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Multiple-Purpose Project
Little Blue River Basin
East Fork Little Blue River
Missouri

Blue Springs Lake

Operation and Maintenance Manual

Appendix IV
Volume Two

Construction Foundation Repo

US Army Corps
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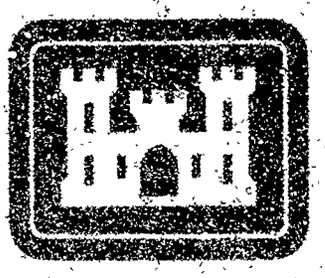
Operation and Maintenance Manual

Appendix IV
Volume Two

Construction Foundation Report



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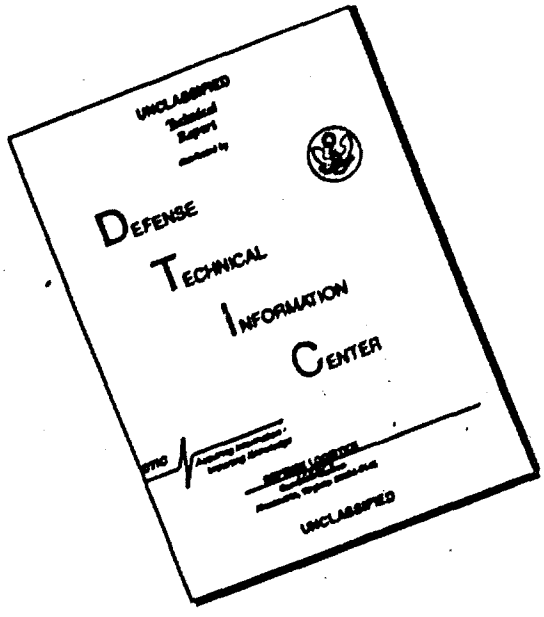

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REPORT DOCUMENTATION PAGE	READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER APPENDIX IV to the Blue Springs Lake, Missouri Operation & Maintenance Manual 2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) MULTIPLE-PURPOSE PROJECT; LITTLE BLUE RIVER BASIN; EAST FORK LITTLE BLUE RIVER, MO; BLUE SPRINGS LAKE, OPERATION AND MAINTENANCE MANUAL; APPENDIX IV, VOLUMES ONE & TWO CONSTRUCTION FOUNDATION REPORT	5. TYPE OF REPORT & PERIOD COVERED 29 Aug 82 to 15 Sep 88 6. PERFORMING ORG. REPORT NUMBER
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Control Determination: This report conforms to the intent of the exempt report catagories as set forth in AR 335-15 and under the paragraph 7-2y of the AR.

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

Volume Two (of 2 Volumes)
Construction Foundation Report

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

The purpose of this report is to provide a record of foundation conditions encountered during construction and methods used to adapt to these conditions. This information is a part of the permanent collection of project engineering data required by ER 1110-1-1801, change 2, dated 1 April 1983.

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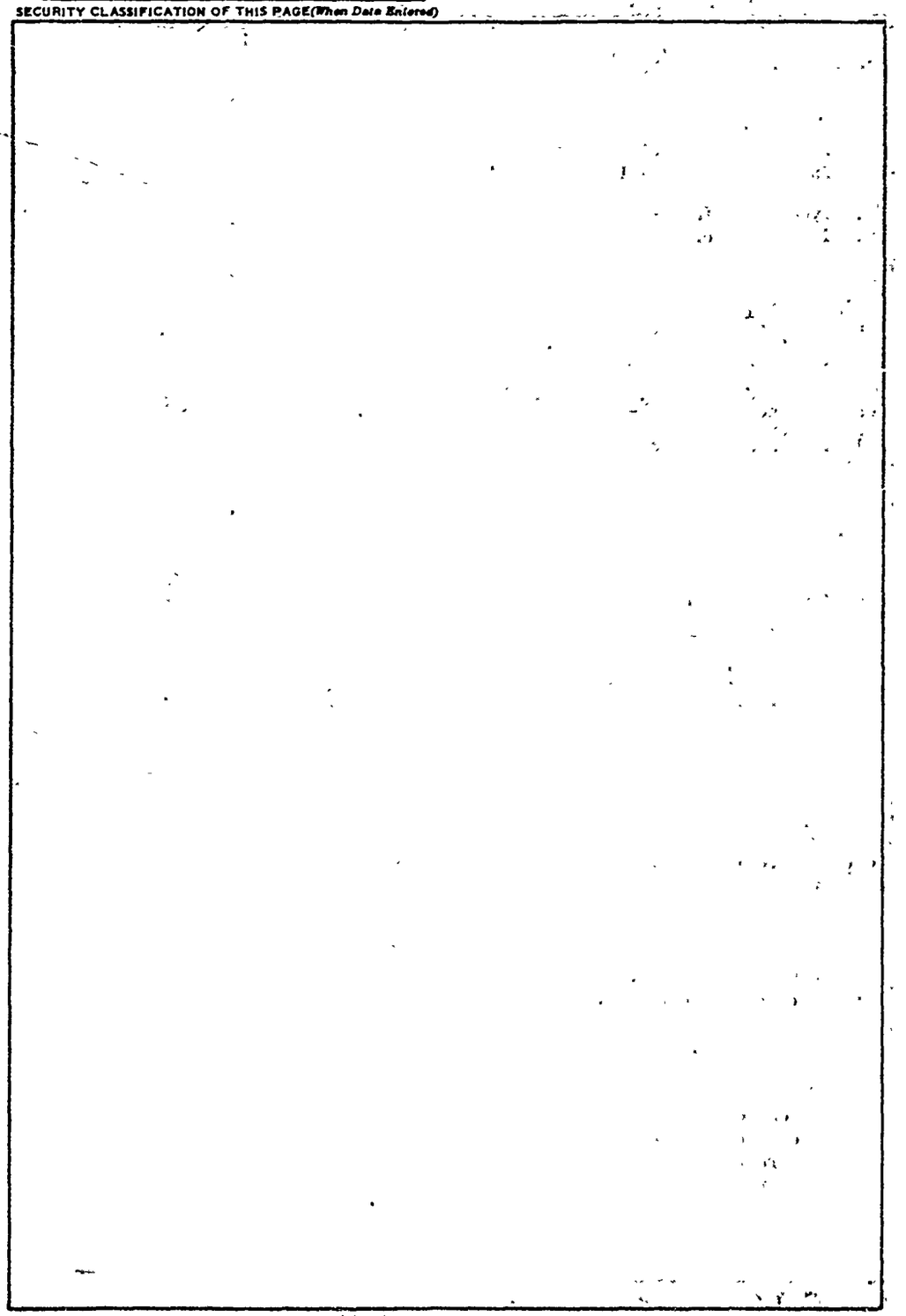

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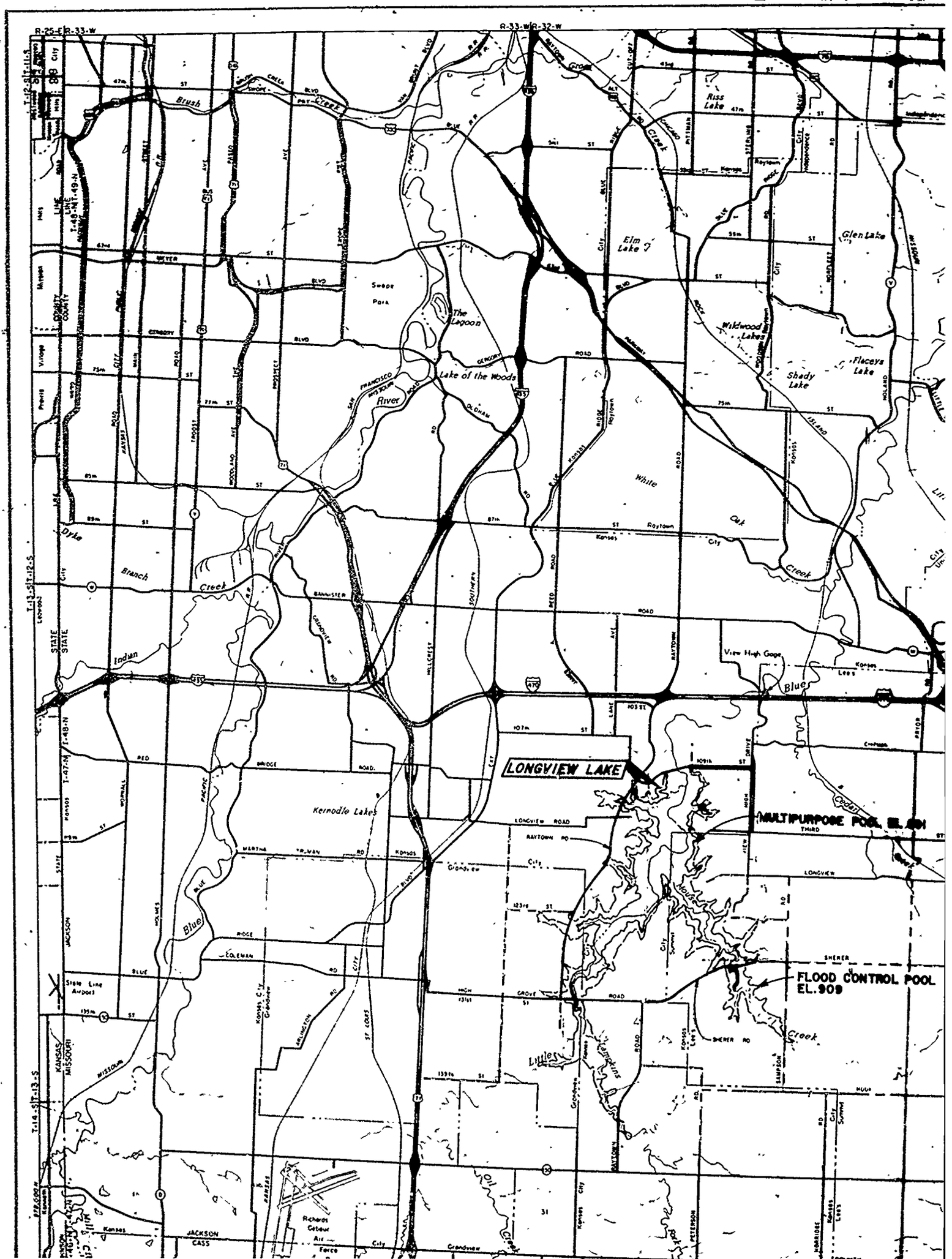
LONGVIEW LAKE
MULTIPURPOSE POOL EL.
FLOOD CONTROL POOL
EL.909
Kernodle Lakes
Lake of the Woods
The Lagoon
Swope Park
Elm Lake
Riss Lake
Glen Lake
Wildwood Lakes
Shady Lake
Flaceys Lake
White Oak Creek
Brush Creek
Indian Creek
Blue River
Dyke Branch
Little Hamkins
Oil Creek
Cedar Creek
Richards Gebaur Air Force
State Line Airport
View High Gage
R-25-E R-33-W
R-33-W R-32-W
T-12-S T-11-S
T-13-S T-12-S
T-14-S T-13-S
T-48-N T-49-N
T-47-N T-48-N
KANSAS
MISSOURI
JACKSON
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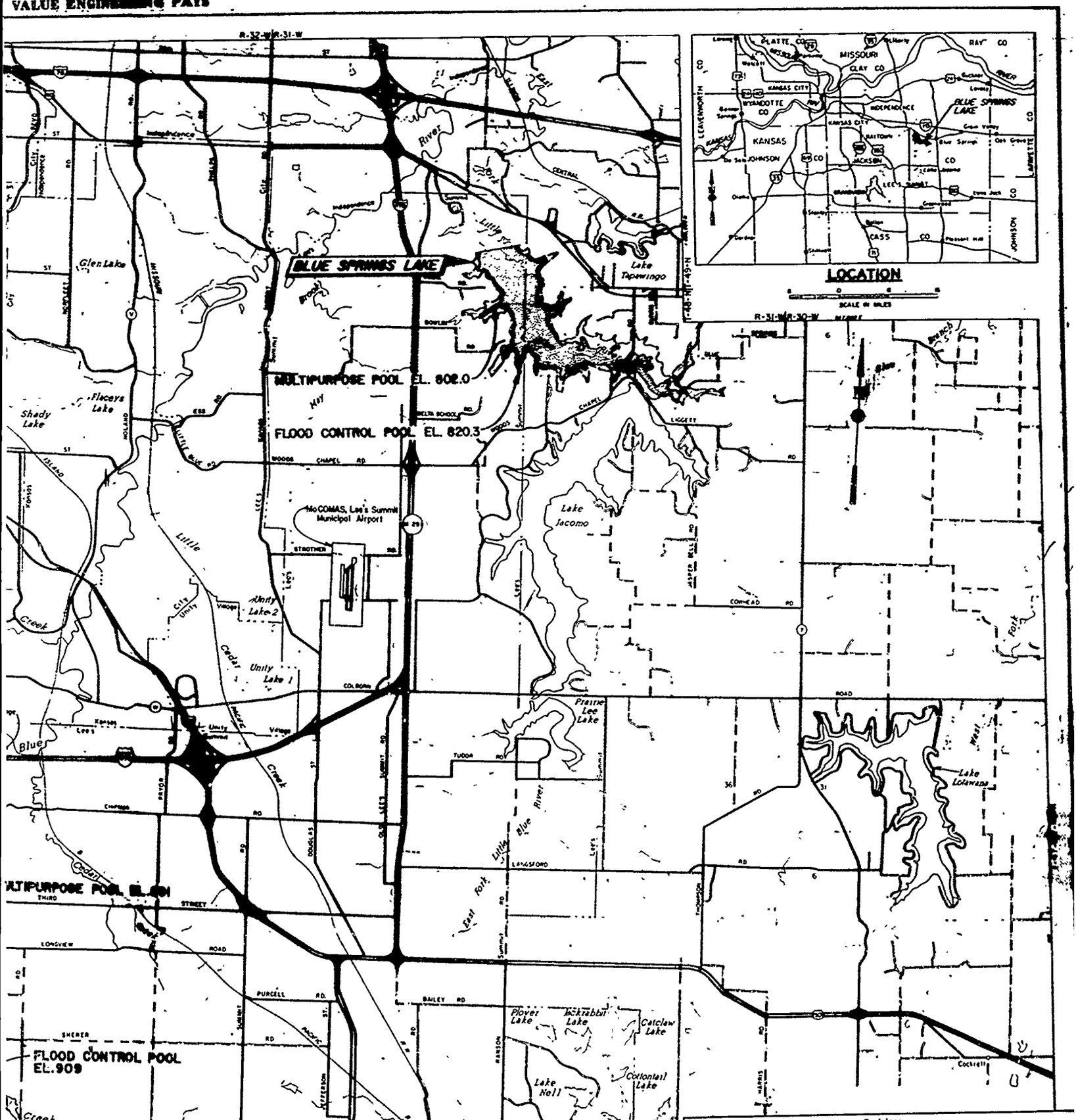


Revisions			
Symbol	Descriptions	Date	Approved

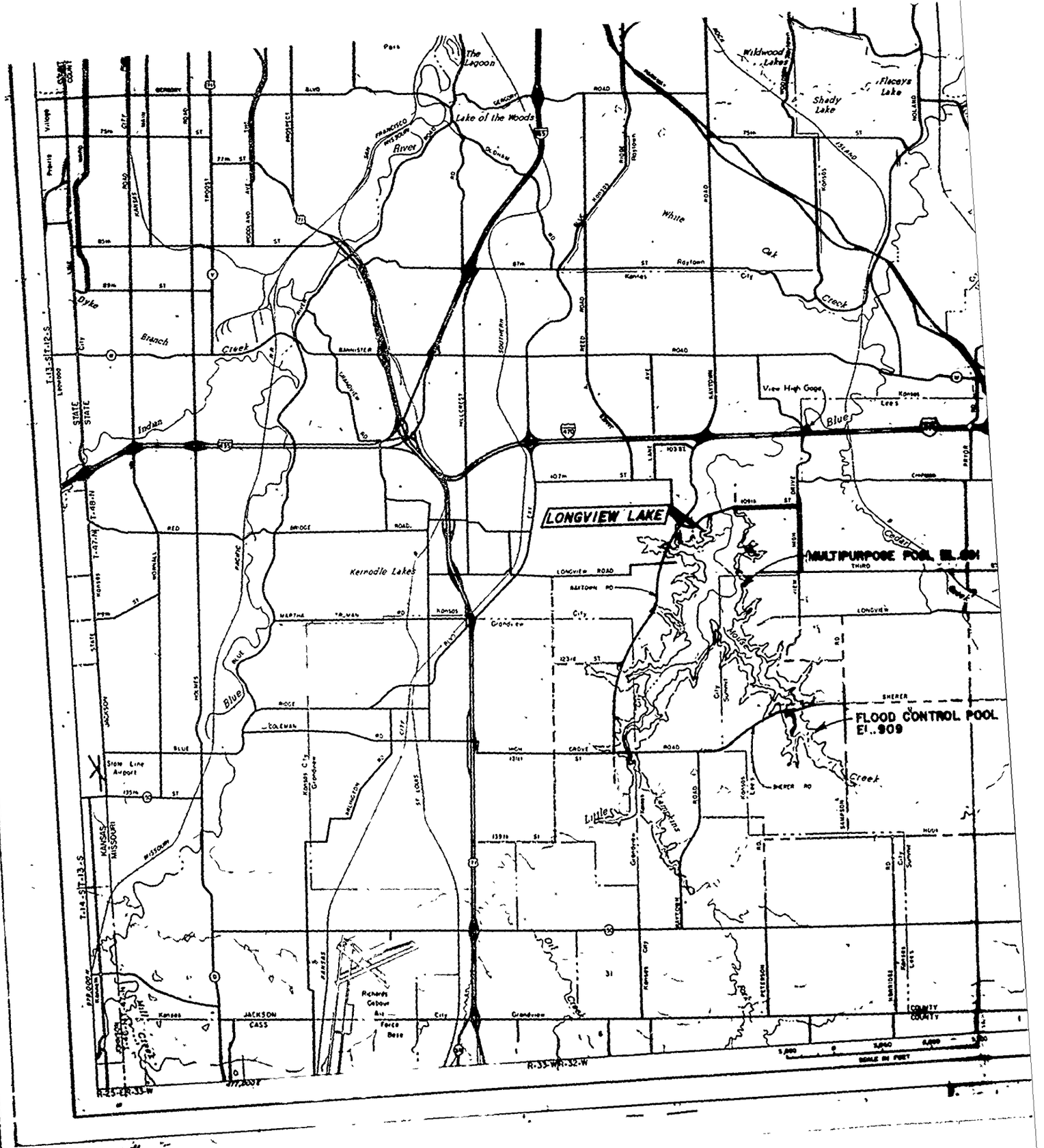
U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by:
Checked by:

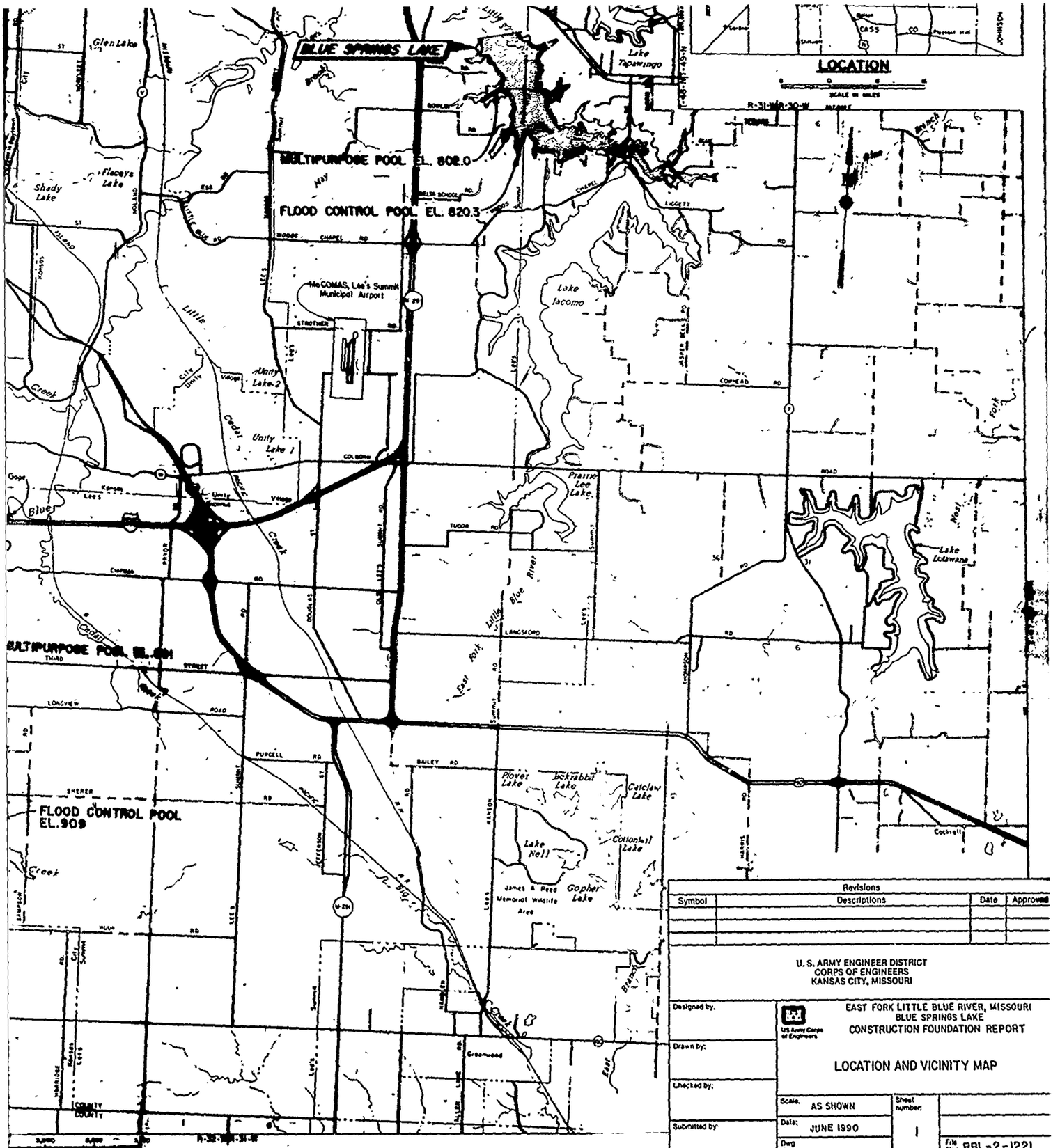
US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

LOCATION AND VICINITY MAP



LONGVIEW LAKE
MULTIPURPOSE POOL EL.
FLOOD CONTROL POOL
EL.909
The Lagoon
Lake of the Woods
Wildwood Lakes
Shady Lake
Flaceys Lake
White Oak Creek
Dyke Branch
Indian Creek
Blue River
View High Gage
Kernodle Lakes
Cedar Creek
Little Lemokins
Oil Creek
Mill Creek
Richards Gebaur Air Force Base
State Line Airport
KANSAS
MISSOURI
JACKSON
CASS
COUNTY
R-33-W R-32-W
R-25-E R-33-W
T-13-S T-12-S
T-14-S T-13-S
T-47-N T-48-N
SCALE IN FEET


BLUE SPRINGS LAKE
LOCATION
MULTIPURPOSE POOL EL. 802.0
FLOOD CONTROL POOL EL. 820.3
McCOMAS, Lee's Summit Municipal Airport
Lake Tapawingo
Lake Jacomo
Prairie Lee Lake
Lake Lotawana
Unity Lake 2
Unity Lake 1
Glen Lake
Shady Lake
Flaceys Lake
Plover Lake
Jackrabbit Lake
Catclaw Lake
Cottontail Lake
Lake Nell
Gopher Lake
James A Reed Memorial Wildlife Area
FLOOD CONTROL POOL EL.909
Revisions
Symbol
Descriptions
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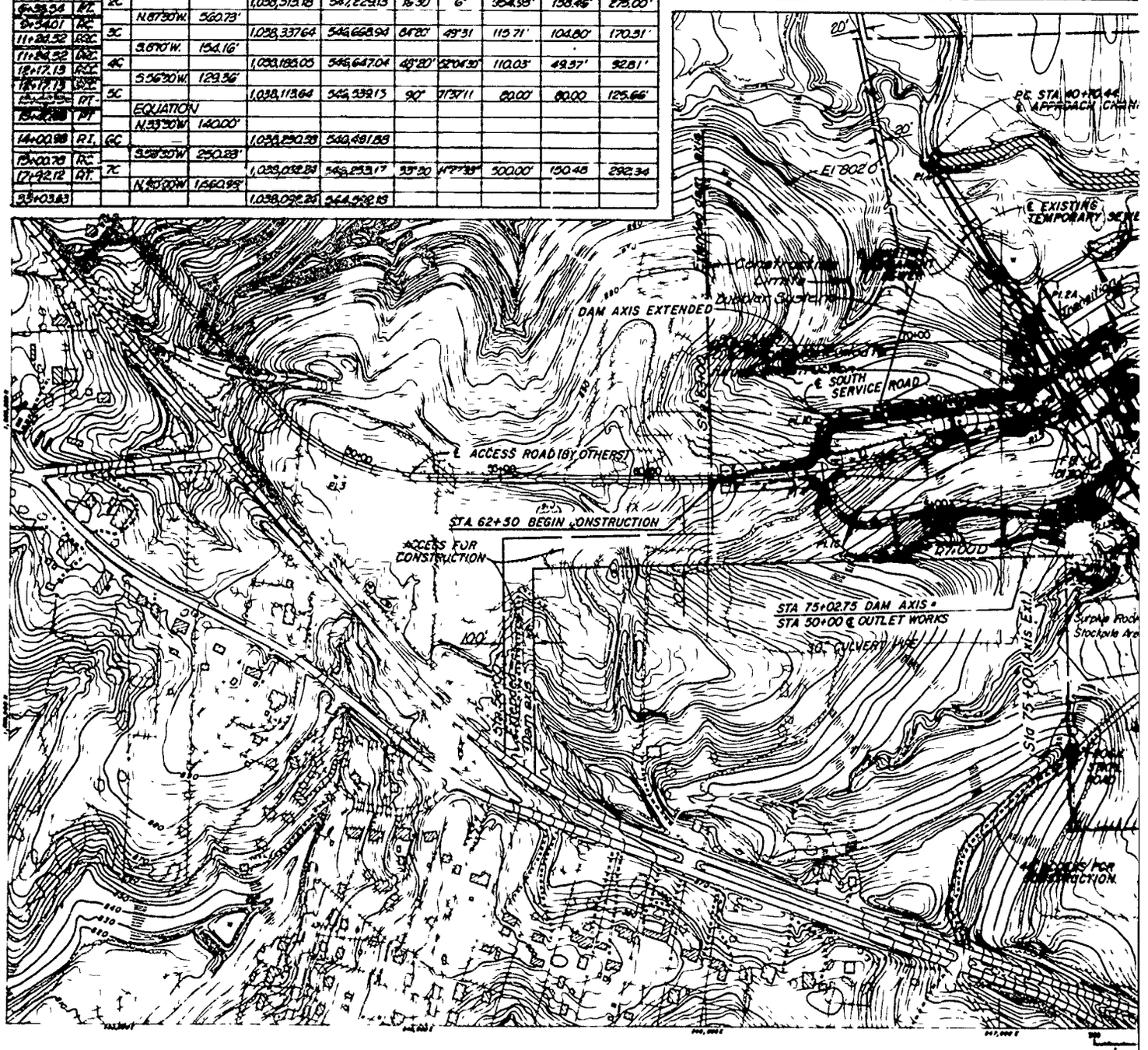
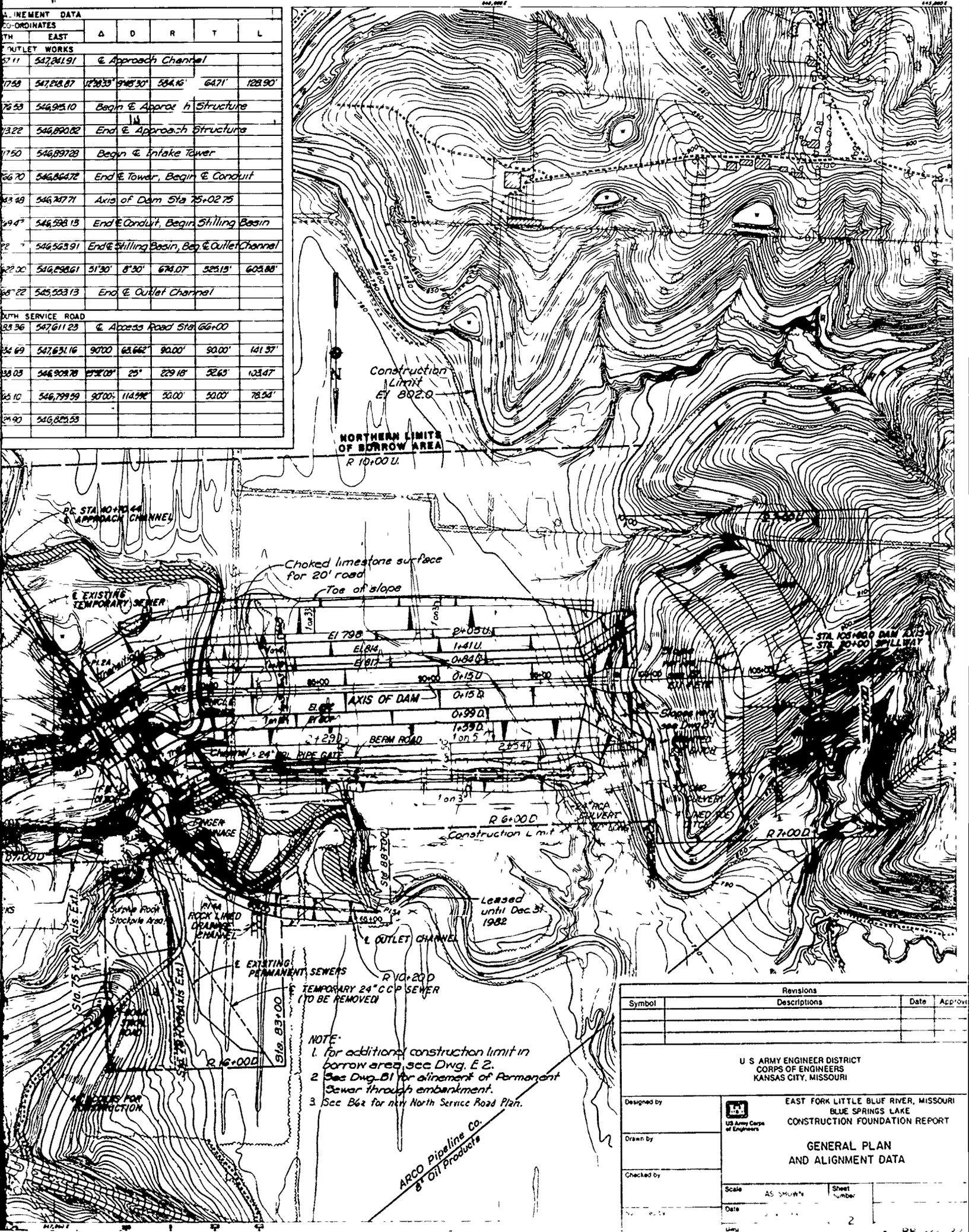
U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI
Designed by:
Drawn by:
Checked by:
Submitted by:
US Army Corps of Engineers
EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT
LOCATION AND VICINITY MAP
Scale: AS SHOWN
Date: JUNE 1990
Sheet number: 1
Dwg No.:
File No.: RBL-2-1221
PLATE NO.

ALINEMENT DATA											
STATION	POT	PI	BEARING	DISTANCE	CO-ORDINATES NORTH	CO-ORDINATES EAST	Δ	D	R	T	L
ACCESS ROAD AND DAM ALIGNMENT											
57+08.42		1			1,037,510.10	550,134.30	0°	-	-	-	-
			S 48°25'W.	163.21'							
36+72.63		2			1,037,401.03	550,012.89	66°16'09"	-	-	-	-
			W 42°00'W.	1,102.91'							
46+38.84	PC										
55+99.12	PT	3			1,038,217.20	549,271.53	47°25'	8°	716.80'	317.00'	596.88'
20+91.80	PC		W 90°00'W.	1,622.08'							
70+88.33	PT	4			1,038,217.20	547,649.45	13°00'	1°30'	3,819.72'	469.00'	933.33'
78+33.37	PC		S 76°00'W.	807.25'							
78+70.04	PT	5			1,038,021.91	545,866.80	19°30'	9°	636.62'	109.39'	216.67'
79+00.02	PC		S 56°30'W.	503.66'							
80+20.02	PT	6			1,037,743.92	546,446.80	32°00'	10°	572.96'	164.23'	320.00'
			S 88°30'W	2,704.31'							
105+60.01		7			1,037,679.19	543,742.82	℄ Spillway Sta 70+00				
SPILLWAY											
10+00	POT				1,037,708.23	544,420.27					
			N 69°30'W	250.00'							
12+50	PC				1,037,113.78	544,186.11					
			N 69°30'W	488.21'							
		1B			1,037,284.75	543,728.81	70°30'	8.294°	69.180'	488.21'	850.00'
			N 1°00'E	488.21'							
21+00	PT				1,037,772.89	543,737.33					
			N 1°00'E	500.00'							
26+00					1,038,272.81	543,746.06					
80+00	POC				1,037,673.13	543,742.82	℄ Dam Sta 103+60.04				
			N 50°43'W.	99.91'							
21+00	PT				1,037,772.89	543,737.33					
NORTH SERVICE ROAD											
0+00	POT				1,038,183.36	547,611.23	℄ Access Road Sta 66+00				
			N 75°55'W.	219.76'							
0+51.22	PC	1C			1,038,401.18	547,588.05	96°22'00"	35°	150.75'	158.54'	253.60'
3+04.82	PT		S 75°00'W	363.72'							
3+42.24	PC										
6+38.94	PT	2C			1,038,313.18	547,229.13	15°30'	6°	354.93'	138.46'	275.00'
6+76.01	PC		N 87°30'W.	560.73'							
11+86.52	PCC	3C			1,038,337.64	546,668.94	84°20'	49°31'	115.71'	104.80'	170.31'
11+86.52	CC		S 6°30'W.	154.16'							
12+17.19	PCC	4C			1,038,188.05	546,647.04	48°20'	52°04'30"	110.03'	49.37'	92.81'
12+17.19	CC		S 56°30'W.	129.36'							
13+17.19	PT	5C			1,038,113.64	545,533.13	90°	71°37'11"	80.00'	80.00	125.66'
13+42.88	PT		EQUATION								
			N 33°30'W	140.00'							
14+00.98	RT	GC			1,038,290.39	546,491.88					
15+00.78	RC		S 58°30'W	250.38'							
17+92.12	RT	7C			1,038,032.84	545,253.17	33°30'	41°27'33"	300.00'	150.45	292.34
			N 40°00'W	1,560.95'							
33+03.83					1,038,032.26	544,592.19					

ALINEMENT DATA									
STATION	POT	PI	BEARING	DISTANCE	CO-ORDINATES NORTH	CO-ORDINATES EAST	Δ	D	
OUTLET WORKS									
40+70.44	PC				1,037,157.11	547,241.91	℄ Approach		
			N 80°51'27"W.	64.71'					
		1A			1,037,217.53	547,218.87	12°58'59"	9°48'30"	
			N 33°30'W	550.37'					
46+85	POT				1,037,676.53	546,915.10	Begin ℄ Ap		
			N 33°30'W	44.00'					
47+29		2A			1,037,713.22	546,890.82	End ℄ Ap		
			N 56°30'E	7.75'					
47+29		3A			1,037,717.50	546,897.28	Begin ℄ T		
			N 33°30'W.	59.00'					
47+88	POT				1,037,766.70	546,864.72	End ℄ Towe		
			N 33°30'W	212.00'					
50+00	POT				1,037,943.48	546,747.71	Axis of Da		
			N 33°30'W	271.00'					
52+71	POT				1,038,169.47	546,598.13	End ℄ Condu		
			N 33°30'W.	62.00'					
53+33	POT				1,038,221.17	546,562.91	End ℄ Stilling B		
			N 33°30'W	480.68'					
54+83.85	PC	4A			1,038,622.00	546,298.61	51°30'	8°30'	
60+94.43	PT		N 85°00'W	748.33'					
65+17.63		5A			1,038,687.22	545,553.13	End ℄ Out		
SOUTH SERVICE ROAD									
0+00	POT				1,038,183.36	547,611.23	℄ Access R		
			S 73°55'E.	150.00'					
0+60	PC.	1D			1,038,034.69	547,631.16	90°00'	63.662'	
2+01.37	PT.		S 82°22'16"W.	72.762'					
7+06.56	PC.	2D			1,037,938.03	546,908.78	6°28'08"	25°	
8+90.05	PT		S 56°30'W	132.14'					
9+19.54	PC	3D			1,037,865.10	546,799.59	90°00'	114.592'	
9+98.08	RT		S 33°30'E	50.00'					
9+98.08	PT				1,037,825.90	546,825.53			



ALINEMENT DATA						
CO-ORDINATES						
TH	EAST	Δ	D	R	T	L
OUTLET WORKS						
57 11	547,241.91	℄ Approach Channel				
1758	547,218.87	12°38'39"	9°45'30"	584.16'	64.71'	128.90'
76 53	546,945.10	Begin ℄ Approach Structure				
13.22	546,890.82	End ℄ Approach Structure				
1750	546,897.28	Begin ℄ Intake Tower				
66 70	546,864.72	End ℄ Tower, Begin ℄ Conduit				
83 38	546,747.71	Axis of Dam Sta 75+02.75				
694	546,598.13	End ℄ Conduit, Begin Stilling Basin				
28	546,563.91	End ℄ Stilling Basin, Beg ℄ Outlet Channel				
22.00	546,598.61	51°30'	8°30'	674.07'	325.13'	605.88'
68 22	545,553.13	End ℄ Outlet Channel				
SOUTH SERVICE ROAD						
83 36	547,611.23	℄ Access Road Sta 66+00				
34 69	547,631.16	90°00'	63.662'	90.00'	90.00'	141.37'
38 03	546,909.78	57°18'08"	25°	229.18'	126.63'	103.47'
65 10	546,799.59	90°00'	114.592'	50.00'	50.00'	78.54'
24 90	546,885.53					



NOTE:
1. For additional construction limit in borrow area, see Dwg. E 2.
2. See Dwg. B1 for alinement of Permanent Sewer through embankment.
3. See B62 for new North Service Road Plan.

Revisions			
Symbol	Descriptions	Date	Approv

U S ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by

Drawn by

Checked by

Supervised by

US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

GENERAL PLAN
AND ALIGNMENT DATA

Scale AS SHOWN

Sheet Number 2

Date

80+20.02	PT	6			1,037,823.36	543,442.60	32.00'	10'	512.56'	164.29'	320.00'
			S 68°30'W	2,704.31'							
105+60.04		7			1,037,672.13	545,732.82	℄ Spillway Sta 20+00				

SPILLWAY

10+00	POT				1,037,066.29	544,420.27					
			N 68°30'W	250.00'							
12+50	PC				1,037,113.78	544,176.11					
			N 69°30'W	488.21'							
		1B			1,037,284.75	543,728.81	70°30'	8.294°	690.60'	488.21'	850.00'
			N 1°00'E	488.21'							
21+00	PT				1,037,772.89	543,737.33					
			N 1°00'E	500.00'							
26+00					1,038,272.81	543,746.06					
20+00	POC				1,037,673.13	543,722.82	℄ Dam Sta 105+60.04				
			N 30°49'W	99.91'							
21+00	RT				1,037,772.89	543,737.33					

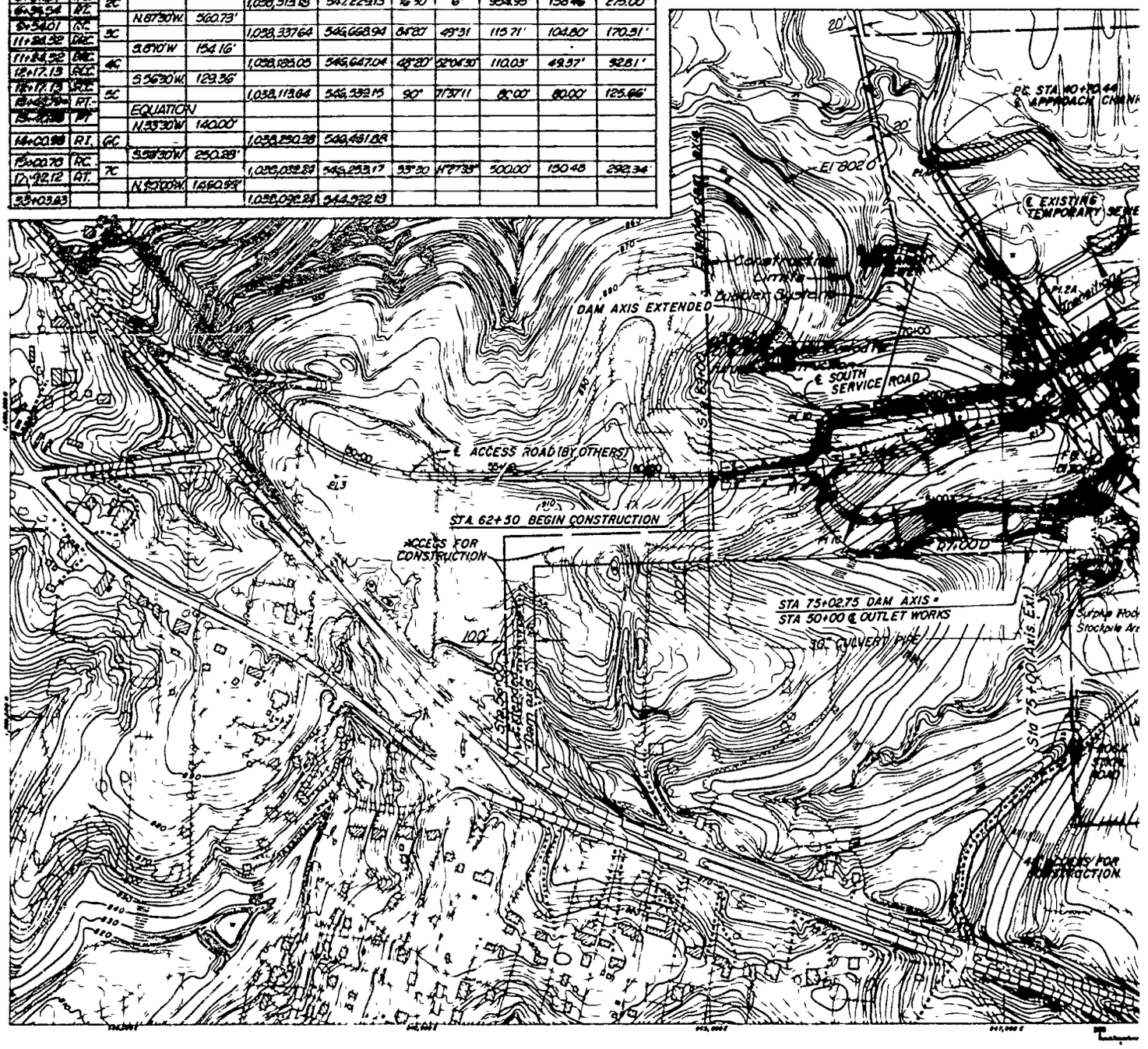
NORTH SERVICE ROAD

0+00	POT				1,038,183.36	547,611.23	℄ Access Road Sta 66+00				
			N 7°35'35"W	219.76'							
0+51.22	PC	1C			1,038,401.19	547,532.05	66°20'05"	55'	150.78'	158.56'	253.60'
3+04.82	PT		S 76°00'W	563.72'							
3+67.34	PC	2C			1,038,313.19	547,229.13	15°30'	6°	954.93'	138.46'	275.00'
6+29.94	PT		N 87°30'W	560.73'							
8+34.01	PC	3C			1,038,337.64	546,668.94	84°30'	49°31'	115.71'	104.80'	170.31'
11+84.32	PRC		S 2°10'W	154.16'							
11+84.32	PRC	4C			1,038,185.05	546,647.04	48°30'	32°04'30"	178.63'	49.37'	92.81'
12+17.13	PCC		S 56°30'W	129.36'							
13+17.13	SRC	5C			1,038,113.84	546,539.15	90°	7°37'11"	80.00'	80.00'	125.66'
13+42.79	PT		EQUATION								
13+42.79	PT		N 33°30'W	140.00'							
14+20.88	RT	GC			1,038,250.38	546,481.89					
15+20.78	PC		S 56°30'W	250.88'							
17+92.12	AT	7C			1,038,032.83	546,253.17	93°30'	4°27'35"	500.00'	130.48'	290.34'
			N 33°00'W	1,660.98'							
33+03.83					1,038,096.86	544,922.13					

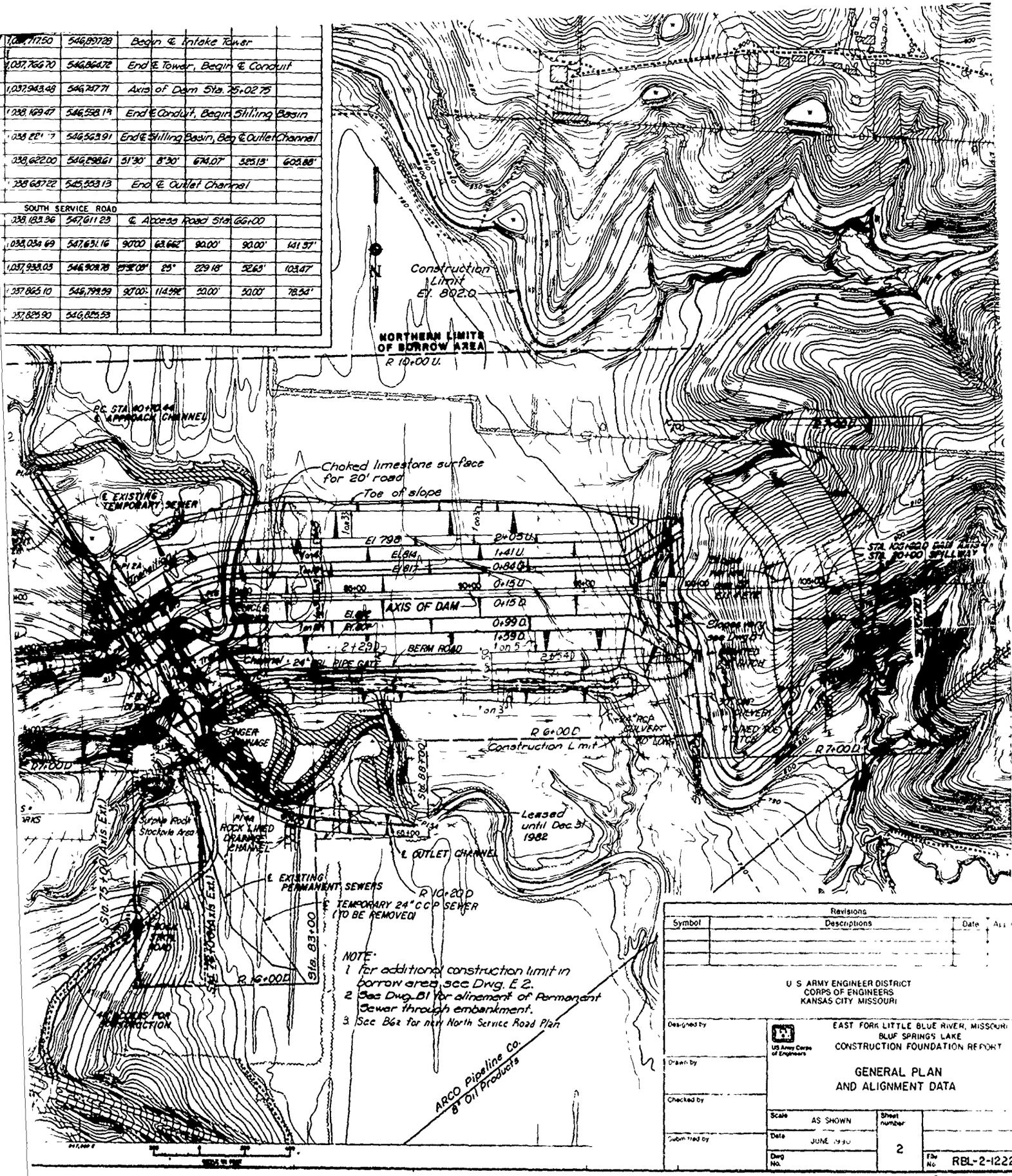
47+66	POT				1,037,766.10	546,864.72	End ℄ Tower				
			N 33°30'W	212.00'							
50+00	POT				1,037,943.48	546,747.71	Axis of Dam				
			N 33°30'W	271.00'							
52+71	POT				1,038,169.47	546,598.13	End ℄ Conduit				
			N 33°30'W	6.00'							
53+33	POT				1,038,221.17	546,563.91	End ℄ Stilling Basin				
54+88.55	PC	4A	N 33°30'W	480.65'							
60+94.43	PT				1,038,622.00	546,298.61	51°30'	8°30'			
			N 85°00'W	748.33'							
65+17.63		5A			1,038,687.22	545,553.13	End ℄ Outlet				

SOUTH SERVICE ROAD

0+00	POT				1,038,183.36	547,611.23	℄ Access Road				
			S 75°55'E	150.00'							
0+60	PC	1D			1,038,034.69	547,631.16	90°00'	63.662'			
2+01.37	PT		S 82°20'W	727.82'							
7+86.56	PC	2D			1,037,938.03	546,909.78	2°52'09"	25°			
8+90.09	PT		S 56°30'W	132.14'							
9+19.54	PC	3D			1,037,865.10	546,799.59	90°00'	114.592'			
9+98.08	RT		S 33°30'E	50.00'							
9+98.08	PT				1,037,825.90	546,825.53					



1,0[illegible],717.50	546,897.28	Begin ℄ Intake Tower				
1,037,766.70	546,864.72	End ℄ Tower, Begin ℄ Conduit				
1,037,943.48	546,747.71	Axis of Dam Sta. 75+02.75				
1,038,169.47	546,558.19	End ℄ Conduit, Begin Stilling Basin				
1,038,22[illegible]	546,563.91	End ℄ Stilling Basin, Beg ℄ Outlet Channel				
1,038,622.00	546,298.61	51°30'	8°30'	674.07'	325.13'	605.88'
1,038,687.22	545,553.13	End ℄ Outlet Channel				
SOUTH SERVICE ROAD						
1,038,183.36	547,611.23	℄ Access Road Sta. 66+00				
1,038,034.69	547,631.16	90°00'	63.662'	90.00'	90.00'	141.37'
1,037,938.03	546,909.78	25°32'08"	25°	229.18'	52.63'	103.47'
1,037,865.10	546,799.59	90°00'	114.592'	50.00'	50.00'	78.54'
1,037,825.90	546,825.53					



Revisions			
Symbol	Descriptions	Date	Appr'y

U S ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY MISSOURI

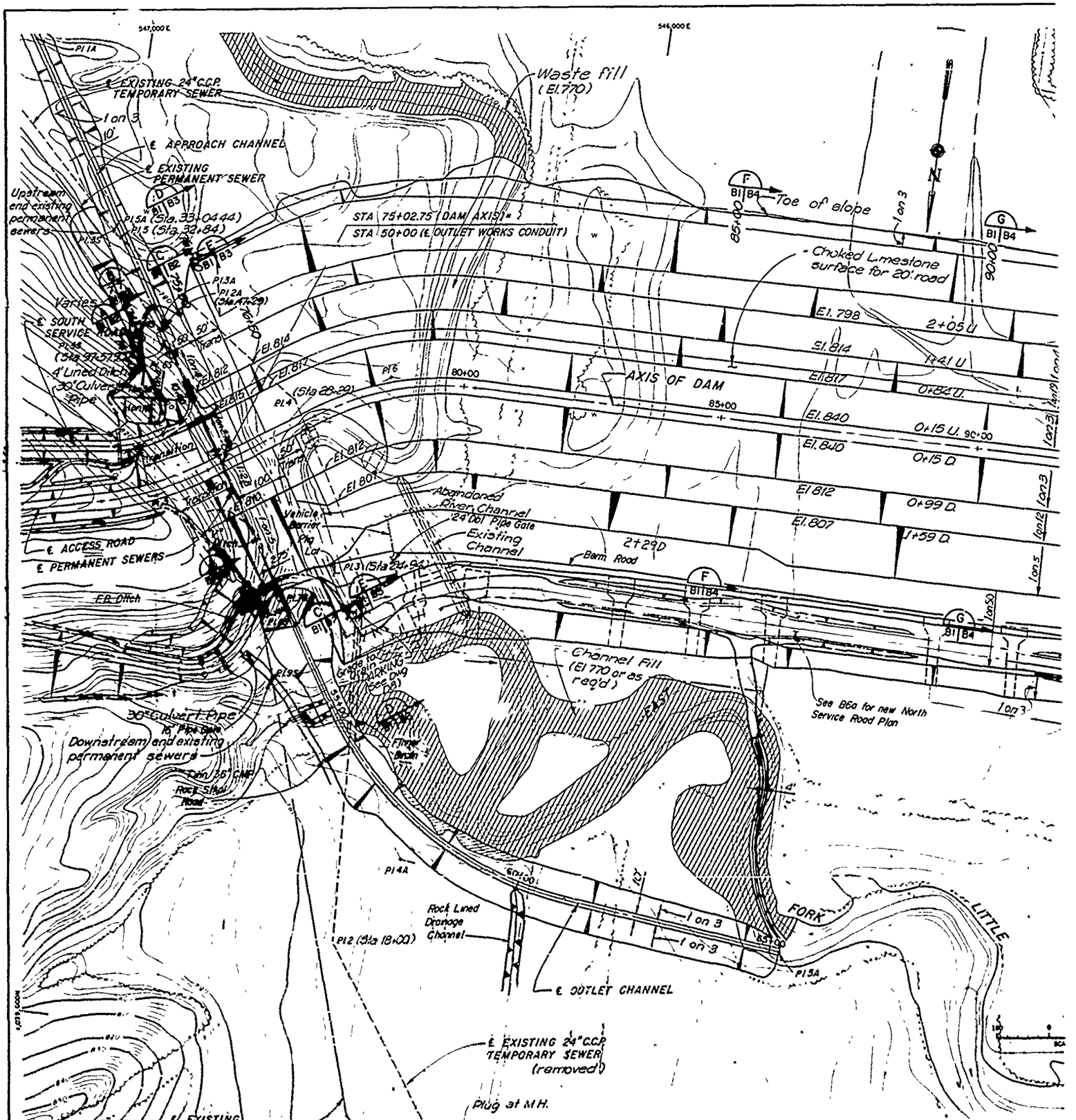
US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

GENERAL PLAN
AND ALIGNMENT DATA

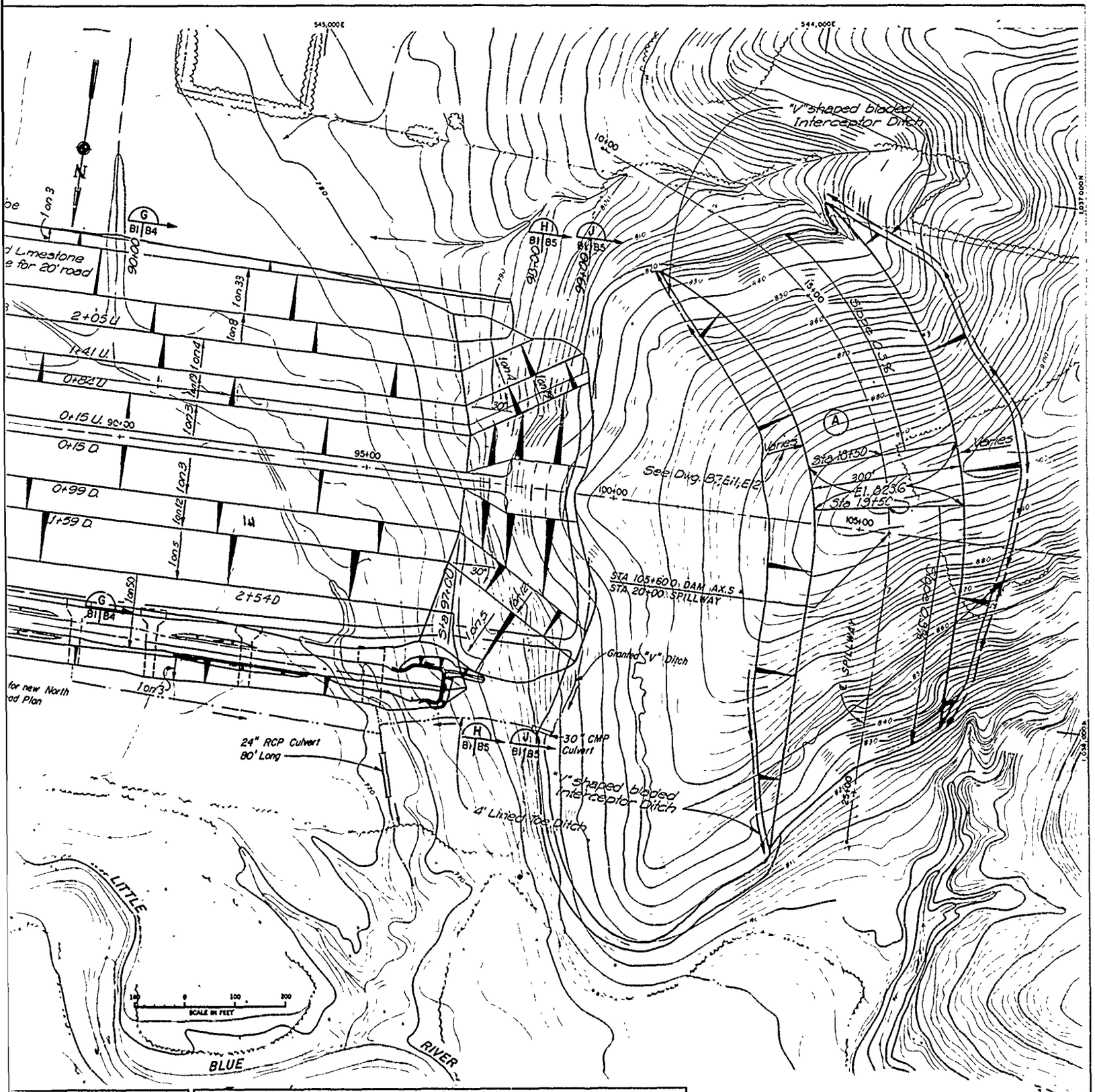
Designed by			
Drawn by			
Checked by			
Submitted by	Scale: AS SHOWN	Sheet number: 2	
	Date: JUNE 1990		
	Dwg No.		File No. RBL-2-1222

PLATE NO



SEWER ALINEMENT DATA

STATION C O E	PL	COE PI	BEARING	DISTANCE	CO-ORDINATES NORTH	CO-ORDINATES EAST	REMARKS
EXISTING PERMANENT SEWER (STATIONING ALONG ℄ OF DOUBLE SEWERS)							
95+14.52		Start			1,037,556.41	547,039.51	Upstream Termination of Exist Perm Sewer
			N46°33'41"W	5.72'			
95+20.24		35			1,037,560.34	547,035.36	
			N40°17'43"W	204.40'			
97+24.64		45			1,037,716.26	546,903.18	P.I. Inside Sewer Approach Structure
			N.33°30'W.	33.29'			
97+57.93		55			1,037,744.02	546,884.81	P.I. inside Tower
			N.39°01'39"W	15.57'			
97+73.50		65			1,037,756.12	546,875.01	P.I. inside Tower
			N33°30'W	225.50'			
100+00					1,037,943.00	546,750.00	Centerline of Dam = 75+00 Dam Axis
			N.33°30'W	254.46'			
102+54.46		75			1,034,157.19	546,609.56	Breakout at Conduit
			N.11°30'E	70.42'			
103+24.88		85			1,038,226.20	546,623.59	
			N.18°00'W	101.31'			
104+26.19		95			1,039,325.41	546,591.36	Downstream Termination Exist Perm Sewer



REMARKS	BURNS & McDONNELL STATION	PI		BEARING	DISTANCE	CO-ORDINATES NORTH	CO-ORDINATES EAST	REMARKS
EWERS)	EXIST ø (EMPORARY 24"ø CCP SEWER (APPROXIMATE LOCATION)							
termination of Exist Perm Sewer	12+00	1				1,039,272.31	546,055.82	Downstream termination Plug manhole
	18+00	2		S36°22'00"E	600.00'	1,038,789.17	546,411.59	
	24+93	3		S31°13'00"E	693.00'	1,038,096.86	546,450.53	
le Sewer Approach Structure	28+29	4		S31°29'00"E	335.00'	1,037,810.37	546,625.49	Temporary sewer to be removed
le Tower	32+84	5		S36°37'00"E	455.00'	1,037,560.44	547,005.56	
le Tower	33+04.41	5A		S46°57'00"E	204.41'	1,037,542.13	547,009.50	
ne of Dam = 75+00 Dam Axis	97+77.58			S46°57'00"E	473.14'			Upstream termination Plug Ends
ut at Conduit						1,037,223.50	547,346.25	
Dam Termination Exist Perm Sewer								

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

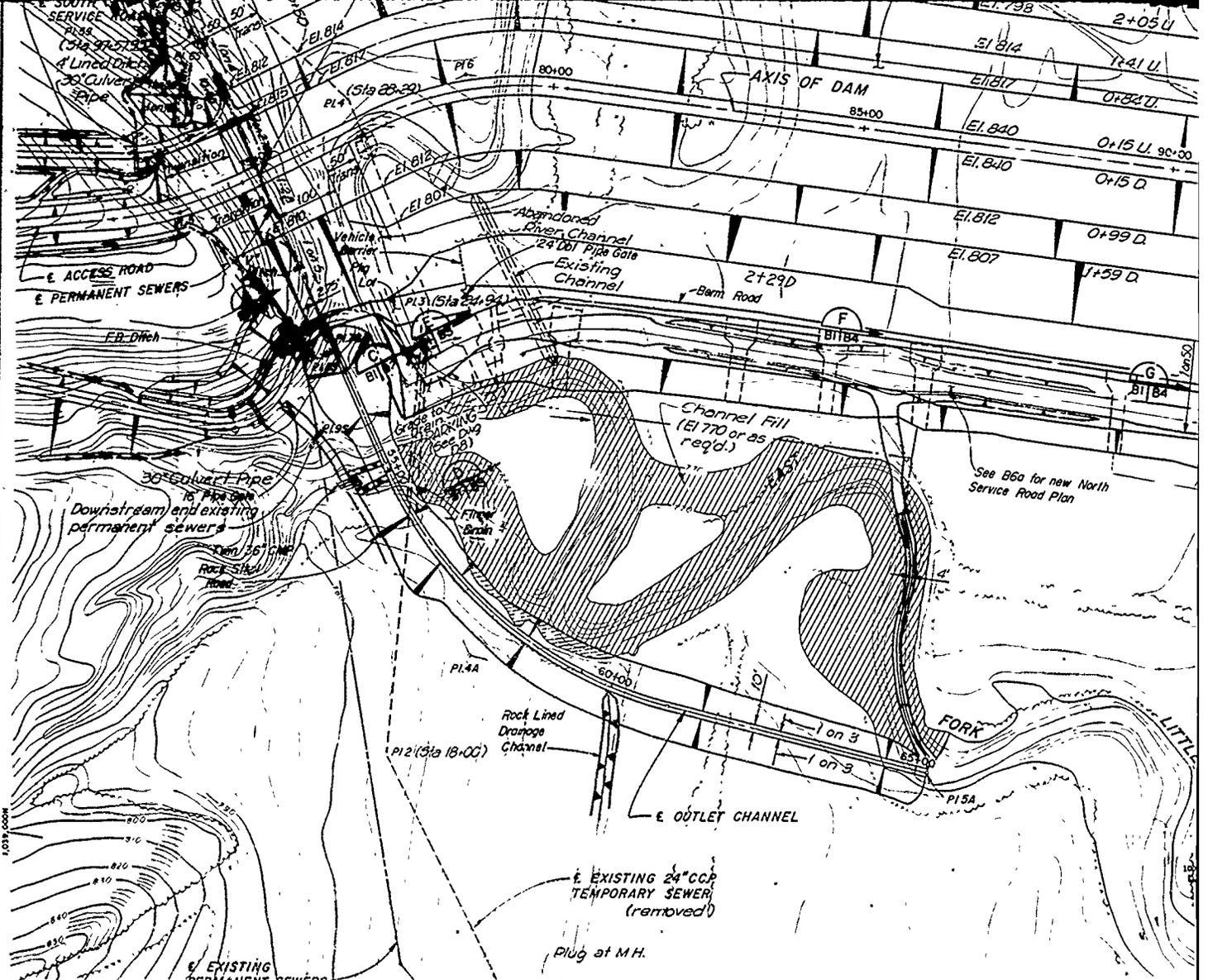
Designed by:
Drawn by:
Checked by:

US Army Corps of Engineers

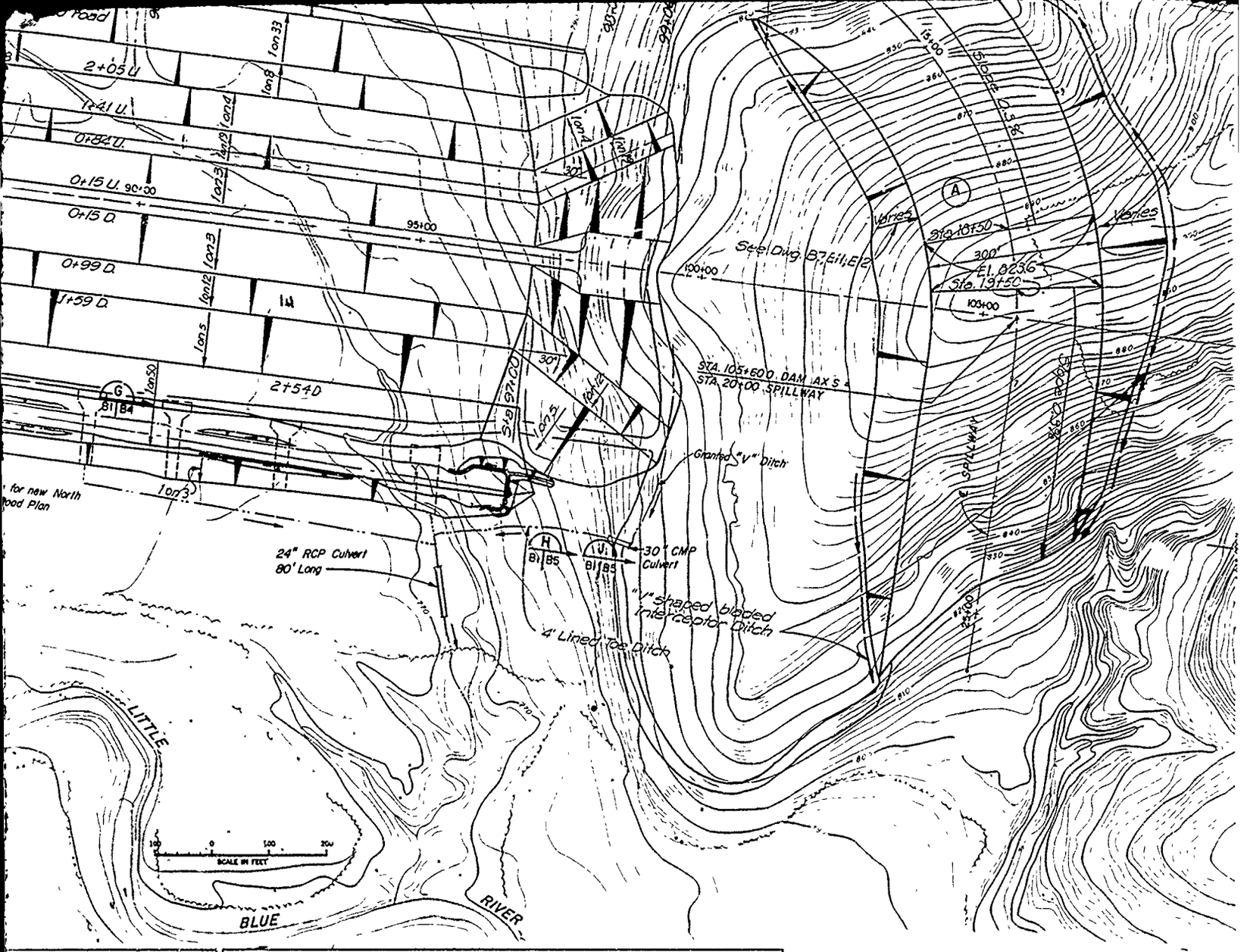
EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

EMBANKMENT PLAN AND SEWER ALINEMENT DATA

Scale: AS SHOWN
Sheet number



SEWER ALINEMENT DATA							
STATION C.O.E.	PI.	COE PI	BEARING	DISTANCE	CO-ORDINATES NORTH	CO-ORDINATES EAST	REMARKS
EXISTING PERMANENT SEWER (STATIONING ALONG € OF DOUBLE SEWERS)							
95+14.52		Start			1,037,556.41	547,039.51	Upstream Termination of Exist Se
95+20.24		35	N 46°35'41"W	5.72'	1,037,560.33	547,035.36	
97+24.64		45	N 40°17'14"W	204.40'	1,037,716.26	546,903.18	RI. Inside Sewer Approach Stru
97+57.93		55	N 33°30'W	33.29'	1,037,744.02	546,884.81	PI Inside Tower
97+73.50		65	N 39°01'39"W	15.57'	1,037,756.12	546,875.01	RI Inside Tower
100+00			N 33°30'W	226.50'	1,037,943.00	546,750.00	Centerline of Dam - 75+00 Ou
102+54.46		75	N 33°30'W	254.46'	1,034,157.19	546,609.55	Break-out at Conduit
103+24.88		85	N 11°30'E	70.42'	1,038,226.20	546,623.59	
104+29.19		95	N 18°00'W	104.31'	1,038,325.31	546,591.36	Downstream Termination Exist Pe


2+05 U.
1+41 U.
0+84 U.
0+15 U. 90+00
0+15 D.
95+00
0+99 D.
1+59 D.
2+54 D.
Lon 33
Lon 8
Lon 24
Lon 9
Lon 7
Lon 31
Lon 3
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Lon 50
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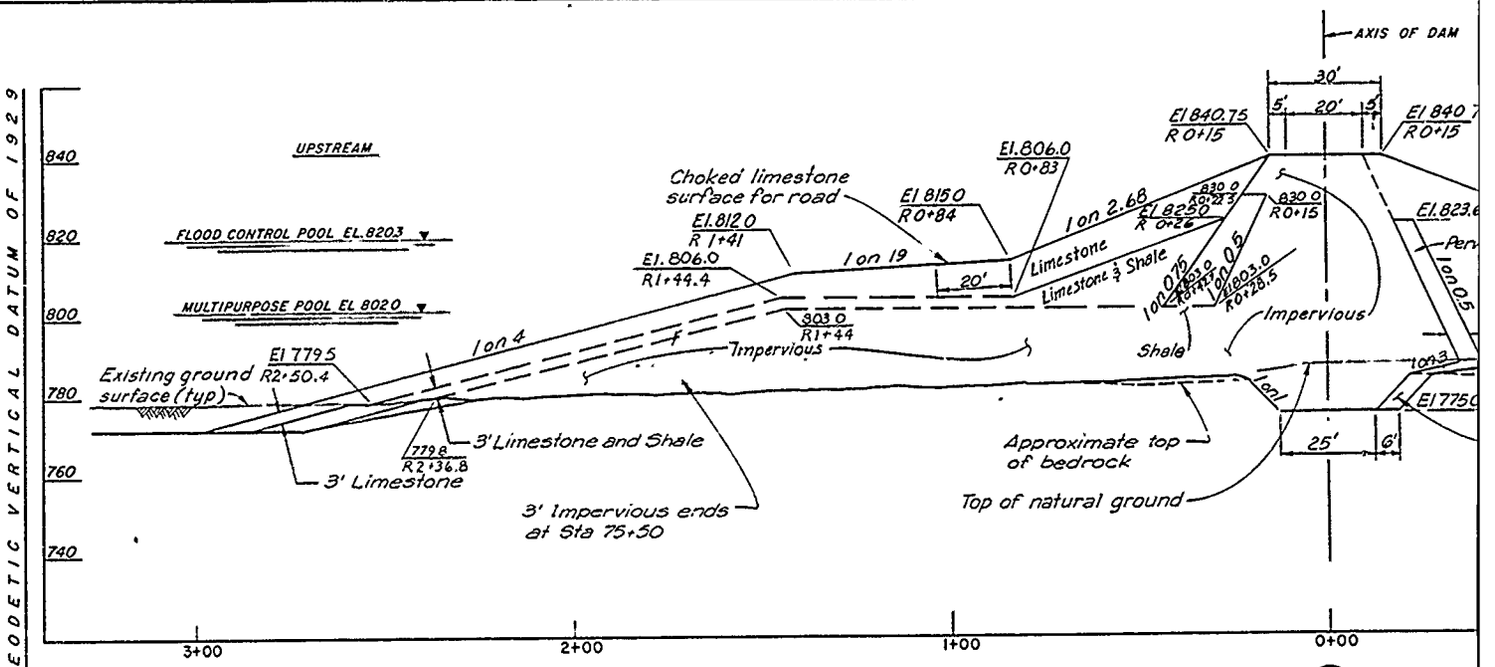
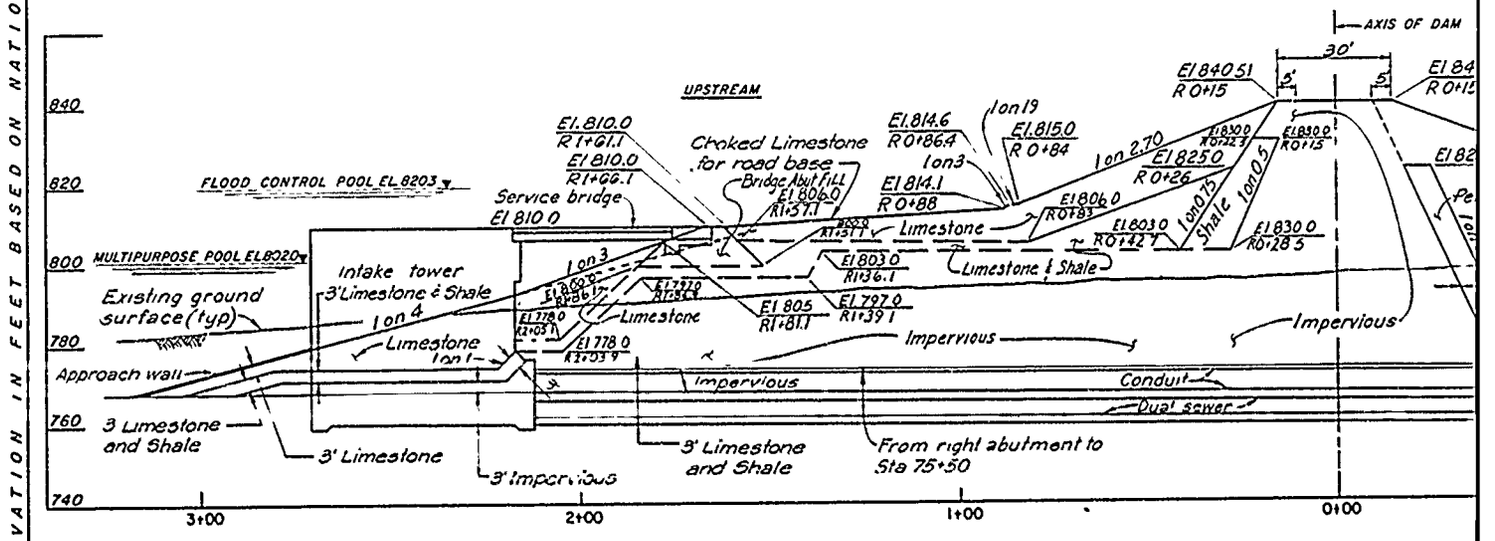
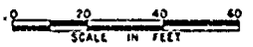
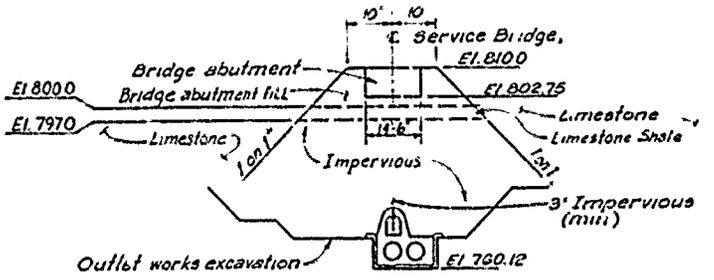


SECTION C STA. 75+50
B1 B2

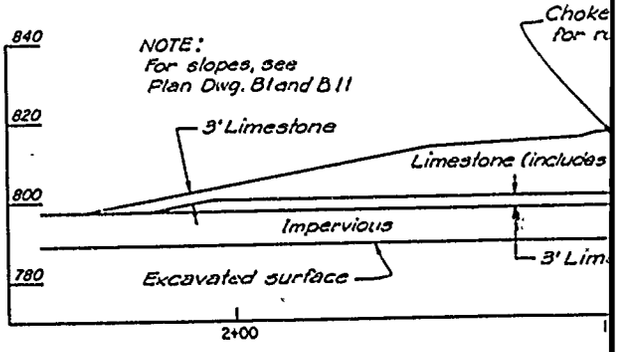


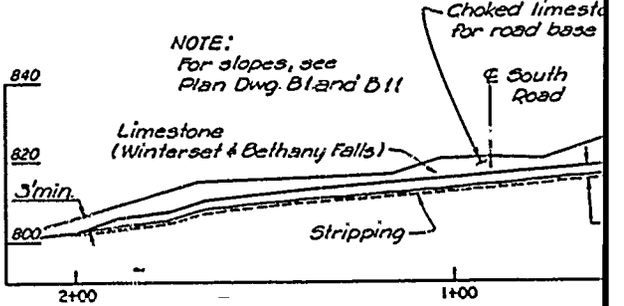
CONDUIT SECTION (STA.75+02.7



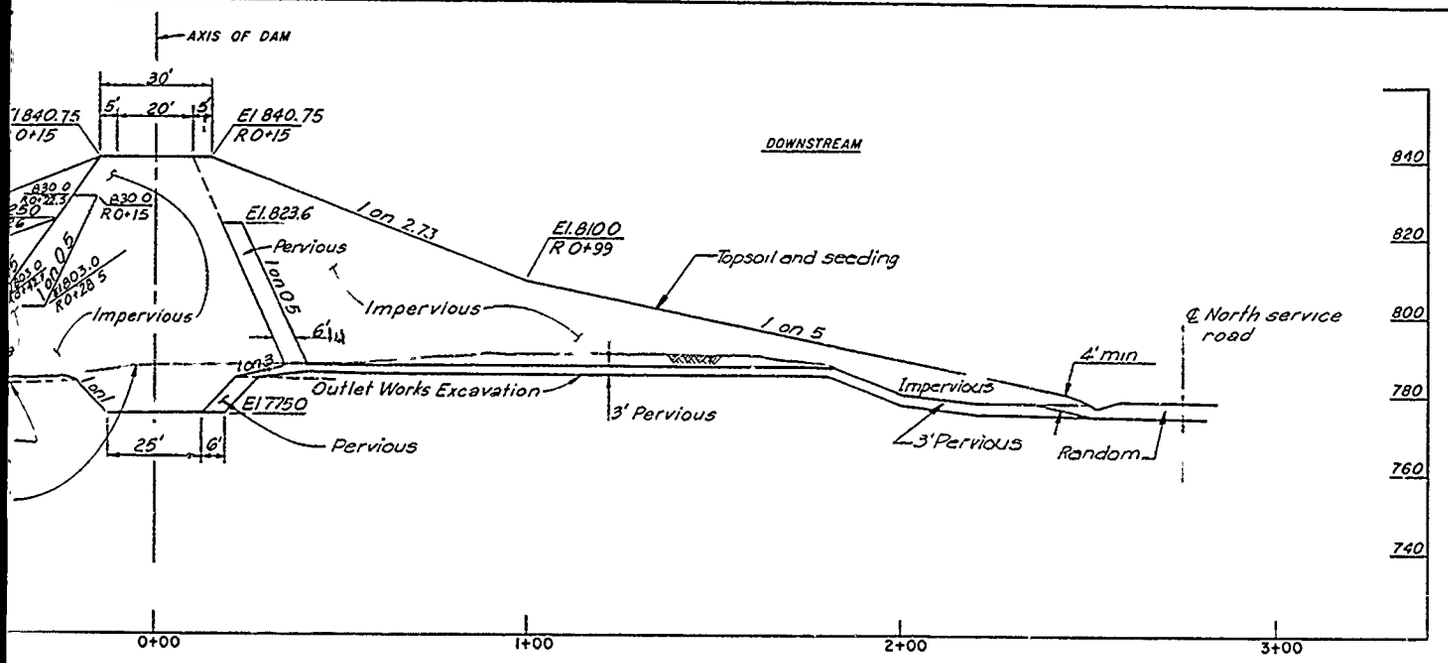


BRIDGE ABUTMENT FILL DETAIL



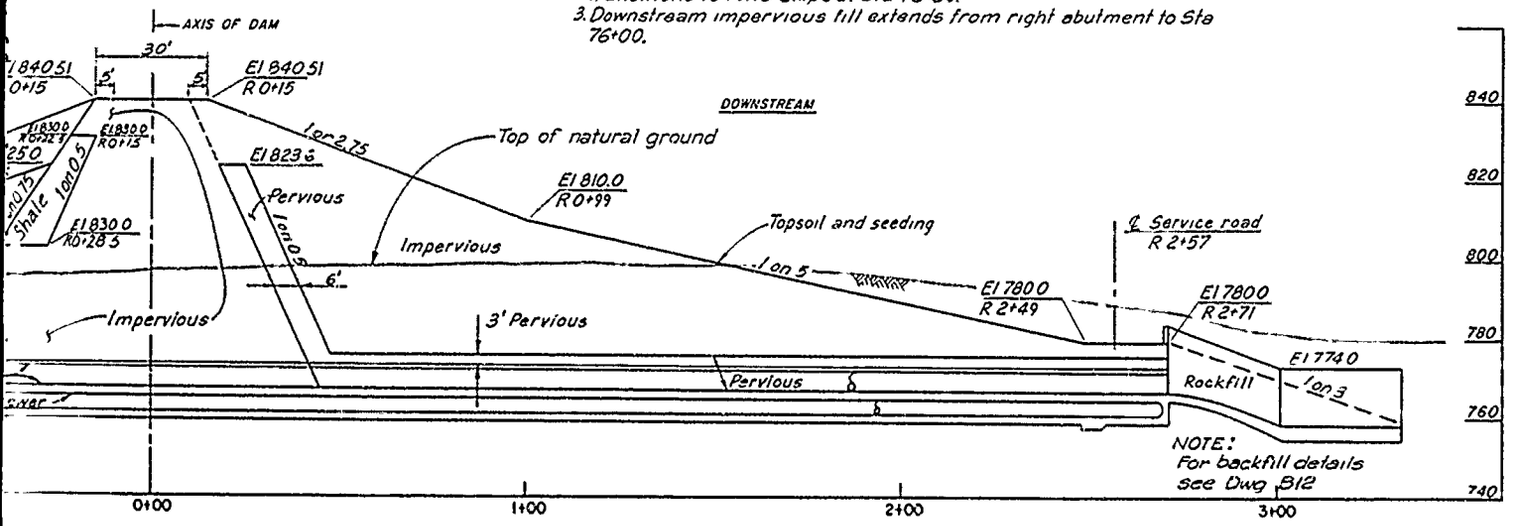


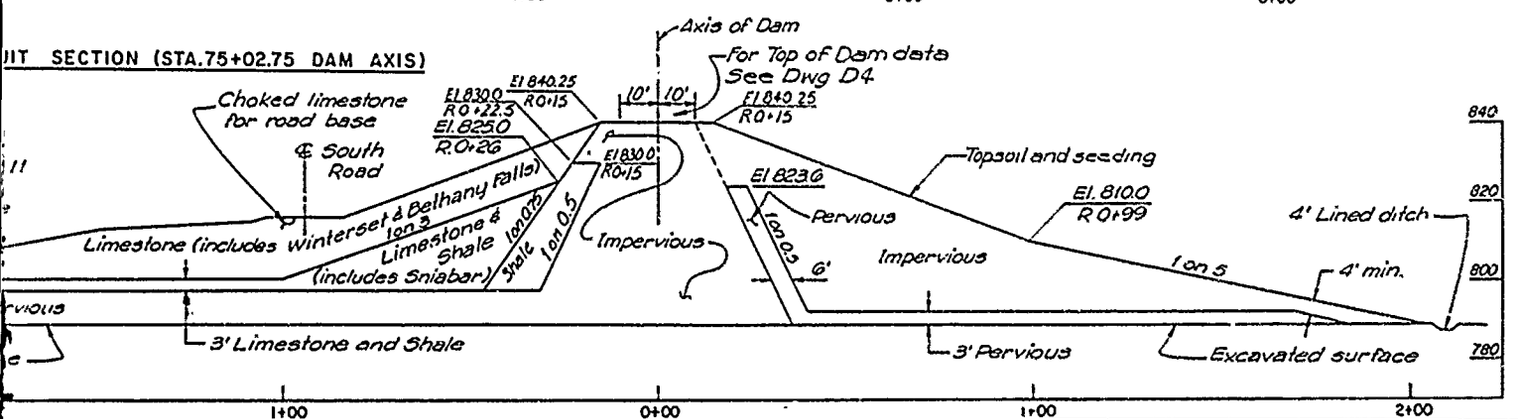
VALUE ENGINEERING PAYS

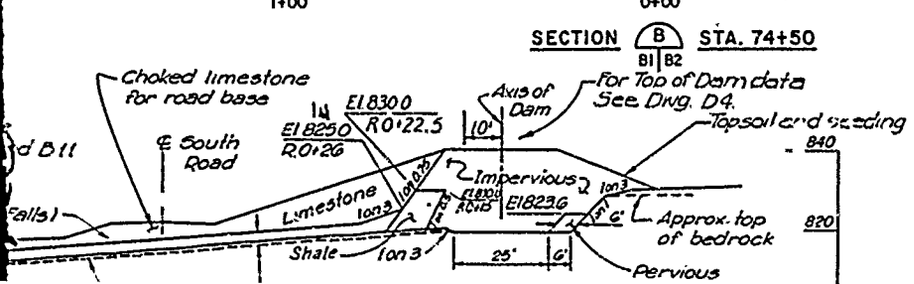


SECTION C STA. 75+50
B1 | B2

NOTES:
1. Upstream 1 on 2.76 slope extends from right abutment to Sta. 75+50 and transitions to 1 on 3 slope at Sta 76+00
2. Downstream 1 on 2.8 slope extends from right abutment to Sta 76+00 and transitions to 1 on 3 slope at Sta 76+50.
3. Downstream impervious fill extends from right abutment to Sta 76+00.







Revisions			
Symbol	Descriptions	Date	Approv

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by

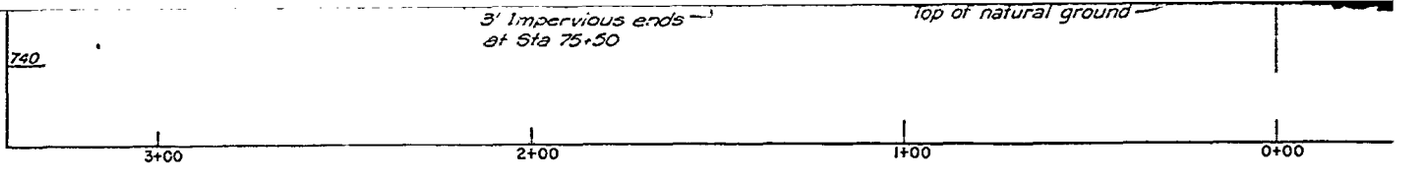
Drawn by

US Army Corps of Engineers

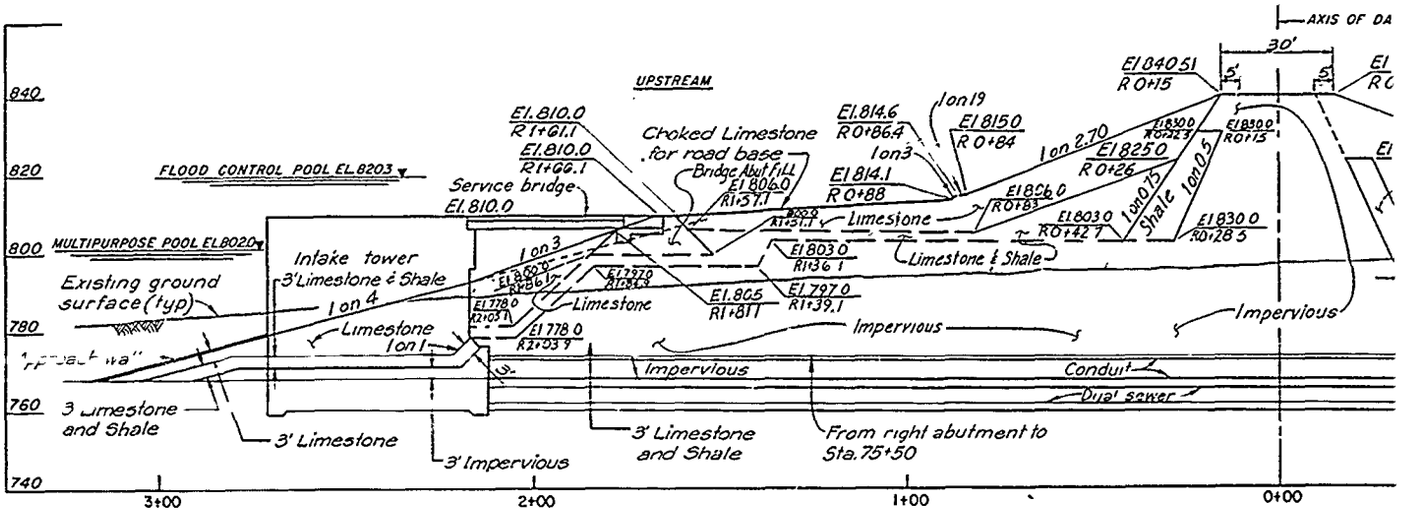
EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

TYPICAL EMBANKMENT

ELEVATION IN FEET BASED ON NATIONAL GEODETIC V

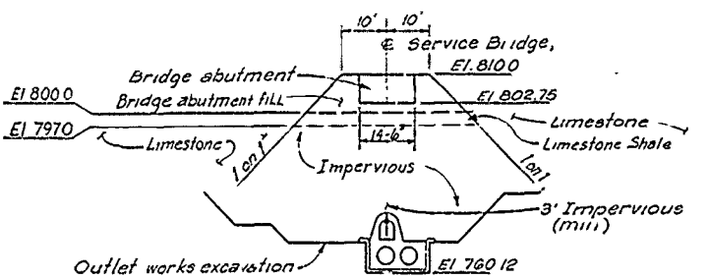


SECTION C B1 B2 STA. 75+

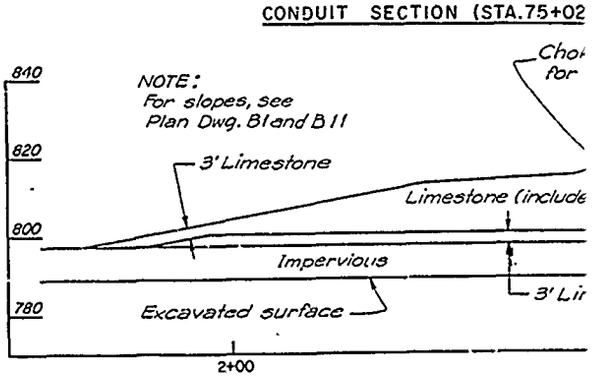


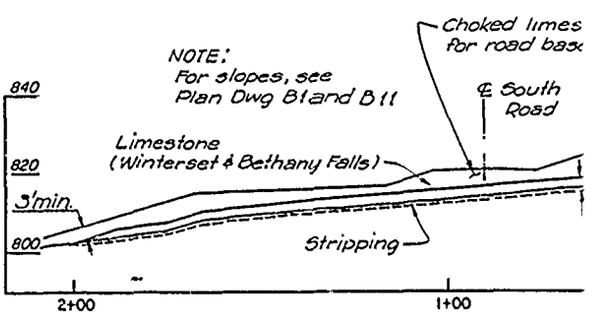
CONDUIT SECTION (STA.75+02

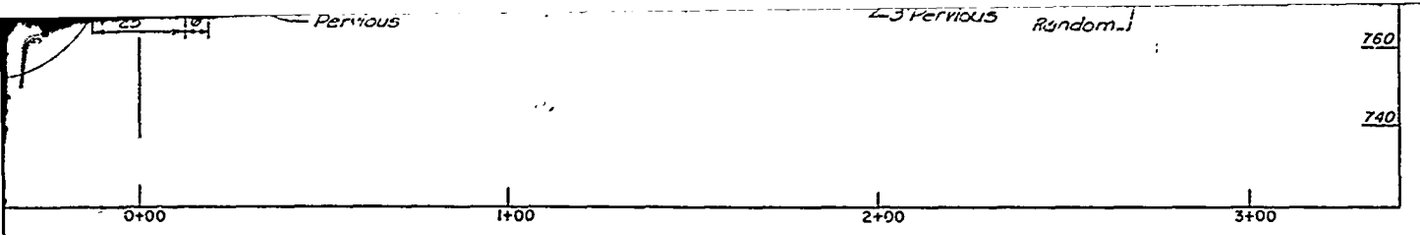




BRIDGE ABUTMENT FILL DETAIL

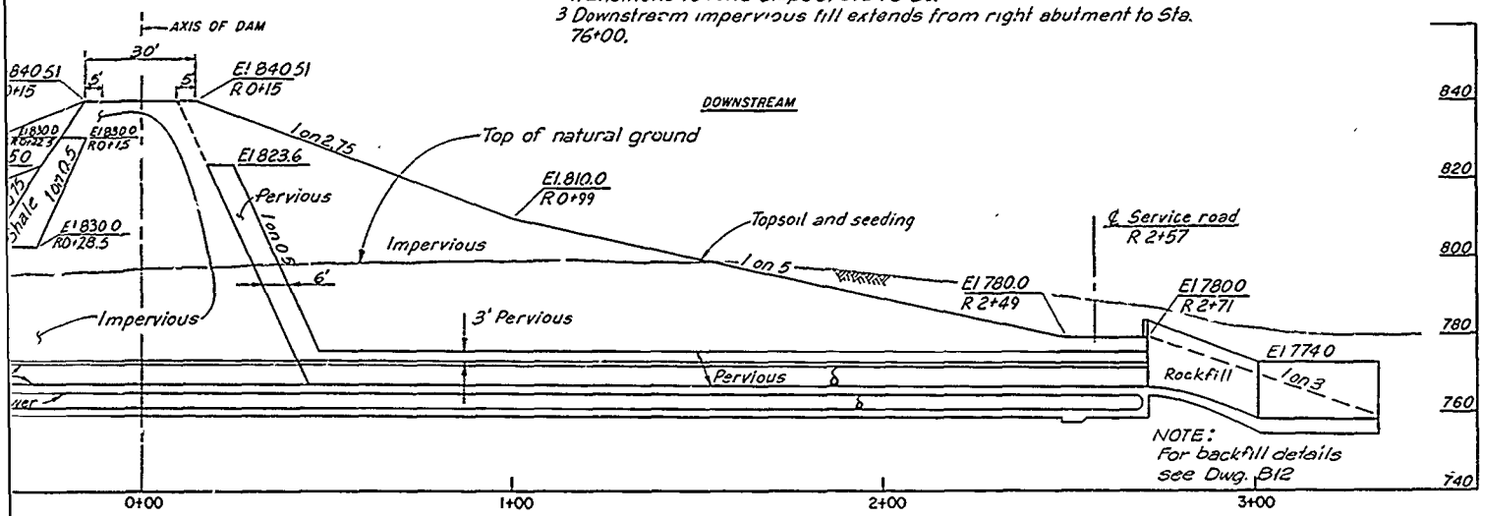




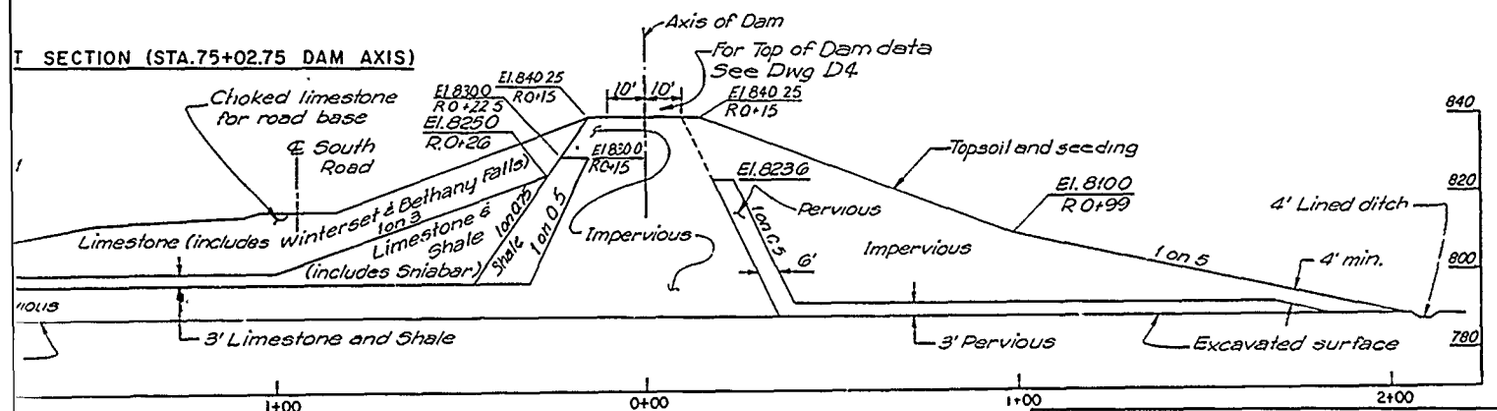


SECTION C (B1 | B2) STA. 75+50

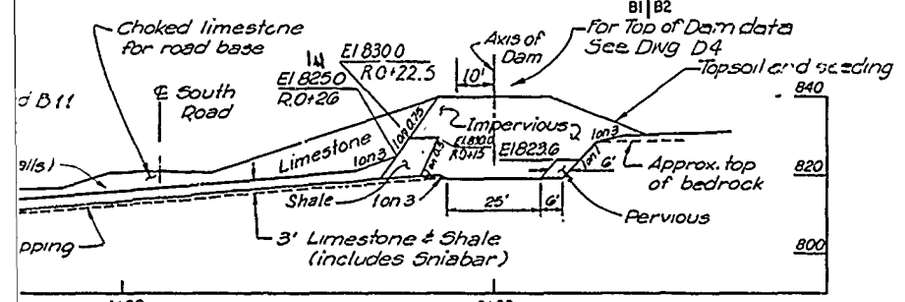
NOTES:
1. Upstream 1 on 2.76 slope extends from right abutment to Sta. 75+50 and transitions to 1 on 3 slope at Sta. 76+00.
2. Downstream 1 on 2.8 slope extends from right abutment to Sta. 76+00 and transitions to 1 on 3 slope at Sta. 76+50.
3. Downstream impervious fill extends from right abutment to Sta. 76+00.



T SECTION (STA.75+02.75 DAM AXIS)



SECTION B (B1 | B2) STA. 74+50



SECTION A (B1 | B2) STA. 74+00

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by:
Checked by:
Submitted by:

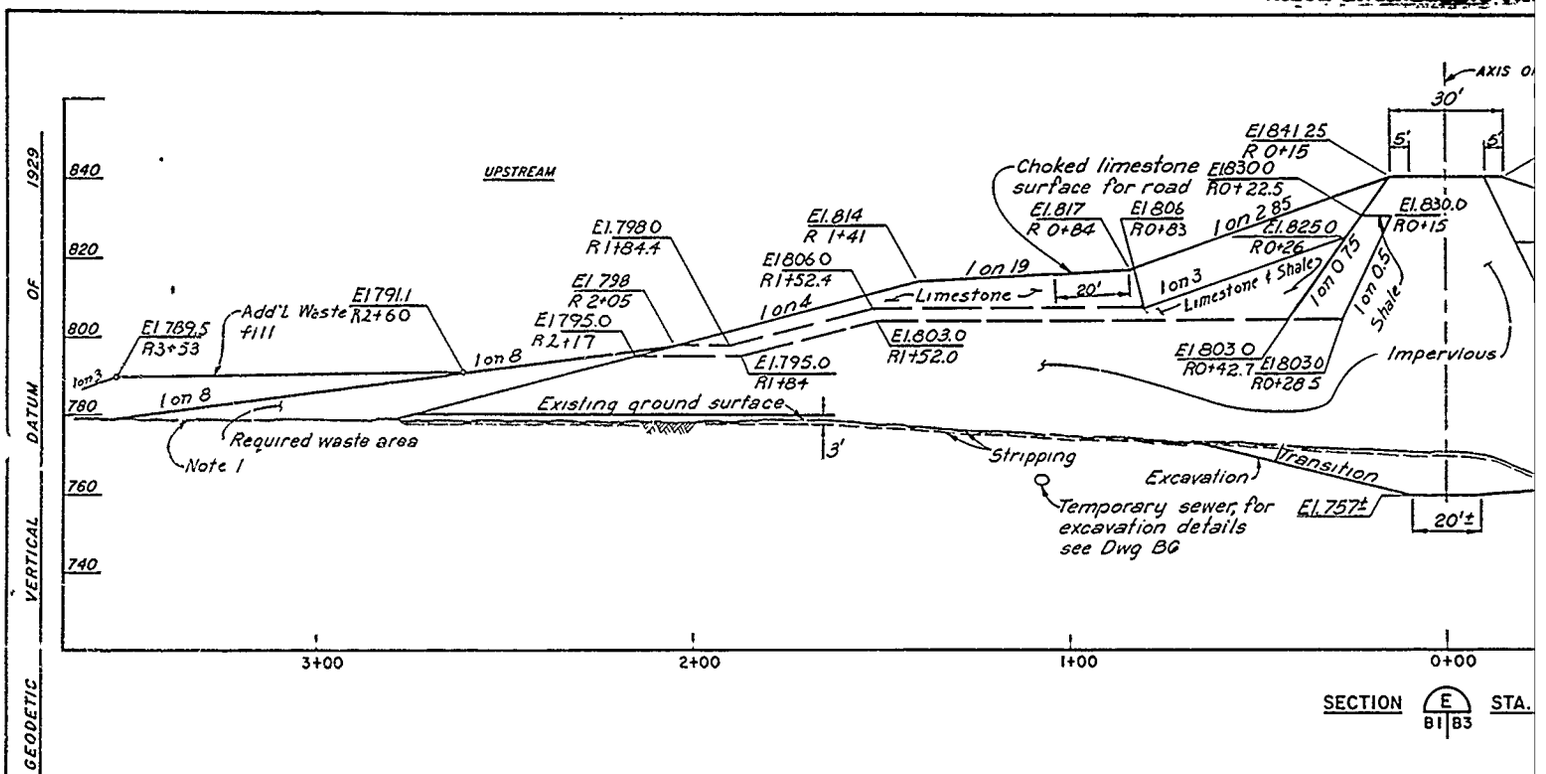
US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

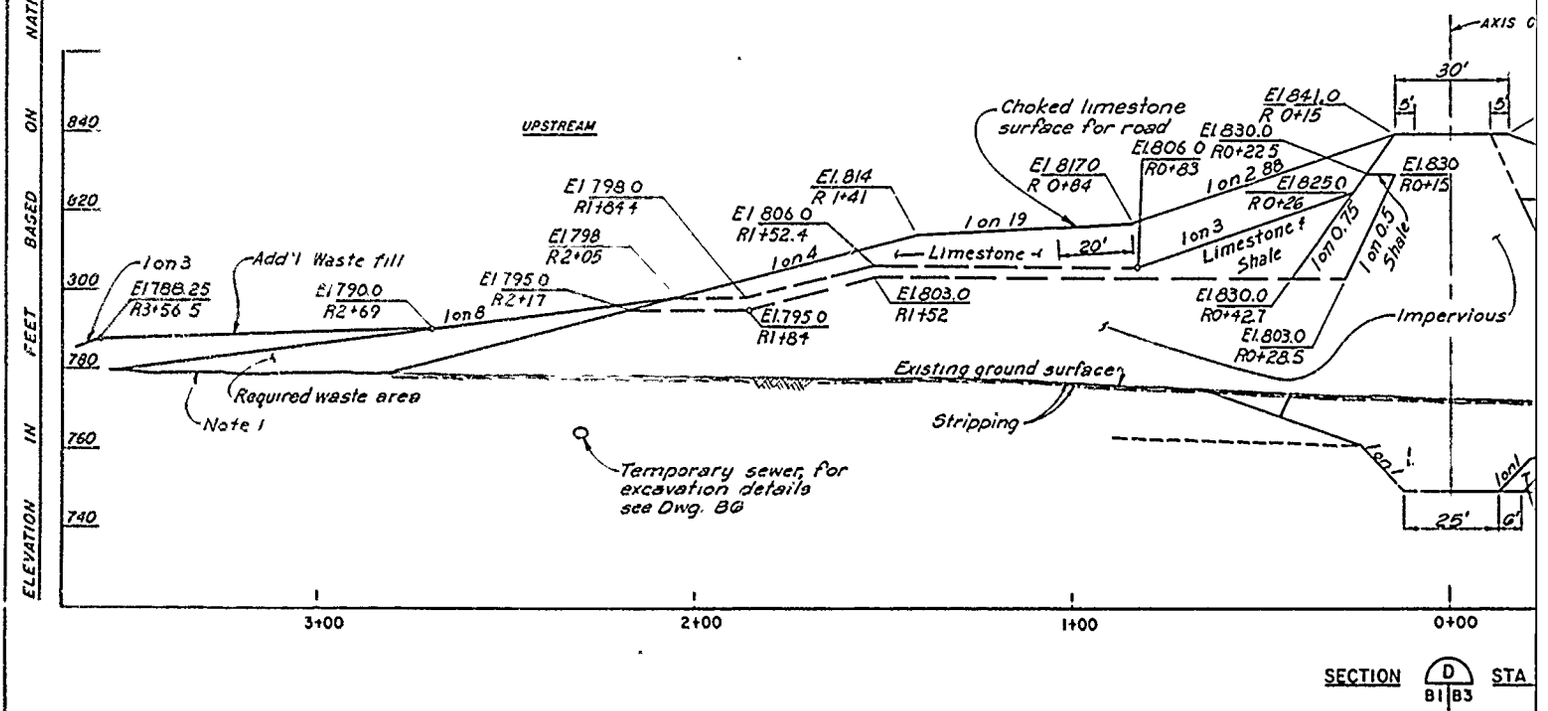
TYPICAL EMBANKMENT,
SECTIONS AND DETAILS

Scale: AS SHOWN
Date: JUNE 1990
Dwg No.:
Sheet number: 4
File No: RBL-2-1224

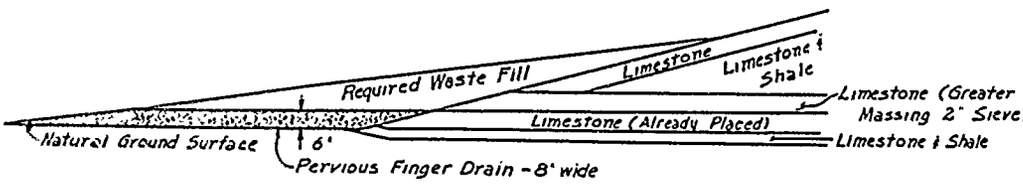
PLATE NO. 4



SECTION E B1 | B3 STA.

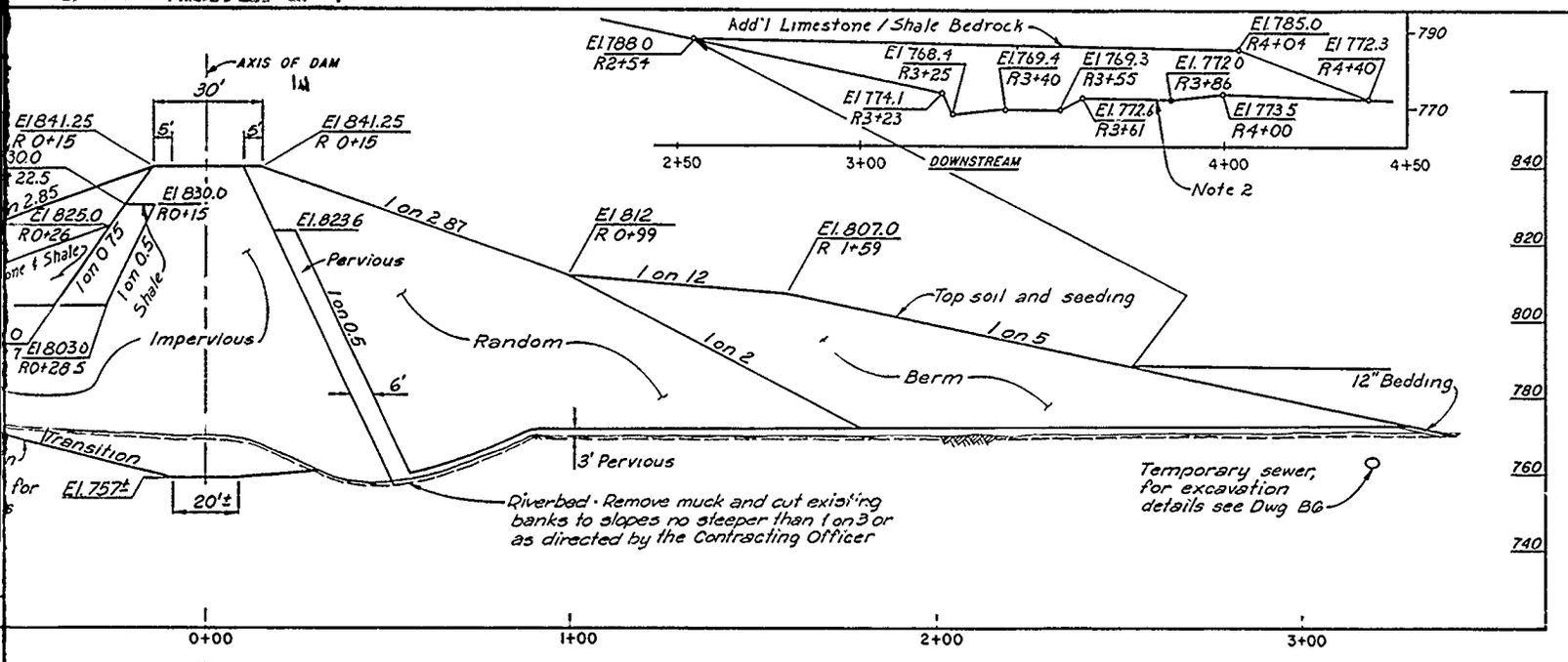


SECTION D B1 | B3 STA



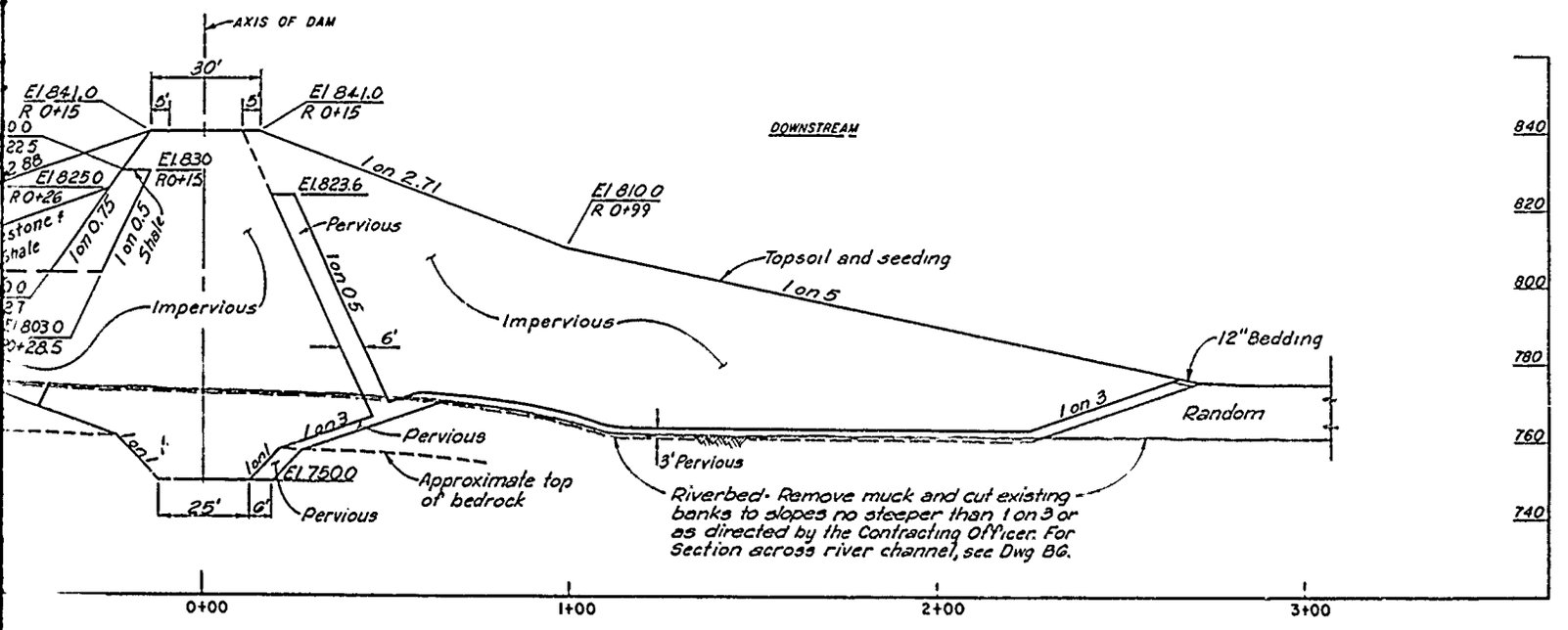
BLUE SPRINGS DAM
Finger Drains Through Waste Fill

VALUE ENGINEERING PAYS



SECTION E B1 B3 STA. 76+50

NOTE:
The impervious fill transitions (slopes) to random and berm fill at Sta 76+50. Construct full impervious at Sta. 76+00 and full random and berm at Sta 76+50. "For pay purposes only" - The break point of impervious to Ramdom and berm will be Station 76+25.



SECTION D B1 B3 STA 76+00

imestone (Greater than 20% Massing 2" Sieve)
imestone & Shale

NOTES:
1. 6' thick x 8' wide pervious finger drains at Stations 83+00, 85+50, 88+00, 90+50, 93+00 and 95+50.
2. 18" Limestone fill with 3' thick x 20' wide pervious finger drains at Stations 77+00, 79+00, 81+00, 83+00, 85+00, 87+00, 89+00, 91+00, 93+00 and 50' wide at 95+00.
3. Upstream 1 on 2.76 slope extends from right abutment to Sta. 75+50 and transitions to 1 on 3 slope at Sta. 76+00.
4. Downstream 1 on 2.8 slope extends from right abutment to Sta. 76+00 and transitions to 1 on 3 slope at Sta. 76+50.
5. Downstream impervious fill extends from right abutment to Sta. 76+00.

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

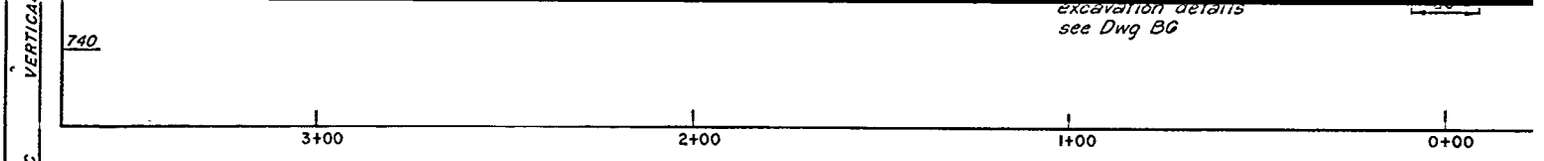
Designed by:
Drawn by:
Checked by:

US Army Corps of Engineers

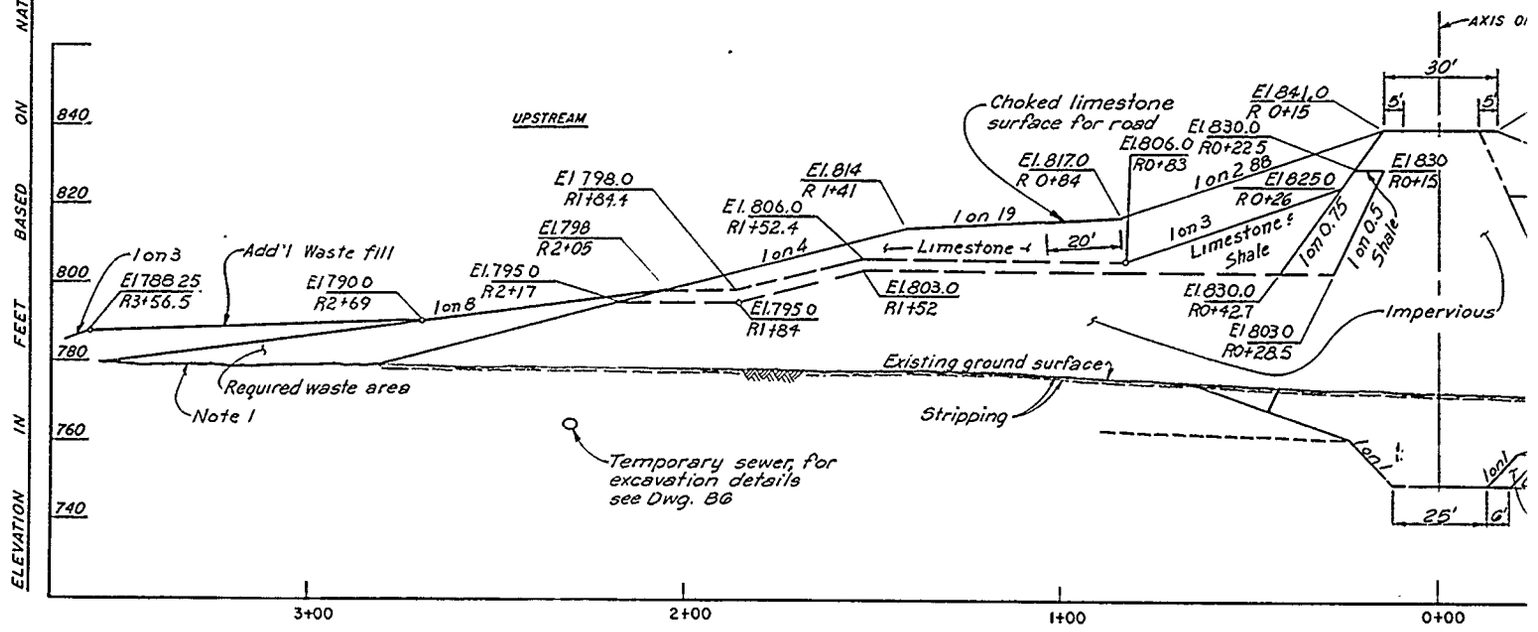
EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

EMBANKMENT SECTIONS

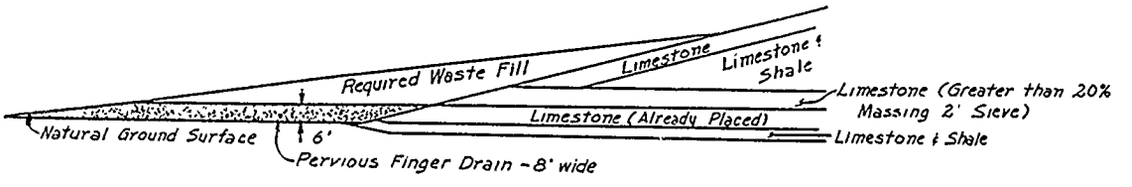
Scale:
Sheet



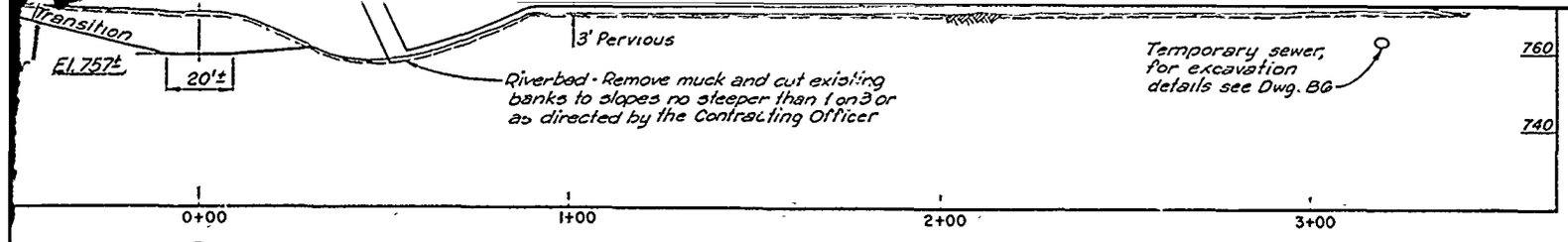
SECTION E B1 | B3 STA.



SECTION D B1 | B3 STA

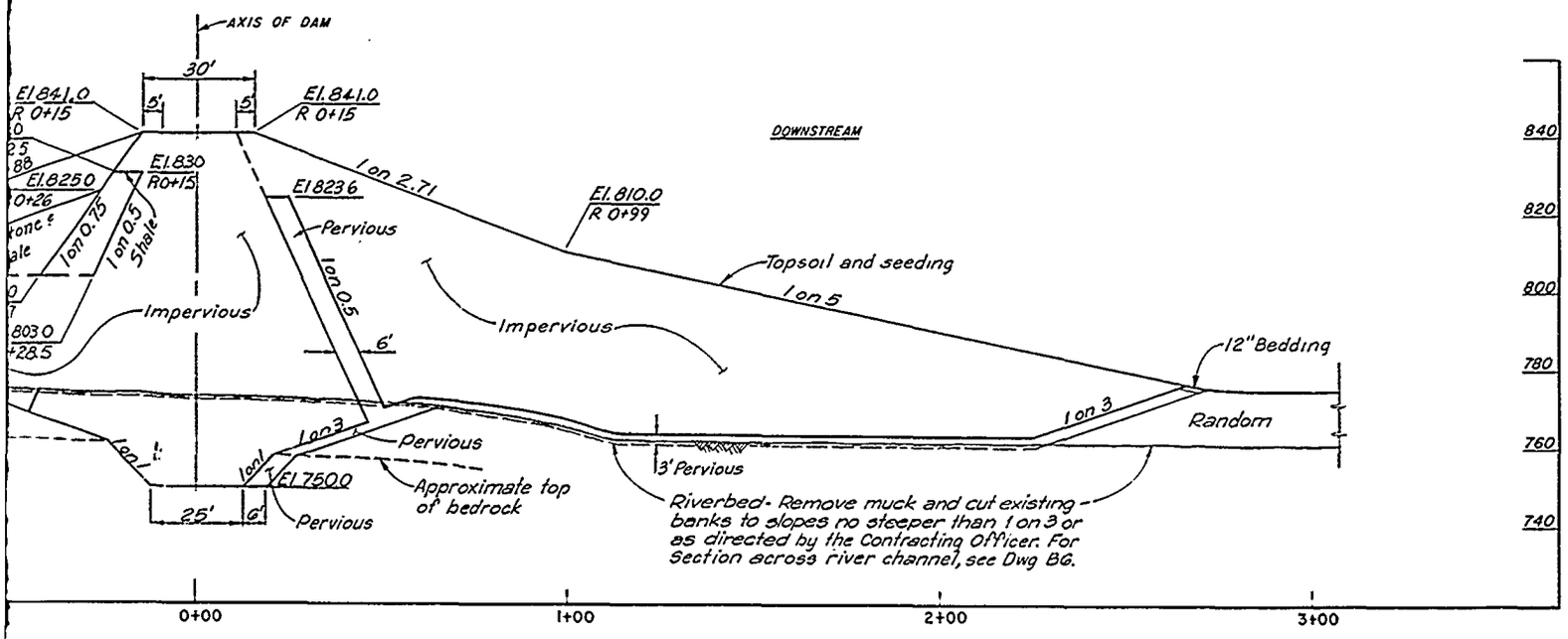


BLUE SPRINGS DAM
Finger Drains Through Waste Fill



SECTION E (B1 | B3) STA. 76+50

NOTE:
The impervious fill transitions (slopes) to random and berm fill at Sta. 76+50. Construct full impervious at Sta. 76+00 and full random and berm at Sta 76+50. "For pay purposes only" - The break point of impervious to Ramdom and berm will be Station 76+25.



SECTION D (B1 | B3) STA. 76+00

mestone (Greater than 20% Massing 2" Sieve)
imestone & Shale

NOTES:
1. 6' thick x 8' wide pervious finger drains at Stations 83+00, 85+50, 88+00, 90+50, 93+00 and 95+50.
2. 18" Limestone fill with 3' thick x 20' wide pervious finger drains at Stations 77+00, 79+00, 81+00, 83+00, 85+00, 87+00, 89+00, 91+00, 93+00 and 50' wide at 95+00.
3. Upstream 1 on 2.76 slope extends from right abutment to Sta. 75+50 and transitions to 1 on 3 slope at Sta. 76+00.
4. Downstream 1 on 2.8 slope extends from right abutment to Sta. 76+00 and transitions to 1 on 3 slope at Sta. 76+50.
5. Downstream impervious fill extends from right abutment to Sta. 76+00.

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by:
Checked by:
Submitted by:

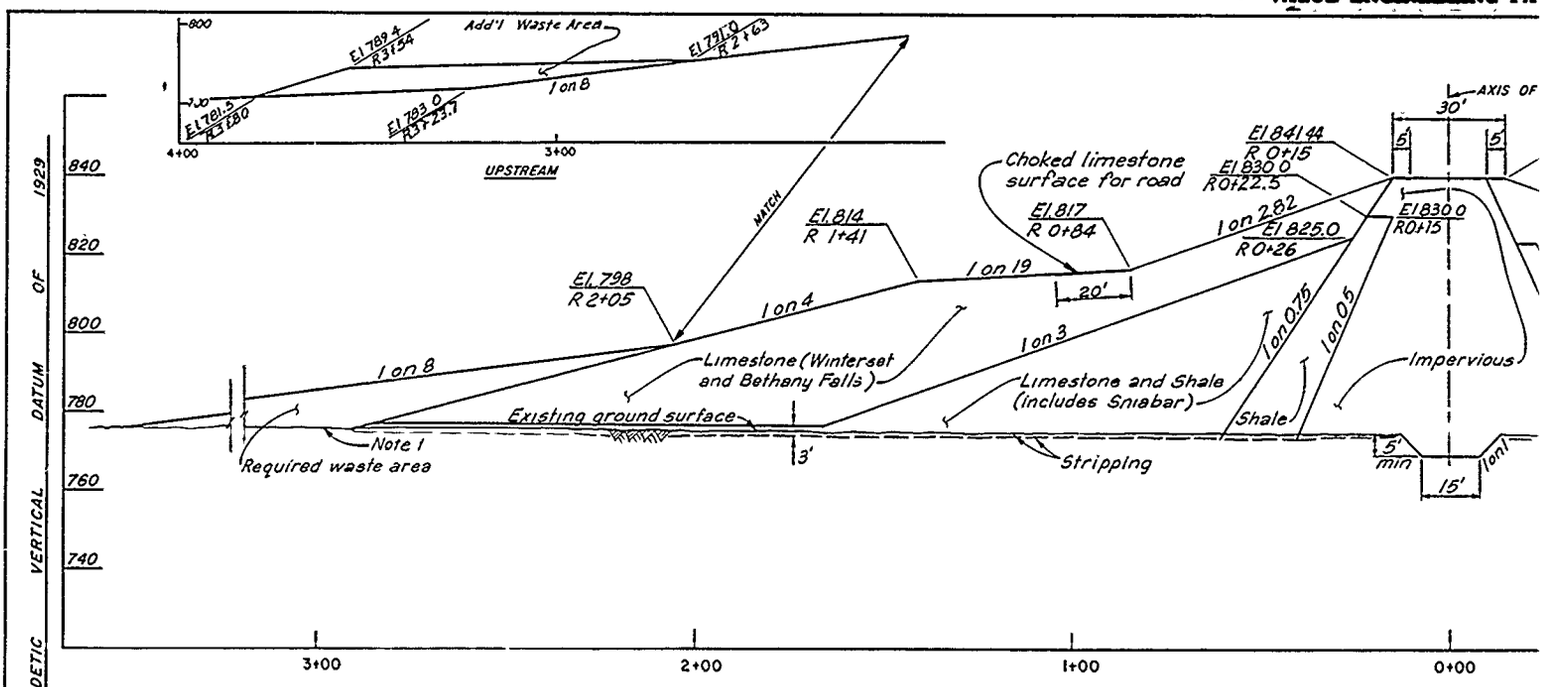
US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

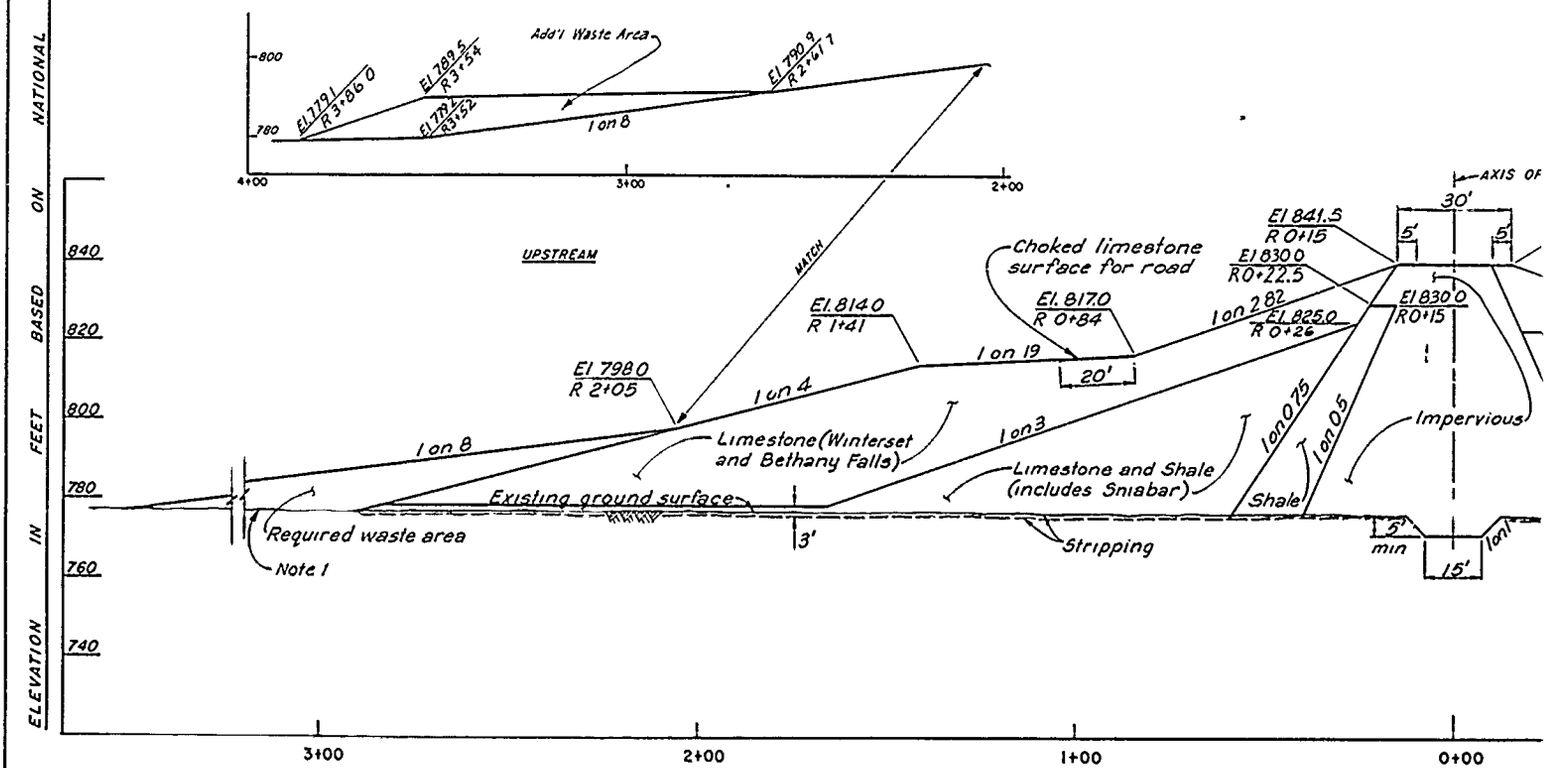
EMBANKMENT SECTIONS

Scale: AS SHOWN
Date: JUNE 1990
Dwg No.:
Sheet number: 5
File No: RBL-2-1225

PLATE NO. 5

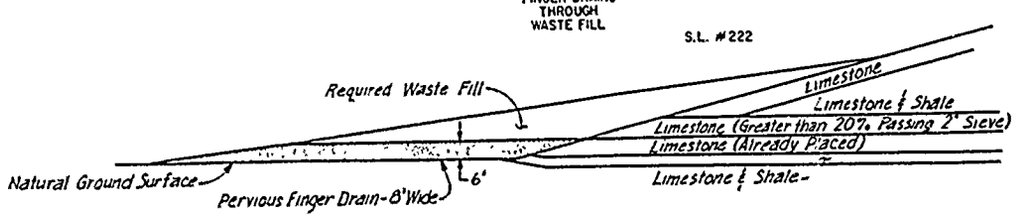


SECTION (G / B1 | B4) STA.



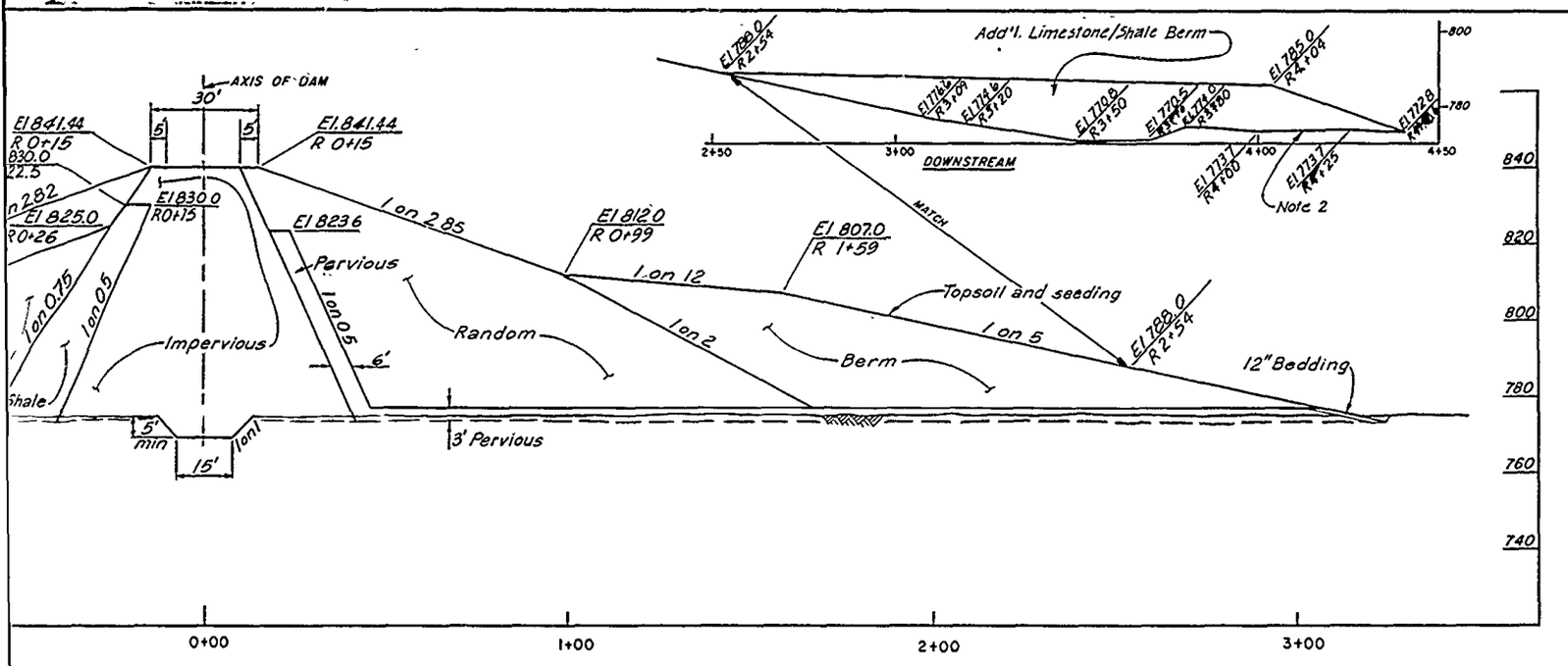
SECTION (F / B1 | B4) STA

BLUE SPRINGS DAM
FINGER DRAINS THROUGH WASTE FILL
S.L. #222

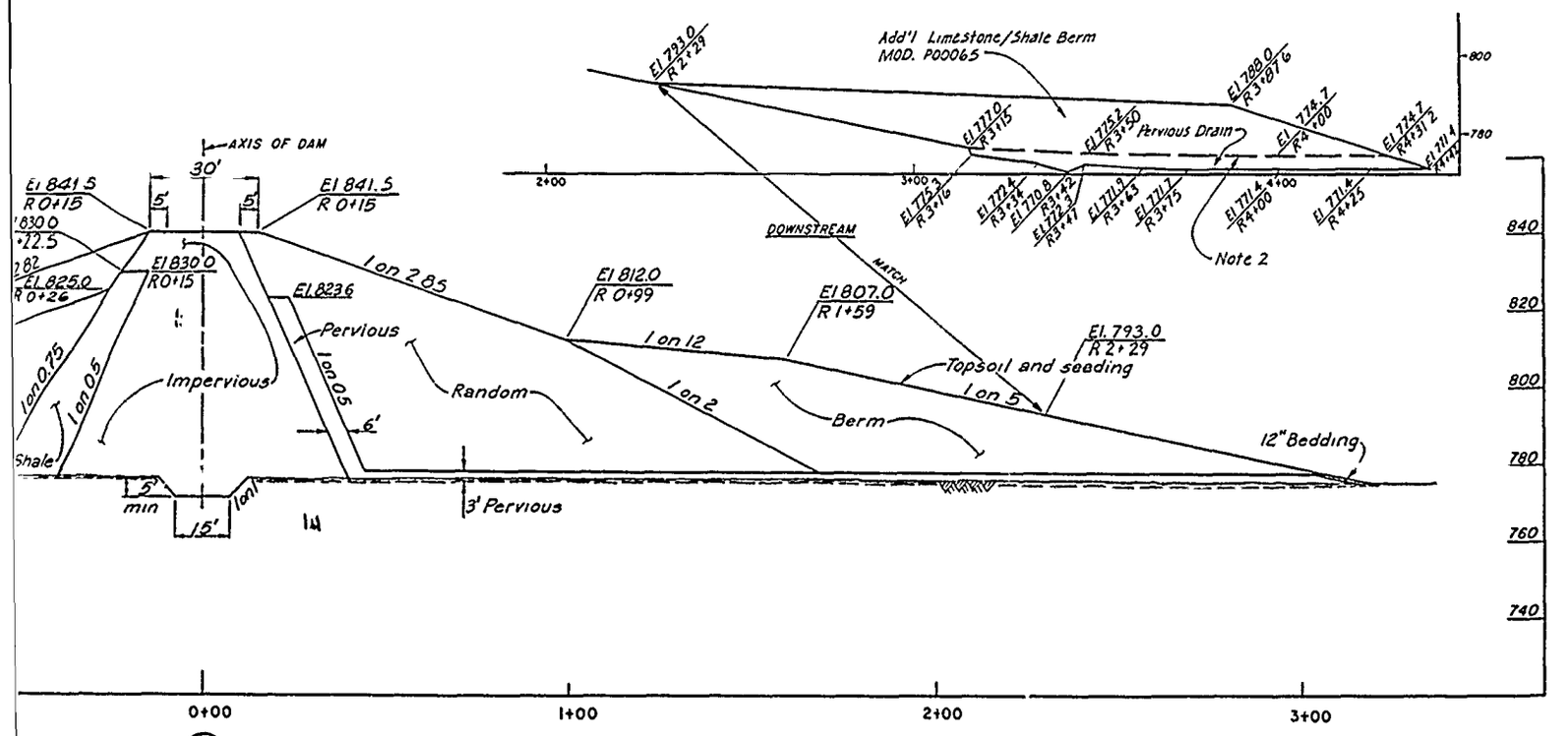


Notes:
1. 6" Thick x 8' Wi
83+00, 85+50,
2. 18" Limestone F
Finger Drains
83+00, 85+00,
50' Wide at 9

VALUE ENGINEERING PAYS



SECTION G (B1 | B4) STA. 90+00



SECTION F (B1 | B4) STA. 85+00

Notes:

1. 6' Thick x 8' Wide Pervious Finger Drains at Stations 83+00, 85+50, 88+00, 90+50, 93+00 and 95+50.
2. 18" Lumestone Fill with 3' Thick x 20' Wide Pervious Finger Drains at Stations 77+00, 79+00, 81+00, 83+00, 85+00, 87+00, 89+00, 91+00, 93+00 and 50' Wide at 95+00.

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:

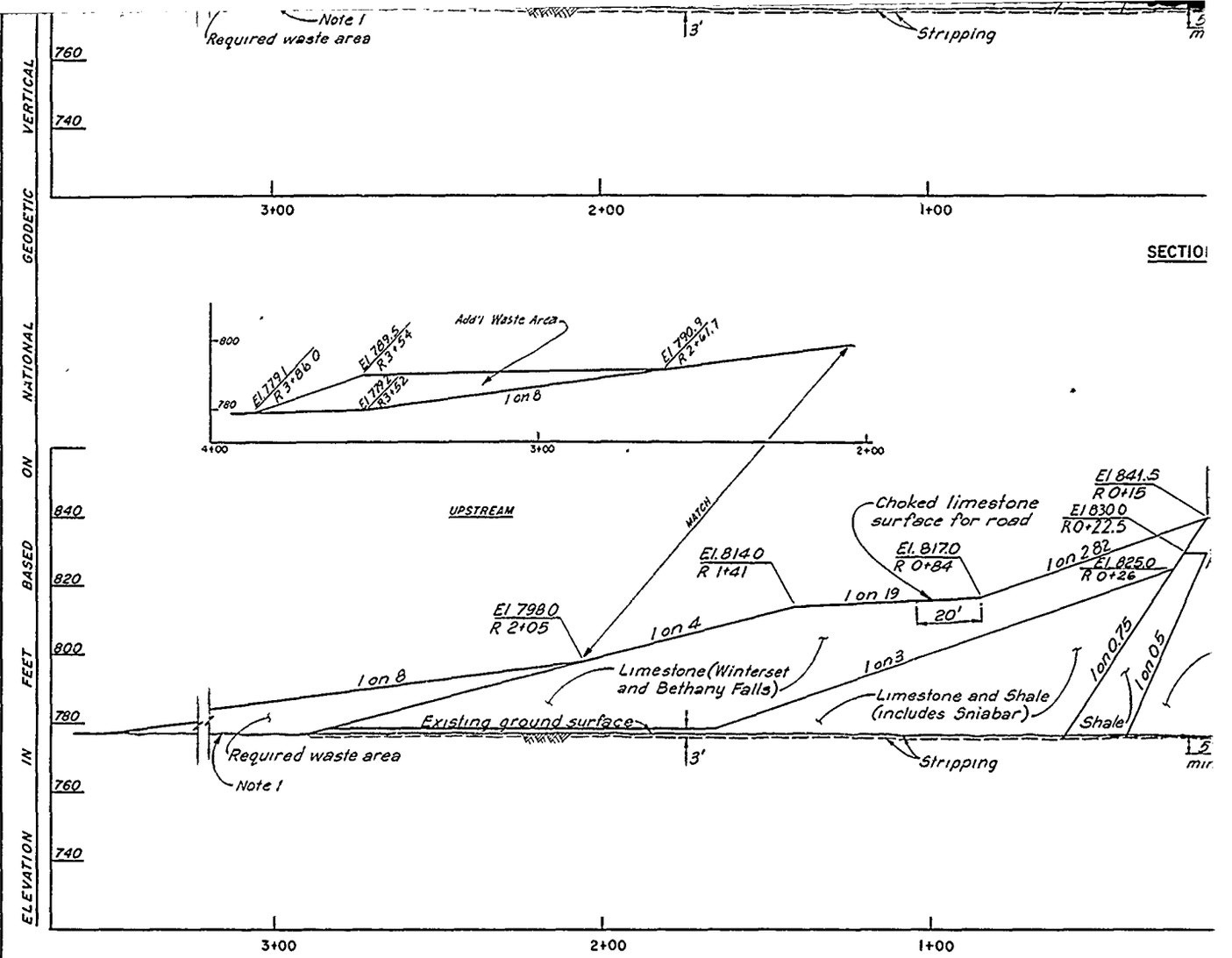
Drawn by:

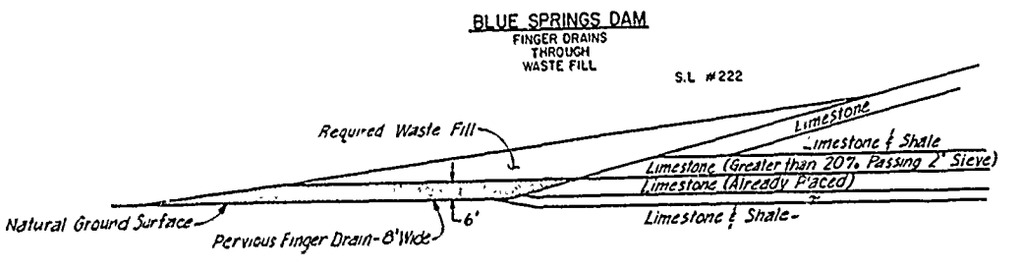
Checked by

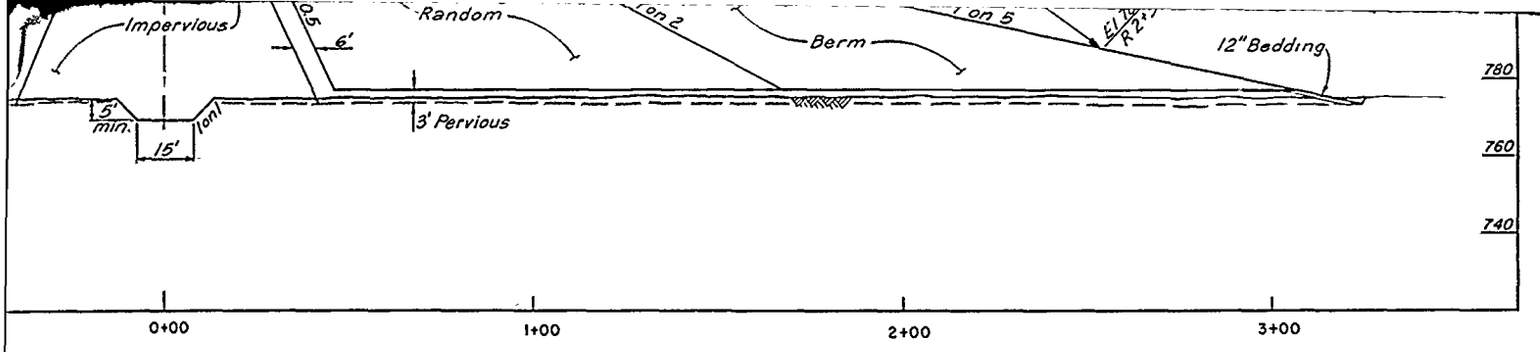
US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

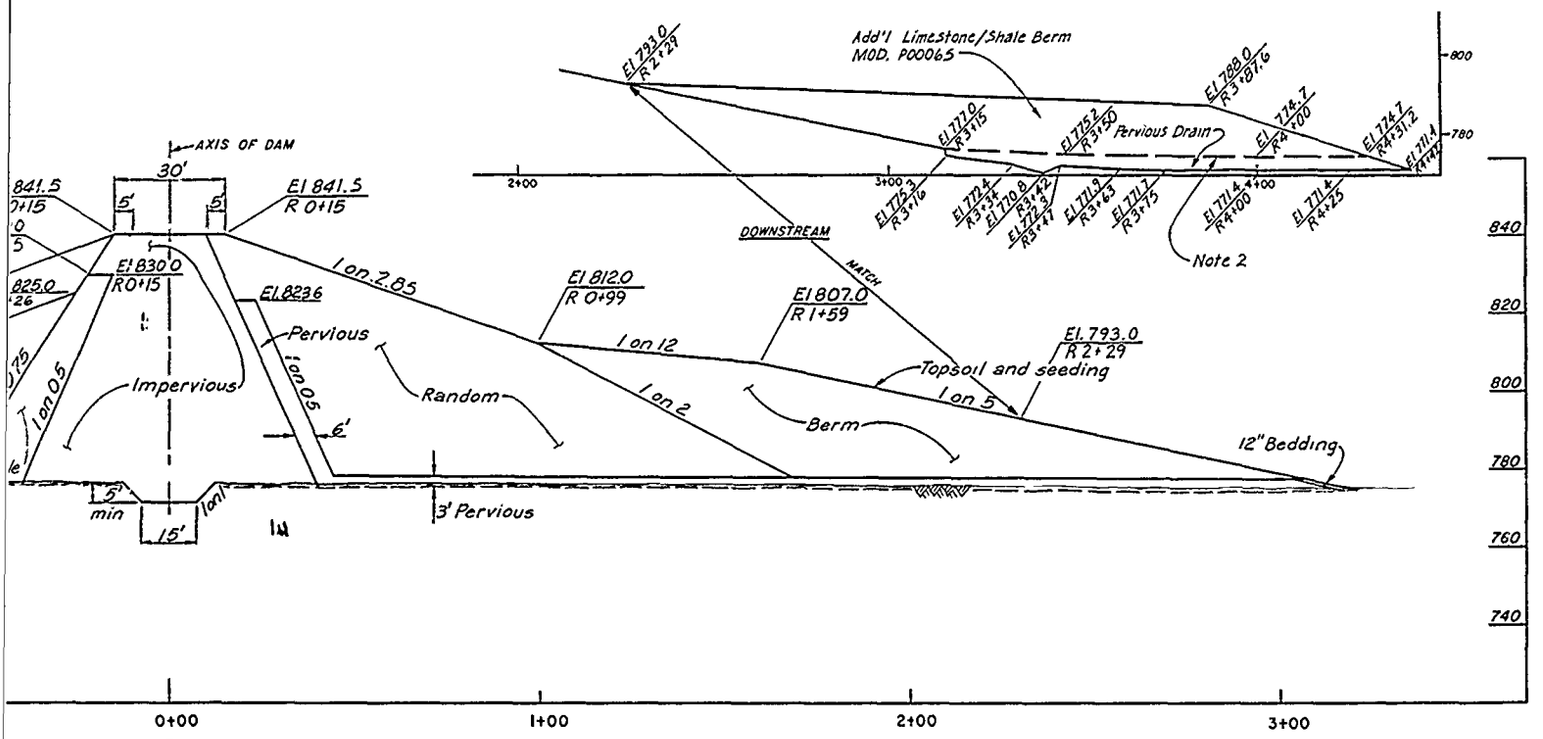
EMBANKMENT SECTIONS


ELEVATION IN FEET BASED ON NATIONAL GEODETIC VERTICAL
760
740
Note 1
Required waste area
3'
Stripping
3+00
2+00
1+00
SECTIO
800
780
El 779.1
R 3+86.0
El 789.5
R 3+54
El 779.2
R 3+62
Add'l Waste Area
El 790.9
R 2+61.7
1 on 8
4+00
3+00
2+00
840
820
800
780
760
740
UPSTREAM
MATCH
El 841.5
R 0+15
El 830.0
R 0+22.5
Choked limestone
surface for road
El. 817.0
R 0+84
El. 825.0
R 0+26
El. 814.0
R 1+41
El 798.0
R 2+05
1 on 19
1 on 2.82
20'
1 on 4
1 on 8
Limestone (Winterset
and Bethany Falls)
1 on 3
Limestone and Shale
(includes Sniabar)
1 on 0.75
1 on 0.5
Shale
Existing ground surface
Required waste area
Note 1
3'
Stripping
3+00
2+00
1+00
SECTION


BLUE SPRINGS DAM
FINGER DRAINS
THROUGH
WASTE FILL
S.L. #222
Required Waste Fill
Limestone
Limestone & Shale
Limestone (Greater than 20% Passing 2" Sieve)
Limestone (Already Placed)
Natural Ground Surface
Pervious Finger Drain - 8' Wide
6'
Limestone & Shale



SECTION G (B1 | B4) STA. 90+00



SECTION F (B1 | B4) STA. 85+00

Notes:

1. *6' Thick x 8' Wide Pervious Finger Drains at Stations 83+00, 85+50, 88+00, 90+50, 93+00 and 95+50.*
2. *18" Limestone Fill with 3' Thick x 20' Wide Pervious Finger Drains at Stations 77+00, 79+00, 81+00, 83+00, 85+00, 87+00, 89+00, 91+00, 93+00 and 50' Wide at 95+00.*

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U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by:
Checked by:
Submitted by:

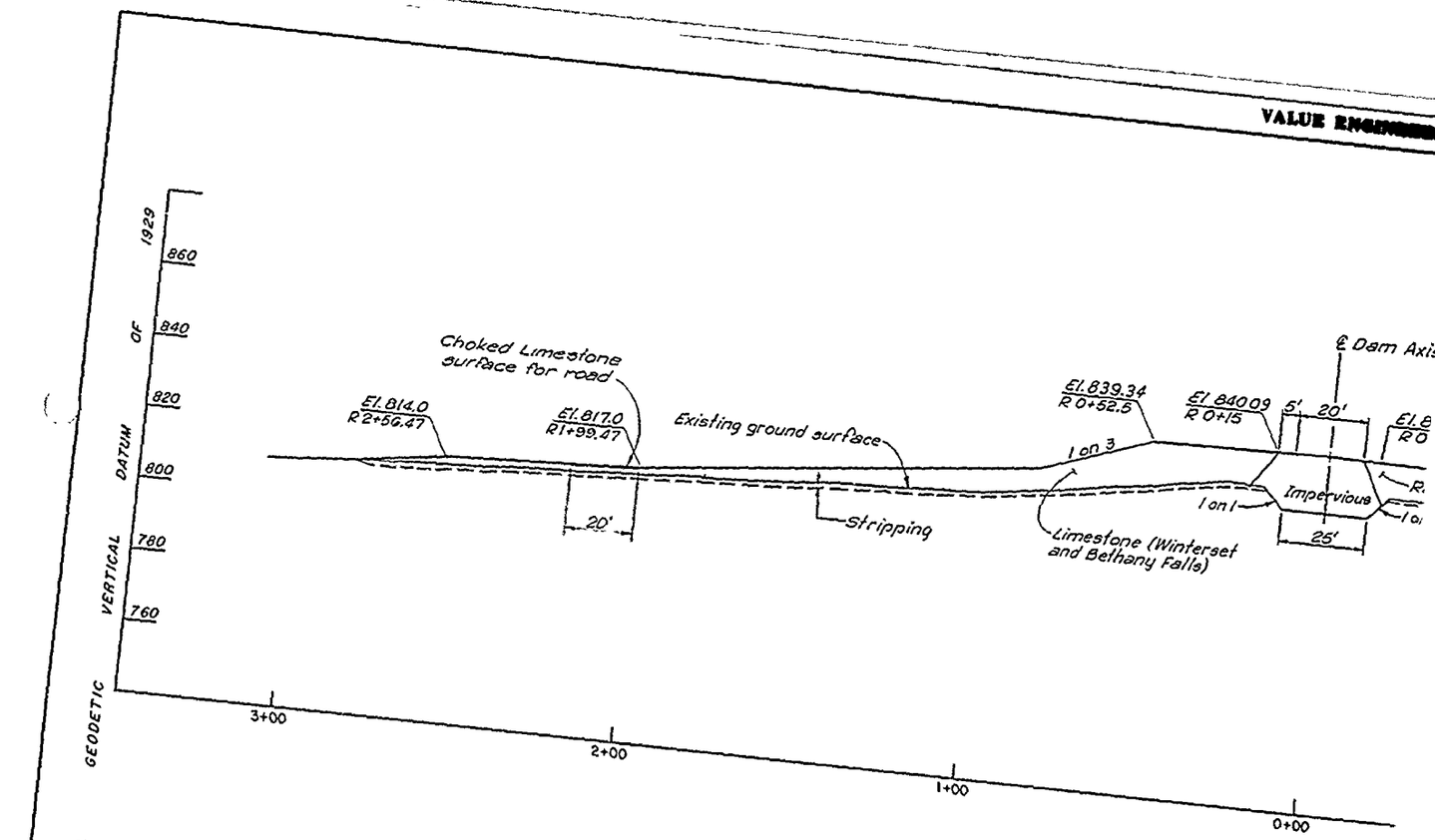
US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

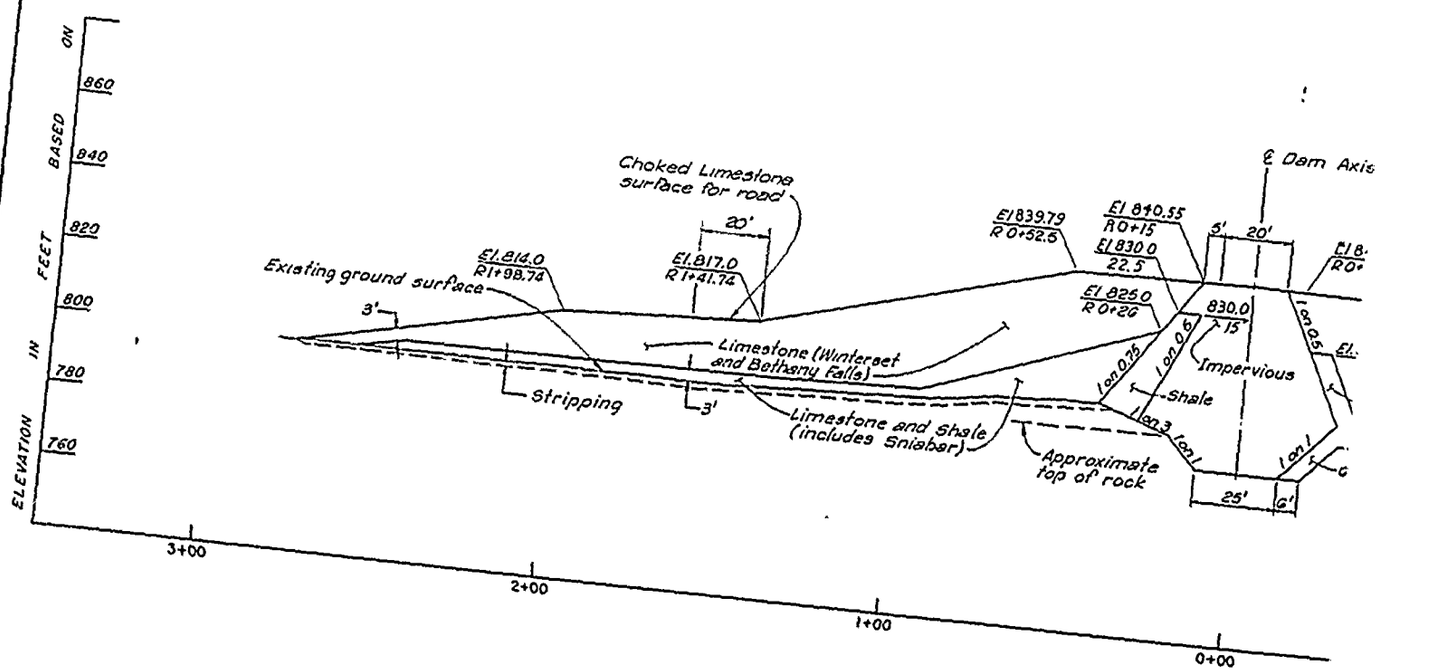
EMBANKMENT SECTIONS

Scale: AS SHOWN
Date: JUNE 1990
Dwg No.:
Sheet number: 6
File No.: RBL-2-1226

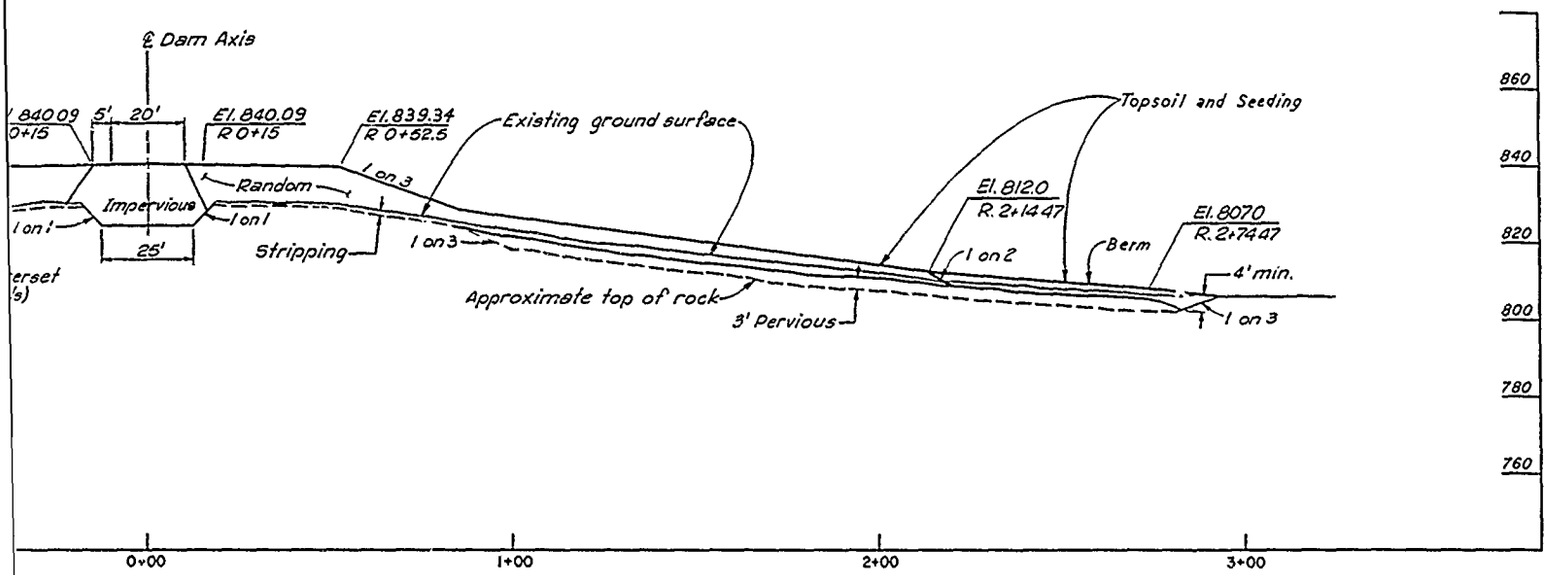
PLATE NO. 6



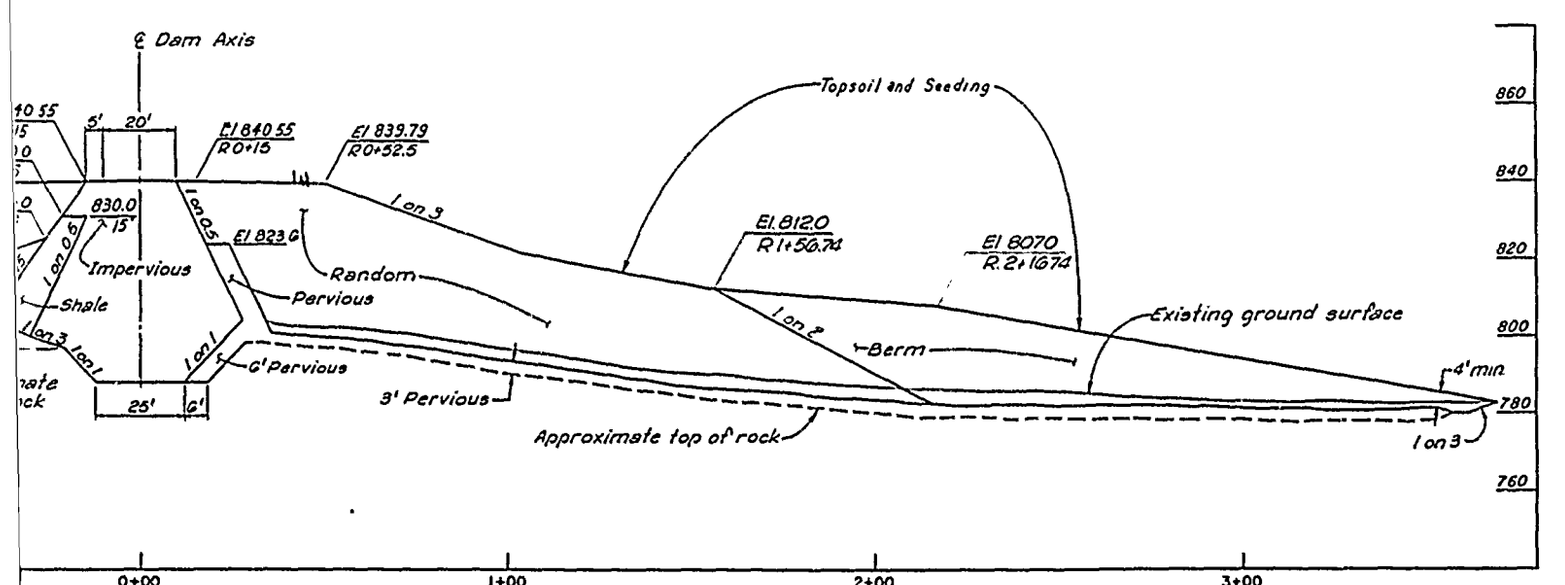
SECTION J 81|85 STA. 99



SECTION H 81|85 STA. 98+



SECTION J (B1|B5) STA. 99+00



SECTION H (B1|B5) STA. 98+00

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CORPS OF ENGINEERS
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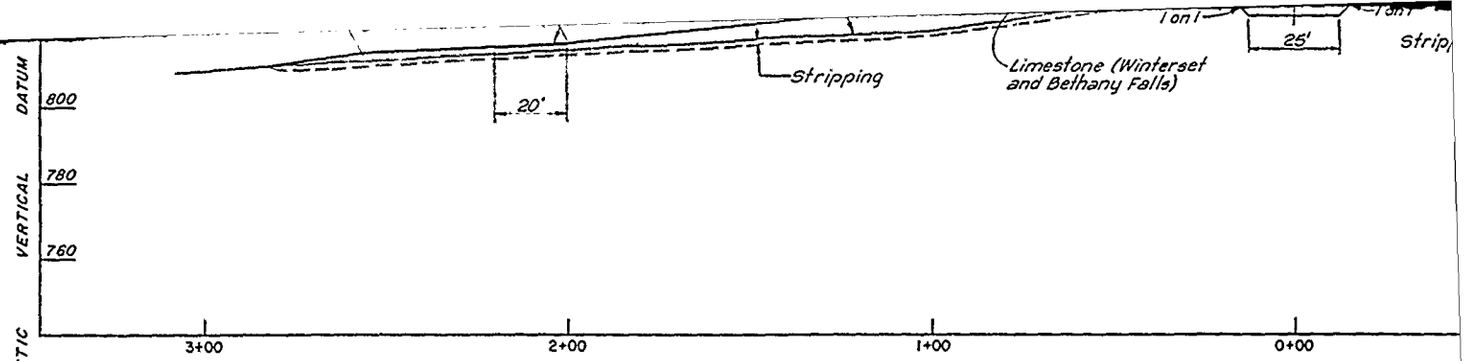
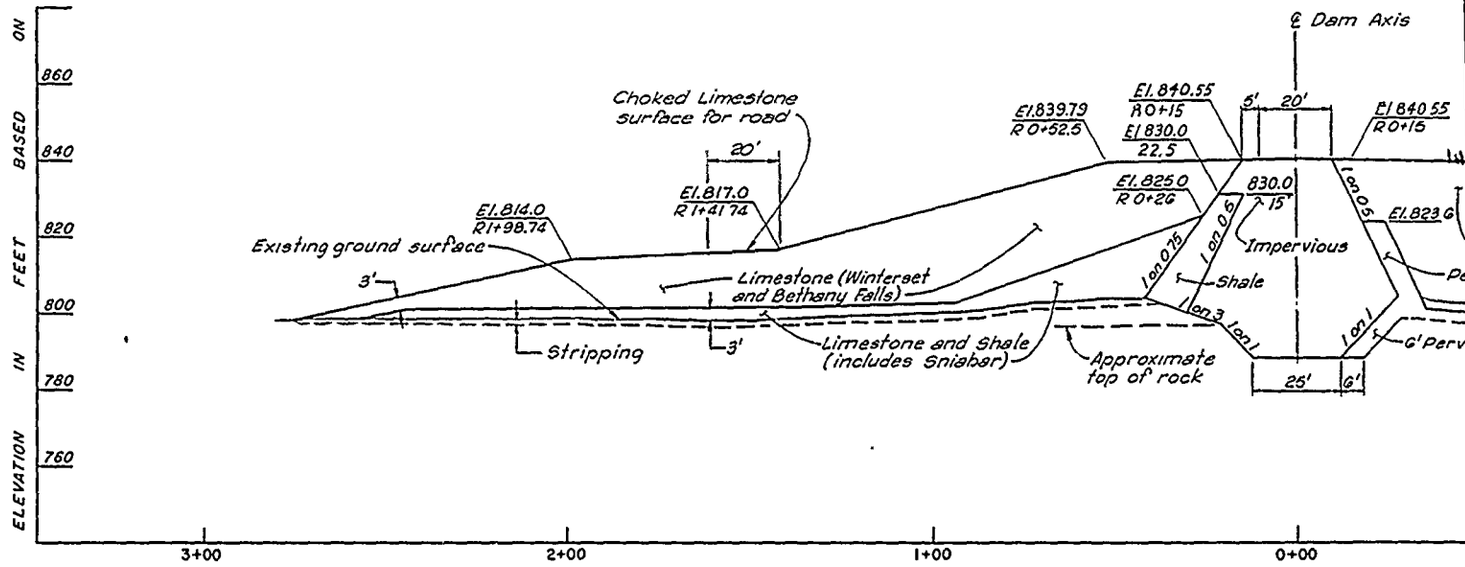
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

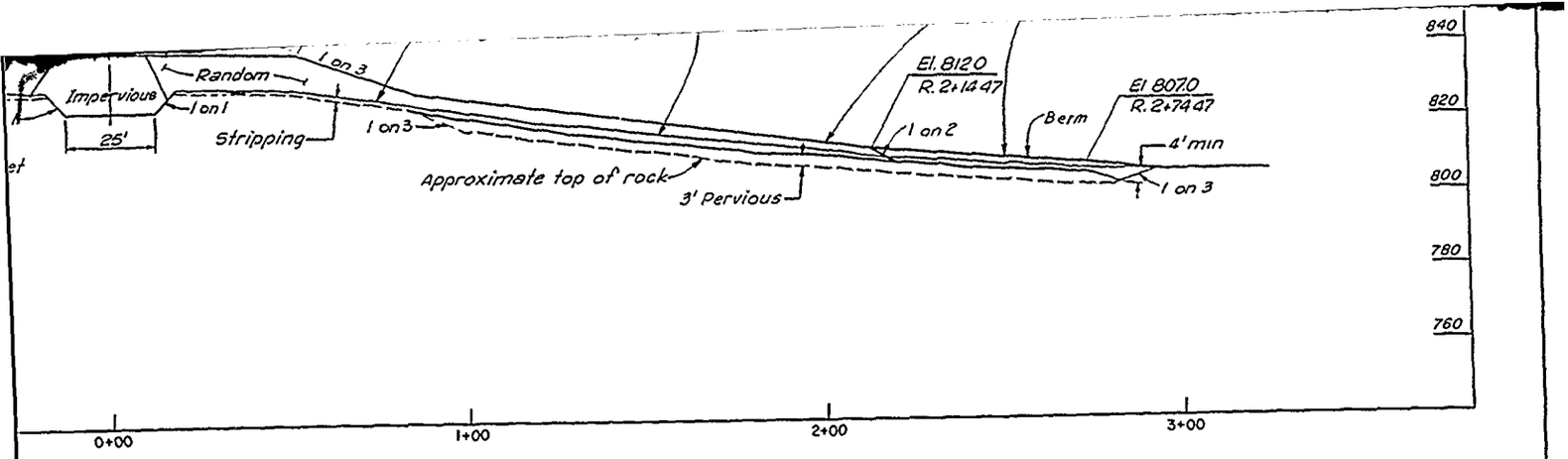
EMBANKMENT SECTIONS



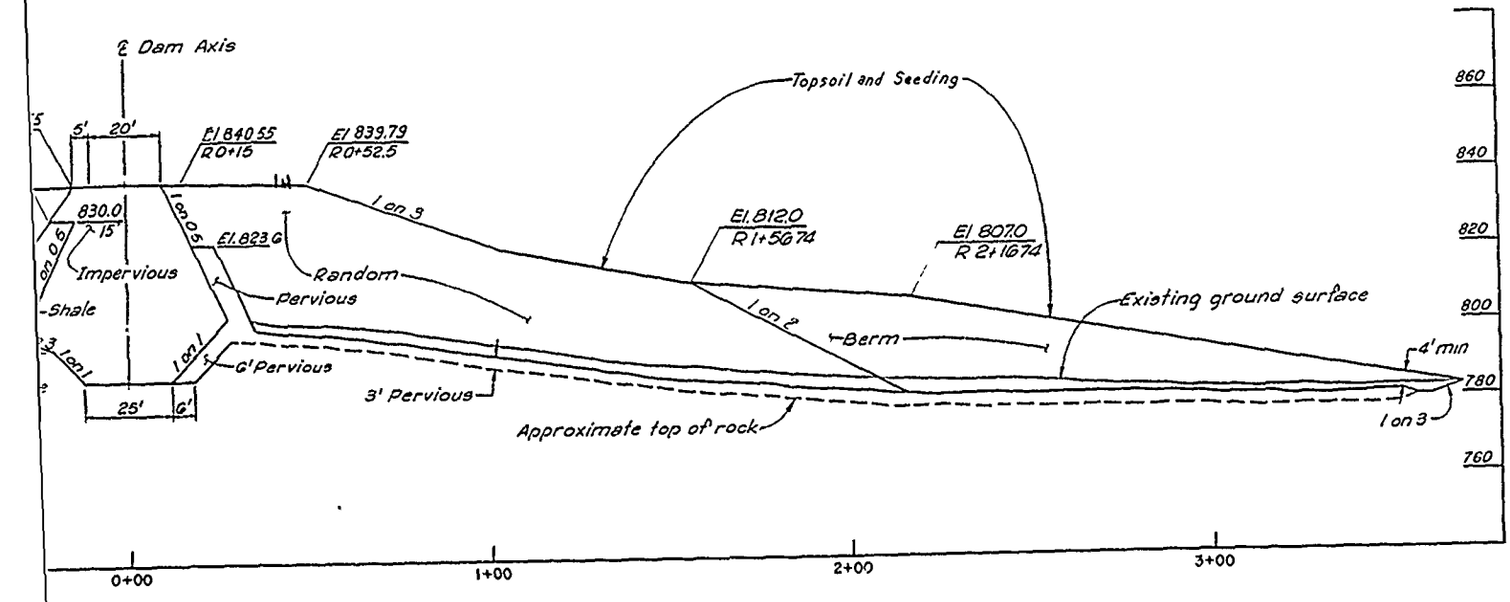
SECTION J B1|B5 STA. 99+00



SECTION H B1|B5 STA. 98+00



CTION (J) B1|B5 STA. 99+00



TION (H) B1|B5 STA. 98+00

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U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

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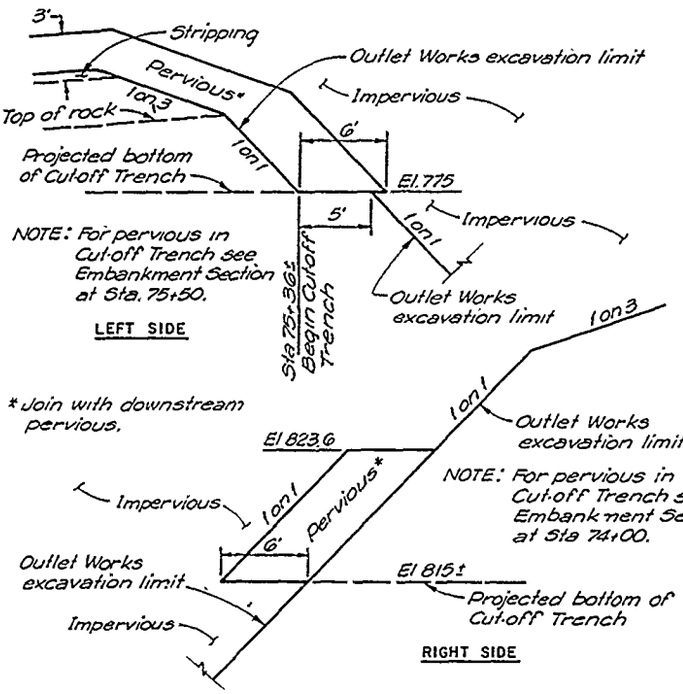
EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

EMBANKMENT SECTIONS

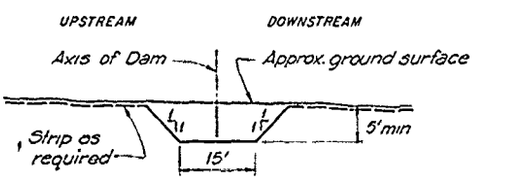
Scale: AS SHOWN
Date: JUNE 1990
Dwg. No.:
Sheet number: 7
File No.: RBL-2-1227

PLATE NO. 7



DETAIL SHOWING PERVIOUS TIE-INS BETWEEN OUTLET WORKS AND CUT-OFF TRENCH EXCAVATIONS, AT OUTLET WORKS STA. 50+20± (LOOKING DOWNSTREAM)

Not to Scale

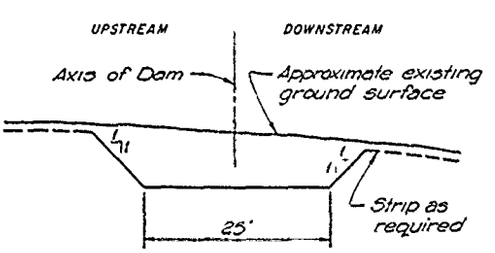


SECTION STA 91+00 (B) B7|B6

INSPECTION TRENCH EXCAVATION

Not to Scale

Note: Inspection trench extends from Sta 77+00± to Sta. 79+00± and from Sta. 80+00± to Sta. 95+00

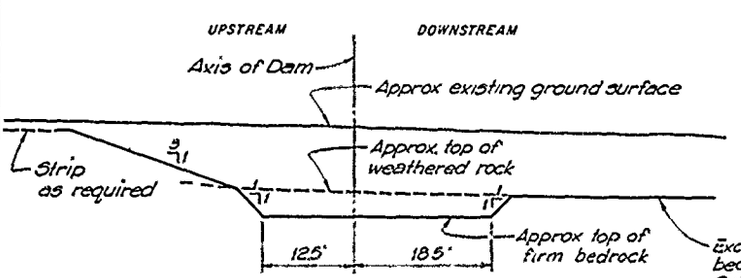


SECTION

CUTOFF TRENCH

Sta. 73+30 to Sta. 73+88± (Rock excavation)

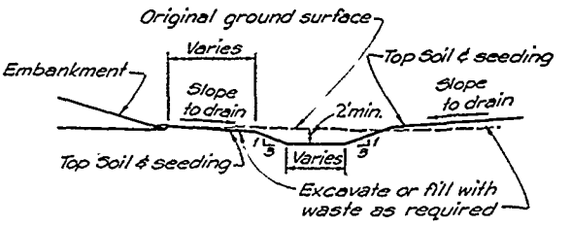
Sta. 95+25 to Sta. 96+95 (Overburden excavation)



SECTION STA. 98+60 (C) B7|B6

CUTOFF TRENCH

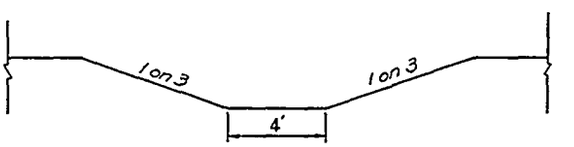
Sta 97+05 to Sta. 99+47



Note: Ditch grade to be established in field by contracting officer.

