



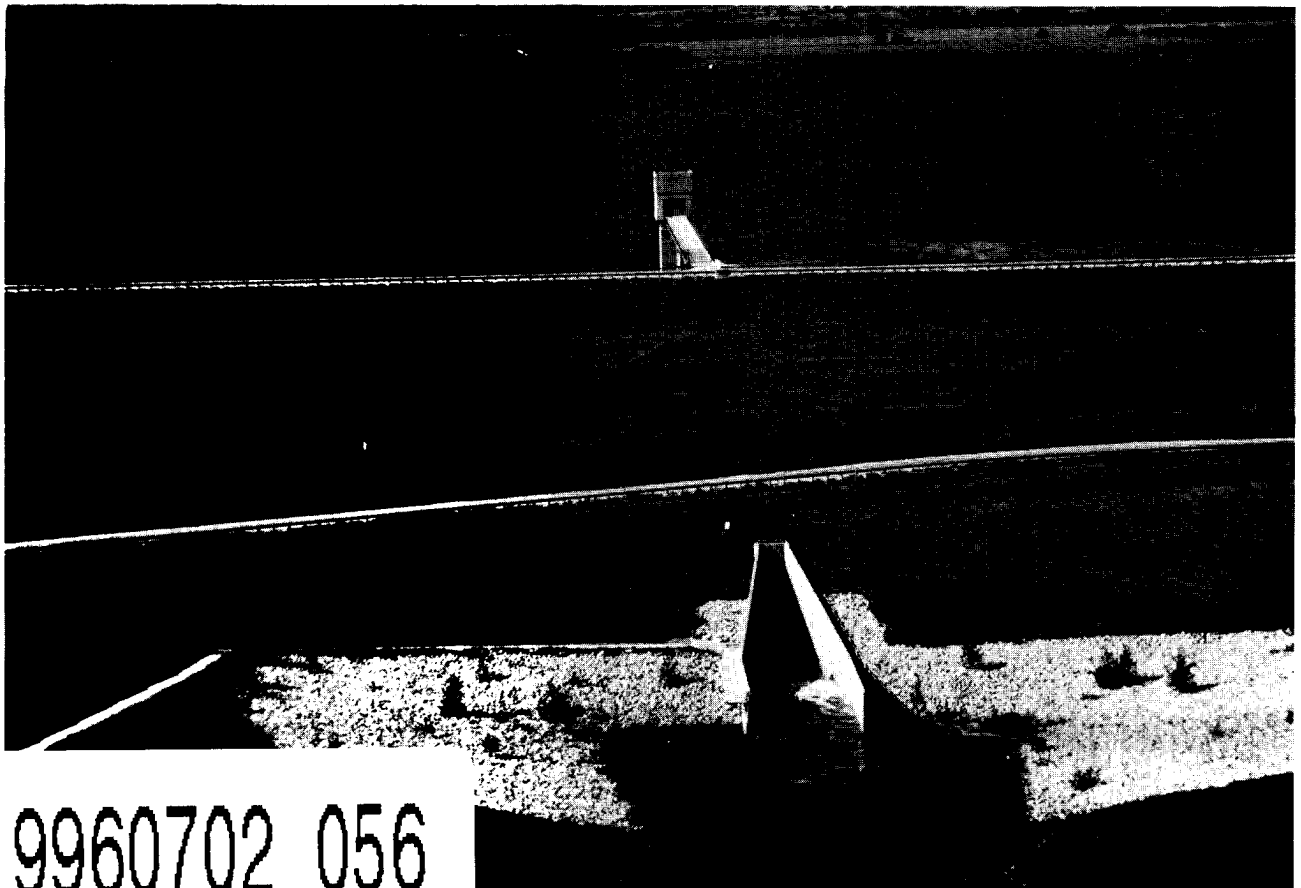
**US Army Corps
of Engineers**
Fort Worth District

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Aquilla Lake Final Foundation Report

Embankment, Spillway and Outlet Works

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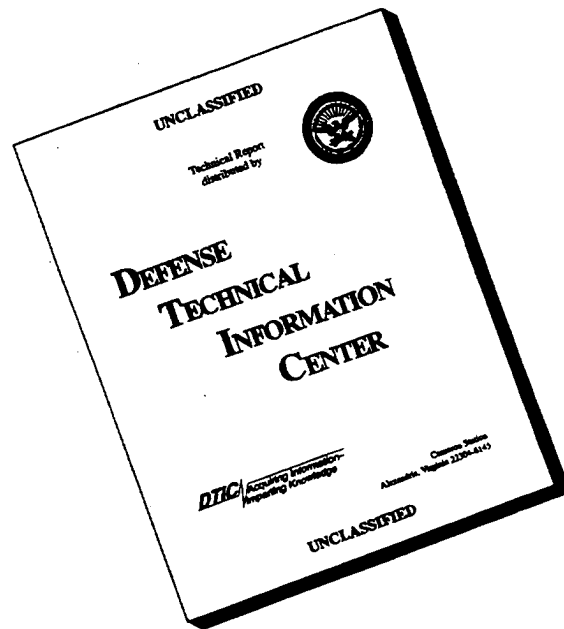
Volume II

REVISED

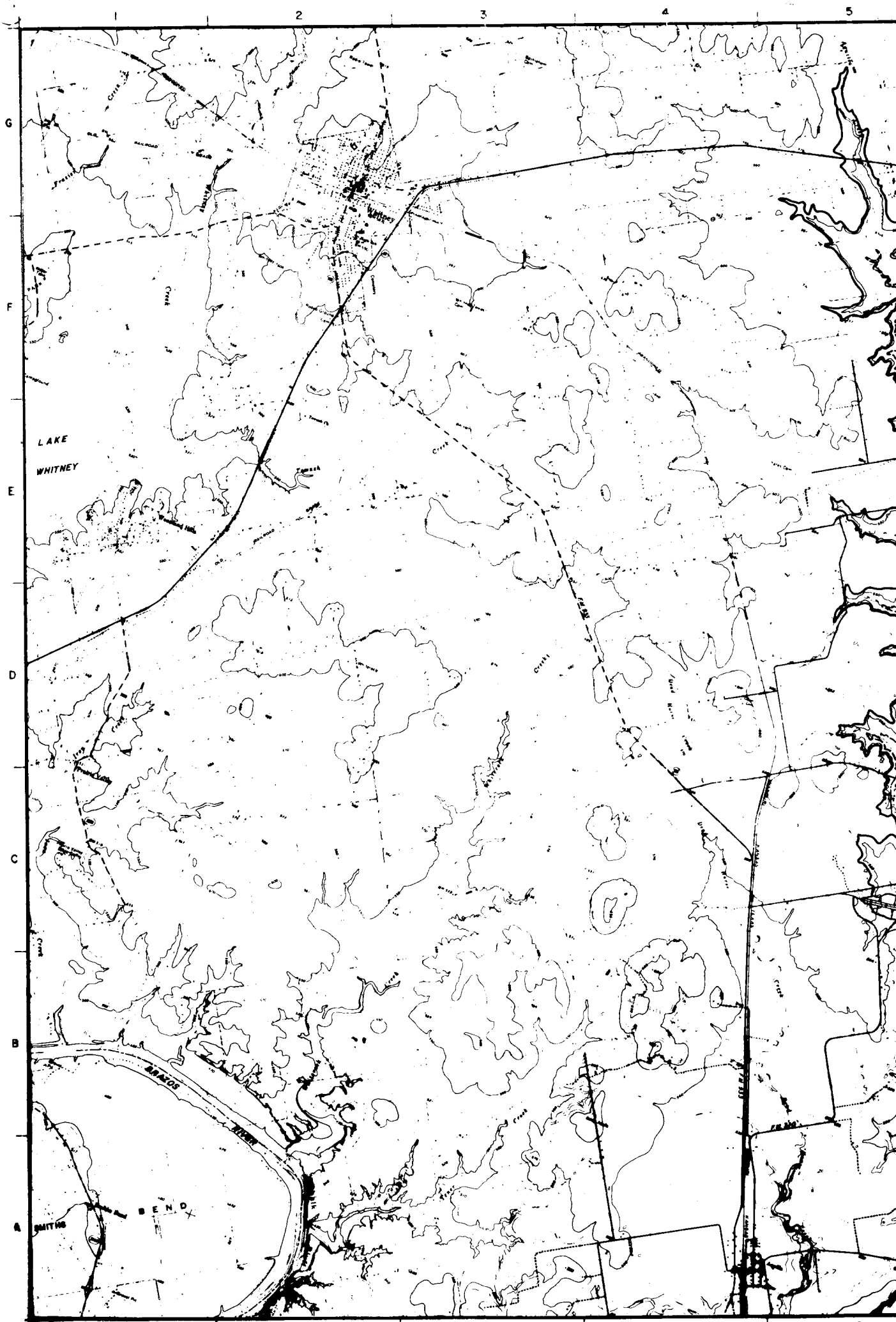
March 1996

November 1987

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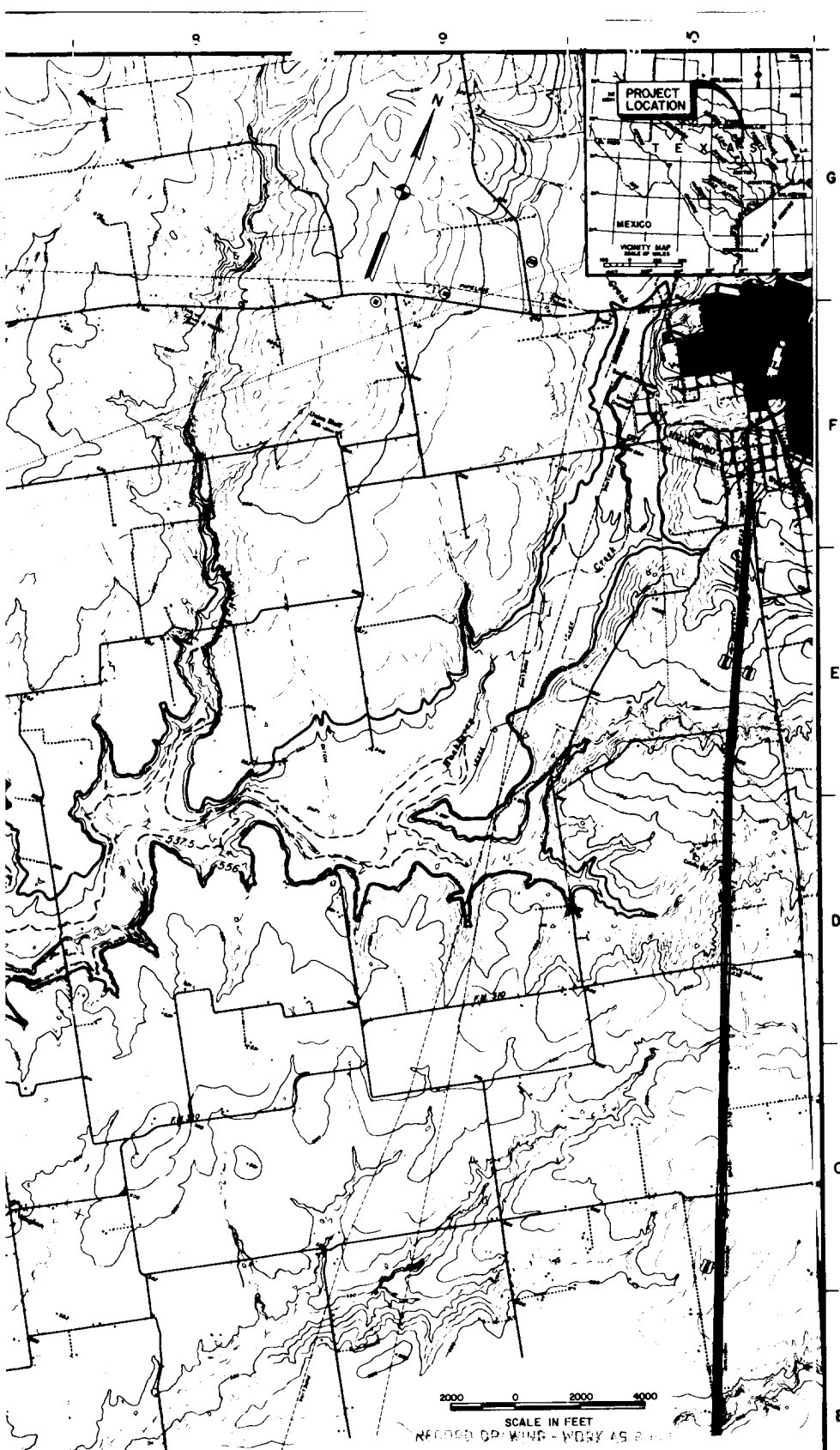
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DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
SUBMITTED BY:	
ENGINEER:	

TO ACCOMPANY FINAL FOUND



REV. NO.	ACTION	DATE	DESCRIPTION OF REVISION

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

DESIGNED BY: AQUILLA LAKE
AQUILLA CREEK, TEXAS

DRAWN BY: INITIAL EMBANKMENT, PARTIAL SPILLWAY
EXCAVATION, AND OUTLET WORKS

CHECKED BY:

LAKE MAP

ENGINEER: _____

INVENTORY NO. DACH6-105-0043 DATED: MAR 1957

CONTRACT NO. WAFW 78-C-0104 SEQUENCE NO. 3

DRAWING NUMBER SHEET NO. 3

LEGEND
RESERVOIR POOL EL. 537.5
CONTROL POOL EL. 956



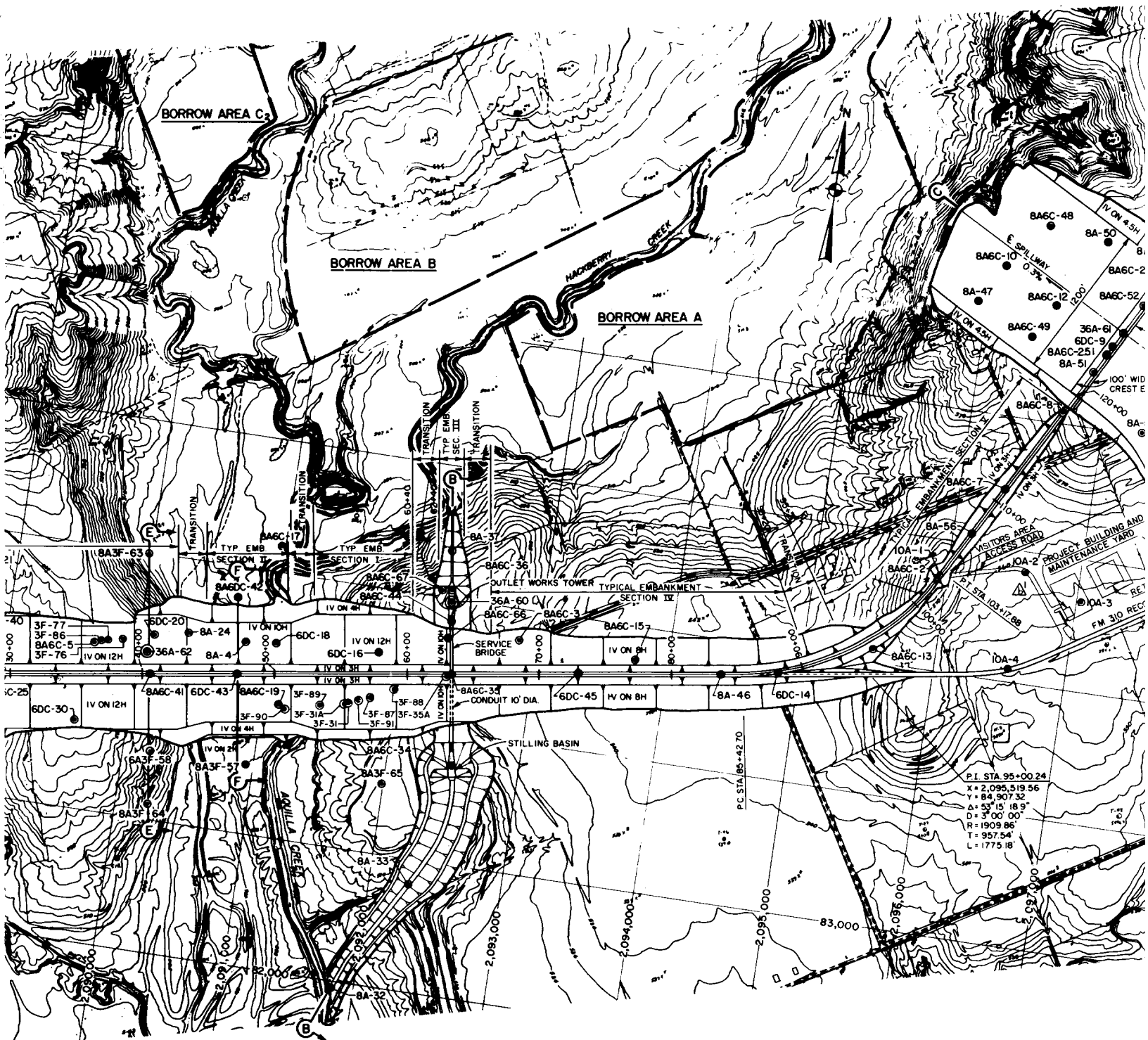
LEGEND

SYMBOLS

- CORE, AUGER AND FISHTAIL BORINGS
- ⊙ LARGE DIAMETER AUGER BORINGS (INSPECTION)

BORING DESIGNATIONS:

- BA6C-00 8 INCH AUGER AND 6 INCH CORE
- 6DC-00 6 INCH DENISON AND 6 INCH CORE
- BA-00, 36A-00 8 INCH AUGER, 36 INCH AUGER
- 3F-00 3 1/8 INCH FISHTAIL OR ROCKBIT



BORING LAYOUT
 400 0 400 800
 SCALE OF FEET

LEGEND

(MBOLS)
 CORE, AUGER AND FISHTAIL BORINGS
 LARGE DIAMETER AUGER BORINGS (INSPECTION)

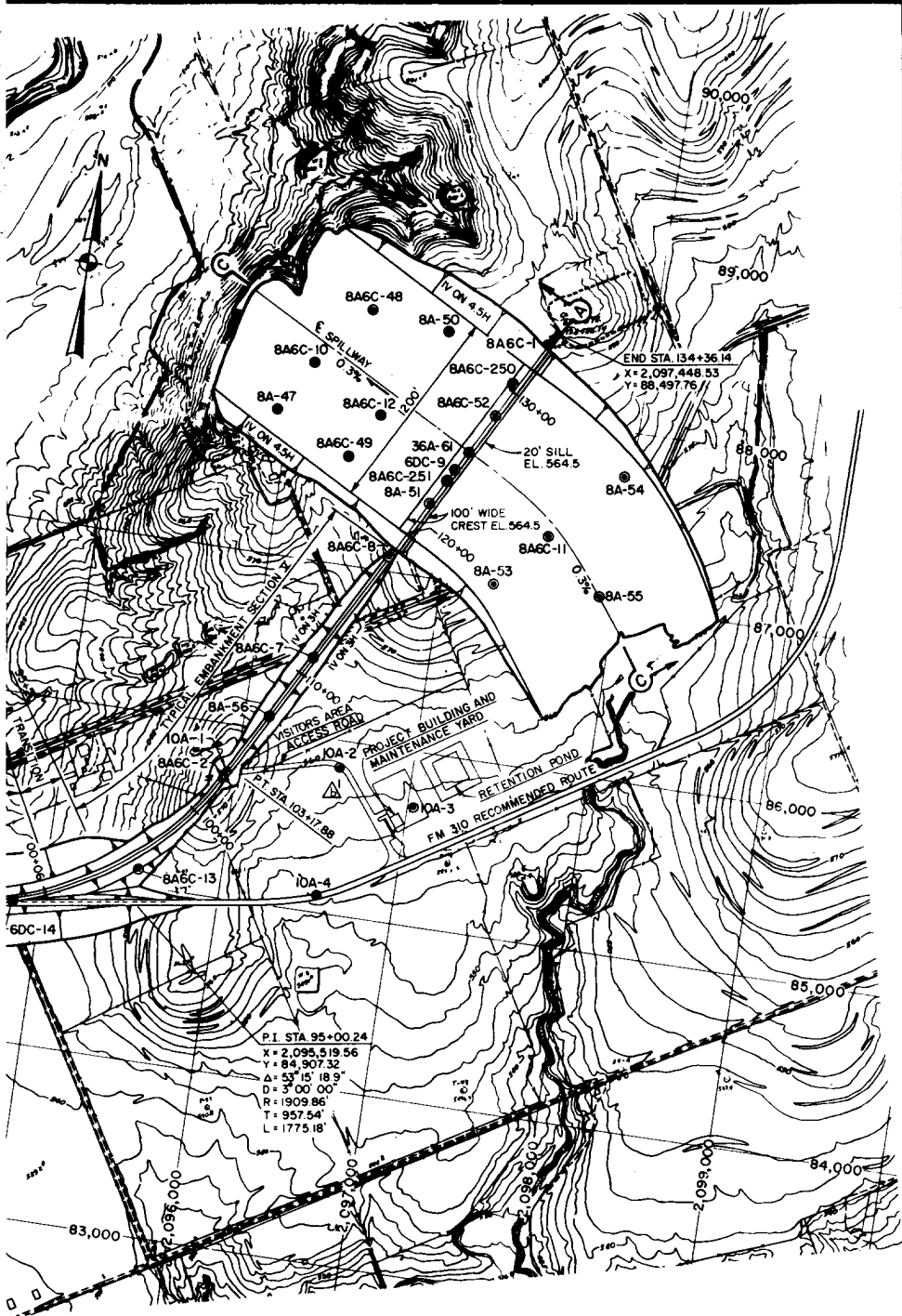
BORING DESIGNATIONS:

6DC-00 8 INCH AUGER AND 6 INCH CORE
 6DC-00 6 INCH DENISON AND 6 INCH CORE
 1-00, 36A-00 8 INCH AUGER, 36 INCH AUGER
 7-00 3 1/8 INCH FISHTAIL OR ROCKBIT

- NOTES:**
1. FOR EMBANKMENT SECTION A-A, SEE SEQ. 76 AND 81
 2. FOR OUTLET WORKS SECTION B-B, SEE SEQ. 82
 3. FOR SPILLWAY SECTION C-C, SEE SEQ. 83
 4. FOR SECTION ON STATION 19+10 D-D, SEE SEQ. 84 & 85
 5. FOR SECTION ON STATION 40+80 E-E, SEE SEQ. 86
 6. FOR SECTION ON STATION 47+20 F-F, SEE SEQ. 87

RECORD DRAWING

DESIGNED BY:	
DRAWN BY:	B. M. B.
CHECKED BY:	
SUBMITTED BY:	
ENGINEER:	



RECORD DRAWING-WORK AS BUILT

EMBANKMENT SECTION A-A, SEE SEQ. 75 AND 81
 EMBANKMENT SECTION B-B, SEE SEQ. 82
 EMBANKMENT SECTION C-C, SEE SEQ. 83
 EMBANKMENT SECTION D-D, SEE SEQ. 84 & 85
 EMBANKMENT SECTION E-E, SEE SEQ. 86
 EMBANKMENT SECTION F-F, SEE SEQ. 87

NO.	DATE	REVISION
1	AM 10002 20 NOV 80	GENERAL REVISIONS

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

DESIGNED BY: AQUILLA LAKE
 AQUILLA CREEK, TEXAS

DRAWN BY: B.M.B.

CHECKED BY:

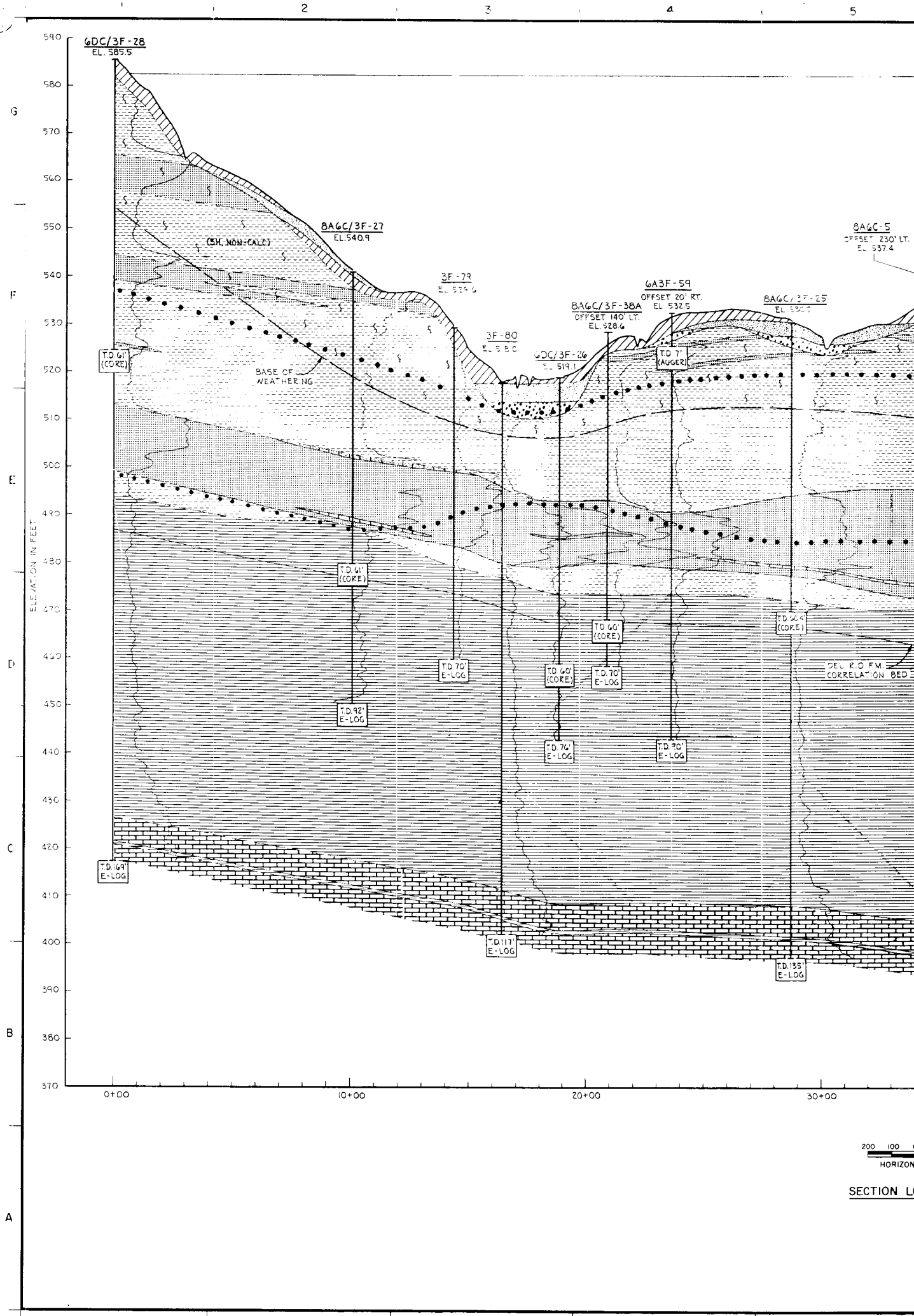
SUBMITTED BY:

ENGINEER:

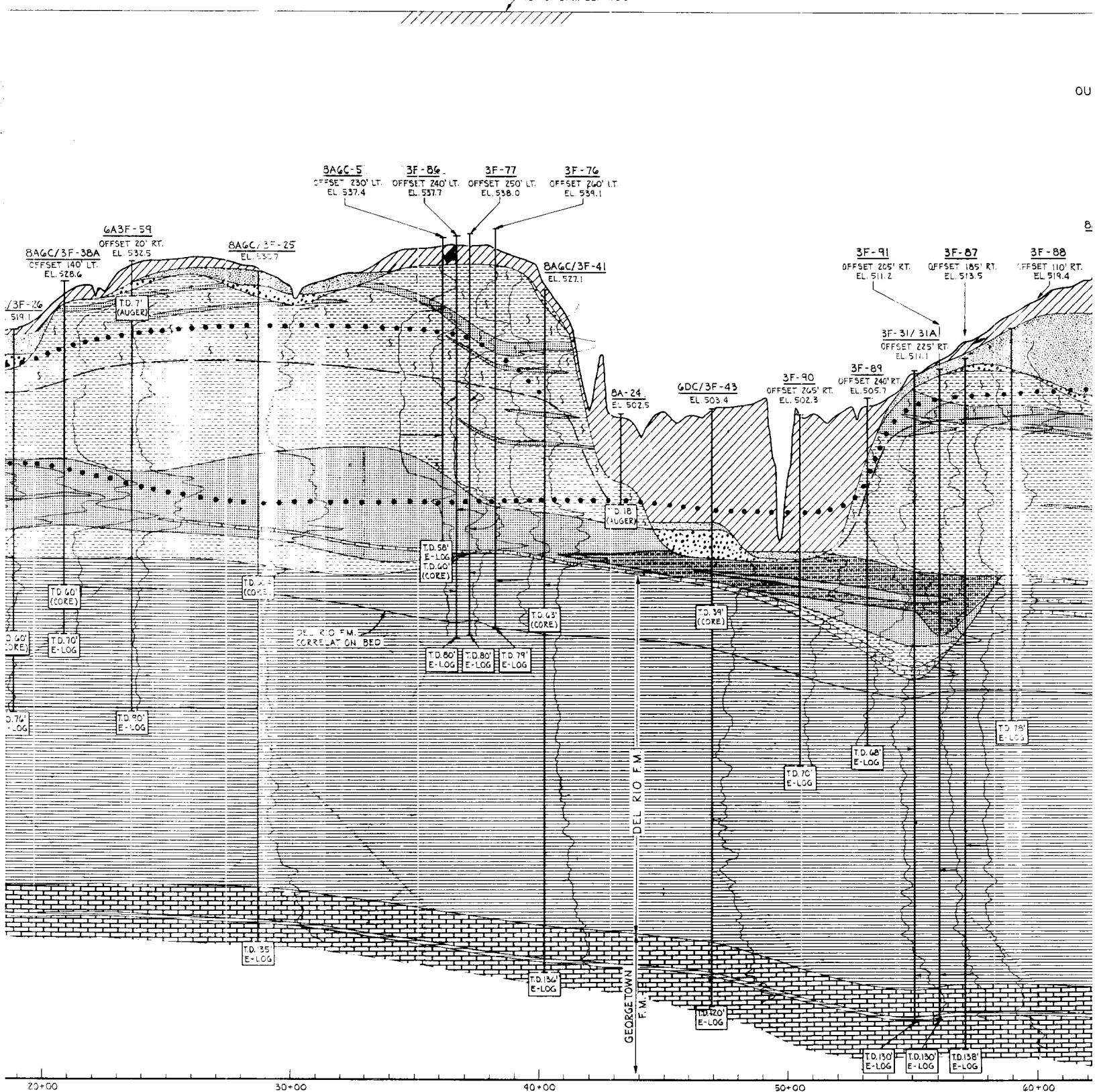
COMPLETION OF
 EMBANKMENT AND SPILLWAY
 AND CONSTRUCTION OF
 SERVICE BRIDGE, ACCESS ROADS, PROJECT BUILDING,
 VISITORS OVERLOOK, F.M. 310 AND
 OTHER APPURTENANCES

BORING LAYOUT

INV. NO. DACW63-80-B-0085 DATED: AUG. 1980
 CONTR. NO. DACW63-81-C-0035
 DRAWING NUMBER SHEET NO. 102 OF



TOP OF DAM EL. 512.5



SECTION LOOKING UPSTREAM

U.S. ARMY

DESIGNED BY: _____

DRAWN BY: _____

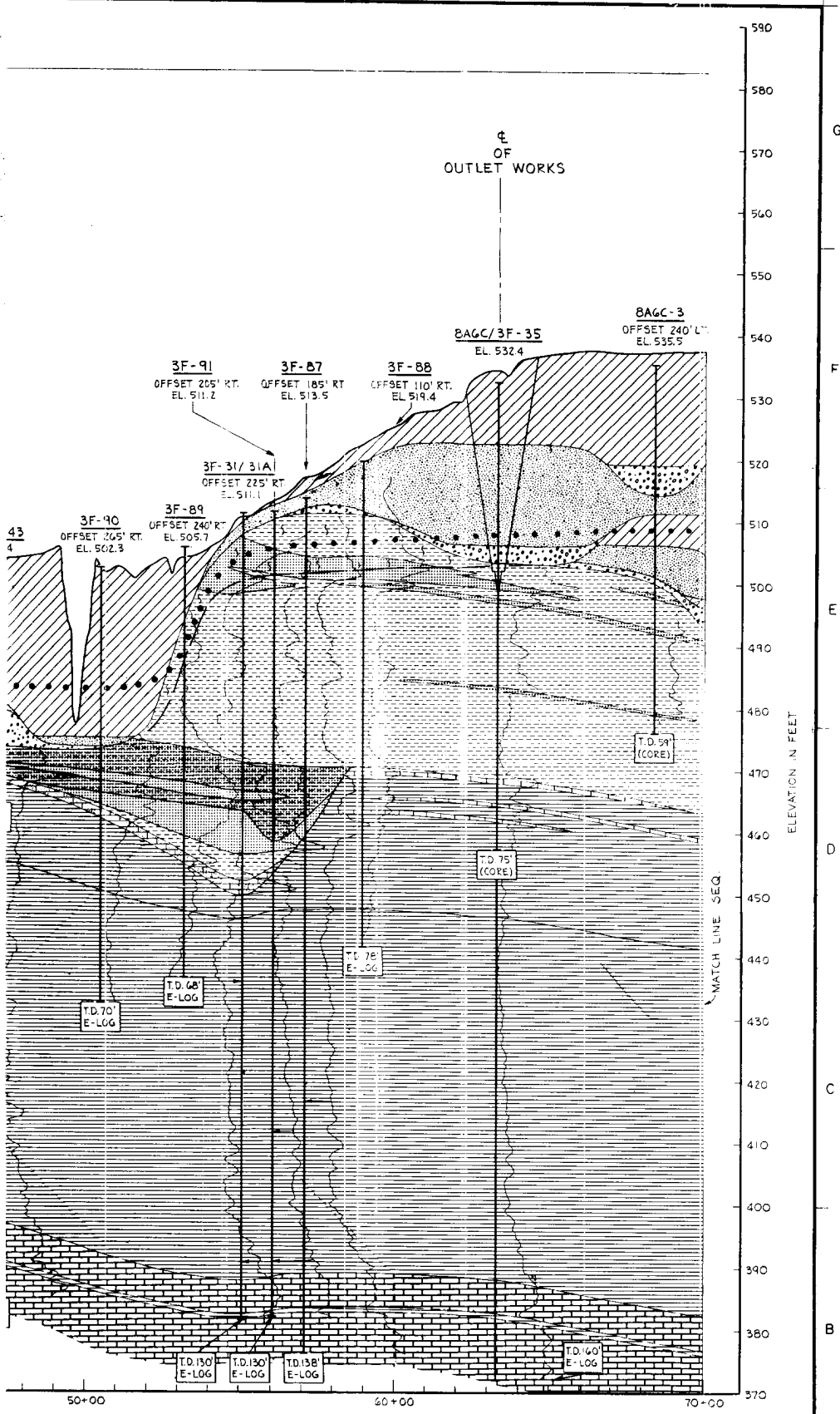
M.B.P.

CHECKED BY: _____

SUBMITTED BY: _____

ENGINEER: _____

NO.	DATE	DESCRIPTION OF REVISION

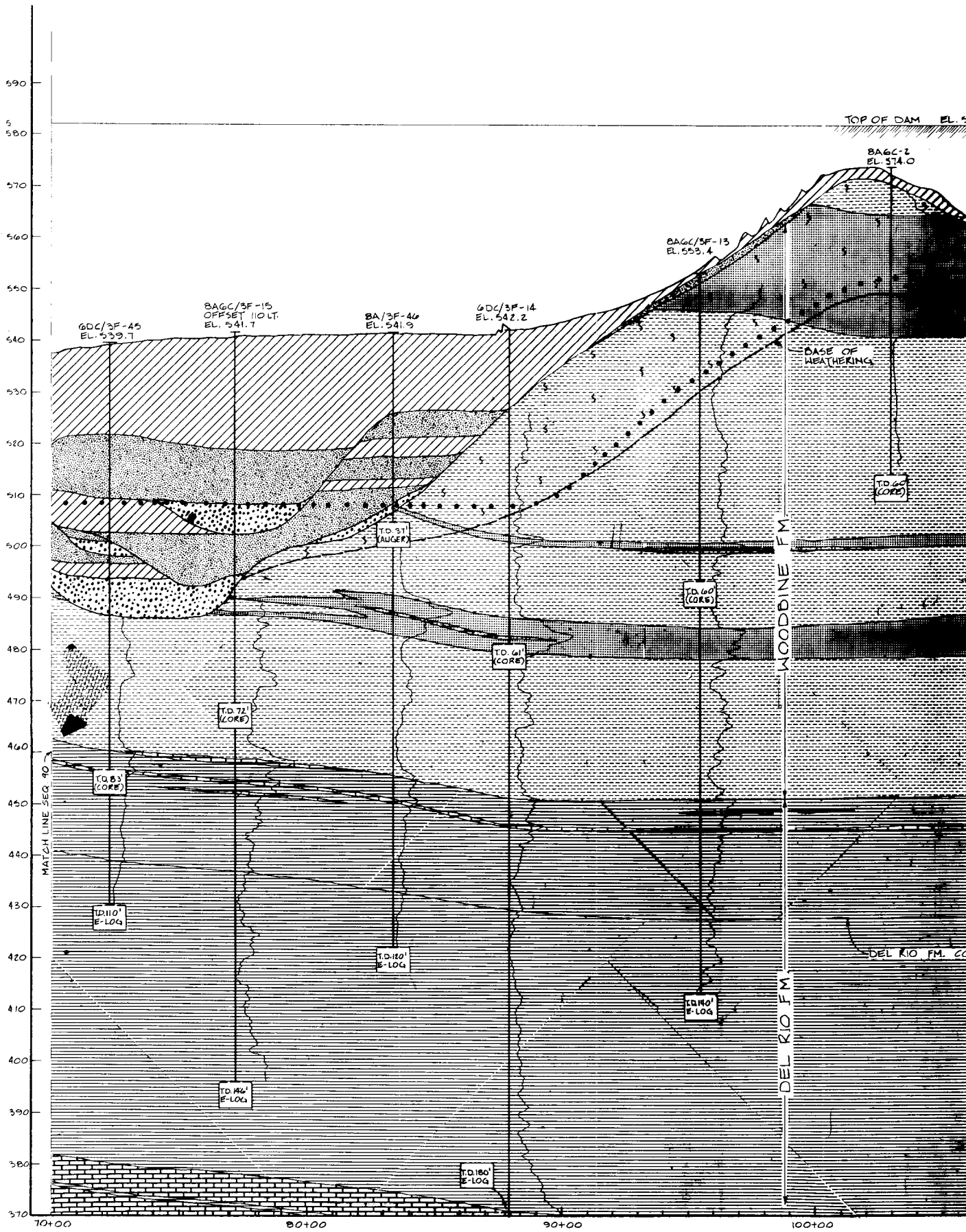


U.S. ARMY ENGINEER DISTRICT, FORT WORTH
CORPS OF ENGINEERS
FORT WORTH, TEXAS

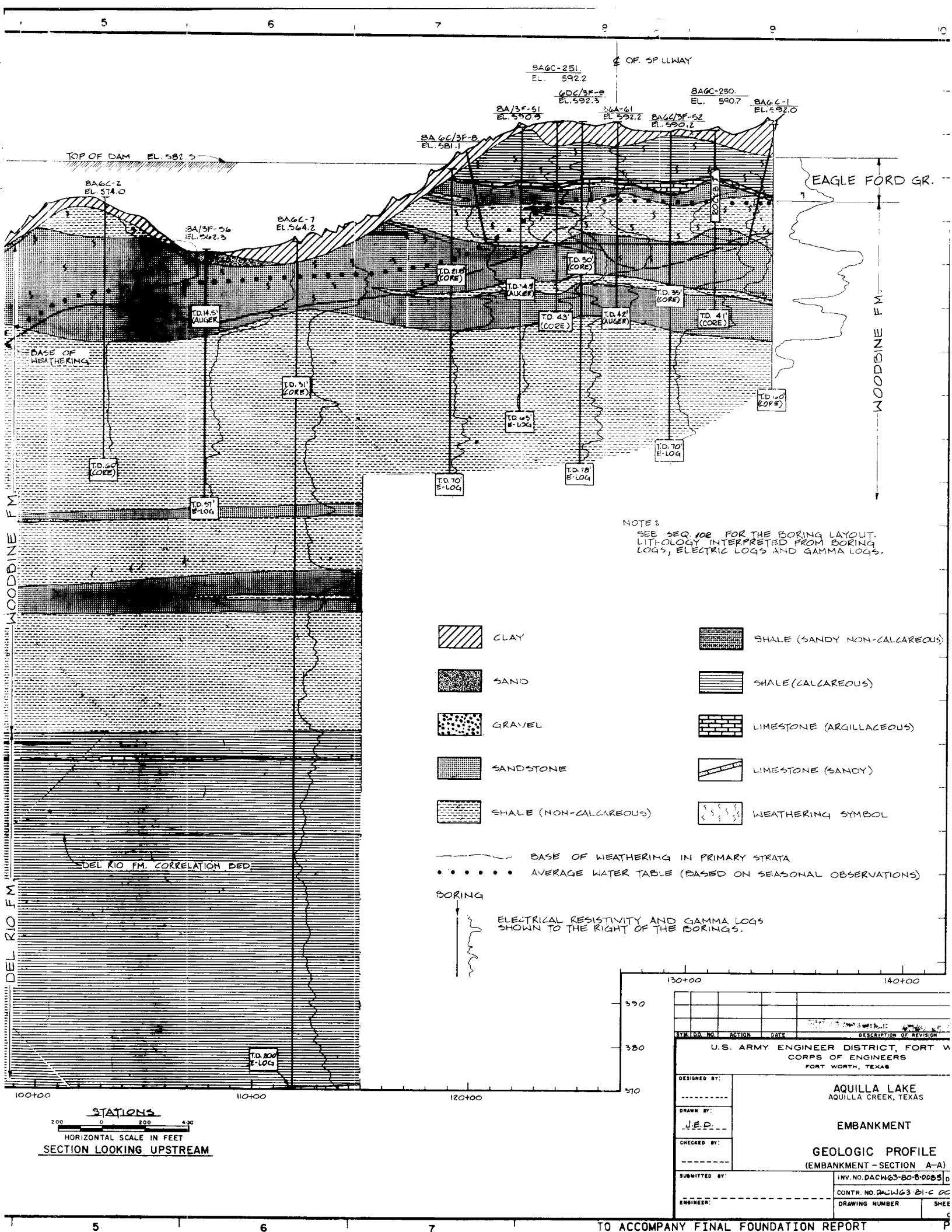
DESIGNED BY:	<p>AQUILLA LAKE AQUILLA CREEK, TEXAS</p> <p>EMBANKMENT</p> <p>GEOLOGIC PROFILE (EMBANKMENT - SECTION A-A)</p>
DRAWN BY:	
CHECKED BY:	
SUBMITTED BY:	
ENGINEER:	INV. NO. DACW63-80-B-0085 DATED: AUG. 1980 CONTR. NO. DACW63-81-C-0035 SEQUENCE NO. 103 DRAWING NUMBER SHEET NO. OF

CONTR. NO. DACW63-81-C-0035

G
F
E
D
C
B
A



STATIONS
 200 0 200
 HORIZONTAL SCALE IN
 SECTION LOOKING UP



STATIONS
 HORIZONTAL SCALE IN FEET
 SECTION LOOKING UPSTREAM

SYM	NO.	ACTION	DATE	DESCRIPTION OF REVISION

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

DESIGNED BY: _____
 DRAWN BY: J.E.D.
 CHECKED BY: _____

SUBMITTED BY: _____

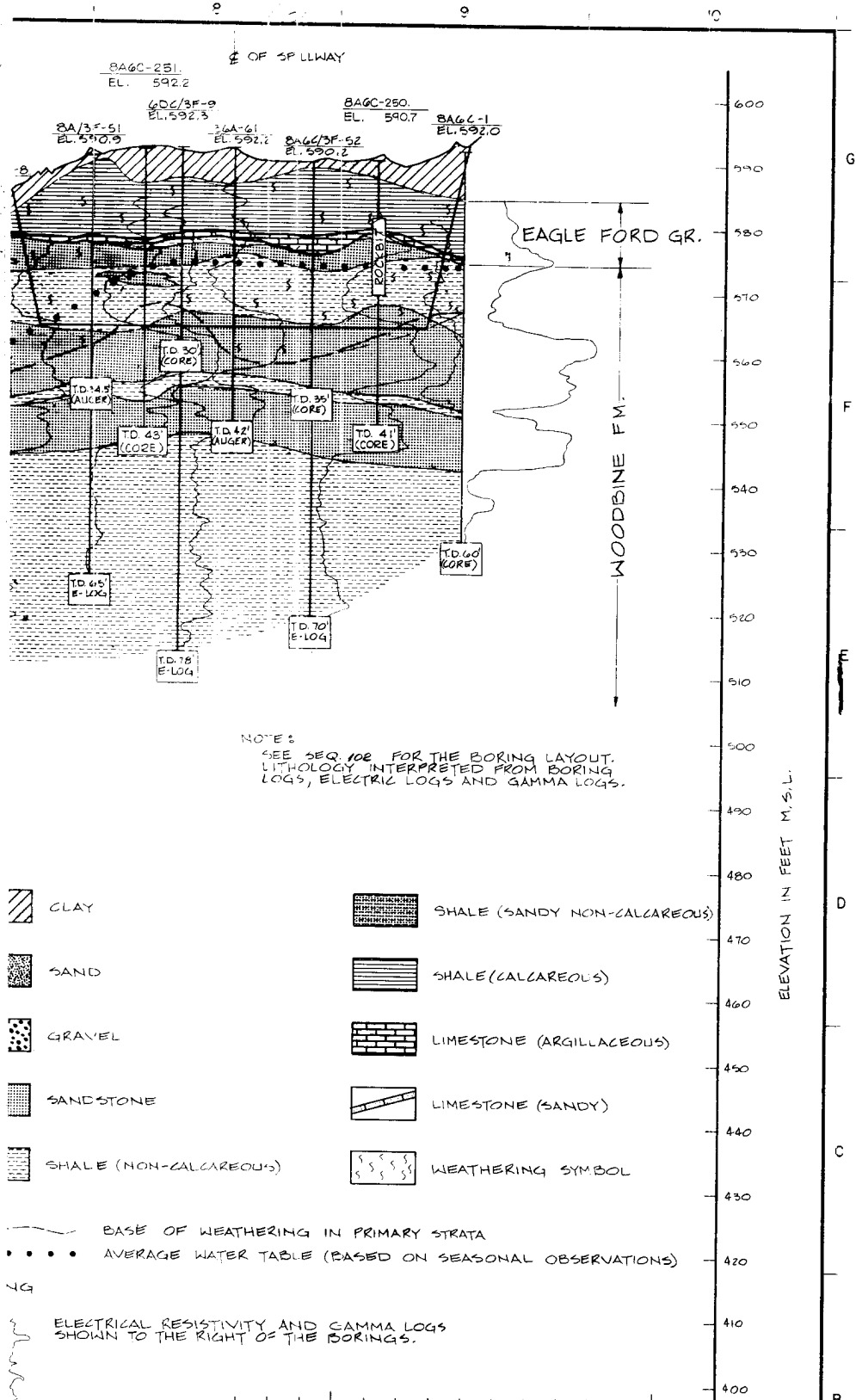
ENGINEER: _____

AQUILLA LAKE
 AQUILLA CREEK, TEXAS

EMBANKMENT

GEOLOGIC PROFILE
 (EMBANKMENT - SECTION A-A)

INV. NO. DACW63-80-8-0085
 CONTR. NO. DACW63-81-C-02
 DRAWING NUMBER _____ SHEET _____



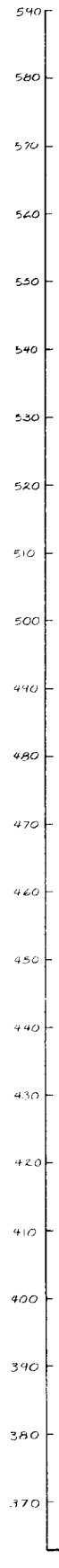
130+00	140+00
390	
380	
370	
360	
350	
340	
330	
320	
310	
300	

SYMBOL NO.	ACTION	DATE	DESCRIPTION OF REVISION
U.S. ARMY ENGINEER DISTRICT, FORT WORTH CORPS OF ENGINEERS FORT WORTH, TEXAS			
DESIGNED BY:	AQUILLA LAKE AQUILLA CREEK, TEXAS		
DRAWN BY:	J.E.P.		
CHECKED BY:	EMBANKMENT		
GEOLOGIC PROFILE (EMBANKMENT - SECTION A-A)			
SUBMITTED BY:	INV. NO. DACW63-80-B-0085	DATED: AUG 1980	
ENGINEER:	CONTR. NO. DACW63-81-C-0035	SEQUENCE NO.	104
	DRAWING NUMBER	SHEET NO.	OF

↑
OF
IMPERMUTMENT
STATION 12+62.25

G
F
E
D
C
B
A

ELEVATION IN FEET M.S.L.



HACKBERRY CREEK

WOODBRINE FM.
DEL RIO FM.

IMPERMUTMENT

HIGHWAY 310

BA-37
EL. 523.4

BAGC/3F-36
EL. 537.2

36A-60
EL. 538.5

BAGC/3F-44
EL. 538.0

BAGC/3F-66
OFFSET 25' W OF L
EL. 526.4

BAGC/3F-35
EL. 532.9

TD 25
(AUGER)

TD 545
(AUGER)

TD 53
(CORE)

TD 75
(CORE)

TD 75
(CORE)

TD 74
E-LOG

TD
(CORE)

TD 98
E-LOG

TD 100
E-LOG

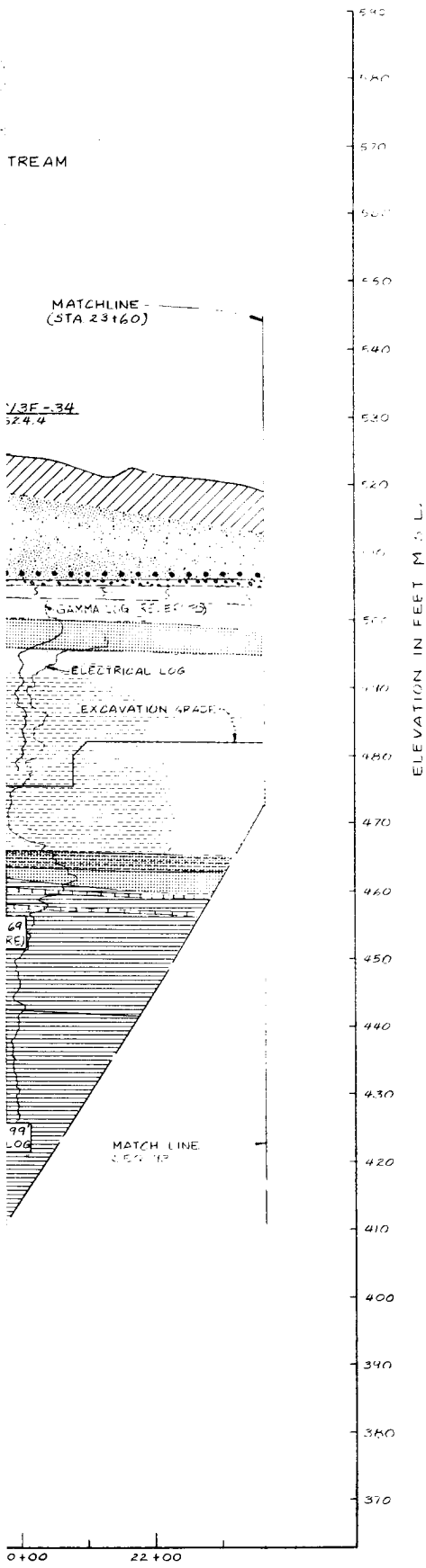
DEL RIO FM CORRELATION
MARKER BED

NOTE:
SEE SEQUENCE #11 FOR THE
BORING LAYOUT

0+00 2+00 4+00 6+00 8+00 10+00 12+00 14+00




STATIONS

SECTION LOOKING TOWARD LEFT ABUTMENT



LITHOLOGIC SYMBOLS:

ADDITIONAL LITHOLOGIC SYMBOLS APPLICABLE TO THIS SHEET. SEE SEQUENCE II FOR OTHER SYMBOLS USED

-  CLAY (NON-SANDY TO SLIGHTLY SANDY)
-  CLAY (SANDY TO VERY SANDY OR INTERBEDDED CLAY AND SAND)
-  SAND (SANDY OR INTERBEDDED SAND AND GRAVEL)

G
F
E
D
C
E

SYM. NO.	ACTION	DATE	DESCRIPTION OF REVISION
U.S. ARMY ENGINEER DISTRICT, FORT WORTH CORPS OF ENGINEERS FORT WORTH, TEXAS			
DESIGNED BY:	AQUILLA LAKE AQUILLA CREEK, TEXAS		
DRAWN BY:	N. E. N.		
CHECKED BY:	GEOLOGIC PROFILE		
	OUTLET WORKS SECTION B-B		
SUBMITTED BY:	INV. NO. DACW 163-76-1-0248	DATED: MARCH, 1976	
ENGINEER:	CONTR. NO. 163	SHEET NO. 92	SEQUENCE NO.
	DRAWING NUMBER	OF	

G

F

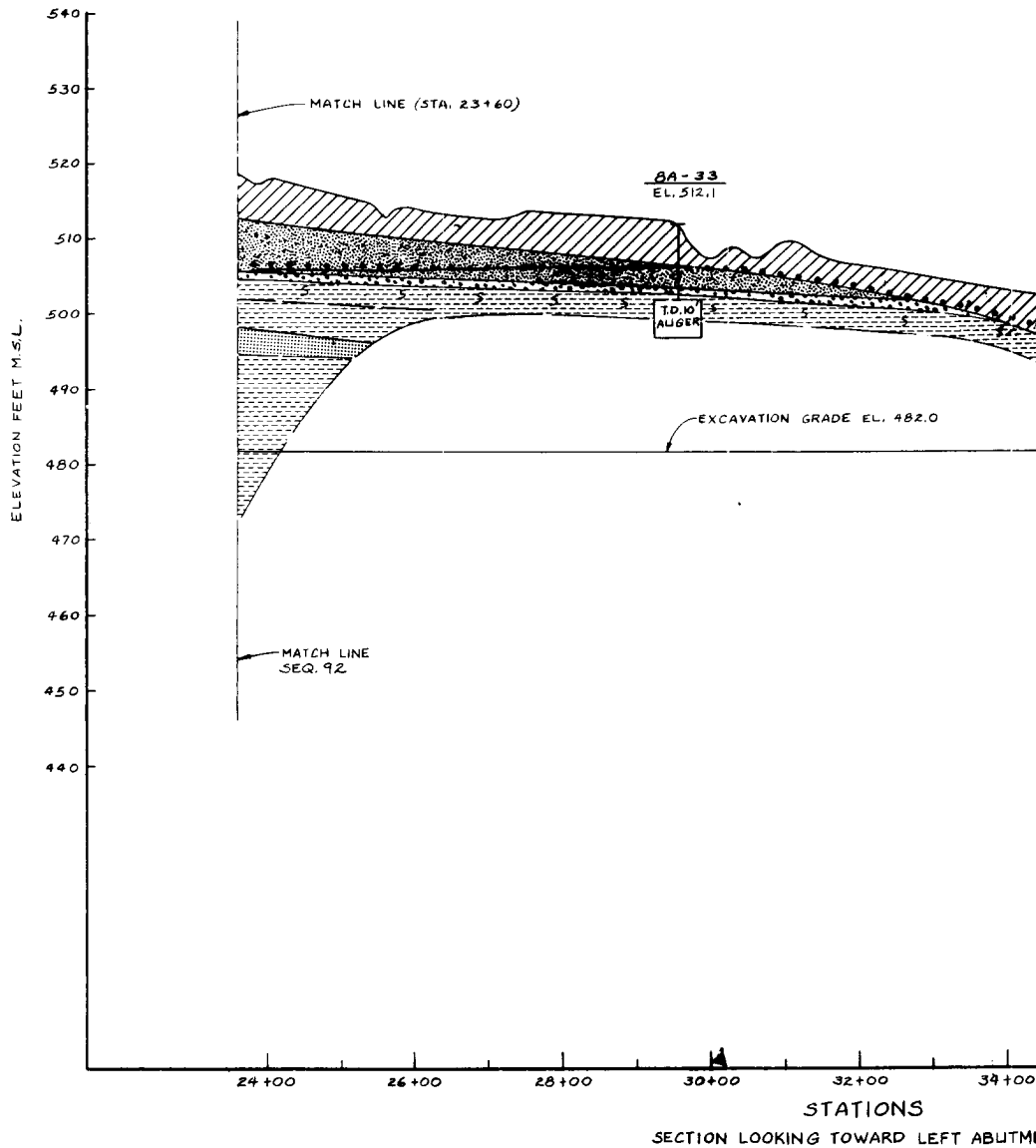
E

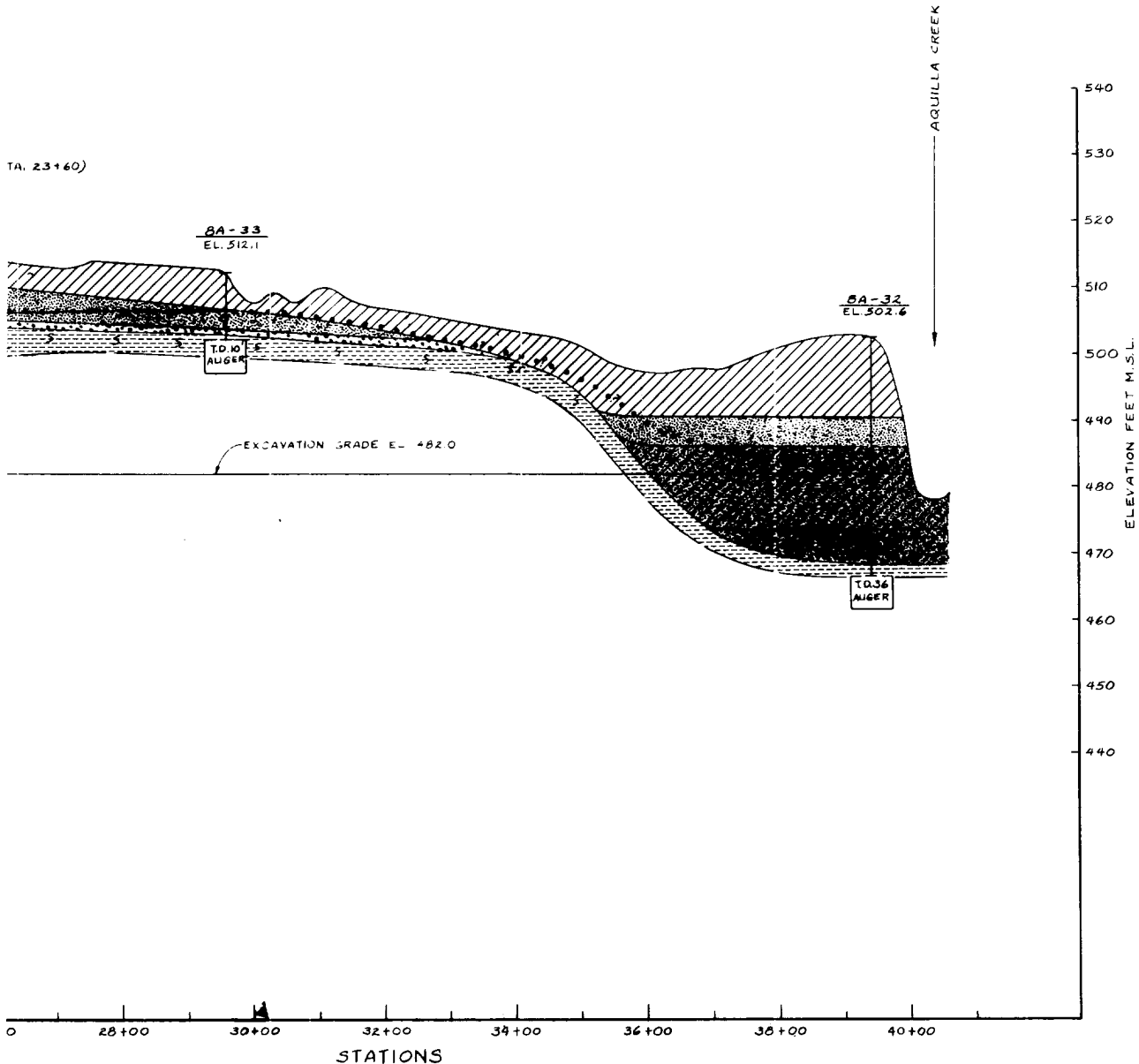
D




C

B

A





- LITH
- ADDITIONAL LITHOLOGICAL INFORMATION SEE SEQUENCE 91 FOR
-  CLAY (NON)
 -  CLAY (SANDY CL.)
 -  SAND (GRAVELLY)

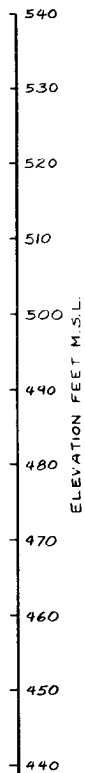
NOTE:
SEE SEQUENCE 89 FOR THE BORING LAYOUT

SYMBOL NO.	ACTION
U.S. ARMY	
DESIGNED BY:	
DRAWN BY:	N.L.M.
CHECKED BY:	
SUBMITTED BY:	
ENGINEER:	

AQUILLA CREEK



100



LITHOLOGIC SYMBOLS

ADDITIONAL LITHOLOGIC SYMBOLS APPLICABLE TO THIS SHEET
SEE SEQUENCE 91 FOR OTHER SYMBOLS USED.



CLAY (NON-SANDY TO SLIGHTLY SANDY).



CLAY (SANDY TO VERY SANDY, OR INTERBEDDED
CLAY AND SAND).



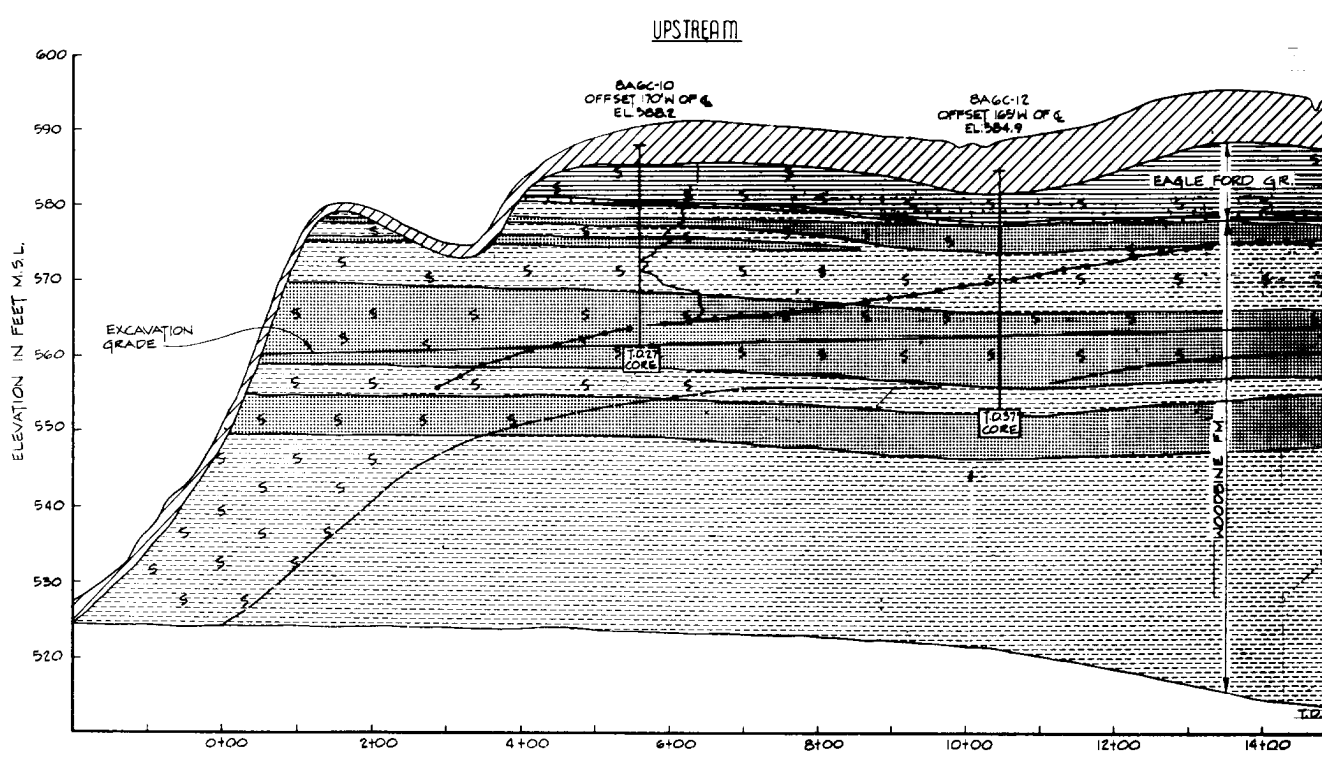
SAND (GRAVELLY OR INTERBEDDED SAND AND GRAVEL).

RECONSTRUCTION WAS BUILT

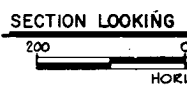
FOR THE BORING LAYOUT

SYMBOL NO.	ACTION	DATE	DESCRIPTION OF REVISION
U.S. ARMY ENGINEER DISTRICT, FORT WORTH CORPS OF ENGINEERS FORT WORTH, TEXAS			
DESIGNED BY:	AQUILLA LAKE AQUILLA CREEK, TEXAS GEOLOGIC PROFILE OUTLET WORKS SECTION B-B		
DRAWN BY:			
CHECKED BY:			
SUBMITTED BY:	INV. NO. DACW63-78-B-0042	DATED: MARCH, 1978	
ENGINEER:	CONTR. NO. ACW63-78-B-0103	SEQUENCE NO.	93
	DRAWING NUMBER	SHEET NO.	OF

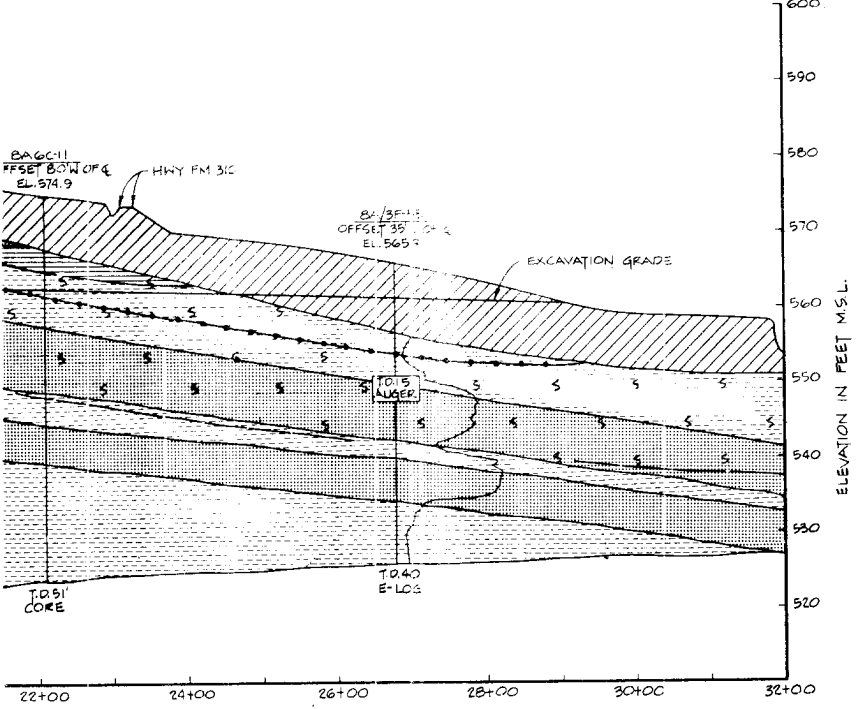
G
F
E
D
C
B
A



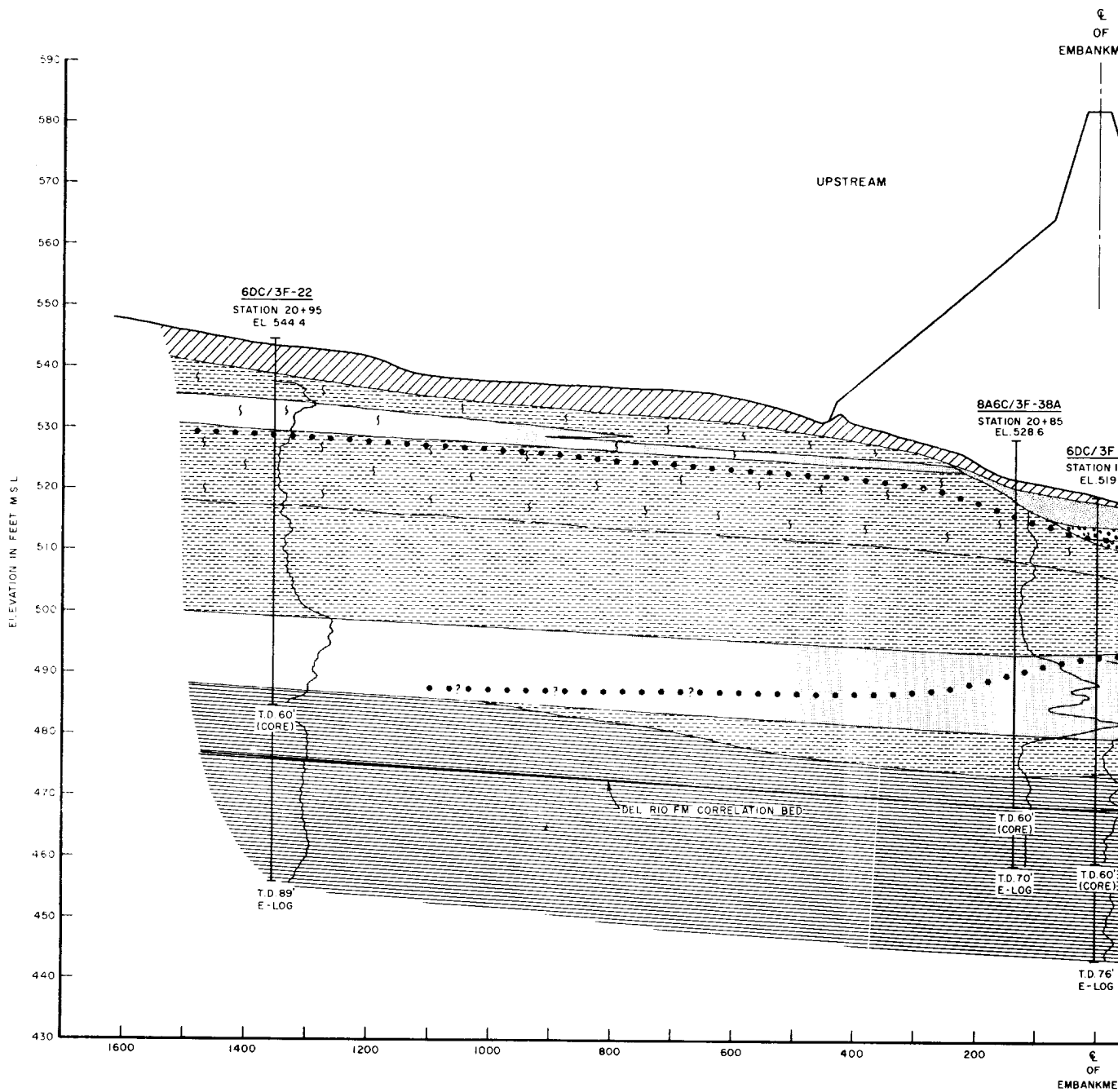
NOTES:
 1. THICKNESS OF OVERBURDEN PENETRATED BY
 OFFSET BORINGS BAGC-10 AND BAGC-12 IS
 ADJUSTED TO THE GROUND SURFACE IN THE
 LINE OF SECTION.
 2. SEE SEQ. 102 FOR THE BORING LAYOUT AND
 SEQ. 104 FOR LITHOLOGIC SYMBOLS.



STREAM

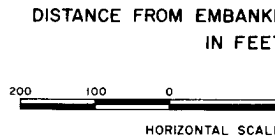


SYMBOL NO.	ACTION	DATE	DESCRIPTION OF REVISION
U.S. ARMY ENGINEER DISTRICT, FORT WORTH CORPS OF ENGINEERS FORT WORTH, TEXAS			
DESIGNED BY:	AQUILLA LAKE AQUILLA CREEK, TEXAS		
DRAWN BY:	SPILLWAY		
CHECKED BY:	GEOLOGIC PROFILE SECTION C-C		
SUBMITTED BY:	INV. NO. DACW43-80-B-0085	DATED: AUG. 1980	
ENGINEER:	CONTR. NO. DACW43-B1-C-0035	DRAWING NUMBER	SEQUENCE NO. 105
		SHEET NO. OF	

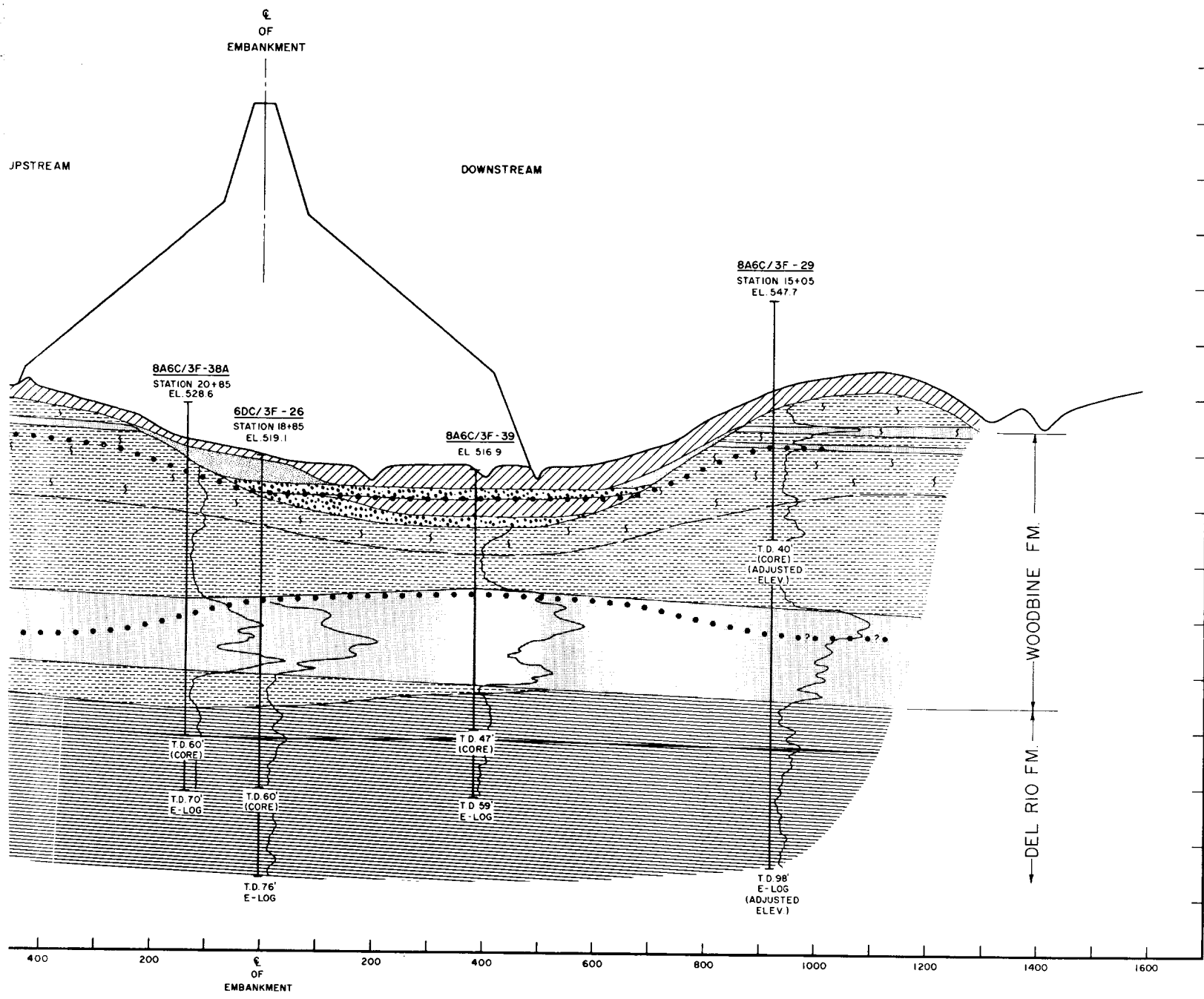


NOTES:

- (1) PRIMARY STRATA SHOWN AT BORING 8A6C/3F-29 ARE DISPLACED DOWNWARD 3 FEET FROM THEIR ELEVATION IN THE BORING AS COMPENSATION FOR FORMATIONAL DIP. OVERBURDEN THICKNESS, AS SHOWN AT THIS BORING, IS ESTIMATED.
- (2) PRIMARY STRATA IN BORING 6DC 3F-22 AND 8A6C 3F-38A ARE AT APPROXIMATELY THE SAME ELEVATION IN THE LINE OF SECTION.
- (3) SEE SEQ. 89 FOR THE BORING LAYOUT AND SEQ. 91 FOR LITHOLOGIC SYMBOLS.

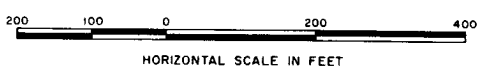


SECTION LOOKING TOWAR



400 200 0 200 400 600 800 1000 1200 1400 1600
 OF EMBANKMENT

DISTANCE FROM EMBANKMENT CENTERLINE
 IN FEET

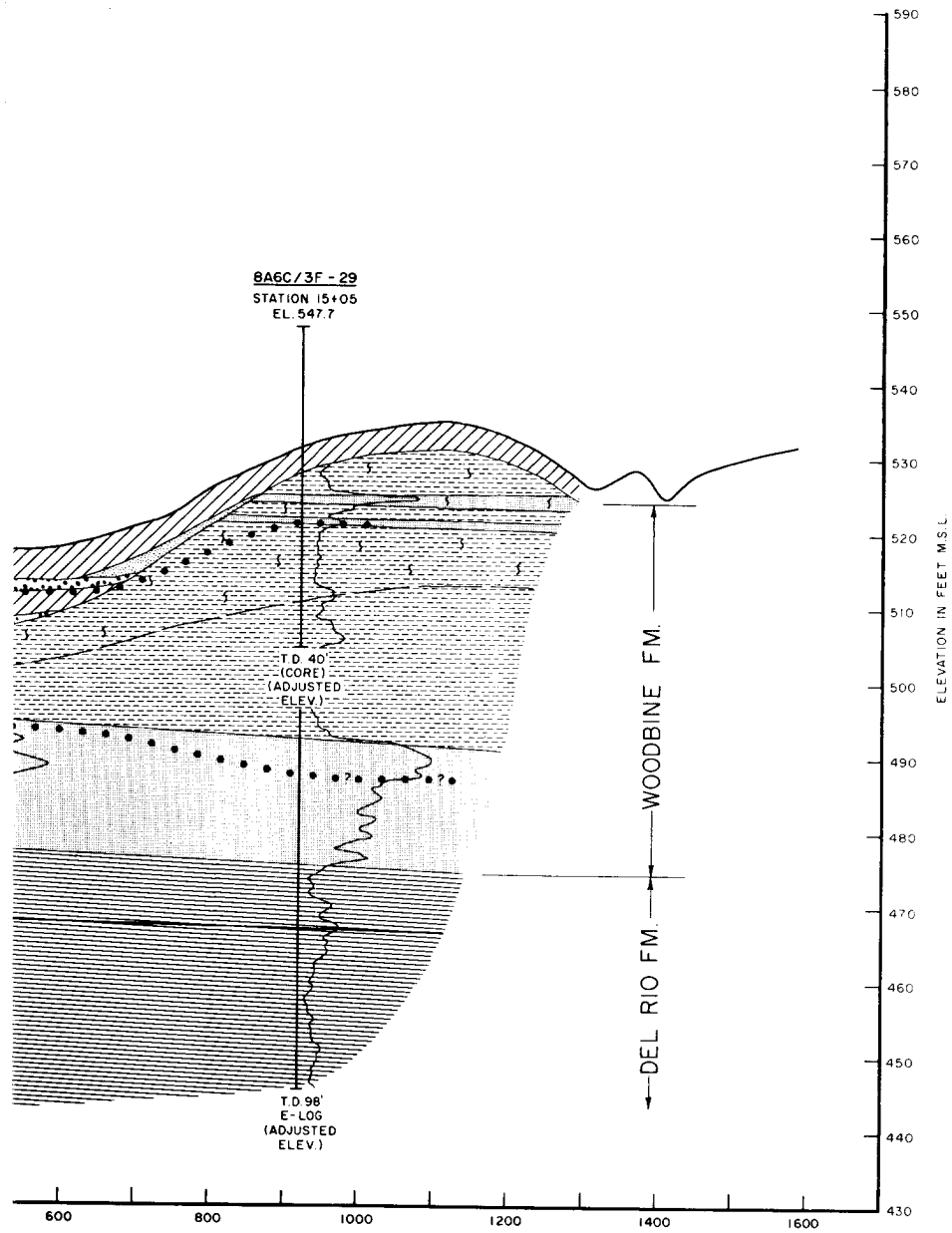


SECTION LOOKING TOWARD LEFT ABUTMENT

RECORD DRAWING - WORK AS BUILT

SYMBOL NO.	ACTION	DATE	DESCRIPTION OF REVISION
U.S. ARMY ENGINEER DISTRICT, FORT CORPS OF ENGINEERS FORT WORTH, TEXAS			
DESIGNED BY:	AQUILLA LAKE AQUILLA CREEK, TEXAS EMBANKMENT AND SPILL GEOLOGIC PROFILE SECTION ON STA. 19+10 D-D		
DRAWN BY:			
CHECKED BY:			
SUBMITTED BY:			
ENGINEER:	INV. NO. DACW63-78-8-004	CONTR. NO. MW63 78-C	
	DRAWING NUMBER		

TO ACCOMPANY FINAL FOUNDATION REPORT



RECORD DRAWING - WORK AS BUILT

SYM. NO.	ACTION	DATE	DESCRIPTION OF REVISION

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

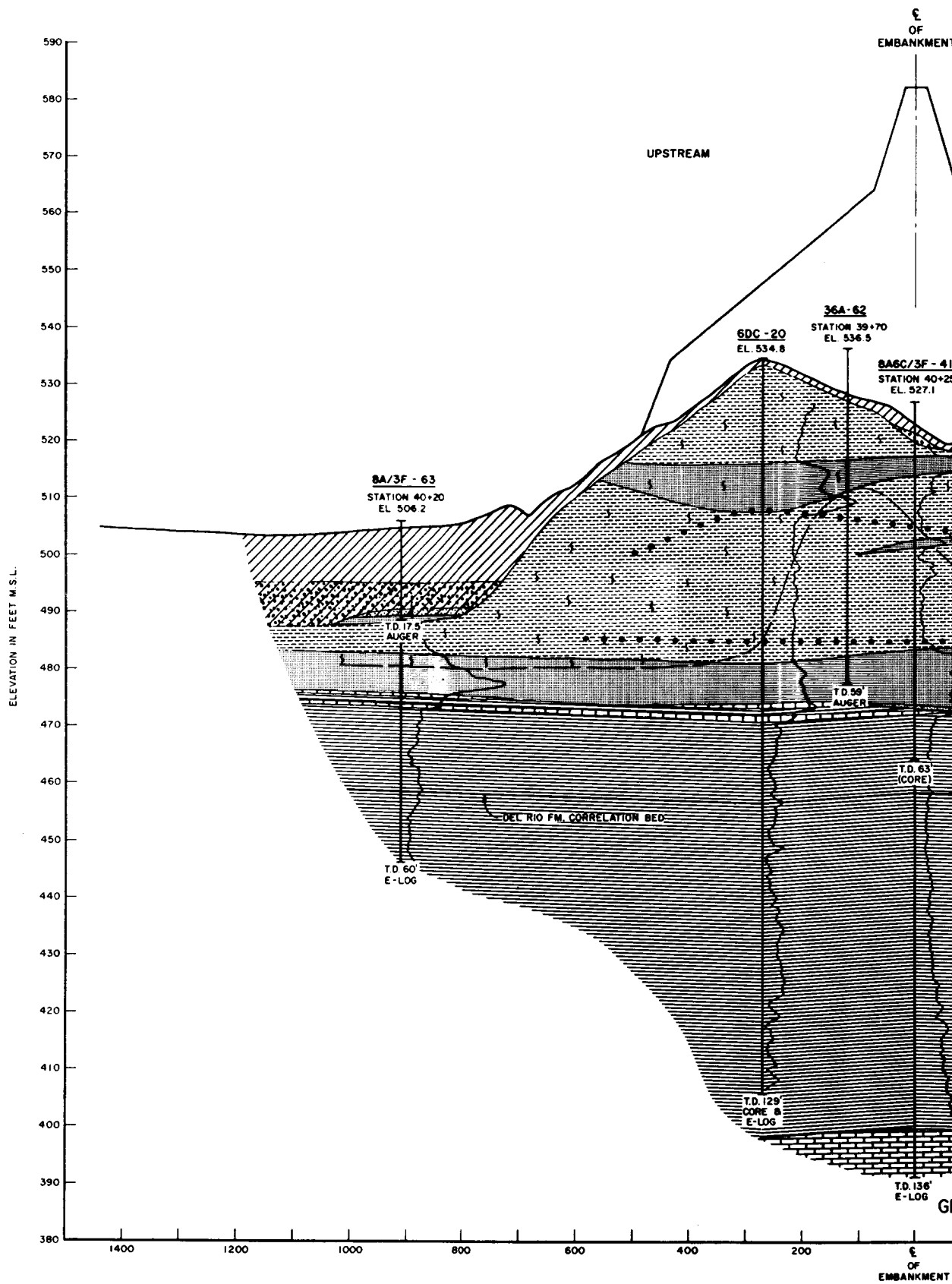
**AQUILLA LAKE
AQUILLA CREEK, TEXAS**

EMBANKMENT AND SPILLWAY

**GEOLOGIC PROFILE
SECTION ON STA. 19+10 D-D**

DESIGNED BY:	AQUILLA LAKE AQUILLA CREEK, TEXAS EMBANKMENT AND SPILLWAY GEOLOGIC PROFILE SECTION ON STA. 19+10 D-D	INV. NO. DACW63-78-8-0042	DATED: MARCH 1978
DRAWN BY:		CONTR. NO. MW63 78-C-0104	SEQUENCE NO. 95
CHECKED BY:		DRAWING NUMBER	SHEET NO. OF
SUBMITTED BY:			

CONTR. NO. MW63-78-C-0104



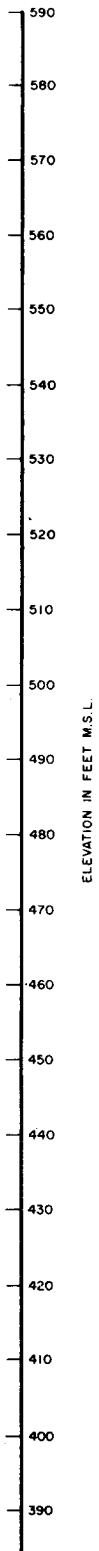
NOTES:

1. OVERBURDEN THICKNESS IS ESTIMATED FOR BORINGS AT ELEVATIONS ABOVE THE PROFILE.
2. DEPTH OF WEATHERING IN THE WOODBINE FORMATION IS ESTIMATED DOWNSTREAM FROM BORING 8AGC/3F-41.
3. SEE SEQ. 89 FOR THE BORING LAYOUT AND SEQ. 91 FOR LITHOLOGIC SYMBOLS.

