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US Army Corps
of Engineers
Fort Worth District

FOUNDATION REPORT

COMPLETION OF

EMBANKMENT, SPILLWAY AND OUTLET WORKS

RAY ROBERTS LAKE

ELM FORK, TRINITY RIVER, TEXAS

August 1990

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CORPS OF ENGINEERS
FORT WORTH DISTRICT, TEXAS

FOUNDATION REPORT
COMPLETION OF EMBANKMENT AND SPILLWAY

RAY ROBERTS LAKE

Statement "A" per telecon Caroline Solomon. U.S. Army Engineering District, Fort Worth/CESWF-IM-C. P. O. Box 17300. Fort Worth, TX 76102-0300.
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PLATES

RAY ROBERTS LAKE FOUNDATION REPORT

1. INTRODUCTION.

a. **Project Location and Description.** Ray Roberts Dam and Lake project is situated in northern Denton, south-central Cooke and western Grayson Counties. The Dam is at river mile 60.0 on Elm Fork of the Trinity River, approximately 30 river miles north of Lewisville Dam. The location of the project is shown on Plate 1. The principal features of the project include (1) a rolled earthfill embankment approximately 14,980 feet long; (2) a limited service spillway consisting of an uncontrolled trapezoidal broad-crested weir; the spillway crest length is 100 feet; and (3) the outlet works, consisting of an excavated approach channel, intake structure and service bridge, a 708-foot long by 13-foot diameter cut and cover conduit, stilling basin and excavated discharge channel (see Plate 2). For the future addition of hydropower, a separate steel-lined concrete 5-foot diameter low flow conduit was constructed beneath the main flood control conduit. (SDN)

b. **Construction Authority.** Congressional authority for construction of Aubrey Lake (now Ray Roberts Lake) is contained in the Public Works - Rivers and Harbor Act approved 27 October 1965 (Public Law 89-298) in accordance with the plan of improvement as outlined in House Document No. 276 (89th Congress, 1st Session).

c. **Purpose of the Report.** This report was prepared in accordance with requirements as set forth by the Office, Chief of Engineers in ER 1110-1-1801.

The purpose of this report is to provide a complete record of foundation conditions encountered during construction. Information contained in this report will be valuable when evaluating (1) necessary remedial action required to prevent or repair any problems resulting from foundation deficiencies; (2) contractor claims related to foundation conditions or alleged change of condition; and (3) planning and design of future comparable construction projects.

A copy of this report should be included in the permanent records maintained at the project office.

d. **Project History.** Four dam site locations were studied prior to final site selection. Site No. 1, the project document site, is at river mile 60.0. Sites 2, 3, and 4 are at river miles 55.9, 51.2, and 64.0, respectively. Three holes were drilled at Site 2 in 1970. No subsurface explorations were done at Sites 3 and 4.

Site No. 4, located upstream of the confluence of the Elm Fork and Isle du Bois Creek would require two embankments and in effect form two lakes. Site No. 4 would also require two outlet facilities or an equalizer channel. This was the uppermost site considered. Sites downstream from Site 3 would be in the flood pool of Lewisville Lake and would require a major railroad relocation.

Based on studies that included an appraisal of the physical, historic, economic, and social impacts at each site, and the results from a public meeting held in April 1971, Site No. 1 was selected as the recommended site. By Public Law 96-384, dated 6 October 1980, the project name was officially changed from Aubrey Lake to Ray Roberts Lake.

Seven locations, designated A through G, for the spillway were investigated. Cost estimates were made for gated, broadcrested, and uncontrolled ogee spillways. Consideration was also given to a perched spillway with the crest elevation at 5 feet, and at 10 feet above the top of the flood control pool.

Site A was used for the gated spillway estimate for site selection. It was in the steep slope of the east abutment and proved to be undesirable from the standpoint of stability and excessive excavation. Site B, the recommended site, was used for the uncontrolled spillway estimate for site selection, and for various other plans. Site B proved to be the most economical spillway location regardless of type of spillway. Site E at Culp Branch on the west abutment was investigated, but spillways here were too costly because of excessive channel excavation and downstream land requirements. Sites C, D, F, and G were eliminated by inspection because of excessive excavation and additional land requirements.

Studies showed that a gated spillway had a higher first cost than the uncontrolled spillways. Annual operating and maintenance costs for a gated spillway would also be appreciably greater. Several studies were made of various plans with both broadcrested and ogee uncontrolled spillways, in order to optimize size and type of structure.

Studies were made for uncontrolled spillways with widths varying from 100 feet to 1,000 feet. These studies indicated that the most economical project would be one with the narrowest spillway and highest embankment. A width of 100 feet was judged to be the practical minimum and was, therefore, selected for the recommended plan.

e. **Contractors Supervision and Quality Control Organization.** The embankment, spillway, and outlet works for Ray Roberts Lake were constructed under one contract. Pertinent data related to the contract are listed below:

Contractor: Phillips and Jordan, Inc., Knoxville, TN
Contract No.: DACW63-82-C-0083
Contractor's Bid: $48,657,799
Notice to Proceed: 31 May 1982
Completion Date: 9 October 1986
Total Payment Including Modifications: $51,491,731.27

(1) **Quality Control.** The quality control organization was furnished and compensated by the contractor.

(2) **Contract Supervision.** Construction was under the immediate supervision of the District Engineer, U.S. Army Engineer District, Fort Worth, Texas. The contracting officer's representative for administration of the contract was Mr. Webb Boland. The following personnel participated in administering the contract: Mr. Mark Gibson, outlet works construction, and Mr. David Bowie, embankment and spillway construction.

2. FOUNDATION EXPLORATIONS.

a. **Investigations Prior to Construction.** Dam Site No. 1 was first explored in 1939. Eight combination auger and core borings numbered C-1 through C-8 were drilled near the present alignment. The borings ranged from 67 to 217 feet in depth. In December 1960, three additional combination auger and core holes, numbered 9 through 11, were drilled on the right abutment slope, ranging in total depth from 30.6 to 106 feet. There are no testing records on either the overburden materials or the rock cores and the borings were not pressure tested. Boring locations are shown on Plates 4 through 7. Logs of boring are shown on Plates 8 through 39.

Twenty-two additional holes were drilled in 1971 and 1972 during the General Design Memo Study Phase. These holes were numbered 12 through 27, and B, C, D, E, F, J, and K. The following table shows the location, total footage, and purpose for these holes.

Location	Number Drilled	Total Footage	Purpose
Right (West) Abutment	6	292.0	Embankment Foundation
Left (East) Abutment	1	51.0	" "
Valley Section	4	296.4	" "
Spillway	7	476.3	Spillway Location & Foundation
Right Abutment Outlet Works	2	95.2	Intake & Stilling Basin Foundation
*Left Abutment Outlet Works	2	105.8	Intake & Stilling Basin Foundation

*Alternate location considered for outlet works.

In late 1972 and 1973, 37 additional holes were drilled. These holes were numbered 28 through 77. Holes 41 through 49 were 3-inch

Shelby tube holes, drilled along the axis of the uncontrolled spillway. Holes 3S-52 through 3S-57 were 3-inch shelby tube holes drilled along the centerline of the outlet works discharge channel. The other 22 holes were drilled in the embankment foundation.

In 1975 and 1976, holes 83 through 99 were drilled in the outlet works area, with the exception of hole 3F-86, which was drilled on the left abutment.

In late 1975, nine 8A6C holes, designated 301 through 309, were drilled at Site E for spillway site selection. This site was was not selected.

In October 1980, holes 310 through 316 were drilled, and in April 1981, holes 358 through 366 were drilled, all in the outlet works area.

One calyx hole (42-inch auger) was drilled in March 1975, to a depth of 46.5 feet to investigate soft clay seams in the embankment foundation. The hole was located at Station 120+70, 130 feet upstream.

A total of 113 foundation borings were drilled at the project.

b. **Investigations During Construction.** No problems requiring additional subsurface explorations were encountered during construction.

3. GEOLOGY.

a. **Physiography.** Ray Roberts Dam and Reservoir lie within the Gulf Coastal Plain physiographic province. The coastal plain of Texas is characterized by a broad rolling landform extending from the outcrop of the basal Cretaceous sands to the northwest to the Gulf of Mexico on the southeast. It has developed upon a sequence of sedimentary rock units which dip gently southeastward, resulting in successively younger formations cropping out Gulfward. The outcrop of each formation or group in the coastal plain of Texas has distinctive soil, vegetation, and erosion characteristics which are the basis for further physiographic subdivision. Ray Roberts Dam and Reservoir lie within two such subdivisions; the Grand Prairie and the Eastern Cross Timbers. Damsite Geology is shown on Plate 3. The Grand Prairie, a subdivision which has developed on the outcrop of the Washita Group of Lower Cretaceous age, occurs generally west of the Elm Fork of the Trinity River. It is characterized by a rolling to hilly topography supported by limestone, marl, clay shale, and sandy shale. Typically, it is a grassy country, the uplands being given largely to grazing, the valleys being important agriculturally. Situated east of the Elm Fork, the Eastern Cross Timbers has developed on the outcrop of the Woodbine Formation of Upper Cretaceous geologic age. The Eastern Cross Timbers is characterized by a rolling to moderately rugged topography which supports a prolific growth of post oak trees.

b. Site Geology.

(1) Overburden. Overburden on the abutments consisted of predominantly residual clay and clayey materials generally ranging from 25 to 35 feet in thickness. The embankment is founded on these materials. In the spillway area, 2 to 11 feet of clay and silty clay with scattered gravel were removed and this structure is founded on weathered clay shale. Overburden materials in the floodplain consist of 35 to 45 feet of alluvial clays, silts, sands, and gravels, comprising the floodplain embankment foundation. In the outlet works area about 20 to 30 feet of alluvial clays, silts, sands, and gravels were removed and the outlet works is founded in unweathered clay shale of the Pawpaw Formation.

(2) **Structure.** Subsurface investigations and subsequent foundation mapping during construction of the dam, outlet works and spillway have not revealed faulting or any other structural anomalies that would adversely affect the foundation of these structures. Correlation of marker beds encountered in the foundation borings show that the strata strike northeast and dip about 60 feet per mile to the southeast. Locally, minor undulations occur within the strata.

(3) **Stratigraphy.** Primary materials at the site from oldest to youngest are Pawpaw shale, Main Street limestone and Grayson marl of Lower Cretaceous age, and the Woodbine Formation of Upper Cretaceous age. The broad Elm Fork River valley is partially filled with Recent floodplain alluvium, while the uplands bordering the valley are often covered with Quaternary age terrace deposits.

a. **Pawpaw Shale.** Except for some isolated remnants of Main Street limestone, the Pawpaw shale comprises the primary strata beneath the embankment between station 0+00 to the base of the left abutment, the outlet works, and spillway (see Plates 44 through 48). The formation is composed of a soft to moderately hard, gray to black, medium bedded clay shale, often sandy with sand laminations and lenses up to several inches thick. Thin, limy, fossiliferous zones occur throughout the formation.

b. **Main Street Limestone.** The Main Street limestone conformably overlies the Pawpaw shale. A full section is present in the left abutment. Erosional remnants occur in the central part of the embankment foundation and on the right abutment slope above elevation 640. The limestone is about 12 feet thick, moderately hard to hard, gray, fossiliferous, massive at its base, and becomes shaly as it grades into the overlying Grayson marl.

c. **Grayson Marl.** The Grayson marl occurs only in the left abutment at the dam site. It is represented by a soft to moderately hard, gray, highly calcareous, thick bedded, fossiliferous shale, that becomes increasingly marly at its base. Often a thin shaly limestone bed caps the formation separating it from the unconformably overlying Woodbine Formation. The Grayson and Main Street Formations are usually mapped as one geologic unit. At the dam site, their combined thickness is about 30 feet.

d. **Woodbine Formation.** The left abutment, above approximate elevation 565, is comprised of sediments belonging to the Woodbine Formation. Core borings made for the embankment reveal a fine-to-coarse-grained sand with scattered ironstone concretions and thin, poorly cemented sandstone seams to approximate elevation 600. In the basal portion of the Woodbine, a soft to moderately hard, gray to brown, sandy clay shale predominates, although sand and sandstone can occur. Carbonaceous fragments are often noted. These inclusions, along with the generally noncalcareous nature of the shale, distinguish the material from the underlying Grayson Formation. The Woodbine exhibits gradational changes, both laterally and vertically, in its lithologic composition that make correlation between even closely spaced borings very difficult. The most detailed description of the Woodbine was developed after excavation of the inspection trench of the left abutment. Plate 58 is a geologic section of the plan of the inspection trench along the left abutment prior to placement of the fill.

(4) **Weathering.** Chemical weathering (oxidation and hydration) has affected the primary strata at the dam site to varying degrees. The shale and sandy shale of the Pawpaw Formation that comprise the primary strata for most of the embankment section have been only slightly altered. Staining (oxidation) is present to a maximum depth of about 14 feet below the top of primary strata that underlie the upland soils of the right abutment, while the Pawpaw shale beneath the alluvium in the valley section is fresh. In contrast, the sand, soft sandstone and shale of the Woodbine Formation that comprise the left abutment are deeply weathered. The relatively permeable sands and sandstones receptive to percolating waters are generally weathered throughout to the top of the first significant shale beds. Weathering in the shale occurs primarily as oxidation along joints and bedding

planes.

(5) **Ground Water.** Water levels are shown on Plates 44 through 48. Significant quantities of ground water are found in the floodplain alluvium and in the basal sands and gravels of the low level terrace deposits. Lesser quantities occur in joints and fractures in the weathered section of the Pawpaw shale and in the basal portion of the Woodbine Formation near its contact with the underlying Grayson in the left abutment. Prior to impoundment, ground water in the floodplain alluvium occurred at depths of 20-25 feet. During excavation of the inspection trench in the left abutment, water seeps were encountered at the contacts of the more pervious sands and sandstones with the underlying clays (see Plate 58).

c. **Engineering Characteristics of the Overburden Materials.**

(1) **Outlet Works.** Overburden in the outlet works area was investigated using auger, Denison and Shelby tube samplers. The materials consist of sandy clays (CL and CH) with zones of clayey sands (SC) and gravels (GC-GP). The gravelly zones generally overlay the primary materials. Overburden thickness varies from about 5 to 25 feet along the approach channel, from 8 to 20 feet along the conduit, and from 12 to 45 feet along the discharge channel. Classification and index testing were performed on jar samples taken from various depths in the overburden.

(2) **Embankment.** The overburden materials in the embankment foundation consist of alluvial clays, sands, and gravel strata.

Classification tests, Q, R, and S strength tests, and consolidation tests were performed on Denison barrel samples taken at varying depths in the clay. Classification and index tests were performed on jar samples taken from auger borings and Denison barrel samples obtained from the overburden in the floodplain. The following properties were used for overburden materials in the floodplain:

Moisture content	20%
Dry density	107.5 pcf

Type Test	c tsf	0 Degrees
Q	0.8	3
R	0.1	14
S	0	26

(3) **Weak Stratum.** The following soil parameters were used for the weak, sandy clay stratum which is located in the foundation near the base of the overburden beneath the floodplain embankment.

Moisture content	23%
Dry density	102.0 pcf

Type Test	c tsf	0 Degrees
Q	0.35 and 0.40	2.5
R	0.1	14
S	0	26

The low, undrained shear strength of this weak stratum is the controlling factor in the stability of the floodplain embankment.

(4) Spillway. The broadcrested weir is founded in weathered shale. Overburden along the centerline of the spillway increases from 2 feet in the area of the weir to 7 feet in the approach channel and 4 to 6 feet in the discharge channel. The overburden consists of principally silty clay with some fine sand and locally scattered fine gravels.

d. Engineering Characteristics of the Bedrock Materials.

(1) Outlet Works. The primary materials in the outlet works area were investigated using Denison, Shelby tube and core barrel samplers. Boring locations are shown on Plate . Primary foundation materials consist of unweathered clay shales of the Pawpaw Formation. The shales contain interbedded sandstone seams and beds that vary from a few inches to approximately 4 feet in thickness. From station 27+00 to 34+00, a near surface limestone layer was encountered which varied from about 2 to 7 feet in thickness. Laboratory testing was performed on selected samples of primary materials taken from borings along the centerline of the outlet works. Tests performed were classification, index grain size, unconfined compression and Q-triaxial compression tests. The approach channel structure, intake tower, and stilling basin was founded in unweathered shale for which the following parameters were used:

Allowable bearing pressure	8.0 ksf
Shear Strength, 0	20°
Cohesion	0

(2) **Embankment.** Laboratory strength tests conducted on samples of primary materials indicate that the shale stratum underlying the overburden through the floodplain has a low to moderately low strength, but its strength increases with depth. Although the strength of the shale is relatively low in the upper portion of the stratum, its strength is greater than that of the overburden; therefore, it is not the governing factor in the stability of the embankment.

(3) **Spillway.** The spillway is founded on interbedded silty shale and soft sandstone of the Pawpaw Formation. The materials are adequate to support the light loads to be imposed.

e. **Unusual or Unanticipated Geologic Conditions Encountered During Construction.** No unusual or unanticipated geologic conditions were encountered during construction.

4. EXCAVATION PROCEDURES

a. **Excavation Grades.** Foundation conditions encountered during excavation of the outlet works, inspection trench, cutoff trench, and emergency spillway were about the same as described in the subsurface data in the plans and specifications. The design slopes were achieved without any problems. The only deviation from designed grade lines was overexcavation in the primary materials. In February 1984, overexcavation occurred in the area adjacent to the outlet works conduit, between stations 28+90 and 29+80. The maximum depth of overexcavation was 2 feet. Contractor backfilled the overexcavation with concrete.

b. Dewatering Provisions. No ground-water problems of a serious nature were experienced in the outlet works, inspection trench, cutoff trench, or spillway excavations. On occasion, heavy rains partially filled the excavations. Small seeps were present in all the excavations except the spillway and are noted on the drawings. Surface water and the small amount of ground-water seepage experienced were handled by pump and sump operations. See Figures 1 through 6. All concrete and impervious backfill placements were on foundations free of water.

c. Overburden Excavation. Overburden materials excavated consisted of residual clay and other clayey materials on the abutments; alluvial clays, silts, sands, and gravels in the floodplain inspection trench and outlet works; and clay and sandy clay with scattered gravel in the spillway area. See Figures 7 through 12. Bulk excavation was done by Caterpillar scrapers. Finished grades were achieved with motor graders. Overburden materials considered suitable were used as random and semicompacted fill.

d. Rock Excavation. All rock excavation was accomplished using rippers and scrapers. Much of the weathered shale was used in a manner similar to the overburden; as random or semicompacted fill. Excavation methods were also similar. After bulk excavations of weathered shale by caterpillar scrapers, final grade was accomplished using motor graders. Exposure of weathered or unweathered shale of the Pawpaw Formation was limited to 3 days. See Figures 13 through 20. When this limit was exceeded, the contractor was required to clean the exposed

Figure 1. Outlet Works excavation showing peripheral ditches controlling ground water.

Figure 2. Same as above

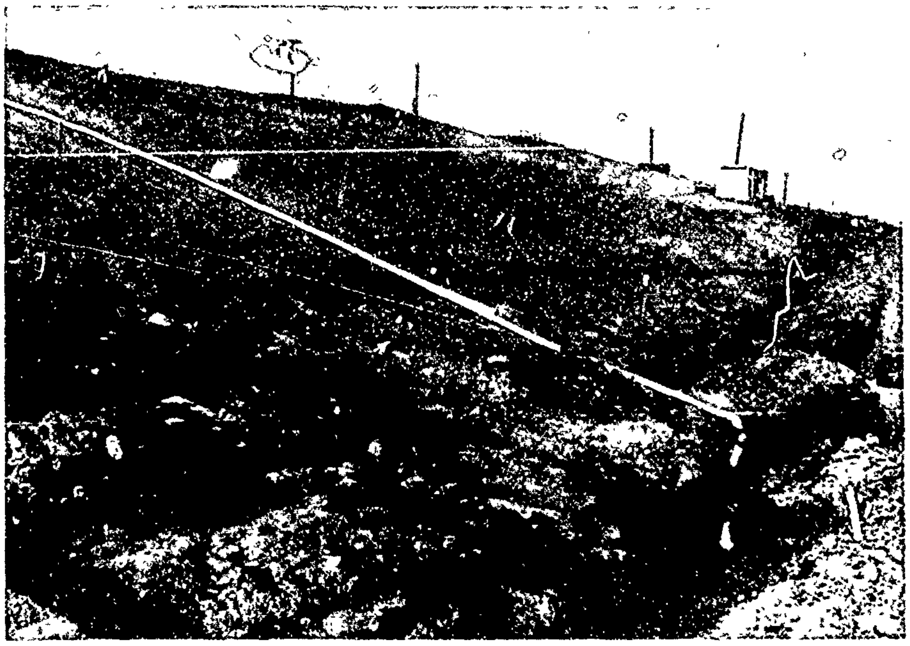

Figure 3. Outlet Works excavation showing peripheral ditches controlling ground water.

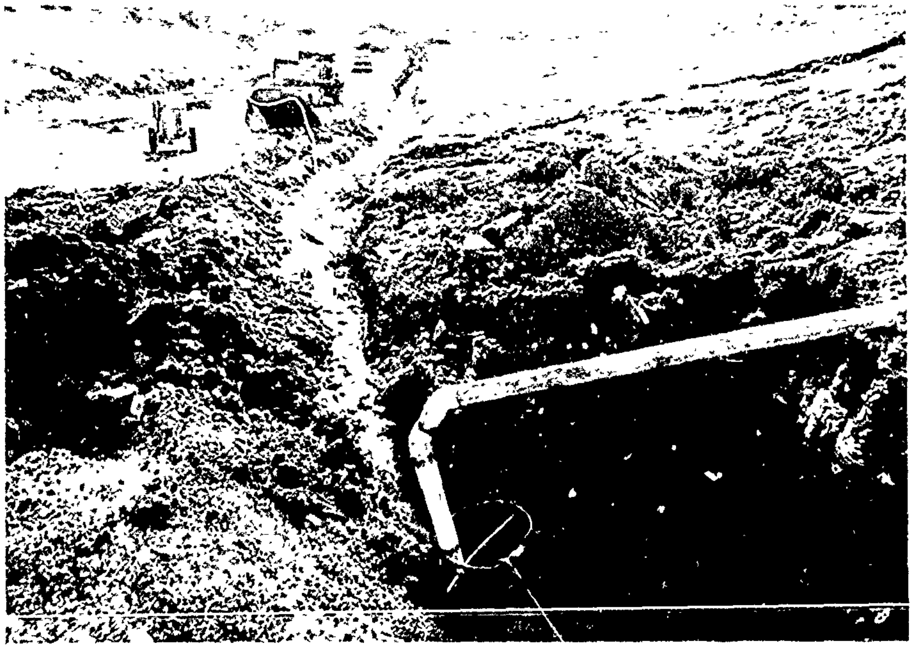

Figure 4. Same as above.

Figure 5. Outlet Works excavation showing peripheral ditches controlling ground water.

Figure 6. Same as above.

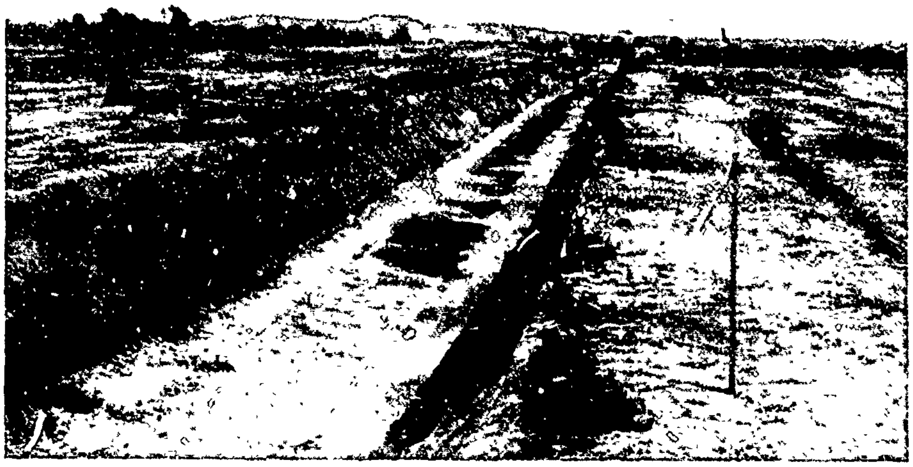

Figure 7. Right Abutment inspection trench looking east (Upstation)

Figure 8. Left Abutment looking east.

Figure 9. Downstream face of right abutment inspection trench approx. sta. 66+50 to 69+00, looking east (Upstation).

Figure 10. Upstream face of right abutment inspection trench Approx. sta. 66+50 to 69+00, looking east.

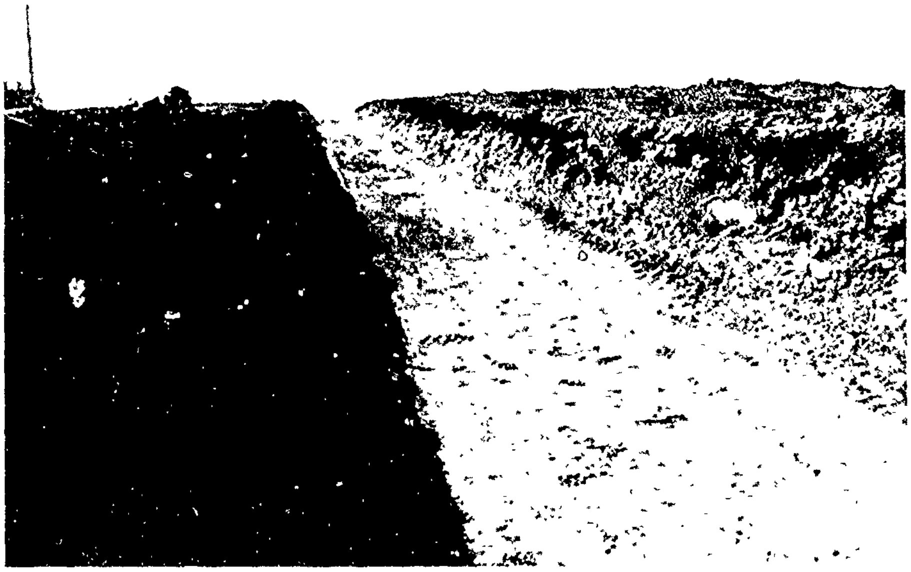

Figure 11. Right abutment inspection trench, looking west (downstream).

Figure 12. Same as above.

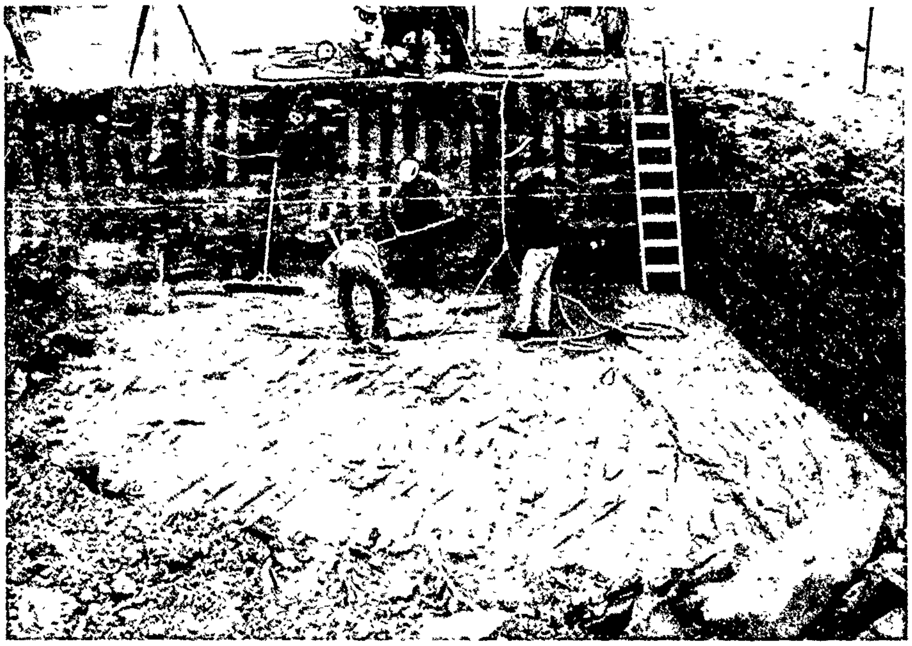

Figure 13. Intake Structure, hand cleaning shale foundation.

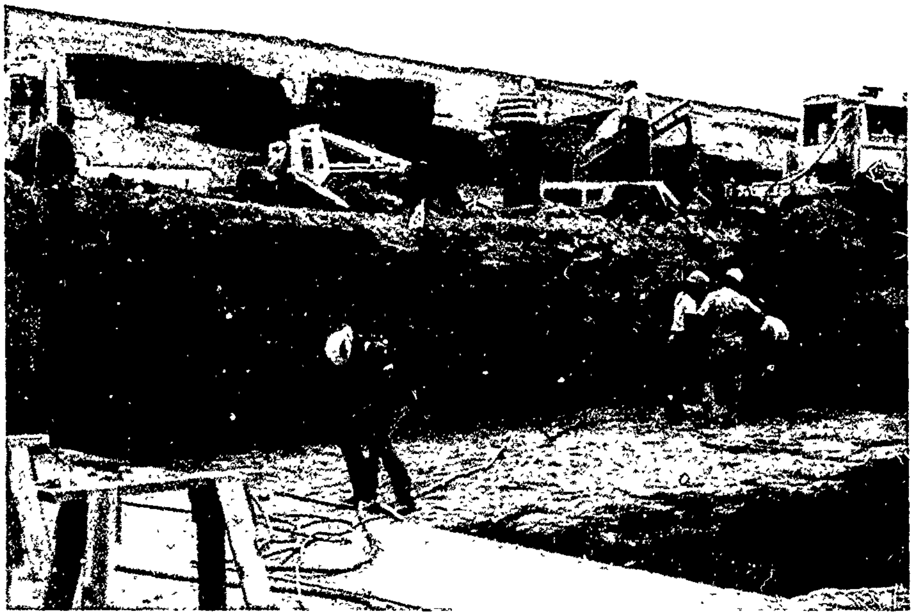

Figure 14. Intake Structure, placing re-bar for slab.

Figure 15. Looking Upstream from valve vault, showing fresh shale surface prior to placement of impervious material.

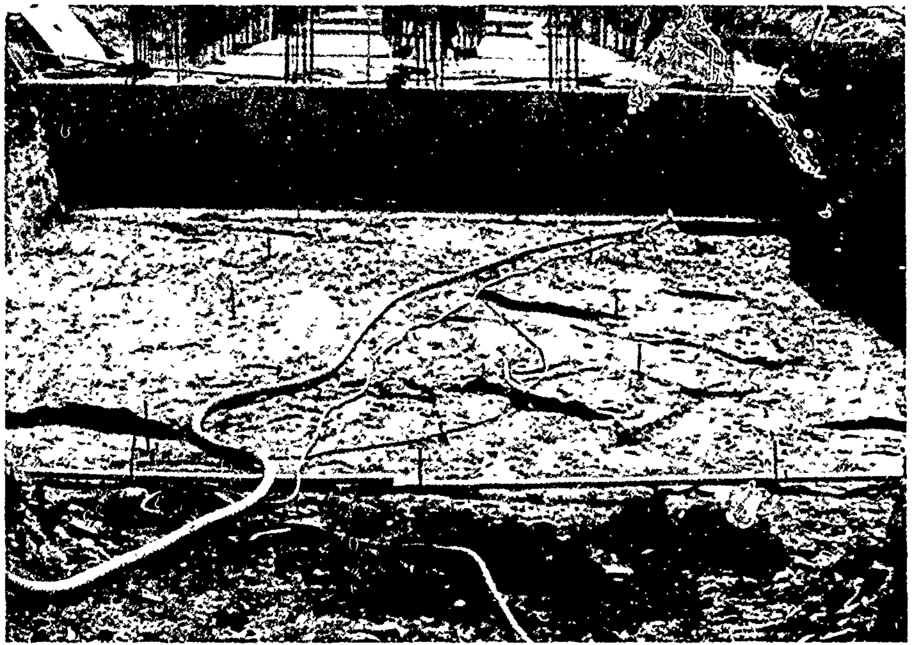

Figure 16. Foundation for approach slab.

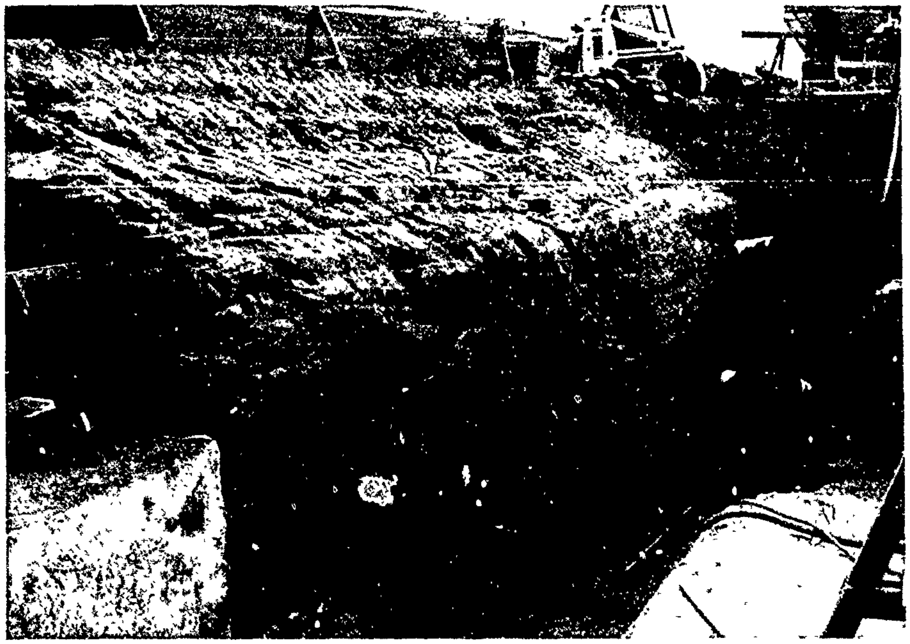

Figure 17. Excavation for intake for hydropower conduit at intake structure slab - looking downstream.

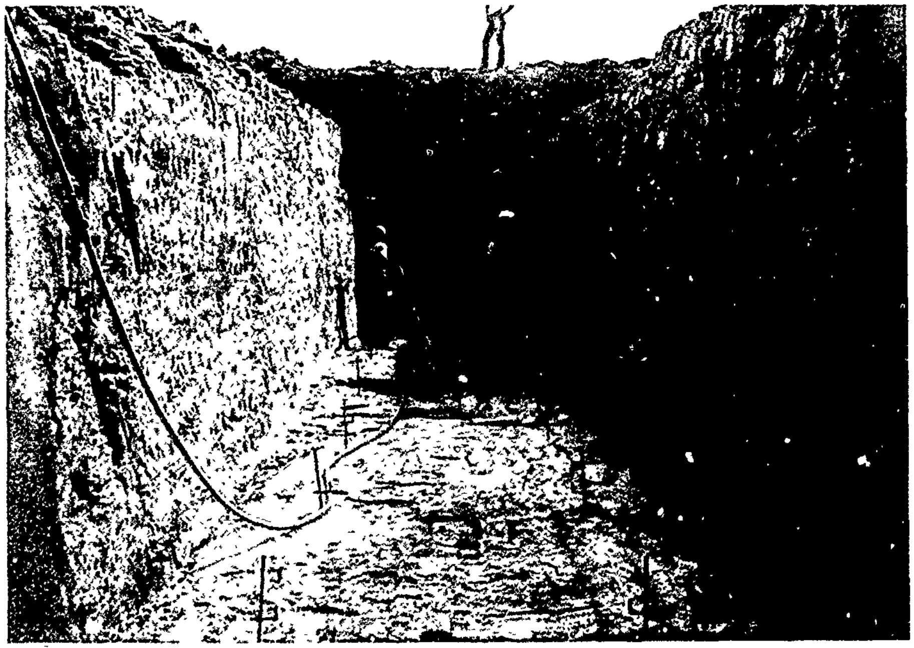

Figure 18. Hydropower conduit - placing gunite, Sta. 29+50-30+00.

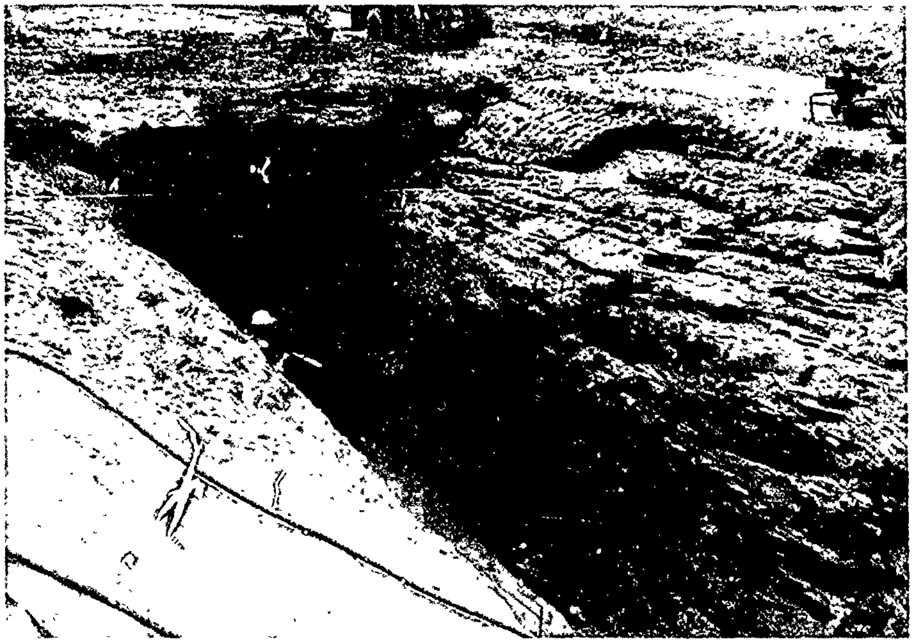

Figure 19. Hydropower conduit, looking downstream, Sta. 29+20.

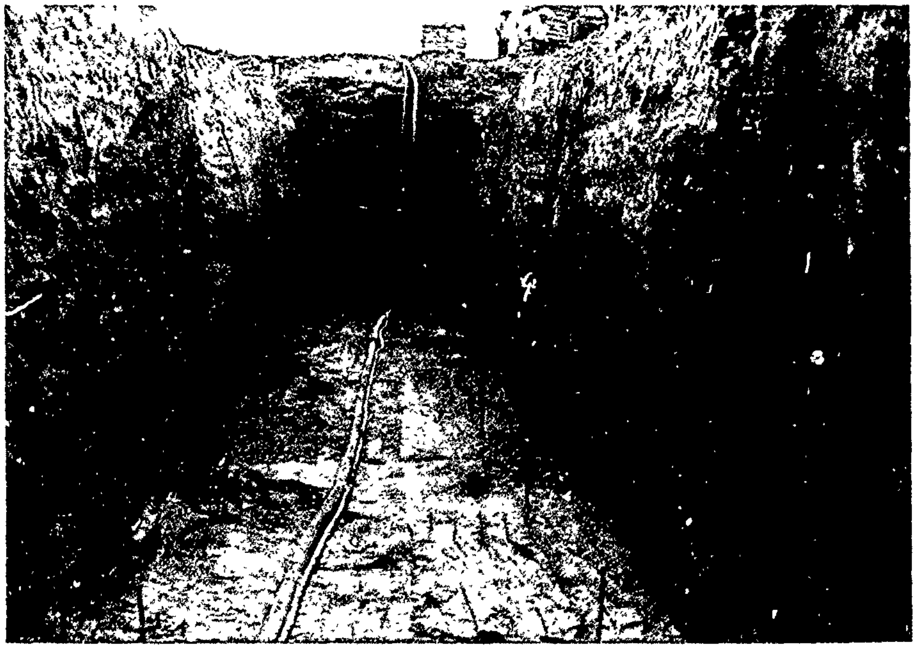

Figure 20. Hydropower conduit, looking downstream, Sta. 30+10.

face by jackhammer and/or air jetting before protective concrete was placed.

e. **Line Drilling, Presplitting, and Contour Blasting.** No line drilling, presplitting, or contour blasting were performed during the course of construction.

f. **Foundation Preparation.** Clay shale of the Pawpaw Formation forms the majority of the foundation in the outlet works excavation and in the excavation for the sill of the limited-use spillway. See Figures 21 through 29. Primary materials in general were not exposed in cutoff or inspection trench excavations. See Figures 30 and 31. The most predominant material exposed was clay, especially CH clays. Since the clay shale deteriorates upon exposure to air, usually very noticeable within about 3 days, protective sealant or lean concrete (Gunite) were specified for exposed shale surfaces. See Figures 34, 35, 36, 41, and 42.

g. **Gunite in Conduit Excavation Walls.** Problems with Gunite (protective concrete) developed in November 1982 in the hydropower conduit section between Stations 26+63 and 30+85. Excavation of the trench was done between 10 November 1982 and 23 November 1982. Gunite was applied, as excavation progressed, on the floor and nearly vertical walls of the trench. Inspection on 24 November 1982 revealed numerous horizontal cracks, circular areas where Gunite has fallen off the wall, and evidence that voids existed behind the Gunite face. Inspection on 30 November 1982 revealed that deterioration of the Gunite had greatly

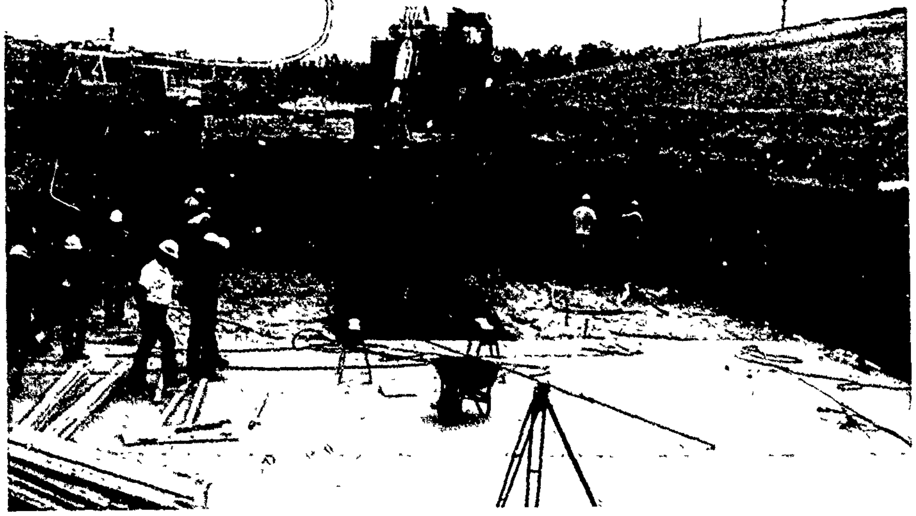

Figure 21. Excavation for hydropower conduit at intake structure slab.

Figure 22. Same as above.

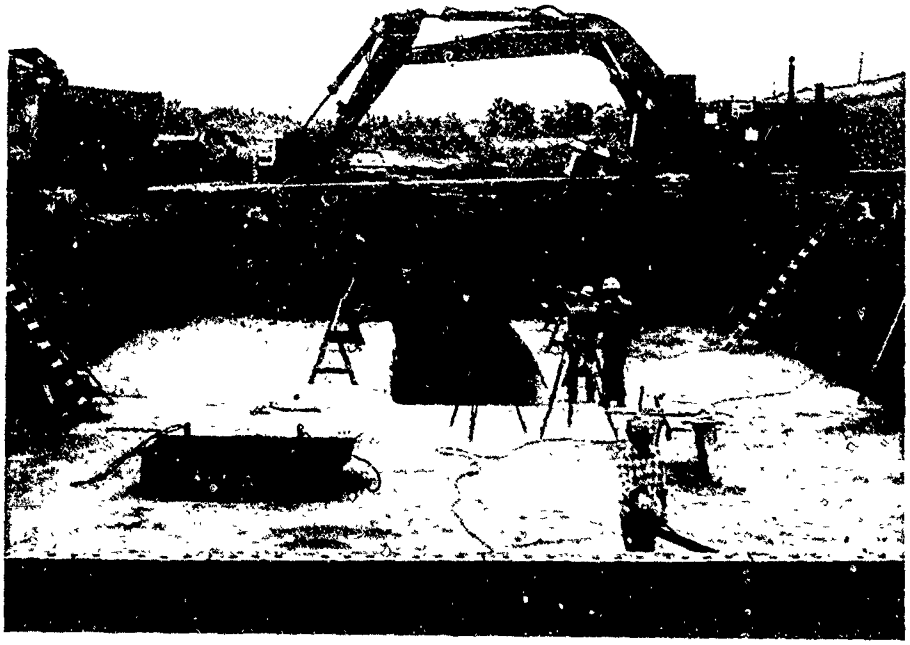

Figure 23. Excavation for hydropower conduit at intake structure slab.

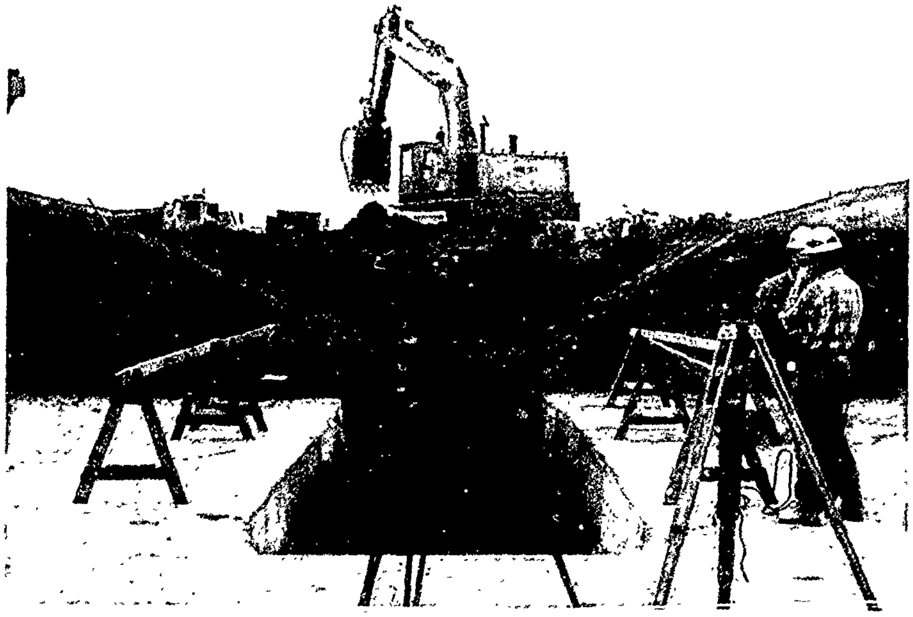

Figure 24. Same as above.

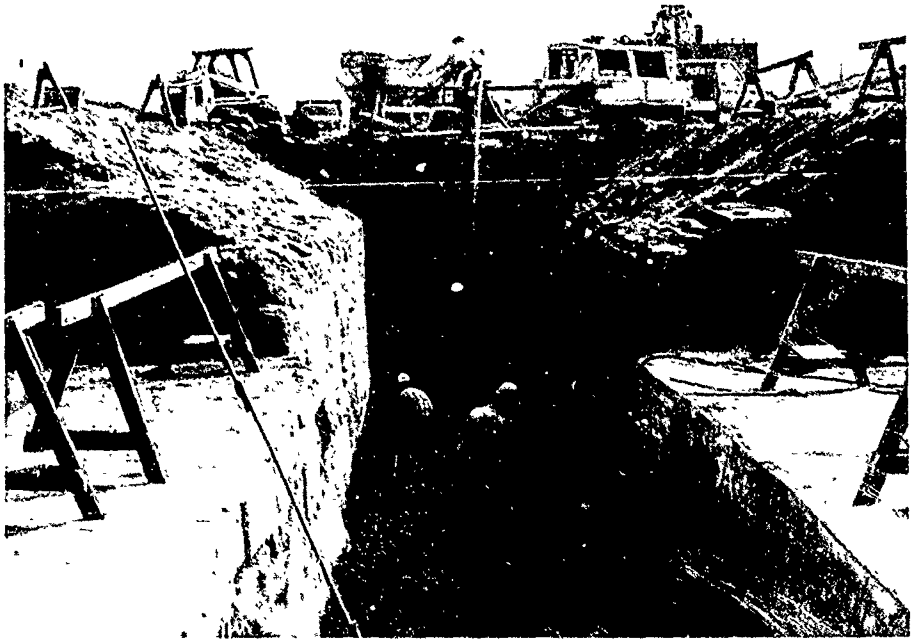

Figure 25. Excavation for hydropower conduit at intake structure slab.

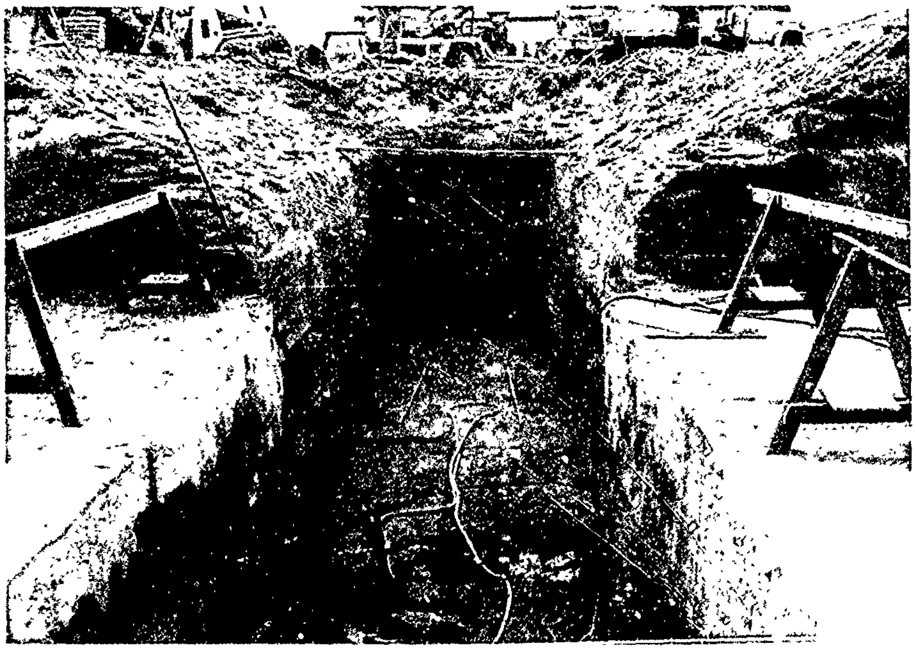

Figure 26. Same as above.

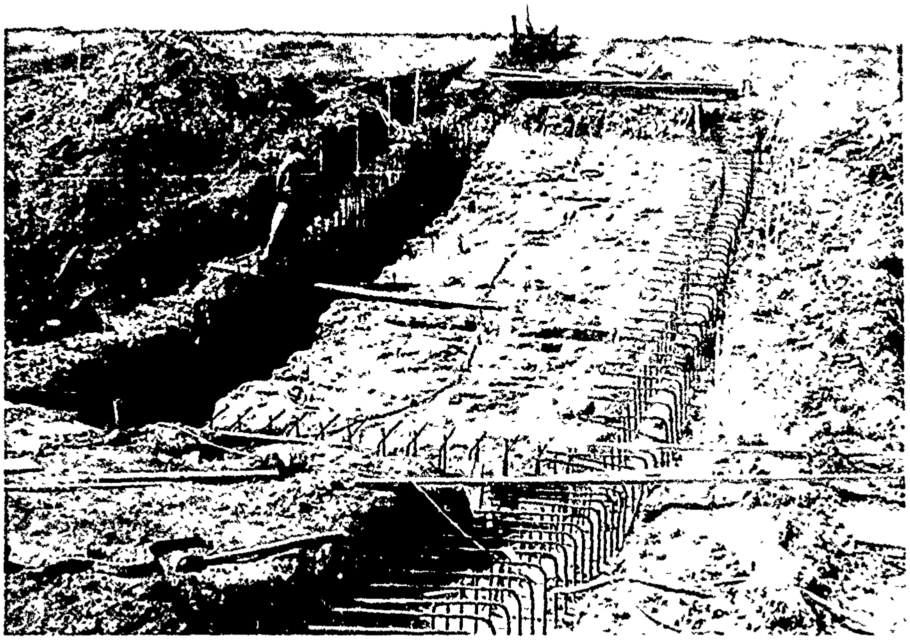

Figure 27. Construction of spillway sill.

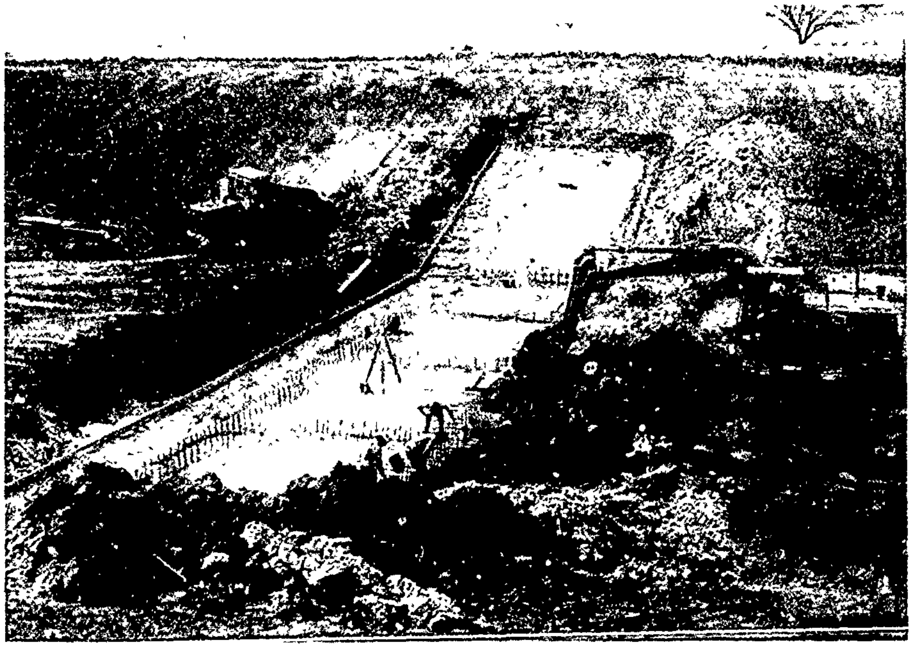

Figure 28. Same as above.

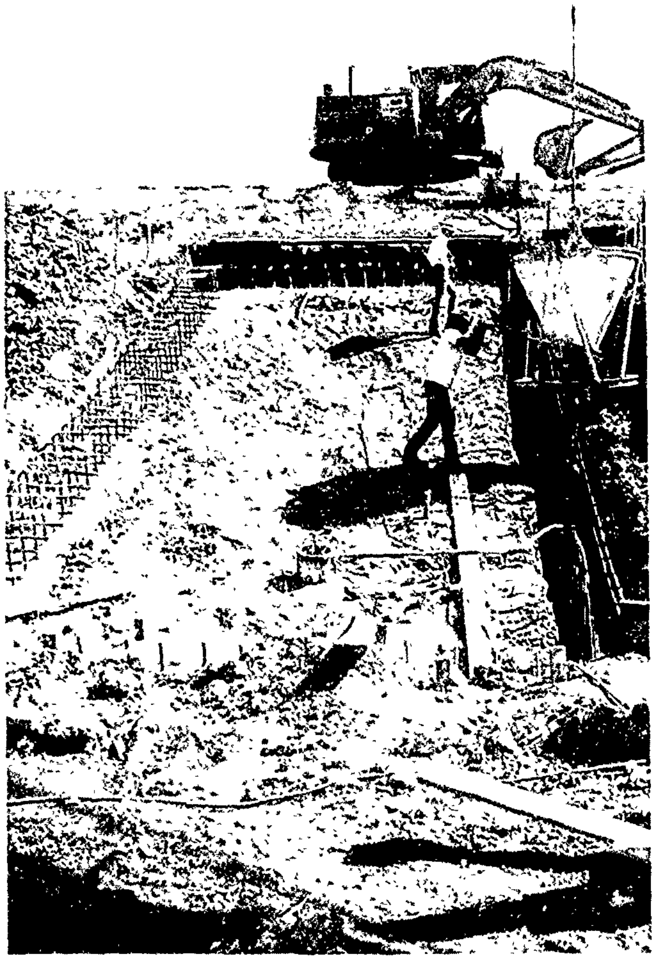

Figure. 29. Spillway - placing concrete footings.

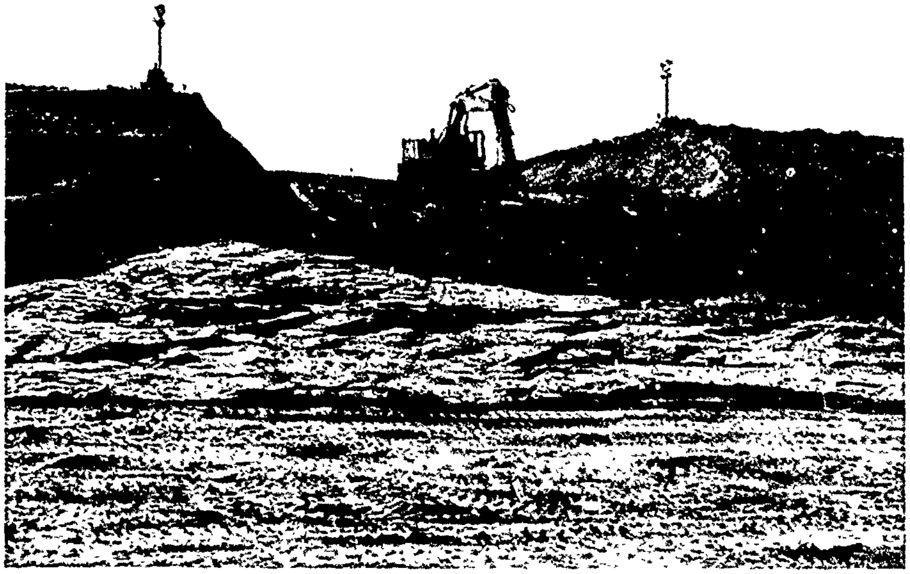

Figure 30. Looking downstation along dam centerline at intersection of embankment centerline and outlet works centerline.

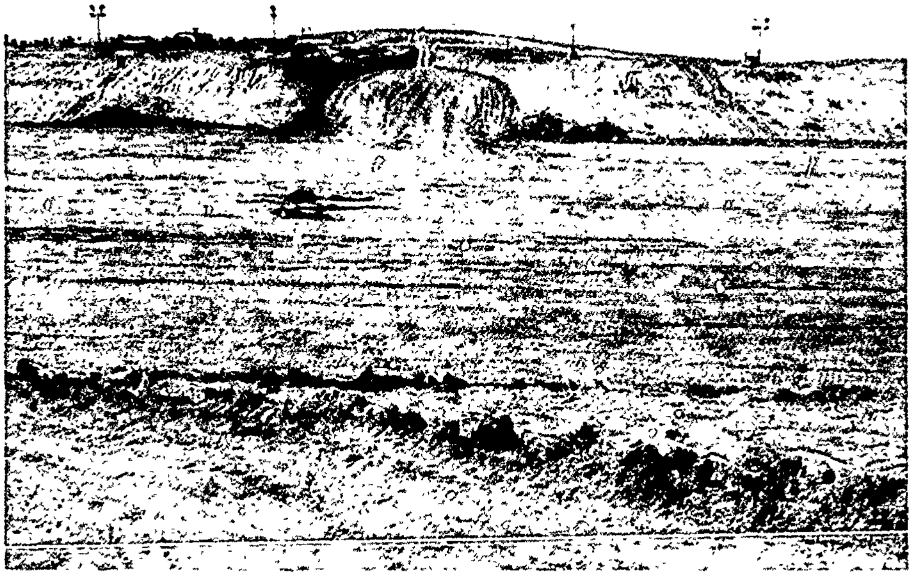

Figure 31. Later view of same area.

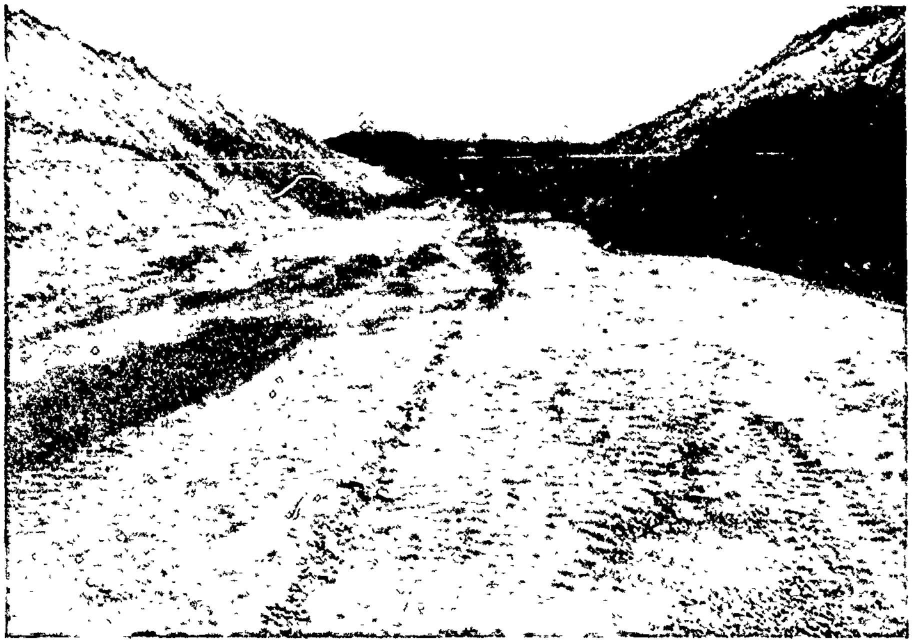

Figure 32. Inspection trench looking upstation (east).

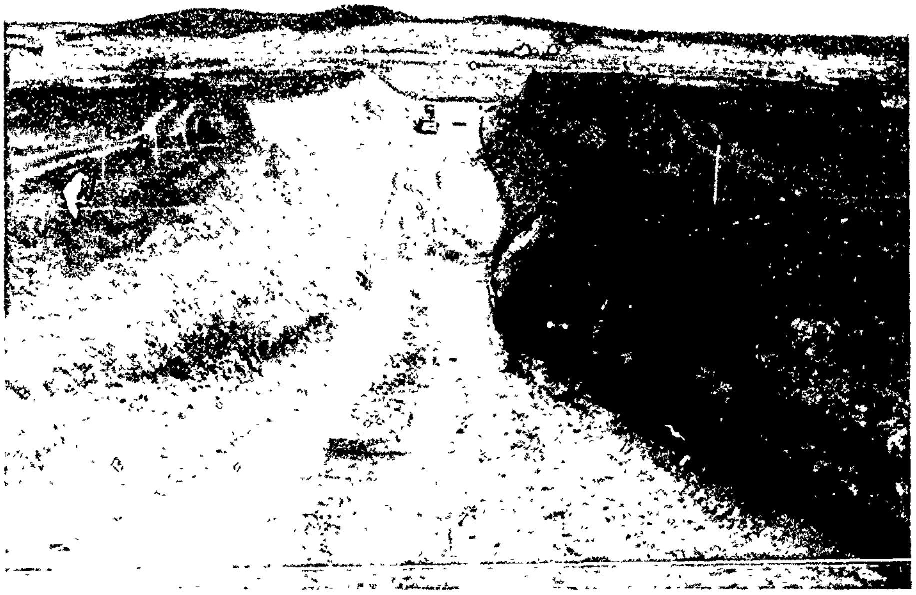

Figure 33. Inspection trench looking upstation.
Sta. 83+00 - 91+00.

Figure 34. Intake structure foundation - spraying aerospray.

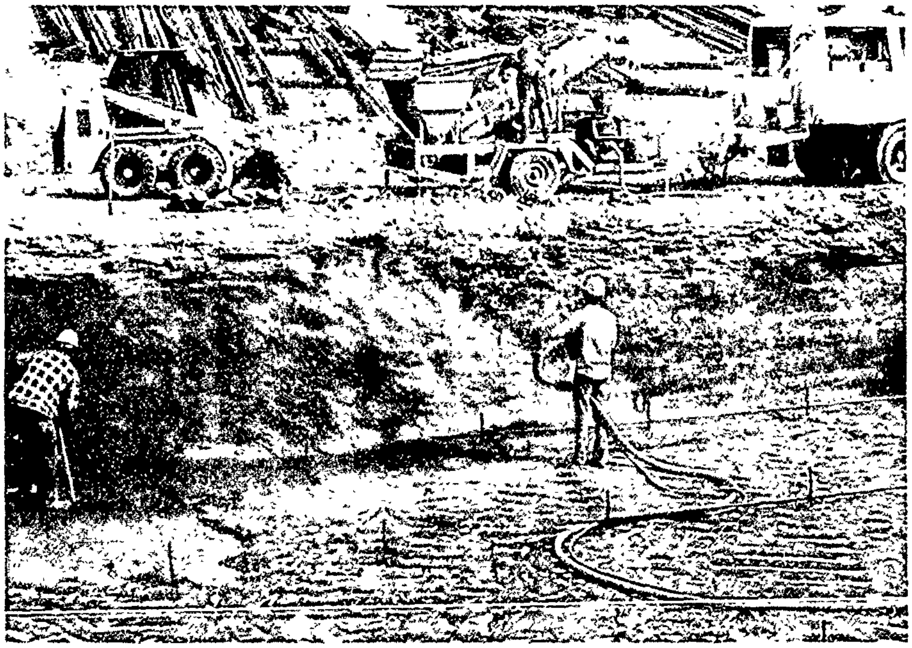

Figure 35. Intake structure foundation - applying gunite.

Figure 36. Intake structure foundation - placing protective concrete.

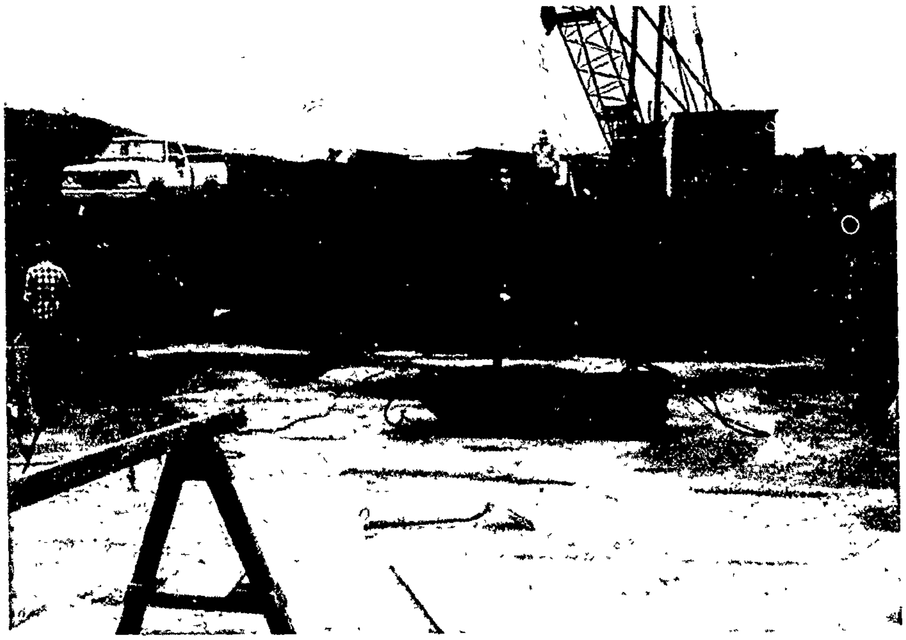

Figure 37. Forms for intake structure.

Figure 38. Outlet works, left side looking downstream at intake structure wing walls showing fresh shale surface.

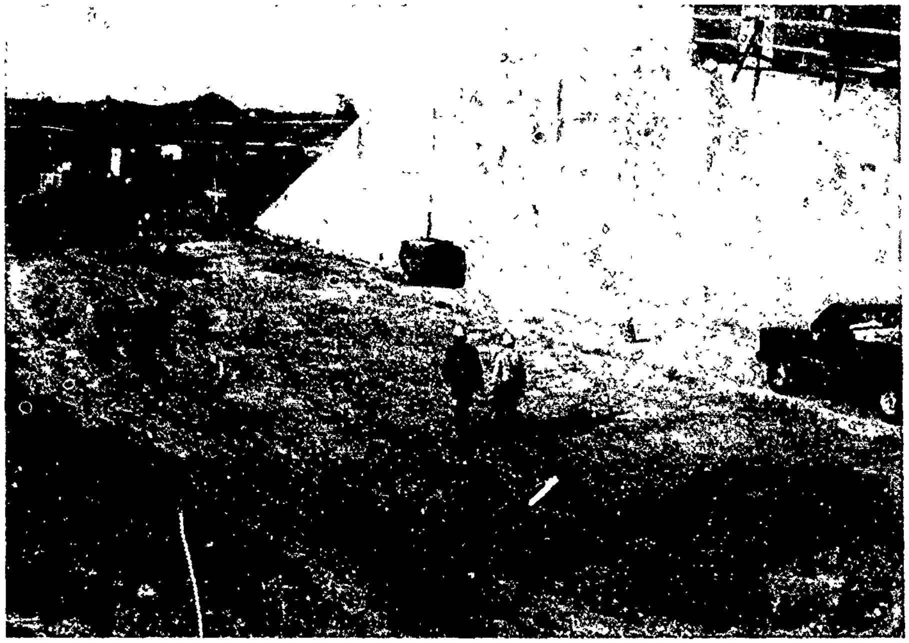

Figure 39. Intake structure, left side looking upstream. Fresh shale surface prior to placement of impervious.

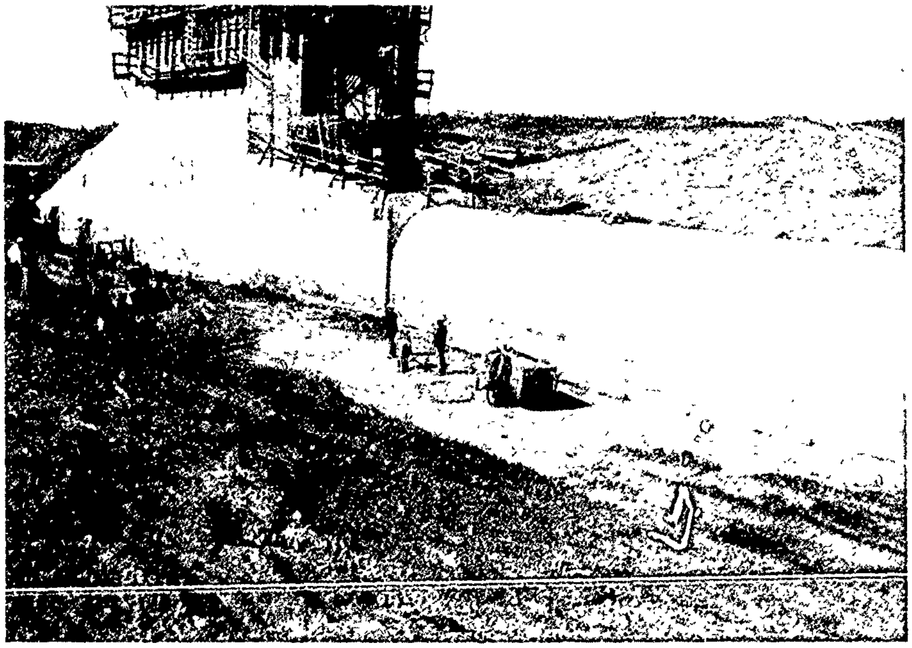

Figure 40. Same as above.

Figure 41. Hydropower conduit excavation showing gunite and aerospray application (looking upstream) Sta. 28+50 - 27+50.

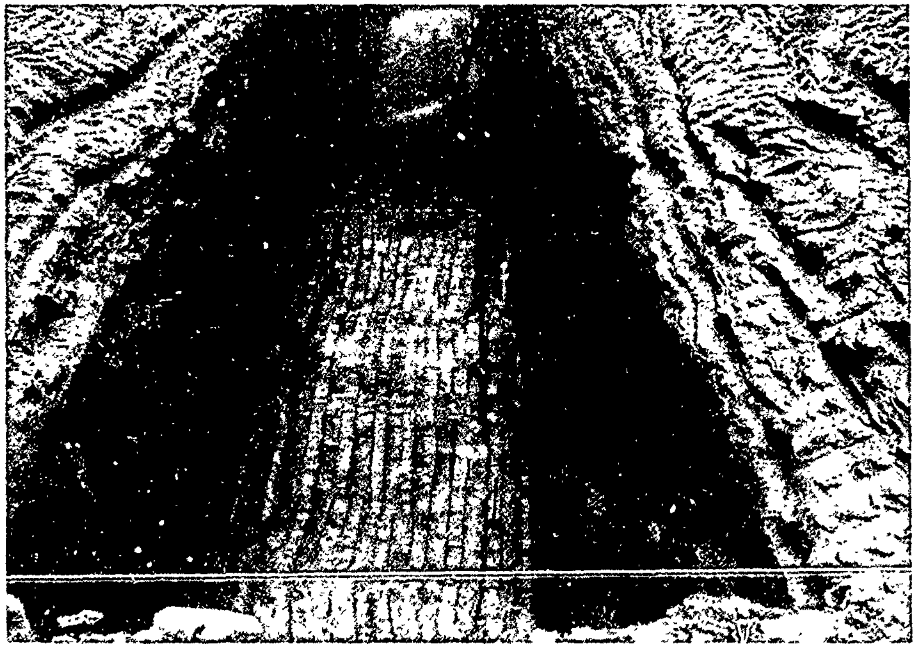

Figure 42. Same as above.

accelerated, apparently because of a heavy rain on 25-26 November 1982. See Figures 43 through 46. From Station 28+25 to 30+85 the Gunite was severely cracked and broken and an estimated 30-foot long section on the east wall of the trench had fallen. Most of the Gunite on both walls in this section appeared loose and ready to fall. Portions of the Gunite, though still in-place, had void space between the Gunite and the rock face. This space could provide a seepage path along the outside of the conduit connected directly to the reservoir pool. A contract modification was signed on 3 December 1982 which stated:

(1) On remainder of penstock excavation (Station 30+85 to Station 34+07), delete pneumatic concrete from the IV: .09 H slopes, and spray these slopes with Aero-spray 70 as often as required to prevent weathering of shale.

(2) Between Stations 28+22 and 30+75 remove <u>all</u> pneumatic concrete which is drummy, cracked, or loose. Spray exposed shale with Aero-spray 70 as often as required to prevent weathering of shale.

(3) All future penstock excavation (Station 30+85 to Station 34+07) and removal of existing pneumatic concrete (Station 28+22 to Station 30+75), will proceed at a rate to accommodate one placement at a time to minimize shale exposure.

The contractor agreed that no more than 3 days would pass between exposure of the clay shale and concrete encasement. On occasions when exposure was more than 3 days, deterioration, consisting of severe drying, cracking and checking, was often noted. Contractor was then

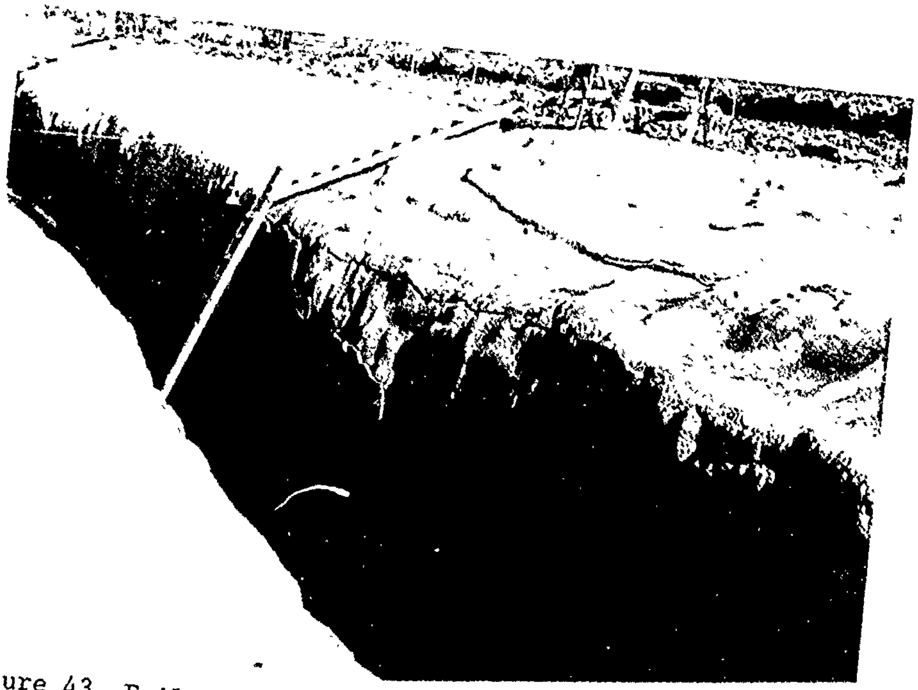

Figure 43. Failure of gunite on hydropower conduit excavation.

Figure 44. Same as above.

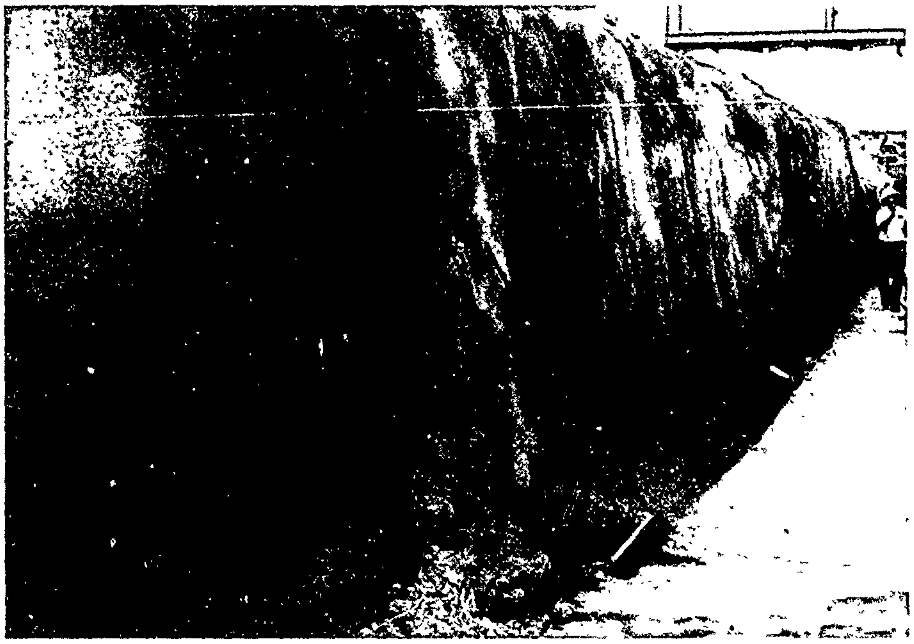

Figure 45. Failure of gunite on hydropower conduit excavation.

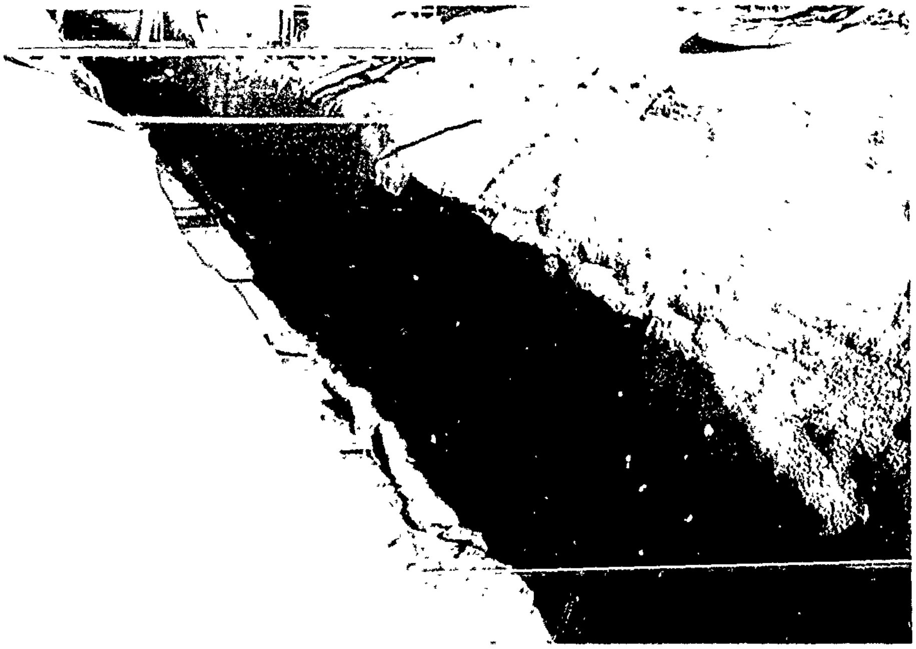

Figure 46. Same as above.

instructed to clean loose and drummy rock by jackhammer and to make final cleanup with compressed air before placement of concrete.

h. **Safety Protection Against Slides and Rock Falls.** Slopes excavated to design grade were generally not steep enough to require special protection against slides and rock falls.

5. **PILE DRIVING AND SPECIAL FOUNDATIONS.** No special foundations, such as driven piles, caissons, or drilled piers were utilized.

6. **TUNNELS, SHAFTS, AND UNDERGROUND STRUCTURES.** The construction of this project did not include any tunnel shafts or underground structures.

7. **FOUNDATION ANCHOR TEST.** A foundation anchor test was performed 4 April 1983 at Station 34+93.5, 5 feet west of outlet works centerline. See Figures 47 through 50. The surface elevation was 531.3. The test was performed in the chute foundation area on a 12-foot anchor with test results shown on pages 19 and 20.

8. **CHARACTER OF FOUNDATION.**

a. **General.** The limited service spillway is founded in weathered clay shale of the Pawpaw Formation of Lower Cretaceous age. The outlet works conduit, chute, and stilling basin are founded on unweathered clay shale of the Pawpaw Formation. Except for the left abutment, the inspection trench was almost entirely in overburden with clays and silty clays predominating. The Woodbine Formation, the basal formation of the Upper Cretaceous, was exposed in the inspection trench in the left abutment. It consists of weathered reddish-brown sands, clays,

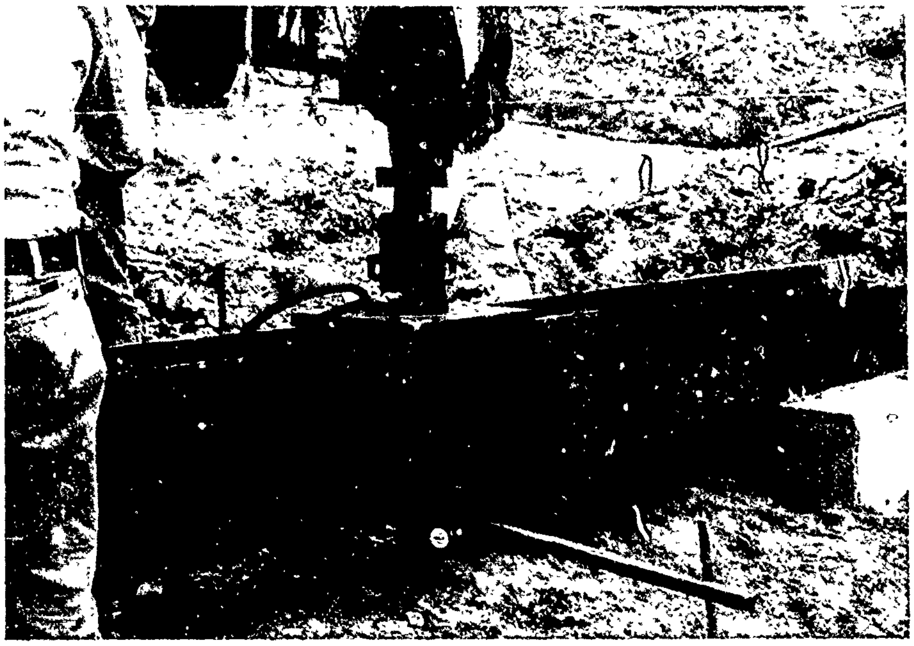

Figure 47. Pullout test. Stilling Basin.

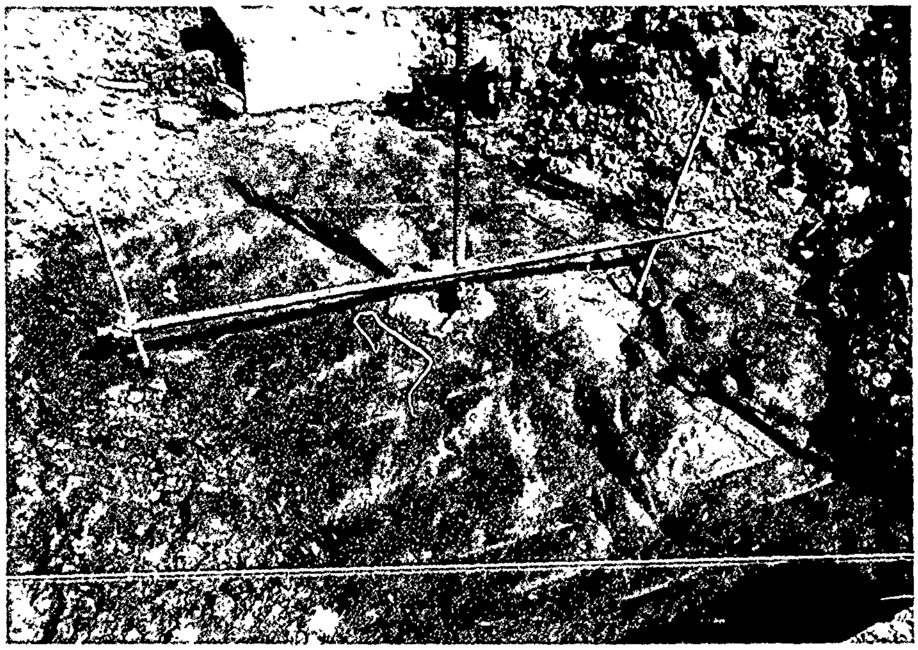

Figure 48. Same as above

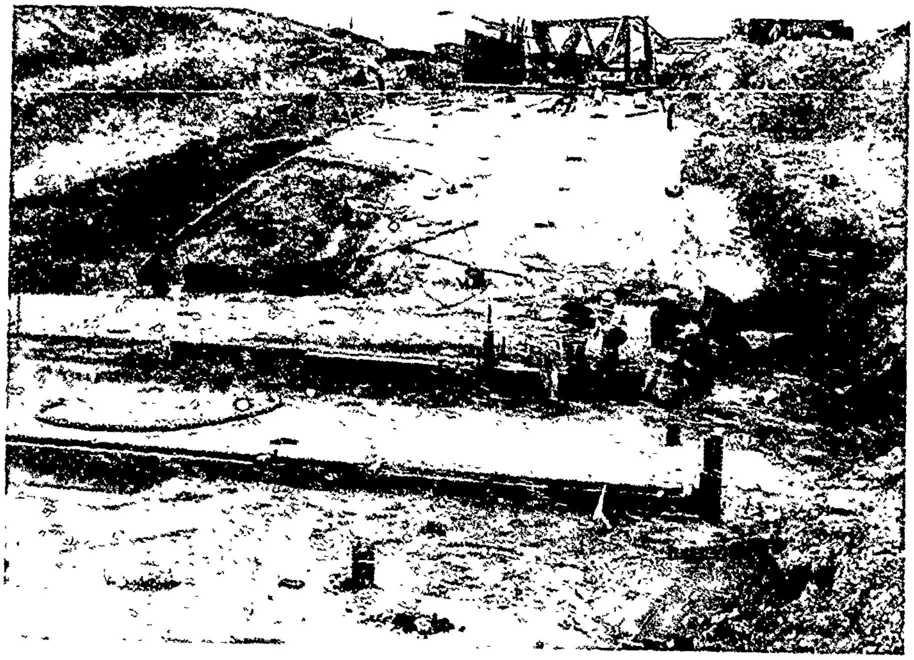

Figure 49. Pullout test. Stilling basin.

Figure 50. Same as above.

TEST NO. 1

Time	Load In Tons	PSI	Deflection In Inches
1044	0	0	.000
1044	5	930	.017
1049	5	930	.017
1050	12.7	2350	.026
1105	12.7	2350	.026
1105	17.7	3150	.035
1110	22.7		.046
1115	22.7		.046
1115	27.7		.059

1120 Stopped test - sag in "I" beam causing deflection in anchor bar.

TEST NO. 2

Time	Load In Tons	PSI	Deflection In Inches
1137	5	930	.003
1142	5	930	.003
1142	12.7	2350	.015
1157	12.7	2350	.016
1157	17.7	3150	.023
1201	17.7	3150	.023
1201	22.7	4050	.034
1207	22.7	4050	.034
1207	27.7	4950	.045
1212	27.7	4950	.046
1212	32.7	5850	.060
1216	32.7	5850	.067
1216	36.0	6600	.075
1221	36.0	6600	.085
1222	32.7	5850	.085
1226	32.7	5850	.085
1226	27.7	4950	.078
1231	27.7	4950	.077
1231	22.7	4050	.068
1236	22.7	4050	.068
1236	17.7	3150	.057
1241	17.7	3150	.057
1241	12.7	2350	.043
1246	12.7	2350	.043

TEST NO. 2
(cont'd)

Time	Load In Tons	PSI	Deflection In Inches
1246	5	930	.018
1251	5	930	.018
1251	0	0	.000
1300	0	0	.000
1300	5	930	-.012
1305	5	930	-.012
1305	12.7	2350	.000
1310	0	0	.000
1310	5	930	-.006
1315	5	930	Reset to .000
Bar deflecting downward and horizontal under initial load.			
1320	5	930	.000
1320	12.7	2350	.016
1335	12.7	2350	.016
1335	5	930	.003
1340	5	930	.003
1340	0	0	-.006
1341	5	930	.001
1346	5	930	.001
1346	10	1820	.011
1351	10	1820	.011
1351	15	2750	.021
1356	15	2750	.023
1356	20	3650	.038
1401	20	3650	.038
1401	25	4550	.049
1406	25	4550	.050
1406	30	5450	.064
1411	30	5450	.064
1411	35	6300	.078
1416	35	6300	.083
1416	40	7200	.107
1421	40	7200	.109

Stop Test

and sandstones ranging from soft and friable to moderately hard.

b. **Character of Overburden Materials.** Overburden materials comprise the foundation for the embankment, in the outlet works approach and discharge channels, and in the approach and discharge channels for the spillway. Overburden materials exposed in the inspection trench and cutoff trench consist of alluvial clays, silts, sands, and gravels in the floodplain between Stations 105+00 and 136+00, and residual overburden on the abutments. Residual overburden consisting of clay and silty clay was exposed in the approach and discharge channels for the spillway. The outlet works approach and discharge channels were excavated in fluviatile terrace and floodplain alluvial materials consisting of clay, sand, silt, and gravel.

c. **Character of Primary Materials.** The Pawpaw Formation comprises much of the foundation and was exposed in the outlet works and the spillway excavation. The Pawpaw is relatively level and finished grade was often on or near bedding planes. See Figures 13, 16, and 18. In the outlet works foundation, the clay shale is generally soft to moderately hard, unweathered, gray to dark gray and thin to medium bedded with scattered sandy seams and occasional sandstone seams north of Station 27+00. South of station 27+00 the clay shale contains up to 50 percent fine-to-medium grained sandstone and sandy seams. The base of the sandy phase was encountered at elevation 523, Station 36+15 in the chute foundation. A 2- to 3-inch thick fossiliferous zone was exposed near the base of the chute at elevation 520.0. Excavation, cleaning of shale surfaces, and placement of fill are shown in Figures 51 through 64. The stilling basin foundation surface was described as shale, soft, slightly sandy with occasional sandy pockets and zones, fossiliferous, gray. See Figures 63 and 64.

The sill foundation for the limited use spillway was excavated down to a sandy, stiff, yellowish-brown to light gray clay, underlain by about 3 feet of gravelly clay. The edges and narrow sections in the middle, horizontal part of the foundation were keyed into weathered shale of the Pawpaw Formation. The approach and discharge channels were excavated in sandy clay. See Figures 27, 28, and 29.

9. **FOUNDATION TREATMENT.** No grouting was necessary at the project and no dental concrete or broom grouting were utilized.

10. FOUNDATION INSTRUMENTATION.

a. **General.** The instrumentation program at Ray Roberts Dam was designed to monitor five basic areas which are discussed below. A plan of instrumentation is shown on Plate 57. The following descriptions are taken from **"Periodic Inspection No. 1, Ray Roberts Lake, July 1987."**

(1) **Initial Embankment and Closure Section.** Nineteen piezometers were installed to monitor pore pressure development in the floodplain foundation during construction of the initial embankment and closure section. Settlement gages (12 deep settlement plates and 3 foundation surface settlement plates) were installed to monitor vertical movement of the foundation in the floodplain, and 8 surface

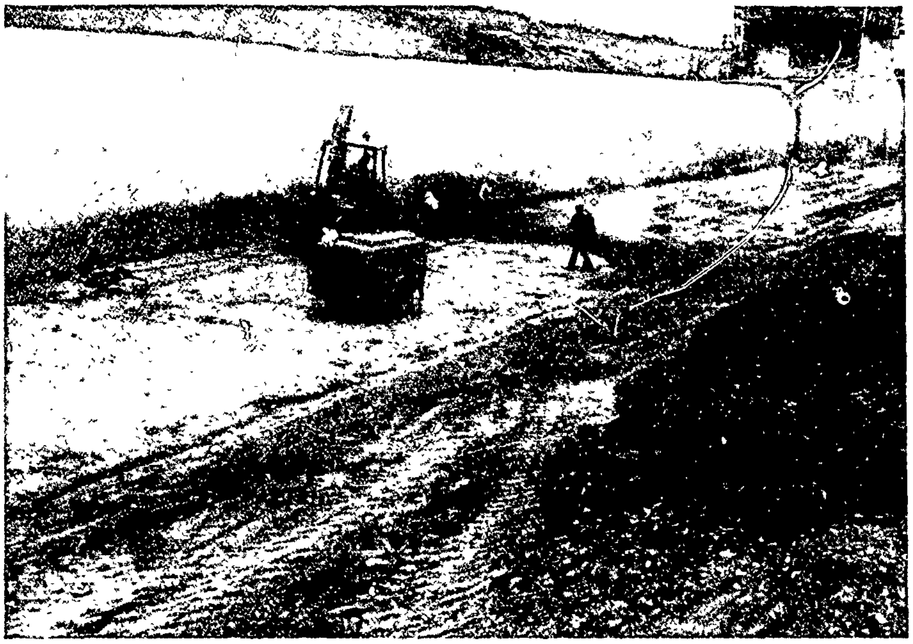

Figure 51. Outlet works, left side looking upstream. Fresh shale surface prior to placement of impervious material.

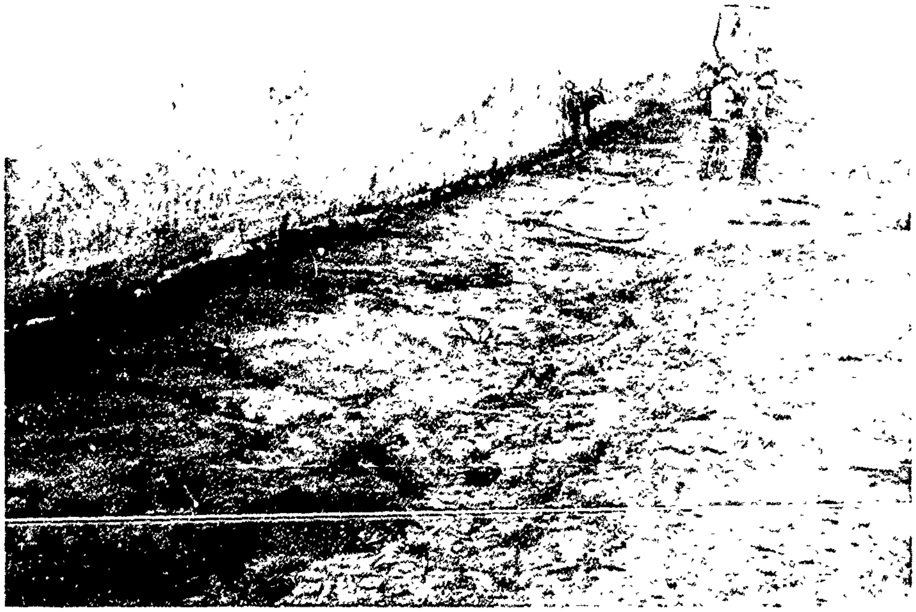

Figure 52. Same as above.

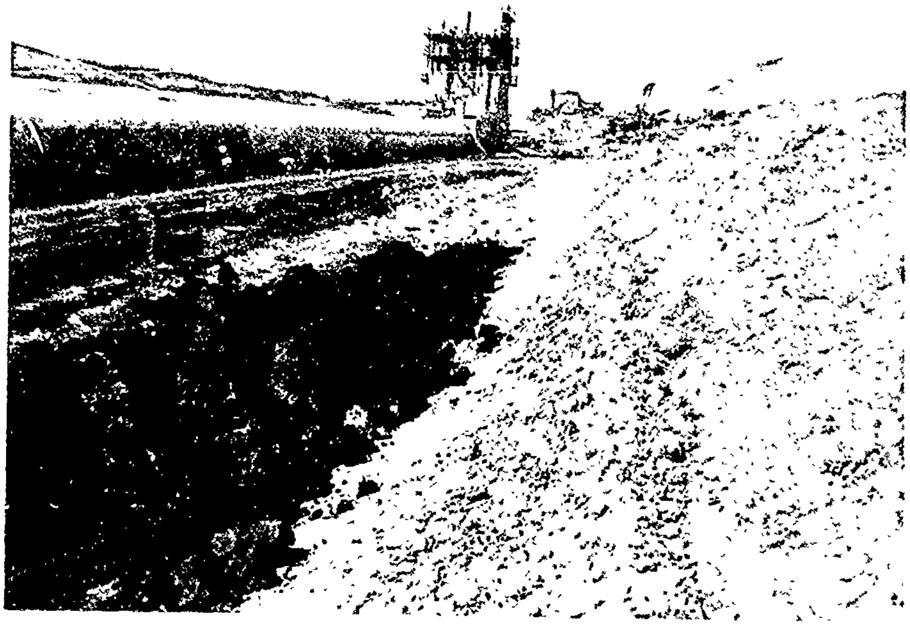

Figure 53. Outlet works conduit, left side, looking upstream. Placing fill on fresh shale surface.

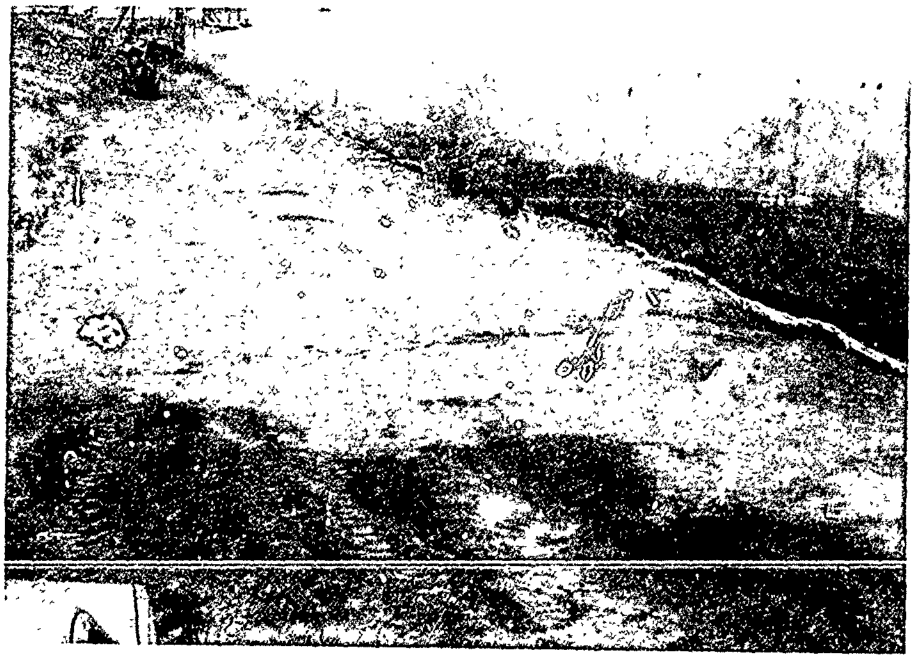

Figure 54. Outlet works conduit, right side, looking upstream. Fresh shale adjacent to conduit.

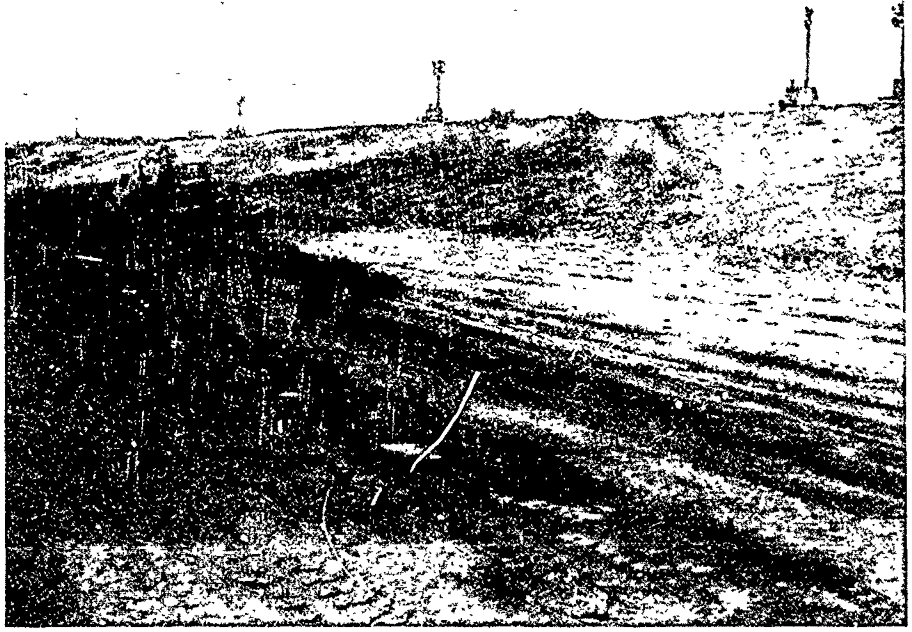

Figure 55. Outlet works excavation, right side looking downstream. Placing fill on fresh shale surface.

Figure 56. Outlet works, right side, looking upstream. Fresh shale surface.

Figure 57. Outlet works, right side looking upstream. Cleaning shale surface in increments prior to placement of fill.

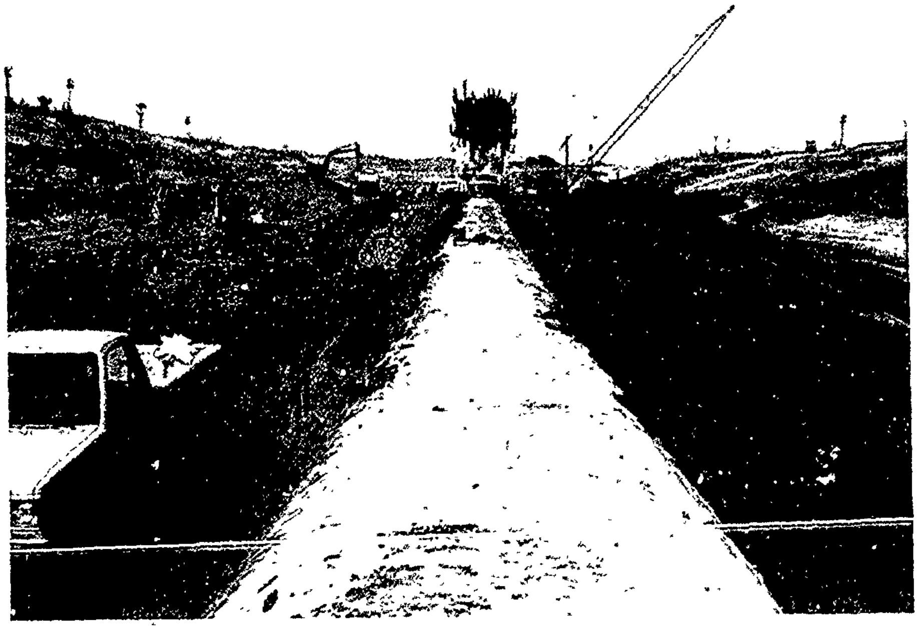

Figure 58. Outlets works conduit, looking upstream.

Figure 59. Outlet works looking downstream from tower.

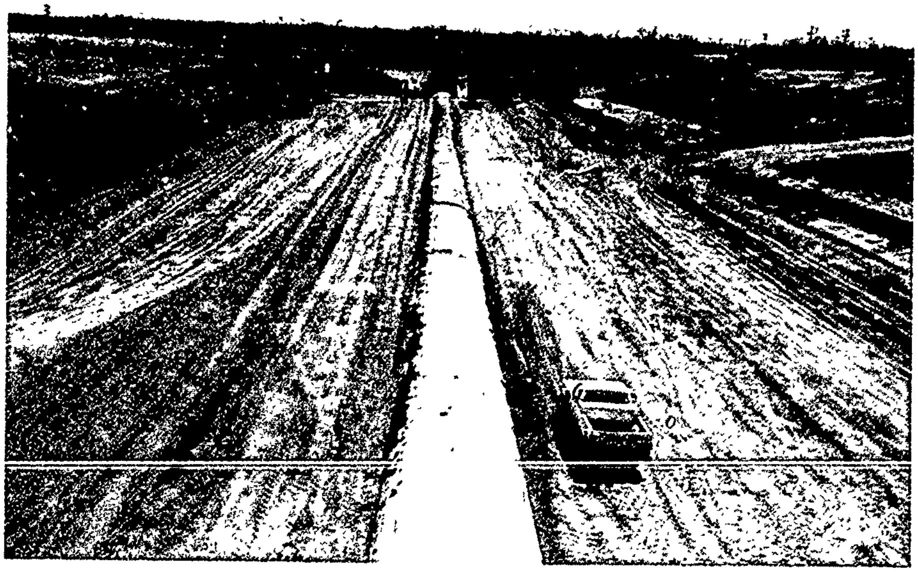

Figure 60. Same as above.

Figure 61. Outlet works, right side, looking downstream. Cleaning shale surface prior to placement of fill.

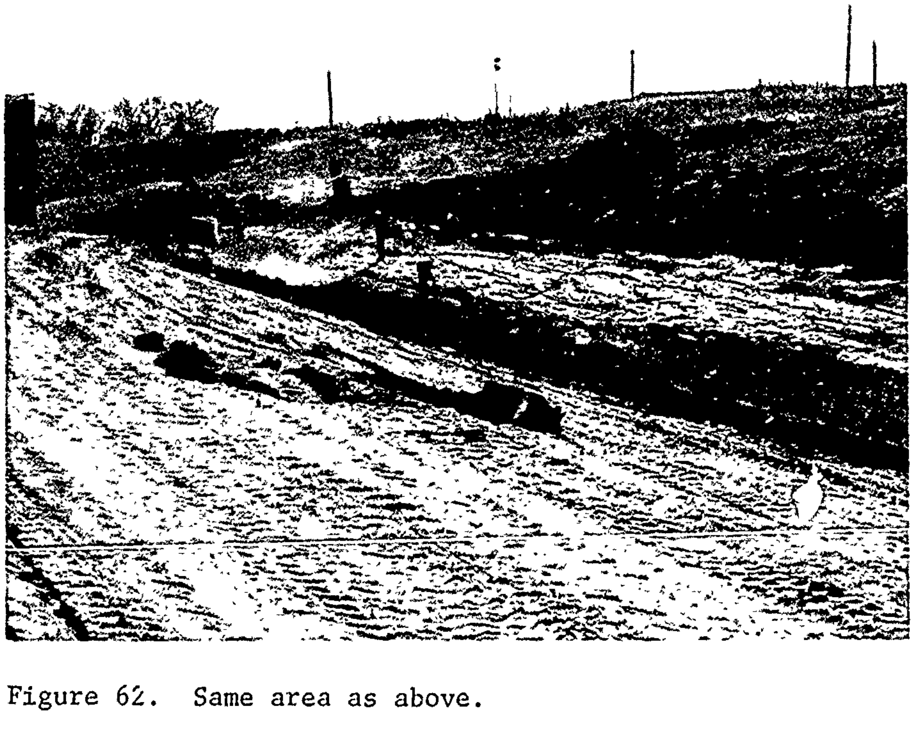

Figure 62. Same area as above.

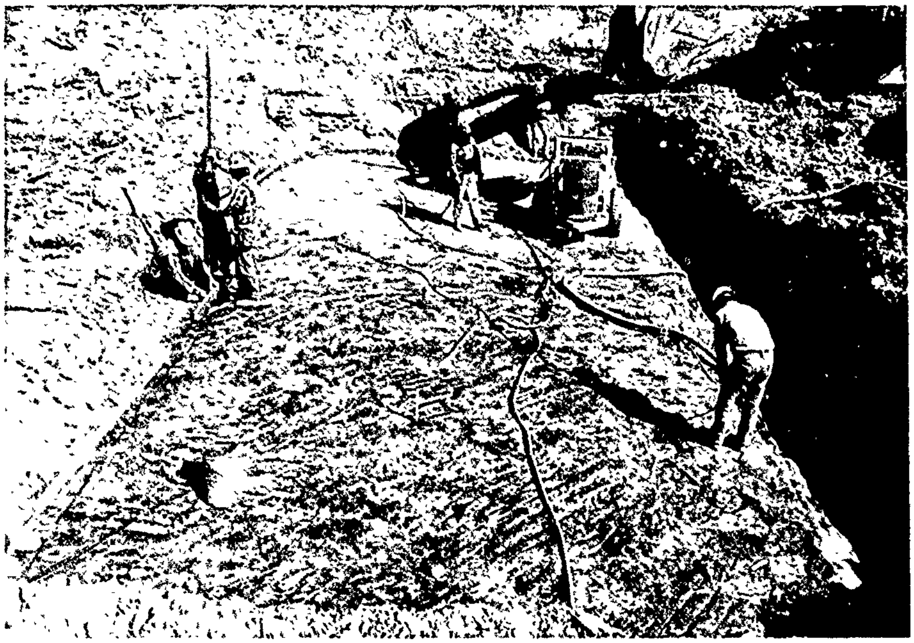

Figure 63. Stilling basin. Spraying aerospray.

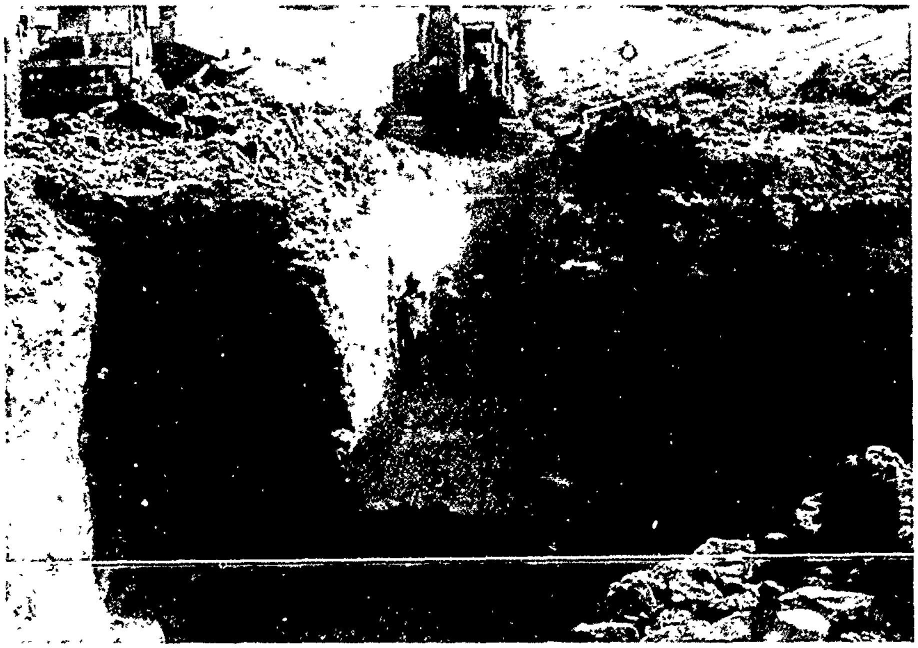

Figure 64. Excavation for discharge from valve vault.

reference marks were provided to monitor embankment movement. Twelve inclinometers were installed to measure lateral displacement of the foundation during construction of the initial embankment and closure section. Of primary concern in planning the instrumentation program was the performance of the initial embankment which was designed to preload and consolidate the floodplain soils.

(2) **Left Abutment.** Nine piezometers were installed to monitor potential seepage effects at the left abutment (the upper portion of the abutment consists of pervious strata) including uplift pressures acting on the downstream portion of the embankment.

(3) **Embankment Underseepage.** Twenty-six seepage piezometers were installed in the embankment foundation to monitor underseepage.

(4) **Outlet Works.** To monitor movement of the outlet work structure, reference pins were installed within the conduit, on the stilling basin walls, and on the service bridge.

(5) **Embankment Crest.** A set of embankment station monuments has been installed along the downstream side of the crest to monitor post-construction settlement.

b. **Schedule of Instrumentation Reading.** Instrumentation located at the project will be read by CESWF-ED-G personnel according to the following schedule, or more frequently, if deemed necessary.

- o Piezometers - quarterly
- o Inclinometers - annually
- o Seepage Interceptor - monthly and when pool reaches 580, 590 600, and 632.5

- Settlement Gages - quarterly and when pool reaches 580, 590, 600, and 632.5
- Outlet Works Reference Pins - semiannually
- Embankment Reference Marks - quarterly

c. **Settlement Plates and Deep Settlement Plates.** Settlement Plates SP-1 through SP-3, and deep settlement Plates DSP-1 through DSP-12 were installed in the floodplain foundation prior to and during initial embankment construction to monitor foundation settlement. Settlement plates consist of a 36-inch square, ¼-inch thick steel plate placed within the foundation materials and welded to a steel riser pipe extended through the embankment fill.

d. **Inclinometers.** I-1 through I-12 were installed within the floodplain embankment foundation prior to construction of the initial embankment to monitor horizontal deflection within the foundation. To provide a fixed frame of reference, all inclinometers were anchored in the primary clay shale. Inclinometers consist of a 3.34-inch diameter grooved ABS casing manufactured by Slope Indicator Company, Seattle Washington. Inclinometers were extended through the fill and steel casing.

e. **Piezometers.** Piezometers P-1 through P-43b have been installed within the embankment foundation materials to monitor foundation performance during construction and after impoundment. Open system piezometers utilizing porous plastic tips as manufactured by Slope Indicator Company, Seattle Washington, were installed using 3/8-inch diameter PVC risers and extended through the fill with steel casing.

Piezometers P-1 through P-19 were installed within the floodplain embankment foundation prior to construction of the initial embankment to monitor excess pore pressure development during construction. After embankment completion, piezometers P-20 through P-36 were installed on the downstream toe and slope within the sands and gravels overlying the shale. Piezometers P-37 through P-43b were installed after embankment completion, within the sandy abutment materials. All Piezometers (P-20 through P-43b) will monitor seepage within the foundation materials during and after reservoir filling.

f. **Surface Reference Marks.** Reference marks consisting of a brass monument, set into a 6-inch diameter pipe filled with concrete, were installed within the floodplain embankment to a depth of 5 feet to monitor vertical movement.

g. **Reference Pins.** Reference pins were installed along the outlet works conduit invert, stilling basin monolith walls, and service bridge. Reference pins which consist of bronze bolts embedded in concrete are used to monitor vertical movement of the monolith or slabs, and relative movement between monoliths or slabs.

h. **Seepage Interceptor System.** A seepage interceptor system has been installed within the left abutment embankment foundation to collect underseepage. The discharge is currently being monitored to record the normal ground-water flow. Flow from the system will be monitored, along with piezometers P-37 through P-43b, during impoundment when the pool reaches elevation 580, 590, 600, 620, and 632.5.

11. **POSSIBLE FUTURE PROBLEMS.** At the time foundations were approved and the dam completed in October 1986, no potential for future problems was apparent. The first periodic inspection was performed in July 1987. By that time several minor skin slides had occurred in the spillway approach channel slope. It was concluded that this problem could be easily remedied. Other minor problems are addressed in **"Periodic Inspection Report No. 1, July 1987."** The dam is considered to be in good general condition.

12. **RECORD OF FOUNDATION APPROVAL.** A record of the date when each section of the outlet works foundation was approved is shown on Plate 58. Records of approval of final foundation grades were kept for all foundations on which concrete was to be placed. The foundation for the emergency spillway was approved as a unit on 11 February 1984.

Figure 65. Outlet works, right side looking downstream. Cleaning shale surface in increments prior to placement of fill.

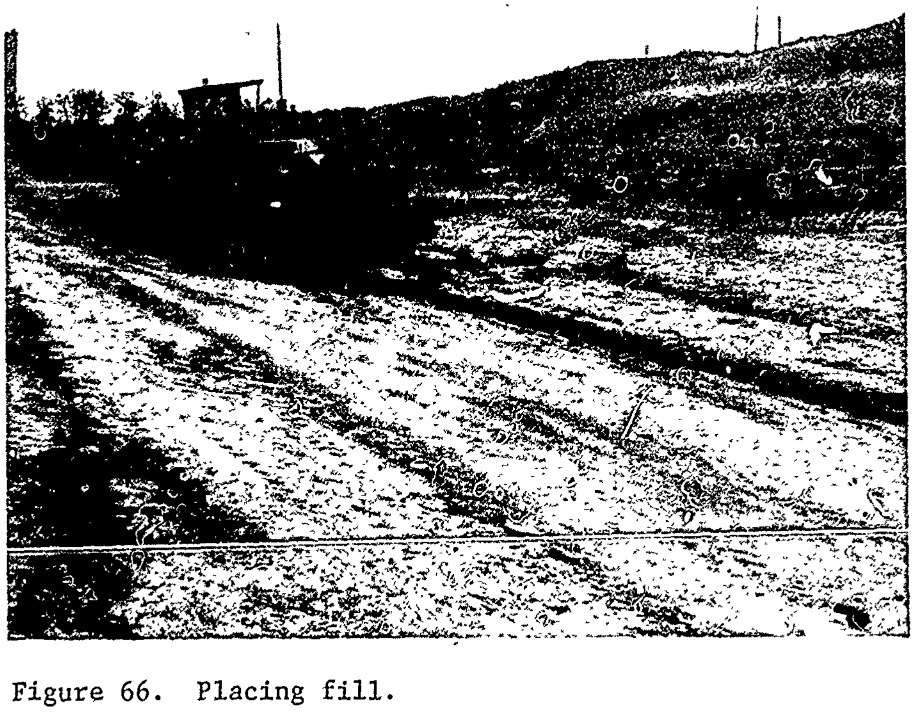

Figure 66. Placing fill.

Figure 67. Outlet works. Placing fill.

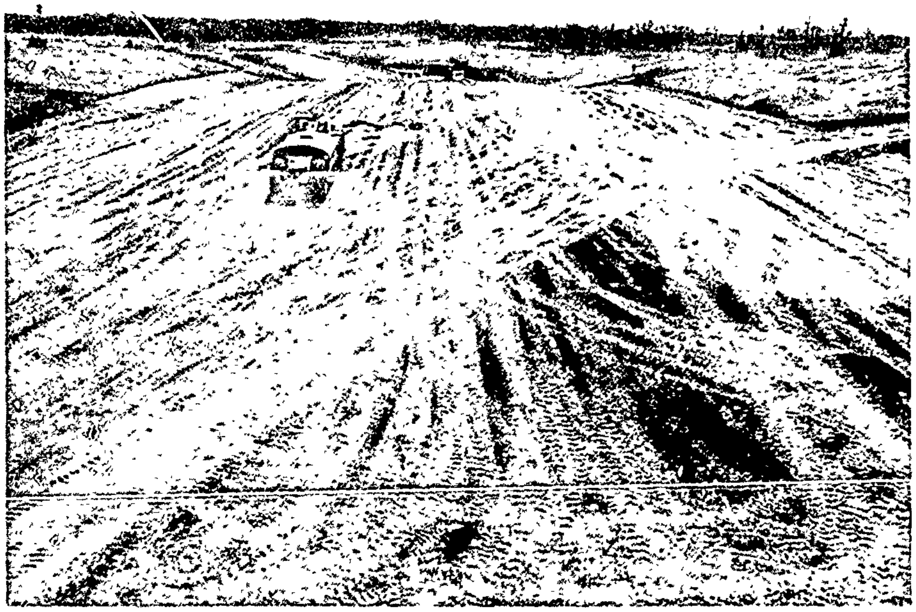

Figure 68. Outlet works backfill, looking downstream.

Figure 69. Excavation for valve vault.

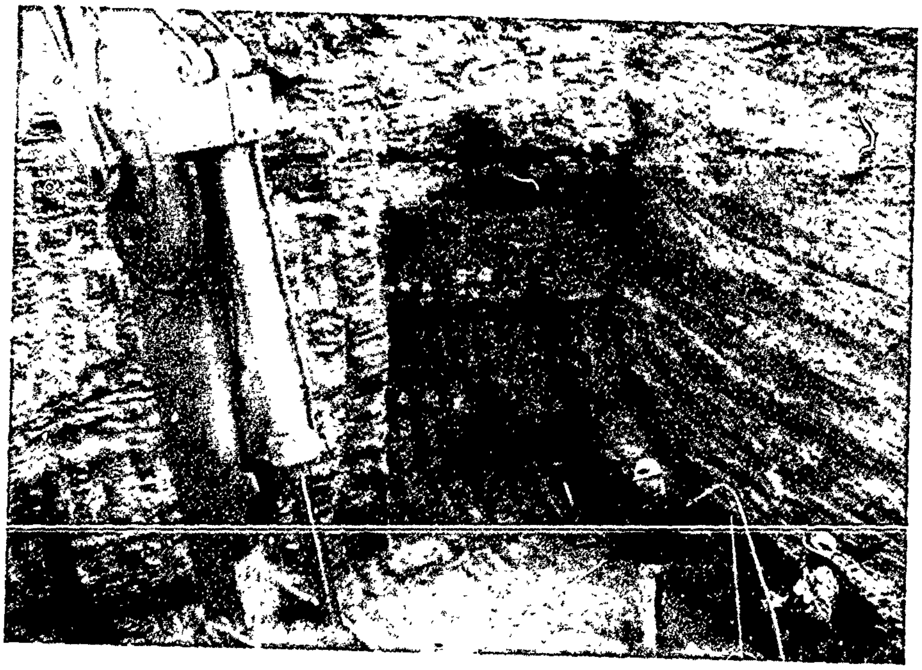

Figure 70. Same as above.

Figure 71. Discharge pipes from valve vault.

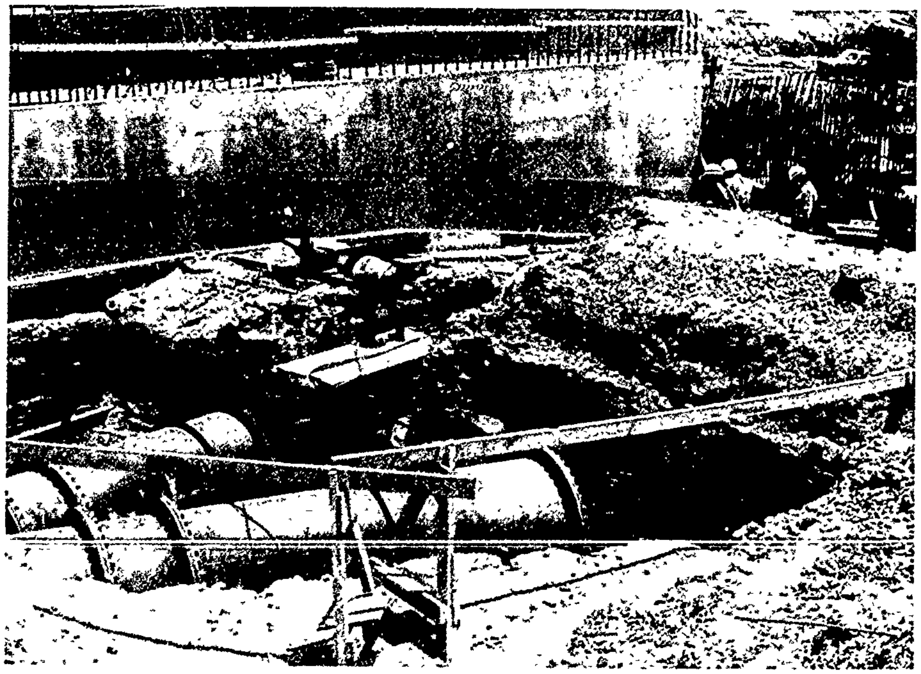

Figure 72. Same as above.

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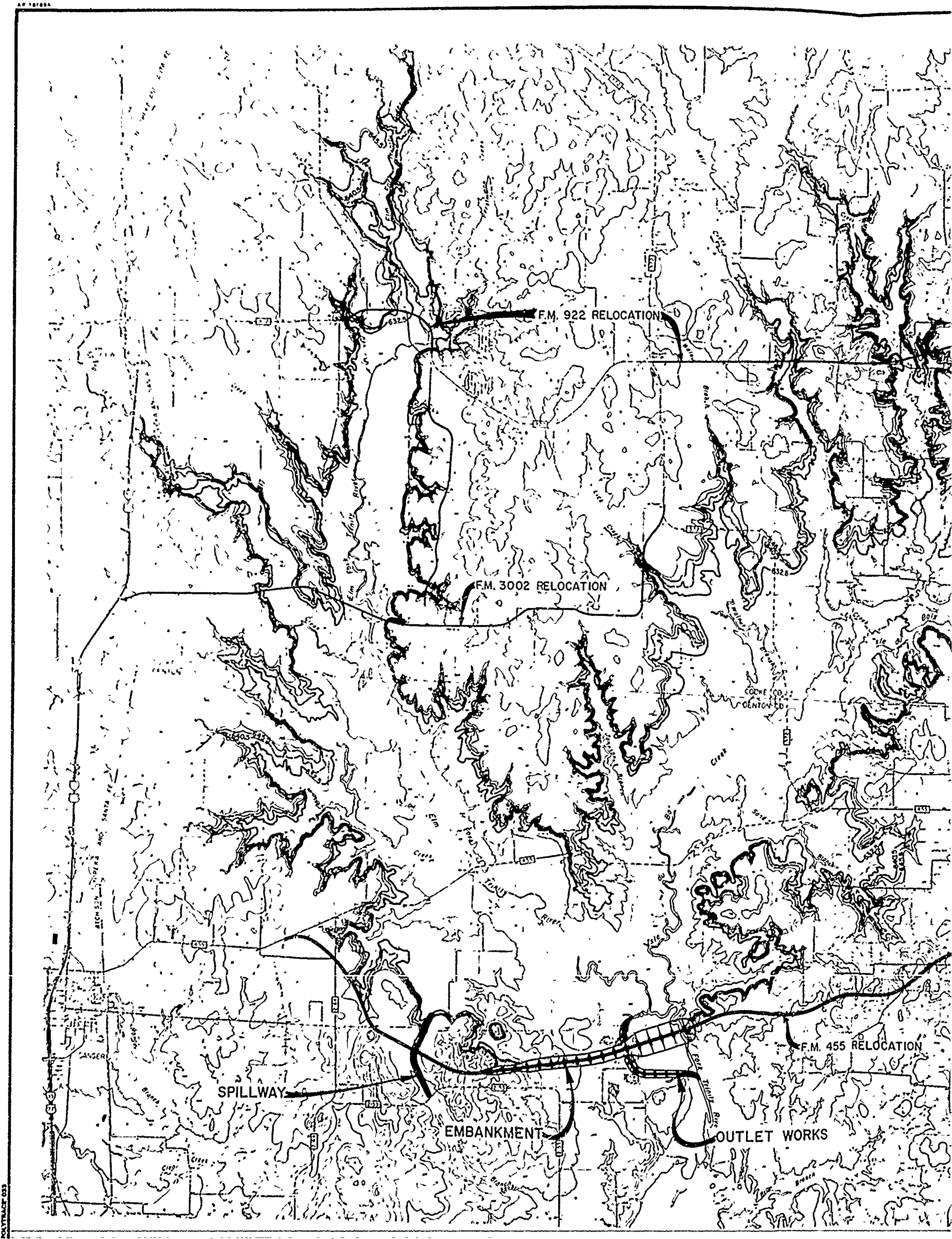
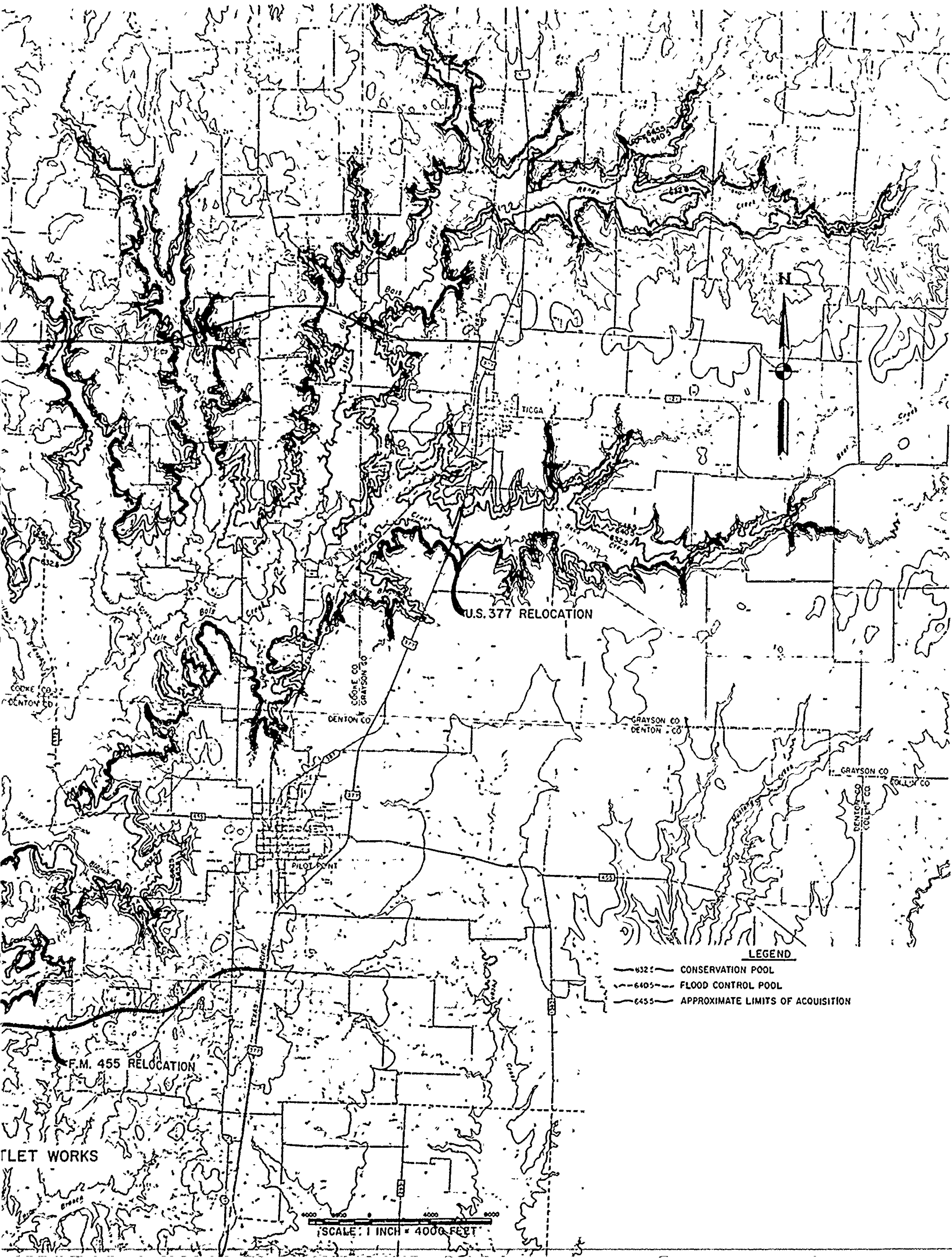
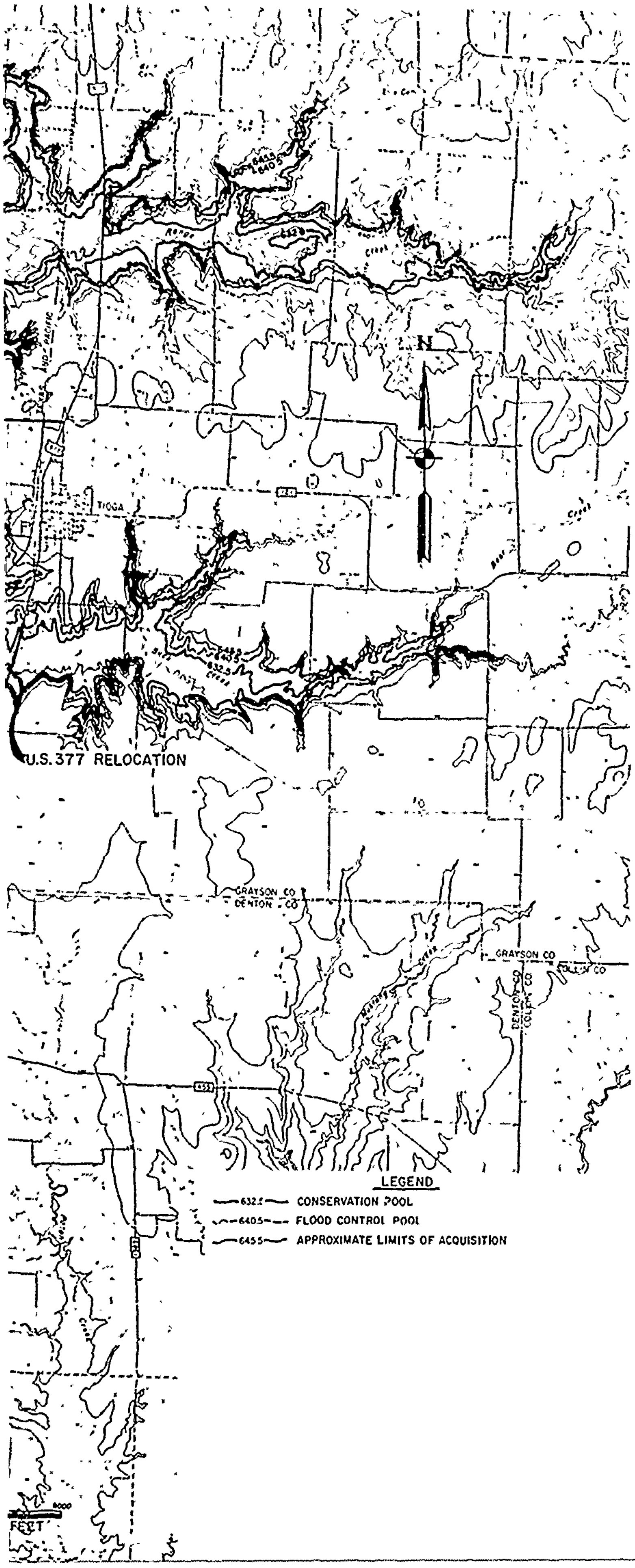
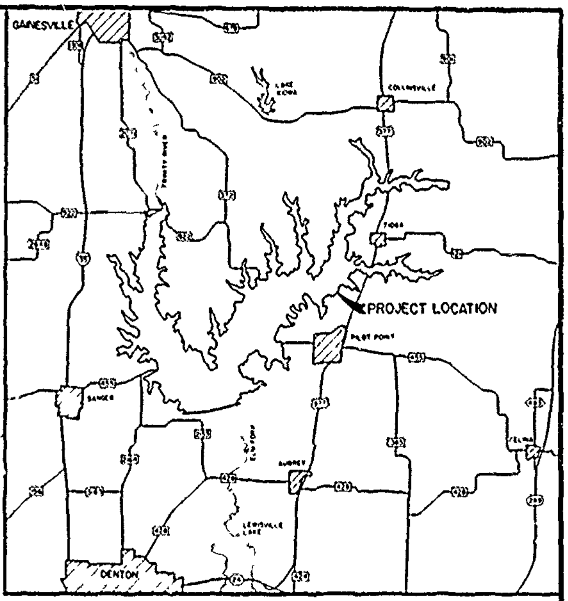

F.M. 922 RELOCATION
F.M. 3002 RELOCATION
632.5
632.8
COOKE CO.
DENTON CO.
Elm Fork Trinity River
Isle du Bois Creek
SANGER
SPILLWAY
EMBANKMENT
OUTLET WORKS
F.M. 455 RELOCATION
Fork Trinity River


N
TIOGA
U.S. 377 RELOCATION
F.M. 455 RELOCATION
TLET WORKS
PILOT POINT
COOKE CO
DENTON CO
COOKE CO
GRAYSON CO
DENTON CO
GRAYSON CO
DENTON CO
GRAYSON CO
COLLIN CO
DENTON CO
COLLIN CO
Isle du Bois Creek
Creek
Bear Creek
Big Mineral Creek
Texas and Pacific
377
455
LEGEND
6325 CONSERVATION POOL
6405 FLOOD CONTROL POOL
6455 APPROXIMATE LIMITS OF ACQUISITION
4000 0 4000 8000
SCALE: 1 INCH = 4000 FEET





VICINITY MAP
SCALE: 1 INCH = 4 MILES APPROX.

