

**HISTORY OF CONSTRUCTION FOR EXISTING CCR SURFACE IMPOUNDMENT
PLANT YATES ASH POND 3 (AP-3)
40 CFR 257.73(c)(1)(i)-(xii)**

(i) Site Name and Ownership Information:

Site Name: Eugene A. Yates Power Plant

Site Location: Newnan, Georgia

Site Address: 708 Dyer Road
Newnan, GA 30263

Owner: Georgia Power Company

Address: 241 Ralph McGill Boulevard
Atlanta, GA 30308

CCR Impoundment Name: Plant Yates Ash Pond 3 (AP-3)

NID ID: GA04183 (038-064-04139 Georgia State ID)

EPA's "Disposal of Coal Combustion Residuals from Electric Utilities" Final Rule (40 C.F.R. Part 257 and Part 261), §257.73(c)(1), requires the owner or operator of an existing CCR surface impoundment to compile a history of construction. To the extent feasible, the following information is provided:

(ii) Location of CCR Unit:

33.452271, -84.891158

See Location Map in the Appendix

(iii) Purpose of CCR Impoundment:

The Eugene A. Yates Power Plant (Plant Yates) was once a seven unit, coal fired, power generation facility. Currently Plant Yates Units 1-5 are in the process of demolition and Plant Yates Units 6 and 7 have been converted to natural gas. AP-3, also called the "emergency ash pond," was designed to receive and store coal combustion residuals produced during the electric power generating process at Plant Yates. Its construction was commissioned in 1976 to relieve Ash Pond A which was nearing capacity. AP-3 also formerly served as a settling basin for decant water from Ash Pond B' which was being used as an ash dewatering facility for material dredged from Ash Pond 2. Ash Pond B' is currently being prepared for closure and no longer functions as a dewatering facility. AP-3 no longer actively receives coal combustion residuals from Plant Yates, but has continued to receive stormwater runoff from Ash Pond B'.

(iv) Watershed Description:

Plant Yates and AP-3 are located within the Acorn Creek-Chattahoochee River HUC-12 watershed which has a total area of 28,284 acres. The Acorn Creek-Chattahoochee River watershed is part of the larger Middle Chattahoochee-Lake Harding HUC-8 watershed which has an area of 1,950,182 acres. The inflow into AP-3 consists of the rainfall that falls within the limits of the surface impoundment as well as runoff from approximately 579 acres of adjoining watershed. Additionally, run-off from Ash Pond B' (25 acres) also flows into AP-3.

(v) Description of physical and engineering properties of CCR unit foundation/abutments:

AP-3 is located in the Piedmont Physiographic Province of Georgia. The Piedmont is characterized by igneous and metamorphic rocks. According to the *Geologic Map of Georgia, 1976*, Plant Yates is located in an Undifferentiated Granite formation of the Piedmont. The residual soils in the Piedmont are a result of weathering of the underlying bedrock. Piedmont residual soils and alluvial soils (due to its proximity to the Chattahoochee River) are present within the footprint of AP-3. The alluvial soils consist of firm to very stiff silts and clays which were underlain by partially weathered rock and residual soils. The residual soils consist mainly of silty sands.

The foundation conditions beneath the AP-3 dike structure are described in design documents initially by identifying that "the embankment foundation can be divided into two zones: the abutment zone and the flood plain zone." Georgia Power went on to describe an upper and lower horizon in the abutment area. The upper horizon was said to contain "firm to very firm, micaceous, silty, fine to medium sand," while the lower horizon consisted of "very firm to very dense micaceous silty, fine to coarse sand. The horizons lacked a well-defined demarcation, and material contained within each horizon likely resulted from "decomposition of the parent crystalline rock beneath." Three horizons were used to describe the flood plain portion of the embankment zone. "Highly organic, inter-bedded, silty fine to medium sand," was contained in the upper horizon. The intermediate zone contained gravelly sand, while micaceous, silty, fine to coarse sand was found in the lower zone. Like those in the entire abutment zone, soils in the lower horizon of the floodplain zone were said to "derive from decomposition of the crystalline rock below." Soil material found in the upper and intermediate zones "were eroded from the adjacent hillsides and transported and deposited by water-"(i.e., alluvium).

(vi) Summary of Site Preparation and Construction Activities:

Designed by the Georgia Power Chief Engineer, AP-3 was constructed under the supervision of a professional engineer. AP-3 has a surface area of about 55 acres and a maximum embankment height of 37 feet with a crest elevation of 755 ft. Available construction drawings and specifications indicate the AP-3 dam is constructed as a zoned embankment dam, with an impervious core surrounded on both sides with fill of higher permeability. As shown in the "Initial Construction" section on the attached *1976 Plan View and Cross Sections* drawing, site preparation consisted of removing 10 feet of organic soil from the surface, resulting in a subgrade for the dam at EL 718 ft. The impervious core was keyed into the subgrade an additional 10 feet at an elevation of EL 708 ft. The upstream face was built to 2:1, and the downstream was sloped to 2.5:1. The impervious core was 15 feet wide at the top of the

embankment and comprised the entire width of the crest. The core was widened with depth to an unknown degree, but was tapered back to a width of 15 feet at the key foundation elevation.

(vii) Engineering Diagram:

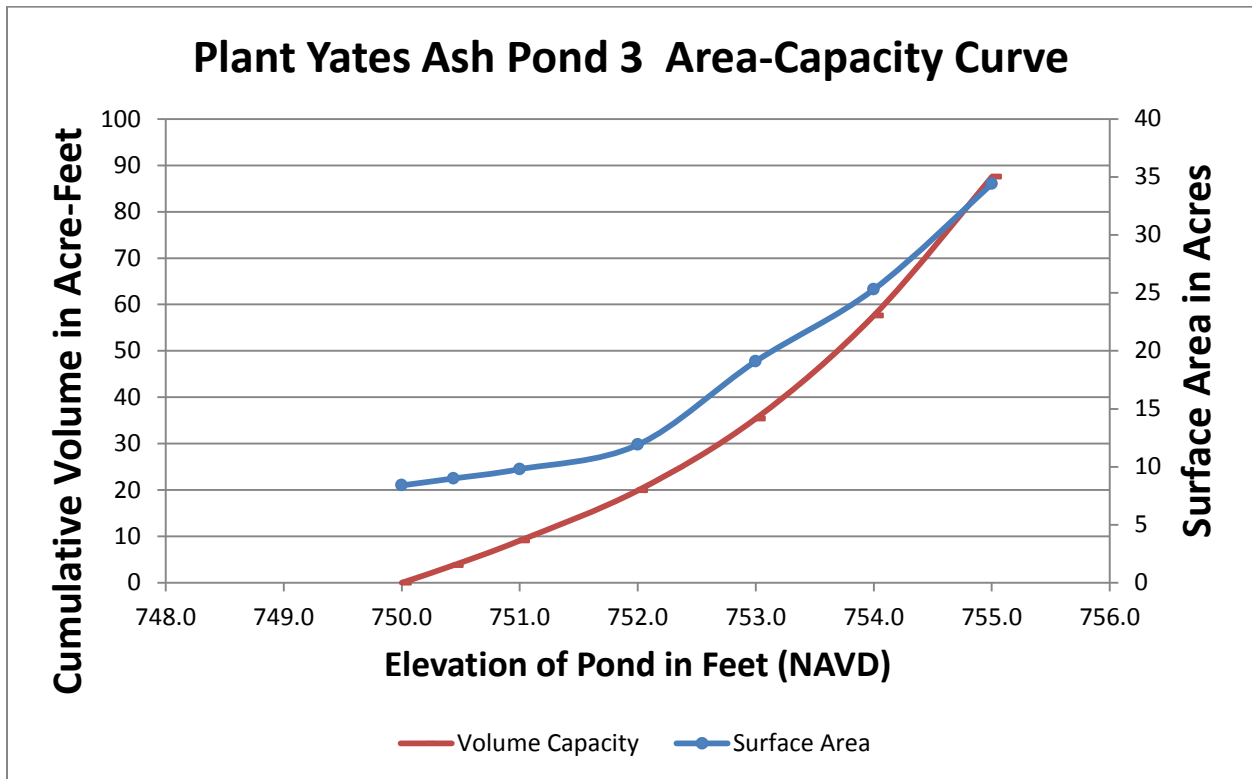
The following drawings relevant to the construction of AP-3 can be found in the Appendix:

- 1976 Plan View and Cross Sections
- 1976 Borrow Area Plan
- 1976 Discharge Structure
- 1976 Foundation Cross Section
- 1982 Seepage Control Drain Plan View, Sections and Construction Notes

(viii) Description of Instrumentation:

There are six piezometers located within the vicinity of AP-3 which are used to monitor water levels around the impoundment.

(ix) Area-capacity curves:



(x) Spillway/Diversion design features and capacity calculations:

Water leaving AP-3 is conveyed in a ditch around the perimeter of the R6 Landfill into Ash Pond 2. The principal spillway for AP-3 consists of a 48-in CMP standpipe with an inlet elevation of 750.4 ft. This standpipe is connected to a 42-in diameter CMP. A 20-ft wide emergency spillway with a bottom width of 20 ft and an elevation of 753.5 ft is located at the western abutment of AP-3 and discharges to the drainage ditch around the perimeter of the R6 Landfill. Capacity calculations indicate that the 20-ft wide emergency spillway has a capacity of 607 cubic feet per second (cfs) during the 100-year design storm and the principal spillway has a capacity of 120 cfs during this same event.

(xi) Provisions for surveillance, maintenance and repair:

Inspections of dikes are critical components and are conducted on a regular basis – at least annually by professional dam safety engineers and at least weekly by trained plant personnel. In addition, inspections are performed after periods of heavy rain and storms. The inspections provide assurance that structures are sound and that action is taken, as needed, based on the findings. Weekly safety inspections include numerous items including pond levels, weather conditions and rainfall since the prior inspection, conditions of slopes and drains, erosion, animal damage, ant hills, alignment of retaining structures and more. During annual inspections, dam safety engineers assess instrument readings, inspect any maintenance or remediation performed since the previous inspection, check the status of work recommended at prior inspections, ensure that the posting of emergency notification information is up to date and evaluate any items noted during plant personnel inspections.

Construction specifications:

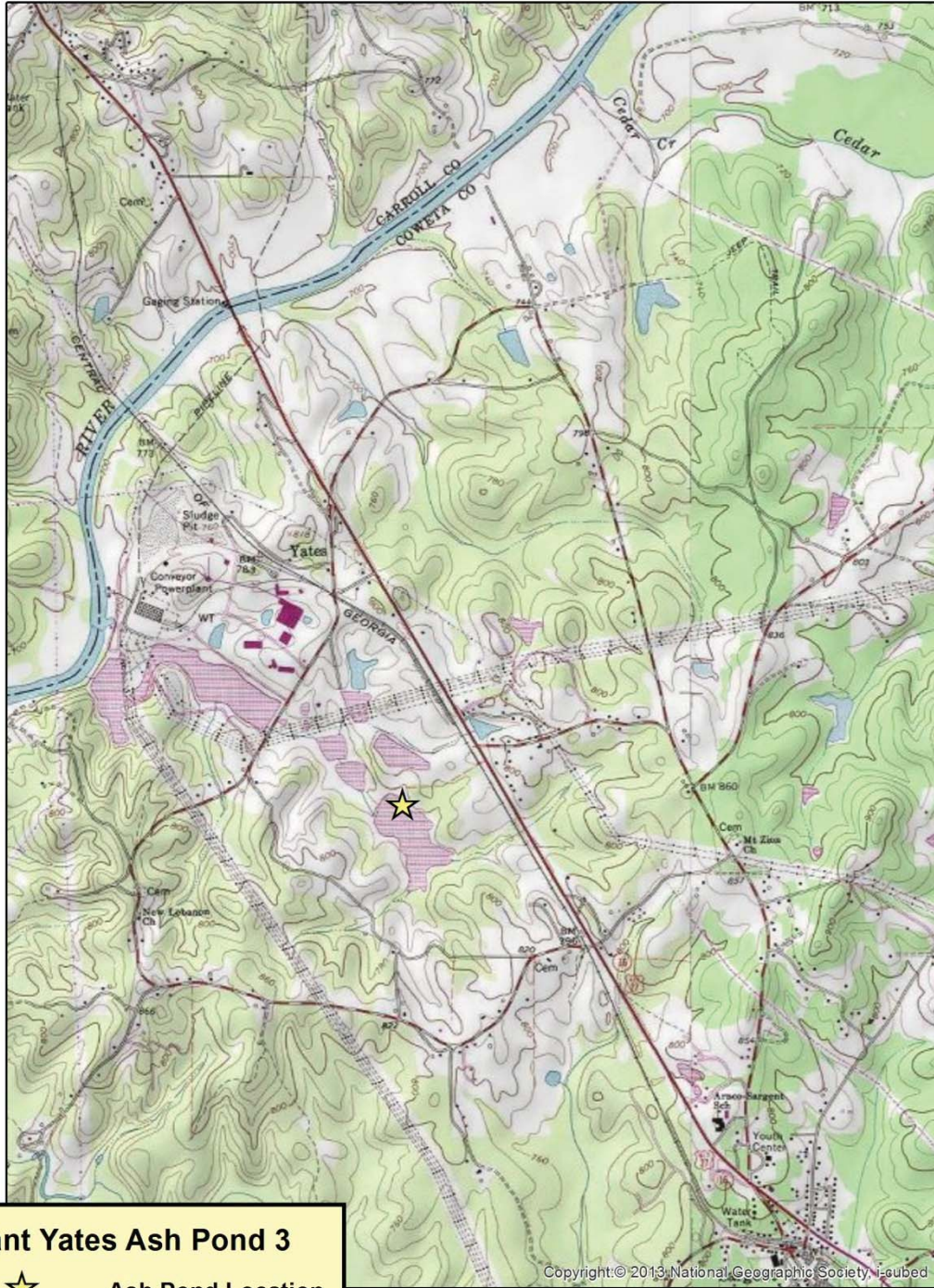
The following specifications relevant to the construction of AP-3 can be found in the Appendix:

- 1976 Detail Specifications for Ash Pond Construction



(xii) Known record of structural instability:

There is no known record of major structural instability or repairs to the AP-3 impoundment. In 1982, an area of seepage was repaired along the dike.