TYPICAL UNLINED TOE DITCH DETAIL

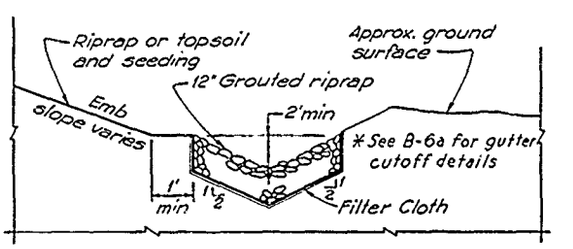
Not to Scale



TYPICAL SECTION

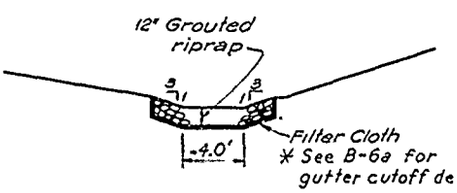
CULVERT DRAINAGE CHANNEL

Not to Scale



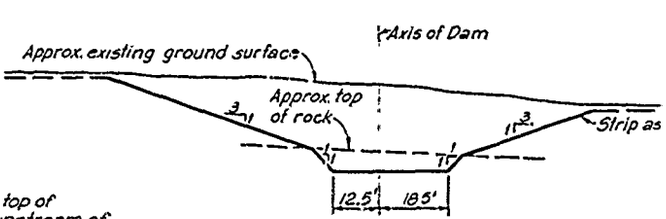
TYPICAL ABUTMENT GUTTER DITCH DETAIL

Not to Scale



TYPICAL LINED DITCH DETAIL

Not to Scale



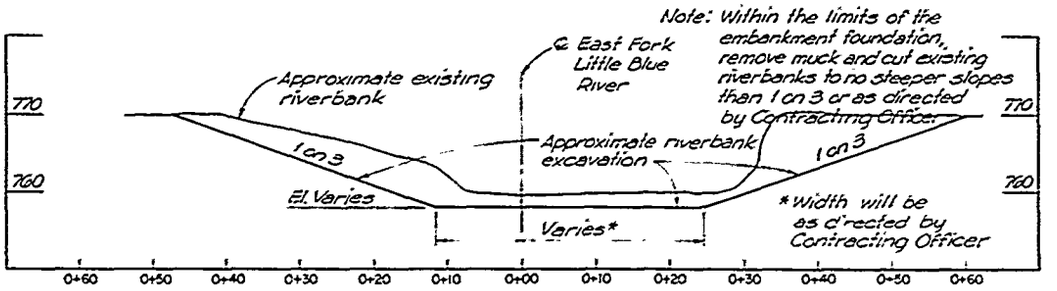
SECTION STA. 76+20 (E) B7|B6

CUTOFF TRENCH

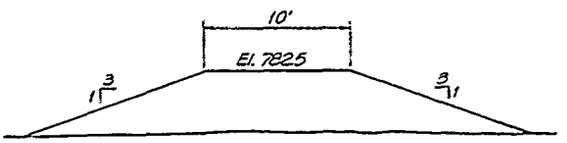
Sta. 75+36 to Sta. 76+30

Not to Scale

VALUE ENGINEERING PAYS

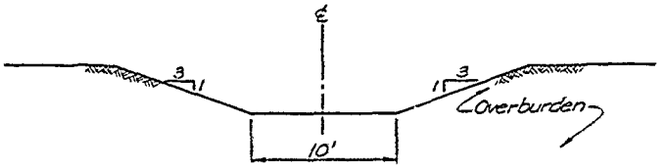


TYPICAL SECTION
RIVERBANK EXCAVATION INCLUDING ABANDONED
RIVER CHANNEL AND EXISTING CHANNEL

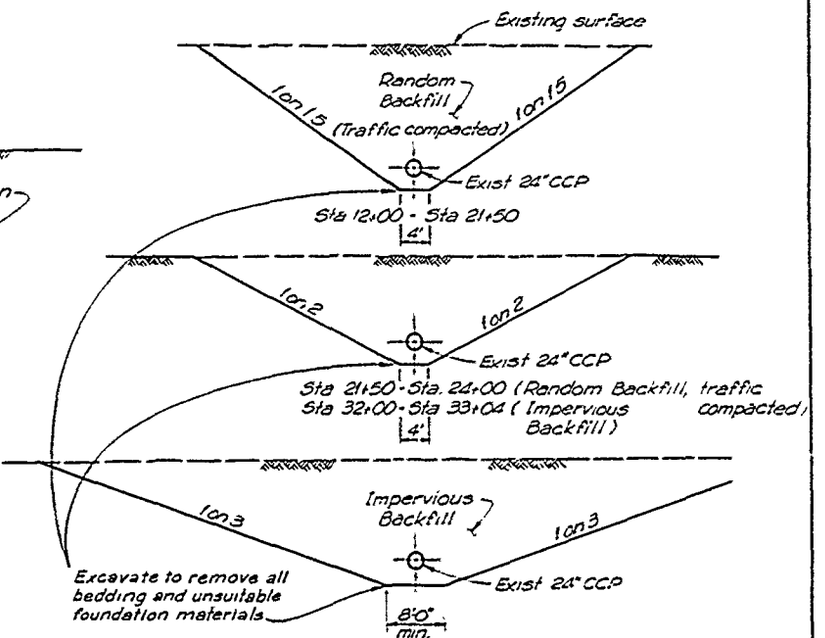


TYPICAL SECTION
PROTECTION DIKE
Not to Scale

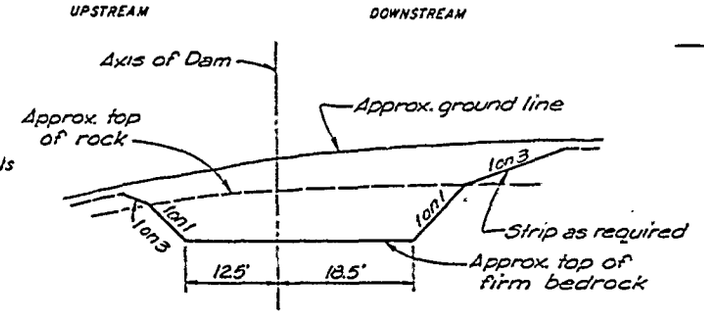
Note: All ditch depths, except as shown, shall be 2 ft. minimums. Depths and grades shall be established in the field by the Contracting Officer.



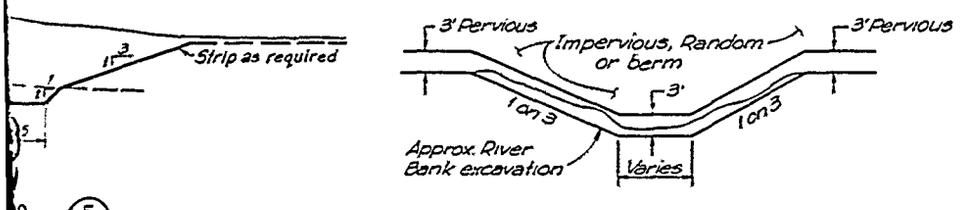
CROSS-SECTION
APPROACH AND OUTLET CHANNELS
Not to Scale



EXCAVATION OF EXISTING TEMPORARY SEWER
Not to Scale
See Profile Drawing B13.



SECTION A B7|B6
CUTOFF TRENCH
Sta. 73+88± to Sta. 74+22±



SECTION ACROSS ABANDONED RIVER

E B7|B6

Revisions			
Symbol	Descriptions	Date	Approved

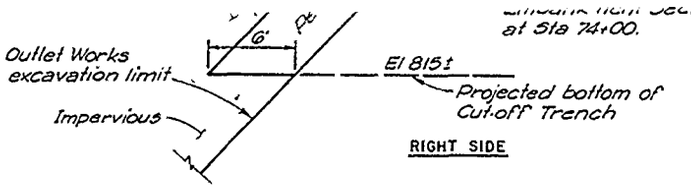
U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by:
Checked by:

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

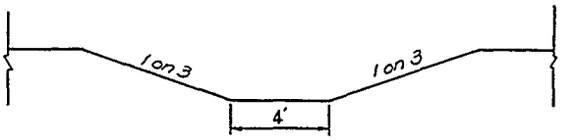
EMBANKMENT CONSTRUCTION DETAILS

at Sta 74+00.

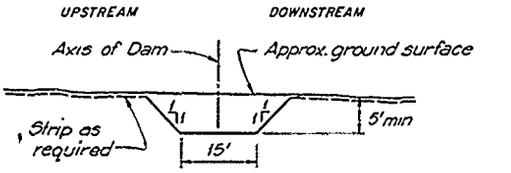


DETAIL SHOWING PERVIOUS TIE-INS BETWEEN OUTLET WORKS AND CUT-OFF TRENCH EXCAVATIONS, AT OUTLET WORKS STA. 50+20± (LOOKING DOWNSTREAM)

Not to Scale

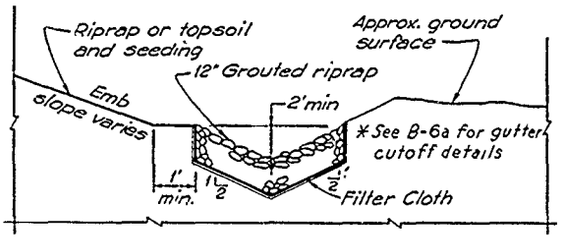


TYPICAL SECTION
CULVERT DRAINAGE CHANNEL
Not to Scale

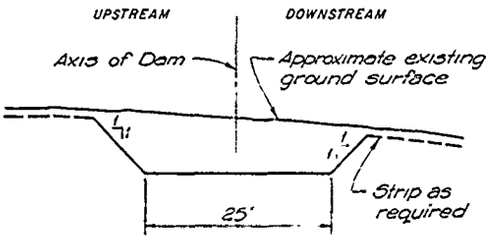


SECTION STA. 91+00 (B) B7|B6
INSPECTION TRENCH EXCAVATION
Not to Scale

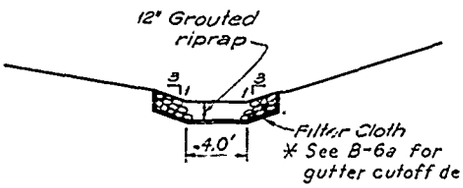
Note: Inspection trench extends from Sta 77+00± to Sta. 79+00± and from Sta 80+00± to Sta. 95+00



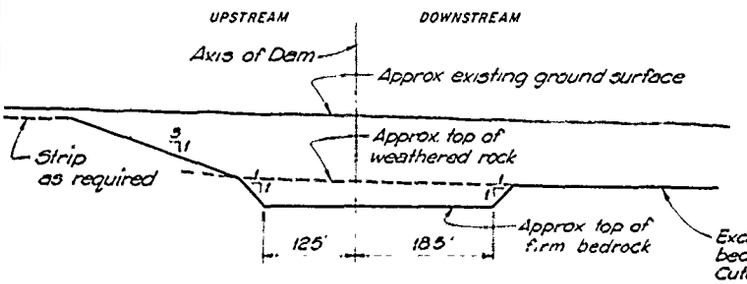
TYPICAL ABUTMENT GUTTER DITCH DETAIL
Not to Scale



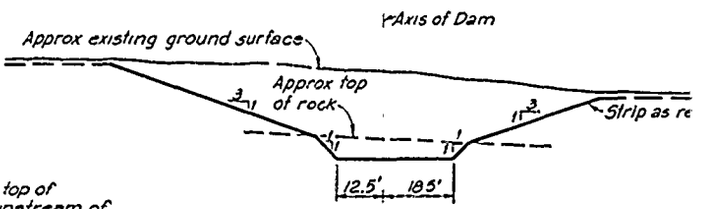
SECTION
CUTOFF TRENCH
Sta 73+30 to Sta 73+88± (Rock excavation)
Sta 95+25 to Sta 96+95 (Overburden excavation)



TYPICAL LINED DITCH DETAIL
Not to Scale

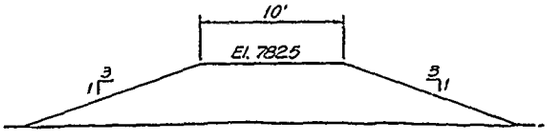


SECTION STA. 98+60 (C) B7|B6
CUTOFF TRENCH
Sta 97+05 to Sta 99+47
Not to Scale



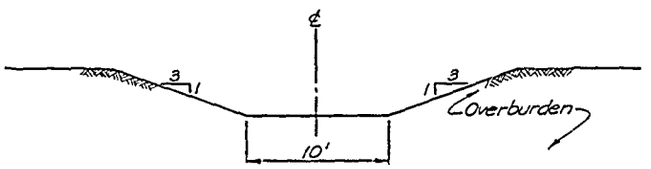
SECTION STA. 76+20 (E) B7|B6
CUTOFF TRENCH
Sta. 75+36 to Sta. 76+30
Not to Scale

RIVER CHANNEL AND EXISTING CHANNEL

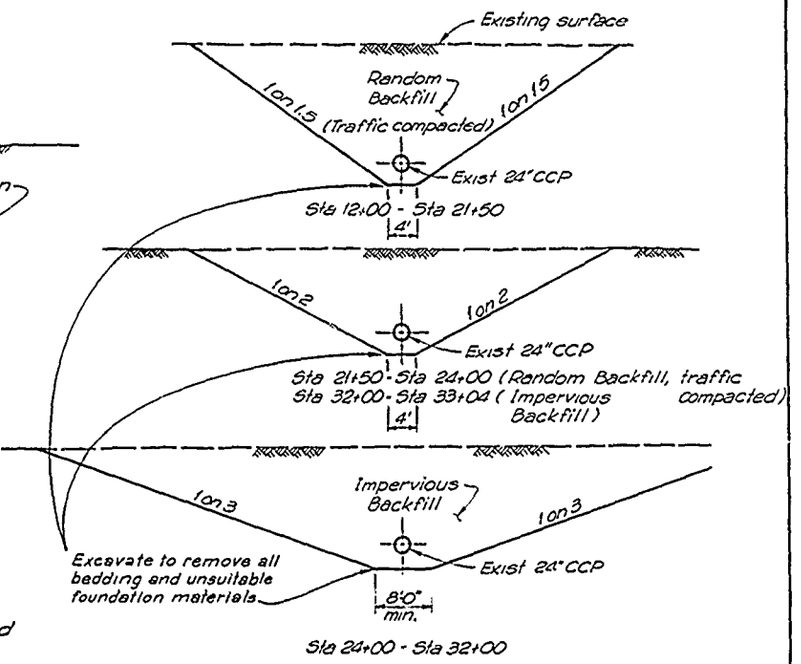


Note: All ditch depths, except as shown, shall be 2 ft. minimums. Depths and grades shall be established in the field by the Contracting Officer.

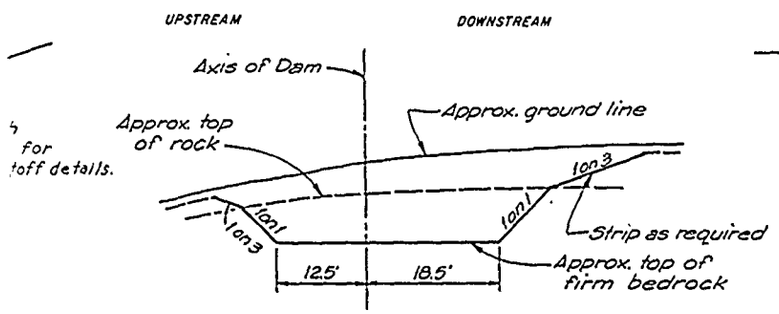
TYPICAL SECTION
PROTECTION DIKE
Not to Scale



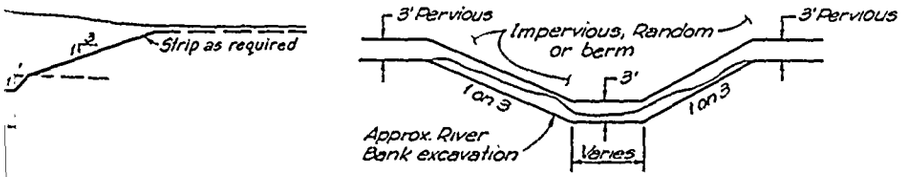
CROSS - SECTION
APPROACH AND OUTLET CHANNELS
Not to Scale



EXCAVATION OF EXISTING TEMPORARY SEWER
Not to Scale
See Profile Drawing B13.



SECTION A B7|B6
CUTOFF TRENCH
Sta 73+88± to Sta 74+22±



E B7|B6

SECTION ACROSS ABANDONED RIVER CHANNEL AND EXISTING CHANNEL SHOWING PLACEMENT OF PERVIOUS
Not to Scale

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by:
Checked by:
Submitted by:

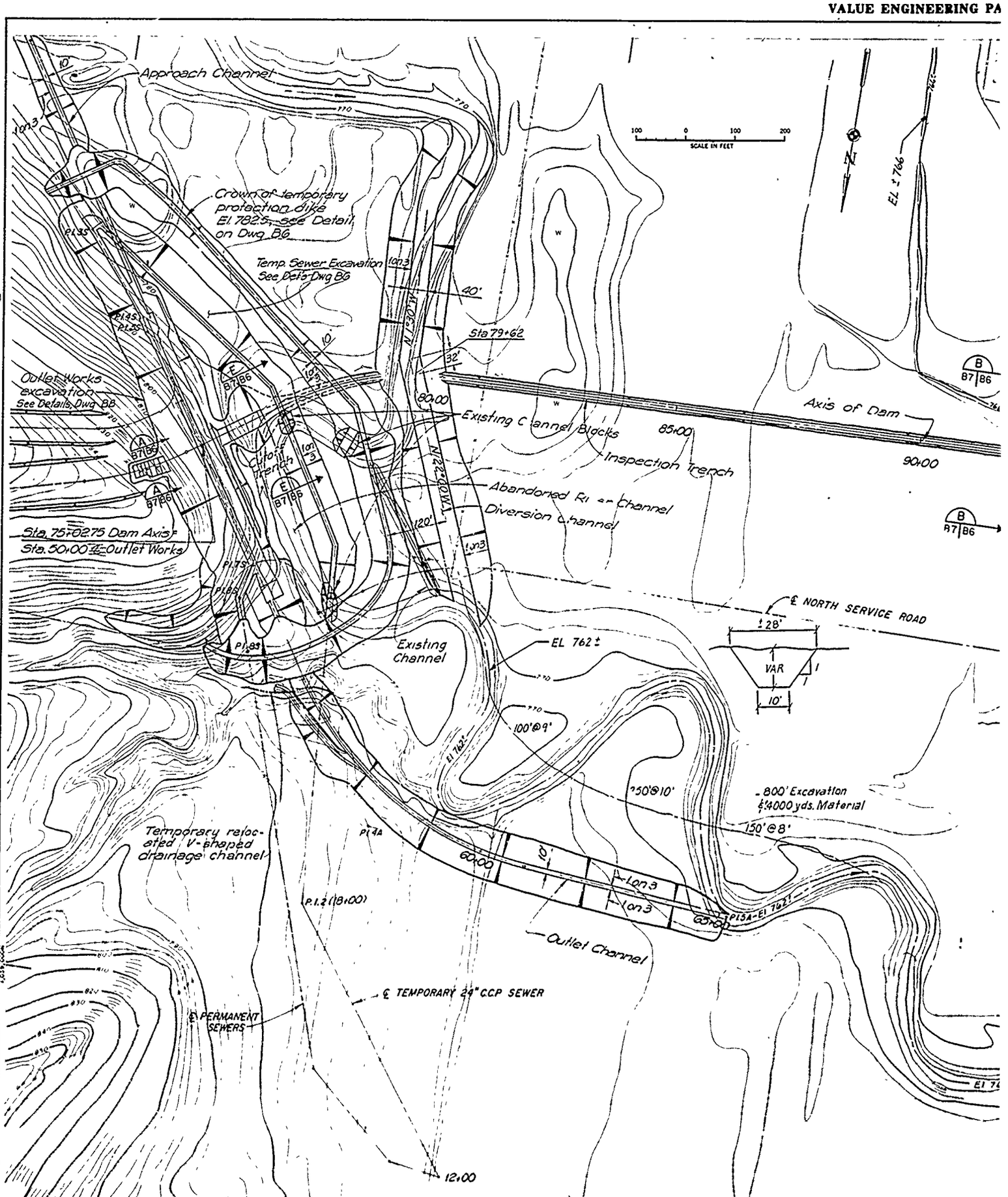
US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

EMBANKMENT CONSTRUCTION DETAILS

Scale: AS SHOWN
Date: JUNE 1990
Dwg No.:
Sheet number: 8
File No: RBL-2-1228

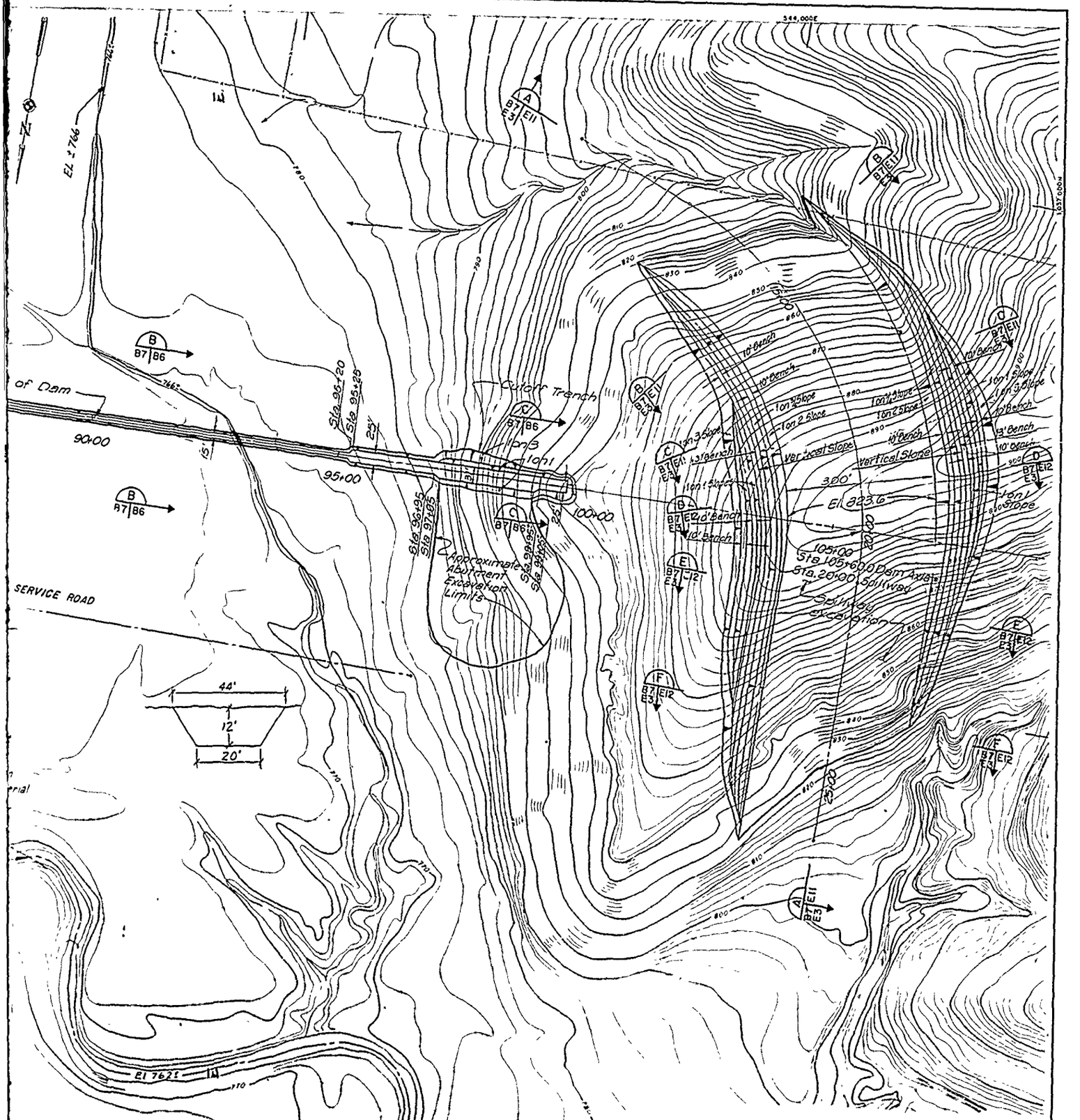
PLATE NO. 8



Notes:
1. For Outlet Works excavation see Dwg. B8.
2. For Approach and Outlet Channels see Dwg. E6.
3. For Spillway Profile and Sections see Dwgs. E11 and El
4. For slopes and elevations in Outlet Works area, see D
"For bottom elevations and slope of spillway excavation, see Dwg

BASE FILE NO REL-2-73

VALUE ENGINEERING PAYS



Dwg 88.
see Dwg. E6.
see Dwgs. E11 and E12.
Works area, see Dwg. 88
way excavation, see Dwg. B-1 & E11.

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
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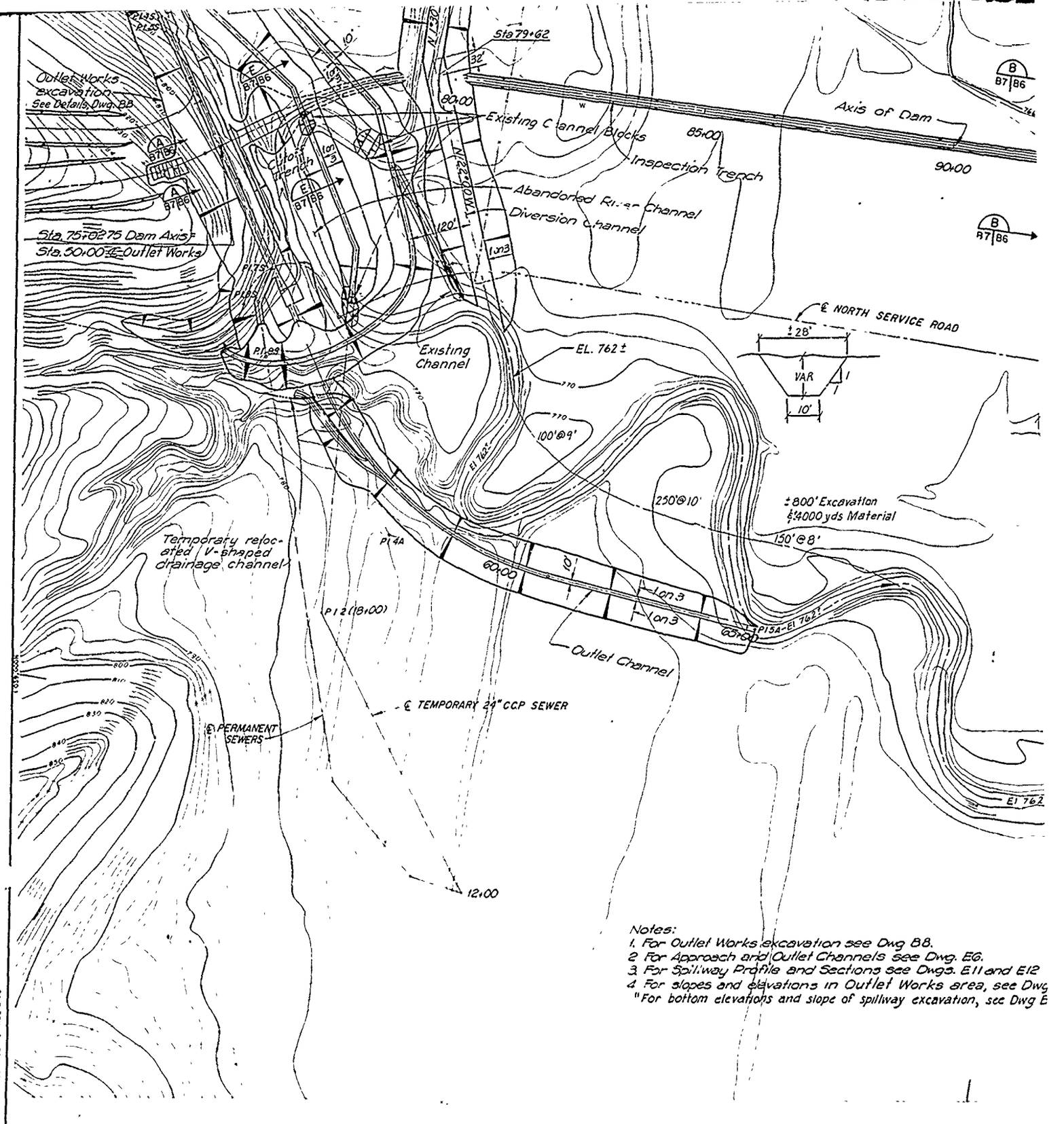
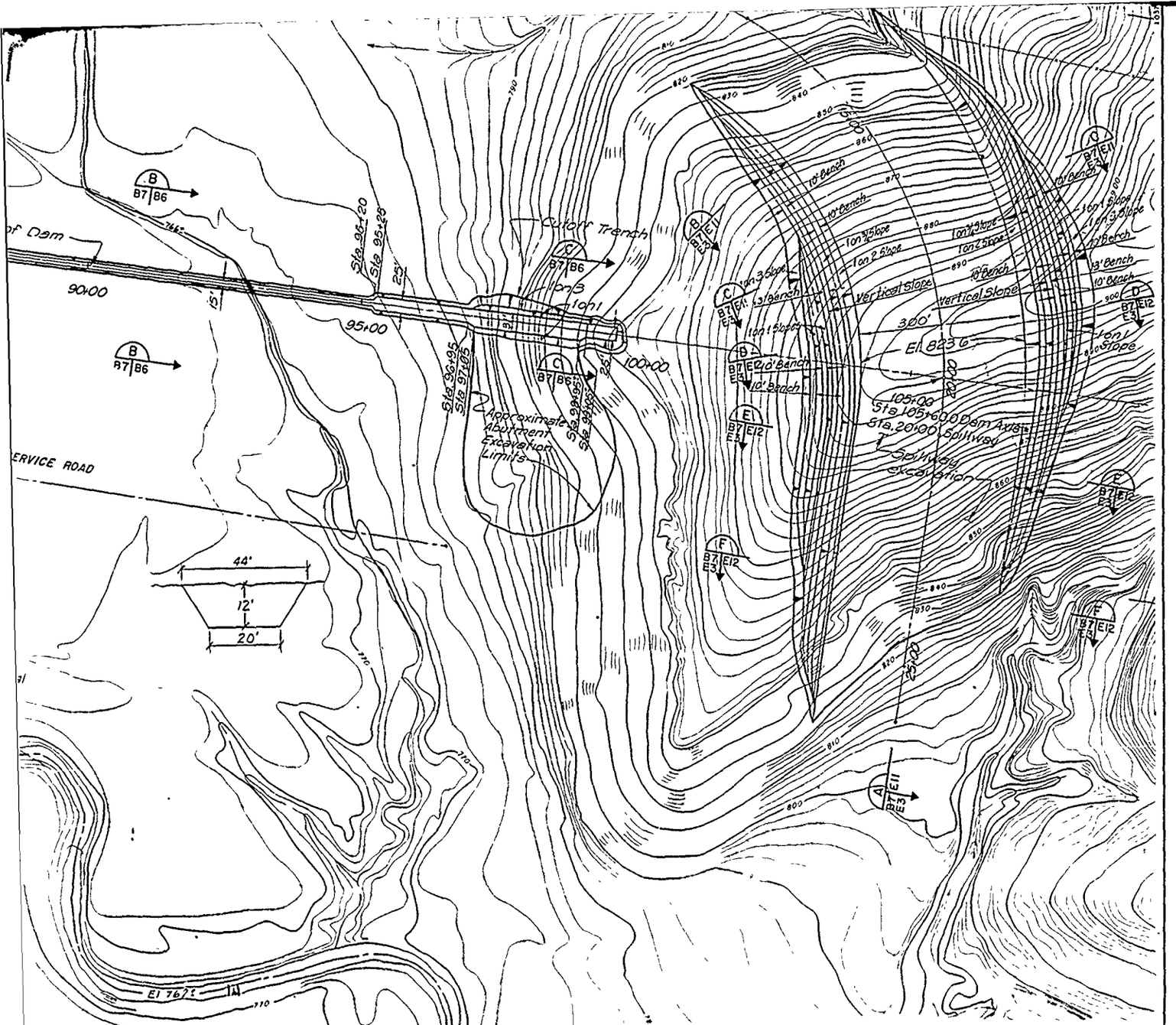
US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

GENERAL PLAN OF EXCAVATION

Scale: AS SHOWN
Sheet number:
Date: JUNE 1990


Sta 79+62
Outlet Works excavation See Details, Dwg. B8
Existing Channel Blocks
Inspection Trench
Axis of Dam
Abandoned River Channel
Diversion Channel
Cutoff Trench
Sta. 75+02.75 Dam Axis = Sta. 50+00 ℄ Outlet Works
℄ NORTH SERVICE ROAD
±28'
VAR
10'
Existing Channel
EL. 762±
100'@9'
250'@10'
±800' Excavation & 4000 yds Material
150'@8'
Temporary relocated V-shaped drainage channel
60+00
65+00
1 on 3
Outlet Channel
℄ TEMPORARY 24" CCP SEWER
℄ PERMANENT SEWERS
12+00
El 762
Notes:
1. For Outlet Works excavation see Dwg B8.
2. For Approach and Outlet Channels see Dwg. E6.
3. For Spillway Profile and Sections see Dwgs. E11 and E12
4. For slopes and elevations in Outlet Works area, see Dwg
"For bottom elevations and slope of spillway excavation, see Dwg E



Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

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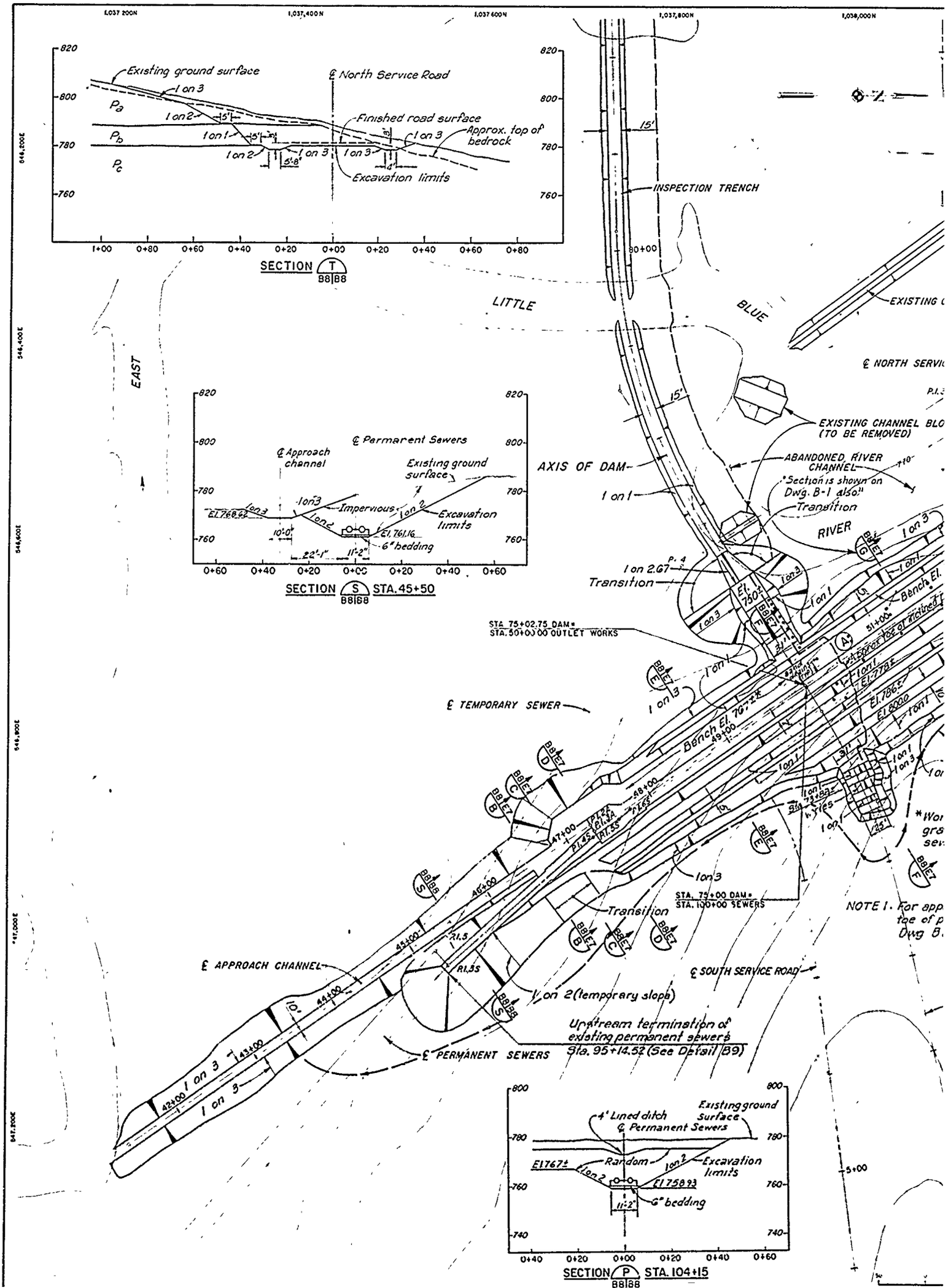
US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

GENERAL PLAN OF EXCAVATION

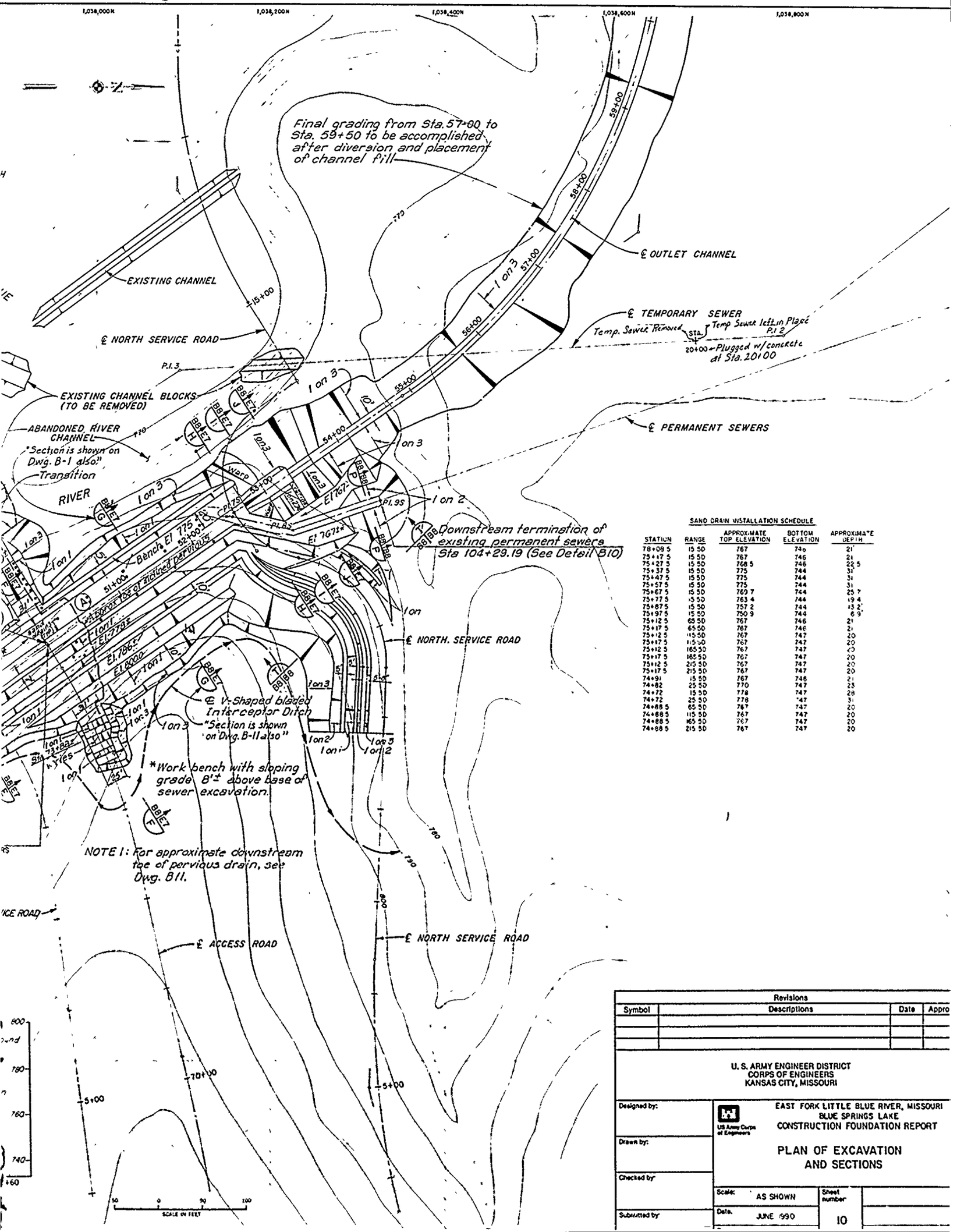
Scale: AS SHOWN
Date: JUNE 1990
Dwg. No.:
Sheet number: 9
File No. RBL-2-1229

PLATE NO. 9



Existing ground surface
℄ North Service Road
1 on 3
1 on 2
1 on 1
Finished road surface
Approx. top of bedrock
Excavation limits
SECTION T B8|B8
INSPECTION TRENCH
LITTLE
BLUE
EAST
RIVER
℄ NORTH SERVI
EXISTING CHANNEL BLO (TO BE REMOVED)
ABANDONED RIVER CHANNEL
"Section is shown on Dwg. B-1 also."
Transition
AXIS OF DAM
1 on 1
1 on 2.67
Transition
℄ Permanent Sewers
℄ Approach channel
Existing ground surface
Impervious
Excavation limits
El. 768.62
El. 761.16
6" bedding
SECTION S STA. 45+50 B8|B8
STA. 75+02.75 DAM = STA. 50+00.00 OUTLET WORKS
℄ TEMPORARY SEWER
Bench El. 767±
STA. 75+00 DAM = STA. 100+00 SEWERS
Transition
℄ APPROACH CHANNEL
℄ SOUTH SERVICE ROAD
1 on 2 (temporary slope)
Upstream termination of existing permanent sewers Sta. 95+14.52 (See Detail B9)
℄ PERMANENT SEWERS
4" Lined ditch
℄ Permanent Sewers
Existing ground surface
Random
Excavation limits
El. 767±
El. 758.93
6" bedding
SECTION P STA. 104+15 B8|B8

VALUE ENGINEERING PAYS



SAND DRAIN INSTALLATION SCHEDULE

STATION	RANGE	APPROXIMATE TOP ELEVATION	BOTTOM ELEVATION	APPROXIMATE DEPTH
78+08 5	15 50	767	74o	21'
75+17 5	15 50	767	746	21
75+27 5	15 50	768 5	746	22 5
75+37 5	15 50	775	744	31
75+47 5	15 50	775	744	31
75+57 5	15 50	775	744	31
75+67 5	15 50	769 7	744	25 7
75+77 5	15 50	763 4	744	19 4
75+87 5	15 50	757 2	744	13 2'
75+97 5	15 50	750 9	744	6 9'
75+12 5	65 50	767	746	21
75+17 5	65 50	767	746	21
75+12 5	115 50	767	747	20
75+17 5	115 50	767	747	20
75+12 5	165 50	767	747	20
75+17 5	165 50	767	747	20
75+12 5	215 50	767	747	20
75+17 5	215 50	767	747	20
74+91	15 50	767	746	21
74+82	25 50	770	747	23
74+72	15 50	778	747	28
74+72	25 50	778	747	31
74+88 5	65 50	767	747	20
74+88 5	115 50	767	747	20
74+88 5	165 50	767	747	20
74+88 5	215 50	767	747	20

Revisions			
Symbol	Descriptions	Date	Appro

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

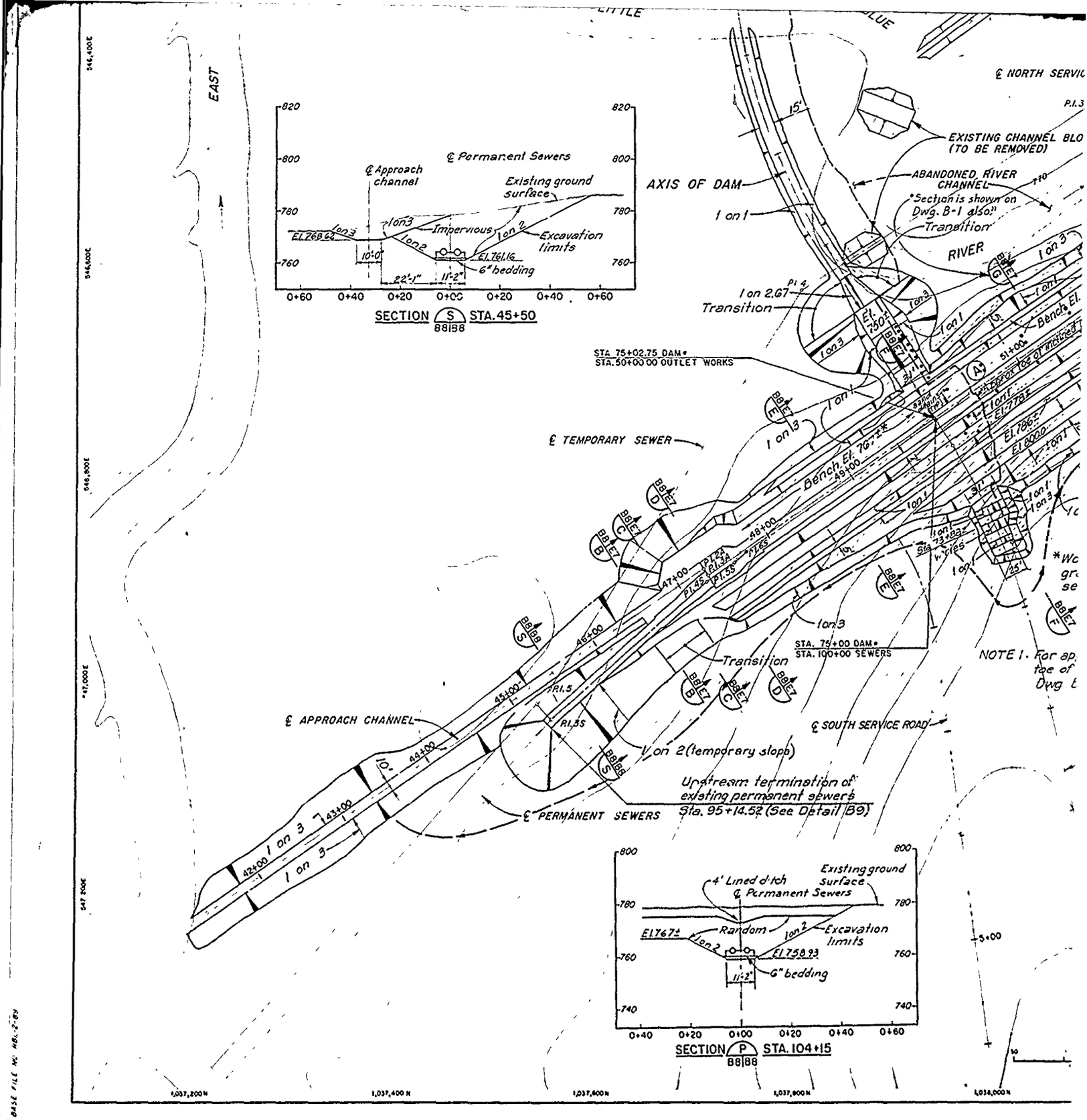
Designed by:
Drawn by:
Checked by:
Submitted by:

US Army Corps of Engineers

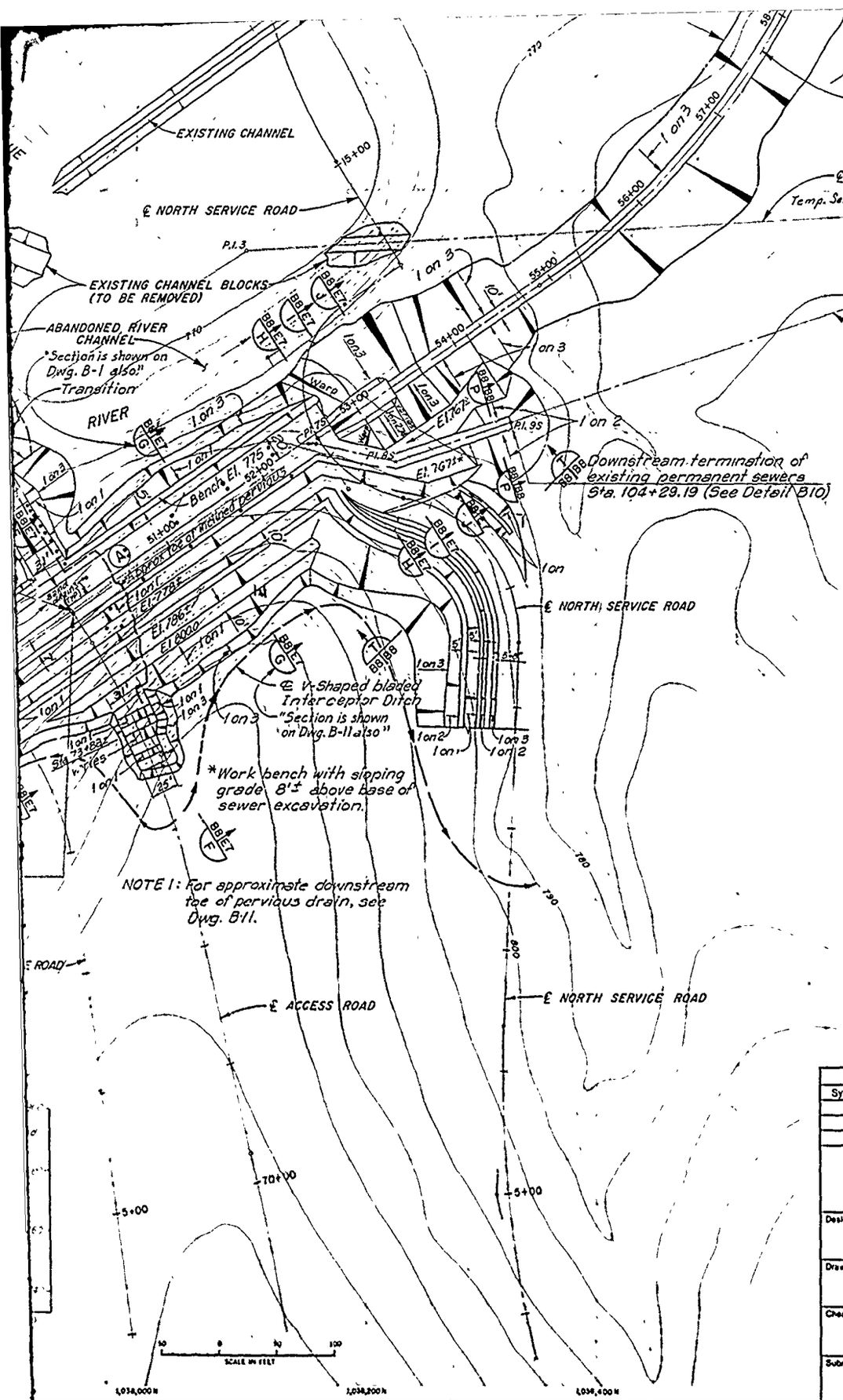
EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

PLAN OF EXCAVATION AND SECTIONS

Scale: AS SHOWN
Date: JUNE 1990
Sheet number: 10



EAST
℄ NORTH SERVIC
EXISTING CHANNEL BLO
(TO BE REMOVED)
ABANDONED RIVER CHANNEL
"Section is shown on Dwg. B-1 also."
Transition
RIVER
AXIS OF DAM
1 on 1
1 on 2.67
Transition
STA 75+02.75 DAM*
STA. 50+00.00 OUTLET WORKS
℄ TEMPORARY SEWER
Bench El. 767±*
STA. 75+00 DAM*
STA. 100+00 SEWERS
Transition
℄ APPROACH CHANNEL
℄ SOUTH SERVICE ROAD
1 on 2 (temporary slope)
Upstream termination of existing permanent sewers
Sta. 95+14.52 (See Detail B9)
℄ PERMANENT SEWERS
NOTE 1. For ap
toe of
Dwg
℄ Permanent Sewers
℄ Approach channel
Existing ground surface
Impervious
Excavation limits
6" bedding
SECTION S STA. 45+50
88|88
4' Lined ditch
℄ Permanent Sewers
Existing ground surface
Random
Excavation limits
6" bedding
SECTION P STA. 104+15
88|88



SAND DRAIN INSTALLATION SCHEDULE

STATION	RANGE	APPROXIMATE TOP ELEVATION	BOTTOM ELEVATION	APPROXIMATE DEPTH
78+08 5	15 5D	767	74o	21'
75+17 5	15 5D	767	746	21'
75+27.5	15 5D	768 5	746	22 5'
75+37 5	15 5D	775	744	31'
75+47 5	15 5D	775	744	31
75+57 5	15 5D	775	744	31
75+67 5	15 5D	769.7	744	25 7'
75+77.5	15 5D	763 4	744	19 4'
75+87 5	15 5D	757 2	744	13 2'
75+97 5	15 5D	750 9	744	6 9'
75+12 5	65 5D	767	746	21'
75+17 5	65 5D	767	746	21'
75+12 5	115 5D	767	747	20'
75+17 5	115 5D	767	747	20'
75+12 5	165 5D	767	747	20'
75+17 5	165 5D	767	747	20'
75+12 5	215 5D	767	747	20
75+17 5	215 5D	767	747	20
74+91	15 5D	767	736	21
74+82	25 5D	770	747	23
74+72	15 5D	778	747	28
74+72	25 5D	778	747	31
74+88 5	65 5D	767	747	20
74+88 5	115 5D	767	747	20
74+88 5	165 5D	767	747	20
74+88 5	215 5D	767	747	20

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U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

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US Army Corps of Engineers

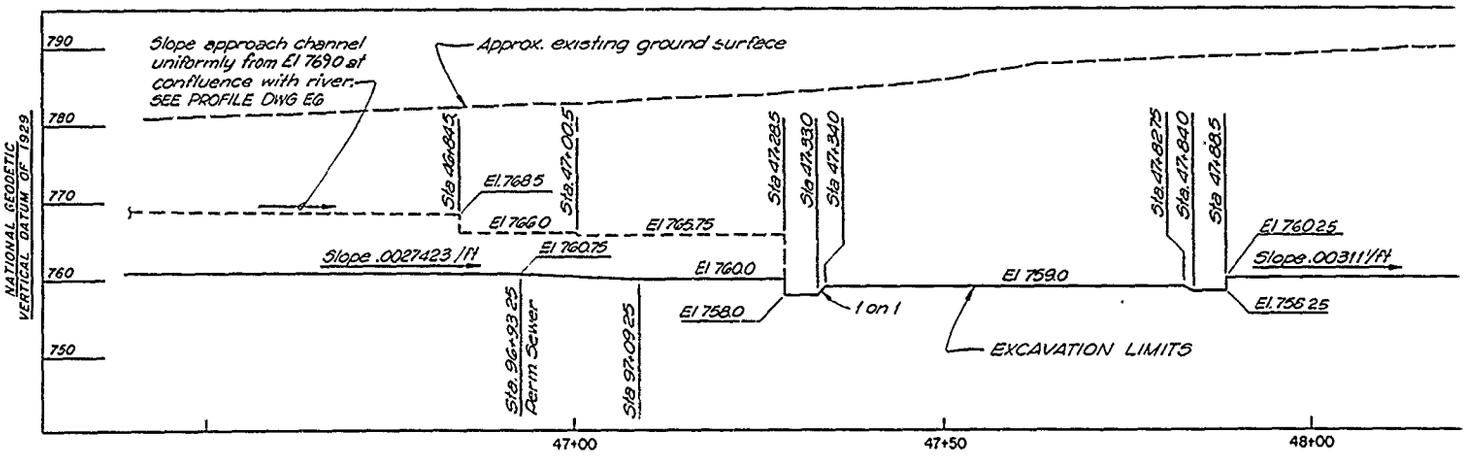
EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

PLAN OF EXCAVATION AND SECTIONS

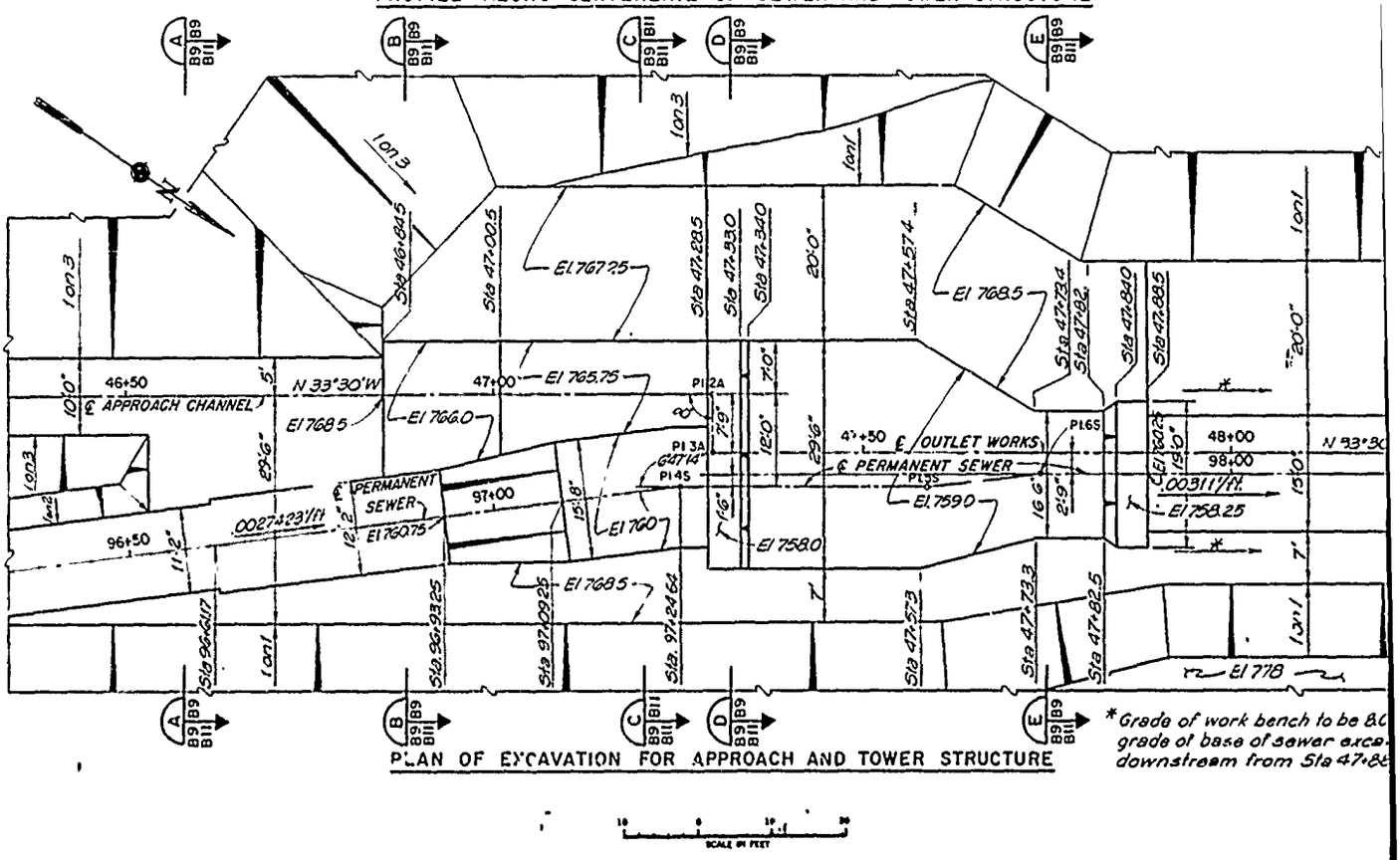
Scale: AS SHOWN
Date: JUNE 1990
Dwg. No.:
Sheet number: 10
File No: RBL-2-1230

PLATE NO. 10

BASE FILE NO. RBL-2-8



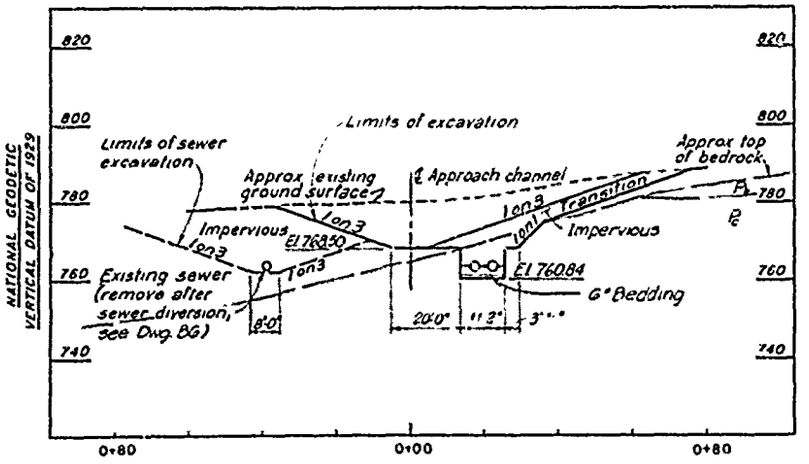
PROFILE ALONG CENTERLINE OF SEWER AND TOWER STRUCTURE



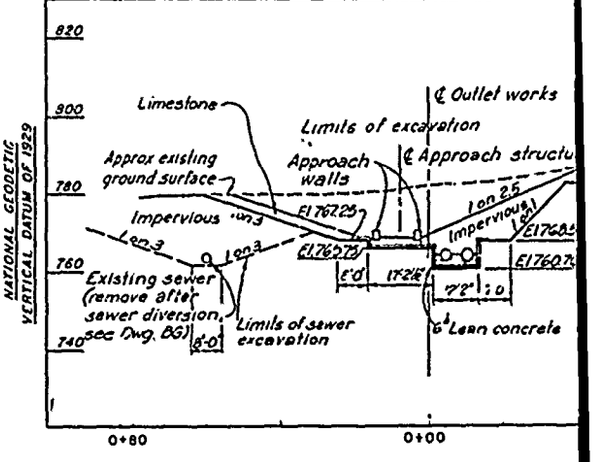
PLAN OF EXCAVATION FOR APPROACH AND TOWER STRUCTURE

*Grade of work bench to be &C grade of base of sewer excav downstream from Sta 47+88

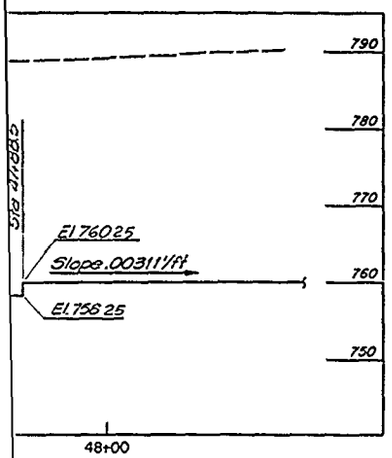
SCALE IN FEET

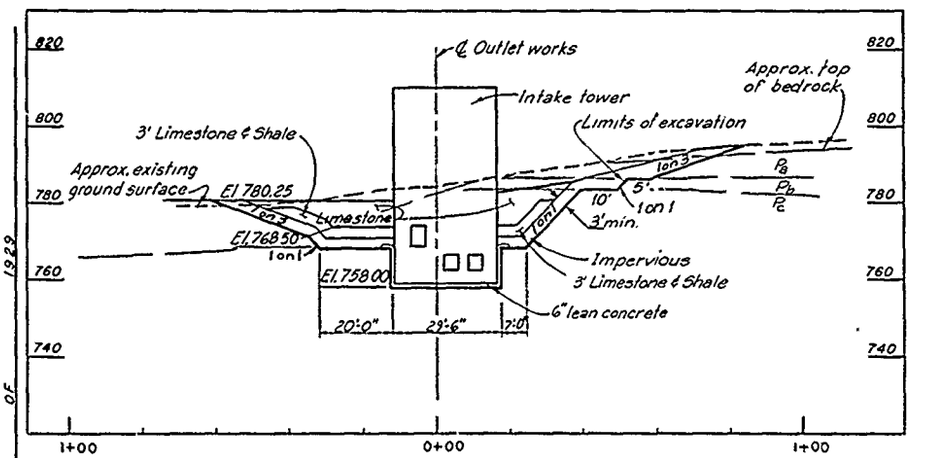


SECTION (A) STA. 46+58
B9 B8

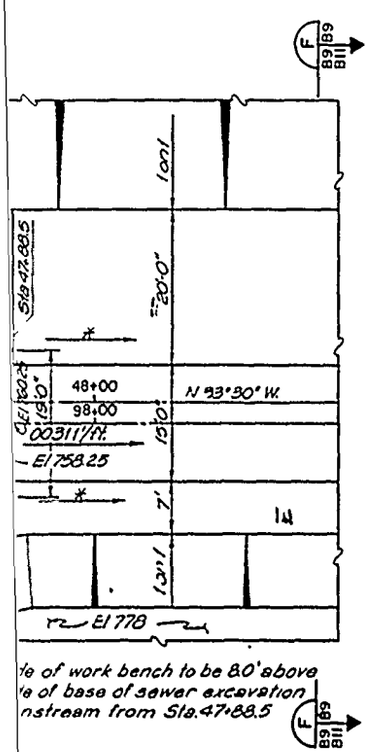


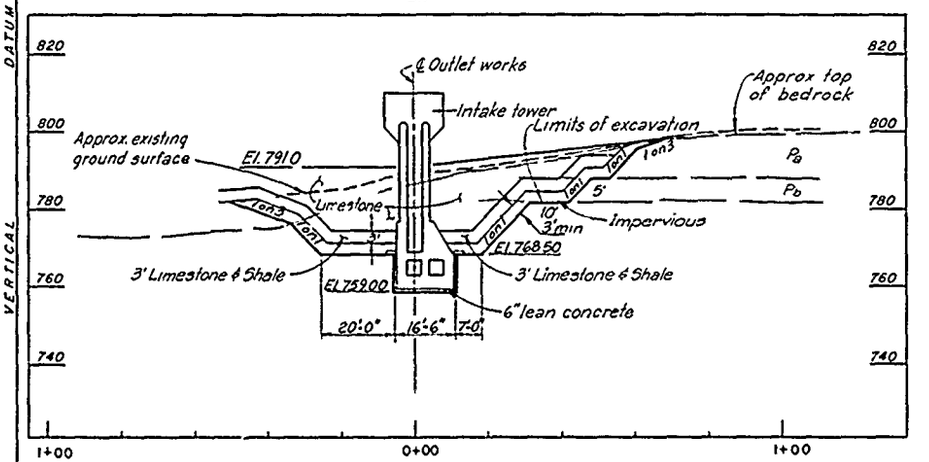
SECTION (B) STA. 46+88



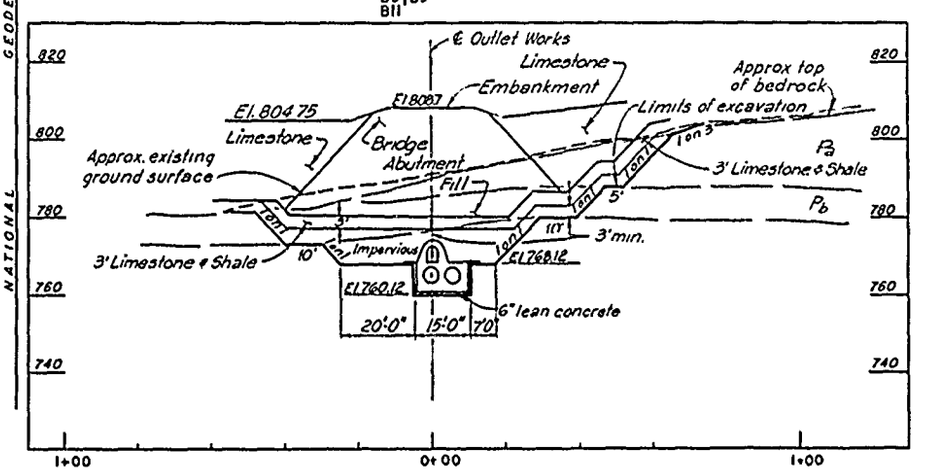


SECTION (D) B9|B9 B11 STA. 47+32

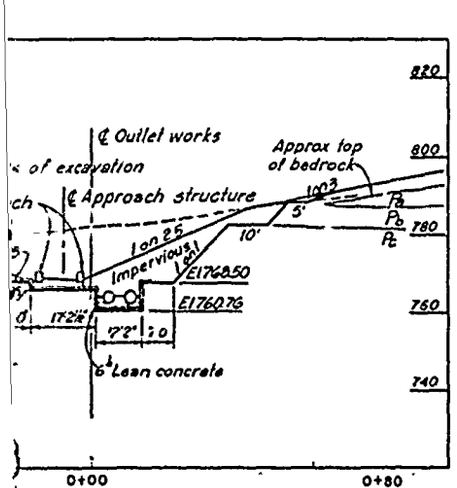




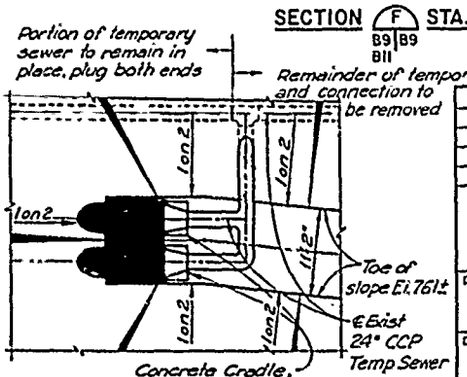
SECTION (E) B9|B9 B11 STA. 47+75



SECTION (F) B9|B9 B11 STA. 48+30



(B) B9|B9 STA. 46+88



EXCAVATION AT UPSTREAM TERMINATION OF EXISTING PERMANENT SEWER

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

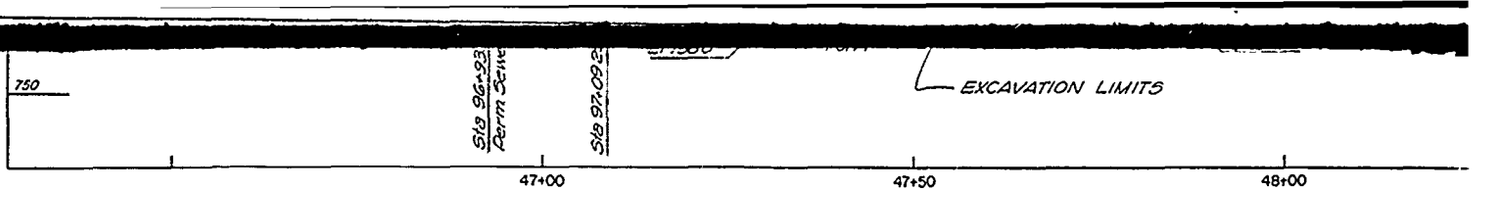
Designed by:
Drawn by:
Checked by:

US Army Corps of Engineers

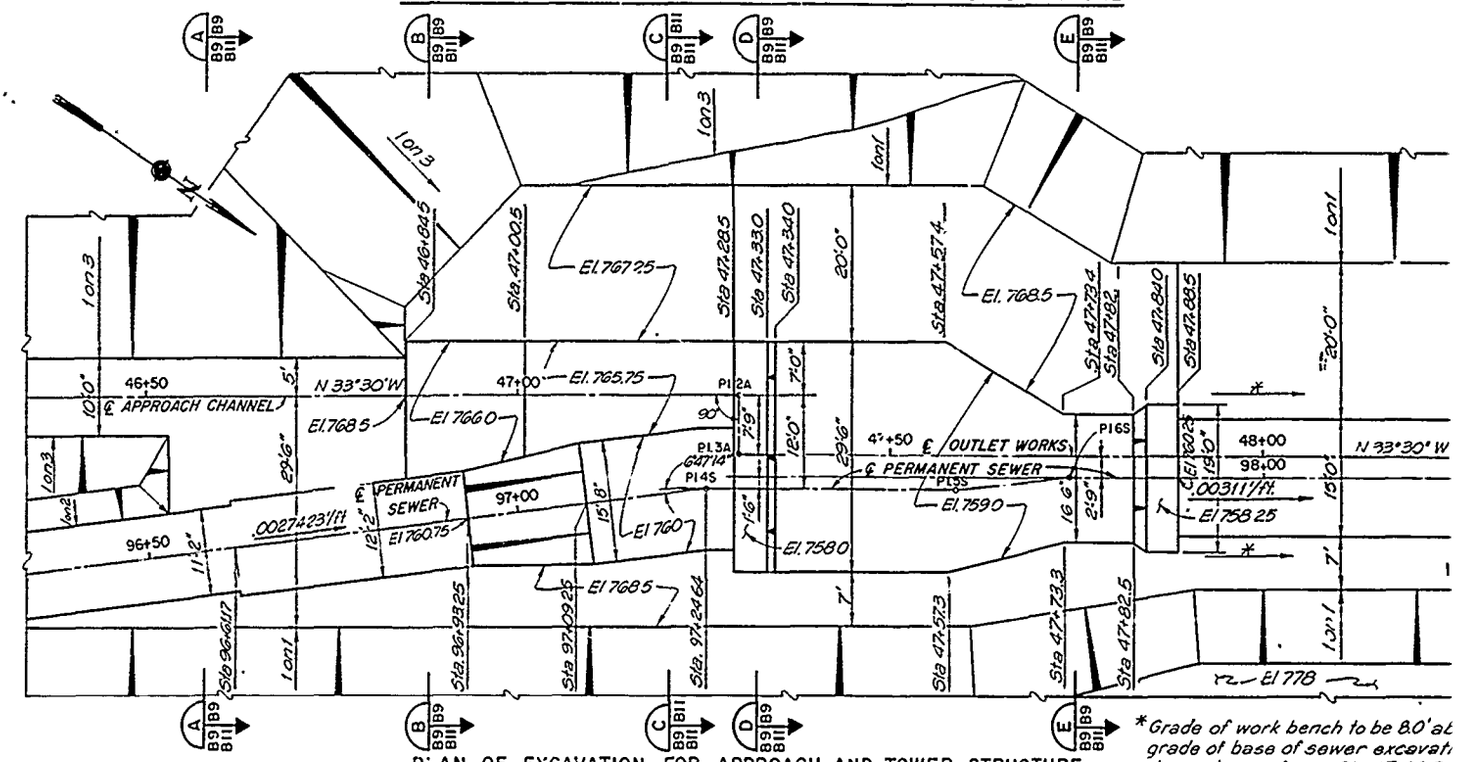
EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

APPROACH STRUCTURE
EXCAVATION AND BACKFILL

Scale: AS SHOWN | Sheet

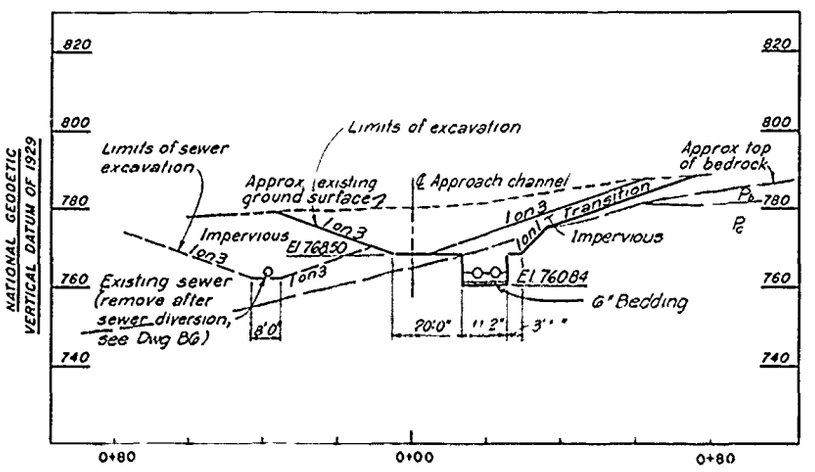


PROFILE ALONG CENTERLINE OF SEWER AND TOWER STRUCTURE

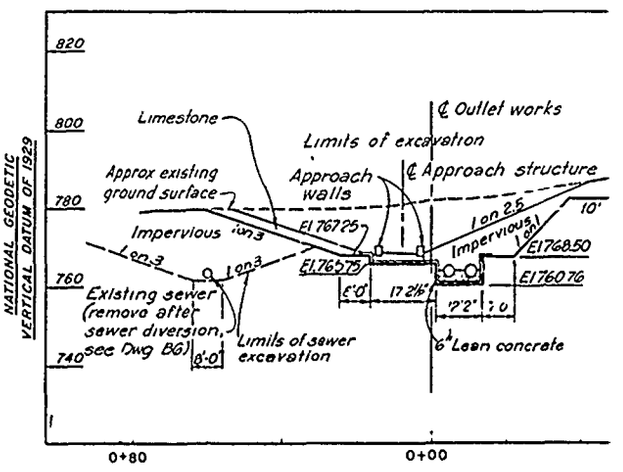


PLAN OF EXCAVATION FOR APPROACH AND TOWER STRUCTURE

SCALE IN FEET

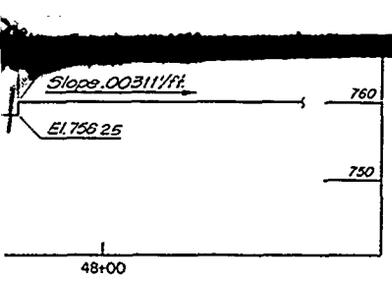


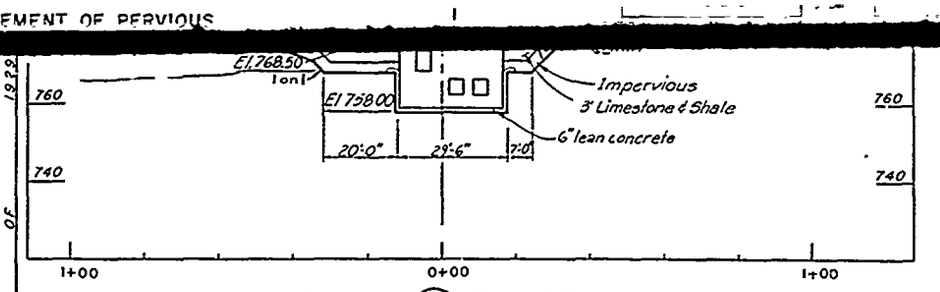
SECTION A B9 B9 B11 STA. 46+58



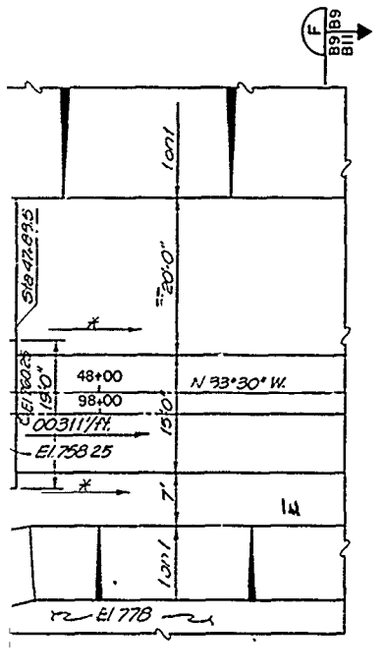
SECTION B B9 B9 B11 STA. 46+88

PLACEMENT OF PERVIOUS



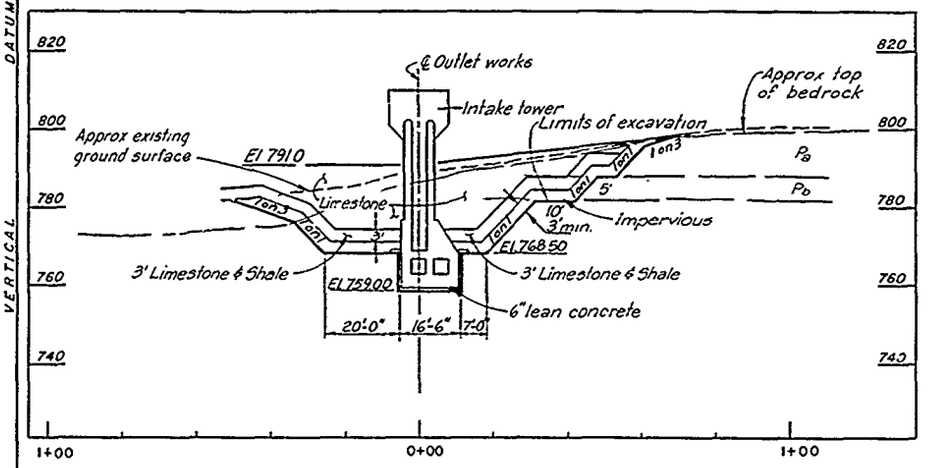


SECTION D B9|B9 B11 STA. 47+32

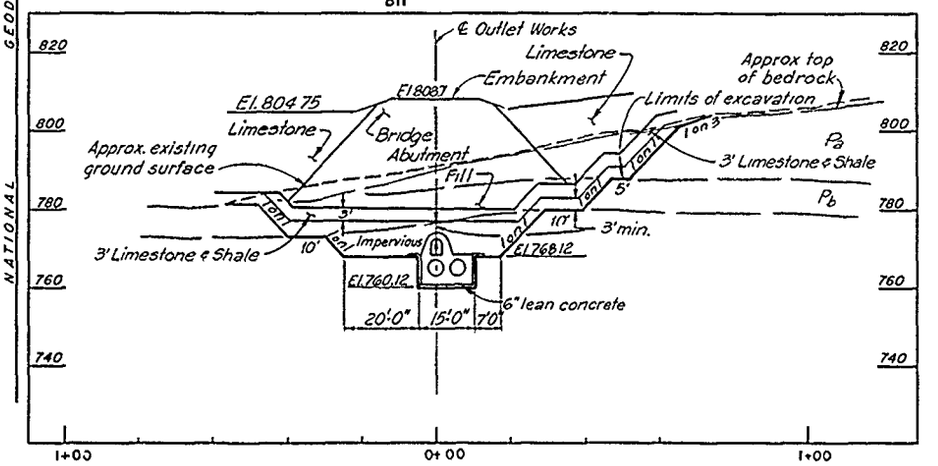


ide of work bench to be 8.0' above
ide of base of sewer excavation
wnstream from Sta 47+88.5

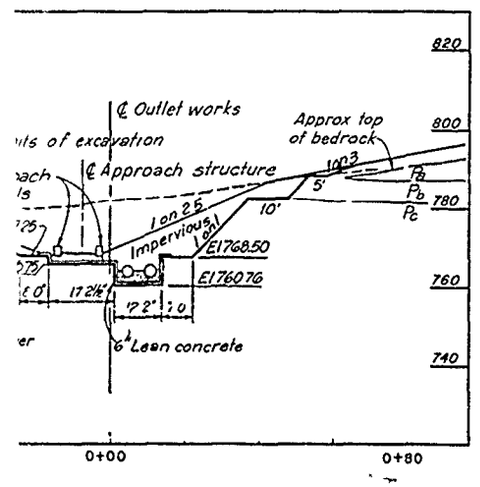
F B9|B9 B11



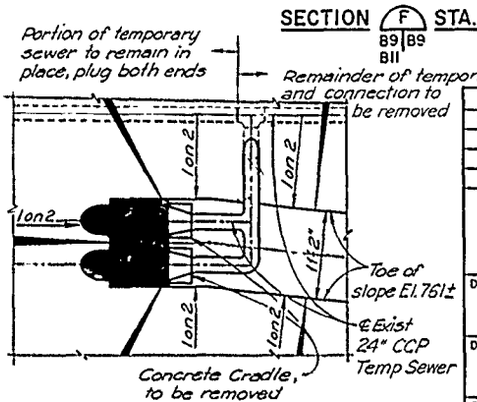
SECTION E B9|B9 B11 STA. 47+75



SECTION F B9|B9 B11 STA. 48+30



ION B B9|B9 B11 STA. 46+88



EXCAVATION AT UPSTREAM TERMINATION OF EXISTING PERMANENT SEWER
Not to Scale

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by:
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Submitted by:

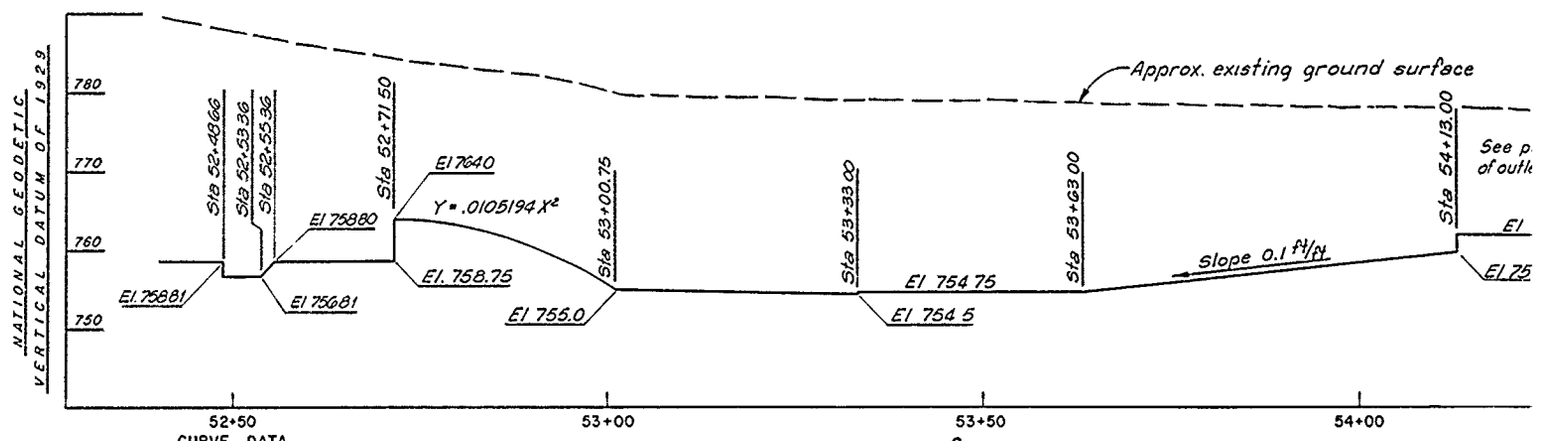
US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

APPROACH STRUCTURE
EXCAVATION AND BACKFILL

Scale	AS SHOWN	Sheet number:	11
Date	JUNE 1990		
Dwg. No.		File No	RBL-2-1231

PLATE NO. 11

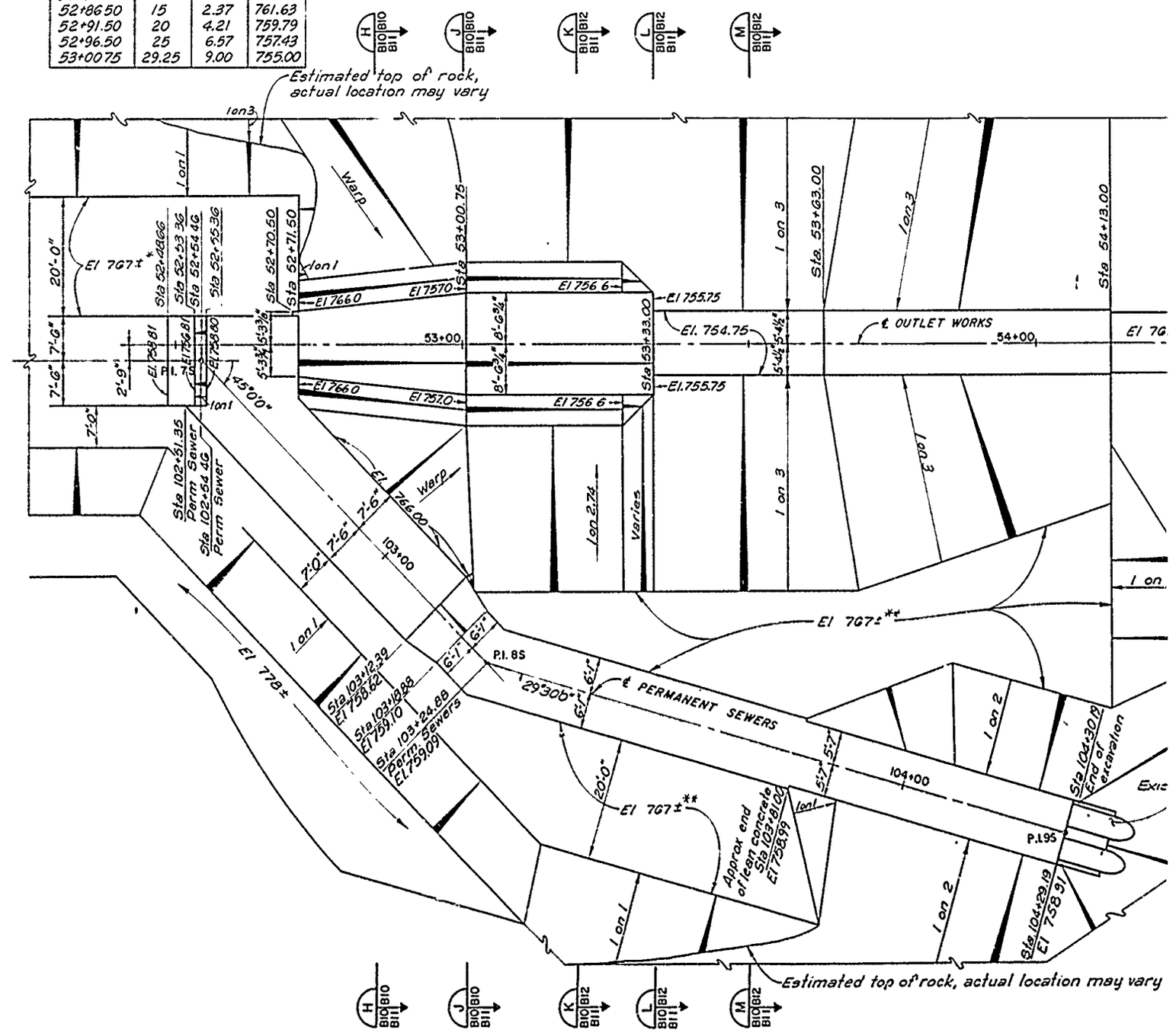


PROFILE ALONG ℄ OF OUTLET WORKS

CURVE DATA

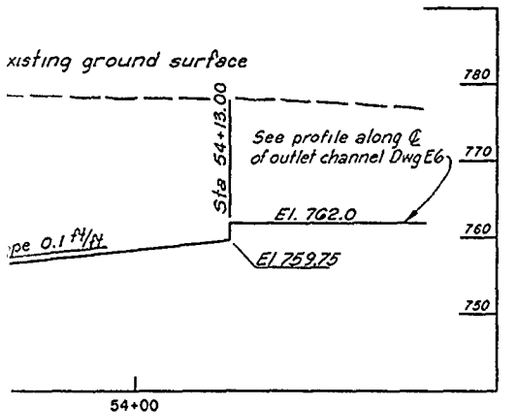
STATION	X	Y	ELEV
52+71.50	0	0	764.00
52+76.50	5	0.26	763.74
52+81.50	10	1.05	762.95
52+86.50	15	2.37	761.63
52+91.50	20	4.21	759.79
52+96.50	25	6.57	757.43
53+00.75	29.25	9.00	755.00

NOTE.
See Dwg B11 for layout of stilling basin

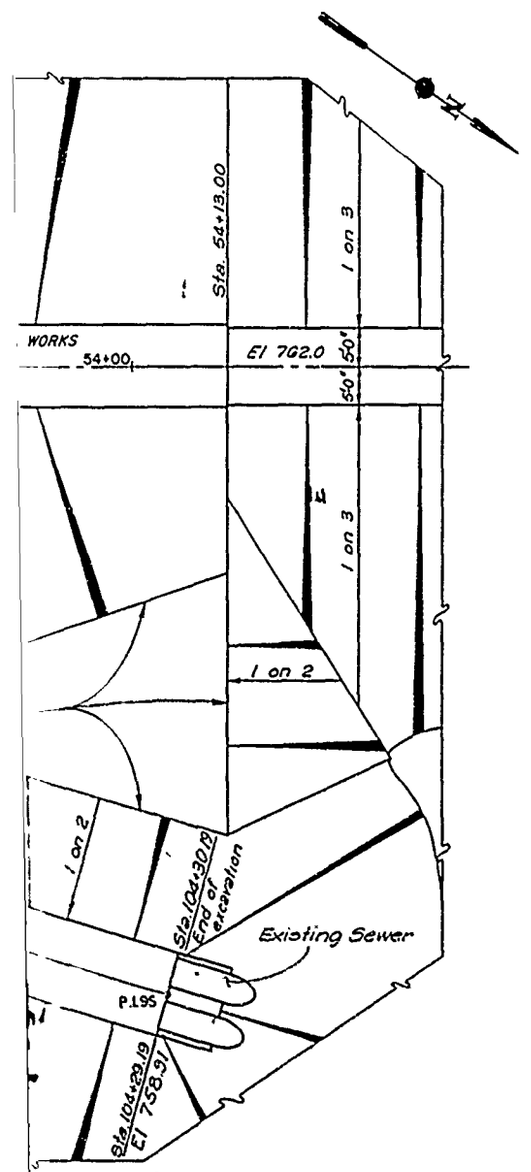


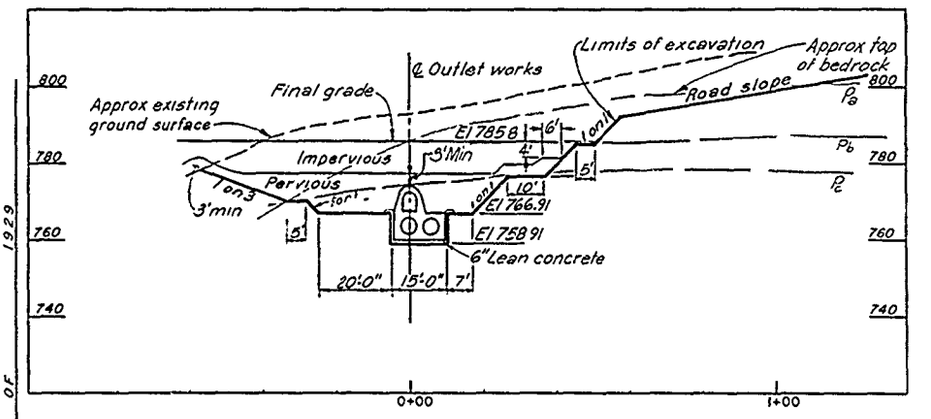
* Grade of work bench to be 8.0'± above grade of base of sewer excavation from Sta 97+88.5 to Sta 103.12.
** Grade of work bench to be 7.5'± above grade of base of sewer excavation from Sta 103+19 to end.

PLAN OF EXCAVATION FOR STILLING BASIN AND PERMANENT SEWER

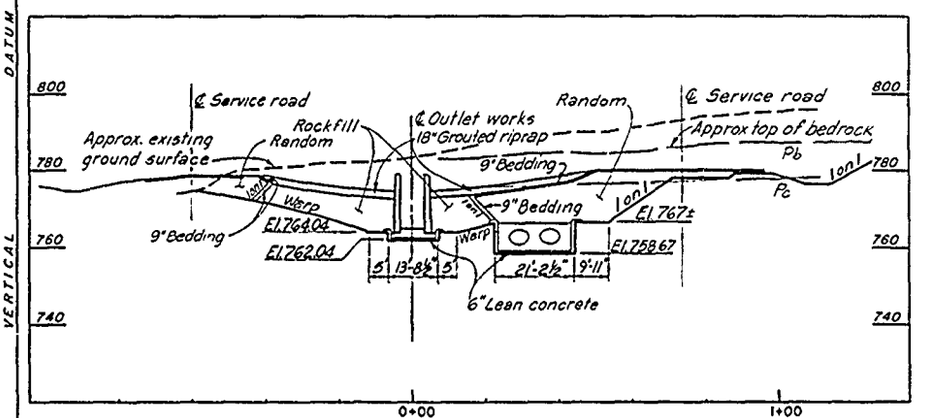


B11 for layout of stilling basin

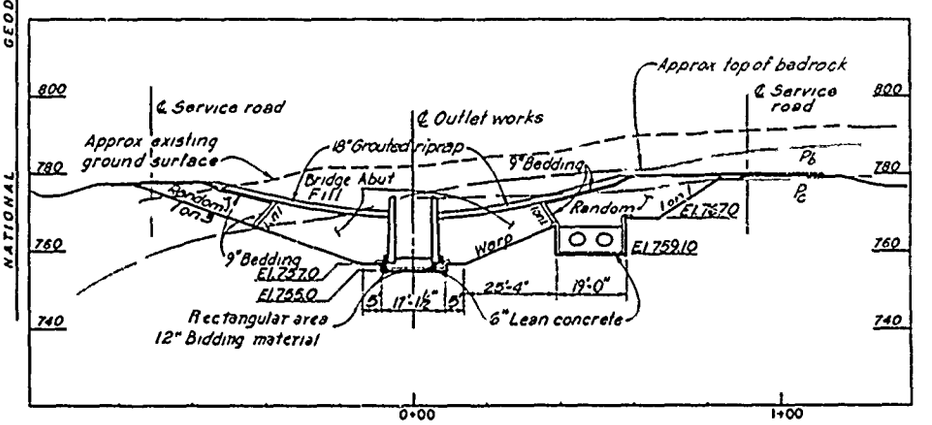




SECTION G STA. 52+20
B11 | B10



SECTION H STA. 52+85
B10 | B10
B11



SECTION J STA. 53+01
B10 | B10
B11

NOTE:
See excavation and backfill Sta. 51+35 on dwg B11

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by:
Checked by:

US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

STILLING BASIN EXCAVATION AND BACKFILL

Scale: AS SHOWN
Sheet number
Date

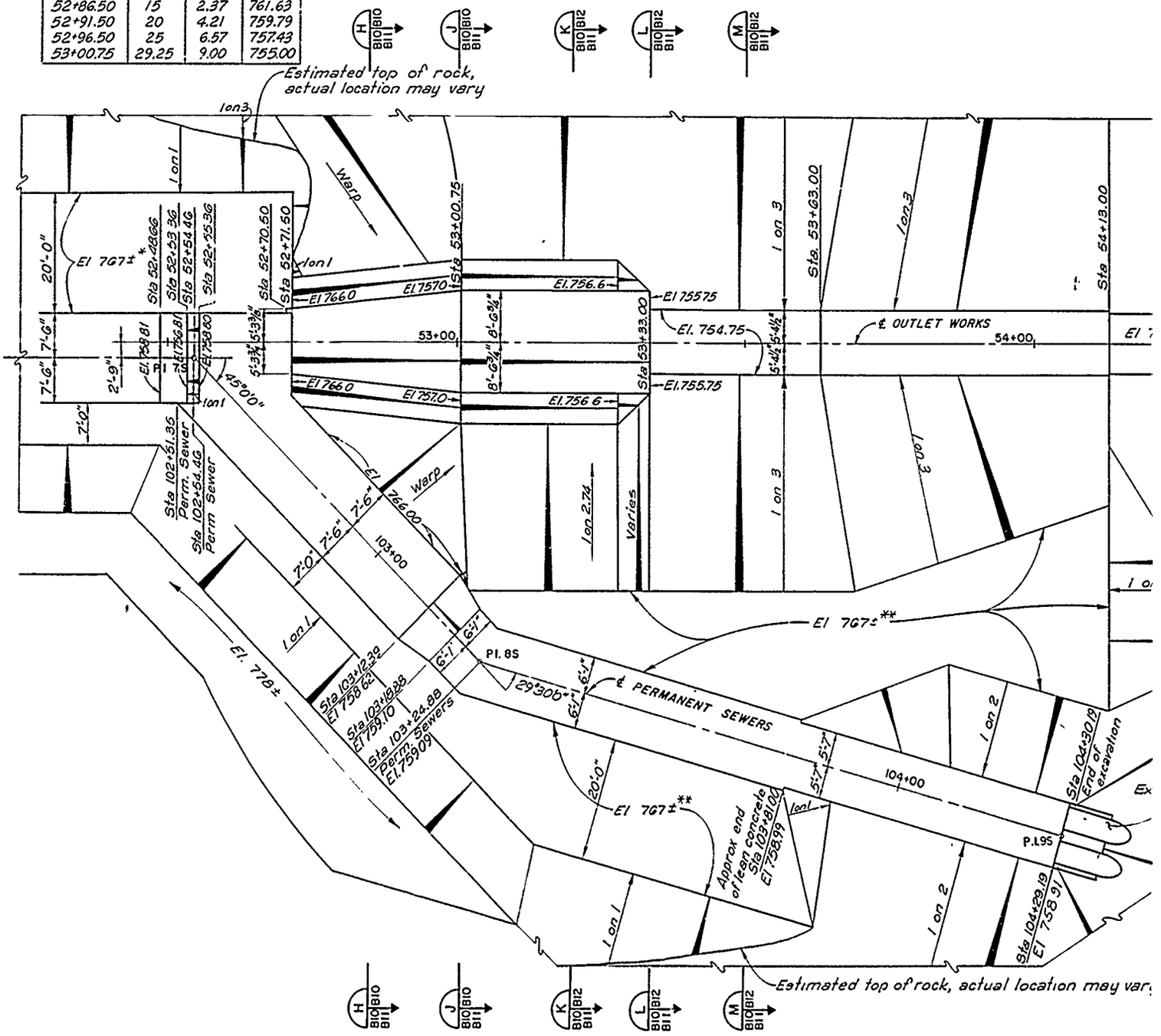
EWER

CURVE DATA

STATION	X	Y	ELEV.
52+71.50	0	0	764.00
52+76.50	5	0.26	763.74
52+81.50	10	1.05	762.95
52+86.50	15	2.37	761.63
52+91.50	20	4.21	759.79
52+96.50	25	6.57	757.43
53+00.75	29.25	9.00	755.00

PROFILE ALONG ℄ OF OUTLET WORKS

NOTE
See Dwg B11 for layout of stilling basin



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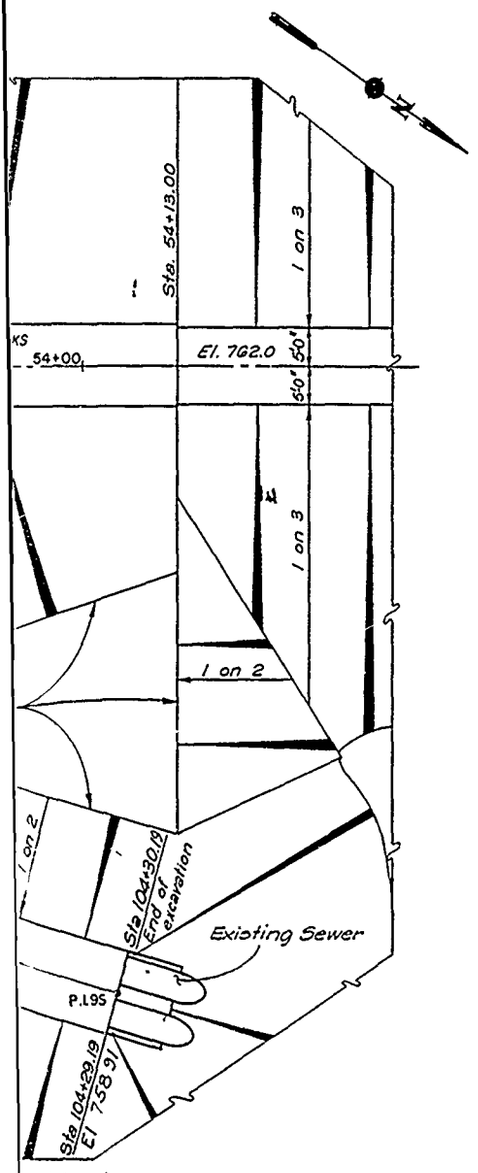
** Grade of work bench to be 7.5'± above grade of base of sewer excavation from Sta 103+19 to end.

PLAN OF EXCAVATION FOR STILLING BASIN AND PERMANENT SEWER

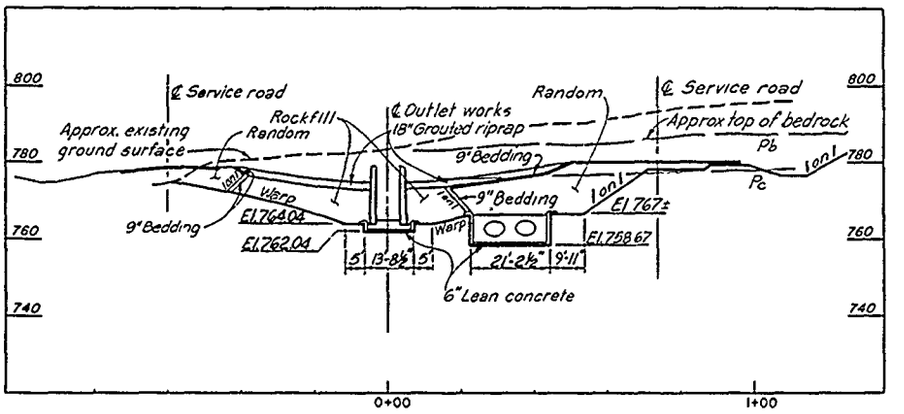
10 0 10 20
SCALE IN FEET

for layout of stilling basin

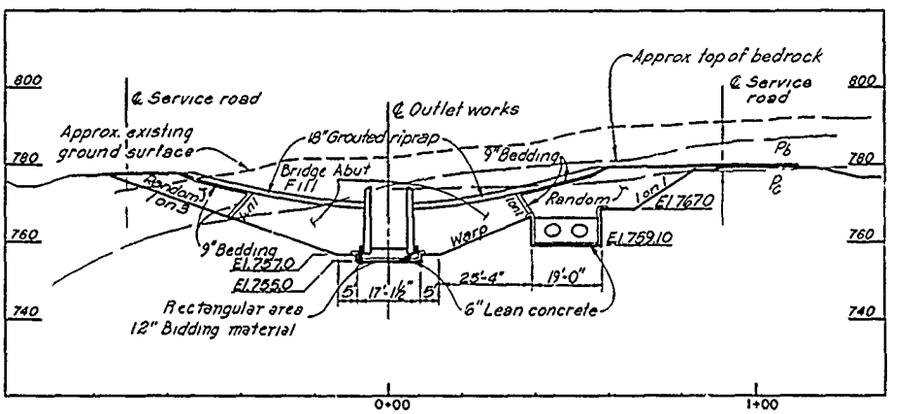


ual location may vary

SECTION G STA. 52+20
B11 B10



SECTION H STA. 52+85
B10 B10
B11



SECTION J STA. 53+01
B10 B10
B11

NOTE:
See excavation and backfill Sta. 51+35 on dwg B11

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by:
Checked by:
Submitted by:

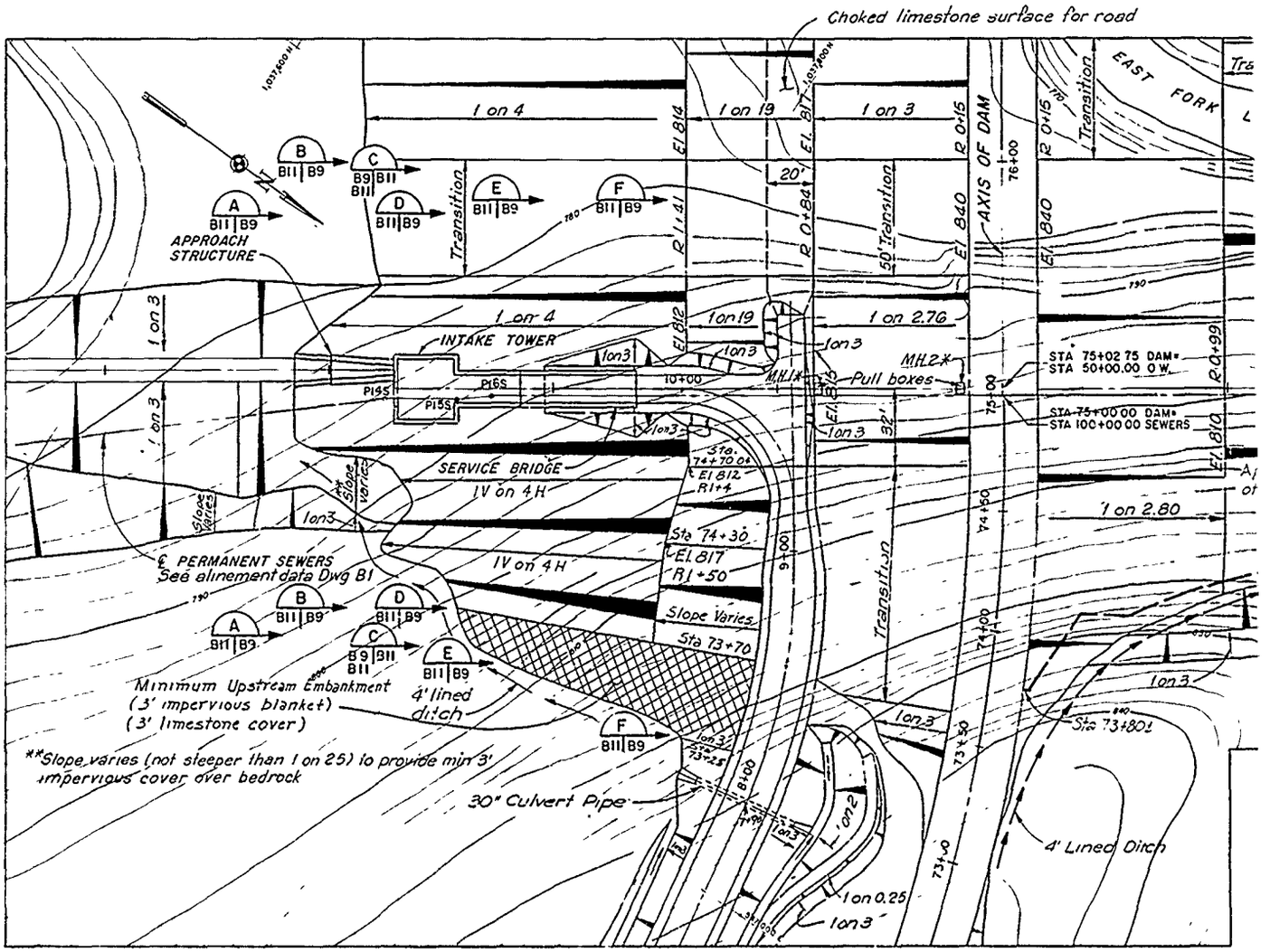
US Army Corps of Engineers

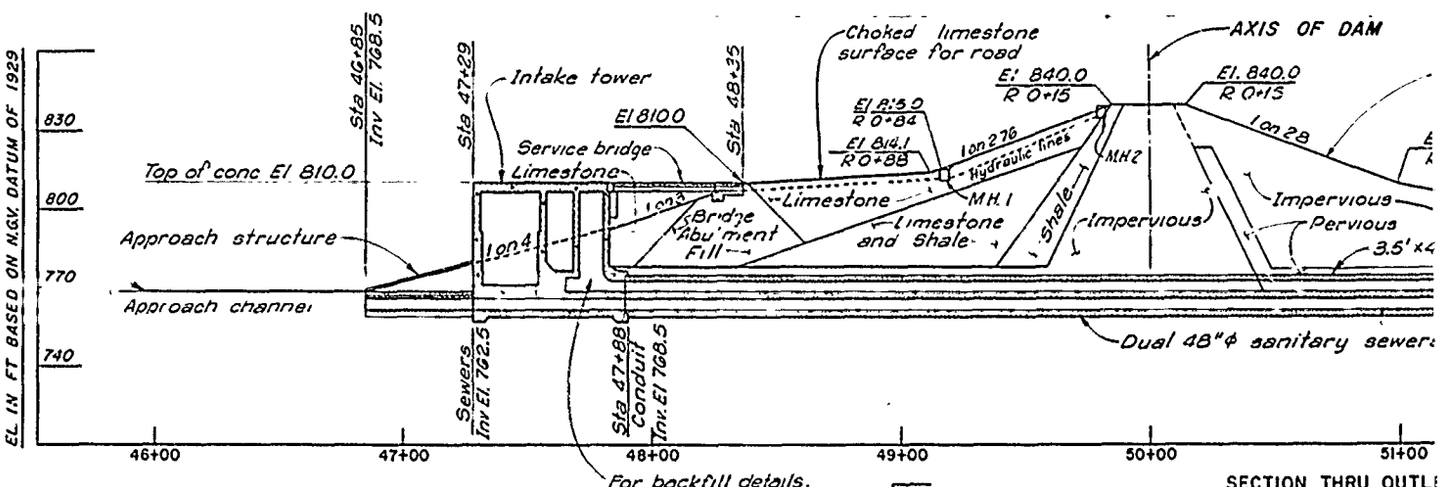
EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

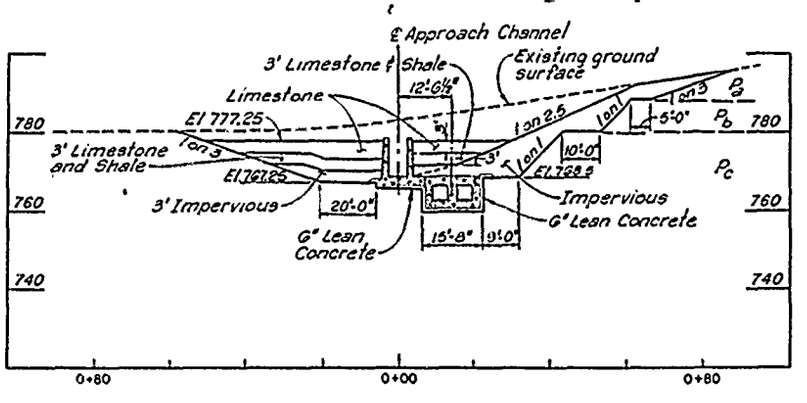
STILLING BASIN EXCAVATION AND BACKFILL

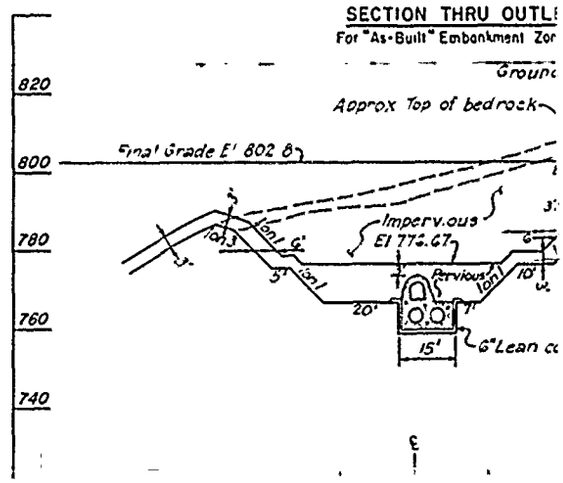
Scale: AS SHOWN
Date: JUNE 1990
Dwg No.:
Sheet number: 12
File No: RBL-2-1232

PLATE NO. 12


Choked limestone surface for road
EAST FORK
1 on 4
1 on 19
1 on 3
AXIS OF DAM
APPROACH STRUCTURE
Transition
INTAKE TOWER
1 on 2.76
MH2
Pull boxes
STA 75+02.75 DAM = STA 50+00.00 O.W.
STA 75+00.00 DAM = STA 100+00.00 SEWERS
SERVICE BRIDGE
1V on 4H
Sta 74+30
El 817
R1+50
Slope Varies
Sta 73+70
1 on 2.80
℄ PERMANENT SEWERS
See alinement data Dwg B1
Minimum Upstream Embankment
(3' impervious blanket)
(3' limestone cover)
4' lined ditch
**Slope varies (not steeper than 1 on 25) to provide min 3' impervious cover over bedrock
30" Culvert Pipe
4' Lined Ditch
1 on 0.25
1 on 3

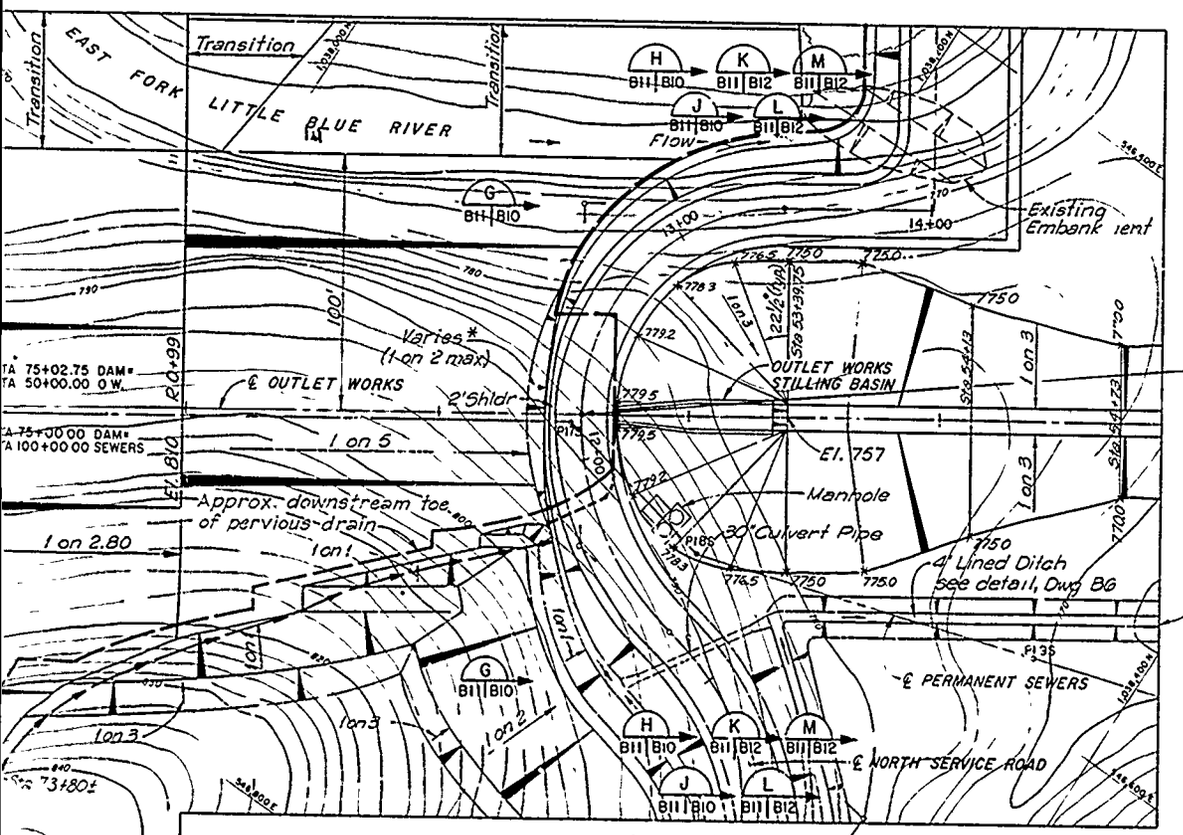

EL IN FT BASED ON N.G.V. DATUM OF 1929
830
800
770
740
Sta 46+85 Inv El 768.5
Sta 47+29
Intake tower
El 810.0
Sta 48+35
Choked limestone surface for road
AXIS OF DAM
El 840.0 R 0+15
El 815.0 R 0+84
El 814.1 R 0+88
1 on 2.76
Hydraulic lines
MH2
MH1
Top of conc El 810.0
Service bridge
Limestone
Bridge Abutment Fill
Limestone and Shale
Shale
Impervious
Pervious
Approach structure
Approach channel
Sewers Inv El 762.5
Sta 47+88 Conduit Inv El 768.5
Dual 48"φ sanitary sewer
46+00
47+00
48+00
49+00
50+00
51+00
For backfill details, see Dwg B2


℄ Approach Channel
3' Limestone & Shale
Existing ground surface
Limestone
El 777.25
3' Limestone and Shale
El 767.25
3' Impervious
20'-0"
6" Lean Concrete
15'-8"
9'-0"
Impervious
6" Lean Concrete
780
760
740
0+80
0+00
0+80


SECTION THRU OUTL
For "As-Built" Embankment Zon
Approx Top of bedrock
Final Grade El 802.8
Impervious
El 776.67
Pervious
20'
15'
6" Lean co
820
800
780
760
740

VALUE ENGINEERING PAYS

for road

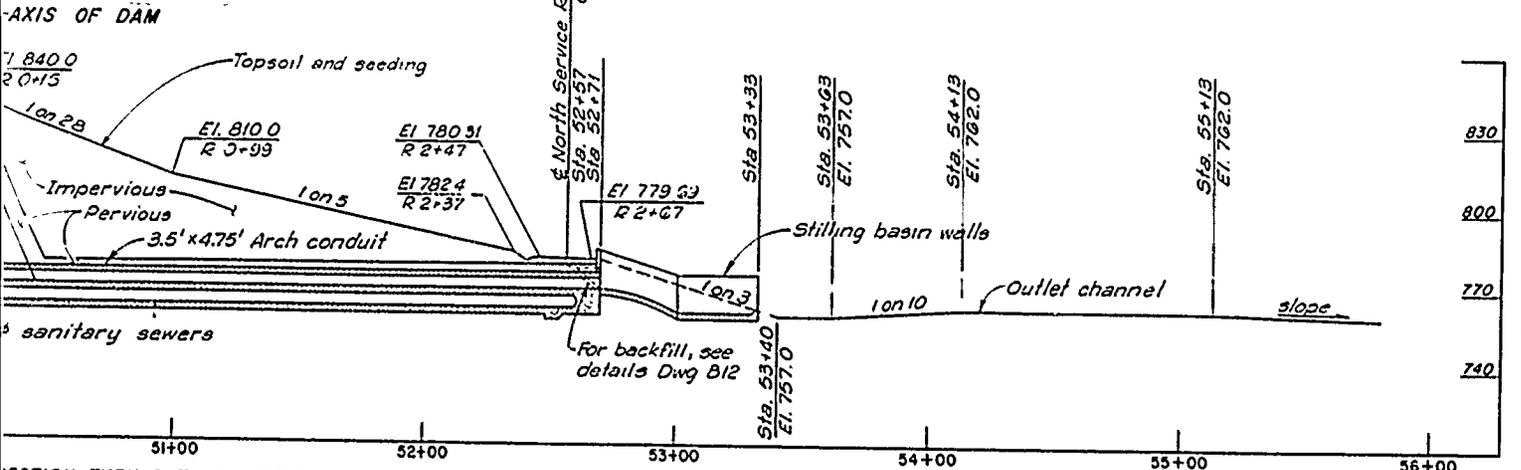


*Backslope varies to intersect embankment slope within 8' of ditchline.

PLAN

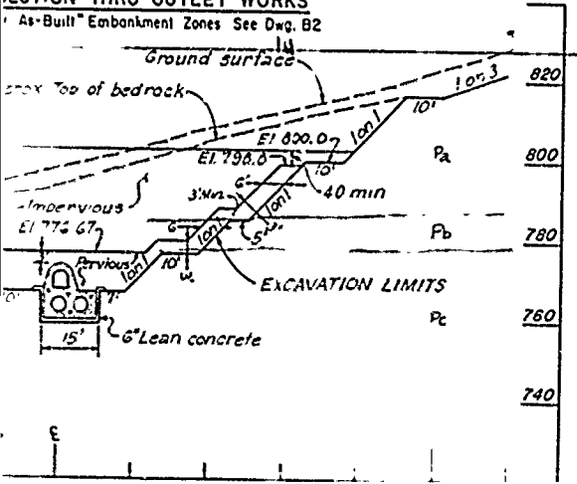
SCALE IN FEET

-AXIS OF DAM



SECTION THRU OUTLET WORKS

"As-Built" Embankment Zones See Dwg. B2



NOTE:
See drawings B2 and B3 for embankment details

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:

Drawn by:

Checked by:

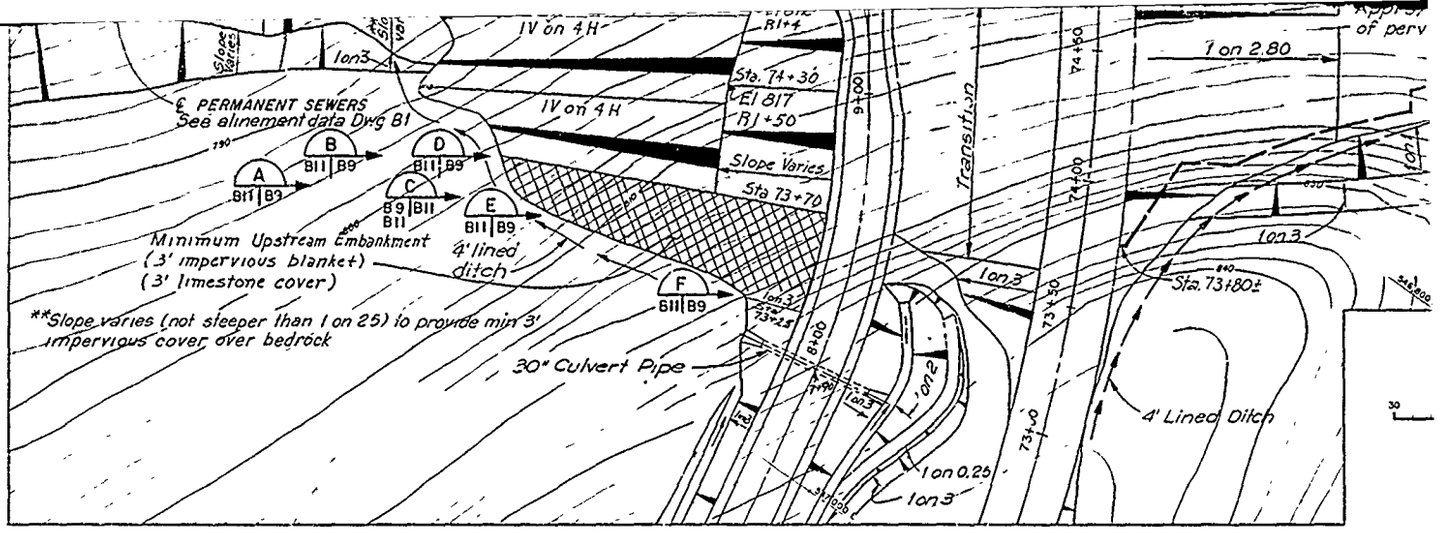
US Army Corps of Engineers

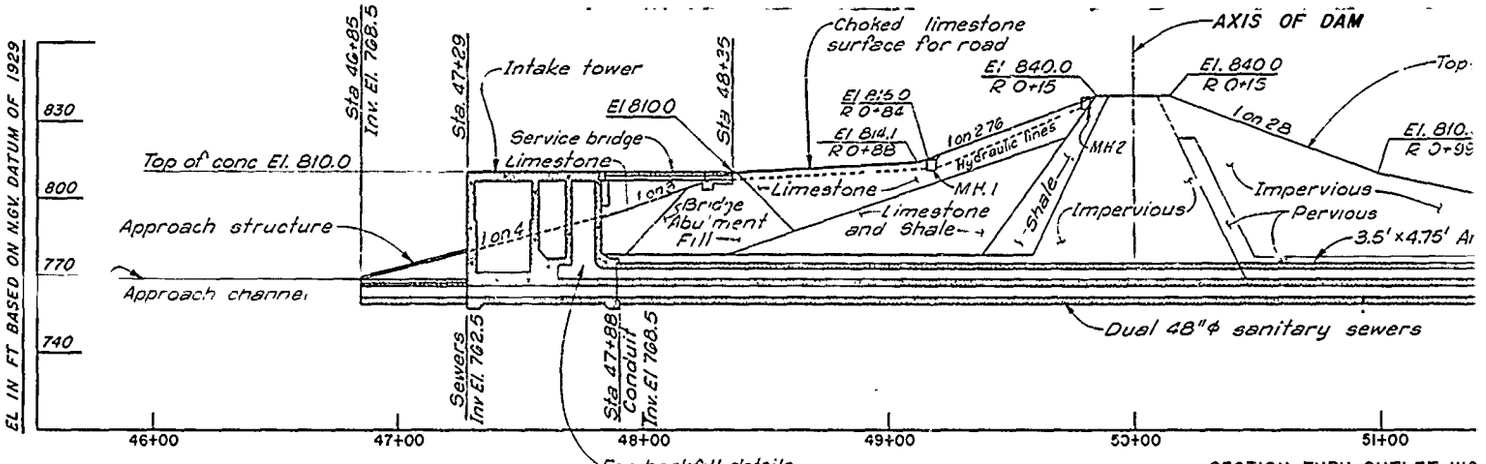
EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

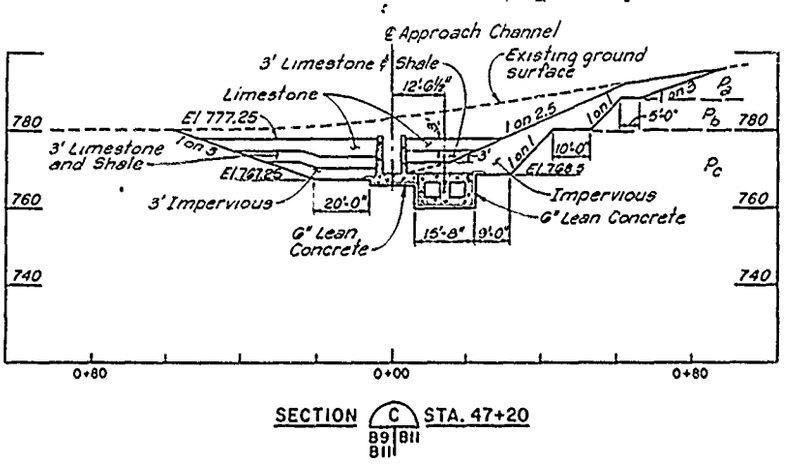
OUTLET WORKS PLAN AND SECTION

Scale: AS SHOWN

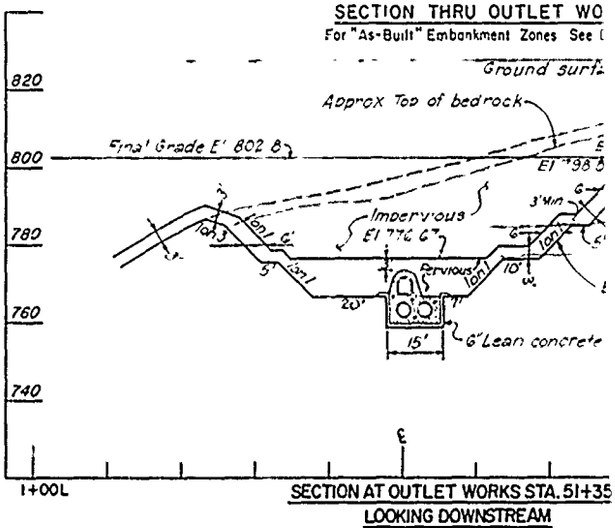
Sheet



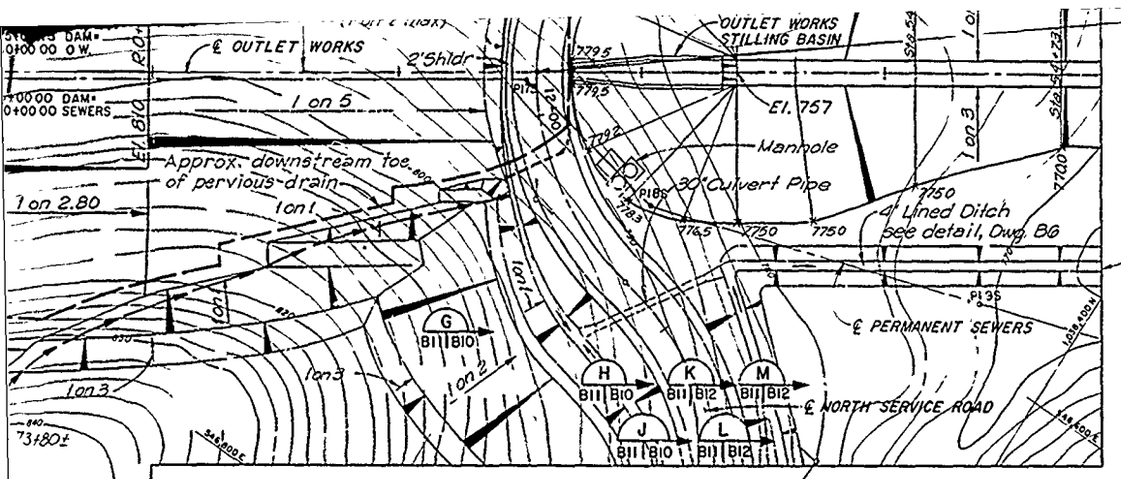




SECTION C STA. 47+20
B9 | B11



SECTION AT OUTLET WORKS STA. 51+35
LOOKING DOWNSTREAM

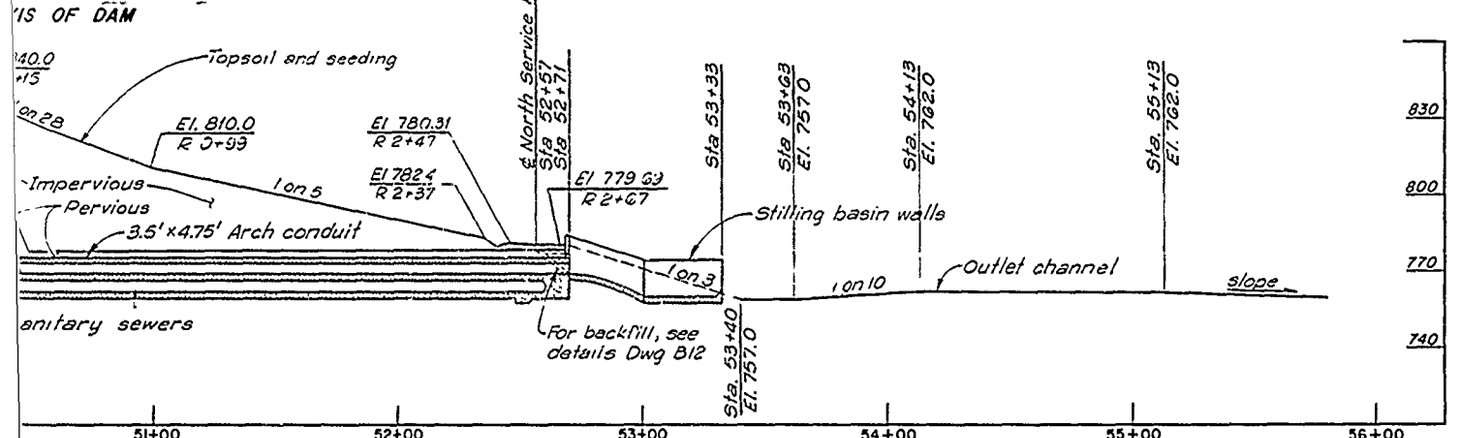


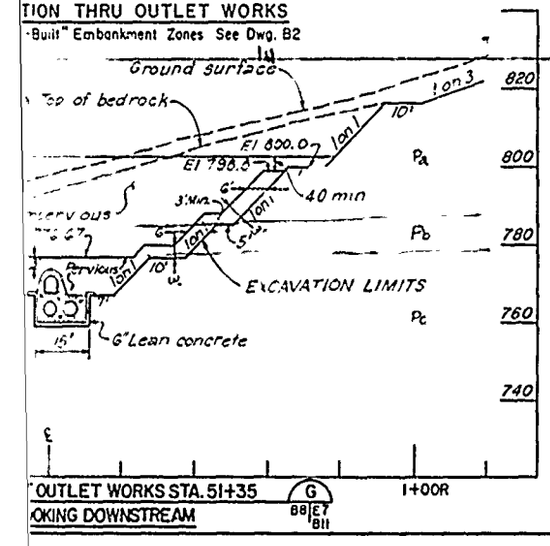
12" bedding on all Rock Fill / Pervious Contact at 1 on 1 DNST. and Vert. on 30 Rt Side portion As-Built

*Backslope varies to intersect embankment slope within 8' of ditchline.

PLAN

SCALE IN FEET 30 0 30 60





NOTE:
See drawings B2 and B3 for embankment details

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by:
Checked by:
Submitted by:

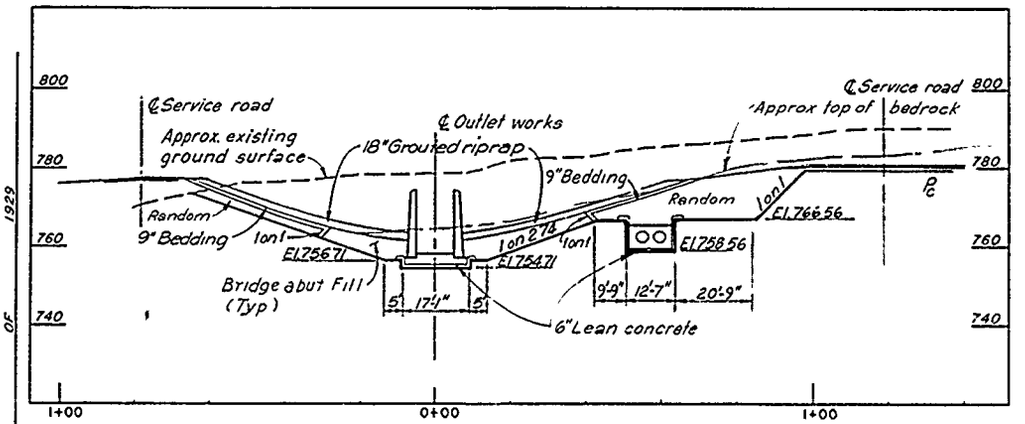
US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

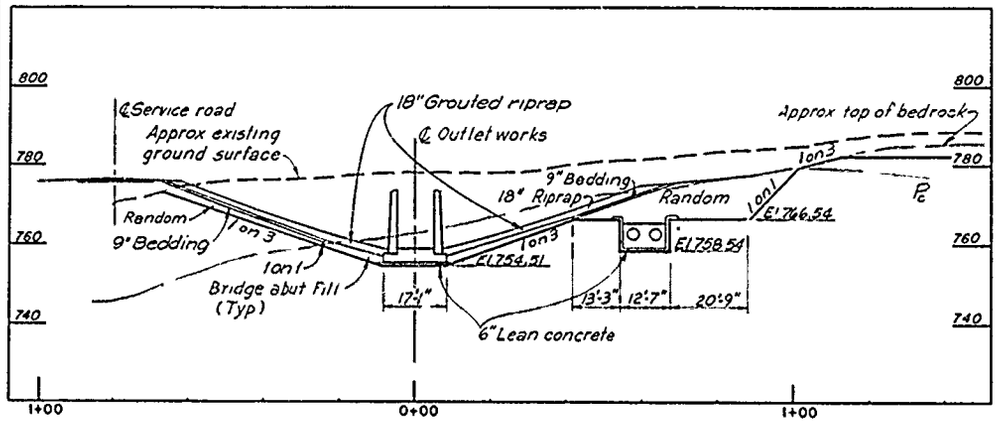
OUTLET WORKS PLAN AND SECTION

Scale: AS SHOWN
Date: JUNE 1990
Dwg. No.:
Sheet number: 13
File No. RBL-2-1233

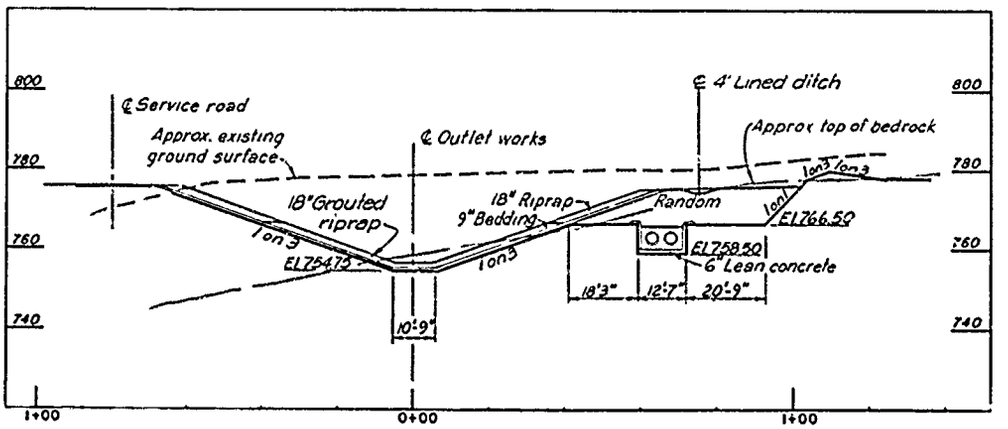
PLATE NO. 13



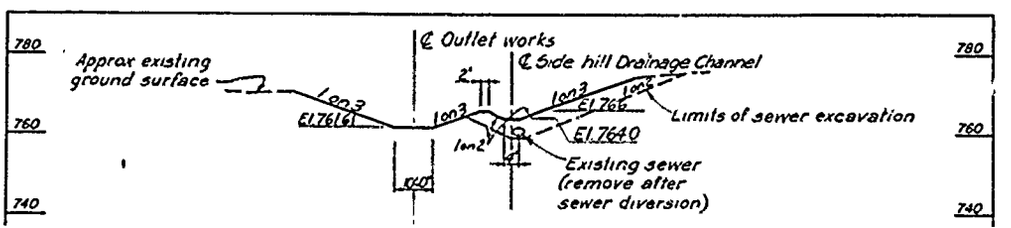
SECTION (K) B11|B12 STA. 53+20

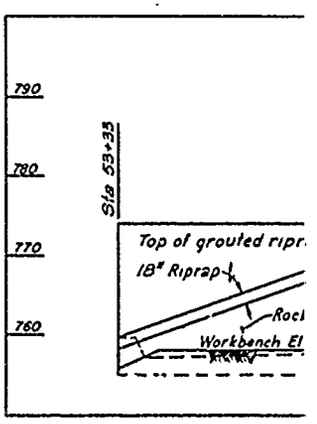


SECTION (L) B11|B12 STA. 53+33

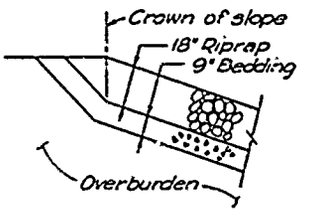


SECTION (M) B11|B12 STA. 53+50





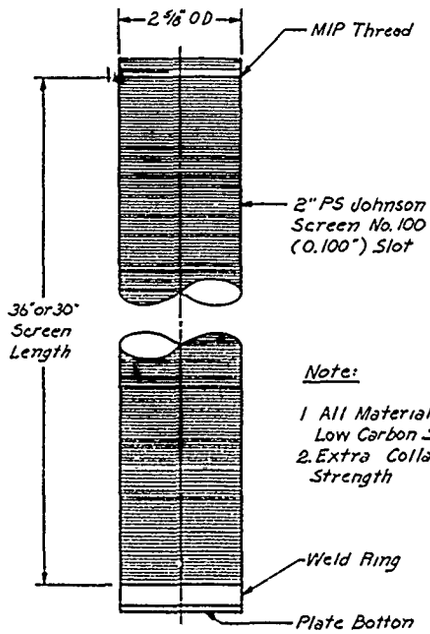
DETAI



UPSLOPE TERMINATION OF SLOPE PROTECTION

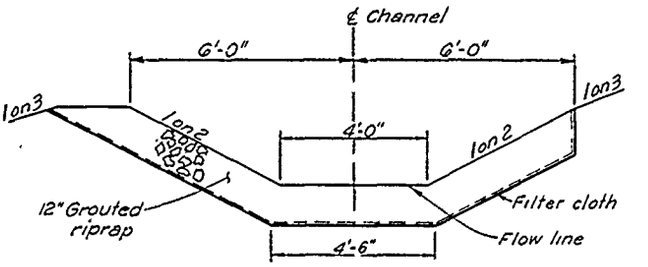
36"or
Scre
Leng

NATIONAL GEODETIC VERTICAL DATUM OF 1929



Note:

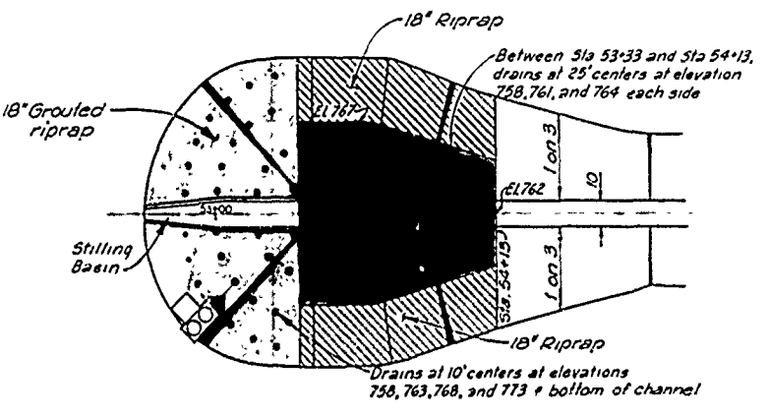
1 All Material Galv Low Carbon Steel
2. Extra Collapse Strength



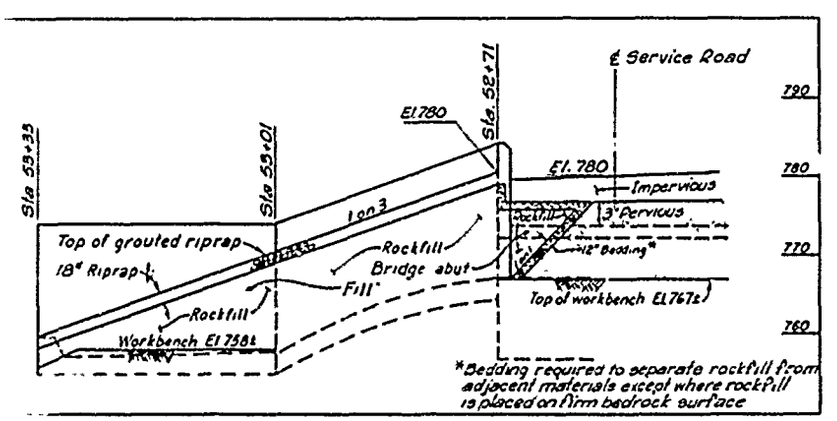
DETAIL OF SIDE-HILL DRAINAGE CHANNEL
LOOKING DOWNSTREAM
Not to Scale

"For connecting the 4-foot-lined ditch to side-hill drainage channel, See Dwg B1 and B11."

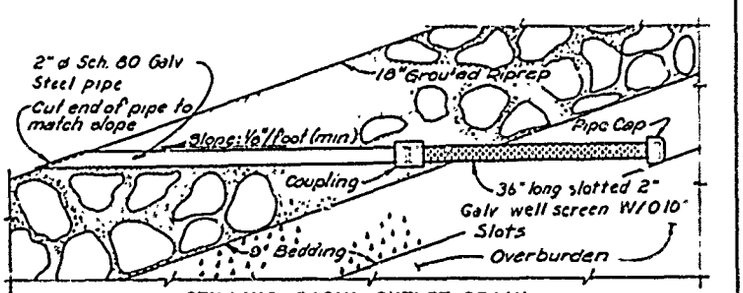
OUTLET WORKS ℄ STATION	RIGHT ANGLE OFFSET FROM TANGENT TO ℄ SIDE-DRAIN, FT	SIDE DRAIN ELEVATION IN FT (NGVD)
55+20.00	37.18 to P.C.	768.0
55+60.00	31.75	766.0
56+00.00	26.36	764.0
56+40.00	20.80	762.0
56+52.56	19.09 to P.T.	761.4
57+00.00	—	761.2



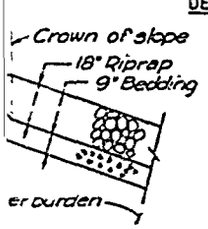
PLAN OF STILLING BASIN
SLOPE PROTECTION AND DRAINS



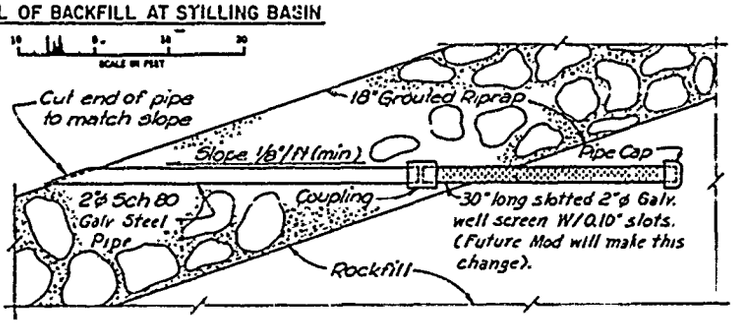
DETAIL OF BACKFILL AT STILLING BASIN



STILLING BASIN OUTLET DRAIN
INSTALLATION DETAIL
RIPRAP OVER BEDDING
Not to Scale



TERMINATION
PROTECTION
to Scale



STILLING BASIN OUTLET DRAIN

Revisions			
Symbol	Descriptions	Date	Approved

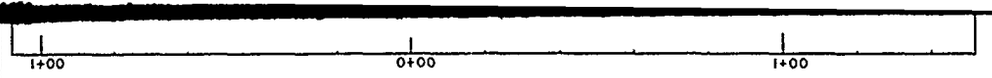
U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by:
Checked by

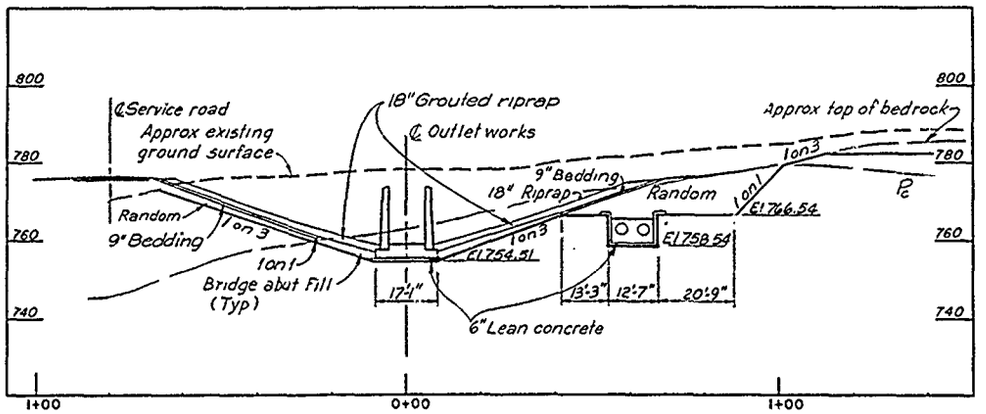
US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

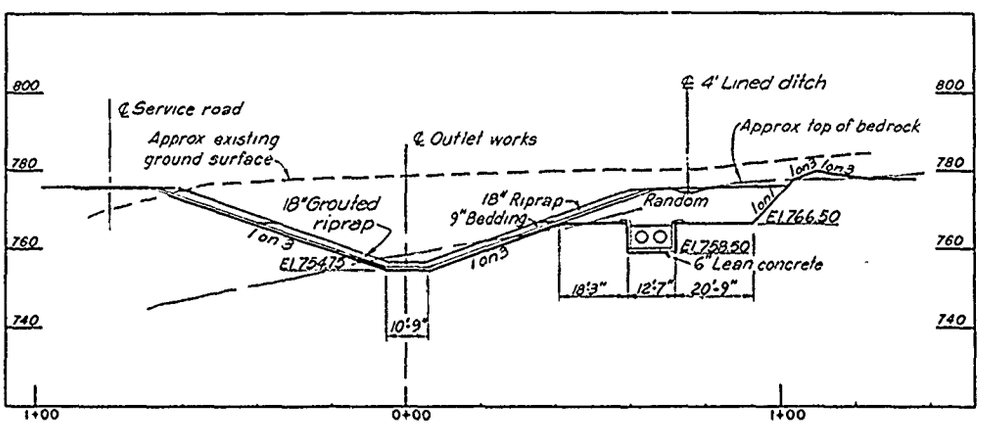
OUTLET WORKS SECTIONS AND DETAILS



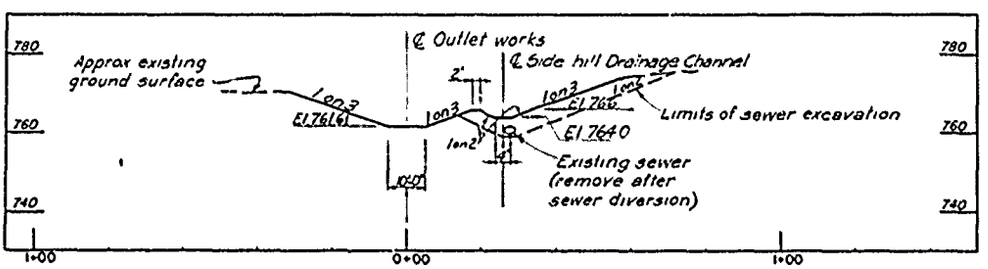
SECTION K STA.53+20
B11|B12



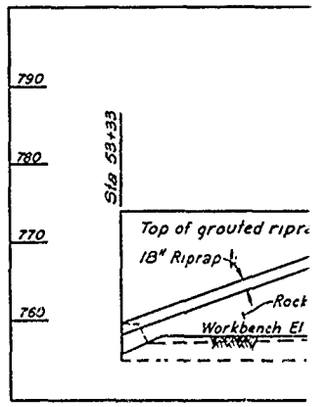
SECTION L STA.53+33
B11|B12



SECTION M STA.53+50
B11|B12



SECTION N STA 56+00
B12|B12



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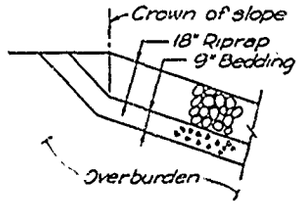
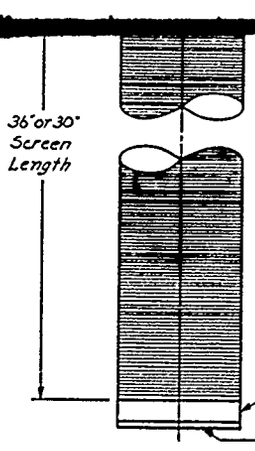


UPSLOPE TERMINATION OF SLOPE PROTECTION

Not to Scale

RECORD D
SEPTEMBER
CONTRACT NO. DACW



Note:

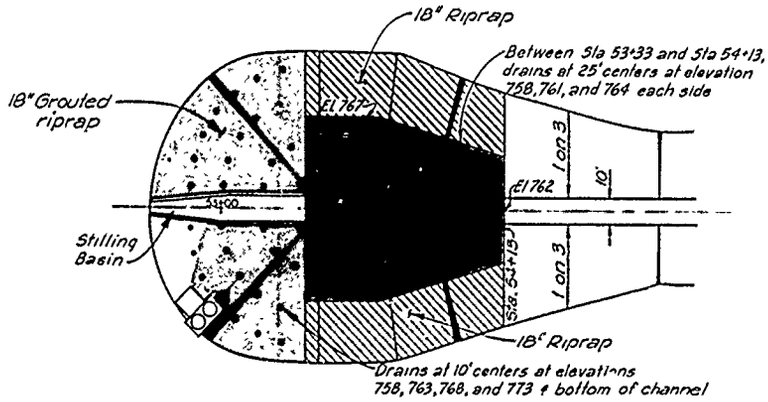
1 All Material Galv Low Carbon Steel
2. Extra Collapse Strength

"For connecting the 4-foot-lined ditch to side-hill drainage channel, See Dwg B1 and B11."