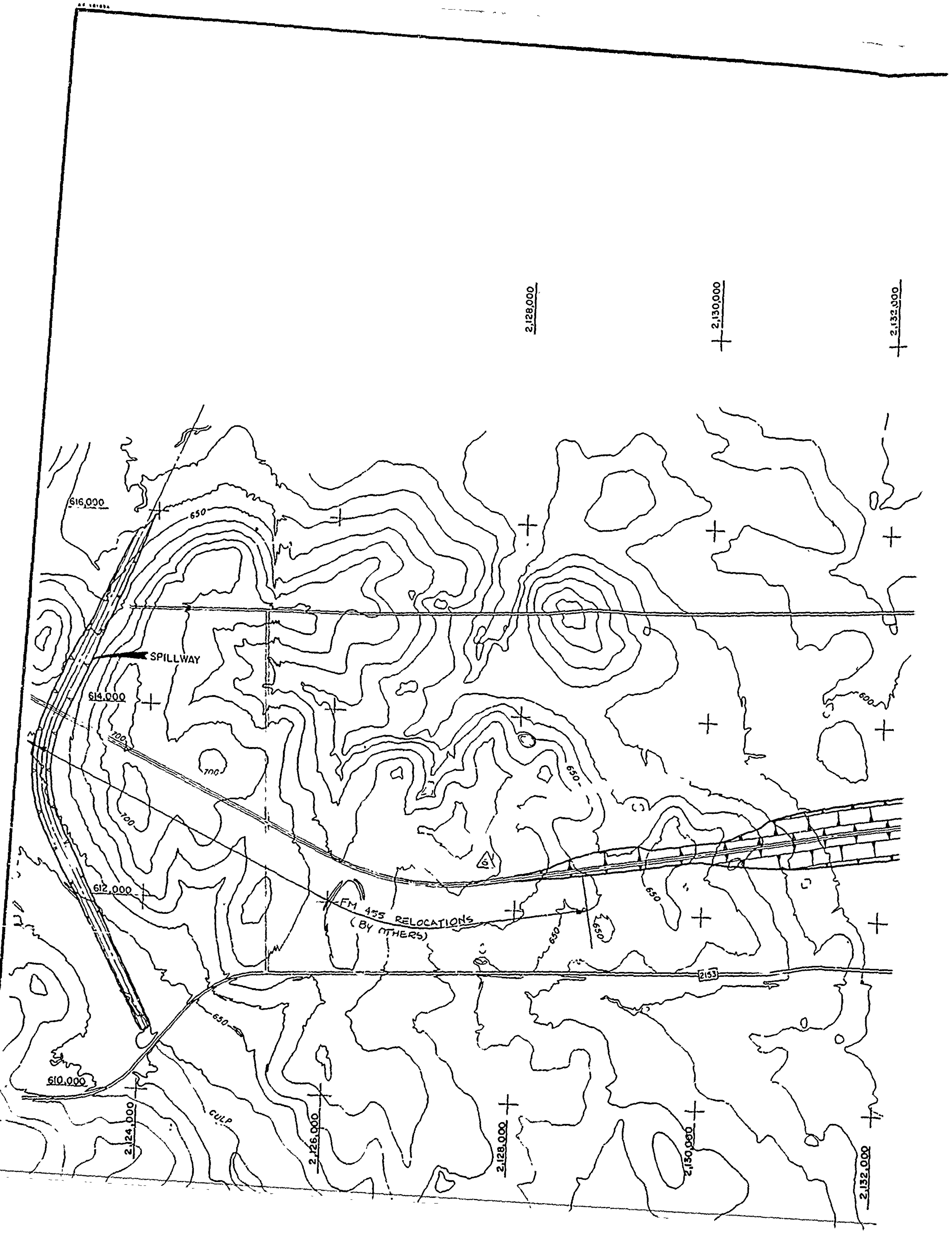
SYM.	DO. NO.	ACTION	DATE	DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

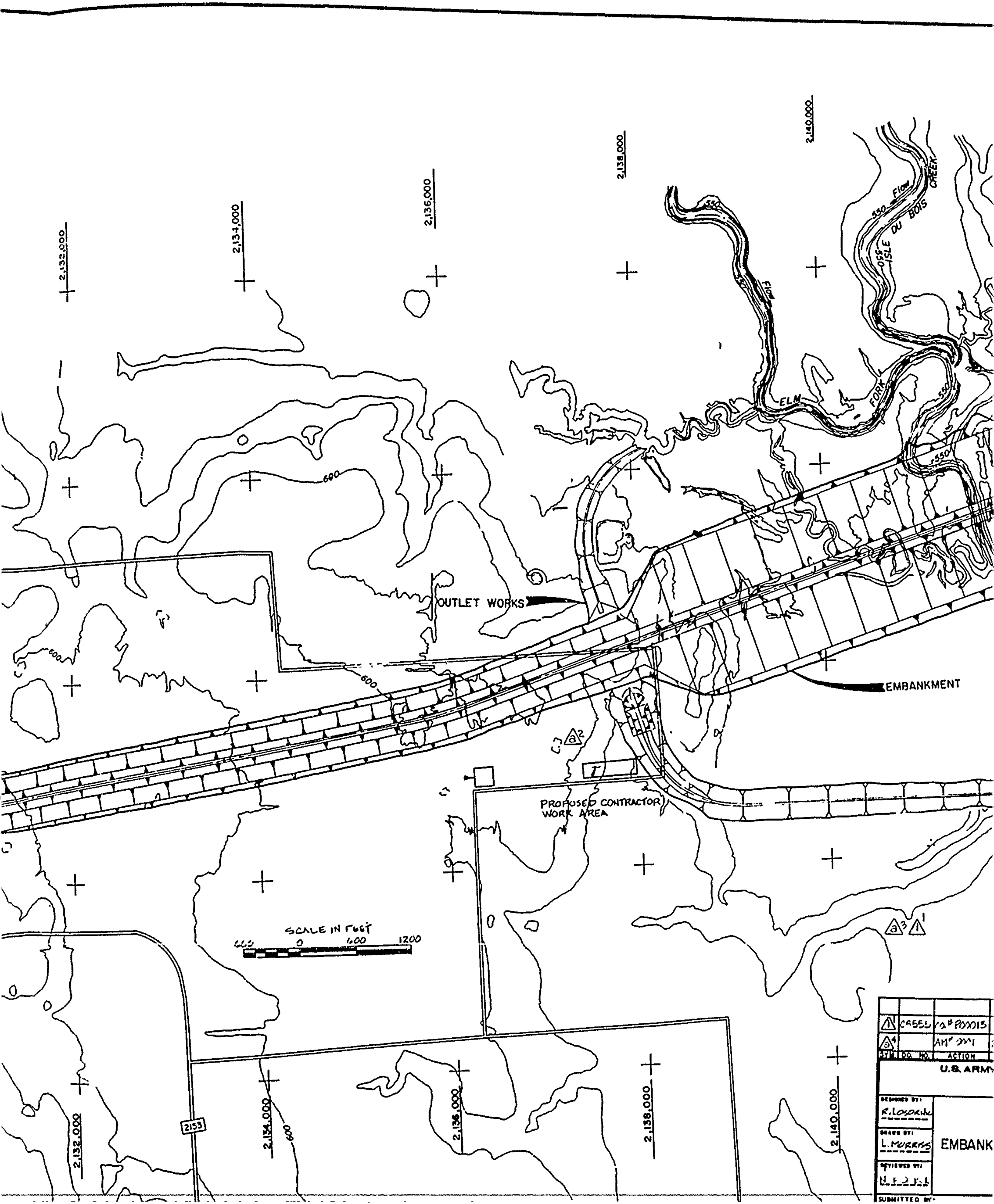
DESIGNED BY:
DRAWN BY:
REVIEWED BY:

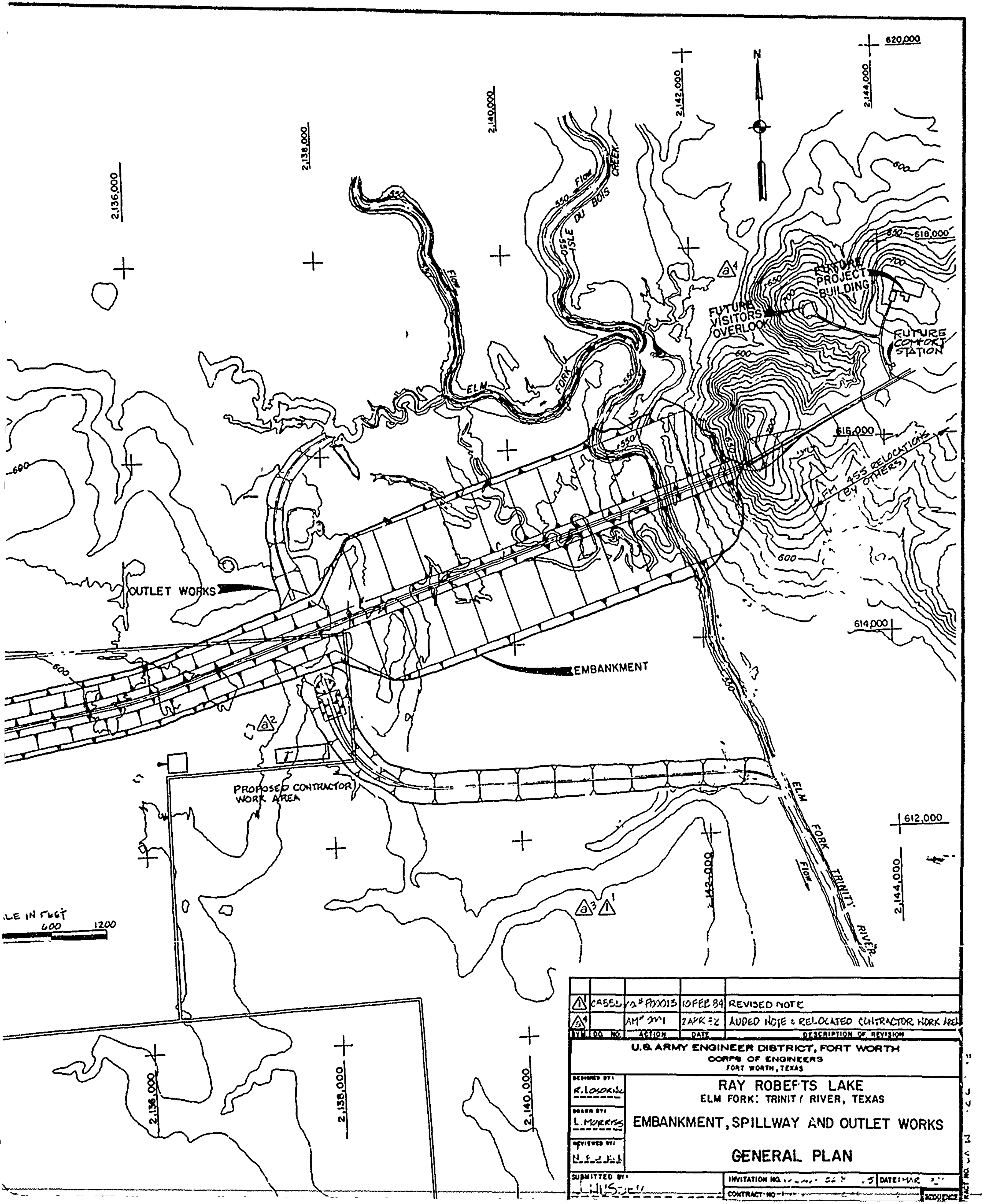
RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS
FOUNDATION REPORT
LAKE MAP AND VICINITY MAP

SUBMITTED BY:
INVITATION NO.
DATE:
CONTRACT NO.
SEQUENCE



SPILLWAY
FM 455 RELOCATIONS
(BY OTHERS)
616,000
614,000
612,000
610,000
2,124,000
2,126,000
2,128,000
2,130,000
2,132,000
650
700
600
2153
CULP


2,132,000
2,134,000
2,136,000
2,138,000
2,140,000
ELM FORK
ISLE DU BOIS CREEK
550
600
FLOW
OUTLET WORKS
EMBANKMENT
PROPOSED CONTRACTOR WORK AREA
SCALE IN FEET
600 0 600 1200
2153
CASSELL
AMT
SYM. DO. NO. ACTION
U.S. ARMY
DESIGNED BY: R. LOSORKIE
DRAWN BY: L. MORRISS
REVIEWED BY:
SUBMITTED BY:
EMBANK



SYM.	DO. NO.	ACTION	DATE	DESCRIPTION OF REVISION
⚠1	CASSL	A# P00013	10 FEB 84	REVISED NOTE
⚠a4		AM# 0001	2 APR 82	ADDED NOTE & RELOCATED CONTRACTOR WORK AREA

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

DESIGNED BY: R.LOSORNK
DRAWN BY: L.MORRIS
REVIEWED BY: N. [illegible]

RAY ROBERTS LAKE
ELM FORK TRINITY RIVER, TEXAS

EMBANKMENT, SPILLWAY AND OUTLET WORKS

GENERAL PLAN

SUBMITTED BY:
INVITATION NO. [illegible] .5
DATE: MAR [illegible]
CONTRACT NO.

CORPS OF ENGINEERS

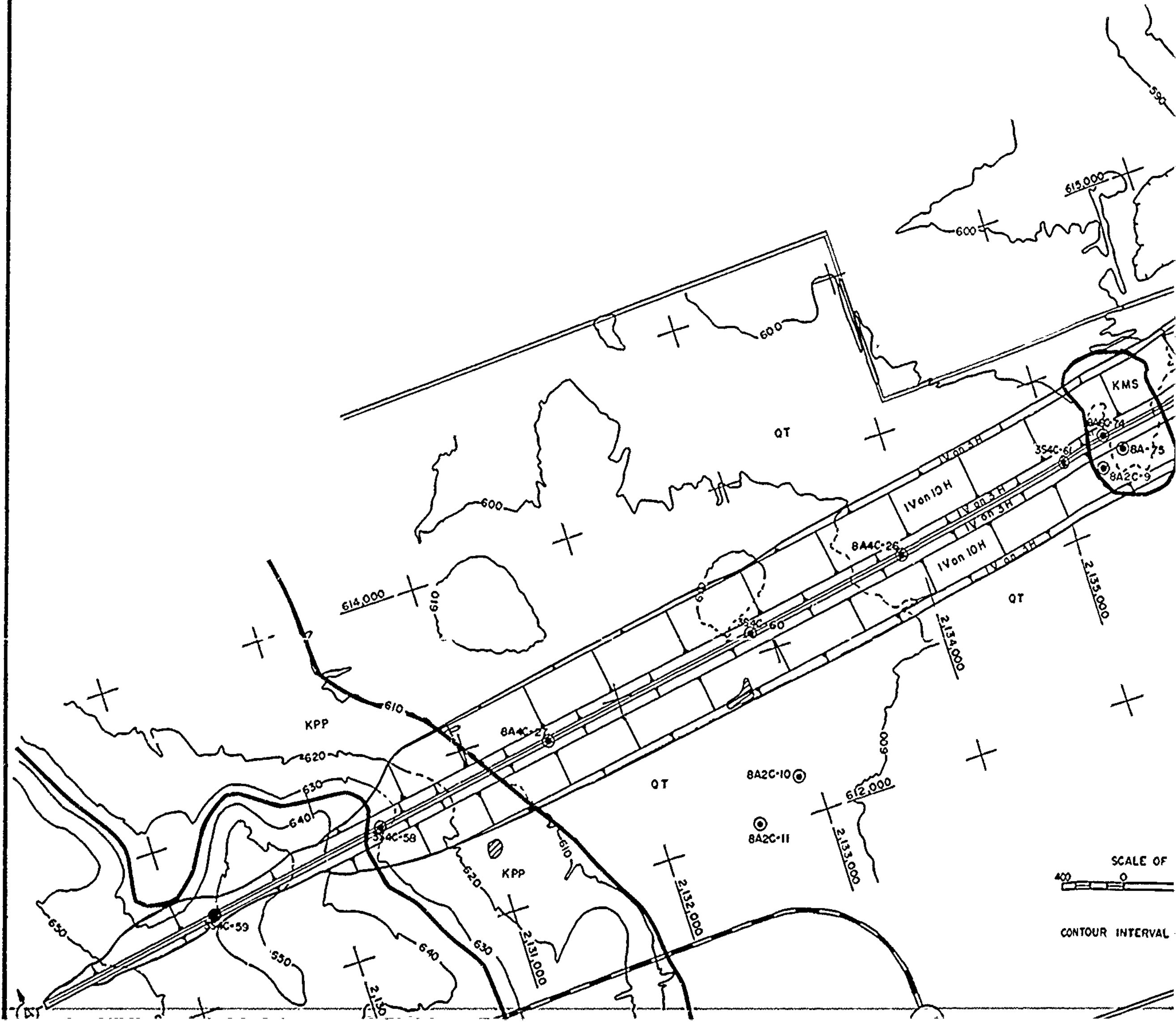
LEGEND

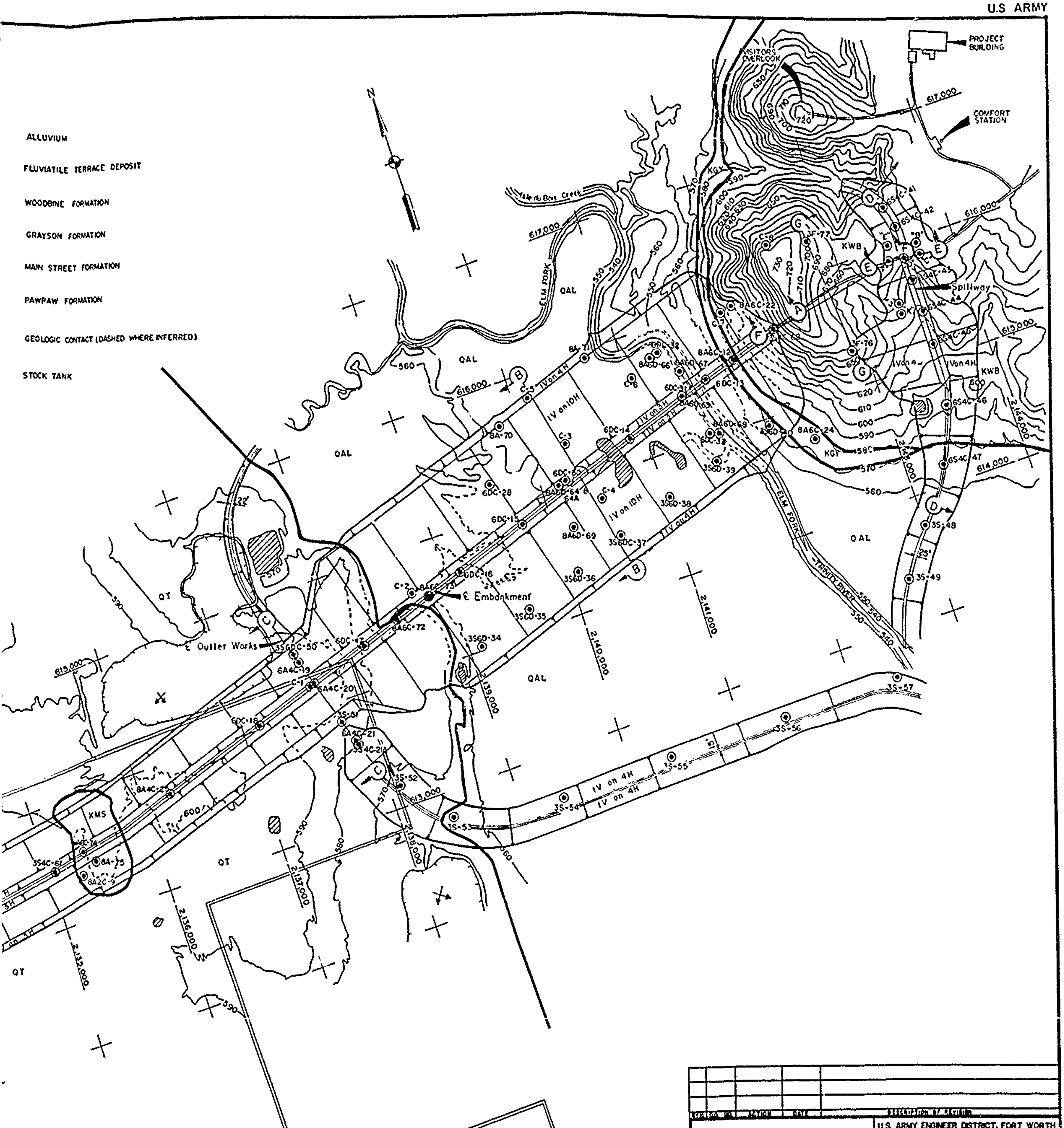
3F	3-INCH FISHTAIL BORING
8A	8-INCH AUGER BORING
3S	3-INCH SHELBY TUBE
4C	4-INCH CORE BORING
6C	6-INCH CORE BORING
6D	6-INCH DENISON BORING
═	COUNTY ROAD (GRAVEL)
▬	FARM TO MARKET ROAD (PAVED)
✕	GRAVEL PIT

RECENT	QAL	ALLUVIUM
PLEIS	QT	FLUVIATILE TERRACE DEP
U. CRET	KWB	WOODBINE FORMATION
L. CRETACEOUS	KGY	GRAYSON FORMATION
	KMS	MAIN STREET FORMATION
	KPP	PAWPAW FORMATION
	~	GEOLOGIC CONTACT (DASHED
	▨	STOCK TANK

NOTES:

1. SEE PLATES III-6 THROUGH III-32 FOR DETAILED LOGS OF BORINGS.
2. GEOLOGY COMPILED FROM SUBSURFACE EXPLORATION AND SURFACE MAPPING.





CONTOUR INTERVAL - 10 FEET

SYMBOL NO.	ACTION	DATE	DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

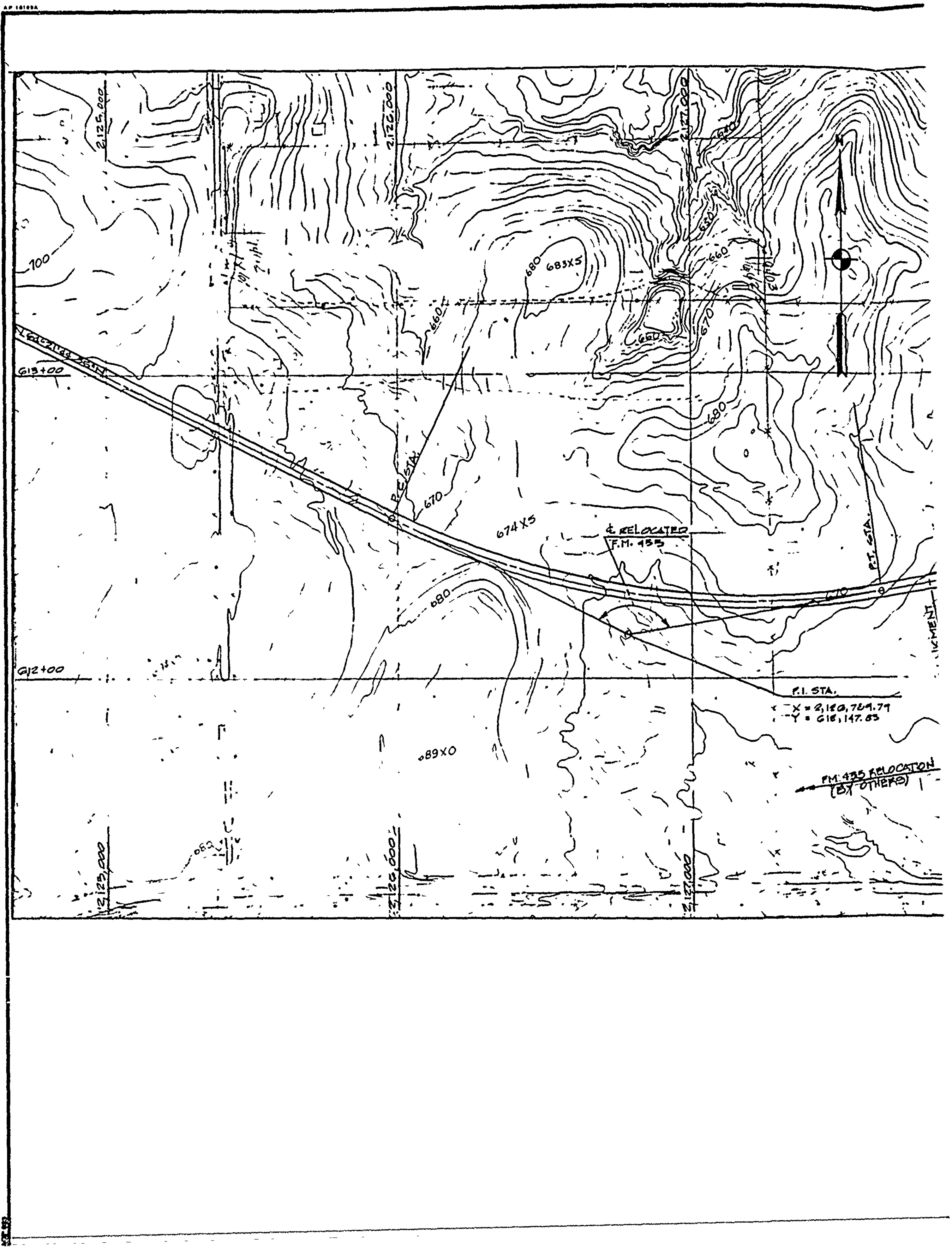
DESIGNED BY: H.BARNETT
DRAWN BY: C. KIRBY
REVIEWED BY: R. BEHM
SUBMITTED BY: ROBERT C. BEHM

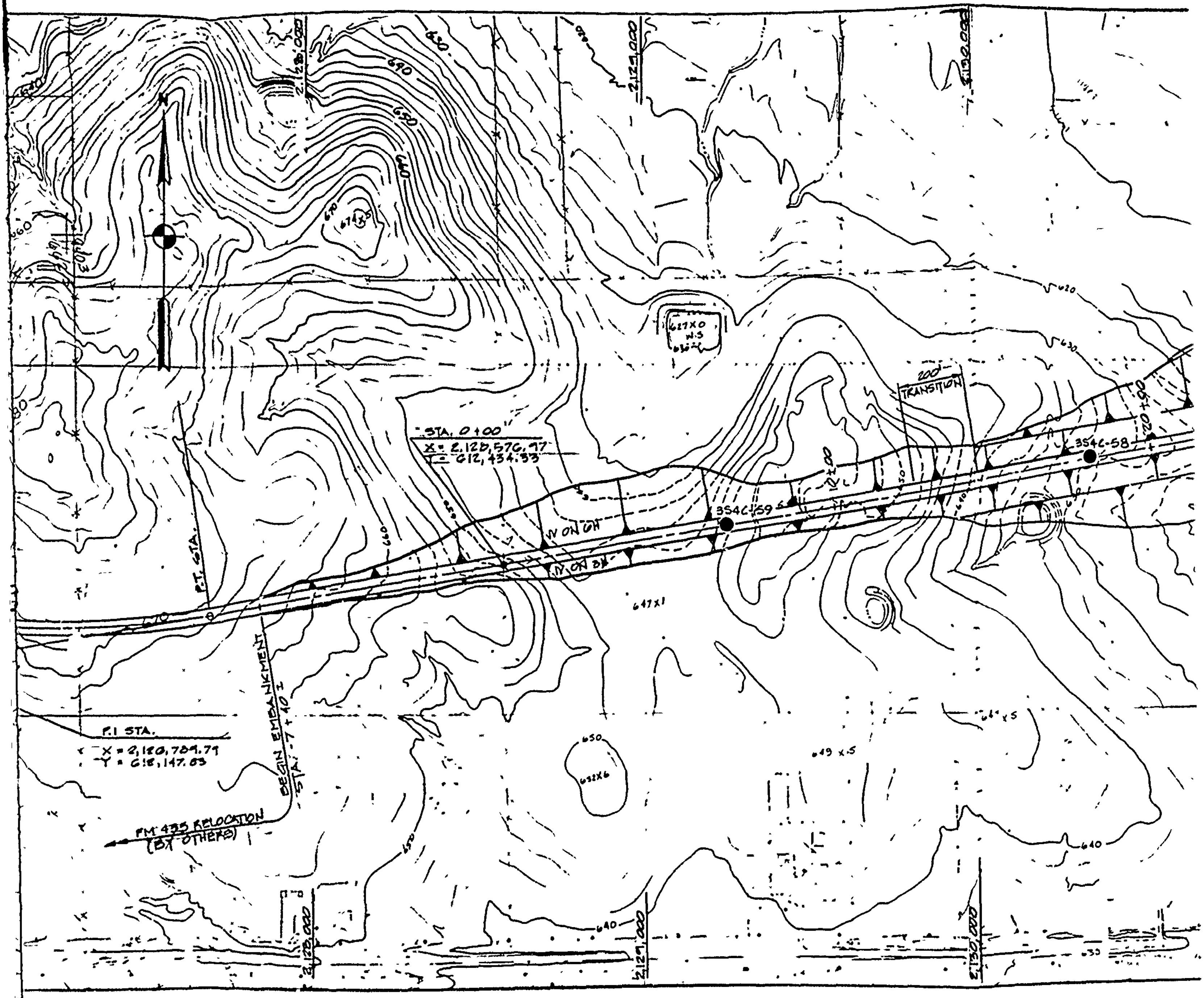
RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS

FOUNDATION REPORT

DAM SITE GEOLOGY

SOL. NO.
DATED:
CONTR. NO.
SEQUENCE NO.

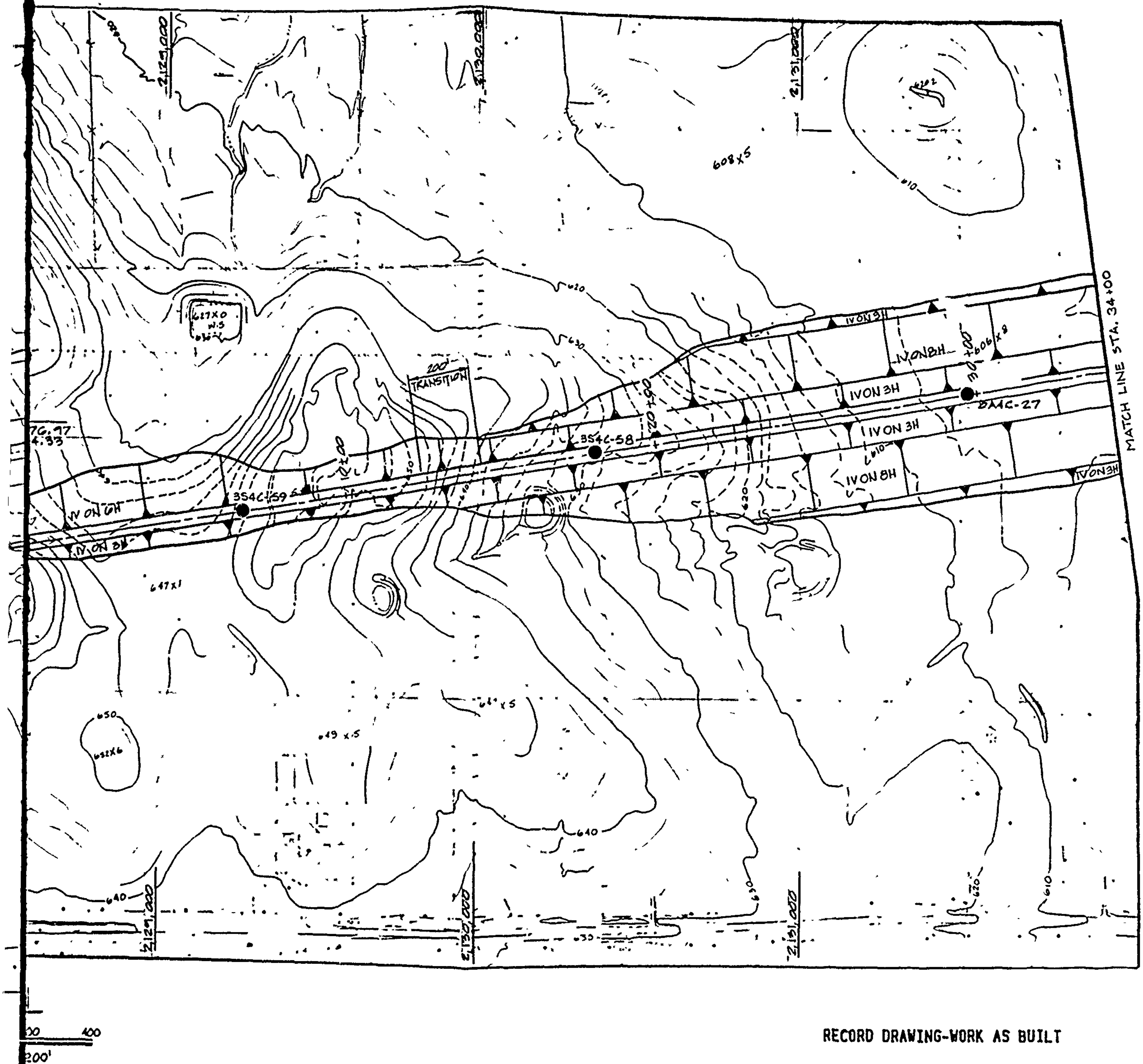

AP 10109A
2,125,000
2,126,000
2,127,000
100
683X5
680
660
630
670
660
680
613+00
612+00
P.C. STA.
670
674X5
680
℄ RELOCATED
F.M. 455
P.T. STA.
670
P.I. STA.
X = 2,180,789.79
Y = 618,147.63
689X0
FM 455 RELOCATION
(BY OTHERS)
KMENT



PLAN

200 100 0 200 400

SCALE: 1" = 200'



RECORD DRAWING-WORK AS BUILT

SYM.	DO. NO.	ACTION	DATE	DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

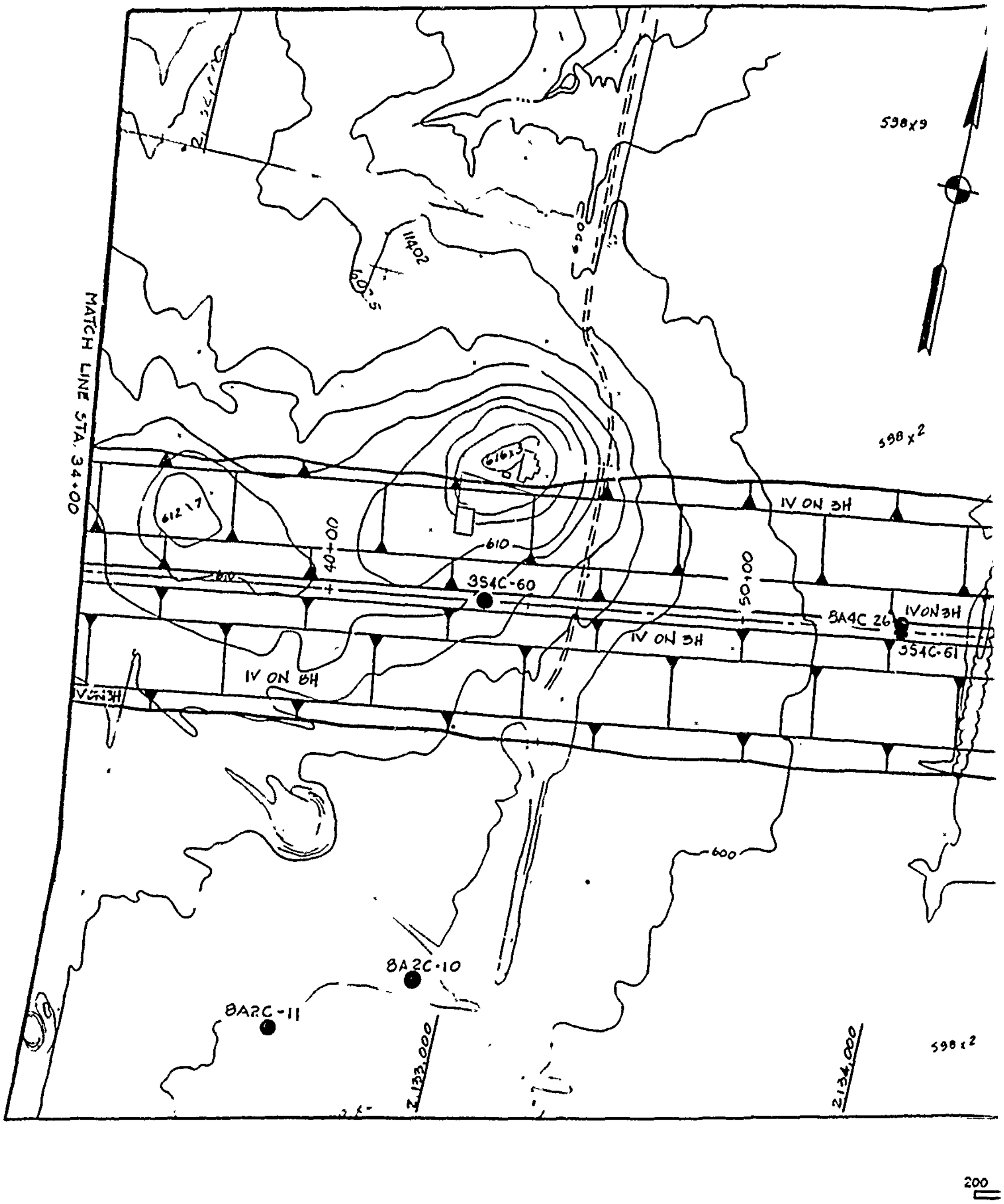
DESIGNED BY: A. BRANCH
DRAWN BY: D. BAILEY
REVIEWED BY: A. BRANCH

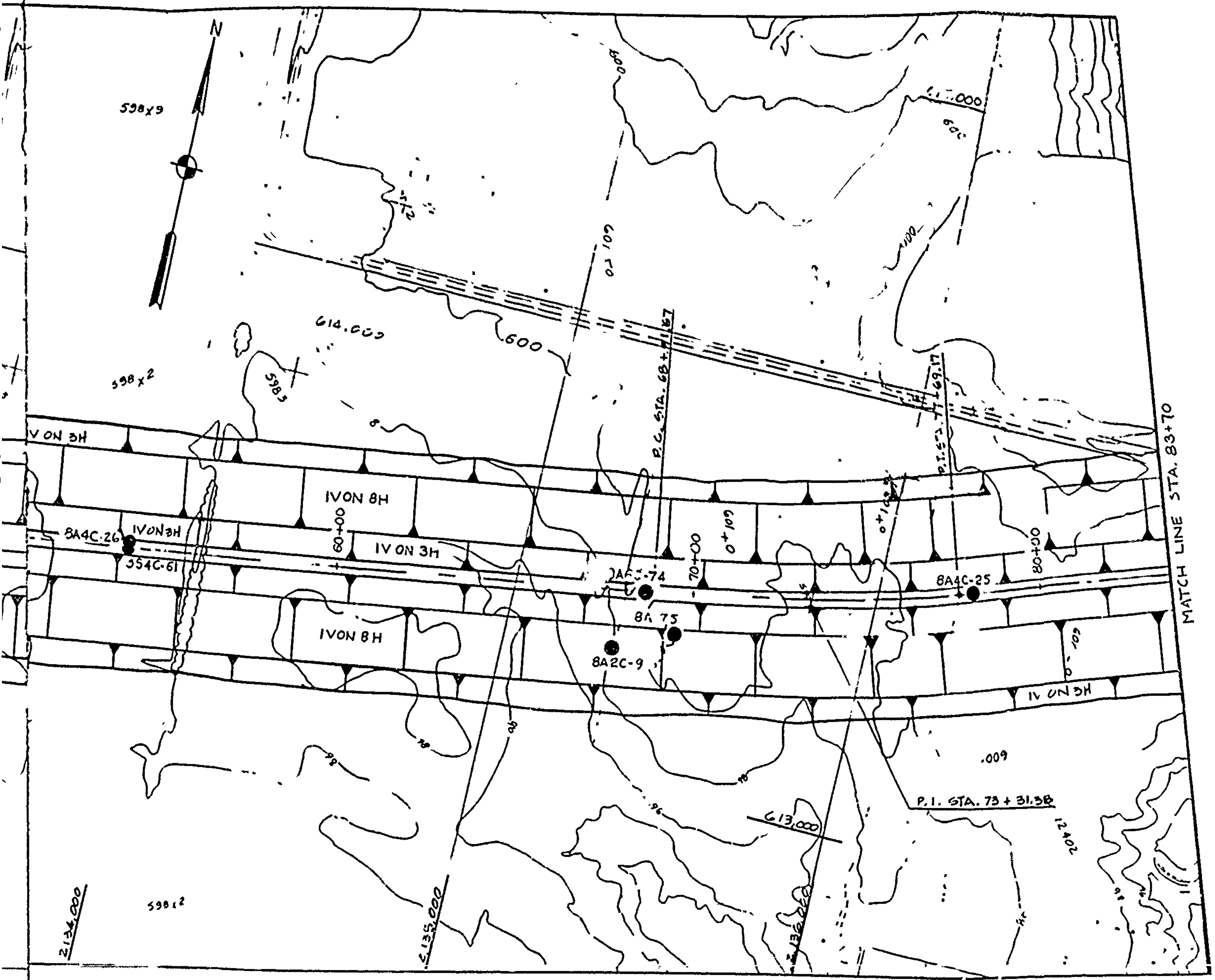
RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS

EMBANKMENT
PLAN OF BORINGS I

SUBMITTED BY: H. KARBS

INVITATION NO. DACW63-82-B-0026
DATE: MAR
CONTRACT NO. DACW63-82-C-0083

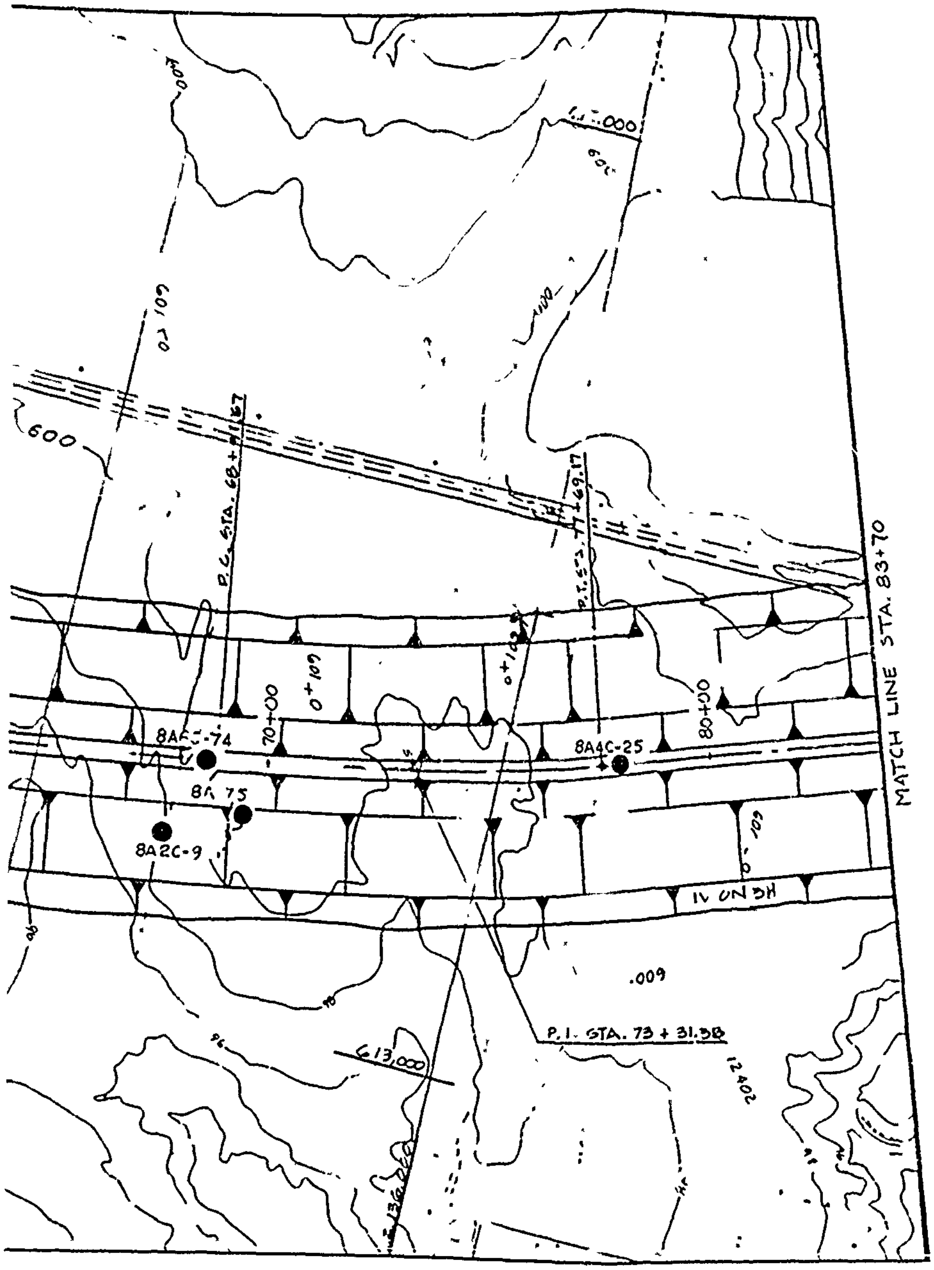

MATCH LINE STA. 34+00
598x9
11402
60.5
600
616.3
612.7
610
610
40+00
50+00
IV ON 3H
3S4C-60
8A4C 26
IVON3H
3S4C-61
IV ON 3H
IV ON 8H
IVON3H
600
8A2C-10
8A2C-11
2,133,000
2,134,000
598x2
598x2
200



PLAN

200 100 0 200 400

SCALE: 1" = 200'



RECORD DRAWING-WORK AS BUILT

SYM	DO. NO.	ACTION	DATE	DESCRIPTION OF REVISION

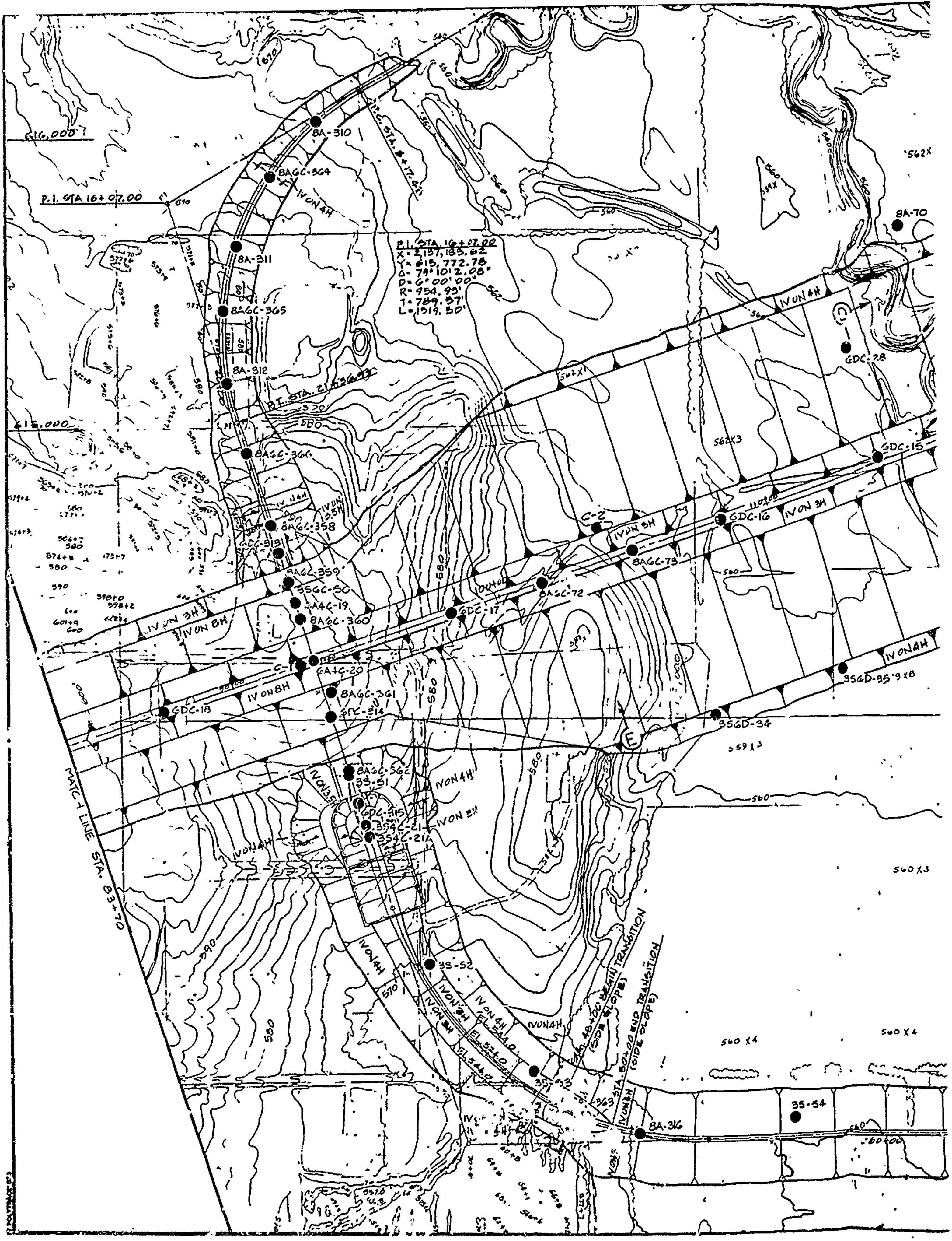
U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

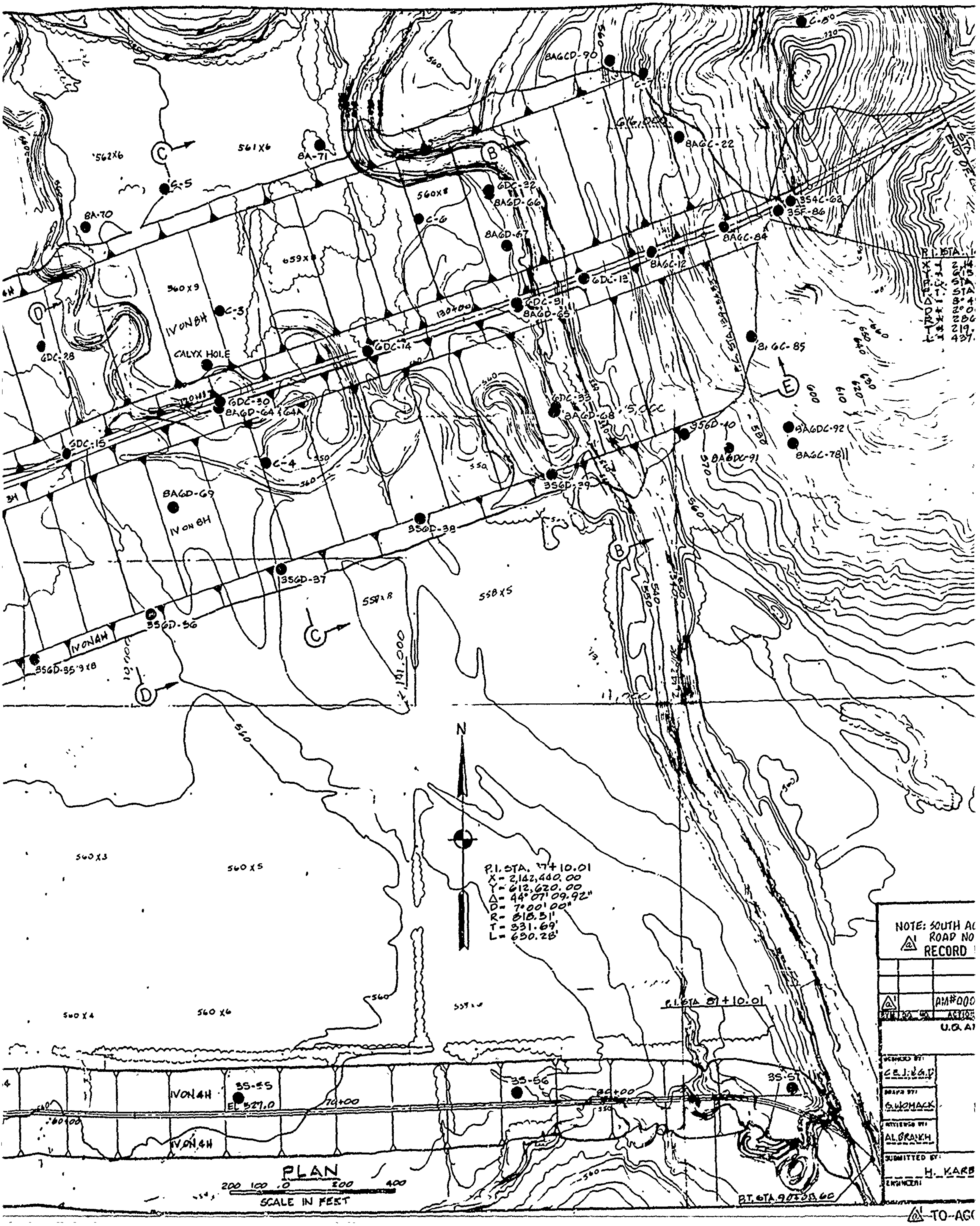
DESIGNED BY: A. BRANCH
DRAWN BY: D BAILEY
REVIEWED BY: A. BRANCH

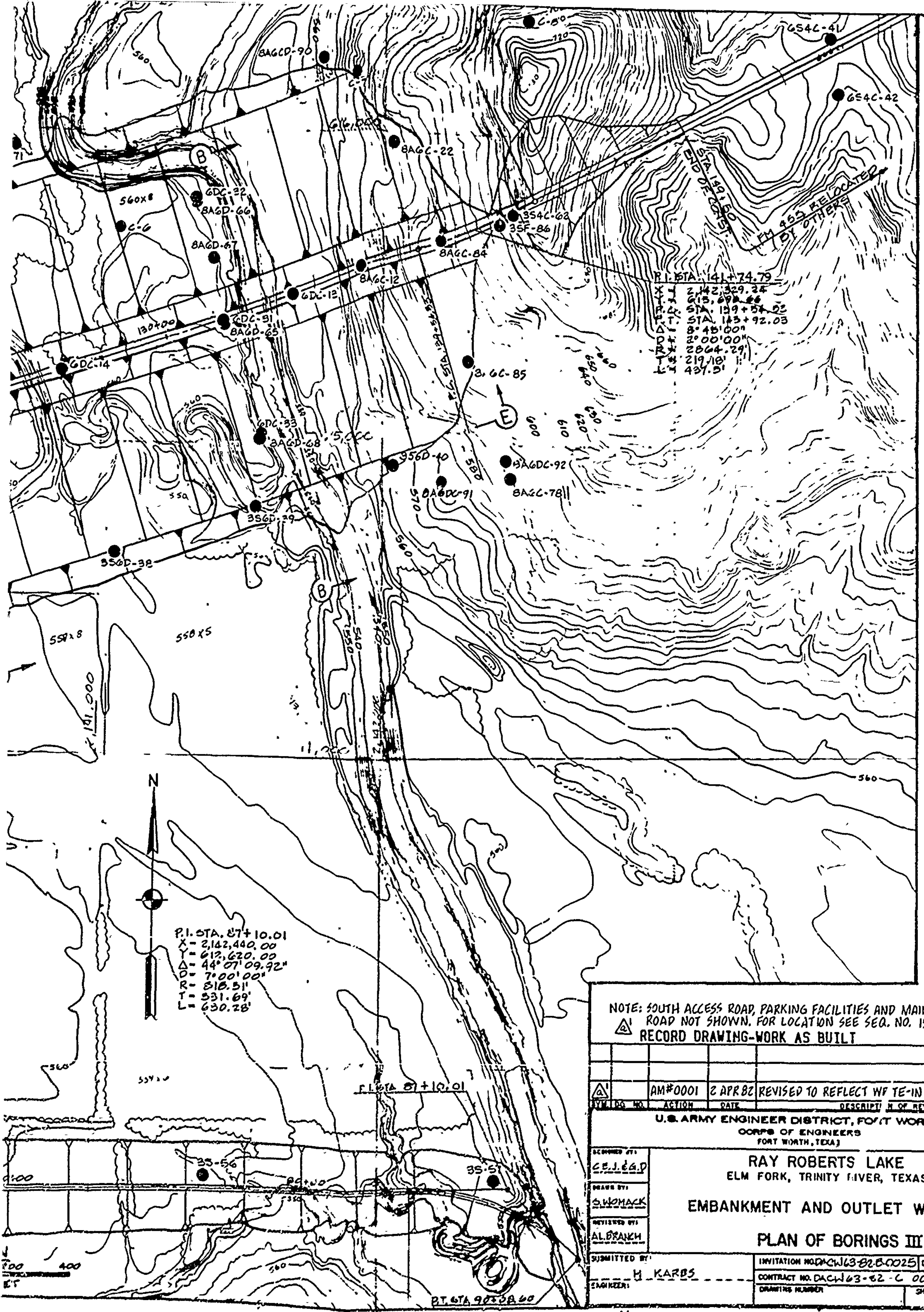
RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS

EMBANKMENT
PLAN OF BORINGS II

SUBMITTED BY:
INVITATION NO. DACW63-82-B-0024 DATE: MAR


616,000
615,000
P.I. STA 16+07.00
P.I. STA 16+07.00
X=2,137,183.62
Y=615,772.78
Δ=79°10'12.08"
D=6°00'00"
R=954.93'
T=789.37'
L=1319.30'
P.I. STA. 21+26.93
8A-310
8AGC-364
8A-311
8AGC-365
8A-312
8AGC-366
8AGC-358
GDC-313
8AGC-359
35GC-50
6AGC-19
8AGC-360
6AGC-20
8AGC-361
GDC-314
8AGC-362
35-51
GDC-315
354C-21
354C-21A
35-52
35-53
8A-316
35-54
GDC-18
GDC-17
8AGC-72
8AGC-73
GDC-16
GDC-15
GDC-28
8A-70
C-1
C-2
356D-35
356D-34
IV ON 4H
IV ON 3H
IV ON 8H
IV ON 3.5H
EL 524.0
EL 544.0
STA. 48+00 BEGIN TRANSITION (SIDE SLOPE)
STA 50+00 END TRANSITION (SIDE SLOPE)
MATC-1 LINE STA. 83+70
60+00
560
562X
562X3
560X3
560 X4
559X3
570
580
590
610


BAGCD-90
C-80
C-7
BAGC-22
8A-71
B
C
562X6
561X6
560X8
S-5
GDC-32
BAGD-66
8A-70
C-6
BAGD-67
3S4C-62
3SF-86
BAGC-84
659X8
BAGC-12
GDC-13
560X9
GDC-31
BAGD-65
D
C-3
IVONBH
130+00
GDC-28
GDC-14
CALYX HOLE
8AGC-85
E
GDC-30
BAGD-64
GDC-33
BAGD-68
3SGD-40
BAGDC-92
GDC-15
C-4
BAGDC-91
BAGC-78
3SGD-39
BAGD-69
IV ON BH
3SGD-38
3SGD-37
558X8
558X5
3SGD-36
IVONBH
3SGD-35
D
560
N
P.I. STA. 77+10.01
X= 2,142,440.00
Y= 612,620.00
Δ= 44°07'09.92"
D= 7°00'00"
R= 818.51'
T= 331.69'
L= 630.28'
560X3
560X5
560X4
560X6
P.I. STA. 81+10.01
3S-55
EL 527.0
70+00
3S-56
80+00
3S-57
IVONBH
PLAN
200 100 0 200 400
SCALE IN FEET
P.T. STA. 90+03.60
NOTE: SOUTH AC
ROAD NO
RECORD
AM#000
U.Q. A
CHECKED BY:
C.E.J.; V.G.D.
DRAWN BY:
G. WOMACK
REVIEWED BY:
AL.GRAICH
SUBMITTED BY:
H. KARB
ENGINEER
TO-AG



NOTE: SOUTH ACCESS ROAD, PARKING FACILITIES AND MAINTENANCE ROAD NOT SHOWN. FOR LOCATION SEE SEQ. NO. 157 AND 158.

⚠ RECORD DRAWING-WORK AS BUILT

SYM.	DO. NO.	ACTION	DATE	DESCRIPTION OF REVISION
⚠		AM#0001	2 APR 82	REVISED TO REFLECT WF TE-IN CHANGE

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

DESIGNED BY: C.E.J. & G.D.
DRAWN BY: S. WOMACK
REVISED BY: AL. BRANCH
SUBMITTED BY: H. KARBS
ENGINEER:

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS

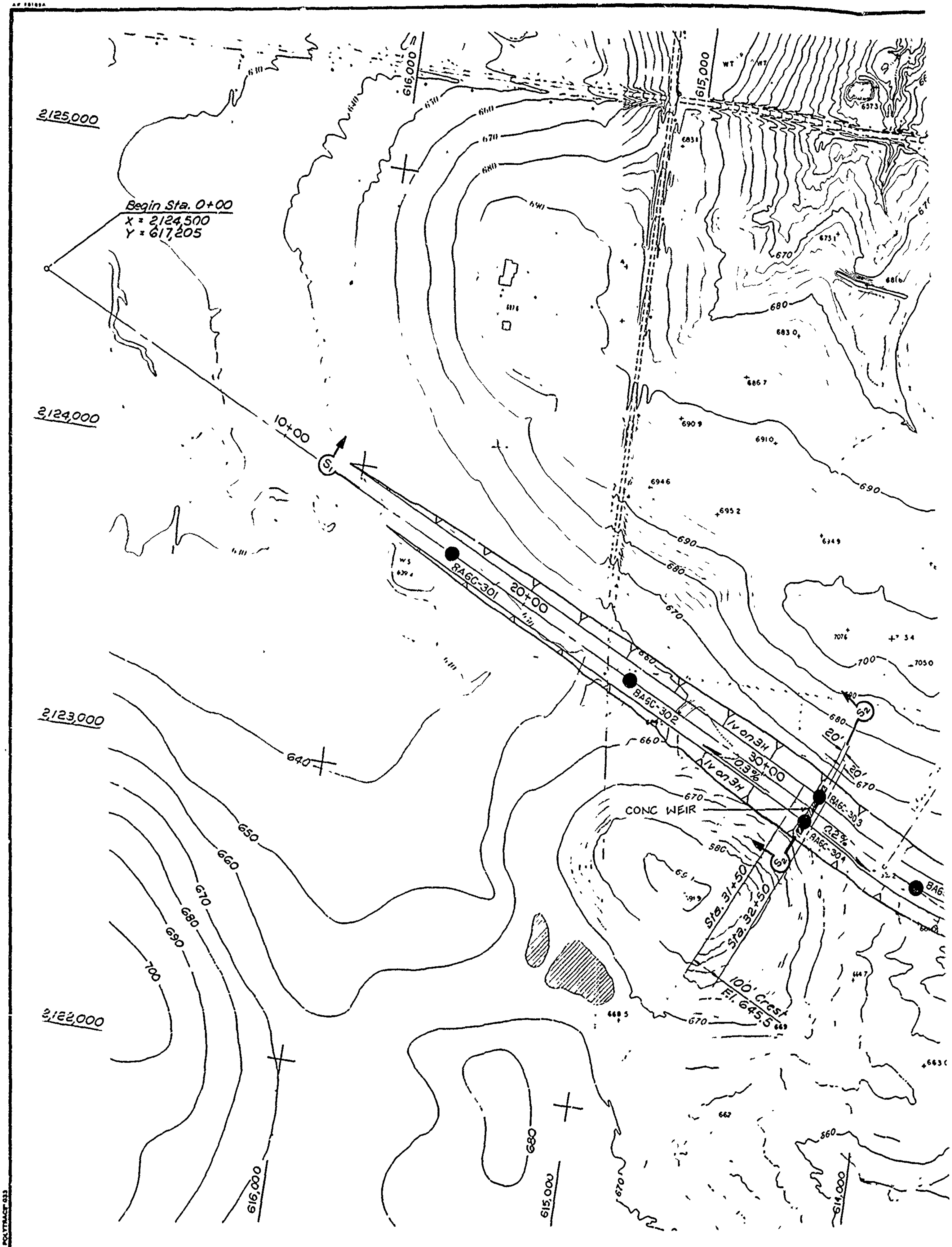
EMBANKMENT AND OUTLET WORKS

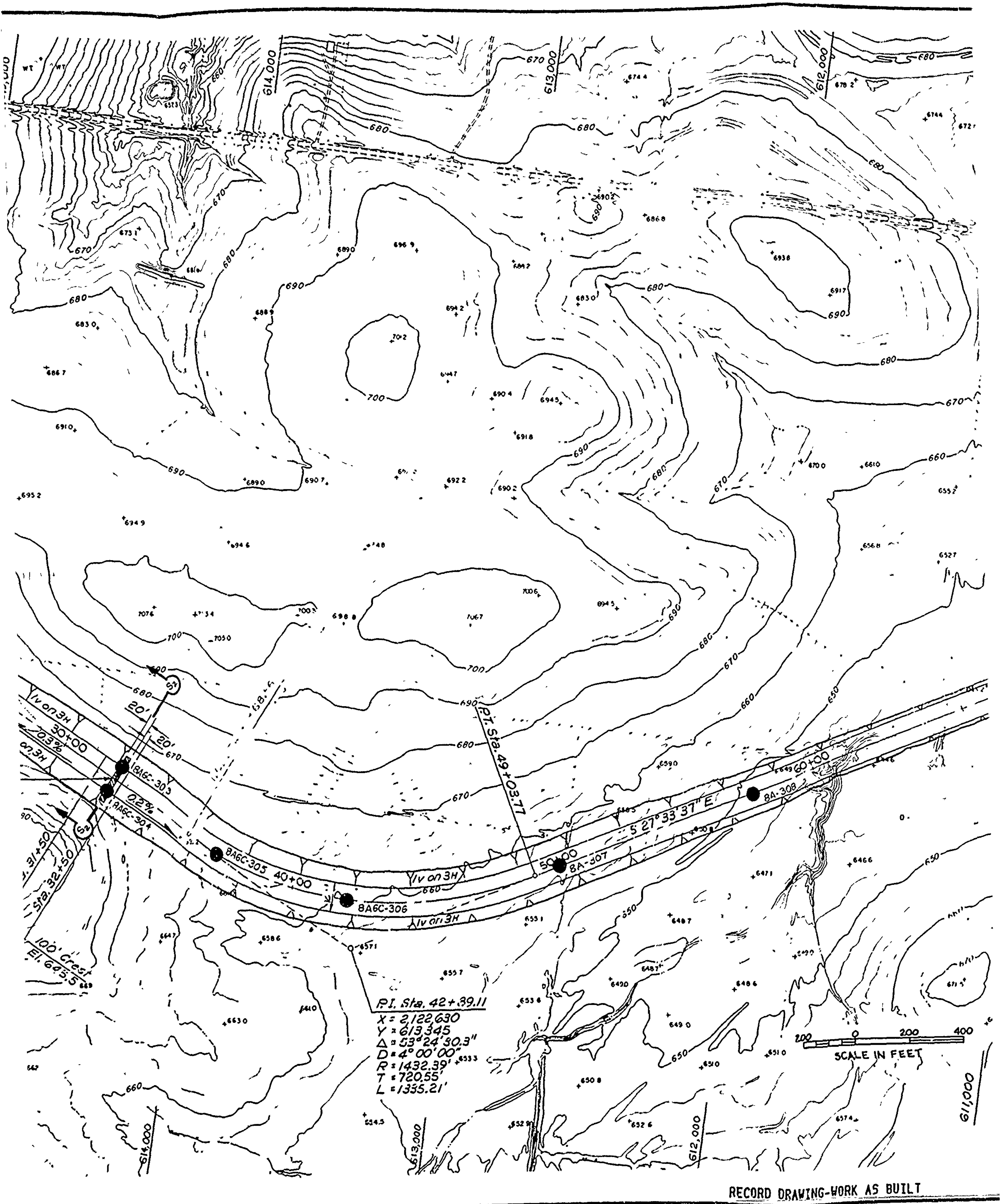
PLAN OF BORINGS III

INVITATION NO. DACW63-82-B-0025
DATE: MAR. 1982
CONTRACT NO. DACW63-82-C-0083
DRAWING NUMBER
SHEET NO. OF
SEQUENCE NO. 6

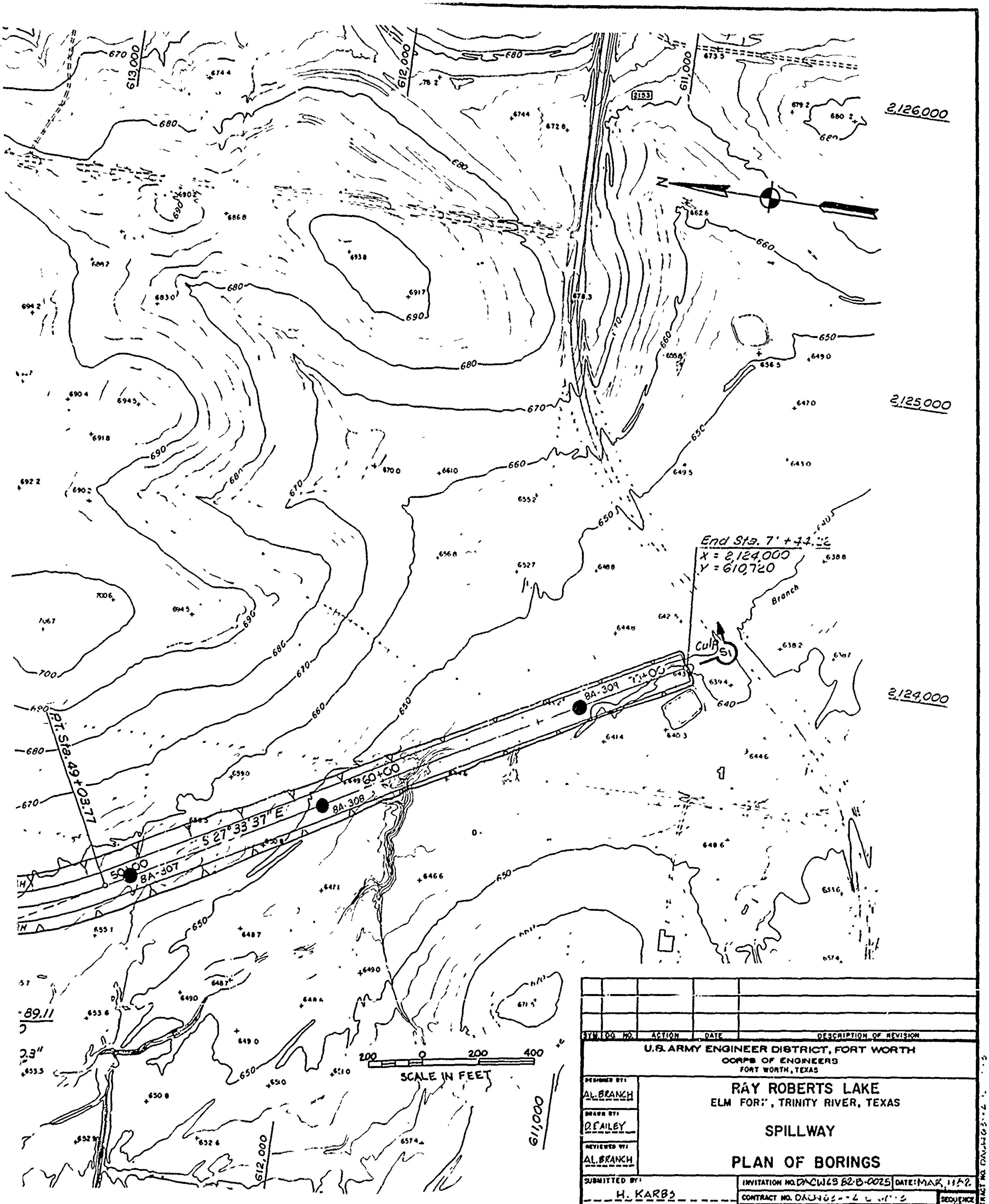
CONTRACT NO. DACW63-82-C-0083

⚠ TO ACCOMPANY FOUNDATION REPORT


2,125,000
2,124,000
2,123,000
2,122,000
616,000
615,000
614,000
Begin Sta. 0+00
X = 2,124,500
Y = 617,205
10+00
S1
20+00
BA6C-301
BA6C-302
1v on 3H
.03%
30+00
1v on 3H
20'
20'
S2
BA6C-303
CONC WEIR
.02%
BA6C-304
S3
Sta. 31+50
Sta. 32+50
100' Crest
El. 645.5
640
650
660
670
680
690
700



RECORD DRAWING-WORK AS BUILT



SYM.	DO. NO.	ACTION	DATE	DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

DESIGNED BY: AL. BRANCH
DRAWN BY: D. FAILEY
REVIEWED BY: AL. BRANCH

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS

SPILLWAY

PLAN OF BORINGS

SUBMITTED BY: H. KARBS
INVITATION NO. DACW63 82-B-0025
DATE: MAR. 1982
CONTRACT NO. DACW63-[illegible]
DRAWING NUMBER
SHEET NO. OF
SEQUENCE NO. 7
CONTRACT NO. DACW63-[illegible]

RECORD DRAWING-WORK AS BUILT

TO ACCOMPANY FOUNDATION REPORT

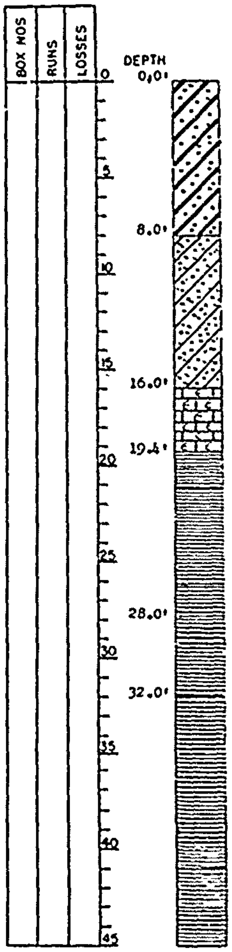
SWDR-C-1. -

UNITED STATES ENGINEER OFFICE
ENGINEERING DIVISION
FIELD INVESTIGATIONS SECTION
GALVESTON, TEXAS

LOG OF CORE DRILLING

Site Aubrey
Date 20 August 1946
Sheet 1 of 2
C.L. Sta. -07 24

Hole No. C-1 Drill No.	Location X= Y=
Type of Bit	Elevation of Top of Hole 597.2'
Size of Core 2-inch	Depth of Overburden 16.0'
Method of Ovb. Sampling Earth Auger	Elevation of Top of Bedrock 581.2'
Set of Casing	Pulled Casing Yes ( ) No ( )
Depth to Water Table	Elevation of Water Table
Total Depth of Hole 97.0'	Elevation of Bottom of Hole 500.2'
Overburden Sampling 16.0' -	Core Drilling 81.0' % Recovery
Date Hole Started 4 January 1939	Date Hole Completed 6 January 1939
Number of Jars/Tubes 1	Marked Upper Elm Creek C.L. Sta. 0/00
Number of Boxes 3	Marked Upper Elm Creek C.L. Sta. 0/00
Classified by	Submitted by



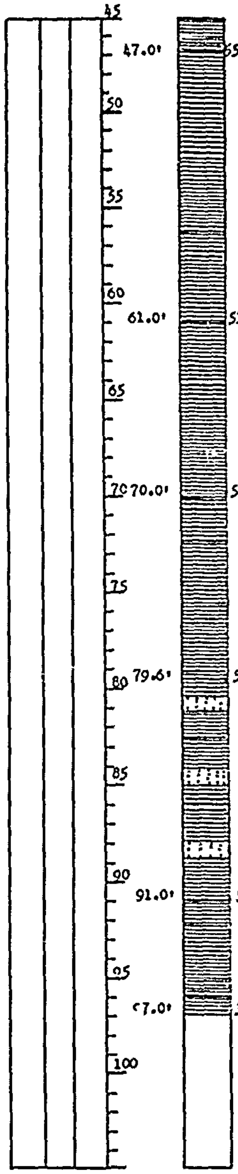
DEPTH	ELEV.	CLASSIFICATION AND REMARKS
0.0'	597.2'	0.0' to 8.0' CLAY, sandy, rust to dark brown.
8.0'	589.2'	8.0' to 16.0' SAND, clayey, tan.
16.0'	581.2'	16.0' to 19.4' LIMESTONE, fossiliferous, marly, brown to tan, surface or near surface outcrops of this material have been colored by iron oxide.
19.4'	577.8'	19.4' to 28.0' SHALE, sandy. - core washed away.
28.0'	569.2'	28.0' to 32.0' SHALE, blue, stained by iron oxide.
32.0'	565.2'	32.0' to 47.0' SHALE, compact, laminated, soft, thin shell seams.

SWDR-C-2'

OF CORE DRILLING CONT

Site Aubrey Dam

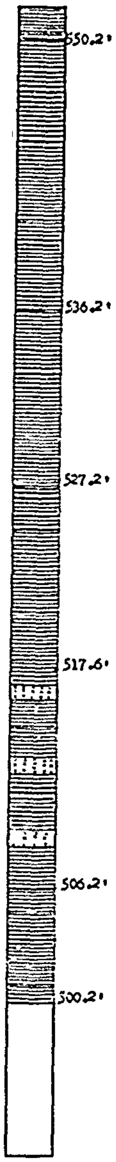
Hole No.



DEPTH	ELEV.	
47.0'	550.2'	47.0' to streaks,
61.0'	536.2'	61.0' to
70.0'	527.2'	70.0' to black, sh
79.6'	517.6'	79.6' to with blac
91.0'	506.2'	91.0' to 9 black, fos
97.0'	500.2'	Bo

OF CORE DRILLING CONTINUATION S ET

Hole No. C-1 Sheet 2 of 2



47.0' to 61.0' SHALE, black with gray sand streaks, pyrite.

61.0' to 70.0' SHALE, sandy, gray-black.

70.0' to 79.6' SHALE, compact, laminated, black, shell marl at 70.5'.

79.6' to 91.0' SANDSTONE, gray, cross-bedded with black shale, pyritic concretions.

91.0' to 97.0' SHALE, laminated, compact, black, fossiliferous, slightly sandy.

Bottom of hole

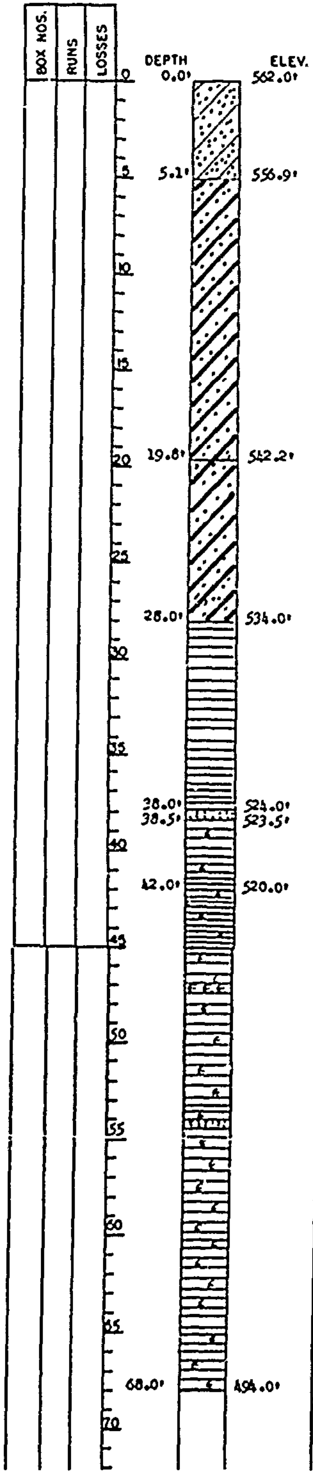
SWDR-C-1

UNITED STATES ENGINEER OFFICE
ENGINEERING DIVISION
FIELD INVESTIGATIONS SECTION
GALVESTON, TEXAS

LOG OF CORE DRILLING

Site Aubrey. Date 20 August 1946
Sheet 1 of 2

Hole No. C-2 Drill No.	Location C.L. Sta. 11/27
Type of Bit	Elevation of Top of Hole 562.0'
Size of Core 2-Inch	Depth of Overburden 28.0'
Method of Ovb. Sampling Earth Auger	Elevation of Top of Bedrock 534.0'
Set of Casing	Pulled Casing Yes ( ) No ( )
Depth to Water Table	Elevation of Water Table
Total Depth of Hole 68.0'	Elevation of Bottom of Hole 494.0'
Overburden Sampling 28.0'	Core Drilling 40.0' % Recovery
Date Hole Started 4 January 1939	Date Hole Completed 6 January 1939
Number of Jars/Tubes 1	Marked Upper Elm Creek C.L. Sta. 11/27
Number of Boxes 2	Marked Upper Elm Creek C.L. Sta. 11/27
Classified by	Submitted by



CLASSIFICATION AND REMARKS

0.0' to 5.1' SAND, clayey, rust.

5.1' to 19.8' CLAY, sandy, dark brown to black.

19.8' to 28.0' CLAY, sandy, yellow-blue.

28.0' to 38.0' SHALE, sandy, laminated, blue.

38.0' to 38.5' SANDSTONE, gray
38.5' to 42.0' SHALE, very sandy, gray.

42.0' to 68.0' SHALE, compact, slightly sandy, black, fossiliferous. Sandstone band from 54.0' to 54.5'.

Bottom of hole

SYM	DC	NO.

DESIGNED BY

DRAWN BY.

REVIEWED BY.

SUBMITTED BY

ENGINEER

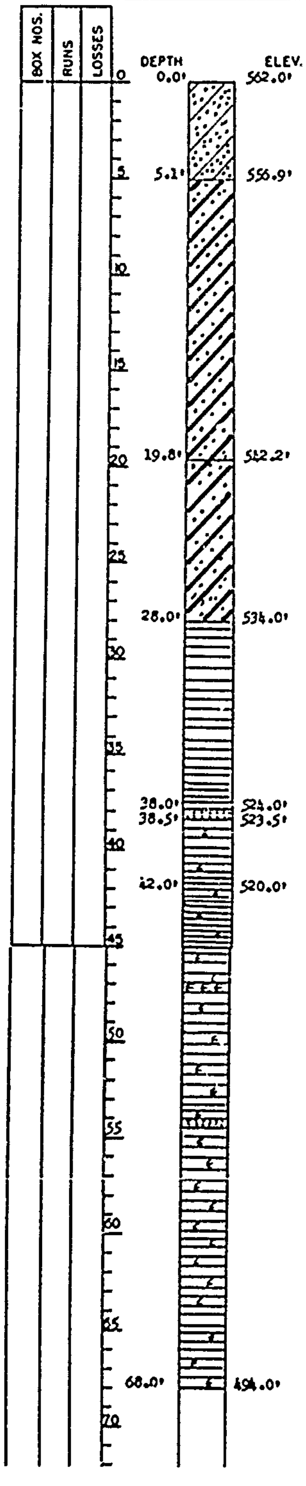
SWDR-C-1

UNITED STATES ENGINEER OFFICE
ENGINEERING DIVISION
FIELD INVESTIGATIONS SECTION
GALVESTON, TEXAS

LOG OF CORE DRILLING

Site Aubrey.
Date 20 August 1946
Sheet 1 of 2

Hole No. C-2 Drill No.	Location C.L. Sta. 11/27
Type of Bit	Elevation of Top of Hole 562.0'
Size of Core 2-Inch	Depth of Overburden 28.0'
Method of Ovb. Sampling Earth Auger	Elevation of Top of Bedrock 534.0'
Set of Casing	Pulled Casing Yes ( ) No ( )
Depth to Water Table	Elevation of Water Table
Total Depth of Hole 68.0'	Elevation of Bottom of Hole 494.0'
Overburden Sampling 28.0'	Core Drilling 40.0' % Recovery
Date Hole Started 4 January 1939	Date Hole Completed 6 January 1939
Number of Jars/Tubes 1	Marked Upper Elm Creek C.L. Sta. 11/27
Number of Boxes 2	Marked Upper Elm Creek C.L. Sta. 11/27
Classified by	Submitted by



CLASSIFICATION AND REMARKS

0.0' to 5.1' SAND, clayey, rust.

5.1' to 19.8' CLAY, sandy, dark brown to black.

19.8' to 28.0' CLAY, sandy, yellow-blue.

28.0' to 38.0' SHALE, sandy, laminated, blue.

38.0' to 38.5' SANDSTONE, gray
38.5' to 42.0' SHALE, very sandy, gray.

42.0' to 68.0' SHALE, compact, slightly sandy, black, fossiliferous. Sandstone band from 54.0' to 54.5'.

Bottom of hole

RECORD DRAWING-WORK AS BUILT

SYM	DO. NO.	ACTION	DATE	DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

DESIGNED BY
DRAWN BY
REVIEWED BY

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS
EMBANKMENT, SPILLWAY AND
OUTLET WORKS
LOGS OF BORINGS
C-1 AND C-2

SUBMITTED BY
ENGINEER
INVITATION NO. DACW63-82-B-0025
DATE MAR, 82
CONTRACT NO. DACW63-82-C-0093
DRAWING NUMBER
SHEET NO. 18
SEQUENCE NO. 8

TO ACCOMPANY FOUNDATION REPORT

SWDK-C-1

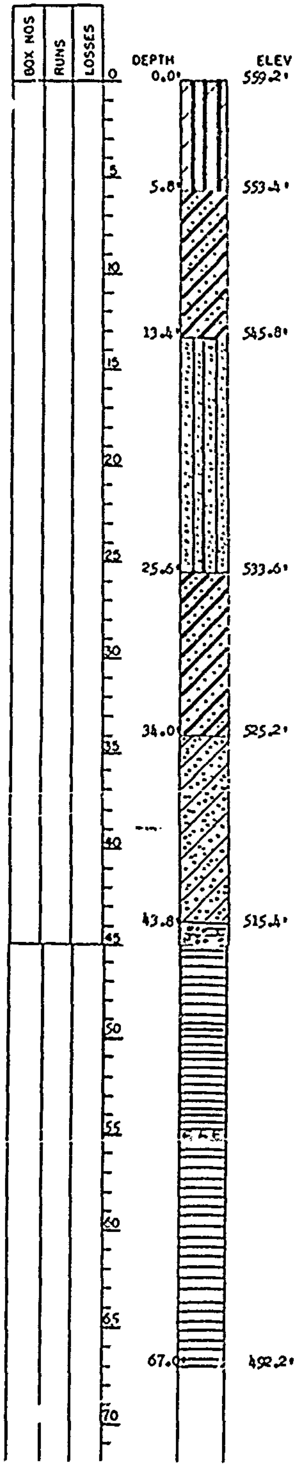
UNITED STATES ENGINEER OFFICE
ENGINEERING DIVISION
FIELD INVESTIGATIONS SECTION
GALVESTON, TEXAS

LOG OF CORE DRILLING

Site Aubrey

Date 20 August 1946
Sheet 1 of 2

Hole No. C-3 Drill No.	Location X= C.L. Sta. 28/00 Y=
Type of Bit	Elevation of Top of Hole 559.2'
Size of Core 2-Inch	Depth of Overburden 45.0'
Method of Ovb. Sampling Earth Auger	Elevation of Top of Bedrock 514.2'
Set of Casing	Pulled Casing Yes ( ) No ( )
Depth to Water Table	Elevation of Water Table
Total Depth of Hole 67.0'	Elevation of Bottom of Hole 492.2'
Overburden Sampling 45.0'	Core Drilling 22.0' % Recovery
Date Hole Started 7 January 1939	Date Hole Completed 10 January 1939
Number of Jars/Tubes 1	Marked Upper Elm Creek C.L. Sta. 28/00
Number of Boxes 1	Marked Upper Elm Creek C.L. Sta. 28/00
Classified by	Submitted by



CLASSIFICATION AND REMARKS

0.0' to 5.8' SILT, clayey, dark brown.

5.8' to 13.4' CLAY, sandy, brown.

13.4' to 25.6' SAND, silty, dark tan.

25.6' to 34.0' CLAY, sandy, light brown.

34.0' to 43.8' SAND, clayey, slate, tan to blue.

43.8' to 45.0' LIMESTONE GRAVEL

45.0' to 67.6' SHALE, black with cross-bedded shale and sand zones.

Bottom of hole

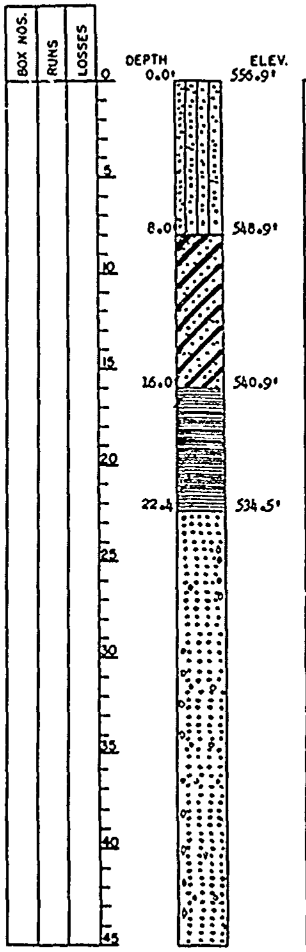
SWDK-C-1

UNITED STATES E
ENGINEERIN
FIELD INVESTIGA
GALVESTO

LOG OF CORE

Site Aubrey

Hole No. C-4 Drill No.
Type of Bit
Size of Core 2-Inch
Method of Ovb. Sampling Earth Auger
Set of Casing
Depth to Water Table
Total Depth of Hole 82.0'
Overburden Sampling 16.0'
Date Hole Started 6 January 1939
Number of Jars/Tubes 2
Number of Boxes 1
Classified by



0.0'

8.0'

16.0
blue

22.4

SWDR-C-1

UNITED STATES ENGINEER OFFICE
ENGINEERING DIVISION
FIELD INVESTIGATIONS SECTION
GALVESTON, TEXAS

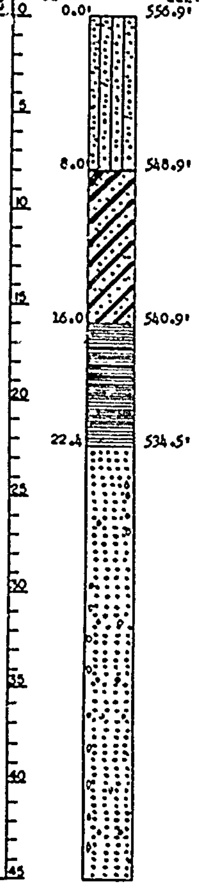
LOG OF CORE DRILLING

Date 20 August 1946
Site Aubrey   Sheet 1 of 2
C.L. Sta. 28/00 500' below.

Hole No. C-4 Drill No.
Type of Bit
Size of Core 2-Inch
Method of Ovb. Sampling Earth Auger
Set of Casing
Depth to Water Table
Total Depth of Hole 82.0'
Overburden Sampling 16.0'
Date Hole Started 6 January 1939
Number of Jars/Tubes 2
Number of Boxes 1
Classified by

Location X= Y=
Elevation of Top of Hole 556.9'
Depth of Overburden 16.0'
Elevation of Top of Bedrock 540.9'
Pulled Casing Yes ( ) No ( )
Elevation of Water Table
Elevation of Bottom of Hole 474.9'
Core Drilling 76.0' % Recovery
Date Hole Completed 10 January 1939
Marked Upper Elm Creek 500' below 28/00
Marked Upper Elm Creek 500' below 28/00
Submitted by

BOX NOS.	RUNS	LOSSES



CLASSIFICATION AND REMARKS

0.0' to 8.0' SAND, silty, dark brown.

8.0' to 16.0' CLAY, sandy, buff.

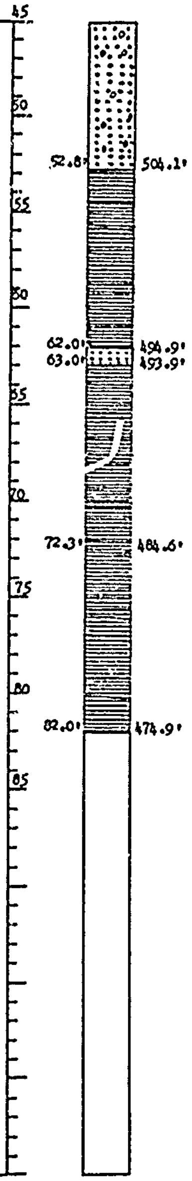
16.0' to 22.4' SHALE, compact, laminated, blue-black.

22.4' to 52.8' SANDSTONE, gravelly, tan.

SWDR-C-2

LOG OF CORE DRILLING CONTINUATION SHEET

Site Aubrey   Hole No C-4   Sheet 2 of 2



52.8' to 62.0' SHALE, compact, laminated, black. Shell marl at 57.0'.

62.0' to 63.0' SANDSTONE, pyritic, gray.
63.0' to 72.3' SHALE, gray, rotten.

72.3' to 82.0' SHALE, compact, laminated, black.

Bottom of hole

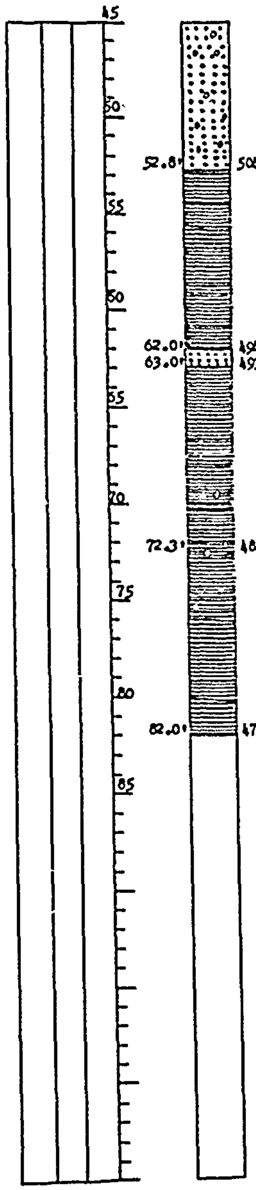
NOTE:

Additional subsurface explorations indicate top of rock shown on this boring is in error. Material from 16.0 to 22.4 is probably clay. Sandstone shown from 22.4 to 52.8 is probably sand, The geologic section reflects these changes. Nov. 1975

SWDX-C-2

LOG OF CORE DRILLING CONTINUATION SHEET

Site Aubrey
Hole No. C-4
Sheet 2 of 2



52.8' to 62.0' SHALE, compact, laminated, black. Shell marl at 57.0'.

62.0' to 63.0' SANDSTONE, pyritic, gray.
63.0' to 72.3' SHALE, gray, rotten.

72.3' to 82.0' SHALE, compact, laminated, black.

Bottom of hole

NOTE:

Additional subsurface explorations indicate top of rock shown on this boring is in error. Material from 16.0 to 22.4 is probably clay. Sandstone shown from 22.4 to 52.8 is probably sand, The geologic section reflects these changes. NOV 1975

RECORD DRAWING-WORK AS BUILT

SYM	DC NO	ACTION	DATE	DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

DESIGNED BY:
DRAWN BY
REVIEWED BY:

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS
EMBANKMENT, SPILLWAY AND
OUTLET WORKS
LOGS OF BORINGS
C-3 AND C-4

SUBMITTED BY
ENGINEER
INVITATION NO. DACW63-82-B-0025
DATE MAR, 1982
CONTRACT NO. DACW63-82-C-0082
DRAWING NUMBER
SHEET NO. OF
SEQUENCE NO. 9

TO ACCOMPANY FOUNDATION REPORT

SWDR-C-1 .

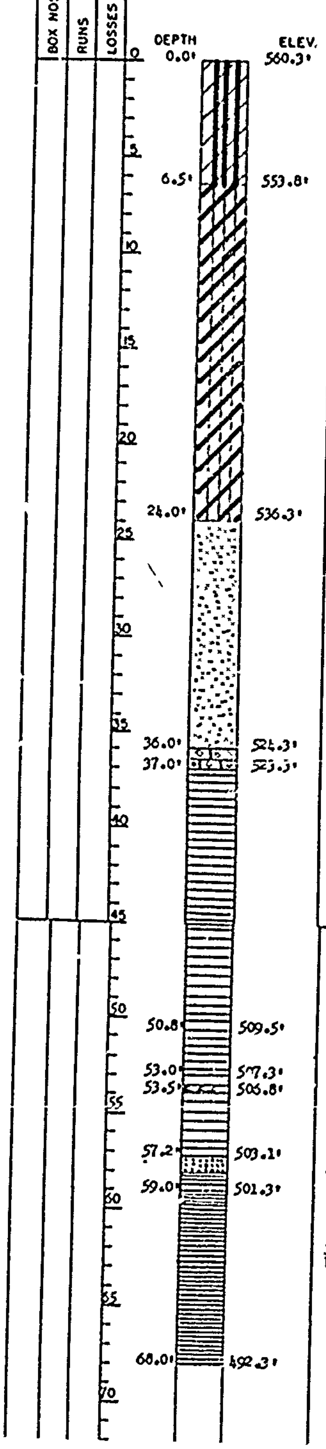
UNITED STATES ENGINEER OFFICE
ENGINEERING DIVISION
FIELD INVESTIGATIONS SECTION
GALVESTON, TEXAS

LOG OF CORE DRILLING

Site Aubrey
Date 20 August 1946
Sheet 1 of 2

Hole No. C-5 Drill No.
Type of Bit
Size of Core 2-Inch
Method of Ovb. Sampling Earth Auger
Set ____ of ____ Casing
Depth to Water Table
Total Depth of Hole 68.0'
Overburden Sampling 37.0'
Date Hole Started 18 January 1939
Number of Jars/Tubes None
Number of Boxes 1
Classified by

Location X= 500' above C.L. Sta. 28/00 Y=
Elevation of Top of Hole 560.3'
Depth of Overburden 37.0'
Elevation of Top of Bedrock 523.3'
Pulled Casing Yes ( ) No ( )
Elevation of Water Table
Elevation of Bottom of Hole 492.3'
Core Drilling 31.0' % Recovery
Date Hole Completed 20 January 1939
Marked - - - - - - - -
Marked Upper Elm Creek 500' Above Sta. 28/00
Submitted by



CLASSIFICATION AND REMARKS

0.0' to 6.5' SILT, clayey, dark brown.

6.5' to 24.0' CLAY, silty, light brown.

24.0' to 36.0' SAND, fine grained, tan.

36.0' to 37.0' LIMESTONE GRAVEL
37.0' to 50.8' SHALE, very sandy, gray, with clay "ironstone" concretions.

50.8' to 53.0' SHALE, laminated, compact, black.

53.0' to 53.5' SHELL MARL

53.5' to 57.2' SHALE, laminated, compact, black.

57.2' to 59.0' SANDSTONE, gray and sandy shale.

59.0' to 68.0' SHALE, laminated, compact, black.

Bottom of hole

SWDR-C-1

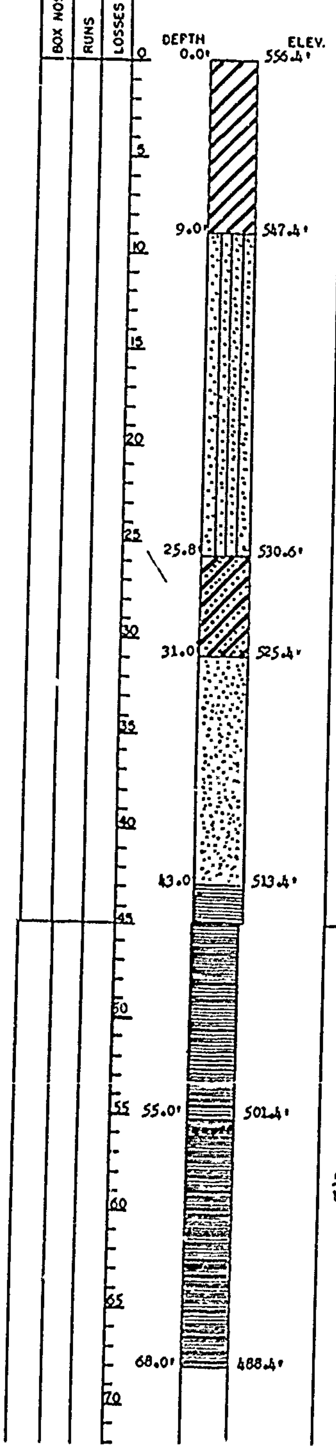
UNITED STATES ENGINEER OFF
ENGINEERING DIVISION
FIELD INVESTIGATIONS SECT
GALVESTON, TEXAS

LOG OF CORE DRILLIN

Site Aubrey

Hole No. C-6 Drill No.
Type of Bit
Size of Core 2-Inch
Method of Ovb. Sampling Earth Auger
Set ____ of ____ Casing
Depth to Water Table
Total Depth of Hole 68.0'
Overburden Sampling 43.0'
Date Hole Started 16 January 1939
Number of Jars/Tubes None
Number of Boxes 1
Classified by

Location X=
Elevation o
Depth of Ov
Elevation o
Pulled Casi
Elevation o
Elevation o
Core Drilli
Date Hole C
Marked
Marked Uppe
Submitted b



CLASSIF

0.0' to 9.0'

9.0' to 25.8'

25.8' to 31.0'

31.0' to 43.0'

43.0' to 55.0'
concretions.

55.0' to 68.0'
blue-black, slight

Bottom

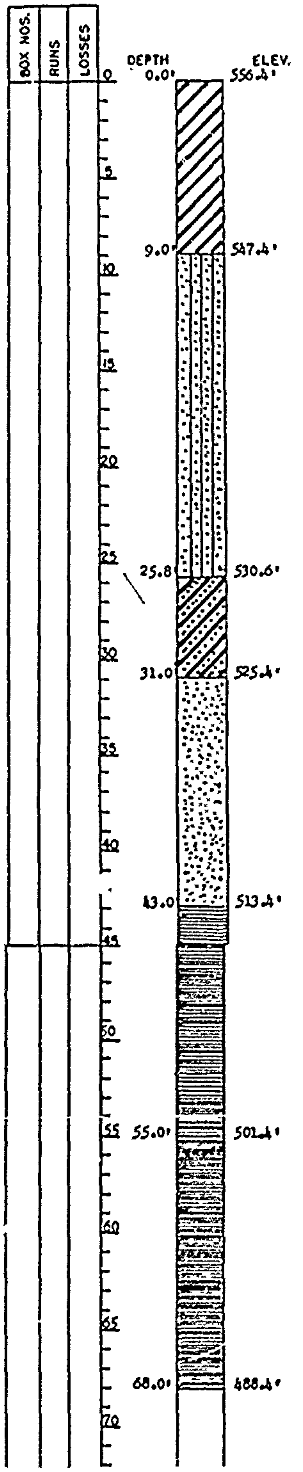
SWBD-C-1

UNITED STATES ENGINEER OFFICE
ENGINEERING DIVISION
FIELD INVESTIGATIONS SECTION
GALVESTON, TEXAS

LOG OF CORE DRILLING

Date 20 August 1946
Site Aubrey Sheet 1 of 2

Hole No. C-6 Drill No.	Location X= C.L. Sta. 30/90 Y=
Type of Bit	Elevation of Top of Hole 556.4'
Size of Core 2-Inch	Depth of Overburden 43.0'
Method of Ovb. Sampling Earth Auger	Elevation of Top of Bedrock 513.4'
Set of Casing	Pulled Casing Yes ( ) No ( )
Depth to Water Table	Elevation of Water Table
Total Depth of Hole 68.0'	Elevation of Bottom of Hole 488.4'
Overburden Sampling 43.0'	Core Drilling 25.0' % Recovery
Date Hole Started 16 January 1939	Date Hole Completed 18 January 1939
Number of Jars/Tubes None	Marked - - - - - - -
Number of Boxes 1	Marked Upper Elm Creek C.L. Sta. 36/00
Classified by	Submitted by



CLASSIFICATION AND REMARKS

0.0' to 9.0' CLAY, dark brown.

9.0' to 25.8' SAND, silty, tan.

25.8' to 31.0' CLAY, very sandy, gray.

31.0' to 43.0' SAND, fine grained, rust.

43.0' to 55.0' SHALE, blue and ironstone concretions.

55.0' to 68.0' SHALE, compact, laminated, blue-black, slightly sandy.

Bottom of hole

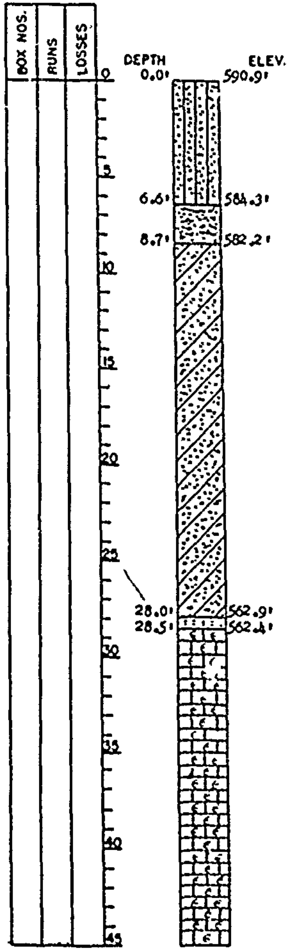
SWGA-C-1.

UNITED STATES ENGINEER OFFICE
ENGINEERING DIVISION
FIELD INVESTIGATIONS SECTION
GALVESTON, TEXAS

LOG OF CORE DRILLING

Date 20 August 1946
Site Aubrey Sheet 1 of 2

Hole No. C-7 Drill No.	Location X= C.L. Sta. 45/80 Y=
Type of Bit	Elevation of Top of Hole 590.9'
Size of Core 2-Inch	Depth of Overburden 28.0'
Method of Ovb. Sampling Earth Auger	Elevation of Top of Bedrock 562.9'
Set of Casing	Pulled Casing Yes ( ) No ( )
Depth to Water Table	Elevation of Water Table
Total Depth of Hole 95.0'	Elevation of Bottom of Hole 495.9'
Overburden Sampling 28.0'	Core Drilling 67.0' % Recovery
Date Hole Started 12 January 1939	Date Hole Completed 16 January 1939
Number of Jars/Tubes 1	Marked Upper Elm Creek C. L. Sta. 45/10
Number of Boxes 2	Marked Upper Elm Creek C. L. Sta. 45/10
Classified by	Submitted by



CLASSIFICATION AND REMARKS

0.0' to 6.6' SAND, silty, dark brown.

6.6' to 8.7' SAND, red and broken sandstone.

8.7' to 28.0' SAND, clayey, tan.

28.0' to 28.5' SANDSTONE, red.

28.5' to 45.2' LIMESTONE, fossiliferous, marly gray.

C-1-

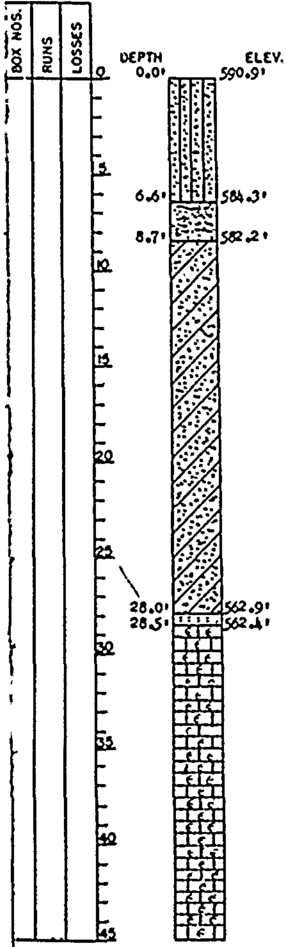
UNITED STATES ENGINEER OFFICE
ENGINEERING DIVISION
FIELD INVESTIGATIONS SECTION
GALVESTON, TEXAS

LOG OF CORE DRILLING

Date 20 August 1946
Site Aubrey
Sheet 1 of 2

ole No. C-7 Drill No.
ype of Bit
ize of Core 2-Inch
ethod of Ovb. Sampling Earth Auger
et of Casing
epth to Water Table
otal Depth of Hole 95.0'
verburden Sampling 28.0'
ate Hole Started 12 January 1939
umber of Jars/Tubes 1
umber of Boxes 2
lassified by

Location X= C.L. Sta. 45/80 Y=
Elevation of Top of Hole 590.9'
Depth of Overburden 28.0'
Elevation of Top of Bedrock 562.9'
Pulled Casing Yes ( ) No ( )
Elevation of Water Table
Elevation of Bottom of Hole 495.9'
Core Drilling 67.0' % Recovery
Date Hole Completed 16 January 1939
Marked Upper Elm Creek C. L. Sta. 45/80
Marked Upper Elm Creek C. L. Sta. 45/80
Submitted by



CLASSIFICATION AND REMARKS

0.0' to 6.6' SAND, silty, dark brown.

6.6' to 8.7' SAND, red and broken sandstone.

8.7' to 28.0' SAND, clayey, tan.

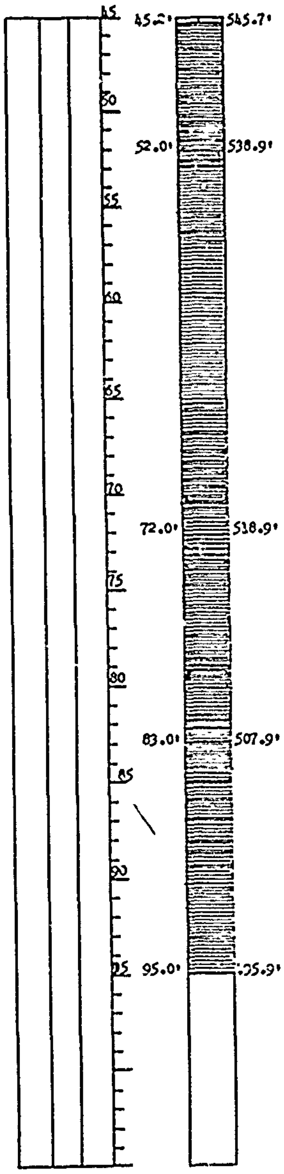
28.0' to 28.5' SANDSTONE, red.

28.5' to 45.2' LIMESTONE, fossiliferous, marly gray.

SWDN-C-2

LOG OF CORE DRILLING CONTINUATION SHEET

Site Aubrey
Hole No C-7
Sheet 2 of 2



45.2' to 52.0' SHALE, black.

52.0' to 72.0' SHALE, compact, laminated, black.

72.0' to 83.0' SHALE, black, with gray sand streaks.

83.0' to 95.0' SHALE, very sandy, gray-black.

Bottom of hole

RECORD DRAWING-WORK AS BUILT

SYM	OC NO	ACTION	DATE	DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

DESIGNED BY
DRAWN BY
REVIEWED BY

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS
EMBANKMENT, SPILLWAY AND OUTLET WORKS
LOGS OF BORINGS C-5, C-6 AND C-7

SUBMITTED BY
ENGINEER
INVITATION NO. DACW63-82-B-0025
DATE MAR, 1982
CONTRACT NO DACW63-82-C-00
DRAWING NUMBER
SHEET NO OF
SEQUENCE NO 10

TO ACCOMPANY FOUNDATION REPORT

SWCN-C-1.

UNITED STATES ENGINEER OFFICE
ENGINEERING DIVISION
FIELD INVESTIGATIONS SECTION
GALVESTON, TEXAS

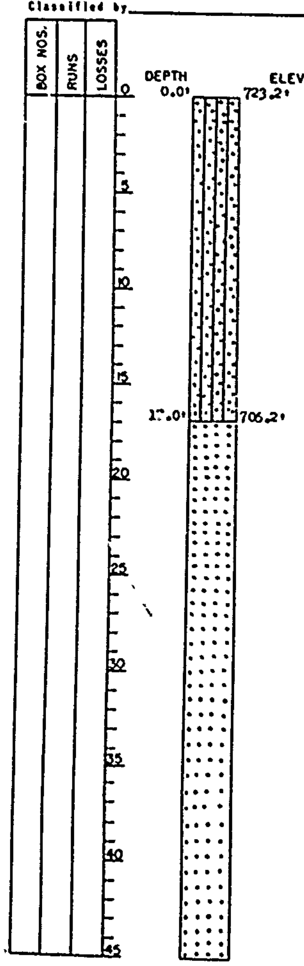
LOG OF CORE DRILLING

Site Aubrey

Date 20 August 1946
Sheet 1 of 4

Hole No. C-8 Drill No. ______
Type of Bit ______
Size of Core 2-Inch
Method of Ovb. Sampling Earth Auger
Set ______ of ______ Casing
Depth to Water Table ______
Total Depth of Hole 217.0'
Overburden Sampling 17.0'
Date Hole Started 12 January 1939
Number of Jars/Tubes 1
Number of Boxes 4
Classified by ______

Location X= C.L. Sta. 51/36
Elevation of Top of Hole 723.2'
Depth of Overburden 17.0'
Elevation of Top of Bedrock 706.2'
Pulled Casing Yes ( ) No ( )
Elevation of Water Table ______
Elevation of Bottom of Hole 506.2'
Core Drilling 200.0' % Recovery ______
Date Hole Completed 30 January 1939
Marked Upper Elm Creek C.L. Sta. 51/36
Marked Upper Elm Creek C.L. Sta. 51/36
Submitted by ______



CLASSIFICATION AND REMARKS

0.0' to 17.0' SAND, silty, red.

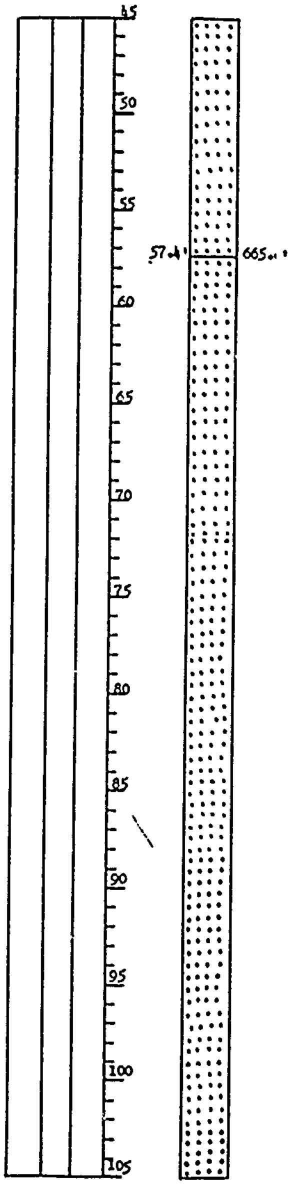
17.0' to 57.4' SANDSTONE, poorly consolidated and cross-bedded, orange, gray & yellow.

SWCN-C-2.

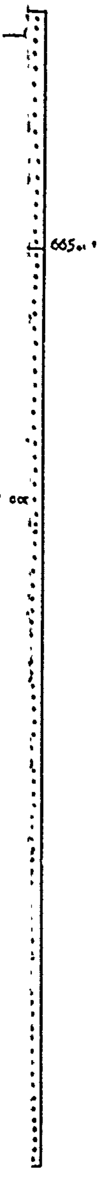
LOG CORE DRILLING CONTINUATION SH

Site Aubrey

Hole No. C-8



57.4' to 111.0' SAND
dated, maroon.



CORE DRILLING CONTINUATION SH

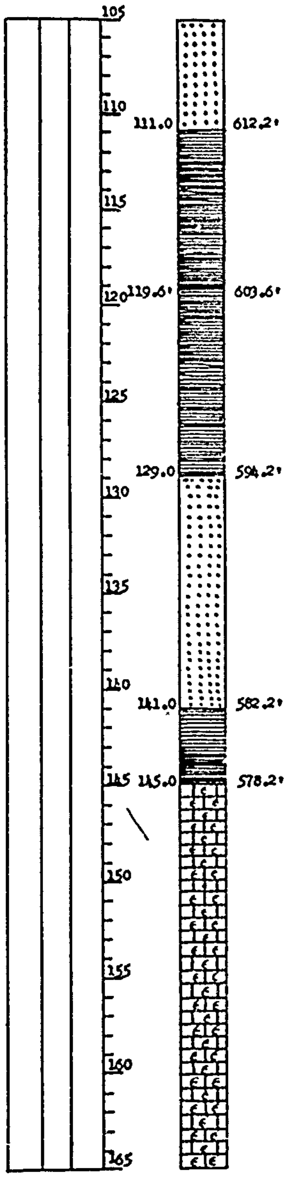
Hole No. C-8 Sheet 2 of 4

57.4' to 111.0' SANDSTONE, poorly consolidated, maroon.

SWDR-C-2.

Site Aubrey

LOG



CORE DRILLING CONTINUATION SH

Hole No. C-8 Sheet 3 of 4

111.0' to 119.6' SHALE, lignitic, black-brown.

119.6' to 129.0' SHALE, sandy, gray-black. Seams of plastic clay.

129.0' to 141.0' SANDSTONE, clayey, consolidated, yellow-gray.

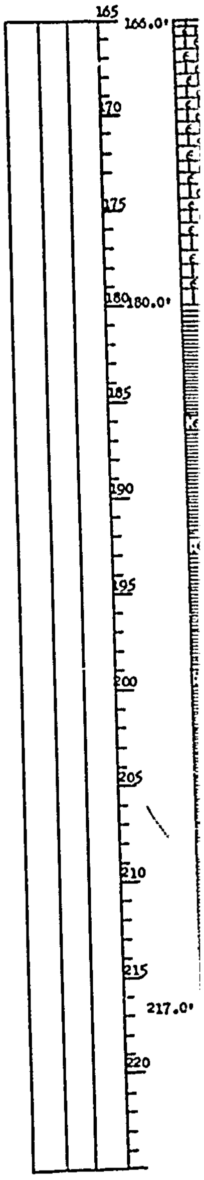
141.0' to 145.0' SHALE, very sandy, green.

145.0' to 166.0' SHELL AGGLOMERATE in matrix of green marly limestone.

SWDR-C-2.

Site Aubrey

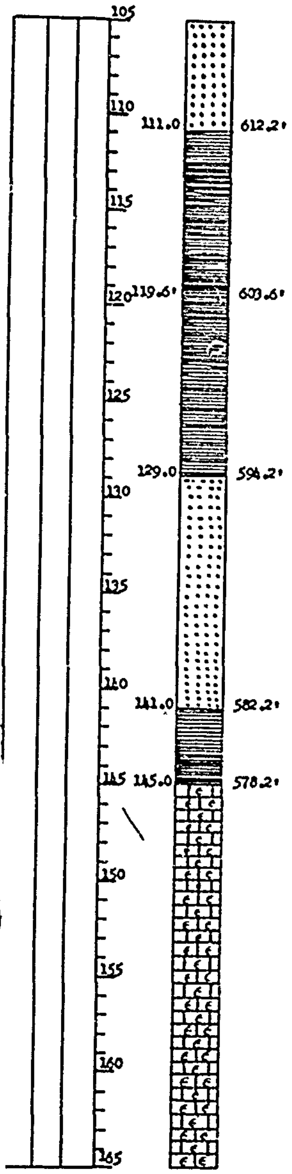
LOG



SWDR-C-2.

LOG CORE DRILLING CONTINUATION SH

Site Aubrey Hole No C-8 Sheet 3 of 4



111.0' to 119.6' SHALE, lignitic, black-brown.

119.6' to 129.0' SHALE, sandy, gray-black. Seams of plastic clay.

129.0' to 141.0' SANDSTONE, clayey, consolidated, yellow-gray.

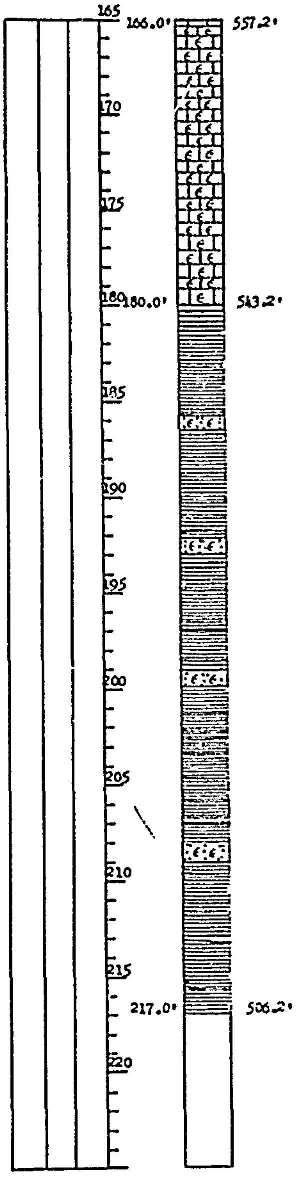
141.0' to 145.0' SHALE, very sandy, green.

145.0' to 166.0' SHELL AGGLOMERATE in matrix of green marly limestone.

SWDR-C-2.

LOG CORE DRILLING CONTINUATION SH

Site Aubrey Hole No C-8 Sheet 4 of 4



166.0' to 180.0' LIMESTONE, fossiliferous, marly, gray.

180.0' to 217.0' SHALE, compact, fossiliferous, sandy in zones, gray-black.

Bottom of hole

RECORD DRAWING-WORK AS BUILT

SYM	DC NO	ACTION	DATE	DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

DESIGNED BY
DRAWN BY:
REVIEWED BY:

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS
EMBANKMENT, SPILLWAY AND
OUTLET WORKS
LOGS OF BORINGS
C-8

SUBMITTED BY
ENGINEER

INVITATION NO. DACW63-82-B-0025 DATE MAR. 1982
CONTRACT NO. DACW63-82-C-0052
DRAWING NUMBER
SHEET NO. OF
SEQUENCE NO 11

TO ACCOMPANY FOUNDATION REPORT

Hole No. 8A2C-9

DRILLING LOG DIVISION Southwestern	INSTALLATION Fort Worth District — SHEET 1 OF 3 SHEETS
1. PROJECT Aubrey Dam Site	10. SIZE AND TYPE OF BIT 8" Auger 2" Core Bbl
2. LOCATION (Coordinates or Station)	11. DATUM FOR ELEVATION SHOWN (TBM or MSL)
3. DRILLING AGENCY Corps of Engineers	12. MANUFACTURER'S DESIGNATION OF DRILL Failing 1500
4. HOLE NO. (As shown on drawing title and file number) 8A2C-9	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 2 — UNDISTURBED 0
5. NAME OF DRILLER R. M. Dunn	14. TOTAL NUMBER CORE BOXES 5
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER *
	16. DATE HOLE — STARTED 5 Dec 50 — COMPLETED 8 Dec 60
	17. ELEVATION TOP OF HOLE 600.5'
7. THICKNESS OF OVERBURDEN 4.5	18. TOTAL CORE RECOVERY FOR BORING 84 %
8. DEPTH DRILLED INTO ROCK 101.5	19. SIGNATURE OF INSPECTOR
9. TOTAL DEPTH OF HOLE 106.0	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
					A	*Ground water elevation undetermined
					B	
596.0'	4.5		Start 2" core 4.5' to 3.9' limestone, marly, hard, siliceous, massive, weathered, dark red oxidized streak from 8.0' to 8.4', gray to buff	75	Box 1	Jar Sample Depths A- 0.0 to 3.6' B- 3.6 to 4.3
591.6'	8.9					
10			8.9 to 12.3 clay, shaly, sand lenses thru out, weathered, slightly laminated, tan to gray	80		
588.2'	12.3					
			NOTE: Base of weathering zone	86		
20			12.3 to 96.5' shale, clayey, sandy, firm to medium hard, very fossilferrous, laminated, dark gray NOTE: Medium hard sandstone streaks at following depths: 16.7 to 16.9 24.7 to 25.3 40.0 to 40.4 43.1 to 43.3 48.0 to 48.4 55.0 (Siltstone)	86		
				86	Box 2	
30				90		
40				97		

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f
					Box 3
				84	
				92	
					Box 4
				90	
				88	
504.0'	96.5		96.5' to 100.0 LIMESTONE sandy, hard, massive, fossilferrous, gray	100	
			100' to 106.0' SHALE, clayey firm, laminated, gray	40	Box 5
494.5'	106.0'		T. D. 106.0'		

% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	Box 3	
84		
92		
	Box 4	
90		
88		
100		
40	Box 5	

IE fossil

clayey

Hole No. 8A2C-10

DRILLING LOG DIVISION Southwestern

INSTALLATION Fort Worth District

SHEET 1 OF 2 SHEETS

1. PROJECT Aubrey Damsite
2. LOCATION (Coordinates or Station)
3. DRILLING AGENCY Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number) 8A2C-10
5. NAME OF DRILLER R. M. Dunn
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN 19.5
8. DEPTH DRILLED INTO ROCK 45.5
9. TOTAL DEPTH OF HOLE 60.0
10. SIZE AND TYPE OF BIT 8" Auger 2" Core Bbl
11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
12. MANUFACTURER'S DESIGNATION OF DRILL Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED 3 UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES 2
15. ELEVATION GROUND WATER *
16. DATE HOLE STARTED 15 Dec 60 COMPLETED 15 Dec 60
17. ELEVATION TOP OF HOLE 610.8
18. TOTAL CORE RECOVERY FOR BORING 90 %
19. SIGNATURE OF INSPECTOR

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
					A	*Ground water elevation on 16 Dec 1960 was (8.0
					B	Jar Sample Depths; A - 0.0' to 5.5' B - 5.5' tp 10.4' C - 10.4' tp 13.8'
			Start 2" Core 14.5'		C	
596.3'	14.5		14.5' to 25.8' clay, shaly, firm, fine sand lenses thru out, soft sandstone streak at 16.8, and 22.1, very hard limestone boulder at 17.6'; gray to yellow	72	Box 1	
				75		
585.0'	25.8	\	25.8' to 41.8' SHALE, clayey, firm weathering stains in upper 3.0'; sandy, laminated, small fossils thru out dark gray NOTE: Base of weathering at 29.0'. Lime seam at 35.0' which is 0.1 thi thick	100		
				90		
				95		
569.0'	41.8		41.8' to 43.3' SAND, clayey, firm-almost sandstone, distinct bedding, fine to medium gray.			
567.5'	43.3		43.3' to 60.0' SHALE, clayey, sandy firm to medium hard lime boulder at 44.8, very fossilferous from 47.0 to 51(, laminated, 4' sandstone at 58.0', dark gray	100	Box 2	
				97		
550.8'			T. D. 60.0'			

DRILLING LOG DIVISION ...uthwestern

1. PROJECT Aubrey Dam Site
2. LOCATION (Coordinates or Station)
3. DRILLING AGENCY Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number) 8A2C-11
5. NAME OF DRILLER R. Dunn
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT
7. THICKNESS OF OVERBURDEN 7.0'
8. DEPTH DRILLED INTO ROCK 23.6
9. TOTAL DEPTH OF HOLE 30.6'

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATER d
			Start 2" core 7.0'
605.2'	7.0		7.0' to 14.4' clay, sh sandy, firm to medium very weathered, horizo fractures, yellow to t
10 -			
597.8'	14.4		14.4' to 15.8 sandstc medium hard, fine to grain, massive, tan t
596.4'	15.8		15.8' to 22.5 shale, s firm to medium hard, a nating seams of sand a and shale, weathered t gray. NOTE: Base of weatl zone
20			
589.7'	22.5	\	22.5' to 30.6 shale, c sandy, firm laminated, marine fossils, dark g
30 581.6'	30.6		T. D. 30.6'
40			

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE

REC

SYM	DQ	NO	ACT

U.S

DESIGNED BY:

DRAWN BY:

REVIEWED BY:

SUBMITTED BY

ENGINEER

TO ACCOM

Hole No. 8A2C-10

LING LOG Division Southwestern	INSTALLATION Fort Worth District
	SHEET 1 of 2 SHEETS
Damsite	10. SIZE AND TYPE OF BIT 8" Auger 2" Core Sbl
(Coordinates or Station)	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
AGENCY f Engineers	12. MANUFACTURER'S DESIGNATION OF DRILL Failing 1500
(As shown on drawing title) 8A2C-10	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: DISTURBED 3, UNDISTURBED 0
DRILLER Dunn	14. TOTAL NUMBER CORE BOXES 2
OF HOLE ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER *
	16. DATE HOLE: STARTED 15 Dec 60, COMPLETED 15 Dec 60
OF OVERBURDEN 19.5	17. ELEVATION TOP OF HOLE 610.8
ILLED INTO ROCK 45.5	18. TOTAL CORE RECOVERY FOR BORING 90 %
PTH OF HOLE 60.0	19. SIGNATURE OF INSPECTOR

DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
				A	*Ground water elevation on 16 Dec 1960 was (8.0
				B	Jar Sample Depths; A - 0.0' to 5.5' B - 5.5' tp 10.4' C - 10.4' tp 13.8'
		Start 2" Core 14.5'		C	
4.5		14.5' to 25.8' clay, shaly, firm, fine sand lenses thru out, soft sandstone:streak at 16.8, and 22.1, very hard limestone boulder at 17.6'; gray to yellow	72 75	Box 1	
25.8		25.8' to 41.8' SHALE, clayey, firm weathering stains in upper 3.0'; sandy, laminated, small fossils thru out dark gray NOTE: Base of weathering at 29.0'. Lime seam at 35.0' which is 0.1 th thick	100 90 95		
1.8		41.8' to 43.3' SAND, clayey, firm-almost sandstone, distinct bedding, fine to medium gray.			
3.3		43.3' to 60.0' SHALE, clayey, sandy firm.to medium hard lime boulder at 44.8, very fossiliferous from 47.0 to 510, laminated, 4' sandstone at 58.0', dark grey	100 97	Box 2	
		T. D. 60.0'			

Hole No. 8A2C-11

DRILLING LOG Division Southwestern	INSTALLATION Fort Worth District
	SHEET 1 of 1 SHEETS
1. PROJECT Aubrey Dam Site	10. SIZE AND TYPE OF BIT 8 Auge. 2" Core Sbl
2. LOCATION (Coordinates or Station)	11. DATUM FOR ELEVATION SHOWN (TBM or MSL)
3. DRILLING AGENCY Corps of Engine rs	12. MANUFACTURER'S DESIGNATION OF DRILL Failing 1500
4. HOLE NO. (As shown on drawing title and file number) 8A2C-11	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: DISTURBED 2, UNDISTURBED 0
5. NAME OF DRILLER R. Dunn	14. TOTAL NUMBER CORE BOXES 1
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER *
	16. DATE HOLE: STARTED 16 Dec 60, COMPLETED 16 Dec 60
7. THICKNESS OF OVERBURDEN 7.0'	17. ELEVATION TOP OF HOLE 612.2'
8. DEPTH DRILLED INTO ROCK 23.6	18. TOTAL CORE RECOVERY FOR BORING 86 %
9. TOTAL DEPTH OF HOLE 30.6'	19. SIGNATURE OF INSPECTOR

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
					A	*Ground water elevation on 19 Dec 60 (10')
			Start 2" core 7.0'		B	Jar Sample Depths A - 0.0 to 3.5' B - 3.5' to 6.5
605.2'	7.0'		7.0' to 14.4' clay, shaly, s sandy, firm to medium hard, very weathered, horizontal fractures, yellow to tan	100		
10				70		
597.8'	14.4		14.4' to 15.8 sandstone, medium hard, fine to medium grain, massive, tan to gray			
596.4'	15.8		15.8' to 22.5 shale, sandy, firm to medium hard, alternating seams of sand stone and shale, weathered tan to gray. NOTE: Base of weathering zone	75 95		
20						
589.7'	22.5		22.5' to 30.6 shale, clayey, sandy, firm laminated, few marine fossils, dark gray	88		
581.6'	30.6		T. D. 30.6'			

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE | PROJECT | HOLE NO.