DISTANCE FROM EMBANKMENT
IN FEET



SECTION LOOKING TOWARD



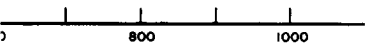
58
0+30
2

8A/3F-64
EL 509.0

T.D. 10'
AUGER

T.D. 59'
GAMMA LOG
(REVERSED)

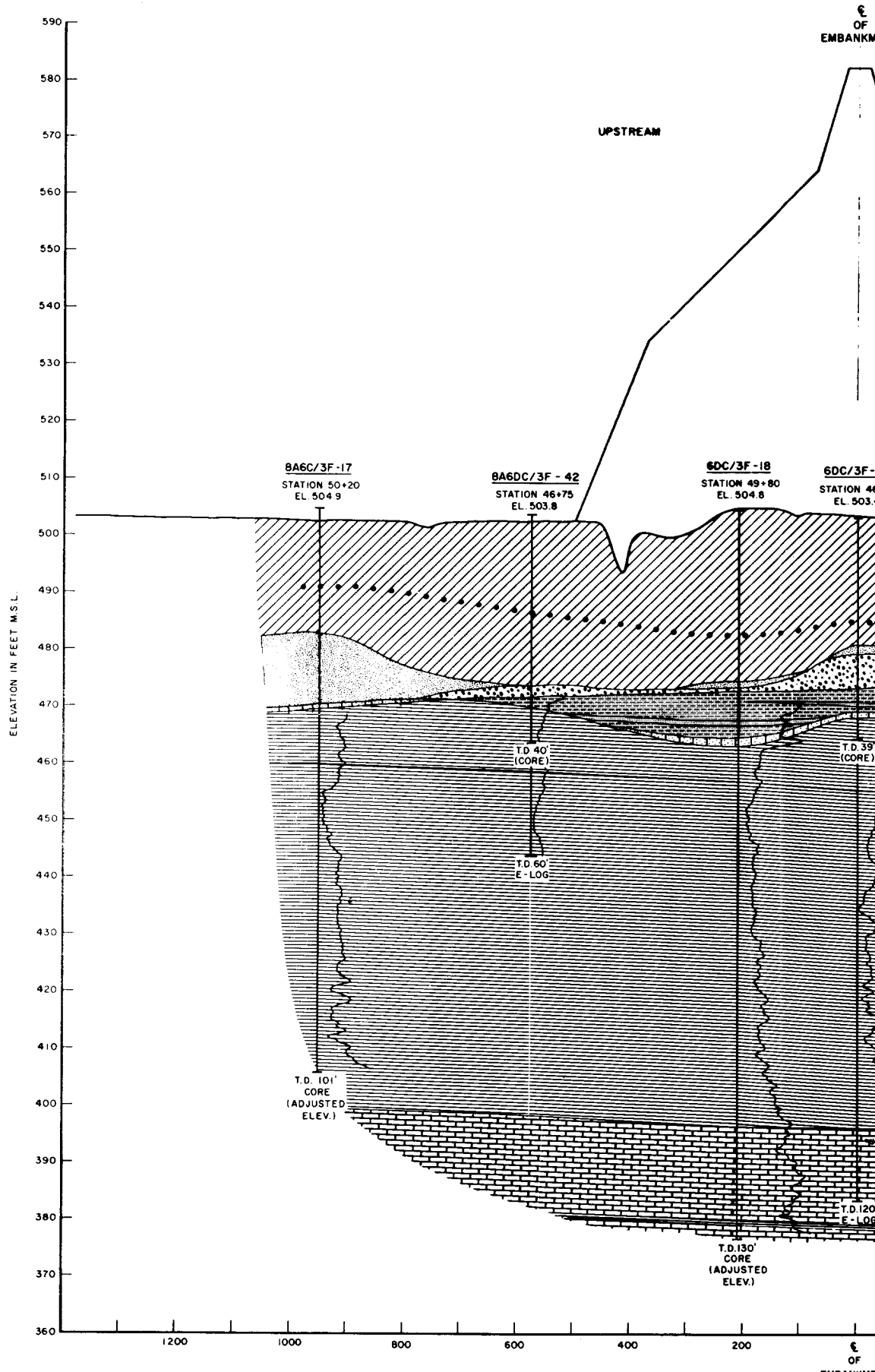
3'
6



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:	AQUILLA LAKE AQUILLA CREEK, TEXAS EMBANKMENT AND SPILLWAY GEOLOGIC PROFILE SECTION ON STA. 40+60E-E		
DRAWN BY:			
CHECKED BY:			
SUBMITTED BY:			
ENGINEER:	INV. NO. DACW63-78-5-0042	DATED: MARCH, 1978	
	CONTR. NO. DAWES 78-C-0104	SEQUENCE NO.	
	DRAWING NUMBER	SHEET NO.	96
		OF	

DRAWING 78-C-0104



NOTES

1. PRIMARY STRATA SHOWN AT BORINGS 8A6C/3F-17 AND 6DC/3F-18 ARE DISPLACED UPWARD 2 FEET AND THOSE SHOWN AT BORING 8A6C-19 ARE DISPLACED UPWARD 3 FEET AS COMPENSATION FOR FORMATIONAL DIP.
2. SEE SEQ. 89 FOR THE BORING LAYOUT AND SEQ. 91 FOR LITHOLOGIC SYMBOLS.

DISTANCE FROM EMBANKMENT
IN FEET

SECTION LOOKING TOWARD

ℰ
OF
EMBANKMENT

UPSTREAM

DOWNSTREAM

C/3F-17
STATION 50+20
EL. 504.9

8A6DC/3F-42
STATION 46+75
EL. 503.8

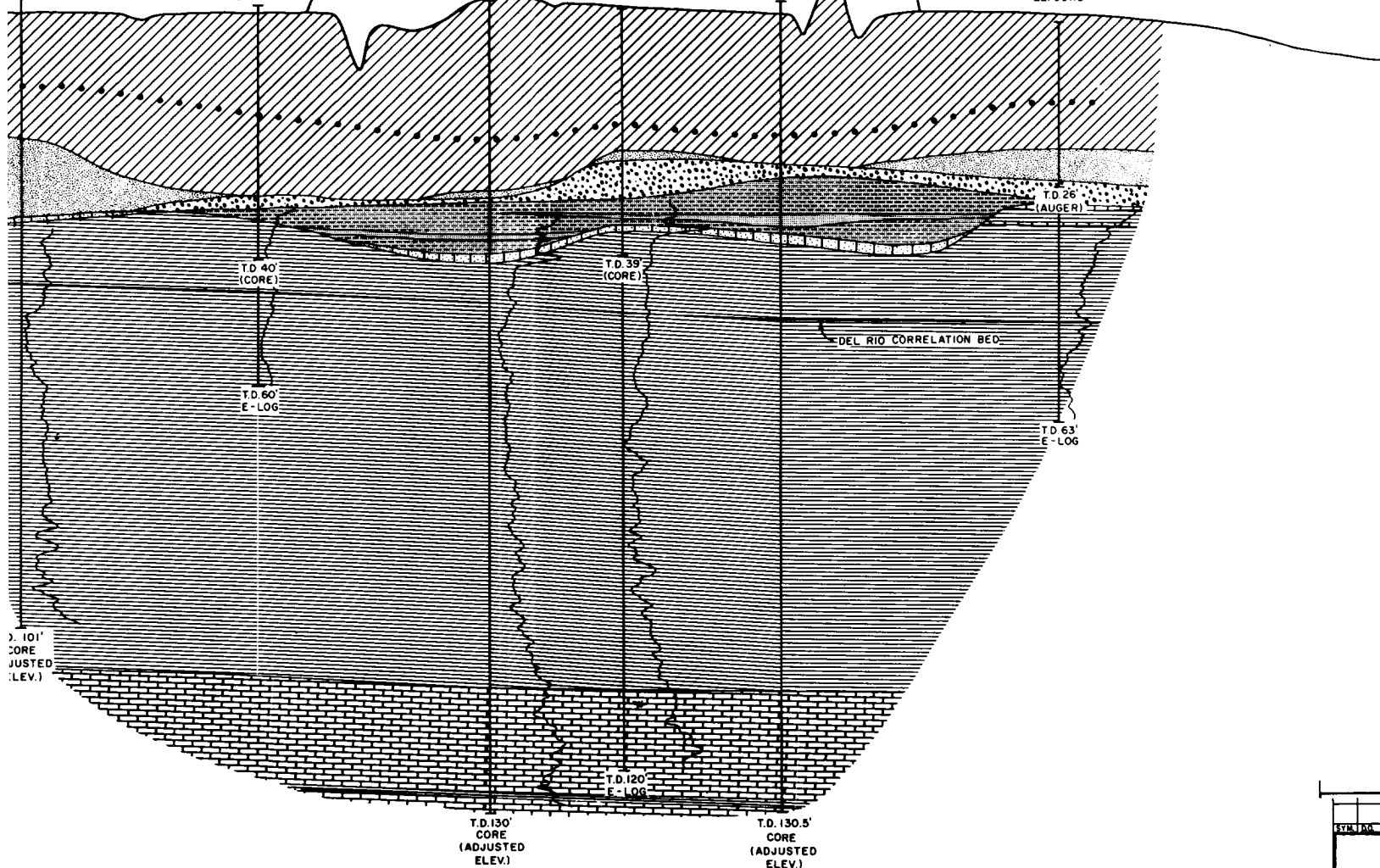
6DC/3F-18
STATION 49+80
EL. 504.8

6DC/3F-43
STATION 46+90
EL. 503.4

8A6C-19
STATION 50+00
EL. 504.5

8A/3F-57
STATION 47+60
EL. 501.3

HIGHWAY 310



101' CORE
(ADJUSTED
ELEV.)

T.D. 40'
(CORE)

T.D. 60'
E-LOG

T.D. 39'
(CORE)

T.D. 120'
E-LOG

T.D. 130'
CORE
(ADJUSTED
ELEV.)

T.D. 130.5'
CORE
(ADJUSTED
ELEV.)

T.D. 63'
E-LOG

T.D. 26'
(AUGER)

DEL RIO CORRELATION BED

800

600

400

200

ℰ

OF
EMBANKMENT

200

400

600

800

1000

C/3F-17 AND 6DC/3F-18
AS SHOWN AT BORING
AS COMPENSATION FOR

DISTANCE FROM EMBANKMENT CENTERLINE
IN FEET

SECTION LOOKING TOWARD LEFT ABUTMENT

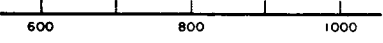
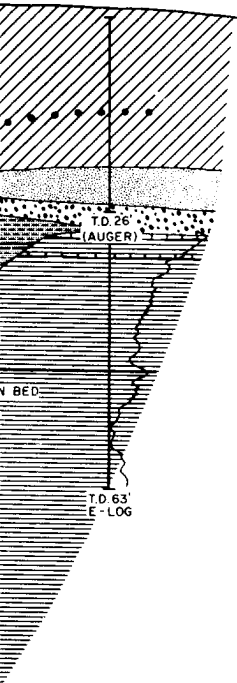
RECORD DRAWING - WORK AS BUILT

DESIGNED
DRAWN
CHECKED
SUBMITTED
ENGINEER

TO ACCOMPANY



8A/3F-57
STATION 47+60
EL. 501.3



SYMBOL NO.	ACTION	DATE	DESCRIPTION OF REVISION
U.S. ARMY ENGINEER DISTRICT, FORT WORTH CORPS OF ENGINEERS FORT WORTH, TEXAS			
DESIGNED BY:	AQUILLA LAKE AQUILLA CREEK, TEXAS EMBANKMENT AND SPILLWAY GEOLOGIC PROFILE SECTION ON STA. 47+20 F-F		
DRAWN BY:			
CHECKED BY:			
SUBMITTED BY:	INV. NO. DACW63-78-B-0042	DATED: MARCH 1978	
ENGINEER:	CONTR. NO. DACW63 78-C-0104	SEQUENCE NO.	
	DRAWING NUMBER	SHEET NO.	97
		OF	

RECORD DRAWING - WORK AS BUILT

F

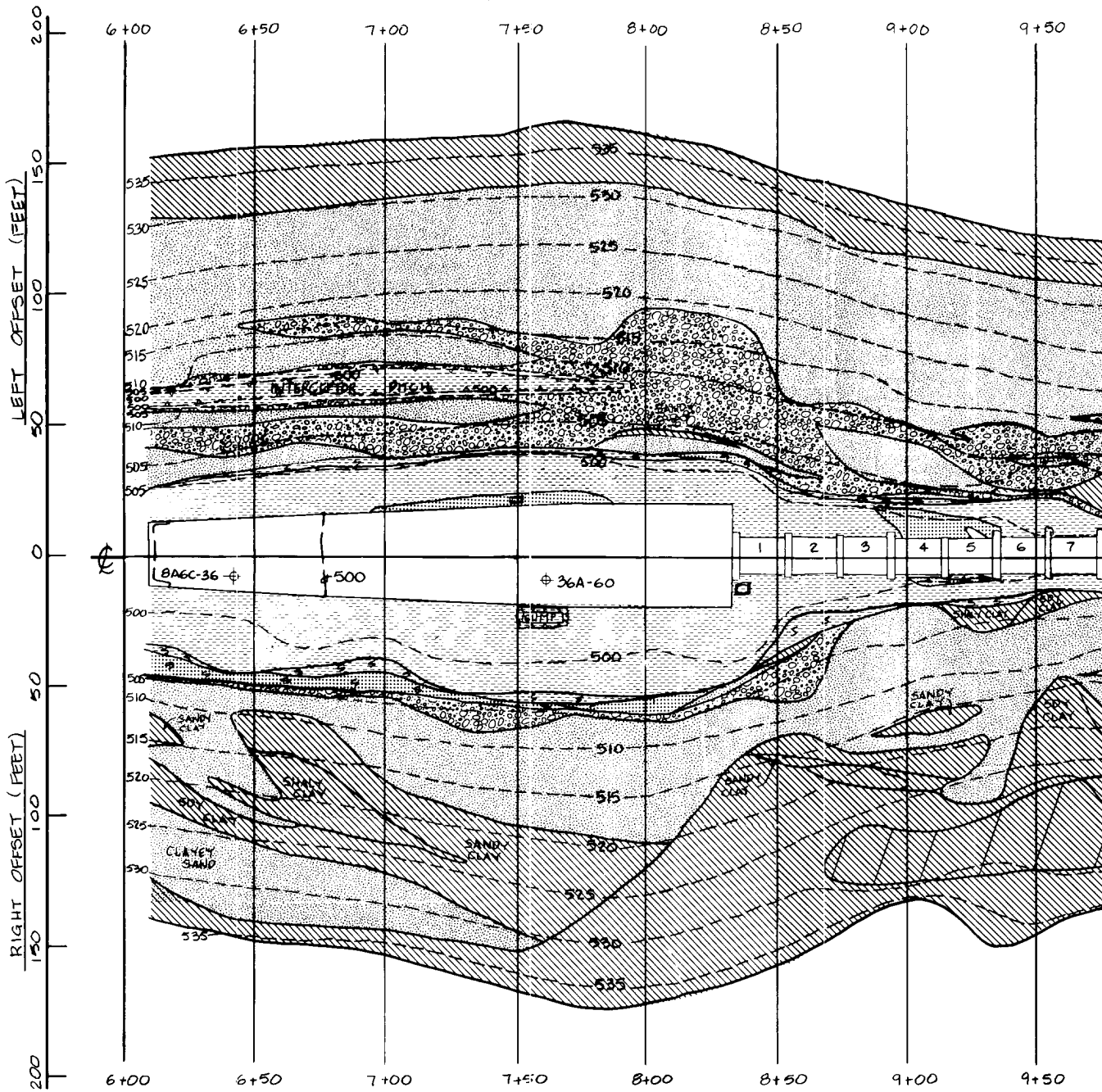
E

D

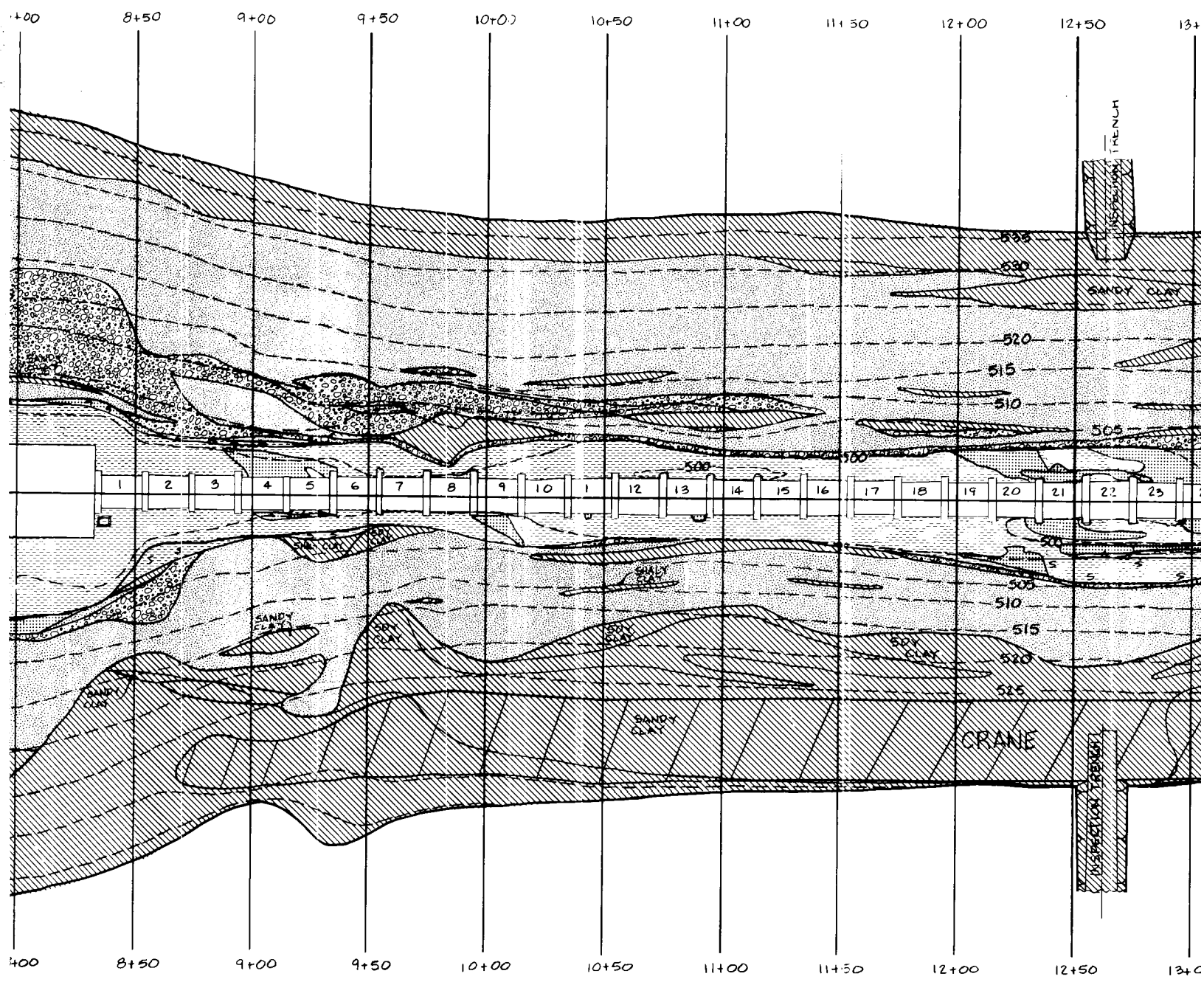
C

B

A



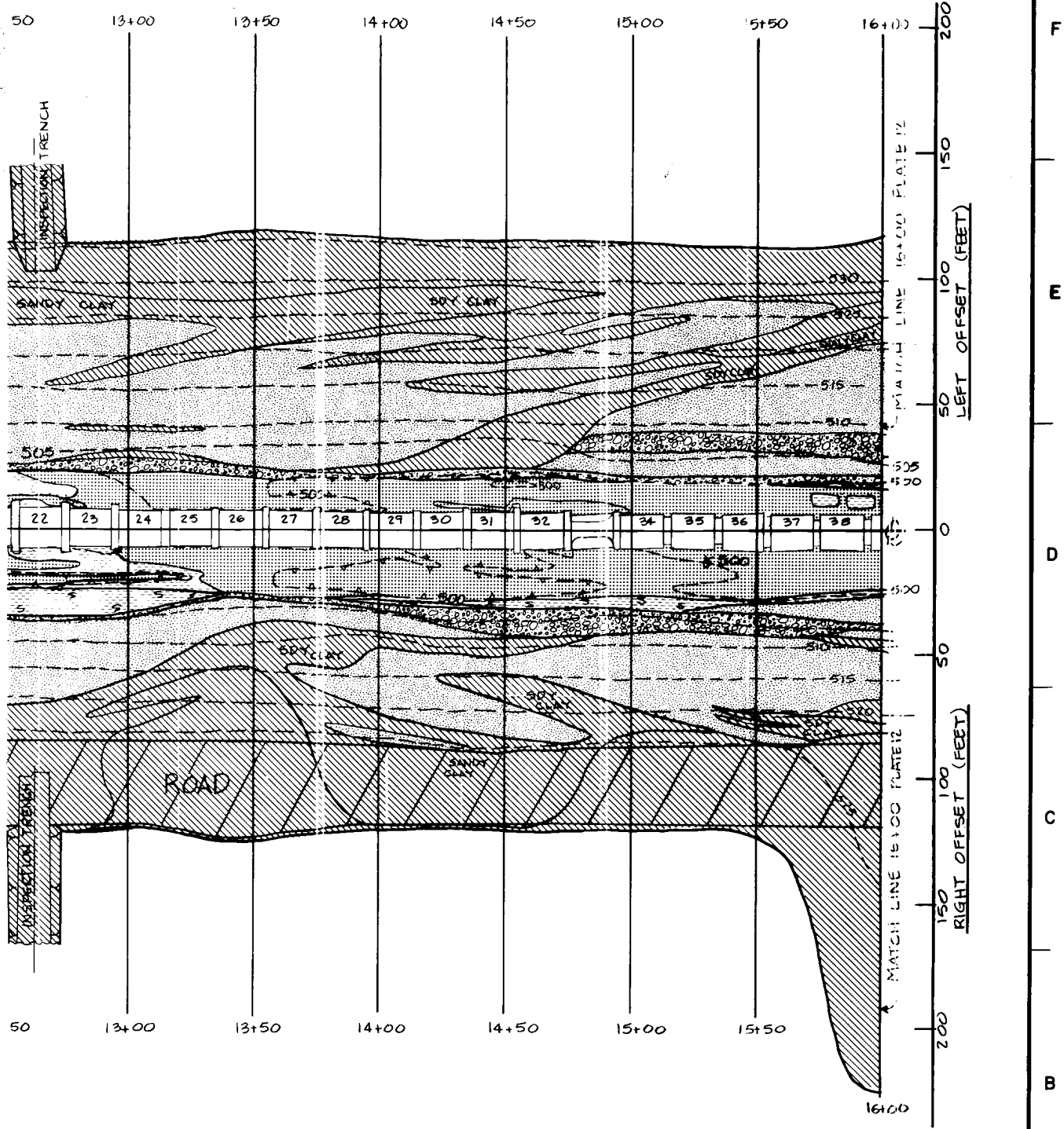
POLYIMAGE 033



MAP SYMBOLS :

- STEEPLY DIP
- CLAY, SAND
- SAND, incl.
- GRAVEL
- SANDSTONE
- SHALE, WE.
- SHALE, UNK.

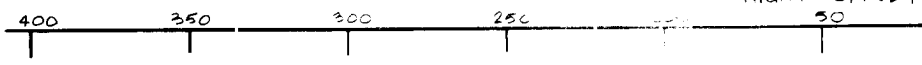
NOTE: THIN, RARE, CLAY-IRONST



- SYMBOLS:**
- ▲ STEEPLY DIPPING FRACTURE WITH SANDSTONE FILLING.
 - ▨ CLAY, SANDY CLAY & SHALT CLAY
 - ▩ SAND, incl. CLAYEY SAND
 - ▧ GRAVEL
 - ▩ SANDSTONE
 - ▨ SHALE, WEATHERED
 - ▨ SHALE, UNWEATHERED
 - THIN, RARE, LOCAL LAYERS OF CONCRETIONARY CLAY-IRONSTONE ARE NOT SHOWN HERE.

SYMBOL NO.	ACTION	DATE	DESCRIPTION OF REVISION
DESIGNED BY: <u>G. RUEPE</u>			U.S. ARMY ENGINEER (DISTRICT, FORT WORTH CORPS OF ENGINEERS FORT WORTH, TEXAS AQUILLA LAKE AQUILLA AND HACKBERRY CREEKS, TEXAS FINAL FOUNDATION REPORT OUTLET WORKS GEOLOGY AND EXCAVATION STA. 6+10.25 TO STA. 16+00.00
DRAWN BY: <u>C. KIRBY</u>			
REVIEWED BY: <u>R. BEHM</u>			
SUBMITTED BY: <u>ROBERT BEHM</u> ENGINEER			
INVIATION NO.		DATE:	
CONTRACT NO.		SEQUENCE NO.	
DRAWING NUMBER		SHEET NO. OF	

RIGHT OFFSET



F

MATCH LINE 16+00 PLATE 11

16+00

16+50

E

17+00

17+50

D

18+00

18+50

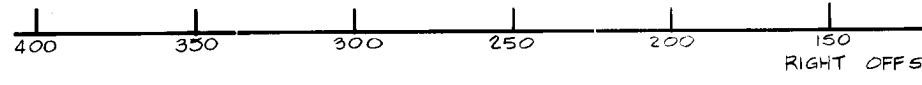
C

19+00

19+50

B

20+00

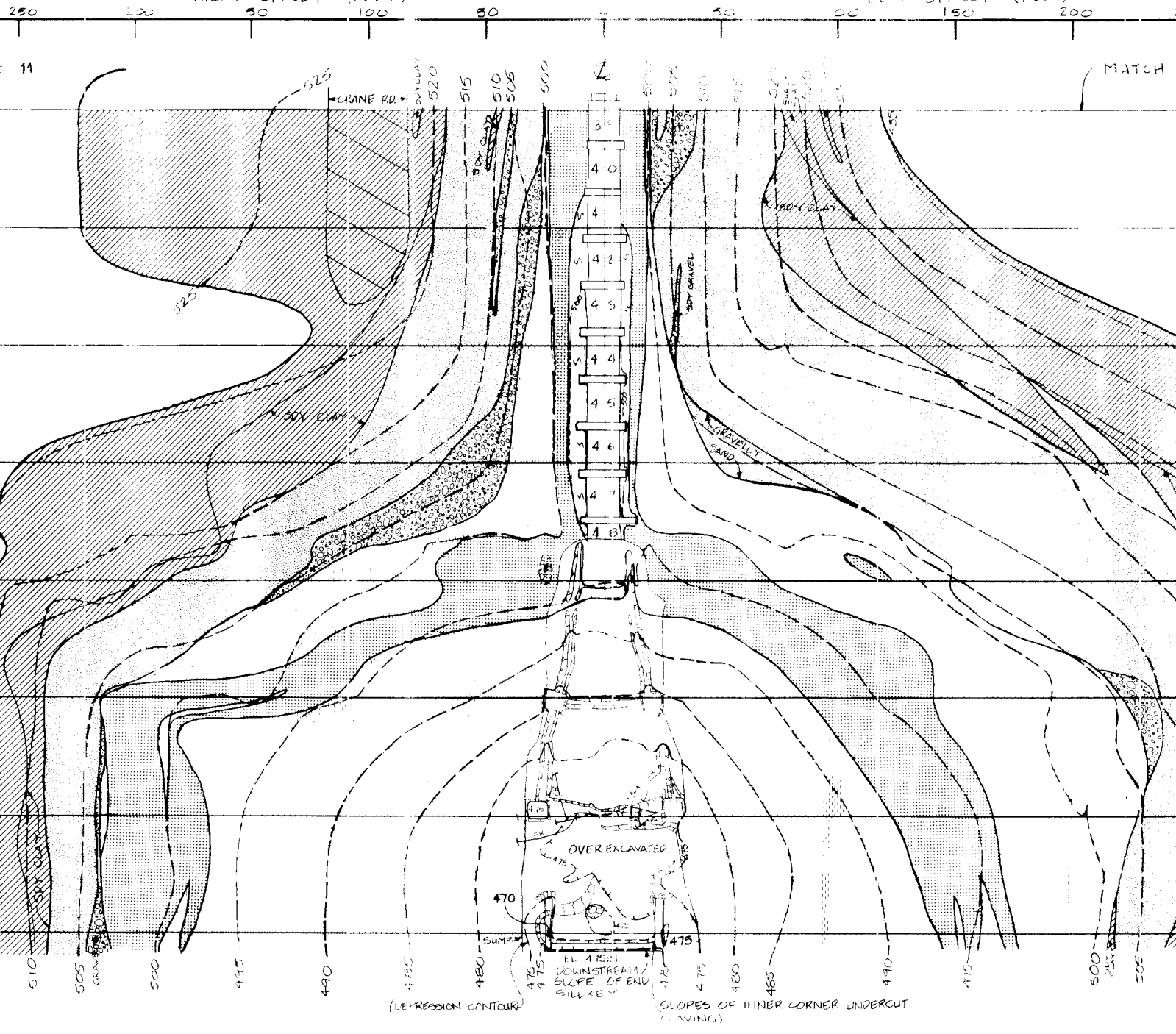


A

P. POLYTRACER 033

RIGHT OFFSET (FEET)

LEFT OFFSET (FEET)



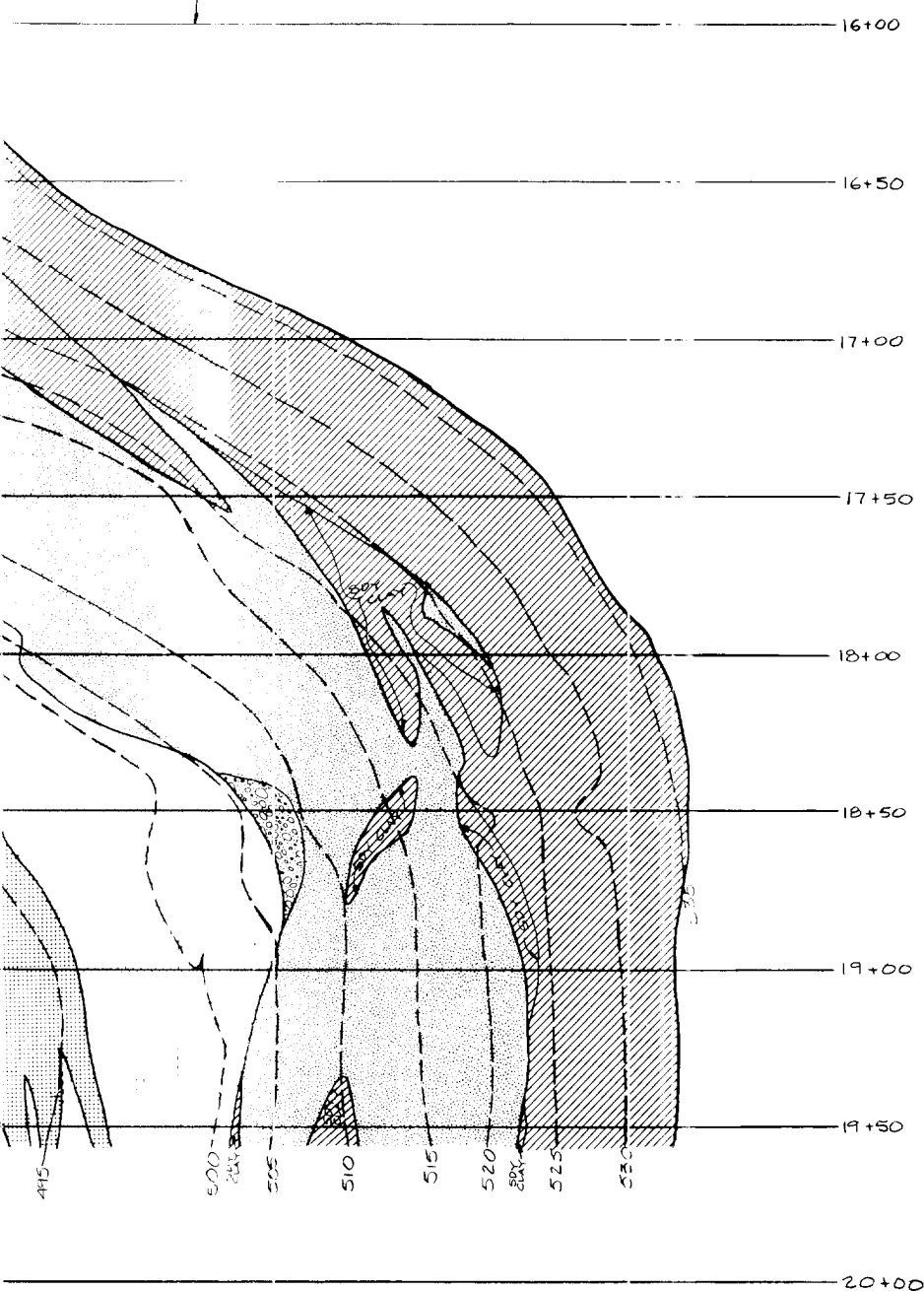
LEFT OFFSET (FEET)

MAP SYMBOL

- ←FR→ STEEPLY DIP WITH SANDSTONE
- [Diagonal Hatching] CLAY, DRY CLAY
- [Stippled] SAND, incl. C
- [Cross-hatched] GRAVEL
- [Dotted] SANDSTONE
- [Horizontal lines with circles] SHALE, WEATH
- [Horizontal lines] SHALE, UNWEA

OFFSET (FEET)
150 200 250 300 350 400

MATCH LINE 16+00 PLATE 11

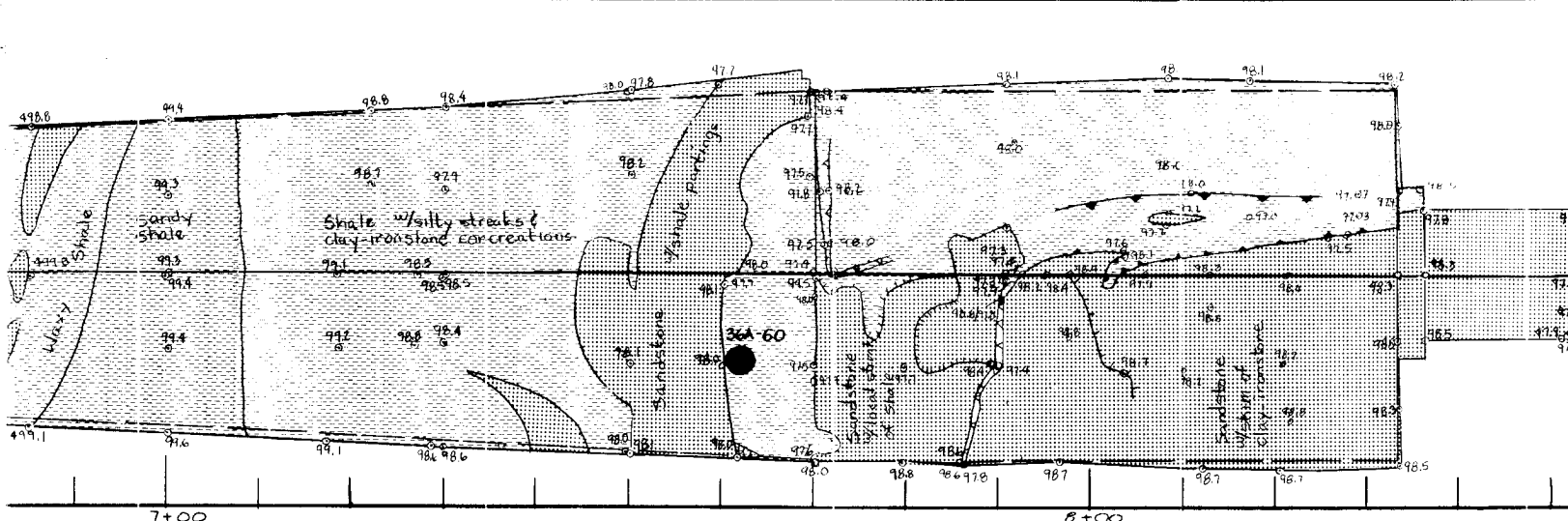
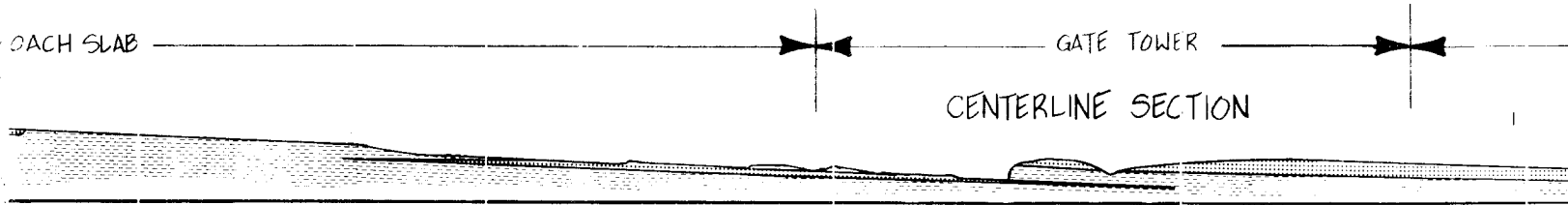


OFFSET (FEET)
150 200 250 300 350 400

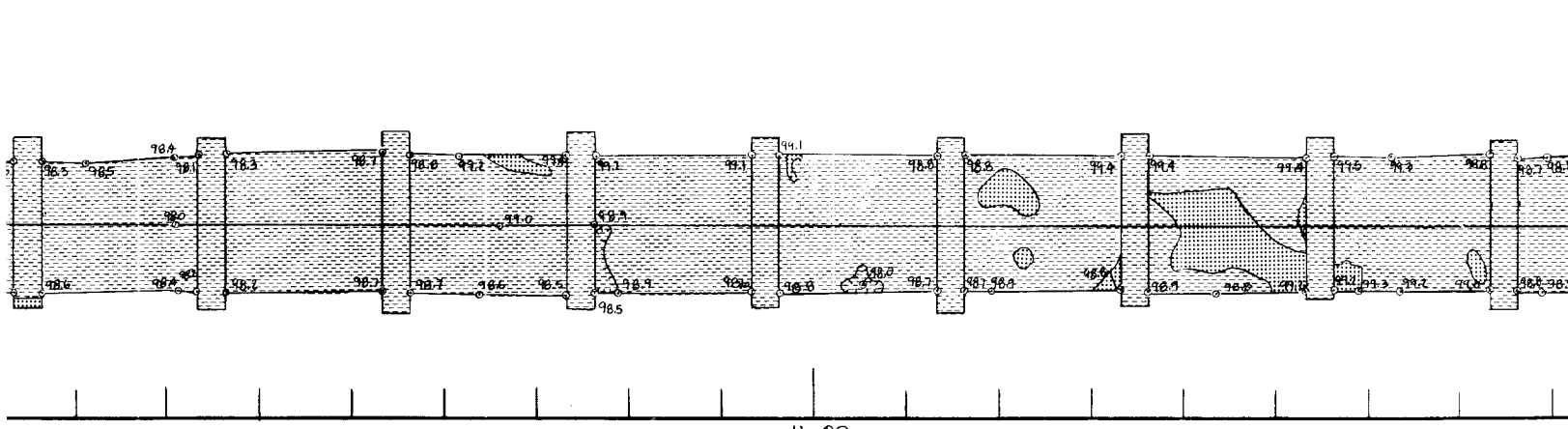
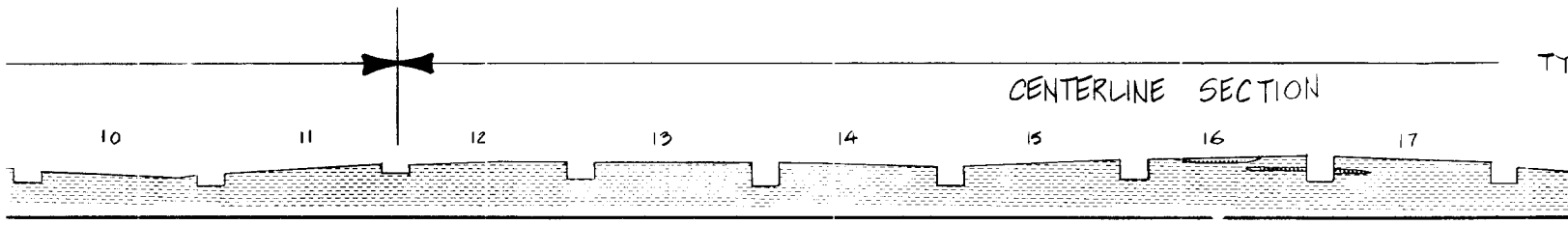
MAP SYMBOLS

- ←FR→ STEEPLY DIPPING FRACTURE WITH SANDSTONE FILLING.
- [Hatched Box] CLAY, SODY CLAY & SHALY CLAY
- [Dotted Box] SAND, incl. CLAYEY SAND
- [Stippled Box] GRAVEL
- [Grid Box] SANDSTONE
- [Wavy Box] SHALE, WEATHERED
- [Blank Box] SHALE, UNWEATHERED

SYMBOL NO.		ACTION		DATE		DESCRIPTION OF REVISION	
U.S. ARMY ENGINEER DISTRICT, FORT WORTH CORPS OF ENGINEERS FORT WORTH, TEXAS							
DESIGNED BY: G. RUEDE		AQUILLA LAKE AQUILLA AND HACKBERRY CREEKS, TEXAS FINAL FOUNDATION REPORT OUTLET WORKS GEOLOGY AND EXCAVATION STA. 16+00.00 TO STA. 19+56.95					
DRAWN BY: C. KIRBY							
REVIEWED BY: R. BEHM							
SUBMITTED BY: ROBERT BEHM		INVITATION NO.		DATE:			
		CONTRACT NO.		DRAWING NUMBER		SHEET NO. OF	
						SEQUENCE NO.	

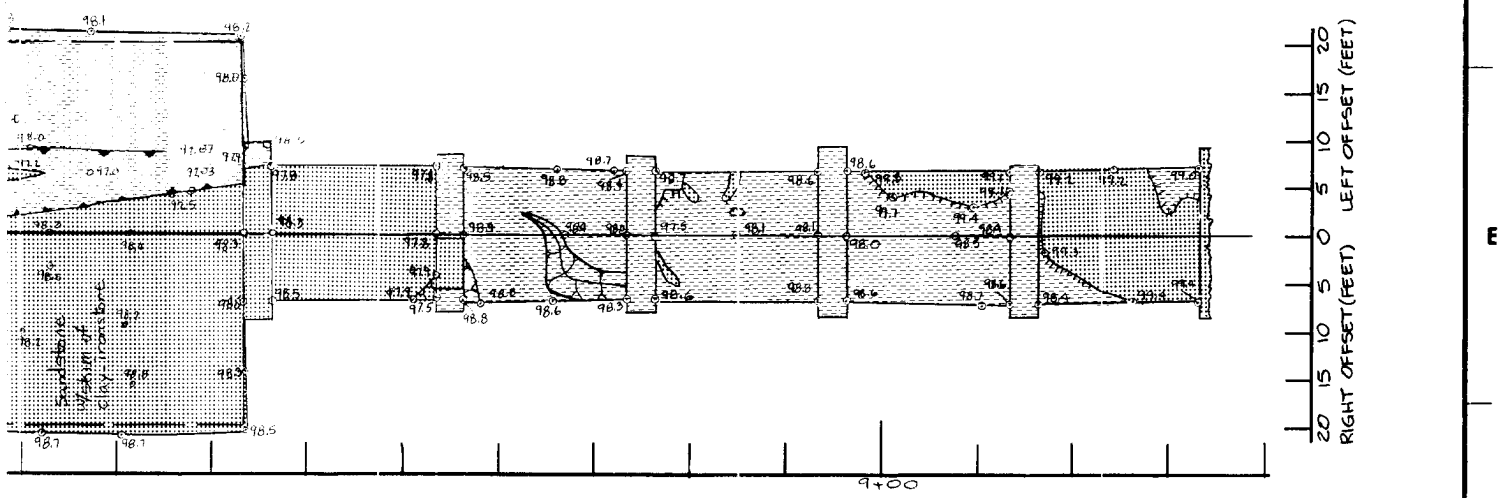
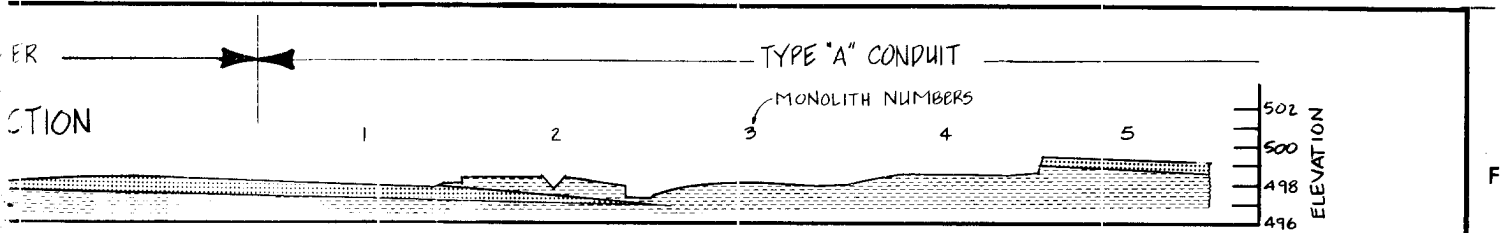


STATIONS
PLAN VIEW, APPROACH, TOWER AND CONDUIT

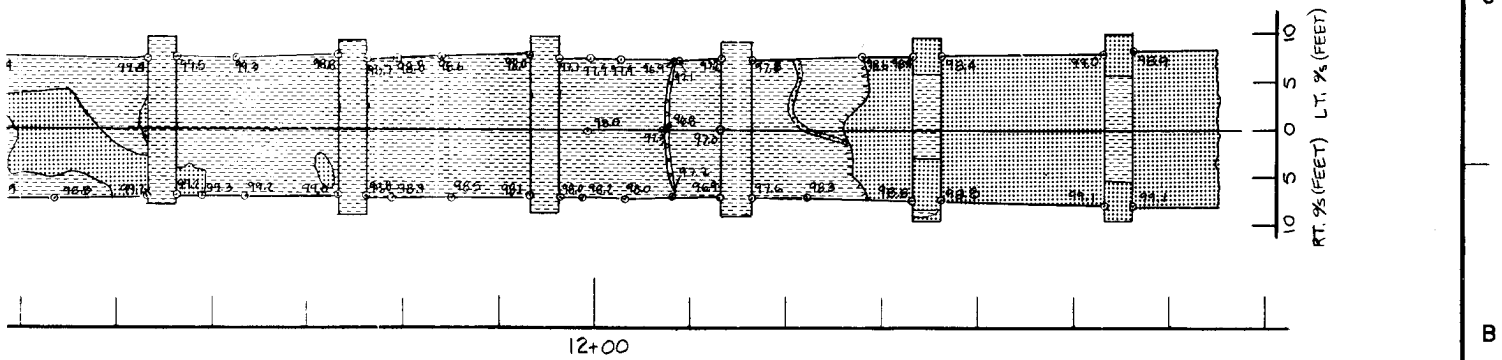
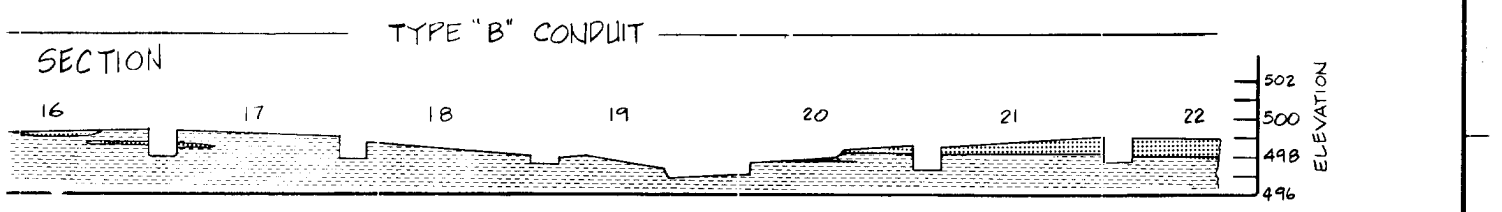


STATIONS
PLAN VIEW OF CONDUIT FOUNDATION

NOTE:
1. FOR PLAN VIEW MAP SYMBOLS, REFER



OWER AND CONDUIT



DUIT FOUNDATION

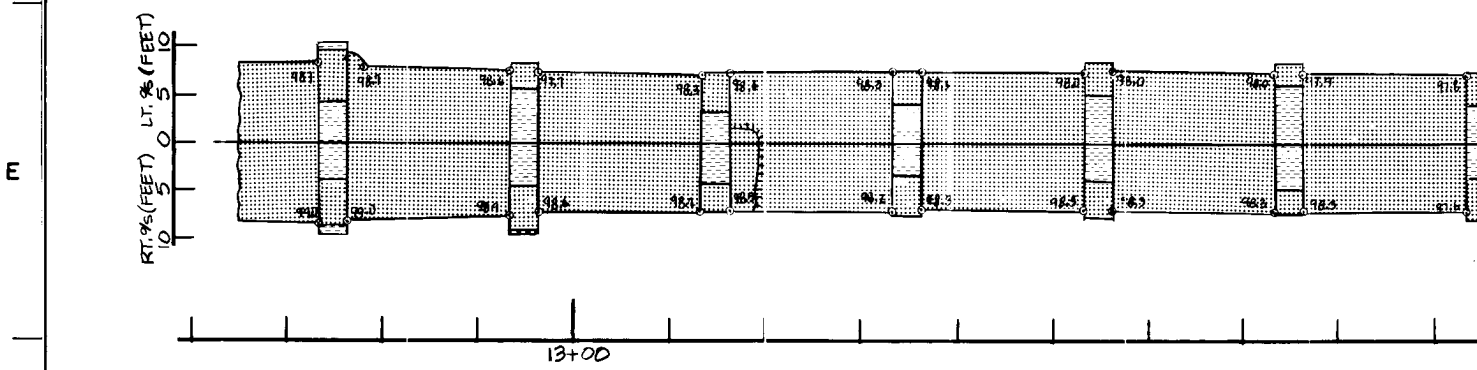
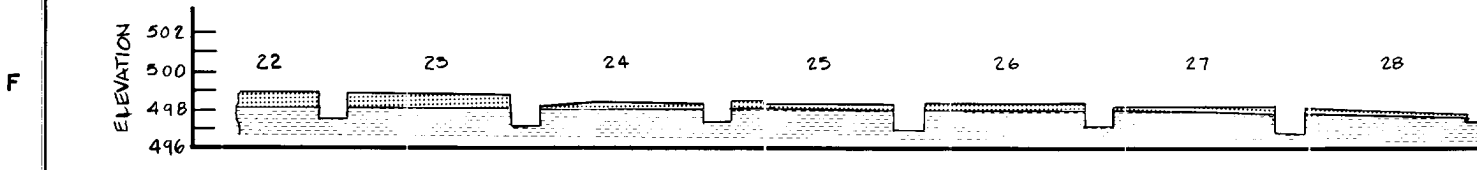
E:
FOR PLAN VIEW MAP SYMBOLS, REFER TO PLATE 15.

SYMBOL NO.	ACTION	DATE	DESCRIPTION OF REVISION
			U.S. ARMY ENGINEER DISTRICT, FORT WORTH CORPS OF ENGINEERS FORT WORTH, TEXAS
DESIGNED BY: <u>G. RUEDE</u>	AQUILLA LAKE AQUILLA AND HACKBERRY CREEKS, TEXAS FINAL FOUNDATION REPORT OUTLET WORKS STRUCTURES GEOLOGY AND EXCAVATION STA. 6+09.05 TO STA. 12+65.00		
DRAWN BY: <u>C. KIRBY</u>			
REVIEWED BY: <u>R. BEHM</u>			
SUBMITTED BY: <u>ROBERT BEHM</u> ENGINEER	INVITATION NO.	DATE:	
	CONTRACT NO.	SEQUENCE NO.	
	DRAWING NUMBER	SHEET NO. OF	

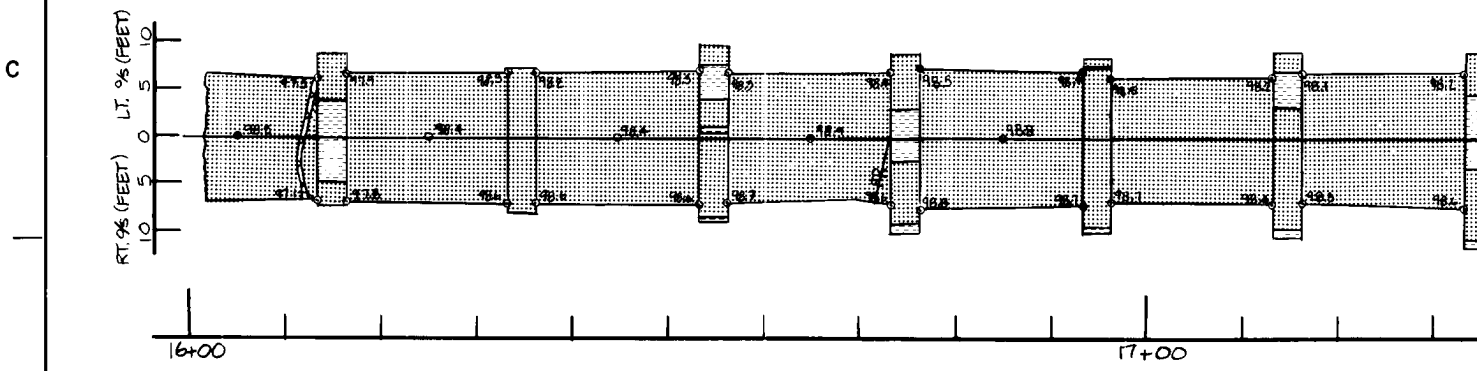
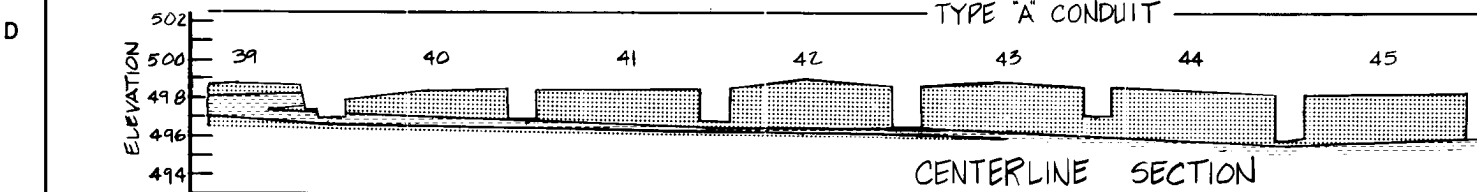
1

2 3 4

TYPE "B" CONDUIT



TYPE "A" CONDUIT



STATIONS
PLAN OF CONDUIT FOUNDATION

B

A

P. POLYMER 033

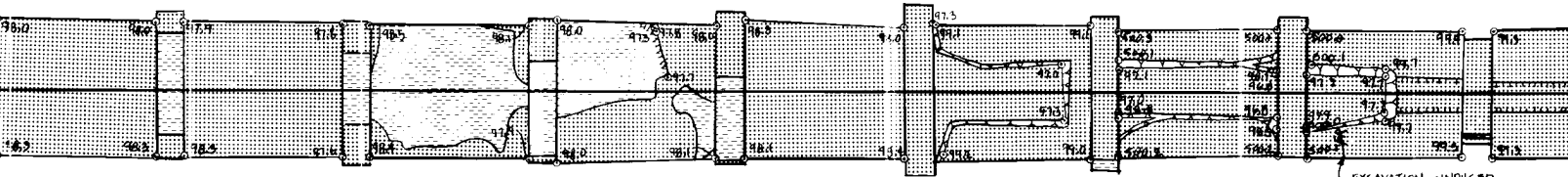
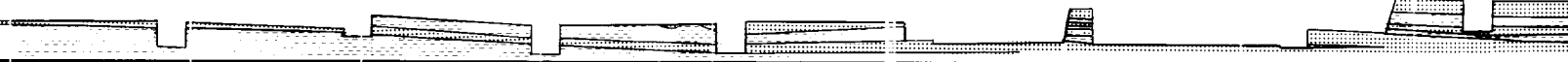
2 3 4

TYPE "B" CONDUIT

CENTERLINE SECTION

MONOLITH NUMBERS

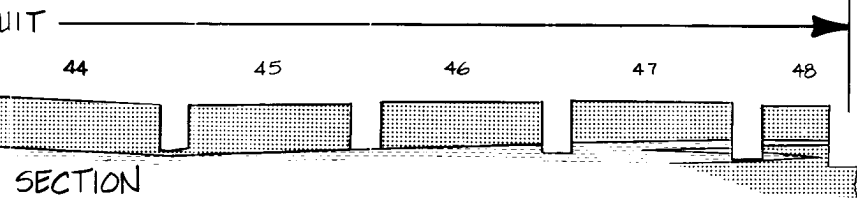
27 28 29 30 31 32 33 34 35



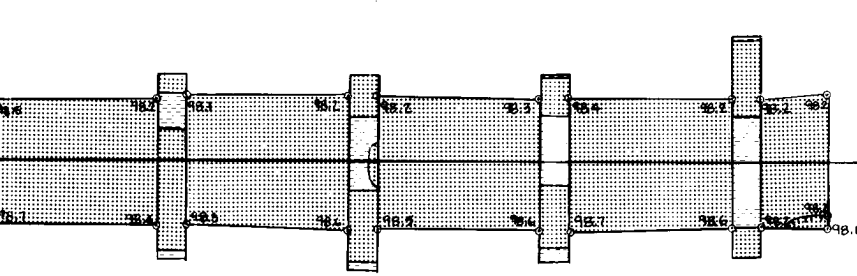
14+00

15+00

STATIONS PLAN OF CONDUIT FOUNDATION



ELEVATION
502
500
498
496
494



15
10
5
0
5
10
15
RT. %S (FEET)
LT. %S (FEET)

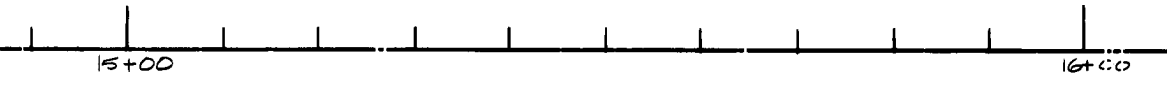
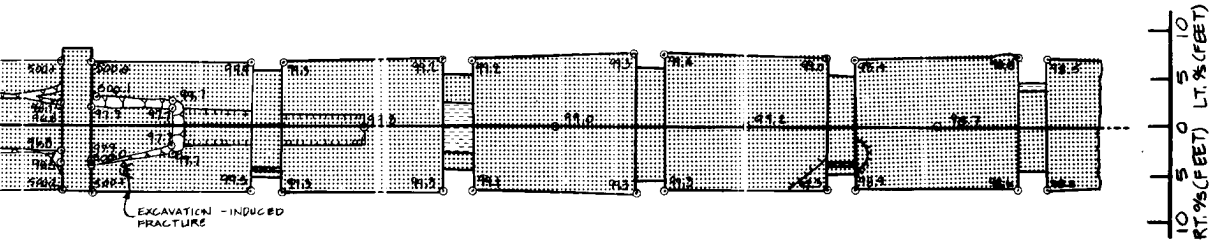
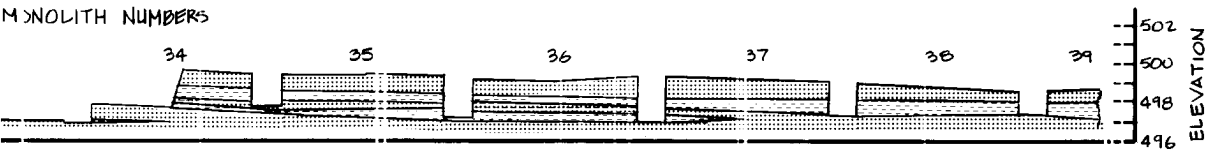
17+00 18+00

STATIONS PLAN OF CONDUIT FOUNDATION

NOTE:
1. FOR PLAN VIEW MAP SYMBOLS, REFER TO PLATE 15.

TYPE "A" CONDUIT

MONOLITH NUMBERS

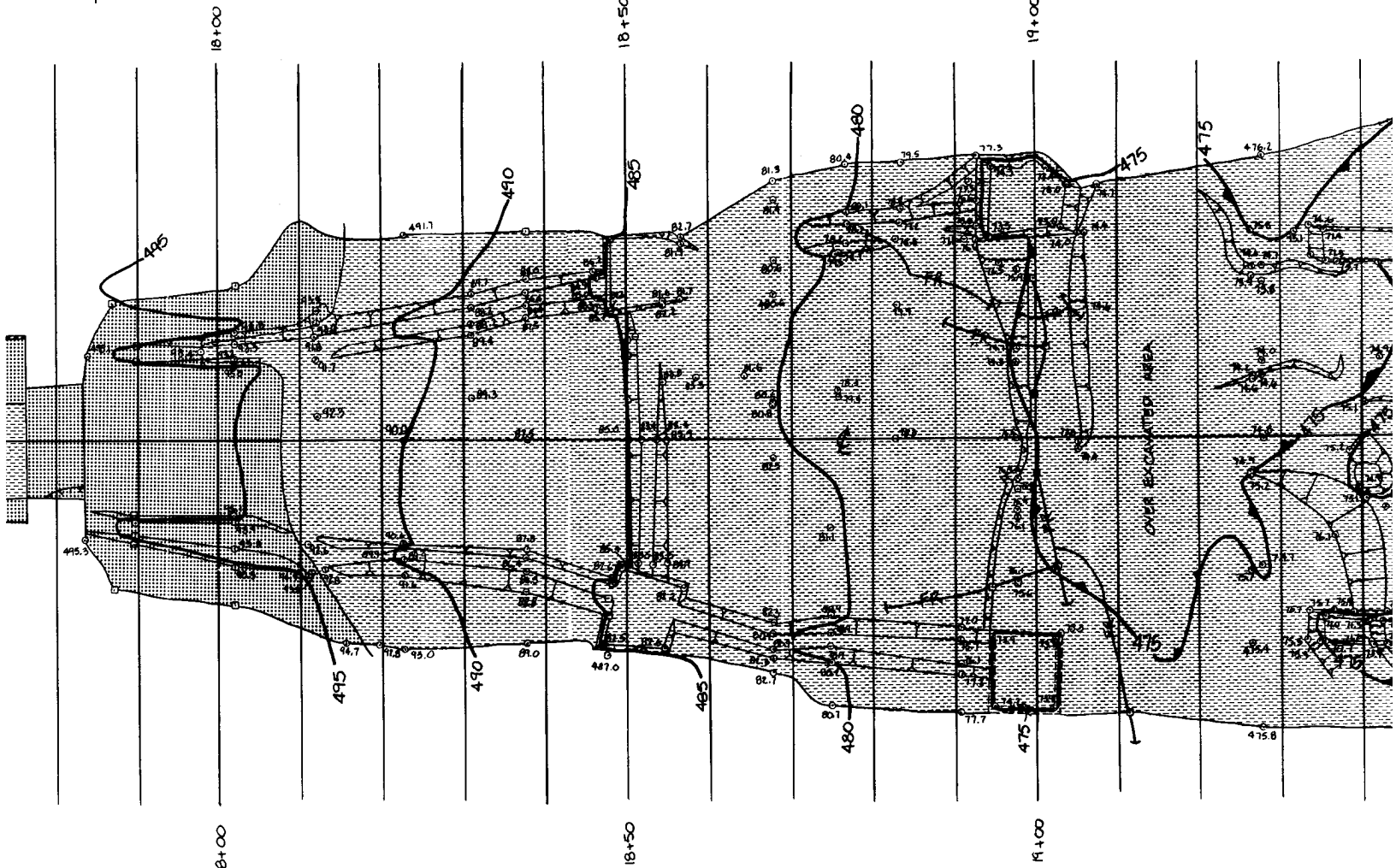
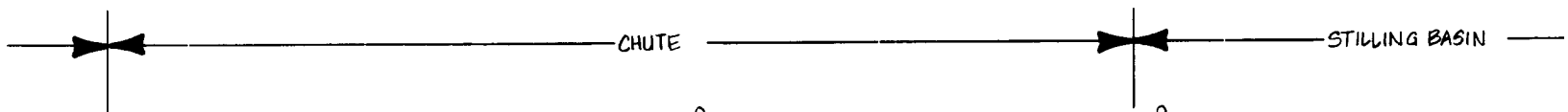
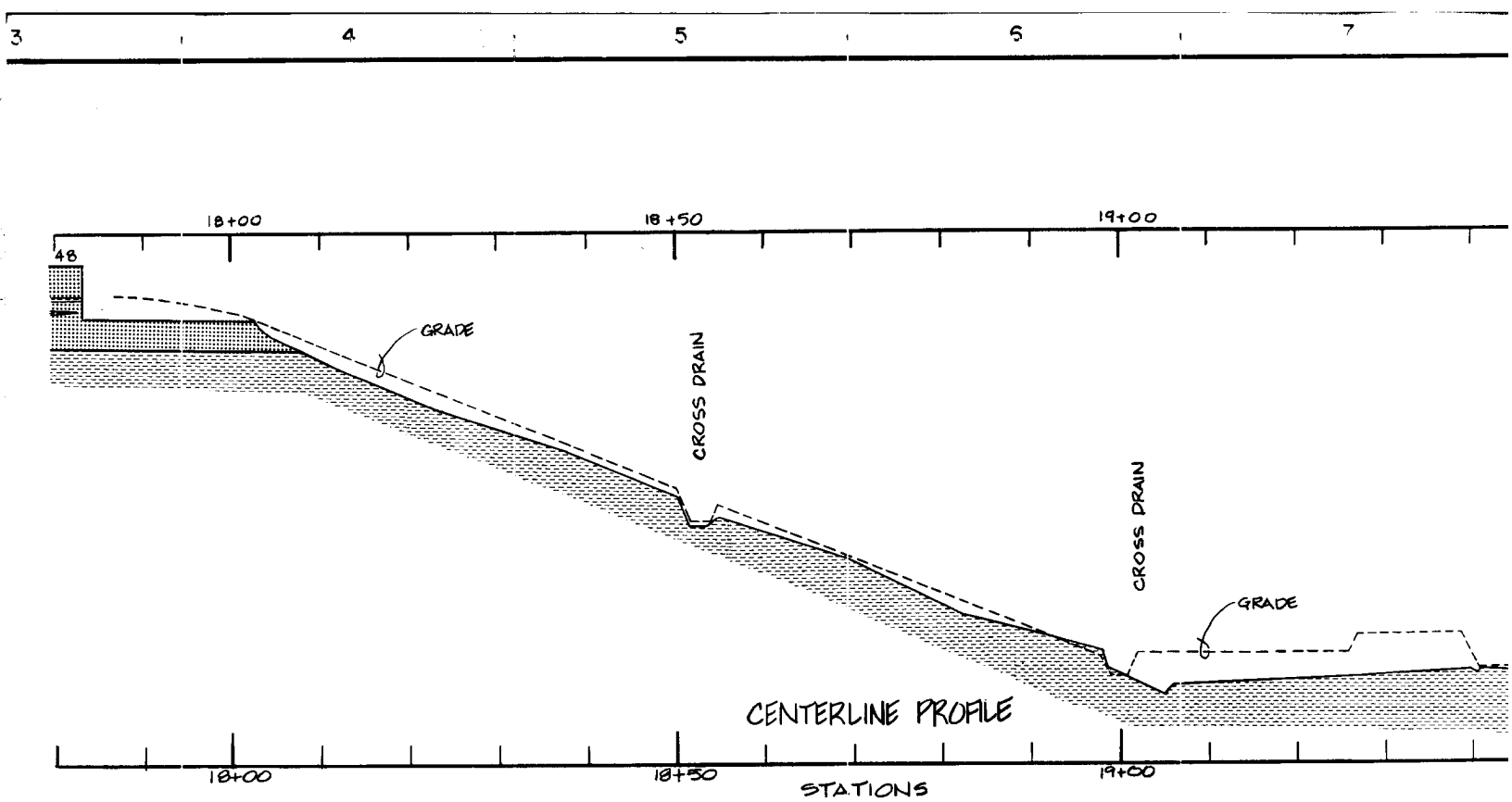


F
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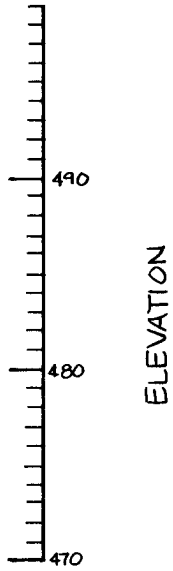
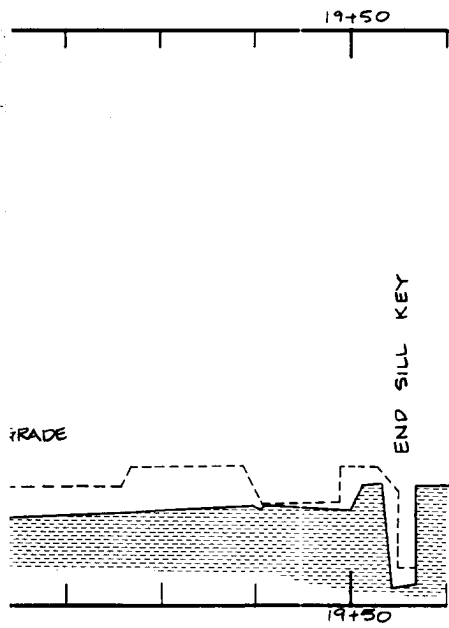
REFER TO PLATE 15.

SYM. NO.	DD. NO.	ACTION	DATE	DESCRIPTION OF REVISION
				U.S. ARMY ENGINEER DISTRICT, FORT WORTH CORPS OF ENGINEERS FORT WORTH, TEXAS
DESIGNED BY: <u>G. RUEDE</u>	AQUILLA LAKE AQUILLA AND HACKBERRY CREEKS, TEXAS FINAL FOUNDATION REPORT OUTLET WORKS STRUCTURES GEOLOGY AND EXCAVATION STA. 12+65.00 TO STA. 17+83.25			
DRAWN BY: <u>G. KIRBY</u>				
REVIEWED BY: <u>R. BEHM</u>				
SUBMITTED BY: <u>ROBERT BEHM</u> ENGINEER				
		INVITATION NO.	DATE:	
		CONTRACT NO.	SEQUENCE NO.	
		DRAWING NUMBER	OF	NO.

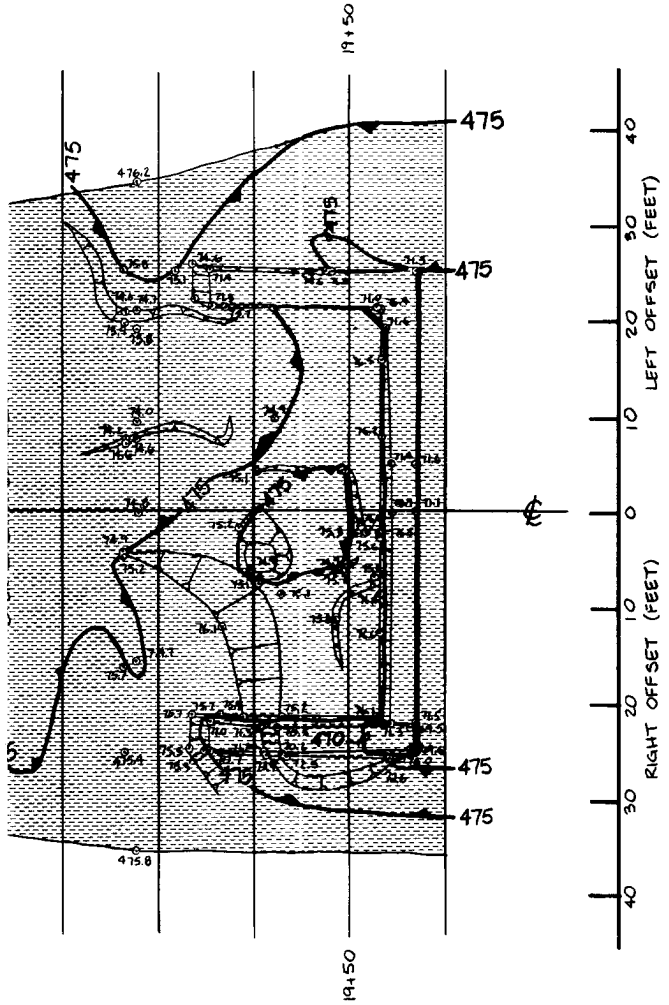
CONTRACT NO.



PLAN VIEW



STILLING BASIN →

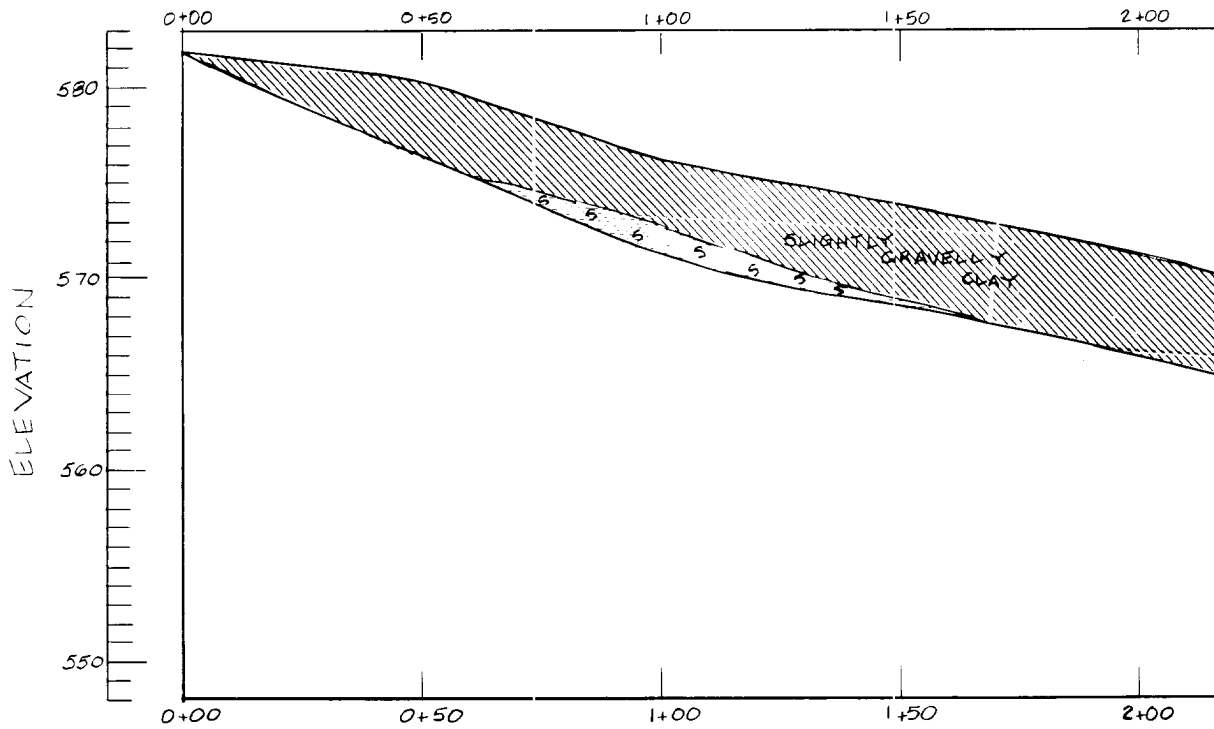


MAP SYMBOLS FOR PLAN VIEW

- DATA POINTS: ELEVATIONS, LOCATION
- LOCATION DATA ONLY
- FR → STEEP-DIPPING FRACTURES FILLED WITH SANDSTONE, TERMINATION OF FRACTURES SHOWN.

