR CAPACITY

Normal flood control storage capacity of the reservoir between the principal and auxiliary spillways is 183 acre-feet which is equivalent to a runoff depth of 1.3 inches over the drainage area. Surcharge storage capacity to the maximum high water elevation is an additional 236 acre-feet, equivalent to a runoff depth over the drainage area of 1.6 inches. Total storage capacity of the dam is 419 acre-feet, equivalent to 2.9 inches of direct runoff.

5.5 FLOODS OF RECORD

The maximum known flood occurred on September 25, 1975. The pool level at this time was reported to be about 5.8 feet above the principal spillway crest. The calculated discharge for this flood is as follows:

Elevation (USGS)	Discharge (cfs)
980.3	161

SECTION 6: STRUCTURAL STABILITY

6.1 EVALUATION OF STRUCTURAL STABILITY

a. Visual Observations

No signs of distress were observed in connection with the earth embankment.

b. Design and Construction Data

A stability analysis was conducted by SCS during the design of the dam. The analyses were performed using the Infinite Slope Method. The soil parameters assumed were $\emptyset = 31^{o}$, $\theta = 18.4^{o}$ $\gamma_s = 141$.

To achieve a factor of safety equal to 1.3 for the upstream slope of 1 on 3, a 20-foot wide berm was incorporated in the design. The berm was placed to elevation 974.5, which approximates the normal pool elevation.

No computations could be located relating to analysis of the downstream slope.

The calculated factor of safety for the upstream slope of the dam is in excess of the minimum factors recommended by the Corps of Engineers. The upstream slope of the dam is, therefore, considered to have an adequate factor of safety for stability. A summary of the analysis is included in Appendix F.

c. Post Construction Changes

No major post construction changes were noted during construction of the dam.

d. Seismic Stability

The dam is located in Seismic Zone 1. Therefore, a seismic analysis is not warrented.

SECTION 7: ASSESSMENT/RECOMMENDATIONS

7.1 ASSESSMENT

a. Safety

The Phase 1 inspection of the Finch Hollow Dam Site 1 did not reveal conditions which constitute a hazard to human life or property. The earth embankment is not considered to be unstable. The dam is capable of retarding flood waters resulting from the PMF. However, the location of the highway embankment below the outlet of the auxiliary spillway and the limited hydraulic capacity of the box culvert beneath the embankment may cause an impoundment of flood waters which could flood the homes which are located between the dam and the highway embankment.

b. Adequacy of Information

Information reviewed for Phase 1 inspection purposes is considered adequate.

c. Need for Additional Investigations

No additional investigations are required at this time concerning the dam and appurtenances. However, the capacity of the highway embankment box culvert and the potential flooding of the downstream homes must be investigated.

7.2 RECOMMENDED MEASURES

a. Results of the highway embankment box culvert investigation will determine the type and extent of remedial measures required.

b. Remove the tree growth at the entrance and exit of the auxiliary spillway channel to provide for unobstructed passage of flow.

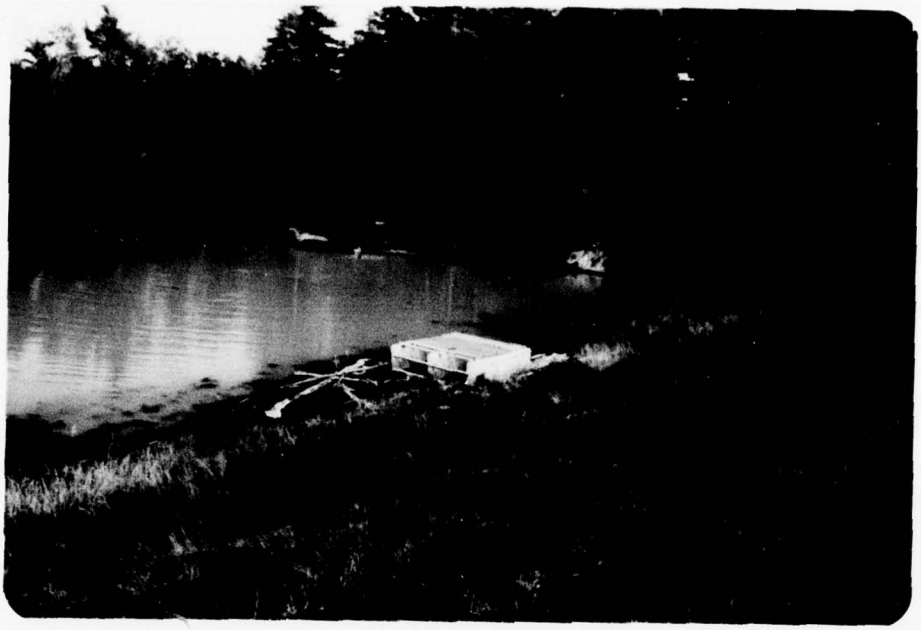
c. Repair the bolting units of the grating at the top of the principal spillway riser.

d. Remove the debris which surrounds the intake of the principal spillway riser. Provide a program of periodic inspection and maintenance of the dam and appurtenances, including operation and lubrication of the slide gate mechanism. Document this information for future reference.

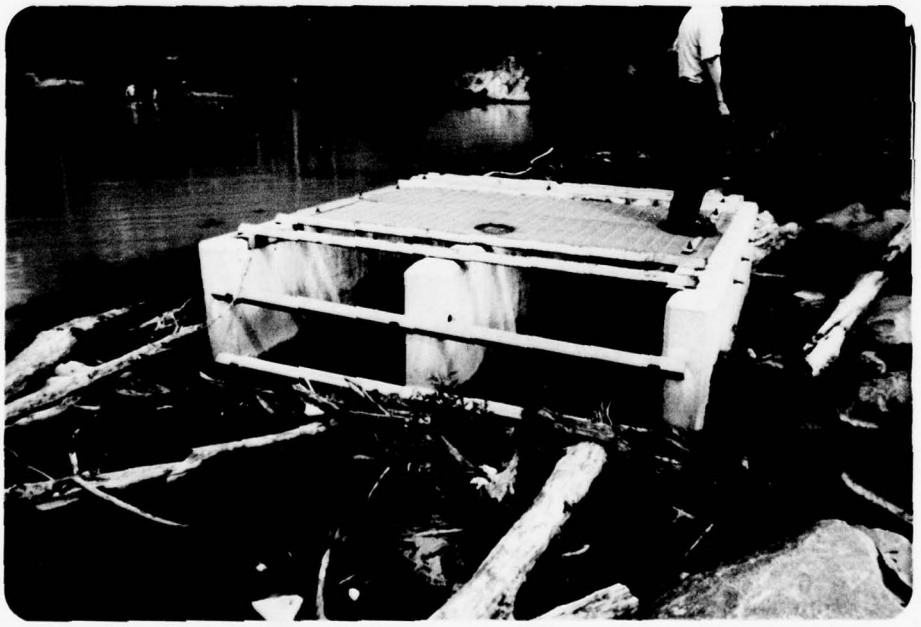
e. Develop an emergency action plan for notification of downstream residents and the proper authorities in the event of heavy auxiliary spillway discharge.

APPENDIX A

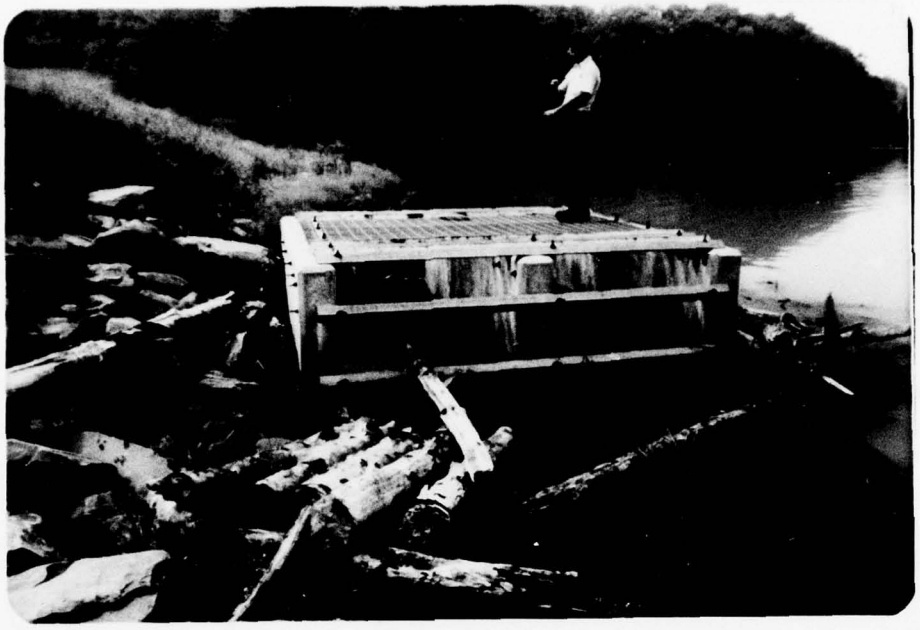
PHOTOGRAPHS



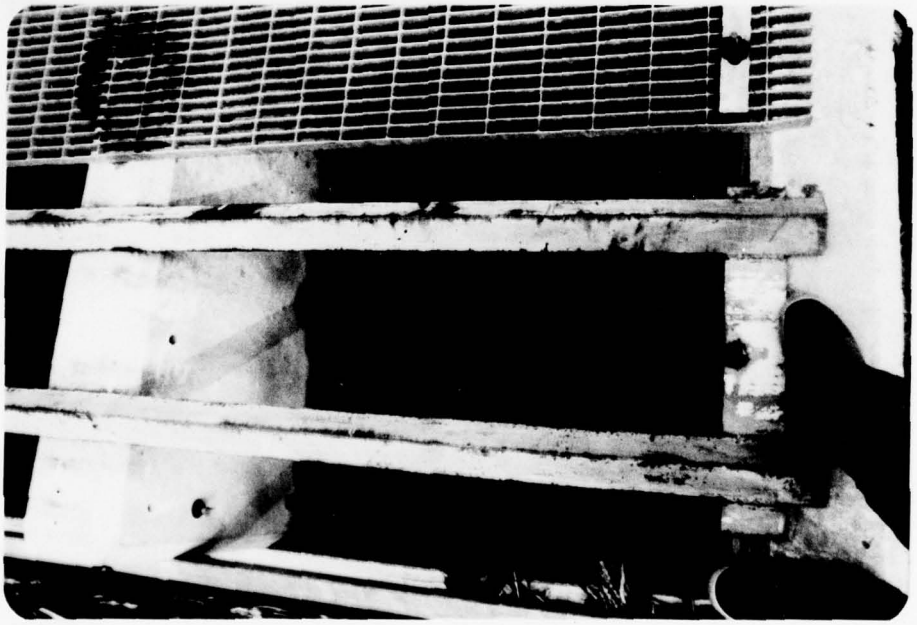
Upstream Face of Dam
Photo #2



Right Side of Principal Spillway Riser
Photo #3



Left Side of Principal Spillway Riser
Photo #4



Grating Atop Riser
Not Missing Bolting Unit Near Boot
Photo #5

Impact Basin
Photo #6

Outlet of 36" Concrete Pipe in Impact Basin
Photo #7

Entrance of Auxiliary Spillway
Note Trees Blocking Entrance
Photo #8

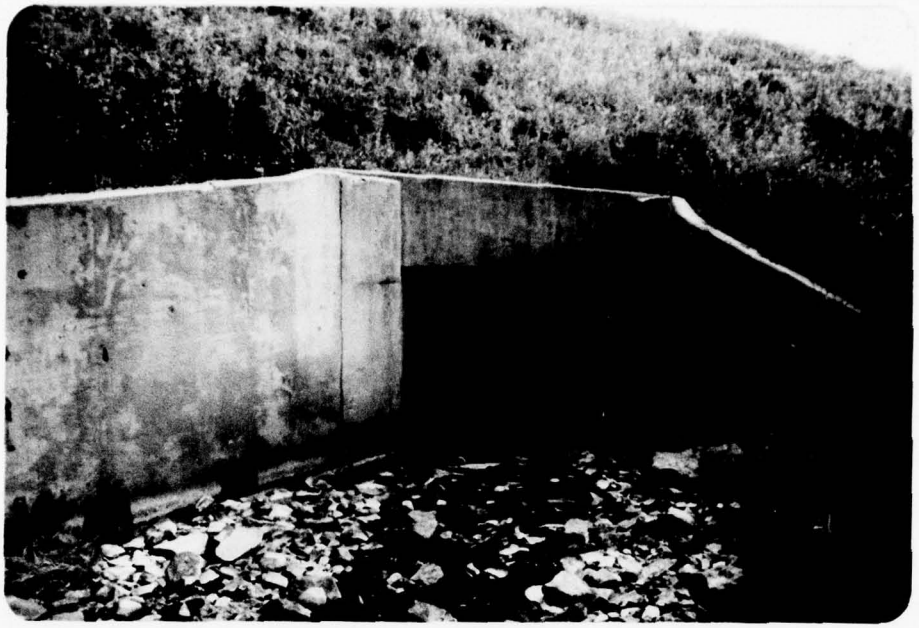
Level Section of Auxiliary Spillway
Photo #9

Exit of Auxiliary Spillway
Note Trees Blocking Exit
Photo #10

Downstream Channel Below Impact Basin
Photo #11

Area Between Dam and Highway Embankment
Photo #12

Highway Embankment Below Dam
Photo #13



Box Culvert Beneath Highway Embankment
Photo #14

APPENDIX B

ENGINEERING DATA CHECKLIST

Check List
Engineering Data
Design Construction Operation

Name of Dam Finch Hollow Sta 1

I.D. # 697

Item	Remarks		
	Plans	Details	Typical Sections
Dam	Yes	Yes	Yes
Spillway(s)	Yes	"	"
Outlet(s)	Yes	"	"
Design Reports	Yes	October 1969	
Design Computations	Info on file at SCS		
Discharge Rating Curves			
Dam Stability	Yes		
Seepage Studies			
Subsurface and Materials Investigations	Yes	See plans	

Item	Remarks
Construction History	Info on file at SCS offices
Surveys, Modifications, Post-Construction Engineering Studies and Reports	None
Accidents or Failure of Dam Description, Reports	None
Operation and Maintenance Records Operation Manual	None

APPENDIX C

VISUAL INSPECTION CHECKLIST

VISUAL INSPECTION CHECKLIST

1) Basic Data

a. General

Name of Dam FINCH HOLLOW SITE 1

I.D. # NY 697 . DEC 96-A-3852

Location: Town { Oakdale / Johnson City } County Broome

Stream Name Finch Hollow → Little Choconut → Susquehanna

Tributary of Susquehanna

Longitude (W), Latitude (N) 75° 55.5' / 42° 03.2'

Hazard Category C

Date(s) of Inspection July 23, 1979

Weather Conditions Partly Cloudy 80°F

b. Inspection Personnel

Ken Harmer Bob McCarty Lee Sepelak

c. Persons Contacted Roy Thomas (315) 423-5501 & Gary Page S.C.S. Broome County Airport

d. History:

Date Constructed July 1973

Owner Broome County

Designer S.C.S

Constructed by Jones & Meade Constr. Appalachin NY

2) Technical Data

Type of Dam Earth - 2 zone embankment

Drainage Area 1745 Ac = 2.73 sq miles

Height 62.0' Length 750'

Upstream Slope 1:3.0 . Downstream Slope 1:2.5

2) Technical Data (Cont'd.)

External Drains: on Downstream Face NONE @ Downstream Toe NONE

Internal Components:

Impervious Core NONE

Drains Yes

Cutoff Trench Yes

Grout Curtain NONE

embankment has 2 zones the primary zone (zone #1) is of compacted gravelly s:H
the 50 feet wide zone #2 on the downstream side of the dam is of compacted gravelly s. H s with oversize material up to 16" incorporated in the fill from scalpings of zone #1

3) Embankment

a. Crest

(1) Vertical Alignment good

(2) Horizontal Alignment good

(3) Surface Cracks none evident

(4) Miscellaneous

b. Slopes

(1) Undesirable Growth or Debris, Animal Burrows NONE

(2) Sloughing, Subsidence or Depressions NONE

(3) Slope Protection riprap on upstream slope at normal pool elev.

(4) Surface Cracks or Movement at Toe none

(5) Seepage none evident

(6) Condition Around Outlet Structure good condition

c. Abutments

(1) Erosion at Embankment and Abutment Contact

none

(2) Seepage along Contact of Embankment and Abutment

none evident

(3) Seepage at toe or along downstream face

none evident

d. Downstream Area - below embankment

(1) Subsidence, Depressions, etc. none

(2) Seepage, unusual growth none

(3) Evidence of surface movement beyond embankment toe

none

(4) Miscellaneous

e. Drainage System

2 - 10" diameter internal drains exit in walls of impact basin

(1) Condition of relief wells, drains, etc. good condition of foundation drains

(2) Discharge from Drainage System no discharge

4) Instrumentation

(1) Monumentation/Surveys none

(2) Observation Wells none

(3) Weirs none

(4) Piezometers none

(5) Other

5) Reservoir

a. Slopes appear stable

b. Sedimentation none reported

6) Spillway(s) (including tail race channel)

a. General Principal riser in upstream slope grated top auxiliary spillway on left side grassed channel

b. Principle Spillway structurally good grate on right side on top of riser is loose bolting units require repair

upstream slope @ riser elev. is riprapped considerable debris around intake

c. Emergency or Auxiliary Spillway good condition many trees at entrance and exit of auxiliary spillway which block any flow to the spillway trees should be removed

no instability or problems with aux. spillway homes adjacent to left side of channel at outlet.

d. Condition of Tail race channel

good condition - riprapped

e. Stability of Channel side/slopes no problems

7) Downstream Channel

a. Condition (debris, etc.) very little highway embankment & box culvert see notes below

b. Slopes good condition

c. Approximate number of homes 20 homes near base of dam on right side of downstream channel, highway embankment below homes with small box culvert to carry flow from dam if dam failure occurred flow would back up behind this

8) Miscellaneous embankment and flooding of these homes would occur, particularly if highway embankment culvert was clogged w/ debris

also emergency spillway flows will return to downstream channel on upstream side of highway embankment. so that if the dam remains intact flooding could still result. Area below highway embankment is a paved parking lot & shopping center (Large) flow from downstream channel is channeled beneath the parking lot. If debris gets into entrance flooding will definately result.

This is a very bad situation.

9) Structural :

a. Concrete Surfaces

good condition

b. Structural Cracking none evident

c. Movement - Horizontal & Vertical Alignment (Settlement)

none evident

d. Junctions with Abutments or Embankments

N/A

e. Drains - Foundation, Joint, Face foundation drains

appear satisfactory - no flow observed

f. Water passages, conduits, sluices

good condition

g. Seepage or Leakage foundation drains - no

flow apparent

h. Joints - Construction, etc. N/A

i. Foundation appears stable

j. Abutments N/A

k. Control Gates reported operational

l. Approach & Outlet Channels approach area to riser lots of debris

m. Energy Dissipators (plunge pool, etc.) impact basin - good condition

n. Intake Structures good condition of concrete surfaces - bolting units of grating on right side require repair

o. Stability appears good

p. Miscellaneous

APPENDIX D

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	1009.6	32.3	460
2) Design High Water (Max. Design Pool)	1004.3	26.5	298
3) Auxiliary Spillway Crest	1001.2	22.2	224
4) Pool Level with Flashboards	N/A		
5) Service Spillway Crest	974.5	5.2	41.3

DISCHARGES

	Volume (cfs)
1) Average Daily	Unknown
2) Spillway @ Maximum High Water	20050
3) Spillway @ Design High Water	4485
4) Spillway @ Auxiliary Spillway Crest Elevation	207
5) Low Level Outlet	—
6) Total (of all facilities) @ Maximum High Water	26.050
7) Maximum Known Flood 9/25/75	161

CREST:

ELEVATION: 1009.6 Top of Dam

Type: Earth Embankment

Width: 19 feet Length: _____

Spillover Principal Spillway 3'x9' R/C Riser weir length 16.33'

Location center of upstream Slope - Principal

At left abutment of embankment - Auxiliary

SPILLWAY:

PRINCIPAL		EMERGENCY
974.5	Elevation	1001.2
Reinforced Concrete	Type	Vegetated Earth
3'x9' Rectangular	Width	350 ft
	Type of Control	
Uncontrolled	Uncontrolled	Uncontrolled
	Controlled:	
—	Type (Flashboards; gate)	—
1	Number	1
weir length 16.33 ft	Size/Length	length of level section 50 ft
	Invert Material	Earth - Glacial Till
	Anticipated Length of operating service	100 year storm
288.33' of 36" R/C Pipe	Chute Length	900 ft.
0	Height Between Spillway Crest & Approach Channel Invert (Weir Flow)	—

OUTLET STRUCTURES/EMERGENCY DRAWDOWN FACILITIES:

Type: Gate ↘ Sluice ____ Conduit ↘ Penstock ____

Shape : Gate: Flat Frame Slide Gate, Conduit Round Cast Iron

Size: 16" 16" Diameter

Elevations: Entrance Invert 952.0

Exit Invert 940.0

Tailrace Channel: Elevation 932.0

HYDROMETEROLOGICAL GAGES:

Type : None

Location: ____

Records:

Date - ____

Max. Reading - ____

FLOOD WATER CONTROL SYSTEM:

Warning System: None

Method of Controlled Releases (mechanisms):

None

except for manually operated reservoir drain system

DRAINAGE AREA: 1745 Acres 2.73 Sq. mi.

DRAINAGE BASIN RUNOFF CHARACTERISTICS:

Land Use - Type: Fields & Forest Semi-Urban

Terrain - Relief: Moderate to steep

Surface - Soil: Glacial till

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

None

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

None

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 N/A (Miles)

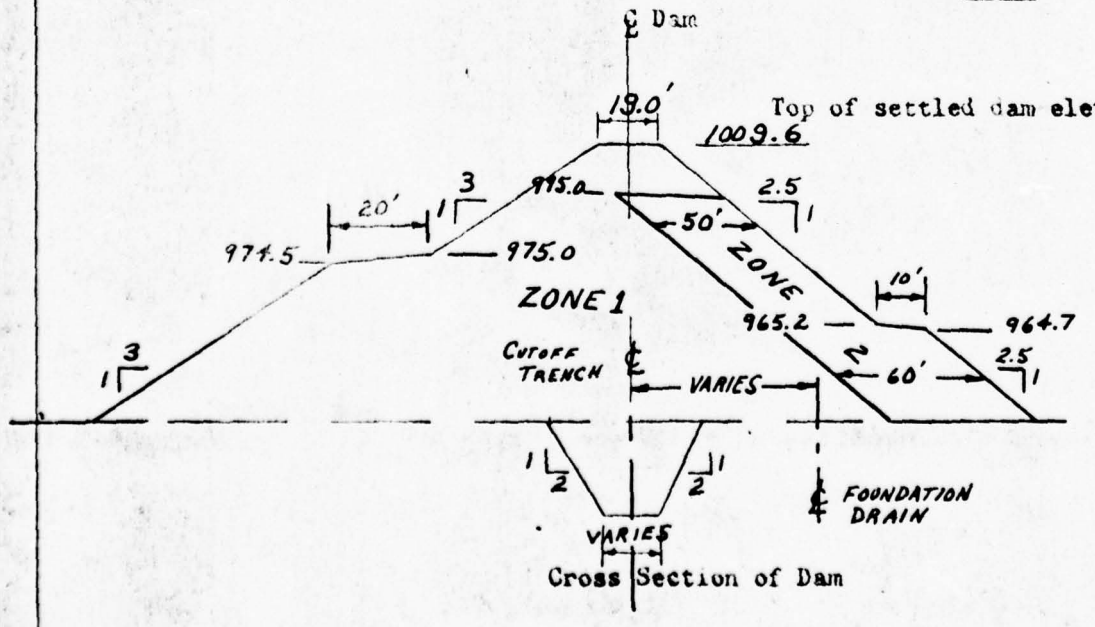
Length of Shoreline (@ Spillway Crest) N/A (Miles)

U. S. DEPARTMENT OF AGRICULTURE — SOIL CONSERVATION SERVICE

DESIGN REPORT SUMMARY

By JEP 9/69

I. Watershed data		
A. Structure class	C	
B. Drainage area	1.745	Ac.
C. Time of concentration - T_c	1.02	Hrs.
D. Hydrologic curve number - C_n Moisture Condition II	75.	
II. Principal spillway		
A. Conduit		
1. Size (I.D.)	36	In.
2. Length	238.33	Ft.
B. Riser		
1. Size	3.0 x 9.0	Ft.
2. Height (floor to crest)	25.50	Ft.
C. Weir length	12.33	Ft.
D. Reservoir drain size	12.	In.
E. Type of energy dissipator	R/C Impact Basin	
III. Emergency spillway		
A. Width	350.	Ft.
B. Side slopes	3:1	
C. Length of level section	50.	Ft.
D. Exit slope	0.027	Ft./Ft.
E. Maximum velocity - in exit section (ESH)	8.1	Ft./Sec.
F. Duration of flow (ESH) through emergency spillway	6.00	Hrs.
G. Frequency of use	100 yrs	
IV. Earth fill		
A. Height	62.	Ft.
B. Volume		C.Y.
C. Compaction	Classes A and C	



Cross Section of Dam

DESIGN SECTION, SYRACUSE, N. Y.