Appendix

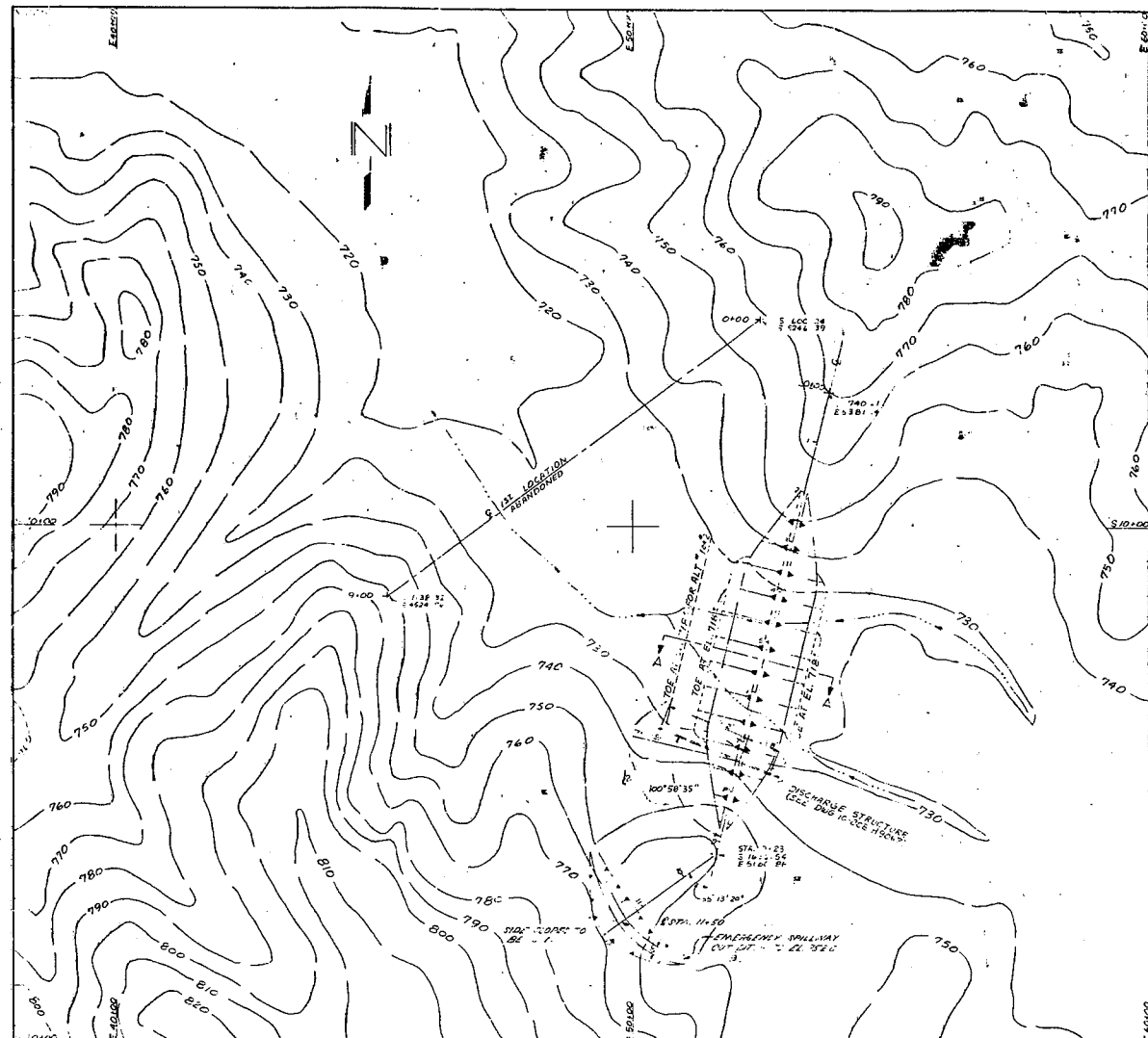


Plant Yates Ash Pond 3

N   **Ash Pond Location**
USA Topo Maps

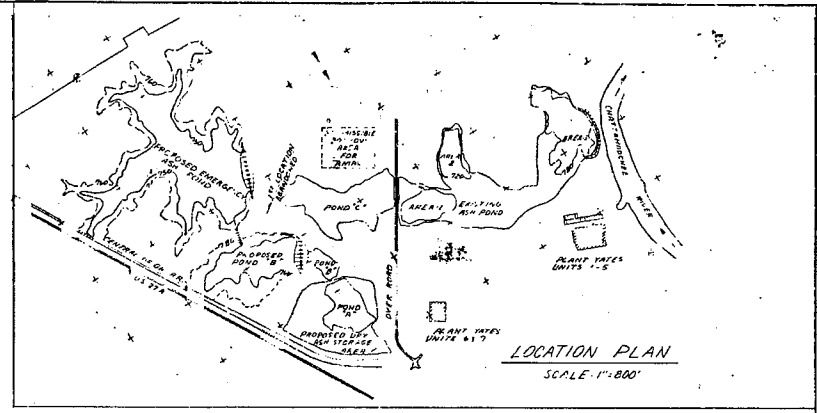


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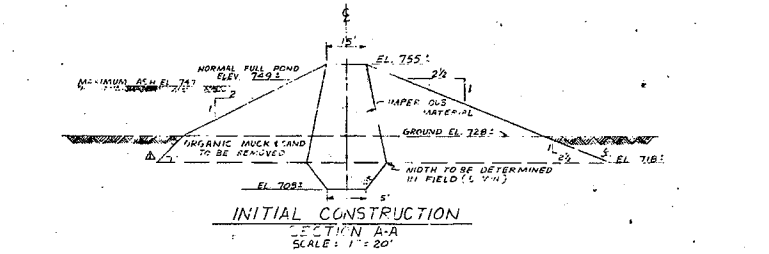


PLAN - INITIAL CONSTRUCTION
SCALE: 1" = 100'

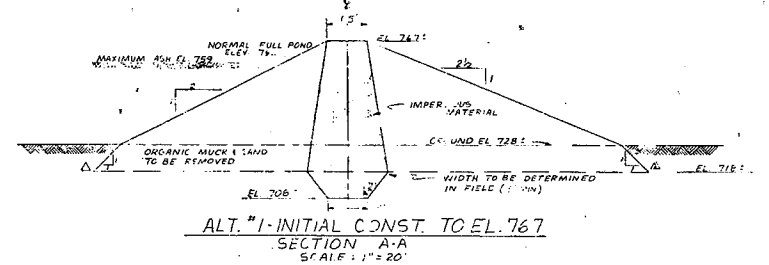
- REFERENCE DRAWINGS**
- 10-20A H-9064 CROSS SECTIONS
 - 10-20B H-9064 FOUNDATION DETAILS
 - 10-20C H-9067 DISCHARGE STRUCTURE DETAILS
 - 10-20D H-9066 ELEVATION EXCAVATION DETAILS



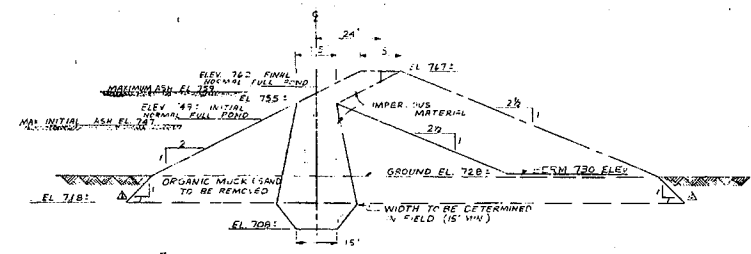
LOCATION PLAN
SCALE: 1" = 800'



INITIAL CONSTRUCTION
SECTION A-A
SCALE: 1" = 20'



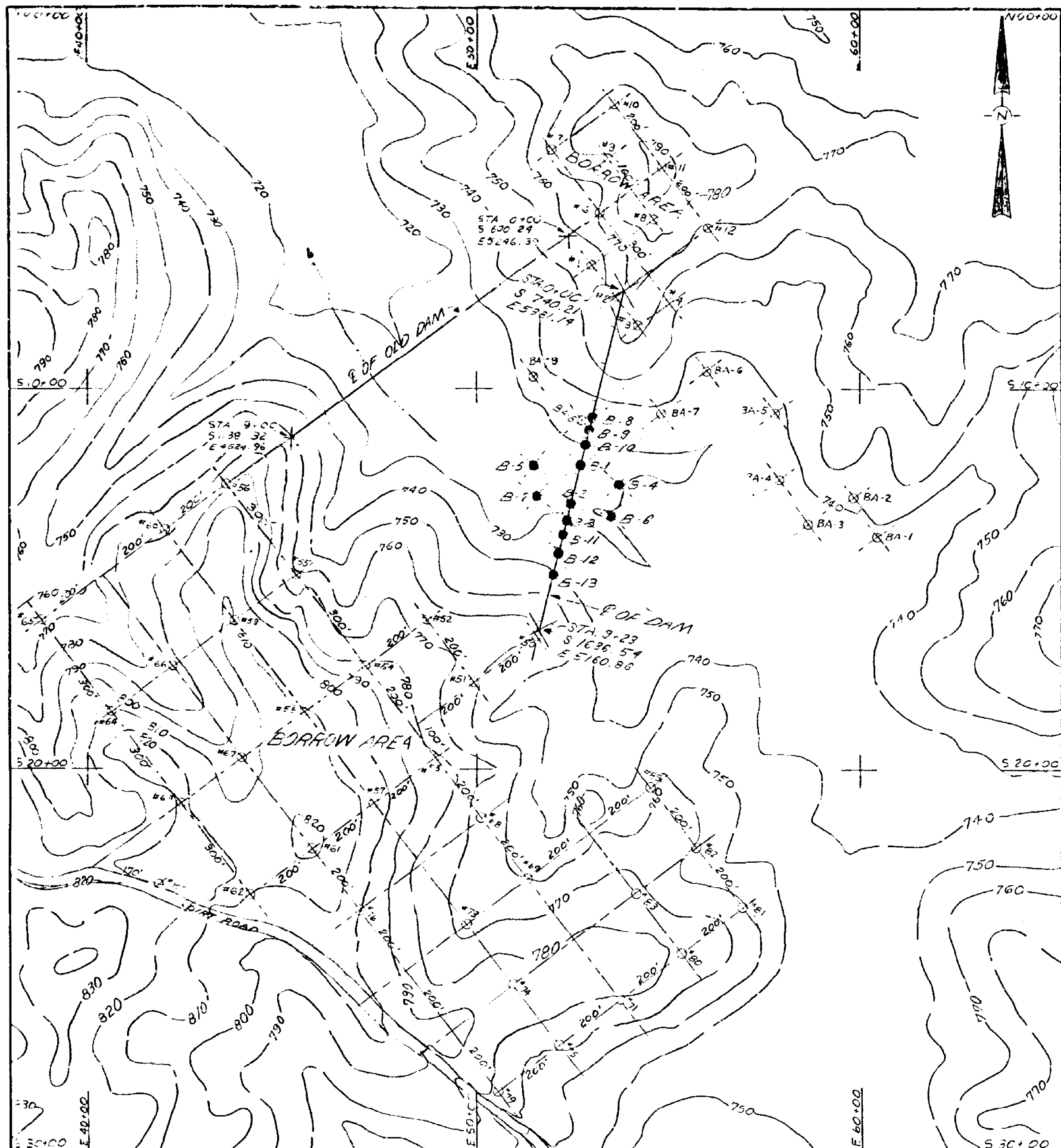
ALT. "1" - INITIAL CONST. TO EL. 767
SECTION A-A
SCALE: 1" = 20'



ALT. "2" - BERM FOR FUTURE CONST. TO EL. 767
SECTION A-A
SCALE: 1" = 20'

- NOTES:**
1. ELEVATIONS ARE MEAN SEA LEVEL.
 2. COORDINATES ARE BASED ON PLANT GRID SYSTEM.
 3. 15 FEET IS THE MINIMUM WIDTH FOR THE IMPERVIOUS MATERIAL.