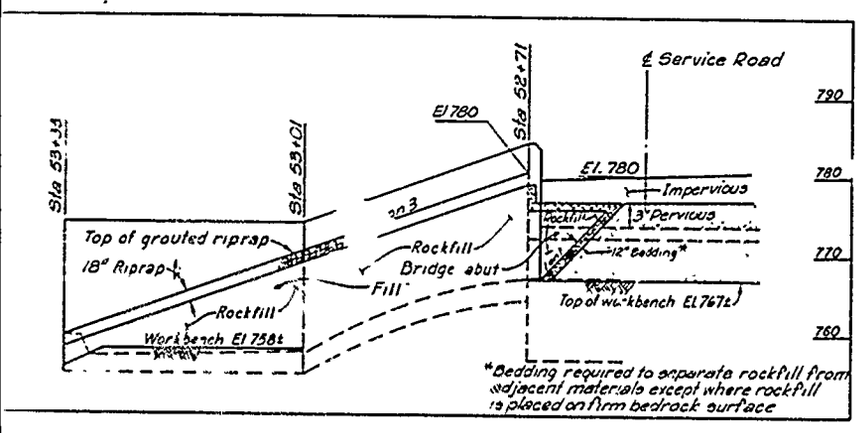
DETAIL OF SIDE-HILL DRAINAGE CHANNEL LOOKING DOWNSTREAM

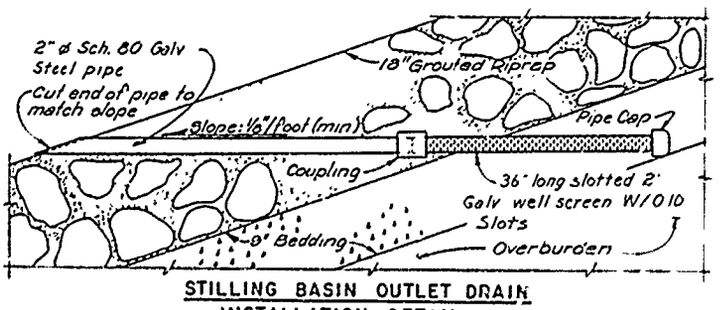
Not to Scale

OUTLET WORKS ℄ STATION	RIGHT ANGLE OFFSET FROM TANGENT TO ℄ SIDE-DRAIN, FT.	SIDE DRAIN ELEVATION IN FT (NGVD)
55+20.00	37.18 to P.C.	768.0
55+60.00	31.75	766.0
56+00.00	26.36	764.0
56+40.00	20.80	762.0
56+52.56	19.09 to P.T.	761.4
57+00.00	—	761.2



PLAN OF STILLING BASIN SLOPE PROTECTION AND DRAINS

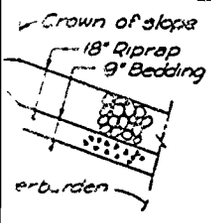




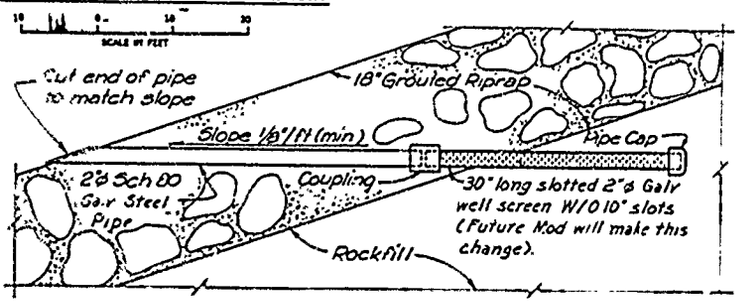
STILLING BASIN OUTLET DRAIN INSTALLATION DETAIL RIPRAP OVER BEDDING

Not to Scale

DETAIL OF BACKFILL AT STILLING BASIN



TERMINATION
E PROTECTION
to Scale



STILLING BASIN OUTLET DRAIN INSTALLATION DETAIL RIPRAP OVER ROCKFILL

Not to Scale

RECORD DRAWING
SEPTEMBER 1988
CONTRACT NO. DACW 41-82-C-0198

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by:
Checked by:
Submitted by:

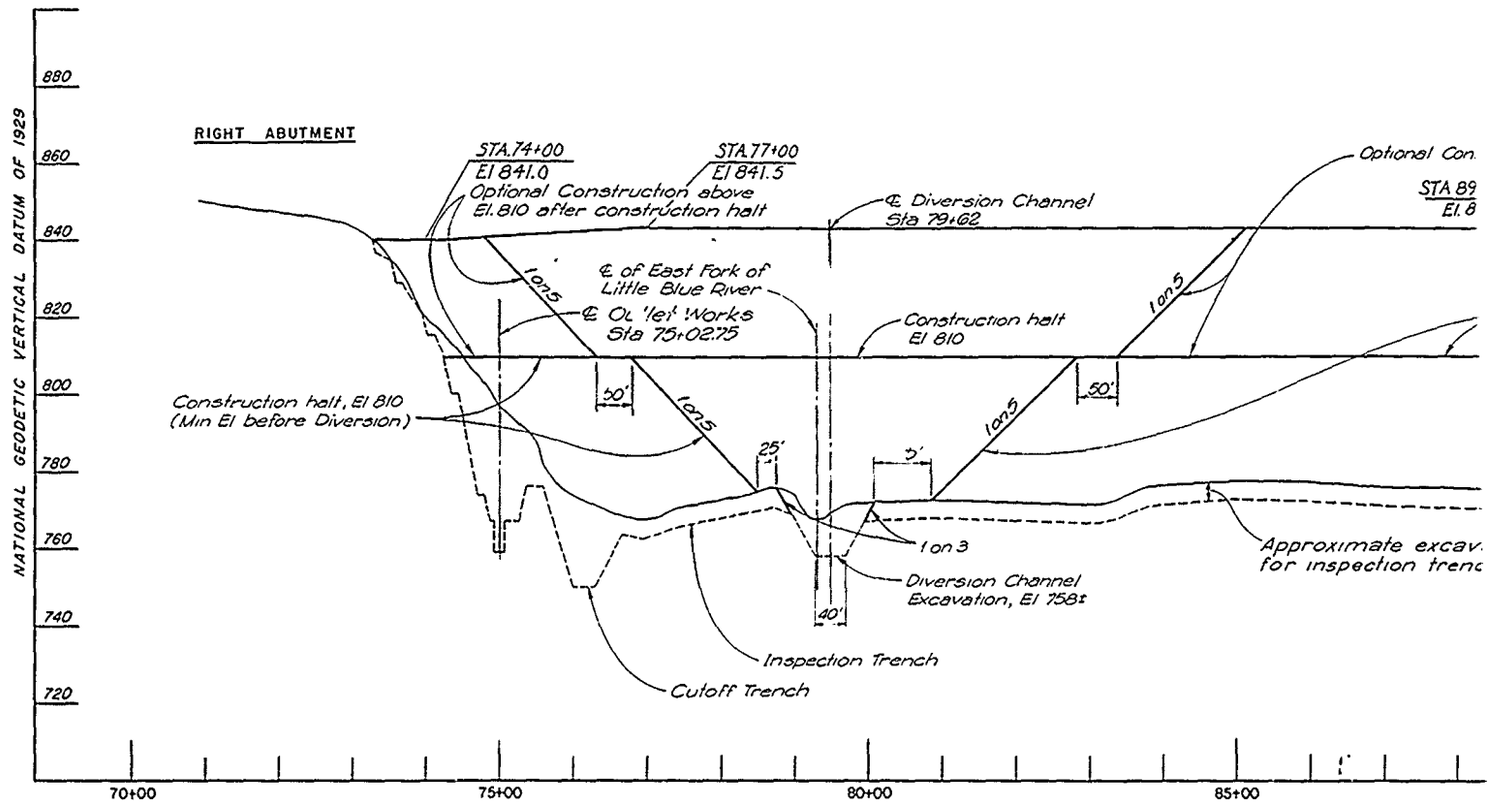
US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

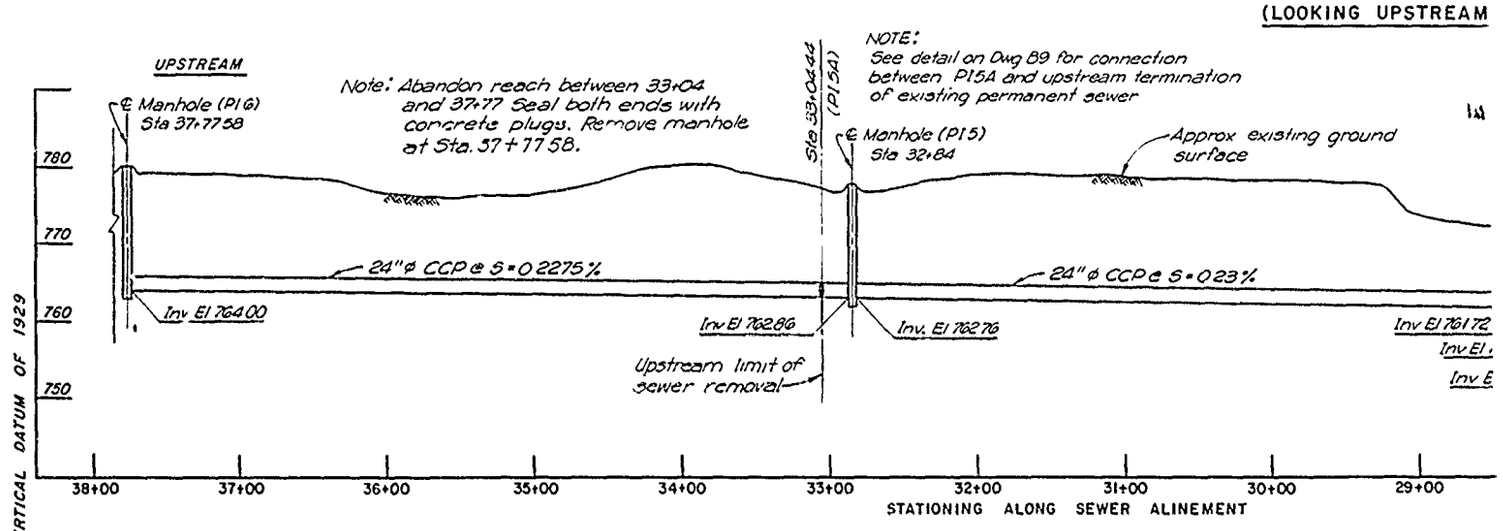
OUTLET WORKS SECTIONS AND DETAILS

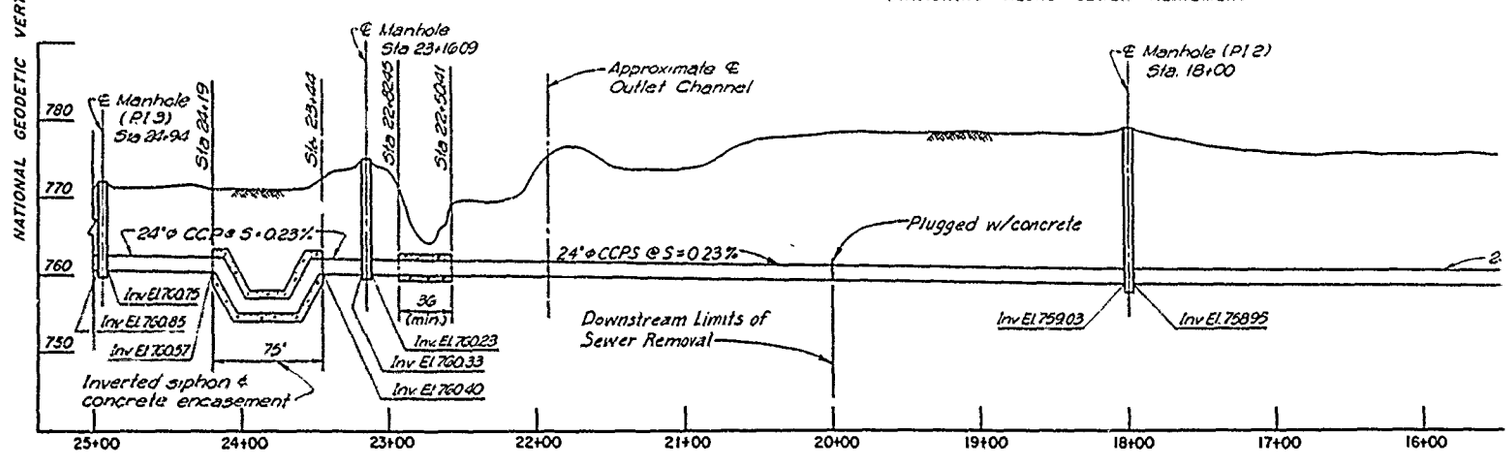
Scale: AS SHOWN
Date: JUNE 1990
Sheet number: 14
Dwg. No.:
File No: RBL-2-1234

PLATE NO. 14



PROFILE ALONG ℄ DAM AND C
(LOOKING UPSTREAM

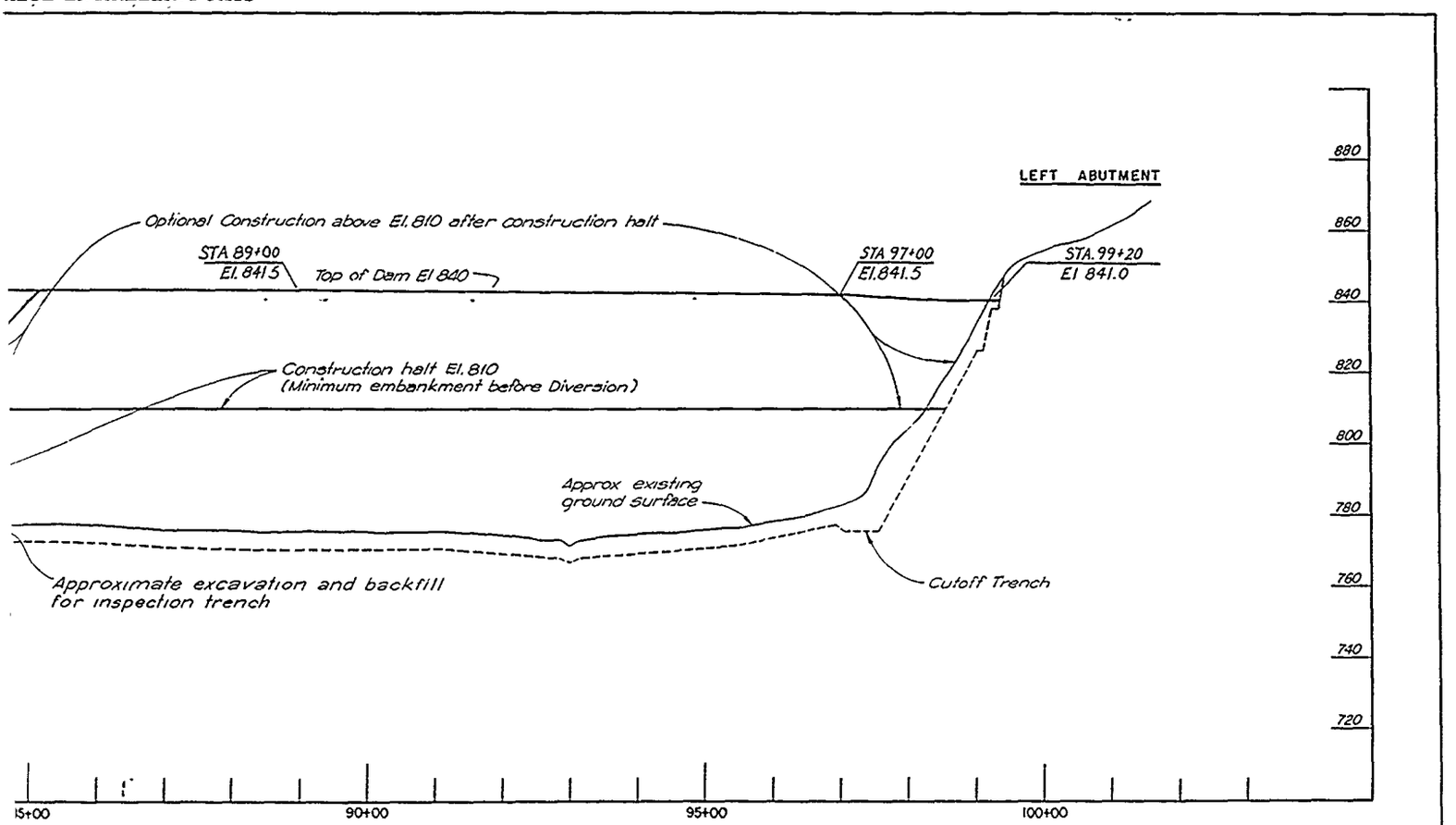




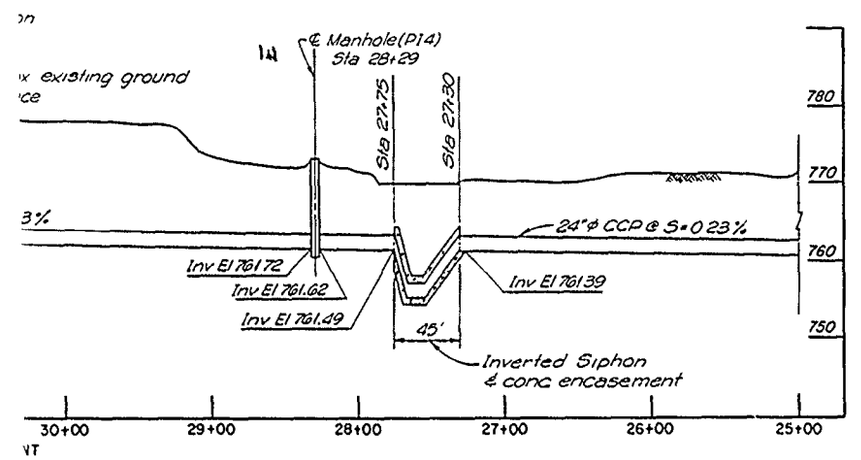
Note: All data for this profile obtained from Burns & McDonnell Plan & Profile drawings No. 6-1 and 7-1 of Contract No. C-3, dated August 7, 1978.

EXISTING TEMPORARY SEWER PROFILE

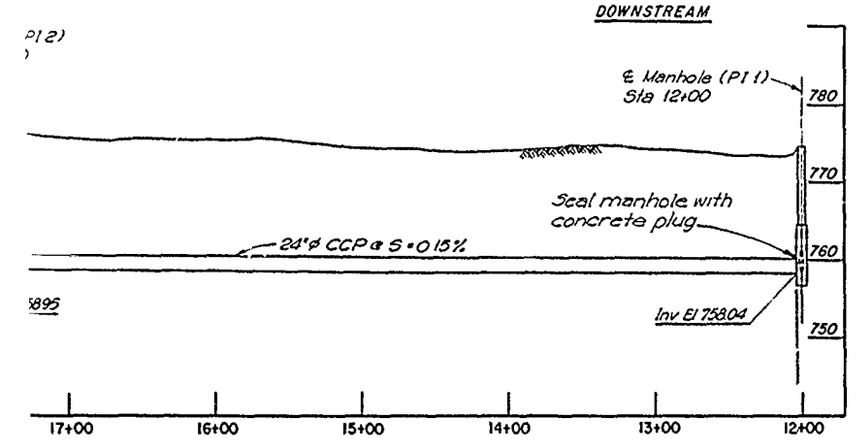
ALUE ENGINEERING PAYS



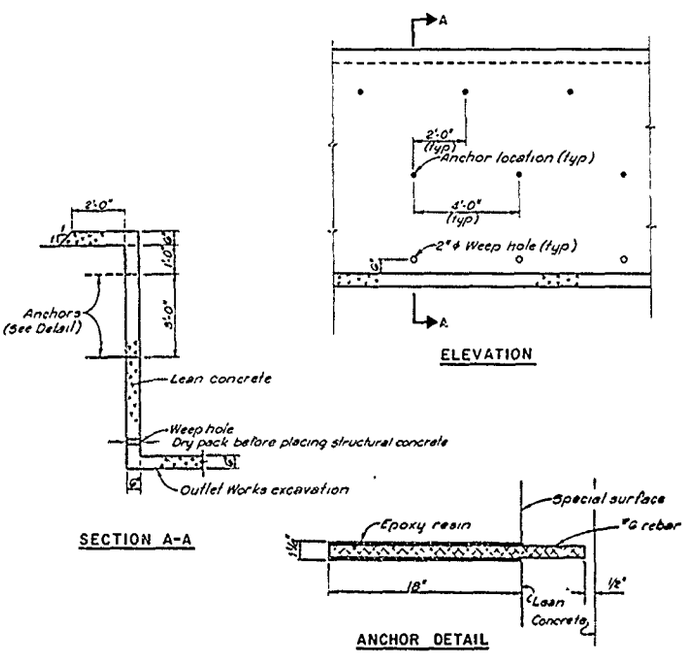
ALONG ℄ DAM AND CUTOFF TRENCH
(LOOKING UPSTREAM)



DOWNSTREAM



PROFILE



SPECIAL SURFACE AND BEARING SURFACE PROTECTION
LEAN CONCRETE DETAILS FOR
INTAKE TOWER AND OUTLET WORKS

N.T.S.

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

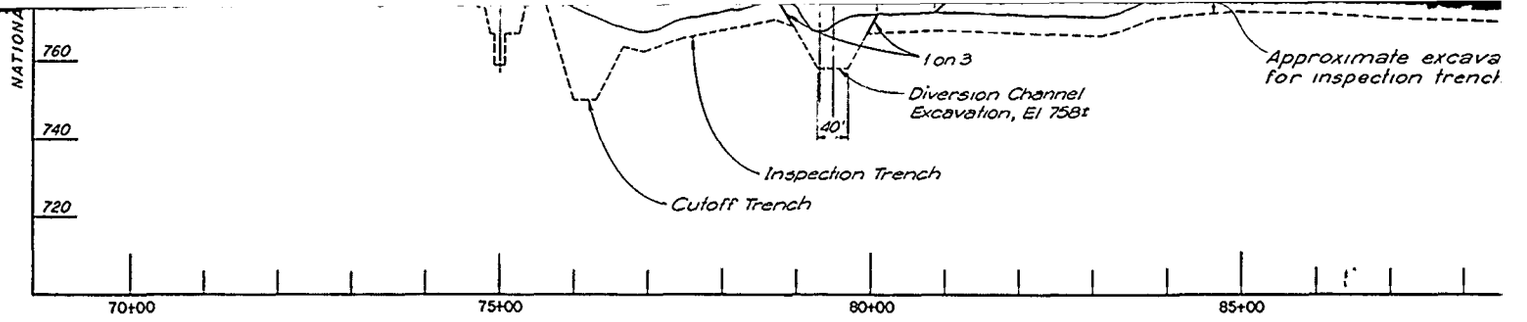
Designed by:
Drawn by:
Checked by:

US Army Corps of Engineers

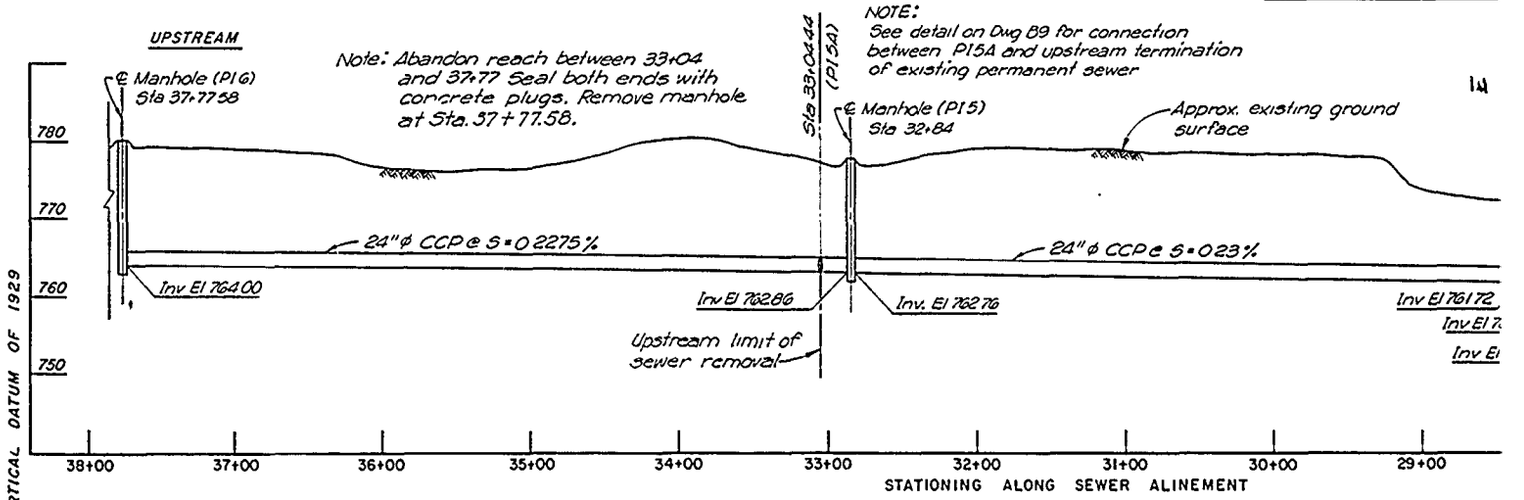
EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

DAM AXIS AND TEMPORARY SEWER
PROFILES AND ANCHOR DETAILS

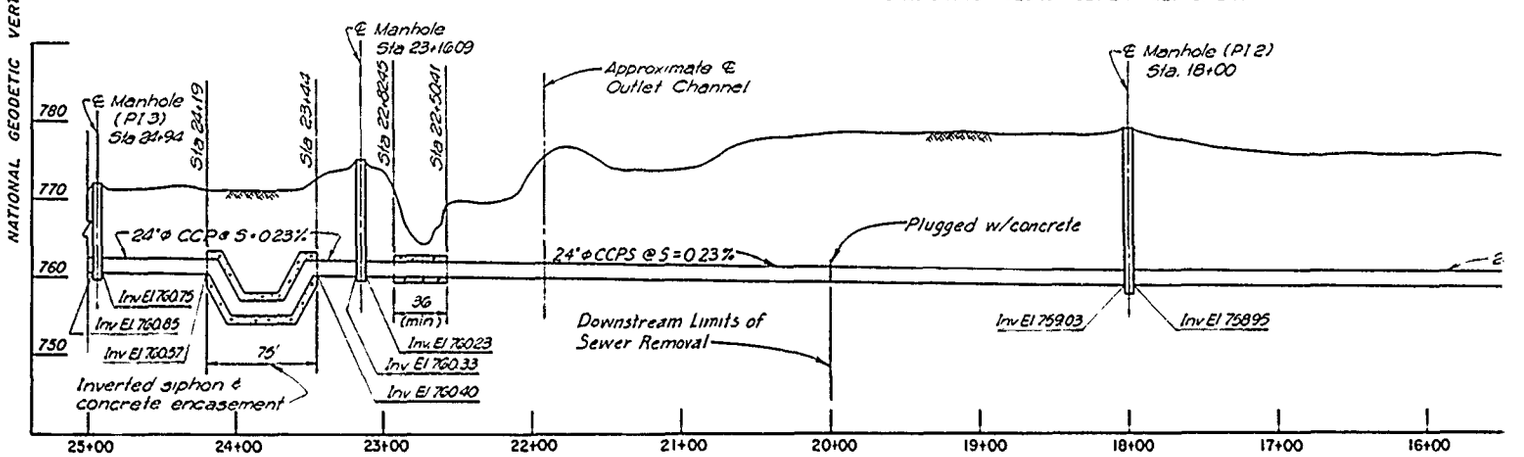
Scale: AS SHOWN
Sheet number



PROFILE ALONG ℄ DAM AND CU
(LOOKING UPSTREAM)

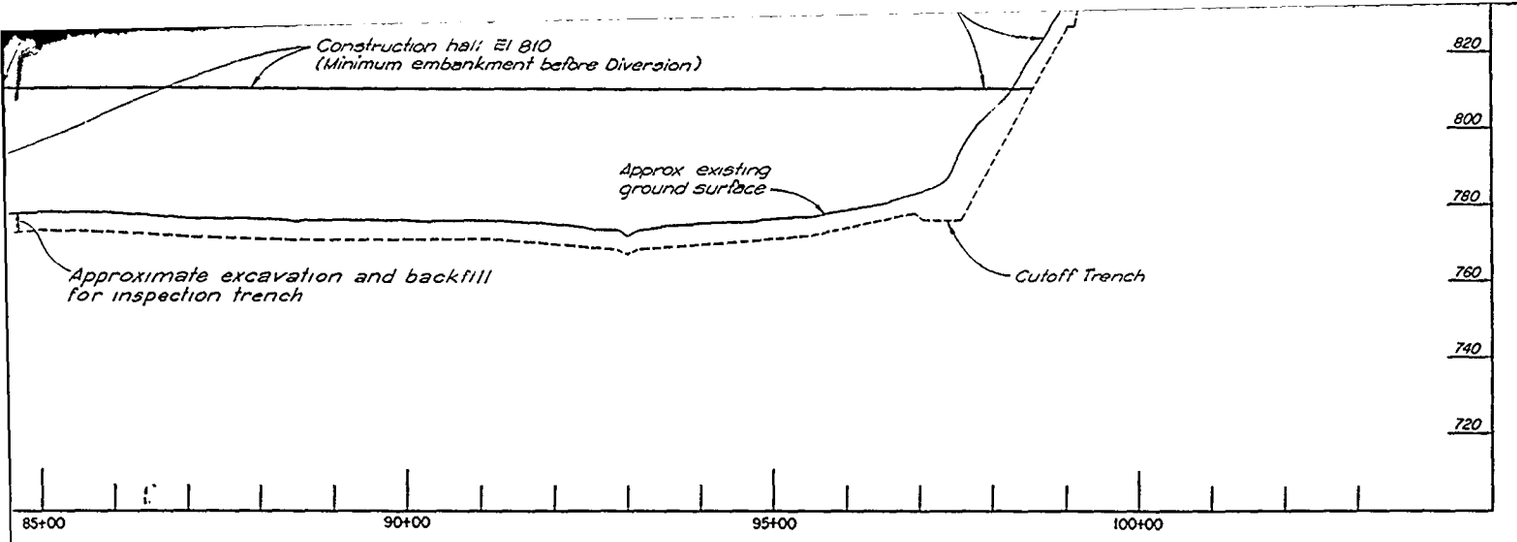


NATIONAL GEODETIC VERTICAL DATUM OF 1929

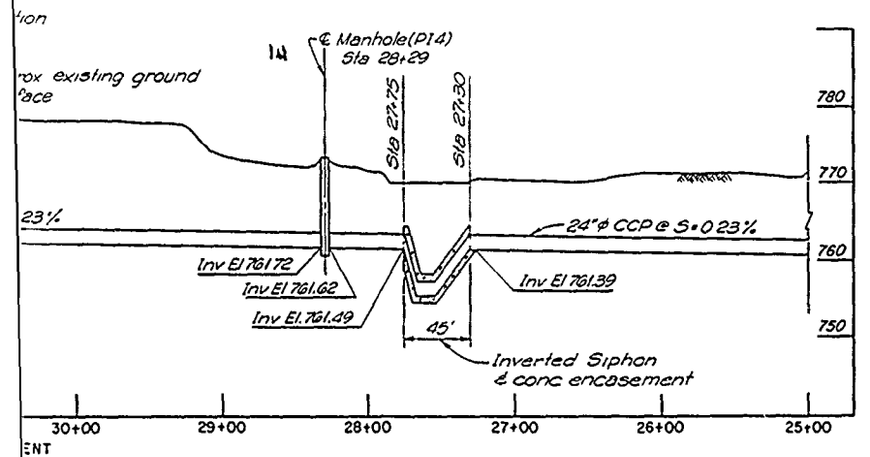


Note: All data for this profile obtained from Burns & McDonnell Plan & Profile drawings No 6-1 and 7-1 of Contract No C-3, dated August 7, 1978.

EXISTING TEMPORARY SEWER PROFILE



E ALONG ℄ DAM AND CUTOFF TRENCH
(LOOKING UPSTREAM)



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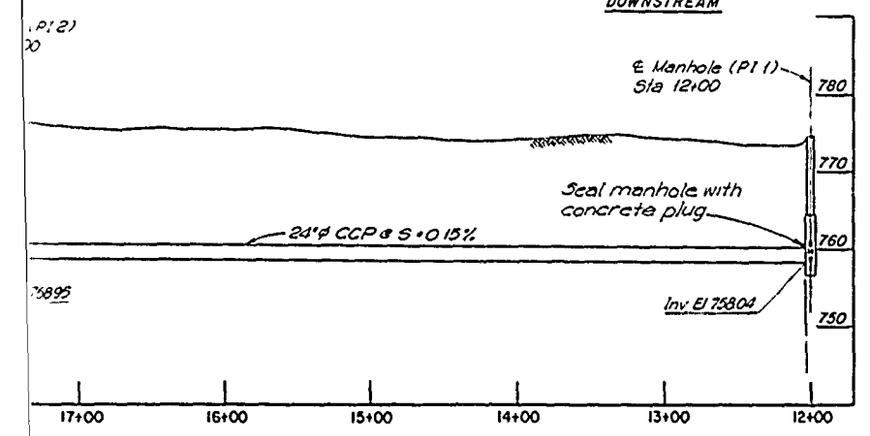

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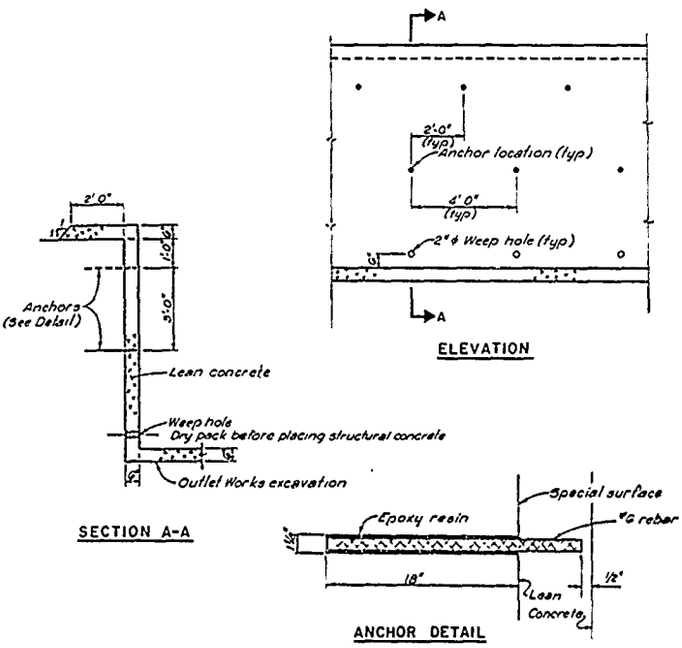


SPECIAL SURFACE AND BEARING SURFACE PROTECTION
LEAN CONCRETE DETAILS FOR
INTAKE TOWER AND OUTLET WORKS

NTS

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by:
Checked by:
Submitted by:

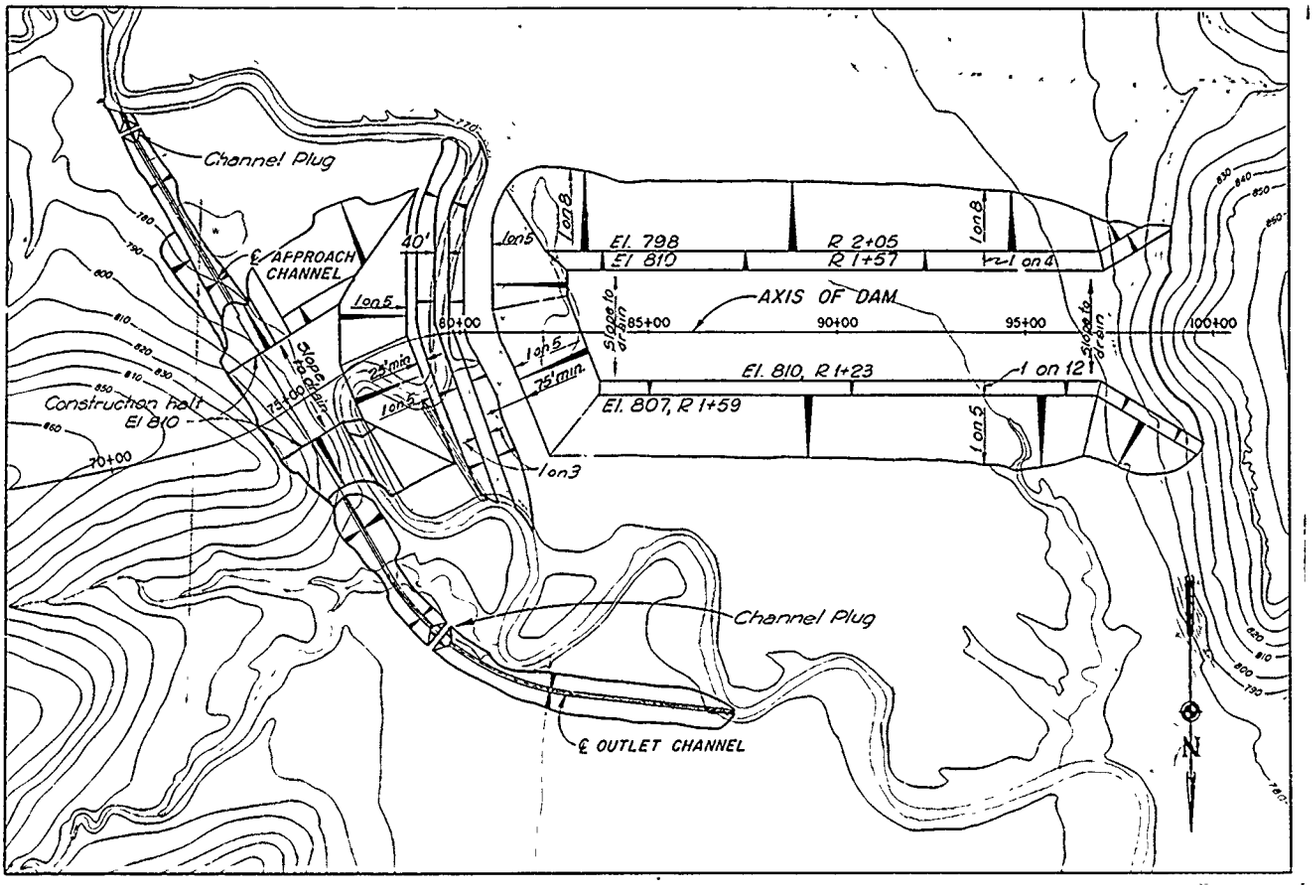
US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

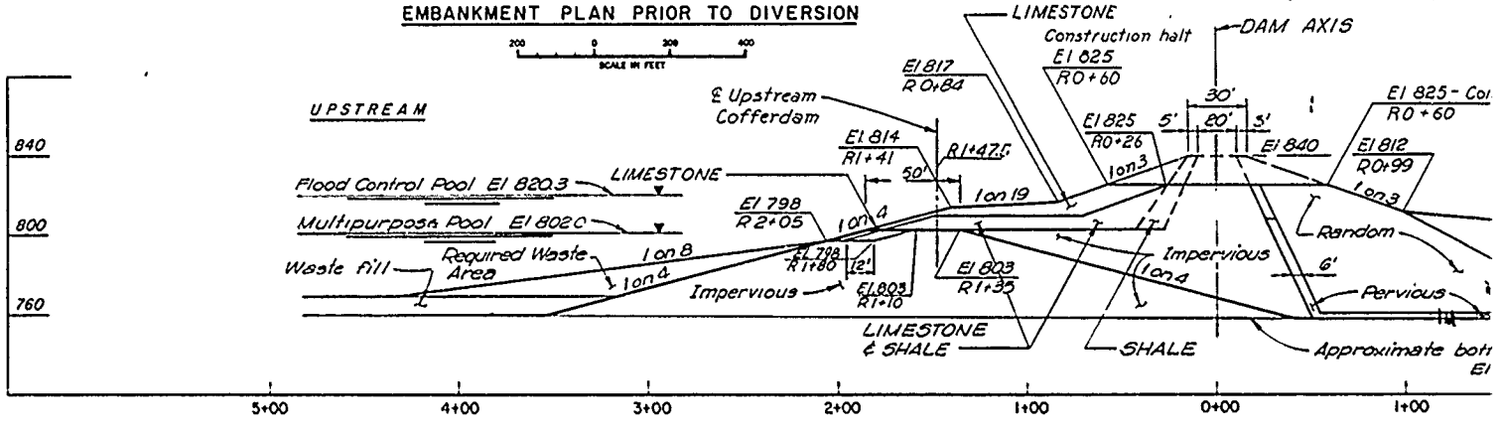
DAM AXIS AND TEMPORARY SEWER PROFILES AND ANCHOR DETAILS

Scale: AS SHOWN
Date: JUNE 1990
Dwg No.:
Sheet number: 15
File No.: RBL-2-1235

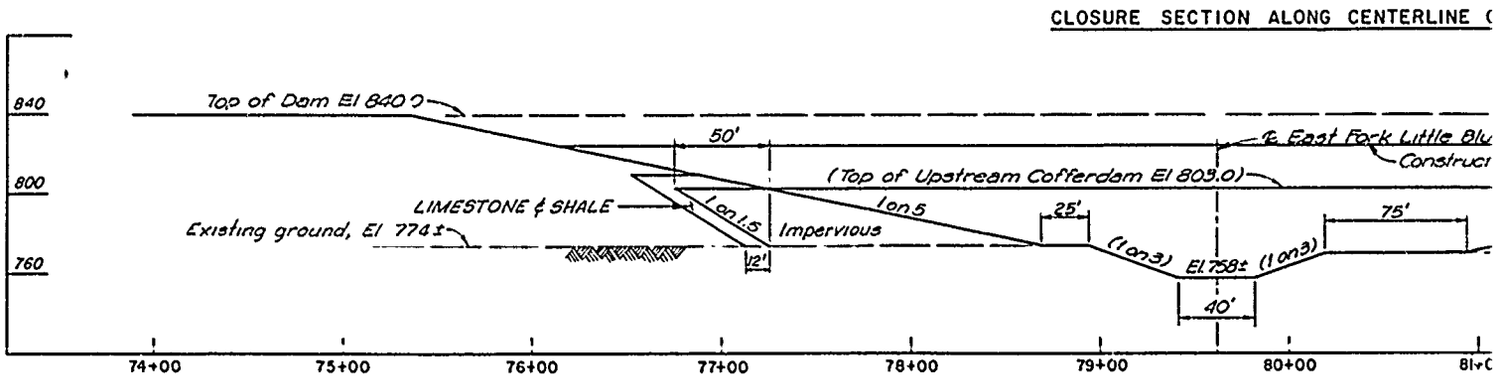
PLATE NO. 15



EMBANKMENT PLAN PRIOR TO DIVERSION

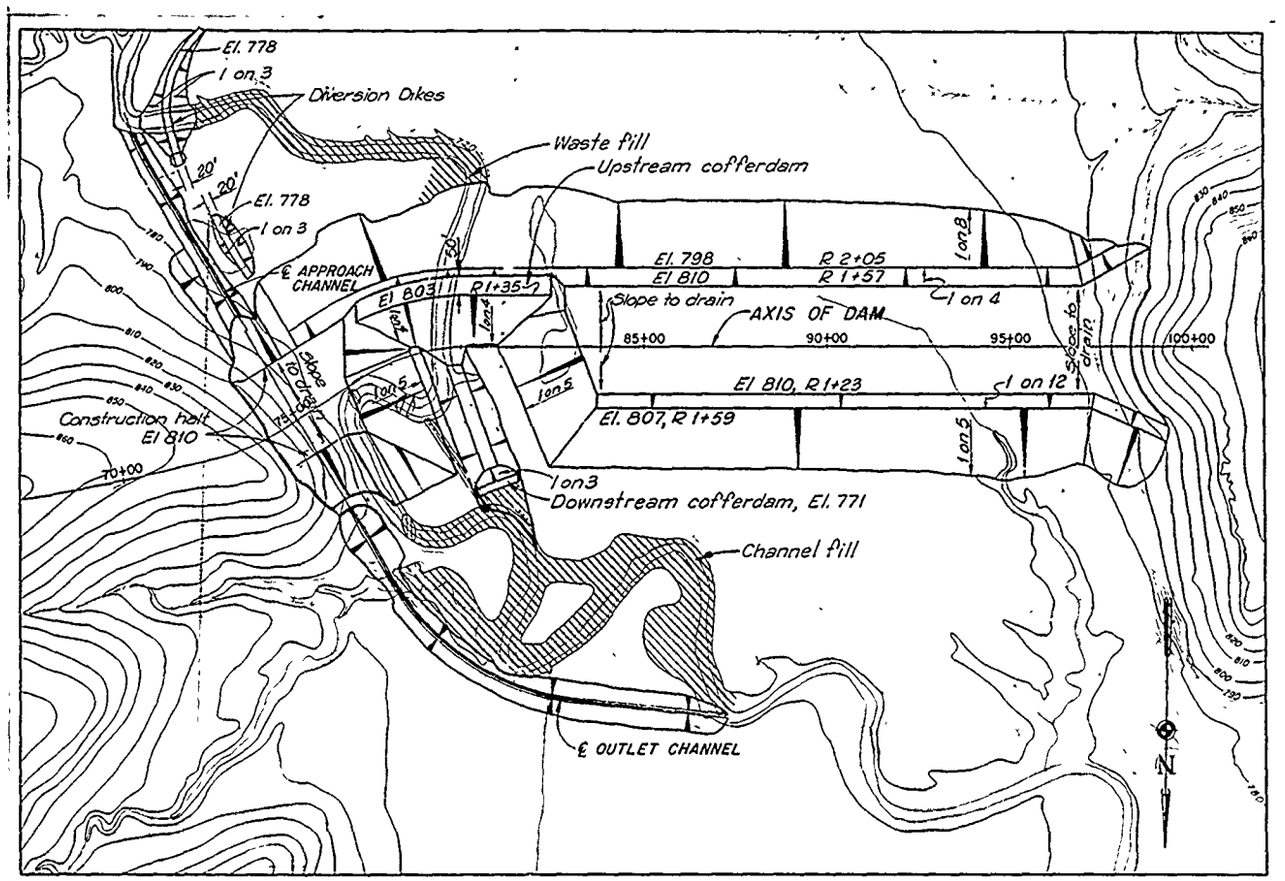


CLOSURE SECTION ALONG CENTERLINE



CLOSURE AREA PROFILE - LOOKING UPSTREAM -

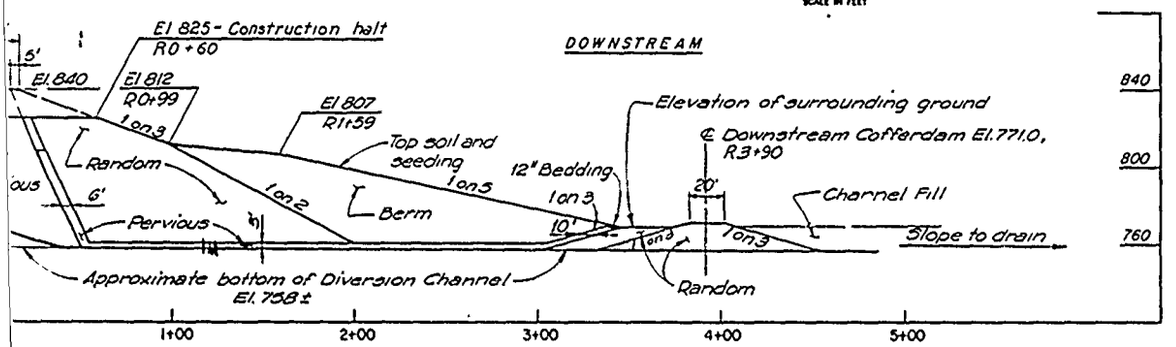
ELEVATION IN FEET BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929



-DAM AXIS

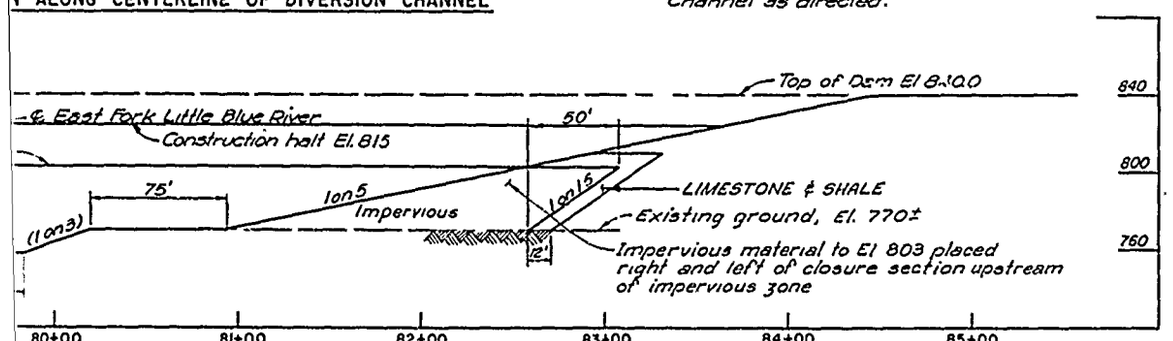
EMBANKMENT PLAN AFTER DIVERSION

SCALE IN FEET

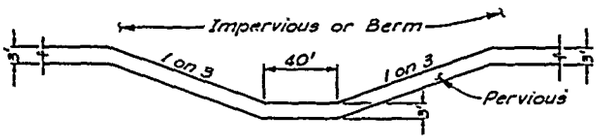


Remove muck and excavate Diversion Channel as directed.

N ALONG CENTERLINE OF DIVERSION CHANNEL



LOOKING UPSTREAM - ℄ COFFERDAM



SECTION ACROSS DIVERSION CHANNEL

Revisions			
Symbol	Descriptions	Date	Approved

U. S ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

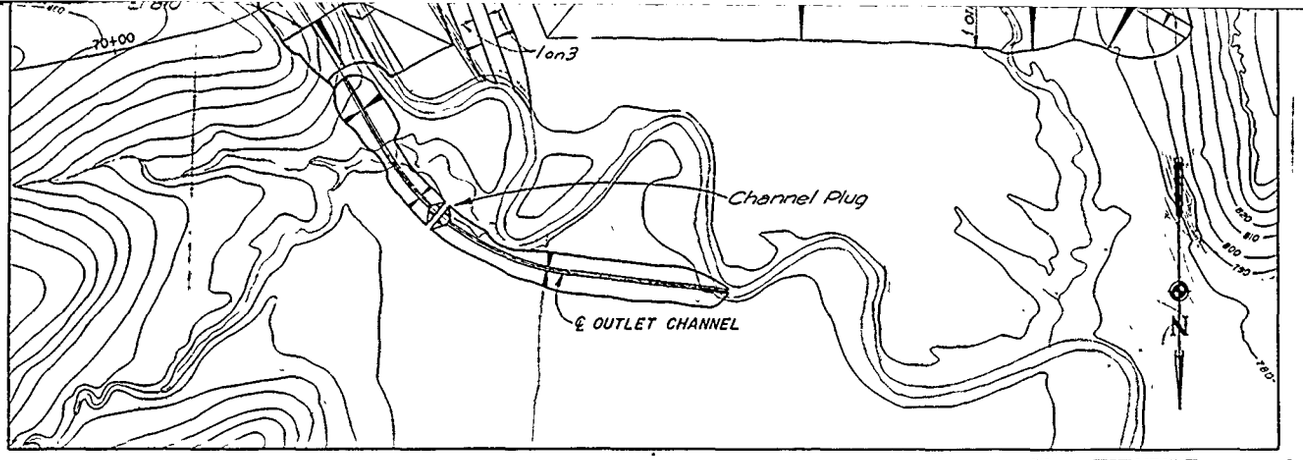
Designed by:
Drawn by:
Checked by:

US Army Corps of Engineers

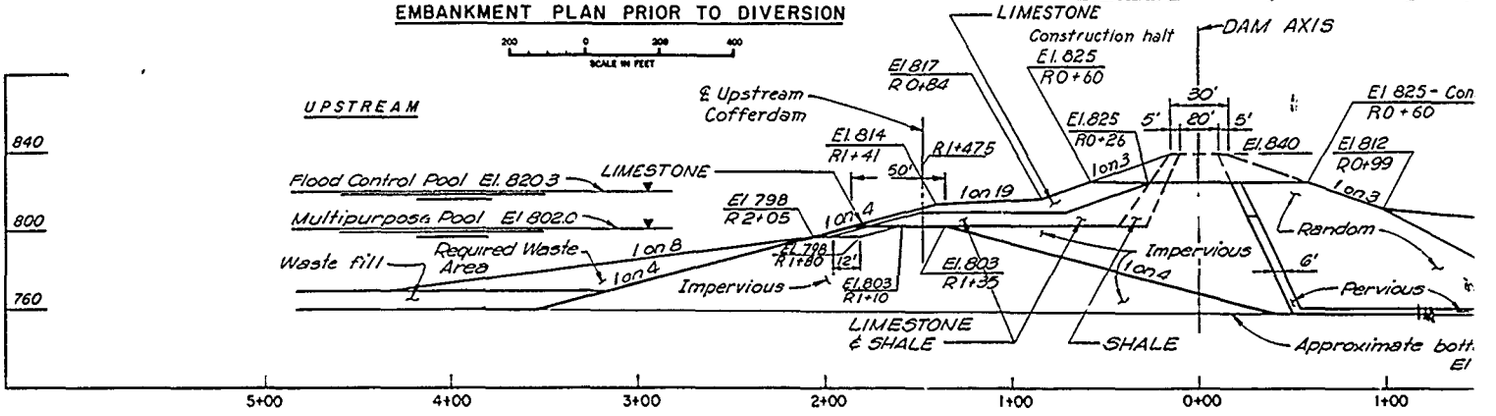
EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

DIVERSION AND CLOSURE DETAILS

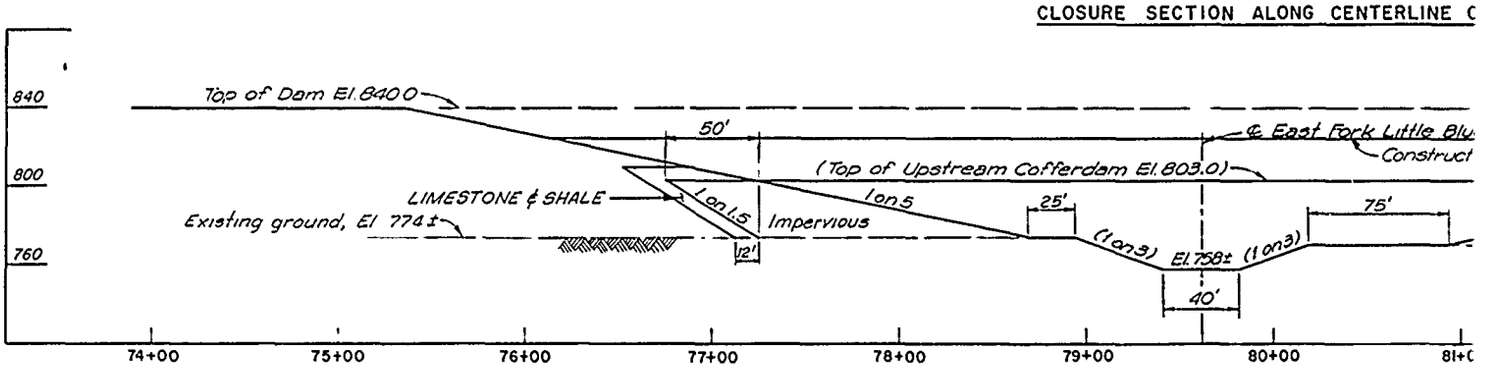
Scale



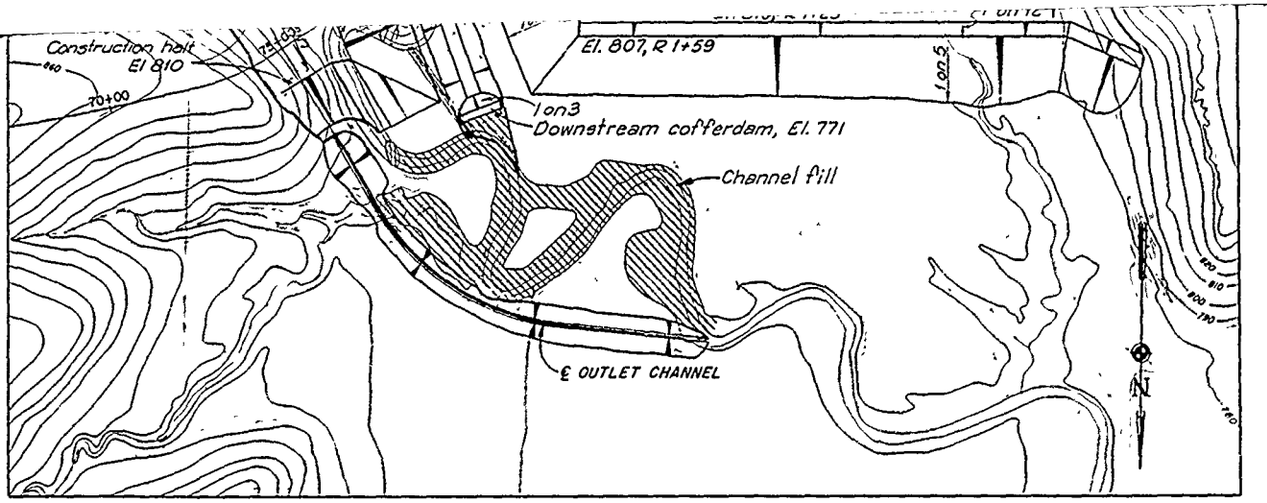
EMBANKMENT PLAN PRIOR TO DIVERSION



CLOSURE SECTION ALONG CENTERLINE C



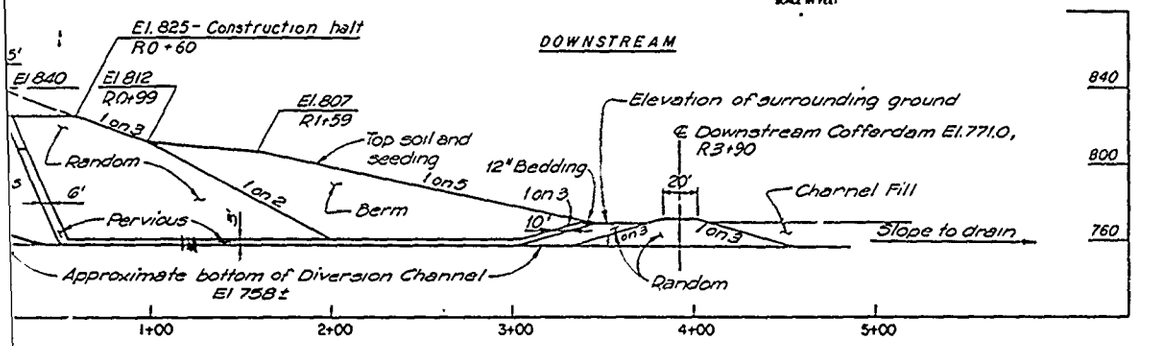
CLOSURE AREA PROFILE - LOOKING UPSTREAM -



EMBANKMENT PLAN AFTER DIVERSION

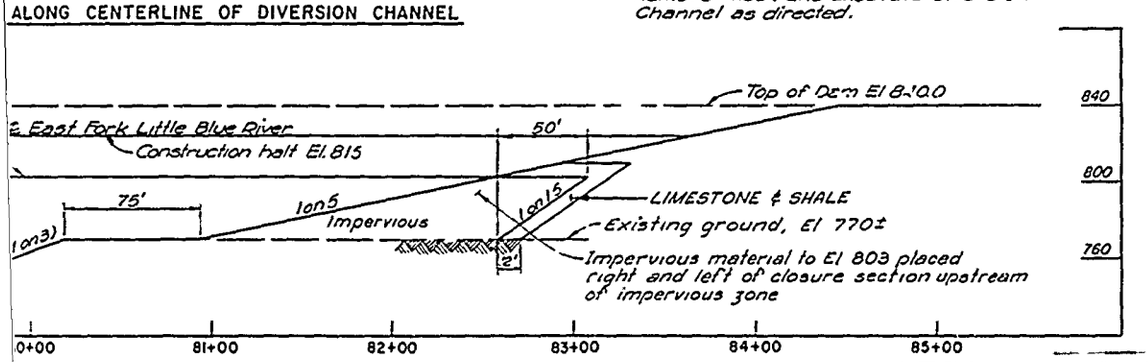
SCALE IN FEET

AM AXIS

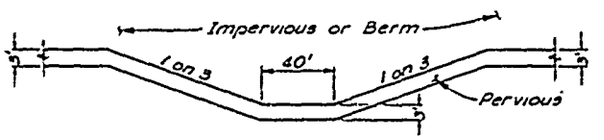


Remove muck and excavate Diversion Channel as directed.

ALONG CENTERLINE OF DIVERSION CHANNEL



OOKING UPSTREAM - ℄ COFFERDAM



SECTION ACROSS DIVERSION CHANNEL
LOOKING DOWNSTREAM
Not to Scale

Revisions			
Symbol	Descriptions	Date	Approved

U S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by

Drawn by

Checked by

Submitted by

US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

DIVERSION AND CLOSURE DETAILS

Scale: AS SHOWN

Date JUNE 1990

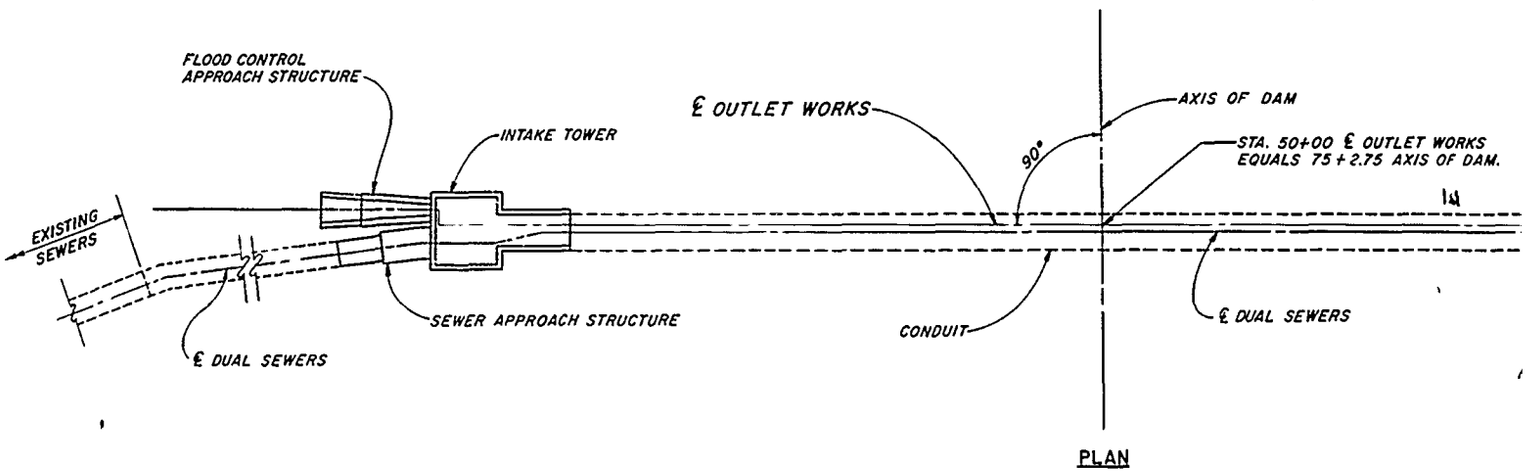
Sheet number 16

Dwg. No.:

File No. RBL-2-1236

PLATE NO. 16

16



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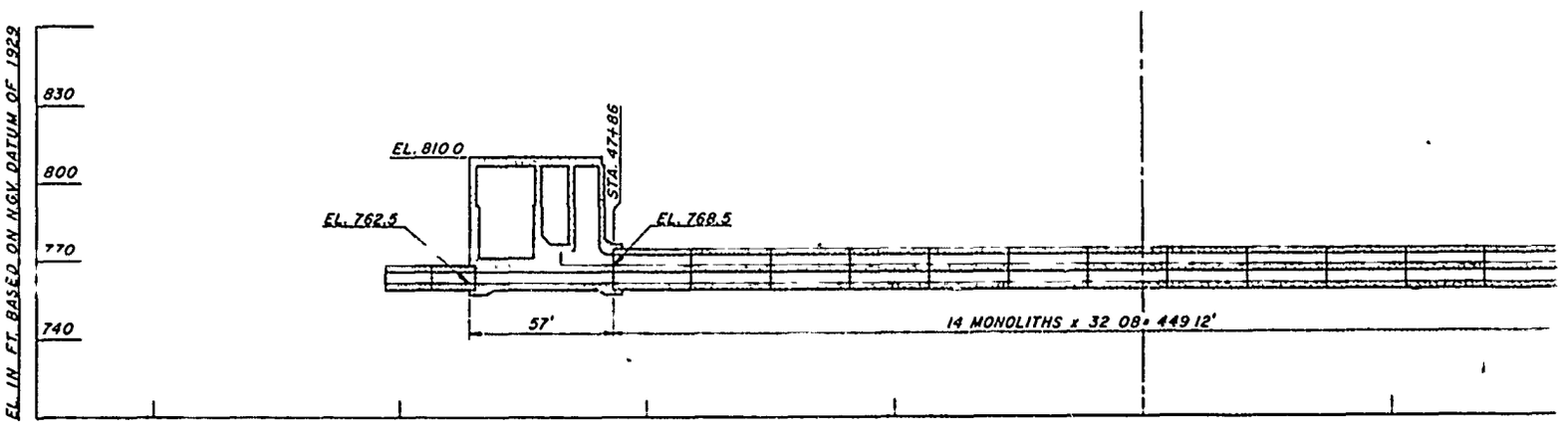
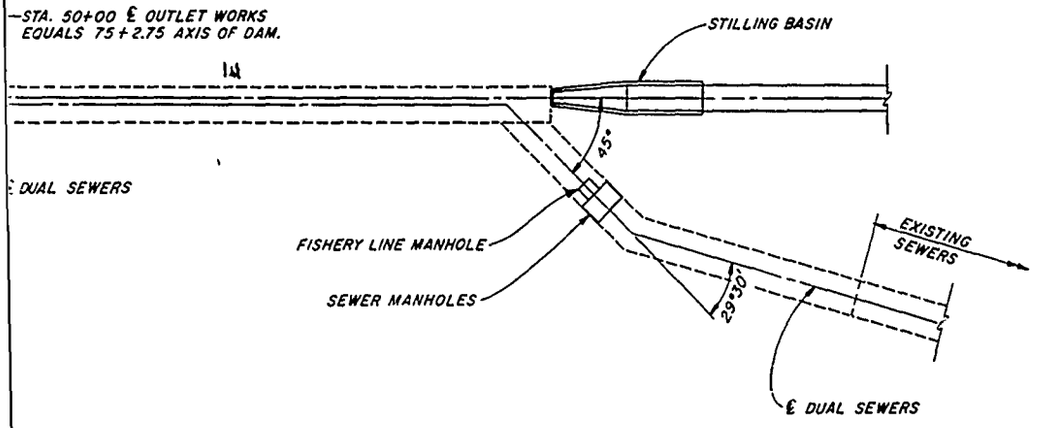
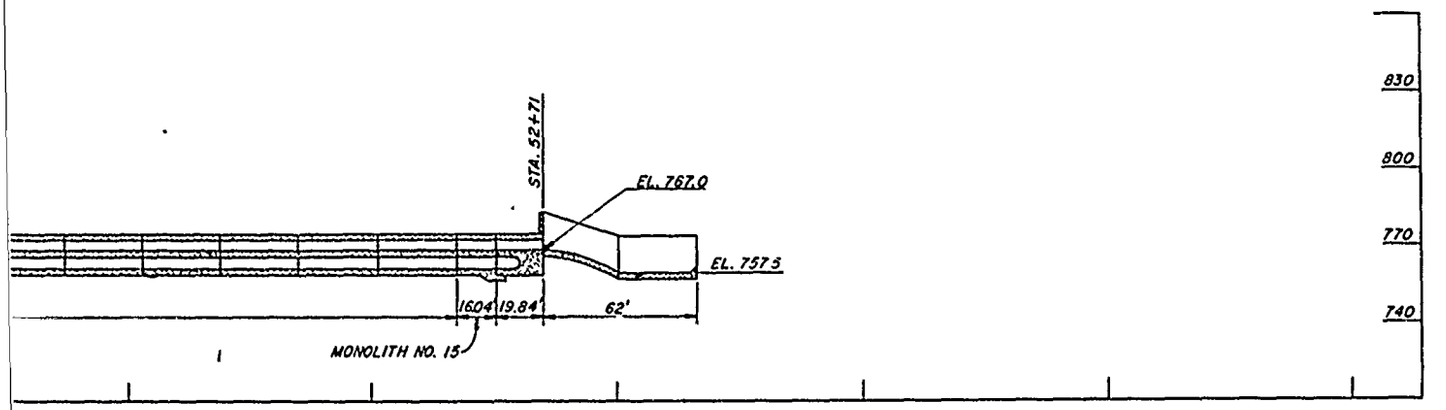


SECTION THRU OUTLET WORKS

OF DAM

—STA. 50+00 ℄ OUTLET WORKS
EQUALS 75+2.75 AXIS OF DAM.





KS

NOTE:
EMBANKMENT NOT SHOWN.
SEE DWG. B8

REFERENCE DWGS.	DWG. NO.
INTAKE TOWER	J1
CONDUIT	P1
STILLING BASIN	R1
APPROACH STRUCTURE (SEWER)	H1
APPROACH STRUCTURE (FLOOD CONTROL)	H3
DOWNSTREAM SEWER	O1

Revisions			
Symbol	Descriptions	Date	Approved

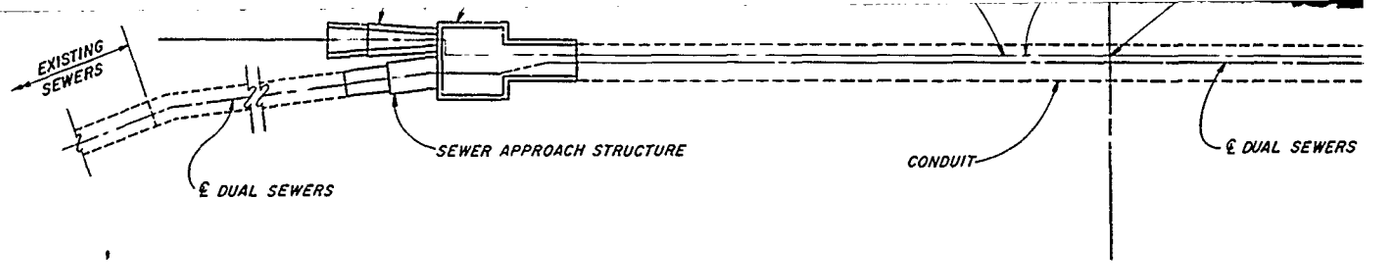
U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by:
Checked by:

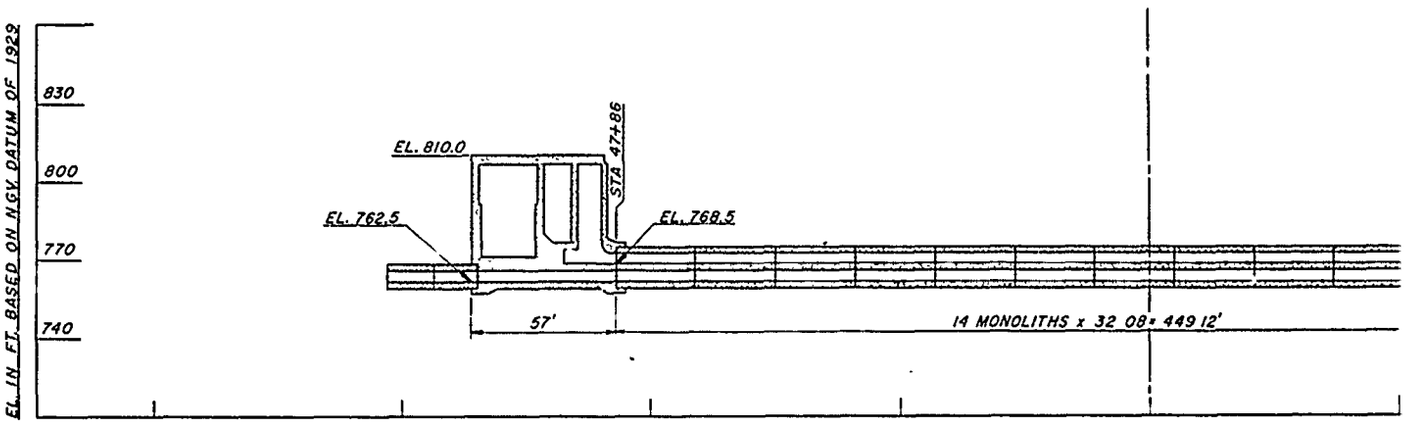
US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

OUTLET WORKS - PLAN AND PROFILE



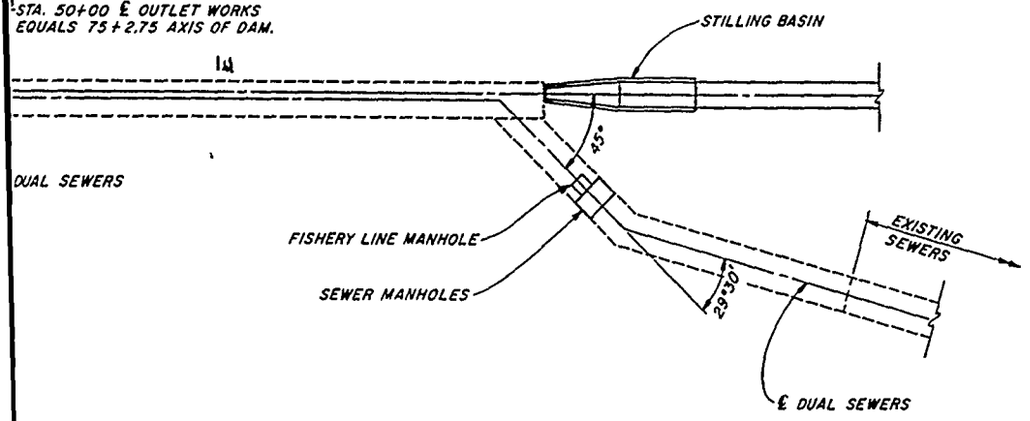
PLAN

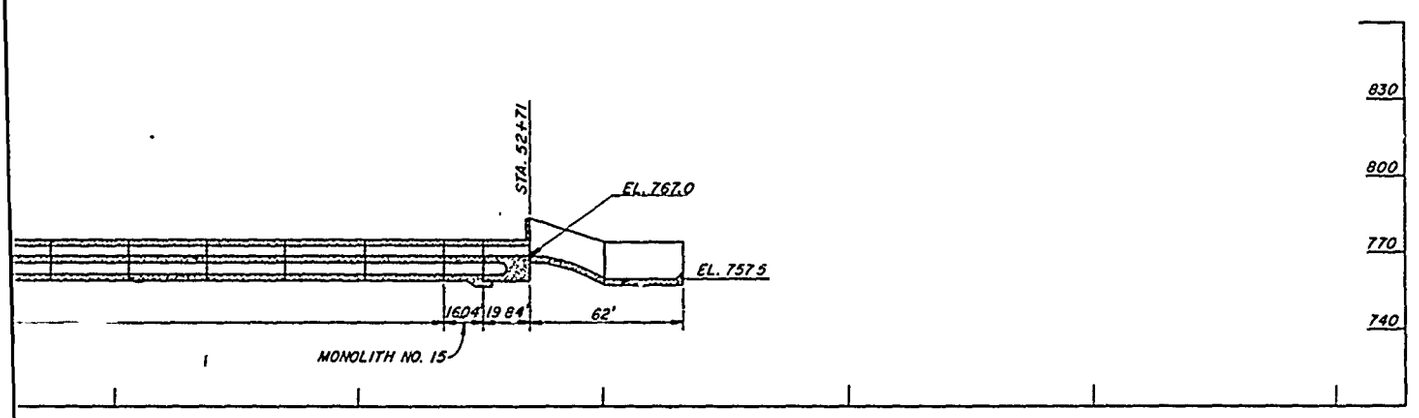


SECTION THRU OUTLET WORKS

OF DAM

STA. 50+00 ℄ OUTLET WORKS EQUALS 75+2.75 AXIS OF DAM.





NOTE:
EMBANKMENT NOT SHOWN.
SEE DWG. B8

REFERENCE DWGS	DWG NO
INTAKE TOWER	J1
CONDUIT	P1
STILLING BASIN	R1
APPROACH STRUCTURE (SEWER)	H1
APPROACH STRUCTURE (FLOOD CONTROL)	H3
DOWNSTREAM SEWER	O1

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by:
Checked by:
Submitted by:

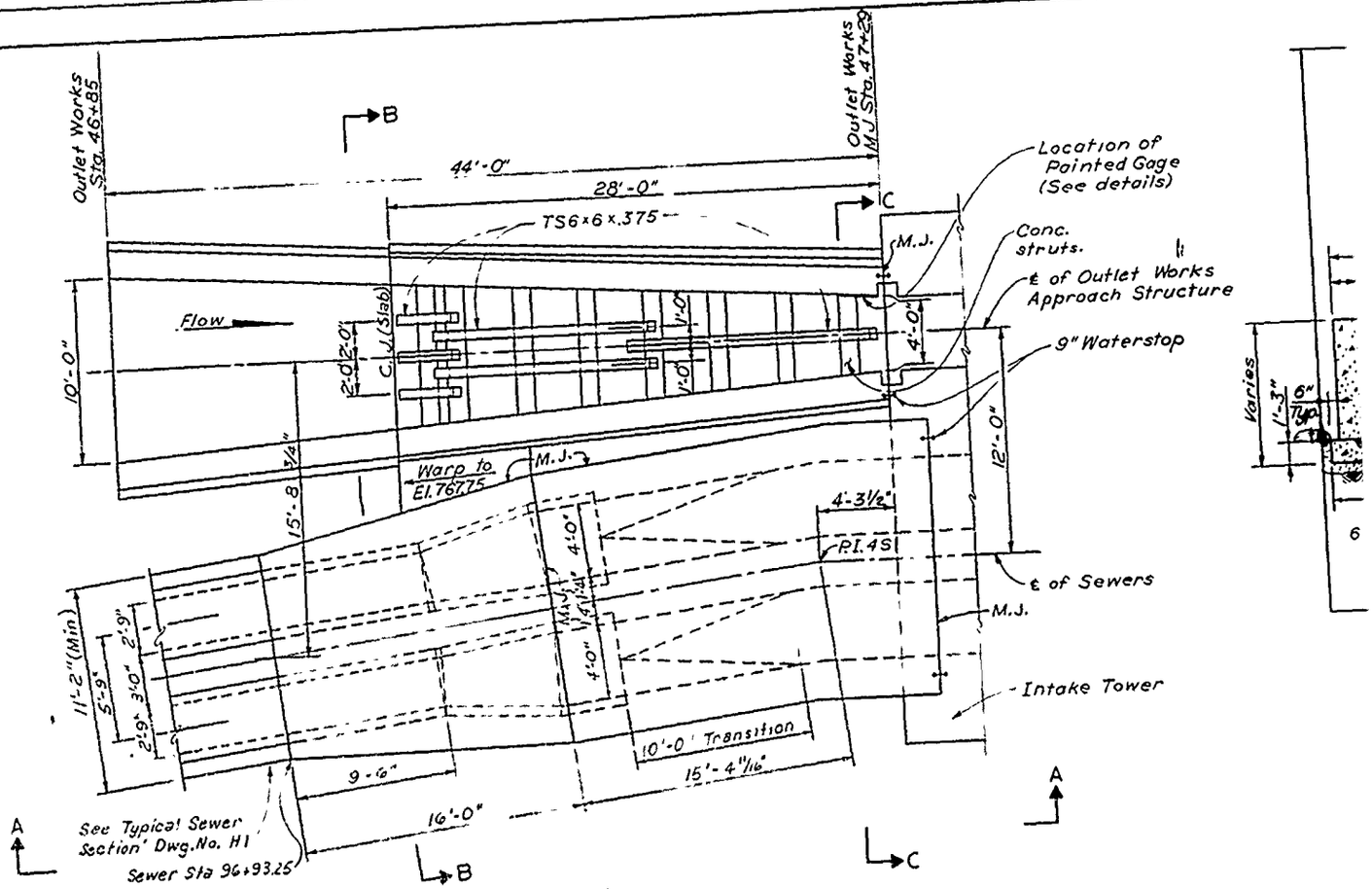
US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

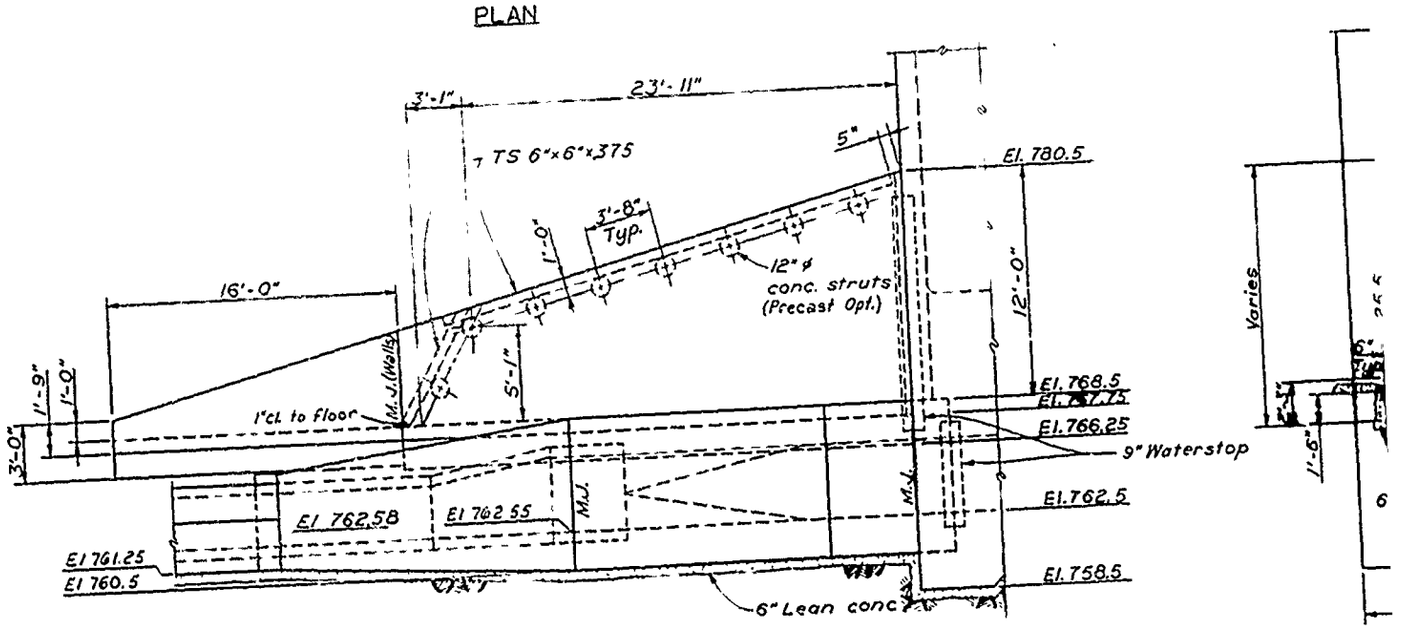
OUTLET WORKS - PLAN AND PROFILE

Scale: AS SHOWN
Date: JUNE 1990
Dwg. No.:
Sheet number: 17
File No.: RBL-2-1237

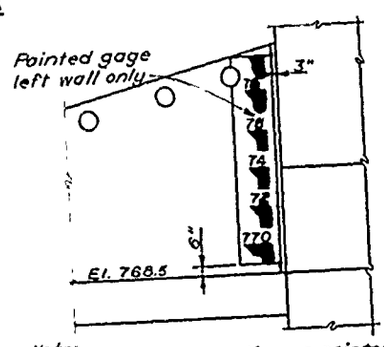
PLATE NO. 17



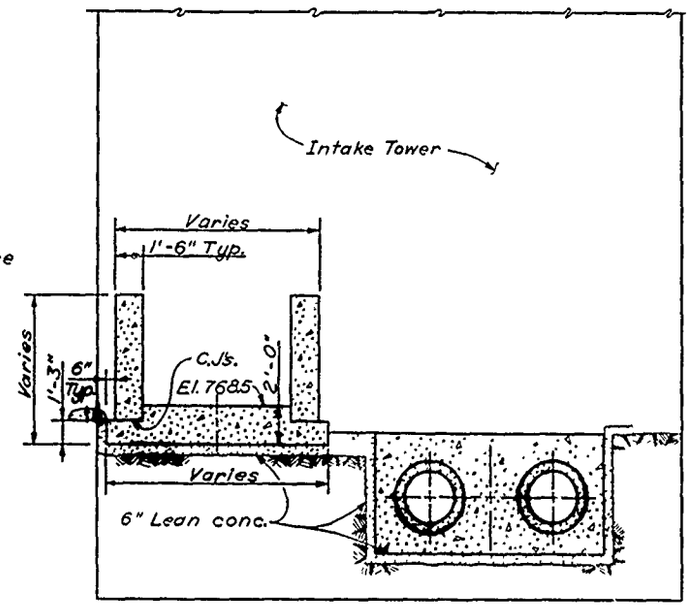
PLAN



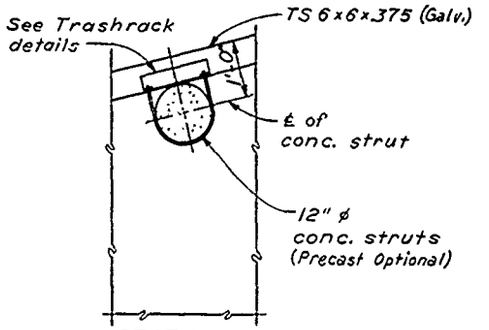
ELEVATION A



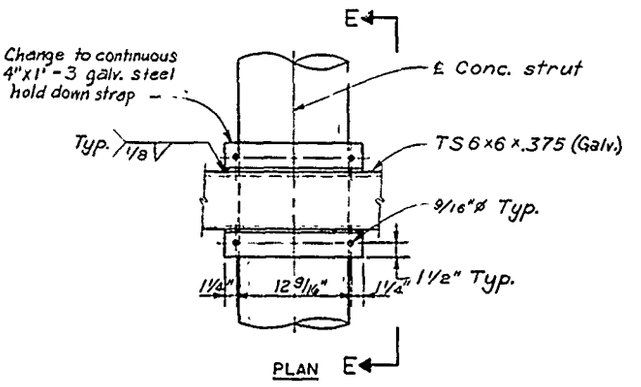
Note:
For more information on pointed gages see "Tile Gage Details" on Dwg. J1.

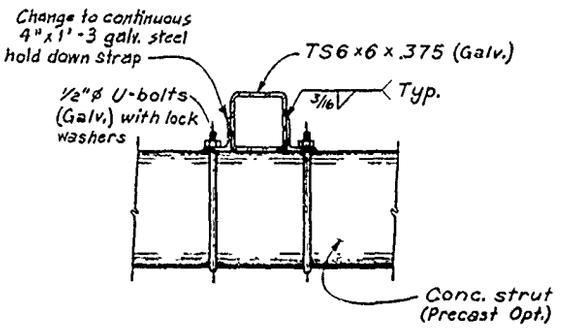


SECTION B

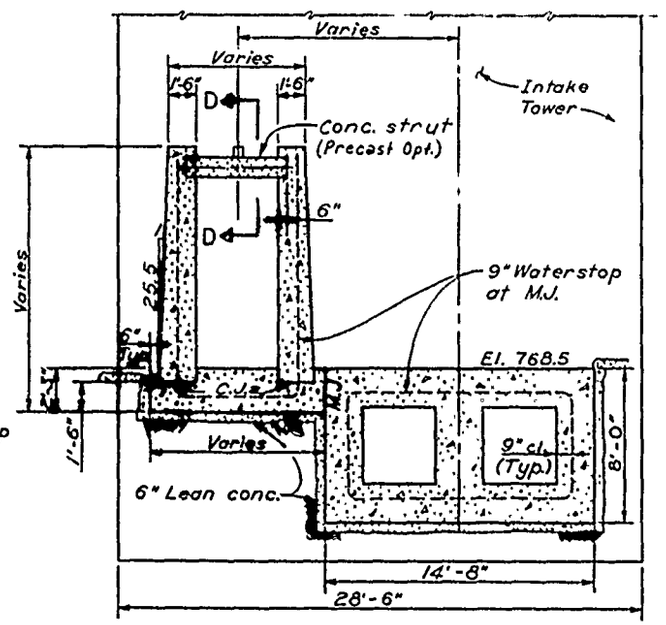


SECTION D
Scale: 1/4" = 1'-0"





SECTION E



SECTION C

TRASHRACK DETAILS
Scale: 1½" = 1'-0"

GENERAL NOTES - APPROACH STRUCTURE

1. M.J. = Monolith joint. - Painted
2. C.J. = Construction joint.
3. Reinforcement is not continuous through Monolith joints.
4. Reinforcement is continuous through Construction joint.
5. Clear distance of reinforcement from waterstop shall be 2½".

REFERENCE DWG. DWG. NO.
RUBBER WATERSTOP ---------- P2
INTAKE TOWER ---------- J3

Revisions			
Symbol	Descriptions	Date	Approved

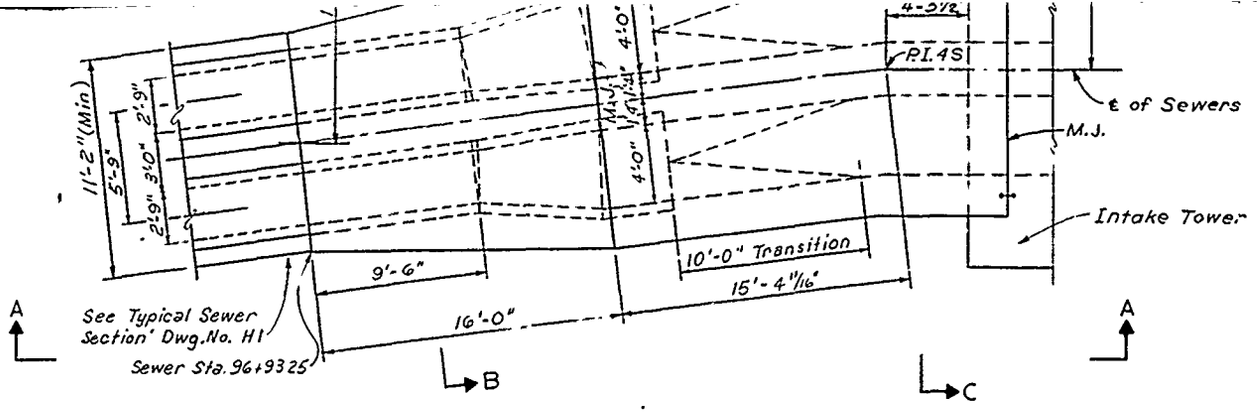
U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by:

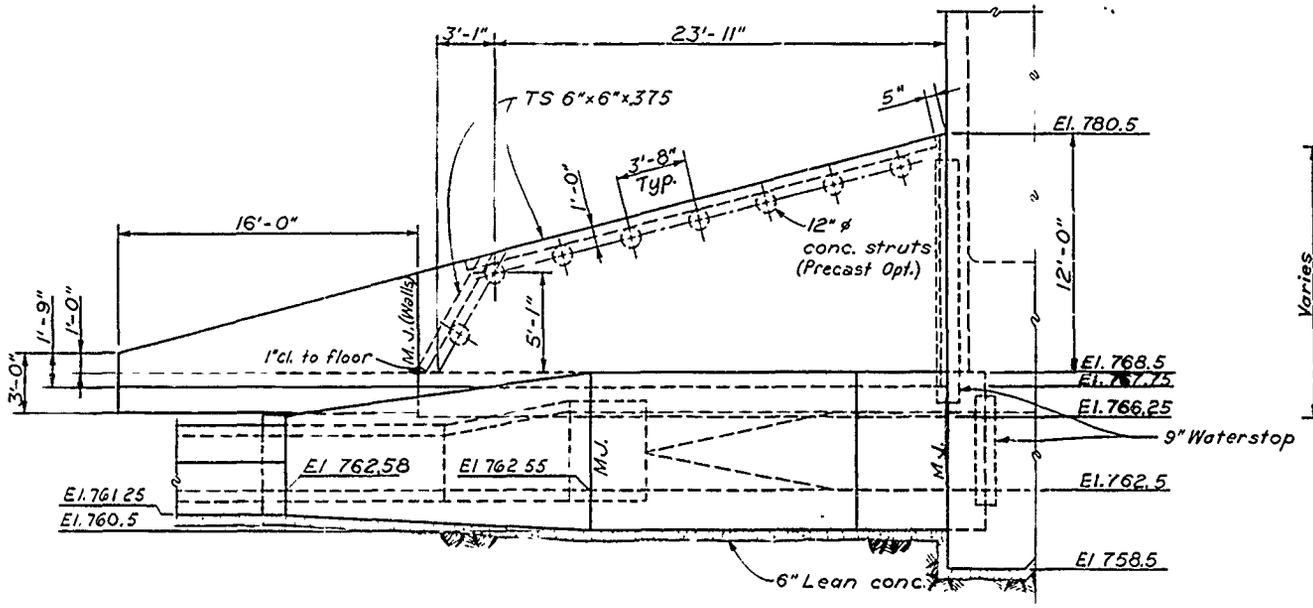
US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

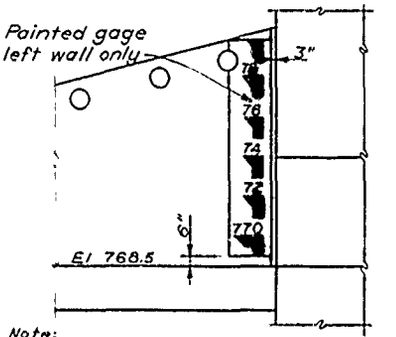
APPROACH STRUCTURE
PLAN AND DETAILS



PLAN

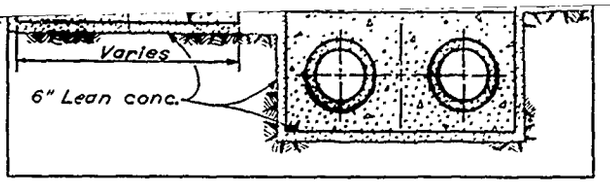


ELEVATION A

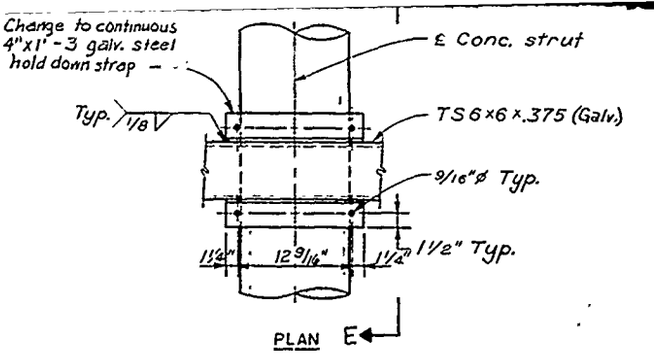


Note:
For more information on painted gages see "Tile Gage Details" on Dwg. J1.

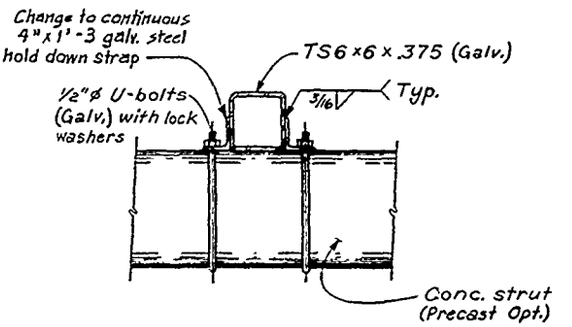
PAINTED GAGE DETAILS
LEFT APPROACH WALL



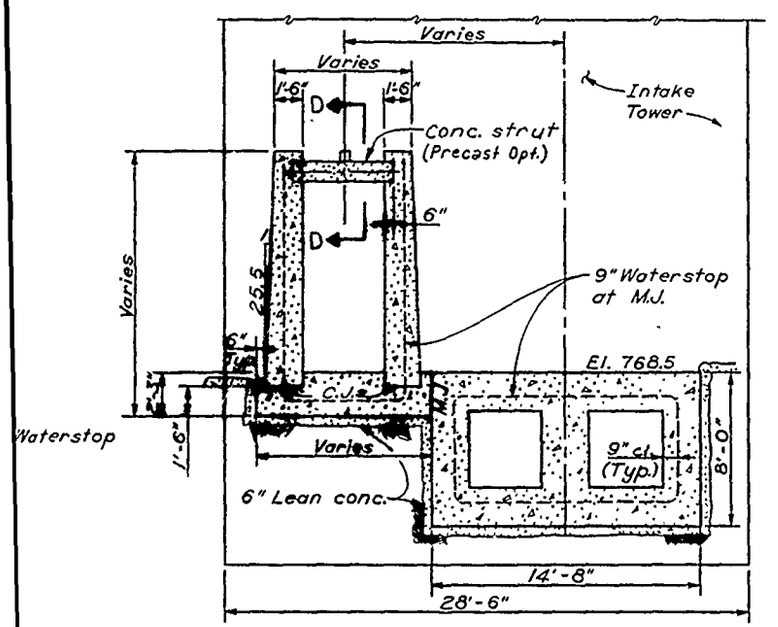
SECTION B



PLAN E



SECTION E



SECTION C

TRASHRACK DETAILS

Scale: 1½" = 1'-0"

GENERAL NOTES - APPROACH STRUCTURE

1. M.J. = Monolith joint. - Painted
2. C.J. = Construction joint.
3. Reinforcement is not continuous through Monolith joints.
4. Reinforcement is continuous through Construction joint.
5. Clear distance of reinforcement from waterstop shall be 2½".

REFERENCE DWG. DWG. NO.

RUBBER WATERSTOP ---------- P2
INTAKE TOWER ---------- J3

Scale: ¼" = 1'-0"
(Except as noted)

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by:
Checked by:
Submitted by:

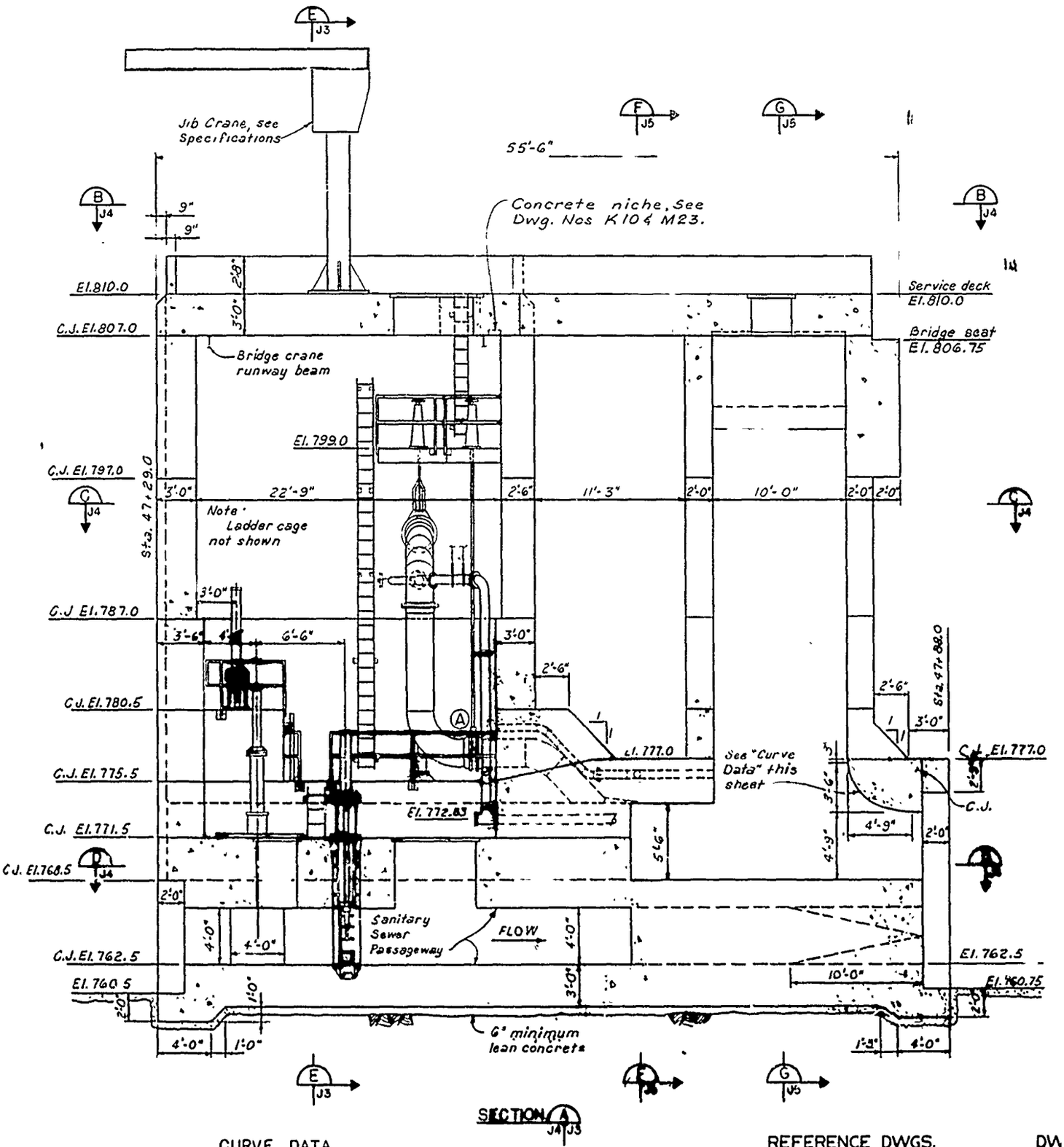
US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

APPROACH STRUCTURE
PLAN AND DETAILS

Scale: AS SHOWN
Date: JUNE 1990
Dwg No.:
Sheet number: 18
File No.: RBL-2-1238

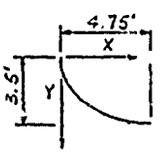
PLATE NO. 18



SECTION A J4 J5

CURVE DATA

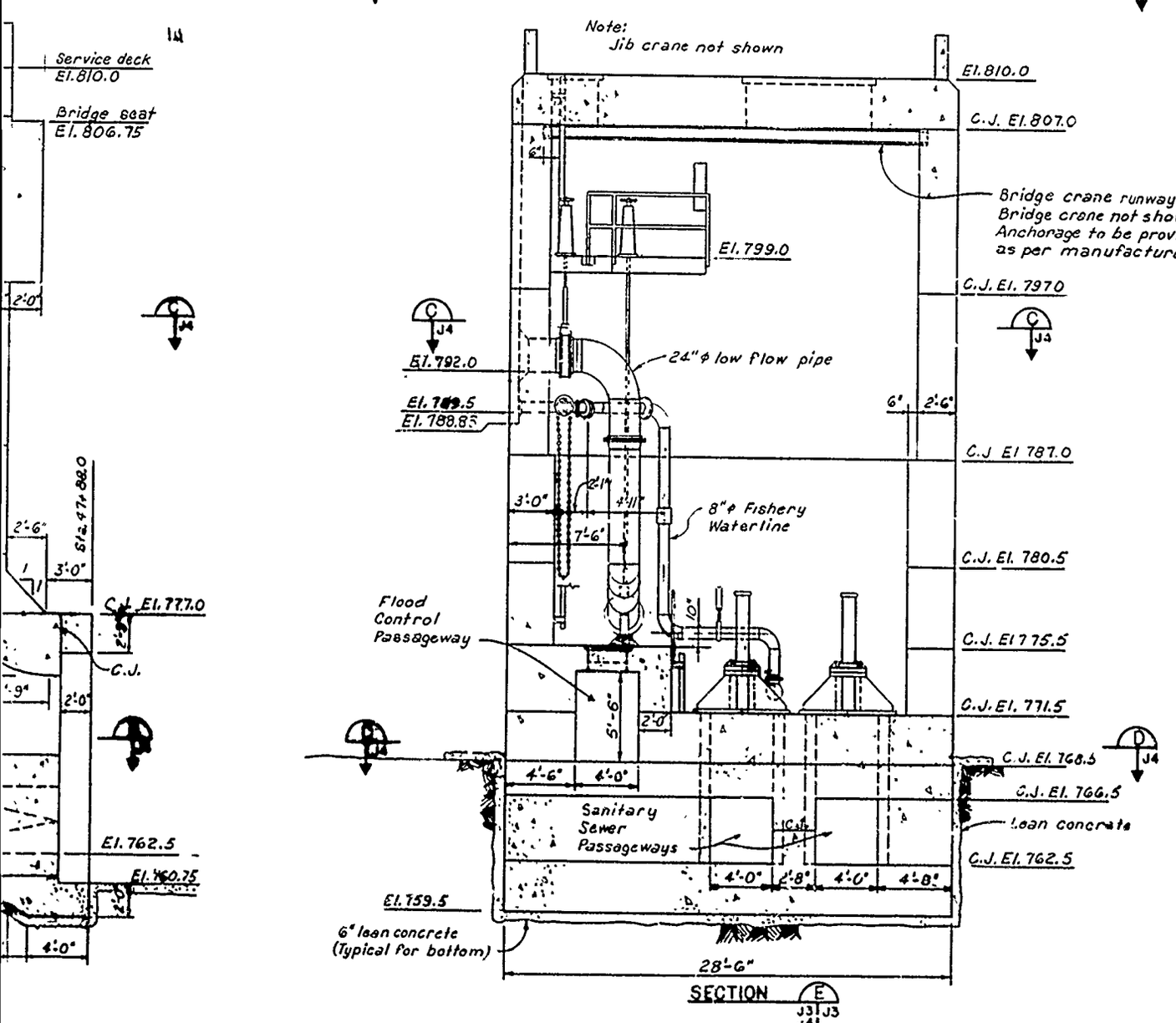
X (Ft.)	Y (Ft.)
0	0
.25	1.12
.5	1.56
1.0	2.15
1.5	2.55
2.5	3.08
3.5	3.38
4.75	5.50



CONCRETE QUANTITY
1268 CU YDS

REFERENCE DWGS.

RAILINGS
LADDERS
HATCHES
LOW FLOW PIPING
WATERSTOPS



DWGS.	DWG. NO.
	L1
	L3
	L4
NG	M1
	J6

NOTE:
Parapet railing & Removable railing not shown.

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

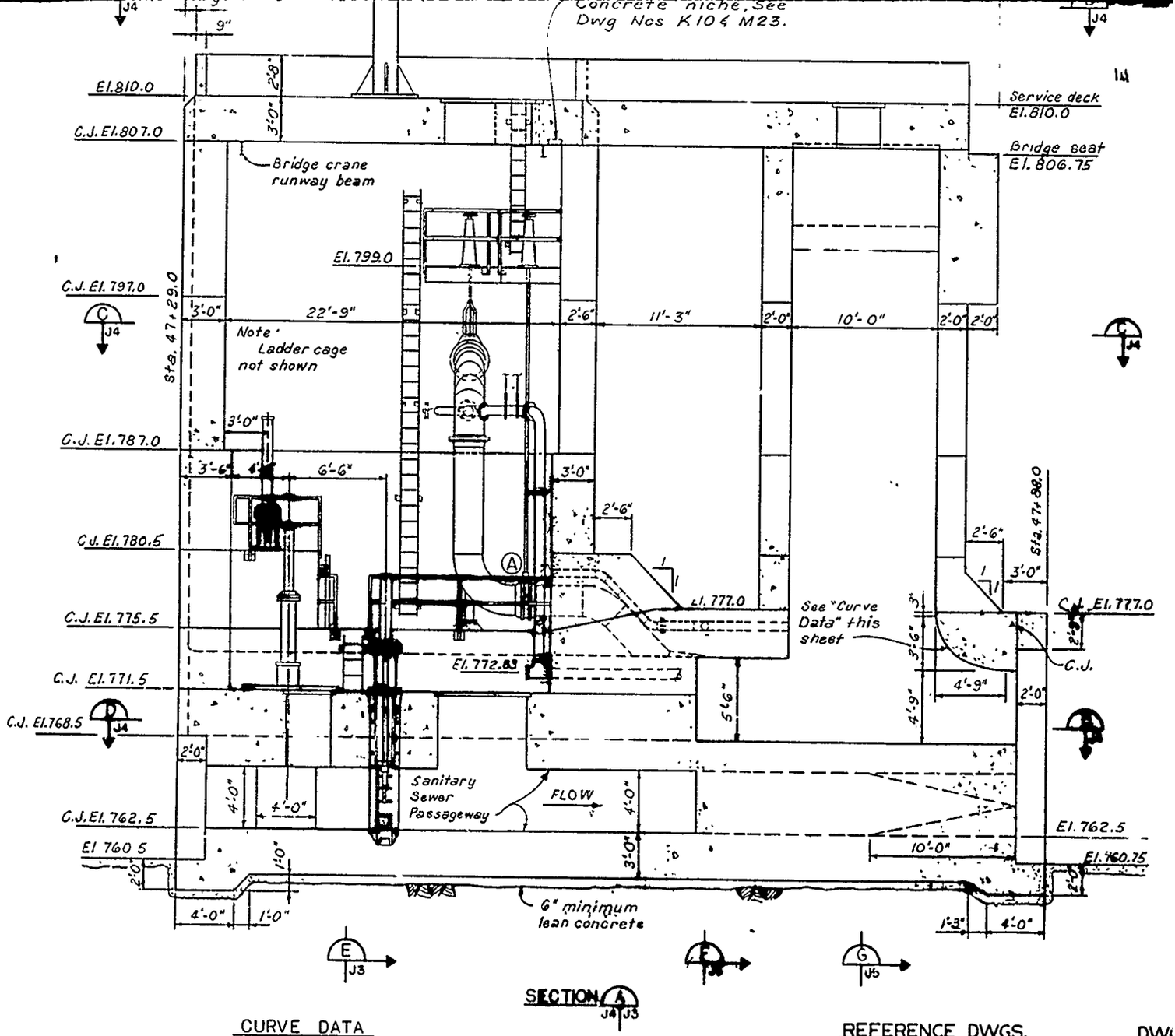
Designed by:
Drawn by:
Checked by:

US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

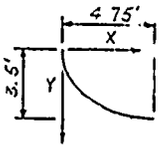
INTAKE TOWER CONCRETE DIMENSIONS

Scale: AS SHOWN



CURVE DATA

X (Ft)	Y (Ft)
0	0
.25	1.12
.5	1.56
1.0	2.15
1.5	2.55
2.5	3.08
3.5	3.38
4.75	3.50

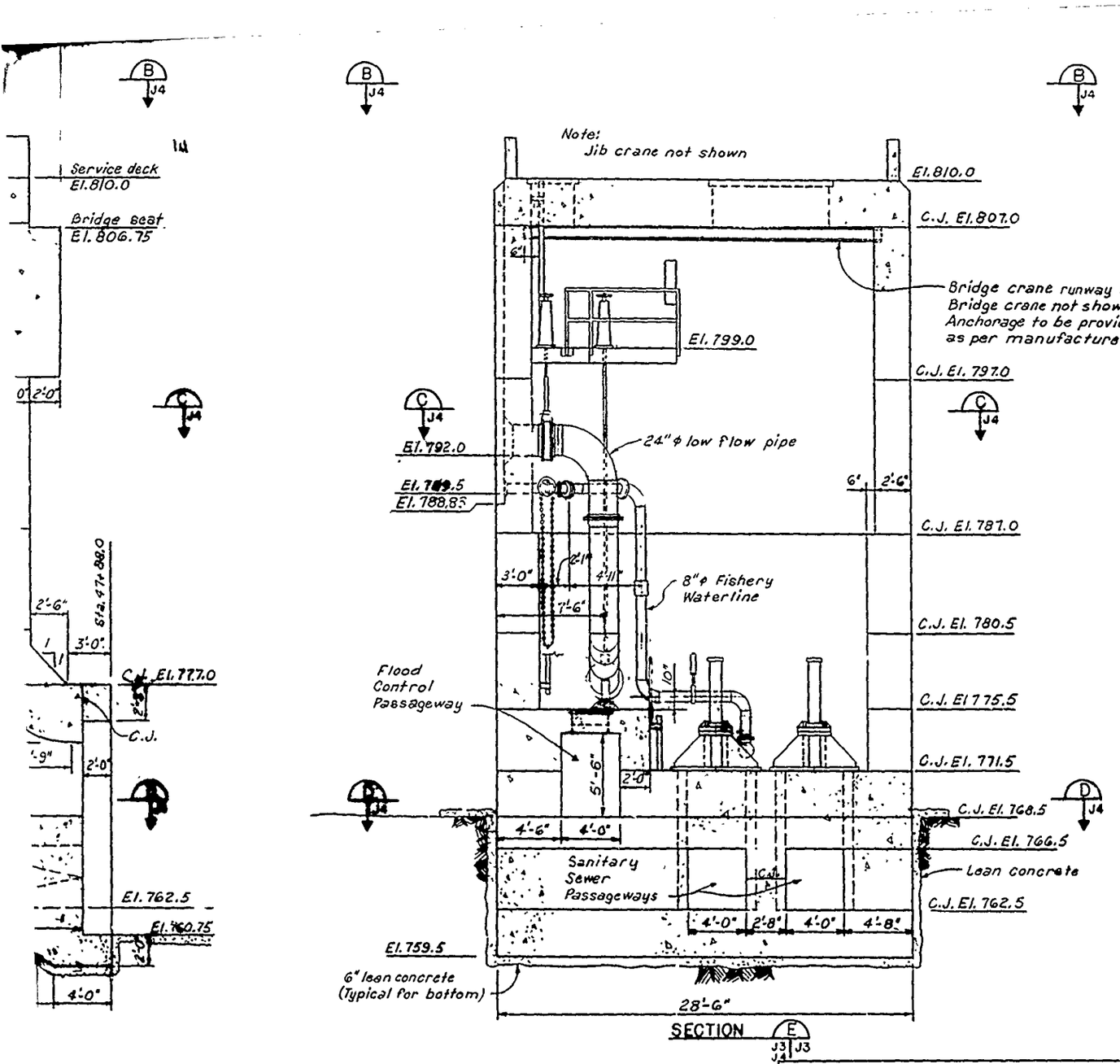


CONCRETE QUANTITY
1268 CU YDS

REFERENCE DWGS.

DWG

RAILINGS
LADDERS
HATCHES
LOW FLOW PIPING
WATERSTOPS



SECTION

NOTE:
Parapet railing & Removable railing not shown.

DWGS.	DWG. NO.
	L1
	L3
	L4
G	M1
	J6

Scale: 1/4" = 1'-0"

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by
Drawn by
Checked by
Submitted by

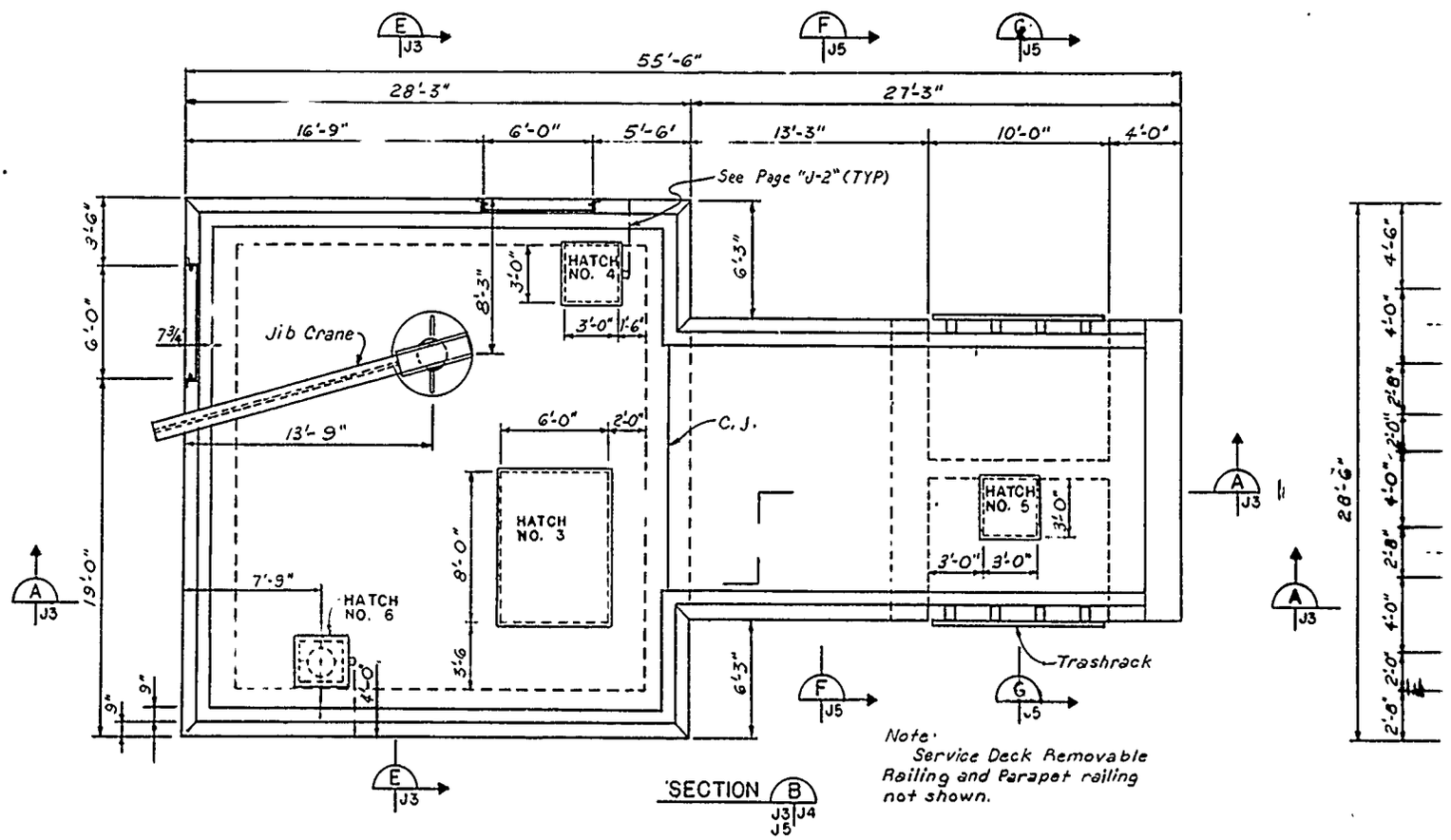
US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

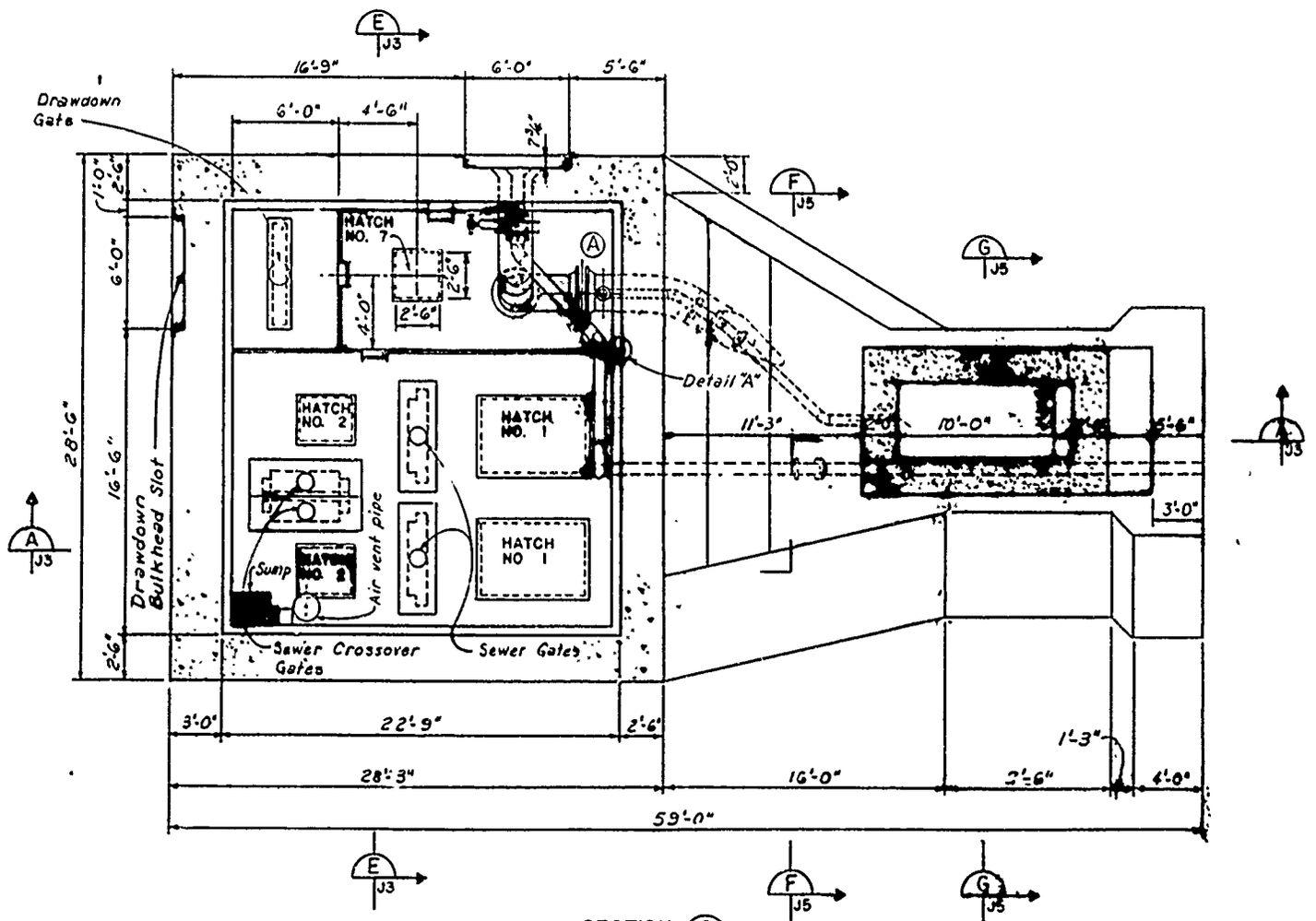
INTAKE TOWER CONCRETE DIMENSIONS

Scale: AS SHOWN
Date: JUNE 1990
Dwg No.:
Sheet number: 19
File No.: RBL-2-1239

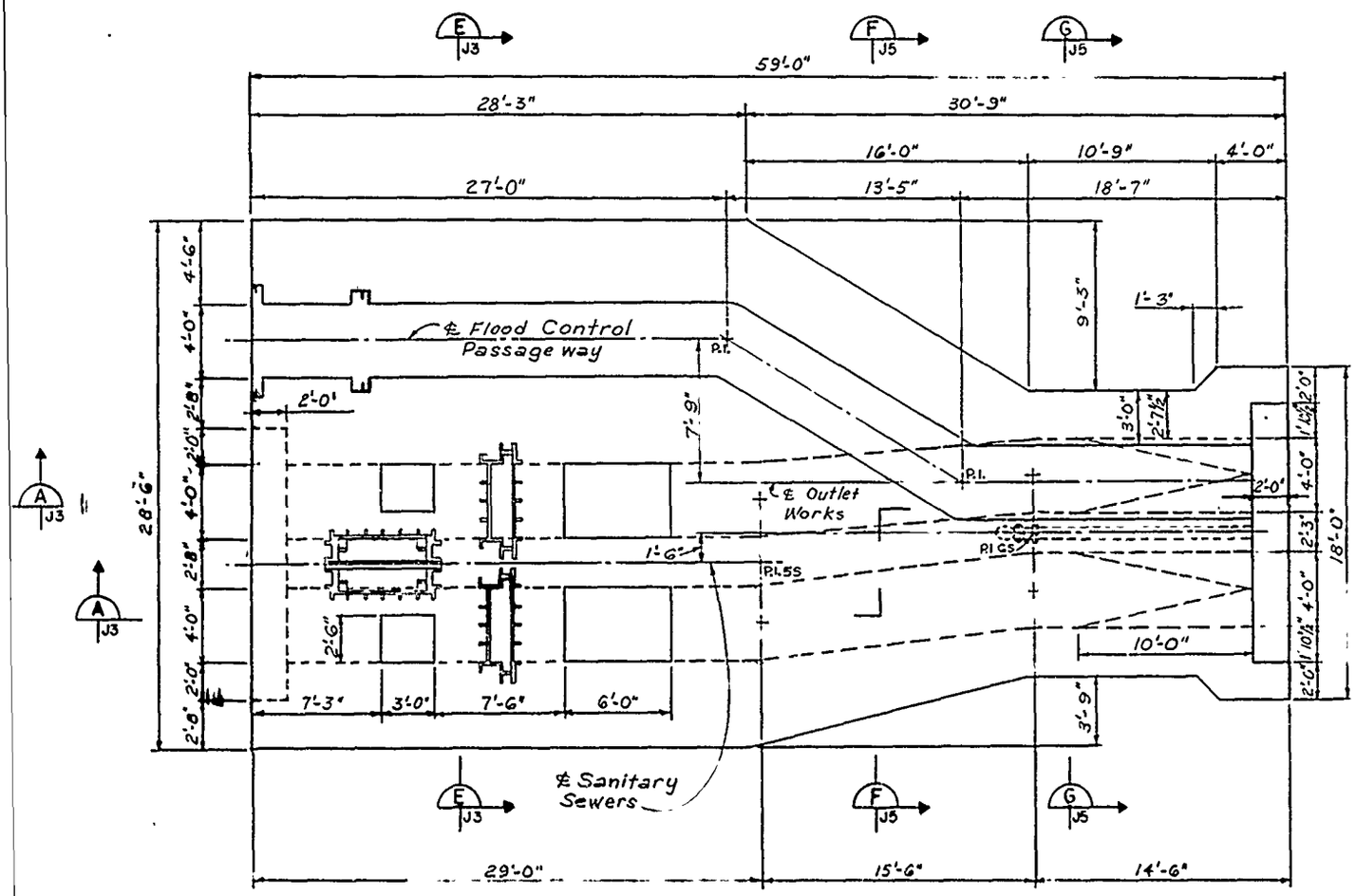
PLATE NO. 19



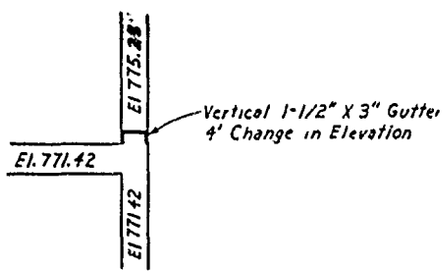
SECTION B



SECTION C



SECTION D J3 J4 J5



VERTICAL GUTTER DETAIL "A"

REFERENCE DWGS. DWG NO.

HATCHES AND FRAMES L4
DROP INLET TRASHRACK L5
PIPING M1

Revisions			
Symbol	Descriptions	Date	Approved

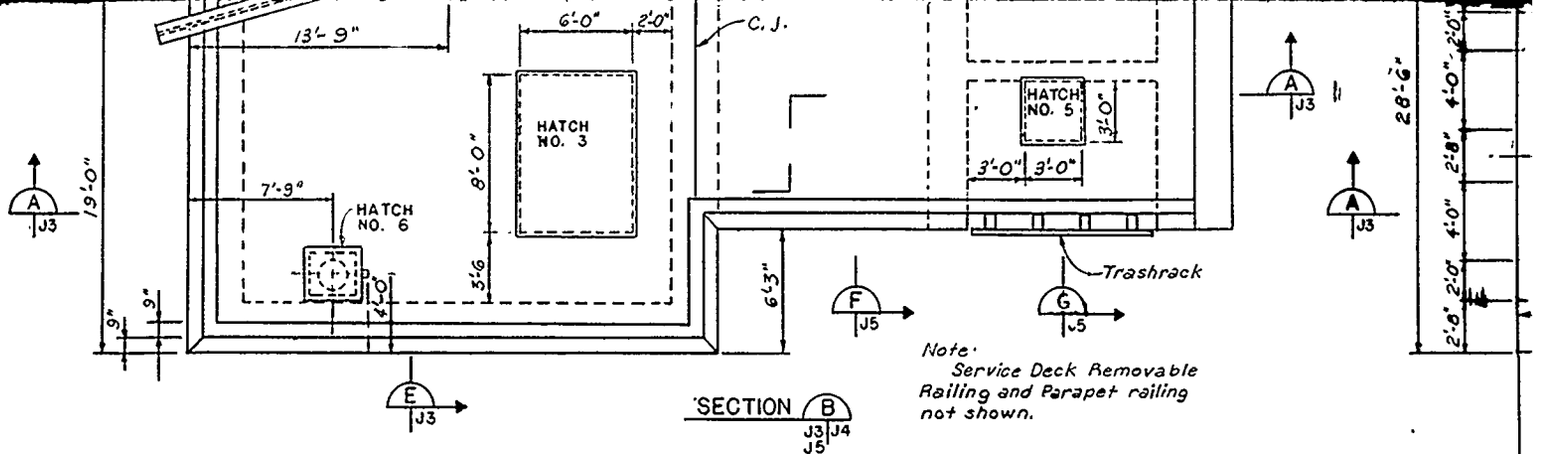
U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by:
Checked by:

US Army Corps of Engineers

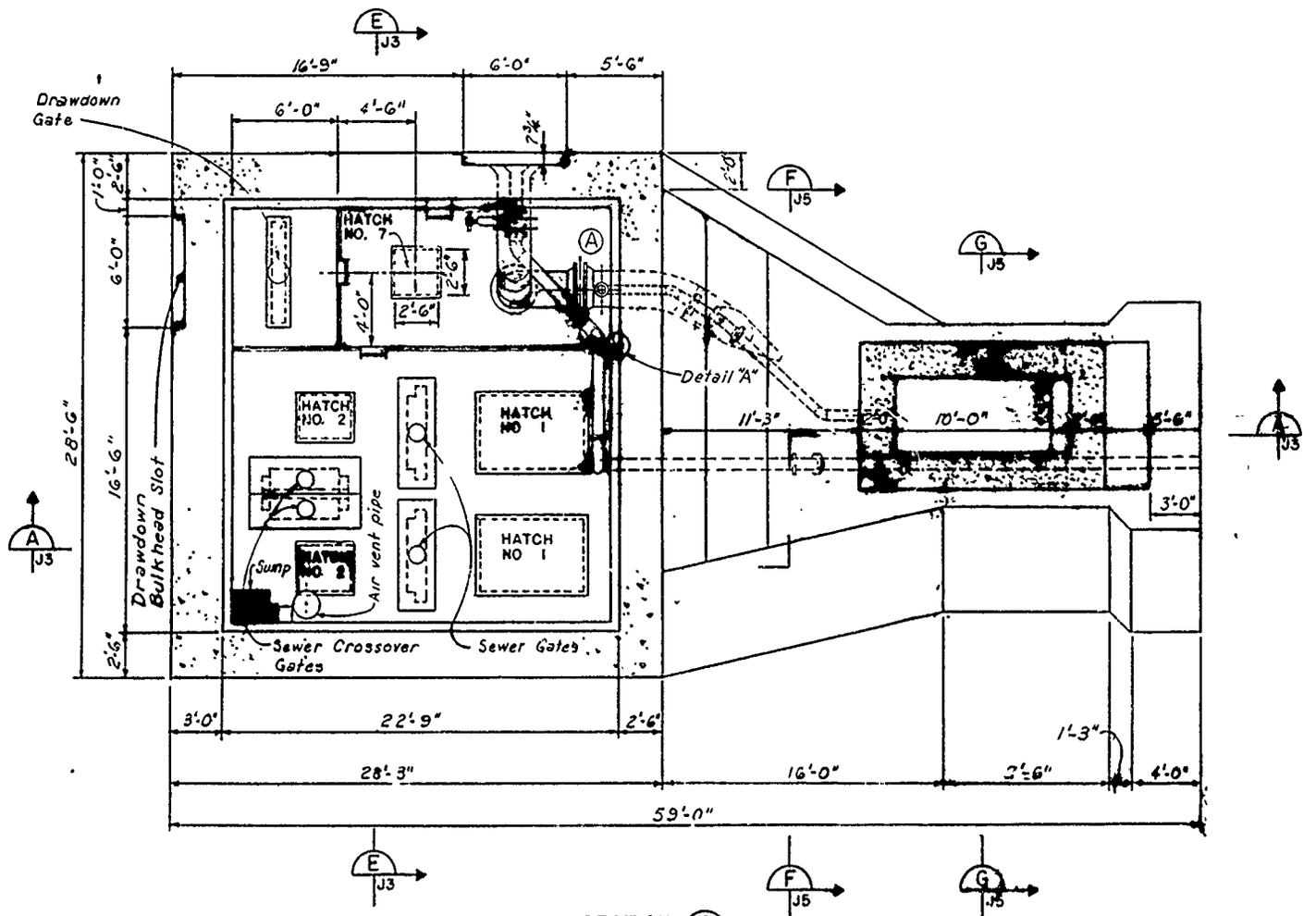
EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

INTAKE TOWER CONCRETE DIMENSIONS

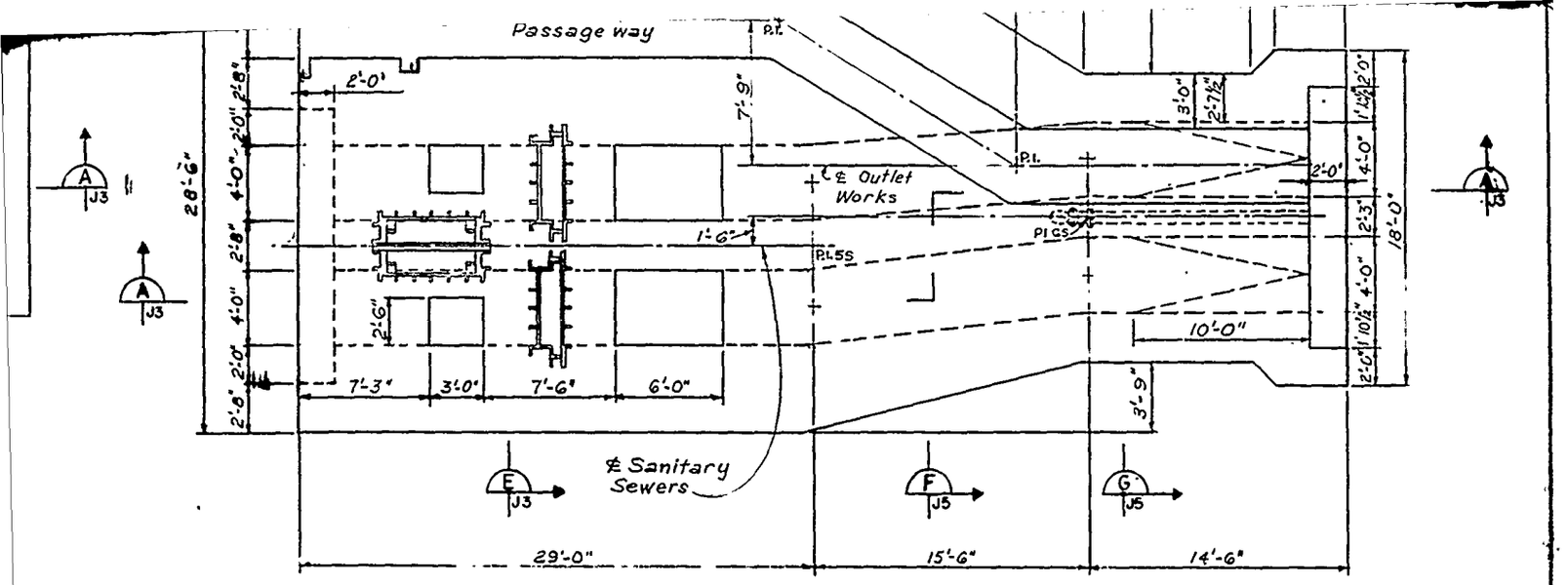


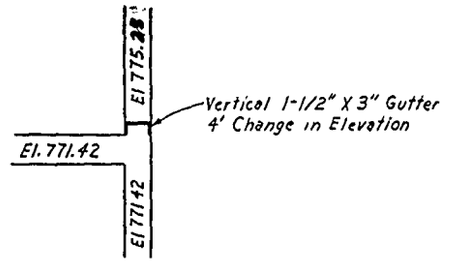
Note:
Service Deck Removable Railing and Parapet railing not shown.

SECTION B J3 J4 J5



SECTION C J3 J4 J5





VERTICAL GUTTER DETAIL "A"

REFERENCE DWGS. DWG NO.

HATCHES AND FRAMES _____ L4
DROP INLET TRASHRACK _____ L5
PIPING _____ M1

Scale: 1/4" = 1'-0"

Revisions			
Symbol	Descriptions	Date	Approved

U S ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by:
Checked by:
Submitted by:

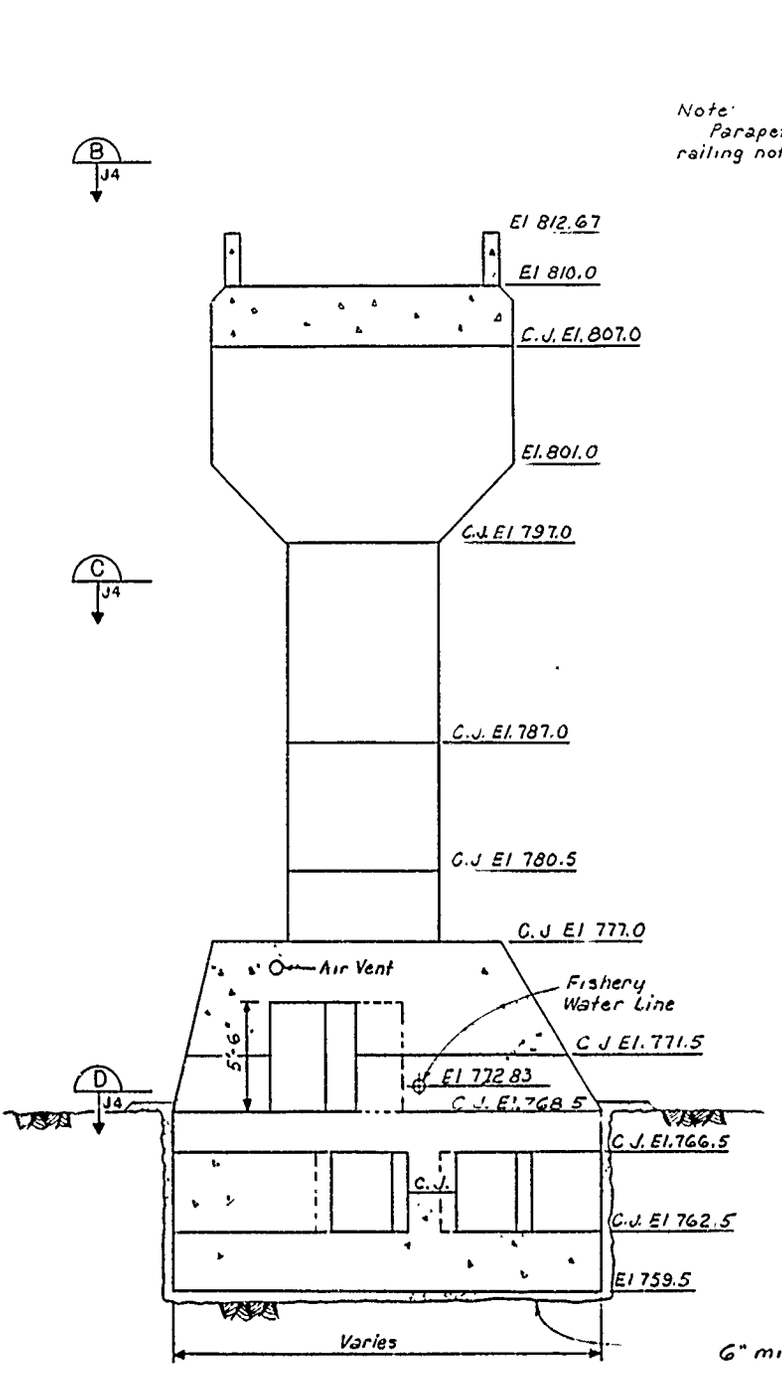
US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

INTAKE TOWER CONCRETE DIMENSIONS

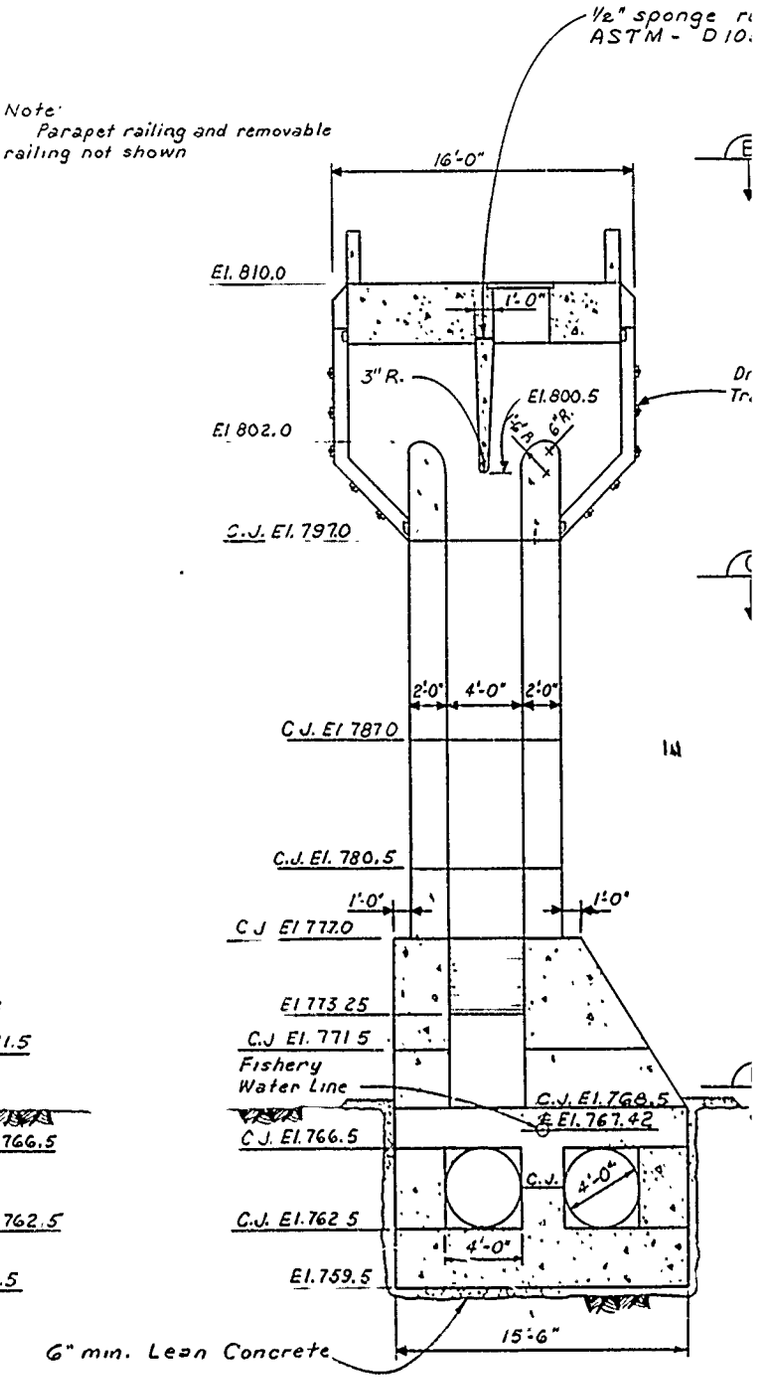
Scale: AS SHOWN
Date: JUNE 1990
Dwg No.:
Sheet number: 20
File No.: RBL-2-1240

PL[illegible]O. 20

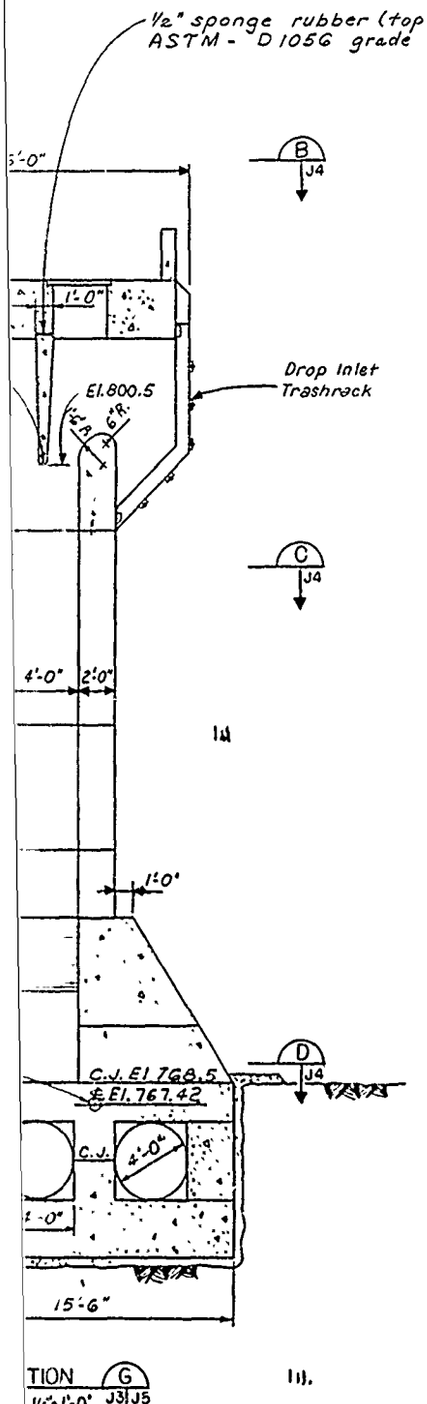


SECTION F
Scale: 1/4"=1'-0" J3 J4 J5

Note:
Parapet railing and removable railing not shown



SECTION G
Scale: 1/4"=1'-0" J3 J4 J5



TION G
1/4"=1'-0" J3 J5
J4

REFERENCE DWGS. DWG. NOS.

WATERSTOPS _____ J6
DROP INLET TRASHRACK _____ L5

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by

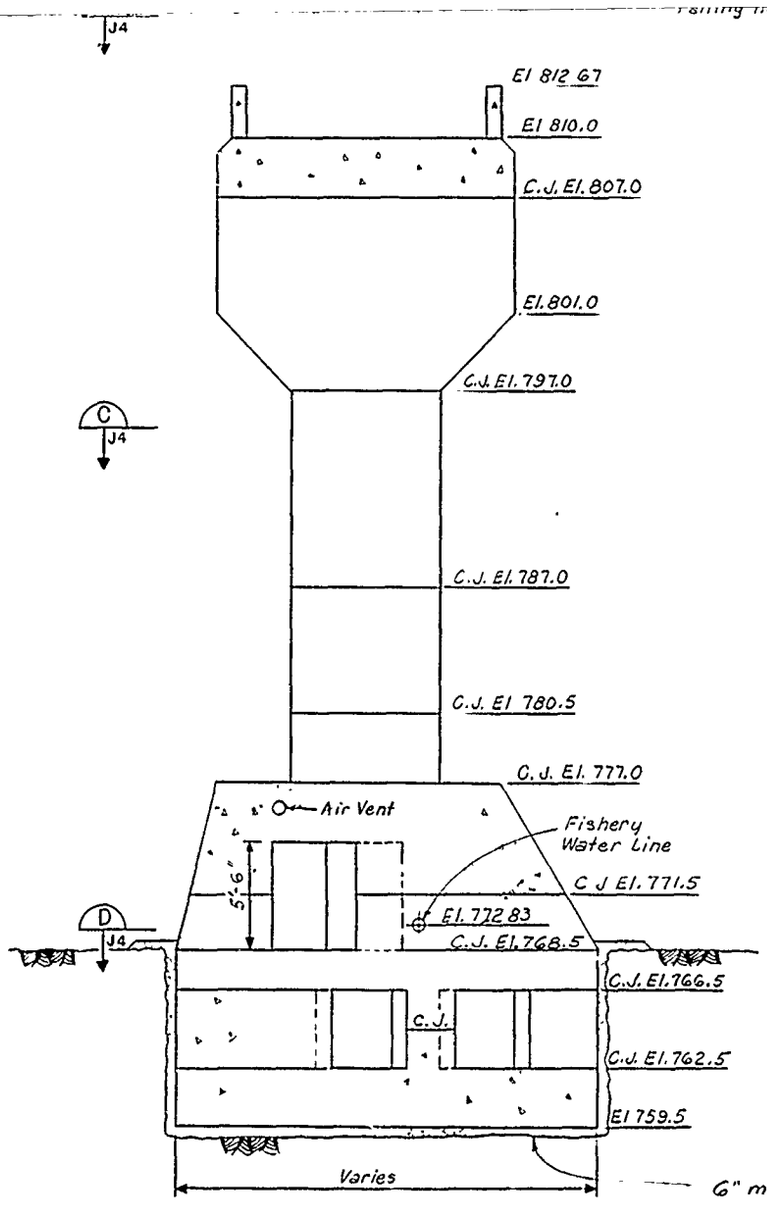
Drawn by

Checked by

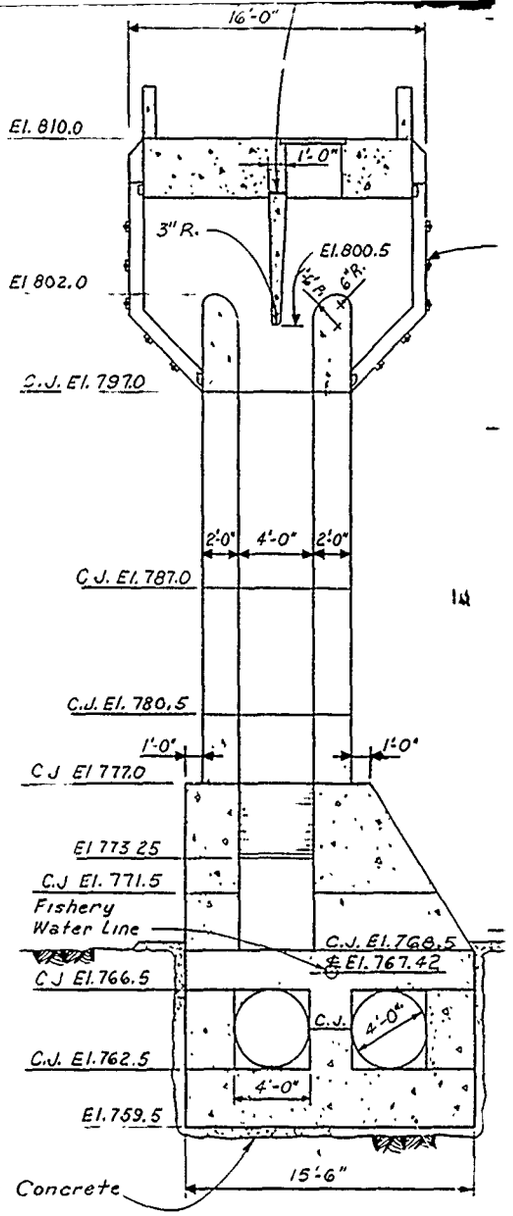
US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

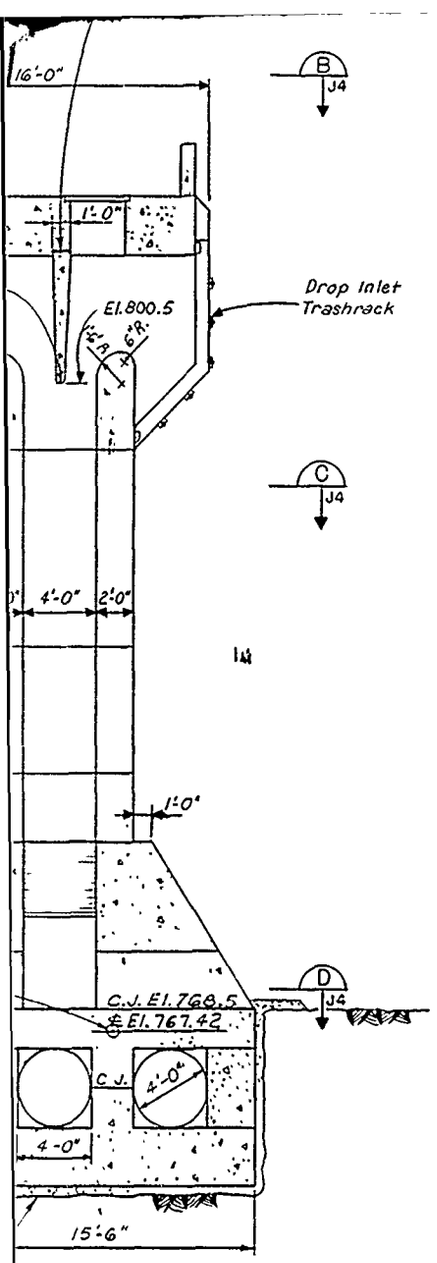
INTAKE TOWER CONCRETE DIMENSIONS



SECTION F
Scale: 1/4"=1'-0" J3 J5 J4



SECTION G
Scale: 1/4"=1'-0" J3 J5 J4



ECTION G
ale: 1/4"=1'-0" J3 J4 J5

REFERENCE DWGS. DWG. NOS.

WATERSTOPS _____ J6
DROP INLET TRASHRACK _____ L5

Revisions			
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U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by
Drawn by
Checked by
Submitted by

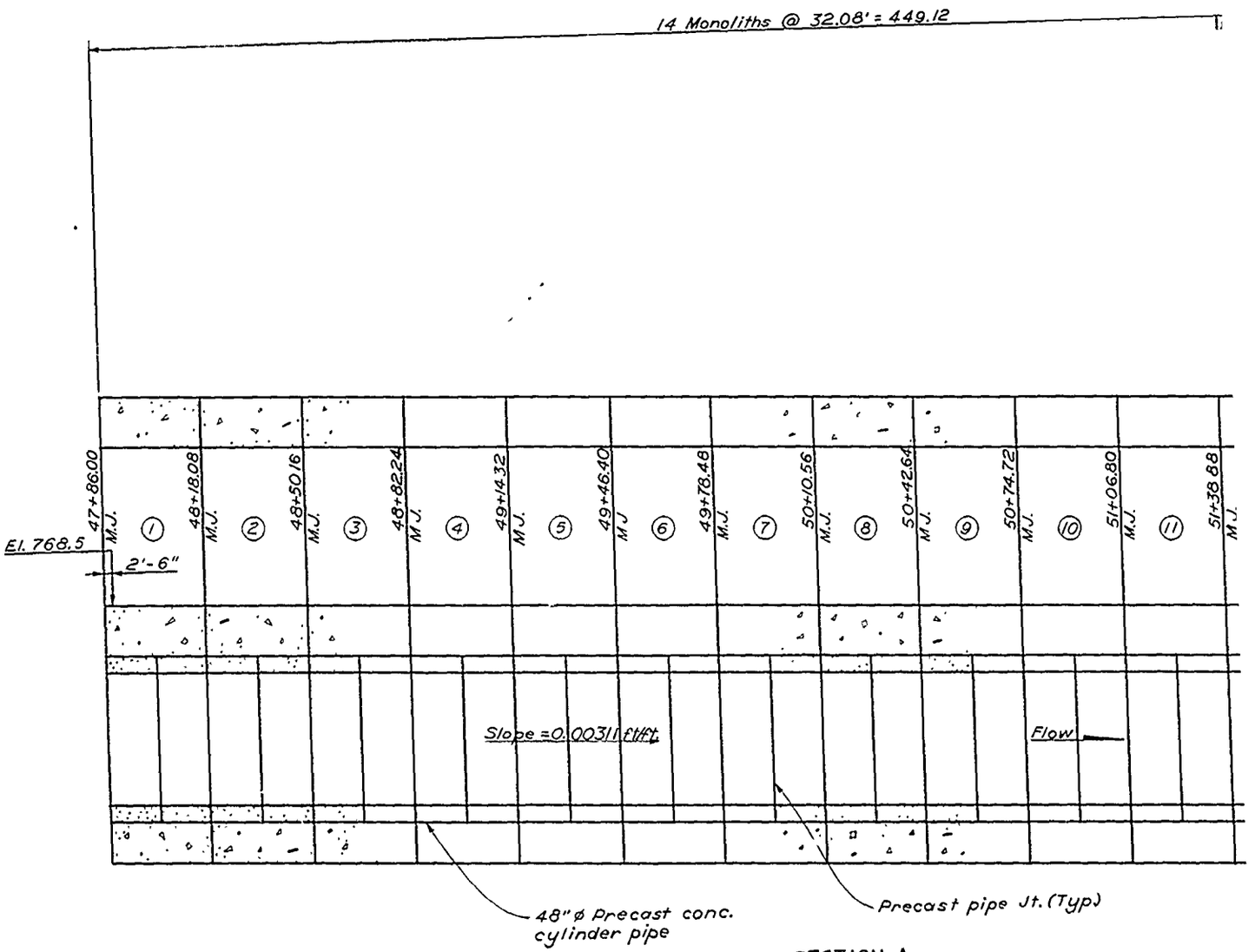
US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

INTAKE TOWER CONCRETE DIMENSIONS

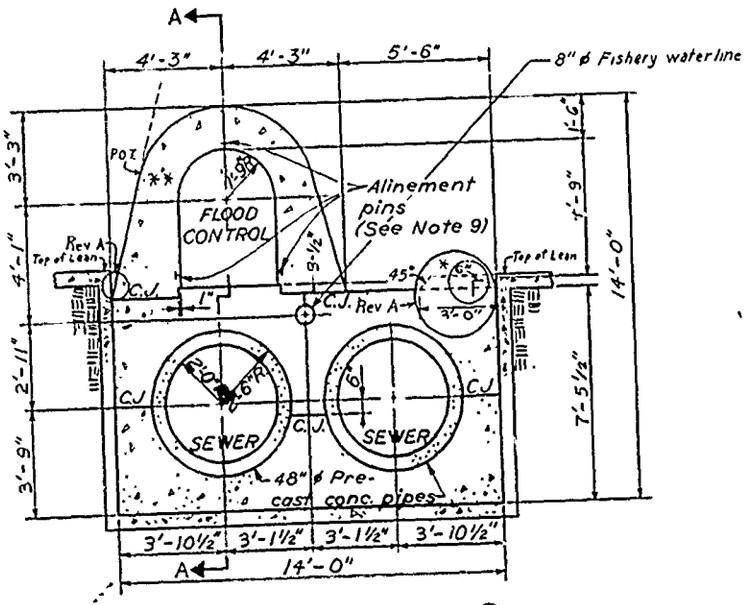
Scale: AS SHOWN
Date: JUNE 1990
Dwg No:
Sheet number: 21
File No: RBL-2-1241

PLATE NO. 21



SECTION A
Scale: Horiz. 1" = 20'-0"
Vert. 1" = 2'-0"

FLOOD CONTROL INVERT ELEVATIONS	
STATION	ELEVATIONS
47+86.00	768.5
47+88.50	768.5
48+18.08	768.41
48+50.16	768.31
48+82.24	768.21
49+14.32	768.11
49+46.40	768.01
49+78.48	757.91
50+10.56	767.81
50+42.64	767.71
50+74.72	767.61
51+06.80	767.51
51+38.88	767.41
51+70.96	767.31
52+03.04	767.21
52+35.12	767.11
52+51.16	767.06
52+71.00	767.00

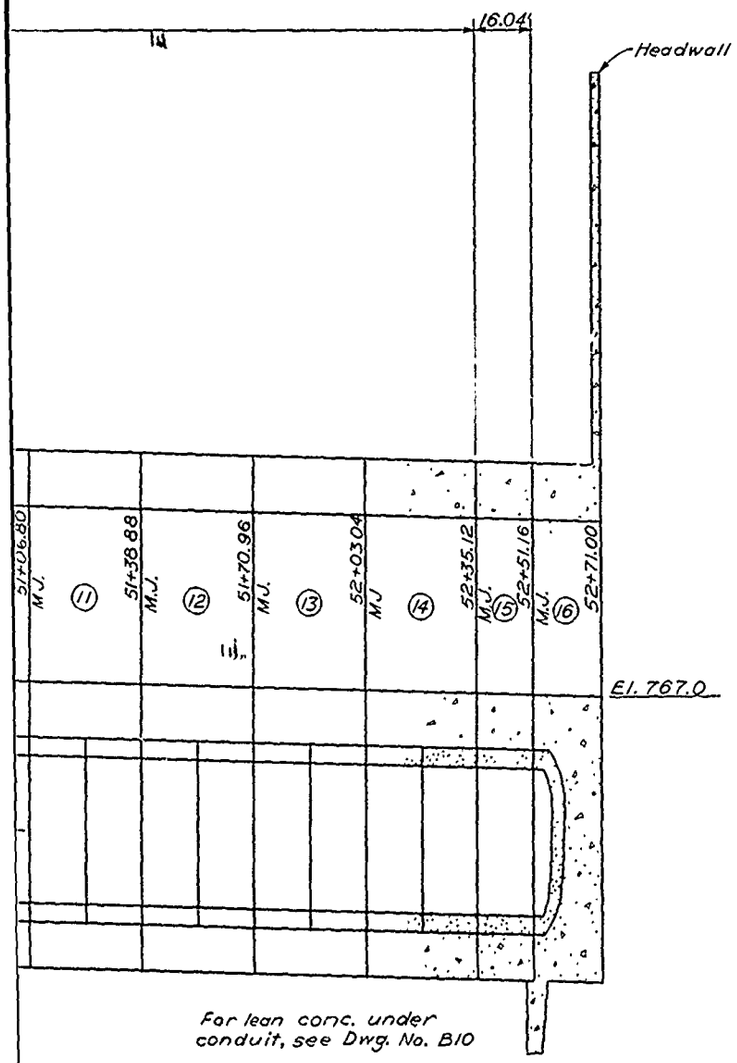


SECTION THRU CONDUIT Ⓐ
MONOLITHS 2 THRU 15
Scale: ⅜" = 1'-0"

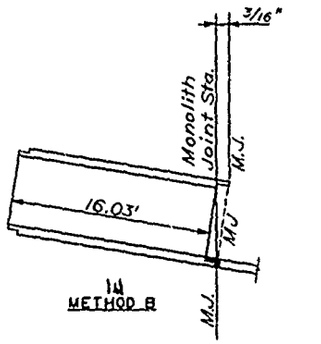
*Note 1: Install #4 Re-Bar 6" x 6" on 24" centers where structure concrete has previously been placed The #4 Bar shall be dowel in and

TYPICAL

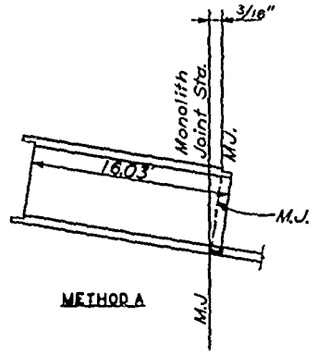
B



For lean conc. under conduit, see Dwg. No. B10



METHOD B



METHOD A

TYPICAL PRECAST PIPE MONOLITH JOINT DETAIL

GENERAL NOTES - CONDUIT AND SEWER ENCASEMENT

1. M.J. - Monolith Joint.
2. C.J. - Construction Joint.
3. Clear distance of reinforcement from Monolith Joint shall be 6" and from face of concrete shall be 4" unless otherwise noted.
4. Clear distance of reinforcement from waterstop and joint filler shall be 1½".
5. All reinforcement splice and anchorage lengths shall conform to table shown on Dwg. No. H4 unless otherwise noted.
6. Reinforcement continuous thru C.J.
7. Reinforcement not continuous thru M.J.
8. All conduit monolith joints shall be coated with bituminous curing compound and the flood control invert joint shall have a ⅛" tooled edge.
9. Provide 3-Stnls. St. rods ½"ϕ x 4'; 5" upstream and downstream of each monolith joint between Sta. 47+85.9 and Sta. 52+51.26. Drill 4½" deep hole. Install rods flush with surface using epoxy adhesive Sika Sikadur Lo-Mod Gel or equal. Follow epoxy manufacturers recommendations for installation. The rods shall be center punched with a fine point punch and approved by the Contracting Officer prior to installation. The final product shall be a permanent, firmly anchored system that will be used to monitor conduit monolith movement. (A)
10. Monolith joints and sewer points of intersection (P.I.s) downstream of Sta. 47+86.00 may differ in the location shown (upstream-downstream direction only) by not more than or less than 0.01 feet, accumulative, for each 16 feet of sewer pipe. Deviations in the conduit monolith locations will be adjusted in Monolith 16 so that the headwall is located at Sta. 52+71.00.

REFERENCE DWG. — DWG. NO.

Conduit Monolith 1 ____ P3
Conduit Monolith 16 ____ Q1
9" Rubber Waterstop __ P2

CONCRETE QUANTITY
CONDUIT MONO 1 THRU 16
1685 CU. YDS.