RECORD DRAWING-WORK AS BUILT

SYMBOL	ZONE NO.	ACTION	DATE	DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

DESIGNED BY: --------
DRAWN BY: --------
REVIEWED BY: --------

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS
EMBANKMENT, SPILLWAY AND
OUTLET WORKS
LOGS OF BORINGS
8A2C-9, 8A2C-10, AND 8A2C-11

SUBMITTED BY
ENGINEER
INVITATION NO. DACW63-82-B-0025
DATE MAR, 1982
CONTRACT NO DACW63-87-C-0093
DRAWING NUMBER
SHEET NO OF
SEQUENCE NO. 12

CONTRACT NO DACW63-82-C-00X3

TO ACCOMPANY FOUNDATION REPORT

Hole No. 8&6C-12

DRILLING LOG | DIVISION Southwestern | INSTALLATION Fort Worth | SHEET 1 of 2 SHEETS

1. PROJECT Aubrey Dam Site No. 1
2. LOCATION (Coordinates or Station)
3. DRILLING AGENCY Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number) 8&6C-12
5. NAME OF DRILLER Schoenover
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN 13.7
8. DEPTH DRILLED INTO ROCK 37.3
9. TOTAL DEPTH OF HOLE 51.0
10. SIZE AND TYPE OF BIT 8" auger, 5" carboloy, 6" diamond
11. DATUM FOR ELEVATION SHOWN (TBM or MSL) 577.1
12. MANUFACTURER'S DESIGNATION OF DRILL Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED 5 : UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES 7
15. ELEVATION GROUND WATER ----
16. DATE HOLE STARTED 2 Nov 71 : COMPLETED 4 Nov 71
17. ELEVATION TOP OF HOLE
18. TOTAL CORE RECOVERY FOR BORING 96.8 %
19. SIGNATURE OF INSPECTOR Vance L. Christie

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			0.0' to 13.7' SAND - - - 0.0 to 10.0 - fine to medium grained, trace clay, medium compact, sli. moist, red.		A	---- 1. After completion, hole was bailed to 43.5'. Same level after 24 hours.
			10.0 to 13.7 - fine to medium grained, trace of fine-grained, well-rounded gravel (-5%), medium compact to dense, sli. moist, red.		B C D	2. Jars: A. 0.0 to 4.7 B. 4.7 to 6.4 C. 6.4 to 8.4 D. 8.4 to 10.0 E. 10.0 to 13.7
	10.0		--- Refusal w/auger @ 13.7' - -----	13.7	E	3. Cartons: 1. 14.2 to 15.1 2. 18.3 to 19.3 3. 23.6 to 24.5 4. 29.0 to 30.0 5. 35.7 to 36.7 6. 42.9 to 43.9 7. 48.3 to 49.1
		1	13.7' to 26.4' LIMESTONE - - - 13.7 to 23.3 - shaley, highly fossilif., m. hard, thick-bedded, unfractured and unjointed, sli. stained, to 22.0', gray.	L 0.6 18.7	1	4. 8" casing set to 14.3'.
Base Stain.	20.0	2	23.3 to 26.4 - very hard, diamond bit used in this section.	0.6 23.3	2	5. Drilling methods: 1. 0.0 to 13.7 - 8" auger. 2. 13.7 to 23.3 - 6" carboloy 3. 23.3 to 26.4 - 6" diamond 4. 26.4 to 51.0 - 6" carboloy.
577.3 [illegible] [illegible]		3		L 2.2		
	30.0	4	26.4' to 51.0' SHALE, non-calc., m. hard, no visible bedding, unjointed and unfractured, occas. siltstone concretion, black.	28.8 G. 1.2 30.2	3	
				G. 0.4 34.2	4	
		5		G. 0.3 38.1	5	
		6		L 0.6 43.2	6	
				G 0.7 47.2		
		7		L 0.8	7	
	50.0		T.D. - 51.0' -	51.0		

DRILLING LOG | DIVISION Southwestern | INSTALLATION Fort Wort

1. PROJECT Aubrey Dam Site No. 1
2. LOCATION (Coordinates or Station) Sta. 134+70 - centerline
3. DRILLING AGENCY Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number) 6DC-13
5. NAME OF DRILLER Suits
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN 43.0
8. DEPTH DRILLED INTO ROCK 52.2
9. TOTAL DEPTH OF HOLE 95.2
10. SIZE AND TYPE
11. DATUM FOR ELE
12. MANUFACTURER Faili
13. TOTAL NO. OF O BURDEN SAMPLE
14. TOTAL NUMBER
15. ELEVATION GRO
16. DATE HOLE
17. ELEVATION TOP
18. TOTAL CORE RE
19. SIGNATURE OF I

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e
			0.0' to 24.6' CLAY - - - - 0.0 to 6.6 - non-calc., moist, stiff to hard, scattered rootlets, black.	
			6.6 to 12.6 - non-calc., moist, sli. sandy, hard, scattered rootlets, dk. brown.	
	10.0		12.6 to 24.6 - calc., sandy, hard to 22.6', stiff from 22.6 to 24.6, moist, tan.	
			24.6' to 28.6' SAND, sli. clayey, non-calc., moist, medium compact, tan.	
	20.0		28.6' to 39.6' CLAY, sandy, sli. calc., moisture increasing with depth, hardness decreasing with depth, saturated from 36.6', tan.	
			- - Drilled into sandy gravel @ 39.6' with d. bb'l. - - - - Start 8" auger @ 39.6' - -	
	30.0		39.6' to 43.0' GRAVEL, fine to medium grained, sandy, water-bearing, loose to medium dense.	

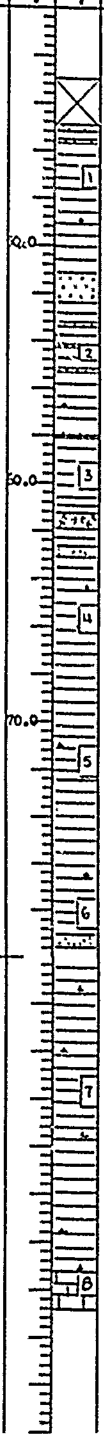
Hole No. 6DC-13

INSTALLATION Fort Worth	SHEET 2 OF 3 SHEETS
10 SIZE AND TYPE OF BIT 8" auger, 6" d.b., 6" carbol	
11 DATUM FOR ELEVATION SHOWN (TBM or MSL)	
12 MANUFACTURER'S DESIGNATION OF DRILL Failing 1500	
13 TOTAL NO. OF OVERBURDEN SAMPLES TAKEN	DISTURBED 1 · UNDISTURBED 19
14 TOTAL NUMBER CORE BOXES 9	
15 ELEVATION GROUND WATER none	
16 DATE HOLE	STARTED 18 Nov 71 · COMPLETED 27 Nov 71
17 ELEVATION TOP OF HOLE 559.39	
18 TOTAL CORE RECOVERY FOR BORING see remarks %	
19 SIGNATURE OF INSPECTOR	

-13

DEG. FROM VERT.

CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
to 24.6'		A	1. After completion, hole was bailed to 90.0'. Water level will be sent in at later date.
- - - -			
to 6.6 - non-calc., moist, stiff to hard, scattered rootlets, black.		1 4.5	
		2 4.5	2. Jar: A. 0.0 to 2.6
to 12.6 - non-calc., moist, sli. sandy, hard, scattered rootlets, dk. brown.		3 4.5	
		4 4.5	3. Denison samples: 1. 2.6 to 4.6 2. 4.6 to 6.6 3. 6.6 to 8.6 4. 8.6 to 10.6 5. 10.6 to 12.6 6. 12.6 to 14.6 7. 14.6 to 16.6 8. 16.6 to 18.6 9. 18.6 to 20.6 10. 20.6 to 22.6 11. 22.6 to 24.6 12. 24.6 to 26.6 13. 26.6 to 28.6 14. 28.6 to 30.6 15. 30.6 to 32.6 16. 32.6 to 34.6 17. 34.6 to 36.6 18. 36.6 to 38.6 19. 38.6 to 39.6
6 to 24.6 - calc., sandy, hard to 22.6', stiff from 22.6 to 24.6, moist, tan.		5 4.5	
		6 4.5	
to 28.6'		7 4.5	
sli. clayey, non-calc., st, medium compact,		8 4.5	
		9 4.5	
o 39.6'		10 4.5	
sandy, sli. calc., ture increasing with h, hardness decreasing depth, saturated 36.6', tan.		11 2.75	Note: Jar samples taken from shoe after each depth: Penetrometer readings shown in column at left.
		12	
ed into sandy gravel with d. bb'l. - - t 8" auger @ 39.6' - -		13	4. Cartons: 1. 46.7 to 47.6 2. 54.3 to 54.8 3. 59.2 to 60.2 4. 65.7 to 66.7 5. 71.5 to 72.5 6. 76.9 to 77.9 7. 85.4 to 86.4 8. 93.4 to 94.4
		14 2.5	
o 43.0'		15 1.5	
, fine to medium ed, sandy, watering, loose to medium		16 1.5	
		17 1.5	5. 8" casing set to 45'
		18 1.0	6. Drilling methods: 1. 0.0 to 2.6 - auger 2. 2.6 to 39.6 - 6" d.b.
		19 1.0	



ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			- - - Augered into primary material @ 43.0' - - Set casing to 45', cleaned out, and started 6" core @ 45.0' - - - - -			3. 39.6 to 45.0 - auger 4. 45.0 to 95.2 - 6" carboloy.
			45.0' to 93.4'	45.0		
			SHALE, non-calc. to sli. calc. with depth, m. hard, black to gray.	L 07	1	NOTE: Actual core loss from 45.0' to 53.2' was 14.6%. Hole taped for depth at 53.2'. Loss possibly occured from 50.5 to 52.0, drilling was very rapid in this zone. 53.2 to 95.2 - core recovery was 98%
			45.0 to 57.2 - thin to medium bedded, with core seperating at sand seams listed below.	49.0 L 05		
			57.2 to 93.4 - core removed from bb'l. as continuous stalks	53.2 L 09	2	
			Sandstone, fine-grained, friable, laminated, @ following depths: 45.0 to 45.3, 45.6 (0.1) 51.3 to 52.3, 53.3 (0.15) 54.2 (0.1), 55.4 (0.1) 55.6 (0.1)	57.2 09	3	
			@ 58.8' - 0.05 seam of broken shells.	61.2		
			61.2 to 61.7 - zone of numerous broken shells	L 00 65.2	4	- - - *** Marker bed - see 6DC-14 at 56.2 to 56.8
			From 62.8 to 93.4 - occas. thin, poorly-defined, friable sandstone seam.	L 11 69.2 6. 0.4	5	
				73.2 L 01	6	
				77.2 6 01	7	
				81.2 L 01 85.2	8	
				L 02 89.2 L 03	9	
			93.4' to 95.2'			
			LIMESTONE, shaley, sli. nodular, fossilif., hard, gray.	93.2 L 00 95.2		- - - - *** Marker bed - see 6DC-14 at 88.4'
			T.D. - 95.2' -			

SYM | DC

DESIGNED

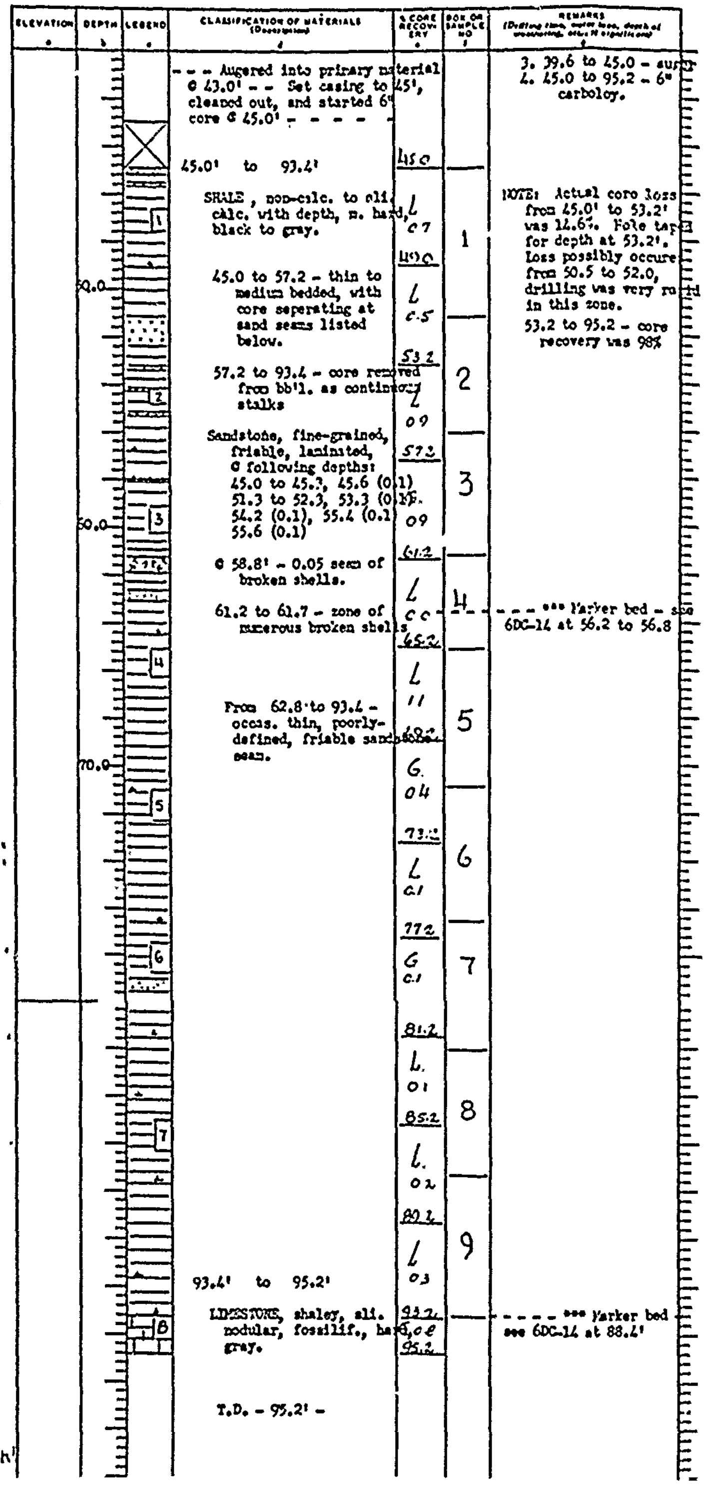
DRAWN BY

REVIEWED

SUBM

SW NEE

TO AC



ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			- - - Augered into primary material @ 43.0' - - Set casing to 45', cleaned out, and started 6" core @ 45.0' - - - - -			3. 39.6 to 45.0 - aug 4. 45.0 to 95.2 - 6" carboloy.
			45.0' to 93.4'	450		
			SHALE, non-calc. to sli. calc. with depth, m. hard, black to gray.	L 07	1	NOTE: Actual core loss from 45.0' to 53.2' was 14.6%. Hole taped for depth at 53.2'. Loss possibly occured from 50.5 to 52.0, drilling was very rapid in this zone.
			45.0 to 57.2 - thin to medium bedded, with core seperating at sand seams listed below.	490 L 05		53.2 to 95.2 - core recovery was 98%
			57.2 to 93.4 - core removed from bb'l. as continuous stalks	53 2 L 09	2	
			Sandstone, fine-grained, friable, laminated, @ following depths: 45.0 to 45.3, 45.6 (0.1) 51.3 to 52.3, 53.3 (0.1) 54.2 (0.1), 55.4 (0.1) 55.6 (0.1)	572 1F. 09	3	
			@ 58.8' - 0.05 seam of broken shells.	61.2		
			61.2 to 61.7 - zone of numerous broken shells	L cc 65.2	4	- - - *** Marker bed - see 6DC-14 at 56.2 to 56.8
			From 62.8' to 93.4 - occas. thin, poorly-defined, friable sandstone seam.	L 11 69.2 G. 04	5	
				73.2 L 01	6	
				77.2 G 01	7	
				81.2 L. 01 85.2	8	
				L. 02 89.2		
			93.4' to 95.2'	L 03	9	
			LIMESTONE, shaley, sli. nodular, fossilif., hard, gray.	93.2 2.0e 95.2		- - - - *** Marker bed see 6DC-14 at 88.4'
			T.D. - 95.2' -			

RECORD DRAWING - WORK AS BUILT

SYM	DC NO	ACTION	DATE	DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

DESIGNED BY
DRAWN BY
REVIEWED BY

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS
EMBANKMENT, SPILLWAY AND OUTLET WORKS
LOGS OF BORINGS 8A6C-12 AND 6 DC-13

SUBMITTED BY
ENGINEER

INVITATION No. DACW63-82-B-0025
DATE MAR. 1982
CONTRACT NO. DACW63-82-C-0063
DRAWING NUMBER
SHEET No.
REFERENCE 13

TO ACCOMPANY FOUNDATION REPORT

Hole No. 6DC-14

DRILLING LOG	DIVISION Southwestern	INSTALLATION Fort Worth	SHEET 1 OF 3 SHEETS
1. PROJECT Aubrey Dam Site No. 1		10. SIZE AND TYPE OF BIT 8" auger, 6" d.b., 6" core	
2. LOCATION (Coordinates or Station)		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	
3. DRILLING AGENCY Corps of Engineers		12. MANUFACTURER'S DESIGNATION OF DRILL Failing 1500	
4. HOLE NO. (As shown on drawing title and file number) 6DC-14		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 16 / UNDISTURBED 17
5. NAME OF DRILLER Suits		14. TOTAL NUMBER CORE BOXES — — —	
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.		15. ELEVATION GROUND WATER none	
		16. DATE HOLE	STARTED 28 Sep. 71 / COMPLETED 1 Oct. 71
7. THICKNESS OF OVERBURDEN 45.3		17. ELEVATION TOP OF HOLE 559.5	
8. DEPTH DRILLED INTO ROCK 44.7		18. TOTAL CORE RECOVERY FOR BORING 99.0 %	
9. TOTAL DEPTH OF HOLE 90.0		19. SIGNATURE OF INSPECTOR	

ELEVATION a | DEPTH b | LEGEND c | CLASSIFICATION OF MATERIALS (Description) d | % CORE RECOVERY e | BOX OR SAMPLE NO. f | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g

Classification of materials:

0.0' to 38.6'

CLAY - - -

0.0 to 18.6 - calc., moist, hard, scattered rootlets to 8.6', tan.

18.6 to 38.6 - calc., sandy, stiff, with hardness decreasing with depth, moist to very moist, tan.

NOTE: 26.6 to 28.6 - attempted 3 times to recover sample. No recovery.

Box or sample no.: A, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, ☒, 13, 14, 15, 16, 17, ☒

Remarks:

none

1. After completion, hole was bailed to 89.0' and casing was pulled. 24 hour water check -

2. Jars:
   A. 0.0 to 2.6

3. Denison cans:
   1. 2.6 to 4.6
   2. 4.6 to 6.6
   3. 6.6 to 8.6
   4. 8.6 to 10.6
   5. 10.6 to 12.6
   6. 12.6 to 14.6
   7. 14.6 to 16.6
   8. 16.6 to 18.6
   9. 18.6 to 20.6
   10. 20.6 to 22.6
   11. 22.6 to 24.6
   12. 24.6 to 26.6
   13. 28.6 to 30.6
   14. 30.6 to 32.6
   15. 32.6 to 34.6
   16. 34.6 to 36.6
   17. 36.6 to 38.6

4. Penetrometer tests on bottom of cans:

   Cans 1 thru 7 - 4.5
   8. 2.75
   9. 1.75
   10. 2.5
   11. 2.0
   12. 1.5
   13. 1.25
   14. 1.0
   15. 2.0
   16. 1.0
   17. N.A.

5. All core was wrapped in aluminum foil and placed in cartons. Depths shown on p. 2

6. 8" casing set to 46.0'.

ELEVATION a | DEPTH b | LEGEND c | CLASSIFICATION OF MATERIALS (Description) d | % CORE RECOVERY e

Classification of materials:

38.6' to 44.2'

SAND and GRAVEL, (recovered only trace in bottom of can 17.), logged by drill action and cutting.

- - - Drilled into primary material @ 44.2', set casi to 46.0', cleaned out, and started 6" core @ 47.2' - -

47.2' to 88.4'

SHALE, sli. to non-calc., sandy, hard (pen. ≠ 4.5) thin to medium bedded to 75.1', thick-bedded from 75.1 to 88.4, unjointed and unfractured, unweathered, gray.

<u>Sedimentary features:</u>

Sandstone beds at the following depths:

47.5 to 47.8, 48.0 to 48.
48.6 to 48.9, 49.4 to 49.6,
50.7 to 51.1, 57.3 to 57.4,
59.1 to 59.3, 62.8 to 62.9,
64.8 to 65.0, 65.6 to 65.8,
67.4 to 67.6, 70.8 to 70.
71.3 to 71.5, 73.0 to 73.
74.7 to 74.9, 79.1 to 79.2,
81.2 to 81.4. Most beds were soft and crumbly, crushed with moderate amount of finger pressure.

56.2 to 56.8 - highly fossilif. section, very calc. Possible marker bed - see 6DC-15

<u>Structural features:</u>

None

88.4' to 90.0'

LIMESTONE, sli. shaly, nodular, fossilif., hard, gray.

T.D. - 90.0' -

Core was seperated at the following

47.5, 47.9, 48.3, 49.0, 49.4, 50.
51.0, 51.1, 51.4, 51.6, 53.4, 54.
59.2, 60.1, 61.2, 62.0, 62.8, 63.
65.0, 66.0, 66.3, 67.2, 67. 70.
71.5, 71.8, 72.9, 74.6, 74.9, 75.
was removed as continuous stalks

% Core recovery:

CKMA (?) 47.2
L. 0.6
51.2
G. 0.2
55.2
L. 0.5
59.2
G. 0.6
63.2
G. 0.3
67.2
L. 0.5
71.2
G. 0.4
75.2
L. 0.0
79.2
L. 0.3
83.2
L. 0.1
87.2
L. 0.0
90.0

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g

38.3' to 44.2'

SAND and GRAVEL, (recovered only trace in bottom of can 17.), logged by drill action and cuttings.

- - - Drilled into primary material @ 44.2', set casing to 46.0', cleaned out, and started 6" core @ 47.2' - - -

47.2' to 88.4'

SHALE, sli. to non-calc., sandy, hard (pen. ≠ 4.5), thin to medium bedded to 75.1', thick-bedded from 75.1 to 88.4, unjointed and unfractured, unweathered, gray.

Sedimentary features:

Sandstone beds at the following depths:

47.5 to 47.8, 48.0 to 48.2, 48.6 to 48.9, 49.4 to 49.6, 50.7 to 51.1, 57.3 to 57.4, 59.1 to 59.3, 62.8 to 62.9, 64.8 to 65.0, 65.6 to 65.8, 67.4 to 67.6, 70.8 to 70.9, 71.3 to 71.5, 73.0 to 73.2, 74.7 to 74.9, 79.1 to 79.2, 81.2 to 81.4. Most beds were soft and crumbly, crushed with moderate amount of finger pressure.

56.2 to 56.8 - highly fossilif. section, very calc. Possible marker bed - see 6DC-15

Structural features:

None

88.4' to 90.0'

LIMESTONE, sli. shaly, nodular, fossilif., hard, gray.

T.D. - 90.0' -

Core was seperated at the following depths:

47.5, 47.9, 48.3, 49. , 49.4, 50.0, 50.7, 50.9, 51.0, 51.1, 51.4, 51.6, 53.4, 54.8, 55.5, 57.3, 59.2, 60.1, 61.2, 62.0, 62.8, 63.3, 63.9, 64.8, 65.0, 65.0, 66.9, 67.2, 67.5, 70.3, 70.8, 71.3, 71.5, 71.7, 72.9, 74.6, 74.9, 75.1, 84.6 - - Note that core was removed as continuous stalks from 75.1'.

% core recovery / box or sample no.:

[illegible] out → set casing
47.2 | 47.2
L. 0.6
51.2
G. 0.2
55.2
L 0.5
59.2
G 0.6
63.2
G 0.3
67.2
L. 0.5
71.2
G. 0.4
75.2
L. 0.0
79.2
L. 0.3
83.2
L. 0.1
87.2
L. 0.0
90.0

Cartons:

1. 47.2 to 48.0
2. 48.0 to 49.0
3. 49.0 to 50.0
4. 50.0 to 50.6
5. 50.6 to 51.6
6. 51.6 to 52.6
7. 52.6 to 53.6
8. 53.6 to 54.6
9. 54.8 to 55.5
10. 55.5 to 56.5
11. 56.5 to 57.3
12. 57.3 to 58.2
13. 58.2 to 59.1
14. 59.1 to 59.9
15. 60.0 to 61.0
16. 61.0 to 61.9
17. 61.9 to 62.7
18. 62.9 to 63.9
19. 63.9 to 65.0
20. 65.0 to 66.0
21. 66.0 to 66.9
22. 67.2 to 68.1
23. 68.1 to 69.0
24. 69.0 to 69.9
25. 69.9 to 70.7
26. 70.9 to 71.8
27. 71.8 to 72.9
28. 73.2 to 74.2
29. 74.2 to 75.1
30. 75.1 to 76.1
31. 76.1 to 77.1
32. 77.1 to 78.1
33. 78.1 to 79.1
34. 79.1 to 80.0
35. 80.0 to 81.0
36. 81.0 to 82.0
37. 82.0 to 82.8
38. 82.8 to 83.8
39. 83.8 to 84.8
40. 84.8 to 85.8
41. 85.8 to 86.8
42. 86.8 to 87.4
43. 87.4 to 88.2
44. 88.2 to 88.9
45. 88.9 to 89.9

The following depths were not cartoned: 54.6 to 54.8, 62.8 to 62.9, 66.9 to 67.2, 72.9 to 73.2.

Hole No. 6DC-15

DRILLING LOG	DIVISION Southwestern
INSTALLATION Fort Worth	SHEET 1 OF 2 SHEETS
1. PROJECT Aubrey Dam Site No. 1	10. SIZE AND TYPE OF BIT 8" auger, 6" d.b., 6" carboloy core
2. LOCATION (Coordinates or Station)	11. DATUM FOR ELEVATION SHOWN (TBM or MSL)
3. DRILLING AGENCY Corps of Engineers	12. MANUFACTURER'S DESIGNATION OF DRILL Failing 1500
4. HOLE NO. (As shown on drawing title and file number) 6DC-15	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: DISTURBED 16 : UNDISTURBED 16
5. NAME OF DRILLER Schoonover	14. TOTAL NUMBER CORE BOXES 5
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER
7. THICKNESS OF OVERBURDEN 38.7	16. DATE HOLE: STARTED 21 Sept. 71 : COMPLETED 24 Sept. 71
8. DEPTH DRILLED INTO ROCK 22.5	17. ELEVATION TOP OF HOLE 558.48
9. TOTAL DEPTH OF HOLE 61.2	18. TOTAL CORE RECOVERY FOR BORING 95.0 %
	19. SIGNATURE OF INSPECTOR James L. Graber

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g

Depth: 10.0, 20.0, 30.0

0.0' to 38.7'

CLAY, calc., sli. moist to 6.7', with gradual moisture increase with depth, hard to 8.7' with strength decreasing with depth (Note penetrometer tests in remarks column), brown to tan.

34.7' to 38.7' - no recovery except for a fine to med. grained Sand from 38.2' to 38.7' loose, trace clay, gray.

- - - Drilled into primary material @ 38.7', set casing to 40.0', cleaned out, and started 6" core @ 40.7' - - -

40.7' to 61.2'

SHALE, sli. to non-calc., sandy, hard (pen. ≠ 4.5), medium to thin-bedded, unjointed and unfractured (except where noted) unweathered, gray.

Sedimentary features:

Sandstone at the following depths:

42.6 to 43.3 - laminated shaly, sli. fissile, crumbly.
43.3 to 44.0 - scattered concretions.
53.2 to 53.4 - laminated, shaly, sli. fissile
55.0 to 56.1 - laminated, shaly, sli. fissile.

48.5 to 49.1 - highly fossilif. (broken shells), calc. possible marker bed - - - - - - - See 6DC-14, 56.2 to 56.8

T.D. - 61.2' -

% core recovery: 40.7, 45.2, 49.2, 53.2, 57.2, 61.2

Box or sample no.: A, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 40.7, 1, 2, 3, 4, 5

1. After completion, casing was pulled, and hole was bailed to 55.0'. Water check after 24 hrs. was 24.0'.

2. Jars:
A. 0.0 to 2.7
Jar samples taken from Denison bb'l shoe except where noted by an asterisk.

3. Denison cans.

	Depth	Pene. test
1.	2.7 - 4.7	4.5
2.	4.7 - 6.7	4.25
3.	6.7 - 8.7	4.5
4.	8.7 - 10.7	4.25
5.	10.7 - 12.7	"
6.	12.7 - 14.7	"
7.	14.7 - 16.7	3.75
8.	16.7 - 18.7	"
9.	18.7 - 20.7	"
10.	20.7 - 22.7	"
11.	22.7 - 24.7	3.0
12.	24.7 - 26.7	"
13.	26.7 - 28.7	"
14.	28.7 - 30.7	2.75
*15.	30.7 - 32.7	1.75
16.	32.7 - 34.7	1.75

Note: Can #8 - sample slipped out on initial retrieve and was recovered on second attempt.
Can #15 - poor recovery. Lost 1.0'

4. Cartons:
1. 41.1 to 41.9
2. 47.5 to 48.5
3. 52.2 to 53.2
4. 56.8 to 57.7
5. 58.6 to 59.5

5. 8" casing set to 40.2'.

6. Drilling methods:
1. 0.0 to 2.7 - 8" auger
2. 2.7 to 40.7 - d. bbl.
3. 40.7 to 61.2 - 6" core

Structural features:

In the upper 10ft., core seems to have a slight dip (approx. 5°).

0.2' fracture with poorly formed slickensides at 56.4'.

Hole No 6DC-15

vision Southwestern	INSTALLATION Fort Worth	SHEET 1 OF 2 SHEETS
e No. 1	10 SIZE AND TYPE OF BIT 8" auger, 6" d.b., 6" carboloy core	
	11 DATUM FOR ELEVATION SHOWN (TBM or MSL)	
	12 MANUFACTURER'S DESIGNATION OF DRILL Failing 1500	
ineers	13 TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 16 / UNDISTURBED 16
6DC-15	14 TOTAL NUMBER CORE BOXES 5	
	15 ELEVATION GROUND WATER ****	
DEG. FROM VERT.	16 DATE HOLE	STARTED 21 Sept. 71 / COMPLETED 24 Sept. 71
38.7	17 ELEVATION TOP OF HOLE 558.48	
22.5	18 TOTAL CORE RECOVERY FOR BORING 95.0 %	
61.2	19 SIGNATURE OF INSPECTOR James L. Kostic	

CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
0.0' to 38.7' CLAY, calc., sli. moist to 6.7', with gradual moisture increase with depth, hard to 8.7' with strength decreasing with depth (Note penetrometer tests in remarks column), brown to tan.		A	**** 1. After completion, casi was pulled, and hole was bailed to 55.0'. Water check after 24 hrs. was 24.0'.
		1	
		2	2. Jars: A. 0.0 to 2.7 Jar samples taken from Denison bb'l shoe except where noted by an asterisk.
		3	
		4	
		5	3. Denison cans. Depth Pene. test 1. 2.7 - 4.7 4.5 2. 4.7 - 6.7 4.25 3. 6.7 - 8.7 4.5 4. 8.7 - 10.7 4.25 5. 10.7 - 12.7 " 6. 12.7 - 14.7 " 7. 14.7 - 16.7 3.75 8. 16.7 - 18.7 " 9. 18.7 - 20.7 " 10. 20.7 - 22.7 " 11. 22.7 - 24.7 3.0 12. 24.7 - 26.7 " 13. 26.7 - 28.7 " 14. 28.7 - 30.7 2.75 **15. 30.7 - 32.7 1.75 16. 32.7 - 34.7 1.75
		6	
		7	
		8	
		9	
		10	
		11	Note: Can #8 - sample slipped out on initial retrieve and was recovered on second attempt. Can #15 - poor recovery. Lost 1.0'
		12	
		13	
34.7' to 38.7' - no recovery except for a fine to med. grained Sand from 38.2' to 38.7' loose, trace clay, gray.		14	4. Cartons: 1. 41.1 to 41.9 2. 47.5 to 48.5 3. 52.2 to 53.2 4. 56.8 to 57.7 5. 58.6 to 59.5
		15	
--- Drilled into primary material @ 38.7', set casing to 40.0', cleaned out, and started 6" core @ 40.7' ---		16	5. 8" casing set to 40.2'.
		☒	6. Drilling methods: 1. 0.0 to 2.7 - 8" auger 2. 2.7 to 40.7 - d. bbl. 3. 40.7 to 61.2 - 6" core
		☒	
	40.7	40.7	
40.7' to 61.2' SHALE, sli. to non-calc., sandy, hard (pen. ≠ 4.5), medium to thin-bedded, unjointed and unfractured (except where noted), unweathered, gray.		1	Structural features: In the upper 10ft., core seems to have a slight dip (approx. 5°).
	45.2	2	0.2' fracture with poorly formed slickensides at 56.4'.
Sedimentary features: Sandstone at the following depths: 42.6 to 43.3 - laminated, shaly, sli. fissile, crumbly. 43.3 to 44.0 - scattered concretions. 53.2 to 53.4 - laminated, shaly, sli. fissile. 55.0 to 56.1 - laminated, shaly, sli. fissile.	49.2	3	
	53.2		
48.5 to 49.1 - highly fossilif. (broken shells), calc., possible marker bed	57.2	4	- See 6DC-14, 56.2 to 56.8
T.D. - 61.2' -	61.2	5	

RECORD DRAWING-CONST. AS BUILT

SYM	DC NO	ACTION	DATE	DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

DESIGNED BY
DRAWN BY
REVIEWED BY

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS
EMBANKMENT, SPILLWAY AND OUTLET WORKS
LOGS OF BORINGS
6 DC-14 AND 6 DC-15

SUBMITTED BY
ENGINEER

INVITATION NO. DACW63-82-B-0025
DATE MAR, 1982
CONTRACT NO DACW63-82-C-0093
DRAWING NUMBER
SHEET NO OF
SEQUENCE NO 14

CONTRACT NO DACW63-82-C-0093

TO ACCOMPANY FOUNDATION REPORT

Hole No. 6DC-16

DRILLING LOG	DIVISION SWD	INSTALLATION FWD	SHEET 1 OF 2 SHEETS

1. PROJECT: AUBREY DAM
2. LOCATION (Coordinates or Station):
3. DRILLING AGENCY: USCE
4. HOLE NO. (As shown on drawing title and file number): 6DC-16
5. NAME OF DRILLER: G. SCHOONOVER
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 38.0
8. DEPTH DRILLED INTO ROCK: 12.0
9. TOTAL DEPTH OF HOLE: 50.0'
10. SIZE AND TYPE OF BIT: 6" GRIZZLEY
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: FAILING 1500
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: DISTURBED 14 UNDISTURBED 12
14. TOTAL NUMBER CORE BOXES: 2
15. ELEVATION GROUND WATER: SEE REMARKS COLUMN
16. DATE HOLE: STARTED 9 SEPT 71 COMPLETED 16 SEPT 71
17. ELEVATION TOP OF HOLE: 559.66'
18. TOTAL CORE RECOVERY FOR BORING: 100 %
19. SIGNATURE OF INSPECTOR:

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
559.66	0.0		0.0' to 3.0'± CLAY: SILTY, SLI MOIST; HARD, ROOT ZONE; DARK BROWN		0.0 A 2.6	I. DRILLING: 8" FLIGHT AUGER: 0.0' – 2.6' 6" DENISON: 2.6' – 32.6'
			3.0'± TO 19.6'± CLAY: W/ TRACE OF SILT; W/ CALC. NODULES; W/ ORGANIC MATTER; MOIST; HARD; BROWN	'B' 'C' 'D' 'E' 'F' 'G' 'H' 'I'	DB #1 (4.0) 4.6 DB #2 (4.5) 6.6 DB #3 (4.5) 8.6 DB #4 (4.5) 10.6 DB #5 (4.5) 12.6 DB #6 (4.5) 14.6 DB #7 (4.5) 16.6 DB #8 (4.0) 18.6	NOTE: SAMPLES BECAME DISTURBED AT 24.6'-28.6' & AT 30.6'-32.6'. JAR SAMPLES WERE TAKEN 8" FLIGHT AUGER: 32.6' – 41.0' CLEANED OUT WITH 10" AUGER & SET CASING TO 41.0'. CLEANED OUT WITH 8" AUGER TO 42.0'. 6" CORE BARREL: 42.0' – 50.0'. II. SAMPLES: JAR A: 0.0' – 2.6' B: 4.6' C: 6.6' D: 8.6' E: 10.6' F: 12.6' G: 14.6'
	20.0		19.6'± TO 29.6'± CLAY: SLI. SILTY; W/ CALC. NODULES; MOIST, V. STIFF; BROWN TO GRAY BROWN	'J' 'K'	DB #9 (2.5) 20.6 DB #10 (2.25) 22.6 DB #11 (2.5) 24.6 L 28.6	H: 16.6' I: 18.6' J: 20.6' K: 22.6' L: 24.6' – 28.6' M: 30.6' – 32.6' N: 32.6' – 37.0' O: 38.0' – 40.5' P: 40.5' – 42.0' DB 1: 2.6' – 4.6' 2: 4.6' – 6.6' 3: 6.6' – 8.6' 4: 8.6' – 10.6' 5: 10.6' – 12.6'
			29.6'± TO 32.6'± CLAY: W/ TRACE OF SILT & FINE SAND; MOIST; V. STIFF, BROWN-TAN		DB #12 (2 ") 30.6 M 32.6	6: 12.6' – 14.6' 7: 14.6' – 16.6' 8: 16.6' – 18.6' 9: 18.6' – 20.6' 10: 20.6' – 22.6' 11: 22.6' – 24.6' 12: 28.6' – 30.6'
			32.6' TO 37.0'± CLAY: SANDY, V. MOIST, V. STIFF DOWN TO STIFF; BROWN-TAN		N	C-1: 44.0 – 45.0 C-2: 49.0 – 50.0
521.66'	38.0		37.0'± TO 38.0' SAND: CLAYEY, W/ SCAT. GRAVEL; FINE TO MED GRAINED, MOD. FIRM, SAT'D; RUST BROWN		37.0 NO SAM 38.0	III. WATER LEVEL: "BORING BAILED TO 50.0' ON 16 SEPT. 71 & CHECKED AFTER 24 HOURS. WATER LEVEL AT 24.0
519.66' 519.16'	40.0 40.5		38.0' TO 40.5' SANDSTONE-SANDY SHALE: UNWEATH; SOFT THIN S.S. FLAGS ALTERNATING WITH SOFT SANDY SHALE; MOIST; BLUE GRAY.	42.0	O 40.5 P 42.0	IV. DEPTH OF WEATH MAT'L. WEATH TO 38.0
			40.5' TO 50.0' T.D. SHALE: ESS. UNWEATH; W/ SANDY LAMINATIONS; W/ SCAT. S.S. CONCRETIONS, FOSS.; SLI. MOIST; SOFT (ROCK CLASS) BLUE GRAY	D: 5.2 R: 5.2 47.2 D: 2.8 R: 2.8	1 47.0 2	V. MISC POCKET PENETROMETER READINGS ARE IN COLUMN "E". ALSO JAR SAMPLES WERE TAKEN FROM DENISON SHOE.
509.66	50.0		T.D. 50.0'	50.0	50.0	

Hole No.

DRILLING LOG	DIVISION Southwestern	INSTALLATION Fort Worth

1. PROJECT: Aubrey Dam Site No. 1
2. LOCATION (Coordinates or Station):
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): 6DC-17
5. NAME OF DRILLER: Schoonover
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 23.5
8. DEPTH DRILLED INTO ROCK: 26.5
9. TOTAL DEPTH OF HOLE: 50.0
10. SIZE AND TYPE OF BIT: 8" auger, 6"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL):
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: DISTURBED 1
14. TOTAL NUMBER CORE BOXES: 4
15. ELEVATION GROUND WATER: none
16. DATE HOLE: STARTED 17 Sept. 71 COMPLETED 2
17. ELEVATION TOP OF HOLE:
18. TOTAL CORE RECOVERY FOR BORING: 1
19. SIGNATURE OF INSPECTOR:

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			0.0' to 5.5' SAND, fine-grained, clayey, hard, sli. moist, brown.		✓ Can 1	none, 1. After co hole was b 45.0' with pulled. 2 check
			5.5' to 22.0' CLAY, sandy, non-calc., sli. moist, hard, mottled tan and gray.		Can 2 Can 3	2. Jar: A. 0.0 to 2
	10.0		@ 14.7' - increase in moisture content to base of overburden.		Can 4 Can 5 Can 6	3. Denison ca 1. 2.7 to 4 2. 4.7 to 6 3. 6.7 to 8 4. 8.7 to 1 5. 10.7 to 6. 12.7 to 7. 14.7 to
			from 18.7' to 22.0' - calc.		Can 7 Can 8	8. 16.7 to 9. 18.7 to 10. 20.7 to Note: Jar samp from shoe a sample depth
	20.0		22.0' to 23.5' CLAY, calc., w/ scattered gravel and well-rounded siltstone concretions, moist, medium to stiff, tan.	22.7 Clean out + Set casing	Can 9 Can 10	4. Cartons: 1. 27.4 to 2. 31.6 to 3. 38.8 to 4. 43.8 to 5. 49.0 to
			- - Augered into primary material @ 23.5', set casing to 25.0', cleaned out, and started 6" core @ 26.2' -	26.2 L. 08 29.2	26.2	5. Shale weat 24.9'.
	30.0		26.2' to 50.0' SHALE, sandy, non-calc., hard (penetrometer / 4.5), thin-bedded, fossilif., unjointed and unfractured to T.D., unweathered, gray	G. 02 33.2 7/6 06 37.2	1 32.9 2 37.9	6. 8" casing 25.0'. 7. Drilling 1. 0.0 to 2. 2. 2.7 to 22 3. 22.7 to 2 4. 26.2 to 5
	40.0		Sandstone concretions avg. 0.1' in thickness at the following depths: 28.5', 29.3', 30.3', 31.2', 37.9.	L 0.0 41.2 L 00 45.2	3 43.2	
	50.0		Shaley sandstone beds at the following depths: 27.0 to 27.4 - laminated 36.8 to 37.1 - " 42.0 to 42.9 - " and sli. fissile. Zone badly washed by core bbl. action.	L. 80 50.0	4 50.0	

T.D. - 50.0' -

Hole No. 6DC-17

DRILLING LOG

DIVISION Southwestern

INSTALLATION Fort Worth

SHEET 1 OF 2 SHEETS

1. PROJECT Aubrey Dam Site No. 1
2. LOCATION (Coordinates or Station)
3. DRILLING AGENCY Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number) 6DC-17
5. NAME OF DRILLER Schoonover
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN 23.5
8. DEPTH DRILLED INTO ROCK 26.5
9. TOTAL DEPTH OF HOLE 50.0
10. SIZE AND TYPE OF BIT 8" auger, 6" d.b., 6" core
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)
12. MANUFACTURER'S DESIGNATION OF DRILL Failing 1500
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED 1 — UNDISTURBED 10
14. TOTAL NUMBER CORE BOXES 4
15. ELEVATION GROUND WATER
16. DATE HOLE — STARTED 17 Sept. 71 — COMPLETED 20 Sept. 71
17. ELEVATION TOP OF HOLE
18. TOTAL CORE RECOVERY FOR BORING 100 %
19. SIGNATURE OF INSPECTOR

ELEVATION (a) | DEPTH (b) | LEGEND (c) | CLASSIFICATION OF MATERIALS (Description) (d) | % CORE RECOVERY (e) | BOX OR SAMPLE NO. (f) | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) (g)

Depth: 10.0, 20.0, 30.0, 40.0, 50.0

Classification of materials:

0.0' to 5.5'

SAND, fine-grained, clayey, hard, sli. moist, brown.

5.5' to 22.0'

CLAY, sandy, non-calc., sli. moist, hard, mottled tan and gray.

@ 14.7' - increase in moisture content to base of overburden.

from 18.7' to 22.0' - calc.

22.0' to 23.5'

CLAY, calc., w/ scattered gravel and well-rounded siltstone concretions, moist, medium to stiff, tan.

-- Augered into primary material @ 23.5', set casing to 25.0', cleaned out, and started 6" core @ 26.2' -

26.2' to 50.0'

SHALE, sandy, non-calc., hard (penetrometer / 4.5), thin-bedded, fossilif., unjointed and unfractured to T.D., unweathered, gray.

Sandstone concretions avg. 0.1' in thickness at the following depths: 28.5', 29.3', 30.3', 31.2', 37.9.

Shaley sandstone beds at the following depths:

27.0 to 27.4 - laminated
36.8 to 37.1 - "
42.0 to 42.9 - " and sli. fissile. Zone badly washed by core bbl. action.

T.D. - 50.0' -

% core recovery / box or sample no.:

A
Can 1
Can 2
Can 3
Can 4
Can 5
Can 6
Can 7
Can 8
Can 9
Can 10
22.7
Clean out + set casing
26.2 — 26.2
L. 0.8
29.2
G 0.2 — 1
32.9
33.2
G 0.6 — 2
37.2 — 37.9
L 0.0
41.2 — 3
L 0.0 — 43.2
45.2
L. 8.0 — 4
50.0 — 50.0

Remarks:

1. After completion, hole was bailed to 45.0' with casing pulled. 24 hour check ________.
2. Jar: A. 0.0 to 2.7
3. Denison cans:
   1. 2.7 to 4.7
   2. 4.7 to 6.7
   3. 6.7 to 8.7
   4. 8.7 to 10.7
   5. 10.7 to 12.7
   6. 12.7 to 14.7
   7. 14.7 to 16.7
   8. 16.7 to 18.7
   9. 18.7 to 20.7
   10. 20.7 to 22.7

   Note: Jar samples taken from shoe at each sample depth.
4. Cartons:
   1. 27.4 to 28.4
   2. 31.6 to 32.6
   3. 38.8 to 39.7
   4. 43.8 to 44.5
   5. 49.0 to 50.0
5. Shale weathored to 24.9'.
6. 8" casing set to 25.0'.
7. Drilling methods:
   1. 0.0 to 2.7 - auger
   2. 2.7 to 22.7 - d. bbl.
   3. 22.7 to 26.2 - auger
   4. 26.2 to 50.0 - 6" core

Hole No. 6DC-18

DRILLING LOG

DIVISION SWD

INSTALLATION FWD

SHEET 1 OF 1 SHEETS

1. PROJECT AUBREY DAM
2. LOCATION (Coordinates or Station)
3. DRILLING AGENCY USCE
4. HOLE NO. (As shown on drawing title and file number) 6DC-18
5. NAME OF DRILLER G. SCHOONOVER
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN 18.2
8. DEPTH DRILLED INTO ROCK 11.8'
9. TOTAL DEPTH OF HOLE 30.0'
10. SIZE AND TYPE OF BIT 6" CARBOLOY
11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 1500
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED 8 — UNDISTURBED 5
14. TOTAL NUMBER CORE BOXES 2
15. ELEVATION GROUND WATER SEE REMARKS COLUMN
16. DATE HOLE — STARTED 7 SEPT. 71 — COMPLETED 8 SEPT 71
17. ELEVATION TOP OF HOLE 595.11
18. TOTAL CORE RECOVERY FOR BORING 95 %
19. SIGNATURE OF INSPECTOR Jackie R.

ELEVATION (a) | DEPTH (b) | LEGEND (c) | CLASSIFICATION OF MATERIALS (Description) (d) | % CORE RECOVERY (e) | BOX OR SAMPLE NO. (f) | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) (g)

Elevation / depth: 595.11 — 0; 576.91 — 18.2; 20; 565.11 — 30.0; 40.0

Classification of materials:

0.0' TO 1.0'

CLAY: SILTY, W/ TRACE OF FINE SAND, STIFF, SLI. MOIST, ROOT ZONE, DARK BROWN.

1.0' TO 6.6'±

CLAY: W/ TRACE OF FINE SAND & SILT, W/ CARBON STAINS, MOIST, V. STIFF DOWN TO HARD, RUST BROWN.

6.6'± TO 10.0'±

CLAY: SANDY, W/ CARBON STAINS, MOIST, V. STIFF, RUST BROWN

10.0'± TO 12.6'

CLAY: V. SANDY, W/ FINE TO MEDIUM GRAVEL, V. MOIST, STIFF TO V. STIFF, RUST BROWN

12.6' TO 14.6'

GRAVEL: FINE TO MED. GRAVEL W/ TRACE OF SAND & CLAY BINDER, V. MOIST, RUST BROWN

14.6' TO 18.2'

SAND-GRAVEL: GRADED SAND, W/ FINE TO COARSE GRAVEL, W/ TRACE OF FINES, SAT'D., RUST BRN.

18.2' TO 30.0' T.D.

SHALE: MOD. WEATH. DOWN TO ESS. UNWEATH.; W/ SANDY LAMINATIONS & OCCASIONAL SANDSTONE FLAGS; W/ PURPLE IRONSTONE CONCRETIONS IN UPPER THREE FEET; W/ TIGHT FRACTURES IN WEATH. ZONE; SLI. MOIST, SOFT (ROCK CLASS.); WEATH. ZONE PREDOM. GRAY BROWN W/ RUST YELLOW; UNWEATH. ZONE IS BLUISH GRAY.

18.2'-25.2': MOD. WEATH.
25.2'-28.2': SLI. WEATH.
28.2'-30.0': ESS. UNWEATH.
27.2'-27.4': S.S. FLAG
27.9': IRONSTONE CONCRETION

T.D 30.0'

% core recovery / box or sample no.:

0.0
A
1.0
No SPL
1.6
DB 1 (2.5)
B 3.6
DB 2 (4.0)
C 5.6
DB 3 (2.75)
D 7.6
DB 4 (2.0)
E 9.6
No SPL.
10.6
DB 5
F 12.6
G
14.6
H
18.2
I
21.2 — 21.2
D 4.0 / R 4.0 — Box 1
25.2
D 4.8 / R 4.3 — 27.2 — Box 2
29.5
30.0

Remarks:

I. DRILLING:
8" FLIGHT AUGER 0.0' - 1.6'
6" DENISON 1.6' - 14.6'
8" FLIGHT AUGER: 14.6' - 20.0'
CLEANED OUT WITH 10" AUGER & SET CASING TO 20.0'
CLEANED OUT CASING TO 21.2'
6" CORE BARREL: 21.2' - 30.0'

II. SAMPLES:
JAR A: 0.0' - 1.0'
B: 3.6'
C: 5.6'
D: 7.6'
E: 9.6'
F: 12.6'
G: 12.6' - 14.6'
H: 14.6' - 18.2'
I: 18.2' - 21.2'
DB 1: 1.6' - 3.6'
2: 3.6' - 5.6'
3: 5.6' - 7.6'
4: 7.6' - 9.6'
5: 10.6' - 12.6'
NOTE: LOST SAMPLE FROM 9.6' - 10.6'; DENISON SAMPLE DISTURBED FROM 12.6' - 14.6'; TOOK JAR SAMPLE
C - 1: 22.4' - 23.4'
2: 26.2' - 27.2'

III. WATER LEVEL.
*BORING BAILED TO 29.2' ON PN OF 8 SEPT & LEFT OPEN 24 HOURS; WATER LEVEL AT 15.6'.

IV. DEPTH OF WEATH.:
MAT'L. WEATH. TO 28.2'.

V. MISC.
POCKET PENETROMETER READINGS IN COLUMN "e." AND JAR SAMPLES WERE TAKEN FROM DENISON SHOE.

ENG FORM 1836 1 APR 63 PREVIOUS EDITIONS MAY BE USED

PROJECT AUBREY DAM — HOLE NO. 6DC-18

Hole ... 6DC-16

DIVISION SWD	INSTALLATION FWD		SHEET 1 OF 1 SHEETS
DAM	10 SIZE AND TYPE OF BIT 6" CARBOLOY		
	11 DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL		
	12 MANUFACTURER'S DESIGNATION OF DRILL FAILING 1500		
6DC-18	13 TOTAL NO. OF OVERBURDEN SAMPLES TAKEN	DISTURBED 8	UNDISTURBED 5
	14 TOTAL NUMBER CORE BOXES 2		
	15 ELEVATION GROUND WATER SEE REMARKS COLUMN		
INED ______ DEG. FROM VERT.	16 DATE HOLE	STARTED 7 SEPT. 71	COMPLETED 8 SEPT. 71
URDEN 18.2'	17 ELEVATION TOP OF HOLE 595.11'		
ROCK 11.8'	18 TOTAL CORE RECOVERY FOR BORING 95 %		
30.0'	19 SIGNATURE OF INSPECTOR Jackie R		

CLASSIFICATION OF MATERIALS (Description)

0.0' TO 1.0'
CLAY: SILTY, W/ TRACE OF FINE SAND, STIFF, SLI. MOIST, ROOT ZONE, DARK BROWN.

1.0' TO 6.6'±
CLAY: W/ TRACE OF FINE SAND & SILT, W/ CARBON STAINS, MOIST, V. STIFF DOWN TO HARD, RUST BROWN.

6.6'± TO 10.0'±
CLAY: SANDY, W/ CARBON STAINS, MOIST, V. STIFF, RUST BROWN

10.0'± TO 12.6'
CLAY: V. SANDY, W/ FINE TO MEDIUM GRAVEL, V. MOIST, STIFF TO V. STIFF, RUST BROWN

12.6' TO 14.6'
GRAVEL: FINE TO MED. GRAVEL W/ TRACE OF SAND & CLAY BINDER, V. MOIST, RUST BROWN

14.6' TO 18.2'
SAND-GRAVEL: GRADED SAND, W/ FINE TO COARSE GRAVEL, W/ TRACE OF FINES, SAT'D., RUST BRN.

18.2' TO 30.0' T.D.
SHALE: MOD. WEATH. DOWN TO ESS. UNWEATH.; W/ SANDY LAMINATIONS & OCCASIONAL SANDSTONE FLAGS; W/ PURPLE IRONSTONE CONCRETIONS IN UPPER THREE FEET; W/ TIGHT FRACTURES IN WEATH. ZONE; SLI. MOIST; SOFT (ROCK CLASS.); WEATH. ZONE PREDOM. GRAY BROWN W/ RUST YELLOW; UNWEATH. ZONE IS BLUISH GRAY.

18.2'-25.2': MOD. WEATH.
25.2'-28.2': SLI. WEATH.
28.2'-30.0': ESS. UNWEATH.
27.2'-27.4': SS. FLAG
27.9': IRONSTONE CONCRETION

T.D. 30.0'

% CORE RECOVERY / BOX OR SAMPLE NO.

0.0 A 1.0; No Spl. 1.6; DB 1 (2.5); "B" 3.6; DB 2 (4.0); "C" 5.6; DB 3 (2.75); "D" 7.6; DB 4 (2.0); "E" 9.6; No Spl. 10.6; DB 5; "F" 12.6; G 14.6; H; 18.2; I; 21.2 21.2; D: 4.0' R: 4.0' Box 1; 25.2; D: 4.8' R: 4.3' Box 2; 27.5; 30.0

REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)

I. DRILLING:
8" FLIGHT AUGER: 0.0' - 1.6'
6" DENISON: 1.6' - 14.6'
8" FLIGHT AUGER: 14.6' - 20.0'
CLEANED OUT WITH 10" AUGER & SET CASING TO 20.0'
CLEANED OUT CASING TO 21.2'
6" CORE BARREL: 21.2' - 30.0'

II. SAMPLES:
JAR A: 0.0' - 1.0'
B: 2.6'
C: 5.6'
D: 7.6'
E: 9.6'
F: 12.6'
G: 12.6' - 14.6'
H: 14.6' - 18.2'
I: 18.2' - 21.2'
DB 1: 1.6' - 3.6'
2: 3.6' - 5.6'
3: 5.6' - 7.6'
4: 7.6' - 9.6'
5: 10.6' - 12.6'
NOTE: LOST SAMPLE FROM 9.6' - 10.6'. DENISON SAMPLE DISTURBED FROM 12.6' - 14.6'; TOOK JAR SAMPLE.
C - 1: 22.4' - 23.4'
2: 26.2' - 27.2'

III. WATER LEVEL:
*BORING BAILED TO 29.2' ON PM OF 8 SEPT & LEFT OPEN 24 HOURS; WATER LEVEL AT 15.6'.

IV. DEPTH OF WEATH.:
MAT'L. WEATH TO 28.2'.

V. MISC.
POCKET PENETROMETER READINGS IN COLUMN "E" AND JAR SAMPLES WERE TAKEN FROM DENISON SHOE.

VIOUS EDITIONS MAY BE USED | PROJECT AUBREY DAM | HOLE NO. 6DC-18

Hole No. 6A4C-19

DRILLING LOG	DIVISION Southwestern	INSTALLATION Fort Worth	SHEET 1 OF 2 SHEETS
1. PROJECT Aubrey Dam Site		10. SIZE AND TYPE OF BIT	
2. LOCATION (Coordinates or Station) Intake Structure		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	
3. DRILLING AGENCY Corps of Engineers		12. MANUFACTURER'S DESIGNATION OF DRILL Failing 1500	
4. HOLE NO. (As shown on drawing title and file number) 6A4C-19		13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN	DISTURBED 5 · UNDISTURBED 0
5. NAME OF DRILLER Cronin		14. TOTAL NUMBER CORE BOXES 4	
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.		15. ELEVATION GROUND WATER ****	
		16. DATE HOLE	STARTED 14 May 72 · COMPLETED 5 May 72
7. THICKNESS OF OVERBURDEN 22.0		17. ELEVATION TOP OF HOLE 597.12	
8. DEPTH DRILLED INTO ROCK 21.0		18. TOTAL CORE RECOVERY FOR BORING 95.2 %	
9. TOTAL DEPTH OF HOLE 43.0		19. SIGNATURE OF INSPECTOR	

ELEVATION | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS (Description) | % CORE RECOVERY | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)

Depth scale: 10.0, 20.0, 30.0

Base of weathering

0.0' to 15.0'
CLAY, non-calc., moist, stiff to hard, sli. sandy, tan and gray.

15.0' to 22.0' *
GRAVEL (max. size 1"), clayey, sli. sandy, med. dense, tan.

- - Fishtail drilled into primary material at 22.0', set casing, and started 4" core @ 22.0' - - - -

22.0' to 43.0'
SHALE, sli. calc., wea. to 27.6', m. hard, medium bedded, unjointed and unfractured, tan to gray.

SANDSTONE, med. cemented, m. hard, at the following depths:
25.8' to 26.1'
27.0' to 27.3'
33.8' to 33.9'
34.0' to 34.5'
35.1' to 35.3'

LIMESTONE, very fossilif., m. hard, from 31.5' to 31.6'.

T.D. - 43.0' -

% core recovery: 21.0; L 0.5; 26.0; L 0.5; 31.0; L 1.4; 36.0; G. 1.0; 41.0; L 0.0; 43.0

Sample no.: A, B, C, D, E; Box 1, 2, 3, 4

****
1. After completion, hole was bailed to 13.0', 3" I.D. plastic pipe was placed to T.D.

2. Jars:
A. 0.0 to 1.0
B. 2.5 to 3.5
C. 5.0 to 6.0
D. 10.0 to 11.0
E. 15.0 to 15.6
Jar samples were taken from selected continuous shelby tube samples to 15.6'.

3. Cartons:
1. 24.5 to 25.5
2. 30.5 to 31.5
3. 36.3 to 37.3
4. 41.0 to 42.0

4. Weathered to 27.6'

5. Fishtail drilled from 15.6 to 22.0.

* Subsequent exploration suggests that a portion of the interval between 15.0 and 22.0 feet is composed of the following: Limestone, hard, massive, weath., white and yellow-brown, fossiliferous.

RECORD DRAWING-WORK AS BUILT

SYM	DO NO	ACTION	DATE	DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

DESIGNED BY
DRAWN BY
REVIEWED BY:

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS
EMBANKMENT, SPILLWAY AND OUTLET WORKS
LOGS OF BORINGS
6 DC-16, 6DC-17, 6 DC-18, AND 6A4C-19

SUBMITTED BY
ENGINEER

INVITATION NO. DACW63-82-B-0025 | DATE MAR. 1982
CONTRACT NO. DACW63-82-C-00
DRAWING NUMBER | SHEET NO. OF | SEQUENCE NO. 15

CONTRACT NO. DACW63-82-C-00

TO ACCOMPANY FOUNDATION REPORT

Hole No. 6A40-20

DRILLING LOG | DIVISION Southwestern
INSTALLATION Fort Worth
SHEET 1 OF 2 SHEETS
1. PROJECT Aubrey Dam Site
2. LOCATION (Coordinates or Station) Right abutment - on C.L. and outlet works
3. DRILLING AGENCY Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number) 6A40-20
5. NAME OF DRILLER Cromain
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ________ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN 19.0
8. DEPTH DRILLED INTO ROCK 28.0
9. TOTAL DEPTH OF HOLE 47.0
10. SIZE AND TYPE OF BIT 6" auger, 4" carboloy
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)
12. MANUFACTURER'S DESIGNATION OF DRILL Failing 36
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN | DISTURBED 5 | UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES 5
15. ELEVATION GROUND WATER ----
16. DATE HOLE | STARTED 8 May 72 | COMPLETED 8 May 72
17. ELEVATION TOP OF HOLE 596.95
18. TOTAL CORE RECOVERY FOR BORING 88.6 %
19. SIGNATURE OF INSPECTOR James L. Bludee

ELEVATION a | DEPTH b | LEGEND c | CLASSIFICATION OF MATERIALS (Description) d | % CORE RECOVERY e | BOX OR SAMPLE NO. f | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g

Depth: 10.0, 20.0, 30.0, 50.0

Base of Weathering

Legend: 1, 2, 3, 4, 5

0.0' to 19.0'

CLAY - -
0.0' to 1.3' - sli. calc. moist, stiff, brown.

1.3' to 4.1' - non-calc., moist, stiff, mottled, brown, tan.

4.1' to 7.8' - increase in sand content, med., moist, tan.

7.8' to 19.0' - non-calc., moist, stiff, tan.

- - Start 4" core @ 19.0' - -

19.0' to 21.8'

LIMESTONE, stained, m. hard, jointed, tan.

21.8' to 47.0'

SHALE - -
21.8 to 22.8' - sli. calc., stiff, weathered, tan.

22.8' to 47.0' - sli. calc., stiff to hard, unjointed and unfractured except from 24.0 to 24.5, sli. sandy, gray.

36.0' to 36.1 - highly fossilif.

T.D. - 47.0' -

% core recovery: 19.0, L. 0.8, 21.0, G. 0.5, 23.0, L. 0.5, 26.5, L. 0.5, 31.5, L. 0.5, 36.0, L. 0.6, 41.0, 45.0, 47.0

Box or sample no.: A, B, C, D, E, 1, 2, 3, 4, 5, 47.0

----
1. After completion, bore was bailed to 42.1'. 3" I.D. perforated plastic casing was placed to T.D.

2. Jars:
A. 0.0 to 1.0
B. 2.0 to 3.0
C. 5.0 to 6.0
D. 10.0 to 11.0
E. 15.0 to 16.0

Jar samples selected from continuous shelby tube samples through overburden.

3. Cartons:
1. 21.8 to 22.8
2. 26.2 to 27.2
3. 30.0 to 31.0
4. 33.6 to 34.6
5. 42.5 to 43.4

4. Weathered to 22.8

Hole N

DRILLING LOG | DIVISION Southwestern
INSTALLATION Fort Worth
1. PROJECT Aubrey Dam Site
2. LOCATION (Coordinates or Station) Right abutment - stilling basin
3. DRILLING AGENCY Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number) 6A40-21
5. NAME OF DRILLER Cromain
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ________ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN 31.7
8. DEPTH DRILLED INTO ROCK 20.5
9. TOTAL DEPTH OF HOLE 52.2
10. SIZE AND TYPE OF BIT 6" auger,
11. DATUM FOR ELEVATION SHOWN (TBM or
12. MANUFACTURER'S DESIGNATION OF DRILL Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN | DISTURBED 8
14. TOTAL NUMBER CORE BOXES 5
15. ELEVATION GROUND WATER ----
16. DATE HOLE | STARTED 5 May 72
17. ELEVATION TOP OF HOLE 581.04
18. TOTAL CORE RECOVERY FOR BORING
19. SIGNATURE OF INSPECTOR James L. Bludee

ELEVATION a | DEPTH b | LEGEND c | CLASSIFICATION OF MATERIALS (Description) d | % CORE RECOVERY e | BOX OR SAMPLE NO. f | RE (Drilling time, weathering,

Depth: 10.0, 20.0, 30.0, 50.0

Legend: 1, 2, 3, 4

0.0' to 23.7'

CLAY, non-calc., sandy, moist, stiff, tan to gray.

23.7' to 28.2'

SAND, clayey, moist, m. dense, tan and gray.

28.2' to 29.2'

GRAVEL, sandy, max. size -3/4", well-rounded, moist, tan.

- - Drilled into unweathered primary material @ 29.2' - -

- - Start 6" core @ 31.7' - -

31.7' to 52.2'

SHALE, sli. calc., unwea. m. hard, thick-bedded, sli. sandy, some jointed zones below 42.1', gray

40.6' to 42.1' - SANDSTONE soft, with SHALE laminae, tan.

T.D. - 52.2' -

% core recovery: 31.7, 31.7, 36.2, 40.5, 45.2, 50.2, 52.2

Box or sample no.: A, B, C, D, E, F, G., H., 1, 2, 3, 4, 5

----
1. After bole was and 3" I plastic, to T.D.

2. Jars:
A. 0.0 t
B. 2.0 t
C. 5.0 t
D. 10.0
E. 15.0
F. 20.0
G. 25.0
H. 29.0

Jar sa select contin sample burden

3. Carto
1. 36.2
2. 42.1
3. 45.2
4. 50.0

4. Primar not we

Hole No. 6A4C-21

NG LOG Division	Southwestern
Installation	Fort Worth
Sheet 1 of 2 sheets	
ey Dam Site	
(Coordinates or Station)	abutment - stilling basin
agency	of Engineers
(As shown on drawing title and file number)	6A4C-21
driller	ain
of hole	☐ inclined ______ deg. from vert.
of overburden	31.7
lled into rock	20.5
th of hole	52.2
10. Size and type of bit	6" auger, 4" core
11. Datum for elevation shown (TBM or MSL)	
12. Manufacturer's designation of drill	Failing 1500
13. Total no. of overburden samples taken	Disturbed 8 / Undisturbed 0
14. Total number core boxes	5
15. Elevation ground water	****
16. Date hole	Started 5 May 72 / Completed 5 May 72
17. Elevation top of hole	581.04
18. Total core recovery for boring	99.6 %
19. Signature of inspector	James L. Chisholm

Legend	Classification of Materials (Description)	% Core Recovery	Box or Sample No.
	0.0' to 23.7' CLAY, non-calc., sandy, moist, stiff, tan to gray.		A B C D
	23.7' to 28.2' SAND, clayey, moist, m. dense, tan and gray.		E
	28.2' to 29.2' GRAVEL, sandy, max. size -3/4", well-rounded, moist, tan.		F
	- - Drilled into unweathered primary material @ 29.2' - -		G.
	- - Start 6" core @ 31.7' - -		H.
	31.7' to 52.2' SHALE, sli. calc., unwea. m. hard, thick-bedded, sli. sandy, some jointed zones below 42.1', gray	31.7 33.7	1
1		36.2	2
	40.6' to 42.1' - SANDSTONE soft, with SHALE laminae, tan.	40.5	3
2		45.2	4
3 4		50.2	5
	T.D. - 52.2' -	52.2	

Remarks (Drilling time, water loss, depth of weathering, etc., if significant)

****

1. After completion, hole was bailed to 46 D, and 3" I.D. perforated plastic pipe was place to T.D.

2. Jars:
   - A. 0.0 to 1.0
   - B. 2.0 to 3.0
   - C. 5.0 to 6.0
   - D. 10.0 to 11.0
   - E. 15.0 to 16.0
   - F. 20.0 to 21.0
   - G. 25.0 to 26.0
   - H. 29.0 to 30.2

   Jar samples were selected from continuous shelby tu samples through over burden.

3. Cartons:
   - 1. 36.2 to 37.2
   - 2. 42.1 to 43.1
   - 3. 45.2 to 46.2
   - 4. 50.0 to 50.9

4. Primary material was not weathered.

Hole No. 3S4C-21A

DRILLING LOG Division	Southwestern
Installation	Fort Worth
Sheet 1 of 3 sheets	
1. Project	Aubrey Dam Site No. 1
2. Location (Coordinates or Station)	Not Shown Y 2,137,824 Y 613,400
3. Drilling agency	Corps of Engineers
4. Hole No. (As shown on drawing title and file number)	3S4C-21A
5. Name of driller	Bill Stanton Trinity Engineering Testing Corporation
6. Direction of hole	☒ Vertical ☐ Inclined ______ deg. from vert.
7. Thickness of overburden	30.6
8. Depth drilled into rock	69.4
9. Total depth of hole	100.0
10. Size and type of bit	3" Shelby & 4" Core
11. Datum for elevation shown (TBM or MSL)	MSL
12. Manufacturer's designation of drill	DAMCO Model 1250
13. Total no. of overburden samples taken	Disturbed 7 / Undisturbed 17
14. Total number core boxes	11
15. Elevation ground water	See Note 2
16. Date hole	Started 12-6-72 / Completed 12-13-72
17. Elevation top of hole	579.74
18. Total core recovery for boring	93.2 %
19. Signature of inspector	See Note 1 under "Remarks"

Elevation	Depth	Classification of Materials (Description)
577.74	2.0'	Brown Clay
573.74	6.0'	Reddish Brown Sandy Clay
561.74	18.0'	Tan Silty Clay w/Sand Lenses
558.74	21.0'	Tan Sandy Clay
557.74	22.5'	Tan Clayey Sand
554.94	24.8'	Tan Clay w/Sand Lenses
553.24	26.5'	Tan Clayey Sand
549.14	30.6'	Tan Silty Sand and Gravel
529.74		30.6'-50.0' SHALE, Soft-Mod. Hard, Unweath., Gray-Dark Gray, Thin-Bedded to Massive, Non-Jointed, Often Sandy, w/Numerous Sand Pockets and Lenses. 32.3' to 32.4', Sandstone, M.-Hard, Gry., Lam., W.-45.0'-45.3', Limestone, Gray, Hard, Fossiliferous, Oolitic. Sand Pockets and Lenses, Gray, Med.-Fine-Grained, Friable, Soft-Mod. Hard at: 31.5-31.7, 31.9-32.1, 32.4-32.6, 40.0-40.5, 40.9-41.0, 41.7-42.1, 42.4-42.5, 43.8-44.2, 44.6-45.0, 46.3-46.5, 46.8-47.0. 48.0'-50.0', Sandstone, Mod. Hard, Well-Cemented, Gray.
499.74		50.0'-80.0' SHALE, Moderately Hard, Unweathered, Dark Gray to Black, Laminated, Non-Jointed, w/Numerous Sand Pockets and Lenses. 53.5'-55.0', Sandstone, Hard, Fine-Med.-Grained, Well-Cemented, Gray. Sand Pockets and Lenses, Gray, Med.-Fine-Grained, Friable, Soft-Med. Hard, at: 55.0-55.9, 56.1-56.2, 56.9-57.4, 58.1-58.5, 67.2-71.3. 64.4'-65.0', Fossiliferous Zone, Hard, Calcareous. 79.3'-79.5', Sandstone, Mod. Hard, Gray, Fine-Med.-Grained, Well-Cemented
		80.0'-96.3' SHALE, Mod. Hard-Hard, Unweath., Very Dark Gray to Black, Massive, Non-Jointed. 82.1', Numerous Siltstone Nodules, Tan, Very Hard.

% Core Recovery	Box or Sample No.
100	W1
100	W2
100	J1
100	W3
100	W4
100	J2
100	W5
100	W6
100	J3
100	W7
100	W8
100	J4
100	W9
100	W10
100	J5
100	W11
100	W12
100	W13
100	J6
100	W14
100	W15
100	W16
100	J7
100	W17
100	J8
R-1 90% 35.0	Box 1
R-2 90% 40.0	Box 2
R-3 90% 45.0	Box 2
R-4 90% 50.0	Box 3
R-5 86% 55.0	Box 4
R-6 84% 60.0	
R-7 100% 65.0	Box 5
R-8 86% 70.0	Box 6
R-9 100% 75.0	Box 7
R-10 94% 80.0	
R-11 100% 85.0	Box 8
R-12 100% 90.0	Box 9
R-13 100%	Box10

Remarks (Drilling time, water loss, depth of weathering, etc., if significant)

3" Shelby Tube Samples 0.0'-28.0'.

JAR SAMPLES
1. 2.0'- 3.0'
2. 6.0'- 7.0'
3. 10.0'-11.0'
4. 14.0'-15.0'
5. 18.0'-19.0'
6. 22.0'-23.0'
7. 26.0'-27.0'
8. 30.0'-31.0'

WRAP SAMPLES
1. 0.0'- 1.0'
2. 1.0'- 2.0'
3. 3.0'- 4.5'
4. 4.5'- 6.0'
5. 7.0'- 8.5'
6. 8.5'-10.0'
7. 11.0'-12.5'
8. 12.5'-14.0'
9. 15.0'-16.5'
10. 16.5'-18.0'
11. 19.0'-20.0'
12. 20.0'-21.0'
13. 21.0'-22.0'
14. 23.0'-24.0'
15. 24.0'-25.0'
16. 25.0'-26.0'
17. 27.0'-28.0'

Moist at 18.0'-22.5'
Wet at 22.5'-30.6'
Set Tub at 28.0' and Cleaned Hole to 30.0'
3" Shelby Tube Sample 30.0'-31.0'
(Continued)

Began Coring w/4" bbl. at 31.0'.

CARTON SAMPLES
1. 33.6'-34.5'
2. 36.7'-37.7'
3. 40.9'-41.8'
4. 45.6'-46.5'
5. 49.1'-49.7'
6. 50.7'-51.5'
7. 57.3'-57.8'
8. 61.2'-61.7'
9. 67.8'-68.7'
10. 70.0'-70.9'
11. 77.0'-77.9'
12. 83.6'-84.5'
13. 85.0'-85.9'
14. 90.0'-90.9'
15. 93.4'-94.3'
16. 98.0'-98.9'

BOXES
1. 31.0'-36.7'
2. 36.7'-43.5'
3. 43.5'-49.1'
4. 49.1'-56.6'
5. 56.6'-64.4'
6. 64.4'-71.3'
7. 71.3'-77.9'
8. 77.9'-82.8'
9. 82.8'-90.9'
10. 90.9'-96.3'
11. 96.3'-100.0'

Elevation
483.44
479.74

Hole No. 3S4C-21A

DIVISION Southwestern	INSTALLATION Fort Worth
	SHEET 1 OF 3 SHEETS
No. 1	10. SIZE AND TYPE OF BIT 3" Shelby & 4" Core
Y: 613,500	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
	12. MANUFACTURER'S DESIGNATION OF DRILL DAMCO Model 1250
3S4C-21A	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 7, UNDISTURBED 17
Bill Stanton ing Testing Corporation	14. TOTAL NUMBER CORE BOXES 11
	15. ELEVATION GROUND WATER See Note 2
DEG. FROM VERT.	16. DATE HOLE: STARTED 12-6-72, COMPLETED 12-13-72
URDEN 30.6	17. ELEVATION TOP OF HOLE 579.74
ROCK 69.4	18. TOTAL CORE RECOVERY FOR BORING 93.2 %
E 100.0	19. SIGNATURE OF INSPECTOR See Note 1 under "Remarks"

CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f
Brown Clay	100	W1
2.0'	100	W2
Reddish Brown Sandy Clay	100	J1
	100	W3
6.0'	100	W4
	100	J2
	100	W5
Tan Silty Clay w/Sand Lenses	100	W6
	100	J3
	100	W7
	100	W8
	100	J4
	100	W9
18.0'	100	W10
Tan Sandy Clay	100	J5
	100	W11
21.0'	100	W12
22.5' Tan Clayey Sand	100	W13
	100	J6
Tan Clay w/Sand Lenses	100	W14
24.8'	100	W15
	100	W16
26.5' Tan Clayey Sand	100	J7
Tan Silty Sand and Gravel	100	W17
30.6'	100	J8

30.6'-50.0'
SHALE, Soft-Mod. Hard, Unweath., Gray-Dark Gray, Thin-Bedded to Massive, Non-Jointed, Often Sandy, w/Numerous Sand Pockets and Lenses.
32.3' to 32.4', Sandstone, M.-Hard, Gry., Lam., W.-
45.0'-45.3', Limestone, Gray, Hard, Fossiliferous, Oolitic.
Sand Pockets and Lenses, Gray, Med.-Fine-Grained, Friable, Soft-Mod. Hard at: 31.5-31.7, 31.9-32.1, 32.4-32.6, 40.0-40.5, 40.9-41.0, 41.7-42.1, 42.4-42.5, 43.8-44.2, 44.6-45.0, 46.3-46.5, 46.8-47.0.
48.0'-50.0', Sandstone, Mod. Hard, Well-Cemented, Gray.

50.0'-80.0'
SHALE, Moderately Hard, Unweathered, Dark Gray to Black, Laminated, Non-Jointed, w/Numerous Sand Pockets and Lenses.
53.5'-55.0', Sandstone, Hard, Fine-Med.-Grained, Well-Cemented, Gray.
Sand Pockets and Lenses, Gray, Med.-Fine-Grained, Friable, Soft-Med. Hard, at: 55.0-55.9, 56.1-56.2, 56.9-57.4, 58.1-58.5, 67.2-71.3.
64.4'-65.0', Fossiliferous Zone, Hard, Calcareous.
79.3'-79.5', Sandstone, Mod. Hard, Gray, Fine-Med.-Grained, Well-Cemented

80.0'-96.3'
SHALE, Mod. Hard-Hard, Unweath., Very Dark Gray to Black, Massive, Non-Jointed.
82.1', Numerous Siltstone Nodules, Tan, Very Hard.

% CORE RECOVERY e			BOX OR SAMPLE NO. f
R-1	90%	35.0	Box 1
R-2	90%	40.0	Box 2
R-3	90%	45.0	Box 2
R-4	90%	50.0	Box 3
R-5	86%	55.0	Box 4
R-6	84%	60.0	
R-7	100%	65.0	Box 5
R-8	86%	70.0	Box 6
R-9	100%	75.0	Box 7
R-10	94%	80.0	Box 8
R-11	100%	85.0	
R-12	100%	90.0	Box 9
R-13	100%		Box10

REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g

3" Shelby Tube Samples 0.0'-28.0'

JAR SAMPLES
1. 2.0'- 3.0'
2. 6.0'- 7.0'
3. 10.0'-11.0'
4. 14.0'-15.0'
5. 18.0'-19.0'
6. 22.0'-23.0'
7. 26.0'-27.0'
8. 30.0'-31.0'

WRAP SAMPLES
1. 0.0'- 1.0'
2. 1.0'- 2.0'
3. 3.0'- 4.5'
4. 4.5'- 6.0'
5. 7.0'- 8.5'
6. 8.5'-10.0'
7. 11.0'-12.5'
8. 12.5'-14.0'
9. 15.0'-16.5'
10. 16.5'-18.0'
11. 19.0'-20.0'
12. 20.0'-21.0'
13. 21.0'-22.0'
14. 23.0'-24.0'
15. 24.0'-25.0'
16. 25.0'-26.0'
17. 27.0'-28.0'

Moist at 18.0'-22.5'
Wet at 22.5'-30.6'
Set Tub at 28.0' and Cleaned Hole to 30.0'
3" Shelby Tube Sample 30.0'-31.0'
(Continued)
Began Coring w/4" bbl. at 31.0'.

CARTON SAMPLES
1. 33.6'-34.5'
2. 36.7'-37.7'
3. 40.9'-41.8'
4. 45.6'-46.5'
5. 49.1'-49.7'
6. 50.7'-51.5'
7. 57.3'-57.8'
8. 61.2'-61.7'
9. 67.8'-68.7'
10. 70.0'-70.9'
11. 77.0'-77.9'
12. 83.6'-84.5'
13. 85.0'-85.9'
14. 90.0'-90.9'
15. 93.4'-94.3'
16. 98.0'-98.9'

BOXES
1. 31.0'-36.7'
2. 36.7'-43.5'
3. 43.5'-49.1'
4. 49.1'-56.6'
5. 56.6'-64.4'
6. 64.4'-71.3'
7. 71.3'-77.9'
8. 77.9'-82.8'
9. 82.8'-90.9'
10. 90.9'-96.3'
11. 96.3'-100.0'

ELEVATION a	DEPTH b	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			93.0		
	94		R-14	Box 10	
483.44	96		92.5%		
		96.3'-100.0' LIMESTONE, Gray, Hard, Unweathered	97.0		
	98		R-15 100%	Box 11	
479.74	100		100.0		
		Total Depth = 100.0'			Note 1: Soils Logged By: A. J. Simpson, Trinity Engineering Testing Corporation; Primary Logged By: Marr and Marple, Corps of Engineers, Fort Worth District Note 2: Installed 2" Plastic Pipe from 581.34 to for ground water observations.

RECORD DRAWING-WORK AS BUILT

SYM	DO NO.	ACTION	DATE	DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

DESIGNED BY:
DRAWN BY:
REVIEWED BY:

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS
EMBANKMENT, SPILLWAY AND
OUTLET WORKS
LOGS OF BORINGS
6A4C-20, 6A4C-21, AND 3S4C-21A

SUBMITTED BY
ENGINEER:

INVITATION NO. DACW63-82-B-0025
DATE: MAR, 1982
CONTRACT NO. DACW63-92-C-0083
DRAWING NUMBER
SHEET NO. OF
SEQUENCE NO. 16

CONTRACT NO DACW63-92-00X3

TO ACCOMPANY FOUNDATION REPORT

Hole No. 8AGC-22

DRILLING LOG	DIVISION Southwestern
INSTALLATION Fort Worth	SHEET 1 OF 2 SHEETS
1. PROJECT Aubrey Dam Site	10. SIZE AND TYPE OF BIT 8" auger, 6" carboloy, 6 diamond
2. LOCATION (Coordinates or Station) Intake structure	11. DATUM FOR ELEVATION SHOWN (TBM or MSL)
3. DRILLING AGENCY Corps of Engineers	12. MANUFACTURER'S DESIGNATION OF DRILL Failing 1500
4. HOLE NO. (As shown on drawing title and file number) 8AGC-22	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: DISTURBED 5, UNDISTURBED 0
5. NAME OF DRILLER Schoonover	14. TOTAL NUMBER CORE BOXES 8
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER **** 583 17 May 72
7. THICKNESS OF OVERBURDEN 8.0	16. DATE HOLE: STARTED 4 May 72, COMPLETED 9 May 72
8. DEPTH DRILLED INTO ROCK 40.5	17. ELEVATION TOP OF HOLE 593.5
9. TOTAL DEPTH OF HOLE 48.5	18. TOTAL CORE RECOVERY FOR BORING 96.3 %
	19. SIGNATURE OF INSPECTOR

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			0.0' to 2.6' SAND, sli. clayey, fine to med. grained, sli. moist, brown.		A	**** 1. After completion, ho was bailed to 45.0' an 2½" I.D. perforated plast pipe was placed in hol
			2.6' to 8.0' CLAY, sandy, moist, medium red to tan.		B	2. Jars: A. 0.0 to 2.6 B. 2.6 to 6.5 C. 6.5 to 8.0 D. 8.0 to 9.0 E. 9.0 to 10.0
			8.0' to 10.0' CLAY-SHALE, calc., moist, stiff, tan.	10.0	C D E	
	10.0	1	- - Start 6" core @ 10.0' - 10.0' to 19.0' CLAY-SHALE, calc., highly jointed, m. hard, numer rootlets, open, highly-stained joint from 14.1 to 15.3, tan and gray.	L. 0.3 14.4 L. 0.2	1	3. Cartons: 1. 10.0 to 11.0 2. 17.2 to 18.2 3. 22.6 to 23.6 4. 27.7 to 28.7 5. 38.4 to 39.4 6. 45.2 to 46.2
Base of Weathering	20.0	2	- - Transitional weathering contact @ 19.0' - - -	16.7	2	4. Weathered to 19.0'
			19.0' to 36.9' SHALE, calc., jointed and stained to 22.6', thick bedded, fossilif., gray	L. 0.5 23.1	3	5. Base of jointing at 22.6'.
		3	19.0' to 30.9' - m. hard	G. 1.0 27.0		
	39.0	4	30.9' to 36.9' - numerous nodular LIMESTONE pieces, hard.	L. 0.2 28.9 G. 0.9 32.5	4	
			- - Transitional contact @ 36.9' - - - - -	L 0.4	5	
		5	36.9' to 43.6' LIMESTONE - - 36.9' to 42.1' - m. hard fossilif., shaley, gray	37.7 G. 0.3 40.0	6	
			42.1' to 43.6' - sandy, fossilif., shaley, HARD, gray.	41.7 G. 0.4 45.5	7	
		6	43.6' to 47.2' SHALE, calc., m. hard, scattered LIMESTONE concretions, gray. 43.6' to 43.8' SILTSTONE, m. hard, tan.	L. 1.0 48.5	8	
		☒	47.2' to 48.5' NO RECOVERY		☒	
	50.0					
			T.D. 48.5' -			

DRILLING LOG	DIVISION Southwestern
INSTALLATION For- Worth District	
1. PROJECT Aubrey Dam	10. SIZE AND TYPE OF BIT 4'
2. LOCATION (Coordinates or Station) Sta 78+00, West Abutment C L	11. DATUM FOR ELEVATION SH
3. DRILLING AGENCY USACE-C	12. MANUFACTURER'S DESIGNA Failing 350
4. HOLE NO. (As shown on drawing title and file number) 8A4C-25	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN
5. NAME OF DRILLER Jay Cremean	14. TOTAL NUMBER CORE BO
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT	15. ELEVATION GROUND WATE
7. THICKNESS OF OVERBURDEN 19.0'	16. DATE HOLE STARTE 25
8. DEPTH DRILLED INTO ROCK 51 0'	17. ELEVATION TOP OF HOLE
9. TOTAL DEPTH OF HOLE 70.6	18. TOTAL CORE RECOVERY F
	19. SIGNATURE OF INSPECTOR Raymond T

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f
	0		0.0' to 17.6' CLAY-lean, sandy-fine; silty; dry. @ 0.6 - becomes moist. @ 1.7' - becomes stiff, well consolidated, fat @ 5.3' - becomes gravelly limestone, hard, max size 1"; lean, with color change. Yellowish brown.		A B C
	10		@ 13.6' - becomes very lean with more sand fines		D E F
			17.6 to [illegible] [illegible] - hard, [illegible] & angular limesto size 1-1/2"; san coarse; silty; mot [illegible] brown, gray, & yellowish-brown		G
	20		--Start 4" core at 20.0'---	L-0.5 22.0	
			20.0' to 69.2' SHALE, soft - moderately hard, moist, interbedded with scattered, thin sandstone seams.	L-0.2 24.0 L-0.4 26.5	1
			20.0'- 2500'- Box 1 Box 2 Weathered, oxide stains, yellow-brown & gray.	L-0	
	30		24.6'-24.8'-SANDSTONE, fine, argillaceous, moderately cemented.	30.4 31.5	2
			25.0-33.3' - Predom Box 2 Box 3 dark gray with oxide staining limited to Bedding Planes.	35.4	3
			28.2-29.6' - Fossiliferous 29.6-29.8' - Sandstone 32.8'-33.2' - Sandstone	36.5 L-0.6	4
	40		Box 3	39.8	

Hole No. 8A4C-25

vestern	INSTALLATION Fort Worth District
	SHEET 1 OF 2 SHEETS
	10. SIZE AND TYPE OF BIT 4" Core Barrel
	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
C.L.	12. MANUFACTURER'S DESIGNATION OF DRILL Failing 350
	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN · DISTURBED 7 · UNDISTURBED 8
4C-25	14. TOTAL NUMBER CORE BOXES 8
	15. ELEVATION GROUND WATER
DEG. FROM VERT.	16. DATE HOLE · STARTED 25 May 72 · COMPLETED 26 May 72
	17. ELEVATION TOP OF HOLE: 600.44
	18. TOTAL CORE RECOVERY FOR BORING %
	19. SIGNATURE OF INSPECTOR Raymond T. Hagen

CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
17.6'		A	JAR SAMPLES
lean, sandy-fine; dry.			A - 0.0' to 1.0' B - 3.0' to 4.0' C - 6.0' to 7.0' D - 9.0' to 10.0' E -12.0' to 13.0' F -15.0' to 16.0' G -18.0' to 19.5'
becomes moist. - becomes stiff, consolidated, fat - becomes gravelly tone, hard, max 1"; lean, with change. wish brown.		B C	CARTON SAMPLES
- becomes very h more sand fines		D E	1 - 22.3' to 23.3' 2 - 29.4' to 30.4' 3 - 34.0' to 35.0' 4 - 36.4' to 37.4 5 - 46.9' to 47.9 6 - 49.0' to 49.8 7 - 52.0' to 53.0' 8 - 58.8' to 59.8'
18.3'		F	PENTROMETER BLOWS 13.6' to 14.1' - 43 14.1' to 15.1' - 72
hard, rounded & limestone; max /2"; sandy-fine to silty; mottled- ray, & yellowish-	L-0.5	G	Set casing to 20.0' and started coring at that depth.
" core at 20.0'---	22.0		
69.2'	L-0.2	1	
	24.0		
oft - moderately t, interbedded tered, thin seams.	L-0.4		
	26.5		
Box 1 Box 2	L-0		
00'- ed, oxide stains, brown & gray.			
	30.4	2	
4.8'-SANDSTONE, rgillaceous, ely cemented.	31.5		
Box 2 Box 3			
' - Predom ay with taining limited ing Planes.		3	
	35.4		
.6' - Fossiliferous	36.5	4	
.8' - Sandstone 3.2'- Sandstone	L-0.6		
Box 3	39.8		

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	40		Box 3			
			33.3'-69.2' Unweathered, dark gray, moderately hard.	41.5 L-1.0		
			36.5'-36.8' - SANDSTONE, moderately hard, mod- erately cemented, very fine, thinly bedded, light gray-tan.			
			Box 4 Box 5	46.5		
			37.3-37.4' - Fossiliferous	G-0.3	5	
			46.7-47.4' - SANDSTONE 47.9-48.4' - " 50.4-50.6' - "		6	
	50		53.5-54.2' - " 54.6-54.9' - " 55.3-55.4' - " 56.4-56.5' - "	50.5 L-0.9	7	
			57.8-58.1' - " 58.2-58.7' - " 61.4-61.6' - " 62.9-64.4' - "			Unable to obtain Carton samples for last 10' of hole due to fragmentation of core
			Box 5 Box 6	55.5		
			64.4-64.9' - Fossiliferous 66.6'-66.9'- - SANDSTONE 67.0-67.6' - " 67.6-68.0' - " 68.5-68.7' - "	L-0.7	8	
	60		Box 6 Box 7	60.5 L-0.2		
				65.5 G-0.8		
	70		T.D 70.0'.	70.0		

ENG FORM MAR 71 1836 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT Aubrey Dam

HOLE NO. 8A4C-25

SYM	DO	NO

DESIGNED BY

DRAWN BY

REVIEWED BY

SUBMITTED BY

ENGINEER

TO ACC

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	40		Box [illegible]			
			33.3'-69.2' Unweathered, dark gray, moderately hard.	41.5		
				L-1.0		
			36.5'-36.8' - SANDSTONE, moderately hard, moderately cemented, very fine, thinly bedded, light gray-tan. Box 4 / Box 5	46.5		
			37.3-37.4' - Fossiliferous	G-0.3	5	
			46.7-47.4' - SANDSTONE			
			47.9-48.4' - "			
			50.4-50.6' - "		6	
	50		53.5-54.2' - "	50.5		
			54.6-54.9' - "			
			55.3-55.4' - "			
			56.4-56.5' - "	L-0.9		
			57.8-58.1' - "		7	
			58.2-58.7' - "			Unable to obtain Corlen samples for last 10' of hole due to fragmentation of core
			61.4-61.6' - "			
			62.9-64.4' - " Box 5 / Box 6	55.5		
			64.4-64.9' - Fossiliferous			
			66.6-66.9' - SANDSTONE	L-0.7		
			67.0-67.6' - "			
			67.6-68.0' - "			
			68.5-68.7' - "		8	
	60		Box 6 / Box 7	60.5		
				L-0.2		
				65.5		
				G-0.8		
	70		T.D 70.0'.	70.0		
	80					

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT Aubrey Dam

HOLE NO. 8A4C-25

RECORD DRAWING-WORK AS BUILT

SYM	DO NO	ACTION	DATE	DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

DESIGNED BY:
DRAWN BY
REVIEWED BY:

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS
EMBANKMENT, SPILLWAY AND
OUTLET WORKS
LOGS OF BORINGS
8A6C-22 AND 8A4C-25

SUBMITTED BY
ENGINEER

INVITATION NO. DACW63-82-B-0025
DATE MAR. 1982
CONTRACT NO DACW63-82-C-0083
DRAWING NUMBER
SHEET NO OF
SEQUENCE NO 17

CONTRACT NO DACW63-82-C-0083

TO ACCOMPANY FOUNDATION REPORT

Hole No. 8A-4C-26

DRILLING LOG — DIVISION Southwestern	INSTALLATION Fort Worth District — SHEET 1 of 2 SHEETS
1. PROJECT Aubrey Dam	10. SIZE AND TYPE OF BIT 4" Core Barrel
2. LOCATION (Coordinates or Station) Sta 34+00, West Abutment C.L.	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY USACE-C	12. MANUFACTURER'S DESIGNATION OF DRILL Failing 350
4. HOLE NO. (As shown on drawing title and file number) 8A-4C-26	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED 10 — UNDISTURBED 4
5. NAME OF DRILLER Jay Creamean	14. TOTAL NUMBER CORE BOXES 4
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER
	16. DATE HOLE — STARTED 24 May 72 — COMPLETED 25 May 72
7. THICKNESS OF OVERBURDEN 30.5'	17. ELEVATION TOP OF HOLE 598.91
8. DEPTH DRILLED INTO ROCK 24.5'	18. TOTAL CORE RECOVERY FOR BORING %
9. TOTAL DEPTH OF HOLE 55.0'	19. SIGNATURE OF INSPECTOR Raymond T. Hagen

ELEVATION a | DEPTH b | LEGEND c | CLASSIFICATION OF MATERIALS (Description) d | % CORE RECOVERY e | BOX OR SAMPLE NO. f | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g

Depth: 10, 20, 30, 40, 50

0.0' to 18.8'

CLAY-dry, lean, loose, sandy-fine; dark grayish-brown.

@ 0.8 becomes fat, stiff, wet

@ 2.3' color changes to light grayish-brown

@ 8.2' becomes very stiff, much fatter, well consolidated, with color change to dark grayish-brown

@ 11.2' becomes lean, very sandy-fine, with color change to yellowish brown.

18.8' to 26.4'

SAND-fine, clayey, lean, wet, silty; yellowish-brown

26.9' to 29.0'

GRAVEL-hard, well rounded, max size 1-1/2"; clayey, lean, sandy-fine; yellowish brown

@ 27.0 - becomes banded with Gravel & Sand bedding. Sand-fine to coarse; micaceous

--Start 4" Core at 31.5'--

31.5' to 54.4'

SHALE, moderately hard, moist, dark gray, fissile, unweathered (except for oxide staining to 33.1), non-jointed.

Box 1 / Box 2

31.5-31.6 SANDSTONE, argillaceous, moderately hard, moderately cemented, thin bedded, oxide stained. Box 2 / Box 3

31.8-32.6 SANDSTONE
35.2-44.1 Interbedded with thin, very fine, thin bedded, tan-lt gray sandstone seams.

36.8-37.0 SANDSTONE Box 3 / Box 4
39.3-40.0 SANDSTONE
39.8-40.0 Fossiliferous
41.8-42.4 SANDSTONE
42.8-43.8 "
44.0-44.1 "

46.9-49.8 Slightly fossiliferous throughout.

46.9-47.3 Sandy with fossil detritus
49.4-49.8 Very fossiliferous, very well cemented, claystone nodules from 49.4 - 49.6.

T.D. 55.0'

% Core recovery: 31.5 / L-0.7 / 33.5 / G-0.4 / 36.5 / L-1.2 / 41.5 / L-0.7 / 46.5 / L-1.0 / 51.5 / L-0.1 / 55.0 / 1.5 Left in hole

Box or sample no.: A, B, C, D, E, F, G, H, I, J, 1, 2, 3, 4

JAR SAMPLES

A - 0.0' to 1.0'
B - 3.0' to 4.0'
C - 6.0' to 7.0'
D - 9.0' to 10.0'
E - 12.0' to 13.0'
F - 15.0' to 16.0'
G - 18.0' to 19.0'
H - 21.0' to 22.0'
I - 24.0' to 25.0'
J - 27.0' to 28.6'

CARTON SAMPLES

1 - 33.4' to 34.3'
2 - 39.0' to 40.0'
3 - 43.5' to 44.6'
4 - 51.0' to 52.0'

Set casing to 30.5'.

Started coring at 31.5' (upper gravel deposit chewed up core - no recovery).

PENETROMETER TEST

26.9 to 27.4 - 50 Blows
27.4 to 28.4 - 97 "

Bailed Hole to 51.3'.

Direct Measure of Depth 53.5'

DRILLING LOG — DIVISION Southwestern	INSTALLATION Fort Worth D
1. PROJECT Aubrey Dam	10. SIZE AND TYPE OF
2. LOCATION (Coordinates or Station) Sta 29+50 West Abutment C.L.	11. DATUM FOR ELEV MSL
3. DRILLING AGENCY USACE-C	12. MANUFACTURER'S Failin
4. HOLE NO. (As shown on drawing title and file number) 8A-4C-27	13. TOTAL NO. OF OVERBURDEN SAMPLES
5. NAME OF DRILLER Jay Creamean	14. TOTAL NUMBER C
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROU
	16. DATE HOLE
7. THICKNESS OF OVERBURDEN 23.9'	17. ELEVATION TOP O
8. DEPTH DRILLED INTO ROCK 16.1'	18. TOTAL CORE REC
9. TOTAL DEPTH OF HOLE 40.0'	19. SIGNATURE OF INS Ra

ELEVATION a | DEPTH b | LEGEND c | CLASSIFICATION OF MATERIALS (Description) d | % CORE RECOVERY e | BOX OR SAMPLE

0.0' to 20.6' - CLAY-fat, moist, sandy-fine to coarse; very dark gray.

@ 2.1' - becomes soft, wet

@ 5.2' - becomes stiff with more coarse sand (lime nodules) with color change to grayish-brown

@ 11.1' - Color change to mottled-yellowish brown, gray, and red.

@ 15.0' - loses coarse sand and becomes lean.

@ 17.6' - becomes gravelly, well rounded, hard, max size 1/2".

20.6' to 23.7' - GRAVEL-hard, rounded, max size 2"; clayey, very lean sandy-fine to coarse; yellowish brown.

Started 4" core at 25.0'.

26.5' to 26.7' SANDSTONE, fine-grained, soft, tan, friable, stained.

26.7' to 32.7' SHALE, sandy, moderately hard, gray to brown, slightly stained, moderately hard sandstone bed at 29.3' to 29.4'.

32.7' to 40.0' SHALE, moderately hard, dark gray, fresh.

TOTAL DEPTH - 40.0'.

% Core recovery: 25.0 / L-1.5 / 26.5 / L 0.0 / 28.5 / L 0.3 / 32.5 / L-0.5 / 36.0

Box or sample no.: B, C, D, E, F, G, H, 1, 2, 3

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT Aubre

Hole No. 8A4C-27

DIVISION Southwestern	INSTALLATION Fort Worth District		SHEET 1 OF 1 SHEETS
	10. SIZE AND TYPE OF BIT 4" Core Barrel		
at Abutment C.L.	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL		
SACE-C	12. MANUFACTURER'S DESIGNATION OF DRILL Failing 350		
8A4C-27	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN	DISTURBED 7	UNDISTURBED 3
Jay Creamean	14. TOTAL NUMBER CORE BOXES 2		
	15. ELEVATION GROUND WATER		
INCLINED ____ DEG. FROM VERT.	16. DATE HOLE	STARTED 27 May 72	COMPLETED 27 May 72
RBURDEN 23.9'	17. ELEVATION TOP OF HOLE 607.03		
ITO ROCK 16.1'	18. TOTAL CORE RECOVERY FOR BORING %		
HOLE 40.0'	19. SIGNATURE OF INSPECTOR Raymond T. Hagen		

LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0.0' to 20.6' - CLAY-fat, moist, sandy-fine to coarse; very dark gray.		A	Jar Samples A -' 0.0' to 1.0' B - 3.0' to 4.0'
	@ 2.1' - becomes soft, wet		B	C - 66.0' to 7.0' D - 9.0' to 10.0' E - 12.0' to 13.0'
	@ 5.2' - becomes stiff with more coarse sand (lime nodules) with color change to grayish-' brown		C	F - 15.0' to 16.0' G - 18.0' to 19.0' H - 21.0' to 22.0' Carton Samples
	@ 11.1' - Color charge to mottled-yellowish brown, gray, and red.		D	1 - 29.9' to 30.8' 2 - 32.7' to 33.7' 3 - 36.9' to 37.9'
	@ 15.0' - loses coarse sand and becomes lean.		E	Set casing to 25.0'. Started coring at this depth.
	@ 17.6' - becomes gravelly, well rounded, hard, max size 1/2".		F	Bailed hole to 37.2'.
	20.6' to 23.7' - GRAVEL-hard, rounded, max size 2",clayey, very lean' sandy-fine to coarse; yellowish brown.		G	
	Started 4" core at 25.0'.		H	
	26.5' to 26.7' SANDSTONE, fine-grained, soft, tan, friable, stained.			
	26.7' to 32.7' SHALE, sandy, moderately hard, gray to brown, slightly stained, moderately hard sandstone bed at 29.3' to 29.4'.	25.0 L-1.5 26.5 L00 28.5		
	32.7' to 40.0' SHALE, moderately hard, dark gray, fresh.	L0.3 32.5 L-0.5 [illegible]	1 2 3	
	TOTAL DEPTH - 40.0'.			

EVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT Aubrey Dam

HOLE NO. 8A4C-27

Hole No. 6DC-28

DRILLING LOG	DIVISION Southwestern	INSTALLATION Fort Worth	SHEET 1 OF 2 SHEETS
1. PROJECT Aubrey Dam Site No. 1		10. SIZE AND TYPE OF BIT 8" A.S., 6" Den, 6" Core
2. LOCATION (Coordinates or Station) Not Shown X 2,139,650 Y' 415,255		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY Corps of Engineers		12. MANUFACTURER'S DESIGNATION OF DRILL Failing Model 44
4. HOLE NO. (As shown on drawing title and file number)	6DC-28	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: DISTURBED 18, UNDISTURBED 16
5. NAME OF DRILLER Trinity Engineering Testing Corporation Boyd Lane		14. TOTAL NUMBER CORE BOXES 5
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.		15. ELEVATION GROUND WATER See Note 2
		16. DATE HOLE: STARTED 11-14-72, COMPLETED 12-7-72
7. THICKNESS OF OVERBURDEN	36.0'	17. ELEVATION TOP OF HOLE 558.84
8. DEPTH DRILLED INTO ROCK	24.0'	18. TOTAL CORE RECOVERY FOR BORING 100.0 %
9. TOTAL DEPTH OF HOLE	60.0'	19. SIGNATURE OF INSPECTOR See Note 1 under "Remarks"

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
556.84	2		Dark Brown Clay 2.0'		J1	Used 8" Auger from 0.0'-3.0'
	4		Tan Clay	100	D1	Used 6" d.b. from 3.0'-38.0'
	6			100	D2	Jar sample taken from shoe of each Denison sample.
550.34	8		8.5'	100	D3	JAR SAMPLES
	10		Tan Sandy Clay	100	D4	1. 0.0'-3.0'
	12			100	D5	2. 5.0' 3. 7.0'
	14			100	D6	4. 9.0' 5. 11.0'
542.34	16		16.5'	100	D7	6. 13.0' 7. 15.0'
	18		Tan Clay	100	D8	8. 17.0' 9. 19.0'
537.84	20		21.0'	100	D9	10. 21.0' 11. 23.0'
	22		Tan Sandy Clay	100	D10	12. 25.0' 13. 27.0'
533.84	24		25.0'	100	D11	14. 29.0' 15. 31.0'
	26		Tan Sand and Gravel	50	D12	16. 33.0' 17. 35.0'
529.84	28		29.0'	75	D13	18. 38.0'
	30		Tan Gravel and Sand	25	D14	
	32			75	D15	Cleaned out from 35.5'-36.0'
522.84	34 36		36.0'	75	D16	Set casing to 36.0' Began coring w/6" bbl. at 38.0'
513.94 498.84	38 40 42 44 46 48 50 52 54 56 58 60		36.0'-44.9' SHALE, Mod. Hard, Non-Jointed, Laminated, Dark (Continued) Gray, Often Sandy w/Thin Sandstone Seams. 39.3'-41.5', Sand, Fine-Med.-Grained, Well-Compacted, Gray, Scat. Thin Tan Siltstone Nodules. 41.7'-42.9', Sand w/Scat. Siltstone Nodules. 43.0'-44.1', Sand Seams. 44.1'-44.5', Sandstone, Well-Cemented, Mod. Hard, Med.-Fine-Grained, Sli. Friable, Gray. 44.5'-44.9', Sand w/Siltstone Nodules 44.9'-60.0' SHALE, Mod. Hard, Non-Jointed, Laminated, Dark Gray, w/Sand Seams at: 46.8-47.5, 52.9-53.0, 54.95-57.9, 58.5-60.0. 47.8'-48.0', Fossiliferous Zone. Total Depth = 60.0'	100 R-1 100% R-1 100% 43.0 R-2 100% 48.0 R-3 100% 53.0 R-4 100% 58.0 R-5 100%	D17 Box 1 Box 2 Box 3 Box 4 Box 5	DENISON SAMPLES 1. 3.0'- 5.0' 2. 5.0'- 7.0' 3. 7.0'- 9.0' 4. 9.0'-11.0' 5. 11.0'-13.0' 6. 13.0'-15.0' 7. 15.0'-17.0' 8. 17.0'-19.0' 9. 19.0'-21.0' 10. 21.0'-23.0' 11. 23.0'-25.0' 12. 25.0'-27.0' 13. 27.0'-29.0' 14. 29.0'-31.0' 15. 31.0'-33.0' 16. 33.0'-35.0' 17. 36.0'-38.0' CARTON SAMPLES 1. 39.8'-40.8' 2. 43.8'-44.8' 3. 50.0'-50.8' 4. 55.3'-56.3' 5. 58.8'-59.8' Note 1: Soils Logged By: A. J. Simpson, Trinity Engineering Testing Corporation; Primary Logged By: Marr, Corps of Engineers, Fort Worth District Note 2: Installed 4" Plastic Pipe from 560.34 to 529.74 for ground-water observations.

Hole No. 6DC-28

DRILLING LOG	DIVISION Southwestern	INSTALLATION Fort Worth	SHEET 1 OF 2 SHEETS
ROJECT ubrey Dam Site No. 1		10. SIZE AND TYPE OF BIT 8" A. S., 6" Den, 6" Core	
OCATION (Coordinates or Station) ot Shown X: 2,119,620 Y: 615,255		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL	
RILLING AGENCY orps of Engineers		12. MANUFACTURER'S DESIGNATION OF DRILL Failing Model 44	
OLE NO. (As shown on drawing title and file number)	6DC-28	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN	DISTURBED 18 · UNDISTURBED 16
AME OF DRILLER Boyd Lane rinity Engineering Testing Corporation		14. TOTAL NUMBER CORE BOXES	5
IRECTION OF HOLE ☑ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.		15. ELEVATION GROUND WATER	See Note 2
		16. DATE HOLE	STARTED 11-14-72 · COMPLETED 12-7-72
		17. ELEVATION TOP OF HOLE	558.84
HICKNESS OF OVERBURDEN	36.0'	18. TOTAL CORE RECOVERY FOR BORING	100.0 %
EPTH DRILLED INTO ROCK	24.0'	19. SIGNATURE OF INSPECTOR	
OTAL DEPTH OF HOLE	60.0'	See Note 1 under "Remarks"	

VATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f
6.84	2		Dark Brown Clay 2.0'		J1
	4		Tan Clay	100	D1
	6			100	D2
0.34	8		8.5'	100	D3
	10		Tan Sandy Clay	100	D4
	12			100	D5
	14			100	D6
2.34	16		16.5'	100	D7
	18		Tan Clay	100	D8
7.8	20		21.0'	100	D9
	22		Tan Sandy Clay	100	D10
3.84	24		25.0'	100	D11
	26		Tan Sand and Gravel	50	D12
9.84	28		29.0'	75	D13
	30		Tan Gravel and Sand	25	D14
	32			75	D15
	34			75 0	D16
2.84	36		36.0'		
			36.0'-44.9' SHALE, Mod. Hard, Non-Jointed, Laminated, Dark (Continued)	100	D17
	38 40		Gray, Often Sandy w/Thin Sandstone Seams.	R-1 100%	Box 1
	42		39.3'-41.5', Sand, Fine-Med.-Grained, Well-Compacted, Gray, Scat. Thin Tan Siltstone Nodules.	R-1 100% 43.0	
13.94	44 46		41.7'-42.9', Sand w/Scat. Siltstone Nodules.	R-2 100% 48.0	Box 2
	48 50 52		43.0'-44.1', Sand Seams. 44.1'-44.5', Sandstone, Well-Cemented, Mod. Hard, Med.-Fine-Grained, Sli. Friable, Gray.	R-3 100% 53.0	Box 3
	54 56		44.5'-44.9', Sand w/Siltstone Nodules	R-4 100% 58.0	Box 4
8.84	58 60		44.9'-60.0' SHALE, Mod. Hard, Non-Jointed, Laminated, Dark Gray, w/Sand Seams at: 46.8-47.5, 52.9-53.0, 54.95-57.9, 58.5-60.0. 47.8'-48.0', Fossiliferous Zone. Total Depth = 60.0'	R-5 100%	Box 5

REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)

Used 8" Auger from 0.0'-3.0'

Used 6" d.b. from 3.0'-38.0'

Jar sample taken from shoe of each Denison sample.

JAR SAMPLES

1.	0.0'-3.0'
2.	5.0'
3.	7.0'
4.	9.0'
5.	11.0'
6.	13.0'
7.	15.0'
8.	17.0'
9.	19.0'
10.	21.0'
11.	23.0'
12.	25.0'
13.	27.0'
14.	29.0'
15.	31.0'
16.	33.0'
17.	35.0'
18.	38.0'

Cleaned out from 35.5'-36.0'

Set casing to 36.0'

Began coring w/6" bbl. at 38.0'

DENISON SAMPLES

1.	3.0'- 5.0'
2.	5.0'- 7.0'
3.	7.0'- 9.0'
4.	9.0'-11.0'
5.	11.0'-13.0'
6.	13.0'-15.0'
7.	15.0'-17.0'
8.	17.0'-19.0'
9.	19.0'-21.0'
10.	21.0'-23.0'
11.	23.0'-25.0'
12.	25.0'-27.0'
13.	27.0'-29.0'
14.	29.0'-31.0'
15.	31.0'-33.0'
16.	33.0'-35.0'
17.	36.0'-38.0'

CARTON SAMPLES

1.	39.8'-40.8'
2.	43.8'-44.8'
3.	50.0'-50.8'
4.	55.3'-56.3'
5.	58.8'-59.8'

Note 1:

Soils Logged By: A. J. Simpson, Trinity Engineering Testing Corporation;

Primary Logged By: Marr, Corps of Engineers, Fort Worth District

Note 2:

Installed 4" Plastic Pipe from 560.34 to 529.74 for groundwater observations.

RECORD DRAWING-WORK AS BUILT

SYM	DC NO	ACTION	DATE	DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

DESIGNED BY:
DRAWN BY:
REVIEWED BY:

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS
EMBANKMENT, SPILLWAY AND
OUTLET WORKS
LOGS OF BORINGS
8A4C-26, 8A4C-27, AND 6 DC-28

SUBMITTED BY:
ENGINEER

INVITATION NO. DACW63-82-B-0025
DATE MAR. 1982
CONTRACT NO. DACW63-82-C-0085
DRAWING NUMBER
SHEET NO. OF
SEQUENCE NO 18

CONTRACT NO DACW63-82-C 00-3

TO ACCOMPANY FOUNDATION REPORT

Hole No. 6DC-30

DRILLING LOG	DIVISION Southwestern
INSTALLATION Fort Worth	SHEET 1 OF 3 SHEETS
1. PROJECT Aubrey Dam Site No. 1	10. SIZE AND TYPE OF BIT 8" Aug, 6" Den, 6" Core
2. LOCATION (Coordinates or Station) X=2, 142, 237; Y=615, 051 Sta. 120+70	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY Corps of Engineers	12. MANUFACTURER'S DESIGNATION OF DRILL Failing Model 44
4. HOLE NO. (As shown on drawing title and file number) 6DC-30	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 21; UNDISTURBED 20
5. NAME OF DRILLER Boyd Lane, Trinity Engineering Testing Corporation	14. TOTAL NUMBER CORE BOXES 7
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.	15. ELEVATION GROUND WATER See Note 2
	16. DATE HOLE: STARTED 11-15-72; COMPLETED 11-30-72
7. THICKNESS OF OVERBURDEN 46.5	17. ELEVATION TOP OF HOLE 556.70
8. DEPTH DRILLED INTO ROCK 43.5	18. TOTAL CORE RECOVERY FOR BORING 96.4 %
9. TOTAL DEPTH OF HOLE 90.0	19. SIGNATURE OF INSPECTOR See Note 1 under "Remarks"

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	2		Dark Brown Clay		J1	Used 8" Auger from 0.0'-3.0'
551.70	4		5.0'	100	D1	Used 6" Denison bbl. from 3.0'-46.0'
	6		Dark Brown Clay w/Sand Lenses	75	D2	Jar sample taken from shoe of each Denison sample.
	8			100	D3	
	10			100	D4	JAR SAMPLES
	12			100	D5	1. 0.0'-3.0'
	14			100	D6	2. 5.0' 3. 7.0'
	16			75	D7	4. 9.0' 5. 11.0'
537.70	18		19.0'	100	D8	6. 13.0' 7. 15.0'
	20		Tan and Gray Clay w/ Calcareous Particles	100	D9	8. 17.0' 9. 19.0'
	22			100	D10	10. 21.0'
	24			100	D11	11. 23.0' 12. 25.0'
	26			50	D12	13. 27.0' 14. 29.0'
	28			100	D13	15. 31.0'
526.70	30		30.0' Tan and Gray Sandy Clay w/ Silt and Sand Lenses	100	D14	16. 33.0' 17. 35.0'
523.70	32		33.0'	100	D15	18. 37.0' 19. 39.0'
	34		Gray Clayey Sand	100	D16	20. 41.0' 21. 46.0'
520.70	36		36.0' Tan and Gray Clayey Gravel w/Sand	100	D17	
	38			50	D18	
	40		Tan and Gray Clayey Gravel w/Sand	50	D19 J20	6" Denison from 40.0'-46.0'
	42 44					Encountered Gray Shale at 46.5'
510.20	46		46.5'	50	D20	Set 8" Casing to 47.8'
	48		46.5'-60.8' SHALE, Mod. Hard, Dark Gray, Thick-Bedded, Massive, Non-Jointed, Often Sandy w/ Thin Sandstone Stringers and Seams. 48.0'-48.7', Scattered Tan Siltstone Inclusions. Sandstone, Fine-Grained, Light Gray, Friable, at: 49.0-49.1, 49.2, 50.8-51.5, 53.0, 57.0-57.2, 60.1-60.2, 60.8. 53.5' and 55.3', Thin Fossiliferous Zones 60.8'	48.0 R-1 100% 50.0		Began Coring w/ 6" Core bbl. at 48.0'
	50 52 54			R-2 100% 55.0	Box 1	DENISON SAMPLES 1. 3.0'- 5.0' 2. 5.0'- 7.0' 3. 7.0'- 9.0'
	56 58			R-3 100% 60.0	Box 2	4. 9.0'-11.0' 5. 11.0'-13.0' 6. 13.0'-15.0' 7. 15.0'-17.0' 8. 17.0'-19.0'
495.90	60 62 64		60.8'-66.5'. SANDSTONE, Mod. Hard, Gray, Fine-Grained, Slightly Friable, Numerous Thin (0.1-0.2) Shale Seams. 66.5'	R-4 95% 65.0	Box 3	9. 19.0'-21.0' 10. 21.0'-23.0' 11. 23.0'-25.0' 12. 25.0'-27.0' 13. 27.0'-29.0'
490.20	66 68 70			R-5 100% 70.0	Box 4	14. 29.0'-31.0' 15. 31.0'-33.0' 16. 33.0'-35.0' 17. 35.0'-37.0' 18. 37.0'-39.0'
	72 74		66.5'-90.0' SHALE, Mod. Hard, Dark Gray, Thick-Bedded, Massive. Numerous Fine-Grained, Light Gray Sandstone Seams and Stringers. Occasional Siltstone Inclusions. 67.0'-67.4', Sandy w/ Siltstone Stringers 68.5'-69.0', Fine Sandstone Stringers 70.3'-71.0', Scattered Brown Siltstone Inclusions.	R-6 100% 75.0	Box 5	19. 39.0'-41.0' 20. 44.0'-46.0' CARTON SAMPLES 1. 49.2'-50.0'
	76 78			R-7 100% 80.0		2. 54.0'-55.0' 3. 56.0'-57.0' 4. 61.7'-62.7' 5. 66.0'-67.0'
	80 82 84			R-8 100% 85.0	Box 6	6. 72.0'-73.0' 7. 77.0'-78.0' 8. 81.7'-82.7' 9. 86.0'-87.0' R-9-left 1' of core in hole.
466.70	86 88 90		90.0'	R-9 80% 90.0	Box 7	(Continued)
			Total Depth = 90.0 Feet			

ELEVATION a	DEPTH b	LEGEND c	CL

ENG FORM 1836-A (MODIFIED)

DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
					Note 1: Soils Logged By: A. J. Simpson, Trinity Engineering Testing Corporation; Primary Logged By: Green and Marr, Corps of Engineers, Fort Worth District. **Note 2:** Installed 4" Plastic Pipe from 558.50 to 520.50 for groundwater observations.

1836-A (MODIFIED)

PROJECT Aubrey Dam Site No. 1 | HOLE NO. 6DC-30

Hole No. 6DC-31

DRILLING LOG	DIVISION Southwestern	INSTALLATION Fort Worth	SHEET 1 OF 2 SHEETS
1. PROJECT Aubrey Dam Site No. 1		10. SIZE AND TYPE OF BIT 8" Aug. 6" Den. 6" core	
2. LOCATION X=2,141,403; Y=615,328, Sta. 132+00		11. DATUM FOR ELEVATION SHOWN MSL	
3. DRILLING AGENCY Corps of Engineers		12. MANUFACTURER'S DESIGNATION OF DRILL Failing Model 44	
4. HOLE NO. 6DC-31		13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: DISTURBED 19, UNDISTURBED 19	
5. NAME OF DRILLER Boyd Lane, Trinity Engineering Testing Corporation		14. TOTAL NUMBER CORE BOXES 9	
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.		15. ELEVATION GROUND WATER See Note 2	
7. THICKNESS OF OVERBURDEN 39.0'		16. DATE HOLE: STARTED 12-18-72, COMPLETED 12-29-72	
8. DEPTH DRILLED INTO ROCK 51.0'		17. ELEVATION TOP OF HOLE 555.38	
9. TOTAL DEPTH OF HOLE 90.0'		18. TOTAL CORE RECOVERY FOR BORING 100.0 %	
		19. SIGNATURE OF INSPECTOR See Note 1 under "Remarks"	

ELEVATION	DEPTH	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.
	2	Brown Clay	0	J1
550.38	4	5.0'	50	D1
	6	Brown Sandy Clay	100	D2
546.38	8	9.0'	100	D3
	10	Brown Silty Clay w/Sand Lenses	100	D4
	12		80	D5
540.38	14	15.0'	100	D6
	16	Brown Silty Sand w/Clay Lenses	90	D7
	18		100	D8
	20		100	D9
532.38	22	23.0'	50	D10
530.38	24	Tan and Gray Sandy Clay 25.0' w/Silt Lenses	100	D11
	26	Tan and Gray Silty Clay w/Iron Ore	50	D12
	28		75	D13
	30		90	D14
522.38	32	33.0'	100	D15
	34	Gray Silty Sand w/ Scattered Gravel	90	D16
	36		100	D17
	38		0	
516.38		39.0'	40	D18
	40 42	39.0'-45.0' , SHALE 39.0'- 45.0' SHALE, Mod. Hard, Dk.-Gray Thin-Bedded-Massive, w/Num. Lt. Gray Sand Pockets and Lenses 43.4' Siltstone Nods., Hard Tan	R-1 100% 45.0	Box 1
510.38	44 46 48	45.0'-55.6' Shale & Sandstone, Alt. Bed w/occas. Sand Lenses Shale is Gray, Massive, Mod. Hard, Sandy Unweathered Sandstone is Fine-Med. Gra Soft-Mod. Hard, Gray-Lt. Gray, Well Cemented	R-2 100% 50.0	Box 2
	50 52 54		R-3 100% 54.0	Box 3
499.78	56 58	55.6'-64.0' Shale, Mod. Hard-Hard, Dk. Gray Laminated, Unweathered 58.6'-59.4' Fossilifedus zone Soft-Mod. Hard, Calc	R-4 100% 59.0	Box 4
	60 62		R-5 100% 64.0	
491.38	64 66 68	64.0'-75.4' Shale & Sandstone, Alt. Bed w/occas. Sand Lenses Shale is Mod Hard-Hard, Dk. Gray, Laminated	R-6 100% 69.0	Box 5
	70 72 74		R-7 100% 74.0	Box 6
479.98	76 78	75.4' 75.4'-90.0' Shale, Gray-Dk. Gray, Mod. Hard-Hard, Laminated Calc.	R-8 100% 79.0	Box 7
	80 82		R-9 100% 84.0	
	84 86 88		R-10 100% 89.0	Box 8
465.39	90	90.0'	100%	Box 9
		Total Depth = 90.0 Feet		

REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)

Used 8" Auger from 0.0'-3.0'
Used 6" Denison bbl. 3.0'-40.0'
Jar sample taken from shoe of each Denison sample.

JAR SAMPLES

1.	0.0'-3.0'
2.	5.0'
3.	7.0'
4.	9.0'
5.	11.0'
6.	13.0'
7.	15.0'
8.	17.0'
9.	19.0'
10.	21.0'
11.	23.0'
12.	25.0'
13.	27.0'
14.	29.0'
15.	31.0'
16.	33.0'
17.	35.0'
18.	37.0'
19.	40.0'

DENISON SAMPLES

1.	3.0'- 5.0'
2.	5.0'- 7.0'
3.	7.0'- 9.0'
4.	9.0'-11.0'
5.	11.0'-13.0'
6.	13.0'-15.0'
7.	15.0'-17.0'
8.	17.0'-19.0'
9.	19.0'-21.0'
10.	21.0'-23.0'
11.	23.0'-25.0'
12.	25.0'-27.0'
13.	27.0'-29.0'
14.	29.0'-31.0'
15.	31.0'-33.0'
16.	33.0'-35.0'
17.	35.0'-37.0'
18.	38.0'-40.0'

Reamed from 0.0'-38.0' w/8" bit.
Began coring w/6" core bbl. at 40.0'
Set 8" casing to 44.0'

CARTON SAMPLES

1.	42.3'-43.3'
2.	46.2'-46.8'
3.	51.6'-52.6'
4.	56.5'-57.5'
5.	61.2'-62.2'
6.	64.7'-65.7'
7.	72.8'-73.8'
8.	75.4'-76.4'
9.	80.9'-81.9'
10.	85.5'-86.5'

Note 1:
Soils Logged By:
A. J. Simpson,
Trinity Engineering Testing Corporation

Primary Logged By:
Marr
Corps of Engineers,
Fort Worth District

Note 2:
Installed 4" plastic pipe from 556.6 to 511.6 for groundwater observations.

ENG FORM 1836-A (MODIFIED)

PROJECT Aubrey Dam Site No. 1 | HOLE NO. 6DC-31

SYM | DO | NO

DESIGNED BY

DRAWN BY

REVIEWED BY

SUBMITTED BY

ENGINEER

TO ACCON

Hole No. 6DC-31

DRILLING LOG	DIVISION Southwestern	INSTALLATION Fort Worth	SHEET 1 OF 2 SHEETS

1. PROJECT Aubrey Dam Site No. 1
2. LOCATION X-2,141,403; Y-415,328; Sta. 132+00
3. DRILLING AGENCY Corps of Engineers
4. HOLE NO. 6DC-31
5. NAME OF DRILLER Boyd Lane, Trinity Engineering Testing Corporation
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED
7. THICKNESS OF OVERBURDEN 39.0'
8. DEPTH DRILLED INTO ROCK 51.0'
9. TOTAL DEPTH OF HOLE 90.0'
10. SIZE AND TYPE OF BIT 8" Aug., 6" Den. & Core
11. DATUM FOR ELEVATION SHOWN MSL
12. MANUFACTURER'S DESIGNATION OF DRILL Failing Model 44
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN 19 / 19
14. TOTAL NUMBER CORE BOXES 9
15. ELEVATION GROUND WATER See Note 2
16. DATE HOLE STARTED 12-18-72 COMPLETED 12-29-72
17. ELEVATION TOP OF HOLE 555.38
18. TOTAL CORE RECOVERY FOR BORING 100.0 %
19. SIGNATURE OF INSPECTOR See Note 1 under "Remarks"

ELEVATION	DEPTH	CLASSIFICATION OF MATERIALS	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS
	2	Brown Clay	0	J1	Used 8" Auger from 0.0'-3.0'
550.38	4	5.0'	50	D1	Used 6" Denison bbl. 3.0'-40.0'
	6	Brown Sandy Clay	100	D2	Jar sample taken from shoe of each Denision sample.
546.38	8	9.0'	100	D3	JAR SAMPLES
	10	Brown Silty Clay w/Sand Lenses	100	D4	1. 0.0'-3.0'
	12		80	D5	2. 5.0' 3. 7.0'
540.38	14	15.0'	100	D6	4. 9.0' 5. 11.0'
	16	Brown Silty Sand w/Clay Lenses	90	D7	6. 13.0' 7. 15.0'
	18		100	D8	8. 17.0' 9. 19.0'
	20		100	D9	10. 21.0'
532.38	22	23.0'	50	D10	11. 23.0' 12. 25.0'
530.38	24	Tan and Gray Sandy Clay w/Silt Lenses 25.0'	100	D11	13. 27.0' 14. 29.0'
	26	Tan and Gray Silty Clay w/Iron Ore	50	D12	15. 31.0' 16. 33.0'
	28		75	D13	17. 35.0' 18. 37.0'
	30		90	D14	19. 40.0'
522.38	32	33.0'	100	D15	DENISON SAMPLES 1. 3.0'- 5.0'
	34	Gray Silty Sand w/ Scattered Gravel	90	D16	2. 5.0'- 7.0' 3. 7.0'- 9.0'
	36		100	D17	4. 9.0'-11.0' 5. 11.0'-13.0'
	38		0		6. 13.0'-15.0'
516.38		39.0'	40	D18	7. 15.0'-17.0'
	40	39.0'-45.0' , SHALE	R-1		DENISON SAMPLES
	42	39.0'- 45.0' SHALE, Mod. Hard, Dk.-Gray Thin-Bedded-Massive, w/Num. Lt. Gray Sand Pockets and Lenses	100%	Box 1	8. 17.0'-19.0' 9. 19.0'-21.0'
510.38	44		45.0		10. 21.0'-23.0'
	46	43.4' Siltstone Nods., Hard Tan	R-2		11. 23.0'-25.0' 12. 25.0'-27.0'
	48	45.0'-55.6' Shale & Sandstone, Alt. Bed w/occas. Sand Lenses	100%	Box 2	13. 27.0'-29.0' 14. 29.0'-31.0'
	50		50.0 R-3		15. 31.0'-33.0' 16. 33.0'-35.0'
	52	Shale is Gray, Massive, Mod. Hard, Sandy Unweathered	100%	Box 3	17. 35.0'-37.0' 18. 38.0'-40.0'
	54	Sandstone is Fine-Med. Gra Soft-Mod. Hard, Gray-Lt. Gray, Well Cemented	54.0 R-4		Reamed from 0.0'-38.0' w/8" bit.
499.78	56		100%		Began coring w/6" core bbl. at 40.0'
	58	55.6'-64.0' Shale, Mod. Hard-Hard, Dk. Gray Laminated, Unweathered	59.0 R-5	Box 4	Set 8" casing to 44.0' CARTON SAMPLES
	62	58.6'-59.4' Fossilifedus zone Soft-Mod. Hard, Calc	100%		1. 42.3'-43.3' 2. 46.2'-46.8'
491.38	64	64.0'-75.4' Shale & Sandstone, Alt. Bed w/occas. Sand Lenses Shale is Mod Hard-Hard, Dk. Gray, Laminated	64.0 R-6 100%	Box 5	3. 51.6'-52.6' 4. 56.5'-57.5' 5. 61.2'-62.2' 6. 64.7'-65.7' 7. 72.8'-73.8'
	70		69.0 R-7 100%	Box 6	8. 75.4'-76.4' 9. 80.9'-81.9' 10. 85.5'-86.5'
479.98	74	75.4'	74.0 R-8		Note 1: Soils Logged By: A. J. Simpson, Trinity Engineering Testing Corporation
	76	75.4'-90.0' Shale, Gray-Dk. Gray, Mod. Hard-Hard, Laminated Calc.	100% 79.0 R-9 100%	Box 7	Primary Logged By: Marr Corps of Engineers, Fort Worth District
	84		84.0 R-10 100%	Box 8	Note 2: Installed 4" plastic pipe from 556.6 to 511.6 for groundwater observations.
465.39	90	90.0'	89.0 100%	Box 9	
		Total Depth = 90.0 Feet			

ENG FORM 1836-A (MODIFIED) PROJECT Aubrey Dam Site No. 1 HOLE NO. 6DC-31

RECORD DRAWING-WORK AS BUILT

SYM	DO NO.	ACTION	DATE	DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

DESIGNED BY:
DRAWN BY:
REVIEWED BY:

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS
EMBANKMENT, SPILLWAY AND
OUTLET WORKS
LOGS OF BORINGS
6DC-30 AND 6 DC-31

SUBMITTED BY
ENGINEER
INVITATION NO. DACW63-82-B-0025 DATE MAR, 1982
CONTRACT NO. DACW63-82-C-0083
DRAWING NUMBER
SHEET NO. OF
SEQUENCE NO 19

CONTRACT NO DACW63-82-C 00

TO ACCOMPANY FOUNDATION REPORT

Hole No. 3S6DC 32

DRILLING LOG	DIVISION Southwestern
INSTALLATION Fort Worth	SHEET 1 OF 2 SHEETS
1. PROJECT Aubrey Dam Site No. 1	10. SIZE AND TYPE OF BIT 3" Shel, 6" Den, 6' Core
2. LOCATION (Coordinates or Station) Not Shown X 2,141,310 Y 615,790	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY Corps of Engineers	12. MANUFACTURER'S DESIGNATION OF DRILL Failing Model 44
4. HOLE NO. (As shown on drawing title and file number) 3S6DC-32	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 16; UNDISTURBED 22
5. NAME OF DRILLER Boyd Lane, Trinity Engineering Testing Corporation	14. TOTAL NUMBER CORE BOXES 3
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER See Note 2
7. THICKNESS OF OVERBURDEN 41.5	16. DATE HOLE: STARTED 12-30-72; COMPLETED 1-4-73
8. DEPTH DRILLED INTO ROCK 18.5	17. ELEVATION TOP OF HOLE 557.05
9. TOTAL DEPTH OF HOLE 60.0	18. TOTAL CORE RECOVERY FOR BORING 100.0 %
	19. SIGNATURE OF INSPECTOR See Note 1 under "Remarks"

ELEVATION a	DEPTH b	CLASSIFICATION OF MATERIALS (Description) d
555.05	2	Brown Clay 2.0'
548.05	9	Brown Sandy Clay 9.0'
539.05	18	Brown Silty Sand 18.0'
530.55	26.5	Brown Clayey Sand 26.5'
525.05	32	Tan Sandy Clay 32.0'
515.55	41.5	Tan Sand and Gravel 41.5 Tan Sand and Gravel
497.05	60	41.5-60.0' SHALE & SANDSTONE, Predonimantely shale, w/num. layers and lenses of sandstone and siltstone nodules. Shale is soft-mod. hard, med bedded to massive, dark gray. Sandstone is fine-grained, soft-mod. hard, light gray to tan, friable. Siltstone Nodules are hard, tan. Scattered fossil shells at 54.4-54.7 and 56.8-56.9 60.0'
		Total Depth = 60.0 Feet

% CORE RECOVERY e	BOX OR SAMPLE NO. f
100	W1
100	W2
100	J1
100	W3
100	W4
100	J2
100	W5
100	W6
100	J3
100	W7
100	W8
100	J4
100	W9
100	W10
100	J5
100	W11
100	D1
75	D2
100	D3
100	D4
50	D5
100	D6
100	D7
0	Lost Sam.
50	D8
50	D9
65	D10
75	D11
R-1 100% 49.0	Box 1
R-2 100% 54.0	Box 2
R-3 100% 59.0 100%	Box 3

REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g

3" Shelby Tube Samples 0.0'-20.0'

Denison bbl. Samples 20.0'-44.0'

Jar Samples Nos. 6 - 16 were taken from the shoe of the Denison sample.