SYM. NO.	DA. NO.	ACTION	DATE	DESCRIPTION OF REVISION
				U.S. ARMY ENGINEER DISTRICT, FORT WORTH CORPS OF ENGINEERS FORT WORTH, TEXAS
DESIGNED BY: <u>G. RUEDE</u>	AQUILLA LAKE AQUILLA AND HACKBERRY CREEKS, TEXAS FINAL FOUNDATION REPORT OUTLET WORKS STRUCTURES GEOLOGY AND EXCAVATION? STA. 17+83.25 TO STA. 19+56.95			
DRAWN BY: <u>C. KIEBY</u>				
REVIEWED BY: <u>R. BEHM</u>				
SUBMITTED BY: <u>ROBERT BEHM</u> ENGINEER:	INVITATION NO.	DATE:		SEQUENCE NO. 1
	CONTRACT NO.	DRAWING NUMBER	SHEET NO. OF	

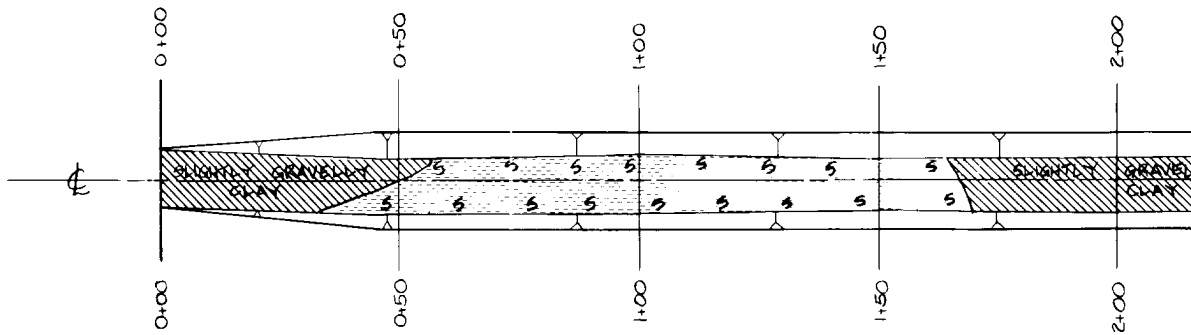
F



E

D

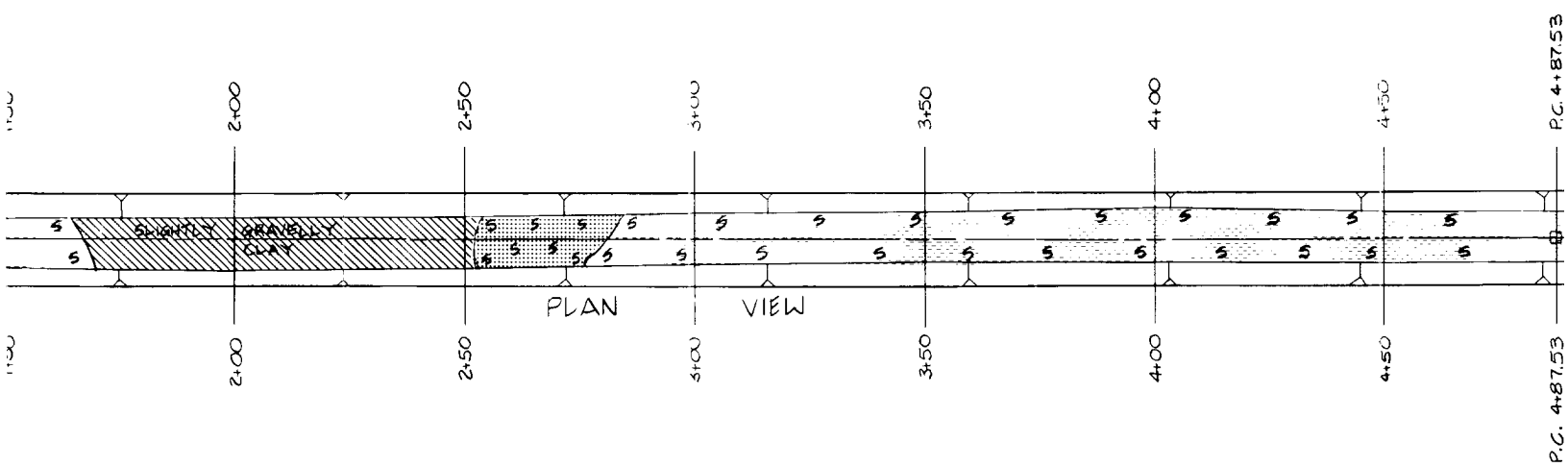
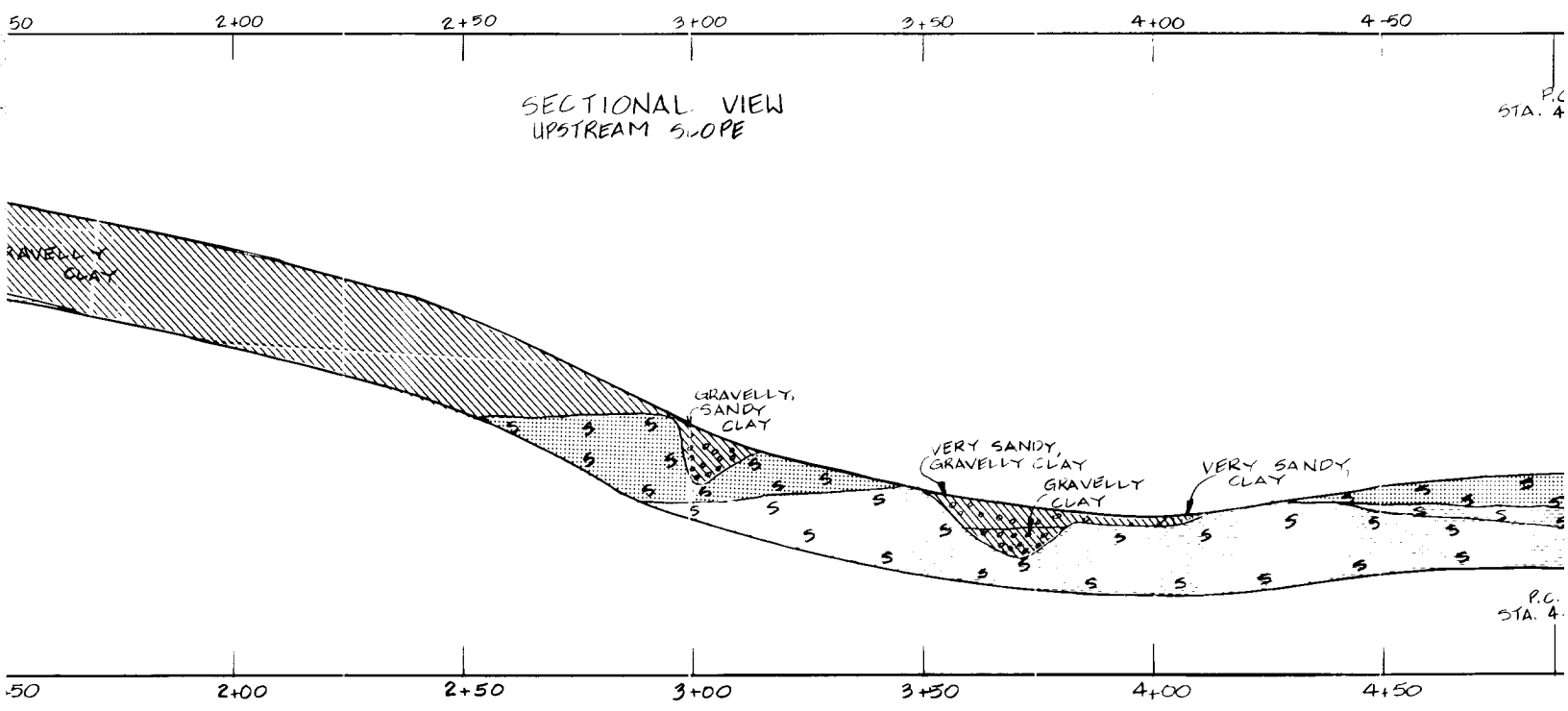
C












B

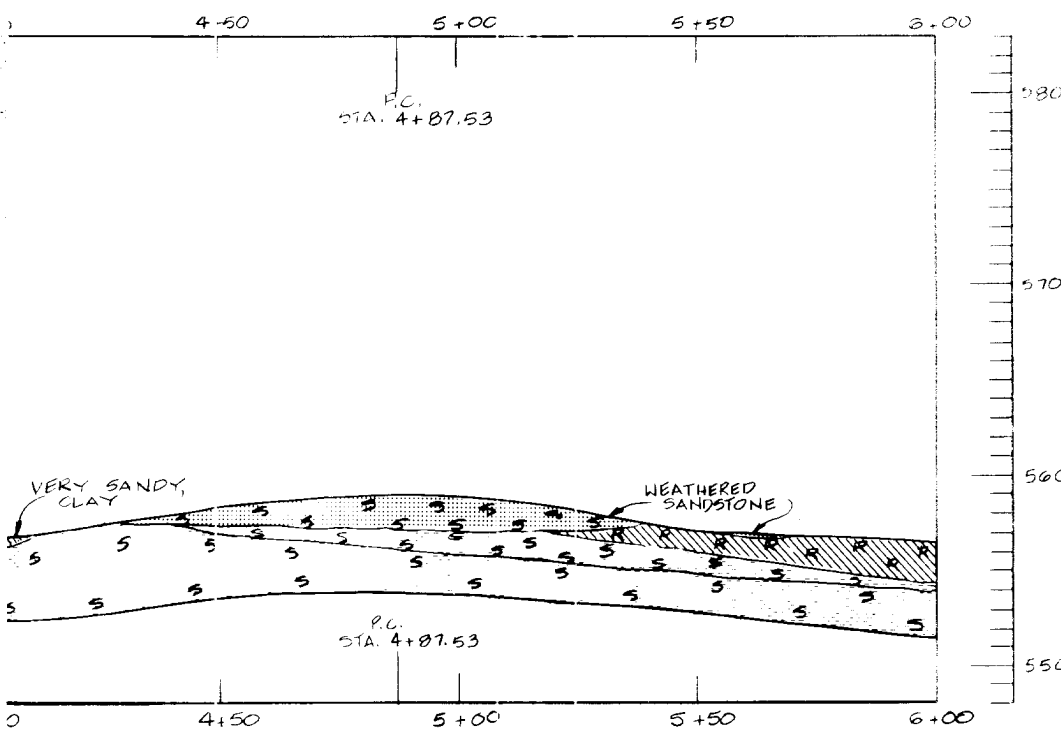
A

POLYTRACE 033

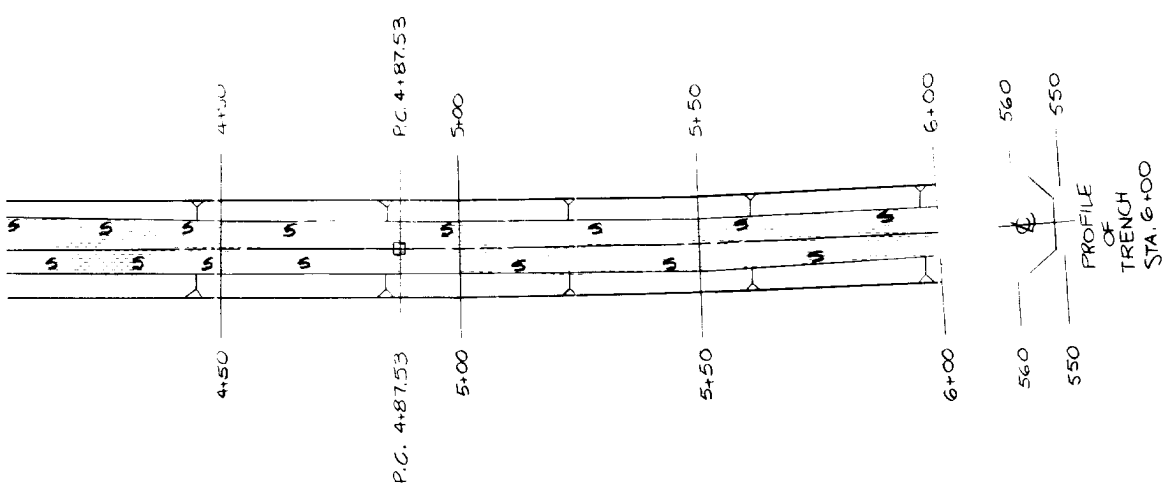


SYMBOLS:

-  CLAY, SANDY CLAY, GRAVELLY CLAY, SHALY CLAY (ALL)
-  RESIDUAL CLAY (VERY HIGHLY WEATHERED SHALE)
-  SAND, CLAYEY SAND, GRAVELLY SAND
-  GRAVEL, SANDY GRAVEL, CLAYEY GRAVEL
-  SANDSTONE, UNWEATHERED
-  SANDSTONE, WEATHERED
-  SHALE, UNWEATHERED
-  SHALE, WEATHERED
-  SHALE, HIGHLY WEATHERED, OF CLAY CONSISTENCY IN PART OR WHOLLY



ELEVATION



- AY, GRAVELLY CLAY, SHALY CLAY (ALLUVIUM)
- Y (VERY HIGHLY WEATHERED SHALE)
- SAND, GRAVELLY SAND
- GRAVEL, CLAYEY GRAVEL
- WEATHERED
- ATHERED
- HERED
- RED
- WEATHERED, OF CLAY CONSISTENCY OR WHOLLY

SYN. I.D.C. NO.	ACTION	DATE	DESCRIPTION OF REVISION
DESIGNED BY: <u>G. RUEDE</u>			U.S. ARMY ENGINEER DISTRICT, FORT WORTH CORPS OF ENGINEERS FORT WORTH, TEXAS AQUILLA LAKE AQUILLA AND HACKBERRY CREEKS, TEXAS FINAL FOUNDATION REPORT INSPECTION TRENCH GEOLOGY AND EXCAVATION STA. 0+00.00 TO STA. 6+00.00
DRAWN BY: <u>C. KIRBY</u>			
REVIEWED BY: <u>R. BEHM</u>			
SUBMITTED BY: <u>ROBERT BEHM</u>			
CONTRACT NO.		INVIATION NO.	DATE:
DRAWING NUMBER		SHEET NO.	SEQUENCE NO.
		OF	

TO ACCOMPANY FINAL FOUNDATION REPORT

PLATE 16

F
E
D
C
B

1

F

E

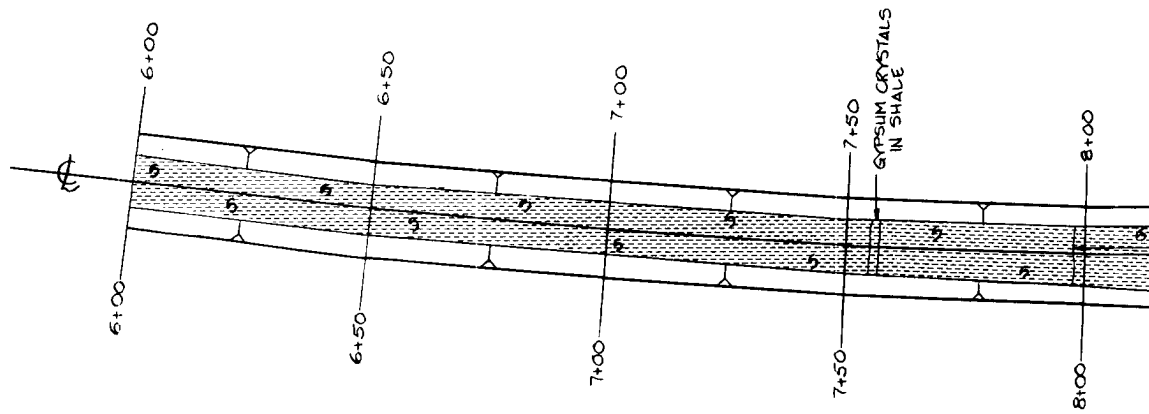
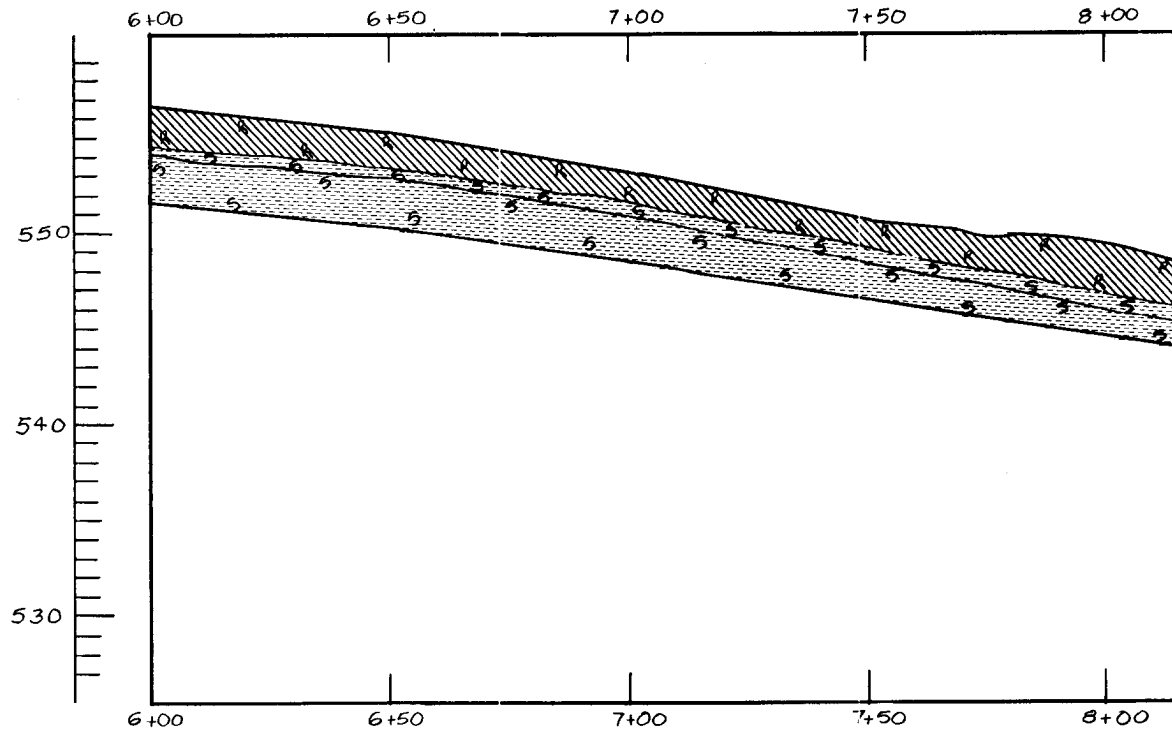
D

C

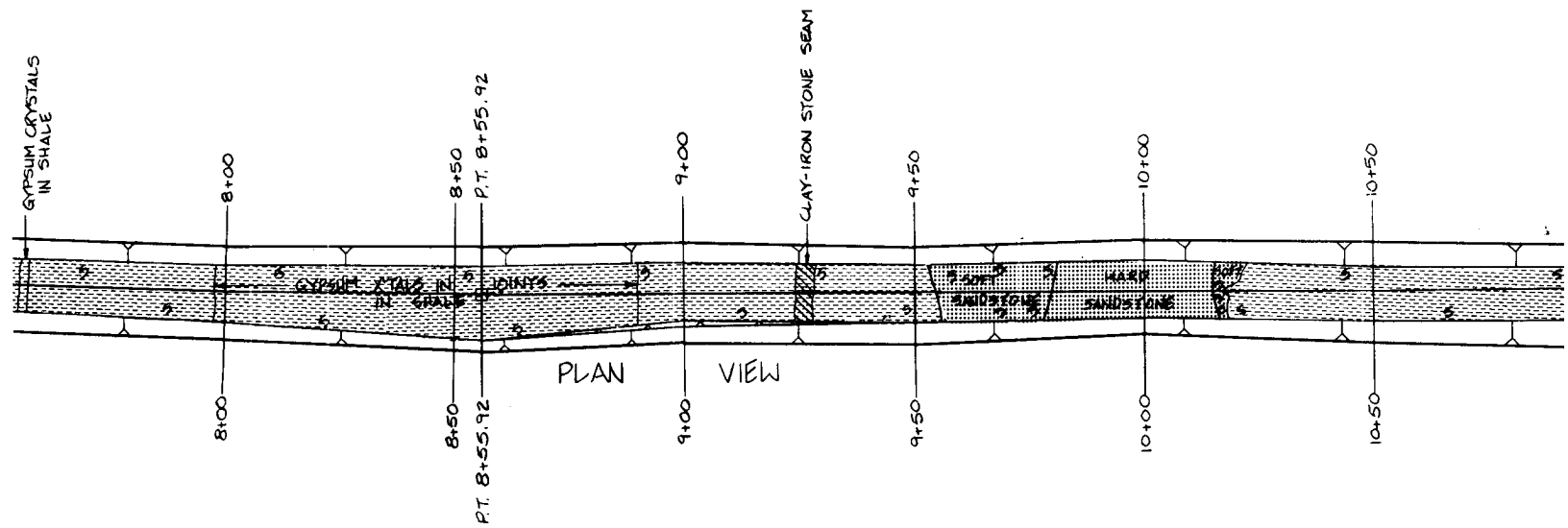
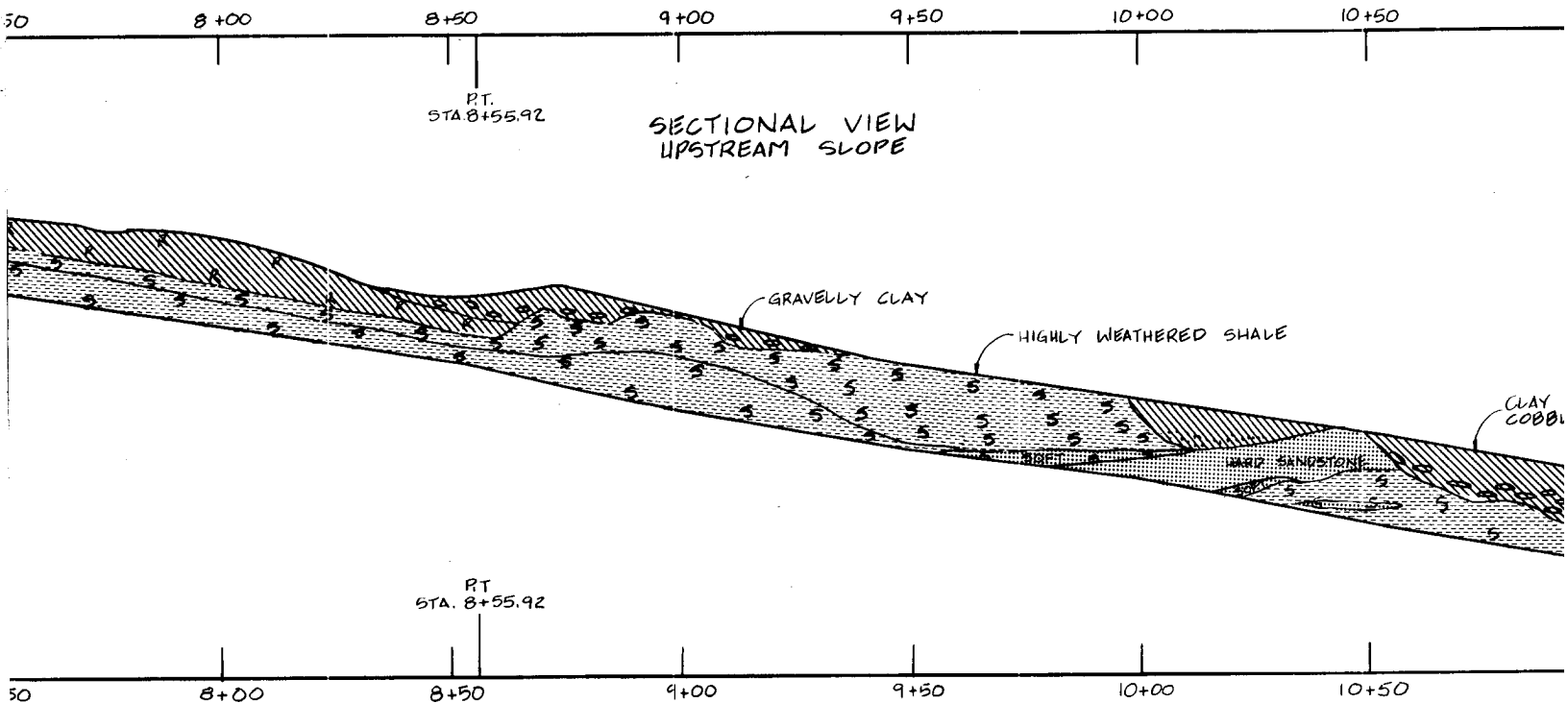
B

A

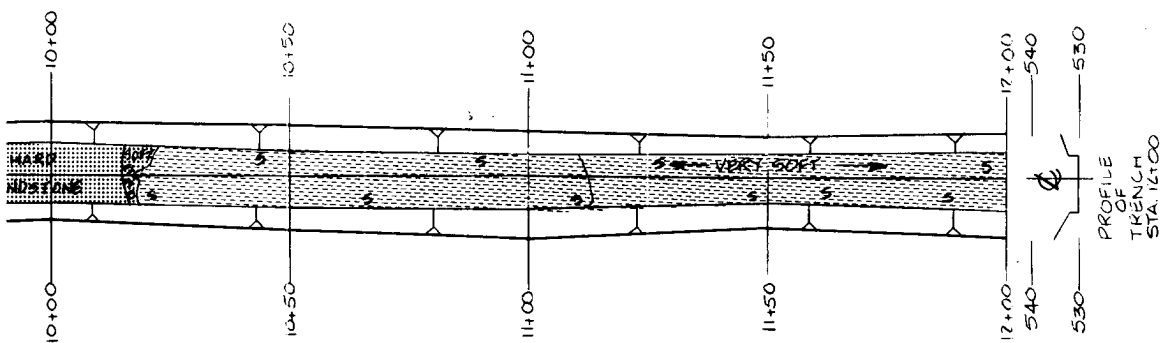
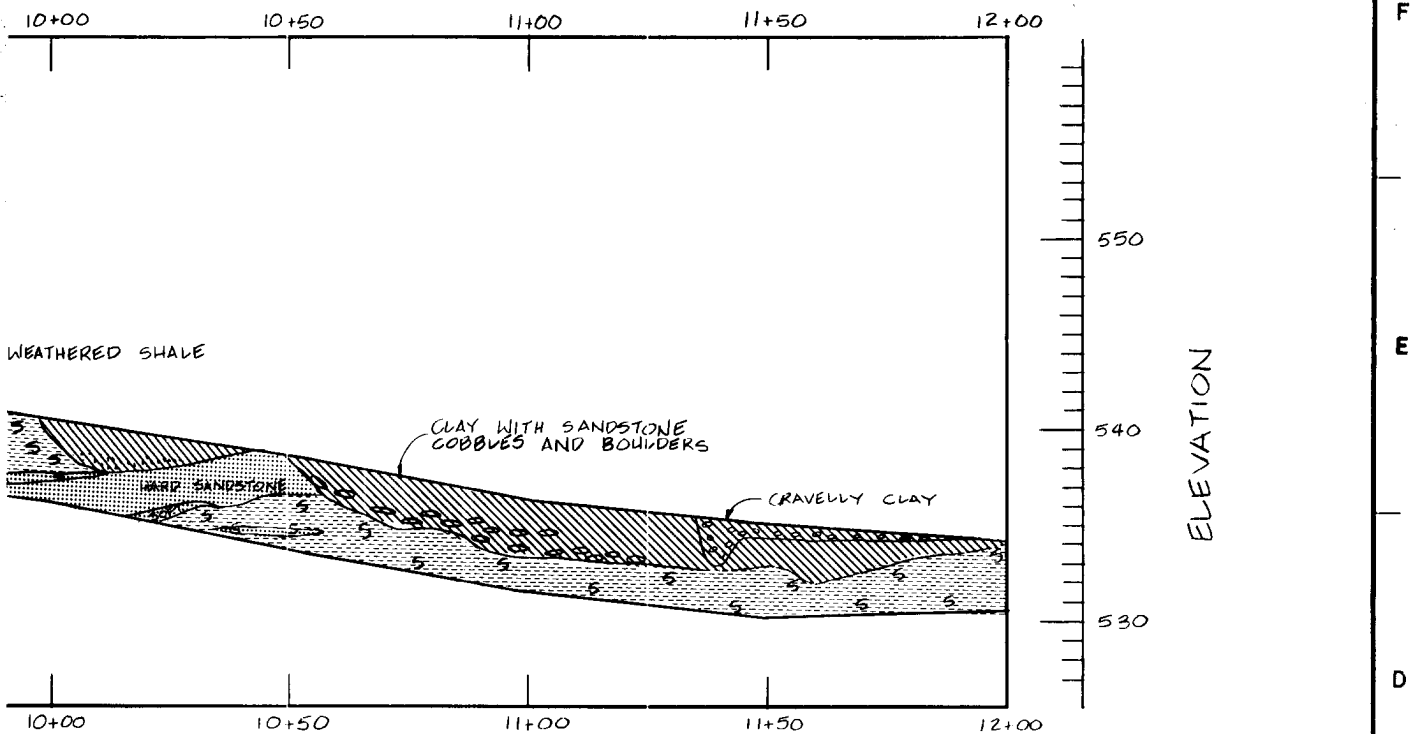
ELEVATION



POLYTRAC 033



NOTE:
1. FOR MAP SYMBOLS, REFER TO PLATE



SYM.	DC. NO.	ACTION	DATE	DESCRIPTION OF REVISION
				U.S. ARMY ENGINEER DISTRICT, FORT WORTH CORPS OF ENGINEERS FORT WORTH, TEXAS
DESIGNED BY: <u>G. RUEDE</u>	AQUILLA LAKE AQUILLA AND HACKBERRY CREEKS, TEXAS FINAL FOUNDATION REPORT INSPECTION TRENCH GEOLOGY AND EXCAVATION STA. 6+00.00 TO STA. 12+00.00			
DRAWN BY: <u>C. KIRBY</u>				
REVIEWED BY: <u>R. BEHM</u>				
SUBMITTED BY: <u>ROBERT BEHM</u>				
ENGINEER:	INVITATION NO.	DATE:		
	CONTRACT NO.	SHEET NO.	SEQUENCE NO.	
	DRAWING NUMBER	OF		

NOTE:
1. FOR MAP SYMBOLS, REFER TO PLATE 16.

①

F

E

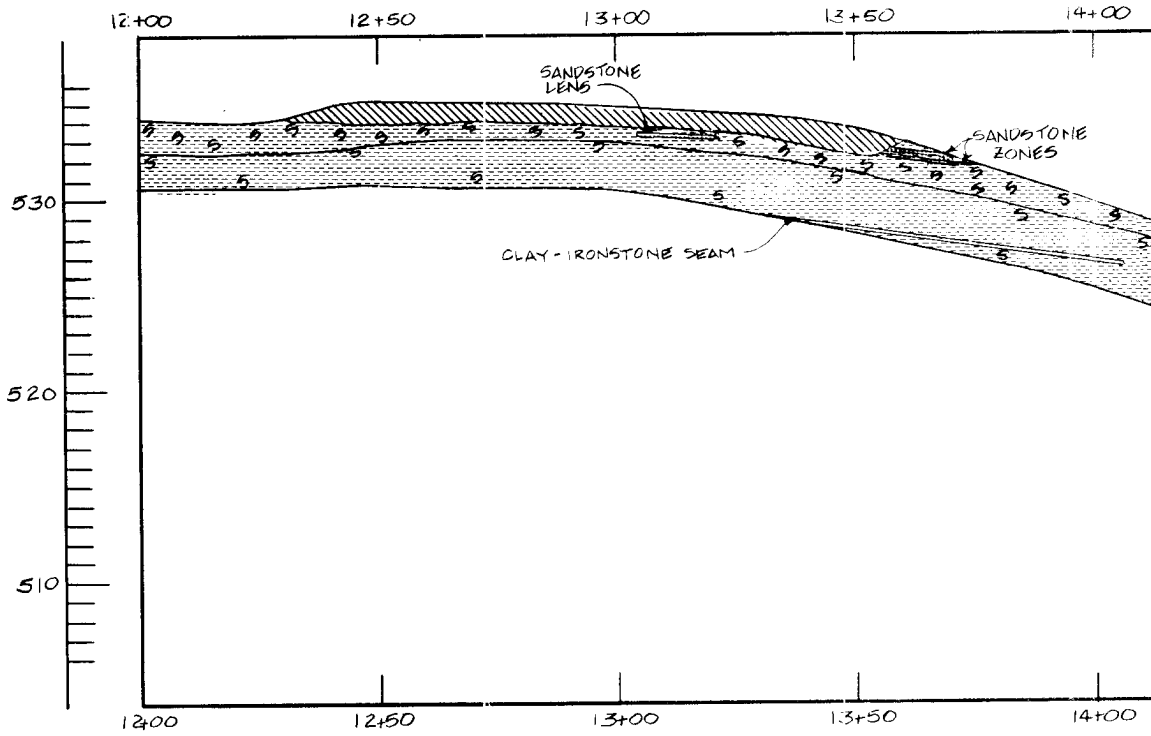
D

C

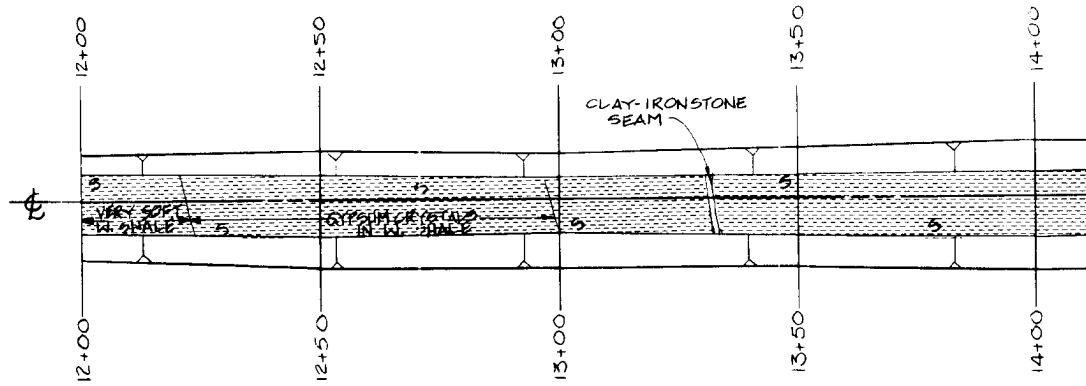
B

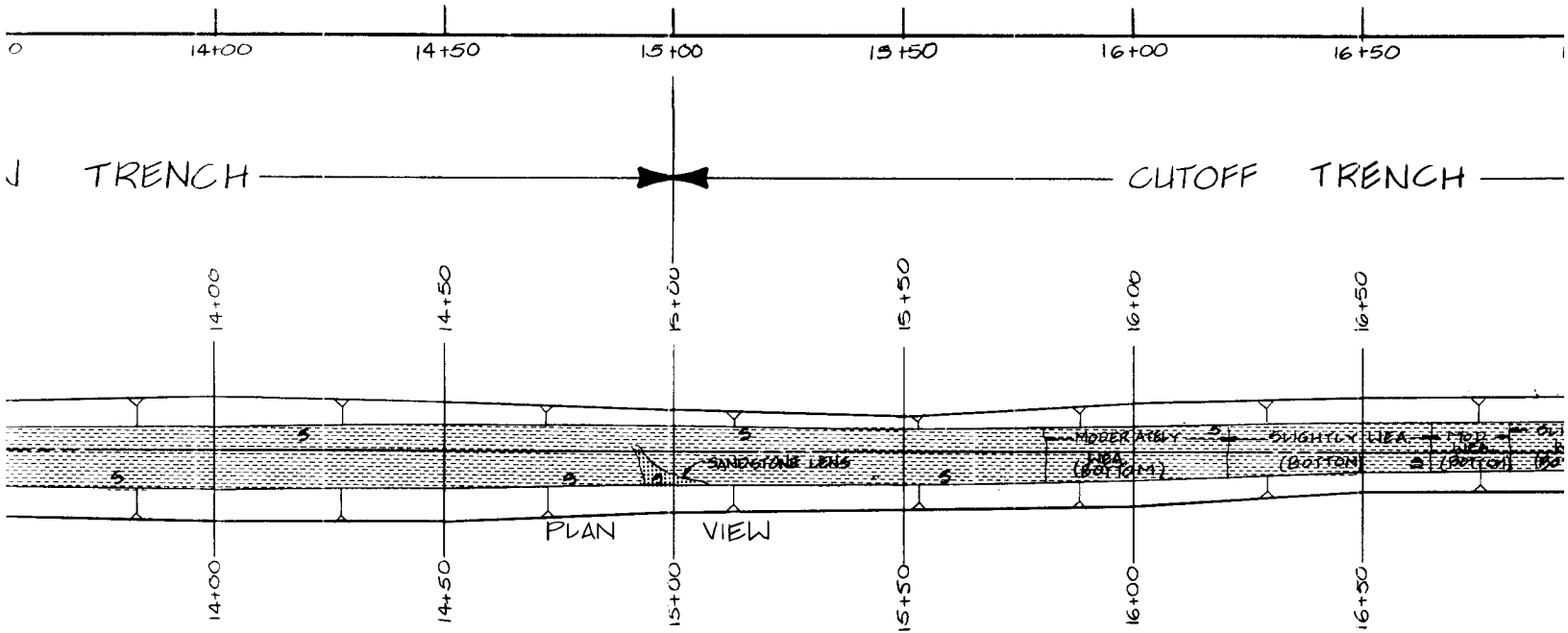
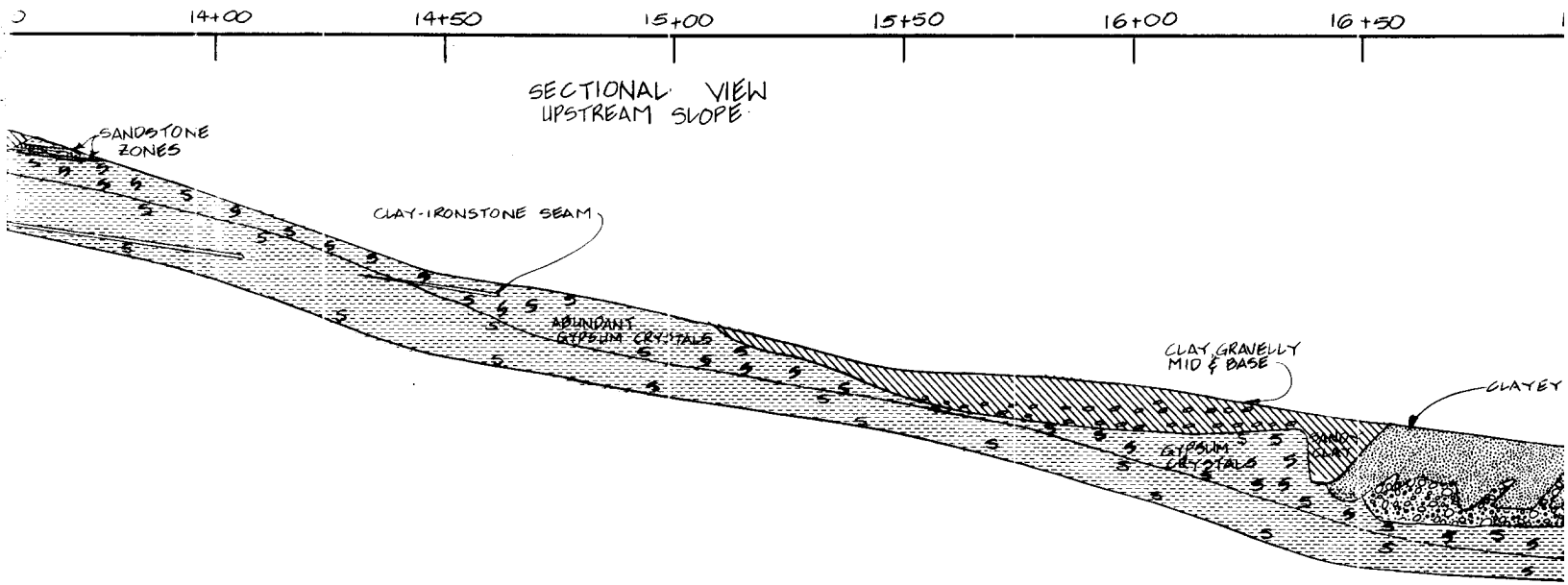
A

ELEVATION



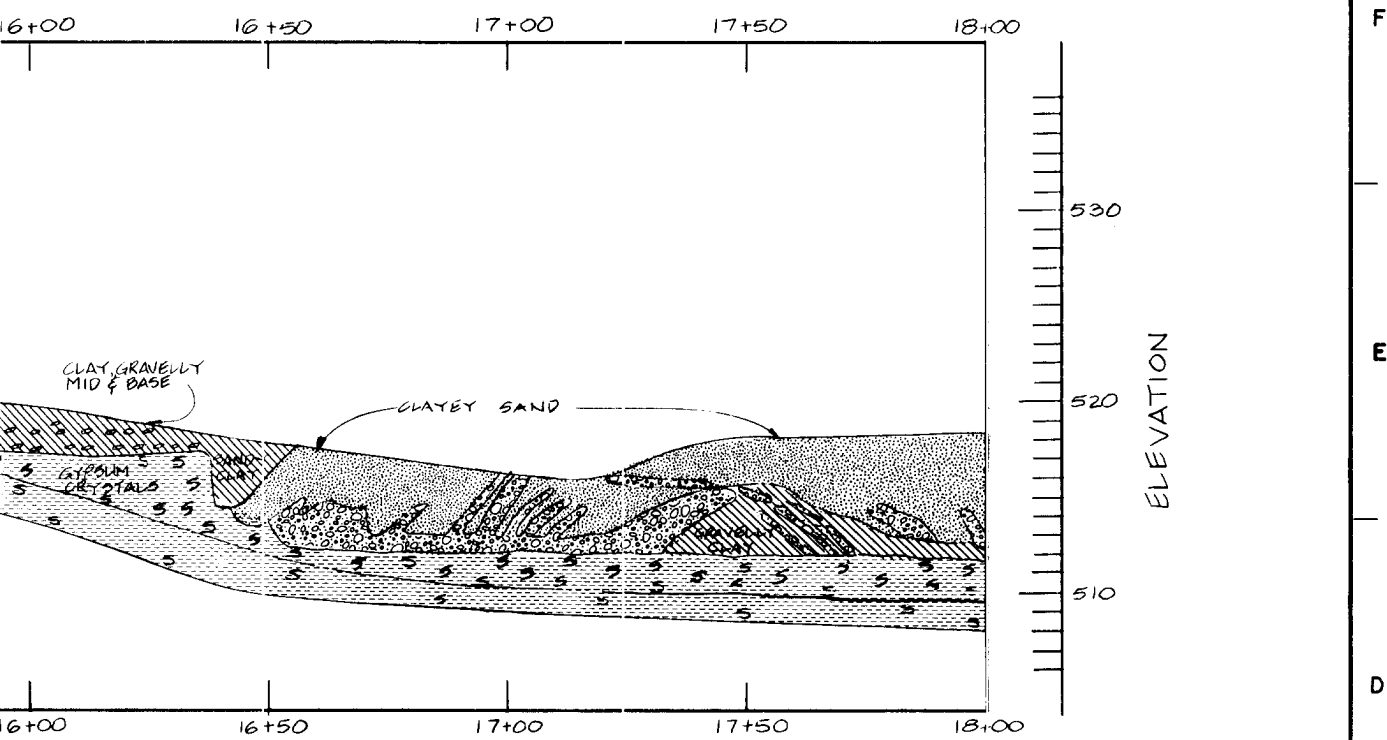
← INSPECTION TRENCH →



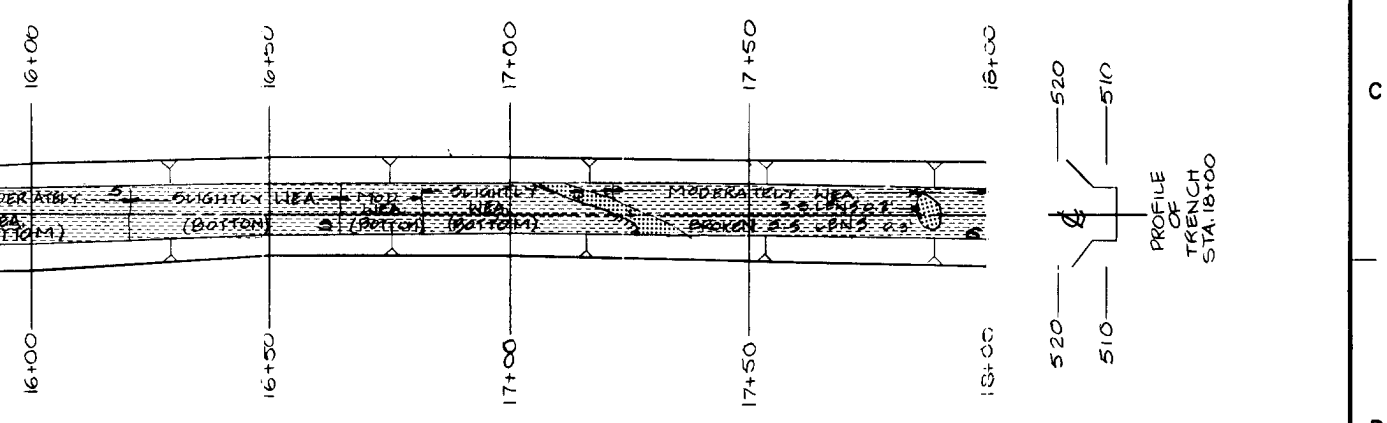


NOTE:

1. FOR MAP SYMBOLS, REFER TO PLATE 16.



CUTOFF TRENCH →

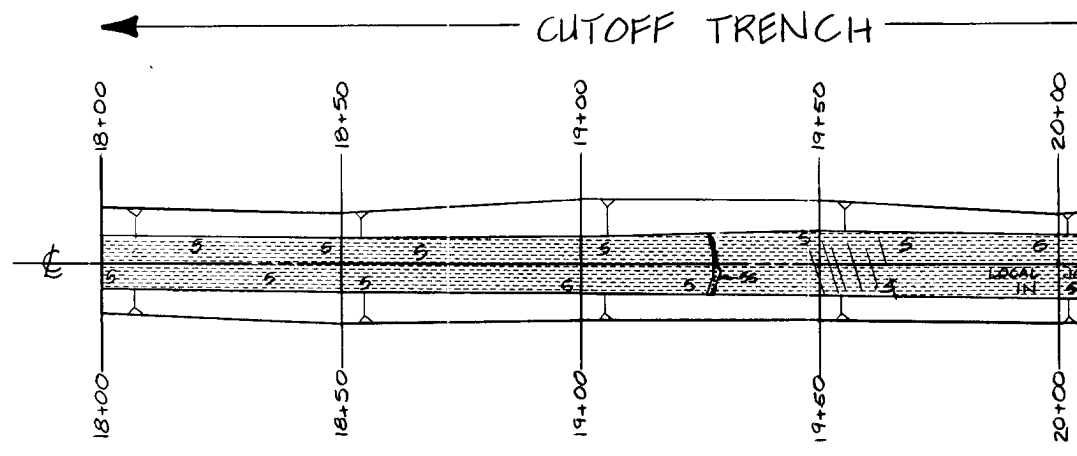
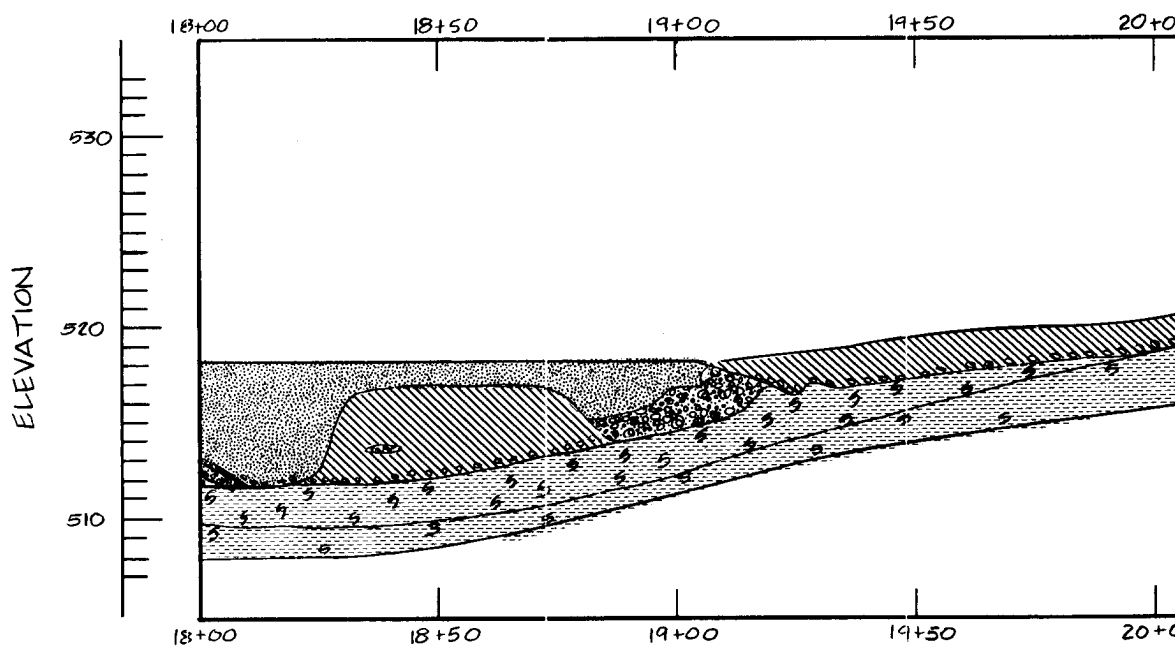


OR MAP SYMBOLS, REFER TO PLATE 15.

SYM. NO.		ACTION		DATE		DESCRIPTION OF REVISION	
U.S. ARMY ENGINEER DISTRICT, FORT WORTH CORPS OF ENGINEERS FORT WORTH, TEXAS							
DESIGNED BY: G. RUEDA		AQUILLA LAKE AQUILLA AND HACKBERRY CREEKS, TEXAS FINAL FOUNDATION REPORT					
DRAWN BY: G. KIRBY		CUTOFF AND INSPECTION TRENCHES					
REVIEWED BY: R. BEHM		GEOLOGY AND EXCAVATION STA. 12+00.00 TO STA. 18+00.00					
SUBMITTED BY: ROBERT BEHM		INVITATION NO.		DATE:			
ENGINEER:		CONTRACT NO.		DRAWING NUMBER		SHEET NO. OF	
						SEQUENCE NO.	

①

F
E
D
C
B
A



19+50

20+00

20+50

21+00

21+50

22+00

22+

SECTIONAL VIEW
UPSTREAM SLOPE

WEATHERED, BROKEN
SANDSTONE

SANDSTONE

19+50

20+00

20+50

21+00

21+50

22+00

22+

EF TRENCH

INSPECTI

19+50

20+00

20+50

21+00

21+50

22+00

22+50

LOCAL
IN
SHALE

LOCAL
SOFTENED
SHALE

DESIGN
W. SIMILAR

PLAN
VIEW

19+50

20+00

20+50

21+00

21+50

22+00

22+50

NOTE:

1. FOR MAP SYMBOLS, REFER

①

F

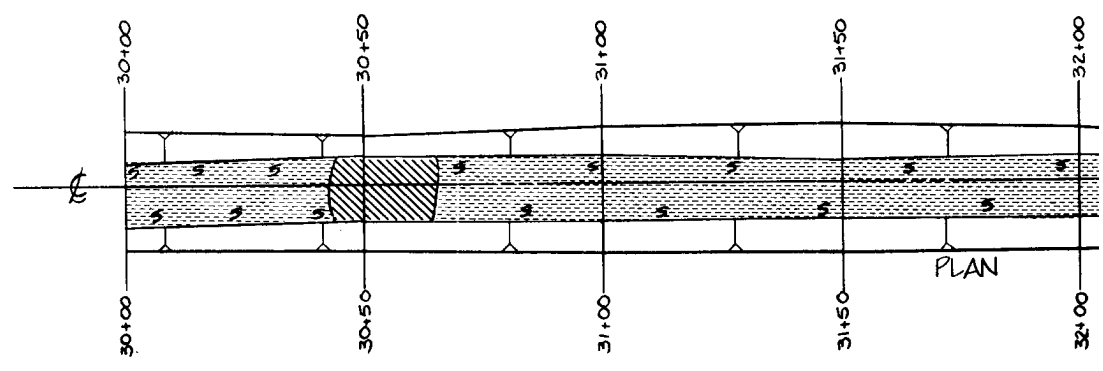
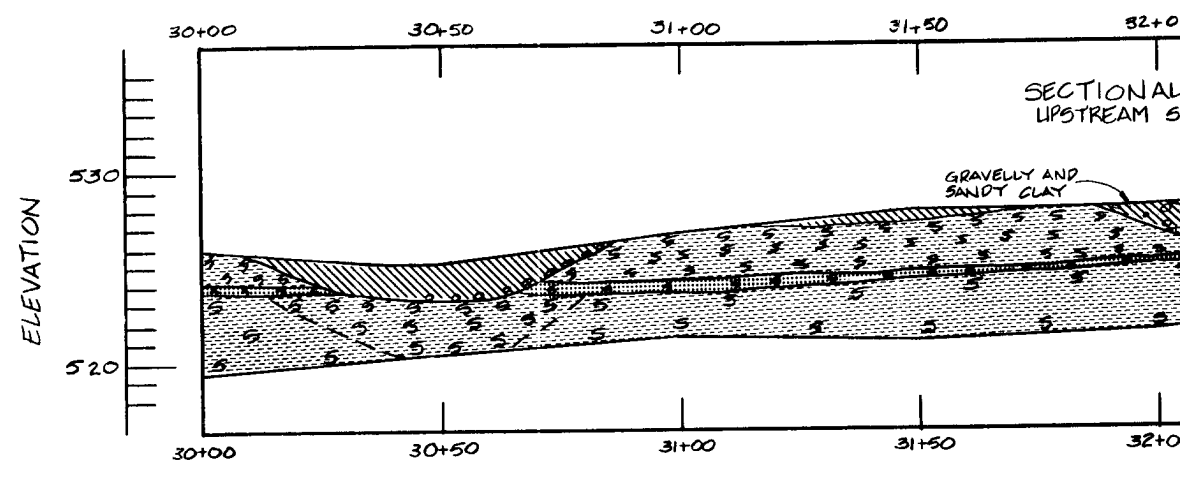
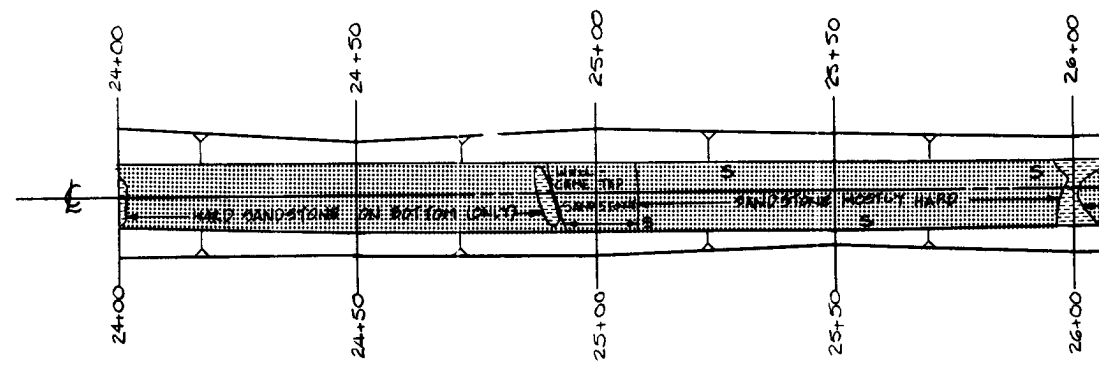
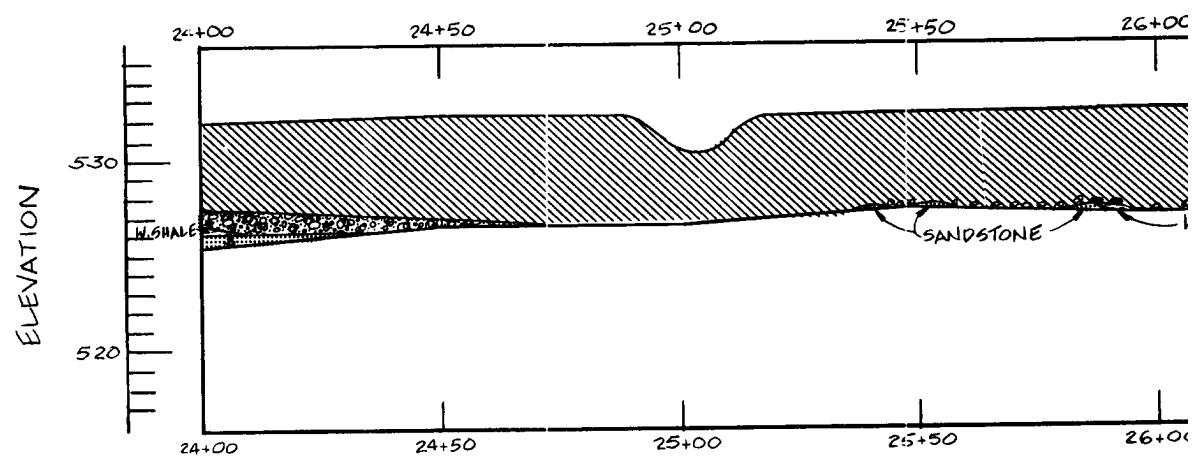
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PLAN

100 FT. OF 100

2

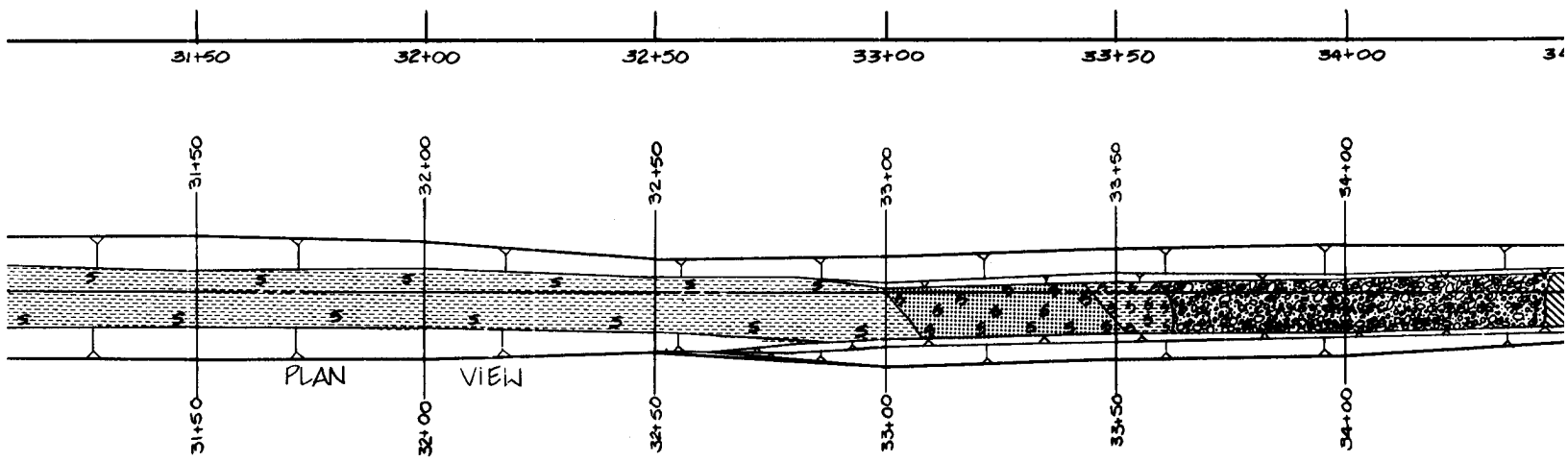
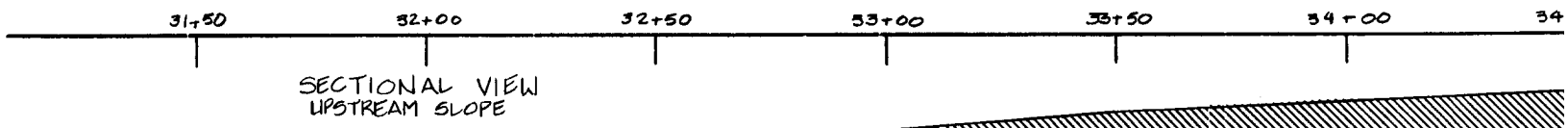
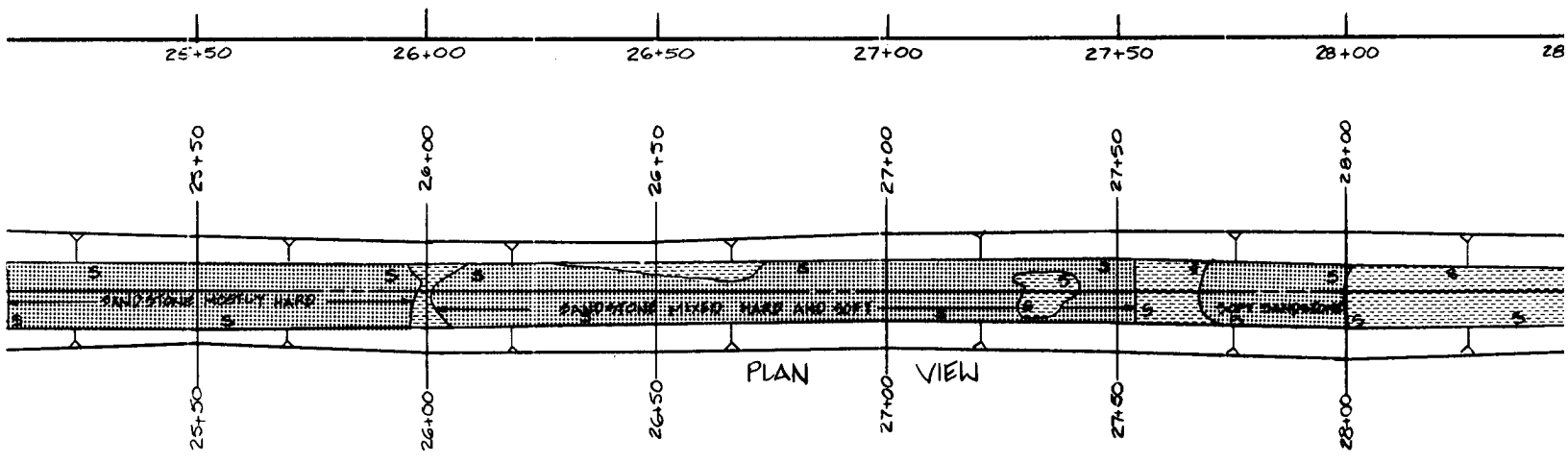
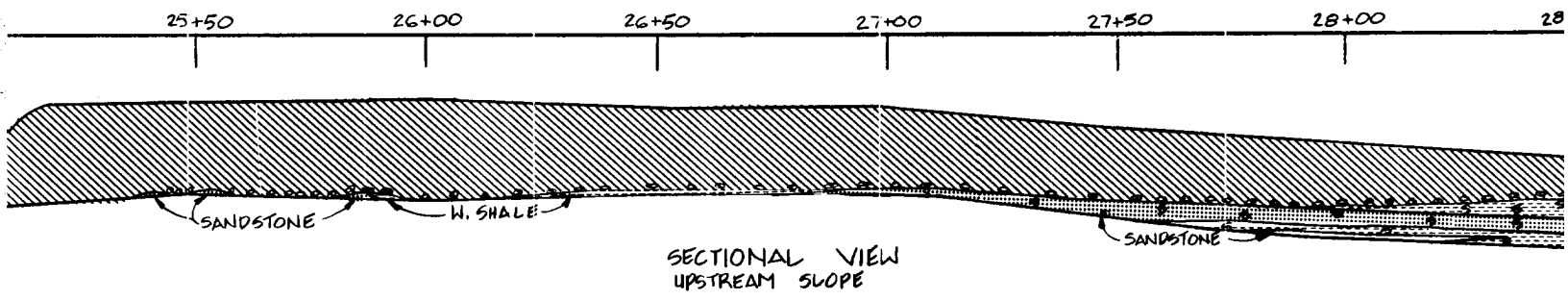
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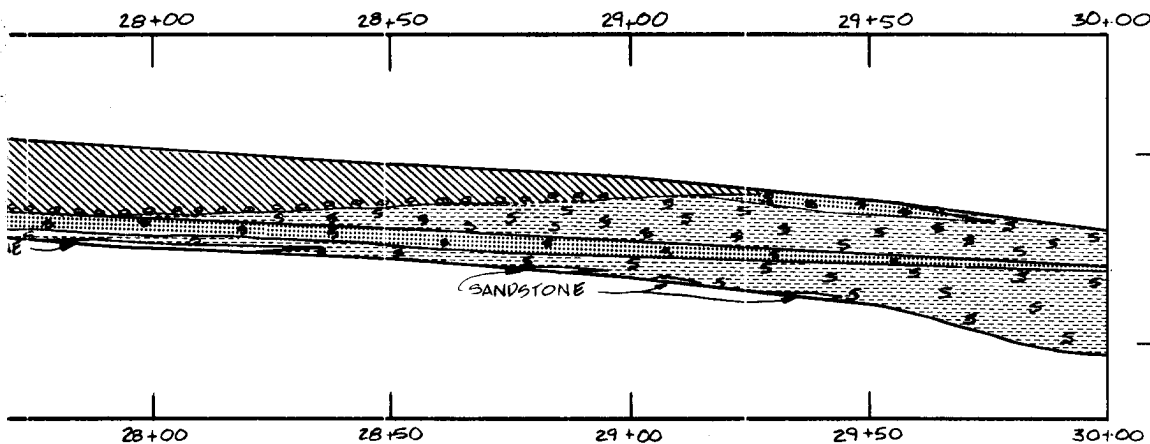
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2

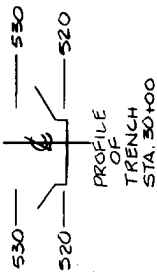
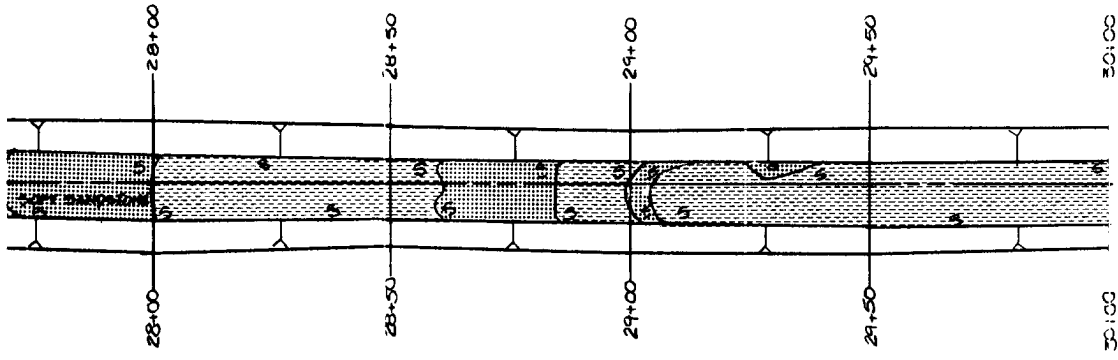
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4

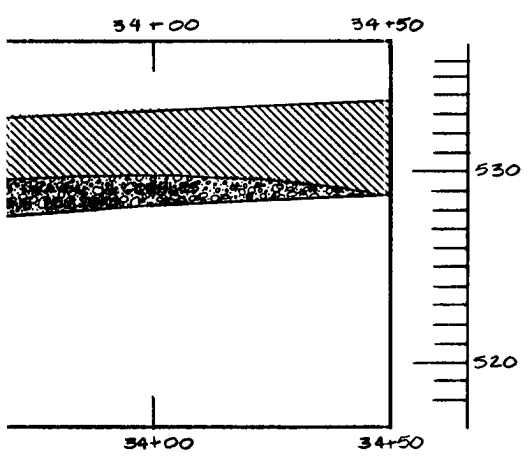




ELEVATION

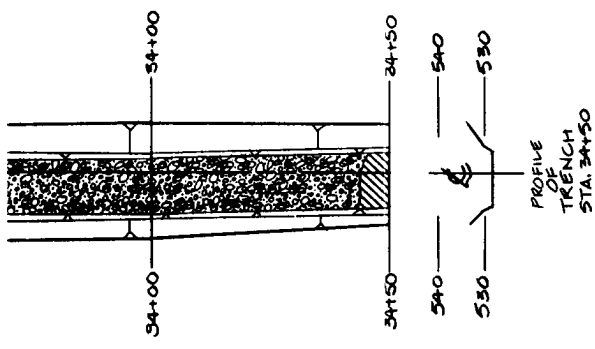


PROFILE OF TRENCH STA. 30+00



ELEVATION

NOTE:
 1. FOR MAP SYMBOLS, REFER TO PLATE 16.



PROFILE OF TRENCH STA. 34+50

BYM. DCA. NO.	ACTION	DATE	DESCRIPTION OF REVISION
			U.S. ARMY ENGINEER DISTRICT, FORT WORTH CORPS OF ENGINEERS FORT WORTH, TEXAS
DESIGNED BY: G. RADE	AQUILLA LAKE AQUILLA AND HACKBERRY CREEKS, TEXAS FINAL FOUNDATION REPORT INSPECTION TRENCH GEOLOGY AND EXCAVATION STA. 24+00.00 TO STA. 34+50.00		
DRAWN BY: C. KIRBY			
REVIEWED BY: R. BEHM			
SUBMITTED BY: ROBERT BEHM			
ENGINEER:	INVITATION NO.	DATE:	
	CONTRACT NO.	SHEET NO. OF	SEQUENC. NO.
	DRAWING NUMBER		

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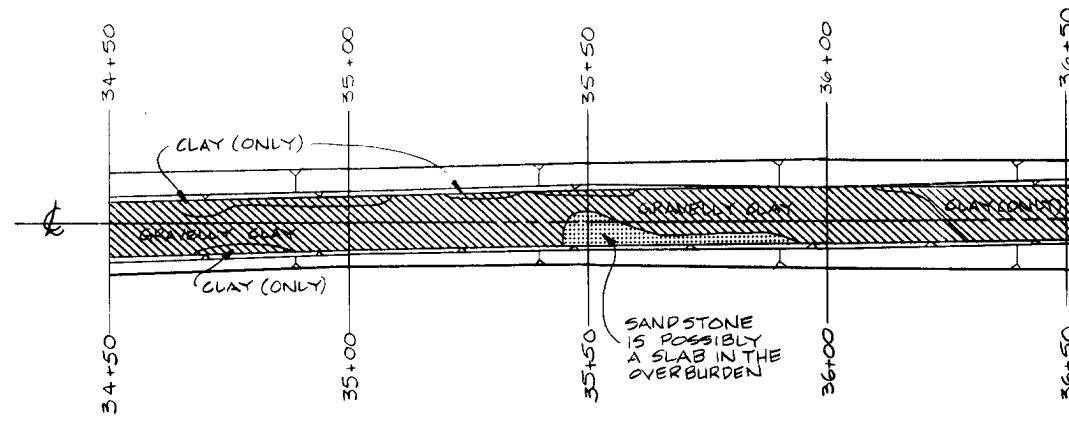
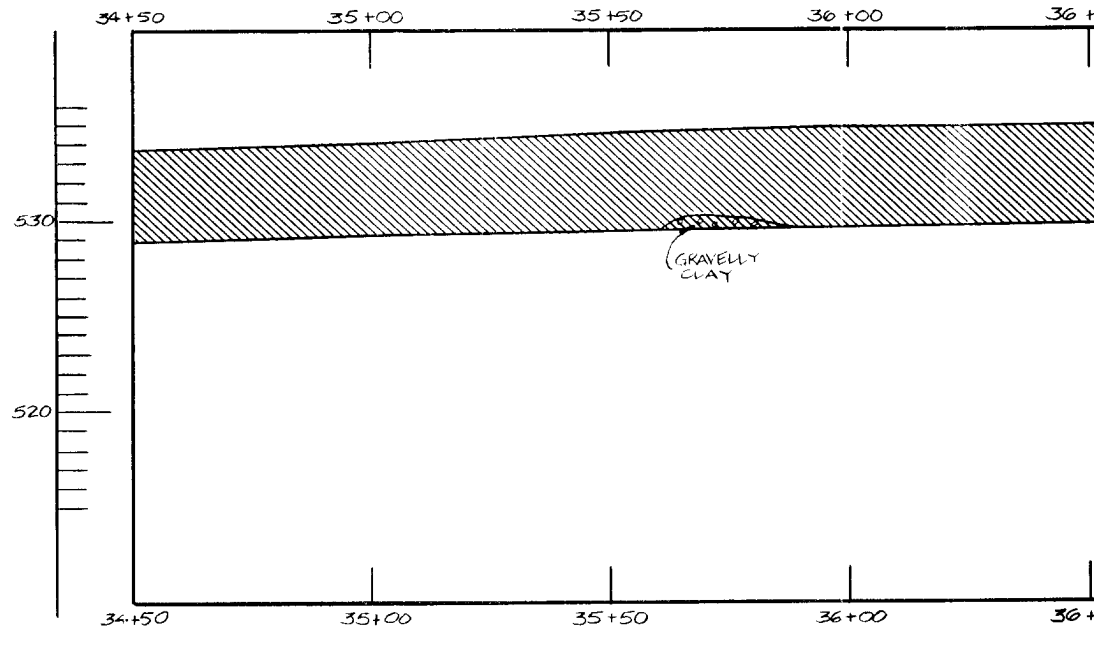
D

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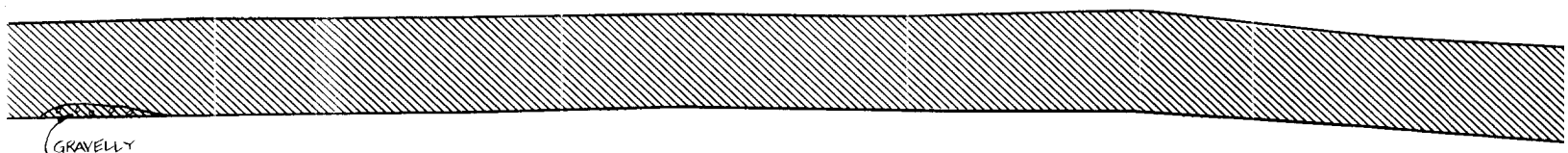
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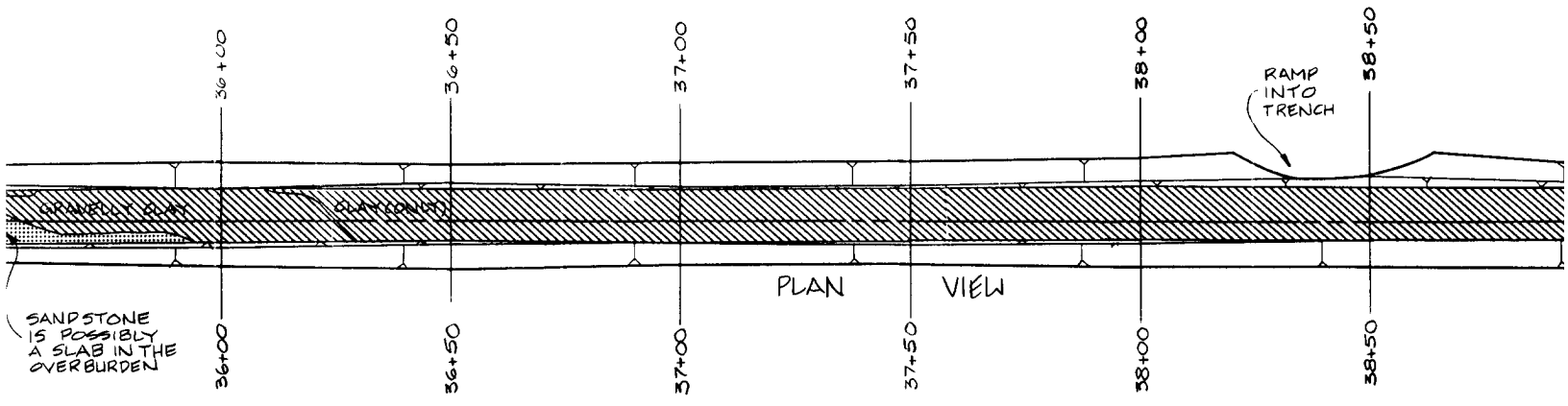
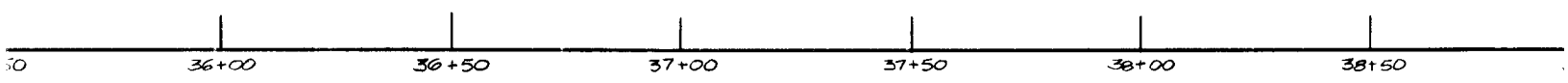
ELEVATION



2 POLYTRACER 033



SECTIONAL VIEW
UPSTREAM SLOPE



NOTE:
1. FOR MAP SY

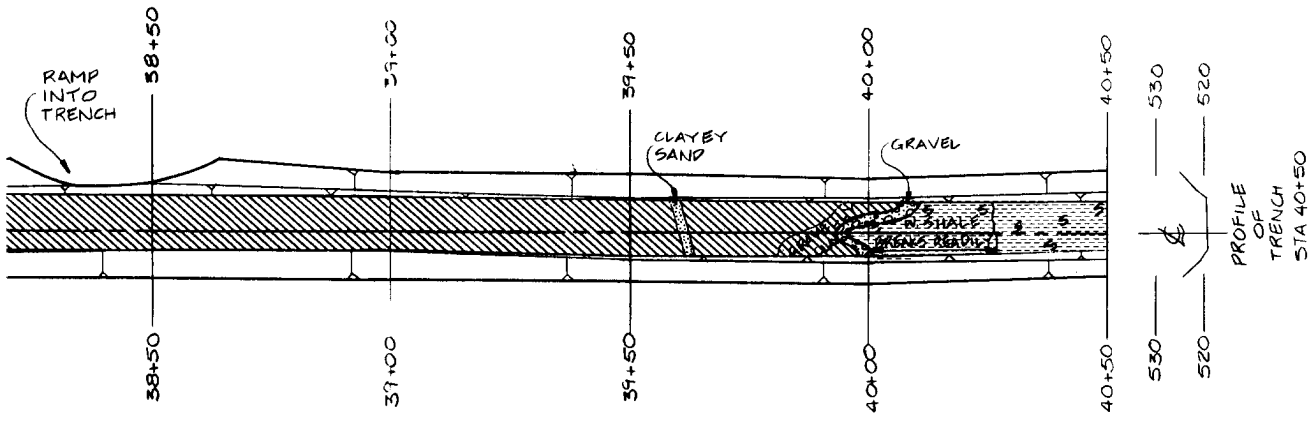
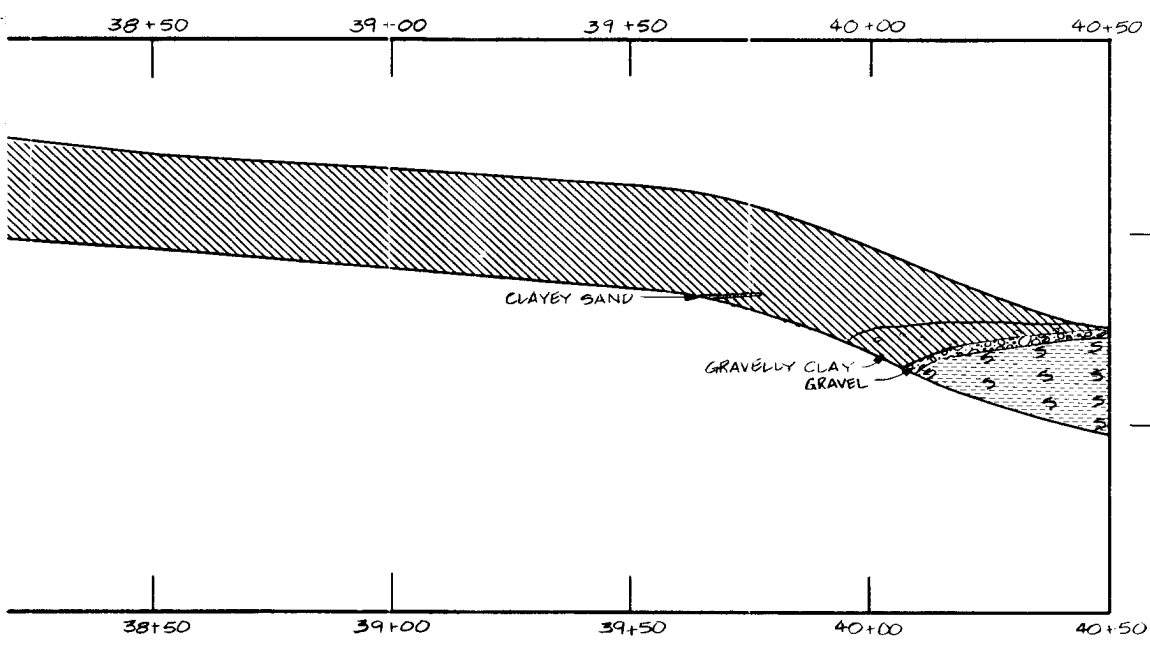
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NOTE:
1. FOR MAP SYMBOLS, REFER TO PLATE 16.

BYM		NO.	ACTION	DATE	DESCRIPTION OF REVISION
DESIGNED BY:		U.S. ARMY ENGINEER DISTRICT, FORT WORTH CORPS OF ENGINEERS FORT WORTH, TEXAS			
DRAWN BY:		AQUILLA LAKE AND HACKBERRY CREEKS, TEXAS FINAL FOUNDATION REPORT INSPECTION TRENCH GEOLOGY AND EXCAVATION STA. 34+50.00 TO STA. 40+50.00			
REVIEWED BY:					
ENGINEER:					
SUBMITTED BY:		INVITATION NO.	DATE:		
ENGINEER:		CONTRACT NO.	DRAWING NUMBER		SEQUENCE NO. OF

1

F

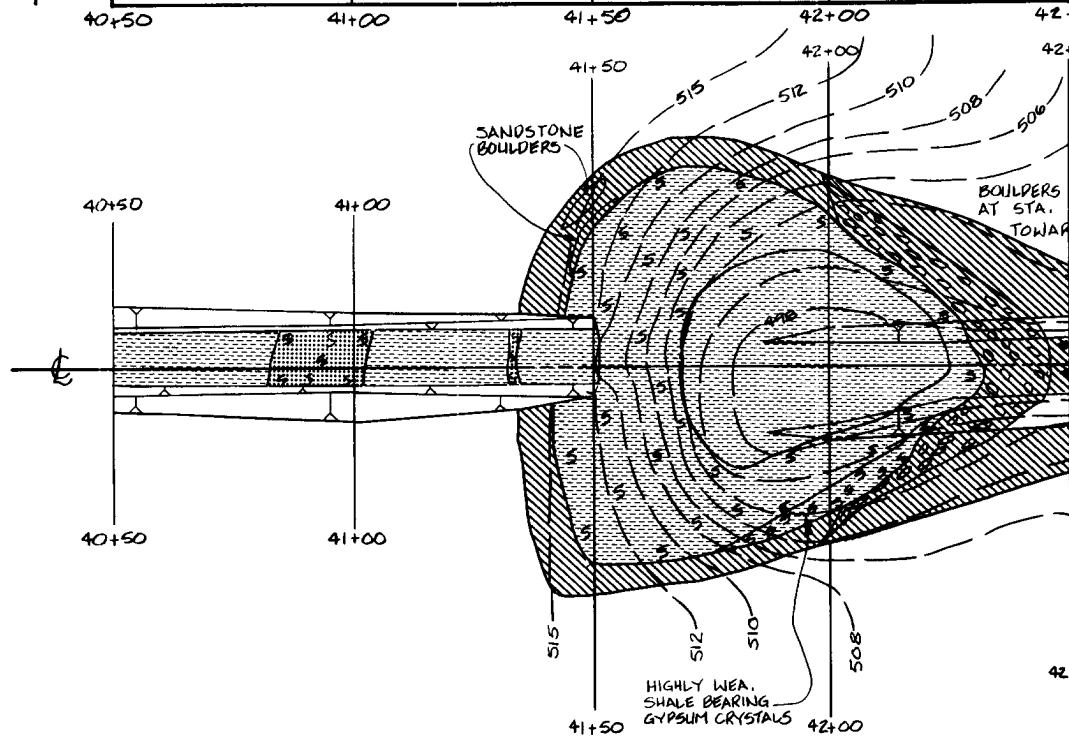
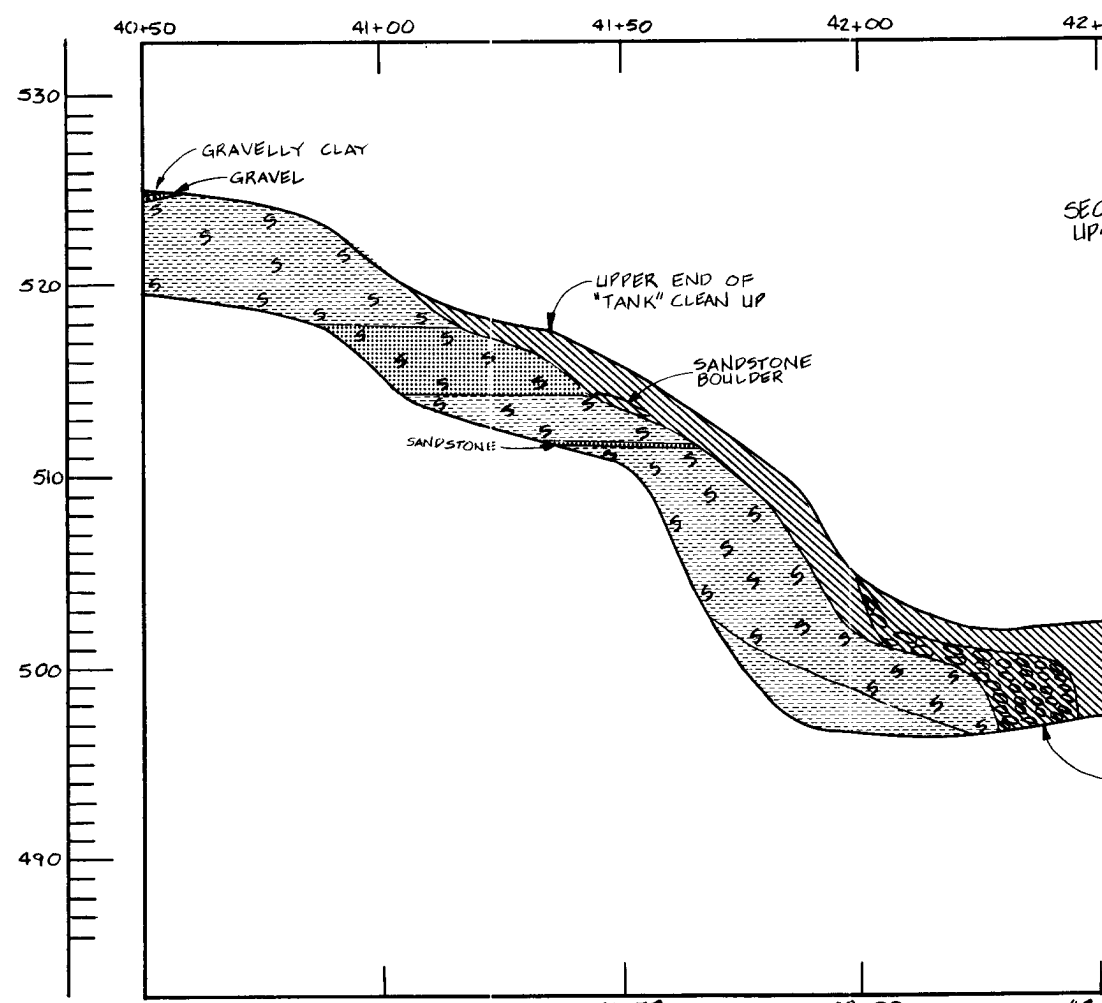
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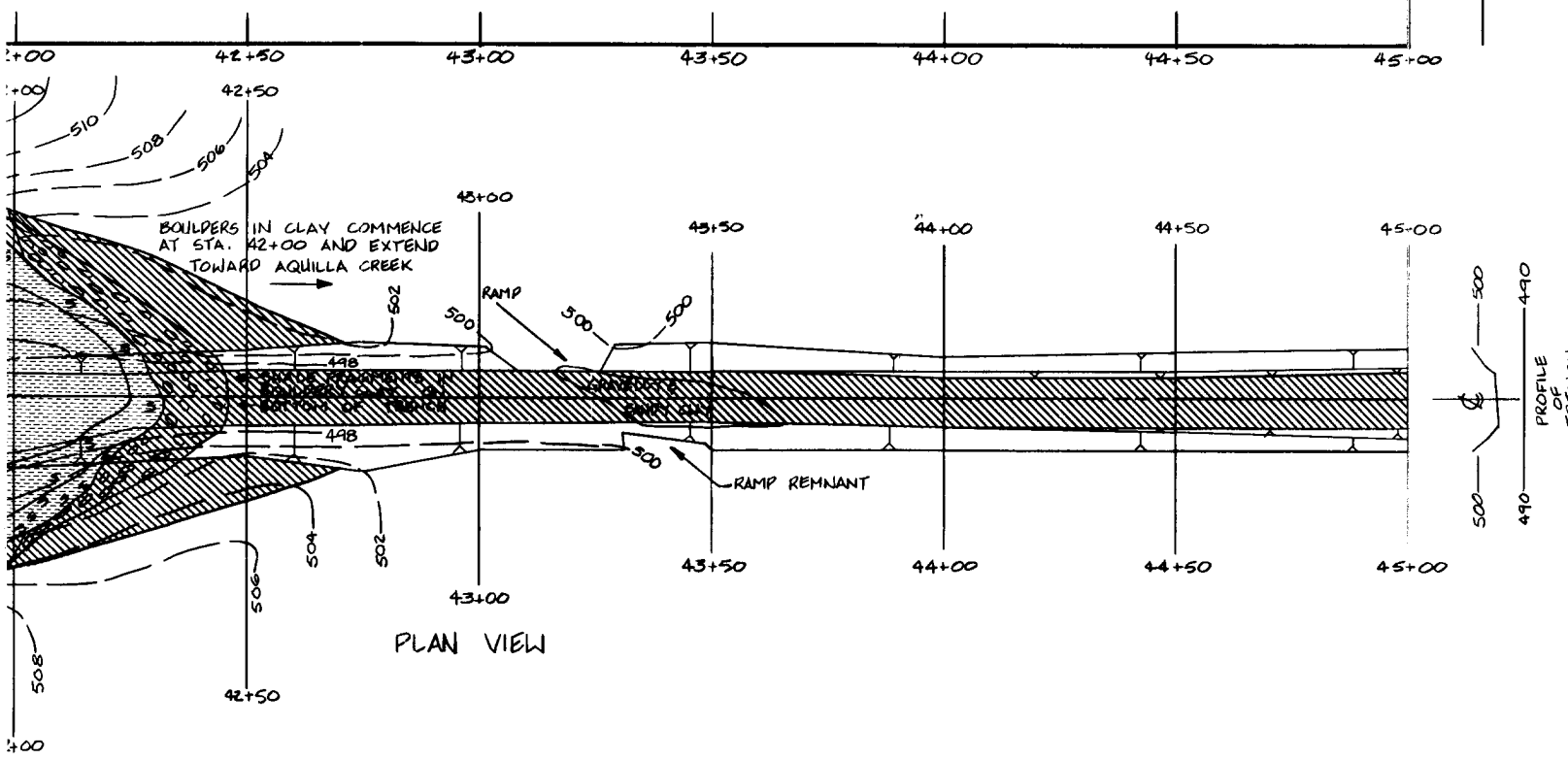
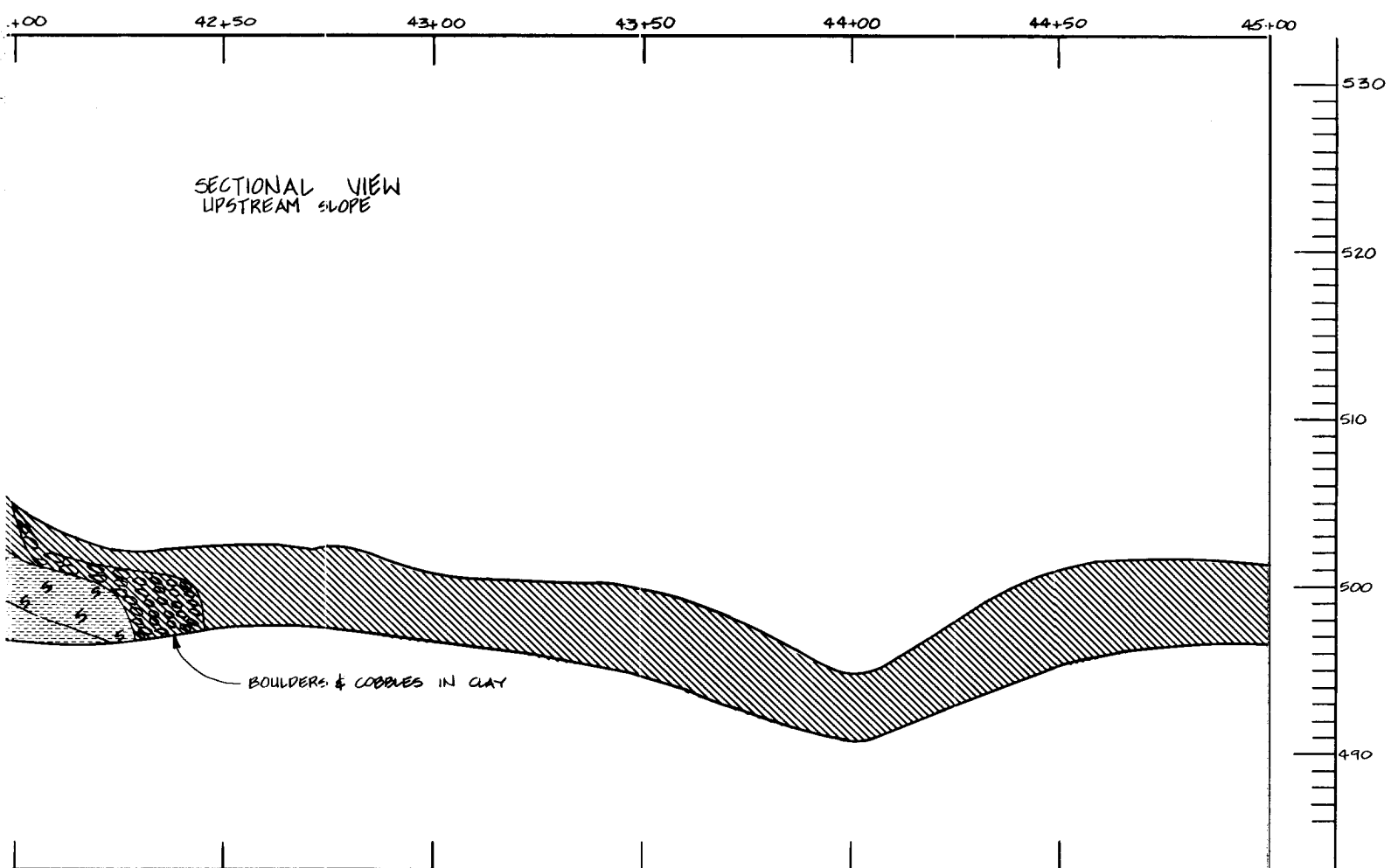
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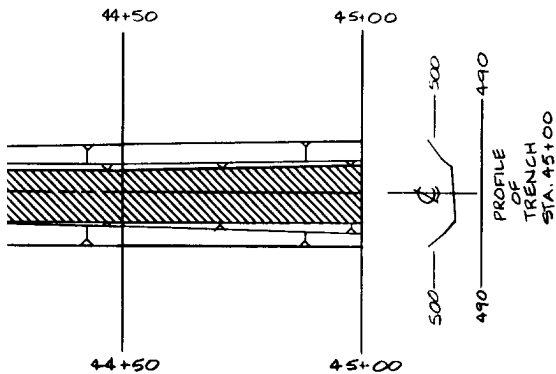
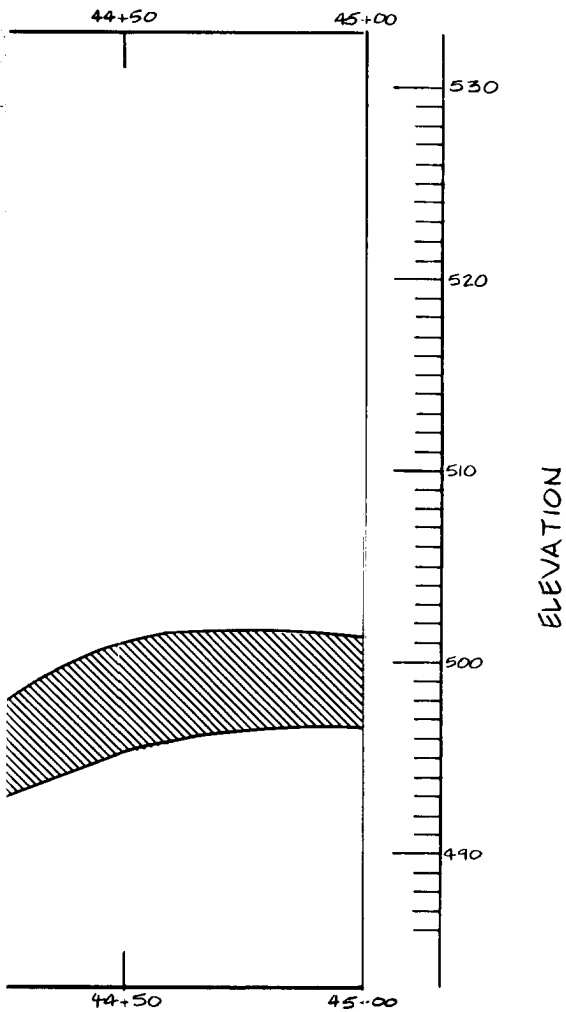
A

ELEVATION



PL. POLYTRAC 633





NOTE:
1. FOR MAP SYMBOLS, REFER TO PLATE 16.