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

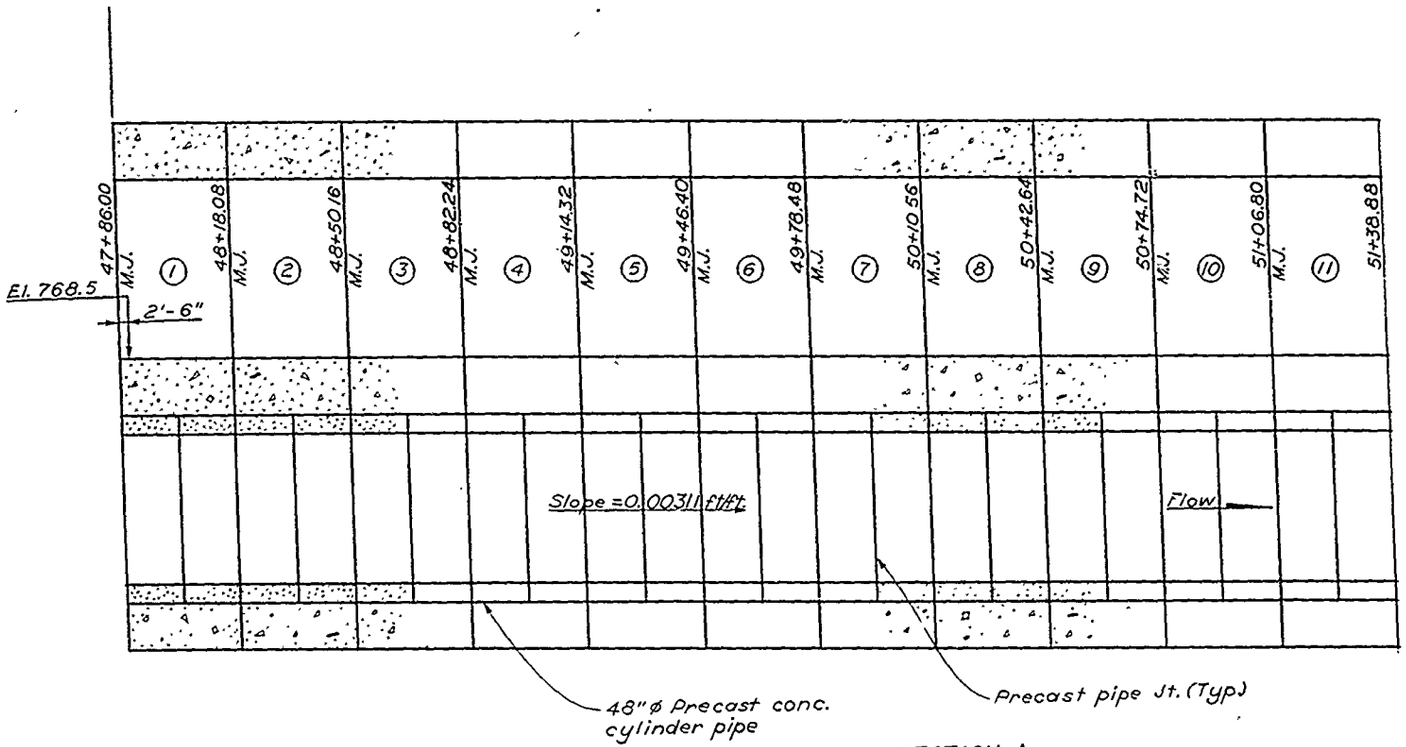
Designed by:
Drawn by:
Checked by:

US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

CONDUIT PROFILE AND DETAILS

Scale AS SHOWN — Sheet



SECTION A
Scale: Horiz. 1" = 20'-0"
Vert. 1" = 2'-0"

FLOOD CONTROL INVERT ELEVATIONS	
STATION	ELEVATIONS
47+86.00	768.5
47+88.50	768.[illegible]
48+18.08	768.41
48+50.16	768.31
48+82.24	768.21
49+14.32	768.11
49+46.40	768.01
49+78.48	767.91
50+10.56	767.81
50+42.64	767.71
50+74.72	767.61
51+06.80	767.51
51+38.88	767.41
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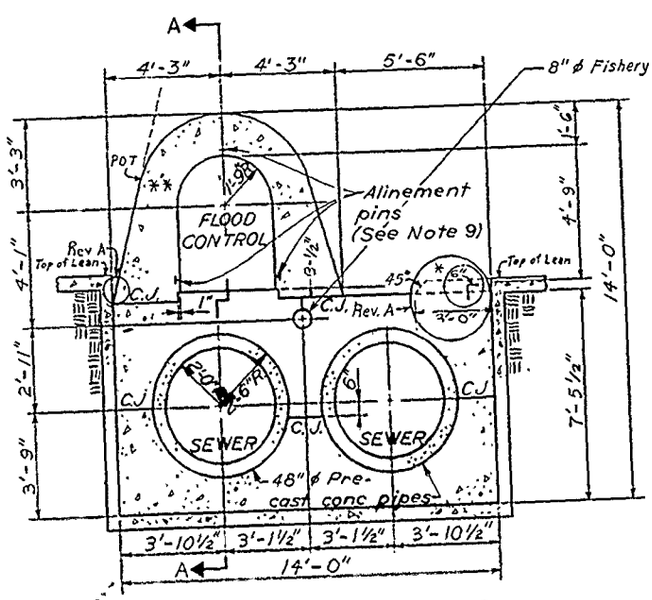
52+35.12	767.11
52+51.16	767.06
52+71.00	767.00



SECTION THRU CONDUIT Ⓐ
MONOLITHS 2 THRU 15
Scale: ~~⅜~~ 1"=1'-0"

*Note 1: Install #4 Re-Bar 6" x 6" on 24" centers where structure concrete has previously been placed. The #4 Bar shall be dowel in and set in epoxy. The concrete in this area shall conform to the dashed section shown.

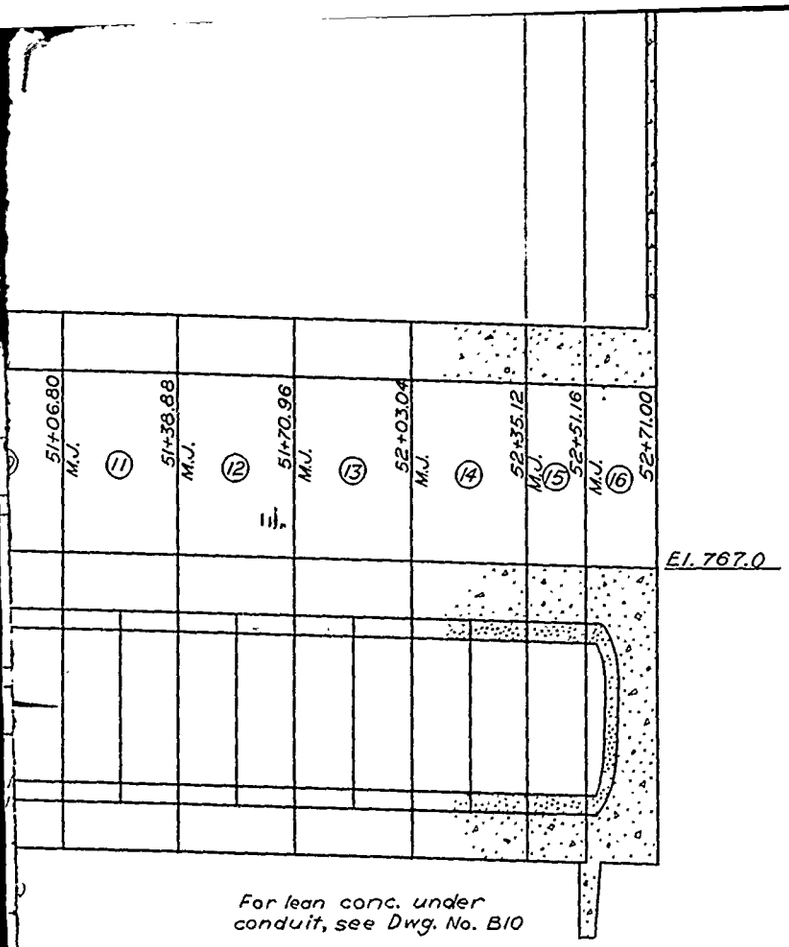
** Construct template to verify theoretical structural dimension.

----Concrete surface prior to modification

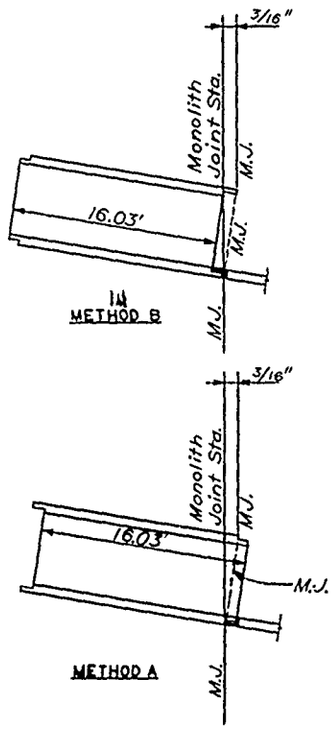
MEI

MEI

TYPICAL
MONOLITH
USE EITHER ME
No



For lean conc. under conduit, see Dwg. No. B10



TYPICAL PRECAST PIPE MONOLITH JOINT DETAIL

USE EITHER METHOD A OR B THROUGHOUT

Not to Scale

GENERAL NOTES - CONDUIT AND SEWER ENCASEMENT

1. M.J. - Monolith Joint.
2. C.J. - Construction Joint.
3. Clear distance of reinforcement from Monolith Joint shall be 6" and from face of concrete shall be 4" unless otherwise noted.
4. Clear distance of reinforcement from waterstop and joint filler shall be 1½".
5. All reinforcement splice and anchorage lengths shall conform to table shown on Dwg. No. H4 unless otherwise noted.
6. Reinforcement continuous thru C.J.
7. Reinforcement not continuous thru M.J.
8. All conduit monolith joints shall be coated with bituminous curing compound and the flood control invert joint shall have a ⅛" tooled edge.
9. Provide 3-Stnls. St rods ½"ϕ x4', 5" upstream and downstream of each monolith joint between Sta. 47+85.9 and Sta. 52+51.26. Drill 4½" deep hole. Install rods flush with surface using epoxy adhesive (A) Sika Sikadur Lo-Mod Gel or equal. Follow epoxy manufacturers recommendations for installation. The rods shall be center punched with a fine point punch and approved by the Contracting Officer prior to installation. The final product shall be a permanent, firmly anchored system that will be used to monitor conduit monolith movement.
10. Monolith joints and sewer points of intersection (P.I.s) downstream of Sta. 47+86.00 may differ in the location shown (upstream-downstream direction only) by not more than or less than 0.01 feet, accumulative, for each 16 feet of sewer pipe. Deviations in the conduit monolith locations will be adjusted in Monolith 16 so that the headwall is located at Sta. 52+71.00.

REFERENCE DWG.	DWG. NO.
Conduit Monolith 1	P3
Conduit Monolith 16	Q1
9" Rubber Waterstop	P2

CONCRETE QUANTITY
CONDUIT MONO 1 THRU 16
1685 CU. YDS.

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by:
Checked by:
Submitted by:

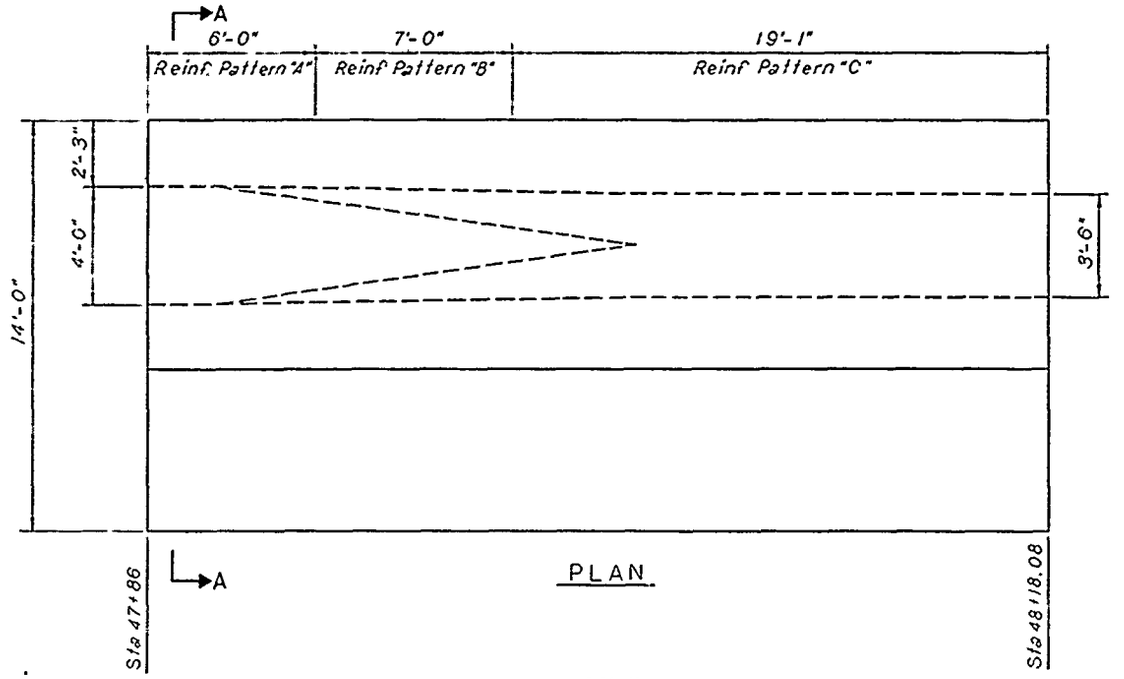
US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

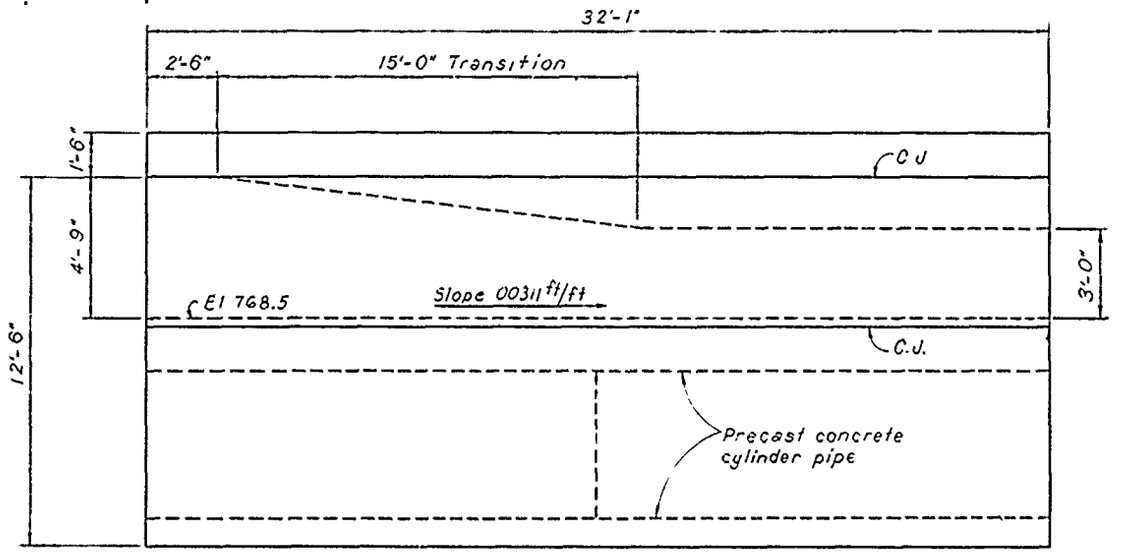
CONDUIT PROFILE AND DETAILS

Scale: AS SHOWN
Date: JUNE 1990
Dwg No.:
Sheet number: 22
File No.: RBL-2-1242

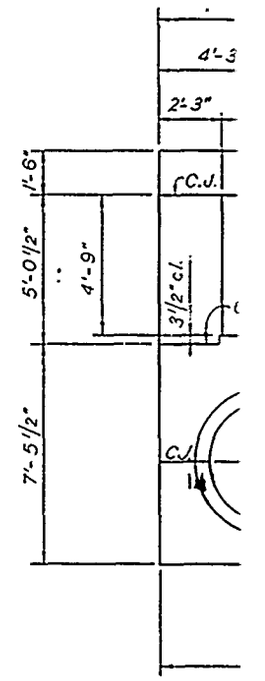
PLATE NO. 22

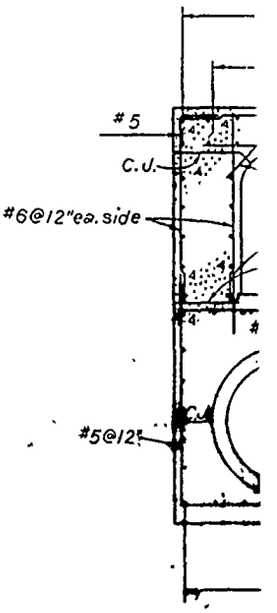


PLAN



ELEVATION





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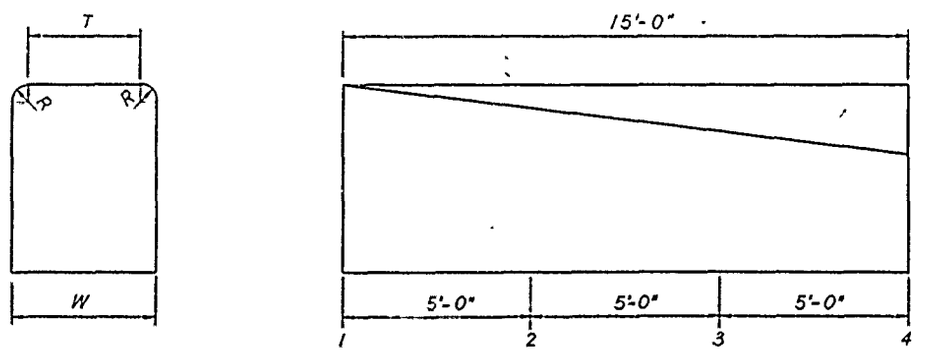
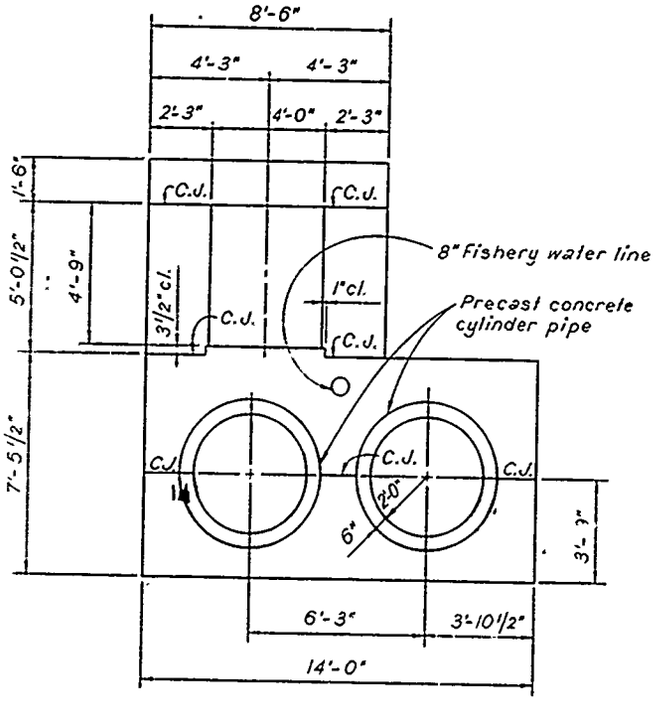


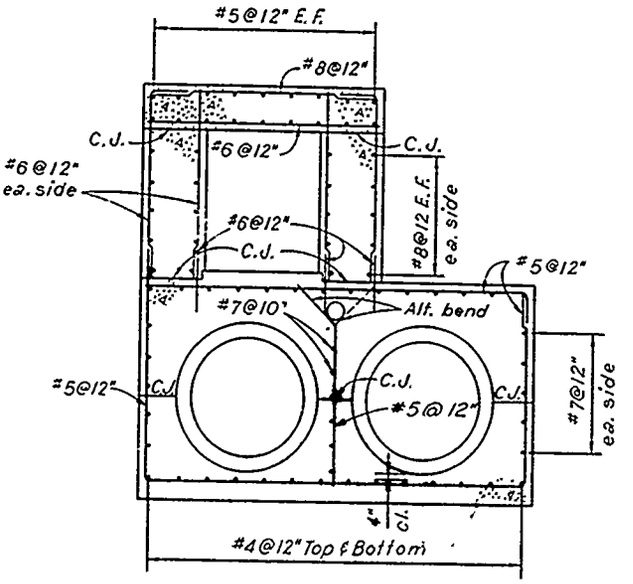
TRANSITION DETAILS

SECTION	R
1	0.00
2	0.58
3	1.17
4	1.75

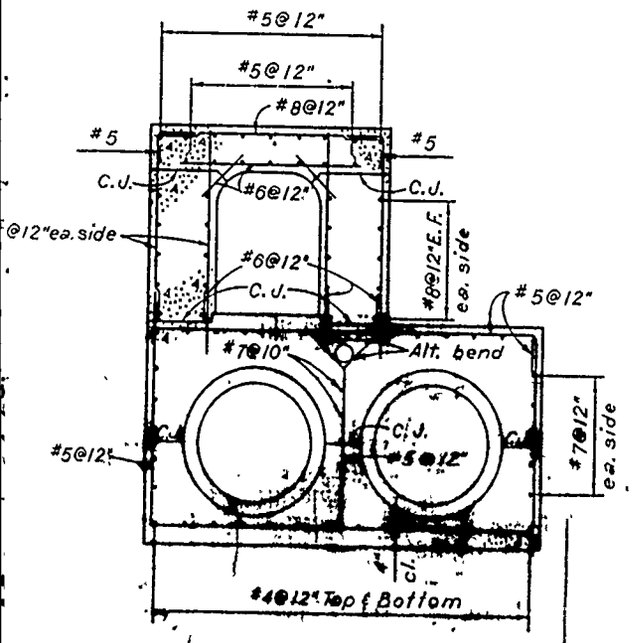
ALUE ENGINEERING PAYS



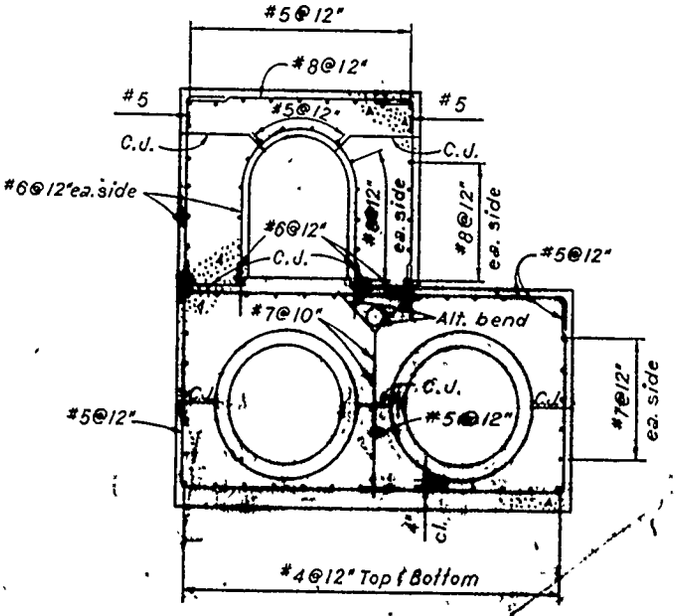
SECTION A



PATTERN "A" REINF.



PATTERN "B" REINF.



PATTERN "C" REINF.

SECTION	R (FT.)	T (FT.)	W (FT.)
1	0.00	4.00	4.00
2	0.58	2.67	3.83
3	1.17	1.33	3.67
4	1.75	0.00	3.50

Scale: 3/8"=1'-0"

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

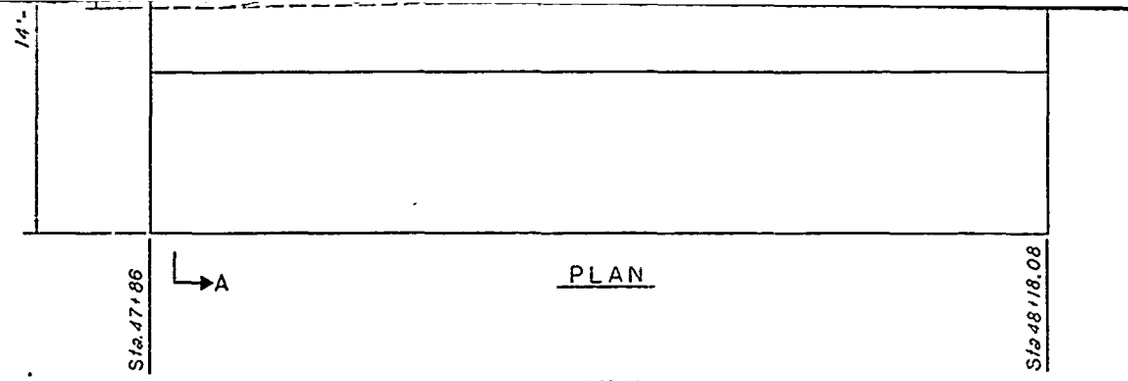
Designed by:
Drawn by:
Checked by:
Submitted by:

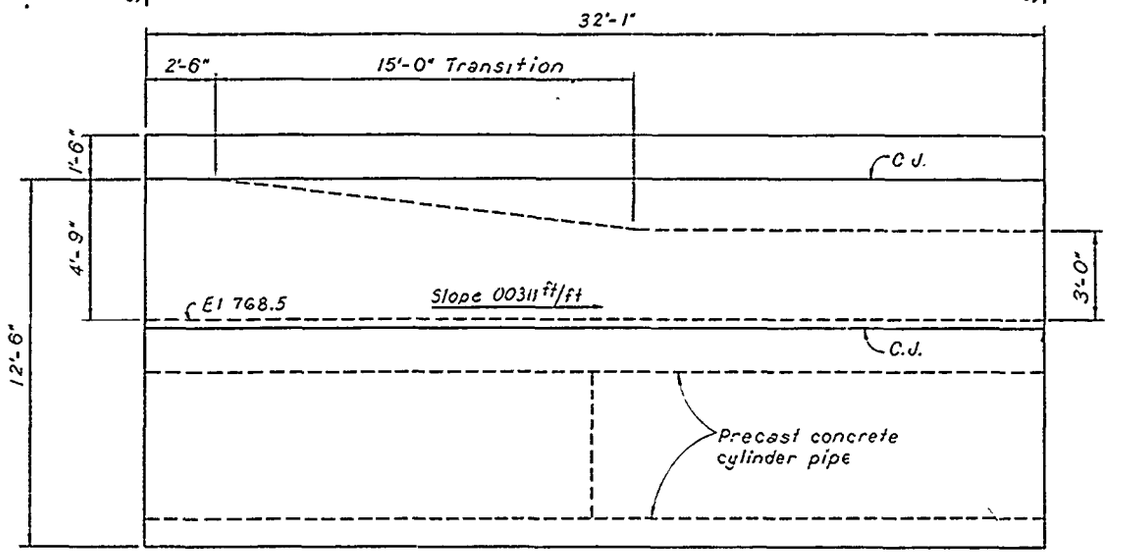
US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

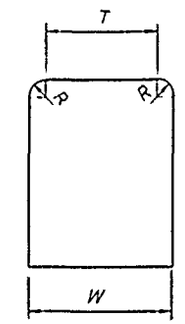
CONDUIT MONOLITH I

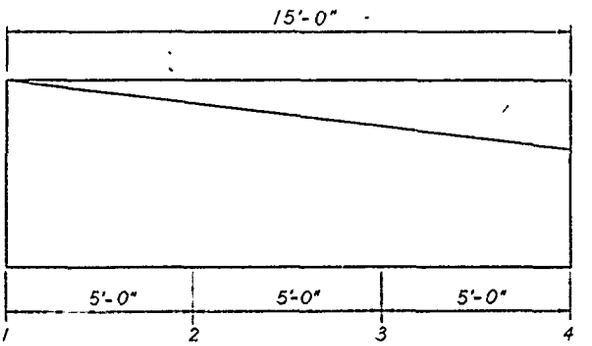
Scale: AS SHOWN
Sheet number:
Date: JUNE 1990



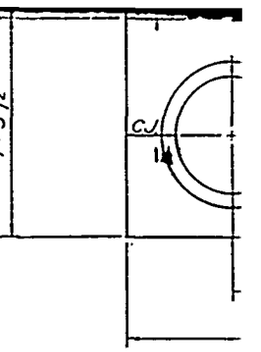


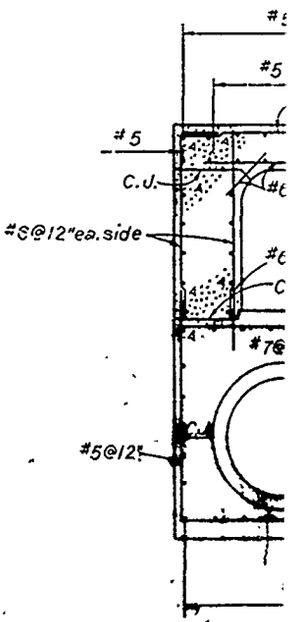
ELEVATION





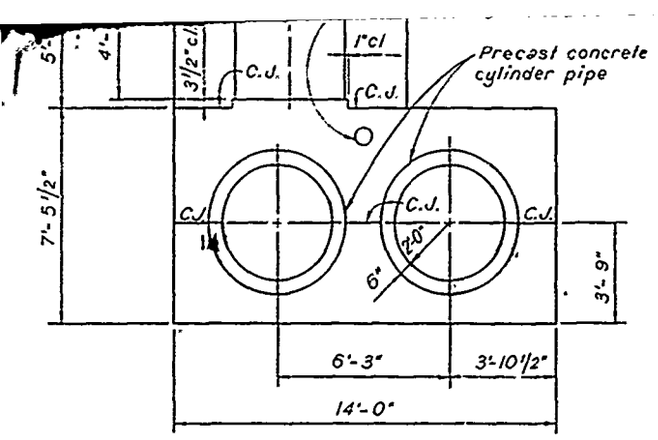
TRANSITION DETAILS



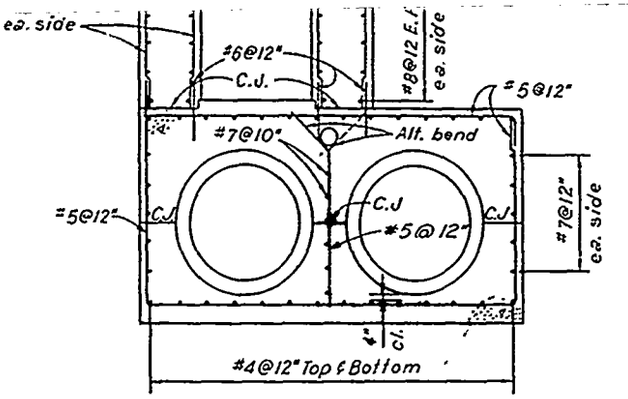


PAT

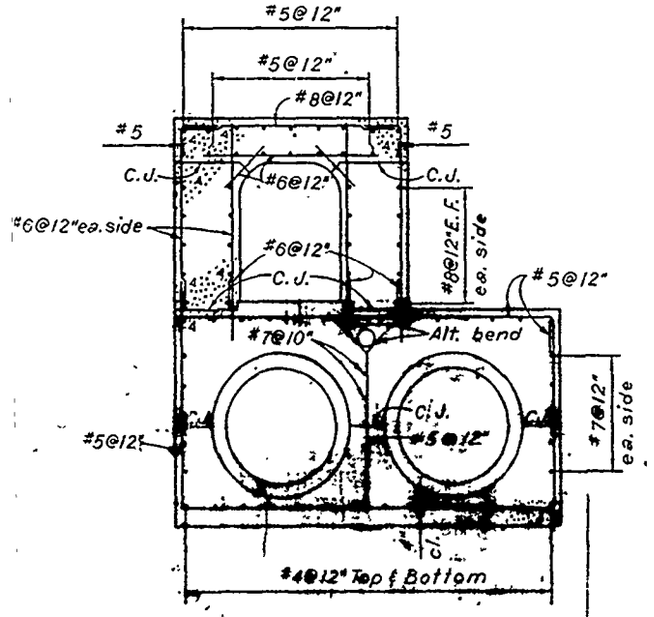
SECTION	R (FT.)
1	0.00
2	0.58
3	1.17
4	1.75



SECTION A



PATTERN "A" REINF.



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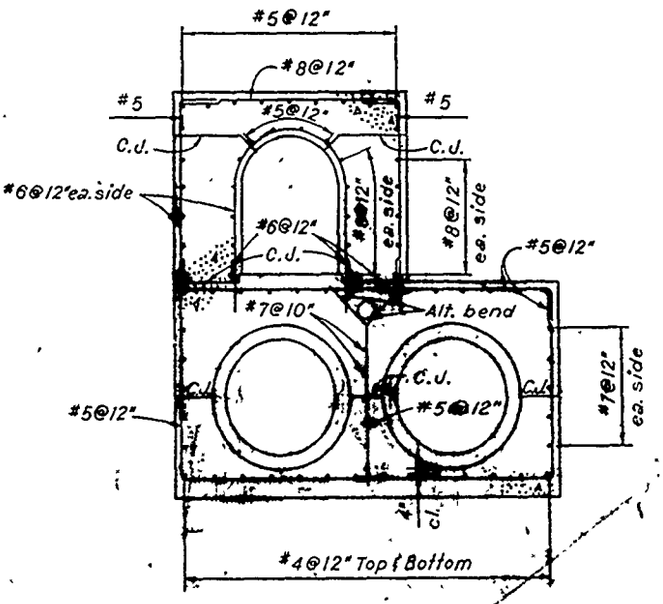


PATTERN "C" REINF.

SECTION	R (FT.)	T (FT.)	W (FT.)
1	0.00	4.00	4.00
2	0.58	2.82	3.83
3	1.17	1.33	3.67
4	1.75	0.00	3.50

Scale: 3/8"=1'-0"

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

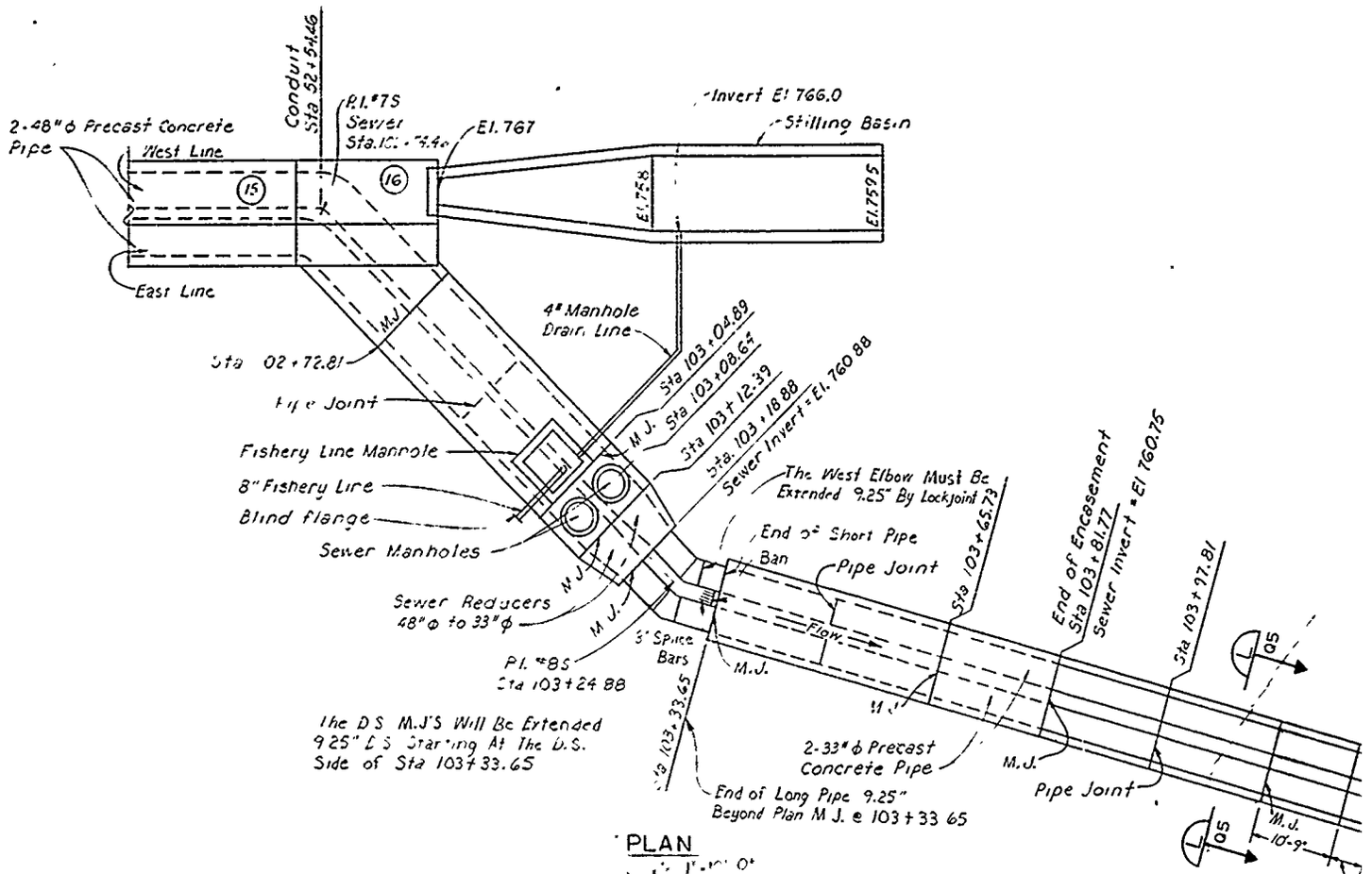
Designed by:
Drawn by:
Checked by:
Submitted by:

US Army Corps of Engineers

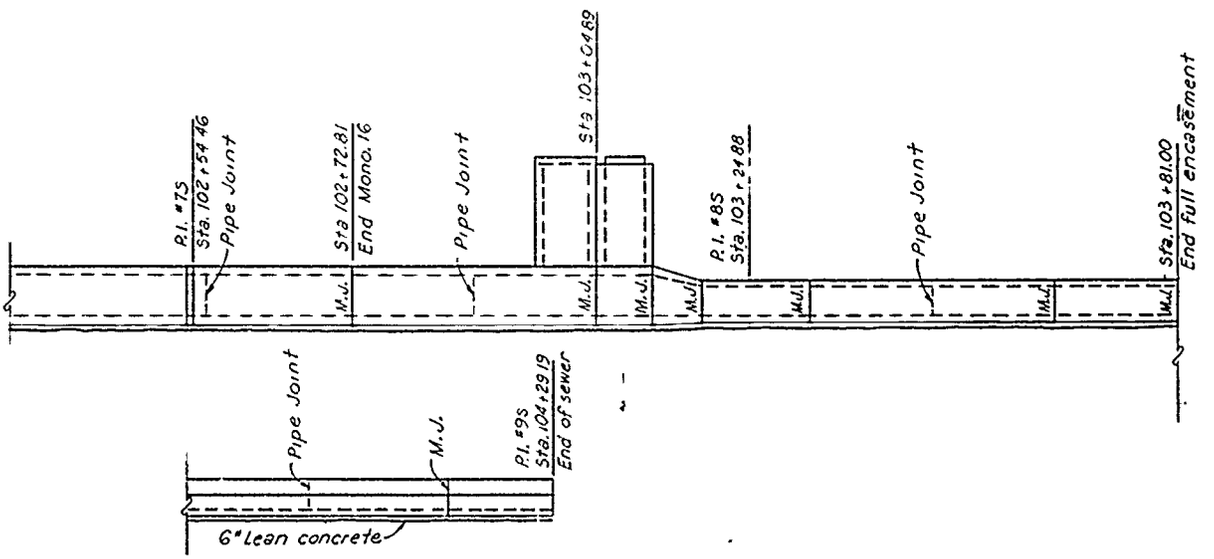
EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

CONDUIT MONOLITH I

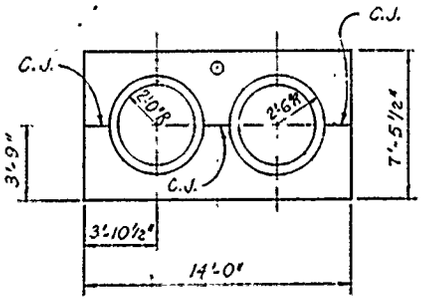
Scale: AS SHOWN
Date: JUNE 1990
Dwg. No.:
Sheet number: 23
File No. RBL-2-1243



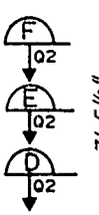
PLAN

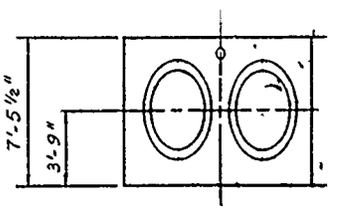


PROFILE
Scale 1"=10'-0"



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

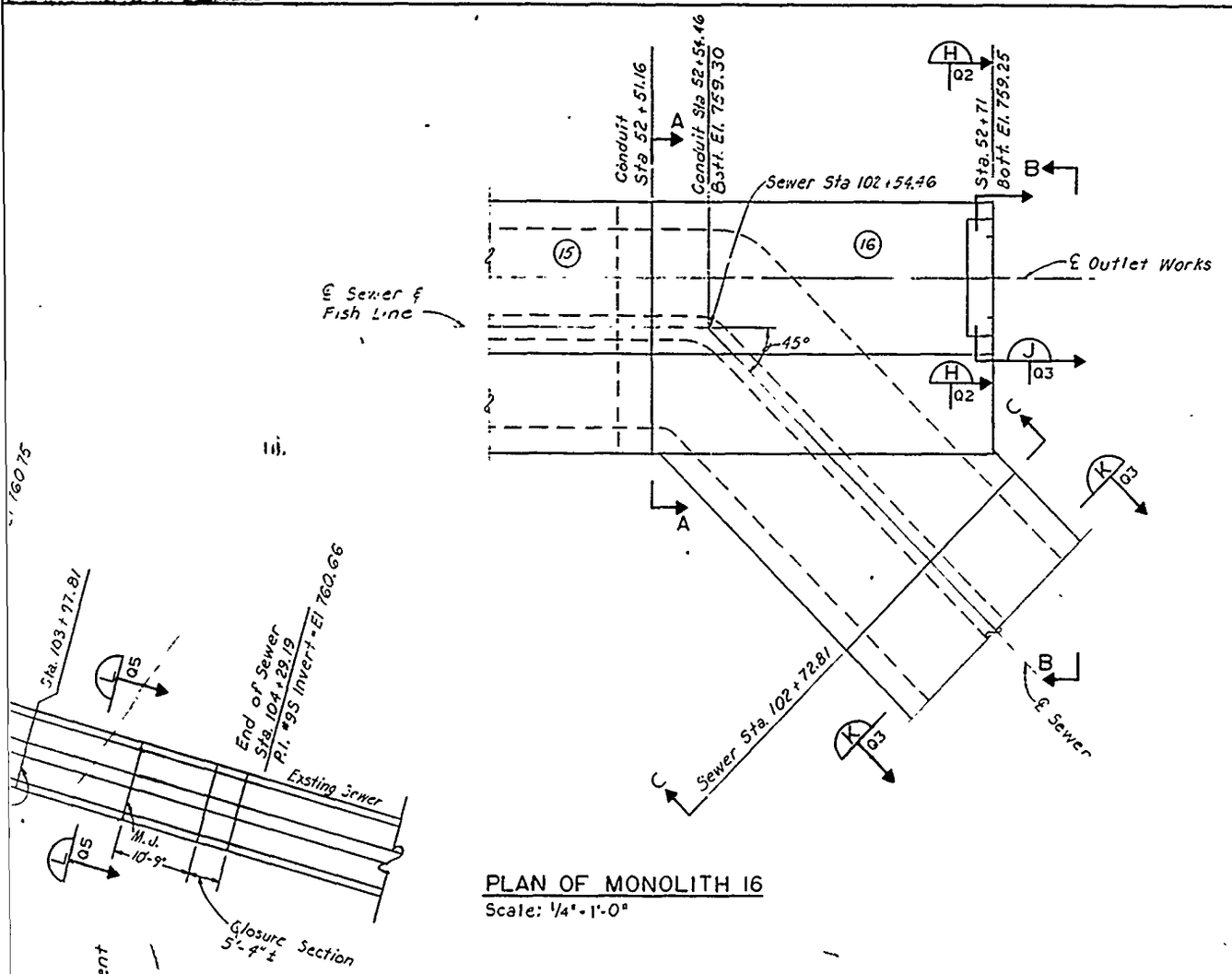




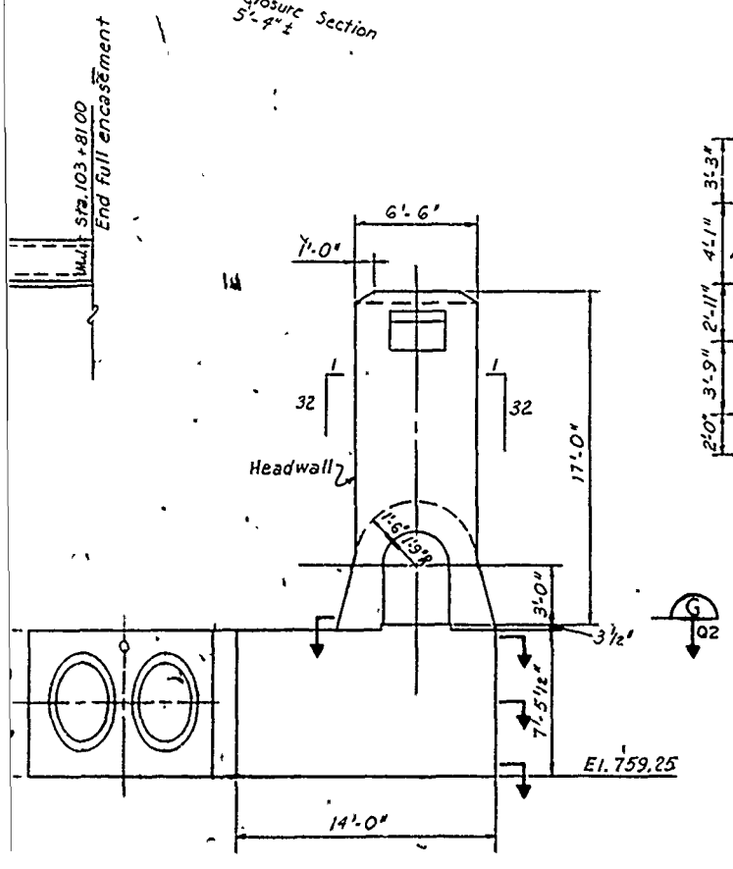
SEC
Scale

CONCRETE QUANTITIES
D.S. SEWER ENCASEMENT
STA. 102+72.81 TO STA. 104+29.19
220 CU. YDS.

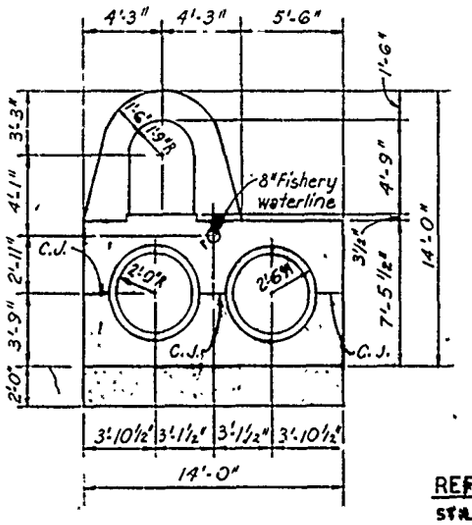
VALUE ENGINEERING PAYS



PLAN OF MONOLITH 16
Scale: 1/4"=1'-0"



SECTION B
Scale: 1/4"=1'-0"



SECTION A
Scale: 1/4"=1'-0"

REFERENCE DWG. DWG. NO.
STILLING BASIN R1

Revisions			
Symbol	Descriptions	Date	Approved

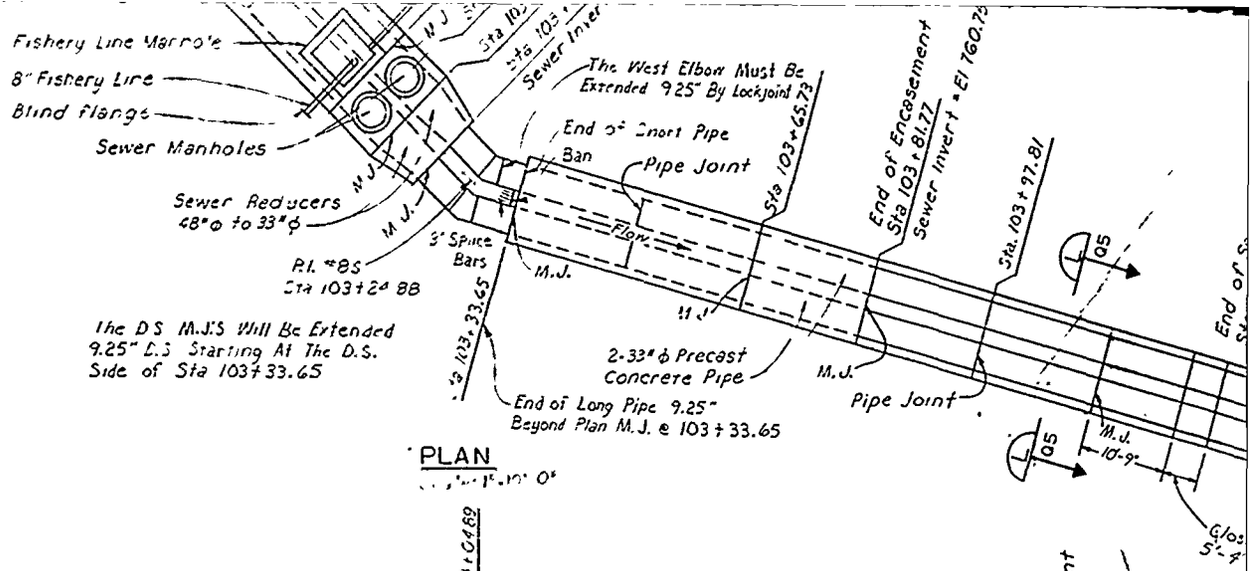
U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by:
Checked by:

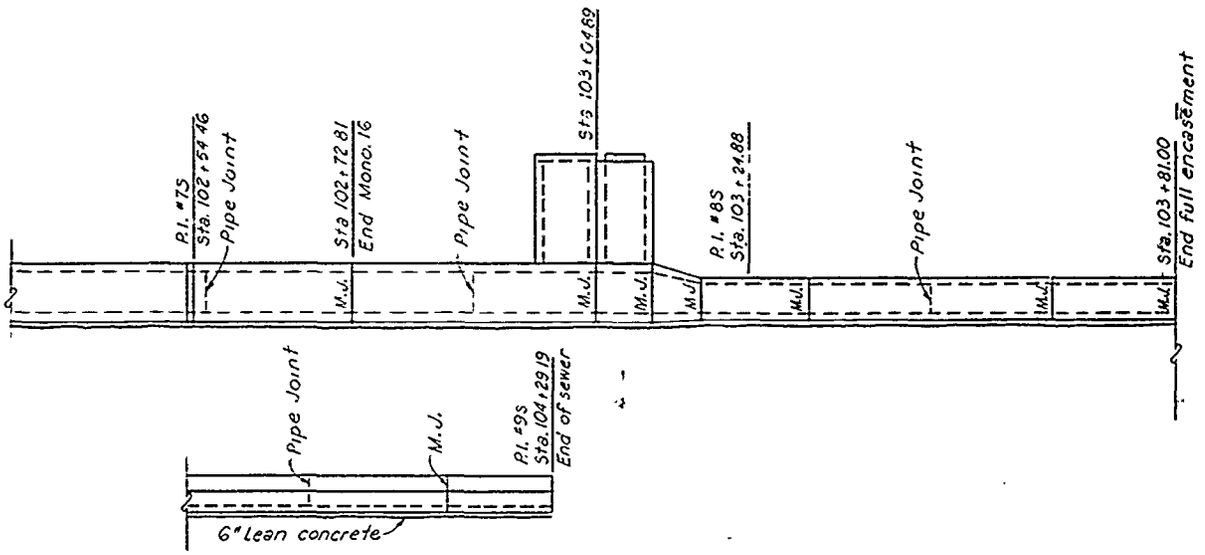
US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

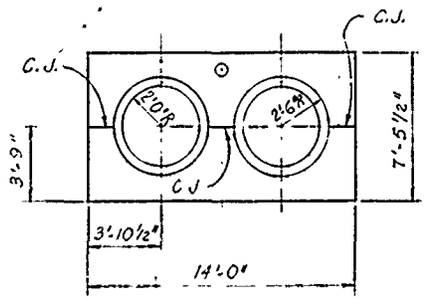
CONDUIT MONOLITH 16 AND DOWNSTREAM SEWER PLAN, PROFILE AND DETAILS

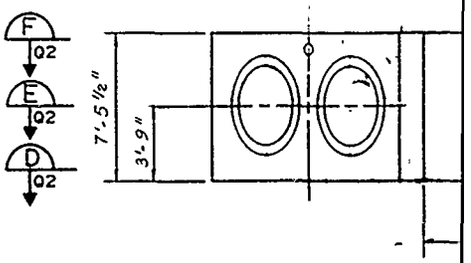


PLAN



PROFILE
Scale 1"=10'-0"

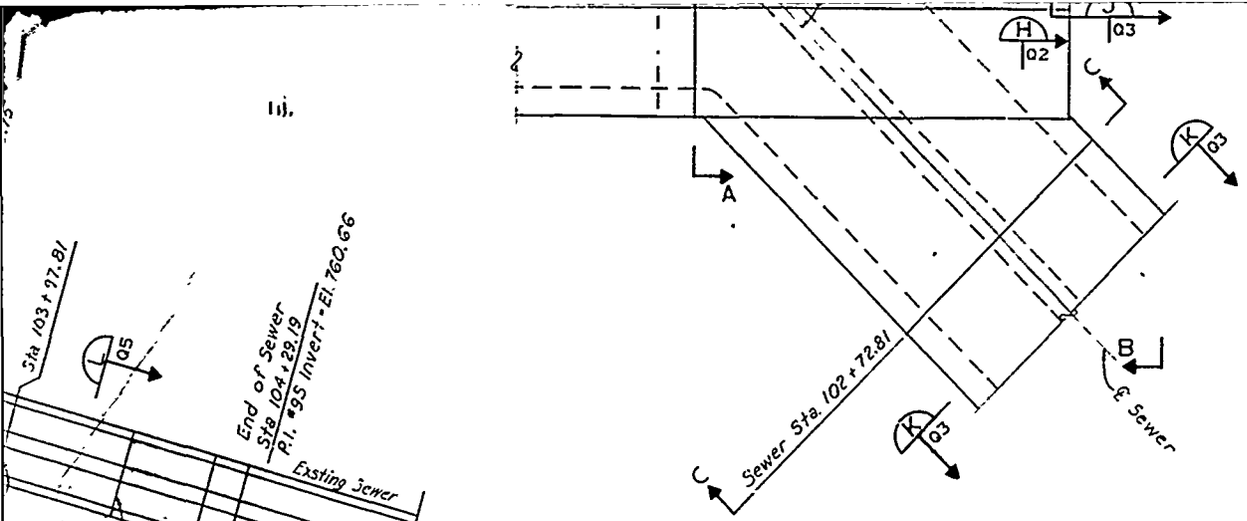




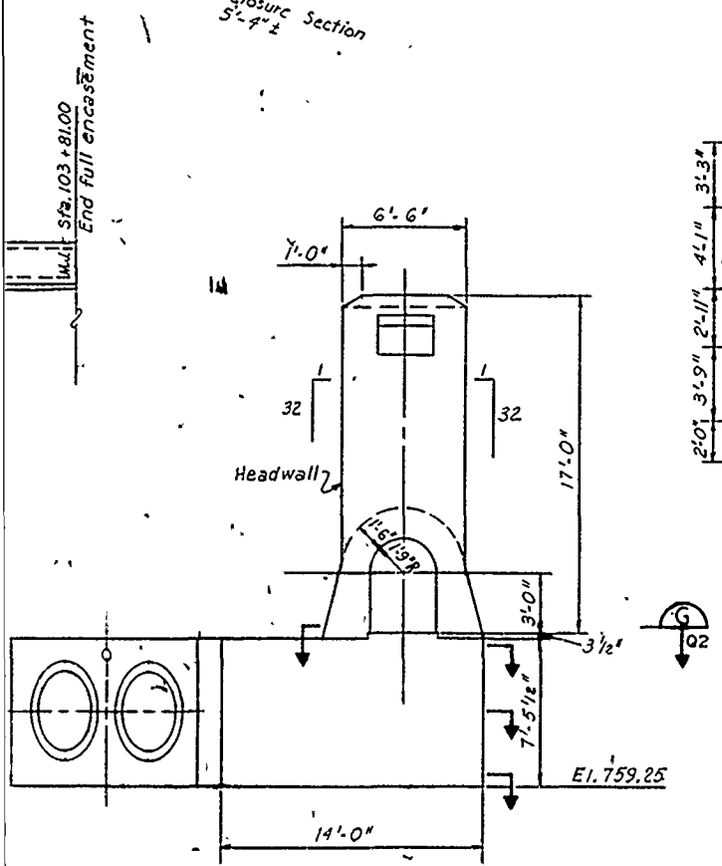
SECTION C
Scale: 1/4"=1'-0"

SECTIO
Scale: 1/4"

CONCRETE QUANTITIES
D.S. SEWER ENCASEMENT
STA. 102+72.81 TO STA. 104+29.19
220 CU. YDS.



PLAN OF MONOLITH 16
Scale: 1/4"=1'-0"



SECTION B
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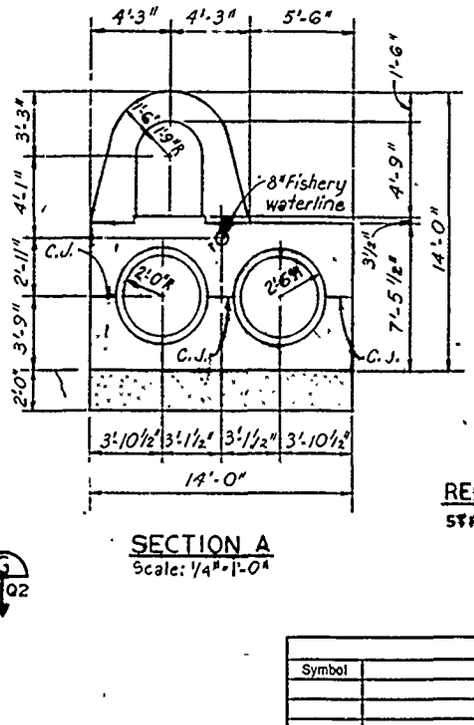


SECTION A
Scale: 1/4"=1'-0"

REFERENCE DWG. DWG. NO.
STILLING BASIN ---------- R1

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by:
Checked by:
Submitted by:

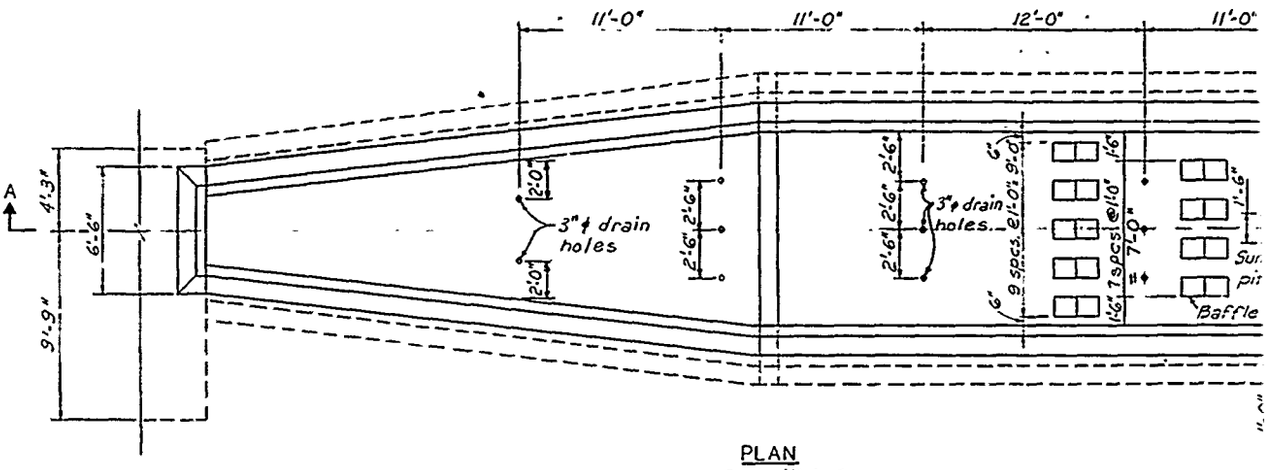
US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

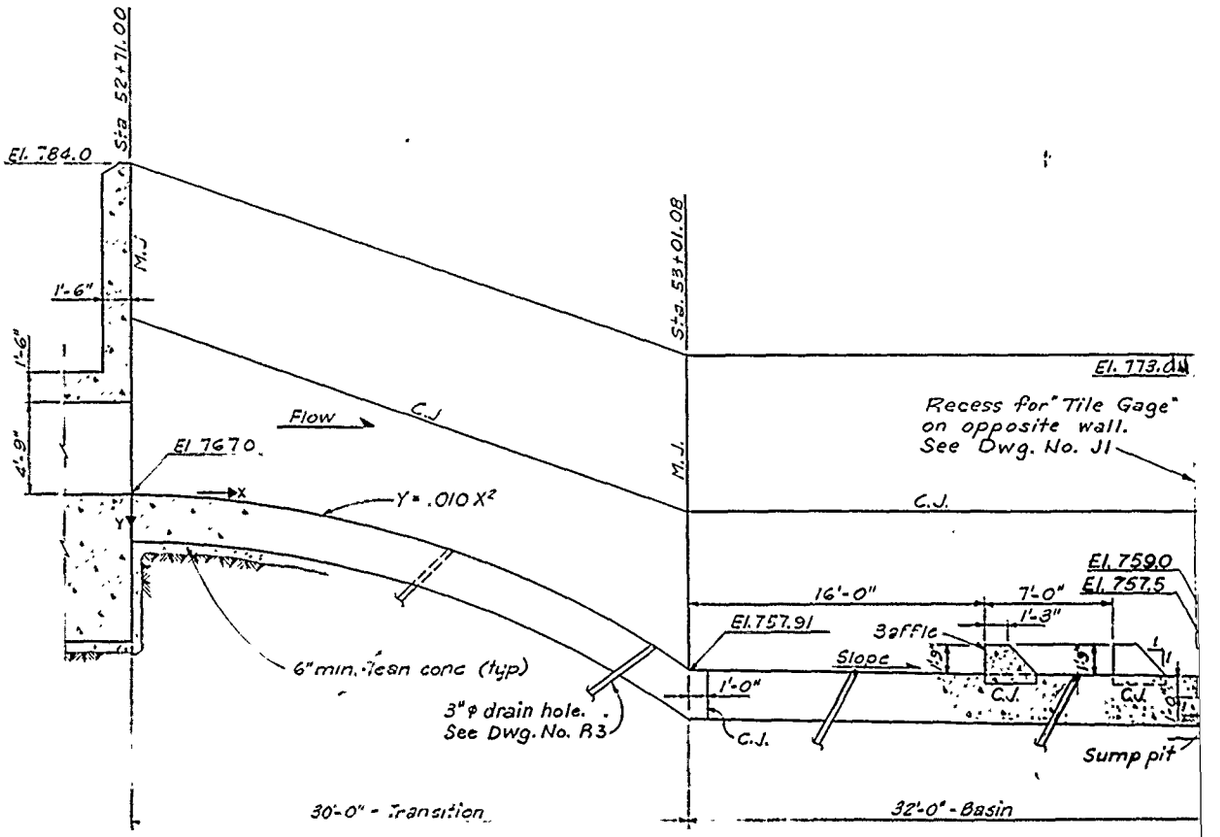
CONDUIT MONOLITH 16 AND DOWNSTREAM SEWER PLAN, PROFILE AND DETAILS

Scale: AS SHOWN
Date: JUNE 1990
Dwg. No.:
Sheet number: 24
File No.: RBL-2-1244

PLATE NO. 24



PLAN
Scale ½"=1'-0"

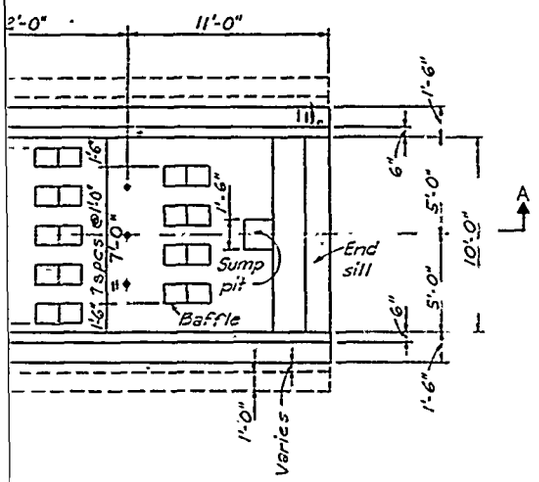


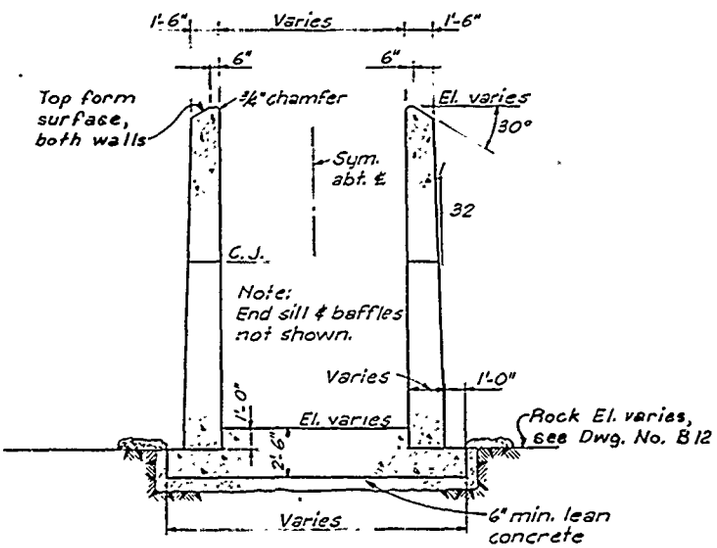
SECTION A
Scale ¼"=1'-0"

CONCRETE QUANTITIES STILLING BASIN
198 CU. YDS.

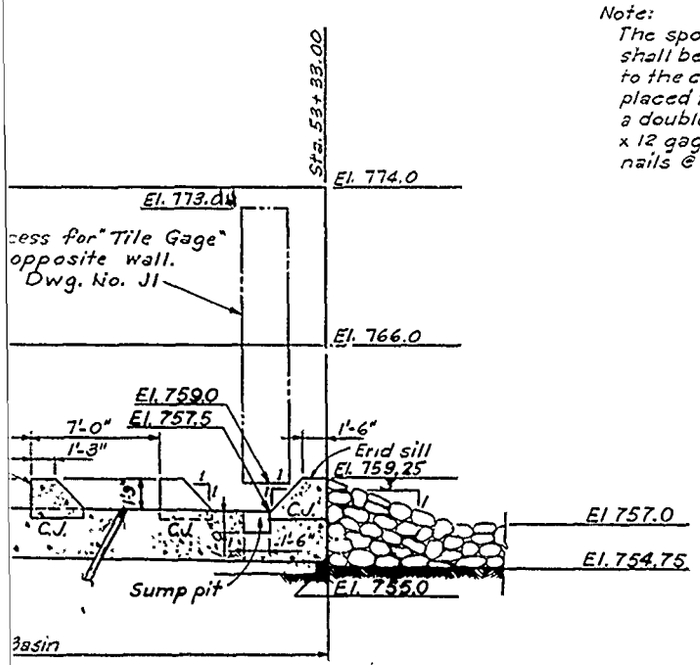
CURVE DATA

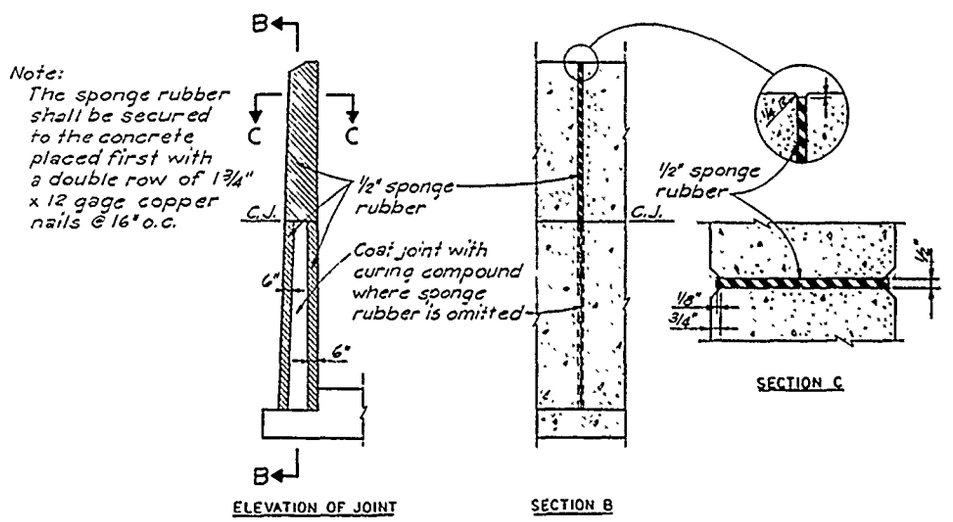
STATION	X	Y	ELEVATION
52+71	0	0.0	767.00
52+76	5	0.25	766.75
52+81	10	1.00	766.00
52+86	15	2.25	764.75





TYPICAL SECTION
Scale ¼"=1'-0"





MONOLITH JOINT DETAIL
Not to Scale

GENERAL NOTES - STILLING BASIN

1. C.J. = Construction joint
   M.J. = Monolith joint
2. Reinforcement continuous thru Construction joints.
3. Reinforcement not continuous thru Monolith joints.
4. Reinforcement in top of base slab shall have a clear distance of 6" from surface of concrete. All other reinforcement shall have a clear distance of 4" from surface of concrete unless otherwise noted.
5. Reinforcement splice and anchorage lengths are shown on Dwg. No. H4
6. All exposed edges of concrete shall be chamfered ¾" unless otherwise noted.

ELEVATION
767.00
766.75

Revisions			
Symbol	Descriptions	Date	Approved

U.S ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

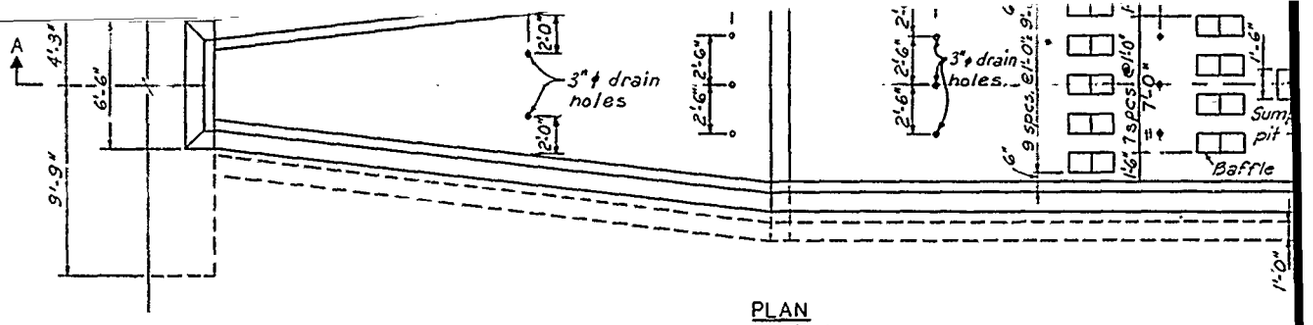
Design by:

Drawn by:

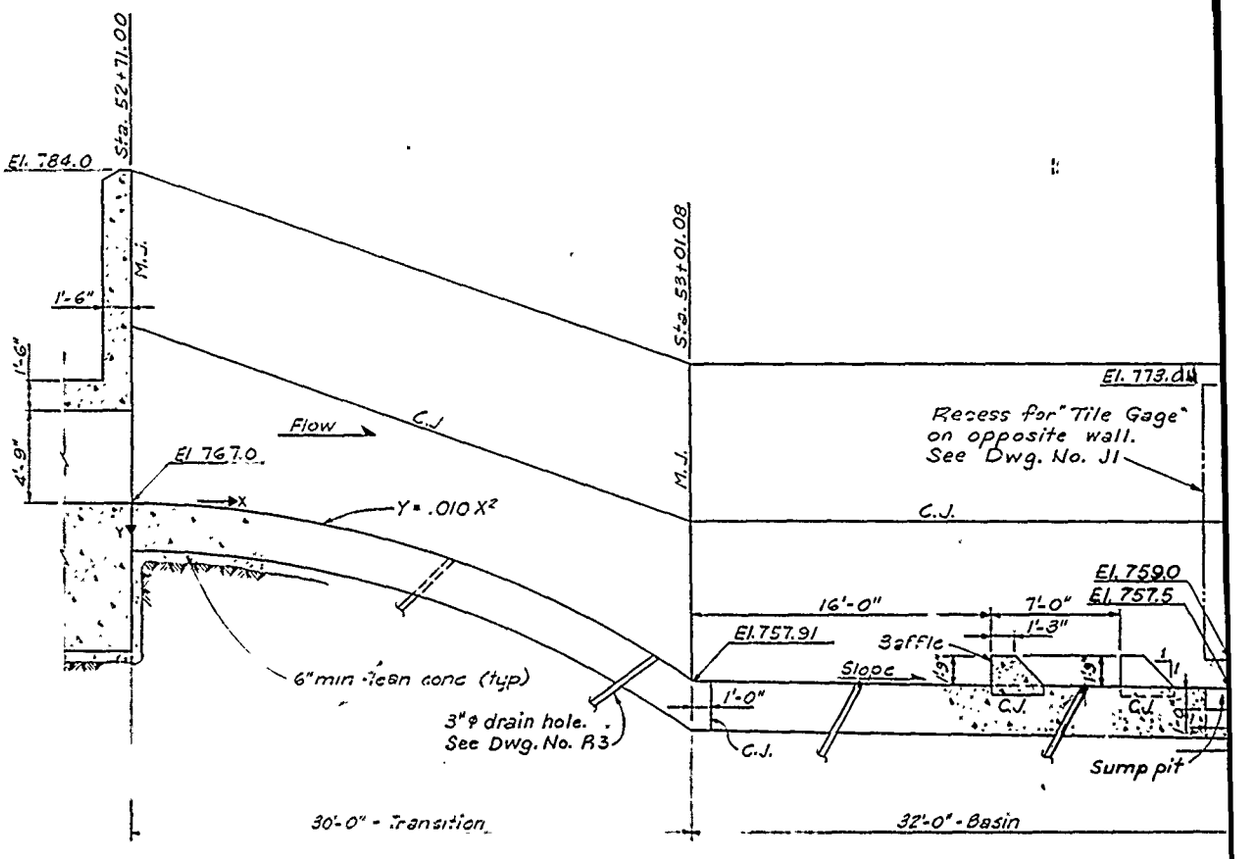
US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

STILLING BASIN



PLAN
Scale ½"=1'-0"

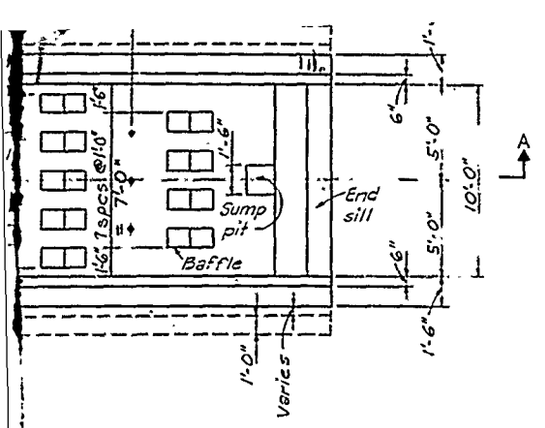


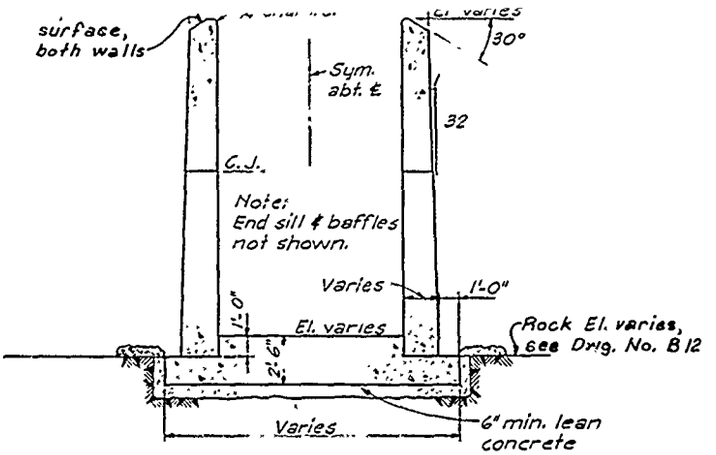
SECTION A
Scale ¼"=1'-0"

CONCRETE QUANTITIES
STILLING BASIN
198 CU. YDS.

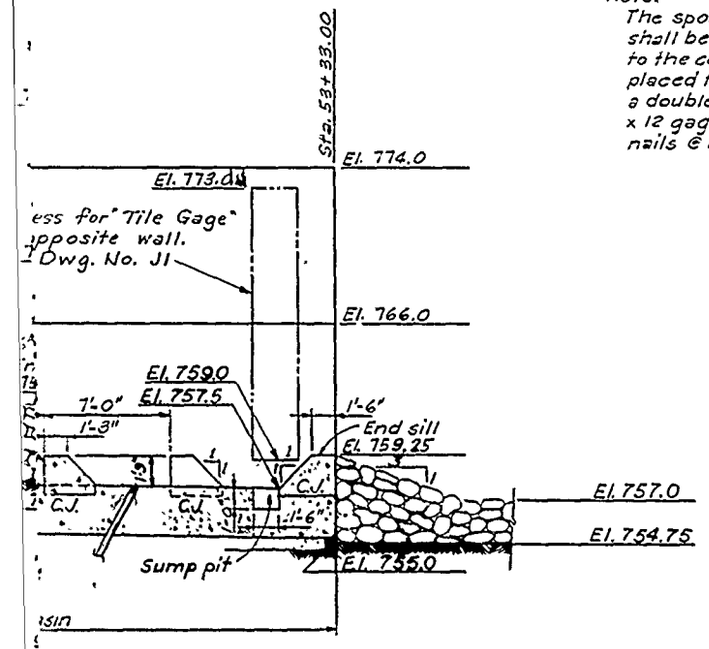
CURVE DATA

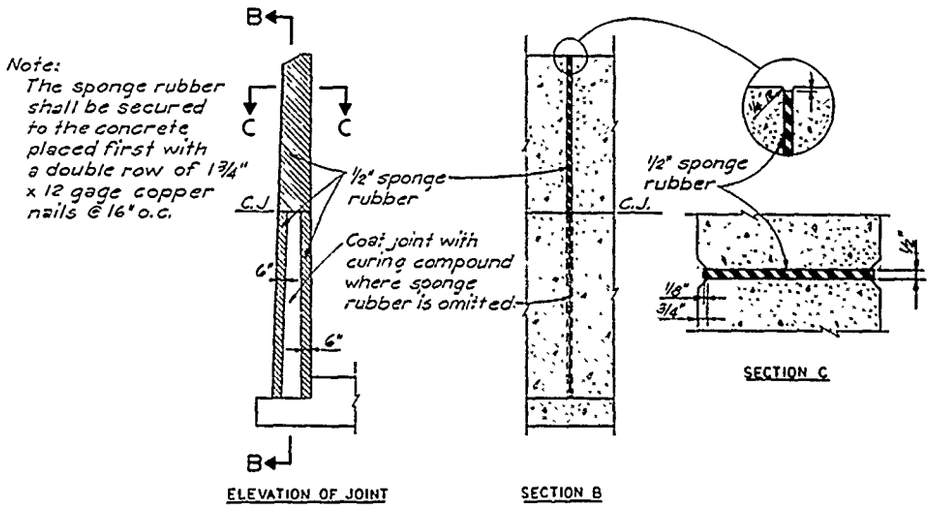
STATION	X	Y	ELEVATION
52+71	0	0.0	767.00
52+76	5	0.25	766.75
52+81	10	1.00	766.00
52+86	15	2.25	764.75
52+91	20	4.00	763.00
52+96	25	6.25	760.75
53+01	30	9.00	758.00





TYPICAL SECTION
Scale 1/4"=1'-0"





ELEVATION OF JOINT

SECTION B

SECTION C

MONOLITH JOINT DETAIL
Not to Scale

ELEVATION
767.00
766.75
766.00
764.75
763.00
760.75
758.00

GENERAL NOTES - STILLING BASIN

1. C.J. = Construction joint
   M.J. = Monolith joint
2. Reinforcement continuous thru Construction joints.
3. Reinforcement not continuous thru Monolith joints.
4. Reinforcement in top of base slab shall have a clear distance of 6" from surface of concrete. All other reinforcement shall have a clear distance of 4" from surface of concrete unless otherwise noted.
5. Reinforcement splice and anchorage lengths are shown on Dwg. No. H4
6. All exposed edges of concrete shall be chamfered 3/4" unless otherwise noted.

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by:
Checked by:
Submitted by:

US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

STILLING BASIN
CONCRETE DIMENSIONS

Scale: AS SHOWN
Date: JUNE 1990
Dwg. No.:
Sheet number: 25
File No.: RBL-2-1245

PLATE NO. 25

GENERAL GEOLOGIC COLUMN

SYSTEM	GROUP	FORMATION	MEMBER OR ZONE	SYMBOL	AVERAGE THICKNESS AND RANGE ( )	GENERAL DESCRIPTION
PENNSYLVANIAN	KANSAS CITY	CHERRYVALE	WEA	WE	**7 7 + (20'-25')	SHALE with interbedded LIMESTONE Shale—soft to occasionally very soft, platy clayey to slightly silty, occasionally fractured, gray weathers tan Limestone - moderately hard, partings to thin beds, finely crystalline, argillaceous, open stained fractures and bedding planes, light gray weathers tan
			BLOCK	BL	**1 9 (1'-4')	LIMESTONE Moderately hard, medium to thin bedded, very finely crystalline, shaly light gray
			FONTANA	FN	**2 2 (2'-5')	SHALE Soft, platy blocky, calcareous occasionally silty, dark gray to black
		DENNIS	WINTERSET	WS	13 6 (***)	LIMESTONE Moderately hard, medium to thick bedded, finely crystalline, black chert nodules to bands in upper half and shale partings lower half, light gray
			STARK	ST	3 2 (1 6'-5 2')	SHALE Soft, platy to fissile, calcareous, carbonaceous, occasional siltstone laminations lower part, medium gray upper grading to dark gray to black lower Occasionally contains a band to thin bed of shaly limestone to limy shale which is correlative with the Canville limestone member Contact with the Galesburg is usually transitional and often not defined
			[Undifferentiated Stark-Galesburg]	[SG]	[7 4]	
			GALESBURG	GA	4 2 (3 1'-5 5')	SHALE Upper—soft, platy, silty, slightly calcareous, dark gray, Lower—soft to occasionally very soft, blocky, slightly silty, occasionally slickensided, gray to greenish gray Base occasionally transitional into the Bethany Falls "peanut rock"
		SWOPE	BETHANY FALLS	BF	22 1' (19 5'-23 2')	LIMESTONE Moderately hard, medium to thick bedded, dense to very finely crystalline, numerous undulating shale partings and stylolites nodular ("peanut rock") zone at top 2 to 6 feet, joints are frequently solutioned and open to clay filled, occasional solutioning along bedding planes, light gray with dark gray shale Often found as very large slump blocks along valley walls
			HUSH-PUCKNEY	HP	2 5 (1 0'-3 2')	SHALE Soft, fissile to platy, clayey, silty at top, carbonaceous lower occasional siltstone laminae, dark gray to black weathers brown
			MIDDLE CREEK	MC	1 2' (0 5'-2 1')	LIMESTONE Moderately hard, thin bedded, finely crystalline, slightly shaly, shale band in middle, gray
		LADORE		LD	2 3' (0 6'-3 2')	SHALE Soft, platy, silty upper, calcareous lower, gray to dark gray. Contact with the Sniabar is frequently transitional and not well defined
		HERTHA	SNIABAR	SB	6 0' (4 7'-7 1')	LIMESTONE Moderately hard, thin bedded to massive, finely crystalline, shaly top and bottom, occasional shaly partings light gray to tan Sometimes transitional contact with the Mound City
			MOUND CITY	MD	4 3' (2 0'-6 0')	SHALE Soft, massive upper to platy lower, blocky, clayey, calcareous with occasional limy nodules upper, numerous slickensides upper, light gray green to light gray upper and gray lower Transitional into Critzer and contact often questionable.
			CRITZER	CZ	2.1' (1 2'-6 0')	SHALE Soft, platy, clayey, slightly calcareous, limestone nodules and partings, occasionally slickensided, gray to occasionally gray green Occasionally transitional into Pleasanton
	MARMATON	PLEASANTON (Undifferentiated)	ZONE A	P_a	21 6' (19 8'-24 1')	SHALE interlaminated with SILTSTONE and SANDSTONE Soft, platy to occasionally massive, clayey, occasionally silty, occasionally calcareous, dark gray to gray green with light gray siltstone and sandstone The massive, non-silty, gray green shale checks rapidly. The sandstone is soft to moderately hard, thin bedded, fine grained and micaceous There is a fairly persistant zone of sandstone, from 0 5' to 2' thick, near the top of the Pleasanton
			ZONE B	P_b	9 4' (8 0'-12 6')	SANDSTONE. Moderately hard to soft, medium bedded to massive with shale partings, fine to very fine grained, silty, micaceous, occasionally calcareous, occasional phosphate nodules, fossiliferous at base, light gray with dark gray laminae and partings. Frequently stained or weathered to light brown, especially when near surface
			ZONE C	P_c	60 3' (58 5'-65 5')	SHALE and SILTSTONE Upper half—generally siltstone with occasional shale interbeds, but sometimes is all massive shale, moderately hard to soft, thin bedded, argillaceous, calcareous, pyritic, light to dark gray; Lower half—soft, thick to medium bedded, occasionally fissile, non-calcareous, occasional limestone nodules and thin beds lower part, very fossiliferous and carbonaceous to thin coal bed(s) at base, dark gray to nearly black
			ZONE D	P_d	8 8' (5 9'-10 7')	UNDERCLAY and SHALE Underclay is soft, massive to thin bedded, disseminated carbonaceous particles, calcareous with sparse limestone nodules, light greenish gray, shale is soft, thin bedded with occasional thin interbeds of siltstone and micaceous sandstone Limestone nodules are sparsely distributed throughout the zone
			ZONE E	P_e	6 5' (4 2'-9 1')	SANDSTONE Soft to moderately hard, thin bedded with occasional shale and siltstone partings to interbeds, very fine grained, micaceous, occasional limestone nodules, disseminated carbonaceous particles, limy at base, light gray to light greenish gray, with dark gray laminae Correlative with Hepler member?
		HOLDENVILLE		HO	9 7' (7 8'-10 7')	SHALE Soft, thin bedded, fissile, clayey, calcareous with occasional limestone partings to thin beds, occasional siltstone at top, dark gray with light gray laminae, red brown zone at base.
		LENAPAH		LP	*12 0' (11-23')	INTERBEDDED SHALE, SANDSTONE and SILTSTONE Shale—soft, fissile to massive, clayey, non-calcareous, varicolored gray, green and red, Sandstone—moderately hard, massive, fine to medium grained, occasionally calcareous and micaceous, greenish gray; Siltstone—soft to moderately hard, partings to massive, non-calcareous, occasionally clayey, gray to greenish gray, reddish gray, where clayey "thin COAL and UNDERCLAY at top of unit underclay usually slickensided reddish gray to greenish gray

*Full unit thickness not penetrated Range shown is reported for region
**Only penetrated in one boring (DC-1 A)
***Full unit thickness penetrated in only one boring—Regional thickness reportedly 25 to 40 feet

TYPE OF EXPLORATION

MAP SYMBOL

- Vertical boring
- Inclined boring showing direction and vertical angle
- Hand or machine dug test pit

CODE DESI

D Drive sample
C Core hole
TP Test pit (in 24" or larg
U Undisturbed
A Auger hole (h auger less th
NS Not Sampl (Field Clas cuttings or
FS Field Secti

TERMS FOR CONSISTENCY SOIL AND HARDNESS OF BEC

SOIL

Consistency	Estimated Unconfined Compressive (Tons per square foot)
Very soft	< 0 25
Soft	0 25 0 5
Medium	0 5 1 0
Stiff	1 0 2 0
Very stiff	2 0 4 0
Hard	> 4 0

BEDROCK

SCALE OF HARDNESS

Very soft or plastic	Can be indented e
Soft	Can be scratched
Moderately hard	Can be scratched cannot be scratche
Hard	Difficult to scratch
Very Hard	Cannot be scratch

BEDROCK UNIT THICKNES

Parting	< 0 02'
Band	0 02' to 0 2'
Thin Bed	0 2' to 0 5'
Medium bed	0 5' to 1 0
Thick bed	1 0' to 2 0'
Massive	> 2 0'

ABBREVIATIONS

alt	alternating	dmp	damp	lea	
ang	angular	dol (c)	dolomite, (dolomitic)	lig	
an	anhydrite	ext	extremely	ls	
ar	argillaceous	f (y)	fine, (finely)	lt	
bdd	bed, bedded, bedding	fe	iron	lo	
br	bedrock	fld	filled	LC	
bky	blocky	fm	firm	LDW	
bl	blue	fos (s)	fossil, (fossiliferous)	med	
bld	boulder	frac (d)	fractures, (fractured)	mic	
blk	black	frag (d)	fragments, (fragmented)	min	
brec (d)	breccia, (brecciated)	fri	friable	mod (y)	
brk	broken	fsl	fissile	mot	
brn	brown	gr	grain	mss	
c	coarse	gra	gradation	mst	
calc	calcareous	grn	green	mtl	
carb	carbonaceous	grv (y)	gravel, (gravelly)	mtx	
cav	cavity	gry	gray	nod	
cbl	cobble	gyp	gypsum	num	
cht	chert	ha	high angle	occ (y)	
circ	circulation	hd	hard	op	
cl (y)	clay, (clayey)	hld	healed	or	
cld	closed	hor	horizontal	org	
cmtd	cemented	inbd	interbedded	par	
col	columnar	incl	inclusions	pt	
conc	concretions	inlam	interlaminated	pl	
cong	conglomerate	irr	irregular	pla	
crm	crumbly	jt (s)	joint, (joints)	pln	
d	dense	la	low angle	ptg (s	
dk	dark	lam (d)	laminae, (laminated)	qtz (e	

TYPE OF EXPLORATION

SYMBOL	CODE DESIGNATION
...ual Boring	D Drive sample hole
...ore Boring showing	C Core hole
... and vertical angle	TP Test pit - includes power auger 24" or larger diameter
...ore or machine	U Undisturbed sample hole
...d test pit	A Auger hole hand or power auger less than 24" diameter
	NS Not Sampled
	Field Classification from cuttings only.
	FS Field Section or outcrop

TERMS FOR CONSISTENCY OF SOIL AND HARDNESS OF BEDROCK

SOIL

...stency	Estimated Unconfined Compressive Strength Tons per square foot
...ft	< 0.25
	0.25 - 0.5
	0.5 - 1.0
	1.0 - 2.0
...d	2.0 - 4.0
	> 4.0

BEDROCK
SCALE OF HARDNESS

...ft or plastic	Can be indented easily with thumb.
	Can be scratched with fingernail.
...ium hard	Can be scratched easily with knife, cannot be scratched with fingernail.
	Difficult to scratch with knife.
...d	Cannot be scratched with knife.

BEDROCK UNIT THICKNESS

Parting	< 0.02
Bed	0.02 to 0.2
Thin Bed	0.2 to 0.5
Medium bed	0.5 to 1.0
Thick bed	1.0 to 2.0
Massive	> 2.0

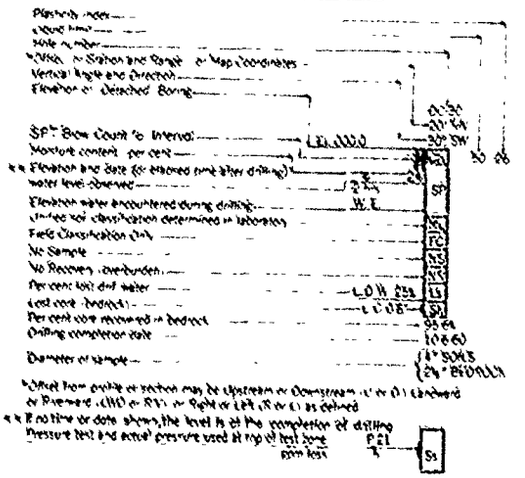
UNIFIED SOIL CLASSIFICATION SYSTEM

GW	Well graded gravels, gravel sand mixtures, little or no fines	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
GP	Poorly graded gravels or gravel sand mixtures, little or no fines	CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
GM	Silty gravels, gravel-sand-silt mixtures	OL	Organic silts and organic silty clays of low plasticity
GC	Clayey gravels, gravel-sand-clay mixtures	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
SW	Well-graded sands, gravelly sands, little or no fines	CH	Inorganic clays of high plasticity, fat clays
SP	Poorly graded sands or gravelly sands, little or no fines	OH	Organic clays of medium to high plasticity, organic silts
SM	Silty sands, sand-silt mixtures	PT	Peat and other highly organic soils
SC	Clayey sands, sand-clay mixtures		

Classification based on material passing 3-inch (76.2 mm) sieve.
Boundary classifications, where used, show two symbols separated by a dash, e.g., GW-GC.
All sieve sizes on this chart are U.S. Standard.

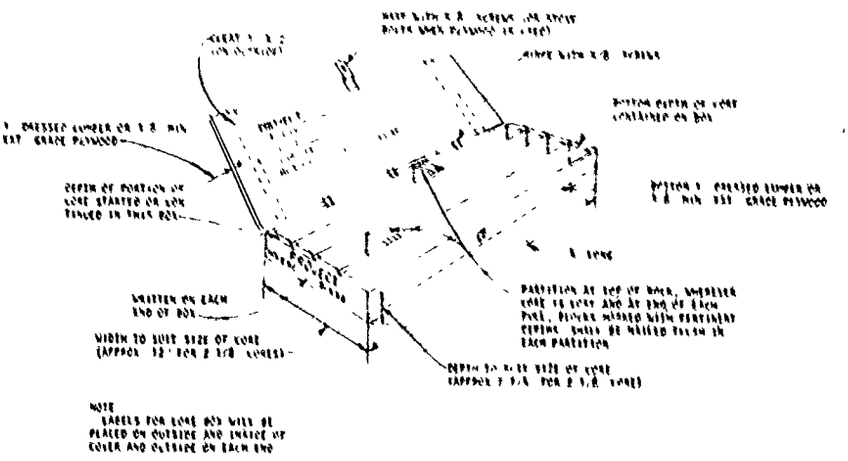
Unified Soil Classification System
Corps of Engineers Waterways Experiment Station
Technical Memorandum No. 3-357 dated March 1953 and revised to 1960

LEGEND FOR LOGS OF BORINGS



ABBREVIATIONS

...amp	lea	leached	rnd (d)	round, (rounded)	
...dolomite (dolomitic)	lg	lignite	sat	saturated	
...extremely	ls	limestone	scat	scattered	
...ine (finely)	lt	light	sd (y)	sand, (sandy)	
...ion	lo	loose	sev	several	
...ed	LC	lost core	sh (y)	shale (shaly)	
...um	LDW	lost drill water	si (y)	silt (silty)	
...ss (fossiliferous)	med	medium	ss	sandstone	
...ctures. (fractured)	mic	micaceous	sl	slightly	
...gments. (fragmented)	min	mineralized	slick	slickensides	
...ibbe	mod (y)	moderate, (moderately)	slks	slickensides	
...ttle	mot	mottled	so	soft	
...um	mss	massive	sol (d)	solution, (solutionized)	
...addition	mst	moist	ss	sandstone	
...ween	mtl	material	st (g)	stained (staining)	
...avel (gravelly)	mtx	matrix	stf	stiff	
...ular	nod	nodules	sty	stylolitic	
...ivolum	num	numerous	v	very	
...high angle	occ (y)	occasional, (occasionally)	vert	vertical	
...ard	op	open	vgy	vuggy	
...ered	or	orange	w	water	
...rizontal	org	organic	w	with	
...erbedded	par	partially	wth	weathered	
...clusions	pt	pt. pitted, pitting	wht	white	
...erlaminated	pl	plastic	x bdd	crossbedded	
...egular	pla	platy	xln	crystalline	
...nt (joints)	pln	plane	y	yellow	
...e angle	prg (s)	parting, (partings)	When used as leg symbol first letter is capitalized		
...minae, laminated	qtz (ic)	quartz, (quartzite)			



NOTE
LABELS FOR CORE BOX WILL BE PLACED ON OUTSIDE AND INSIDE OF COVER AND OUTSIDE ON EACH END

CORE BOX DETAILS
(FOR EXPLORATORY DRILLING)

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by:

US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

GENERAL GEOLOGIC

PENNSYLVANIAN	KANSAS CITY	CH	FONTANA	FN	**2 2 (2'-5)	SHALE Soft, platy, blocky, calcareous, occasionally silty, dark gray to black
		DENNIS	WINTERSET	WS	13 6 (***)	LIMESTONE Moderately hard, medium to thick bedded, finely crystalline, black chert nodules to bands in upper half and shale partings lower half, light gray.
			STARK	S1	3 2' (1 6 - 5 2)	SHALE Soft, platy to fissile, calcareous, carbonaceous, occasional siltstone laminations lower part, medium gray upper grading to dark gray to black lower Occasionally contains a band to thin bed of shaly limestone to limy shale which is correlative with the Canville limestone member. Contact with the Galesburg is usually transitional and often not defined
			[Undifferentiated Stark-Galesburg]	[SG]	[7 4']	
			GALESBURG	GA	4 2' (3 1 - 5 5')	SHALE Upper—soft, platy, silty, slightly calcareous, dark gray. Lower—soft to occasionally very soft, blocky, slightly silty, occasionally slickensided, gray to greenish gray. Base occasionally transitional into the Bethany Falls "peanut rock"
		SWOPE	BETHANY FALLS	BF	22 1 (19 5 - 23 2)	LIMESTONE Moderately hard, medium to thick bedded, dense to very finely crystalline, numerous undulating shale partings and stylolites, nodular ("peanut rock") zone at top 2 to 6 feet, joints are frequently solutioned and open to clay filled, occasional solutioning along bedding planes, light gray with dark gray shale. Often found as very large slump blocks along valley walls.
			HUSH-PUCKNEY	HP	2 5' (1 0 -3 2)	SHALE Soft, fissile to platy, clayey, silty at top, carbonaceous lower occasional siltstone lamnae, dark gray to black weathers brown
			MIDDLE CREEK	MC	1.2' (0 5'-2 1')	LIMESTONE Moderately hard, thin bedded, finely crystalline, slightly shaly, shale band in middle, gray.
			LADORE	LD	2 3' (0 6'-3 2')	SHALE: Soft, platy, silty upper, calcareous lower, gray to dark gray. Contact with the Sniabar is frequently transitional and not well defined
		HERTHA	SNIABAR	SB	6 0' (4,7 - 7.1')	LIMESTONE: Moderately hard, thin bedded to massive, finely crystalline, shaly top and bottom, occasional shaly partings, light gray to tan Sometimes transitional contact with the Mound City.
			MOUND CITY	MD	4 1' (2 0'- 6 0)	SHALE Soft, massive upper to platy lower, blocky, clayey, calcareous with occasional limy nodules upper, numerous slickensides upper, light gray green to light gray upper and gray lower. Transitional into Critzer and contact often questionable.
			CRITZER	CZ	2 1' (1 2'- 6 0)	SHALE: Soft, platy, clayey, slightly calcareous, limestone nodules and partings, occasionally slickensided, gray to occasionally gray green. Occasionally transitional into Pleasanton
	PLEASANTON (Undifferentiated)		ZONE A	P_a	21 6' (19 8'- 24.1')	SHALE interlaminated with SILTSTONE and SANDSTONE: Soft, platy to occasionally massive, clayey, occasionally silty, occasionally calcareous, dark gray to gray green with light gray siltstone and sandstone The massive, non-silty, gray green shale checks rapidly. The sandstone is soft to moderately hard, thin bedded, fine grained and micaceous There is a fairly persistant zone of sandstone, from 0 5' to 2' thick, near the top of the Pleasanton
			ZONE B	P_b	9 4' (8 0'- 12 6')	SANDSTONE. Moderately hard to soft, medium bedded to massive with shale partings, fine to very fine grained, silty, micaceous, occasionally calcareous, occasional phosphate nodules, fossiliferous at base, light gray with dark gray laminae and partings. Frequently stained or weathered to light brown, especially when near surface
			ZONE C	P_c	60 3' (58 5'- 65 5)	SHALE and SILTSTONE: Upper half—generally siltstone with occasional shale interbeds, but sometimes is all massive shale; moderately hard to soft, thin bedded, argillaceous, calcareous, pyritic, light to dark gray. Lower half—soft, thick to medium bedded, occasionally fissile, non-calcareous, occasional limestone nodules and thin beds lower part, very fossiliferous and carbonaceous to thin coal bed(s) at base, dark gray to nearly black
			ZONE D	P_d	8 8' (5 9'- 10 7)	UNDERCLAY and SHALE: Underclay is soft, massive to thin bedded, disseminated carbonaceous particles, calcareous with sparse limestone nodules, light greenish gray, shale is soft, thin bedded with occasional thin interbeds of siltstone and micaceous sandstone Limestone nodules are sparsely distributed throughout the zone
			ZONE E	P_e	6 5' (4 2'- 9 1')	SANDSTONE Soft to moderately hard, thin bedded with occasional shale and siltstone partings to interbeds, very fine grained, micaceous, occasional limestone nodules, disseminated carbonaceous particles, limy at base, light gray to light greenish gray, with dark gray laminae. Correlative with Hepler member?
	MARMATON		HOLDENVILLE	HO	9 7' (7 8'- 10 7)	SHALE: Soft, thin bedded, fissile, clayey, calcareous with occasional limestone partings to thin beds, occasional siltstone at top, dark gray with light gray laminae, red brown zone at base
			LENAPAH	LP	*12 0' (1'-23)	INTERBEDDED SHALE, SANDSTONE and SILTSTONE Shale—soft, fissile to massive, clayey, non-calcareous, varicolored gray, green and red; Sandstone—moderately hard, massive, fine to medium grained, occasionally calcareous and micaceous, greenish gray, Siltstone—soft to moderately hard, partings to massive, non-calcareous, occasionally clayey, gray to greenish gray, reddish gray, where clayey *Thin COAL and UNDERCLAY at top of unit underclay usually slickensided reddish gray to greenish gray

*Full unit thickness not penetrated Range shown is reported for region
**Only penetrated in one boring (DC-1 A)
***Full unit thickness penetrated in only one boring—Regional thickness reportedly 25 to 40 feet

(Tons per square foot)

Very soft	<0 25
Soft	025 05
Medium	05 10
Stiff	10 20
Very stiff	20 40
Hard	>40

BEDROCK

SCALE OF HARDNESS

Very soft or plastic	Can be indented easily
Soft	Can be scratched with
Moderately hard	Can be scratched easil cannot be scratched w
Hard	Difficult to scratch wit
Very Hard	Cannot be scratched w

BEDROCK UNIT THICKNESS

Parting	<0 02'
Band	0 02' to 0 2'
Thin Bed	0 2' to 0 5'
Medium bed	0 5' to 1 0'
Thick bed	1 0' to 2 0'
Massive	>2 0'

ABBREVIATIONS

alt	alternating	dmp	damp	lea	leach
ang	angular	dol (c)	dolomite, (dolomitic)	lig	l gnit
an	anhydrite	ext	extremely	ls	limes
ar	argillaceous	f (y)	fine, (finely)	lt	light
bdd	bed, bedded bedd ng	fe	iron	lo	loose
bdr	bedrock	fld	filled	LC	lost c
bky	blocky	fm	firm	LDW	lost c
bl	blue	fos (s)	fossil (fossiliferous)	med	medi
bld	boulder	frac (d)	fractures, (fractured)	mic	mica
blk	black	frag (d)	fragments, (fragmented)	min	mine
brec (d)	breccia (brecciated)	fri	friable	mod (y)	mode
brk	broken	fst	fissile	mot	motl
brn	brown	gr	grain	mss	mass
c	coarse	gra	gradation	mst	mois
calc	calcareous	grn	green	mtl	mate
carb	carbonaceous	grv (y)	gravel (gravelly)	mtx	matri
cav	cavity	gry	gray	nod	nodu
cbl	cobble	gyp	gypsum	num	numi
cht	chert	ha	high angle	occ (y)	occa
circl	circulation	hd	hard	op	open
cl (y)	clay (clayey)	hld	healed	or	orang
cld	closed	hor	horizontal	org	organ
cmtd	cemented	inbd	interbedded	par	partu
col	columnar	incl	inclusions	pt	pit p
conc	concretions	inlam	interlaminated	pl	plast
cong	conglomerate	irr	irregular	pla	platy
crm	crumbly	jt (s)	joint (joints)	pln	plane
d	dense	la	low angle	ptg (s)	partic
dk	dark	lam (d)	laminae, (laminated)	qtz (e)	quart

TERMS FOR CONSISTENCY OF SOIL AND HARDNESS OF BEDROCK

SOIL

Estimated Unconfined Compressive Strength (Tons per square foot)

	< 0.25
	0.25 0.5
	0.5 1.0
	1.0 2.0
	2.0 4.0
	> 4.0

BEDROCK

SCALE OF HARDNESS

plastic	Can be indented easily with thumb
	Can be scratched with fingernail.
ard	Can be scratched easily with knife, cannot be scratched with fingernail.
	Difficult to scratch with knife
	Cannot be scratched with knife

BEDROCK UNIT THICKNESS

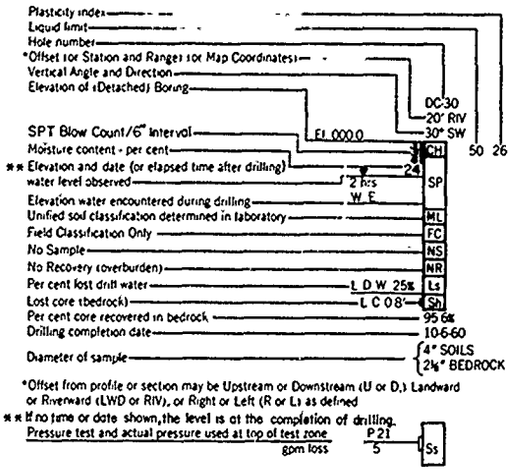
Parting	< 0.02'
Band	0.02' to 0.2'
Thin Bed	0.2' to 0.5'
Medium bed	0.5' to 1.0'
Thick bed	1.0' to 2.0'
Massive	> 2.0'

SC Clayey sands, sand-clay mixture Pt Peat and other highly organic soils

Classification from actual laboratory tests where LL and PI are shown

Dual classification where used is in accordance with the Unified Soil Classification System. For details on the Unified Soil Classification System See Waterways Experiment Station Technical Memorandum No. 3-357 dated March 1953 and revised in 1960

LEGEND FOR LOGS OF BORINGS

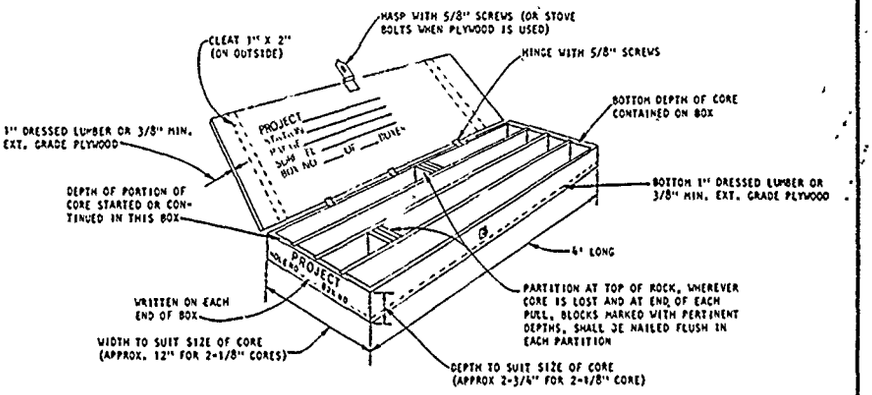


*Offset from profile or section may be Upstream or Downstream (U or D,) Landward or Riverward (LWD or RIV), or Right or Left (R or L) as defined

** If no time or date shown, the level is at the completion of drilling.

Pressure test and actual pressure used at top of test zone — P 21 / 5 — Ss

gpm loss



NOTE:
LABELS FOR CORE BOX WILL BE PLACED ON OUTSIDE AND INSIDE OF COVER AND OUTSIDE ON EACH END.

CORE BOX DETAILS

(FOR EXPLORATORY DRILLING)

ABBREVIATIONS

mp	lea	leached	rnd (d)	round (rounded)
lomite (dolomite)	lig	lignite	sat	saturated
remely	ls	limestone	scat	scattered
e (finely)	lt	light	sd (y)	sand, (sandy)
n	lo	loose	sev	several
ed	LC	lost core	sh (y)	shale, (shaly)
	LDW	lost drill water	si (y)	silt, (silty)
s) (fossiliferous)	med	medium	sis	siltstone
ctures (fractured)	mic	micaceous	sl	slightly
gments (fragmented)	min	mineralized	slcs	siliceous
abe	mod (y)	moderate, (moderately)	slks	slickensides
s'e	mot	mottled	so	soft
on	mss	massive	sol (d)	solution, (solutionized)
cation	mst	moist	ss	sandstone
en	mtl	material	st (g)	stained (staining)
ve gravelly)	mtx	matrix	stf	stiff
	nod	nodules	sty	stylolitic
ssum	num	numerous	v	very
e angle	occ (y)	occasional, (occasionally)	vert	vertical
	op	open	vgy	vuggy
ded	or	orange	w	water
nal	org	organic	w	with
ebedded	par	partially	wth	weathered
ions	pit	pit, pitted, pitting	wht	white
e ar nated	pl	plastic	x bdd	crossed bedded
ic ar	pla	platy	xln	crystalline
ints)	pln	plane	y	yellow
ge	ptg (s)	parting, (partings)	When used as log symbol first letter is capitalized	
ae (laminated)	qtz (y)	quartz (quartzite)		

Revisions			
Symbol	Descriptions	Date	Approved

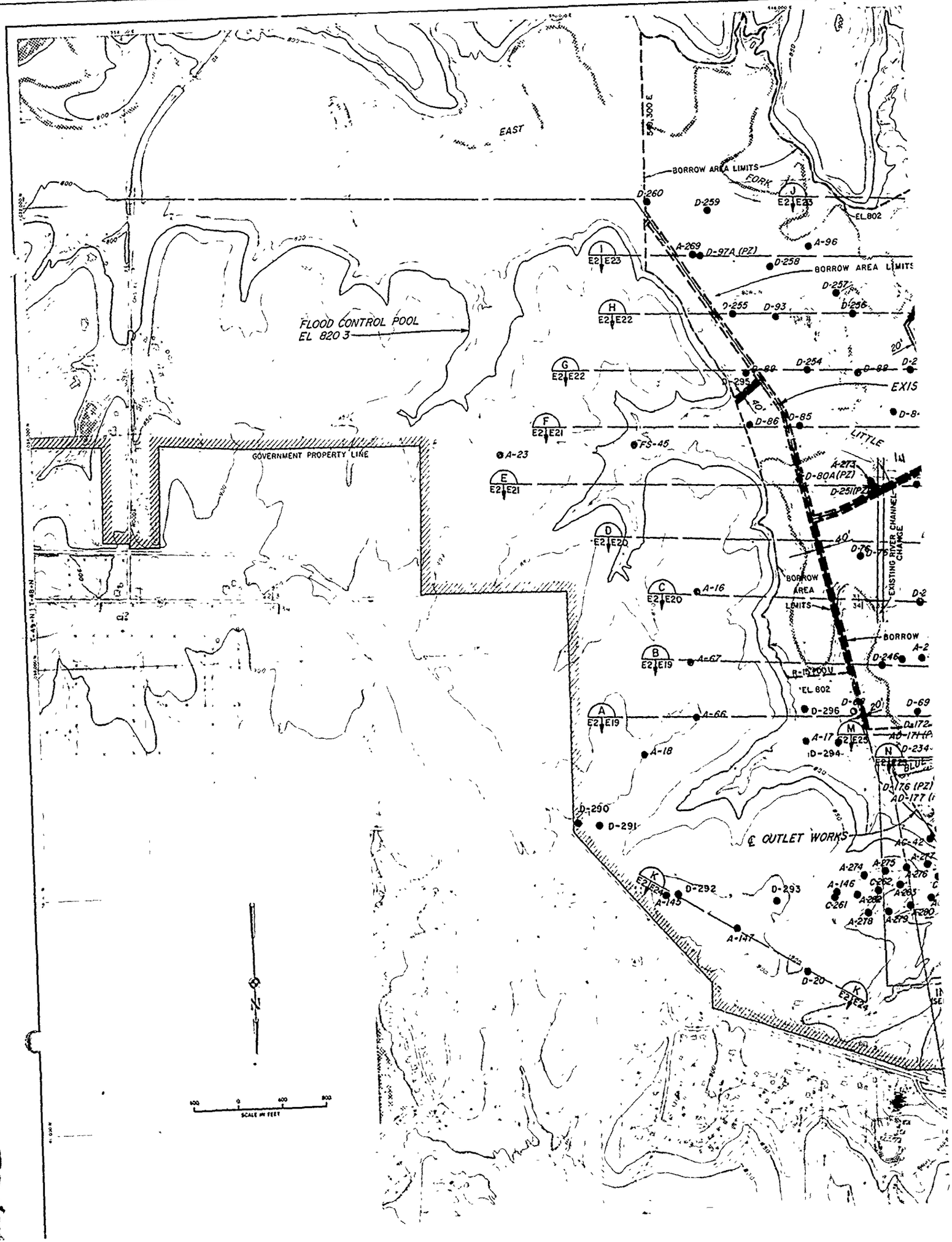
U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:	EAST FORK LITTLE BLUE RIVER, MISSOURI
Drawn by:	BLUE SPRINGS LAKE
Checked by:	CONSTRUCTION FOUNDATION REPORT
Submitted by:	GENERAL GEOLOGIC COLUMN AND LEGEND

US Army Corps of Engineers

Scale:	AS SHOWN	Sheet number:	
Date:	JUNE 1990	26	
Dwg. No.:		File No.:	RBL-2-1246

PLATE NO. 26


EAST
FORK
BORROW AREA LIMITS
FLOOD CONTROL POOL
EL 820 3
GOVERNMENT PROPERTY LINE
EXIS
LITTLE
EXISTING RIVER CHANNEL CHANGE
BORROW AREA LIMITS
BORROW
EL 802
℄ OUTLET WORKS
SCALE IN FEET
D-260
D-259
A-269
D-97A (PZ)
A-96
D-258
D-257
D-255
D-93
D-256
D-254
D-88
D-295
D-86
D-85
FS-45
A-23
A-273
D-80A(PZ)
D-251(PZ)
D-76
D-75
A-16
A-67
D-246
D-296
D-69
A-66
A-17
D-294
A-18
D-290
D-291
D-292
D-293
A-145
A-147
D-20
A-274
A-275
A-146
C-261
A-278
A-279
A-280
A-276
A-277
A-283
A-282
A-262
A-42
D-176 (PZ)
AD-177
D-234
D-172
AD-171
E2 E23
E2 E22
E2 E21
E2 E20
E2 E19
E2 E24
E2 E25
E2 E23
E2 E22
E2 E21
E2 E20
E2 E19
E2 E24
E2 E25
E2 E24
I
H
G
F
E
D
C
B
A
K
M
N
J
20'
40'
T-49-N
T-48-N

VALUE ENGINEERING PAYS

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

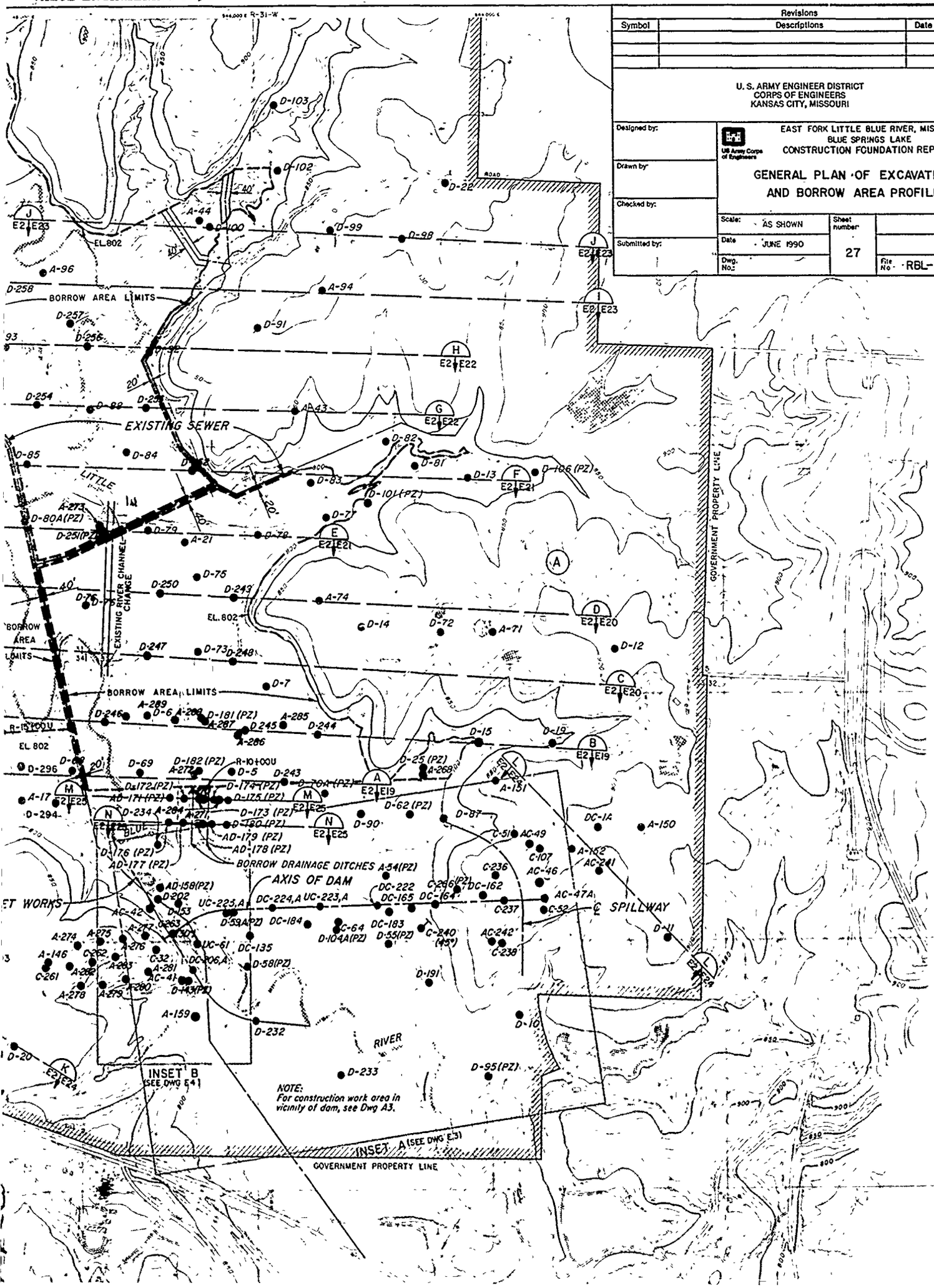
Designed by:
Drawn by:
Checked by:
Submitted by:

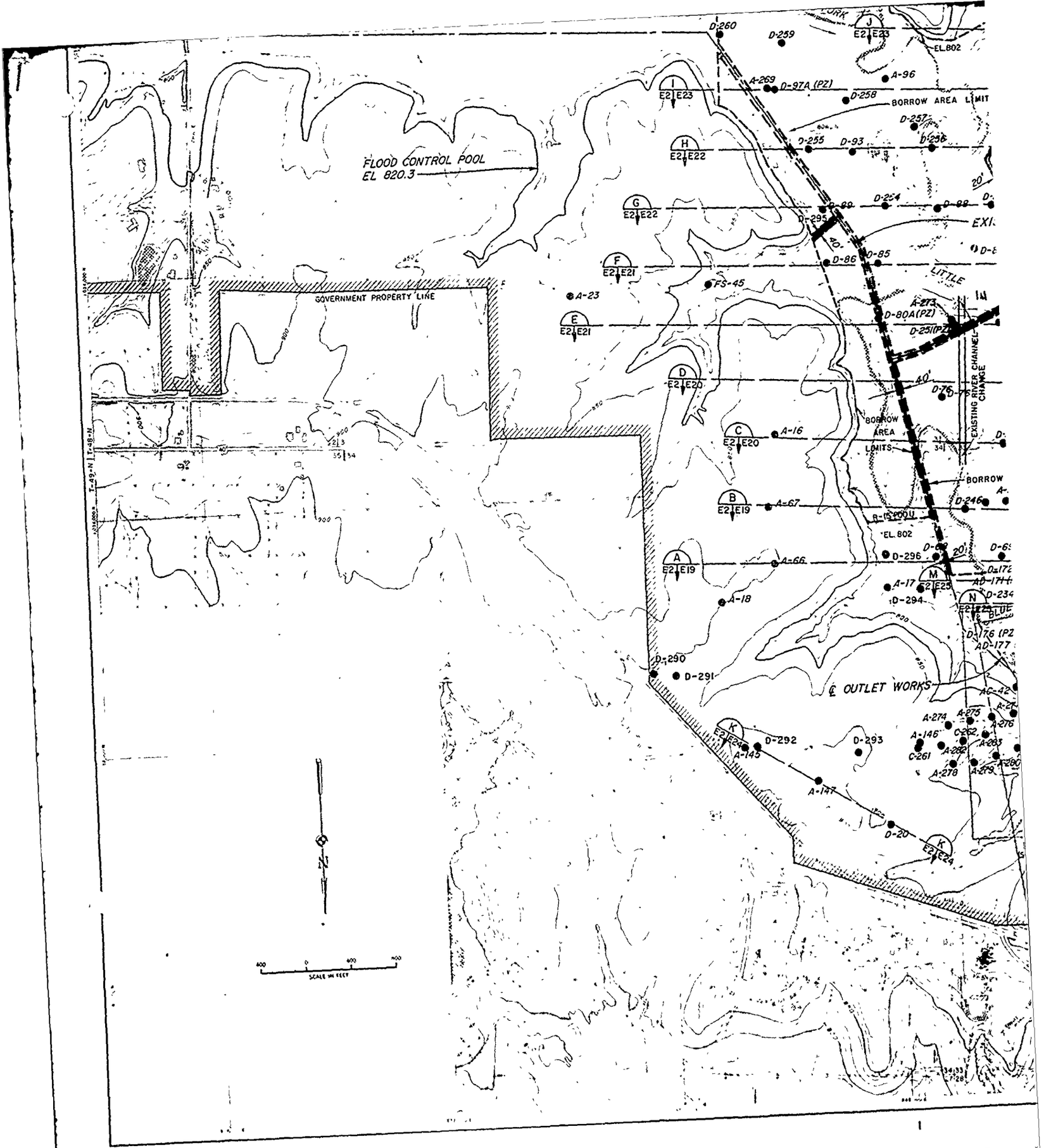
US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

GENERAL PLAN OF EXCAVATION AND BORROW AREA PROFILE

Scale: AS SHOWN
Date: JUNE 1990
Dwg. No.:
Sheet number: 27
File No.: RBL-2-1247




FLOOD CONTROL POOL
EL 820.3
GOVERNMENT PROPERTY LINE
BORROW AREA LIMIT
BORROW AREA LIMITS
EXISTING RIVER CHANNEL CHANGE
LITTLE
EL. 802
℄ OUTLET WORKS
SCALE IN FEET
D-260
D-259
A-269
D-97A (PZ)
A-96
D-258
D-257
D-255
D-93
D-256
D-254
D-295
D-86
D-85
FS-45
A-23
A-273
D-80A(PZ)
D-251(PZ)
D-76
A-16
A-67
D-246
D-296
A-66
A-17
D-294
A-18
D-290
D-291
D-292
D-293
A-145
A-147
D-20
A-274
A-275
A-276
A-146
C-262
C-261
A-282
A-283
A-278
A-279
A-280
AC-42
AD-177
D-176 (PZ
T-49-N | T-48-N

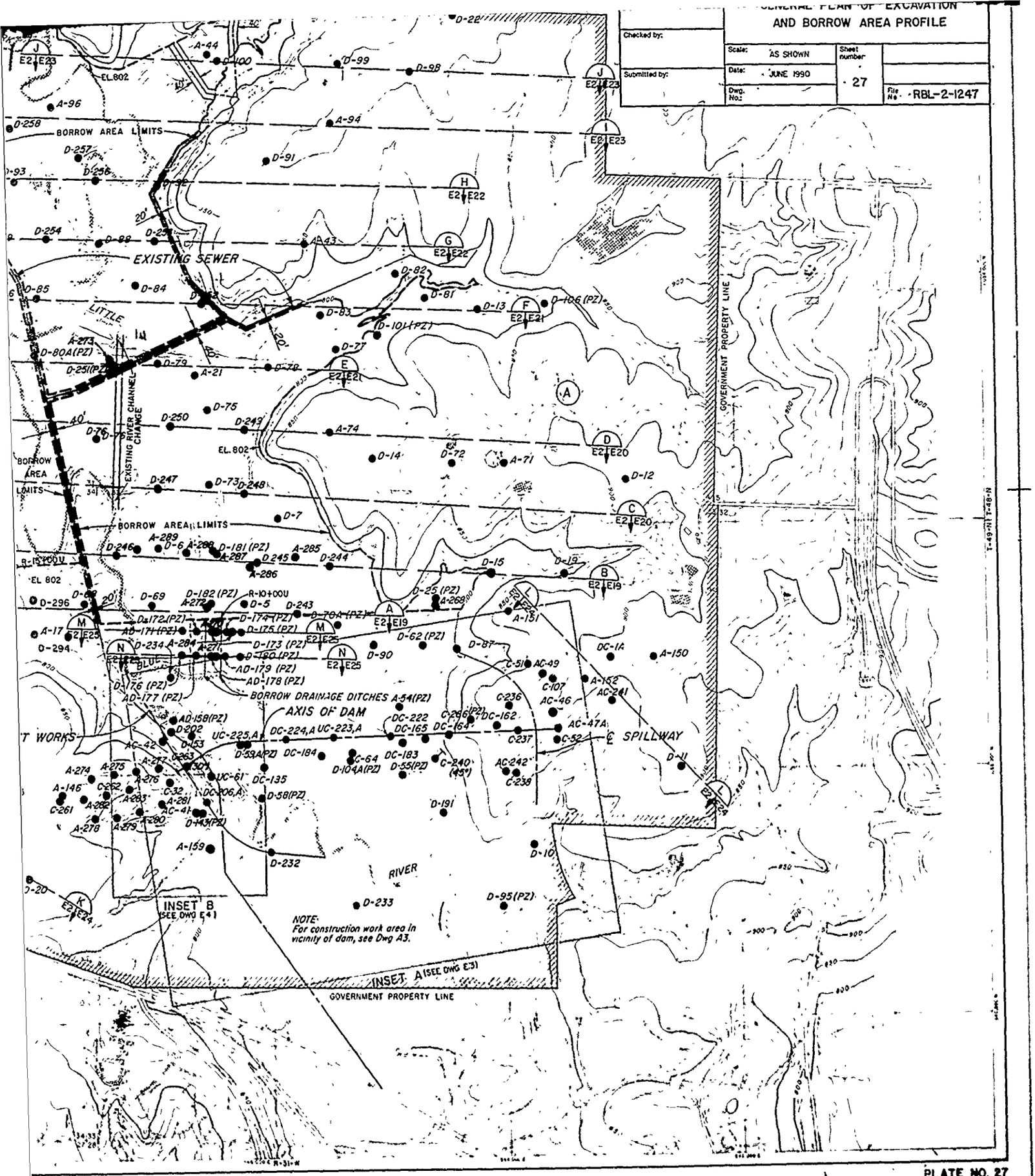
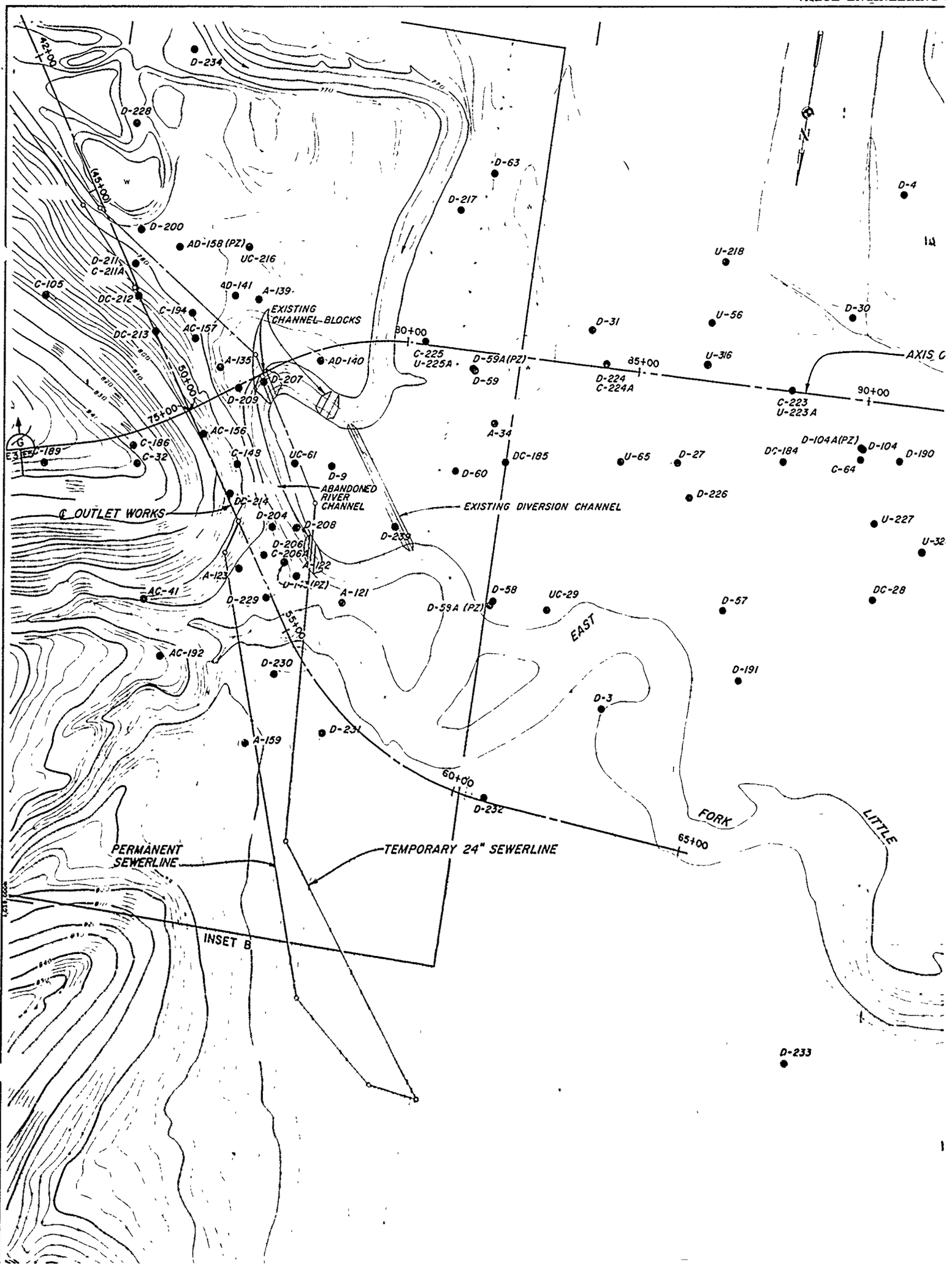
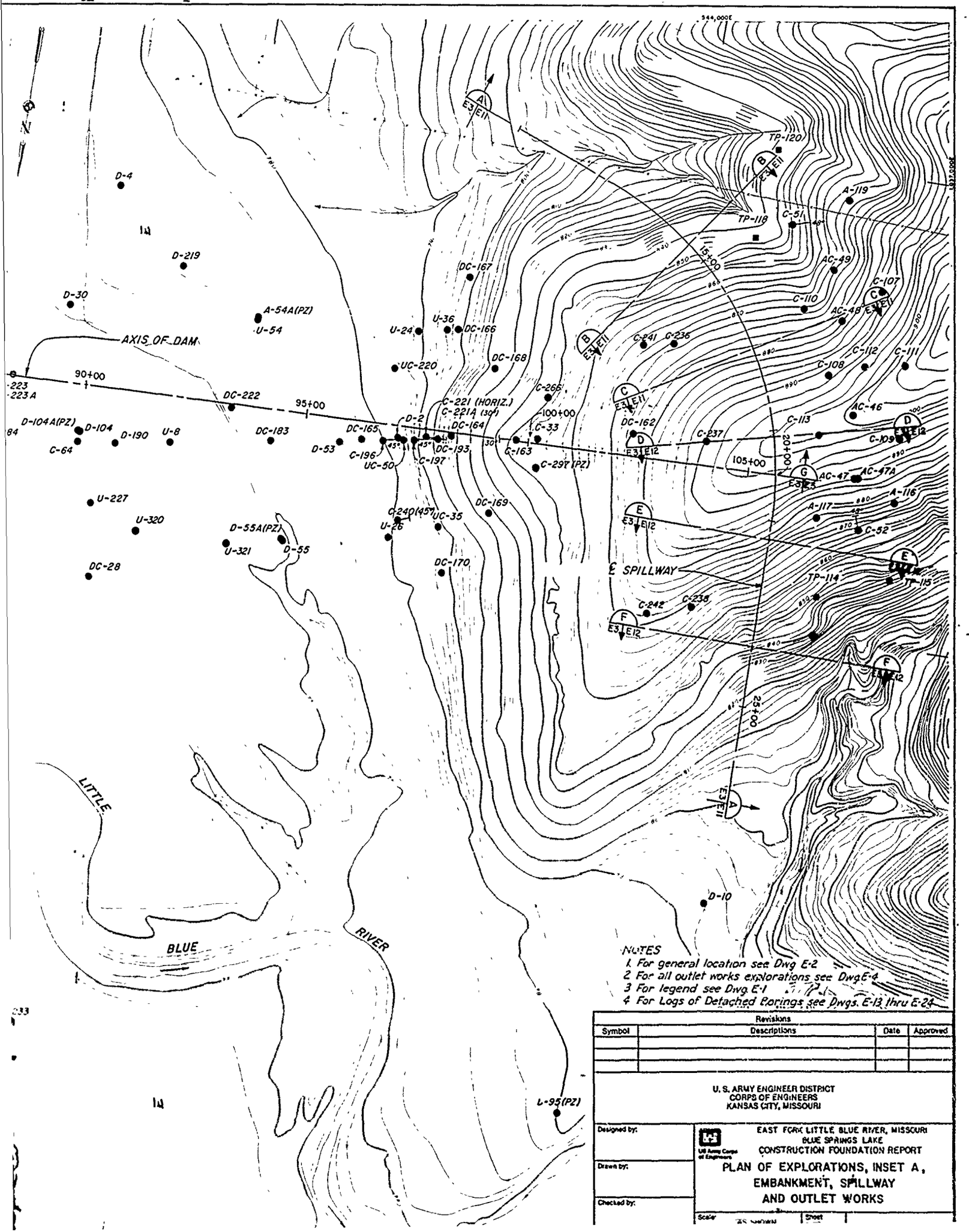

GENERAL PLAN OF EXCAVATION
AND BORROW AREA PROFILE
Checked by:
Submitted by:
Scale: AS SHOWN
Date: JUNE 1990
Dwg. No.:
Sheet number 27
File No. RBL-2-1247
BORROW AREA LIMITS
EXISTING SEWER
LITTLE
EXISTING RIVER CHANNEL CHANGE
GOVERNMENT PROPERTY LINE
BORROW AREA LIMITS
BORROW DRAINAGE DITCHES
AXIS OF DAM
SPILLWAY
RIVER
INSET B (SEE DWG E4)
INSET A (SEE DWG E3)
NOTE: For construction work area in vicinity of dam, see Dwg A3.

PLATE NO. 27



42+00
D-234
D-228
(45+00)
D-200
AD-158 (PZ)
UC-216
D-211
C-211A
C-105
DC-212
AD-141
A-139
C-194
EXISTING CHANNEL BLOCKS
AC-157
DC-213
A-135
AD-140
D-207
D-209
50+00
75+00
AC-156
C-186
C-189
C-32
C-148
UC-61
D-9
ABANDONED RIVER CHANNEL
DC-214
℄ OUTLET WORKS
D-204
D-208
D-206
C-206A
A-122
A-123
AC-41
D-229
A-121
55+00
AC-192
D-230
A-159
D-231
60+00
D-232
65+00
PERMANENT SEWERLINE
TEMPORARY 24" SEWERLINE
INSET B
D-63
D-217
80+00
C-225
U-225A
D-59A (PZ)
D-59
85+00
D-224
C-224A
A-34
DC-185
D-60
EXISTING DIVERSION CHANNEL
D-239
D-58
D-59A (PZ)
UC-29
EAST
FORK
LITTLE
D-3
D-31
U-218
U-56
U-316
D-4
D-30
AXIS C
90+00
C-223
U-223A
U-65
D-27
D-226
DC-184
D-104A (PZ)
D-104
C-64
D-190
U-227
U-32
DC-28
D-57
D-191
D-233



NOTES
1. For general location see Dwg E-2
2. For all outlet works explorations see Dwg E-4
3. For legend see Dwg E-1
4. For Logs of Detached Borings see Dwgs. E-13 thru E-24

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

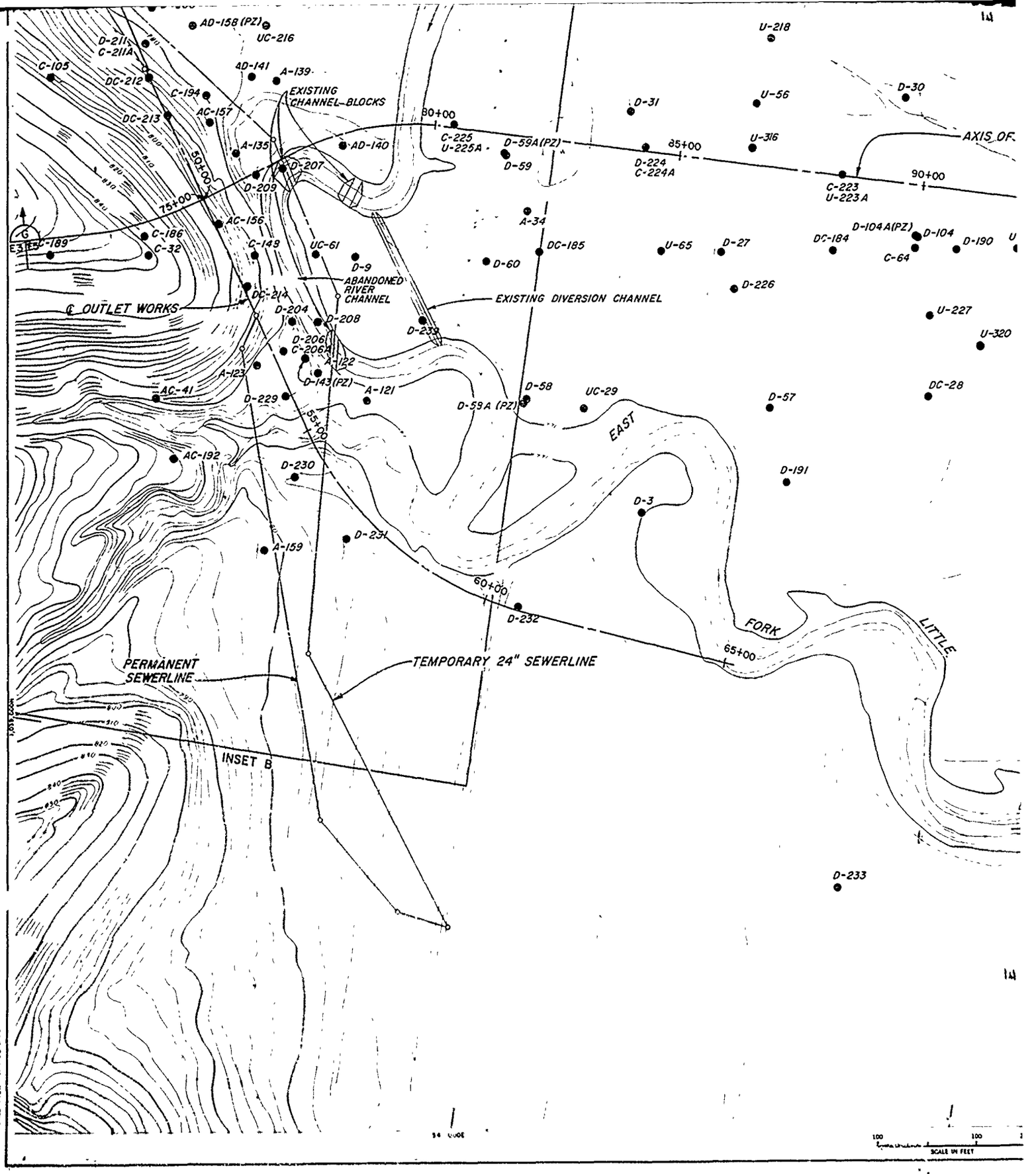
Designed by:
Drawn by:
Checked by:

US Army Corps of Engineers

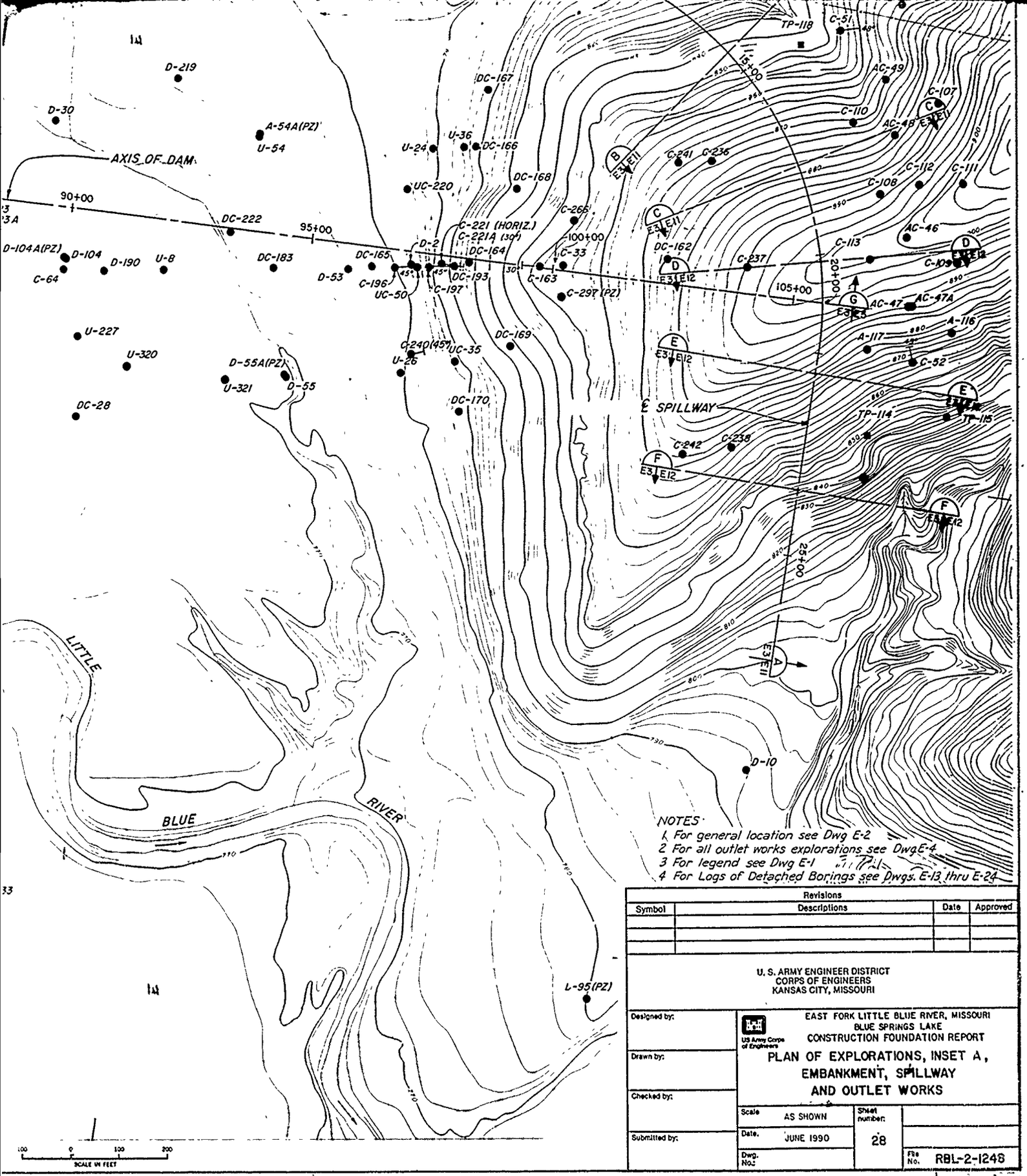
EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

PLAN OF EXPLORATIONS, INSET A, EMBANKMENT, SPILLWAY AND OUTLET WORKS

Scale: AS SHOWN | Sheet



AD-158 (PZ)
UC-216
D-211
C-211A
C-105
DC-212
AD-141
A-139
EXISTING CHANNEL BLOCKS
C-194
AC-157
DC-213
A-135
AD-140
D-207
D-209
50+00
75+00
80+00
C-225
U-225A
D-59A (PZ)
D-59
85+00
D-224
C-224A
U-218
U-56
D-31
U-316
D-30
AXIS OF
C-223
U-223A
90+00
A-34
AC-156
C-186
C-32
C-189
C-149
UC-61
D-9
ABANDONED RIVER CHANNEL
DC-214
℄ OUTLET WORKS
D-204
D-208
D-206
C-206A
A-122
A-123
D-143 (PZ)
A-121
AC-41
D-229
55+00
D-239
EXISTING DIVERSION CHANNEL
D-60
DC-185
U-65
D-27
D-226
DC-184
D-104A (PZ)
D-104
C-64
D-190
U-227
U-320
D-58
D-59A (PZ)
UC-29
D-57
DC-28
EAST
AC-192
D-230
D-191
D-3
D-231
A-159
60+00
D-232
FORK
LITTLE
65+00
PERMANENT SEWERLINE
TEMPORARY 24" SEWERLINE
INSET B
D-233
SCALE IN FEET



NOTES

1. For general location see Dwg E-2
2. For all outlet works explorations see Dwg E-4
3. For legend see Dwg E-1
4. For Logs of Detached Borings see Dwgs. E-13 thru E-24

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by:
Checked by:
Submitted by:

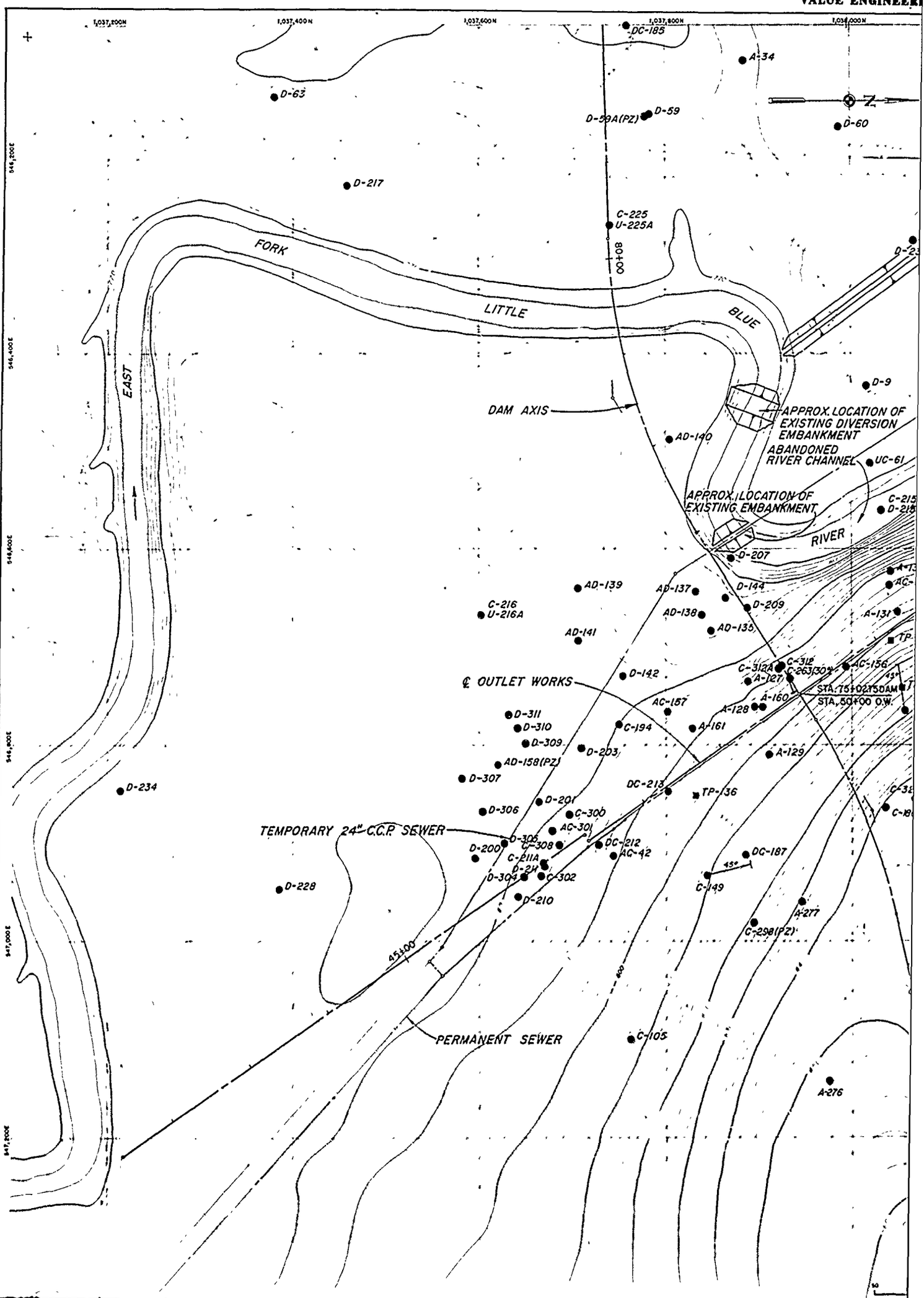
US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

PLAN OF EXPLORATIONS, INSET A, EMBANKMENT, SPILLWAY AND OUTLET WORKS

Scale	AS SHOWN	Sheet number:	28
Date.	JUNE 1990		
Dwg. No.:		File No.	RBL-2-1248

PLATE NO. 28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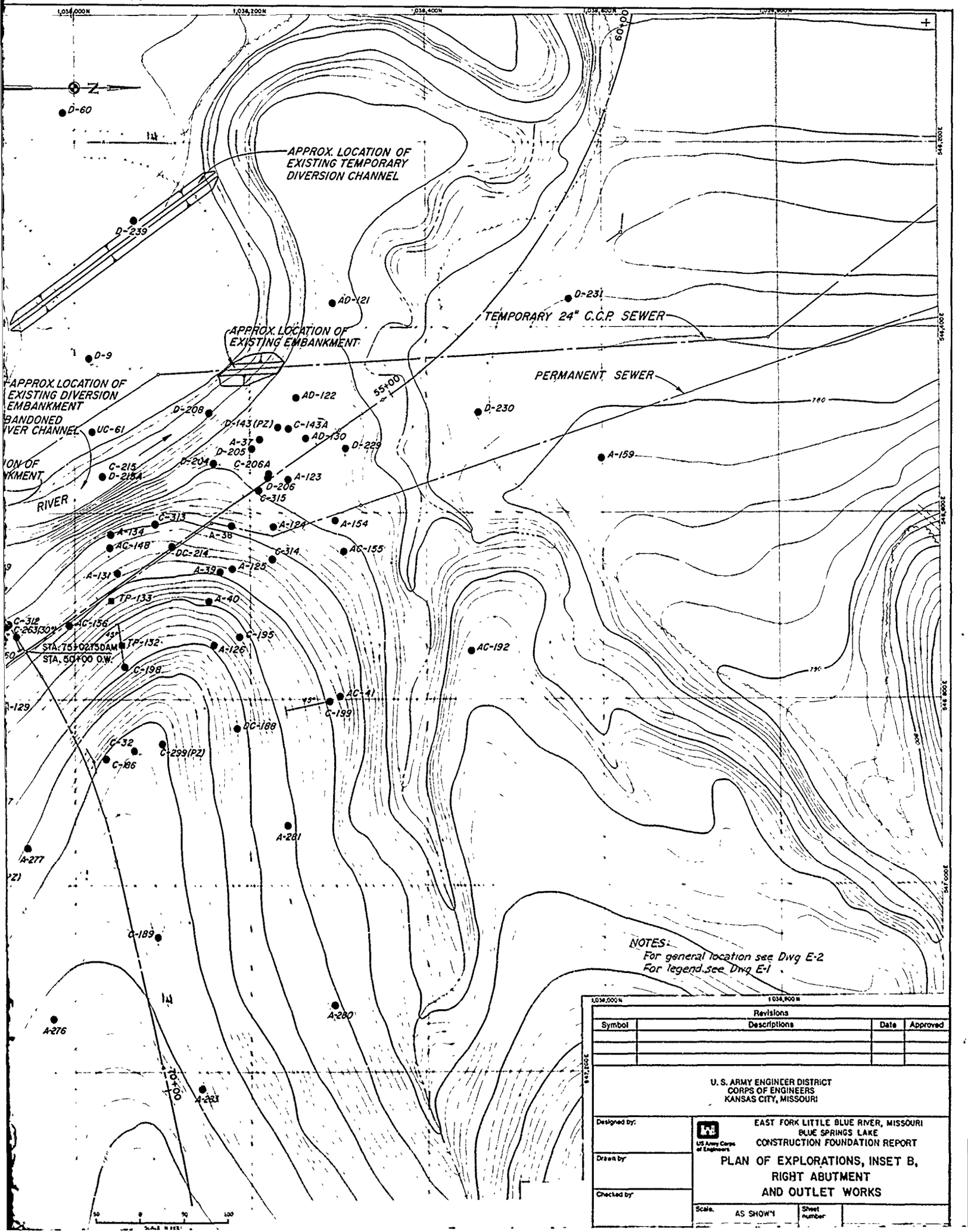
1,037,400N
1,037,600N
1,037,800N
1,038,000N
546,200E
546,400E
546,600E
546,800E
547,000E
547,200E
DC-185
A-34
D-63
D-59A(PZ)
D-59
D-60
D-217
C-225
U-225A
80+00
FORK
LITTLE
BLUE
EAST
D-9
DAM AXIS
APPROX. LOCATION OF EXISTING DIVERSION EMBANKMENT
AD-140
ABANDONED RIVER CHANNEL
UC-61
APPROX. LOCATION OF EXISTING EMBANKMENT
RIVER
D-207
AD-139
AD-137
D-144
C-216
U-216A
AD-138
D-209
AD-135
A-131
AD-141
C-312A
C-312
C-263(30°)
AC-156
A-127
D-142
℄ OUTLET WORKS
STA. 75+02.75 DAM
STA. 50+00 O.W.
AC-157
A-160
A-128
D-311
D-310
C-194
A-161
D-309
D-203
A-129
AD-158(PZ)
D-307
D-234
DC-213
TP-136
D-201
D-306
C-300
AC-301
TEMPORARY 24" C.C.P. SEWER
D-305
C-308
DC-212
D-200
AC-42
DC-187
C-211A
D-211
D-304
C-302
C-149
D-228
D-210
A-277
C-298(PZ)
45+00
PERMANENT SEWER
C-105
A-276



Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

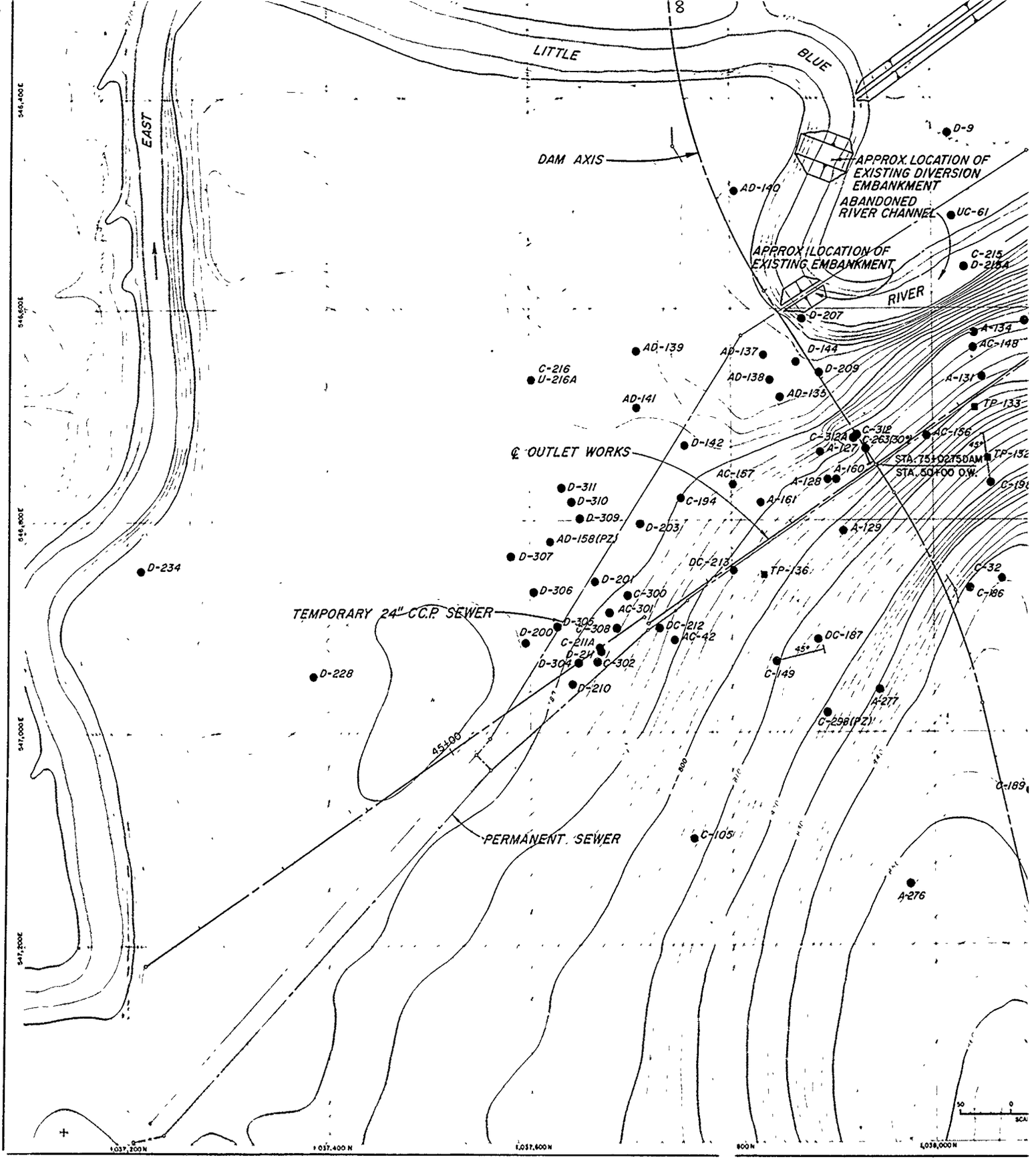
Designed by:
Drawn by:
Checked by:

US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

PLAN OF EXPLORATIONS, INSET B, RIGHT ABUTMENT AND OUTLET WORKS

Scale: AS SHOWN
Sheet number:


LITTLE
BLUE
EAST
DAM AXIS
APPROX. LOCATION OF EXISTING DIVERSION EMBANKMENT
ABANDONED RIVER CHANNEL
APPROX. LOCATION OF EXISTING EMBANKMENT
RIVER
℄ OUTLET WORKS
TEMPORARY 24" C.C.P. SEWER
PERMANENT SEWER
STA. 75+02.75 DAM
STA. 50+00 O.W.
45±00
546,400E
546,600E
546,800E
547,000E
547,200E
1,037,200 N
1,037,400 N
1,037,600 N
800 N
1,038,000 N
D-9
AD-140
UC-61
C-215
D-215A
D-207
A-134
AC-148
AD-139
AD-137
D-144
C-216
U-216A
AD-138
D-209
A-131
AD-141
AD-135
TP-133
C-312A
C-312
C-263(30")
AC-156
D-142
A-127
A-160
AC-157
A-128
D-311
D-310
C-194
A-161
D-309
D-203
A-129
AD-158(PZ)
D-307
DC-213
TP-136
C-32
C-186
D-234
D-306
D-201
C-300
AC-301
D-305
C-308
DC-212
AC-42
D-200
C-211A
D-211
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DC-187
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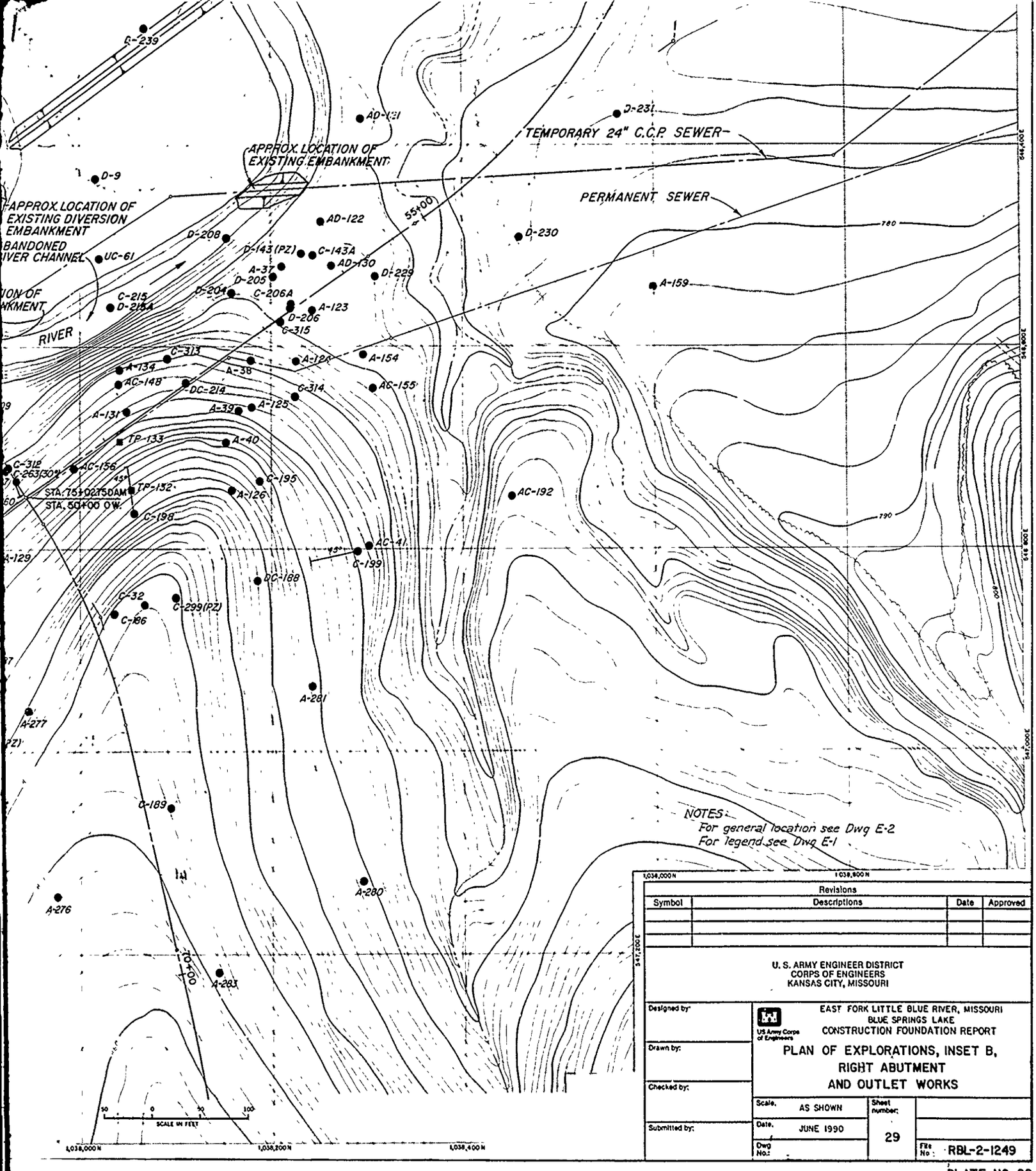
C-298(PZ)
C-189
C-105
A-276



Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by:
Checked by:
Submitted by:

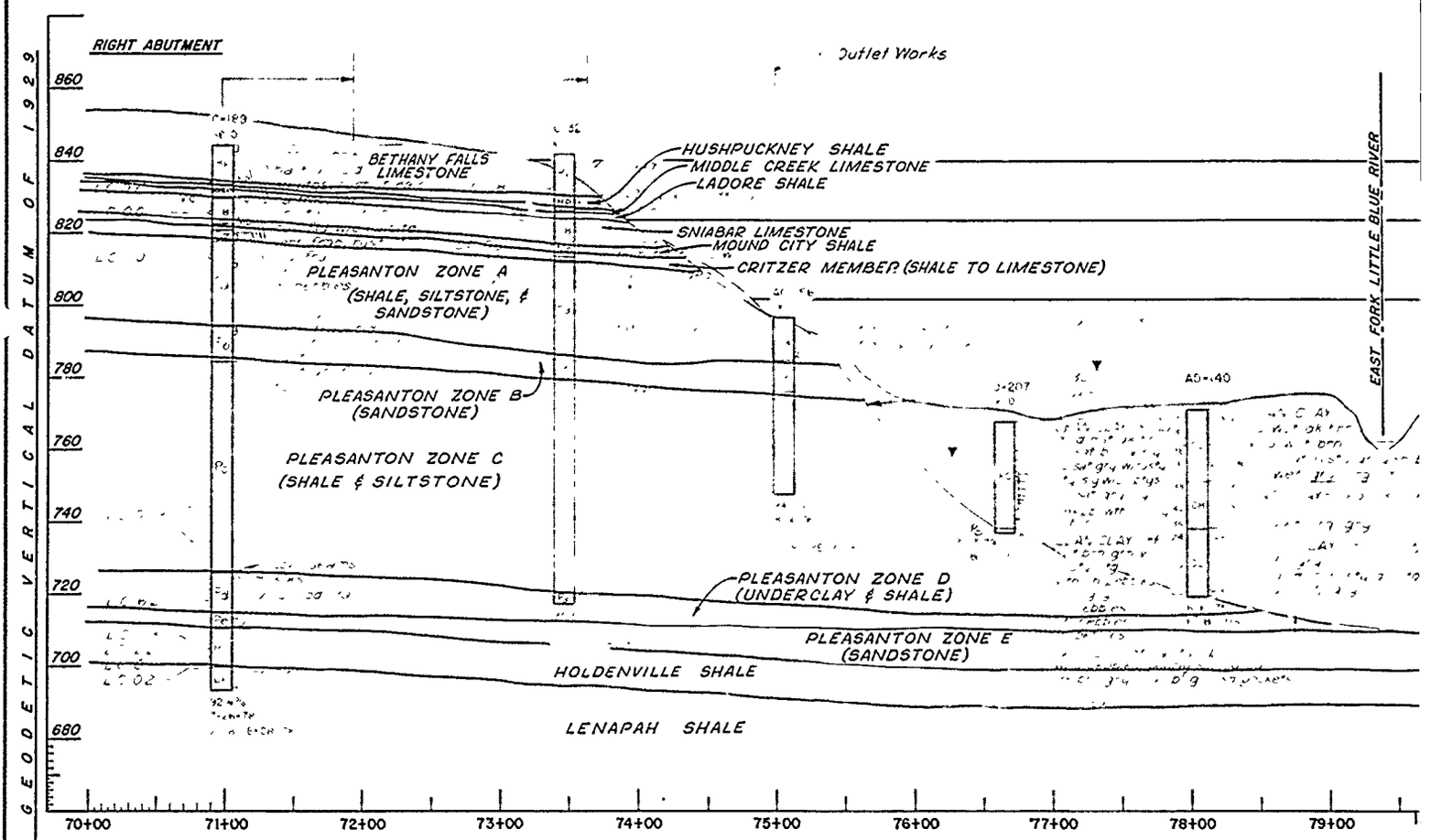
US Army Corps of Engineers

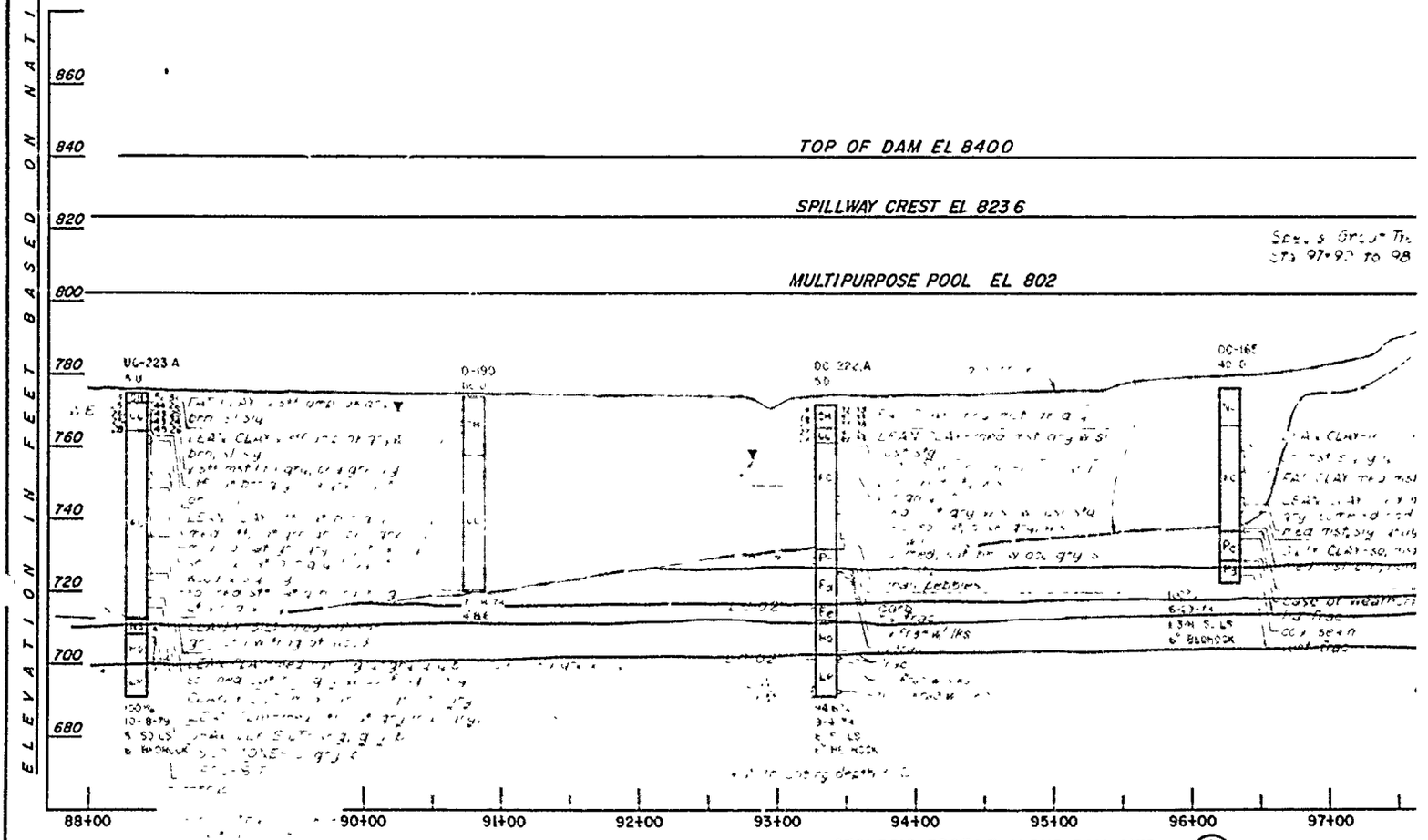
EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

PLAN OF EXPLORATIONS, INSET B, RIGHT ABUTMENT AND OUTLET WORKS

Scale: AS SHOWN
Date: JUNE 1990
Dwg No.:
Sheet number: 29
File No.: RBL-2-1249

PLATE NO. 29

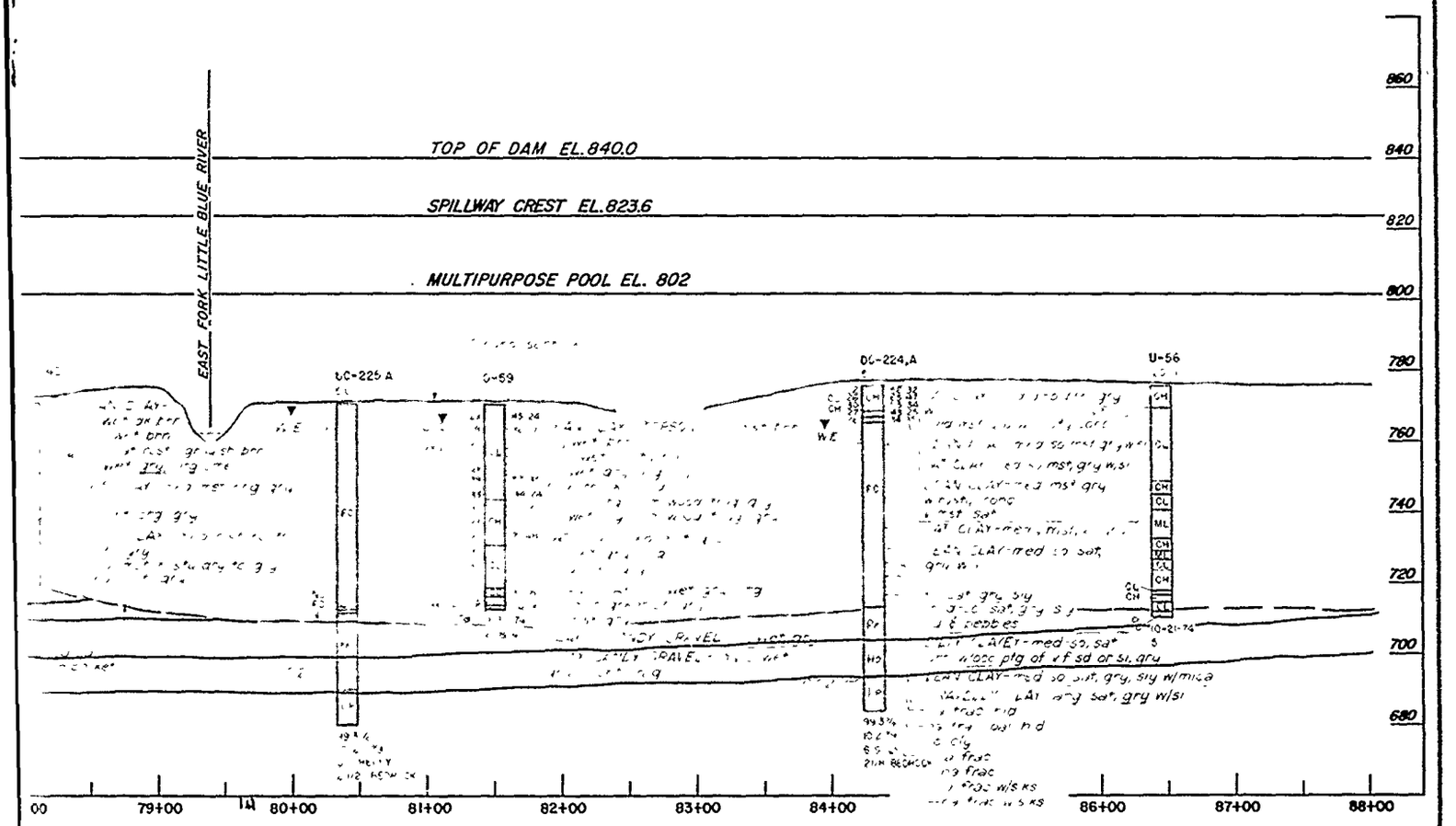


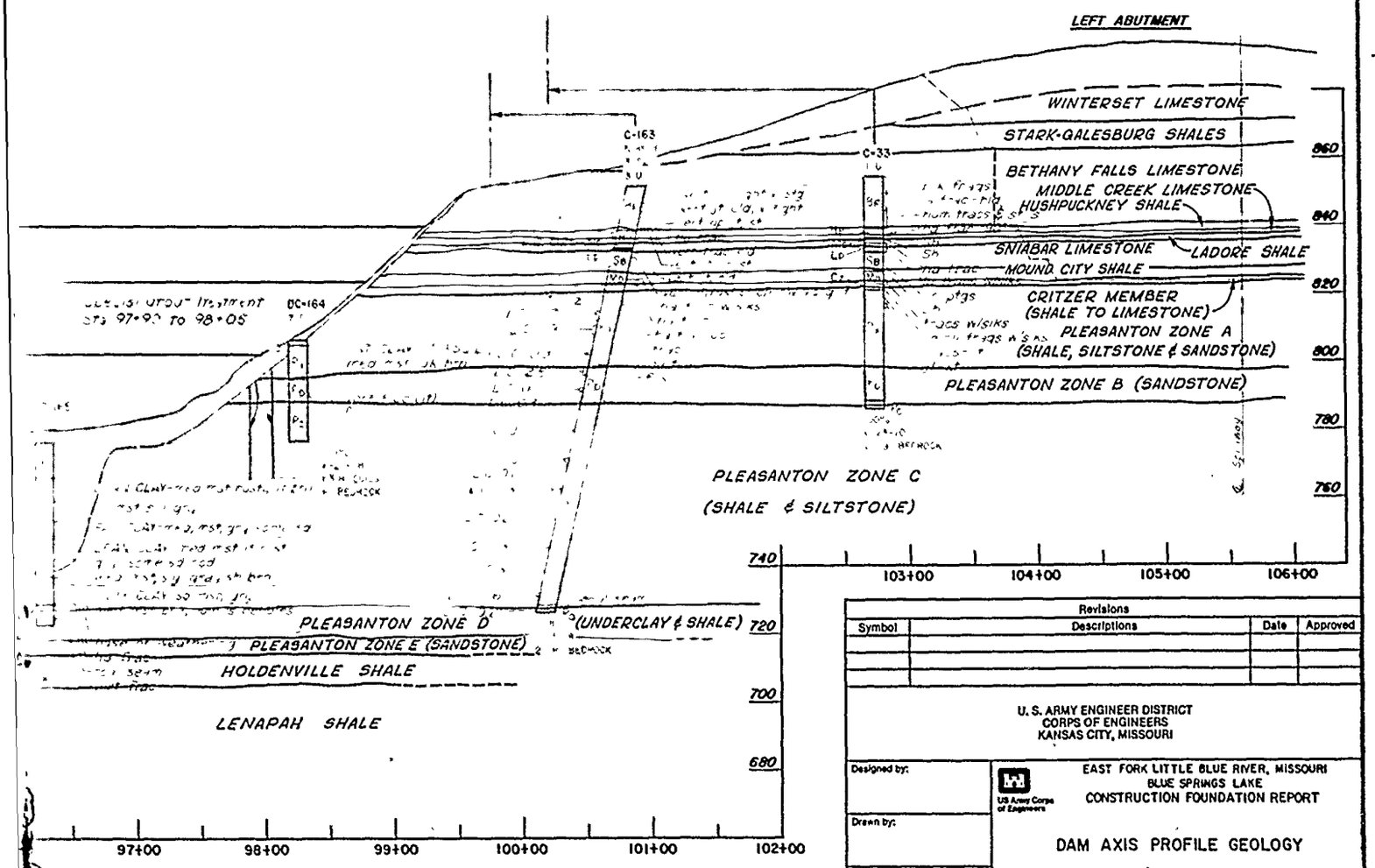


GEOLOGIC PROFILE ALONG DAM AXIS (LOOKING UPSTREAM)

G
E3 E5

VALUE ENGINEERING PAYS





Note:
1 For location of Borings see

Revisions			
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CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

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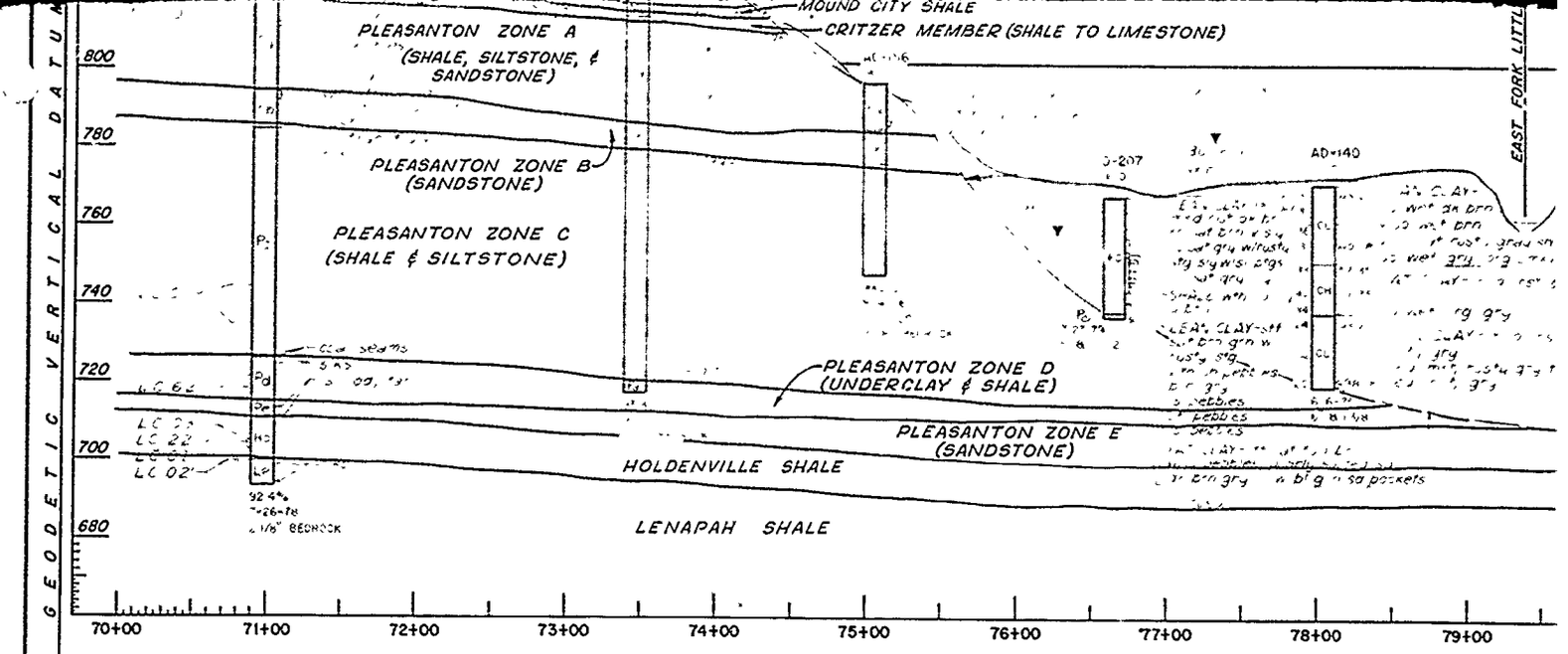
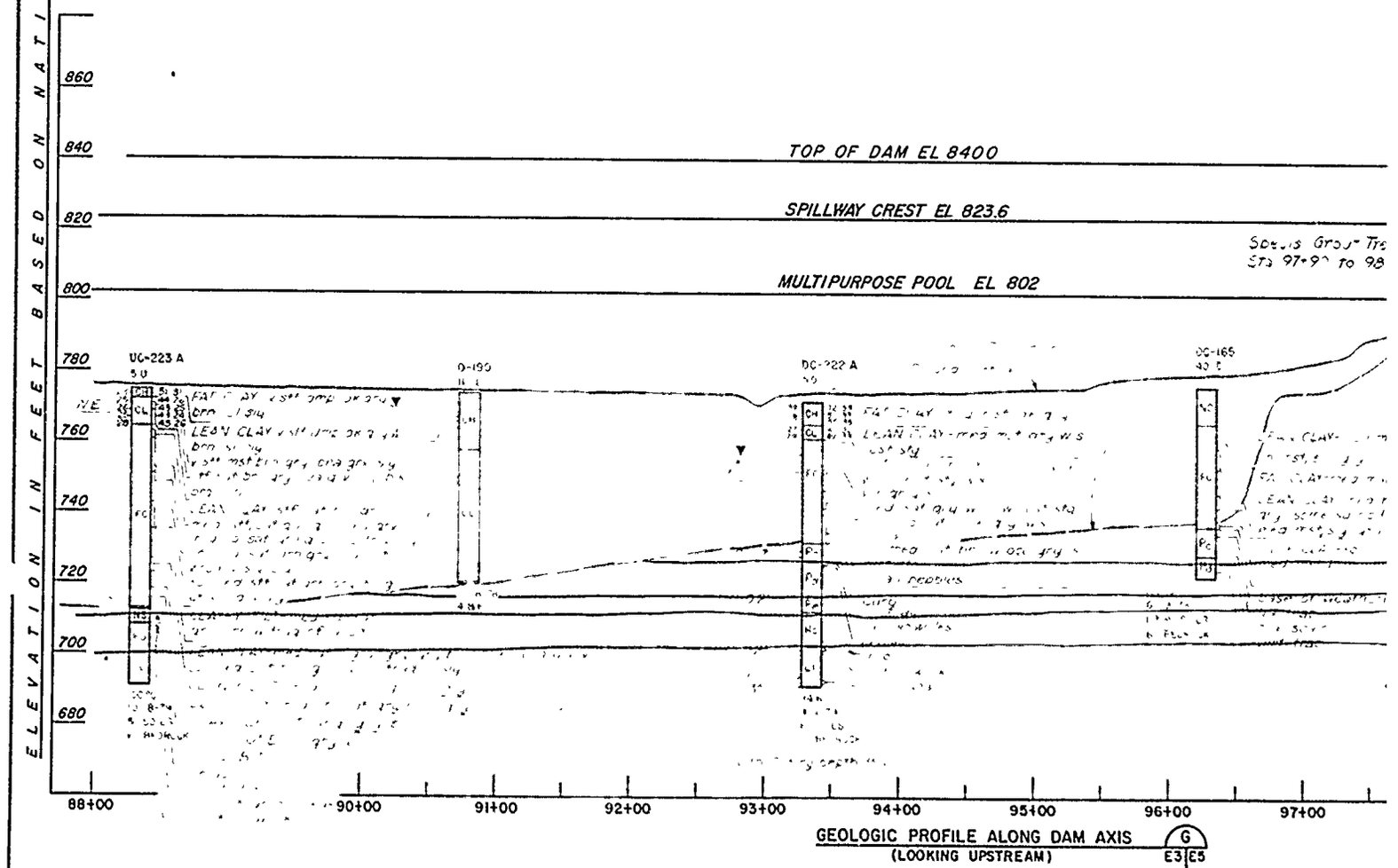
EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

DAM AXIS PROFILE GEOLOGY

Scale: AS SHOWN
Sheet number



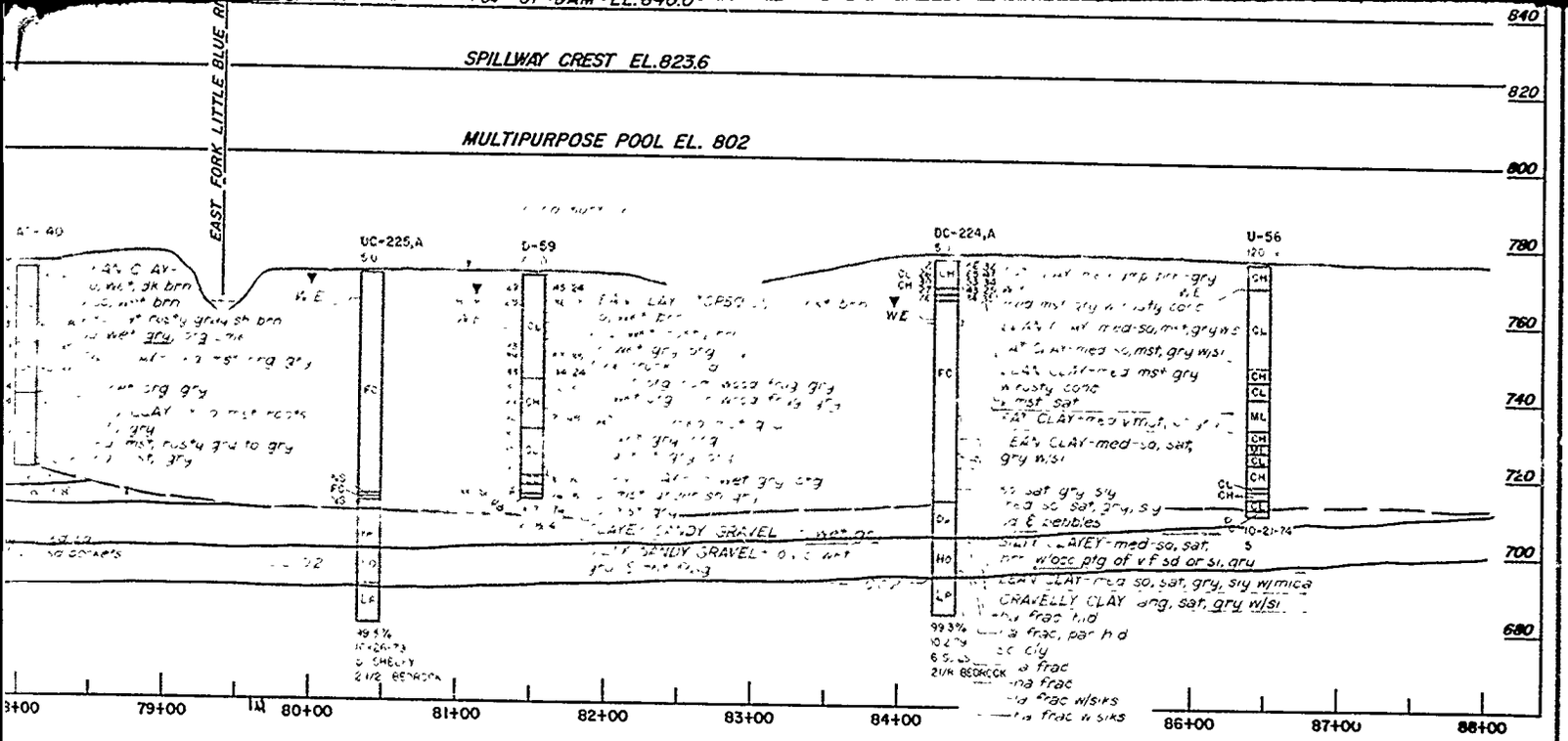


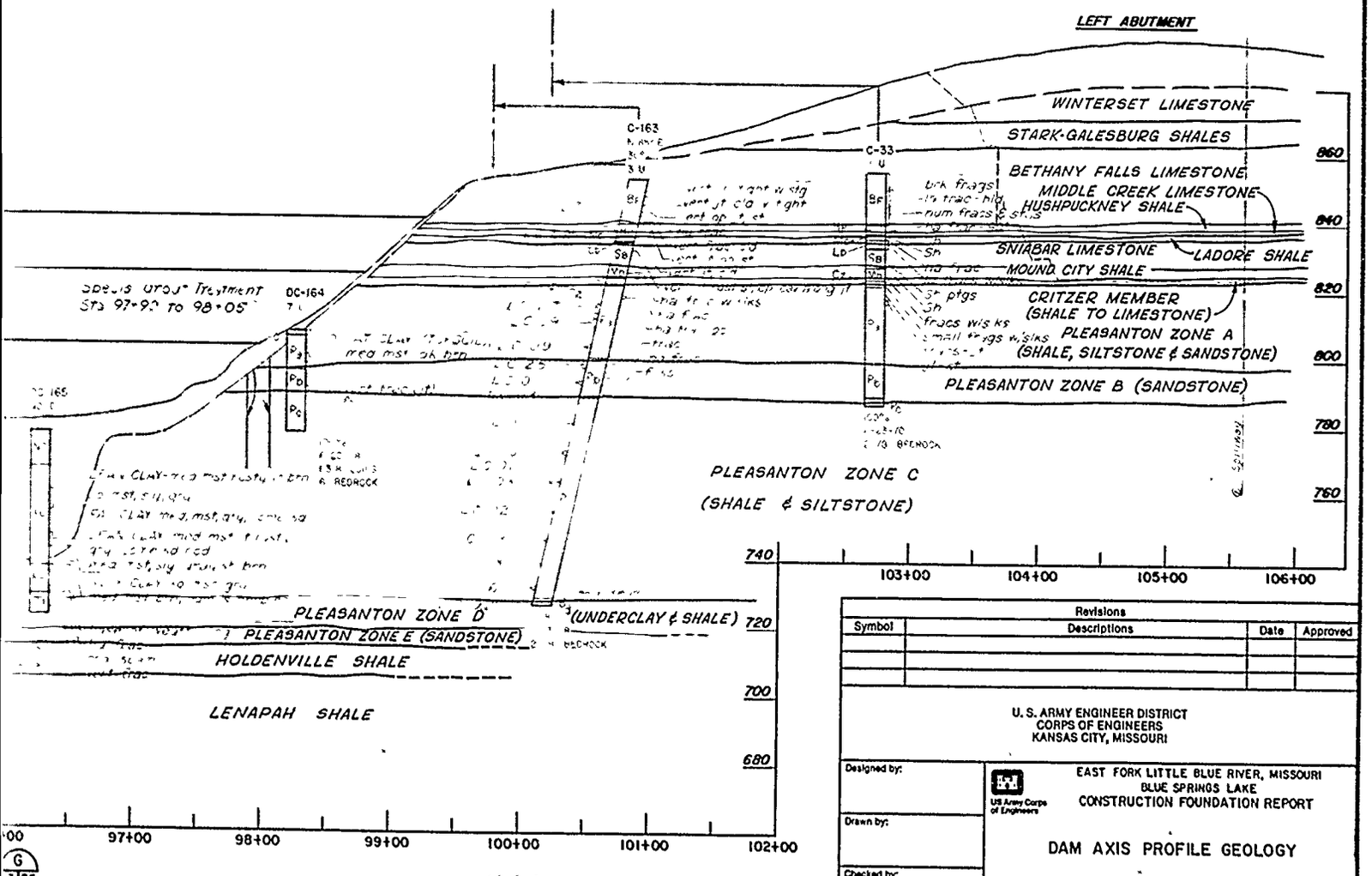
ELEVATION IN FEET BASED ON NATIONAL GEODETIC VERTICAL DATUM

GEOLOGIC PROFILE ALONG DAM AXIS (LOOKING UPSTREAM)

G

E3 | E5





Note:
1. For location of Borings see Dwgs. E2, E3 and E4.
2. For General Geologic Column and Legend see Dwg. E1.

Revisions			
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U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

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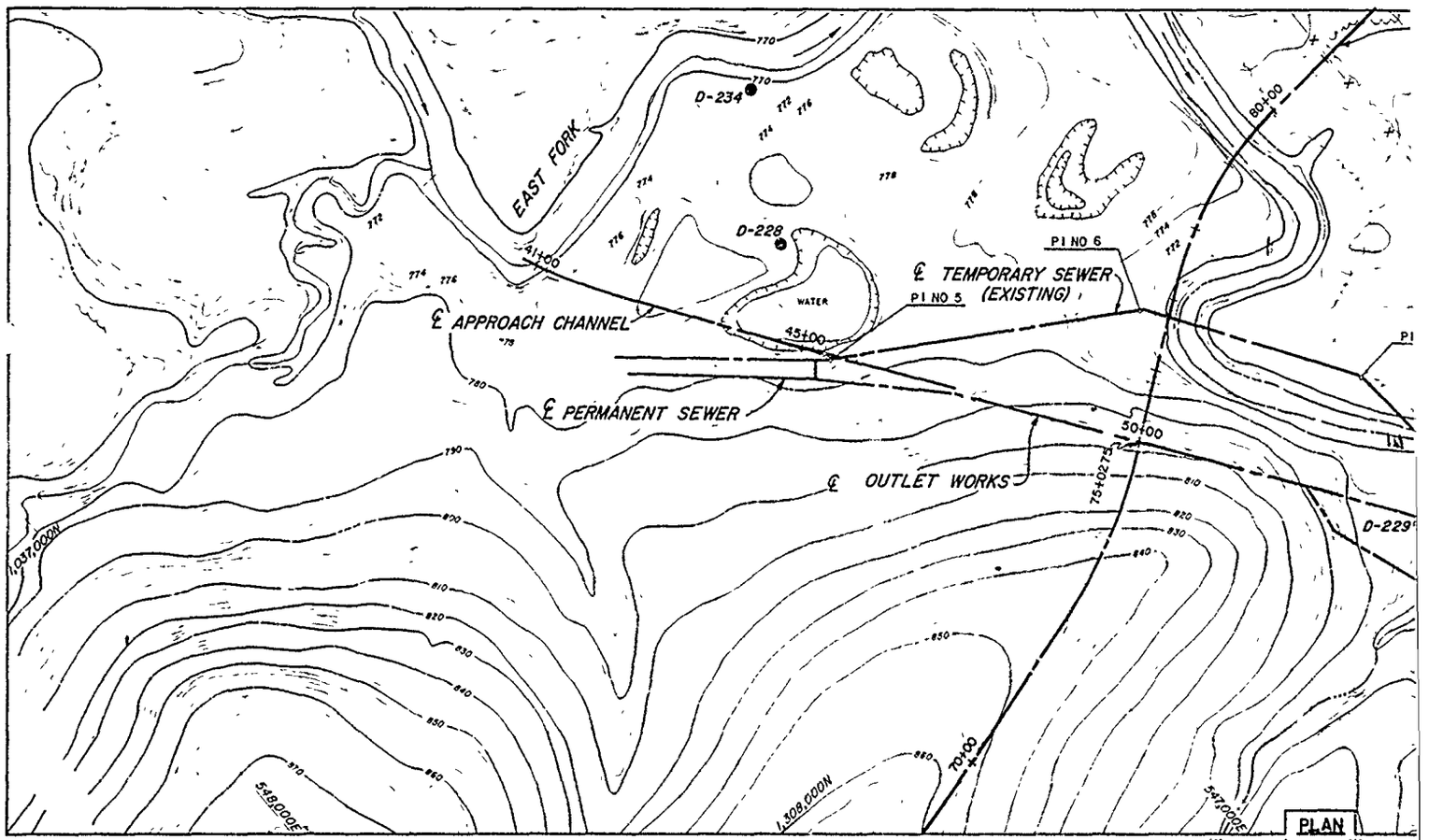
US Army Corps of Engineers

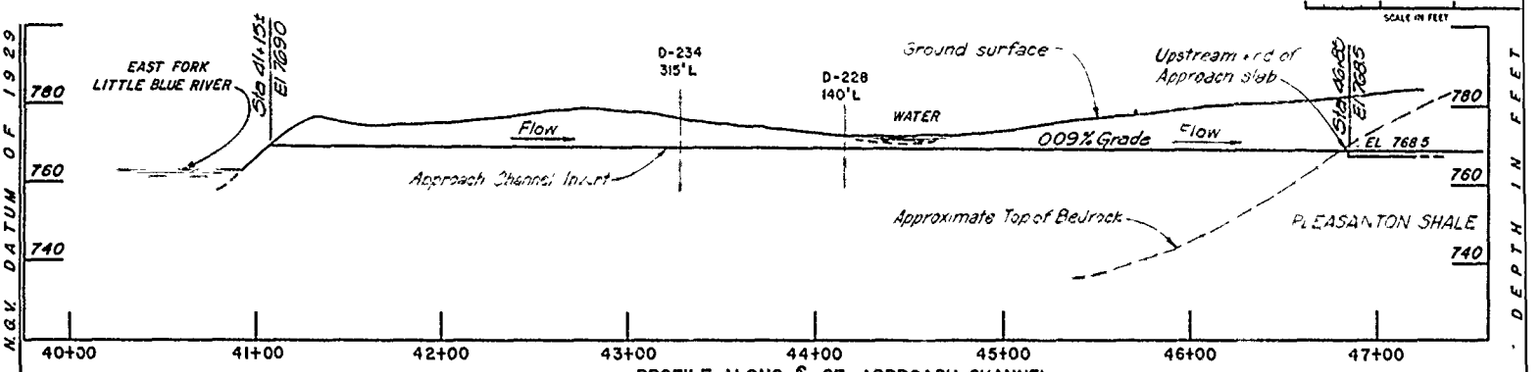
EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

DAM AXIS PROFILE GEOLOGY

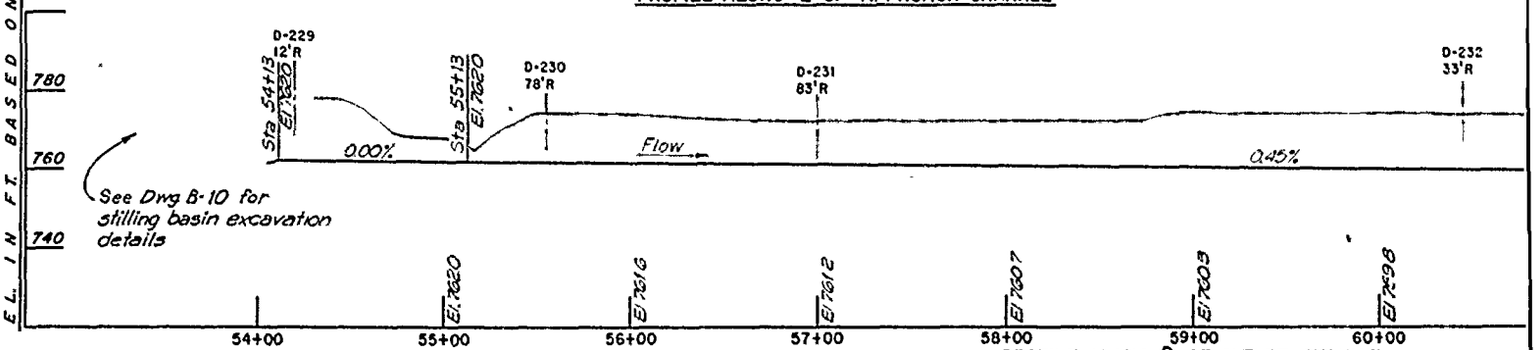
Scale: AS SHOWN	Sheet number: 30	
Date: JUNE 1990		File No.: RBL-2-1250
Dwg. No.:		

PLATE NO. 30

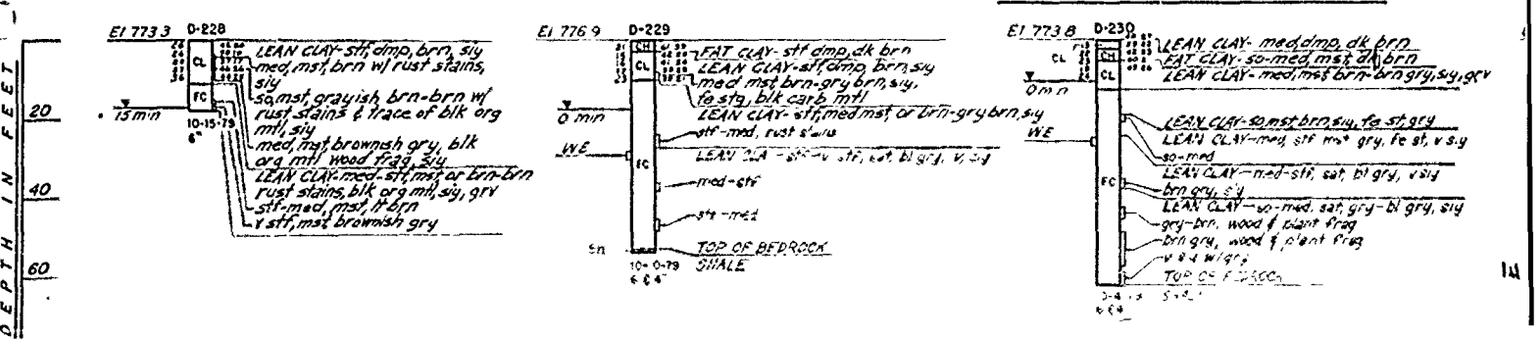




PROFILE ALONG ℄ OF APPROACH CHANNEL



PROFILE ALONG ℄ OF OUTLET CHANNEL



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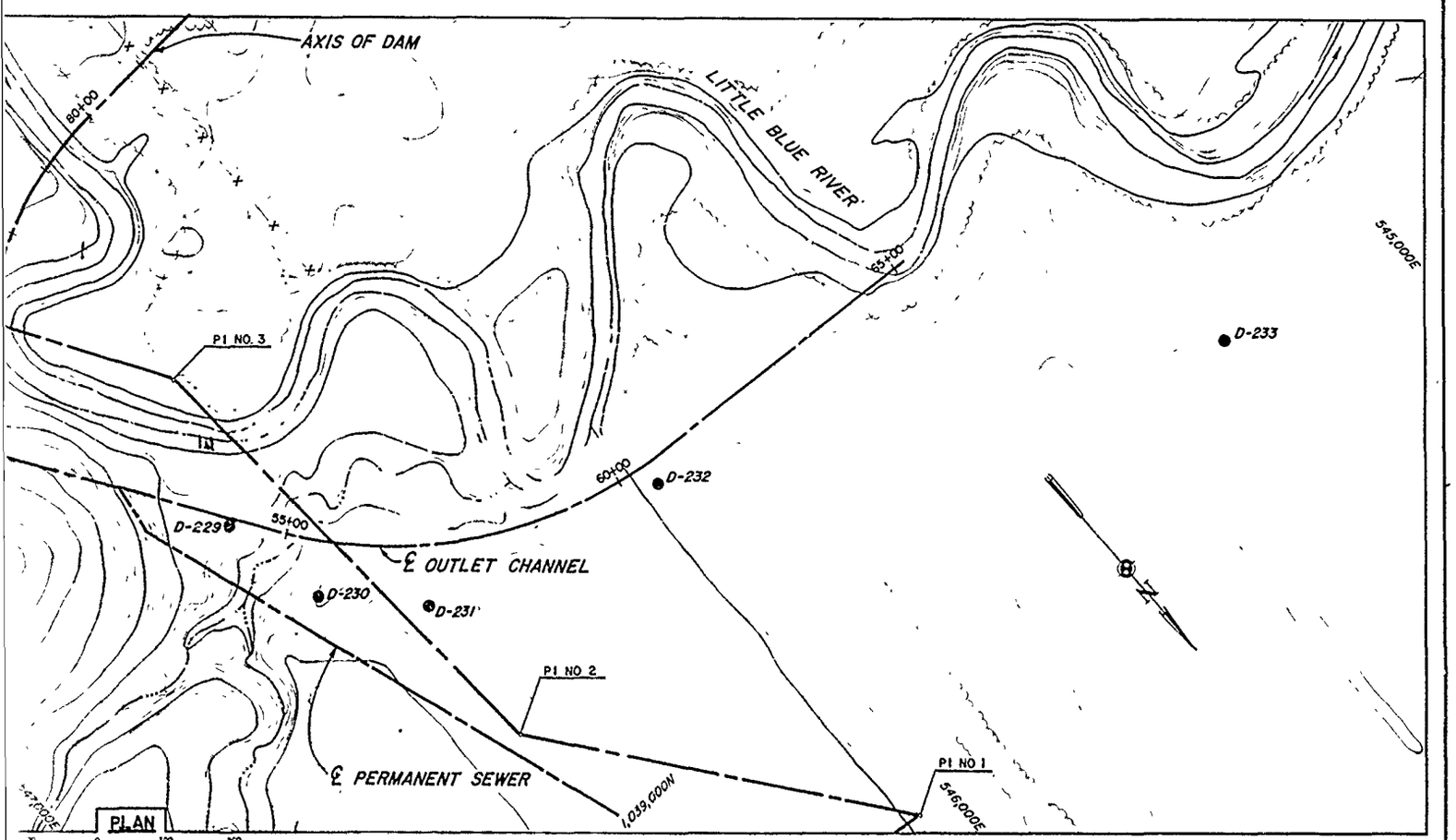
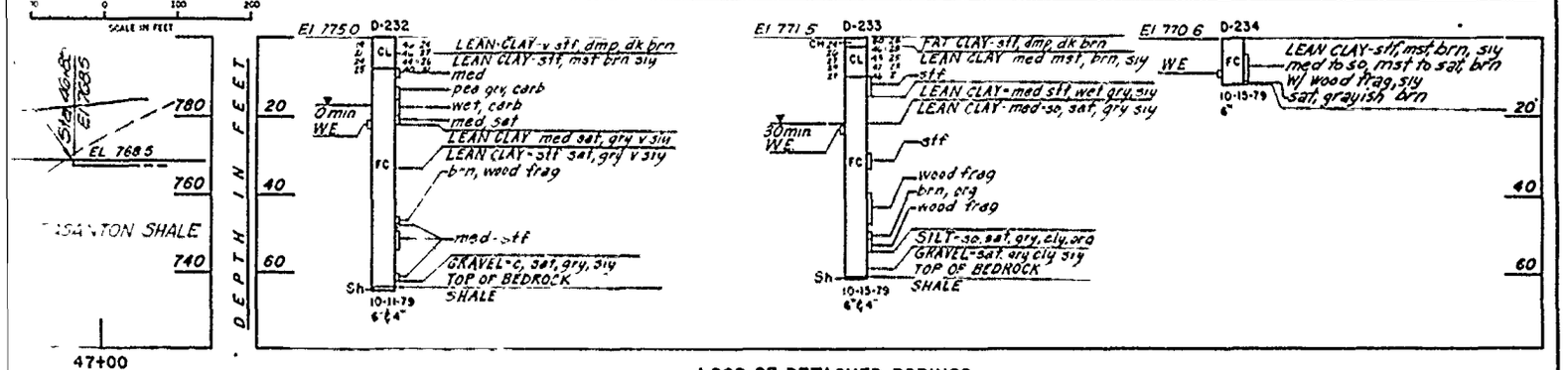
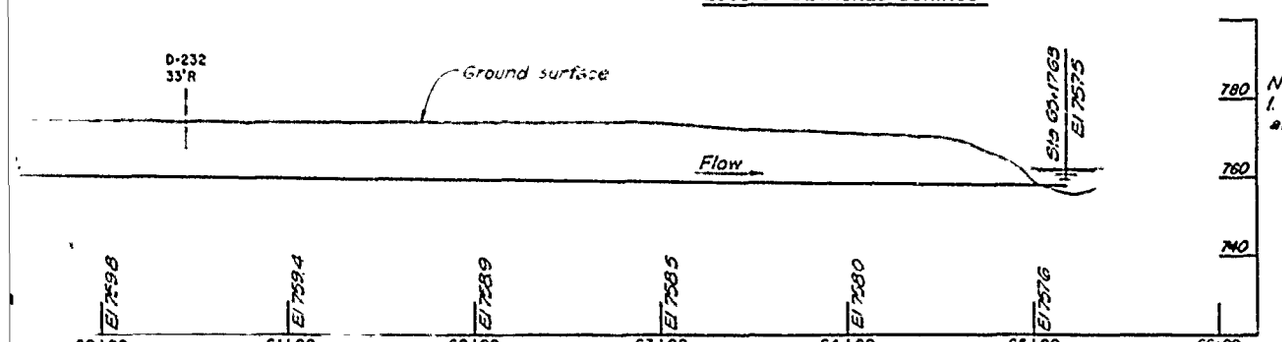


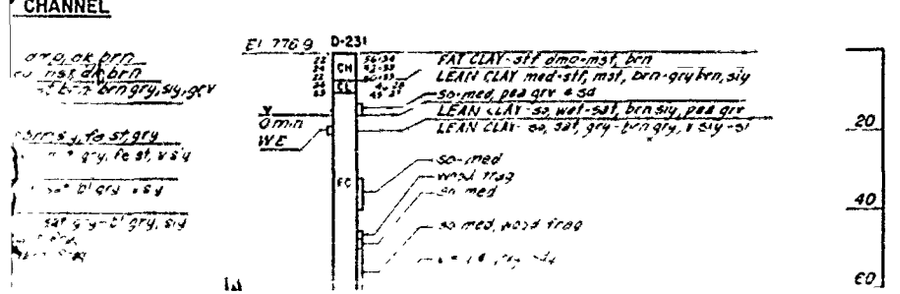


LOGS OF DETACHED BORINGS



NOTE:
1. For General Geologic Column and Legend see Dwg El.

CHANNEL



Revisions			
Symbol	Description	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

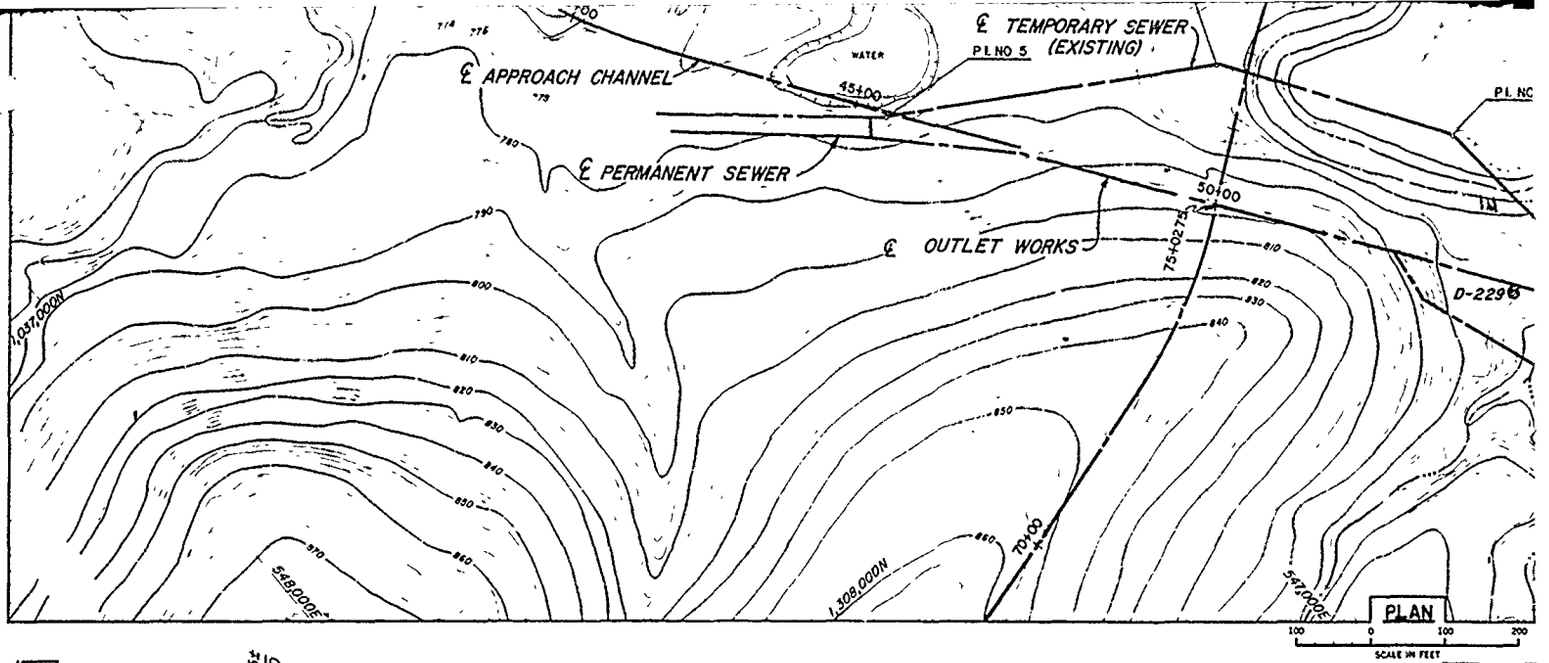
Designed by

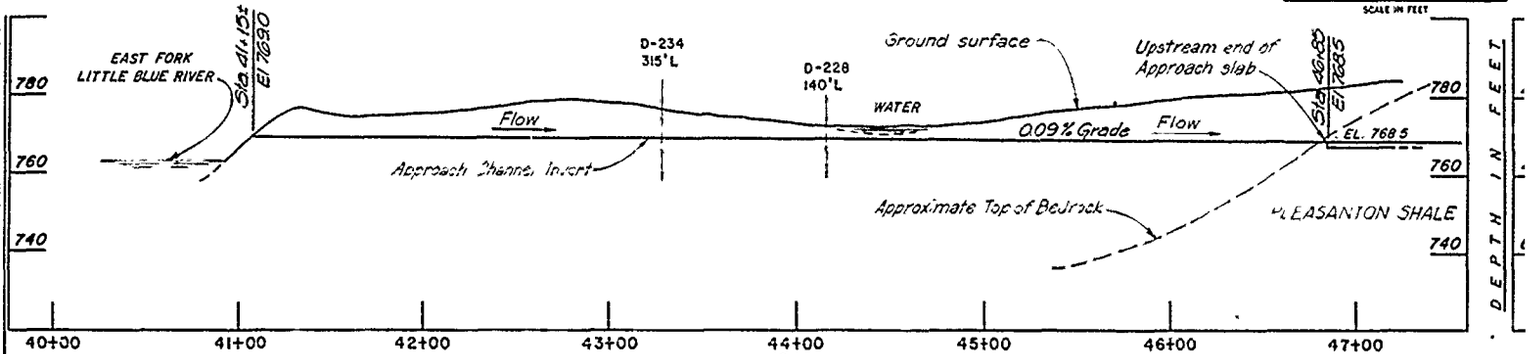
Drawn by

US Army Corps of Engineers

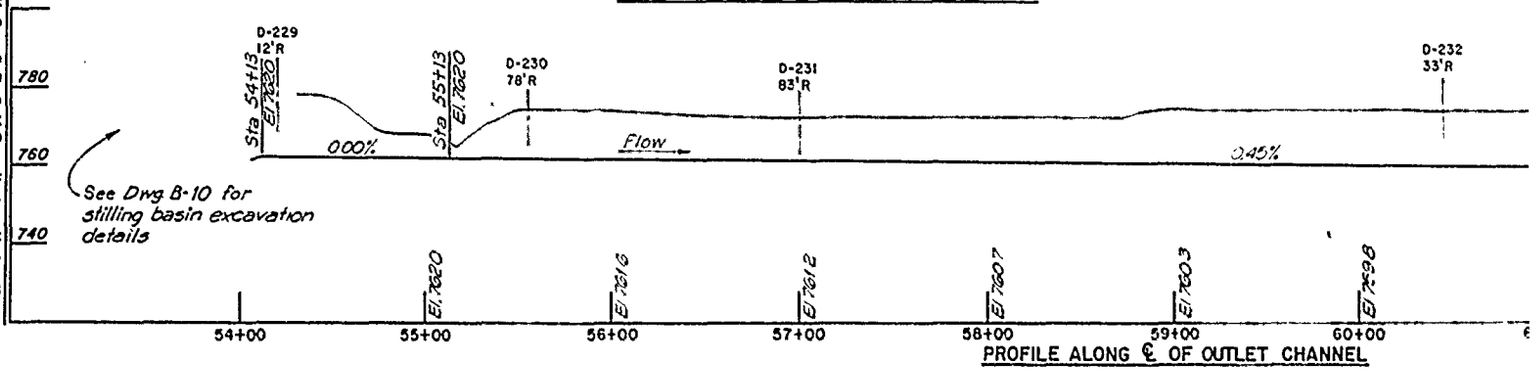
EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

APPROACH AND OUTLET CHANNELS

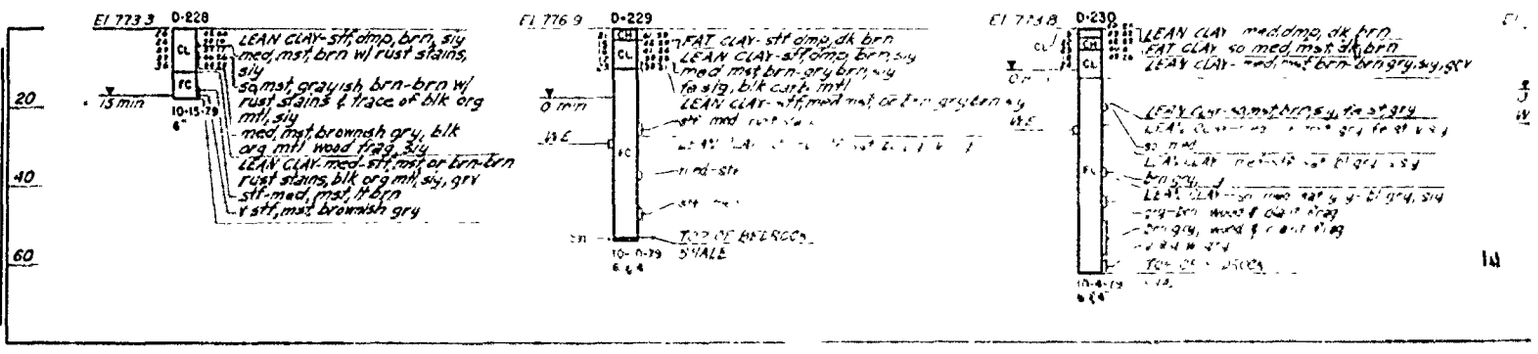




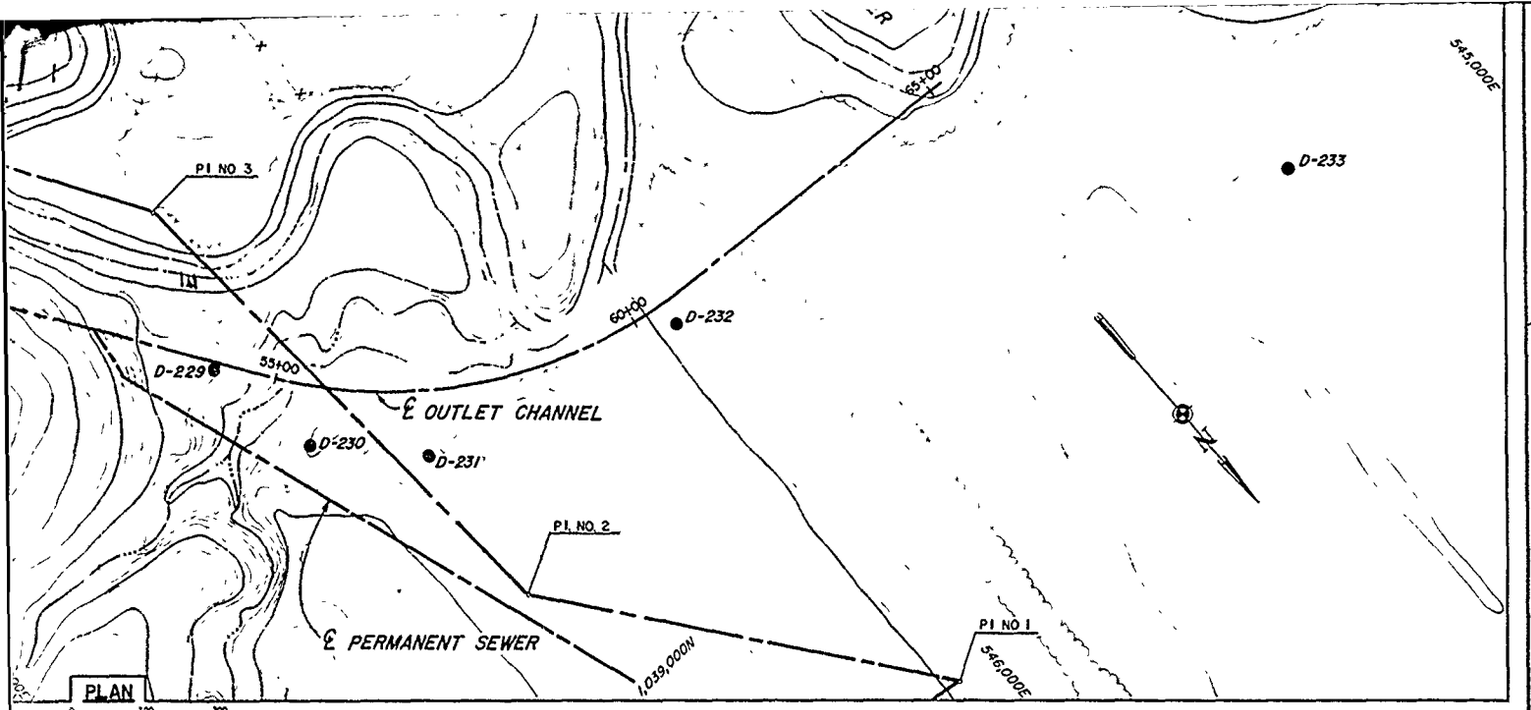
PROFILE ALONG ℄ OF APPROACH CHANNEL

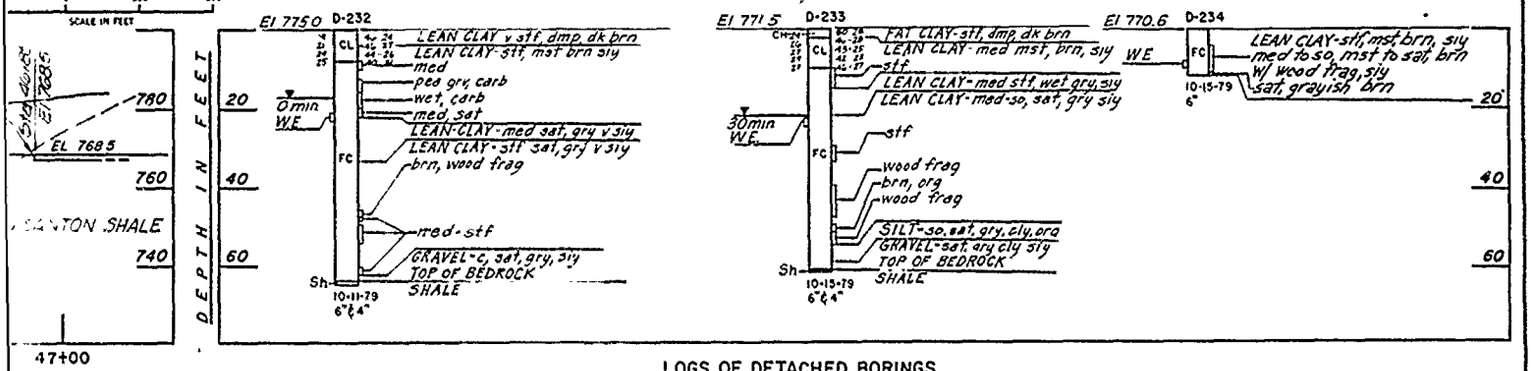


PROFILE ALONG ℄ OF OUTLET CHANNEL

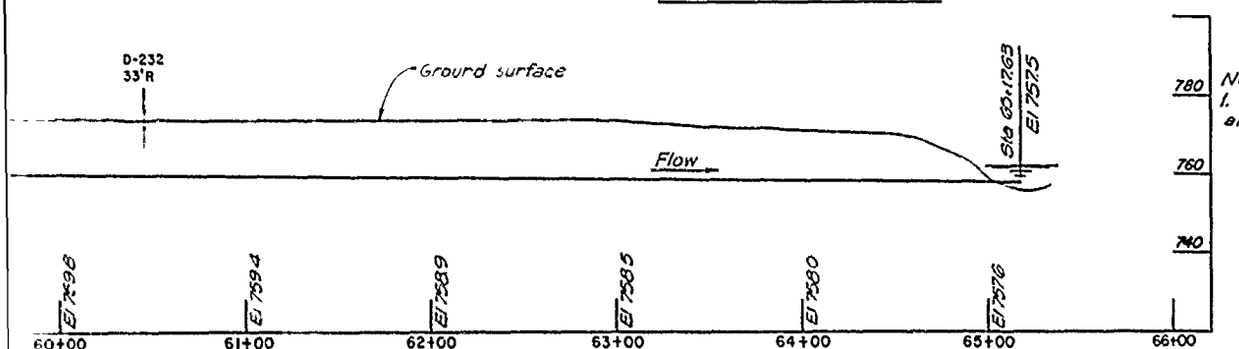


LOGS OF DETACHED BORINGS

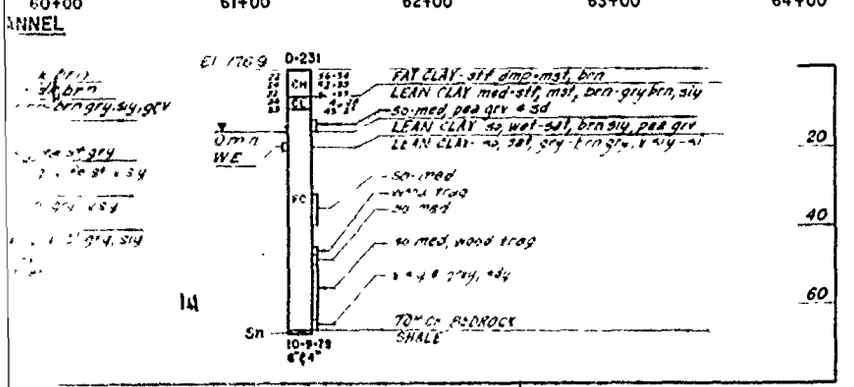




LOGS OF DETACHED BORINGS



NOTE:
1. For General Geologic Column and Legend see Dwg El.



Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by:
Checked by:
Submitted by:

US Army Corps of Engineers

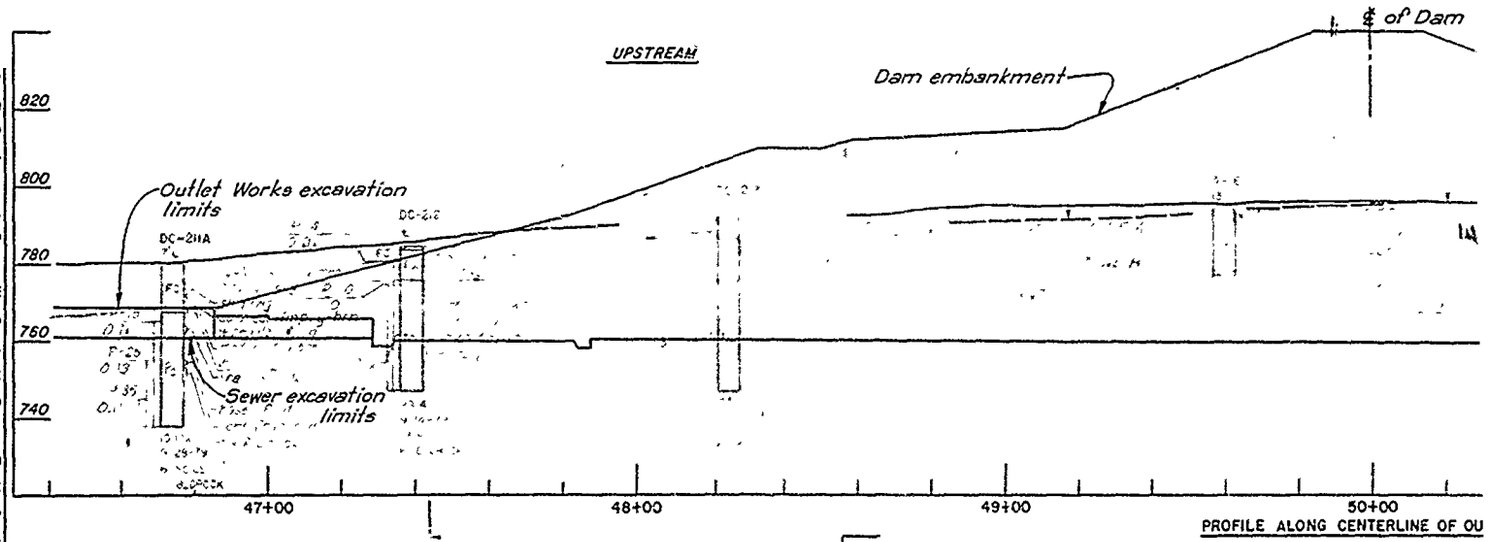
EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

APPROACH AND OUTLET CHANNELS PLAN AND PROFILES AND LOGS OF DETAILED BORINGS

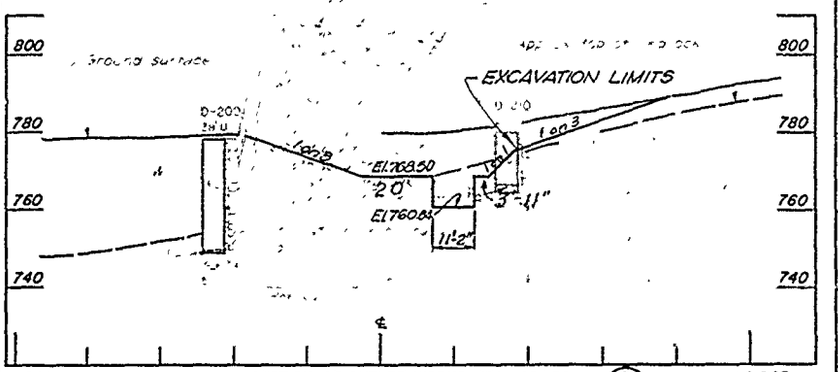
Scale: AS SHOWN
Date: JUNE 1990
Dwg. No.:
Sheet number: 31
File No. RBL-2-1251

PLATE NO. 31

ELEVATION IN FEET BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929



PROFILE ALONG CENTERLINE OF OU



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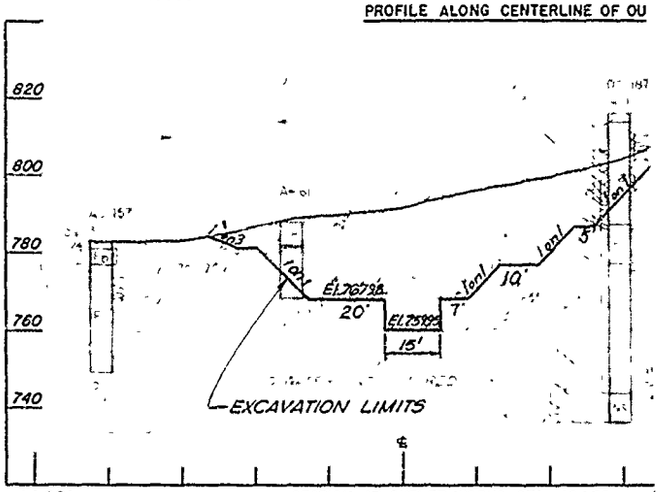

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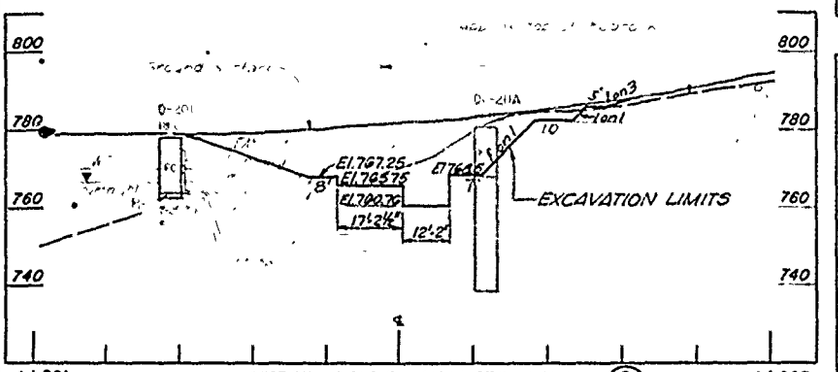
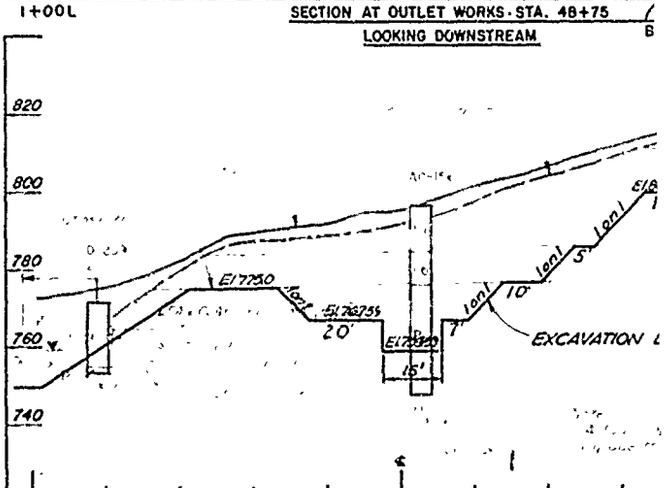
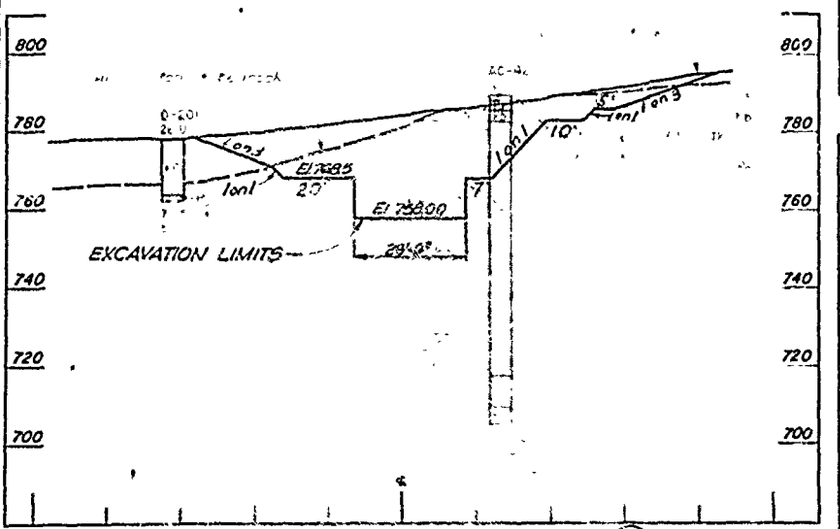


1+00L — SECTION AT OUTLET WORKS STA. 46+88 (C) LOOKING DOWNSTREAM — 1+00R



1+00L — SECTION AT OUTLET WORKS STA. 50+00 (•DAM STA. 75+ — LOOKING DOWNSTREAM



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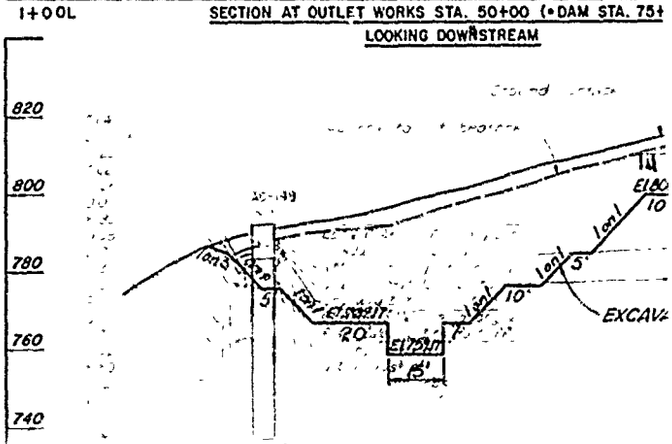

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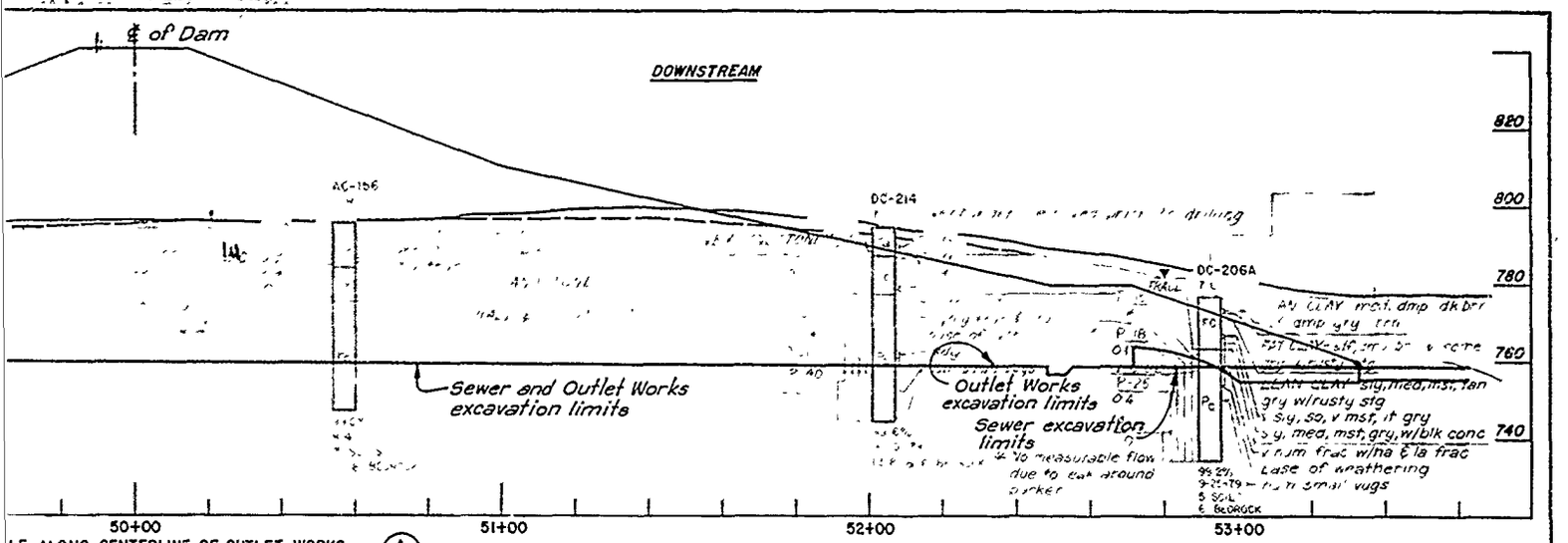
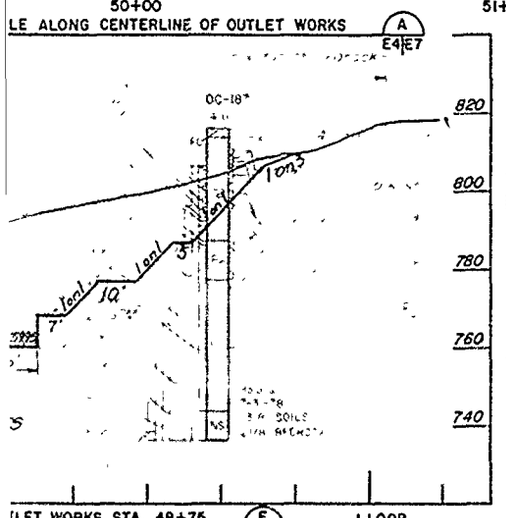
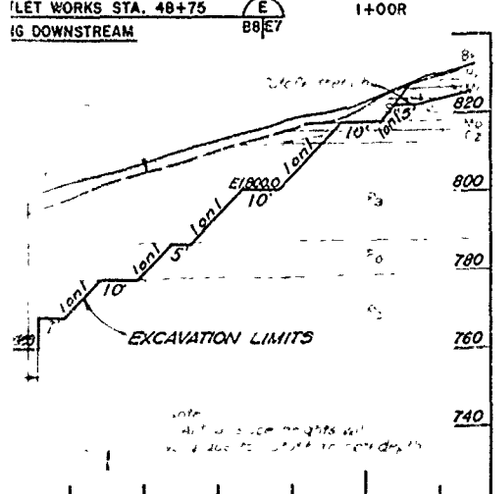
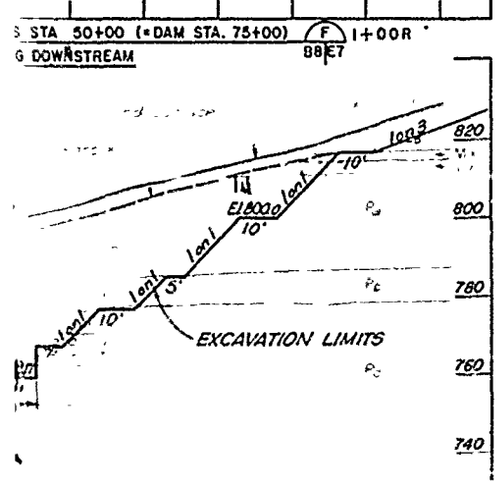
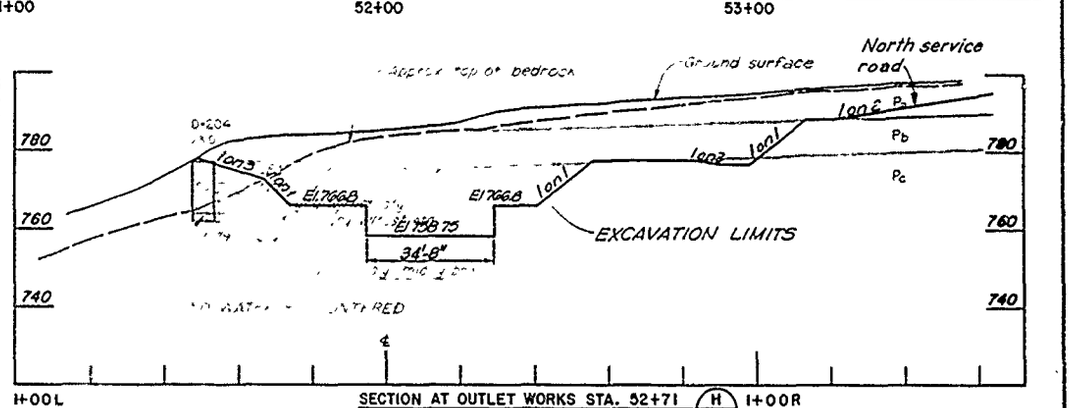
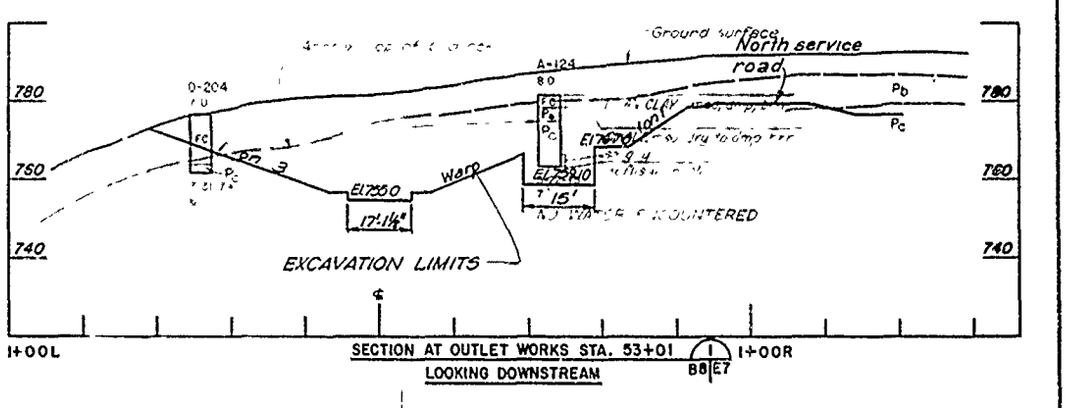


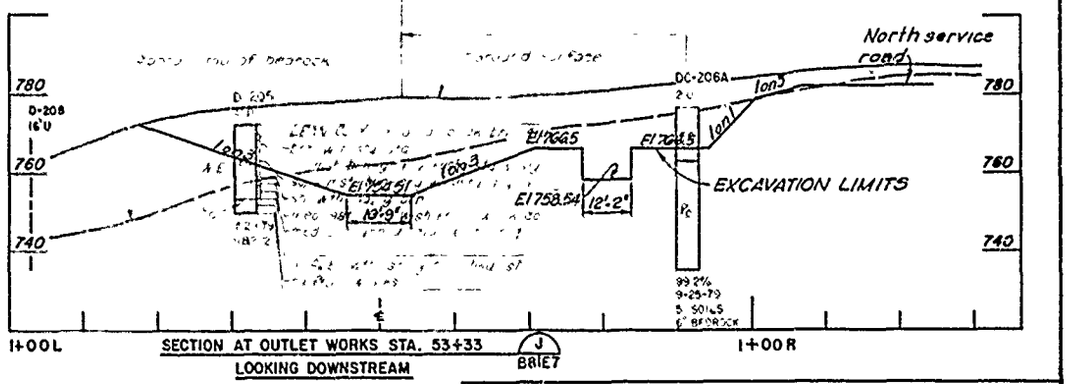












NOTES:
1. For location of Profile, Sections and Borings, see Dwg. No. E4
2. For General Geologic Column and Legend see Dwg. No. E1.
3. For Logs of Detached Borings see Dwgs. E13 thru E18.

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:

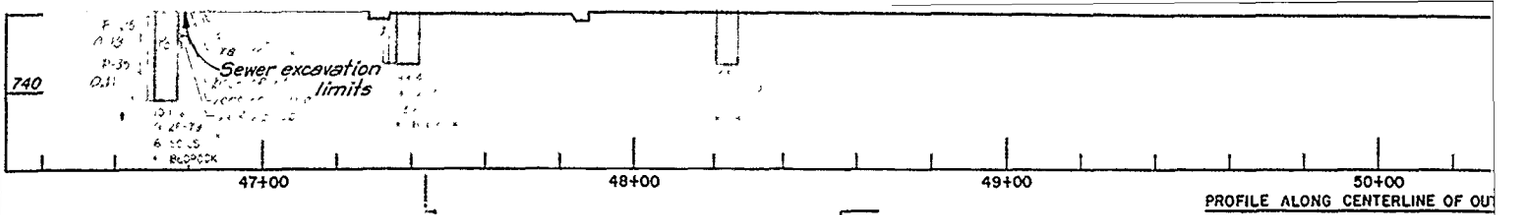
Drawn by:

US Army Corps of Engineers

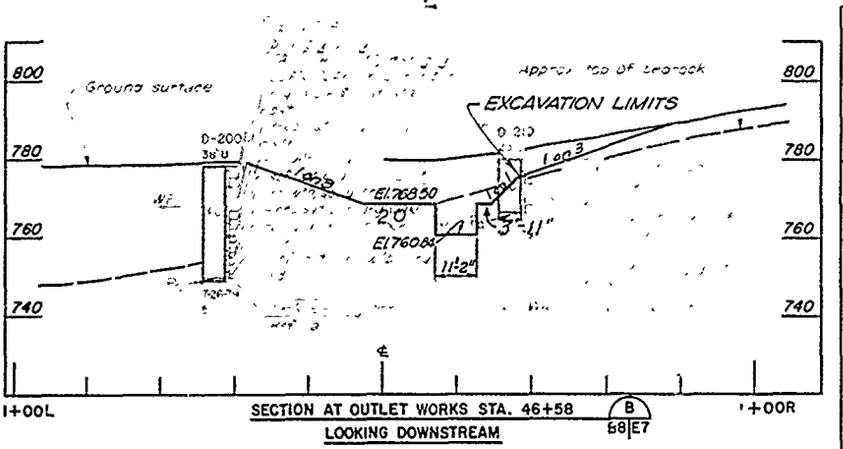
EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

OUTLET WORKS GEOLOGIC PROFILES AND SECTIONS AND EXCAVATION LIMITS

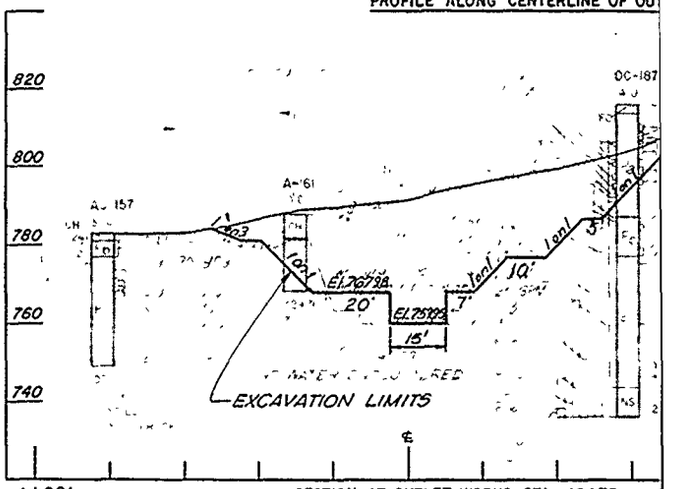
ELEVATION IN FEET BASED ON NATIONAL GEODETIC VERTICAL DAT



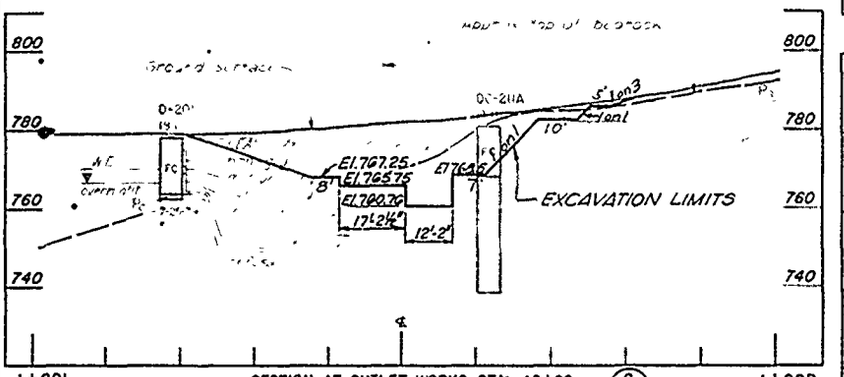
PROFILE ALONG CENTERLINE OF OU



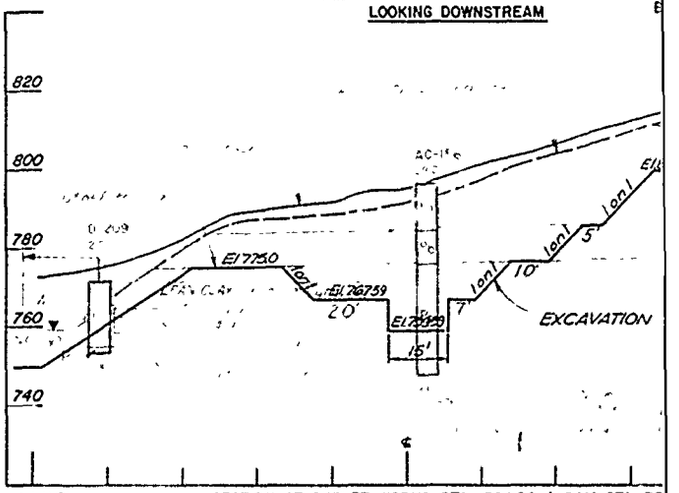
SECTION AT OUTLET WORKS STA. 46+58 (B | B8|E7)
LOOKING DOWNSTREAM



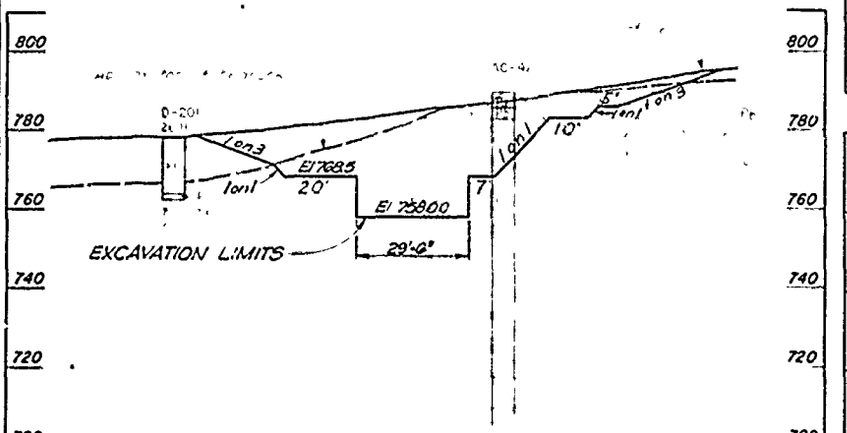
SECTION AT OUTLET WORKS STA. 48+75
LOOKING DOWNSTREAM



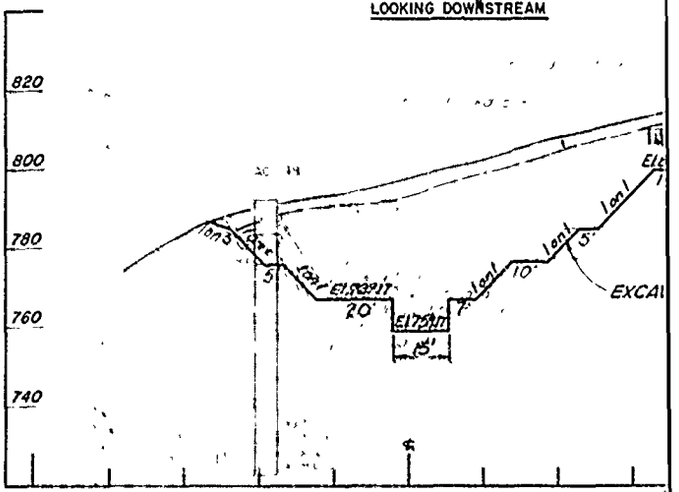
SECTION AT OUTLET WORKS STA. 46+88 (C | B8|E7)
LOOKING DOWNSTREAM



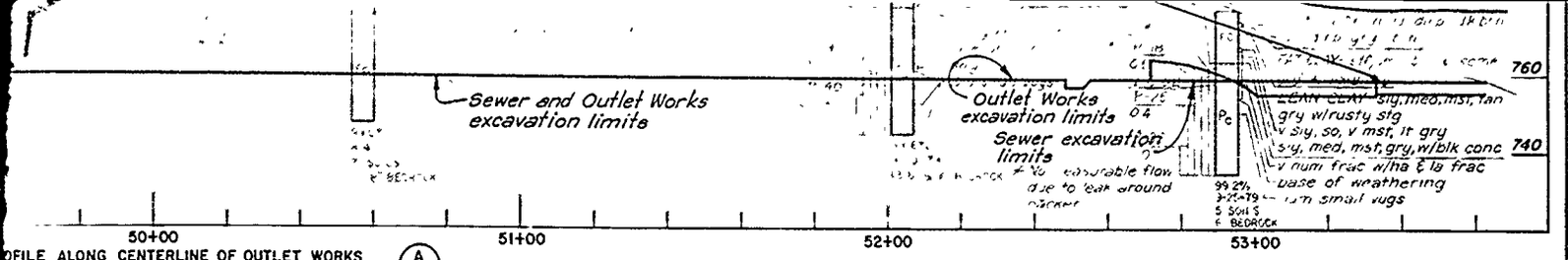
SECTION AT OUTLET WORKS STA 50+00 (=DAM STA. 75
LOOKING DOWNSTREAM



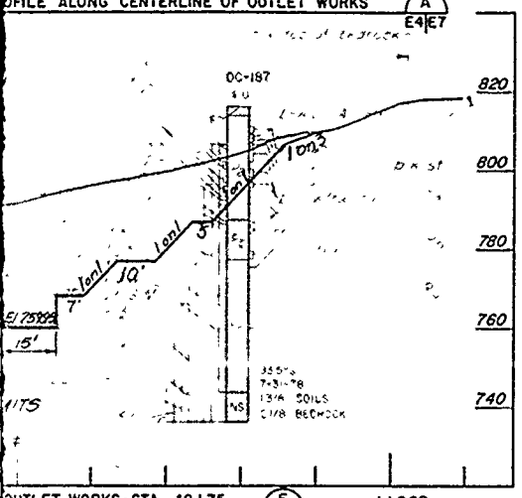
SECTION AT OUTLET WORKS STA. 47+32 (D | B8|E7)
LOOKING DOWNSTREAM



SECTION AT OUTLET WORKS STA. 51+35
LOOKING DOWNSTREAM

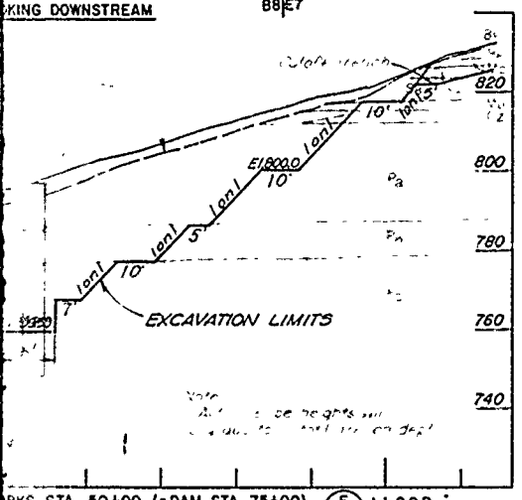


OFILE ALONG CENTERLINE OF OUTLET WORKS (A) E4|E7



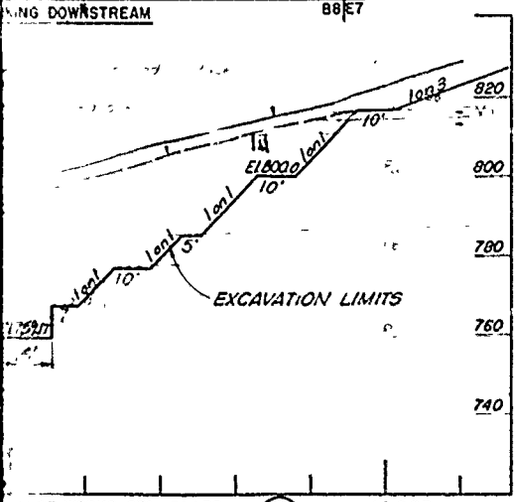
OUTLET WORKS-STA. 48+75 (E) 88|E7 1+00R

KING DOWNSTREAM



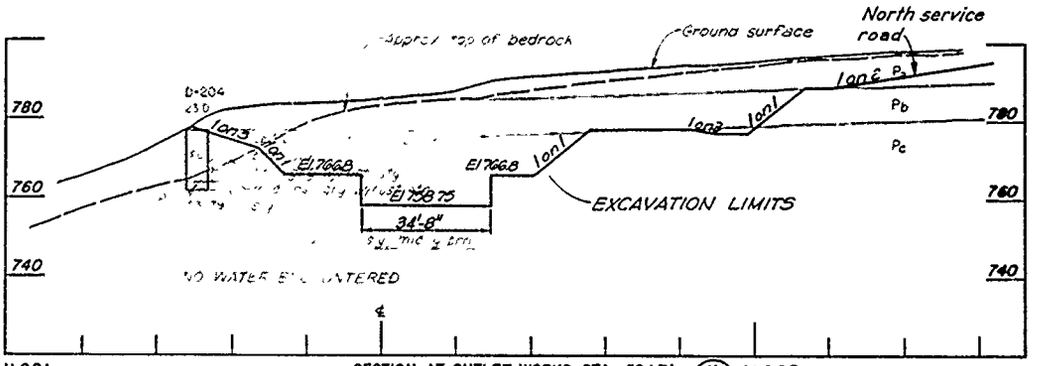
RKS STA. 50+00 (=DAM STA. 75+00) (F) 88|E7 1+00R

NG DOWNSTREAM



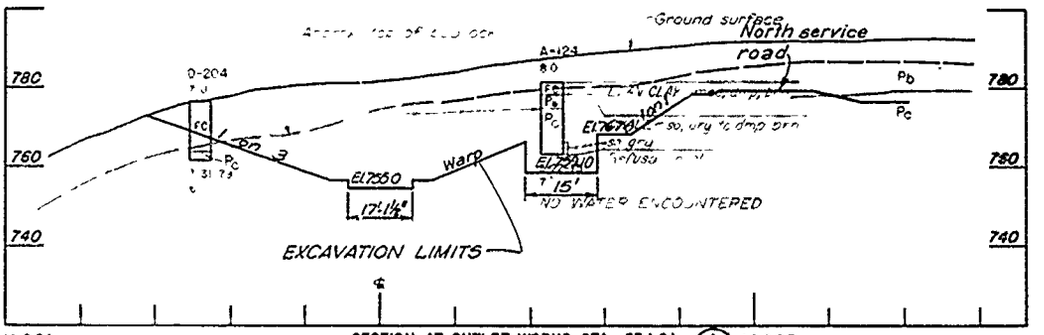
LET WORKS STA. 51+35 (G) 88|E7 1+00R

G DOWNSTREAM



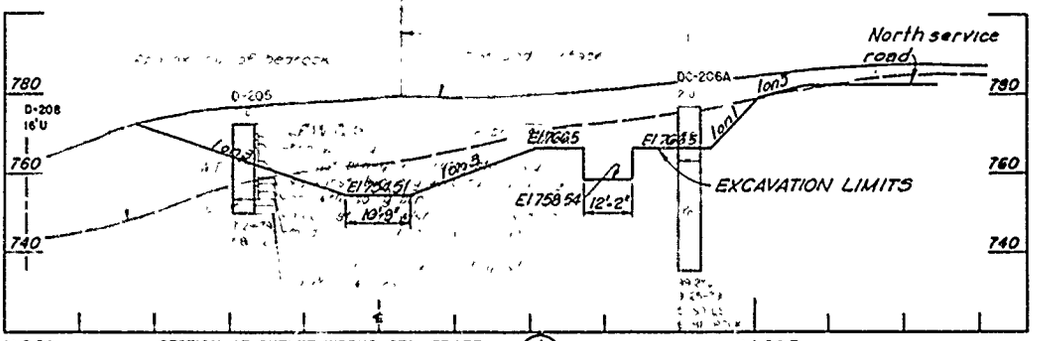
SECTION AT OUTLET WORKS STA. 52+71 (H) 88|E7

LOOKING DOWNSTREAM



SECTION AT OUTLET WORKS STA. 53+01 (I) 88|E7

LOOKING DOWNSTREAM



SECTION AT OUTLET WORKS STA. 53+33 (J) 88|E7

LOOKING DOWNSTREAM

NOTES:
1. For location of Profile, Sections and Borings, see Dwg No. E4
2. For General Geologic Column and Legend see Dwg. No. E1.
3. For Logs of Detached Borings see Dwgs. E13 thru E18.

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by:
Checked by:
Submitted by:

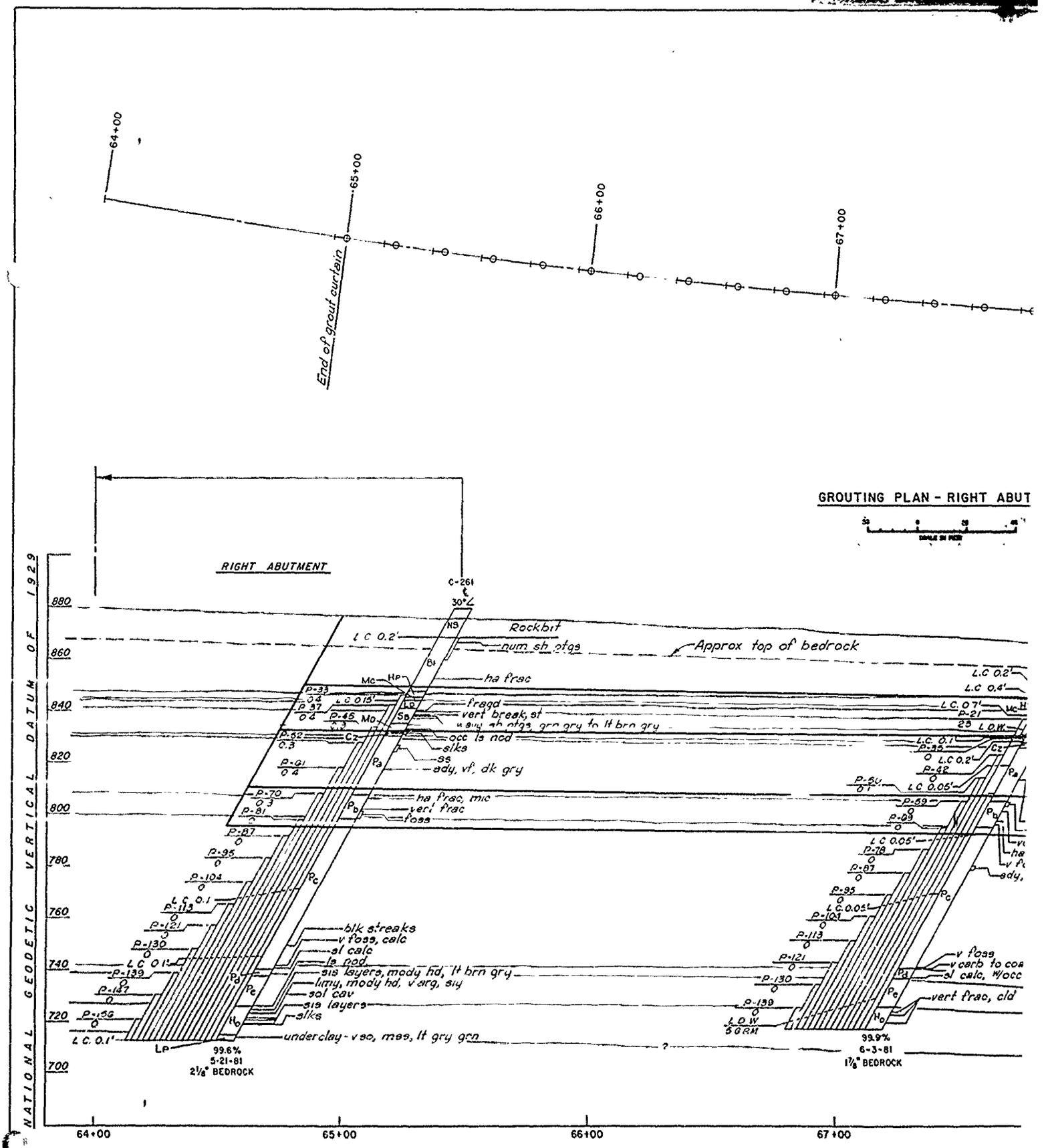
US Army Corps of Engineers

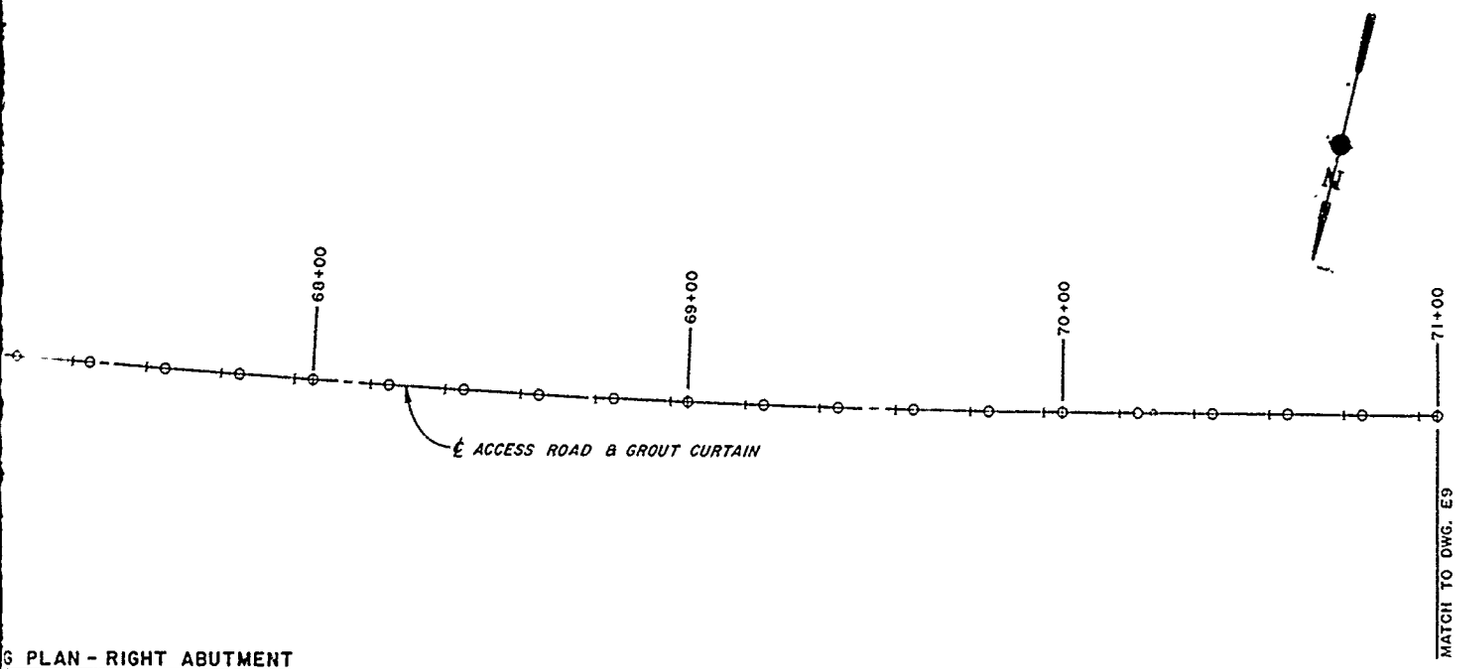
EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

OUTLET WORKS GEOLOGIC PROFILES AND SECTIONS AND EXCAVATION LIMITS

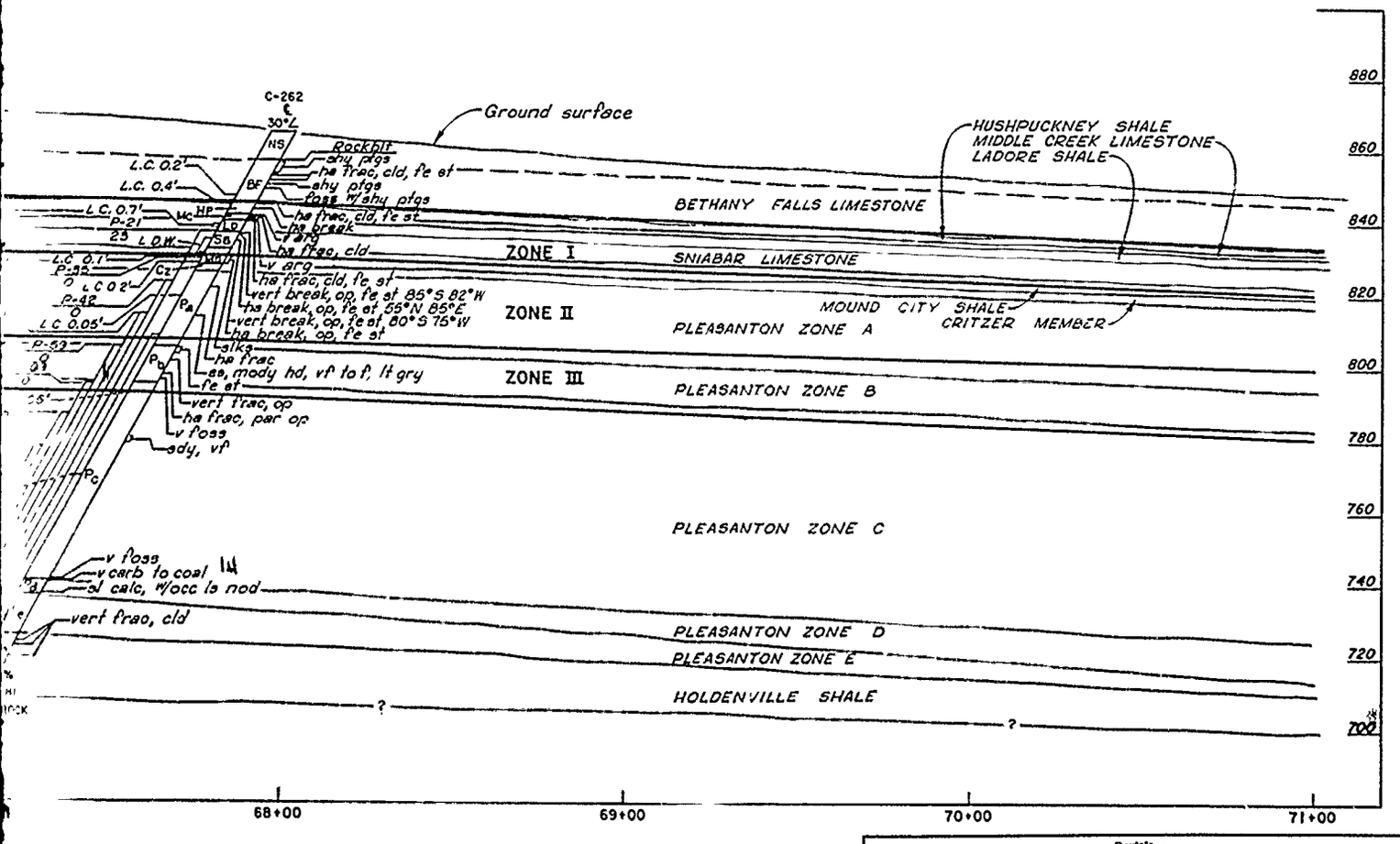
Scale: AS SHOWN
Date: JUNE 1990
Dwg. No.:
Sheet number: 32
File No: RBL-2-1252

PLATE NO. 32


64+00
65+00
66+00
67+00
End of grout curtain
GROUTING PLAN - RIGHT ABUT
RIGHT ABUTMENT
C-261
30°∠
NATIONAL GEODETIC VERTICAL DATUM OF 1929
880
860
840
820
800
780
760
740
720
700
Rockbit
num sh otgs
Approx top of bedrock
L C 0.2'
ha frac
fragd
vert break, st
occ ls nod
slks
ss
sdy, vf, dk gry
ha frac, mic
vert frac
foss
blk streaks
v foss, calc
sl calc
ls nod
sls layers, mody hd, lt brn gry
limy, mody hd, v arg, sly
sol cav
sls layers
slks
underclay - v sc, mas, lt gry grn
99.6%
5-21-81
2⅛" BEDROCK
99.9%
6-3-81
1⅞" BEDROCK
64+00
65+00
66+00
67+00
GROUTING PROFILE - RIGHT



G PLAN - RIGHT ABUTMENT



PROFILE - RIGHT ABUTMENT

Notes
1. For general geologic column see Dwg. E1.
2. For location of borings see Dwg. E2.
3. Only primary grout holes are shown on plan.
4. Borings C-261 & C-262 are drilled

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

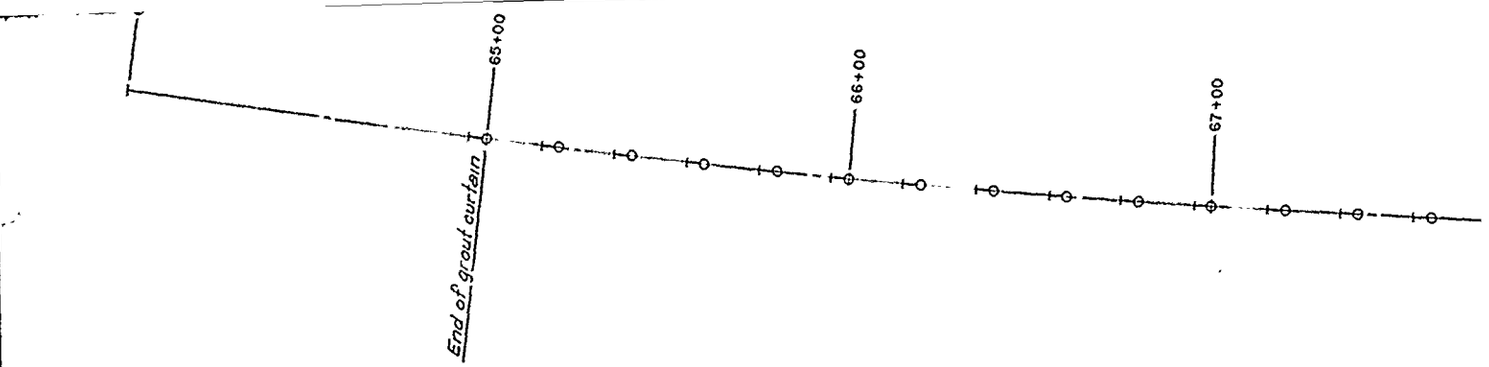
Designed by:
Drawn by:
Checked by:

US Army Corps of Engineers

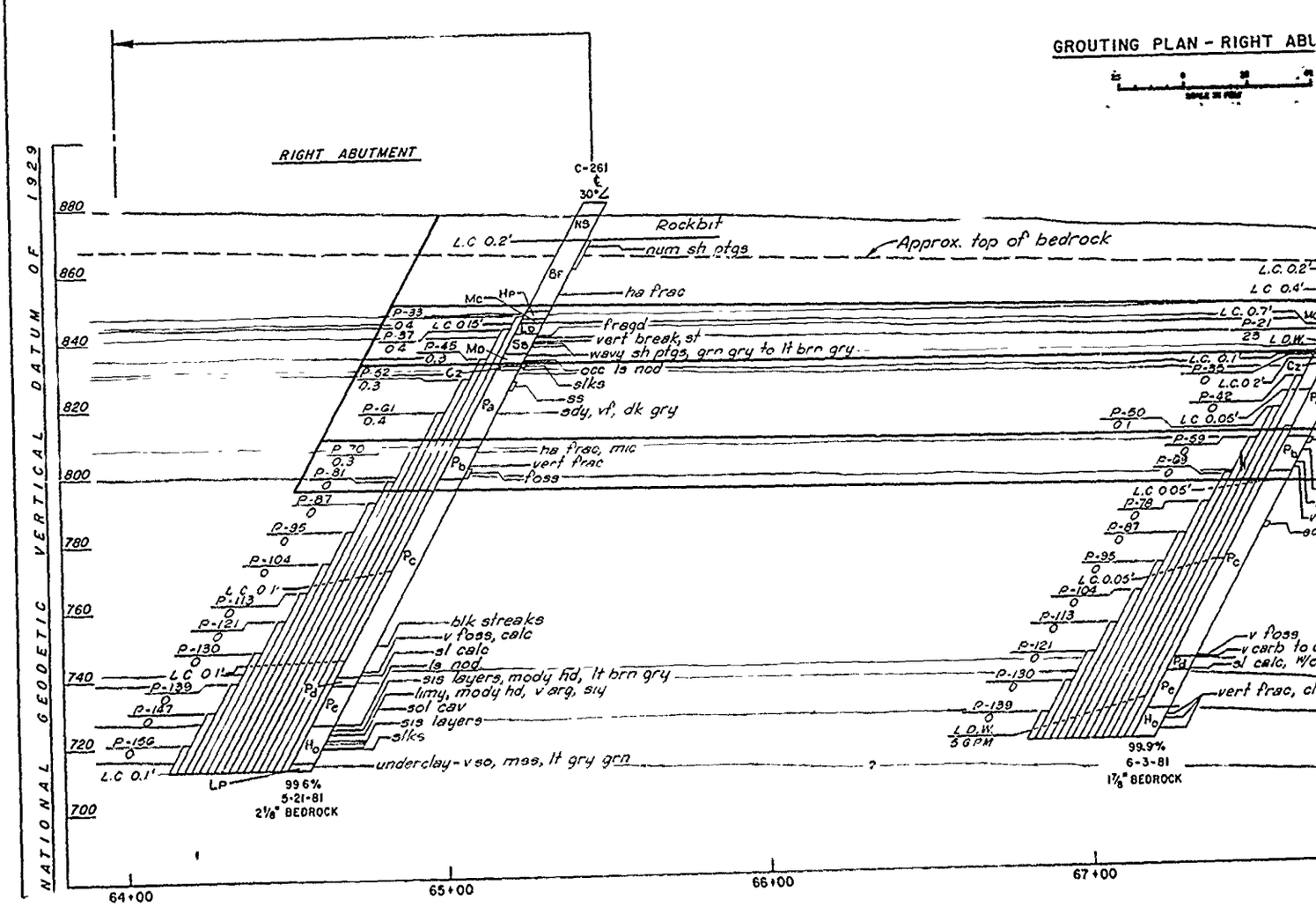
EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

CURTAIN GROUTING PLAN AND PROFILE
FOR RIGHT ABUTMENT
STA. 64+00 TO STA. 71+00

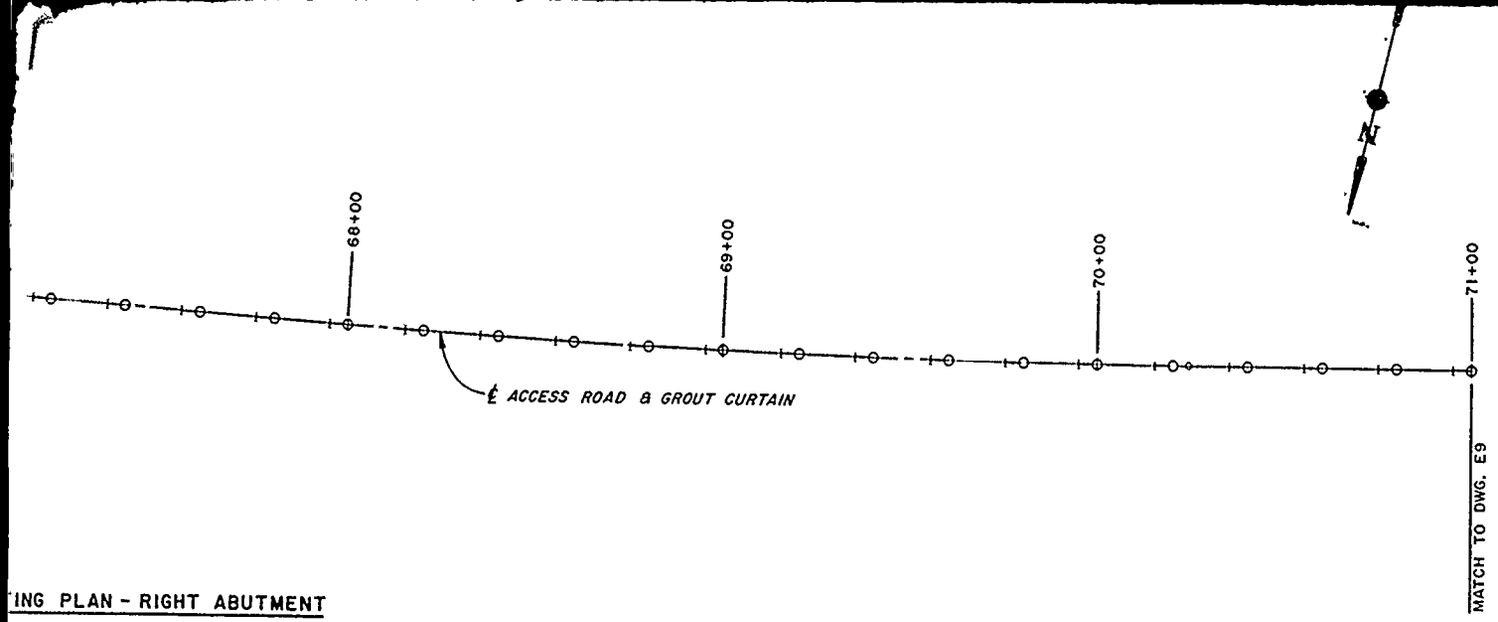
Scale: AS SHOWN
Sheet number: 33



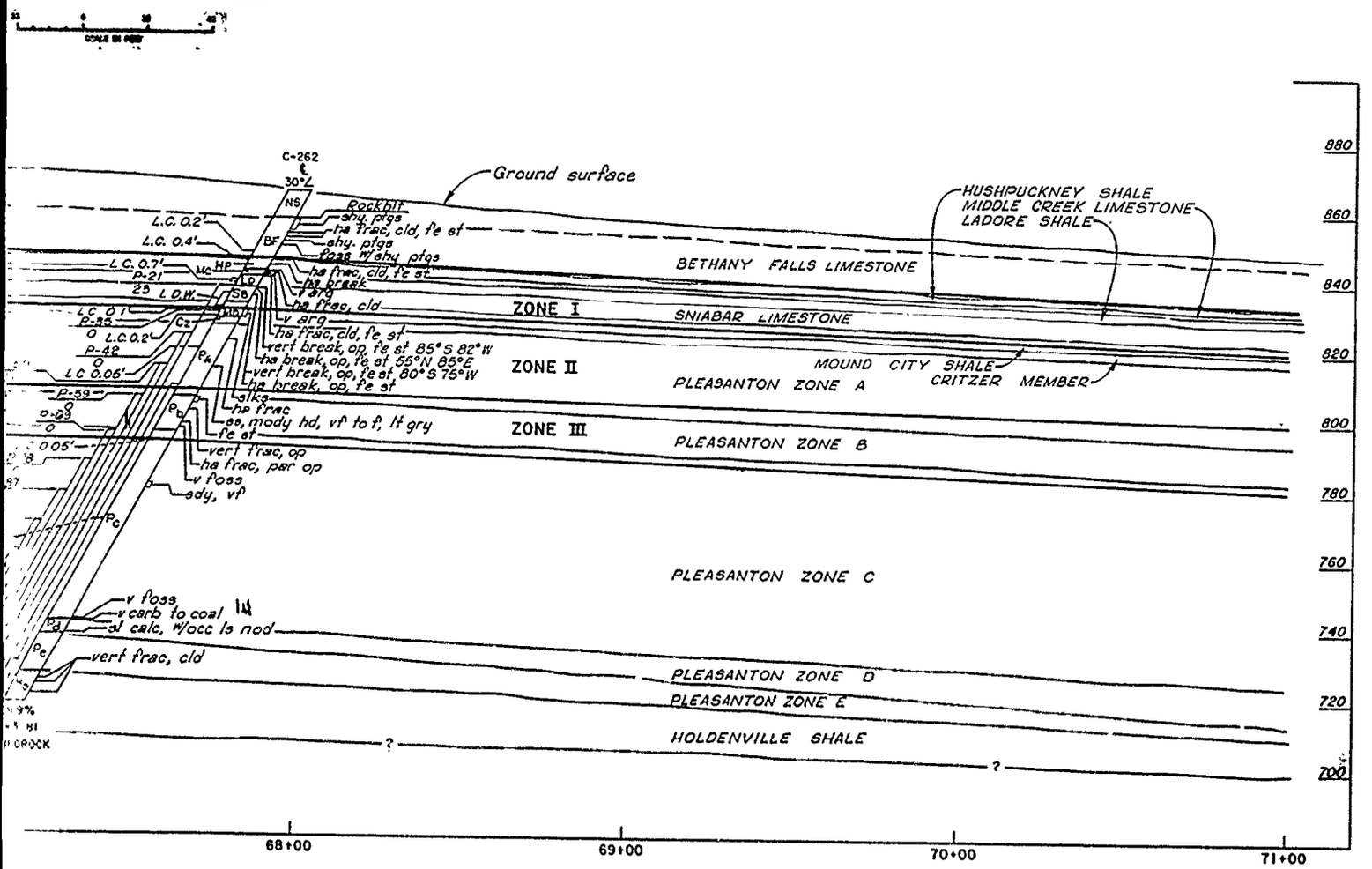
GROUTING PLAN - RIGHT ABU



GROUTING PROFILE - RIGHT



ING PLAN - RIGHT ABUTMENT



NG PROFILE - RIGHT ABUTMENT

Notes
1. *For general geologic column see Dwg. E1.*
2. *For location of borings see Dwg. E2.*
3. *Only primary grout holes are shown on plan.*
4. *Boring's C-2G1 & C-2G2 are drilled landward and parallel to dam axis.*

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by:
Checked by:
Submitted by:

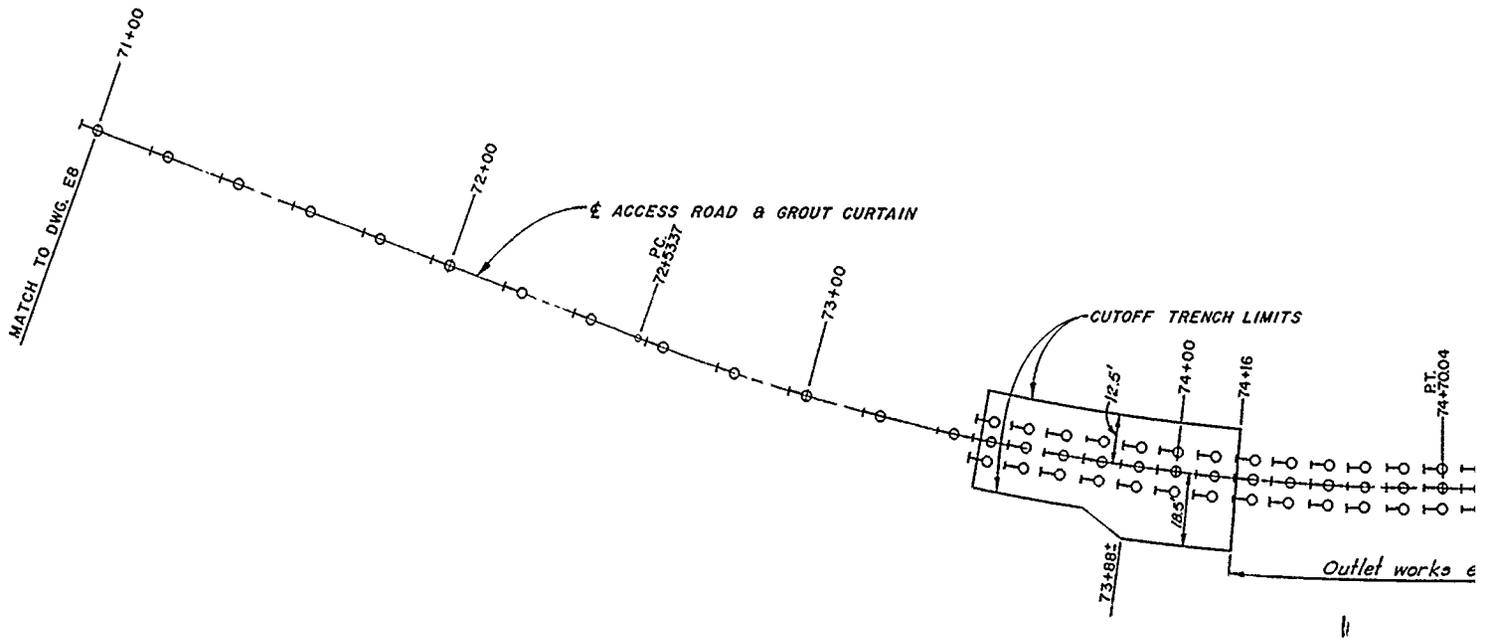
US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

CURTAIN GROUTING PLAN AND PROFILE
FOR RIGHT ABUTMENT
STA. 64+00 TO STA. 71+00

Scale: AS SHOWN
Date: JUNE 1990
Dwg. No.
Sheet number: 33
File No: RBL-2-1253

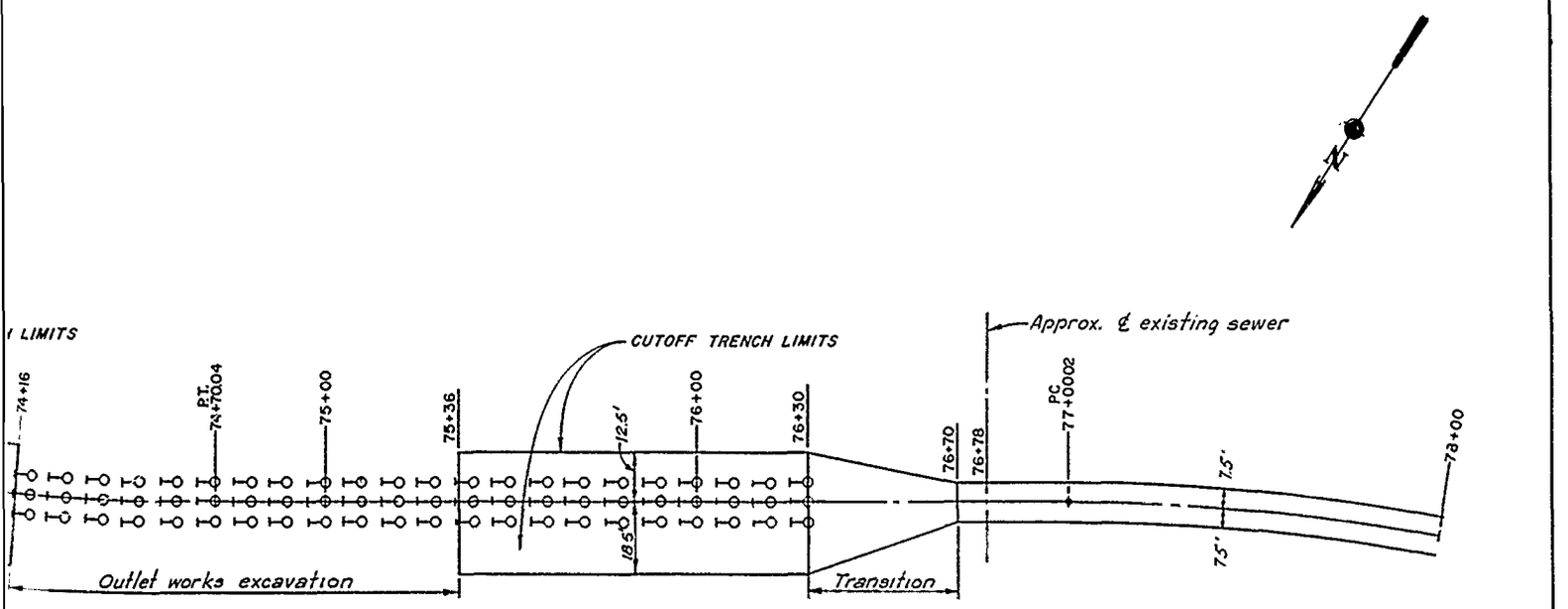
PLATE NO. 33



GROUTING PLAN - RIGHT ABU

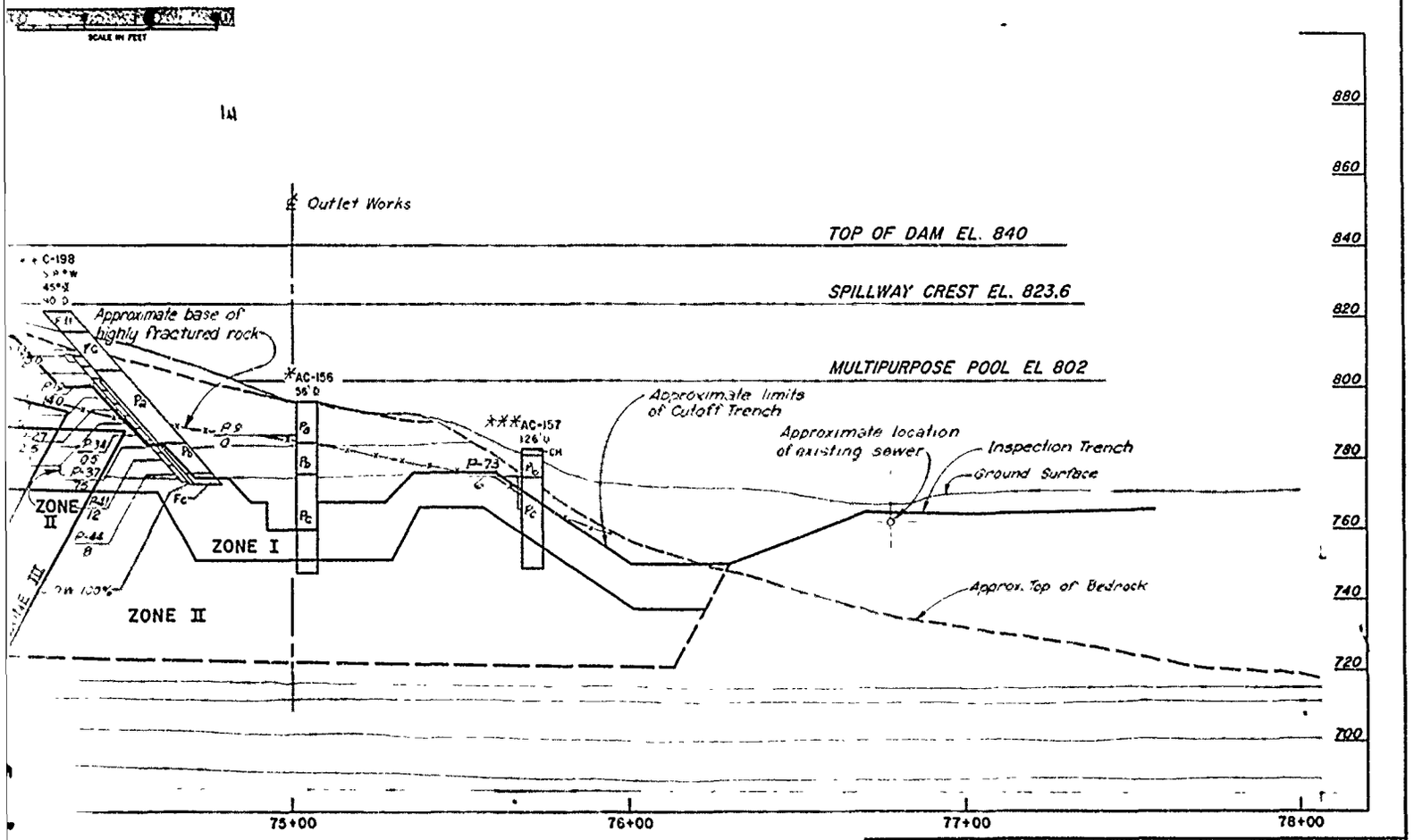


GROUTING PROFILE - RIGHT A



NG PLAN - RIGHT ABUTMENT

SCALE IN FEET



NG PROFILE - RIGHT ABUTMENT

Notes:
1. For General Geologic Column and legend, see Dwg E1.
2. For location of borings see Dwgs E2, E3 & E4
3. Borings with a single *, see Dwg. E5.
4. Borings with a double **, see Logs of Detached Borings.
5. Borings with a triple ***, see Dwg. E7
6. Only primary grout holes are shown on Plan

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

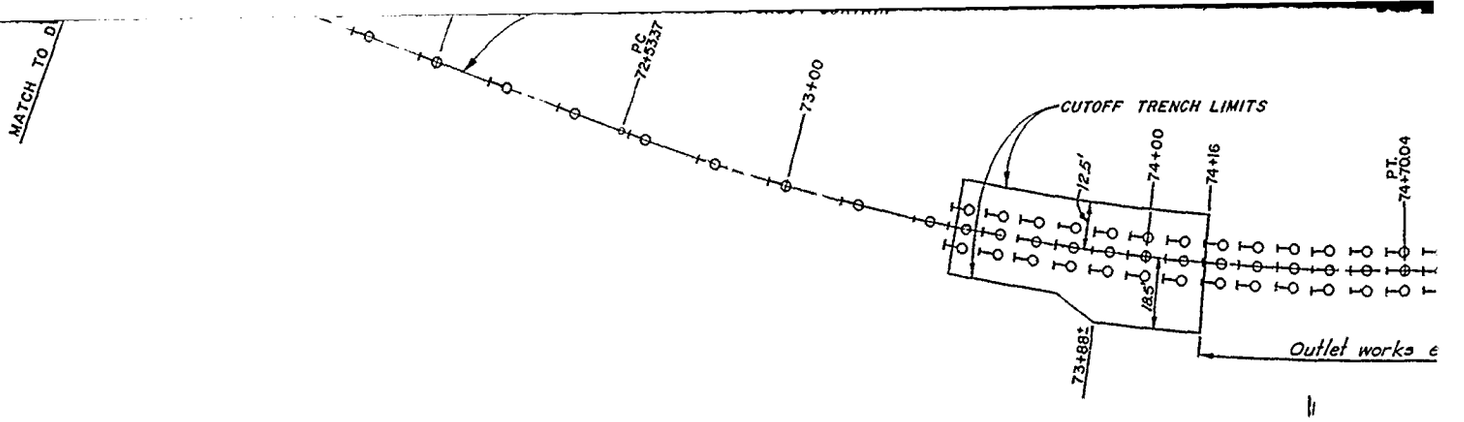
Designed by

Drawn by

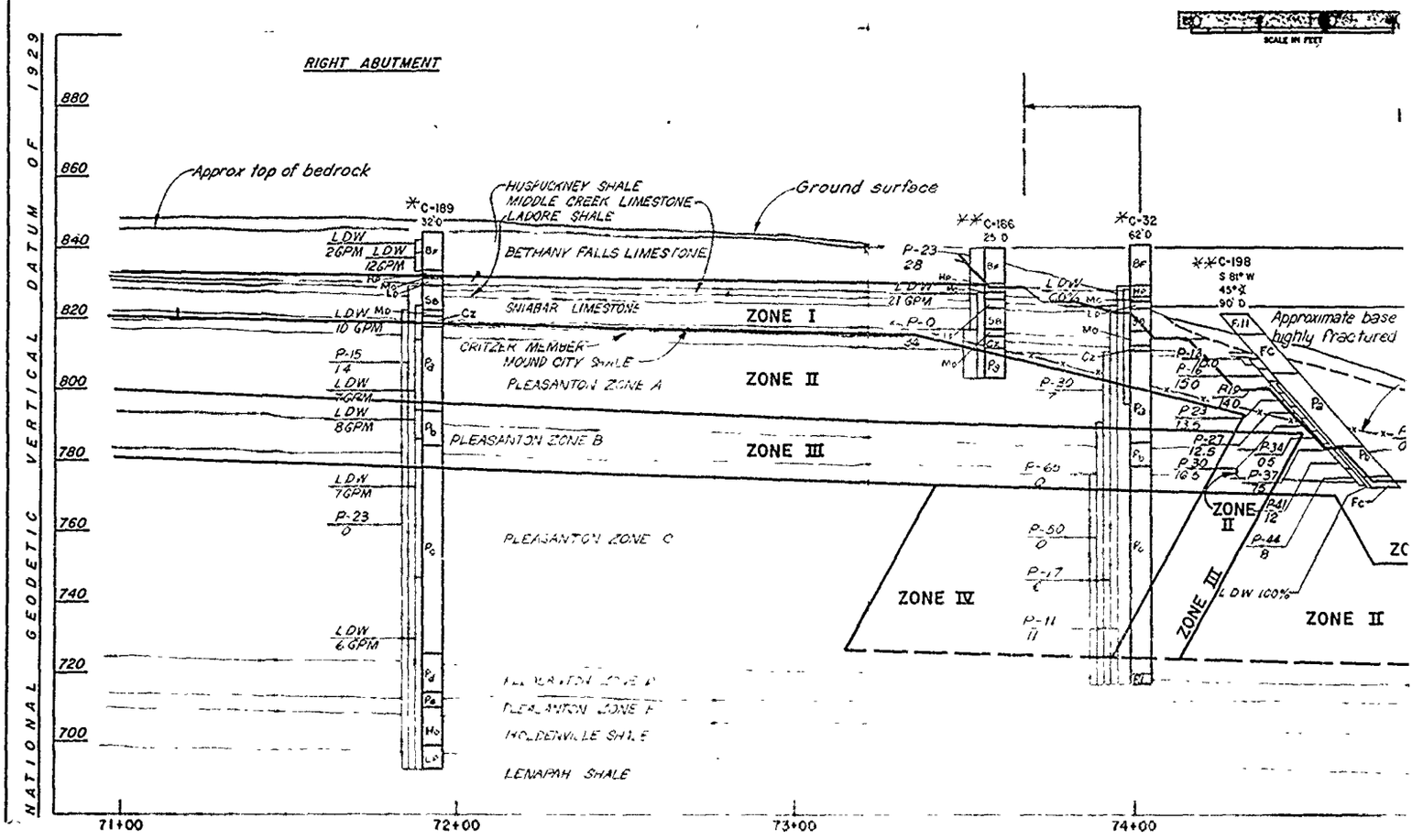
US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

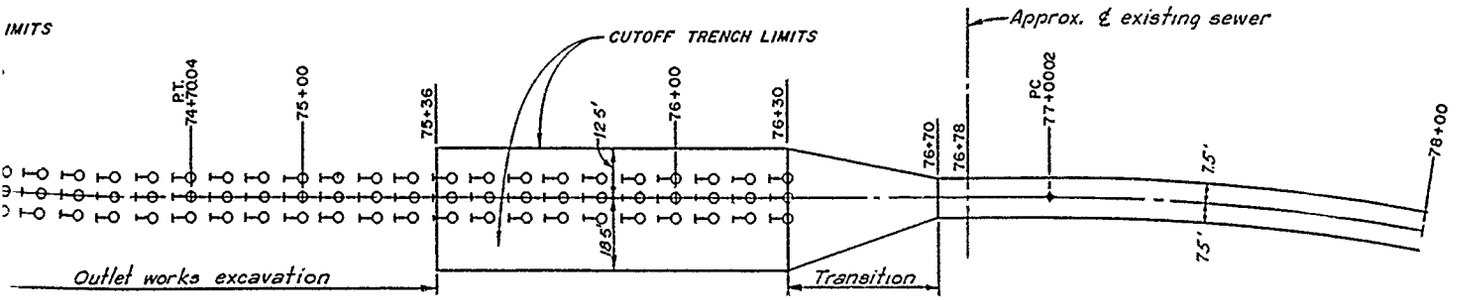
CURTAIN GROUTING-PLAN AND PROFILE FOR RIGHT ABUTMENT
STA 71+00 TO STA 78+00



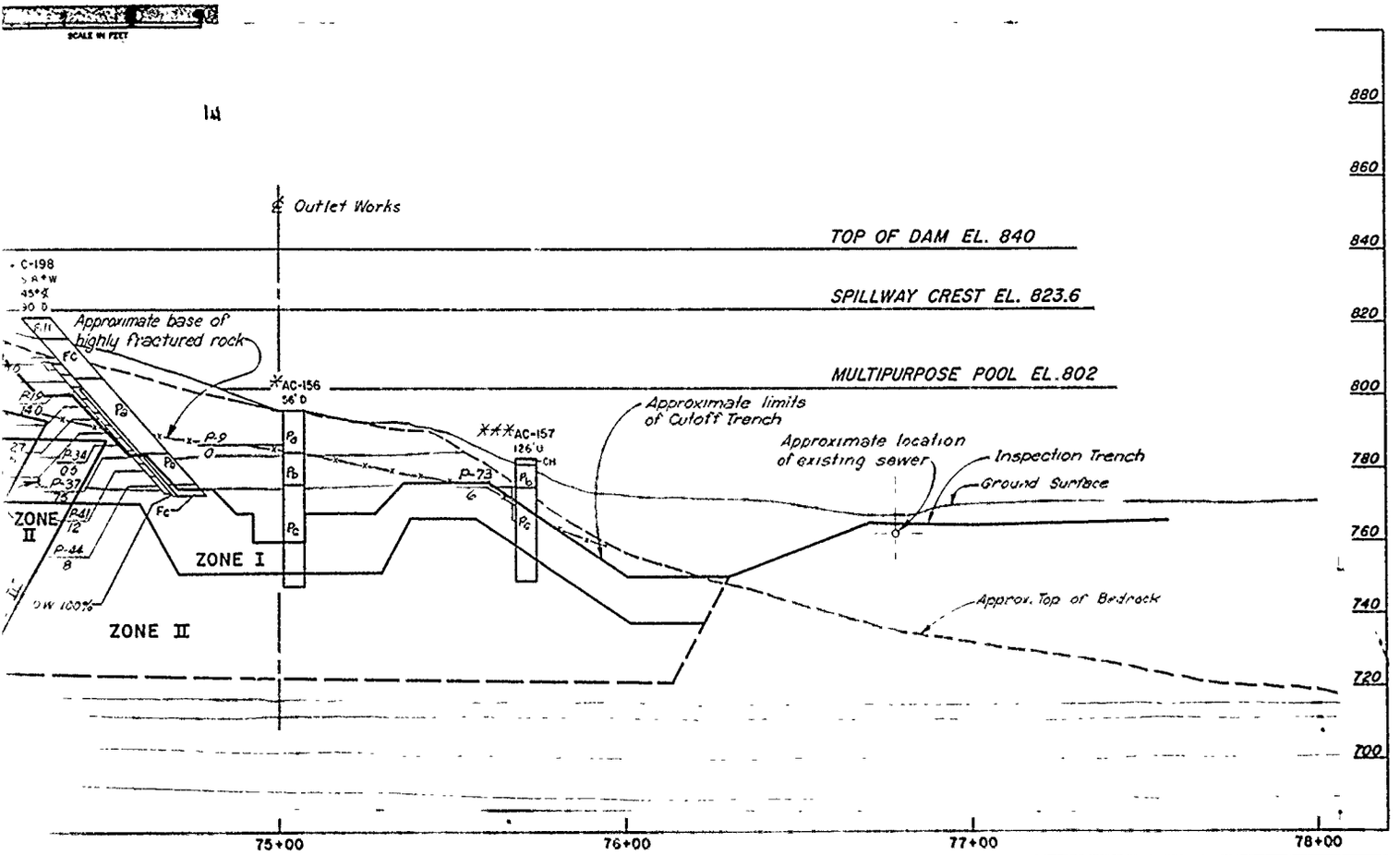
GROUTING PLAN - RIGHT ABU



GROUTING PROFILE - RIGHT A



PLAN - RIGHT ABUTMENT



PROFILE - RIGHT ABUTMENT

Notes:
1. For General Geologic Column and legend, see Dwg E1.
2. For location of borings see Dwgs E2, E3 & E4
3. Borings with a single *, see Dwg. E5.
4. Borings with a double **, see Logs of Detached Borings.
5. Borings with a triple ***, see Dwg E7
6. Only primary grout holes are shown on Plan

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by
Drawn by
Checked by
Submitted by

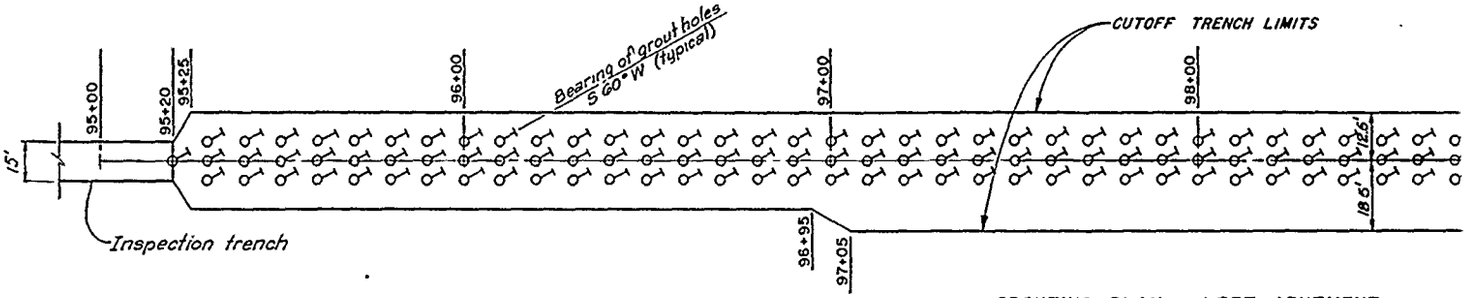
US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

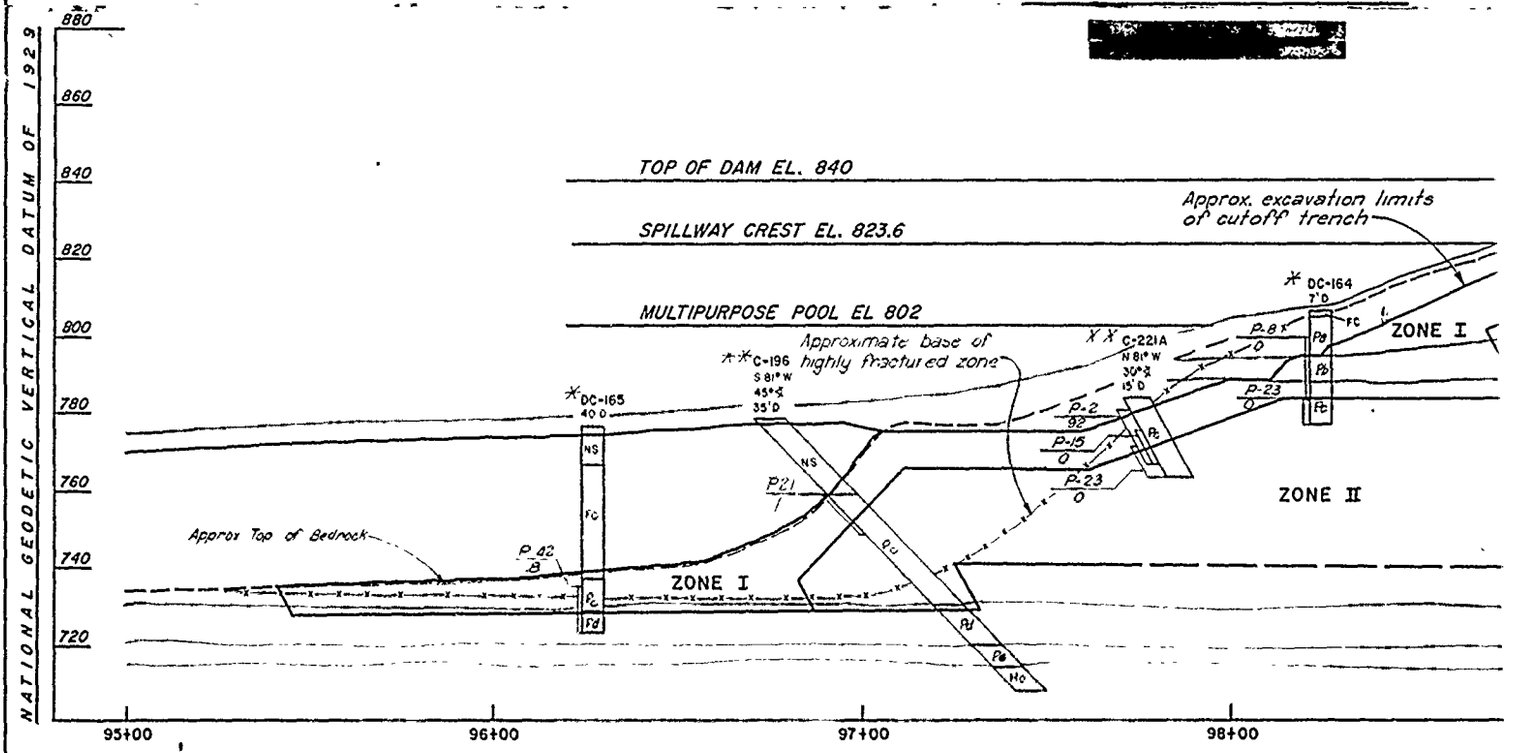
CURTAIN GROUTING PLAN AND PROFILE
FOR RIGHT ABUTMENT
STA. 71+00 TO STA. 78+00

Scale: AS SHOWN
Date: JUNE 1990
Sheet number: 34
File No. R3L-2-1254

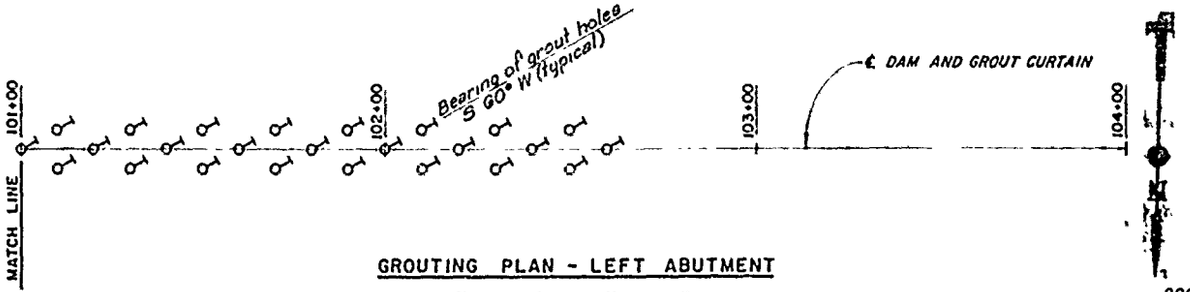
PLATE NO 34



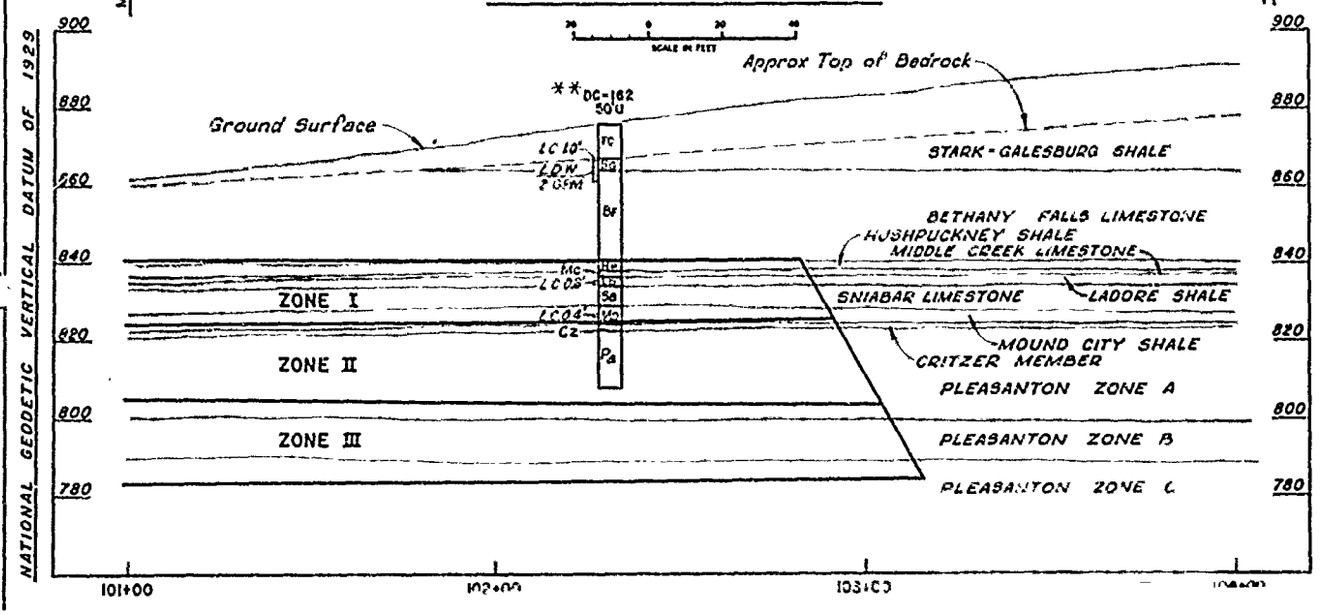
GROUTING PLAN - LEFT ABUTMENT



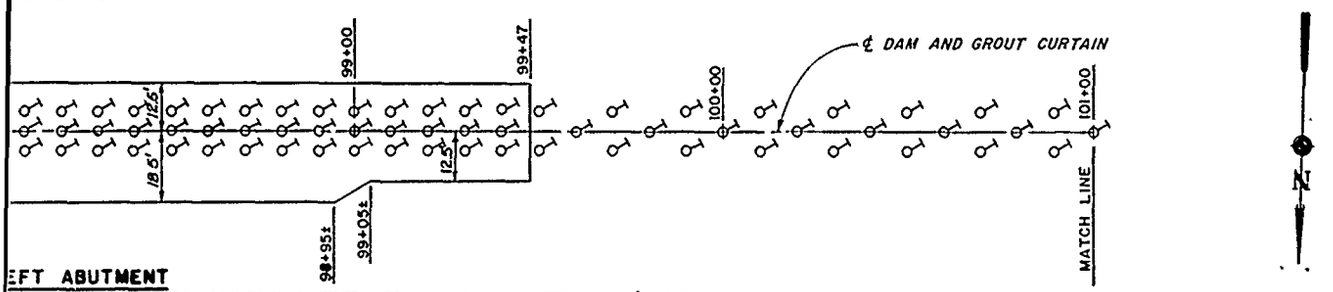
GROUTING PROFILE - LEFT ABUTMENT



GROUTING PLAN - LEFT ABUTMENT



NCH LIMITS



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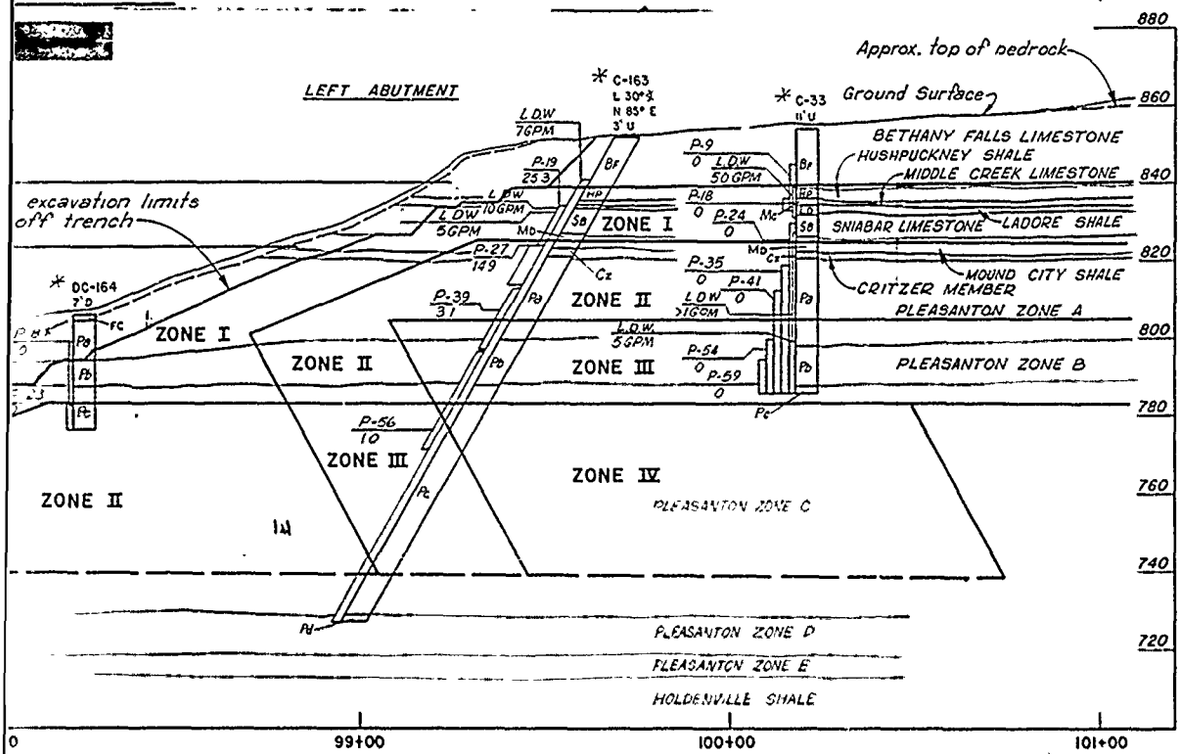
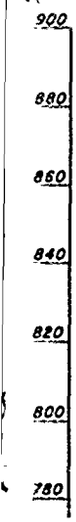
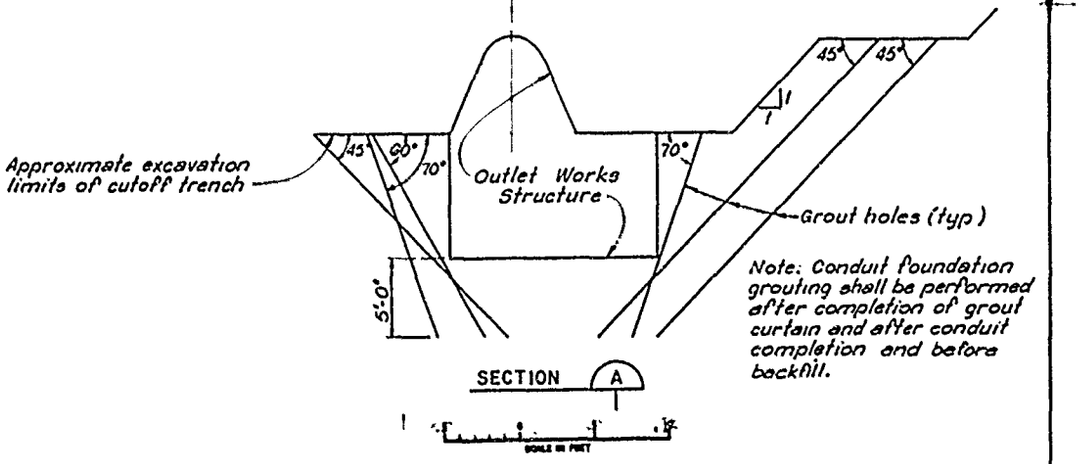


LEFT ABUTMENT





℄ Outlet Works ℄
Dam Sta. 75+02.75



Note: Conduit foundation grouting shall be performed after completion of grout curtain and after conduit completion and before backfill.

Notes:
1. For General Geologic Column, see Dwg E1
2. For location of Borings, see Dwg E3

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

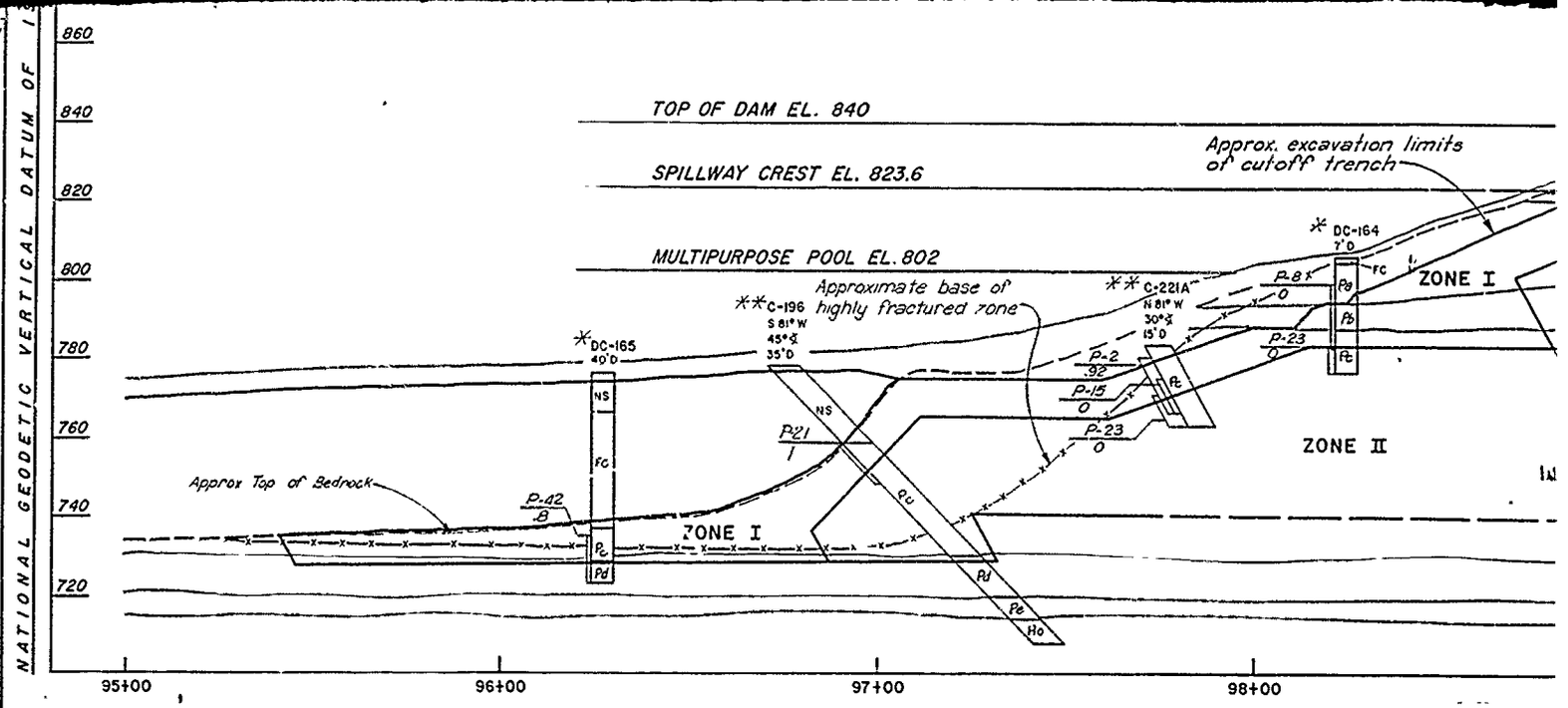
Designed by

Drawn by

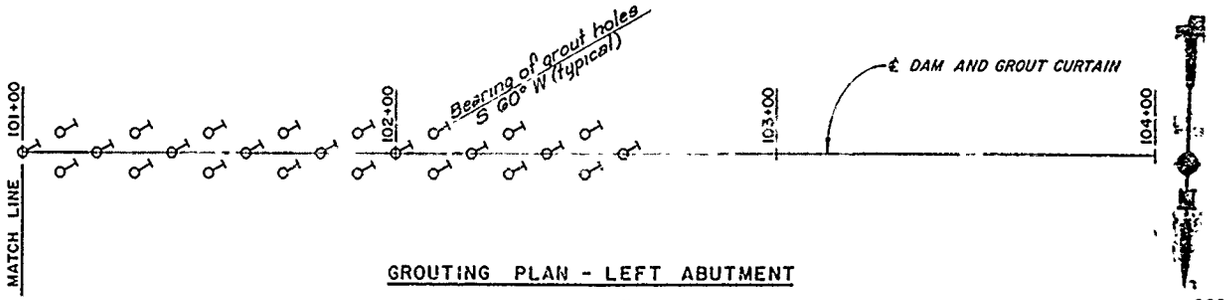
US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

CURTAIN GROUTING PLAN AND PROFILE

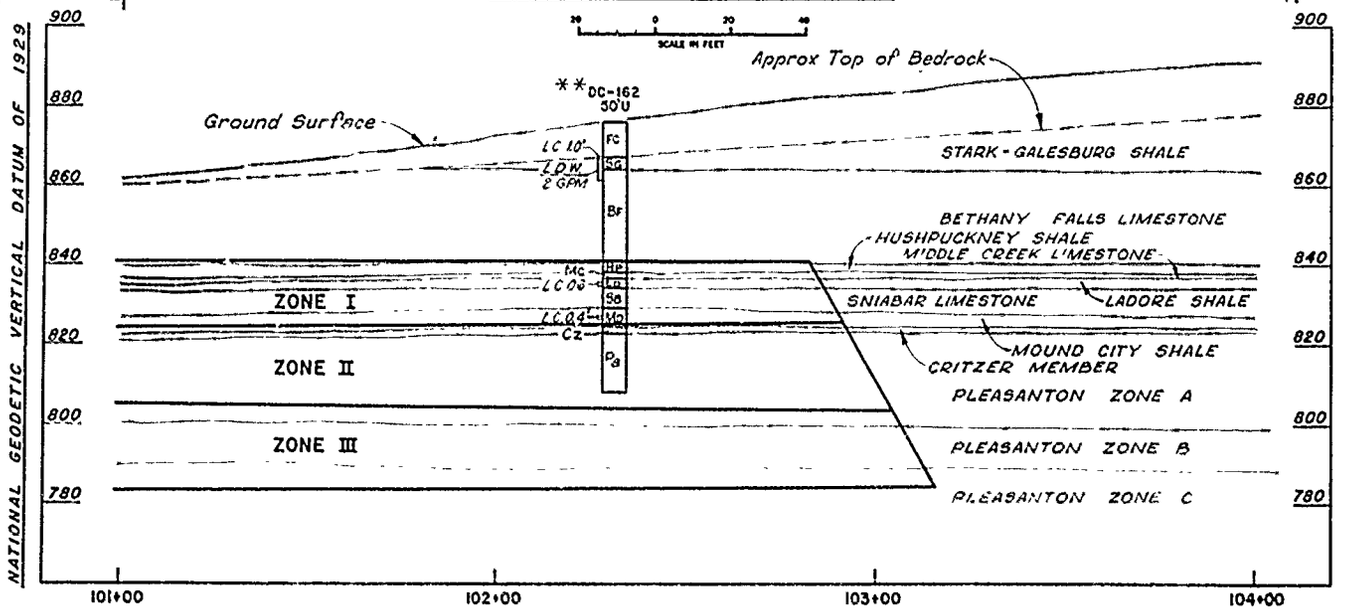


GROUTING PROFILE - LEFT ABUTMENT

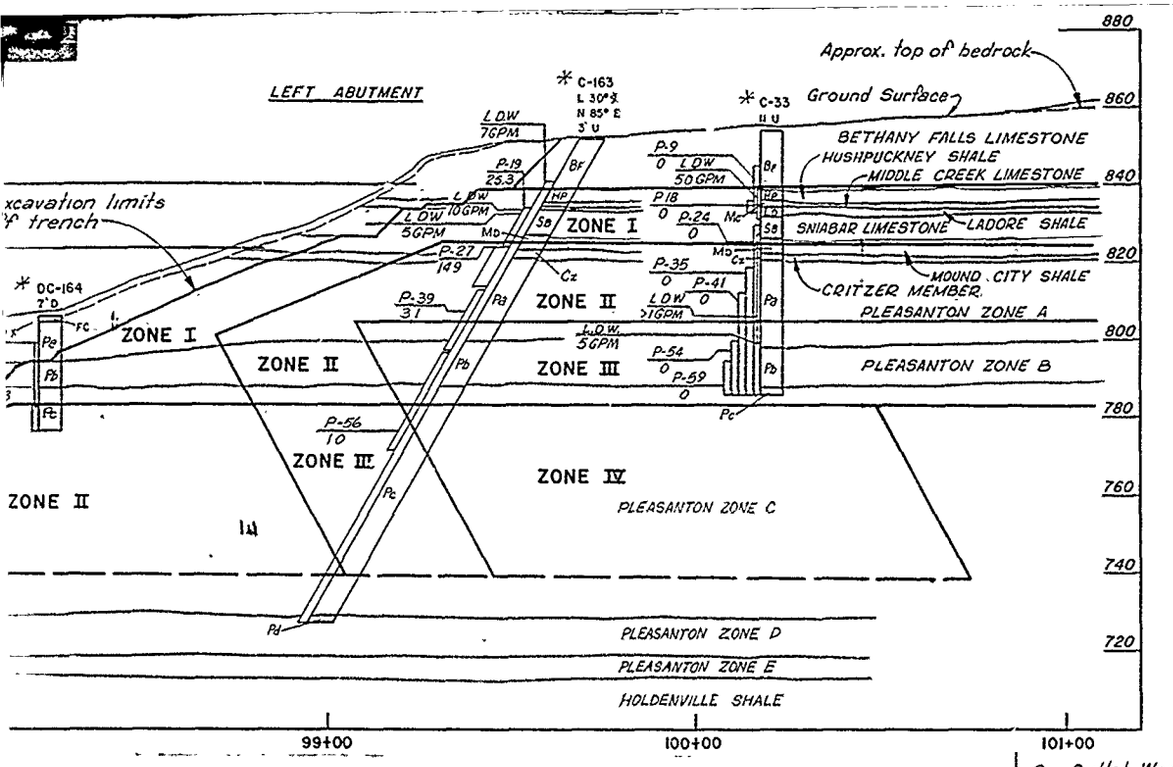


GROUTING PLAN - LEFT ABUTMENT

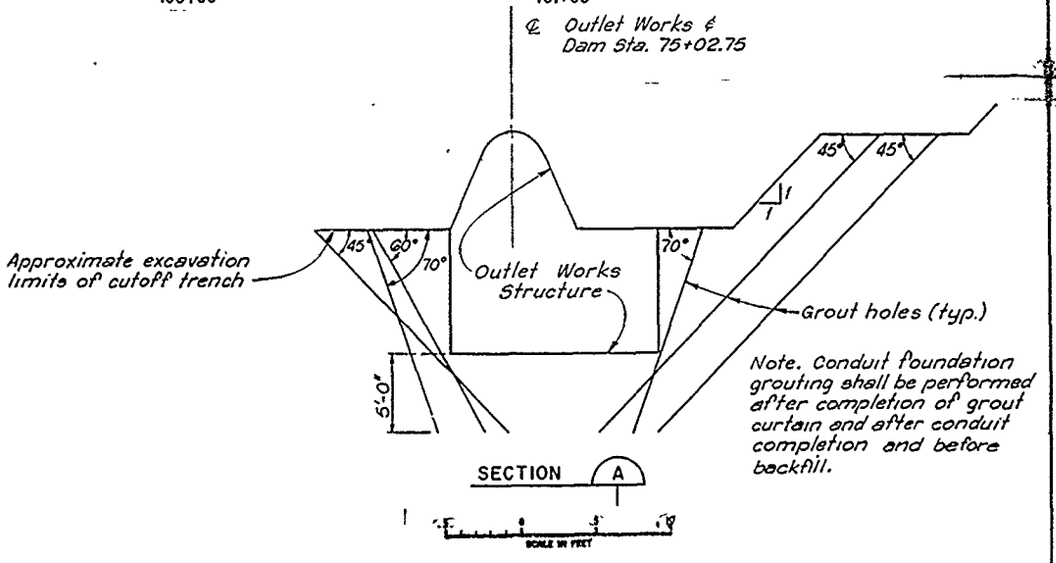
SCALE IN FEET



GROUTING PROFILE - LEFT ABUTMENT



EFT ABUTMENT



Note. Conduit foundation grouting shall be performed after completion of grout curtain and after conduit completion and before backfill.