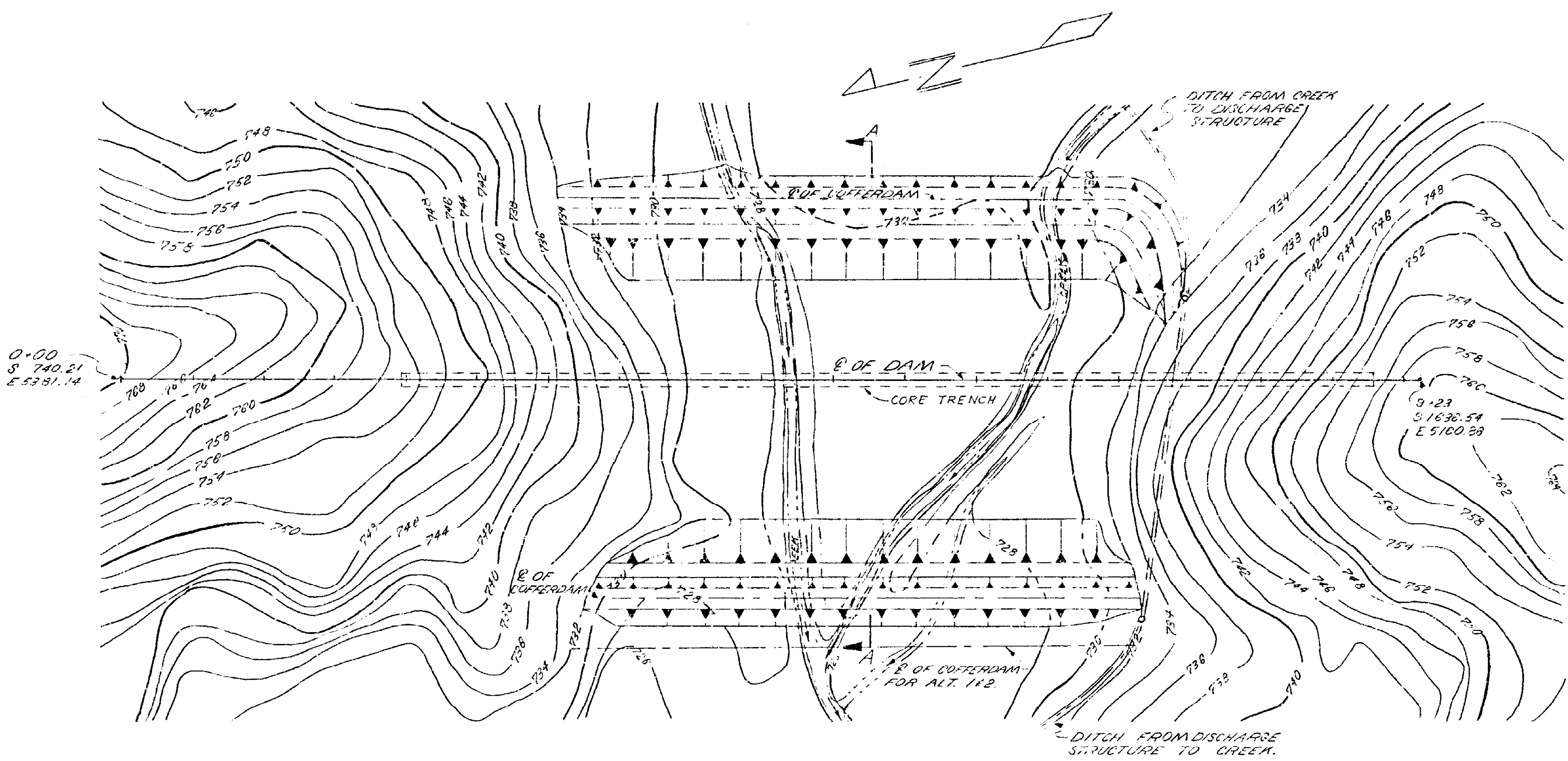
GEORGIA POWER CO., ATLANTA, GA.	
GENERAL ENGINEERING DEPARTMENT	
PLANT NAME	
EMERGENCY ASH POND	
PLAN AND SECTIONS	
DATE	SCALE
11/17	1" = 20'
DRAWING NUMBER	SHEET NO.
10-20B	H-9065



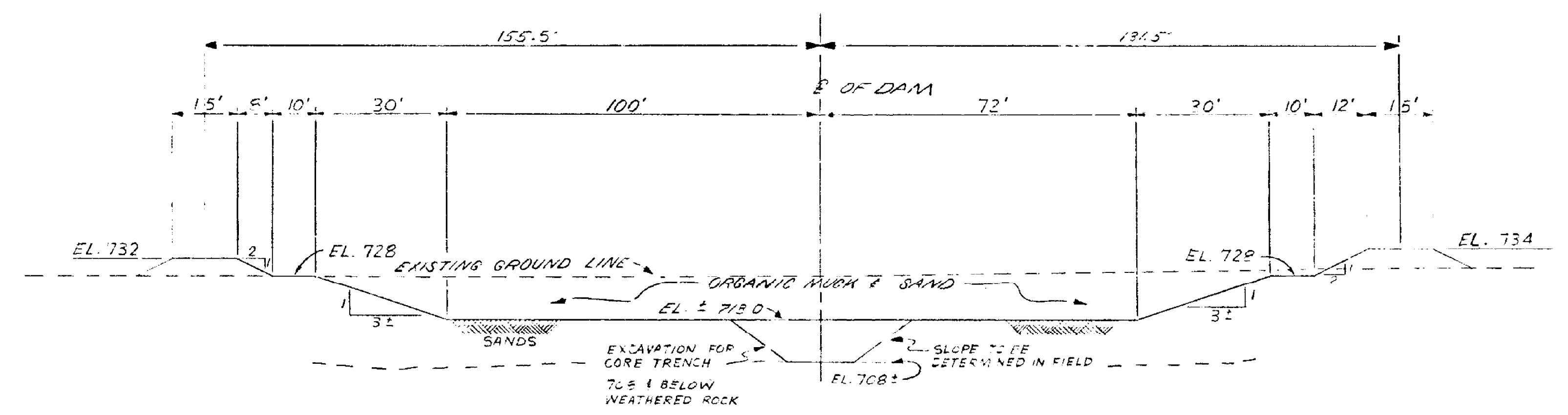
BORROW AREA PLAN
SCALE: 1" = 200'

NOTES:

1. BORROW AREA NORTH OF DAM SITE WILL NOT BE UTILIZED.
2. BORROW AREA WITHIN 600' OF E OF OLD DAM WILL NOT BE UTILIZED.
3. BORING LOGS AND RECORDS OF SOILSPACE INVESTIGATIONS ARE AVAILABLE AT THE GEORGIA POWER COMPANY, 23 FLOOR, 230 PEACHTREE STREET, N.E. ATLANTA, GEORGIA 30303.



FOUNDATION PLAN
SCALE: 1" = 50'

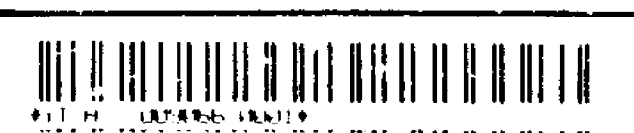


SECTION A-A
SCALE: 1" = 20'

REFERENCE DRAWINGS

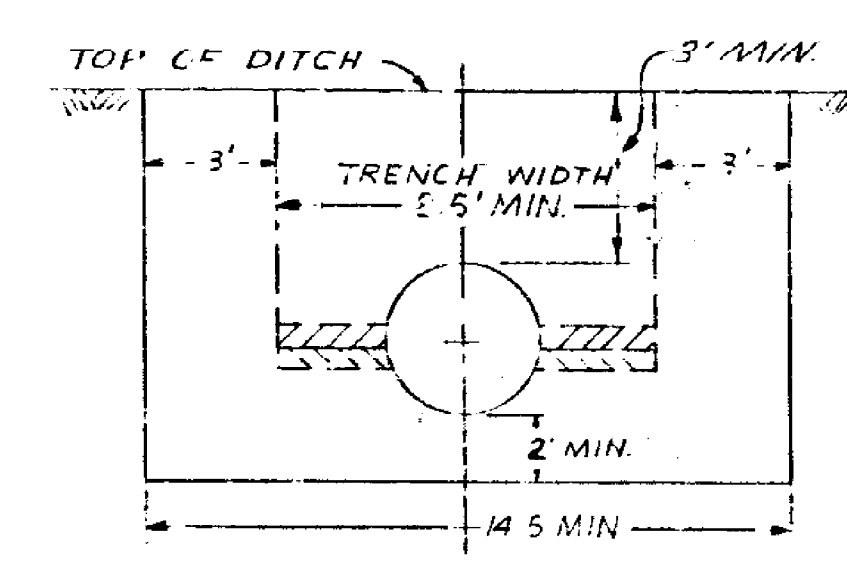
- 10-208 H-9064 CROSS SECTIONS
- 10-208 H-9065 PLAN AND SECTIONS
- 10-208 H-9068 ELEVATION - EXCAVATION DETAILS

GEORGIA POWER CO., ATLANTA, GA. GENERAL ENGINEERING DEPARTMENT			
FLANT YATES EMERGENCY ASH POND DAM FOUND AND BORROW AREA DETAILS			
NO. OF REVISIONS 1 DATE 11/17/77	DRAWN BY JWP	CHECKED BY JWP	DATE 11/17/77
SCALE 1" = 20'		DRAWING NUMBER 10-208	
LOCATION FLANT YATES		SHEET NO. 1-208	



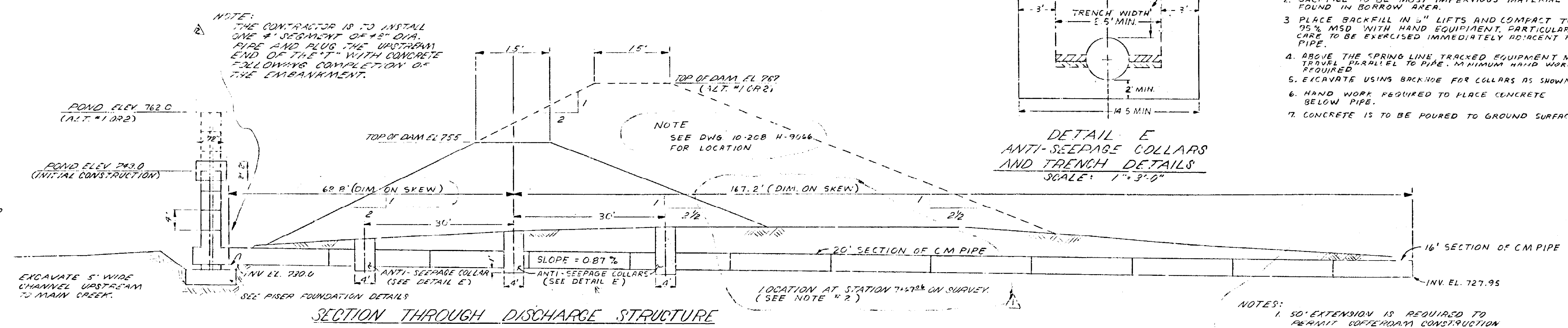
NOTES:

1. SHAPE TRENCH BOTTOM USING A TEMPLATE TO CONFORM TO THE SHAPE OF PIPE.
2. BACKFILL TO BE MOST IMPERVIOUS MATERIAL FOUND IN BORROW AREA.
3. PLACE BACKFILL IN 4" LIFTS AND COMPACT TO 95% M.S.D. WITH HAND EQUIPMENT. PARTICULAR CARE TO BE EXERCISED IMMEDIATELY ADJACENT TO PIPE.
4. BRIDGE THE SPRING LINE TRACKED EQUIPMENT MAY TRAVEL PARALLEL TO PIPE. MINIMUM HAND WORK REQUIRED.
5. EXCAVATE USING BACKHOE FOR COLLARS AS SHOWN.
6. HAND WORK REQUIRED TO PLACE CONCRETE BELOW PIPE.
7. CONCRETE IS TO BE POURED TO GROUND SURFACE.