SHEET 3

By JEP 9/69

U S DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

Element of Structure	Determining Factor	Elev.	Surface Area Acres	Storage		Inflow		Peak Outflow c.f.s.
				Ac.-Ft.	Inches*	Volume Inches*	Rate c.f.s.	
Crest of Riser	100 yr. submerged sediment accumulation.	974.5	5.2	41.3	0.28	--	--	--
Crest of emergency spillway	100 yr. frequency storm AMC II	1001.2	21.2	224. 1/	1.54			207.
Design high water	ES-1020 Sh. 4 of 5** moisture cond. II	1004.3	26.5	298. 1/	2.05	6.61	4720	4435
Top of Dam	ES-1020 Sh. 5 of 5**	1009.6	32.3	460 1/	3.16	20.82	26,270	26,050

*Volume expressed in inches of runoff from controlled watershed area of 1,745. acres.
**Refer to hydrologic criteria in National Engineering Memorandum SCS-27 (Rev.)
1/ Does not include 115.8 ac. ft. of sediment storage. (100 yr total sediment)

DESIGN SECTION, SYRACUSE, NY

Sheet 4

FINCH HOLLOW DAM

SITE 1

D.A. = Drainage area in square miles

L = River mileage from the given station to the upstream limit of the drainage area

LCA = River mileage from the station to the center of gravity of the drainage area

PMP = Probable Maximum Precipitation in inches

t_p = Lag time from mid-point of unit rainfall duration, t_r, to peak of unit hydrograph, in hours.

t_r = Unit rainfall duration, equal to $\frac{t_p}{550}$, in hours.

C_t = Coefficient depending upon units and drainage basin characteristics

t_R = Unit rainfall duration other than standard unit, t_r, adopted in specific study, in hours.

t_{pR} = Lag time from mid-point of unit rainfall duration t_R, to peak of unit hydrograph, in hours

D.A = 2.73 square miles, L = 4.0 miles, LCA = 1.96 miles

PMP = 21 inches C_t = 2,

C_p = 0.625 from average 640 C_p = 400

$t_p = C_t (L \cdot LCA)^{0.3} = 2(4 \times 1.96)^{.3} = 3.71$ hours

$t_r = \frac{t_p}{5.5} = \frac{3.71}{5.5} = .67$ hours (Use 1 hr. hydrograph)

$t_{pR} = t_p + 0.25 (t_R - t_r) = 3.71 + .25(1 - .67) = 3.79$ hrs.

From HMR 33 - Figure 2, Depth - Area - Duration

6 hour % = 111, 12 hour % = 123

24 hour % = 133, 48 hour % = 142

```
**********************************
FLOOD HYDROGRAPH PACKAGE (HEC-1)
DAM SAFETY VERSION      JULY 1971
  LAST MODIFICATION  26 FEB 79
  MODIFIED FOR HONEYWELL SPR 79
**********************************

*************************************
THIS PROGRAM IS CURRENTLY BEING MODIFIED
TO RUN ON THE DCS HONEYWELL SYSTEM

PLEASE REPORT ANY UNUSUAL OPERATING PROBLEMS
TO MIKE TILLSON (ext. 423) PHX 7-5566
*************************************
    1              A1   FLINT HOLLOW DAM SITE 1
    2              A2   HYDROLOGIC/HYDRAULIC ANALYSES OF THE DAM
    3              A3   RATIOS OF PMF ROUTED THROUGH THE RESERVOIR
    4              B    100       1       0       0       0       0       0       0       0       0
    5              B1     5

    6              J      1       1       1

    7              J1     1

    8              K      0       1       0       0       0       0       1

    9              K1   CALCULATION OF INFLOW HYDROGRAPH TO RESERVOIR

   10              M      1       1    2.73            2.73                                   1

   11              P             21     111     123     133     142

   12              T      0       0       0       0       0       0       1     0.1       0

   13              J   3.71    .625

   14              X   5.40    5.46       1

   15              K      1       2                                               1

   16              K1   ROUTED FLOWS THROUGH THE RESERVOIR

   17              Y                                       1       1

   18              Y1     1                                                    41.3      -1

   19              Y4 974.5  1001.2  1004.3  1009.6

   20              Y5     0     207    4485   26050

   21              $S  41.3     224     298     460

   22              $E 974.5  1001.2  1004.3  1009.6

   23              $B 974.5

   24              $D  1010   3,087.     1.5     730

   25              K     99

   26              A
```

	27	A
	28	A
	29	A
	30	A

PREVIEW OF SEQUENCE OF STREAM NETWORK CALCULATIONS

RUNOFF HYDROGRAPH AT	1
ROUTE HYDROGRAPH TO	2
END OF NETWORK	

```
**********************************
FLOOD HYDROGRAPH PACKAGE (HEC-1)
DAM SAFETY VERSION      JULY 1973
  LAST MODIFICATION  26 FEB 79
  MODIFIED FOR HONEYWELL APR 79
**********************************

**************************************
THIS PROGRAM IS CURRENTLY BEING MODIFIED
TO RUN ON THE GGS HONEYWELL SYSTEM

PLEASE REPORT ANY UNUSUAL OPERATIONS PROBLEMS
TO MIKE TILLSON (PH. 423) PHI 7-5666
**************************************

RUN  DATE 09/06/79
                    FINCH HOLLOW DAM SITE 1
                    HYDROLOGIC/HYDRAULIC ANALYSES OF THE DAM
                    RATIOS OF PMF ROUTED THROUGH THE RESERVOIR

                                JOB SPECIFICATION
        NQ      NHR     NMIN     IDAY      IHR     IMIN    METRC     IPLT     IPRT    NSTAN
       100       1        0        0        0        0        0        0        0        0
                          JOPER      NWT    LROPT    TRACE
                              5        0        0        0

                          MULTI-PLAN ANALYSES TO BE PERFORMED
                              NPLAN= 1  NRTIO= 1  LRTIO= 1
              RTIOS=   1.00

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

                          SUB-AREA RUNOFF COMPUTATION

              CALCULATION OF INFLOW HYDROGRAPH TO RESERVOIR
                      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    2.73     0.     2.73    0.      0.          0       1       0

                                PRECIP DATA
                      SPFE     PMS      P6      R12     R24     R48     R72     R96
                      0.      21.00   111.00  123.00  133.00  142.00   0.      0.
TRSPC COMPUTED BY THE PROGRAM IS 0.000

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

                              UNIT HYDROGRAPH DATA
                          TP=  3.71    CP=0.63    NTA=  0

                              RECESSION DATA
                      STRTQ=     5.46    QRCSN=     5.46    RTIOR= 1.00
APPROXIMATE CLARK COEFFICIENTS FROM GIVEN SNYDER CP AND TP ARE TC= 4.27 AND R= 3.40 INTERVALS
```

HYDROGRAPH AT I-10-H SECTION GRADUATES LAG= 3.72 HOURS, CP= 0.65 VOL= 1.00

30.	127.	234.	292.	269.	205.	153.	113.	84.	63.	
47.	35.	26.	19.	14.	11.	8.	6.	4.	3.	
2.										

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	1.00	1	0.01	0.	0.01	5.	1.03	3.00	51	0.	0.	0.	708.
1.01	2.00	2	0.01	0.	0.01	5.	1.03	4.00	52	0.	0.	0.	532.
1.01	3.00	3	0.01	0.	0.01	5.	1.03	5.00	53	0.	0.	0.	397.
1.01	4.00	4	0.01	0.	0.01	5.	1.03	6.00	54	0.	0.	0.	296.
1.01	5.00	5	0.01	0.	0.01	5.	1.03	7.00	55	0.	0.	0.	221.
1.01	6.00	6	0.01	0.	0.01	5.	1.03	8.00	56	0.	0.	0.	166.
1.01	7.00	7	0.02	0.	0.02	5.	1.03	9.00	57	0.	0.	0.	124.
1.01	8.00	8	0.02	0.	0.02	5.	1.03	10.00	58	0.	0.	0.	91.
1.01	9.00	9	0.02	0.	0.02	5.	1.03	11.00	59	0.	0.	0.	65.
1.01	10.00	10	0.02	0.	0.02	5.	1.03	12.00	60	0.	0.	0.	45.
1.01	11.00	11	0.02	0.	0.02	5.	1.03	13.00	61	0.	0.	0.	22.
1.01	12.00	12	0.02	0.	0.02	5.	1.03	14.00	62	0.	0.	0.	13.
1.01	13.00	13	0.13	0.	0.13	5.	1.03	15.00	63	0.	0.	0.	8.
1.01	14.00	14	0.15	0.	0.15	5.	1.03	16.00	64	0.	0.	0.	7.
1.01	15.00	15	0.19	0.	0.19	5.	1.03	17.00	65	0.	0.	0.	7.
1.01	16.00	16	0.48	0.10	0.38	9.	1.03	18.00	66	0.	0.	0.	6.
1.01	17.00	17	0.18	0.08	0.10	21.	1.03	19.00	67	0.	0.	0.	6.
1.01	18.00	18	0.14	0.04	0.10	41.	1.03	20.00	68	0.	0.	0.	6.
1.01	19.00	19	0.01	0.	0.01	58.	1.03	21.00	69	0.	0.	0.	5.
1.01	20.00	20	0.01	0.	0.01	64.	1.03	22.00	70	0.	0.	0.	5.
1.01	21.00	21	0.01	0.	0.01	58.	1.03	23.00	71	0.	0.	0.	5.
1.01	22.00	22	0.01	0.	0.01	47.	1.04	0.	72	0.	0.	0.	5.
1.01	23.00	23	0.01	0.	0.01	37.	1.04	1.00	73	0.	0.	0.	5.
1.02	0.	24	0.01	0.	0.01	29.	1.04	2.00	74	0.	0.	0.	5.
1.02	1.00	25	0.11	0.01	0.10	23.	1.04	3.00	75	0.	0.	0.	5.
1.02	2.00	26	0.11	0.01	0.10	20.	1.04	4.00	76	0.	0.	0.	5.
1.02	3.00	27	0.11	0.01	0.10	20.	1.04	5.00	77	0.	0.	0.	5.
1.02	4.00	28	0.11	0.01	0.10	21.	1.04	6.00	78	0.	0.	0.	5.
1.02	5.00	29	0.11	0.01	0.10	22.	1.04	7.00	79	0.	0.	0.	5.
1.02	6.00	30	0.11	0.01	0.10	23.	1.04	8.00	80	0.	0.	0.	5.
1.02	7.00	31	0.34	0.24	0.10	32.	1.04	9.00	81	0.	0.	0.	5.
1.02	8.00	32	0.34	0.24	0.10	62.	1.04	10.00	82	0.	0.	0.	5.
1.02	9.00	33	0.34	0.24	0.10	115.	1.04	11.00	83	0.	0.	0.	5.
1.02	10.00	34	0.34	0.24	0.10	180.	1.04	12.00	84	0.	0.	0.	5.
1.02	11.00	35	0.34	0.24	0.10	241.	1.04	13.00	85	0.	0.	0.	5.
1.02	12.00	36	0.34	0.24	0.10	287.	1.04	14.00	86	0.	0.	0.	5.
1.02	13.00	37	1.86	1.76	0.10	376.	1.04	15.00	87	0.	0.	0.	5.
1.02	14.00	38	2.24	2.14	0.10	613.	1.04	16.00	88	0.	0.	0.	5.
1.02	15.00	39	2.80	2.70	0.10	1058.	1.04	17.00	89	0.	0.	0.	5.
1.02	16.00	40	7.09	6.99	0.10	1833.	1.04	18.00	90	0.	0.	0.	5.
1.02	17.00	41	2.61	2.51	0.10	2886.	1.04	19.00	91	0.	0.	0.	5.
1.02	18.00	42	2.05	1.95	0.10	3876.	1.04	20.00	92	0.	0.	0.	5.
1.02	19.00	43	0.17	0.07	0.10	4408.	1.04	21.00	93	0.	0.	0.	5.
1.02	20.00	44	0.17	0.07	0.10	4230.	1.04	22.00	94	0.	0.	0.	5.
1.02	21.00	45	0.17	0.07	0.10	3562.	1.04	23.00	95	0.	0.	0.	5.
1.02	22.00	46	0.17	0.07	0.10	2791.	1.05	0.	96	0.	0.	0.	5.
1.02	23.00	47	0.17	0.07	0.10	2118.	1.05	1.00	97	0.	0.	0.	5.
1.03	0.	48	0.17	0.07	0.10	1608.	1.05	2.00	98	0.	0.	0.	5.
1.03	1.00	49	0.	0.	0.	1226.	1.05	3.00	99	0.	0.	0.	5.
1.03	2.00	50	0.	0.	0.	934.	1.05	4.00	100	0.	0.	0.	5.
									SUM	23.86	20.16	3.69	35884.
										(606.)	(512.)	(94.)	(1016.12)

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	4408.	3561.	1444.	497.	35899.
CMS	125.	101.	41.	14.	1017.
INCHES		12.14	19.69	20.30	20.39

THOUS CU M		2178.	3534.	3645.	3669.				

HYDROGRAPH AT STA 1 FOR PLAN 1, RTIO 1

5.	5.	5.	5.	5.	5.	5.	5.	5.	5.
5.	5.	5.	5.	5.	8.	21.	41.	58.	64.
58.	47.	37.	29.	23.	20.	20.	21.	22.	23.
32.	62.	115.	180.	241.	267.	370.	613.	1054.	1633.
2866.	3876.	4408.	4230.	3562.	2791.	2118.	1608.	1220.	934.
704.	532.	397.	296.	221.	165.	124.	91.	65.	45.
22.	13.	9.	7.	7.	6.	6.	6.	5.	5.
5.	5.	5.	5.	5.	5.	5.	5.	5.	5.
5.	5.	5.	5.	5.	5.	5.	5.	5.	5.
5.	5.	5.	5.	5.	5.	5.	5.	5.	5.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	4408.	3561.	1444.	497.	35899.
CMS	125.	101.	41.	14.	1017.
INCHES		12.14	19.69	20.30	20.39
MM		308.24	500.05	515.71	517.84
AC-FT		1766.	2865.	2955.	2967.
THOUS CU M		2178.	3534.	3645.	3660.

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

HYDROGRAPH ROUTING

ROUTED FLOWS THROUGH THE RESERVOIR

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

ROUTING DATA

QLOSS	CLOSS	AVG	IRES	ISAME	IOPT	IPNP	LSTR
0.	0.	0.	1	1	0	0	0

NSTPS	NSTDL	LAG	AMSKK	X	TSK	STORA	ISPRAT
1	0	0	0.	0.	0.	41.	-1

STAGE	974.50	1001.20	1004.30	1009.60
FLOW	0.	297.00	4485.00	26050.00
CAPACITY=	41.	224.	298.	460.
ELEVATION=	975.	1001.	1004.	1010.

CREL	SPWID	COQW	EXPW	ELEVL	COQL	CAREA	EXPL
974.5	0.	0.	0.	0.	0.	0.	0.

DAM DATA

TOPEL	COQD	EXPD	DAMWID
1010.0	3.1	1.5	730.

WARNING *** TOP OF DAM, BOTTOM OF BREACH, OR LOW-LEVEL OUTLET IS NOT WITHIN RANGE OF GIVEN ELEVATIONS IN STORAGE-ELEVATION DATA
BOTTOM OF RESERVOIR ASSUMED TO BE AT 974.50
STORAGE-ELEVATION DATA WILL BE EXTRAPOLATED ABOVE ELEVATION 1009.60

STATION 2, PLAN 1, RATIO 1

END-OF-PERIOD HYDROGRAPH ORDINATES

MO.DA	HR.MN	PERIOD	HOURS	INFLOW	OUTFLOW	STORAGE	STAGE
1.01	1.00	1	1.00	5.	0.	42.	974.6
1.01	2.00	2	2.00	5.	1.	42.	974.6

1.01	4.00	4	4.00	5.	2.	43.	974.7
1.01	5.00	5	5.00	5.	2.	43.	974.8
1.01	6.00	6	6.00	5.	2.	43.	974.8
1.01	7.00	7	7.00	5.	3.	44.	974.8
1.01	8.00	8	8.00	5.	3.	44.	974.9
1.01	9.00	9	9.00	5.	3.	44.	974.9
1.01	10.00	10	10.00	5.	3.	44.	974.9
1.01	11.00	11	11.00	5.	4.	44.	975.0
1.01	12.00	12	12.00	5.	4.	45.	975.0
1.01	13.00	13	13.00	5.	4.	45.	975.0
1.01	14.00	14	14.00	5.	4.	45.	975.0
1.01	15.00	15	15.00	5.	4.	45.	975.0
1.01	16.00	16	16.00	9.	4.	45.	975.1
1.01	17.00	17	17.00	21.	5.	46.	975.2
1.01	18.00	18	18.00	41.	8.	48.	975.5
1.01	19.00	19	19.00	58.	11.	51.	976.0
1.01	20.00	20	20.00	64.	16.	55.	976.5
1.01	21.00	21	21.00	58.	20.	59.	977.1
1.01	22.00	22	22.00	47.	23.	61.	977.4
1.01	23.00	23	23.00	37.	25.	63.	977.7
1.02	0.	24	24.00	29.	25.	64.	977.8
1.02	1.00	25	25.00	23.	25.	64.	977.8
1.02	2.00	26	26.00	20.	25.	64.	977.7
1.02	3.00	27	27.00	20.	25.	63.	977.7
1.02	4.00	28	28.00	21.	24.	63.	977.6
1.02	5.00	29	29.00	22.	24.	62.	977.6
1.02	6.00	30	30.00	23.	24.	62.	977.6
1.02	7.00	31	31.00	32.	24.	63.	977.6
1.02	8.00	32	32.00	62.	26.	64.	977.9
1.02	9.00	33	33.00	115.	32.	69.	978.6
1.02	10.00	34	34.00	180.	42.	78.	979.9
1.02	11.00	35	35.00	241.	57.	92.	981.9
1.02	12.00	36	36.00	287.	76.	108.	984.3
1.02	13.00	37	37.00	376.	99.	128.	987.2
1.02	14.00	38	38.00	613.	134.	160.	991.8
1.02	15.00	39	39.00	1058.	197.	215.	999.9
1.02	16.00	40	40.00	1833.	1806.	252.	1002.4
1.02	17.00	41	41.00	2886.	2587.	265.	1002.9
1.02	18.00	42	42.00	3876.	3707.	285.	1002.7
1.02	19.00	43	43.00	4408.	4320.	295.	1004.2
1.02	20.00	44	44.00	4230.	4319.	295.	1004.2
1.02	21.00	45	45.00	3562.	3722.	285.	1003.7
1.02	22.00	46	46.00	2791.	2953.	271.	1003.2
1.02	23.00	47	47.00	2118.	2250.	259.	1002.7
1.03	0.	48	48.00	1608.	1704.	250.	1002.3
1.03	1.00	49	49.00	1226.	1299.	243.	1002.0
1.03	2.00	50	50.00	934.	990.	238.	1001.8
1.03	3.00	51	51.00	704.	752.	233.	1001.6
1.03	4.00	52	52.00	532.	566.	230.	1001.5
1.03	5.00	53	53.00	397.	423.	228.	1001.4
1.03	6.00	54	54.00	296.	315.	226.	1001.3
1.03	7.00	55	55.00	221.	236.	224.	1001.2
1.03	8.00	56	56.00	166.	205.	222.	1000.9
1.03	9.00	57	57.00	124.	200.	218.	1000.3
1.03	10.00	58	58.00	91.	191.	210.	999.2
1.03	11.00	59	59.00	65.	181.	201.	997.9
1.03	12.00	60	60.00	45.	170.	191.	996.4
1.03	13.00	61	61.00	22.	156.	181.	994.6
1.03	14.00	62	62.00	13.	145.	169.	993.2
1.03	15.00	63	63.00	8.	133.	159.	991.7
1.03	16.00	64	64.00	7.	122.	149.	990.2
1.03	17.00	65	65.00	7.	112.	140.	988.9
1.03	18.00	66	66.00	6.	102.	132.	987.7
1.03	19.00	67	67.00	6.	94.	124.	986.6

1.03	22.00	70	70.00	5.	72.	109.	983.8
1.03	23.00	71	71.00	5.	66.	100.	983.0
1.04	0.	72	72.00	5.	61.	95.	982.3
1.04	1.00	73	73.00	5.	56.	90.	981.7
1.04	2.00	74	74.00	5.	51.	87.	981.1
1.04	3.00	75	75.00	5.	47.	83.	980.6
1.04	4.00	76	76.00	5.	43.	80.	980.1
1.04	5.00	77	77.00	5.	40.	77.	979.7
1.04	6.00	78	78.00	5.	37.	74.	979.3
1.04	7.00	79	79.00	5.	34.	71.	978.9
1.04	8.00	80	80.00	5.	32.	69.	978.6
1.04	9.00	81	81.00	5.	29.	67.	978.3
1.04	10.00	82	82.00	5.	27.	65.	978.0
1.04	11.00	83	83.00	5.	25.	63.	977.7
1.04	12.00	84	84.00	5.	23.	62.	977.5
1.04	13.00	85	85.00	5.	22.	61.	977.3
1.04	14.00	86	86.00	5.	20.	59.	977.1
1.04	15.00	87	87.00	5.	19.	58.	977.0
1.04	16.00	88	88.00	5.	18.	57.	976.8
1.04	17.00	89	89.00	5.	17.	56.	976.7
1.04	18.00	90	90.00	5.	16.	55.	976.5
1.04	19.00	91	91.00	5.	15.	54.	976.4
1.04	20.00	92	92.00	5.	14.	54.	976.3
1.04	21.00	93	93.00	5.	13.	53.	976.2
1.04	22.00	94	94.00	5.	12.	52.	976.1
1.04	23.00	95	95.00	5.	12.	52.	976.0
1.05	0.	96	96.00	5.	11.	51.	976.0
1.05	1.00	97	97.00	5.	11.	51.	975.9
1.05	2.00	98	98.00	5.	10.	50.	975.8
1.05	3.00	99	99.00	5.	10.	50.	975.8
1.05	4.00	100	100.00	5.	9.	50.	975.7

PEAK OUTFLOW IS 4320. AT TIME 43.00 HOURS

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	4320.	3573.	1391.	495.	35804.
CMS	122.	101.	39.	14.	1014.
INCHES		12.18	18.96	20.24	20.33
MM		309.26	481.64	514.04	516.46
AC-FT		1772.	2759.	2945.	2959.
THOUS CU M		2186.	3404.	3633.	3650.

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

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 1.00
HYDROGRAPH AT	1	2.73 (7.07)	1	4400. (124.81)(
ROUTED TO	2	2.73 (7.07)	1	4320. (122.33)(

SUMMARY OF DAM SAFETY ANALYSIS

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	974.50	974.50	1010.00
STORAGE	41.	41.	472.
OUTFLOW	0.	0.	27678.

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
1.00	1004.13	0.	295.	4320.	0.	43.00	0.

LIST OF REFERENCES

APPENDIX E

APPENDIX E

REFERENCES

1) U.S. Department of Commerce, Technical Paper No. 40, Rainfall Frequency Atlas of the United States, May 1961.

2) Soil Conservation Service, National Engineering Handbook, Section 4, Hydrology, August 1972 (U.S. Department of Agriculture).

3) H.W. King and E.F. Brater, Handbook of Hydraulics, 5th edition, McGraw-Hill, 1963.

4) T.W. Lambe and R.V. Whitman, Soil Mechanics, John Wiley and Sons, 1965.

5) W.D. Thornbury, Principles of Geomorphology, John Wiley and Sons, 1969.

6) University of the State of New York, Geology of New York, Education Leaflet 20, Reprinted 1973.

7) Cornell University Agriculture Experiment Station (compiled by M.G. Cline and R.L. Marshall), General Soil Map of New York State and Soils of New York Landscapes, Information Bulletin 119, 1977.