Notes:
1. For General Geologic Column, see Dwg. E1.
2. For location of Borings, see Dwg E3
3. Only primary grout holes are shown on plan.
4. Borings with a single *, see Dwg E5
5. Borings with a double **, see Logs of Detached Borings.

Revisions			
Symbol	Descriptions	Date	Approved

U S ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

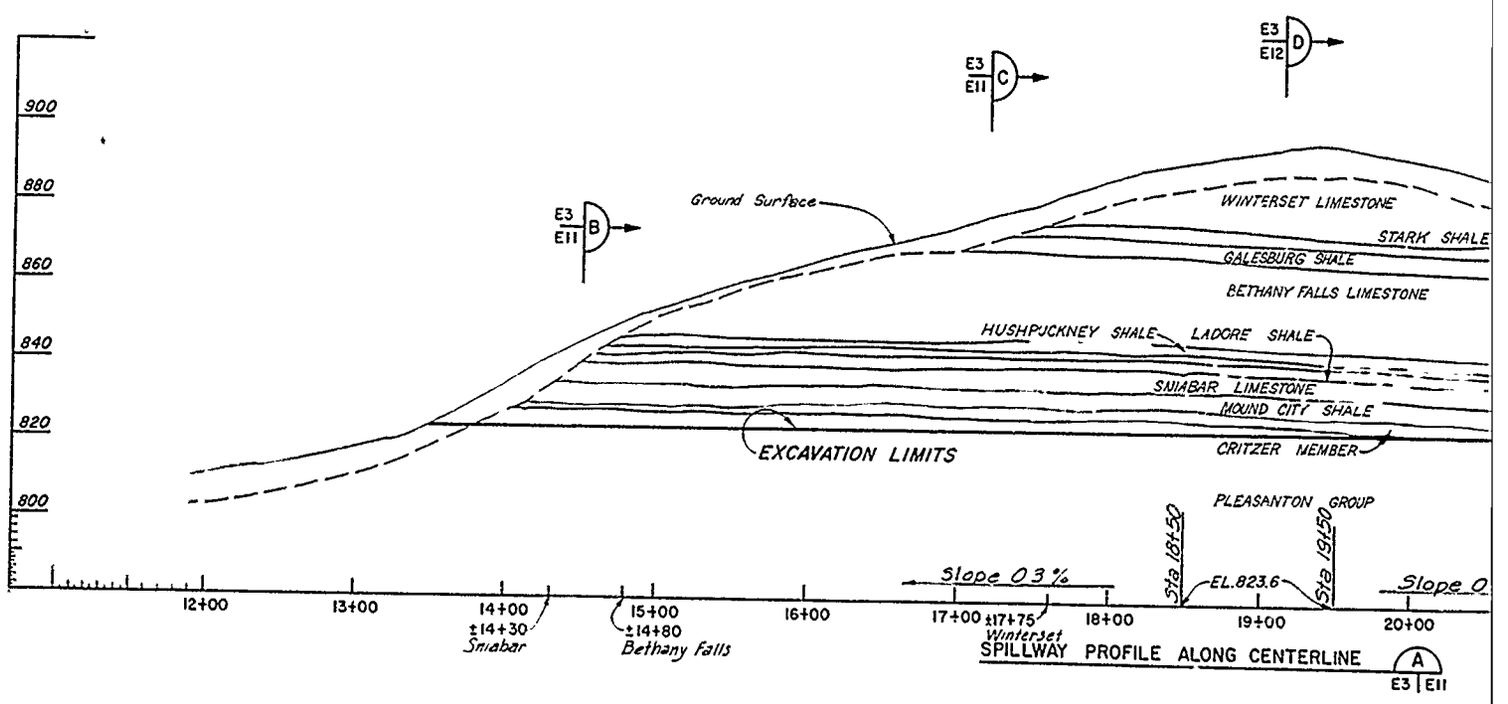
EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

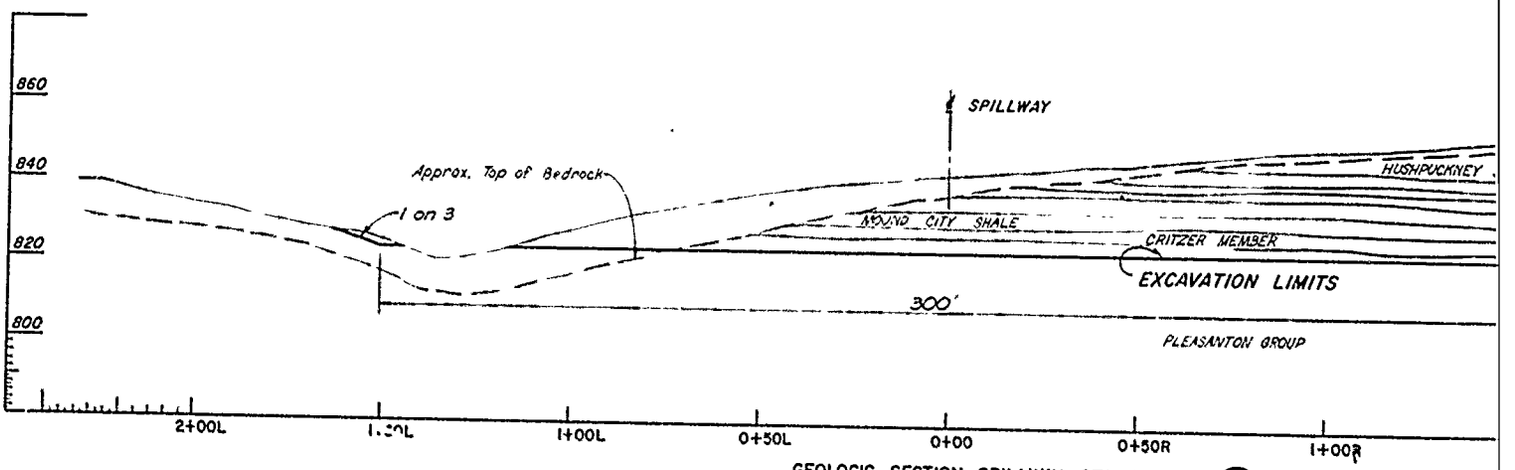
CURTAIN GROUTING PLAN AND PROFILE FOR LEFT ABUTMENT AND CONDUIT FOUNDATION GROUTING DETAIL

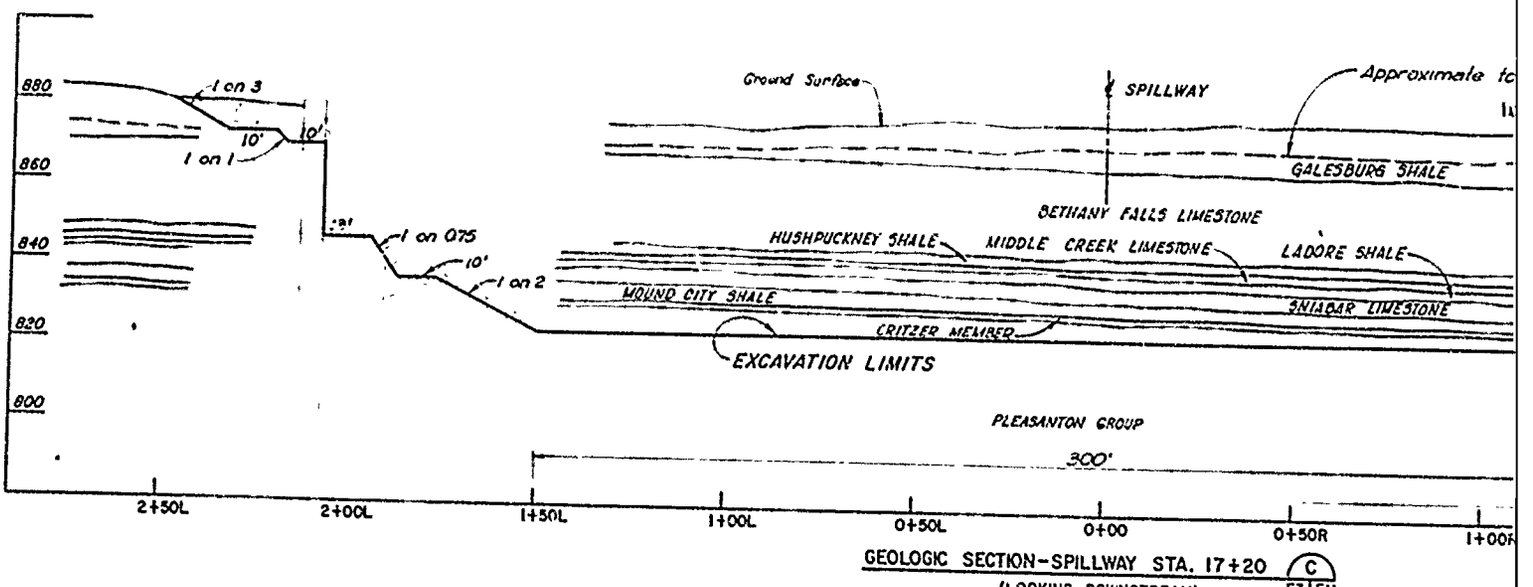
Designed by	Scale: AS SHOWN	Sheet number: 35	
Drawn by	Date: JUNE 1990		
Checked by	Dwg. No.		File No. RBL-2-1255
Submitted by			

PLATE NO: 35

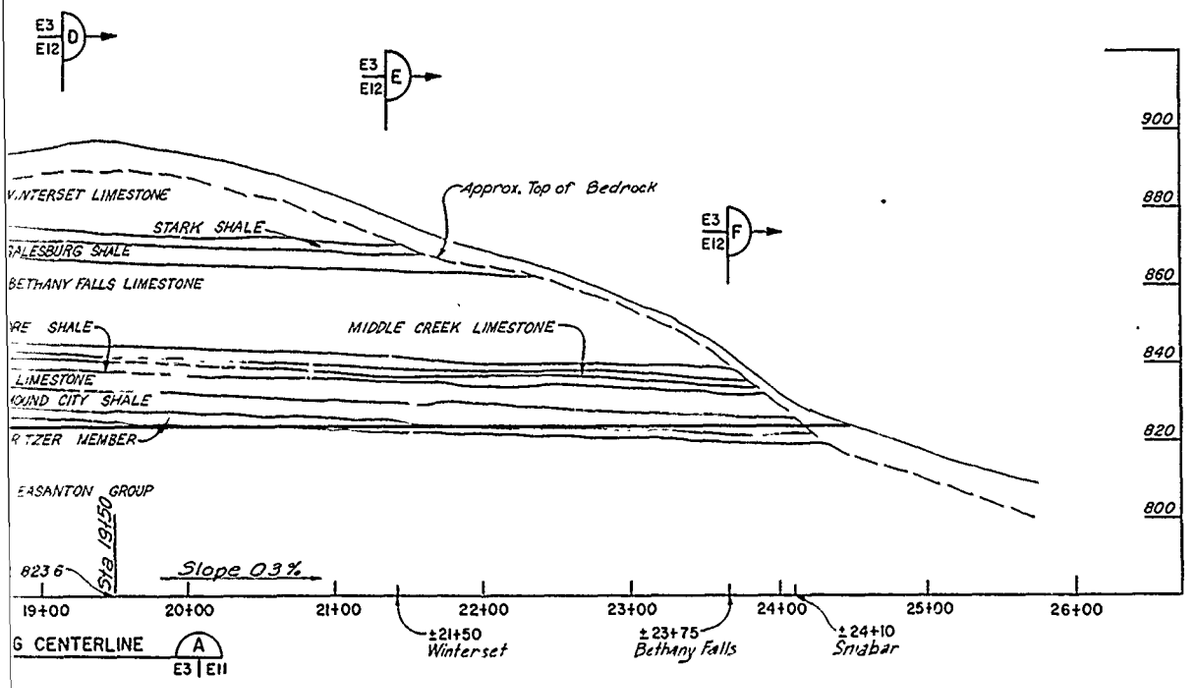
ELEVATION IN FEET BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929

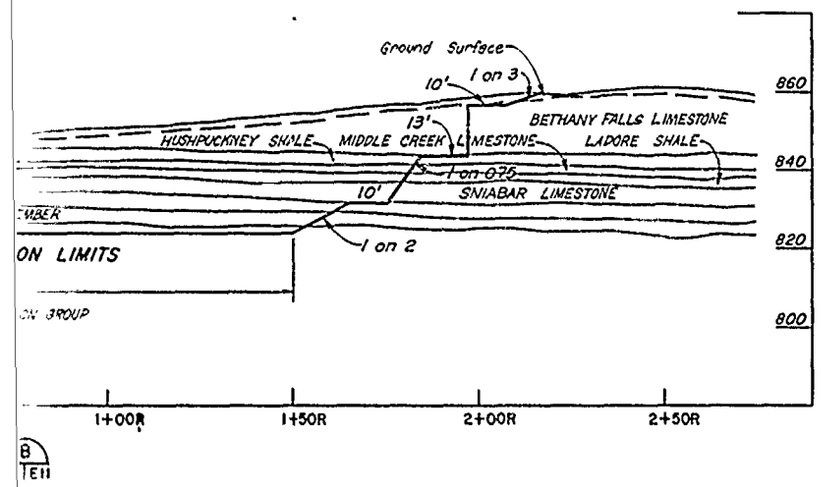


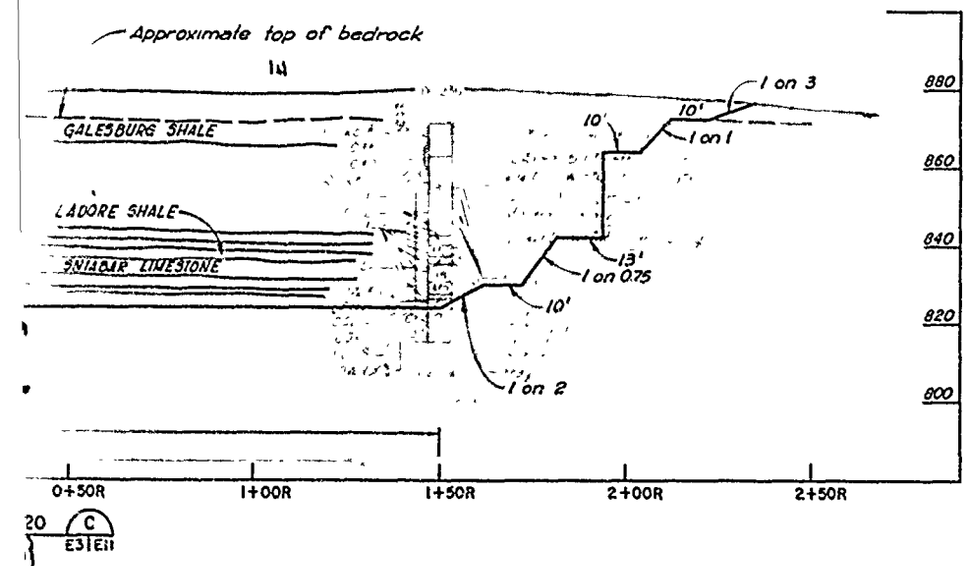




VALUE ENGINEERING PAYS







NOTES:
1 For general geologic column and legend see Dwg. E 1
2 For plan of spillway see Dwg. 87.
3 For location of Borings, see Dwgs. E2 & E3.

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by:
Checked by:

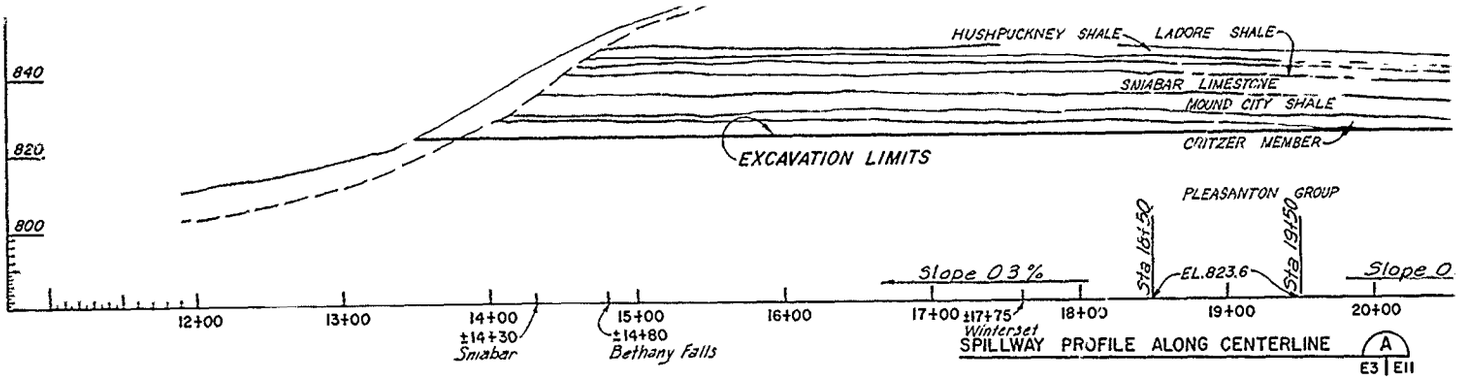
US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

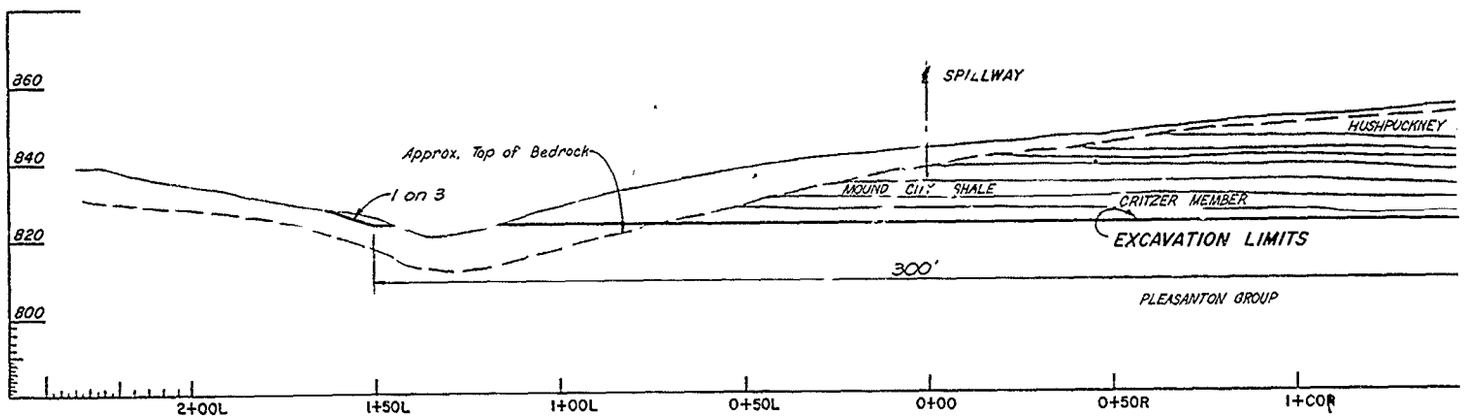
SPILLWAY PROFILE AND SECTIONS
GEOLOGY AND EXCAVATION LIMITS

Scale: AS SHOWN
Sheet number
Date

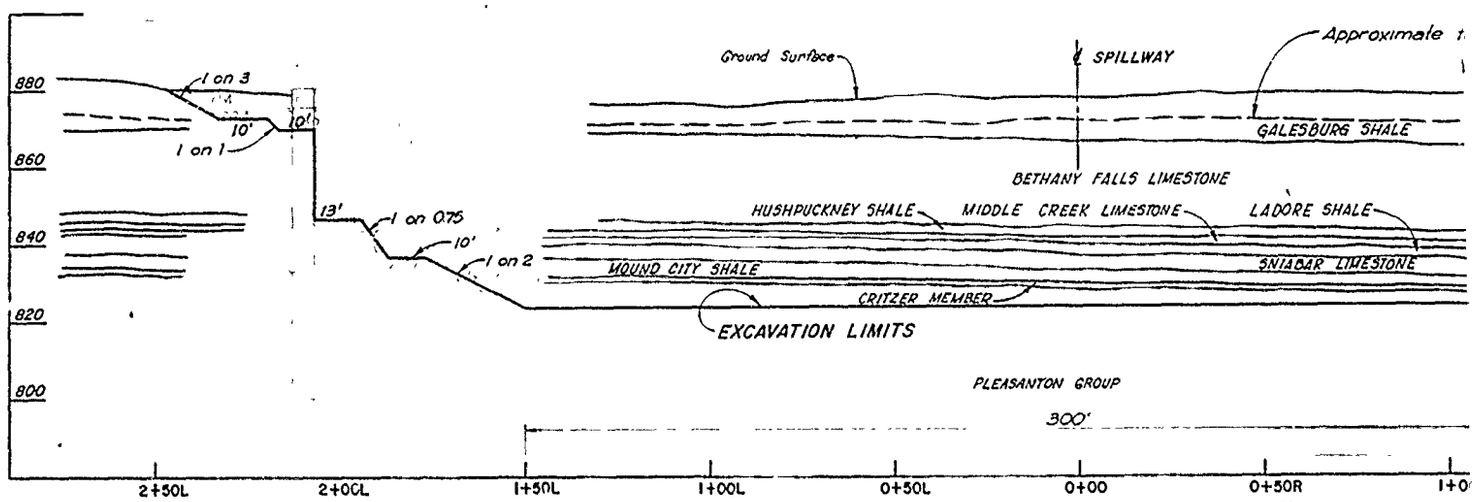
ELEVATION IN FEET BASED ON NATIONAL GEODETIC VERTICAL DATUM



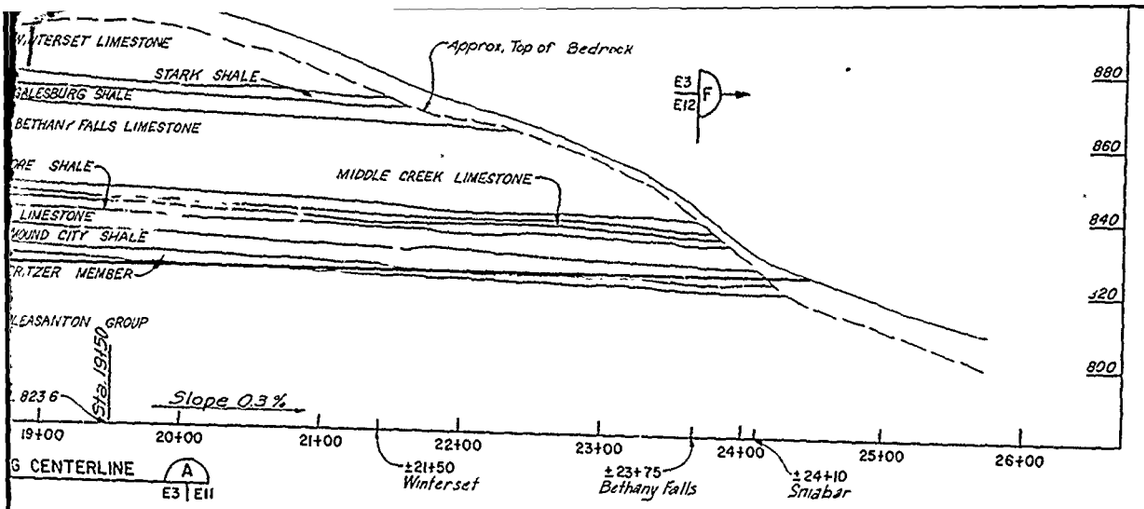
SPILLWAY PROFILE ALONG CENTERLINE (A) E3 | E11

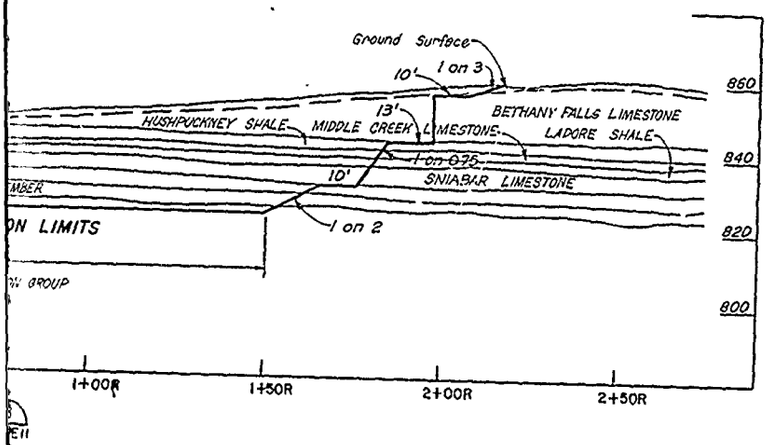


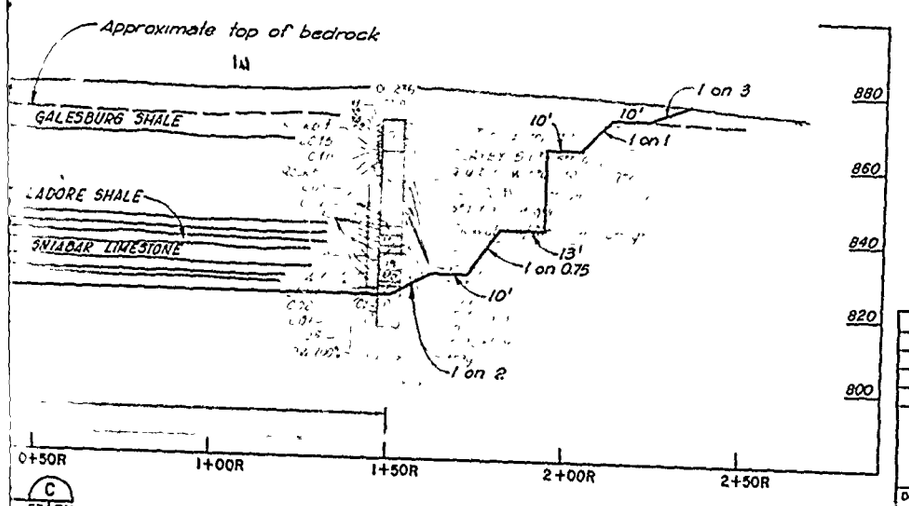
GEOLOGIC SECTION-SPILLWAY STA. 14+50 (B) E3 | E11
(LOOKING DOWNSTREAM)



GEOLOGIC SECTION-SPILLWAY STA. 17+20 (C) E3 | E11
(LOOKING DOWNSTREAM)







NOTES:
1 For general geologic column and legend see Dwg E 1
2 For plan of spillway see Dwg. B7.
3 For location of Borings, see Dwgs E2 & E3.

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by:
Checked by:
Submitted by:

US Army Corps of Engineers

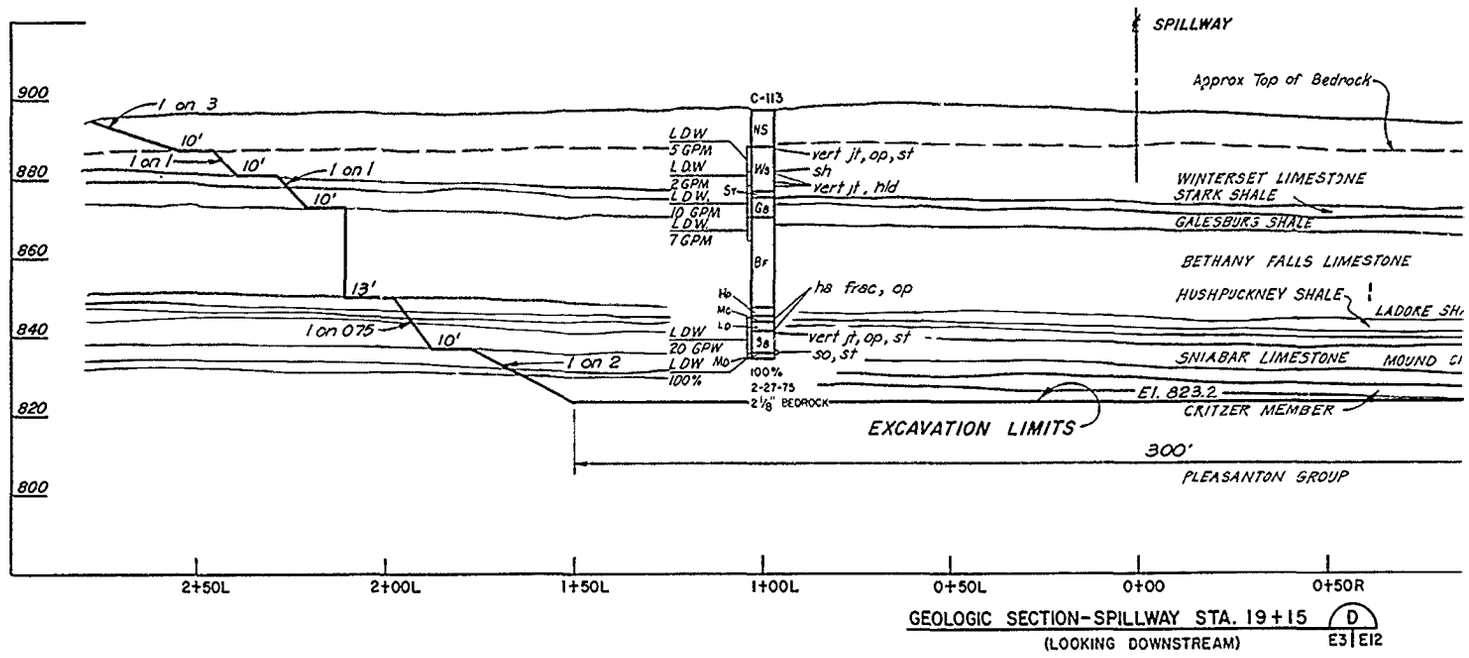
EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

SPILLWAY PROFILE AND SECTIONS
GEOLOGY AND EXCAVATION LIMITS

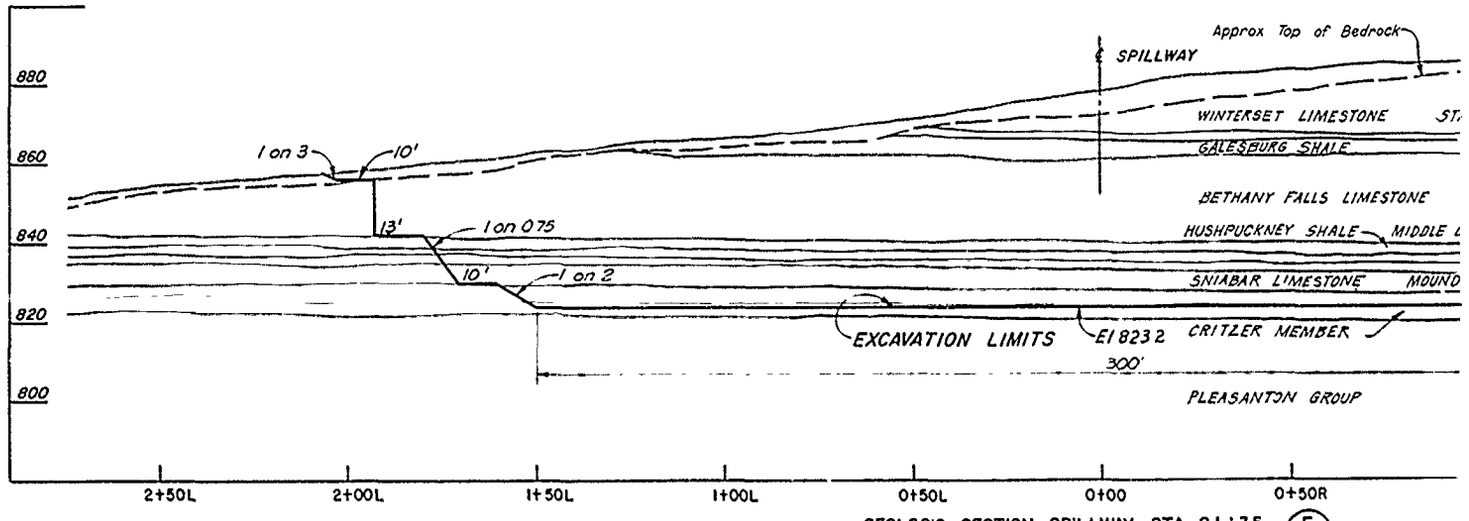
Scale: AS SHOWN
Date: JUNE 1990
Sheet number: 36
Dwg No.:
File No. RBL-2-1256

PLATE NO. 36

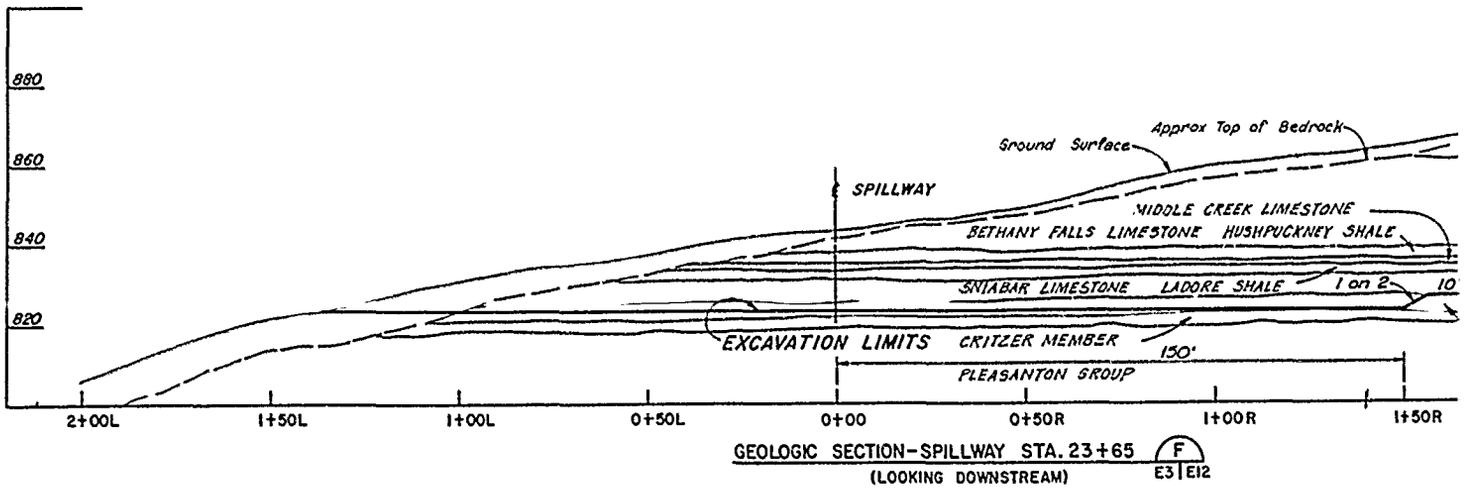
ELEVATION IN FEET BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929



GEOLOGIC SECTION-SPILLWAY STA. 19+15 (D)
(LOOKING DOWNSTREAM) E3 | E12

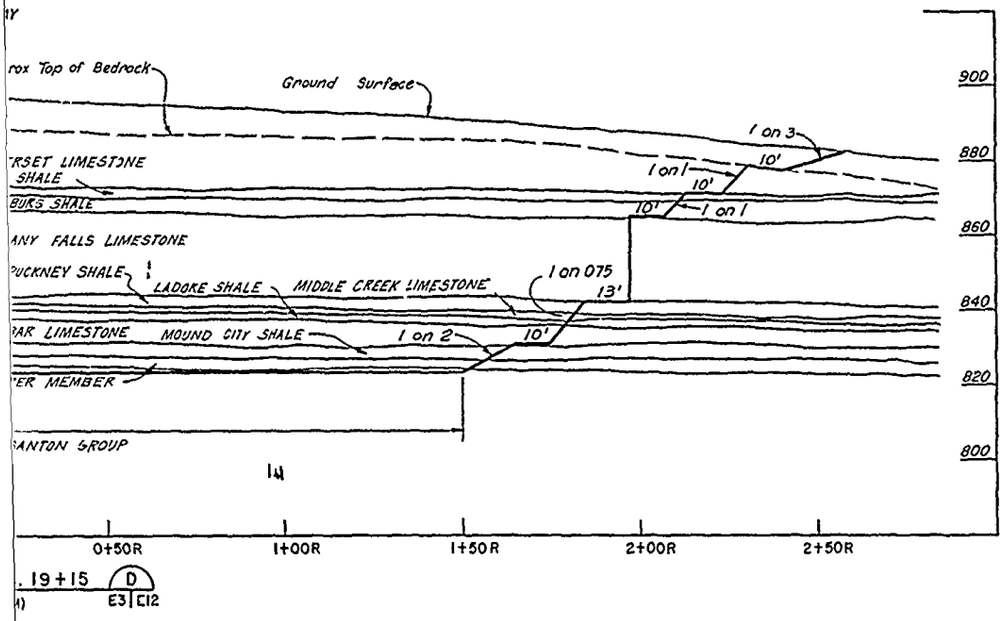


GEOLOGIC SECTION-SPILLWAY STA. 21+35 (E)
(LOOKING DOWNSTREAM) E3 | E12

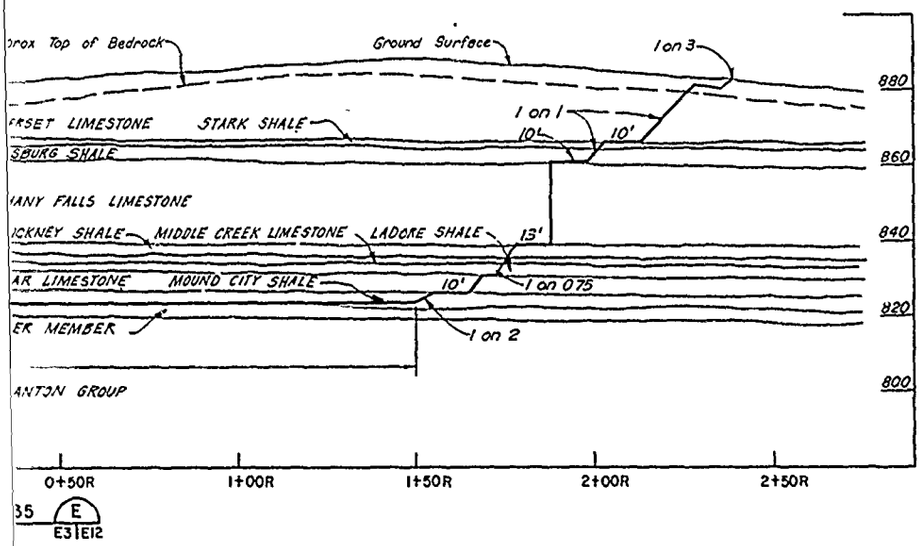


GEOLOGIC SECTION-SPILLWAY STA. 23+65 (F)
(LOOKING DOWNSTREAM) E3 | E12

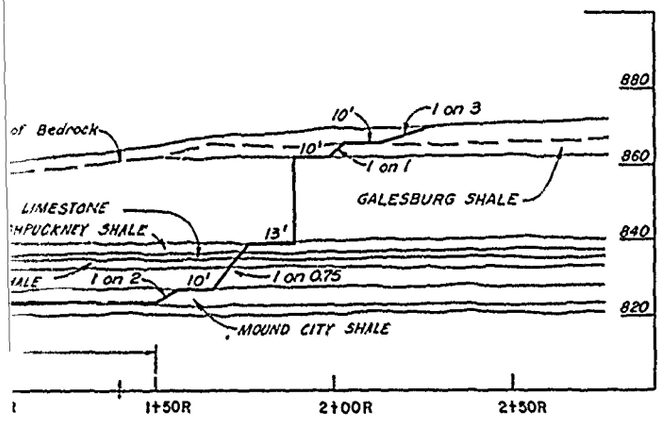
VALUE ENGINEERING PAYS



19+15 D
E3 E12



35 E
E3 E12



NOTES:
1. For general geologic column and legend see Dwg. E 1
2. For plan of spillway see Dwg. B7.
3. For location of Borings see Dwgs. E2 & E3.

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by:
Checked by:

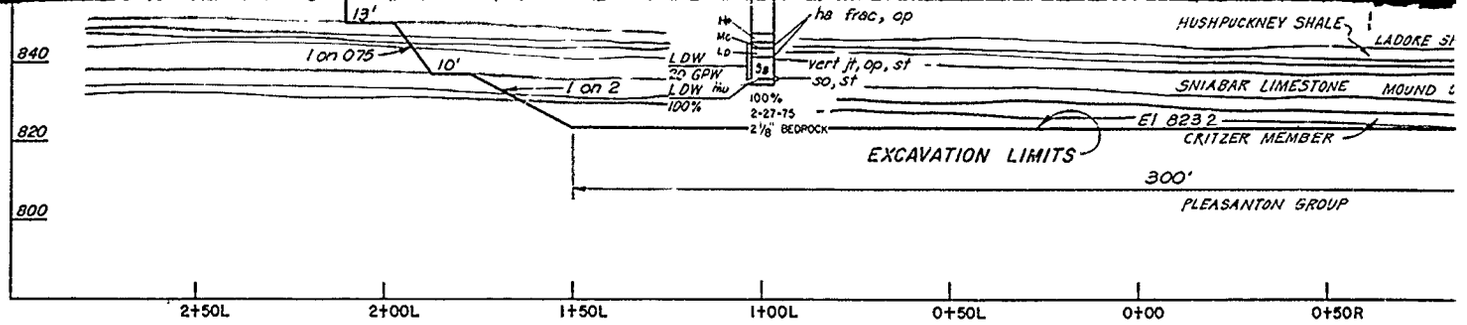
US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

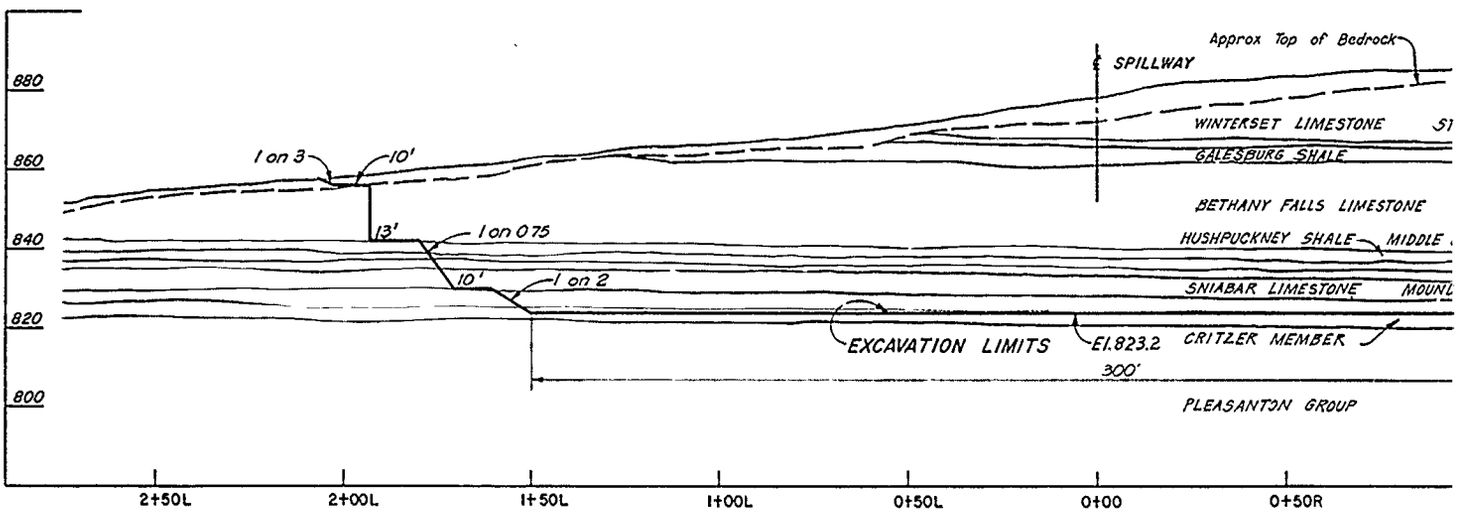
SPILLWAY SECTIONS,
GEOLOGY AND EXCAVATION LIMITS

Scale: AS SHOWN
Sheet

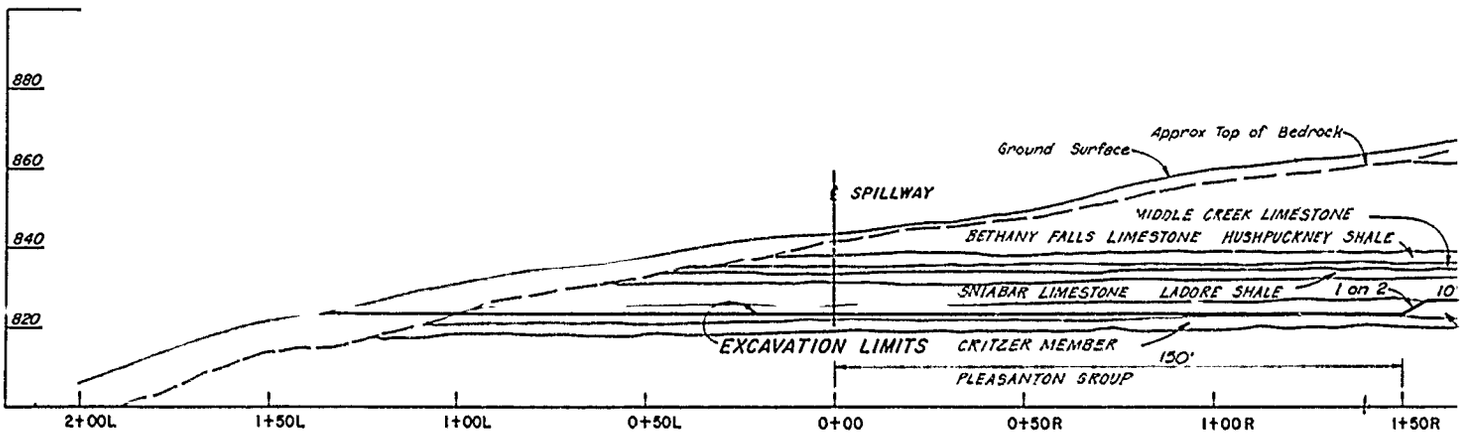
ELEVATION IN FEET BASED ON NATIONAL GEODETIC VERTICAL DAT



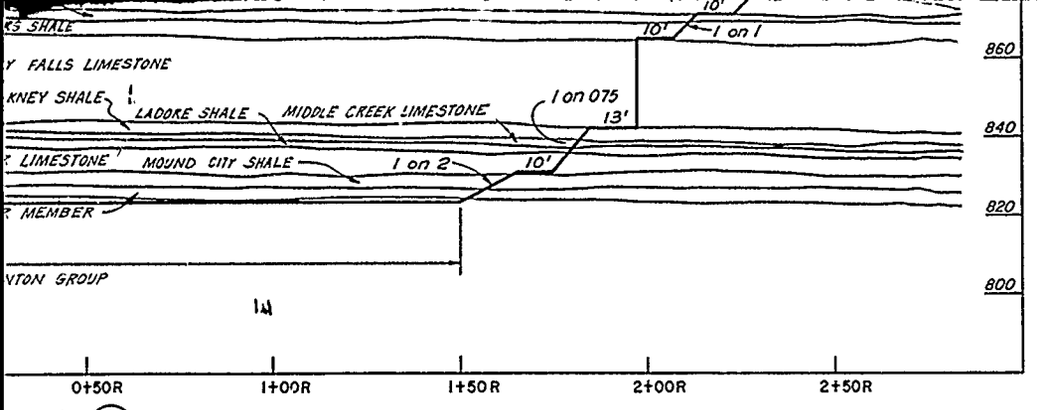
GEOLOGIC SECTION-SPILLWAY STA. 19+15 (D)
(LOOKING DOWNSTREAM) E3 | E12

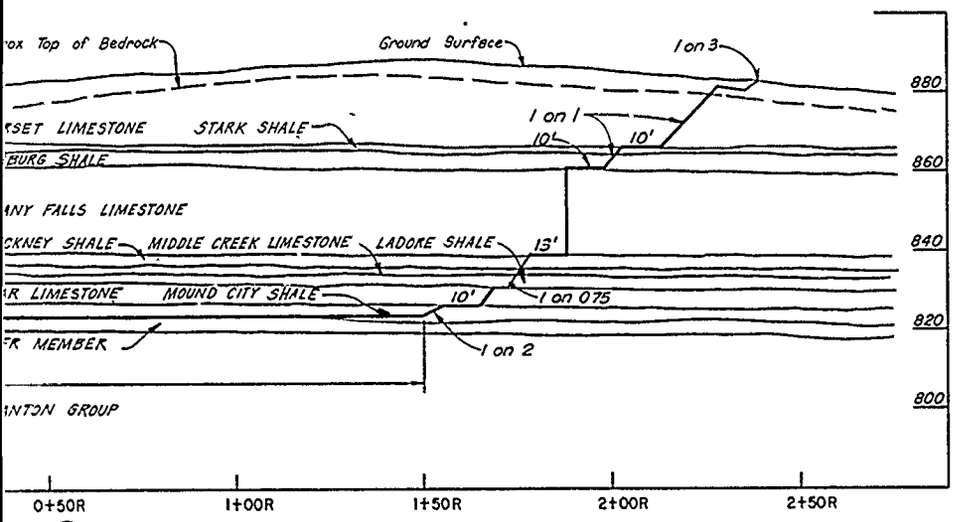


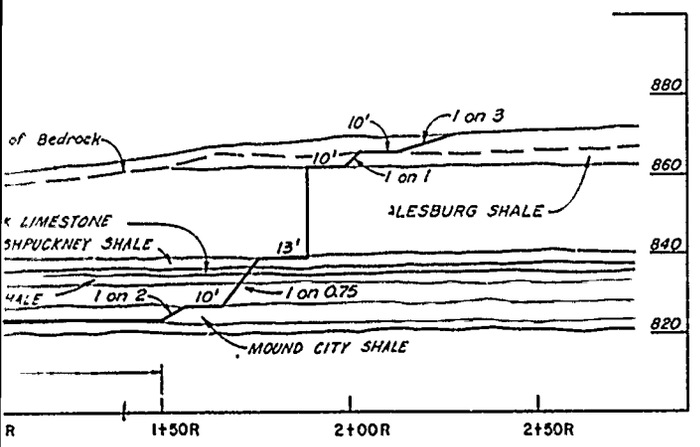
GEOLOGIC SECTION-SPILLWAY STA. 21+35 (E)
(LOOKING DOWNSTREAM) E3 | E12



GEOLOGIC SECTION-SPILLWAY STA. 23+65 (F)
(LOOKING DOWNSTREAM) E3 | E12







NOTES:
1. For general geologic column and legend see Dwg. E 1
2 For plan of spillway see Dwg B7.
3 For location of Borings see Dwgs E2 & E3.

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by:
Checked by:
Submitted by:

US Army Corps of Engineers

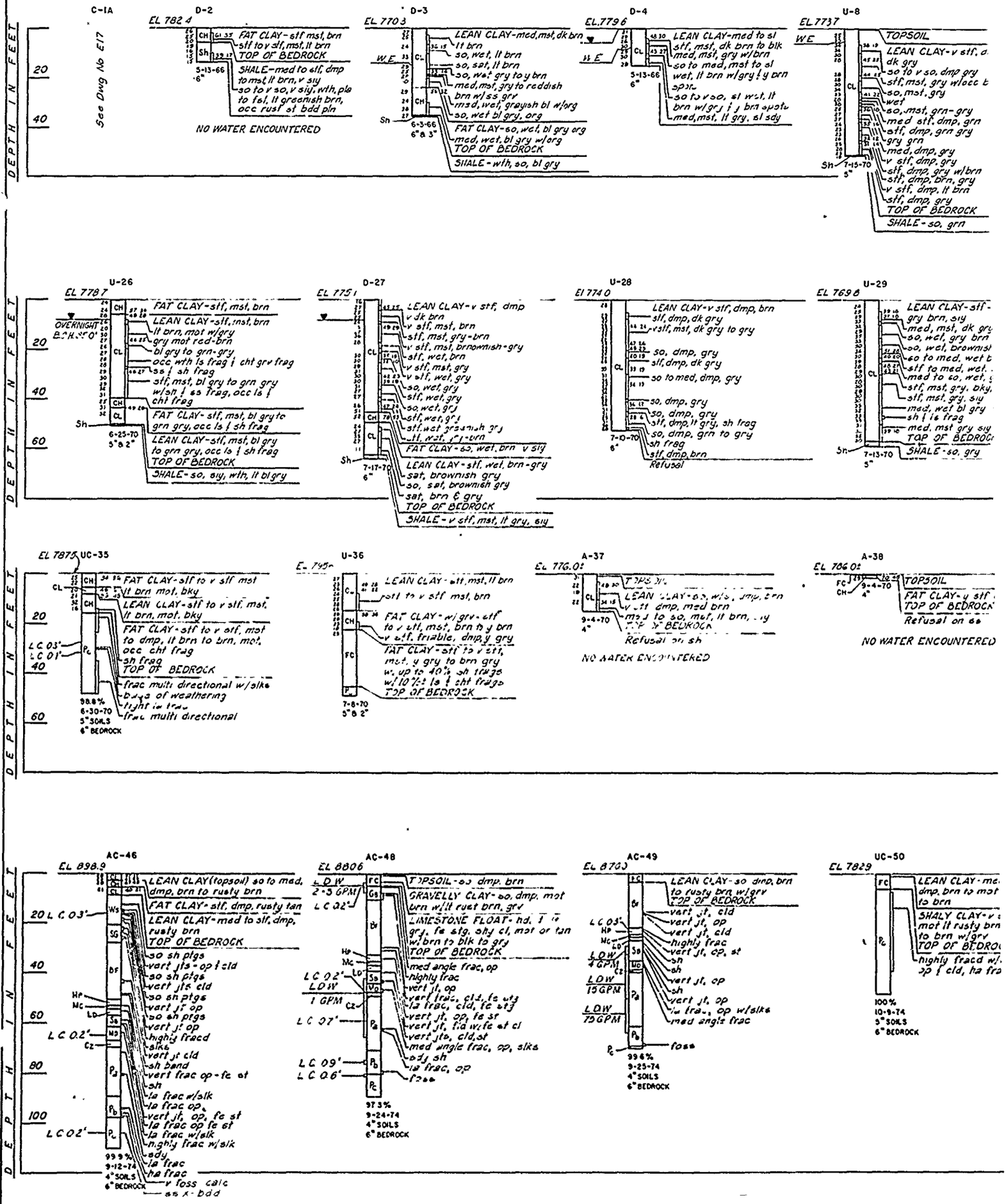
EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

SPILLWAY SECTIONS,
GEOLOGY AND EXCAVATION LIMITS

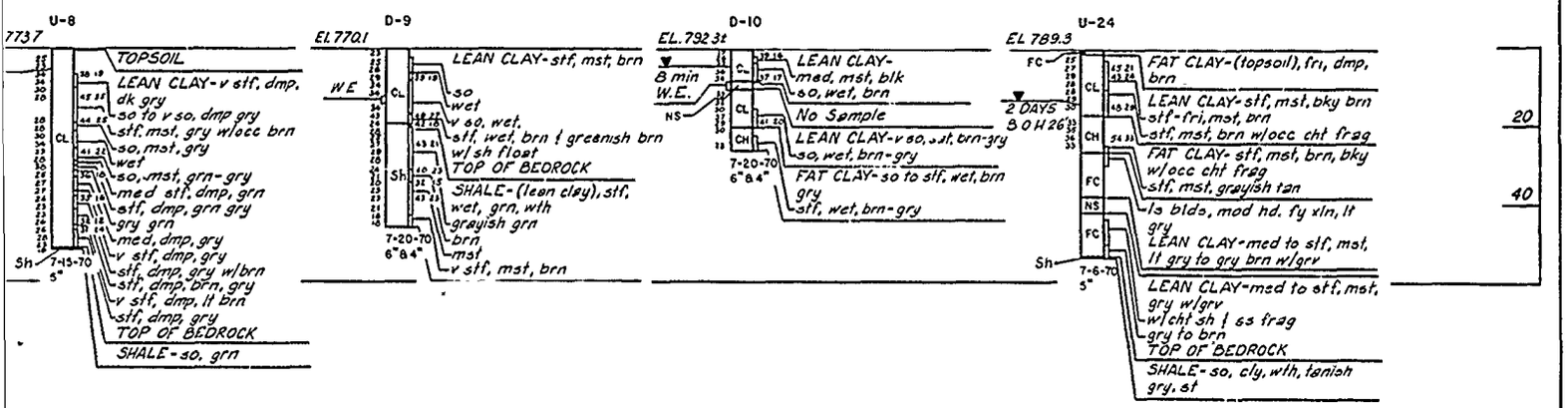
Scale: AS SHOWN
Date: JUNE 1990
Dwg. No.:
Sheet number: 37
File No: RBL-2-1257

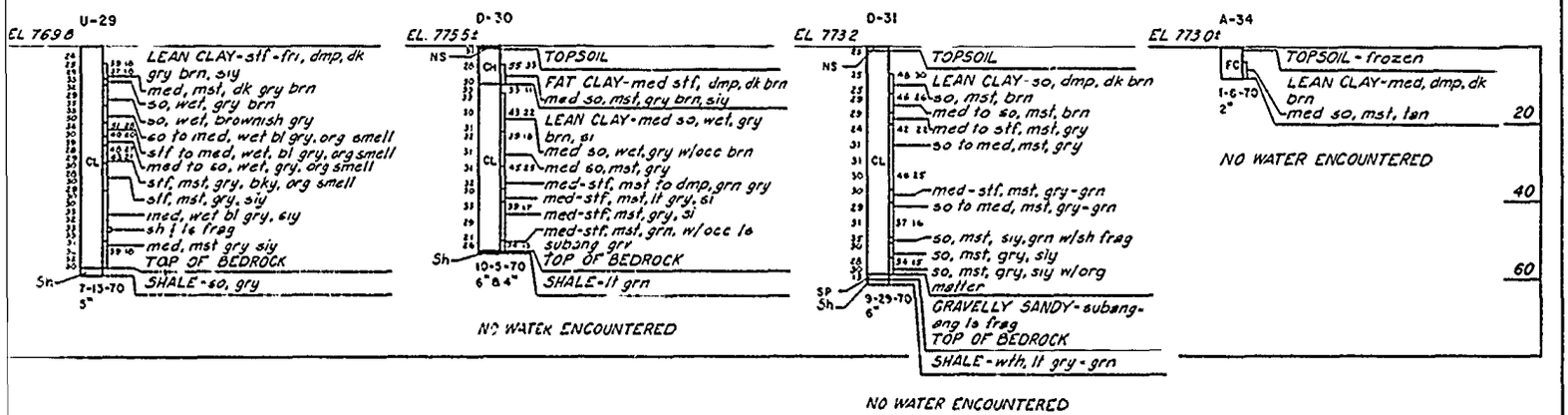
PLATE NO. 37

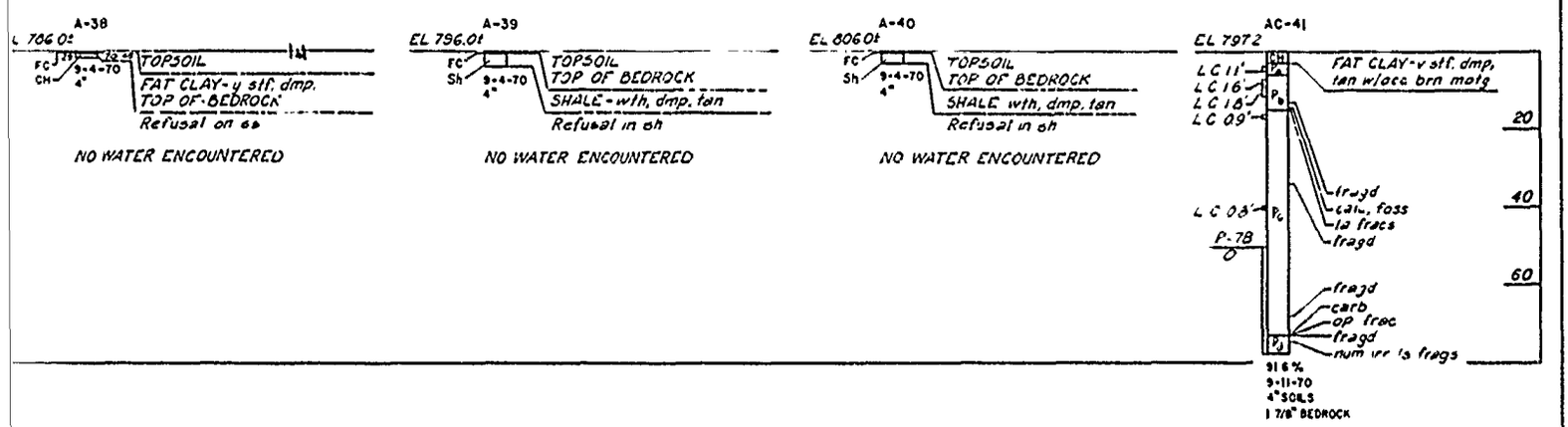
VALUE ENGINEERING PAYS

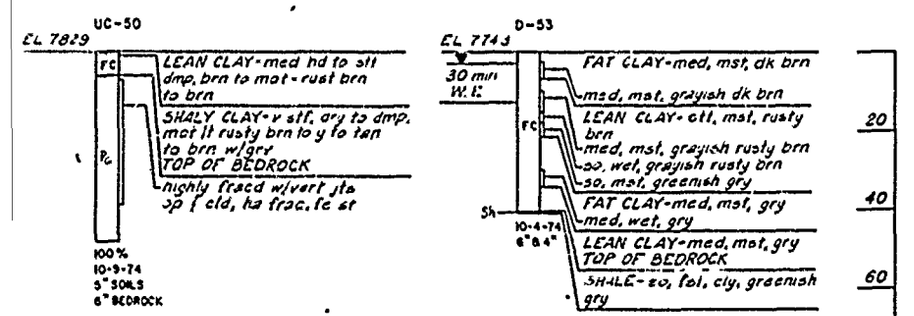


G PAYS









NOTES
1 For General Geologic Column and Legend, see Dwg E-1
2 For location of borings, see Dwgs. E-2, E-3, and E-4.

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

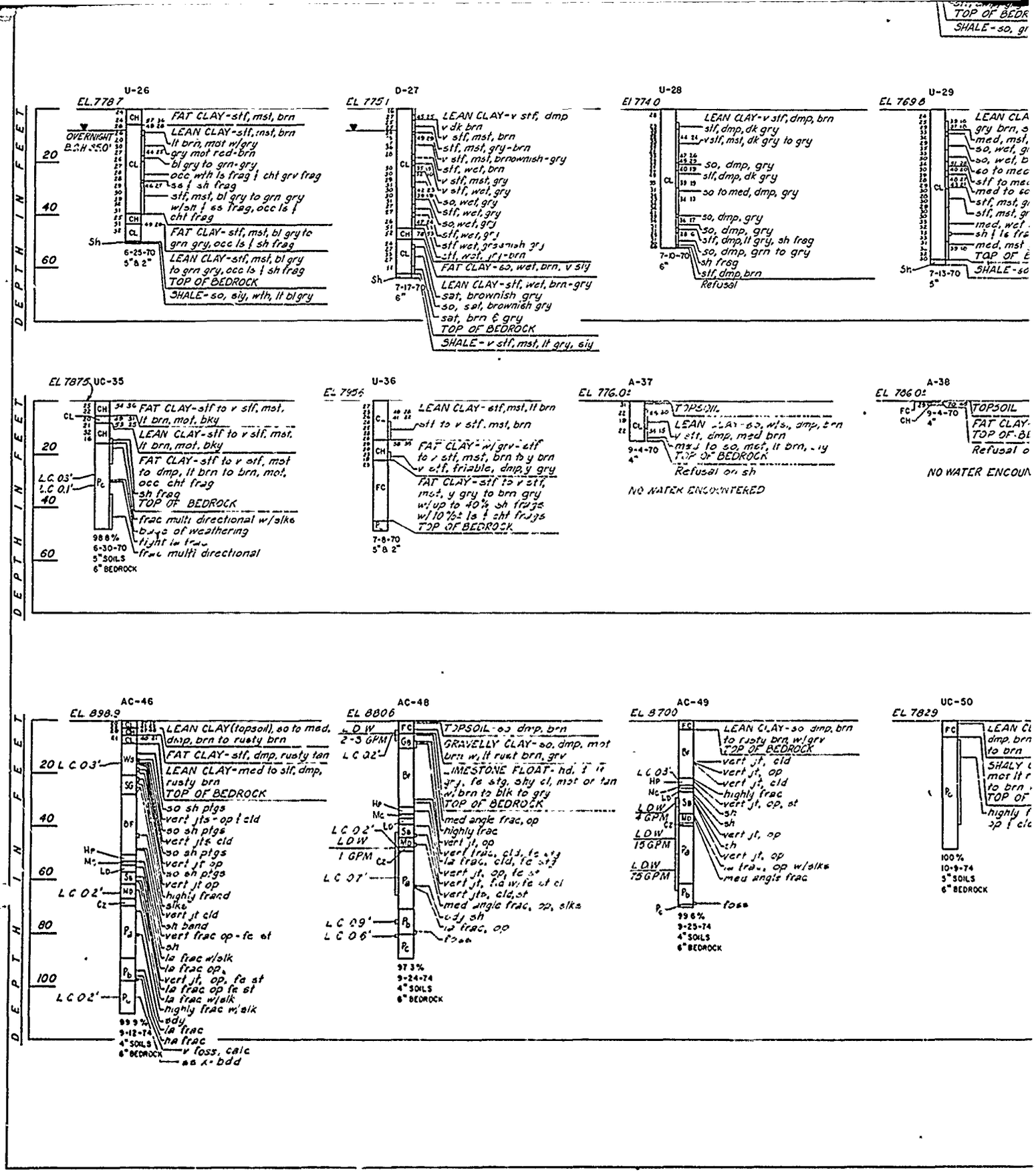
Designed by

Drawn by

US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

LOGS OF DETACHED BORINGS



U-26
EL. 778.7
FAT CLAY-stf, mst, brn
LEAN CLAY-stf, mst, brn
lt brn, mot w/gry
gry mot red-brn
bl gry to grn-gry
occ wth ls frag & cht grv frag
ss & sh frag
stf, mst, bl gry to grn gry w/sh & ss frag, occ ls & cht frag
FAT CLAY-stf, mst, bl gry to grn gry, occ ls & sh frag
LEAN CLAY-stf, mst, bl gry to grn gry, occ ls & sh frag
TOP OF BEDROCK
SHALE-so, siy, wth, lt bl gry
OVERNIGHT
6-25-70
5" & 2"
D-27
EL 775.1
LEAN CLAY-v stf, dmp
v dk brn
v stf, mst, brn
stf, mst, gry-brn
v stf, mst, brownish-gry
stf, wet, brn
v stf, mst, gry
v stf, wet, gry
so, wet, gry
stf, wet, gry
so, wet, gry
stf, wet, gry
stf wet, grsnish gry
stf, wet, gry-brn
FAT CLAY-so, wet, brn, v siy
LEAN CLAY-stf, wet, brn-gry
sat, brownish gry
so, sat, brownish gry
sat, brn & gry
TOP OF BEDROCK
SHALE-v stf, mst, lt gry, siy
7-17-70
6"
U-28
El 774.0
LEAN CLAY-v stf, dmp, brn
stf, dmp, dk gry
v stf, mst, dk gry to gry
so, dmp, gry
stf, dmp, dk gry
so to med, dmp, gry
so, dmp, gry
so, dmp, gry
stf, dmp, lt gry, sh frag
so, dmp, grn to gry
sh frag
stf, dmp, brn
Refusal
7-10-70
6"
U-29
EL 769.8
7-13-70
5"
EL 787.5 UC-35
FAT CLAY-stf to v stf, mst, lt brn, mot, bky
LEAN CLAY-stf to v stf, mst, lt brn, mot, bky
FAT CLAY-stf to v stf, mst to dmp, lt brn to brn, mot, occ cht frag
sh frag
TOP OF BEDROCK
frac multi directional w/slks
base of weathering
tight la frac
frac multi directional
L.C. 0.3'
L.C. 0.1'
98.8%
6-30-70
5" SOILS
6" BEDROCK
U-36
EL 795.6
LEAN CLAY-stf, mst, lt brn
stf to v stf, mst, brn
FAT CLAY-w/grv-stf to v stf, mst, brn to y brn
v stf, friable, dmp, y gry
FAT CLAY-stf to v stf, mst, y gry to brn gry w/up to 40% sh frags w/10%± ls & cht frags
TOP OF BEDROCK
7-8-70
5" & 2"
A-37
EL 776.0±
TOPSOIL
LEAN CLAY-so, w/s, dmp, brn
v stf, dmp, med brn
med to so, mst, lt brn, siy
TOP OF BEDROCK
Refusal on sh
9-4-70
4"
NO WATER ENCOUNTERED
A-38
EL 786.0±
TOPSOIL
FAT CLAY-
TOP OF BE
Refusal o
9-4-70
4"
NO WATER ENCOUN
AC-46
EL 898.9
LEAN CLAY (topsoil), so to med, dmp, brn to rusty brn
FAT CLAY-stf, dmp, rusty tan
LEAN CLAY-med to stf, dmp, rusty brn
TOP OF BEDROCK
so sh ptgs
vert jts-op & cld
so sh ptgs
vert jts cld
so sh ptgs
vert jt op
so sh ptgs
vert jt op
highly frac
slks
vert jt cld
sh band
vert frac op-fe st
sh
la frac w/slk
la frac op
vert jt, op, fe st
la frac op fe st
la frac w/slk
highly frac w/slk
sdy
la frac
ha frac
v foss, calc
ss x-bdd
L C 0.3'
L C 0.2'
L C 0.2'
99.9%
9-12-74
4" SOILS
6" BEDROCK
AC-48
EL 880.6
TOPSOIL-so dmp, brn
GRAVELLY CLAY-so, dmp, mot brn w/lt rust brn, grv
LIMESTONE FLOAT-hd, lt gry, fe stg, shy cl, mot or tan w/brn to blk to gry
TOP OF BEDROCK
med angle frac, op
highly frac
vert jt, op
vert frac, cld, fe stg
la frac, cld, fe stg
vert jt, op, fe st
vert jt, fe w/fe st cl
vert jts, cld, st
med angle frac, op, slks
sdy sh
la frac, op
foss
L D W
2-3 GPM
L C 0.2'
L D W
1 GPM
L C 0.7'
L C 0.9'
L C 0.6'
97.3%
9-24-74
4" SOILS
6" BEDROCK
AC-49
EL 870.0
LEAN CLAY-so dmp, brn to rusty brn w/grv
TOP OF BEDROCK
vert jt, cld
vert jt, op
vert jt, cld
highly frac
vert jt, op, st
sh
sh
vert jt, op
sh
vert jt, op
la frac, op w/slks
med angle frac
foss
L C 0.3'
L D W
4 GPM
L D W
15 GPM
L D W
75 GPM
99.6%
9-25-74
4" SOILS
6" BEDROCK
UC-50
EL 782.9
100%
10-9-74
5" SOILS
6" BEDROCK
DEPTH IN FEET
20
40
60
80
100

stf, dmp, gry w/brn
stf, dmp, brn, gry
v stf, dmp, lt brn
stf, dmp, gry
TOP OF BEDROCK
SHALE - so, grn

v stf, mst, brn

Sh 7-6-70 5"
lt gry to gry brn w/grv
LEAN CLAY - med to stf, mst, gry w/grv
w/cht sh & ss frag
gry to brn
TOP OF BEDROCK
SHALE - so, cly, wth, tanish gry, st

U-29
EL 769.8
LEAN CLAY - stf - fri, dmp, dk gry brn, siy
med, mst, dk gry brn
so, wet, gry brn
so, wet, brownish gry
so to med, wet bl gry, org smell
stf to med, wet, bl gry, org smell
med to so, wet, gry, org smell
stf, mst, gry, bky, org smell
stf, mst, gry, siy
med, wet bl gry, siy
sh & ls frag
med, mst gry siy
TOP OF BEDROCK
Sh 7-13-70 5"
SHALE - so, gry

D-30
EL 775.5±
NS
TOPSOIL
FAT CLAY - med stf, dmp, dk brn
med so, mst, gry brn, siy
LEAN CLAY - med so, wet, gry brn, si
med so, wet, gry w/occ brn
med so, mst, gry
med - stf, mst to dmp, grn gry
med - stf, mst, lt gry, si
med - stf, mst, gry, si
med - stf, mst, grn, w/occ ls subang gry
TOP OF BEDROCK
Sh 10-5-70 6" & 4"
SHALE - lt grn
NO WATER ENCOUNTERED

D-31
EL 773.2
NS
TOPSOIL
LEAN CLAY - so, dmp, dk brn
so, mst, brn
med to so, mst, brn
med to stf, mst, gry
so to med, mst, gry
med - stf, mst, gry - grn
so to med, mst, gry - grn
so, mst, siy, grn w/sh frag
so, mst, gry, siy
so, mst, gry, siy w/org matter
SP Sh 9-29-70 6"
GRAVELLY SANDY - subang - ang ls frag
TOP OF BEDROCK
SHALE - wth, lt gry - grn
NO WATER ENCOUNTERED

A-34
EL 773.0±
FC 1-6-70 2"
TOPSOIL - frozen
LEAN CLAY - med, dmp, dk brn
med so, mst, tan
NO WATER ENCOUNTERED

A-38
EL 786.0±
FC CH 9-4-70 4"
TOPSOIL
FAT CLAY - v stf, dmp,
TOP OF BEDROCK
Refusal on ss
NO WATER ENCOUNTERED

A-39
EL 796.0±
FC Sh 9-4-70 4"
TOPSOIL
TOP OF BEDROCK
SHALE - wth, dmp, tan
Refusal in sh
NO WATER ENCOUNTERED

A-40
EL. 806.0±
FC Sh 9-4-70 4"
TOPSOIL
TOP OF BEDROCK
SHALE wth, dmp, tan
Refusal in sh
NO WATER ENCOUNTERED

AC-41
EL 797.2
CH
LC 11'
LC 16'
LC 18'
LC 09'
FAT CLAY - v stf, dmp, tan w/occ brn motg
LL 08'
P-78
0
frag'd
calc. foss
ls fracs
frag'd
frag'd
carb
op frac
frag'd
num ir ls frags
20
40
60
91 6%
9-11-70
4" SOILS
1 7/8" BEDROCK

UC-50
EL 782.9
FC
LEAN CLAY - med hd to stf dmp, brn to mot - rust brn to brn
SHALY CLAY - v stf, gry to dmp, mot lt rusty brn to y to tan to brn w/grv
TOP OF BEDROCK
highly fracd w/vert jts op & cld, ha frac. fc st
100%
10-9-74
5" SOILS
6" BEDROCK

D-53
EL 774.3
30 min W.L.
FAT CLAY - med, mst, dk brn
med, mst, grayish dk brn
LEAN CLAY - stf, mst, rusty brn
med, mst, grayish rusty brn
so wet, grayish rusty brn
so, mst, greenish gry
FAT CLAY - med, mst, gry
med, wet, gry
LEAN CLAY - med, mst, gry
TOP OF BEDROCK
Sh 10-4-74 6" & 4"
SHALE - so, foi, cly, greenish gry
20
40
60
80
100

NOTES
1 For General Geologic Column and Legend, see Dwg E-1
2 For location of borings, see Dwgs E-2, E-3 and E-4

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by:
Checked by:
Submitted by:

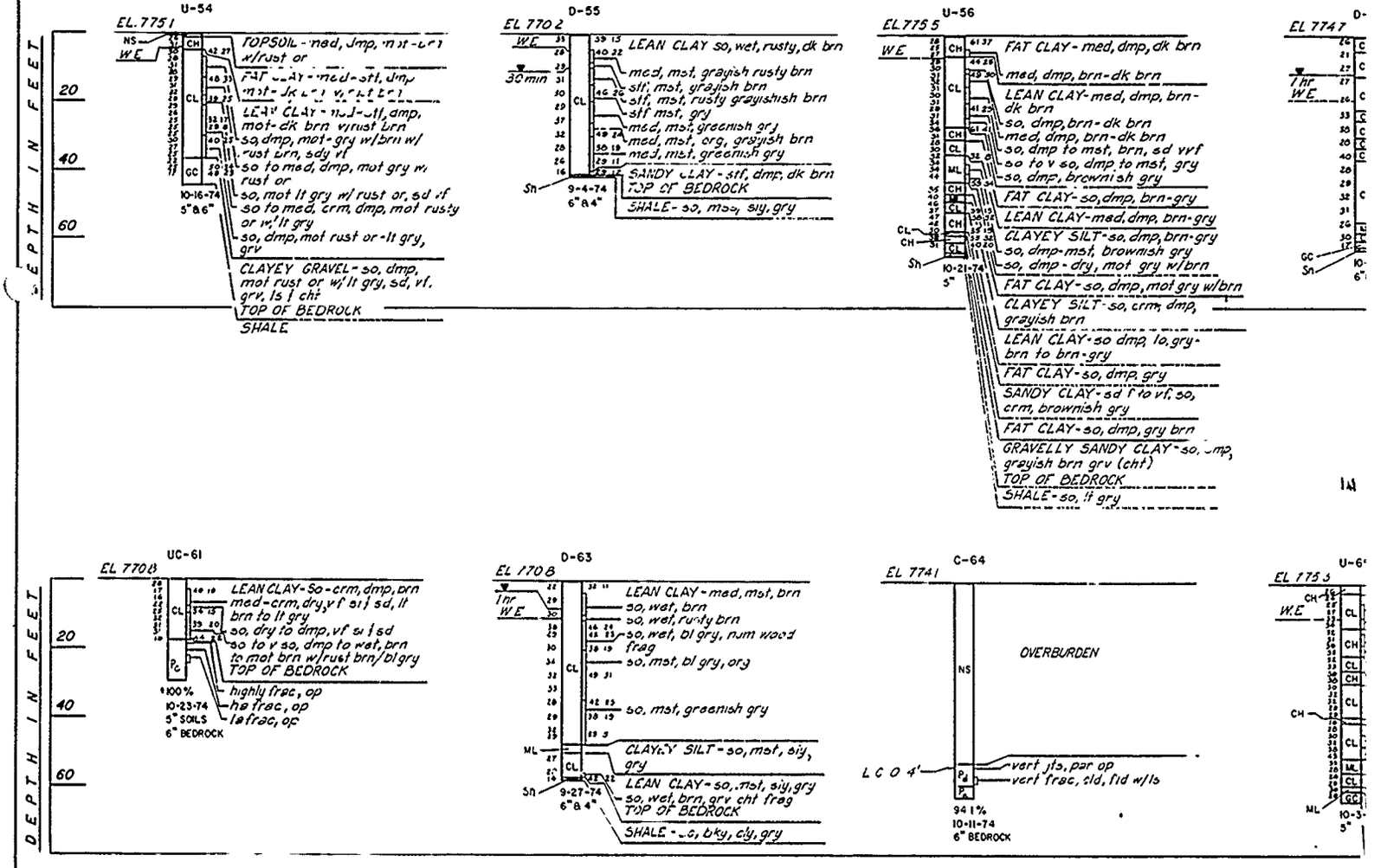
US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

LOGS OF DETACHED BORINGS
NOS. 2 THROUGH 53

Scale: AS SHOWN
Date: JUNE 1990
Dwg. No.:
Sheet number: 38
File No. RBL-2-1258

PLATE NO. 38


DEPTH IN FEET
20
40
60
U-54
EL. 7751
TOPSOIL - med, dmp, mst - dk brn w/rust or
FAT CLAY - med - stf, dmp, mst - dk brn w/rust brn
LEAN CLAY - med - stf, dmp, mot - dk brn w/rust brn
so, dmp, mot - gry w/brn w/ rust brn, sdy vf
so to med, dmp, mot gry w/ rust or
so, mot lt gry w/ rust or, sd vf
so to med, crm, dmp, mot rusty or w/lt gry
so, dmp, mot rust or - lt gry, grv
CLAYEY GRAVEL - so, dmp, mot rust or w/lt gry, sd, vf, grv, ls & cht
TOP OF BEDROCK
SHALE
10-16-74
5"&6"
D-55
EL 7702
LEAN CLAY so, wet, rusty, dk brn
med, mst, grayish rusty brn
stf, mst, grayish brn
stf mst, gry
med, mst, greenish gry
med, mst, org, grayish brn
med, mst, greenish gry
SANDY CLAY - stf, dmp, dk brn
TOP OF BEDROCK
SHALE - so, mod, sly, gry
9-4-74
6"&4"
U-56
EL 7755
FAT CLAY - med, dmp, dk brn
med, dmp, brn - dk brn
LEAN CLAY - med, dmp, brn - dk brn
so, dmp, brn - dk brn
med, dmp, brn - dk brn
so, dmp to mst, brn, sd vrf
so to v so, dmp to mst, gry
so, dmp, brownish gry
FAT CLAY - so, dmp, brn - gry
LEAN CLAY - med, dmp, brn - gry
CLAYEY SILT - so, dmp, brn - gry
so, dmp - mst, brownish gry
so, dmp - dry, mot gry w/brn
FAT CLAY - so, dmp, mot gry w/brn
CLAYEY SILT - so, crm, dmp, grayish brn
LEAN CLAY - so dmp, lo. gry - brn to brn - gry
FAT CLAY - so, dmp, gry
SANDY CLAY - sd f to vf, so, crm, brownish gry
FAT CLAY - so, dmp, gry brn
GRAVELLY SANDY CLAY - so, dmp, grayish brn grv (cht)
TOP OF BEDROCK
SHALE - so, lt gry
10-21-74
5"
EL 7747
1 hr
WE
GC
Sh
UC-61
EL 7708
LEAN CLAY - so - crm, dmp, brn
med - crm, dry, vf stf sd, lt brn to lt gry
so, dry to dmp, vf stf sd
so to v so, dmp to wet, brn to mot brn w/rust brn/bl gry
TOP OF BEDROCK
highly frac, op
he frac, op
le frac, op
100%
10-23-74
5" SOILS
6" BEDROCK
D-63
EL 7708
1 hr
WE
LEAN CLAY - med, mst, brn
so, wet, brn
so, wet, rusty brn
so, wet, bl gry, num wood frag
so, mst, bl gry, org
so, mst, greenish gry
CLAYEY SILT - so, mst, sly, gry
LEAN CLAY - so, mst, sly, gry
so, wet, brn, grv cht frag
TOP OF BEDROCK
SHALE - so, bky, cly, gry
9-27-74
6"&4"
C-64
EL 7741
OVERBURDEN
LC 0 4'
vert jts, par op
vert frac, cld, fld w/ls
94 1%
10-11-74
6" BEDROCK
U-6
EL 7753
W.E
ML
10-3-
5"
AC-105
EL 8058
LC 05'
LC 0.1'
LDW
5 GPM
P-30
0.4
P-35
0.2
P-45
0.83
LC 0.2'
LC 0.3'
P-50
0.97
P-55
0.83
P-60
1.32
P-65
1.32
P-70
1.32
LC 0.1'
LC 0.5'
LDW
7 GPM
P-5
1.50
P-15
1.75
P-20
0.35
P-25
0.30
P-40
0.74
GRAVELLY SANDY LEAN CLAY - v stf, mst, red brn, f to c sd, rndd pebbles
SANDY CLAYEY SILT - stf, dmp, y brn, f sd w/occ c gr
SANDY SILTY LEAN CLAY stf dmp, y brn, f to med sd, occ wh sls frag
CLAYEY GRAVEL - so, mst, y brn, ang ch pebble to gry w/y brn rust stain
le frac, cld rust st
hor & le frac, rust st
he frac, op rust st
base of weathering
he frac, op rust st
he & le frac, cld, rust st
he frac
foss
97.3%
3-7-75
5" SOILS
4" BEDROCK
C-107
EL 8857
LDW
5 GPM
LDW
5 GPM HP
OVERBURDEN
jt or vert frac
he break
irr earthy le break
shy
sh band
sh lam
sh band
vert frac, op, par st
hld vert fracs
par hld vert fracs
he fracs
brk
shy ls
vert frac, hld
shy
hld le frac w/pyrite
100%
7-17-75
6" BEDROCK
C-109
EL 8913
OVERBURDEN
LC 0 1'
LC 0 4'
LC 0 3'
LC 1.7
LC 0 3'
vert jts, op
vert jt
vert jt, op
num hld st jts
calcite hld vert jt
vert jt, op
hld he jt
hld vert jt
sh ptg w/small slick
hld vert jt
vert jt, op
sh
vert jts, op, st
LDW
10 GPM
LDW
15 GPM
94.3%
3-7-75
6" BEDROCK
EL 902
LDW
3 GPM
LC 0 4'
LDW
2 GPM
LDW
3 GPM
TP-115
EL 8455
FC
6-17-75
SHOVEL
lo blds
TOP OF BEDROCK
Refusal on ls
NO WATER ENCOUNTERED
A-116
EL 872.1
FC
Sh
6-18-75
7"
TOPSOIL - lean, mst
TOP OF BEDROCK
Refusal on ls
NO WATER ENCOUNTERED
A-117
EL 8755
FC
Sh
6-18-75
7"
TOPSOIL - lean cl, so, mst, gry
FAT CLAY - stf, dmp, red brn
TOP OF BEDROCK
SHALE - so, wth, tan
Refusal on ls
EL 8433
FC

D-57

EL.7747

- FAT CLAY-(topsoil), stf, mst, dk brn
- LEAN CLAY-med, mst, brn — 1 hr WE
- FAT CLAY-med, mst, brn
- gry
- med, wet, gry, org
- so, wet, gry, org
- LEAN CLAY-so, wet, gry, org
- FAT CLAY-med, wet, gry, org
- LEAN CLAY-med, wet, grn-gry
- FAT CLAY-med, wet, gry
- LEAN CLAY-so, mst, greenish gry
- so, wet, greenish gry, org, sly
- so, mst, greenish
- SILT-so, mst, gry
- LEAN CLAY-so, mst, gry
- CLAYEY SANDY GRAVEL-lo, wet, c, gry, grv, cht & ls frag
- TOP OF BEDROCK
- SHALE-so, sly, lamd, gry to greenish gry

GC, Sh — 10-2-74 — 6"&4"

D-58

EL 7699

- LEAN CLAY-med, mst, dk brn
- med, mst, brn — WE
- so, wet, brn
- so, wet, rusty brn
- med, mst, gry, org
- FAT CLAY-med, mst, gry, org
- med, mst, gry
- so, wet, gry to greenish, org, sly
- so, mst, greenish gry, org, sly
- med, mst, org, gry
- LEAN CLAY-med, mst, gry, org, sly — WE
- CLAYEY SANDY GRAVEL-so, wet, c, greenish gry — GC, Sh — 10-2-74 — 6"&4"
- TOP OF BEDROCK
- SHALE-so, sly, bky, gry

D-60

EL 7741

- LEAN CLAY-stf, dmp, brn
- stf, dmp, grayish brn
- med, mst, rusty brn
- so, wet, rusty brn
- so, mst, gry w/rust stg
- FAT CLAY-med, mst, gry w/ rust stg
- LEAN CLAY-med, mst, gry
- FAT CLAY-med, mst, gry
- LEAN CLAY-med, mst, grn-gry — WE
- so, mst, gry
- med, mst, greenish gry
- org, sly
- CLAYEY SANDY GRAVEL-lo, vc, sat, ang cht frag greenish gry — GC-GM, Sh — 10-1-74 — 6"&4"
- so to lo, sat, vc, ang cht frag, num sh frag, greenish gry
- TOP OF BEDROCK
- SHALE-so, sly, bky, gry

20 / 40 / 60

U-65

EL 7753

- FAT CLAY-so to med, dry to dmp, brn to dk brn — WE
- LEAN CLAY-med, dmp, brn w/rust brn w/dk brn
- so, dmp, brn to rust w/dk brn
- v so, mst to wet, mot-brn to rust to dk brn to gry
- FAT CLAY-med, dmp, gry
- med, dmp, mot-gry to rust to brn
- so to med, dmp, gry, sd vf
- LEAN CLAY-so to v so, mst to wet, gry, sd vf
- FAT CLAY-so to med, wet to dmp, gry, sly
- LEAN CLAY-med dmp to mst, gry, sly
- FAT CLAY-(cl sh), med, dmp, dk greenish gry, sly, mot-brn to dk grn gry
- LEAN CLAY-med, dmp, dk greenish gry, sl sly
- so, dmp, dk greenish gry
- so to v so, mst to dmp, gry
- SILT-med, dmp, dk gry
- LEAN CLAY-med, dmp, brn, sly
- SILT-med to so, dmp, brn
- CLAYEY SANDY GRAVEL-so dmp, brn, grv-cht

ML — 10-3-74 — 5"

D-95 PZ

El 7797

- LEAN CLAY-stf, mst, dk brn
- brn — WE
- med stf, mst, brn
- so, wet, brn
- so, sat, brn
- med stf, sat, tan, w/occ red
- med stf, sat, gry, occ red w/c to f grv
- med stf, sat, gry & red w/ grv

2-5-79 — 6"

D-104

EL 7741

- FAT CLAY-stf, mst, dk brn — 20 min WE
- brn
- LEAN CLAY-so, wet, rusty lt brn
- FAT CLAY-stf, mst, rusty gry
- LEAN CLAY-med, mst, gry
- so, wet, gry
- greenish gry
- sly, greenish gry
- SILTY CLAY-so, wet, sly, greenish gry
- med, mst, gry
- LEAN CLAY-so, mst, rusty gry brn to greenish gry
- TOP OF BEDROCK
- SHALE-so, sdy, sly, bky, grn gry

Sh — 10-3-74 — 6"&4"

20 / 40 / 60

C-111

EL 9021

- LDW 3 GPM, LC 04' — OVERBURDEN
- vert jt, op
- lm frac, st
- hm frac, st
- hm jt, hld
- cl
- sh
- vert jt, hld
- vert jt
- hm frac
- hm frac
- vert jt, st, hld
- hm jt, op
- hm frac, op
- vert jt, op
- sh
- vert jt, op
- hm frac w/silks
- hm jt, op, st

LDW 2 GPM — LDW 3 GPM — 99.2% — 2-26-75 — 24/8" BEDROCK

C-112

EL 894.1

- LC 23', LC 04' — LDW 6 GPM — OVERBURDEN
- med angle jt, op
- sh
- vert
- sh
- sh ptgs
- sh
- vert jt, hld
- med angle frac, possible slks
- num sh ptgs
- sh
- hm frac
- num sh ptgs
- sh
- sh
- 94.7% — 2-21-75 — 2-1/8" BEDROCK
- med angle
- hm frac
- sh
- hm frac
- par op jt, w/stg
- par op jt, w/stg

TP-114

EL 8471

- roots, decayed matter, pebbles
- TOP OF BEDROCK — 6-17-75 — SHOVEL
- Refusal on ls

NO WATER ENCOUNTERED

20 / 40 / 60

NOTES:
1. For General Geologic Column and Legend see Dwg. E-1.
2. For location of borings see Dwgs. E-2, E-3, and E-4.

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:

Drawn by:

US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

LOGS OF DETACHED BORINGS
NOS. 54 THROUGH 119

TP-118

EL. 848±

- roots & decayed matter w/ pebbles
- TOP OF BEDROCK — 6-17-75 — SHOVEL
- Refusal on ls

NO WATER ENCOUNTERED

A-119

EL 868±

- FAT CLAY-med, mst, brn red
- ls rubble
- TOP OF BEDROCK — 6-18-75 — 7"
- Refusal on ls

20

SHALE

CLAYEY SILT - so, crm, dmp, grayish brn
LEAN CLAY - so dmp, lo, gry-brn to brn-gry
FAT CLAY - so, dmp, gry
SANDY CLAY - sd f to vf, so, crm, brownish gry
FAT CLAY - so, dmp, gry brn
GRAVELLY SANDY CLAY - so, dmp, grayish brn, grv (cht)
TOP OF BEDROCK
SHALE - so, lt gry

DEPTH IN FEET

UC-61
EL. 7708
LEAN CLAY - So - crm, dmp, brn
med - crm, dry, y f sil sd, lt brn to lt gry
so, dry to dmp, vf s i sd
so to v so, dmp to wet, brn
f - mot brn w/rust brn/bl gry
TOP OF BEDROCK
100%
10-23-74
5" SOILS
6" BEDROCK
highly frac, op
he frac, op
le frac, op

D-63
EL 7708
Inr WE
LEAN CLAY - med, mst, brn
so, wet, brn
so, wet, rusty brn
so, wet, bl gry, num wood frag
so, mst, bl gry, org
so, mst, greenish gry
CLAYEY SILT - so, mst, siy, gry
LEAN CLAY - so, mst, siy, gry
so, wet, brn, grv cht frag
TOP OF BEDROCK
SHALE - lc, bky, ciy, gry
9-27-74
6" 8 4"

C-64
EL 7741
OVERBURDEN
L C 0 4'
vert jts, par op
vert frac, cld, tld w/ls
94 1%
10-11-74
6" BEDROCK

EL 7753
WE.

AC-105
EL 8058
GRAVELLY SANDY LEAN CLAY - v stf, mst, red brn, f to c sd, rndd pebbles
SANDY CLAYEY SILT - stf, dmp, y brn, f sd w/occ c gr
SANDY SILTY LEAN CLAY stf dmp, y brn, f to med sd, occ wth sis frag
CLAYEY GRAVEL - so, mst, y brn, gng sh pebble to gry w/y brn rust stain
le frac, cld rust st
hor f le frac, rust st
he frac, op rust st
base of weathering
he frac, op rust st
he f le frac, cld, rust st
he frac
foss
L C .05'
L C 01'
L D W
5 GPM
L D W
7.5 GPM
L C 02'
L C 03'
L C 05'
L D W
7 GPM
97 3%
3-7-79
5" SOILS
4" BEDROCK

C-107
EL 885.7
L D W
5 GPM
OVERBURDEN
jt or vert frac
he break
irr earthy le break
shy
sh band
sh lam
sh band
vert frac, op, par st
hld vert fracs
par hld vert fracs
he fracs
brk
shy ls
vert frac, hld
shy
hld le frac w/pyrite
100%
7-17-75
6" BEDROCK

C-109
EL 8913
OVERBURDEN
L C 01'
L C 04'
L C 03'
L C 1.7
L C 03'
vert jts, op
vert jt
vert jt, op
num hld st jts
calcite hld vert jt
vert jt, op
hld he jt
hld vert jt
sh ptg w/small slick
hld vert jt
vert jt, op
sh
vert jts, op, st
L D W
10 GPM
L D W
15 GPM
94 3%
3-7-75
6" BEDROCK

EL 9(
L D W
3 GP
L C 0

L D W
2 GP

L D W
3 GP

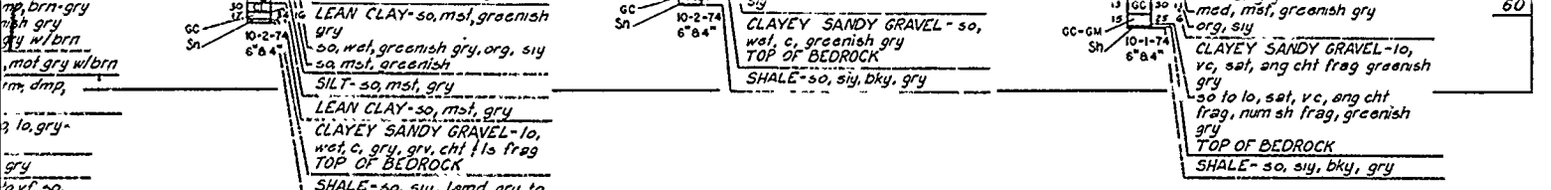
DEPTH IN FT.

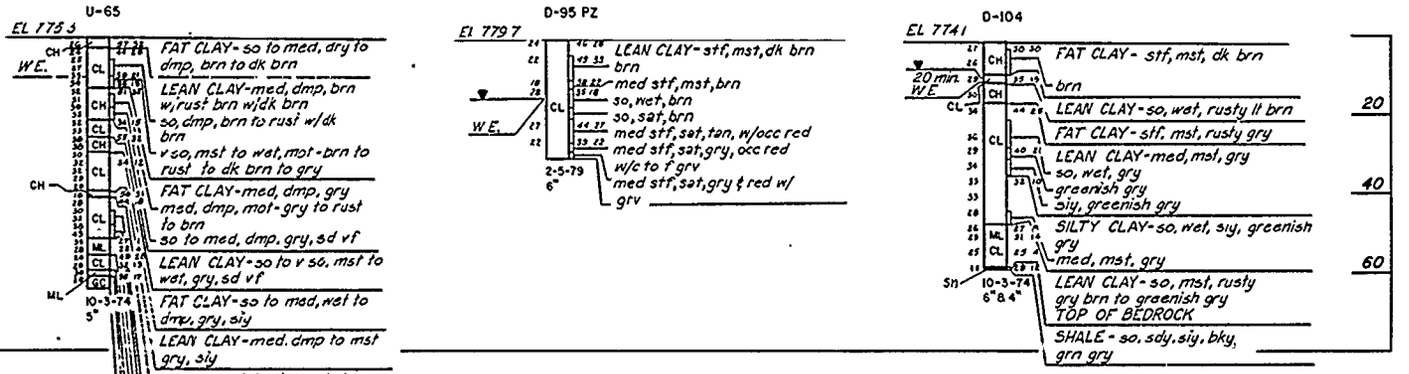
TP-115
EL 8455
lo blds
TOP OF BEDROCK
6-17-75
SHOVEL
Refusal on ls
NO WATER ENCOUNTERED

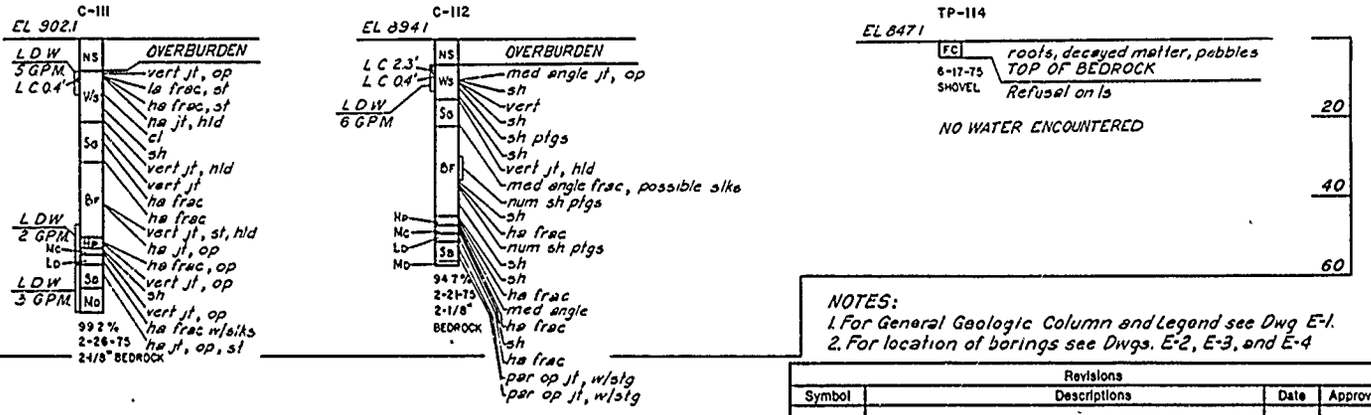
A-116
EL 8721
TOPSOIL - lean, mst
TOP OF BEDROCK
6-18-75
7"
Refusal on ls
NO WATER ENCOUNTERED

A-117
EL 8755
TOPSOIL - lean cl, so, mst, gry
FAT CLAY - stf, dmp, red brn
TOP OF BEDROCK
SHALE - so, wth, lam
6-18-75
7"
Refusal on ls
NO WATER ENCOUNTERED

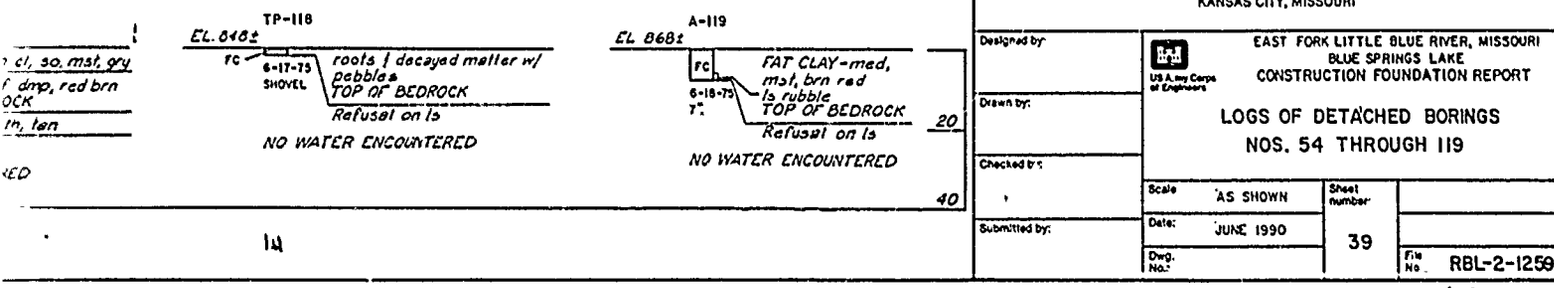
EL 84(







NOTES:
1. For General Geologic Column and Legend see Dwg E-1.
2. For location of borings see Dwgs. E-2, E-3, and E-4



Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by:
Checked by:
Submitted by:

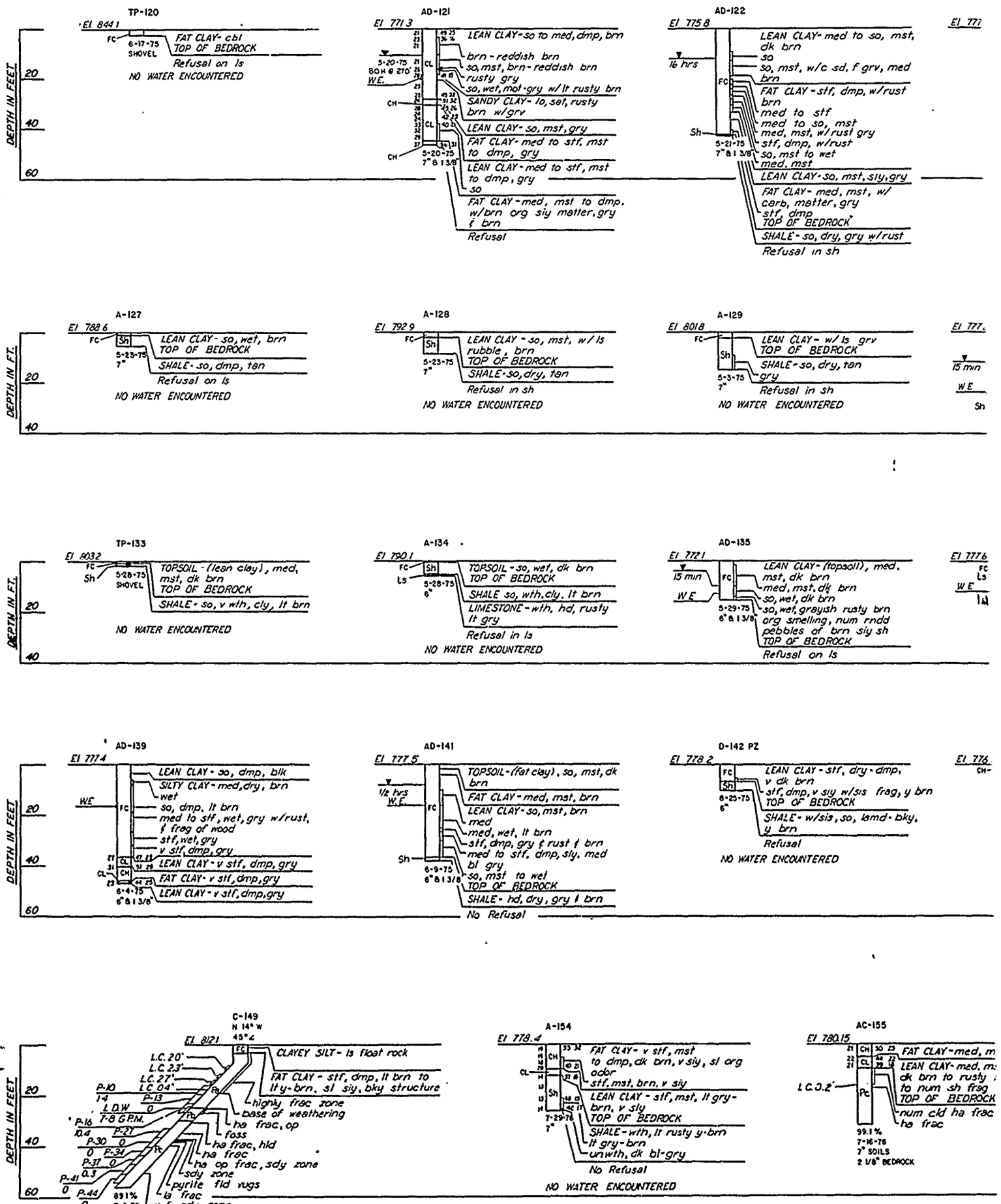
US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

LOGS OF DETACHED BORINGS
NOS. 54 THROUGH 119

Scale: AS SHOWN
Date: JUNE 1990
Dwg. No.:
Sheet number: 39
File No.: RBL-2-1259

PLATE NO. 39


DEPTH IN FEET
20
40
60
TP-120
El 844.1
FC
6-17-75
SHOVEL
FAT CLAY- cbl
TOP OF BEDROCK
Refusal on ls
NO WATER ENCOUNTERED
AD-121
El 771.3
5-20-75
BOH @ 210'
W.E.
CL
CH
CL
CH
5-20-75
7" & 1 3/8"
LEAN CLAY- so to med, dmp, brn
brn - reddish brn
so, mst, brn - reddish brn
rusty gry
so, wet, mot - gry w/ lt rusty brn
SANDY CLAY- lo, sat, rusty brn w/grv
LEAN CLAY- so, mst, gry
FAT CLAY- med to stf, mst to dmp, gry
LEAN CLAY- med to stf, mst to dmp, gry
so
FAT CLAY- med, mst to dmp, w/brn org siy matter, gry & brn
Refusal
AD-122
El 775.8
16 hrs
FC
Sh
5-21-75
7" & 1 3/8"
LEAN CLAY- med to so, mst, dk brn
so
so, mst, w/c sd, f grv, med brn
FAT CLAY- stf, dmp, w/rust brn
med to stf
med to so, mst
med, mst, w/rust gry
stf, dmp, w/rust
so, mst to wet
med. mst
LEAN CLAY- so, mst, sly, gry
FAT CLAY- med, mst, w/ carb, matter, gry
stf, dmp
TOP OF BEDROCK
SHALE- so, dry, gry w/rust
Refusal in sh
El 777
A-127
El 788.6
FC
Sh
5-23-75
7"
LEAN CLAY- so, wet, brn
TOP OF BEDROCK
SHALE- so, dmp, tan
Refusal on ls
NO WATER ENCOUNTERED
A-128
El 792.9
FC
Sh
5-23-75
7"
LEAN CLAY - so, mst, w/ ls rubble, brn
TOP OF BEDROCK
SHALE- so, dry, tan
Refusal in sh
NO WATER ENCOUNTERED
A-129
El 801.8
FC
Sh
5-3-75
7"
LEAN CLAY - w/ ls grv
TOP OF BEDROCK
SHALE- so, dry, tan gry
Refusal in sh
NO WATER ENCOUNTERED
El 777.
15 min
W E
Sh
TP-133
El 803.2
FC
Sh
5-28-75
SHOVEL
TOPSOIL - (lean clay), med, mst, dk brn
TOP OF BEDROCK
SHALE - so, v wth, cly, lt brn
NO WATER ENCOUNTERED
A-134
El 790.1
FC
Sh
Ls
5-28-75
6"
TOPSOIL - so, wet, dk brn
TOP OF BEDROCK
SHALE so, wth. cly. lt brn
LIMESTONE - wth, hd, rusty lt gry
Refusal in ls
NO WATER ENCOUNTERED
AD-135
El 772.1
15 min
W E
FC
5-29-75
6" & 1 3/8"
LEAN CLAY- (topsoil), med. mst, dk brn
med, mst, dk brn
so, wet, dk brn
so, wet, grayish rusty brn org smelling, num rndd pebbles of brn siy sh
TOP OF BEDROCK
Refusal on ls
El 777.6
FC
Ls
W E
AD-139
El 777.4
WE
FC
CL
CH
CL
CH
6-4-75
6" & 1 3/8"
LEAN CLAY - so, dmp, blk
SILTY CLAY - med, dry, brn
wet
so, dmp, lt brn
med to stf, wet, gry w/rust, f frag of wood
stf, wet, gry
v stf, dmp, gry
LEAN CLAY - v stf, dmp, gry
FAT CLAY - v stf, dmp, gry
LEAN CLAY - v stf, dmp, gry
AD-141
El 777.5
1/2 hrs
W.E
FC
Sh
6-9-75
6" & 1 3/8"
TOPSOIL - (fat clay), so, mst, dk brn
FAT CLAY - med, mst, brn
LEAN CLAY - so, mst, brn
med
med, wet, lt brn
stf, dmp, gry & rust & brn
med to stf, dmp, sly, med bl gry
so, mst to wet
TOP OF BEDROCK
SHALE - hd, dry, gry & brn
No Refusal
D-142 PZ
El 778.2
FC
Sh
8-25-75
6"
LEAN CLAY - stf, dry - dmp, v dk brn
stf, dmp, v siy w/sis frag, y brn
TOP OF BEDROCK
SHALE - w/sis, so, lamd - bky, y brn
Refusal
NO WATER ENCOUNTERED
El 776.
CH-
C-149
N 14° W
45° ∠
El 812.1
FC
Pc
L.C. 20'
L.C. 23'
L.C. 27'
L.C. 04'
P-10
1-4
P-13
L.D.W
0
7-8 G.P.M.
P-16
10.4
P-27
P-30
0
P-34
P-37
0
0.3
P-41
0
P-44
0
89.1%
7-6-79
1 7/8" BEDROCK
CLAYEY SILT - ls float rock
FAT CLAY - stf, dmp, lt brn to lt y-brn, sl siy, bky structure
highly frac zone
base of weathering
ha frac, op
foss
ha frac, hld
ha frac
ha op frac, sdy zone
sdy zone
pyrite fld vugs
ls frac
v f sdy zone
A-154
El 778.4
CH
CL
Sh
7-29-76
7"
FAT CLAY - v stf, mst to dmp, dk brn, v siy, sl org odor
stf, mst, brn, v siy
LEAN CLAY - stf, mst, lt gry - brn, v sly
TOP OF BEDROCK
SHALE - wth, lt rusty y-brn lt gry - brn unwth, dk bl-gry
No Refusal
NO WATER ENCOUNTERED
AC-155
El 780.15
CH
CL
Pc
L.C. 0.2'
FAT CLAY - med, m
LEAN CLAY - med, m dk brn to rusty to num sh frag
TOP OF BEDROCK
num cld ha frac
ha frac
99.1%
7-16-76
7" SOILS
2 1/8" BEDROCK

AYS

med to so, mst,
: sd, f grv, med
tf, dmp, w/rust
f
mst
/rust gry
/rust
et
so, mst, slty, gry
ed, mst, w/
r, gry
ROCK"
ry, gry w/rust
sh

A-123

El 777.6

FC — LEAN CLAY- med, mst, dk gry brn
so, mst, brn
f grv
Sh — TOP OF BEDROCK
5-22-75 7" — SHALE- so, dry, wth, tan
Refusal in sh

NO WATER ENCOUNTERED

A-125

El 796.8

FC 30 — Sh 38 33 — LEAN CLAY-med, dmp, brn
TOP OF BEDROCK
5-22-75 7" — SHALE- so, tan
Refusal on ls

NO WATER ENCOUNTERED

A-126

El 816.32

FC — LEAN CLAY- f ls rubble
TOP OF BEDROCK
Sh — SHALE - so, wth, gry tan
gry
5-22-75 7" — Refusal on ls

NO WATER ENCOUNTERED

20
40
60

w/ ls grv
ROCK
y, tan
ED

AD-130

El 777.2

15 min — WE — Sh — FC — LEAN CLAY - med, mst, dk gry
dk brn
brn
med, mst, rusty brn w/occ gry
med, mst, rusty brn, org smell
5-27-75 6" & 1 3/8" — med, mst, gry, org smell
TOP OF BEDROCK
SHALE - so, siy, wth, non-calc, greyish brn
Refusal

A-131

El 795.8

FC — Sh — LEAN CLAY - med, mst, dk brn
5-27-75 6" — med, mst, brn
TOP OF BEDROCK
SHALE - so, cly, non-calc, v wth, brn
so, cly, non-calc, unwth gry
No Refusal

NO WATER ENCOUNTERED

TP-132

El 815.2

WE — FC — Sh — 5-28-75 SHOVEL — TOPSOIL - (lean clay), so, wet, dk brn
LEAN CLAY - med, mst brn w/num ls cbl
TOP OF BEDROCK
SHALE - so non-calc, cly, lt brn

20
40

opsoil), med.
brn
rusty brn
num rndd
orn siy sh
OCK
S

TP-136

El 777.6

FC — LS — WE — 5-30-75 SHOVEL — TOPSOIL - (fat clay), med, mst, dk brn
TOP OF BEDROCK
LIMESTONE - v wth, med xln, thin bdd, greyish rusty lt brn (solution jt)
Refusal

AD-137

El 772.5

15 min — WE — FC — Sh — LEAN CLAY - so, mst, dk brn
so, wet, brn
v so, wet, org smell, rusty brn
FAT CLAY- stf, mst, rusty brn w/gry f grn, num rndd pebble size sh frag
6-2-75 6" & 1 3/8" — stf, mst, lt brn
TOP OF BEDROCK
SHALE - so, pla, siy, rusty gry

AD-138

El 772.4

10 min — WE — FC — Sh — LEAN CLAY - so, mst brn, lt brn
SILTY CLAY - v so, dmp, lt brn sat
6-4-75 7" & 1 3/8" — TOP OF BEDROCK
SHALE med, dmp, tan
Refusal in sh

20
40

dry - dmp,
w/s/s frag, y brn
OCK
so, lamd - bky,

DC-143 PZ, A

El 776.5

CH — CL — Pc — FAT CLAY- stf to v stf, dry, brn to dk gry-brn
LEAN CLAY- v stf, dmp, red brn f gry
stf, dry, red brn f tan
stf to med, dmp to mst, red brn f gry to lt gry w/rust mot
stf, dmp, v siy, w/s/s frag, red tan
med to so, dmp to mst, v siy, lt bl gry w/rust to bl grn
v stf, dmp, w/num s/s frag, red-y brn, wth sh
100 % 8-25-75 6" SOILS 6" BEDROCK — TOP OF BEDROCK
ha jt st
hld, la jt, st
vert jt
la jt, op, st
vert jt, op
num multi directional jts, op

D-144

El 772.0

15 min — WE — FC — Sh — TOPSOIL - (lean clay), dry, brn, siy
LEAN CLAY - fm, mst, brn, siy
fm, dmp
so, mst, brn
v so, wet, brn, siy, occ lt gry streaks f dk brn streaks, sdy at base
9-4-75 6" — TOP OF BEDROCK
SHALE - fm, tan w/ lt gry streaks

D-153

El 772.0

FC — Sh — TOPSOIL - fm, mst, dk brn
TOP OF BEDROCK
WEATHERED SHALE - fm, mst to dry, tan to lt gry, siy
lt gry
so, wet, tan-brn, siy
lt gry w/ red-brn
9-4-75 6" — v so, wet, slate gry w/fe stains
so, wet bl gry, unwth

20
40
60

NOTES:
1. For General Geologic Column and Legend see Dwg. E-1.
2. For location of borings see Dwgs. E-2, E-3, and E-4.

AC-155

5

CH — CL — Pc — FAT CLAY - med, mst, dk brn
LEAN CLAY- med, mst to wet, dk brn to rusty brn, occ to num sh frag
TOP OF BEDROCK
num cld ha frac
ha frac

99 1/2 %
7-16-76
7" SOILS
2 1/8" BEDROCK

AD-158 PZ

El 778.3

FC — CLAYEY SILT - (topsoil), stf to v stf, dmp to mst, dk brn, sl org odor
SILT f CLAY MIXTURE - stf to med, mst, brn
WE — Sh — 7-29-76 7" & 1 3/8" — FAT CLAY - v stf, mst, lt rusty brn, gry, blk, trace of sl, few fe pellets
ss f sh frag
TOP OF BEDROCK
SHALE - wth
unwth
Refusal

20
40
60

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

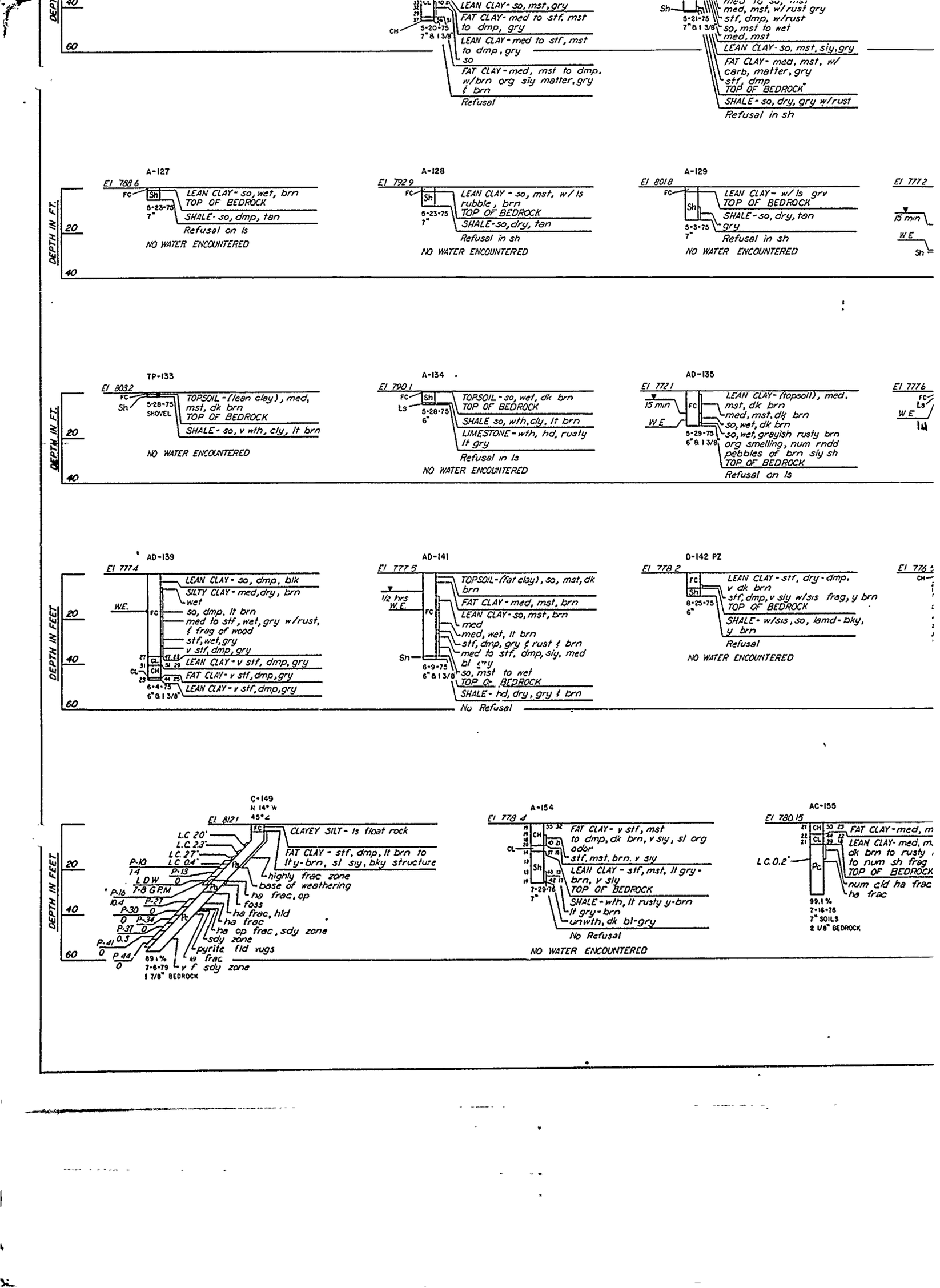
Designed by:
Drawn by:
Checked by:
Submitted by:

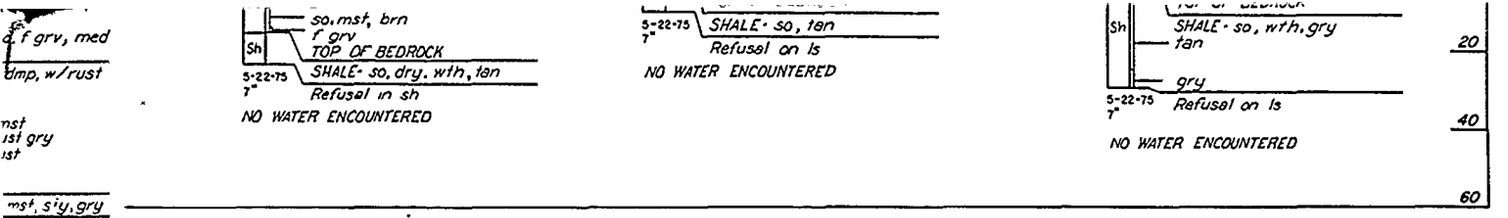
US Army Corps of Engineers

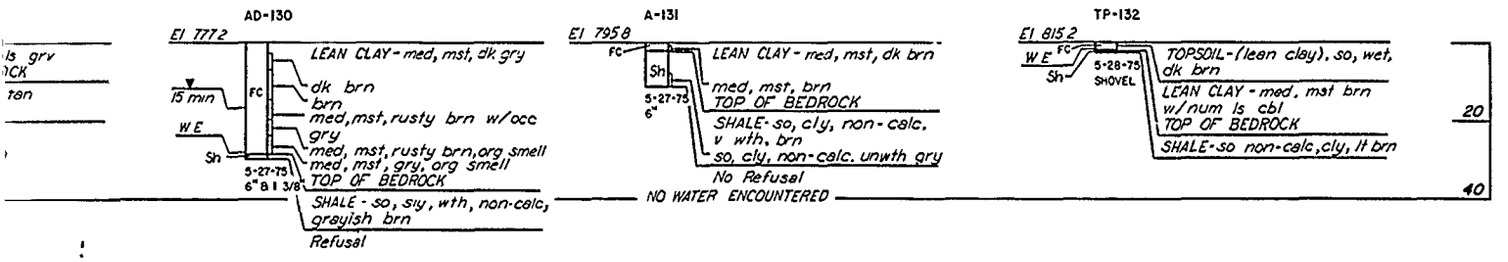
EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

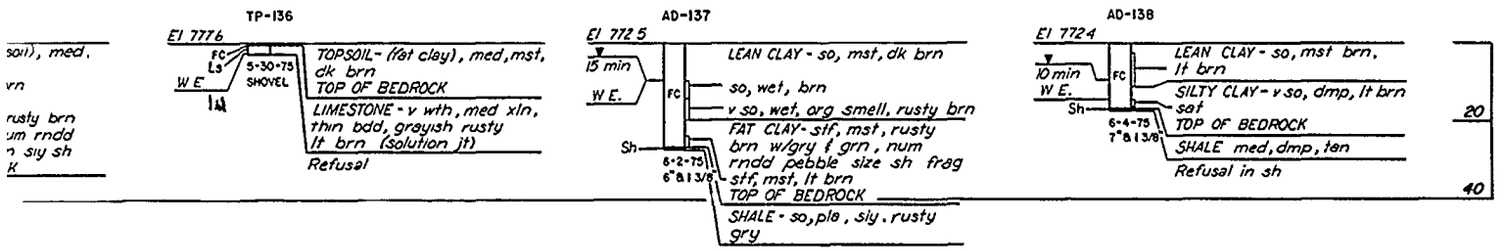
LOGS OF DETACHED BORINGS
NOS. 120 THROUGH 158

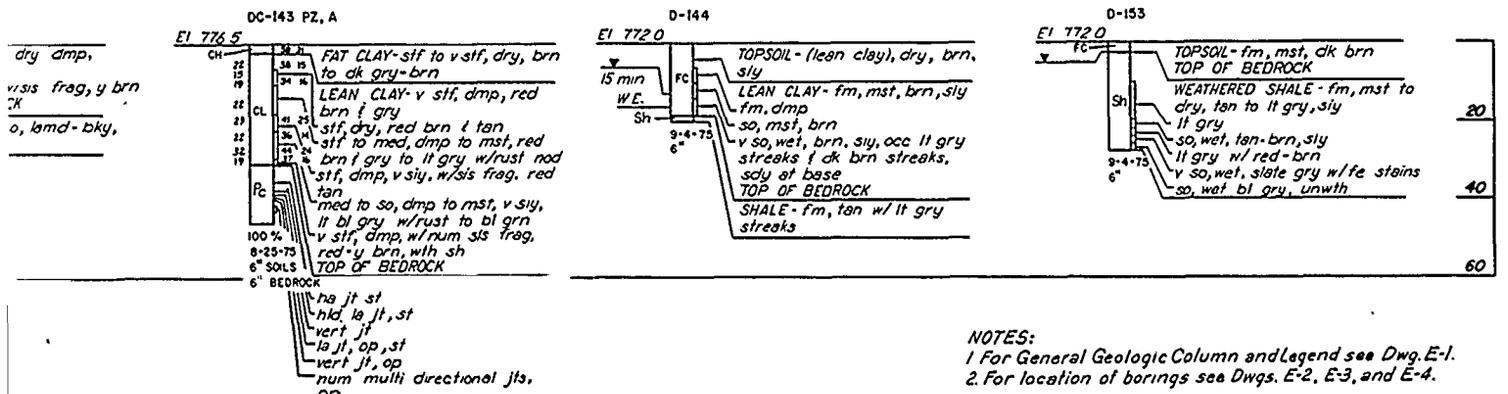
Scale: AS SHOWN
Date: JUNE 1990
Sheet number: 10


DEPTH IN FEET
40
60
CH
5-20-75
7" & 1 3/8"
LEAN CLAY - so, mst, gry
FAT CLAY - med to stf, mst to dmp, gry
LEAN CLAY - med to stf, mst to dmp, gry so
FAT CLAY - med, mst to dmp. w/brn org siy matter, gry & brn
Refusal
Sh
5-21-75
7" & 1 3/8"
med to so, mst
med, mst, w/rust gry
stf, dmp, w/rust
so, mst to wet
med, mst
LEAN CLAY - so, mst, siy, gry
FAT CLAY - med, mst, w/ carb, matter, gry stf, dmp
TOP OF BEDROCK
SHALE - so, dry, gry w/rust
Refusal in sh
A-127
El 788.6
FC
Sh
5-23-75
7"
LEAN CLAY - so, wet, brn
TOP OF BEDROCK
SHALE - so, dmp, tan
Refusal on ls
NO WATER ENCOUNTERED
A-128
El 792.9
FC
Sh
5-23-75
7"
LEAN CLAY - so, mst, w/ ls rubble, brn
TOP OF BEDROCK
SHALE - so, dry, tan
Refusal in sh
NO WATER ENCOUNTERED
A-129
El 801.8
FC
Sh
5-3-75
7"
LEAN CLAY - w/ ls grv
TOP OF BEDROCK
SHALE - so, dry, tan gry
Refusal in sh
NO WATER ENCOUNTERED
El 777.2
15 min
W E
Sh
DEPTH IN FT.
20
40
TP-133
El 803.2
FC
Sh
5-28-75
SHOVEL
TOPSOIL - (lean clay), med, mst, dk brn
TOP OF BEDROCK
SHALE - so, v wth, cly, lt brn
NO WATER ENCOUNTERED
A-134
El 790.1
FC
Ls
Sh
5-28-75
6"
TOPSOIL - so, wet, dk brn
TOP OF BEDROCK
SHALE so, wth, cly, lt brn
LIMESTONE - wth, hd, rusty lt gry
Refusal in ls
NO WATER ENCOUNTERED
AD-135
El 772.1
15 min
W E
FC
5-29-75
6" & 1 3/8"
LEAN CLAY - (topsoil), med. mst, dk brn
med, mst, dk brn
so, wet, dk brn
so, wet, grayish rusty brn org smelling, num rndd pebbles of brn siy sh
TOP OF BEDROCK
Refusal on ls
El 777.6
FC
Ls
W E
DEPTH IN FEET
20
40
AD-139
El 777.4
W.E.
FC
CL
CH
6-4-75
6" & 1 3/8"
LEAN CLAY - so, dmp, blk
SILTY CLAY - med, dry, brn wet
so, dmp, lt brn
med to stf, wet, gry w/rust, & frag of wood
stf, wet, gry
v stf, dmp, gry
LEAN CLAY - v stf, dmp, gry
FAT CLAY - v stf, dmp, gry
LEAN CLAY - v stf, dmp, gry
AD-141
El 777.5
1 1/2 hrs
W.E.
FC
Sh
6-9-75
6" & 1 3/8"
TOPSOIL - (fat clay), so, mst, dk brn
FAT CLAY - med, mst, brn
LEAN CLAY - so, mst, brn med
med, wet, lt brn
stf, dmp, gry & rust & brn
med to stf, dmp, siy, med bl gry
so, mst to wet
TOP OF BEDROCK
SHALE - hd, dry, gry & brn
No Refusal
D-142 PZ
El 778.2
FC
Sh
8-25-75
6"
LEAN CLAY - stf, dry - dmp, v dk brn
stf, dmp, v sly w/sis frag, y brn
TOP OF BEDROCK
SHALE - w/sis, so, lamd - bky, y brn
Refusal
NO WATER ENCOUNTERED
El 776.5
CH
DEPTH IN FEET
20
40
60
C-149
N 14° W
45° ∠
El 812.1
FC
L.C. 20'
L.C. 23'
L.C. 27'
L.C. 0.4'
P-10
1.4
P-13
L D W
0
P-16
7-8 G.P.M.
10.4
P-21
P-30
0
P-34
0
P-37
0
0.5
P-41
0
P 44
0
89.1%
7-6-79
1 7/8" BEDROCK
CLAYEY SILT - ls float rock
FAT CLAY - stf, dmp, lt brn to lt y-brn, sl siy, bky structure
highly frac zone
base of weathering
hs frac, op
foss
hs frac, hld
hs frac
hs op frac, sdy zone
sdy zone
pyrite fld vugs
hs frac
v f sdy zone
A-154
El 778.4
CH
CL
Sh
7-29-76
7"
FAT CLAY - v stf, mst to dmp, dk brn, v siy, sl org odor
stf, mst, brn, v siy
LEAN CLAY - stf, mst, lt gry - brn, v siy
TOP OF BEDROCK
SHALE - wth, lt rusty y-brn
lt gry-brn
unwth, dk bl-gry
No Refusal
NO WATER ENCOUNTERED
AC-155
El 780.15
CH
CL
Pc
L.C. 0.2'
99.1%
7-16-76
7" SOILS
2 1/8" BEDROCK
FAT CLAY - med, m
LEAN CLAY - med, m. dk brn to rusty to num sh frag
TOP OF BEDROCK
num cld ha frac
ha frac

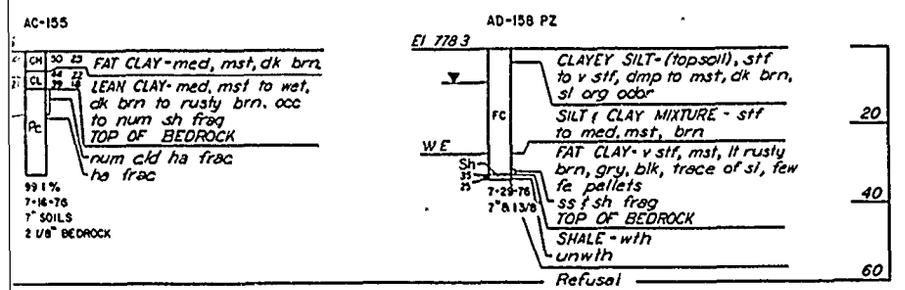








NOTES:
1 For General Geologic Column and Legend see Dwg. E-1.
2. For location of borings see Dwgs. E-2, E-3, and E-4.



Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by:
Checked by:
Submitted by:

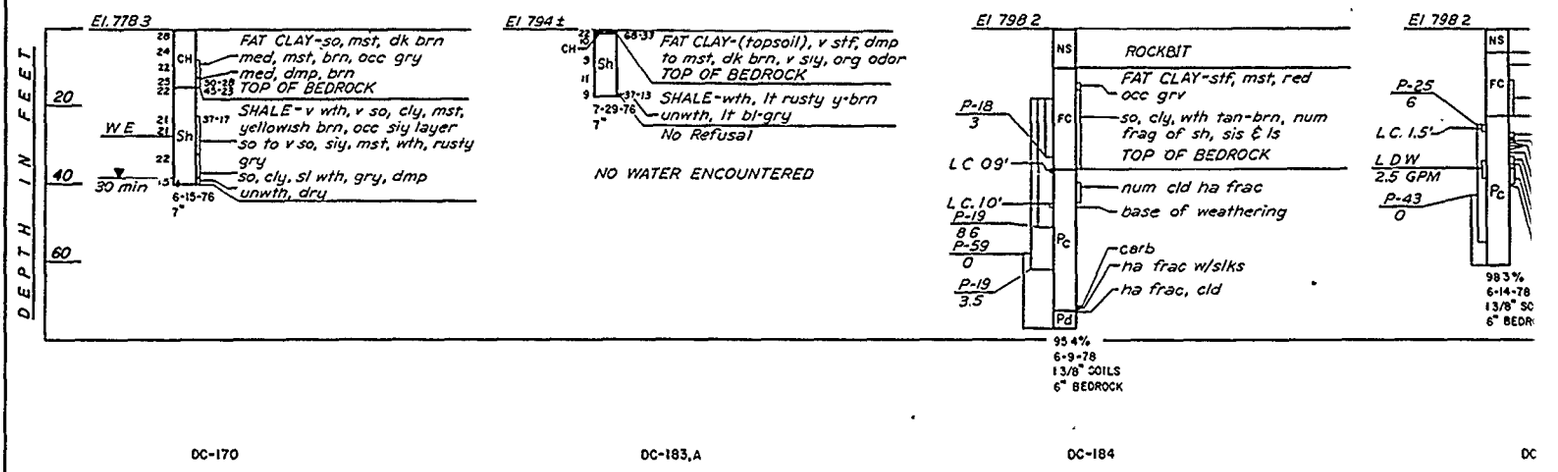
US Army Corps of Engineers

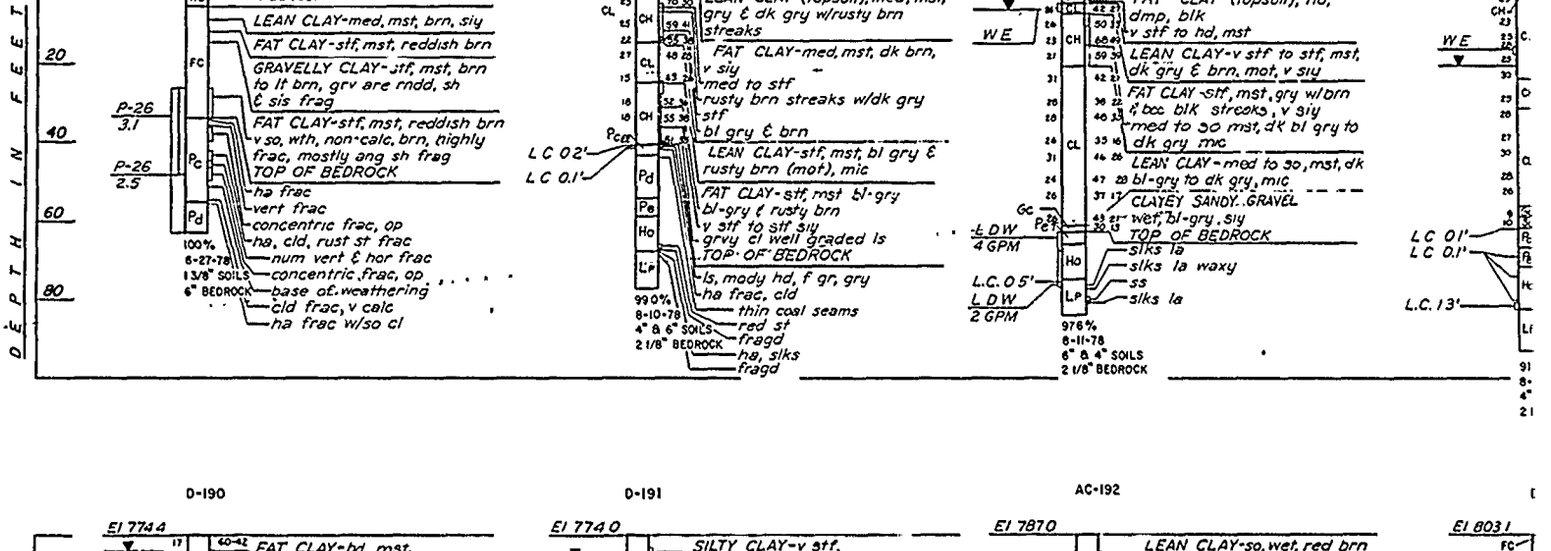
EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

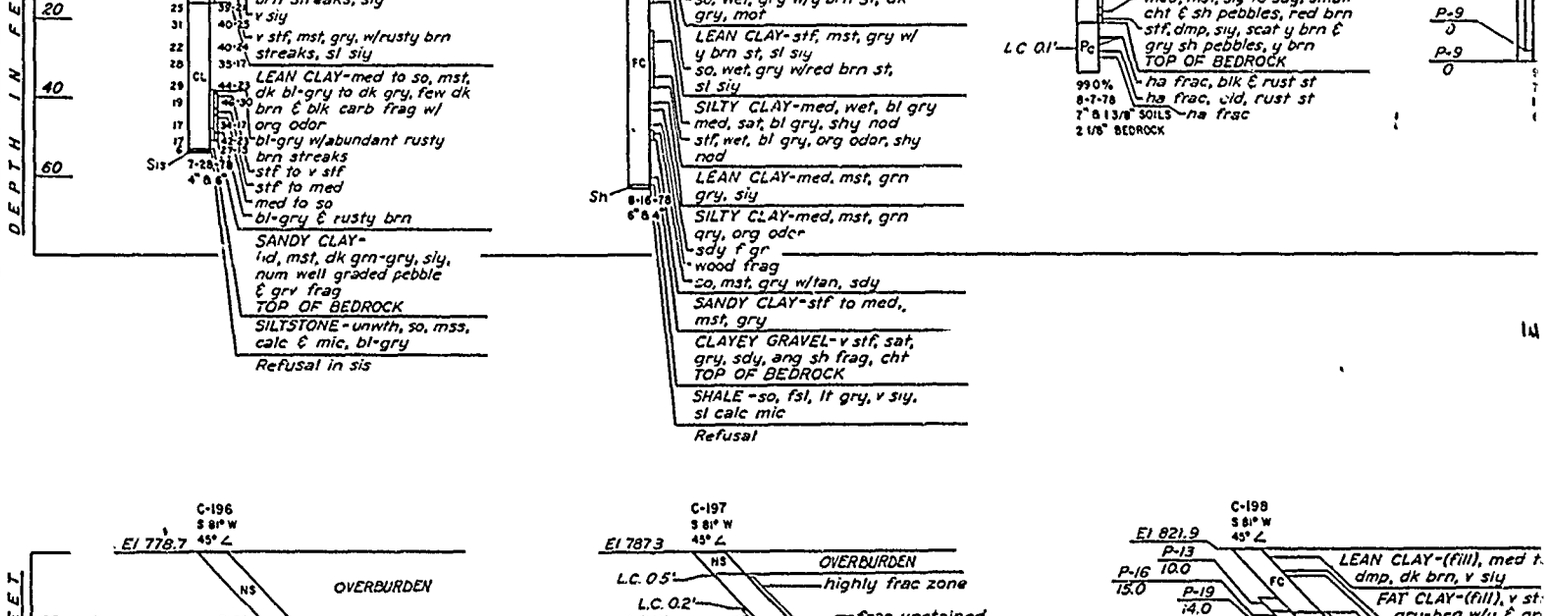
LOGS OF DETACHED BORINGS
NOS. 120 THROUGH 158

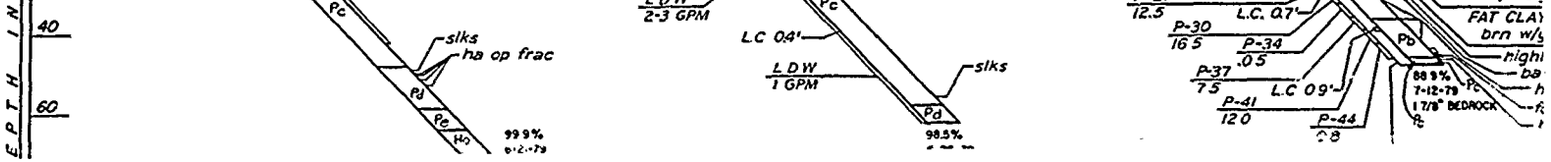
Scale: AS SHOWN
Date: JUNE 1990
Dwg No.:
Sheet number: 40
File No.: RBL-2-1260

PLATE NO. 40

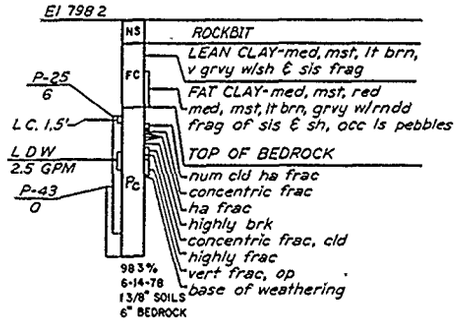

A-159
El 778 3
FAT CLAY-so, mst, dk brn
med, mst, brn, occ gry
med, dmp, brn
TOP OF BEDROCK
SHALE-v wth, v so, cly, mst, yellowish brn, occ sly layer
so to v so, sly, mst, wth, rusty gry
so, cly, sl wth, gry, dmp
unwth, dry
WE
30 min
6-15-76
7"
A-160
El 794 ±
FAT CLAY-(topsoil), v stf, dmp
to mst, dk brn, v sly, org odor
TOP OF BEDROCK
SHALE-wth, lt rusty y-brn
unwth, lt bl-gry
No Refusal
7-29-76
7"
NO WATER ENCOUNTERED
DC-166
El 798 2
ROCKBIT
FAT CLAY-stf, mst, red
occ grv
so, cly, wth tan-brn, num
frag of sh, sis & ls
TOP OF BEDROCK
num cld ha frac
base of weathering
carb
ha frac w/slks
ha frac, cld
P-18
3
LC 09'
LC. 10'
P-19
8 6
P-59
0
P-19
3.5
95 4%
6-9-78
13/8" SOILS
6" BEDROCK
DC-16?
El 798 2
P-25
6
LC. 1.5'
LDW
2.5 GPM
P-43
0
98 3%
6-14-78
13/8" SC
6" BEDR
DEPTH IN FEET
20
40
60


DC-170
El 787 1
ROCKBIT
LEAN CLAY-med, mst, brn, sly
FAT CLAY-stf, mst, reddish brn
GRAVELLY CLAY-stf, mst, brn to lt brn, grv are rndd, sh & sis frag
FAT CLAY-stf, mst, reddish brn
v so, wth, non-calc, brn, highly frac, mostly ang sh frag
TOP OF BEDROCK
ha frac
vert frac
concentric frac, op
ha, cld, rust st frac
num vert & hor frac
concentric frac, op
base of weathering
cld frac, v calc
ha frac w/so cl
P-26
3.1
P-26
2.5
100%
6-27-78
13/8" SOILS
6" BEDROCK
DC-183,A
El 772 0
LEAN CLAY-(topsoil), med, mst, gry & dk gry w/rusty brn streaks
FAT CLAY-med, mst, dk brn, v sly
med to stf
rusty brn streaks w/dk gry
stf
bl gry & brn
LEAN CLAY-stf, mst, bl gry & rusty brn (mot), mic
FAT CLAY-stf, mst bl-gry
bl-gry & rusty brn
v stf to stf sly
grvy cl well graded ls
TOP OF BEDROCK
ls, mody hd, f gr, gry
ha frac, cld
thin coal seams
red st
fragd
ha, slks
fragd
LC 02'
LC 0.1'
99 0%
8-10-78
4" & 6" SOILS
2 1/8" BEDROCK
DC-184
El 774 4
FAT CLAY-(topsoil), hd, dmp, blk
v stf to hd, mst
LEAN CLAY-v stf to stf, mst, dk gry & brn, mot, v sly
FAT CLAY-stf, mst, gry w/brn & occ blk streaks, v sly
med to so mst, dk bl gry to dk gry, mic
LEAN CLAY-med to so, mst, dk bl-gry to dk gry, mic
CLAYEY SANDY GRAVEL
wet, bl-gry, sly
TOP OF BEDROCK
slks la
slks la waxy
ss
slks la
WE
LDW
4 GPM
L.C. 0 5'
LDW
2 GPM
97 6%
6-11-78
6" & 4" SOILS
2 1/8" BEDROCK
DC
El 774 6
WE
LC 0 1'
LC 0.1'
L.C. 13'
DEPTH IN FEET
20
40
60
80

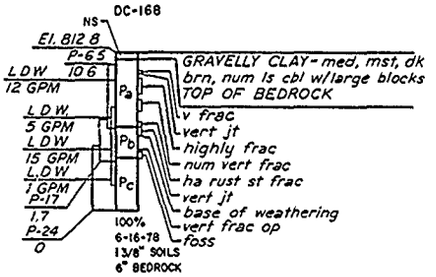

D-190
El 774 4
FAT CLAY-hd, mst, dk gry, sly, sl org odor
v stf, mst, dk gry w/rusty brn streaks, sly
v sly
v stf, mst, gry, w/rusty brn streaks, sl sly
LEAN CLAY-med to so, mst, dk bl-gry to dk gry, few dk brn & blk carb frag w/ org odor
bl-gry w/abundant rusty brn streaks
stf to v stf
stf to med
med to so
bl-gry & rusty brn
SANDY CLAY-hd, mst, dk grn-gry, sly, num well graded pebble & grv frag
TOP OF BEDROCK
SILTSTONE-unwth, so, mss, calc & mic, bl-gry
Refusal in sis
WE
7-28-78
4" & 6"
D-191
El 774 0
30 min
WE
SILTY CLAY-v stf, mst, dk gry
med, mst, gry w/brn, st
so, wet, gry w/y brn st, dk gry, mot
LEAN CLAY-stf, mst, gry w/ y brn st, sl sly
so, wet, gry w/red brn st, sl sly
SILTY CLAY-med, wet, bl gry
med, sat, bl gry, shy nod
stf, wet, bl gry, org odor, shy nod
LEAN CLAY-med, mst, grn gry, sly
SILTY CLAY-med, mst, grn gry, org odor
sdy f gr
wood frag
so, mst, gry w/tan, sdy
SANDY CLAY-stf to med, mst, gry
CLAYEY GRAVEL-v stf, sat, gry, sdy, ang sh frag, cht
TOP OF BEDROCK
SHALE-so, fsl, lt gry, v sly, sl calc mic
Refusal
8-16-78
6" &
AC-192
El 787 0
LEAN CLAY-so, wet, red brn sly
stf, dmp
med, mst, sly to sdy, small cht & sh pebbles, red brn
stf, dmp, sly, scat y brn & gry sh pebbles, y brn
TOP OF BEDROCK
ha frac, blk & rust st
ha frac, cld, rust st
ha frac
LC 0.1'
99 0%
8-7-78
7" & 13/8" SOILS
2 1/8" BEDROCK
El 803 1
LC. 0.1'
P-9
0
P-9
0
DEPTH IN FEET
20
40
60


C-196
S 81° W
45° ∠
El 778.7
OVERBURDEN
highly fracd zone
slks
ha op frac
P-21
L.C. 0.1'
99 9%
C-197
S 81° W
45° ∠
El 787 3
OVERBURDEN
highly frac zone
frac unstained
la frac
softer, lighter gry, cl sh
slks
L.C. 0.5'
L.C. 0.2'
LDW
2 GPM
L.C. 0.1'
LDW
2-3 GPM
LC 0.4'
LDW
1 GPM
98.5%
C-198
S 81° W
45° ∠
El 821.9
LEAN CLAY-(fill), med t
dmp, dk brn, v sly
FAT CLAY-(fill), v st
gry-brn w/y & gr
TOP OF NATURA
LEAN CLAY-n
dk brn, v sl
FAT CLA
brn w/
high
P-13
10.0
P-16
15.0
P-19
14.0
L.C. 3.2'
P-23
13.5
L.C. 0.3'
P-27
12.5
L.C. 0.7'
P-30
16 5
P-34
.05
P-37
7 5
L.C 09'
P-41
12 0
P-44
88 9%
7-12-78
1 7/8" BEDROCK
DEPTH IN FEET
20
40
60

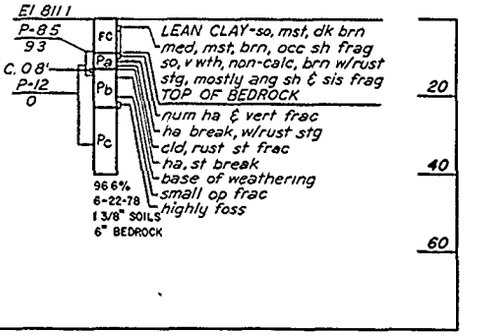
DC-167



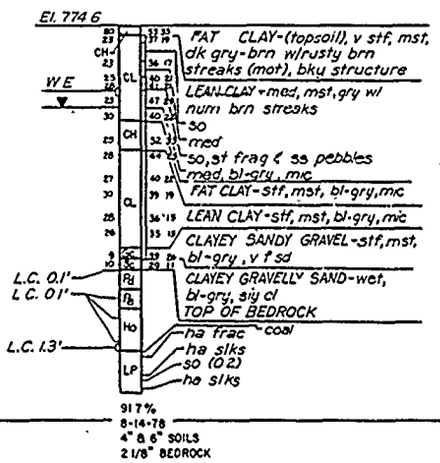
DC-168



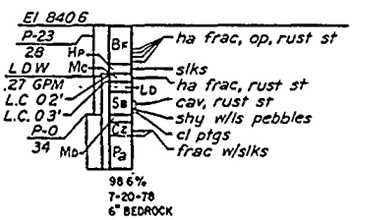
DC-169



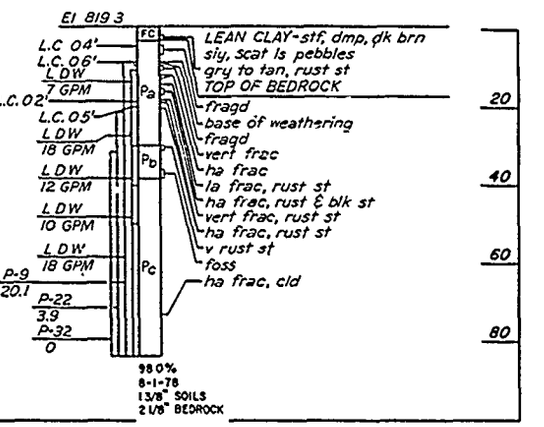
DC-185,A



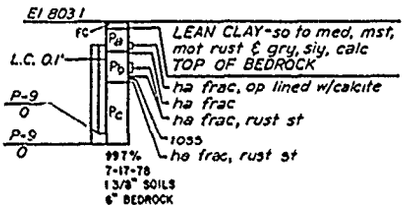
C-186



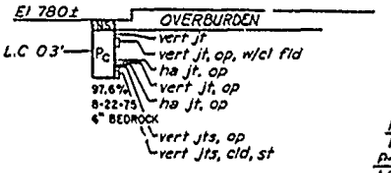
DC-188



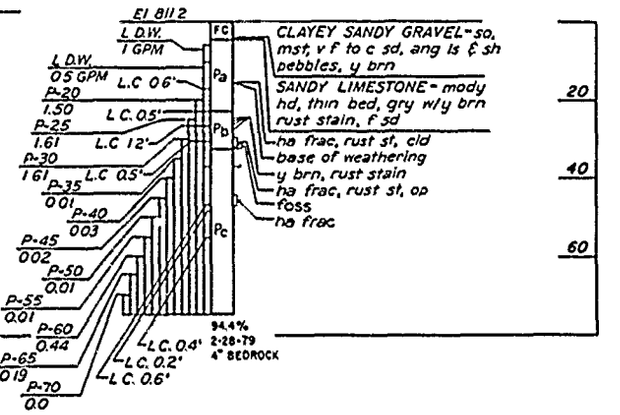
DC-193



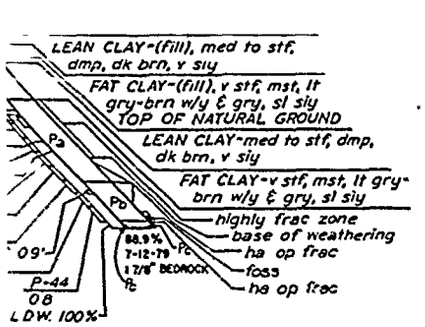
C-194

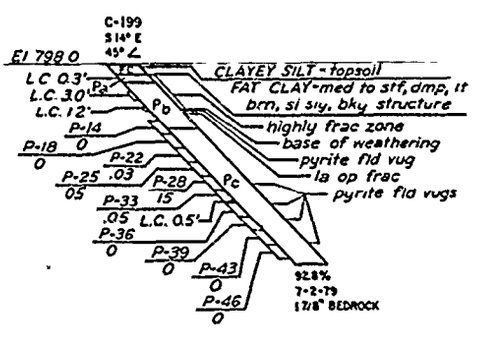


C-195



NOTES.
1 For General Geologic Column and Legend see Dwg E-1
2 For location of borings see Dwgs. E-2, E-3, and E-4.





Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

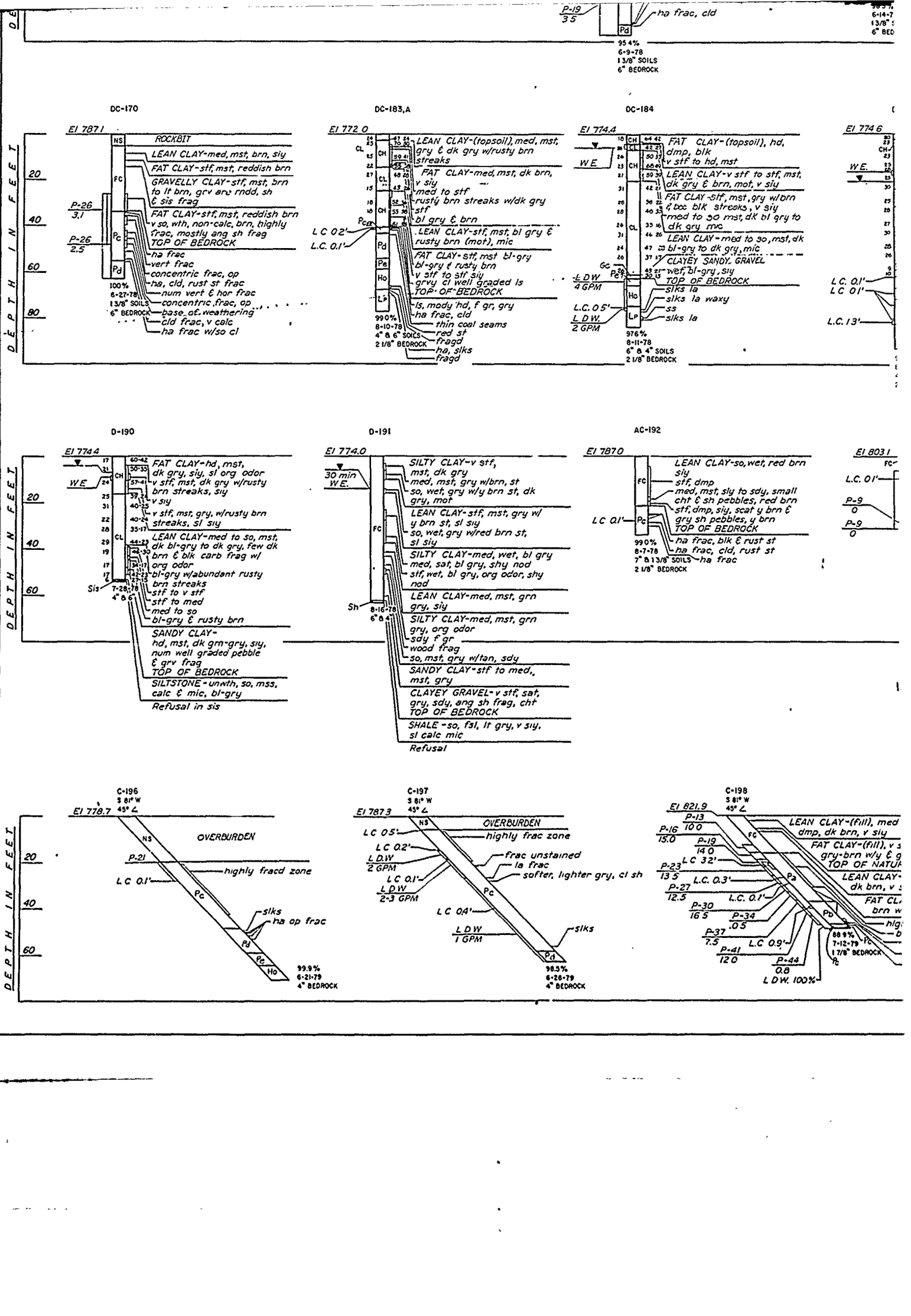
Designed by:
Drawn by:
Checked by:
Submitted by:

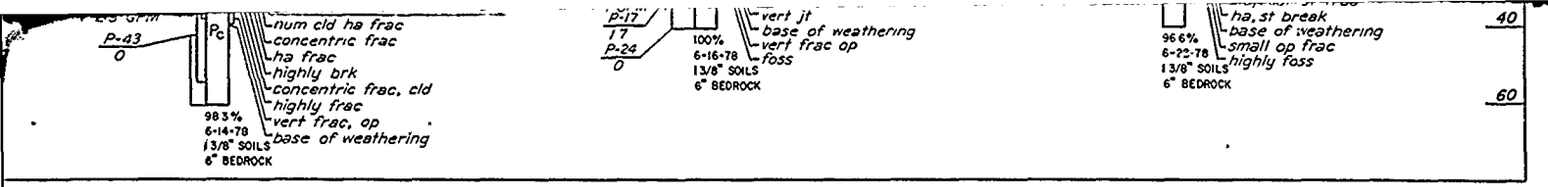
US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

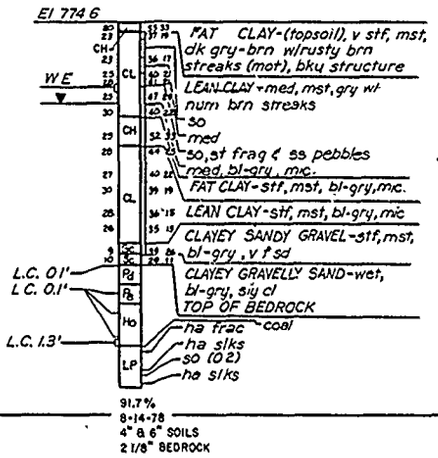
LOGS OF DETACHED BORINGS
NOS. 159 THROUGH 199

Scale: AS SHOWN
Date: JUNE 1990
Sheet number:

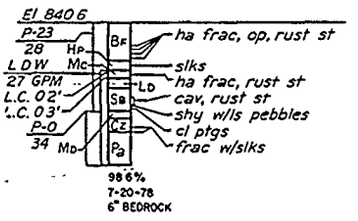

DEPTH IN FEET
20
40
60
80
P-19
3.5
ha frac, cld
95.4%
6-9-78
13/8" SOILS
6" BEDROCK
DC-170
El 787.1
ROCKBIT
LEAN CLAY-med, mst, brn, sly
FAT CLAY-stf, mst, reddish brn
GRAVELLY CLAY-stf, mst, brn to lt brn, grv are rndd, sh & sis frag
P-26
3.1
FAT CLAY-stf, mst, reddish brn v so, wth, non-calc, brn, highly frac, mostly ang sh frag
P-26
2.5
TOP OF BEDROCK
ha frac
vert frac
concentric frac, op
ha, cld, rust st frac
num vert & hor frac
concentric frac, op
base of weathering
cld frac, v calc
ha frac w/so cl
100%
6-27-78
13/8" SOILS
6" BEDROCK
DC-183,A
El 772.0
LEAN CLAY-(topsoil), med, mst, gry & dk gry w/rusty brn streaks
FAT CLAY-med, mst, dk brn, v sly
med to stf
rusty brn streaks w/dk gry
stf
bl gry & brn
LC 0.2'
LC 0.1'
LEAN CLAY-stf, mst, bl gry & rusty brn (mot), mic
FAT CLAY-stf, mst bl-gry
bl-gry & rusty brn
v stf to stf sly
grvy cl well graded ls
TOP OF BEDROCK
ls, mody hd, f gr, gry
ha frac, cld
thin coal seams
red st
fragd
ha, slks
fragd
99.0%
8-10-78
4" & 6" SOILS
2 1/8" BEDROCK
DC-184
El 774.4
WE
FAT CLAY-(topsoil), hd, dmp, blk
v stf to hd, mst
LEAN CLAY-v stf to stf, mst, dk gry & brn, mot, v sly
FAT CLAY-stf, mst, gry w/brn & bcc blk streaks, v sly
med to so mst, dk bl gry to dk gry mic
LEAN CLAY-med to so, mst, dk bl-gry to dk gry, mic
CLAYEY SANDY GRAVEL
wet, bl-gry, sly
TOP OF BEDROCK
slks la
slks la waxy
ss
slks la
L DW
4 GPM
L.C. 0.5'
L DW
2 GPM
97.6%
8-11-78
6" & 4" SOILS
2 1/8" BEDROCK
El 774.6
WE
L.C. 0.1'
L.C. 0.1'
L.C. 1.3'
D-190
El 774.4
WE
FAT CLAY-hd, mst, dk gry, sly, sl org odor
v stf, mst, dk gry w/rusty brn streaks, sly
v sly
v stf, mst, gry, w/rusty brn streaks, sl sly
LEAN CLAY-med to so, mst, dk bl-gry to dk gry, few dk brn & blk carb frag w/ org odor
bl-gry w/abundant rusty brn streaks
stf to v stf
stf to med
med to so
bl-gry & rusty brn
SANDY CLAY-hd, mst, dk grn-gry, sly, num well graded pebble & grv frag
TOP OF BEDROCK
SILTSTONE-unwth, so, mss, calc & mic, bl-gry
Refusal in sis
Sis
7-28-78
4" & 6"
D-191
El 774.0
30 min
WE.
SILTY CLAY-v stf, mst, dk gry
med, mst, gry w/brn, st
so, wet, gry w/y brn st, dk gry, mot
LEAN CLAY-stf, mst, gry w/ y brn st, sl sly
so, wet, gry w/red brn st, sl sly
SILTY CLAY-med, wet, bl gry
med, sat, bl gry, shy nod
stf, wet, bl gry, org odor, shy nod
LEAN CLAY-med, mst, grn gry, sly
SILTY CLAY-med, mst, grn gry, org odor
sdy f gr
wood frag
so, mst, gry w/tan, sdy
SANDY CLAY-stf to med., mst, gry
CLAYEY GRAVEL-v stf, sat, gry, sdy, ang sh frag, cht
TOP OF BEDROCK
SHALE-so, fsl, lt gry, v sly, sl calc mic
Refusal
Sh
8-16-78
6" & 4"
AC-192
El 787.0
LEAN CLAY-so, wet, red brn sly
stf, dmp
med, mst, sly to sdy, small cht & sh pebbles, red brn
stf, dmp, sly, scat y brn & gry sh pebbles, y brn
TOP OF BEDROCK
ha frac, blk & rust st
ha frac, cld, rust st
ha frac
LC 0.1'
99.0%
8-7-78
7" & 13/8" SOILS
2 1/8" BEDROCK
El 803.1
L.C. 0.1'
P-9
0
P-9
0
C-196
S 81° W
45° ∠
El 778.7
OVERBURDEN
highly fracd zone
P-21
L C 0.1'
slks
ha op frac
99.9%
6-21-79
4" BEDROCK
C-197
S 81° W
45° ∠
El 787.3
OVERBURDEN
highly frac zone
LC 0.5'
LC 0.2'
L DW
2 GPM
LC 0.1'
L DW
2-3 GPM
frac unstained
la frac
softer, lighter gry, cl sh
LC 0.4'
L DW
1 GPM
slks
98.5%
6-26-79
4" BEDROCK
C-198
S 81° W
45° ∠
El 821.9
P-13
10.0
P-16
15.0
P-19
14.0
LC 3.2'
P-23
13.5
L.C. 0.3'
P-27
12.5
L.C. 0.1'
P-30
16.5
P-34
.05
P-37
7.5
L.C. 0.9'
P-41
12.0
P-44
0.8
L DW 100%
LEAN CLAY-(fill), med dmp, dk brn, v sly
FAT CLAY-(fill), v s gry-brn w/y & g
TOP OF NATUR
LEAN CLAY-dk brn, v s
FAT CL brn w
88.9%
7-12-79
1 7/8" BEDROCK



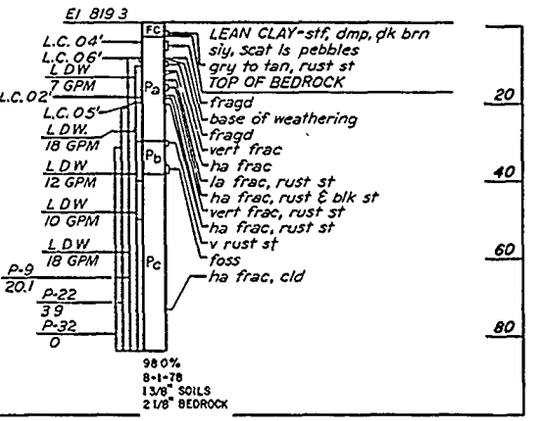
DC-185,A



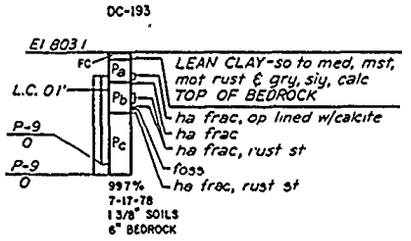
C-186



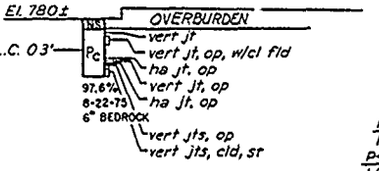
DC-188



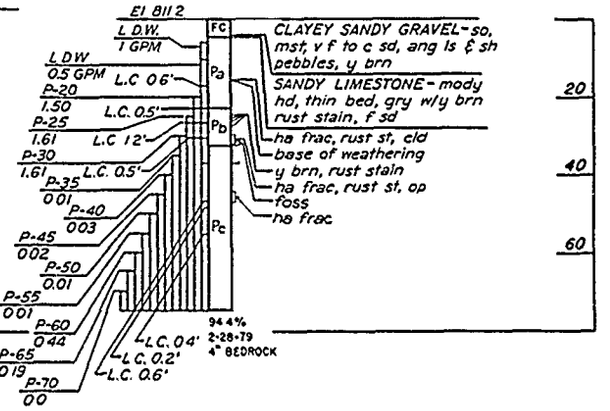
DC-193



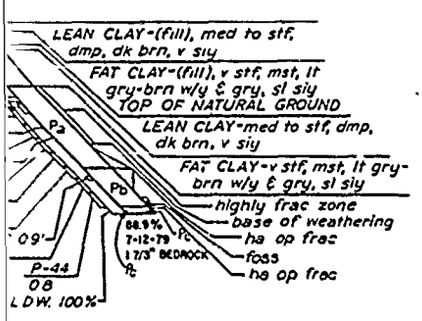
C-194

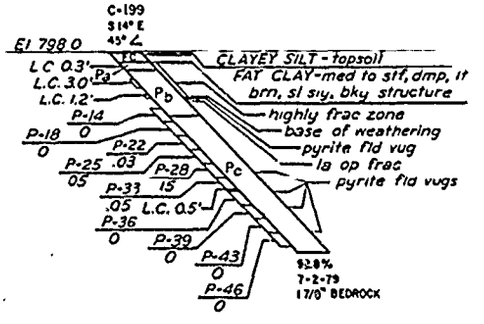


C-195



NOTES:
1 For General Geologic Column and Legend see Dwg E-1
2 For location of borings see Dwgs. E-2, E-3, and E-4





Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by:
Checked by:
Submitted by:

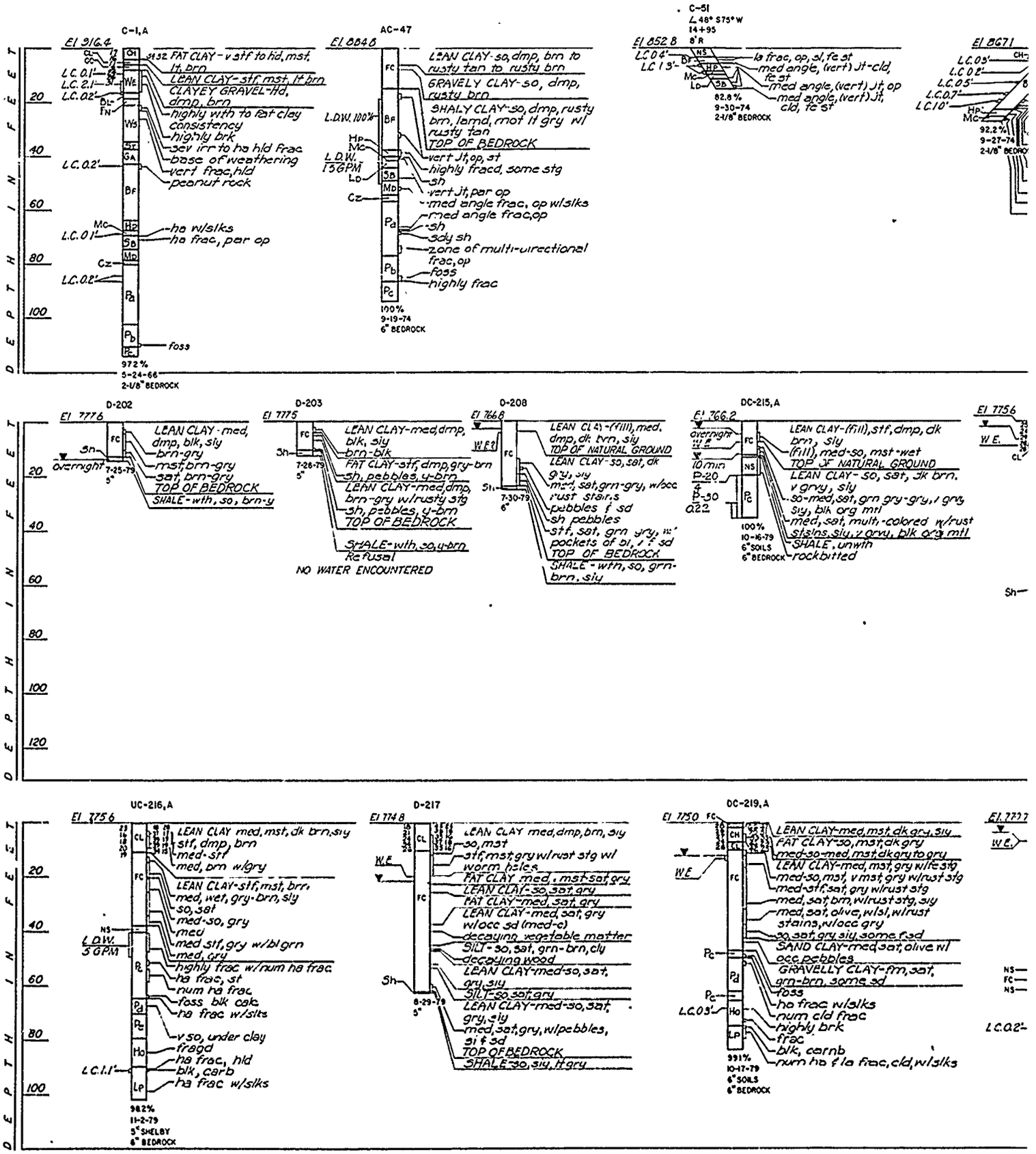
US Army Corps of Engineers

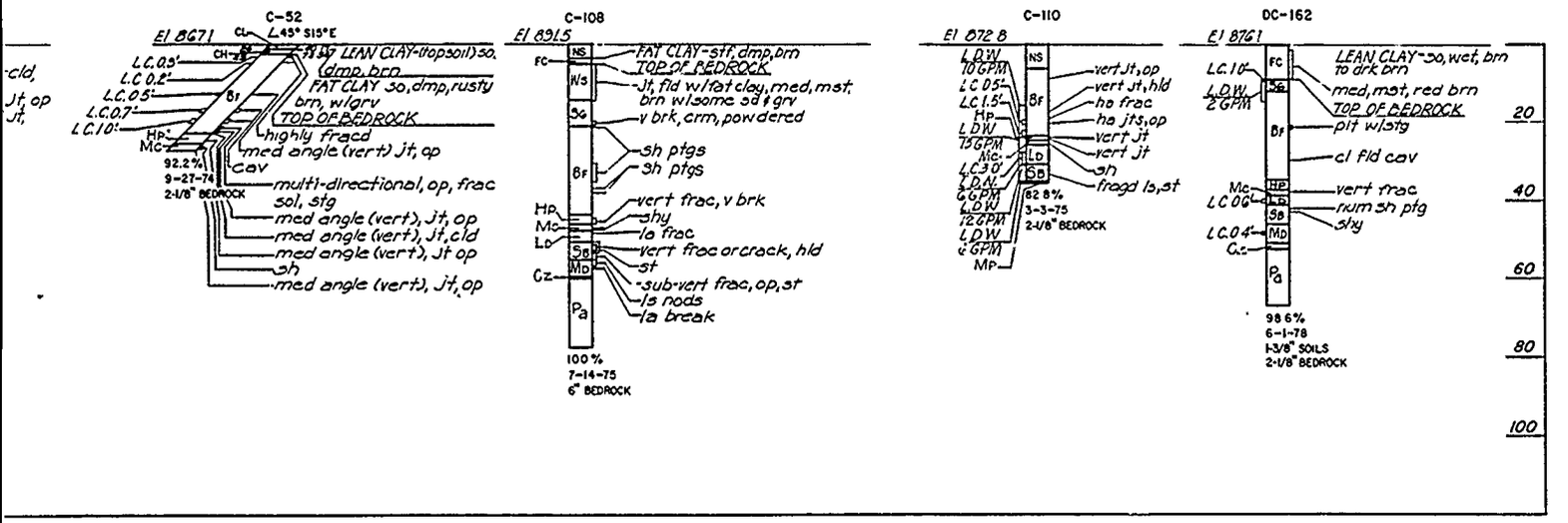
EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

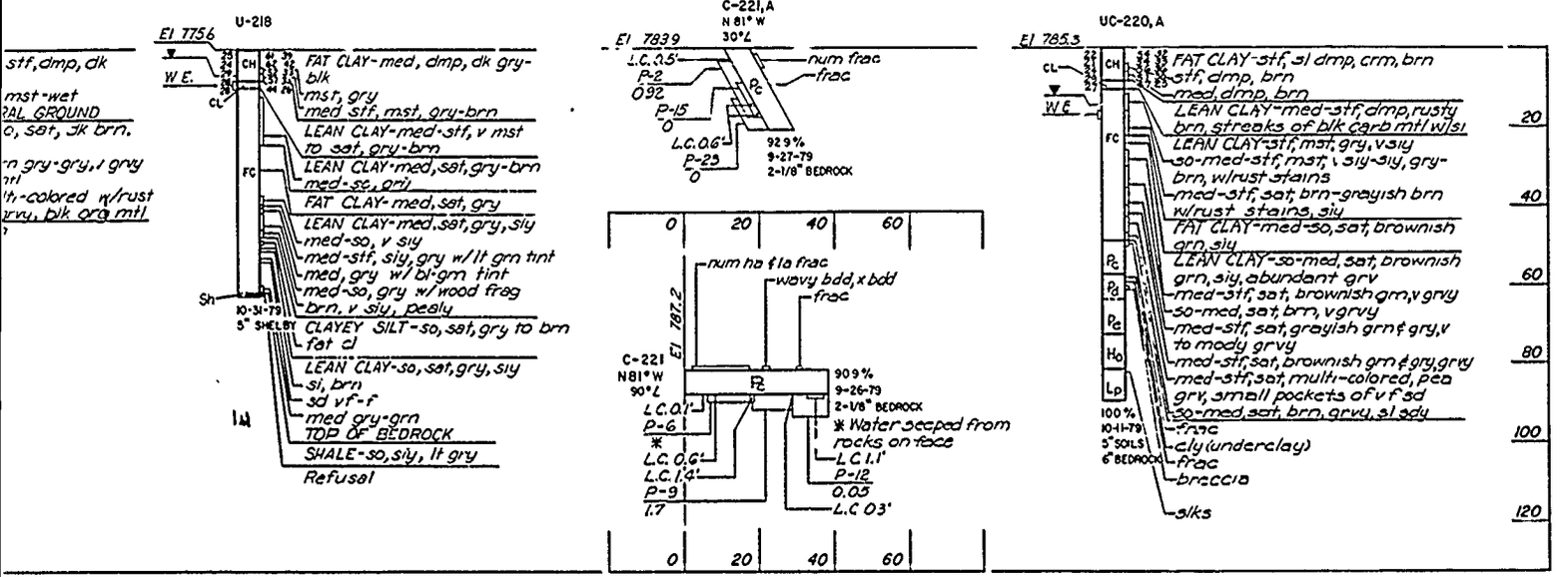
LOGS OF DETACHED BORINGS
NOS. 159 THROUGH 199

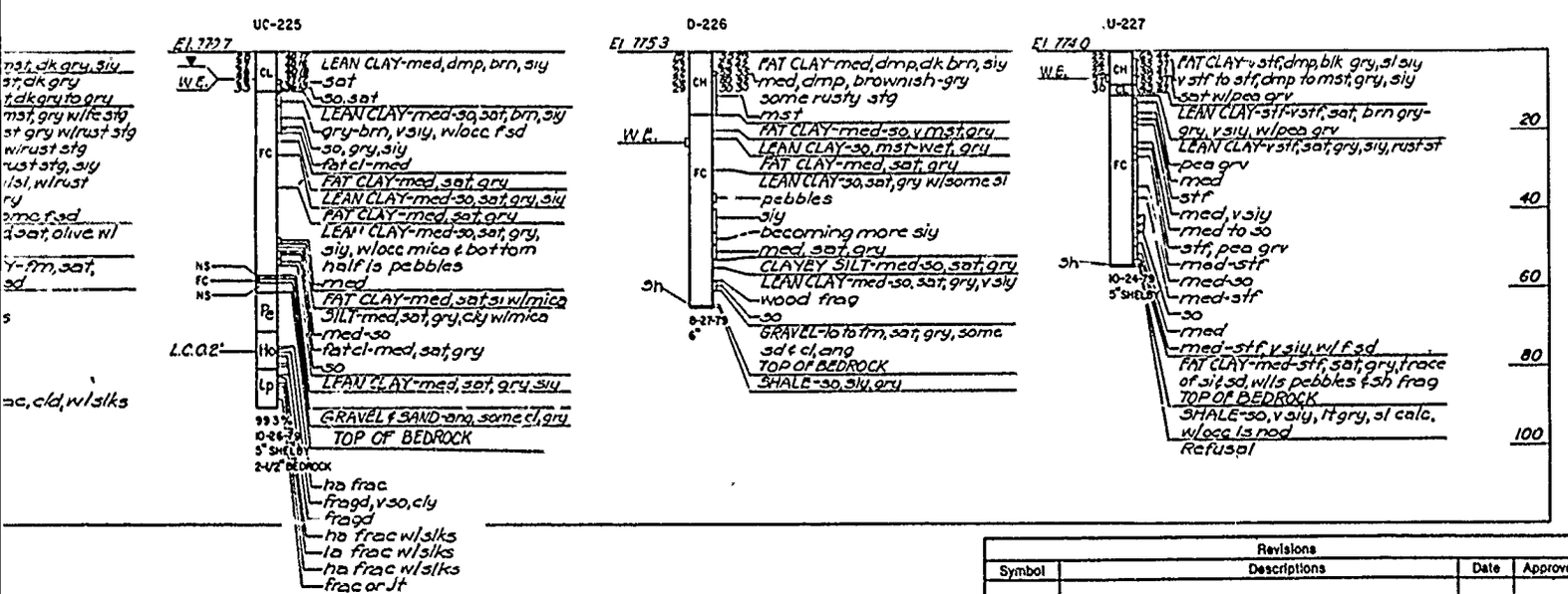
Scale: AS SHOWN
Date: JUNE 1990
Dwg. No.:
Sheet number: 41
File No.: RBL-2-1261

PLATE NO. 41


C-1,A
El 916.4
FAT CLAY - v stf to hd, mst, lt, brn
LEAN CLAY - stf, mst, lt brn
CLAYEY GRAVEL - Hd, dmp, brn
highly wth to fat clay consistency
highly brk
sev irr to ha hld frac
base of weathering
vert frac, hld
peanut rock
ha w/slks
ha frac, par op
foss
972%
5-24-66
2-1/8" BEDROCK
AC-47
El 884.8
LEAN CLAY - so, dmp, brn to rusty tan to rusty brn
GRAVELY CLAY - so, dmp, rusty brn
SHALY CLAY - so, dmp, rusty brn, lamd, mot lt gry w/ rusty tan
TOP OF BEDROCK
vert Jt, op, st
highly fracd, some stg
sh
vert Jt, par op
med angle frac, op w/slks
med angle frac, op
sh
sdy sh
zone of multi-directional frac, op
foss
highly frac
100%
9-19-74
6" BEDROCK
C-51
El 852.8
la frac, op, sl, fe st
med angle, (vert) Jt - cld, fe st
med angle, (vert) Jt, op
med angle, (vert) Jt, cld, fe st
82.8%
9-30-74
2-1/8" BEDROCK
El 867.1
D-202
El 777.6
LEAN CLAY - med, dmp, blk, sly
brn-gry
mst, brn-gry
sat, brn-gry
TOP OF BEDROCK
SHALE - wth, so, brn-y
overnight
7-25-79
D-203
El 777.5
LEAN CLAY - med, dmp, blk, sly
brn-blk
FAT CLAY - stf, dmp, gry-brn
sh, pebbles, y-brn
LEAN CLAY - med, dmp, brn-gry w/rusty stg
sh, pebbles, y-brn
TOP OF BEDROCK
SHALE - wth, so, y-brn
Refusal
NO WATER ENCOUNTERED
7-26-79
D-208
El 766.8
LEAN CLAY - (fill), med, dmp, dk brn, sly
TOP OF NATURAL GROUND
LEAN CLAY - so, sat, dk gry, sly
med, sat, grn-gry, w/occ rust stains
pebbles & sd
sh pebbles
stf, sat, grn gry, w/ pockets of bl, v f sd
TOP OF BEDROCK
SHALE - wth, so, grn-brn, sly
7-30-79
DC-215,A
El 766.2
LEAN CLAY - (fill), stf, dmp, dk brn, sly
(fill), med-so, mst-wet
TOP OF NATURAL GROUND
LEAN CLAY - so, sat, dk brn, v gry, sly
so-med, sat, grn gry-gry, v gry, sly, blk org mtl
med, sat, multi-colored w/rust stains, sly, v gry, blk org mtl
SHALE, unwth
rockbitted
100%
10-16-79
6" SOILS
6" BEDROCK
El 775.6
UC-216,A
El 775.6
LEAN CLAY med, mst, dk brn, sly
stf, dmp, brn
med-stf
med, brn w/gry
LEAN CLAY - stf, mst, brn
med, wet, gry-brn, sly
so, sat
med-so, gry
med
med stf, gry w/bl grn
med, gry
highly frac w/num ha frac
ha frac, st
num ha frac
foss blk calc
ha frac w/slks
v so, under clay
fragd
ha frac, hld
blk, carb
ha frac w/slks
L.D.W. 5 GPM
982%
11-2-79
5" SHELBY
6" BEDROCK
D-217
El 774.8
LEAN CLAY med, dmp, brn, sly
so, mst
stf, mst, gry w/rust stg w/ worm holes
FAT CLAY med, mst-sat, gry
LEAN CLAY - so, sat, gry
FAT CLAY - med, sat, gry
LEAN CLAY - med, sat, gry w/occ sd (med-c)
decaying vegetable matter
SILT - so, sat, grn-brn, cly
decaying wood
LEAN CLAY - med-so, sat, gry, sly
SILT - so, sat, gry
LEAN CLAY - med-so, sat, gry, sly
med, sat, gry, w/pebbles, si & sd
TOP OF BEDROCK
SHALE - so, sly, lt gry
8-29-79
DC-219,A
El 775.0
LEAN CLAY - med, mst, dk gry, sly
FAT CLAY - so, mst, dk gry
med-so-med, mst, dk gry to gry
LEAN CLAY - med, mst, gry w/fe stg
med-so, mst, v mst, gry w/rust stg
med-stf, sat, gry w/rust stg
med, sat, brn, w/rust stg, sly
med, sat, olive, w/sl, w/rust stains, w/occ gry
so, sat, gry, sly, some f sd
SAND CLAY - med, sat, olive w/ occ pebbles
GRAVELLY CLAY - fm, sat, grn-brn, some sd
foss
ha frac w/slks
num cld frac
highly brk
frac
blk, carnb
num ha & la frac, cld, w/slks
991%
10-17-79
6" SOILS
6" BEDROCK
DEPTH IN FEET
20
40
60
80
100
120







NOTES
1 For General Geologic Column and Legend, see Dwg E-1
2 For location of borings, see Dwgs E-2, E-3, and E-4

Revisions			
Symbol	Descriptions	Date	Approved

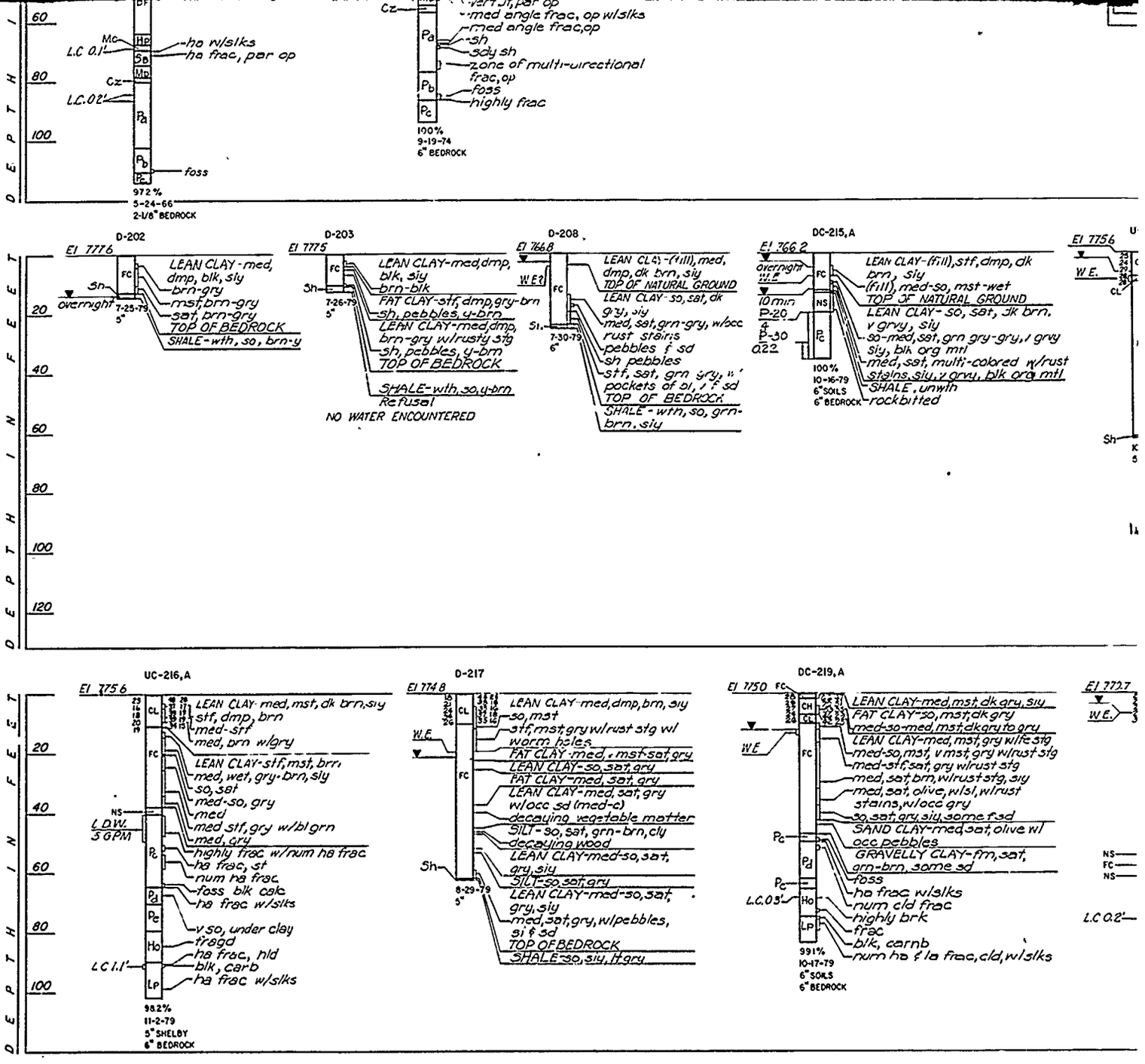
U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

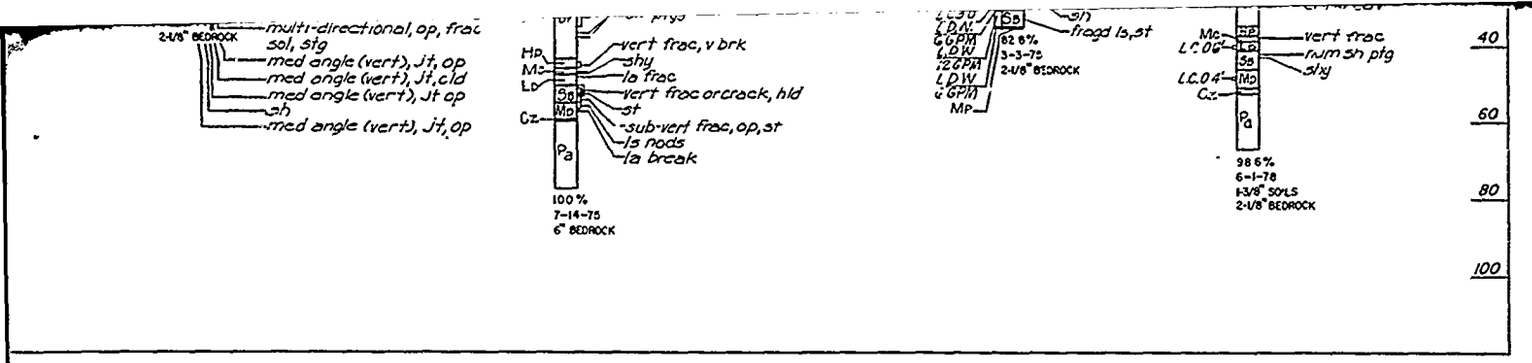
Designed by:
Drawn by:
Checked by:

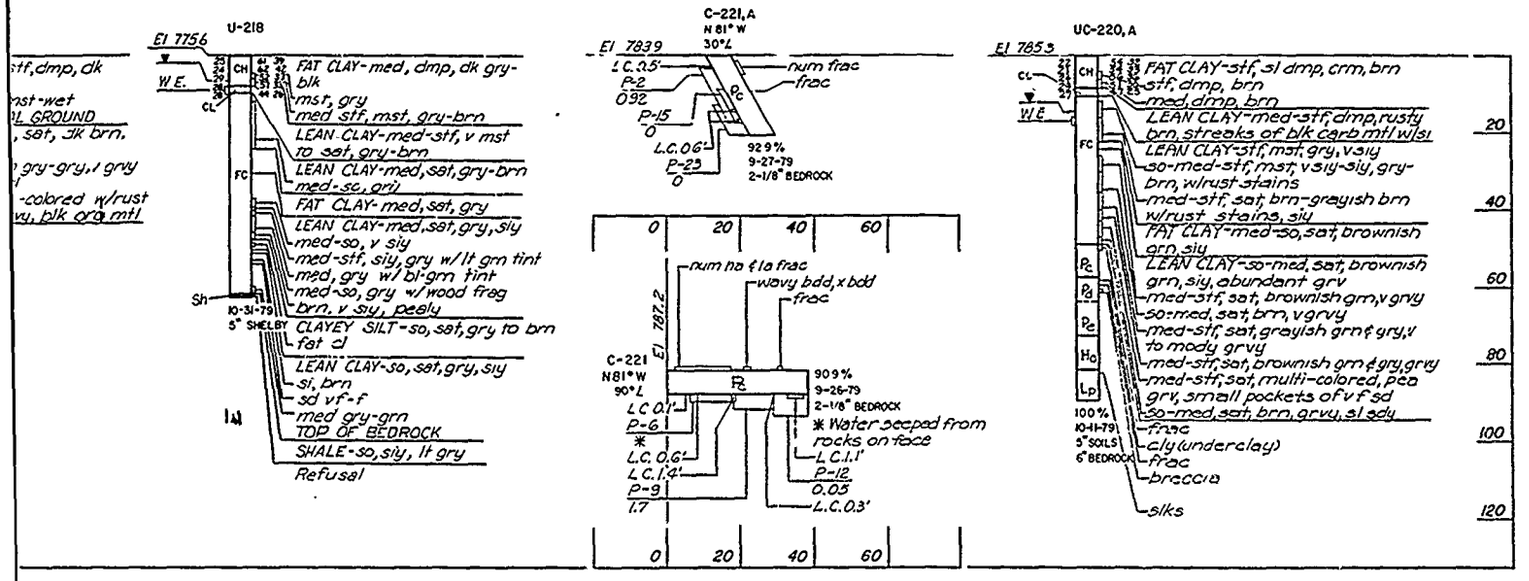
US Army Corps of Engineers

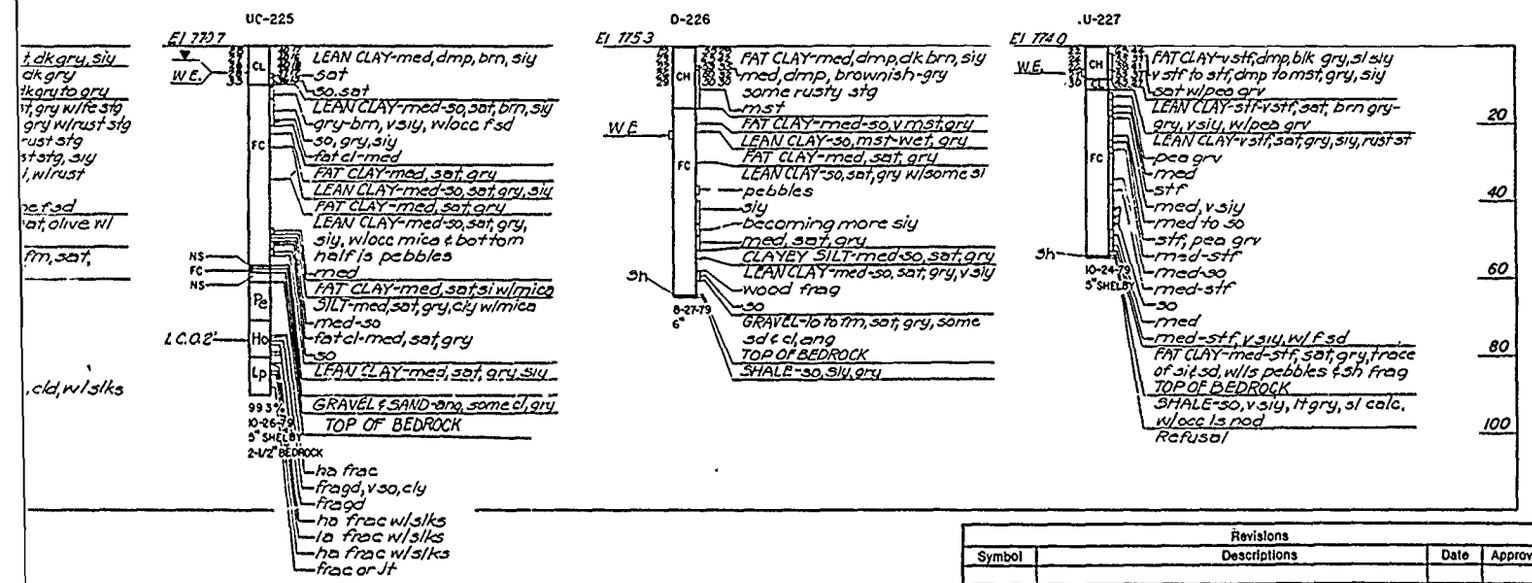
EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

LOGS OF DETACHED BORINGS
NOS. 202 THROUGH 227


DEPTH IN FEET
60
80
100
Mc
L.C 0.1'
Cz
L.C.0.2'
Hp
Sb
Mp
Pa
Pb
Pc
ha w/slks
ha frac, par op
foss
97.2%
5-24-66
2-1/8" BEDROCK
Cz
vert st, par op
med angle frac, op w/slks
med angle frac, op
sh
sdy sh
zone of multi-directional frac, op
foss
highly frac
100%
9-19-74
6" BEDROCK
D-202
El 777.6
FC
Sh
overnight
7-25-79
5"
LEAN CLAY-med, dmp, blk, sly
brn-gry
mst, brn-gry
sat, brn-gry
TOP OF BEDROCK
SHALE-wth, so, brn-y
D-203
El 777.5
FC
Sh
7-26-79
5"
LEAN CLAY-med, dmp, blk, sly
brn-blk
FAT CLAY-stf, dmp, gry-brn
sh, pebbles, y-brn
LEAN CLAY-med, dmp, brn-gry w/rusty stg
sh, pebbles, y-brn
TOP OF BEDROCK
SHALE-wth, so, y-brn
Refusal
NO WATER ENCOUNTERED
D-208
El 766.8
W.E.?
FC
St.
7-30-79
6"
LEAN CLAY-(fill), med, dmp, dk brn, sly
TOP OF NATURAL GROUND
LEAN CLAY-so, sat, dk gry, sly
med, sat, grn-gry, w/occ rust stains
pebbles f sd
sh pebbles
stf, sat, grn gry, w/ pockets of bl, v f sd
TOP OF BEDROCK
SHALE-wth, so, grn-brn, sly
DC-215, A
El 766.2
overnight
W.E.
10 min
P-20
4
P-30
0.22
FC
NS
Pc
100%
10-16-79
6" SOILS
6" BEDROCK
LEAN CLAY-(fill), stf, dmp, dk brn, sly
(fill), med-so, mst-wet
TOP OF NATURAL GROUND
LEAN CLAY-so, sat, dk brn, v grvy, sly
so-med, sat, grn gry-gry, v grvy sly, blk org mtl
med, sat, multi-colored w/rust stains, sly, v grvy, blk org mtl
SHALE, unwth
rockbitted
El 775.6
W.E.
CL
Sh
UC-216, A
El 775.6
CL
FC
NS
L.D.W.
5 GPM
Pc
Pd
Pe
Ho
Lp
L.C 1.1'
LEAN CLAY-med, mst, dk brn, sly
stf, dmp, brn
med-stf
med, brn w/gry
LEAN CLAY-stf, mst, brn
med, wet, gry-brn, sly
so, sat
med-so, gry
med
med stf, gry w/bl grn
med, gry
highly frac w/num ha frac
ha frac, st
num ha frac
foss blk calc
ha frac w/slks
v so, under clay
fragd
ha frac, hld
blk, carb
ha frac w/slks
98.2%
11-2-79
5" SHELBY
6" BEDROCK
D-217
El 774.8
CL
FC
W.E.
Sh
8-29-79
5"
LEAN CLAY-med, dmp, brn, sly
so, mst
stf, mst, gry w/rust stg w/ worm holes
FAT CLAY-med, v mst-sat, gry
LEAN CLAY-so, sat, gry
FAT CLAY-med, sat, gry
LEAN CLAY-med, sat, gry w/occ sd (med-c)
decaying vegetable matter
SILT-so, sat, grn-brn, cly
decaying wood
LEAN CLAY-med-so, sat, gry, sly
SILT-so, sat, gry
LEAN CLAY-med-so, sat, gry, sly
med, sat, gry, w/pebbles, si & sd
TOP OF BEDROCK
SHALE-so, sly, lt gry
DC-219, A
El 775.0
FC
CH
CL
W.E.
FC
Pc
Pd
Pc
L.C.0.3'
Ho
Lp
99.1%
10-17-79
6" SOILS
6" BEDROCK
LEAN CLAY-med, mst, dk gry, sly
FAT CLAY-so, mst, dk gry
med-so-med, mst, dk gry to gry
LEAN CLAY-med, mst, gry w/fe stg
med-so, mst, v mst, gry w/rust stg
med-stf, sat, gry w/rust stg
med, sat, brn, w/rust stg, sly
med, sat, olive, w/sl, w/rust stains, w/occ gry
so, sat, gry, sly, some f sd
SAND CLAY-med, sat, olive w/ occ pebbles
GRAVELLY CLAY-fm, sat, grn-brn, some sd
foss
ha frac w/slks
num cld frac
highly brk
frac
blk, carnb
num ha & la frac, cld, w/slks
El 772.7
W.E.
NS
FC
NS
L.C 0.2'







NOTES
1. For General Geologic Column and Legend, see Dwg E-1
2. For location of borings, see Dwgs E-2, E-3, and E-4

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by:
Checked by:
Submitted by:

US Army Corps of Engineers

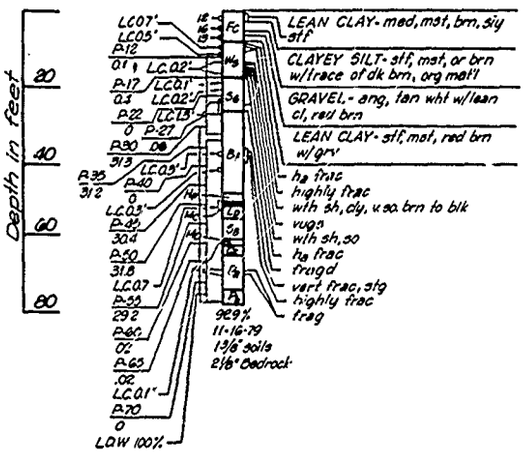
EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

LOGS OF DETACHED BORINGS
NOS. 202 THROUGH 227

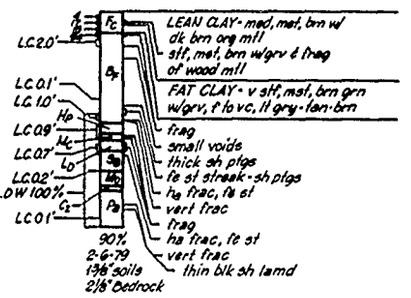
Scale: AS SHOWN
Date: JUNE 1990
Dwg. No.:
Sheet number: 42
File No: RBL-2-1262

PLATE NO. 42

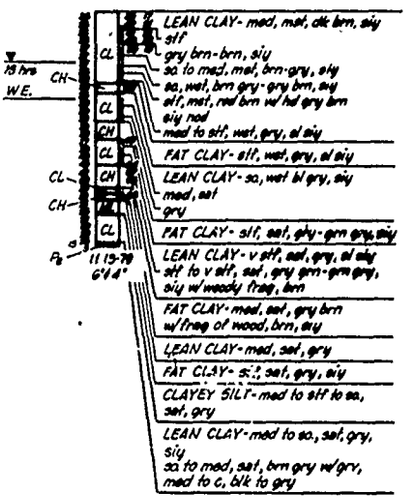
C-237



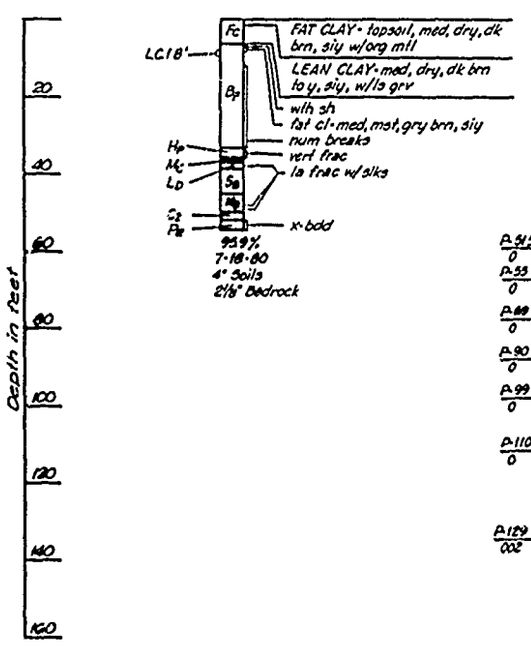
C-238



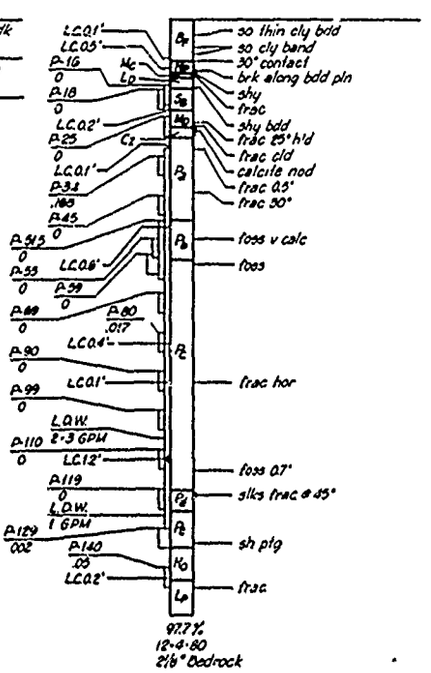
D-239



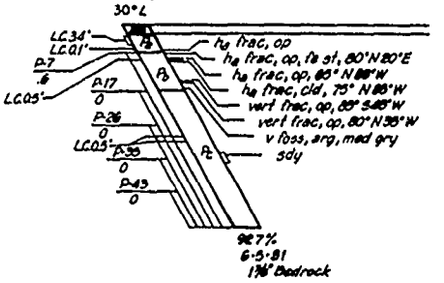
AC-242



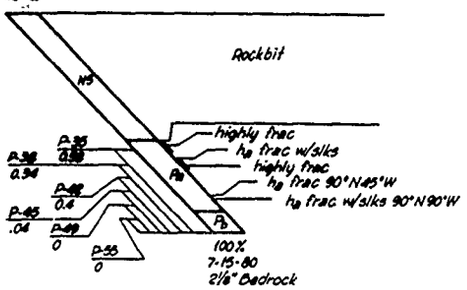
C-266, Pz



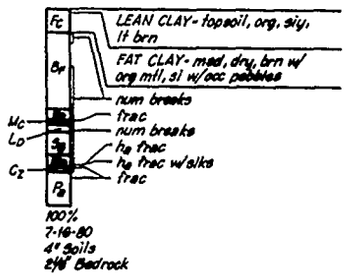
C-263
N69° E
30° L

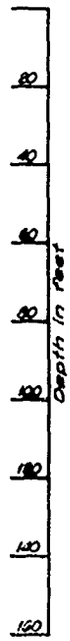


C-240
N 118° W
45° ∠



AC-241





NOTE:
1. For location of boring see Dwg. E2.
2. For General Geologic Column and Legend see Dwg. E1.

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

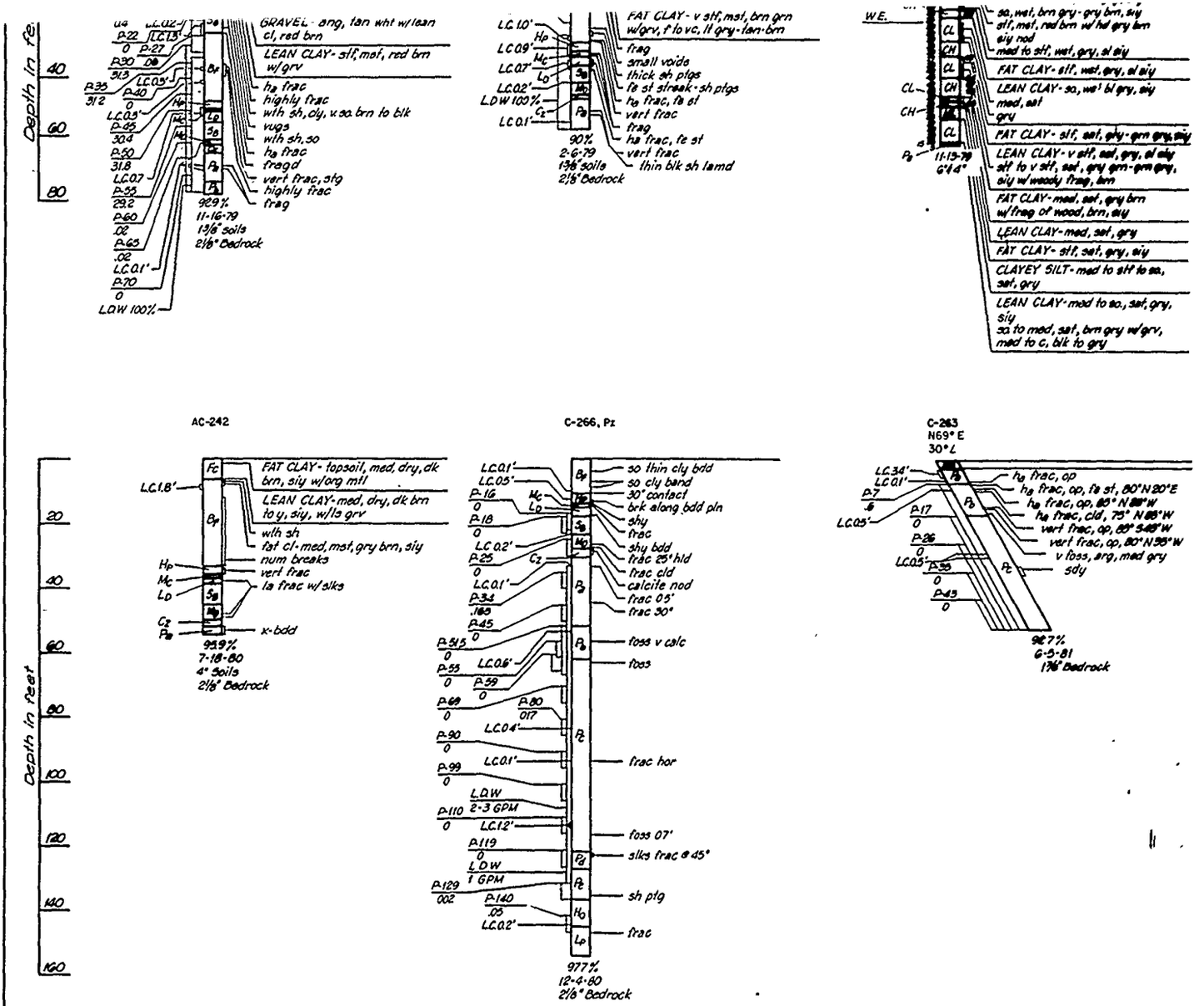
Designed by:
Drawn by:
Checked by:
Submitted by

US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

LOGS OF DETACHED BORINGS
NOS. 237 THROUGH 266

Scale: AS SHOWN
Sheet number:
Date: JUNE 1982


Depth in ft
40
60
80
GRAVEL - ang, tan wht w/lean cl, red brn
LEAN CLAY - stf, mst, red brn w/grv
ha frac
highly frac
with sh, cly, v sa. brn to blk
vugs
with sh, so
ha frac
fragd
vert frac, stg
highly frac
frag
92.9%
11-16-79
13/8" soils
2 1/8" Bedrock
LDW 100%
FAT CLAY - v stf, mst, brn grn w/grv, f to vc, lt gry-tan-brn
frag
small voids
thick sh ptgs
fe st streak - sh ptgs
ha frac, fe st
vert frac
frag
ha frac, fe st
vert frac
thin blk sh lamd
90%
2-6-79
1 3/8" soils
2 1/8" Bedrock
W.E.
sa, wet, brn gry - gry brn, slty
stf, mst, red brn w/ltd gry brn slty nod
mod to stf, wet, gry, sl slty
FAT CLAY - stf, wet, gry, sl slty
LEAN CLAY - sa, wet bl gry, slty
med, sat
gry
FAT CLAY - stf, sat, gry - grn gry, slty
LEAN CLAY - v stf, sat, gry, sl slty
stf to v stf, sat, gry grn - grn gry, slty w/woody frag, brn
FAT CLAY - med, sat, gry brn w/frag of wood, brn, slty
LEAN CLAY - med, sat, gry
FAT CLAY - stf, sat, gry, slty
CLAYEY SILT - med to stf to sa, sat, gry
LEAN CLAY - med to sa., sat, gry, slty
sa to med, sat, brn gry w/grv, med to c, blk to gry
11-13-79
6'4"
AC-242
Depth in feet
20
40
60
80
100
120
140
160
FAT CLAY - topsoil, med, dry, dk brn, slty w/org mtl
LEAN CLAY - med, dry, dk brn to y, slty, w/ls grv
wth sh
fst cl - med, mst, gry brn, slty
num breaks
vert frac
la frac w/slks
x-bdd
99.9%
7-18-80
4" Soils
2 1/8" Bedrock
C-266, Pz
so thin cly bdd
so cly band
30° contact
brk along bdd pln
shy
frac
shy bdd
frac 25° hld
frac cld
calcite nod
frac 05°
frac 30°
foss v calc
foss
frac hor
foss 07°
slks frac @ 45°
sh ptg
frac
97.7%
12-4-80
2 1/8" Bedrock
C-263
N69° E
30° L
ha frac, op
ha frac, op, fe st, 80° N 30° E
ha frac, op, 85° N 88° W
ha frac, cld, 75° N 88° W
vert frac, op, 80° S 48° W
vert frac, op, 80° N 58° W
v foss, arg, med gry
sdy
98.7%
6-5-81
1 7/8" Bedrock

...Y- med, mst, dk brn, sly

...brn, sly
...l, mst, brn-gry, sly
...n gry-gry brn, sly
...d brn w/ hd gry brn

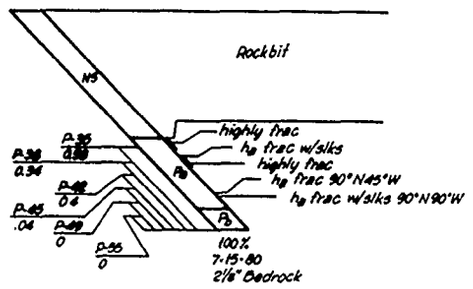
...t, wet, gry, sl sly
...Y- slf, wet, gry, sl sly
...Y- so, wet bl gry, sly

...- slf, sat, gry-grn gry, sly
...Y- v stf, sat, gry, sl sly
...f, sat, gry grn-grn gry,
...dy frag, brn
...med, sat, gry brn
...wood, brn, sly
...Y- med, sat, gry
...- stf, sat, gry, sly
...ILT- med to stf lo sa,
...Y- med to so, sat, gry,
..., sat, brn gry w/grv,
...blk to gry

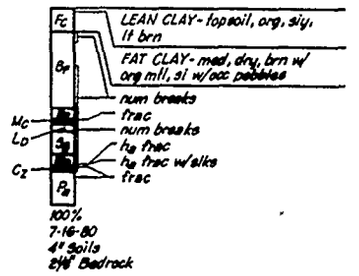
...,op
...c, op, fs st, 80°N 80°E
...ac, op, 85° N 88°W
...frac, cld, 75° N 85°W
...t frac, op, 85° S 45°W
...ert frac, op, 80° N 35°W
...v foss, arg, med gry
...sdy

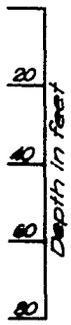
...%
...81
..." Bedrock

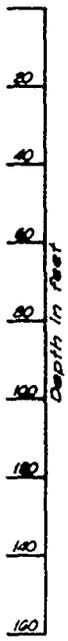
C-240
N 118° W
45° L



AC-241







NOTE:
1. For location of boring see Dwg. E2.
2. For General Geologic Column and Legend see Dwg. E1.

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by:
Checked by:
Submitted by:

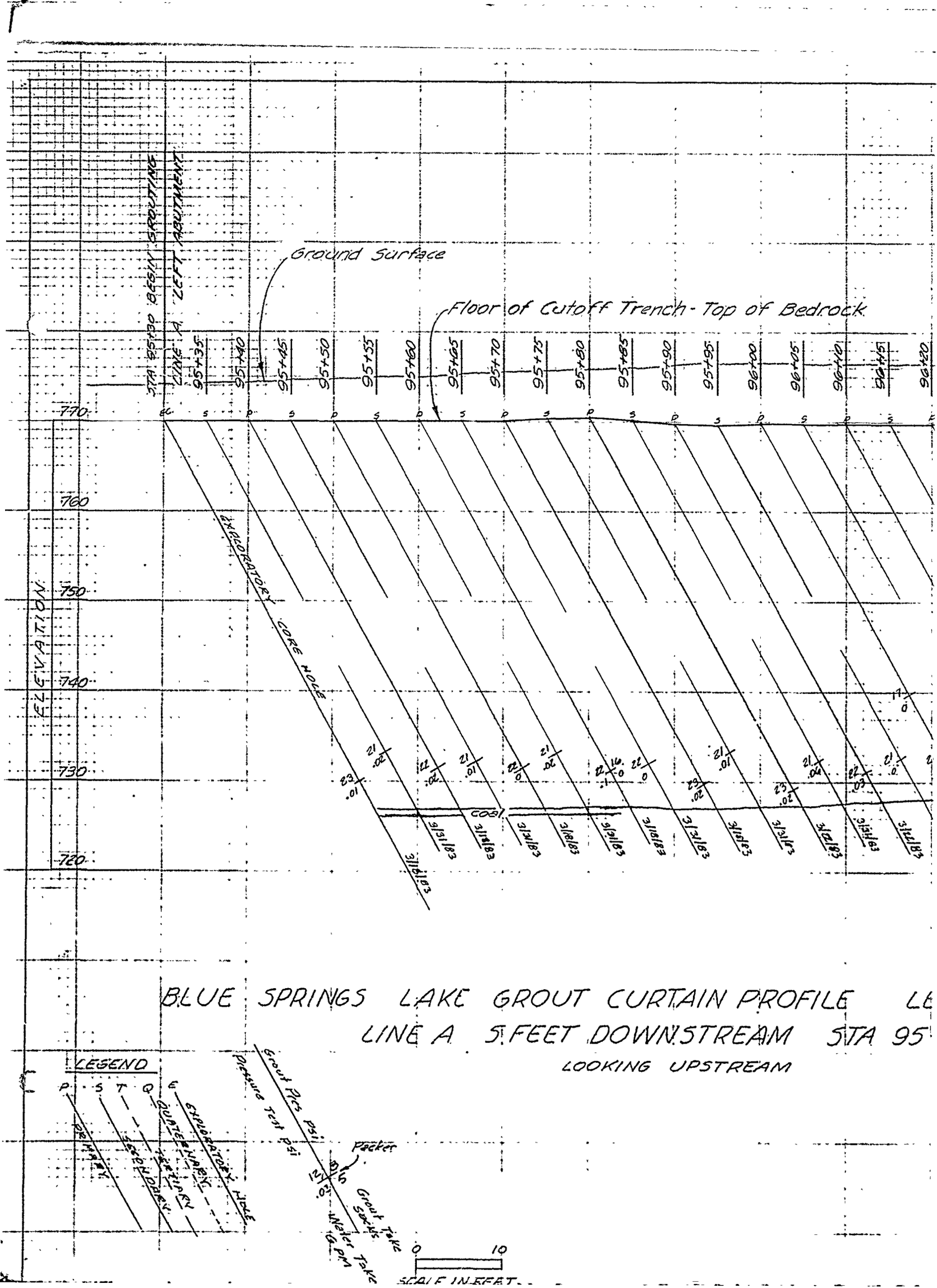
US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

LOGS OF DETACHED BORINGS NOS. 237 THROUGH 266

Scale: AS SHOWN
Date: JUNE 1990
Dwg. No.:
Sheet number: 43
File No.: RBL-2-1265

PLATE NO. 43



BLUE SPRINGS LAKE GROUT CURTAIN PROFILE LE

LINE A 5 FEET DOWNSTREAM STA 95

LOOKING UPSTREAM

LEGEND

P S T Q E

EXPLORATORY HOLE

QUATERNARY

TERTIARY

SECONDARY

PRIMARY

Grout Pipe psi

Pressure Test psi

Packer

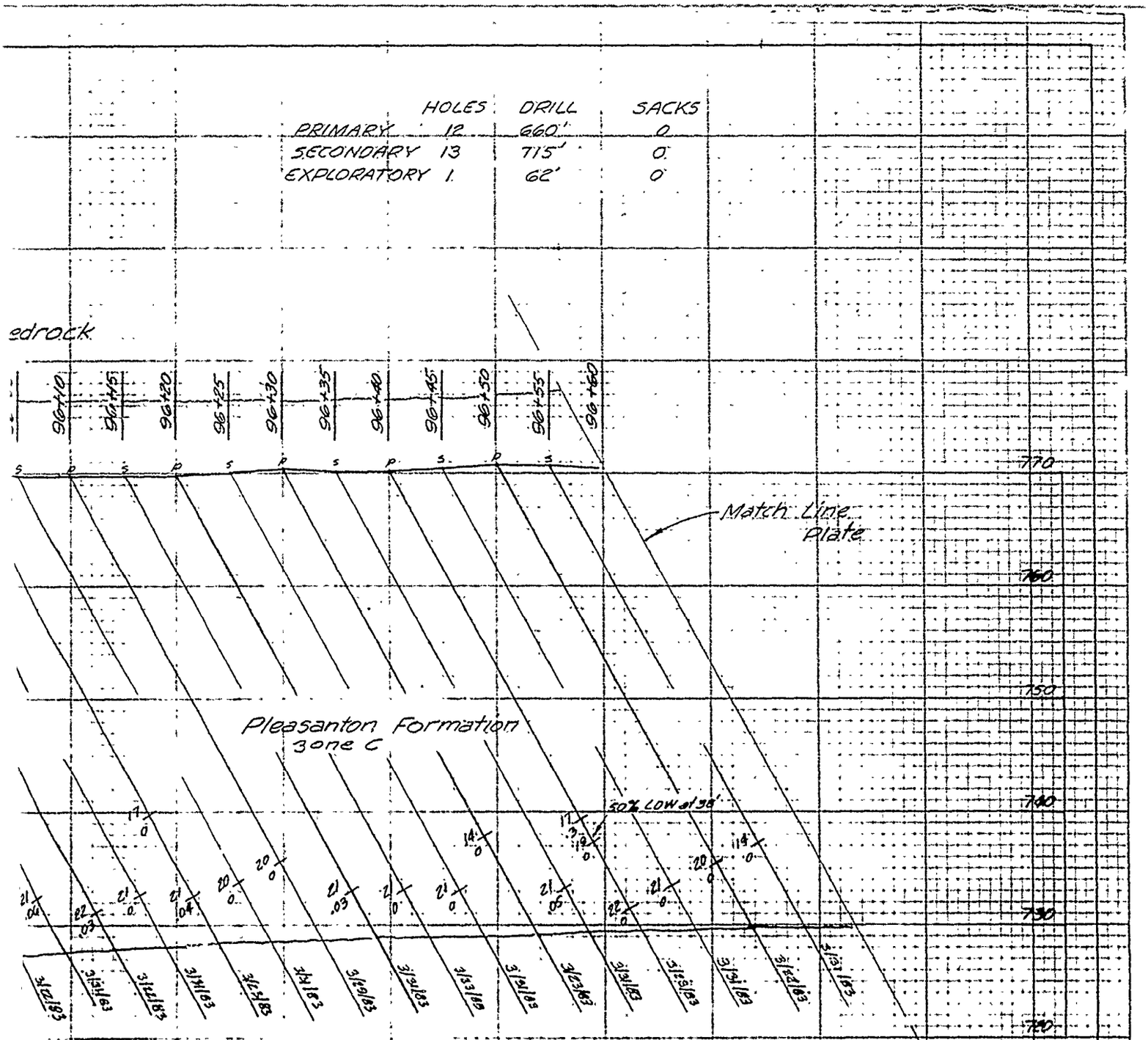
Grout Take

Water Take

0 10

SCALE IN FEET

	HOLES	DRILL	SACKS
PRIMARY	12	660'	0
SECONDARY	13	715'	0
EXPLORATORY	1	62'	0



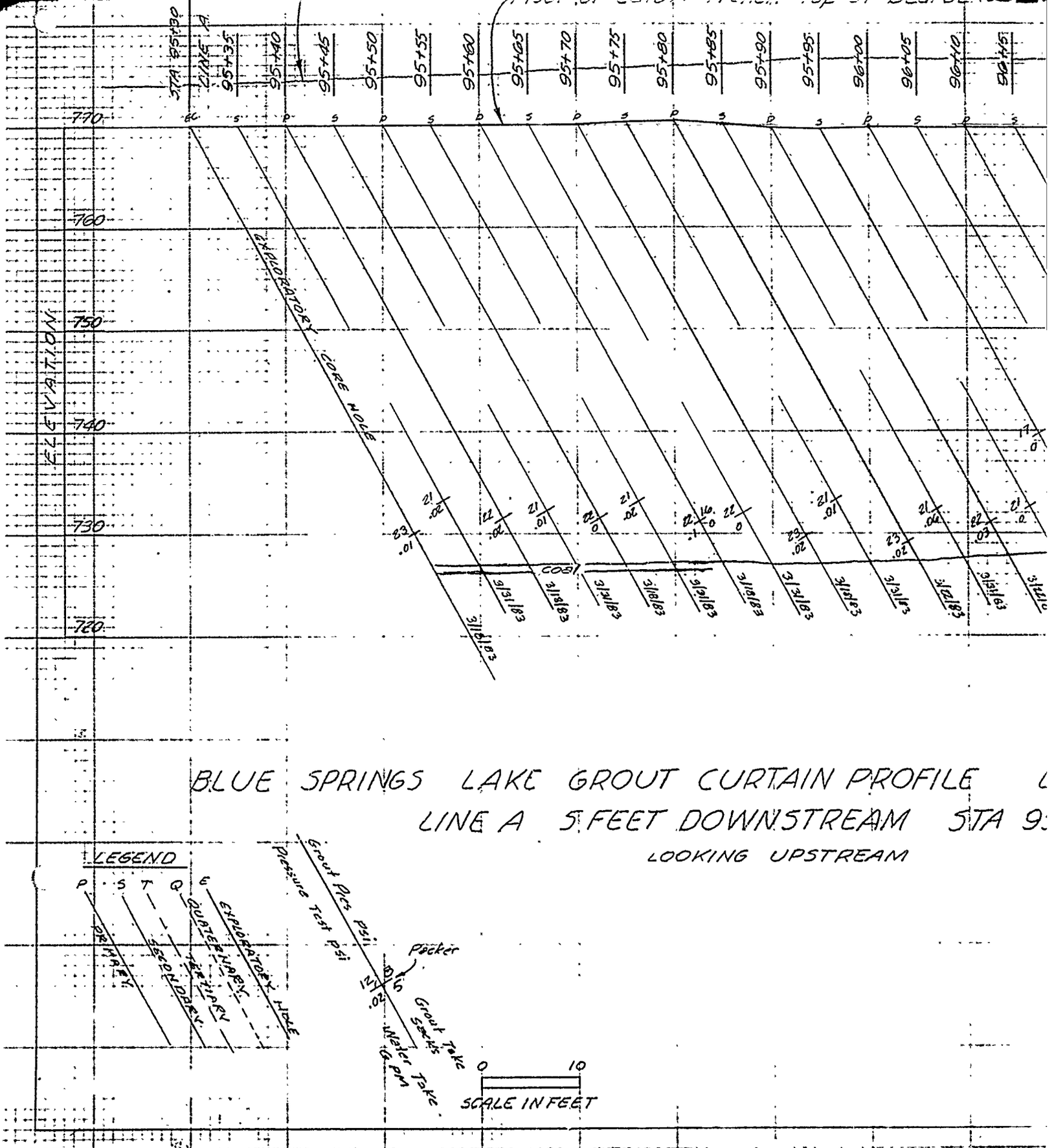
ILE LEFT ABUTMENT
STA 95+30 TO STA 96+60

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by: V.A.
Checked by: C.H.
Submitted by:

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT
GROUT CURTAIN PROFILE
LEFT ABUTMENT LINE A
STA. 95+30 TO STA. 96+60

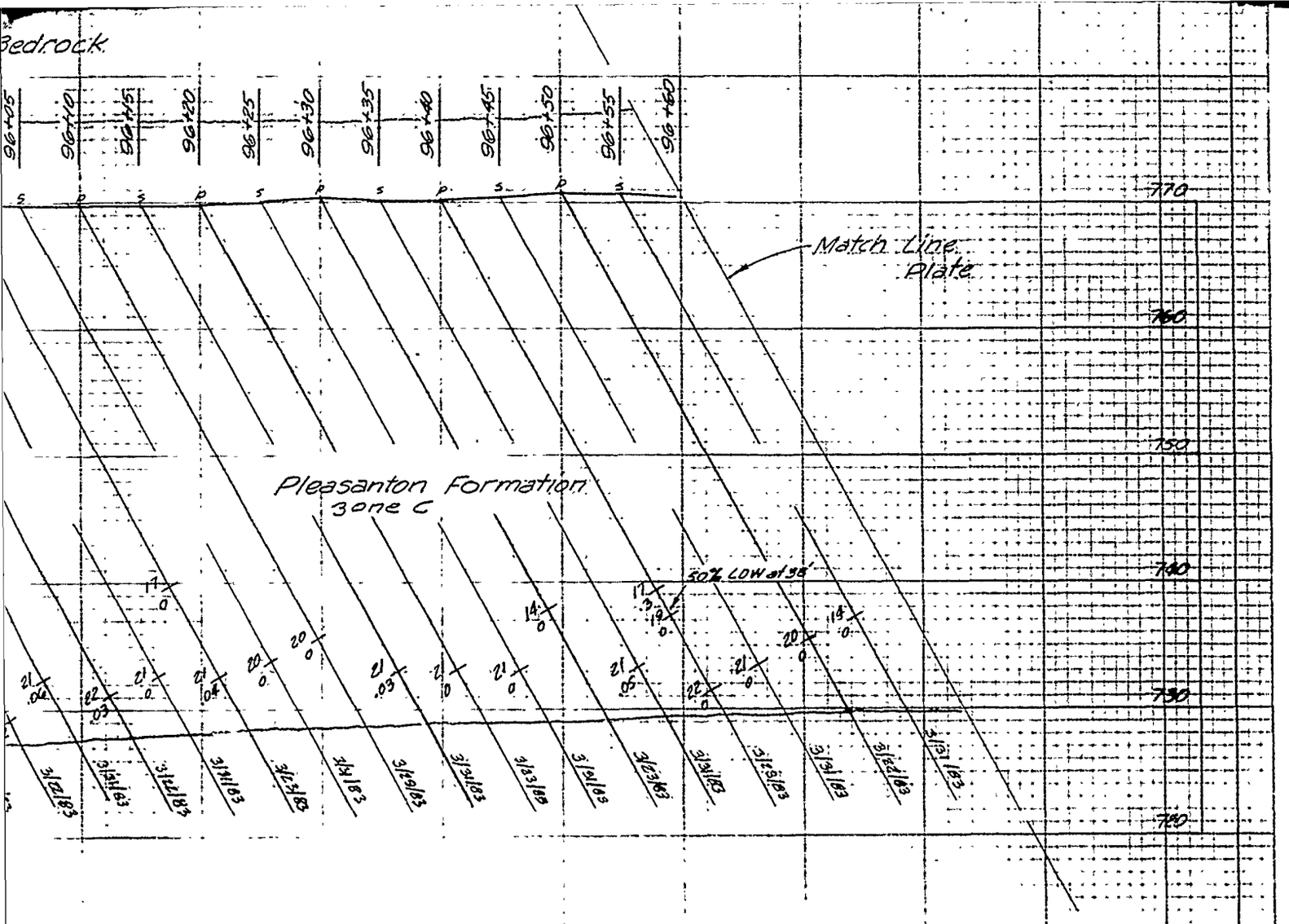
Scale: AS SHOWN
Date: JULY 1983
Sheet number:



BLUE SPRINGS LAKE GROUT CURTAIN PROFILE

LINE A 5 FEET DOWNSTREAM STA 9

LOOKING UPSTREAM



OFILE LEFT ABUTMENT

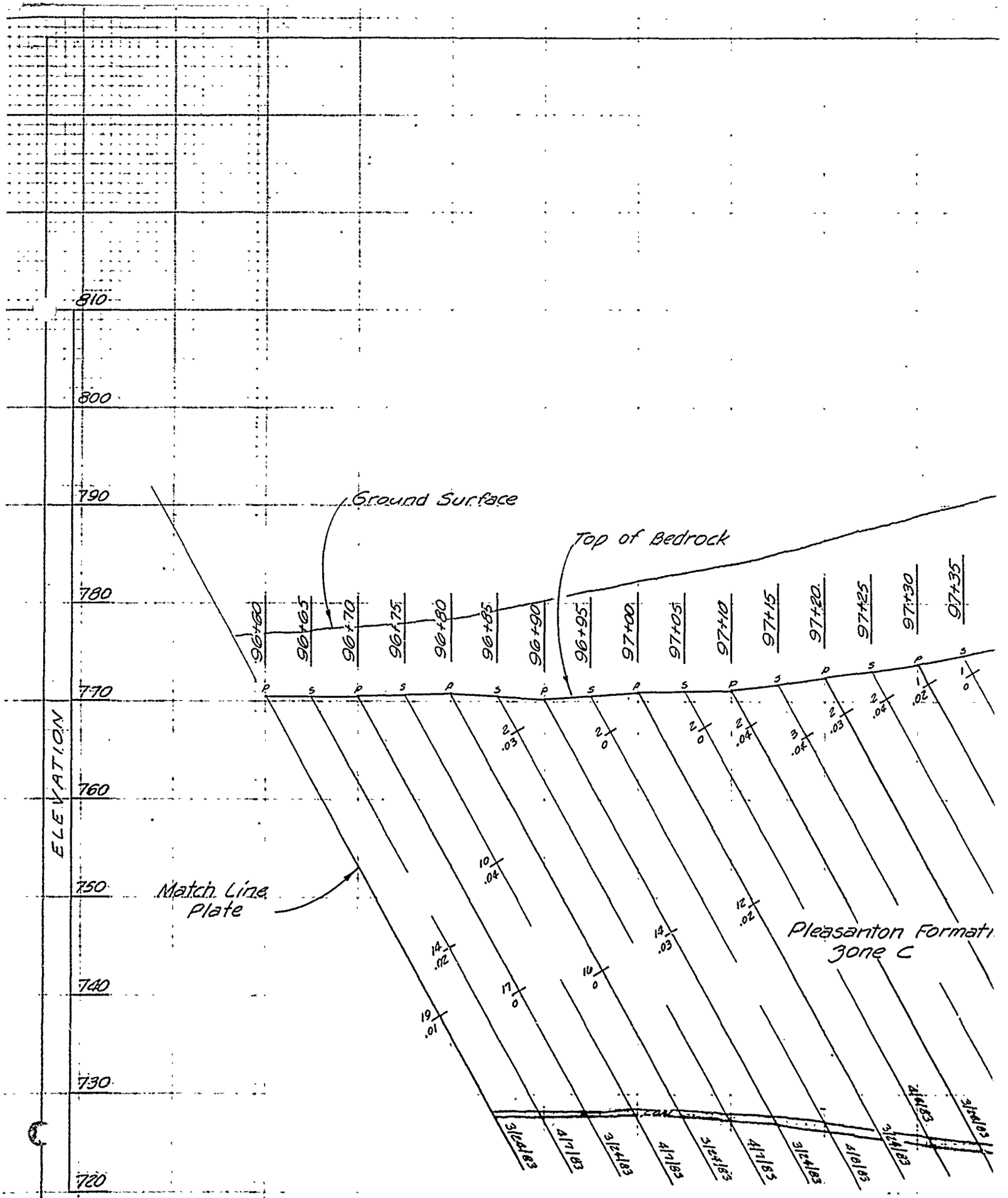
STA 95+30 TO STA 96+60

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT
GROUT CURTAIN PROFILE
LEFT ABUTMENT LINE A
STA. 95+30 TO STA. 96+60

Designed by:			
Drawn by:	V.A.		
Checked by:	C.H.		
Submitted by:			
Scale:	AS SHOWN	Sheet Number:	44
Date:	JUNE 1990		
Drawing No.:		File No.:	RBL-2-1264

PLATE NO. 44



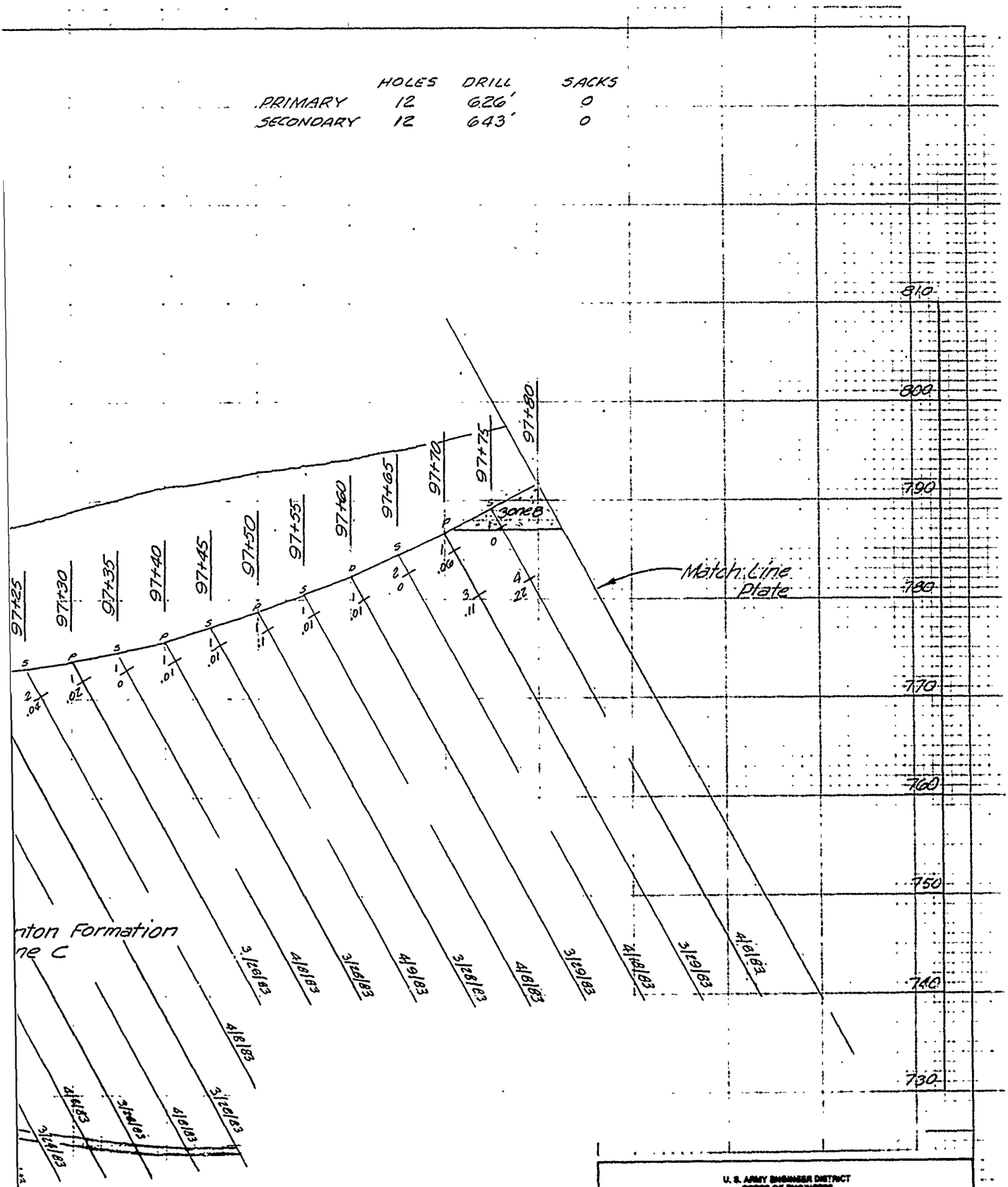
BLUE SPRINGS LAKE GROUT CURTAIN PROFILE L

LINE A 5 FEET DOWNSTREAM STA 96+

LOOKING UPSTREAM

0 10

	HOLES	DRILL	SACKS
PRIMARY	12	626'	0
SECONDARY	12	643'	0



niton Formation
ne C

OFILE LEFT ABUTMENT
STA 96+60 TO STA 97+80

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:

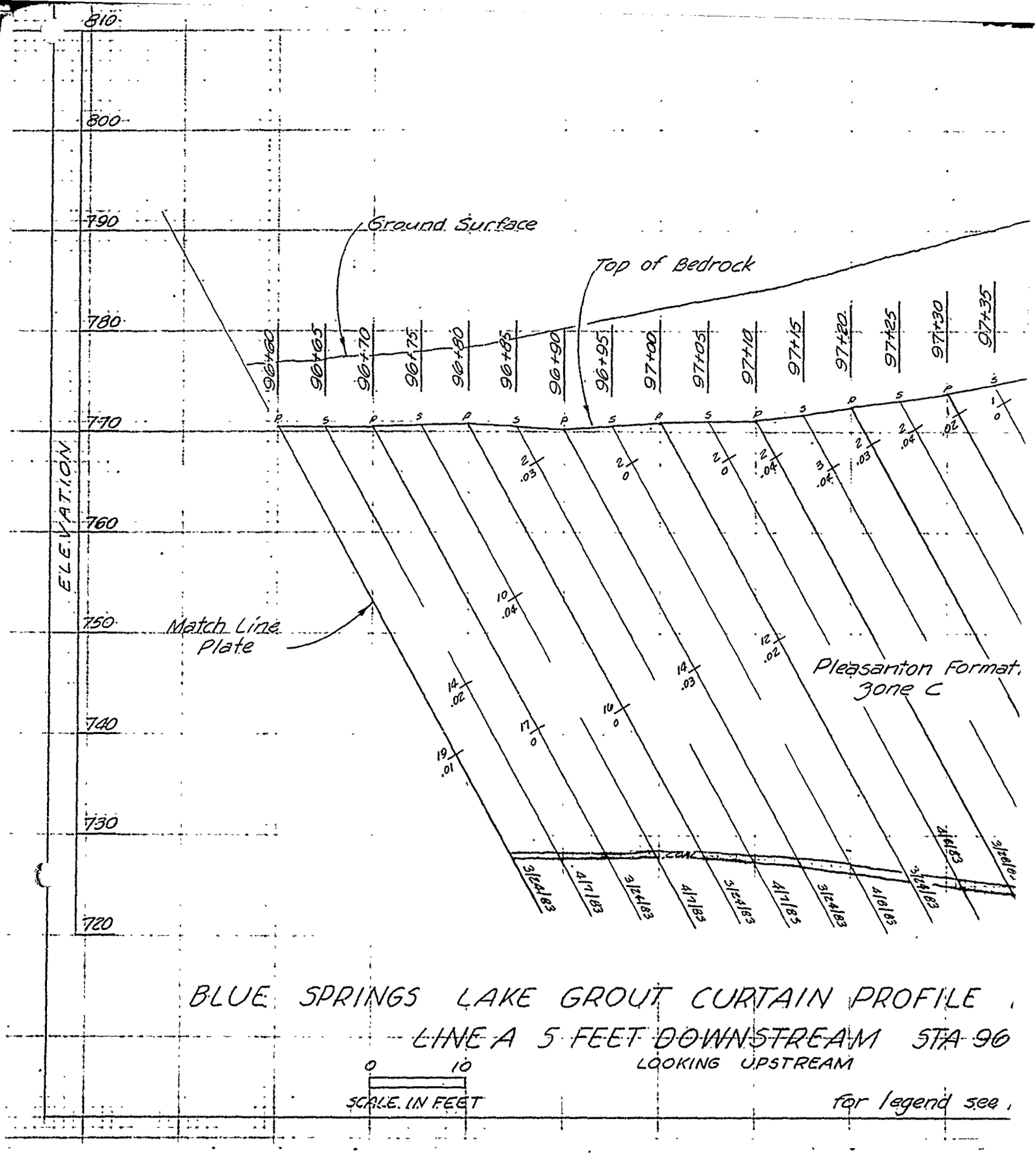
Drawn by: V.A.

Checked by: C.H.

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT
GROUT CURTAIN PROFILE
LEFT ABUTMENT LINE A
STA. 96+60 TO STA. 97+80

Scale: AS SHOWN

Sheet number:



BLUE SPRINGS LAKE GROUT CURTAIN PROFILE

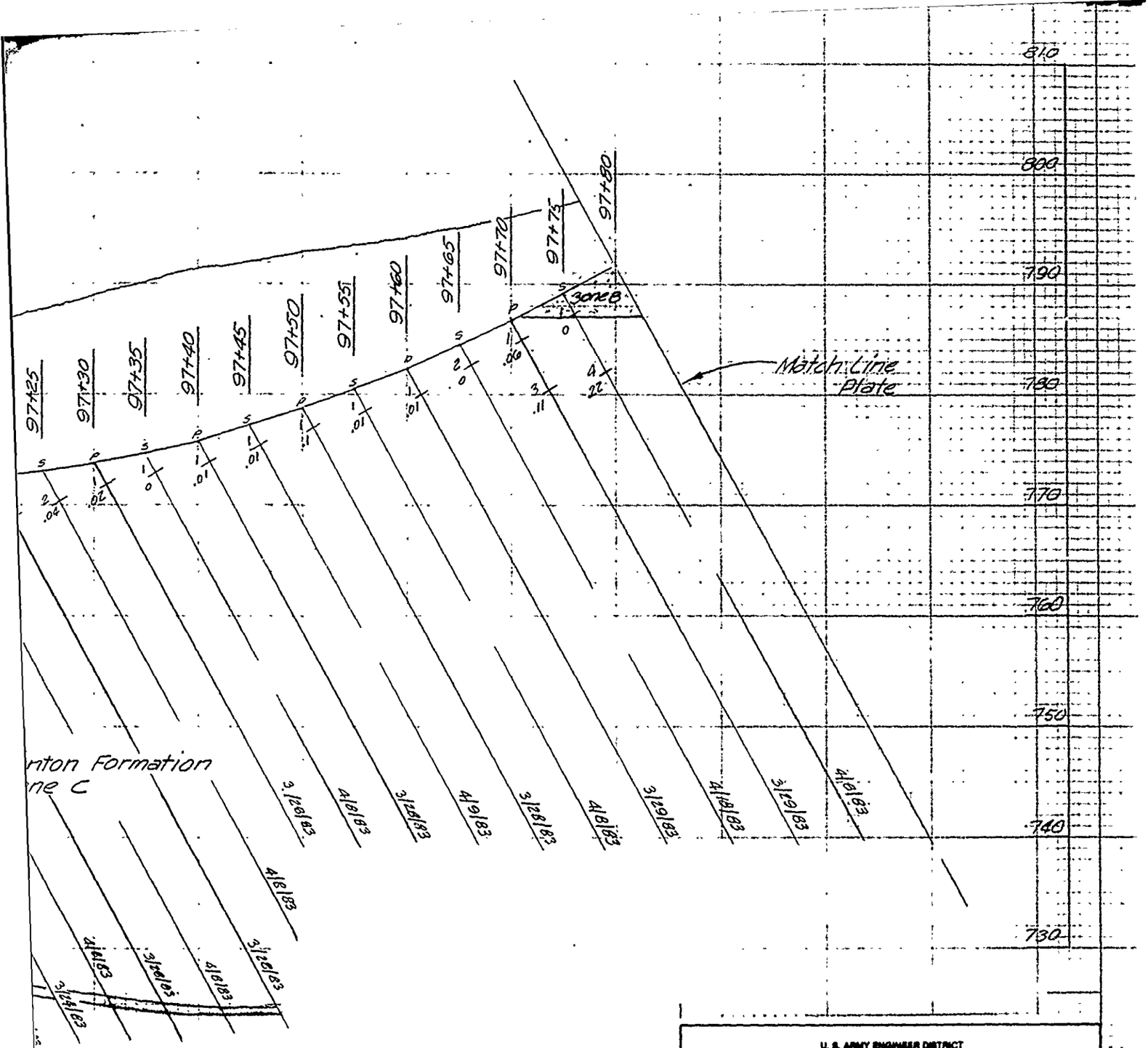
LINE A 5 FEET DOWNSTREAM STA 96

LOOKING UPSTREAM

0 10

SCALE IN FEET

for legend see



OFILE LEFT ABUTMENT

STA 96+60 TO STA 97+80

egend see Plate 44

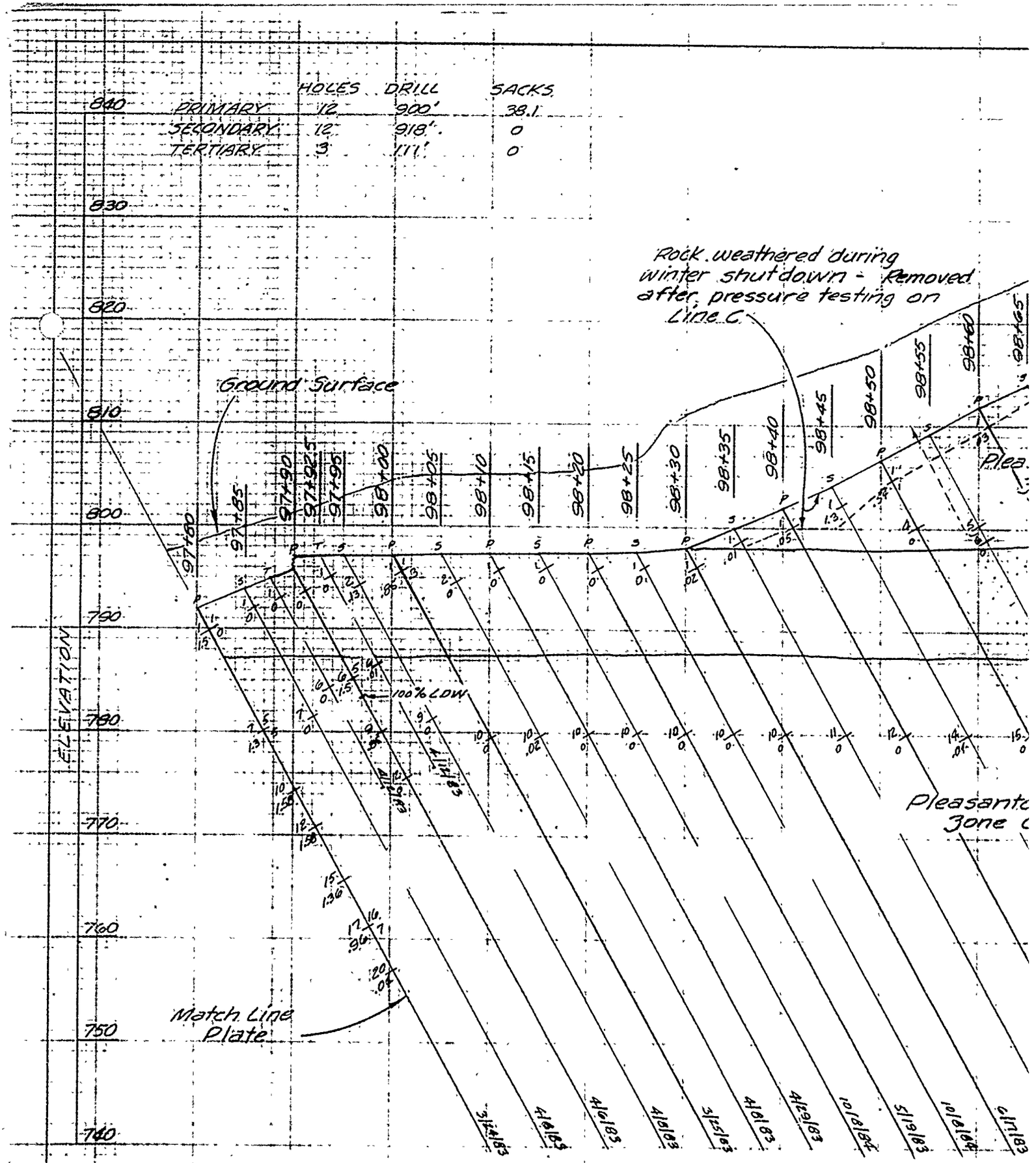
U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

GROUT CURTAIN PROFILE
LEFT ABUTMENT LINE A
STA. 96+60 TO STA. 97+80

Designed by:	
Drawn by:	V.A.
Checked by:	C.H.
Submitted by:	
Scale:	AS SHOWN
Date:	JUNE 1990
Sheet number:	45
File No.:	RBL-2-1265

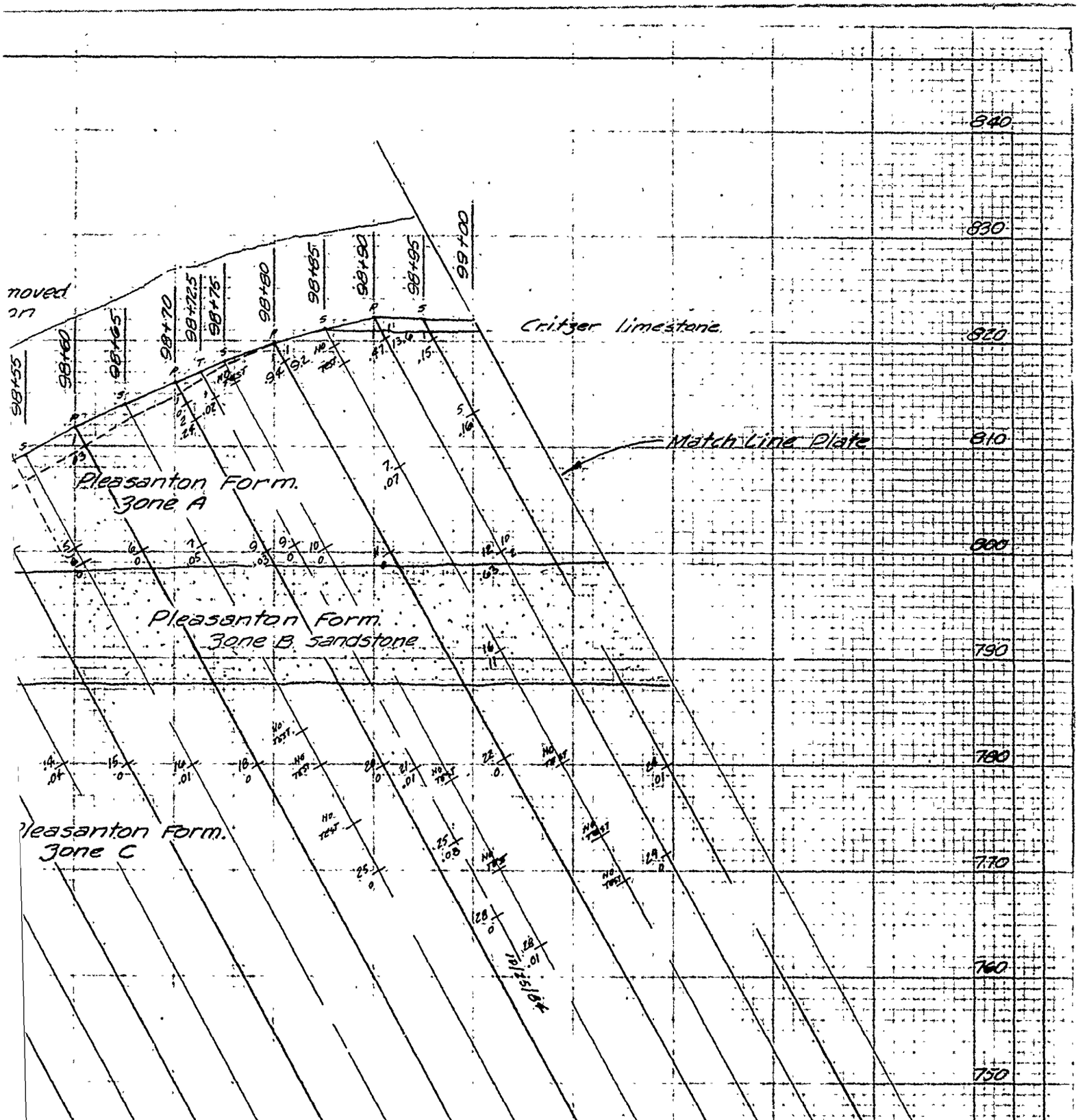
PLATE NO. 45



BLUE SPRINGS LAKE GROUT CURTAIN PROFILE

LINE A 5 FEET DOWNSTREAM STA 9

LOOKING UPSTREAM



OFILE LEFT ABUTMENT
STA 97+80 TO STA 99+00

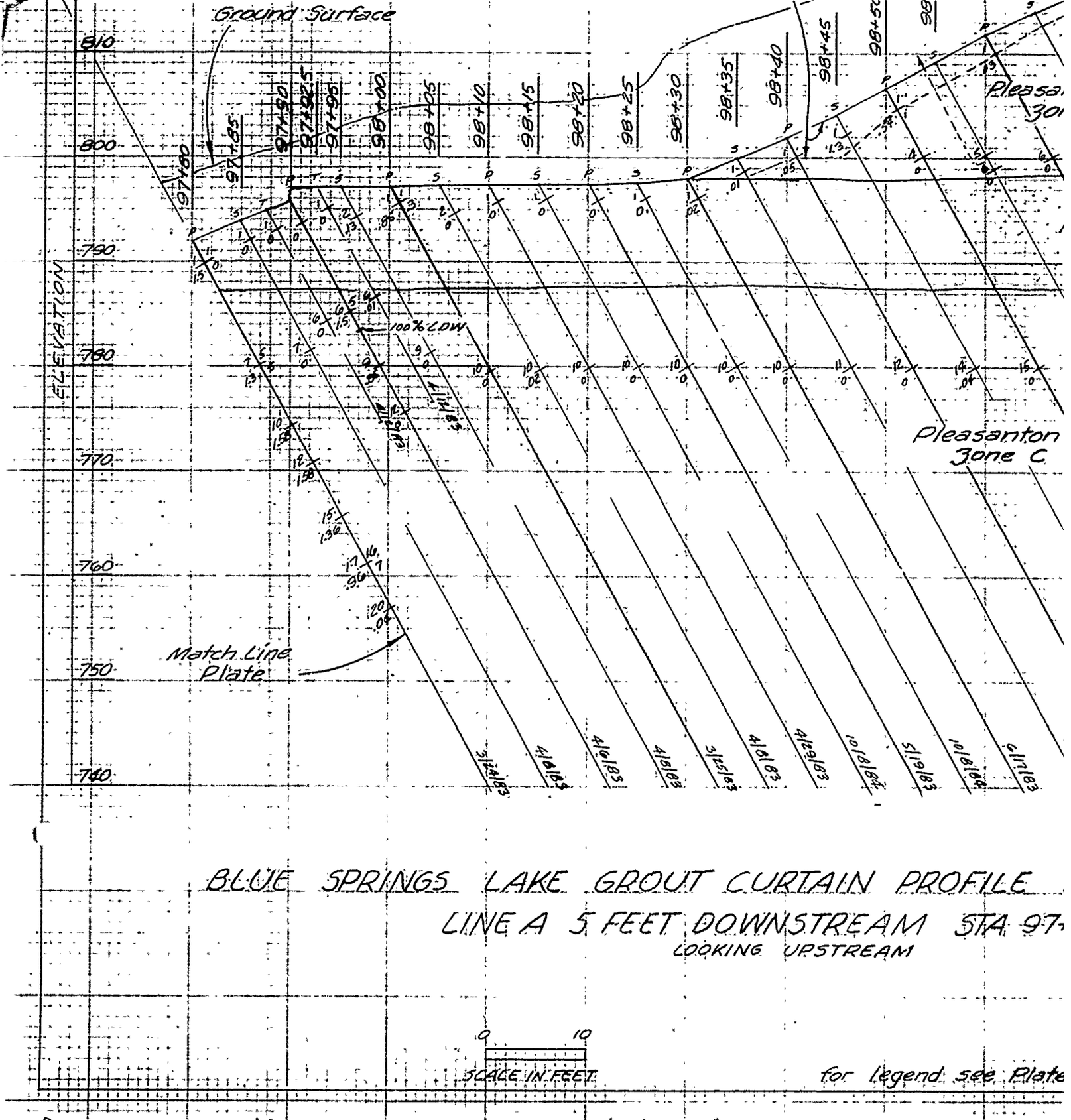
U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:

Drawn by: V.A.

Checked by:

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT
GROUT CURTAIN PROFILE
LEFT ABUTMENT LINE A
STA 97+80 TO STA 99+00



BLUE SPRINGS LAKE GROUT CURTAIN PROFILE

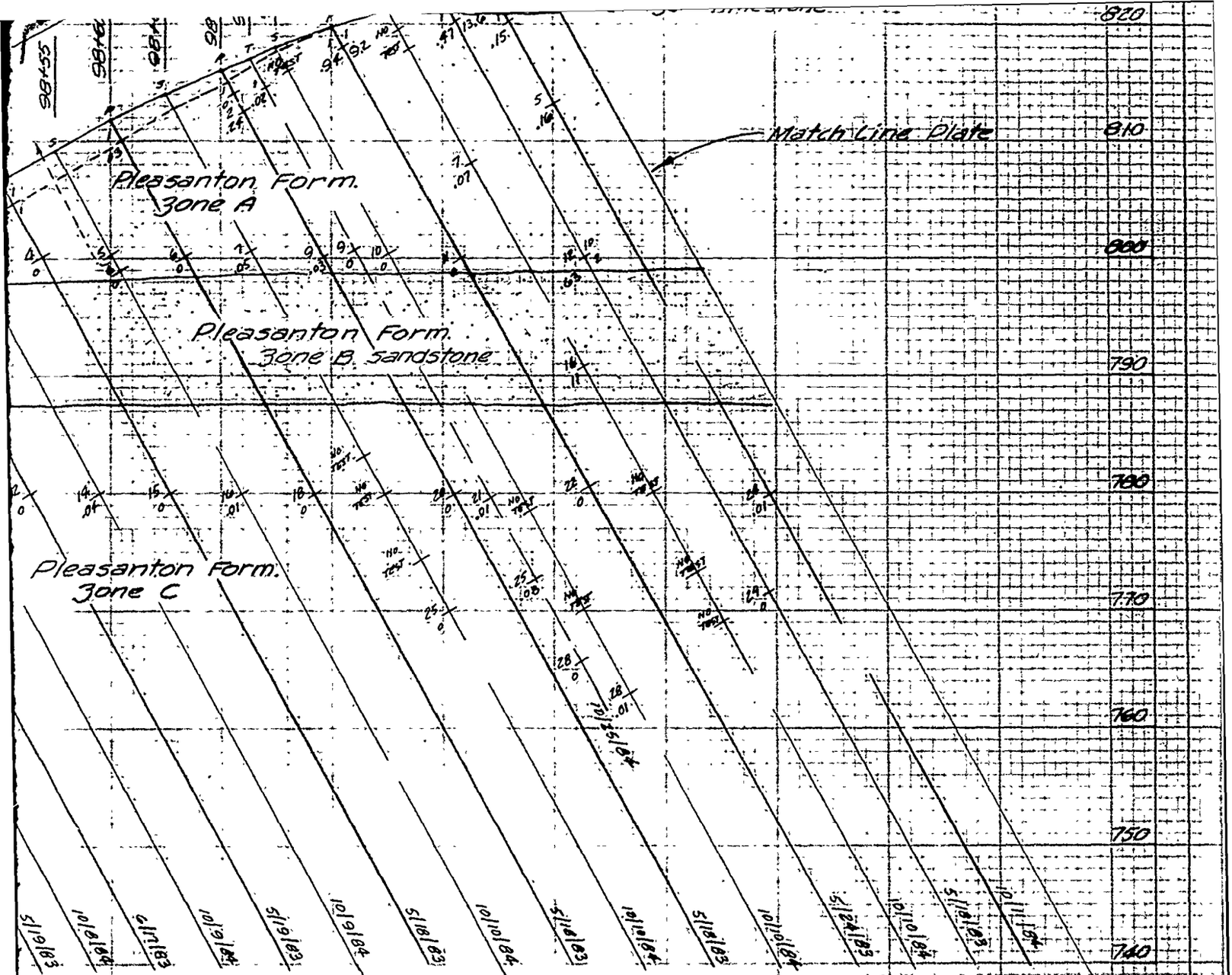
LINE A 5 FEET DOWNSTREAM STA 97+

LOOKING UPSTREAM

0 10

SCALE IN FEET

for legend see Plate



PROFILE LEFT ABUTMENT

M STA 97+80 TO STA 99+00

1

end see Plate 44

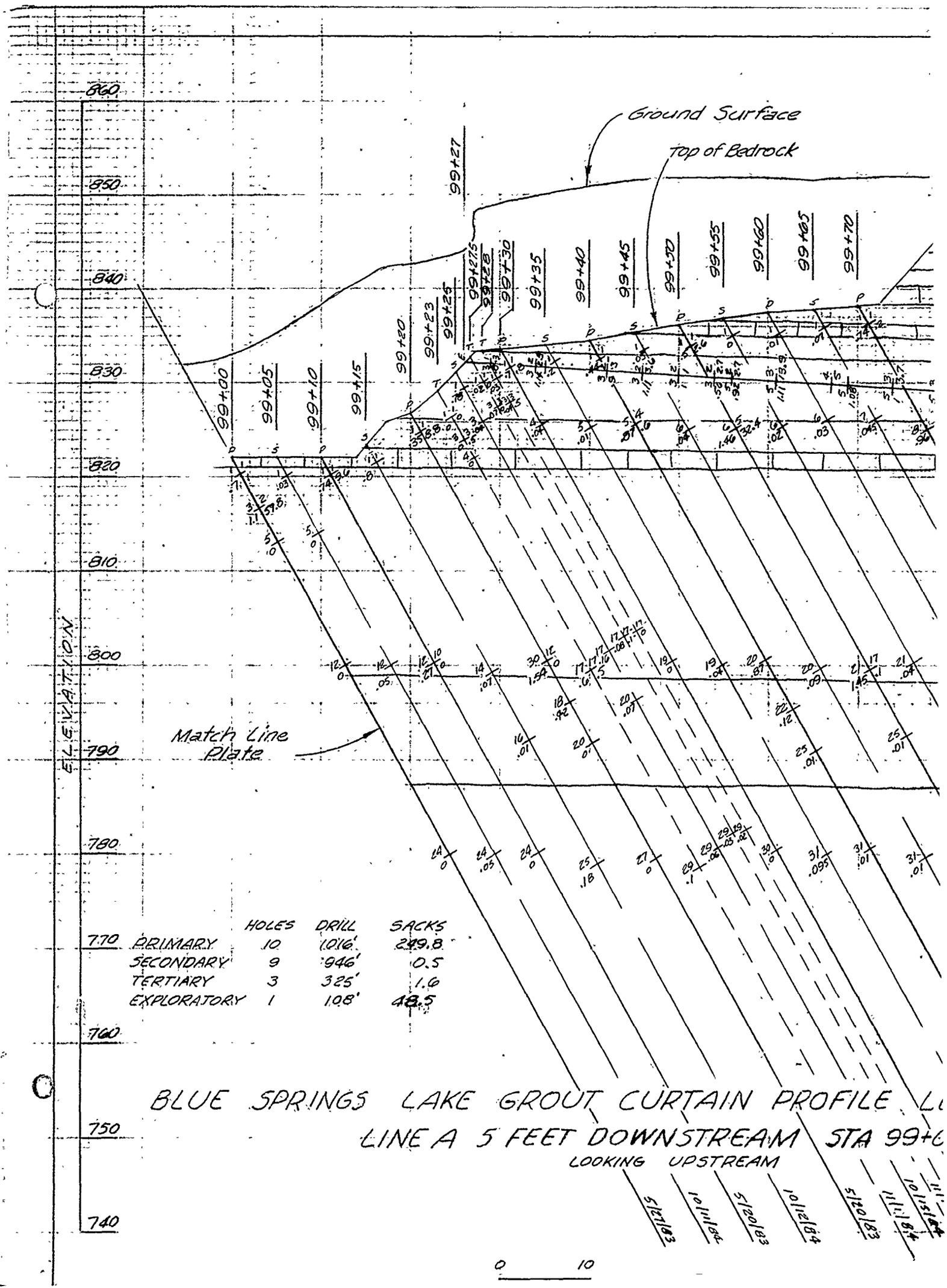
U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

GROUT CURTAIN PROFILE
LEFT ABUTMENT LINE A
STA. 97+80 TO STA. 99+00

Designed by:			
Drawn by: V.A.			
Checked by: C.H.	Scale: AS SHOWN	Sheet Number: 46	
Submitted by:	Date: JUNE 1990		File No.: RBL-2-1266
	Dwg. No.:		

PLATE NO. 46



	HOLES	DRILL	SACKS
PRIMARY	10	1016'	299.8
SECONDARY	9	946'	0.5
TERTIARY	3	325'	1.6
EXPLORATORY	1	108'	48.5

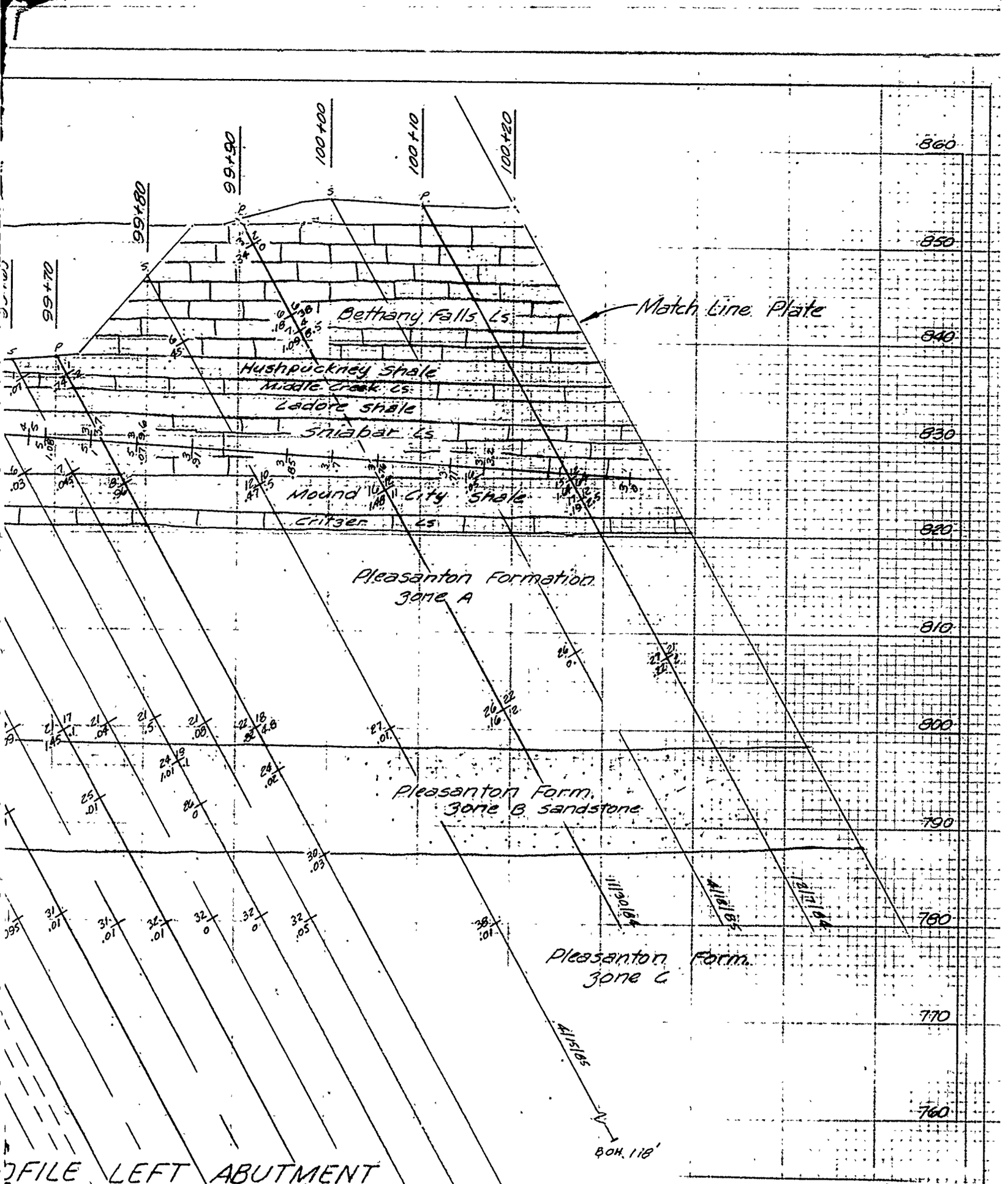
BLUE SPRINGS LAKE GROUT CURTAIN PROFILE L

LINE A 5 FEET DOWNSTREAM STA 99+0

LOOKING UPSTREAM

5/27/83 10/11/84 5/20/83 10/12/84 5/20/83 10/15/84

0 10



PROFILE LEFT ABUTMENT

STA 99+00 TO STA 100+20

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:

Drawn by: V.A.

Checked by: C.H.

Submitted by:

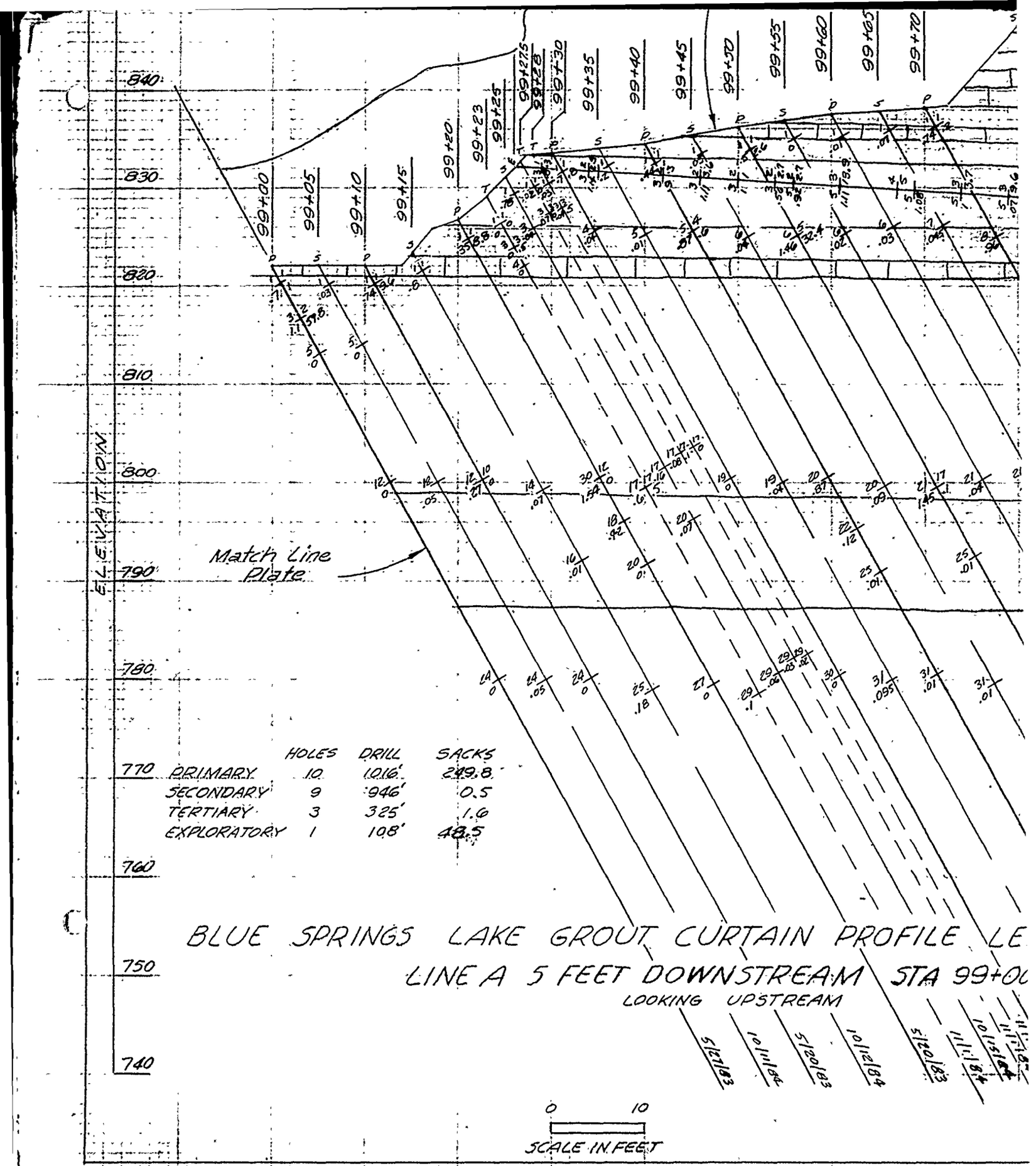
EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

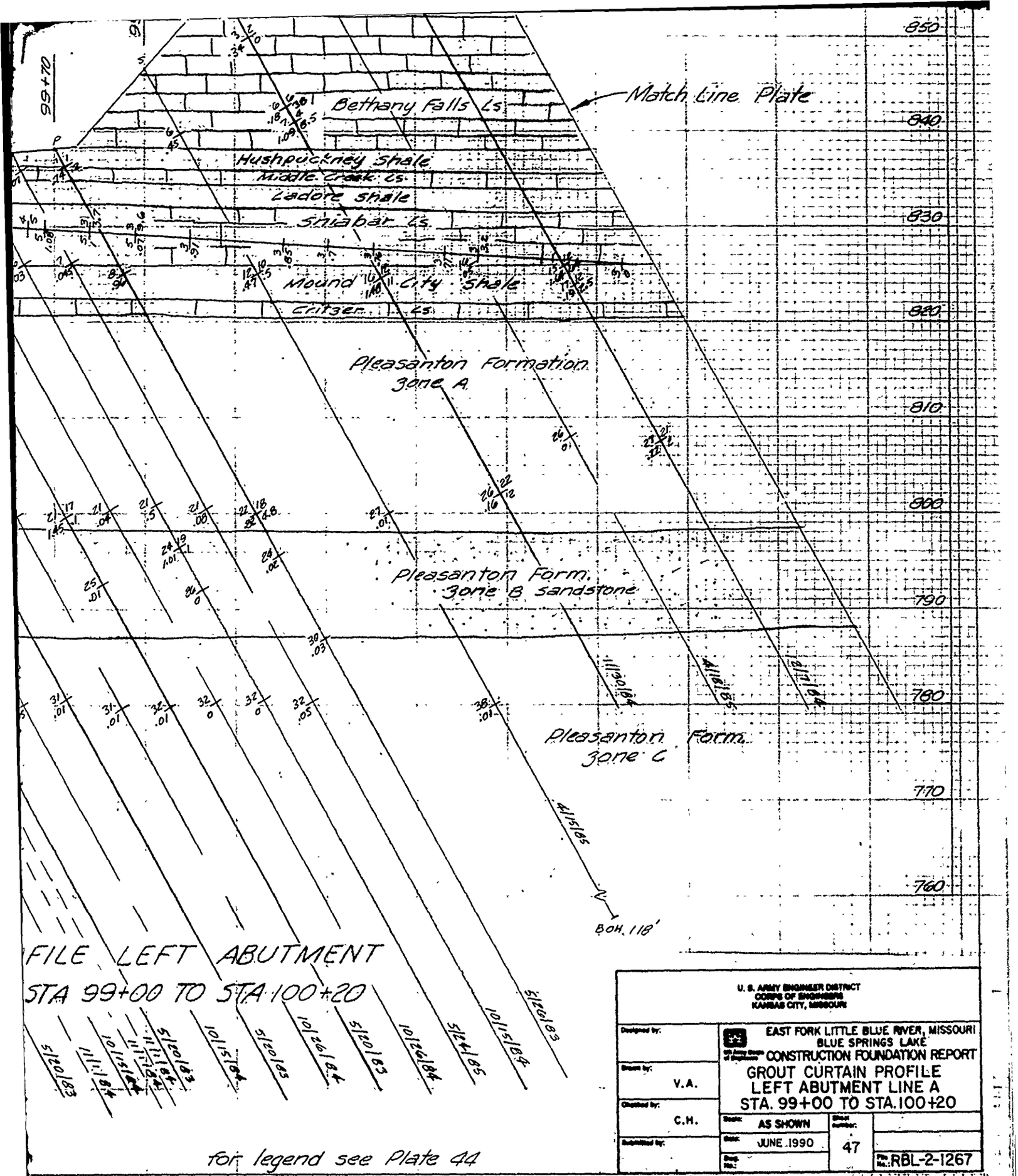
GROUT CURTAIN PROFILE
LEFT ABUTMENT LINE A
STA. 99+00 TO STA. 100+20

Scale: AS SHOWN

Date: JUNE 1990

Sheet number: 47


ELEVATION
840
830
820
810
800
790
780
770
760
750
740
99+00
99+05
99+10
99+15
99+20
99+23
99+25
99+28
99+30
99+35
99+40
99+45
99+50
99+55
99+60
99+65
99+70
Match Line Plate
HOLES DRILL SACKS
PRIMARY 10 1016' 249.8
SECONDARY 9 946' 0.5
TERTIARY 3 325' 1.6
EXPLORATORY 1 108' 48.5
BLUE SPRINGS LAKE GROUT CURTAIN PROFILE LE
LINE A 5 FEET DOWNSTREAM STA 99+0
LOOKING UPSTREAM
5/27/83
10/11/84
5/20/83
10/12/84
5/20/83
10/11/84
0 10
SCALE IN FEET

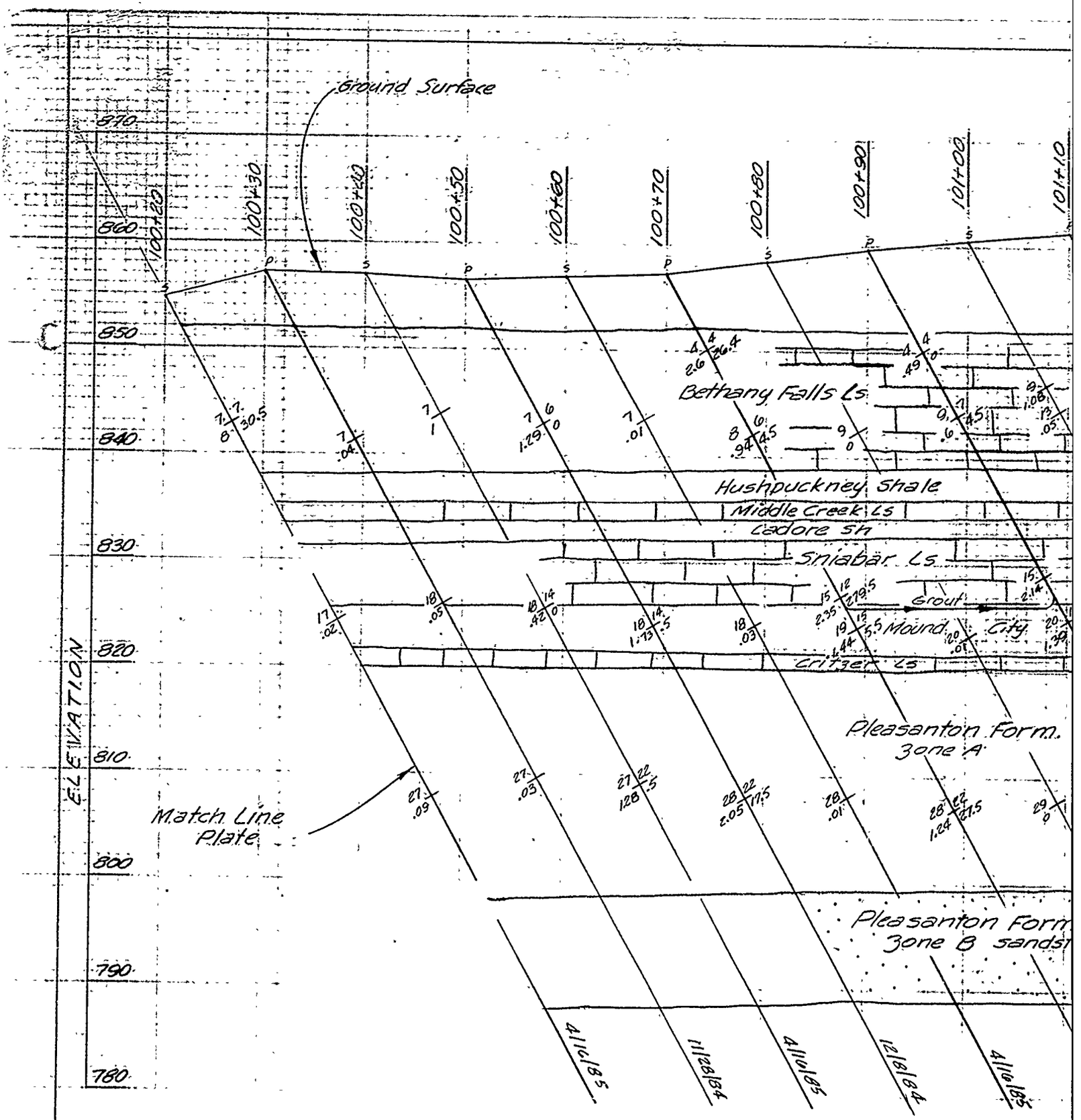


U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT
GROUT CURTAIN PROFILE
LEFT ABUTMENT LINE A
STA. 99+00 TO STA.100+20

Designed by:	
Drawn by:	V.A.
Checked by:	C.H.
Submitted by:	
Scale:	AS SHOWN
Date:	JUNE 1990
Sheet number:	47
File No.:	RBL-2-1267

PLATE NO. 47

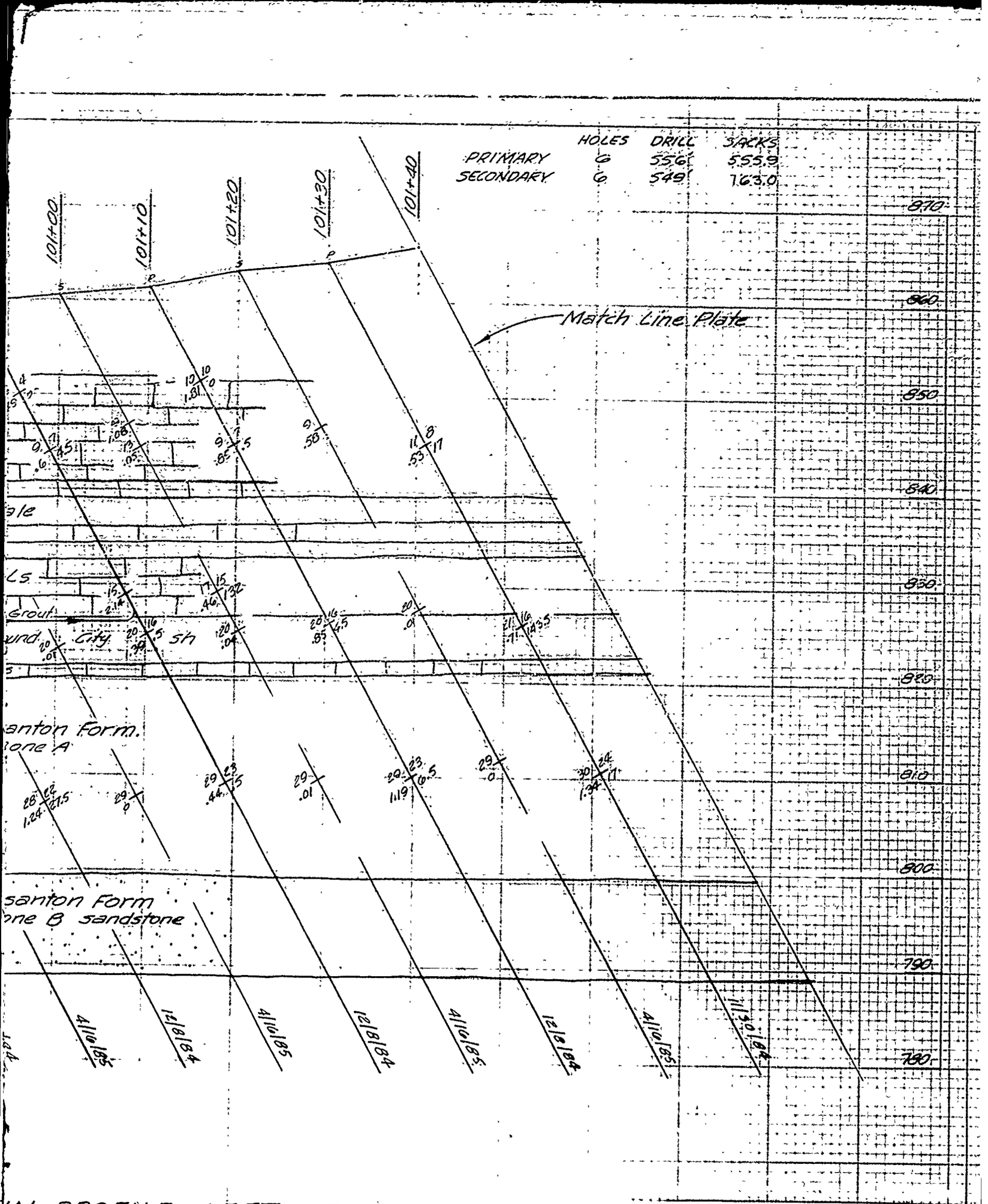


BLUE SPRINGS LAKE GROUT CURTAIN PROFIL

LINE A 5 FEET DOWNSTREAM STA

LOOKING UPSTREAM

0 10



N PROFILE LEFT ABUTMENT

REAM STA 100+20 TO STA 101+40

EAM

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CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

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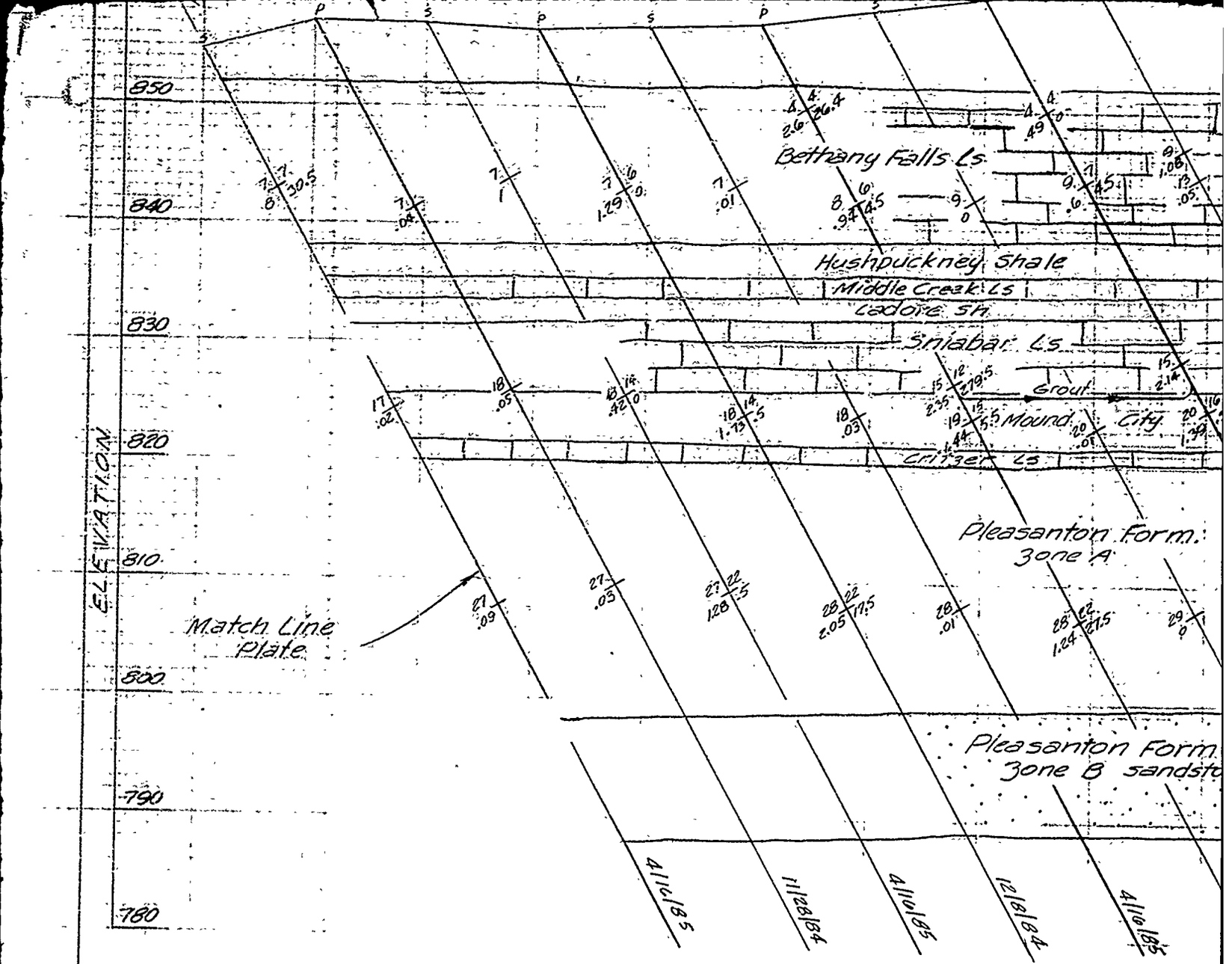
Drawn by: V.A.

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT
GROUT CURTAIN PROFILE
LEFT ABUTMENT LINE A
STA 100+20 TO STA 101+40



BLUE SPRINGS LAKE GROUT CURTAIN PROFILE

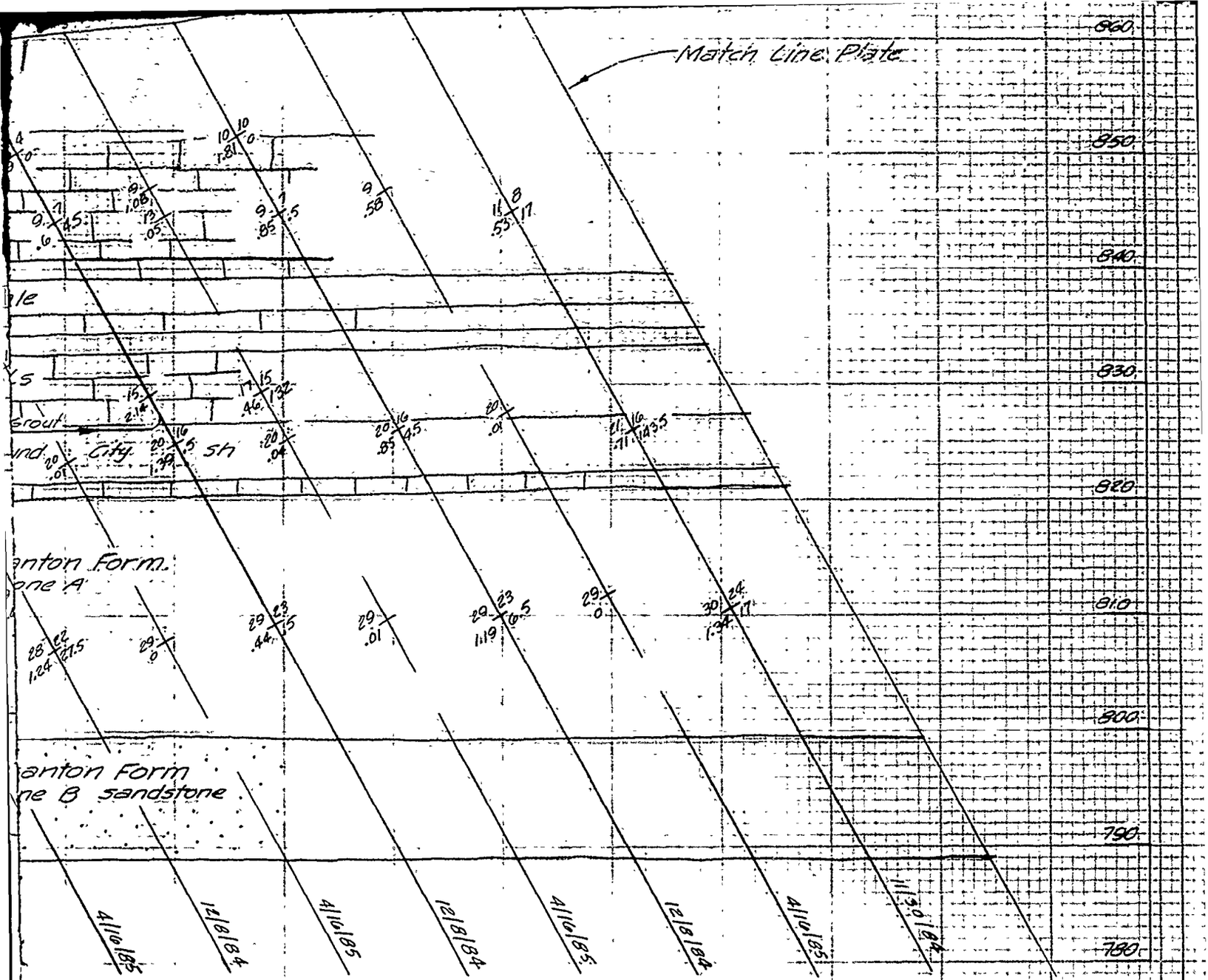
LINE A 5 FEET DOWNSTREAM STA

LOOKING UPSTREAM

0 10

SCALE IN FEET

for le



N PROFILE LEFT ABUTMENT

EAM STA 100+20 TO STA 101+40

EAM

for legend see Plate 44

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:

Drawn by: V.A.

Checked by: C.H.

Submitted by:

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT
GROUT CURTAIN PROFILE
LEFT ABUTMENT LINE A
STA. 100+20 TO STA. 101+40

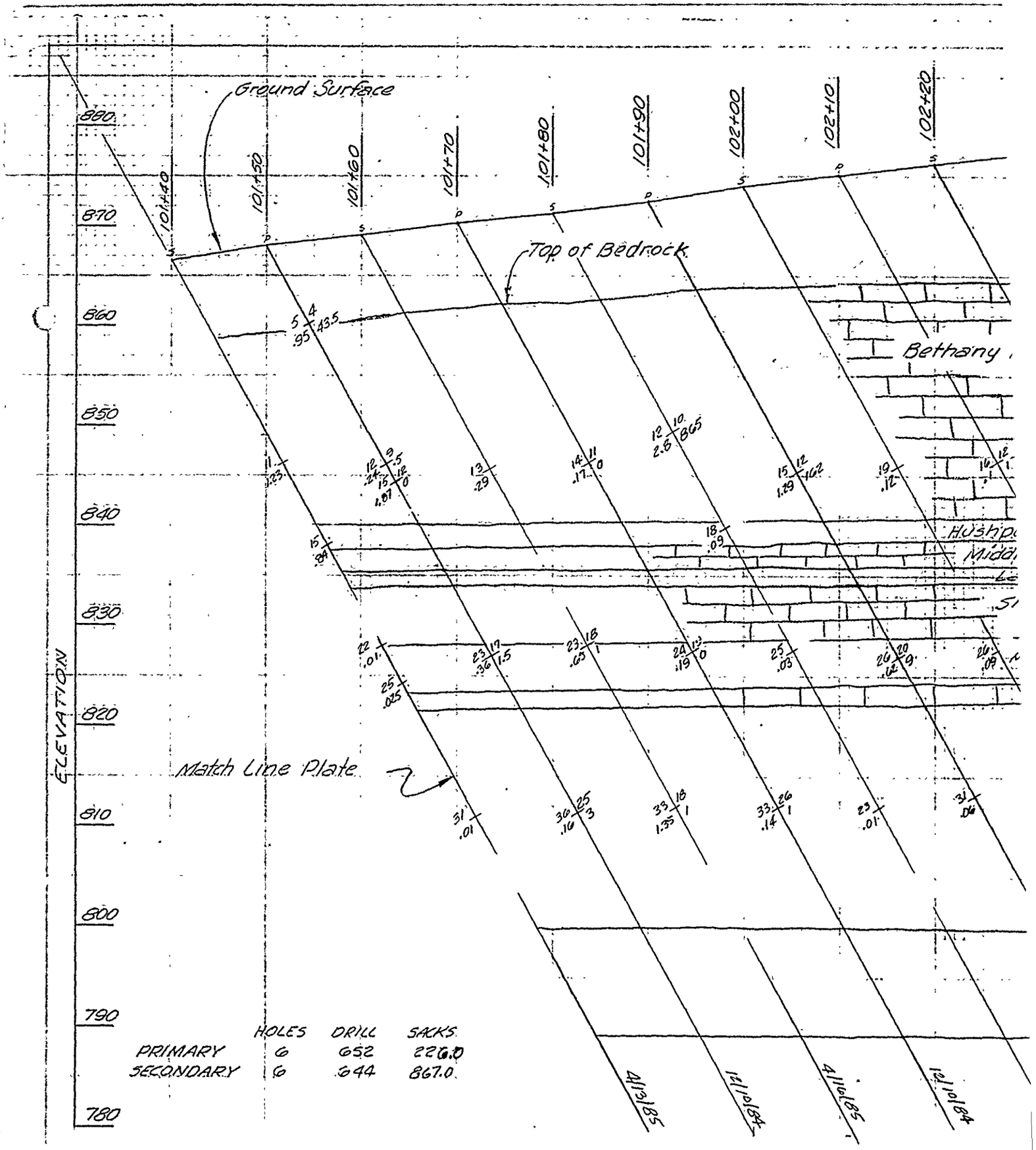
Scale: AS SHOWN

Date: JUNE 1990

Sheet number: 48

Dwg. No.: RBL-2-1268

PLATE NO. 48

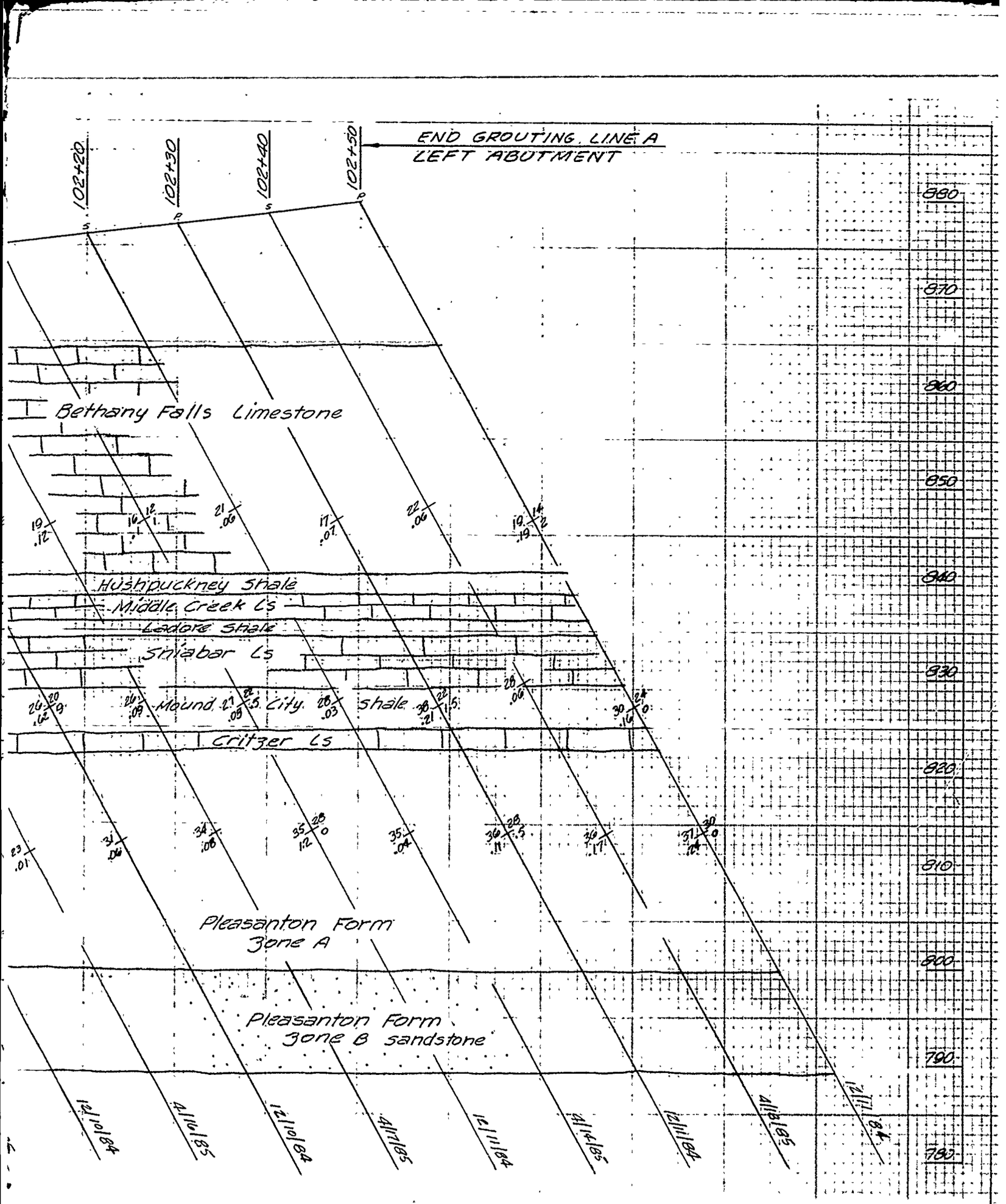


BLUE SPRINGS LAKE GROUT CURTAIN PROFIL

LINE A 5 FEET DOWNSTREAM STA

LOOKING UPSTREAM

0 10



AIN PROFILE LEFT ABUTMENT

TREAM STA 101+40 TO STA 102+50

SPEAM

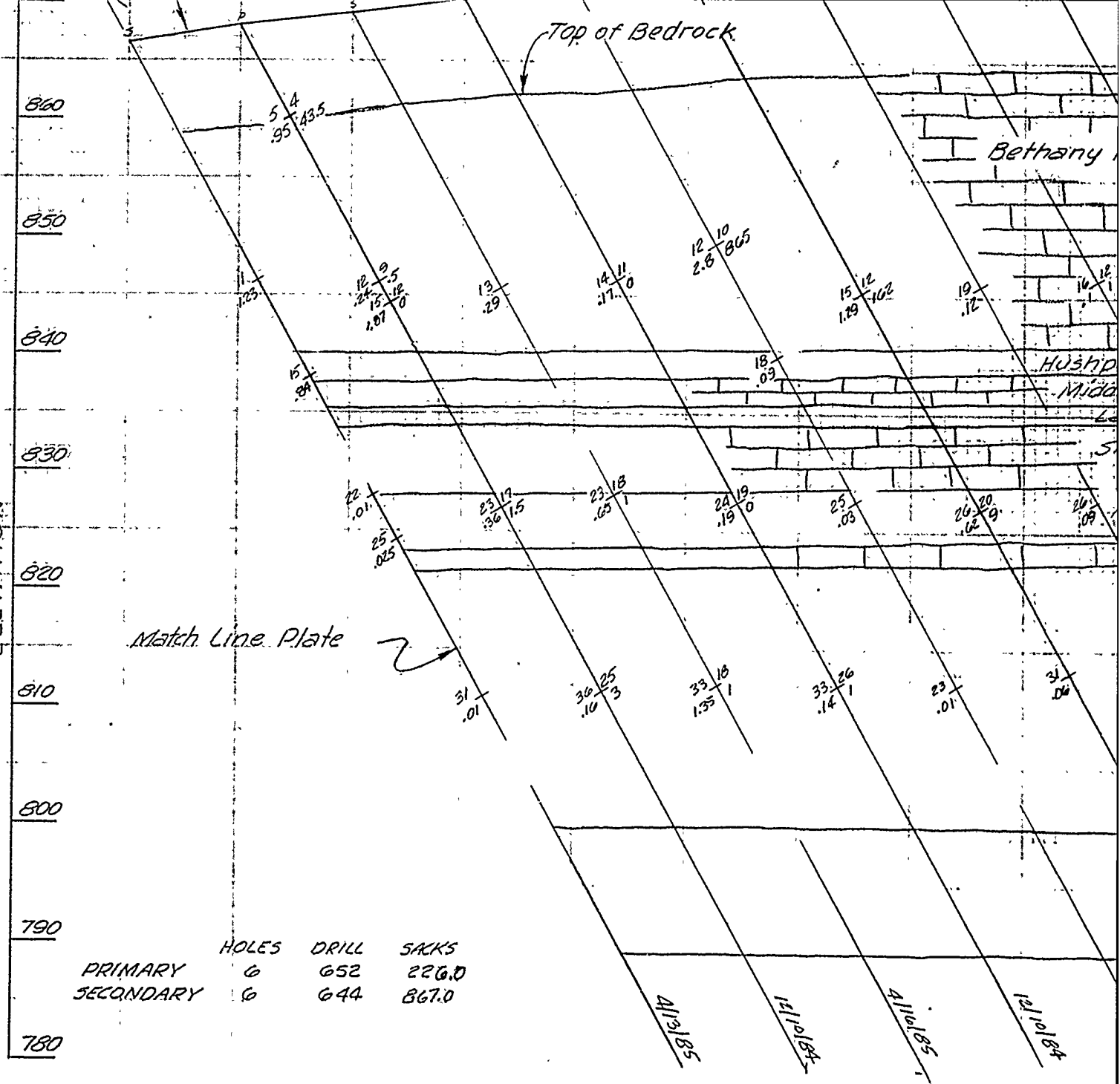
U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:

Drawn by: V.A.

Checked by:

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT
GROUT CURTAIN PROFILE
LEFT ABUTMENT LINE A
STA 101+40 TO STA 102+50



	HOLES	DRILL	SACKS
PRIMARY	6	652	226.0
SECONDARY	6	644	867.0

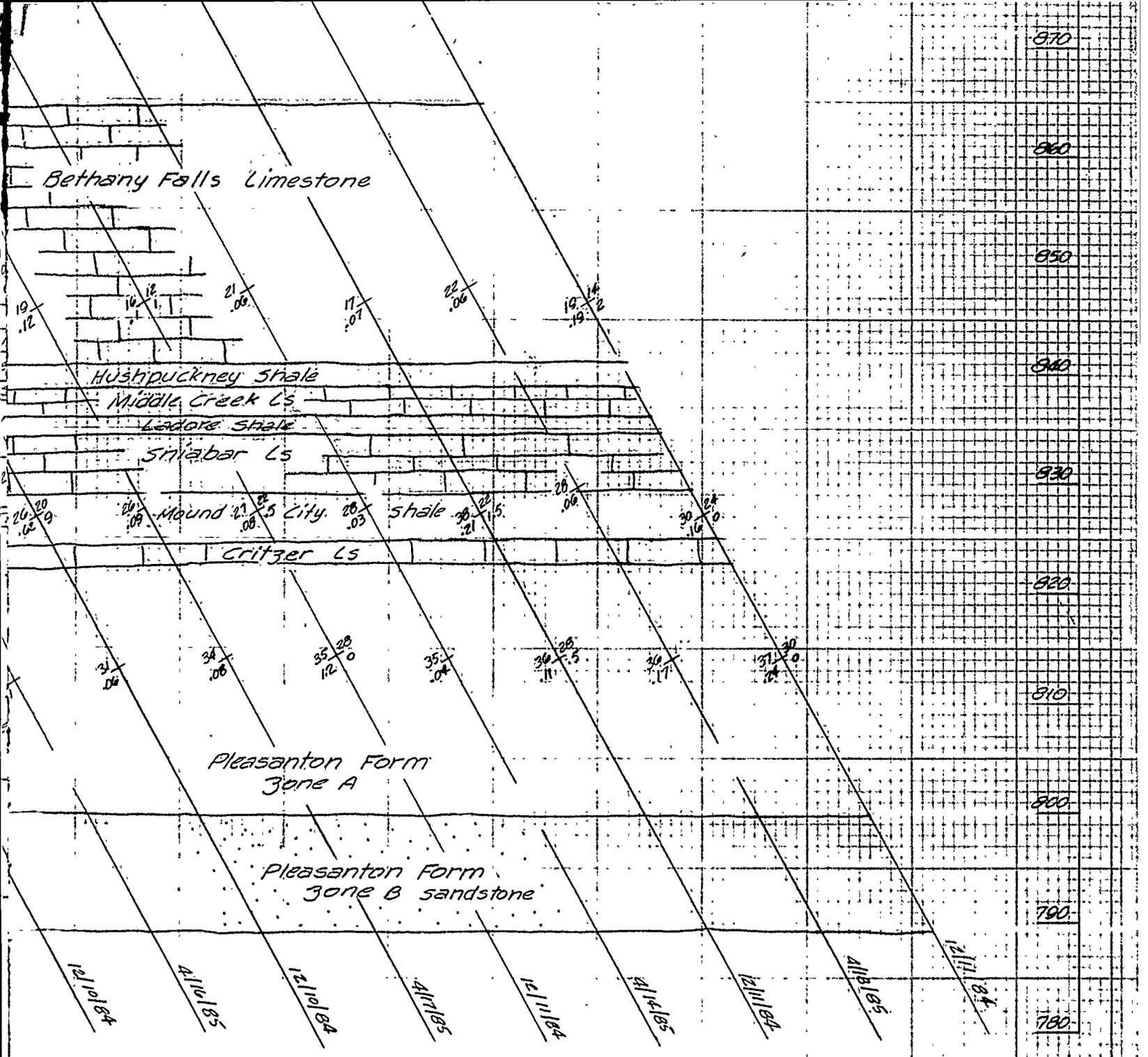
BLUE SPRINGS LAKE GROUT CURTAIN PROFI

LINE A 5 FEET DOWNSTREAM ST

LOOKING UPSTREAM

0 10

SCALE IN FEET



IN PROFILE LEFT ABUTMENT
PEAM STA 101+40 TO STA 102+50

TANI

for legend see Plate 44

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:

Drawn by: V.A.

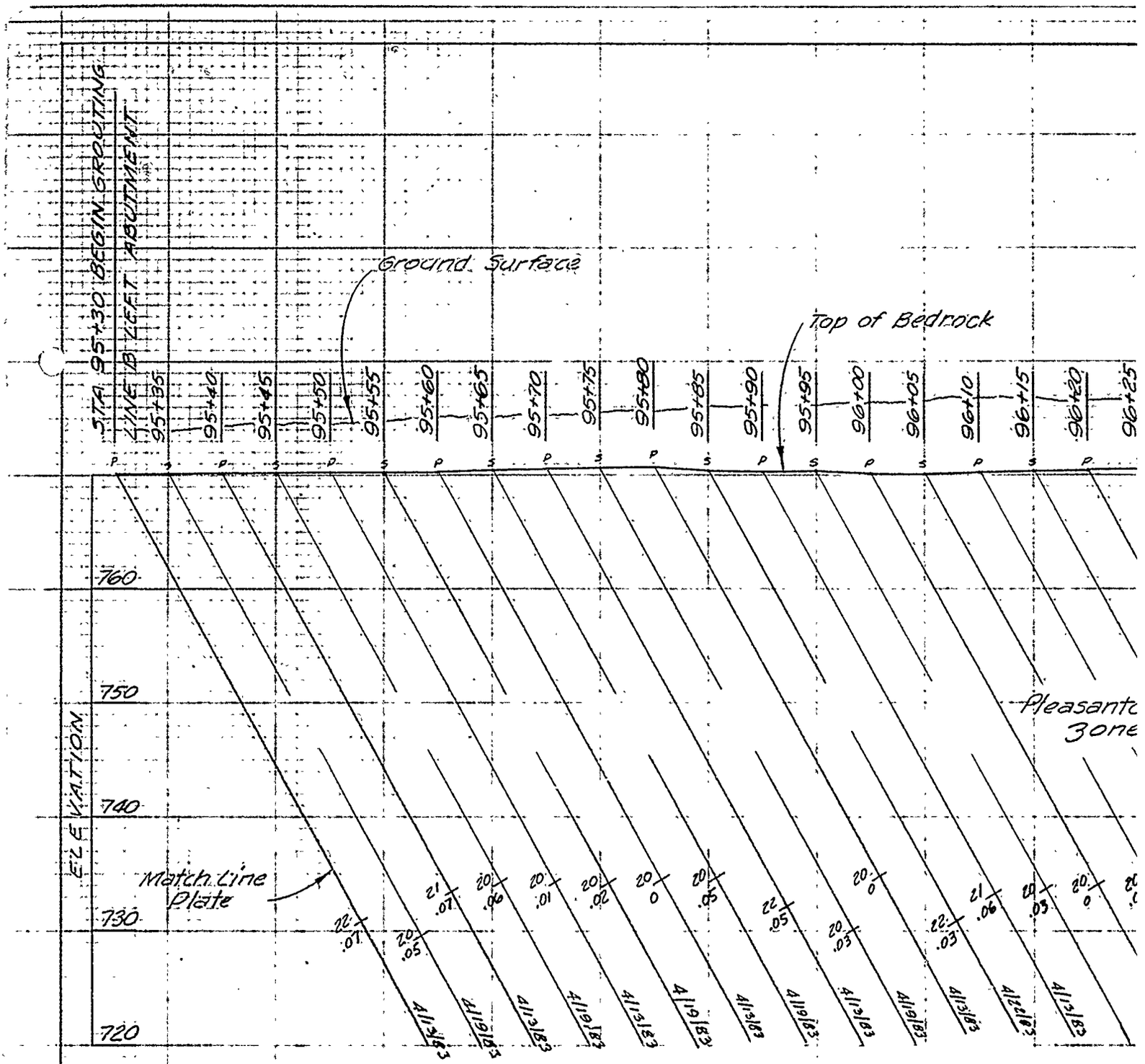
Checked by: C.H.

Submitted by:

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT
GROUT CURTAIN PROFILE
LEFT ABUTMENT LINE A
STA. 101+40 TO STA. 102+50

Scale: AS SHOWN
Date: JUNE 1990
Work No.:
Sheet number: 49
File No.: RBL-2-1269

PLATE NO. 49

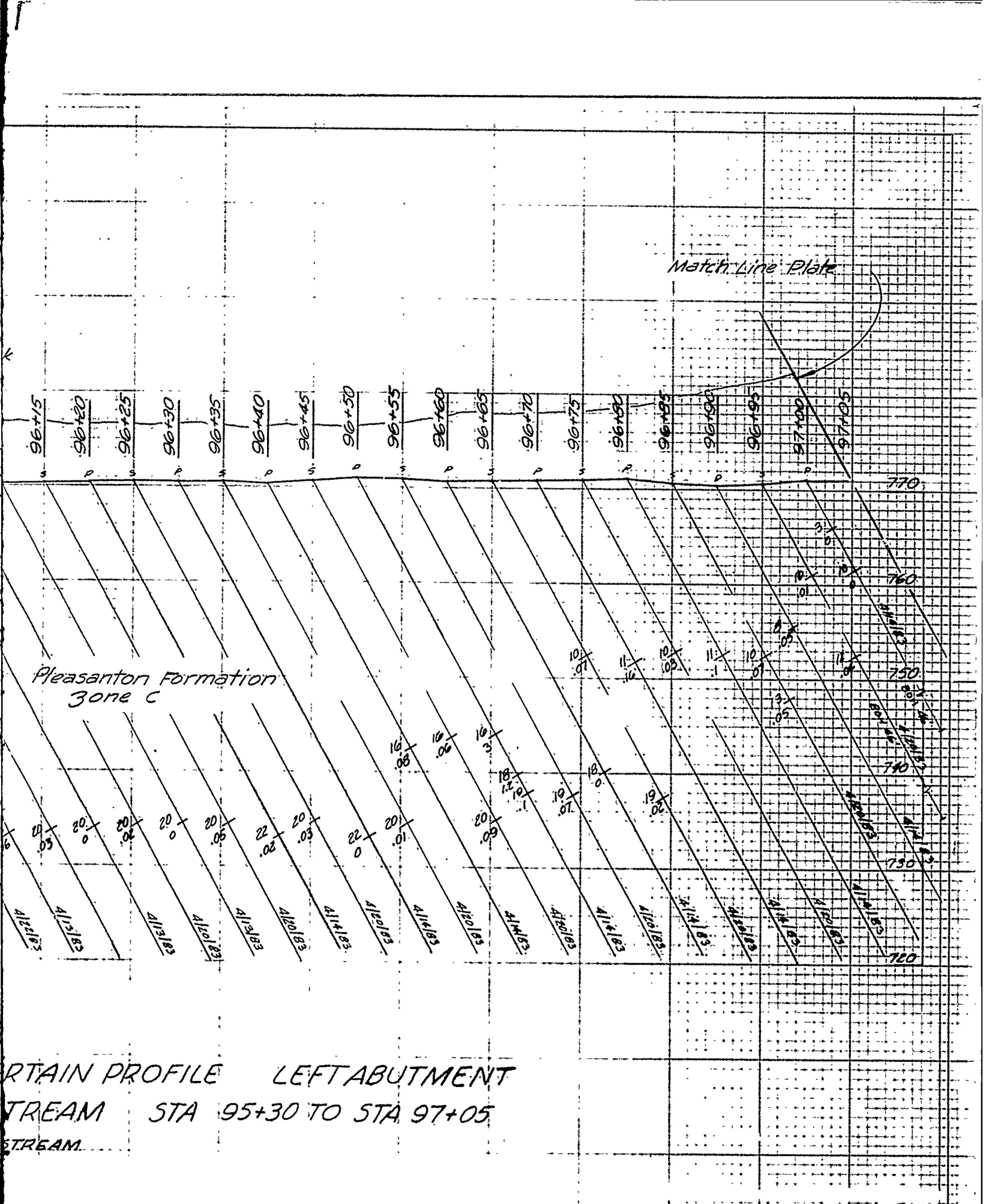


BLUE SPRINGS LAKE GROUT CURTAIN P

LINE B 5 FEET UPSTREAM

LOOKING UPSTREAM

	HOLES	DRILL	SACKS
PRIMARY	18	1016'	0
SECONDARY	17	967'	0



RTAIN PROFILE LEFT ABUTMENT

TREAM STA 95+30 TO STA 97+05

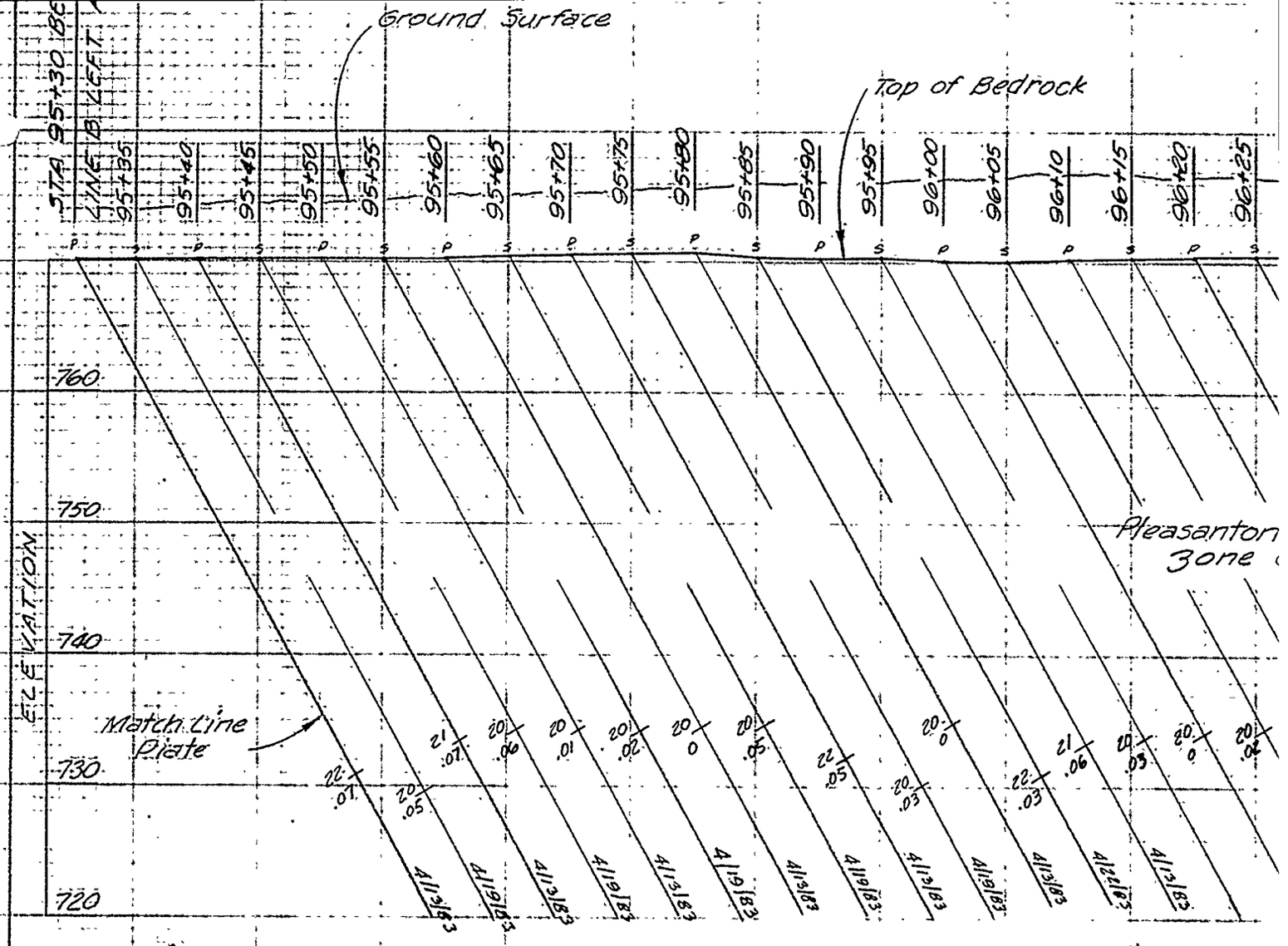
STREAM

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:

Drawn by: V.A.