SYM. NO.	ACTION	DATE	DESCRIPTION OF REVISION
DESIGNED BY: <u>G. RUEDE</u>			U.S. ARMY ENGINEER DISTRICT, FORT WORTH CORPS OF ENGINEERS FORT WORTH, TEXAS
DRAWN BY: <u>C. KIRBY</u>			
REVIEWED BY: 			AQUILLA LAKE AQUILLA AND HACKBERRY CREEKS, TEXAS FINAL FOUNDATION REPORT INSPECTION TRENCH GEOLOGY AND EXCAVATION STA. 40+50.00 TO STA. 45+00.00
SUBMITTED BY: 			
ENGINEER: 		INVITATION NO.	DATE:
		CONTRACT NO.	SEQUENCE NO.
		DRAWING NUMBER	SHEET NO. OF

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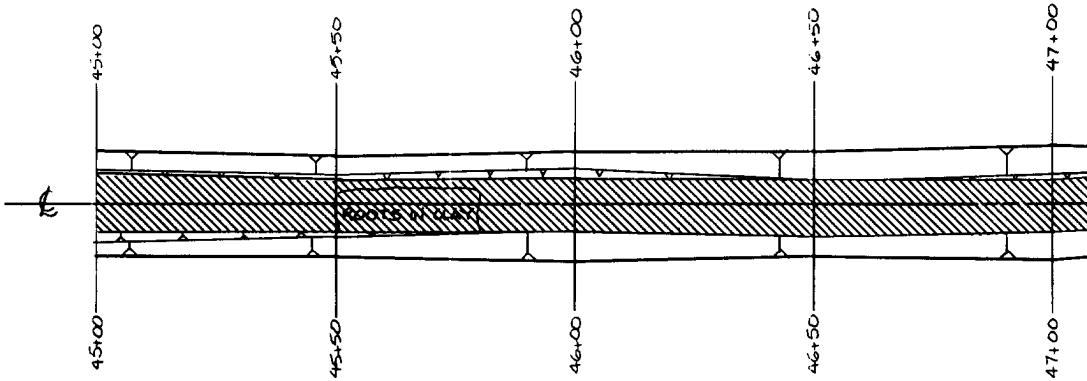
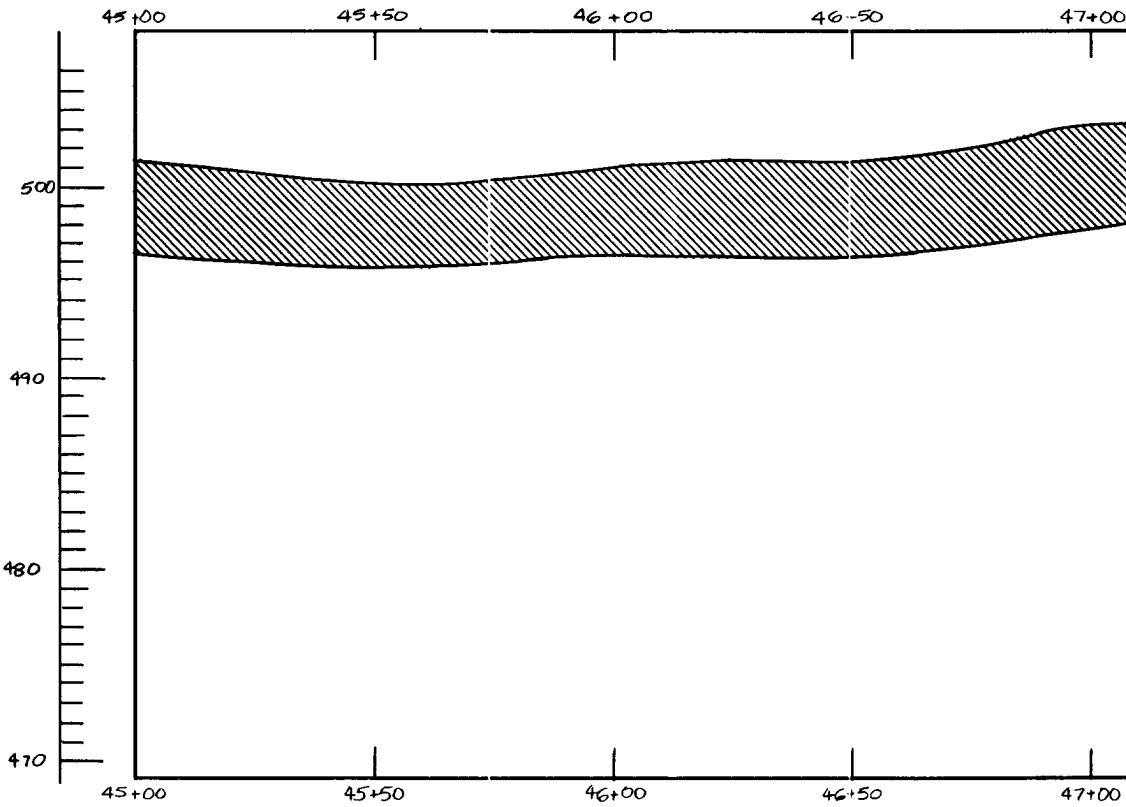
D

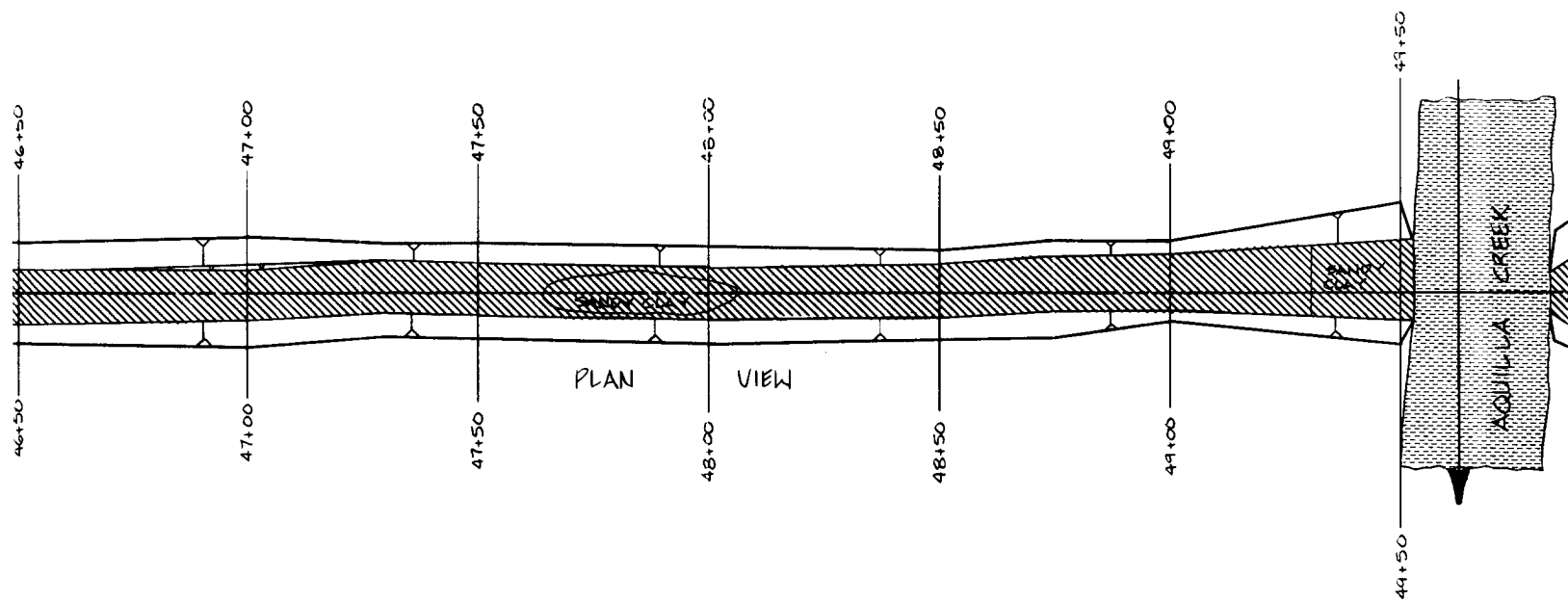
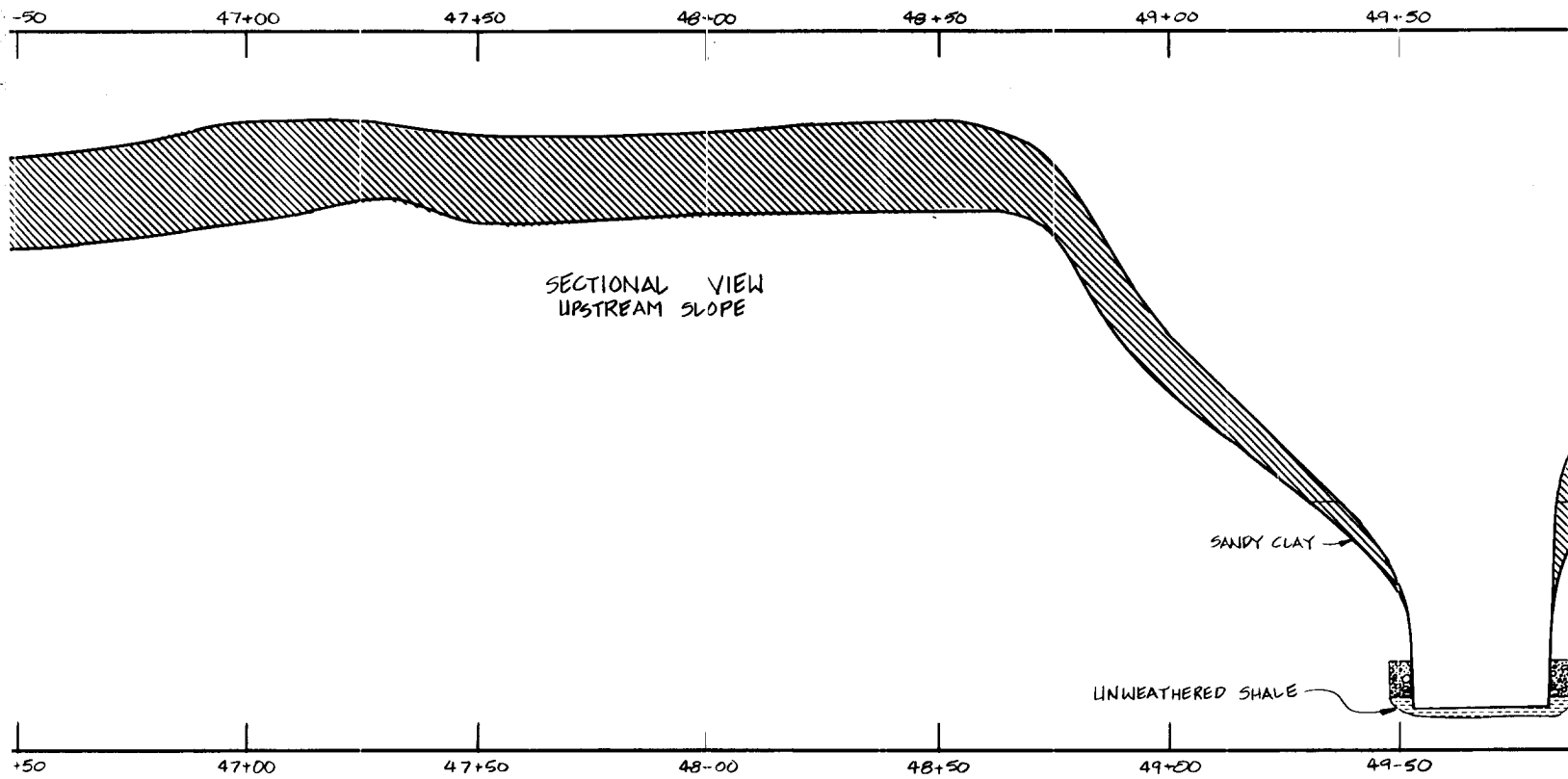
C

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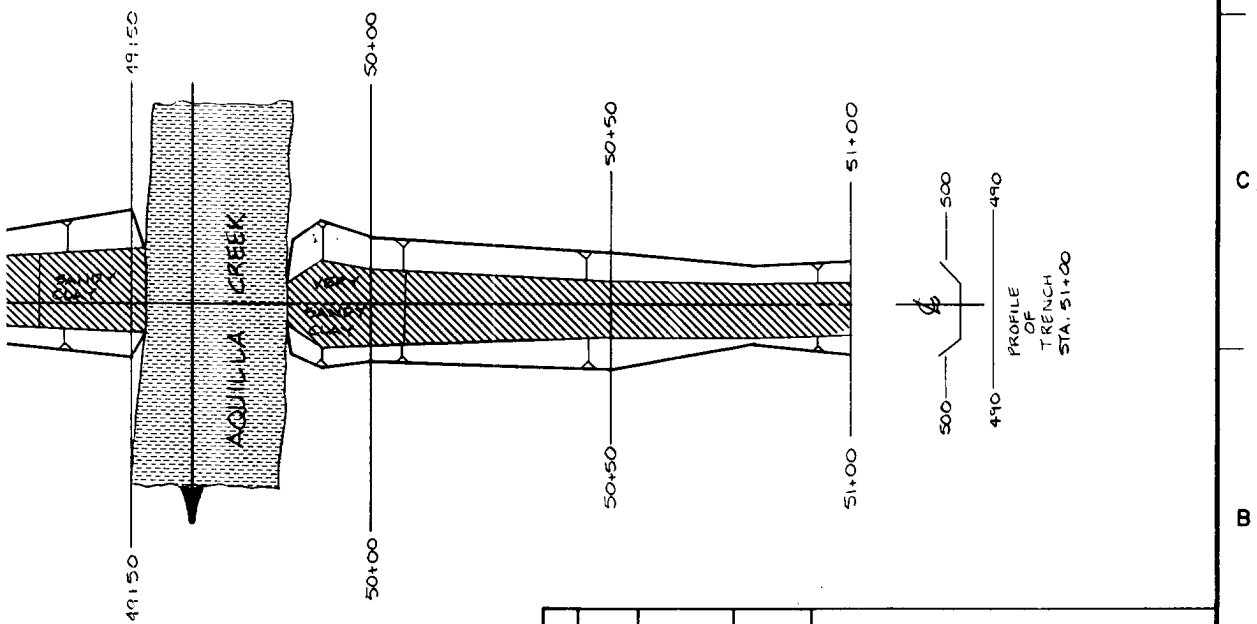
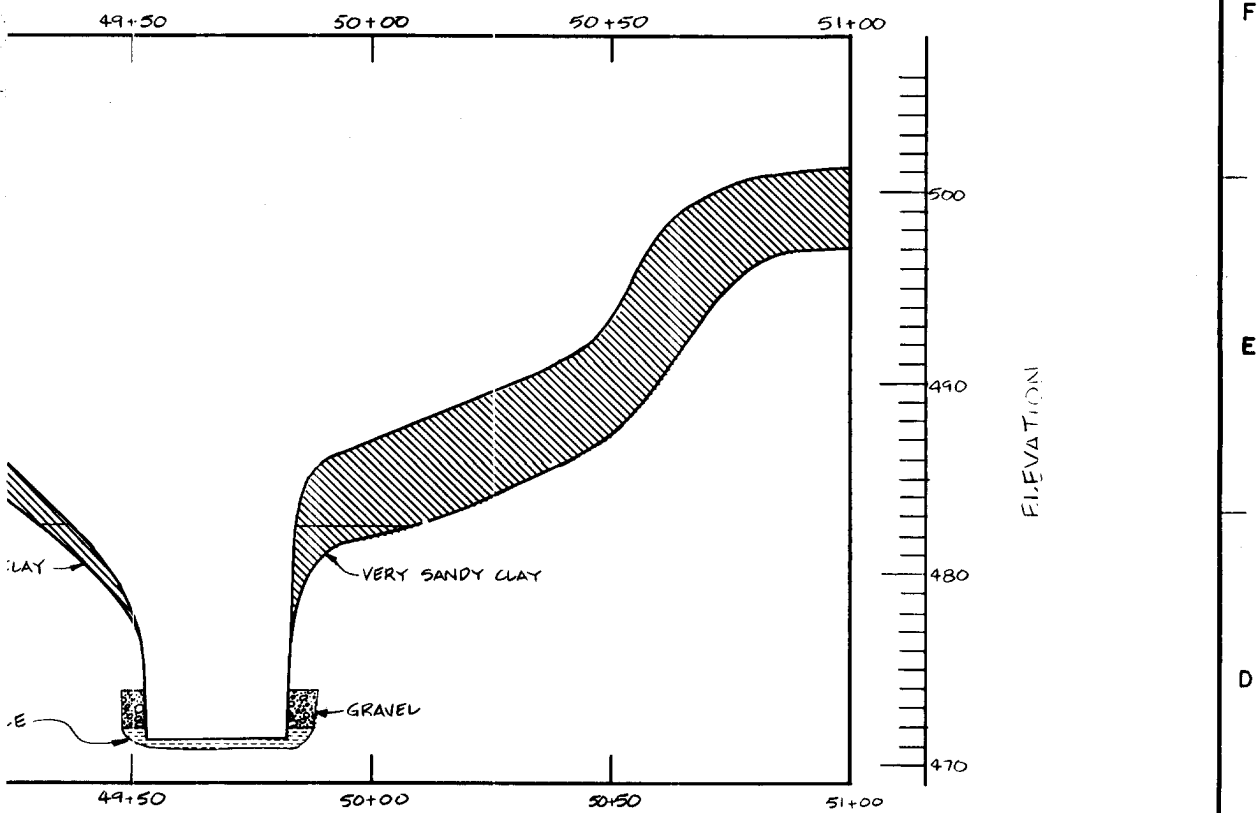
ELEVATION





NOTE:

1. FOR MAP SYMBOLS, REFER TO PLATE 16.



REFER TO PLATE 16.

SYM. NO.	NO.	ACTION	DATE	DESCRIPTION OF REVISION
				U.S. ARMY ENGINEER DISTRICT, FORT WORTH CORPS OF ENGINEERS FORT WORTH, TEXAS
DESIGNED BY: G. RUEDE	AQUILLA LAKE AQUILLA AND HACKBERRY CREEKS, TEXAS FINAL FOUNDATION REPORT INSPECTION TRENCH GEOLOGY AND EXCAVATION STA. 45 + 00.00 TO STA. 51 + 00.00			
DRAWN BY: C. KIRBY				
REVIEWED BY: R. BEHM				
SUBMITTED BY: ROBERT BEHM				
ENGINEER:	INVITATION NO.	DATE:		
	CONTRACT NO.	SHEET NO.	SEQUENCE NO.	
	DRAWING NUMBER	OF		

1

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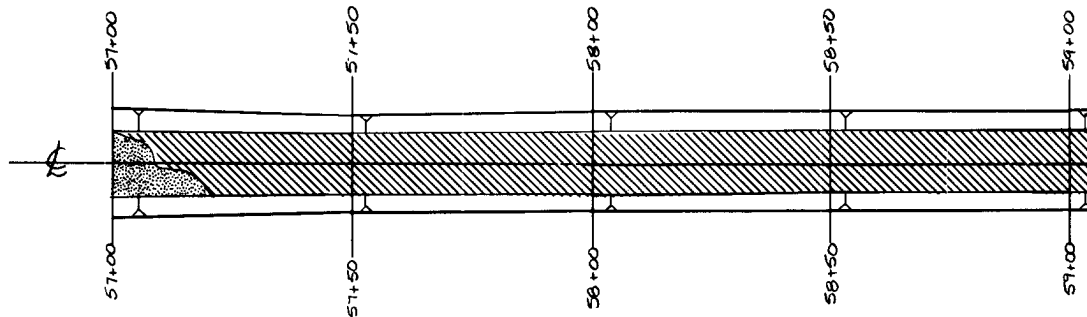
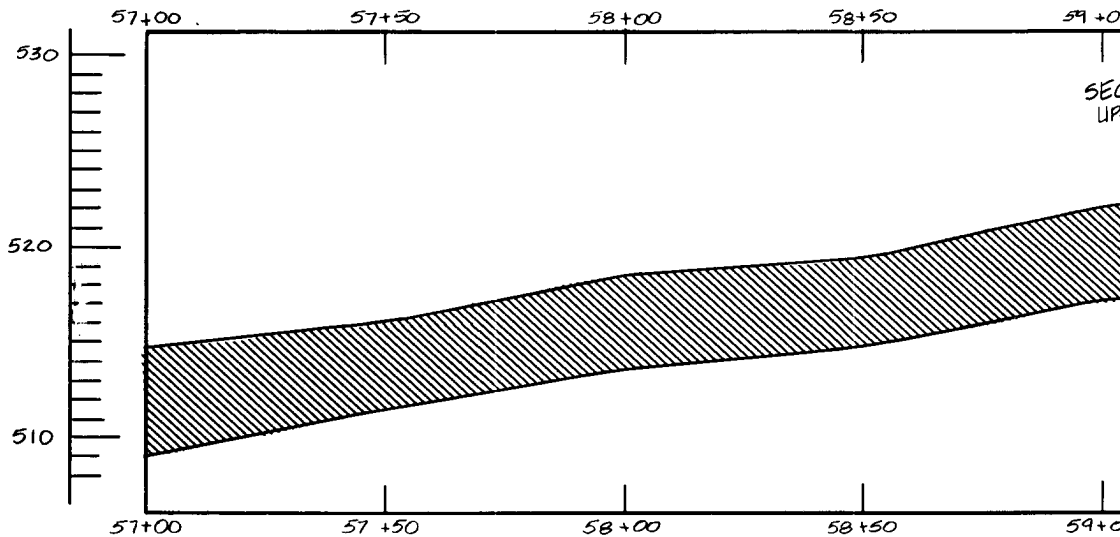
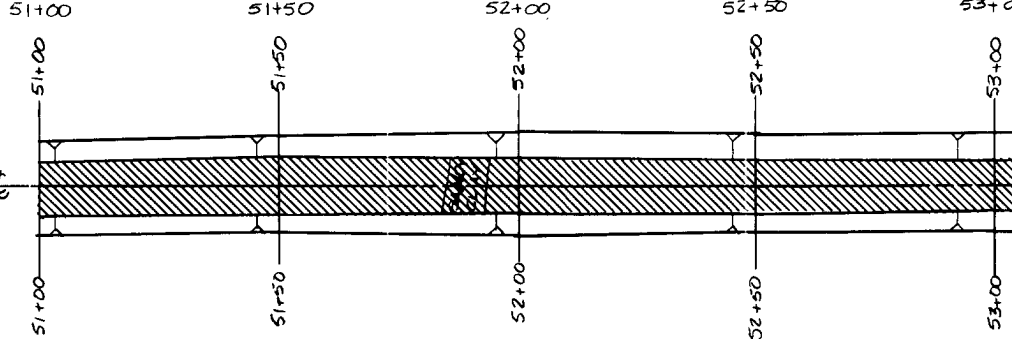
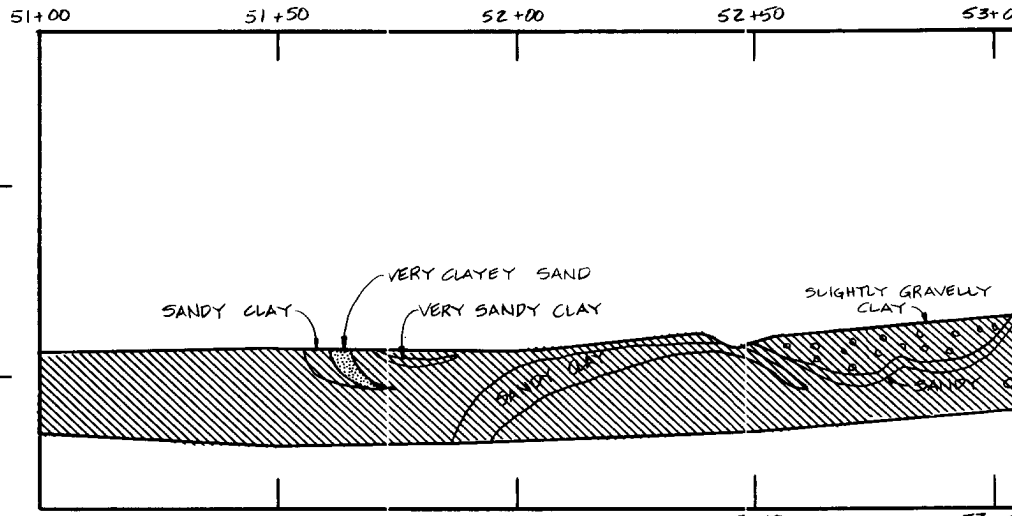
D

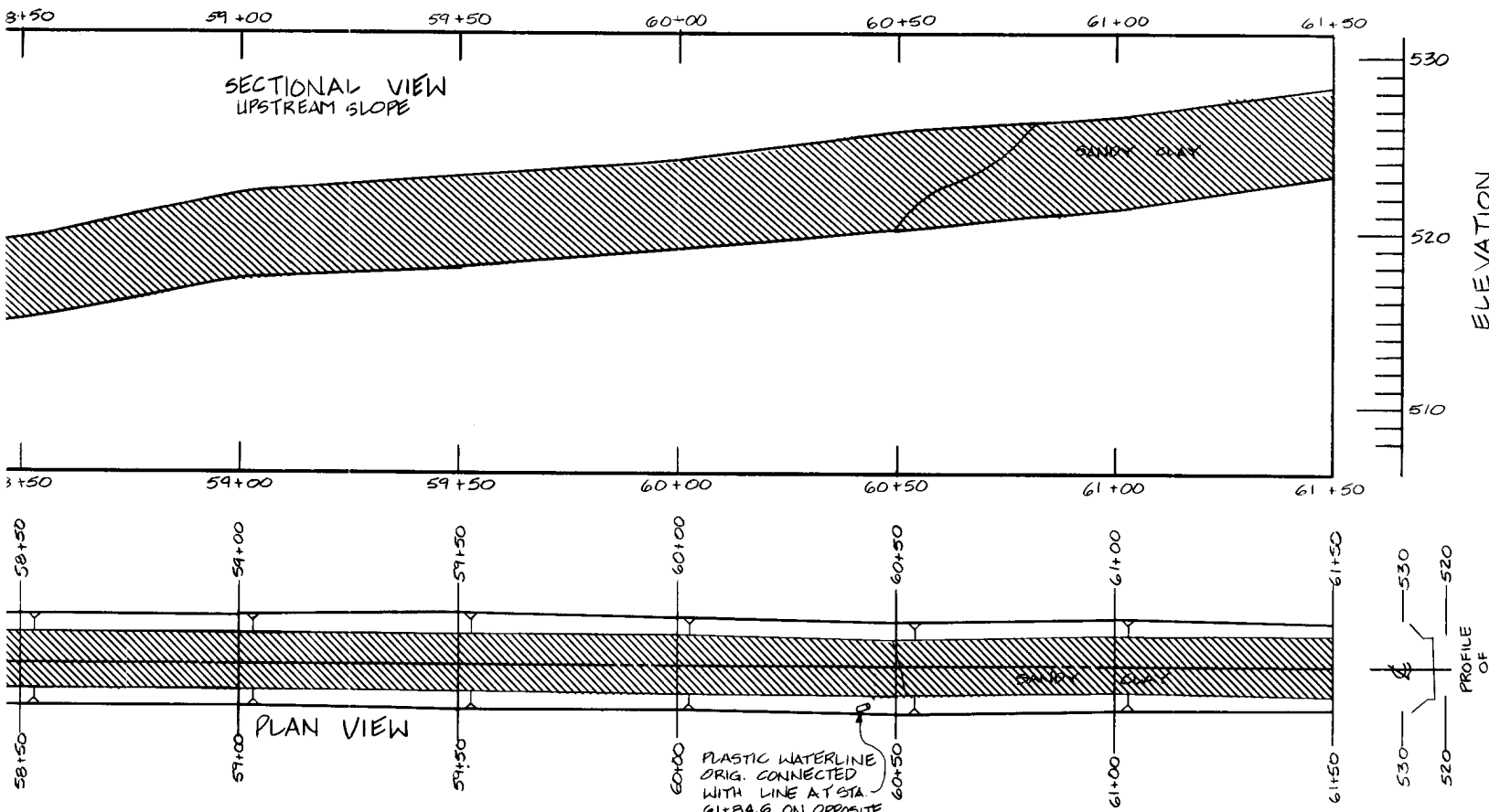
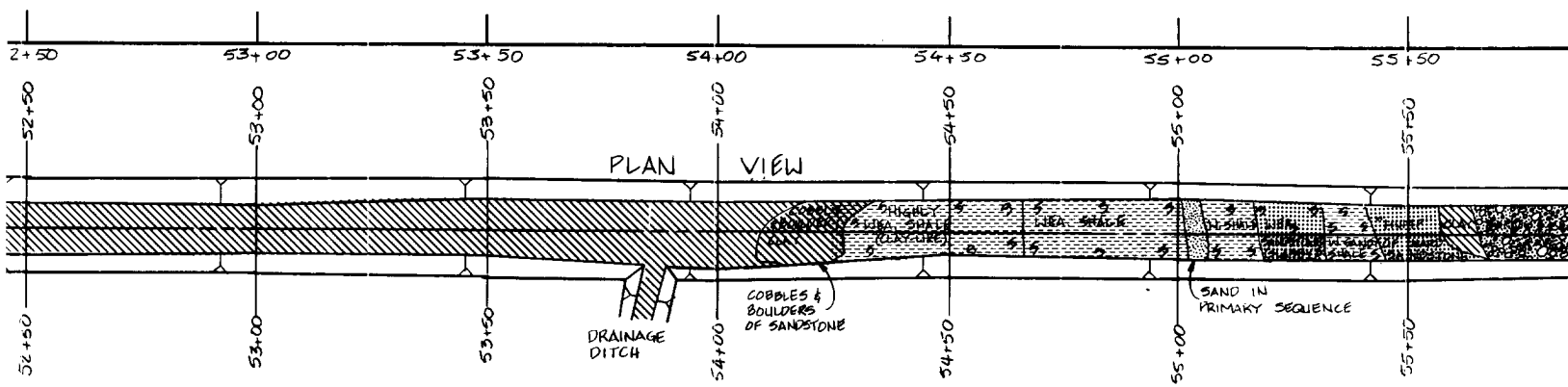
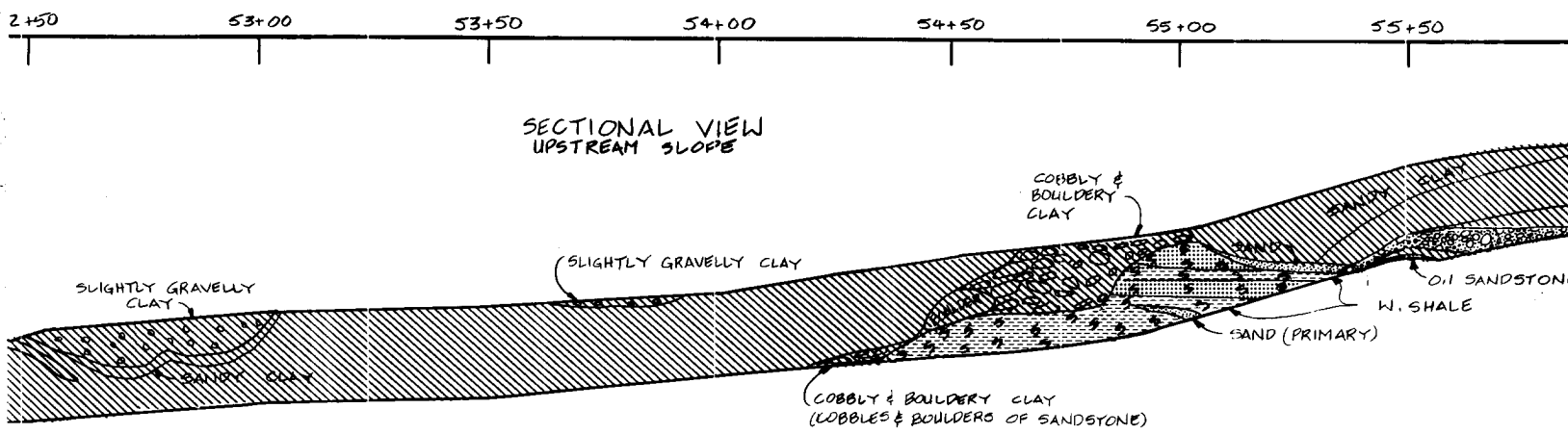
C

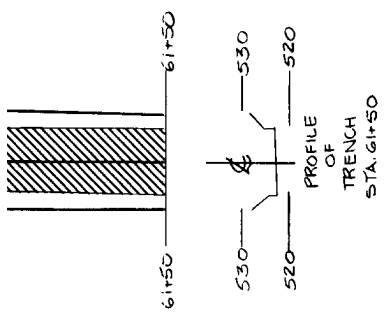
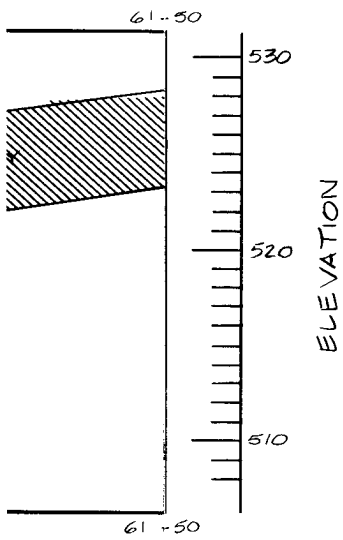
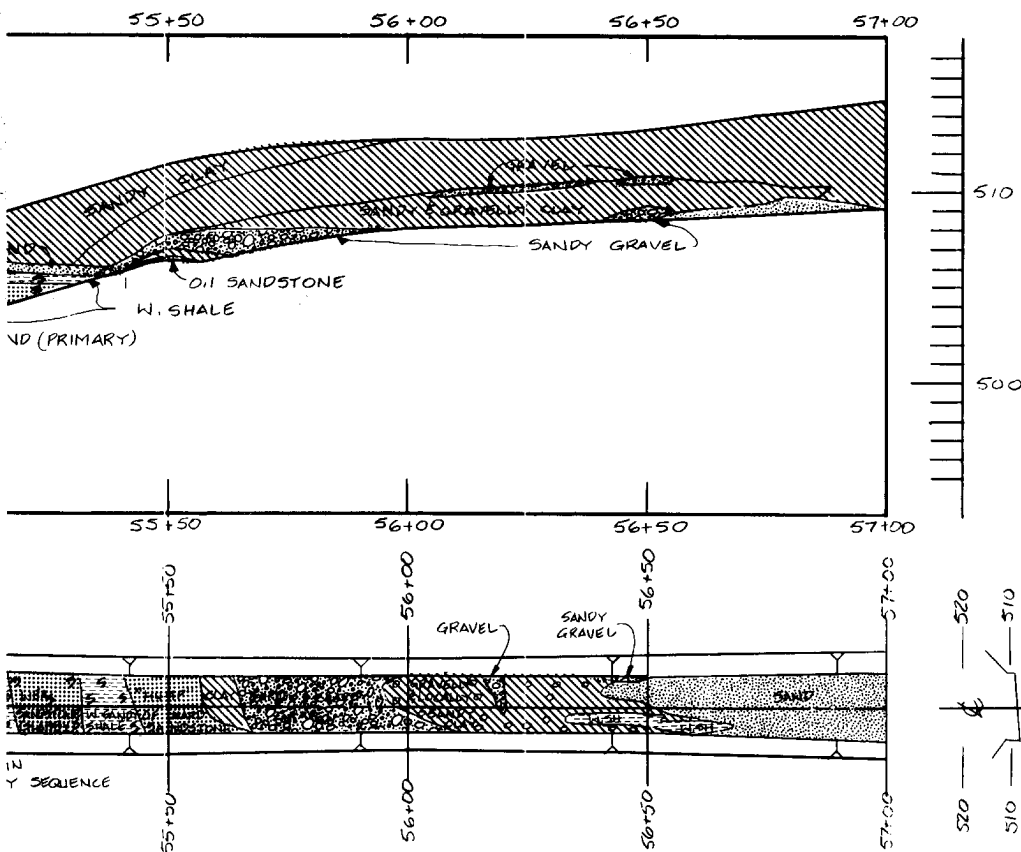
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P. POLYTRAC 003







NOTE:
1. FOR MAP SYMBOLS, REFER TO PLATE 16.

BY	DO. NO.	ACTION	DATE	DESCRIPTION OF REVISION
DESIGNED BY:				U.S. ARMY ENGINEER DISTRICT, FORT WORTH CORPS OF ENGINEERS FORT WORTH, TEXAS
DRAWN BY:				AQUILLA LAKE AQUILLA AND HACKBERRY CREEKS, TEXAS FINAL FOUNDATION REPORT INSPECTION TRENCH GEOLOGY AND EXCAVATION STA. 51+00.00 TO STA. 61+50.00
REVIEWED BY:				
SUBMITTED BY:				
ENGINEER:				INVIATION NO.
				DATE:
				CONTRACT NO.
				DRAWING NUMBER
				SHEET NO. OF
				SEQUENCE NO.

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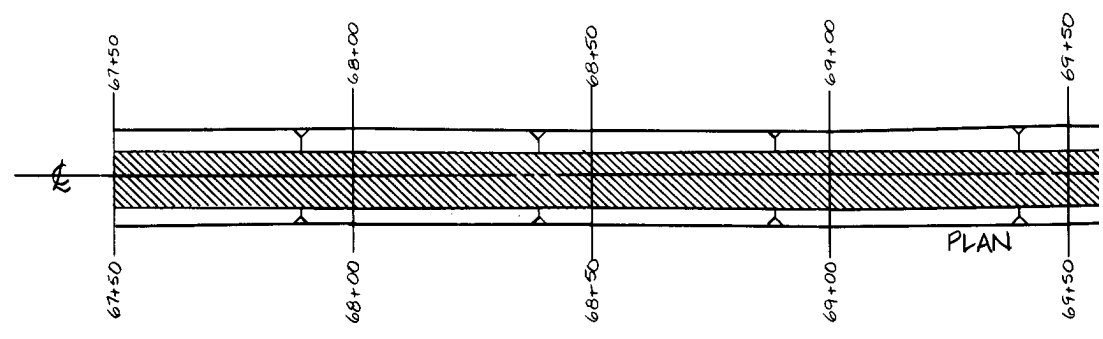
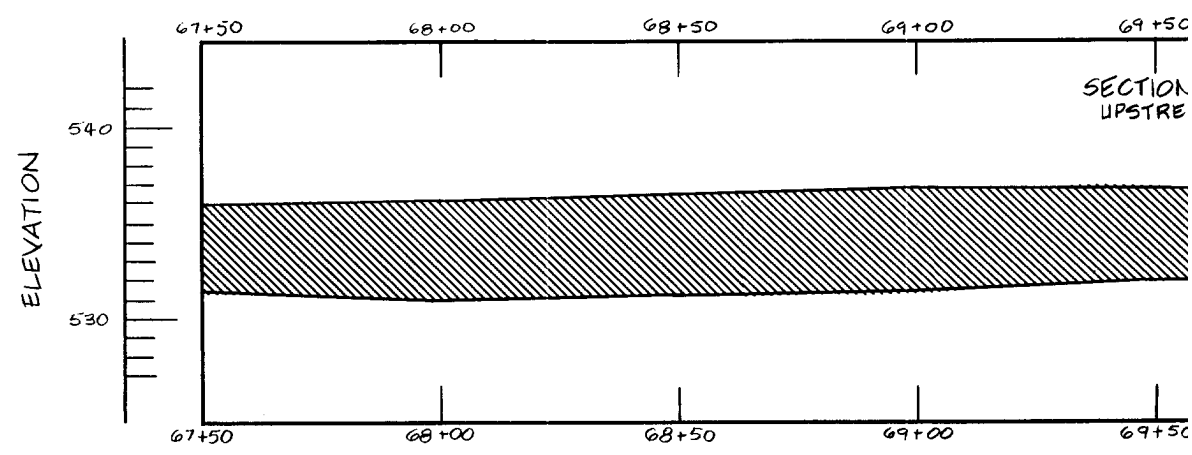
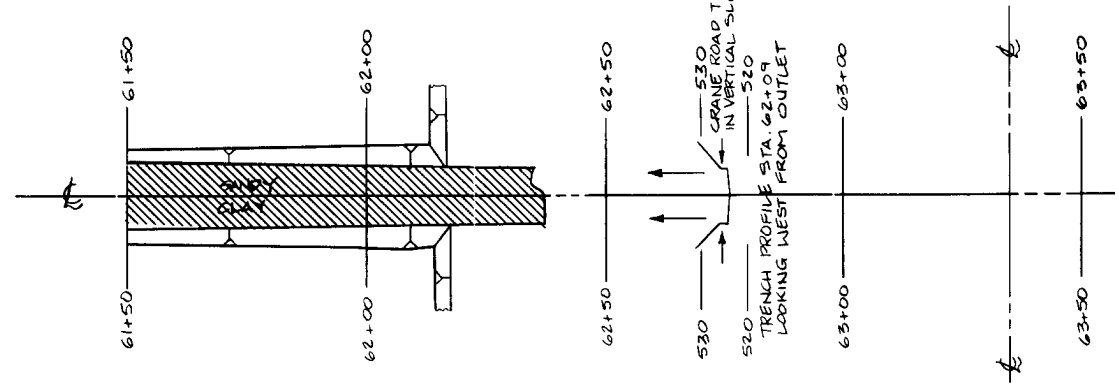
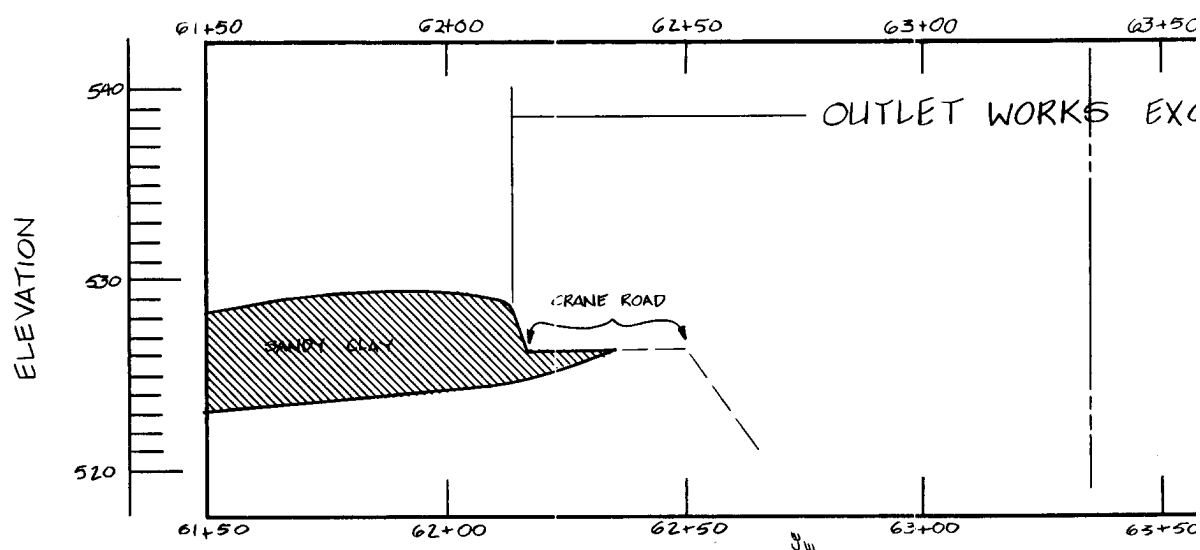
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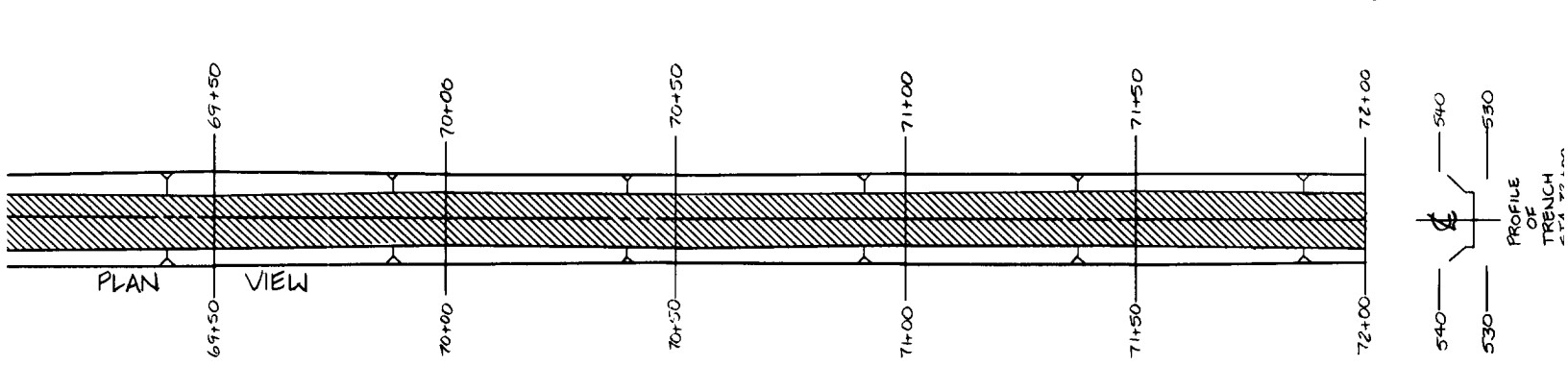
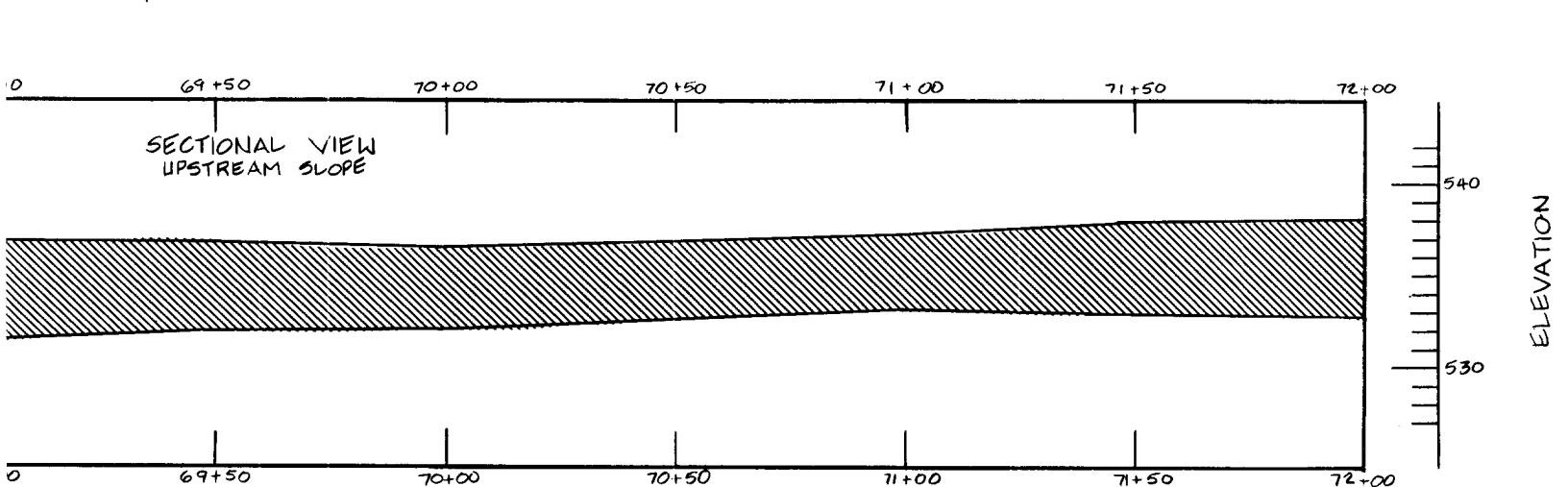
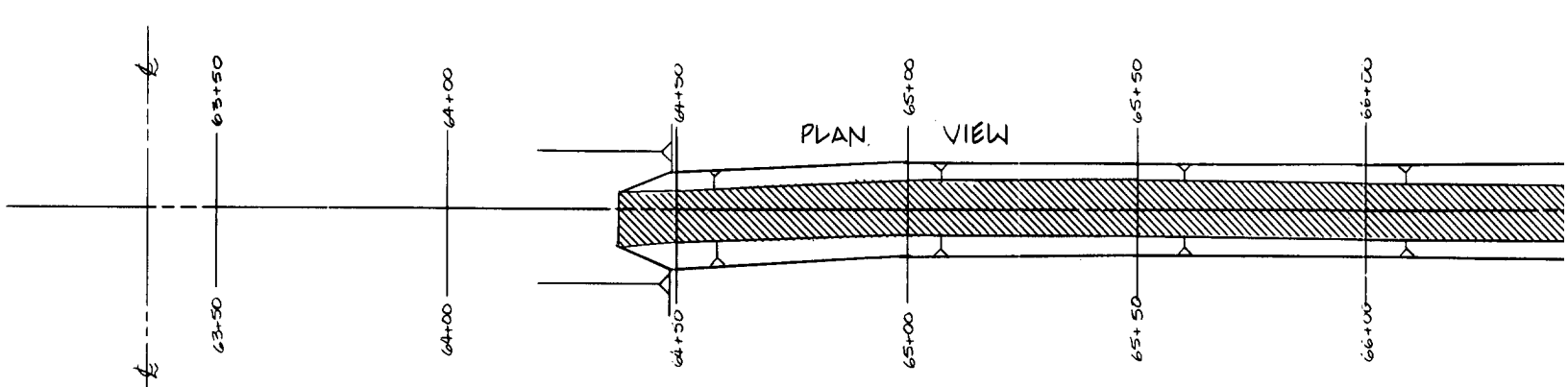
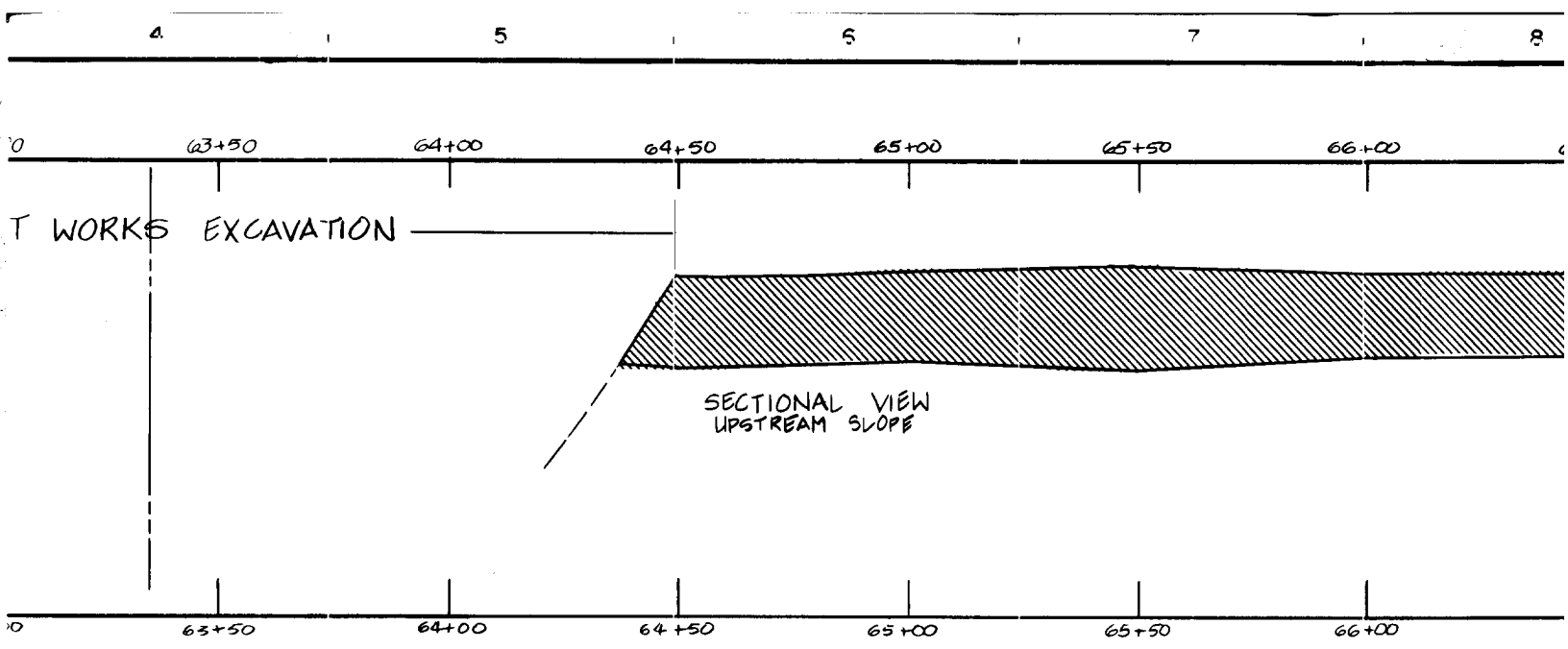
POLYTRACE 031

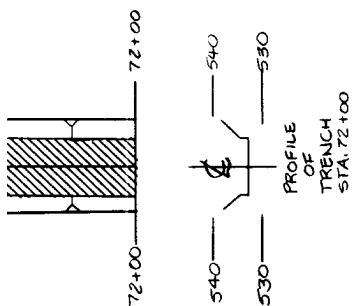
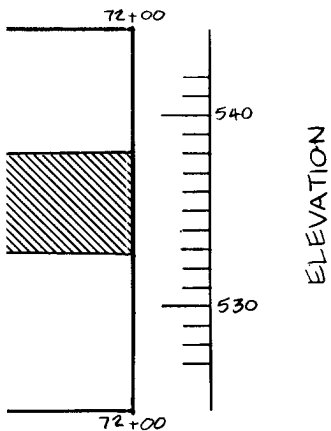
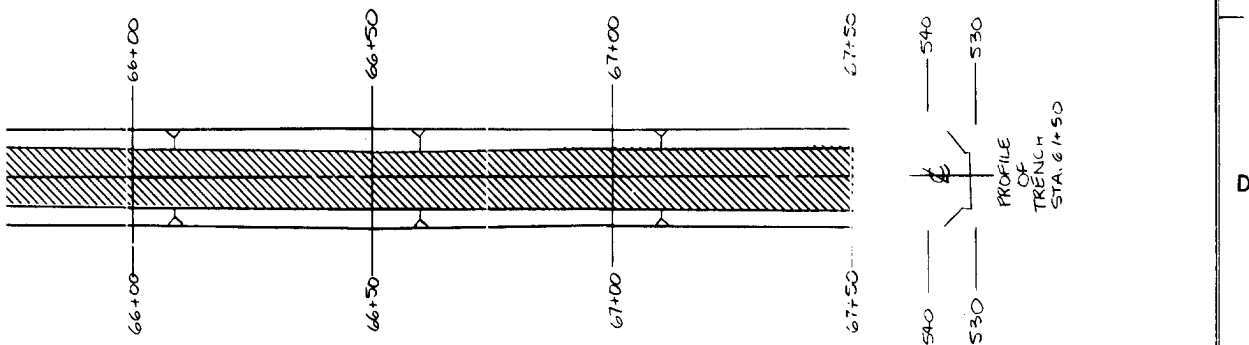
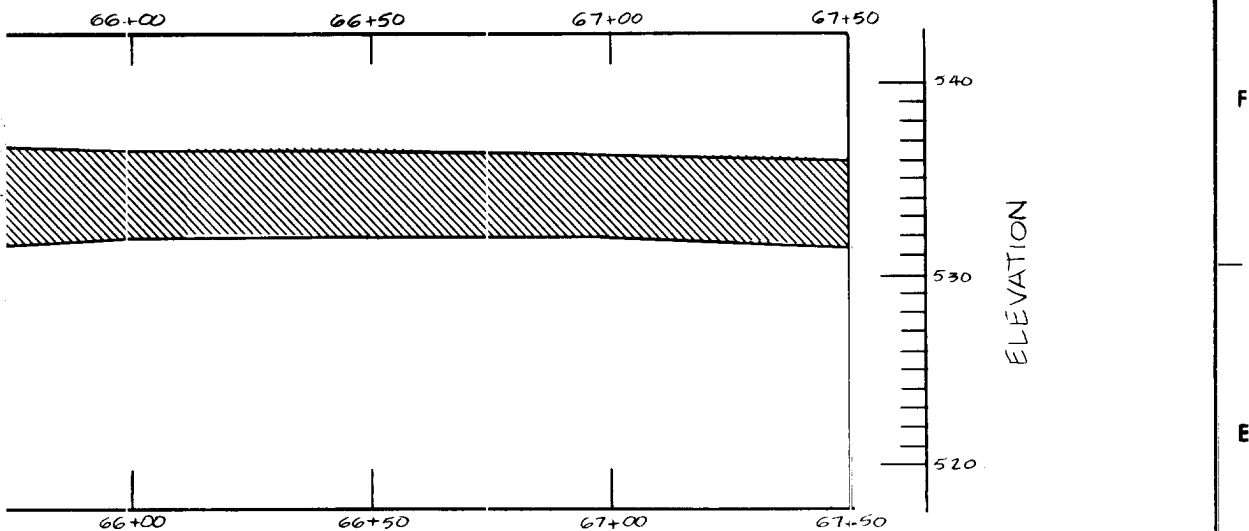
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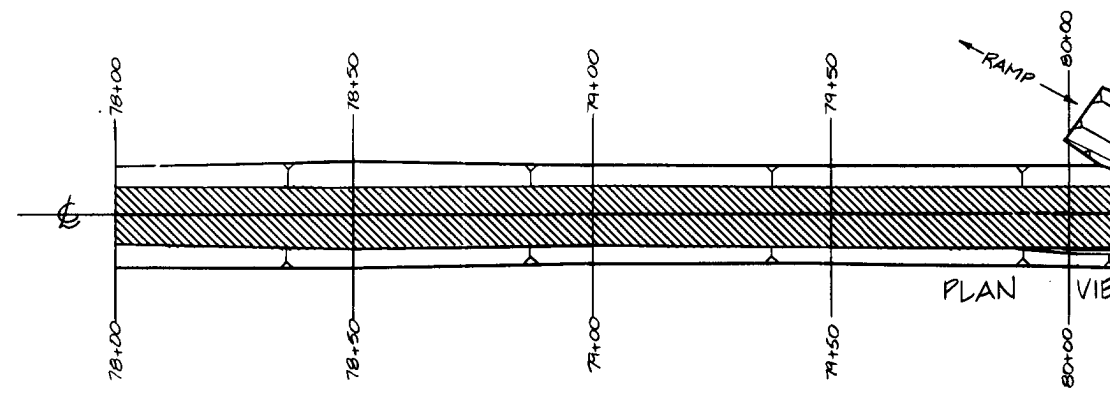
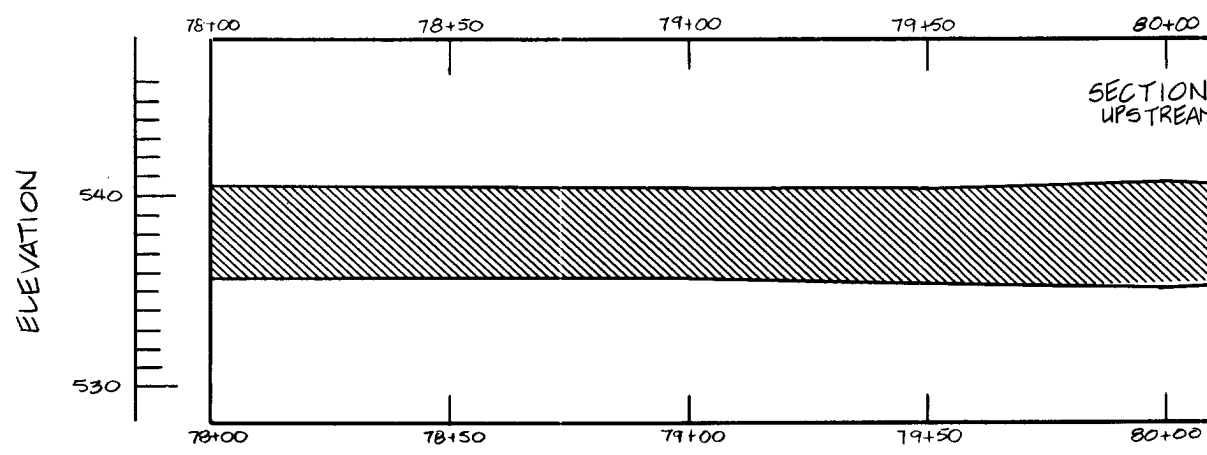
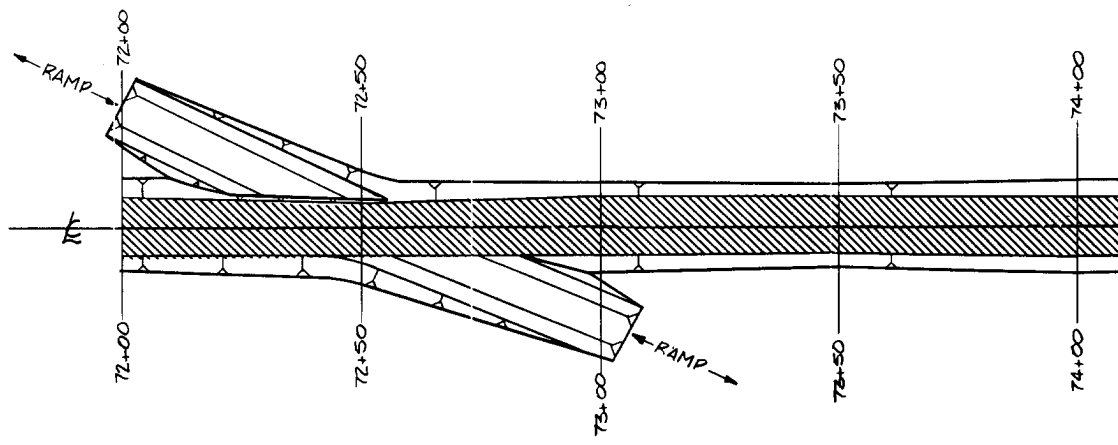
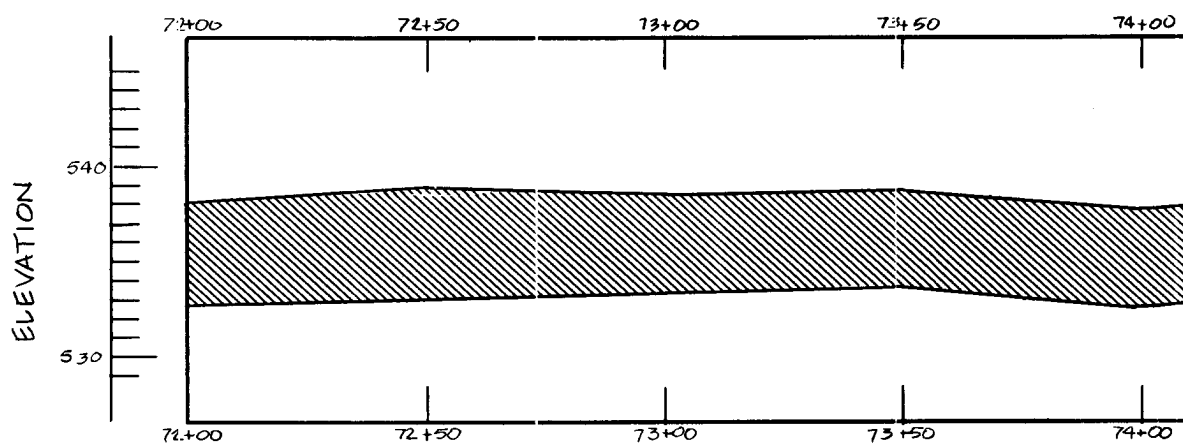




NOTE:
1. FOR MAP SYMBOLS, REFER TO PLATE 16.

SYMBOL NO.	ACTION	DATE	DESCRIPTION OF REVISION
			U.S. ARMY ENGINEER DISTRICT, FORT WORTH CORPS OF ENGINEERS FORT WORTH, TEXAS
DESIGNED BY: G. RUEDE	AQUILLA LAKE AQUILLA AND HACKBERRY CREEKS, TEXAS FINAL FOUNDATION REPORT INSPECTION TRENCH GEOLOGY AND EXCAVATION STA. 61+50.00 TO STA. 72+00.00		
DRAWN BY: C. KIRBY			
REVIEWED BY: R. BEHM			
SUBMITTED BY: ROBERT BEHM			
ENGINEER:	INVIATION NO.	DATE:	
	CONTRACT NO.	SHEET NO.	SEQUENCE NO.
	DRAWING NUMBER	OF	

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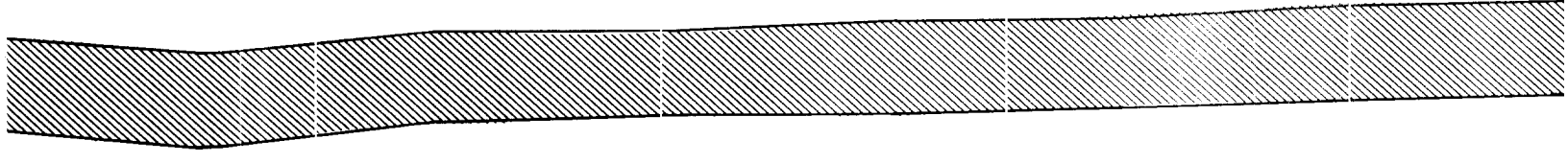


SECTION, UPSTREAM

PLAN VIEW

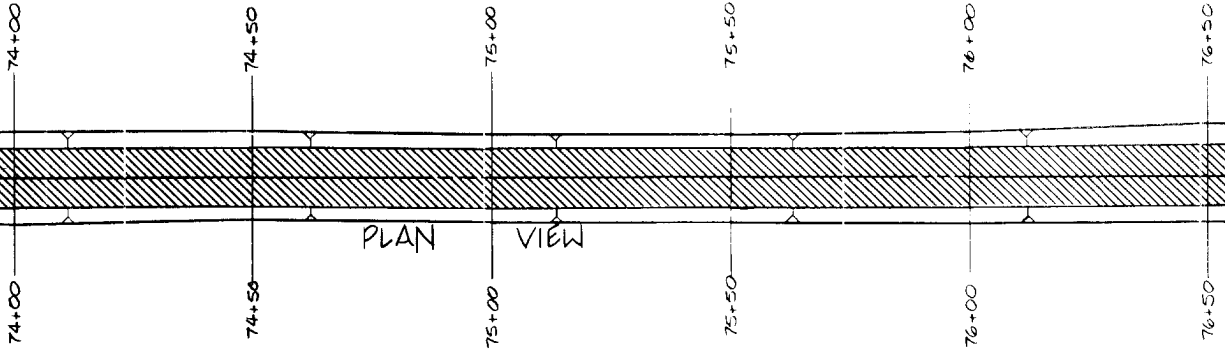
74+00 74+50 75+00 75+50 76+00 76+50

SECTIONAL VIEW
UPSTREAM SLOPE



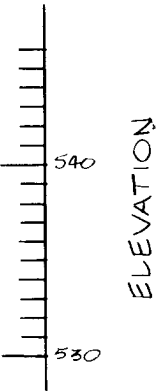
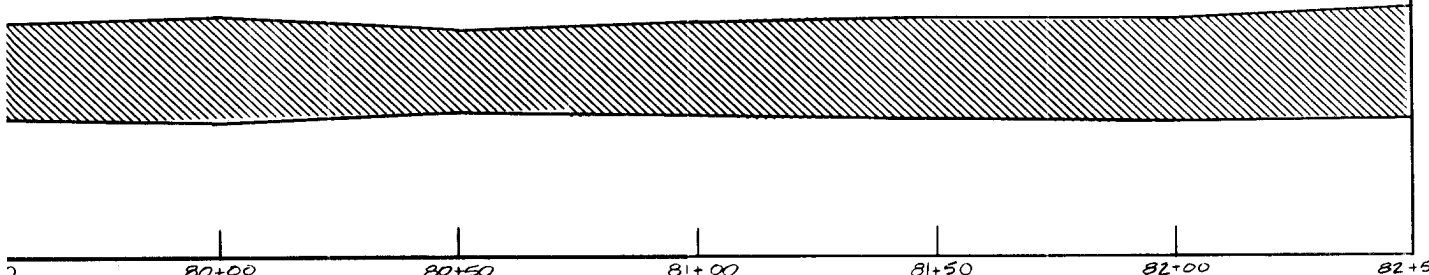
74+00 74+50 75+00 75+50 76+00 76+50

PLAN VIEW



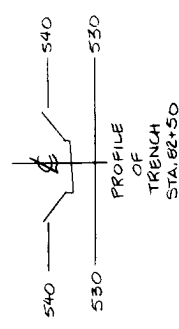
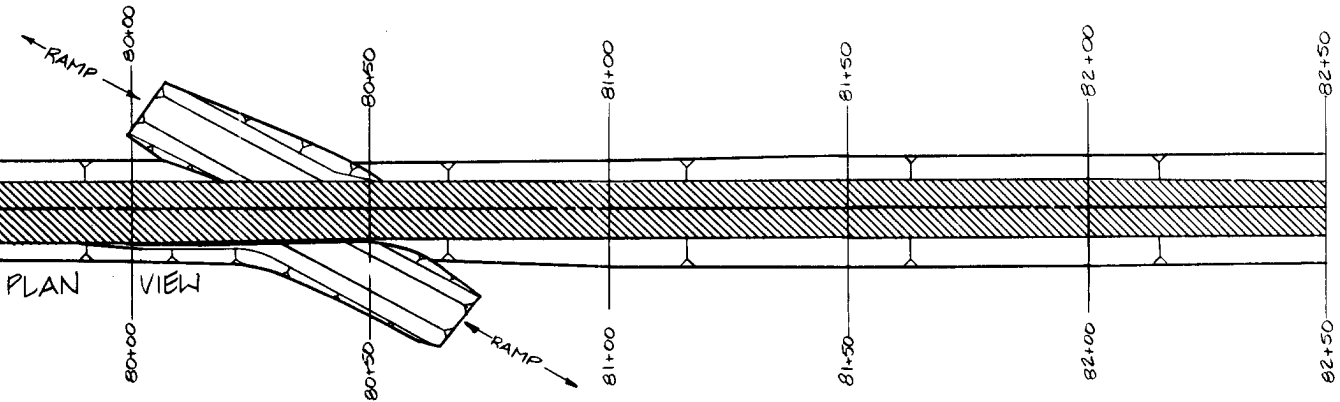
80+00 80+50 81+00 81+50 82+00 82+50

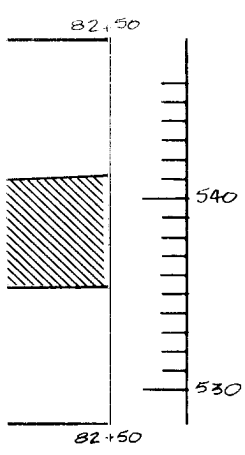
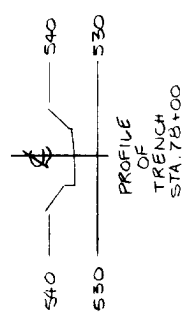
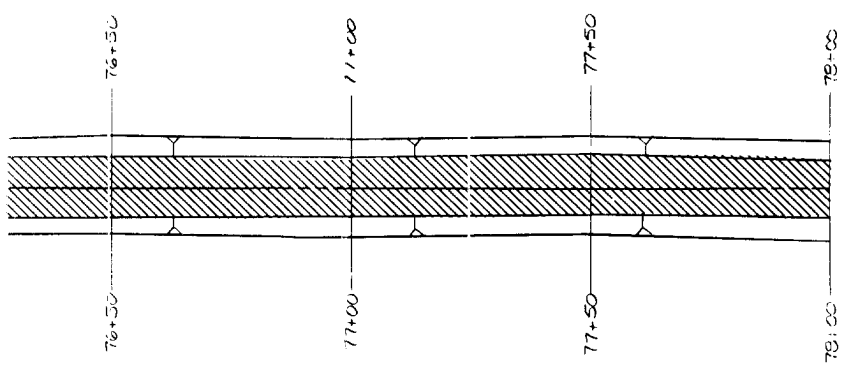
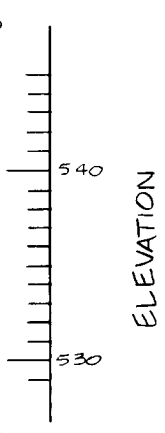
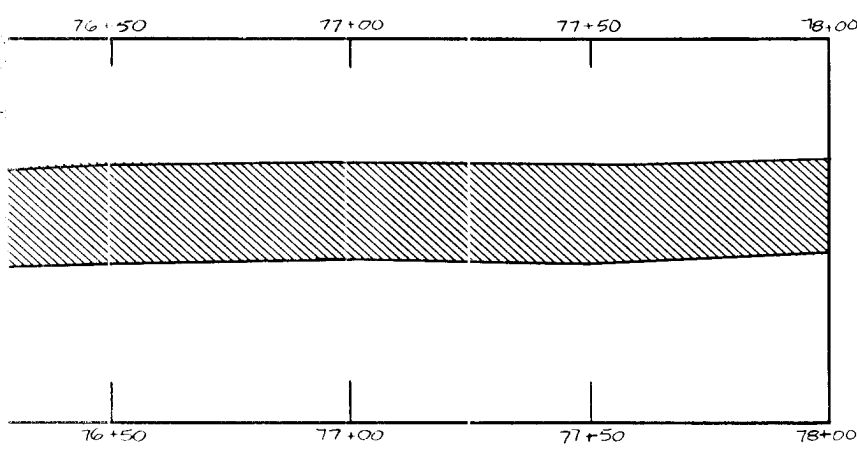
SECTIONAL VIEW
UPSTREAM SLOPE



80+00 80+50 81+00 81+50 82+00 82+50

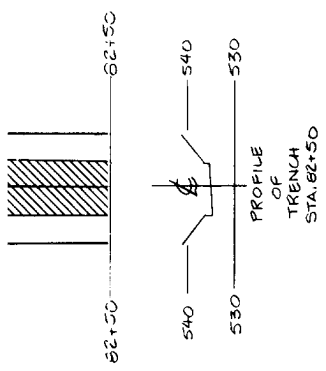
PLAN VIEW





ELEVATION

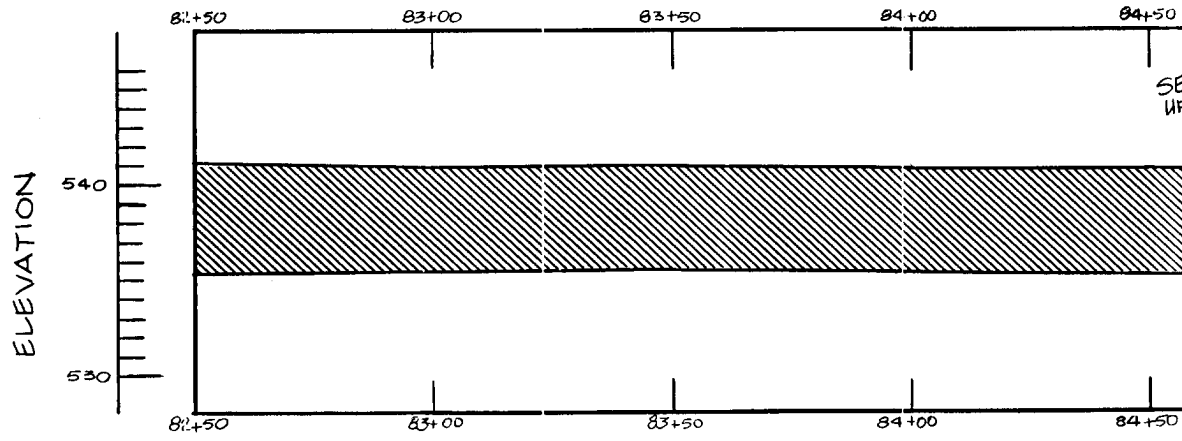
NOTE:
1. FOR MAP SYMBOLS, REFER TO PLATE 16.



SYM.	DR.	NO.	ACTION	DATE	DESCRIPTION OF REVISION
					U.S. ARMY ENGINEER DISTRICT, FORT WORTH CORPS OF ENGINEERS FORT WORTH, TEXAS
DESIGNED BY:	AQUILLA LAKE AQUILLA AND HACKBERRY CREEKS, TEXAS FINAL FOUNDATION REPORT				
DRAWN BY:	INSPECTION TRENCH				
REVIEWED BY:	GEOLOGY AND EXCAVATION STA. 72+00.00 TO STA. 82+50.00				
SUBMITTED BY:	INVITATION NO.	DATE:			
ENGINEER:	CONTRACT NO.	SHEET NO.	SEQUENCE NO.		
	DRAWING NUMBER	OF			

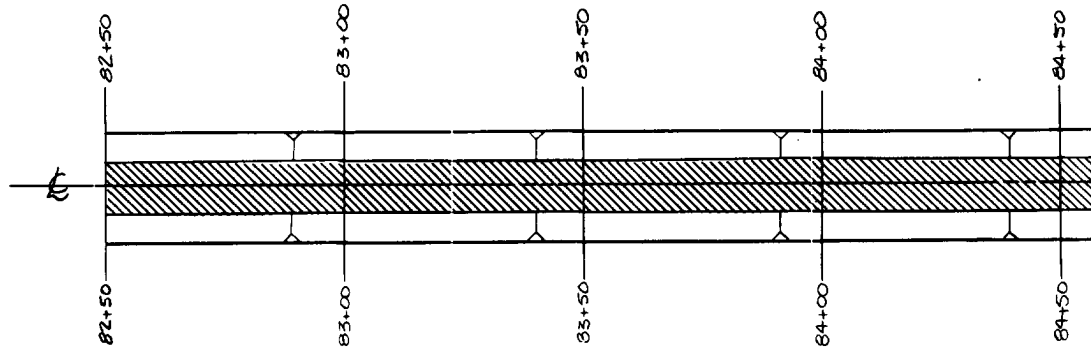
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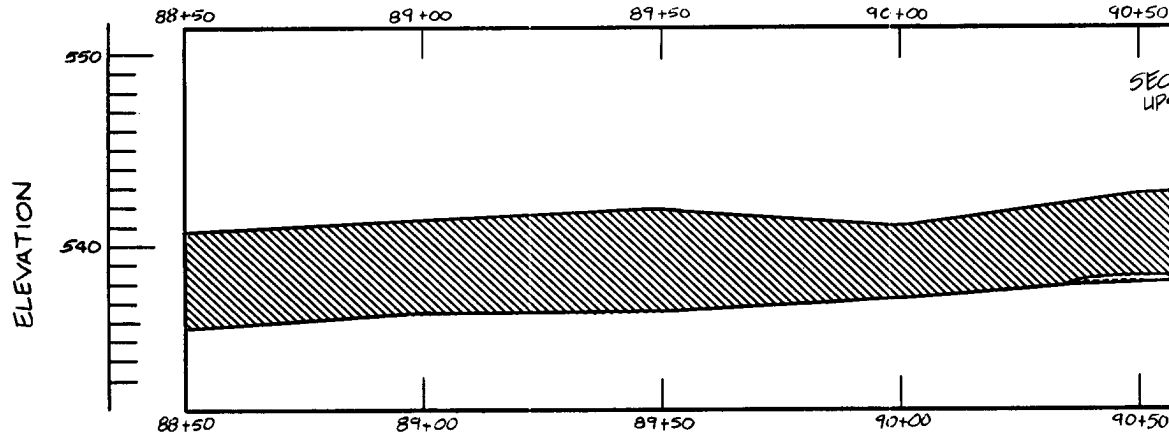


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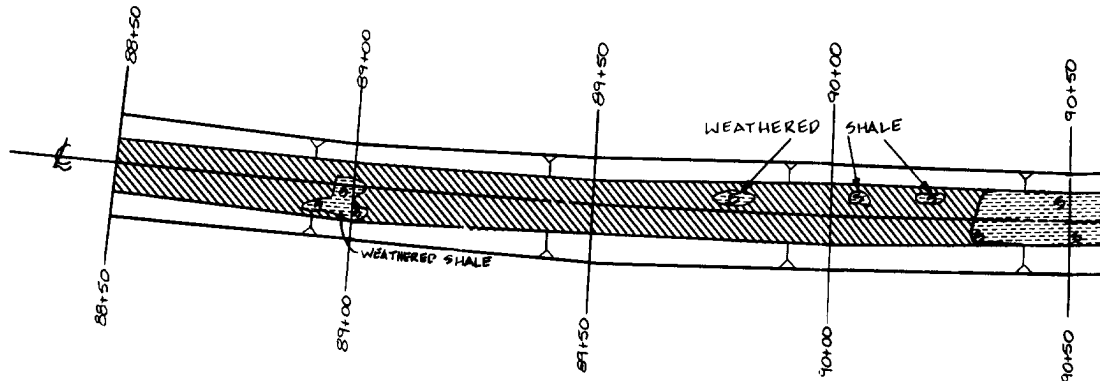
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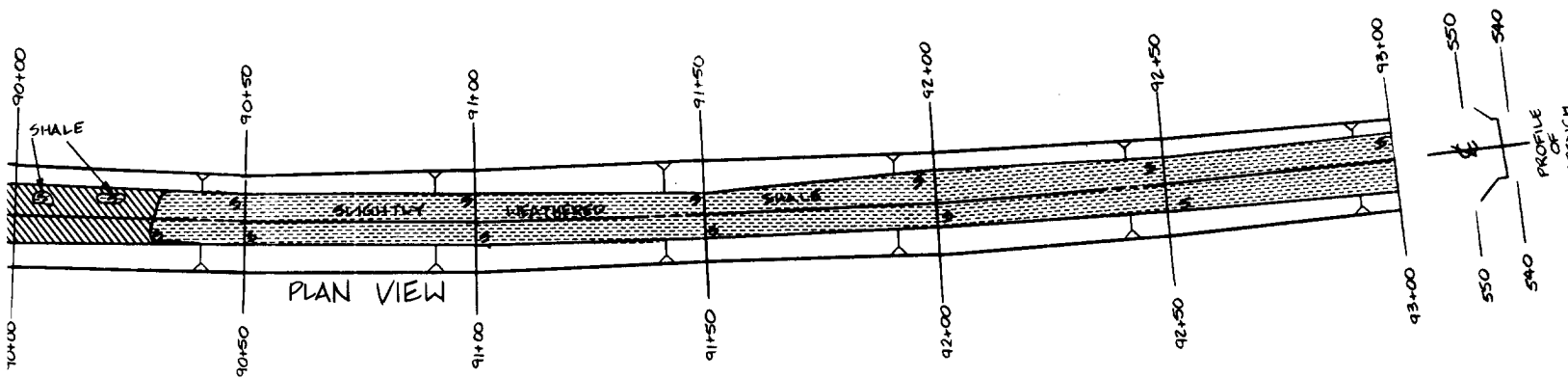
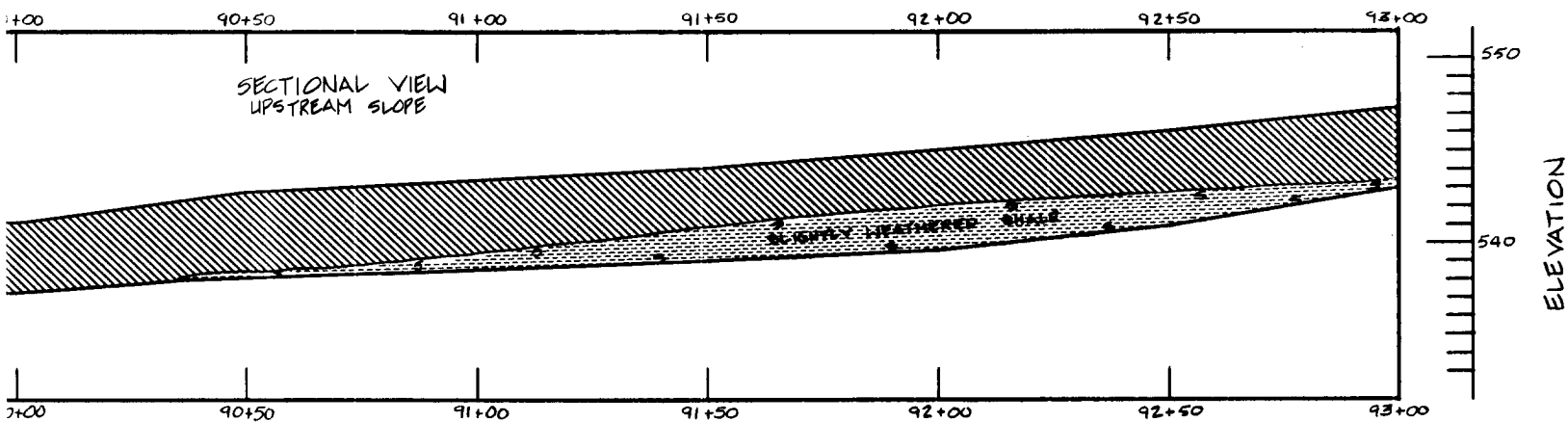
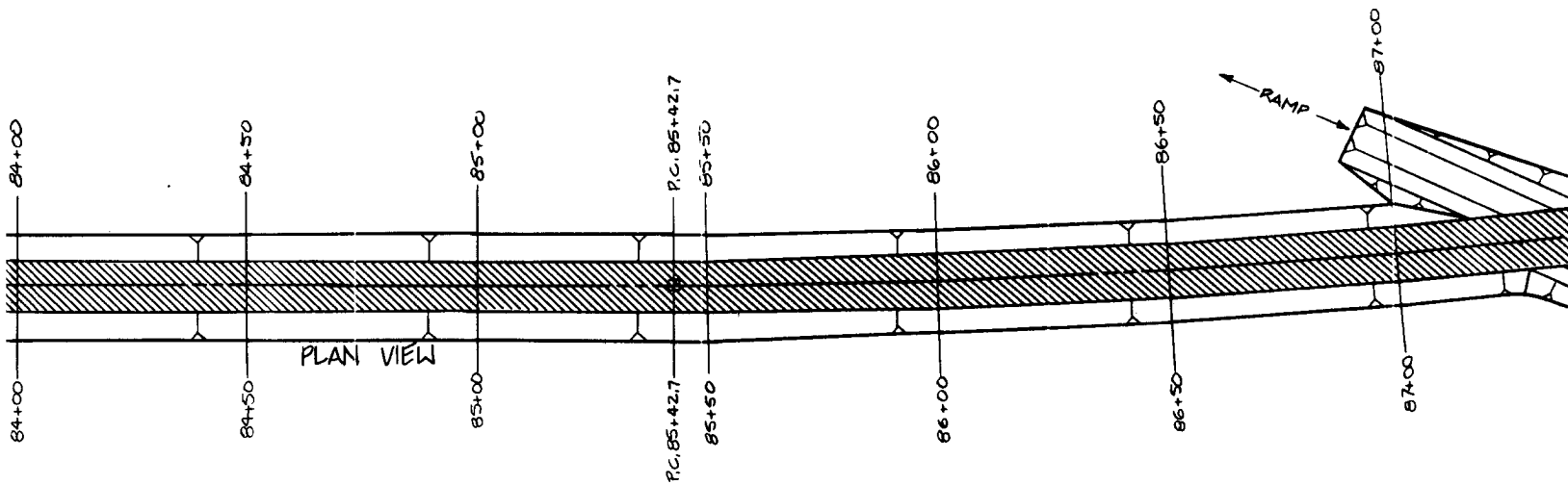
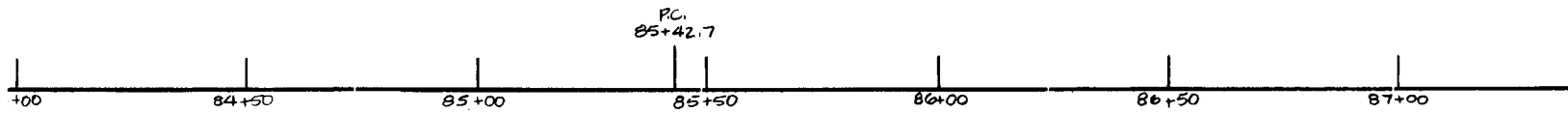
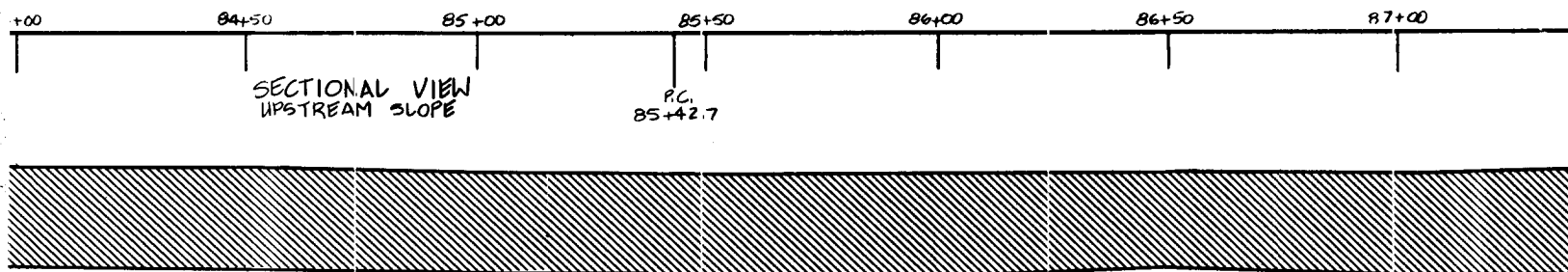


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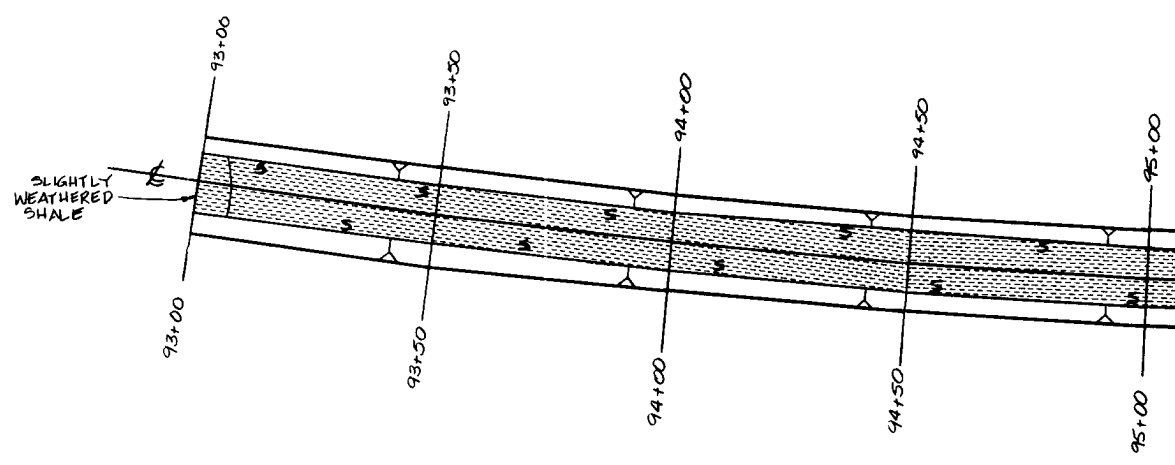
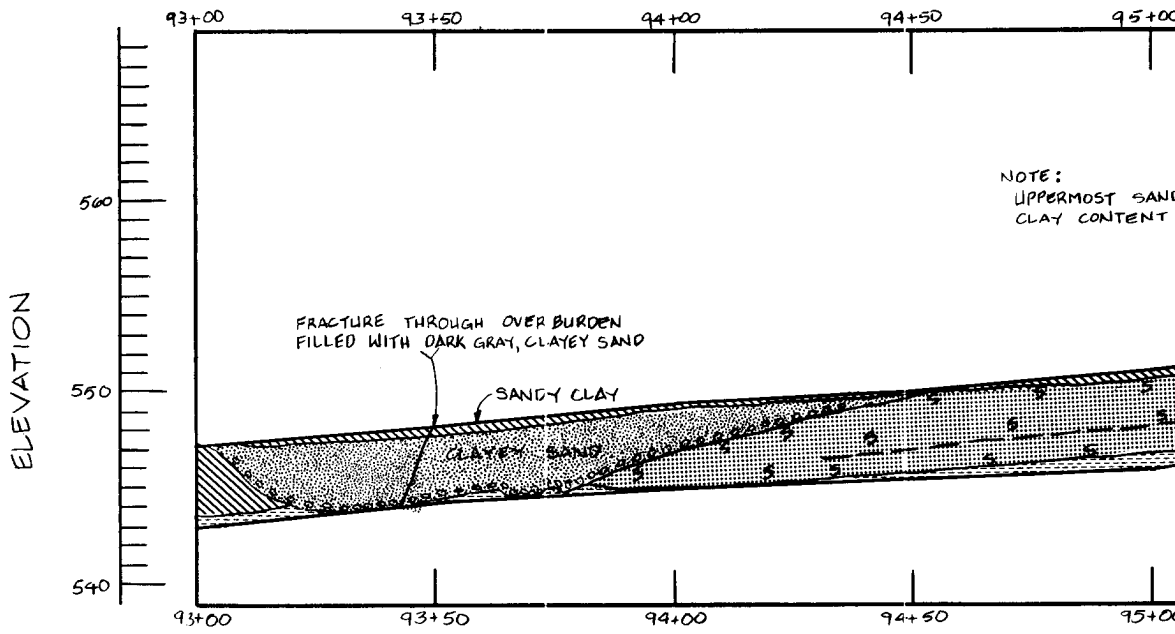


A

PLATE 033



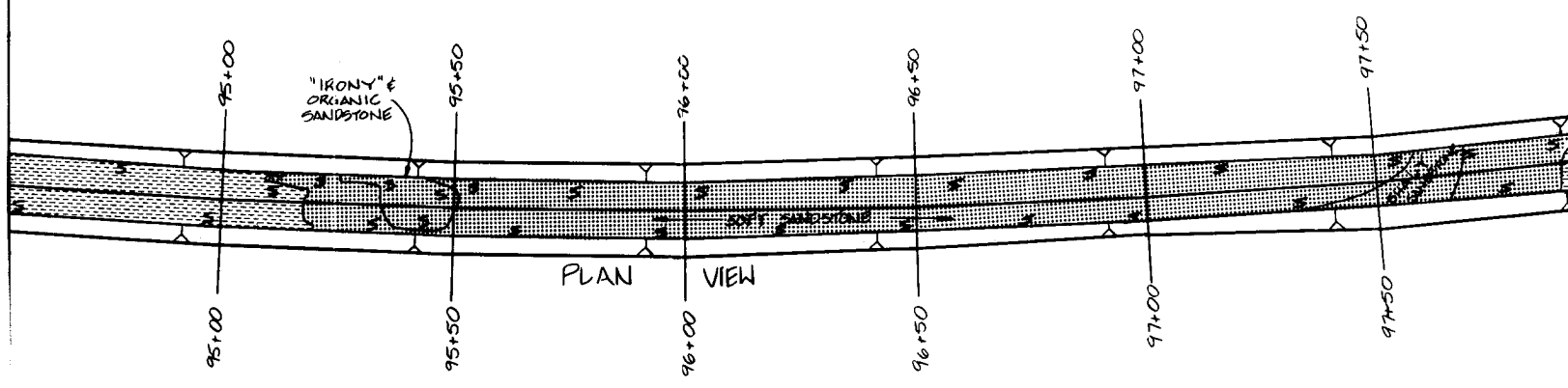
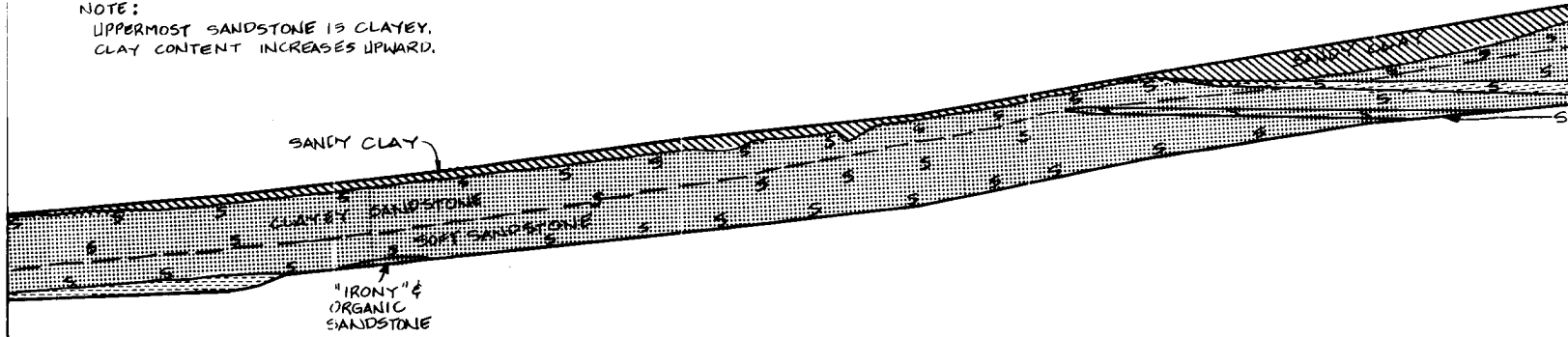
F
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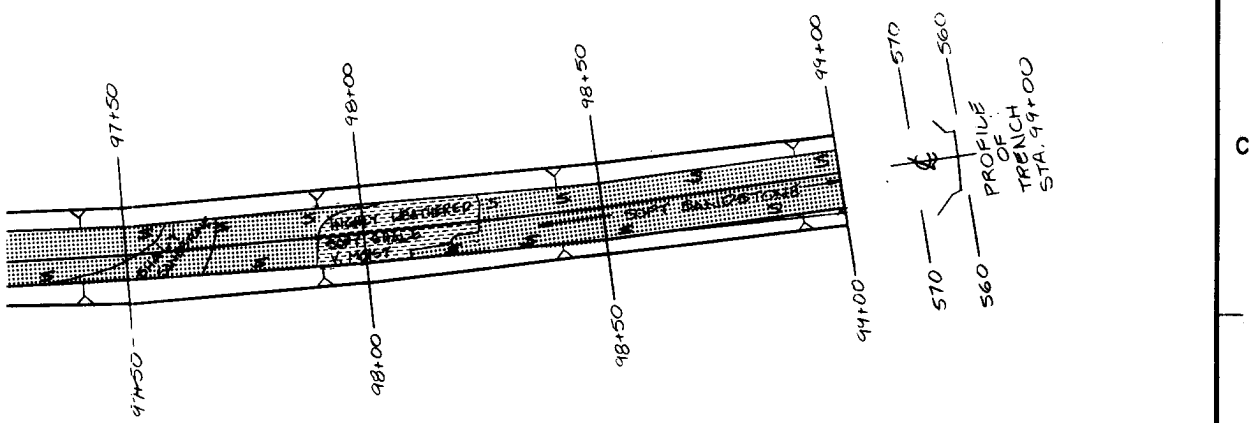
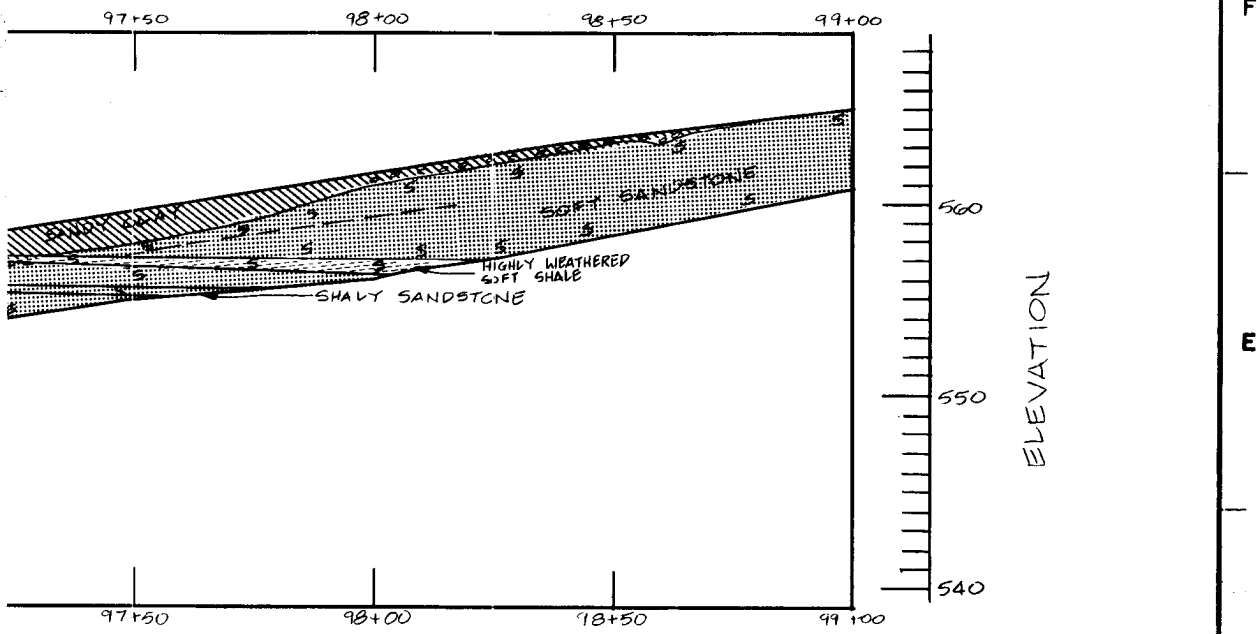
SECTIONAL VIEW UPSTREAM SLOPE

NOTE:
UPPERMOST SANDSTONE IS CLAYEY.
CLAY CONTENT INCREASES UPWARD.