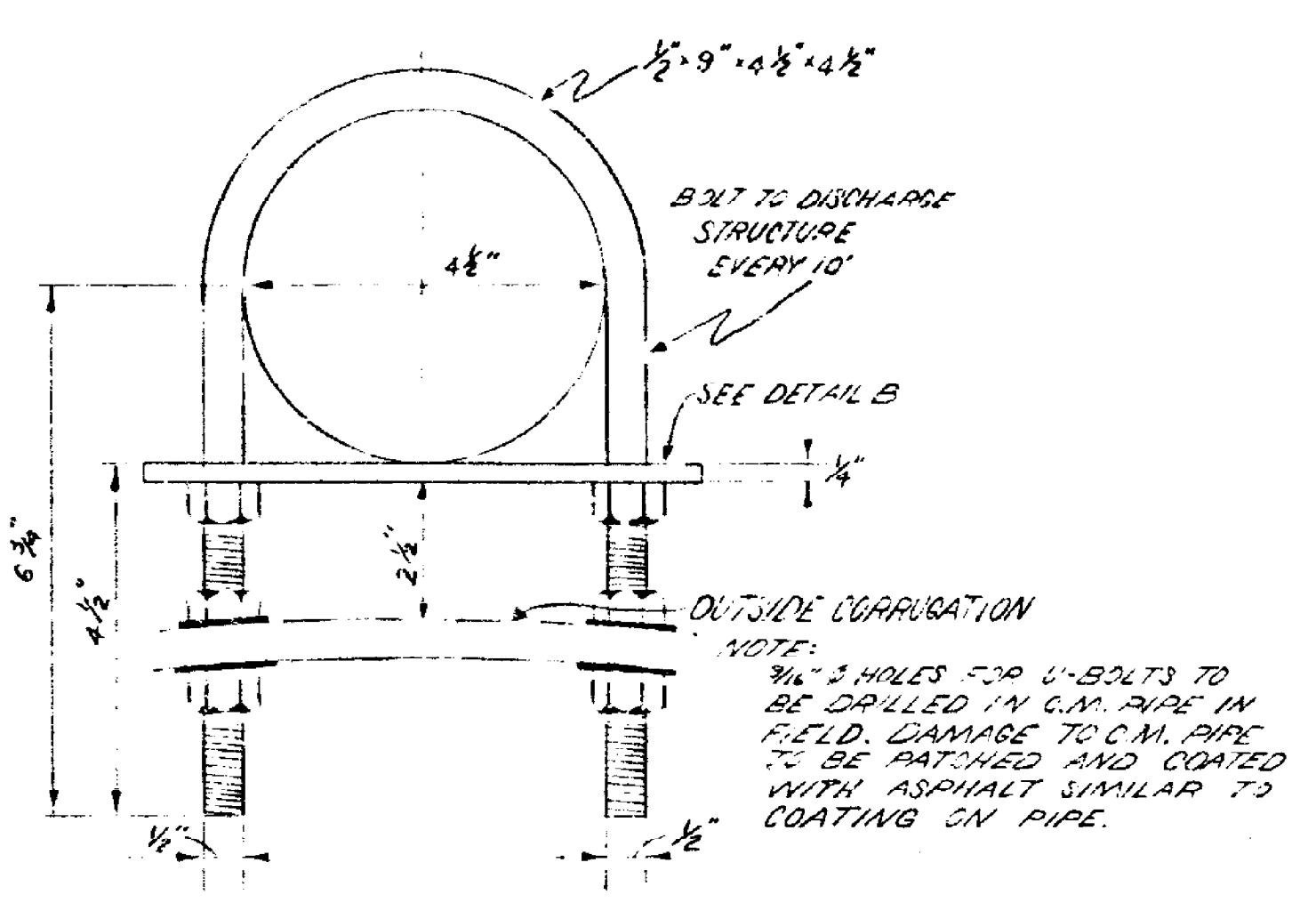


DETAIL E
ANTI-SEEPAGE COLLARS
AND TRENCH DETAILS
SCALE: 1/4" = 1'-0"

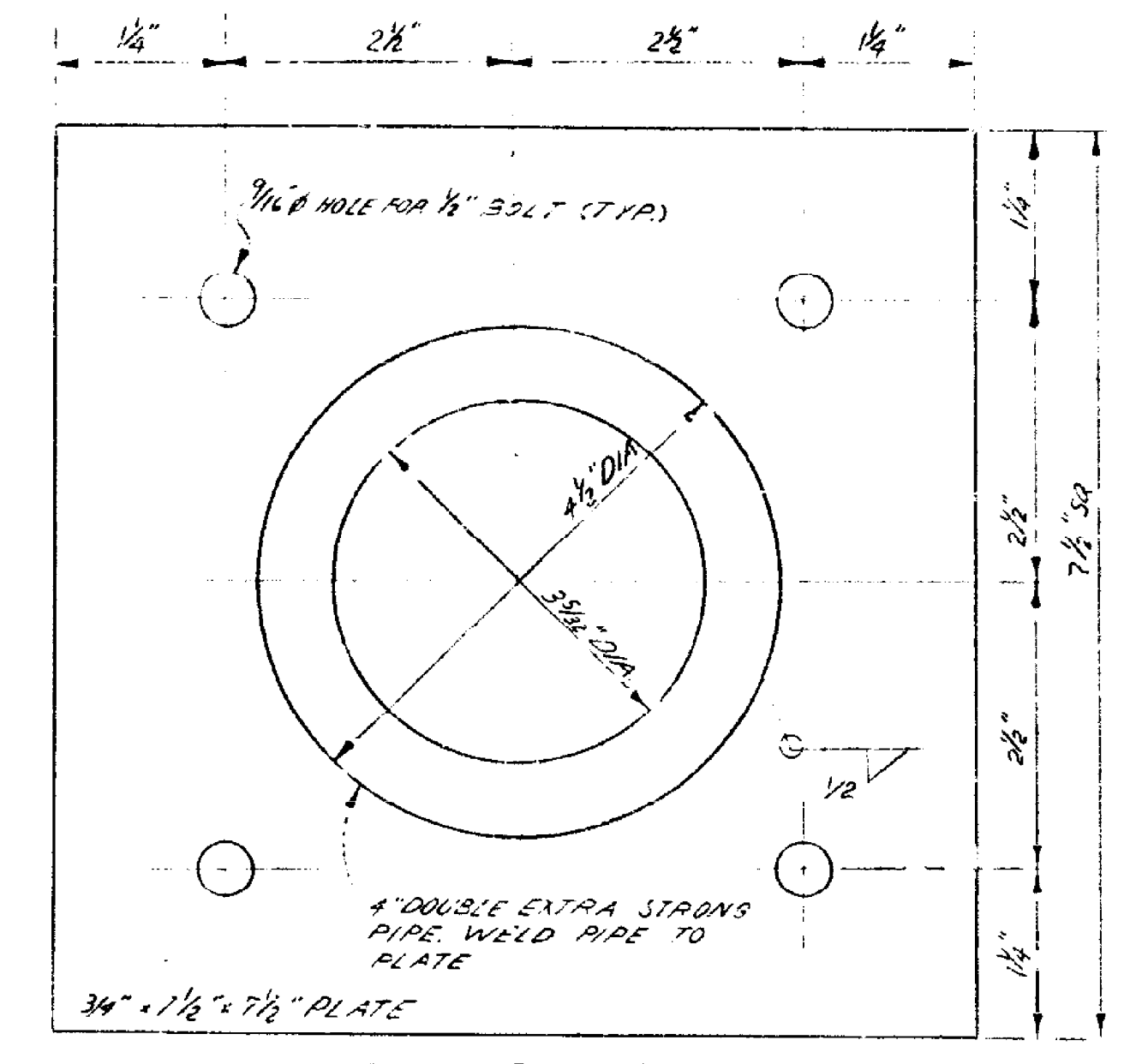
- NOTES:**
1. 30' EXTENSION IS REQUIRED TO PERMIT SUFFICIENT CONSTRUCTION FOR ALT. #1 OR #2.
 2. FINAL LOCATION OF DISCHARGE STRUCTURE TO BE DETERMINED IN FIELD.



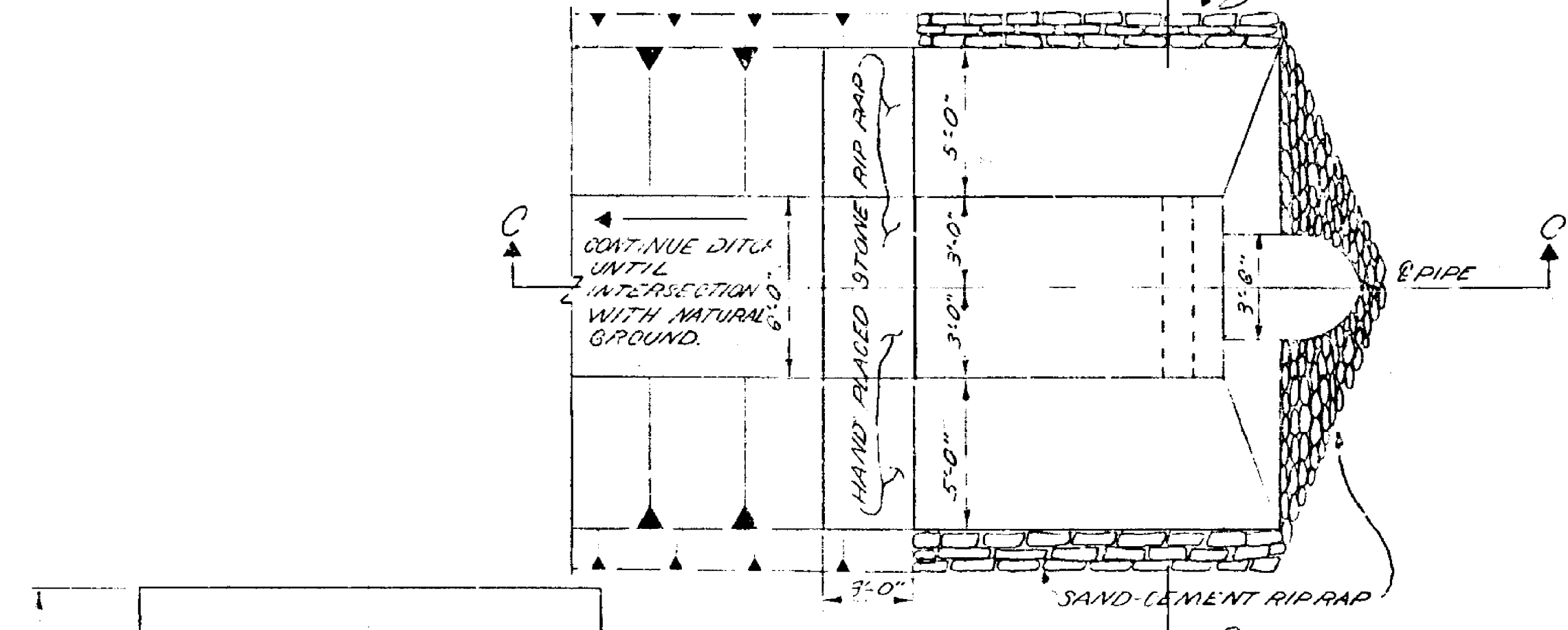
SECTION THROUGH DISCHARGE STRUCTURE
SCALE: 1/4" = 1'-0"



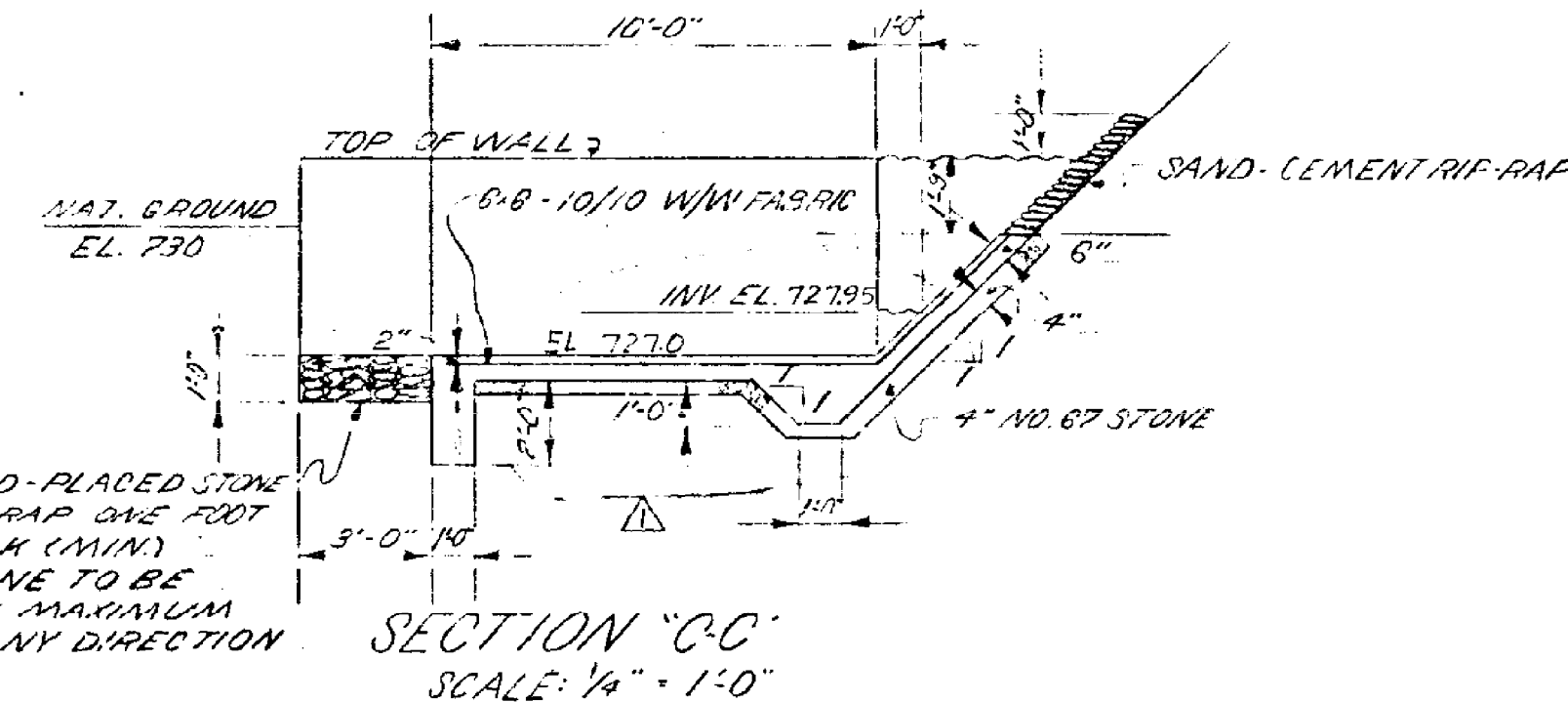
U-BOLT DETAILS
SCALE: 1/2" = 1'-0"
(4 REQUIRED)