JAR SAMPLES

1. 2.0'- 3.0'
2. 6.0- 7.0'
3. 10.0'-11.0'
4. 14.0'-15.0'
5. 18.0'-19.0'
6. 22.0'
7. 24.0'
8. 26.0'
9. 28.0'
10. 30.0'
11. 32.0'
12. 34.0'
13. 38.0'
14. 40.0'
15. 42.0'
16. 44.0'

Reamed hole to 42.0' w/8" bit.

Set 8" casing to 42.0'

Used 6" core bbl. from 44.0'-60.0'

WRAP SAMPLES

1. 0.0'- 1.0'
2. 1.0'- 2.0'
3. 3.0'- 4.5'
4. 4.5'- 6.0'
5. 7.0'- 8.5'
6. 8.5'-10.0'
7. 11.0'-12.5'
8. 12.5'-14.0'
9. 15.0'-16.5'
10. 16.5'-18.0'
11. 19.0'-20.0'

DENISON SAMPLES

1. 20.0'-22.0'
2. 22.0'-24.0'
3. 24.0'-26.0'
4. 26.0'-28.0'
5. 28.0'-30.0'
6. 30.0'-32.0'
7. 32.0'-34.0'
8. 36.0'-38.0'
9. 38.0'-40.0'
10. 40.0'-42.0'
11. 42.0'-44.0'

CARTON SAMPLES

1. 45.3'-46.2'
2. 52.6'-53.6'
3. 57.3'-58.1'

Note 1.
Soils Logged By:
A. J. Simpson,
Trinity Engineering
Testing Corporation

Primary Logged By:
Green and Marr,
Corps of Engineers,
Fort Worth District

Note 2:
Installed 4" plastic pipe from 559.25 to 516.25 for groundwater observations.

Hole No. 6DC-33

DRILLING LOG	DIVISION Southwestern
INSTALLATION Fort Worth	SHEET 1 OF 2 SHEETS
1. PROJECT Aubrey Dam Site No. 1	10. SIZE AND TYPE OF BIT A 6" Den. 6 Core
2. LOCATION (Coordinates or Station) X=2,141,550; Y=615,025	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY Corps of Engineers	12. MANUFACTURER'S DESIGNATION OF DRILL Failing Model 44
4. HOLE NO. (As shown on drawing title and file number) 6DC-33	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 20; UNDISTURBED 18
5. NAME OF DRILLER Boyd Lane, Trinity Engineering Testing Corporation	14. TOTAL NUMBER CORE BOXES 3
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER See Note 2
7. THICKNESS OF OVERBURDEN 41.0	16. DATE HOLE: STARTED 12-8-72; COMPLETED 12-15-72
8. DEPTH DRILLED INTO ROCK 18.0	17. ELEVATION TOP OF HOLE 561.29
9. TOTAL DEPTH OF HOLE 59.0	18. TOTAL CORE RECOVERY FOR BORING 90.0 %
	19. SIGNATURE OF INSPECTOR See Note 1 under "Remarks"

ELEVATION a	DEPTH b	CLASSIFICATION OF MATERIALS (Description) d
554.29	7	Brown Clay 7.0'
542.29	19	Tan Sandy Clay 19.0'
538.79	22.5	Tan Clay w/Calcareous Particles 22.5'
528.29	33	Tan Sandy Clay w/ Calcareous Particles 33.0'
523.59	37.7	Tan Clayey Sand 37.7'
	40	Tan Clayey Sand w/Gravel 40.0'
520.29	41	41.0' Tan Gravel w/Sand
515.29	44	41.0'-44.0' Gray Shale
513.29	46	44.0'-45.0' Gravel, 1 1/2' Max. Diam., Well Rounded 45.0'-46.0' Sand & Gravel, 1 1/2" Max. Diam., Fine-Med. Grn., Gray Loosely Compacted Very Moist
502.29	59	46.0'-59.0' SHALE AND SANDSTONE, Alt. Beds, w/occas. Sand Lenses Shale is Gray Soft-Mod Hard Laminated Unweathered Sandstone is Mod. Hard-Hard, Gray Fine-Med. Grn., Loosely Cemented Siltstone Nodules, Tan, Hard at 47.5', 54.0', 58.2'
		Total Depth = 59.0 Feet

% CORE RECOVERY e	BOX OR SAMPLE NO. f
	J1
100	D1
100	D2
100	D3
50	D4
50	D5
75	D6
75	D7
100	D8
75	D9
100	D10
100	D11
75	D12
100	D13
50	D14
40	D15
Cleaned Hole	
100	D16
50	D17
75	D18
	J20
0 44.0	Core Lost
R-1 100% 49.0	Box 1
R-2 90% 54.0	Box 2
R-3 90% 59.0	Box 3

REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g

Used 8" Auger from 0.0'-3.0'

Used 6" Denison bbl. from 3.0'-44.0'

Jar sample taken from shoe of each Denison sample.

JAR SAMPLES

1. 0.0'-3.0'
2. 5.0'
3. 7.0'
4. 9.0'
5. 11.0'
6. 13.0'
7. 15.0'
8. 17.0'
9. 19.0'
10. 21.0'
11. 23.0'
12. 25.0'
13. 27.0'
14. 29.0'
15. 31.0'
16. 33.0'
17. 37.0'
18. 39.0'
19. 41.0'
20. 41.5'

DENISON SAMPLES

1. 3.0'- 5.0'
2. 5.0'- 7.0'
3. 7.0'- 9.0'
4. 9.0'-11.0'
5. 11.0'-13.0'
6. 13.0'-15.0'
7. 15.0'-17.0'
8. 17.0'-19.0'
9. 19.0'-21.0'
10. 21.0'-23.0'
11. 23.0'-25.0'
12. 25.0'-27.0'
13. 27.0'-29.0'
14. 29.0'-31.0'
15. 31.0'-33.0'
16. 35.0'-37.0'
17. 37.0'-39.0'
18. 39.0'-41.0'

Set Casing to 41.5'

Began Coring w/6" bbl. at 44.0'

CARTON SAMPLES

1. 47.9'-48.6'
2. 52.0'-53.0'
3. 55.2'-56.0'

Note 1:
Soils Logged By:
A. J. Simpson,
Trinity Engineering
Testing Corporation;

Primary Logged By:

Corps of Engineers,
Fort Worth District

Note 2:
Installed 4" plastic pipe from 563.3 to 519.1 for ground-water observations.

ENG FORM 1836-A (MODIFIED) | PROJECT Aubrey Dam Site No. 1 | HOLE NO. 6DC-33

DRILLING LOG

1. PROJECT Aubrey Dam Si
2. LOCATION X=2,139,118, Y=
3. DRILLING AGENCY Corps of Engine
5. NAME OF DRILLER Trinity Enginee
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLI

ELEVATION a	DEPTH b
551.47	8
547.97	12
532.97	26
528.97	30
523.17	36
521.97	38
520.97	38

ENG FORM 1836-A (MODIFIE

POLYTRACE

Hole No. 6DC-33

	SHEET 1 OF 2 SHEETS
5" Den. 6 Core	
20	UNDISTURBED 18
3	
Note 2	
	COMPLETED 12-15-72
61.29	
90.0	%
arks"	

8" Auger from
-3.0'
6" Denison
from 3.0'.

mple taken
shoe of each
son sample.

SAMPLES
0'-3.0'
5.0'
7.0'
9.0'
11.0'
13.0'
15.0'
17.0'
19.0'
21.0'
3.0'
5.0'
7.0'
9.0'
1.0'
3.0'
7.0'
9.0'
1.0'
1.5'

N SAMPLES
0'- 5.0'
0'- 7.0'
0'- 9.0'
0'-11.0'
'-13.0'
'-15.0'
'-17.0'
'-19.0'
'-21.0'
'-23.0'
'-25.0'
'-27.0'
'-29.0'
'-31.0'
-33.0'
-37.0'
-39.0'
-41.0'

g to 41.5'
ring w/6"
4.0'

SAMPLES
-48.6'
-53.0'
-56.0'

ged By:
pson,
ngineering
Corporation;
Logged By:

Engineers,
th District

4" plastic
563.3 to
or ground-
ervations.

1 | HOLE NO. 6DC-33

Hole No. 3S6D-34

DRILLING LOG	DIVISION Southwestern	INSTALLATION Fort Worth	SHEET 1 OF 2 SHEETS

1. PROJECT Aubrey Dam Site No. 1	10. SIZE AND TYPE OF BIT 3" Shelby, 6" d.b.
2. LOCATION (Coordinates or Station) X=2,139,118, Y=614,010; Sta. 106+00/619'R	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY Corps of Engineers	12. MANUFACTURER'S DESIGNATION OF DRILL Failing Model 44
4. HOLE NO. (As shown on drawing title and file number) 3S6D-34	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 11, UNDISTURBED 20
5. NAME OF DRILLER Boyd Lane, Trinity Engineering Testing Corporation	14. TOTAL NUMBER CORE BOXES 0
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER See Note 2
	16. DATE HOLE: STARTED 2-2-73, COMPLETED 2-5-73
7. THICKNESS OF OVERBURDEN 38.0'	17. ELEVATION TOP OF HOLE 559.99
8. DEPTH DRILLED INTO ROCK 1.0'	18. TOTAL CORE RECOVERY FOR BORING -- %
9. TOTAL DEPTH OF HOLE 39.0'	19. SIGNATURE OF INSPECTOR See Note 1 under "Remarks"

ELEVATION a	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f
551.47	Brown Clay 8.5'		
547.97	Brow Clay w/Calcareous Particles 12.0'		
532.97	Light Brown Sandy Clay w/Calcareous Particles 27.0'		
528.97	Brown Clay 31.0'		
	Brown Sandy Clay w/ Gravel	90%	D1
		90%	D2
523.17	36.8'	80%	D3
521.97	38.0' Tan Sand and Gravel	75%	D4
520.97	39.0' Gray Shale		
—	Total Depth = 39.0 Feet		

Sample Nos.: W1, W2, J1, W3, W4, J2, W5, W6, J3, W7, W8, J4, W9, W10, J5, W11, W12, J6, W13, W14, J7, W15, W16, J8, D1, D2, D3, D4

REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g

Drilling: 0.0'-31.0', 3" Shelby tube. 31.0'-39.0', 6" d.b. Set 8" casing to 38.0'. Water rose to 4.0' depth and could not be bailed out when boring reached the 36.0' depth.

WRAP SAMPLES
1. 0.0'- 1.0'
2. 1.0'- 2.0'
3. 3.0'- 4.5'
4. 4.5'- 6.0'
5. 7.0'- 8.5'
6. 8.5'-10.0'
7. 11.0'-12.5'
8. 12.5'-14.0'
9. 15.0'-16.5'
10. 16.5'-18.0'
11. 19.0'-20.5'
12. 20.5'-22.0'
13. 23.0'-24.5'
14. 24.5'-26.0'
15. 27.0'-28.5'
16. 28.5'-30.0'

DENISON SAMPLES
1. 31.0'-33.0'
2. 33.0'-35.0'
3. 35.0'-37.0'
4. 37.0'-39.0'

JAR SAMPLES
1. 2.0'- 3.0'
2. 6.0'- 7.0'
3. 10.0'-11.0'
4. 14.0'-15.0'
5. 18.0'-19.0'
6. 22.0'-23.0'
7. 26.0'-27.0'
8. 30.0'-31.0'
9. 33.0'
10. 35.0'
11. 37.0'
12. 39.0'

Note 1:
Soils logged by:
A. J. Simpson,
Trinity Engineering
Testing Corporation.

Note 2:
Installed 4" plastic pipe from 561.0 to 522.0 for groundwater observations.

ENG FORM 1836-A (MODIFIED) | PROJECT Aubrey Dam Site No. 1 | HOLE NO. 3S6D-34

Hole No 3S6D-35

DRILLING	DIVISION Southwestern	INSTALLATION Fort Worth	SHEET 1 OF 2 SHEETS

1. PROJECT Aubrey Dam Site No. 1	10. SIZE AND TYPE OF BIT 3" Shelby & 6" d.b.
2. LOCATION (Coordinates or Station) X=2,139,594, Y=614,164; Sta. 111+00/619'R	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY Corps of Engineers	12. MANUFACTURER'S DESIGNATION OF DRILL Failing Model 44
4. HOLE NO. (As shown on drawing title and file number) 3S6D-35	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 12, UNDISTURBED 23
5. NAME OF DRILLER Boyd Lane, Trinity Engineering Testing Corporation	14. TOTAL NUMBER CORE BOXES 0
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER See Note 2
	16. DATE HOLE: STARTED 1-31-72, COMPLETED 2-2-73
7. THICKNESS OF OVERBURDEN 45.0'	17. ELEVATION TOP OF HOLE 559.58
8. DEPTH DRILLED INTO ROCK 2.0'	18. TOTAL CORE RECOVERY FOR BORING 83.3 %
9. TOTAL DEPTH OF HOLE 47.0'	19. SIGNATURE OF INSPECTOR See Note 1 under "Remarks"

ELEVATION a	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f
546.58	Dark Brown Clay 13.0'		
539.58	Brown Clay w/Silt 20.0'		
524.58	Brown Silty Clay 35.0'		
	Tan and Brown Sandy Clay		
518.08	41.5' Tan & Brown Sandy Clay		
	Gray Sandy Clay	75%	D1
515.08	44.5'		
514.58	4.50' Gray Sand w/Gravel	100%	D2
512.58	Gray Shale	75%	D3
	Total Depth = 47.0 Feet		

Sample Nos.: W1, W2, J1, W3, W4, J2, W5, W6, J3, W7, W8, J4, W9, W10, J5, W11, W12, J6, W13, W14, J7, W15, W16, J8, W17, W18, J9, W19, W20, J10, W21, D1, D2, D3

REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g

Boring advanced with 3" Shelby tube from 0.0'-40.5'. Cleaned out 40.5'-41.0'. Used 6" Denison barrel 41.0'-47.0'. Set 8" casing to 45.0' depth. Encountered moisture at 23.0' and water at 38.0'.

JAR SAMPLES
1. 2.0'- 3.0'
2. 6.0'- 7.0'
3. 10.0'-11.0'
4. 14.0'-15.0'
5. 18.0'-19.0'
6. 22.0'-23.0'
7. 26.0'-27.0'
8. 30.0'-31.0'
9. 34.0'-35.0'
10. 38.0'-39.0'
11. 43.0'
12. 45.0'
13. 47.0'

DENISON SAMPLES
1. 41.0'-43.0'
2. 43.0'-45.0'
3. 45.0'-47.0'

WRAP SAMPLES
1. 0.0'- 1.0'
2. 1.0'- 2.0'
3. 3.0'- 4.0'
4. 4.5'- 6.0'
5. 7.0'- 8.5'
6. 8.5'-10.0'
7. 11.0'-12.5'
8. 12.5'-14.0'
9. 15.0'-16.5'
10. 16.5'-18.0'
11. 19.0'-20.5'
12. 20.5'-22.0'
13. 23.0'-24.5'
14. 24.5'-26.0'
15. 27.0'-28.5'
16. 28.5'-30.0'
17. 31.0'-32.5'
18. 32.5'-34.0'
19. 35.0'-36.5'
20. 36.5'-38.0'
21. 39.0'-40.5'

Note 1:
Soils logged by:
A. J. Simpson,
Trinity Engineering
Testing Corporation.

Note 2:
4" plastic pipe installed from for groundwater observations.

REC

SYM	DO NO	A

U.

DESIGNED BY

DRAWN BY

REVIEWED BY

3

SUBMITTED BY

ENGINEER

TO ACCOM

. 3S6D-34
SHEET 1 OF 2 SHEETS
6" d.b.
20
2
2-5-73
.0'-31.0',3"
. 31.0'-
b. Set 8"
.0'. Water
depth and
bailed
ring
36.0'

MPLES
- 1.0'
- 2.0'
- 4.5'
- 6.0'
- 8.5'
-10.0'
-12.5'
-14.0'
-16.5'
-18.0'
-20.5'
-22.0'
-24.5'
-26.0'
-28.5'
-30.0'

SAMPLES
-33.0'
-35.0'
-37.0'
-39.0'

PLES
- 3.0'
- 7.0'
-11.0'
-15.0'
-19.0'
-23.0'
-27.0'
-31.0'
0'
0'
0'
0'

d by:
pson,
gineering
rporation.

'plastic
61.0 to
ground-
rvations.

HOLE NO 3S6D-34

Hole No 3S6D-35

DRILLING LOG

DIVISION: Southwestern
INSTALLATION: Fort Worth
SHEET 1 OF 2 SHEETS
1. PROJECT: Aubrey Dam Site No. 1
2. LOCATION (Coordinates or Station): X=2,139,594; Y=614,164; Sta. 111+00/619'R
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO (As shown on drawing title and file number): 3S6D-35
5. NAME OF DRILLER: Boyd Lane, Trinity Engineering Testing Corporation
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 45.0'
8. DEPTH DRILLED INTO ROCK: 2.0'
9. TOTAL DEPTH OF HOLE: 47.0'
10. SIZE AND TYPE OF BIT: 3" Shelby & 6" d.b.
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing Model 44
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: DISTURBED 12; UNDISTURBED 23
14. TOTAL NUMBER CORE BOXES: 0
15. ELEVATION GROUND WATER: See Note 2
16. DATE HOLE: STARTED 1-31-72; COMPLETED 2-2-73
17. ELEVATION TOP OF HOLE: 559.58
18. TOTAL CORE RECOVERY FOR BORING: 83.3 %
19. SIGNATURE OF INSPECTOR: See Note 1 under "Remarks"

ELEVATION a	DEPTH b	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f
546.58	13.0'	Dark Brown Clay		W1 W2 J1 W3 W4 J2 W5 W6 J3 W7
539.58	20.0'	Brown Clay w/Silt		W8 J4 W9 W10 J5
524.58	35.0'	Brown Silty Clay		W11 W12 J6 W13 W14 J7 W15 W16 J8 W17 W18
518.08	41.5'	Tan and Brown Sandy Clay 41.5' Tan & Brown Sandy Clay		J9 W19 W20 J10 W21
515.08	44.5'	Gray Sandy Clay	75%	D1
514.58	4.50'	Gray Sand w/Gravel	100%	D2
512.58		Gray Shale	75%	D3
		Total Depth = 47.0 Feet		

REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g

Boring advanced with 3" Shelby tube from 0.0'-40.5'. Cleaned out 40.5'-41.0'. Used 6" Denison barrel 41.0'-47.0'. Set 8" casing to 45.0' depth. Encountered moisture at 23.0' and water at 38.0'.

JAR SAMPLES
1. 2.0'- 3.0'
2. 6.0'- 7.0'
3. 10.0'-11.0'
4. 14.0'-15.0'
5. 18.0'-19.0'
6. 22.0'-23.0'
7. 26.0'-27.0'
8. 30.0'-31.0'
9. 34.0'-35.0'
10. 38.0'-39.0'
11. 43.0'
12. 45.0'
13. 47.0'

DENISON SAMPLES
1. 41.0'-43.0'
2. 43.0'-45.0'
3. 45.0'-47.0'

WRAP SAMPLES
1. 0.0'- 1.0'
2. 1.0'- 2.0'
3. 3.0'- 4.0'
4. 4.5'- 6.0'
5. 7.0'- 8.5'
6. 8.5'-10.0'
7. 11.0'-12.5'
8. 12.5'-14.0'
9. 15.0'-16.5'
10. 16.5'-18.0'
11. 19.0'-20.5'
12. 20.5'-22.0'
13. 23.0'-24.5'
14. 24.5'-26.0'
15. 27.0'-28.5'
16. 28.5'-30.0'
17. 31.0'-32.5'
18. 32.5'-34.0'
19. 35.0'-36.5'
20. 36.5'-38.0'
21. 39.0'-40.5'

Note 1:
Soils logged by: A. J. Simpson, Trinity Engineering Testing Corporation.

Note 2:
4" plastic pipe in~~stalled from~~ for groundwater observations.

RECORD DRAWING-WORK AS BUILT

SYM	DO NO	ACTION	DATE	DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

DESIGNED BY
DRAWN BY
REVIEWED BY

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS
EMBANKMENT, SPILLWAY AND
OUTLET WORKS
LOGS OF BORINGS
3S6DC-32, 6DC-33, 3S6D-34, AND 3S6D-35

SUBMITTED BY
ENGINEER
INVITATION NO. DACW63-82 B-0025
DATE MAR 1982
CONTRACT NO DACW63-82 C 0043
DRAWING NUMBER
SHEET NO OF
SEQUENCE NO 20

ONTRACT NO DACW63-82 C 0043

TO ACCOMPANY FOUNDATION REPORT

Hole No. 3S6D-36

DRILLING LOG	DIVISION Southwestern	INSTALLATION Fort Worth	SHEET 1 of 2 SHEETS
1. PROJECT Aubrey Dam Site No. 1		10. SIZE AND TYPE OF BIT 3" Shelby, 6" Denison	
2. LOCATION (Coordinates or Station) X 2,[illegible]42 Y [illegible]15 31[illegible] Sta. 11[illegible]+07 6[illegible]'R		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL	
3. DRILLING AGENCY Corps of Engineers		12. MANUFACTURER'S DESIGNATION OF DRILL Failing Model 44	
4. HOLE NO. (As shown on drawing title and file number) 3S6D-36		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 14 / UNDISTURBED 23
5. NAME OF DRILLER Boyd Lane, Trinity Engineering Testing Corporation		14. TOTAL NUMBER CORE BOXES 0	
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.		15. ELEVATION GROUND WATER See Note 2	
7. THICKNESS OF OVERBURDEN 44.0		16. DATE HOLE	STARTED 1-29-73 / COMPLETED 1-30-73
8. DEPTH DRILLED INTO ROCK 2.0'		17. ELEVATION TOP OF HOLE 557.88	
9. TOTAL DEPTH OF HOLE 46.0'		18. TOTAL CORE RECOVERY FOR BORING -- %	
		19. SIGNATURE OF INSPECTOR See Note 1 under "Remarks"	

ELEVATION a	CLASSIFICATION OF MATERIALS (Description) d
549.38	Brown Clay 8.5'
543.88	Tan and Brown Clay w/ Calcareous Particles 14.0'
529.88	Light Brown Silty Clay 28.0'
526.88	Tan and Light Gray Sandy Clay 31.0'
520.88	Tan Sand 37.0'
	Tan Sand and Gravel
513.88	Tan Sand and Gravel 44.0'
511.88	Gray Shale 46.0'
	Total Depth = 46.0 Feet

BOX OR SAMPLE NO. f	% CORE RECOVERY e
W1	
W2	
J1	
W3	
W4	
J2	
W5	
W6	
J3	
W7	
W8	
J4	
W9	
W10	
J5	
W11	
W12	
J6	
W13	
W14	
D1	100%
D2	100%
D3	100%
D4	50%
D5	50%
D6	100%
D7	75%
D8	50%
D9	50%
D10	100%

REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g

Drilling
3" Shelby: 0.0'-26.0'. Cleaned out. Set 26.0' of 8" casing. 6" d.b. from 26.0'-46.0'. Advanced casing to 45.0'.

WRAP SAMPLES
1. 0.0'- 1.0'
2. 1.0'- 2.0'
3. 3.0'- 4.5'
4. 4.5'- 6.0'
5. 7.0'- 8.5'
6. 8.5'-10.0'
7. 11.0'-12.5'
8. 12.5'-14.0'
9. 15.0'-16.5'
10. 16.5'-18.0'
11. 19.0'-20.5'
12. 20.5'-22.0'
13. 23.0'-24.5'

JAR SAMPLES
1. 2.0'- 3.0'
2. 6.0'- 7.0'
3. 10.0'-11.0'
4. 14.0'-15.0'
5. 18.0'-19.0'
6. 22.0'-23.0'
7. 28.0'
8. 30.0'
9. 32.0'
10. 34.0'
11. 36.0'
12. 38.0'
13. 40.0'
14. 42.0'
15. 44.0'
16. 46.0'

DENISON SAMPLES
1. 26.0'-28.0'
2. 28.0'-30.0'
3. 30.0'-32.0'
4. 32.0'-34.0'
5. 34.0'-36.0'
6. 36.0'-38.0'
7. 38.0'-40.0'
8. 40.0'-42.0'
9. 42.0'-44.0'
10. 44.0'-46.0'

Note 1:
Soils logged by: A. J. Simpson, Trinity Engineering Testing Corporation.

Note 2:
Install 4" plastic pipe from 559.18 to 513.18 for groundwater observations.

Boring was advanced to 26.0 feet below the ground surface prior to using drilling fluid and groundwater was encountered at the 18.0-foot depth.

Hol

DRILLING LOG	DIVISION Southwestern	INSTALLATION Fort Worth	
1. PROJECT Aubrey Dam Site No. 1		10. SIZE AND TYPE OF BIT 3" Shelb	
2. LOCATION (Coordinates or Station) X=2,140,546; Y=614,471; Sta. 121+007 619'R		11. DATUM FOR ELEVATION SHOWN MSL	
3. DRILLING AGENCY Corps of Engineers		12. MANUFACTURER'S DESIGNATION OF DRILL Failing Model 44	
4. HOLE NO. (As shown on drawing title and file number) 3S6DC-37		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	15
5. NAME OF DRILLER Boyd Lane, Trinity Engineering Testing Corporation		14. TOTAL NUMBER CORE BOXES 0	
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.		15. ELEVATION GROUND WATER See	
7. THICKNESS OF OVERBURDEN 44.0'		16. DATE HOLE	STARTED 1-20-73
8. DEPTH DRILLED INTO ROCK 2.0'		17. ELEVATION TOP OF HOLE 556.	
9. TOTAL DEPTH OF HOLE 46.0'		18. TOTAL CORE RECOVERY FOR BORING	
		19. SIGNATURE OF INSPECTOR See Note 1 under "Remark	

ELEVATION a	CLASSIFICATION OF MATERIALS (Description) d
553.68	Brown Clay 3.0'
549.68	Tan Silty Clay 7.0'
545.68	Light Brown Silty Clay 11.0'
536.68	Tan and Brown Silty Clay 20.0'
526.68	Tan Silty Sandy Clay 30.0'
524.68	Tan Clayey Sand 32.0'
518.68	Tan Silty Sand 38.0'
	Tan Sand and Gravel
512.68	Tan Sand and Gravel 44.0'
510.68	Gray Shale 46.0'
	Total Depth = 46.0 Feet

BOX OR SAMPLE NO. f	% CORE RECOVERY e
W1	
W2	
J1	
W3	
W4	
J2	
W5	
W6	
J3	
W7	
W8	
J4	
W9	
W10	
J5	
W11	
W12	
J6	
W13	
W14	
J7	
W15	
W16	
J8	
D1	100%
D2	75%
D3	75%
D4	100%
D5	25%
D5	50%
J15	25%
D6	100%

DRILLI
3" Shelb
Cleaned
31.0'-46

WRAP
1. 0.
2. 1.
3. 3.
4. 4.
5. 7.
6. 8.
7. 11.
8. 12.
9. 15.
10. 16.
11. 19.
12. 20.
13. 23.
14. 24.5
15. 27.0
16. 28.5

JAR SA
1. 2.0
2. 6.0
3. 10.0
4. 14.0
5. 18.0
6. 22.0
7. 26.0
8. 30.0'
9. 33
10. 35
11. 37
12. 38
13. 38.0'
14. 42.
15. 42.0'
16. 46.

DENISON
1. 31.0'
2. 33.0'
3. 35.0'
4. 37.0'
5. 40.0'
6. 44.0'

Set 8" casi

Note 1:
Soils logge
A. J. Simp
Trinity En
Testing Co

Note 2:
Installed 4"
pipe from
511.68 for
water obse

Hole No. 356DC-37

Southwestern	INSTALLATION Fort Worth
No. 1	SHEET 1 of 2 SHEETS
Sta. 121+007	10. SIZE AND TYPE OF BIT 3" Shelby & 6" d.b.
4,471; 619'R	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
	12. MANUFACTURER'S DESIGNATION OF DRILL Falling Model 44
356DC-37	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 15 — UNDISTURBED 21
Boyd Lane	14. TOTAL NUMBER CORE BOXES 0
Testing Corporation	15. ELEVATION GROUND WATER See Note 2
DEG. FROM VERT.	16. DATE HOLE — STARTED 1-20-73 — COMPLETED 1-24-73
44.0'	17. ELEVATION TOP OF HOLE 556.68
2.0'	18. TOTAL CORE RECOVERY FOR BORING — %
46.0'	19. SIGNATURE OF INSPECTOR See Note 1 under "Remarks"

CLASSIFICATION OF MATERIALS (Description) d
Brown Clay 3.0'
Tan Silty Clay 7.0'
Light Brown Silty Clay 11.0'
Tan and Brown Silty Clay 0.0'
an Silty Sandy Clay 0.0'
an Clayey Sand 2.0'
an Silty Sand 1.0'
an Sand and Gravel
n Sand and Gravel .0'
ay Shale .0'
tal Depth = 46.0 Feet

% CORE RECOVERY e	BOX OR SAMPLE NO. f
	W1
	W2
	J1
	W3
	W4
	J2
	W5
	W6
	J3
	W7
	W8
	J4
	W9
	W10
	J5
	W11
	W12
	J6
	W13
	W14
	J7
	W15
	W16
	J8
100%	D1
75%	D2
75%	D3
100%	D4
25%	D5
50%	D5
25%	J15
100%	D6

REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g

DRILLING

3" Shelby: 0.0'-31.0'

Cleaned out 6" d.b.: 31.0'-46.0'.

WRAP SAMPLES

1. 0.0'- 1.0'
2. 1.0'- 2.0'
3. 3.0'- 4.5'
4. 4.5'- 6.0'
5. 7.0'- 8.0'
6. 8.5'-10.0'
7. 11.0'-12.5'
8. 12.5'-14.0'
9. 15.0'-16.5'
10. 16.5'-18.0'
11. 19.0'-20.5'
12. 20.5'-22.0'
13. 23.0'-24.5'
14. 24.5'-26.0'
15. 27.0'-28.5'
16. 28.5'-30.0'

JAR SAMPLES

1. 2.0'- 3.0'
2. 6.0'- 7.0'
3. 10.0'-11.0'
4. 14.0'-15.0'
5. 18.0'-19.0'
6. 22.0'-23.0'
7. 26.0'-27.0'
8. 30.0'-31.0'
9. 33.0'
10. 35.0'
11. 37.0'
12. 38.0'
13. 38.0'-40.0'
14. 42.0'
15. 42.0'-44.0'
16. 46.0'

DENISON SAMPLES

1. 31.0'-33.0'
2. 33.0'-35.0'
3. 35.0'-37.0'
4. 37.0'-38.0'
5. 40.0'-42.0'
6. 44.0'-46.0'

Set 8" casing to 45.0'.

Note 1: Soils logged by: A. J. Simpson, Trinity Engineering Testing Corporation.

Note 2: Installed 4" plastic pipe from 557.68 to 511.68 for groundwater observations.

Hole No. 356D-38

DRILLING LOG	DIVISION Southwestern
INSTALLATION Fort Worth	SHEET 1 of 2 SHEETS
1. PROJECT Aubrey Dam Site No. 1	10. SIZE AND TYPE OF BIT 3' Shelby, 6" d.b.
2. LOCATION (Coordinates or Station) Not Shown	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY Corps of Engineers	12. MANUFACTURER'S DESIGNATION OF DRILL Falling Model 44
4. HOLE NO. (As shown on drawing title and file number) 356D-38	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 11 — UNDISTURBED 19
5. NAME OF DRILLER Boyd Lane, Trinity Engineering Testing Corporation	14. TOTAL NUMBER CORE BOXES 0
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER See Note 2
	16. DATE HOLE — STARTED 1-18-73 — COMPLETED 1-20-73
	17. ELEVATION TOP OF HOLE 559.07
7. THICKNESS OF OVERBURDEN 44.0'	18. TOTAL CORE RECOVERY FOR BORING --- %
8. DEPTH DRILLED INTO ROCK 1.5'	19. SIGNATURE OF INSPECTOR
9. TOTAL DEPTH OF HOLE 45.5'	See Note 1 under "Remarks"

ELEVATION a	CLASSIFICATION OF MATERIALS (Description) d
556.07	Dark Brown Clay 3.0'
550.57	Brown Clay 8.5'
533.07	Light Brown Silty Clay 26.0'
530.57	Tan Sandy Clay 28.5'
523.07	Tan Sand w/Gravel 36.0'
	Tan Sand and Gravel
515.07	Tan Sand and Gravel 44.0'
513.57	Gray Shale
	Total Depth = 45.5 Feet

% CORE RECOVERY e	BOX OR SAMPLE NO. f
	W1
	W2
	J1
	W3
	W4
	J2
	W5
	W6
	J3
	W7
	W8
	J4
	W9
	W10
	J5
	W11
	W12
	J7
	W13
	W14
	J8
	W15
	W16
100%	D1
100%	D2
0%	
0%	
10%	J11
0%	
50%	D3
100%	D4

REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g

3" Shelby tube samples from 0.0'-30.0'. Boring was advanced to 30.0' prior to using drilling fluid. Water at 20.5'. 6" d.b. from 30.0'-45.5'. Set 8" casing to 44.0'.

WRAP SAMPLES

1. 0.0'- 1.0'
2. 1.0'- 2.0'
3. 3.0'- 4.5'
4. 4.5'- 6.0'
5. 7.0'- 8.5'
6. 8.5'-10.0'
7. 11.0'-12.5'
8. 12.5'-14.0'
9. 15.0'-16.5'
10. 16.5'-18.0'
11. 19.0'-20.5'
12. 20.5'-22.0'
13. 23.0'-24.5'
14. 24.5'-26.0'
15. 27.0'-28.5'
16. 28.5'-30.0'

DENISON SAMPLES

1. 30.0'-32.0'
2. 32.0'-34.0'
3. 42.0'-44.0'
4. 44.0'-45.5'

JAR SAMPLES

1. 2.0'- 3.0'
2. 6.0'- 7.0'
3. 10.0'-11.0'
4. 14.0'-15.0'
5. 18.0'-19.0'
7. 22.0'-23.0'
8. 26.0'-27.0'
9. 32.0'
10. 34.0'
11. 38.0'-40.0'
12. 44.0'
13. 45.5'

Note 1: Soils logged by: A. J. Simpson, Trinity Engineering Testing Corporation.

Note 2: Installed 4" plastic pipe from for groundwater observations.

DRILLING L

1. PROJECT Aubrey Dam Site N

2. LOCATION (Coordinates or Station) Not Shown

3. DRILLING AGENCY Corps of Engineer

4. HOLE NO. (As shown on drawing title and file number)

5. NAME OF DRILLER Trinity Engineerin

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED

7. THICKNESS OF OVERBURDEN

8. DEPTH DRILLED INTO ROCK

9. TOTAL DEPTH OF HOLE

ELEVATION a
556.11
533.61
532.11
521.11
515.11
513.61

RECORD DRAWING-WORK AS BUILT

Hole No. 3S6D-38

…G LOG	DIVISION Southwestern	INSTALLATION Fort Worth	SHEET 1 OF 2 SHEETS

…Dam Site No. 1

…(Coordinates or Station)

…wn

…ENCY

… Engineers

…(As shown on drawing title and file number) 3S6D-38

…LLER Boyd Lane

…Engineering Testing Corporation

…F HOLE ☐ INCLINED ______ DEG. FROM VERT.

…F OVERBURDEN 44.0'

…ED INTO ROCK 1.5'

…H OF HOLE 45.5'

10. SIZE AND TYPE OF BIT 3" Shelby, 6" d.b.

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL

12. MANUFACTURER'S DESIGNATION OF DRILL Falling Model 44

13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 11, UNDISTURBED 19

14. TOTAL NUMBER CORE BOXES 0

15. ELEVATION GROUND WATER See Note 2

16. DATE HOLE: STARTED 1-18-73, COMPLETED 1-20-73

17. ELEVATION TOP OF HOLE 559.07

18. TOTAL CORE RECOVERY FOR BORING --- %

19. SIGNATURE OF INSPECTOR See Note 1 under "Remarks"

…EPTH b | LEGEND c | CLASSIFICATION OF MATERIALS (Description) d | % CORE RECOVERY e | BOX OR SAMPLE NO. f | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g

Classification of materials:

- Dark Brown Clay
- 3.0'
- Brown Clay
- 8.5'
- Light Brown Silty Clay
- 26.0'
- Tan Sandy Clay
- 28.5'
- Tan Sand w/Gravel
- 36.0'
- Tan Sand and Gravel
- Tan Sand and Gravel
- 44.0'
- Gray Shale
- Total Depth = 45.5 Feet

Depth: 2, 4, 6

Box or sample no.: W1, W2, J1, W3, W4, J2, W5, W6, J3, W7, W8, J4, W9, W10, J5, W11, W12, J7, W13, W14, J8, W15, W16

% Core Recovery	Box or Sample No.
100%	D1
100%	D2
0%	
0%	
10%	J11
0%	
50%	D3
100%	D4

Remarks:

3" Shelby tube samples from 0.0'-30.0'. Boring was advanced to 30.0' prior to using drilling fluid. Water at 20.5'. 6" d.b. from 30.0'-45.5'. Set 8" casing to 44.0'.

WRAP SAMPLES

1. 0.0'- 1.0'
2. 1.0'- 2.0'
3. 3.0'- 4.5'
4. 4.5'- 6.0'
5. 7.0'- 8.5'
6. 8.5'-10.0'
7. 11.0'-12.5'
8. 12.5'-14.0'
9. 15.0'-16.5'
10. 16.5'-18.0'
11. 19.0'-20.5'
12. 20.5'-22.0'
13. 23.0'-24.5'
14. 24.5'-26.0'
15. 27.0'-28.5'
16. 28.5'-30.0'

DENISON SAMPLES

1. 30.0'-32.0'
2. 32.0'-34.0'
3. 42.0'-44.0'
4. 44.0'-45.5'

JAR SAMPLES

1. 2.0'- 3.0'
2. 6.0'- 7.0'
3. 10.0'-11.0'
4. 14.0'-15.0'
5. 18.0'-19.0'
7. 22.0'-23.0'
8. 26.0'-27.0'
9. 32.0'
10. 34.0'
11. 38.0'-40.0'
12. 44.0'
13. 45.5'

Note 1:
Soils logged by:
A. J. Simpson,
Trinity Engineering
Testing Corporation.

Note 2:
Installed 4" plastic
pipe from
for groundwater
observations.

Hole No. 3S6D-39

DRILLING LOG	DIVISION Southwestern	INSTALLATION Fort Worth	SHEET 1 OF 2 SHEETS

1. PROJECT Aubrey Dam Site No. 1
2. LOCATION (Coordinates or Station) Not Shown
3. DRILLING AGENCY Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number) 3S6D-39
5. NAME OF DRILLER Boyd Lane, Trinity Engineering Testing Corporation
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN 45.5'
8. DEPTH DRILLED INTO ROCK 1.5'
9. TOTAL DEPTH OF HOLE 47.0'
10. SIZE AND TYPE OF BIT 3" Shelby, 6" d.b.
11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
12. MANUFACTURER'S DESIGNATION OF DRILL Failing Model 44
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED, UNDISTURBED
14. TOTAL NUMBER CORE BOXES 0
15. ELEVATION GROUND WATER
16. DATE HOLE: STARTED 1-16-73, COMPLETED 1-17-73
17. ELEVATION TOP OF HOLE 560.61
18. TOTAL CORE RECOVERY FOR BORING %
19. SIGNATURE OF INSPECTOR See Note 1 under "Remarks"

ELEVATION a | DEPTH b | LEGEND c | CLASSIFICATION OF MATERIALS (Description) d | % CORE RECOVERY e | BOX OR SAMPLE NO. f | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g

Elevation	Classification of materials
	Dark Brown Clay
556.11	4.5'
	Brown Silty Clay
533.61	27.0'
532.11	Tan Sandy Clay
	Tan Clayey Sand
521.11	39.5'
	Tan Sand and Gravel
	Tan Sand and Gravel
515.11	45.5'
513.61	Gray Shale
	Total Depth = 47.0 Feet

Depth: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48

Box or sample no.: W1, W2, J1, W3, W4, J2, W5, W6, J3, W7, W8, J4, W9, W10, J5, W11, W12, J6, W13, W14, J7, W15, W16, J8, W17, W18

% Core Recovery	Box or Sample No.
100%	D1
100%	D2
75%	D3
85%	D4
90%	D5
33%	J14
100%	D6

Remarks:

3" Shelby tube samples from 0.0'-34.0'. 6" d.b. samples from 34.0'-47.0'. Set 8" casing to 46.0'. Boring was advanced to 34.0' prior to using drilling fluid.

WRAP SAMPLES

1. 0.0'- 1.0'
2. 1.0'- 2.0'
3. 3.0'- 4.5'
4. 4.5'- 6.0'
5. 7.0'- 8.5'
6. 8.5'-10.0'
7. 11.0'-12.5'
8. 12.5'-14.0'
9. 15.0'-16.5'
10. 16.5'-18.0'
11. 19.0'-20.5'
12. 20.5'-22.0'
13. 23.0'-24.5'
14. 24.5'-26.0'
15. 27.0'-28.5'
16. 28.5'-30.0'
17. 31.0'-32.5'
18. 32.5'-34.0'

DENISON SAMPLES

1. 34.0'-36.0'
2. 36.0'-38.0'
3. 38.0'-40.0'
4. 40.0'-42.0'
5. 42.0'-44.0'
6. 45.5'-47.0'

A jar sample was taken from the shoe of each denison barrel run.

JAR SAMPLES

1. 2.0'- 3.0'
2. 6.0'- 7.0'
3. 10.0'-11.0'
4. 14.0'-15.0'
5. 18.0'-19.0'
6. 22.0'-23.0'
7. 26.0'-27.0'
8. 30.0'-31.0'
9. 36.0'
10. 38.0'
11. 40.0'
12. 42.0'
13. 44.0'
14. 44.0'-45.5'
15. 47.0'

Note 1:
Soils logged by:
A. J. Simpson,
Trinity Engineering
Testing Corporation

RECORD DRAWING-WORK AS BUILT

SYM	OC NO	ACTION	DATE	DESCRIPTION OF REVISION

U.S ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

DESIGNED BY: --------

DRAWN BY: --------

REVIEWED BY: --------

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS
EMBANKMENT, SPILLWAY AND
OUTLET WORKS
LOGS OF BORINGS
8S6D-36, 3S6DC-37, 3S6D-38, AND 3S6D-39

SUBMITTED BY

ENGINEER

INVITATION NO. DACW63-82-B-0025 DATE MAR, 1982

CONTRACT NO. DACW63-82-C-0083

DRAWING NUMBER

SHEET NO OF

SEQUENCE NO 21

CONTRACT NO. DACW63-82-C-0083

TO ACCOMPANY FOUNDATION REPORT

Hole No. 356D-40

DRILLING LOG	DIVISION Southwestern
INSTALLATION Fort Worth	SHEET 1 OF 1 SHEETS
1. PROJECT Aubrey Dam Site No. 1	10. SIZE AND TYPE OF BIT 3" Shelby, d.b., NX-core
2. LOCATION (Coordinates or Station) X=2,142,040; Y=614,930	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY Corps of Engineers	12. MANUFACTURER'S DESIGNATION OF DRILL DAMCO 1250
4. HOLE NO. (As shown on drawing title and file number) 356D-40	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED 6 UNDISTURBED 6
5. NAME OF DRILLER Bill Stanton Trinity Engineering Testing Corporation	14. TOTAL NUMBER CORE BOXES 1
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER See Note 2
7. THICKNESS OF OVERBURDEN 15.0'	16. DATE HOLE STARTED 11-30-73 COMPLETED 2-8-73
8. DEPTH DRILLED INTO ROCK 12.0'	17. ELEVATION TOP OF HOLE 649 04 566.3
9. TOTAL DEPTH OF HOLE 27.0'	18. TOTAL CORE RECOVERY FOR BORING 100 %
	19. SIGNATURE OF INSPECTOR See Note 1 under "Remarks"

ELEVATION a	DEPTH b	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f
562.3	2 4	Brown Silty Sand 4.0'		W1 J1
559.3	6	Brown Silty Sand w/Clay Lenses 7.0'		B1
557.3	8	Red and Brown Clayey Sand 9.0'		J2 W2
554.3	10 12	Brown and Light Gray Clayey Sand 12.0'	100%	D1
551.3	14	Gray Clay w/Sand Lenses and Iron Ore Particles 15.0'	90% 100%	D2 D3
544.1	16 18 20 22	Tan Sandstone w/Shale Lenses 22.2'	100% R-1 100% 22.0'	D4 Box 1
539.3	24 26	Gray Shale 27.0'	R-2 100% 27.0'	W3 W4
	28	Total Depth = 27.0 Feet		

REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g

DRILLING
0.0'-9.0', 3"Shelby
9.0'-17.0', 4"d.b.
17.0'-27.0', NX-core.
Set tub at 9.0'.

WRAP SAMPLES
1. 0.0'- 2.0'
2. 6.0'- 8.0'
3. 22.2'-22.9'
4. 23.5'-24.4'

JAR SAMPLES
1. 2.0'- 4.0'
2. 6.0'- 8.0'
3. 11.0'
4. 13.0'
5. 15.0'
6. 17.0'

Set 8" casing to the 17.0' depth.

Note 1:
Soils logged by:
A. J. Simpson,
Trinity Engineering Testing Corporation.

Note 2:
Installed 4" plastic pipe from 650.0 to 631.0 for ground-water observations.

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE
MAR 71 (MODIFIED)
PROJECT Aubrey Dam Site No. 1 HOLE NO. 356D-40

Hole No. 354C-41

DRILLING LOG	DIVISION Southwestern
INSTALLATION Fort Worth	SHEET 1 OF 2 SHEETS
1. PROJECT Aubrey Dam Site No. 1	10. SIZE AND TYPE OF BIT 3" Shelby and 4" Core
2. LOCATION (Coordinates or Station) X = 2,143,525, Y = 616,330	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY Corps of Engineers	12. MANUFACTURER'S DESIGNATION OF DRILL DAMCO 1250
4. HOLE NO. (As shown on drawing title and file number) 354C-41	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED 11 UNDISTURBED 5
5. NAME OF DRILLER Bill Stanton Trinity Engineering Testing Corporation	14. TOTAL NUMBER CORE BOXES 2
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER See Note 2
7. THICKNESS OF OVERBURDEN 49.0'	16. DATE HOLE STARTED 2-13-73 COMPLETED 2 15-73
8. DEPTH DRILLED INTO ROCK 10.0'	17. ELEVATION TOP OF HOLE 665.20
9. TOTAL DEPTH OF HOLE 59.0'	18. TOTAL CORE RECOVERY FOR BORING 100.0 %
	19. SIGNATURE OF INSPECTOR See Note 1 Under "Remarks"

ELEVATION a	DEPTH b	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f
664.70		0.5' Brown Clayey Sand		D1
660.20	2 4	Red Clayey Silty Sand 5.0'		W1 J1 W2 W3 W4
647.20	6 8 10 12 14 16 18	Red and Orange Sand (Cemented) 18.0'	9.0' 50 % 14.0' 0 % 18.0'	J2 B2 B3 * *
617.30	20 22 24 26 28 30 32 34 36 38 40 42 44 46 48	Tan Sand Tan Sand 47.9'	19.0' 0 % 23.0' 24.0' 0 % 28.0' 29.0' 0 % 33.0' 34.0' 0 % 38.0' 39.0' 0 % 43.0' 44.0' 50 %	B4 * B5 * B6 * B7 * B8 * B9 *
616.20		49.0' Gray Shale w/Sandstone Lenses	49.0'	W5
612.10	50 52	Shale, Dk. Gray-Black, Soft-Mod. Hard, Massive, w/ Occas. Sandy Zones 53.1'	100% 54.0'	Box 1
606.20	54 56 58	Shale, Lt. Gray, Mod. Hard Massive, Calc., w/occas. Sandy Zones	100% 59.0'	Box 2
	60	Total Depth of Boring = 59.0'		

REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g

DRILLING:
0.0'-9.0': 3" Shelby Tube
9.0'-49.0': NX-Core and 2" Split-Spoon
49.0-59.0': 4" Core

*All recovered NX-Core Samples were placed in TETCO's cardboard core boxes.

Set 6" casing to 49.0' depth. Sand washed away with drilling fluid.

JAR SAMPLES:
1. 2.0'-3.0'
2. 6.0'-7.0'

BAG SAMPLES:
1. 0.0'- 1.0'
2. 7.0'- 8.0'
3. 8.0'- 9.0'
4. 18.0'-19.0'
5. 23.0'-24.0'
6. 28.0'-29.0'
7. 33.0'-34.0'
8. 38.0'-39.0'
9. 43.0'-44.0'

WRAP SAMPLES:
1. 1.0'- 2.0'
2. 3.0'- 4.0'
3. 4.0'- 5.0'
4. 5.0'- 6.0'
5. 47.9'-48.5'

CARTONS:
1. 52.5'-53.4'

BOXES:
1. 49.0'-54.0'
2. 54.0'-59.0'

Note 1:
Soils logged by:
A. J. Simpson,
Trinity Engineering Testing Corporation

Primary logged by:
Marr,
Fort Worth District,
Corps of Engineers

Note 2:
2" plastic pipe installed from 666.2 to 616.2 for groundwater observations.

ENG FORM 1836-A (MODIFIED)
PROJECT Aubrey Dam Site No. 1 HOLE NO. 354C-41

DI
Aub
X =
Cor
Tri
661.0
657.3
653.0
649.0
617.00
609.3
607.00
ENG FORM

POLYTRACE 023

Hole No. 354C-41

rth	SHEET 1 OF 2 SHEETS
3" Shelby and 4" Core	
50	
11	5
2	
See Note 2	
2-13-73	2-15-73
665.20	
100.0	
Under "Remarks"	

DRILLING:
0.0'-9.0': 3" Shelby Tube
9.0'-49.0': NX-Core and 2" Split-Spoon
49.0-59.0': 4" Core

*All recovered NX-Core Samples were placed in TETCO's cardboard core boxe

Set 6" casing to 49.0' depth. Sand washed away with drilling fluid.

JAR SAMPLES:
1. 2.0'-3.0'
2. 6.0'-7.0'

BAG SAMPLES:
1. 0.0'- 1.0'
2. 7.0'- 8.0'
3. 8.0'- 9.0'
4. 18.0'-19.0'
5. 23.0'-24.0'
6. 28.0'-29.0'
7. 33.0'-34.0'
8. 38.0'-39.0'
9. 43.0'-44.0'

WRAP SAMPLES:
1. 1.0'- 2.0'
2. 3.0'- 4.0'
3. 4.0'- 5.0'
4. 5.0'- 6.0'
5. 47.9'-48.5'

CARTONS:
1. 52.3'-53.4'

BOXES:
1. 49.0'-54.0'
2. 54.0'-59.0'

Note 1:
Soils logged by:
A. J. Simpson,
Trinity Engineering Testing Corporation

Primary logged by:
Marr,
Fort Worth District,
Corps of Engineers

Note 2:
2" plastic pipe installed from 666.2 to 616.2 for groundwater observations.

y Dam Site No. 1 | 354C-41

Hole No. 354C 42

DRILLING LOG — Southwestern	Fort Worth — SHEET 1 OF 2 SHEETS
Aubrey Dam Site No. 1	3 Shelby, NX & 4 Core
X = 2,143,550, Y = 616,150	MSL
Corps of Engineers	DAMCO 1250
354C-42	5 — 7
Bill Stanton, Trinity Engineering Testing Corp.	1
☒ VERTICAL ☐ INCLINED	See Note 2
13.0	2-7-73 — 2-13-73
42.0'	662.00
55.0'	31.6
	See Note 1 under "Remarks"

ELEVATION	DEPTH	CLASSIFICATION OF MATERIALS	% CORE RECOVERY	BOX OR SAMPLE NO.
661.00		1.0' Brown Clayey Sand		W1
657.30	4.7'	Red Sandy Clay		J1 W2 W3
653.00	9.0'	Tan and Orange Clayey Sand w/Iron Ore and Lignite Particles		W4 J2 W5 W6
649.00	13.0'	Red and Gray Clayey Sand	13.0'	W7 J3 B1 B2
		13.0'-45.0' Tan and Brown Sandstone w/Layers of Loosely Cemented Sandstone	33% 16.0'	In Shelby Box
			20% 21.0'	B3
			0% 25.0'	
			26.0'	B4
			0% 30.0'	
			31.0'	B5
			0% 35.0'	
			36.0'	B6
			0% 40.0'	
			41.0'	B7
617.00			63% 45.0	In Shelby Box
		45.0'-52.7' Shale, Dk. Gray, Massive, Soft-Mod. Hard	60% 50.0	In Shelby Box
609.3	52.7'	Siltstone Nodules, Hard, Tan	R-1 100%	Box 1
607.00		52.7'-55.0' Shale, Gray, Mod. Hard, Massive often Sandy w/Num. Sand and Sandstone Seams, Sand is Tan Med. Grn.	55.0	
		Total Depth = 55.0 Feet		

REMARKS

DRILLING:
0.0'-13.0', 3" Shelby Tube
13.0'-50.0', NX-Core
21.0'-41.0', Split-Spoon Samples at 5' intervals.
50.0'-55.0', 4" Core
Drilling fluid was used below the 10.5' depth.
Set casing to 50.0'

WRAP SAMPLES:
1. 0.0'- 2.0'
2. 3.0'- 4.0'
3. 4.0'- 5.0'
4. 5.0'- 6.0'
5. 7.0'- 8.0'
6. 8.0'- 9.0'
7. 9.0'-10.0'
8. 43.2'-43.7'
9. 43.7'-44.3'
0. 45.0'-46.2'
1. 46.2'-46.8'
2. 46.8'-47.6'

JAR SAMPLES:
1. 2.0'- 3.0'
2. 6.0'- 7.0'
3. 10.0'-10.5'

BAG SAMPLES:
1. 10.5'-12.0'
2. 12.0'-13.0'
3. 16.0'-21.0'
4. 25.0'-26.0'
5. 30.0'-31.0'
6. 35.0'-35.6'
7. 40.0'-41.0'

BOX 1: 5.0'-55.0'

CARTON 1: 51.8'-52.7'

Note 1:
Soils Logged By:
A. J. Simpson,
Trinity Engineering Testing Corporation

Primary Logged By:
Marr
Corps of Engineers
Fort Worth District

Note 2:
Installed 2" plastic pipe from 663.0 to 613.0 for ground water observations.

ENG FORM 1836-A (MODIFIED) | Aubrey Dam Site No. 1 | 354C-42

Hole No. 356DC 50

DRILLING LOG — Southwestern	Fort Worth — SHEET 1 OF 2 SHEETS
Aubrey Dam Site No. 1	MSL
X=2,137,605 Y=614,466 Sta. 33+007 250'L	Failing Model 44
Corps of Engineers	3 — 8
356DC 50	11
Boyd Lane, Trinity Engineering Testing Corporation	See Note 2
☒ VERTICAL ☐ INCLINED	1-5-73 — 1-15-73
14.0'	596.96
76.0'	98.0
90.0'	See Note 1 under "Remarks"

ELEVATION	DEPTH	CLASSIFICATION OF MATERIALS	% CORE RECOVERY	BOX OR SAMPLE NO.
591.46	5.5'	Tan and Brown Clay		W1 W2 J1 W3 W4
582.96	14.0'	Tan Sandy Clay		J2 W5 W6 J3 W7 W8
578.96	18.0'	14.0'-18.0' Limestone Gravel, Weathered, Tan Mod. Hard	100 100 100 100	J4 B1 B2 B3
		18.0'-27.0' Shale, Tan and Gray Weathered, Soft w/Num. Fine Grn. Soft, Friable, Tan Sand Pockets 22.0' Ironstone Nods., Red, Hard. 27.2'-28.7' Sandstone, Fin. Grain, Soft, Friable, Tan, Weathered, Ox. Stained.	100 100 100 100 100 100 100 100 100 0 100	J5 W9 B4 B5 W10 J6 W11 W12 W13 J7
		30.5'-90.0' Shale and Sandstone, Predominantly Shale w/Num. Layers and Lenses of Sandstone and Siltstone Nodules.	R-1 100% 30.0'	1
			R-2 100% 35.0'	Box 2
			R-3 100% 40.0'	Box 3
		30.5'-90.0' Shale and Sandstone, Predominantly Shale w/Num. Layer and Lenses of Sandstone, Scattered Siltstone Inclusions and Fossil Shells. Shale is Soft-Mid. Hard, Med. Bedded to Massive, Dark Gray, Unweathered. Sandstone is Soft-Mod. Hard, Lt. Gray, Fine-V. Fine Grn., Friable. Siltstone is Hard Tan Below 60.0' Sandstone is very Fine Grain and Hard.	R-4 100% 45.0'	Box 3
			R-5 100% 50.0'	Box 4
			R-6 100% 55.0'	Box 5
			R-7 86% 60.0'	Box 6
			R-8 95% 64.0'	
			R-9 100% 69.0'	Box 7
			R-10 100% 74.0'	Box 8
			R-11 80% 79.0'	Box 9
		79.0'-79.4' Fossiliferous Zone	R-12 115% 83.0'	Box 10
			R-13 100% 88.0'	
506.96	90.0'		R-14 100%	Box 11
		Total Depth = 90.0 Feet		

REMARKS

3" Shelby tube 0.0'-24.5'

JAR SAMPLES
1. 2.0'- 3.0'
2. 6.0'- 7.0'
3. 10.0'-11.0'
4. 14.0'-14.5'
5. 18.0'-19.0'
6. 22.0'-23.0'
7. 26.0'-27.0'

BAG SAMPLES
1. 14.5'-16.0'
2. 16.0'-17.0'
3. 17.0'-18.0'
4. 20.0'-20.5'
5. 20.5'-21.0'

WRAP SAMPLES
1. 0.0'- 1.0'
2. 1.0'- 2.0'
3. 3.0'- 4.5'
4. 4.5'- 6.0'
5. 7.0'- 8.5'
6. 8.5'-10.0'
7. 11.0'-12.5'
8. 12.5'-14.0'
9. 19.0'-20.0'
10. 21.0'-22.0'
11. 23.0'-23.5'
12. 23.5'-24.0'
13. 24.0'-24.5'

Drilled hole out from 24.5'-27.0' and set casing to 27.0'.

Started coring with 6" core barrel at 27.0'.

CARTON SAMPLES
1. 27.0'-27.5'
2. 33.3'-34.3'
3. 38.5'-39.2'
4. 41.7'-42.7'
5. 47.0'-48.0'
6. 50.5'-51.5'
7. 58.0'-59.0'
8. 60.8'-61.8'
9. 66.5'-67.5'
10. 71.5'-72.5'
11. 75.6'-76.6'
12. 80.9'-81.9'
13. 84.3'-85.3'
14. 89.0'-90.0'

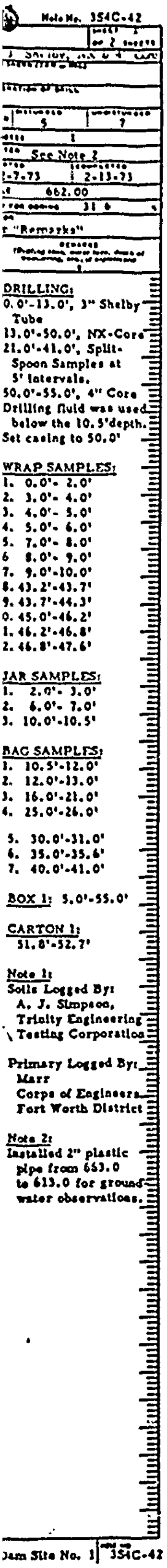
BOXES
1. 27.0'-31.9'
2. 31.9'-37.2'
3. 37.2'-43.5'
4. 43.5'-49.5'
5. 49.5'-55.0'
6. 55.0'-62.1'
7. 62.1'-68.0'
8. 68.0'-73.6'
9. 73.6'-80.0'
10. 80.0'-86.0'
11. 86.0'-90.0'

Note 1:
Soils logged by:
A. J. Simpson,
Trinity Engineering Testing Corporation;

Primary logged by:
Green & Marr
Corps of Engineers,
Fort Worth District.

Note 2:
Installed 4" plastic pipe from 597.8 to 566.8 for groundwater observations.

ENG FORM 1836-A (MODIFIED) | Aubrey Dam Site No. 1 | 356DC-5



Hole No. 3S4C-42

Sheet 2 of 2 sheets

J Shelby, NX & 4" Core

5 | 7

1

See Note 2

2-7-73 | 2-13-73

662.00

31.6 %

r "Remarks"

DRILLING:
0.0'-13.0', 3" Shelby Tube
13.0'-50.0', NX-Core
21.0'-41.0', Split-Spoon Samples at 5' Intervals.
50.0'-55.0', 4" Core
Drilling fluid was used below the 10.5' depth.
Set casing to 50.0'

WRAP SAMPLES:
1. 0.0'- 2.0'
2. 3.0'- 4.0'
3. 4.0'- 5.0'
4. 5.0'- 6.0'
5. 7.0'- 8.0'
6 8.0'- 9.0'
7. 9.0'-10.0'
8. 43.2'-43.7'
9. 43.7'-44.3'
0. 45.0'-46.2'
1. 46.2'-46.8'
2. 46.8'-47.6'

JAR SAMPLES:
1. 2.0'- 3.0'
2. 6.0'- 7.0'
3. 10.0'-10.5'

BAG SAMPLES:
1. 10.5'-12.0'
2. 12.0'-13.0'
3. 16.0'-21.0'
4. 25.0'-26.0'
5. 30.0'-31.0'
6. 35.0'-35.6'
7. 40.0'-41.0'

BOX 1: 5.0'-55.0'

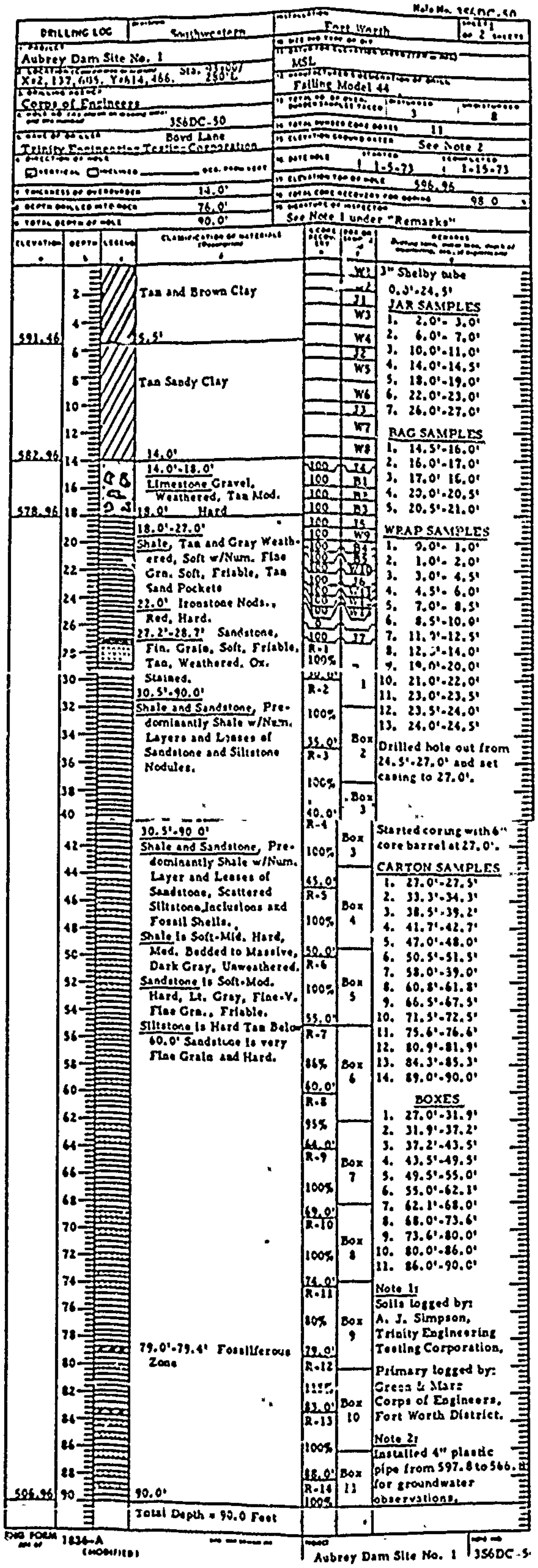
CARTON 1: 51.8'-52.7'

Note 1:
Soils Logged By:
A. J. Simpson,
Trinity Engineering
Testing Corporation

Primary Logged By:
Marr
Corps of Engineers
Fort Worth District

Note 2:
Installed 2" plastic pipe from 663.0 to 613.0 for groundwater observations.

Dam Site No. 1 | 3S4C-42



Hole No. 3S6DC-50

DRILLING LOG	Southwestern	Fort Worth	Sheet 1 of 2 sheets
Aubrey Dam Site No. 1			
X=2,137,605, Y=614,466. Sta. [illegible] 250'L		MSL	
Corps of Engineers		Failing Model 44	
3S6DC-50		3	8
Boyd Lane Trinity Engineering Testing Corporation		11	
☒ Vertical ☐ Inclined		See Note 2	
		1-5-73	1-15-73
14.0'		596.96	
76.0'		98.0 %	
90.0'		See Note 1 under "Remarks"	

Elevation	Depth	Classification of Materials	% Core Recovery	Box or Sample No.
	0	Tan and Brown Clay		W1, W2, J1, W3
591.46	5.5'	Tan Sandy Clay		W4, J2, W5, W6, J3, W7, W8
582.96	14.0'	14.0'-18.0' **Limestone Gravel**, Weathered, Tan Mod. Hard	100 100 100 100	J4 B1 B2 B3
578.96	18.0'	18.0'-27.0' **Shale**, Tan and Gray Weathered, Soft w/Num. Fine Grn. Soft, Friable, Tan Sand Pockets 22.0' Ironstone Nods., Red, Hard. 27.2'-28.7' Sandstone, Fin. Grain, Soft, Friable, Tan, Weathered, Ox. Stained.	100 100 100 100 100 100 100 100 100 100	J5 W9 B4 B5 W10 J6 W11 W12 J7
	27.0'-30.0'		R-1 100%	Box 1
	30.0'	30.5'-90.0' **Shale and Sandstone**, Predominantly Shale w/Num. Layers and Lenses of Sandstone and Siltstone Nodules.	R-2 100%	Box 1
	35.0'		R-3 100%	Box 2
	40.0'	30.5'-90.0' **Shale and Sandstone**, Predominantly Shale w/Num. Layer and Lenses of Sandstone, Scattered Siltstone Inclusions and Fossil Shells. **Shale** is Soft-Mid. Hard, Med. Bedded to Massive, Dark Gray, Unweathered. **Sandstone** is Soft-Mod. Hard, Lt. Gray, Fine-V. Fine Grn., Friable. **Siltstone** is Hard Tan Below 60.0' Sandstone is very Fine Grain and Hard.	R-4 100%	Box 3
	45.0'		R-5 100%	Box 4
	50.0'		R-6 100%	Box 5
	55.0'		R-7 86%	Box 6
	60.0'		R-8 95%	Box 6
	64.0'		R-9 100%	Box 7
	69.0'		R-10 100%	Box 8
	74.0'		R-11 80%	Box 9
	79.0'	79.0'-79.4' Fossiliferous Zone	R-12 115%	Box 10
	83.0'		R-13 100%	Box 10
	88.0'		R-14 100%	Box 11
506.96	90.0'	Total Depth = 90.0 Feet		

Remarks:

3" Shelby tube 0.0'-24.5'

JAR SAMPLES
1. 2.0'- 3.0'
2. 6.0'- 7.0'
3. 10.0'-11.0'
4. 14.0'-14.5'
5. 18.0'-19.0'
6. 22.0'-23.0'
7. 26.0'-27.0'

BAG SAMPLES
1. 14.5'-16.0'
2. 16.0'-17.0'
3. 17.0'-18.0'
4. 20.0'-20.5'
5. 20.5'-21.0'

WRAP SAMPLES
1. 0.0'- 1.0'
2. 1.0'- 2.0'
3. 3.0'- 4.5'
4. 4.5'- 6.0'
5. 7.0'- 8.5'
6. 8.5'-10.0'
7. 11.9'-12.5'
8. 12.5'-14.0'
9. 19.0'-20.0'
10. 21.0'-22.0'
11. 23.0'-23.5'
12. 23.5'-24.0'
13. 24.0'-24.5'

Drilled hole out from 24.5'-27.0' and set casing to 27.0'.

Started coring with 6" core barrel at 27.0'.

CARTON SAMPLES
1. 27.0'-27.5'
2. 33.3'-34.3'
3. 38.5'-39.2'
4. 41.7'-42.7'
5. 47.0'-48.0'
6. 50.5'-51.5'
7. 58.0'-59.0'
8. 60.8'-61.8'
9. 66.5'-67.5'
10. 71.5'-72.5'
11. 75.6'-76.6'
12. 80.9'-81.9'
13. 84.3'-85.3'
14. 89.0'-90.0'

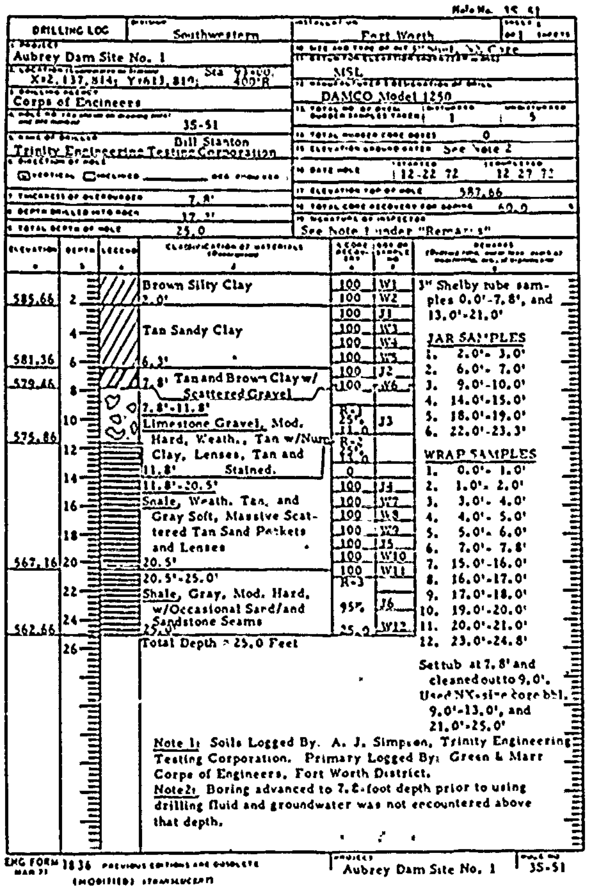
BOXES
1. 27.0'-31.9'
2. 31.9'-37.2'
3. 37.2'-43.5'
4. 43.5'-49.5'
5. 49.5'-55.0'
6. 55.0'-62.1'
7. 62.1'-68.0'
8. 68.0'-73.6'
9. 73.6'-80.0'
10. 80.0'-86.0'
11. 86.0'-90.0'

Note 1:
Soils logged by:
A. J. Simpson,
Trinity Engineering
Testing Corporation,

Primary logged by:
Green & Marr
Corps of Engineers,
Fort Worth District.

Note 2:
Installed 4" plastic pipe from 597.8 to 566.8 for groundwater observations.

ENG FORM 1836-A (MODIFIED) | Aubrey Dam Site No. 1 | 3S6DC-5



Hole No. 35-51

DRILLING LOG	Southwestern	Fort Worth	Sheet 1 of 1 sheets
Aubrey Dam Site No. 1		3" Shelby, NX Core	
X=2,137,814; Y=613,819; Sta. 93+00, 400'R		MSL	
Corps of Engineers		DAMCO Model 1250	
35-51		1	5
Bill Stanton Trinity Engineering Testing Corporation		0	
☒ Vertical ☐ Inclined		See Note 2	
		12-22-72	12-27-72
7.8'		587.66	
17.2'		60.0 %	
25.0		See Note 1 under "Remarks"	

Elevation	Depth	Classification of Materials	% Core Recovery	Box or Sample No.
	0	Brown Silty Clay	100	W1
585.66	2.0'	Tan Sandy Clay	100 100 100 100 100	W2 J1 W3 W4 W5
581.36	6.3'	Tan and Brown Clay w/ Scattered Gravel	100 100	J2 W6
579.46	7.8'	7.8'-11.8' **Limestone Gravel**, Mod. Hard, Weath., Tan w/Num. Clay, Lenses, Tan and Stained.	R-1 25%	J3
	11.0		R-2 25%	
575.86	11.8'	11.8'-20.5' **Shale**, Weath. Tan, and Gray Soft, Massive Scattered Tan Sand Pockets and Lenses	13.0 0 100 100 100 100 100 100 100	 J4 W7 W8 W9 J5 W10 W11
567.16	20.5'	20.5'-25.0' **Shale**, Gray, Mod. Hard, w/Occasional Sand/and Sandstone Seams	R-3 95%	J6 W12
562.66	25.0'	Total Depth = 25.0 Feet	25.0	

Remarks:

3" Shelby tube samples 0.0'-7.8', and 13.0'-21.0'

JAR SAMPLES
1. 2.0'- 3.0'
2. 6.0'- 7.0'
3. 9.0'-10.0'
4. 14.0'-15.0'
5. 18.0'-19.0'
6. 22.0'-23.3'

WRAP SAMPLES
1. 0.0'- 1.0'
2. 1.0'- 2.0'
3. 3.0'- 4.0'
4. 4.0'- 5.0'
5. 5.0'- 6.0'
6. 7.0'- 7.8'
7. 15.0'-16.0'
8. 16.0'-17.0'
9. 17.0'-18.0'
10. 19.0'-20.0'
11. 20.0'-21.0'
12. 23.0'-24.8'

Set tub at 7.8' and cleaned out to 9.0'. Used NX-size core bbl. 9.0'-13.0', and 21.0'-25.0'

Note 1: Soils Logged By. A. J. Simpson, Trinity Engineering Testing Corporation. Primary Logged By: Green & Marr Corps of Engineers, Fort Worth District.

Note 2: Boring advanced to 7.8-foot depth prior to using drilling fluid and groundwater was not encountered above that depth.

ENG FORM MAR 71 1836 PREVIOUS EDITIONS ARE OBSOLETE (MODIFIED) | Aubrey Dam Site No. 1 | 35-51

RECORD DRAWING-WORK AS BUILT

SYM	DO NO.	ACTION	DATE	DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

DESIGNED BY: --------
DRAWN BY: --------
REVIEWED BY: --------

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS
EMBANKMENT, SPILLWAY AND
OUTLET WORKS
LOGS OF BORINGS
3S6D-40, 3S4C-41, 3S4C-42, 3S6DC-50 AND 35-51

SUBMITTED BY
ENGINEER

INVITATION NO. DACW63-82-B-0025 | DATE MAR. 1982
CONTRACT NO DACW63-82-C-0093
DRAWING NUMBER | SHEET NO. OF | SEQUENCE NO 22

CONTRACT NO DACW63-82-C-0093

TO ACCOMPANY FOUNDATION REPORT

Hole No. 3S-52

DRILLING	DIVISION Southwestern
INSTALLATION Fort W h	SHEET 1 OF 1 SHEETS
1. PROJECT Aubrey Dam Site No. 1	10. SIZE AND TYPE OF BIT 3" Shelby tube
2. LOCATION (Coordinates or Station) Not Shown	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY Corps of Engineers	12. MANUFACTURER'S DESIGNATION OF DRILL Falling Model 44
4. HOLE NO. (As shown on drawing title and file number) 3S-52	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 7; UNDISTURBED 7
5. NAME OF DRILLER Boyd Lane, Trinity Engineering Testing Corporation	14. TOTAL NUMBER CORE BOXES 0
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER See Note 2
	16. DATE HOLE: STARTED 1-23-73; COMPLETED 1-23-73
7. THICKNESS OF OVERBURDEN 17.5'	17. ELEVATION TOP OF HOLE 568.34
8. DEPTH DRILLED INTO ROCK 1.5	18. TOTAL CORE RECOVERY FOR BORING --- %
9. TOTAL DEPTH OF HOLE 19.0'	19. SIGNATURE OF INSPECTOR See Note 1 under "Remarks"

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
566.34	2	▨	Brown Sandy Clay 2.0'		W1 W2	Boring was advanced to 15.0' prior to using drilling fluid. Water at 12.5'. All samples taken with 3" Shelby tube, except B2, which is a washed sample. **WRAP SAMPLES** 1. 0.0'- 1.0' 2. 1.0'- 2.0' 3. 3.0'- 4.5' 4. 4.5'- 6.0' 5. 7.0'- 8.5' 6. 11.0'-12.5' 7. 12.5'-14.0' **BAG SAMPLES** 1. 8.5'-10.0' 2. 15.0'-18.0' **JAR SAMPLES** 1. 2.0'- 3.0' 2. 6.0'- 7.0' 3. 10.0'-11.0' 4. 14.0'-15.0' 5. 18.0'-19.0' Note 1: Soils logged by: A. J. Simpson, Trinity Engineering Testing Corporation. Note 2: Groundwater was encountered at 12.5'.
562.34	4 6	▨	Brown and Tan Sandy Clay w/Iron Ore 6.0'		J1 W3 W4	
560.04	8	▨	Brown and Light Gray Sandy Clay w/Iron Ore 8.3'		J2 W5	
550.84	10 12 14 16	▨	Tan Clayey Silty Sand w/ Gravel 17.5'		B1 J3 W6 W7 J4 B2	
549.34	18	▤	Gray Shale		J5	
	20		Total Depth = 19.0 Feet			

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE (MODIFIED) (TRANSLUCENT)

PROJECT Aubrey Dam Site No. 1 HOLE NO. 3S-52

Hole No. 3S-53

DRILLING	DIVISION Southwestern
INSTALLATION Fort Wor	SHEET 1 OF 1 SHEETS
1. PROJECT Aubrey Dam Site No. 1	10. SIZE AND TYPE OF BIT 3" Shelby
2. LOCATION (Coordinates or Station) X=2,138,455; Y=612,795	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY Corps of Engineers	12. MANUFACTURER'S DESIGNATION OF DRILL Falling Model 44
4. HOLE NO. (As shown on drawing title and file number) 3S-53	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 3; UNDISTURBED 1
5. NAME OF DRILLER Boyd Lane, Trinity Engineering Testing Corporation	14. TOTAL NUMBER CORE BOXES 0
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER See Note 2
	16. DATE HOLE: STARTED 1-23-73; COMPLETED 1-23-73
7. THICKNESS OF OVERBURDEN 12.5'	17. ELEVATION TOP OF HOLE 562.37
8. DEPTH DRILLED INTO ROCK 4.5'	18. TOTAL CORE RECOVERY FOR BORING ---
9. TOTAL DEPTH OF HOLE 17.0'	19. SIGNATURE OF INSPECTOR See Note 1 under "Remarks"

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
555.37	2 4 6	▨	Brown Sandy Clay w/Gravel 7.0'		W1 W2 J1 W3 W4 J2	Used 3" Shelby tube for all samples. **WRAP SAMPLES** 1. 0.0'- 1.0' 2. 1.0'- 2.0' 3. 3.0'- 4.0' 4. 4.5'- 6.0' 5. 7.0'- 8.5' 6. 8.5'-10.0' 7. 11.0'-12.0' 8. 12.5'-14.0' 9. 15.0'-16.5' **JAR SAMPLES** 1. 2.0'- 3.0' 2. 6.0'- 7.0' 3. 10.0'-11.0' 4. 14.0'-15.0' **BAG SAMPLE** 1. 16.5'-17.0' Note 1: Soils logged by: A. J. Simpson, Trinity Engineering Testing Corporation. Note 2: Boring was advanced to 17.0 feet depth without using drilling fluid and groundwater was not encountered [illegible] that depth.
549.87	8 10 12	▨	Brown and Light Gray Sandy Clay w/Scattered Gravel and Calcareous Particles 12.5'		W5 W6 J3 W7	
546.37	14 16	▤	Light Gray and Yellow Weathered Shale w/Silt Layers 16.0'		W8 J4 W9	
545.37		▤	Gray Shale w/Sandstone Lenses 17.0'		B1	
	18		Total Depth = 17.0 Feet			

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE (MODIFIED) (TRANSLUCENT)

PROJECT Aubrey Dam Site No. 1 HOLE NO. 3S-53

Hole No. 35-53

Fort Wor
3" Shelby
Model 44
3 | 1
0
See Note 2
1-23-73 | 1-23-73
562.37
---
under "Remarks"

Sample No.	Remarks
W1	Used 3" Shelby tube for all samples.
W2	
J1	
W3	
W4	
J2	
W5	
W6	
J3	
W7	
W8	
J4	
W9	
B1	

WRAP SAMPLES
1. 0.0'- 1.0'
2. 1.0'- 2.0'
3. 3.0'- 4.0'
4. 4.5'- 6.0'
5. 7.0'- 8.5'
6. 8.5'-10.0'
7. 11.0'-12.0'
8. 12.5'-14.0'
9. 15.0'-16.5'

JAR SAMPLES
1. 2.0'- 3.0'
2. 6.0'- 7.0'
3. 10.0'-11.0'
4. 14.0'-15.0'

BAG SAMPLE
1. 16.5'-17.0'

Note 1:
Soils logged by:
A. J. Simpson,
Trinity Engineering
Testing Corporation.

Note 2:
Boring was advanced to 17.0 feet depth without using drilling fluid and groundwater was not encountered above that depth.

Dam Site No. 1 | Hole No. 35-53

Hole No. 35-54

DRILLING LOG | Division: Southwestern | Installation: Fort Worth | Sheet 1 of 2 sheets

Project: Aubrey Dam Site No. 1
Location: X = 2,139,350; Y = 612,635
Drilling agency: Corps of Engineers
Hole No.: 35-54
Name of driller: Walenbach-Southwestern Labs; Trinity Engineering Testing Corp.
Direction of hole: ☐ Vertical ☐ Inclined
Thickness of overburden: 40.0'
Depth drilled into rock: 0.5
Total depth of hole: 40.5'
Size and type of bit: 3" Shelby
Datum for elevation shown: MSL
Manufacturer's designation of drill: Failing 1500
Total no. of overburden samples taken: Disturbed 8 | Undisturbed 6
Total number core boxes: 0
Elevation ground water: See Note 2
Date hole: Started 3-9-73 | Completed 3-9-73
Elevation top of hole: 558.70
Total core recovery for boring:
Signature of inspector: See Note 1 under "Remarks"

Elevation	Depth	Classification of Materials	Sample No.
		Gray Clay	W1 J1 W2 J2
548.7	10	10.0'	
		Brown Clay w/Calcareous Particles	W3 J3 W4 J4 W5
538.7	20	20.0'	
		Tan Sandy Clay	J5 W6
536.2	22.5	22.5'	
		Tan Sand and Gravel	J6 J7 J8
518.2		Gray Shale	J9
		Total Depth = 40.5 Feet	

Remarks:

3" Shelby tube Samples from 0.0'- 22.0'
Drilling fluid was utilized from the ground surface down

Wrap Samples
1. 0.0'- 2.0'
2. 4.0'- 6.0'
3. 8.0'-10.0'
4. 12.0'-14.0'
5. 16.0'-18.0'
6. 20.0'-22.0'

Jar Samples
1. 2.0'- 4.0'
2. 6.0'- 8.0'
3. 10.0'-12.0'
4. 14.0'-16.0'
5. 18.0'-20.0'
6. 22.0'-24.0'
7. 24.0'-26.0'
8. 26.0'-27.0'
9. 40.0'-40.5'

Note 1:
Soils logged by:
A. J. Simpson
Trinity Engineering
Testing Corporation

Note 2:
Drilling fluid was utilized in advancing the boring from the ground surface down.

ENG FORM 1836-A (MODIFIED) | Project: Aubrey Dam Site No. 1 | Hole No. 35-54

Hole No. 35-55

DRILLING LOG | Division: Southwestern | Installation: Fort Worth | Sheet 1 of 2 sheets

Project: Aubrey Dam Site No. 1
Location: X = 2,140,380, Y = 612,640
Drilling agency: Corps of Engineers
Hole No.: 35-55
Name of driller: Southwestern Labs; Trinity Engineering Testing Corp.
Direction of hole: ☒ Vertical ☐ Inclined
Thickness of overburden: 46.0
Depth drilled into rock: 0.5'
Total depth of hole: 46.5'
Size and type of bit: 3" Shelby, 6" H. A.
Datum for elevation shown: MSL
Manufacturer's designation of drill: Failing 1500
Total no. of overburden samples taken: Disturbed 8 | Undisturbed 8
Total number core boxes: 0
Elevation ground water: See Note 2
Date hole: Started 3-9-73 | Completed 3-9-73
Elevation top of hole: 558.45
Total core recovery for boring: --
Signature of inspector: See Note 1 under Remarks

Elevation	Depth	Classification of Materials	Sample No.
		Gray Clay	W1 J1
552.95		5.5'	
		Brown Clay w/Calcareous Particles and Scattered Gravel	W2 J2 W3 J3 W4 J4 W5 J5 W6 J6
533.45		25.0'	
531.75		26.7 Tan Sandy Clay	W7
		Tan Sand	J7 W8
527.45		31.0	
		Tan Sand and Gravel	J8
		Tan Sand and Gravel	
512.45	46	46.0'	
511.95		Gray Shale	W9
		Total Depth = 46.5 Feet	

Remarks:

3" Shelby tube Samples from 0.0'- 32.0'

Boring was advanced to 20.0' prior to using drilling fluid

Wrap Samples
1. 0.0'- 2.0'
2. 4.0'- 6.0'
3. 8.0'-10.0'
4. 12.0'-14.0'
5. 16.0'-18.0'
6. 20.0'-22.0'
7. 24.0'-26.0'
8. 28.0'-30.0'

Jar Samples
1. 2.0'- 4.0'
2. 6.0'- 8.0'
3. 10.0'-12.0'
4. 14.0'-16.0'
5. 18.0'-20.0'
6. 22.0'-24.0'
7. 26.0'-28.0'
8. 30.0'-32.0'

Note 1:
Soils logged by:
A. J. Simpson
Trinity Engineering
Testing Corporation

Note 2:
Boring was advanced to 20.0 feet below the ground surface prior to using drilling fluid and groundwater was not encountered above that depth.

ENG FORM 1836-A (MODIFIED) | Project: Aubrey Dam Site No. 1 | Hole No. 35-55

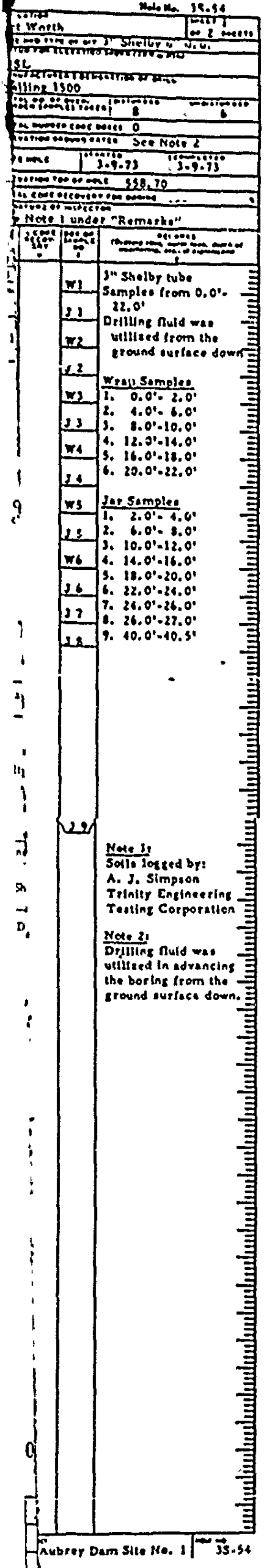
DRILLING
Aubrey D
X = 2,14
Co
Trinity E
☒

Elevation	Depth
550.7	2
530.2	26
527.7	28
518.7	38
513.7	42

SYM | DO NO

DESIGNED BY:
DRAWN BY
REVIEWED BY:
SUBMITTED
ENGINEER

TO ACC



Hole No. 3S-54

t Worth

SHEET 1 of 2 SHEETS

3" Shelby u U.U.

SL

lling 1500

8 | 6

0

See Note 2

3-9-73 | 3-9-73

558.70

Note 1 under "Remarks"

W1
J1
W2
J2
W3
J3
W4
J4
W5
J5
W6
J6
J7
J8
J9

3" Shelby tube Samples from 0.0'-22.0'

Drilling fluid was utilized from the ground surface down

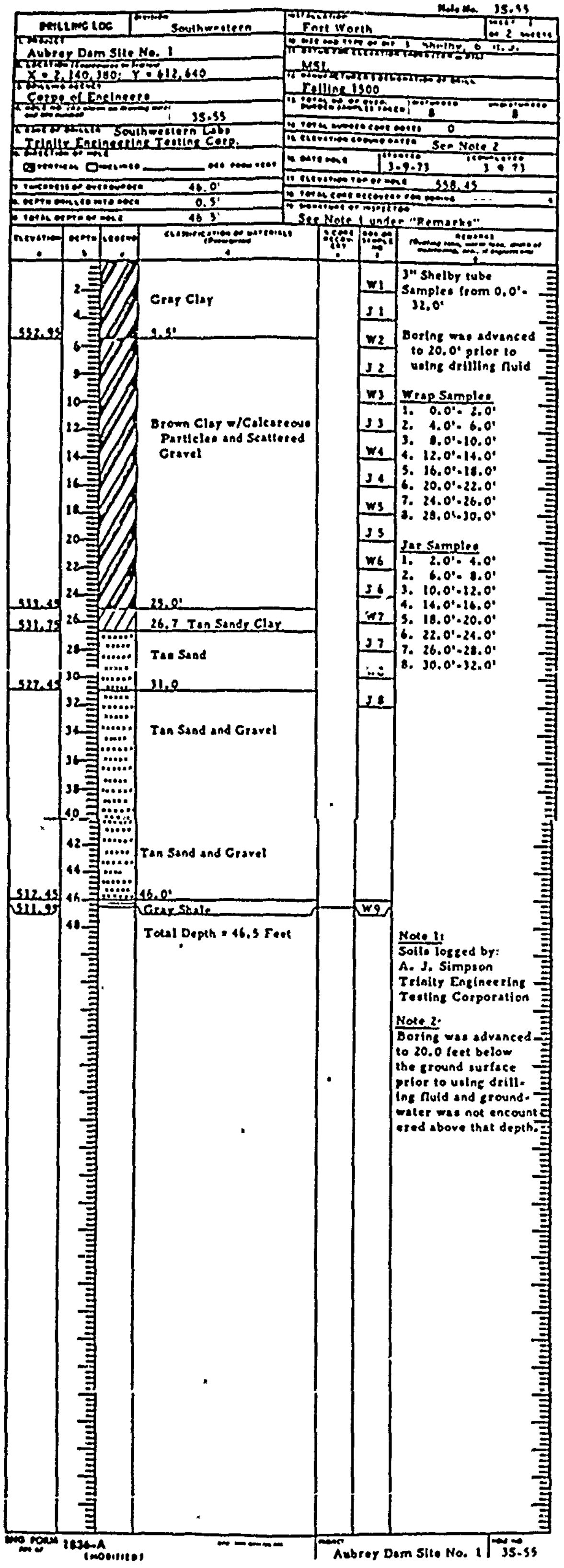
Wrap Samples
1. 0.0'- 2.0'
2. 4.0'- 6.0'
3. 8.0'-10.0'
4. 12.0'-14.0'
5. 16.0'-18.0'
6. 20.0'-22.0'

Jar Samples
1. 2.0'- 4.0'
2. 6.0'- 8.0'
3. 10.0'-12.0'
4. 14.0'-16.0'
5. 18.0'-20.0'
6. 22.0'-24.0'
7. 24.0'-26.0'
8. 26.0'-27.0'
9. 40.0'-40.5'

Note 1:
Soils logged by:
A. J. Simpson
Trinity Engineering
Testing Corporation

Note 2:
Drilling fluid was utilized in advancing the boring from the ground surface down.

Aubrey Dam Site No. 1 | 3S-54



Hole No. 3S-55

DRILLING LOG | Southwestern | Fort Worth | SHEET 1 of 2 SHEETS

Aubrey Dam Site No. 1

X = 2,140,380; Y = 612,640

Corps of Engineers

3S-55

Southwestern Labs
Trinity Engineering Testing Corp.

☒ VERTICAL ☐ INCLINED

46.0'

0.5'

46.5'

3 Shelby, 6 U.J.

MSL

Falling 1500

8 | 8

0

See Note 2

3-9-73 | 3-9-73

558.45

See Note 1 under "Remarks"

ELEVATION	DEPTH	CLASSIFICATION OF MATERIALS
		Gray Clay
552.95		5.5'
		Brown Clay w/Calcareous Particles and Scattered Gravel
533.45		25.0'
531.75		26.7 Tan Sandy Clay
		Tan Sand
527.45		31.0
		Tan Sand and Gravel
		Tan Sand and Gravel
512.45		46.0'
511.95		Gray Shale
		Total Depth = 46.5 Feet

W1
J1
W2
J2
W3
J3
W4
J4
W5
J5
W6
J6
W7
J7
J8
W9

3" Shelby tube Samples from 0.0'-32.0'

Boring was advanced to 20.0' prior to using drilling fluid

Wrap Samples
1. 0.0'- 2.0'
2. 4.0'- 6.0'
3. 8.0'-10.0'
4. 12.0'-14.0'
5. 16.0'-18.0'
6. 20.0'-22.0'
7. 24.0'-26.0'
8. 28.0'-30.0'

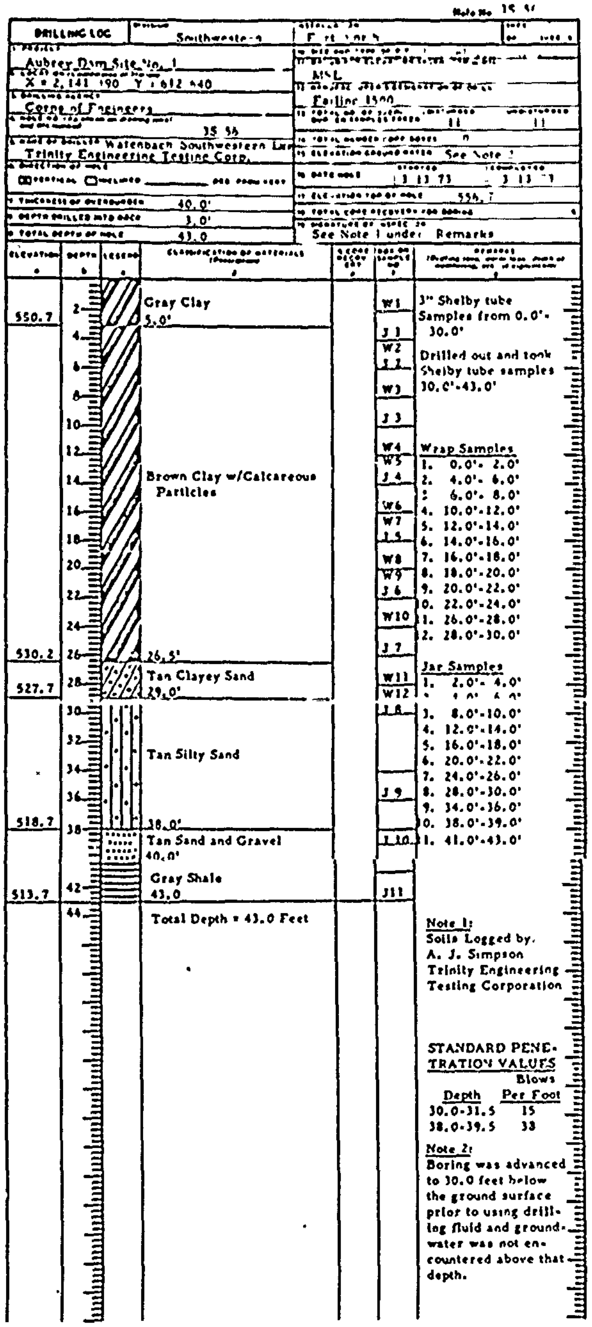
Jar Samples
1. 2.0'- 4.0'
2. 6.0'- 8.0'
3. 10.0'-12.0'
4. 14.0'-16.0'
5. 18.0'-20.0'
6. 22.0'-24.0'
7. 26.0'-28.0'
8. 30.0'-32.0'

Note 1:
Soils logged by:
A. J. Simpson
Trinity Engineering
Testing Corporation

Note 2:
Boring was advanced to 20.0 feet below the ground surface prior to using drilling fluid and groundwater was not encountered above that depth.

ENG FORM 1836-A (MODIFIED)

Aubrey Dam Site No. 1 | 3S-55



Hole No. 3S-56

DRILLING LOG | Southwestern | Fort Worth

Aubrey Dam Site No. 1

X = 2,141,190 Y = 612,440

Corps of Engineers

3S 56

Watenbach Southwestern Lab
Trinity Engineering Testing Corp.

☒ VERTICAL ☐ INCLINED

40.0'

3.0'

43.0

MSL

Falling 1500

11 | 11

0

See Note 2

3 13 73 | 3 13 73

556.7

See Note 1 under Remarks

ELEVATION	DEPTH	CLASSIFICATION OF MATERIALS
		Gray Clay
550.7		5.0'
		Brown Clay w/Calcareous Particles
530.2		26.5'
		Tan Clayey Sand
527.7		29.0'
		Tan Silty Sand
518.7		38.0'
		Tan Sand and Gravel 40.0'
		Gray Shale
513.7		43.0
		Total Depth = 43.0 Feet

W1
J1
W2
J2
W3
J3
W4
W5
J4
W6
W7
J5
W8
W9
J6
W10
J7
W11
W12
J8
J9
J10
J11

3" Shelby tube Samples from 0.0'-30.0'

Drilled out and took Shelby tube samples 30.0'-43.0'

Wrap Samples
1. 0.0'- 2.0'
2. 4.0'- 6.0'
3. 6.0'- 8.0'
4. 10.0'-12.0'
5. 12.0'-14.0'
6. 14.0'-16.0'
7. 16.0'-18.0'
8. 18.0'-20.0'
9. 20.0'-22.0'
0. 22.0'-24.0'
1. 26.0'-28.0'
2. 28.0'-30.0'

Jar Samples
1. 2.0'- 4.0'
[illegible]
3. 8.0'-10.0'
4. 12.0'-14.0'
5. 16.0'-18.0'
6. 20.0'-22.0'
7. 24.0'-26.0'
8. 28.0'-30.0'
9. 34.0'-36.0'
0. 38.0'-39.0'
1. 41.0'-43.0'

Note 1:
Soils Logged by.
A. J. Simpson
Trinity Engineering
Testing Corporation

STANDARD PENETRATION VALUES

Depth	Blows Per Foot
30.0-31.5	15
38.0-39.5	33

Note 2:
Boring was advanced to 30.0 feet below the ground surface prior to using drilling fluid and groundwater was not encountered above that depth.

RECORD DRAWING-WORK AS BUILT

SYM	DO NO	ACTION	DATE	DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

DESIGNED BY:
DRAWN BY:
REVIEWED BY:

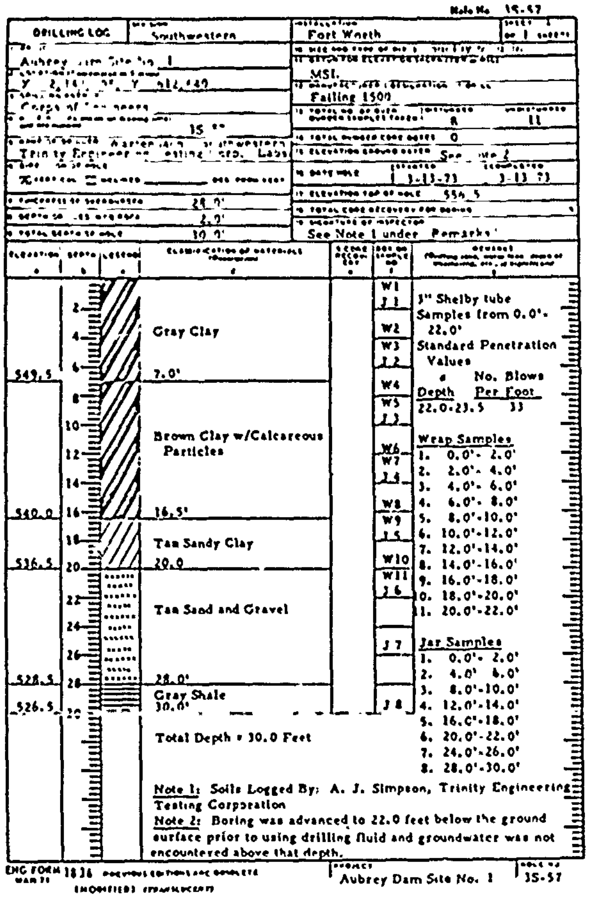
RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS
EMBANKMENT, SPILLWAY AND OUTLET WORKS
LOGS OF BORINGS
3S-52, 3S-53, 3S-54, 3S-55 AND 3S-56

SUBMITTED BY
ENGINEER

INVITATION NO. DACW63-82-B-0025
DATE MAR, 1982
CONTRACT NO. DACW63-82-C-0073
DRAWING NUMBER
SHEET NO OF
SEQUENCE NO. 23

CONTRACT NO DACW63-82-C-0073

TO ACCOMPANY FOUNDATION REPORT



Hole No. 35-57

DRILLING LOG | Southwestern | Fort Worth | Sheet 1 of 1 sheets

Aubrey Dam Site No. 1
[illegible] 2,14[illegible], Y 612,149
Corps of Engineers
35-57
Warren [illegible] Southwestern
Trinity Engineering Testing Co. Labs
☒ Vertical ☐ Inclined
28.0'
2.0'
30.0'

MSL
Failing 1500
8 | 11
0
See Note 2
3-13-73 | 3-13-73
556.5
See Note 1 under "Remarks"

Elevation	Classification of materials	Sample No.
549.5	Gray Clay 7.0'	W1 J1 W2 W3 J2
540.0	Brown Clay w/Calcareous Particles 16.5'	W4 W5 J3 W6 W7 J4 W8
536.5	Tan Sandy Clay 20.0	W9 J5 W10
528.5	Tan Sand and Gravel 28.0'	W11 J6 J7
526.5	Gray Shale 30.0'	J8

Total Depth = 30.0 Feet

3" Shelby tube Samples from 0.0'-22.0'

Standard Penetration Values

Depth	No. Blows Per Foot
22.0-23.5	33

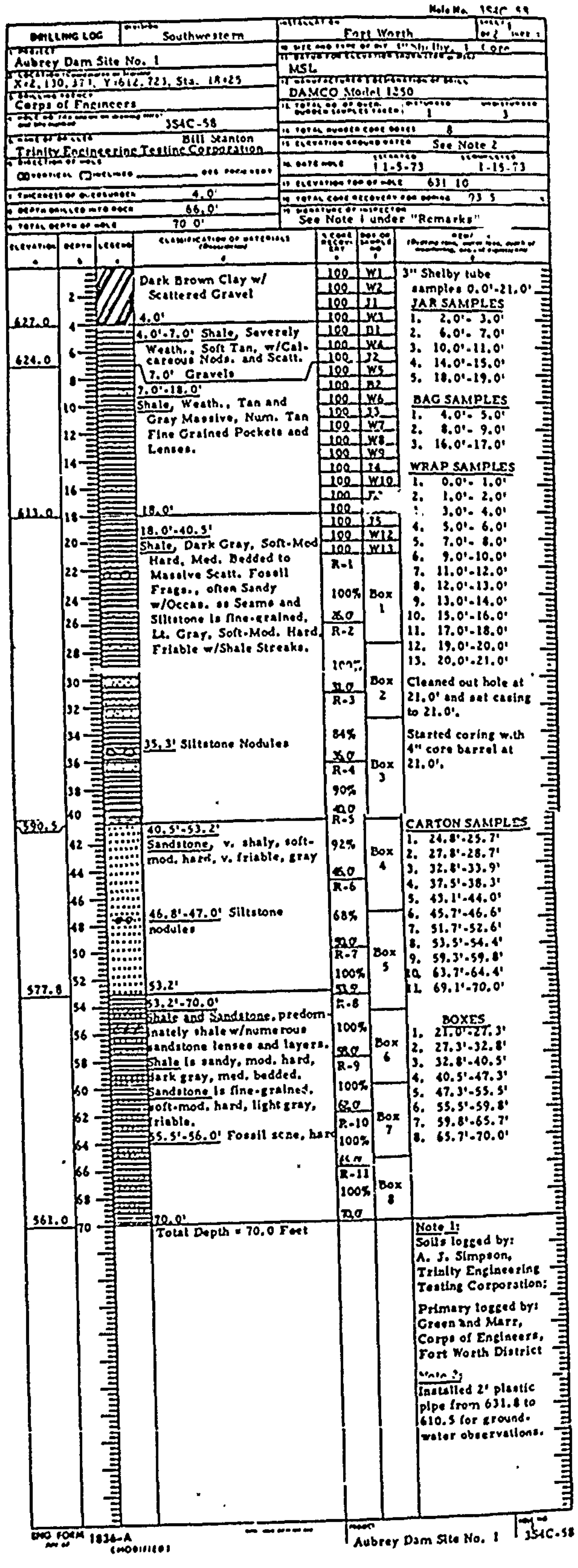
Wrap Samples
1. 0.0'- 2.0'
2. 2.0'- 4.0'
3. 4.0'- 6.0'
4. 6.0'- 8.0'
5. 8.0'-10.0'
6. 10.0'-12.0'
7. 12.0'-14.0'
8. 14.0'-16.0'
9. 16.0'-18.0'
10. 18.0'-20.0'
11. 20.0'-22.0'

Jar Samples
1. 0.0'- 2.0'
2. 4.0'- 6.0'
3. 8.0'-10.0'
4. 12.0'-14.0'
5. 16.0'-18.0'
6. 20.0'-22.0'
7. 24.0'-26.0'
8. 28.0'-30.0'

Note 1: Soils Logged By: A. J. Simpson, Trinity Engineering Testing Corporation

Note 2: Boring was advanced to 22.0 feet below the ground surface prior to using drilling fluid and groundwater was not encountered above that depth.

ENG FORM 1836 (MODIFIED) | Aubrey Dam Site No. 1 | 35-57



Hole No. 354C-58

DRILLING LOG | Southwestern | Fort Worth | Sheet 1 of 2 sheets

Aubrey Dam Site No. 1
X=2,130,371, Y=612,723, Sta. 18+25
Corps of Engineers
354C-58
Bill Stanton
Trinity Engineering Testing Corporation
☒ Vertical ☐ Inclined
4.0'
66.0'
70.0'

3" Shelby, 4" Core
MSL
DAMCO Model 1250
1 | 3
8
See Note 2
11-5-73 | 1-15-73
631.10
93.5
See Note 1 under "Remarks"

Elevation	Classification of materials	% Core Recovery	Box or Sample No.
627.0	Dark Brown Clay w/ Scattered Gravel 4.0'	100 100 100 100	W1 W2 J1 W3
624.0	4.0'-7.0' Shale, Severely Weath., Soft Tan, w/Calcareous Nods. and Scatt. 7.0' Gravels	100 100 100	B1 W4 J2
613.0	7.0'-18.0' Shale, Weath., Tan and Gray Massive, Num. Tan Fine Grained Pockets and Lenses. 18.0'	100 100 100 100 100 100 100 100 100 100	W5 B2 W6 J3 W7 W8 W9 J4 W10 J[illegible]
590.5	18.0'-40.5' Shale, Dark Gray, Soft-Med Hard, Med. Bedded to Massive Scatt. Fossil Frags., often Sandy w/Occas. as Seams and Siltstone is fine-grained, Lt. Gray, Soft-Mod. Hard, Friable w/Shale Streaks. 35.3' Siltstone Nodules	100 100 100 100 R-1 100% 26.0 R-2 100% 31.0 R-3 84% 36.0 R-4 90% 40.0	[illegible] J5 W12 W13 Box 1 Box 2 Box 3
577.8	40.5'-53.2' Sandstone, v. shaly, soft-mod. hard, v. friable, gray 46.8'-47.0' Siltstone nodules 53.2'	R-5 92% 45.0 R-6 68% 50.0 R-7 100% 53.9	Box 4 Box 5
561.0	53.2'-70.0' Shale and Sandstone, predominately shale w/numerous sandstone lenses and layers. Shale is sandy, mod. hard, dark gray, med. bedded. Sandstone is fine-grained, soft-mod. hard, light gray, friable. 55.5'-56.0' Fossil zone, hard 70.0'	R-8 100% 58.0 R-9 100% 62.0 R-10 100% 65.0 R-11 100% 70.0	Box 6 Box 7 Box 8

Total Depth = 70.0 Feet

3" Shelby tube samples 0.0'-21.0'

JAR SAMPLES
1. 2.0'- 3.0'
2. 6.0'- 7.0'
3. 10.0'-11.0'
4. 14.0'-15.0'
5. 18.0'-19.0'

BAG SAMPLES
1. 4.0'- 5.0'
2. 8.0'- 9.0'
3. 16.0'-17.0'

WRAP SAMPLES
1. 0.0'- 1.0'
2. 1.0'- 2.0'
3. 3.0'- 4.0'
4. 5.0'- 6.0'
5. 7.0'- 8.0'
6. 9.0'-10.0'
7. 11.0'-12.0'
8. 12.0'-13.0'
9. 13.0'-14.0'
10. 15.0'-16.0'
11. 17.0'-18.0'
12. 19.0'-20.0'
13. 20.0'-21.0'

Cleaned out hole at 21.0' and set casing to 21.0'.

Started coring with 4" core barrel at 21.0'.

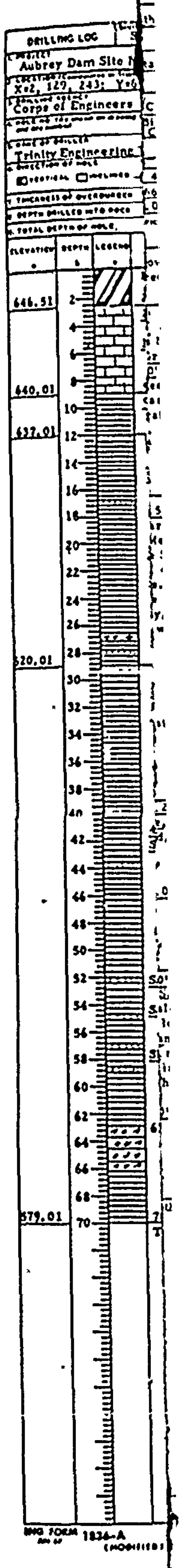
CARTON SAMPLES
1. 24.8'-25.7'
2. 27.8'-28.7'
3. 32.8'-33.9'
4. 37.5'-38.3'
5. 43.1'-44.0'
6. 45.7'-46.6'
7. 51.7'-52.6'
8. 53.5'-54.4'
9. 59.3'-59.8'
10. 63.7'-64.4'
11. 69.1'-70.0'

BOXES
1. 21.0'-27.3'
2. 27.3'-32.8'
3. 32.8'-40.5'
4. 40.5'-47.3'
5. 47.3'-55.5'
6. 55.5'-59.8'
7. 59.8'-65.7'
8. 65.7'-70.0'

Note 1: Soils logged by: A. J. Simpson, Trinity Engineering Testing Corporation; Primary logged by: Green and Marr, Corps of Engineers, Fort Worth District

Note 2: Installed 2" plastic pipe from 631.8 to 610.5 for groundwater observations.

ENG FORM 1836-A (MODIFIED) | Aubrey Dam Site No. 1 | 354C-58



DRILLING LOG
Aubrey Dam Site N
X=2, 129, 243; Y=6
Corps of Engineers
Trinity Engineering
☒ Vertical ☐ Inclined

646.51
640.01
637.01
620.01
579.01

ENG FORM 1836-A (MODIFIED)

Hole No. 3S4C-58

Fort Worth | SHEET 1 OF 2 SHEETS

3" Shelby, 4" Core

SL

AMCO Model 1250

1 | 3

8

See Note 2

11-5-73 | 1-15-73

631.10

93.5

See Note 1 under "Remarks"

% CORE RECOVERY	BOX OR SAMPLE NO.
100	W1
100	W2
100	J1
100	W3
100	B1
100	W4
100	J2
100	W5
100	B2
100	W6
100	J3
100	W7
100	W8
100	W9
100	J4
100	W10
100	B3
100	W11
100	J5
100	W12
100	W13
R-1 100% 26.0	Box 1
R-2 100% 31.0	Box 2
R-3 84% 36.0	Box 3
R-4 90% 40.0	
R-5 92% 45.0	Box 4
R-6 68% 51.0	
R-7 100% 53.0	Box 5
R-8 100% 58.0	Box 6
R-9 100% 62.0	
R-10 100% 66.0	Box 7
R-11 100% 70.0	Box 8

REMARKS

3" Shelby tube samples 0.0'-21.0'

JAR SAMPLES
1. 2.0'- 3.0'
2. 6.0'- 7.0'
3. 10.0'-11.0'
4. 14.0'-15.0'
5. 18.0'-19.0'

BAG SAMPLES
1. 4.0'- 5.0'
2. 8.0'- 9.0'
3. 16.0'-17.0'

WRAP SAMPLES
1. 0.0'- 1.0'
2. 1.0'- 2.0'
3. 3.0'- 4.0'
4. 5.0'- 6.0'
5. 7.0'- 8.0'
6. 9.0'-10.0'
7. 11.0'-12.0'
8. 12.0'-13.0'
9. 13.0'-14.0'
10. 15.0'-16.0'
11. 17.0'-18.0'
12. 19.0'-20.0'
13. 20.0'-21.0'

Cleaned out hole at 21.0' and set casing to 21.0'.

Started coring with 4" core barrel at 21.0'.

CARTON SAMPLES
1. 24.8'-25.7'
2. 27.8'-28.7'
3. 32.8'-33.9'
4. 37.5'-38.3'
5. 43.1'-44.0'
6. 45.7'-46.6'
7. 51.7'-52.6'
8. 53.5'-54.4'
9. 59.3'-59.8'
10. 63.7'-64.4'
11. 69.1'-70.0'

BOXES
1. 21.0'-27.3'
2. 27.3'-32.8'
3. 32.8'-40.5'
4. 40.5'-47.3'
5. 47.3'-55.5'
6. 55.5'-59.8'
7. 59.8'-65.7'
8. 65.7'-70.0'

Note 1:
Soils logged by:
A. J. Simpson,
Trinity Engineering
Testing Corporation:

Primary logged by:
Green and Marr,
Corps of Engineers,
Fort Worth District

Note 2:
Installed 2' plastic pipe from 631.8 to 610.5 for ground-water observations.

PROJECT Aubrey Dam Site No. 1 | HOLE NO. 3S4C-58

Hole No. 3S4C-59

DRILLING LOG | DIVISION Southwestern | INSTALLATION Fort Worth | SHEET 1 OF SHEETS

1. PROJECT Aubrey Dam Site No. 1

2. LOCATION X=2,149,243, Y=612,541, Sta. 6+75

3. DRILLING AGENCY Corps of Engineers

4. HOLE NO. 3S4C-59

5. NAME OF DRILLER Bill Stanton, Trinity Engineering Testing Corporation

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 14.0

8. DEPTH DRILLED INTO ROCK 56.0

9. TOTAL DEPTH OF HOLE 70.0

10. SIZE AND TYPE OF BIT 3" Shelby, NX & 4" Core

11. DATUM FOR ELEVATION SHOWN MSL

12. MANUFACTURER'S DESIGNATION OF DRILL DAMCO Model 1250

13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED 5 UNDISTURBED 5

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER See Note 2

16. DATE HOLE STARTED 12-19-72 COMPLETED 12-21-72

17. ELEVATION TOP OF HOLE 649.01

18. TOTAL CORE RECOVERY FOR BORING 88.5

19. SIGNATURE OF INSPECTOR See Note 1 under "Remarks"

ELEVATION	DEPTH	CLASSIFICATION OF MATERIALS (Description)
646.51	2.5	Brown Clay w/Iron Ore Gravel 2.5'
640.01	9.0	2.5'-9.0' Limestone, Weathered, Tan, Mod. Hard 9.0'
637.01	12.0	9.0'-12.0' Shale, Weath., Tan, Soft w/Scat. Hard Calc. Nods 12.0'
620.01	29.0	12.0'-29.0' Shale, Soft-Mod. Hard, Med. Bedded or Massive, Dk. Gray w/Num. Pockets and Lenses of Sand and Sandstone Sand is Fine-Med. Grained, Well Compacted Gray. Sandstone is Soft-Mod. Hard, Fine-Med. Grained, Well Cemented, Gray, Friable. Siltstone is Hard, Tan at 27.1'-28.0'. 29.0'
	40.0	29.0'-40.0' Shale, Laminated, Mod. Hard, Dk. Gray-Black, Calcareous, w/Num. Pockets and Lenses, Sand and Sandstone, also Scat. Hard, Tan Siltstone Nodules.
579.01	70.0	40.0'-70.0' Shale, Laminated, Mod. Hard-Hard, Unweath. Dk. Gray-Black Calcareous, w/Num., Pockets and Lenses of Sand and Sandstone. Sand is fine-grained, Gray, Well-Compacted. Sandstone is fine-grained, Mod. Hard-Hard, Gray, Friable. Siltstone, Nodules, Hard, Tan, Occasionally Found. 63.0'-66.0'-Highly Calcareous Fossil Zone-Abundance of Fossils Causes Shale to be Very Impure and Incohesive. 70.0'
		Total Depth = 70.0 Feet

% CORE RECOVERY	BOX OR SAMPLE NO.
100	W1
100	W2
100	J1
100	B1
0	
R-1 40% 9.0'	J2
100	W3
100	J3
100	B2
100	W4
100	W5
100	J4
R-2 80% 20.0'	Box 1
R-3 30% 25.0'	
R-4 100% 29.0'	Box 2
R-5 100% 35.0'	Box 3
R-6 100% 40.0'	Box 4
R-7 90% 45.0	Box 5
R-8 80% 50.0	
R-9 100% 55.0	Box 6
R-10 87% 58.0	Box 7
R-11 63.0	
R-12 66.0	Box 8
R-13 70.0	Box 9

REMARKS

3" Shelby tube samples 0.0'-3.0', and 9.0'-15.0'.
Set tub at 3.0'.
Cleaned Hole at 3.0'-4.0'.
Used NX-size core bbl. 4.0'-9.0'
Used 4" core bbl. 15.0'-70.0'
Set 6" casing to 15.0'

JAR SAMPLES
1. 2.0'- 2.5'
2. 6.0'- 7.0'
3. 10.0'-11.0'
4. 14.0'-15.0'

BAG SAMPLES
1. 2.5'- 3.0'
2. 11.0'-12.0'

WRAP SAMPLES
1. 0.0'- 1.0'
2. 1.0'- 2.0'
3. 9.0'-10.0'
4. 12.0'-13.0'
5. 13.0'-14.0'

CARTON SAMPLES
1. 19.2'-20.0'
2. 22.3'-23.2'
3. 25.0'-25.9'
4. 33.0'-33.9'
5. 37.9'-38.6'
6. 42.0'-42.7'
7. 46.6'-47.5'
8. 53.4'-54.2'
9. 56.3'-57.2'
10. 60.0'-60.5'
11. 61.1'-62.0'
12. 67.6'-68.5'

Note 1)
Soils Logged By:
A. J. Simpson,
Trinity Engineering
Testing Corporation;

Primary Logged By:
Green & Marr
Corps of Engineers,
Fort Worth District

Note 2:
Installed 2" Plastic Pipe from 649.6 to 635.1 for ground-water observations.

ENG FORM 1836-A (MODIFIED) | PROJECT Aubrey Dam Site No. 1 | HOLE NO. 3S4C-59

Hole No. 3S4C-60

DRILLING LOG | DIVISION Southwestern | INSTALLATION Fort Worth | SHEET 1 OF SHEETS

1. PROJECT Aubrey Dam Site No. 1

2. LOCATION X=2,132,897, Y=613,127, Sta. 43+74.71

3. DRILLING AGENCY Corps of Engineers

4. HOLE NO. 3S4C-60

5. NAME OF DRILLER Bill Stanton, Trinity Engineering Testing Corporation

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 5.0'

8. DEPTH DRILLED INTO ROCK 45.0'

9. TOTAL DEPTH OF HOLE 50.0'

10. SIZE AND TYPE OF BIT 3" Shelby, 4" Core

11. DATUM FOR ELEVATION SHOWN MSL

12. MANUFACTURER'S DESIGNATION OF DRILL DAMCO Model 1250

13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED 1 UNDISTURBED 4

14. TOTAL NUMBER CORE BOXES 4

15. ELEVATION GROUND WATER See Note 2

16. DATE HOLE STARTED 12-15-72 COMPLETED 12-19-72

17. ELEVATION TOP OF HOLE 607.42

18. TOTAL CORE RECOVERY FOR BORING 90.4

19. SIGNATURE OF INSPECTOR See Note 1 under "Remarks"

ELEVATION	DEPTH	CLASSIFICATION OF MATERIALS (Description)
606.12	1.3	1.3 Brown Clay
602.42	5.0	Tan Clay w/Lignite and Calcareous Particles 5.0'
599.42	8.0	5.0'-8.0' Limestone, Severely Weath. Tan. 8.0'
597.42	10.0	8.0'-10.0' Clay, Tan, Sandy, w/Iron Ore and Lignite Particles 10.0'
590.42	17.0	10.0'-17.0' Clay, Tan, Sandy, w/Iron Ore and Lignite Particles 17.0'
587.72	28.7	17.0'-28.7' Shale, Weath., Tan, Soft, Mod. Hard, w/Num. Tan Sand Pockets and Lenses. 28.7'
567.82	39.6	28.7'-39.6' SHALE, Gray, Massive Mod. Hard, w/Occas. Gray, well Compacted, Fine-Med. Grained Sand Lenses. 33.7'-33.8', Siltstone Nodules, Tan, Very Hard 39.6' 39.6'-50.0', SHALE
557.42	50.0	39.6'-50.0' SHALE, Gray, Med. Hard, Unweath., Laminated, w/ Numerous Lenses and Layers of Gray, Med. Hard Well-Compacted, Fine-Med.-Grained Sand and Sandstone. 40.1'-40.3', Sandstone, Porous, Fossiliferous, Hard, Gray. 44.6' and 46.6', Siltstone Nodules, Tan, Very Hard 48.4'-50.0', Shale, Hard, Gray 50.0'
		Total Depth = 50.0 Feet

% CORE RECOVERY	BOX OR SAMPLE NO.
	W1
	W2
	J1
	W3
	W4
100	B1
100	J2
100	B2
100	J3
100	W5
100	J4
100	W6
100	W7
100	W8
100	J5
100	W9
100	W10
100	W11
100	J6
100	B3
100	B4
100	B5
100	J7
100	J8
	B6
R-1 80.0% 29.3	Box 1
R-2 80.0% 35.0	
R-3 125% 39.0	Box 2
R4 90% 44.0	Box 3
R-5 90% 49.0 100%	[illegible]

REMARKS

3" Shelby tube samples 0.0'-23.0'
Set tub at 23.0'
Cleaned hole to 26.5'
Set 6' casing to 27.0
Used 4" core bbl. 27.0'-50.0'

JAR SAMPLES
1. 2.0'- 3.0'
2. 5.6'- 6.6'
3. 8.0'- 9.0'
4. 10.0'-11.0'
5. 14.0'-15.0'
6. 18.0'-19.0'
7. 22.0'-23.0
8. 26.5'-27.0'

WRAP SAMPLES
1. 0.0'- 1.0'
2. 1.0'- 2.0'
3. 3.0'- 4.0'
4. 4.0'- 5.0'
5. 9.0'-10.0'
6. 11.0'-12.0'
7. 12.0'-13.0'
8. 13.0'-14.0'
9. 15.0'-16.0'
10. 16.0'-17.0'
11. 17.0'-18.0'

BAG SAMPLES
1. 5.0'- 5.6'
2. 6.6'- 8.0'
3. 19.0'-20.0'
4. 20.0'-21.0'
5. 21.0'-22.0'
6. 27.0'-27.5'

CARTON SAMPLES
1. 27.5'-28.0'
2. 30.0'-31.1'
3. 36.2'-37.0'
4. 41.4'-42.0'
5. 47.6'-48.4'

Note 1:
Soils Logged By:
A. J. Simpson,
Trinity Engineering
Testing Corporation

Primary Logged By:
Marr and Marple,
Corps of Engineers,
Fort Worth District

Note 2:
Installed 2" plastic pipe from 608.6 to 583.3 for ground-water observations.

ENG FORM 1836-A (MODIFIED) | PROJECT Aubrey Dam Site No. 1 | HOLE NO. 3S4C-60

4C-59
1
2 sheets
" Core
5
21-72
4.5

-3.0',
0',
',
at 3.0'.
core
bbl.
to 15.0'
LES
5'
0'
0'
0'
LES
0'
0'
PLES
0'
.0'
.0'
.0'
.0'
PLES
0'
2'
9'
9'
6'
7'
5'
2'
2'
5'
0'
5'
By:
on,
neering
oration;
ged By:
rr
ineers,
District
Plastic
49.6 to
ground
vations.

3S4C-59

Hole No. 3S4C-60

DRILLING LOG	Southwestern	Fort Worth	Sheet 1 of 2 sheets

Aubrey Dam Site No. 1
X=2,132,097, Y=613,127, Sta. 43+74.71
Corps of Engineers
3S4C-60
Bill Stanton
Trinity Engineering Testing Corporation
☒ Vertical ☐ Inclined
Thickness of overburden: 5.0'
Depth drilled into rock: 45.0'
Total depth of hole: 50.0'
3" Shelby / 4" Core
MSL
DAMCO Model 1250
1 4
Total number core boxes 4
See Note 2
Date hole: Started 12-15-72 Completed 12-19-72
Elevation top of hole 607.42
Total core recovery for boring 90 %
See Note 1 under "Remarks"

Elevation	Depth	Classification of materials
606.12		1.3 Brown Clay
602.42	2, 4	Tan Clay w/Lignite and Calcareous Particles 5.0'
599.42	6, 8	5.0'-8.0' Limestone, Severely Weath. Tan. 8.0'
597.42	10	8.0'-10.0' Clay, Tan, Sandy, w/Iron Ore and Lignite Particles 10.0'
590.42	12, 14, 16	10.0'-17.0' Clay, Tan, Sandy, w/Iron Ore and Lignite Particles 17.0'
587.72	18, 20, 22, 24, 26, 28	17.0'-28.7' Shale, Weath., Tan, Soft, Mod. Hard, w/Num. Tan Sand Pockets and Lenses. 28.7'
	30, 32, 34, 36, 38	[illegible] SHALE, Gray, Massive Mod. Hard, w/Occas. Gray, well Compacted, Fine-Med. Grained Sand Lenses. 33.7'-33.8', Siltstone Nodules, Tan, Very Hard 39.6'
567.82	40	39.6'-50.0', SHALE
557.42	42, 44, 46, 48, 50	39.6'-50.0' SHALE, Gray, Med. Hard, Unweath., Laminated, w/ Numerous Lenses and Layers of Gray, Med. Hard Well-Compacted, Fine-Med.-Grained Sand and Sandstone. 40.1'-40.3', Sandstone, Porous, Fossiliferous, Hard, Gray. 44.6' and 46.6', Siltstone Nodules, Tan, Very Hard 48.4'-50.0', Shale, Hard, Gray 50.0'

Total Depth = 50.0 Feet

% Core recovery	Box or sample no.
	W1
	W2
	J1
	W3
	W4
100	B1
100	J2
100	B2
100	J3
100	W5
100	J4
100	W6
100	W7
100	W8
100	J5
100	W9
100	W10
100	W11
100	J6
100	B3
100	B4
100	B5
100	J7
100	J8
	B6
R-1 80.0% 29.2	
R-2 80.0% 35.0	Box 1
R-3 125% 39.0	Box 2
R4	
90% 44.0	Box 3
R-5 90% 49.0	Box 4
100%	

Remarks:
3" Shelby tube samples 0.0'-23.0'
Set tub at 23.0'
Cleaned hole to 26.5'
Set 6" casing to 27.0'
Used 4" core bbl. 27.0'-50.0'

JAR SAMPLES
1. 2.0'- 3.0'
2. 5.6'- 6.6'
3. 8.0'- 9.0'
4. 10.0'-11.0'
5. 14.0'-15.0'
6. 18.0'-19.0'
7. 22.0'-23.0'
8. 26.5'-27.0'

WRAP SAMPLES
1. 0.0'- 1.0'
2. 1.0'- 2.0'
3. 3.0'- 4.0'
4. 4.0'- 5.0'
5. 9.0'-10.0'
6. 11.0'-12.0'
7. 12.0'-13.0'
8. 13.0'-14.0'
9. 15.0'-16.0'
10. 16.0'-17.0'
11. 17.0'-18.0'

BAG SAMPLES
1. 5.0'- 5.6'
2. 6.6'- 8.0'
3. 19.0'-20.0'
4. 20.0'-21.0'
5. 21.0'-22.0'
6. 27.0'-27.5'

CARTON SAMPLES
1. 27.5'-28.0'
2. 30.0'-31.1'
3. 36.2'-37.0'
4. 41.4'-42.0'
5. 47.6'-48.4'

Note 1:
Soils Logged By: A. J. Simpson, Trinity Engineering Testing Corporation

Primary Logged By: Marr and Marple, Corps of Engineers, Fort Worth District

Note 2:
Installed 2" plastic pipe from 608.6 to 583.3 for groundwater observations.

ENG FORM 1836-A (MODIFIED)
Project: Aubrey Dam Site No. 1
Hole No. 3S4C-60

Hole No. 3S4C-61

DRILLING LOG	Southwestern	Fort Worth	Sheet 1 of 2 sheets

Aubrey Dam Site No. 1
X=2,135,051, Y=613,472, Sta. 65+57
Corps of Engineers
3S4C-61
Bill Stanton
Trinity Engineering Testing Corporation
☒ Vertical ☐ Inclined
Thickness of overburden: 32.6
Depth drilled into rock: 37.4
Total depth of hole: 70.0
3" Shelby / 4" Core
MSL
DAMCO Model 1250
9 18
Total number core boxes 6
See Note 2
Date hole: Started 12-27-72 Completed 12-29-72
Elevation top of hole 595.51
Total core recovery for boring 76.4 %
See Note 1 under "Remarks"

Elevation	Depth	Classification of materials
593.51	2	Dark Brown Clay w/ Calcareous Particles 2.0'
591.51	4	Dark Brown Sandy Clay w/ Calcareous Particles 4.0'
584.51	6, 8, 10	Tan and Gray Sandy Clay w/Lignite Particles 11.0'
577.51	12, 14, 16, 18	Tan Clay w/Sand Lenses 18.0'
571.51	20, 22, 24	Tan Clayey Sand 24.0'
562.91	26, 28, 30, 32	Tan Sand and Gravel w/ Clay Lenses 32.6'
	34, 36, 38, 40	32.6'-70.0' SHALE AND SANDSTONE, Alternating Beds, w/occas. Sand Lenses
535.81	42, 44, 46, 48, 50, 52, 54, 56, 58	32.6'-70.0' SHALE, is Mod. Hard, Massive Gray Unweathered SANDSTONE is Mod. Hard, Fine-Med. Grn. Lt. Gray, Well Cemented 59.7'
525.51	60, 62, 64, 66, 68, 70	59.7'-70.0' SHALE & SANDSTONE Alt. Beds w/Occas. Sand Lenses SHALE is Dk. Gray, Mod. Hard Laminated, Calc. SANDSTONE is Gray Mod. Hard Fine-Med. Grn. Poorly Cemented, Friable Calc.

Total Depth = 70.0 Feet

% Core recovery	Box or sample no.
100	W1
100	W2
100	J1
100	W3
100	W4
100	W5
100	J2
100	W6
100	W7
100	W8
100	J3
100	W9
100	W10
100	W11
100	J4
100	W12
100	W13
100	W14
100	J5
100	W15
100	W16
100	W17
100	J6
100	W18
R-1 17% 27.0	J7
100	B1
R-2 12% 33.0	3" Shelby Box
100	B2
R-3 74% 39.0	Box 1
R-4 94% 44.0	Box 2
R-5 84% 49.0	
R-6 96% 54.0	Box 3
R-7 94% 59.0	Box 4
R-8 100% 64.0	Box 5
R-9 92% 69.0	Box 6
100%	

Remarks:
3" Shelby tube samples 0.0' 24.0', 27.0'-28. ', 33.0'-34.0'.
Set Tub at 24.0'
Used NX-size bbl. for R-1 & R-2.