APPENDIX F

STABILITY ANALYSES

COMPUTATION SHEET
SCS-523 REV 5-58

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

GPO 1958 O—470867

STATE	NY		PROJECT	LITTLE CHOCONUT - SITE 1		
BY	DATE 9/69		CHECKED BY	DATE	JOB NO.	NY-2014-D
SUBJECT	SLOPE STABILITY				SHEET	OF Pg 3-1

INFINITE SLOPE METHOD

CASE A :

$$F_s = \frac{\gamma_b \tan \phi}{\gamma_s \tan \theta}$$

WHERE $\gamma_s = 141$
$\gamma_b = 78.6$
$\tan 31° = 0.6$
$\tan \theta = \frac{1}{3}$ ($\theta = 18.4°$)

$$F_s = \frac{78.6\,(0.6)}{141\,(0.333)} = 1.0$$

CASE B :

$$F_s = \frac{(\gamma_s \cos^2\theta - \gamma_w) \tan \phi}{\gamma_s \sin\theta \cos\theta}$$

$$F_s = \frac{(141\,(.948)^2) - 62.4\,(0.6)}{141\,(.3155)\,(.948)} = 0.92$$

NOTE : TO OBTAIN F.S. = 1.3 (FROM COMPUTER SLOPE STABILITY) IT IS RECOMMENDED THAT A 20' WIDE BERM BE USED @ PERM. POOL EL.

LITTLE CHOCTAWHATCHEE SITE 1 - 1HY

UPSTREAM SLOPE
RUN w/ 2 ea. 10' BERMS

Pg 3-2

UPSTREAM

N =	-241.0	E =	260.3	
FOS =	1.270	R =	320.0	5'
FOS =	1.270	R =	318.0	
N =	-240.0	E =	185.0	
FOS =	1.227	R =	245.0	
N =	-240.0	E =	111.0	
N =	-185.0	E =	260.0	
FOS =	1.381	R =	320.0	
FOS =	1.378	R =	318.0	
FOS =	1.361	R =	316.0	
FOS =	1.322	R =	314.0	
FOS =	1.297	R =	312.0	— 15' of SURFACE
FOS =	1.278	R =	310.0	
FOS =	1.255	R =	308.0	
FOS =	1.200	R =	306.0	
FOS =	1.165	R =	304.0	
FOS =	1.145	R =	302.0	
FOS =	1.003	R =	300.0	
FOS =	0.713	R =	298.0	2m w/surface
N =	-185.0	E =	185.0	
FOS =	1.256	R =	245.0	
FOS =	1.242	R =	243.0	
FOS =	1.230	R =	241.0	
FOS =	1.214	R =	239.0	
FOS =	1.217	R =	237.0	
FOS =	1.210	R =	235.0	
FOS =	1.215	R =	233.0	
FOS =	1.187	R =	231.0	
FOS =	1.186	R =	229.0	
FOS =	1.227	R =	227.0	
FOS =	0.413	R =	225.0	
N =	-185.0	E =	110.0	
FOS =	1.235	R =	170.0	
FOS =	1.291	R =	168.0	
FOS =	1.308	R =	166.0	
FOS =	1.316	R =	164.0	
FOS =	1.328	R =	162.0	
FOS =	1.347	R =	160.0	
FOS =	1.354	R =	158.0	
FOS =	1.367	R =	156.0	
FOS =	1.391	R =	154.0	
FOS =	1.329	R =	152.0	

FOS = 1.395 A = 350.0
FOS = 1.412 A = 345.0
FOS = 1.428 A = 340.0
FOS = 1.448 A = 335.0

H = -150.0 A = 145.0

FOS = 1.438 A = 345.0
FOS = 1.425 A = 340.0

H = -140.0 A = 140.0

H = -135.0 A = 130.0

FOS = 1.519 A = 320.0
FOS = 1.492 A = 315.0
FOS = 1.454 A = 310.0
FOS = 1.401 A = 305.0
FOS = 1.350 A = 300.0
FOS = 1.329 A = 295.0
FOS = 1.305 A = 290.0
FOS = 1.277 A = 285.0
FOS = 1.257 A = 280.0
FOS = 1.269 A = 282.0
FOS = 1.190 A = 290.0
FOS = 1.222 A = 288.0

H = -165.0 A = 185.0

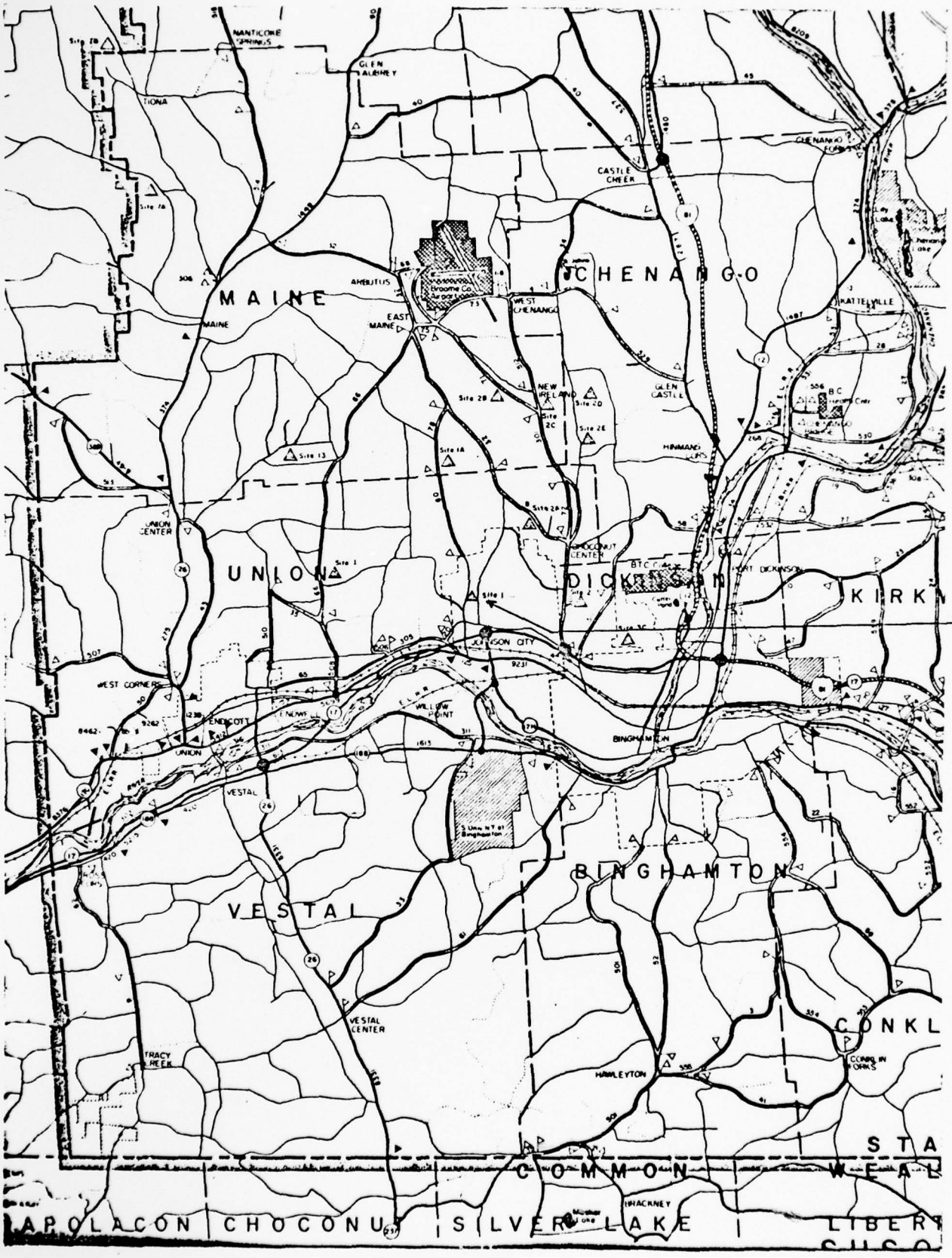
FOS = 1.288 A = 265.0
FOS = 1.273 A = 263.0
FOS = 1.274 A = 261.0
FOS = 1.270 A = 259.0
FOS = 1.273 A = 257.0
FOS = 1.287 A = 255.0
FOS = 1.318 A = 253.0
FOS = 1.330 A = 251.0
FOS = 1.357 A = 249.0
FOS = 1.381 A = 247.0
FOS = 1.388 A = 245.0

H = -145.0 A = 110.0

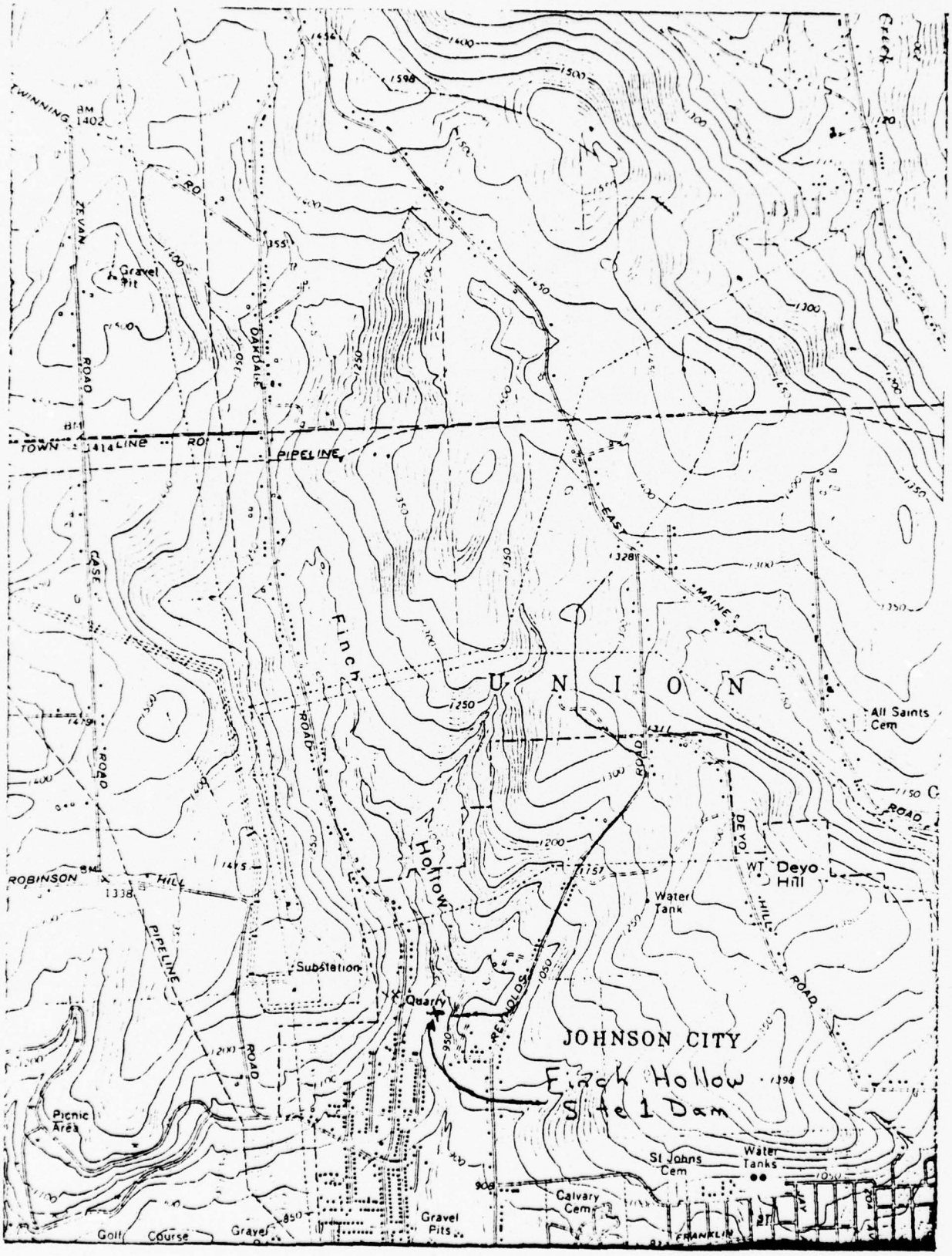
FOS = 1.335 A = 170.0
FOS = 1.36[illegible] A = 168.0
FOS = 1.333 A = 166.0
FOS = 1.3[illegible]5 A = 164.0
FOS = 1.[illegible] A = 162.0
FOS = 1.[illegible] A = 160.0
FOS = 1.521 A = 158.0
FOS = 1.533 A = 156.0
FOS = 1.772 A = 154.0
FOS = 1.7[illegible] A = 152.0
FOS = 1.888 A = 150.0

APPENDIX G

DRAWINGS



Location Plan
Finch Hollow
Site 1 Dam
Broome County



Topographic Map

List of Drawings

FINCH HOLLOW SITE I DAM

CONSTRUCTION DETAILS

1. Areas under the dam and levee (including 15 feet outside the toes). Emergency spillway (including 15 feet outside the cut slopes), and borrow area to be cleared and grubbed. Limits of area to be cleared and grubbed to be staked in the field by the engineer.

2. The waste areas and the area upstream from the dam and below elevation 976.5 shall be cleared. Limits of area to be cleared shall be staked in the field by the engineer.

3. Depths and limits of borrow excavation as shown are approximate. Final depths and limits shall be determined by the engineer at the time of construction. At the completion of earth fill operations, the borrow area will be left gently sloping, generally smooth, and free draining.

4. Bottom section of emergency spillway to be covered with 6" of topsoil from sta. 3+40 to approx. sta. 9+50.

5. Waste areas shall be graded to be free draining and generally smooth.

6. The contractor will construct temporary bridges, install culverts, or use other methods approved by the engineer where Haul Roads cross live streams to reduce pollution of the stream.

7. The contractor will sprinkle or apply dust suppressors on Haul Roads and at the site to reduce pollution of the air.

8. All chemicals, fuels, and lubricants will be located, stored, and disposed of in such a manner as to prevent their entry into streams, wells, or springs.

9. Sanitary facilities will be located in such a manner as to prevent pollution of springs, wells, and streams.

EXCAVATION SMALL ROCKLINED CHANNEL 223.3 cu yd
LOOSE ROCK CHANNEL LINING 608 sq yd

RELOCATED STREAM BED

SMALL ROCKLINED CHANNEL

DESIGN HIGH WATER ELEV

WASTE AREA

BURIED CABLE

SUPPLEMENTAL BORROW AREA

BORROW AREA

TP-103

DA-153

ELEV 980.0

SEDIMENT POOL ELEV 974.0

℄ PRINCIPAL SPILLWAY

MATCH LINE

DESIGN HIGH WATER ELEV 1004.3

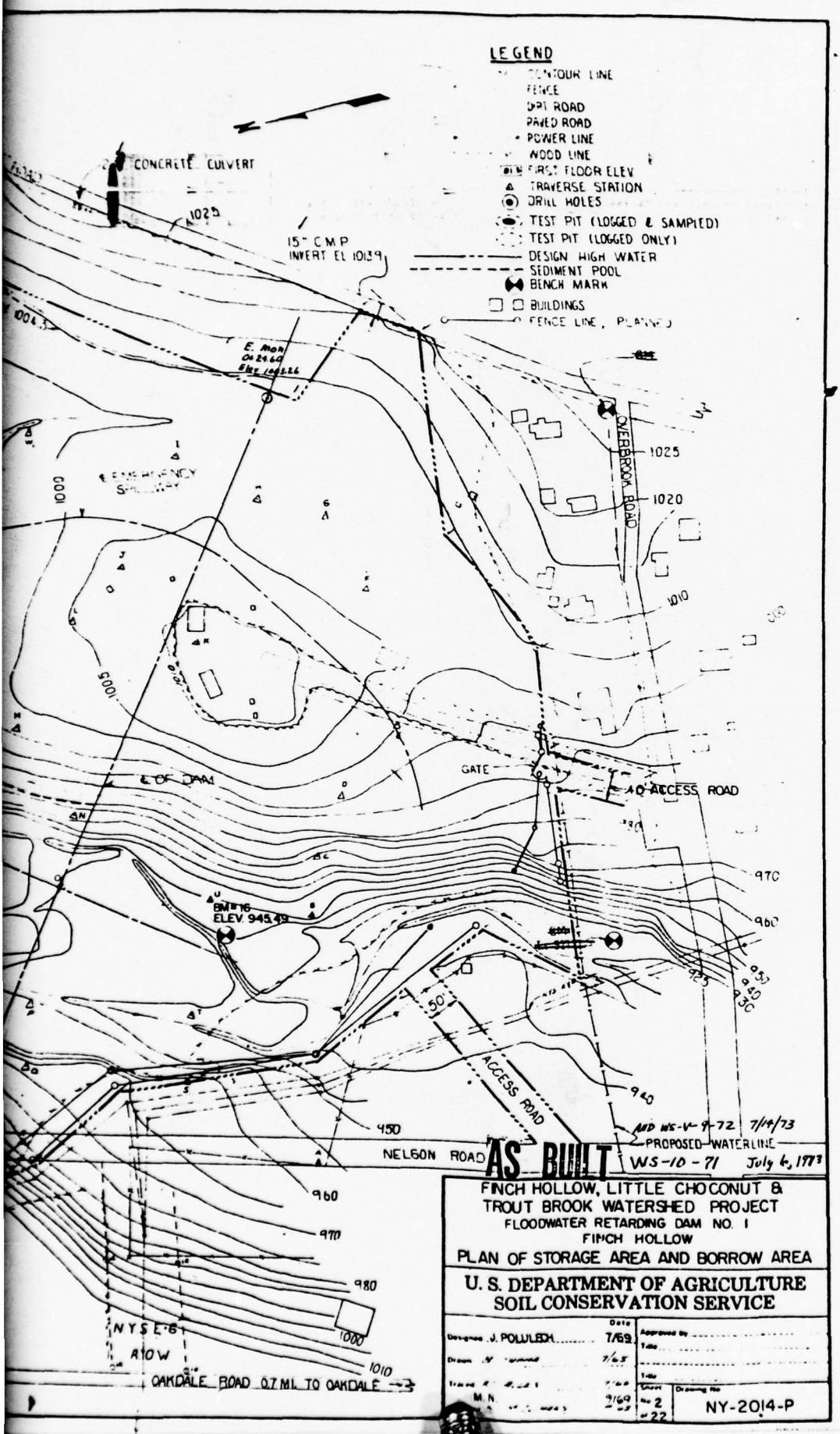
CONSTRUCTION LIMITS

Item 1 - CLEARING CLASS A 7.6 Ac.
Item 2 - CLEARING & GRUBBING 21.0 Ac.
Item 22.03 - Vegetative Treatment Under WS-V-9-71
Slopes 0.5 Ac
Flat Areas 0.5 Ac

Item 2 Vegetative Treatment Under WS-V-9-72
Slopes 6.5 Ac
Flat Areas 5.0 Ac
Around Structures 1.2 Ac

CONTOUR INTERVAL 5'

0 25 50 100 200
SCALE IN FEET



AS BUILT

MOD WS-V-9-72 7/14/73

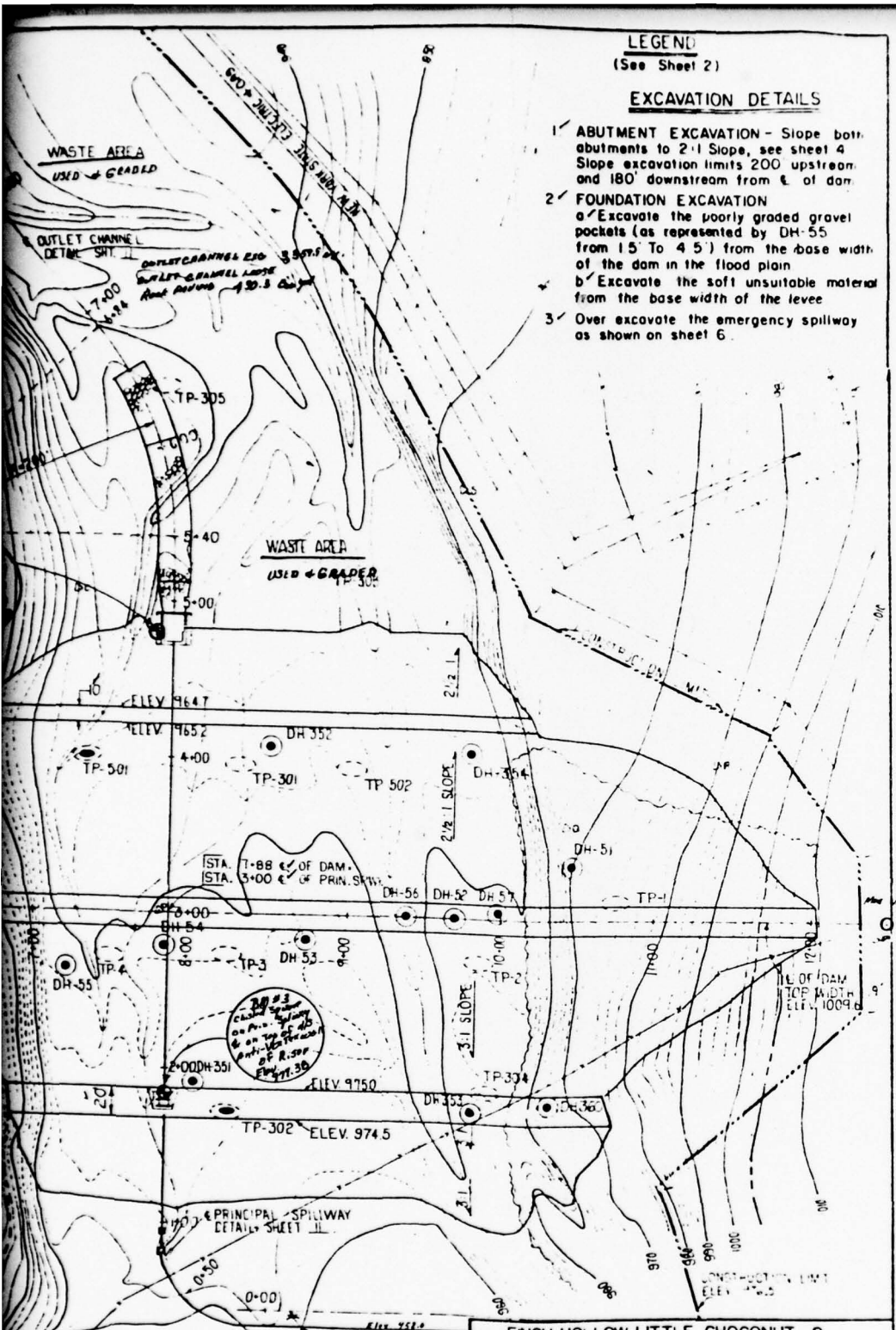
WS-10-71 July 4, 1973

FINCH HOLLOW, LITTLE CHOCONUT & TROUT BROOK WATERSHED PROJECT
FLOODWATER RETARDING DAM NO. 1
FINCH HOLLOW
PLAN OF STORAGE AREA AND BORROW AREA

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

	Date		
Designed J. POLULECH	7/69	Approved by	
Drawn	7/69	Title	
Traced	7/69	Title	
M.N.	9/69	Sheet No. 2 of 22	Drawing No. NY-2014-P

LAYOUT DATA CURVE I
Δ = 48°15'
R = 285
D = 20°06
L = 240
T = 127.69
E = 27.29
M = 24.91
℄ STATION | DEFLECTION | CHORD DIST
2+10 | 0°00 | 0.00
2+50 | 4°01 | 39.95
3+00 | 9°03 | 49.94
3+50 | 14°04 | 49.94
4+00 | 19°06 | 49.94
4+50 | 24°08 | 49.94
LAYOUT DATA CURVE II
Δ = 33°17' R = 285 D = 20°06 L = 275
T = 149.31 E = 36.74 M = 32.55
℄ STATION | DEFLECTION | CHORD DIST
6+75 | 0°00' | 0.00
7+00 | 2°31' | 24.99
7+50 | 7°32' | 49.94
8+00 | 12°34' | 49.94
8+50 | 17°35' | 49.94
9+00 | 22°37' | 49.94
9+50 | 27°39' | 49.94
℄ OF LEVEE TOP WIDTH 12' DETAIL SHT 5
SHADED AREA FILLED WITH UNSUITABLE MATERIAL AND GRADED TO EDGE OF LEVEE TO DRAIN TOP OF BE POND
WASTE AREA
TO BE GRADED AGAINST OUTSIDE SLOPE OF LEVEE TO PREVENT PONDING
℄ SOIL LEVEL SECTION ELEV 1001.2
REYNOLDS ROAD
FRANCES ROAD
TRAILER
CURVE II
R. 285
CURVE I
TP-204
TP-202
TP-205
TP-201
TP-203
TP-5
DH-251
DH-252
DH-57
S 0.027 FT/FT
S 0.020 FT/FT
A-285
DIVERSION DITCH DETAIL SHT 1
℄ DIVERSION DITCH TO BE LOCATED AS STAKED IN THE FIELD BY THE ENGINEER
CONSTRUCTION LIMIT
DESIGN HIGH WATER ELEV 1002.1
EXISTING CONTOUR
INVERT OF EM SPILLWAY WAS OVER EXCAVATED & FILL WAS NOT NEEDED
℄ ROCK LINED OUTLET CHANNEL (DETAIL SHT 7A) TO BE LOCATED & STAKED IN THE FIELD BY THE ENGINEER
SEDIMENT POOL



LEGEND

(See Sheet 2)

EXCAVATION DETAILS

1/ ABUTMENT EXCAVATION - Slope both abutments to 2:1 Slope, see sheet 4 Slope excavation limits 200 upstream and 180' downstream from ℄ of dam

2/ FOUNDATION EXCAVATION

a/ Excavate the poorly graded gravel pockets (as represented by DH-55 from 15' To 45') from the base width of the dam in the flood plain

b/ Excavate the soft unsuitable material from the base width of the levee

3/ Over excavate the emergency spillway as shown on sheet 6.