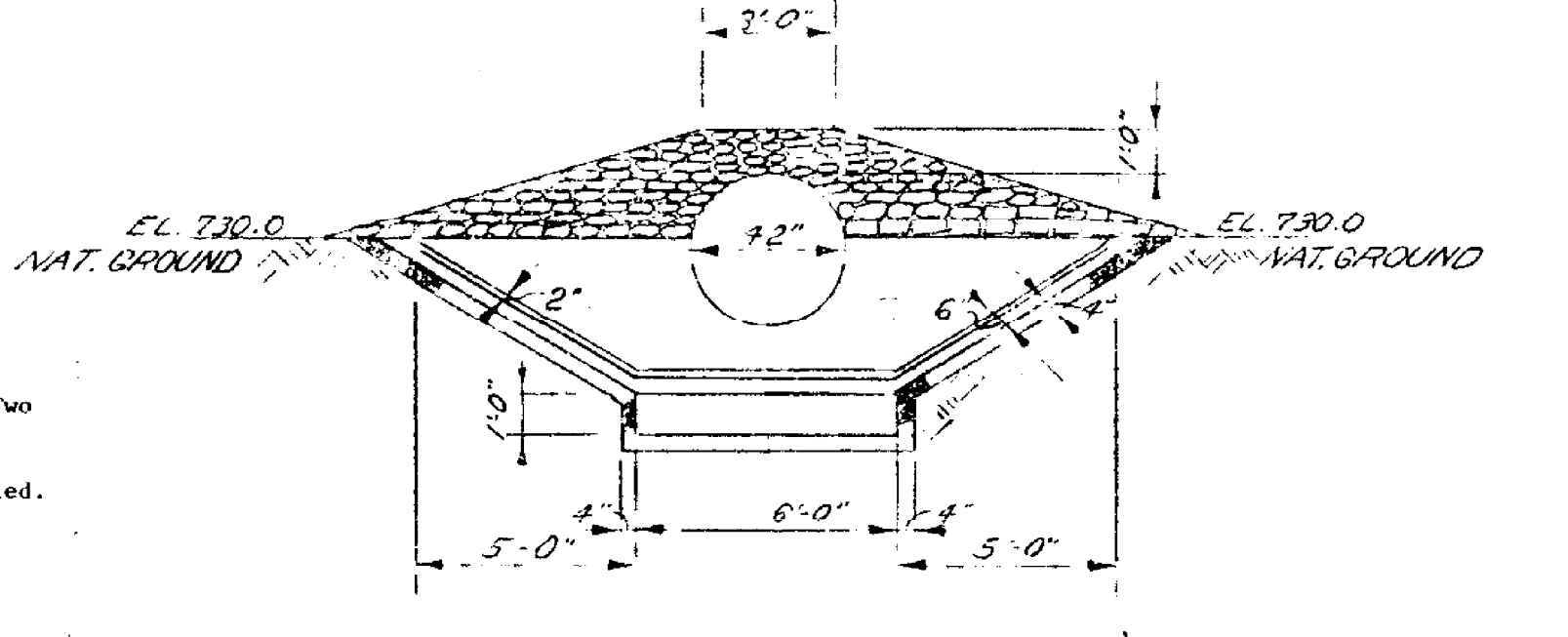
BASE PLATE DETAIL
SCALE: 3/8" = 1'-0"
(2 REQUIRED)



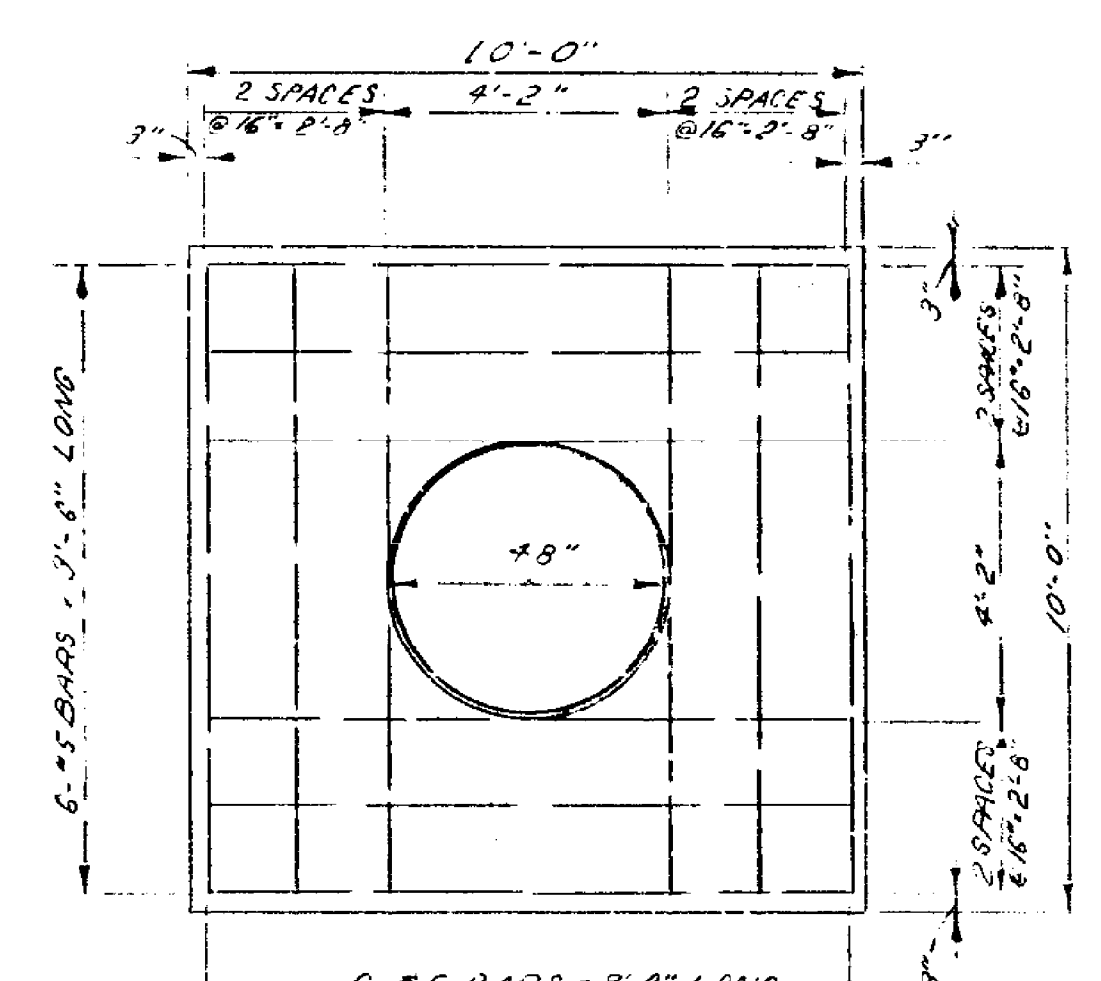
PLAN-DISCHARGE PIPE OUTLET
SCALE: 1/4" = 1'-0"



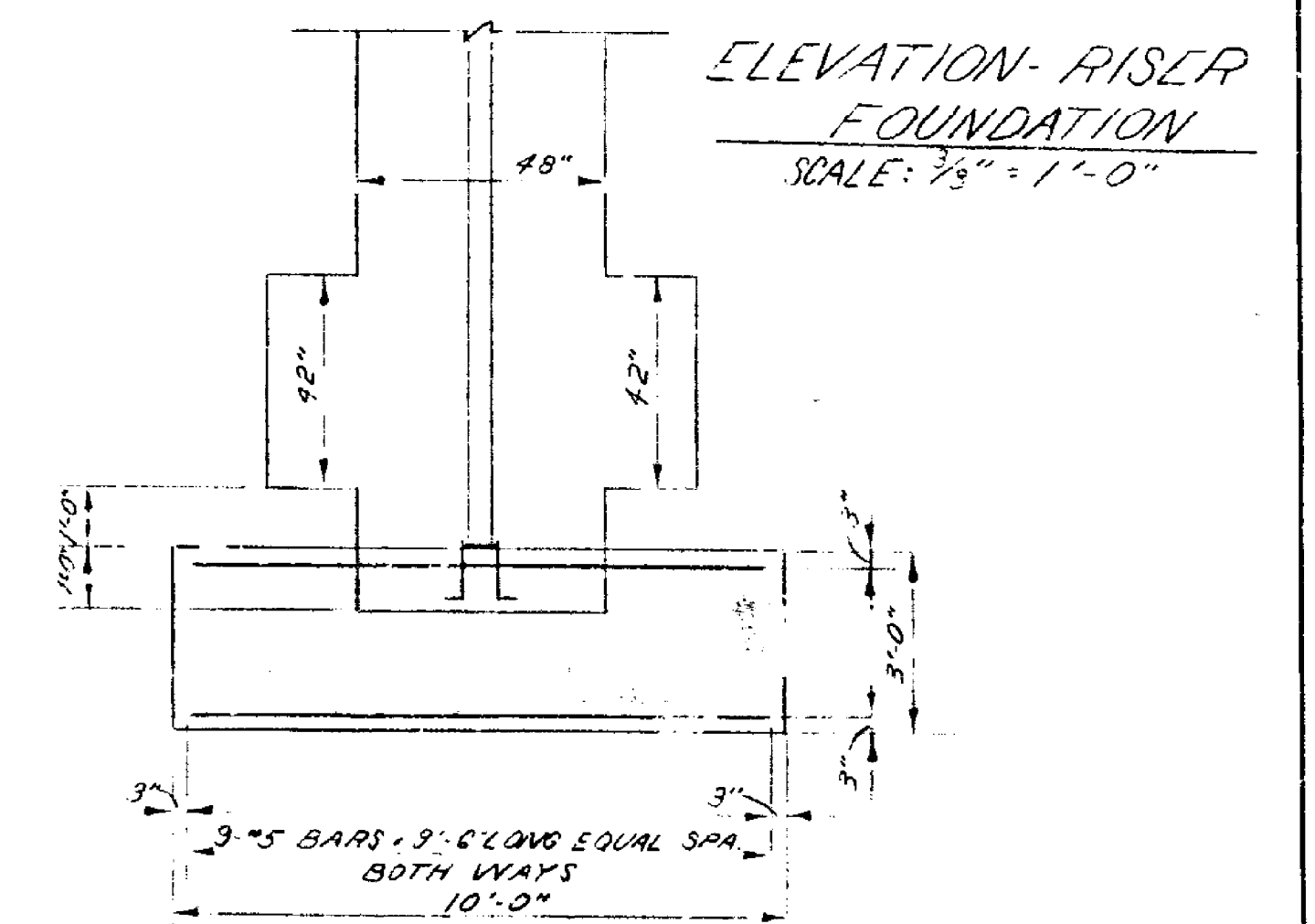
SECTION 'C-C'
SCALE: 1/4" = 1'-0"



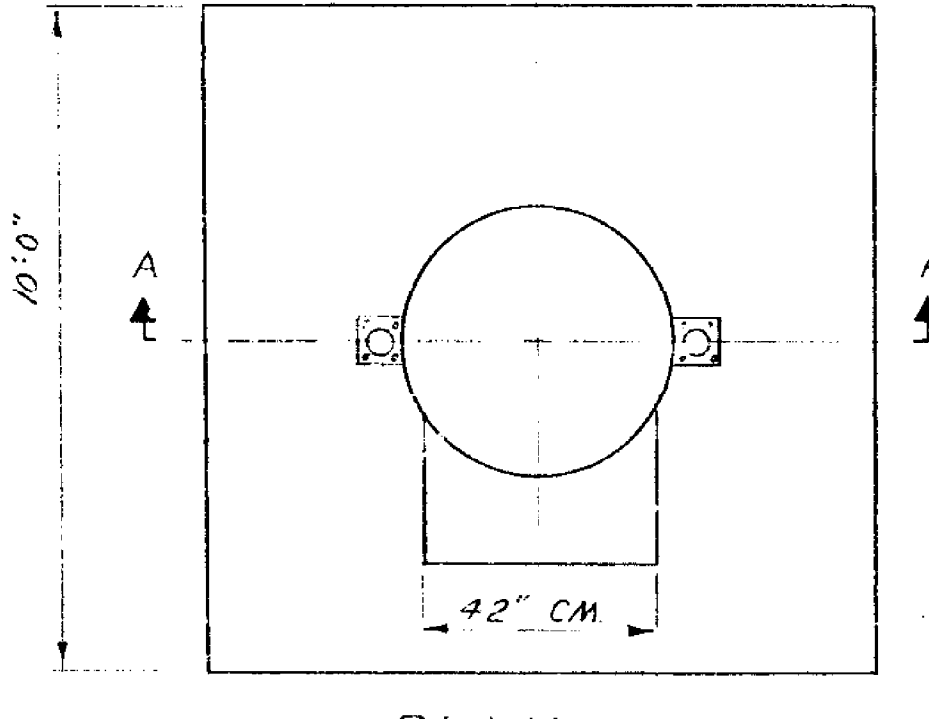
SECTION 'D-D'
SCALE: 1/4" = 1'-0"



PLAN-RISER FOUNDATION
SCALE: 3/8" = 1'-0"



ELEVATION-RISER FOUNDATION
SCALE: 3/8" = 1'-0"



PLAN VIEW
SCALE: 3/8" = 1'-0"

SPECIFICATIONS (SEE DETAIL E NOTES)

EXCAVATION:
Remove all unsuitable material below the bottom of steel pipe and backfill with compacted earth.