JAR SAMPLES
1. 2.0'- 3.0'
2. 6.0'- 7.0'
3. 10.0'-11.0'
4. 14.0'-15.0'
5. 18.0'-19.0'
6. 22.0'-23.0'
7. 24.0'-27.0'

Samples very moist 20.0'-24.0'
Set 6" casing to 33.0'
Used 4" core bbl. 34.0'-70.0'

WRAP SAMPLES
1. 0.0'- 1.0'
2. 1.0'- 2.0'
3. 3.0'- 4.0'
4. 4.0'- 5.0'
5. 5.0'- 6.0'
6. 7.0'- 8.0'
7. 8.0'- 9.0'
8. 9.0'-10.0'
9. 11.0'-12.0'
10. 12.0'-13.0'
11. 13.0'-14.0'
12. 15.0'-16.0'
13. 16.0'-17.0'
(Continued)

WRAP SAMPLES
14. 17.0'-18.0'
15. 19.0'-20.0'
16. 20.0'-21.0'
17. 21.0'-22.0'
18. 23.0'-24.0'

BAG SAMPLES
1. 27.0'-28.0'
2. 33.0'-34.0'

CARTON SAMPLES
1. 37.0'-37.9'
2. 42.0'-42.8'
3. 47.9'-48.8'
4. 51.2'-51.8'
5. 57.5'-58.4'
6. 59.0'-59.7'
7. 64.0'-64.9'

Note 1:
Soils Logged By: A. J. Simpson, Trinity Engineering Testing Corporation;

Primary Logged By: Marr Corps of Engineers, Fort Worth District.

Note 2:
Installed 2" plastic pipe from 596.1 to 563.1 for groundwater observations.

RECORD DRAWING-WORK AS PUILT

SYM	DO NO	ACTION	DATE	DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS
EMBANKMENT, SPILLWAY AND
OUTLET WORKS
LOGS OF BORINGS
3S-57, 3S4C-58, 3S4C-59, 3S4C-60, AND 3S4C-61

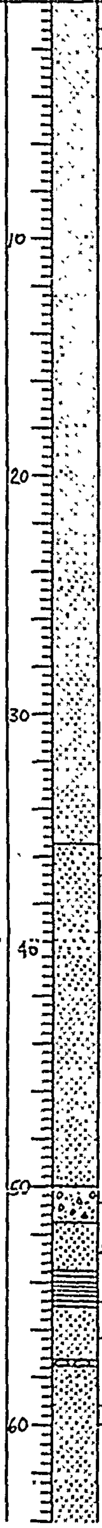
DESIGNED BY: ---------
DRAWN BY: ---------
REVIEWED BY: ---------
SUBMITTED BY
ENGINEER
INVITATION NO. DACW63-82-B-0025
DATE MAR, 1982
CONTRACT NO DACW63-82-C-0083
DRAWING NUMBER
SHEET NO OF
SEQUENCE NO 24

CONTRACT NO DACW63-82-C-0083

Hole No. 3S4C-62

DRILLING LOG	DIVISION SOUTHWESTERN	INSTALLATION FT WORTH DIST	SHEET 1 OF 3 SHEETS
1. PROJECT AUBREY DAM SITE # 1		10. SIZE AND TYPE OF BIT 4" CORE, NX CORE	
2. LOCATION (Coordinates or Station) Sta ~~144+99~~		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.	
3. DRILLING AGENCY USCE		12. MANUFACTURER'S DESIGNATION OF DRILL DAMCO 1250	
4. HOLE NO. (As shown on drawing title and file number) 3S4C-62		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED: ; UNDISTURBED:
5. NAME OF DRILLER TRINITY ENGR TESTING CORP.		14. TOTAL NUMBER CORE BOXES 15	
6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.		15. ELEVATION GROUND WATER	
		16. DATE HOLE	STARTED 12 MA 73 ; COMPLETED 9 Ma 73
7. THICKNESS OF OVERBURDEN 0		17. ELEVATION TOP OF HOLE ~~650.0~~ 651.35	
8. DEPTH DRILLED INTO ROCK 120.0		18. TOTAL CORE RECOVERY FOR BORING 95 %	
9. TOTAL DEPTH OF HOLE 120.0		19. SIGNATURE OF INSPECTOR Alan V Man	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g



0.0' - 35.5'
SAND & SANDSTONE
POORLY CEMENTED BUT TIGHT, MED-COARSE GRN, RED, TAN, AND GRAY, SCATT GRAVELS

35.5' - 50.0'
SAND & SANDSTONE
MED.-COARSE GRN, SOFT, V. POORLY CEMENTED, GRAVELLY, TAN & GRAY

50.0-51.5 SAND & GRAVEL
½" MAX DIAM, MED-COARSE GRN SAND, LOOSELY CONS, TAN & GOLD

51.5'-53.5' SANDSTONE, HIGHLY WEATH, GRAVELLY, SOFT-MOD HARD TAN & BROWN

53.5'-55.0' SHALE, HARD, SLI. SANDY, DK. GRAY

55.0'-57.3' SANDSTONE, GRAY, MOD. HARD, FINE-MED. GRN.

57.3-57.5 SILTSTONE, HARD, TAN

57.5' - 81.0'
SANDSTONE, SHALY, LIGNITIC, GRAY TO DK. GRAY, SOFT-MOD HARD, MASSIVE, FINE-MED GRN, OCCAS SILTSTONE NODS.

DRILLING

3" SHELBY TUBE
0.0 - 3.0'

FISH-TAIL BIT
3.0 - 16.0'

NX-CORE BBL
16.0 - 19.0 (NO RECOV)

8½" ROCK BIT
19.0 - 24.0'

6" ROCK-BIT
24.0 - 30.0'

4" CORE-BBL.
30.0 - 35.5' (NO RECOV)

4" CORE-BBL
35.5 - 108'

NX CORE BBL
108 - 120'

SAMPLES

JAR 1: 2.0-2.5'
2: 3.0-3.5
3: 10.0-11.0
4: 29.0-30.0
5: 35.5-36.0

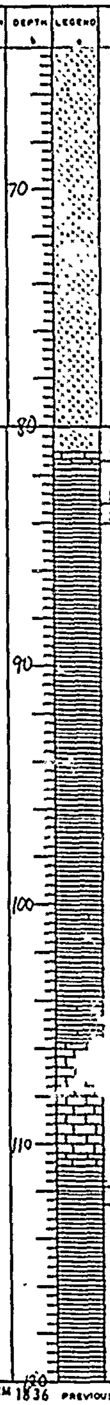
SAMPLES (cont)

CARTON 1: 46.5'-47.5'
2: 52.5-53.5
3: 57.4-58.2
4: 62.8-63.7
5: 68.3-69.2
6: 72.3-73.2
7: 78.3-79.2
8: 81.9-82.8
9: 88.7-89.6
10: 94.1-95.0
11: 96.5-97.4
12: 112.6-113.5
13: 116.1-117.1

WATER LEVEL AFTER 36 HOURS WAS 65.6'

NOTE: HOLE WAS PRESSURE TESTED

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REM (Drilling time, weathering, etc



81.0-81.5 LIMESTONE NODULES
HARD, GRAY

81.5'-106.0'
SHALE, MOD HARD, CALC, MASSIVE, GRAY

651.35
-111.00
540.35

HARD, MASSIVE, FOSSILIFEROUS,

111.0-120.0 TD
SHALE, MOD HARD, DARK GRAY TO BLACK, MASSIVE, SCAT FOSS. ZONES

119.5-120.0' VERY FOSSILIFEROUS

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT
AUBREY DAM SITE # 1

CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
91.0-91.5 LIMESTONE NODULES HARD, GRAY 91.5'-106.0' SHALE, MOD. HARD, CALC, MASSIVE, GRAY			
106.0'-111.0' LIMESTONE, HARD, MASSIVE TO NODULAR, FOSSILIFEROUS, GRAY			
111.0-120.0 TD SHALE, MOD HARD, DARK GRAY TO BLACK, MASSIVE, SCAT FOSS. ZONES			
119.5-120.0' VERY, FOSSILIFEROUS			

…TIONS ARE OBSOLETE.

PROJECT AUBREY DAM SITE #1

HOLE NO. 354C-62

Hole No. 8A6D-64

DRILLING LOG

DIVISION Southwestern

INSTALLATION Fort Worth

SHEET 1 OF 2 SHEETS

1. PROJECT Aubrey Dam Site
2. LOCATION (Coordinates or Station)
3. DRILLING AGENCY Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number) 8A6D-64
5. NAME OF DRILLER Newhouse
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN 44.0
8. DEPTH DRILLED INTO ROCK 57.0
9. TOTAL DEPTH OF HOLE 101.0
10. SIZE AND TYPE OF BIT 8" auger, 6" d.b., 3" fishtail
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)
12. MANUFACTURER'S DESIGNATION OF DRILL Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED 5 UNDISTURBED 3
14. TOTAL NUMBER CORE BOXES --
15. ELEVATION GROUND WATER ----
16. DATE HOLE STARTED 9 April 73 COMPLETED 11 April 73
17. ELEVATION TOP OF HOLE
18. TOTAL CORE RECOVERY FOR BORING
19. SIGNATURE OF INSPECTOR James L. Wooten

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			0.0' to 24.0' CLAY - 0.0 to 4.0 - calc., moist, stiff, brown. 4.0 to 14.0 - calc., sandy, moist, stiff, brown. 14.0 to 19.0 - calc., scattered gravel, moist, stiff, brown. 19.0 to 24.0 - calc., moist, stiff, gray and tan. - - - Start 6" d. bb'l at 24.0' - - - - -			---- 1. Water level not determined. 2. Jars: A. 26.0 B. 28.0 C. 36.0 D. 38.0 E. 38.6 NOTE: All jar samples taken from shoe and catcher of denison sampler.
			24.0' to 26.0' CLAY, calc., moist, stiff, gray and tan.			3. Denison cans: 1. 24.0 to 26.0 2. 34.0 to 36.0 3. 36.0 to 38.0
			26.0' to 34.0' NO RECOVERY -			4. Hole squeezing badly at 27.0'. 4" plastic pipe set to 45.0'. Another offset from 6DC-30, Hole 8A6D-64A, will be drilled to obtai denison samples fro 26.0 to 34.0. Offse bearings and elevations will be furni after completion.
			34.0' to 37.3' CLAY, sandy, moist, med. stiff, gray and tan.		Can 1	
			37.3' to 38.6' SAND, gravelly, clayey, saturated, med. dense, tan. - - Refusal w/d. bb'l. at 38.6' - - Start 3" fishtail at 38.6' - - -			5. Drilling: 0.0' to 24.0' - 8" auger - no sample taken. 24.0' to 38.6' - 6" d. bb'l. 38.6' to 101.0' - 3 fishtail.
			38.6' to 44.0' SAND and GRAVEL, med. dense. - - Drilled into primary material at 44.0' - - -		Can 2 Can 3	6. Identification of materials from 38. to 101' based on cuttings and drill action.
			44.0' to 101.0' SHALE, soft to m. hard w/LIMESTONE from 86.5' to 89.6'.			7. "E" log from 45' to 101'
	90.0					
	100.0		T.D. - 101.0' -	101.0	101.0	

DRILLING LO

1. PROJECT Aubrey Dam S
2. LOCATION (Coordinates or
3. DRILLING AGENCY Corps of Engi
4. HOLE NO. (As shown on d… and file number)
5. NAME OF DRILLER Newhouse
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLIN
7. THICKNESS OF OVERBURD
8. DEPTH DRILLED INTO RO
9. TOTAL DEPTH OF HOLE

ELEVATION a	DEPTH b	LEGEN c

ENG FORM MAR 71 1836 PREVIOU

Hole No. 8A6D-64

LOG | DIVISION Southwestern | INSTALLATION Fort Worth | SHEET 1 OF 2 SHEETS

Dam Site

Engineers

8A6D-64

ouse

INCLINED ________ DEG. FROM VERT.

RBURDEN 44.0

INTO ROCK 57.0

HOLE 101.0

10 SIZE AND TYPE OF BIT 8" auger, 6" d.b., 3" fishtail

11. DATUM FOR ELEVATION SHOWN (TBM or MSL)

12. MANUFACTURER'S DESIGNATION OF DRILL Failing 1500

13 TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN | DISTURBED 5 | UNDISTURBED 3

14 TOTAL NUMBER CORE BOXES - -

15. ELEVATION GROUND WATER ----

16 DATE HOLE | STARTED 9 April 73 | COMPLETED 11 April 73

17 ELEVATION TOP OF HOLE

18 TOTAL CORE RECOVERY FOR BORING %

19. SIGNATURE OF INSPECTOR

LEGEND e	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0.0' to 24.0' CLAY - - - 0.0 to 4.0 - calc., moist, stiff, brown. 4.0 to 14.0 - calc., sandy, moist, stiff, brown. 14.0 to 19.0 - calc., scattered gravel, moist, stiff, brown. 19.0 to 24.0 - calc., moist, stiff, gray and tan. - - - Start 6" d. bb'l at 24.0' - - - - -			---- 1. Water level not determined. 2. Jars: A. 26.0 B. 28.0 C. 36.0 D. 38.0 E. 38.6 NOTE: All jar samples taken from shoe and catcher of denison sampler.
	24.0' to 26.0' CLAY, calc., moist, stiff, gray and tan. 26.0' to 34.0' NO RECOVERY -			3. Denison cans: 1. 24.0 to 26.0 2. 34.0 to 36.0 3. 36.0 to 38.0 4. Hole squeezing badly at 27.0'. 4" plastic pipe set to 45.0'. Another offset from 6DC-30, Hole 8A6D-64A, will be drilled to obtai denison samples fro 26.0 to 34.0. Offse bearings and elevations will be furni after completion.
	34.0' to 37.3' CLAY, sandy, moist, med. stiff, gray and tan.		Can 1	
	37.3' to 38.6' SAND, gravelly, clayey, saturated, med. dense, tan. - - Refusal w/d. bb'l. at 38.6' - - Start 3" fishtail at 38.6' - - -			5. Drilling: 0.0' to 24.0' - 8" auger - no sample taken. 24.0' to 38.6' - 6" d. bb'l. 38.6' to 101.0' - 3 fishtail.
	38.6' to 44.0' SAND and GRAVEL, med. dense. - - Drilled into primary material at 44.0' - -		Can 2 Can 3	6. Identification of materials from 38. to 101' based on cuttings and drill action.
	44.0' to 101.0' SHALE, soft to m. hard w/LIMESTONE from 86.5' to 89.6'.			7. "E" log from 45' to 101'
	T.D. - 101.0' -	101.0	101.0	

Hole No. 8A6D-64A

DRILLING LOG | DIVISION Southwestern | INSTALLATION Fort Worth | SHEET OF 1 SHEETS

1 PROJECT Aubrey Dam Site

2 LOCATION (Coordinates or Station)

3 DRILLING AGENCY Corps of Engineers

4 HOLE NO. (As shown on drawing title and file number) 8A6D-64A

5 NAME OF DRILLER Newhouse

6 DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ________ DEG. FROM VERT.

7 THICKNESS OF OVERBURDEN - -

8 DEPTH DRILLED INTO ROCK - -

9 TOTAL DEPTH OF HOLE 36.0

10 SIZE AND TYPE OF BIT 8" auger, 6" d.bb'l.

11 DATUM FOR ELEVATION SHOWN (TBM or MSL)

12 MANUFACTURER'S DESIGNATION OF DRILL Failing 1500

13 TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN | DISTURBED 6 | UNDISTURBED 6

14 TOTAL NUMBER CORE BOXES ---

15. ELEVATION GROUND WATER ----

16 DATE HOLE | STARTED 11 Apr 73 | COMPLETED 11 Apr 73

17. ELEVATION TOP OF HOLE

18 TOTAL CORE RECOVERY FOR BORING %

19 SIGNATURE OF INSPECTOR

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			0.0' to 24.0' CLAY, calc., moist, stiff, brown to gray and tan. - - Start 6" d. bb'l. at 24.0' - - -			---- 1. Water table not determined. 2. Jars: A. 26.0 B. 28.0 C. 30.0 D. 32.0 E. 34.0 F. 36.0 NOTE: Jar samples take from shoe of denison bb'l.
			24.0' to 34.0' CLAY, calc., moist, med. stiff to stiff, sandy to 32.0' with sand increase at 32.0', tan and gray. 34.0' to 36.0' SAND, sli. clayey, med. dense, saturated, medium to coarse grained, tan.			3. Denison Cans: 1. 24.0 to 26.0 2. 26.0 to 28.0 3. 28.0 to 30.0 4. 30.0 to 32.0 5. 32.0 to 34.0 6. 34.0 to 36.0 4. Drilling: 1. 0.0' to 24.0' - 8" auger 2. 24.0' to 36.0' - 6" d. bb'l.
			T.D. - 36.0' -		Can 1 Can 2 Can 3 Can 4 Can 5 Can 6	

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE | PROJECT Aubrey Dam Site | HOLE NO. 8A6D-64A

RECORD DRAWING-WORK AS BUILT

SYM	DC NO.	ACTION	DATE	DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

DESIGNED BY --------

DRAWN BY --------

REVIEWED BY: --------

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS
EMBANKMENT, SPILLWAY AND
OUTLET WORKS
LOGS OF BORINGS
3S4C-62, 3A6D-64, AND 8A6D-64A

SUBMITTED BY

ENGINEER

INVITATION NO. DACW63-82-B-0025 | DATE MAR. 1982

CONTRACT NO DACW63-82 C 0083

DRAWING NUMBER | SHEET NO OF | SEQUENCE NO 25

CONTRACT NO DACW63 82 C 0083

TO ACCOMPANY FOUNDATION REPORT

Hole No. DA62-65

DRILLING LOG	DIVISION Southwestern	INSTALLATION Fort Worth Dist	SHEET 1 OF 3 SHEETS

1. PROJECT [illegible]
2. LOCATION (Coordinates or Station)
3. DRILLING AGENCY Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number) A6 -65
5. NAME OF DRILLER [illegible]
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ___ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN 39.2
8. DEPTH DRILLED INTO ROCK 58.3
9. TOTAL DEPTH OF HOLE 97.5
10. SIZE AND TYPE OF BIT
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)
12. MANUFACTURER'S DESIGNATION OF DRILL Failing 1500
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED 9 UNDISTURBED 8
14. TOTAL NUMBER CORE BOXES 1
15. ELEVATION GROUND WATER
16. DATE HOLE STARTED 4 Apr 1973 COMPLETED 5 Apr 1973
17. ELEVATION TOP OF HOLE 555.4
18. TOTAL CORE RECOVERY FOR BORING 92 %
19. SIGNATURE OF INSPECTOR

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			0.0 - 17.0 CLAY 0.0 - 5.5 brown, moist, med. stiff 5.5 - 11.0 sandy, brn, moist, med stiff 11.0 - 15.0 brown, moist, stiff 15.0 - 17.0 sandy, brn, moist, stiff			Drilling 0.0 - 22.0 8" auger 22.0 - 40.0 6" d bbl 40.0 - 87.0 3" fishtail 87.0 - 97.5 2" core
	10		17.0 - 26.2 SAND tan, med dense, sat'd, med to coarse gr, calc. 25.0 - 26.2 dense			Jar samples A. 24.0 B. 26.0 C. 28.0 D. 30.0 E. 32.0 F. 33.8 G. 34.0 H. 36.0 I. 38.0
	20		26.2 - 31.0 CLAY moist, gray and tan, stiff to v. stiff calc		D1 D2 D3 D4	Denison samples 1. 22.0 - 24.0 2. 24.0 - 26.0 3. 26.0 - 28.0 4. 28.0 - 30.0 5. 30.0 - 32.0 6. 32.0 - 34.0 7. 34.0 - 36.0 8. 36.0 - 38.0 Water table 4 Apr, 73: adjacent hole, 6DC-31 at 17.7' Note 8" casing to 6.5' Electric log
	30		31.0 - 33.8 SAND tan, sat'd, m dense, med to coarse gr, calc 33.8 - 35.5 CLAY sandy, med stiff, gray, calc.		D5 D6 D7 D8 no recov.	
	40					

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d
			35.5 - 39.2 SAND tan, sat'd, gravelly, med to coarse gr, med dense, calc 39.2 - 87.0 SHALE dk. gray, med hard (rock classification) unwea, non-jointed, sl. calc 48.2 - 50.0 significantly harder to fishtail.
	50		
	60		
	70		
	80		87.0 - 87.1 SILTSTONE hard, cemented, massive 87.1 - 90.2 LIMESTONE lt. gray, soft (rock classification), massive 87.1 - 88.9 med hard
	90		90.2 - 97.3 SHALE dk. gray, med hard, non-jointed 97.3 - 97.5 SILTSTONE hard, cemented, massive TD = 97.5
	100		

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			35.5 - 30.2 SAND tan, sat'd, gravelly, med to coarse gr, med dense, calc			
			30.2 - 87.0 SHALE dk. gray, med hard (rock classification) unwea, non-jointed, sl. calc			
	50		48.2 - 50.0 significantly harder to fish tail.			
	60					
	70					
	80					
			87.0 - 87.1 SILTSTONE hard, cemented, massive			
			87.1 - 90.2 LIMESTONE lt. gray, soft (rock classification), massive 87.1 - 88.9 med hard	D5.0 L1.8	Box 1	
	90		90.2 - 97.3 SHALE dk. gray, med hard, non-jointed	D5.5 L1.1		
			97.3 - 97.5 SILTSTONE hard, cemented, massive			
			TD @ 97.5			
	100					

Hole No 8A6D-66

DRILLING LOG

DIVISION: Southwestern

INSTALLATION: Fort Worth

SHEET 1 OF 1 SHEETS

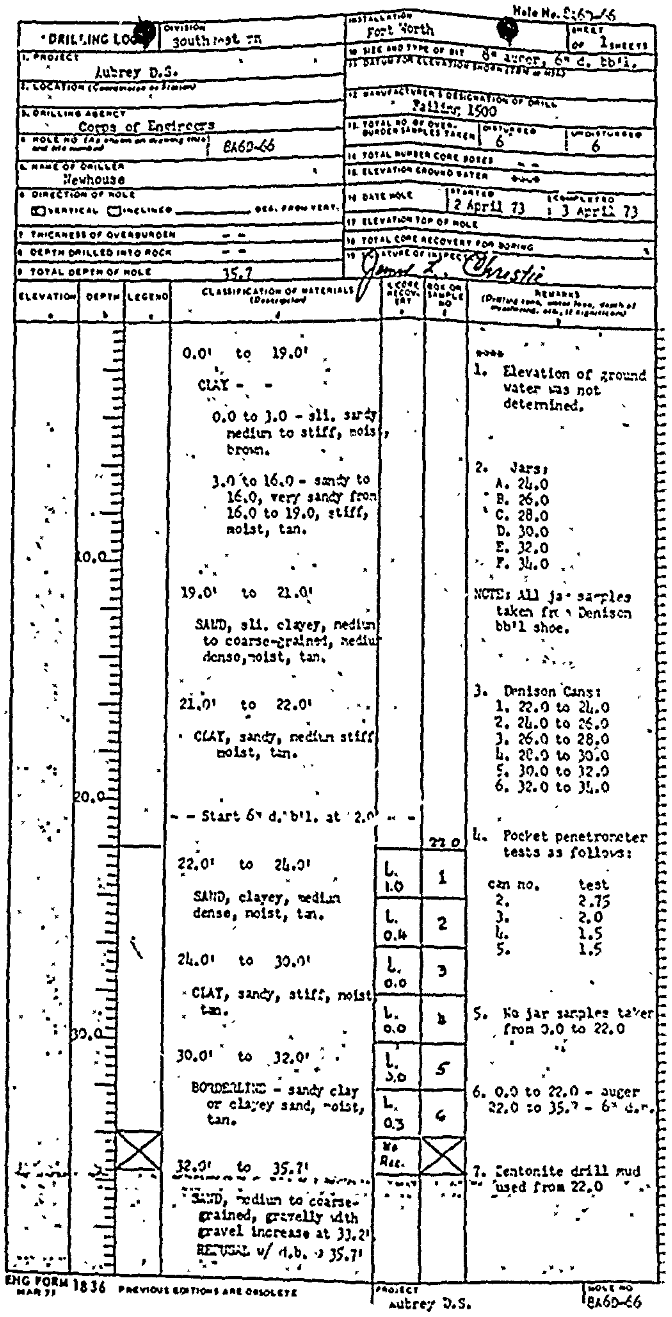
1. PROJECT: Aubrey D.S.
2. LOCATION (Coordinates or Station):
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): 8A6D-66
5. NAME OF DRILLER: Newhouse
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: - -
8. DEPTH DRILLED INTO ROCK: - -
9. TOTAL DEPTH OF HOLE: 35.7
10. SIZE AND TYPE OF BIT: 8" auger, 6" d. bb'l.
11. DATUM FOR ELEVATION SHOWN (TBM or MSL):
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: DISTURBED 6 UNDISTURBED 6
14. TOTAL NUMBER CORE BOXES: - -
15. ELEVATION GROUND WATER: - -
16. DATE HOLE: STARTED 2 April 73 COMPLETED 3 April 73
17. ELEVATION TOP OF HOLE:
18. TOTAL CORE RECOVERY FOR BORING: %
19. SIGNATURE OF INSPECTOR: James L. Christie

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			0.0' to 19.0' CLAY - - 0.0 to 3.0 - sli. sandy medium to stiff, moist, brown. 3.0 to 16.0 - sandy to 16.0, very sandy from 16.0 to 19.0, stiff, moist, tan.			1. Elevation of ground water was not determined. 2. Jars: A. 24.0 B. 26.0 C. 28.0 D. 30.0 E. 32.0 F. 34.0
	10.0		19.0' to 21.0' SAND, sli. clayey, medium to coarse-grained, medium dense, moist, tan.			NOTE: All jar samples taken from Denison bb'l shoe.
			21.0' to 22.0' CLAY, sandy, medium stiff moist, tan.			3. Denison Cans: 1. 22.0 to 24.0 2. 24.0 to 26.0 3. 26.0 to 28.0 4. 28.0 to 30.0 5. 30.0 to 32.0 6. 32.0 to 34.0
	20.0		- - Start 6" d.b'l. at 22.0	- -	22.0	4. Pocket penetrometer tests as follows: can no. test 2. 2.75 3. 2.0 4. 1.5 5. 1.5
			22.0' to 24.0' SAND, clayey, medium dense, moist, tan.	L. 1.0	1	
				L. 0.4	2	
			24.0' to 30.0' CLAY, sandy, stiff, moist tan.	L. 0.0	3	
				L. 0.0	4	5. No jar samples taken from 0.0 to 22.0
	30.0		30.0' to 32.0' BORDERLINE - sandy clay or clayey sand, moist, tan.	L. 0.0	5	
				L. 0.3	6	6. 0.0 to 22.0 - auger 22.0 to 35.7 - 6" d.b.
		☒		No Rec.	☒	
			32.0' to 35.7' SAND, medium to coarse-grained, gravelly with gravel increase at 33.2' REFUSAL w/ d.b. @ 35.7'			7. Bentonite drill mud used from 22.0

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT: Aubrey D.S.

HOLE NO.: 8A6D-66



Hole No. 8A6D-66

DRILLING LOG

DIVISION: Southwestern
INSTALLATION: Fort Worth
SHEET 1 OF 1 SHEETS

1. PROJECT: Aubrey D.S.
2. LOCATION (Coordinates or Station):
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): 8A6D-66
5. NAME OF DRILLER: Newhouse
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: - -
8. DEPTH DRILLED INTO ROCK: - -
9. TOTAL DEPTH OF HOLE: 35.7
10. SIZE AND TYPE OF BIT: 8" auger, 6" d. bb'l.
11. DATUM FOR ELEVATION SHOWN (TBM or MSL):
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: DISTURBED 6 UNDISTURBED 6
14. TOTAL NUMBER CORE BOXES: - -
15. ELEVATION GROUND WATER: - - -
16. DATE HOLE: STARTED 2 April 73 COMPLETED 3 April 73
17. ELEVATION TOP OF HOLE:
18. TOTAL CORE RECOVERY FOR BORING: %
19. SIGNATURE OF INSPECTOR: James L. Christie

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			0.0' to 19.0' CLAY - - 0.0 to 3.0 - sli. sandy medium to stiff, moist, brown. 3.0 to 16.0 - sandy to 16.0, very sandy from 16.0 to 19.0, stiff, moist, tan.			1. Elevation of ground water was not determined. 2. Jars: A. 24.0 B. 26.0 C. 28.0 D. 30.0 E. 32.0 F. 34.0 NOTE: All jar samples taken from Denison bb'l shoe.
	10.0		19.0' to 21.0' SAND, sli. clayey, medium to coarse-grained, medium dense, moist, tan.			
			21.0' to 22.0' CLAY, sandy, medium stiff moist, tan.			3. Denison Cans: 1. 22.0 to 24.0 2. 24.0 to 26.0 3. 26.0 to 28.0 4. 28.0 to 30.0 5. 30.0 to 32.0 6. 32.0 to 34.0
	20.0		- - Start 6" d. bb'l. at 22.0 - -		22.0	4. Pocket penetrometer tests as follows: can no. test 2. 2.75 3. 2.0 4. 1.5 5. 1.5
			22.0' to 24.0' SAND, clayey, medium dense, moist, tan.	L. 1.0	1	
				L. 0.4	2	
			24.0' to 30.0' CLAY, sandy, stiff, moist tan.	L. 0.0	3	
	30.0			L. 0.0	4	5. No jar samples taken from 0.0 to 22.0
			30.0' to 32.0' BORDERLINE - sandy clay or clayey sand, moist, tan.	L. 3.0	5	
				L. 0.3	6	6. 0.0 to 22.0 - auger 22.0 to 35.7 - 6" d.b.
		☒		No Rec.	☒	
			32.0' to 35.7' SAND, medium to coarse-grained, gravelly with gravel increase at 33.2' REFUSAL w/ d.b. @ 35.7'			7. Bentonite drill mud used from 22.0

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT: Aubrey D.S.
HOLE NO.: 8A6D-66

RECORD DRAWING-WORK AS BUILT

SYM	DC NO	ACTION	DATE	DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

DESIGNED BY
DRAWN BY
REVIEWED BY

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS
EMBANKMENT, SPILLWAY AND
OUTLET WORKS
LOGS OF BORINGS
8A6D-65 AND 8A6D-66

SUBMITTED BY
ENGINEER
INVITATION NO. DACW63-82-B-0025
DATE MAR. 1982
CONTRACT NO. DACW63-82 C 00[illegible]3
DRAWING NUMBER
SHEET NO OF
SEQUENCE NO. 26

CONTRACT NO DACW63-82-C-00[illegible]

TO ACCOMPANY FOUNDATION REPORT

Hole No. 8A6D-67

DRILLING LOG	DIVISION Southwestern	INSTALLATION Fort Worth District	SHEET 1 OF 2 SHEETS
1. PROJECT Aubrey D. S.		10. SIZE AND TYPE OF BIT 6" D Bbl	
2. LOCATION (Coordinates or Station) *		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL	
3. DRILLING AGENCY Corps of Engineers		12. MANUFACTURER'S DESIGNATION OF DRILL Failing 1500	
4. HOLE NO. (As shown on drawing title and file number)	8A6D-67	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 12 · UNDISTURBED 9
5. NAME OF DRILLER Mullins		14. TOTAL NUMBER CORE BOXES	
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.		15. ELEVATION GROUND WATER --	
		16. DATE HOLE	STARTED 8 Aug 73 · COMPLETED 9 Aug 73
7. THICKNESS OF OVERBURDEN	35.3	17. ELEVATION TOP OF HOLE 558.6'	
8. DEPTH DRILLED INTO ROCK	0	18. TOTAL CORE RECOVERY FOR BORING %	
9. TOTAL DEPTH OF HOLE	35.3	19. SIGNATURE OF INSPECTOR Joseph A.	

ELEVATION a | DEPTH b | LEGEND c | CLASSIFICATION OF MATERIALS (Description) d | % CORE RECOVERY e | BOX OR SAMPLE NO. f | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g

Depth scale: 10, 20, 30, 40

0.0 to 33.3

CLAY - -

0.0 to 3.0 medium plasticity, dark brown, medium stiff, moist

3.0 to 9.4 low to medium plasticity, brown, very moist, stiff, slightly sandy

9.4 to 16.5 medium plasticity, dark brown, stiff, moist

16.5 to 26.5 low plasticity, dark brown, stiff to very stiff, moist, slightly sandy

26.5 to 30.5 medium plasticity, dark brown, stiff, moist

30.5 to 33.3 medium plasticity, gray and tan, very stiff, moist

33.3 to 35.3

GRAVEL - -

Jar A
Jar B
Jar C
Jar D
Can 1
Carton
Can 2
Can 3
Can 4
Can 5
Can 6
Can 7
Can 8

Drilling

0.0 to 15.0 10" auger
15.0 to 33.3 6" D Bbl
33.3 to 35.3 7 7/8" rock bit

Denison samples

1. 15.8 to 17.8
2. 19.8 to 21.8
3. 21.8 to 23.8
4. 23.8 to 25.8
5. 25.8 to 27.8
6. 27.8 to 29.8
7. 29.8 to 31.8
8. 31.8 to 33.3

Carton sample

1. 18.1 to 19.0

Note: sample came from denison can.

Jar samples

A. 0.0 to 3.0
B. 3.0 to 8.0
C. 8.0 to 9.4
D. 9.4 to 15.8
E. 17.8
F. 19.8
G. 21.8
H. 23.8
I. 25.8
J. 27.8
K. 29.8
L. 31.8

Note: samples E through L from shoe of Denison Bbl.

***Location**

Hole offset 20.7' S35°W from staked location (X- 2,141,445; Y- 615,594). New elevation is 559.6 as determined by hand level.

T. D. @ 35.3

Hand penetrometer test

depth	tons/sq. ft.
17.8	1.30
19.8	1.50
21.8	2.25
23.8	2.25
25.8	2.25
27.8	1.75
29.8	1.75
31.8	3.30

Note

All samples are calcareous.

Water table

Hole was not bailed. 4" slotted, plastic pipe set to 36.0'. Daily measurements reported on supplimental sheet.

DRILLING LOG	DIVISION Southwestern
1. PROJECT Aubrey D. S.	
2. LOCATION (Coordinates or Station) X: 2,141,610 Y: 615,020	
3. DRILLING AGENCY Corps of Engineers	
4. HOLE NO. (As shown on drawing title and file number)	8A6D-68
5. NAME OF DRILLER Mullins	
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	
7. THICKNESS OF OVERBURDEN	45.5'
8. DEPTH DRILLED INTO ROCK	0
9. TOTAL DEPTH OF HOLE	45.5'

ELEVATION a | DEPTH b | LEGEND c | CLASSIFICATION OF MATERIA (Description) d

Depth scale: 10, 20, 30, 40, 50

0.0 to 29.2

CLAY - -

0.0 to 6.0 medium pl
dark brown, medium st
stiff, moist, caolare

6.0 to 14.6 medium p
brown, hard, moist (t
very stiff at 12.5)

14.6 to 18.0 medium
ticity, light brown,
stiff, moist

18.0 to 22.0 high pl
brown, very stiff, ve

22.0 to 28.2 medium
ticity, light brown a
very n stiff to stiff
moist, slightly sandy

28.2 to 29.2 low pla
gray and tan, very st
moist

29.2 to 32.6

SAND - -

tan, loose to medium
saturated, non calcar

32.6 to 36.0

CLAY - -

32.6 to 34.5 medium
tisity, moist, stiff,

and gray

34.0 to 36.0 low pla
tan and gray, soft to
stiff, saturated, san

36.0 to 38.5

SAND - -

tan, medium dense, sa
slightly clayey

38.5 to 45.5

GRAVEL - -

tan, loose, saturated,
sandy, becomes coarse
40.5'

T. D. @ 45.5

POLYTRACT 633

Hole No. 8A6D-68

DRILLING LOG
DIVISION: Southwestern
INSTALLATION: Fort Worth District
SHEET 1 OF 2 SHEETS

1. PROJECT: Aubrey D. S.
2. LOCATION (Coordinates or Station): X: 2,141,610 Y: 615,020
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): 8A6D-68
5. NAME OF DRILLER: Mullins
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 45.5'
8. DEPTH DRILLED INTO ROCK: 0
9. TOTAL DEPTH OF HOLE: 45.5'
10. SIZE AND TYPE OF BIT: 8" auger; 6" D Bbl
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: DISTURBED 20 UNDISTURBED 16
14. TOTAL NUMBER CORE BOXES
15. ELEVATION GROUND WATER: *
16. DATE HOLE: STARTED 9 Aug 73 COMPLETED 10 Aug 73
17. ELEVATION TOP OF HOLE: 560.8'
18. TOTAL CORE RECOVERY FOR BORING: %
19. SIGNATURE OF INSPECTOR: Joseph A. Oberle

ELEVATION | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS (Description) | % CORE RECOVERY | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)

Classification of materials

0.0 to 29.2

CLAY - -

0.0 to 6.0 medium plasticity, dark brown, medium stiff to stiff, moist, calcareous

6.0 to 14.6 medium plasticity, brown, hard, moist (becomes very stiff at 12.5)

14.6 to 18.0 medium plasticity, light brown, very stiff, moist

18.0 to 22.0 high plasticity, brown, very stiff, very moist

22.0 to 28.2 medium plasticity, light brown and gray, very n stiff to stiff, moist, slightly sandy

28.2 to 29.2 low plasticity, gray and tan, very stiff, moist

29.2 to 32.6

SAND - -

tan, loose to medium dense, saturated, non calcareous

32.6 to 36.0

CLAY - -

32.6 to 34.5 medium plasticity, moist, stiff, tan and gray

34.0 to 36.0 low plasticity, tan and gray, soft to medium stiff, saturated, sandy

36.0 to 38.5

SAND - -

tan, medium dense, saturated, slightly clayey

38.5 to 45.5

GRAVEL - -

tan, loose, saturated, sandy, becomes coarse at 40.5'

T. D. @ 45.5

Box or sample no.

Jar A, Jar B, Can 1, Can 2, Can 3, Can 4, Can 5, Can 6, Can 7, Can 8, Can 9, Can 10, Can 11, Can 12, ☒, Can 13, Can 14, Can 15, Can 16, ☒, ☒

Remarks

Drilling

0.0 to 5.0 8" auger
5.0 to 41.0 6" D Bbl
41.0 to 45.5 7 7/8" rock bit
no casing

Denison samples

1. 5.0 to 7.0
2. 7.0 to 9.0
3. 9.0 to 11.0
4. 11.0 to 13.0
5. 13.0 to 15.0
6. 15.0 to 17.0
7. 17.0 to 19.0
8. 19.0 to 21.0
9. 21.0 to 23.0
10. 2[illegible] to 25.0
11. 25.0 to 27.0
12. 27.0 to 29.0
13. 31.0 to 33.0
14. 33.0 to 35.0
15. 35.0 to 37.0
16. 37.0 to 39.0

Note: sand sample from 29.0 to 31.0 and gravel sample from 39.0 to 41.0 were disturbed.

Jar samples

A. 0.0 to 3.0
B. 3.0 to 5.0
C. 7.0
D. 9.0
E. 11.0
F. 13.0
G. 15.0
H. 17.0
I. 19.0
J. 21.0
K. 23.0
L. 25.0
M. 27.0
N. 29.0
O. 31.0
P. 33.0
Q. 35.0
R. 37.0
S. 39.0
T. 41.0

Note: samples C through T obtained from shoe of Denison barrel.

*Water table

Hole was bailed to 35.0. After 15 minutes, level at 15.0'. 4" slotted plastic pipe installed to 44.0'. Daily measurements reported on supplemental sheet.

Note

All material from 0.0 to 29.2 was calcareous

Hand penetrometer test

depth	tons/sq. ft.
7.0	>4.50
9.0	>4.50
11.0	>4.50
13.0	4.00
15.0	3.00
17.0	2.00
19.0	2.10
21.0	2.25
23.0	2.50
25.0	2.25
27.0	2.00
29.0	3.00
35.0	0.50

Hole

DRILLING LOG
DIVISION: Southwestern
INSTALLATION: Fort Worth Distri

1. PROJECT: Aubrey D. S.
2. LOCATION (Coordinates or Station): X- 2,140,155 Y- 614,685
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): 8A6D-69
5. NAME OF DRILLER: Mullins
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 43.0
8. DEPTH DRILLED INTO ROCK: 1.0
9. TOTAL DEPTH OF HOLE: 44.0
10. SIZE AND TYPE OF BIT: *
11. DATUM FOR ELEVATION SHOWN: MSL
12. MANUFACTURER'S DESIGNATION OF DRI: Failing 1500
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: DISTURBED 16
14. TOTAL NUMBER CORE BOXES
15. ELEVATION GROUND WATER: **
16. DATE HOLE: STARTED 15 Aug 73
17. ELEVATION TOP OF HOLE: 557.5
18. TOTAL CORE RECOVERY FOR BORING
19. SIGNATURE OF INSPECTOR: Joseph A. Oberle

ELEVATION | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS (Description) | % CORE RECOVERY | BOX OR SAMPLE NO. | RE

Classification of materials

0.0 to 32.0

CLAY - -

0.0 to 4.5 medium plasticity, brownish-gray, stiff, slightly moist

4.5 to 11.0 low to medium plasticity, brown, stiff to very stiff, moist, with some calcareous particles 5.2 to 11.0

11.0 to 20.0 high plasticity, light brown, moist to very moist, stiff

20.0 to 22.0 high plasticity, light brown, medium stiff, very moist to saturated

22.0 to 28.0 medium plasticity, brown, stiff to very stiff, moist, with some calcareous particles and a few small shells

28.0 to 30.0 medium plasticity, tan, stiff, very moist, slightly sandy

30.0 to 32.0 low plasticity. tan, saturated, stiff, sandy

32.0 to 43.0

SAND - -

32.0 to 34.0 tan, medium dense, clayey, saturated

34.0 to 36.5 tan, loose, saturated, gravelly

36.5 to 43.0 with coarse gravel

43.0 to 44.0

SHALE - -

dark gray, medium hard (rock classification), unweathered, non-jointed, moist

Box or sample no.

Jar A, Jar B, Jar C, Jar D, Jar E, Can 1, Can 2, ☒, Can 3, Can 4 50%, Can 5, Can 6 50%, Can 7, Can 8, Can 9, ☒

Remarks

*Dri

0.0 to 15.
15.0 to 3
37.0 to 4
rockbit
no casing

Jar s

A. 0.0 to
B. 4.5 to
C. 5.2 to
D. 10.2 to
E. 11.0 to
F. 17.0
G. 19.0
H. 21.0
I. 23.0
J. 25.0
K. 27.0
L. 29.0
M. 31.0
N. 33.0
O. 35.0
P. 37.0

Note: samp
P taken fr
Denison ba

Denison

1. 15.0 to
2. 17.0 to
3. 21.0 to
4. 23.0 to
5. 25.0 to
6. 27.0 to
7. 29.0 to
8. 31.0 to
9. 33.0 to

Note: no s
21.0 due to
no sample
due to pre

No

All overbu
are calcar

Hand penet

depth
17.0
19.0
23.0
25.0
27.0
29.0
31.0

**Water

Hole baile
imately 30
water very
After com
bailing,
9.8'. Addi
table info
ported on
sheet. 4"
plastic p
35.0'.

Hole No. 8A6D-69

DRILLING LOG	DIVISION Southwestern	INSTALLATION Fort Worth District	SHEET 1 OF 2 SHEETS

1. PROJECT: Aubrey D. S.
2. LOCATION (Coordinates or Station): X- 2,140,155 Y- 614,685
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): 8A6D-69
5. NAME OF DRILLER: Mullins
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 43.0
8. DEPTH DRILLED INTO ROCK: 1.0
9. TOTAL DEPTH OF HOLE: 44.0
10. SIZE AND TYPE OF BIT: *
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 16 | UNDISTURBED 9
14. TOTAL NUMBER CORE BOXES:
15. ELEVATION GROUND WATER: **
16. DATE HOLE: STARTED 15 Aug 73 | COMPLETED 16 Aug 73
17. ELEVATION TOP OF HOLE: 557.5'
18. TOTAL CORE RECOVERY FOR BORING: %
19. SIGNATURE OF INSPECTOR: Joseph A. Kuntz

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f
			0.0 to 32.0		Jar A
			CLAY - -		
			0.0 to 4.5 medium plasticity, brownish-gray, stiff, slightly moist		Jar B
			4.5 to 11.0 low to medium plasticity, brown, stiff to very stiff, moist, with some calcareous particles 5.2 to 11.0		Jar C
	10		11.0 to 20.0 high plasticity, light brown, moist to very moist, stiff		Jar D
			20.0 to 22.0 high plasticity, light brown, medium stiff, very moist to saturated		Jar E
			22.0 to 28.0 medium plasticity, brown, stiff to very stiff, moist, with some calcareous particles and a few small shells		Can 1 Can 2
	20		28.0 to 30.0 medium plasticity, tan, stiff, very moist, slightly sandy		☒ Can 3
			30.0 to 32.0 low plasticity, tan, saturated, stiff, sandy		Can 4 50%
			32.0 to 43.0		
			SAND - -		Can 5
			32.0 to 34.0 tan, medium dense, clayey, saturated		Can 6 50%
	30		34.0 to 36.5 tan, loose, saturated, gravelly		Can 7
			36.5 to 43.0 with coarse gravel		Can 8 Can 9 ☒
	40				
			43.0 to 44.0		
			SHALE - -		
			dark gray, medium hard (rock classification), unweathered, non-jointed, moist		
	50				

REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g

*Drilling

0.0 to 15.0 10" auger
15.0 to 37.0 6" D Bbl
37.0 to 44.0 7 7/8" rockbit

no casing

Jar samples

A. 0.0 to 4.5
B. 4.5 to 5.2
C. 5.2 to 10.2
D. 10.2 to 11.0
E. 11.0 to 15.0
F. 17.0
G. 19.0
H. 21.0
I. 23.0
J. 25.0
K. 27.0
L. 29.0
M. 31.0
N. 33.0
O. 35.0
P. 37.0

Note: samples F through P taken from shoe of Denison barrel.

Denison samples

1. 15.0 to 17.0
2. 17.0 to 19.0
3. 21.0 to 23.0
4. 23.0 to 25.0
5. 25.0 to 27.0
6. 27.0 to 29.0
7. 29.0 to 31.0
8. 31.0 to 33.0
9. 33.0 to 35.0

Note: no sample 19.0 to 21.0 due to catcher; no sample 35.0 to 37.0 due to presence of gravel

Note

All overburden material are calcareous.

Hand penetrometer test

depth	tons/sq. ft.
17.0	3.20
19.0	2.75
23.0	2.65
25.0	2.65
27.0	1.75
29.0	1.50
31.0	1.20

**Water table

Hole bailed to approximately 30.0' but making water very rapidly. After completion of bailing, water level at 9.8'. Additional water table information reported on supplimental sheet. 4" slotted plastic pipe set to 35.0'.

RECORD DRAWING-WORK AS BUILT

SYM	DO NO.	ACTION	DATE	DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

DESIGNED BY:
DRAWN BY:
REVIEWED BY:

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS
EMBANKMENT, SPILLWAY AND
OUTLET WORKS
LOGS OF BORINGS
8A6D-67, 8A6D-68, AND 8A6D-69

SUBMITTED BY
ENGINEER

INVITATION NO. DACW63-82-B-0025 DATE: MAR. 1982
CONTRACT NO. DACW63-82-C-0083
DRAWING NUMBER
SHEET NO ___ OF ___
SEQUENCE NO. 27

CONTRACT NO DACW63-82-C-0083

Hole No. 8A-70

DRILLING LOG	DIVISION Southwestern	INSTALLATION Fort Worth District	SHEET 1 of 2 SHEETS
1. PROJECT Aubrey D. S.		10. SIZE AND TYPE OF BIT 8" auger	
2. LOCATION (Coordinates or Station) X: 2,133,8[illegible] Y: 615,[illegible]		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL	
3. DRILLING AGENCY Corps of Engineers		12. MANUFACTURER'S DESIGNATION OF DRILL Failing 1500	
4. HOLE NO. (As shown on drawing title and file number) 8A-70		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 14 · UNDISTURBED
5. NAME OF DRILLER Mullins		14. TOTAL NUMBER CORE BOXES	
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ___ DEG. FROM VERT.		15. ELEVATION GROUND WATER *	
		16. DATE HOLE	STARTED 14 Aug 73 · COMPLETED 15 Aug 73
7. THICKNESS OF OVERBURDEN 39.2		17. ELEVATION TOP OF HOLE 561.0'	
8. DEPTH DRILLED INTO ROCK 0.8		18. TOTAL CORE RECOVERY FOR BORING %	
9. TOTAL DEPTH OF HOLE 40.0		19. SIGNATURE OF INSPECTOR Joseph A. Struble	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			0.0 to 29.0 CLAY - - 0.0 to 5.0 medium plasticity, dark brown, medium stiff, slightly moist		Jar A	Drilling 0.0 to 40.0 8" auger no casing
			5.0 to 10.8 medium plasticity, brown, stiff, moist, with some calcareous particles		Jar B	Jar samples A. 0.0 to 5.0 B. 5.0 to 10.8 C. 10.8 to 12.0 D. 12.0 to 16.8 E. 16.8 to 21.8 F. 21.8 to 27.0 G. 27.0 to 28.0 H. 28.0 to 29.0 I. 29.0 to 31.0 J. 31.0 to 33.0 K. 33.0 to 34.0 L. 34.0 to 35.0 M. 35.0 to 38.0 N. 38.0 to 39.2 O. 39.2 to 40.0
	10		10.8 to 27.0 high plasticity, brown, stiff to very stiff, moist		Jar C Jar D	
	20				Jar E Jar F	Note All overburden materials are calcareous *Water table Drilling mud not used and hole not bailed. 4" slotted plastic pipe set to 33.0'. At completion of drilling, water level standing at 24.1'. Other water table information reported on supplimental sheet.
			27.0 to 28.0 medium plasticity, tan, medium stiff to stiff, very moist, slightly sandy		Jar G	
			28.0 to 29.0 low plasticity, tan, medium stiff, saturated, sandy		Jar H	
	30		29.0 to 33.0 SAND - - tan, loose, saturated, becomes slightly gravelly 31.0 to 33.0		Jar I Jar J Jar K Jar L	
			33.0 to 34.0 CLAY - - medium to high plasticity, brown, stiff, moist, slightly gravelly		Jar M Jar N	
	40		34.0 to 35.0 GRAVEL - - tan, loose, saturated, poorly graded		Jar O	T. D. @ 40.0
			35.0 to 39.2 CLAY - - 35.0 to 38.0 medium plasticity, brown and gray, stiff, moist 38.0 to 39.2 low plasticity, brown, medium stiff, saturated, sandy and gravelly			
			39.2 to 40.0 SHALE - - dark gray medium hard (rock classification), unweathered, non-jointed, non- to slightly calcareous			

DRILLING LOG	DIVISION Southwestern	INSTALLATION Fort
1. PROJECT Aubrey D. S.		10. SIZE AND TYPE
2. LOCATION (Coordinates or Station) X: 2,140,700 Y: 615,945		11. DATUM FOR EL
3. DRILLING AGENCY Corps of Engineers		12. MANUFACTURE Failing 1
4. HOLE NO. (As shown on drawing title and file number) 8A-71		13. TOTAL NO. OF OVERBURDEN SAMPL
5. NAME OF DRILLER Mullins		14. TOTAL NUMBER
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ___ DEG. FROM VERT.		15. ELEVATION GRO
		16. DATE HOLE
7. THICKNESS OF OVERBURDEN 45.5'		17. ELEVATION TOP
8. DEPTH DRILLED INTO ROCK 0.5'		18. TOTAL CORE RE
9. TOTAL DEPTH OF HOLE 46.0'		19. SIGNATURE OF

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e
			0.0 to 30.5 CLAY - - 0.0 to 6.5 medium plasticity, brown, medium stiff (becomes stiff at 4.0), slightly moist	
			6.5 to 11.5 low plasticity, light brown, very stiff, slightly sandy	
	10		11.5 to 16.5 medium plasticity, light brown, stiff, moist	
			16.5 to 29.6 medium to high plasticity, brown, stiff, moist	
	20			
	30		29.6 to 30.5 low plasticity, tan, stiff, saturated, sandy, very slightly gravelly	
			30.5 to 31.7 SAND - - tan, loose, saturated, coarse, gravelly	
			31.7 to 37.0 CLAY - -	
	40		31.7 to 32.5 high plasticity, gray and tan mottled, medium stiff, very moist, calcareous	
			32.5 to 37.0 high plasticity, grayish-brown, soft to medium stiff, very moist to saturated. Becomes slightly sandy at 35.0	
			37.0 to 45.5 GRAVEL - -	
	50		tan, loose, saturated, clayey, with some shells and small cobbles. Becomes very clayey at 42.0'.	

Jar K
Jar L
Jar M

Hole No. 8A-71

DRILLING LOG	DIVISION Southwestern	INSTALLATION Fort Worth District	SHEET 1 OF 2 SHEETS
1. PROJECT Aubrey D. S.		10. SIZE AND TYPE OF BIT 8" auger	
2. LOCATION (Coordinates or Station) X: 2,140,700 Y: 615,945		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL	
3. DRILLING AGENCY Corps of Engineers		12. MANUFACTURER'S DESIGNATION OF DRILL Failing 1500	
4. HOLE NO. (As shown on drawing title and file number)	8A-71	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 13 UNDISTURBED 0
5. NAME OF DRILLER Mullins		14. TOTAL NUMBER CORE BOXES	
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.		15. ELEVATION GROUND WATER *	
		16. DATE HOLE	STARTED 13 Aug 73 COMPLETED 14 Aug 73
7. THICKNESS OF OVERBURDEN	45.5'	17. ELEVATION TOP OF HOLE 560.0'	
8. DEPTH DRILLED INTO ROCK	0.5'	18. TOTAL CORE RECOVERY FOR BORING	%
9. TOTAL DEPTH OF HOLE	46.0'	19. SIGNATURE OF INSPECTOR Joseph A. [illegible]	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			0.0 to 30.5 CLAY - -		Jar A	**Drilling** 0.0 to 43.0 8" auger 43.0 to 46.0 7 7/8 rockbit
			0.0 to 6.5 medium plasticity, brown, medium stiff (becomes stiff at 4.0), slightly moist		Jar B	**Jar samples** A. 0.0 to 4.0 B. 4.0 to 6.5 C. 6.5 to 11.5 D. 11.5 to 16.5 E. 16.5 to 20.5 F. 20.5 to 25.5 G. 25.5 td 29.6 H. 29.6 to 30.5 I. 30.5 to 31.7 J. 31.7 to 32.5 K. 32.5 to 37.0 L. 37.0 to 42.0 M. 42.0 to 45.5
			6.5 to 11.5 low plasticity, light brown, very stiff, slightly sandy		Jar C	
	10		11.5 to 16.5 medium plasticity, light brown, stiff, moist		Jar D	
			16.5 to 29.6 medium to high plasticity, brown, stiff, moist		Jar E	**Note** All materials are calcareous. ***Water table** Because of squeezing, hole w[illegible] bailed only to 16.0 [illegible] slotted, plastic [illegible] set to 39.2'. [illegible] measurements reported on supplimental sheet.
	20				Jar F	
					Jar G	
	30		29.6 to 30.5 low plasticity, tan, stiff, saturated, sandy, very slightly gravelly		Jar H	
			30.5 to 31.7 SAND - - tan, loose, saturated, coarse, gravelly		Jar I Jar J Jar K	
	40		31.7 to 37.0 CLAY - -		Jar L	
			31.7 to 32.5 high plasticity, gray and tan mottled, medium stiff, very moist, calcareous			
			32.5 to 37.0 high plasticity, grayish-brown, soft to medium stiff, very moist to saturated Becomes slightly sandy at 35.0		Jar M	T. D. @ 46.0
			37.0 to 45.5 GRAVEL - -			
	50		tan, loose, saturated, clayey, with some shells and small cobbles. Becomes very clayey at 42.0'.			

Hole No. 8A6C-72

DRILLING LOG	DIVISION Southwestern	INSTALLATION Fort Worth District	SHEET 1 OF 1 SHEETS
1. PROJECT Aubrey D. S.		10. SIZE AND TYPE OF BIT 8" auger; 6" core	
2. LOCATION (Coordinates or Station) *		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL	
3. DRILLING AGENCY Corps of Engineers		12. MANUFACTURER'S DESIGNATION OF DRILL Failing 1500	
4. HOLE NO. (As shown on drawing title and file number)	8A6C-72	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 8 UNDISTURBED 0
5. NAME OF DRILLER Newhouse		14. TOTAL NUMBER CORE BOXES 1	
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.		15. ELEVATION GROUND WATER **	
		16. DATE HOLE	STARTED 17 Aug 73 COMPLETED 21 Aug 73
7. THICKNESS OF OVERBURDEN	21.0	17. ELEVATION TOP OF HOLE 570.4	
8. DEPTH DRILLED INTO ROCK	7.0	18. TOTAL CORE RECOVERY FOR BORING 60%	%
9. TOTAL DEPTH OF HOLE	28.0	19. SIGNATURE OF INSPECTOR Joseph A. [illegible]	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			0.0 to 4.0 CLAY - - medium plasticity, brown, very stiff, slightly moist, slightly sandy		Jar A	***Location** Hole offset 16.0' S40°W from staked location of X- 2,138,510 and Y- 614,460
			4.0 to 20.0 SAND - -		Jar B	****Water table** 4" slotted plastic pipe installed to 18.5 after hole bailed to 23.0. Readings reported on supplimental sheet.
	10		4.0 to 11.0 tan, medium dense, moist, fine, clayey; becomes silty at 10.0		Jar C	
			11.0 to 12.5 tan, medium dense, moist, silty, with small ironstone nodules		Jar D	**Drilling** 0.0 to 24.0 8" auger 24.0 to 28.0 6" core
			12.5 to 15.0 tan and gray, loose, saturated, with ironstone		Jar E Jar F	**Jar samples** A. 0.0 to 4.0 B. 4.0 to 10.0 C. 10.0 to 11.0 D. 11.0 to 12.5 E. 12.5 to 15.0 F. 15.0 to 17.0 G. 17.0 to 20.0 H. 20.0 to 21.0
			15.0 to 17.0 gray, loose, saturated, silty		Jar G	
	20		17.0 to 20.0 tan, loose, saturated, silty		Jar H	
			20.0 to 21.0 GRAVEL - - tan, loose, saturated, sandy, with cobbles up to 4" diameter		No Jar. class.	**Carton sample** 1. 26.7 to 27.6
			21.0 to 21.2 SILTSTONE - - light gray, hard (rock classification), massive	L 1.2	Box 1	**Note** Overburden is non-calcareous. ~~Hole~~ elevation is 571.1'. 8" casing to 24.0'
	30		21.2 to 28.0 SHALE - - light gray, non-weathered, moderately hard (rock classification), laminated, non-jointed			
			T. D. @ 28.0			

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT Aubrey D. S.

HOLE NO. 8A6C-72

Hole No 8A6C-72

ISION Southwestern	INSTALLATION Fort Worth District
	SHEET 1 OF 1 SHEETS
	10. SIZE AND TYPE OF BIT 8" auger; 6" core
	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
	12. MANUFACTURER'S DESIGNATION OF DRILL Failing 1500
8A6C-72	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: DISTURBED 8; UNDISTURBED 0
	14. TOTAL NUMBER CORE BOXES 1
	15. ELEVATION GROUND WATER **
DEG. FROM VERT.	16. DATE HOLE: STARTED 17 Aug 73; COMPLETED 21 Aug 73
21.0	17. ELEVATION TOP OF HOLE 570.4
7.0	18. TOTAL CORE RECOVERY FOR BORING 60%
28.0	19. SIGNATURE OF INSPECTOR Joseph A. Olunkte

CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
0.0 to 4.0 CLAY - - medium plasticity, brown, very stiff, slightly moist, slightly sandy		Jar A Jar B	*Location Hole offset 16.0' 340° W from staked location of X- 2,138,510 and Y- 614,460 **Water table 4" slotted plastic pipe installed to 18.5 after hole bailed to 23.0. Readings reported on supplimental sheet.
4.0 to 20.0 SAND - - 4.0 to 11.0 tan, medium dense, moist, fine, clayey; becomes silty at 10.0 11.0 to 12.5 tan, medium dense, moist, silty, with small ironstone nodules 12.5 to 15.0 tan and gray, loose, saturated, with ironstone 15.0 to 17.0 gray, loose, saturated, silty 17.0 to 20.0 tan, loose, saturated, silty		Jar C Jar D Jar E Jar F Jar G Jar H	Drilling 0.0 to 24.0 8" auger 24.0 to 28.0 6" core Jar samples A. 0.0 to 4.0 B. 4.0 to 10.0 C. 10.0 to 11.0 D. 11.0 to 12.5 E. 12.5 to 15.0 F. 15.0 to 17.0 G. 17.0 to 20.0 H. 20.0 to 21.0
20.0 to 21.0 GRAVEL - - tan, loose, saturated, sandy, with cobbles up to 4" diameter		No Jar. cla[illegible]	Carton sample 1. 26.7 to 27.6
21.0 to 21.2 SILTSTONE - - light gray, hard (rock classification), massive	L 1.2	Box 1	Note Overburden is non-calcareous. ~~Hw~~ elevation is 571.1'. 8" casing to 24.0'
21.2 to 28.0 SHALE - - light gray, non-weathered, moderately hard (rock classification), laminated, non-jointed T. D. @ 28.0			

EDITIONS ARE OBSOLETE.

PROJECT Aubrey D. S.

HOLE NO. 8A6C-72

Hole No 8A6C-73

DRILLING LOG	DIVISION Southwestern
INSTALLATION Fort Worth District	SHEET 1 OF 1 SHEETS
1. PROJECT Aubrey D. S.	10. SIZE AND TYPE OF BIT 8" auger; 6" core
2. LOCATION (Coordinates or Station) X- 2,138,830 Y- 614,570	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY Corps of Engineers	12. MANUFACTURER'S DESIGNATION OF DRILL Failing 1500
4. HOLE NO. (As shown on drawing title and file number) 8A6C-73	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: DISTURBED 4; UNDISTURBED 0
5. NAME OF DRILLER Mulling	14. TOTAL NUMBER CORE BOXES 1
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER *
	16. DATE HOLE: STARTED 17 Aug 73; COMPLETED 17 Aug 73
7. THICKNESS OF OVERBURDEN 10.5	17. ELEVATION TOP OF HOLE 560.4'
8. DEPTH DRILLED INTO ROCK 8.5	18. TOTAL CORE RECOVERY FOR BORING 100%
9. TOTAL DEPTH OF HOLE 19.0	19. SIGNATURE OF INSPECTOR Joseph A. Olunkte

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			0.0 to 10.5 CLAY - - 0.0 to 4.0 medium to high plasticity, dark brown, stiff, dry to slightly moist, non-calcareous		Jar A Jar B	Drilling 0.0 to 14.0 8" auger 14.0 to 19.0 6" core no casing
			4.0 to 6.0 medium plasticity, light brown, very stiff, moist, slightly sandy, calcareous		Jar C Jar D	Jar samples A. 0.0 [illegible] B. 4.[illegible] [illegible].0 C. 6.0 to 7.5 D. 7.5 to 10.5 E. 10.5 to 13.0 F. 13.0 to 14.0
	10		6.0 to 7.5 low plasticity, tan, stiff, moist, sandy, calcareous		Jar E	Carton sample 1. 18.1 to 19.0
			7.5 to 10.5 low plasticity, tan and gray, very stiff, moist, sandy, non-calcareous, becomes slightly gravelly 10.0 to 10.5	14.0 L 0.0	Jar F Box 1	*Water table 4" slotted plastic pipe set to 19.0 after hole bailed to 17.2'. Water table information reported on supplimental sheet.
		C	10.5 to 19.0 SHALE *- moderately weathered, dark gray to tan, moist, soft (rock classification), non-jointed, with clayey sand, tan, from 13.0 to 14.0	19.0	19.0	
	20		T. D. @ 19.0			

*Carton Sample Shows A mottled gray & tan Clay w/ small pockets of siltstone. No shale structure noted.

WKS 9/27/74

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT Aubrey D. S.

HOLE NO. 8A6C-73

RECORD DRAWING-WORK AS BUILT

SYM	DO NO	ACTION	DATE	DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

DESIGNED BY
DRAWN BY
REVIEWED BY

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS
EMBANKMENT, SPILLWAY AND OUTLET WORKS
LOGS OF BORINGS
8A-70, 8A-71, 8A6C-72, AND 8A6C-73

SUBMITTED BY

CH, ENGR

INVITATION NO. DACW63-82-B-0025 DATE MAR, 1982

CONTRACT NO. DACW63-82-C-0083

DRAWING NUMBER

SHEET NO OF

SEQUENCE NO 28

CONTRACT NO DACW63-82-C-0083

TO ACCOMPANY FOUNDATION REPORT

Hole No. 8160-74

DRILLING LOG	DIVISION Southwestern	INSTALLATION Fort Worth District	SHEET 1 OF 1 SHEETS

1. PROJECT Aubrey D. S.	10. SIZE AND TYPE OF BIT 8" auger; 6" core
2. LOCATION (Coordinates or Station)	11. DATUM FOR ELEVATION SHOWN (TBM or MSL)
3. DRILLING AGENCY Corps of Engineers	12. MANUFACTURER'S DESIGNATION OF DRILL Failing 1500
4. HOLE NO. (As shown on drawing title and file number) 8160-74	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: DISTURBED 0, UNDISTURBED 0
5. NAME OF DRILLER Newhouse	14. TOTAL NUMBER CORE BOXES 1
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.	15. ELEVATION GROUND WATER
	16. DATE HOLE: STARTED 21 Aug 73, COMPLETED 22 Aug 73
	17. ELEVATION TOP OF HOLE
7. THICKNESS OF OVERBURDEN 3.5	18. TOTAL CORE RECOVERY FOR BORING 75%
8. DEPTH DRILLED INTO ROCK 5.6	19. SIGNATURE OF INSPECTOR Joseph A.
9. TOTAL DEPTH OF HOLE 9.1	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			0.0 to 3.5			**Drilling**
			CLAY - -			0.0 to 3.5 8" auger 3.5 to 9.1 6" core (short barrel) 0.0 to 3.5 8" casing
			0.0 to 2.5 medium plasticity, dark brown, stiff to very stiff, slightly moist	LO.T	Box 1	**Carton sample** 1. 5.4 to 6.0
			2.5 to 3.5 low plasticity, brown, stiff, moist, slightly sandy; gravelly from 3.3 to 3.5	LO.5		**Note**
	10		3.5 to 7.9			Water measurements not taken. Overburden non-calcareous.
			LIMESTONE - -			
			hard (rock classification), well cemented, light gray, massive			
			7.9 to 9.1			
			SHALE - -			
			gray and tan, moderately hard, non-jointed, non-calcareous			
			T. D. @ 9.1			

Hole No. 8A-75

DRILLING LOG	DIVISION Southwestern	INSTALLATION Fort Worth District	SHEET 1 OF 1 SHEETS

1. PROJECT Aubrey D. S.	10. SIZE AND TYPE OF BIT 8" auger
2. LOCATION (Coordinates or Station)	11. DATUM FOR ELEVATION SHOWN (TBM or MSL)
3. DRILLING AGENCY Corps of Engineers	12. MANUFACTURER'S DESIGNATION OF DRILL Failing 1500
4. HOLE NO. (As shown on drawing title and file number) 8A-~~74~~ 75	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: DISTURBED 0, UNDISTURBED 0
5. NAME OF DRILLER Newhouse	14. TOTAL NUMBER CORE BOXES
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.	15. ELEVATION GROUND WATER
	16. DATE HOLE: STARTED 22 Aug 73, COMPLETED 22 Aug 73
	17. ELEVATION TOP OF HOLE
7. THICKNESS OF OVERBURDEN 5.5	18. TOTAL CORE RECOVERY FOR BORING %
8. DEPTH DRILLED INTO ROCK 0	19. SIGNATURE OF INSPECTOR Joseph A.
9. TOTAL DEPTH OF HOLE 5.5	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			0.0 to 5.5			**Drilling**
			CLAY - -			0.0 to 5.5 8" auger
			0.0 to 4.0 medium plasticity, dark brown, stiff to very stiff, slightly moist			**Note**
			4.0 to 5.5 becomes light brown, moist			Water measurements not taken. Overburden non-calcareous. Auger refusal at 5.5'.
	10		5.5			
			LIMESTONE - -			
			hard (rock classification), well cemented, light gray, massive			
			T. D. @ 5.5			

DRILLING LOG	DIVISION SWD	INSTALLAT

1. PROJECT AUBREY DAM	10. SIZE A
2. LOCATION (Coordinates or Station) TUNNEL OUTLET WORKS	11. DATUM
3. DRILLING AGENCY USCE	12. MANUFA
4. HOLE NO. (As shown on drawing title and file number) B16C-78	13. TOTAL N BURDEN
5. NAME OF DRILLER Newhouse	14. TOTAL N
	15. ELEVATI
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.	16. DATE HO
	17. ELEVATI
7. THICKNESS OF OVERBURDEN 12.0'	18. TOTAL C
8. DEPTH DRILLED INTO ROCK 80.8'	19. SIGNATUR
9. TOTAL DEPTH OF HOLE 92.8'	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% C REC
	0		0.0'-to 39.5'	
			NO SAMPLES TAKEN	
	10			
	20			
	30			
	40			

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT) PROJECT

Hole No. 8A6C-78

DRILLING LOG

DIVISION: SWD

INSTALLATION: Ft North Dist

SHEET 1 OF 3 SHEETS

1. PROJECT: AUBREY DAM
2. LOCATION (Coordinates or Station): TUNNEL OUTLET WORKS
3. DRILLING AGENCY: USCE
4. HOLE NO. (As shown on drawing title and file number): 8A6C-78
5. NAME OF DRILLER: Newhouse
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 12.0'
8. DEPTH DRILLED INTO ROCK: 80.8'
9. TOTAL DEPTH OF HOLE: 92.8'
10. SIZE AND TYPE OF BIT: See notes
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 0 UNDISTURBED 9
14. TOTAL NUMBER CORE BOXES: 10
15. ELEVATION GROUND WATER: See notes
16. DATE HOLE: STARTED 11Feb76 COMPLETED 13Feb76
17. ELEVATION TOP OF HOLE
18. TOTAL CORE RECOVERY FOR BORING %
19. SIGNATURE OF INSPECTOR: Alan J. Mun

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0		0.0'-to 39.5' NO SAMPLES TAKEN			
	10					
	20					
	30					
	40				Box 1	

REMARKS:

1. Hole was bailed to 92' upon completion. After one hour, water level had risen to 82'.

2. Drilling:

   8" auger- 0 - 12.0'
   rock-bit- 12 - 39.5'
   6" core-barrel - 39.5' - 92.8' TD

3. Cartons:
   1. 43.8' to 44.8'
   2. 48.5' to 49.5'
   3. 54.0' to 55.0'
   4. 60.4' to 61.4'
   5. 66.4' to 67.3'
   6. 73.0' to 74.0'
   7. 80.0' to 81.0'
   8. 85.3' to 86.3'
   9. 91.0' to 91.8'

4. Core boxes:
   1. 39.5' to 45.1'
   2. 45.1' to 50.5'
   3. 50.5' to 56.2'
   4. 56.2' to 62.0'
   5. 62.0' to 67.3'
   6. 67.3' to 71.9'
   7. 71.9' to 77.0'
   8. 77.0' to 82.6'
   9. 82.6' to 88.2'
   10. 88.2' to 92.8'

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT: AUBREY DAM

HOLE NO.: 8A6C-78

Hole No. 8A6C-78

DRILLING LOG

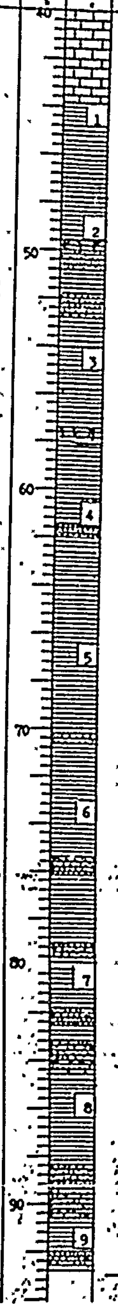
DIVISION: SWD

INSTALLATION: Ft North Dist

SHEET 2 OF 3 SHEETS

1. PROJECT: AUBREY DAM
2. LOCATION (Coordinates or Station): TUNNEL OUTLET WORKS
3. DRILLING AGENCY: USCE
4. HOLE NO. (As shown on drawing title and file number): 8A6C- 78
5. NAME OF DRILLER: Newhouse
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 12.0'
8. DEPTH DRILLED INTO ROCK: 80.8'
9. TOTAL DEPTH OF HOLE: 92.8'
10. SIZE AND TYPE OF BIT: See notes
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 0 UNDISTURBED 9
14. TOTAL NUMBER CORE BOXES: 10
15. ELEVATION GROUND WATER: See notes
16. DATE HOLE: STARTED 11Feb76 COMPLETED 13Feb76
17. ELEVATION TOP OF HOLE
18. TOTAL CORE RECOVERY FOR BORING %
19. SIGNATURE OF INSPECTOR: Alan J. Mun

ELEVATION a | DEPTH b | LEGEND c | CLASSIFICATION OF MATERIALS (Description) d | % CORE RECOVERY e | BOX OR SAMPLE NO. f | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g



39.5' to 43.8'

LIMESTONE - Hard, light gray, argillaceous, becomes shaly at bottom, massive

43.8' to 92.8'

SHALE - Moderately hard, non - calc, laminated, silty, scatt fossil zones gray to dark gray with numerous lt gray sand & sandstone lenses

fossil zones at 49.9' and 57.8'

Fine-grained sand or sandstone zones at:

50.2' - 50.6'
50.9' - 51.9'
61.4' - 62.0'
64.4' - 67.3'
70.1' - 70.4'
75.5' - 76.2'
79.0' - 79.7'
81.9' - 82.4'
83.2' - 84.5'
88.3' - 90.4'
92.0' - 92.6'

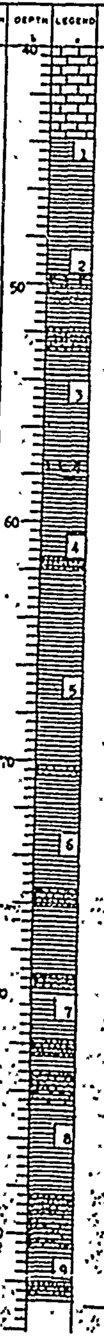
T.D. 92.8'

% CORE RECOVERY e
L 0.2'
L 0.2'
G 0.2'
L 0.2'
G 0.2'
L 0.0'
L.0.5'
G 0.7'
L 0.0'
L 0.2'
L 0.0'
L 0.0'

BOX OR SAMPLE NO. f
Box 1
Box 2
Box 3
Box 4
Box 5
Box 6
Box 7
Box 8
Box 9
Box 10

DRILLING LOG	DIVISION SWD	INSTALLATION Ft Worth Dist	Hole No. 8A6C-78 SHEET 2 OF 3 SHEETS
1. PROJECT AUBREY DAM		10. SIZE AND TYPE OF BIT See notes	
2. LOCATION (Coordinates or Station) TUNNEL OUTLET WORKS		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	
3. DRILLING AGENCY USCE		12. MANUFACTURER'S DESIGNATION OF DRILL Failing 1500	
4. HOLE NO. (As shown on drawing title and file number)	8A6C-78	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN	DISTURBED 0 / UNDISTURBED 9
5. NAME OF DRILLER Newhouse		14. TOTAL NUMBER CORE BOXES 10	
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.		15. ELEVATION GROUND WATER See notes	
		16. DATE HOLE	STARTED 11Feb76 / COMPLETED 13Feb76
7. THICKNESS OF OVERBURDEN	12.0'	17. ELEVATION TOP OF HOLE	
8. DEPTH DRILLED INTO ROCK	80.8'	18. TOTAL CORE RECOVERY FOR BORING	%
9. TOTAL DEPTH OF HOLE	92.8'	19. SIGNATURE OF INSPECTOR Alan J. Mor	

ELEVATION a | DEPTH b | LEGEND c | CLASSIFICATION OF MATERIALS (Description) d | % CORE RECOVERY e | BOX OR SAMPLE NO. f | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g



39.5' to 43.8'

LIMESTONE - Hard, light gray, argillaceous, becomes shaly at bottom, massive

43.8' to 92.8'

SHALE - Moderately hard, non - calc, laminated, silty, scatt fossil zones gray to dark gray with numerous lt gray sand & sandstone lenses

fossil zones at 49.9' and 57.8'

Fine-grained sand or sandstone zones at:
50.2' - 50.6'
50.9' - 51.9'
61.4' - 62.0'
64.4' - 67.3'
70.1' - 70.4'
75.5' - 76.2'
79.0' - 79.7'
81.9' - 82.4'
83.2' - 84.5'
88.3' - 90.4'
92.0' - 92.6'

T.D. 92.8'

% CORE RECOVERY	BOX OR SAMPLE NO.
L 0.2'	Box 1
L 0.2'	Box 2
C 0.2'	Box 3
L 0.2'	Box 4
C 0.2'	Box 5
L 0.0'	Box 6
L 0.5'	Box 7
C 0.7'	Box 8
L 0.0'	Box 9
L C.2'	Box 10
L 0.0'	
L 0.0'	

RECORD DRAWING-WORK AS BUILT

SYM	DC	NO	ACTION	DATE	DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

DESIGNED BY
DRAWN BY
REVIEWED BY

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS
EMBANKMENT, SPILLWAY AND
OUTLET WORKS
LOGS OF BORINGS
8A6C-74, 8A-75, AND 8A6C-78

SUBMITTED BY
ENGINEER

INVITATION NO. DACW63-82-B-0025 | DATE MAR. 1982
CONTRACT NO. DACW63-82-C-0083
DRAWING NUMBER
SHEET NO. OF
SEQUENCE NO. 29

CONTRACT NO DACW63-82-C-0083

TO ACCOMPANY FOUNDATION REPORT

Hole No. 8A6C-84

DRILLING LOG

DIVISION	Southwestern
INSTALLATION	Fort Worth District
SHEET 1	OF 3 SHEETS
1. PROJECT	Aubrey Lake
2. LOCATION (Coordinates or Station)	Left abutment
3. DRILLING AGENCY	Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number)	8A6C-84
5. NAME OF DRILLER	Walling
6. DIRECTION OF HOLE	☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	4.0'
8. DEPTH DRILLED INTO ROCK	82.0'
9. TOTAL DEPTH OF HOLE	86.0'
10. SIZE AND TYPE OF BIT	8" auger; 6" core
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	
12. MANUFACTURER'S DESIGNATION OF DRILL	Failing 1500
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN	DISTURBED 1 UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES	15
15. ELEVATION GROUND WATER	*
16. DATE HOLE	STARTED 7 Jan 75 COMPLETED 16 Jan 75
17. ELEVATION TOP OF HOLE	~~6[illegible]05'~~ 621.3
18. TOTAL CORE RECOVERY FOR BORING	99%
19. SIGNATURE OF INSPECTOR	

ELEVATION a | DEPTH b | LEGEND c | CLASSIFICATION OF MATERIALS (Description) d | % CORE RECOVERY e | BOX OR SAMPLE NO. f | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g

Depth: 10, 20, 30, 40

Legend: 1, 2, 3

0.0' to 4.0'

SAND - -

brown, loose, very moist, medium-grained, non-calcareous

4.0' to 33.5'

SAND (primary) - -

red, massive, weathered, fine-grained, with some small ironstone concretions and zones slightly clayey

4.0' to 16.3' non-cemented

16.3' to 24.5' poorly cemented

24.5' to 27.3' non-cemented

27.3' to 29.0' poorly cemented

29.0' to 33.5' non-cemented, slightly clayey, becoming very clayey at base

33.5' to ~~43.8'~~ 45.3

SHALE - -

light gray, moderately weathered, massive, non-calcareous, easy to drill, 4.25' to 4.50' on hand penetrometer down to 35.0' and >4.5 below 35.0'; sandy to very sandy with

% core recovery: 9.0 | L 0u | 13.0 | L 00 | 17.0 | L 00 | 21.0 | L 03 | 25.0 | L 00 | 29.0 | L 0.0 | 33.0 | L 00 | 37.0 | L 0.0

Box or sample no.: Jar A | 9.0 | Box 1 | 14.0 | 2 | 19.0 | 3 | 24.7 | 4 | 27.7 | 5 | 34.6 | 6 | 40.0

Drilling

0.0' to 9.0' 8" auger
9.0' to 86.0' 6" core
0.0' to 17.0' 8" casing

Jar sample

A. 0.0' to 4.0'

Carton samples

1. 16.3' to 17.0'
2. 20.1' to 21.0'
3. 36.1' to 37.0'
4. 42.0' to 43.0'
5. 51.7' to 52.6'
6. 56.4' to 57.3'
7. 61.6' to 62.6'
8. 65.4' to 66.3'
9. 68.1' to 69.0'
10. 69.0' to 69.9'
11. 72.7' to 73.6'
12. 76.9' to 77.8'
13. 79.9' to 80.9'
14. 81.8' to 82.6'
15. 85.1' to 86.0'

Note

Depth of weathering at 55.0'. Hole was NOT electric logged.

*Water level

Four inch slotted plastic pipe was set to 49.

Hole No.

DRILLING LOG

DIVISION	SWD
INSTALLATION	FWD
1. PROJECT	Aubrey Lake
2. LOCATION (Coordinates or Station)	
3. DRILLING AGENCY	
4. HOLE NO. (As shown on drawing title and file number)	8A6C-84
5. NAME OF DRILLER	
6. DIRECTION OF HOLE	☐ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	
8. DEPTH DRILLED INTO ROCK	
9. TOTAL DEPTH OF HOLE	
10. SIZE AND TYPE OF BIT	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	
12. MANUFACTURER'S DESIGNATION OF DRILL	
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN	DISTURBED
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED
17. ELEVATION TOP OF HOLE	
18. TOTAL CORE RECOVERY FOR BORING	
19. SIGNATURE OF INSPECTOR	

ELEVATION a | DEPTH b | LEGEND c | CLASSIFICATION OF MATERIALS (Description) d | % CORE RECOVERY e | BOX OR SAMPLE NO. f | REMARKS (Drilling time, water loss, depth of weathering, etc.

Depth: 50, 60, 70, 80, 90, 100

Legend: 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15

occasional pockets of tan sand; with numerous short, irregular, tight, iron-stained yellow-brown joints, some of which open upon handling

32.5' to 34.8' black, iron stained, high angle, tight joint

44.4' to 46.8' badly jointed and very sandy; completely broken up with handling

48.0' to 48.3' ironstone, red, soft

48.3' to 65.4'

SHALE - -

48.3' to 55.0' tan and light gray, slightly weathered, massive, calcareous

55.0' to 65.4' light gray to gray, non-weathered, thin-bedded, very calcareous; slightly fossiliferous in lower 0.1'

65.4' to 79.2'

LIMESTONE - -

65.4' to 72.7' gradational with above unit, light gray, argillaceous, with numerous lenses of gray shale; moderately well cemented

72.7' to 78.6' well cemented with occasional lenses of shale, light gray

78.6' to 79.2' transitional with unit below

79.2' to

SHALE - -

dark gray, non-calcareous, thin-bedded, non-fractured, non-jointed, with numerous thin sandy lenses and lenses of fine, poorly cemented, thin-bedded to cross-bedded sandstone; contains scattered ~~shells which tend to be con-~~ centrated along bedding planes

sandstone at 80.7' to 81.0'; 81.7' to 82.0'; 82.3' to 82.6'; 85.7' to 86.0'

siltstone, brownish-gray, well cemented at 79.6'; 85.2'

% core recovery: 41.0 | L 06 | 45.0 | L 00 | 49.0 | G 02 | 53.0 | L 0.2 | 57.0 | L 02 | 61.0 | L 0.1 | 65.3 | L 1.1 | 68.3 | G 0.7 | 70.3 | G 0.6 | 74.3 | G 0.3 | 78.6 | L 01 | 83.3 | G 05

Box or sample no.: 7 | 45.4 | 8 | 49.4 | 9 | 54.9 | 10 | 60.2 | 11 | 66.3 | 12 | 73.6 | 13 | 14 | 84.0 | 15 | 86.0

T. D. in shal

Hole No. 8A6C-84

INSTALLATION FWD

SHEET 2 OF 3 SHEETS

6C-84

ies from vert

10 SIZE AND TYPE OF BIT

11 DATUM FOR ELEVATION SHOWN (TBM or MSL)

12 MANUFACTURER'S DESIGNATION OF DRILL

13 TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN | DISTURBED | UNDISTURBED

14 TOTAL NUMBER CORE BOXES

15 ELEVATION GROUND WATER

16 DATE HOLE | STARTED | COMPLETED

17 ELEVATION TOP OF HOLE

18 TOTAL CORE RECOVERY FOR BORING

19 SIGNATURE OF INSPECTOR

tion of materials (Description) d	% core recovery e	box or sample no. f	Remarks (Drilling time, water loss, depth of weathering, etc., if significant) g
l pockets of tan h numerous short, , tight, iron-stained own joints, some open upon handling	41.0 L 0.6 45.0	7 45.4	
34.8' black, iron high angle, tight	L 0.0	8	
46.8' badly jointed sandy; completely with handling	49.0	49.4	
48.3' ironstone,	G 0.2	9	
.4'	53.0		
55.0' tan and y, slightly weathered, calcareous	L 0.2 57.0	54.9 10	
65.4' light gray to -weathered, thin- ery calcareous; fossiliferous in	L 0 2	60.2	
.2'	61.0 L 0.1	11	
72.7' gradational e unit, light gray, ous, with numerous gray shale; nod- ell cemented	64.3 L 1.1	66.3	
	68.3 G 0.7 70.3	12	
78.6' well cemented sional lenses of ght gray	G 0.6 74.3	73.6	
79.2' transitional below	G 0.3 78.6	13	
	L 0.1 83.3	14 84.0	
y, non-calcareous, ded, non-fractured, ted, with numerous ases and lenses of orly cemented, thin- o cross-bedded sand- ontains scattered hich tend to be con- d along bedding	G 0.5 thin	15 86.0	T. D. in shale at 86.0'
e at 80.7' to 81.0'; 82.0'; 82.3' to 82.6'; 86.0'			
, brownish-gray, ented at 79.6';			

Hole No. 8A6C-85

DRILLING LOG | DIVISION So thwestern | INSTALLATION Fort Worth Dist | SHEET 1 OF 2 SHEETS

1 PROJECT Aubrey Lake

2 LOCATION (Coordinates or Station)

3 DRILLING AGENCY Corps of Engineers

4 HOLE NO. (As shown on drawing title and file number) 8A6C-85

5 NAME OF DRILLER Mullins

6 DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.

7 THICKNESS OF OVERBURDEN 3.5'

8 DEPTH DRILLED INTO ROCK 63.5'

9 TOTAL DEPTH OF HOLE 67.0'

10 SIZE AND TYPE OF BIT 8" auger; 6" core

11 DATUM FOR ELEVATION SHOWN (TBM or MSL)

12 MANUFACTURER'S DESIGNATION OF DRILL Failing 1500

13 TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN | DISTURBED 1 | UNDISTURBED 0

14 TOTAL NUMBER CORE BOXES 12

15 ELEVATION GROUND WATER *

16 DATE HOLE | STARTED 3 Dec 74 | COMPLETED 6 Dec 74

17 ELEVATION TOP OF HOLE ~~600-24'~~ 542.5

18 TOTAL CORE RECOVERY FOR BORING 100%

19 SIGNATURE OF INSPECTOR

Elevation a	Depth b	Legend c	Classification of materials (Description) d	% core recovery e	Box or sample no. f	Remarks (Drilling time, water loss, depth of weathering, etc., if significant) g
			0.0' to 3.5' SAND - - tan, loose, moist, fine to medium, silty, non-calcareous		Jar A B 7.0	**Drilling** 0.0' to 7.0' 8" auger 7.0' to 67.0' 6" core 0.0' to 6.0' 8" casing
		C1	3.5' to 25.6' SAND (primary) - - 3.5' to 6.0' brown, non-cemented, non-calcareous, fine to medium, slightly clayey, very moist, with numerous ironstone concretions (to 6"), easy to auger	L00 10.0	Box 1 11.6	**Jar samples** A. 0.0' to 3.5' B. 3.5' to 6.0'
	10	2	6.0' to 8.6' reddish-brown, poorly cemented, with concretions, very difficult to auger	L 00 14.0	2	**Carton samples** 1. 7.0' to 7.9' 2. 12.3' to 13.2' 3. 16.0' to 16.8' 4. 18.0' to 18.9' 5. 27.7' to 28.6' 6. 32.1' to 33.0' 7. 34.7' to 35.6' 8. 41.4' to 42.3' 9. 48.1' to 49.0' 10. 54.0' to 54.9' 11. 58.3' to 59.2' 12. 65.6' to 66.5'
		3 4	8.6' to 14.2' reddish-brown, non-cemented, massive, very moist, non-calcareous, with scattered small ironstone concretions, carbonaceous inclusions, and decayed roots	L 00 18.0	17.7	
	20		14.2' to 25.6' becomes light gray with reddish-brown and yellowish-brown, clayey, with some carbonaceous matter and occasional thin veins of selenite	L 0.3 22.0	3 23.1	**Note** Depth of weathering at 33.7'.
			18.0' to 19.8' CLAY, predominately gray, sandy, with pockets of yellowish-brown clayey sand	G 03 26.0	4	***Water level** Hole was not bailed but left open for water level checks.
		5	19.8' to 25.6' borderline clay, gray, massive with lenses of clayey sand and sandy clay	L 0.4 27.0	28.6	
	30	6	25.6' to 45.0' SHALE - -	G 0.4 33.0	5 34.3	
		7	25.6' to 26.7' dark purple, sandy, massive, with ironstone nodules	L 00 37.0	6	
	40		26.7' to 28.6' light gray and gray, slightly weathered, approximately 4.0 on hand	L1.0	39.6	

Elevation a	Depth b	Legend c	Classif
		8	penetr non-c. and no
			28.6' calcar penetr
		9	33.7' gray, cement planes app re
	50		34.0
			42.8 tere
			45.0' to
		10	LIMES.O.
			45.0' with a laccou and p modera with n 50.8'
	60	11	51.3' gray, numero and l
		12	57.6' to
			SHALE -
	70		dark fractu carcou to 59. from 5 pocket are a
			56.'
			60.5' bedde
			60.9'
			61.6'
			62.1'

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS A

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SYM

DESIGNED

DRAWN BY

REVIEWED

SUBM

ENGINE

Hole No 8A6C-85

DIVISION So.thwestern	INSTALLATION Fort Worth Dis
	SHEET 1 OF 2 SHEETS
ke	10 SIZE AND TYPE OF BIT 8" auger; 6" core
	11 DATUM FOR ELEVATION SHOWN (TBM or MSL)
ncy Engineers	12 MANUFACTURER'S DESIGNATION OF DRILL Failing 1500
8A6C-85	13 TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 1; UNDISTURBED 0
	14 TOTAL NUMBER CORE BOXES 12
	15 ELEVATION GROUND WATER
HOLE ☐ INCLINED ____ DEG. FROM VERT.	16. DATE HOLE: STARTED 3 Dec 74; COMPLETED 6 Dec 74
OVERBURDEN 3.5'	17 ELEVATION TOP OF HOLE ~~600.3±~~ 599.5
O INTO ROCK 63.5'	18 TOTAL CORE RECOVERY FOR BORING 100%
OF HOLE 67.0'	19 SIGNATURE OF INSPECTOR

CLASSIFICATION OF MATERIALS (Description)

0.0' to 3.5'

SAND - -

tan, loose, moist, fine to medium, silty, non-calcareous

3.5' to 25.6'

SAND (primary) - -

3.5' to 6.0' brown, non-cemented, non-calcareous, fine to medium, slightly clayey, very moist, with numerous ironstone concretions (to 6"), easy to auger

6.0' to 8.6' reddish-brown, poorly cemented, with concretions, very difficult to auger

8.6' to 14.2' reddish-brown, non-cemented, massive, very moist, non-calcareous, with scattered small ironstone concretions, carbonaceous inclusions, and decayed roots

14.2' to 25.6' becomes light gray with reddish-brown and yellowish-brown, clayey, with some carbonaceous matter and occasional thin veins of selenite

18.0' to 19.8' CLAY, predominately gray, sandy, with pockets of yellowish-brown clayey sand

19.8' to 25.6' borderline clay, gray, massive with lenses of clayey sand and sandy clay

25.6' to 45.0'

SHALE - -

25.6' to 26.7' dark purple, sandy, massive, with ironstone nodules

26.7' to 28.6' light gray and gray, slightly weathered, approximately 4.0 on hand

% CORE RECOVERY / BOX OR SAMPLE NO

Jar A
B
7.0
100 Box 1
10.0
L 00
11.6
2
14.0
L 00
17.7
18.0
L 03
3
22.0
23.1
G 03
4
26.0
L 0.4
28.6
29.0
G 0.4
5
33.0
L 00
34.3
6
37.0
L 1.0
39.6

REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)

Drilling

0.0' to 7.0' 8" auger
7.0' to 67.0' 6" core
0.0' to 6.0' 8" casing

Jar samples

A. 0.0' to 3.5'
B. 3.5' to 6.0'

Carton samples

1. 7.0' to 7.9'
2. 12.3' to 13.2'
3. 16.0' to 16.8'
4. 18.0' to 18.9'
5. 27.7' to 28.6'
6. 32.1' to 33.0'
7. 34.7' to 35.6'
8. 41.4' to 42.3'
9. 48.1' to 49.0'
10. 54.0' to 54.9'
11. 58.3' to 59.2'
12. 65.6' to 66.5'

Note

Depth of weathering at 33.7'.

Water level

Hole was not bailed but left open for water level checks.

ELEVATION | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS (Description) | % CORE RECOVERY | BOX OR SAMPLE NO | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)

penetrometer, thin-bedded, non-calcareous, non-fractured, and non-jointed

28.6' to 33.7' becomes calcareous, >4.5 on hand penetrometer

33.7' to 45.0' non-weathered, gray, very calcareous, slightly cemented, breaks along bedding planes, but bedding is not apparent

34.0' to 34.2' rust-stained

42.8' to 45.0' with scattered fossils

45.0' to 57.6'

LIMESTONE - -

45.0' to 51.3' transitional with above unit, very argillaceous, with numerous lenses and partings of shale, gray, moderately well cemented, with numerous fossils from 50.8' to 51.2'

51.3' to 57.6' becomes light gray, well cemented, with numerous lenses of gray, argillaceous limestone

57.6' to 60.5'

SHALE - -

dark gray, thin-bedded, non-fractured, non-jointed, calcareous on bedding planes to 59.0', non-calcareous from 59.0' to TD, scattered pockets of fossils, thin layers are sandy

58.3' to 59.0' SILTSTONE

60.5' to 60.9' SAND, thin-bedded, very fine

60.9' to 61.0' SILTSTONE

61.6' fossils on bedding plane

62.1' to 62.2' fossiliferous

Depth: 50, 60, 70

Legend box numbers: 8, 9, 10, 11, 12

% CORE RECOVERY / BOX OR SAMPLE NO

41.0
7
G 10
44.0
L 00
8
49.0
L 17
50.3
53.0
9
G 11
55.4
56.0
L 01
10
59.0
G 03
59.8
63.0
11
L 01
67.0
66.5

T. D. in shale 67.0'

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE (TRANSLUCENT)

PROJECT Aubrey Lake

HOLE NO 8A6C-85

RECORD DRAWING-WORK AS BUILT

SYM	DC NO	ACTION	DATE	DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

DESIGNED BY --------
DRAWN BY --------
REVIEWED BY --------

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS
EMBANKMENT, SPILLWAY AND
OUTLET WORKS
LOGS OF BORINGS
8A6C-84 AND 8A6C-85

SUBMITTED BY
ENGINEER

INVITATION NO. DACW63-82-B-0025
DATE MAR. 1982
CONTRACT NO. DACW63-82-C-00
DRAWING NUMBER
SHEET NO.
SEQUENCE 30

Hole No. 33P-86

DRILLING LOG

DIVISION: Southwestern	INSTALLATION: Fort Worth District
	SHEET 1 OF 4 SHEETS
1. PROJECT: Aubrey Lake	10. SIZE AND TYPE OF BIT: 3 1/8" fishtail
2. LOCATION (Coordinates or Station): Left Abutment*	11. DATUM FOR ELEVATION SHOWN (TBM or MSL):
3. DRILLING AGENCY: Corps of Engineers	12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
4. HOLE NO. (As shown on drawing title and file number): 33P-86	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: DISTURBED 0; UNDISTURBED 0
5. NAME OF DRILLER: Mullins	14. TOTAL NUMBER CORE BOXES: 0
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER: --
	16. DATE HOLE: STARTED 15 Dec 74; COMPLETED 6 Jan 75
	17. ELEVATION TOP OF HOLE *
7. THICKNESS OF OVERBURDEN: 0.0'	18. TOTAL CORE RECOVERY FOR BORING: %
8. DEPTH DRILLED INTO ROCK: 140.0'	19. SIGNATURE OF INSPECTOR: Joseph A. Obricht
9. TOTAL DEPTH OF HOLE: 140.0'	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			0.0' to 68.5' SAND -- red, fine-grained			**Drilling** 0.0' to 140.0' 3 1/8" fishtail **Jar sample** A. 45.0' (from split spoon; may be fall-in)
			8.0' becomes firmer, possibly clayey			**Offset** Due to inaccessibility, hole was offset approximately 50' WSW from elevation 690.26' to elevation 674.8' (as measured by hand level). Packer lost in hole at 95.0', and hole was redrilled 4.5' S at same elevation.
	10					
			14.5' ironstone concretion			**Note** Attempted unsuccessfully to obtain sand samples with shelby tube, split spoon, and NX core barrel. Hole was pressure tested and electric logged. Logging is by drilling action and cuttings.
	20		20.0' to 21.5' fairly hard, poorly cemented			
	30					
	40					
	50					
	60					
			68.5' to 101.3' SHALE -- gray, non-calcareous			
	70					
			73.8' to 74.1' harder			
			77.2' very hard			
	80		79.5' to 81.5' very hard			
			91.5' to 101.0' sandy, cuts very easily			
	90					
	100		101.0' to 101.3' very hard			
			101.3' to 115.0' SHALE -- gray, calcareous, cuts easily to 106.0'			
			108.8' very hard			
	110					
			115.0' to 132.8' LIMESTONE --			
	120		121.0' to 121.2' soft			
			127.0' to 132.0' becomes very hard			
	130					
			132.8' to 140.0' SHALE -- dark gray, non-calcareous			
	140		T. D. in shale @ 140.0'			

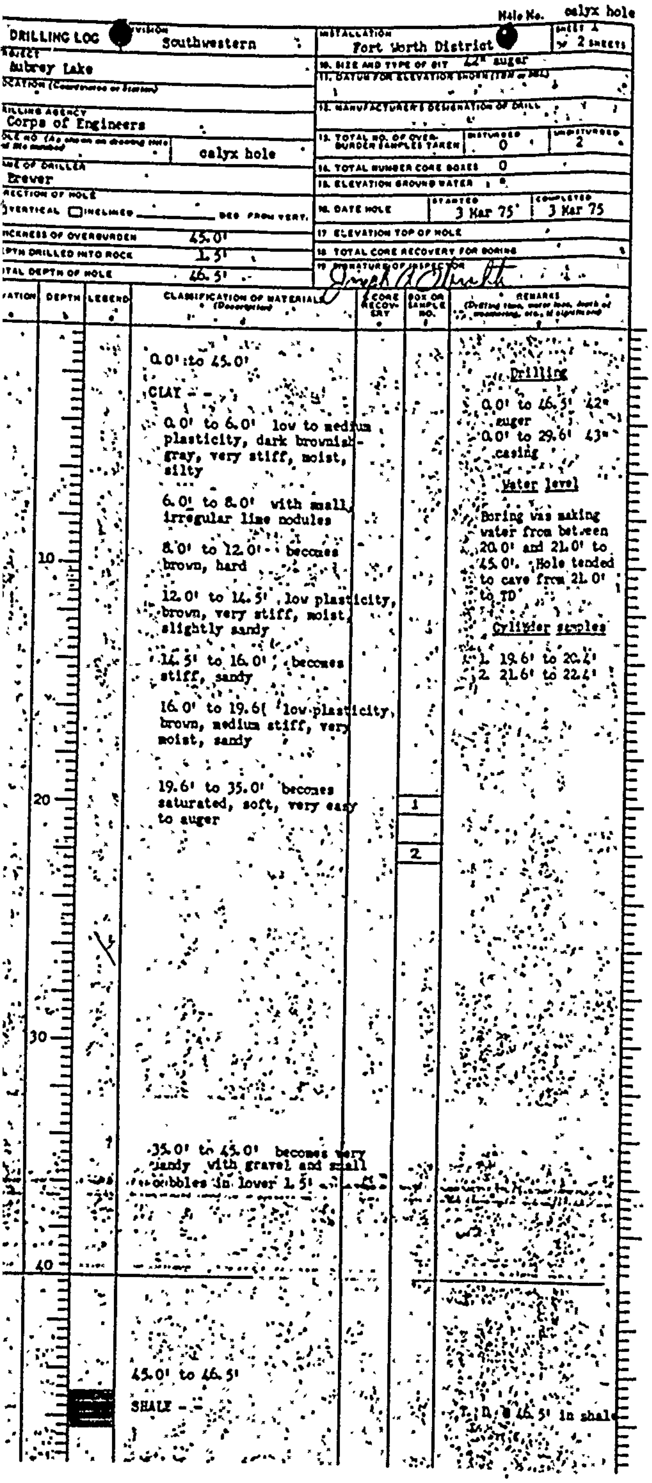
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			68.5' to 101.3' SHALE - - gray, non-calcareous			
	70					
			73.8' to 74.1' harder			
			77.2' very hard			
	80		79.5' to 81.5' very hard			
			91.5' to 101.0' sandy, cuts very easily			
	90					
	100		101.0' to 101.3' very hard			
			101.3' to 115.0' SHALE - - gray, calcareous, cuts easily to 106.0'			
			108.8' very hard			
	110					
			115.0' to 132.8' LIMESTONE - -			
	120		121.0' to 121.2' soft			
			127.0' to 132.8' becomes very hard			
	130					
			132.8' to 140.0' SHALE - - dark gray, non-calcareous			
	140		T. D. in shale @ 140.0'			

Hole No. calyx hole

DRILLING LOG	DIVISION Southwestern	INSTALLATION Fort Worth District	SHEET 1 OF 2 SHEETS

1. PROJECT Aubrey Lake
2. LOCATION (Coordinates or Station)
3. DRILLING AGENCY Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number) calyx hole
5. NAME OF DRILLER Brewer
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN 45.0'
8. DEPTH DRILLED INTO ROCK 1.5'
9. TOTAL DEPTH OF HOLE 46.5'
10. SIZE AND TYPE OF BIT 42" auger
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)
12. MANUFACTURER'S DESIGNATION OF DRILL
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED 0 UNDISTURBED 2
14. TOTAL NUMBER CORE BOXES 0
15. ELEVATION GROUND WATER
16. DATE HOLE STARTED 3 Mar 75 COMPLETED 3 Mar 75
17. ELEVATION TOP OF HOLE
18. TOTAL CORE RECOVERY FOR BORING
19. SIGNATURE OF INSPECTOR Joseph A. Olbrecht

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			0.0' to 45.0' CLAY - - 0.0' to 6.0' low to medium plasticity, dark brownish-gray, very stiff, moist, silty 6.0' to 8.0' with small, irregular lime nodules 8.0' to 12.0' becomes brown, hard			Drilling 0.0' to 46.5' 42" auger 0.0' to 29.6' 43" casing Water level Boring was making water from between 20.0' and 21.0' to 45.0'. Hole tended to cave from 21.0' to TD
	10		12.0' to 14.5' low plasticity, brown, very stiff, moist, slightly sandy 14.5' to 16.0' becomes stiff, sandy 16.0' to 19.6' low plasticity, brown, medium stiff, very moist, sandy			Cylinder samples 1. 19.6' to 20.4' 2. 21.6' to 22.4'
	20		19.6' to 35.0' becomes saturated, soft, very easy to auger		1 2	
	30					
			35.0' to 45.0' becomes very sandy with gravel and small cobbles in lower 1.5'			
	40					
			45.0' to 46.5' SHALE - -			T. D. @ 46.5' in shale



Hole No. calyx hole

DRILLING LOG | DIVISION: Southwestern | INSTALLATION: Fort Worth District | SHEET 1 of 2 SHEETS

PROJECT: Aubrey Lake

LOCATION (Coordinates or Station):

DRILLING AGENCY: Corps of Engineers

HOLE NO. (As shown on drawing title and file number): calyx hole

NAME OF DRILLER: Brewer

DIRECTION OF HOLE: VERTICAL ☐ INCLINED ______ DEG. FROM VERT.

THICKNESS OF OVERBURDEN: 45.0'

DEPTH DRILLED INTO ROCK: 1.5'

TOTAL DEPTH OF HOLE: 46.5'

10. SIZE AND TYPE OF BIT: 42" auger

11. DATUM FOR ELEVATION SHOWN (TBM or MSL):

12. MANUFACTURER'S DESIGNATION OF DRILL:

13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 0 | UNDISTURBED 2

14. TOTAL NUMBER CORE BOXES: 0

15. ELEVATION GROUND WATER:

16. DATE HOLE: STARTED 3 Mar 75 | COMPLETED 3 Mar 75

17. ELEVATION TOP OF HOLE:

18. TOTAL CORE RECOVERY FOR BORING:

19. SIGNATURE OF INSPECTOR: Joseph A. Strukh

ELEVATION a | DEPTH b | LEGEND c | CLASSIFICATION OF MATERIALS (Description) d | % CORE RECOVERY e | BOX OR SAMPLE NO. f | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g

Depth: 10, 20, 30, 40

0.0' to 45.0'

CLAY -

0.0' to 6.0' low to medium plasticity, dark brownish-gray, very stiff, moist, silty

6.0' to 8.0' with small, irregular lime nodules

8.0' to 12.0' becomes brown, hard

12.0' to 14.5' low plasticity, brown, very stiff, moist, slightly sandy

14.5' to 16.0' becomes stiff, sandy

16.0' to 19.6' low plasticity, brown, medium stiff, very moist, sandy

19.6' to 35.0' becomes saturated, soft, very easy to auger

35.0' to 45.0' becomes very sandy with gravel and small cobbles in lower 1.5'

45.0' to 46.5'

SHALE -

Sample no.: 1, 2

Drilling

0.0' to 46.5' 42" auger

0.0' to 29.6' 43" casing

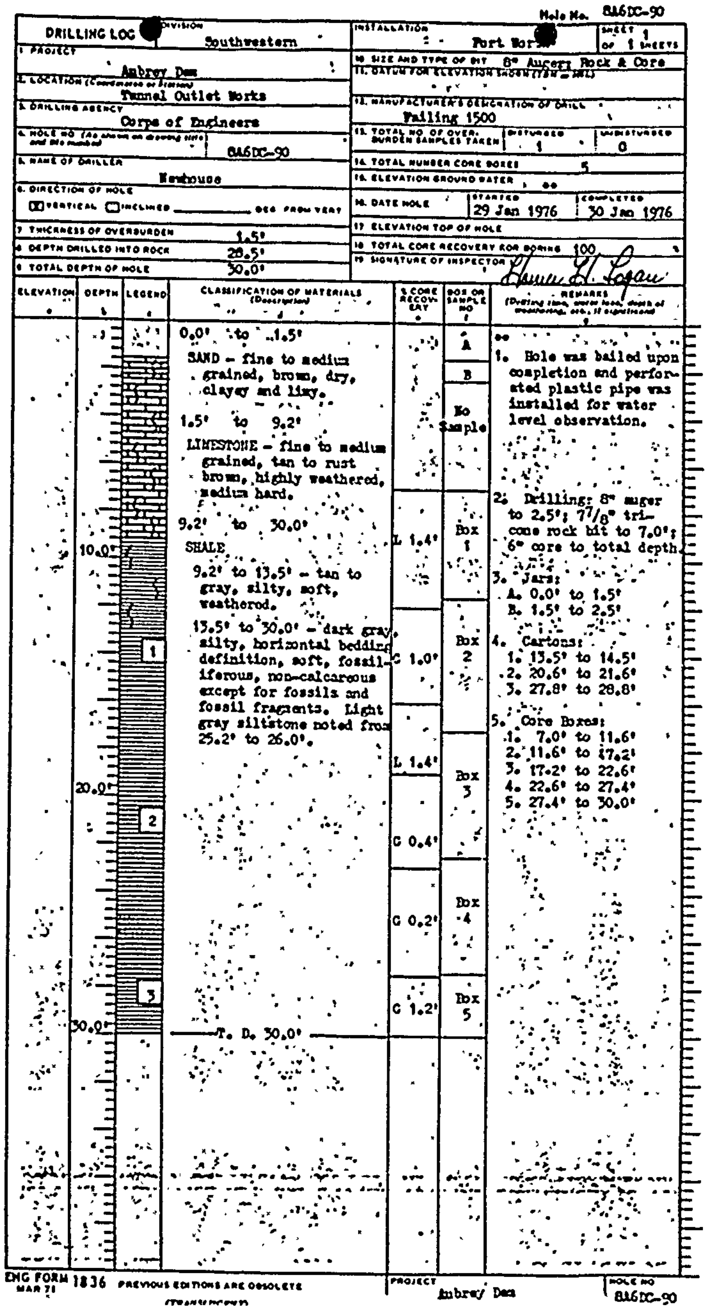
Water level

Boring was making water from between 20.0' and 21.0' to 45.0'. Hole tended to cave from 21.0' to TD

Cylinder samples

1. 19.6' to 20.4'
2. 21.6' to 22.4'

T. D. @ 46.5' in shale



Hole No. 8A6DC-90

DRILLING LOG | DIVISION: Southwestern | INSTALLATION: Fort Worth | SHEET 1 of 1 SHEETS

1. PROJECT: Aubrey Dam

2. LOCATION (Coordinates or Station): Tunnel Outlet Works

3. DRILLING AGENCY: Corps of Engineers

4. HOLE NO. (As shown on drawing title and file number): 8A6DC-90

5. NAME OF DRILLER: Newhouse

6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN: 1.5'

8. DEPTH DRILLED INTO ROCK: 28.5'

9. TOTAL DEPTH OF HOLE: 30.0'

10. SIZE AND TYPE OF BIT: 8" Auger; Rock & Core

11. DATUM FOR ELEVATION SHOWN (TBM or MSL):

12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500

13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 1 | UNDISTURBED 0

14. TOTAL NUMBER CORE BOXES: 5

15. ELEVATION GROUND WATER:

16. DATE HOLE: STARTED 29 Jan 1976 | COMPLETED 30 Jan 1976

17. ELEVATION TOP OF HOLE:

18. TOTAL CORE RECOVERY FOR BORING: 100 %

19. SIGNATURE OF INSPECTOR: Lauren H. Logan

ELEVATION a | DEPTH b | LEGEND c | CLASSIFICATION OF MATERIALS (Description) d | % CORE RECOVERY e | BOX OR SAMPLE NO. f | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g

Depth: 10.0', 20.0', 30.0'

Legend: 1, 2, 3

0.0' to 1.5'

SAND - fine to medium grained, brown, dry, clayey and limy.

1.5' to 9.2'

LIMESTONE - fine to medium grained, tan to rust brown, highly weathered, medium hard.

9.2' to 30.0'

SHALE

9.2' to 13.5' - tan to gray, silty, soft, weathered.

13.5' to 30.0' - dark gray, silty, horizontal bedding definition, soft, fossiliferous, non-calcareous except for fossils and fossil fragments. Light gray siltstone noted from 25.2' to 26.0'.

T. D. 30.0'

% CORE RECOVERY	BOX OR SAMPLE NO.
	A
	B
	No Sample
L 1.4'	Box 1
C 1.0'	Box 2
L 1.4'	Box 3
G 0.4'	
G 0.2'	Box 4
C 1.2'	Box 5

1. Hole was bailed upon completion and perforated plastic pipe was installed for water level observation.

2. Drilling: 8" auger to 2.5'; 7 7/8" tri-cone rock bit to 7.0'; 6" core to total depth.

3. Jars:
   - A. 0.0' to 1.5'
   - B. 1.5' to 2.5'

4. Cartons:
   - 1. 13.5' to 14.5'
   - 2. 20.6' to 21.6'
   - 3. 27.8' to 28.8'

5. Core Boxes:
   - 1. 7.0' to 11.6'
   - 2. 11.6' to 17.2'
   - 3. 17.2' to 22.6'
   - 4. 22.6' to 27.4'
   - 5. 27.4' to 30.0'

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE (TRANSLUCENT)

PROJECT: Aubrey Dam | HOLE NO. 8A6DC-90

RECORD DRAWING-WORK AS BUILT

SYM	DC NO	ACTION	DATE	DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

DESIGNED BY:
DRAWN BY:
REVIEWED BY:

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS
EMBANKMENT, SPILLWAY AND
OUTLET WORKS
LOGS OF BORINGS
3SF-86, CALYX HOLE AND 8A6DC-90

SUBMITTED BY
ENGINEER

INVITATION NO. DACW63-82-B-0025 | DATE MAR, 1982

CONTRACT NO. DACW63-82-C-0083

DRAWING NUMBER | SHEET NO OF | SEQUENCE NO. 31

CONTRACT NO DACW63-82-C-0083

TO ACCOMPANY FOUNDATION REPORT

Hole No. 8A6C-91

DRILLING LOG	DIVISION Southwestern	INSTALLATION Fort Worth	SHEET 1 OF 2 SHEETS
1. PROJECT Aubrey Dam		10. SIZE AND TYPE OF BIT 10" Auger; 6" Core	
2. LOCATION (Coordinates or Station) Tunnel Outlet Works		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	
3. DRILLING AGENCY Corps of Engineers		12. MANUFACTURER'S DESIGNATION OF DRILL Failing 1500	
4. HOLE NO. (As shown on drawing title and file number) 8A6C-91		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 6 / UNDISTURBED 0
5. NAME OF DRILLER Seagraves and Pullins		14. TOTAL NUMBER CORE BOXES 8	
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ___ DEG. FROM VERT.		15. ELEVATION GROUND WATER **	
7. THICKNESS OF OVERBURDEN 18.0'		16. DATE HOLE	STARTED 11 Dec. 1975 / COMPLETED 16 Dec. 1975
8. DEPTH DRILLED INTO ROCK 46.1'		17. ELEVATION TOP OF HOLE	
9. TOTAL DEPTH OF HOLE 64.1'		18. TOTAL CORE RECOVERY FOR BORING 99 %	
		19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f
	10.0'		0.0' to 14.0' SAND 0.0' to 4.0' - very fine grained, light brown, unconsolidated, dry, non-calcareous. 4.0' to 7.0' - as above interval, light tan color, slightly damp, non-calcareous. 7.0' to 9.0' - very fine grained, rust brown, moist, becoming clayey (cohesive), non-calcareous. 9.0' to 14.0' - as above interval, more clayey, more moist, non-calcareous.		B C D
			14.0' to 18.0' GRAVEL - borders on gravelly clay, dark brown, poorly graded up to 1½", becoming wet from 15.5' to 18.0', non-calcareous.		E F G
	20.0'	1	18.0' to 24.0' SHALE - light tan, soft, intermittently limy and gray below 20.0'. Very calcareous.	L 0.5'	Box 1
	30.0'	2	24.0' to 36.9' LIMESTONE - light gray, fine to medium grained, medium hard, argillaceous, fossiliferous (less argillaceous, lighter in color from 29.5' to 34.5').	G 0.5'	Box 2
	40.0'	3 4 5 6 7 8	36.9' to 63.9' SHALE - dark gray, silty, soft, intermittently fossiliferous, slightly calcareous. Light gray very fine grained sandstone noted from 54.5' to 54.8'. Gray, dense, micaceous siltstone noted from 57.2' to 59.0' with angular (approximately 10° from horizontal) contact with shale below.	L 0.4' G 0.3' L 0.2' G 0.1' L 0.7' G 0.4' L 0.2' G 0.5'	Box 3 Box 4 Box 5 Box 6 Box 7 Box 8
	50.0' 60.0'		T. D. 64.1'		

REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g

**

Hole bailed to near T.D. upon completion with 27.0' of slotted plastic pipe installed for water level observation.
Water level after:
20 hours - 29.0'
48 hours - 17.2'

Drilling: Augered to 19.5'; 6" core to total depth of 64.1'. Offset core hole 7½' east and drilled fishtail hole 3" in diameter to total depth of 67.0' for electric logging.

Electric log was made for this boring.

Jars:
A. 0.0' to 4.0'
B. 4.0' to 7.0'
C. 7.0' to 9.0'
D. 9.0' to 14.0'
E. 14.0' to 15.5'
F. 15.5' to 18.0'
G. 18.0' to 19.5'

Cartons:
1. 20.6' to 21.5'
2. 25.6' to 26.6'
3. 31.7' to 32.7'
4. 37.5' to 38.5'
5. 44.8' to 45.8'
6. 51.6' to 52.6'
7. 55.9' to 56.9'
8. 62.9' to 63.9'

Core Boxes:
1. 19.5' to 24.9'
2. 24.9' to 30.2'
3. 30.2' to 35.9'
4. 35.9' to 41.6'
5. 41.6' to 46.9'
6. 46.9' to 52.6'
7. 52.6' to 58.6'
8. 58.6' to 63.9'

NOTE:
CORE SWOLLEN AFTER EXPOSURE TO ELEMENTS, (SOME RAIN) FROM 55.1 TO 55.9.

DRILLING LOG	DIVISION Southwestern	INSTALLATION Fort Wor
1. PROJECT Aubrey Dam		10. SIZE AND TYPE OF BIT
2. LOCATION (Coordinates or Station) Tunnel Outlet Works		11. DATUM FOR ELEVATION
3. DRILLING AGENCY Corps of Engineers		12. MANUFACTURER'S DESI
4. HOLE NO. (As shown on drawing title and file number) 8A6C-92		Failing 1500
5. NAME OF DRILLER Newhouse		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKE
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ___ DEG. FROM VERT.		14. TOTAL NUMBER CORE
7. THICKNESS OF OVERBURDEN 15.2'		15. ELEVATION GROUND WA
8. DEPTH DRILLED INTO ROCK 10.3'		16. DATE HOLE 19
9. TOTAL DEPTH OF HOLE 25.5'		17. ELEVATION TOP OF HO
		18. TOTAL CORE RECOVER
		19. SIGNATURE OF INSPECT

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f
	10.0'		0.0' to 15.2' CLAY AND SAND - clay dominates overburden with sand noted only at 6.0'. Clay from 0.0' to 2.0' light reddish brown, stiff, silty, sandy, medium to low plasticity, slightly moist; becoming dry, finely sandy, light rust brown at 4.0'. Sand at 6.0' fine grained, brown, clayey with scattered fine gravel. Clay was noted below and to 15.2'; reddish brown, some gray, silty, slightly sandy, medium to low plasticity, medium to stiff, moist, non-calcareous.	1 2 3 No Sample 4 5 6	A B C D E F G
			15.2' to 17.2' SHALE - tan soft, silty, calcareous.	7	H
	20.0'	1 2	17.2' to 25.5' LIMESTONE - gray, soft to medium hard to hard, fine to medium grained, argillaceous, fossiliferous.	L 0.0' L 0.0'	Box 1 Box 2
			T. D. 25.5'		

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT Aubrey

Hole No. 8A6DC-92

DRILLING LOG

DIVISION Southwestern

INSTALLATION Fort Worth

SHEET 1 OF 1 SHEETS

1. PROJECT Aubrey Dam
2. LOCATION (Coordinates or Station) Tunnel Outlet Works
3. DRILLING AGENCY Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number) 8A6DC-92
5. NAME OF DRILLER Newhouse
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN 15.2'
8. DEPTH DRILLED INTO ROCK 10.3'
9. TOTAL DEPTH OF HOLE 25.5'
10. SIZE AND TYPE OF BIT
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)
12. MANUFACTURER'S DESIGNATION OF DRILL Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED 7 UNDISTURBED 7
14. TOTAL NUMBER CORE BOXES 2
15. ELEVATION GROUND WATER **
16. DATE HOLE STARTED 19 Jan 1976 COMPLETED 20 Jan 1976
17. ELEVATION TOP OF HOLE
18. TOTAL CORE RECOVERY FOR BORING 100 %
19. SIGNATURE OF INSPECTOR Louis L. Logan

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			0.0' to 15.2' CLAY AND SAND - clay dominates overburden with sand noted only at 6.0'. Clay from 0.0' to 2.0' light reddish brown, stiff, silty, sandy, medium to low plasticity, slightly moist; becoming dry, finely sandy, light rust brown at 4.0'. Sand at 6.0' fine grained, brown, clayey with scattered fine gravel. Clay was noted below and to 15.2'; reddish brown, some gray, silty, slightly sandy, medium to low plasticity, medium to stiff, moist, non-calcareous.		A	** 1. Hole was bailed upon completion and perforated plastic pipe installed for water level observation.
				1	B	
				2	C	
				3	D	2. Drilling: 8" auger to 2.0'; Denison barrel to 17.0'; 6" core to 25.5'.
	10.0'			No Sample		
				4	E	3. Jars: A. 0.0' to 2.0' B. At 4.0' C. At 6.0' D. At 8.0' E. At 11.0' F. At 13.0' G. At 15.0' H. At 17.0'
				5	F	
			15.2' to 17.2' SHALE - tan soft, silty, calcareous.	6	G	
			17.2' to 25.5' LIMESTONE - gray, soft to medium hard to hard, fine to medium grained, argillaceous, fossiliferous.	7	H	
	20.0'	1		L 0.0'	Box 1	4. Denison Cans: 1. 2.0' to 4.0' 2. 4.0' to 6.0' 3. 6.0' to 8.0' 4. 9.0' to 11.0' 5. 11.0' to 13.0' 6. 13.0' to 15.0' 7. 15.0' to 17.0'
		2	—T. D. 25.5'—	L 0.0'	Box 2	5. Cartons: 1. 18.7' to 19.7' 2. 23.3' to 24.2' 6. Core Boxes: 1. 17.0' to 21.5' 2. 21.5' to 25.5'

FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT Aubrey Dam

HOLE NO. 8A6DC-92

Hole No. 8A6C-301

DRILLING LOG

DIVISION Southwestern

INSTALLATION Fort Worth

SHEET 1 OF 1 SHEETS

1. PROJECT Aubrey Lake
2. LOCATION (Coordinates or Station) Spillway Site "E"
3. DRILLING AGENCY Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number) 8A6C-301
5. NAME OF DRILLER Schoonover
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN 7.0'
8. DEPTH DRILLED INTO ROCK 13.0'
9. TOTAL DEPTH OF HOLE 20.0'
10. SIZE AND TYPE OF BIT 8" Auger; 6" Core
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)
12. MANUFACTURER'S DESIGNATION OF DRILL Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED 2 UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES 2
15. ELEVATION GROUND WATER **
16. DATE HOLE STARTED 21 Nov. 1975 COMPLETED 21 Nov. 1975
17. ELEVATION TOP OF HOLE
18. TOTAL CORE RECOVERY FOR BORING 100 %
19. SIGNATURE OF INSPECTOR Louis L. Logan

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			0.0' to 2.0' CLAY - as described in interval below.		No Sample	** 1. Hole was bailed to near total depth upon completion. 4" plastic pipe, slotted, was installed in boring for future water level observations.
			2.0' to 7.0' CLAY 2.0' to 5.0' - medium plasticity, brown, hard, silty to finely sandy, slightly moist, non-calcareous.		A	
					B	
	10.0'	1	5.0' to 7.0' - as above interval, slightly lighter in color, some very fine gravel widely scattered throughout.	L 0.1'	Box 1	2. Drilling: 8" auger to 7.0'; 6" core to total depth of 20.0'.
		2	7.0' to 13.9' CLAY-SHALE - soft, rust brown and gray, silty, highly weathered, non-calcareous, occasional very fine gravel scattered throughout recovery.	L 0.1'		3. Jars: A. 2.0' to 5.0' B. 5.0' to 7.0'
		3	13.9' to 20.0' SHALE - tan with some gray marbling, soft, occasional soft white limy inclusions. Shale is non-calcareous and weathered to total depth. Sand lense noted from 13.5' to 13.9'; fine grained, rust brown. Iron concretionary zone noted from 14.9' to 15.1'.	L 0.4'	Box 2	4. Cartons: 1. 7.5' to 8.5' 2. 11.5' to 12.5' 3. 16.7' to 17.6' 4. 19.0' to 20.0'
	20.0'	4	—T. D. 20.0'—	G 0.6'		5. Core Boxes: 1. 7.0' to 13.4' 2. 13.4' to 20.0'

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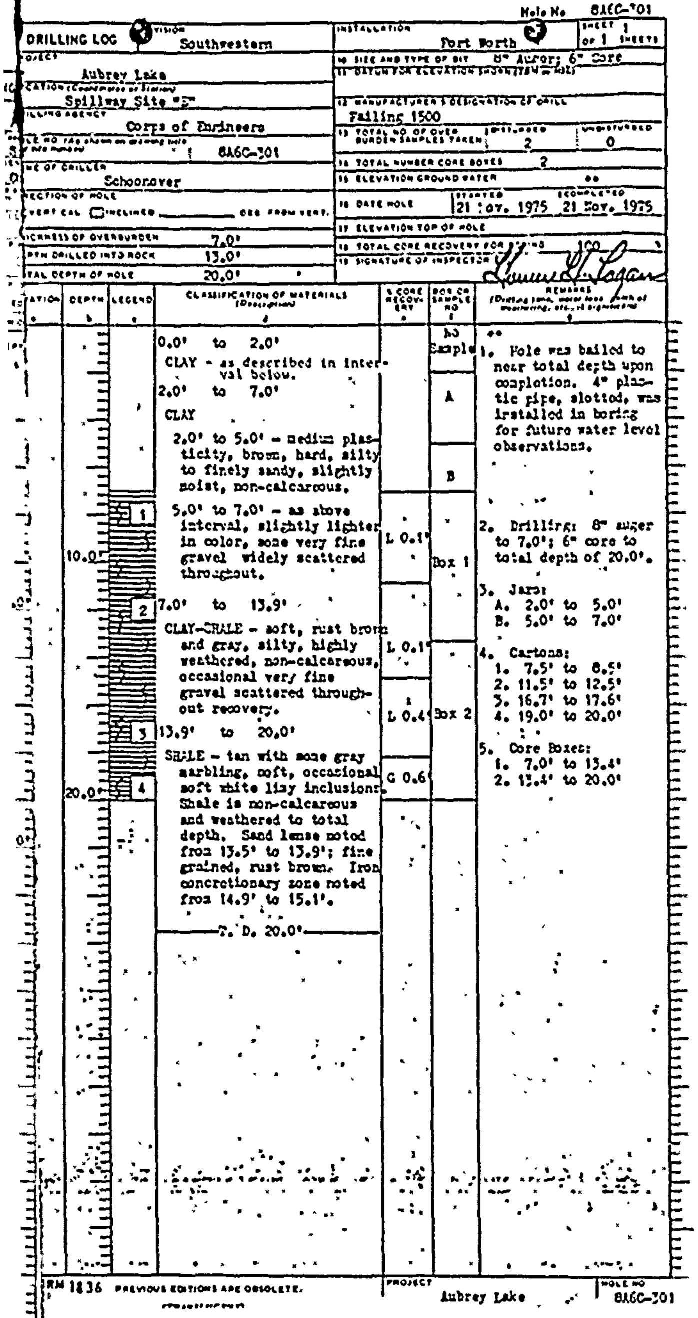
PROJECT Aubrey Lake

HOLE NO. 8A6C-301



Hole No. 8A6C-301

DRILLING LOG

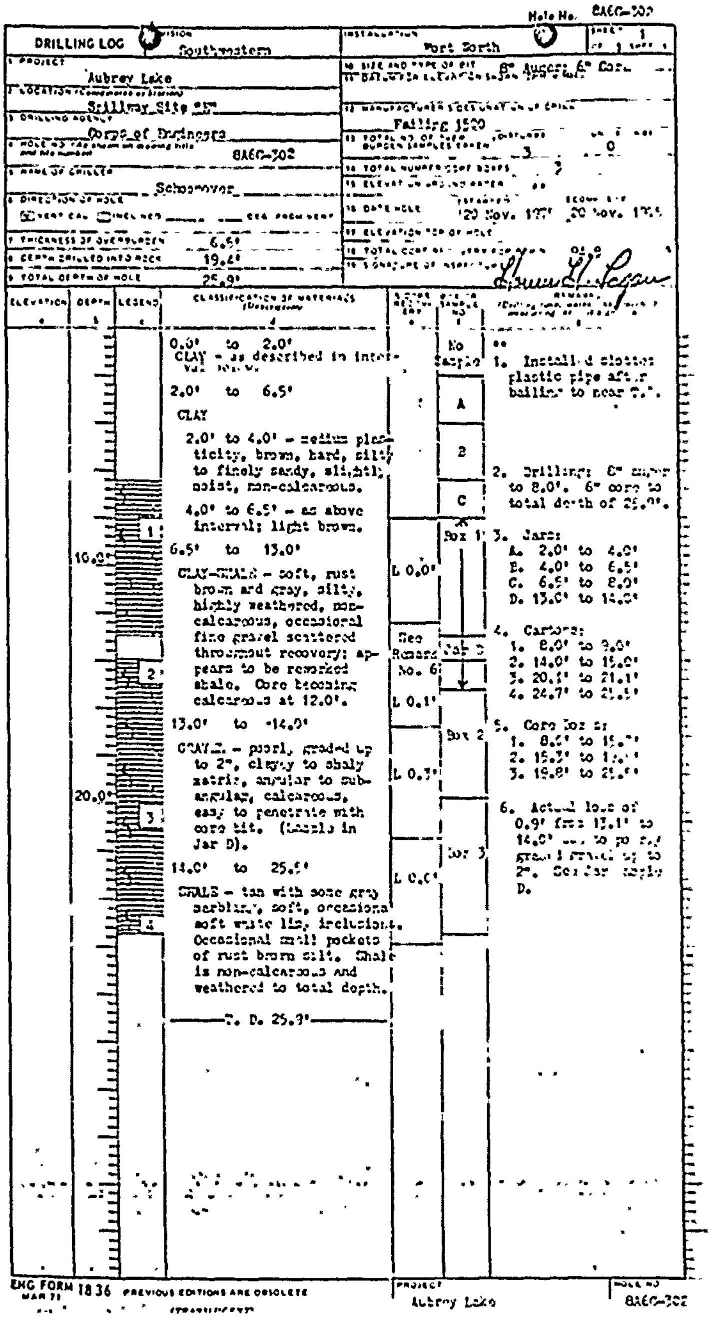
DIVISION	Southwestern
INSTALLATION	Fort Worth
SHEET	1 of 1 SHEETS
PROJECT	Aubrey Lake
10. SIZE AND TYPE OF BIT	8" Auger; 6" Core
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	
LOCATION (Coordinates or Station)	Spillway Site "E"
12. MANUFACTURER'S DESIGNATION OF DRILL	Failing 1500
DRILLING AGENCY	Corps of Engineers
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN	DISTURBED 2 / UNDISTURBED 0
HOLE NO. (As shown on drawing title and file number)	8A6C-301
14. TOTAL NUMBER CORE BOXES	2
NAME OF DRILLER	Schoonover
15. ELEVATION GROUND WATER	**
DIRECTION OF HOLE	☐ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
16. DATE HOLE	STARTED 21 Nov. 1975 / COMPLETED 21 Nov. 1975
17. ELEVATION TOP OF HOLE	
THICKNESS OF OVERBURDEN	7.0'
18. TOTAL CORE RECOVERY FOR BORING	100 %
DEPTH DRILLED INTO ROCK	13.0'
19. SIGNATURE OF INSPECTOR	Lonnie L. Logan
TOTAL DEPTH OF HOLE	20.0'

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			0.0' to 2.0' CLAY - as described in interval below.		No Sample	** 1. Hole was bailed to near total depth upon completion. 4" plastic pipe, slotted, was installed in boring for future water level observations.
			2.0' to 7.0' CLAY 2.0' to 5.0' - medium plasticity, brown, hard, silty to finely sandy, slightly moist, non-calcareous.		A	
			5.0' to 7.0' - as above interval, slightly lighter in color, some very fine gravel widely scattered throughout.		B	
	10.0'	1		L 0.1'	Box 1	2. Drilling: 8" auger to 7.0'; 6" core to total depth of 20.0'.
		2	7.0' to 13.9' CLAY-SHALE - soft, rust brown and gray, silty, highly weathered, non-calcareous, occasional very fine gravel scattered throughout recovery.	L 0.1'		3. Jars: A. 2.0' to 5.0' B. 5.0' to 7.0'
		3	13.9' to 20.0' SHALE - tan with some gray marbling, soft, occasional soft white limy inclusions. Shale is non-calcareous and weathered to total depth. Sand lense noted from 13.5' to 13.9'; fine grained, rust brown. Iron concretionary zone noted from 14.9' to 15.1'.	L 0.4'	Box 2	4. Cartons: 1. 7.5' to 8.5' 2. 11.5' to 12.5' 3. 16.7' to 17.6' 4. 19.0' to 20.0'
	20.0'	4	T. D. 20.0'	G 0.6'		5. Core Boxes: 1. 7.0' to 13.4' 2. 13.4' to 20.0'

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT Aubrey Lake

HOLE NO. 8A6C-301



Hole No. 8A6C-302

DRILLING LOG

DIVISION	Southwestern
INSTALLATION	Fort Worth
SHEET	1 of 1 SHEETS
1. PROJECT	Aubrey Lake
10. SIZE AND TYPE OF BIT	8" Auger; 6" Core
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	
2. LOCATION (Coordinates or Station)	Spillway Site "E"
12. MANUFACTURER'S DESIGNATION OF DRILL	Failing 1500
3. DRILLING AGENCY	Corps of Engineers
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN	DISTURBED 3 / UNDISTURBED 0
4. HOLE NO. (As shown on drawing title and file number)	8A6C-302
14. TOTAL NUMBER CORE BOXES	3
5. NAME OF DRILLER	Schoonover
15. ELEVATION GROUND WATER	**
6. DIRECTION OF HOLE	☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
16. DATE HOLE	STARTED 20 Nov. 1975 / COMPLETED 20 Nov. 1975
17. ELEVATION TOP OF HOLE	
7. THICKNESS OF OVERBURDEN	6.5'
18. TOTAL CORE RECOVERY FOR BORING	91.9 %
8. DEPTH DRILLED INTO ROCK	19.4'
19. SIGNATURE OF INSPECTOR	Lonnie L. Logan
9. TOTAL DEPTH OF HOLE	25.9'

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			0.0' to 2.0' CLAY - as described in interval below.		No Sample	** 1. Installed slotted plastic pipe after bailing to near T.D.
			2.0' to 6.5' CLAY 2.0' to 4.0' - medium plasticity, brown, hard, silty to finely sandy, slightly moist, non-calcareous.		A	
			4.0' to 6.5' - as above interval; light brown.		B	2. Drilling: 8" auger to 8.0'. 6" core to total depth of 25.9'.
					C	
	10.0'	1	6.5' to 13.0' CLAY-SHALE - soft, rust brown and gray, silty, highly weathered, non-calcareous, occasional fine gravel scattered throughout recovery; appears to be reworked shale. Core becoming calcareous at 12.0'.	L 0.0'	Box 1	3. Jars: A. 2.0' to 4.0' B. 4.0' to 6.5' C. 6.5' to 8.0' D. 13.0' to 14.0'
		2	13.0' to 14.0' GRAVEL - poorly graded up to 2", clayey to shaly matrix, angular to subangular, calcareous, easy to penetrate with core bit. (Sample in Jar D).	See Remarks No. 6	Jar D	4. Cartons: 1. 8.0' to 9.0' 2. 14.0' to 15.0' 3. 20.1' to 21.1' 4. 24.7' to 25.[illegible]'
				L 0.1'	Box 2	5. Core Boxes: 1. 8.0' to 15.[illegible]' 2. 15.[illegible]' to 1[illegible]' 3. 19.8' to 25.9'
	20.0'	3	14.0' to 25.9' SHALE - tan with some gray marbling, soft, occasional soft white limy inclusions. Occasional small pockets of rust brown silt. Shale is non-calcareous and weathered to total depth.	L 0.7'		6. Actual loss of 0.9' from 13.1' to 14.0' due to poorly graded gravel up to 2". See Jar sample D.
		4	T. D. 25.9'	L 0.0'	Box 3	

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE (TRANSLUCENT)

PROJECT Aubrey Lake

HOLE NO. 8A6C-302

RECORD DRAWING-WORK AS BUILT

SYM	[illegible] NO.	ACTION	DATE	DESCRIPTION OF REVISION

U S ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

DESIGNED BY
DRAWN BY
REVIEWED BY

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS
EMBANKMENT, SPILLWAY AND
OUTLET WORKS
LOGS OF BORINGS
8A6C-91, 8A6DC-92, 8A6C-301, AND 8A6C-302

SUBMITTED BY
ENGINEER

INVITATION NO. DACW63-82-B-0060
DATE MAR. 1982
CONTRACT NO. DACW63-82-[illegible]
DRAWING NUMBER
SHEET NO.
SEQUENCE NO. 39

Hole No. 8AEC-303

DRILLING LOG

DIVISION	Southwestern
INSTALLATION	Fort Worth
SHEET 1 OF 2 SHEETS	
1. PROJECT	Aubrey Lake
2. LOCATION (Coordinates or Station)	Spillway Site "E"
3. DRILLING AGENCY	Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number)	8AEC-303
5. NAME OF DRILLER	Schoonover
6. DIRECTION OF HOLE	☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	11.0'
8. DEPTH DRILLED INTO ROCK	40.0'
9. TOTAL DEPTH OF HOLE	51.0'
10. SIZE AND TYPE OF BIT	8" Auger; 6" Core
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	
12. MANUFACTURER'S DESIGNATION OF DRILL	Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 2 / UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES	7
15. ELEVATION GROUND WATER	--
16. DATE HOLE	STARTED 21 Nov. 1975 / COMPLETED 25 Nov. 1975
17. ELEVATION TOP OF HOLE	
18. TOTAL CORE RECOVERY FOR BORING	99.3 %
19. SIGNATURE OF INSPECTOR	Howard L. Logan

ELEVATION a | DEPTH b | LEGEND c | CLASSIFICATION OF MATERIALS (Description) d | % CORE RECOVERY e | BOX OR SAMPLE NO. f | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g

Depth: 10.0' 20.0' 30.0' 40.0' 50.0'

Legend: 1 2 3 4 5 6 7 8

Classification of materials:

0.0' to 11.0'

CLAY

0.0' to 7.0' - medium plasticity, brown, hard, silty to finely sandy, slightly moist, non-calcareous.