FINCH HOLLOW, LITTLE CHOCONUT & TROUT BROOK WATERSHED PROJECT

FLOODWATER RETARDING DAM NO 1

FINCH HOLLOW

PLAN OF STRUCTURAL WORKS

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

J. POLULECH 7/69

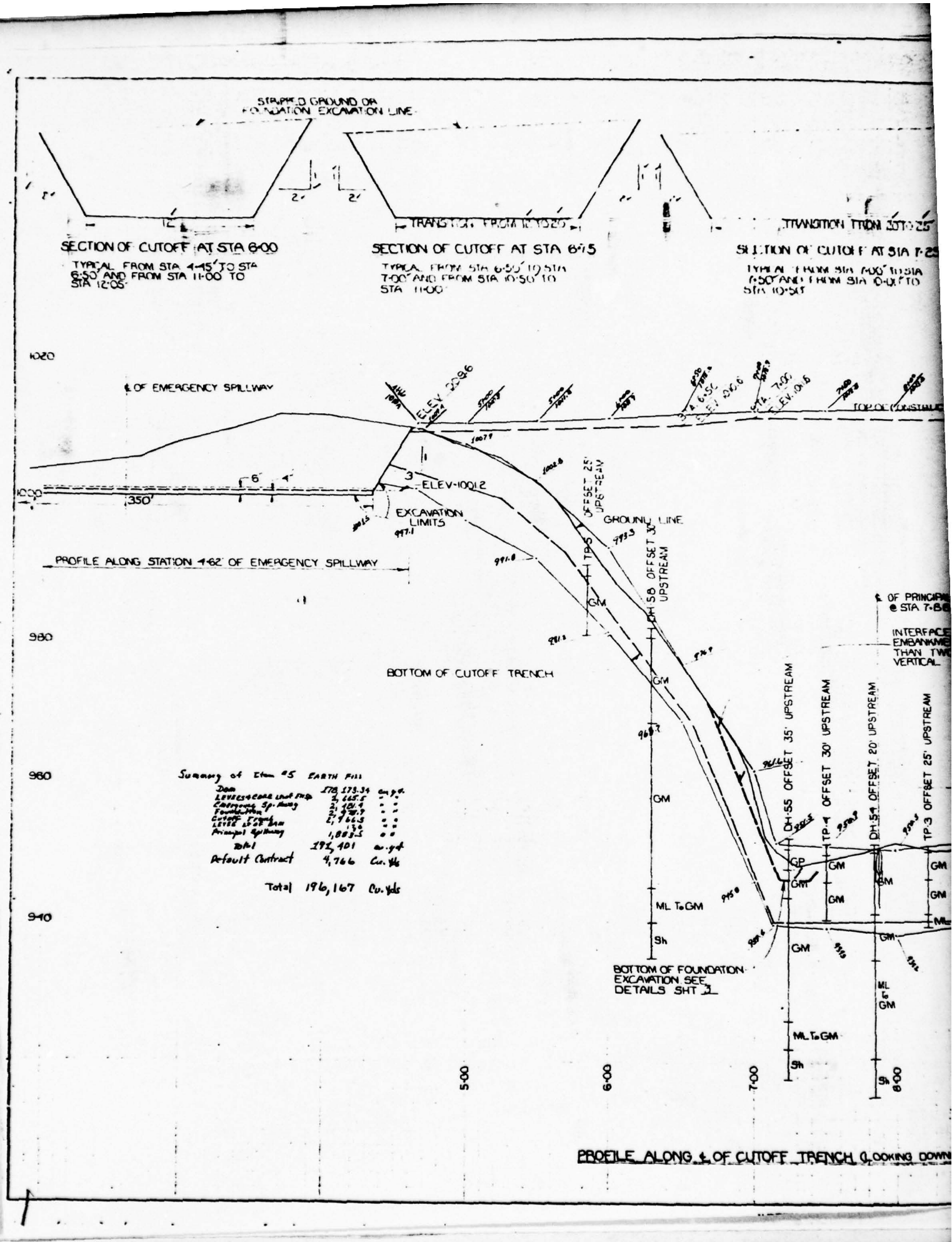
J. DE VITA III

M. NIKOLICH 8/69

3
22

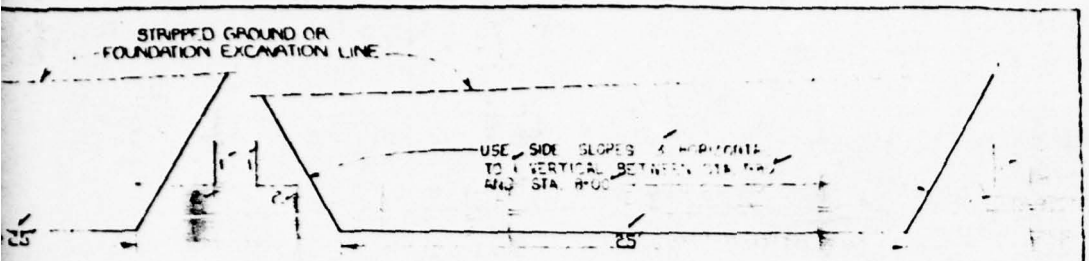
NY-2014-P

SCS-313 C (9-64)



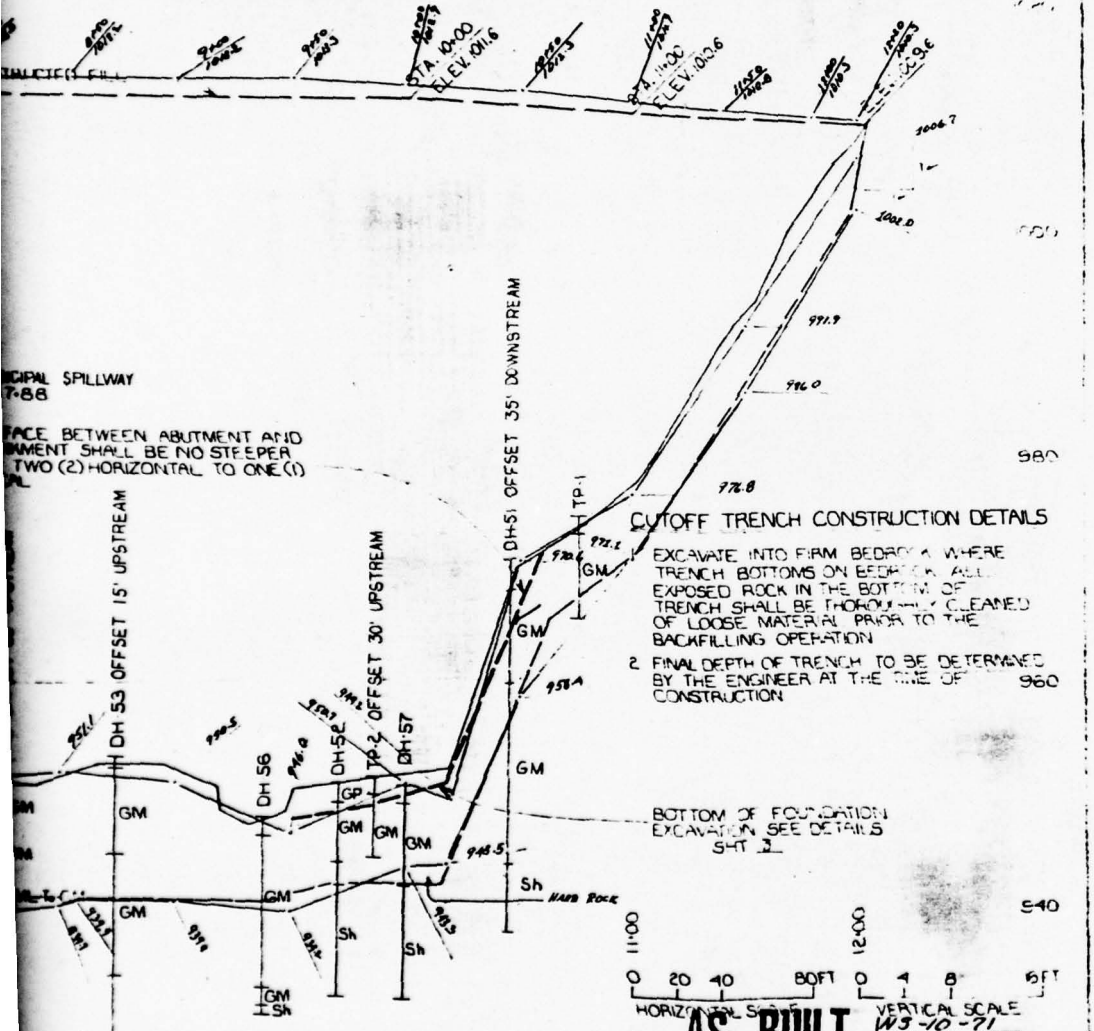
Summary of Item #5 EARTH FILL

Dam	578,173.34	cu.yd.
Levees & Cond. Und. Fnd.	3,665.5	" "
Contract Sp. Items	2,101.9	" "
Foundation	2,978.7	" "
Cutoff Trench	2,766.5	" "
Levee Closure Dam	130	" "
Principal Spillway	1,885.5	" "
Total	193,401	cu.yd.
Default Contract	4,766	Cu. Yds
Total	196,167	Cu. Yds



SECTION OF CUTOFF AT STA 9+65

TYPICAL FROM STA 7+5[illegible] TO STA 10+00



CUTOFF TRENCH CONSTRUCTION DETAILS

1. EXCAVATE INTO FIRM BEDROCK WHERE TRENCH BOTTOMS ON BEDROCK. ALL EXPOSED ROCK IN THE BOTTOM OF TRENCH SHALL BE THOROUGHLY CLEANED OF LOOSE MATERIAL PRIOR TO THE BACKFILLING OPERATION
2. FINAL DEPTH OF TRENCH TO BE DETERMINED BY THE ENGINEER AT THE TIME OF CONSTRUCTION

AS BUILT
W3-10-71
July 6, 1973

FINCH HOLLOW, LITTLE CHOCONUT & TROUT BROOK WATERSHED PROJECT
FLOODWATER RETARDING DAM NO 1
FINCH HOLLOW
CUTOFF TRENCH EXCAVATION

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

J. [illegible] ECH 769
J. [illegible] A III 769

Foundation Excavation – 2,842.2 sq yd
Cutoff Trench Excavation – 7,966.5 cu yd

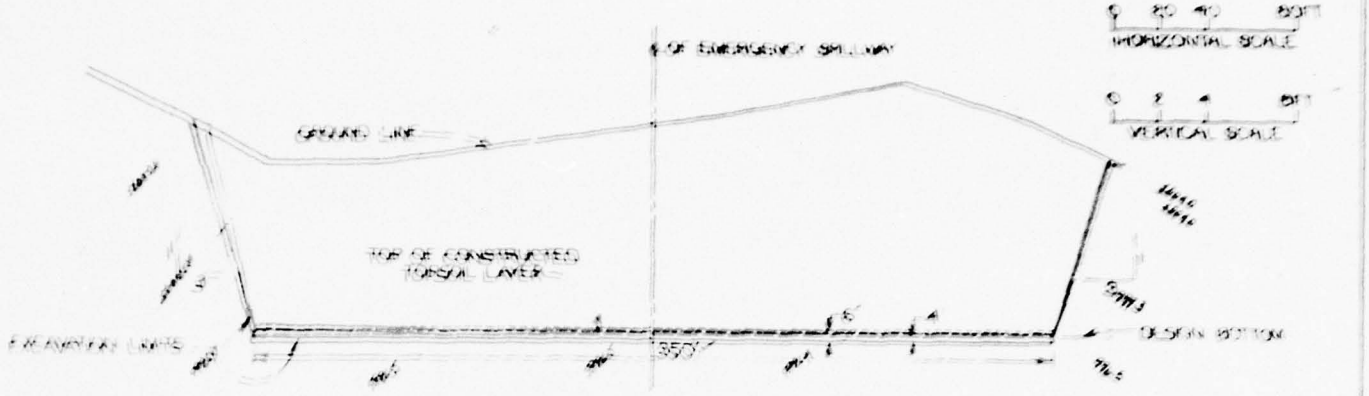
ML To GM

9+00
10+00

[illegible] SPILLWAY
7-88

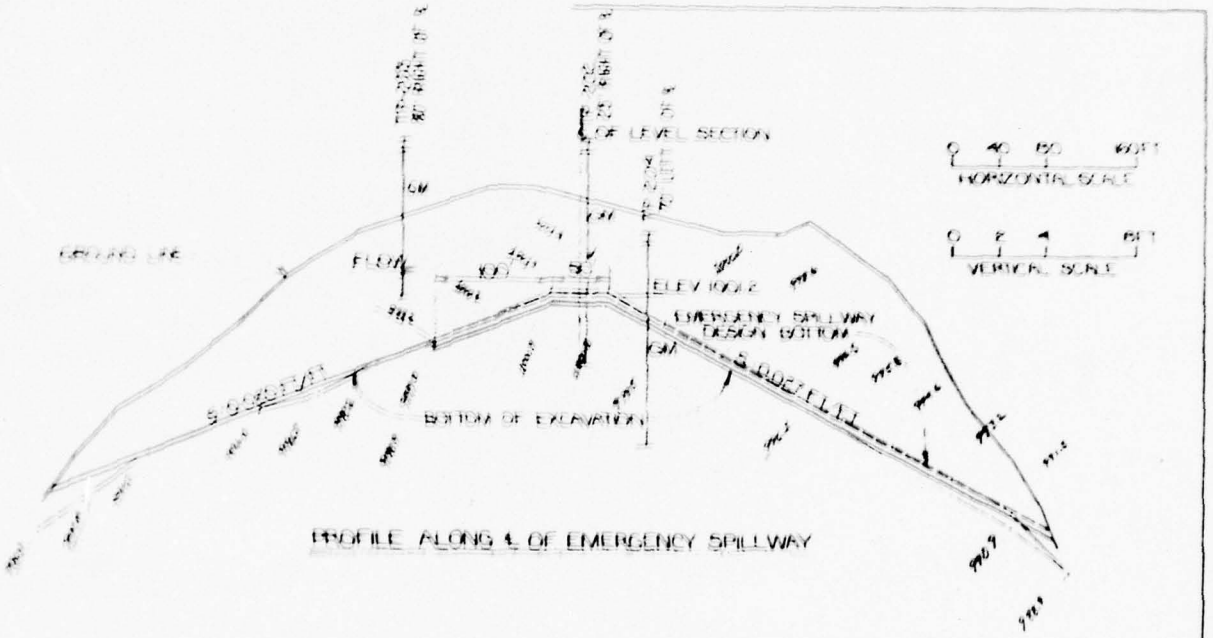
FACE BETWEEN ABUTMENT AND
BANKMENT SHALL BE NO STEEPER
THAN TWO (2) HORIZONTAL TO ONE (1)

STREAM)

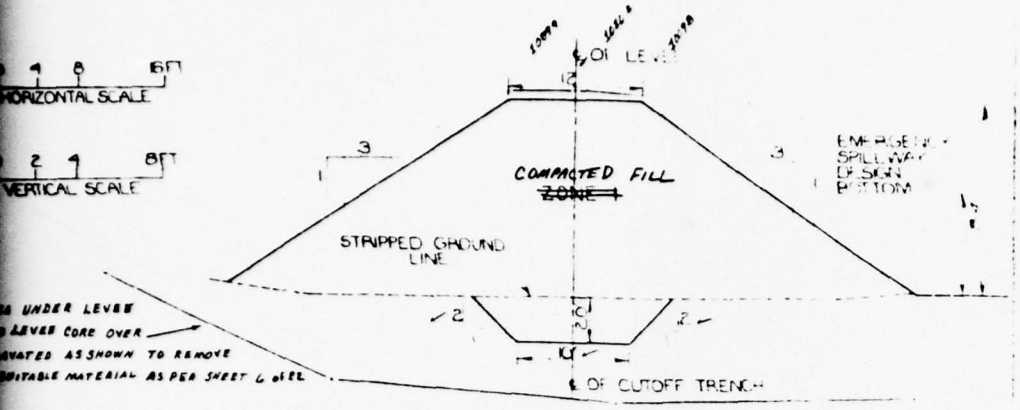


SECTION OF EMERGENCY SPILLWAY AT STA 6+75

TYPICAL FROM STATION 3+50 TO APPROX STATION 5+50, EXCAVATION LIMITS TO DESIGN BOTTOM FROM APPROX STATION 7+00 TO STATION 8+50

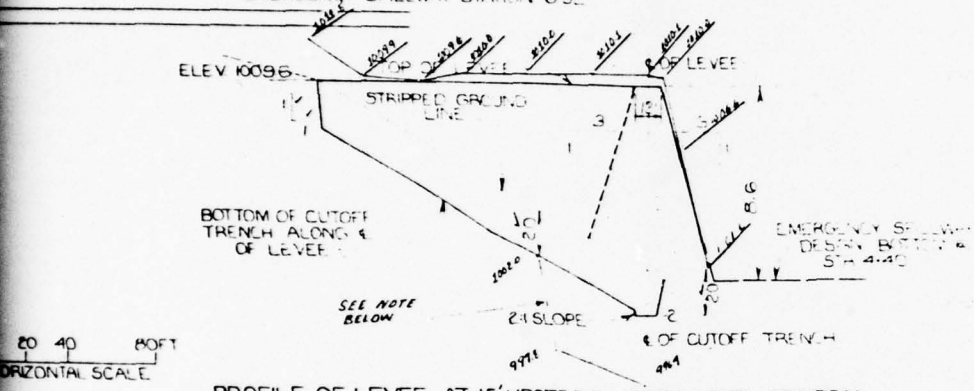


PROFILE ALONG ℄ OF EMERGENCY SPILLWAY

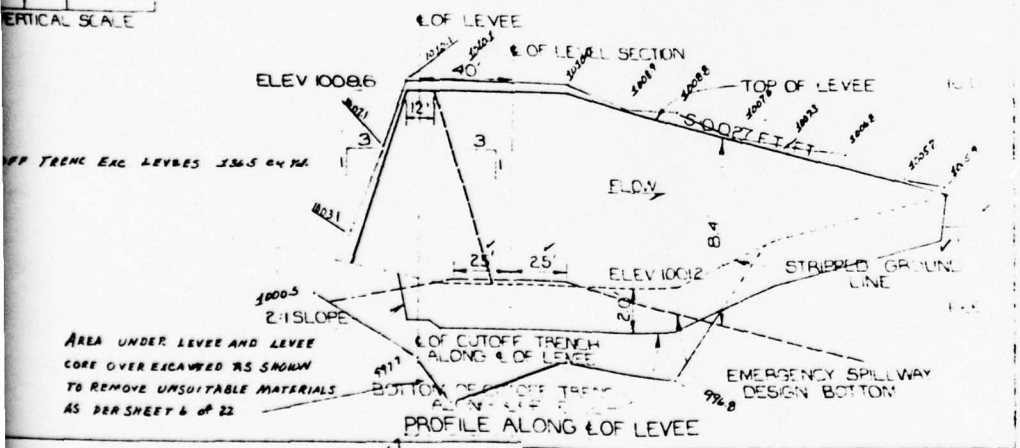


SECTION OF LEVEE AT EMERGENCY SPILLWAY STATION 4+75

TYPICAL FROM UPSTREAM EDGE OF LEVEE SECTION TO APPROX EMERGENCY SPILLWAY STATION 6+52



PROFILE OF LEVEE AT 15' UPSTREAM FROM LEVEL SECTION



PROFILE ALONG ℄ OF LEVEE

AS BUILT
W.S-10-71
July 6, 1978

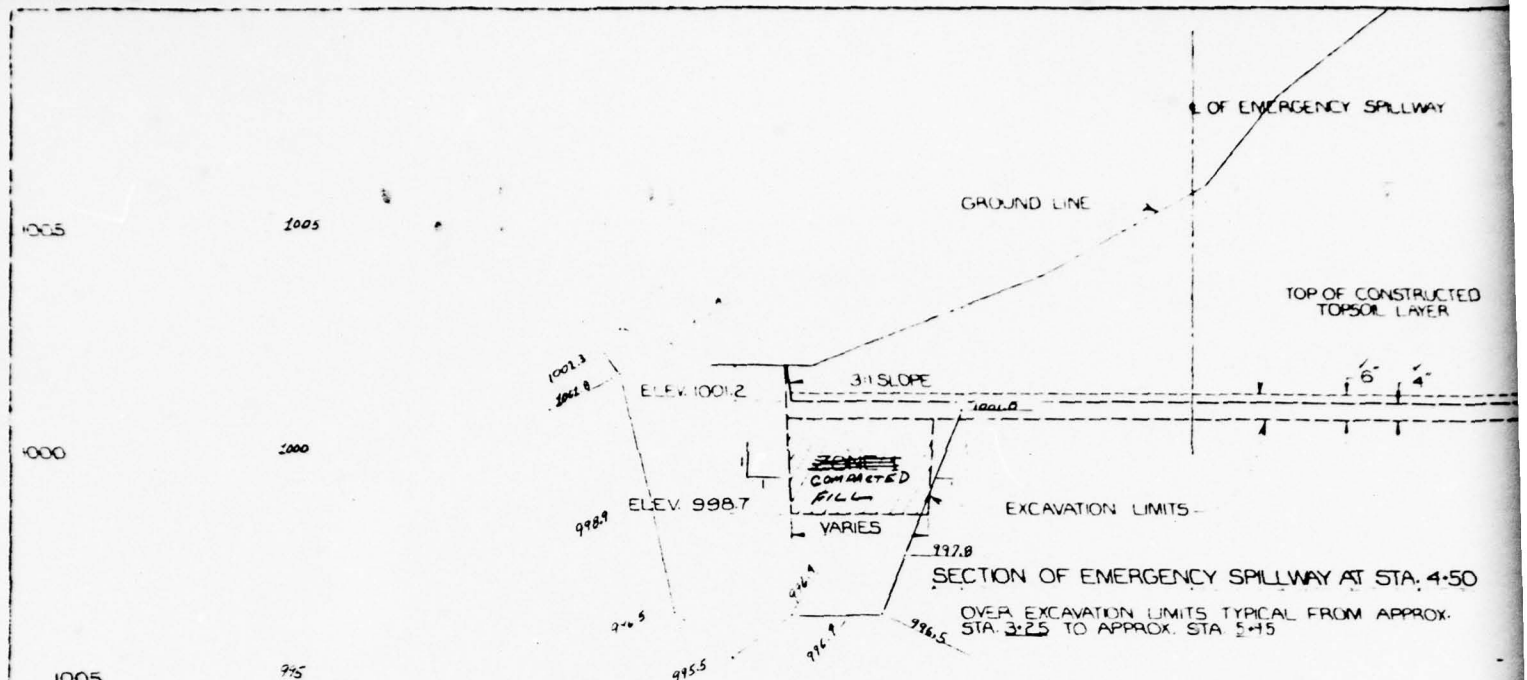
FINCH HOLLOW, LITTLE CHOCONUT & TROUT BROOK WATERSHED PROJECT
FLOODWATER RETARDING DAM NO 1
FINCH HOLLOW
EMERGENCY SPILLWAY