CONNECTING BANDS:
Install with care to insure water tight fit. The silo logs, threaded rods and nuts will be used on bands. Two rods will be placed on either side of joint to hold the 2" wide bands in place.

BITUMINOUS COATING:
Where damage to the bituminous coating exposes the metal, repair by patching before the structure is backfilled. Use a coating similar to that covering the pipe.

BACKFILL:
Fill material under haunches and around the structure to be placed alternately in 6" layers on both side of the pipe to permit thorough compaction. Compaction must be done with mechanical equipment. The compaction and fill material must meet the requirements of the detail Specifications and Detail E.

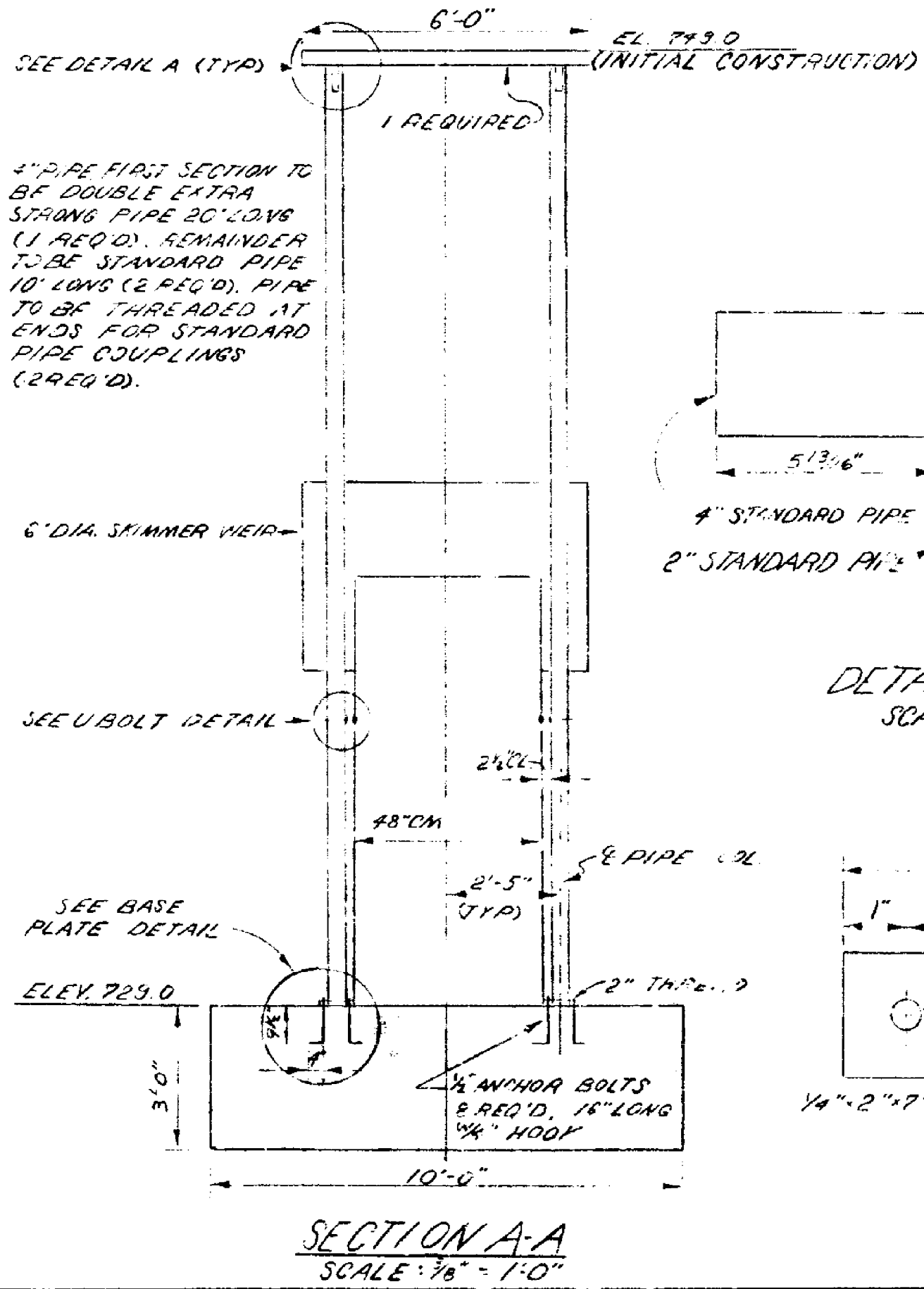
CONCRETE:
The minimum compressive strength shall be 3000 P.S.I. at 21 days.

RIPARAP:
Riprap to be sand and gravel bags with a sand to cement ratio of 4 to 1 by weight or dumped and hand placed mortar bound stone, placed as shown in Sections C-C, D-D, and Plan of Discharge Outlet.

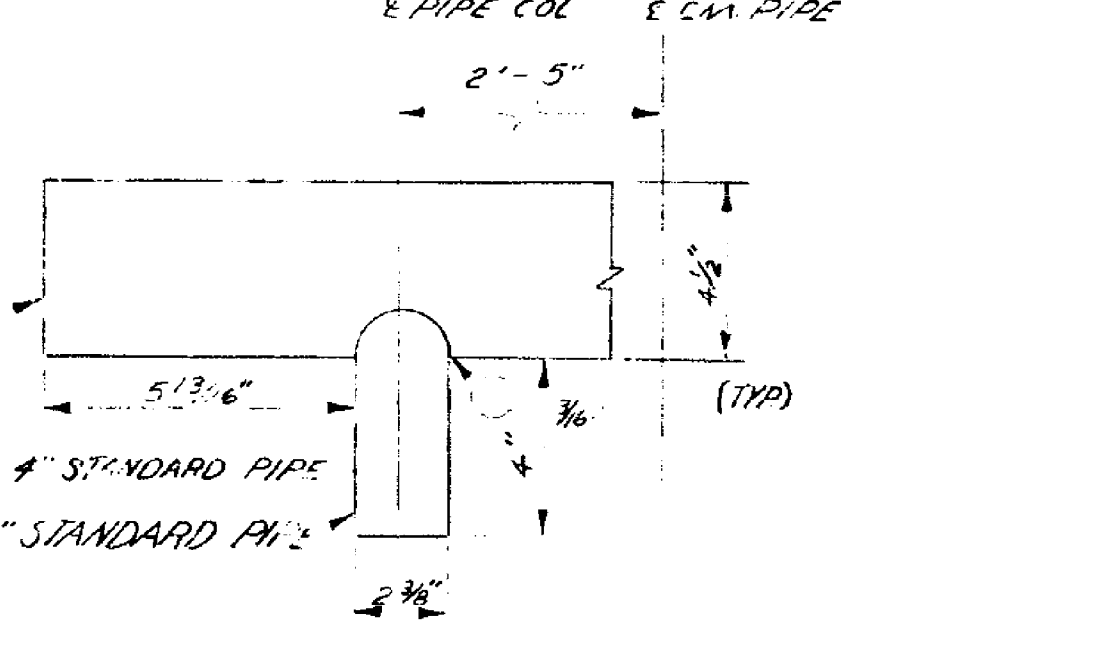
GRAVEL BLANKETS:
To be No. 37 stone placed in a 4" layer under the discharge outlet structure. Gravel shall meet the requirements of the State of Georgia Highway Specifications, Section 800.01 1972 Edition (Construction of Roads and Bridges).

REFERENCE:

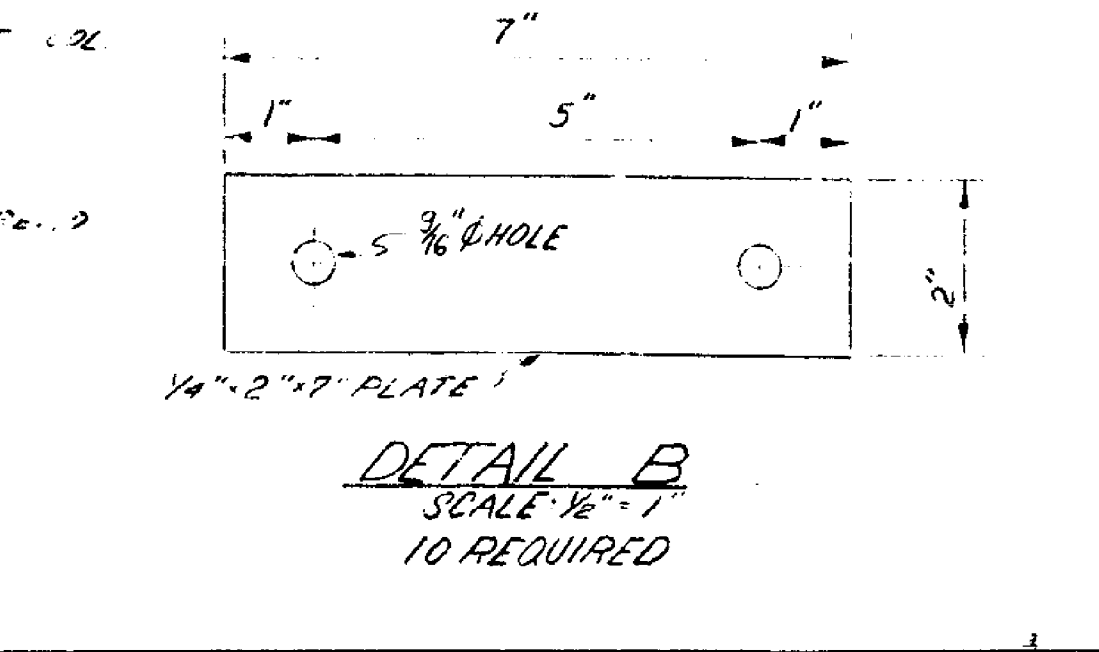
(1) SEE REVISION NUMBER YPR-457-2259 FOR LM PIPE CONNECTING BANDS, & RISER TEE.



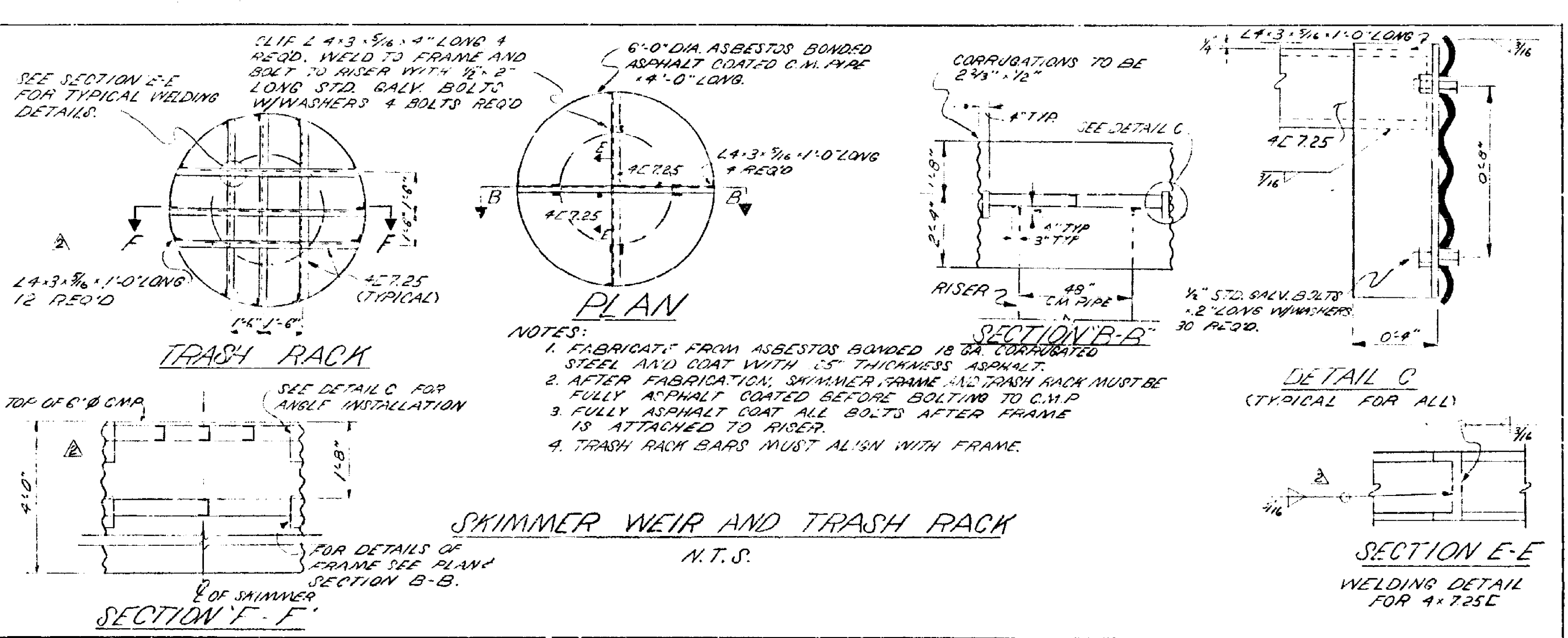
SECTION A-A
SCALE: 3/8" = 1'-0"