PLAN VIEW

NOTE:
1. FOR MAP SYMBOLS, REFER TO PI



MAP SYMBOLS, REFER TO PLATE 16.

BYM. OR NO.	ACTION	DATE	DESCRIPTION OF REVISION
			U.S. ARMY ENGINEER DISTRICT, FORT WORTH CORPS OF ENGINEERS FORT WORTH, TEXAS
DESIGNED BY: G. RUDOLPH	AQUILLA LAKE AQUILLA AND HACKBERRY CREEKS, TEXAS FINAL FOUNDATION REPORT INSPECTION TRENCH GEOLOGY AND EXCAVATION STA. 93+00.00 TO STA. 99+00.00		
DRAWN BY: C. KIRBY			
REVIEWED BY: R. BEHM			
SUBMITTED BY: ROBERT BEHM			
ENGINEER:	INVITATION NO.	DATE:	SEQUENCE NO.
	CONTRACT NO.		
	DRAWING NUMBER	SHEET NO. OF	

1

F

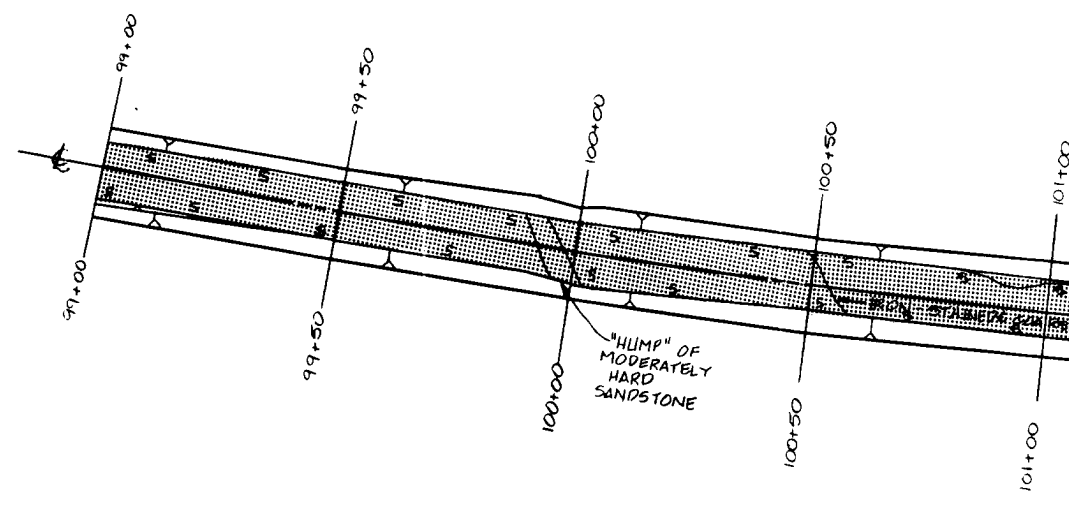
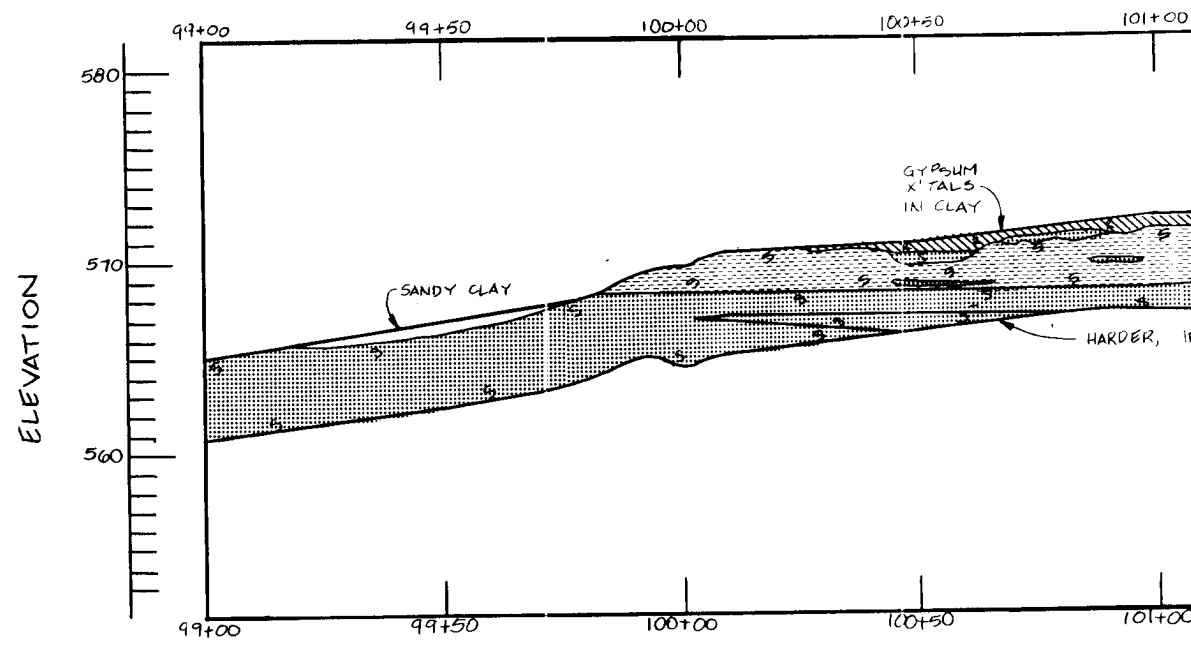
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D

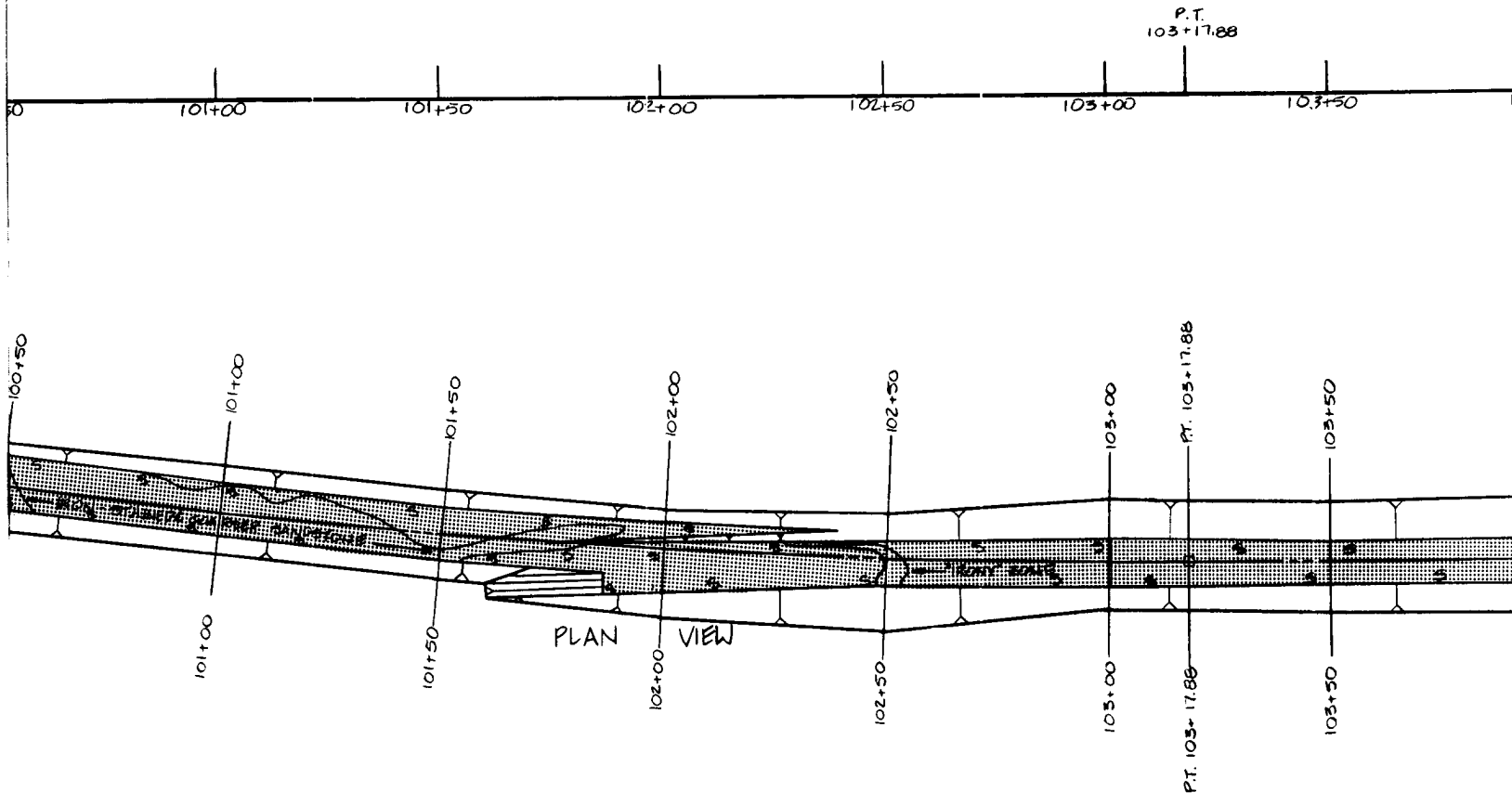
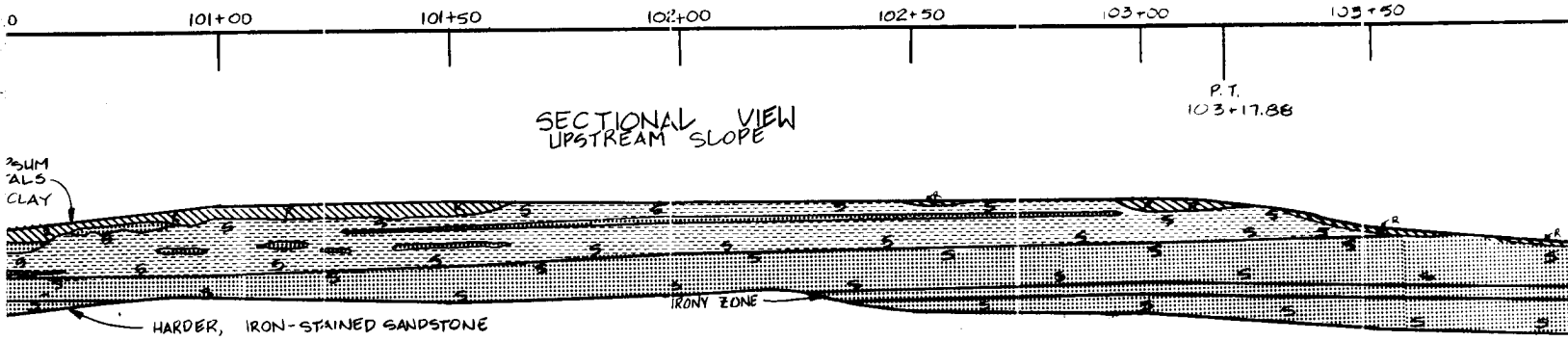
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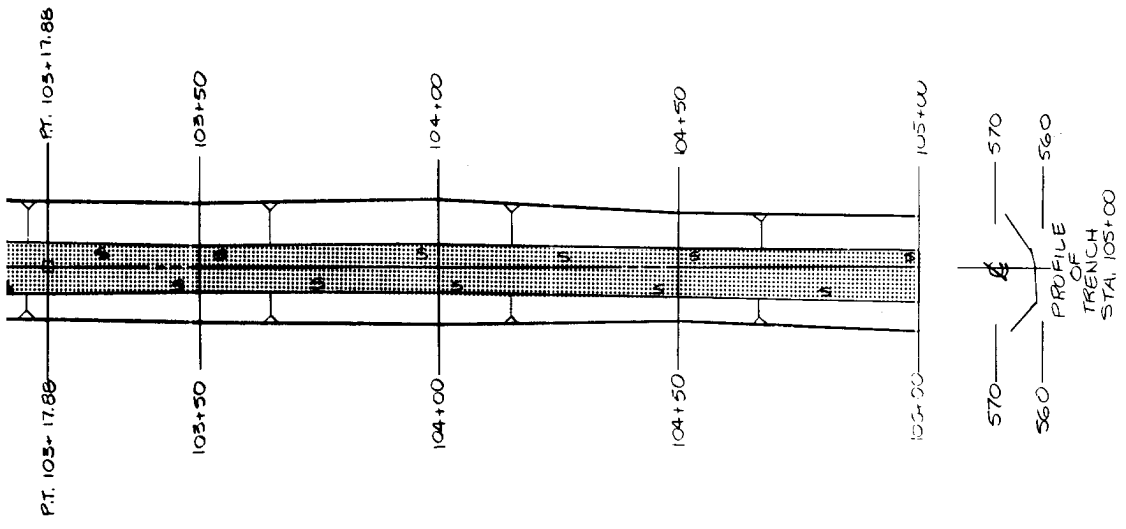
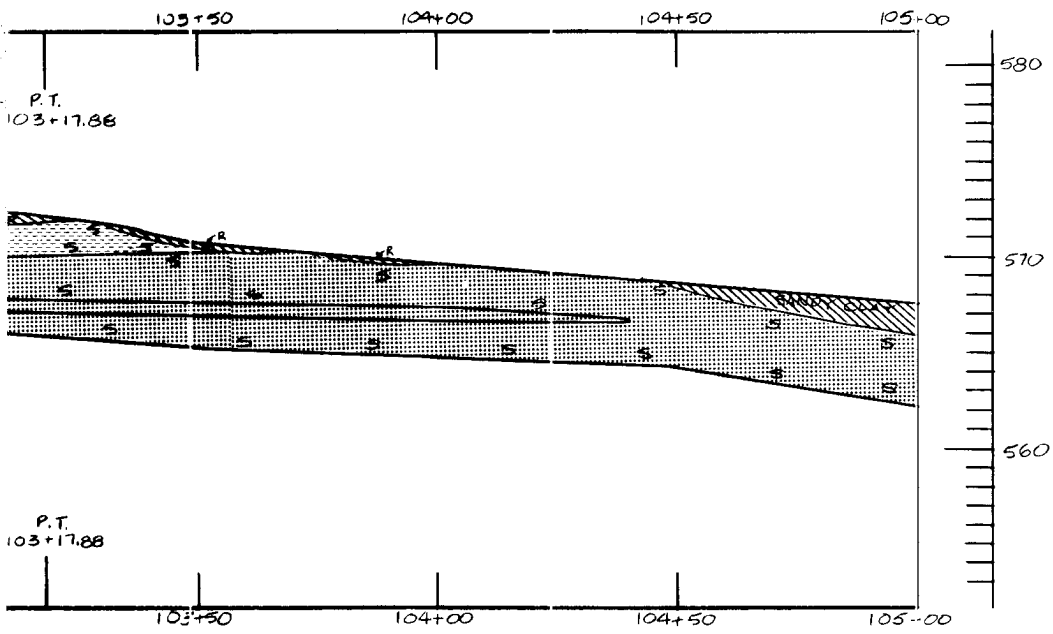
A



POLYTRAC 033



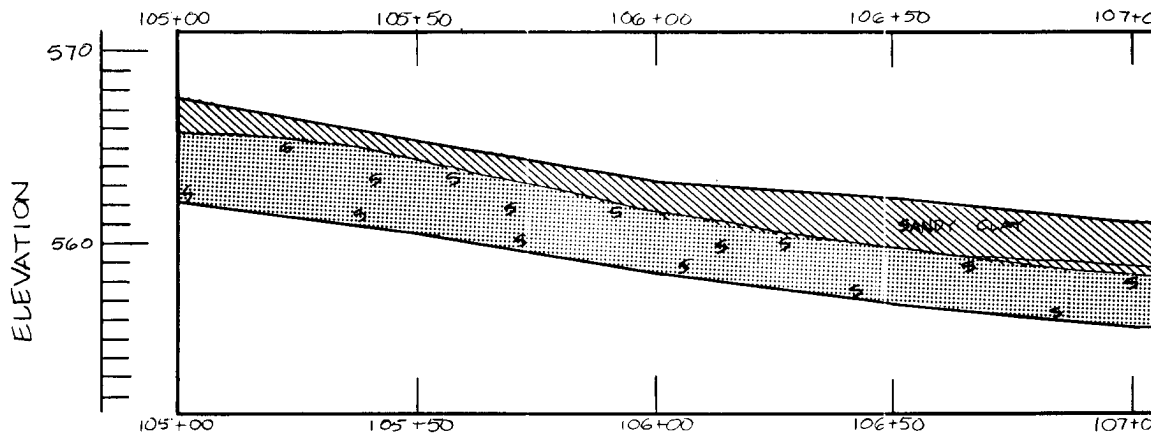
NOTE:
1. FOR MAP SYMBOLS, REFER TO F



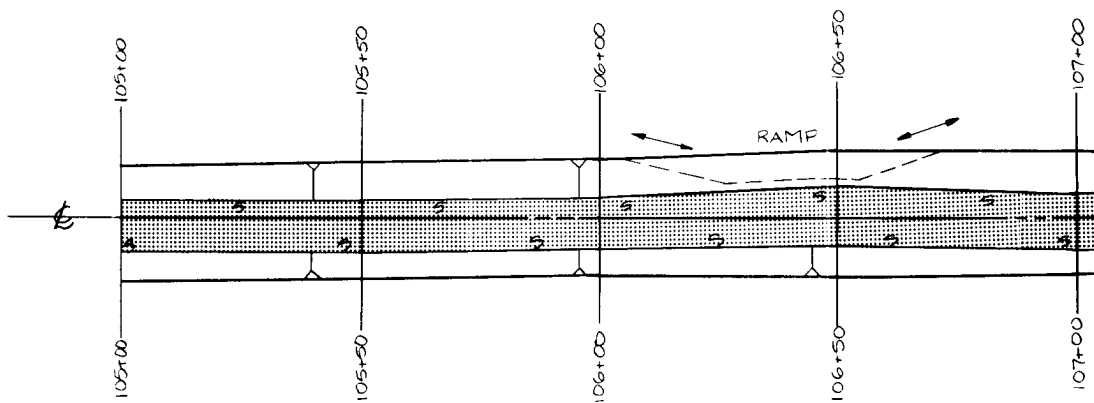
NOTE:
FOR MAP SYMBOLS, REFER TO PLATE 16.

SYM.	NO.	ACTION	DATE	DESCRIPTION OF REVISION
				U.S. ARMY ENGINEER DISTRICT, FORT WORTH CORPS OF ENGINEERS FORT WORTH, TEXAS
DESIGNED BY: G. RUEDE	AQUILLA LAKE AQUILLA AND HACKBERRY CREEKS, TEXAS FINAL FOUNDATION REPORT INSPECTION TRENCH GEOLOGY AND EXCAVATION STA. 99+00.00 TO STA. 105+00.00			
DRAWN BY: C. KIRBY				
REVIEWED BY: R. BEHM				
SUBMITTED BY: ROBERT BEHM				
ENGINEER:	INVITATION NO.	DATE:		
	CONTRACT NO.	SHEET NO.	SEQUENCE NO.	
	DRAWING NUMBER	OF		

F

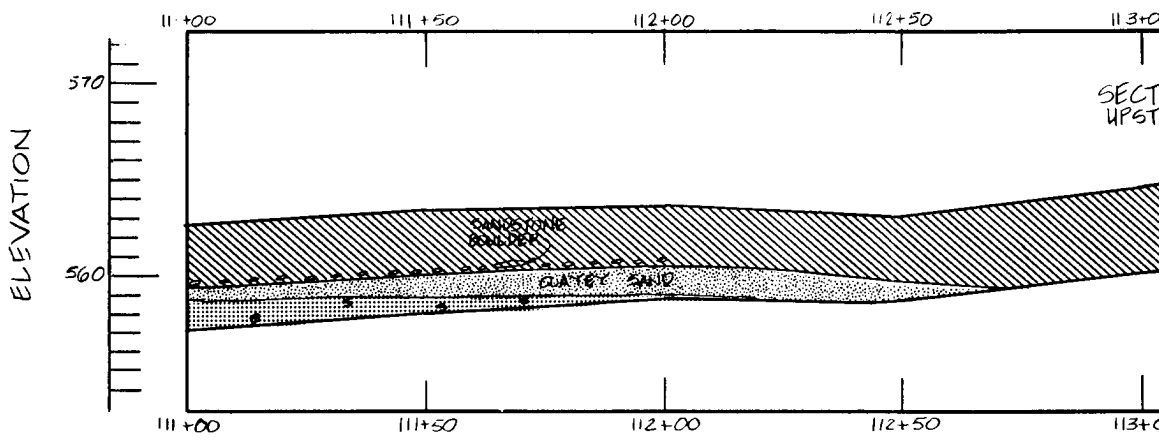


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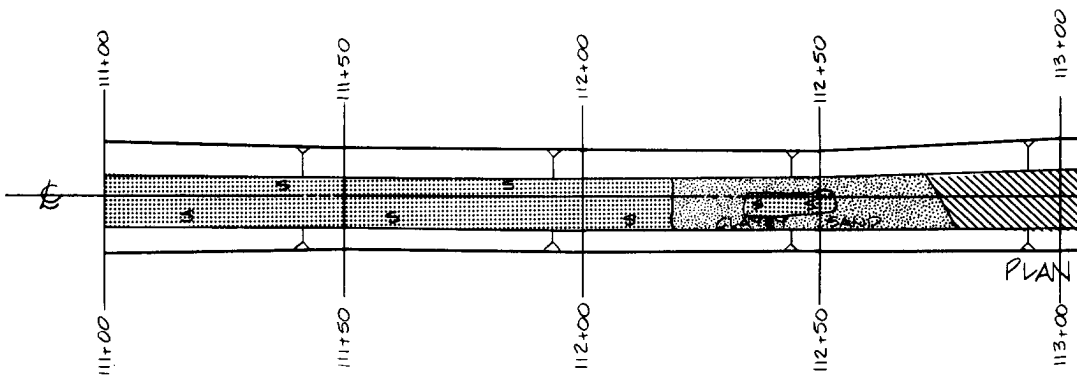


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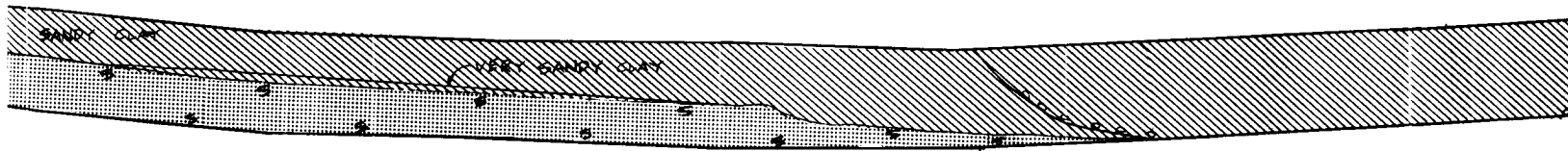


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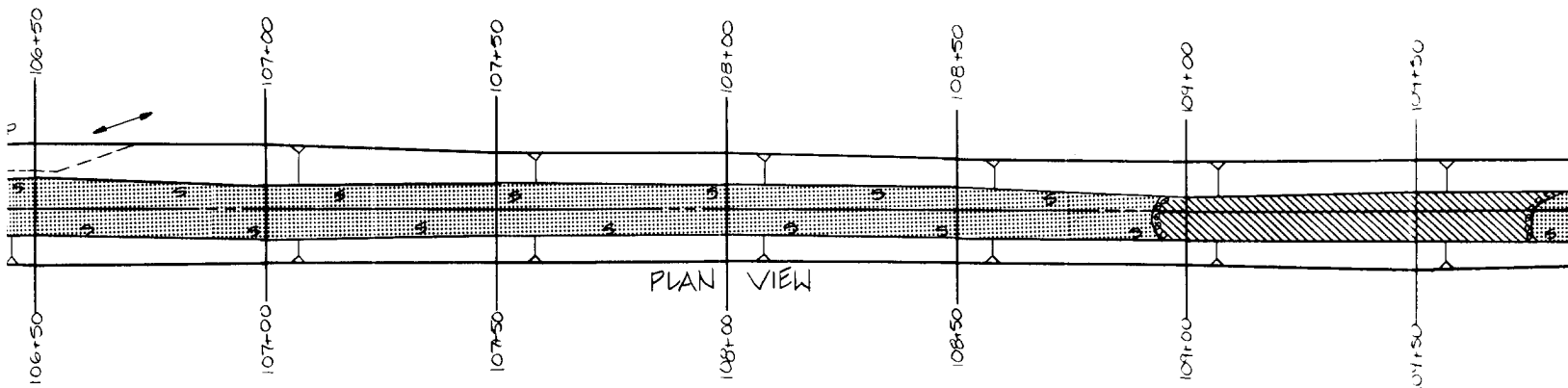
POLYTRAC 933

106+50 107+00 107+50 108+00 108+50 109+00 109+50

SECTIONAL VIEW
UPSTREAM SLOPE



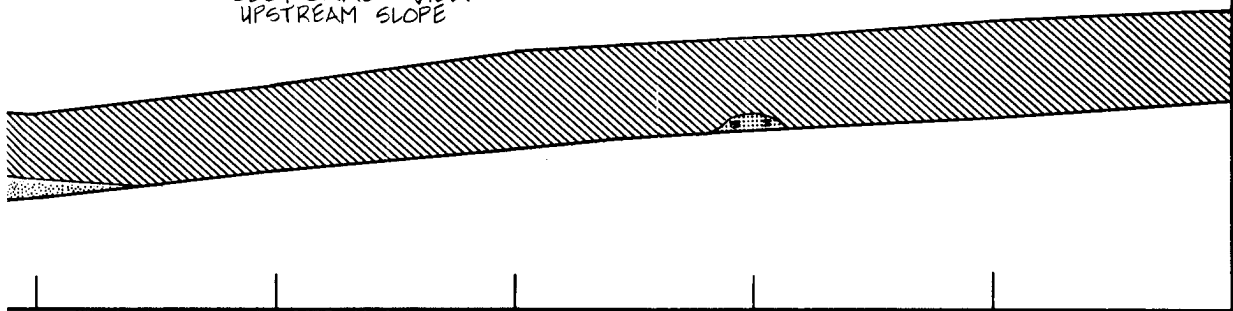
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PLAN VIEW

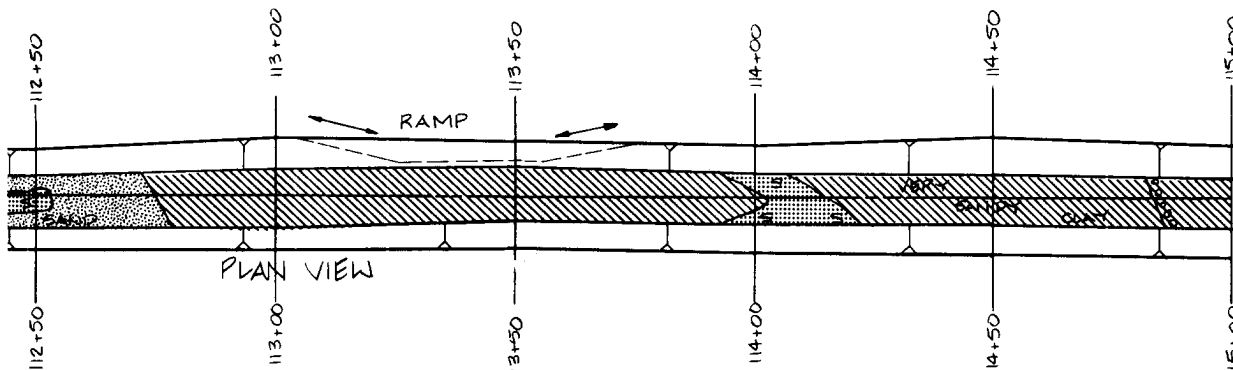
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SECTIONAL VIEW
UPSTREAM SLOPE



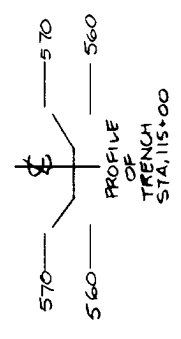
ELEVATION

112+50 113+00 113+50 114+00 114+50 115+00

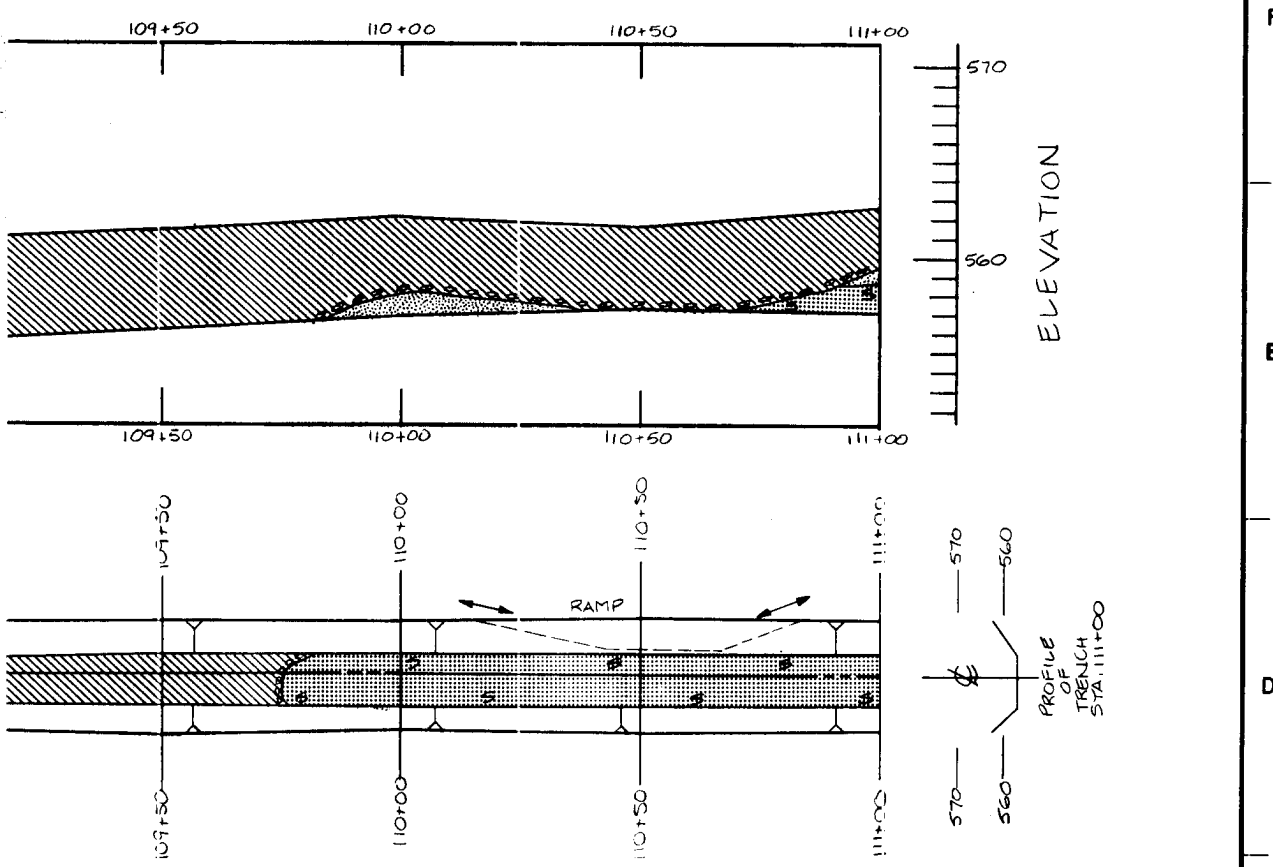


PLAN VIEW

RAMP



PROFILE
OF
TRENCH
STA. 115+00



NOTE:
1. FOR MAP SYMBOLS, REFER TO PLATE 16.

PROFILE OF TRENCH STA. 115+00
 560
 570

SYMBOL NO.				ACTION		DATE		DESCRIPTION OF REVISION			
U.S. ARMY ENGINEER DISTRICT, FORT WORTH CORPS OF ENGINEERS FORT WORTH, TEXAS											
DESIGNED BY: G. RUEDE		AQUILLA LAKE AQUILLA AND HACKBERRY CREEKS, TEXAS FINAL FOUNDATION REPORT INSPECTION TRENCH									
DRAWN BY: C. KIRBY		GEOLOGY AND EXCAVATION STA. 105+00.00 TO STA. 115+00.00									
REVIEWED BY: R. BEHM		SUBMITTED BY: ROBERT BEHM		ENGINEER:		INVITATION NO.		DATE:			
				CONTRACT NO.		DRAWING NUMBER		SHEET NO. OF		SEQUENCE NO.	

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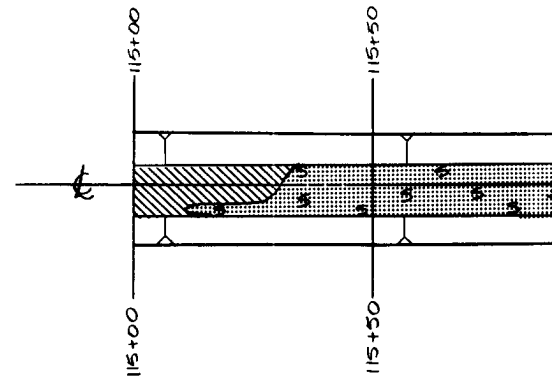
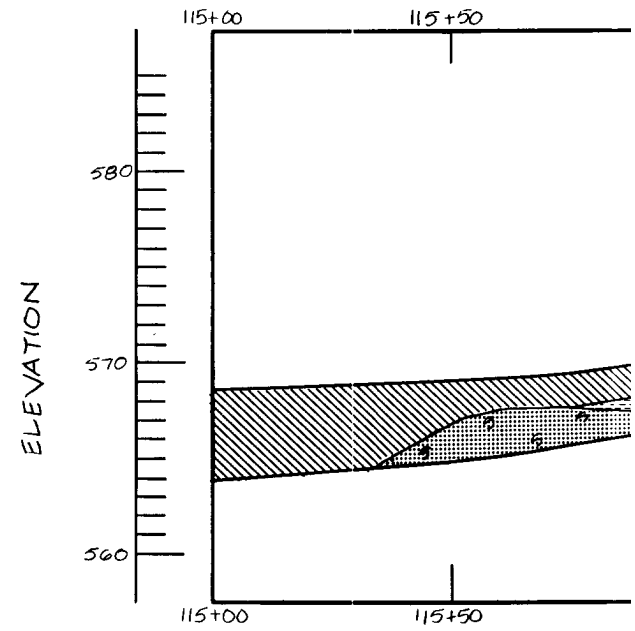
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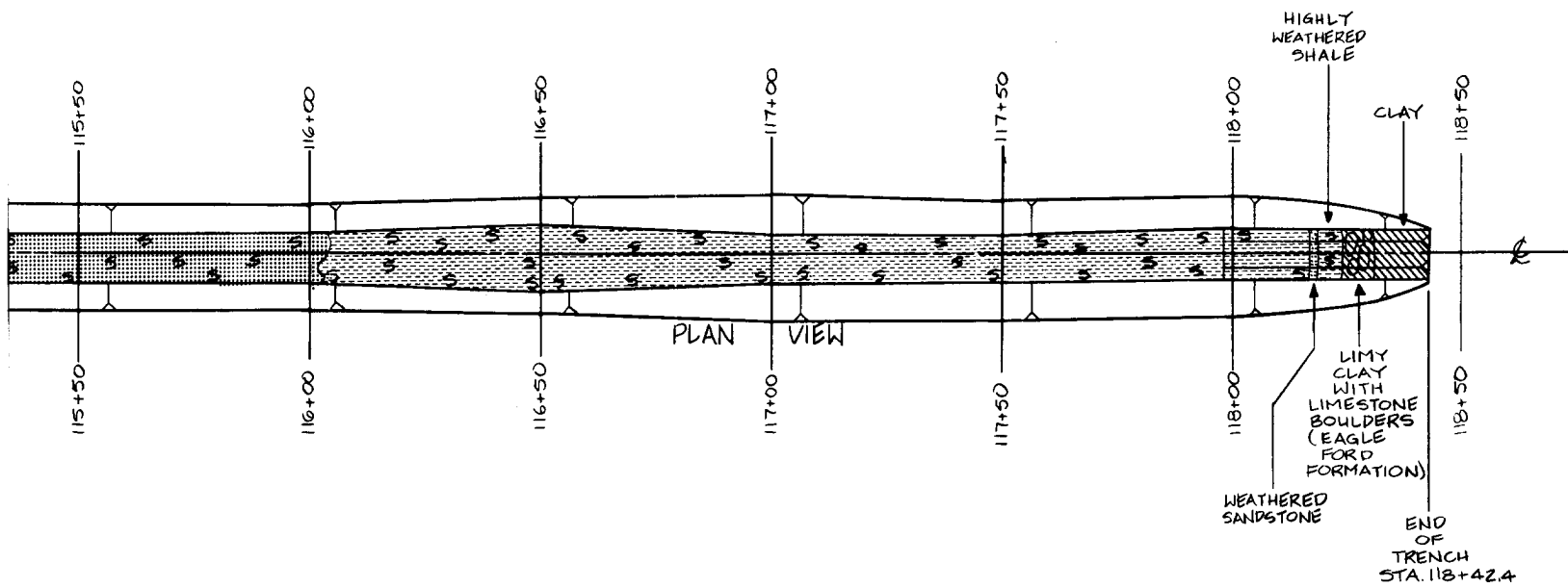
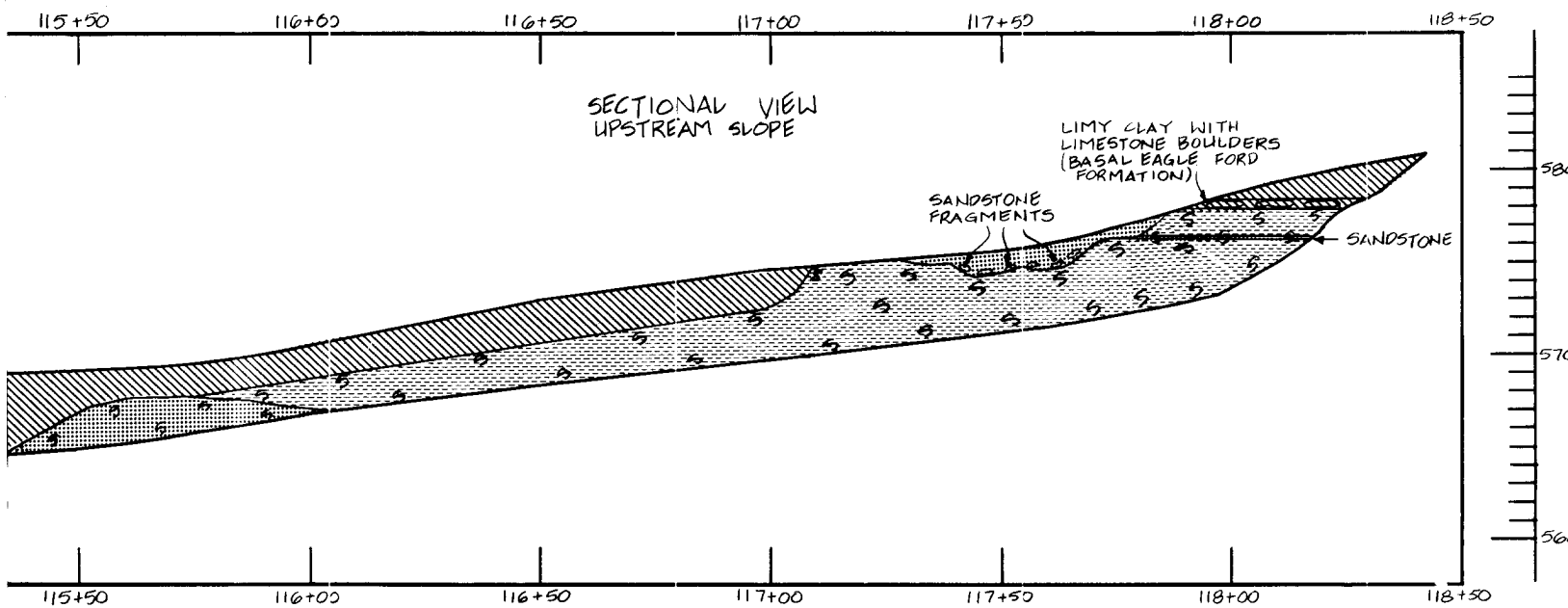
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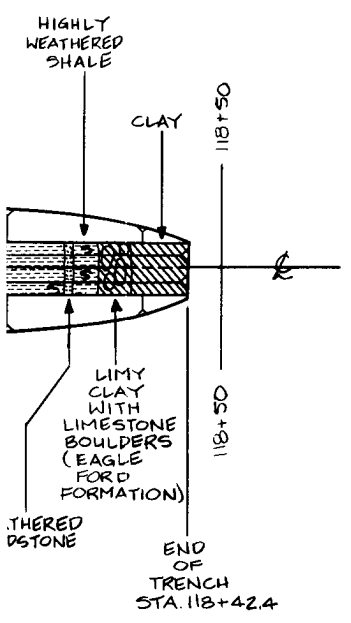
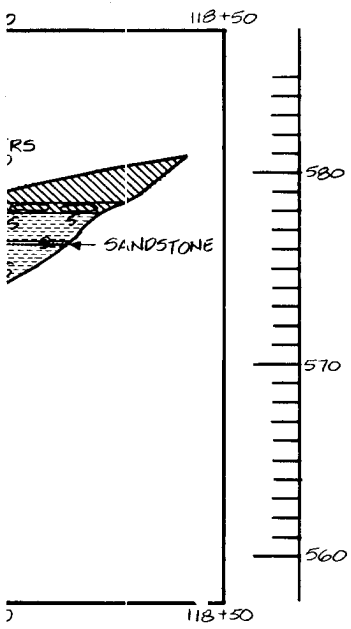
B

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POLYTRACE 033



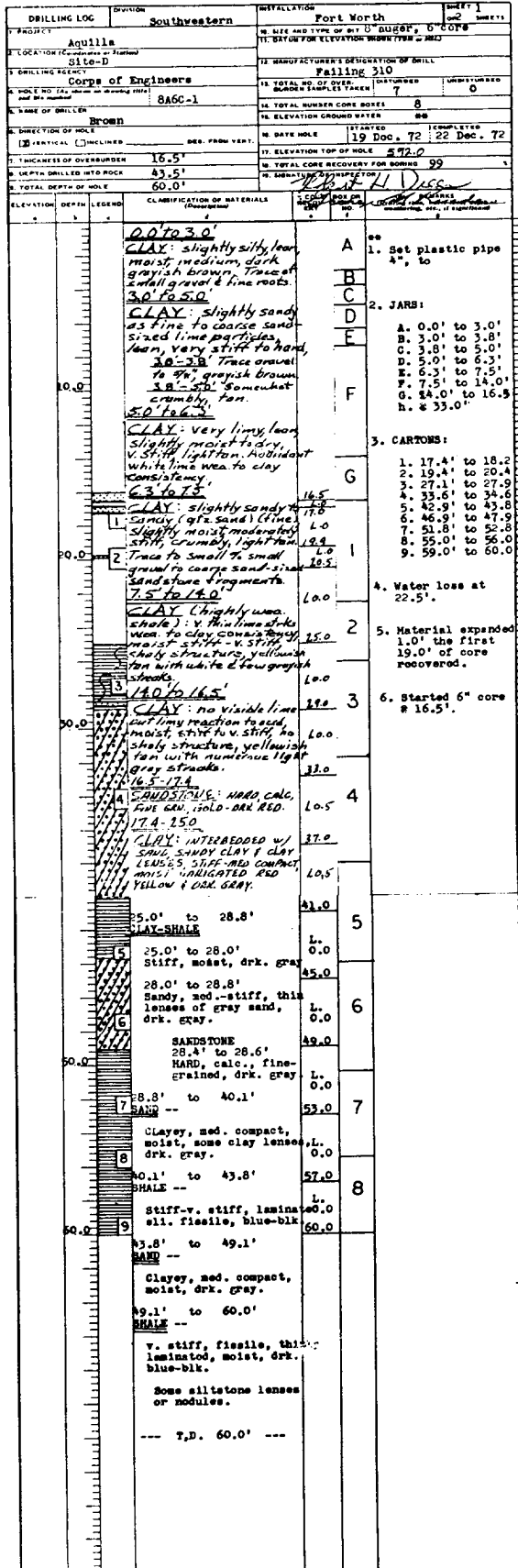




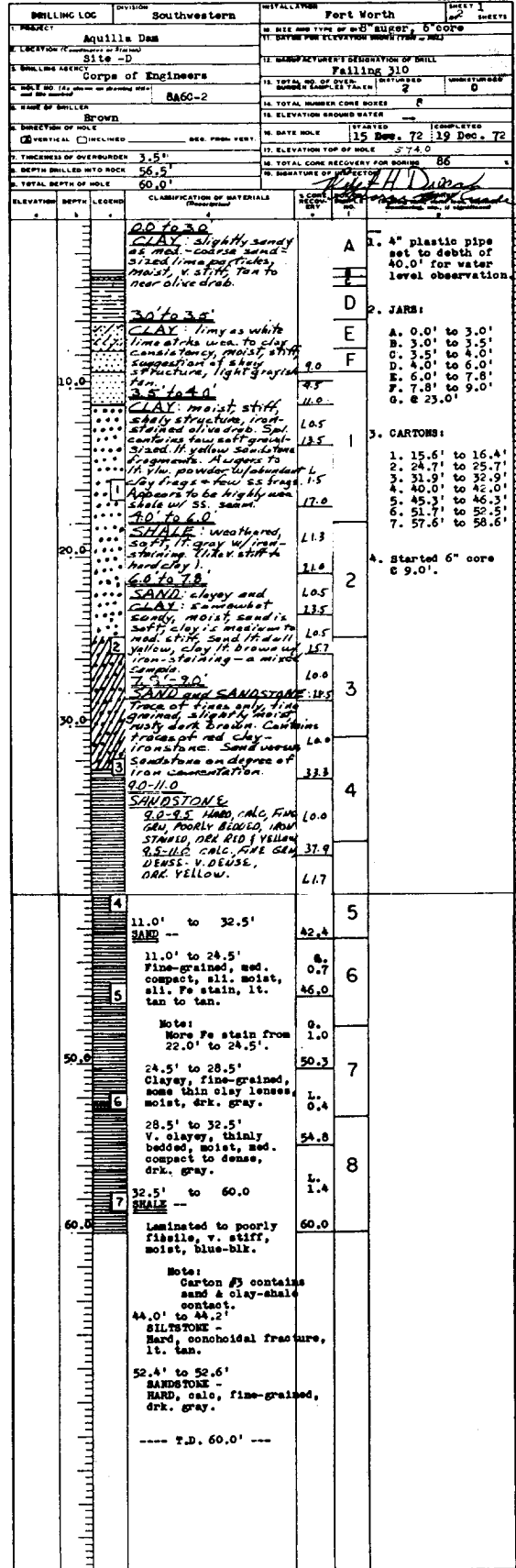
NOTE:
1. FOR MAP SYMBOLS, REFER TO PLATE 16.

SYMBOL NO.	ACTION	DATE	DESCRIPTION OF REVISION
			U.S. ARMY ENGINEER DISTRICT, FORT WORTH CORPS OF ENGINEERS FORT WORTH, TEXAS
DESIGNED BY: <u>G. RUDE</u>	AQUILLA LAKE AQUILLA AND HACKBERRY CREEKS, TEXAS FINAL FOUNDATION REPORT INSPECTION TRENCH GEOLOGY AND EXCAVATION STA. 115 + 00.00 TO STA. 118 + 42.40		
DRAWN BY: <u>C. KIRBY</u>			
REVIEWED BY: <u>R. BEHM</u>			
SUBMITTED BY: <u>ROBERT BEHM</u>			
ENGINEER:	INVITATION NO.	DATE:	SEQUENCE NO.
DRAWING NUMBER	SHEET NO.	OF	

Make No. 8A6C-1



Make No. 8A6C-2



DRILLING LOG		Division	INSTALLATION	Sheet No.
PROJECT: Aquilla Dam		Southwestern	Fort Worth	8A-4
LOCATION: Mobile Dist		Site: D	Corp of Engineers	8A-4
DATE: 31 Dec 72		Driller: Brown	Inspector: Jones	
ELEVATION TOP OF HOLE: 36.0		ELEVATION GROUND WATER: 33.5		
DEPTH DRILLED INTO ROCK: 33.1		TOTAL CORE RECOVERY FOR BORING: 33.5		
TOTAL DEPTH OF HOLE: 59.1		SIGNATURE OF INSPECTOR: Jones		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	REMARKS
36.0	0.0		CLAY: LEAN, MOIST, STIFF, DRK GRAY.	* WATER LEVEL WHL BECAME WET @ 19'. SET 4" PLASTIC PIPE TO 40.0'
35.0	5.5		CLAY: SL SANDY TO SANDY AS FINE TO CBS SAND-SIZED LIME PARTICLES, LEAN.	JAR SAMPLES: A. 0.0-5.5 B. 5.5-8.0 C. 8.0-11.0 D. 11.0-16.0 E. 16.0-21.0 F. 21.0-26.0 G. 26.0-31.0 H. 31.0-36.0
34.0	11.0		CLAY: SANDY, (FINE-CBS SAND), CLAYEY, MOIST, BROWN. GRAVEL 1/4" - 5/8"	CARTON SAMPLES: 1. 38.9-39.9 2. 46.7-47.7 3. 56.5-57.5
33.0	16.0		CLAYEY SAND (SANDY CLAY) MOIST, MED, RUSTY TAN.	WEATHERING: MINTL SL WEATH TO 41.0'
32.0	21.0		CLAY: SANDY MOIST MED STIFF, STIFF BUSTY TAN w/ SOME LT. GRAY INCLUSIONS.	NOTE: SHALE IS HEAVILY EXPANDABLE FROM 36.0' - 40.0'
31.0	26.0		CLAYEY SAND (SANDY CLAY) MOIST, SOFT, RUSTY TAN w/ TRACE OF LT. GRAY.	
30.0	31.0		GRAVEL	
29.0	36.0		CLAYEY SAND (SANDY CLAY) MOIST, SOFT, RUSTY TAN w/ TRACE OF LT. GRAY.	
28.0	41.0		CLAYEY SAND (SANDY CLAY) MOIST, SOFT, RUSTY TAN w/ TRACE OF LT. GRAY.	
27.0	46.0		CLAYEY SAND (SANDY CLAY) MOIST, SOFT, RUSTY TAN w/ TRACE OF LT. GRAY.	
26.0	51.0		CLAYEY SAND (SANDY CLAY) MOIST, SOFT, RUSTY TAN w/ TRACE OF LT. GRAY.	
25.0	56.0		CLAYEY SAND (SANDY CLAY) MOIST, SOFT, RUSTY TAN w/ TRACE OF LT. GRAY.	
24.0	61.0		CLAYEY SAND (SANDY CLAY) MOIST, SOFT, RUSTY TAN w/ TRACE OF LT. GRAY.	
23.0	66.0		CLAYEY SAND (SANDY CLAY) MOIST, SOFT, RUSTY TAN w/ TRACE OF LT. GRAY.	
22.0	71.0		CLAYEY SAND (SANDY CLAY) MOIST, SOFT, RUSTY TAN w/ TRACE OF LT. GRAY.	
21.0	76.0		CLAYEY SAND (SANDY CLAY) MOIST, SOFT, RUSTY TAN w/ TRACE OF LT. GRAY.	
20.0	81.0		CLAYEY SAND (SANDY CLAY) MOIST, SOFT, RUSTY TAN w/ TRACE OF LT. GRAY.	
19.0	86.0		CLAYEY SAND (SANDY CLAY) MOIST, SOFT, RUSTY TAN w/ TRACE OF LT. GRAY.	
18.0	91.0		CLAYEY SAND (SANDY CLAY) MOIST, SOFT, RUSTY TAN w/ TRACE OF LT. GRAY.	
17.0	96.0		CLAYEY SAND (SANDY CLAY) MOIST, SOFT, RUSTY TAN w/ TRACE OF LT. GRAY.	
16.0	101.0		CLAYEY SAND (SANDY CLAY) MOIST, SOFT, RUSTY TAN w/ TRACE OF LT. GRAY.	
15.0	106.0		CLAYEY SAND (SANDY CLAY) MOIST, SOFT, RUSTY TAN w/ TRACE OF LT. GRAY.	
14.0	111.0		CLAYEY SAND (SANDY CLAY) MOIST, SOFT, RUSTY TAN w/ TRACE OF LT. GRAY.	
13.0	116.0		CLAYEY SAND (SANDY CLAY) MOIST, SOFT, RUSTY TAN w/ TRACE OF LT. GRAY.	
12.0	121.0		CLAYEY SAND (SANDY CLAY) MOIST, SOFT, RUSTY TAN w/ TRACE OF LT. GRAY.	
11.0	126.0		CLAYEY SAND (SANDY CLAY) MOIST, SOFT, RUSTY TAN w/ TRACE OF LT. GRAY.	
10.0	131.0		CLAYEY SAND (SANDY CLAY) MOIST, SOFT, RUSTY TAN w/ TRACE OF LT. GRAY.	
9.0	136.0		CLAYEY SAND (SANDY CLAY) MOIST, SOFT, RUSTY TAN w/ TRACE OF LT. GRAY.	
8.0	141.0		CLAYEY SAND (SANDY CLAY) MOIST, SOFT, RUSTY TAN w/ TRACE OF LT. GRAY.	
7.0	146.0		CLAYEY SAND (SANDY CLAY) MOIST, SOFT, RUSTY TAN w/ TRACE OF LT. GRAY.	
6.0	151.0		CLAYEY SAND (SANDY CLAY) MOIST, SOFT, RUSTY TAN w/ TRACE OF LT. GRAY.	
5.0	156.0		CLAYEY SAND (SANDY CLAY) MOIST, SOFT, RUSTY TAN w/ TRACE OF LT. GRAY.	
4.0	161.0		CLAYEY SAND (SANDY CLAY) MOIST, SOFT, RUSTY TAN w/ TRACE OF LT. GRAY.	
3.0	166.0		CLAYEY SAND (SANDY CLAY) MOIST, SOFT, RUSTY TAN w/ TRACE OF LT. GRAY.	
2.0	171.0		CLAYEY SAND (SANDY CLAY) MOIST, SOFT, RUSTY TAN w/ TRACE OF LT. GRAY.	
1.0	176.0		CLAYEY SAND (SANDY CLAY) MOIST, SOFT, RUSTY TAN w/ TRACE OF LT. GRAY.	
0.0	181.0		CLAYEY SAND (SANDY CLAY) MOIST, SOFT, RUSTY TAN w/ TRACE OF LT. GRAY.	

DRILLING LOG		Division	INSTALLATION	Sheet No.
PROJECT: Aquilla		Southwestern	Fort Worth	8A-4
LOCATION: Site D		Corp of Engineers	Corp of Engineers	8A-4
DATE: 19 Jan 73		Driller: Jones	Inspector: Jones	
ELEVATION TOP OF HOLE: 32.5		ELEVATION GROUND WATER: 33.5		
DEPTH DRILLED INTO ROCK: 1.0		TOTAL CORE RECOVERY FOR BORING: 33.5		
TOTAL DEPTH OF HOLE: 33.5		SIGNATURE OF INSPECTOR: Jones		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	REMARKS
32.5	0.0		CLAY	** 1. Water level was 20.0' 10 Jan. 73
32.0	0.0		CLAY	2. JARS: A. 0.0' to 4.5' B. 4.5' to 5.0' C. 5.0' to 6.0' D. 6.0' to 11.0' E. 11.0' to 15.0' F. 16.0' to 20.0' G. 20.0' to 25.0' H. 25.0' to 31.5' I. 28.0' to 33.5' J. 33.5' to 33.5'
31.0	4.5		CLAY	3. Primary augered into a 32.5', highly weathered to consistency of clay.
30.0	10.0		CLAY	
29.0	16.0		CLAY	
28.0	21.0		CLAY	
27.0	26.0		CLAY	
26.0	31.0		CLAY	
25.0	36.0		CLAY	
24.0	41.0		CLAY	
23.0	46.0		CLAY	
22.0	51.0		CLAY	
21.0	56.0		CLAY	
20.0	61.0		CLAY	
19.0	66.0		CLAY	
18.0	71.0		CLAY	
17.0	76.0		CLAY	
16.0	81.0		CLAY	
15.0	86.0		CLAY	
14.0	91.0		CLAY	
13.0	96.0		CLAY	
12.0	101.0		CLAY	
11.0	106.0		CLAY	
10.0	111.0		CLAY	
9.0	116.0		CLAY	
8.0	121.0		CLAY	
7.0	126.0		CLAY	
6.0	131.0		CLAY	
5.0	136.0		CLAY	
4.0	141.0		CLAY	
3.0	146.0		CLAY	
2.0	151.0		CLAY	
1.0	156.0		CLAY	
0.0	161.0		CLAY	

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

DESIGNED BY: _____

DRAWN BY: _____

CHECKED BY: _____

LOGS OF BORINGS
8A-1, 2, 3 AND 8A-4

INSTRUMENT NO. DACW63-80-B-0085 DATED: AUG. 1980

CONTRACT NO. DACW63-80-C-0035

DRAWING NUMBER: _____ SHEET NO. 176

ENGINEER: _____

RECORD DRAWING-WORK AS BUILT

State No. BACC-5

DRILLING LOG	DIVISION	INSTALLATION	PROJECT		
Southwestern	Fort Worth	2nd	1		
PROJECT	AQUILLA				
1. LOCATION (or coordinates for location)	Site-D				
2. DRILLING AGENCY	Corps of Engineers				
3. NAME OF DRILLER	Jones				
4. DATE HOLE STARTED	19 Jan. 73				
5. DATE HOLE COMPLETED	9 Jan. 73				
6. THICKNESS OF OVERBURDEN	5.4'				
7. DEPTH DRILLED INTO ROCK	44.6'				
8. TOTAL DEPTH OF HOLE	60.0'				
9. TOTAL CORRECOVERY FOR SOILS	88.2				
10. TOTAL CORRECOVERY FOR ROCKS	100.0				
11. MANUFACTURER'S DESIGNATION OF DRILL	Falling				
12. TOTAL NO. OF CUTS	0				
13. TOTAL NUMBER CORE BOXES	8				
14. ELEVATION GROUND WATER	0.0				
15. DATE HOLE STARTED	19 Jan. 73				
16. ELEVATION TOP OF HOLE	527.4				
17. TOTAL CORRECOVERY FOR SOILS	88.2				
18. TOTAL CORRECOVERY FOR ROCKS	100.0				
19. DIRECTION OF HOLE	VERTICAL				
20. THICKNESS OF OVERBURDEN	5.4'				
21. DEPTH DRILLED INTO ROCK	44.6'				
22. TOTAL DEPTH OF HOLE	60.0'				
23. TOTAL CORRECOVERY FOR SOILS	88.2				
24. TOTAL CORRECOVERY FOR ROCKS	100.0				
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	LOG CORRECTION (Feet)	REMARKS (Plugging, casing, etc.)
	0.0'		0.0' to 5.4' Clay		1. 30.0' of plastic pipe put in hole water level 19.03 12 Jan. 73
	5.4'		0.0' to 3.5' Some sand grains, med stiff, moist, drk. brown to blk.		2. JARS: A. 0.0' to 3.5' B. 3.5' to 4.9' C. 4.9' to 5.4' D. 5.4' to 10.0'
	10.0'		3.5' to 4.9' Sli. sandy, v. stiff to hard, sli. moist, brown.		3. CARTONS: 1. 11.3' to 12.3' 2. 17.0' to 18.0' 3. 23.7' to 24.7' 4. 29.4' to 30.4' 5. 36.5' to 37.5' 6. 43.2' to 44.2' 7. 51.7' to 52.7' 8. 57.5' to 58.5'
	15.0'		4.9' to 5.4' Sli. sandy, stiff-v. stiff, sli. moist, some calc. nodules.		4. Shales weathered to the consistency of a clay-shale to 39.0'.
	20.0'		5.4' to 10.0' (Clay-Shale) Sandy, dry-sli. moist, v. stiff, yel. brown.		
	25.0'		10.0' to 14.0' SANDSTONE HARD, calc., thinly bedded, fine-grained, gray.		
	30.0'		14.0' to 14.3' SANDSTONE HARD, calc., thinly bedded, fine-grained, gray.		
	35.0'		14.3' to 14.7' SHALE V. stiff, calc, moist, yel.-brown.		
	40.0'		14.7' to 15.0' SANDSTONE HARD, thinly bedded, fine-grained, gray.		
	45.0'		15.0' to 47.5' SHALE (Clay-Shale)		
	50.0'		47.5' to 50.0' SANDSTONE HARD, calc., thinly bedded, fine-grained, gray.		
	55.0'		50.0' to 58.0' Interbedded gray sandy lenses & blk. shale, thinly bedded, v. stiff to hard or dense, moist.		
	60.0'		58.0' to 60.0' SANDSTONE (consistency of v. dense sand) Clayey, moist, fine-grained, some v. thin sh. seams. Thin carbonaceous seams to 60.0', many seams from 51.7' to 54.0'. drk. gray. Limy beds or lenses located @ 54.5' to 55.7' 56.8' to 57.6' 58.0' to 60.0' Mod hard, wht. sandy.		

ENG FORM 1836 MAR 71

PREVIOUS EDITIONS ARE OBSOLETE (TRANSUC 127)

PROJECT AQUILLA - D

STATE NO. BACC-5

State No. BACC-7

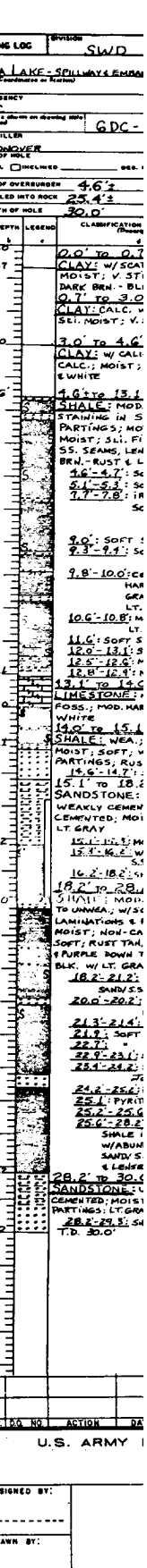
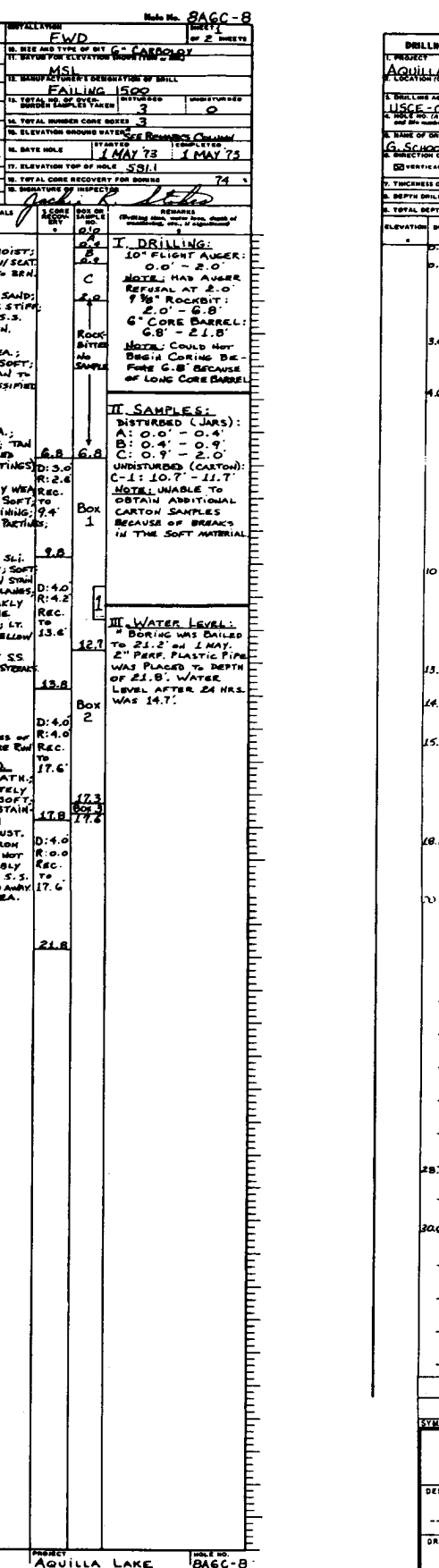
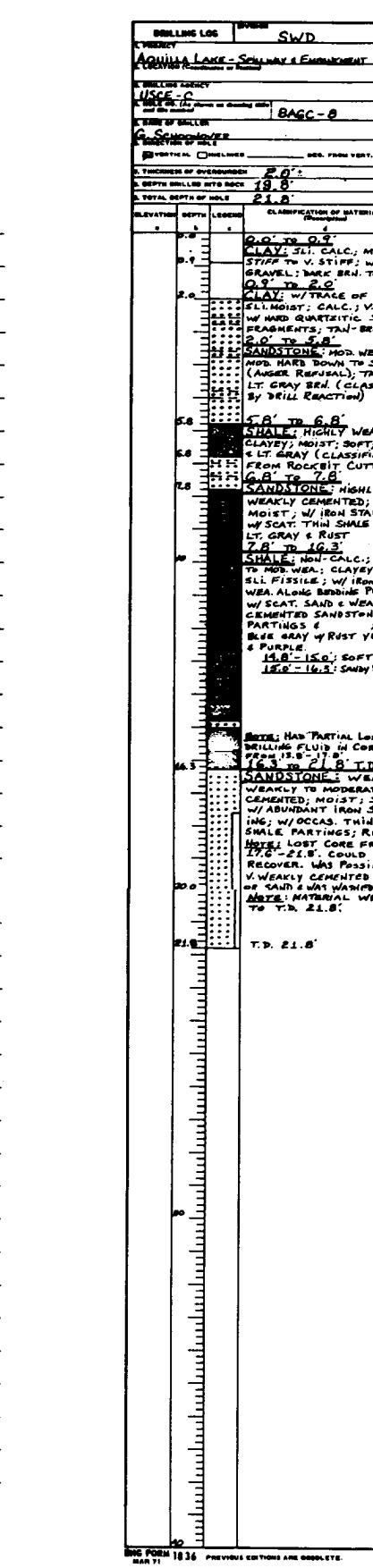
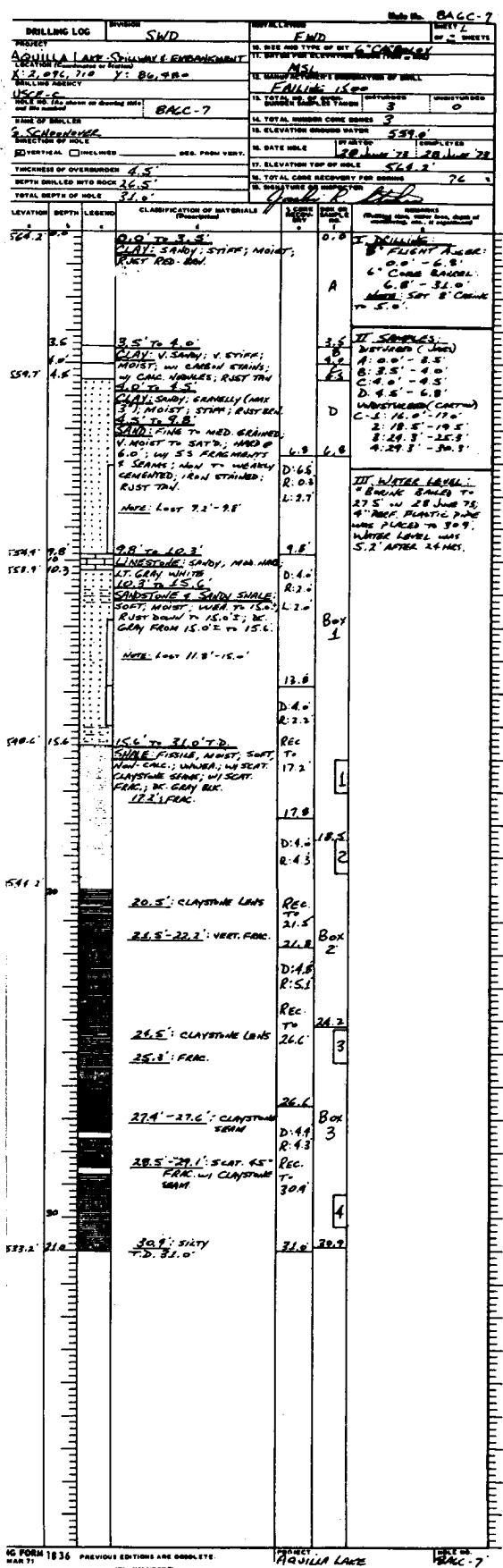
DRILLING LOG	DIVISION	INSTALLATION	PROJECT		
SND	Fort Worth	2nd	1		
PROJECT	AQUILLA LAKE				
1. LOCATION (or coordinates for location)	Site-D				
2. DRILLING AGENCY	Corps of Engineers				
3. NAME OF DRILLER	Jones				
4. DATE HOLE STARTED	19 Jan. 73				
5. DATE HOLE COMPLETED	9 Jan. 73				
6. THICKNESS OF OVERBURDEN	5.4'				
7. DEPTH DRILLED INTO ROCK	44.6'				
8. TOTAL DEPTH OF HOLE	60.0'				
9. TOTAL CORRECOVERY FOR SOILS	88.2				
10. TOTAL CORRECOVERY FOR ROCKS	100.0				
11. MANUFACTURER'S DESIGNATION OF DRILL	Falling				
12. TOTAL NO. OF CUTS	0				
13. TOTAL NUMBER CORE BOXES	8				
14. ELEVATION GROUND WATER	0.0				
15. DATE HOLE STARTED	19 Jan. 73				
16. ELEVATION TOP OF HOLE	527.4				
17. TOTAL CORRECOVERY FOR SOILS	88.2				
18. TOTAL CORRECOVERY FOR ROCKS	100.0				
19. DIRECTION OF HOLE	VERTICAL				
20. THICKNESS OF OVERBURDEN	5.4'				
21. DEPTH DRILLED INTO ROCK	44.6'				
22. TOTAL DEPTH OF HOLE	60.0'				
23. TOTAL CORRECOVERY FOR SOILS	88.2				
24. TOTAL CORRECOVERY FOR ROCKS	100.0				
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	LOG CORRECTION (Feet)	REMARKS (Plugging, casing, etc.)
	0.0'		0.0' to 3.5' Clay, sandy, stiff, moist, blk. red. blk.		I. DEWELLING: 0.0' - 6.8' 6" CORR. RAILING: 6.8' - 31.0' MADE. SET & CORRECT TO 5.0'
	5.4'		3.5' to 4.9' Sli. sandy, v. stiff, moist, w. calc. nodules; rust tan.		II. SAMPLES: 1. 0.0' - 3.5' 2. 3.5' - 4.9' 3. 4.9' - 5.4' 4. 5.4' - 6.8' 5. 6.8' - 11.0' 6. 11.0' - 17.0' 7. 17.0' - 23.7' 8. 23.7' - 29.4' 9. 29.4' - 36.5' 10. 36.5' - 43.2' 11. 43.2' - 49.4' 12. 49.4' - 51.7' 13. 51.7' - 57.5'
	10.0'		4.9' to 5.4' Sli. sandy, stiff-v. stiff, sli. moist, some calc. nodules.		III. WATER LEVEL: "B" BORE HOLE TO 27.5' ON 28 JAN 73. "C" BORE PLASTIC PIPE WERE PLACED TO 80.9' WATER LEVEL WAS 5.2' ABOVE 24 HRS.
	15.0'		5.4' to 10.0' (Clay-Shale) Sandy, dry-sli. moist, v. stiff, yel. brown.		
	20.0'		10.0' to 14.0' SANDSTONE HARD, calc., thinly bedded, fine-grained, gray.		
	25.0'		14.0' to 14.3' SANDSTONE HARD, calc., thinly bedded, fine-grained, gray.		
	30.0'		14.3' to 14.7' SHALE V. stiff, calc, moist, yel.-brown.		
	35.0'		14.7' to 15.0' SANDSTONE HARD, thinly bedded, fine-grained, gray.		
	40.0'		15.0' to 47.5' SHALE (Clay-Shale)		
	45.0'		47.5' to 50.0' SANDSTONE HARD, calc., thinly bedded, fine-grained, gray.		
	50.0'		50.0' to 58.0' Interbedded gray sandy lenses & blk. shale, thinly bedded, v. stiff to hard or dense, moist.		
	55.0'		58.0' to 60.0' SANDSTONE (consistency of v. dense sand) Clayey, moist, fine-grained, some v. thin sh. seams. Thin carbonaceous seams to 60.0', many seams from 51.7' to 54.0'. drk. gray. Limy beds or lenses located @ 54.5' to 55.7' 56.8' to 57.6' 58.0' to 60.0' Mod hard, wht. sandy.		