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

J POLULECH 7-69
J DE VITA III 7-69
J POLULECH ✓ 8/69

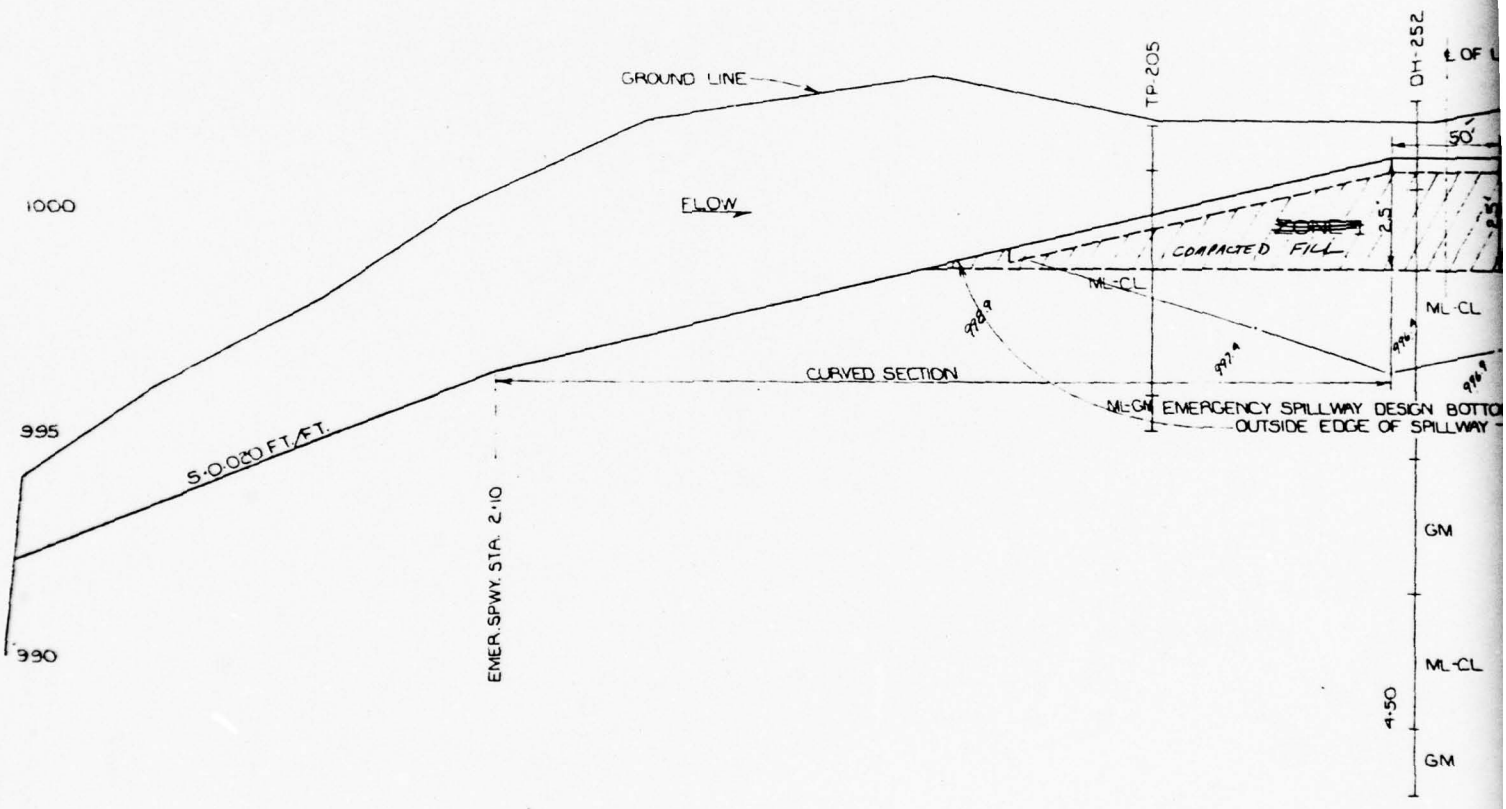
5
22

NY-2014-P

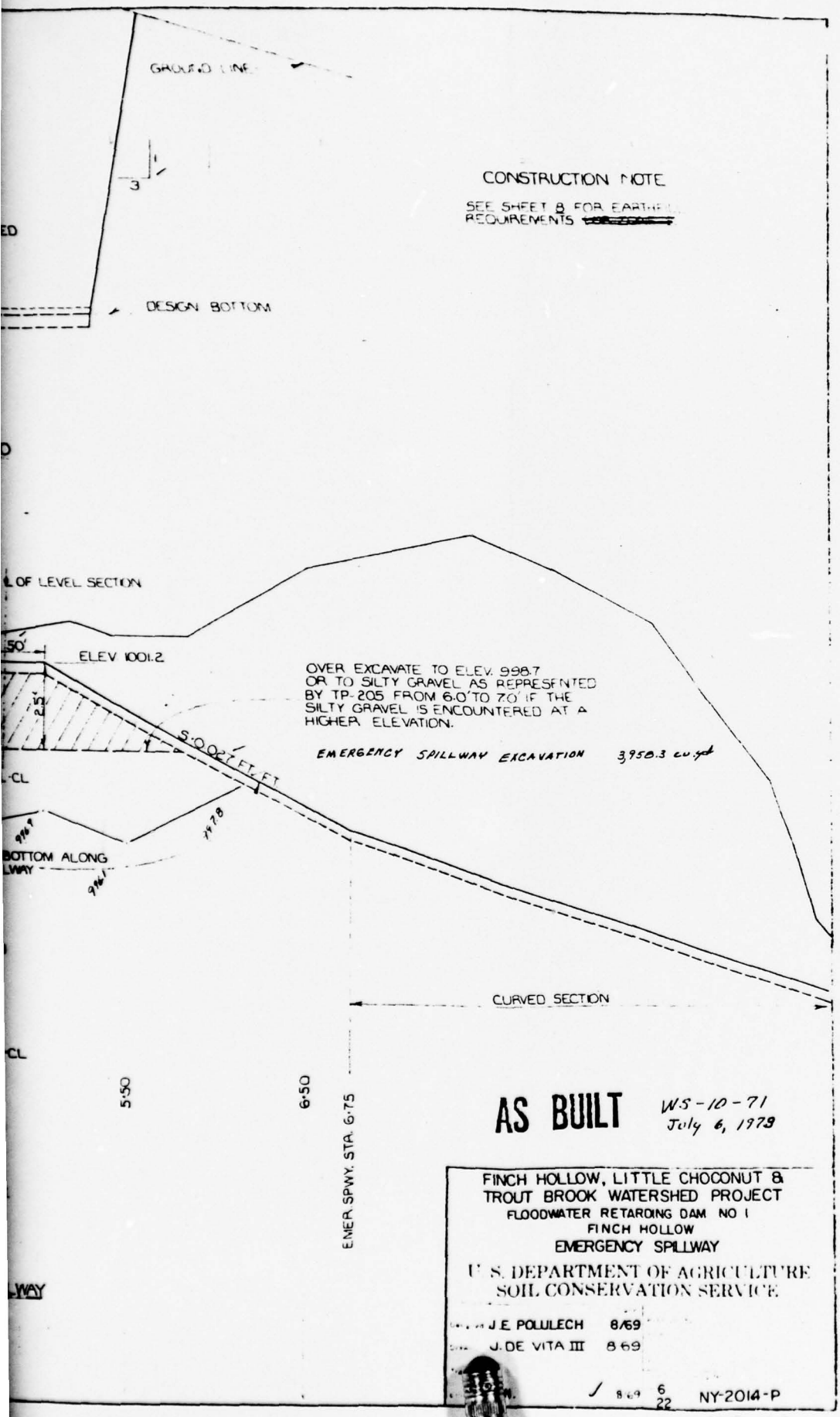


SECTION OF EMERGENCY SPILLWAY AT STA. 4+50

OVER EXCAVATION LIMITS TYPICAL FROM APPROX. STA. 3+25 TO APPROX. STA. 5+15



PROFILE ALONG OUTSIDE EDGE OF EMERGENCY SPILLWAY



AS BUILT

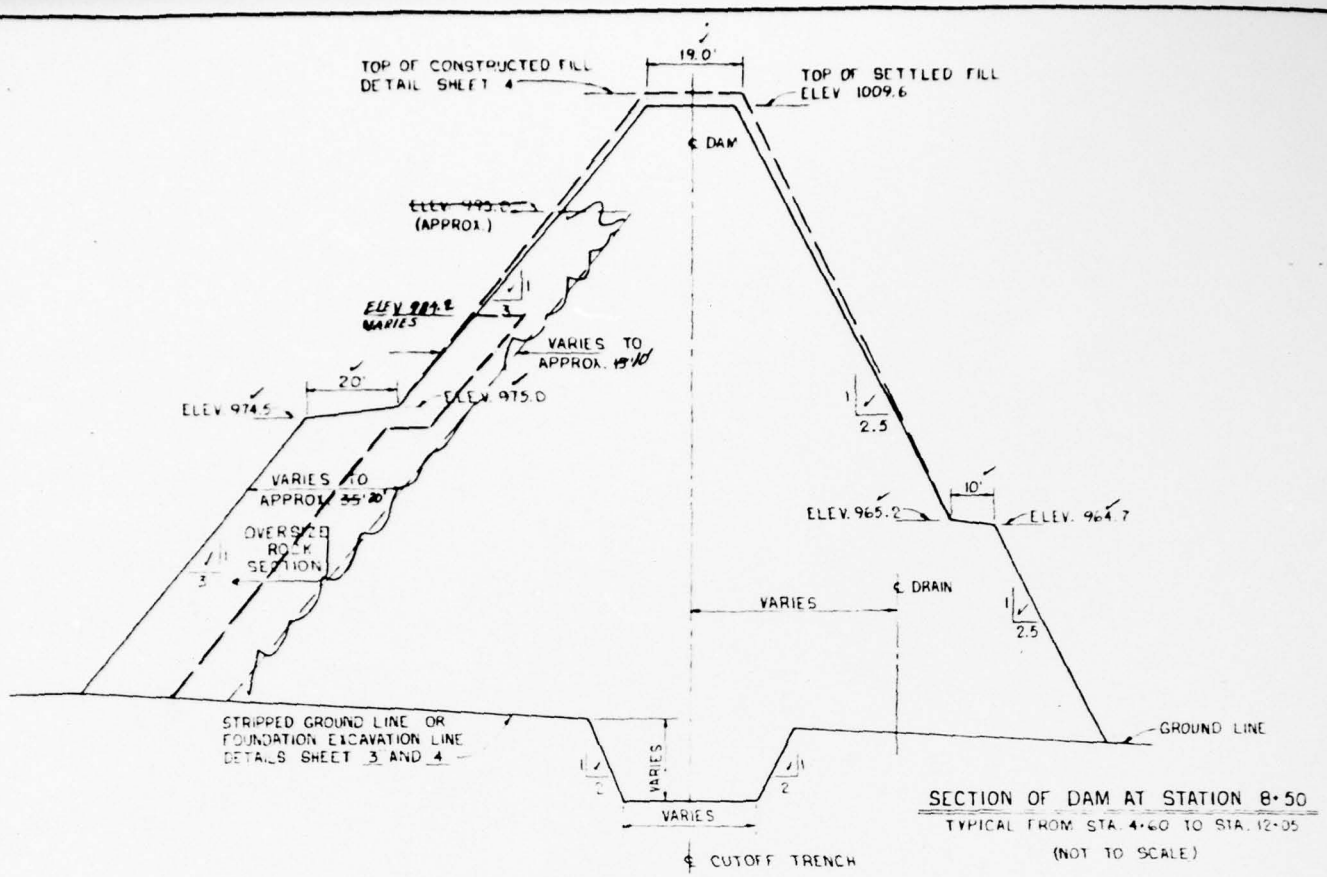
W.S-10-71
July 6, 1979

FINCH HOLLOW, LITTLE CHOCONUT & TROUT BROOK WATERSHED PROJECT
FLOODWATER RETARDING DAM NO 1
FINCH HOLLOW
EMERGENCY SPILLWAY

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

J.E. POLULECH 8/69
J. DE VITA III 8-69

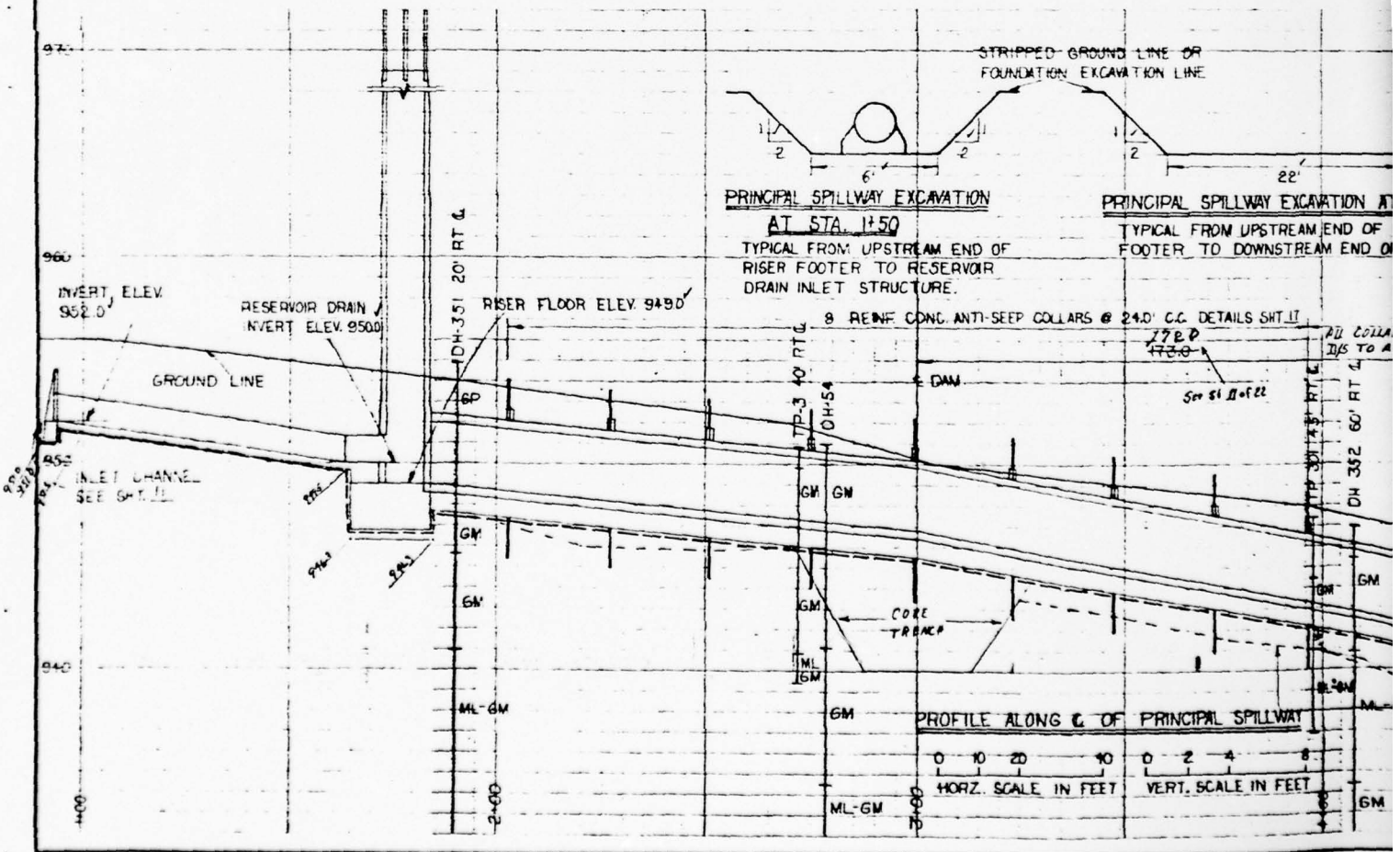
8-69 6/22 NY-2014-P



SECTION OF DAM AT STATION 8+50

TYPICAL FROM STA. 4+60 TO STA. 12+05

(NOT TO SCALE)



EARTH FILL REQUIREMENTS

Material 1/	Max. Rock Size 2/	Max. Lift Thick 3/	Min. Required Water Content 4/	Compaction 5/	
				Class	Definition
Materials represented by: TP 203 from 0.5 to 7.0' TP 102 from 0.5 to 10.0' TP 104 from 4.0 to 10.5'	6"	9"	2 percentage points below optimum	A	100% of maximum density by ASTM D-698 Method C

1/ a. The placement table indicates estimated use of material.
b. Excavated material (Represented by TP-102 from 0.5' to 10.0' in borrow area) shall be used as earth fill adjacent to the drain fill material. Minimum covering of this material-2.0'.

2/ a. Maximum rock size placed in backfill compacted by means of hand tamping or manually directed power tampers or plate vibrators shall be 3".
b. Maximum rock size of 18" dumped in the earth fill that is not used in the construction of the principal spillway outlet channel or the rocklined outlet channel shall be raked to the portion of the dam labeled "oversize rock section" as shown on the drawings.

3/ Maximum lift thickness prior to compaction. The maximum lift thickness of the rock section shall be no greater than 18" prior to compaction.

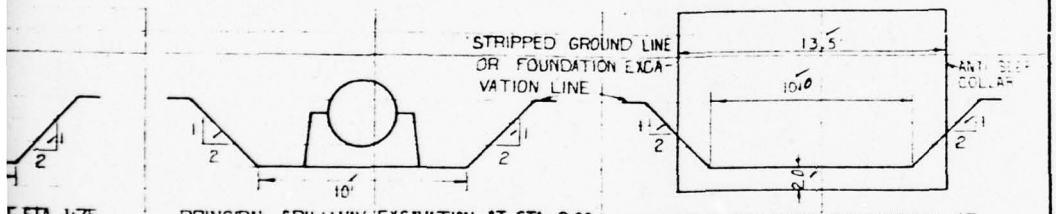
4/ Water content at time of compaction.

5/ a. For typical compaction curves see sheet 22.
b. Use Class C compaction in areas of the dam containing oversize material. Class C compaction shall consist of: Three passes per lift of fill by a tamping roller exerting a minimum contact pressure of 450 p.s.i., or equivalent as approved by the engineer.

CONSTRUCTION DETAILS

1. Material placed in the oversize rock section shall contain oversize material raked from the earth fill. This Section shall be essentially free of materials less than 3". The indicated boundaries of this section are approximate. Adjustments will be made by the engineer to utilize the oversize material.

2. Topsoil that is suitable for use and not used on the specified area of the emergency spillway shall be incorporated within the slopes of the earth fill as directed by the engineer.



PRINCIPAL SPILLWAY EXCAVATION AT STA 2+00
TYPICAL FROM DOWNSTREAM END OF RISER TO UPSTREAM END OF IMPACT BASIN

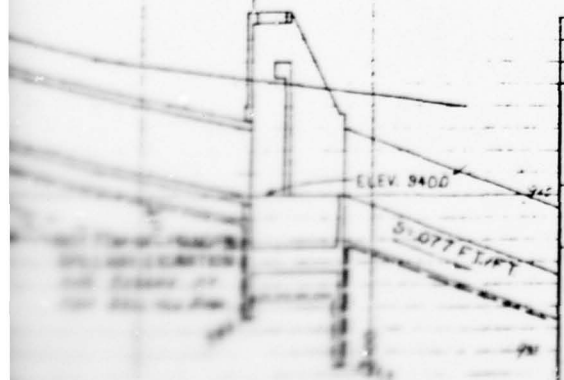
PRINCIPAL SPILLWAY EXCAVATION AT ANTI-SEEP COLLARS

T STA. 1+75
RISER
F. RISER.

77.0
78.0'
MOLED 10'
VOID PIPE JOINTS

Item #4 Excavation of Structure Area 1,8035 cu yd.

AS BUILT W.S-IC-71
July 6, 1973



DEC. 1970	FILL PLACEMENT	
DATE	ITEM	APPROVED

REVISIONS

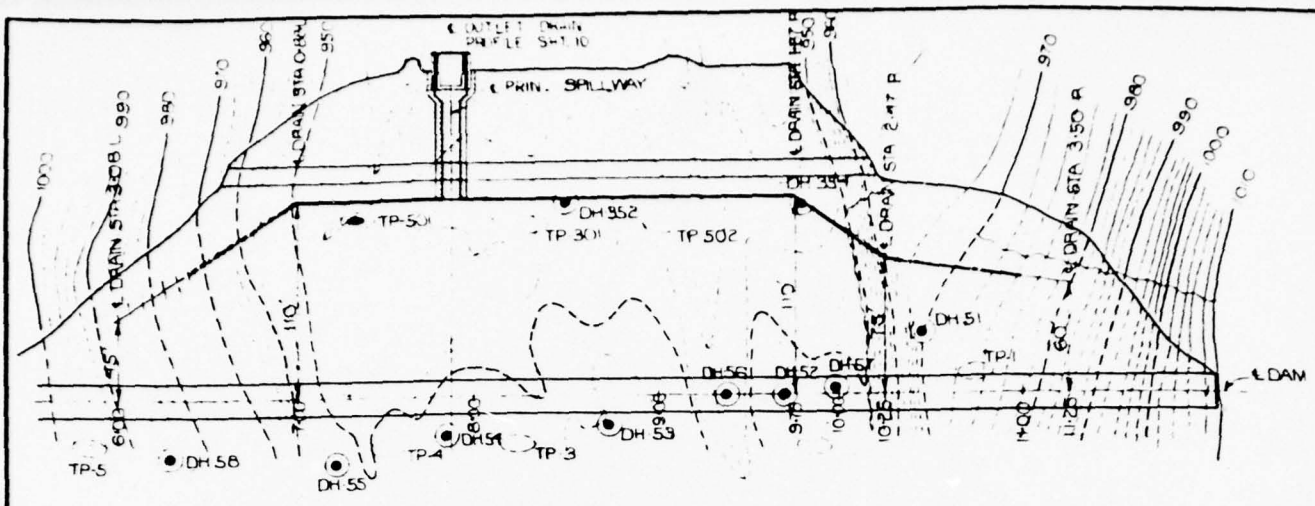
FINCH HOLLOW, LITTLE CHOCONUT & TROUT BROOK WATERSHED PROJECT
FLOODWATER RETARDING DAM NO 1
FINCH HOLLOW
FILL PLACEMENT & PRIN. SPWY. EXCAVATION

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed	Date	Approved by
J POLULECH	7/69	Title
Drawn: D BURDICK	7/69	Title
Traced		
Checked: M.N.	8/69	Sheet No. 8 22