DETAIL A
SCALE: 1/2" = 1'-0"

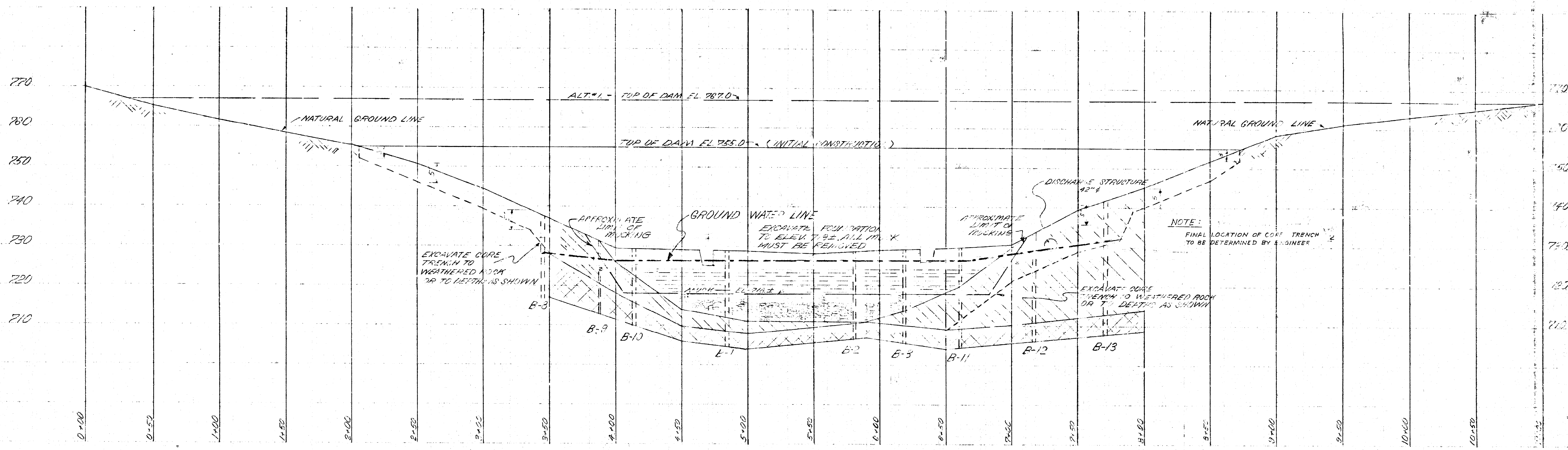


DETAIL B
SCALE: 1/2" = 1'-0"
10 REQUIRED



SKIMMER WEIR AND TRASH RACK
M.T.S.

GEORGIA POWER CO., ATLANTA, GA. GENERAL ENGINEERING DEPARTMENT			
PLANT YATES EMERGENCY ASH POND DAM DISCHARGE STRUCTURE SECTIONS			
DRAWN BY MHT	SCALE AS SHOWN	DATE 10-20-67	SHEET NO. 10-208
LOCATION 10-208	DRAWING NUMBER 10-208	SHEET NO. 4-3067	DATE 6/27/74



VIEW LOOKING UPSTREAM
(E OF DAM)

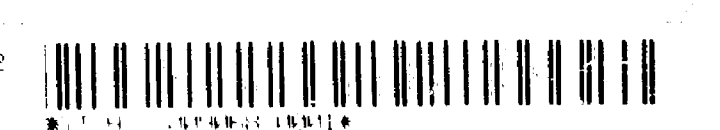
LEGEND	
	BLACK ORGANIC FINE SANDY SILTS AND CLAYS INTERBEDDED WITH FINE TO MEDIUM SAND LAYERS. (MUD)
	GRAY AND WHITE GRAVELLY MEDIUM TO COARSE SAND.
	TAN BROWN AND WHITE MICACEOUS SILTY FINE TO MEDIUM SAND.
	BROWN AND WHITE VERY DENSE PARTIALLY WEATHERED ROCK.

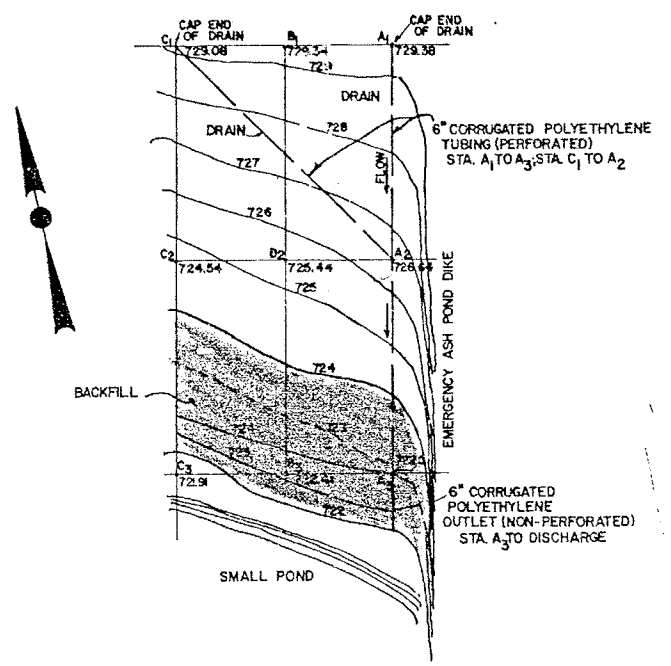
NOTES:
1. SOIL PROFILE FROM BORING LOGS MADE JUNE 1976.
2. GEOLOGIC PROFILE APPROXIMATE.

SCALE:
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 10'

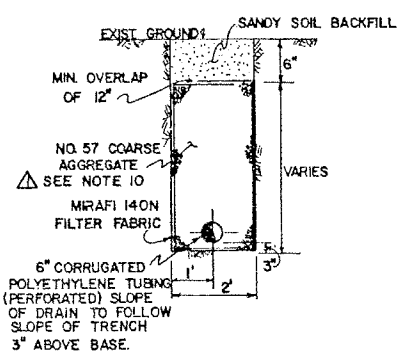
REFERENCE DRAWINGS:
CROSS-SECTIONS: 10-208 H-208
PLAN SECTIONS: 10-208 H-208
FOUNDATION IMPROVEMENT
AREA DETAILS: 10-208 H-208

GEORGIA POWER CO. ATLANTA, GA. GENERAL ENGINEERING DEPARTMENT	
PLANT YATES EMERGENCY ASST. FOUND. DET.	
ELEVATION - 511.00	
DATE: 11/17/76	SCALE: 1" = 10'
DRAWING NUMBER: 10-208 H-208	
LOCATION: 10-208 H-208	
DRAWN BY: DJM	
CHECKED BY: 9/15/76	

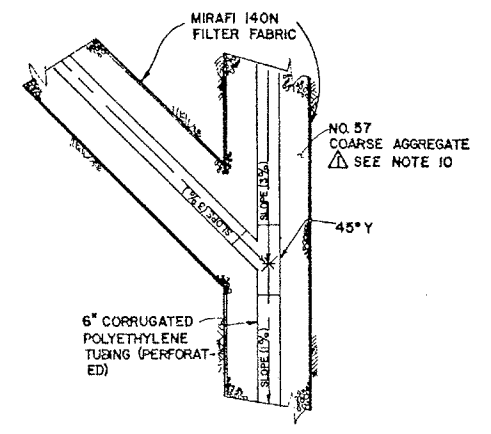




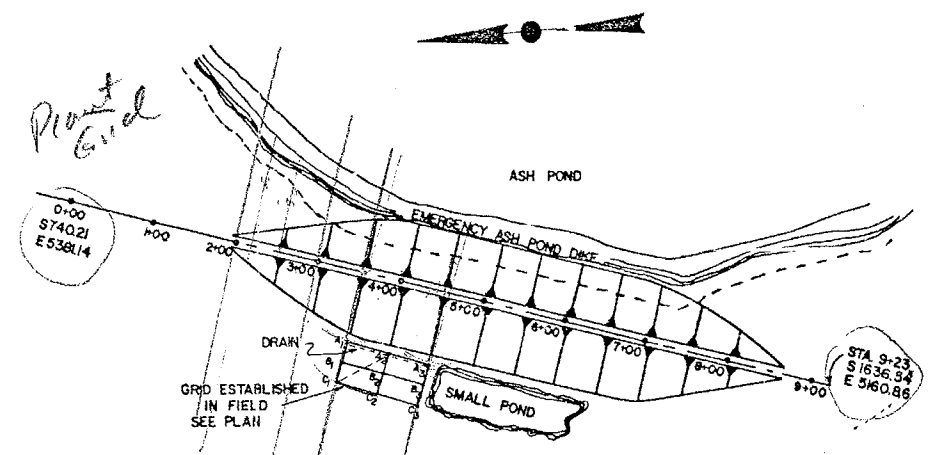
PLAN
1" = 20'



TYPICAL SECTION
N.T.S.

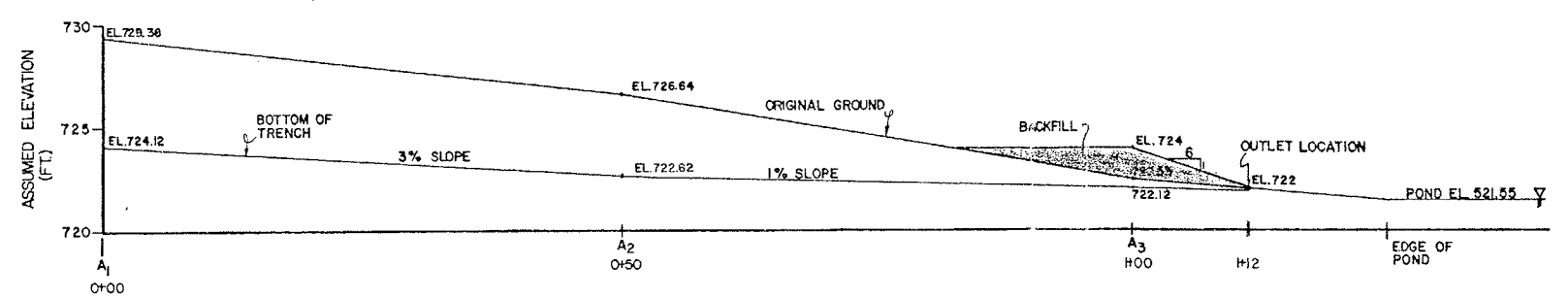


PLAN AT STATION A2
1" = 2'

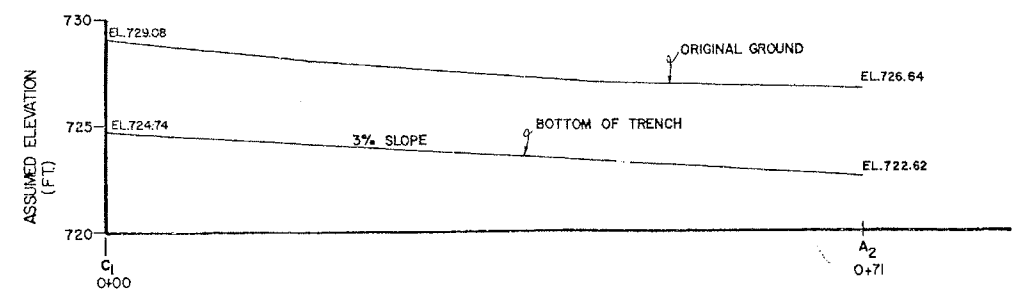


LOCATION
1" = 100'

- NOTES:
1. ALL STATIONS LOCATED IN FIELD
 2. SLOPE OF DRAINS TO FOLLOW SLOPE OF BOTTOM OF TRENCH
 3. ELEVATIONS AND CONTOURS ARE BASED ON AN ASSUMED TEM LOCATED IN FIELD.
 4. TRENCHING, PLACEMENT OF FILTER FABRIC, AND PLACEMENT OF BACKFILL SHALL BE MONITORED BY A REPRESENTATIVE OF POWER SUPPLY ENGINEERING & SERVICES.
 5. BACKFILL SHALL BE A SANDY CLAY OR BOTTOM ASH.
 6. EACH END OF PERFORATED TUBING WILL BE PLUGGED WITH STANDARD END PLUGS.
 7. FILTER FABRIC TO BE MIRAFI 140N AS SUPPLIED BY BURKE CO., P. O. BOX 105268, ATLANTA, GA. 30336; (404) 349-7840.
 8. CORRUGATED POLYETHYLENE TUBING SHALL BE A.D.S. 6" PERFORATED AND NON-PERFORATED TUBING AS SUPPLIED BY A.D.S. INCORPORATED, DUNWOODY PARK, BLDG. 3, SUITE 126, ATLANTA, GA. 30338; (404) 393-0602.
 9. AN EMERGENCY STOCKPILE OF SAND AND #57 STONE IS TO BE ACCESSIBLE TO EXCAVATION FOR CONSTRUCTION OF REVERSE DRAINS IF NECESSARY.
 10. AT THE DISCRETION OF THE DESIGNING ENGINEER, #57 STONE MAY BE SUBSTITUTED BY PYRITE FREE BOTTOM ASH.