ENG FORM 1836 MAR 71

PREVIOUS EDITIONS ARE OBSOLETE (TRANSUC 127)

PROJECT AQUILLA LAKE

STATE NO. BACC-7



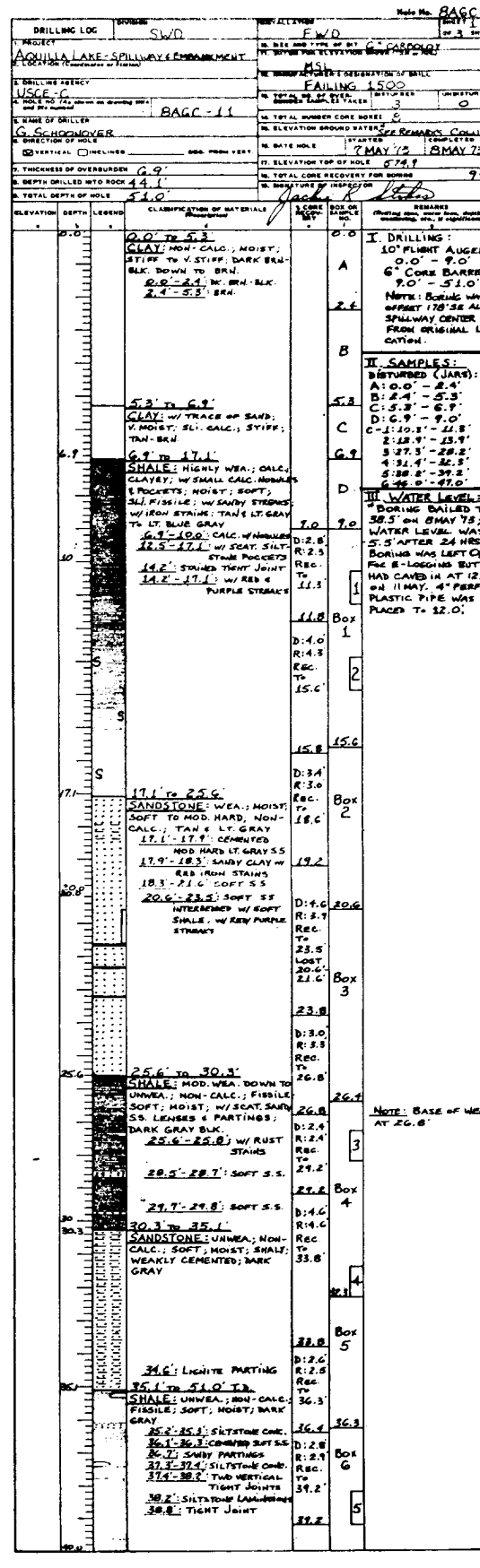
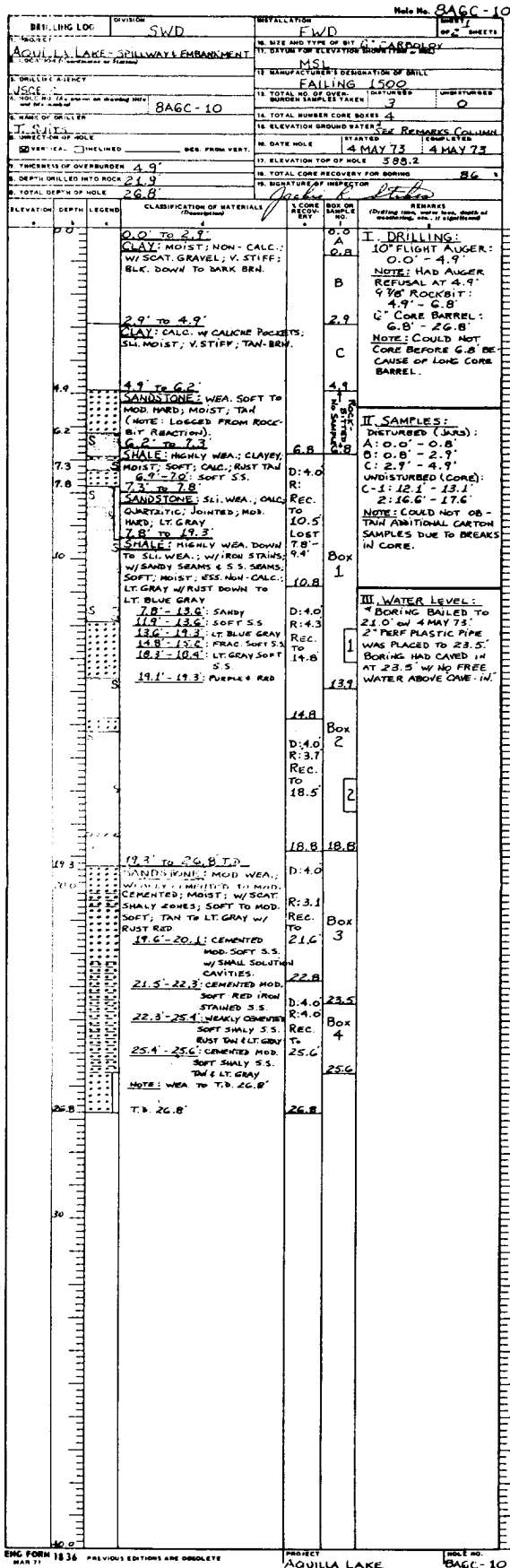
DRILLING LOG		DIVISION SWD		METALLIZATION FWD		SHEET 1 OF 2 SHEETS	
PROJECT AQUILLA LAKE-SPILLWAY EMBANKMENT		NO. AND TYPE OF BIT 6" CARBOLITE		NO. DATE AND TIME OF TEST 12 MAY 73 3 MAY		TESTER SEE REMARKS COLUMN	
LOCATION (Continent or Station)		M.S.L.		TOTAL NUMBER CORE BORES 5		ELEVATION GROUND WATER	
DRILLING AGENCY USCE-C		MANUFACTURER'S DESIGNATION OF DRILL FAILING 1500		TOTAL CORE RECOVERY FOR BORING		SIGNATURE OF INSPECTOR	
HOLE NO. TO WHICH THIS BORING RELATES GDC-9		TOTAL DEPTH OF BORING 30.0'		TOTAL CORE RECOVERY FOR BORING		SIGNATURE OF INSPECTOR	
NAME OF DRILLER G. Spindler		ELEVATION TOP OF HOLE 592.3		TOTAL CORE RECOVERY FOR BORING		SIGNATURE OF INSPECTOR	
DIRECTION OF BORE VERTICAL		DATE HOLE 12 MAY 73		TOTAL CORE RECOVERY FOR BORING		SIGNATURE OF INSPECTOR	
THICKNESS OF OVERBURDEN 4.6'		ELEVATION TOP OF HOLE 592.3		TOTAL CORE RECOVERY FOR BORING		SIGNATURE OF INSPECTOR	
DEPTH DRILLED INTO ROCK 29.4'		ELEVATION TOP OF HOLE 592.3		TOTAL CORE RECOVERY FOR BORING		SIGNATURE OF INSPECTOR	
TOTAL DEPTH OF HOLE 30.0'		ELEVATION TOP OF HOLE 592.3		TOTAL CORE RECOVERY FOR BORING		SIGNATURE OF INSPECTOR	

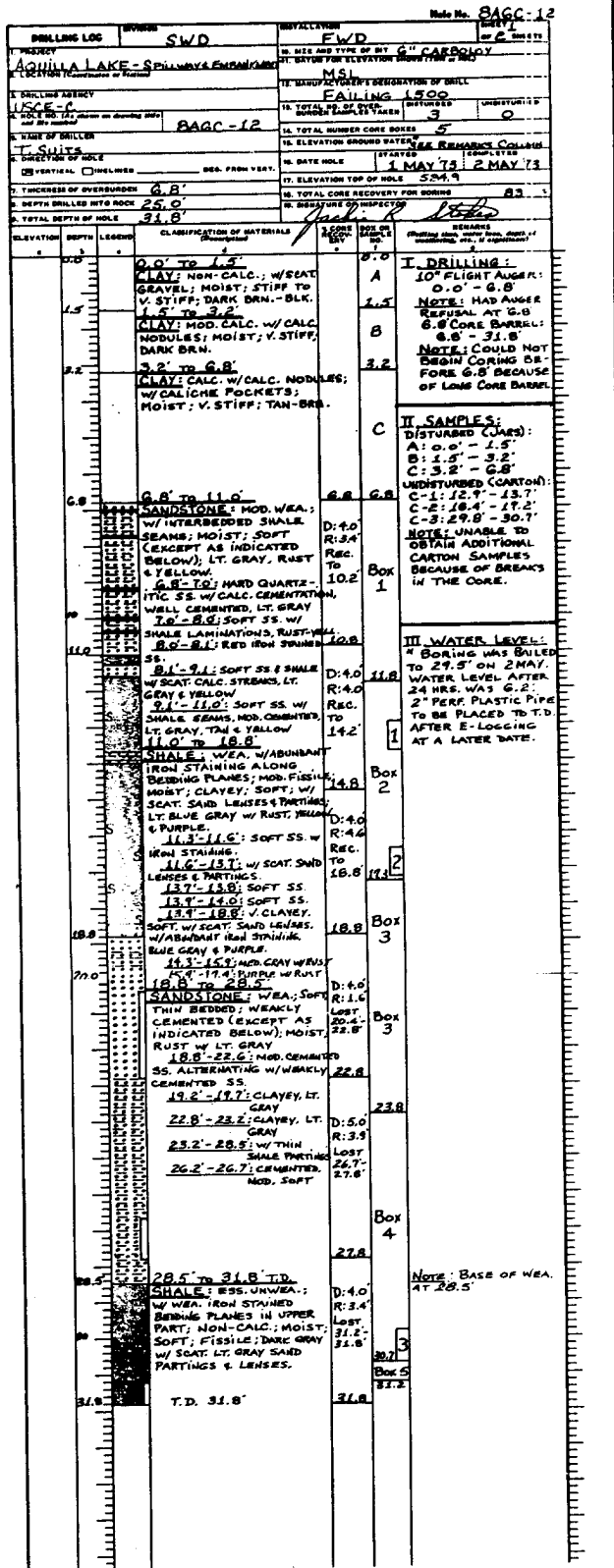
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	SCORE (0-10)	REMARKS (Drilling data, core loss, depth of penetration, etc., if applicable)
0.0	0.0		0.0 TO 0.7' CLAY; W/SCAT. GRAVEL; MOIST; V. STIFF; NON-CALC. DARK BRN. - BLK.	A7	I. DRILLING: 10" FLIGHT AUGER; 0.0' - 2.6' 6" DENISON ODL; 2.6' - 5.3' NOTE: HAD DENISON REFUSAL AT 5.3' 9 7/8" ROCKBIT; 2.6' - 6.8' 6" CORE BARREL; 6.8' - 30.0'
0.7	0.7		0.7 TO 3.0' CLAY; CALC. W/ CALC. NODULES; SLI. MOIST; V. STIFF; BRN. - TAN	B	
3.0	3.0		3.0 TO 4.6' CLAY; W/ CALICHE POCKETS; V. STIFF; CALC.; MOIST; MOD. FAT; TAN & WHITE	DB1 (3.57)	
4.6	4.6		4.6 TO 13.1' SHALE; MOD. WEA.; W/ IRON STAINING IN SS SEAMS & PARTINGS; MOD. CALC.; SOFT; MOIST; SLI. FISSILE; W/ SCAT. SS. SEAMS, LENSES & PARTINGS; BRN. - RUST & LT. GRAY	C	
13.1	13.1		13.1 TO 16.8' S.S. SEAMS, LENSES & PARTINGS; BRN. - RUST & LT. GRAY	D:3.0	
16.8	16.8		16.8 TO 17.8' SOFT SS.	R:2.6	
17.8	17.8		17.8 TO 19.4' IRON STAINED SOFT SS.	REC. TO 19.4'	
19.4	19.4		19.4 TO 20.2' SOFT SS.	9.8	
20.2	20.2		20.2 TO 21.2' CEMENTED L.S. MOD. HARD, WEAR. FINE GRAINED, W/ JOINT. LT. GRAY WHITE	D:4.0	
21.2	21.2		21.2 TO 22.2' MOD. HARD S.S. LT. GRAY WHITE	R:4.9	
22.2	22.2		22.2 TO 23.0' SOFT S.S. LENS	REC. TO 23.0'	
23.0	23.0		23.0 TO 24.0' SOFT S.S. PARTINGS	13.8	
24.0	24.0		24.0 TO 25.1' LIMESTONE; MOD. WEA.; FOSS.; MOD. HARD; LT. GRAY WHITE	Box 2	
25.1	25.1		25.1 TO 26.1' SHALE; WEA.; MOD. FISSILE; MOIST; SOFT, W/ CALC. S.S. PARTINGS, RUST TAN	D:4.0	
26.1	26.1		26.1 TO 27.1' SANDSTONE; WEA.; SOFT. WEAKLY CEMENTED TO MOD. CEMENTED; MOIST; TAN W/ LT. GRAY	R:3.0	
27.1	27.1		27.1 TO 28.1' MOD. CEMENTED S.S. WEAKLY CEMENTED S.S. RUST & RED	REC. TO 28.1'	
28.1	28.1		28.1 TO 29.1' MOD. WEA. HOWEN TO UNWEA. W/ SCAT. S.S. SEAMS LAMINATIONS & PARTINGS; MOIST; NON-CALC. FISSILE; SOFT; RUST TAN, LT. BLUE GRAY	16.3	
29.1	29.1		29.1 TO 29.7' PURPLE DOWN TO DARK GRAY BLK. W/ LT. GRAY PARTINGS	17.8	
29.7	29.7		29.7 TO 30.0' SAND/SS PARTINGS	Box 3	
30.0	30.0		30.0 TO 30.2' MOD. SOFT S.S. LT. GRAY	D:4.0	
30.2	30.2		30.2 TO 30.4' SOFT S.S.	R:2.0	
30.4	30.4		30.4 TO 30.6' SOFT S.S.	LOST 16.8	
30.6	30.6		30.6 TO 30.8' SOFT S.S.	11.8	
30.8	30.8		30.8 TO 30.9' STAINED TIGHT JOINT	17.8	
30.9	30.9		30.9 TO 31.0' PYRITE FLAKES	Box 3	
31.0	31.0		31.0 TO 31.1' PYRITE LENS	D:1.5	
31.1	31.1		31.1 TO 31.2' MOD. SOFT S.S. DARK GRAY	R:1.2	
31.2	31.2		31.2 TO 31.3' SHALE INTERBEDDED W/ ABUNDANT LT. GRAY SAND/ S.S. PARTINGS & LENSES	REC. TO 31.3'	
31.3	31.3		31.3 TO 31.4' SANDSTONE; UNWEA.; SOFT CEMENTED; MOIST; W/ SHALE PARTINGS; LT. GRAY W/ DARK GRAY	23.0	
31.4	31.4		31.4 TO 31.5' SHALE PARTINGS	D:2.5	
31.5	31.5		31.5 TO 31.6' T.D. 30.0'	R:2.6	
31.6	31.6			REC. TO 31.6'	
31.6	31.6			Box 4	
31.6	31.6			25.6	
31.6	31.6			24.8	
31.6	31.6			25.1	
31.6	31.6			25.2	
31.6	31.6			25.6	
31.6	31.6			28.2	
31.6	31.6			28.7	
31.6	31.6			29.7	
31.6	31.6			28.7	
31.6	31.6			Box 5	
31.6	31.6			29.7	
31.6	31.6			30.0	

DESIGNED BY:	AQUILLA LAKE AQUILLA CREEK, TEXAS
DRAWN BY:	EMBANKMENT AND SPILLWAY
CHECKED BY:	LOGS OF BORINGS 8A6C-5, 7, 8 AND 6DC-9
SUBMITTED BY:	INV. NO. DACW63-80-B-0085 DATED: AUG. 1960
ENGINEER:	CONTR. NO. DACW63-81-C-0039 SEQUENCE NO. 107
	DRAWING NUMBER 8-2 OF SHEET NO. 107

S BUILT

CONTR. NO. DACW63-81-C-0039





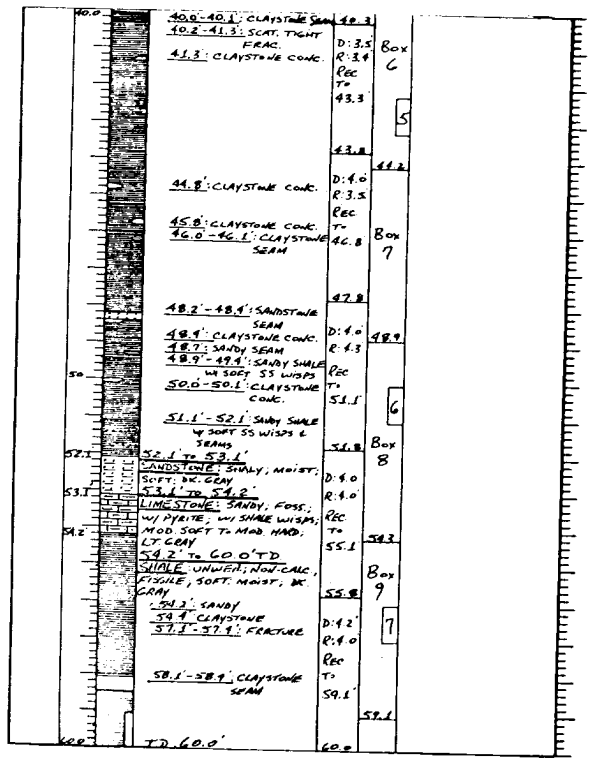
REV. NO.	ACTION	DATE	DESCRIPTION OF REVISION
U.S. ARMY ENGINEER DISTRICT, FORT WORTH CORPS OF ENGINEERS FORT WORTH, TEXAS			
DESIGNED BY:	AQUILLA LAKE AQUILLA CREEK, TEXAS		
DRAWN BY:	EMBANKMENT AND SPILLWAY		
CHECKED BY:	LOGS OF BORINGS 8A6C-10, 11 AND 12		
SUBMITTED BY:	INV. NO. DACW63-80-B-0285	DATED:	AUG 1960
ENGINEER:	CONTR. NO. DACW63-81-C-0039	SEQUENCE NO.	108
	DRAWING NUMBER	SHEET NO.	8-3 OF

RECORD DRAWING-WORK AS BUILT

CONT. NO. DACW63-81-C-0039

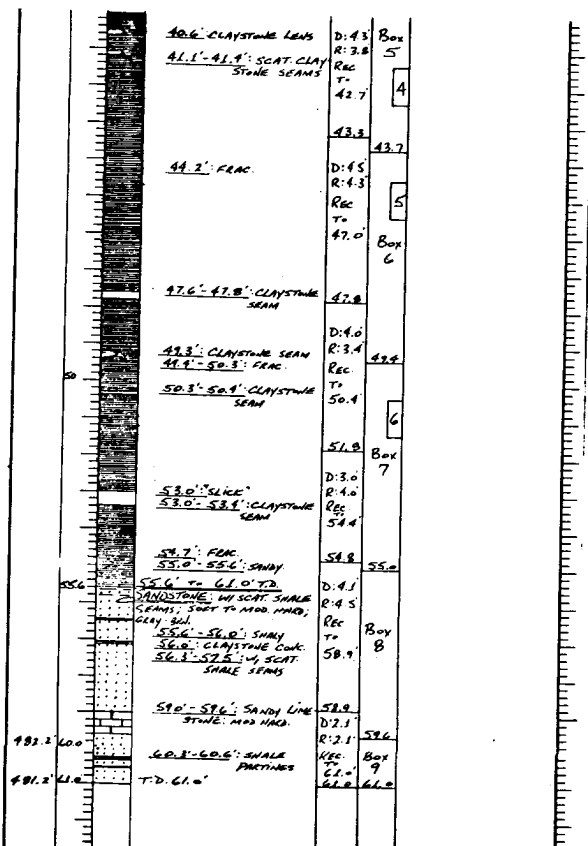
DRILLING LOG		DIVISION	INSTALLATION	SHEET 2 OF 7 SHEETS	
PROJECT: AQUILLA LAKE EMPANMENT		SWD	EWD	CONTRACT NO. 60000001	
1. LOCATION (Latitude or Stationing)				10. DATE AND TIME OF BIT FALLING 15:00	
2. DRILLING METHOD				11. DATE FOR ELEVATION MEASUREMENT MSL	
3. NAME OF OPERATOR				12. MANUFACTURER'S DESIGNATION OF DRILL	
4. DIRECTION OF HOLE				13. TOTAL NO. OF CUTS	
5. THICKNESS OF OVERBURDEN		1.8		14. TOTAL NUMBER CORE BOXES	
6. DEPTH DRILLED INTO ROCK		58.2		15. ELEVATION GROUND WATER	
7. TOTAL DEPTH OF HOLE		60.0		16. DATE HOLE STARTED	
8. ELEVATION DEPTH				17. ELEVATION TOP OF HOLE	
9. LEGEND				18. TOTAL CORE RECOVERY FOR BORING	
10. CLASSIFICATION OF MATERIALS (Description)				19. SIGNATURE OF INSPECTOR	
11. CORE RECOVERY				20. REMARKS (Include name, depth of weathering, etc., if significant)	

ELEVATION	DEPTH	DESCRIPTION	REMARKS
0.0	0.0	0.0' TO 1.8'	I. DRILLING
1.8	1.8	SAND, W/ TRACE OF FINES; FIRM, FINE TO MED GRAINED, V. MOIST; BRN.	A. FLIGHT AUGER 0.0' - 9.0'
1.8	1.8	1.8' TO 4.0'	B. 6" CORE BARREL 0.0' - 60.0'
4.0	4.0	CLAY, SANDY, W/ SS FRAGMENTS, STIFF, MOIST; RUST RED W/ BRN.	NOTE: PULLED UP 5.0' & FISHTAILED TO 140.0' & E-LOGGED
4.0	4.0	4.0' TO 6.9'	II. SAMPLES:
6.9	6.9	SAND, FINE TO MED GRAINED, MOIST, FIRM, LT RUST	A. 0.0' - 1.8'
6.9	6.9	6.9' TO 23.1'	B. 1.8' - 4.0'
23.1	23.1	SHALE, HIGHLY WEAR DOWN TO UNWDR; NON-CALC.; SANDY W/ UPPER PART; W/ SCAT. GRAY, MOIST; SOFT; LT. GRAY & RUST DOWN TO DK. GRAY	C. 4.0' - 6.9'
23.1	23.1	23.1' TO 28.5'	D. 6.9' - 9.0'
28.5	28.5	SHALE, HIGHLY WEAR DOWN TO UNWDR; NON-CALC.; SANDY W/ UPPER PART; W/ SCAT. GRAY, MOIST; SOFT; LT. GRAY & RUST DOWN TO DK. GRAY	E. 12.6' - 13.5'
28.5	28.5	28.5' TO 30.6'	F. 21.0' - 21.8'
30.6	30.6	SOFT SS POCKET	G. 25.1' - 26.1'
30.6	30.6	30.6' TO 32.1'	H. 36.9' - 37.9'
32.1	32.1	SOFT SS SEAM	I. 42.3' - 43.3'
32.1	32.1	32.1' TO 33.1'	J. 50.1' - 51.1'
33.1	33.1	SOFT SS SEAM	K. 56.0' - 57.0'
33.1	33.1	33.1' TO 34.1'	
34.1	34.1	CLAYSTONE POCKET	
34.1	34.1	34.1' TO 35.1'	
35.1	35.1	CLAYSTONE POCKET	
35.1	35.1	35.1' TO 36.1'	
36.1	36.1	CLAYSTONE POCKET	
36.1	36.1	36.1' TO 37.1'	
37.1	37.1	CLAYSTONE POCKET	
37.1	37.1	37.1' TO 38.1'	
38.1	38.1	CLAYSTONE POCKET	
38.1	38.1	38.1' TO 39.1'	
39.1	39.1	CLAYSTONE POCKET	
39.1	39.1	39.1' TO 40.0'	
40.0	40.0	CLAYSTONE SEAM	



Note No. **GDC-14**
 SHEET 1
 OF 4 SHEETS
 FWD
 E AND TYPE OF BY **G. CARROLL**
 FOR THE DESIGNATION (SHOW TYPE - SIZE)
 MSL
 MANUFACTURER'S DESIGNATION OF DRILL
FALLING 1500
 TOTAL NO. OF OVER BITTED
 ADREN SAMPLES TAKEN **7**
 TOTAL NUMBER CORE BOXES **9**
 ELEVATION BOUNDARY **REMARKS COLUMN**
 TR HOLE **21 JUN 73** [C] LAYED
 ELEVATION TOP OF HOLE **542.2**
 TOTAL CORE RECOVERY FOR BORING
 NATURE OF INSPECTOR
 [Signature]
 I. CORE RECOVERY FOR BORING
 II. SAMPLES
 III. WATER LEVEL
 REMARKS
 (Showing elev., water level, depth of penetration, etc., if significant)

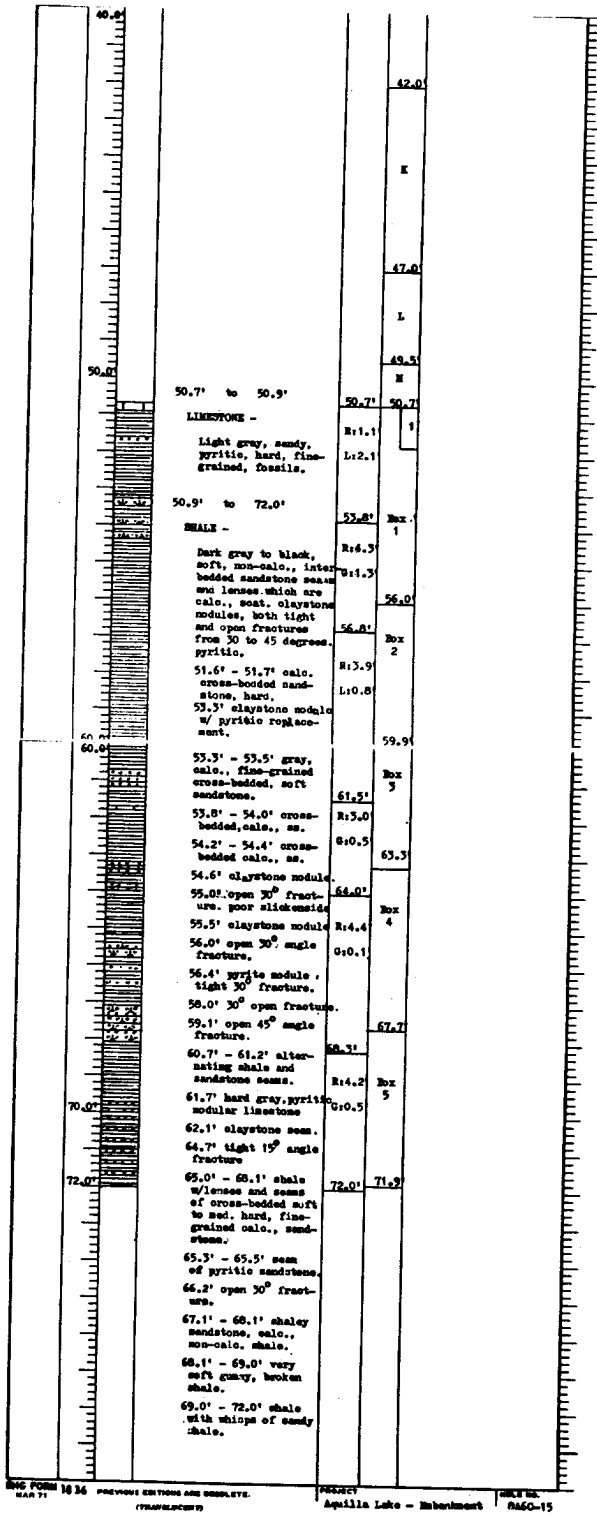
0.0	I DRILLING	D: 43	Box
A	B PLANT ANGER	R: 3.8	5
2.6	C DENISEW BUL	T: 42.7	4
DB 1 (2.7)	D 0.0 - 2.0	43.3	
B 4.6	E 2.0 - 16.0	D: 45	
DB 2 (4.5)	F 16.0 - 16.0	R: 4.3	5
C 6.6	G 16.0 - 61.0	Rec	
DB 3 (6.5)	H 16.0	T: 47.0	Box 6
D 8.6	I UNDISTURBED (DEPT SW)	47.8	
DB 4 (8.5)	J 2.0 - 4.0	D: 46	
E 10.6	K 4.0 - 50.3	R: 3.4	49.2
DB 5 (10.5)	L 50.3 - 50.9	Rec	
F 12.6	M 50.9 - 51.9	T: 50.4	6
DB 6 (12.5)	N 51.9	51.9	Box 7
G 14.6	O 53.0 SLICE	D: 3.0	
DB 7 (14.5)	P 53.0 - 53.1	R: 4.0	
H 16.6	Q 53.1 - 54.7	Rec	54.6
DB 8 (16.5)	R 54.7 - 55.0	T: 54.8	55.0
I 18.6	S 55.0 - 55.6	54.8	
DB 9 (18.5)	T 55.6 - 61.0	D: 4.1	
J 20.6	U SANDSTONE, W/ SCAT SHALE	R: 4.5	
DB 10 (20.5)	V 61.0 - 62.8	Rec	Box 8
K 22.6	W 62.8 - 66.2	T: 58.9	
DB 11 (22.5)	X 66.2 - 66.2	58.9	
L 24.6	Y 66.2 - 66.2	D: 2.1	59.6
DB 12 (24.5)	Z 66.2 - 66.2	R: 2.1	
M 26.6	AA 66.2 - 66.2	Rec	Box 9
DB 13 (26.5)	AB 66.2 - 66.2	T: 66.2	66.0
N 28.6	AC 66.2 - 66.2		
DB 14 (28.5)	AD 66.2 - 66.2		
O 30.6	AE 66.2 - 66.2		
DB 15 (30.5)	AF 66.2 - 66.2		
P 32.6	AG 66.2 - 66.2		
DB 16 (32.5)	AH 66.2 - 66.2		
Q 34.6	AI 66.2 - 66.2		
DB 17 (34.5)	AJ 66.2 - 66.2		
R 36.6	AK 66.2 - 66.2		
DB 18 (36.5)	AL 66.2 - 66.2		
S 38.6	AM 66.2 - 66.2		
DB 19 (38.5)	AN 66.2 - 66.2		
T 40.6	AO 66.2 - 66.2		
DB 20 (40.5)	AP 66.2 - 66.2		
U 42.6	AQ 66.2 - 66.2		
DB 21 (42.5)	AR 66.2 - 66.2		
V 44.6	AS 66.2 - 66.2		
DB 22 (44.5)	AT 66.2 - 66.2		
W 46.6	AU 66.2 - 66.2		
DB 23 (46.5)	AV 66.2 - 66.2		
X 48.6	AW 66.2 - 66.2		
DB 24 (48.5)	AX 66.2 - 66.2		
Y 50.6	AY 66.2 - 66.2		
DB 25 (50.5)	AZ 66.2 - 66.2		
Z 52.6	BA 66.2 - 66.2		
DB 26 (52.5)	BB 66.2 - 66.2		
AA 54.6	BC 66.2 - 66.2		
DB 27 (54.5)	BD 66.2 - 66.2		
AB 56.6	BE 66.2 - 66.2		
DB 28 (56.5)	BF 66.2 - 66.2		
AC 58.6	BG 66.2 - 66.2		
DB 29 (58.5)	BH 66.2 - 66.2		
AD 60.6	BI 66.2 - 66.2		
DB 30 (60.5)	BJ 66.2 - 66.2		
AE 62.6	BK 66.2 - 66.2		
DB 31 (62.5)	BL 66.2 - 66.2		
AF 64.6	BM 66.2 - 66.2		
DB 32 (64.5)	BN 66.2 - 66.2		
AG 66.6	BO 66.2 - 66.2		
DB 33 (66.5)	BP 66.2 - 66.2		
AH 68.6	BQ 66.2 - 66.2		
DB 34 (68.5)	BR 66.2 - 66.2		
AI 70.6	BS 66.2 - 66.2		
DB 35 (70.5)	BT 66.2 - 66.2		
AJ 72.6	BU 66.2 - 66.2		
DB 36 (72.5)	BV 66.2 - 66.2		
AK 74.6	BW 66.2 - 66.2		
DB 37 (74.5)	BX 66.2 - 66.2		
AL 76.6	BY 66.2 - 66.2		
DB 38 (76.5)	BZ 66.2 - 66.2		
AM 78.6	CA 66.2 - 66.2		
DB 39 (78.5)	CB 66.2 - 66.2		
AN 80.6	CC 66.2 - 66.2		
DB 40 (80.5)	CD 66.2 - 66.2		
AO 82.6	CE 66.2 - 66.2		
DB 41 (82.5)	CF 66.2 - 66.2		
AP 84.6	CG 66.2 - 66.2		
DB 42 (84.5)	CH 66.2 - 66.2		
AQ 86.6	CH 66.2 - 66.2		
DB 43 (86.5)	CI 66.2 - 66.2		
AR 88.6	CI 66.2 - 66.2		
DB 44 (88.5)	CI 66.2 - 66.2		
AS 90.6	CI 66.2 - 66.2		
DB 45 (90.5)	CI 66.2 - 66.2		
AT 92.6	CI 66.2 - 66.2		
DB 46 (92.5)	CI 66.2 - 66.2		
AV 94.6	CI 66.2 - 66.2		
DB 47 (94.5)	CI 66.2 - 66.2		
AW 96.6	CI 66.2 - 66.2		
DB 48 (96.5)	CI 66.2 - 66.2		
AX 98.6	CI 66.2 - 66.2		
DB 49 (98.5)	CI 66.2 - 66.2		
AY 100.6	CI 66.2 - 66.2		
DB 50 (100.5)	CI 66.2 - 66.2		



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:	AQUILLA LAKE AQUILLA CREEK, TEXAS EMBANKMENT AND SPILLWAY LOGS OF BORINGS BAGC-13 AND GDC-14		
DRAWN BY:			
CHECKED BY:			
SUBMITTED BY:			
ENGINEER:	INV. NO. DACW 63-80-B-0085	DATED: AUG. 1980	SEQUENCE NO.
	CONTR. NO. DACW 63-81-C-0039	SHEET NO.	109
	DRAWING NUMBER	B-4 OF	

CONTR. NO. DACW 63-81-C-0039



RECORD DRAWING-WORK AS BUILT

SYMBOL NO.	ACTION	DATE	DESCRIPTION OF REV.
U.S. ARMY ENGINEER DISTRICT, FORT WORTH, TEXAS CORPS OF ENGINEERS FORT WORTH, TEXAS			
DESIGNED BY:	AQUILLA LAKE AQUILLA CREEK, TEXAS EMBANKMENT AND SPI LOGS OF BORING 8460-15		
DRAWN BY:			
CHECKED BY:			
SUBMITTED BY:			
ENGINEER:			
INV. NO. DACW63-80-8 CONTR. NO. DACW63-80-8 DRAWING NUMBER			

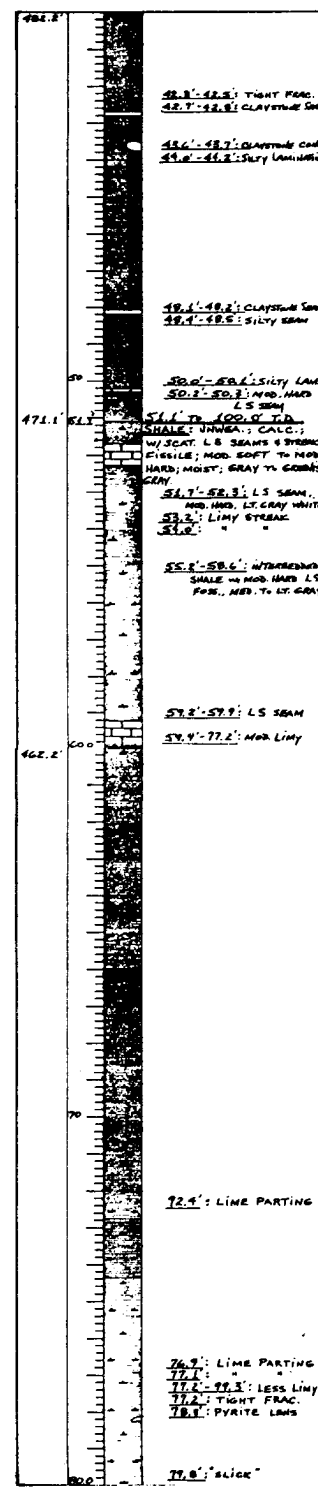
TO ACCOMPANY FINAL FOUNDATION REPORT

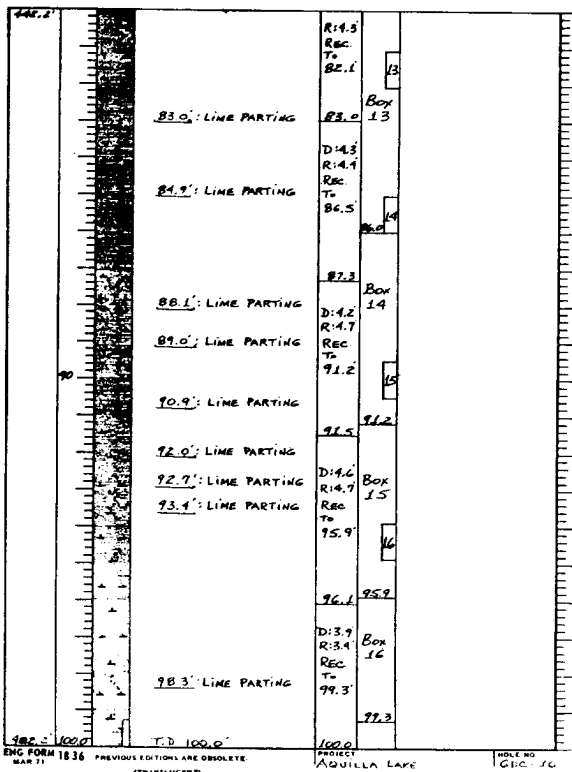
RECORD DRAWING-WORK AS BUILT

SYMBOL NO.	ACTION	DATE	DESCRIPTION OF REVISION
U.S. ARMY ENGINEER DISTRICT, FORT WORTH CORPS OF ENGINEERS FORT WORTH, TEXAS			
DESIGNED BY:	AQUILLA LAKE AQUILLA CREEK, TEXAS EMBANKMENT AND SPILLWAY LOGS OF BORINGS 8A6C-15		
DRAWN BY:			
CHECKED BY:			
SUBMITTED BY:	INV. NO. DACW63-80-B-0085	DATED:	AUG. 1980
ENGINEER:	CONTR. NO. DACW63-81-C-0039	SEQUENCE NO.	
	DRAWING NUMBER	SHEET NO.	110
		B-5 of	

CONTR. NO. DACW63-81-C-0039

BUREAU		DIVISION		INSTALLATION		DATE	
AQUILLA LAKE - EMBANKMENT		SWD		FWD		GDC-16	
PROJECT		NO. AND TYPE OF HOLE		NO. AND TYPE OF HOLE		NO. AND TYPE OF HOLE	
K2201, R. 15		C		C		C	
USFC		MSI		MSI		MSI	
K2201, R. 15		FALLING 1500		FALLING 1500		FALLING 1500	
GDC-16		5		5		5	
GDC-16		16		16		16	
GDC-16		17 MAY 75		17 MAY 75		17 MAY 75	
10.6'		522.2'		522.2'		522.2'	
89.4'		78.4'		78.4'		78.4'	
100.0'							
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	NO. OF SAMPLES	REMARKS	NO. OF SAMPLES	REMARKS
522.2	0.0		0.0' TO 3.6' ± CLAY, MOIST; W/ TRACE OF SAND; V. STIFF TO HARD, DK. BRN.		I. DRILLING: B' FLIGHT AUGER: 0' - 2.6' G' DENISON BARREL 2.6' - 12.6' G' CORE BARREL 12.6' - 100.0'		
	3.6		3.6' TO 5.6' ± CLAY; SANDY; MOIST; HARD; RUST BRN. & LT. GRAY		II. SAMPLES: DISTURBED (JARS): A: 0.0' - 2.6' B: 4.6' C: 6.6' D: 8.6' E: 10.6' F: 12.6' UNDISTURBED (DENISON): DB 1: 2.6' - 4.6' DB 2: 4.6' - 6.6' DB 3: 6.6' - 8.6' DB 4: 8.6' - 10.6' DB 5: 10.6' - 12.6' UNDISTURBED (CORES): C-1: 12.6' - 14.6' C-2: 14.6' - 16.6' C-3: 16.6' - 18.6' C-4: 18.6' - 20.6' C-5: 20.6' - 22.6' C-6: 22.6' - 24.6' C-7: 24.6' - 26.6' C-8: 26.6' - 28.6' C-9: 28.6' - 30.6' C-10: 30.6' - 32.6' C-11: 32.6' - 34.6' C-12: 34.6' - 36.6' C-13: 36.6' - 38.6' C-14: 38.6' - 40.6' C-15: 40.6' - 42.6' C-16: 42.6' - 44.6'		
	5.6		5.6' TO 9.6' ± SAND; SLT. CLAYEY; FINE TO MED GRAINED; MOIST; FIRM; RUST TAN & LT. GRAY				
	9.6		9.6' TO 10.6' ± CLAY; MOIST; W/ WEA SHALE & SCAT GRAVEL				
	10.6		10.6' TO 17.8' ± SHALE; HIGHLY WEA.; SOFT; CLAYEY; MOIST; W/ SCAT. TIGHT FRAC.; NON-CALC.; W/ GYP VEINING; W/ SCAT. SANDY POCKETS & LAMINAE; OLIVE GRAY & RUST W/ LT. BLUE GRAY				
	17.8		17.8' TO 21.3' ± SANDSTONE; SOFT TO HARD; W/ INTERBEDDED SHALE; MOIST; TAN & GRAY				
	21.3		21.3' TO 21.8' ± SS; MOD. SOFT TO TW				
	21.8		21.8' TO 20.4' ± HARD CALC. S.S. TW - BAN.				
	20.4		20.4' TO 20.6' ± SOFT UNWEA. SHALE				
	20.6		20.6' TO 21.3' ± HARD CALC. S.S.; LT. TO MED GR.				
	21.3		21.3' TO 21.8' ± INTERBEDDED MOD. SOFT SS & SOFT UNWEA. SHALE				
	21.8		21.8' TO 21.1' ± SHALE; UNWEA.; NON-CALC.; SOFT; MOIST; FISSILE; W/ SCAT. CLAYSTONE SEAMS & CONG.; W/ OCCAS. MOD. HARD LS SEAM; W/ SCAT. TIGHT JOINTS; W/ GRAY BLK.				
	21.1		21.1' TO 22.6' ± MOD. HARD CLAYSTONE				
	22.6		22.6' TO 23.8' ± TIGHT JOINT				
	23.8		23.8' TO 24.9' ± CLAYSTONE				
	24.9		24.9' TO 25.0' ± CLAYSTONE SEAM				
	25.0		25.0' TO 27.8' ± TIGHT JOINT				
	27.8		27.8' TO 28.2' ± TIGHT JOINT				
	28.2		28.2' TO 29.8' ± SILTY POCKETS				
	29.8		29.8' TO 30.7' ± MOD. HARD LS SEAM				
	30.7		30.7' TO 30.8' ± PYRITE CONG.				
	30.8		30.8' TO 31.6' ± CLAYSTONE				
	31.6		31.6' TO 32.3' ± REGG. SILTY PARTINGS				
	32.3		32.3' TO 32.5' ± HARD CLAYSTONE				
	32.5		32.5' TO 33.8' ± TIGHT JOINT				
	33.8		33.8' TO 34.2' ± CLAYSTONE				
	34.2		34.2' TO 34.7' ± CLAYSTONE				
	34.7		34.7' TO 36.2' ± SILTY PARTINGS				
	36.2		36.2' TO 36.3' ± INTERBEDDED W/ SILTSTONE				
	36.3		36.3' TO 37.7' ± CLAYSTONE				
	37.7		37.7' TO 38.0' ± TIGHT FRAC.				
	38.0		38.0' TO 38.2' ± TIGHT FRAC.				
	38.2		38.2' TO 39.7' ± TIGHT FRAC.				
	39.7		39.7' TO 40.0' ± TIGHT FRAC.				





ENG FORM 1836
 MAR 71
 PREVIOUS EDITIONS ARE OBSOLETE
 (TRANSFERRED)
 PROJECT
 AQUILLA LAKE
 HOLE NO.
 6DC-16

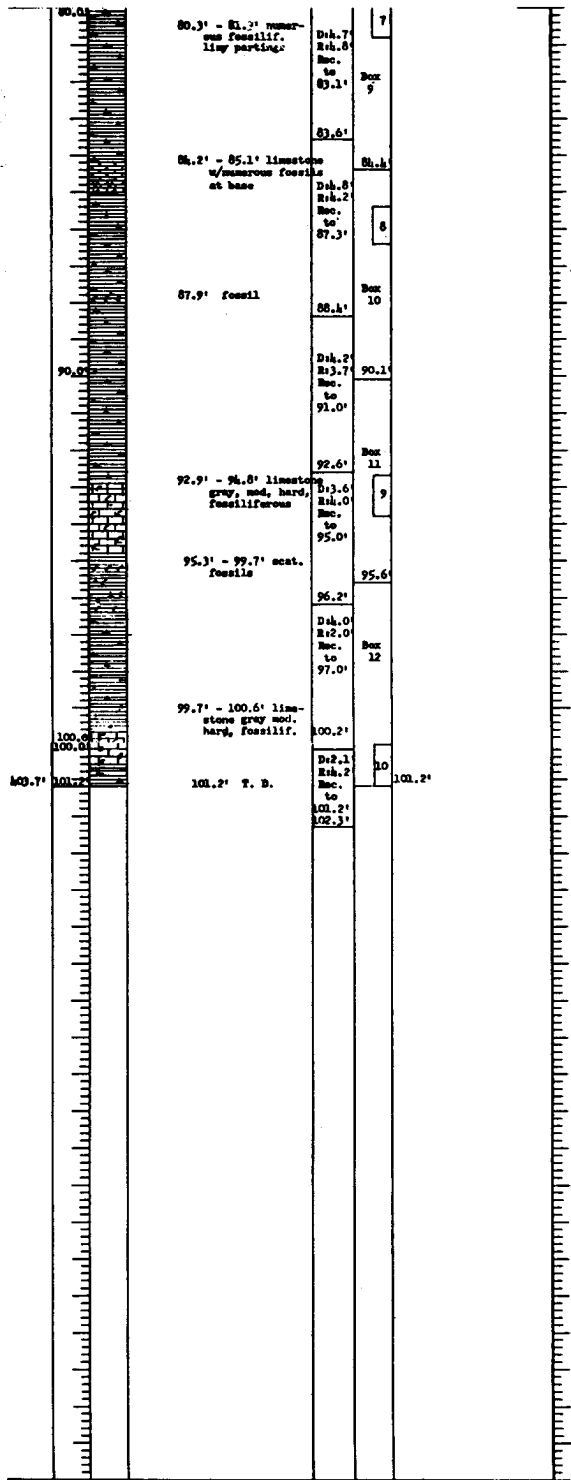
RECORD DRAWING-WORK AS BUILT

SYMBOL NO.	ACTION	DATE	DESCRIPTION OF REVISION
U.S. ARMY ENGINEER DISTRICT, FORT WORTH CORPS OF ENGINEERS FORT WORTH, TEXAS			
DESIGNED BY:	AQUILLA LAKE AQUILLA CREEK, TEXAS EMBANKMENT AND SPILLWAY LOGS OF BORINGS 6DC-16		
DRAWN BY:			
CHECKED BY:			
SUBMITTED BY:	INV. NO. DACW63-80-B-0085	DATED: AUG, 1980	SEQUENCE NO.
ENGINEER:	DRAWING NUMBER	SHEET NO.	III

CONTR. NO. DACW63-81-C-0035

BELLING LOG		DIVISION		SYMBOLS		DATE	
PROJECT		SMD		FWD		#866C-17	
Aquilla Lake - Subbasement		6" Carbonyl		6" Carbonyl		1	
LOCATION		ELEVATION		DATE		NO. OF SHEETS	
X: 7,090,765 Y: 85,120		11,00'		25 July '73		6	
NO. OF SHEETS		NO. OF SHEETS		NO. OF SHEETS		NO. OF SHEETS	
866C-17		12		11,00'		0	
NAME OF BELLER		NO. OF SHEETS		NO. OF SHEETS		NO. OF SHEETS	
G. Schoonover		11,00'		11,00'		0	
SECTION OF HOLE		NO. OF SHEETS		NO. OF SHEETS		NO. OF SHEETS	
Vertical		11,00'		11,00'		0	
TOTAL DEPTH OF OVERBURDEN		NO. OF SHEETS		NO. OF SHEETS		NO. OF SHEETS	
36.5'		11,00'		11,00'		0	
NO. OF SHEETS		NO. OF SHEETS		NO. OF SHEETS		NO. OF SHEETS	
61-7'		11,00'		11,00'		0	
TOTAL DEPTH OF HOLE		NO. OF SHEETS		NO. OF SHEETS		NO. OF SHEETS	
101.2'		11,00'		11,00'		0	
CLASSIFICATION OF MATERIALS		CORRECTION		REMARKS		CORRECTION	
ELEVATION	DEPTH	LEGEND	CLASSIFICATION	DEPTH	REMARKS	DEPTH	REMARKS
501.9'	0.0' to 3.0'	CLAY -	A	0.0' to 3.0'	1. 8" Flight Auger 0.0' - 36.5'		
		Dark brown, silty, silty, moist, high plasticity, calc.			6" Core Barrel 36.5' - 101.2'		
					8" Casing out to 36.5'		
496.9'	3.0' to 8.0'	CLAY -	B	3.0' to 8.0'	2. Jarv :		
		Chocolate brown, very silty, silty, moist, silty, calc., high plasticity.			A: 0.0' - 3.0'		
					B: 3.0' - 8.0'		
					C: 8.0' - 13.0'		
					D: 13.0' - 17.0'		
					E: 17.0' - 22.0'		
					F: 22.0' - 26.5'		
					G: 26.5' - 31.5'		
					H: 31.5' - 36.5'		
491.9'	8.0' to 13.0'	CLAY -	C	8.0' to 13.0'	3. Cartons :		
		Brown, silty, sandy, silty, moist, med. plasticity, calc.			C-1: 38.8' - 39.8'		
					C-2: 46.1' - 47.1'		
					C-3: 52.7' - 53.7'		
					C-4: 60.2' - 61.2'		
					C-5: 66.5' - 67.5'		
					C-6: 73.1' - 74.1'		
					C-7: 79.8' - 80.8'		
					C-8: 85.1' - 86.1'		
					C-9: 92.7' - 93.8'		
					C-10: 100.1' - 101.2'		
487.9'	13.0' to 17.0'	CLAY -	D	13.0' to 17.0'	4. E-logged 31 July '73 Perforated plastic pipe set to 50.0'		
		Light brown, silty, sandy, silty, moist, med. plasticity, calc.					
482.9'	17.0' to 22.0'	CLAY -	E	17.0' to 22.0'			
		Tan, sandy, moist, med. plasticity, calc.					
478.4'	22.0' to 26.5'	SAND -	F	22.0' to 26.5'			
		Light tan, clayey, very moist, med. to low plasticity, calc.					
473.4'	26.5' to 31.5'	SAND -	G	26.5' to 31.5'			
		Light tan w/white streaks, clayey, very moist, med. to low plasticity, calc.					
468.4'	31.5' to 36.5'	SAND -	H	31.5' to 36.5'			
		Dark gray, clayey, very moist, low plasticity, calc., w/tabular rounded sandstone and dark limestone pebbles at lower portions.					
467.6'	36.5' to 37.3'	LIMESTONE -	I	36.5' to 37.3'			
		Light olive brown and white, sandy, fine-grained crystalline, angular, silty limestone at base, pyrite replacement and streaks of a dk. mineral along bedding.					

ELEVATION	DEPTH	LEGEND	CLASSIFICATION	DEPTH	REMARKS	DEPTH	REMARKS
37.3' to 101.2'					Gray and dk. gray, silty, fine-grained, numerous small, silty partings, pyritic seams and nod., interbedded limestone seams, high angle fractures, fossiliferous.		
38.2' - 38.6'					open and tight high angle fractures		
41.2'					lim pyritic parting		
47.7'					fossil. lim parting		
49.0' - 49.4'					high angle fracture		
57.5' - 58.2'					high angle fracture		
57.9'					pyritic lim parting		
58.3'					fossil. pyritic lim parting		
58.5' - 59.4'					scat. foss. lim partings		
65.1'					fossils		
66.2 - 66.3					mod. hard limestone seam, sandy		
75.0' - 75.1'					sandy pyritic lim seam		
75.7' - 77.5'					scat. fossils in scat. lim partings		
79.1' - 79.3'					mod. hard lim seam		



ENGINEERING FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE. MAR 71 (TRANSLOCATION)

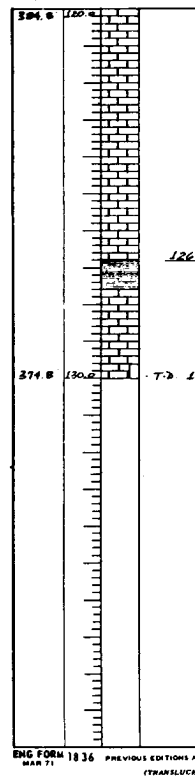
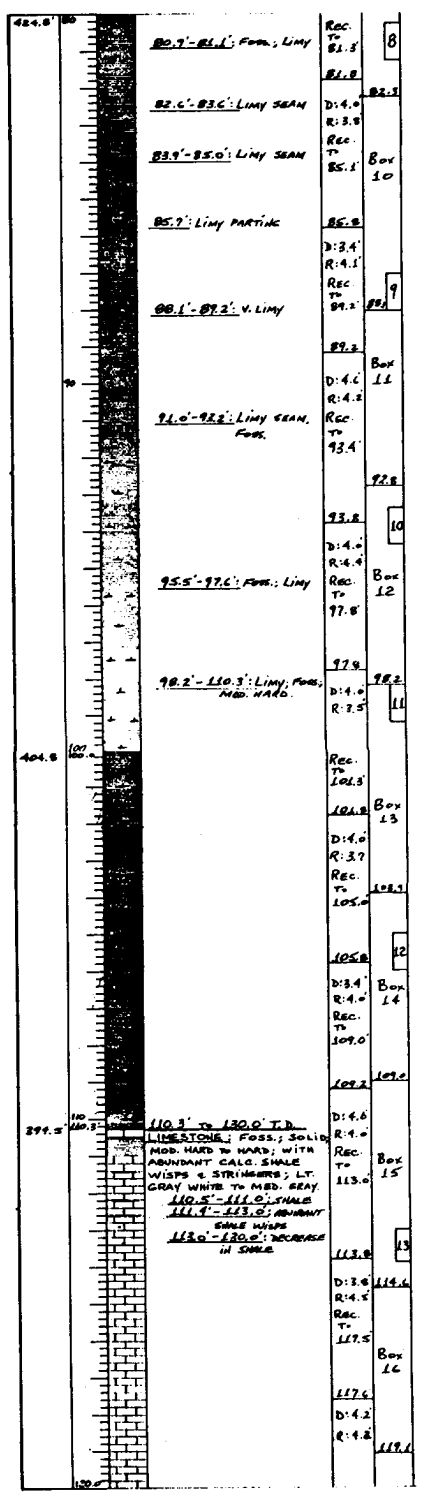
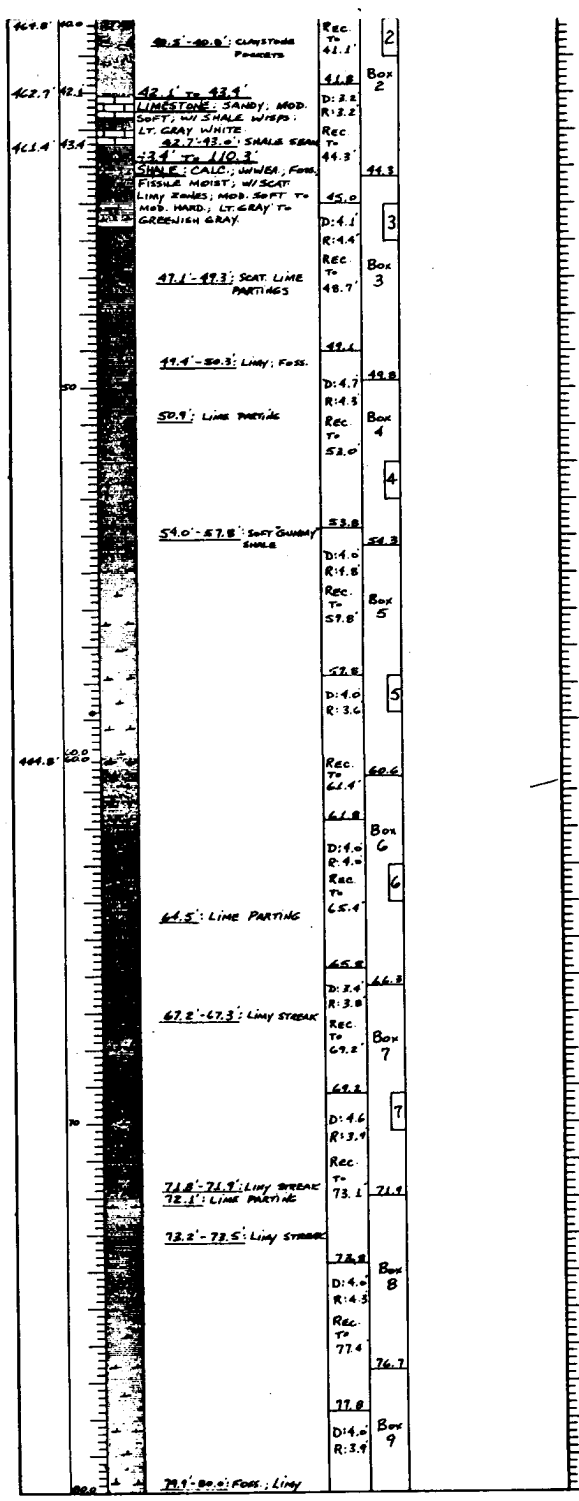
PROJECT: Aquilla Lake - Embankment

SHEET NO.: 8A6C-17

RECORD DRAWING-WORK AS BUILT

REVISION NO.	ACTION	DATE	DESCRIPTION OF REVISION
U.S. ARMY ENGINEER DISTRICT, FORT WORTH CORPS OF ENGINEERS FORT WORTH, TEXAS			
DESIGNED BY:	AQUILLA LAKE AQUILLA CREEK, TEXAS EMBANKMENT AND SPILLWAY LOGS OF BORINGS 8A6C-17		
DRAWN BY:			
CHECKED BY:			
SUBMITTED BY:	INV. NO. DACW63-80-B-0085	DATED: AUG. 1980	SEQUENCE NO.
ENGINEER:	CONTR. NO. DACW63-81-C-0033	DRAWING NUMBER	SHEET NO. 112
		6-7 OF	

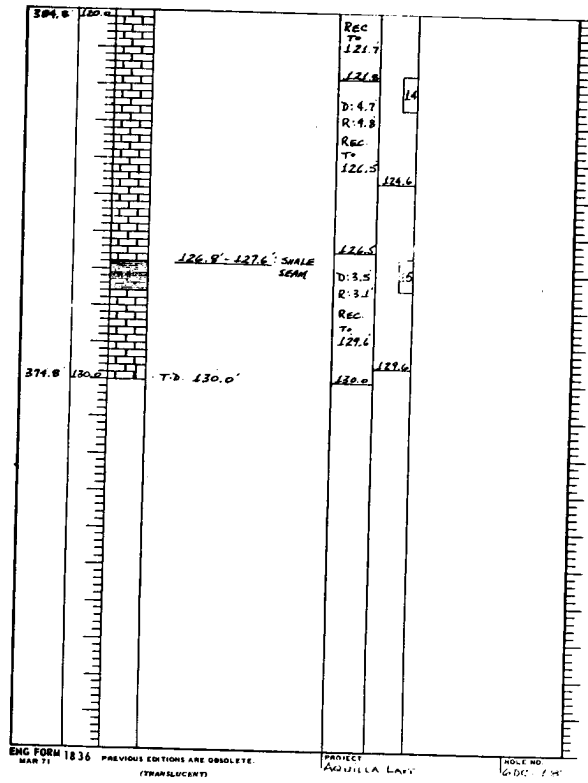
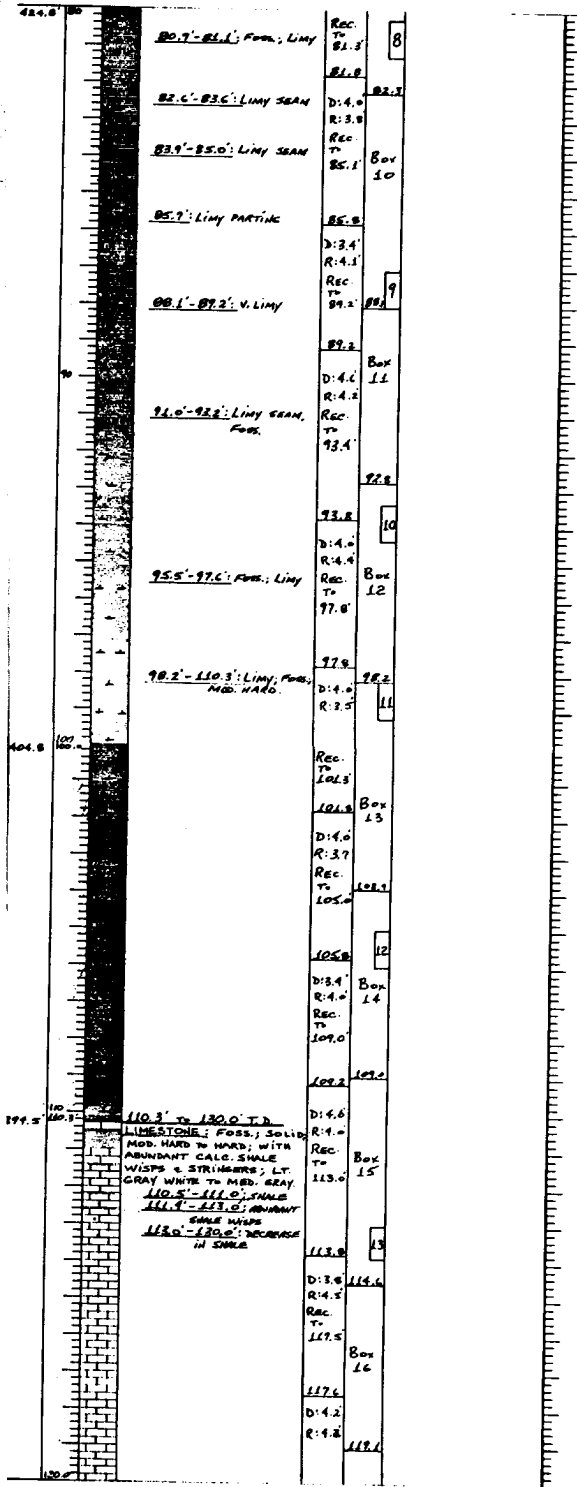
CONTR. NO. DACW63-81-C-0033



ENG FORM 18 36 PREVIOUS EDITIONS AT
MAR 71 (TRANSLUCENT)

RECORD DRAWING

SYMBOL NO.	ACTION
U.S. ARMY	
DESIGNED BY:	-----
DRAWN BY:	-----
CHECKED BY:	-----
SUBMITTED BY:	-----
ENGINEER:	-----



ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. PROJECT AQUILLA LAKE SCALE NO. 6"=1' 1/4"

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:	AQUILLA LAKE AQUILLA CREEK, TEXAS EMBANKMENT AND SPILLWAY LOGS OF BORINGS 6DC-18		
DRAWN BY:			
CHECKED BY:			
SUBMITTED BY:	INV. NO. DACW03-80-B-0086	DATED: AUG 1960	SEQUENCE NO.
ENGINEER:	CONTR. NO. DACW03-81-C-2035	DRAWING NUMBER	SHEET NO. 113

CONTR. NO. DACW03-81-C-2035

BORING LOG		GENERAL INFORMATION		LOG SHEET	
NO.	DEPTH	DESCRIPTION OF MATERIALS	LOG SHEET NO.	DATE	BY
1. 0.0' to 0.6'		CLAY - Dark brown, hard, silty, sandy, high plasticity, silty, moist, non-calc., nodules.	0.0' to 0.6'	1. 0.0' Flight Auger	
2. 0.6' to 5.6'		CLAY - Orange brown, hard, high plasticity, moist, quartzite gravel, non-calc., nodules.	0.6' to 5.6'	0.0' - 2.6' 6" Denison Barrel 2.6' - 7.1' 6" Core Barrel 7.1' - 60.0' Blended bit 56.1' - 60.0' Casing set to 7.0'	
3. 5.6' to 27.3'		SHALE - Gray, smooth, orange stained fractures and joints, soft, non-calc., pyritic, numerous partings, ironstone nodules, interbedded non-calc. sandstone and siltstone, fossiliferous.	5.6' to 27.3'	2. Jars: 10.0' - 0.6' B10.6' - 2.6' 12.6' - 4.6' B12.6' - 7.1' 14.6' - 7.1'	
4. 27.3' to 30.0'		10.1' - 10.4' gray-white calc. fine-grained sandstone. 10.5' appearance of and consistency. 10.5' - 11.5' brown sandstone, non-calc., poorly sorted, orange stains in bedding, red ironstone lens. 11.5' - 14.9' interbedded non-calc. brown sandstone and gray shale, weathered, orange stained, some trail casts along ss. and shale contacts, sandstone nodules.	27.3' to 30.0'	3. Cartons: C-1: 7.1' - 8.1' C-2: 19.1' - 20.0' C-3: 23.6' - 24.6' C-4: 27.5' - 28.5' C-5: 32.5' - 33.5' C-6: 38.5' - 39.5' C-7: 44.0' - 45.0' C-8: 51.4' - 52.2' C-9: 59.0' - 60.0'	
5. 30.0' to 32.0'		17.1' - 17.5' gray homogeneous, sandy, clayey shale, peppered with specks of black fossil remains.	30.0' to 32.0'	4. Weathering to 27.3'	
6. 32.0' to 34.0'		20.7' - 27.3' numerous gypsum partings	32.0' to 34.0'	5. 3-jogged Aug. '75 Perforated plastic pipe set to 60.0'	
7. 34.0' to 36.0'		24.7' ironstone nodules	34.0' to 36.0'	6. Water level was 18.5' after 24 hours.	
8. 36.0' to 38.0'		27.3' to 45.4'	36.0' to 38.0'		
9. 38.0' to 40.0'		SHALE - Dark gray, unweathered, silty, waxy, interbedded crossbedded sandstone lenses and some, fossiliferous, non-calc., sandstone, siltstone lenses, both tight and open low and high angle fractures.	38.0' to 40.0'		
10. 40.0' to 42.0'		28.2' siltstone nodules	40.0' to 42.0'		
11. 42.0' to 44.0'		29.9' - 32.5' sandstone lenses	42.0' to 44.0'		
12. 44.0' to 46.0'		32.5' fossils	44.0' to 46.0'		
13. 46.0' to 48.0'		33.7' low angle fract.	46.0' to 48.0'		
14. 48.0' to 50.0'		34.3' - 36.3' tight high angle fractures intersecting, some ascending at near 60° angles.	48.0' to 50.0'		
15. 50.0' to 52.0'		36.8' - 40.0' sandstone lenses and some.	50.0' to 52.0'		

DEPTH	DESCRIPTION	LOG SHEET NO.	DATE	BY
56.0' - 57.3'	LIMESTONE - Gray to white, fine to med. grained, very sandy in upper part, pyritic, shaly of black shale, and knotty flow structures at base. 56.0' - 56.9' gray-brown with tongues of white 45° to bore pyritic. 57.0' pyrite seam			
57.3' to 60.0'	SHALE - Dark gray, silty, soft, calc., silty, fissile, sand. fossils.			
40.0' - 40.1'	low angle fracture	Box 6		
42.1'	sandstone lens	41.9'		
45.0'	sandstone lens and fossils	44.0' to 44.5'		42.5'
45.4' to 53.2'	SANDSTONE - Gray-brown, soft, fine to med. grained, non-calc., open fractures along bedding planes, fossils, silty, shaly, from 45.4' - 48.9' 48.4' - 48.9' numerous sand, 1/8" calc., white nodules in sandstone.	45.2'		7
48.9' - 49.4'	gray, non-calc. shale.	45.9'		Box 7
49.4' - 51.2'	shale of shaly of white calc. sandstone. sand. orange colored claystone lenses.	44.2' to 44.5'		48.4'
51.2' - 53.2'	gray sandy shale.	49.4'		48.4'
53.2' to 55.5'	LIMESTONE - Gray white, sandy, numerous black fossil frags. silty, friable, mod. hard, pyritic, siltstone nodules, apparent unconformity at base.	50.1'		Box 8
55.5' to 54.4'	SHALE - Gray to black, calc., apparent dip of 10° to 15°	50.1' to 50.2'		50.1'

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

DESIGNED BY: _____
DRAWN BY: _____
CHECKED BY: _____
SUBMITTED BY: _____

INV. NO. DACW63-80
CONTR. NO. DACW63-80
DRAWING NUMBER

RECORD DRAWING-WORK AS BUILT

TO ACCOMPANY FINAL FOUNDATION REPORT

56.0' to 57.3'
LIMESTONE -
 Gray to white, fine to med. grained, very sandy in upper part, pyritic, shales of black shale, and knotty flow structures at base.
 56.0' - 56.9' gray-brown with tongues of white 45' to bore pyritic.
 57.0' pyrite seen

57.3' to 60.0'
SHALE -
 Dark gray, silty, soft, calc., sil. fissile, cont. fossils.

40.0' - 40.1' low angle fracture

42.1' sandstone lens

45.0' sandstone lens and fossils.

45.4' to 53.2'

SANDSTONE -

Gray-brown, soft, fine to med. grained, non-calc., open fractures along bedding planes, fossils, sil. shaley, from 45.4' - 48.9' 48.4' - 48.9' numerous soft, 1/8" calc., white nodules in sandstone.

48.9' - 49.4' gray, non-calc. shale.

49.4' - 51.2' shale w/ shales of white calc. sandstone, cont. crum colored claystone lenses.

51.2' - 53.2' gray sandy shale.

53.2' to 55.5'

LIMESTONE -

Gray white, sandy, numerous black fossil frags. sil. friable, med. hard, pyritic, silstone nodules, apparent unconformity at base.

55.5' to 54.4'

SHALE -

Gray to black, calc., apparent dip of 10° to 15°

Box 6

41.9'

42.9'

45.2'

45.9'

Box 7

49.4'

50.1'

48.4'

48.4'

49.4'

50.1'

Box 8

51.2'

52.2'

51.0'

8

54.3'

51.0'

51.2'

54.4'

56.1'

56.0'

Box 9

57.4'

58.2'

51.0'

52.6'

52.0'

60.0'

60.0'

REVISION NO.	DATE	DESCRIPTION OF REVISION

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

AQUILLA LAKE
 AQUILLA CREEK, TEXAS

EMBANKMENT AND SPILLWAY

LOGS OF BORINGS
 BA6C-19

DESIGNED BY:	<p align="center">AQUILLA LAKE AQUILLA CREEK, TEXAS</p> <p align="center">EMBANKMENT AND SPILLWAY</p> <p align="center">LOGS OF BORINGS BA6C-19</p>
DRAWN BY:	
CHECKED BY:	
SUBMITTED BY:	

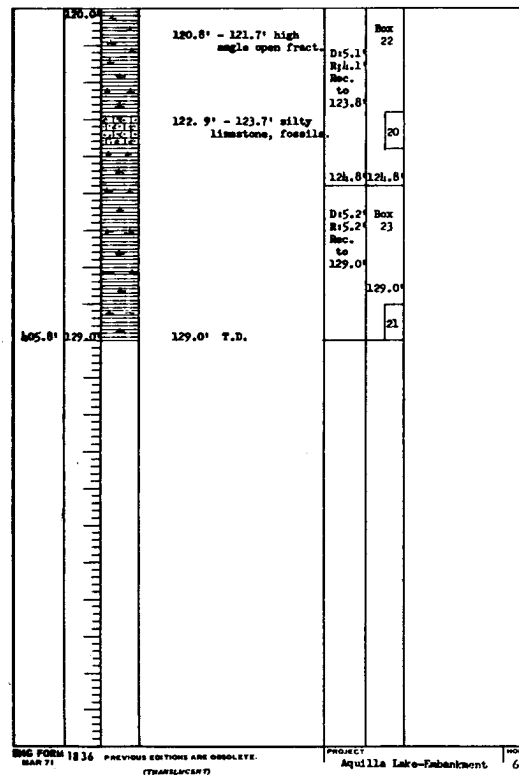
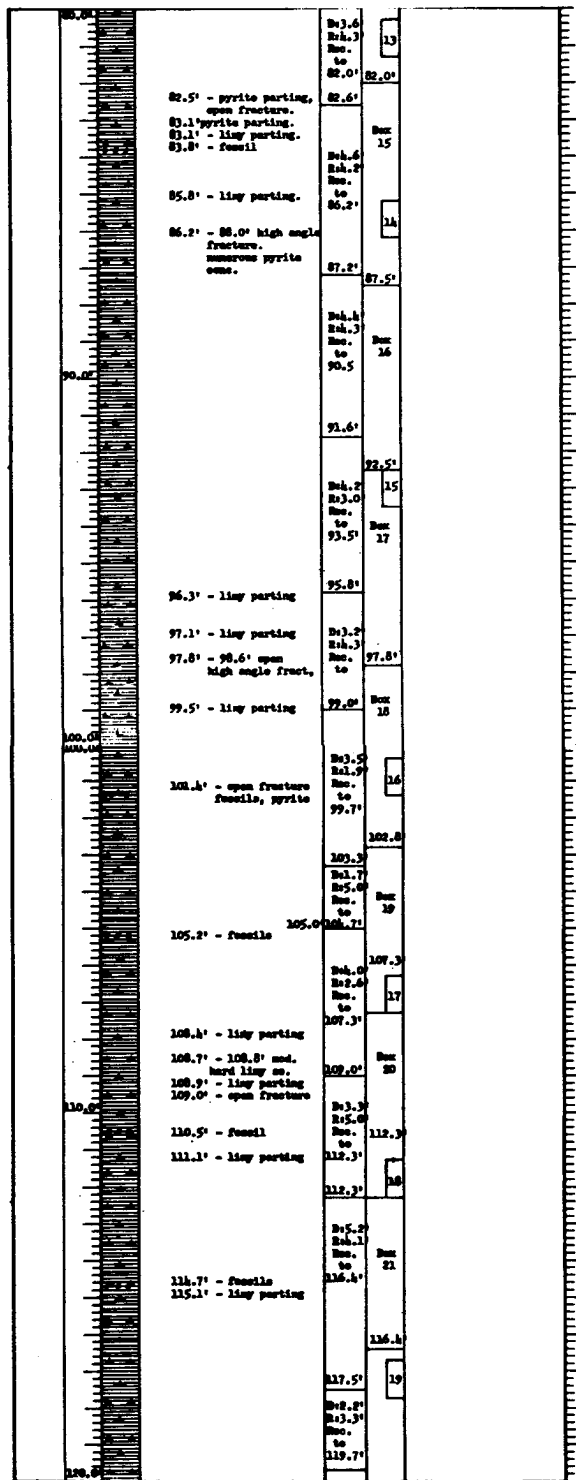
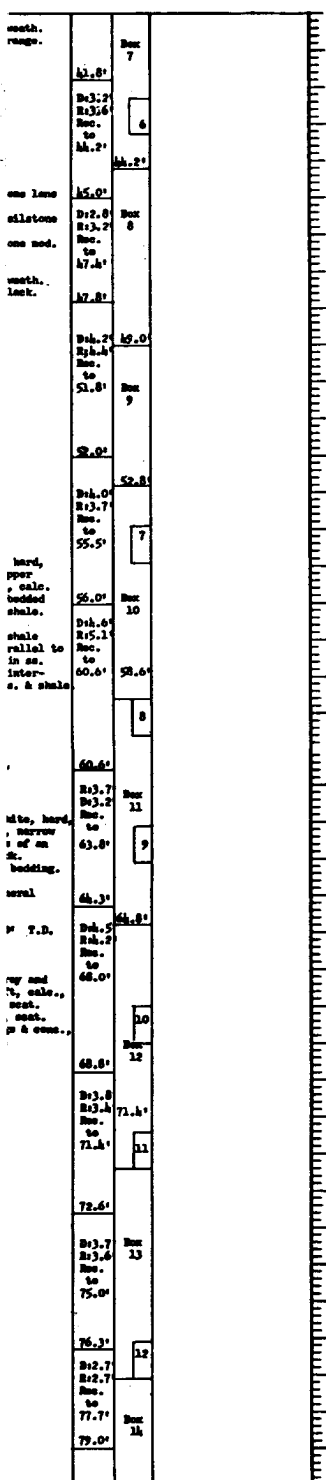
INV. NO. DACW63-80-B-0085	DATED: AUG 1980
CONTR. NO. DACW63-B1-C-0035	SEQUENCE NO.
DRAWING NUMBER	SHEET NO.
	114

CONTR. NO. DACW63-B1-C-0035

Plate No. 62C-20

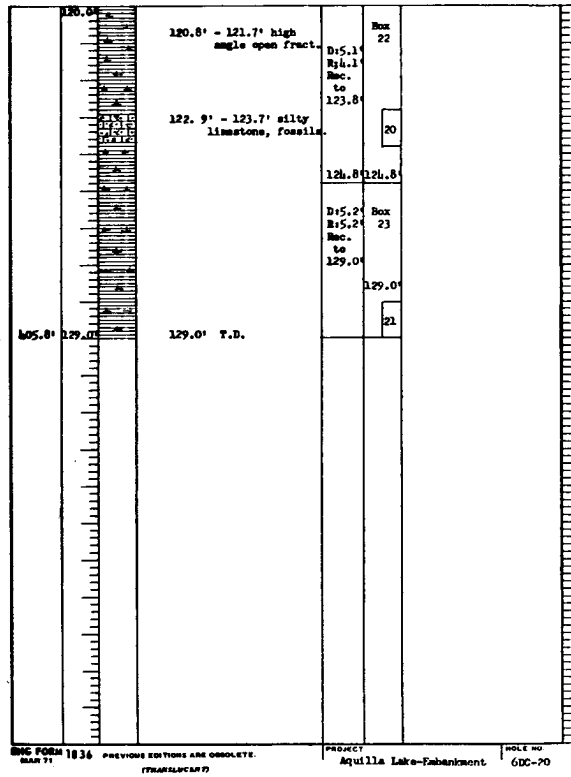
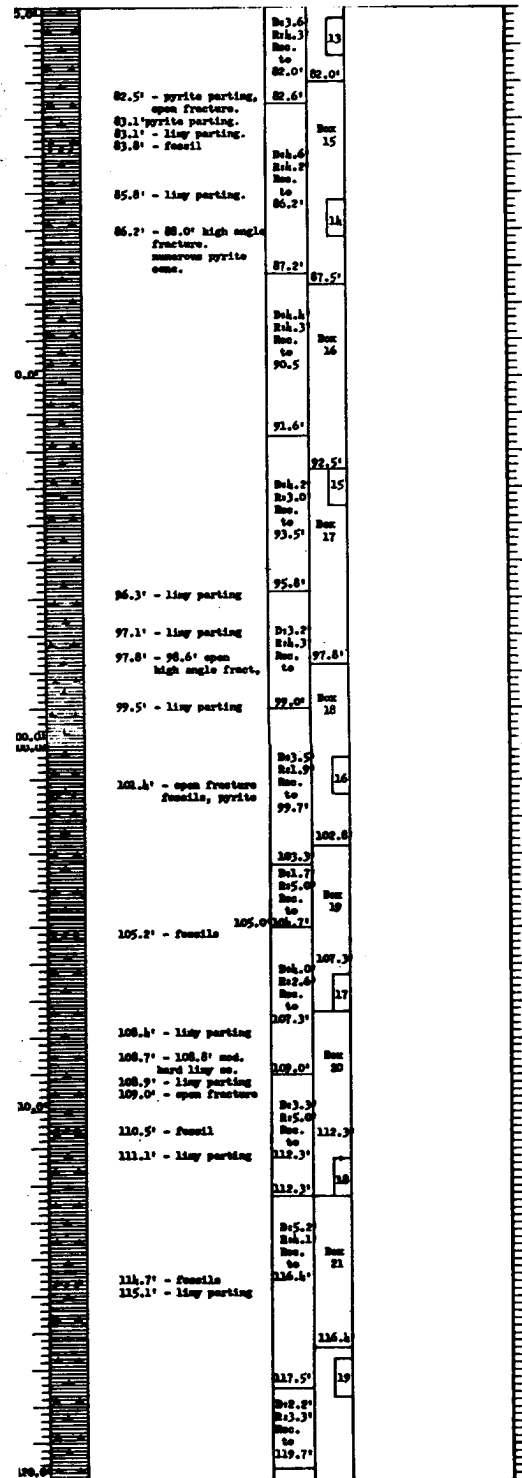
DRILLING LOG		WELL NO.	DATE
PROJECT: Aquilla Lake - Rehabilitation		WELL NO. 62C-20	DATE 18 July '73
LOCATION: 2,090,110 Y 84,370		DEPTH: 129.0'	STARTED: 18 July '73
AGENCY: USGS		COMPLETED: 20 July '73	
DRILLER: T. Suite			
DIRECTION OF HOLE: Vertical			
THICKNESS OF OVERBURDEN: 1.0'			
DEPTH DRILLED INTO ROCK: 128.0'			
TOTAL DEPTH OF HOLE: 129.0'			
ELEVATION	DEPTH	LOG	REMARKS
536.8'	0.0'	0.0' to 1.0'	1. 8" Flight Auger 0.0' - 2.6'
533.8'	1.0'	CLAY -	6" Dunison barrel 2.6' - 6.6'
532.8'	2.0'	Gray-brown, sil. m.s.t., med. to high plasticity, calc., silky, w/rounded pebbles.	6" Core barrel 6.6' - 129.0'
531.2'	3.6'	1.0' to 2.0'	8" Casing set to 23.0'
		SHALE -	2. Jars: A: 0.0' - 1.0', B: 1.0' - 2.0', C: 2.0' - 2.6', D: 2.6' - 4.6', E: 4.6' - 6.6'
		Gray & tan, soft, sil. calc., silky.	3. Dunison core: DB-1: 2.6' - 4.6', DB-2: 4.6' - 6.6'
		2.0' to 3.6'	4. Cartons: C-1: 8.6' - 9.6', C-2: 12.2' - 13.2', C-3: 17.4' - 18.4', C-4: 31.3' - 32.3', C-5: 35.9' - 36.9', C-6: 42.3' - 43.3', C-7: 53.9' - 54.9', C-8: 58.6' - 59.6', C-9: 62.1' - 63.1', C-10: 67.0' - 68.0', C-11: 70.4' - 71.4', C-12: 76.1' - 77.1', C-13: 80.3' - 81.3', C-14: 85.2' - 86.2', C-15: 92.5' - 93.5', C-16: 100.4' - 101.4', C-17: 106.3' - 107.3', C-18: 111.3' - 112.3', C-19: 116.7' - 117.7', C-20: 122.8' - 123.8', C-21: 128.0' - 129.0'
		3.6' to 10.0'	5. Weathering to 50.0'
		SHALE -	
		Olive-gray, w/streaks of rust color, soft, sil. fissile, non-calc., med. tight fractures, highly weath., selenite seams.	
		8.1' - Rust-red ironstone	
		11.1' - Selenite seam	
		13.6' - Selenite seam	
		10.0' to 18.4'	
		18.4' to 27.0'	
		SANDSTONE -	
		Olive-gray, gray & red, soft to hard, partial weath., non-calc. to calc., med. open fractures w/iron stain, shale seam.	
		19.2' - 21.5' - poorly con., broken	
		20.0' to 23.2'	
		SANDSTONE (contd.)	
		23.1' - 23.2' - shale seam	
		23.6' - 27.0' - hard calc. sandstone w/med. high angle iron stained fractures	
		27.0' to 53.6'	
		SHALE -	
		Alternating lt. & dk. gray color, soft, non-calc., both horizontal & high angle fractures, seams of weath. gummy shale of orange & green-brown color, interbedded sandstone, siltstone and claystone nodules and lenses.	
		27.3' - 27.4' ss. seam	
		27.7' - 27.8' ss. seam	
		28.7' - siltstone	
		29.4' - 29.8' siltstone	
		29.8' - 31.1' weath., gummy, green-brown to orange	
		32.7' - 33.1' light fract., ls to here.	
		33.1' - 33.5' gummy red-brown	
		36.6' - 36.7' siltstone	
		35.1' - 35.4' ss. seam, hard, non-calc.	
		36.9' - 38.5' high-angle open fractures	
		38.5' - 40.6' med. lenses & nodules of claystone	
		40.0'	

ELEVATION	DEPTH	LOG	REMARKS
40.6'			40.6' - 42.3' weath. gummy, orange.
41.8'			41.8' - 42.3' weath. gummy, orange.
45.0'			45.0' - 45.9' siltstone
45.7'			45.7' - 45.9' siltstone
47.4'			47.4' - 49.6' weath. gummy, black.
53.6'			53.6' to 60.6'
53.6'			SANDSTONE -
53.6'			Gray-brown, med. hard, non-calc. in upper section to sil. calc. at base, interbedded dk. gray soft shale.
53.9'			53.9' - 54.9' shale frag. parallel to bedding in ss.
55.2'			55.2' - 60.6' interbedded ss. & shale
60.6'			60.6' to 63.8'
60.6'			LIMESTONE -
60.6'			Gray-brown to white, hard, fossiliferous, narrow concretionary of an unstratified dk. mineral along bedding.
61.0'			61.0' - dk mineral
63.8'			63.8' to 129.0' T.D.
63.8'			SHALE -
63.8'			Alternating gray and dk. gray, soft, calc., sil. fissile, med. clay partings, med. pyrite partings & conc., med. fossils.
66.8'			66.8' - 71.4'
71.4'			71.4' - 72.6'
72.6'			72.6' - 75.0'
75.0'			75.0' - 76.2'
76.2'			76.2' - 77.7'
77.7'			77.7' - 79.0'
79.0'			79.0' - 80.0'



RECORD DRAWING-WORK AS BUILT

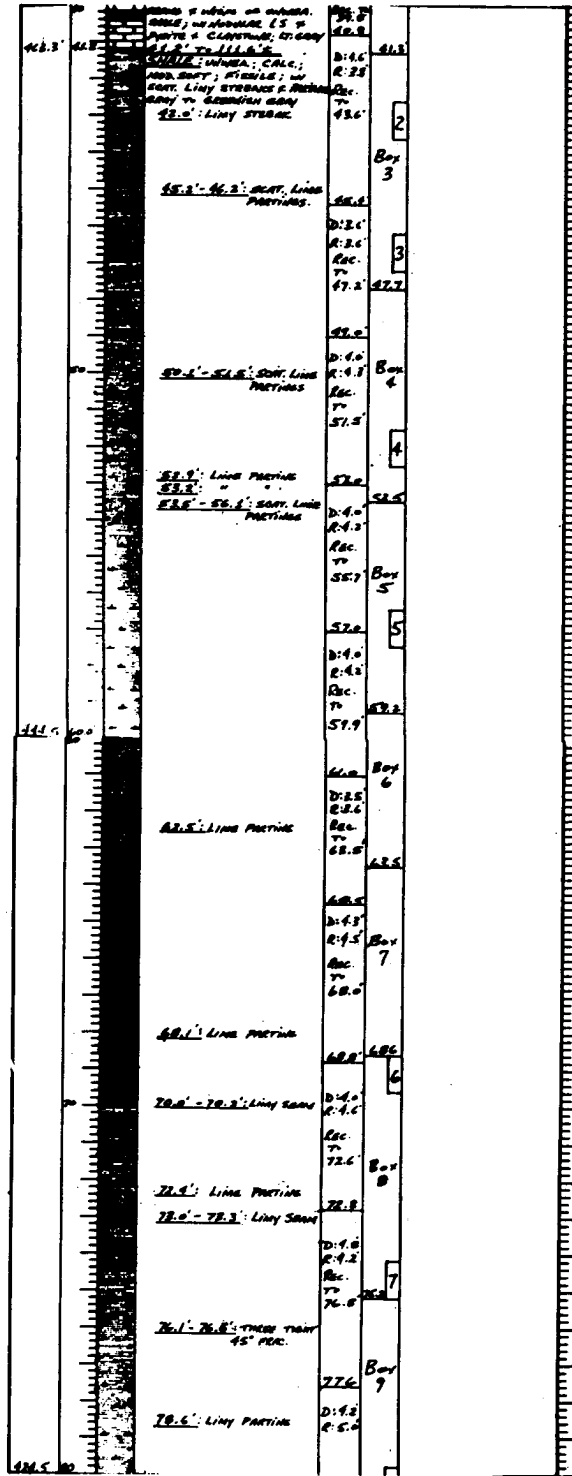
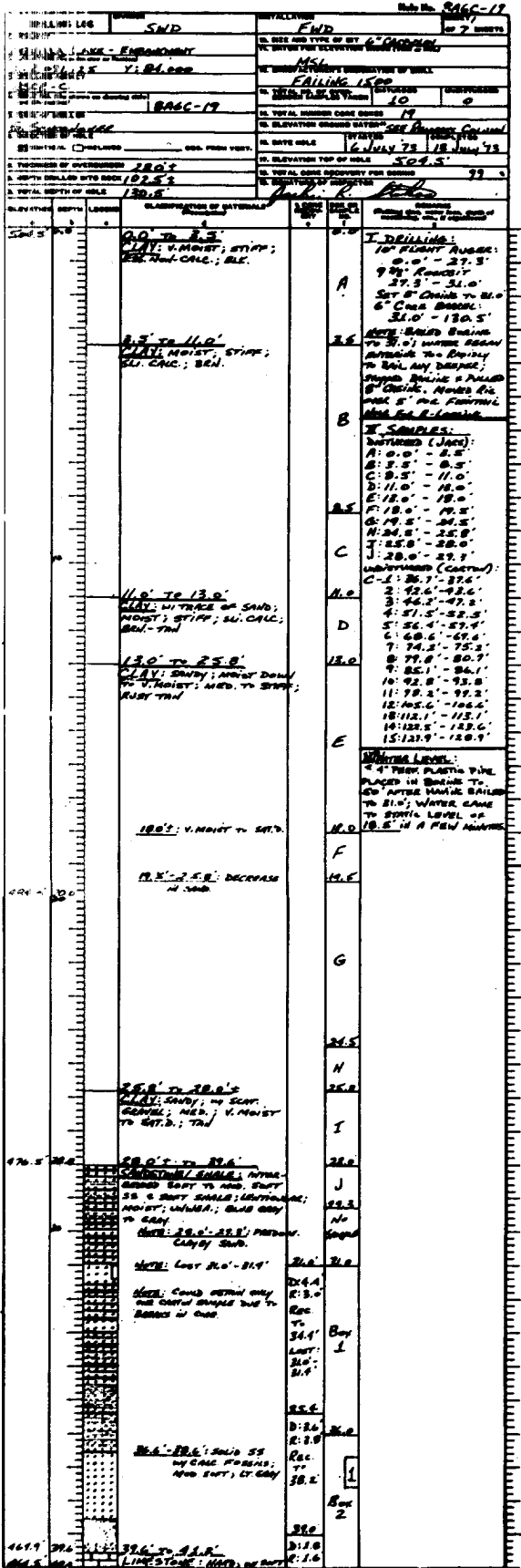
DATE				
SCALE				
U.S. ARMY ENGINEER DISTRICT, FORT WORTH, TEXAS				
DESIGNED BY:	AQUILLA LAKE, AQUILLA CREEK, TEXAS			
DRAWN BY:	EMBANKMENT AND SPI			
CHECKED BY:	LOGS OF BORING			
SUBMITTED BY:	6DC-20			
ENGINEER:	INV. NO. DACW63-80-1			
	CONTR. NO. DACW63-80-1			
	DRAWING NUMBER			

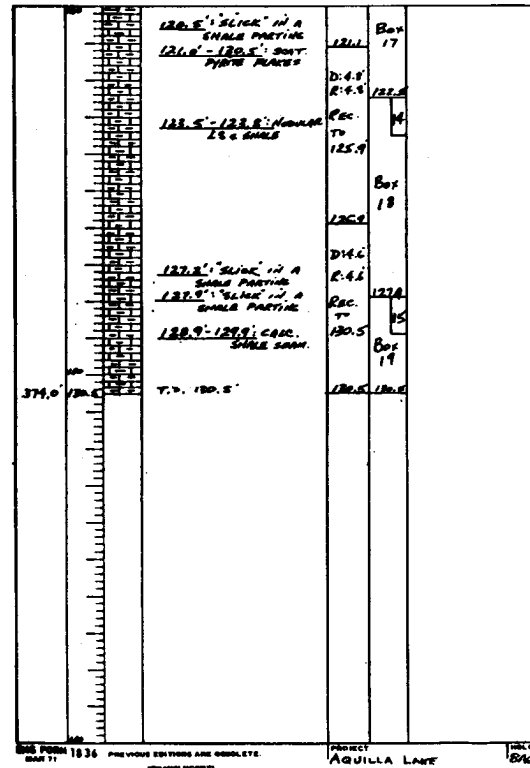
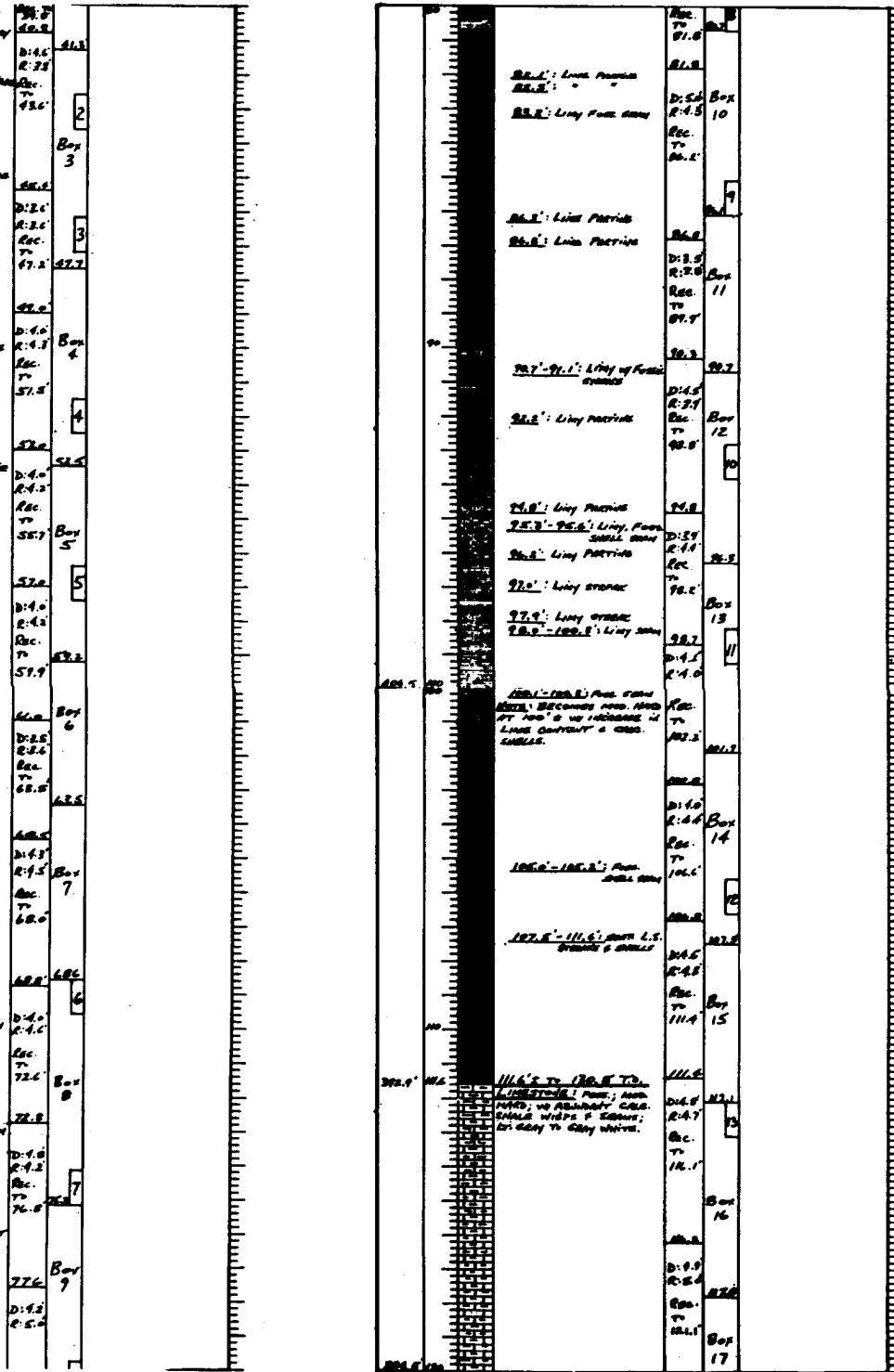


ENGINEERING FORM 1036 PREVIOUS EDITIONS ARE OBSOLETE. PROJECT Aquilla Lake-Embankment. SHEET NO. GDC-20

RECORD DRAWING-WORK AS BUILT

REVISING NO.	ACTION	DATE	DESCRIPTION OF REVISION
U.S. ARMY ENGINEER DISTRICT, FORT WORTH CORPS OF ENGINEERS FORT WORTH, TEXAS			
DESIGNED BY:	AQUILLA LAKE AQUILLA CREEK, TEXAS		
DRAWN BY:	EMBANKMENT AND SPILLWAY		
CHECKED BY:	LOGS OF BORINGS GDC-20		
SUBMITTED BY:	INV. NO. DACN63-80-B-0008	DATED: AUG. 1962	
ENGINEER:	CONTR. NO. DACN63-80-B-00015	DRAWING NUMBER	SEQUENCE NO. 115

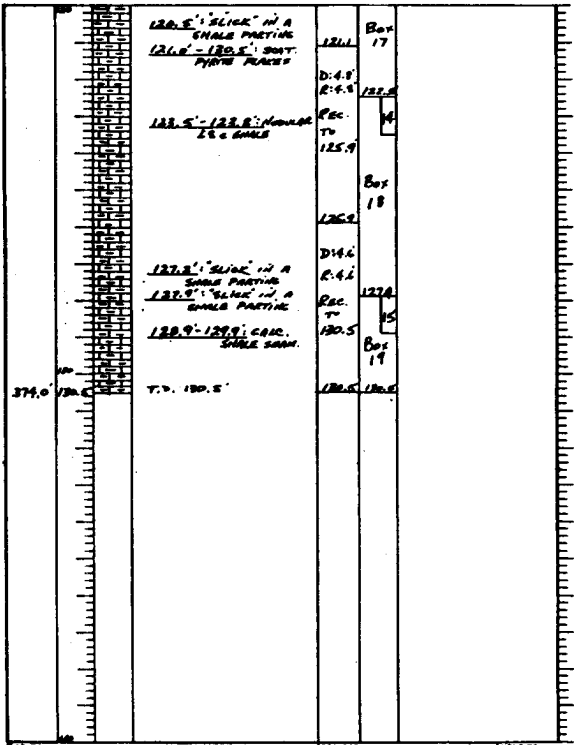




FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE. PROJECT AQUILLA LAKE

RECORD DRAWING-WORK AS BUILT

DESIGNED BY:	AQUILLA LAKE AQUILLA CREEK, TEXAS EMBANKMENT AND SPILL LOGS OF BORINGS BACG-21 AND 6DC-22
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
DATE:	INV. NO. DACW63-50-B-00 CONTR. NO. DACW63-50-B-00 DRAWING NUMBER



FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE. PROJECT AQUILLA LAKE SHEET NO. BA6C-17

RECORD DRAWING-WORK AS BUILT

DESIGNED BY:	AQUILLA LAKE AQUILLA CREEK, TEXAS EMBANKMENT AND SPILLWAY LOGS OF BORINGS BA6C-21 AND 60C-22
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	INV. NO. DACH63-60-B-0055 DATED: AUG. 1960 CONTR. NO. DACW63-61-C-0033 DRAWING NUMBER SHEET NO. 116 8-11 of

CONTR. NO. DACW63-61-C-0033

Note No. BA-24

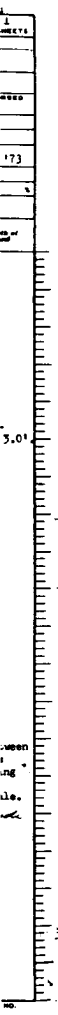
DRILLING LOG		DIVISION SMD	INSTALLATION PWJ	SHEET 1 OF 1 SHEETS
PROJECT Aquilla Lake - Embankment		10. SIZE AND TYPE OF BIT Piling 1500		
11. LOCATION (Continuation of Record) It 2,090,370 It 84,425		12. MANUFACTURER'S DESIGNATION OF DRILL Piling 1500		
13. DRILLING AGENCY USCE-C		14. TOTAL NO. OF SPEC. SAMPLES TAKEN 5		
15. NAME OF DRILLER T. Suits		16. TOTAL NUMBER CORE HOLES 0		
17. DIRECTION OF HOLE <input type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		18. DATE HOLE 1 Aug. '73		
19. THICKNESS OF OVERBURDEN 16.0'		20. ELEVATION TOP OF HOLE 502.5'		
21. DEPTH DRILLED INTO ROCK 2.0'		22. TOTAL CORE RECOVERY FOR BORING 18.0'		
23. TOTAL DEPTH OF HOLE 18.0'		24. SIGNATURE OF INSPECTOR <i>Joseph P. Mathews</i>		

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Photographed)	SCORE NO.	BOX OR SAMPLE NO.	REMARKS (Coring data, water level, depth of weathering, etc., if significant)
502.5'	0.0'		0.0' to 5.0' CLAY - Brown, silty, moist, plastic, med. plasticity, calc., smooth.		0.0'	1. 8" Auger 0.0' - 18.0'
			5.0' to 8.5' CLAY - Lt. brown, moist, silty, med. plasticity, calc., soft, smooth.		5.0'	2. Jars: A: 0.0' - 5.0' B: 5.0' - 8.5' C: 8.5' - 14.0' D: 14.0' - 16.0' E: 16.0' - 18.0'
			8.5' to 14.0' CLAY - Dark brown, hard, silty, moist, scat. caliche, silty, high plasticity, calc.		8.5'	3. 24 hour check - water level was 3.0'
	10.0'		14.0' to 16.0' CLAY - Olive-brown, w/gray & orange streaks, sticky, smooth, silty, high plasticity, gypsum crystals, non-calc.		14.0'	NOTE: The clay shown between 14.0' and 16.0' is interpreted as being highly weathered, non-calcareous shale. <i>Henry M. Kuehl</i>
486.5'	16.0'		16.0' to 18.0' SHALE - Gray, badly weath., orange & brown stains, clayey, soft, non- calc., 18.0' T. D.		16.0'	
	18.0'				18.0'	

ENGINE FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE. PROJECT HOLE NO.