7.0' to 11.0' - as above interval; more moist.

11.0' to 22.0'

CLAY-SHALE - rust brown, marbled gray, soft, non-calcareous; appears to be reworked shale; scattered ferrous nodules; very gravelly and calcareous from 18.3' to 19.3' with very fine grained light rust brown sand from 19.3 to 19.6'.

22.0' to 50.7'

SHALE

22.0' to 40.7' - light tan to grayish tan, soft, non-calcareous, bedding angle approximately 5° from horizontal, occasional ferrous nodule with distinct iron concretionary zone from 26.3' to 26.8'; very fine grained light rust brown sandstone from 35.8' to 36.0' and from 37.4' to 37.7'; approaching base of extensive weathering from 38.0' to 40.7' as evidenced by intermittent short intervals of light bluish-gray shale.

40.7' to 50.7' - shale is light bluish-gray, soft, slightly silty, very fossiliferous (numerous fossils along parting at 44.3' and in Carton No. 8 at 49.7'); bedding is near horizontal; shale is calcareous from 40.7' to recovery depth of 50.7'.

T. D. 51.0'

% Core recovery: L 1.0' / G 0.8' / L 0.8' / L 0.0' / G 0.2' / G 0.8' / L 0.0' / L 0.0' / L 0.7' / G 0.4'

Box or sample no.: No Sample / A / B / Box 1 / Box 2 / Box 3 / Box 4 / Box 5 / Box 6 / Box 7

Remarks:

1. Hole was bailed to near total depth upon completion. Unable to determine where hole is making water, but making water slowly. Installed slotted plastic pipe for water level observations.
   Water Levels:
   26 Nov. '75 - 17.0'
   1 Dec. '75 - 16.5'

2. Drilling: 8" auger to 11.0'; 6" core to total depth of 51.0'. Set 3.0' of 8" casing due to fluid loss near surface.

3. Jars:
   A. 2.0' to 7.0'
   B. 7.0' to 11.0'

4. Cartons:
   1. 11.3' to 12.2'
   2. 16.0' to 17.0'
   3. 22.1' to 23.1'
   4. 28.5' to 29.5'
   5. 35.1' to 35.8'
   6. 39.7' to 40.7'
   7. 45.3' to 46.2'
   8. 49.7' to 50.7'

5. Core Boxes:
   1. 11.0' to 17.5'
   2. 17.5' to 23.5'
   3. 23.5' to 28.3'
   4. 28.3' to 33.9'
   5. 33.9' to 39.0'
   6. 39.0' to 44.3'
   7. 44.3' to 50.7'

DRILLING LOG

DIVISION	Southwestern
1. PROJECT	Aubrey Lake
2. LOCATION (Coordinates or Station)	Spillway Site "E"
3. DRILLING AGENCY	Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number)	8AEC-304
5. NAME OF DRILLER	Schoonover
6. DIRECTION OF HOLE	☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	2.0'
8. DEPTH DRILLED INTO ROCK	49.0'
9. TOTAL DEPTH OF HOLE	51.0'
12. MANUFACTURER	Failing

ELEVATION a | DEPTH b | LEGEND c | CLASSIFICATION OF MATERIALS (Description) d | % CORE RECOVERY e

Depth: 10.0' 20.0' 30.0' 40.0' 50.0'

Legend: 1 2 3 4 5 6 7 8 9

Classification of materials:

0.0' to 2.0'

CLAY - medium plasticity, brown, hard, silty to finely sandy, slightly moist, non-calcareous.

2.0' to 13.7'

CLAY-SHALE

2.0' to 7.0' - rust brown, soft, non-calcareous; appears to be reworked shale; more moist from 4.0' to 7.0'.

7.0' to 13.7' - as described above with some gray marbling and scattered ferrous nodules.

13.7' to 14.0'

SANDSTONE - very fine grained, light rust brown, soft, well consolidated, non-calcareous.

14.0' to 17.0'

SHALE - light tan to grayish tan, soft, silty, non-calcareous.

17.0' to 17.6'

SANDSTONE - as described in interval 13.7' to 14.0'.

17.6' to 19.8'

SHALE - as described above.

19.8' to 20.2'

SANDSTONE - as described above.

20.2' to 20.6'

SHALE - as described above.

20.6' to 22.8'

SANDSTONE - as described above with approximately 5° from horizontal bedding angle.

22.8' to 32.7'

SHALE - as described above, approaching base of extensive weathering from 28.7' to 32.7' as evidenced by intermittent thin beds of bluish gray silty shale. Distinct iron concretionary zone was noted from 28.7' to 29.2'. Shale becoming calcareous below 24.7'

32.7' to 51.0'

SHALE - unweathered, soft, bluish gray, varies from waxy to silty to very finely sandy, fossiliferous, calcareous.

T. D. 51.0'

% Core recovery: L 0.6' / G 0.2' / L 0.0' / L 0.0' / L 0.1' / G 0.5' / L 0.9' / G 0.5' / L 0.0' / L 0.0' / G 0.4'

Hole No. 8A6C-304

Southwestern	INSTALLATION Fort Worth
	SHEET 1 OF 2 SHEETS
	10 SIZE AND TYPE OF BIT 8" Auger; 6" Core
	11 DATUM FOR ELEVATION SHOWN (TBM or MSL)
e "E"	12 MANUFACTURER'S DESIGNATION OF DRILL Failing 1500
ineers	13 TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 0 — UNDISTURBED 0
8A6C-304	14 TOTAL NUMBER CORE BOXES 8
nover	15 ELEVATION GROUND WATER **
DEG. FROM VERT.	16 DATE HOLE — STARTED 1 Dec. 1975 — COMPLETED 3 Dec. 1975
2.0'	17 ELEVATION TOP OF HOLE
49.0'	18 TOTAL CORE RECOVERY FOR BORING 100 %
51.0'	19 SIGNATURE OF INSPECTOR

CLASSIFICATION OF MATERIALS (Description)

.0' to 2.0'

LAY – medium plasticity, brown, hard, silty to finely sandy, slightly moist, non-calcareous.

0' to 13.7'

LAY-SHALE

2.0' to 7.0' – rust brown, soft, non-calcareous; appears to be reworked shale; more moist from 4.0' to 7.0'.

7.0' to 13.7' – as described above with some gray marbling and scattered ferrous nodules.

.7' to 14.0'

NDSTONE – very fine grained, light rust brown, soft, well consolidated, non-calcareous.

.0' to 1?.0'

ALE – light tan to grayish tan, soft, silty, non-calcareous.

0' to 17.6'

NDSTONE – as described in interval 13.7' to 14.0'.

6' to 19.8'

ALE – as described above.

8' to 20.2'

NDSTONE – as described above.

2' to 20.6'

ALE – as described above.

6' to 22.8'

NDSTONE – as described above with approximately 5° from horizontal bedding angle.

9' to 32.7'

ALE – as described above, approaching base of extensive weathering from 28.7' to 32.7' as evidenced by intermittent thin beds of bluish gray

stinct iron concretiony zone was noted from .7' to 29.2'. Shale coming calcareous below .7'.

7' to 51.0'

ALE – unweathered, soft, uish grey, varies from ry to silty to very fine sandy, fossiliferous, lcareous.

— T. D. 51.0' —

% CORE RECOVERY	BOX OR SAMPLE NO.
	No Sample
	A
	B
L 0.6'	Box 1
G 0.2'	Box 2
L 0.0'	
	Box 3
L 0.0'	
L 0.1'	Box 4
G 0.5'	Box 5
L 0.9'	
G 0.5'	Box 6
L 0.0'	Box 7
L 0.0'	
G 0.4'	Box 8

REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)

**

1. Hole was bailed to near total depth upon completion. Water level 24 hours after completion at 16.0'. Hole was backfilled.

2. Drilling: 8" auger to 7.0'. 6" core to total depth of 51.0'.

3. Jars:
   - A. 2.0' to 4.0'
   - B. 4.0' to 7.0'

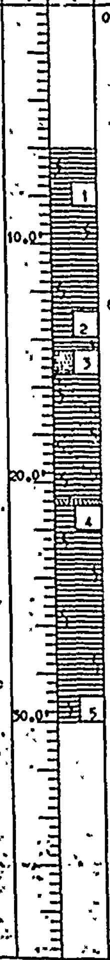
4. Cartons:
   1. 7.5' to 8.5'
   2. 12.5' to 13.5'
   3. 17.8' to 18.8'
   4. 23.4' to 24.4'
   5. 27.7' to 28.7'
   6. 31.0' to 32.0'
   7. 39.5' to 40.5'
   8. 45.5' to 46.5'
   9. 50.0' to 51.0'

5. Core Boxes:
   1. 7.0' to 12.5'
   2. 12.5' to 18.9'
   3. 18.9' to 24.7'
   4. 24.7' to 30.3'
   5. 30.3' to 36.0'
   6. 36.0' to 41.7'
   7. 41.7' to 47.3'
   8. 47.3' to 51.0'

Hole No. 8A6C-305

DRILLING LOG	DIVISION Southwestern
INSTALLATION Fort Worth	SHEET 1 OF 1 SHEETS
1. PROJECT Aubrey Lake	10 SIZE AND TYPE OF BIT 8" Auger; 6" Core
2. LOCATION (Coordinates or Station) Spillway Site "E"	11 DATUM FOR ELEVATION SHOWN (TBM or MSL)
3. DRILLING AGENCY Corps of Engineers	12 MANUFACTURER'S DESIGNATION OF DRILL Failing 1500
4. HOLE NO. (As shown on drawing title and file number) 8A6C-305	13 TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 2 — UNDISTURBED 0
5. NAME OF DRILLER Schoonover	14 TOTAL NUMBER CORE BOXES 4
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15 ELEVATION GROUND WATER
	16 DATE HOLE — STARTED 3 Dec. 1975 — COMPLETED 4 Dec. 1975
7 THICKNESS OF OVERBURDEN 6.0'	17 ELEVATION TOP OF HOLE
8 DEPTH DRILLED INTO ROCK 24.0'	18 TOTAL CORE RECOVERY FOR BORING 100 %
9 TOTAL DEPTH OF HOLE 30.0'	19 SIGNATURE OF INSPECTOR

ELEVATION a | DEPTH b | LEGEND c



CLASSIFICATION OF MATERIALS (Description) d

0.0' to 6.0'

CLAY

0.0' to 2.0' – medium plasticity, hard, silty to finely sandy, brown, slightly moist, non-calcareous.

2.0' to 4.0' – as above interval; slightly calcareous.

4.0' to 6.0' – yellowish brown, medium plasticity, stiff, silty, finely sandy, some scattered fine gravel, moist, non-calcareous.

6.0' to 12.0'

CLAY-SHALE – rust brown, soft, some gray mixed, scattered gravel and ferrous nodules, non-calcareous.

12.0' to 21.0'

SHALE AND SANDSTONE – shale is dominant; light tan to grayish tan, silty, non-calcareous. Shale is interrupted with occasional thin beds of sandstones, notably from 14.5' to 17.3'; sandstone is light rust brown, very fine grained, soft and non-calcareous. Maximum thickness without shale interruption was 1.0' (Carton No. 3 from 14.5' to 15.5'). Shale was dominant from 17.3' to 20.7'. Last sandstone in this boring was logged from 20.7' to 21.0'.

21.0' to 30.0'

SHALE – soft, light tan to grayish tan, silty, some very widely scattered selenite; iron concretionary zone, very calcareous noted from 23.4' to 23.9'. Shale is [illegible]tly calcareous from this point to total depth and is weathered throughout.

— T. D. 30.0' —

% CORE RECOVERY e	BOX OR SAMPLE NO. f
	No Sample
	A
	B
	C
L 0.6'	Box 1
L 0.1'	Box 2
G 0.4'	
L 0.4'	Box 3
L 0.1'	Box 4
G 0.8'	

REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g

**

1. Hole was bailed to near total depth upon completion and slotted plastic pipe installed for water level observation. Water level after 24 hours at 10.9'.

2. Drilling: 8" auger to 7.0'; 6" core to total depth of 30.0'.

3. Jars:
   - A. 2.0' to 4.0'
   - B. 4.0' to 6.0'
   - C. 6.0' to 7.0'

4. Cartons:
   1. 7.5' to 8.5'
   2. 12.9' to 13.9'
   3. 14.5' to 15.5'
   4. 21.0' to 22.0'
   5. 29.0' to 30.0'

5. Core Boxes:
   1. 7.0' to 12.6'
   2. 12.6' to 19.2'
   3. 19.2' to 24.8'
   4. 24.8' to 30.0'

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE | PROJECT Aubrey Lake | HOLE NO. 8A6C-305

DRILLING LOG

1 PROJECT Aubrey L

2 LOCATION (Coordinates or Sta Spillway

3 DRILLING AGENCY Corps of

4 HOLE NO. (As shown on drawing title and file number)

5. NAME OF DRILLER Sc

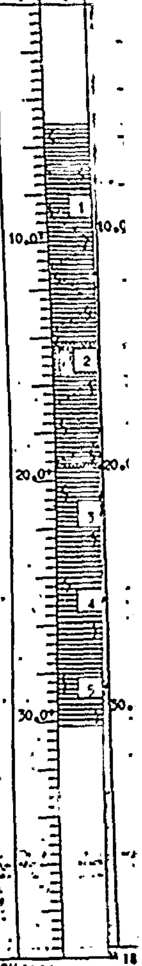
6 DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED

7 THICKNESS OF OVERBUR

8 DEPTH DRILLED INTO RO

9 TOTAL DEPTH OF HOLE

ELEVATION | DEPTH | LEGEND



ENG FORM 1836 MAR 71 PREVIO

Hole No. 8A6C-305

hrestorn

"E"

gineers

8A6C-305

ver

______ DEG. FROM VERT.

6.0'

24.0'

30.0'

INSTALLATION Fort Worth

SHEET 1 OF 1 SHEETS

10 SIZE AND TYPE OF BIT 8" Auger; 6" Core

11 DATUM FOR ELEVATION SHOWN (TBM or MSL)

12 MANUFACTURER'S DESIGNATION OF DRILL Failing 1500

13 TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED 2 UNDISTURBED 0

14 TOTAL NUMBER CORE BOXES 4

15 ELEVATION GROUND WATER

16 DATE HOLE STARTED 3 Dec. 1975 COMPLETED 4 Dec. 1975

17 ELEVATION TOP OF HOLE

18 TOTAL CORE RECOVERY FOR BORING 100 %

19 SIGNATURE OF INSPECTOR [illegible] Logan

ASSIFICATION OF MATERIALS (Description)

to 6.0'

Y

0' to 2.0' – medium plas-
icity, hard, silty to
inely sandy, brown,
lightly moist, non-cal-
areous.

0' to 4.0' – as above
nterval; slightly cal-
areous.

0' to 6.0' – yellowish
rown, medium plasticity,
tiff, silty, finely sandy,
ome scattered fine gra-
el, moist, non-calcareous.

to 12.0'

Y-SHALE – rust brown,
oft, some gray mixed,
cattered gravel and
errous nodules, non-
alcareous.

' to 21.0'

LE AND SANDSTONE – shale
is dominant; light tan to
grayish tan, silty, non-
alcareous. Shale is in-
terrupted with occasional
thin beds of sandstones,
otably from 14.5' to
17.3'; sandstone is light
rust brown, very fine
grained, soft and non-
calcareous. Maximum thick-
ness without shale inter-
ruption was 1.0' (Carton
No. 3 from 14.5' to 15.5').
Shale was dominant from 17.3'
to 20.7'. Last sandstone
in this boring was logged
from 20.7' to 21.0'.

0' to 30.0'

ALE – soft, light tan to
grayish tan, silty, some
very widely scattered
selenite; iron concretion-
ary zone, very calcareous
noted from 23.4' to 23.9'.
Shale is slightly calcareous
from this point to total depth
and is weathered throughout.

—— T. D. 30.0' ——

% CORE RECOVERY	BOX OR SAMPLE NO
	No Sample
	A
	B
	C
L 0.6'	Box 1
L 0.1'	Box 2
C 0.4' L 0.4'	Box 3
L 0.1' C 0.8'	Box 4

REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)

**

1. Hole was bailed to near total depth upon completion and slotted plastic pipe installed for water level observation. Water level after 24 hours at 10.9'.
2. Drilling: 8" auger to 7.0'; 6" core to total depth of 30.0'.
3. Jars:
   - A. 2.0' to 4.0'
   - B. 4.0' to 6.0'
   - C. 6.0' to 7.0'
4. Cartons:
   1. 7.5' to 8.5'
   2. 12.9' to 13.9'
   3. 14.5' to 15.5'
   4. 21.0' to 22.0'
   5. 29.0' to 30.0'
5. Core Boxes:
   1. 7.0' to 12.6'
   2. 12.6' to 19.2'
   3. 19.2' to 24.8'
   4. 24.8' to 30.0'

TIONS ARE OBSOLETE.

PROJECT Aubrey Lake

HOLE NO 8A6C-305

Hole No 8A6C-306

DRILLING LOG

DIVISION Southwestern

INSTALLATION Fort Worth

SHEET 1 OF 1 SHEETS

1 PROJECT Aubrey Lake

2 LOCATION (Coordinates or Station) Spillway Site "E"

3 DRILLING AGENCY Corps of Engineers

4 HOLE NO. (As shown on drawing title and file number) 8A6C-306

5 NAME OF DRILLER Schoonover

6 DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.

7 THICKNESS OF OVERBURDEN 5.0'

8 DEPTH DRILLED INTO ROCK 25.2'

9 TOTAL DEPTH OF HOLE 30.2'

10 SIZE AND TYPE OF BIT 8" Auger; 6" Core

11 DATUM FOR ELEVATION SHOWN (TBM or MSL)

12 MANUFACTURER'S DESIGNATION OF DRILL Failing 1500

13 TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED 1 UNDISTURBED 0

14 TOTAL NUMBER CORE BOXES 4

15 ELEVATION GROUND WATER **

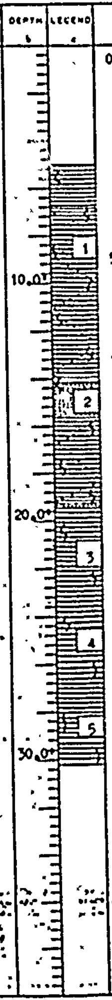
16 DATE HOLE STARTED 4 Dec. 1975 COMPLETED 5 Dec. 1975

17 ELEVATION TOP OF HOLE

18 TOTAL CORE RECOVERY FOR BORING 100 %

19 SIGNATURE OF INSPECTOR [illegible] Logan

ELEVATION | DEPTH | LEGEND



CLASSIFICATION OF MATERIALS (Description)

0.0' to 5.0'

CLAY

0.0' to 2.0' – medium plasticity, light brown, hard, silty, sandy, slightly moist, non-calcareous.

2.0' to 5.0' – medium plasticity, light brown, very stiff, silty, slightly moist, non-calcareous.

5.0' to 7.0'

CLAY-SHALE – rust brown and gray, soft, silty, appears to be reworked shale, non-calcareous.

7.0' to 19.5'

SHALE AND SANDSTONE – shale is dominant; light tan to grayish tan, silty, non-calcareous. Shale is interrupted with occasional beds of sandstone, notably from 12.4' 19.5' with maximum thickness of 1.5' from 14.2' to 15.7' (see carton No. 2). Sandstone is light rust brown, very fine grained, well consolidated, soft, and non-calcareous. Shale as described above is dominant below this point with last sandstone in this interval logged from 19.3' to 19.5'.

19.5' to 30.2'

SHALE – light tan to gray, (predominantly gray below 25.0'), silty, scattered small crystals of selenite, slightly calcareous; iron concretionary zone, very calcareous, noted from 21.9' to 22.4'. Some very fine-grained gray sand interbedded with shale below 29.0'. Shale is weathered to total depth.

—— T. D. 30.2' ——

% CORE RECOVERY	BOX OR SAMPLE NO
	No Sample
	A
	B
L 0.5'	Box 1
C 0.2' L 0.1'	Box 2
C 0.1'	Box 3
C 0.3' L 0.0'	Box 4

REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)

**

1. Hole was bailed to near total depth upon completion and slotted plastic pipe was installed for water level observation.
2. Drilling: 8" auger to 7.0'; 6" core to total depth of 30.2'.
3. Jars:
   - A. 2.0' to 5.0'
   - B. 5.0' to 7.0'
4. Cartons:
   1. 8.0' to 9.0'
   2. 14.5' to 15.5'
   3. 20.9' to 21.9'
   4. 24.6' to 25.5'
   5. 28.2' to 29.1'
5. Core Boxes:
   1. 7.0' to 12.9'
   2. 12.9' to 18.6'
   3. 18.6' to 24.2'
   4. 24.2' to 30.2'

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT Aubrey Lake

HOLE NO. 8A6C-306

RECORD DRAWING-WORK AS BUILT

SYM	DC NO	ACTION	DATE	DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

DESIGNED BY: --------
DRAWN BY --------
REVIEWED BY: --------

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS
EMBANKMENT, SPILLWAY AND
OUTLET WORKS
LOGS OF BORINGS
8A6C-303, 8A6C-304, 8A6C-305, AND 8A6C-306

SUBMITTED BY.
ENGINEER

INVITATION NO. DACW63-82-B-0025
DATE: MAR, 1982
CONTRACT NO DACW63-82-C-0093
DRAWING NUMBER
SHEET NO OF –
SEQUENCE NO 33

CONTRACT NO DACW63-82-C-0093

TO ACCOMPANY FOUNDATION REPORT

Hole No. 8A6C-307

DRILLING LOG

DIVISION: Southwestern

INSTALLATION: Fort Wo

SHEET 1 OF 1 SHEETS

1. PROJECT: Aubrey Lake
2. LOCATION (Coordinates or Station): Spillway Site "E"
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): 8A6C-307
5. NAME OF DRILLER: Schoonover
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 4.5
8. DEPTH DRILLED INTO ROCK: 20.5'
9. TOTAL DEPTH OF HOLE: 25.0'
10. SIZE AND TYPE OF BIT: 8" Auger; 6" Core
11. DATUM FOR ELEVATION SHOWN (TBM or MSL):
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: DISTURBED 1 UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES: 3
15. ELEVATION GROUND WATER: **
16. DATE HOLE: STARTED 8 Dec. 1975 COMPLETED 8 Dec. 1975
17. ELEVATION TOP OF HOLE:
18. TOTAL CORE RECOVERY FOR BORING: 99.3 %
19. SIGNATURE OF INSPECTOR: H. Logan

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			0.0' to 4.5' CLAY - medium plasticity, brown, hard, silty, sandy, slightly moist, non-calcareous.		No Sample A	** 1. Hole bailed to near total depth upon completion and slotted plastic pipe installed for water level observation.
			4.5' to 10.0' CLAY-SHALE - rust brown, some gray mixed, soft, appears to be reworked shale, scattered small ferrous nodules, non-calcareous.		B	
	10.0'	1 2 3 4	10.0' to 24.7' SHALE, SILTSTONE AND SANDSTONE - shale is light tan, some gray marbling, soft, variously grades into thin beds of siltstone and very fine grained sandstones; light rust brown and non-calcareous. Maximum thickness of sandstone is 0.8' from 18.3' to 19.1'. Last sandstone logged this interval from 22.0' to 22.3', brown, fine grained and calcareous. Shale as previously described becoming gray, slightly calcareous below 22.3'. Iron concretionary zone, very calcareous, noted from 24.5' to 24.7'.	L 0.2' L 1.0' G 1.2' L 0.3'	Box 1 Box 2 Box 3	2. Drilling: 6" auger to 7.0'; 6" core to total depth of 25.0'. 3. Jars: A. 2.0' to 4.5' B. 4.5' to 7.0' 4. Cartons: 1. 7.7' to 8.7' 2. 12.7' to 13.5' 3. 19.2' to 20.0' 4. 23.0' to 24.0' 5. Core Boxes: 1. 7.0' to 12.7' 2. 12.7' to 18.3' 3. 13.3' to 24.7'
	20.0'					
			T. D. 25.0'			

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT: Aubrey Lake

HOLE NO. 8A6C-307

Hole No

DRILLING LOG

DIVISION: Southwestern

INSTALLATION: Fort W

1. PROJECT: Aubrey Lake
2. LOCATION (Coordinates or Station): Spillway Site "E"
3. DRILLING AGENCY: Corps of Engineers
4. HOLE NO. (As shown on drawing title and file number): 8A5C-308
5. NAME OF DRILLER: Schoonover
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 3.5'
8. DEPTH DRILLED INTO ROCK: 17.1'
9. TOTAL DEPTH OF HOLE: 20.6'
10. SIZE AND TYPE OF BIT: 8" Auger; 6
11. DATUM FOR ELEVATION SHOWN (TBM or MSL):
12. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: DISTURBED 1
14. TOTAL NUMBER CORE BOXES: 3
15. ELEVATION GROUND WATER:
16. DATE HOLE: STARTED 9 Dec. 1975
17. ELEVATION TOP OF HOLE:
18. TOTAL CORE RECOVERY FOR BORING: 10
19. SIGNATURE OF INSPECTOR:

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc. g
			0.0' to 3.5' CLAY - medium plasticity, brown, hard, silty to finely sandy, slightly moist, non-calcareous.		No Sample A B	** 1. Hole bai total dept pletion an plastic pi for water vation.
			3.5' to 4.5' CLAY-SHALE - rust brown to reddish brown, some gray, soft, gravelly (composed mostly of small ferrous nodules), some calcareous granules.		C	
	10.0'	1 2 3	4.5' to 20.6' SHALE AND SANDSTONE - predominantly shale, light tan to grayish tan, soft, non-calcareous with interruptions of light rust brown, fine grained sandstone noted at the following intervals: 10.5' to 11.0'; 11.5' to 12.3'; 12.8' to 14.9'; 16.9' to 17.2'. Shale becoming slightly calcareous from 17.2' to total depth. Iron concretionary zone, very calcareous from 20.0 to 20.4'.	L 0.4' L 0.5' G 0.9'	Box 1 Box 2 Box 3	2. Drilling to 7.0'; 6 total depth 3. Jars: A. 2.0' to B. 3.5' to C. 4.5' to 4. Cartons: 1. 8.4' to 2. 14.4' to 3. 19.0' to 5. Core Boxe 1. 7.0' to 2. 12.8' to 3. 20.0' to
	20.0'					
			T. D. 20.6'			

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT: Aubrey Lake

Hole No. 8A6C-308

LING LOG DIVISION Southwestern	INSTALLATION Fort W[illegible]h	SHEET 1 OF 1 SHEETS
Aubrey Lake	10. SIZE AND TYPE OF BIT 8" Auger; 6" Core	
N (Coordinates or Station) Spillway Site "E"	11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	
G AGENCY Corps of Engineers	12. MANUFACTURER'S DESIGNATION OF DRILL Failing 1500	
(As shown on drawing title ... number) 8A6C-308	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 1 · UNDISTURBED 0
DRILLER Schoonover	14. TOTAL NUMBER CORE BOXES 3	
N OF HOLE	15. ELEVATION GROUND WATER **	
CAL ☐ INCLINED ______ DEG. FROM VERT.	16. DATE HOLE	STARTED 9 Dec. 1975 · COMPLETED 9 Dec. 1975
S OF OVERBURDEN 3.5'	17. ELEVATION TOP OF HOLE	
RILLED INTO ROCK 17.1'	18. TOTAL CORE RECOVERY FOR BORING 100 %	
EPTH OF HOLE 20.6'	19. SIGNATURE OF INSPECTOR Logan	

DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
		0.0' to 3.5' CLAY - medium plasticity, brown, hard, silty to finely sandy, slightly moist, non-calcareous.		No Sample A B	** 1. Hole bailed to near total depth upon completion and slotted plastic pipe installed for water level observation.
	1	3.5' to 4.5' CLAY-SHALE - rust brown to reddish brown, some gray, soft, gravelly (composed mostly of small ferrous nodules), some calcareous granules.		C	2. Drilling: 8" auger to 7.0'; 6" core to total depth of 20.6'.
10.0'	2	4.5' to 20.6' SHALE AND SANDSTONE - predominantly shale, light tan to grayish tan, soft, non-calcareous with interruptions of light rust brown, fine grained sandstone noted at the following intervals: 10.5' to 11.0'; 11.5' to 12.3'; 12.8' to 14.9'; 16.9' to 17.2'. Shale becoming slightly calcareous from 17.2' to total depth. Iron concretionary zone, very calcareous from 20.0 to 20.4'.	L 0.4' L 0.5' G 0.9'	Box 1 Box 2 Box 3	3. Jars: A. 2.0' to 3.5' B. 3.5' to 4.5' C. 4.5' to 7.0' 4. Cartons: 1. 8.4' to 9.4' 2. 14.4' to 15.4' 3. 19.0' to 20.0' 5. Core Boxes: 1. 7.0' to 12.8' 2. 12.8' to 20.0' 3. 20.0' to 20.6'
.0'	3	T. D. 20.6'			

36 PREVIOUS EDITIONS ARE OBSOLETE.
(TRANSLUCENT)

PROJECT Aubrey Lake
HOLE NO. 8A6C-308

Hole No. 8A6C-309

DRILLING LOG DIVISION Southwestern	INSTALLATION Fort Worth	SHEET 1 OF 1 SHEETS
1. PROJECT Aubrey Lake	10. SIZE AND TYPE OF BIT 8" Auger; 6" Core	
2. LOCATION (Coordinates or Station) Spillway Site "E"	11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	
3. DRILLING AGENCY Corps of Engineers	12. MANUFACTURER'S DESIGNATION OF DRILL Failing 1500	
4. HOLE NO. (As shown on drawing title and file number) 8A6C-309	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 1 · UNDISTURBED 0
5. NAME OF DRILLER Schoonover	14. TOTAL NUMBER CORE BOXES 1	
6. DIRECTION OF HOLE ☐ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.	15. ELEVATION GROUND WATER **	
	16. DATE HOLE	STARTED 10 Dec. 1975 · COMPLETED 10 Dec. 1975
7. THICKNESS OF OVERBURDEN 4.5'	17. ELEVATION TOP OF HOLE	
8. DEPTH DRILLED INTO ROCK 10.5'	18. TOTAL CORE RECOVERY FOR BORING 100 %	
9. TOTAL DEPTH OF HOLE 15.0'	19. SIGNATURE OF INSPECTOR Logan	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			0.0' to 4.5' CLAY - medium plasticity, brown, hard, silty to finely sandy, slightly moist, becoming more moist from 2.0' to 4.5', slightly calcareous.		No Sample A B	** 1. Hole was bailed to near total depth upon completion and slotted plastic pipe installed for water level observation.
	10.0'	1	4.5' to 9.9' CLAY-SHALE - appears to be reworked shale, rust brown, marbled gray, soft, abundant calcareous nodules throughout, moist. Clay-shale is gravelly (mostly ferrous nodules) throughout this interval. Calcareous from 9.3' to 9.9'.	Actual Loss 1.4' L 0.6' G 0.6'	Box 1	2. Drilling: 8" auger to 7.0'; 6" core to total depth of 15.0'. 3. Jars: A. 2.0' to 4.5' B. 4.5' to 7.0' 4. Cartons: 1. 7.5' to 8.5' 2. 14.0' to 15.0' 5. Core Box: 1. 7.0' to 15.0'
		2	9.9' to 11.3' Core lost due to grinding.			
			11.3' to 15.0' SHALE AND SANDSTONE - shale is tan, to grayish tan, soft, silty, finely sandy and is interrupted by tan very fine grained sandstone at the following intervals: 11.8' to 12.0'; 12.5' to 13.3'. Ironstone noted from 13.3' to 13.4'. Shale and sandstone is non-calcareous.			
			T. D. 15.0'			

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.
(TRANSLUCENT)

PROJECT Aubrey Lake
HOLE NO. 8A6C-309

DRILL

1. PROJECT

2. LOCATI

3. DRILLING

4. HOLE NO

5. NAME OF

6. DIRECTIO

7. THICKNES

8. DEPTH DR

9. TOTAL DE

ELEVATION

ENG FORM MAR 71

Hole No. 8A6C-309

DIVISION Southwestern	INSTALLATION Fort Worth
	SHEET 1 OF 1 SHEETS
ubrey Lake	10. SIZE AND TYPE OF BIT 8" Auger; 6" Core
Spillway Site "E"	11. DATUM FOR ELEVATION SHOWN (TBM or MSL)
orps of Engineers	12. MANUFACTURER'S DESIGNATION OF DRILL Failing 1500
8A6C-309	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 1; UNDISTURBED 0
Schoonover	14. TOTAL NUMBER CORE BOXES 1
	15. ELEVATION GROUND WATER **
DEG. FROM VERT.	16. DATE HOLE: STARTED 10 Dec. 1975; COMPLETED 10 Dec. 1975
4.5'	17. ELEVATION TOP OF HOLE
10.5'	18. TOTAL CORE RECOVERY FOR BORING 100 %
15.0'	19. SIGNATURE OF INSPECTOR

CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
0.0' to 4.5' CLAY - medium plasticity, brown, hard, silty to finely sandy, slightly moist, becoming more moist from 2.0' to 4.5', slightly calcareous.		No Sampl A	** 1. Hole was bailed to near total depth upon completion and slotted plastic pipe installed for water level observation.
4.5' to 9.9' CLAY-SHALE - appears to be reworked shale, rust brown, marbled gray, soft, abundant calcareous nodules throughout, moist. Clay-shale is gravelly (mostly ferrous nodules) throughout this interval. Calcareous from 9.3' to 9.9'.	Actual Loss 1.4' L 0.6' G 0.6'	B Box 1	2. Drilling: 8" auger to 7.0'; 6" core to total depth of 15.0'. 3. Jars: A. 2.0' to 4.5' B. 4.5' to 7.0' 4. Cartons: 1. 7.5' to 8.5' 2. 14.0' to 15.0' 5. Core Box: 1. 7.0' to 15.0'
9.9' to 11.3' Core lost due to grinding.			
11.3' to 15.0' SHALE AND SANDSTONE - shale is tan, to grayish tan, soft, silty, finely sandy and is interrupted by tan very fine grained sandstone at the following intervals: 11.8' to 12.0'; 12.5' to 13.3'. Ironstone noted from 13.3' to 13.4'. Shale and sandstone is non-calcareous.			
T. D. 15.0'			

NS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT Aubrey Lake

HOLE NO. 8A6C-309

Hole No. 8A-310

DRILLING LOG — DIVISION Southwestern	INSTALLATION Fort Worth — SHEET OF 1 SHEETS
1. PROJECT Aubrey Dam	10. SIZE AND TYPE OF BIT auger
2. LOCATION (Coordinates or Station) Outlet Works	11. DATUM FOR ELEVATION SHOWN (TBM or MSL)
3. DRILLING AGENCY USCE	12. MANUFACTURER'S DESIGNATION OF DRILL Failing 1500
4. HOLE NO. (As shown on drawing title and file number) 8A-310	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 5; UNDISTURBED 0
5. NAME OF DRILLER Mullins	14. TOTAL NUMBER CORE BOXES - -
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER **
	16. DATE HOLE: STARTED 19 Sep 80; COMPLETED 19 Sep 80
7. THICKNESS OF OVERBURDEN 10.3	17. ELEVATION TOP OF HOLE offset elev base
8. DEPTH DRILLED INTO ROCK 0.7	18. TOTAL CORE RECOVERY FOR BORING %
9. TOTAL DEPTH OF HOLE 11 0	19. SIGNATURE OF INSPECTOR L P Cole by JK

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			0.0' to 1.0' CLAY, low plasticity, hard, dry, silty, dark gray.		A B	*** 1. Hole was dry after completion. 16 hour check, hole was dry.
			1.0' to 4.0' CLAY, medium plasticity, hard, dry, gray.		C	2. Jars: A. 0.0 to 1.0 B. 1.0 to 4.0 C. 4.0 to 6.0 D. 6.0 to 9.0 E. 9.0 to 10.3 F. 10.3 to 11.0
			4.0' to 6.0' CLAY, medium plasticity, silty, stiff, gravelly, some caliche, tan and white.		D	
	10				E F	3. Hole offset 10' East.
			6.0' to 10.3' CLAY, low plasticity, medium stiff, sandy, moist to 9', wet from 9' to 10.3', tan.			
			10.3' to 11.0' SHALE, weathered to 10.5', unweathered from 10.5' to 11', stiff, dark gray.			
	20					
			T.D. - 11.0' -			

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT Aubrey Dam

HOLE NO. 8A-310

RECORD DRAWING-WORK AS BUILT

SYM	DO NO	ACTION	DATE	DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

DESIGNED BY:
DRAWN BY:
REVIEWED BY:

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS
EMBANKMENT, SPILLWAY AND OUTLET WORKS
LOGS OF BORINGS
8A6C-307, 8A6C-308, 8A6C-309 AND 8A-310

SUBMITTED BY

ENGINEER

INVITATION NO. DACW63-82-B-0025

DATE MAR. 1982

CONTRACT NO. DACW63-82-C-0083

DRAWING NUMBER

SHEET NO. OF

SEQUENCE NO. 34

CONTRACT NO DACW63-82-C-0083

TO ACCOMPANY FOUNDATION REPORT

Hole No. 8A-311

DRILLING LOG

DIVISION Southwestern	INSTALLATION Fort Worth
SHEET 1 OF 1 SHEETS	
1. PROJECT Aubrey Dam	10. SIZE AND TYPE OF BIT auger
2. LOCATION (Coordinates or Station) Outlet Works	11. DATUM FOR ELEVATION SHOWN (TBM or MSL)
3. DRILLING AGENCY USCE	12. MANUFACTURER'S DESIGNATION OF DRILL Failing 1500
4. HOLE NO. (As shown on drawing title and file number) 8A-311	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: DISTURBED 5; UNDISTURBED 0
5. NAME OF DRILLER Mullins	14. TOTAL NUMBER CORE BOXES - -
6. DIRECTION OF HOLE ☐ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.	15. ELEVATION GROUND WATER ***
7. THICKNESS OF OVERBURDEN 13.8	16. DATE HOLE: STARTED 5; COMPLETED 6
8. DEPTH DRILLED INTO ROCK 2.2	17. ELEVATION TOP OF HOLE 573.6 (offset elev)
9. TOTAL DEPTH OF HOLE 16.0	18. TOTAL CORE RECOVERY FOR BORING %
	19. SIGNATURE OF INSPECTOR L P Cole

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			0.0' to 1.0' SILT, medium stiff, dry, low plasticity, dark brown.		A	****
			1.0' to 6.7' CLAY, low plastcity, medium stiff, silty, sandy, sligtly moist, red and tan.		B	1. Hole was dry after completion. 16 hour check, level was 15.4' 2. Jars: A. 0.0 to 1.0 B. 1.0 to 6.7 C. 6.7 to 12.0 D. 12.0 to 13.8 E. 13.8 to 16.0
	10		6.7' to 12.0' CLAY, low plasticity, medium stiff, sandy, moist, tan and gray.		C	3. Hole offset 30 ft. on a bearing of N 90° E.
			12.0' to 13.8' SAND, gravelly, medium dense, clayey, tan and brown.		D	
			13.8' to 16.0' SHALE, reworked in upper 0.3', unweathered darl gray..		E	
	20		T.D. - 16.0' -			

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT Aubrey Dam

HOLE NO. 8A-311

H

DRILLING LOG

DIVISION Southwestern	INSTALLATION Fort Worth
1. PROJECT Aubrey Dam	10. SIZE AND TYPE OF BIT auger
2. LOCATION (Coordinates or Station) Outlet Works	11. DATUM FOR ELEVATION SHOWN
3. DRILLING AGENCY USCE	12. MANUFACTURER'S DESIGNATION OF Failing 1500
4. HOLE NO. (As shown on drawing title and file number) 8A-312	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: DISTURB 6
5. NAME OF DRILLER Mullins	14. TOTAL NUMBER CORE BOXES
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.	15. ELEVATION GROUND WATER **
7. THICKNESS OF OVERBURDEN 15.0	16. DATE HOLE: STARTED 19 Sep 80
8. DEPTH DRILLED INTO ROCK 0.5	17. ELEVATION TOP OF ℄ hole 56
9. TOTAL DEPTH OF HOLE 15 5	18. TOTAL CORE RECOVERY FOR BORIN
	19. SIGNATURE OF INSPECTOR L P Cole

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	(Drilling t weathe
			0.0' to 2.0' SAND, fine grained, medium dense, dry, brown.		A	** 1. Au rated 24 ho was
			2.0' to 12.0' GRAVEL, coarse to fine grained, medium dense, moist from 2' to 5', damp from 5' to 7', becomes saturated at 7'.		B	
					C	2. Ja A. 0. B. 2. C. 5. D. 7. E. 12 F. 15
	10		12.0' to 15.0' CLAY, medium plasticity, very stiff, moist, gravelly, brown.		D	3. Hol on N80 ina Ele tai
			15.0' to 15.5' SHALE, unweathered, soft, dark gray.		E	
					F	
	20		T.D. - 15.5' -			

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT Aubrey Lake

Hole No. 8A-312

ision Southwestern	INSTALLATION Fort Worth
	SHEET 1 OF 1 SHEETS
	10. SIZE AND TYPE OF BIT AUGER
	11. DATUM FOR ELEVATION SHOWN (TBM or MSL)
ion)	12. MANUFACTURER'S DESIGNATION OF DRILL Failing 1500
e Hole) 8A 312	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 6, UNDISTURBED 0
line	14. TOTAL NUMBER CORE BOXES - -
	15. ELEVATION GROUND WATER **
DEG. FROM VERT.	16. DATE HOLE: STARTED 19 Sep 80, COMPLETED 19 Sep 80
15.0	17. ELEVATION TOP OF hole 567.9
0.5	18. TOTAL CORE RECOVERY FOR BORING %
15.5	19. SIGNATURE OF INSPECTOR L P Cole lgf

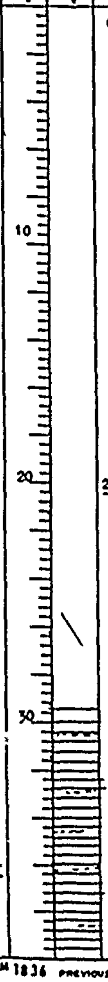
CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
0.0' to **2.0'** SAND, fine grained, medium dense, dry, brown.		A B	** 1. Augered into saturated gravel at 7'. 24 hour check - level was same.
2.0' to **12.0'** GRAVEL, coarse to fine grained, medium dense, moist from 2' to 5', damp from 5' to 7', becomes saturated at 7'.		C D	2. Jars: A. 0.0 to 2.0 B. 2.0 to 5.0 C. 5.0 to 7.0 D. 7.0 to 12.0 E. 1. ? to 15.0 F. 15.. to 15.5
12.0' to **15.0'** CLAY, medium plasticity, very stiff, moist, gravelly, brown.		E	3. Hole offset 80 ft. on a bearing of N80°E due to inaccessible terrain. Elevation was obtained with level.
15.0' to **15.5'** SHALE, unweathered, soft, dark gray. T.D. - 15.5' -		F	

ATIONS ARE OBSOLETE. PROJECT Aubrey Lake HOLE NO. 8A-312

Hole No. 6DC-313

DRILLING LOG DIVISION SWD	INSTALLATION FWD
	SHEET 1 OF 3 SHEETS
1. PROJECT Aubrey Dam	10. SIZE AND TYPE OF BIT 8" aug., 6" den., 6" core
2. LOCATION (Coordinates or Station) Outlet	11. DATUM FOR ELEVATION SHOWN (TBM or MSL)
3. DRILLING AGENCY USCE-C	12. MANUFACTURER'S DESIGNATION OF DRILL Failing 1500
4. HOLE NO. (As shown on drawing title and file number) 6DC-313	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 14, UNDISTURBED 6
5. NAME OF DRILLER Newboman & Mullins	14. TOTAL NUMBER CORE BOXES 10
6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER ****
	16. DATE HOLE: STARTED 29 Aug, COMPLETED 10 Sep 80
7. THICKNESS OF OVERBURDEN 29.5	17. ELEVATION TOP OF HOLE
8. DEPTH DRILLED INTO ROCK 53.6	18. TOTAL CORE RECOVERY FOR BORING 99 %
9. TOTAL DEPTH OF HOLE 83.1	19. SIGNATURE OF INSPECTOR McVey to 39', Cole to T.D.

ELEVATION a · DEPTH b · LEGEND c



CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
0.0' to **16.0'** CLAY **0.0'** to **4.0'**, low plasticity, hard, dry, brown, silty. **4.0'** to **6.3'**, med. plast., V. stiff, dry, strong brown, sl. sandy. **6.3'** to **16.0'**, med./low plast., stiff, dry, yellowish brown, silty, lime nodules and sand below 15.0'.		A B C 1 D 2 E 3 F	**** 1. Bailed hole to near T.D., 24 hr. check, water @ 23.5'. 2. Jars: ** from den. ca A. 0.0 to 4.0 B. 4.0 to 5.0 C. 5.0 to 5.5 D. 7.0 E. 9.0 F. 11.0 G. 11.0 to 13.0 ** H. 15.0 I. 17.0 J. 18.0 ** K. 20.0 L. 20.0 to 21.3 ** M. 21.3 to 26.3 N. 26.3 to 29.5 O. 29.5 to 32.0
16.0' to **21.3'** SAND, fine grained, clayey & silty seams within, sl. gravelly, dry, strong brown, & yellow brown W/ light grey.		G 4 H 5 I J	3. Denison cans: 1. 5.5 to 7.0 2. 7.0 to 9.0 3. 9.0 to 11.0 4. 13.0 to 15.0 5. 15.0 to 17.0 6. 18.0 to 20.0
21.3' to **29.5'** GRAVEL, coarse to fine & round, damp to moist? (drill fluid still in hole), strong brn. clayey, sandy.		6 K L	
29.5' to **82.9'** CLAYSHALE, unweath., dk, grey, soft to mod. soft (Rx. classif) massive, silty W/ interbeds of thin silty & sandy seams @ 10-12 degrees. Several med. hard SANDSTONE seams as indicated below: 45.6— 45.9 49.6 50.9 50.4 52.1 57.0 57.3 61.2 61.4 64.1 64.4 64.9 65.0 66.7 66.8 Highly fossilif. zone from 69.9 to 70.4 (ctn, #7). Structural features as follows: 43.4 open fract 47.1 " " 51.3 " " 64.2 " "		M N O	4. Cartons: 1-35.3 to 36.3 2-41.9 to 42.9 3-45.6 to 46.3 4-50.5 to 51.3 5-57.3 to 58.3 6-65.8 to 66.8 7-69.9 to 70.6 8-75.3 to 76.3 9-81.9 to 82.9
		☒	5. Drilling: 0.0' to 5.0', 8" auger, Set 5.0' casing
	6.02	Box 1	5.0' to 21.5' 6" denison 8" casing as drill progressed
	6.02	2	21.5' to 32.0' 8" auger

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. PROJECT HOLE NO. 6DC-313

DRILLING LOG

1. PROJECT AUB

2. LOCATION (Coordinates or S

3. DRILLING AGENCY

4. HOLE NO. (As shown on dra and file number)

5. NAME OF DRILLER

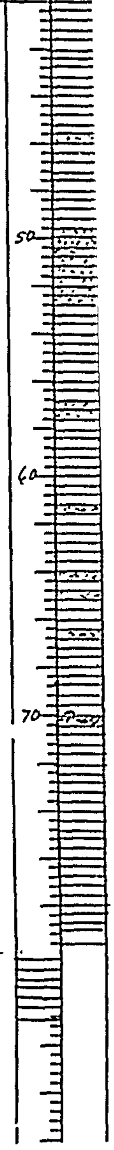
6. DIRECTION OF HOLE ☐ VERTICAL ☐ INCLINE

7. THICKNESS OF OVERBURDE

8. DEPTH DRILLED INTO ROCK

9. TOTAL DEPTH OF HOLE

ELEVATION a · DEPTH b · LEGEND c



RECORD DRAWING-WORK AS BUILT

Hole No. 6DC-313

LOG | DIVISION SWD | INSTALLATION FWD | SHEET 1 of 3 SHEETS

rey Dam

10. SIZE AND TYPE OF BIT 8" aug., 6" den., 6" core
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)
(Coordinates or Station)
t
12. MANUFACTURER'S DESIGNATION OF DRILL Failing 1500
ACY USCE-C
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED 14 | UNDISTURBED 6
(shown on drawing title) 6DC-313
14. TOTAL NUMBER CORE BOXES 10
LER
15. ELEVATION GROUND WATER ----
lie A. Mullins
HOLE
☐ INCLINED ________ DEG. FROM VERT.
16. DATE HOLE | STARTED 29 Aug | COMPLETED 10 Sep 80
17. ELEVATION TOP OF HOLE
OVERBURDEN 29.5
18. TOTAL CORE RECOVERY FOR BORING 99 %
D INTO ROCK 53.6
19. SIGNATURE OF INSPECTOR McVey to 39', Cole to T.D.
OF HOLE 83.1

TH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
		0.0' to 16.0' **CLAY** 0.0' to 4.0', low plasticity, hard, dry, brown, silty. 4.0' to 6.3', med. plast., V. stiff, dry, strong brown, sl. sandy. 6.3' to 16.0', med./low plast., stiff, dry, yellowish brown, silty, lime nodules and sand below 15.0'. **16.0' to 21.3'** **SAND**, fine grained, clayey & silty seams within, sl. gravelly, dry, strong brown, & yellow brown W/ light grey. **21.3' to 29.5'** **GRAVEL**, coarse to fine & round, damp to moist? (drill fluid still in hole), strong brn. clayey, sandy. **29.5' to 82.9'** **CLAYSHALE**, unweath., dk. grey, soft to mod. soft (Rx. classif) massive, silty W/ interbeds of thin silty & sandy seams @ 10-12 degrees. Several med. hard SANDSTONE seams as indicated below: 45.6— 45.9 49.6 50.9 50.4 52.1 57.0 57.3 61.2 61.4 64.1 64.4 64.9 65.0 66.7 66.8 Highly fossilif. zone from 69.9 to 70.4 (ctn. #7). Structural features as follows: 43.4 open fract 47.1 " " 51.3 " " 64.2 " "	L-02 G-02	A B C 1 D 2 E 3 F G 4 H 5 I J 6 K L M N O Box 1 2	---- 1. Bailed hole to near T.D., 24 hr. check, water @ 23.5'. 2. Jars: ** from den. ca A. 0.0 to 4.0 B. 4.0 to 5.0 C. 5.0 to 5.5 D. 7.0 E. 9.0 F. 11.0 G. 11.0 to 13.0 ** H. 15.0 I. 17.0 J. 18.0 ** K. 20.0 L. 20.0 to 21.3 ** M. 21.3 to 26.3 N. 26.3 to 29.5 O. 29.5 to 32.0 3. Denison cans: 1. 5.5 to 7.0 2. 7.0 to 9.0 3. 9.0 to 11.0 4. 13.0 to 15.0 5. 15.0 to 17.0 6. 18.0 to 20.0 4. Cartons: 1-35.3 to 36.3 2-41.9 to 42.9 3-45.6 to 46.3 4-50.5 to 51.3 5-57.5 to 58.3 6-65.8 to 66.8 7-69.9 to 70.6 8-75.3 to 76.3 9-81.9 to 82.9 5. Drilling: 0.0' to 5.0', 8" auger, Set 5.0' casing 5.0' to 21.5' 6" denison 8" casing as drill progressed 21.5' to 32.0' 8" auger

PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT | HOLE NO. 6DC-313

Hole No. 6DC-313

DRILLING LOG | DIVISION | INSTALLATION | SHEET 4 of 3 SHEETS

1. PROJECT AUBREY DAM
10. SIZE AND TYPE OF BIT
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)
2. LOCATION (Coordinates or Station) OUTLET
12. MANUFACTURER'S DESIGNATION OF DRILL
3. DRILLING AGENCY
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED | UNDISTURBED
4. HOLE NO. (As shown on drawing title and file number) 6DC-313
14. TOTAL NUMBER CORE BOXES
5. NAME OF DRILLER
15. ELEVATION GROUND WATER
6. DIRECTION OF HOLE
☐ VERTICAL ☐ INCLINED ________ DEG. FROM VERT.
16. DATE HOLE | STARTED | COMPLETED
17. ELEVATION TOP OF HOLE
7. THICKNESS OF OVERBURDEN
18. TOTAL CORE RECOVERY FOR BORING %
8. DEPTH DRILLED INTO ROCK
19. SIGNATURE OF INSPECTOR
9. TOTAL DEPTH OF HOLE

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
				L-1.2	2	Drilling cont. Set 31.5' casing, clearout to 33.5' 33.5' to 83.1' 6" core
				G-03	3 3	
	50			L-0.1	4 4	
				G-03		
				L-0.1	5 5	
	60			G-02	6	
				L-0.2	6 7	
	70			L-0.2	7 8	
				G 0.1		
				G-0.2	8 9	
				G 0.1	10	
			- T.D. 83.1 -	G 0.1	10	
				9		
			HOLE TAPED 72.9			

SYM	OC NO.	ACTION	DATE	DESCRIPTION OF REVISION

U.S ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

DESIGNED BY: --------
DRAWN BY --------
REVIEWED BY: --------

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS
EMBANKMENT, SPILLWAY AND
OUTLET WORKS
LOGS OF BORINGS
8A-311, 8A-312, 6DC-313

SUBMITTED BY
ENGINEER
INVITATION NO. DACW63-82-B-0025 | DATE MAR. 1982
CONTRACT NO. DACW63-82-C-0083
DRAWING NUMBER | SHEET NO. OF | SEQUENCE NO. 35

CONTRACT NO DACW63-82-C-0083

RECORD DRAWING-WORK AS BUILT

TO ACCOMPANY FOUNDATION REPORT

Hole No. 6DC 314

DRILLING LOG | DIVISION Southwestern | INSTALLATION Fort Worth | SHEET OF 3 SHEETS

1. PROJECT Aubrey Dam
2. LOCATION (Coordinates or Station) Outlet Works
3. DRILLING AGENCY USCE
4. HOLE NO. (As shown on drawing title and file number) 6DC-314
5. NAME OF DRILLER Mullins
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN 18.5
8. DEPTH DRILLED INTO ROCK 70.5
9. TOTAL DEPTH OF HOLE 89.0
10. SIZE AND TYPE OF BIT [illegible]
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)
12. MANUFACTURER'S DESIGNATION OF DRILL Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED 7 UNDISTURBED 6
14. TOTAL NUMBER CORE BOXES 15
15. ELEVATION GROUND WATER **
16. DATE HOLE STARTED 10 Sep 80 COMPLETED 15 Sep 80
17. ELEVATION TOP OF HOLE
18. TOTAL CORE RECOVERY FOR BORING 100%
19. SIGNATURE OF INSPECTOR

ELEVATION (a) | DEPTH (b) | LEGEND (c) | CLASSIFICATION OF MATERIALS (Description) (d) | % CORE RECOVERY (e) | BOX OR SAMPLE NO. (f) | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) (g)

CLASSIFICATION OF MATERIALS

<u></u>0.0' to 2.5'

CLAY, low plasticity, hard, silty, dark brown.

2.5' to 3.5'

CLAY, medium plasticity, hard, moist, brown

3.5' to 13.5'

CLAY (CALICHE), medium to low plasticity, hard, slightly moist, silty, calcareous nodules, brown.

13.5' to 15.0'*

GRAVEL, well-graded, medium dense, clayey, brown.

15.0' to 18.5'*

CLAY (CALICHE), low plasticity, hard, moist, calcareous nodules, light brown.

18.5' to 24.5'

SHALE, highly weathered to 22.0', partly weathered from 22.0' to 24.5', soft, numerous fractures to 22.0', tan and gray.

24.5' to 89.0'

SHALE, unweathered, moderately hard, massive, gray, with interbeds of moderately hard SANDSTONE as shown below:

44.3' to 44.5 - SANDSTONE
44.7' to 44.9' - SANDSTONE

54.3' to 54.9' - SANDSTONE

60.6' to 60.8' - SANDSTONE

62.1' to 62.4' - SANDSTONE
62.7' to 62.9' - SANDSTONE

65.0' to 65.5' - SANDSTONE
66.0' to 70.0' - SANDSTONE

72.3' to 74.5' - very fossiliferous, numerous claystone lenses

T.D. - 89.0' -

% CORE RECOVERY / BOX OR SAMPLE NO.

% Core Recovery	Box or Sample No.
	A
	1
	2
	3
	4
	5
	6
20.5	20.5
L 00 24.5	1
L 00 290	2
L 0.0 330	3
L 00 365	4
L 03 410	5
G 03 495	6
L 0.0 535	7
L 05 570	8
G. 0.1 61.5	9
G 04 655	10
L. 0.0 695	11
L 0.7 735	12
G. 0.1 780	13
820 G 0.2 860	14
G.03 890	15

REMARKS

**

1. After completion, hole was bailed to T.D. 24 hour check, level was 39.3

2. Jars:
   - A. 0.0 to 2.5
   - B. @ 4.5
   - C. @ 6.5
   - D. @ 8.5
   - E. @ 10.5
   - F. @ 12.5
   - G. @ 13.5

3. Denison cans:
   - 1. 2.5 to 4.5
   - 2. 4.5 to 6.5
   - 3. 6.5 to 8.5
   - 4. 8.5 to 10.5
   - 5. 10.5 to 12.5
   - 6. 12.5 to 13.5

4. Cartons were not requested.

5. Drilling methods:
   - 0.0 to 2.5 - auger
   - 2.5 to 13.5 - denison bb'l.
   - 13.5 to 20.5 - auger
   - 20.5 to 89.0 - core

6. Depth of weathering at 24.5'

* Substitute the following classification of materials for this interval: Limestone: argil, weathered stained yellow-brown & white massive, hard, foss, irreg thin soft shale seams, limonite concretions. (See boring 3A6C-351 which was drilled at the same location).

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE | PROJECT Aubrey Dam | HOLE NO. 6DC 314

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	40			41.0	5	
			44.3' to 44.5 - SANDSTONE 44.7' to 44.9' - SANDSTONE	G 0.3	6	
	50			495 L 0.0 535	7	
			54.3' to 54.9' - SANDSTONE	L 05 570	8	
	60		60.6' to 60.8' - SANDSTONE	G 0.1 61.5	9	
			62.1' to 62.4' - SANDSTONE 62.7' to 62.9' - SANDSTONE	G 04 655	10	
			65.0' to 65.5' - SANDSTONE 66.0' to 70.0' - SANDSTONE	L. 00 695	11	
	70		72.3' to 74.5' - very fossiliferous, numerous claystone lenses	L 0.7 735	12	
				G. 0.1 780	13	
				820 G 0.2	14	
				860 G.03 890	15	
	90		T.D. - 89.0' -			

Hole No. 6DC-315

DRILLING LOG — DIVISION Southwestern — INSTALLATION Fort Worth — SHEET 1 OF 3 SHEETS

1. PROJECT Aubrey Dam
2. LOCATION (Coordinates or Station) Outlet Works
3. DRILLING AGENCY USCE
4. HOLE NO. (As shown on drawing title and file number) 6DC-315
5. NAME OF DRILLER Mullins
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN 18.5
8. DEPTH DRILLED INTO ROCK 76.3
9. TOTAL DEPTH OF HOLE 94.8
10. SIZE AND TYPE OF BIT auger, d bb'l, core bb'l
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)
12. MANUFACTURER'S DESIGNATION OF DRILL Failing 1500
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED 8 — UNDISTURBED 2
14. TOTAL NUMBER CORE BOXES 14
15. ELEVATION GROUND WATER **
16. DATE HOLE — STARTED 13 Sept 80 — COMPLETED 18 Sept 80
17. ELEVATION TOP OF HOLE
18. TOTAL CORE RECOVERY FOR BORING 98.4 %
19. SIGNATURE OF INSPECTOR L P Cole by JL

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			0.0' to 2.5' CLAY, low plasticity, hard, dry, brown.		A	**
					B 1	1. After completion, hole was bailed to T.D. 24 hr check, water level was 31.5'
			2.5' to 6.5' CLAY, medium plasticity, very stiff, slightly moist, brown.		C 2	2. Jars: A. 0.0 to 2.5 * B. 4.5 * C. @ 6.5 D. 6.5 to 11.5 E. 11.5 to 12.5 F. 12.5 to 17.5 G. 17.5 to 18.5 H. 18.5 to 20.5 * taken from denison shoe.
	10		6.5' to 18.5' CLAY, medium plasticity, hard, moist, gravelly except from 17.5' to 18.5', calcareous nodules.		D	
					E	3. Denison cans: 1. 2.5 to 4.5 2. 4.5 to 6.5
			18.5' to 30.0' SHALE, moderately soft, weathered as shown below: 18.5' to 20.5' - unweathered. 20.5' to 25.4' - highly weathered, soft, tan. 25.4' to 30.0' - slightly weathered, gray and tan		F	4. Cartons: 1. 22.6 to 23.6 2. 26.7 to 27.7 3. 30.0 to 31.0 4. 35.4 to 36.4 5. 38.9 to 39.9 6. 44.5 to 45.5 7. 51.2 to 52.2 8. 56.0 to 57.0 9. 59.8 to 60.6 11. 65.4 to 66.4 11. 70.6 to 71.6 12. 77.0 to 77.8 13. 80.8 to 81.8 14. 85.8 to 86.8 15. 90.0 to 90.9 16. 93.8 to 94.8
					G	
	20			205	H 20.5	
				L. 03 245	1	
			30.0' to 94.8' SHALE, moderately soft, unweathered, unjointed, unfractured, massive, gray. Interbeds of hard SANDSTONE at the following depths: 21.0' to 21.6' 38.9' to 40.3' 42.7' to 43.0' 45.7' to 45.0' 49.3' to 50.0' 57.3' to 58.3' 58.4' - very fossiliferous.	L. 06 285	2	5. Drilling methods: 0.0 to 2.5 - auger 2.5 to 6.5 - denison bb'l 6.5 to 20.5 - auger 20.5 to 94.8- core bb'l
	30			L. 0.0 325		6. Base of weathering at 30'
				G. 08 365	3	
	40			L. 04 40.5	4	
				G. 04 44.5	4	
				L. 0.0 490	5	
	50			G 0.2 535	6	
				L. 05 580	7	

Hole No. 6DC 315

RILLING LOG — VISION Southwestern	INSTALLATION Fort Worth — SHEET 1 OF 3 SHEETS
ECT Aubrey Dam	10 SIZE AND TYPE OF BIT auger, d bb'l, core bb'l
ATION (Coordinates or Station) Outlet Works	11 DATUM FOR ELEVATION SHOWN (TBM or MSL)
LING AGENCY USCE	12 MANUFACTURER'S DESIGNATION OF DRILL Failing 1500
E NO (As shown on drawing title and file number) 6DC-315	13 TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 8 — UNDISTURBED 2
E OF DRILLER Mullins	14 TOTAL NUMBER CORE BOXES 14
CTION OF HOLE ERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15 ELEVATION GROUND WATER **
	16 DATE HOLE — STARTED 13 Sept 80 — COMPLETED 18 Sept 80
KNESS OF OVERBURDEN 18.5	17 ELEVATION TOP OF HOLE
TH DRILLED INTO ROCK 76.3	18 TOTAL CORE RECOVERY FOR BORING 98.4 %
AL DEPTH OF HOLE 94.8	19 SIGNATURE OF INSPECTOR L P Cole by

ATION | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS (Description) | % CORE RECOVERY | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)

CLASSIFICATION OF MATERIALS

0.0' to 2.5'

CLAY, low plasticity, hard, dry, brown.

2.5' to 6.5'

CLAY, medium plasticity, very stiff, slightly moist, brow.

6.5' to 18.5'

CLAY, medium plasticity, hard, moist, gravelly except from 17.5' to 18.5', calcareous nodules.

18.5' to 30.0'

SHALE, moderately soft, weathered as shown below:
18.5' to 20.5' - unweathered.
20.5' to 25.4' - highly weathered, soft, tan.
25.4' to 30.0' - slightly weathered, gray and tan

30.0' to 94.8'

SHALE, moderately soft, unweathered, unjointed, unfractured, massive, gray.

Interbeds of hard SANDSTONE at the following depths:

21.0' to 21.6'
38.9' to 40.3'
42.7' to 43.0'
45.7' to 45.0'
49.3' to 50.0'
57.3' to 53.3'

58.4' - very fossiliferous.

T.D. - 94.8' -

% CORE RECOVERY / BOX OR SAMPLE NO.

% Core Recovery	Box or Sample No.
	A
	1 B
	2 C
	D
	E
	F
	G
20.5	H 20.5
L. 0.3 24.5	1
L. 0.6 28.5	2
L. 0.0 32.5	
G. 0.8 36.5	3
L. 0.4 40.5	4
G. 0.4 44.5	4
L. 0.0 49.0	5
G. 0.2 53.5	6
L. 0.5 58.0	7
L. 0.2 62.0	8
L. 0.1 66.0	9
L. 1.7 70.0	
G. 1.5 73.0	10
L. 1.4 77.0	11
G. 1.0 79.0	
L. 0.0 83.0	12
L. 0.2 87.0	13
G. 0.1 91.0	
L. 0.0 95.0	14

REMARKS

**

1. After completion, hole was bailed to T.D. 24 hr check, water level was 31.5'

2. Jars:
   - A. 0.0 to 2.5
   - * B. 4.5
   - * C. @ 6.5
   - D. 6.5 to 11.5
   - E. 11.5 to 12.5
   - F. 12.5 to 17.5
   - G. 17.5 to 18.5
   - H. 18.5 to 20.5
   - * taken from denison shoe.

3. Denison cans:
   - 1. 2.5 to 4.5
   - 2. 4.5 to 6.5

4. Cartons:
   - 1. 22.6 to 23.6
   - 2. 26.7 to 27.7
   - 3. 30.0 to 31.0
   - 4. 35.4 to 36.4
   - 5. 38.9 to 39.9
   - 6. 44.5 to 45.5
   - 7. 51.2 to 52.2
   - 8. 56.0 to 57.0
   - 9. 59.8 to 60.6
   - 11 65.4 to 66.4
   - 11. 70.6 to 71.6
   - 12. 77.0 to 77.8
   - 13. 80.8 to 81.8
   - 14. 85.8 to 86.8
   - 15. 90.0 to 90.9
   - 16. 93.8 to 94.8

5. Drilling methods:
   - 0.0 to 2.5 - auger
   - 2.5 to 6.5 - denison bb'l
   - 6.5 to 20.5 - auger
   - 20.5 to 94.8 - core bb'l

6. Base of weathering at 30'

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT Aubrey Dam

HOLE NO. 6DC 315

RECORD DRAWING-WORK AS BUILT

SYM	ZONE NO	ACTION	DATE	DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

DESIGNED BY
DRAWN BY
REVIEWED BY
SUBMITTED BY
ENGINEER

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS
EMBANKMENT, SPILLWAY AND
OUTLET WORKS
LOGS OF BORINGS
6 DC-314 AND 6DC-315

INVITATION NO. DACW63-82 B-0025
DATE MAR. 1982
CONTRACT NO. DACW63-82 C
DRAWING NUMBER
SHEET NO.
SEQUENCE 36

TO ACCOMPANY FOUNDATION REPORT

Hole No. 8A-315

DRILLING LOG	DIVISION Southwestern
INSTALLATION	Fort Worth
SHEET	of SHEETS
1. PROJECT	Aubrey Dam
2. LOCATION (Coordinates or Station)	Outlet Works
3. DRILLING AGENCY	USCE
4. HOLE NO. (As shown on drawing title and file number)	8A-316
5. NAME OF DRILLER	Mullins
6. DIRECTION OF HOLE	☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	--
8. DEPTH DRILLED INTO ROCK	--
9. TOTAL DEPTH OF HOLE	35.0
10. SIZE AND TYPE OF BIT	
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	
12. MANUFACTURER'S DESIGNATION OF DRILL	Failing 1500
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 7 / UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES	--
15. ELEVATION GROUND WATER	***
16. DATE HOLE	STARTED 19 Sep 80 / COMPLETED 19 Sep 80
17. ELEVATION TOP OF HOLE	
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	J. P. Cole by

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			0.0' to 11.0' CLAY, medium to high plasticity, stiff, moist black and white.		A	*** 1. After completion, water level in hole was 12.4. 16 hour check - level was 12.4'
			11.0' to 23.0' CLAY, high plasticity, medium stiff, moist to 16', very moist from 16' to 23', scattered gravel, tan and gray.		B	2. Jars: A. 0.0 to 5.0 B. 5.0 to 11.0 C. 11.0 to 16.0 D. 16.0 to 21.0 E. 21.0 to 23.0 F. 23/0 to 29.0 G. 29.0 to 35.0
	10		23.0' to 29.0' CLAY, medium plasticity, soft, wet, sandy, gray-green.		C	
			29.0' to 35.0' CLAY, medium plasticity, soft, wet, sandy, gray green.		D	
	20		T.D. - 35.0' -		E	
					F	
	30				G	

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT Aubrey Dam

HOLE NO. 8A 316

DRILLING LOG	DIVISION SWD
INSTALLATION	F
1. PROJECT	AUBREY DAM - OUTLET WORKS
2. LOCATION (Coordinates or Station)	STA 2 +10
3. DRILLING AGENCY	USCE-C
4. HOLE NO. (As shown on drawing title and file number)	BALC-358
5. NAME OF DRILLER	MULLINS
6. DIRECTION OF HOLE	☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	27.7'
8. DEPTH DRILLED INTO ROCK	76.8'
9. TOTAL DEPTH OF HOLE	104.5'
10. SIZE AND TYPE OF	
11. DATUM FOR ELEVAT	
12. MANUFACTURER'S D	
13. TOTAL NO. OF OVER-BURDEN SAMPLES TA	
14. TOTAL NUMBER COR	
15. ELEVATION GROUND	
16. DATE HOLE	
17. ELEVATION TOP OF	
18. TOTAL CORE RECOV	
19. SIGNATURE OF INSPE	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f
	0.0'		0.0' TO 13.5' CLAY: 0.0'-1.3' MED/HIGH PLASTICITY, STIFF, MOIST, DK.BRN, SANDY LIME 1.3'-5.6' as above, COLOR GRADES TO BRN 5.6'-13.5' LOW PLASTICITY, HARD; DRY, REDDISH YELLOW; SANDY & SILTY, VERY SANDY AFTER 10.6'		A B C
	10				D
			13.5' TO 16.1' GRAVEL COARSE TO FINE, DRY; STRONG BRN, VERY SANDY, CLAYEY		E
			16.1' TO 20.2': SAND: FINE-GRAINED; DRY; REDDISH YELLOW; SLI. GRAVELLY		F
	20		20.2' TO 27.7': GRAVEL COARSE TO FINE; DAMP; VERY SANDY, STRONG BRN TO BRN BY 24.2'		G H
	27.7' 30		27.7' TO 43.1': SHALE: 27.7'-28.3': WEATHERED; GRAY; MASSIVE; SAND IS OLIVE, VERY FRIABLE & WEAKLY CEMENTED 28.3'-43.1': UNWEATHERED; DK GRAY, MOD. SOFT, MASSIVE; SILTY; NUMEROUS THIN (<0.1' THICK) SAND-STONE SEAMS SCATTERED EXCEPT WHERE NOTED: @30.0' 30.3'-30.5' @31.5' 33.3'-34.2': VERY SILTY		I J ☒ Box 1 Box 2
	40				

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT AUBR

Hole No. BALC-358

DRILLING LOG	DIVISION SWD
INSTALLATION FWD	SHEET 1 OF 3 SHEETS
1. PROJECT AUBREY DAM - OUTLET WORKS	10. SIZE AND TYPE OF BIT AUGER & 6" CORE
2. LOCATION (Coordinates or Station) STA 25+10	11. DATUM FOR ELEVATION SHOWN (TBM or MSL)
3. DRILLING AGENCY USCE-C	12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 1500
4. HOLE NO. (As shown on drawing title and file number) BALC-358	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: DISTURBED 8 / UNDISTURBED 0
5. NAME OF DRILLER HULLINS	14. TOTAL NUMBER CORE BOXES 16
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER * SEE REMARKS
7. THICKNESS OF OVERBURDEN 27.7'	16. DATE HOLE: STARTED 9FEB81 / COMPLETED 13FEB81
8. DEPTH DRILLED INTO ROCK 76.8'	17. ELEVATION TOP OF HOLE
9. TOTAL DEPTH OF HOLE 104.5'	18. TOTAL CORE RECOVERY FOR BORING 99 %
	19. SIGNATURE OF INSPECTOR McVEY

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0.0'		0.0' To 13.5' CLAY 0.0'-1.3' MED/HIGH PLASTICITY, STIFF; MOIST, DK. BRN, SANDY LIME 1.3'-5.6' as above, COLOR GRADES TO BRN 5.6'-13.5' LOW PLASTICITY, HARD; DRY, REDDISH YELLOW, SANDY & SILTY, VERY SANDY AFTER 10.6'		A B C D	1. WATER LEVEL: 84 HRS AFTER BAILING WATER LEVEL WAS @ 27.2' 2. JAR SAMPLES. A: 0.0'-1.3' B: 1.3'-5.6' C: 5.6'-10.6' D: 10.6'-13.5' E 13.5'-16.1' F. 16.1'-20.2' G. 20.2'-24.2' H: 24.2'-27.7' I 27.7'-28.3' J: 28.3'-29.0'
	10					
			13.5' To 16.1' GRAVEL COARSE TO FINE, DRY; STRONG BRN, VERY SANDY, CLAYEY		E	3. DRILLING: AUGER 0.0'-29.0' SET 30' OF CASING. CLEANED HOLE OUT TO 30.0'. 6" CORE 30.0'-105.0'.
			16.1' To 20.2' SAND FINE-GRAINED; DRY, REDDISH YELLOW; SLI GRAVELLY		F	
	20		20.2' To 27.7' GRAVEL COARSE TO FINE; DAMP; VERY SANDY, STRONG BRN TO BRN BY 24.2'		G H	4. E-LOGGING: BORING DRILLED 15' SOUTH OF BALC-358 & WAS E-LOGGED. 5. BASE OF WEATHERING: @ 28.3'
	27.7'		27.7' To 43.1': SHALE: 27.7'-28.3' WEATHERED; GRAY, MASSIVE; SAND IS OLIVE, VERY FRIABLE & WEAKLY CEMENTED 28.3'-43.1' UNWEATHERED, DK. GRAY; MOD. SOFT, MASSIVE; SILTY; NUMEROUS THIN (<0.1' THICK) SANDSTONE SEAMS SCATTERED EXCEPT WHERE NOTED: @ 30.0' 30.3'-30.5' @ 31.5' 33.3'-34.2': VERY SILTY		I J ☒ Box 1 Box 2	
	30					

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PROJECT AUBREY DAM

HOLE NO. BALC-358

Hole No. BALC 358

DRILLING LOG	DIVISION SWD
INSTALLATION FWD	SHEET 2 OF 3 SHEETS
1. PROJECT AUBREY DAM - OUTLET WORKS	10. SIZE AND TYPE OF BIT AUGER 6" CORE
2. LOCATION (Coordinates or Station) STA 25+10	11. DATUM FOR ELEVATION SHOWN (TBM or MSL)
3. DRILLING AGENCY USCE-C	12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 1500
4. HOLE NO. (As shown on drawing title and file number) BALC-358	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: DISTURBED 8 / UNDISTURBED 0
5. NAME OF DRILLER HULLINS	14. TOTAL NUMBER CORE BOXES 16
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER * SEE REMARKS
7. THICKNESS OF OVERBURDEN 27.7'	16. DATE HOLE: STARTED 9FEB81 / COMPLETED 13FEB81
8. DEPTH DRILLED INTO ROCK 76.8'	17. ELEVATION TOP OF HOLE
9. TOTAL DEPTH OF HOLE 104.5'	18. TOTAL CORE RECOVERY FOR BORING 99 %
	19. SIGNATURE OF INSPECTOR McVEY

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			@ 34.2': HARD DENSE BRN CO_3 37.2'-37.5': VERY SILTY @ 40.4' HARD DENSE BRN CO_3		Box 3	
			43.1' To 66.9': SHALE & SANDSTONE: 43.1'-66.3': INTERLAYERED, UNWEATHERED; DK GRAY TO LT. GRAY, MOD. SOFT TO MOD HARD, MOD. CEMENTED SANDSTONE ZONES AS FOLLOWS: 43.1'-43.4' 45.7'-46.0' 46.9'-48.0': SHALEY 48.5'-50.1': SHALEY 50.8'-51.0' 52.3'-54.5' SHALEY		Box 4 Box 5 Box 6	
	50					
			58.5-59.0'			
	60		60.2'-60.5' @ 61.3': HARD BRN CO_3 61.5'-61.9': SANDSTONE IS HARD & WELL-CEMENTED		Box 7 Box 8	
			66.3'-66.9': SHALE as above; SANDSTONE IS GREEN GRAY WITH NUMEROUS OYSTER SHELLS (< 1/2" in size)			
	70		66.9' To 99.9': SHALE: 66.9'-91.0': UNWEATHERED, DK. GRAY TO LT. GRAY, MOD. SOFT TO MOD. HARD; ARENACEOUS, NUMEROUS THIN & SCAT. SAND & SILT SEAMS; NUMEROUS HARD BRN CONCRETIONS & LENSES @ 68.0': FOSSILIFEROUS & VERY SILTY FOR 0.5'		Box 9 Box 10 Box 11	
	80					

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT AUBREY DAM

HOLE NO. BALC-358

Hole No. BA6C-358

DRILLING LOG | DIVISION SWD | INSTALLATION FWD | SHEET 2 OF 3 SHEETS

ECT: UBREY DAM - OUTLET WORKS
ATION (Coordinates or Station): STA 25+10
LLING AGENCY: USCE-C
E NO (As shown on drawing title and file number): BA6C-358
OF DRILLER: HULLINS
ECTION OF HOLE: RTICAL ☐ INCLINED ______ DEG FROM VERT.
KNESS OF OVERBURDEN: 27.7'
H DRILLED INTO ROCK: 76.8'
L DEPTH OF HOLE: 104.5'

10 SIZE AND TYPE OF BIT: AUGER, 6" CORE
11 DATUM FOR ELEVATION SHOWN (TBM or MSL):
12 MANUFACTURER'S DESIGNATION OF DRILL: FAILING 1500
13 TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: DISTURBED 8 | UNDISTURBED 0
14 TOTAL NUMBER CORE BOXES: 16
15 ELEVATION GROUND WATER: SEE REMARKS
16 DATE HOLE: STARTED 9FEB81 | COMPLETED 13FEB81
17 ELEVATION TOP OF HOLE:
18 TOTAL CORE RECOVERY FOR BORING: 99%
19 SIGNATURE OF INSPECTOR: McVEY

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			@342' HARD DENSE BRN CO_3 372'-375': VERY SILTY @404' HARD DENSE BRN CO_3		Box 3	
			43.1' to 66.9': SHALE & SANDSTONE: 431'-663': INTERLAYERED, UNWEATHERED; DK GRAY TO LT. GRAY, MOD. SOFT TO MOD HARD, MOD. CEMENTED SANDSTONE ZONES AS FOLLOWS:		Box 4	
	50		431'-434' 457'-460'		Box 5	
			469'-480': SHALEY 485'-501': SHALEY 508'-510' 523'-545': SHALEY		Box 6	
	60		585-590' 602'-605' @61.3': HARD BRN CO_3		Box 7	
			615'-619': SANDSTONE IS HARD & WELL-CEMENTED		Box 8	
			663'-669': SHALE as above; SANDSTONE IS GREEN GRAY WITH NUMEROUS OYSTER SHELLS (< 1/2" in size)			
	70		66.9' to 99.9': SHALE: 669'-910': UNWEATHERED DK GRAY TO LT GRAY, MOD. SOFT TO MOD. HARD, ARENACEOUS, NUMEROUS THIN & FLAT SAND & SILT SEAMS; NUMEROUS HARD BRN CONCRETIONARY LENSES		Box 9	
					Box 10	
	80		@[illegible]: FOSSILIFEROUS & VERY SILTY FOR [illegible]		Box 11	

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE | PROJECT AUBREY DAM | HOLE NO. BA6C-358

Hole No. BA6C-358

DRILLING LOG | DIVISION SWD | INSTALLATION FWD | SHEET 3 OF 3 SHEETS

1 PROJECT: AUBREY DAM - OUTLET WORKS
2 LOCATION (Coordinates or Station): STA 25+10
3 DRILLING AGENCY: USCE-C
4 HOLE NO. (As shown on drawing title and file number): BA6C-358
5 NAME OF DRILLER: BREWER
6 DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ______ DEG FROM VERT
7 THICKNESS OF OVERBURDEN: 27.7'
8 DEPTH DRILLED INTO ROCK: 76.8
9 TOTAL DEPTH OF HOLE: 104.5'

10 SIZE AND TYPE OF BIT: AUGER, 6" CORE
11 DATUM FOR ELEVATION SHOWN (TBM or MSL):
12 MANUFACTURER'S DESIGNATION OF DRILL: FAILING 1500
13 TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: DISTURBED 8 | UNDISTURBED 0
14 TOTAL NUMBER CORE BOXES: 16
15 ELEVATION GROUND WATER: SEE REMARKS
16 DATE HOLE: STARTED 9FEB81 | COMPLETED 13FEB81
17 ELEVATION TOP OF HOLE:
18 TOTAL CORE RECOVERY FOR BORING: 99%
19 SIGNATURE OF INSPECTOR: McVEY

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			SANDSTONE ZONES AS FOLLOWS @748' 755'-757' 762'-780' 799'-805'		Box 12	
					Box 13	
	90		903'-910' SCAT OYSTER SHELLS 910'-999' DK GRAY, MASSIVE, MOD SOFT, SLI SANDY & SILTY		Box 14	
					Box 15	
	100		999' to 1037' LIMESTONE HARD, MASSIVE, WHITE, ARGILLACEOUS, SLI FOSSILIFEROUS 1037' to 1045' SHALE, DK GRAY MASSIVE, MOD SOFT, LIMEY, SOME OYSTER SHELLS		Box 16	
	104.5'		TD 1045'	[illegible]		
	110					
	120					

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE | PROJECT AUBREY DAM | HOLE NO. BA6C-358

RECORD DRAWING-WORK AS BUILT

SYMBOL	[illegible]	DATE	DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS
EMBANKMENT, SPILLWAY AND
OUTLET WORKS
LOGS OF BORINGS
BA-310 AND BAGC-358

INVITATION NO. DACW[illegible]-82-B-0025 DATE MAR. 198[illegible]
CONTRACT NO. DACW[illegible]-82-C-0043
SHEET 27

TO ACCOMPANY FOUNDATION REPORT

Hole No. BAGC-359

DRILLING LOG	DIVISION SWD	INSTALLATION FWD	SHEET 1 OF 1 SHEETS

1. PROJECT AUBREY DAM- OUTLET WORKS	10. SIZE AND TYPE OF BIT AUGER; 6" CORE
2. LOCATION (Coordinates or Station) STA 27+20	11. DATUM FOR ELEVATION SHOWN (TBM or MSL)
3. DRILLING AGENCY USCE-C	12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 1500
4. HOLE NO. (As shown on drawing title and file number) BAGC-359	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 5; UNDISTURBED 0
5. NAME OF DRILLER MULLINS	14. TOTAL NUMBER CORE BOXES 3
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER * SEE REMARKS
7. THICKNESS OF OVERBURDEN 17.0'	16. DATE HOLE: STARTED 18 FEB 81; COMPLETED 19 FEB 81
8. DEPTH DRILLED INTO ROCK 15.5'	17. ELEVATION TOP OF HOLE
9. TOTAL DEPTH OF HOLE 32.5'	18. TOTAL CORE RECOVERY FOR BORING 100%
	19. SIGNATURE OF INSPECTOR McVEY

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0.0'		0.0' to 17.0': CLAY: 0.0'-3.0': MED/HIGH PLASTICITY; HARD; DRY; BRN; SANDY & SILTY		A	*1 WATER LEVEL: 24 HRS AFTER BAILING WATER LEVEL WAS @ 27.4'
			3.0'-4.9': as above; VERY STIFF; DAMP; BRN		B	
			4.9'-8.0': MED/HIGH PLASTICITY; HARD; DRY; YELLOW BRN & BRN; LIMEY; SILTY & SANDY		C	2. JAR SAMPLES A: 0.0'-3.0' B: 3.0'-4.9' C: 4.9'-8.0' D: 8.0'-14.1' E: 14.1'-17.0'
	10		8.0'-14.1': MED/LOW PLASTICITY, VERY STIFF; DRY, RED YELLOW; SILTY & SANDY		D	
			14.1'-17.0': as above; STIFF, DAMP		E	DRILLING: AUGERED 0.0'-17.5'. AUGER REFUSAL @ 17.5'. 6" CORE 17.5'-32.5'. LEFT 1.0' OF CORE IN BORING (31.5'-32.5') ON LAST RUN. BAILED BORING.
	17.0'		17.0' to 18.7 LIMESTONE HARD; MASSIVE, WEATHER-STAINED, WHITE & YELLOW-BRN, FOSSILIFEROUS; 0.1' THICK LIMONITE SEAM @ BASE		Box 1	
	20		18.7' to 31.5' SHALE: 18.7'-28.9': WEATHERED; YELLOW BRN & GRAY; SOFT TO MOD. SOFT, MASSIVE, SCAT. THIN SILT & SAND SEAMS, SL. TO NON-CALC 18.8'-19.1': MOD HARD & MOD. CEMENTED SANDSTONE SEAMS		Box 2	4. BASE OF WEATHERING @ 28.9'
	30		25.7'-27.2': VERY SANDY ZONE 27.6'-27.7': HARD LIMONITE SEAM 28.9': THIN VERY SHELLY & SANDY SEAM		Box 3	
	31.5'		28.9'-31.5': UNWEATHERED; DK. GRAY; FOSSILIFEROUS; 3" AMMONITE @ 31.0' TD: 31.5'	1.0' LEFT IN HOLE		
	40					

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE | PROJECT AUBREY DAM | HOLE NO. BAGC-359

Hole No.

DRILLING LOG	DIVISION SWD	INSTALLATION FWD

1. PROJECT AUBREY DAM- OUTLET WORKS	10. SIZE AND TYPE OF BIT AUGER; 6"
2. LOCATION (Coordinates or Station) STA 28+50	11. DATUM FOR ELEVATION SHOWN (TBM or
3. DRILLING AGENCY USCE-C	12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 15
4. HOLE NO. (As shown on drawing title and file number) BAGC-360	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 4
5. NAME OF DRILLER MULLINS	14. TOTAL NUMBER CORE BOXES 3
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER * SEE R
7. THICKNESS OF OVERBURDEN 15.3'	16. DATE HOLE: STARTED 19 FEB 81
8. DEPTH DRILLED INTO ROCK 14.7'	17. ELEVATION TOP OF HOLE
9. TOTAL DEPTH OF HOLE 30.0'	18. TOTAL CORE RECOVERY FOR BORING
	19. SIGNATURE OF INSPECTOR McVEY

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REM
	0.0'		0.0' to 15.3': CLAY: 0.0'-2.4': MED/HIGH PLASTICITY, STIFF; DAMP, DK. BRN; SANDY & SILTY		A	*1. WATER LE 18 HRS A WATER @ 23.1'
			2.4'-7.4': HIGH/MED PLASTICITY, STIFF; DAMP TO MOIST, RED YELLOW; SILTY & SANDY, LIME NODULES 7.4'-12.7': as above, MED/LOW PLASTICITY; MED STIFF, SANDIER		B	2. JAR SA A: 0.0'-2' B: 2.4'-7 C: 7.4'-1 D: 12.7'-
	10				C	3. DRILLIN AUGERED 6" CORE BAILED E
			12.7'-15.3': MED/HIGH PLASTICITY; HARD; DRY, YELLOW BRN, SANDY & SILTY; LIMEY		D	
	15.3'		15.3' to 17.3': LIMESTONE WHITE & YELLOW BRN STAINS, HARD; MASSIVE, FOSSILIFEROUS		Box 1	4 E-LOGGI C-OG HO 27' NORT BAGC-36
	20		17.3' to 29.7': SHALE WEATHERED TO YELLOW BRN & LT. GRAY TO 29.2', THEN UNWEATHERED DK GRAY, MASSIVE, MOD. SOFT, SILTY & SANDY, NUMEROUS SCAT. THIN SAND SEAMS; FEW LIMONITE CONCRETIONS		Box 2	5. BASE OF @ 29.2'
			26.3'-26.7': MOD. CEMENTED SANDSTONE 27.8'-28.1': MOD. CEMENTED SANDSTONE		Box 3	
	29.7' 30		TD: 29.7'			
	40					

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE | PROJECT AUBREY DAM

Hole No. BAGC-360

ING LOG	DIVISION SWD
INSTALLATION FWD	SHEET 1 OF 1 SHEETS
DAM - OUTLET WORKS	10 SIZE AND TYPE OF BIT AUGER, 6" CORE
(Coordinates or Station) 28+50	11 DATUM FOR ELEVATION SHOWN (TBM or MSL)
AGENCY USCE-C	12 MANUFACTURER'S DESIGNATION OF DRILL FAILING 1500
(As shown on drawing title) BAGC-360	13 TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 4 — UNDISTURBED 0
DRILLER MULLINS	14 TOTAL NUMBER CORE BOXES 3
OF HOLE AL ☐ INCLINED ______ DEG. FROM VERT	15 ELEVATION GROUND WATER *SEE REMARKS
	16 DATE HOLE — STARTED 19 FEB 81 — COMPLETED 19 FEB 81
	17 ELEVATION TOP OF HOLE
OF OVERBURDEN 15.3'	18 TOTAL CORE RECOVERY FOR BORING 98 %
ILLED INTO ROCK 14.7'	19 SIGNATURE OF INSPECTOR McVEY
PTH OF HOLE 30.0'	

DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
0.0'		0.0' to 15.3': CLAY: 0.0'-2.4': MED/HIGH PLASTICITY, STIFF, DAMP; DK. BRN; SANDY & SILTY 2.4'-7.4': HIGH/MED PLASTICITY, STIFF; DAMP TO MOIST; RED YELLOW; SILTY & SANDY; LIME NODULES 7.4'-12.7': as above, MED/LOW PLASTICITY; MED. STIFF; SANDIER 12.7'-15.3': MED/HIGH PLASTICITY, HARD; DRY, YELLOW BRN, SANDY & SILTY, LIMEY		A B C D	* 1 WATER LEVEL: 18 HRS. AFTER BAILING WATER LEVEL WAS @ 23.1'. 2. JAR SAMPLES. A: 0.0'-2.4' B: 2.4'-7.4' C. 7.4'-12.7' D. 12.7'-15.3' 3. DRILLING: AUGERED 0.0'-15.0'. 6" CORE 15.0'-30.0'. BAILED BORING.
15.3'		15.3' to 17.3': LIMESTONE: WHITE & YELLOW BRN STAINS, HARD; MASSIVE; FOSSILIFEROUS		Box 1	4 E-LOGGING E-LOG HOLE DRILLED 27' NORTH OF BAGC-360.
20		17.3' to 29.7': SHALE WEATHERED TO YELLOW BRN & LT. GRAY TO 29.2'; THEN UNWEATHERED DK GRAY; MASSIVE; MOD. SOFT, SILTY & SANDY, NUMEROUS SCAT. THIN SAND SEAMS; FEW LIMONITE CONCRETIONS 26.3'-26.7': MOD. CEMENTED SANDSTONE 27.8'-28.1': MOD. CEMENTED SANDSTONE		Box 2 Box 3	5. BASE OF WEATHERING @ 29.2'.
29.7'		TD: 29.7'			

836 PREVIOUS EDITIONS ARE OBSOLETE — PROJECT AUBREY DAM — HOLE NO. BAGC-360

Hole No. BAGC-361

DRILLING LOG	DIVISION SWD
INSTALLATION FWD	SHEET 1 OF 1 SHEETS
1 PROJECT AUBREY DAM - OUTLET WORKS	10 SIZE AND TYPE OF BIT 8" AUGER, 6" CARBOLOY
2 LOCATION (Coordinates or Station) STA 32+00	11 DATUM FOR ELEVATION SHOWN (TBM or MSL)
3 DRILLING AGENCY USCE-C	12 MANUFACTURER'S DESIGNATION OF DRILL FAILING 1500
4 HOLE NO. (As shown on drawing title and file number) BAGC-361	13 TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 3 — UNDISTURBED 0
5 NAME OF DRILLER MULLINS	14 TOTAL NUMBER CORE BOXES 3
6 DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT	15 ELEVATION GROUND WATER * SEE REMARKS
	16 DATE HOLE — STARTED 29 JAN 81 — COMPLETED 30 JAN 81
	17 ELEVATION TOP OF HOLE
7 THICKNESS OF OVERBURDEN 13.0'	18 TOTAL CORE RECOVERY FOR BORING 99 %
8 DEPTH DRILLED INTO ROCK 11.0'	19 SIGNATURE OF INSPECTOR
9 TOTAL DEPTH OF HOLE 24.0'	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0.0'		0.0' to 13.0': CLAY: 0.0'-5.0' MED. TO HIGH PLASTICITY; STIFF TO VERY STIFF; MOIST; RED-BRN WITH YELLOW-BRN & STREAKS BRN; SILTY, SLI. CALC 5.0'-8.1': HIGH PLASTICITY, VERY STIFF; SLI. MOIST; YELLOW-BRN; SANDY & SILTY, LIMEY; CALC 8.1'-13.0' MED-LOW PLASTICITY; VERY STIFF, SLI. MOIST; YELLOW-BRN; SANDY & SILTY; SLI GRAVELLY @ 8.5'		A B C	* 1 WATER LEVEL: ENCOUNTERED NO WATER WHILE AUGERING. 24 HRS AFTER BAILING WATER LEVEL WAS @ 17.5'. 2. JAR SAMPLES. A: 0.0'-5.0' B: 5.0'-8.1' C: 8.1'-13.0'
	13.0'		13.0' to 19.2': LIMESTONE: ARGILLACEOUS, WEATHER-STAINED YELLOW-BRN & WHITE, MASSIVE; HARD; OYSTER SHELLS, IRREGULAR THIN SOFT SHALE SEAMS; LIMONITE CONCRETIONS 18.8'-19.2' HARD RED LIMONITE SEAM	0.2' CORE LOSS (13.0'-24.0')	Box 1 Box 2	3 DRILLING 8" AUGER 0.0'-13.0' AUGER REFUSAL @ 13.0'. SET CASING TO 13.0'. 6" CORING 13.0'-24.0'. BAILED HOLE. 4 E-LOGGING BORING DRILLED 5' WEST OF BAGC-361 TO DEPTH OF 120.0' & WAS E-LOGGED
	20		19.2' to 23.8': SHALE: DK. GRAY WITH YELLOW-BRN WEATHERED JOINTS; MOD. SOFT; MASSIVE; LIMONITE CONCRETIONS; MOD HARD, MOD. CEMENTED PALE BRN OR GRAY THIN SANDSTONE SEAMS @ 22.0', 22.3', 22.8', & 23.5' 19.2'-20.5': WEATHERED YELLOW-BRN & LT. GRAY		Box 3	
	23.8'		TD 23.8'			
	30					
	40					

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE — PROJECT AUBREY DAM — HOLE NO. BAGC-361

Hole No. 8A6C-361

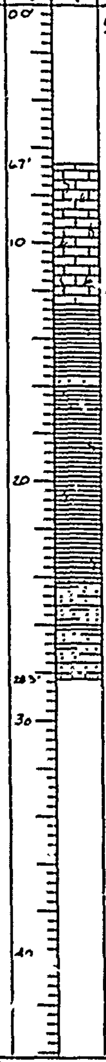
SWD	INSTALLATION FWD	SHEET 1 OF 1 SHEETS
TLET WORKS	10 SIZE AND TYPE OF BIT 8" AUGER, 6" CARBOLOY 11 DATUM FOR ELEVATION SHOWN (TBM or MSL)	
E-C	12 MANUFACTURER'S DESIGNATION OF DRILL FAILING 1500	
8A6C-361	13 TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 3 / UNDISTURBED 0
LLINS	14 TOTAL NUMBER CORE BOXES 3	
	15 ELEVATION GROUND WATER SEE REMARKS	
DEG. FROM VERT.	16 DATE HOLE	STARTED 29 JAN 81 / COMPLETED 30 JAN 81
13.0'	17 ELEVATION TOP OF HOLE	
11.0'	18 TOTAL CORE RECOVERY FOR BORING	99%
24.0'	19 SIGNATURE OF INSPECTOR	

CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
0.0' To 13.0': CLAY 0.0'-5.0' MED. TO HIGH PLASTICITY; STIFF TO VERY STIFF; MOIST; RED-BRN WITH YELLOW-BRN & STRONG BRN; SILTY, SLI. CALC 5.0'-8.1' HIGH PLASTICITY, VERY STIFF; SLI. MOIST; YELLOW-BRN; SANDY & SILTY; LIMEY; CALC 8.1'-13.0' MED-LOW PLASTICITY; VERY STIFF, SLI. MOIST; YELLOW-BRN, SANDY & SILTY; SLI. GRAVELLY @ 8.5'		A B C	1. WATER LEVEL ENCOUNTERED NO WATER WHILE AUGERING. 24 HRS. AFTER BAILING WATER LEVEL WAS @ 17.5' 2. JAR SAMPLES A: 0.0'-5.0' B: 5.0'-8.1' C: 8.1'-13.0'
13.0' To 19.2': LIMESTONE ARGILLACEOUS, WEATHER-STAINED YELLOW-BRN & WHITE, MASSIVE; HARD; OYSTER SHELLS, IRREGULAR THIN SOFT SHALE SEAMS, LIMONITE CONCRETIONS 18.8'-19.2': HARD RED LIMONITE SEAM 19.2' To 23.8': SHALE: DK. GRAY WITH YELLOW-BRN WEATHERED JOINTS; MOD. SOFT; MASSIVE, LIMONITE CONCRETIONS; MOD HARD, MOD. CEMENTED PALE BRN OR GRAY THIN SANDSTONE SEAMS @ 22.0', 22.3', 22.8', & 23.5' 19.2'-20.5': WEATHERED YELLOW-BRN & LT. GRAY TD 23.8'	0.2' CORELOSS (23.0'-24.0')	Box 1 Box 2 Box 3	3. DRILLING 8" AUGER 0.0'-13.0' AUGER REFUSAL @ 13.0'. SET CASING To 13.0' 6" CORING 13.0'-24.0'. BAILED HOLE 4. E-LOGGING BORING DRILLED 5' WEST OF 8A6C-361 To DEPTH OF 120.0' & WAS E-LOGGED

S EDITIONS ARE OBSOLETE | PROJECT AUBREY DAM | HOLE NO 8A6C-361

Hole No. 8A6C-362

DRILLING LOG	DIVISION SWD	INSTALLATION FWD	SHEET 1 OF 2 SHEETS
1. PROJECT AUBREY DAM-OUTLET WORKS		10 SIZE AND TYPE OF BIT 8" AUGER, 6" CORE	
2. LOCATION (Coordinates or Station) STA. 33+95		11 DATUM FOR ELEVATION SHOWN (TBM or MSL)	
3. DRILLING AGENCY USCE:C		12 MANUFACTURER'S DESIGNATION OF DRILL FAILING 1500	
4. HOLE NO. (As shown on drawing title and file number)	8A6C-362	13 TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 3 / UNDISTURBED 0
5. NAME OF DRILLER MULLINS		14 TOTAL NUMBER CORE BOXES 5	
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.		15 ELEVATION GROUND WATER SEE REMARKS	
		16 DATE HOLE	STARTED 30 JAN 81 / COMPLETED 2 FEB 81
7. THICKNESS OF OVERBURDEN	6.7'	17 ELEVATION TOP OF HOLE	
8. DEPTH DRILLED INTO ROCK	21.9'	18 TOTAL CORE RECOVERY FOR BORING	99%
9. TOTAL DEPTH OF HOLE	28.6'	19 SIGNATURE OF INSPECTOR	McVey



ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0.0'		0.0' To 6.7' CLAY 0.0'-1.3' MED PLASTICITY; STIFF; DRY, DK. BRN, SANDY & SILTY 1.3'-2.2' HIGH PLASTICITY; STIFF, SLI. MOIST, STRONG BRN 2.2'-6.7' MED-LOW PLASTICITY, VERY STIFF, DRY, REDDISH-YELLOW; SANDY & SILTY; LIMEY		A B C	1 WATER LEVEL BAILED BORING 2 FEB 81 3 FEB 81 WL = 21.0' 4 FEB 81 WL = 20.2' 6 FEB 81 WL = 19.1' 9 FEB 81 WL = 18.9' 2 JAR SAMPLES A 0.0'-1.3' B 1.3'-2.2' C 2.2'-6.7'
	6.7'		6.7' To 12.6': LIMESTONE ARGILLACEOUS, WEATHER-STAINED YELLOW-BRN & WHITE; MASSIVE; HARD; OYSTER SHELLS 12.3'-12.6' HARD RED LIMONITE SEAM		Box 1 Box 2 Box 3	3 DRILLING 8" AUGER & 6" CORE 4 E-LOGGING BORING DRILLED 7' EAST OF 8A6C-362 To DEPTH OF 110.0' & WAS E-LOGGED
			12.6' To 24.1' SHALE: WEATHERED YELLOW-BRN & GRAY TO UNWEATHERED DK GRAY @ 24.3', SOFT TO MOD. SOFT, MASSIVE; LIMONITE CONCRETIONS, SCAT. THIN SANDY SEAMS, MOD HARD, MOD. CEMENTED PALE BRN SANDSTONE SEAMS @ 15.6'-16.0' & @ 16.9'		Box 4 Box 5	
	28.3'		24.1' To 28.3' SANDSTONE & SHALE: INTERBEDDED DK GRAY SOFT TO MOD SOFT UNWEATHERED SHALE & PALE BRN MOD. HARD MOD CEMENTED SANDSTONE 24.1'-24.2' HARD, WELL-CEMENTED SANDSTONE 28.1'-28.3': HARD, WELL-CEMENTED SANDSTONE TD 28.3'			

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE | PROJECT AUBREY DAM | HOLE NO 8A6C-362

RECORD DRAWING-WORK AS BUILT

SYM	DC NO	ACTION	DATE	DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

DESIGNED BY
DRAWN BY
REVIEWED BY

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS
EMBANKMENT, SPILLWAY AND OUTLET WORKS
LOGS OF BORINGS
8A6C-359, 8A6C-360, 8A6C-361 AND 8A6C-362

SUBMITTED BY
ENGINEER

INVITATION NO. DACW63-82-B-0025
DATE MAR. 1982
CONTRACT NO DACW63-82 C-0083
DRAWING NUMBER
SHEET NO OF
SEQUENCE NO 38
CONTRACT NO DACW63-82-C-0083

TO ACCOMPANY FOUNDATION REPORT

Hole No. 8A-363

DRILLING LOG	DIVISION SWD	INSTALLATION FWD	SHEET 1 OF 1 SHEETS
1. PROJECT AUBREY DAM - OUTLET WORKS		10. SIZE AND TYPE OF BIT 8" AUGER	
2. LOCATION (Coordinates or Station) STA 49+00		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	
3. DRILLING AGENCY USCE-C		12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 1500	
4. HOLE NO. (As shown on drawing title and file number) BA-363		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 0 / UNDISTURBED 0
5. NAME OF DRILLER MULLINS		14. TOTAL NUMBER CORE BOXES N/A	
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.		15. ELEVATION GROUND WATER * SEE REMARKS	
		16. DATE HOLE	STARTED 4 JAN 81 / COMPLETED 4 JAN 81
		17. ELEVATION TOP OF HOLE	
7. THICKNESS OF OVERBURDEN 24.6'		18. TOTAL CORE RECOVERY FOR BORING N/A %	
8. DEPTH DRILLED INTO ROCK 1.4'		19. SIGNATURE OF INSPECTOR McVEY	
9. TOTAL DEPTH OF HOLE 26.0'			

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0.0'		0.0' to 24.6': CLAY:			* 1. WATER LEVEL:
			0.0'-4.3' LOW PLASTICITY @ SURFACE, GRADING TO HIGH PLASTICITY BY 1.0'; SOFT TO MED. STIFF, MOIST; DK BRN; SILTY			BORING MAKING WATER @ 13.0'. WATER LEVEL IMMEDIATELY AFTER DRILLING WAS @ 7.0'. 24 HRS AFTER DRILLING WATER LEVEL WAS @ 4.8'. 6FEB81: WL: 4.6' 9FEB81: WL: 4.6'
	10		4.3'-16.0': HIGH-MED. PLASTICITY; STIFF BECOMING SOFT BY 14.0', MOIST; YELLOW BRN & LT. GRAY; SANDY & SILTY; SOME LIME GRAVELS			2. NO SAMPLES TAKEN.
			16.0'-23.0': GRAY & STRONG BRN; as above; THIN YELLOW SAND SEAM AFTER 20.0'.			3 DRILLING NOTE BORING OFFSET 17' NE.
	20		23.0'-24.6': DK. GRAY, as above, STIFF			
	24.6'		24.6' To 26.0': SHALE: DK. GRAY; DRY; MOD SOFT, BLOCKY CLEAVAGE			
	26.0'		TD: 26.0'			
	30					
	40					

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. PROJECT AUBREY DAM HOLE NO. 8A-363

Hole No.

DRILLING LOG	DIVISION SWD	INSTALLATION FWD	
1. PROJECT AUBREY DAM - OUTLET WORKS		10. SIZE AND TYPE OF BIT AUGER; 6" COR	
2. LOCATION (Coordinates or Station) STA. 12+50		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	
3. DRILLING AGENCY USCE-C		12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 1500	
4. HOLE NO. (As shown on drawing title and file number) BA6C-36A		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 4
5. NAME OF DRILLER MULLINS		14. TOTAL NUMBER CORE BOXES 4	
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.		15. ELEVATION GROUND WATER * SEE REM	
		16. DATE HOLE	STARTED 23 FEB 81
		17. ELEVATION TOP OF HOLE	
7. THICKNESS OF OVERBURDEN 12.0'		18. TOTAL CORE RECOVERY FOR BORING	
8. DEPTH DRILLED INTO ROCK 23.0'		19. SIGNATURE OF INSPECTOR McVEY	
9. TOTAL DEPTH OF HOLE 35.0'			

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0.0'		0.0' to 8.0': CLAY:		A	* 1. WATER LEVE
			0.0'-2.1': LOW PLASTICITY, STIFF, MOIST, BLACK; SILTY & SANDY		B	24 HRS. AFT WATER LEVE 8.5'
			2.1'-5.1': HIGH PLASTICITY; STIFF; MOIST; DK. BRN; SILTY			
			5.1'-8.0': HIGH PLASTICITY, HARD, SLI DAMP, YELLOW BRN & LT. GRAY, LIMEY; SANDY & SILTY		C	2. JAR SAM A: 0.0'-2. B: 2.1'-5.1 C: 5.1'-8.0 D: 8.0'-12. E: 12.0'-16
	10		8.0' to 12.0': GRAVEL: WELL-GRADED, MED. DENSE; SUB-ROUNDED; SANDY; CLAYEY; BRN		D.	
	12.0'		12.0' to 16.0': SHALE & SANDSTONE: SLI. WEATHERED; YELLOW BRN & LT. TO DK. GRAY; SOFT TO MOD SOFT, MASSIVE; SOME SAND & GRAVEL TO 14.0' (REWORKED OR DUE TO AUGER)		E	3. DRILLING AUGERED SET CASIN CLEANED CORED 16 BAILED
					Box 1	4. BASE OF WEA @ 16.0'.
	20		16.0' to 35.0': SHALE: UNWEATHERED DK GRAY; MOD SOFT; MASSIVE; SILTY & SANDY; SLI. FOSSILIFEROUS WITH PLANT REMAINS & CARBON; ABUNDANT MOD. HARD MOD CEMENTED SANDSTONE SEAMS		Box 2	
			16.9'-17.4' SANDSTONE 18.1'-18.8': SANDSTONE 20.8'-21.0': SANDSTONE 21.1'-21.4': SANDSTONE 21.7'-21.9': SANDSTONE		Box 3	
	30		22.2'-22.5': SANDSTONE 23.8'-24.0': SANDSTONE 29.3'-29.8': SANDSTONE 29.9'-30.5': SANDSTONE 32.6'-33.4': SANDSTONE 33.8'-34.7': SHALEY SANDSTONE		Box 4	
	35.0'		34.7': HARD BRN CONCRETION			
			TD: 35.0'			
	40					

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. PROJECT AUBREY DAM

Hole No. 8A6C-365

RILLING LOG | ON SWD | INSTALLATION FWD | SHEET 1 OF 1 SHEETS

ECT UBREY DAM - OUTLET WORKS

TION (Coordinates or Station) A 17+50

ING AGENCY USCE-C

NO (As shown on drawing title) 8A6C-365

OF DRILLER MULLINS

TION OF HOLE ☐ ERTICAL ☐ INCLINED ________ DEG. FROM VERT

NESS OF OVERBURDEN 16.0'

H DRILLED INTO ROCK 18.7'

L DEPTH OF HOLE 34.7'

10. SIZE AND TYPE OF BIT AUGER, 6" CORE

11. DATUM FOR ELEVATION SHOWN (TBM or MSL)

12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 1500

13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 6 | UNDISTURBED 0

14. TOTAL NUMBER CORE BOXES 3

15. ELEVATION GROUND WATER * SEE REMARKS

16. DATE HOLE: STARTED 6 FEB 81 | COMPLETED 6 FEB 81

17. ELEVATION TOP OF HOLE

18. TOTAL CORE RECOVERY FOR BORING 98 %

19. SIGNATURE OF INSPECTOR McVEY

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	0.0'		0.0' To 12.2': CLAY: 0.0'-2.4': LOW PLASTICITY, MED. STIFF, MOIST; YELLOW BRN; VERY SANDY; GRAVELLY 2.4'-3.5': MED/HIGH PLASTICITY; MED STIFF, MOIST; BROWNISH-GRAY, SANDY, SLI. GRAVELLY 3.5'-8.3': MED/HIGH PLASTICITY; HARD; DRY; BRN GRAY, SANDY & SILTY 8.3'-12.2': MED/HIGH PLASTICITY; HARD; DRY; YELLOW BRN & LT. GRAY; SANDY & SILTY 12.2' To 16.0': GRAVEL: 12.2'-13.1': COARSE TO FINE; ROUND, DRY; STRONG BRN; SANDY & CLAYEY 13.1'-16.0': as above; MOIST, YELLOW BRN & LT. GRAY 16.0' To 34.7': SHALE & SANDSTONE: INTERLAYERED; UNWEATHERED; DK. GRAY TO LT. GRAY; MOD. SOFT TO MOD HARD; MOD. CEMENTED; MASSIVE 23.5'-24.6': SANDSTONE SEAM TD: 34.7'		A B C D E F G Box 1 Box 2 Box 3	* 1. WATER LEVEL: 72 HRS. AFTER BAILING WATER LEVEL WAS @ 14.0'. 2. JAR SAMPLES: A: 0.0'-2.4' B: 2.4'-3.5' C: 3.5'-8.3' D: 8.3'-12.2' E: 12.2'-13.1' F: 13.1'-16.0' G: 16.0'-20.0' 3. DRILLING: NOTE: BORING OFFSET 50' WEST AUGER 0.0'-16.0' SET 19' OF CASING CLEANED OUT TO 20.0'. 6" CORE 20.0'-35.0'.
	10					
	16.0'					
	20					
	30					
	34.7'					

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. | PROJECT AUBREY DAM | HOLE NO. 8A6C-365

RECORD DRAWING-WORK AS BUILT

Hole No. 8A6C-365

NG LOG | ON SWD | INSTALLATION FWD | SHEET 1 OF 1 SHEETS

Y DAM - OUTLET WORKS

(Coordinates or Station) 17+50

GENCY USCE-C

(As shown on drawing title) 8A6C-365

ILLER MULLINS

OF HOLE ☐ INCLINED ________ DEG. FROM VERT

OF OVERBURDEN 16.0'

LED INTO ROCK 18.7'

H OF HOLE 34.7'

10. SIZE AND TYPE OF BIT AUGER, 6" CORE

11. DATUM FOR ELEVATION SHOWN (TBM or MSL)

12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 1500

13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 6 | UNDISTURBED 0

14. TOTAL NUMBER CORE BOXES 3

15. ELEVATION GROUND WATER * SEE REMARKS

16. DATE HOLE: STARTED 6 FEB 81 | COMPLETED 6 FEB 81

17. ELEVATION TOP OF HOLE

18. TOTAL CORE RECOVERY FOR BORING 98 %

19. SIGNATURE OF INSPECTOR McVEY

0.0' To 12.2':
CLAY:
0.0'-2.4': LOW PLASTICITY, MED STIFF; MOIST, YELLOW BRN; VERY SANDY; GRAVELLY
2.4'-3.5': MED/HIGH PLASTICITY; MED. STIFF; MOIST; BROWNISH-GRAY, SANDY, SLI. GRAVELLY
3.5'-8.3': MED/HIGH PLASTICITY; HARD; DRY; BRN GRAY; SANDY & SILTY
8.3'-12.2': MED/HIGH PLASTICITY; HARD; DRY, YELLOW BRN & LT. GRAY; SANDY & SILTY
12.2' To 16.0':
GRAVEL:
12.2'-13.1': COARSE TO FINE; ROUND, DRY; STRONG BRN; SANDY & CLAYEY
13.1'-16.0': as above; MOIST, YELLOW BRN & LT. GRAY
16.0' To 34.7':
SHALE & SANDSTONE:
INTERLAYERED; UNWEATHERED; DK. GRAY TO LT. GRAY; MOD SOFT TO MOD HARD; MOD. CEMENTED; MASSIVE
23.5'-24.6': SANDSTONE SEAM
TD: 34.7'

A B C D E F G Box 1 Box 2 Box 3

* 1. WATER LEVEL:
72 HRS. AFTER BAILING WATER LEVEL WAS @ 14.0'.
2. JAR SAMPLES:
A: 0.0'-2.4'
B: 2.4'-3.5'
C: 3.5'-8.3'
D: 8.3'-12.2'
E: 12.2'-13.1'
F: 13.1'-16.0'
G: 16.0'-20.0'
3. DRILLING:
NOTE: BORING OFFSET 50' WEST.
AUGER 0.0'-16.0'
SET 19' OF CASING.
CLEANED OUT TO 20.0'.
6" CORE 20.0'-35.0'.

36 PREVIOUS EDITIONS ARE OBSOLETE | PROJECT AUBREY DAM | HOLE NO. 8A6C-365

RECORD DRAWING-WORK AS BUILT

RECORD DRAWING-WORK AS BUIL

Hole No. 8A6C-365

...ION SWD	INSTALLATION FWD	SHEET 1 OF 1 SHEETS

...- OUTLET WORKS
...or Station)
USCE-C
...drawing title) 8A6C-365
MULLINS
...INED ______ DEG. FROM VERT.
...RDEN 16.0'
...ROCK 18.7'
...E 34.7'

10. SIZE AND TYPE OF BIT AUGER, 6" CORE
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)
12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 1500
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED 6 — UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES 3
15. ELEVATION GROUND WATER * SEE REMARKS
16. DATE HOLE — STARTED 6 FEB 81 — COMPLETED 6 FEB 81
17. ELEVATION TOP OF HOLE
18. TOTAL CORE RECOVERY FOR BORING 98 %
19. SIGNATURE OF INSPECTOR McVEY

...END e | CLASSIFICATION OF MATERIALS (Description) d | % CORE RECOVERY e | BOX OR SAMPLE NO. f | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g

00' To 12.2':
CLAY:
00'-2.4': LOW PLASTICITY, MED. STIFF, MOIST; YELLOW BRN; VERY SANDY, GRAVELLY
2.4'-3.5': MED/HIGH PLASTICITY; MED. STIFF; MOIST; BROWNISH-GRAY, SANDY, SLI. GRAVELLY
3.5'-8.3': MED/HIGH PLASTICITY; HARD; DRY; BRN GRAY; SANDY & SILTY
8.3'-12.2': MED/HIGH PLASTICITY; HARD; DRY, YELLOW BRN & LT. GRAY; SANDY & SILTY
12.2' To 16.0'
GRAVEL:
12.2'-13.1': COARSE TO FINE; ROUND; DRY; STRONG BRN; SANDY & CLAYEY
13.1'-16.0': as above; MOIST; YELLOW BRN & LT. GRAY
16.0' To 34.7':
SHALE & SANDSTONE:
INTERLAYERED; UNWEATHERED; DK. GRAY TO LT. GRAY; MOD. SOFT TO MOD HARD, MOD. CEMENTED; MASSIVE
23.5'-24.6': SANDSTONE SEAM
TD: 34.7'

A
B
C
D
E
F
G
Box 1
Box 2
Box 3

*1. WATER LEVEL:
72 HRS. AFTER BAILING WATER LEVEL WAS @ 14.0'.

2. JAR SAMPLES:
A: 0.0'-2.4'
B: 2.4'-3.5'
C: 3.5'-8.3'
D: 8.3'-12.2'
E: 12.2'-13.1'
F: 13.1'-16.0'
G: 16.0'-20.0'

3. DRILLING:
NOTE: BORING OFFSET 50' WEST
AUGER 0.0'-16.0'.
SET 19' OF CASING.
CLEANED OUT TO 20.0'.
6" CORE 20.0'-35.0'.

...IOUS EDITIONS ARE OBSOLETE. | PROJECT AUBREY DAM | HOLE NO. 8A6C-365

Hole No. 8A6C-366

DRILLING LOG	DIVISION SWD	INSTALLATION FWD — SHEET 1 OF 2 SHEETS

1. PROJECT AUBREY DAM - OUTLET WORKS
2. LOCATION (Coordinates or Station) STA. 22+50
3. DRILLING AGENCY USCE-C
4. HOLE NO. (As shown on drawing title and file number) 8A6C-366
5. NAME OF DRILLER MU NS
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ______ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN 25.0'
8. DEPTH DRILLED INTO ROCK 10.0'
9. TOTAL DEPTH OF HOLE 35.0'
10. SIZE AND TYPE OF BIT 8" AUGER, 6" CARBOLOY
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)
12. MANUFACTURER'S DESIGNATION OF DRILL FAILING 1500
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED 6 — UNDISTURBED 0
14. TOTAL NUMBER CORE BOXES 2
15. ELEVATION GROUND WATER * SEE REMARKS
16. DATE HOLE — STARTED 4 FEB 81 — COMPLETED 5 FEB 81
17. ELEVATION TOP OF HOLE
18. TOTAL CORE RECOVERY FOR BORING 96 %
19. SIGNATURE OF INSPECTOR McVEY

ELEVATION a | DEPTH b | LEGEND c | CLASSIFICATION OF MATERIALS (Description) d | % CORE RECOVERY e | BOX OR SAMPLE NO. f | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g

Depth: 0.0' — 10 — 20 — 25.0' — 30 — 34.6' — 40

0.0' To 17.0':
CLAY
0.0'-3.1' HIGH PLASTICITY, STIFF, MOIST, RED & REDDISH-BRN, SANDY & SILTY
3.1'-12.3' MED-HIGH PLASTICITY, HARD; DRY, YELLOW-BRN & LT. GRAY, SANDY & SILTY
12.3'-17.0' LOW-MED PLASTICITY, MED STIFF TO SOFT, MOIST, PALE BRN & YELLOW-BRN, VERY SANDY, SAND SEAMS
17.0' To 25.0'
GRAVEL:
17.0'-19.8': FINE TO COARSE, ROUND, VERY MOIST TO WET, STRONG BRN; SANDY & CLAYEY
19.8'-25.0' as above; YELLOW-BRN & LT. GRAY, VERY MOIST
25.0' To 34.6'
SHALE ARENACEOUS, SOFT TO MOD SOFT, UNWEATHERED, MASSIVE; BENTONITIC-LOOKING @ 25.4', SCAT SANDSTONE SEAMS; SCAT. DOLOMITE SEAMS; MANY THIN SCAT. SAND SEAMS, MOD. SOFT TO MOD HARD, MOD CEMENTED, & LT. GRAY
25.0'-25.4' VERY HARD BRN DOLOMITE SEAM
26.1'-26.3': SANDSTONE
27.8' HARD DOLOMITE
28.5'-29.2': SHALEY SANDSTONE
31.3'-31.6': SANDSTONE
31.9'-32.0: SANDSTONE
32.0'-32.1': DOLOMITE
32.8'-34.6': SHALEY SANDSTONE
TD: 34.6'

0.4' CORE LOSS (34.6'-35.0)

A
B
C
D
E
F
Box 1
Box 2

*1 WATER LEVEL
18 HRS AFTER BAILING WATER LEVEL WAS @ 17.8'
72 HRS AFTER BAILING WATER LEVEL WAS @ 17.5'

2 JAR SAMPLES:
A 0.0'-3.1'
B 3.1'-8.1'
C. 8.1'-12.3'
D 12.3'-17.0'
E 17.0'-19.8'
F 19.8'-25.0'

3. DRILLING
NOTE GRAVEL ON SURFACE @ BORING LOCATION
8" AUGER 0.0'-25.0'
AUGER REFUSAL @ 25.0'. SET CASING TO 25.0' 6" CORING 25.0'-35.0'

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE | PROJECT AUBREY DAM | HOLE NO. 8A6C-366

RECORD DRAWING-WORK AS BUILT

SYM	DC NO.	ACTION	DATE	DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

8A

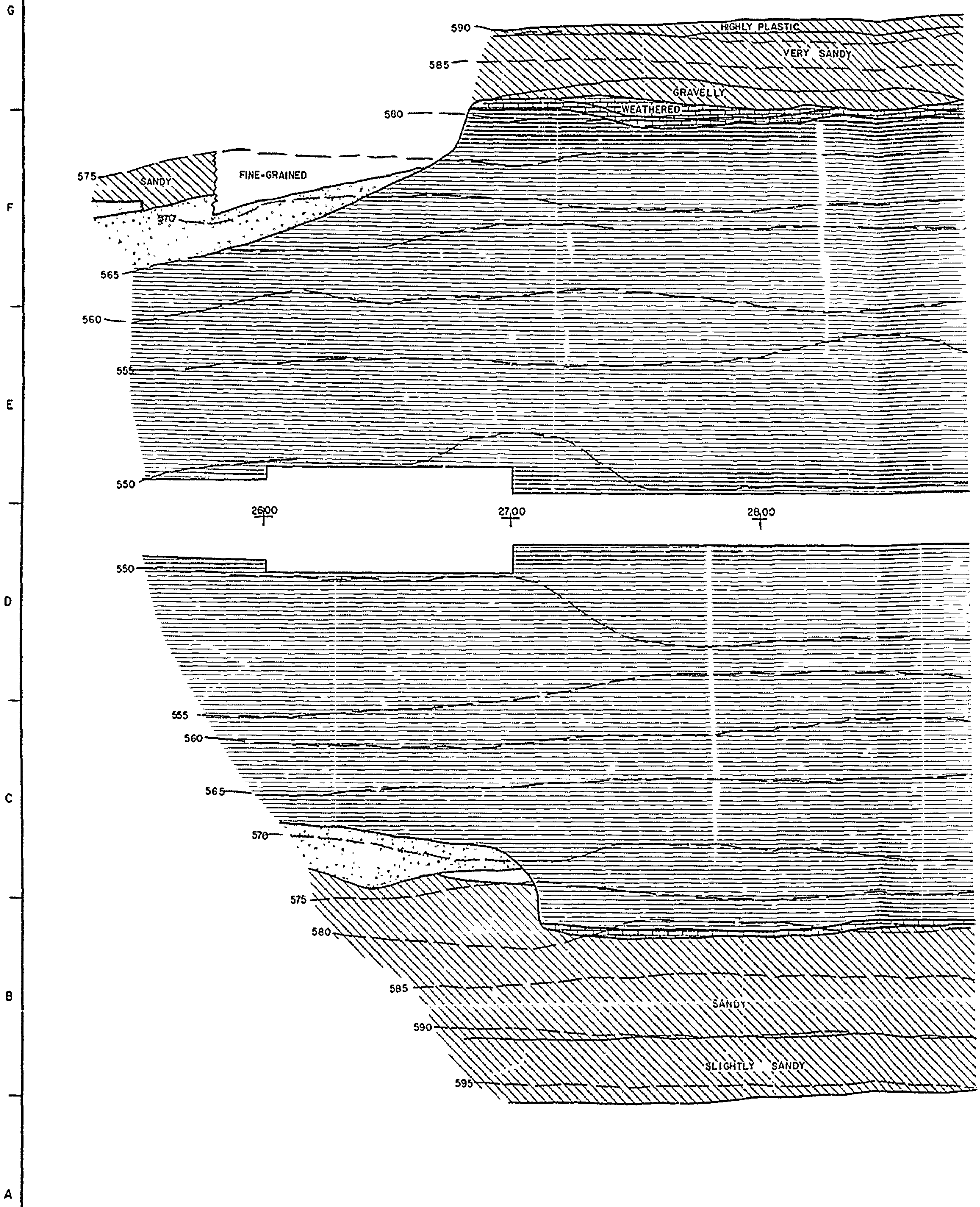
DESIGNED BY: --------
DRAWN BY: --------
REVIEWED BY: --------

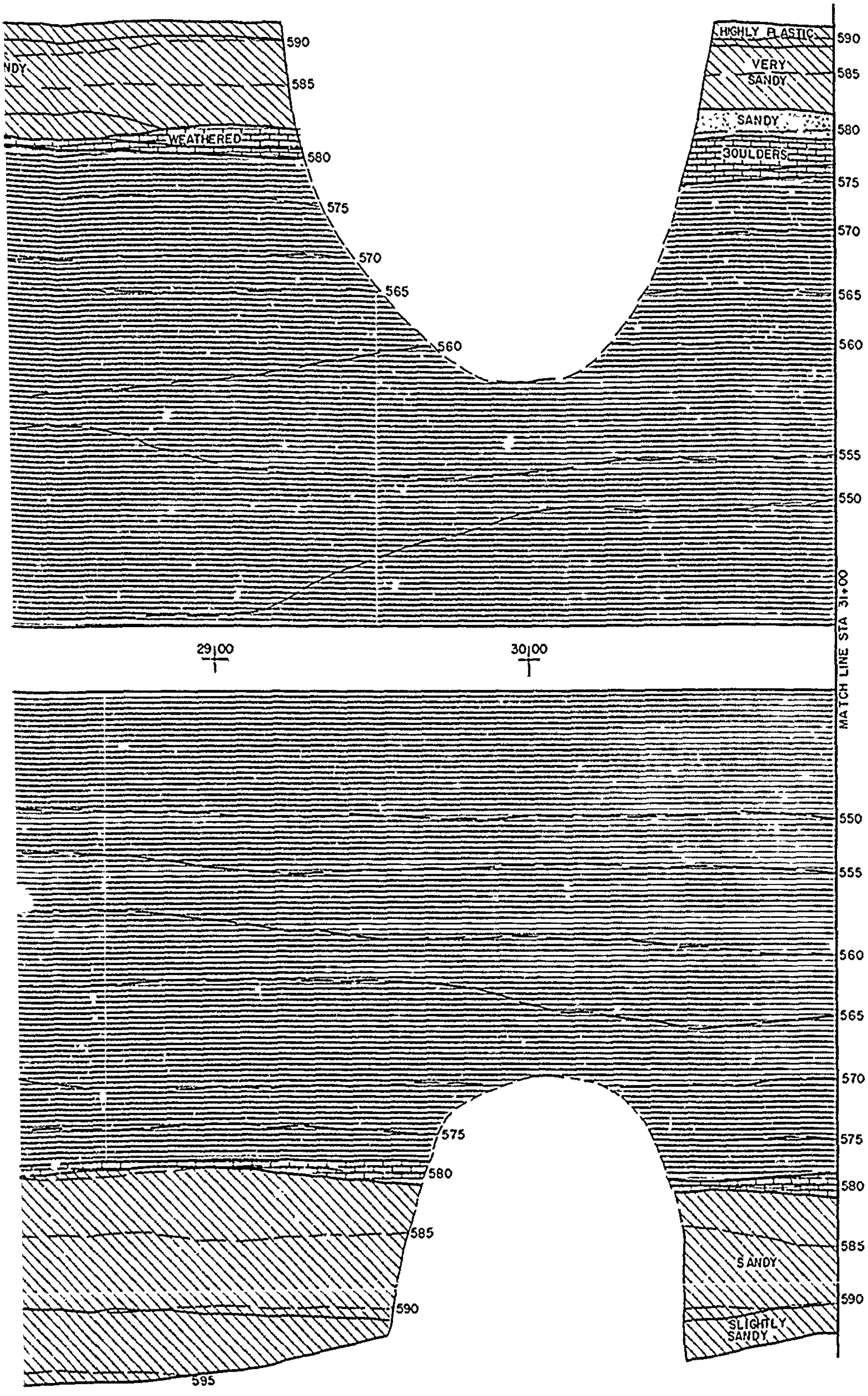
RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS
EMBANKMENT, SPILLWAY AND
OUTLET WORKS
LOGS OF BORINGS
8A-363, 8A6C-364, 8A6C-365 AND 8A6C-366

SUBMITTED BY
ENGINEER

INVITATION NO. DACW63-82-B-0025
DATE MAR, 1982
CONTRACT NO. DACW63-82-C-0083
DRAWING NUMBER
SHEET NO. OF
SEQUENCE NO. 39

CONTRACT NO DACW63-82-C-0083


G
F
E
D
C
B
A
590
585
580
575
570
565
560
555
550
HIGHLY PLASTIC
VERY SANDY
GRAVELLY
WEATHERED
SANDY
FINE-GRAINED
26,00
27,00
28,00
550
555
560
565
570
575
580
585
590
595
SANDY
SLIGHTLY SANDY



LEGEND

□	SAND
▒	GRAVEL
▨	CLAY
□	SANDSTONE
▦	LIMESTONE
☰	SHALE

SYMBOL NO.	ACTION	DATE	DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEX.