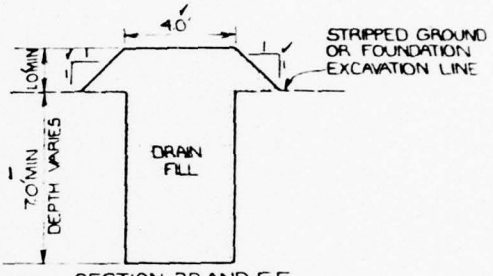
Drawing No. NY-2014-P

Form SCS 317 (November



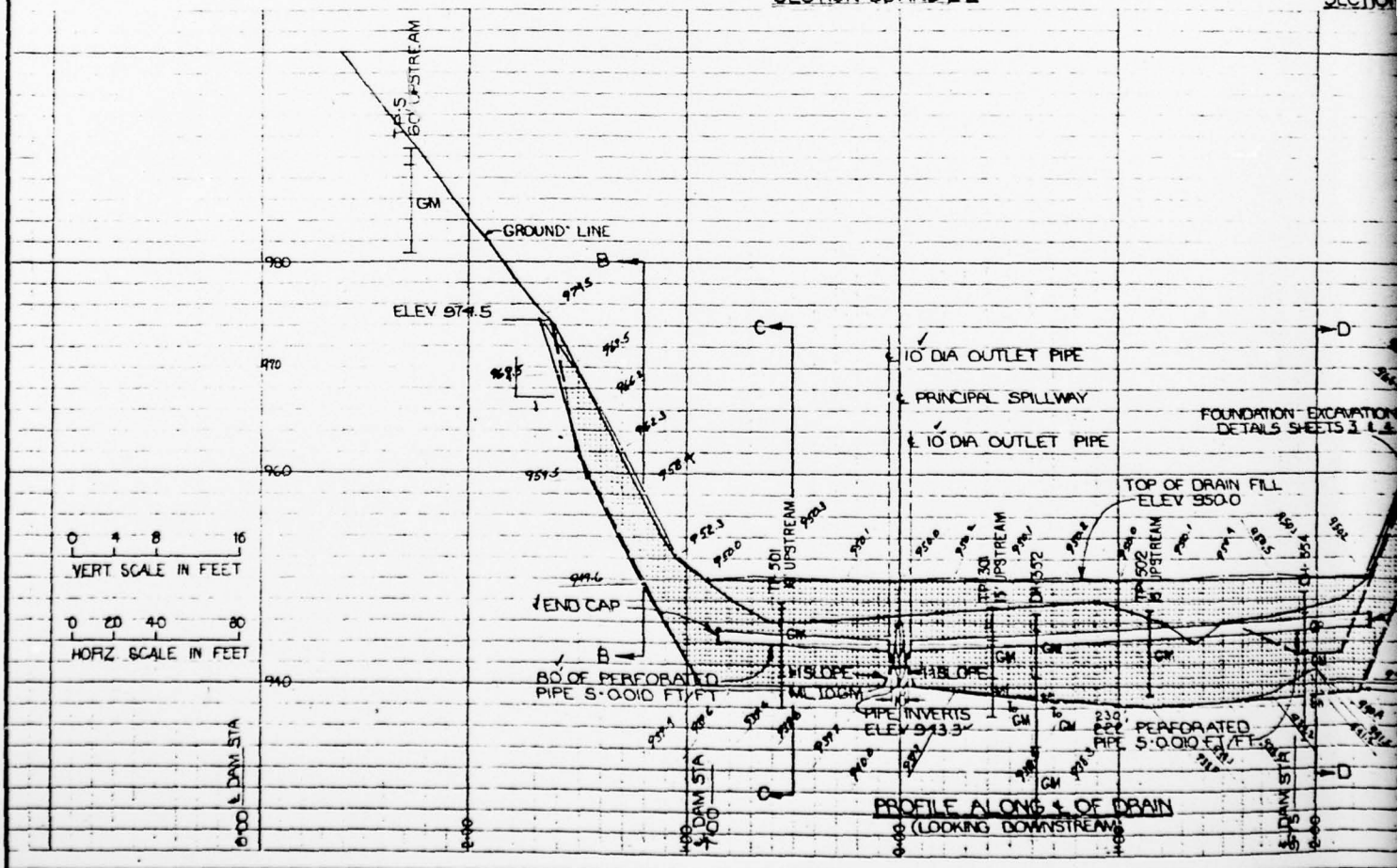
PLAN VIEW

0 25 50 100FT
SCALE



SECTION BB AND E-E

SECTION



PROFILE ALONG ℄ OF DRAIN
(LOOKING DOWNSTREAM)

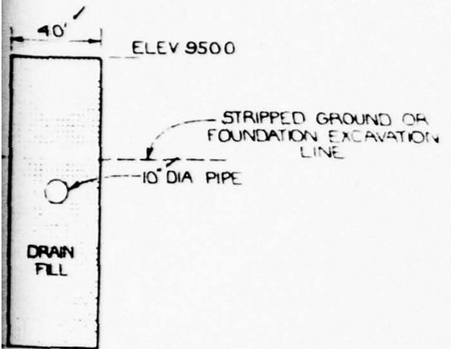
DRAINAGE SYSTEM DETAILS

1 PERF DRAIN PIPE SHALL CONFORM TO SPECIFICATION 545 AND SHALL BE 10" DIA PRESSURE PIPE, CLASS 200

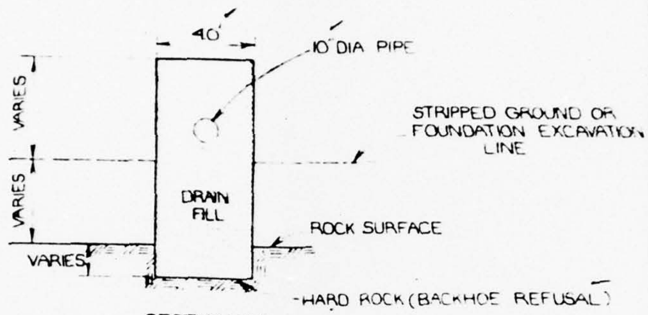
2 THE PROFILES AT THE BOTTOM OF ALL EXCAVATIONS AS SHOWN ARE ONLY APPROXIMATE THE REQUIRED FINISHED GRADES WILL BE ESTABLISHED IN THE FIELD AT THE TIME OF CONSTRUCTION BY THE ENGINEER

QUANTITY SUMMARY

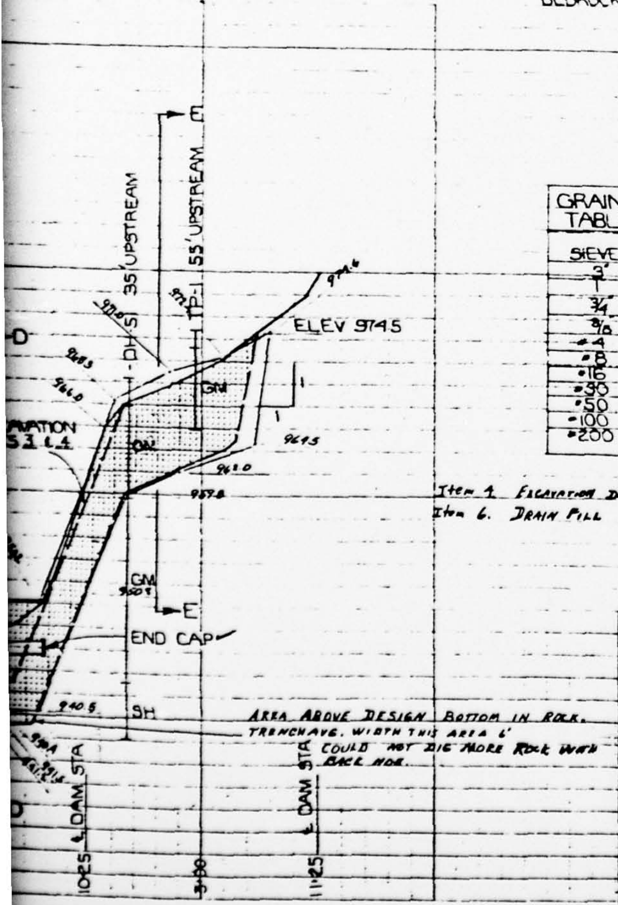
~~94~~ 97 CU. YDS. DRAIN FILL
~~700~~ 464 LIN. FT. STRAIGHT SECTION OF PERFORATED ASBESTOS CEMENT PIPE.
2 END CAPS
1 45° ELBOW 10" DIA. INTERNAL ANGLE (CAST IRON)
2 90° ELBOWS (10" DIA) (CAST IRON)
4 45° ELBOWS (10" DIA) (CAST IRON)



SECTION C-C



SECTION D-D
TYPICAL SECTION OF DRAIN TRENCH WHERE BEDROCK IS ENCOUNTERED



GRAIN SIZE DISTRIBUTION TABLE FOR DRAIN FILL		
SIEVE NO	% PASSING	As Delivered to S.M. & USFD
3"	100	100%
1"	86-100	100
3/4"	80-96	88
3/8	60-85	62
#4	37-68	35
#8	18-50	26
#16	3-27	20
#30	0-11	10
#50	0-4	2
#100	0-3	1
#200	0-3	0

Item 4. Excavation Drain Trench 567.7 cu yd.
Item 6. Drain Fill 97.80 cu yd.

AREA ABOVE DESIGN BOTTOM IN ROCK. TRENCH AVG. WIDTH THIS AREA 6' COULD NOT DIG MORE ROCK WITH BACK HOE.

AS BUILT WS-10-71 July 6, 1973

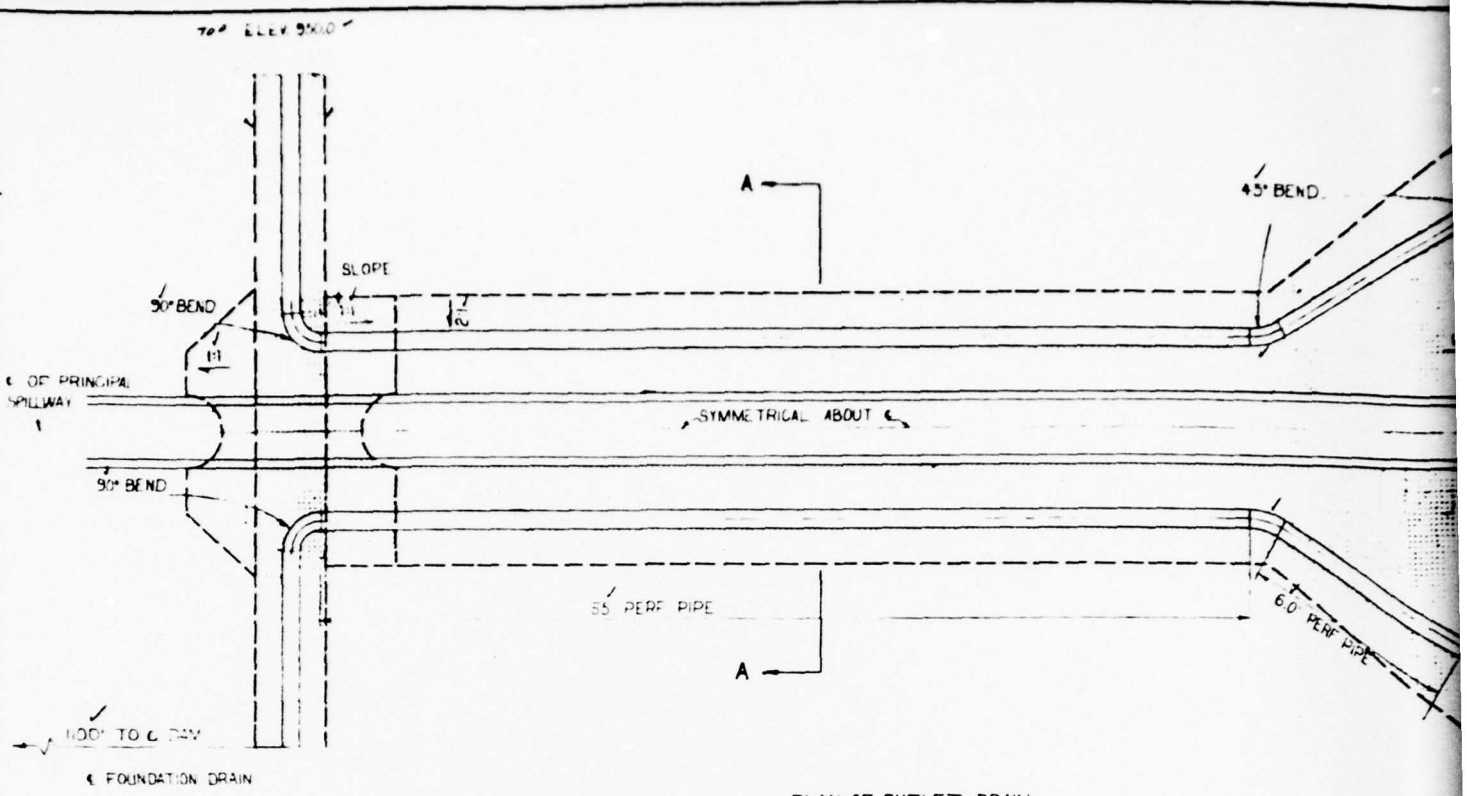
FINCH HOLLOW, LITTLE CHOCONUT & TROUT BROOK WATERSHED PROJECT
FLOODWATER RETARDING DAM NO. 1
FINCH HOLLOW
DRAINAGE SYSTEM

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

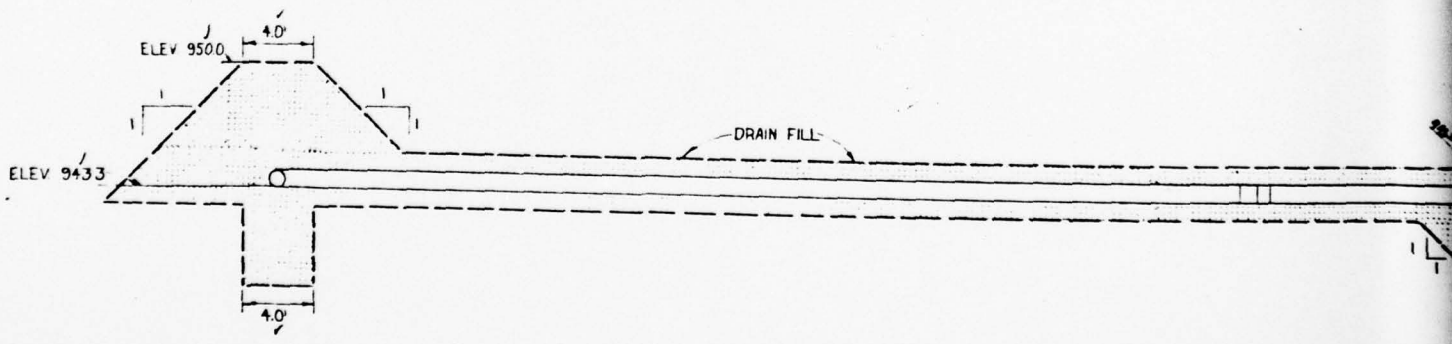
Designed	Date	Approved by
J.E. POLULECH	8/69	Title
Drawn J. DE VITA III	8 69	Title
Traced		
Checked A.R.T. & J.M.Z.	✓ 9/69	Sheet No. 9 of 22 — Drawing No. NY-2014-P

Form SCS 317 (November 1954)

2

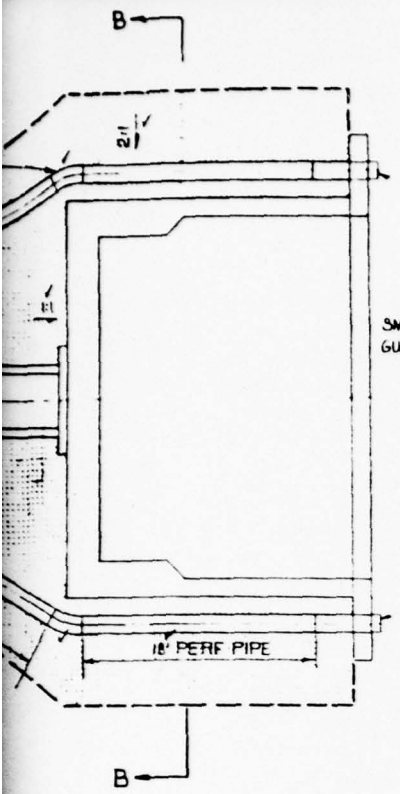


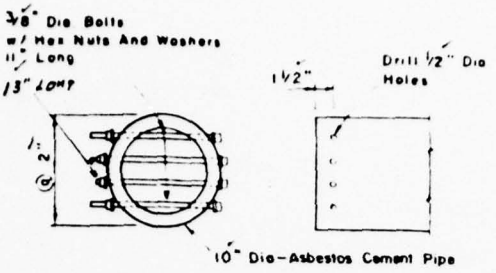
PLAN OF OUTLET DRAIN
(NOT TO SCALE)



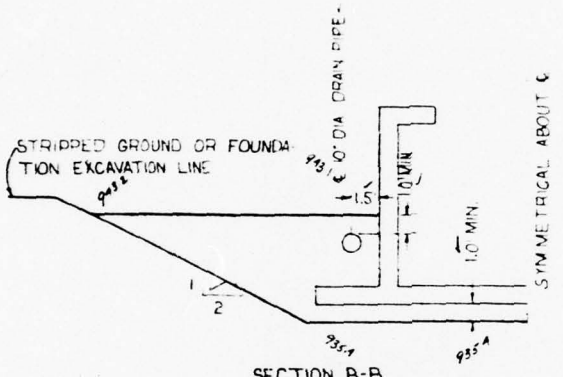
DRAIN FILL UNDER
BASIN WILL BE

TYPICAL SECTION ALONG OUTLET DRAIN
(NOT TO SCALE)

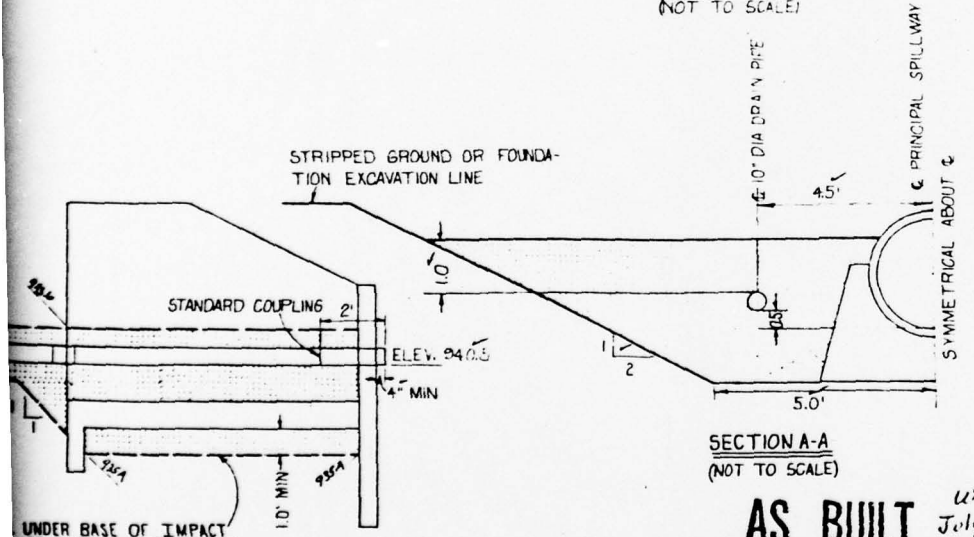




SMALL ANIMAL GUARD DETAILS (2-Req



SECTION B-B
(NOT TO SCALE)



SECTION A-A
(NOT TO SCALE)

AS BUILT 05-10-71
July 6, 1978

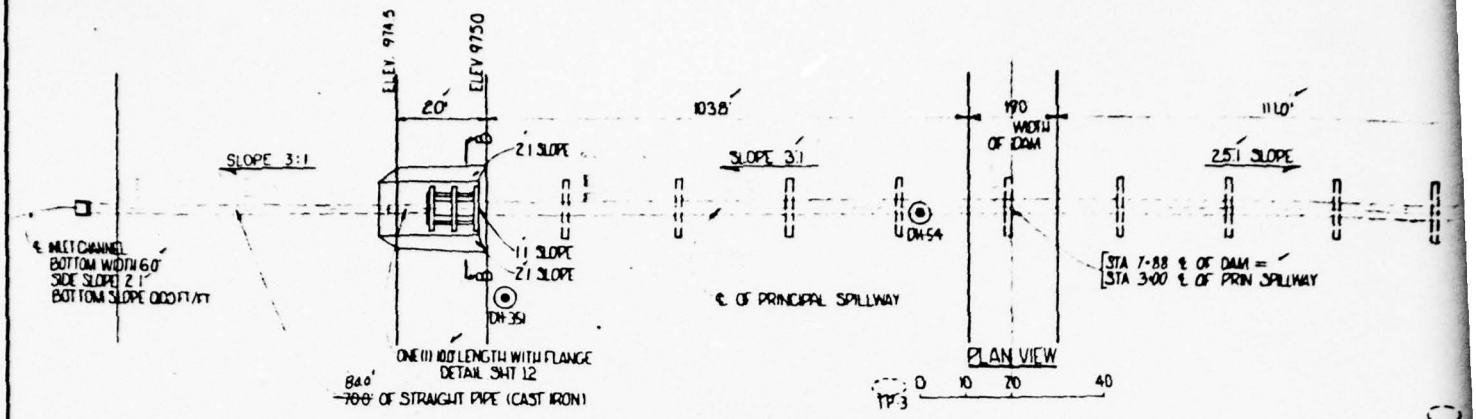
FINCH HOLLOW, LITTLE CHOCONUT & TROUT BROOK WATERSHED PROJECT
FLOODWATER RETARDING DAM NO 1
FINCH HOLLOW
DRAINAGE SYSTEM

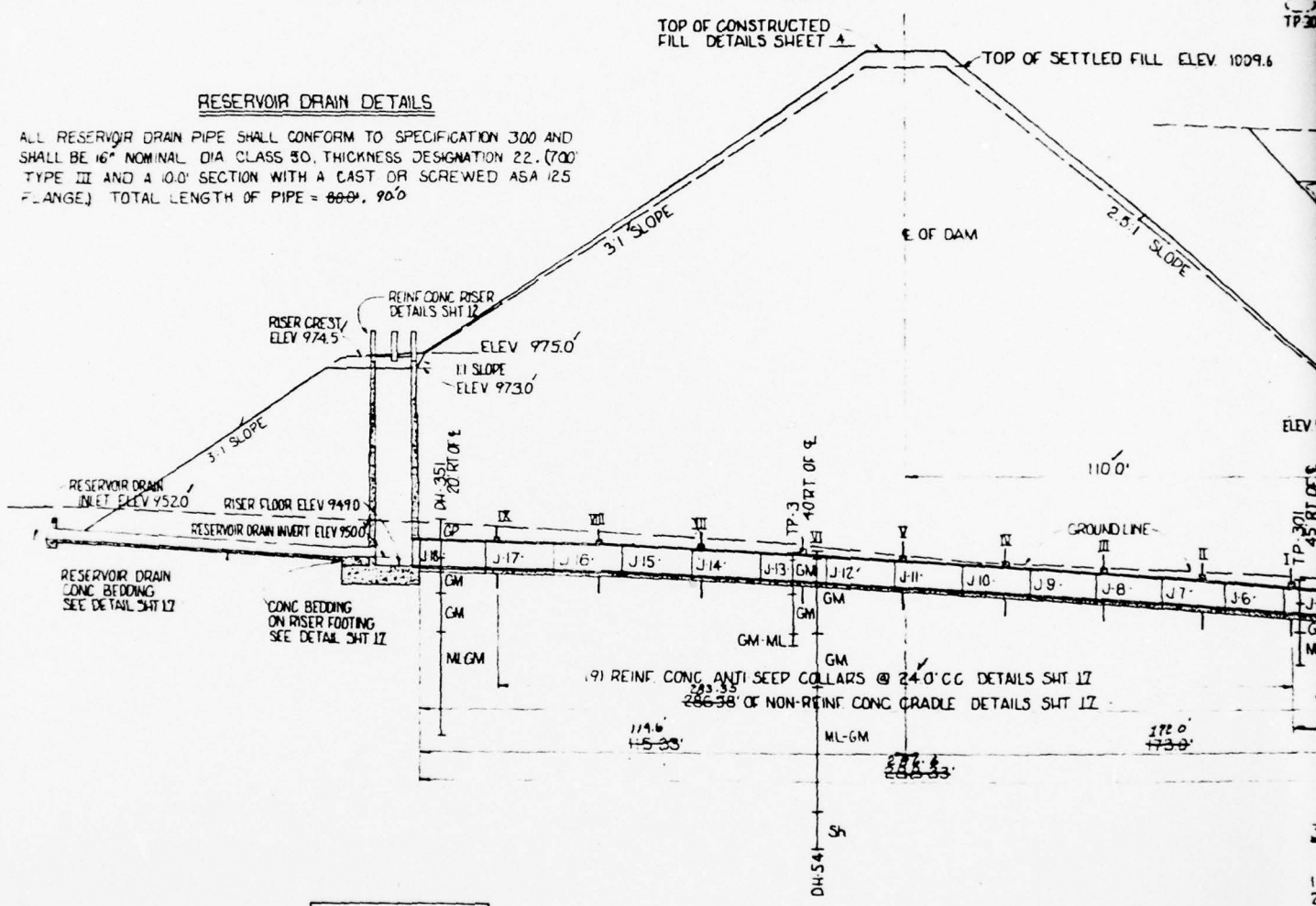
U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

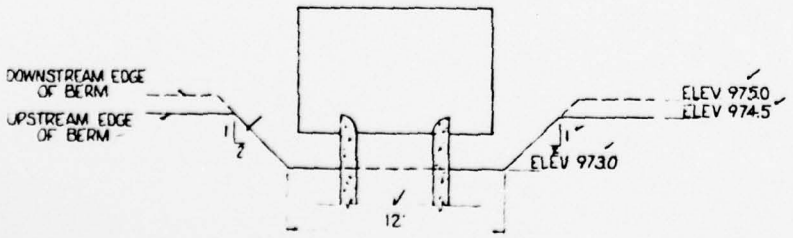
		Date
Designed	J. POLULECH	8/69
Drawn	D. BURDICK	8/69
Traced		
Checked	A.R.T., L.B.	9/69