RECORD DRAWING-WORK AS BUILT

SYMBOL NO.	ACTION	DATE	DESCRIPTION OF REVISION
U.S. ARMY ENGINEER DISTRICT, FORT V CORPS OF ENGINEERS FORT WORTH, TEXAS			
DESIGNED BY:	AQUILLA LAKE AQUILLA CREEK, TEXAS EMBANKMENT AND SPILLWAY LOGS OF BORINGS 8AGC-23 AND 8A-24		
DRAWN BY:			
CHECKED BY:			
SUBMITTED BY:	INV. NO. DACW63-80-B-0085	CONTR. NO. DACW63-81-23	
ENGINEER:	DRAWING NUMBER	SHEET	
		B-12	

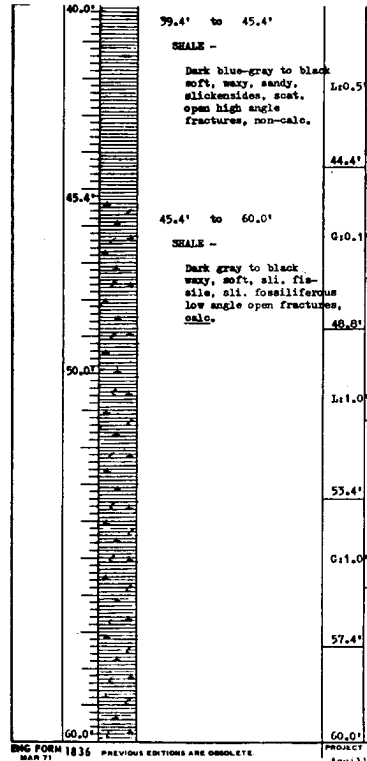


RECORD DRAWING-WORK AS BUILT

SYM. OR NO.	ACTION	DATE	DESCRIPTION OF REVISION
U.S. ARMY ENGINEER DISTRICT, FORT WORTH CORPS OF ENGINEERS FORT WORTH, TEXAS			
DESIGNED BY:	AQUILLA LAKE AQUILLA CREEK, TEXAS EMBANKMENT AND SPILLWAY LOGS OF BORINGS 8A6C-23 AND 8A-24		
DRAWN BY:			
CHECKED BY:			
SUBMITTED BY:			
ENGINEER:	INV. NO. DACW43-80-B-0005	DATED: AUG. 1980	
	CONTR. NO. DACW43-81-C-0035	DRAWING NUMBER	SEQUENCE NO.
		8-12 OF	117

CONTR. NO. DACW43-81-C-0035

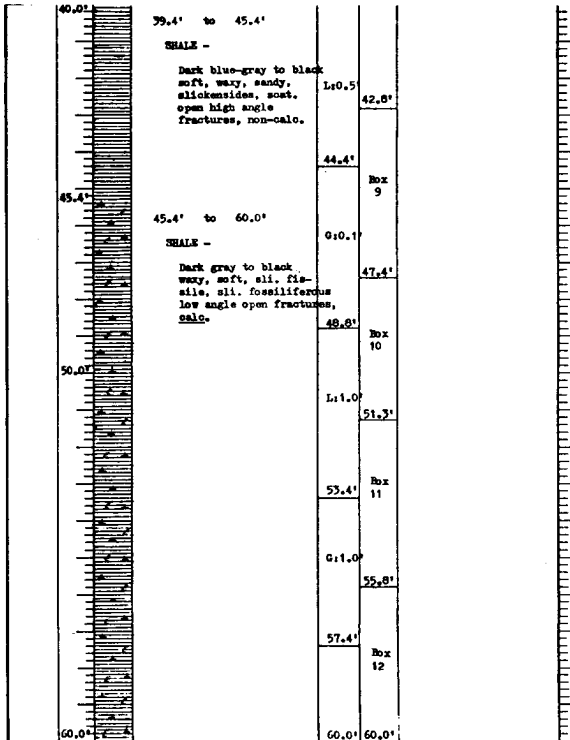
DRILLING LOG		DIVISION		DEPARTMENT		DATE	
1. PROJECT Aguilla Lake - Rehabilitation		SWD		PFD		SHEET 1 OF 3 SHEETS	
2. LOCATION (Continuation of Number)		3. SITE AND TYPE OF BIT 6" Carbide		4. DATE FOR ELEVATION MEASUREMENT		5. RIMMOUNT	
6. DRILLING AGENCY None		7. MANUFACTURER'S DESIGNATION OF DRILL Tilling 1500		8. TOTAL NUMBER OF CORE SAMPLES		9. UNDISTURBED	
10. TOTAL NUMBER OF CORE SAMPLES		11. TOTAL NUMBER OF CORE SAMPLES		12. ELEVATION GROUND WATER		13. ELEVATION GROUND WATER	
14. DATE HOLE STARTED		15. DATE HOLE COMPLETED		16. ELEVATION TOP OF HOLE		17. ELEVATION TOP OF HOLE	
18. THICKNESS OF OVERBURDEN		19. TOTAL CORE RECOVERY FOR BORING		20. SIGNATURE OF SUPERVISOR		21. SIGNATURE OF INSPECTOR	
22. TOTAL DEPTH OF HOLE		23. TOTAL DEPTH OF HOLE		24. TOTAL DEPTH OF HOLE		25. TOTAL DEPTH OF HOLE	
ELEVATION	DEPTH	LOGS	CLASSIFICATION OF MATERIALS (Description)	LOGS	LOGS	LOGS	LOGS
40.9'	37.3'	Box 9	0.0' to 0.8' CLAY - Dark brown, silty, silty, med. to high plasticity, non-calc.	0.0' 0.8'	1. 8" Flight Auger 0.0' - 2.6' 8.6' - 10.0'		
45.0'	41.8'	Box 9	0.8' to 7.6' SAND - 0.8' - 2.6' Brown, med. dense, fine to med. grained, saturated, silty, clayey, low plasticity, non-calc. 2.6' - 4.3' Brown, dense, med. grained, low plasticity, water bearing, non-calc., few ss. quartzite and sandstone gravel. 4.3' - 7.6' sample recovered. Probably a very loose sandy pea size gravel having a few 4 mm. gravels.	0.8' 7.6'	2. Jars: A: 0.0' - 0.8' B: 0.8' - 2.6' C: 4.6' D: 8.6'		
49.2'	45.0'	Box 10	7.6' to 12.5' SHALE - Blue-gray and brown, weathered, stained, soft, sandy, silty, fissile, non-calc., some black deteriorating rootlets.	7.6' 12.5'	No sample recovery between 4.6' and 6.6'. Probably a very loose sandy pea size gravel. 35.4' of Woodbine W. (sandstone and Pepper Shale) was wrapped in wall canvas and was. 14.5' of Del Rio W. (shale) was also wrapped in this way.		
52.3'	49.2'	Box 11	12.5' to 25.8' SHALE - Dark blue-gray, sandy, fissile, waxy, silty. Fossiliferous, non-calc., tight and open low angle fractures, tight and open high angle fractures, slickensides.	12.5' 25.8'	3. The hole was bailed to 56.4'. 60.0' of slotted plastic pipe was set. After 24 hours the water level was 2.3'.		
56.8'	52.3'	Box 12	25.8' to 26.2' SANDSTONE - Black, very soft, med. grained, non-calc., clayey, non-calc.	25.8' 26.2'	4. A 76.0' fishtail was E-logged 15 December '73.		
60.4'	56.8'	Box 12	26.2' to 29.2' SANDSTONE - Grey, calc., med. hard, very laxy, very fossiliferous, med. grained.	26.2' 29.2'			
60.4'	60.4'	Box 12	29.2' to 39.4' SANDSTONE - Grey brown, non-calc., med. grained, inter-bedded some of med. hard and soft sandstone, very soft some may be washed away leaving open fractures, ss. light or black woody fibrous fossil along some bedding planes. 30.2' - 30.9' Limestone hard, light gray, crystalline, fine-grained sandy dark gray some.	29.2' 39.4'			



Interval	Depth	Notes
37.3' to 52.3'	41.8'	SANDSTONE - Light gray, soft to med. hard, silty, non-calc., fine grained, there were heavy core losses in this sandstone. Very soft sandstone some washed away during drilling.
52.3' to 52.6'	52.3'	LIMESTONE - Light gray, hard, crystalline, fine-grained, dark gray sand some.
52.6' to 60.4'	56.8'	SHALE - Blue-gray, soft, fissile, shaly of sand, non-calc. few ss., fossils.

RECORD DRAWING-

SYMBOL NO.	ACTION
U.S. ARMY	
DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
SUBMITTED BY:	
ENGINEER:	



BNC FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE (TRANSLUCENT) PROJECT Aquilla Lake - Embankment HOLE NO. GDC-26

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:	AQUILLA LAKE AQUILLA CREEK, TEXAS EMBANKMENT AND SPILLWAY LOGS OF BORINGS BA6C-25 AND GDC-26		
DRAWN BY:			
CHECKED BY:			
SUBMITTED BY:	INV. NO. DACW63-80-B-0085	DATED: AUG. 1980	SEQUENCE NO.
ENGINEER:	CONTR. NO. DACW63-81-C-0035	DRAWING NUMBER	SHEET NO. 118
		8-13 OF	

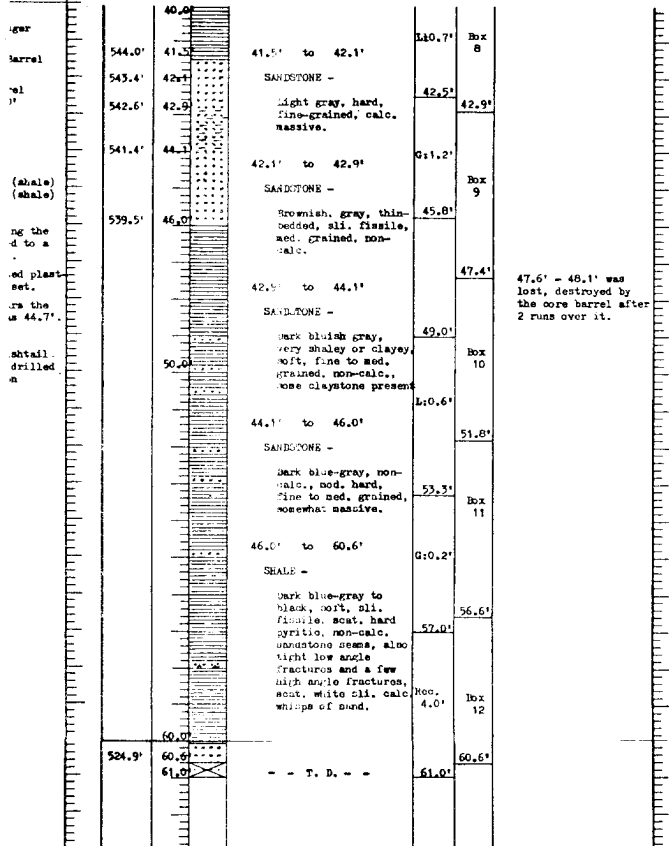
CONTR. NO. DACW63-81-C-0035

Well No. **PA60-77**

DRILLING LOG	DIVISION	SWD	INSTALLATION	FWD	SHEET
PROJECT					1 OF 4 SHEETS
1. PROJECT	Aquilla Lake - Embankment		10. SIZE AND TYPE OF BIT 11. BITUM FOR ELEVATION SHOWN (FEET or METERS)		
2. LOCATION (Town, County or Range)			12. MANUFACTURER'S DESIGNATION OF DRILL		
3. DRILLING AGENCY	WELLS		13. PULLING 1500		
4. HOLE NO. (As shown on boring title and this number)	PA60-77		14. TOTAL NO. OF LOGS DISBURSED		3
5. NAME OF DRILLER	G. Schoonover		15. TOTAL NUMBER CORE BOXES		13
6. DIRECTION OF HOLE (a) VERTICAL (b) INCLINED	SEE FROM WEST		16. ELEVATION GROUND WATER		
7. THICKNESS OF OVERBURDEN	3.5'		17. DATE HOLE STARTED		18 JAN. '74
8. DEPTH DRILLED INTO ROCK	57.2'		18. ELEVATION TOP OF HOLE		540.9'
9. TOTAL DEPTH OF HOLE	61.0'		19. TOTAL CORE RECOVERY FOR BORING		3
ELEVATION			20. SIGNATURE OF INSPECTOR		
DEPTH			REMARKS		
LEGEND			(Drilling time, water level, depth of overburden, etc., if significant)		
CLASSIFICATION OF MATERIALS (Descriptive)			1. CORE BOX OR SAMPLE NO.		
			2.		

ELEVATION	DEPTH	CLASSIFICATION OF MATERIALS	REMARKS
540.9'	0.0'	0.0' to 0.7'	1. 8" Flight Auger 0.0' - 3.5'
		SAND -	6" Core Barrel 3.5' - 61.0'
		Dark brown, loose, moist, med.-grained, low plasticity, silty, clayey, non-calc.	
537.5'	3.5'	0.7' to 3.5'	2. Jar:
		CLAY -	A: 0.0' - 0.7'
		0.7' - 1.9' Orange-tan, med. stiff, med. to high plasticity, moist, sandy, silty, non-calc.	B: 0.7' - 1.9'
		1.9' - 3.5' Tannish brown, stiff, moist, sandy, med. to high plasticity, non-calc. scat. coarse sand size chert and sandstone.	C: 1.9' - 3.5'
534.9'	6.0'	3.5' to 3.7'	3. After drilling the hole was bailed to 59.3' and 61.0' of slotted plastic pipe was set. After 24 hours the water level was 54.2'.
		LIMESTONE -	4. A 90.0' fishtail hole was drilled 18 Jan. - 21 Jan. '74, and was logged on 21 Jan. '74.
		Light gray, hard, fine-grained, crystalline.	
		3.7' to 6.0'	
		SANDSTONE -	
		Tan and brown, light gray, med. hard to soft interbedded seams, weathered, stained, fine to med. grained, scat. seams of soft gray shale.	
		6.0' to 21.8'	
		SHALE -	
		Light gray, weathered, stained light joints and fractures, soft, fissile, scat. sandstone nodules, iron-stained.	
		21.8' to 37.8'	
		SHALE -	
		Dark blue gray, soft, fissile, non-calc., silty, sandy, few scat. nodules of claystone, gyttiferous, few tight fractures.	
519.1'	21.0'	37.8' to 40.8'	
		LIMESTONE -	
		Gray, hard, fine-grained, crystalline, fossiliferous.	
502.1'	38.8'	40.8' to 52.7'	
		SANDSTONE -	
		Dark gray, soft to med. hard, med.-grained, non-calc., scat. seams of very soft to unconsolidated which were often lost in drilling.	
		52.7' to 53.3'	
		SHALE -	
		Dark gray, soft, waxy, few lime partings, all. calc., fissile.	
		53.3' to 54.4'	
		LIMESTONE -	
		Light gray, hard, med. grained, crystalline, fossiliferous, base is an unconformity and open fracture due to handling, minor alkalisides.	
		54.4' to 61.0'	
		SHALE -	
		Dark gray to black, soft, fissile, scat. lime partings, fossils, calc.	

6DC-28
 4 inches
 3
 1964
 74



RECORD DRAWING-WORK AS BUILT

SYM	DD	NO.	ACTION	DATE	DESCRIPTION OF REVISION
U.S. ARMY ENGINEER DISTRICT, FORT WORTH CORPS OF ENGINEERS FORT WORTH, TEXAS					
DESIGNED BY:	AQUILLA LAKE AQUILLA CREEK, TEXAS EMBANKMENT AND SPILLWAY LOGS OF BORINGS 8A6C-27 AND 6DC-28				
DRAWN BY:					
CHECKED BY:					
SUBMITTED BY:	INV. NO. DACW 63-80-B-0005	DATED:	AUG. 1960		
ENGINEER:	CONTR. NO. DACW 63-81-C-0033	DRAWING NUMBER	SHEET NO.	SEQUENCE NO.	
			8-14 of	119	

CONTR. NO. DACW 63-81-C-0033

DAILY LOG		Division	LOCALITY	DATE
PROJECT		Southwestern	Fort Worth	1950
LOCATION		Aquilla Dam Site	IT. 2000' TO 2000' ELEVATION	
PURPOSE		Outlet Works	ABOVE FUL	
ENGINEER		Corps of Engineers	Project 1500	
DRAWING NO.		8160-34	NO. OF TESTS	11
NAME OF DRILLER		Schoonover	ELEVATION GROUND WATER	50
DIRECTION OF HOLE		Vertical	DATE MOLE	5 Sept 74
THICKNESS OF OVERBURDEN		13.5'	COMPLETED	12 Sept 74
DEPTH DRILLED INTO ROCK		49.5'	NO. TOTAL CORE RECOVERY FOR SOILS	10.1
TOTAL DEPTH OF HOLE		63.0'	SIGNATURE OF INSPECTOR	<i>[Signature]</i>
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	REMARKS
10.0	0.0' to 5.5'		CLAY	1. Hole making water from 16.0' to 19.5'. Water level 16 Sept. 74, after heavy rains at 17.2'
	0.0' to 2.0'		low plasticity, medium dark brown, very finely sandy to silty, moist, calcareous.	
	2.0' to 5.5'		low plasticity, medium to soft, brown, very finely sandy to silty, moist calcareous.	
20.0	5.5' to 16.7'		SAND	2. Drilling: No problems. Post core loss due to mechanical grinding after encountering small lenticular very fine grained hard sandstones.
	5.5' to 7.5'		fine to medium to coarse grained, tan to light brown, silty and clayey with calcareous nodules up to 1/8". non cohesive, calcareous.	
	7.5' to 10.0'		very fine grained to silty, very clayey in places, tan to rust brown, cohesive, damp.	
	10.0' to 14.6'		very fine grained, silty and slightly clayey, light rust colored, poorly cohesive, damp, calcareous.	
	14.6' to 16.5'		medium grained, some clayey binder, dark brown, non cohesive, wet, calcareous.	
30.0	16.5' to 18.7'		very fine grained, clayey, tan to light brown, moderately cohesive, wet, calcareous.	
	18.7' to 19.5'		GRAVEL - poorly graded, medium to light brown clayey binder, wet.	
40.0	19.5' to 21.0'		SHALE - dark gray, weathered, soft, non-calcareous.	
50.0	21.0' to 59.0'		SHALE - gray to dark gray, soft to medium hard, frequent linear fracturing and occasional natural partings; occasional gradations into fine grained, gray, soft sandstones, with no observed thickness in excess of 0.5'; frequent lenses of grayish-tan very fine grained, well cemented sandstones. When encountered, these lenses often broke and caused core loss due to grinding.	
60.0	59.0' to 63.0'		SHALE: unbedded, non-calc. soft, dark gray. 59.0' to 61.0' silty sandstone. 61.0' to 62.0' silty sandstone. 62.0' to 63.0' non-silty shale. 63.0' to 64.0' fine grained sandstone. 64.0' to 65.0' fine grained sandstone. 65.0' to 66.0' fine grained sandstone. 66.0' to 67.0' fine grained sandstone. 67.0' to 68.0' fine grained sandstone. 68.0' to 69.0' fine grained sandstone. 69.0' to 70.0' fine grained sandstone.	

68.5' to 69.2' SHALE & SANDSTONE
 Finely interbedded. Shale is very silty & silty. Sandstone is silty & silty. Both partings in both materials. Interval is dark gray.

69.2' to 69.6' Sandstone, v. calc. / Limestone, v. sandy.

69.6' to 69.8' SANDSTONE: silty, v. calc., slightly friable, mod. hard, gray. Contains abundant silty shaly nodules. Partings are somewhat calc.

69.8' to 69.9' Limestone: sandy, shaly. Contains fossils. A mixture.

69.9' to 69.9' Limestone: argillaceous, mod. hard to very hard. Top 2.0' is rust-stained.

69.9' to 69.9' SHALE: unbedded, calc. mod. hard to soft, gray to dark gray.

69.9' to 69.9' contains thin limestone lenses.

69.9' to 69.9' Apparently drilled up.

69.9' to 69.9' soft contains many partings of very argillaceous limestone.

T.O.C. 69.0'

DRILLING LOG		DIVISION	INSTALLATION		SHEET	
		Northwest	Port Worth		1 of 2 SHEETS	
PROJECT		Aquillo Dam		DATE AND TYPE OF BIT		
LOCATION (City, State or Nation) & Outlet Works		Dallas, Texas		26 July 1974		
DRILLING AGENCY		Corps of Engineers		TYPE AND TYPE OF BIT		
NAME OF MILLER		8A60-36		H. BAYON FOR ELEVATION SHOWING		
DIRECTION OF HOLE		VERTICAL		ASL		
THICKNESS OF OVERBURDEN		11.5'		IF BANY/OFFICER'S DESIGNATION OF HOLE		
DEPTH DRILLED INTO ROCK		46.5'		Fulling 1500		
TOTAL DEPTH OF HOLE		78.0'		TOTAL NO. OF CORES		
				12		
				UNRECOVERED		
				0		
				ELEVATION GROUND WATER		
				537.2'		
				ELEVATION TOP OF HOLE		
				95		
				SIGNATURE OF INSPECTOR		
				<i>[Signature]</i>		
ELEVATION	DEPTH	LEGEND	CLARIFICATION OF MATERIALS (Flooring)	CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Including core, core loss, depth of penetration, etc., if significant)
	0.0'		0.0' to 11.0'		A	1. Water level at 25.5' after completion.
			CLAY		B	
			0.0' to 1.8' - medium to high plasticity, moist, black, slightly sandy, calcareous.		C	2. Drilling: Augered to 33.0' (Rock contact at 32.0'). Saw gun coring at 33.0'.
			1.8' to 4.0' - medium plasticity, moist, scattered calcareous nodules, tan, slightly sandy.		D	3. Jars:
			4.0' to 6.3' - as above interval; no nodules.		E	A. 0.0' to 1.8'
			6.3' to 11.0' - borderline clayey sand, moist, tan calcareous.		F	B. 1.8' to 4.0'
			SAND - medium to fine grained, medium dense, slightly moist, tan, clayey, calcareous.		G	C. 4.0' to 6.3'
			22.0' to 23.0'		H	D. 6.3' to 11.0'
			GRAVEL - 3/4" maximum, sub-rounded, poorly graded, medium dense, clayey, sandy, tan to red, some siltstone fragments, moist, calcareous.		I	E. 11.0' to 16.0'
			23.0' to 30.5'		J	F. 16.0' to 20.0'
			SAND - medium dense, medium to fine grained, tan, moist, clayey, gravelly from 28.0' to 30.5', calcareous.		K	G. 20.0' to 22.0'
			30.5' to 31.5'		L	H. 22.0' to 23.0'
			GRAVEL - 3/4" maximum, sub-rounded, poorly graded, tan, medium dense, sandy clayey, very moist, calcareous.		M	I. 23.0' to 28.0'
			31.5' to 32.0'		N	J. 28.0' to 29.5'
			SHALE - non-calcareous, weathered, soft, dark gray.		O	K. 29.5' to 30.5'
			32.0' to 67.8' ***		P	L. 30.5' to 31.5'
			SHALE - gray to dark gray, soft to medium hard, frequent laminar definition and occasional natural partings; occasional gradations into fine grained, gray, soft sandstones with no observed thickness in excess of 0.8'; frequent lenses of grayish-tan very fine grained, well cemented sandstones. When encountered, these lenses often broke and caused core loss due to grinding. Shale became very calcareous at 67.8'.		Q	M. 31.5' to 32.0'
			67.8' to 78.0'		R	4. Core Boxes:
			LEWY SHALE / SHALY LIMESTONE		S	1. 33.0' to 37.0'
			Core intermittently grades from shaly limestone to limy shale, medium hard to hard, gray to grayish-tan, slightly to very calcareous.		T	2. 37.0' to 41.0'
			Top of Dal Rio formation at 67.8' (picked from measured core recovery and electric logs).		U	3. 41.0' to 45.3'
					V	4. 45.3' to 50.0'
					W	5. 50.0' to 53.9'
					X	6. 53.9' to 58.2'
					Y	7. 58.2' to 62.5'
					Z	8. 62.5' to 66.8'
					AA	9. 66.8' to 70.1'
					AB	10. 70.1' to 75.0'
					AC	11. 75.0' to 77.0'
					AD	5. Sample Treatments:
					AE	Dore was cursorily examined and immediately wrapped in foil, sealed with wax, then wrapped in polyethylene and covered with wax to preserve samples for testing.
					AF	6. Location of Hole: Texas State Plane Coordinates: Tieded X - 2,092,300 Y - 85,070
					AG	7. Top of shale at 32.0' Augered to 33.0' began coring at 33.0' Core was not logged in detail (see remarks No. 5). Description is general
					AH	8. Core was examined at STD Laboratory in preparation for selective testing. Interval 59.9' to 60.5' was found to be badly broken with slickensides noted on some of the pieces. Prominent slickensides noted also at 60.5' approximately 45' to core. It is possible that the badly broken condition of the core in this short interval was due in part to mechanical damage. Shale dark gray to black, soft.
					AI	
					AJ	
					AK	
					AL	
					AM	
					AN	
					AO	
					AP	
					AQ	
					AR	
					AS	
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					HT	
					HU	
					HV	
					HW	
					HX	

Hole No. 8A6C-36
 SHEET 1
 of 2 SHEETS
 Port North
 8" AUGER
 Core
 12
 11
 23 July 1974
 23 July 1974
 57.2'
 95
 23 July 1974

DRILLING LOG		PROJECT		INSTALLATION	
Aquilla Dam Site		Southwestern		Fort Worth	
8" AUGER		8" AUGER		8" AUGER	
Outlet Works Investigation		Above BSL		Falling 1900	
Corps of Engineers		Falling 1900		Falling 1900	
23.5'		23.5'		23.5'	
25.0'		25.0'		25.0'	
CLAY - calcareous, medium plasticity, medium, tan moist, sandy		CLAY - calcareous, 2 nd maximum, moist, sandy, slightly clayey, tan.		SAND - fine grained, tan, calcareous, medium dense, damp.	
CLAY - medium to low plasticity, medium, tan, slightly calcareous, possible highly weathered shale.		SHALE - gray, some laminar definition, unweathered.		SHALE - gray, some laminar definition, unweathered.	

1. Water level at 23.5' after completion.
 2. Drilling: Augered to 33.0' (Rock contact at 32.0'). Began coring at 33.0'.
 3. Jars:
 A. 0.0' to 1.8'
 B. 1.8' to 4.0'
 C. 4.0' to 6.3'
 D. 6.3' to 11.0'
 E. 11.0' to 16.0'
 F. 16.0' to 20.0'
 G. 20.0' to 22.0'
 H. 22.0' to 23.0'
 I. 23.0' to 28.0'
 J. 28.0' to 29.5'
 K. 29.5' to 30.5'
 L. 30.5' to 31.5'
 M. 31.5' to 32.0'
 4. Core Boxes:
 1. 33.0' to 37.0'
 2. 37.0' to 41.0'
 3. 41.0' to 45.3'
 4. 45.3' to 50.0'
 5. 50.0' to 53.9'
 6. 53.9' to 58.2'
 7. 58.2' to 62.5'
 8. 62.5' to 66.8'
 9. 66.8' to 70.1'
 10. 70.1' to 75.0'
 11. 75.0' to 77.0'
 5. Sample Treatment:
 Core was cursorily examined and immediately wrapped in foil, sealed with wax, then wrapped in polyethylene and covered with wax to preserve samples for testing.
 6. Location of Hole:
 Texas 54 to Plano
 Coordinates: Sealed
 X - 2,092,300
 Y - 65,070
 7. Top of shale at 32.0' Augered to 33.0'. Began coring at 33.0'. Core was not logged in detail (see Remarks No. 5). Description is general.
 8. Core was examined at SUD Laboratory in preparation for selective testing. Interval 59.9' to 60.5' was found to be badly broken with slickensides noted on some of the pieces. Prominent slickenside noted also at 60.5' approximately 45° to core. It is possible that the badly broken condition of the core in this short interval was due in part to mechanical damage. Shale dark gray to black, soft.

RECORD DRAWING-WORK AS BUILT

SYMBOL NO.	ACTION	DATE	DESCRIPTION
U.S. ARMY ENGINEER DISTRICT CORPS OF ENGINEERS FORT WORTH, TEXAS			
DESIGNED BY:	AQUILLA		
DRAWN BY:	AQUILLA CRE		
CHECKED BY:	EMBANKMENT A		
SUBMITTED BY:	LOGS OF 1		
ENGINEER:	8A6C-36 AN		
	INV. NO. DAV	CONTR. NO. 2	DRAWING NO.

TO ACCOMPANY FINAL FOUNDATION REPORT

DRILLING LOG DIVISION: Southeastern PROJECT: Aquilla Dam Site HOLE NO. 74: SA-37		INSTALLATION: Fort Worth SHEET: 1 OF 1 SHEETS DATE: 23 July 1974			
LOCATION: Outlet Works Investigation DRILLING AGENCY: Corps of Engineers		MANUFACTURER'S DESIGNATION OF DRILL: Pilling 1950 TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: 9 UNDISTURBED: 0			
NAME OF DRILLER: [Blank] DIRECTION OF HOLE: <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED THICKNESS OF OVERBURDEN: 24.5' DEPTH DRILLED INTO ROCK: 1.5' TOTAL DEPTH OF HOLE: 25.0'		ELEVATION GROUND WATER: 50 DATE HOLE: 23 July 1974 ELEVATION TOP OF HOLE: 523.4' TOTAL CORE RECOVERY FOR BORING: 1 SIGNATURE OF INSPECTOR: [Signature]			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	SOIL OR ROCK NO.	REMARKS
10.0'	0.0'		CLAY - calcareous, medium plasticity, medium, tan moist, sandy	A	1. Probably making water below 17.0'. Hole caved to 17.5' upon completion. Water level at 17.5' 25 July 1974. 2. Drilling: No problems. 3. Jars: A. 0.0' to 0.6' B. 0.6' to 5.5' C. 5.5' to 6.8' D. 6.8' to 7.1' E. 7.1' to 13.5' F. 13.5' to 16.0' G. 16.0' to 16.8' H. 16.8' to 19.0' I. 19.0' to 23.5' J. 23.5' to 25.0'
	13.5'		GRAVEL - calcareous, 2" maximum, moist, sandy, slightly clayey, tan.	B	
	16.8'		SAND - fine grained, tan, calcareous, medium dense, damp.	C	
	19.0'		CLAY - medium to low plasticity, medium, tan, slightly calcareous, possible highly weathered shale.	D	
	23.5'		SHALE - gray, some laminar definition, unweathered.	E	
	25.0'			F	
				G	
				H	
				I	
				J	

EMG FORM 18 36 PREVIOUS EDITIONS ARE OBSOLETE
 PROJECT: Aquilla Dam Site HOLE NO: SA-37

RECORD DRAWING-WORK AS BUILT

SVN NO.	ACTION	DATE	DESCRIPTION OF REVISION
U.S. ARMY ENGINEER DISTRICT, FORT WORTH CORPS OF ENGINEERS FORT WORTH, TEXAS			
DESIGNED BY:	AQUILLA LAKE AQUILLA CREEK, TEXAS EMBANKMENT AND SPILLWAY LOGS OF BORINGS BA6C-36 AND 8A-37		
DRAWN BY:			
CHECKED BY:			
SUBMITTED BY:	INV. NO. DACW63-80-B-0085	DATED: AUG 1980	SEQUENCE NO.
ENGINEER:	CONTR. NO. PACW63-B-1-0035	DRAWING NUMBER	SHEET NO. 122

CONTR. NO. PACW63-B-1-0035

Hole No. 8160-39

DRILLING LOG		REVISION	INSTALLATION	DATE
1. PROJECT		2. LOCATION (Name of Well)	3. DATE AND TYPE OF WY	4. SHEET
5. DRILLING AGENCY		6. DESCRIPTION OF WELL		
7. NAME OF DRILLER		8. ELEVATION GROUND WATER		
9. DIRECTION OF WIND		10. DATE MOLE		
11. THICKNESS OF OVERBURDEN		12. ELEVATION TOP OF MOLE		
13. DEPTH DRILLED INTO ROCK		14. TOTAL CORE RECOVERY FOR SOILS		
15. TOTAL DEPTH OF WELL		16. TOTAL NUMBER CORE BOXES		

1. PROJECT: **Southwestern**
 2. LOCATION: **Fort North District**
 3. DATE AND TYPE OF WY: **6" open 3" fish-tail**
 4. SHEET: **1 of 3 sheets**
 5. DRILLING AGENCY: **Phillips 1500**
 6. DESCRIPTION OF WELL: **Drilled 1500**
 7. NAME OF DRILLER: **8160-39**
 8. ELEVATION GROUND WATER: **0**
 9. DIRECTION OF WIND: **VERTICAL**
 10. DATE MOLE: **29 Aug 75**
 11. THICKNESS OF OVERBURDEN: **10.5'**
 12. ELEVATION TOP OF MOLE: **316.9**
 13. DEPTH DRILLED INTO ROCK: **20.5'**
 14. TOTAL CORE RECOVERY FOR SOILS: **97%**
 15. TOTAL DEPTH OF WELL: **61.0'**
 16. TOTAL NUMBER CORE BOXES: **7**

ELEVATION	DEPTH	LOG	CLASSIFICATION OF MATERIALS	TESTS	REMARKS
48.4' to 71.0'		SHALE --	0.0' to 3.5' CLAY -- low plasticity, dark brown soft to medium stiff, very moist, very sandy	Jor A 6	Well log 0.0' to 10.5' 8" auger 10.5' to 47.0' 6" core 0.0' to 61.0' 3" fish-tail
50.1' to 50.5'		SANDSTONE, moderately cemented, light gray	3.5' to 5.5' GRATE -- tan, medium dense, very moist, sandy and clayey, to 1"	C D	Jar samples A. 0.0' to 3.5' B. 3.5' to 5.5' C. 5.5' to 6.5' D. 6.5' to 10.5'
55.1' to 71.0'		greenish-gray, calcareous, fissile, with clay streaks	5.5' to 10.5' CLAY -- tan, stiff, moist, sandy	10.5 L 12.5 13.5 14.0 14.7 15.7	Carbon samples 1. 11.8' to 12.7' 2. 15.3' to 16.2' 3. 45.5' to 46.4'
7. B. @ 71.0' in shale			10.5' to 14.5' weathered, light gray and yellowish-brown, with occasional thin, elongate sandy lenses. Several low and high angle tight fractures; core was very badly broken in this zone due to poor seating of casing through gravel. Curate depths are uncertain.	16.7 18.7 20.9 22.0	Boxed samples 7. 38.9' to 42.4' Individual pieces wrapped. 38.9' to 39.7' 39.7' to 41.0' 41.0' to 42.4'
			14.5' to 15.3' slightly weathered, dark gray, with rust colored staining, especially on bedding planes; slightly gypsiferous	23.5 L 23 25.5 L 26.6	**Location 8160-39 was drilled on opposite side of street, as shown on map. 39-39 was drilled 3.7' S of 8160-39, and 0.35' lower than 8160-39 for purposes of geophysical logging.
			15.3' to 16.8' 4.25 on hand penetrometer, non-fissile	0.2 16.7 18.7 20.9	Water level A hole was drilled 16.0 deep, 8" S of 8160-39, and 4" slotted plastic pipe was set to 14.0'. Due to cave-in, pea gravel was not placed about pipe. Hole made water at 6.5'.
			16.8' to 20.5' >4.5, fissile, waxy	28.0 L 28 30.0 31.0	
			20.5' to 21.5' 4.0' to 4.25 on penetrometer. non-fissile, does not tend to break on bedding planes upon drying	37.0 L 37 39.0 40.0	Mud 0.0' to 9.6' 8" casing 10.5' to 15.3' weathered 15.3' to 61.0' unweathered
			21.5' to 21.7' SANDSTONE, poorly cemented, light gray	42.6 L 42 44.0 45.0	0.0' to 40.4' non-calcareous, except several well cemented beds in sand stratum 40.4' to 61.0' calcareous 46.4' to 61.0' log is based on settings and drill action only
			21.7' to 22.0' very sandy	46.4 L 46 48.0 49.0	
			22.0' to 38.9' SANDSTONE --		7. B. @ 61.0' in shale
			22.0' to 25.2' light brown, poorly cemented, with some shale partings and thin beds of lignite; some core loss here		
			25.2' to 26.1' LIMESTONE, light gray, well cemented, sandy, with numerous shale partings and a lens of moderately cemented sandstone; could not cut with a carbide		
			26.1' to 27.5' light brown, moderately cemented, with occasional shale partings and thin beds of lignite		
			27.5' to 27.8' no recovery		
			27.8' to 29.1' light gray, well cemented, calcareous, interbedded with thin beds of lignite; could not cut with carbide		
			29.1' to 31.2' light brown, moderately cemented, with several beds (0.05') of lignite and lignitic sandstone		
			31.2' to 31.5' LIMESTONE, light gray, well cemented, sandy with numerous shale partings		
			31.5' to 38.9' light brown, moderately cemented, with some thin beds of lignite and shale partings		
			33.1' to 33.6'; 34.1' to 34.8' with 0.1' beds of interbedded		

shale and sandstone
37.7' to 38.1'; 38.4' to 39.7'
SHALE --
38.9' to 61.0'
SHALE --
38.9' to 40.4' dark gray, soft, waxy, non-calcareous, with occasional whips of lime
40.4' to 61.0' greenish-gray, calcareous, with clay streaks, moderately hard
45.9' to 46.4' slightly less calcareous

RECORD DRAWING-WOF

DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
SUBMITTED BY:	
ENGINEER:	

Map No. 846C-39

DRILLING LOG	NUMBER	DESCRIPTION	DATE
PROJECT	LOCATION	DRILLING AGENCY	DATE OF DRILLING
NAME OF DRILLER	TYPE OF HOLE	DEPTH OF HOLE	DIAMETER OF HOLE
THICKNESS OF OVERBURDEN	DEPTH DRILLED INTO ROCK	TOTAL DEPTH OF HOLE	CLASSIFICATION OF MATERIALS

DEPTH	LOG	DESCRIPTION	TESTS	REMARKS
0.0' to 3.5'	CLAY --	low plasticity, dark brown, soft to medium stiff., very moist, very sandy		0.0' to 10.5' 8" auger 10.5' to 47.0' 6" core 0.0' to 81.0' 5" fish-tail
3.5' to 5.5'	GRAVEL --	tan, medium dense, very moist, sandy and clayey, to 1"		jar samples A. 0.0' to 3.5' B. 3.5' to 5.5' C. 5.5' to 8.5' D. 8.5' to 10.5'
5.5' to 10.5'	CLAY --	tan, stiff, moist, sandy		Carbon samples 1. 11.8' to 12.7' 2. 15.3' to 16.2' 3. 45.5' to 46.4'
5.5' to 8.5'	CLAY --	tan, stiff, moist, sandy		Boxed samples 7. 38.9' to 42.4'
8.5' to 10.5'	CLAY --	tan, soft, saturated, sandy and very gravelly, with nodules to 4"		Individual pieces wrapped: 38.9' to 39.7' 39.7' to 41.0' 41.0' to 42.4'
10.5' to 22.0'	SHALE --	10.5' to 14.5' weathered, light gray and yellowish-brown, with occasional thin, elongate sandy lenses. Several low and high angle tight fractures; core was very badly broken in this zone due to poor seating of casing through gravel. Accurate depths are uncertain.		**Location 846C-39 was drilled on opposite side of street, as shown on scale. 39-39 was drilled 9.7' S of 846C-39, and 0.25' lower than 846C-39 for purposes of geophysical logging.
14.5' to 15.3'	CLAY --	slightly weathered, dark gray, with some rust colored staining, especially on bedding planes; slightly gypsiferous		**Water level A hole was drilled 16.0' deep, 8" N of 846C-39, and 4" slotted plastic pipe was set to 14.0'. Due to wave-in, pea gravel was not placed about pipe. Hole made water at 8.5'.
15.3' to 22.0'	CLAY --	unweathered, dark gray		
15.3' to 16.8'	CLAY --	4.25 on hand penetrometer, non-fissile		
16.8' to 20.5'	CLAY --	>4.5, fissile, waxy		
20.5' to 21.5'	CLAY --	4.0' to 4.25 on penetrometer, non-fissile, does not break on bedding planes upon drying		
21.5' to 21.7'	SANDSTONE	poorly cemented, light gray		
21.7' to 22.0'	CLAY --	very sandy		
22.0' to 38.9'	SANDSTONE --			
22.0' to 25.2'	CLAY --	light brown, poorly cemented, with some shale partings and thin beds of lignite; some core loss here		
25.2' to 26.1'	LIMESTONE	light gray, well cemented, sandy, with numerous shale partings and a lens of moderately cemented sandstone; could not cut with a corbit		
26.1' to 27.5'	CLAY --	light brown, moderately cemented, with occasional shale partings and thin beds of lignite		
27.5' to 27.8'	CLAY --	no redtop		
27.8' to 29.1'	CLAY --	light gray, well cemented, calcareous interbedded with thin beds of lignite; could not cut with corbit		
29.1' to 31.2'	CLAY --	light brown, moderately cemented, with several beds (0.05') of lignite and lignite sandstone		
31.2' to 31.5'	LIMESTONE	light gray, well cemented, sandy with numerous shale partings		
31.5' to 33.9'	CLAY --	light brown, moderately cemented, with some thin beds of lignite and shale partings		
33.1' to 33.6'; 34.1' to 34.8'	CLAY --	with 0.1' beds of interbedded		

shale and sandstone 37.7' to 38.1'; 38.4' to 38.7'
SHALE --
38.9' to 61.0'
SHALE --
38.9' to 40.4' dark gray, soft, waxy, non-calcareous, with occasional wisps of lime
40.4' to 61.0' greenish-gray, calcareous, with clay pockets, moderately hard
45.9' to 46.4' slightly less calcareous

RECORD DRAWING-WORK AS BUILT

DESIGNED BY:	AQUILLA LAKE AQUILLA CREEK, TEXAS EMBANKMENT AND SPILLWAY LOGS OF BORINGS 846C-38A AND 39		
DRAWN BY:			
CHECKED BY:			
SUBMITTED BY:			
INVENTORY NO.:	846C-38A-B-0085	DATE:	AUG 1980
CONTRACT NO.:	846C-38A-B-0085	SEQUENCE NO.:	123
DRAWING NUMBER:	B-120f	SHEET NO.:	123

Sheet No. 1

DIVISION Southwestern		INSTALLATION North North District	
PROJECT Fishall		DATE AND TYPE OF JOB 25 Feb 51	
DRAWN BY J. P. ...		SCALE FOR ELEVATION 1" = 10'	
CHECKED BY ...		TITLE Pillars 1500	
CORRECTIONS ...		TOTAL NUMBER OF SHEETS 2	
ELEVATION BAGC-40		TOTAL NUMBER CORE HOLES 13	
ELEVATION ...		ELEVATION GROUND WATER 0	
ELEVATION ...		DATE HOLE STARTED 16 Apr 51	
ELEVATION ...		DATE HOLE COMPLETED 17 Apr 51	
ELEVATION ...		ELEVATION TOP OF HOLE 539.1	
ELEVATION ...		TOTAL CORE RECOVERY FOR BORING 96.26	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	3-CORE NO.	NO. OF SAMPLES	REMARKS (Including lith. desc., color, etc., if appropriate)
0.0'	2.0'	SAND --	dark brown, loose, moist, slightly clayey, fine	50	A, B, C, D	Drilling 0.0' to 6.0' 8" auger 6.0' to 70.0' 6" core 0.0' to 71.0' 3" fish-tail
2.0'	3.0'	GRAVEL --	medium dense, yellow-brown, moist, very clayey, with small, well rounded pebbles of quartz and ironstone	10.0	Rox	1. 0.0' to 2.0' 2. 2.0' to 3.0' 3. 3.0' to 5.0' 4. 5.0' to 6.0'
3.0'	10.0'	SANDSTONE --	red, yellow, tan, and gray, weathered, fine-grained, poorly cemented	14.0	2	Carbonaceous 1. 12.2' to 13.1' 2. 19.0' to 19.9' 3. 24.9' to 25.8' 4. 33.0' to 33.9' 5. 68.4' to 69.3'
5.0'	6.0'	SHALE, gray and tan, thin-bedded	9.3' to 10.0' very poorly cemented, with some thin lenses of shale	22.0	22.3	*Enter level Hole was drilled 12' E of BAGC-40 for observation well, but had auger refusal in sandstone at 3.0'. Core did not penetrate with either a fish-tail or rockbit. Thus, 4" slotted, plastic pipe was set in BAGC-40 to 16.3', where it had caved. 24 hour check - 10.5'.
10.0'	40.5'	SHALE --	10.0' to 13.5' light gray, weathered, with several low angle, rust-stained fractures. massive core remains intact upon drying	6	0.1	Note 0.0' to 23.9' weathered 23.9' to 70.0' uncemented 0.0' to 64.5' non-calcareous 64.5' to 71.0' calcareous
10.0'	10.2'		10.0' to 10.2' with clay-ironstone, red	30.0	5	37.9
15.5'	21.7'		15.5' to 21.7' gray, weathered, with very numerous low and high angle fractures which tend to open upon drying and are stained red	0.0	0.0	37.0
20.3'	21.6'		20.3' to 21.6' several high angle fractures, as above, which intersect at 21.0'	0.0	0.0	37.4
21.7'	2.9'		21.7' to 2.9' dark gray, slightly weathered, with occasional stained, low angle fractures, and thin lenses of gray, soft sandstone	0.0	0.0	37.0
25.9'	38.0'		25.9' to 38.0' dark gray, unweathered, with numerous lenses of sandstone	0.0	0.0	37.0
26.7'	27.8'		26.7' to 27.8' high angle fracture, healed with soft sandstone	0.0	0.0	37.0
27.8'	27.9'		27.8' to 27.9'; 29.9' to 30.1' SANDSTONE, poorly cemented	50.0	50.5	37.0
36.8'	37.4'		36.8' to 37.4' with very numerous lenses of sandstone	0.0	0.0	37.0
38.0'	40.5'		38.0' to 40.5' sandy, with numerous, small, elongate lenses of sandstone	0.2	0.2	37.0
40.5'	63.2'	SANDSTONE --	40.5' to 42.0' gray, poorly cemented, with thin lenses of shale and scattered lignite grains	62.0	62.5	37.0
41.7'			41.7' uncemented	6	0.4	63.9
42.0'	46.1'		42.0' to 46.1' with numerous partings of shale, slightly lignitic	0.4	0.4	66.0
43.5'	43.6'		43.5' to 43.6'; 43.8' to 43.9'; 44.0' to 44.1' uncemented	0.4	0.4	69.2
46.1'	47.5'		46.1' to 47.5' moderately to well cemented, grading downward to moderately cemented	70.0	70.0	
47.5'	50.7'		47.5' to 50.7' poorly cemented with very thin beds of lignite			
47.3'	47.7'		47.3' to 47.7'; 48.6' to 48.8'; 49.1' to 49.2'; 49.5' to 49.8'; 50.0' to 50.7' Lenses of thin bedded shale and sandstone			
50.7'	53.3'		50.7' to 53.3' moderately cemented, with numerous, thin			

beds of lignite on bedding planes, but sandstone appears massive
53.3' to 54.6' moderately to well cemented, lignitic at top to non-lignitic at base
54.6' to 59.4' with very numerous lenses of thin bedded shale and sandstone
59.4' to 56.5' predominantly sandstone
59.4' to 61.8' moderately cemented, with interbedded lignite seams at 59.2' to 59.3'; 59.8' to 59.9'; 60.3' to 60.4'; lignite tends to be concentrated along bedding
61.8' to 63.2' moderately to well cemented
63.2' to 63.9'
SHALE --
dark gray, with occasional beds of sandstone
63.9' to 64.5'
SANDSTONE --
63.9' to 64.2' poorly cemented with shale partings
64.2' to 64.5' well cemented, brownish-gray
64.5' to 65.3'
LIGNITE --
light gray, well cemented, crystalline, sandy
65.3' to 69.3'
SHALE --
greenish-gray, fissile, calcareous, with clay streaks
T. N. @ 69.3' in shale

DRILLING LOG		SYMBOLS		LOCALITY		DATE	
Southwestern		Fort North District		Fall 1950		1	
Well No. 8460-41		Drill No. 8460-41		Drill No. 8460-41		Drill No. 8460-41	
NAME OF DRILLER		TOTAL NUMBER CORE BOXES		ELEVATION BRASS WATER		DATE	
R. J. ...		11		0		27 May 75	
ELEVATION OF SURFACE		ELEVATION TOP OF SOLE		TOTAL CORE RECOVERY FOR BOXES		PERCENT	
3.0'		527.14'		97%		1	
DEPTH DRILLED INTO ROCK		TOTAL DEPTH OF SOLE		CLASSIFICATION OF MATERIALS		CORRECTION	
24.0'		53.0'		CLAY --		0.0'	
0.0' to 2.0'	CLAY --	0.0'	2.0'	6	Drilling	0.0' to 6.0' 8" auger	6.0' to 63.0' 6" core
0.0' to 1.0'	low plasticity, brown, very stiff, moist, sandy, with small lime nodules	0.0'	1.0'	D	JAZ nodules	A. 0.0' to 1.0'	B. 1.0' to 2.0'
1.0' to 2.0'	becomes slightly gravelly, with pockets of soft, calcite-like material	1.0'	2.0'	E	Carbon nodules	C. 2.0' to 3.0'	D. 3.0' to 5.0'
2.0' to 3.0'	GRAVEL --	2.0'	3.0'	L		E. 5.0' to 6.0'	
3.0' to 4.0'	poorly graded, tan, medium dense, moist, well rounded, very clayey, to 1"	3.0'	4.0'	12.7		1. 6.0' to 7.0'	2. 18.0' to 19.7'
3.0' to 4.0'	SHALE --	3.0'	4.0'	17.0		3. 20.6' to 21.5'	4. 21.6' to 22.3'
3.0' to 5.0'	gray and tan, mottled with sand and gravel, very calcareous, with much soft, calcite-like material	3.0'	5.0'	17.3		5. 25.4' to 26.3'	6. 26.7' to 26.4'
5.0' to 8.0'	tan and gray, weathered, non-calcareous, with occasional low angle tight fractures, with small elongate pebbles of sand, which increase downward; lower 0.1' very sandy	5.0'	8.0'	23.0		7. 36.0' to 36.6'	8. 36.6' to 37.5'
8.0' to 9.6'	lost	8.0'	9.6'	27.0		9. 38.1' to 39.0'	10. 39.5' to 40.4'
9.6' to 10.2'	SANDSTONE, well cemented, calcareous, gray, could not cut with carbide bit	9.6'	10.2'	28.3		11. 54.5' to 55.4'	12. 60.2' to 61.1'
10.2' to 15.2'	weathered, predominantly light gray with numerous elongate, sandy zones	10.2'	15.2'	33.6			
10.5' to 10.8'	with beds of poorly cemented sandstone and clay-ironstone	10.5'	10.8'	34.0			
12.1' to 12.4'	with several low and high angle, tight, yellow-stained fractures	12.1'	12.4'	35.2			
13.2' to 14.0'	very sandy at top, grading downward to clay SANDSTONE, gray, with 30" open fracture, 13.7'	13.2'	14.0'	42.1			
14.0' to 15.5'	light gray, with numerous tight, irregular, short, iron-stained fractures, sandy in upper 0.2'	14.0'	15.5'	44.5			
14.7' to 14.9'	SANDSTONE, moderately cemented, brown, thin-bedded, non-calcareous	14.7'	14.9'	48.0			
15.5' to 17.2'	slightly weathered, predominantly gray with less numerous fractures, as above	15.5'	17.2'	51.1			
16.1' to 16.3'	clay-ironstone, red	16.1'	16.3'	56.0			
16.6' to 17.2'	high angle, tight, iron-stained fracture	16.6'	17.2'	56.6			
17.2' to 22.3'	non-weathered, except stained fractures dark gray	17.2'	22.3'	60.0			
19.2' to 19.3'	stained, tight, low angle fracture	19.2'	19.3'	61.3			
20.0' to 20.3'	high angle fracture, as above	20.0'	20.3'	61.7			
21.5' to 21.6'	clay-ironstone, stained	21.5'	21.6'	62.3			
21.6' to 22.3'	a little softer, very smooth texture	21.6'	22.3'	62.7			
22.3' to 24.0'	unweathered, with numerous zones of	22.3'	24.0'	63.0			
24.0' to 24.3'	SANDSTONE, hard, slightly calcareous	24.0'	24.3'	63.3			
24.3' to 24.5'	a little softer	24.3'	24.5'	63.5			
24.5' to 24.6'	SANDSTONE, as above	24.5'	24.6'	63.6			
24.6' to 26.8'	waxy	24.6'	26.8'	63.8			
25.0' to 25.1'	SANDSTONE, moderately hard, slightly	25.0'	25.1'	64.0			

side of lignite on bedding planes, wt sandstone appears massive

3.3' to 54.6' moderately to well cemented, lignitic at top to non-lignitic at base

4.6' to 59.4' with very numerous lenses of thinly bedded shale and sandstone

55.4' to 56.3' predominantly sandstone

59.4' to 61.8' moderately cemented, with interbedded lignite seams at 59.2' to 59.3', 59.8' to 59.9', 60.3' to 60.4', lignite tends to be concentrated along bedding

61.8' to 63.2' moderately to well cemented

63' to 63.9'

64' --

dark gray, with occasional beds of sandstone

65' --

65.9' to 64.2' poorly cemented with shale partings

64.2' to 64.5' well cemented, brownish-gray

65' to 65.3'

65.9' --

light gray, well cemented, crystalline, sandy

65' to 69.3'

66' --

greenish-gray, fissile, calcareous, with limy streaks

R. A. @ 69.3' in shale

calcareous

25.3' to 25.4' SANDSTONE, moderately hard, slightly calcareous

25.4' to 30.1' with numerous pockets, lenses, and thin beds of sandstone

27.4' to 27.8', 28.4' to 28.6', 29.0' to 29.5' sandstone lenses, light gray

30.1' to 43.4' waxy

33.2' to 33.3' SANDSTONE, light gray, poorly cemented, thinly interbedded with shale

34.0' to 34.2' SANDSTONE, light gray, well cemented, calcareous

41.8' to 42.1' SANDSTONE, poorly cemented

42.2' to 42.4' sandstone lenses

43.4' to 44.0' sandy

44.0' to 55.4'

SANDSTONE --

44.0' to 45.7' brown and light brown, moderately cemented, calcareous to non-calcareous, very fossiliferous, with numerous oyster shells

45.7' to 47.8' moderately cemented, decreasing downward to poorly cemented at 47.3', fossiliferous, mostly non-calcareous, with occasional shale partings

47.8' to 48.5' SHALE, dark gray, interbedded with poorly cemented sandstone

48.5' to 49.3' same as 44.0' to 45.7' with some lignite

49.3' to 50.2' gray, poorly to moderately cemented, calcareous, slightly fossiliferous, slightly lignitic

50.2' to 51.8' light gray, well cemented, calcareous, with very numerous partings of shale which increase downward, slightly fossiliferous, approaches sandy limestone

51.8' to 53.4' grayish-brown, moderately to well cemented, with numerous partings of shale, mostly non-calcareous, pyritic at base

53.4' to 53.7'

LIMESTONE --

gray, well cemented, sandy, with several solution cavities and partings of shale

53.7' to 62.6'

SHALE --

greenish-gray, calcareous, with shims of lime, moderately hard

54.1' to 54.3' lenses of limy sandstone

RECORD DRAWING-WOR

SYMBOL NO.	ACTION	DATE
U.S. ARMY ENGINEERING CENTER		
DESIGNED BY:		
DRAWN BY:		
CHECKED BY:		
APPROVED BY:		
ENGINEER:		

calcareous
 25.3' to 25.4' SANDSTONE, moderately hard, slightly calcareous
 25.4' to 30.1' with numerous pockets, lenses, and thin beds of sandstone
 27.4' to 27.8'; 28.4' to 28.6'; 29.0' to 29.5' sandstone lenses, light gray
 30.1' to 43.4' clay
 33.2' to 33.3' SANDSTONE, light gray, poorly cemented, thinly interbedded with shale
 34.0' to 34.2' SANDSTONE, light gray, well cemented, calcareous
 41.8' to 42.1' SANDSTONE, poorly cemented
 42.2' to 42.4' sandstone lenses
 43.4' to 44.0' sandy
 44.0' to 53.4'
 SANDSTONE --
 44.0' to 45.7' brown and light brown, moderately cemented, calcareous to non-calcareous, very fossiliferous, with numerous oyster shells
 45.7' to 47.8' moderately cemented, decreasing downward to poorly cemented at 47.3', fossiliferous, mostly non-calcareous, with occasional shale partings
 47.8' to 48.5' SHALE, dark gray, interbedded with poorly cemented sandstone
 48.5' to 49.3' same as 44.0' to 45.7' with some lignite
 49.3' to 50.2' gray, nearly to moderately cemented, rocky
 non-calcareous, slightly fossiliferous, slightly lignite
 50.2' to 51.8' light gray, well cemented, calcareous, with very numerous partings of shale which increase downward, slightly fossiliferous, approaches sandy limestone
 51.8' to 53.4' grayish-brown, moderately to well cemented, with numerous partings of shale, mostly non-calcareous, pyritic at base
 53.4' to 53.7'
 LIMESTONE --
 gray, well cemented, sandy, with several solution cavities and partings of shale
 53.7' to 62.6'
 SHALE --
 greenish-gray, calcareous, with shreds of lime, moderately hard
 54.1' to 54.3' lenses of clay sandstone

RECORD DRAWING-WORK AS BUILT

REVISION NO.	ACTION	DATE	DESCRIPTION OF REVISION
U.S. ARMY ENGINEER DISTRICT, FORT WORTH CORPS OF ENGINEERS FORT WORTH, TEXAS			
DESIGNED BY:	AQUILLA LAKE AQUILLA CREEK, TEXAS EMBANKMENT AND SPILLWAY LOGS OF BORINGS 8A6C-40 AND 41		
DRAWN BY:			
CHECKED BY:			
SUBMITTED BY:			
ENGINEER:	INV. NO. DACWGS-80-B-0085	DATED: AUG. 1980	SEQUENCE NO.
	CONTR. NO. DACWGS-81-C-0035	DRAWING NUMBER	SHEET NO.
		18-19 OF	124

CONTR. NO. DACWGS-81-C-0035

Male No. 8160-44

Southwestern

Project: Amulla

Location: (Coordinates or Name)

Drilling Agency: Corps of Engineers

Drill No. (Date of Drilling and No. in Series): DAGC-44

Name of Driller: [Signature]

Direction of Hole: () Vertical () Inclined

Remarks: [Signature]

Male No. 8160-44

Southwestern

Project: 1st North District

Location: (Coordinates or Name)

Drilling Agency: Falling 1500

Drill No. (Date of Drilling and No. in Series): 15 12

Name of Driller: [Signature]

Direction of Hole: () Vertical () Inclined

Remarks: [Signature]

CLASSIFICATION OF MATERIALS (See page 1)	DEPTH (Feet)	REMARKS (Depth, nature, etc., of material, etc., if significant)
CLAY --	0.0' to 22.5'	Drilling
0.0' to 0.8' low plasticity, brown, stiff, moist, sandy	0.0' to 2.0' 8" auger	
0.8' to 3.0' becomes light brown, very sandy	2.0' to 26.0' 6" core	
3.0' to 5.0' low plasticity, brown, very stiff, moist, sandy	26.0' to 39.0' 6" core	
5.0' to 22.0' low plasticity, light brown, very stiff, moist, very sandy		
15.0' to 15.0' with small, irregular, lime nodules		
17.0' becomes very moist		
19.0' becomes slightly gravelly		
21.0' approaches clayey sand		
SAND --	22.5' to 24.0'	
light brown, medium dense, very moist, very clayey		
GRAVEL --	24.0' to 29.9'	
24.0' to 26.0' light brown, medium dense, poorly graded, saturated, clayey, well rounded, averages 1/2", with cobbles to 2"		
26.0' to 28.0' becomes very clayey		
28.0' to 29.9' with numerous rounded to elongate cobbles, maximum diameter 6"; everyting was washed away but the cobbles		

CLASSIFICATION OF MATERIALS (See page 1)	DEPTH (Feet)	REMARKS (Depth, nature, etc., of material, etc., if significant)
CLAY --	0.0' to 15.0'	Drilling
0.0' to 3.5' low plasticity, brownish-gray, stiff, moist, sandy	0.0' to 35.8' 8" auger	
3.5' to 5.5' becomes hard	35.8' to 75.0' 6" core	
5.5' to 8.0' low plasticity, brown, very stiff, moist, sandy, with small lime nodules	0.0' to 101.0' 3" fish tail	
8.0' to 15.0' becomes tan, very sandy		
SAND --	15.0' to 23.5'	
15.0' to 19.0' tan, medium dense, moist, slightly clayey		
19.0' to 20.5' loose to medium dense, tan, very fine, silty		
20.5' to 23.5' brown, well graded, slightly clayey, gravelly to 3/4"		
CLAY --	23.5' to 25.0'	
low plasticity, tan, stiff, moist, very sandy		
SAND --	25.0' to 34.0'	
25.0' to 27.0' brown, well graded, slightly clayey, gravelly to 3/4"		
27.0' to 34.0' tan, medium dense, clayey, with some of gray, sandy clay, very moist to 32.0', saturated 32.0' to 34.0'		
GRAVEL --	34.0' to 36.0'	
low plasticity, light gray		
GRAVEL --	36.0' to 36.3'	
tan, medium dense, sandy and clayey, with cobbles to 2"		
SHALE --	36.3' to 101.0'	
36.3' to 45.0' with numerous lenses and beds of sandstone as follows		
36.3' to 36.4' slightly weathered, gray with some red and tan		
36.4' to 37.5' no recovery		
37.5' to 37.6' SANDSTONE, light gray, well cemented, calcareous, could not be recovered with a carbide		
37.6' to 38.4' no recovery		
38.4' to 38.6' SANDSTONE, as 37.5' to 37.6'		
38.6' to 38.8' with numerous, elongate lenses of calcareous sandstone and several small pyrite nodules		
38.8' to 39.1' waxy, dark gray		
39.1' to 39.4' with several lenses of moderately cemented, non-calcareous sandstone, light gray		
39.4' to 41.6' gray, sandy		
41.6' to 42.0' waxy, dark gray		
42.0' to 42.6' SANDSTONE, light gray, well cemented, calcareous, with thin (1/16") beds of shale and pyrite from 42.4' to 42.5'		

DEPTH (Feet)	REMARKS (Depth, nature, etc., of material, etc., if significant)
42.6' to 44.8'	waxy, with 44.7' to 44.8' a little softer
44.8' to 45.0'	SANDSTONE, well cemented, light gray
45.0' to 48.3'	waxy
45.3' to 45.5'	tight low angle joint
45.7' to 48.1'	a little softer
46.1' to 46.2'	small lens of light brown chert
47.7' to 48.1'	tight, low angle joint, with 1" displacement
48.1' to 48.2'	a little softer
48.3' to 57.8'	with very numerous elongate lenses and beds of light gray, moderately to well cemented sandstone and chert
50.3' to 50.4'	SANDSTONE, light gray, well cemented
54.5' to 54.8'; 55.1' to 55.4'; 55.8' to 55.9'; 56.0' to 56.3'	SANDSTONE, light gray, moderately cemented
56.3' to 56.4'	chert, light brown, hard
56.4' to 57.8'	SANDSTONE, moderately well cemented, thin-bedded, calcareous to silty
57.7' to 57.8'	non-calcareous, with an open low angle joint
57.8' to 70.7'	waxy
60.7' to 60.9'	SANDSTONE, moderately cemented, cross-bedded
60.9' to 61.5'	with numerous elongate lenses of sandstone
62.0' to 62.5'	tight 45° joint
62.4' to 62.6'	chert, light brown, hard, also 61.1' to 61.2'; 65.7' to 65.8'; 66.1' to 66.3'
69.2' to 69.5'	SANDSTONE, light gray, poorly cemented
69.7' to 69.9'	SANDSTONE, poorly cemented, calcareous
70.7' to 74.5'	gray, slightly cemented, calcareous, with very numerous clay streaks, moderately hard
74.5' to 101.0'	gray, calcareous, as above

CLASSIFICATION OF MATERIALS (See page 1)	DEPTH (Feet)	REMARKS (Depth, nature, etc., of material, etc., if significant)
SHALE --	29.9' to 30.0'	Mud
light gray, well cemented, sandy, slightly stained		
SHALE --	30.0' to 34.2'	
30.0' to 34.2' calcareous sandstone		
SHALE --	34.2' to 35.1'	
34.2' to 35.1' calcareous sandstone		
SHALE --	35.1' to 38.8'	
35.1' to 38.8' calcareous sandstone		
SHALE --	38.8' to 42.0'	
38.8' to 42.0' calcareous sandstone		
SHALE --	42.0' to 42.6'	
42.0' to 42.6' calcareous sandstone		
SHALE --	42.6' to 44.8'	
42.6' to 44.8' calcareous sandstone		
SHALE --	44.8' to 45.0'	
44.8' to 45.0' calcareous sandstone		
SHALE --	45.0' to 48.3'	
45.0' to 48.3' calcareous sandstone		
SHALE --	48.3' to 57.8'	
48.3' to 57.8' calcareous sandstone		
SHALE --	57.8' to 70.7'	
57.8' to 70.7' calcareous sandstone		
SHALE --	70.7' to 101.0'	
70.7' to 101.0' calcareous sandstone		

CLASSIFICATION OF MATERIALS (See page 1)	DEPTH (Feet)	REMARKS (Depth, nature, etc., of material, etc., if significant)
SHALE --	29.9' to 30.0'	Mud
0.0' to 30.0' calcareous sandstone		
30.0' to 34.2' calcareous sandstone		
SHALE --	34.2' to 35.1'	
34.2' to 35.1' calcareous sandstone		
SHALE --	35.1' to 38.8'	
35.1' to 38.8' calcareous sandstone		
SHALE --	38.8' to 42.0'	
38.8' to 42.0' calcareous sandstone		
SHALE --	42.0' to 42.6'	
42.0' to 42.6' calcareous sandstone		
SHALE --	42.6' to 44.8'	
42.6' to 44.8' calcareous sandstone		
SHALE --	44.8' to 45.0'	
44.8' to 45.0' calcareous sandstone		
SHALE --	45.0' to 48.3'	
45.0' to 48.3' calcareous sandstone		
SHALE --	48.3' to 57.8'	
48.3' to 57.8' calcareous sandstone		
SHALE --	57.8' to 70.7'	
57.8' to 70.7' calcareous sandstone		
SHALE --	70.7' to 101.0'	
70.7' to 101.0' calcareous sandstone		

RECORD DRAWING-WORK AS BU

DESIGNED BY: _____

DRAWN BY: _____

CHECKED BY: _____

SUBMITTED BY: _____

ENGINEER: _____

U.S. ARMY ENGINEER CORPS

FOR T. D. 6" core @ 74.5'

Male No. 816C-44

1st District	SHEET 1 OF 4 SHEETS
ELEVATION ABOVE MEAN SEA	
TYPE DESCRIPTION OF DRILL	
1500	
RETURNED	UNRETURNED
14	0
IN CORE WORKS	
8	
STARTED	COMPLETED
20 APR 75	2 MAY 75
OF OF HOLE	537.96
RECOVERY FOR BORING	95%

INSPECTOR
B. J. Smith

REMARKS
Drilling was done in accordance with specifications of 816C-44.