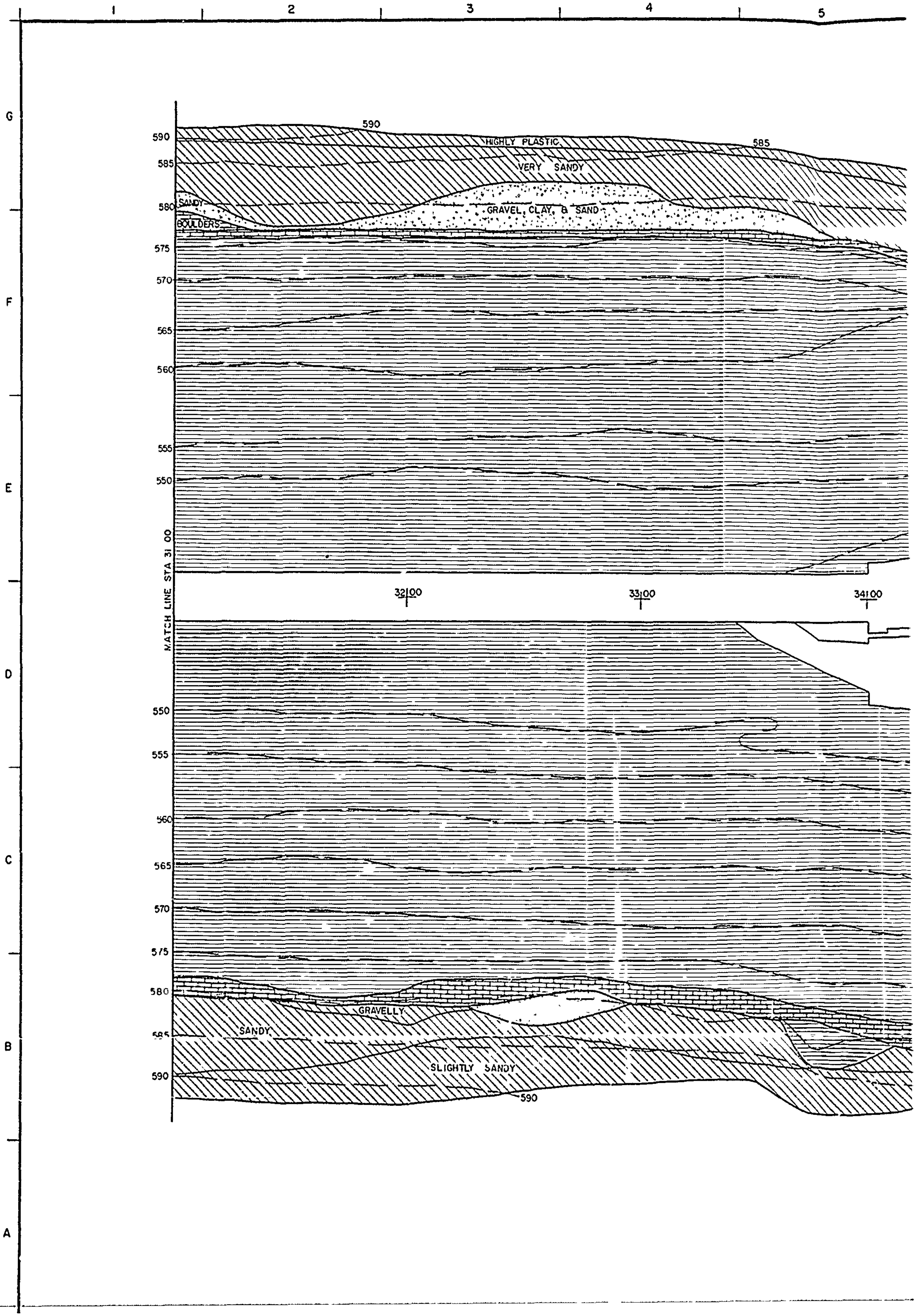
DESIGNED BY: H.BARNETT
DRAWN BY: C.KIRBY
REVIEWED BY: R.BEHM

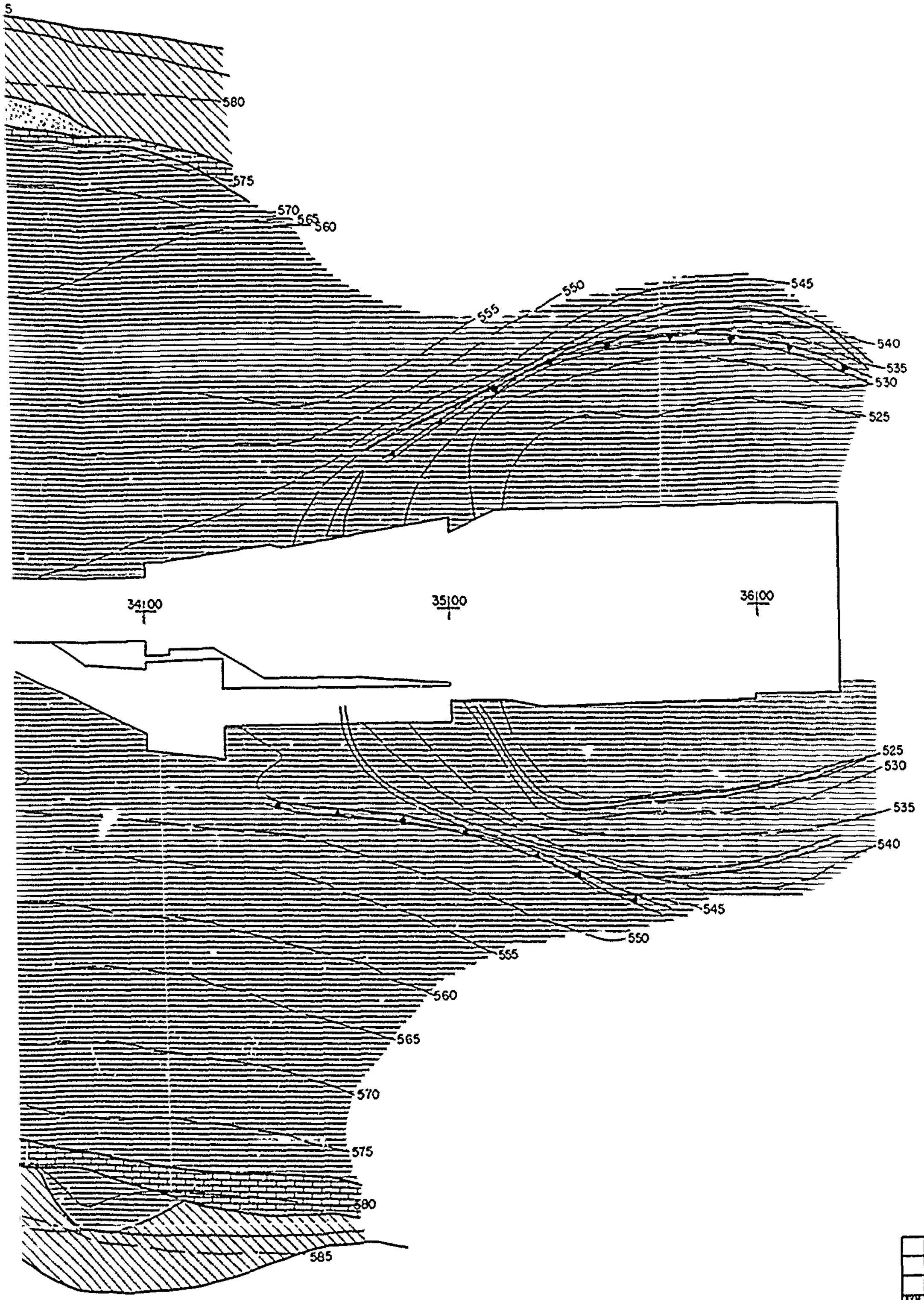
RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS

FOUNDATION REPORT

OUTLET WORKS
STA. 25+50 TO 31+00

SUBMITTED BY: ROBERT C. BEHM
ENGINEER:
SOL. NO.
DATED:
CONTR. NO.
DRAWING NUMBER
SHEET NO. OF
SEQUENCE NO. 40


1
2
3
4
5
G
F
E
D
C
B
A
590
585
HIGHLY PLASTIC
VERY SANDY
SANDY
GRAVEL, CLAY, & SAND
BOULDERS
590
585
580
575
570
565
560
555
550
MATCH LINE STA 31 00
32+00
33+00
34+00
550
555
560
565
570
575
580
GRAVELLY
SANDY
585
SLIGHTLY SANDY
590
590



SYMBOL	ZONE		DATE	DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

DESIGNED BY: H BARNETT
DRAWN BY: C. KIRBY
REVIEWED BY: R. BEHM

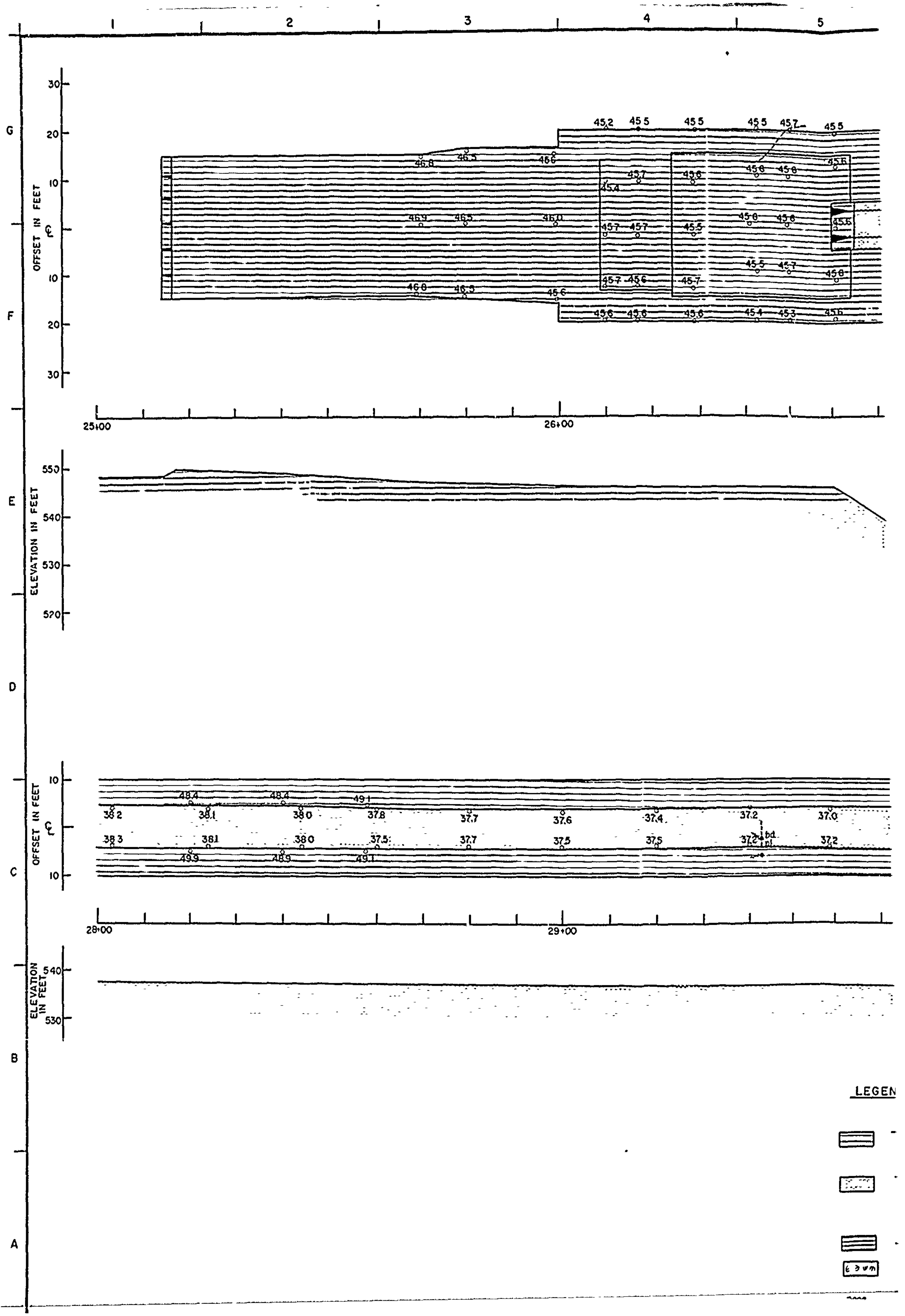
RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS

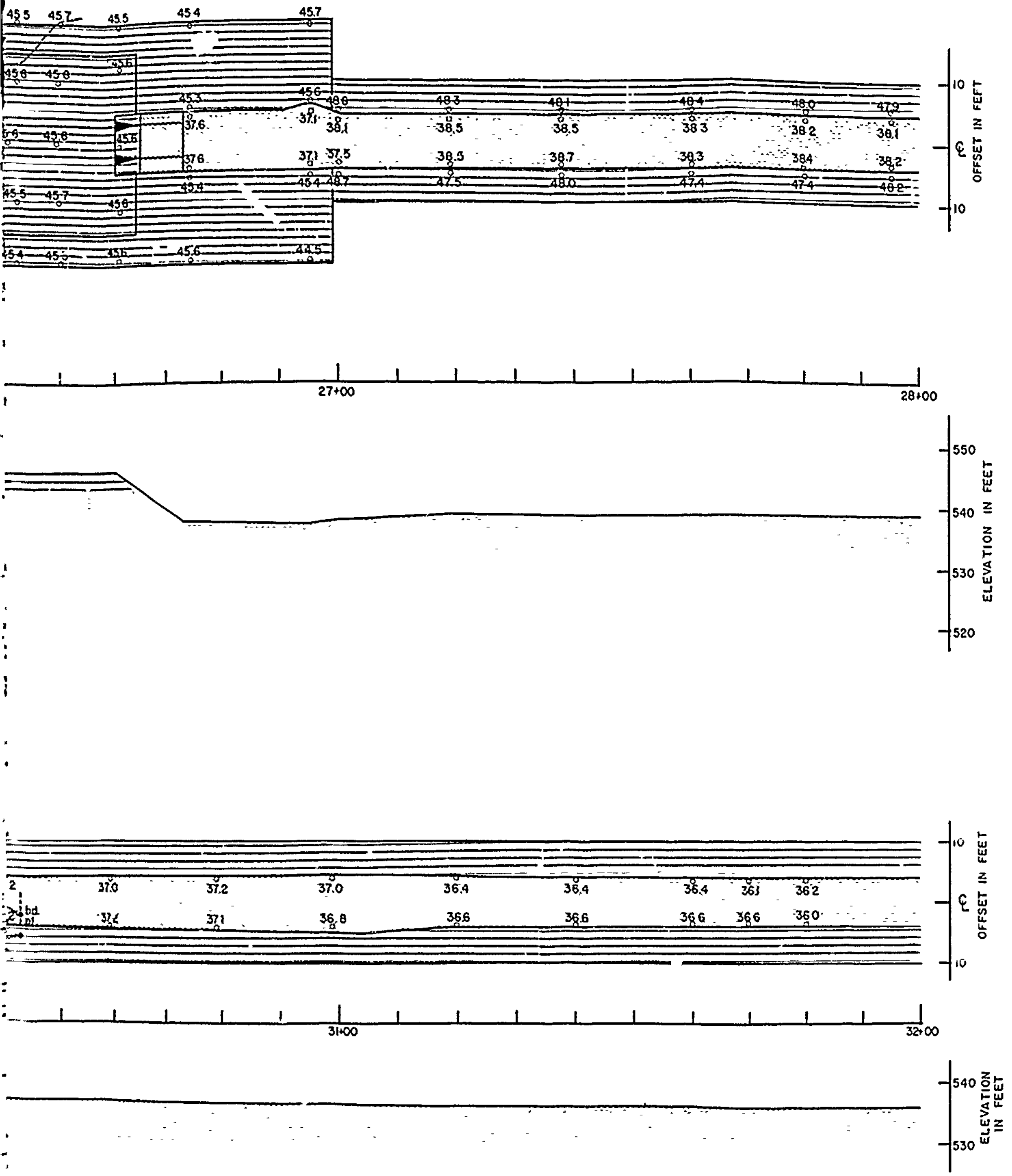
FOUNDATION REPORT

OUTLET WORKS
STA. 31+00 TO 36+28

SUBMITTED BY: ROBERT C. BEHM
ENGINEER:

SOL. NO.
DATED:
CONTR. NO.
DRAWING NUMBER
SHEET NO. OF
SEQUENCE NO. 41
CONTR. NO.


1
2
3
4
5
G
F
E
D
C
B
A
OFFSET IN FEET
30
20
10
℄
10
20
30
45.2
45.5
45.5
45.5
45.7
45.5
46.8
46.5
46.6
45.7
45.6
45.6
45.8
45.6
45.4
45.6
46.9
46.5
46.0
45.7
45.7
45.5
45.6
45.6
45.6
45.7
45.6
45.5
45.7
45.7
45.6
46.8
46.5
45.6
45.6
45.6
45.6
45.4
45.3
45.6
25+00
26+00
ELEVATION IN FEET
550
540
530
520
OFFSET IN FEET
10
℄
10
48.4
48.4
49.1
38.2
38.1
38.0
37.8
37.7
37.6
37.4
37.2
37.0
38.3
38.1
38.0
37.5
37.7
37.5
37.5
37.2
bd.
pl.
37.2
49.9
48.9
49.1
28+00
29+00
ELEVATION IN FEET
540
530
LEGEN



LEGEND

▤	CLAY-SHALE, SOFT TO MODERATELY HARD, GREENISH TO DARK GRAY w/SAND AND SANDSTONE LENSES.
☐	ALTERNATING CLAY SHALE AND SANDSTONE SEAMS, SOFT TO MODERATELY HARD, DARK GRAY. SANDSTONE, FINE TO MEDIUM GRAINED, COMPRISES UP TO 50% OF MATERIAL.
▤	CLAY-SHALE, SOFT TO MODERATELY HARD, MOIST, DARK GRAY, SLIGHTLY FOSSILFEROUS.
ꜫ ∋ ♥ ⋒	HIGHLY FOSSILFEROUS
∼	WATER SEEP

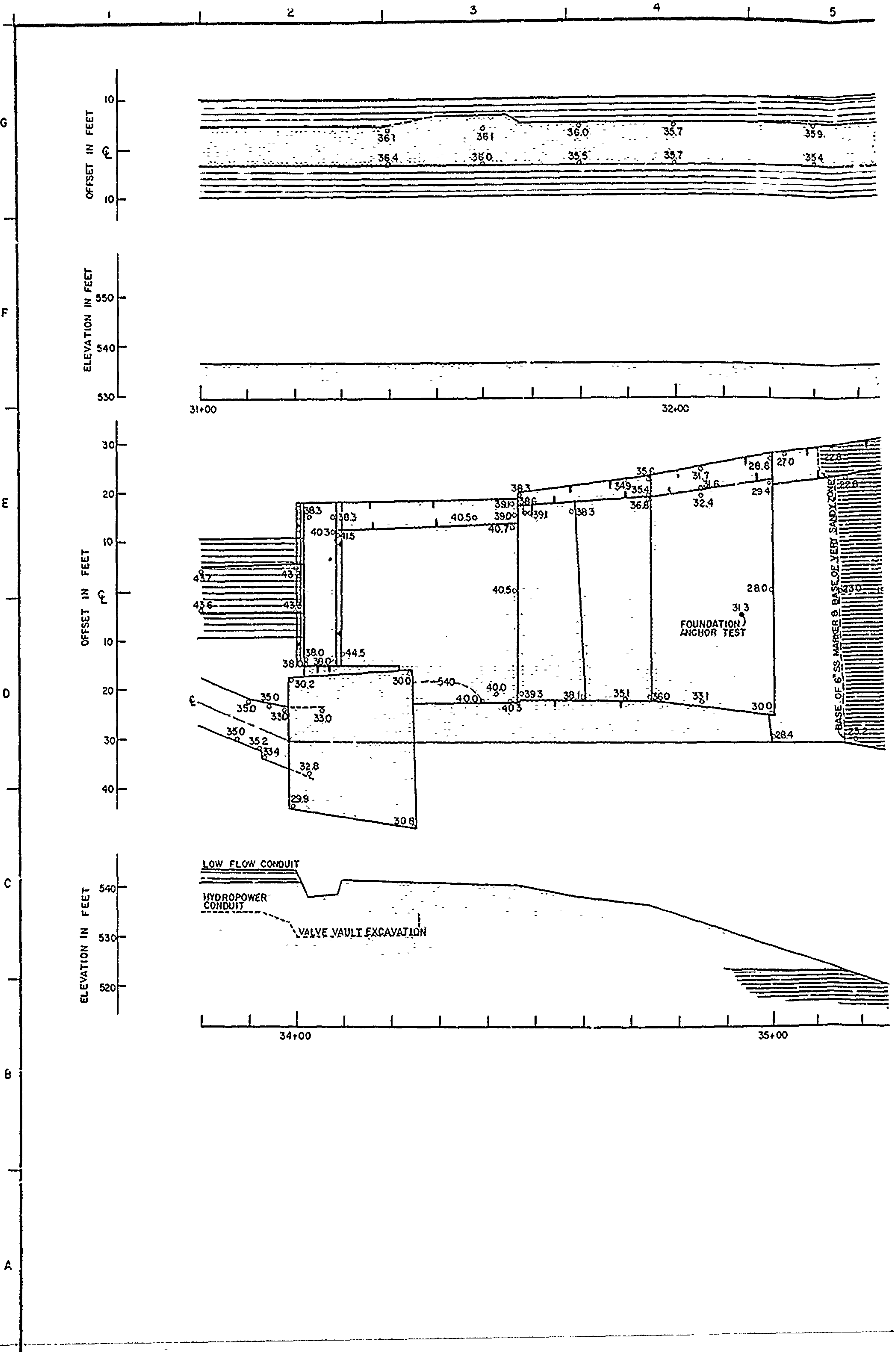
SYMBOL NO. ACTION DATE DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEX S

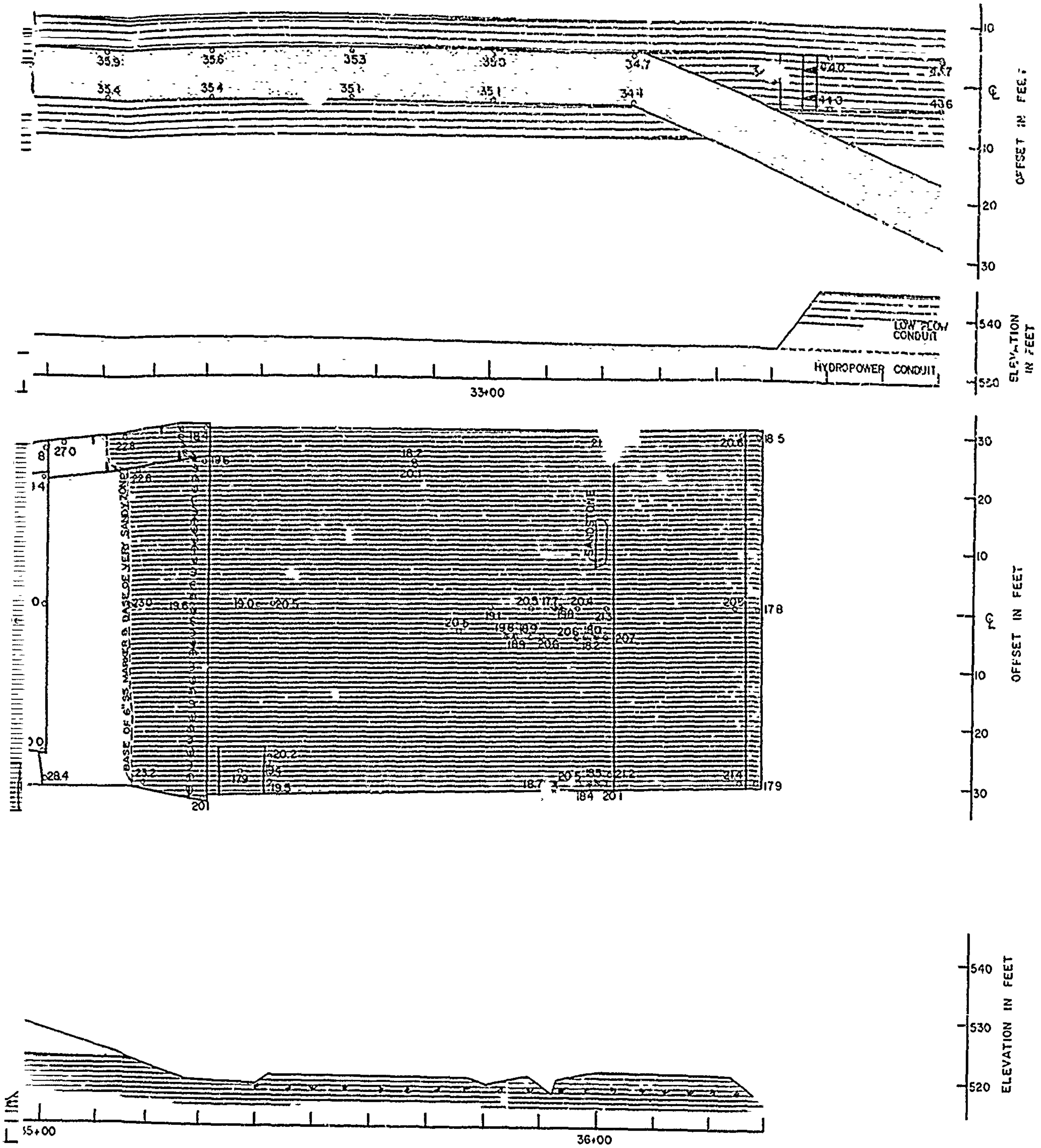
DESIGNED BY: H.BARNETT
DRAWN BY: C.KIRBY
REVIEWED BY: R.BEHM

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS
FOUNDATION REPORT
OUTLET WORKS
PLAN AND PROFILE
STA. 25+00 TO 31+00

SUBMITTED BY: ROBERT C BEHM
ENGINEER:
SCL.I.O.
DATED:
CONTR. NO.
DRAWING NUMBER
SHEET NO. OF
SEQUENCE NO. 42



1
2
3
4
5
G
F
E
D
C
B
A
OFFSET IN FEET
10
℄
10
36.1
36.1
36.0
35.7
35.9
36.4
36.0
35.5
35.7
35.4
ELEVATION IN FEET
550
540
530
31+00
32+00
OFFSET IN FEET
30
20
10
℄
10
20
30
40
43.7
43.6
38.3
38.3
40.3
41.5
40.5
39.1
39.0
40.7
38.3
38.6
39.1
38.3
34.9
35.4
35.6
36.8
31.7
31.6
32.4
28.8
27.0
29.4
22.8
22.8
40.5
28.0
31.3
FOUNDATION ANCHOR TEST
23.0
38.0
38.0
30.0
44.5
30.2
30.0
540
40.0
40.0
39.3
40.3
38.1
35.1
36.0
33.1
30.0
28.4
23.2
35.0
35.0
33.0
33.0
35.0
35.2
33.4
32.8
29.9
30.8
BASE OF 6" SS MARKER & BASE OF VERY SANDY ZONE
LOW FLOW CONDUIT
HYDROPOWER CONDUIT
VALVE VAULT EXCAVATION
ELEVATION IN FEET
540
530
520
34+00
35+00



NOTE:

FOR LEGEND, SEE PLATE NO. 42.

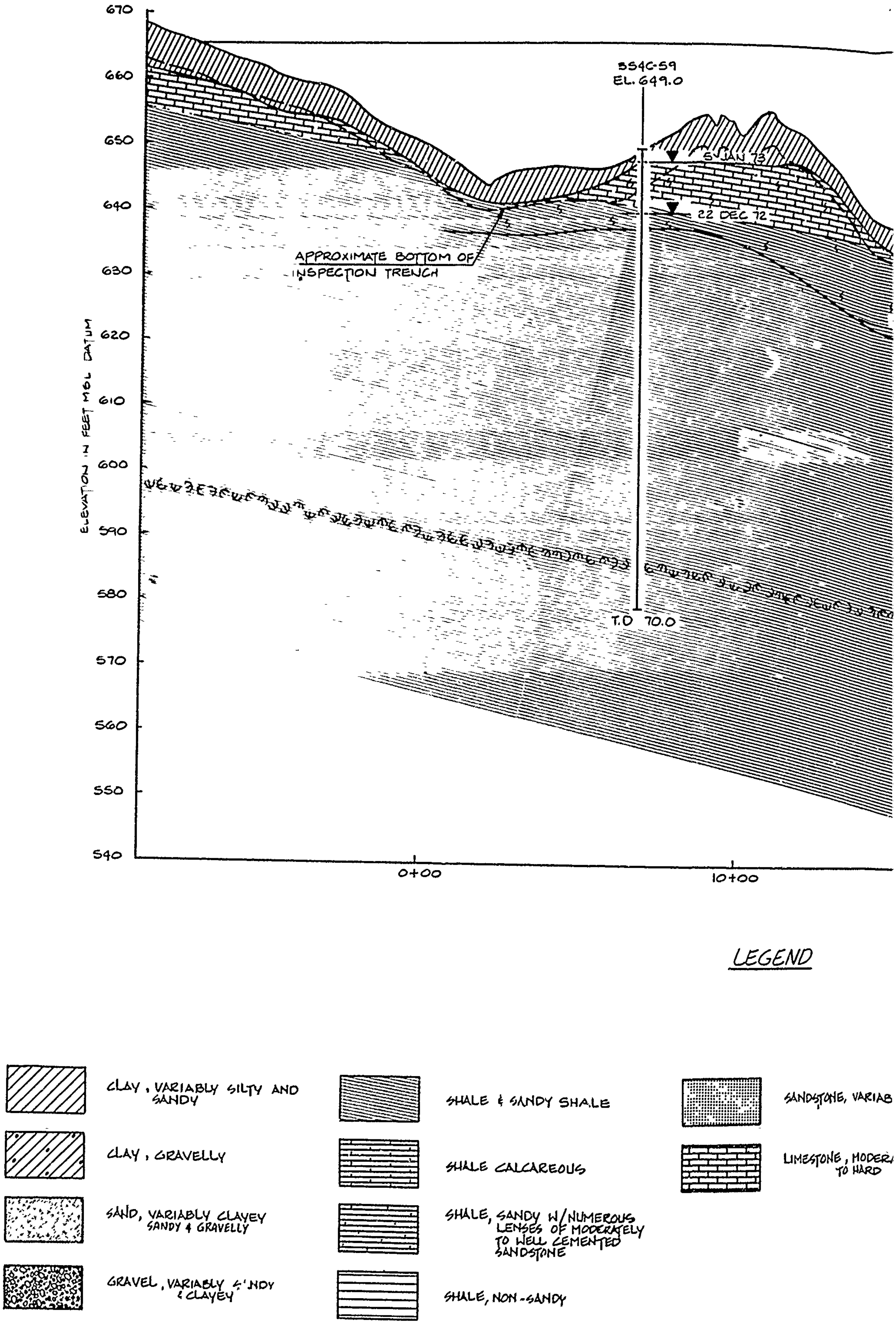
U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

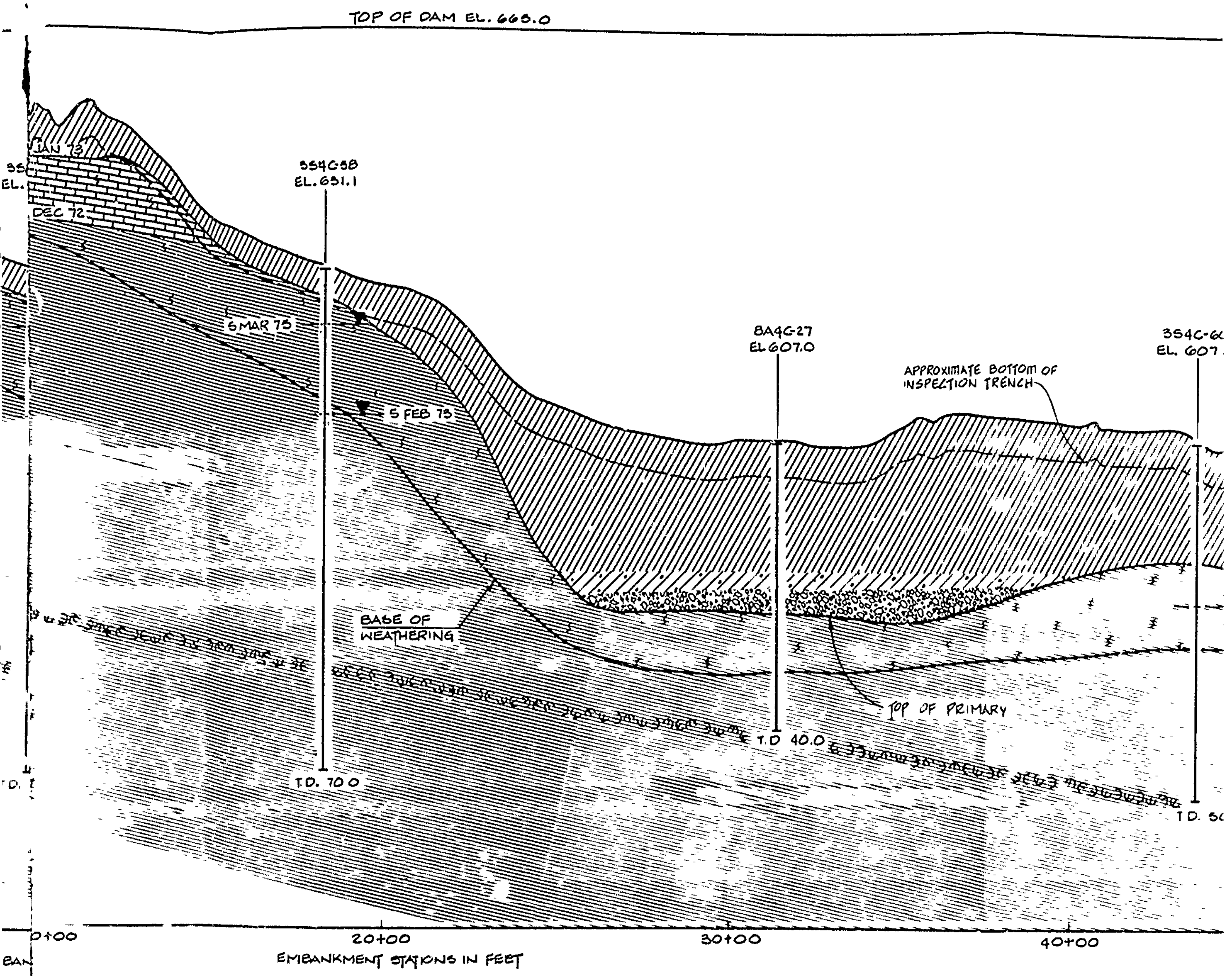
DESIGNED BY: H BARNETT
DRAWN BY: C KIRBY
REVIEWED BY: R. BEHM

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS
FOUNDATION REPORT
OUTLET WORKS
STA. 31+00 TO 36+25

SUBMITTED BY: ROBERT C. BEHM
ENGINEER

SOL. NO.
DATED:
CONTR. NO.
DRAWING NUMBER
SHEET NO. OF
SEQUENCE NO. 43


670
660
650
640
630
620
610
600
590
580
570
560
550
540
ELEVATION IN FEET MSL DATUM
SS4C-59
EL. 649.0
5 JAN 73
22 DEC 72
APPROXIMATE BOTTOM OF INSPECTION TRENCH
T.D 70.0
0+00
10+00
LEGEND
CLAY, VARIABLY SILTY AND SANDY
CLAY, GRAVELLY
SAND, VARIABLY CLAYEY SANDY & GRAVELLY
GRAVEL, VARIABLY SANDY & CLAYEY
SHALE & SANDY SHALE
SHALE CALCAREOUS
SHALE, SANDY W/NUMEROUS LENSES OF MODERATELY TO WELL CEMENTED SANDSTONE
SHALE, NON-SANDY
SANDSTONE, VARIAB
LIMESTONE, MODER TO HARD



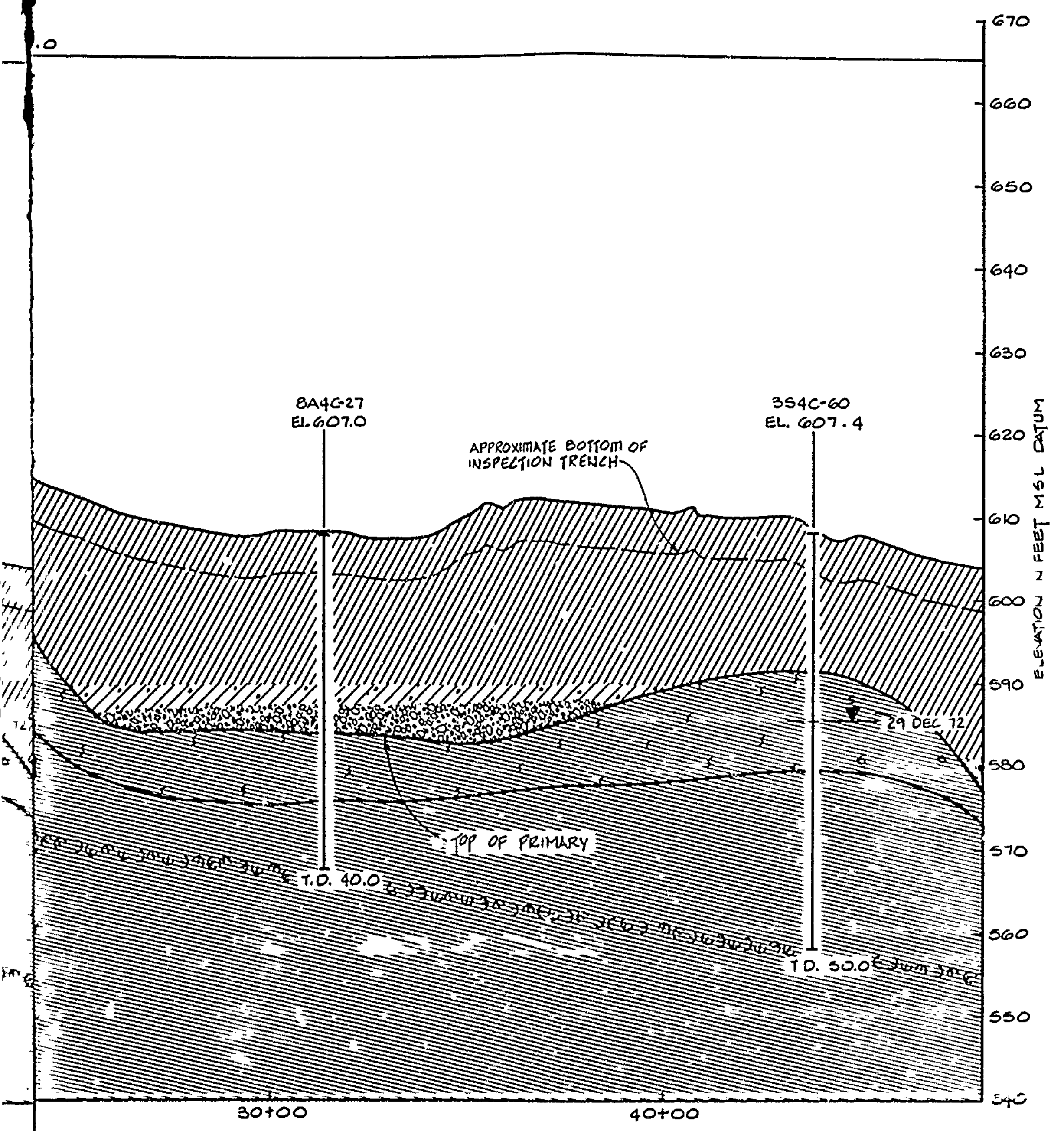
LEGEND

▼	WATER LEVEL ON DATE INDICATED
▒	SANDSTONE, VARIABLY CEMENTED
▦	LIMESTONE, MODERATELY HARD TO HARD
S S S	WEATHERED ZONE
ε௵϶ε϶	FOSSILIFEROUS ZONE
∿	100 OHM RESISTIVITY LOG

8A	8 INCH AUGER BORING
6D	6-INCH DENISON BORING
6C	6-INCH CORE BORING
4C	4-INCH CORE BORING
3S	3-INCH SHELBY TUBE
2C	2-INCH CORE BORING
F	FISHTAIL WASH BORING
C	CORE BORING
T.D.	TOTAL DEPTH

GENERAL NOTES

1. OVERBURDEN AND PRIMARY STRATA DESCRIPTIONS ARE GENERALIZED SEE SEQUENCES 205 THROUGH 236 FOR DETAILED LOGS OF BORINGS.
2. ABSENCE OF GROUND WATER LEVELS OPPOSITE BORING LOGS DOES NOT NECESSARILY MEAN THAT GROUND WATER WILL NOT BE ENCOUNTERED AT THE LOCATION OR WITHIN THE VERTICAL REACHES OF THE BORINGS. WATER LEVELS WILL FLUCTUATE DEPENDING ON SEASON AND RAINFALL.
3. FOR DETAIL OF CUTOFF AND INSPECTION TRENCH SEE SEQ. 171 AND 172.



LEVEL ON
IDICATED

ZED ZONE

FEROUS ZONE

IH
VITY LOG

8A	8 INCH AUGER BORING
6D	6-INCH DENISON BORING
6C	6-INCH CORE BORING
4C	4-INCH CORE BORING
3S	3-INCH SHELBY TUBE
2C	2-INCH CORE BORING
F	FISHTAIL WASH BORING
C	CORE BORING
T.D.	TOTAL DEPTH

GENERAL NOTES

1. OVERBURDEN AND PRIMARY STRATA DESCRIPTIONS ARE GENERALIZED SEE SEQUENCES 205 THROUGH 236 FOR DETAILED LOGS OF BORINGS.
2. ABSENCE OF GROUND WATER LEVELS OPPOSITE BORING LOGS DOES NOT NECESSARILY MEAN THAT GROUND WATER WILL NOT BE ENCOUNTERED AT THE LOCATION OR WITHIN THE VERTICAL REACHES OF THE BORINGS. WATER LEVELS WILL FLUCTUATE DEPENDING ON SEASON AND RAINFALL.
3. FOR DETAIL OF CUTOFF AND INSPECTION TRENCH SEE SEQ. 171 AND 172.

RECORD DRAWING-WORK AS BUILT

SYMBOL	NO.	ACTION	DATE	DESCRIPTION OF REVISION

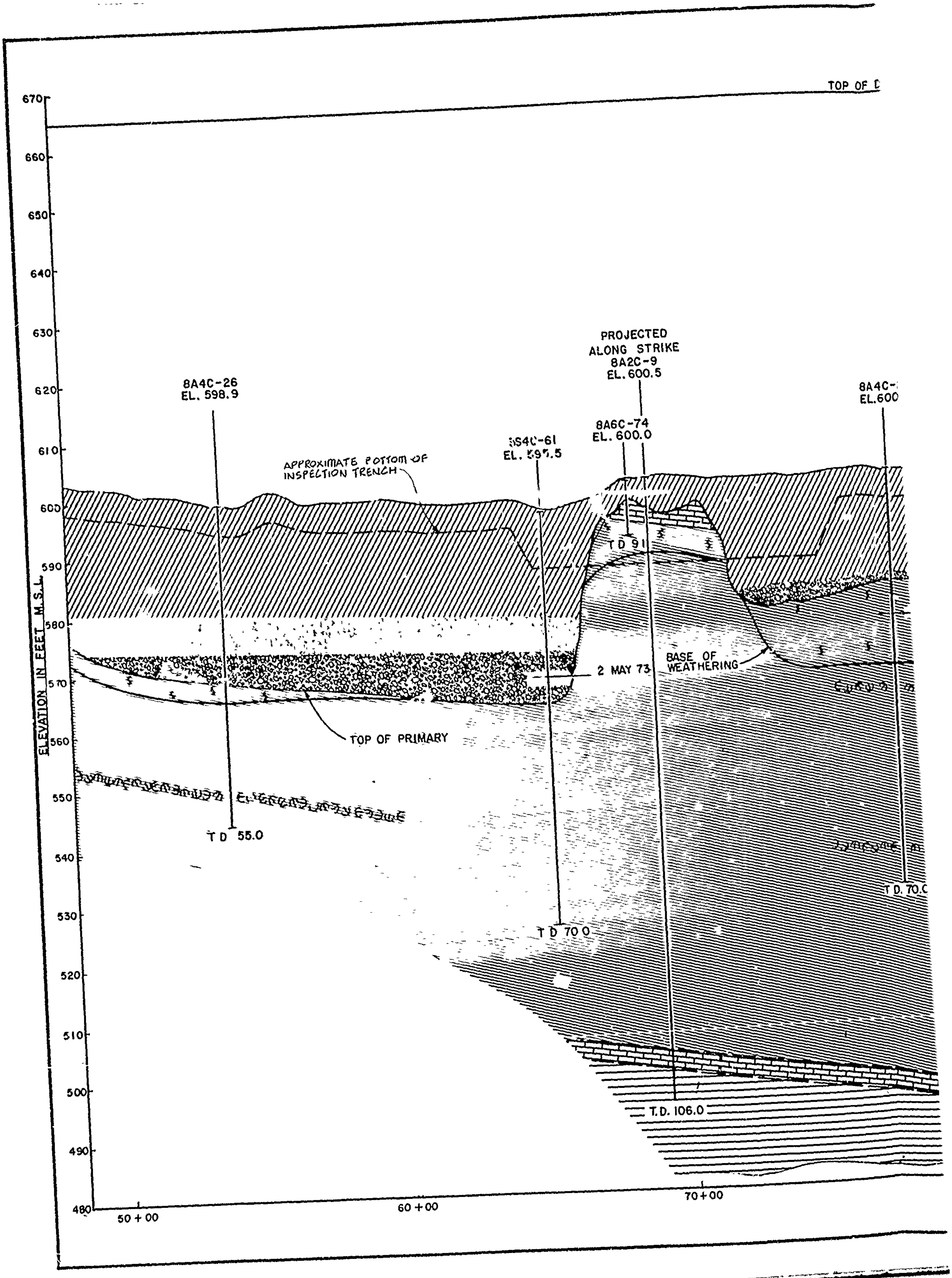
U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

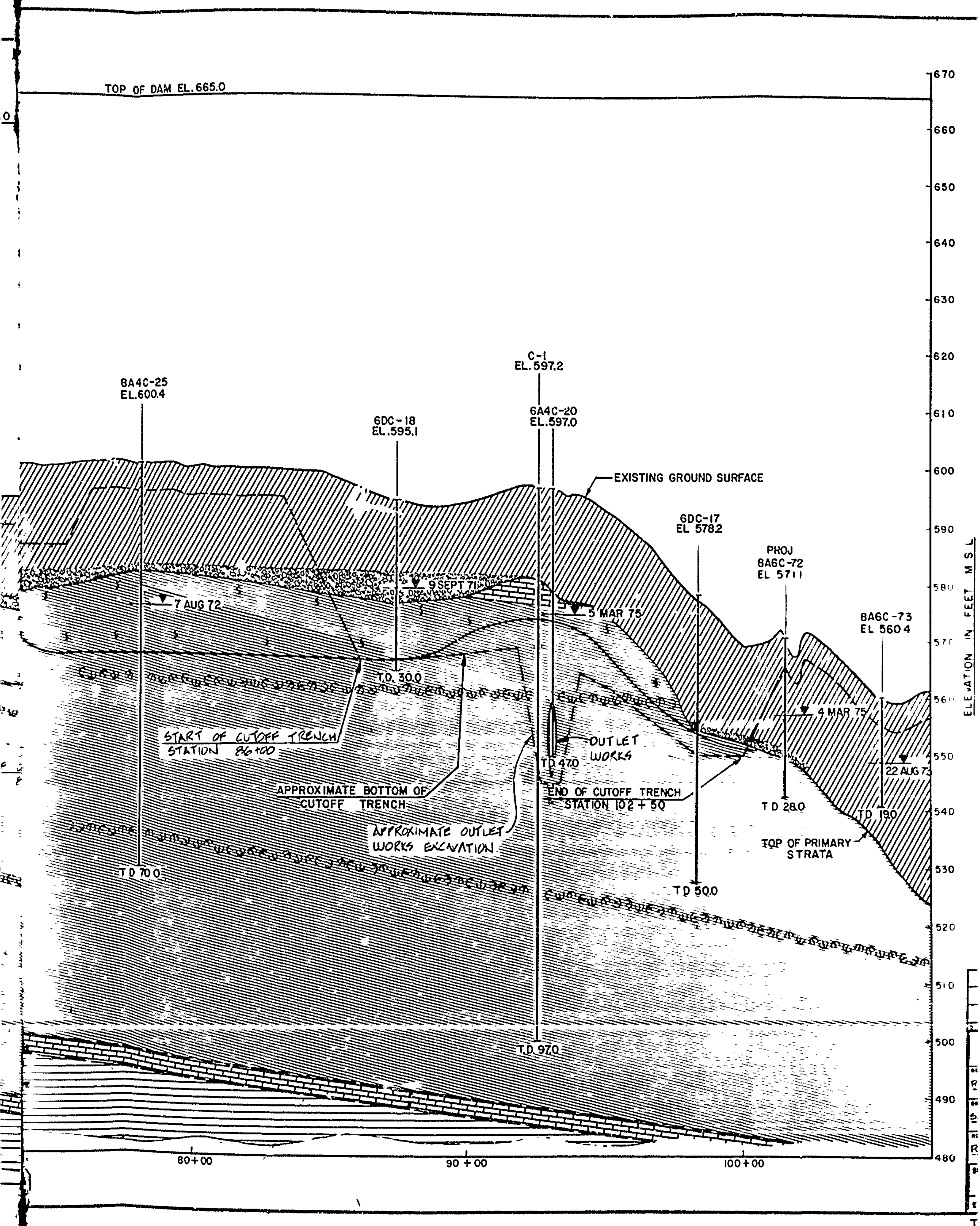
DESIGNED BY: R. HAGEN
DRAWN BY: H. RUTHERFORD
REVIEWED BY: R. HAGEN

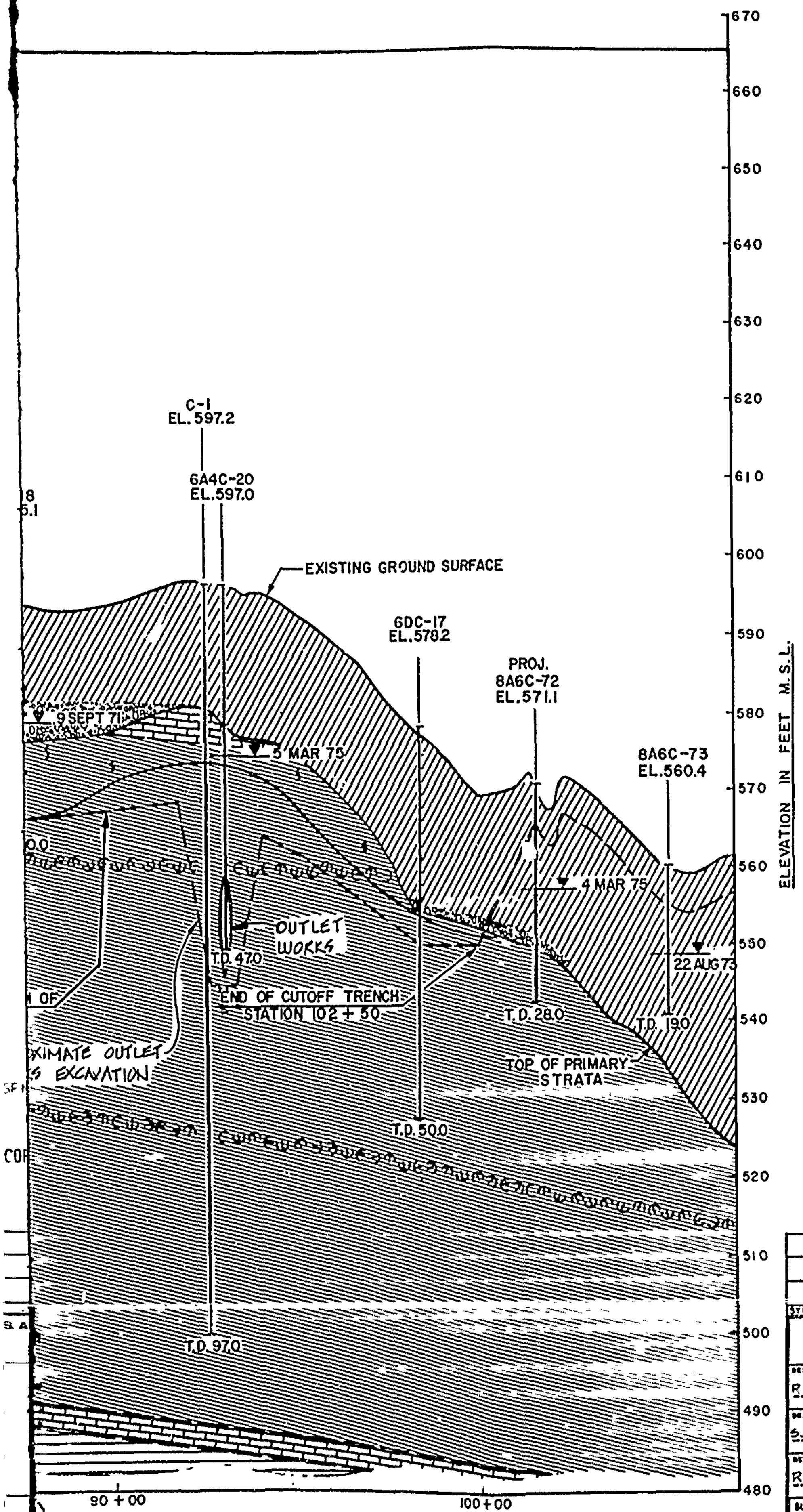
RAY ROBERTS LAKE
ELM FORK TRINITY RIVER, TEXAS
EMBANKMENT
GEOLOGIC PROFILE
EMBANKMENT CENTERLINE
(STA. 0+00 TO STA. 48+00)

SUBMITTED BY: M. GREEN
ENGINEER:
INVITATION NO. DACW63-82-B-0025
DATE: MAR 1982
CONTRACT NO. DACW63-82-C-0083
DRAWING NUMBER
SHEET NO. OF
SEQUENCE NO. 44

TO ACCOMPANY FOUNDATION REPORT


TOP OF
670
660
650
640
630
620
610
600
590
580
570
560
550
540
530
520
510
500
490
480
ELEVATION IN FEET M.S.L.
8A4C-26
EL. 598.9
APPROXIMATE BOTTOM OF INSPECTION TRENCH
8S4C-61
EL. 595.5
PROJECTED ALONG STRIKE
8A2C-9
EL. 600.5
8A6C-74
EL. 600.0
8A4C-
EL.600
TD 91
2 MAY 73
BASE OF WEATHERING
TOP OF PRIMARY
TD 55.0
TD 70.0
T.D. 70.0
T.D. 106.0
50 + 00
60 + 00
70 + 00


TOP OF DAM EL. 665.0
8A4C-25
EL. 600.4
6DC-18
EL. 595.1
C-1
EL. 597.2
6A4C-20
EL. 597.0
EXISTING GROUND SURFACE
6DC-17
EL 578.2
PROJ
8A6C-72
EL 571.1
8A6C-73
EL 560.4
9 SEPT 71
7 AUG 72
5 MAR 75
4 MAR 75
22 AUG 73
T.D. 30.0
START OF CUTOFF TRENCH
STATION 86+00
OUTLET
WORKS
T.D. 47.0
APPROXIMATE BOTTOM OF
CUTOFF TRENCH
END OF CUTOFF TRENCH
STATION 102 + 50
T D 28.0
T D 19.0
APPROXIMATE OUTLET
WORKS EXCAVATION
TOP OF PRIMARY
STRATA
T D 70.0
T D 50.0
T.D. 97.0
80+00
90 + 00
100+00
670
660
650
640
630
620
610
600
590
580
570
560
550
540
530
520
510
500
490
480
ELEVATION IN FEET M S L



FOR LEGEND AND GENERAL NOTES, SEE SEQ 199

RECORD DRAWING-WORK AS BUILT

SYM	DO NO	ACTION	DATE	DESCRIPTION OF REVISION

U S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

DESIGNED BY
R. HAGEN

DRAWN BY:
S. WOMACK

REVIEWED BY:
R. HAGEN

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS

EMBANKMENT
GEOLOGIC PROFILE
EMBANKMENT CENTERLINE
(STATION 48+00 TO 107+00)

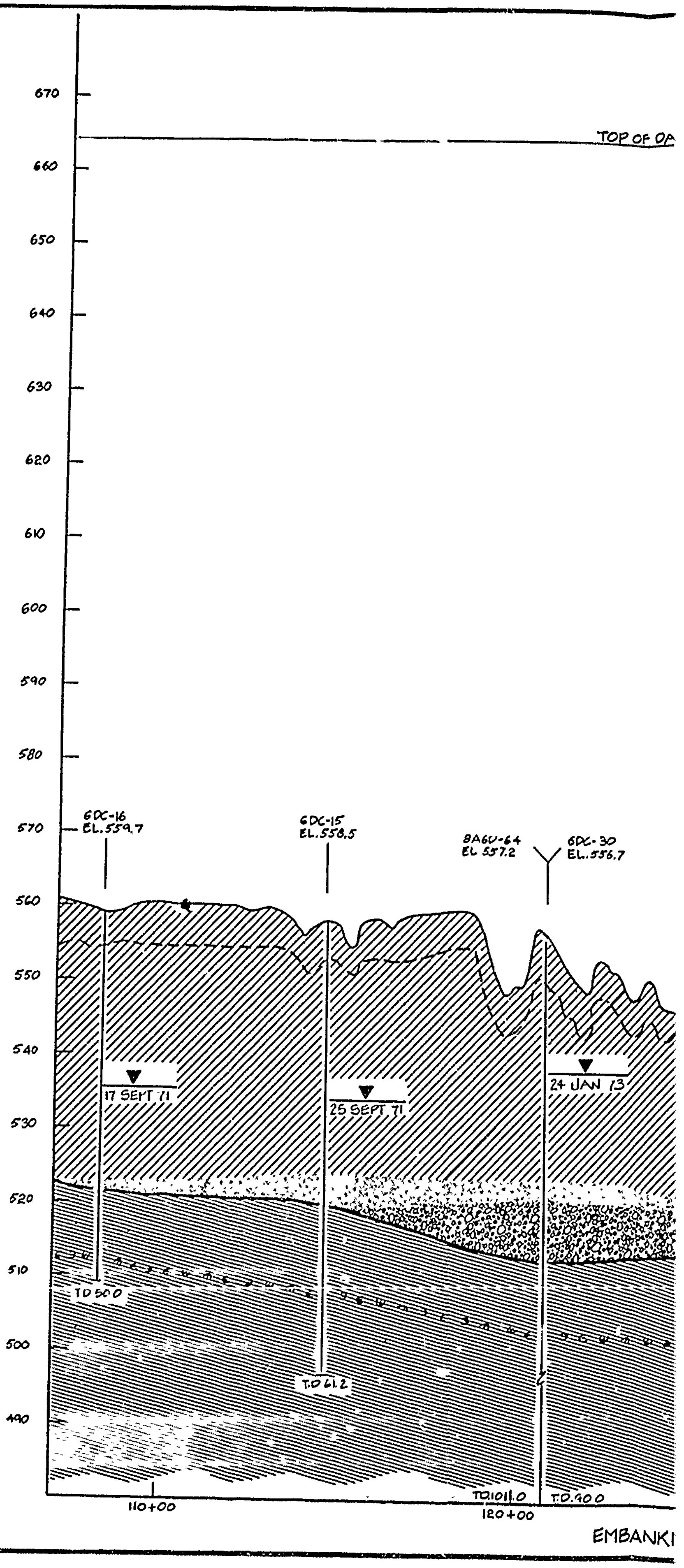
SUBMITTED BY:
M. GREEN

ENGINEER:

INVITATION NO. DACW63-82-B-0025
DATE: MAR, 1982
CONTRACT NO. DACW 63 - 82 - C - 0033
DRAWING NUMBER
SHEET NO.
OF
SEQUENCE NO.
45

CONTRACT NO. DACW63-82-C-0033

TO ACCOMPANY FOUNDATION REPORT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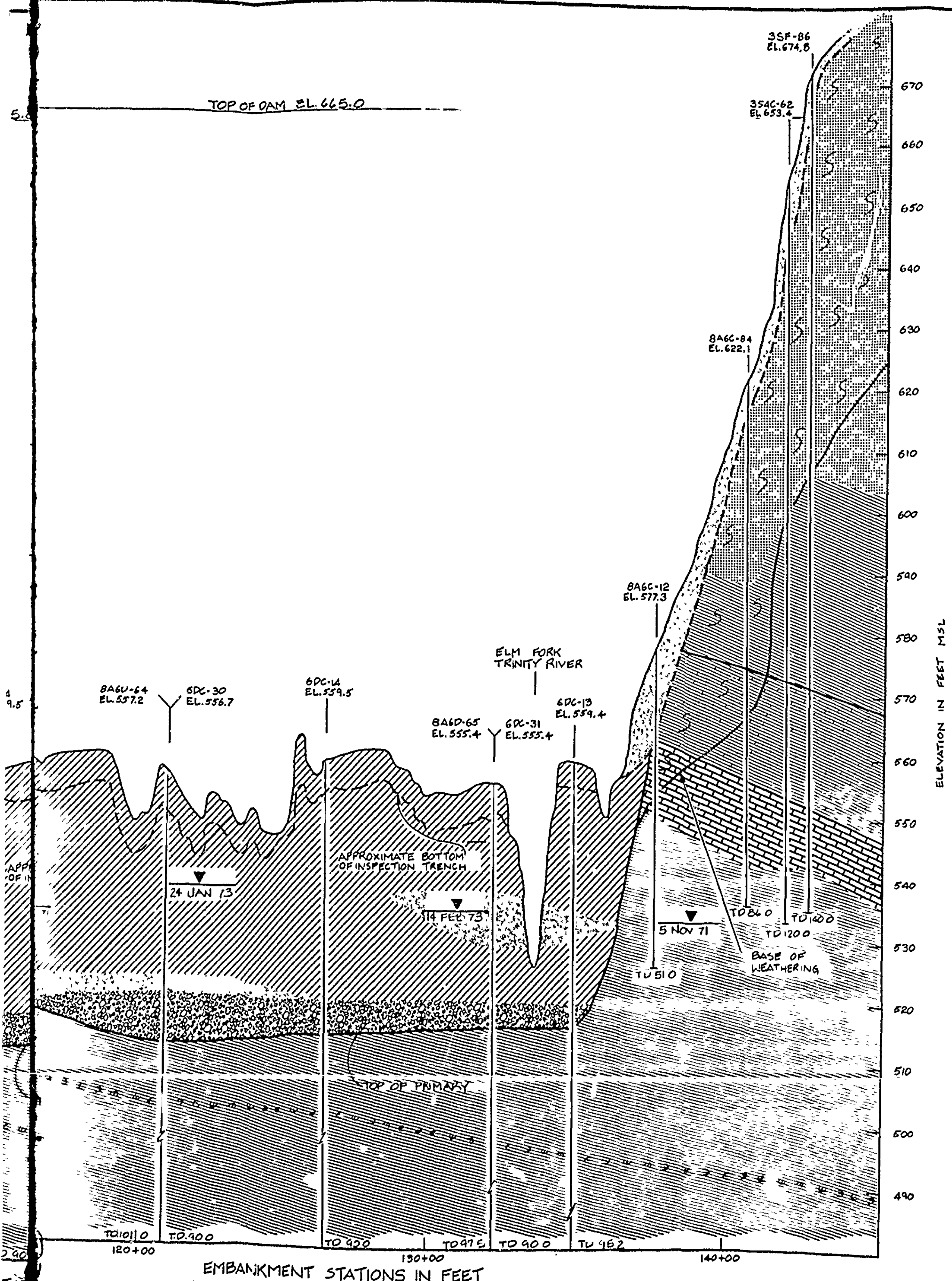
TOP OF DA
6DC-16
EL. 559.7
6DC-15
EL. 558.5
BA6U-64
EL 557.2
6DC-30
EL. 556.7
17 SEPT 71
25 SEPT 71
24 JAN 73
T.D 50.0
T.D 61.2
T.D 101.0
T.D 90.0
110+00
120+00
EMBANK


TOP OF DAM EL.665.0
5.
3SF-86
EL.674.8
354C-62
EL.653.4
8A6C-84
EL.622.1
8A6C-12
EL.577.3
ELM FORK
TRINITY RIVER
8A6U-64
EL.557.2
6DC-30
EL.556.7
6DC-14
EL.559.5
8A6D-65
EL.555.4
6DC-31
EL.555.4
6DC-13
EL.559.4
4
9.5
APP
OF IN
71
24 JAN 73
APPROXIMATE BOTTOM
OF INSPECTION TRENCH
14 FEB 73
5 NOV 71
BASE OF
WEATHERING
TD 51.0
TD 86.0
TD 120.0
TD 140.0
TOP OF PRIMARY
TD101.0
T.D.90.0
TD 92.0
TD 97.5
TD 90.0
TD 96.2
D 90
120+00
130+00
140+00
EMBANKMENT STATIONS IN FEET
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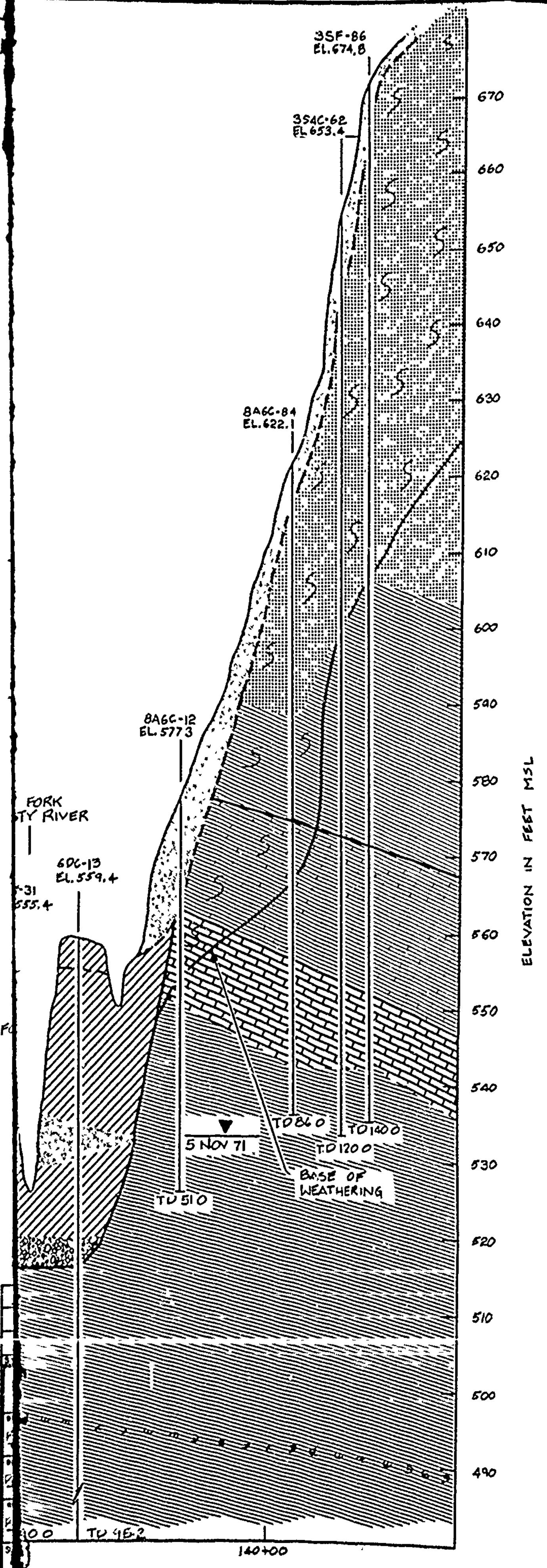
ELEVATION IN FEET MSL



FOR LEGEND AND GENERAL NOTES SEE SEQ 191.

RECORD DRAWING-WORK AS BUILT

SYM	DG. NO.	ACTION	DATE	DESCRIPTION OF REVISION

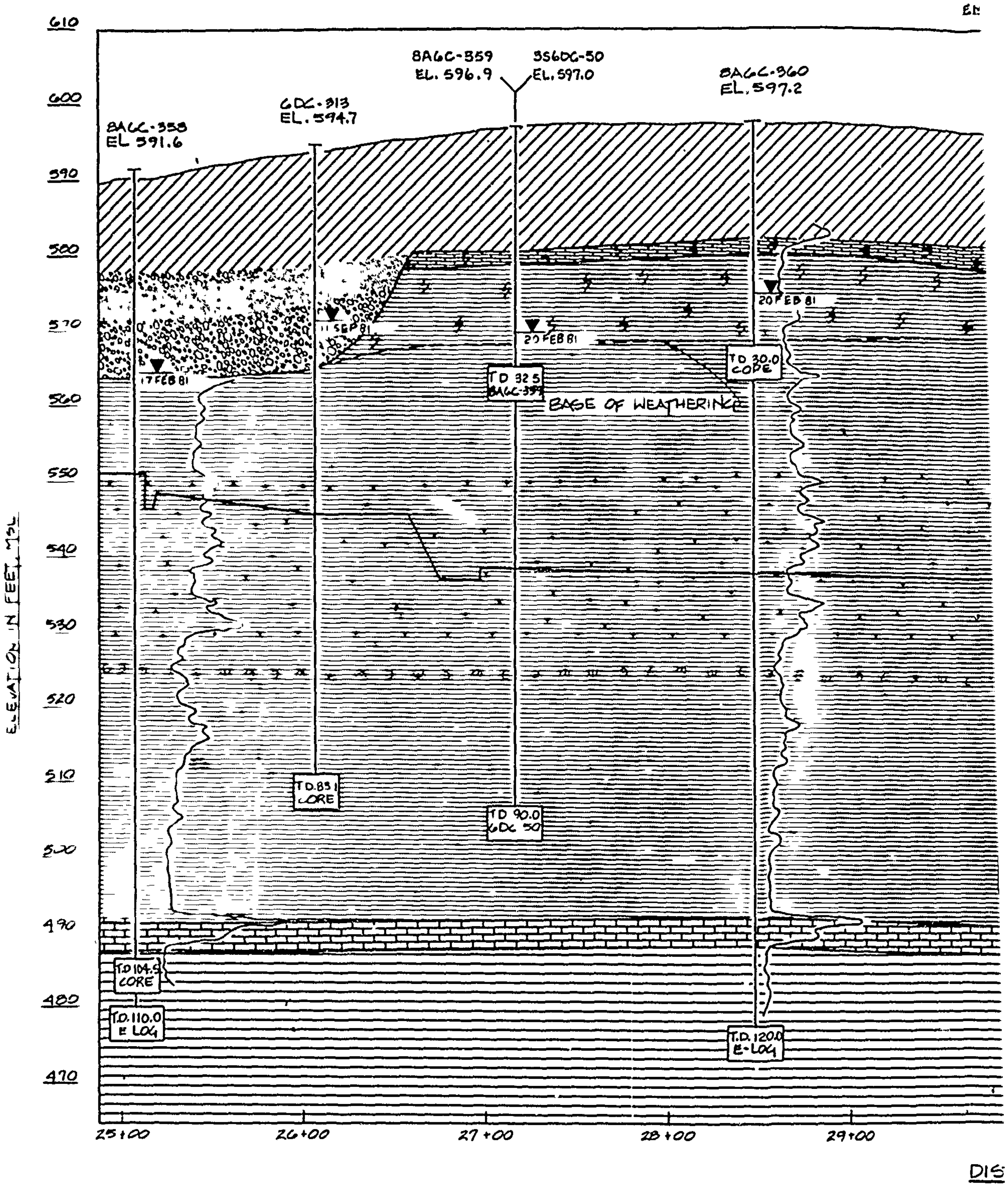
U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

DESIGNED BY: R. HAGEN
DRAWN BY: D BAILEY
REVIEWED BY: R HAGEN

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS
EMBANKMENT
GEOLOGIC PROFILE
EMBANKMENT CENTERLINE
(STATION 107+00 TO 142 + 25)

SUBMITTED BY: M GREEN
ENGINEER:
INVITATION NO. DACW63-82-B-0025
DATE: MAR, 19
CONTRACT NO. DACW63-82 C 0053
DRAWING NUMBER
SHEET NO.
OF
4

TO ACCOMPANY FOUNDATION REPORT


EN
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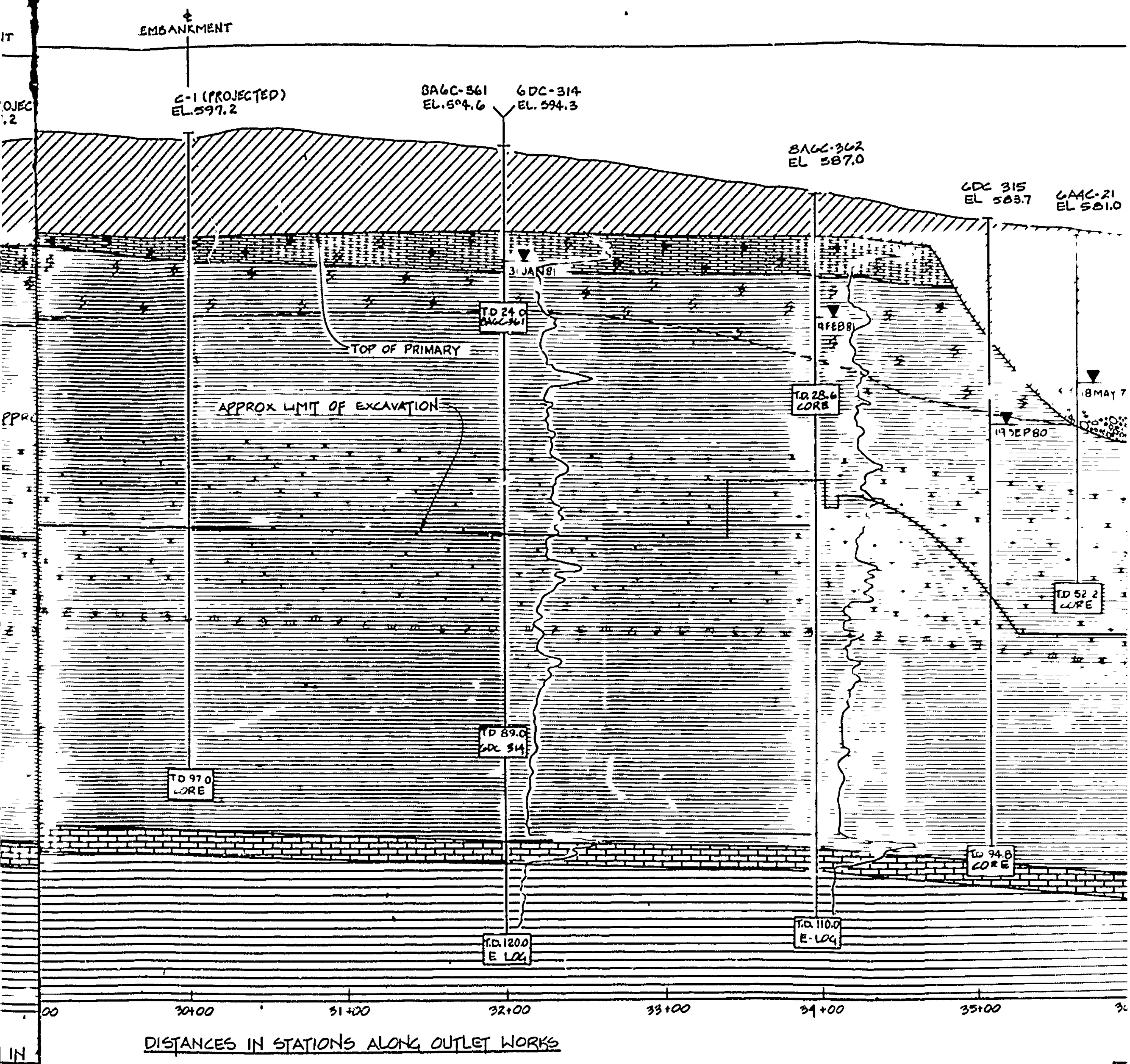
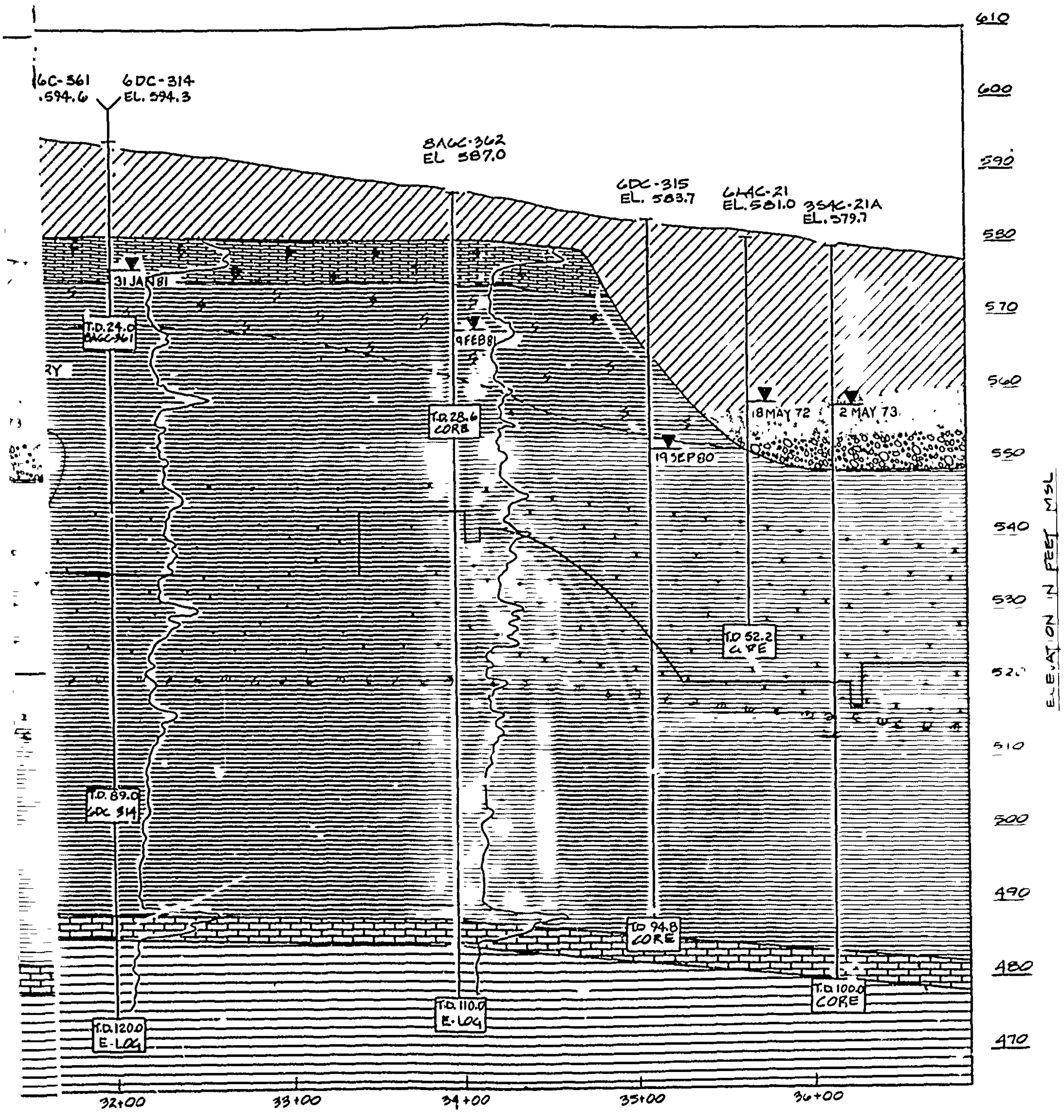
470
ELEVATION IN FEET, MSL
8AGC-358
EL 591.6
6DC-313
EL. 594.7
8AGC-359
EL. 596.9
55GDC-50
EL. 597.0
8AGC-360
EL. 597.2
17 FEB 81
11 SEP 81
20 FEB 81
20 FEB 81
TD 32.5
8AGC-359
TD 30.0
CORE
BASE OF WEATHERING
T.D. 85.1
CORE
TD 90.0
6DC 50
T.D. 104.5
CORE
T.D. 110.0
E LOG
T.D. 120.0
E-LOG
25+00
26+00
27+00
28+00
29+00
DIS



FOR LEGEND AND GENERAL NOTES SEE SEQ 199 .

RECORD DRAWING-WORK AS BUILT



TLET WORKS

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FOR LEGEND AND GENERAL NOTES SEE SEQ 199.

RECORD DRAWING-WORK AS BUILT

SYMBOL	NO.	ACTION	DATE	DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

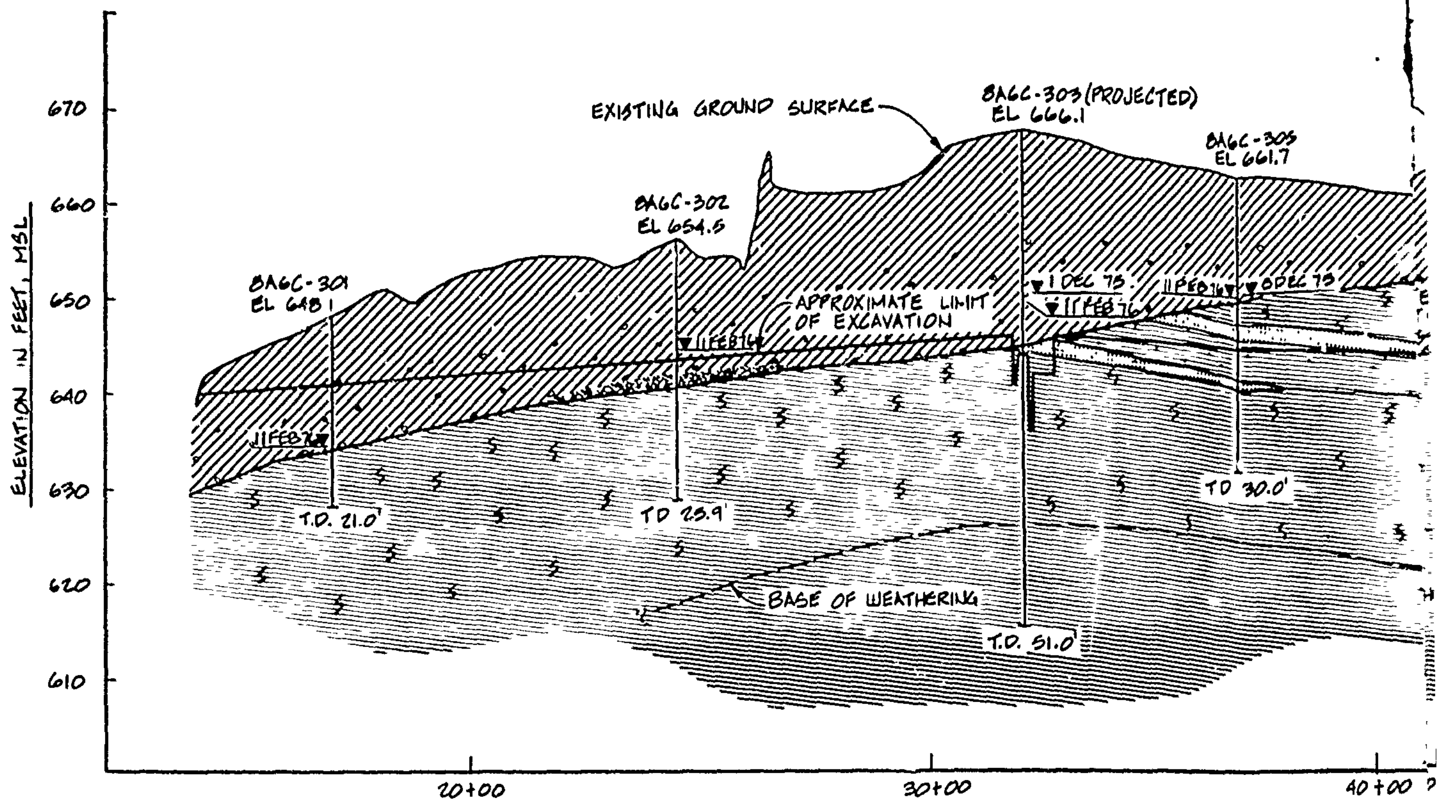
DESIGNED BY: R. HAGEN
DRAWN BY: M. BLAIN
REVIEWED BY: R. HAGEN

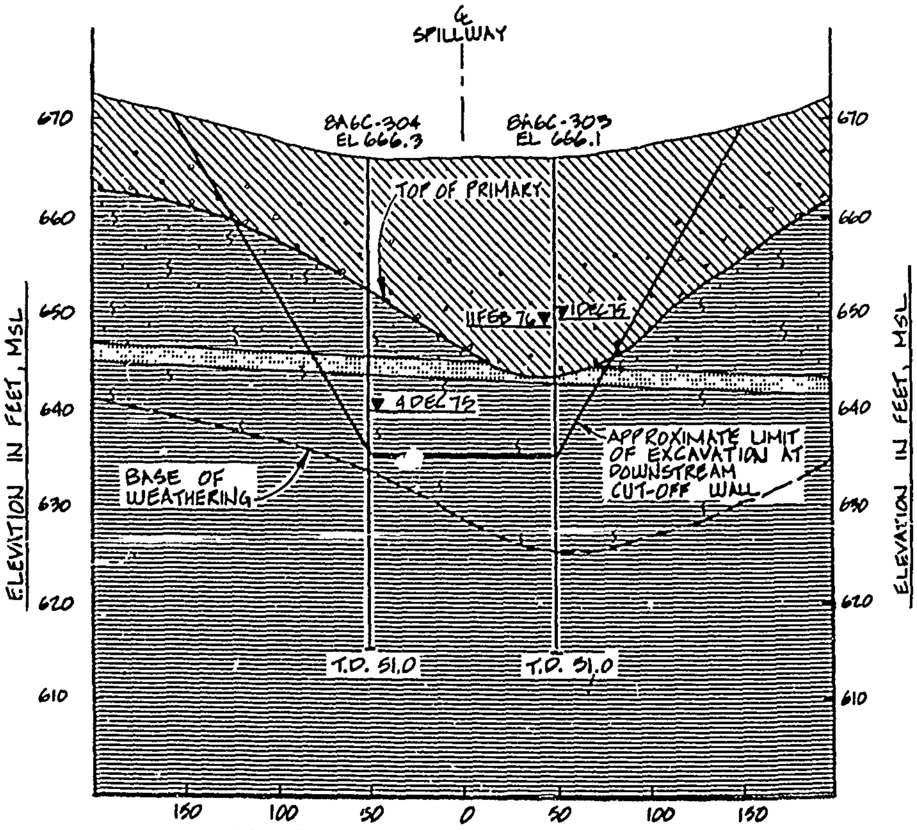
RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS
OUTLET WORKS
GEOLOGIC PROFILE
STATION 25+11 TO STATION 36+27

SUBMITTED BY: M. GREEN
ENGINEER:
INVITATION NO. DACW63-82-B-0025
DATE: MAR. 198
CONTRACT NO. DACW 63-82-C-0083
DRAWING NUMBER
SHEET NO. OF
SEQUENCE NO. 47

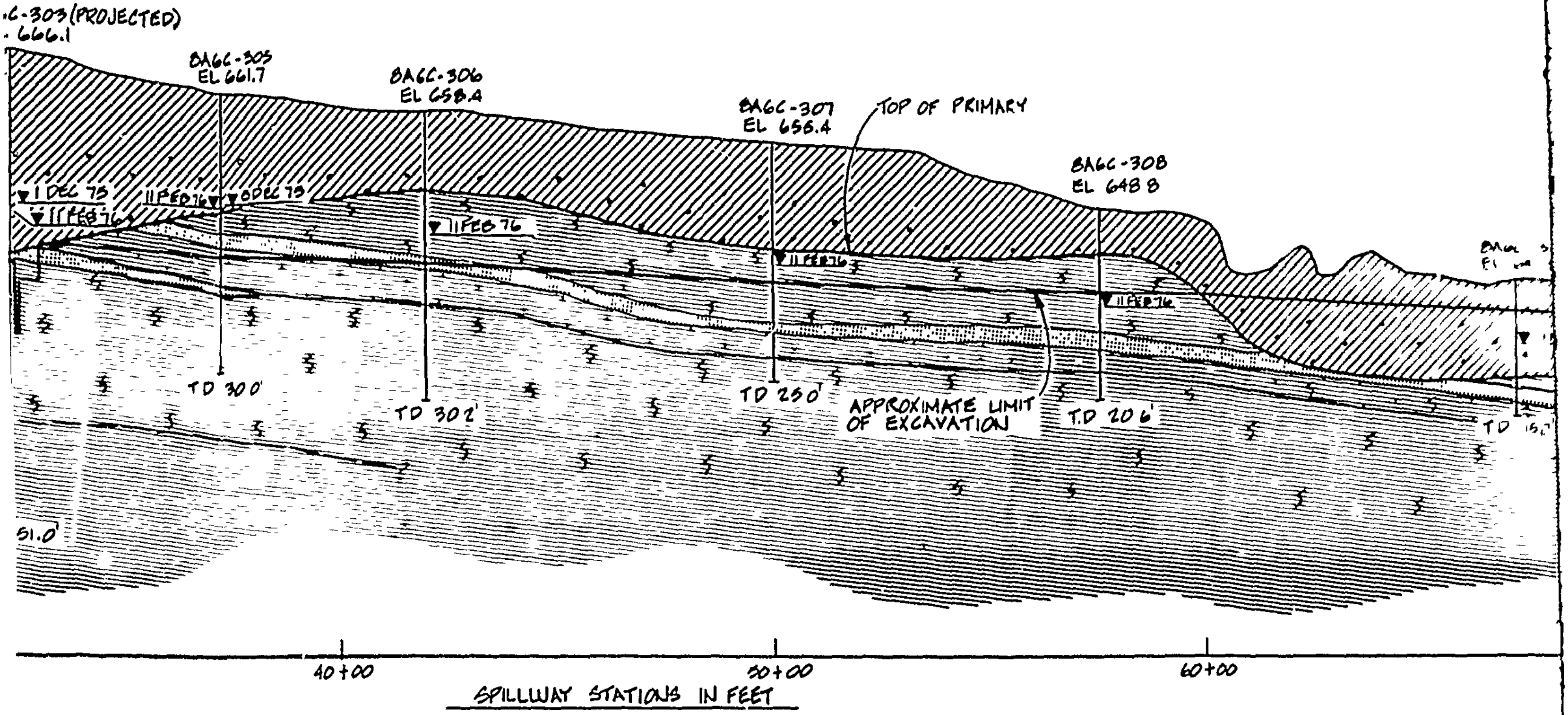
TO ACCOMPANY FOUNDATION REPORT

PAN



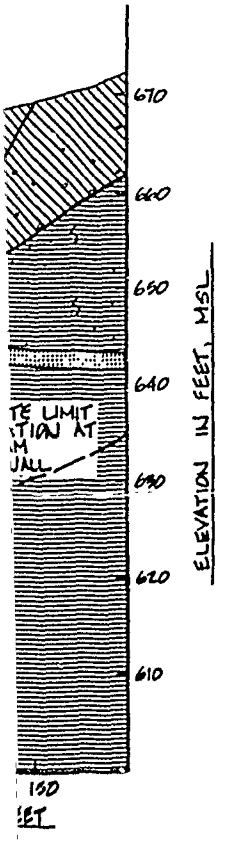


SPILLWAY GEOLOGIC SECTION S_2-S_2

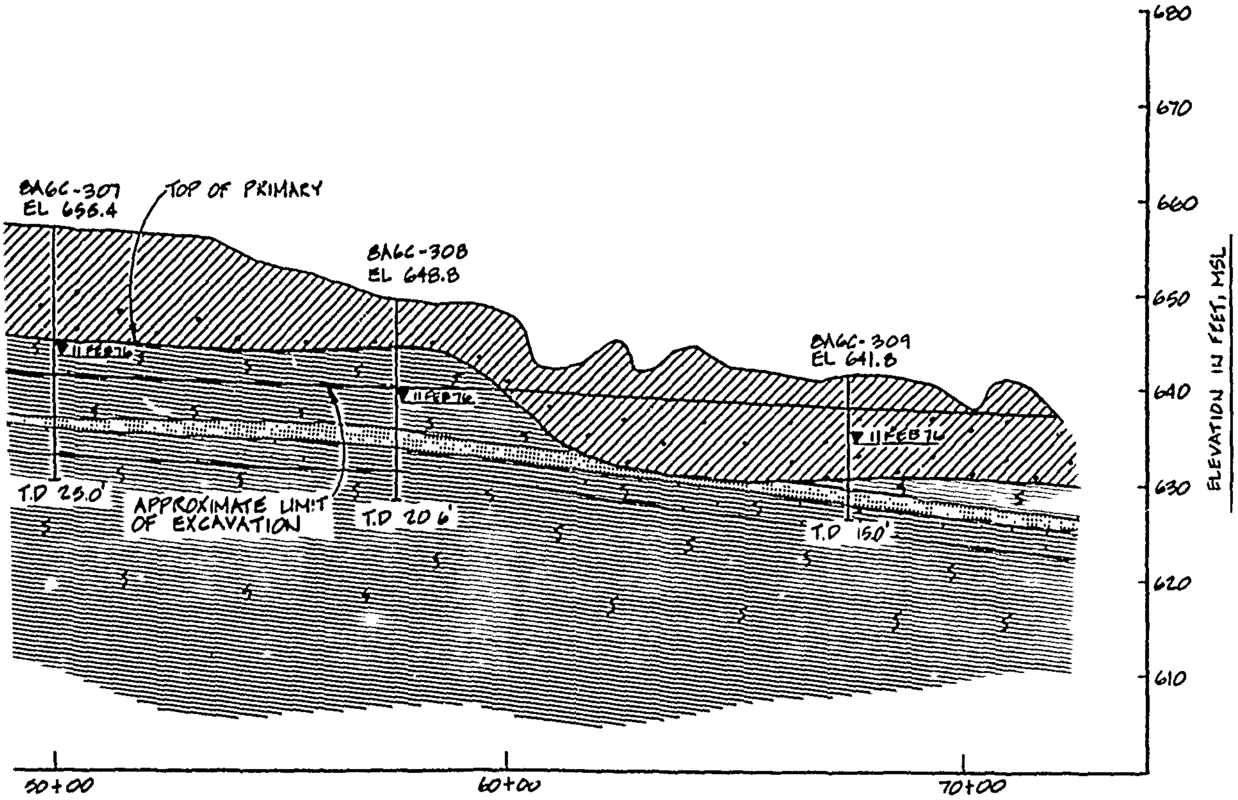


SPILLWAY GEOLOGIC PROFILE S_1-S_1

NOTES:
1. FOR LEGEND AND GENERAL NOTES SEE SE
2. FOR LOCATION OF PROFILE AND SECTION SE



S_2



EET

OFILE S_1-S_1

NOTES:

1. FOR LEGEND AND GENERAL NOTES SEE SEQ. 199.
2. FOR LOCATION OF PROFILE AND SECTION SEE SEQ. 180.

RECORD DRAWING-WORK AS BUILT

SYM.	DO. NO.	ACTION	DATE	DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

DESIGNED BY: R. HAGEN
DRAWN BY: R. REED
REVISED BY: R. HAGEN

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS

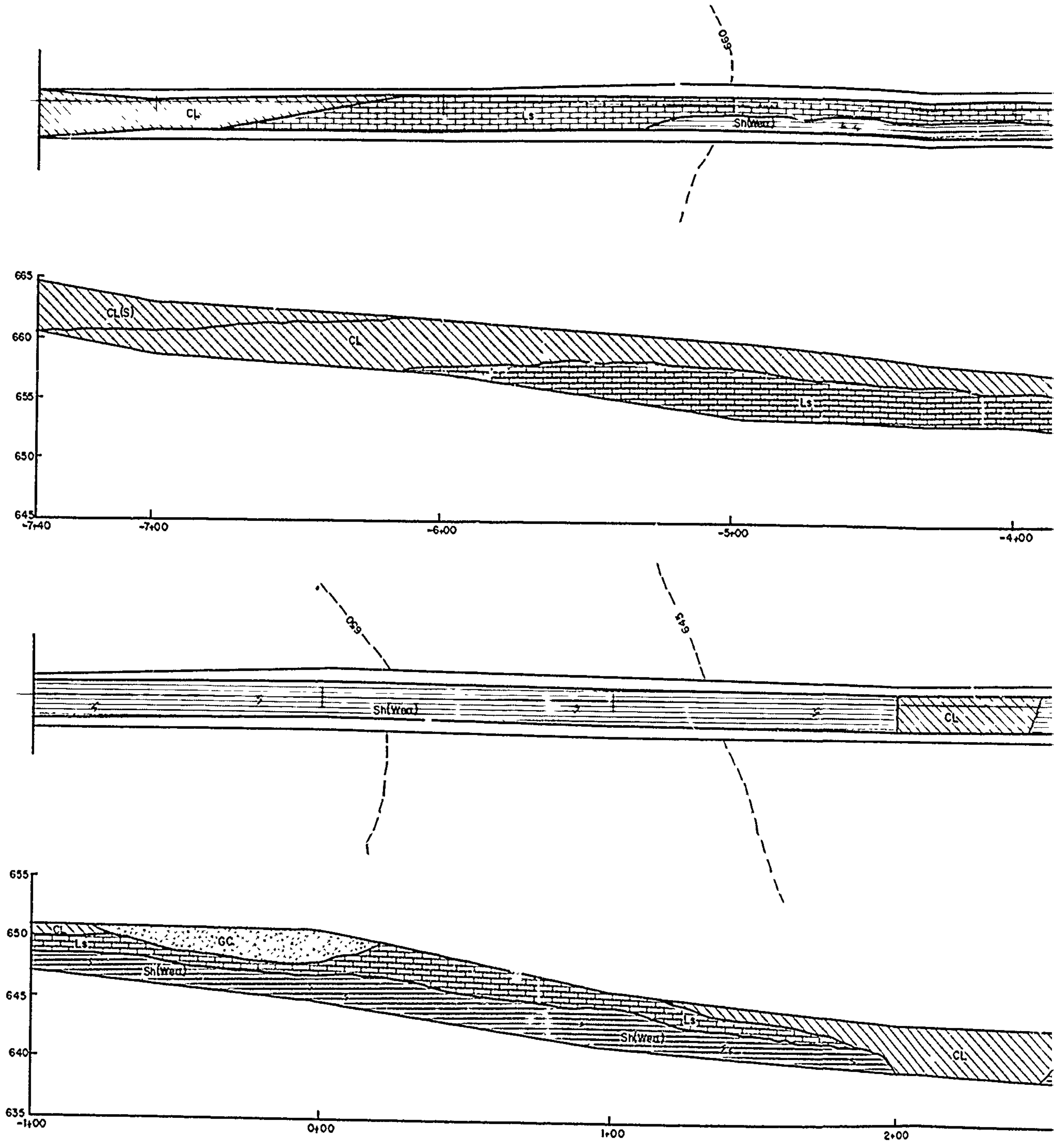
SPILLWAY, APPROACH CHANNEL AND DISCHARGE CHANNEL

GEOLOGIC PROFILE S_1-S_1 AND SECTION S_2-S_2

SUBMITTED BY: M. GREEN
ENGINEER:
INVITATION NO. DACW63-82-B-0025
DATE: MAR. 1982
CONTRACT NO. DACW 63-82-C-0083
DRAWING NUMBER
SHEET NO. OF
SEQUENCE NO. 48

CONTRACT NO. DACW63-82-C-0083

TO ACCOMPANY FOUNDATION REPORT

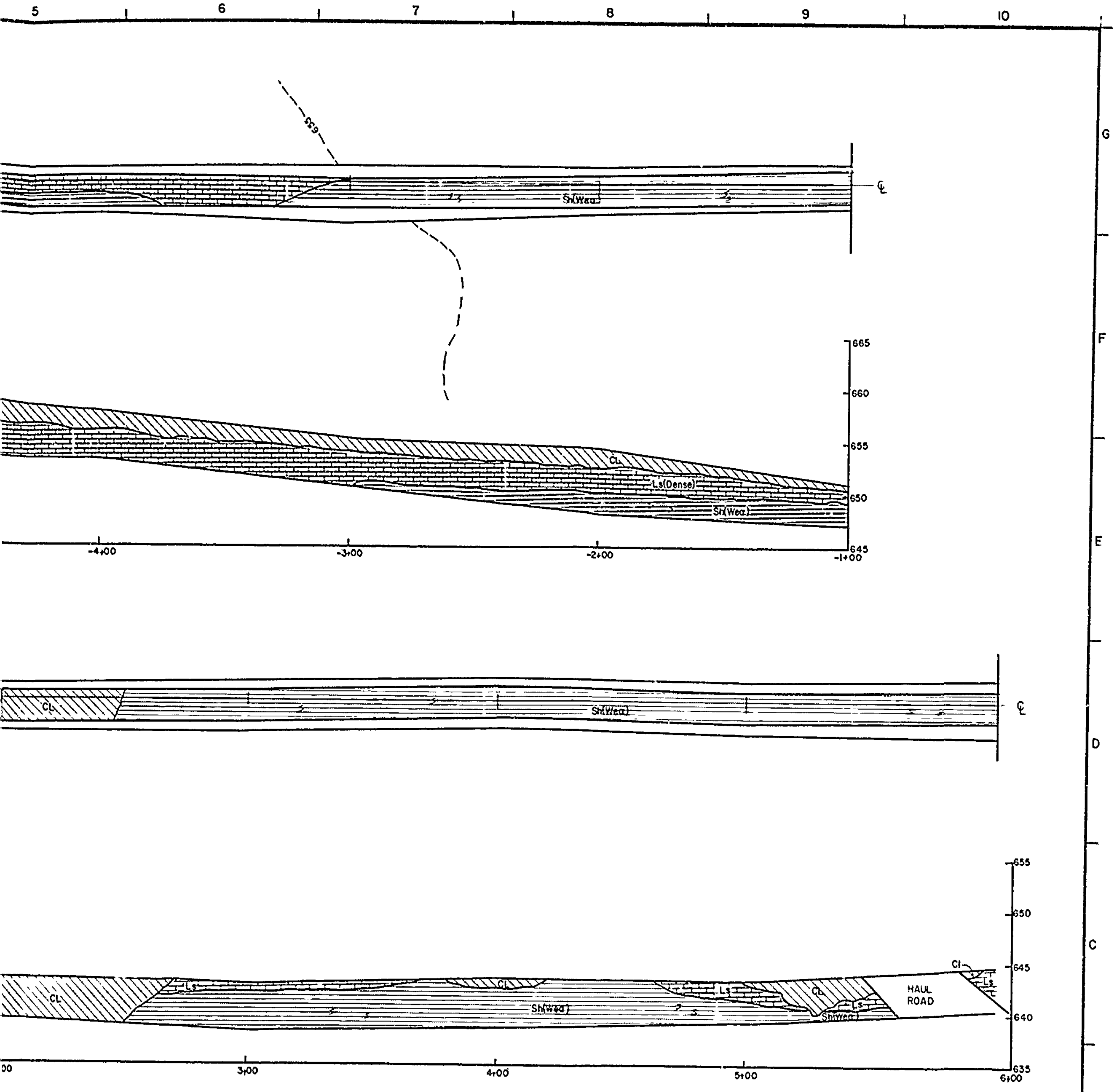


LEGEND

CH	CLAY, MEDIUM TO HIGH PLASTICITY, DARK BROWN
CL	CLAY, LEAN
CL(Sandy)	CLAY, LEAN, SANDY
CL(Grav)	CLAY, GRAVELLY
OH	CLAY, HIGH PLASTICITY, ORGANIC, BLACK
SC	SAND, CLAYEY, FINE
SP	SAND, FINE, POORLY GRADED
GC	GRAVEL, VARIABLY CLAYEY
▨	CLAY, STIFF, HAS APPEARANCE OF WEATHERED SHALE INCLUDING SHALE-LIKE STRUCTURE.
☰	SHALE, WEATHERED
☰	SHALE, UNWEATHERED

NOTES

1. SECTION
2. NO INSI
3. PLAN V
GEOLOGY



NOTES

1. SECTIONS REPRESENT UPSTREAM(LEFT) FACE OF INSPECTION TRENCH.
2. NO INSPECTION TRENCH WAS EXCAVATED BETWEEN STATIONS 117+50 AND 125+50.
3. PLAN VIEW OF INSPECTION TRENCH PRESENTS GEOLOGY OF THE FLOOR ONLY. GEOLOGY OF SIDE SLOPES IS PRESENTED IN THE SECTION.

SYMBOL NO. ACTION DATE DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEX.

DESIGNED BY: H BARNETT
DRAWN BY: C.KIRBY
REVIEWED BY: R.BEHM

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS

FOUNDATION REPORT
INSPECTION TRENCH
AS-BUILT PLAN AND PROFILE
STA. -7+40 TO 6+00

SUBMITTED BY: ROBERT C. BEHM
ENGINEER:

SOL. NO.
DATED:
CONTR. NO.
DRAWING NUMBER
SHEET NO.
SEQUENCE NO. 49

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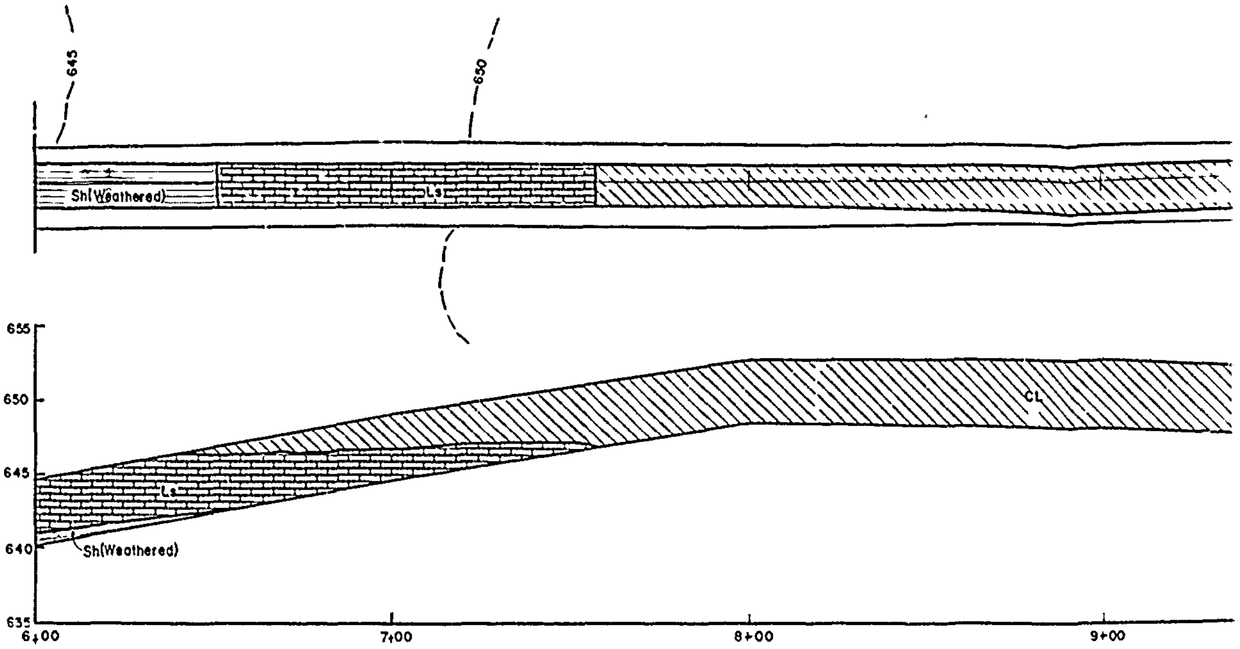
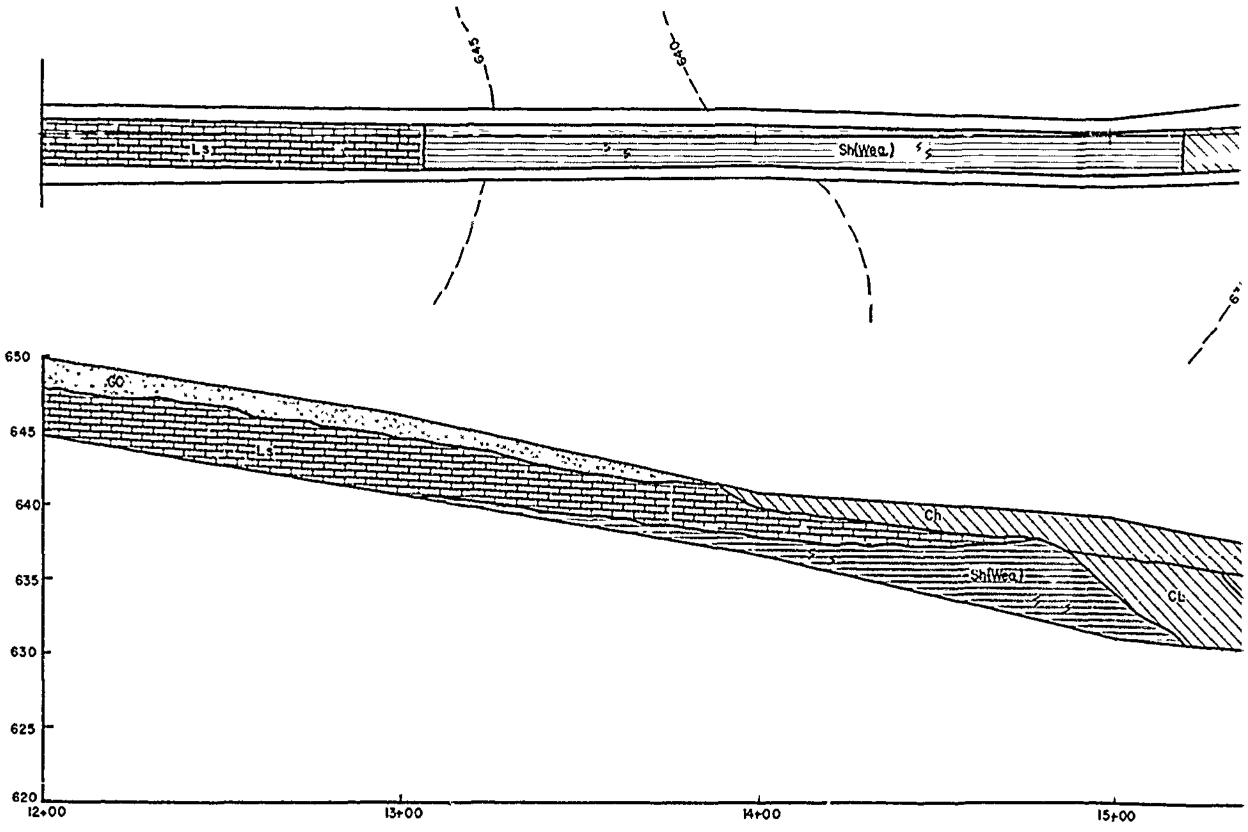

645
650
Sh(Weathered)
Ls
655
650
645
640
635
CL
Ls
Sh(Weathered)
6+00
7+00
8+00
9+00


645
640
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Sh(Wea.)
650
645
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630
625
620
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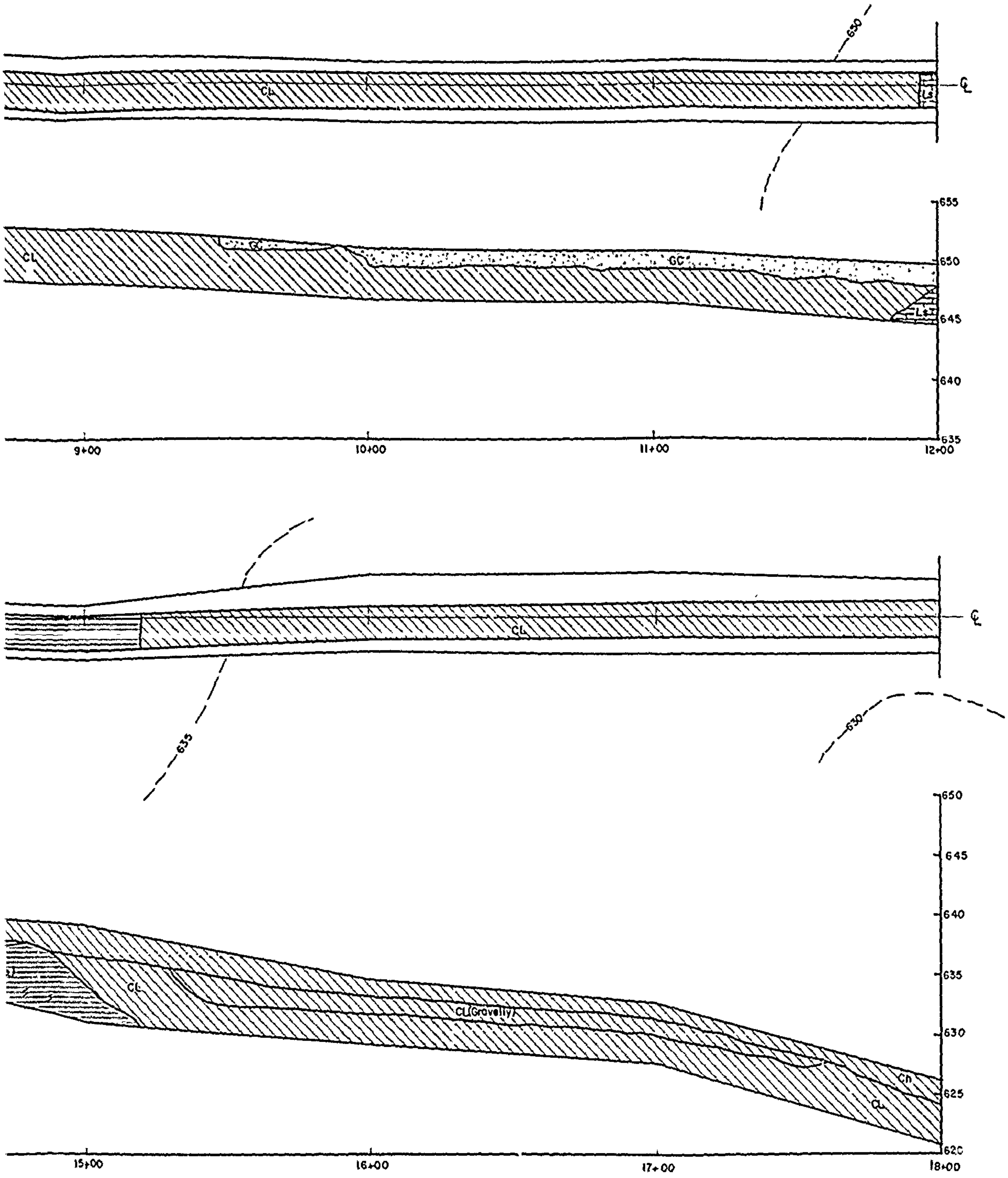
CL
12+00
13+00
14+00
15+00



SYMBOL NO.	ACTION	DATE	DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

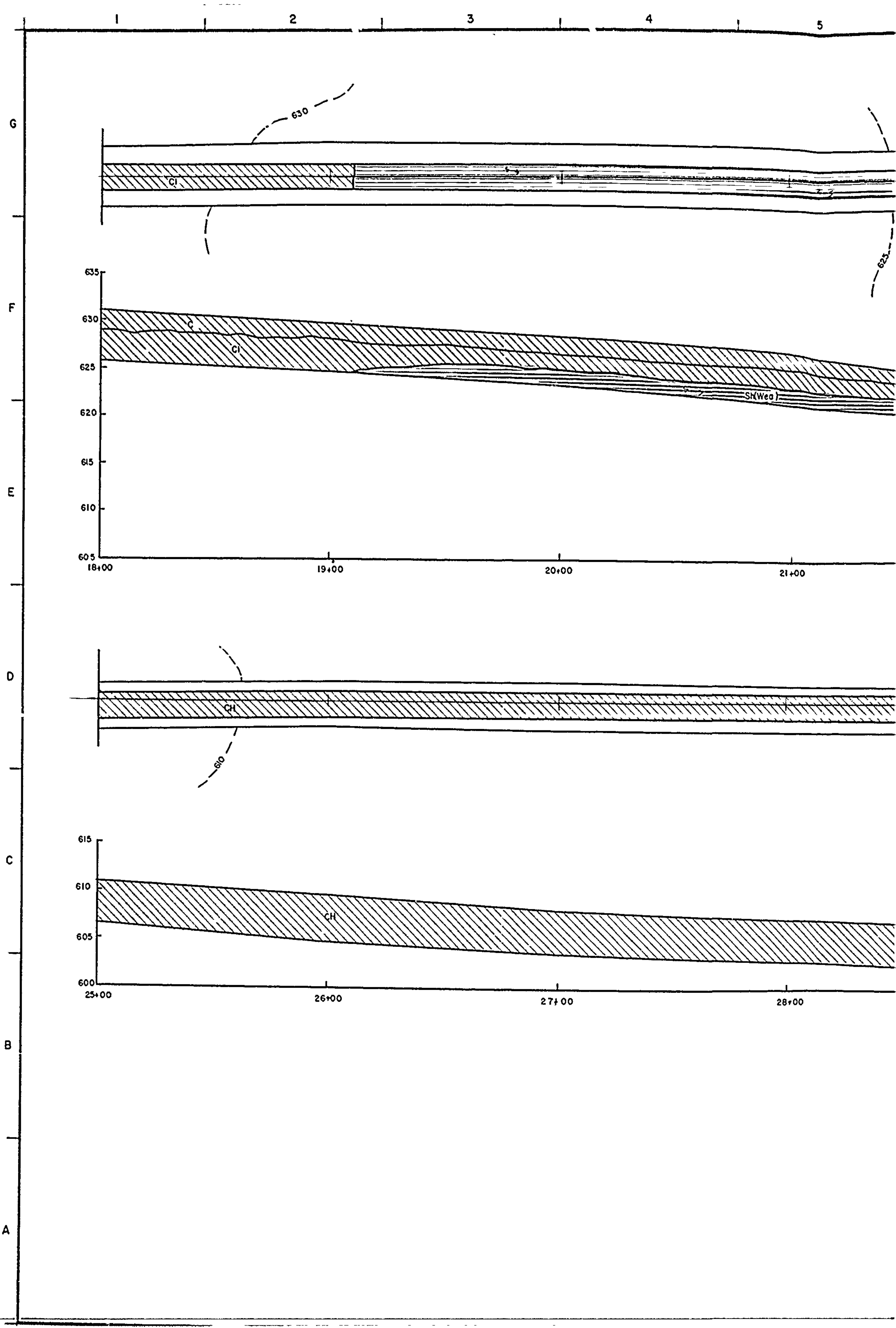
DESIGNED BY: H. BARNETT
DRAWN BY: C. KIRBY
REVIEWED BY: R. BEHM

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS

FOUNDATION REPORT
INSPECTION TRENCH
AS-BUILT PLAN AND PROFILE
STA. 6+00 TO 18+00

SUBMITTED BY: ROBERT C. BEHM
ENGINEER:
SOL. NO.
DATED:
CONTR. NO
DRAWING NUMBER
SHEET NO. OF
SEQUENCE NO. 50
CONTR. NO.