10
22

NY-2014-P





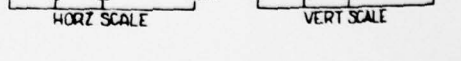


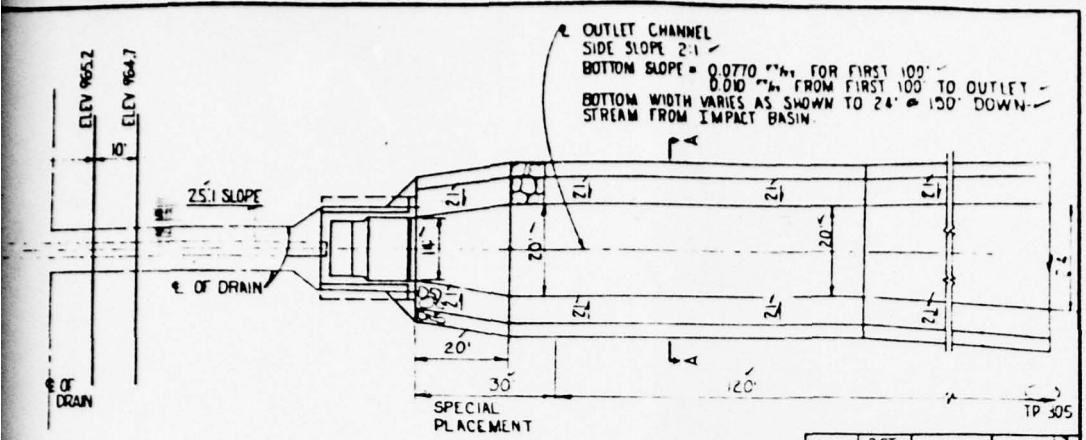
SECTION B-B
NOT TO SCALE

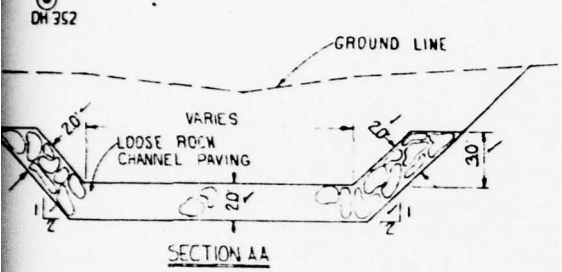
RESERVOIR DRAIN DETAILS

ALL RESERVOIR DRAIN PIPE SHALL CONFORM TO SPECIFICATION 300 AND SHALL BE 16" NOMINAL DIA CLASS 50, THICKNESS DESIGNATION 22. (700' TYPE III AND A 10.0' SECTION WITH A CAST OR SCREWED ASA 125 FLANGE.) TOTAL LENGTH OF PIPE = ~~80.0~~', 90.0'

PROFILE ALONG ℄ OF PRINCIPAL SPILLWAY







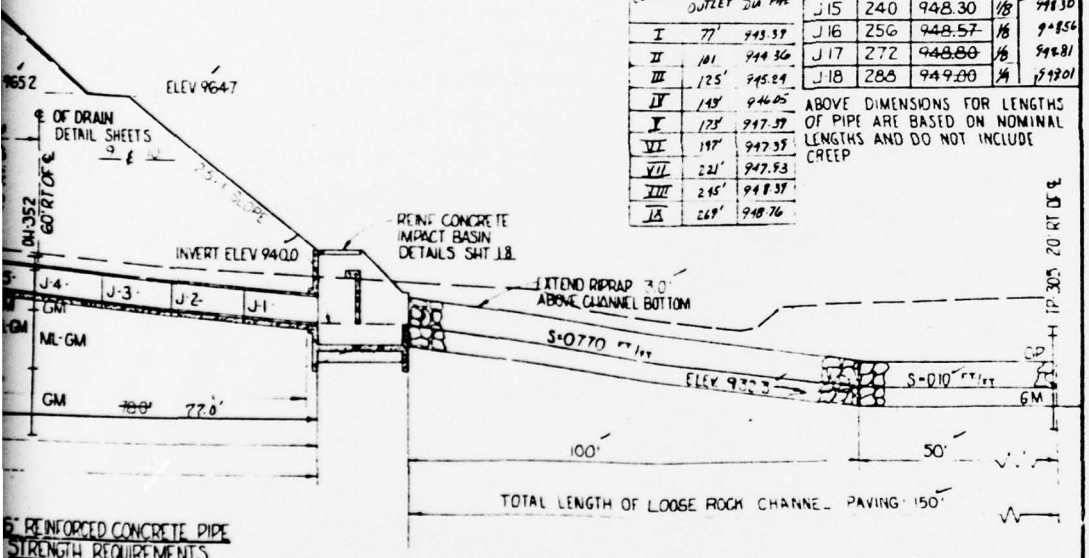
COLLAR	DIST FROM OUTLET	INVERT OF 36" DIA PIPE
I	78'	943.43
II	102'	944.39
III	126'	945.28
IV	150'	946.07
V	174'	946.78
VI	198'	947.41
VII	222'	947.96
VIII	246'	948.41
IX	270'	948.78

COLLAR	DIST FROM OUTLET	INVERT OF 36" DIA PIPE
I	77'	943.39
II	101'	944.36
III	125'	945.29
IV	149'	946.05
V	173'	947.39
VI	197'	947.35
VII	221'	947.93
VIII	245'	948.37
IX	269'	948.76

JOINT	DIST FROM OUTLET	INVERT OF 36" DIA PIPE	SLOPE
OUTLET	0	940.00	
J-1	16	940.71	1/4
J-2	32	~~941.41~~	1/8
J-3	48	~~942.12~~	1/4
J-4	64	942.83	1/4
J-5	80	943.51	1/4
J-6	96	~~944.16~~	1/4
J-7	112	944.77	1/4
J-8	128	~~945.35~~	3/16
J-9	144	945.89	1/4
J-10	160	946.38	1/8
J-11	176	946.84	1/4
J-12	192	~~947.26~~	1/4
J-13	208	~~947.65~~	1/4
J-14	224	948.00	1/8
J-15	240	948.30	1/8
J-16	256	~~948.57~~	1/8
J-17	272	~~948.80~~	1/8
J-18	288	949.00	1/4

VARIABLE SLOPE 0.00415

ABOVE DIMENSIONS FOR LENGTHS OF PIPE ARE BASED ON NOMINAL LENGTHS AND DO NOT INCLUDE CREEP



36" REINFORCED CONCRETE PIPE STRENGTH REQUIREMENTS

PRESSURE HEAD 63 FT
LOAD 33,483 LBS PER LIN FT
BASED ON O.D OF 3.67 FT
MIN 3 EDGE BEARING STRENGTH FOR 0.01" CRACK 13,434 LBS PER LIN FT FOR PRESTRESSED PIPE (AWWA C 301)
O.D 3.92' 286.6 L. FT.

WHERE THE PIPE FURNISHED HAS AN INSIDE DIAMETER GREATER THAN THAT CALLED FOR ON THE PLANS, THE THREE-EDGE BEARING STRENGTH OF THE PIPE FURNISHED MUST BE EQUAL TO OR GREATER THAN THE SPECIFIED THREE-EDGE BEARING STRENGTH MULTIPLIED BY THE RATIO OF THE OUTSIDE DIAMETER OF THE PIPE FURNISHED TO THE OUTSIDE DIAMETER SPECIFIED.

FABRICATION INSTRUCTIONS
(18) 16.0' SECTIONS ONE (1) SPIGOT RING WALL FITTING FOR 21" WALL
PIPE SUPPLIERS NOTE: CAST OUTSIDE OF SPIGOT RING WITH CONCRETE ON ONE 16.0' SECTION

WHEN PIPE IS SUPPLIED IN LENGTHS OTHER THAN SHOWN THE ENGINEER WILL PROVIDE THE CONTRACTOR WITH A REVISION OF THIS SHEET

AS BUILT W9-10-71 July 6, 1973

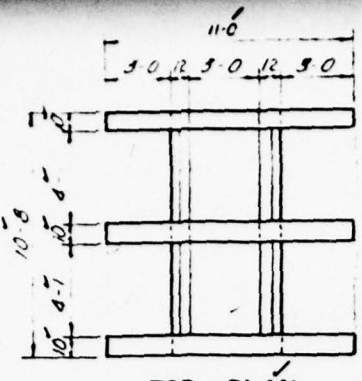
FINCH HOLLOW, LITTLE CHOCONUT & TROUT BROOK WATERSHED PROJECT
FLOODWATER RETARDING DAM NO. 1
FINCH HOLLOW
PLAN PROFILE OF PRINCIPAL SPILLWAY

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

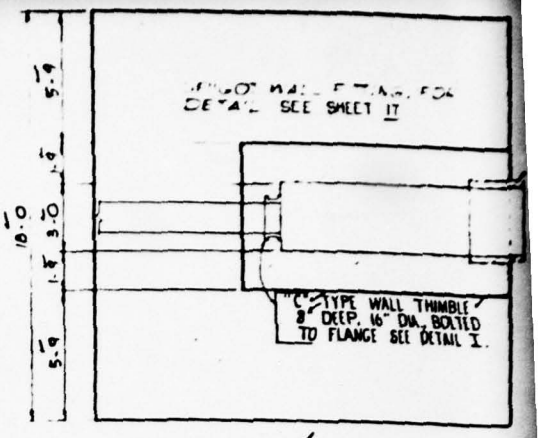
		Date
Designed	J. POLULECH	7/69
Drawn	W EBERSBACH	8/69
Traced		
Checked	T. E.	8/69

Sheet 11 of 22

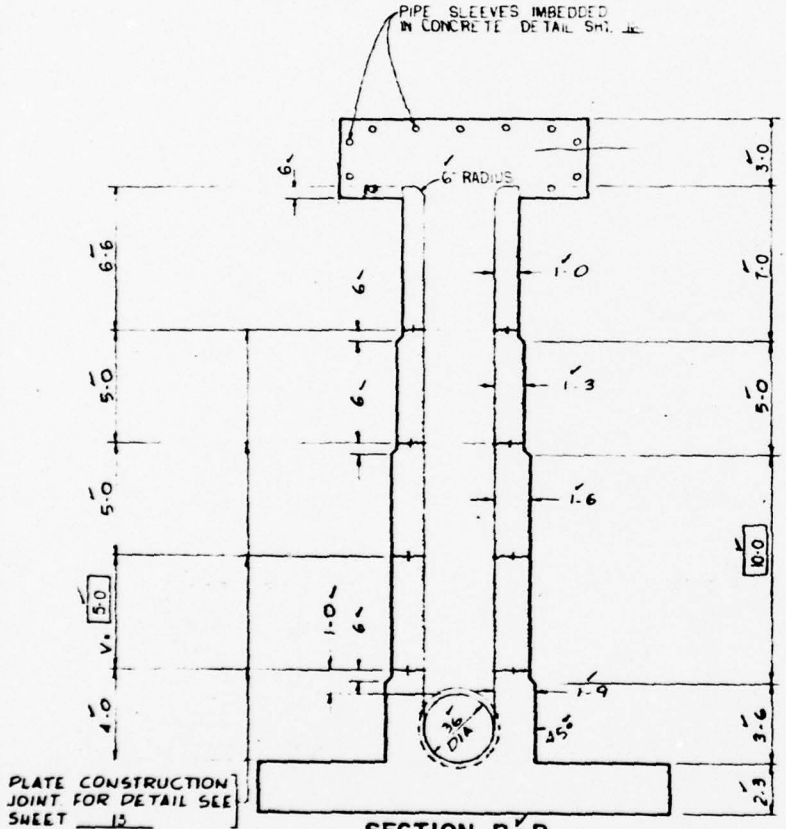
NY-2014-P



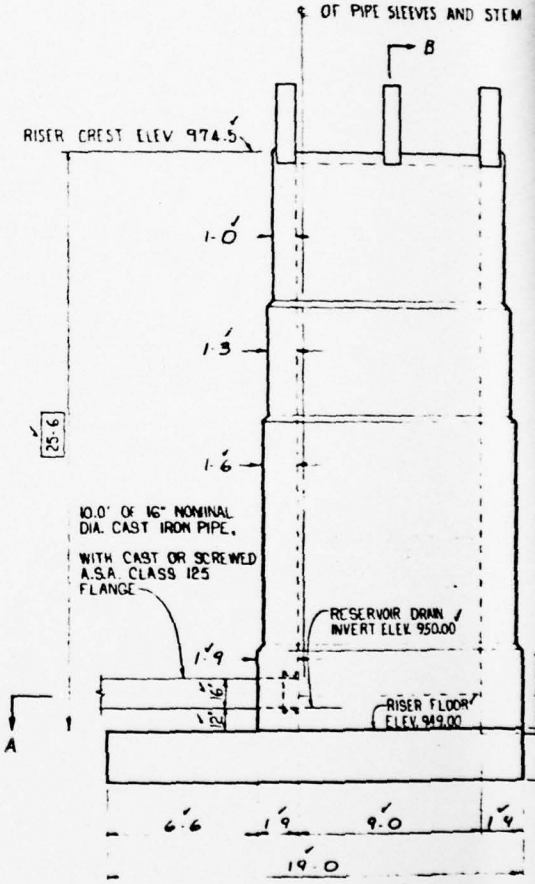
TOP PLAN



SECTION A-A

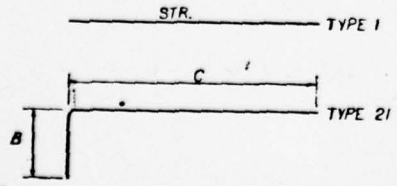


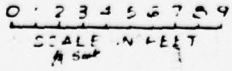
SECTION B-B

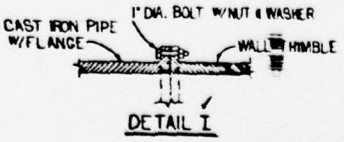


SIDEWALL ELEVATION

BAR TYPES







DETAIL I

STEEL SCHEDULE

MARK	SIZE	QUANTITY	LENGTH	TYPE	B	C	TOTAL LENGTH
B1	5	22	17-6	1	-	-	385 0
B2	6	14	18-6	1	-	-	333-0
B3	7	34	8-6	1	-	-	289-0
B4	8	46	9 7	21	4-3	5-4	440 10
B5	6	18	18-6	1	-	-	333-0
B6	6	12	17-6	1	-	-	210-0
B7	8	14	17-6	1	-	-	245 0
B8	6	4	8-3	1	-	-	33-0
B9	5	12	6-2	21	0-11	5-3	74 0
B10	5	4	6-1	21	0 11	5 2	24-4
B11	5	30	6 0	21	0-11	5-1	180-0
B12	6	12	10-0	1	-	-	120-0
B13	5	7	4-0	1	-	-	28 0
B14	6	14	11-2	21	4-1	7-1	156-4
B15	6	4	10-8	21	3-10	6-10	42-8
B16	6	2	9-2	21	2-1	7 1	18-4
B17	6	4	8-10	21	1-9	7-1	35-4
B18	6	4	8-6	21	1 5	7-1	34-0
B19	6	4	8-4	21	1-3	7-1	33-4
B20	8	46	4-7	1	-	-	210-10
B21	5	12	3-8	1	-	-	44-0
B22	5	2	2-7	1	-	-	5-2
B23	5	2	2-3	1	-	-	4-6
B24	5	2	3-0	1	-	-	6-0
B25	5	2	2-4	1	-	-	4-8
B26	5	1	2-3	1	-	-	2-3
B-11-A	5	30	1-8	1	-	-	50-0
R1	5	26	11-7	1	-	-	301-2
R2	7	8	11-7	1	-	-	92-8
R3	5	30	9-6	1	-	-	285-0
R4	7	14	9-6	1	-	-	133-0
R5	7	16	10-0	1	-	-	160-0
R6	5	14	4-0	1	-	-	56-0
R7	7	40	11-0	21	4-0	7-0	440-0
R8	6	16	10-0	1	-	-	160-0

Bar B-11 should have been 6-0 by 7'2" → B11-A was added to make up diff. w/spacing of bars

MARK	SIZE	QUANTITY	LENGTH	TYPE	B	C	TOTAL LENGTH
R9	5	14	4 0	1			56 0
R10	6	36	10 8	21	3-10	6-10	384 0
R11	6	4	10 2	21	3-7	6-7	40 8
R12	5	30	3-8	1	-	-	110 0
R13	1	14	4 4	1	-	-	60 8
R14	5	26	6-7	1	-	-	171-2
R15	5	8	7	1	-	-	57 8
R16	5	30	4-6	1	-	-	135-0
R17	5	14	4-6	1	-	-	63-0
R18	6	16	9-8	1	-	-	154-8
R19	5	14	3-8	1	-	-	51-4
R20	6	36	10-2	21	3-7	6-7	366 0
R21	6	4	9-8	21	3-4	6-4	38-8
R22	5	30	3-8	1	-	-	110-0
R23	5	10	9-8	1	-	-	96-8
R24	5	20	6-2	1	-	-	123-4
R25	5	6	6-1	1	-	-	36-6
R26	5	22	6-4	1	-	-	139-4
R27	5	10	6-1	1	-	-	60-10
R28	6	20	9-8	1	-	-	193-4
R29	5	12	3-8	1	-	-	44-0
R30	6	52	9-8	21	3-4	6-4	502-8
T1	5	6	4-10	1			29-0
T2	5	10	4-10	1			48-4
T3	5	4	4-2	1			16-8
T4	5	16	3-2	1			50-8
T5	5	8	10-7	1			84-8
T6	5	12	3-2	1			38-0
T7	5	6	10-7	1			63-6
T8	5	6	10-7	1			63-6
T9	5	4	4-5	21	1-0	3-5	17-8
T10	5	12	3-2	1			38-0
T11	5	6	2-8	1			16-0
T12	5	8	4-10	1			38-8

CONSTRUCTION DETAILS

1 SPECIFIED BAR DIMENSIONS ARE MEASURED TO THE OUTSIDE EDGE OF ALL BENDS
2 RADIUS OF BENDS EQUALS 3 BAR DIAMETERS FOR SIZES EQUAL TO OR LESS THAN #7
3 THE 2" AND 3" DISTANCE FROM [illegible] CONCRETE SURFACES ARE CLEAR [illegible] WHERE NOT OTHERWISE SPECIFIED [illegible] STEEL PLACED IN CONCRETE [illegible] THE GROUPS SHALL HAVE A MIN. COVER AS PRESCRIBED FOR [illegible] CONCRETE MEMBERS, BUT SHALL HAVE A MINIMUM OF 2" CLEAR COVER
4 ALL EXPOSED EDGES OF CONCRETE TO HAVE A 3/4 CHAMFER UNLESS OTHERWISE [illegible]

SLIDE GATE DETAILS

1 16" DIAMETER FLAT FRAME SLIDE GATE [illegible] CONTAINED UNIT
2 CLASS 0-30
3 SLIDE GATE SHALL CONFORM TO SPEC 301 AND SHALL BE TYPE MHS-1
4 1/2" TYPE WALL THIMBLE 8' DEEP
5 STEM SHALL BE SIZED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS STEM SHALL BE EQUIPPED WITH A REMOVERLE T-HANDLE WRENCH THE WRENCH SOCKET SHALL BE LOCATED TO ARRIVE THE TOP STEM GUIDE AND 28'-0" ABOVE THE FLOOR OF THE RISER (3") ALL OTHER STEM GUIDES WILL BE LOCATED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS
6 PAINT IN ACCORDANCE WITH SPEC [illegible]
7 HOLES DRILLED IN BACK FLANGE OF WALL THIMBLE BY GATE MANUFACTURER ACCORDING TO ASA CLASS 125 FLANGE SPECIFICATIONS
DIAMETER OF BOLT CIRCLE 21 1/4"
NUMBER OF BOLT HOLES 16
DIAMETER OF BOLT HOLES 1 1/8"

4 PIPE
1'-6"
A
96.35

QUANTITIES

STEEL

#5 BARS -	~~2703-7~~	~~2820~~	LBS
#6 BARS -	3574 0 ✓	5368 ✓	LBS
#7 BARS -	1175-4 ✓	2403 ✓	LBS
#8 BARS -	~~876-8~~ ✓	2396 ✓	LBS
	~~[illegible]~~	~~[illegible]~~	LBS
		112,987	

CONCRETE 691. ~~[illegible]~~ CU. YDS

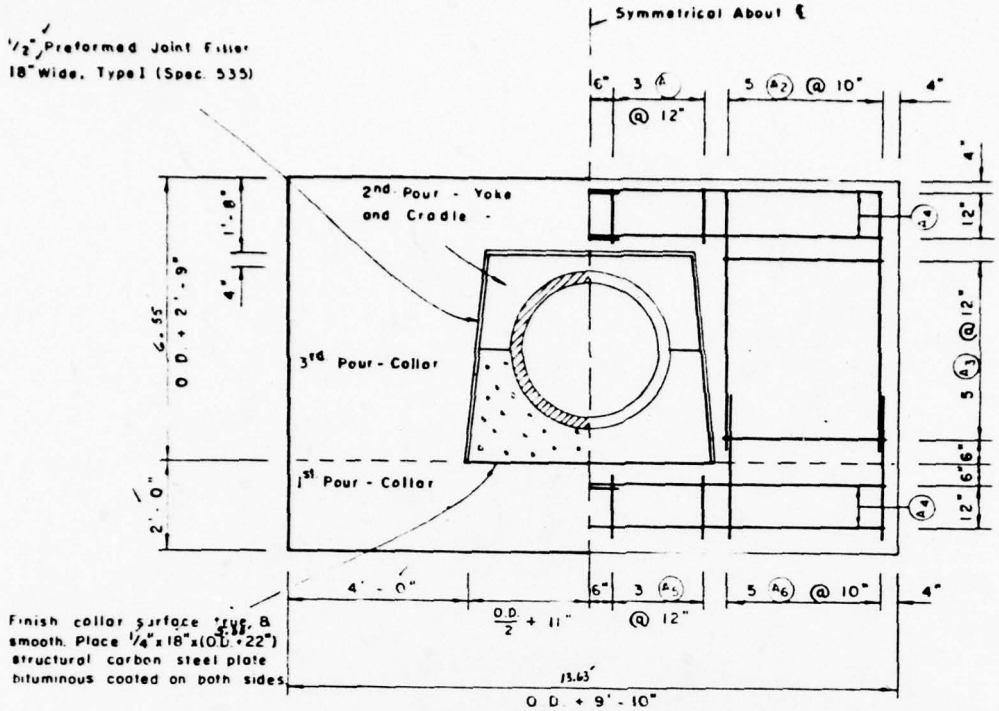
AS BUILT WS-10-71 July 6, 1973

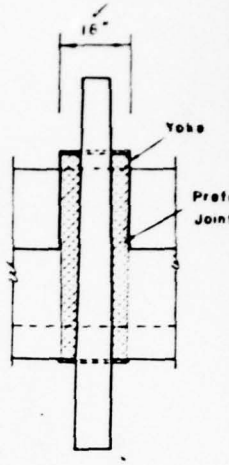
FINCH HOLLOW, LITTLE CHOCONUT & TROUT BROOK WATERSHED PROJECT
FLOODWATER RETARDING DAM NO. 1
FINCH HOLLOW
RISER STRUCTURAL DETAILS

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed	D.C. CHAPMAN	8/69	Approved by ... Title ...
Drawn			Title
Traced			Sheet no. 12 of 22
Checked	T. BROWN	8/69	Drawing No. NY-2014-P

2

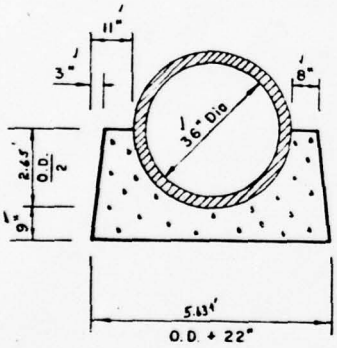


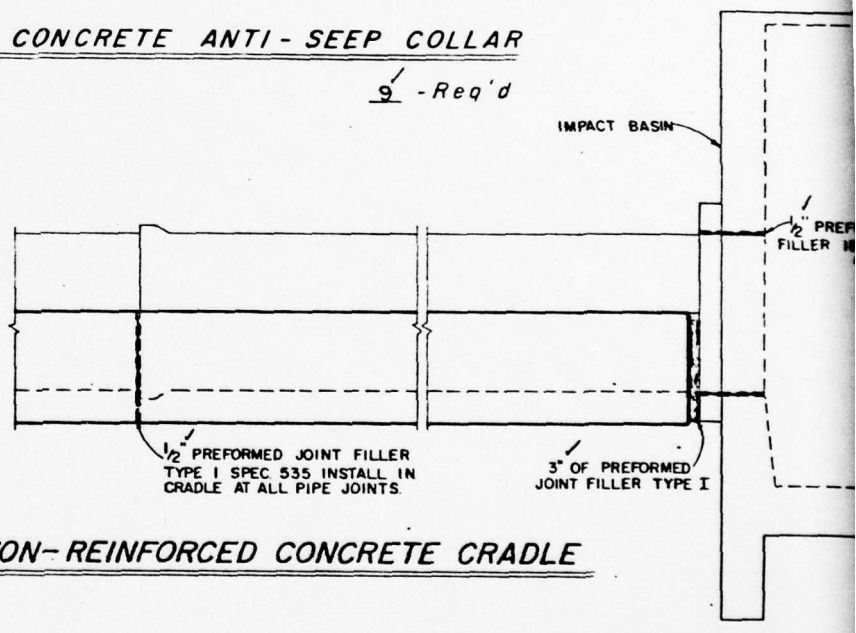


ALL STEEL PLACED AS SHOWN

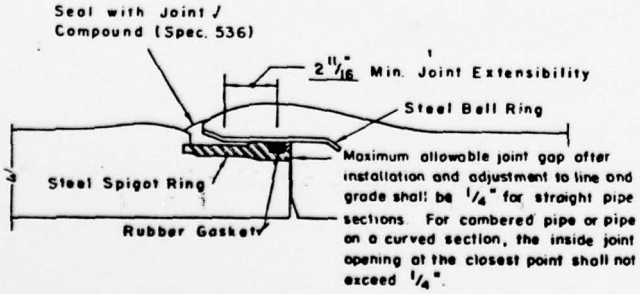
REINFORCED CONCRETE ANTI-SEEP COLLAR

9 - Req'd

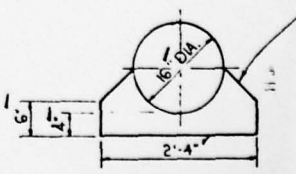




NON-REINFORCED CONCRETE CRADLE

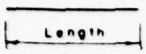


REINFORCED CONCRETE PIPE - JOINT DETA'LS



RESERVOIR DRAIN CONCRETE BEDDING

BAR TYPE



ANTI-SEEP COLLAR STEEL SCHEDULE

Mark	Size	Length	Type	Quan / Collar	Total Quan	Total Length
A-1	4	1-3	1	6	54	67-6
A-2	4	6-0	1	10	90	540-0
A-3	4	3-6	1	10	90	315-0
A-4	4	7-6	1	8	72	540-0
A-5	4	1-6	1	6	54	81-0
A-6	4	3-9	1	10	90	337-6

NOTE

Bar lengths do not change with changes in outside diameter of pipe.