For	Drilling
A	0.0' to 35.8' 8" auger
B	35.8' to 75.0' 6" core
	0.0' to 101.0' 3" fish tail
C	jar samples
A.	0.0' to 3.5'
B.	3.5' to 5.5'
C.	5.5' to 8.0'
D.	8.0' to 15.0'
E.	15.0' to 19.0'
F.	19.0' to 20.5'
G.	20.5' to 25.5'
H.	25.5' to 27.0'
I.	27.0' to 32.0'
J.	32.0' to 34.0'
K.	34.0' to 36.3'
L.	36.3' to 74.3'
M.	74.3' to 101.0'
N.	101.0' to 150.0'
O.	150.0' to 200.0'
P.	200.0' to 250.0'
Q.	250.0' to 300.0'
R.	300.0' to 350.0'
S.	350.0' to 400.0'
T.	400.0' to 450.0'
U.	450.0' to 500.0'
V.	500.0' to 550.0'
W.	550.0' to 600.0'
X.	600.0' to 650.0'
Y.	650.0' to 700.0'
Z.	700.0' to 750.0'
aa.	750.0' to 800.0'
ab.	800.0' to 850.0'
ac.	850.0' to 900.0'
ad.	900.0' to 950.0'
ae.	950.0' to 1000.0'
af.	1000.0' to 1050.0'
ag.	1050.0' to 1100.0'
ah.	1100.0' to 1150.0'
ai.	1150.0' to 1200.0'
aj.	1200.0' to 1250.0'
ak.	1250.0' to 1300.0'
al.	1300.0' to 1350.0'
am.	1350.0' to 1400.0'
an.	1400.0' to 1450.0'
ao.	1450.0' to 1500.0'
ap.	1500.0' to 1550.0'
aq.	1550.0' to 1600.0'
ar.	1600.0' to 1650.0'
as.	1650.0' to 1700.0'
at.	1700.0' to 1750.0'
au.	1750.0' to 1800.0'
av.	1800.0' to 1850.0'
aw.	1850.0' to 1900.0'
ax.	1900.0' to 1950.0'
ay.	1950.0' to 2000.0'
az.	2000.0' to 2050.0'
ba.	2050.0' to 2100.0'
bb.	2100.0' to 2150.0'
bc.	2150.0' to 2200.0'
bd.	2200.0' to 2250.0'
be.	2250.0' to 2300.0'
bf.	2300.0' to 2350.0'
bg.	2350.0' to 2400.0'
bh.	2400.0' to 2450.0'
bi.	2450.0' to 2500.0'
bj.	2500.0' to 2550.0'
bk.	2550.0' to 2600.0'
bl.	2600.0' to 2650.0'
bm.	2650.0' to 2700.0'
bn.	2700.0' to 2750.0'
bo.	2750.0' to 2800.0'
bp.	2800.0' to 2850.0'
bq.	2850.0' to 2900.0'
br.	2900.0' to 2950.0'
bs.	2950.0' to 3000.0'
bt.	3000.0' to 3050.0'
bu.	3050.0' to 3100.0'
bv.	3100.0' to 3150.0'
bw.	3150.0' to 3200.0'
bx.	3200.0' to 3250.0'
by.	3250.0' to 3300.0'
bz.	3300.0' to 3350.0'
ca.	3350.0' to 3400.0'
cb.	3400.0' to 3450.0'
cc.	3450.0' to 3500.0'
cd.	3500.0' to 3550.0'
ce.	3550.0' to 3600.0'
cf.	3600.0' to 3650.0'
cg.	3650.0' to 3700.0'
ch.	3700.0' to 3750.0'
ci.	3750.0' to 3800.0'
cj.	3800.0' to 3850.0'
ck.	3850.0' to 3900.0'
cl.	3900.0' to 3950.0'
cm.	3950.0' to 4000.0'
cn.	4000.0' to 4050.0'
co.	4050.0' to 4100.0'
cp.	4100.0' to 4150.0'
cq.	4150.0' to 4200.0'
cr.	4200.0' to 4250.0'
cs.	4250.0' to 4300.0'
ct.	4300.0' to 4350.0'
cu.	4350.0' to 4400.0'
cv.	4400.0' to 4450.0'
cw.	4450.0' to 4500.0'
cx.	4500.0' to 4550.0'
cy.	4550.0' to 4600.0'
cz.	4600.0' to 4650.0'
da.	4650.0' to 4700.0'
db.	4700.0' to 4750.0'
dc.	4750.0' to 4800.0'
dd.	4800.0' to 4850.0'
de.	4850.0' to 4900.0'
df.	4900.0' to 4950.0'
dg.	4950.0' to 5000.0'
dh.	5000.0' to 5050.0'
di.	5050.0' to 5100.0'
dj.	5100.0' to 5150.0'
dk.	5150.0' to 5200.0'
dl.	5200.0' to 5250.0'
dm.	5250.0' to 5300.0'
dn.	5300.0' to 5350.0'
do.	5350.0' to 5400.0'
dp.	5400.0' to 5450.0'
dq.	5450.0' to 5500.0'
dr.	5500.0' to 5550.0'
ds.	5550.0' to 5600.0'
dt.	5600.0' to 5650.0'
du.	5650.0' to 5700.0'
dv.	5700.0' to 5750.0'
dw.	5750.0' to 5800.0'
dx.	5800.0' to 5850.0'
dy.	5850.0' to 5900.0'
dz.	5900.0' to 5950.0'
ea.	5950.0' to 6000.0'
eb.	6000.0' to 6050.0'
ec.	6050.0' to 6100.0'
ed.	6100.0' to 6150.0'
ee.	6150.0' to 6200.0'
ef.	6200.0' to 6250.0'
eg.	6250.0' to 6300.0'
eh.	6300.0' to 6350.0'
ei.	6350.0' to 6400.0'
ej.	6400.0' to 6450.0'
ek.	6450.0' to 6500.0'
el.	6500.0' to 6550.0'
em.	6550.0' to 6600.0'
en.	6600.0' to 6650.0'
eo.	6650.0' to 6700.0'
ep.	6700.0' to 6750.0'
eq.	6750.0' to 6800.0'
er.	6800.0' to 6850.0'
es.	6850.0' to 6900.0'
et.	6900.0' to 6950.0'
eu.	6950.0' to 7000.0'
ev.	7000.0' to 7050.0'
ew.	7050.0' to 7100.0'
ex.	7100.0' to 7150.0'
ey.	7150.0' to 7200.0'
ez.	7200.0' to 7250.0'
fa.	7250.0' to 7300.0'
fb.	7300.0' to 7350.0'
fc.	7350.0' to 7400.0'
fd.	7400.0' to 7450.0'
fe.	7450.0' to 7500.0'
ff.	7500.0' to 7550.0'
fg.	7550.0' to 7600.0'
fh.	7600.0' to 7650.0'
fi.	7650.0' to 7700.0'
fj.	7700.0' to 7750.0'
fk.	7750.0' to 7800.0'
fl.	7800.0' to 7850.0'
fm.	7850.0' to 7900.0'
fn.	7900.0' to 7950.0'
fo.	7950.0' to 8000.0'
fp.	8000.0' to 8050.0'
fq.	8050.0' to 8100.0'
fr.	8100.0' to 8150.0'
fs.	8150.0' to 8200.0'
ft.	8200.0' to 8250.0'
fu.	8250.0' to 8300.0'
fv.	8300.0' to 8350.0'
fw.	8350.0' to 8400.0'
fx.	8400.0' to 8450.0'
fy.	8450.0' to 8500.0'
fz.	8500.0' to 8550.0'
ga.	8550.0' to 8600.0'
gb.	8600.0' to 8650.0'
gc.	8650.0' to 8700.0'
gd.	8700.0' to 8750.0'
ge.	8750.0' to 8800.0'
gf.	8800.0' to 8850.0'
gg.	8850.0' to 8900.0'
gh.	8900.0' to 8950.0'
gi.	8950.0' to 9000.0'
gj.	9000.0' to 9050.0'
gk.	9050.0' to 9100.0'
gl.	9100.0' to 9150.0'
gm.	9150.0' to 9200.0'
gn.	9200.0' to 9250.0'
go.	9250.0' to 9300.0'
gp.	9300.0' to 9350.0'
gq.	9350.0' to 9400.0'
gr.	9400.0' to 9450.0'
gs.	9450.0' to 9500.0'
gt.	9500.0' to 9550.0'
gu.	9550.0' to 9600.0'
gv.	9600.0' to 9650.0'
gw.	9650.0' to 9700.0'
gx.	9700.0' to 9750.0'
gy.	9750.0' to 9800.0'
gz.	9800.0' to 9850.0'
ha.	9850.0' to 9900.0'
hb.	9900.0' to 9950.0'
hc.	9950.0' to 10000.0'
hd.	10000.0' to 10050.0'
he.	10050.0' to 10100.0'
hf.	10100.0' to 10150.0'
hg.	10150.0' to 10200.0'
hh.	10200.0' to 10250.0'
hi.	10250.0' to 10300.0'
hj.	10300.0' to 10350.0'
hk.	10350.0' to 10400.0'
hl.	10400.0' to 10450.0'
hm.	10450.0' to 10500.0'
hn.	10500.0' to 10550.0'
ho.	10550.0' to 10600.0'
hp.	10600.0' to 10650.0'
hq.	10650.0' to 10700.0'
hr.	10700.0' to 10750.0'
hs.	10750.0' to 10800.0'
ht.	10800.0' to 10850.0'
hu.	10850.0' to 10900.0'
hv.	10900.0' to 10950.0'
hw.	10950.0' to 11000.0'
hx.	11000.0' to 11050.0'
hy.	11050.0' to 11100.0'
hz.	11100.0' to 11150.0'
ia.	11150.0' to 11200.0'
ib.	11200.0' to 11250.0'
ic.	11250.0' to 11300.0'
id.	11300.0' to 11350.0'
ie.	11350.0' to 11400.0'
if.	11400.0' to 11450.0'
ig.	11450.0' to 11500.0'
ih.	11500.0' to 11550.0'
ii.	11550.0' to 11600.0'
ij.	11600.0' to 11650.0'
ik.	11650.0' to 11700.0'
il.	11700.0' to 11750.0'
im.	11750.0' to 11800.0'
in.	11800.0' to 11850.0'
io.	11850.0' to 11900.0'
ip.	11900.0' to 11950.0'
iq.	11950.0' to 12000.0'
ir.	12000.0' to 12050.0'
is.	12050.0' to 12100.0'
it.	12100.0' to 12150.0'
iu.	12150.0' to 12200.0'
iv.	12200.0' to 12250.0'
iu.	12250.0' to 12300.0'
iv.	12300.0' to 12350.0'
iu.	12350.0' to 12400.0'
iv.	12400.0' to 12450.0'
iu.	12450.0' to 12500.0'
iv.	12500.0' to 12550.0'
iu.	12550.0' to 12600.0'
iv.	12600.0' to 12650.0'
iu.	12650.0' to 12700.0'
iv.	12700.0' to 12750.0'
iu.	12750.0' to 12800.0'
iv.	12800.0' to 12850.0'
iu.	12850.0' to 12900.0'
iv.	12900.0' to 12950.0'
iu.	12950.0' to 13000.0'
iv.	13000.0' to 13050.0'
iu.	13050.0' to 13100.0'
iv.	13100.0' to 13150.0'
iu.	13150.0' to 13200.0'
iv.	13200.0' to 13250.0'
iu.	13250.0' to 13300.0'
iv.	13300.0' to 13350.0'
iu.	13350.0' to 13400.0'
iv.	13400.0' to 13450.0'
iu.	13450.0' to 13500.0'
iv.	13500.0' to 13550.0'
iu.	13550.0' to 13600.0'
iv.	13600.0' to 13650.0'
iu.	13650.0' to 13700.0'
iv.	13700.0' to 13750.0'
iu.	13750.0' to 13800.0'
iv.	13800.0' to 13850.0'
iu.	13850.0' to 13900.0'
iv.	13900.0' to 13950.0'
iu.	13950.0' to 14000.0'
iv.	14000.0' to 14050.0'
iu.	14050.0' to 14100.0'
iv.	14100.0' to 14150.0'
iu.	14150.0' to 14200.0'
iv.	14200.0' to 14250.0'
iu.	14250.0' to 14300.0'
iv.	14300.0' to 14350.0'
iu.	14350.0' to 14400.0'
iv.	14400.0' to 14450.0'
iu.	14450.0' to 14500.0'
iv.	14500.0' to 14550.0'
iu.	14550.0' to 14600.0'
iv.	14600.0' to 14650.0'
iu.	14650.0' to 14700.0'
iv.	14700.0' to 14750.0'
iu.	14750.0' to 14800.0'
iv.	14800.0' to 14850.0'
iu.	14850.0' to 14900.0'
iv.	14900.0' to 14950.0'
iu.	14950.0' to 15000.0'
iv.	15000.0' to 15050.0'
iu.	15050.0' to 15100.0'
iv.	15100.0' to 15150.0'
iu.	15150.0' to 15200.0'
iv.	15200.0' to 15250.0'
iu.	15250.0' to 15300.0'
iv.	15300.0' to 15350.0'
iu.	15350.0' to 15400.0'
iv.	15400.0' to 15450.0'
iu.	15450.0' to 15500.0'
iv.	15500.0' to 15550.0'
iu.	15550.0' to 15600.0'
iv.	15600.0' to 15650.0'
iu.	15650.0' to 15700.0'
iv.	15700.0' to 15750.0'
iu.	15750.0' to 15800.0'
iv.	15800.0' to 15850.0'
iu.	15850.0' to 15900.0'
iv.	15900.0' to 15950.0'
iu.	15950.0' to 16000.0'

Drilling Log Form (8-46)

PROJECT: Aquilla
 LOCATION: Southwestern
 DRILLING AGENCY: Corps of Engineers
 NAME OF DRILLER: Brewer
 DATE: 8-46

MANUFACTURER'S DESCRIPTION OF DRILL: Falling 1500
 TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: 12
 TOTAL NUMBER CORE HOLES: 0
 ELEVATION GROUND WATER: 0

THICKNESS OF OVERBURDEN: 34.5'
 DEPTH DRILLED INTO ROCK: 2.5'
 TOTAL DEPTH OF HOLE: 37.0'

ELEVATION: 111.0'

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIAL	REMARKS
111.0'	0.0'		CLAY --	0.0' to 15.5'
	0.0'		CLAY --	0.0' to 37.0' 8" auger 0.0' to 121.0' 3" fish tail
	3.0'		CLAY --	low plasticity, gray, very moist, stiff, silty
	6.5'		CLAY --	medium plasticity, gray, very stiff, very moist
	10.8'		CLAY --	low plasticity, brown, very stiff, moist, with several small lime nodules
	13.0'		CLAY --	low plasticity, tan, very stiff, moist, with occasional pockets of carbonaceous material
	15.5'		CLAY --	becomes very sandy
	20.3'		SAND --	15.5' to 20.3'
	17.0'		CLAY --	15.5' to 17.0' brown, loose, moist, fine to medium, slightly clayey
	20.3'		CLAY --	17.0' to 20.3' becomes clayey, down to very clayey at 19.4'; brown with some gray
	24.0'		CLAY --	20.3' to 24.0'
	24.0'		SAND --	low plasticity, tan with some gray, stiff, very moist, very sandy
	26.2'		SAND --	24.0' to 26.2'
	26.2'		CLAY --	tan with some gray, medium dense, very moist, very clayey
	30.0'		CLAY --	26.2' to 30.0'
	30.0'		SAND --	low plasticity, brown, very moist, stiff to very stiff, sandy and gravelly, to 1"
	33.0'		SAND --	30.0' to 33.0'
	34.5'		GRAVEL --	tan, loose, saturated
	34.5'		SHALE --	well graded, tan, saturated, clayey, to 4"
	37.0'		SHALE --	34.5' to 37.0'
	37.0'		SHALE --	slightly weathered, gray and tan, non-calcareous
	37.0'			T. D. @ 37.0' in shale

Drilling Log Form (8-47)

PROJECT: Aquilla
 LOCATION: Southwestern
 DRILLING AGENCY: Corps of Engineers
 NAME OF DRILLER: Brewer
 DATE: 8-47

MANUFACTURER'S DESCRIPTION OF DRILL: Falling 1500
 TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: 12
 TOTAL NUMBER CORE HOLES: 0
 ELEVATION GROUND WATER: 0

THICKNESS OF OVERBURDEN: 5.0'
 DEPTH DRILLED INTO ROCK: 36.0'
 TOTAL DEPTH OF HOLE: 41.0'

ELEVATION: 111.0'

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIAL	REMARKS
111.0'	0.0'		CLAY --	0.0' to 5.0'
	0.0'		CLAY --	0.0' to 37.0' 8" auger 0.0' to 121.0' 3" fish tail
	3.0'		CLAY --	dark brown, very at bedded, with pockets of soft like material
	4.0'		CLAY --	3.0' to 4.0' brown, hard, sandy and gravelly
	5.0'		CLAY --	4.0' to 5.0' brown, very at bedded, with pockets of soft like material
	5.0'		SHALE --	5.0' to 5.4'
	5.4'		SHALE --	well cemented, penetrate with
	18.0'		SHALE --	5.4' to 18.0'
	18.0'		SHALE --	gray
	30.0'		SHALE --	18.0' to 41.0'
	30.0'		SHALE --	SANDSTONE --
	32.0'		SHALE --	30.0' to 32.0'
	32.5'		SHALE --	32.0' to 32.5'
	32.5'		SHALE --	32.5' to 33.0'
	37.0'		SHALE --	T. D. @ 41.0' in

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIAL	REMARKS
111.0'	54.5'		CLAY --	54.5' to 54.6' clay-ironstone
	56.0'		CLAY --	56.0' to 56.2' low angle, tight, slickensided joint, which opens upon drying
	57.8'		CLAY --	57.8' to 70.3' dark gray, with numerous lenses and beds of sandstone, calcareous and non-calcareous and clay-ironstone nodules
	58.4'		CLAY --	58.4' to 58.6'; 65.9' to 66.0' clay-ironstone
	59.1'		CLAY --	59.1' to 59.2'; 59.3' to 59.5 sandstone
	70.3'		CLAY --	70.3' to 79.1' dark gray, waxy
	70.9'		CLAY --	70.9' to 71.0'; 71.8' to 71.9 a little softer
	72.0'		CLAY --	72.0' to 72.3' three low angle, slip t, slickensided joints, 0.1' apart, which open upon drying
	76.2'		SANDSTONE	76.2' to 76.4' SANDSTONE, light gray, fine-grained, poorly cemented, calcareous
	76.4'		SANDSTONE	76.4' to 79.1' with some slightly calcareous
	79.1'		SANDSTONE	79.1' to 80.9' gray, moderately hard, slightly cemented, with numerous clay streaks; mostly calcareous, with some non-calcareous, sandy
	80.9'		SANDSTONE	80.9' to 111.0' gray to greenish gray, calcareous, moderately hard, with occasional clay streaks

T. D. @ 111.0' in shale

REVISIONS

NO.	DATE	DESCRIPTION

TO ACCOMPANY FIN

Mo. No. 81-46 SHEET 1 OF 2 SHEETS
 Fort Worth District
 SIZE AND TYPE OF BIT 8" auger, 3" fish-tail
 DATE FOR ELEVATION 19 MAY 75
 MANUFACTURER'S DESIGNATION OF DRILL
 Falling 1500
 TOTAL NO. OF DAYS 12 UNDISTURBED 0
 BURDEN SAMPLES TAKEN 0
 TOTAL NUMBER CORE BOXES 0
 ELEVATION GROUND WATER 8
 DATE MOLE 19 MAY 75 19 MAY 75
 DIRECTION OF MOLE 8
 ELEVATION TOP OF MOLE 541.87'
 TOTAL CORE RECOVERY FOR BORING 1
 SIGNATURE OF INSPECTOR *W. A. D. ...*

DEPTH	REMARKS
0.0' to 37.0'	8" auger
0.0' to 121.0'	3" fish-tail
	jar samples
A. 0.0' to 3.0'	
B. 3.0' to 6.5'	
C. 6.5' to 10.8'	
D. 10.8' to 13.0'	
E. 13.0' to 15.5'	
F. 15.5' to 17.0'	
G. 17.0' to 20.3'	
H. 20.3' to 24.0'	
I. 24.0' to 28.2'	
J. 28.2' to 30.0'	
K. 30.0' to 33.0'	
L. 33.0' to 34.5'	
	*Water level
	Hole making water, 30.0' to 34.5'. Four inch plastic pipe, slotted from 17.0' to 37.0', was set from 2.5' to 37.0'. Hole was back-filled with pea gravel to 10.0'.
	Note
	SP-46 was drilled to 121.0' and was offset 6.0' N of 81-46 at the same elevation, for purpose of geophysical logging.
	0.0' to 34.5' calcareous
	34.5' to 37.0' non-calcareous
	34.5' to 37.0' weathered

Mo. No. 81-47 SHEET 1 OF 1 SHEETS
 Fort Worth District
 SIZE AND TYPE OF BIT 8" auger, 3" fish-tail
 DATE FOR ELEVATION 15 APR 75
 MANUFACTURER'S DESIGNATION OF DRILL
 Falling 1500
 TOTAL NO. OF DAYS 3 UNDISTURBED 0
 BURDEN SAMPLES TAKEN 0
 TOTAL NUMBER CORE BOXES 0
 ELEVATION GROUND WATER 8
 DATE MOLE 15 APR 75 15 APR 75
 DIRECTION OF MOLE 8
 ELEVATION TOP OF MOLE 586.92'
 TOTAL CORE RECOVERY FOR BORING 1
 SIGNATURE OF INSPECTOR *W. A. D. ...*

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	BOREHOLE SAMPLE NO.	REMARKS
586.92'	0.0'		0.0' to 5.0'	A	Drilling
			CLAY - -	B	0.0' to 5.0' 8" auger refusal at 5.0'
			0.0' to 3.0' low plasticity, dark brown, very stiff, moist	C	0.0' to 41.0' 3" fish-tail
			3.0' to 4.0' low plasticity, brown, hard, moist, slightly sandy and gravelly		jar samples
			4.0' to 5.0' becomes grayish-brown, very stiff, appears to be bedded, with very numerous pockets of soft, quiche-like material		A. 0.0' to 3.0' B. 3.0' to 4.0' C. 4.0' to 5.0'
			5.0' to 5.4'		*Water level
			LIMESTONE - -		Hole dry at completion of augering, 24 hour check - dry.
			well cemented, could not penetrate with auger		Note
			5.4' to 18.0'		0.0' to 3.0' non-calcareous
			SHALE - -		3.0' to 5.4' calcareous
			gray		5.4' to 41.0' non-calcareous
			18.0' to 41.0'		SP-47 was drilled 8.0' N of 81-46 for purpose of geophysical logging. Log is based on cutting and drill action below 5.0'.
			SANDSTONES - -		
			30.0' to 32.0' SHALE		
			32.0' to 32.5' well cemented		
			32.5' to 33.0' SHALE		
			T. D. @ 41.0' in sandstone		

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: _____ DRAWN BY: _____ CHECKED BY: _____ SUBMITTED BY: _____			
AQUILLA LAKE AQUILLA CREEK, TEXAS EMBANKMENT AND SPILLWAY LOGS OF BORINGS 6DC-45, 8A-46 AND 47			
INV. NO. DACW63-80-B-0088		DATED: AUG 1980	
CONTR. NO. DACW63-B1-0035		SEQUENCE NO.	
DRAWING NUMBER		SHEET NO. 126	

Wells No. 816C-49

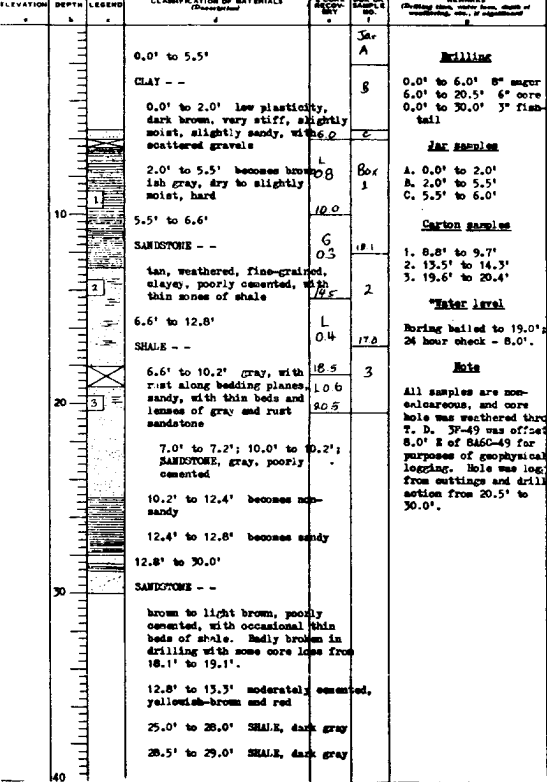
BELLING LOG		DIVISION	INSTALLATION	WELL NO.	SHEET
Southern		Southeastern	Port Worth District	816C-49	1 of 2
1. LOCATION (Township and Range)		2. MANUFACTURER'S DESIGNATION OF DRILL			
3. LOCATION (Coordinates or Station)		4. FALLING 1500			
5. DATE OF LOGGING		6. TOTAL NO. OF OVER-DRIVEN SAMPLES TAKEN			
7. NAME OF DRILLER		8. TOTAL NUMBER CORE BOXES			
9. DATE OF LOGGING		9. ELEVATION GROUND WATER			
10. DATE OF LOGGING		10. DATE HOLE			
11. ELEVATION TOP OF HOLE		11. ELEVATION TOP OF HOLE			
12. TOTAL CORE RECOVERY FOR BORING		12. TOTAL CORE RECOVERY FOR BORING			
13. SIGNATURE OF SUPERVISOR		13. SIGNATURE OF SUPERVISOR			
ELEVATION DEPTH LEGEND		CLASSIFICATION OF MATERIALS (Description)		REMARKS	
0.0' to 5.7'	CLAY --	0.0' to 1.5' low plasticity, brown, stiff, moist, silty and slightly sandy	1.5' to 3.0' becomes hard, slightly moist, gravelly	3.0' to 5.7' low plasticity, light brown, hard, moist, sandy, with numerous small, line nodules and small pockets of soft, calcareous material	5.7' to 13.6' SHALE --
13.6' to 14.1'	SHALE --	tan, with some light gray weathered, thin-bedded, tends to break along bedding planes, non-fractured or jointed, with occasional very thin beds of siltstone and fine sandstone			
14.1' to 14.7'	SHALE --	light gray and light brown weathered, moderately to well cemented			
14.7' to 14.9'	SHALE --	14.1' to 14.2' SHALE			
14.9' to 14.7'	SHALE --	14.7' to 20.9' weathered, light gray to gray, thin-bedded, with very numerous elongate lenses and beds of gray, yellow, and reddish-brown sandstone			
20.9' to 16.2'	SANDSTONE --	16.2' to 17.0' SANDSTONE, light brown, moderately cemented, with occasional shale partings, slightly calcareous			
17.0' to 20.5'	SANDSTONE --	20.5' to 20.8' SANDSTONE, light brown, poorly cemented			
20.8' to 20.9'	SANDSTONE --	20.9' to 23.7' slightly weathered, dark gray, with less numerous, very thin rust colored beds of sandstone			
23.7' to 27.4'	SANDSTONE --	23.7' to 28.9' unweathered, dark gray, thin-bedded, with occasional thin beds of light gray, poorly cemented sandstone			
27.4' to 28.2'	SANDSTONE --	27.4' to 27.7' SANDSTONE, light gray, poorly cemented			
28.2' to 28.9'	SANDSTONE --	28.2' to 28.9' very sandy, with numerous pockets of sandstone			
28.9' to 33.7'	SANDSTONE --	28.9' to 36.0' SANDSTONE -- light gray, poorly cemented, with numerous thin lenses and partings of shale			
33.7' to 36.0'	SANDSTONE --	33.7' to 36.0' very poorly cemented to non cemented, with some core loss			
36.0' to 39.9'	SHALE --	36.0' to 39.9' SHALE -- dark gray, thin-bedded, non-fractured or jointed			
39.9' to 40.8'	SANDSTONE --	39.9' to 40.8' SANDSTONE --			
40.8' to 42.0'	SHALE --	40.8' to 42.0' SHALE -- dark gray			
42.0' to 47.5'	SANDSTONE --	42.0' to 47.5' SANDSTONE --			
47.5' to 61.0'	SHALE --	47.5' to 61.0' SHALE --			

Wells No. 816C-49

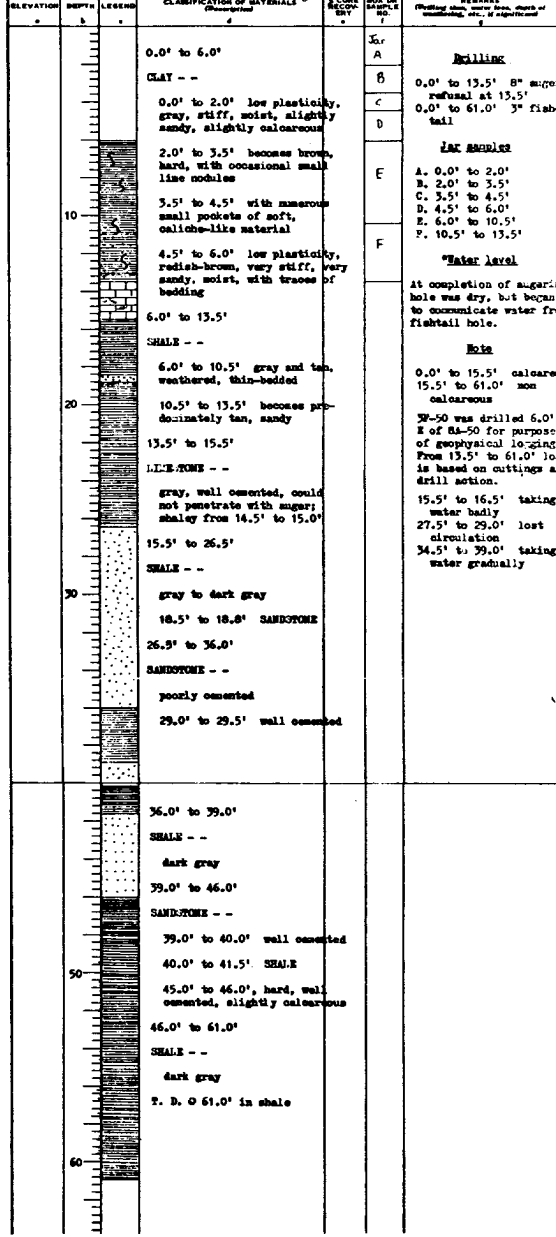
BELLING LOG		DIVISION	INSTALLATION	WELL NO.	SHEET
Southern		Southeastern	Port Worth District	816C-49	2 of 2
1. LOCATION (Township and Range)		2. MANUFACTURER'S DESIGNATION OF DRILL			
3. LOCATION (Coordinates or Station)		4. FALLING 1500			
5. DATE OF LOGGING		6. TOTAL NO. OF OVER-DRIVEN SAMPLES TAKEN			
7. NAME OF DRILLER		8. TOTAL NUMBER CORE BOXES			
9. DATE OF LOGGING		9. ELEVATION GROUND WATER			
10. DATE OF LOGGING		10. DATE HOLE			
11. ELEVATION TOP OF HOLE		11. ELEVATION TOP OF HOLE			
12. TOTAL CORE RECOVERY FOR BORING		12. TOTAL CORE RECOVERY FOR BORING			
13. SIGNATURE OF SUPERVISOR		13. SIGNATURE OF SUPERVISOR			
ELEVATION DEPTH LEGEND		CLASSIFICATION OF MATERIALS (Description)		REMARKS	
0.0' to 5.5'	CLAY --	0.0' to 2.0' low plasticity, dark brown, very stiff, slightly moist, slightly sandy, with scattered gravel	2.0' to 5.5' becomes brownish gray, dry to slightly moist, hard	5.5' to 6.6'	SANDSTONE --
6.6' to 12.8'	SHALE --	tan, weathered, fine-grained, clayey, poorly cemented, with thin zones of shale			
12.8' to 18.5'	SANDSTONE --	6.6' to 10.2' gray, with rust along bedding planes, sandy, with thin beds and lenses of gray and rust sandstone			
18.5' to 25.0'	SANDSTONE --	7.0' to 7.2'; 10.0' to 10.2'; SANDSTONE, gray, poorly cemented			
25.0' to 28.5'	SHALE --	10.2' to 12.4' becomes non-sandy			
28.5' to 30.0'	SHALE --	12.4' to 12.8' becomes sandy			
30.0' to 30.5'	SANDSTONE --	12.8' to 30.0' SANDSTONE -- brown to light brown, poorly cemented, with occasional thin beds of shale. Badly broken in drilling with some core loss from 18.1' to 19.1'.			
30.5' to 30.0'	SANDSTONE --	12.8' to 13.3' moderately cemented, yellowish-brown and red			
30.0' to 30.5'	SHALE --	25.0' to 28.0' SHALE, dark gray			
30.5' to 30.0'	SHALE --	28.5' to 29.0' SHALE, dark gray			

Note
All samples are non calcareous, and core hole was weathered. F. D. SP-49 was of 8.0" E of 816C-49 for purposes of geophysical logging. Hole was from cuttings and action from 20.5' to 30.0'.

DIVISION Southwestern		INSTALLATION Fort Worth District		SHEET 1 OF 1 SHEETS	
PROJECT Soililla		W. SIZE AND TYPE OF BIT 8" Sugar, 3" (light)		SHEET 1 OF 1 SHEETS	
1. LOCATION (Coordinate or Section)		11. MANUFACTURER'S DESIGNATION OF DRILL Palling 1500		12. TOTAL NO. OF CORES BORING SAMPLES TAKEN	
2. DRILLING AGENCY Corps of Engineers		13. TOTAL NO. OF CORES BORING SAMPLES TAKEN		14. TOTAL NUMBER CORE BOXES	
3. NAME OF DRILLER Brewer		14. ELEVATION GROUND WATER		15. ELEVATION TOP OF HOLE	
4. DIRECTION OF HOLE VERTICAL		15. DATE MOLE 9 Apr 75		16. STARTED 9 Apr 75	
5. THICKNESS OF OVERBURDEN 5.5'		16. TOTAL CORE RECOVERY FOR BORING		17. SIGNATURE OF INSPECTOR G. J. [Signature]	
6. DEPTH DRILLED INTO ROCK 24.5'		17. ELEVATION TOP OF HOLE 579.12'		18. TOTAL DEPTH OF HOLE 30.0'	



DIVISION Southwestern		INSTALLATION Fort Worth District		SHEET 1 OF 1 SHEETS	
PROJECT Soililla		W. SIZE AND TYPE OF BIT 8" Sugar, 3" (light)		SHEET 1 OF 1 SHEETS	
1. LOCATION (Coordinate or Section)		11. MANUFACTURER'S DESIGNATION OF DRILL Palling 1500		12. TOTAL NO. OF CORES BORING SAMPLES TAKEN	
2. DRILLING AGENCY Corps of Engineers		13. TOTAL NO. OF CORES BORING SAMPLES TAKEN		14. TOTAL NUMBER CORE BOXES	
3. NAME OF DRILLER Brewer		14. ELEVATION GROUND WATER		15. ELEVATION TOP OF HOLE	
4. DIRECTION OF HOLE VERTICAL		15. DATE MOLE 15 Apr 75		16. STARTED 15 Apr 75	
5. THICKNESS OF OVERBURDEN 6.0'		16. TOTAL CORE RECOVERY FOR BORING		17. SIGNATURE OF INSPECTOR G. J. [Signature]	
6. DEPTH DRILLED INTO ROCK 55.0'		17. ELEVATION TOP OF HOLE 522.0'		18. TOTAL DEPTH OF HOLE 61.0'	



RECORD DRAW

SUM. TRA. NO.	ACTION
U.S. AR	
DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
SUBMITTED BY:	
ENGINEER:	

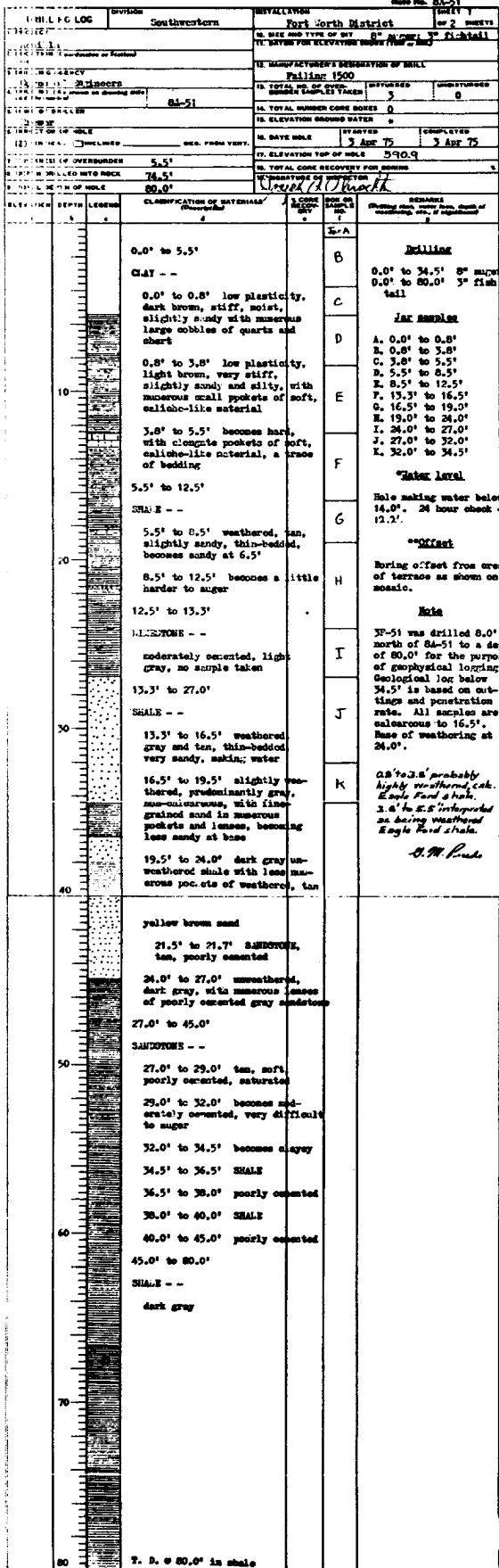
DIVISION		INSTALLATION		SHEET	
Southwestern		Fort Worth District		B-22	
PROJECT		10. SIZE AND TYPE OF SH: 8" diameter, 3" length		11. DATE OF REVISION: 15 Apr 75	
12. MANUFACTURER'S DESIGNATION OF DRILL		Pilling 1500		13. TOTAL NO. OF OVERS: 4	
14. TOTAL NUMBER CORE BORES: 0		15. ELEVATION GROUND WATER: 0		16. DATE MOLE: 15 Apr 75	
17. ELEVATION TOP OF MOLE: 595.8		18. TOTAL CORE RECOVERY FOR BORING: 0		19. TEMPERATURE OF SECTION: 61.0'	
CLASSIFICATION OF MATERIALS (Description)		CORRECTION		REMARKS (Showing depth, water level, depth of penetration, etc., if appropriate)	
0.0' to 6.0'		A		Drilling	
CLAY --		B		0.0' to 13.5' 8" diameter natural at 13.5'	
0.0' to 2.0' low plasticity, gray, stiff, moist, slightly sandy, slightly calcareous		C		0.0' to 61.0' 3" fish-tail	
2.0' to 3.5' becomes brown, hard, with occasional small lime nodules		D		JAC SAMPLES	
3.5' to 4.5' with numerous small pockets of soft, calcite-like material		E		A. 0.0' to 2.0' B. 2.0' to 3.5' C. 3.5' to 4.5' D. 4.5' to 6.0' E. 6.0' to 10.5' F. 10.5' to 13.5'	
4.5' to 6.0' low plasticity, reddish-brown, very stiff, very sandy, moist, with traces of bedding		F		Water level	
6.0' to 13.5'				At completion of a garden hole was dry, but began to communicate water from fish-tail hole.	
SHALE --				Note	
6.0' to 10.5' gray and tan, weathered, thin-bedded				0.0' to 15.5' calcareous 15.5' to 61.0' non calcareous	
10.5' to 13.5' becomes predominantly tan, sandy				SP-50 was drilled 6.0' E of BA-50 for purposes of geophysical logging. From 13.5' to 61.0' log is based on cuttings and drill motion.	
13.5' to 15.5'				15.5' to 16.5' taking water badly	
SANDSTONE --				27.5' to 29.0' lost circulation	
gray, well cemented, could not penetrate with auger; shaly from 14.5' to 15.0'				34.5' to 39.0' taking water gradually	
15.5' to 26.5'					
SHALE --					
gray to dark gray					
18.5' to 18.8' SANDSTONE					
26.5' to 36.0'					
SANDSTONE --					
poorly cemented					
29.0' to 29.5' well cemented					
36.0' to 39.0'					
SHALE --					
dark gray					
39.0' to 46.0'					
SANDSTONE --					
39.0' to 40.0' well cemented					
40.0' to 41.5' SHALE					
45.0' to 46.0', hard, well cemented, slightly calcareous					
46.0' to 61.0'					
SHALE --					
dark gray					
T. D. O 61.0' in shale					

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:	AQUILLA LAKE AQUILLA CREEK, TEXAS EMBANKMENT AND SPILLWAY LOGS OF BORINGS 8A6C-48, 49 AND 8A-50		
DRAWN BY:			
CHECKED BY:			
SUBMITTED BY:	INV. NO. DACW63-80-B-0088	DATED: AUG. 1980	SEQUENCE NO.
ENGINEER:	CONTR. NO. DACW63-81-C-0035	DRAWING NUMBER	SHEET NO. 127
		B-22 of	

CONTR. NO. DACW63-81-C-0035

Form No. 84-51



Form No. 84-51

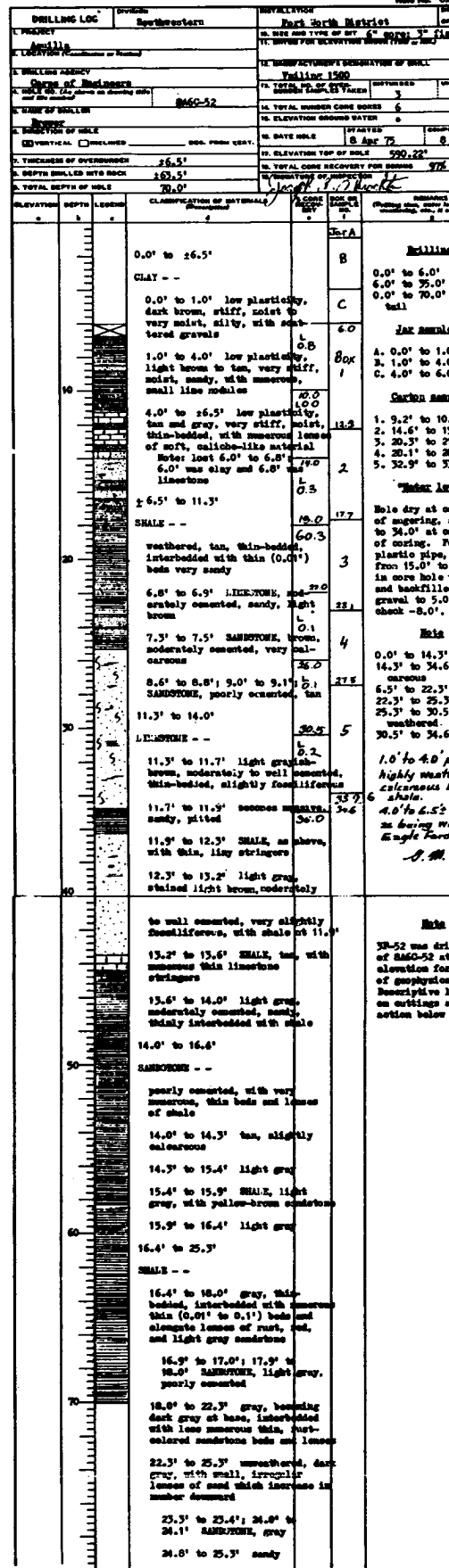


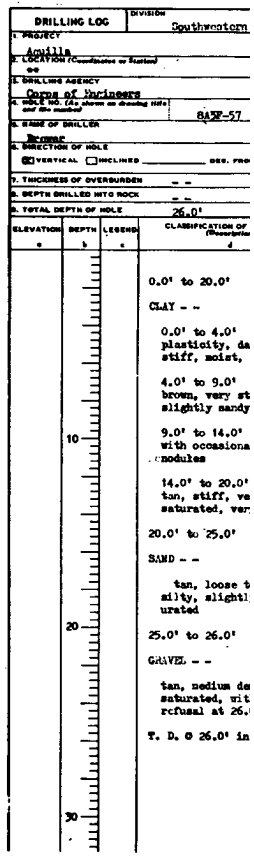
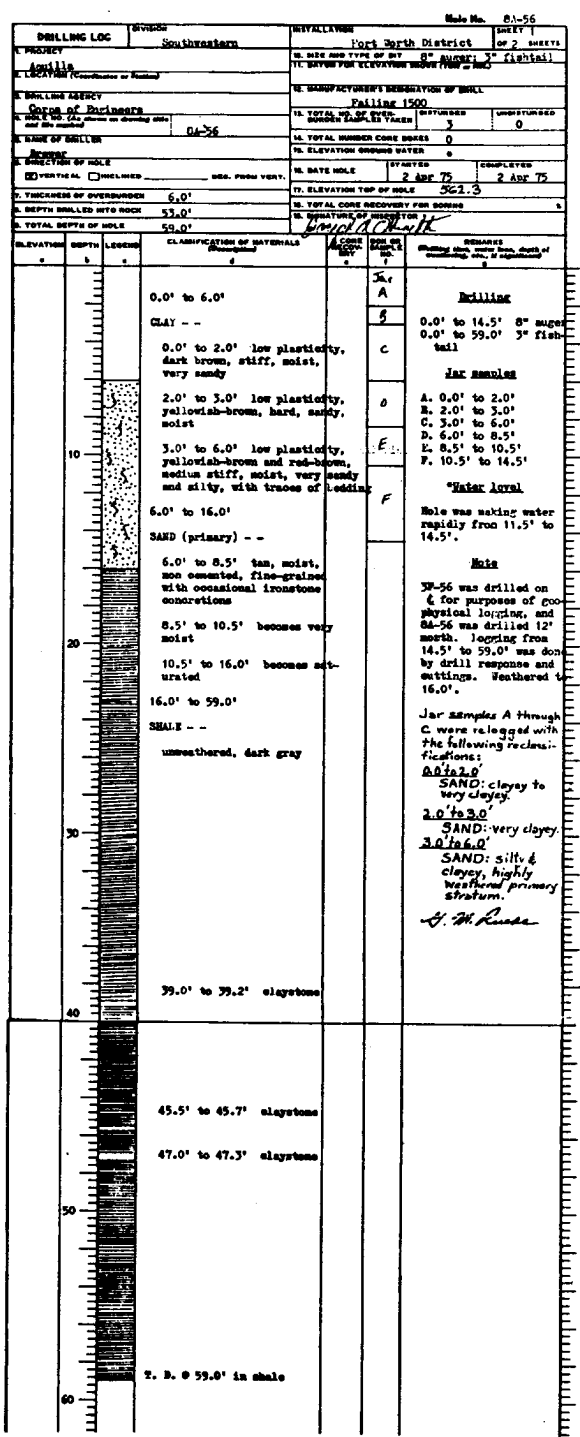
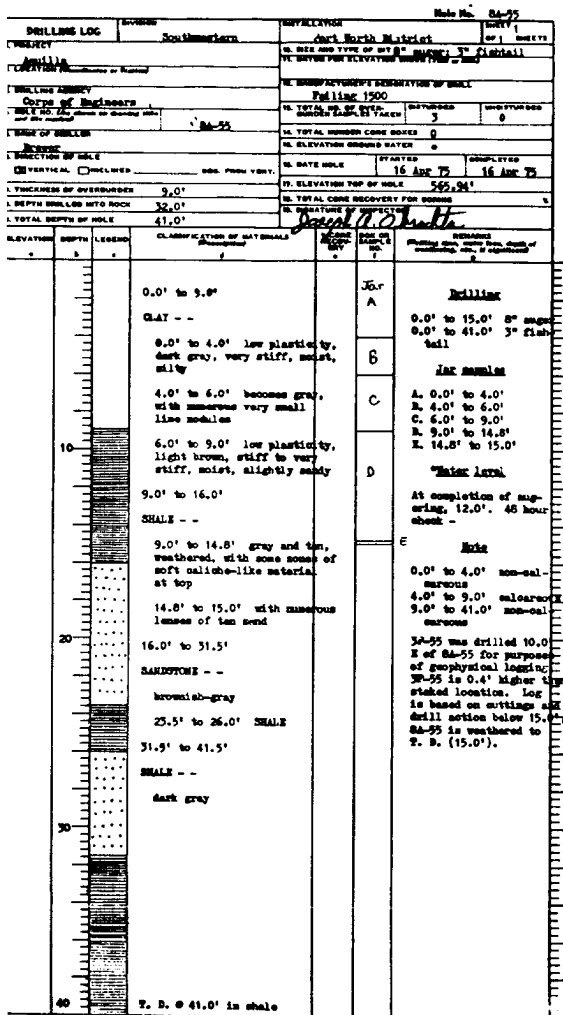
Plate No. 53

DRILLING LOG		DIVISION Southwestern	INSTALLATION Fort Worth District	SHEET OF 1 SHEETS
PROJECT		DATE AND TYPE OF SOIL 2 Apr 75		
LOCATION (Coordinate or Station)		DATE FOR ELEVATION CORRECTION		
DRILLING AGENCY Corps of Engineers		MANUFACTURER'S DESIGNATION OF DRILL Falline 1500		
SOIL NO. (As shown on drawing sheet and the contract) 8A-53		TOTAL NO. OF OVERBURDEN SAMPLES TAKEN 0		
NAME OF DRILLER Brewer		TOTAL NUMBER CORE BOXES 0		
DIRECTION OF HOLE Vertical		ELEVATION GROUND WATER a		
THICKNESS OF OVERBURDEN 6.0'		DATE HOLE 2 Apr 75		
DEPTH DRILLED INTO ROCK 14.0'		COMPLETED 2 Apr 75		
TOTAL DEPTH OF HOLE 20.0'		ELEVATION TOP OF HOLE 576.0		
CLASSIFICATION OF MATERIALS		TOTAL CORE RECOVERY FOR BORING		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	REMARKS
			0.0' to 6.0'	Drilling
			CLAY --	0.0' to 20.0' 8" auger
			0.0' to 2.0' low plasticity, brownish-gray, stiff, moist, sandy, with scattered gravels	Jar samples
			2.0' to 4.0' low plasticity, brown, very stiff, moist, sandy, slightly calcareous	A. 0.0' to 2.0' B. 2.0' to 4.0' C. 4.0' to 6.0' D. 6.0' to 15.0' E. 15.0' to 15.5'
			4.0' to 6.0' becomes gray and tan, with a suggestion of bedding, occasional small lime nodules, non-calcareous	Note: nearly all material from 15.5' to 20.0' was washed off of auger. No sample was obtained.
			6.0' to 15.5'	Note
			SHALE --	Samples are calcareous from 0.0' to 4.0'.
			6.0' to 13.0' badly weathered, gray and tan, traces of bedded structure, moist, sandy, with pockets very silty; sand content increases toward base	*Water level
			13.0' to 15.5' very sandy with pockets of clayey sand, very moist	Hole making water from 15.5' to 20.0'. At completion of augering, water level was at 11.4' 24 hour check - 11.5'
			15.5' to 20.0'	**Dr. net
			SAND --	Boring was offset to right of way as shown in notes. 3"-53 was drilled to 40.0' for purposes of geophysical logging. It was drilled 10' J of 8A-53. 3"-53 lost water slowly below 12.0', and badly from 15.0' to 17.0'.
			15.5' to 16.5' loose, saturated, no sample	
			16.5' to 20.0' becomes poorly cemented, a little harder to auger, no sample	
			T. D. 0 20.0' in sand	

RECORD DRAWING-WORK AS BUILT

REV. NO.	ACTION	DATE	DESCRIPTION OF REVISION
U.S. ARMY ENGINEER DISTRICT, FORT WORTH CORPS OF ENGINEERS FORT WORTH, TEXAS			
DESIGNED BY:	AQUILLA LAKE AQUILLA CREEK, TEXAS EMBANKMENT AND SPILLWAY LOGS OF BORINGS 8A-51, 52 AND 53		
DRAWN BY:			
CHECKED BY:			
SUBMITTED BY:	INV. NO. DACW63-80-B-0085	DATED: AUG. 1980	SEQUENCE NO.
ENGINEER:	CONTR. NO. DACW63-80-B-0085	DRAWING NUMBER	SHEET NO. 128
			B-23 of 62

CONTR. NO. DACW63-80-B-0085



RECORD DRAWING

DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
SUBMITTED BY:	
ENGINEER:	

Male No. 8A-56

PROJECT: Port North District

DATE: 2 Apr 75

DEPTH: 562.3

MANUFACTURER'S DESIGNATION OF DRILL: Pulling 1500

DATE HOLE STARTED: 2 Apr 75

DATE HOLE COMPLETED: 2 Apr 75

DEPTH DRILLED INTO ROCK: 26.0'

CLAY: 0.0' to 14.5' 8" super; 0.0' to 59.0' 3" fish tail

JAR SAMPLES: A. 0.0' to 2.0', B. 2.0' to 3.0', C. 3.0' to 6.0', D. 6.0' to 8.5', E. 8.5' to 10.5', F. 10.5' to 14.5'

Water level: Hole was making water rapidly from 11.5' to 14.5'.

Note: SP-56 was drilled on 6 for purposes of geophysical logging, and SA-56 was drilled 12' north. Logging from 14.5' to 59.0' was done by drill response and cuttings. Weathered to 16.0'.

Jar samples A through C were relogged with the following reclassifications:
 A. 0.0' to 2.0' SAND: clayey to very clayey.
 2.0' to 3.0' SAND: very clayey.
 3.0' to 6.0' SAND: silt & clayey, highly weathered primary structure.

J. H. Rouse

Male No. 8A-57

PROJECT: Aquilla

DATE: 9 June 75

DEPTH: 501.3

MANUFACTURER'S DESIGNATION OF DRILL: Pulling 1500

DATE HOLE STARTED: 9 June 75

DATE HOLE COMPLETED: 9 June 75

DEPTH DRILLED INTO ROCK: 26.0'

CLAY: 0.0' to 20.0'

JAR SAMPLES: A. 0.0' to 4.0', B. 4.0' to 9.0', C. 9.0' to 14.0', D. 14.0' to 20.0', E. 20.0' to 25.0', F. 25.0' to 26.0'

Water level: Hole making water at 20.0'; at completion of auguring, water level at 12.0'; 24 hour check 13.0'.

Note: Boring was 0' out approximately 70.0', no elevation on record. New elevation will be determined.

All samples are calcareous. SP-57 was drilled adjacent to super hole for purposes of geophysical logging. This is a relogging of SA-57. The clay in jars A to C has dried out completely.

RECORD DRAWING-WORK AS BUILT

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

DESIGNED BY: AQUILLA LAKE
 AQUILLA CREEK, TEXAS

DRAWN BY: EMBANKMENT AND SPILLWAY

CHECKED BY: LOGS OF BORINGS
 8A-54, 55, 56 AND 8A3F-57

SUBMITTED BY: INV. NO. DACW63-80-B-0085 DATED: AUG 1980

ENGINEER: CONTR. NO. DACW63-81-C-0015 SEQUENCE NO. 129
 DRAWING NUMBER SHEET NO. 129
 13-24 OF

Make No. 6437-58

DRILLING LOG		DIVISION	INSTALLATION	DATE
6437-58		Southeastern	Fort North District	19 May 75
PROJECT		Fishing 1500		
LOCATION		516.24'		
MANUFACTURER'S DESIGNATION OF BELL		Falling 1500		
CORPS OF ENGINEERS		6437-58		
DATE		19 May 75		
ELEVATION		516.24'		
DEPTH		71.0'		
CLASSIFICATION OF MATERIALS		CLAY --		
0.0' to 2.0'		CLAY --		
0.0' to 1.0' low plasticity, brown, stiff, moist, sandy, with small lime nodules		1.0' to 2.0' with numerous small pockets of soft, calcite-like material		
2.0' to 4.5'		SAND --		
2.0' to 3.0' tan, medium dense, moist, silty		3.0' to 4.5' becomes gravelly, well graded, to 1"		
4.5' to 7.0'		SHALE --		
4.5' to 6.0' tan and gray, badly weathered, reworked with sand in upper portion, numerous ironstone nodules, calcareous		6.0' to 7.0' gray, weathered, non-calcareous, with ironstone		
7.0' to 71.0' in shale				
REMARKS		Drilling 0.0' to 7.0' 8" auger 0.0' to 71.0' 3" fish-tail Jax samples A. 0.0' to 1.0' B. 1.0' to 2.0' C. 2.0' to 3.0' D. 3.0' to 4.5' E. 4.5' to 6.0' F. 6.0' to 7.0' Water level No water encountered in augering. 24 hour check - dry. Elevation Elevation of staked location, 516.24'; but farmer had plowed up stake. Note 0.0' to 6.0' calcareous 6.0' to 7.0' non-calcareous 4.5' to 7.0' weathered Hole was offset 7.0' S of fish-tail hole, which was drilled 71.0' for purposes of geophysical logging.		

Make No. 6437-59

DRILLING LOG		DIVISION	INSTALLATION	DATE
6437-59		Southeastern	Fort North District	21 Apr 75
PROJECT		Fishing 1500		
LOCATION		516.24'		
MANUFACTURER'S DESIGNATION OF BELL		Falling 1500		
CORPS OF ENGINEERS		6437-59		
DATE		21 Apr 75		
ELEVATION		516.24'		
DEPTH		71.0'		
CLASSIFICATION OF MATERIALS		CLAY --		
0.0' to 6.0'		CLAY --		
0.0' to 0.8' low plasticity, brown, moist, sandy, crumbly, non-calcareous, with very small lime nodules		0.8' to 3.5' low plasticity, brown, hard, moist, slightly sandy, slightly calcareous		
3.5' to 4.5' becomes gravelly		4.5' to 6.0' low plasticity, reddish-brown, very stiff, moist, sandy and gravelly, calcareous		
6.0' to 7.0'		SHALE --		
weathered, gray and tan, non-calcareous		7.0' to 71.0' in shale		
REMARKS		Drilling 0.0' to 7.0' 8" auger Jax samples A. 0.0' to 0.8' B. 0.8' to 3.5' C. 3.5' to 4.5' D. 4.5' to 6.0' E. 6.0' to 7.0' Water level 24 hour check - dry. Note Hole was offset E, 6 and drilled with a 4 rockbit to 91.0' for purposes of geophysical logging.		

Male No. 613-59

DRILLING LOG	DIVISION	INSTALLATION	SHEET
Southwestern	Port North District	613-59	1 of 1 SHEETS
PROJECT	U. S. GEOLOGICAL SURVEY		
WELL	No. 1000		
DATE	1975		
DRILLING AGENCY	Palmer 1500		
NO. OF OVERBURDEN	6.0'		
DEPTH DRILLED INTO ROCK	1.0'		
TOTAL DEPTH OF HOLE	7.0'		

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIAL	REMARKS
0.0'	0.0'		CLAY --	Drilling
0.0'	0.8'		CLAY --	0.0' to 0.8' low plasticity, brown, moist, sandy, crumbly, non-calcareous, with very small line nodules
0.8'	3.5'		CLAY --	0.8' to 3.5' low plasticity, brown, hard, moist, slightly sandy, slightly calcareous
3.5'	4.5'		CLAY --	3.5' to 4.5' becomes gravelly
4.5'	6.0'		CLAY --	4.5' to 6.0' low plasticity, reddish-brown, very stiff, moist, sandy and gravelly, calcareous
6.0'	7.0'		SHALE --	6.0' to 7.0' weathered, gray and tan, non-calcareous
				T. D. @ 7.0' in shale

Male No. 76A-50

DRILLING LOG	DIVISION	INSTALLATION	SHEET
Southwestern	Port North District	76A-50	1 of 2 SHEETS
PROJECT	Aquilla		
WELL	No. 1000		
DATE	1975		
DRILLING AGENCY	Corps of Engineers		
NO. OF OVERBURDEN	5.5'		
DEPTH DRILLED INTO ROCK	36.5'		
TOTAL DEPTH OF HOLE	42.0'		

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIAL	REMARKS
0.0'	0.0'		CLAY --	Drilling
0.0'	19.0'		CLAY --	0.0' to 19.0' low plasticity, brown, sandy
19.0'	27.0'		SAND --	19.0' to 27.0' tan, loose to medium dense, clayey at top, moist
27.0'	35.5'		GRAVEL and SAND --	27.0' to 35.5' difficult to pick out contacts on auger; gravel dark brown, well graded, very moist but saturated at 34.0'; sand - tan, gravelly
35.5'	54.5'		SHALE --	35.5' to 54.5' dark gray, unweathered, non-calcareous, with numerous thin lenses of sandstone, and nodules of clay-ironstone
54.5'			SANDSTONE --	54.5' well cemented, could not penetrate with auger or dry barrel
				T. D. @ 54.5' in sandstone

Male No. 76A-50

DRILLING LOG	DIVISION	INSTALLATION	SHEET
Southwestern	Port North District	76A-50	2 of 2 SHEETS
PROJECT	Aquilla		
WELL	No. 1000		
DATE	1975		
DRILLING AGENCY	Corps of Engineers		
NO. OF OVERBURDEN	5.5'		
DEPTH DRILLED INTO ROCK	36.5'		
TOTAL DEPTH OF HOLE	42.0'		

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIAL	REMARKS
0.0'	0.0'		CLAY --	Drilling
0.0'	5.5'		CLAY --	0.0' to 5.5' low plasticity, stiff, moist nodules and calcite-like becomes more
5.5'	13.1'		SHALE --	5.5' to 13.1' tan, calcareous interbedded with sand
13.1'	14.0'		SHALE --	13.1' to 14.0' light gray, cemented, diff.
14.0'	15.2'		SHALE --	14.0' to 15.2' brown, poorly cemented shale
15.2'	16.5'		SHALE --	15.2' to 16.5' 16.5' to 25.9' weathered, with fractures fr
16.5'	25.9'		SHALE --	24.9' to 25.9' unweathered
25.9'	32.1'		SANDSTONE --	25.9' to 32.1' poorly cemented with shale
32.1'	35.0'		SHALE --	32.1' to 35.0' dark gray
35.0'	37.0'		SHALE --	37.0' to 42.0' gray, poorly
42.0'			SHALE --	T. D. @ 42.0'

RECORD DRA

DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
SUBMITTED BY:	
ENGINEER:	

TO ACCOMPANY FINAL F

Male No. 36A-50
 North District
 SHEET 1 OF 2 SHEETS
 TYPE OF BIT 4 1/2" AUGER
 ELEVATION BROW (FROM G.M.S.)
 WENT'S DESIGNATION OF DRILL
 NO. OF OVER-UNDERTAKEN
 SAMPLES TAKEN 0
 UNDISTURBED 0
 USER CORE BOXES 0
 GROUND WATER 8
 STARTED 12 May 75
 COMPLETED 13 May 75
 TOP OF HOLE 538.52'
 RECOVERY FOR BORING
 REMARKS
 (Drilling time, water level, depth of weathering, etc., if significant)

DRILLING LOG		Division	INSTALLATION	Male No.
1. PROJECT		Southampton	36A North District	36A-50
2. LOCATION (Continents or States)				
3. DRILLING AGENCY				
4. NAME OF OVER-UNDERTAKEN		36A-50		
5. NAME OF DRILLER		Martin and Martin		
6. DIRECTION OF HOLE		VERTICAL		
7. THICKNESS OF OVERBURDEN		5.5'		
8. DEPTH DRILLED INTO ROCK		36.5'		
9. TOTAL DEPTH OF HOLE		42.0'		
10. ELEVATION TOP OF HOLE		538.52'		
11. ELEVATION GROUND WATER		8'		
12. DATE HOLE		12 May 75		
13. ELEVATION TOP OF HOLE		538.52'		
14. TOTAL CORE RECOVERY FOR BORING				
15. PERCENTAGE OF RECOVERY				
16. TOTAL CORE RECOVERY FOR BORING				
17. PERCENTAGE OF RECOVERY				
ELEVATION	DEPTH	LEGEND	CLARIFICATION OF MATERIALS (Described)	REMARKS (Drilling time, water level, depth of weathering, etc., if significant)
	0.0'		CLAY - -	low plasticity, brown, very stiff, moist, with small lime nodules and pockets of soft calcite-like material which become more numerous downward
	5.5'		SHALE - -	tan, calcareous, weathered, interbedded with thin beds of sand
	13.1'		DIKSTONITE - -	light gray, sandy, well cemented, difficult to auger
	14.0'		SHALE - -	tan and gray, weathered, with some sandy, non-calcareous
	15.2'		SANDSTONE - -	brown, poorly cemented, with numerous thin beds of shale
	16.5'		SHALE - -	tan and gray, weathered, with some tight fractures from 20.0' to 20.7'
	24.9'		SANDSTONE - -	dark gray, unweathered
	25.9'		SHALE - -	tan, weathered, poorly cemented, interbedded with shale
	32.1'		SHALE - -	gray, unweathered
	35.0'		SHALE - -	dark gray
	37.0'		SANDSTONE - -	gray, poorly cemented
	42.0'			T. D. @ 42.0' in sandstone

Drilling
 0.0' to 54.5' 42" auger refusal at 54.5'
 54.5' 42" dry barrel refusal at 54.5'
 0.0' to 36.0' casing

***Water level**
 Hole was making water from 34.0' to 35.5'. 24 hour check (before casing pulled) - dry.

Note
 Hole was logged by cuttings, drill action, and visual inspection.
 0.0' to 35.5' calcareous
 35.5' to 54.5' non-calcareous
 Primary is unweathered

Drilling
 0.0' to 42.0' 42" auger
 0.0' to 8.0' casing

***Water level**
 Hole is making water at 30.0'. 18 hour check - 23.3'

Note
 Hole was logged by cuttings and visual inspection.
 0.0' to 14.0' calcareous
 14.0' to 42.0' non-calcareous
 5.5' to 24.9' weathered
 24.9' to 25.9' unweathered
 25.9' to 32.1' weathered
 32.1' to 42.0' unweathered

RECORD DRAWING-WORK AS BUILT

REV. NO.	ACTION	DATE	DESCRIPTION OF REVISION
U.S. ARMY ENGINEER DISTRICT, FORT WORTH CORPS OF ENGINEERS FORT WORTH, TEXAS			
DESIGNED BY:	AQUILLA LAKE AQUILLA CREEK, TEXAS EMBANKMENT AND SPILLWAY LOGS OF BORINGS 6A3F-58, 59, 36A-60 AND 61		
DRAWN BY:			
CHECKED BY:			
SUBMITTED BY:	INV. NO. DACW63-80-B-0086	DATED: AUG. 1980	SEQUENCE NO.
ENGINEER:	CONTR. NO. DACW63-81-C-0035	DRAWING NUMBER	SHEET NO. 130
		8-25 OF	

Drilling Log Form 1 (Left Page)

Drilling Log No. 811-1-3

PROJECT: Aquilla

LOCATION: 1st Jeth's District

INSTALLATION: 1st Jeth's District

DATE: 10 June 75

DEPTH: 17.5'

CLASSIFICATION OF MATERIALS: CLAY, SAND, SANDSTONE

LEGEND: A, B, C, D, E, F, G, H

REMARKS: Note was logged from examination of jar samples. No water level information is available.

Drilling Log Form 1 (Middle Page)

Drilling Log No. 811-1-4

PROJECT: Aquilla

LOCATION: 1st Jeth's District

INSTALLATION: 1st Jeth's District

DATE: 10 June 75

DEPTH: 10.0'

CLASSIFICATION OF MATERIALS: CLAY, SHALE, SANDSTONE

LEGEND: A, B, C, D, E, F

REMARKS: All samples are non-calcareous. Note was logged from examination of jar samples. No water level information is available. Weathered to T. D.

Drilling Log Form 1 (Right Page)

Drilling Log No. 811-1-5

PROJECT: Aquilla

LOCATION: 1st Jeth's District

INSTALLATION: 1st Jeth's District

DATE: 10 June 75

DEPTH: 12.0'

CLASSIFICATION OF MATERIALS: CLAY, SAND, SANDSTONE

LEGEND: A, B, C, D, E, F

REMARKS: Well cemented, with sizer.

RECORD DRAWING-W

DESIGNED BY:

DRAWN BY:

CHECKED BY:

SUBMITTED BY:

ENGINEER:

TO ACCOMPANY FINAL FOUNDATION

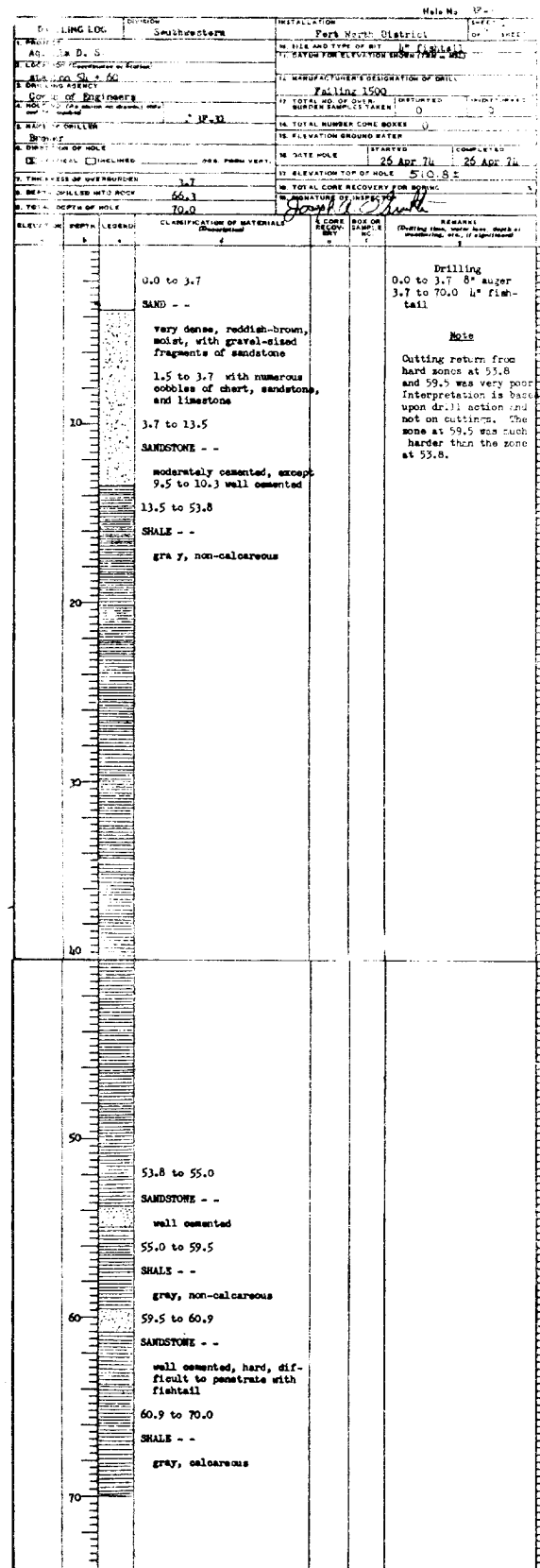
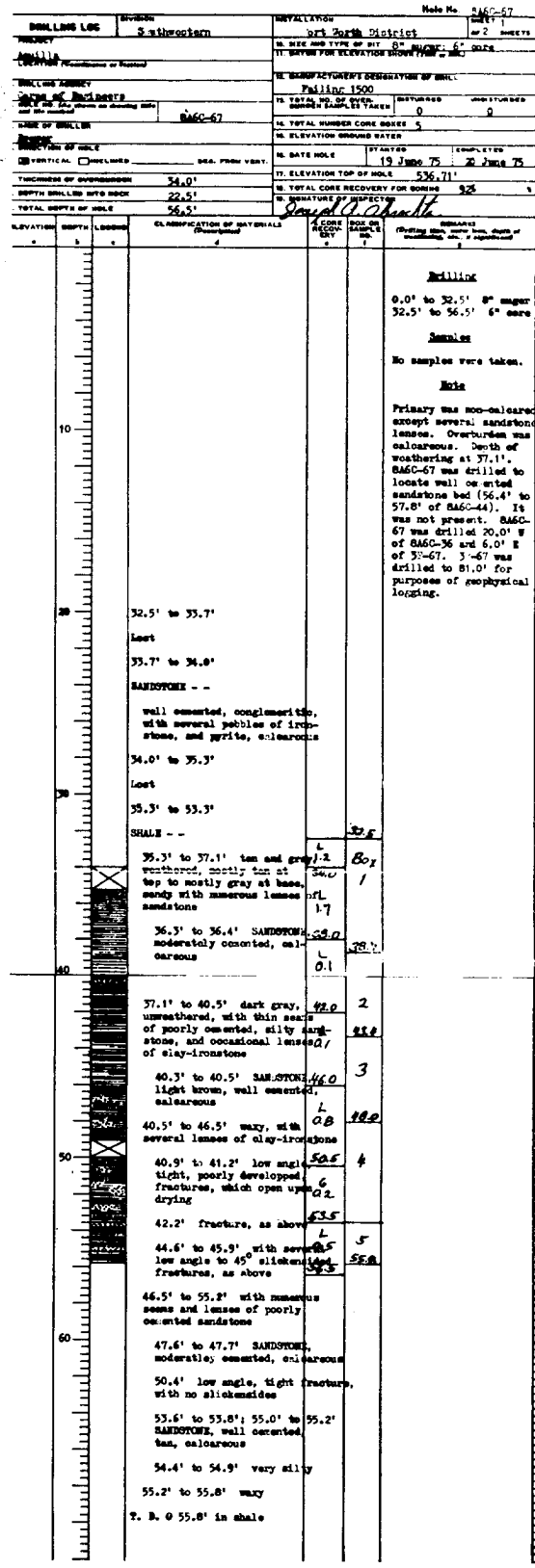
Plate No. 83F-4

PROJECT		DIVISION	
COUNTY		CORPS DISTRICT	
DATE		DATE	
MANUFACTURER'S DESIGNATION OF DRILL		MANUFACTURER'S DESIGNATION OF DRILL	
TOTAL NO. OF CORES		TOTAL NO. OF CORES	
TOTAL NUMBER CORE BOXES		TOTAL NUMBER CORE BOXES	
DATE MOLE		DATE MOLE	
ELEVATION TOP OF MOLE		ELEVATION TOP OF MOLE	
TOTAL CORE RECOVERY FOR BORING		TOTAL CORE RECOVERY FOR BORING	
SIGNATURE OF INSPECTOR		SIGNATURE OF INSPECTOR	
CLASSIFICATION OF MATERIALS		CLASSIFICATION OF MATERIALS	
0.0' to 3.0'	CLAY --	0.0' to 10.0'	CLAY --
0.0' to 0.5'	low plasticity, brown, moist, crumbly, very sandy and silty	0.0' to 1.0'	8" sampler refusal at 10.0'
0.5' to 3.0'	medium plasticity, reddish-brown, stiff, moist	1.0' to 4.0'	jar samples
3.0' to 8.5'	SHALE --	4.0' to 5.0'	tan, with shale seams; refusal at 10.0'
3.0' to 4.0'	red and gray mottled	5.0' to 8.5'	T. D. @ 10.0' in sandstone
4.0' to 5.0'	light gray, with lenses of sandstone		
5.0' to 8.5'	light gray		
8.5' to 10.0'			
SANDSTONE --			
tan, with shale seams; refusal at 10.0'			
T. D. @ 10.0' in sandstone			

PROJECT		DIVISION	
COUNTY		CORPS DISTRICT	
DATE		DATE	
MANUFACTURER'S DESIGNATION OF DRILL		MANUFACTURER'S DESIGNATION OF DRILL	
TOTAL NO. OF CORES		TOTAL NO. OF CORES	
TOTAL NUMBER CORE BOXES		TOTAL NUMBER CORE BOXES	
DATE MOLE		DATE MOLE	
ELEVATION TOP OF MOLE		ELEVATION TOP OF MOLE	
TOTAL CORE RECOVERY FOR BORING		TOTAL CORE RECOVERY FOR BORING	
SIGNATURE OF INSPECTOR		SIGNATURE OF INSPECTOR	
CLASSIFICATION OF MATERIALS		CLASSIFICATION OF MATERIALS	
0.0' to 8.0'	CLAY --	0.0' to 10.0'	CLAY --
0.0' to 4.0'	low plasticity, gray, very stiff, moist, silty, with small, lime nodules	0.0' to 1.0'	8" sampler refusal at 12.0'
4.0' to 5.5'	hard as brownish-gray, with nodules to 1/2"	1.0' to 4.0'	jar samples
5.5' to 8.0'	low plasticity, gray, with some tan, very stiff, moist, sandy	4.0' to 5.0'	tan, with shale seams; refusal at 10.0'
8.0' to 10.0'	SAND --	5.0' to 8.5'	T. D. @ 10.0' in sandstone
gray with some tan, loose to medium dense, very moist, clayey			
10.0' to 12.0'	GRAVEL --		
tan, loose, saturated, well graded, clayey, to 1 1/2"			
12.0'	SANDSTONE --		
well cemented, could not cut with auger			
T. D. @ 12.0' in sandstone			

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:				AQUILLA LAKE AQUILLA CREEK, TEXAS EMBANKMENT AND SPILLWAY LOGS OF BORINGS 36A-62, 8A3F-63, 64 & 65			
DRAWN BY:							
CHECKED BY:							
SUBMITTED BY:				INV. NO. DACW63-80-5-0088		DATED: AUG 1980	
ENGINEER:				CONTR. NO. DACW63-80-5-0088		SEQUENCE NO. 131	
				DRAWING NUMBER		SHEET NO. 8-26 OF	



RECORD DRAWING-W

EVAL. NO.	NO.	ACTION	DATE
U.S. ARMY ENGINEERING CENTER			
DESIGNED BY: _____			
DRAWN BY: _____			
CHECKED BY: _____			
SUBMITTED BY: _____			
ENGINEER: _____			

DRILLING LOG		DIVISION	SYMBOL	DATE	SHEET
PROJECT: Aquilla Lake		SWD	H. Worth	1979	2
LOCATION: S. 1/4 Sec. 10, T. 145 N., R. 145 E.					
DRILLING LOG: S. 1/4 Sec. 10, T. 145 N., R. 145 E.					
HOLE NO.: BAGC-250					
NAME OF DRILLER: [Blank]					
DIRECTION OF HOLE: [Blank]					
THICKNESS OF OVERBURDEN: 3.1					
DEPTH DRILLED INTO ROCK: 32.9					
TOTAL DEPTH OF HOLE: 41.4					
CLASSIFICATION OF MATERIALS					
ELEVATION	DEPTH	LEGEND	DESCRIPTION	REMARKS	
519.3	0.0 to 7.5	CLAY	0.0 to 3.1 - high plasticity, stiff, moist, block to brown, calc, sandy and gravelly. 3.1 to 7.5 - med. plast, stiff, moist, yellowish brown with some red after 64, calc, sl. sandy, silty.	* Drilling 0.0 to 9' - 10' upper 50' 10" B casing 9' to 21.0 - 7 1/2" casing 21.0 to 41.4 - 6" casing Soil bagged up to 5' for Aquilla project lab. Base of weathering 28.4' Boxes 1. 21.0 - 25.7 2. 25.7 - 34.2 3. 34.2 - 38.7 4. 38.7 - 40.7 Hole was E-logged.	
529.7	7.5 to 10.9	SHALE	highly weathered to a stiff clay consistency, yell. br. and gray, calc, sandy and silty seams (very thin).		
569.4	10.9 to 11.4	ARGONACIOUS LIMESTONE	hard, white, calc. Frag. Ford Gr.		
569.4	11.4 to 21.0	SHALE and LIMESTONE	This section rockbit - call made from rotary action. 11.4 - 12' - shale. 12 - 12.7 - shale. 12.7 - 21.0 - shale w/ hard s.s. @ 13.3'.	Box 1 Hole was E-logged.	
569.4	21.0 to 22.3	SHALE	weathered, mod soft, dark gray and yell. br., some yellow, non calc, pale brown, not hard s.s. sand (L.T. 0.1" thick) so. throughout section.	Actual loss 28.4' + 33.3' = 34.7' + 36.4'	
554.9	22.3 to 36.2	SANDSTONE	weathered till 28.4', fine grained, mod. hard, mod. friable, pale brown, non calc, shaley.	Box 2 Sandstone washed out.	
550.1	36.2 to 37.6	SANDSTONE (cont)	Shale seam 33.5 to 24.0' and sand within. Shale seam 24.3 to 24.4'. Shale seam 24.6 to 25.2'. Very shaley zone from 27.7 to 35.2'.	Box 3	
550.1	37.6 to 40.6	SHALE	unweathered, mod. soft, dark gray, non calc, thin sandstone seams and lenses throughout.	Box 4	
550.1	40.6 to 41.4	SANDSTONE	fine grained, mod soft to mod hard, mod. cemented, pale brown and gray, non calc. Shaley from 37.6 to 30.0', 38 to 38.6 - no shale. Both above mod. hard zones. 38.6 to 39.3 - v. shaley. 39.3 to 39.7 - shale (sandy). 39.7 to 40.6 - sl. shaley. Above three zones are mod. soft and sand is friable.	Box 5 Box 6	

DRILLING LOG		DIVISION	SYMBOL	DATE	SHEET
PROJECT: Aquilla Lake		SWD	H. Worth	1979	1
LOCATION: S. 1/4 Sec. 10, T. 145 N., R. 145 E.					
DRILLING LOG: S. 1/4 Sec. 10, T. 145 N., R. 145 E.					
HOLE NO.: BAGC-251					
NAME OF DRILLER: [Blank]					
DIRECTION OF HOLE: [Blank]					
THICKNESS OF OVERBURDEN: 5.3					
DEPTH DRILLED INTO ROCK: 37.7					
TOTAL DEPTH OF HOLE: 43.2					
CLASSIFICATION OF MATERIALS					
ELEVATION	DEPTH	LEGEND	DESCRIPTION	REMARKS	
576.9	0.0 to 8.9	CLAY	0.0 to 0.2 - high plasticity, mod stiff, moist, black, calc, sandy and gravelly. 0.2 to 4.9 - high/red class. city, stiff, moist, calc, yellowish brown, limy, sl. sandy, gravelly at 2.5' (0.2" thick). 4.9 to 5.3 - [Blank]	* Drilling 0.0 to 14.5' - 50' 10" B casing 14.5 to 43.2' Base of weathering at 14.5' by the 4" project lab. Boxes 1. 14.5 - 19.3 - 2 2. 19.3 - 24.3 - 3 3. 24.3 - 28.9 - 4 4. 28.9 - 33.9 - 5 5. 33.9 - 38.7 - 6 Hole was E-logged.	
577.0	8.9 to 14.3	SHALE	highly weathered to a stiff clay consistency, very little shale structure, except from 6.4 to 7.0 - where structure is apparent, yell. br., gray, and some red, calc, sandy and silty, exp. 12.5' @ 11'.	Box 1	
577.0	14.3 to 14.8	ARGONACIOUS LIMESTONE	hard, white, calc, massive, well cemented, Frag. Ford Group	Box 2	
569.4	14.8 to 15.7	SHALE	weathered, mod. soft (7.5 class), gray and yell. br., calc, scattered thin sand seams.	Box 3	
569.4	15.7 to 18.3	SANDSTONE	15.7 to 15.6 - weathered, fine grained, mod soft, gray, sl. calc, poorly to mod. cemented, friable, limonitic @ top of section (cont).	Box 4	
555.9	18.3 to 19.3	SANDSTONE	15.7 to 18.3 - weathered, fine, hard, well cemented, light pale brown, sl. calc.	Box 5	
555.9	19.3 to 21.5	SANDSTONE	17.0 to 18.3 - fine, poorly cemented and v. friable (much washed out by drilling circulation), gray, sl. calc, sl. shaley.	Box 6	
550.1	21.5 to 28.1	SHALE	18.3 to 19.3 - weathered, soft (7.5 class), yell. br. and gray and red, sl. calc, sandy. 19.3 to 19.3 - as above except v. sandy. 19.3 to 21.5 - weathered, fine, mod hard and mod cemented, pale brown, non calc, jointed, local dip (L.T. 10') @ 20.5 to 20.7'. 1.75 to 2.75 @ 20.3 & 21.1 - both 0.1" thick.		
550.1	28.1 to 36.2	SHALE	21.5 to 25.8 - weathered, mod soft, gray and strong brown, non calc, limonitic, s.s. seams (mod hard and pale brown) @ 21.5 & again from 23.5 to 23.8'. 23.8 to 28.1 - weather stained fractures till 24.3, then unweathered, dark gray, non calc, mod soft, so. thin sand seams, v. pyritic from 25.0 to 25.1 and @ 26.2. Mod. hard s.s. from 26.1 to 26.2 and 27.1 to 27.3'.	Base of sandst dip of 12'. Shale beneath shows no dip. The above two came out in massive core Shale exhibits up to 7' from 22.5'.	

DRILLING LOG	DIVISION	LOCALITY	DATE	SHEET
AGUILLA LAKE	SWD	H. Worth	16 June 79	3
LOCATION	AGUILLA LAKE	AGUILLA LAKE	AGUILLA LAKE	AGUILLA LAKE
DRILLER	OSCE	OSCE	OSCE	OSCE
DATE	18 AUG - 257	18 AUG - 257	18 AUG - 257	18 AUG - 257
DEPTH	32.9	32.9	32.9	32.9
DIAMETER	4.3	4.3	4.3	4.3
REMARKS	<p># Drilling 0.0 to 14.5 - 10' layer Set 10' of casing 14.5 to 42.3 - 6' core</p> <p>Base of weathering @ 24.3'</p> <p>The only samples taken were those of weathered shale at 14.8-15.7 & 19.3-19.3 by the Aguilla project lab.</p> <p>Boxes 1. 14.5 - 19.3 2. 19.3 - 24.3 3. 24.3 - 28.7 4. 28.7 - 33.9 5. 33.9 - 38.7 6. 38.7 - 42.3</p> <p>Hole was elongated</p> <p>Base of sandstone has dip of 12°</p> <p>Shale beneath s.s. shows no dip.</p> <p>The above two sections came out in two successive core pulls.</p> <p>Shale exhibits dip of up to 7° from 21.9 to 22.5°.</p>			

DRILLING LOG	DIVISION	LOCALITY	DATE	SHEET
AGUILLA LAKE	SWD	H. Worth	16 June 79	3
LOCATION	AGUILLA LAKE	AGUILLA LAKE	AGUILLA LAKE	AGUILLA LAKE
DRILLER	OSCE	OSCE	OSCE	OSCE
DATE	18 AUG - 257	18 AUG - 257	18 AUG - 257	18 AUG - 257
DEPTH	32.9	32.9	32.9	32.9
DIAMETER	4.3	4.3	4.3	4.3
REMARKS	<p>20.1 to 36.3 SANDSTONE - is weathered, fine, gray, non calc, red soft to med. hard, poorly to mod. cemented, shaly, pyritic c. 30.5'. Mostly poorly cemented and friable after 32.7'.</p> <p>36.3 to 39.6 SHALE - mod soft, dark gray non calc, so. thin gray sandstone/siltstone seams and lenses. Mod. hard, pale brown silt (lignite) lenses from 37.0 to 37.1'.</p> <p>39.6 to 43.2 SANDSTONE - fine grained, mod hard, mod. cemented, gray, non calc. Very shaly from 40.2 to 40.6'. Shale zone from 41.1 to 41.4'. Shaly zone from 41.7 to 43.2'.</p>			

DRILL FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE PROJECT SHEET NO. BAGC-257

RECORD DRAWING

U.S. ARMY	
DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	

Sheet No. 10A-1

BELLING LOG		BORING		INSTALLATION		
PROJECT		SUBD		Pt North		
1. NAME		3. DATE		4. SIZE AND TYPE OF BIT		
2. LOCATION (Reference or Station)		10A-1		4" auger		
5. DRILLING AGENCY		10A-1		6. DATE FOR ELEVATION MEASUREMENT		
7. DRILLING METHOD		10A-1		7. MANUFACTURER'S DESIGNATION OF DRILL		
8. NAME OF DRILLER		10A-1		Falling 1500		
9. DATE OF DRILLING		10A-1		13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		
10. ELEVATION GROUND WATER		10A-1		3		
11. DATE HOLE STARTED		10A-1		14. TOTAL NUMBER CORE BOXES		
28 March 78		10A-1		0		
12. ELEVATION TOP OF HOLE		10A-1		15. ELEVATION GROUND WATER		
28 March 78		10A-1		---		
13. TOTAL CORE RECOVERY FOR BORING		10A-1		16. DATE HOLE STARTED		
---		10A-1		28 March 78		
14. SIGNATURE OF INSPECTOR		10A-1		17. DATE HOLE COMPLETED		
Robert A. McVey Jr		10A-1		28 March 78		
15. TOTAL DEPTH OF HOLE		10A-1		18. TOTAL CORE RECOVERY FOR BORING		
9.0		10A-1		---		
16. TOTAL DEPTH OF HOLE		10A-1		19. SIGNATURE OF INSPECTOR		
9.0		10A-1		Robert A. McVey Jr		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	1. CORE RECOVERY %	2. BOX OR SAMPLE NO.	REMARKS (Noting size, nature, depth of penetration, etc., if appropriate)
			0.0 - 6.5			1. --- Dry hole.
			CLAY		A	
			0.0 - 2.8 - - high plasticity, very stiff, slightly moist, light gray and brown, calc.		B	2. Jars: A. 0.0 - 2.8 B. 2.8 - 6.5 C. 6.5 - 9.0
			2.8 - 6.5 - - low plastic, hard, dry, strong brown, calc, silty.		C	
			6.5 - 9.0			
			SAND - mostly fine and round, dry, dark brown, slightly calc, silty, slightly gravelly.			

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSILUCENT)

PROJECT

SOLE NO.

Sheet No. 10A-2

BELLING LOG		BORING		INSTALLATION		
PROJECT		SUBD		Pt North		
1. NAME		3. DATE		4. SIZE AND TYPE OF BIT		
2. LOCATION (Reference or Station)		10A-2		4" auger		
5. DRILLING AGENCY		10A-2		6. DATE FOR ELEVATION MEASUREMENT		
7. DRILLING METHOD		10A-2		7. MANUFACTURER'S DESIGNATION OF DRILL		
8. NAME OF DRILLER		10A-2		Falling 1500		
9. DATE OF DRILLING		10A-2		13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN		
10. ELEVATION GROUND WATER		10A-2		3		
11. DATE HOLE STARTED		10A-2		14. TOTAL NUMBER CORE BOXES		
28 March 78		10A-2		0		
12. ELEVATION TOP OF HOLE		10A-2		15. ELEVATION GROUND WATER		
28 March 78		10A-2		---		
13. TOTAL CORE RECOVERY FOR BORING		10A-2		16. DATE HOLE STARTED		
---		10A-2		28 March 78		
14. SIGNATURE OF INSPECTOR		10A-2		17. DATE HOLE COMPLETED		
Robert A. McVey Jr		10A-2		28 March 78		
15. TOTAL DEPTH OF HOLE		10A-2		18. TOTAL CORE RECOVERY FOR BORING		
5.2		10A-2		---		
16. TOTAL DEPTH OF HOLE		10A-2		19. SIGNATURE OF INSPECTOR		
5.2		10A-2		Robert A. McVey Jr		
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	1. CORE RECOVERY %	2. BOX OR SAMPLE NO.	REMARKS (Noting size, nature, depth of penetration, etc., if appropriate)
			0.0 - 5.2			1. --- Dry hole.
			CLAY		A	
			0.0 - 2.8 - - high plasticity, very stiff, slightly moist, black, non calc.		B	2. Jars: A. 0.0 - 2.8 B. 2.8 - 4.3 C. 4.3 - 5.2
			2.8 - 4.3 - - low plastic, very stiff, slightly moist, grayish brown, slightly calc, sandy and silty.		C	
			4.3 - 5.2 - - low plastic, very stiff, slightly moist, non calc, sandy and silty.			

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSILUCENT)

PROJECT

SOLE NO.

State No. 10A-2

DRILLING LOG		SECTION	SPD	INSTALLATION		Pt North		SHEET 1	
PROJECT Aguilla Dam				DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM	
LOCATION (Continuation of Section)				DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM	
DRILLING AGENCY USCR				DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM	
HOLE NO. (As shown on drawing and this sheet)		10A-2		DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM	
NAME OF DRILLER Brewer				DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM	
DIRECTION OF HOLE VERTICAL				DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM	
THICKNESS OF OVERBURDEN				DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM	
DEPTH DRILLED INTO ROCK				DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM	
TOTAL DEPTH OF HOLE		5.2		DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM	
ELEVATION		DEPTH		LEGEND		CLASSIFICATION OF MATERIALS		CORRECTION	
0.0 - 5.2		CLAY		1. see Dry hole.		2. Jars: A. 0.0 - 2.8 B. 2.8 - 4.3 C. 4.3 - 5.2			
0.0 - 2.8 -- high plasticity, very stiff, slightly moist, black, non calc.									
2.8 - 4.3 -- low plast, very stiff, slightly moist, grayish brown, slightly calc, sandy and silty.									
4.3 - 5.2 -- low plast, very stiff, slightly moist, non calc, sandy and silty.									

State No. 10A-3

DRILLING LOG		SECTION	SPD	INSTALLATION		Pt North		SHEET 1	
PROJECT Aguilla Dam				DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM	
LOCATION (Continuation of Section)				DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM	
DRILLING AGENCY USCR				DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM	
HOLE NO. (As shown on drawing and this sheet)		10A-3		DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM	
NAME OF DRILLER Brewer				DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM	
DIRECTION OF HOLE VERTICAL				DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM	
THICKNESS OF OVERBURDEN				DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM	
DEPTH DRILLED INTO ROCK				DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM	
TOTAL DEPTH OF HOLE		8.3		DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM	
ELEVATION		DEPTH		LEGEND		CLASSIFICATION OF MATERIALS		CORRECTION	
0.0 - 6.0		CLAY		1. see Dry hole.		2. Jars: A. 0.0 - 1.5 B. 1.5 - 3.1 C. 3.1 - 6.0 D. 6.0 - 8.3			
0.0 - 1.5 -- mod plasticity, stiff, moist, black non calc, very sandy and silty.									
1.5 - 3.1 -- high plast, very stiff, moist, red, non calc.									
3.1 - 6.0 -- high to med plast, very stiff, slightly moist, strong brown w/ some brown sized in, non calc, silty.									
6.0 - 8.3		SAND		SAND - mostly fine and round, moist, yellow to some colorless lenses, non calc, silty, slightly gravelly.					

DRILLING LOG		SECTION	SPD	INSTALLATION		Pt North		SHEET 1	
PROJECT Aguilla Dam				DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM	
LOCATION (Continuation of Section)				DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM	
DRILLING AGENCY USCR				DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM	
HOLE NO. (As shown on drawing and this sheet)		10A-4		DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM	
NAME OF DRILLER Brewer				DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM	
DIRECTION OF HOLE VERTICAL				DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM	
THICKNESS OF OVERBURDEN				DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM	
DEPTH DRILLED INTO ROCK				DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM	
TOTAL DEPTH OF HOLE		3.0		DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM		DATE AND TYPE OF BIT 4" ALUMINUM	
ELEVATION		DEPTH		LEGEND		CLASSIFICATION OF MATERIALS		CORRECTION	
0.0 - 0.9		SAND		SAND - fine and dry, brown, non calc.					
0.9 - 6.1		CLAY		0.9 - 5.3 -- high plasticity, very stiff slightly moist, calc, very strong brown oo w/ above after					
5.3 - 6.1 -- medium plastic, very stiff gray and strong non-calc, sandy									
6.1 - 9.0		SAND		SAND - fine and strong brown w/ gray, non calc.					

RECORD DRAWING

NOTE: SEE

DESIGNED BY:	
DRAWN BY:	ACC
CHECKED BY:	
SUBMITTED BY:	

TO ACCOMPANY FINAL FOUNDAT

Make No. 10A-3

PROJECT: Ft Worth SHEET: 1 OF 1 SHEETS

1. SIZE AND TYPE OF BIT: 4" AUGER

2. DATE FOR ELEVATION ABOVE ZERO: FALLING 1500

3. MANUFACTURER'S DESIGNATION OF DRILL: FALLING 1500

4. TOTAL NO. OF SAMPLES TAKEN: UNDISTURBED: 0 UNDISTURBED: 0

5. TOTAL NUMBER CORE BOXES: 0

6. ELEVATION GROUND WATER: 000

7. DATE HOLE STARTED: 28 March 78 COMPLETED: 28 March 78

8. ELEVATION TOP OF HOLE: 000

9. TOTAL CORE RECOVERY FOR BORING: 0

10. SIGNATURE OF INSPECTOR: Robert A. McVey Jr.

SECTION	DEPTH	REMARKS
A	1.000	Dry hole.
B	2. Jars:	
C	A. 0.0 - 1.5	
D	B. 1.5 - 3.1	
	C. 3.1 - 6.0	
	D. 6.0 - 9.0	

Make No. 10A-4

PROJECT: Aquilla Dam SHEET: 1 OF 1 SHEETS

1. LOCATION: (Coordinate or Station)

2. DATE FOR ELEVATION ABOVE ZERO: FALLING 1500

3. MANUFACTURER'S DESIGNATION OF DRILL: FALLING 1500

4. TOTAL NO. OF SAMPLES TAKEN: UNDISTURBED: 5 UNDISTURBED: 0

5. TOTAL NUMBER CORE BOXES: 0

6. ELEVATION GROUND WATER: 000

7. DATE HOLE STARTED: 28 March 78 COMPLETED: 28 March 78

8. ELEVATION TOP OF HOLE: 000

9. TOTAL CORE RECOVERY FOR BORING: 0

10. SIGNATURE OF INSPECTOR: Robert A. McVey Jr.

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	SECTION	REMARKS
10.00	0.0 - 0.9		SAND - fine and round, loose, dry, brown, non calc, silty.	A	1. *** Dry hole.
	0.9 - 6.1		CLAY	B	2. Jars:
	0.9 - 5.3		0.9 - 5.3 -- high plasticity, very stiff to hard, slightly moist, red, non calc, very slightly sandy. Strong brown color mixed w/ above after 2.5.	C	A. 0.0 - 0.9
	5.3 - 6.1		5.3 - 6.1 -- med to low plast, very stiff, moist, gray and strong brown, non calc, sandy.	D	B. 0.9 - 2.5
	6.1 - 9.0		6.1 - 9.0 SAND - fine and round, moist, strong brown w/ some light gray, non calc, silty.	E	C. 2.5 - 5.3
					D. 5.3 - 6.1
					E. 6.1 - 9.0

RECORD DRAWING-WORK AS BUILT

NOTE: SEE PLATE 1-2 FOR BORING LOCATIONS.

AM 0002	28NOV80	NEW SHEET
DESIGNED BY:	AQUILLA LAKE AQUILLA CREEK, TEXAS	
DRAWN BY:	ACCESS ROAD AND MAINTENANCE YARD LOGS OF BORINGS	
CHECKED BY:	10A-1, 10A-2, 10A-3, AND 10A-4	
SUBMITTED BY:	INV. NO.	SEQUENCE NO.
	DATED:	133A
	DRAWING NUMBER	SHEET NO. OF