ELEVATION OF DRAIN FROM STA. A1 TO A3
VERT. - 1/4" = 1'
HORIZ. - 1/8" = 1'



ELEVATION OF DRAIN FROM STA. C1 TO A2
VERT. - 1/4" = 1'
HORIZ. - 1/8" = 1'

- CONSTRUCTION NOTES:
1. EXCAVATION SHALL BE PERFORMED USING A BACKHOE OR GRADALL AND SHALL PROCEED FROM THE DRAIN OUTLET UPHILL TO PREVENT FLOODING OR SEEPAGE.
 2. CARE SHOULD BE TAKEN TO INSURE ALL EDGES OF THE TRENCH ARE PROPERLY LINED WITH FILTER FABRIC. SPLICES IN THE FABRIC SHOULD OVERLAP A MINIMUM OF 2'. WHEN MAKING SPLICES, THE UPHILL SECTION SHOULD BE TUCKED UNDER THE SECTION WHICH PRECEDED IT.
 3. ALL PIPE FITTINGS AND/OR JOINTS SHALL BE ASSEMBLED ABOVE GROUND PRIOR TO PLACING THE PIPE IN THE TRENCH. AT NO TIME SHALL ANY-ONE ENTER THE TRENCH IF THE DEPTH EXCEEDS 5'.
 4. NO MORE THAN 10' OF TRENCH WILL REMAIN OPEN OVERNIGHT.
 5. UPON COMPLETION OF THE JOB, ANY RUTS, DEPRESSIONS OR DISTURBED AREAS SHALL BE BACKFILLED AND THE AREA REGRASSD.
 6. IF UNUSAL SEEPAGE, SLIDING, OR SLUFFING OCCURS CONTACT THE CHIEF CIVIL ENGINEER (EXT. 7140) OR HYDRAULIC SECTION SUPERVISING ENGINEER (EXT. 7130).

GEORGIA POWER CO., ATLANTA, GA.			
GENERAL ENGINEERING DEPARTMENT			
PLANT YATES			
ASH POND DIKE SEEPAGE CONTROL DRAINS			
EMERGENCY ASH POND			
DESIGNER	DATE	SCALE	CHKD
J.P. P... 7/29/82			AWM
DRAWN BY	DATE	DRAWING NUMBER	
M.H. Thompson 7/30/82	7-27-82	10-208	
LOCATION		SHEET NO.	
10-208		D-9116	



CSG
61 XZ

GEORGIA POWER COMPANY
PROCEDURES
FOR
ASH POND CONSTRUCTION
AT
PLANT YATES

PREPARED BY Alan W. Murray DATE June 24, 1976
REVIEWED BY M. J. Thompson DATE 6/24/76

APPROVALS

	<u>INITIAL</u>	<u>DATE</u>
CHIEF CIVIL & MECHANICAL ENGINEER	<u>DNM</u>	<u>6/24/76</u>
CHIEF CIVIL ENGINEER	<u>CSJ</u>	<u>6/25/76</u>

INQUIRY NO. GA-4657
ASH POND CONSTRUCTION
FOR
PLANT YATES
OF
GEORGIA POWER COMPANY
DETAIL SPECIFICATIONS

The General Provisions, the Detail Specifications and the Contractor's Proposal, together with the drawings applicable to this work shall all become a part of any contract entered into for the performance of the work as specified herein.

A. Scope

These Specifications cover the construction of a new ash pond at Plant Yates. This work includes all plant, labor, equipment and tools required to satisfactorily complete an embankment, construct the overflow structure and install the discharge pipe. All materials, except as noted will be furnished by the Contractor.

Major items of work to be covered are:

- (1) Clearing, grubbing, and stripping of the embankment and designated borrow areas.
- (2) Clearing for the ash storage reservoir.
- (3) Installation of discharge pipe for use with cofferdams as a stream diversion culvert. The Purchaser will furnish the pipe.
- (4) Drainage of the embankment foundation area.
- (5) Removal of alluvial material in foundation where required.
- (6) Embankment construction, to include excavation, placement, and compaction of materials, including a center zone of impervious material.
- (7) Construction of ash pond overflow structure. The Purchaser will furnish the pipe.
- (8) Seeding of embankment slopes.
- (9) Seeding of borrow and spoil areas.

B. Approximate Quantities

The Purchaser does not guarantee the estimated quantities given below. The quantities are provided as information only to indicate the approximate amount of work involved.

(1)	Reservoir Clearing	45 acres
(2)	Clearing and Grubbing	20 acres
(3)	Embankment	55,000 cy
(4)	Ditching	8,000 cy
(5)	Discharge Structure 42" Diameter Pipe	260 ft.
	48" Diameter Pipe	12 ft.
(6)	Cofferdams	2,000 cy
(7)	Mucking	23,300 cy
(8)	Seeding	100,000 sy
(9)	Stripping	30,000 cy

C. Drawings

The following drawings describe the work to be performed:

10-208 A-9009	Riser Ell.
10-208 H-9058	Reservoir Clearing
10-208 H-9064	Cross Sections
10-208 H-9065	Plan and Sections
10-208 H-9066	Foundation and Borrow Area Details
10-208 H-9067	Discharge Structure Details
10-208 H-9068	Elevation - Excavation Details

D. Clearing, Grubbing and Stripping

All borrow areas and embankment foundation areas shall be cleared and grubbed and stripped of all organic material, material unsuitable for compaction and all weak soil to a depth shown on drawings or as determined by the Engineer in the field.

The cleared and grubbed areas shall be harrowed or raked with a tractor mounted root rake to collect all small material previously overlooked. The tractor shall be of adequate size to achieve a minimum of four inches penetration of the rake teeth and such teeth shall not have an opening between teeth greater than twelve inches.

No explosives shall be used in the clearing and grubbing operation unless approved by the Engineer.

The Contractor shall have salvage rights to any timber remaining on the site providing that any such salvage operations do not hold up the progress of the work. All timber must either be removed from the site or burned. The Contractor shall obtain all permits required for legal burning.

All stripping and spoil material is to be stockpiled on the site in an area designated by the Engineer. Any stockpiled material must be dressed so as to present a neat appearance.

All areas to be cleared and not grubbed require the removal of all floatable material except: leaves, grass, weeds and stalks of cultivated crops. All buildings, fences, chimneys, or other structures shall be removed. All trees are to be cut within 12" of the ground on the uphill side.

E. Excavation

(1) Stream Diversion Culvert

The creeks flowing through the proposed embankment area shall be diverted before work on the dike begins. The diversion plan is shown on Drawing 10-208 H-9067. Pipe placement bedding, encasement and installation of anti-seepage collars shall be in accordance with this drawing. Compaction is to be obtained by hand methods in accordance with section 4 of these specifications.

(2) Subsurface Conditions

Logs and records of subsurface investigations performed by the Purchaser or the Purchaser's consultants are available for inspection at the Georgia Power Company, 23rd Floor, 230 Peachtree Street, N.E., Atlanta, Georgia 30303. This information is for estimating purposes only and is not a guarantee of conditions at each location and elevation shown. Boring data is shown on Drawing 10-208 H-9066.

(3) Excavation Details

- a. This item shall include excavation, removal, disposal of subsurface materials as required by the plans and the Purchaser's Engineer to construct the ash pond embankment.
- b. The Contractor shall excavate to stakes set by the Purchaser, and shall be instructed by the Purchaser's Engineer as to the limits of excavation, slopes, disposal of material and all other features of the excavation. All excavation shall be carried to suitable elevations in accordance with the intent of the design and Drawing 10-208 H-9068, and all excavation and fill will be approved by the Purchaser's Engineer before final acceptance. The Purchaser's Engineer must approve modifications of the excavation methods should unexpected problems develop.
- c. Foundation excavation shall be carried out by the Contractor as follows:
 - (1) The Contractor shall install cofferdams for use in diverting the flow through the discharge pipe. The cofferdam locations are shown on Drawing 10-208 H-9066.

- (2) The Contractor next shall install necessary pumping equipment to drain the foundation material. Construction dewatering shall be required whenever the groundwater is at least two feet below the bottom of the excavation:
 - (3) The Contractor will excavate, utilizing whatever equipment is necessary, all unsuitable material. (Organic muck and sand). The Purchaser's Engineer will determine when the excavation intercepts the underlying coarse sand. The approximate extent of this mucking is shown on Drawing 10-208 H-9068.
 - (4) The impervious center core of the dam is to be excavated into weathered rock or into residual material as shown on Drawing 10-208 H-9068 and as directed by the Purchaser's Engineer. The core excavation must be a minimum of 15' wide.
- d. All earthwork, including ramps and access roads must be restored to approximately their original elevation if the Purchaser's Engineer so directs. The Contractor shall protect and maintain his earthwork and slopes by directing surface water away through the use of berms and ditches above excavated areas. The Contractor shall install any drainage piping required because of the Contractor's mode of operation including his ramps and access roads.
 - e. No explosives shall be used on this project without approval of the Purchaser's Engineer. If explosives must be used, all blasting operations shall be conducted in strict accordance with existing ordinances and regulations relative to the storage and use of explosives. Blasting shall be done only by experienced men, and extreme care and precautions shall be used to prevent injury or damage to persons, property or structure. The Contractor shall so regulate the use and placing of explosives as not to unduly disturb or loosen materials outside the lines of the excavation.

A whistle or siren shall be provided by the Contractor, and shall be sounded immediately before blasting. It shall be the Contractor's responsibility to see that all persons and vehicles are cleared from the area where they might be injured or damaged by blasting. Immediately after blasting, all loose material thrown by the explosion must be removed.

- f. No excavation shall take place within 150 feet of the toe of the embankment other than necessary for foundation preparation as directed by the Purchaser's Engineer.

(4) Embankment and Fill

- a. Material required to complete the embankments shall be taken from borrow areas designated by the Purchaser's Engineer.

- b. The Contractor shall prepare the subgrade for the embankment. The subgrade shall be properly leveled before placing the first lift of fill. In all cases, the surface must be plowed, scarified, and finely broken up to a depth of at least six (6) inches. On steep slopes, steps shall be cut to prevent sliding. All depressions shall be filled and compacted to the level of the surrounding ground. Each lift is to be well mixed either by plowing or harrowing before compaction.
- c. The embankments and fills shall be formed by placing the fill materials in uniform layers not over six (6) inches thick, loose measurement, for one (1) foot beyond the full width of the embankment on each side. Each layer shall be kept level with the necessary grading equipment and shall be compacted with a sheepsfoot roller having six (6) to eight (8) square inches of foot area and a foot pressure of 600 to 800 pounds per square inch. Upon completion the slopes shall be dressed to the final grade.

The material is to be compacted only when the moisture content is within the desired range, optimum moisture to $\pm 3\%$. The density of each layer of fill material shall not be less than 95% of the relative maximum density as determined by the Standard Proctor Compaction Test. The Purchaser will run the necessary tests to insure compliance with this portion of the Specifications. When the moisture content is too low, compaction will be permitted if the Contractor sprinkles the layers sufficiently to bring the moisture content within the optimum range. Sprinkling shall be done after deposition, but before compaction. If the moisture content is too high, the Contractor will be permitted to stockpile and aerate the fill material to promote drying to bring it back within the optimum moisture range. This drying must be done prior to placement. Material for the impervious core will be obtained from specific borrow sites as designated by the Purchaser's Engineer. Compaction methods for the core trench will be determined by the Purchaser's Engineer.

- d. If the construction of embankments or fills is interrupted, the Contractor shall be required to shape and smooth the last layer of fill material placed on the embankment to provide a surface that will shed as much water as possible during the interruption. When the work is resumed, the Contractor shall be required to level, scarify and recompact the last layer of fill material before placing additional layers.
- e. After placement and prior to compaction, the soil in each lift shall be inspected for roots and stones six (6) inches or more in diameter. Any such materials found shall be removed from the embankment prior to compaction.

F. Slope Protection

Upon completion of the embankment, the upstream slope shall be seeded to Elevation 740 and the downstream slope will be seeded to one foot beyond the toe of the slope.

Hydro-seeding methods shall be used in accordance with Section 700, Standard Specifications, State Highway Department of Georgia.

G. Basis of Payment

The Contractor is to be paid for furnishing all equipment, supervision, supplies, labor and materials, except where specifically designated as to be obtained by the Purchaser, in accordance with their proposal dated June 2, 1976.

H. Payment

The Contractor will prepare on or about the first of each month a summary of the previous month's costs. This amount plus 25% of the lump sum fee will be paid to the Contractor within 30 days of date of invoice.

AWM/dkw
6-18-76