TO ACCOMPANY FOUNDATION REPORT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SH(Wea)
18+00
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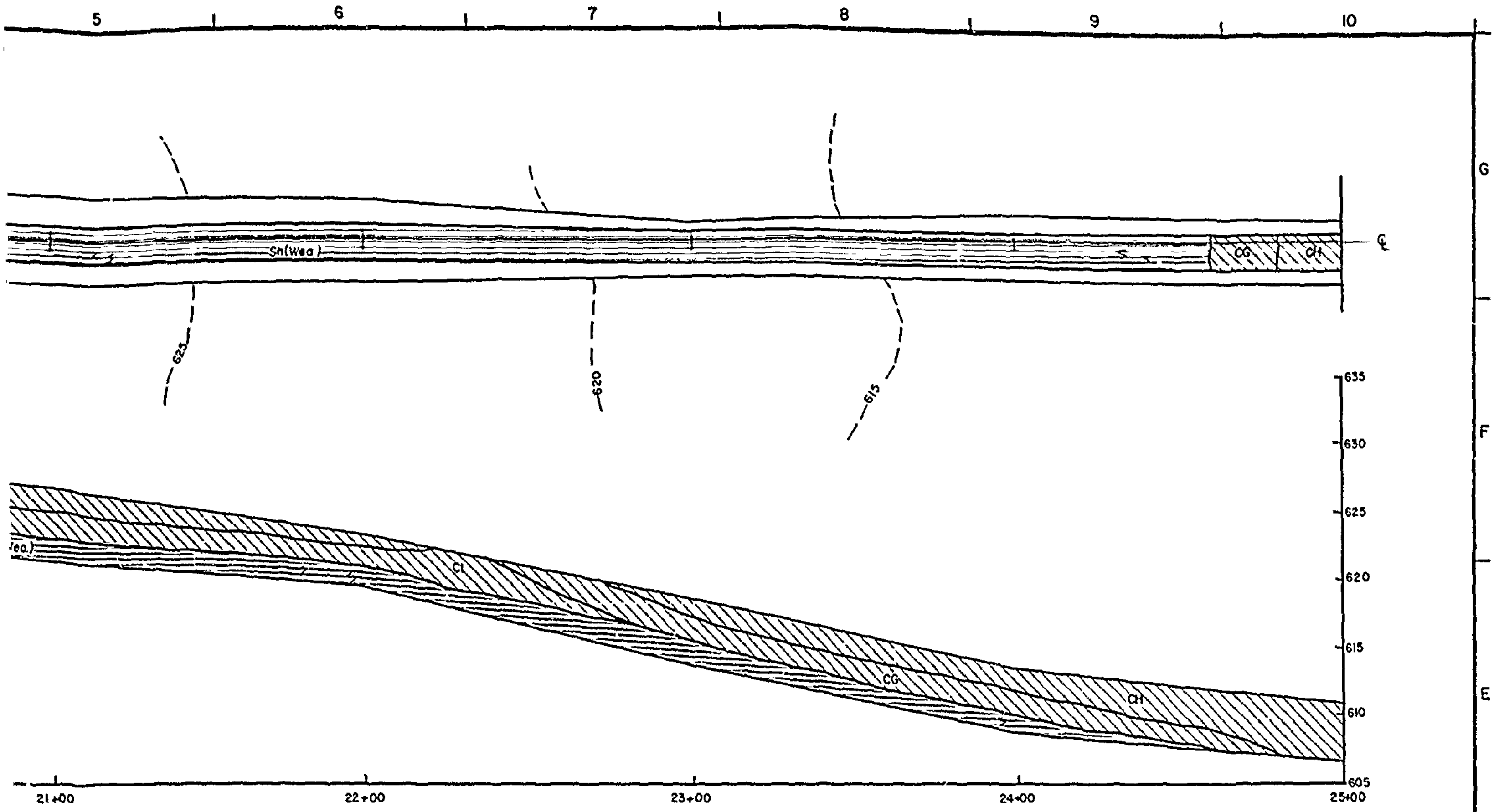
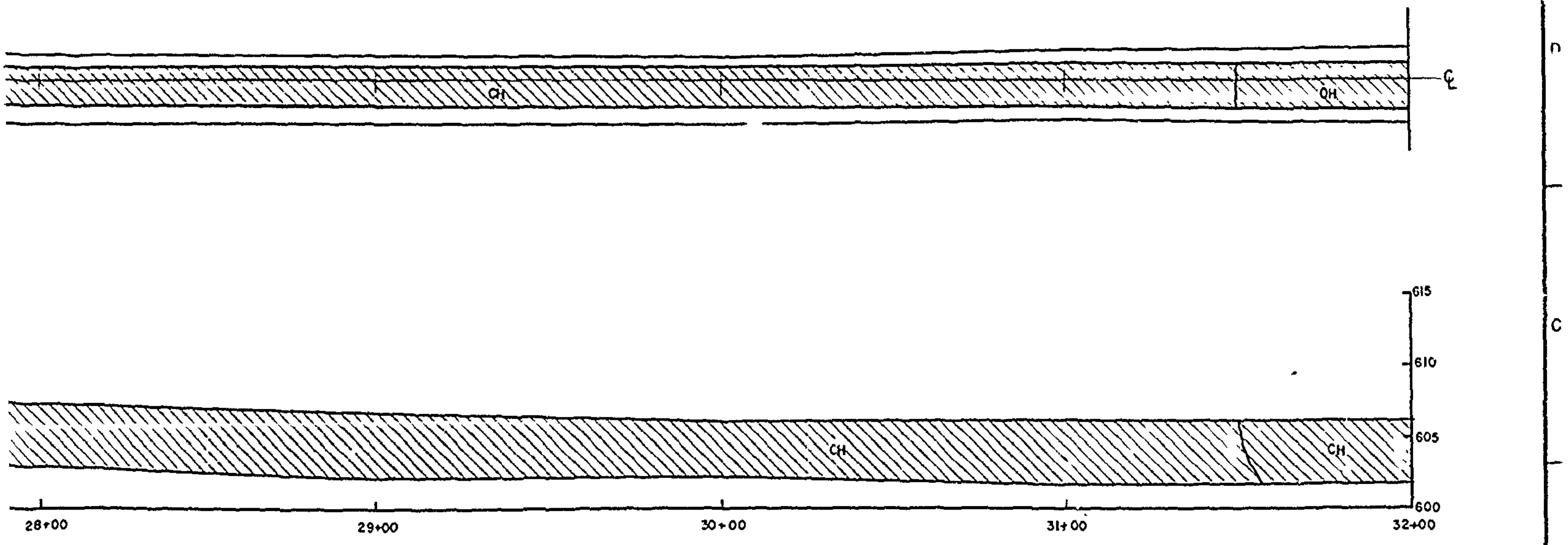
28+00





SYMBOL	NO.	ACTION	DATE	DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

DESIGNED BY: H. BARNETT
DRAWN BY: C. KIRBY
REVIEWED BY: R. BEHM

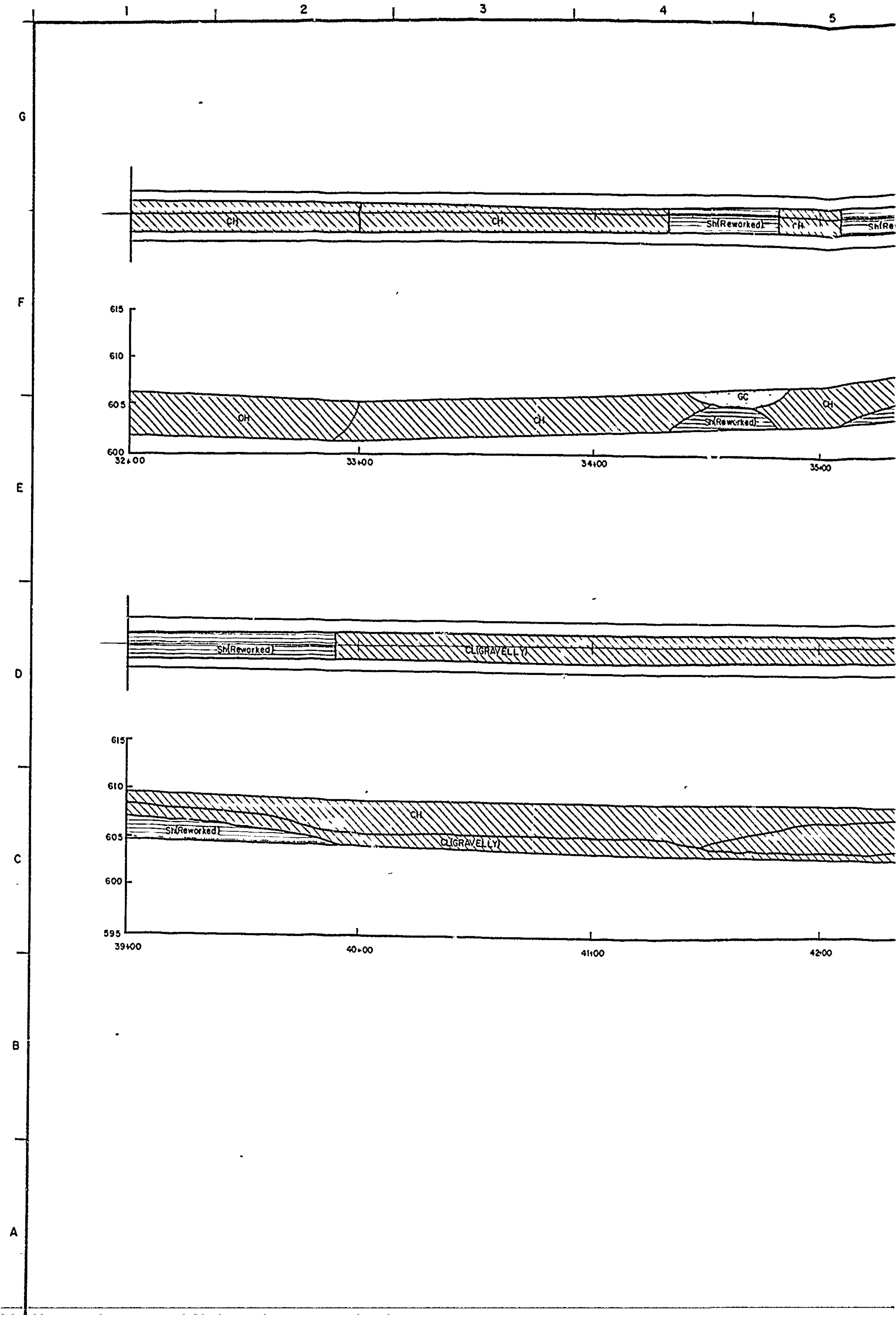
RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS

FOUNDATION REPORT

INSPECTION TRENCH
AS-BUILT PLAN AND PROFILE
STA. 18+00 TO 32+00

SUBMITTED BY: ROBERT C. BEHM
ENGINEER:

SOL. NO.
DATED:
CONTR. NO.
DRAWING NUMBER
SHEET NO. OF
SEQUENCE NO. 51

1
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33+00
34+00
35+00
Sh(Reworked)
CL(GRAVELLY)
615
610
605
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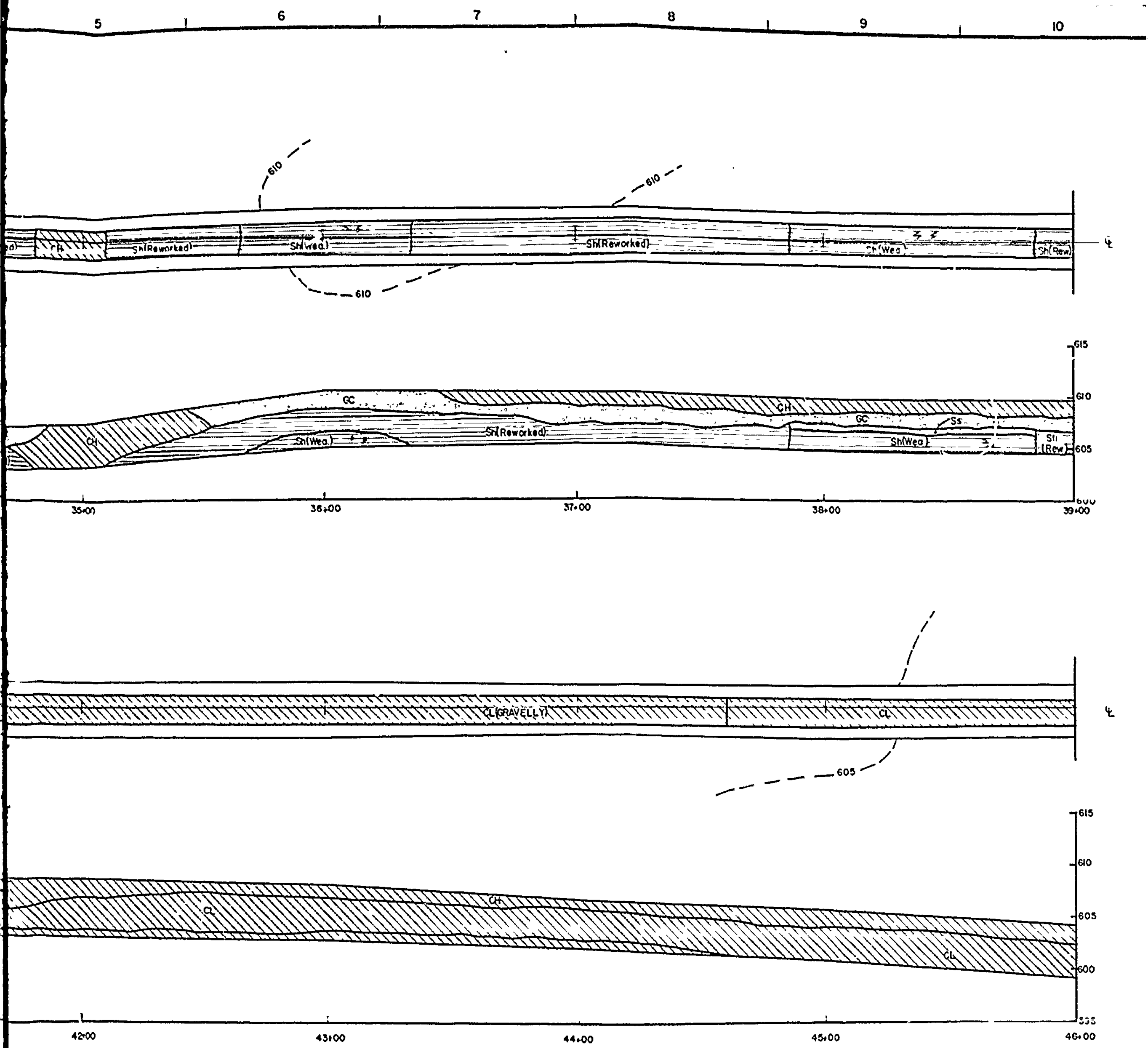
595
CH
Sh(Reworked)
CL(GRAVELLY)
39+00
40+00
41+00
42+00



SYM	NO.	ACTION	DATE	DESCRIPTION OF REVISION

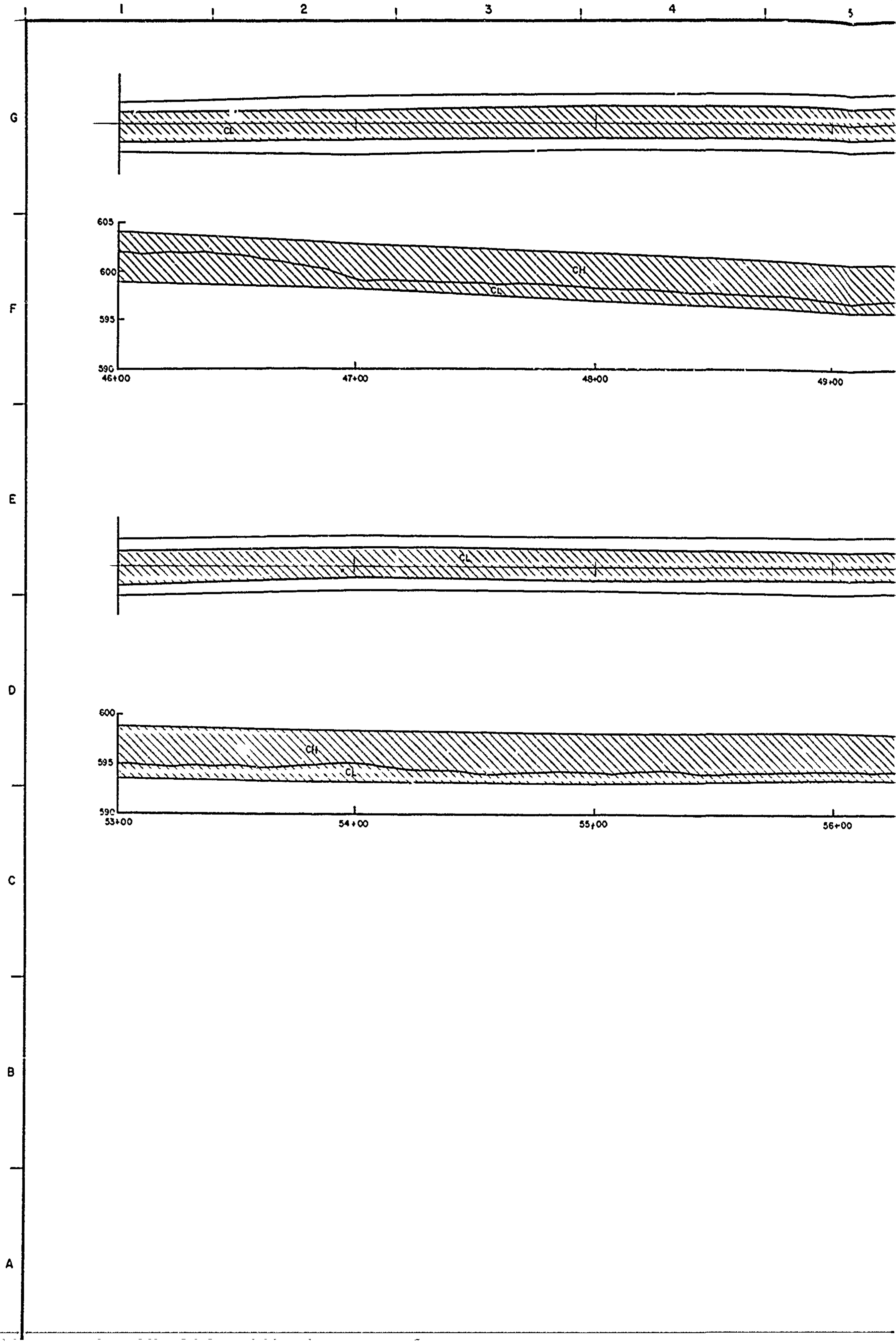
U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

DESIGNED BY: H. BARNETT
DRAWN BY: C. KIRBY
REVIEWED BY: R. BEHM

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS

FOUNDATION REPORT
INSPECTION TRENCH
AS-BUILT PLAN AND PROFILE
STA. 32+00 TO 46+00

SUBMITTED BY: ROBERT C BEHM
SOL. NO.
DATED:
CONTR. NO.
SEQUENC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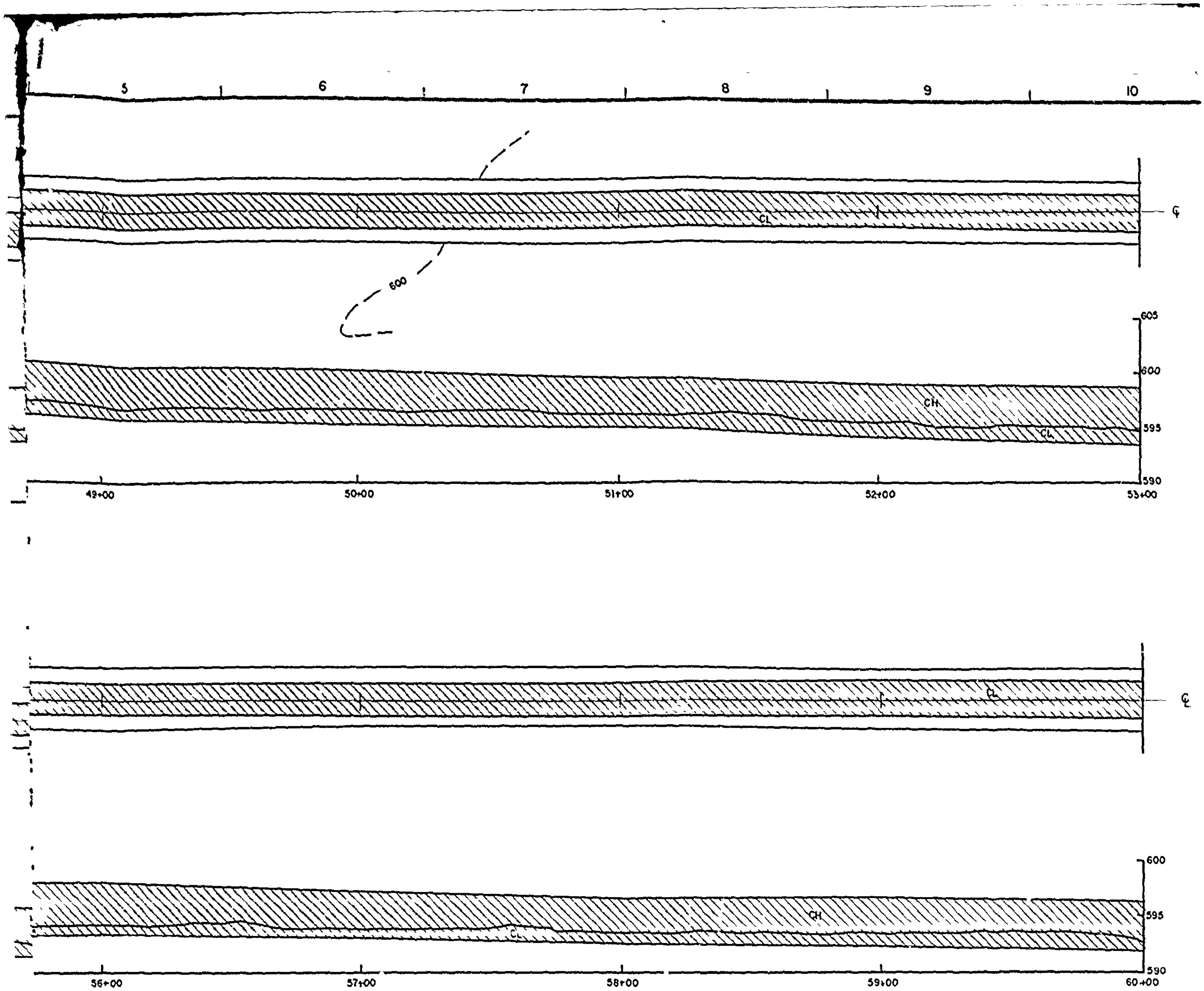
54+00
55+00
56+00



SYM. | NO. | ACTION | DATE | DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WOR
CORPS OF ENGINEERS
FORT WORTH, TEXAS

DESIGNED BY:
H BARNETT

DRAWN BY:
C.KIRBY

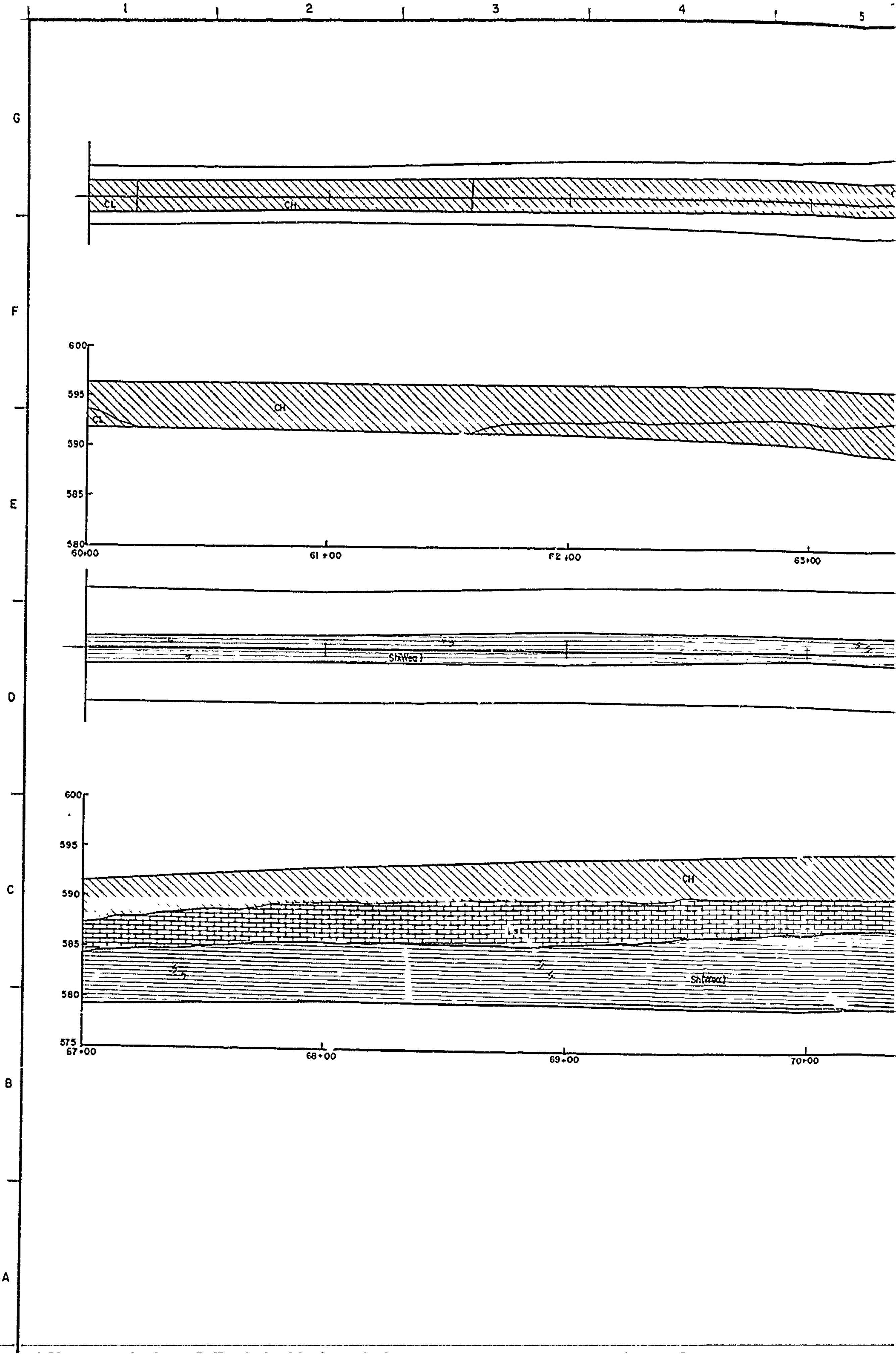
REVIEWED BY:
R. BEHM

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS

FOUNDATION REPORT
INSPECTION TRENCH
AS-BUILT PLAN AND PROFILE
STA. 46+00 TO 60+00

SUBMITTED BY:
ROBERT C BEHM
ENGINEER.

SOL. NO.
DATED:
CONTR. NO.
DRAWING NUMBER
SHEET NO.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60+00
61+00
62+00
63+00
Sh(Wea)
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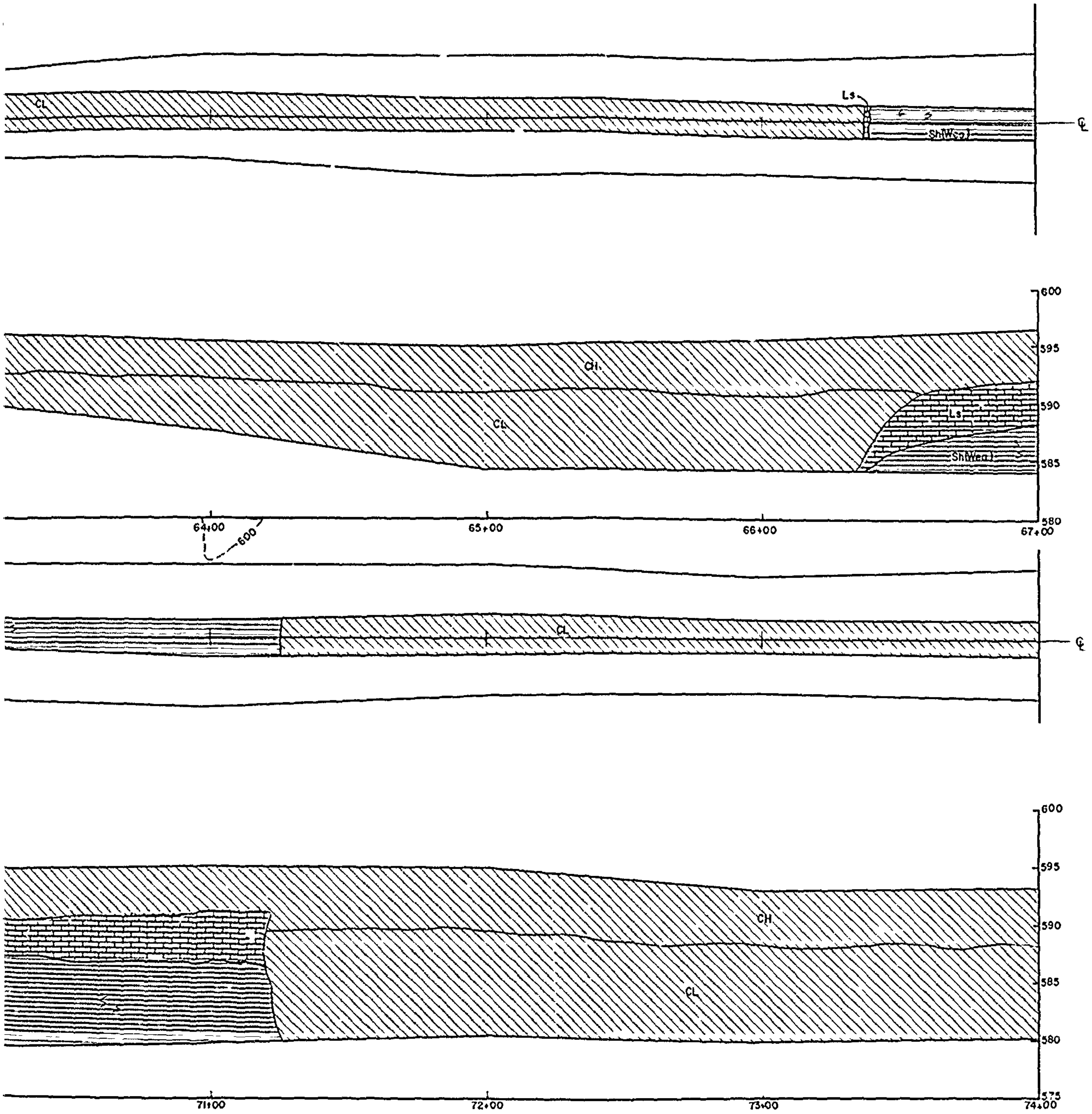
595
590
585
580
575
CH
Ls
Sh(Wea)
67+00
68+00
69+00
70+00



SYM	ZONE NO.	ACTION	DATE	DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

DESIGNED BY: H. BARNETT
DRAWN BY: C. KIRBY
REVIEWED BY: R. BEHM

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS
FOUNDATION REPORT
INSPECTION TRENCH
AS-BUILT PLAN AND PROFILE
STA. 60+00 TO 74+00

SUBMITTED BY: ROBERT C BEHM
ENGINEER.

SOL. NO.
DATED:
CONTR. NO.
DRAWING NUMBER
SHEET NO. OF
SEQUENCE NO. 54
CONTR. NO.

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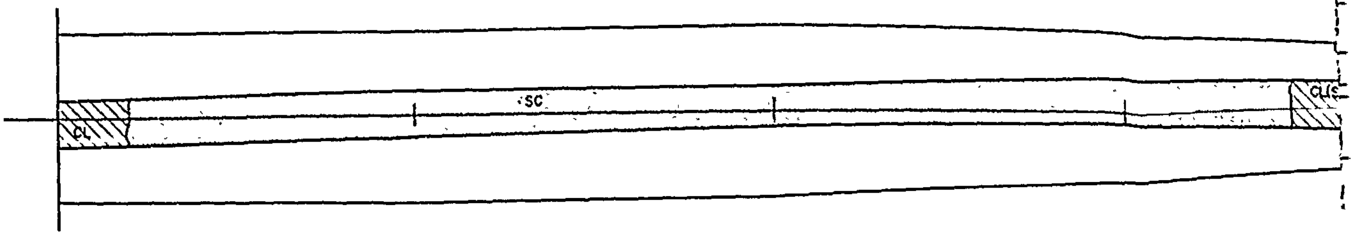
TO ACCOMPANY FOUNDATION REPORT


SC
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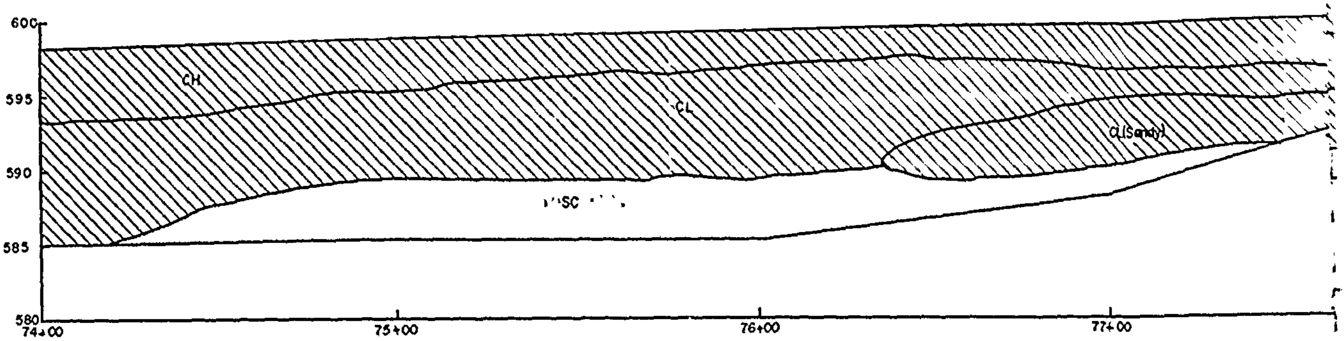
600
595
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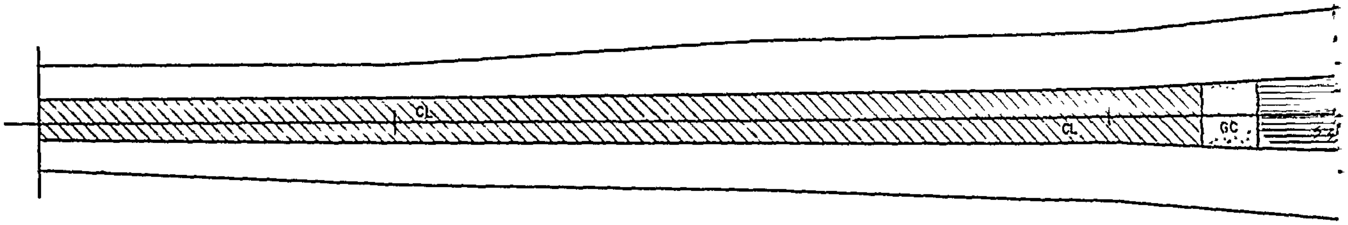
585
580
74+00
75+00
76+00
77+00
CH
CL
CL(Sandy)
SC


CL
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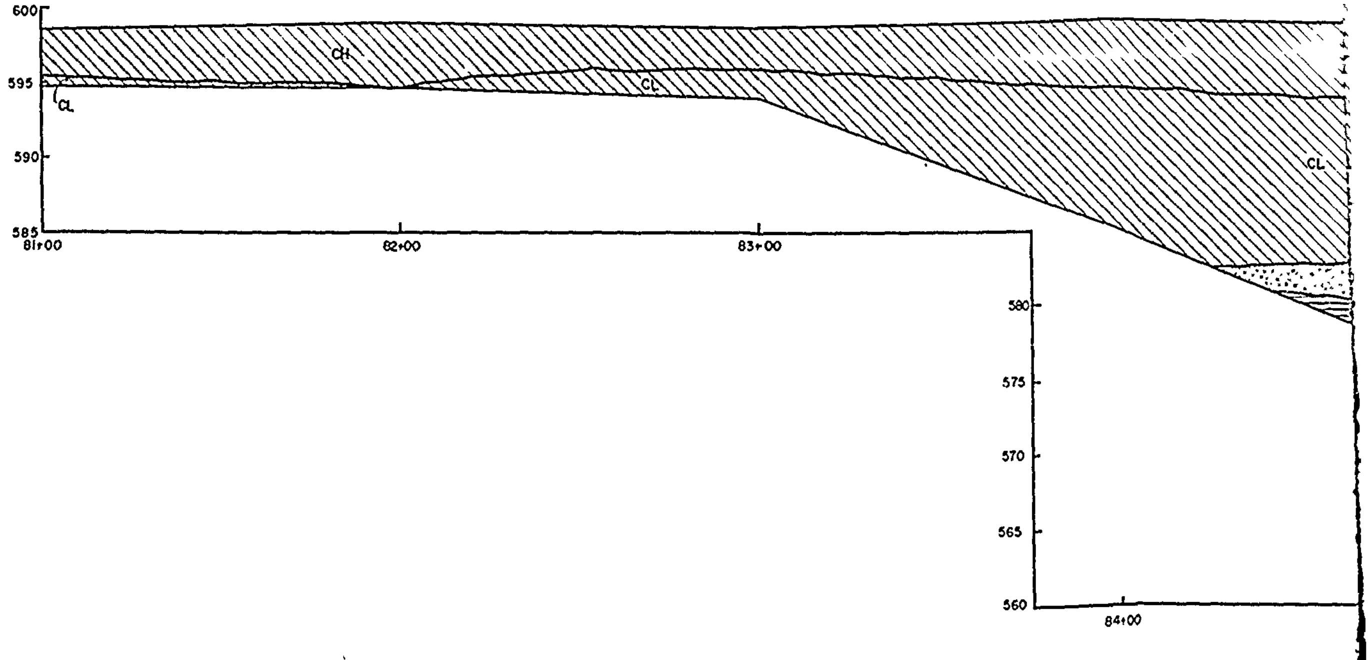
GC


600
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82+00
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CH
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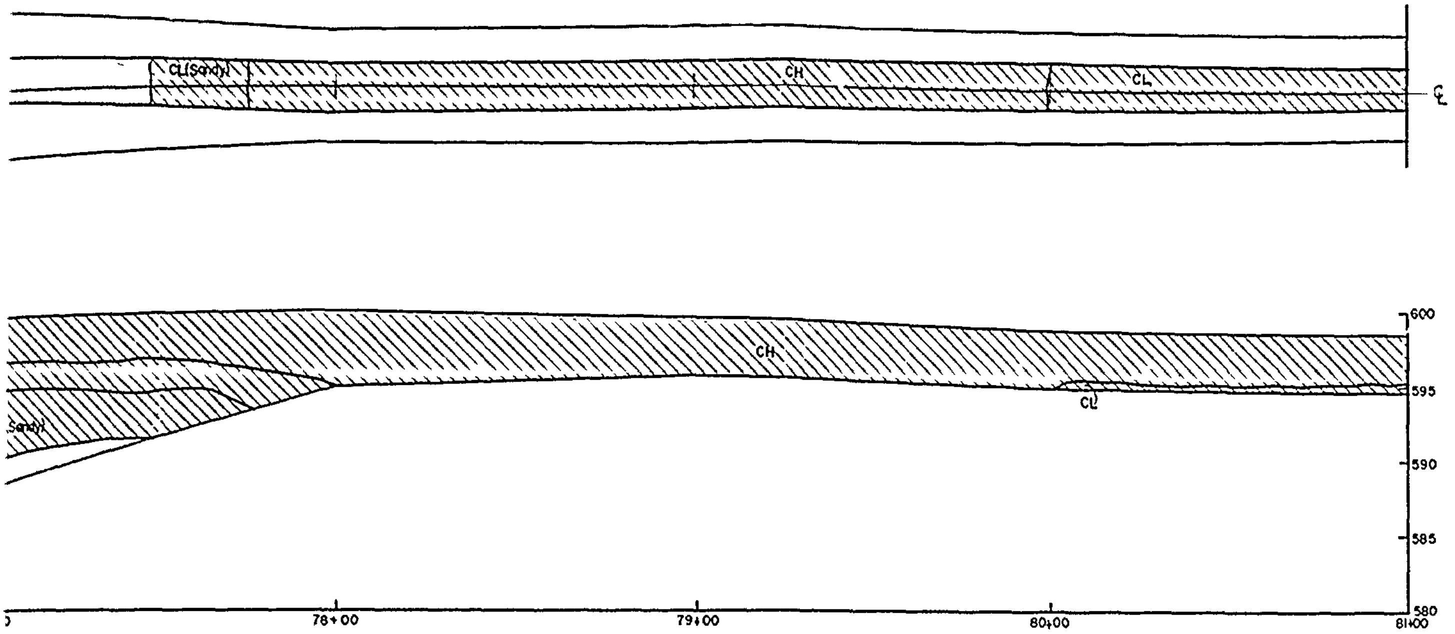
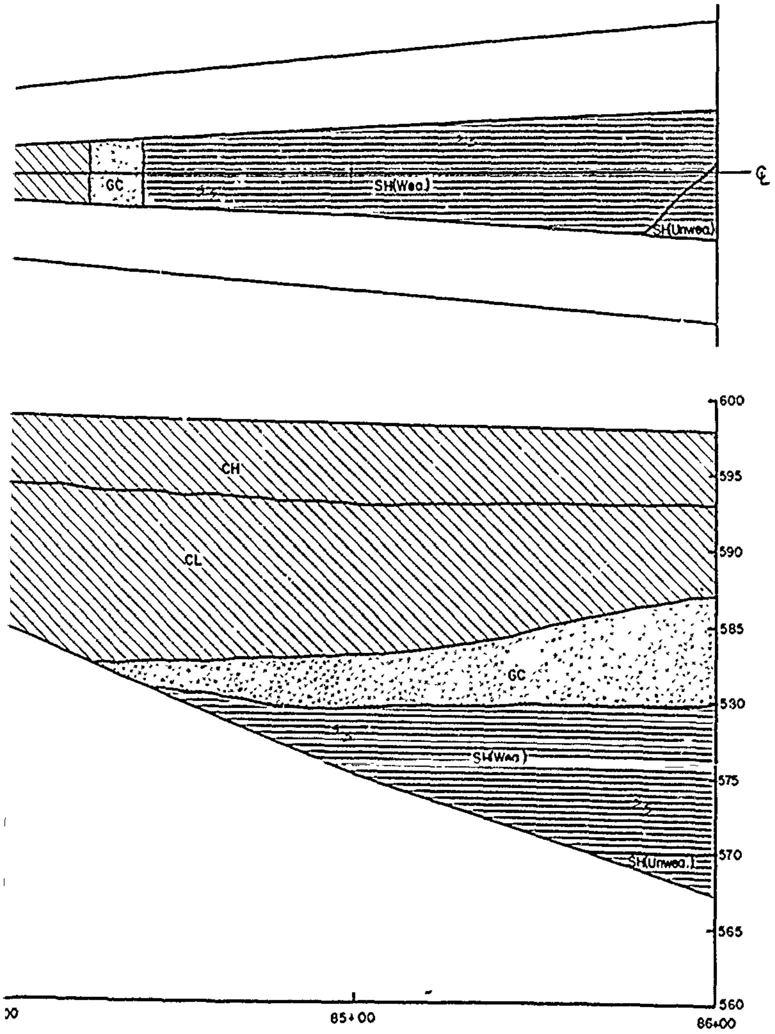
84+00





SYMBOL	NO.	ACTION	DATE	DESCRIPTION OF REVISION

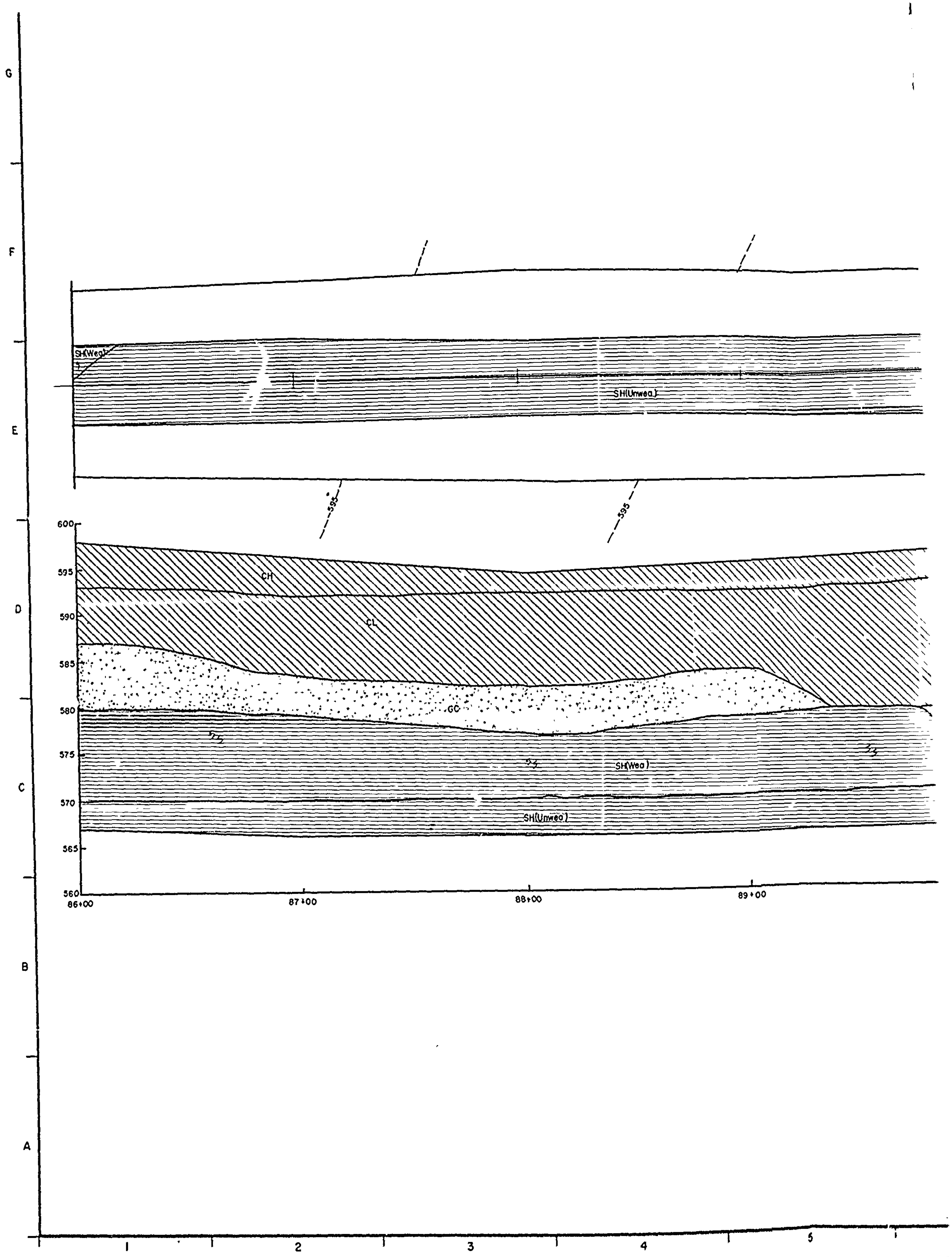
U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEX.

DESIGNED BY: H BARNETT
DRAWN BY: C KIRBY
REVIEWED BY: R. BEHM

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS
FOUNDATION REPORT
INSPECTION TRENCH
AS-BUILT PLAN AND PROFILE
STA 74+00 TO 86+00

SUBMITTED BY: ROBERT C BEHM
ENGINEER:
SOL. NO.
DATED:
CONTR. NO.
DRAWING NUMBER
SHEET NO. OF
SEQUENCE NO. 55
CONTR. NO.

TO ACCOMPANY FOUNDATION REPORT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SH(Unwea)
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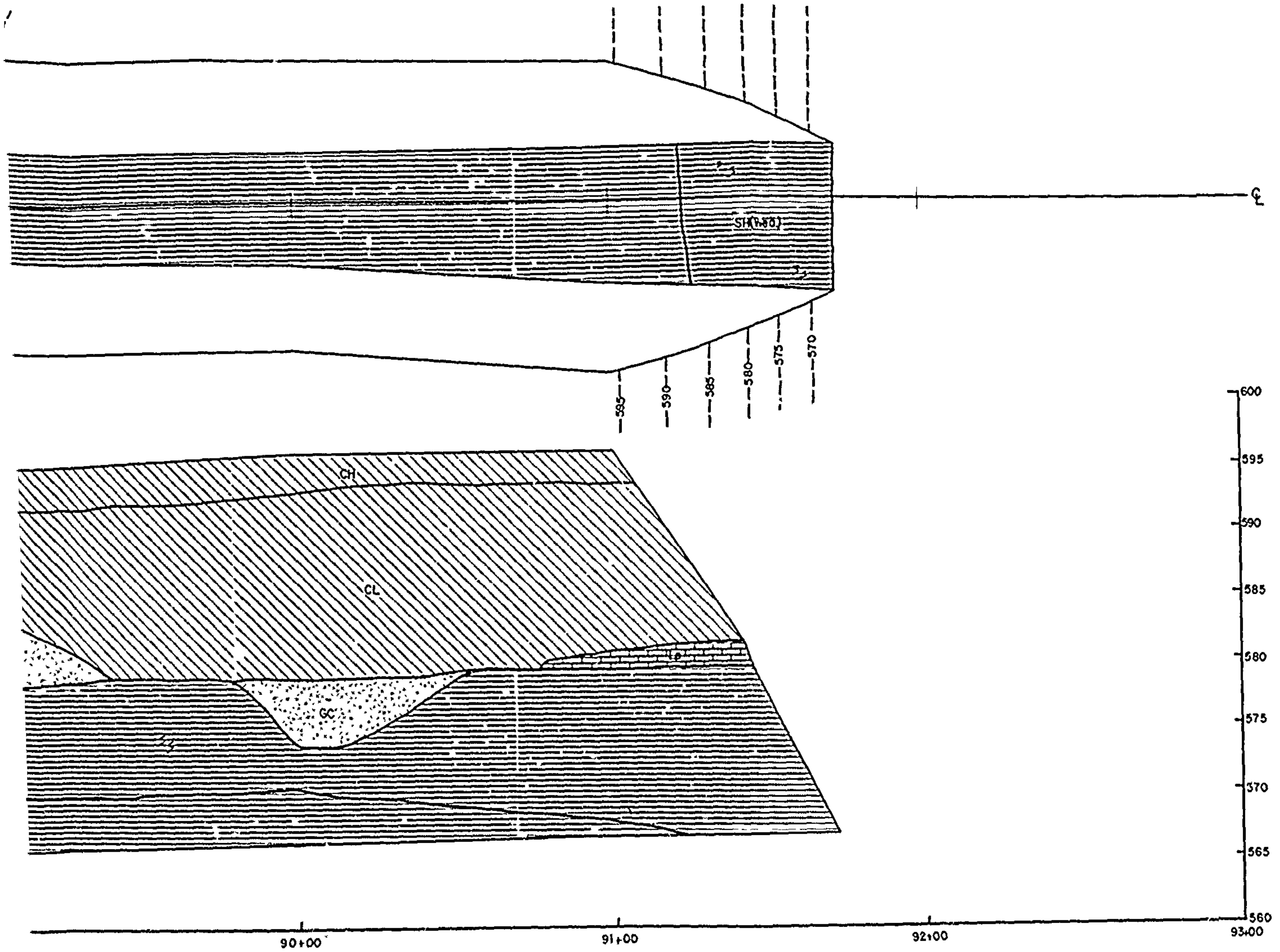


SYM	ZONE NO.	ACTION	DATE	DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

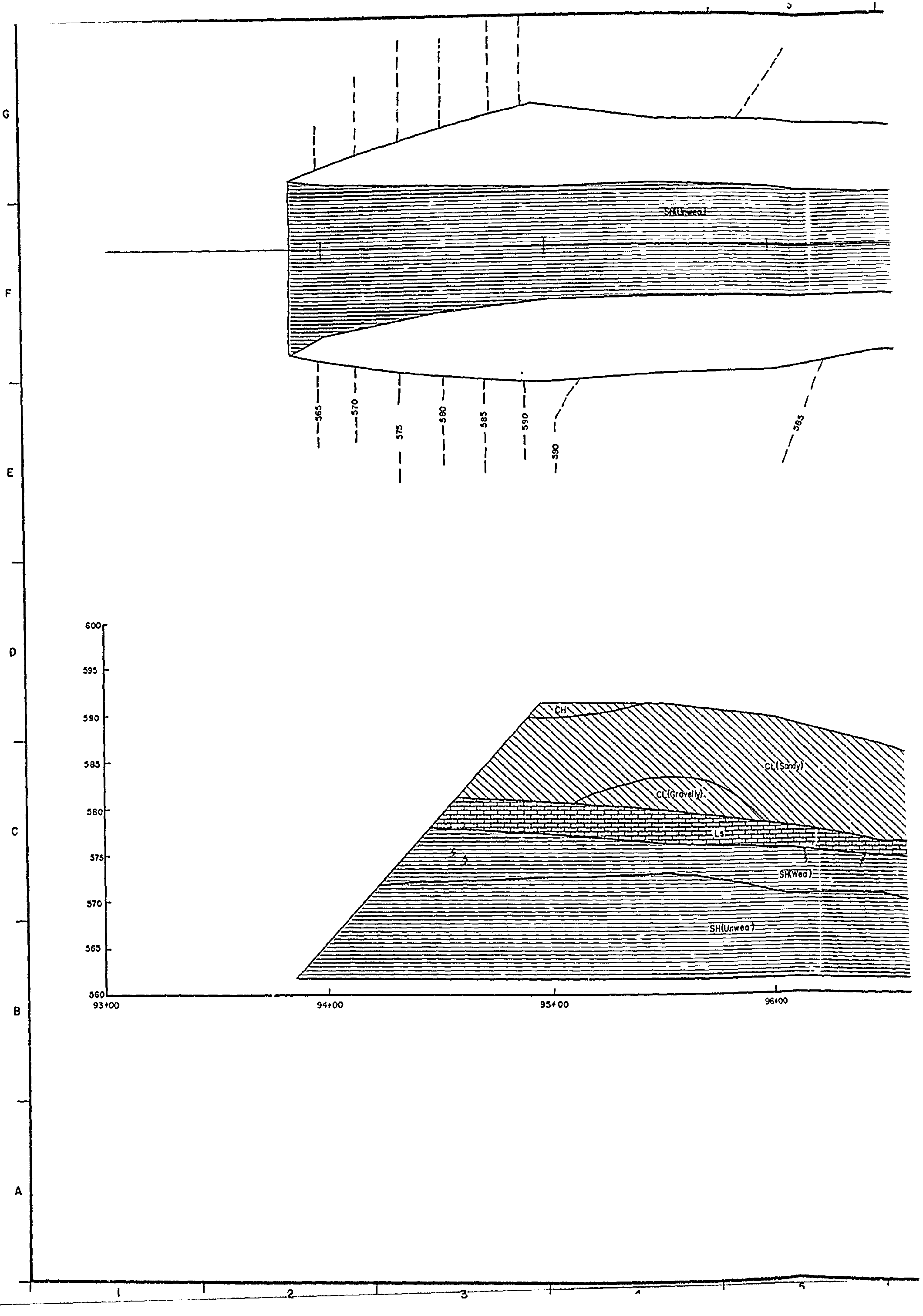
DESIGNED BY: H. BARNETT
DRAWN BY: C. KIRBY
REVIEWED BY: R. BEHM

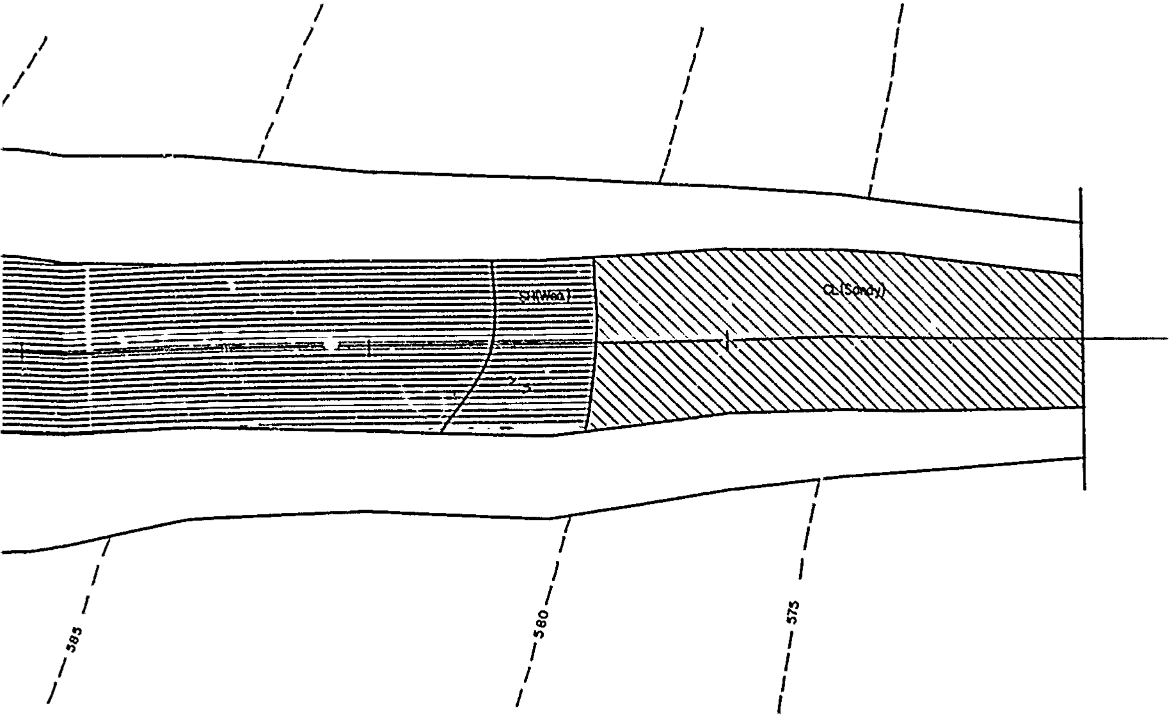
RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS
FOUNDATION REPORT
INSPECTION TRENCH
AS-BUILT PLAN AND PROFILE
STA. 86+00 TO 93+00

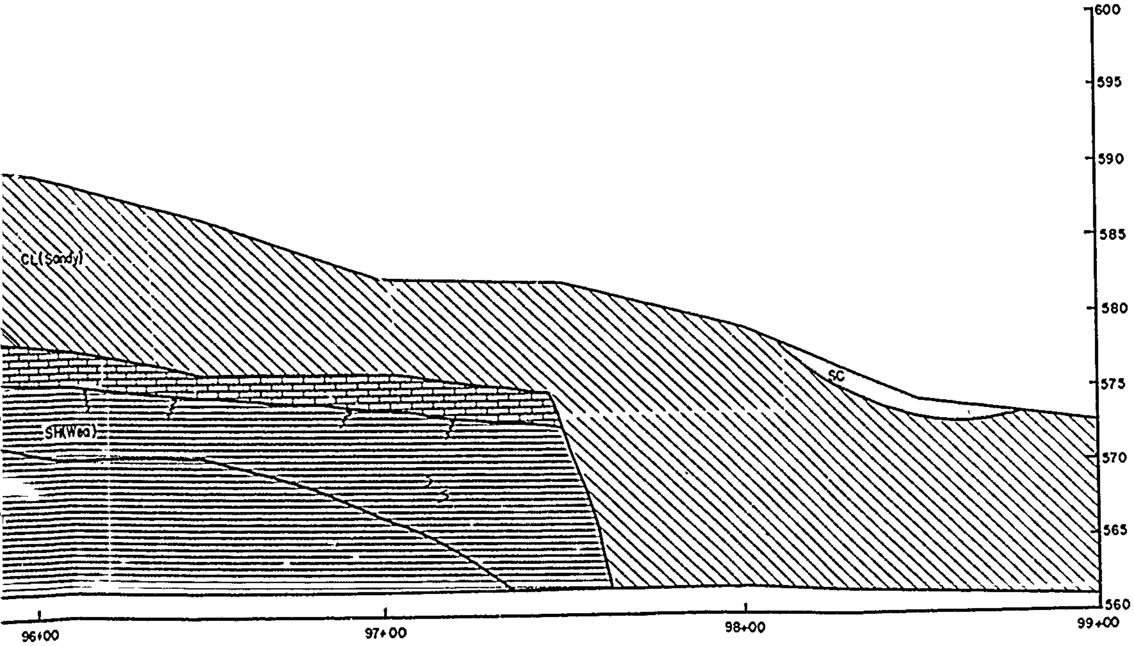
SUBMITTED BY: ROBERT C. BEHM
ENGINEER:

SOL. NO.
DATED:
CONTR. NO.
DRAWING NUMBER
SHEET NO. OF
SEQUENCE NO. 56
CONTR. NO.

TO ACCOMPANY FOUNDATION REPORT


G
F
E
D
C
B
A
SH(Unwea)
565
570
575
580
585
590
590
585
600
595
590
585
580
575
570
565
560
CH
CL(Sandy)
CL(Gravelly)
Ls
SH(Wea)
SH(Unwea)
93+00
94+00
95+00
96+00
1
2
3
4
5





SYMBOL NO.	ACTION	DATE	DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

DESIGNED BY: H.BARNETT
DRAWN BY: C.KIRBY
REVIEWED BY: R.BEHM

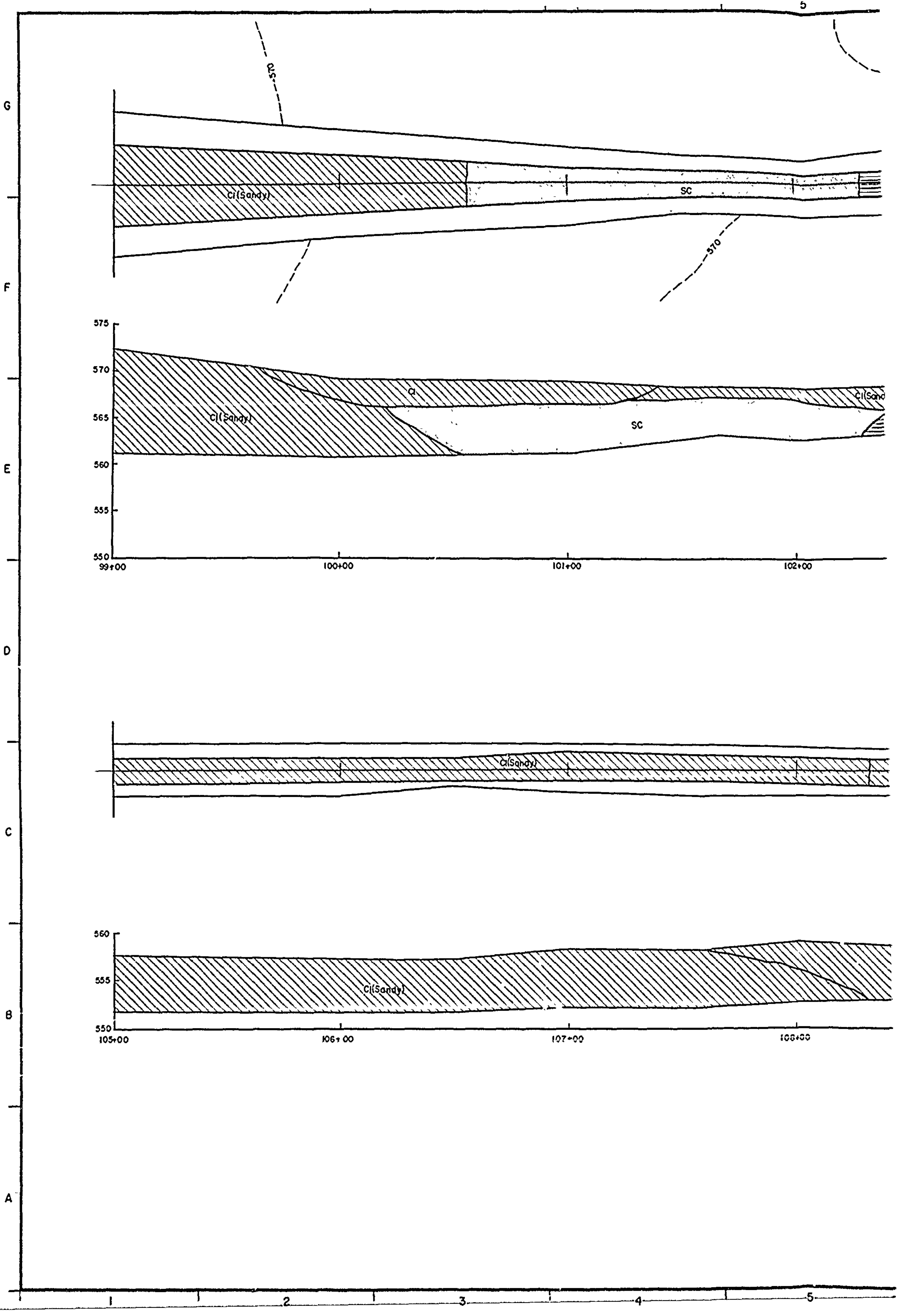
RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS

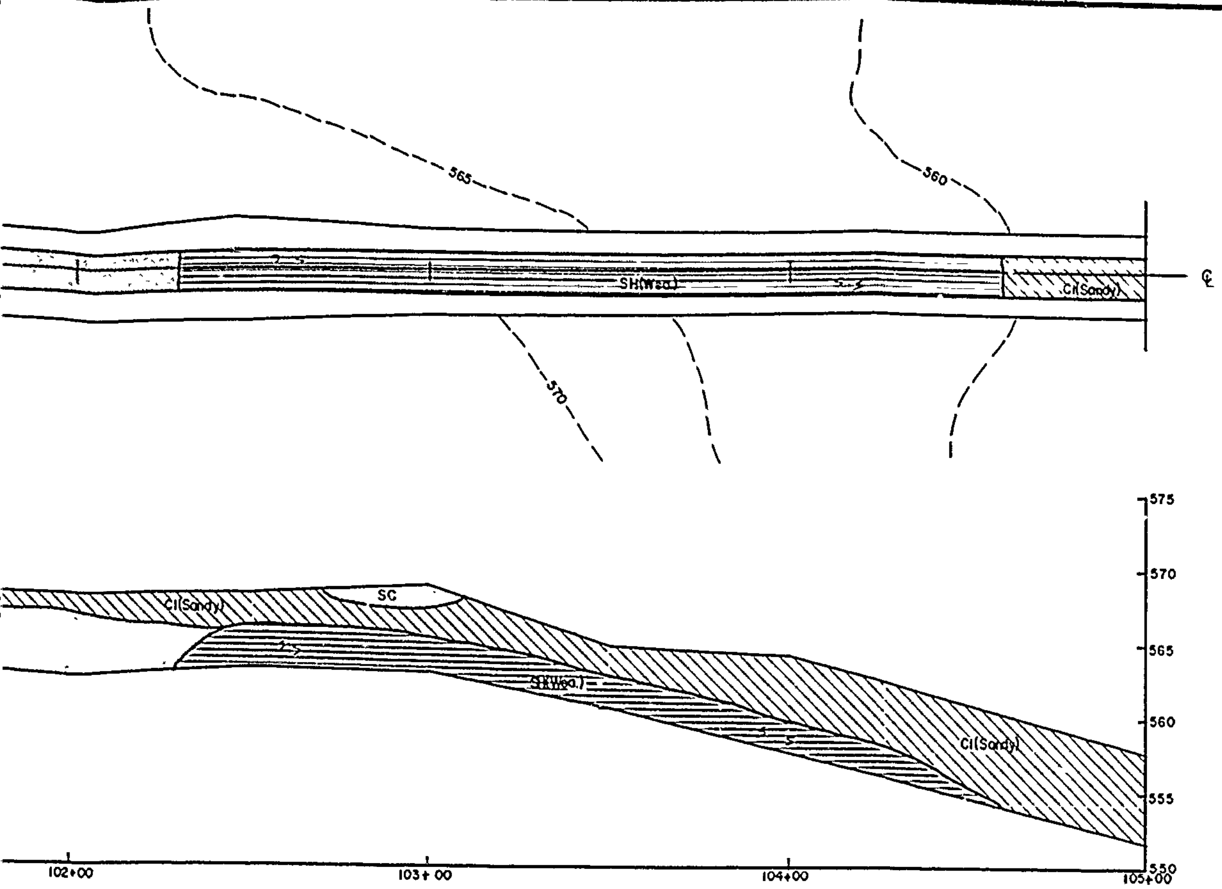
FOUNDATION REPORT
INSPECTION TRENCH
AS-BUILT PLAN AND PROFILE
STA. 93 00 TO 99 00

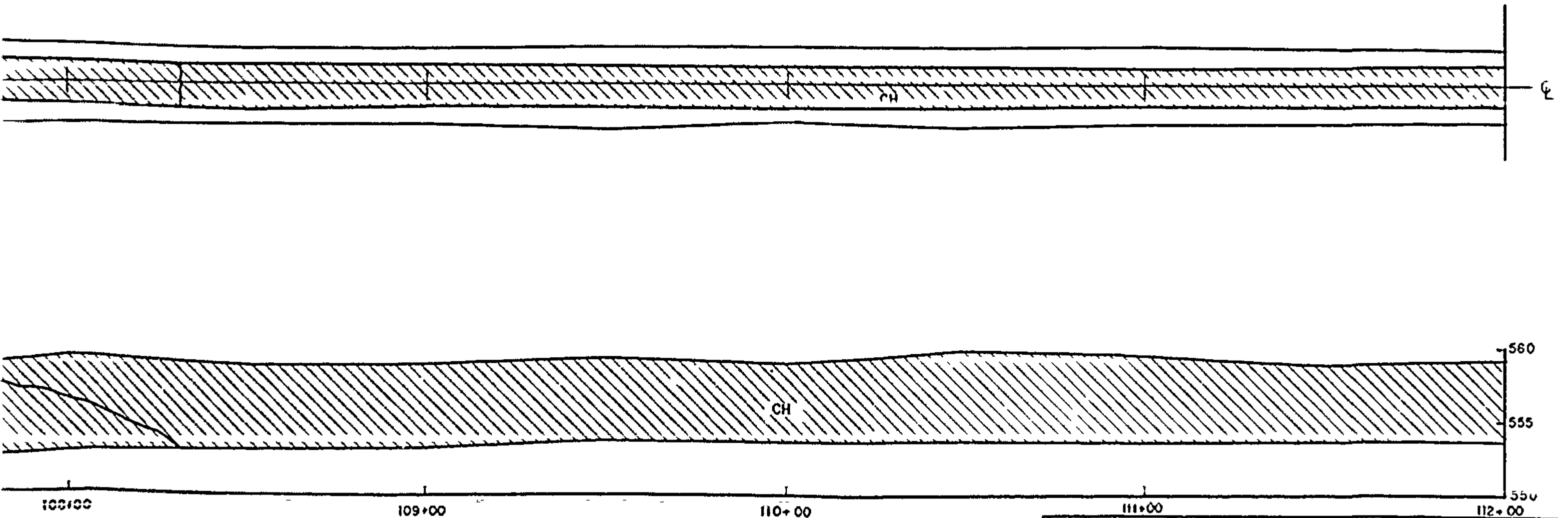
SUBMITTED BY: ROBERT C. BEHM
ENGINEER:

SOL. NO.
DATED:
CONTR. NO.
DRAWING NUMBER
SHEET NO. OF
SEQUENCE NO. 57
CONTR. NO.

TO ACCOMPANY FOUNDATION REPORT


5
G
570
Cl(Sandy)
SC
570
F
575
570
565
560
555
550
Cl
Cl(Sandy)
SC
Cl(Sand
99+00
100+00
101+00
102+00
E
D
Cl(Sandy)
C
560
555
550
Cl(Sandy)
105+00
106+00
107+00
108+00
B
A
1
2
3
4
5





SYMBOL	NO.	ACTION	DATE	DESCRIPTION OF REVISION

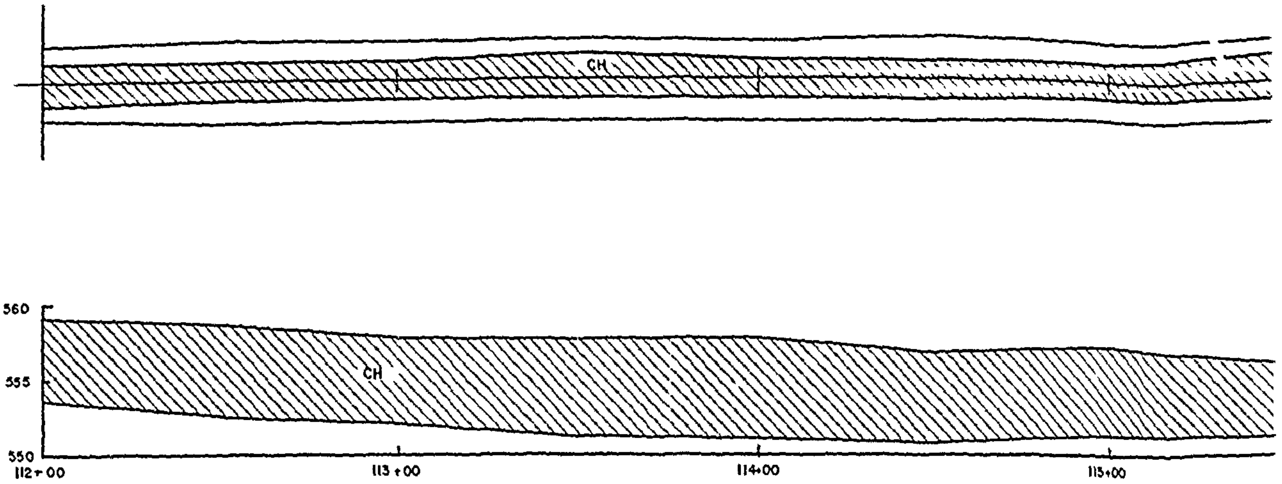
U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEX.

DESIGNED BY: H.BARNETT
DRAWN BY: C.KIRBY
REVIEWED BY: R.BEHM

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS
FOUNDATION REPORT
INSPECTION TRENCH
AS-BUILT PLAN AND PROFILE
STA. 99+00 TO 112+00

SUBMITTED BY: ROBERT C. BEHM
ENGINEER:
SOL. NO.
DATED:
CONTR. NO
DRAWING NUMBER
SHEET NO.
SEQUENCE NO. 58
CONTR. NO.

TO ACCOMPANY FOUNDATION REPORT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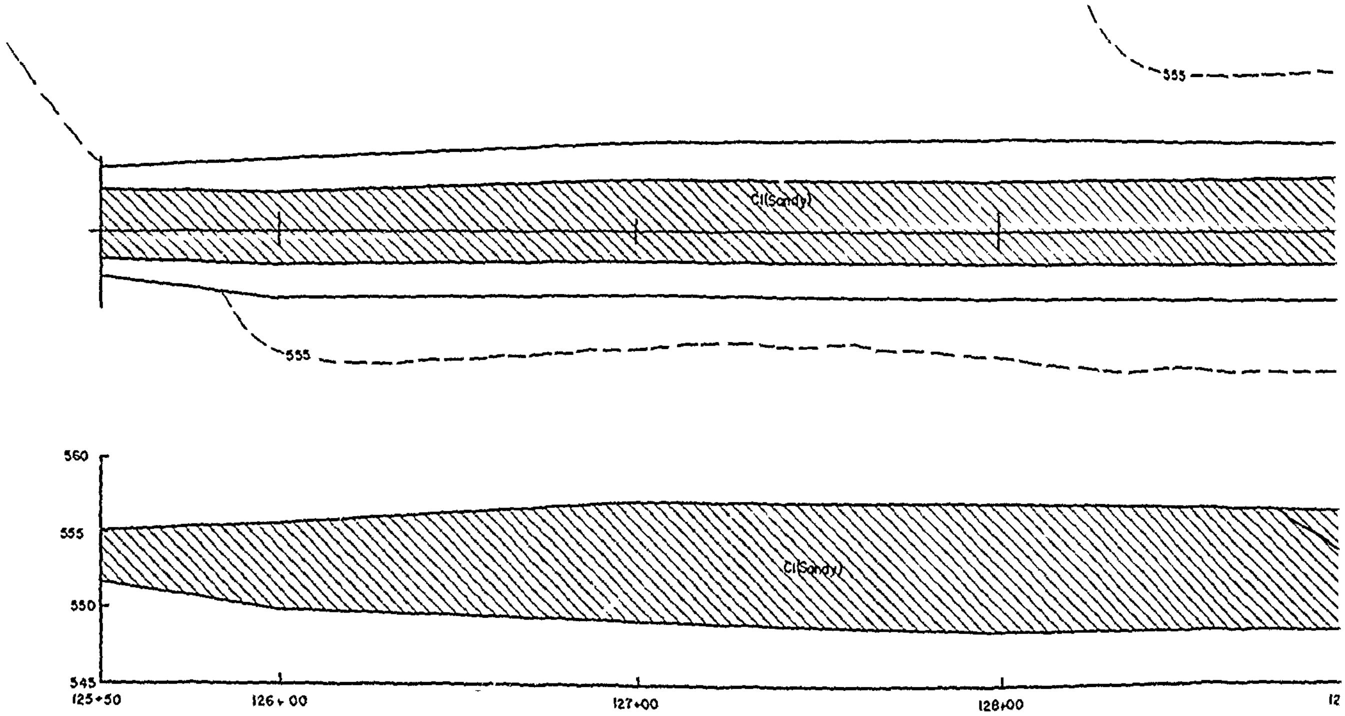
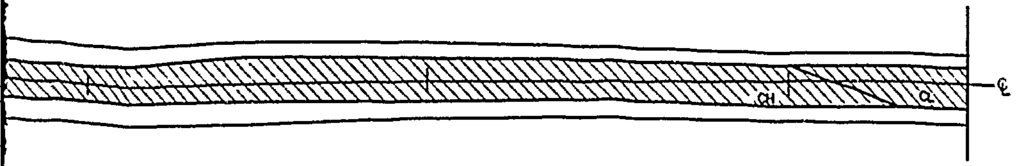
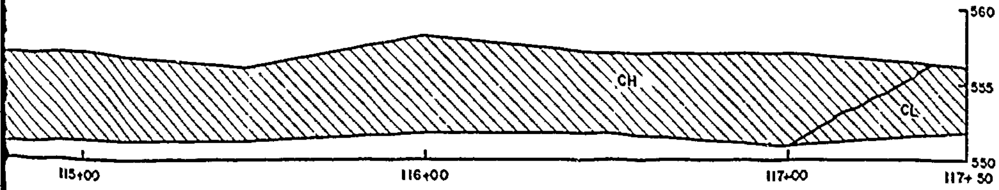
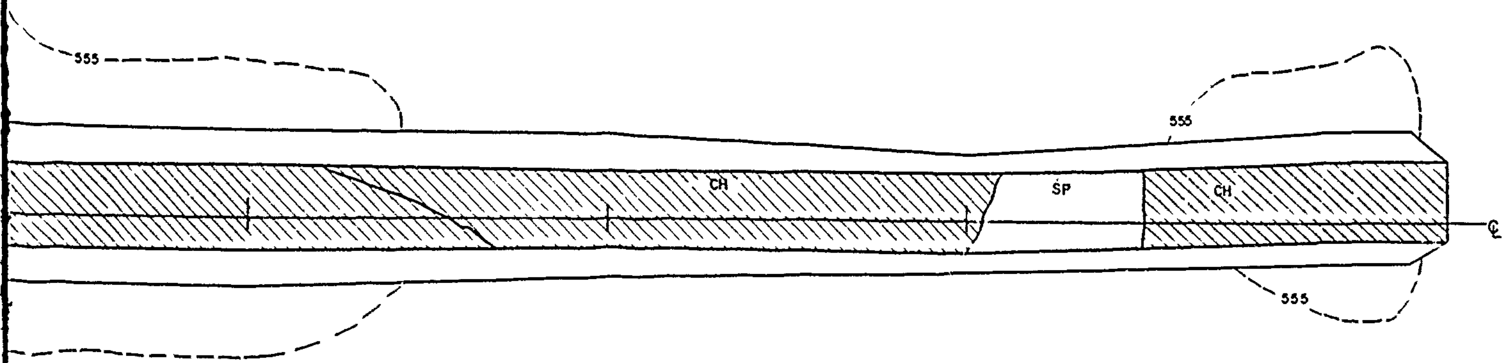
560
555
550
CH
112+00
113+00
114+00
115+00

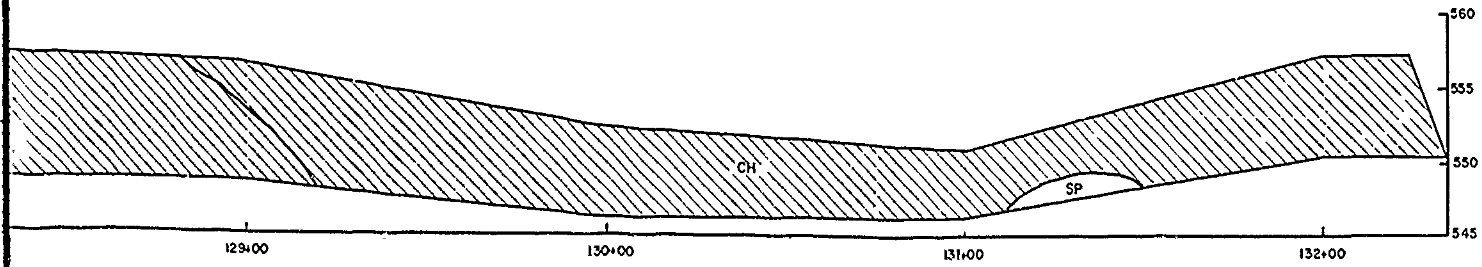

555
Cl(Sandy)
555
560
555
550
545
Cl(Sandy)
125+50
126+00
127+00
128+00
12



NOTE
NO INSPECTION TRENCH WAS EXCAVATED BETWEEN STATIONS 117+50 AND 125+50







SYMBOL NO.	ACTION	DATE	DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

DESIGNED BY: H. BARNETT
DRAWN BY: C KIRBY
REVIEWED BY: R BEHM

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS

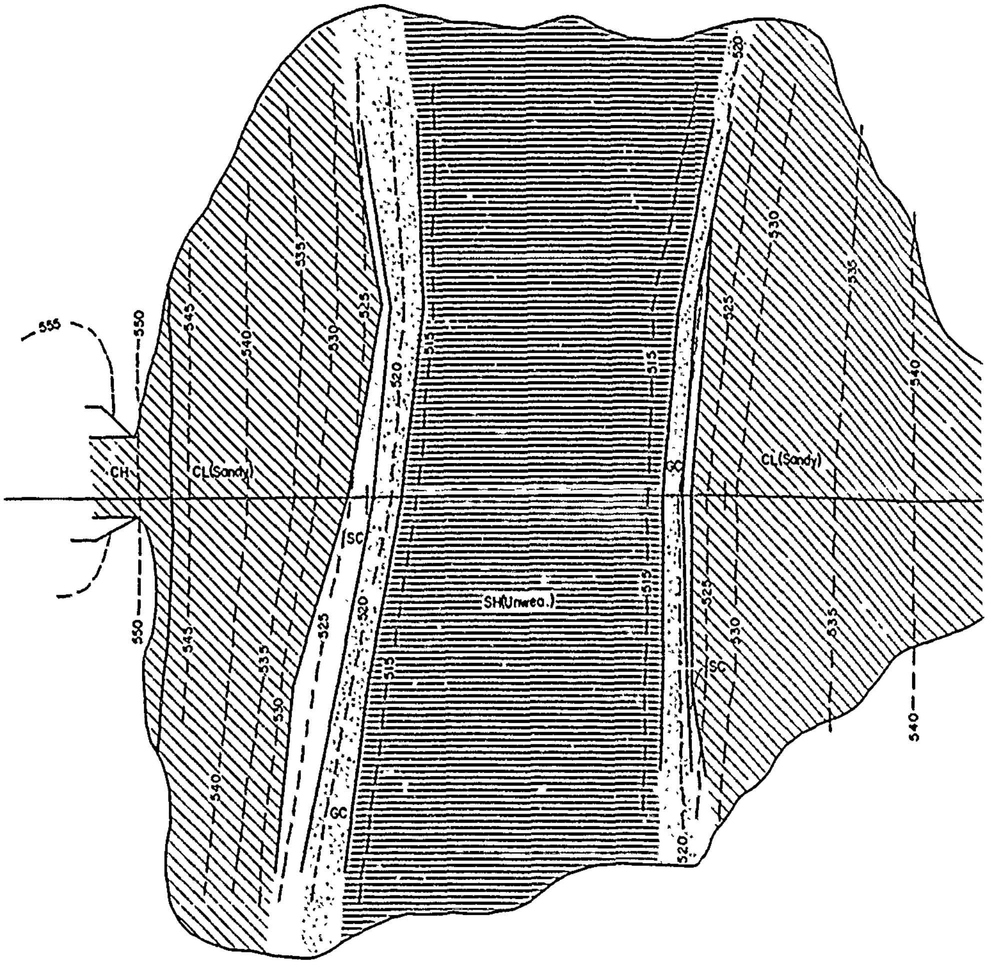
FOUNDATION REPORT

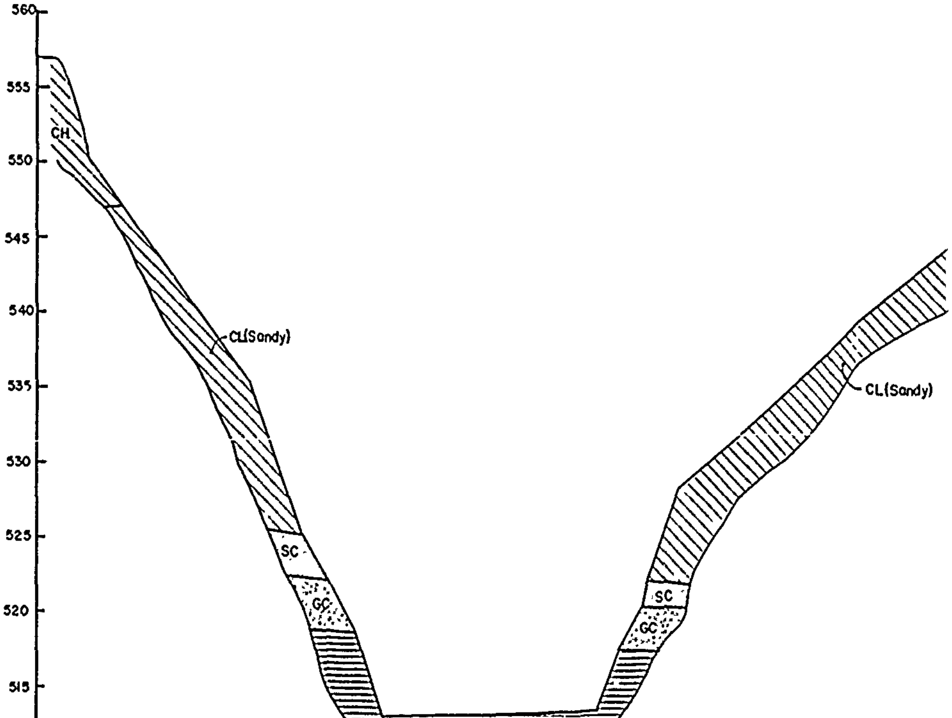
INSPECTION TRENCH
AS-BUILT PLAN AND PROFILE
STA. 112+00 TO 117+50/125+50 TO 132+35

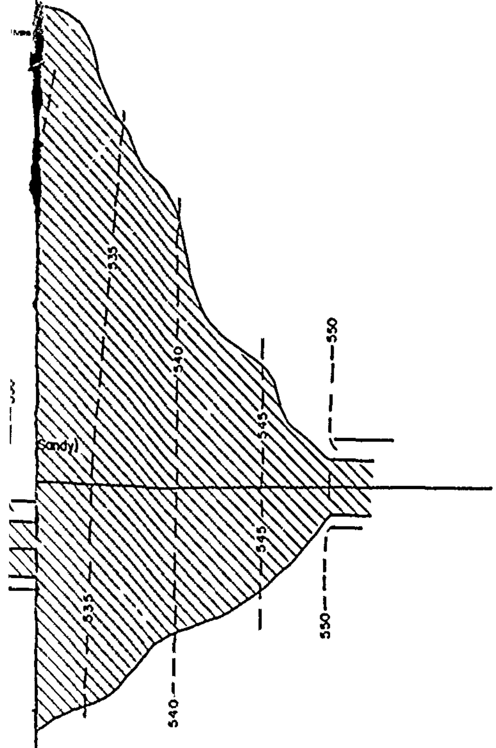
SUBMITTED BY: ROBERT C BEHM
ENGINEER:

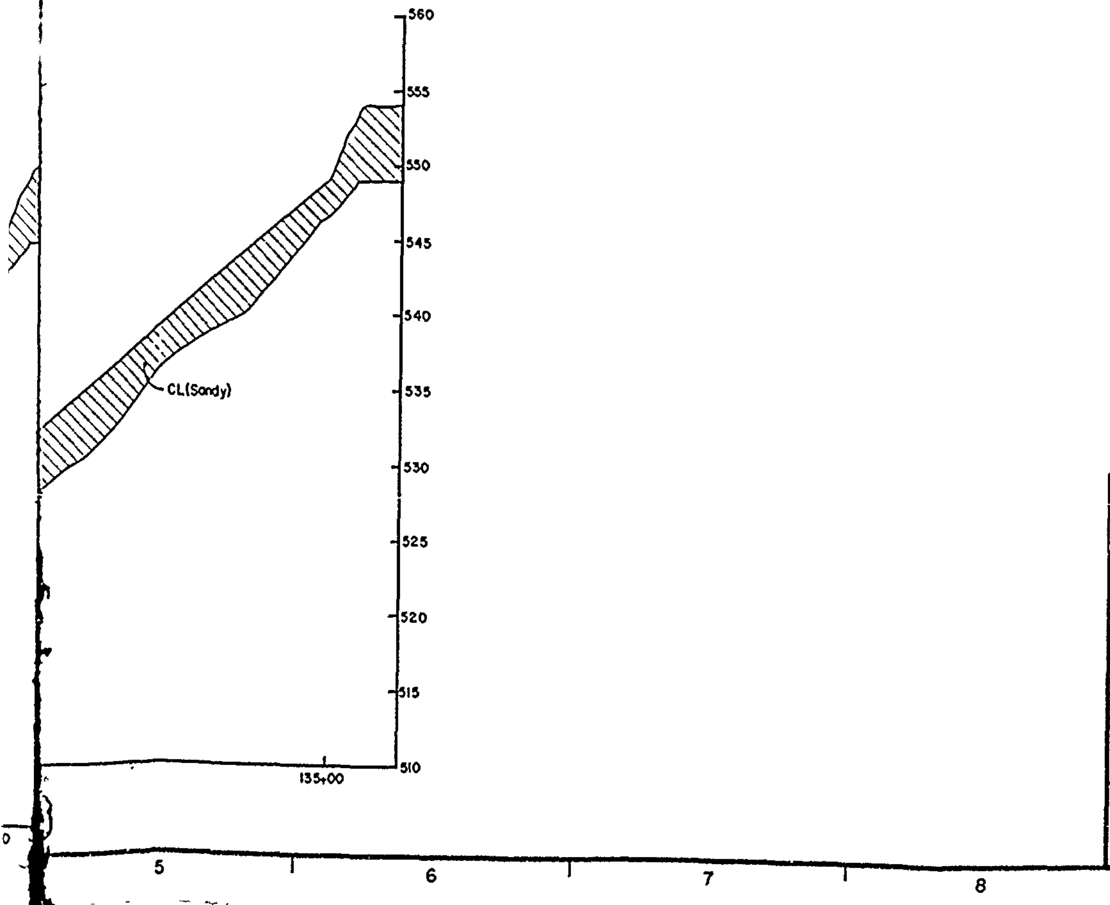
SOL. NO.
DATED:
CONTR. NO.
DRAWING NUMBER
SHEET NO. OF
SEQUENCE NO. 59
CONTR. NO.

TO ACCOMPANY FOUNDATION REPORT


555
550
545
540
535
530
525
520
515
CH
CL(Sandy)
SC
GC
SH(Unwea.)
515
520
525
530
535
540
GC
CL(Sandy)
SC
550
545
540
535
530
525
520
515
515
520
525
530
535
540
520


560
555
550
545
540
535
530
525
520
515
510
CH
CL(Sandy)
SC
GC
SH(Unwea')
SC
GC
CL(Sandy)
133+00
134+00





SYMBOL NO.	ACTION	DATE	DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WO
CORPS OF ENGINEERS
FORT WORTH, TEXAS

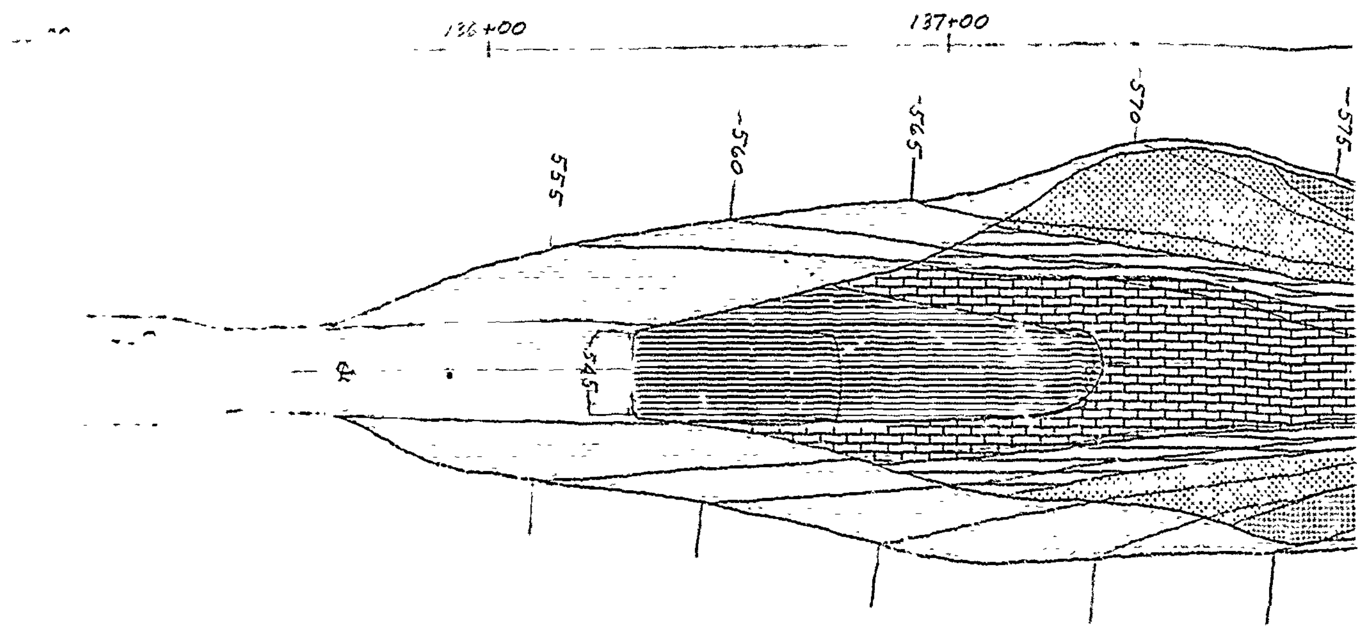
DESIGNED BY: H.BARNETT
DRAWN BY: C.KIRBY
REVIEWED BY: R. BEHM

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS
FOUNDATION REPORT
INSPECTION TRENCH
AS BUILT PLAN AND PROFILE
STA. 132+35 TO 135+20

SUBMITTED BY: ROBERT C BEHM
ENGINEER:

SOL. NO.
DATED:
CONTR. NO.
DRAWING NUMBER
SHEET NO.
OF
6

TO ACCOMPANY FOUNDATION REPORT

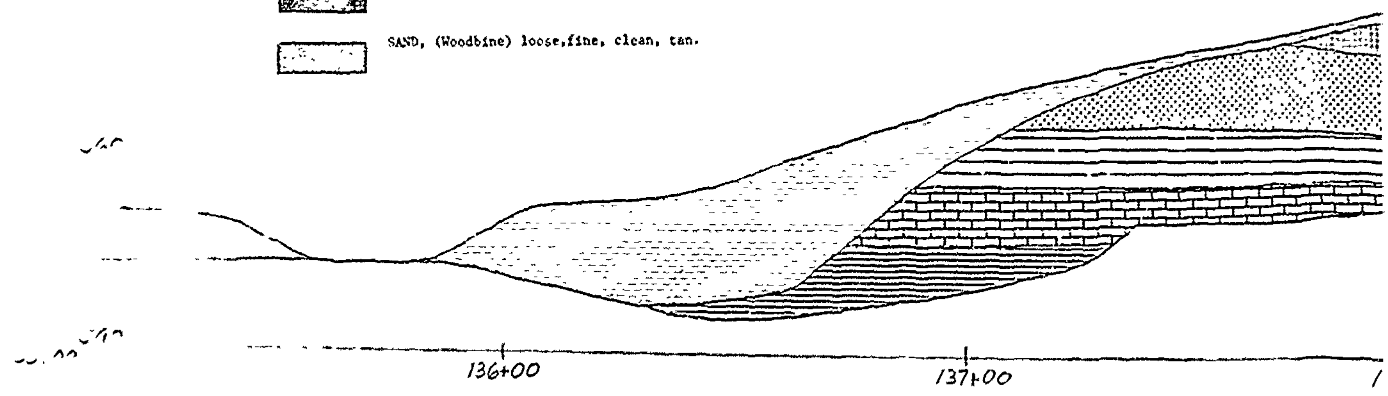


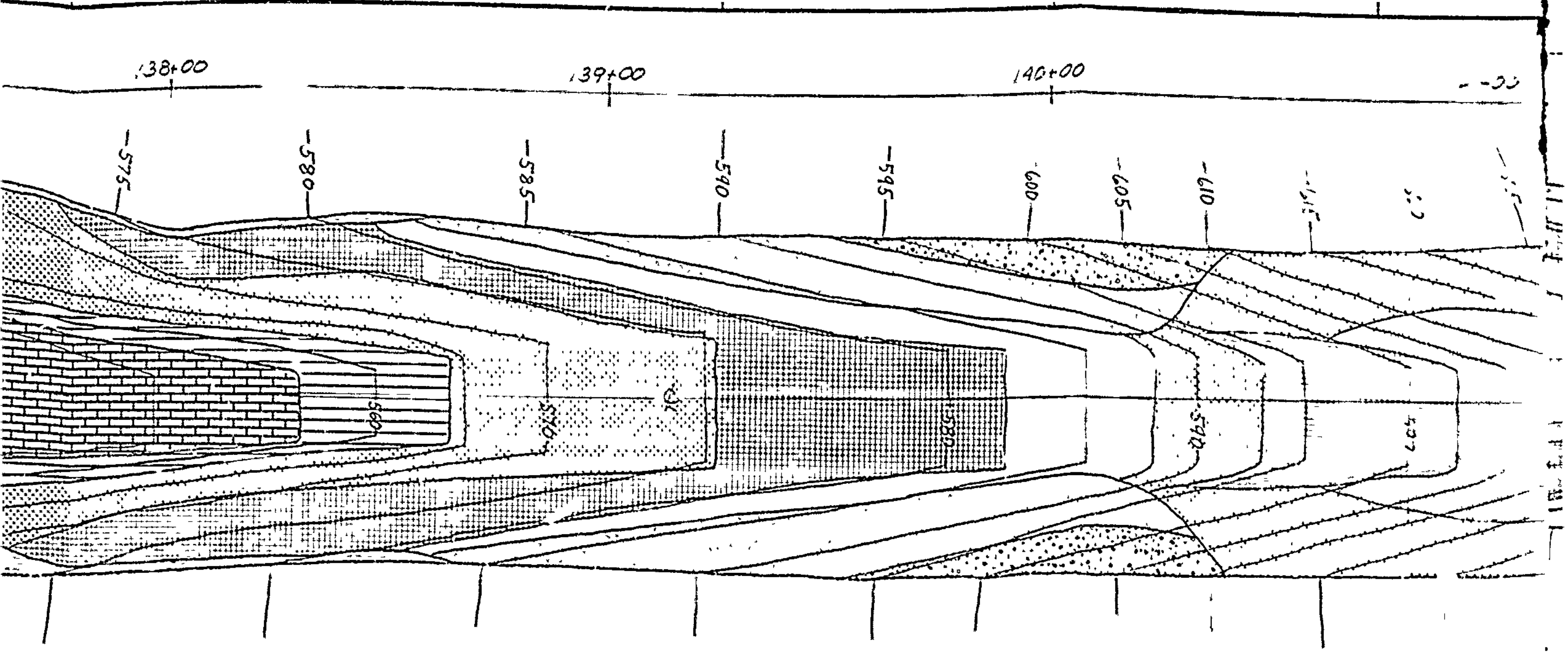
OVERBURDEN

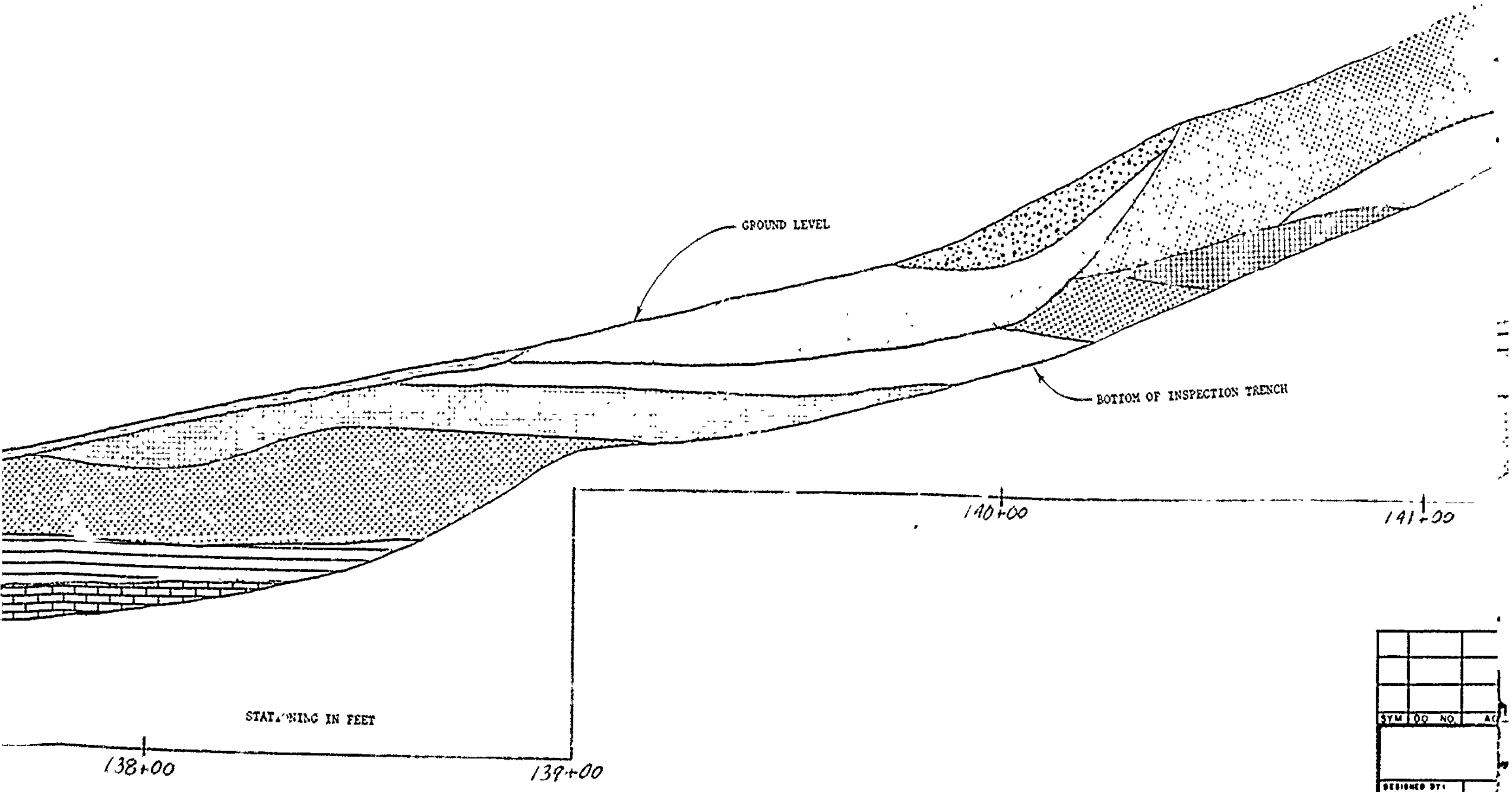
▤	CLAY, v sandy, dry, lt gray mottled red-brn
☐	SAND, silty, variably clayey, tan, fine. Scattered gravels. irregularly weakly cemented.
░	SAND, clayey, dense, rust. With gravel and cobble-sized sandstone fragments.

PRIMARY

☰	SHALE, (Pawpaw) soft, moist, gray w/ rust stains along joint planes, mod-sl cemented.
▦	LIMESTONE, (Main Street) hard. sl weathered, non-jointed.
▤	MARL, (Grayson) soft-mod hard. moist. weathered, calc. massive, tan and lt gray. scatt stained joints.
▒	WEATHERED SANDSTONE, (Woodbine) Non-cemented sand and weakly cemented sandstone, oxide stained. lt gray and rust.
▩	CLAY, (Woodbine) sandy, v stiff, dry. lt gray mottled rust. massive, contains plant frags.
▓	SAND, (Woodbine) fine, clayey, silty, rust.
░	SAND, (Woodbine) loose, fine, clean, tan.

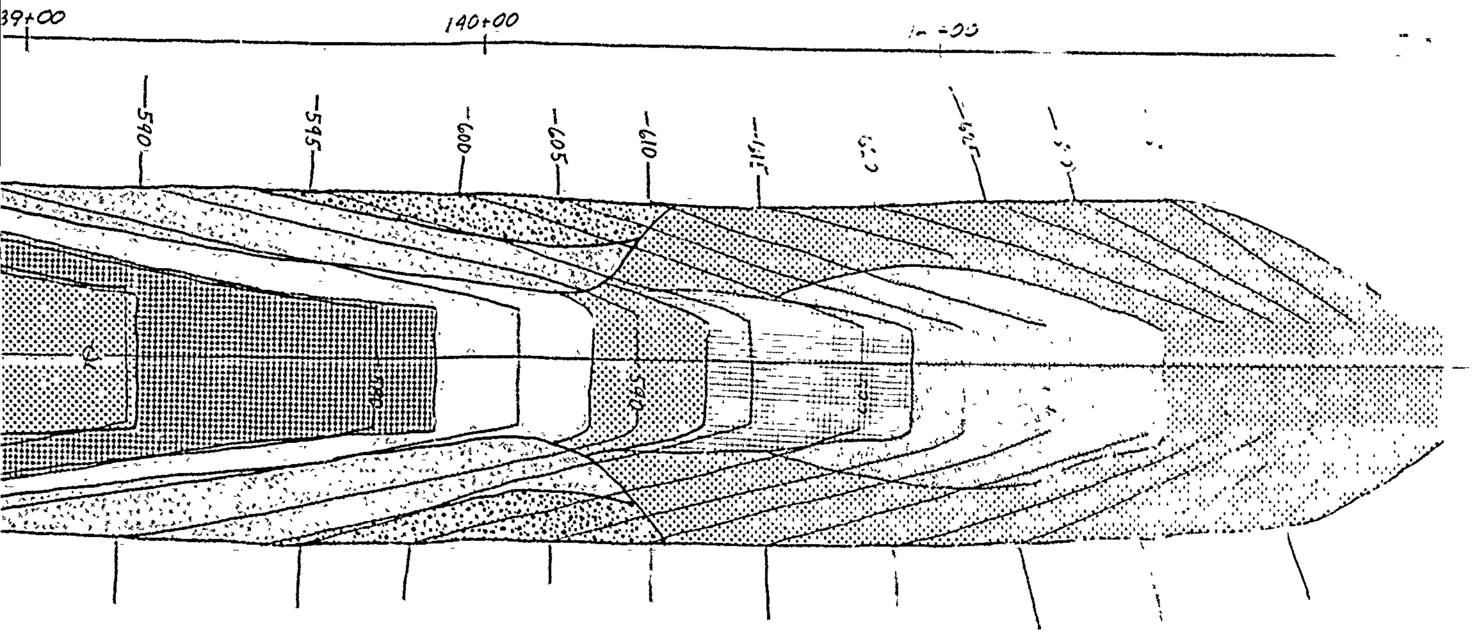


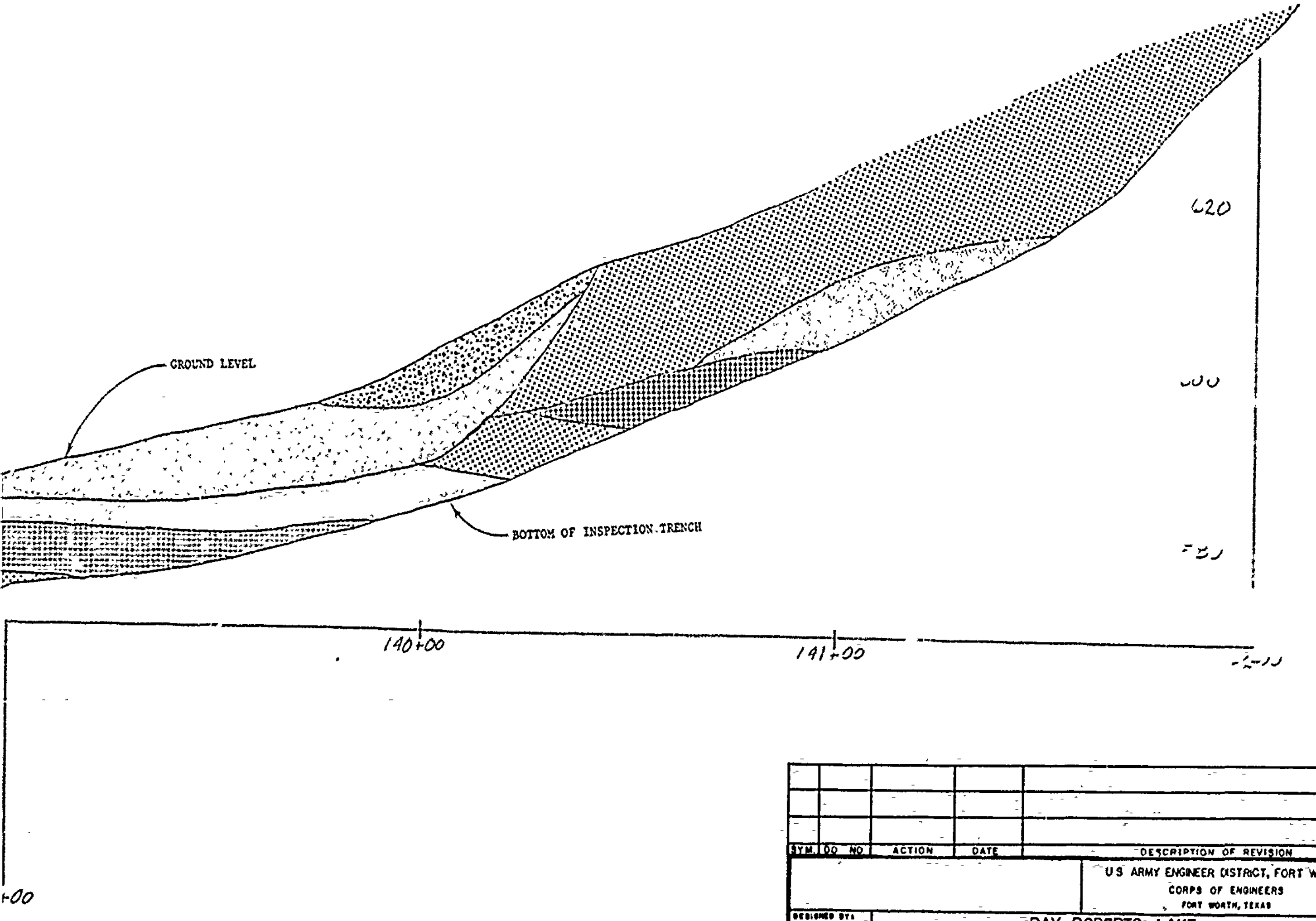




SYM	DO NO.	A

DESIGNED BY:
R.HAGEN
DRAWN BY:
R.HAGEN
REVIEWED BY:
R.HAGEN





SYM.	DO NO	ACTION	DATE	DESCRIPTION OF REVISION

US ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

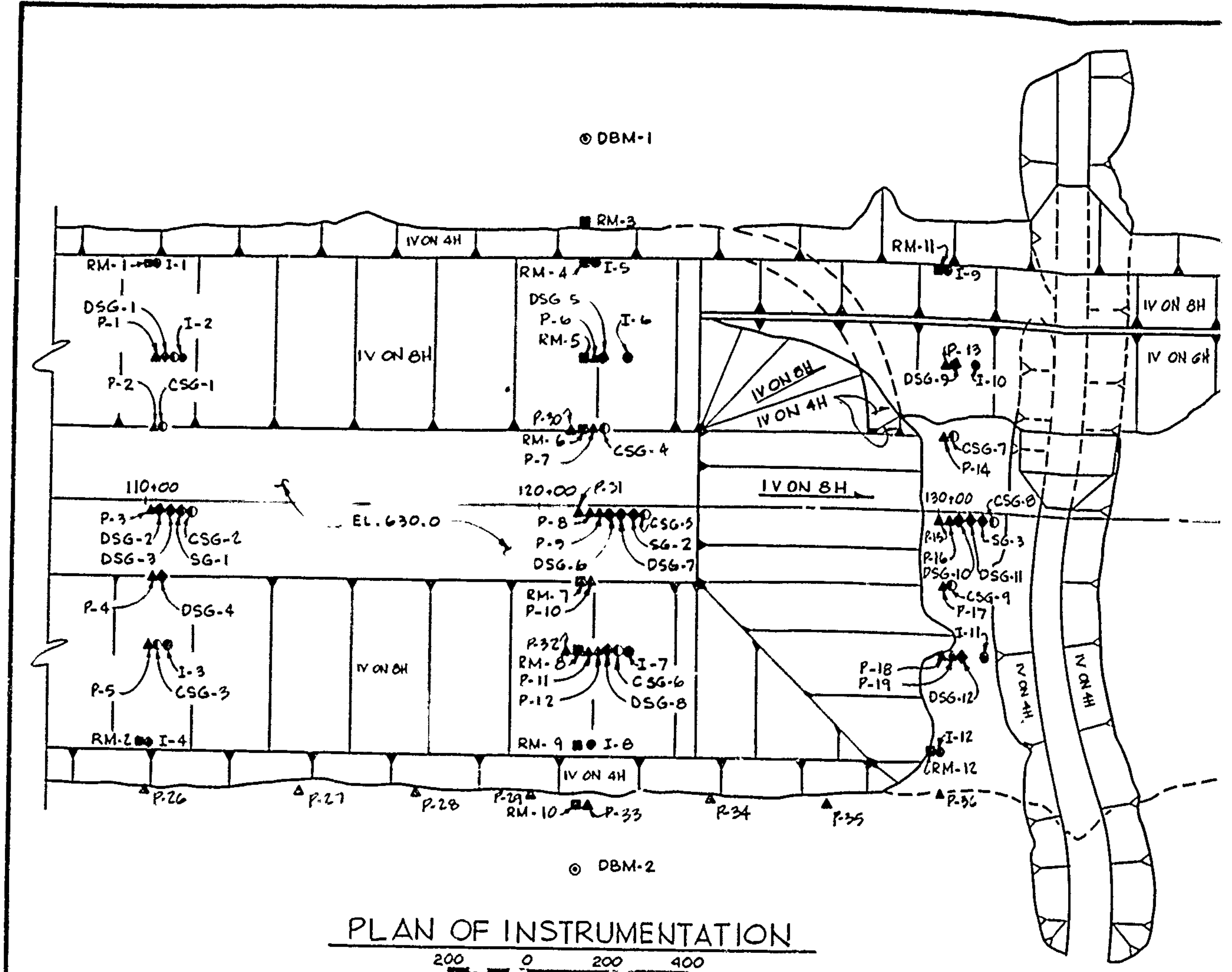
DESIGNED BY: R. HAGEN
DRAWN BY: R. HAGEN
REVIEWED BY: R. HAGEN

RAY ROBERTS LAKE
ELM FORK TRINITY RIVER, TEXAS

LEFT ABUTMENT INSPECTION TRENCH

GEOLOGIC PLAN AND PROFILE
STA. 135+00 TO STA. 142+00

SUBMITTED BY: ROBERT G. BEHM
INVITATION NO.
DATE:



PLAN OF INSTRUMENTATION

200 0 200 400
SCALE IN FEET

REFERENCE MARKS				
LINE	NO.	STATION	OFFSET	INSTALLATION SCHEDULE
A	RM-1	109+90.2	580.6 U/S	3
	RM-2	109+90.1	580.3 D/S	3
B	RM-3	120+89.4	679.6 U/S	1
	RM-4	120+90.3	579.1 U/S	3
	RM-5	120+90.7	350.8 U/S	3
	RM-6		U/S	3
	RM-7		D/S	3
	RM-8	120+90.3	351.1 D/S	3
	RM-9	120+79.6	580.2 D/S	3
	RM-10	120+78.3	689.8 D/S	1
C	RM-11		U/S	3
	RM-12		D/S	3

⚠1

POROUS PLASTIC TIP PIEZOMETERS						
LINE	NO.	STATION	OFFSET	FILTER LOCATION	APPROX. FILTER EL. FT., MSL	INSTALLATION SCHEDULE
A	P-1	110+15	349' U/S	WK CI	534-539	1
	P-2	110+10	179' U/S	WK CI	529-534	1
	P-3	110+10	24' D/S	WK CI	524-529	1
	P-4	110+18	181' D/S	WK CI	525-530	1
	P-5	110+10	350' D/S	WK CI	526-531	1
B	P-6	121+10	350' U/S	WK CI	538-543	1
	P-7	121+11	180' U/S	WK CI	538-543	1
	P-8	121+01	24' D/S	WK CI	522-527	1
	P-9	121+10	24' D/S	SH	490-495	1
	P-10	121+10	180' D/S	WK CI	530-535	1
	P-11	121+20	350' D/S	WK CI	536-541	1
	P-12	121+10	350' U/S	SH	499-504	1
C	P-13	129+99	351' U/S	WK CI	533-538	2
	P-14A	130+17	112' U/S	WK CI	527-532	2
	P-15	130+00	24' D/S	WK CI	529-534	2
	P-16	130+10	24' D/S	SH	501-506	2
	P-17A	130+01	116' D/S	WK CI	526-531	2
	P-18	129+99	349' D/S	WK CI	[illegible]	2
	P-19	130+10	349' D/S	SH	499-504	2
SEEPAGE PIEZOMETERS	P-20	28+47	297' D/S	SD & GR	583-588	4
	P-21	32+48	299' D/S	SD & GR	581-586	4
	P-22	54+02	323' D/S	SD & GR	565-570	4
	P-23	63+00	327' D/S	SD & GR	565-570	4
	P-24	73+25	328' D/S	SD & GR	576-581	4
	P-25	85+07	320' D/S	SD & GR	576-581	4
	P-26	110+05	666' D/S	SD & GR	523-528	4
	P-27	114+00	678' D/S	SD & GR	521-526	4
	P-28	116+99	678' U/S	SD & GR	520-525	4
	P-29	119+99	678' D/S	SD & GR	518-523	4
	P-30	121+40	182' U/S	SD & GR	520-525	4
	P-31	120+40	26' D/S	SD & GR	513-518	4
	P-32	121+00	345' D/S	SD & GR	525-530	4
	P-33	121+09	677' D/S	SD & GR	518-523	4
	P-34	124+30	675' D/S	SD & GR	520-525	4
	P-35	127+29	672' D/S	SD & GR	521-526	4
	P-36	130+10	675' D/S	SD & GR	522-527	4

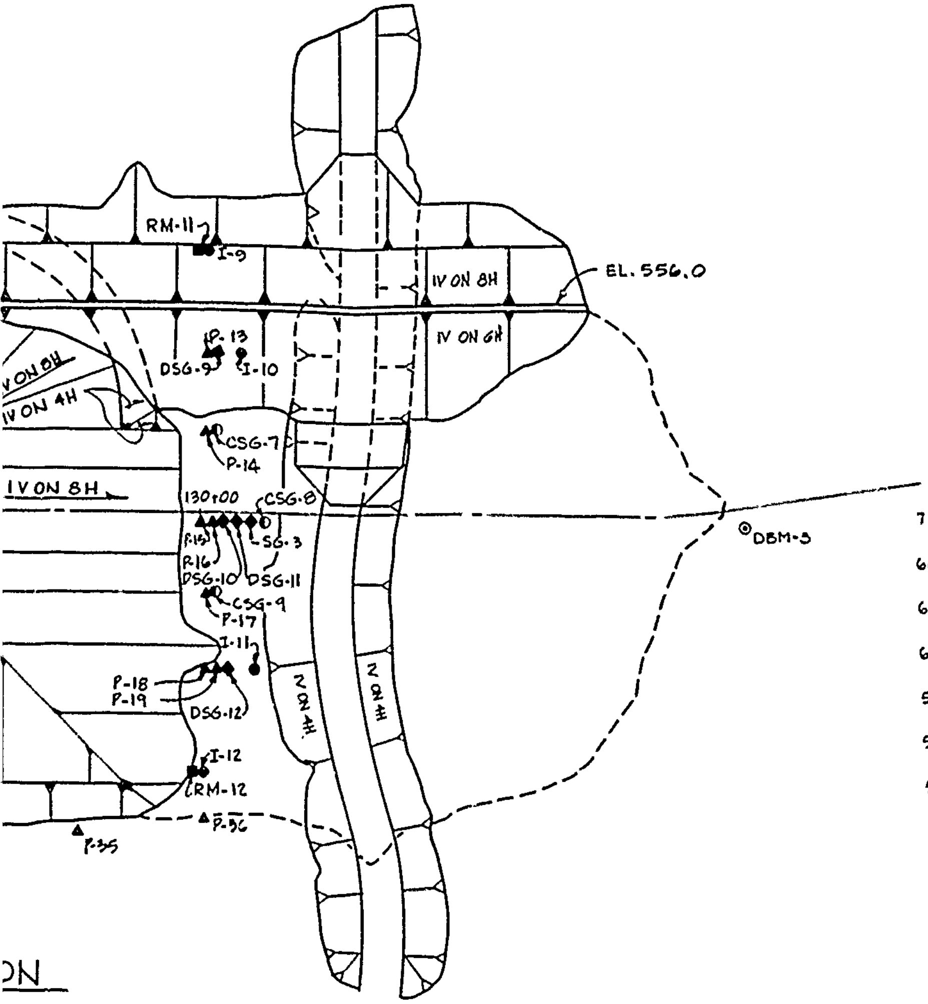
⚠2

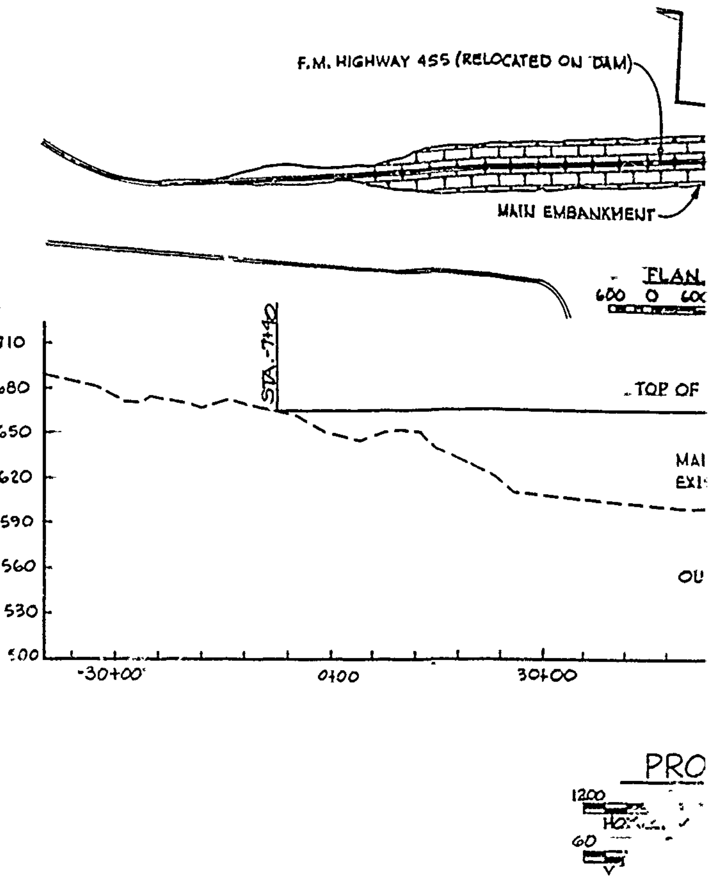
SETTLEME			
LINE	NO.	STATION	OFF
A	DSG-1	110+30	350
	DSG-2	110+20	24
	DSG-3	110+30	24
	SG-1	110+50	25
	DSG-4	110+20	350
B	DSG-5	121+20	350
	DSG-6	121+20	24
	DSG-7	121+40	24
	SG-2	121+31	25
	DSG-8	121+30	350
C	DSG-9	130+09	351
	DSG-10	130+19	24
	DSG-11	130+29	24
	SG-3	130+40	24
	DSG-12	130+19	350

⚠4

POROUS PLASTIC TIP P			
LINE	NO.	STATION	OFFSET
SEEPAGE PIEZOMETERS	P-14B	130+07	120' U/S
	P-37	137+62	104' U/S
	P-38	137+59	361' D/S
	P-39	137+58	621' D/S
	P-40	139+06	107' D/S
	P-41	139+04	565' D/S
	P-42	140+53	326' D/S
	P-43A	141+41	92' D/S
	P-43B	141+39	95' D/S

⚠3





ON

ZOMETERS		
TER TION	APPROX. FILTER EL. FT., MSL	INSTALLATION SCHEDULE
CI	534-539	1
CI	529-534	1
CI	524-529	1
CI	525-530	1
CI	526-531	1
CI	538-543	1
CI	538-543	1
CI	522-527	1
H	490-495	1
CI	530-535	1
CI	536-541	1
H	499-504	1
CI	533-538	2
CI	527-532	2
CI	529-534	2
H	501-506	2
CI	526-531	2
CL	524-529	2
H	499-504	2
GR	583-588	4
GR	581-586	4
GR	565-570	4
GR	565-570	4
GR	576-581	4
GR	576-581	4
GR	523-528	4
GR	521-526	4
GR	520-525	4
GR	518-523	4
GR	520-525	4
GR	513-518	4
GR	525-530	4
GR	518-523	4
GP.	520-525	4
GR	521-525	4
GR	522-527	4

SETTLEMENT GAGES					
LINE	NO.	STATION	OFFSET	APPROX. PLATE EL	INSTALLATION SCHEDULE
A	DSG-1	110+30	350' U/S	536	1
	DSG-2	110+20	24' D/S	503	1
	DSG-3	110+30	24' D/S	526	1
	SG-1	110+50	25' D/S	560	1
	DSG-4	110+20	350' D/S	529	1
B	DSG-5	121+20	350' U/S	540	1
	DSG-6	121+20	24' D/S	525	1
	DSG-7	121+40	24' D/S	508	1
	SG-2	121+31	25' D/S	557	1
	DSG-8	121+30	350' D/S	540	1
C	DSG-9	130+09	351' U/S	536	2
	DSG-10	130+19	24' D/S	532	2
	DSG-11	130+29	24' D/S	516	2
	SG-3	130+40	24' U/S	558	2
	DSG-12	130+19	350' D/S	526	2

4

POROUS PLASTIC TIP PIEZOMETERS (CONT.)						
LINE	NO.	STATION	OFFSET	FILTER LOCATION	APPROX. FILTER EL. FT., MSL	INSTALLATION SCHEDULE
EEPAGE PIEZOMETERS	P-14B	130+07	120' U/S	SD & CI		
	P-37	137+62	104' U/S	SD		
	P-38	137+59	361' D/S			
	P-39	137+58	621' D/S			
	P-40	139+06	107' D/S	SD & CI		
	P-41	139+04	565' D/S	SD		
	P-42	140+53	326' D/S	SD		
	P-43A	141+41	92' D/S	SD		
	P-43B	141+39	95' D/S	SD		

3

INCLINOMETERS					
LINE	NO	STATION	OFFSET	APPROX BOTTOM	INSTALLATION SCHEDULE
A	I-1	110+10	580' U/S	490	1
	I-2	110+30	350' U/S	490	1
	I-3	110+30	350' D/S	480	1
	I-4	110+20	580' D/S	488	1
B	I-5	121+10	580' U/S	500	1
	I-6	121+30	350' U/S	498	1
	I-7	121+50	350' D/S	494	1
	I-8	121+10	580' D/S	494	1
C	I-9	130+10	580' U/S	490	2
	I-10	130+30	350' U/S	496	2
	I-11	130+40	350 D/S	494	2
	I-12	150+10	580' D/S	494	2

COLLAPSIBLE SETTLEMENT GAGES					
LINE	NO.	STATION	OFFSET	APPROX. BOTTOM	INSTALLATION SCHEDULE
A	CSG-1	110+20	180' U/S	490	1
	CSG-2	110+50	24' U/S	480	1
	CSG-3	110+40	350' D/S	480	1
B	CSG-4	121+20	180' U/S	496	1
	CSG-5	121+60	24' D/S	486	1
	CSG-6	171+40	350' D/S	494	1
C	CSG-7	1,0+20	180 U/S	496	2
	CSG-8	130+60	24' D/S	486	2
	CSG-9	130+20	180' D/S	494	2

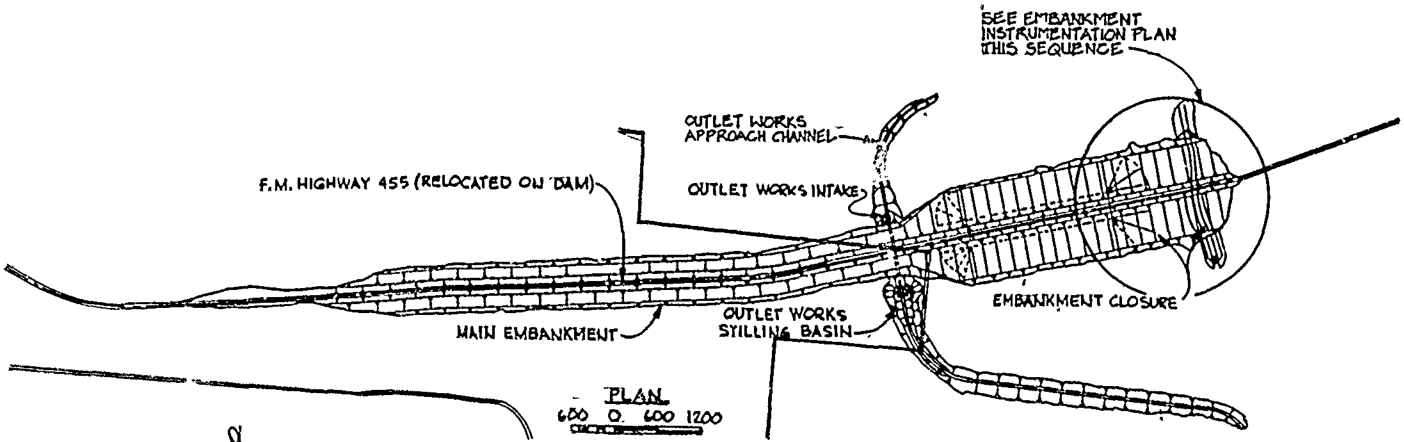
INSTALLATION SCHEDULE

1. AFTER STRIPPING STA
2. AFTER STRIPPING STA
3. AS EMBANKMENT RE ELEVATION AT THIS ST OFFSET (BEFORE TOP
4. AFTER ENTIRE EMB TOPPED-OUT

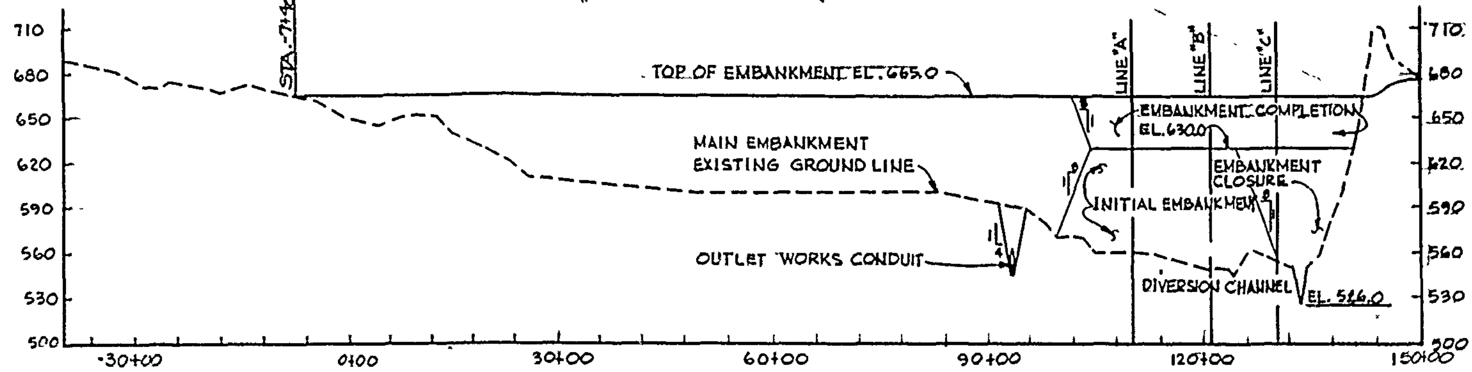
LEGEND

▲	PIEZOMETER
◆	SETTLEMENT GAGE
◐	COLLAPSIBLE SETTL
●	INCLINOMETER
■	REFERENCE MARK
⊙	BENCHMARK

DEEP BENCHMARK				
LINE	NO.	STATION	OFFSET	APPR BOTT
B	DBM-1	121+00	880' D/S	50
B	DBM-2	121+00	380' D/S	49
	DBM-3	143+00	50' D/S	65



PLAN



PROFILE

1200 0 1200 2400
HORIZ. SCALE IN FEET
60 0 60 120
VERT. SCALE IN FEET

NOTES:

1. FOR SECTION THRU LINE A, SEE SEQ. NO. 44 .
2. FOR SECTION THRU LINE B, SEE SEQ. NO. 45 .
3. FOR SECTION THRU LINE C, SEE SEQ. NO. 46 .
4. ALL INSTRUMENT ELEVATIONS ARE APPROXIMATE. ACTUAL ELEVATIONS WILL BE DETERMINED AT TIME OF INSTALLATION.
5. ALL INSTRUMENTATION WILL HAVE PROTECTIVE FENCE, EXCEPT THOSE ALONG THE DOWNSTREAM CREST. FOR PROTECTIVE FENCE DETAILS, SEE SEQ. 41 .

INCLINOMETERS

LINE	NO.	STATION	OFFSET	APPROX BOTTOM	INSTALLATION SCHEDULE
A	I-1	110+10	580' U/S	490	1
	I-2	110+30	350' U/S	490	1
	I-3	110+30	350' D/S	480	1
	I-4	110+20	580' D/S	488	1
B	I-5	121+10	580' U/S	500	1
	I-6	121+30	350' U/S	498	1
	I-7	121+50	350' D/S	494	1
	I-8	121+10	580' D/S	494	1
C	I-9	130+10	580' U/S	490	2
	I-10	130+30	350' U/S	496	2
	I-11	130+40	350' D/S	494	2
	I-12	150+10	580' D/S	494	2

INSTALLATION SCHEDULE LEGEND

1. AFTER STRIPPING STAGE I
2. AFTER STRIPPING STAGE III C
3. AS EMBANKMENT REACHES FINISHED ELEVATION AT THIS STATION AND OFFSET (BEFORE TOPSOIL).
4. AFTER ENTIRE EMBANKMENT IS TOPPED-OUT

LEGEND

▲	PIEZOMETER
◆	SETTLEMENT GAGE
◐	COLLAPSIBLE SETTLEMENT GAGE
⊖	INCLINOMETER
■	REFERENCE MARK
⊙	BENCHMARK

COLLAPSIBLE SETTLEMENT GAGES

LINE	NO.	STATION	OFFSET	APPROX. BOTTOM	INSTALLATION SCHEDULE
A	CSG-1	110+20	180' U/S	490	1
	CSG-2	110+50	24' U/S	480	1
	CSG-3	110+40	350' D/S	480	1
B	CSG-4	121+20	180' U/S	496	1
	CSG-5	121+60	24' D/S	486	1
	CSG-6	121+40	350' D/S	494	1
C	CSG-7	130+20	180' U/S	496	2
	CSG-8	130+60	24' D/S	486	2
	CSG-9	130+20	180' D/S	494	2

DEEP BENCHMARK

LINE	NO.	STATION	OFFSET	APPROX. BOTTOM EL.	INSTALLATION SCHEDULE
B	DBM-1	121+00	850' D/S	500	1
B	DBM-2	121+00	880' D/S	490	1
	DBM-3	143+00	50' D/S	650	1

RECORD DRAWING-WORK AS-BUILT

SYM.	DO. NO.	ACTION	DATE	DESCRIPTION OF REVISION
△1 3	C0182	CO#P00016	30MAR84	REVISED TO REFLECT AS-BUILT CHANGES

U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

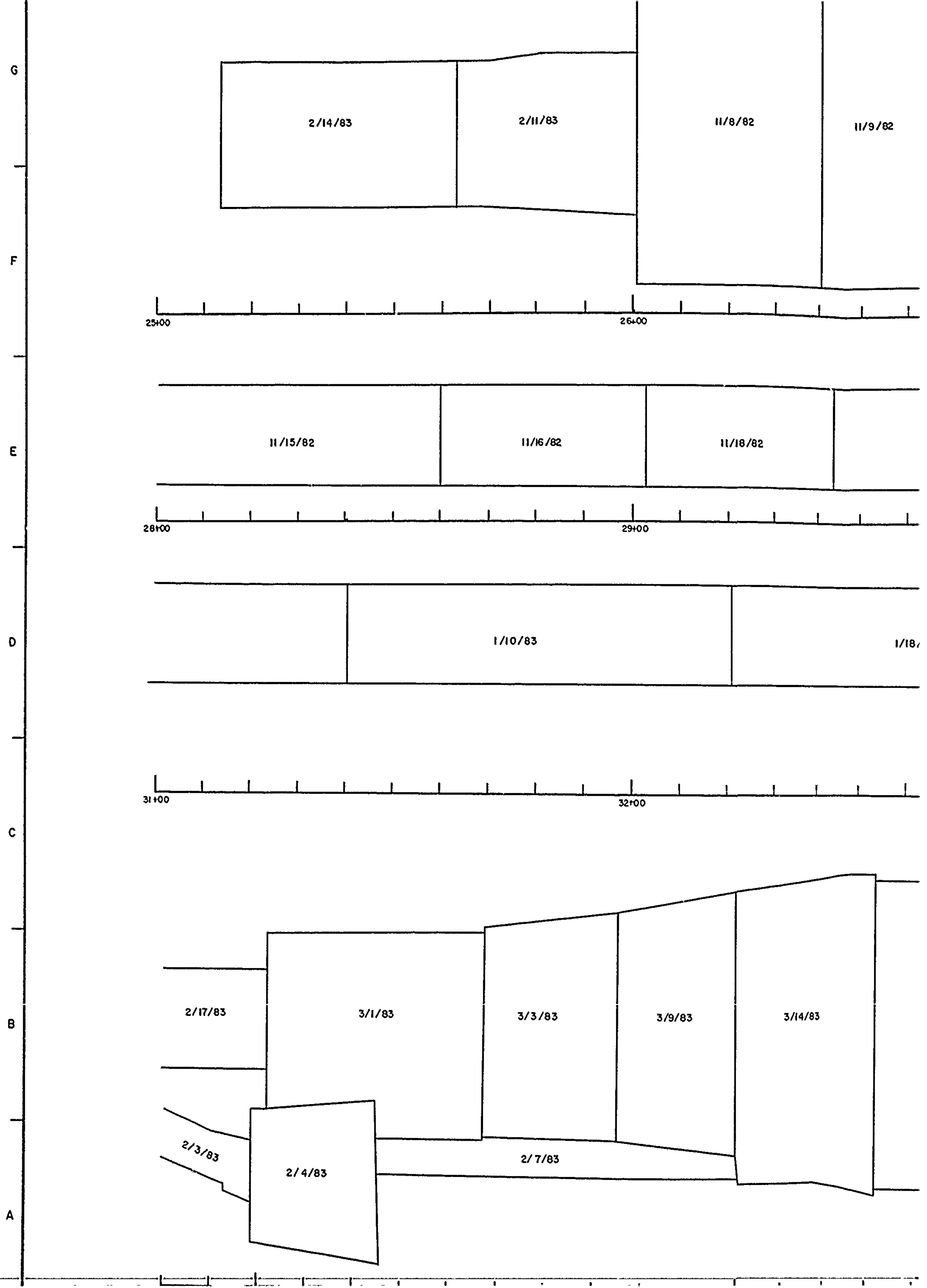
DESIGNED BY: A. BRANCH
DRAWN BY: J. FIESELER
REVIEWED BY: A. BRANCH

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS

EMBANKMENT
PLAN OF INSTRUMENTATION

SUBMITTED BY: H. KARBS
ENGINEER:
INVITATION NO. DACW63-82-B-0025
DATE: MAR. 1982
CONTRACT NO. DACW63-82-C-0093
DRAWING NUMBER
SHEET NO. OF
SEQUENCE NO. 62

CONTRACT NO. DACW63-82-C-0093


G
2/14/83
2/11/83
11/8/82
11/9/82
F
25+00
26+00
E
11/15/82
11/16/82
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28+00
29+00
D
1/10/83
1/18/
31+00
32+00
C
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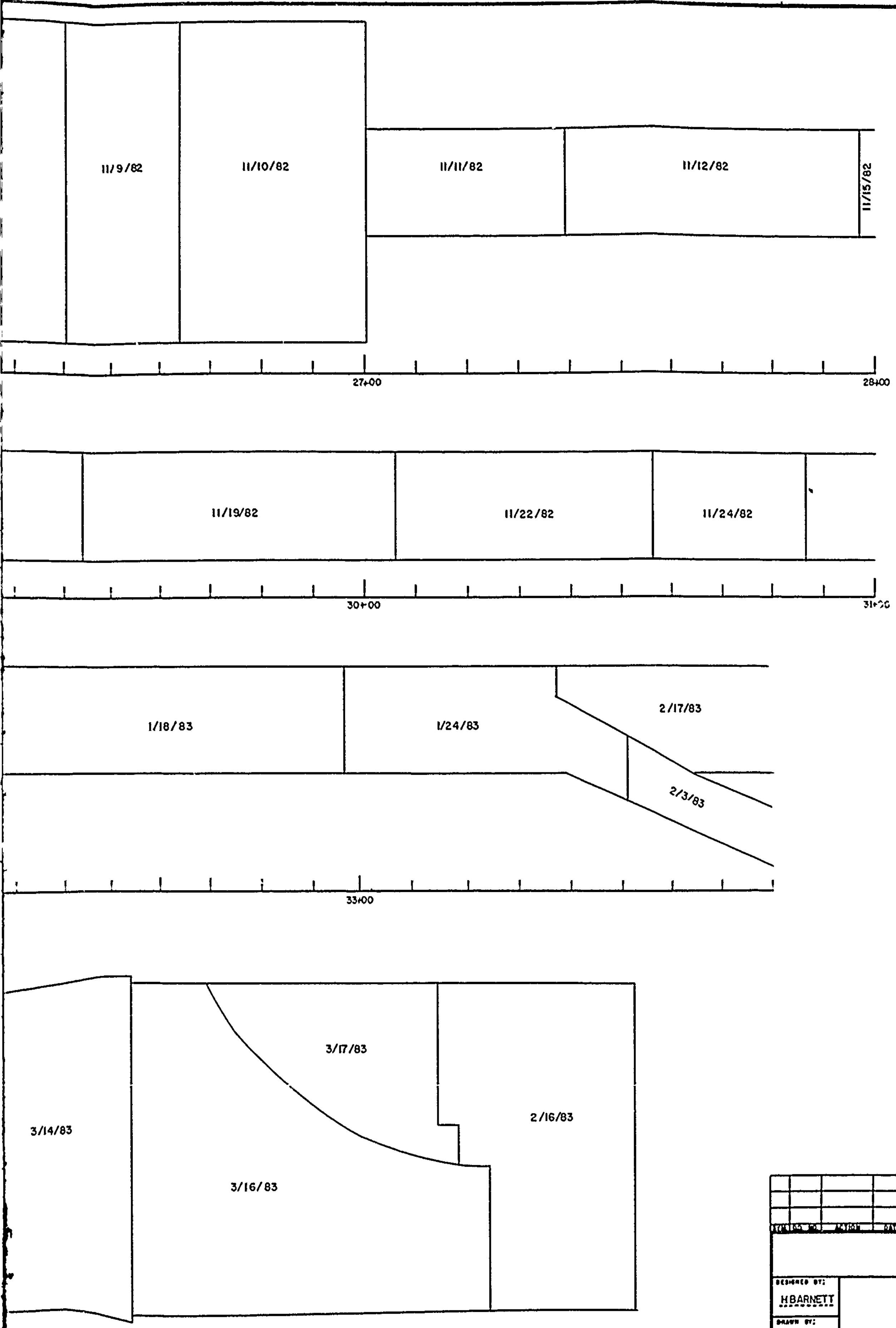
A



[illegible]	[illegible]	ACTION	DATE	DESCRIPTION OF REVISION

U.S. ARMY ENGINEER DISTRICT, FORT WOR
CORPS OF ENGINEERS
FORT WORTH, TEXAS

DESIGNED BY: H.BARNETT
DRAWN BY: C.KIRBY
REVIEWED BY: R.BEHM

RAY ROBERTS LAKE
ELM FORK, TRINITY RIVER, TEXAS

FOUNDATION REPORT

RECORD OF FOUNDATION APPROVAL