QUANTITIES (This Sheet Only)

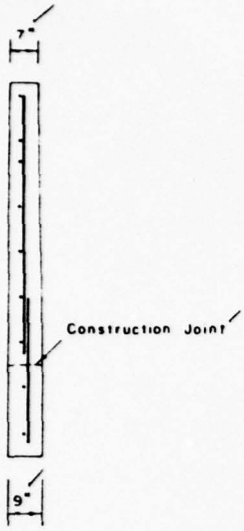
STEEL

No. 4 Bar 1881-0 * 1,257 Lbs

CONCRETE 20.98 cu yd

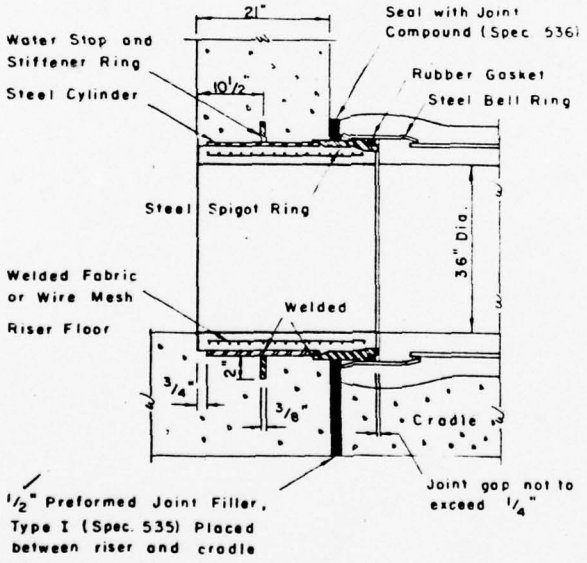
REINFORCED ~~80.3~~ Cu. Yds

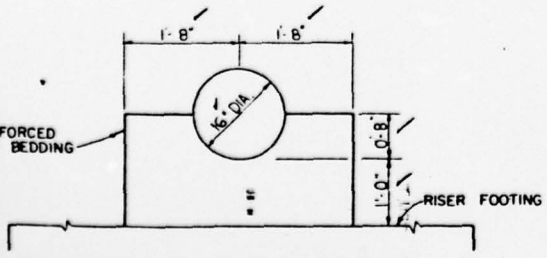
NON-REINFORCED ~~89.8 Cu Yds~~ 98.2 Cu yds



med
Filler

PREFORMED
ER 18" WIDE





REINFORCED CONCRETE BEDDING

RISER FOOTING CONCRETE BEDDING

SPIGOT WALL FITTING

AS BUILT

WS-70-71

July 6, 1973

FINCH HOLLOW, LITTLE CHOCONUT & TROUT BROOK WATERSHED PROJECT
FLOODWATER RETARDING DAM NO. 1
FINCH HOLLOW

CONDUIT DETAILS

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

		Date	Approved by
Designed	J.E. POLULECH	7/69	Title
Drawn	J. DE VITA	7/69	Title
Traced			Sheet No. 17 of 22
	D.C. CHAPMAN	8/69	Drawing No. NY-2014-P

2

MATERIAL DESCRIPTIONS

A

Topsoil, silty - sandy +4" material - some organic matter - brown to black - dry to moist - rapidly permeable - loose

B

Gravel, silt & sand matrix, approx. 40 percent fines - many 30 percent coarse angular to subangular 6" to 24" flags - brown - moist - moderately to rapidly permeable - loose to dense - glacial drift? (GM)

C

Silty gravel - subangular to subrounded - gray to blue-green - moist to saturated w/depth - slight permeability - dense to very dense - glacial till. (GM)

D

Silt, w/little gravel - some minor clay seams - gray to gray-green mottled - moist to saturated - slightly permeable - dense to very dense - (reworked glacial till or glacialacustrine material). (ML to GM)

E

Silt, little or no sands or gravel - some clay lenses - some organic material - slate gray - moist to saturated - slight to very slowly permeable - very dense - recent alluvium. (ML)

F

Silt, sandy w/clay lenses - brown - very moist to saturated - very slowly permeable - soft - recent alluvium (swamp area). (ML-CL)

G

Silt w/clay lenses - slate gray - very moist to saturated - very slowly permeable - soft - recent alluvium (swamp area). (ML-CL)

H

Gravel, small percent fines - many +6" cobbles - gray - moist to wet - w/depth - moderately to rapidly permeable - loose. (GP)

I

Shaly siltstone or silty shale - upper 2 ft. fractured - occasional mud seam in this area - dense and very tight w/depth. Sh

BACKHOE PIT LOGS

TP 1, C/L, Elev. 974.6

0	1.5	Material A
1.5	9.0	" B

TP 2, C/L, Elev. 951.0

0	1.5	Material A
1.5	7.0	" B

TP 3, C/L, Elev. 950.8

0	1.0	Material A
1.0	5.0	" B
5.0	10.0	" C
10.0	11.5	" D

TP 4, C/L, Elev. 951.1

0	1.5	Material A
1.5	5.5	" B
5.5	11.0	" C

TP 5, C/L, Elev. 990.8

0	1.5	Material A
1.5	10.0	" B

TP 101, Borrow Area, Elev. 1012.0

0	1.5	Material A
1.5	9.0	" B
9.0	12.0	" E (SAMPLE 101.1)

TP 102, Borrow Area, Elev. 1019.6

0	0.5	Material A
0.5	10.0	" B (SAMPLE 102.1, 4.5'-10.0')

TP 103, Borrow Area, Elev. 1002.2

0	3.0	Material A
3.0	7.5	" B
7.5	10.0	" C (SAMPLE 103.1)

TP 104, Borrow Area, Elev. 1000.7

0	1.0	Material A
1.0	4.0	" B
4.0	10.5	" C (SAMPLE 104.1)

TP 105, Borrow Area, Elev. 1014. (approx.)

0	0.5	Material A
0.5	10.5	" B

TP 201, Emergency Spillway, Elev. 1012.2

0	0.5	Material A
0.5	6.0	" B

TP 202, Emergency Spillway, Elev. 1008.1

0	0.5	Material A
0.5	10.0	" B

TP 203, Emergency Spillway, Elev. 1008.1

0	0.5	Material A
0.5	7.0	" B (SAMPLE 203.1 -7.0')

TP 204, Emergency Spillway, Elev. 1004.0

0	0.5	Material A
0.5	8.5	" B

TP 205, Emergency Spillway (Swamp Area), Elev. 1001.9

0	1.0	Material A
1.0	6.0	" F
6.0	7.0	" D

TP 2B, Emergency Spillway (Swamp Area), Elev. 1001.0

0	1.0	Material A
1.0	6.5	" F
6.5	7.5	" G

TP 301, Principal Spillway, Elev. 947.4

0	3.0	Material A
3.0	6.5	" B
6.5	10.5	" D

TP 302, Principal Spillway, Elev. 954.4

0	1.0	Material H
1.0	5.0	" B
5.0	11.0	" C (SAMPLE 302.1)

TP 303, Principal Spillway, Elev. 944.7

0	1.0	Material A
1.0	5.0	" B
5.0	8.5	" C

TP 304, Principal Spillway, Elev. 954.2

0	1.0	Material A
1.0	5.5	" B
5.5	12.0	" C

TP 305, Principal Spillway, Elev. 939.9

0	1.0	Material A
1.0	6.5	" H
6.5	11.5	" C

TP 501, Drain Line, Elev. 947.9

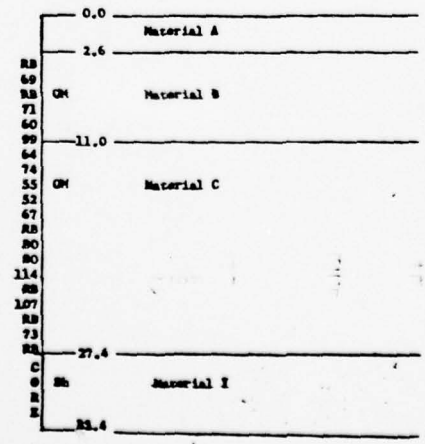
0	0.5	Material A
0.5	7.0	" B
7.0	10.0	" D (SAMPLE 501.1)

TP 502, Drain Line, Elev. 947.2

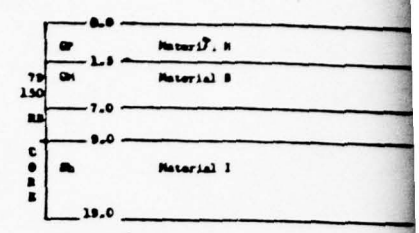
0	0.5	Material H
0.5	8.0	" B
8.0 -		" I (?)

DRILL HOLE LOGS

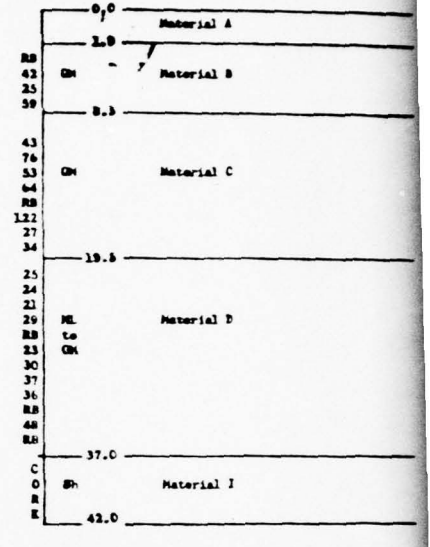
DH #51, C/L, Elev. 970.5



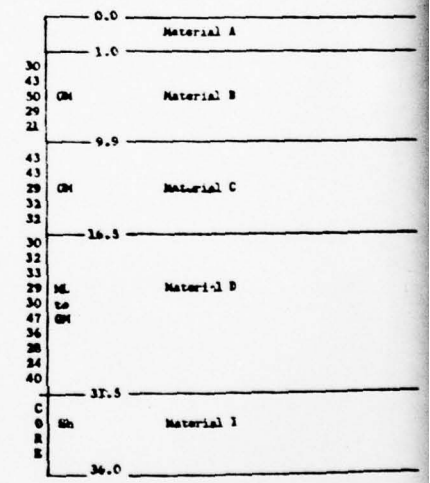
DH #52, C/L, Elev. 95..



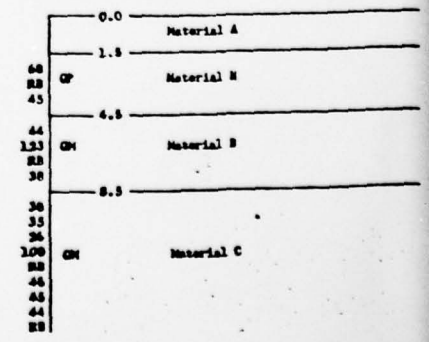
DH #53, C/L, Elev. 952.7

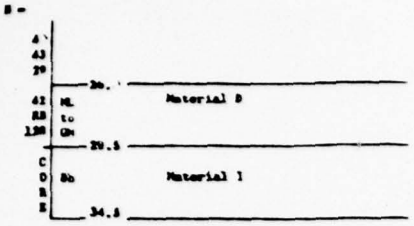


DH #54, C/L, Elev. 95..

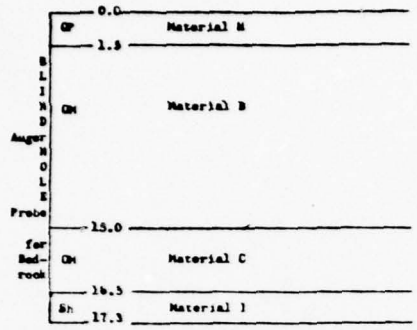


DH #55, C/L, Elev. 952.0



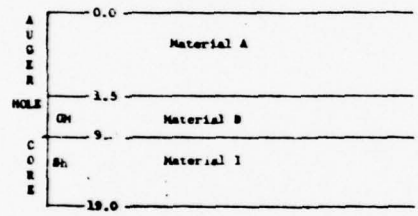


DH #56, C/L Elev. 947.3



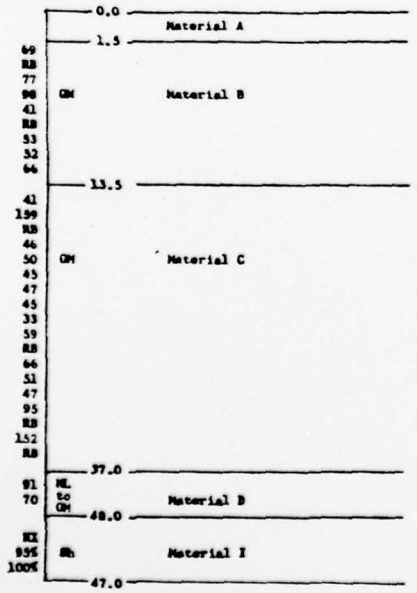
NOTE: All classifications are based on estimation of drill & cuttings on auger flights.

DH #57, C/L Elev. 950.5

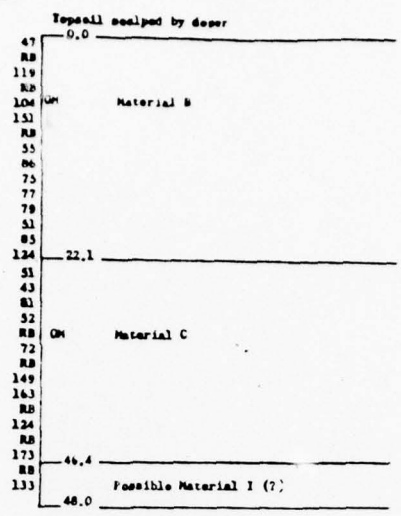


NOTE: All classifications are based on estimation of drill & cuttings on auger flights.

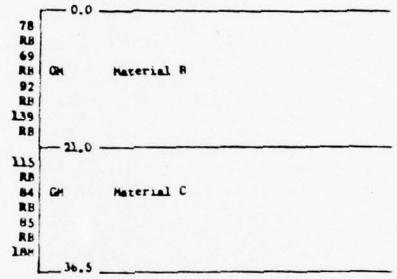
DH #58, C/L Elev. 981.9



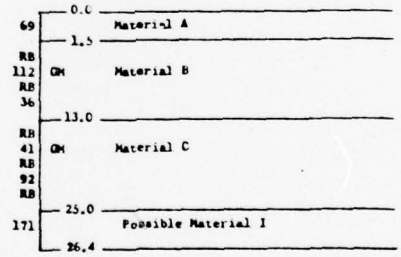
DH #151, Borrow Area, Elev. 1017.1



DH #152, Borrow Area, Elev. 1022.3



DH #153, Borrow Area, Elev. 1031.8



AS BUILT W.S-10-71
July 6, 1973

FINCH HOLLOW, LITTLE CHOCONUT & TROUT BROOK WATERSHED PROJECT
FLOODWATER RETARDING DAM NO. 1
LITTLE CHOCONUT CREEK
LOGS OF TEST HOLES

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Surveyed by J. A. Chisholm	Date 7/66	Approved by	
Drawn		Title	
Traced		Title	
Checked		Sheet No. 21 of 22	Drawing No. NY-2014

SCS-313C (9-64)

DH #234, Borrow Area, Elev. 984.1

Blows	Class	Depth	Material
21		0.0 – 1.5	Material A
RB, 72, RB, 34, RB, 0F, RB	GM	1.5 – 13.3	Material B
65, RB, 49, 83	GM	13.3 – 27.0	Material C

DH #351, Emergency Spillway, Elev. 1011.5

Blows	Class	Depth	Material
63		0.0 – 0.5	Material A
RB, 59, RB, 97	GM	0.5 – 11.5	Material B

DH #252, Emergency Spillway, Elev. 1002.5

Blows	Class	Depth	Material
		0.0 – 2.0	Material A
5, 16, 17, 27, 21, 33	ML–CL	2.0 – 8.0	Material F
30, 34, 18	GM	8.0 – 11.0	Material C
27, 21, 27	ML–CL	11.0 – 14.0	Material G
43	GM	14.0 – 15.5	Material C

DH #331, Principal Spillway, Elev. 954.9

Blows	Class	Depth	Material
17, 14, 22	GP	0.0 – 5.0	Material H
RB, 68, 32, 44	GM	5.0 – 9.3	Material B
49, 34, 34	GM	9.3 – 14.0	Material C
31, 32, 25, 35, 29, 33, 36, 29	ML to GM	14.0 – 26.5	Material D (SAMPLE 12, 18.5'-20.0')

DH #332, Principal Spillway, Elev. 946.9

Blows	Class	Depth	Material
18		0.0 – 1.5	Material A
44, RB, 22, 28	GM	1.5 – 6.0	Material B
21, 22, 30, 31	ML to GM	6.0 – 12.5	Material D
52, RB, 47, RB, 110, RB, 77	GM	12.5 – 30.0	Material C

DH #333, Principal Spillway, Elev. 9_.1

Blows	Class	Depth	Material
23, 11	GP	0.0 – 2.0	Material H
RB, 14	ML–CL	2.0 – 5.0	Material G
70, RB, 137, 34, RB, 72, 22, 40, 35, 30	GM	5.0 – 18.0	Material C
22, 34	ML to GM	18.0 – 21.5	Material D
37, 21, RB	GM	21.5 – 27.0	Material C
71, RB	Sh	27.0 – 32.0	Material I

DH #334, Principal Spillway, Elev. 948.8

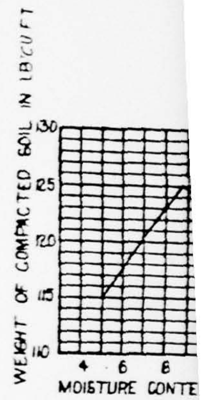
Blows	Class	Depth	Material
50		0.0 – 2.0	Material A
RB, 50	GP	2.0 – 5.5	Material H
RB, 1.9	GM	5.5 – 7.5	Material C
	Sh	7.5 – 14.0	Material I

DH #360, Principal Spillway, Elev. 967.9

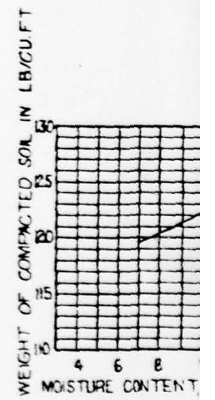
Blows	Class	Depth	Material
RB		0.0 – 2.3	Fill (Bulldozed Road
		2.3 – 2.7	Topsoil
72, RB, 35, 43	GM	2.7 – 12.0	Material B
36, 46, 44, 58, 58, 58, 44, 59, 47, 36, 5_, 59	GM	12.0 – _5._	Material C

Curve #_
Material
Max γ_d
Opt. moist.

Curve #4
Material
Max γ_d
Opt. moist.



COMPACTION (
FIELD SAMPLE
LABORATORY CLA



COMPACTION
FIELD SAMPLE
LABORATORY CLA

AD-A076 166 NEW YORK STATE DEPT OF ENVIRONMENTAL CONSERVATION ALBANY F/G 13/2
NATIONAL DAM SAFETY PROGRAM. FINCH HOLLOW WATERSHED PROJECT, SI--ETC(U)
AUG 79 G KOCH DACW51-79-C-0001
UNCLASSIFIED NL

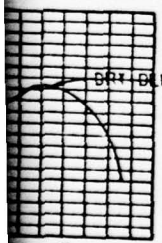
2 OF 2
AD
A076166

END
DATE
FILMED
11-79
DDC

made at SML #3
Fr. Em Spl
128.0
MS %

made at SML # 3
Fr Em Spl
127.5
MS 10.3%

ENT PERCENT OF DRY WEIGHT
CURVE
NO. 1041
ASSIFICATION GC-GM



PERCENT OF DRY WEIGHT
CURVE
NO. 2031
SSIFICATION - GC

LEGEND

TEST HOLE NUMBERING SYSTEM

Construction of dam	1 - 99
Auxiliary spillway	101 - 199
Emergency spillway	201 - 299
Centerline of outlet structure	301 - 399
Diversion channel	401 - 499
Relief wells	501 - 599

UNIFIED SOIL CLASSIFICATION SYSTEM SYMBOLS

GW	Well-graded gravels; gravel-sand mixtures
GP	Poorly graded gravels
GM	Silty gravels; gravel-sand-silt mixtures
GC	Clayey gravels; gravel-sand-clay mixtures
SW	Well graded sands; sand-gravel mixtures
SP	Poorly graded sands
SM	Silty sands; sand-silt mixtures
SC	Clayey sands; sand-clay mixtures
ML	Silts; silty, or fine sands; sandy or clayey silts
CL	Clays of low to medium plasticity; silty, sandy or gravelly clays.
CH	Clays of high plasticity; fat clays
MH	Elastic silts; diatomaceous or micaceous silts
OL	Organic silts and organic silty clays of low plasticity
OH	Organic clays or silts of medium to high plasticity

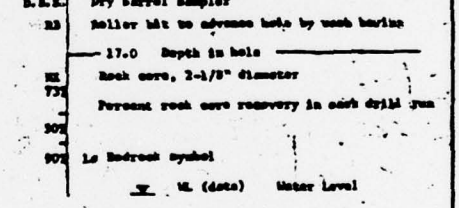
BEDROCK SYMBOLS

B	Basalt	Sc	Schist
Gn	Gneiss	Sh	Shale
Gr	Granite	Si	Siltstone
Ls	Limestone	Sl	Slate
Ma	Marble	Ss	Sandstone

SAMPLES

DS	Disturbed
US	Undisturbed
Core	RX Core

KEY TO DRILL HOLE (DH) LOGS



All soil and rock descriptions and classifications were determined by visual examination.

AS BUILT WS-10-71 July 6 1973

FINCH HOLLOW, LITTLE CHOCONUT & TROUT BROOK WATERSHED PROJECT
FLOODWATER RETARDING DAM NO. 1
LITTLE CHOCONUT CREEK
LOGS OF TEST HOLES

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Investigated J. A. Chisholm 8/64	Approved by	
Drawn	Title	
Traced	Title	
Checked	Sheet No. 22 of 22	Drawing No. NY-2014

SCS-313 (9-64)