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT
GROUT CURTAIN PROFILE
LEFT ABUTMENT LINE B



BLUE SPRINGS LAKE GROUT CURTAIN PR

LINE B 5 FEET UPSTREAM

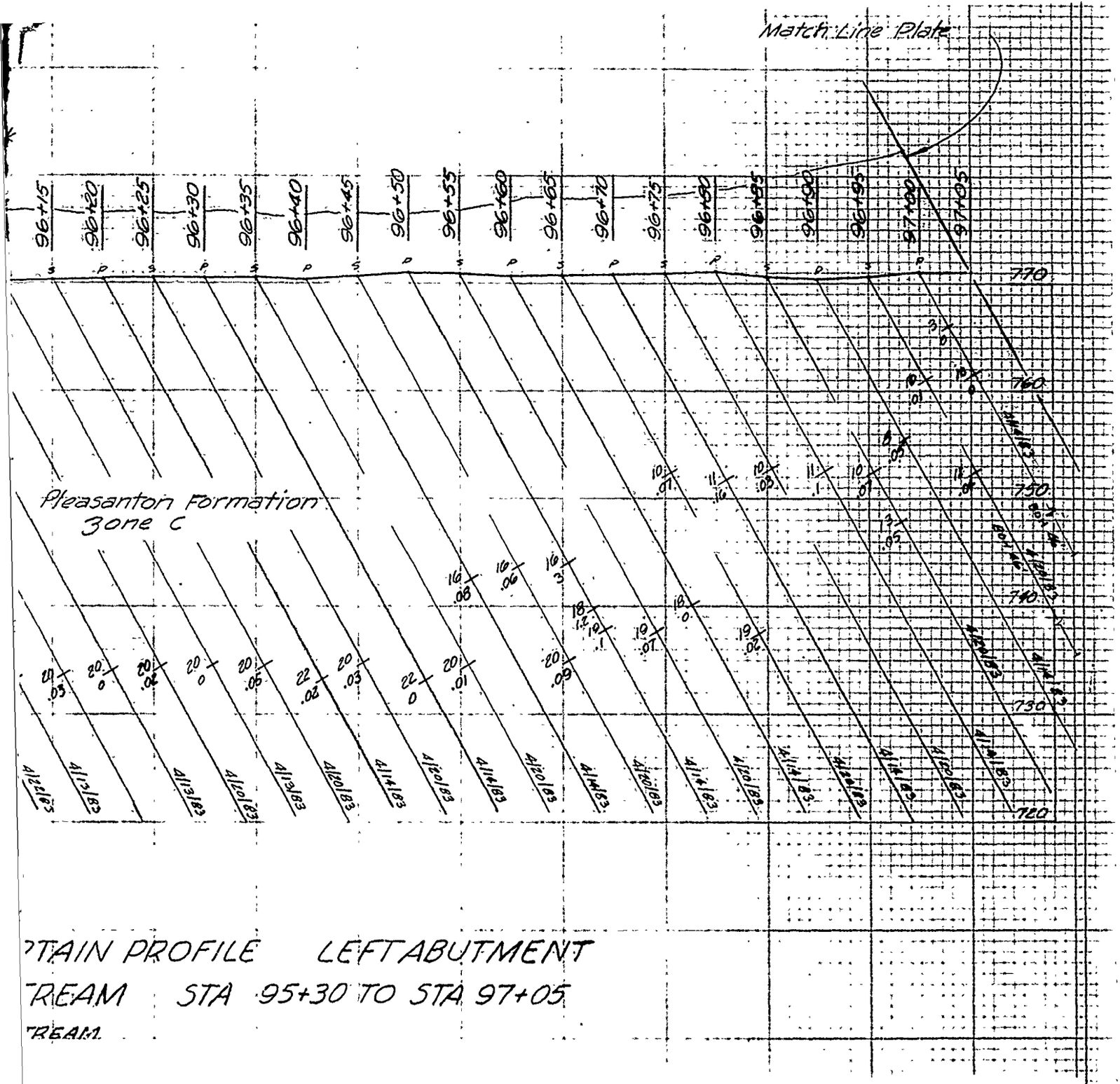
LOOKING UPSTREAM

	HOLES	DRILL	SACKS
PRIMARY	18	1016'	0
SECONDARY	17	967'	0

0 10

SCALE IN FEET

for Legend see Plate



TAIN PROFILE LEFT ABUTMENT

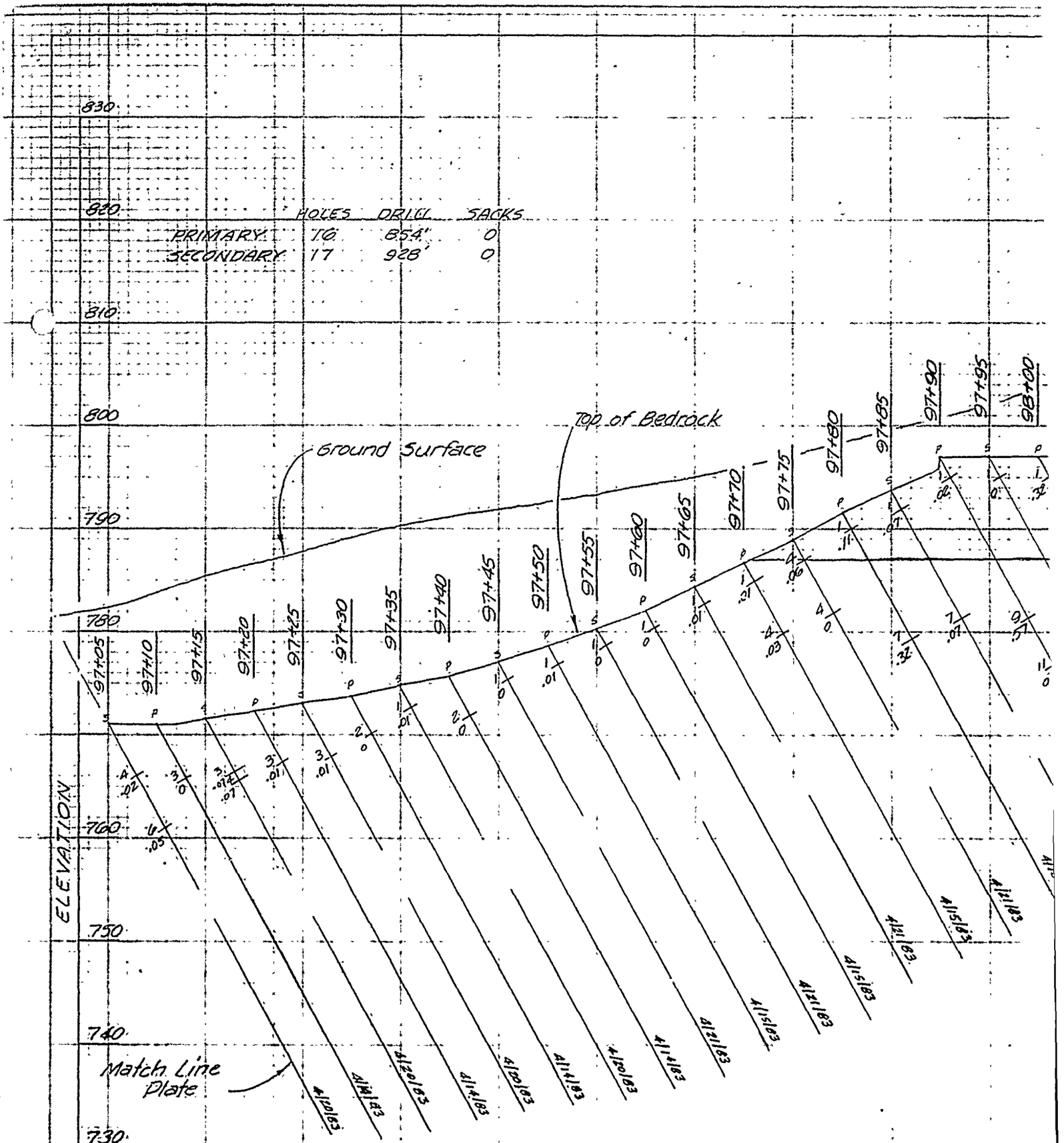
TREAM STA 95+30 TO STA 97+05

TREAM

d see Plate 44

U. S. ARMY ENGINEER DISTRICT CORPS OF ENGINEERS KANSAS CITY, MISSOURI		
Designed by:	EAST FORK LITTLE BLUE RIVER, MISSOURI BLUE SPRINGS LAKE CONSTRUCTION FOUNDATION REPORT	
Drawn by: V.A.	GROUT CURTAIN PROFILE LEFT ABUTMENT LINE B STA. 95+30 TO STA. 97+05	
Checked by: C.H.	Scale: AS SHOWN	Sheet number: 50
Submitted by:	Date: JUNE 1990	File No.: RBL-2-1270
	Dwg. No.:	

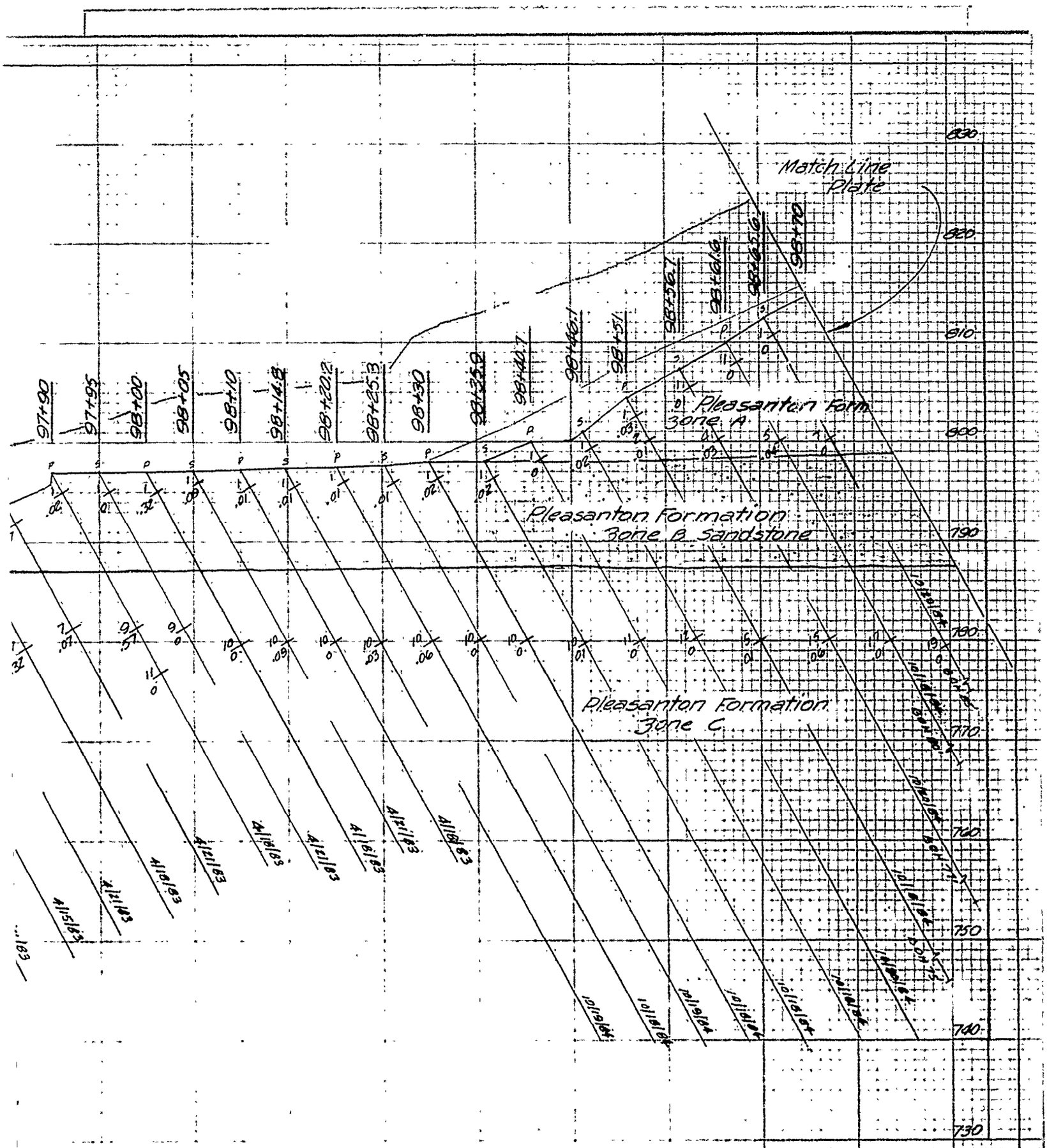
PLATE NO. 50



BLUE SPRINGS LAKE GROUT CURTAIN PROFI

LINE B 5 FEET UPSTREAM STA

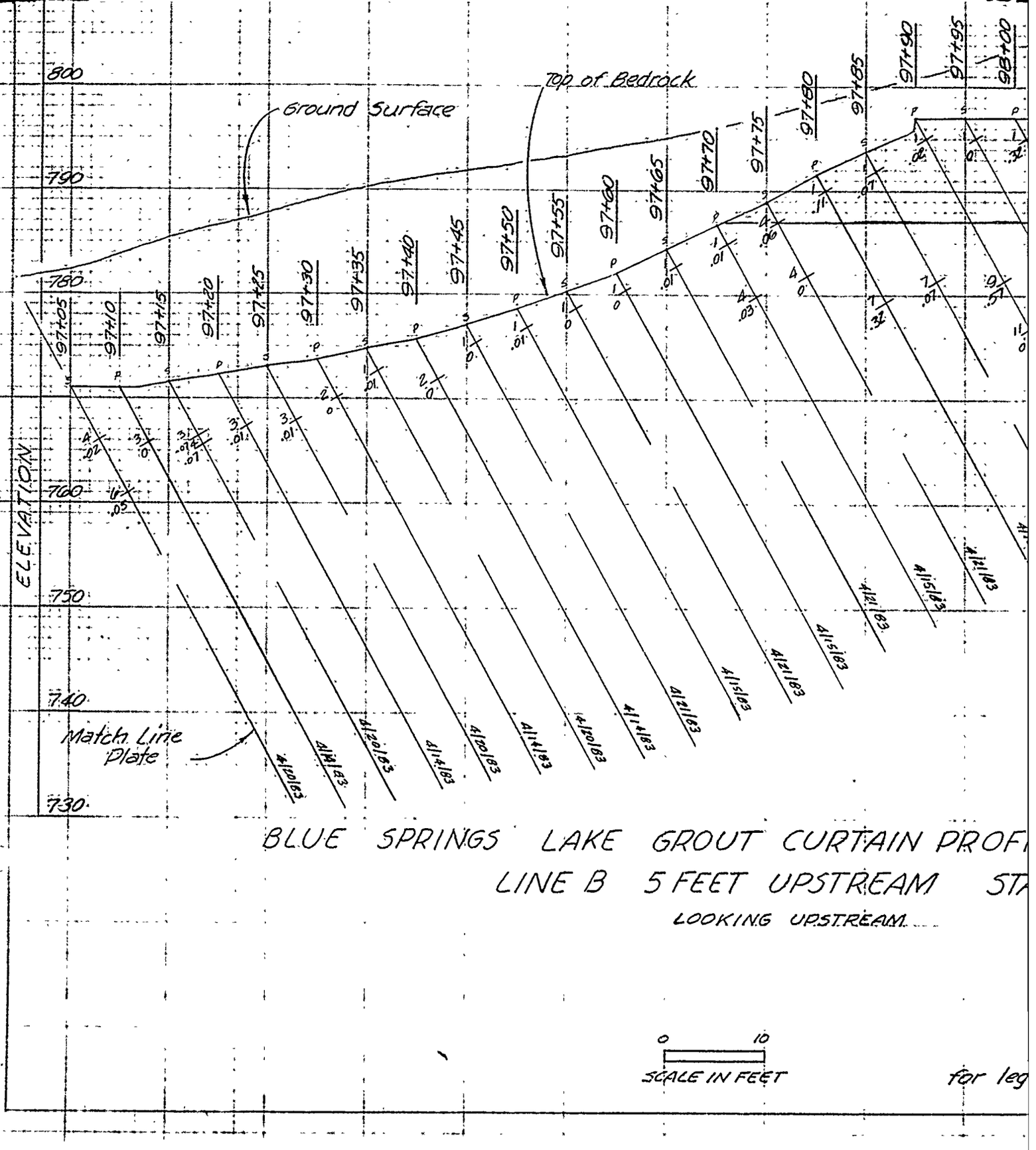
LOOKING UPSTREAM



AIN PROFILE LEFT ABUTMENT

FAM STA 97+05 TO STA 98+70

U. S. ARMY ENGINEER DISTRICT CORPS OF ENGINEERS KANSAS CITY, MISSOURI	
Designed by:	EAST FORK LITTLE BLUE RIVER, MISSOURI BLUE SPRINGS LAKE

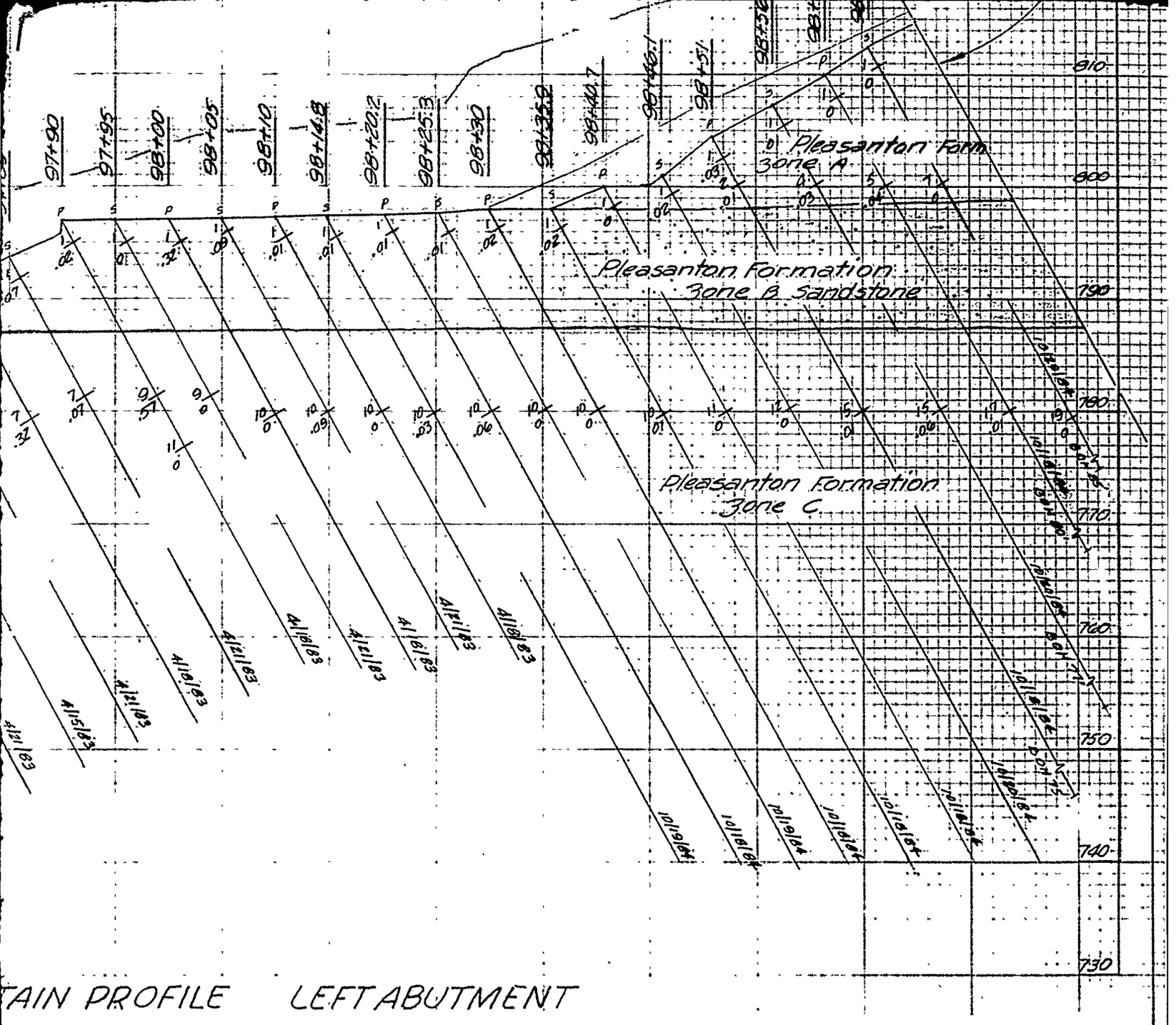


BLUE SPRINGS LAKE GROUT CURTAIN PROFI

LINE B 5 FEET UPSTREAM STA

LOOKING UPSTREAM

for leg



TAIN PROFILE LEFT ABUTMENT

REAM STA 97+05 TO STA 98+70

EAM.

for legend see Plate 44

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:

Drawn by: V.A.

Checked by: C.H.

Submitted by:

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

GROUT CURTAIN PROFILE.
LEFT ABUTMENT LINE B
STA. 97+05 TO STA. 98+70

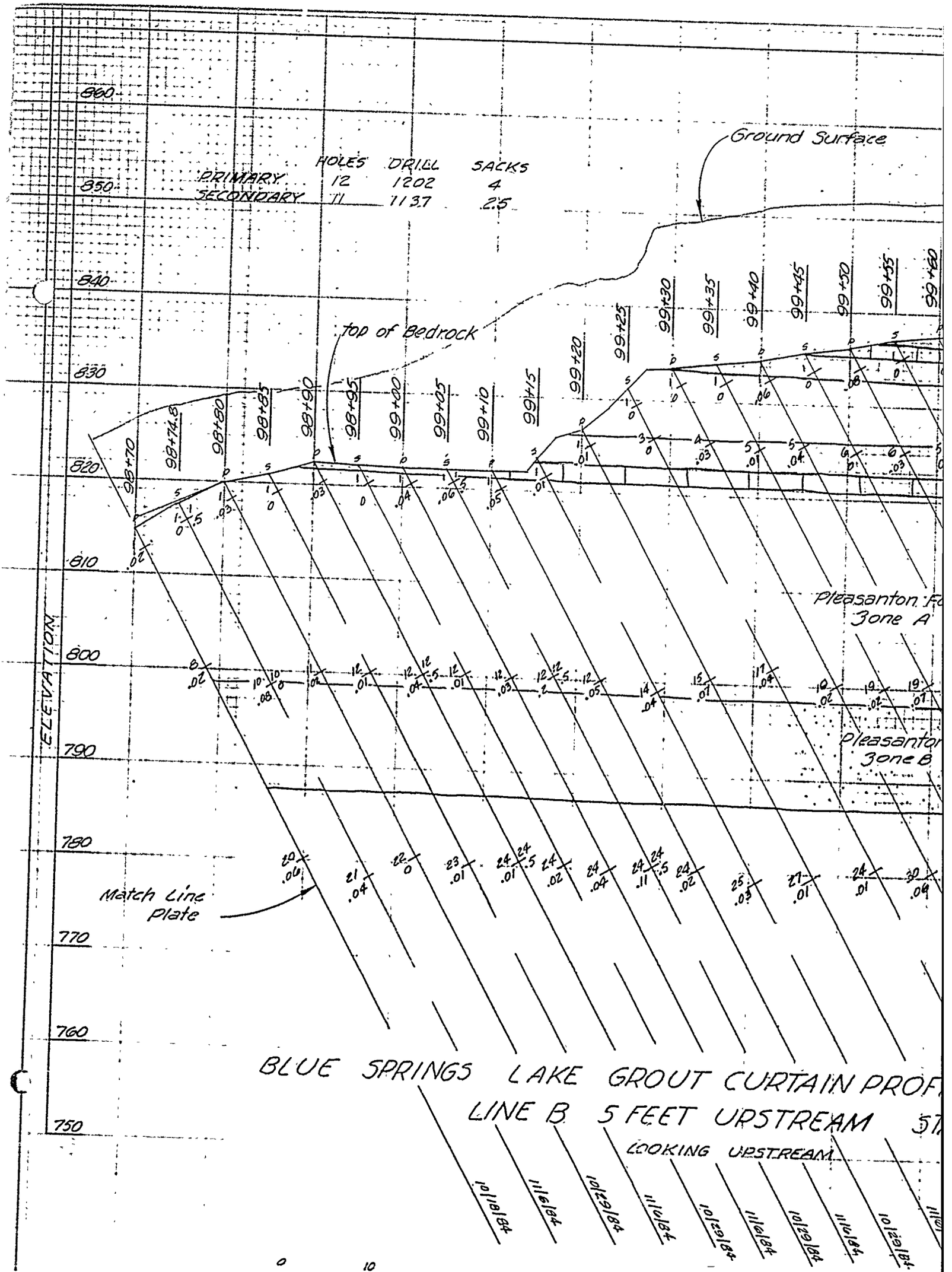
Scale: AS SHOWN

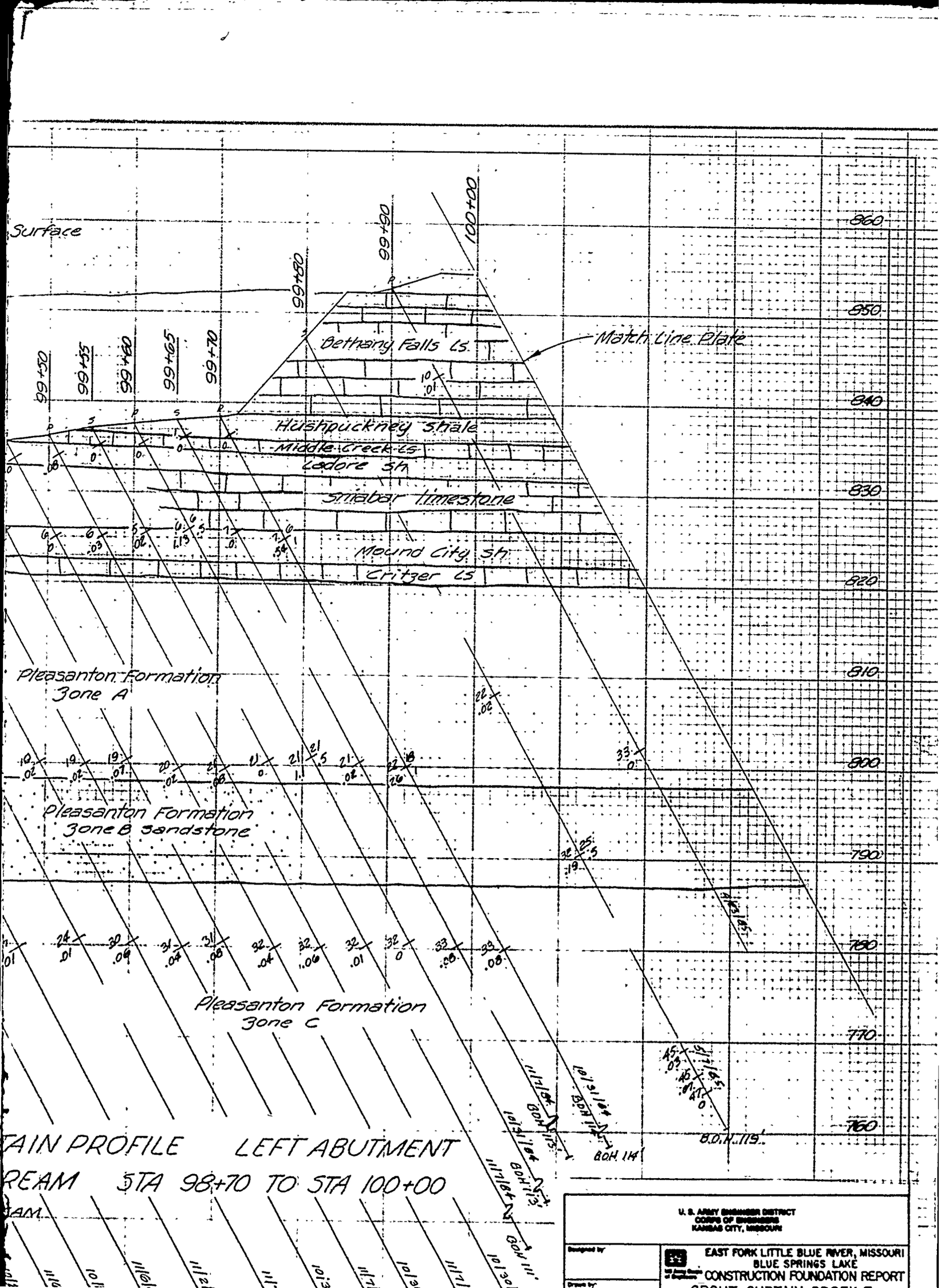
Date: JUNE 1990

Sheet number: 51

Proj. No. RBL-2-1271

PLATE NO. 51


HOLES DRILL SACKS
PRIMARY 12 1202 4
SECONDARY 11 1137 2.5
Ground Surface
top of Bedrock
Pleasanton Fo
Zone A
Pleasanton
Zone B
Match Line
plate
ELEVATION
960
850
840
830
820
810
800
790
780
770
760
750
98+70
98+74.8
98+80
98+85
98+90
98+95
99+00
99+05
99+10
99+15
99+20
99+25
99+30
99+35
99+40
99+45
99+55
99+60
BLUE SPRINGS LAKE GROUT CURTAIN PROF
LINE B 5 FEET UPSTREAM
LOOKING UPSTREAM
10/18/84
11/6/84
10/29/84
11/6/84
10/29/84
11/6/84
10/29/84
11/6/84
10/29/84
0
10



TAIN PROFILE LEFT ABUTMENT

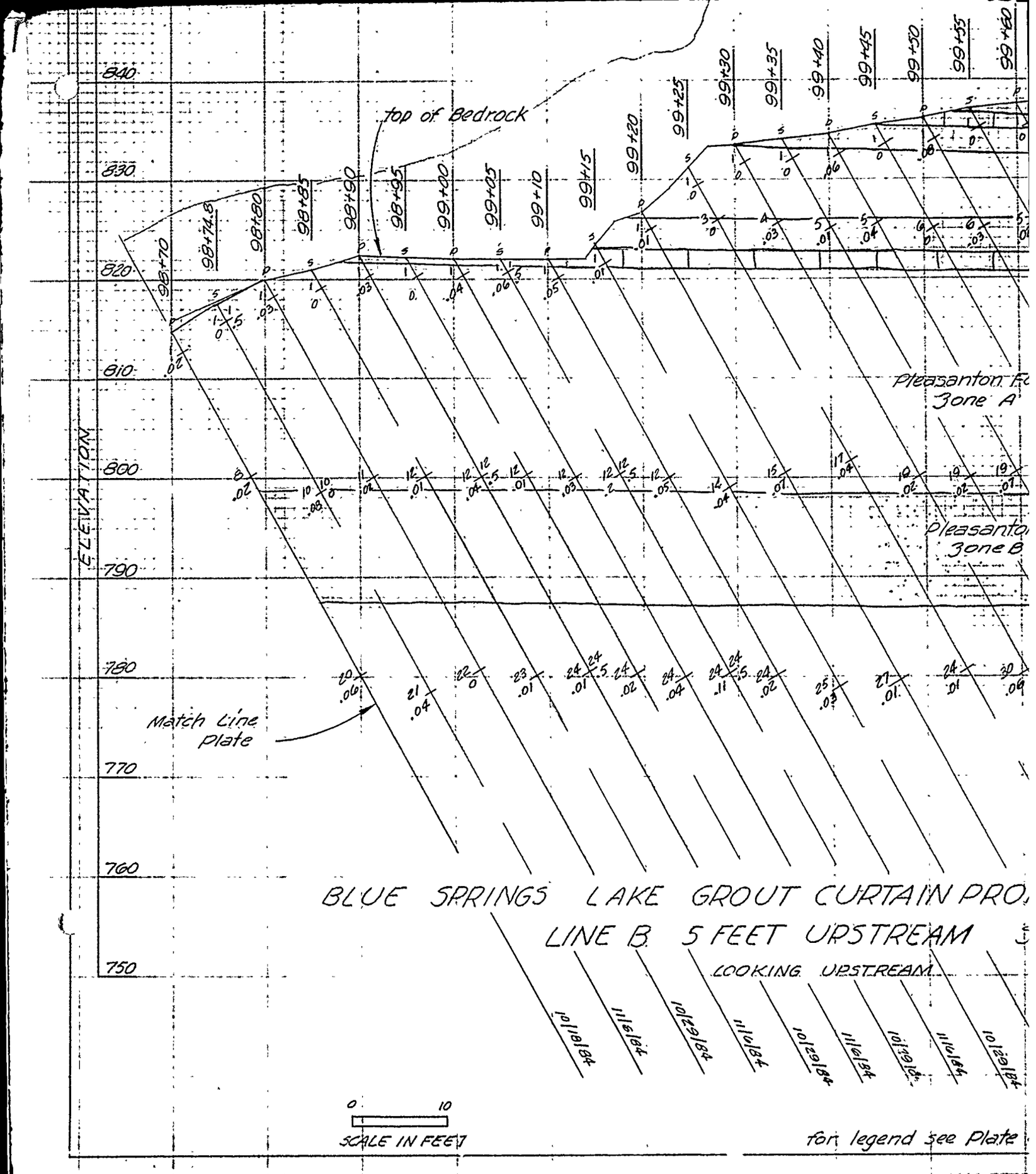
REAM STA 98+70 TO STA 100+00

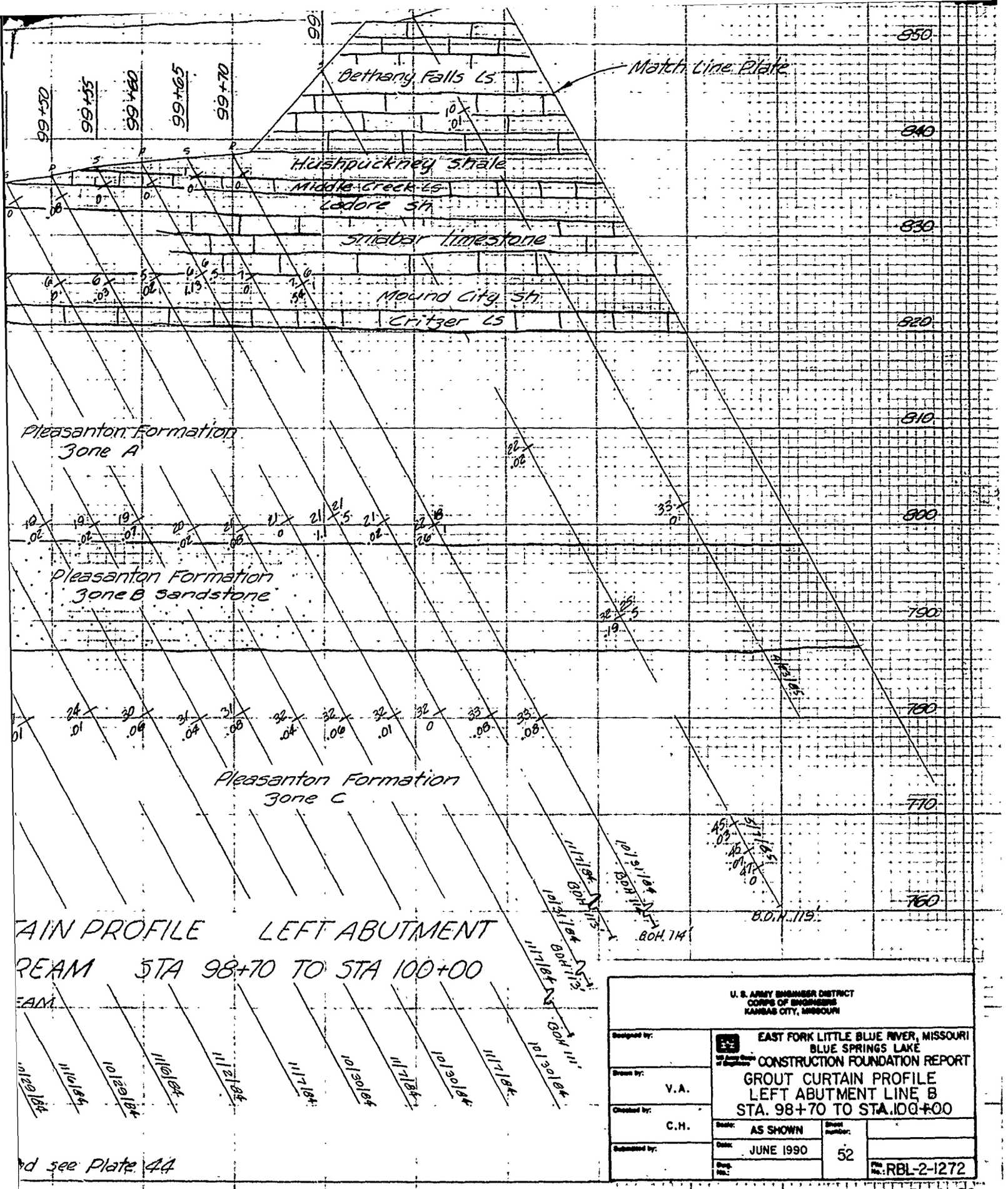
AM

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT


ELEVATION
840
830
820
810
800
790
780
770
760
750
top of Bedrock
Match Line
plate
Pleasanton F
Zone A
Pleasanto
Zone B
BLUE SPRINGS LAKE GROUT CURTAIN PRO
LINE B 5 FEET UPSTREAM
LOOKING UPSTREAM
10/18/84
11/6/84
10/29/84
11/14/84
10/29/84
11/6/84
10/29/84
11/14/84
10/29/84
0
10
SCALE IN FEET
for legend see Plate



TAIN PROFILE LEFT ABUTMENT

REAM STA 98+70 TO STA 100+00

EAM

d see Plate 44

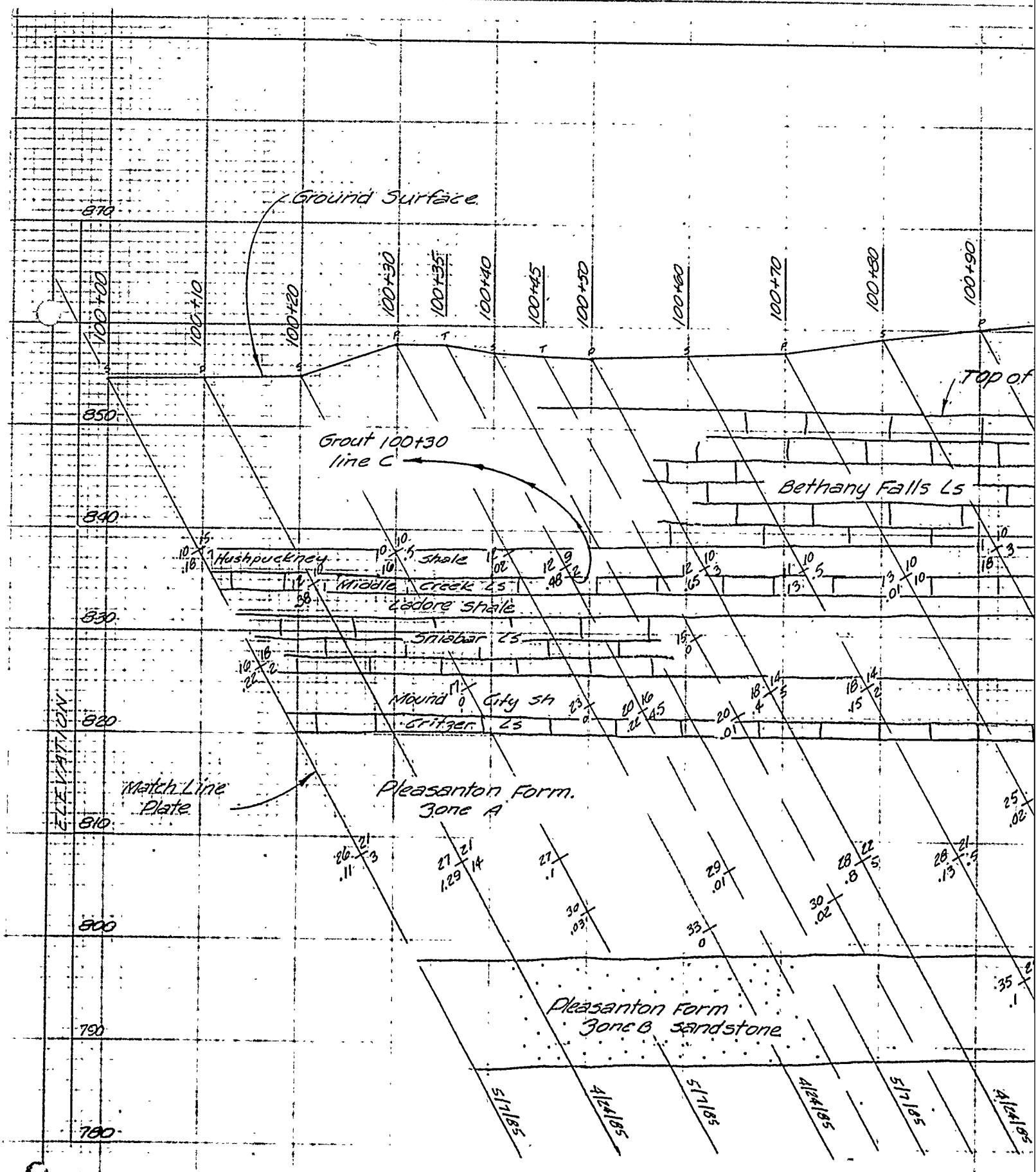
U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

GROUT CURTAIN PROFILE
LEFT ABUTMENT LINE B
STA. 98+70 TO STA.100+00

Designed by:			
Drawn by: V.A.	Scale: AS SHOWN	Sheet number: 52	
Checked by: C.H.	Date: JUNE 1990		File No.: RBL-2-1272
Submitted by:	Dwg. No.:		

PLATE NO. 52

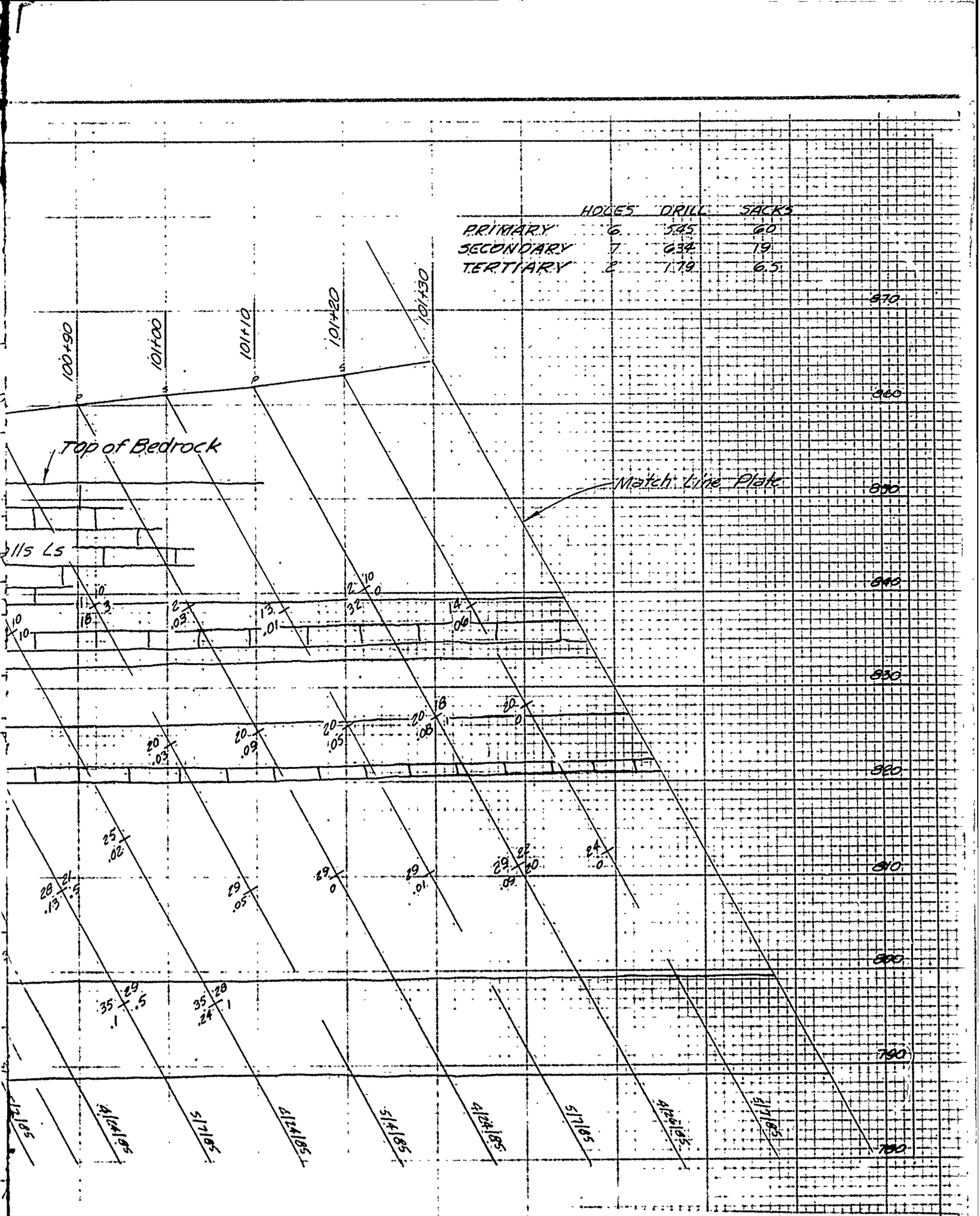


BLUE SPRINGS LAKE GROUT CURTAIN PROFILE

LINE B 5 FEET UPSTREAM STA 100+

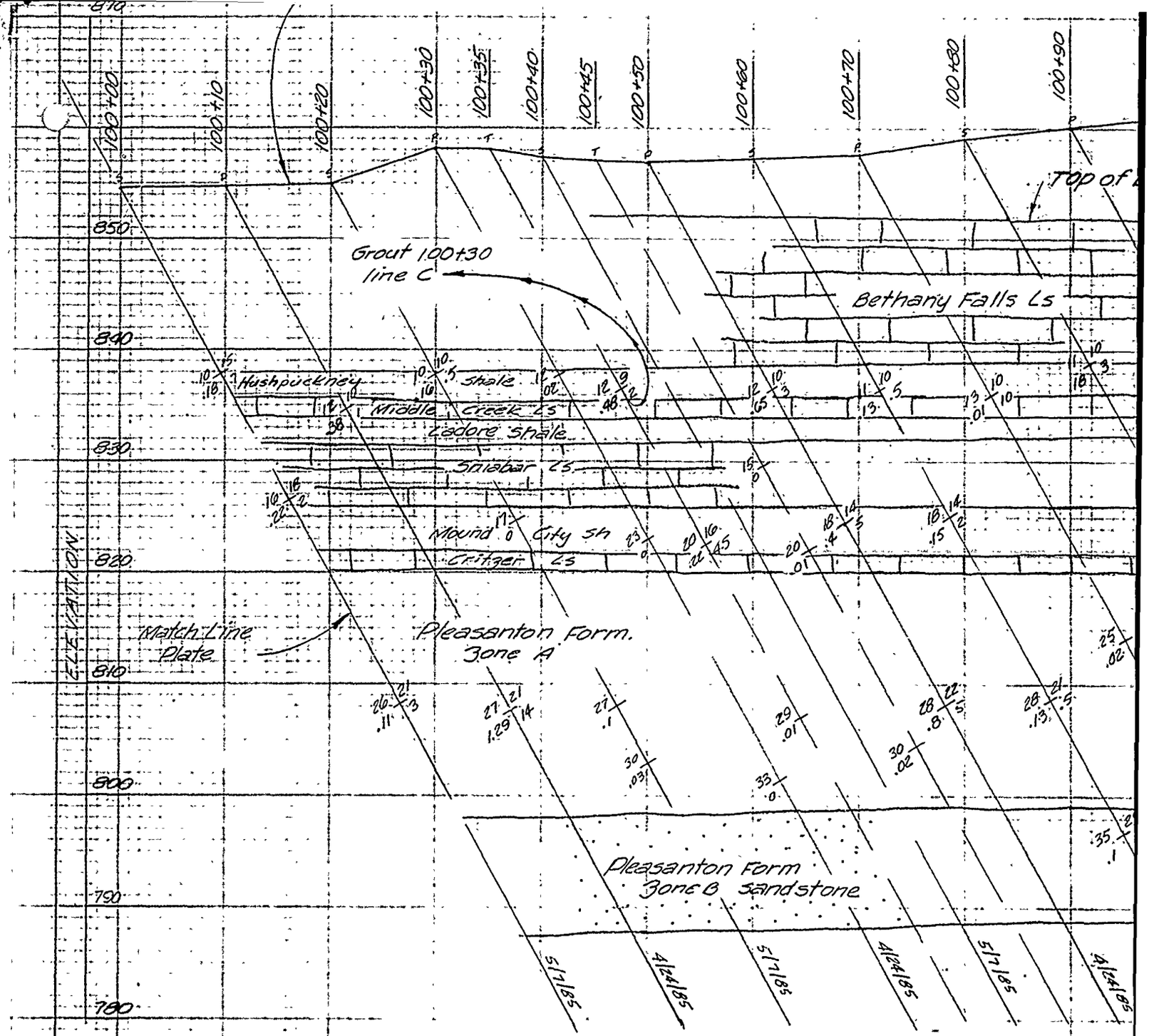
LOOKING UPSTREAM.

0 10



PROFILE LEFT ABUTMENT
STA 100+00 TO STA 101+30

U. S. ARMY ENGINEER DISTRICT CORPS OF ENGINEERS KANSAS CITY, MISSOURI	
Designed by:	EAST FORK LITTLE BLUE RIVER, MISSOURI BLUE SPRINGS LAKE CONSTRUCTION FOUNDATION REPORT
Drawn by: V.A.	GROUT CURTAIN PROFILE LEFT ABUTMENT LINE B



BLUE SPRINGS LAKE GROUT CURTAIN PROFILE

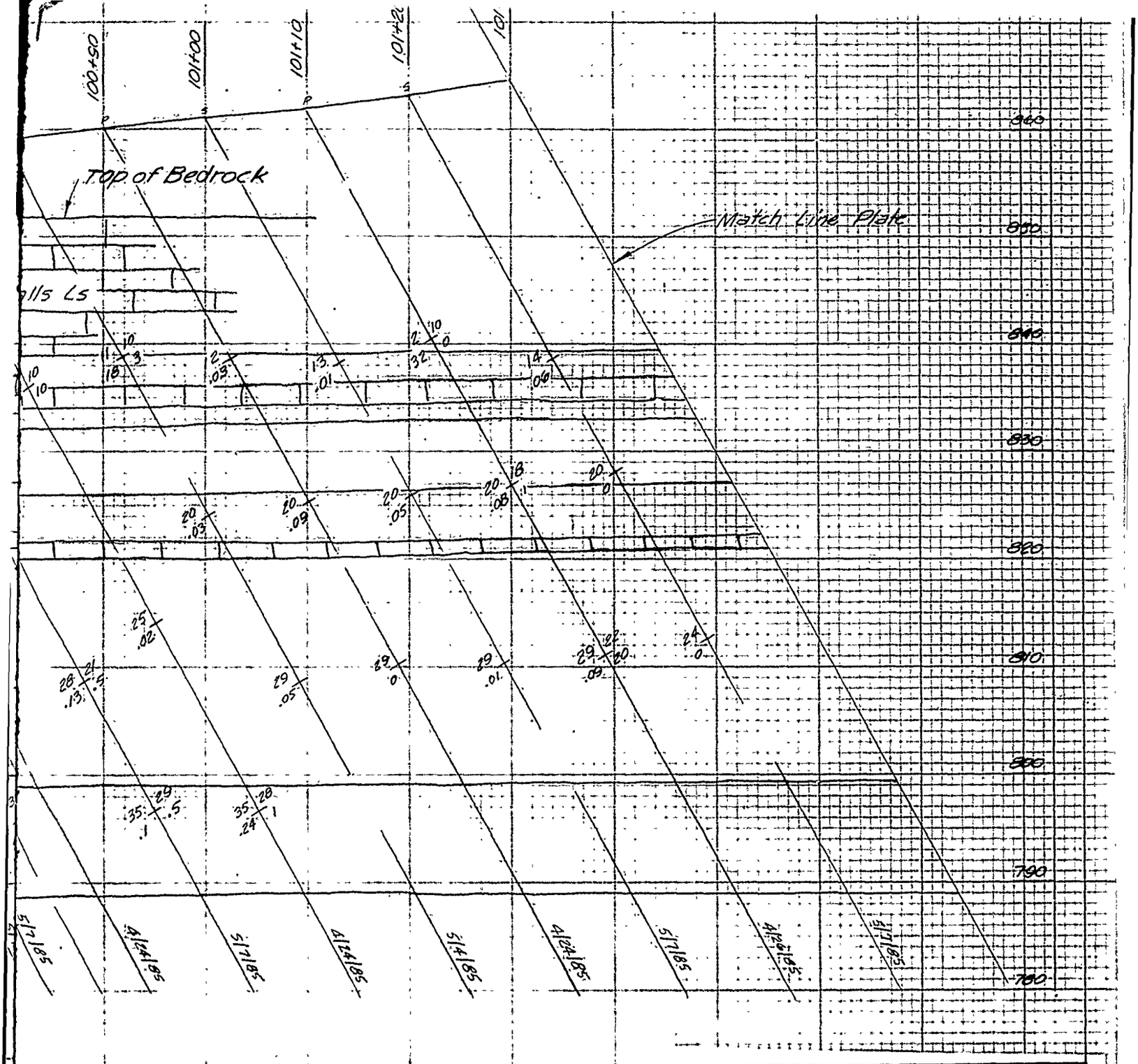
LINE B 5 FEET UPSTREAM STA 100

LOOKING UPSTREAM

0 10

SCALE IN FEET

For legend



PROFILE LEFT ABUTMENT
STA 100+00 TO STA 101+30

For legend see Plate 44

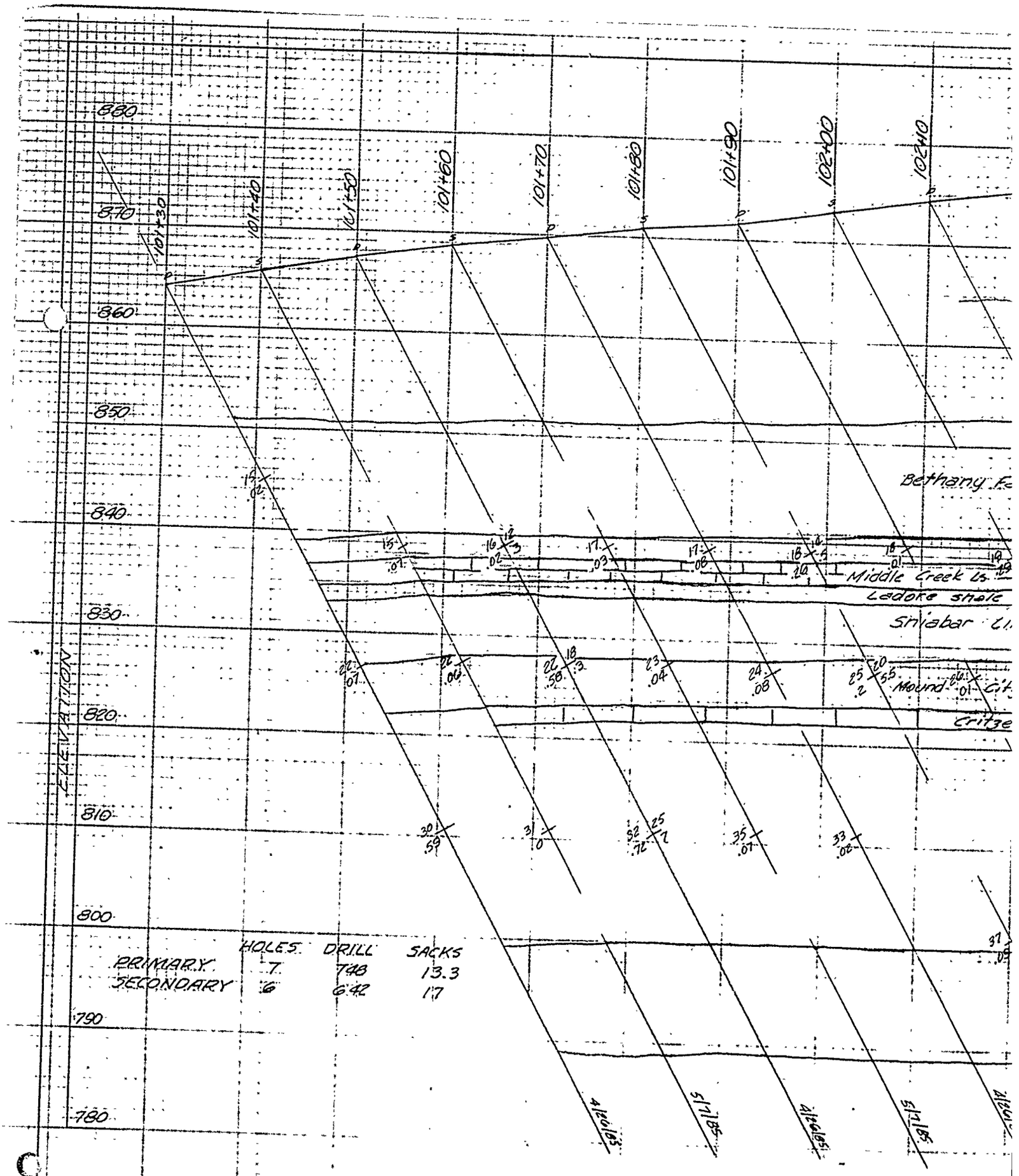
U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by: V.A.
Checked by: C.H.
Submitted by:

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT
GROUT CURTAIN PROFILE
LEFT ABUTMENT LINE B
STA. 100+00 TO STA. 101+30

Scale: AS SHOWN
Date: JUNE 1990
Sheet number: 53
Dwg. No.:
File No.: RBL-2-1273

PLATE NO. 53

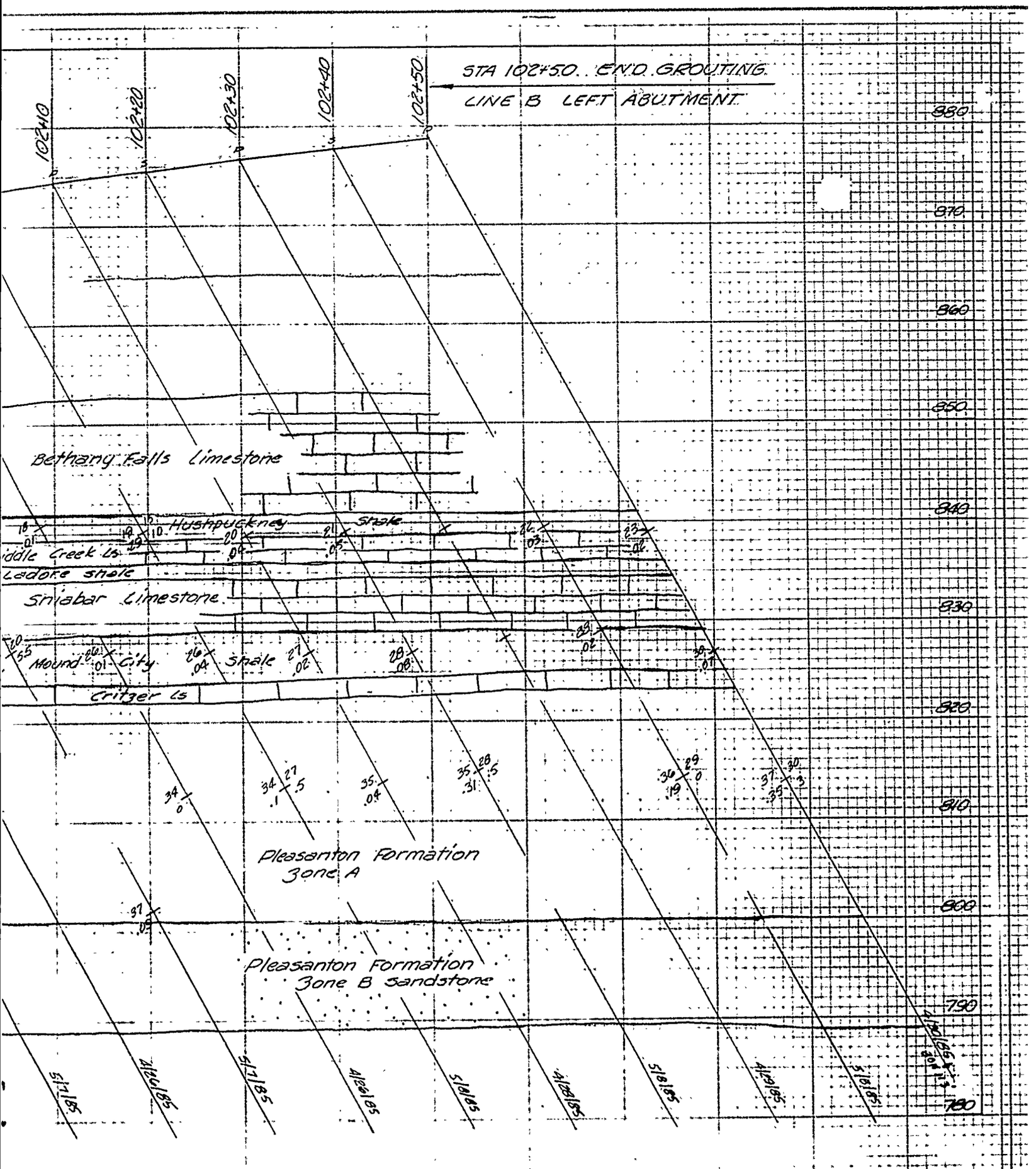


	HOLES	DRILL	SACKS
PRIMARY	7	748	13.3
SECONDARY	6	642	17

BLUE SPRINGS LAKE GROUT CURTAIN PROFILE

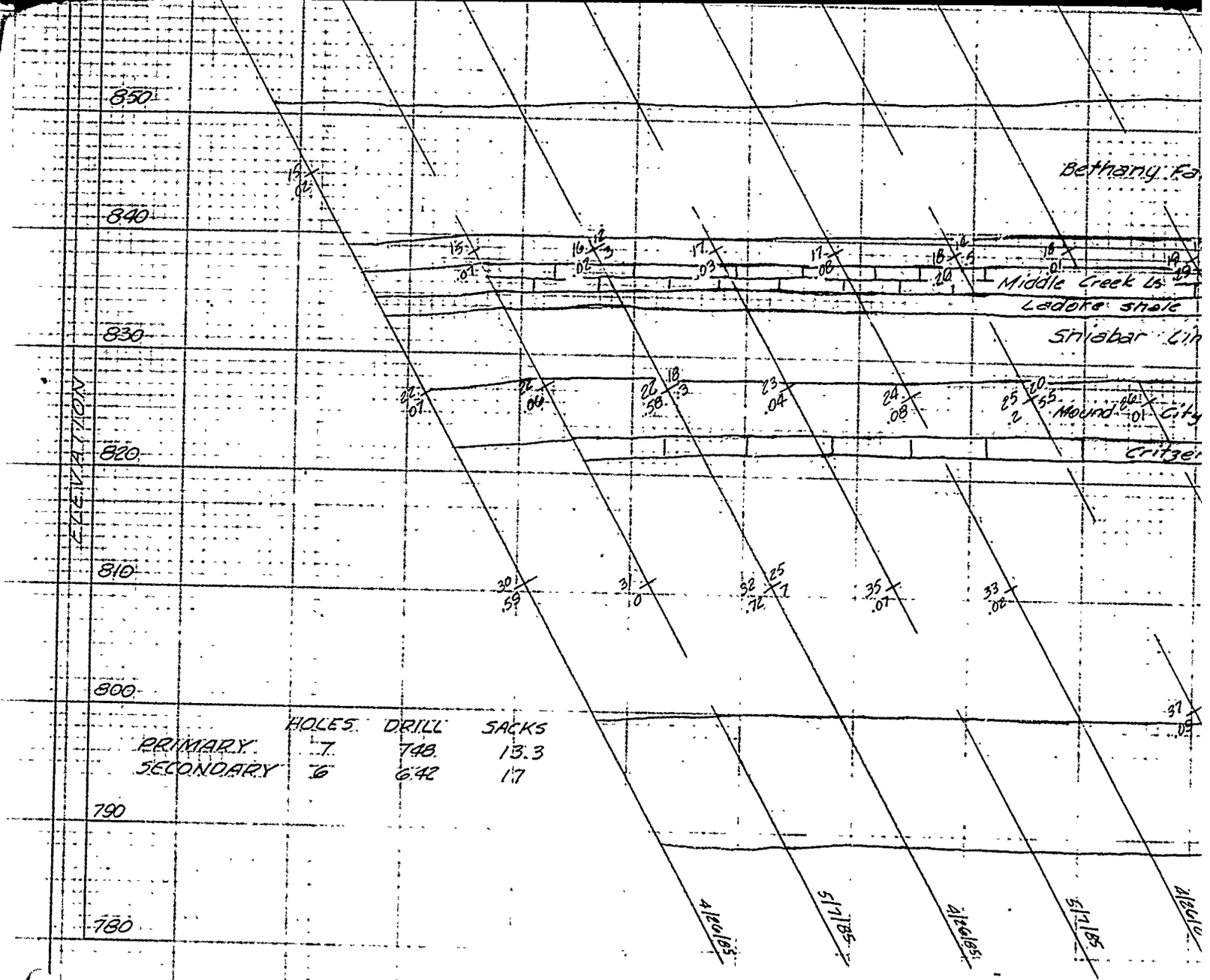
LINE B 5 FEET UPSTREAM STA 101+

LOOKING UPSTREAM



PROFILE LEFT ABUTMENT
STA 101+30 TO STA 102+50

U. S. ARMY ENGINEER DISTRICT CORPS OF ENGINEERS KANSAS CITY, MISSOURI	
Designed by:	EAST FORK LITTLE BLUE RIVER, MISSOURI BLUE SPRINGS LAKE CONSTRUCTION FOUNDATION REPORT
Drawn by: V.A.	GROUT CURTAIN PROFILE LEFT ABUTMENT LINE B STA 101+30 TO STA 102+50



BLUE SPRINGS LAKE GROUT CURTAIN PROFILE

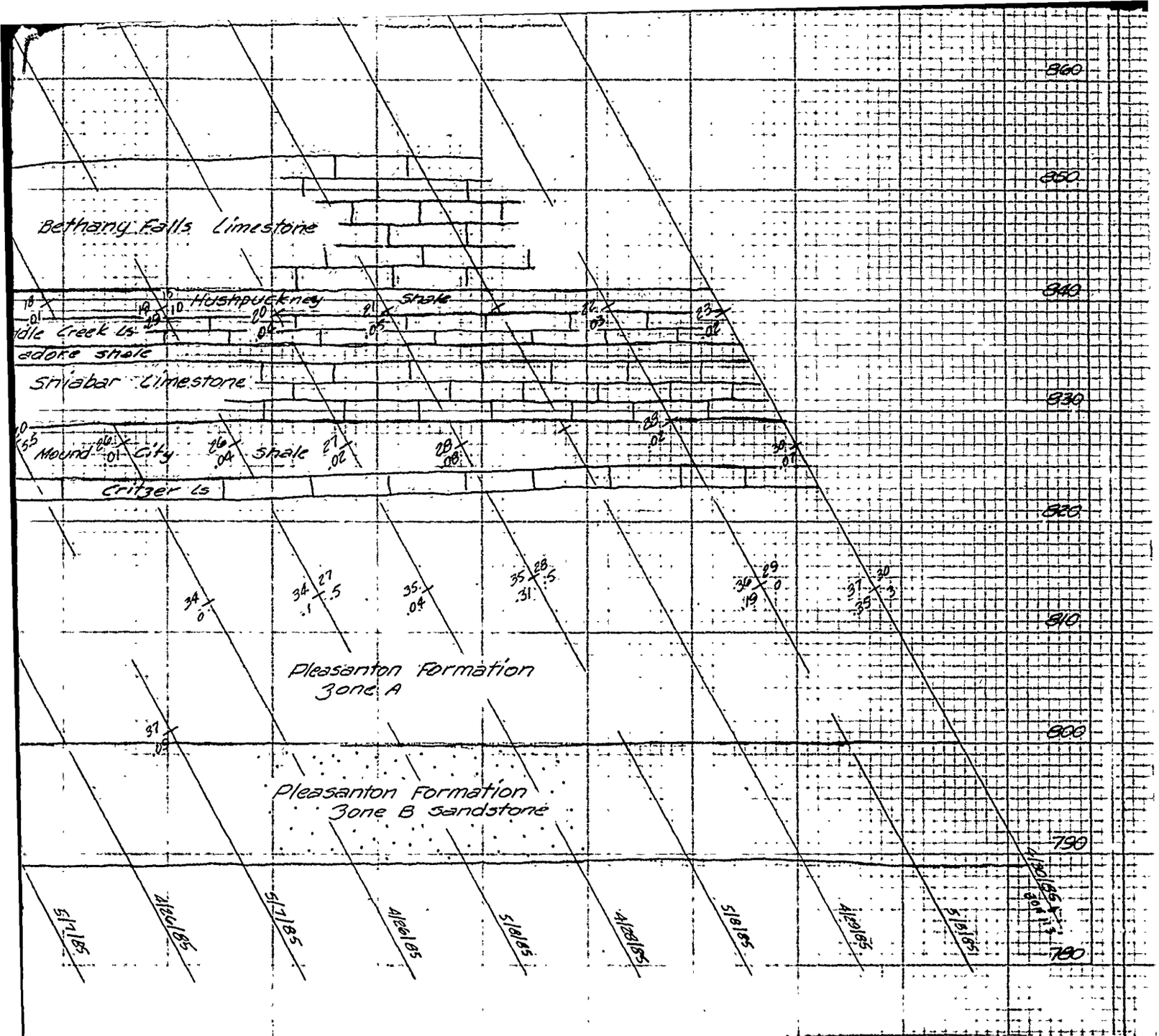
LINE B 5 FEET UPSTREAM STA 101+3

LOOKING UPSTREAM

0 10

SCALE IN FEET

for leger



PROFILE LEFT ABUTMENT
STA 101+30 TO STA 102+50

for legend see Plate 44

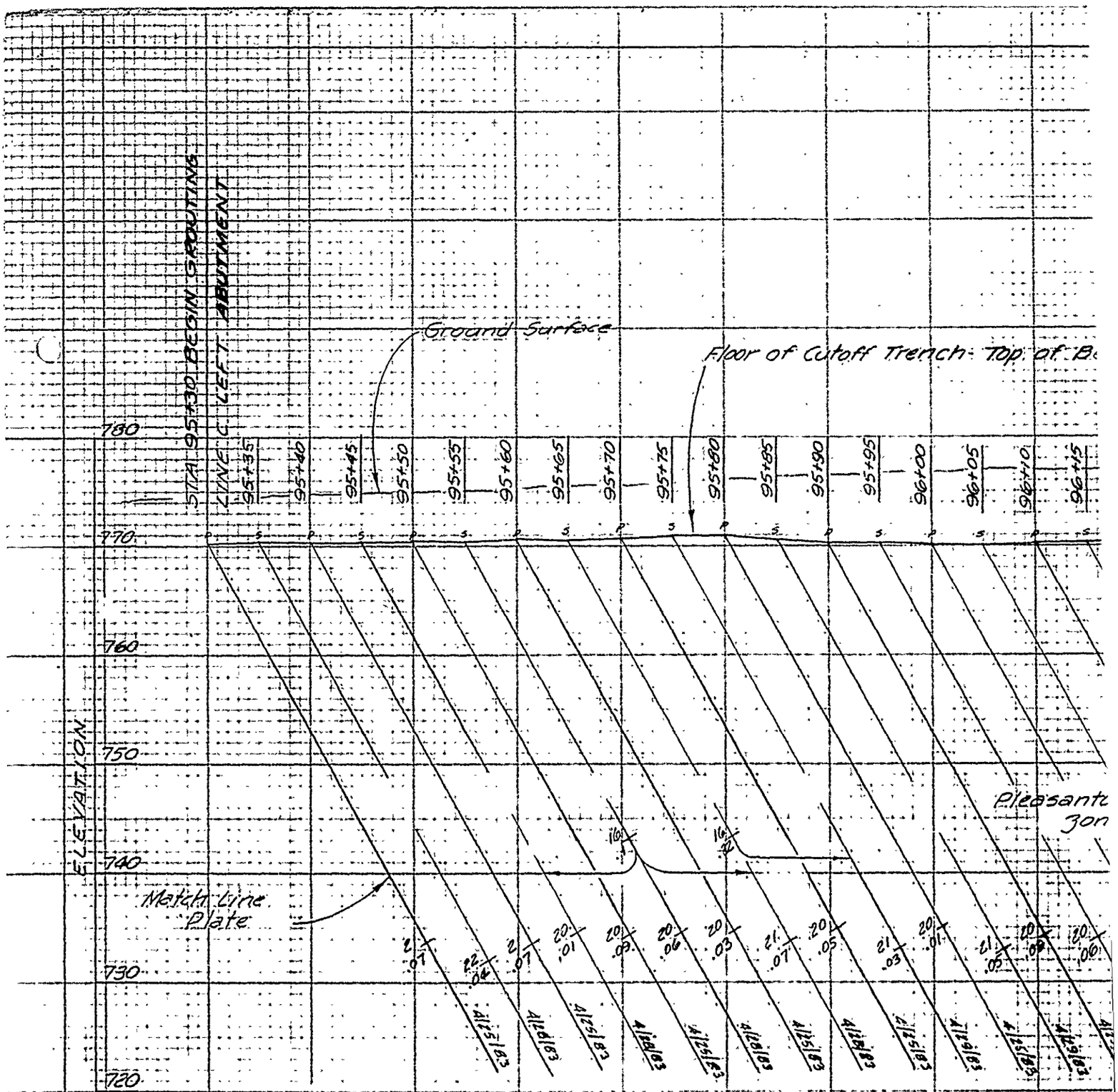
U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by: V.A.
Checked by: C.H.
Submitted by:

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT
GROUT CURTAIN PROFILE
LEFT ABUTMENT LINE B
STA.101+30 TO STA.102+50

Scale: AS SHOWN
Date: JUNE 1990
Sheet number: 54
Dwg. No.:
File No.: RBL-2-1274

PLATE NO. 54

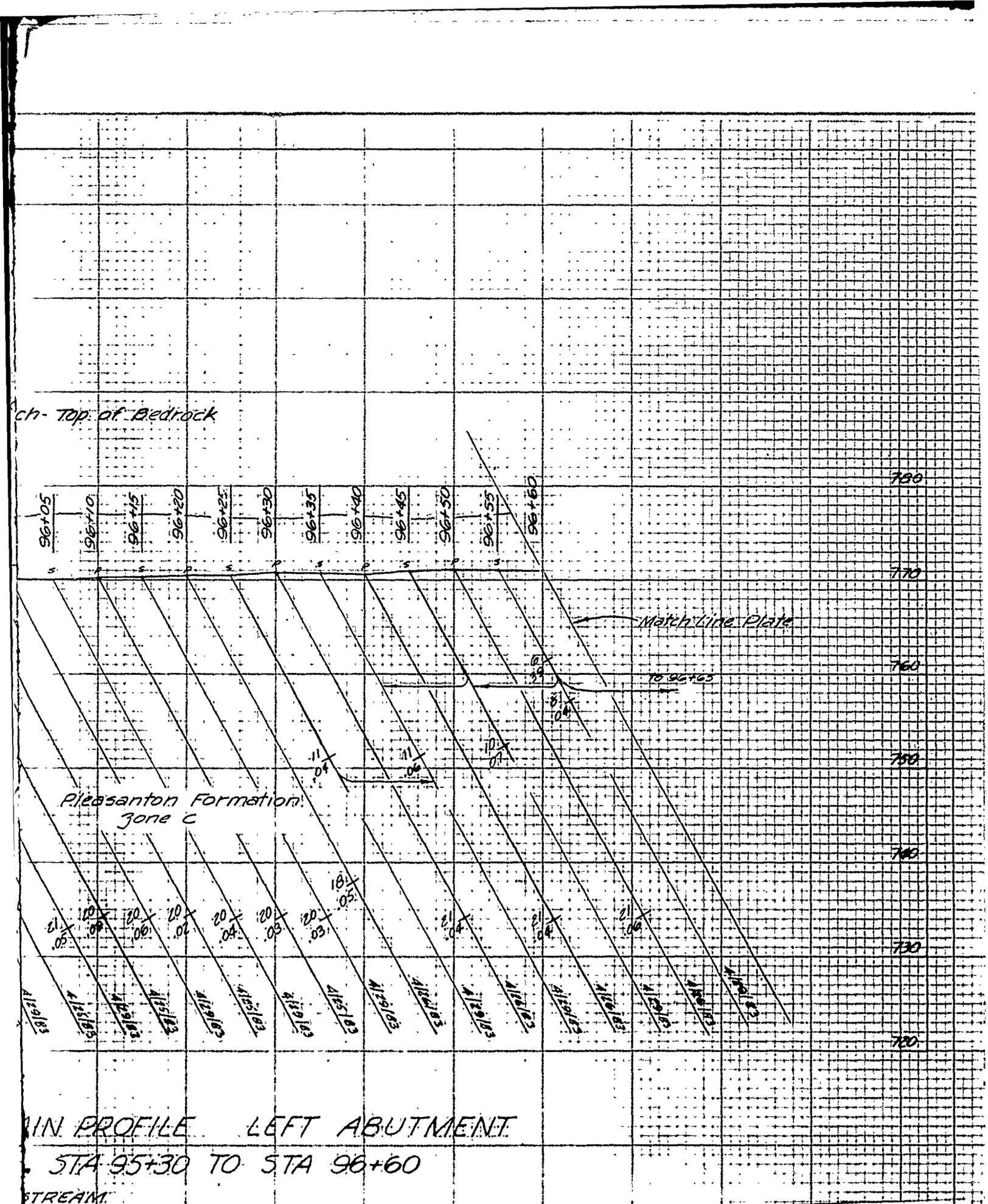


BLUE SPRINGS LAKE GROUT CURTAIN PROFI

LINE C ON DAM AXIS. STA 95+

LOOKING UPSTREAM

	HOLES	DRILL	SACKS
PRIMARY	13	728	0
SECONDARY	13	728	0



IN PROFILE LEFT ABUTMENT

STA 95+30 TO STA 96+60

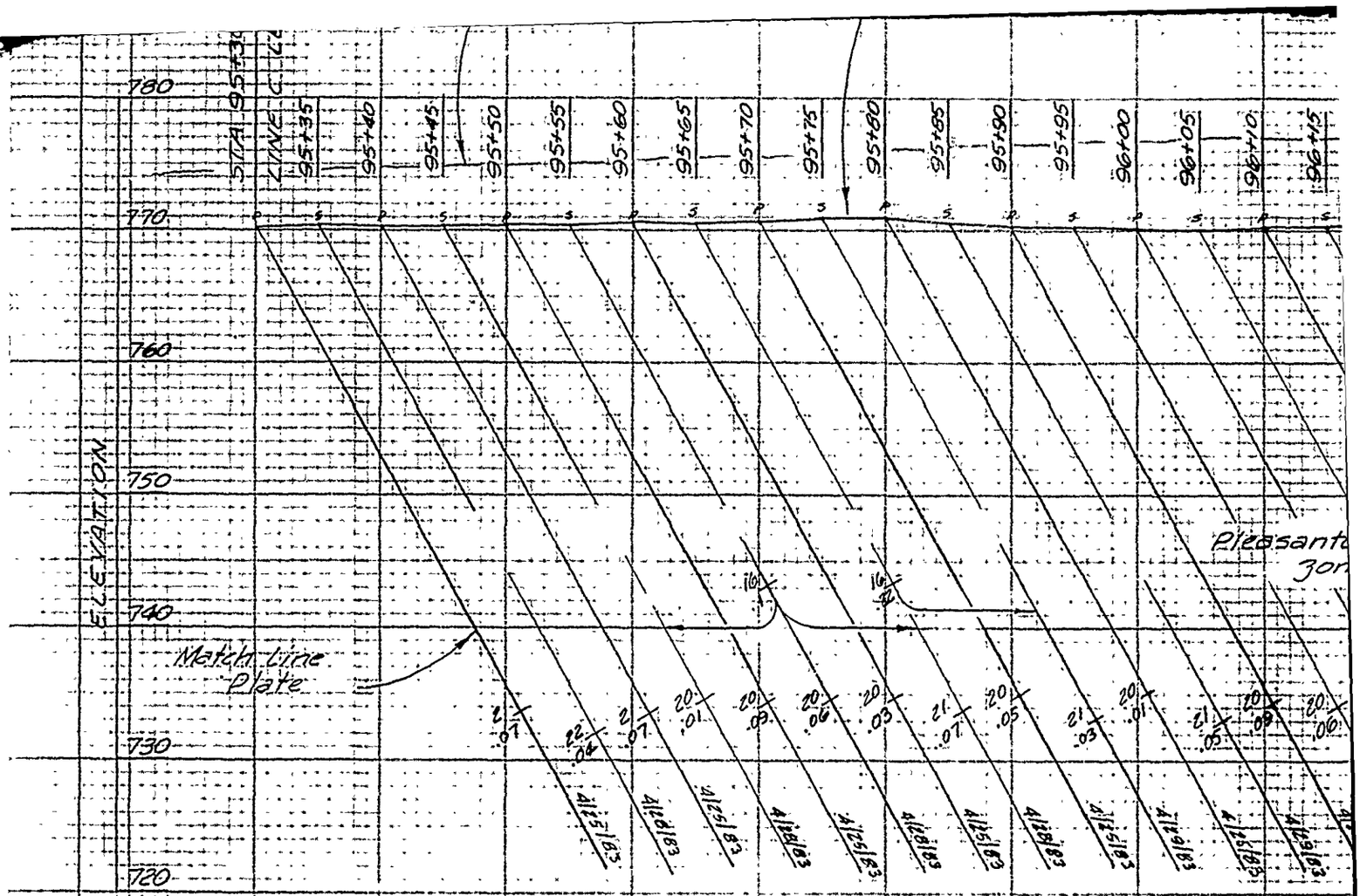
STREAM

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by

Drawn by V.A.

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT
GROUT CURTAIN PROFILE
LEFT ABUTMENT LINE C



BLUE SPRINGS LAKE GROUT CURTAIN PROFI

LINE C ON DAM AXIS STA 95+

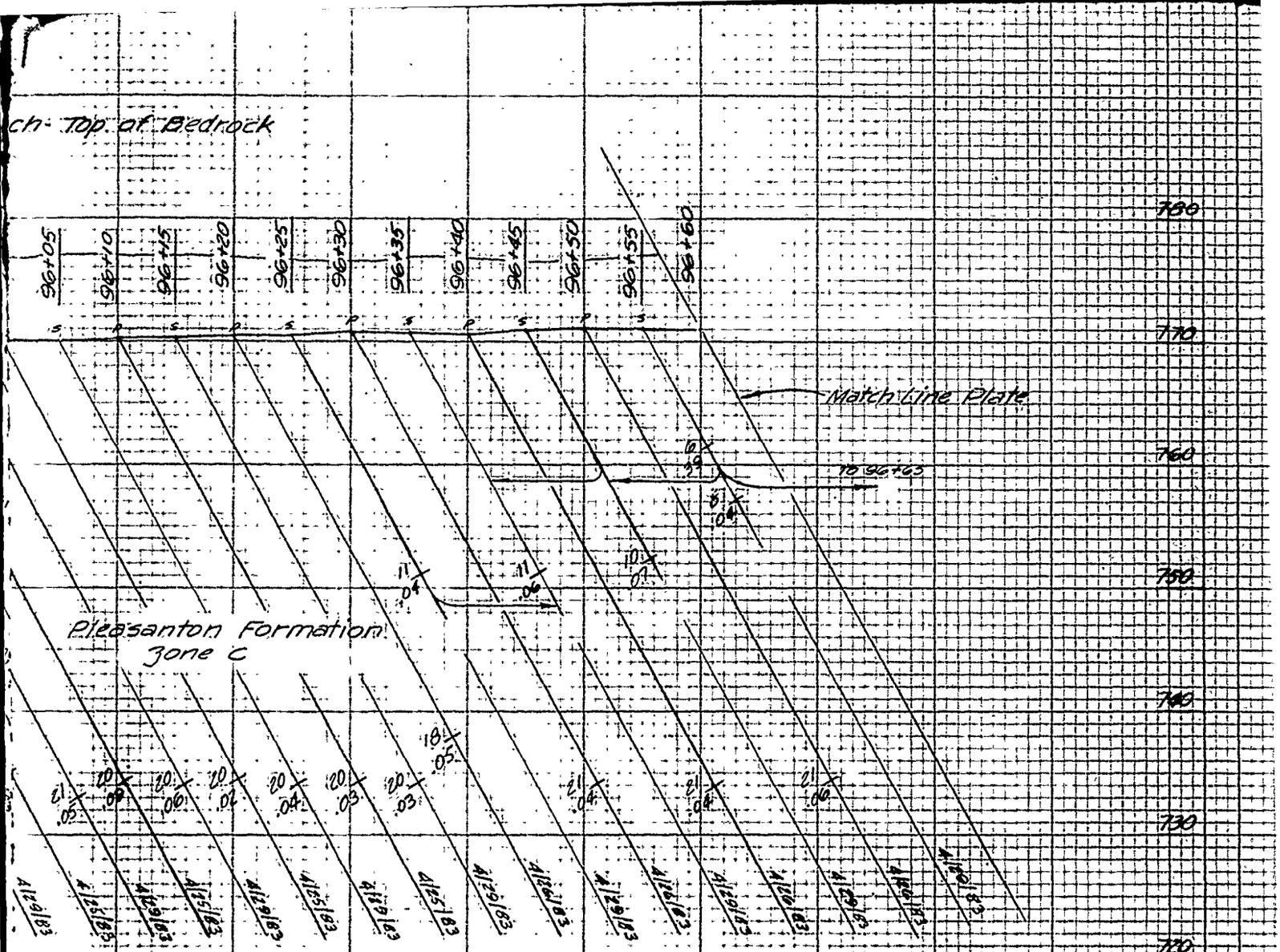
LOOKING UPSTREAM

	HOLES	DRILL	SACKS
PRIMARY	13	728	0
SECONDARY	13	728	0

0 10

SCALE IN FEET

for legend s



AIN. PROFILE LEFT ABUTMENT

STA 95+30 TO STA 96+60

STREAM

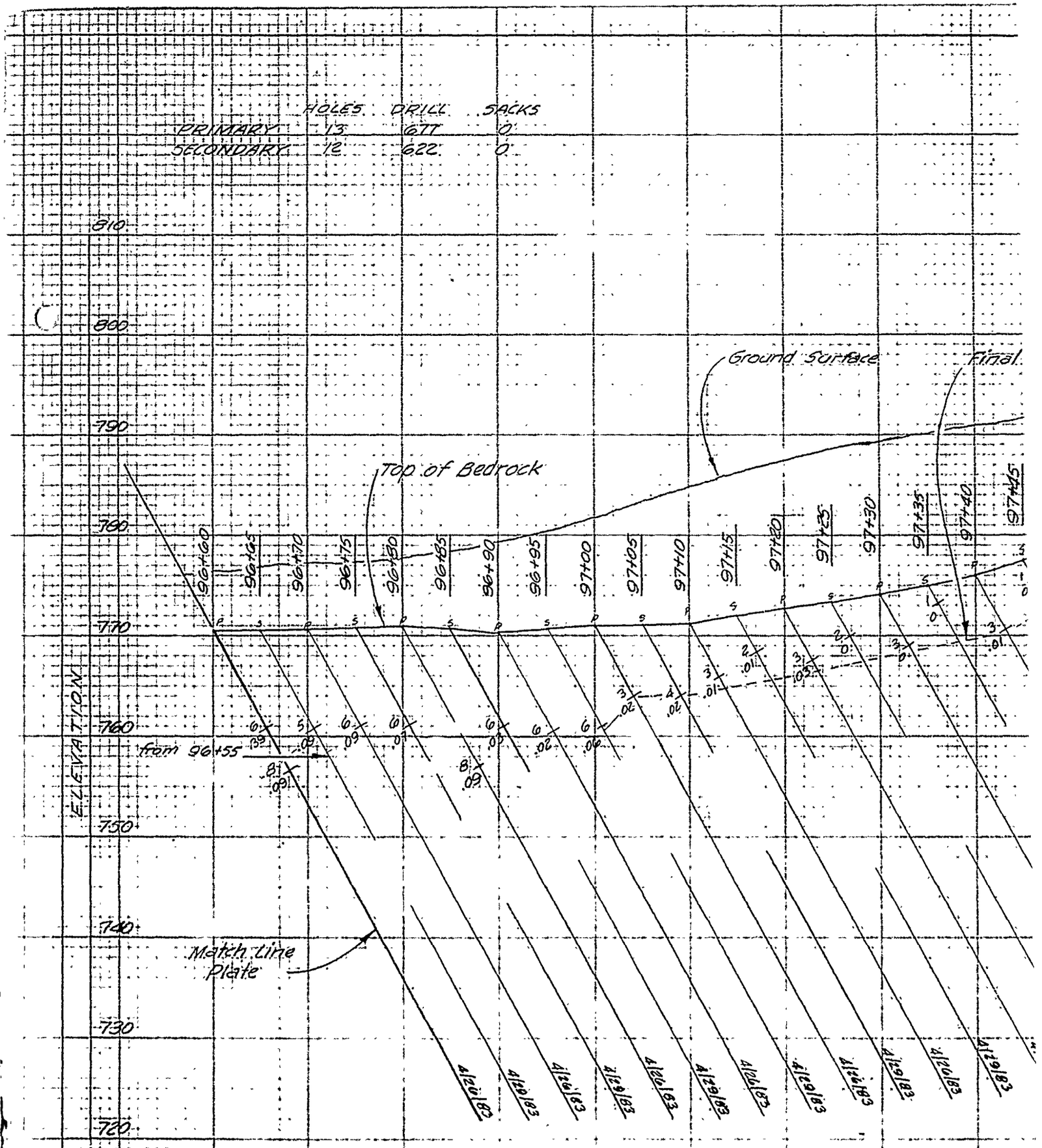
for legend see Plate 44

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT
GROUT CURTAIN PROFILE
LEFT ABUTMENT LINE C
STA. 95+30 TO STA. 96+60

Designed by:			
Drawn by: V.A.	Scale: AS SHOWN	Sheet number: 55	
Checked by: C.H.	Date: JUNE 1990		File No. RBL-2-1275
Submitted by:	Dwg. No.		

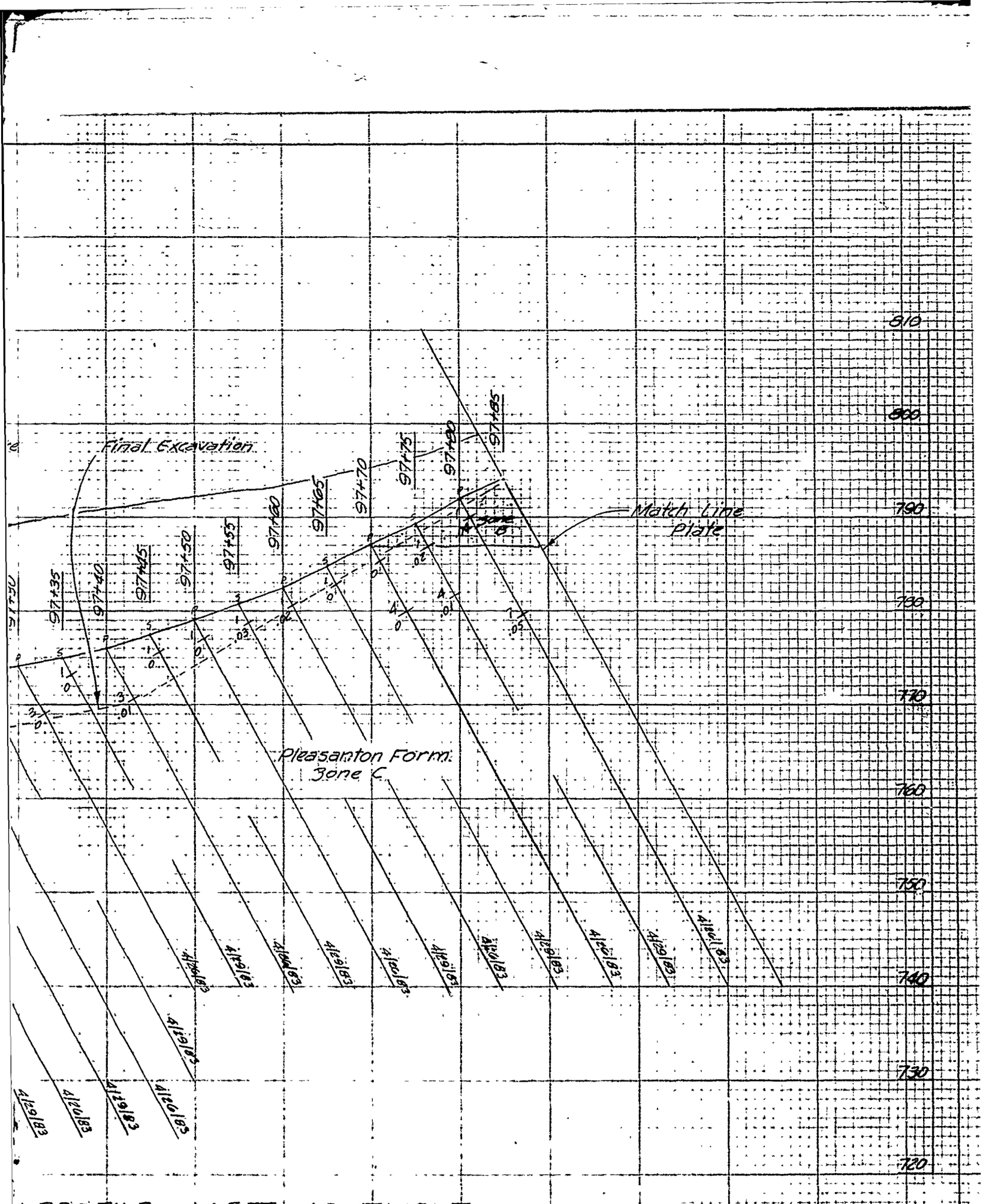
PLATE NO. 55



BLUE SPRINGS LAKE GROUT CURTAIN PROFILE

LINE C ON DAM AXIS STA 96+60

LOOKING UPSTREAM

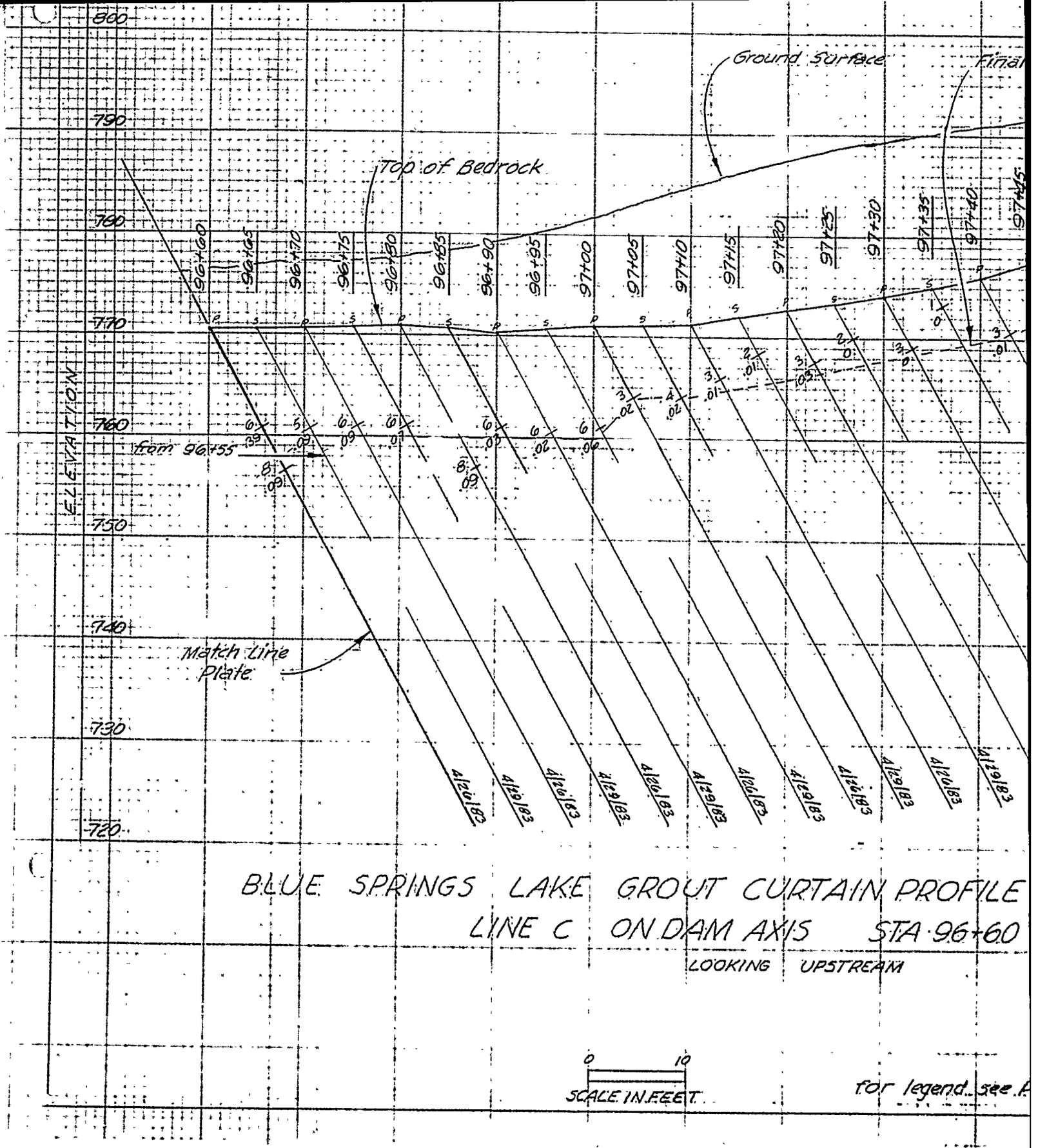


PROFILE LEFT ABUTMENT
STA 96+60 TO STA 97+85

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by:

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT
GROUT CURTAIN PROFILE



BLUE SPRINGS LAKE GROUT CURTAIN PROFILE

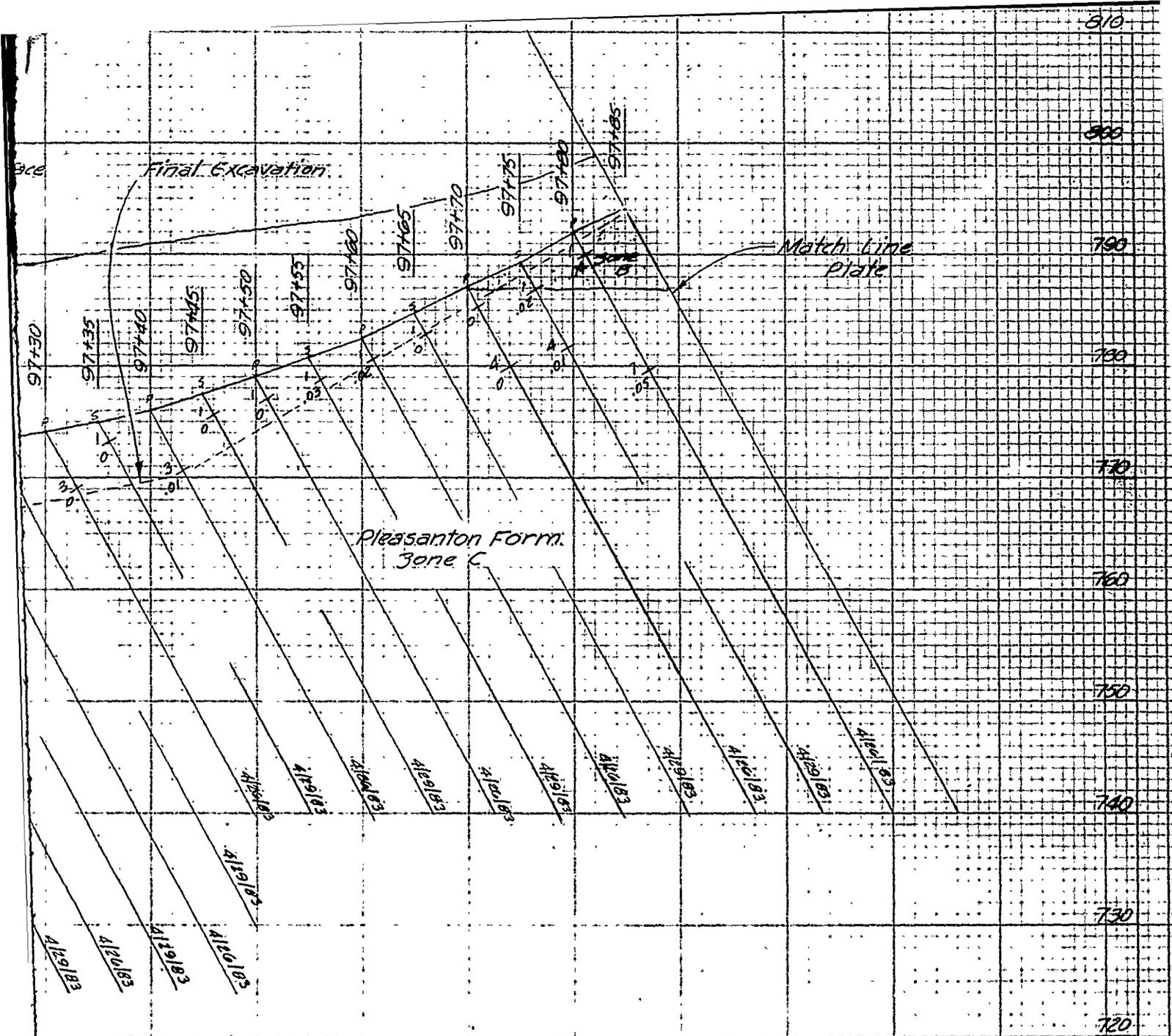
LINE C ON DAM AXIS STA 96+60

LOOKING UPSTREAM

0 10

SCALE IN FEET

for legend see A



PROFILE LEFT ABUTMENT

STA 96+60 TO STA 97+85

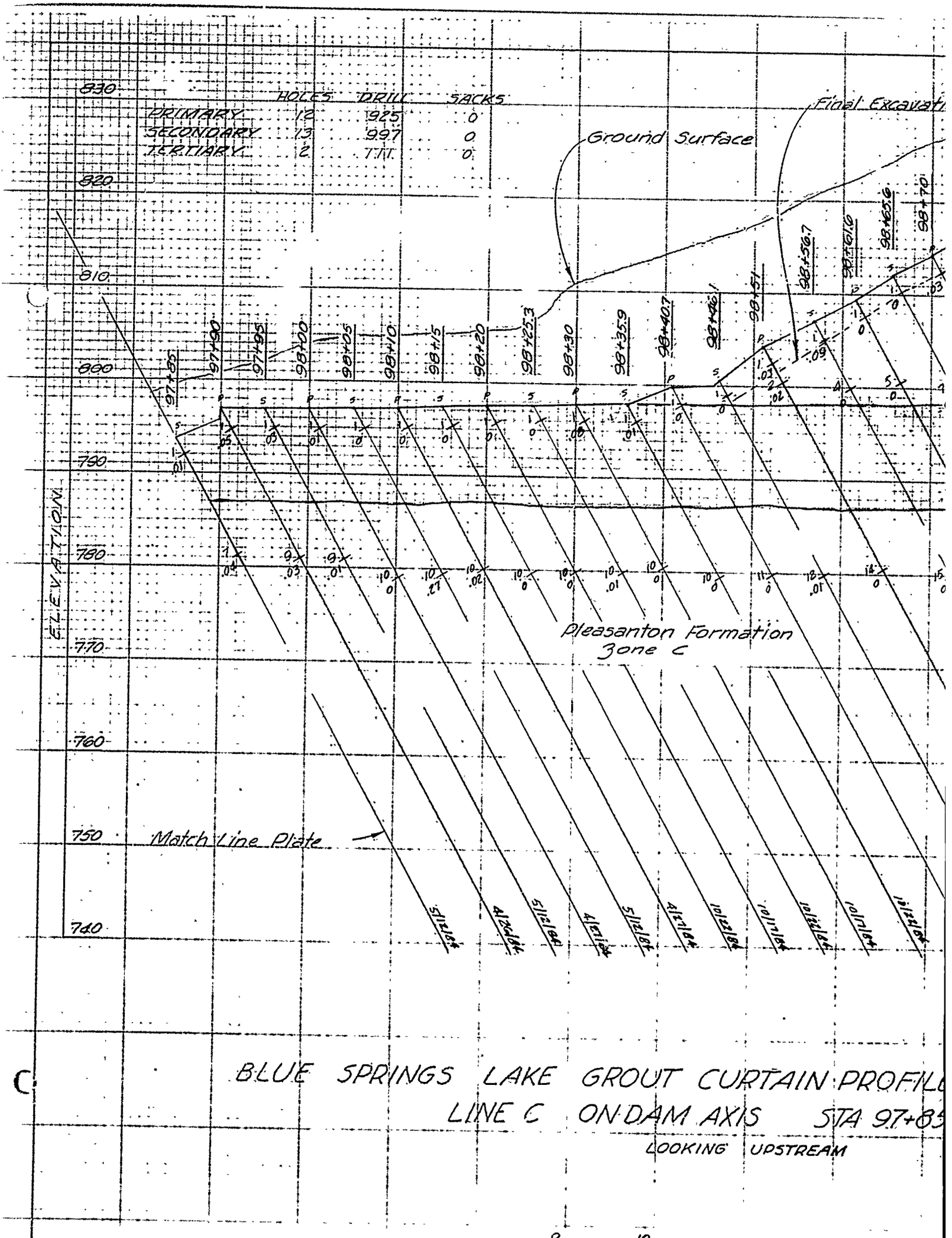
4M

r legend see Plate 44

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:	EAST FORK LITTLE BLUE RIVER, MISSOURI BLUE SPRINGS LAKE CONSTRUCTION FOUNDATION REPORT
Drawn by: V.A.	GROUT CURTAIN PROFILE LEFT ABUTMENT LINE C STA. 96+60 TO STA. 97+85
Checked by: C.H.	Scale: AS SHOWN; Sheet number:
Submitted by:	Date: JUNE 1990; 56; File No.: RBL-2-1276

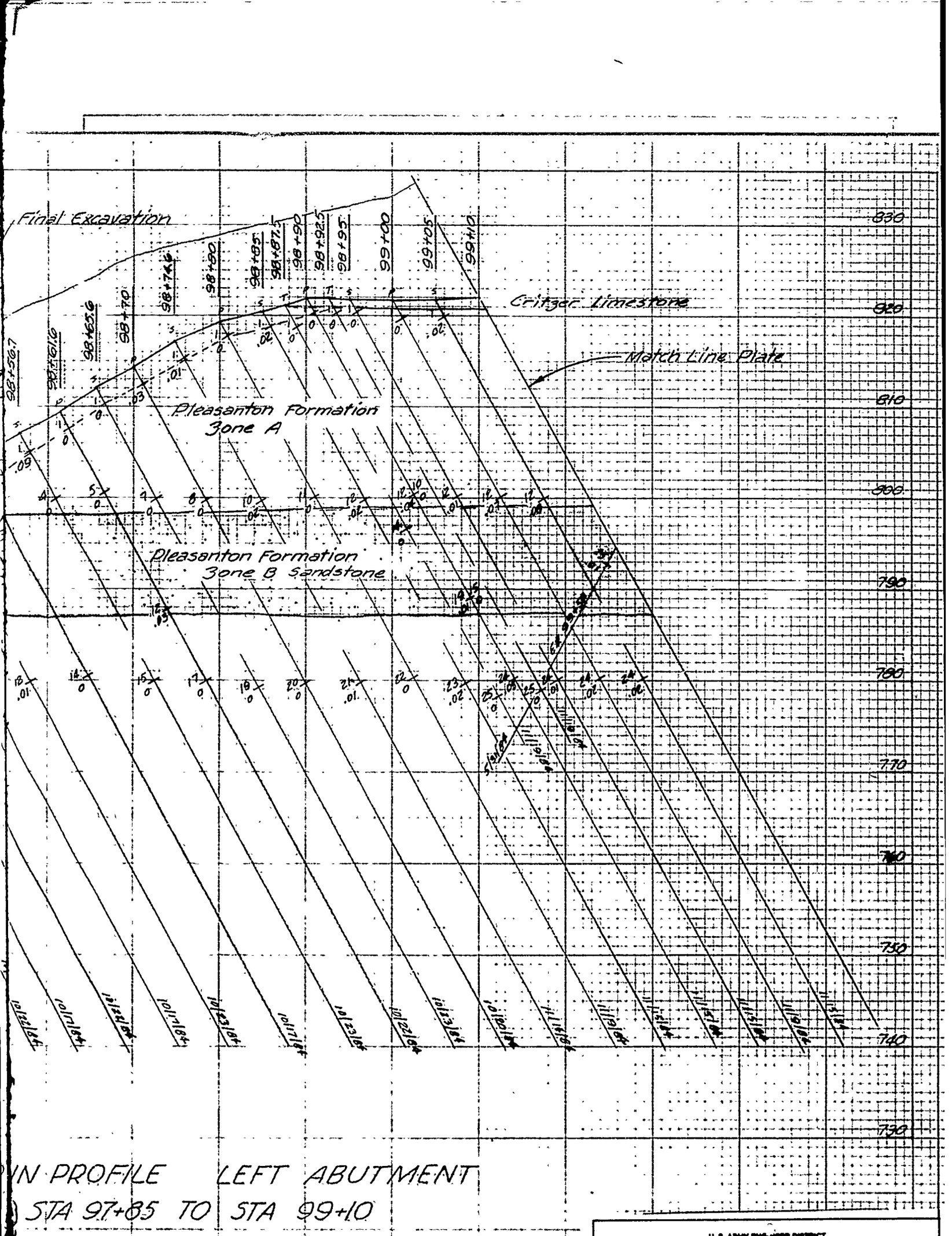
PLATE NO. 56



BLUE SPRINGS LAKE GROUT CURTAIN PROFILE

LINE C ON DAM AXIS STA 97+85

LOOKING UPSTREAM



VN PROFILE LEFT ABUTMENT

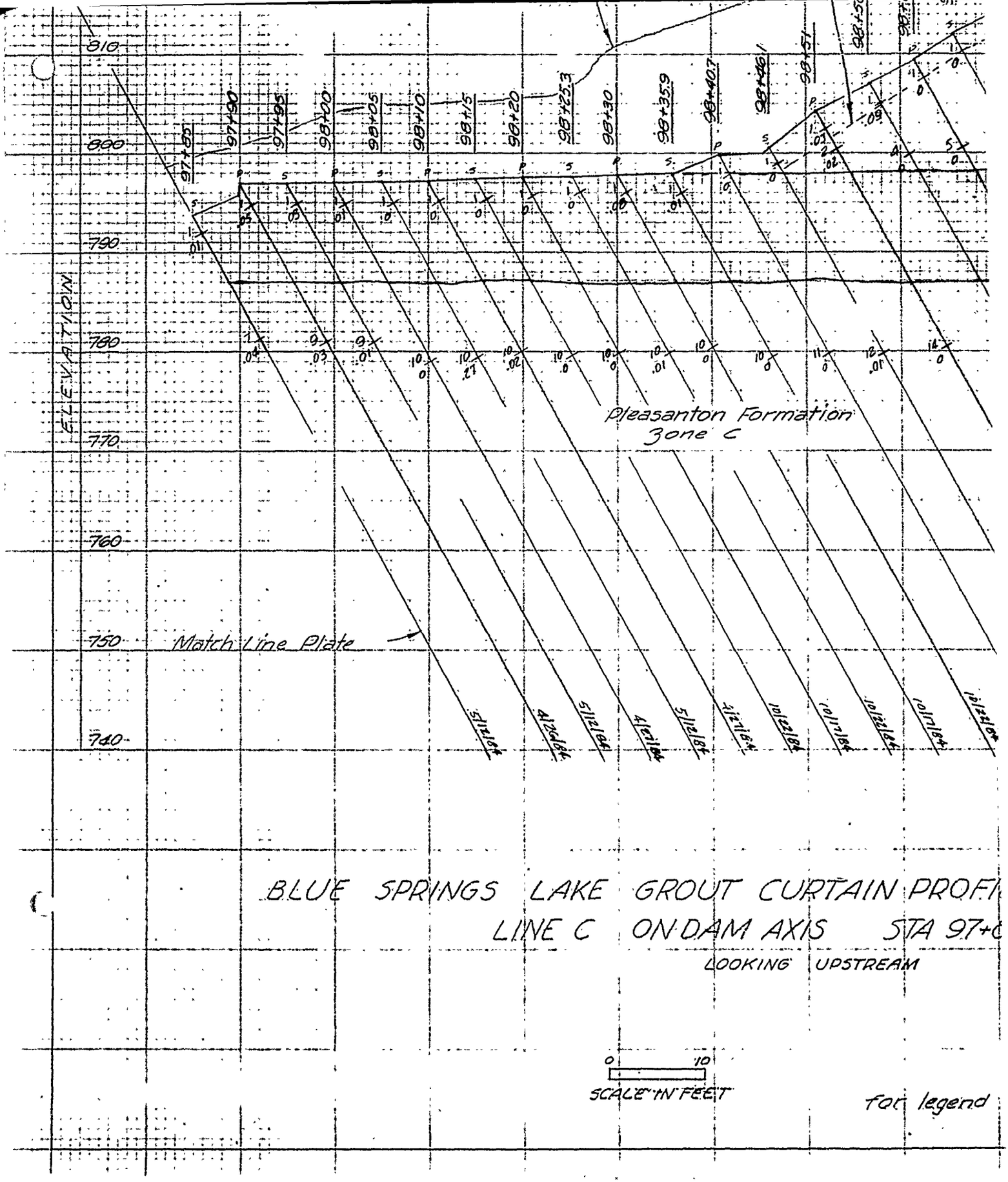
) STA 97+85 TO STA 99+10

EAM

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by

EAST FORK LITTLE, BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
US Army Corps CONSTRUCTION EXCAVATION REPORT



BLUE SPRINGS LAKE GROUT CURTAIN PROFI

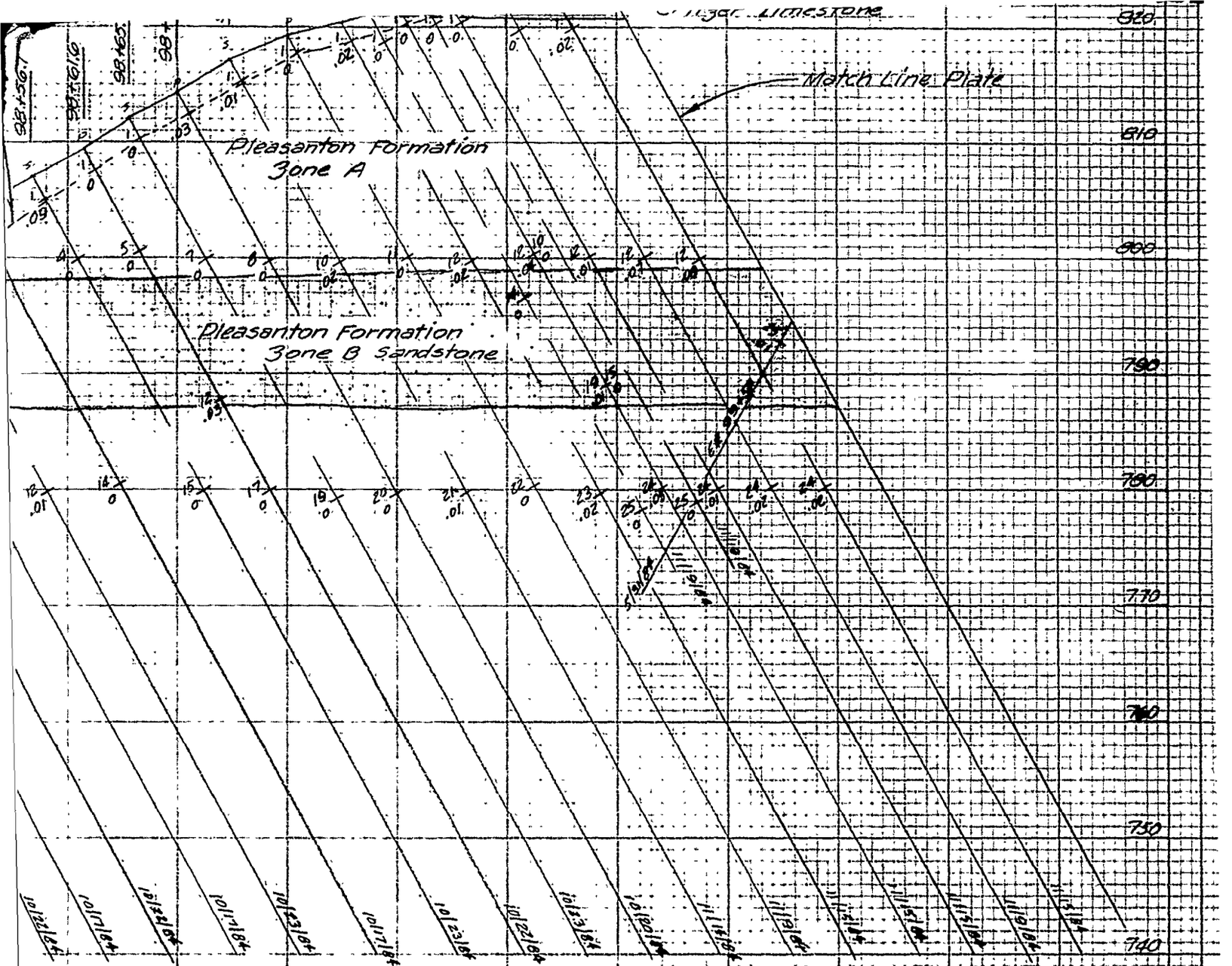
LINE C ON DAM AXIS STA 97+0

LOOKING UPSTREAM

0 10

SCALE IN FEET

For legend



IN PROFILE LEFT ABUTMENT

STA 97+85 TO STA 99+10

REAM

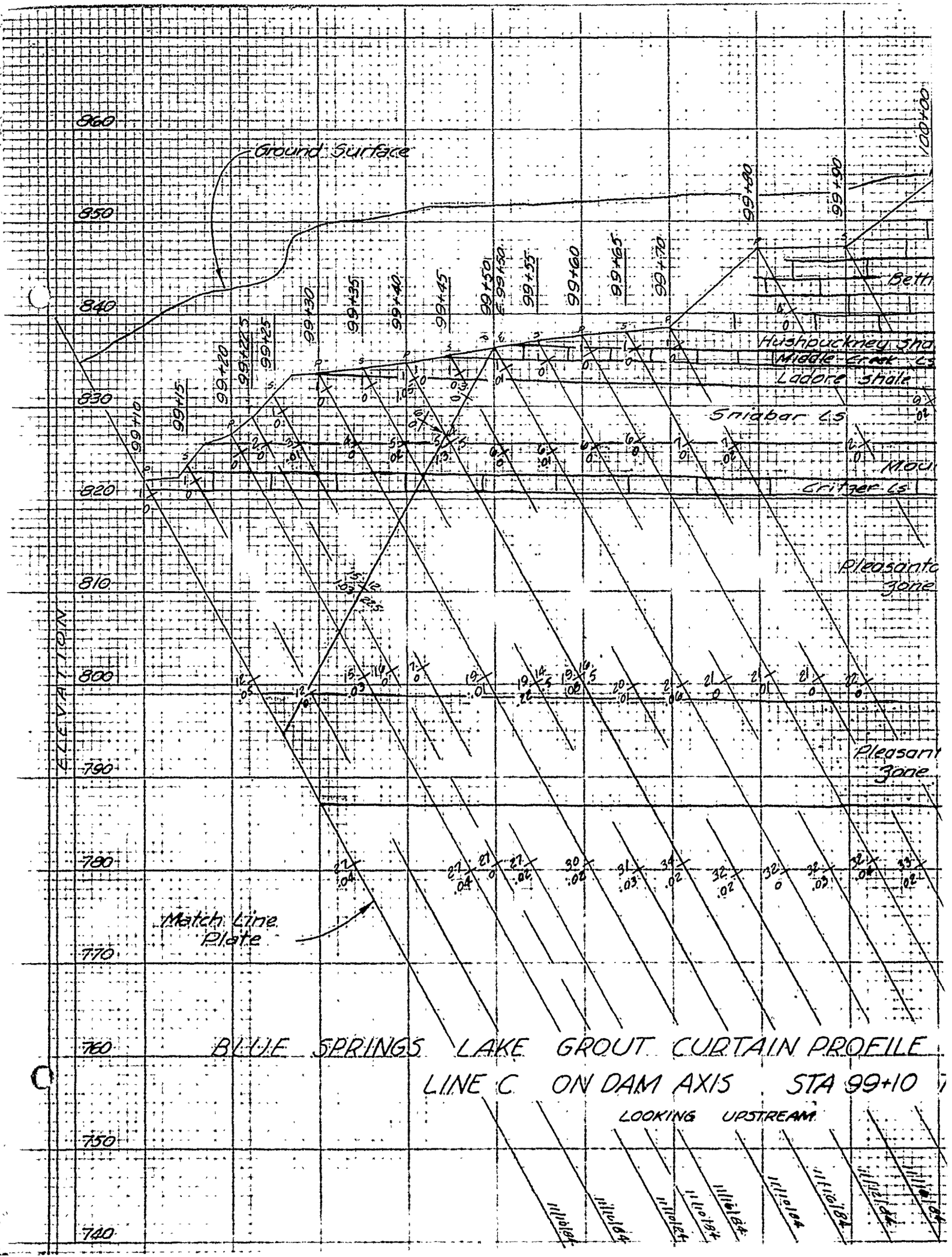
For legend see Plate 44

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT
GROUT CURTAIN PROFILE
LEFT ABUTMENT LINE C
STA. 97+85 TO STA. 99+10

Designed by:	
Drawn by:	V.A.
Checked by:	C.H.
Submitted by:	
Scale:	AS SHOWN
Date:	JUNE 1990
Drawing No.:	
Sheet number:	57
File No.:	RBL-2-1277

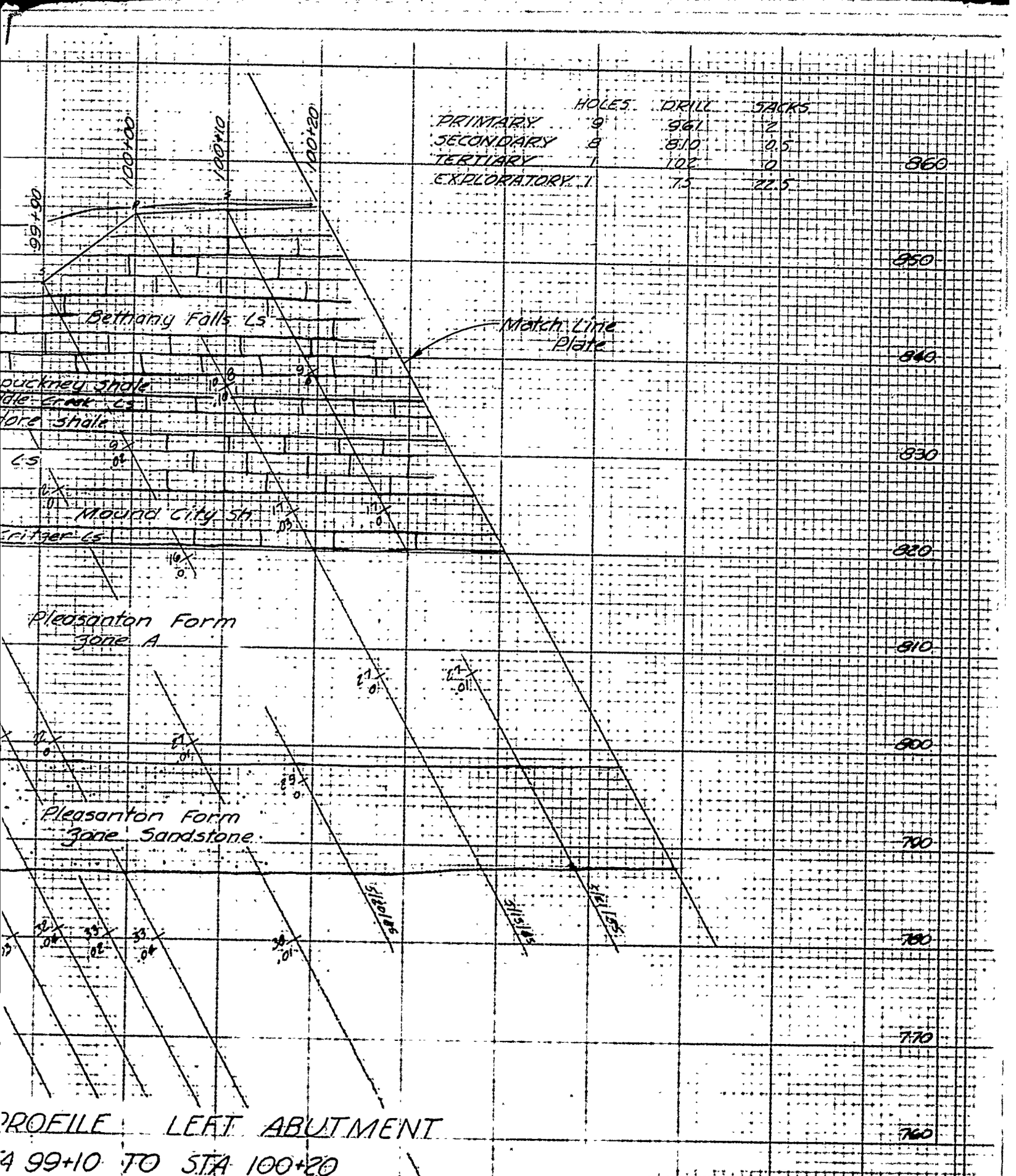
PLATE NO. 57



BLUE SPRINGS LAKE GROUT CURTAIN PROFILE

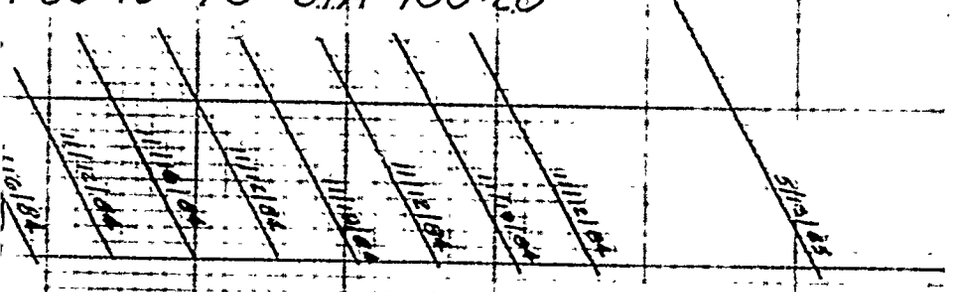
LINE C ON DAM AXIS STA 99+10

LOOKING UPSTREAM



PROFILE LEFT ABUTMENT

STA 99+10 TO STA 100+20



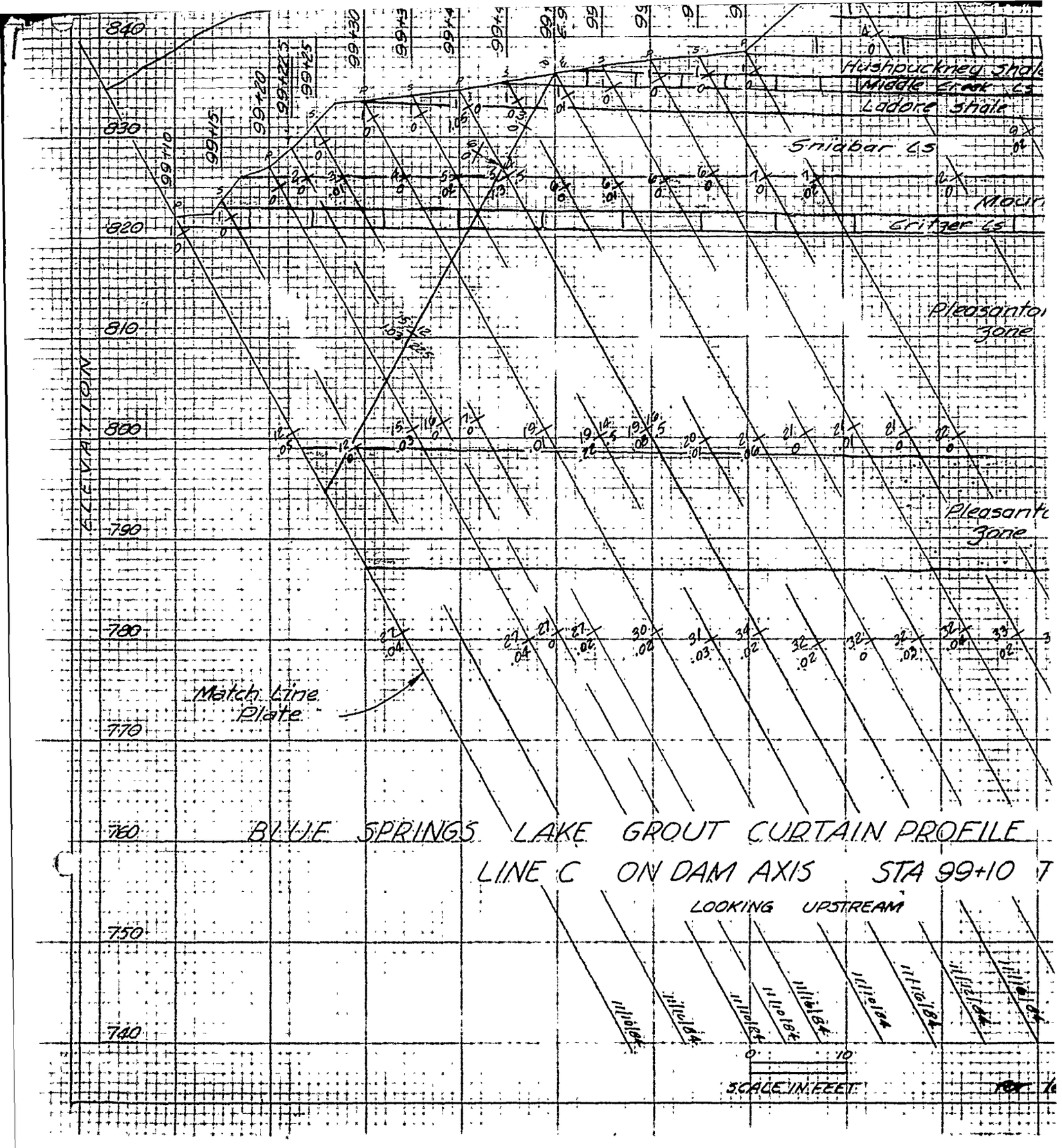
ref legend see Plate 44

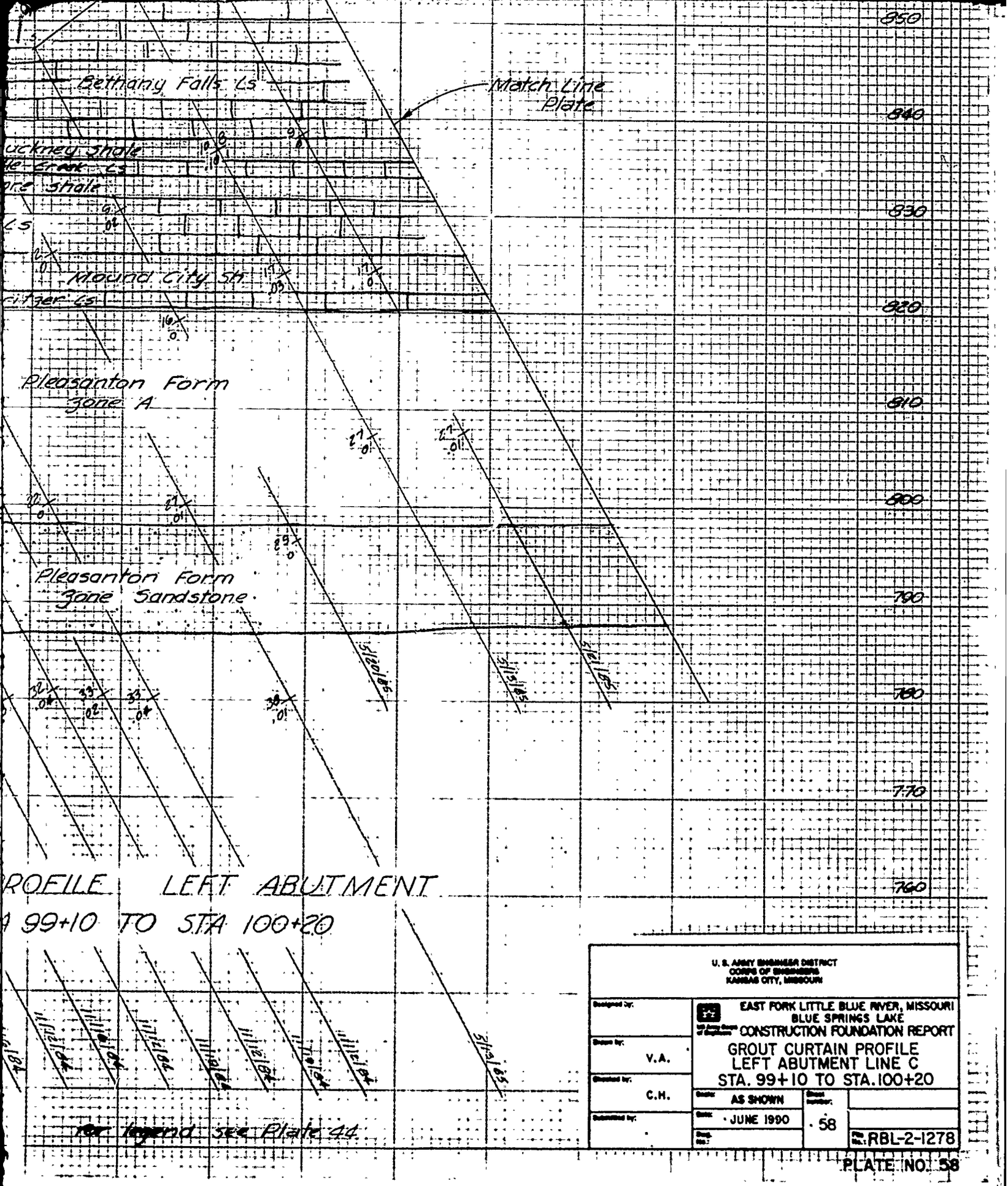
U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

GROUT CURTAIN PROFILE
LEFT ABUTMENT LINE C
STA. 99+10 TO STA. 100+20

Designed by:
Drawn by: V.A.
Checked by: C.H.
Submitted by:
Scale: AS SHOWN
Date: JUNE 1990
Sheet number: 58
Dwg. No. RBL-2-1278


Hushpuckney Shale
Middle Creek LS
Ladore Shale
Smiabar LS
Mocin
Grinter LS
Pleasanton
Zone
Pleasanto
Zone
840
830
820
810
800
790
780
770
760
750
740
NIOTT RAVINE
Match Line
Plate
BLUE SPRINGS LAKE GROUT CURTAIN PROFILE
LINE C ON DAM AXIS STA 99+10
LOOKING UPSTREAM
0
10
SCALE IN FEET



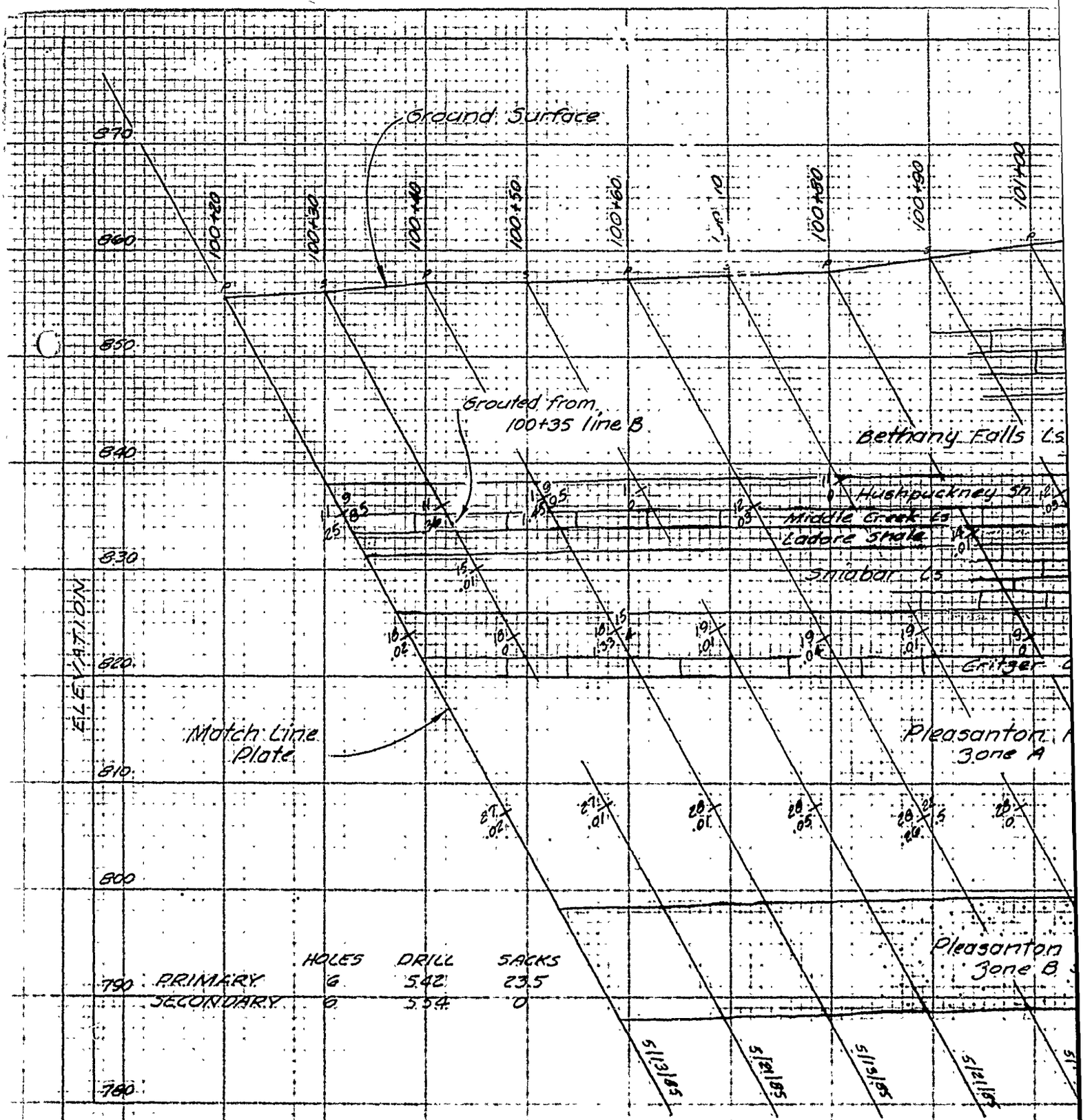
U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

GROUT CURTAIN PROFILE
LEFT ABUTMENT LINE C
STA. 99+10 TO STA. 100+20

Designed by:	
Drawn by:	V.A.
Checked by:	C.H.
Submitted by:	
Scale:	AS SHOWN
Date:	JUNE 1990
Sheet number:	58
File No.:	RBL-2-1278

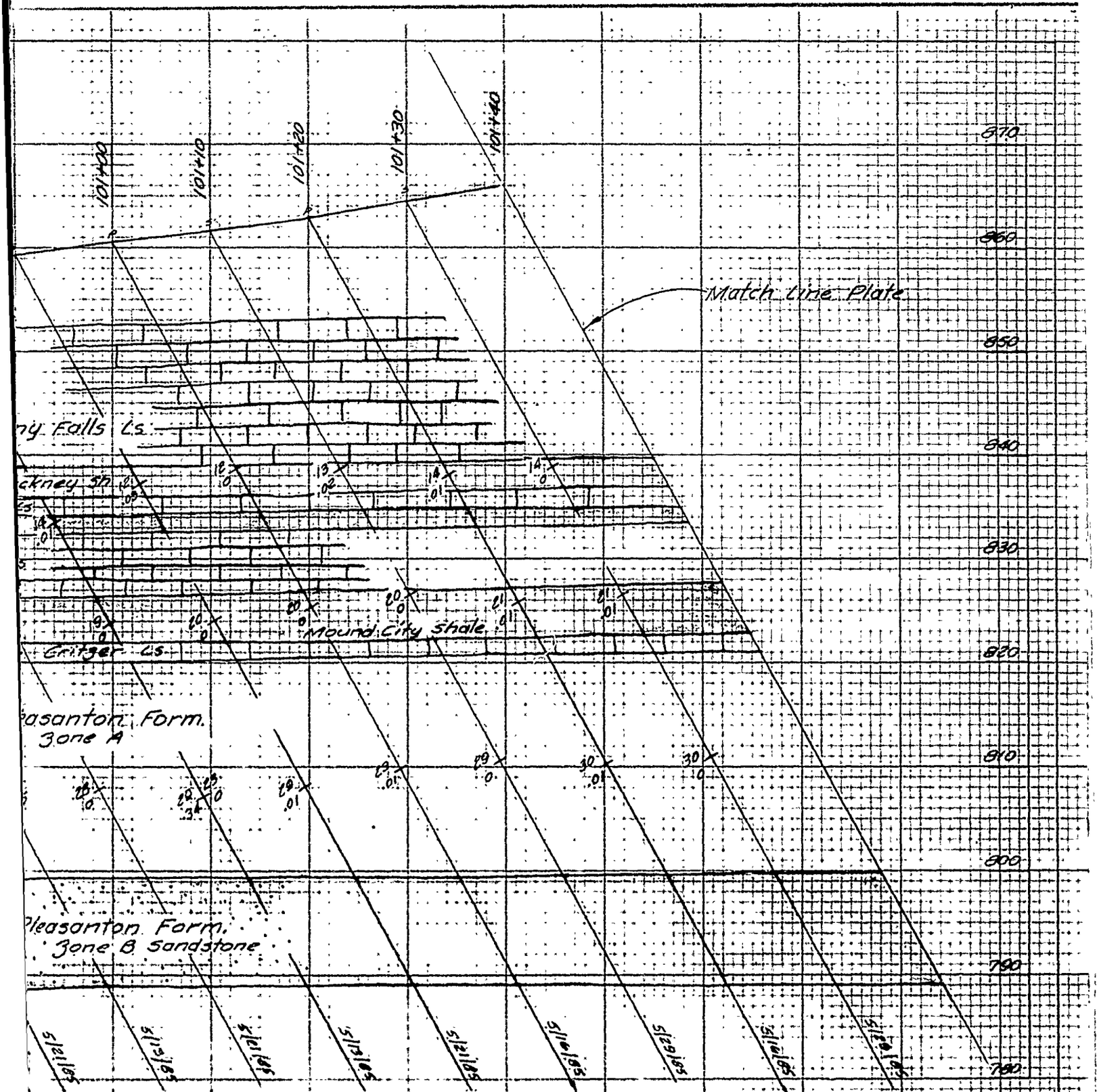
PLATE NO. 58



BLUE SPRINGS LAKE GROUT CURTAIN PROFILE

LINE C ON DAM AXIS STA 100+20

LOOKING UPSTREAM



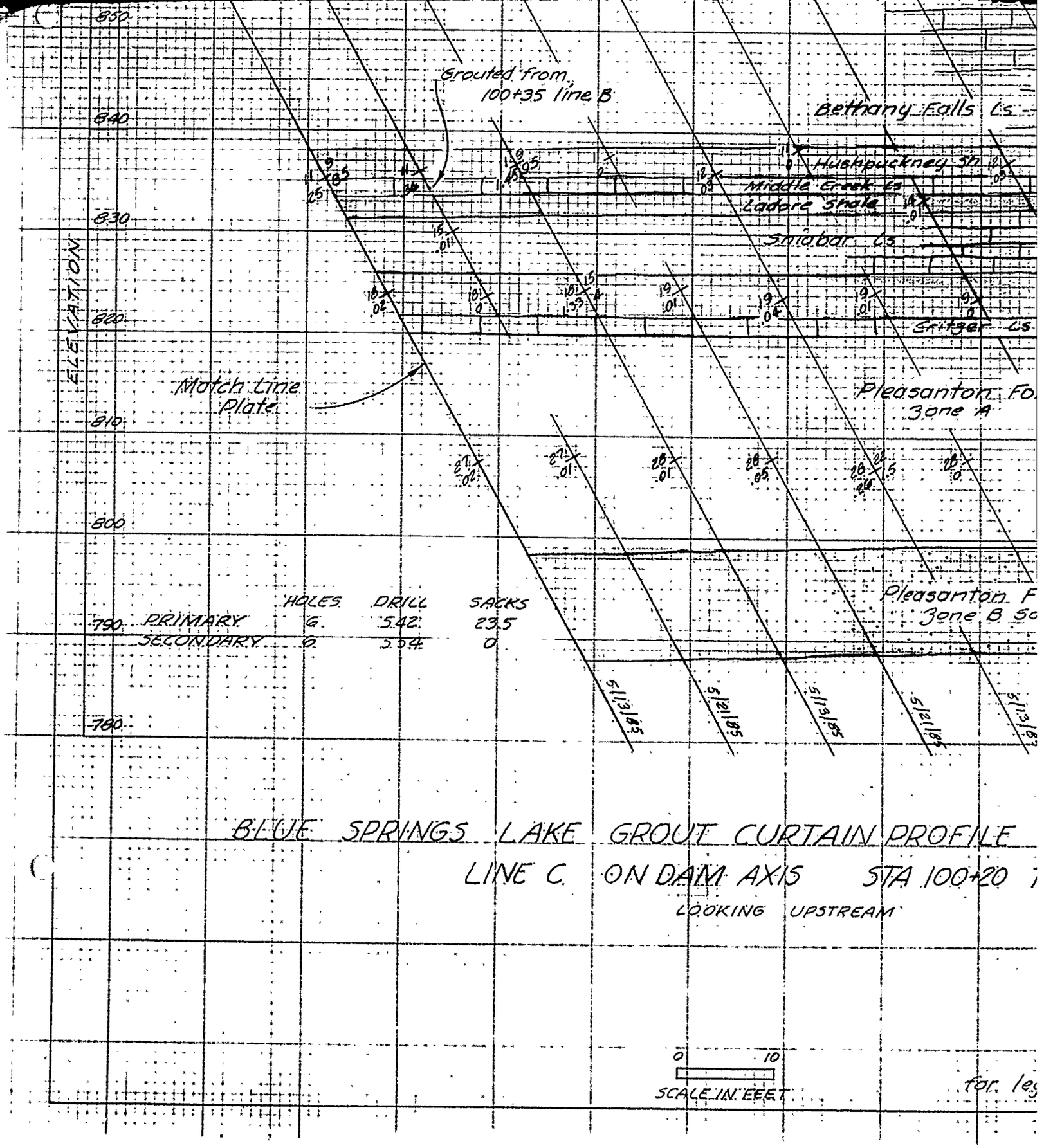
ROFILE LEFT ABUTMENT

A 100+20 TO STA 101+40

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT



	HOLES	DRILL	SACKS
PRIMARY	6	542	23.5
SECONDARY	0	554	0

BLUE SPRINGS LAKE GROUT CURTAIN PROFILE

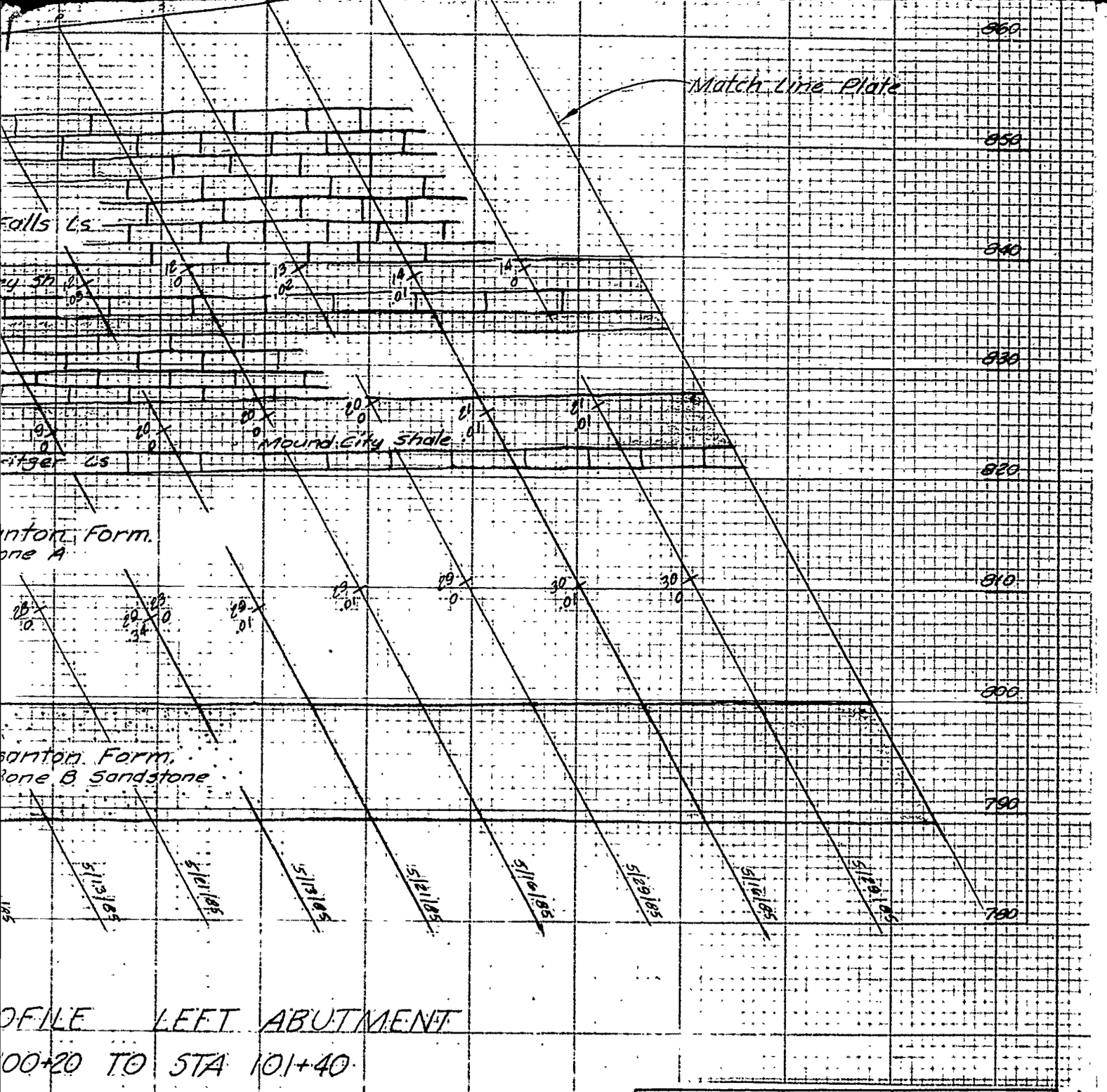
LINE C ON DAM AXIS STA 100+20

LOOKING UPSTREAM

0 10

SCALE IN FEET

for le



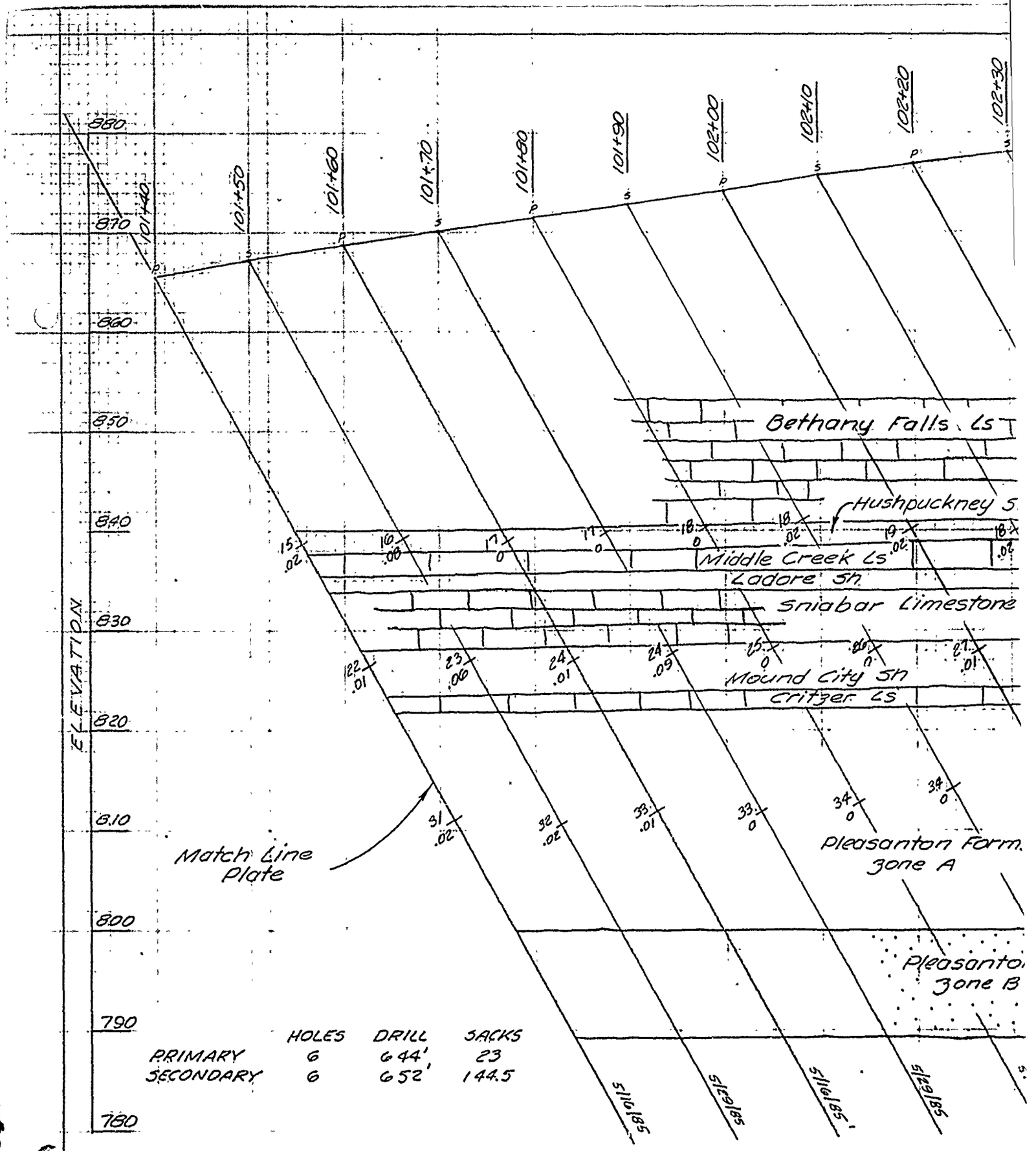
U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

GROUT CURTAIN PROFILE
LEFT ABUTMENT LINE C
STA.100+20 TO STA.101+40

Designed by:			
Drawn by: V.A.			
Checked by: C.H.	Scale: AS SHOWN	Sheet number:	
Submitted by:	Date: JUNE 1990	59	
	Proj. No.:	File No.: RBL-2-1279	

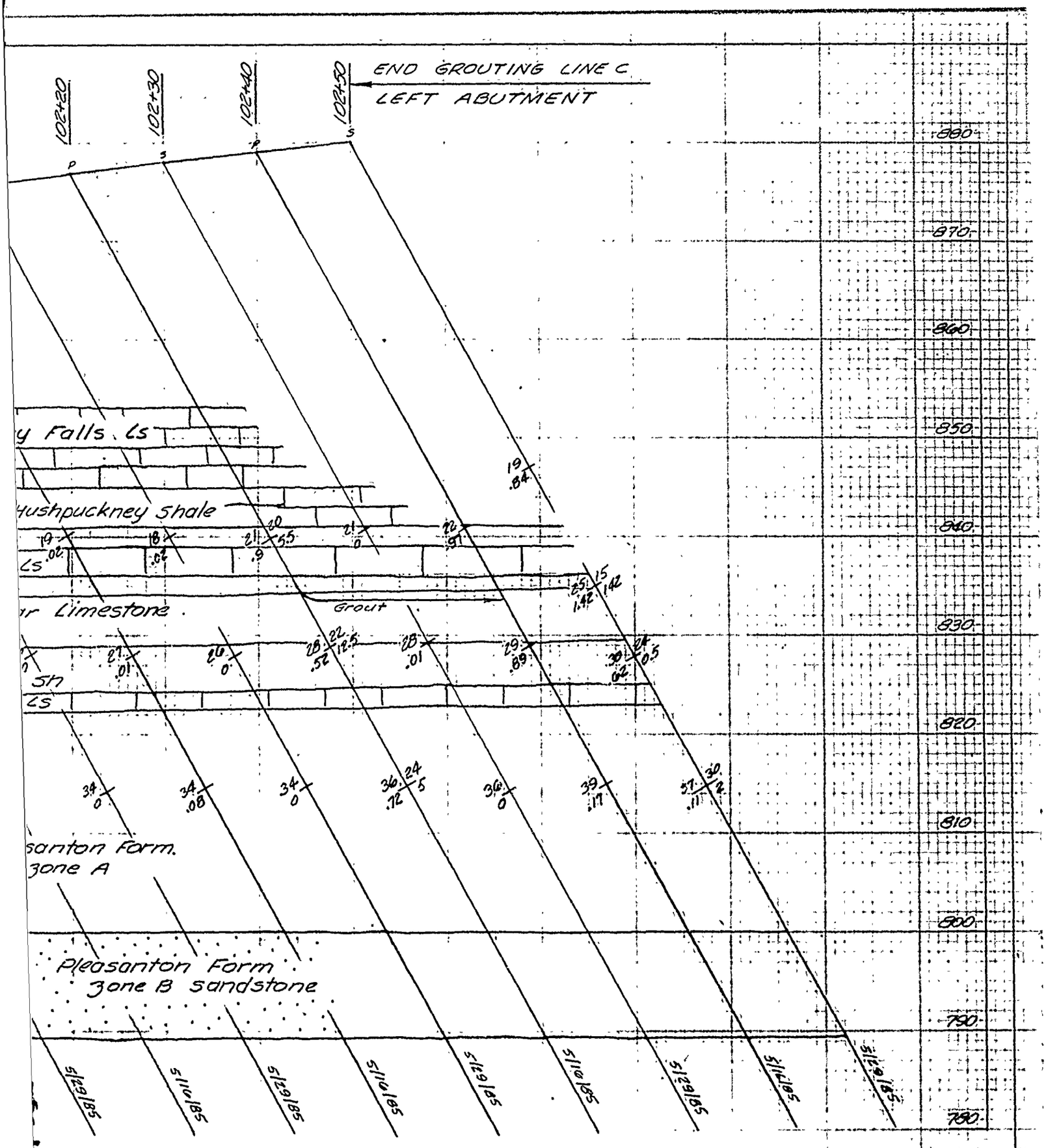
PLATE NO. 59



BLUE SPRINGS LAKE GROUT CURTAIN PROFILE

LINE C ON DAM AXIS STA 101+40 T

LOOKING UPSTREAM



PROFILE LEFT ABUTMENT
STA 101+40 TO STA 102+50

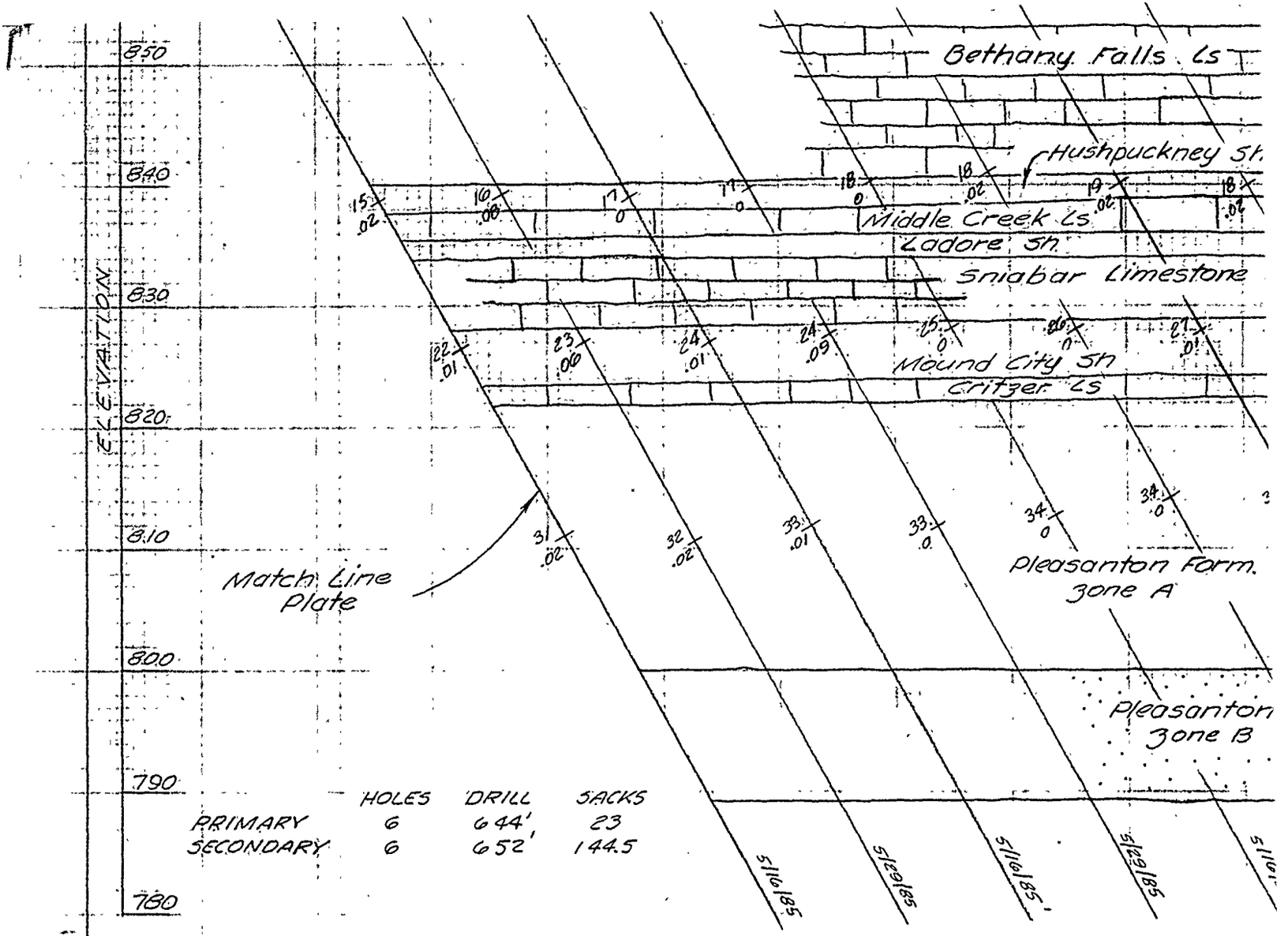
U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:

Drawn by: V.A.

Checked by:

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT
GROUT CURTAIN PROFILE
LEFT ABUTMENT LINE C
STA 101+40 TO STA 102+50



	HOLES	DRILL	SACKS
PRIMARY	6	644'	23
SECONDARY	6	652'	144.5

BLUE SPRINGS LAKE GROUT CURTAIN PROFILE

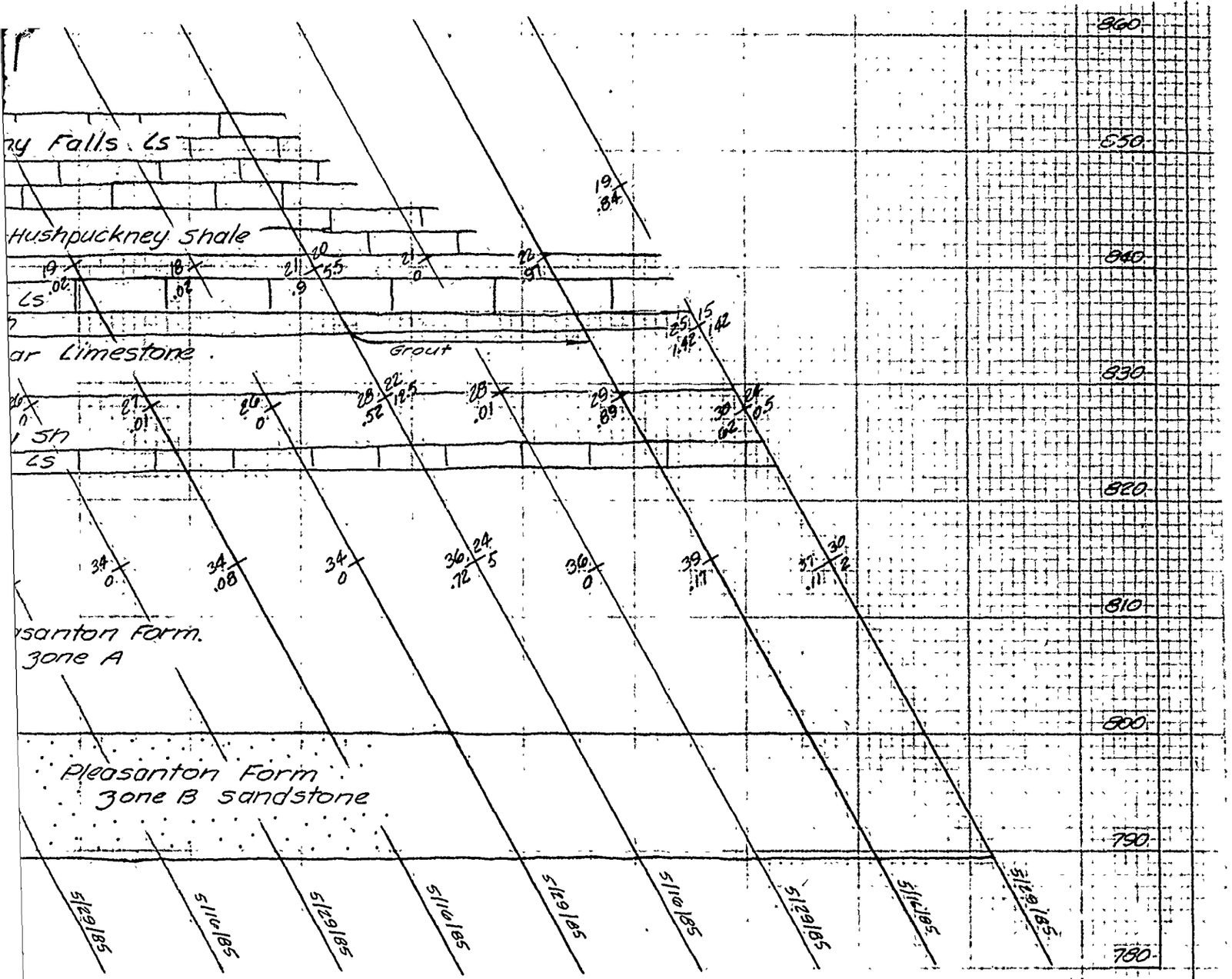
LINE C ON DAM AXIS STA 101+40 TO

LOOKING UPSTREAM

0 10

SCALE IN FEET

for legend se



PROFILE LEFT ABUTMENT
STA 101+40 TO STA 102+50

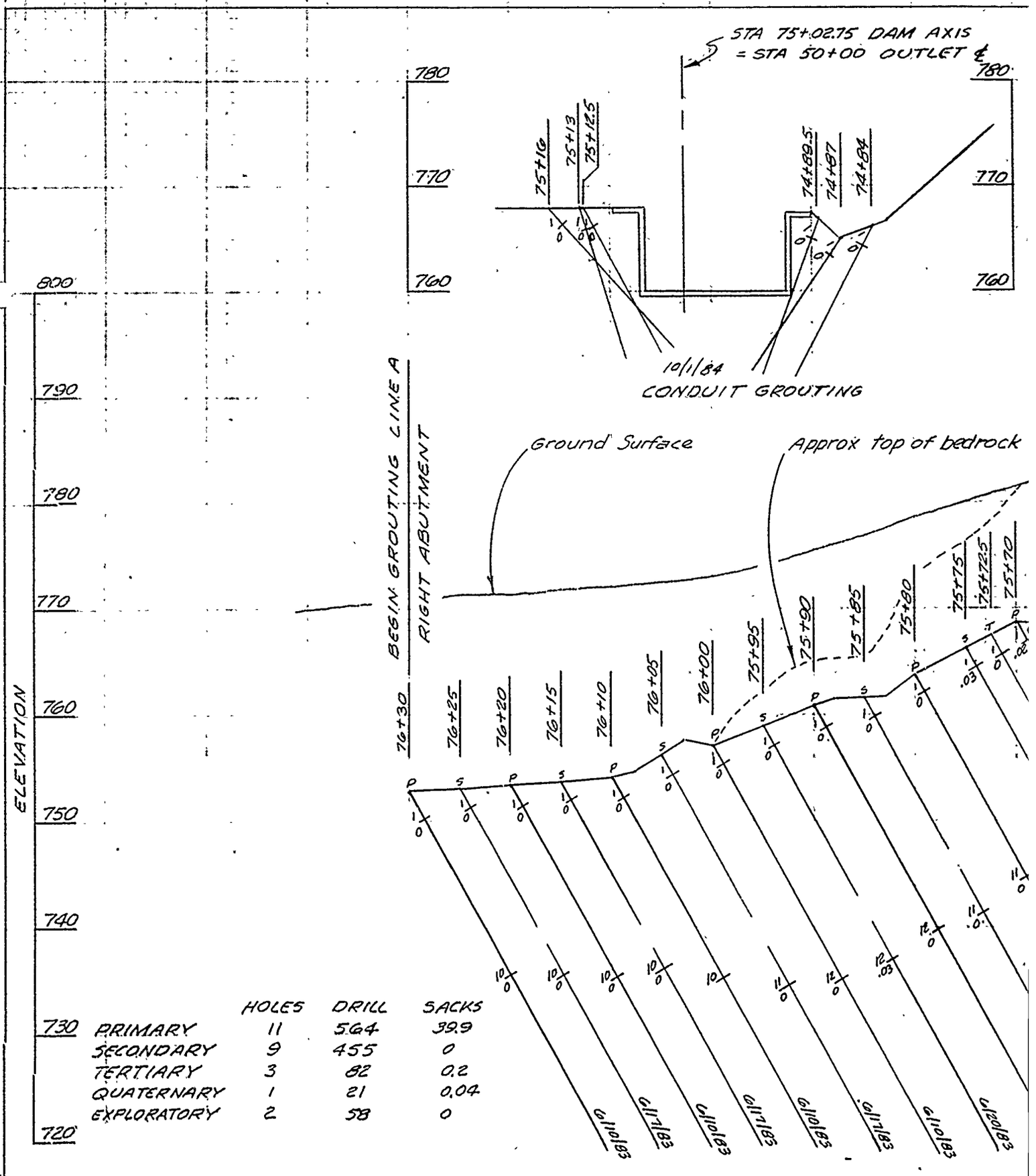
for legend see Plate 44

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT
GROUT CURTAIN PROFILE
LEFT ABUTMENT LINE C
STA. 101+40 TO STA. 102+50

Designed by:	
Drawn by:	V.A.
Checked by:	C.H.
Submitted by:	
Scale:	AS SHOWN
Date:	JUNE 1990
Drawing No.:	
Sheet number:	60
File No.:	RBL-2-1280

PLATE NO. 60



	HOLES	DRILL	SACKS
PRIMARY	11	564	39.9
SECONDARY	9	455	0
TERTIARY	3	82	0.2
QUATERNARY	1	21	0.04
EXPLORATORY	2	58	0

BLUE SPRINGS LAKE GROUT CURTAIN PROFIL

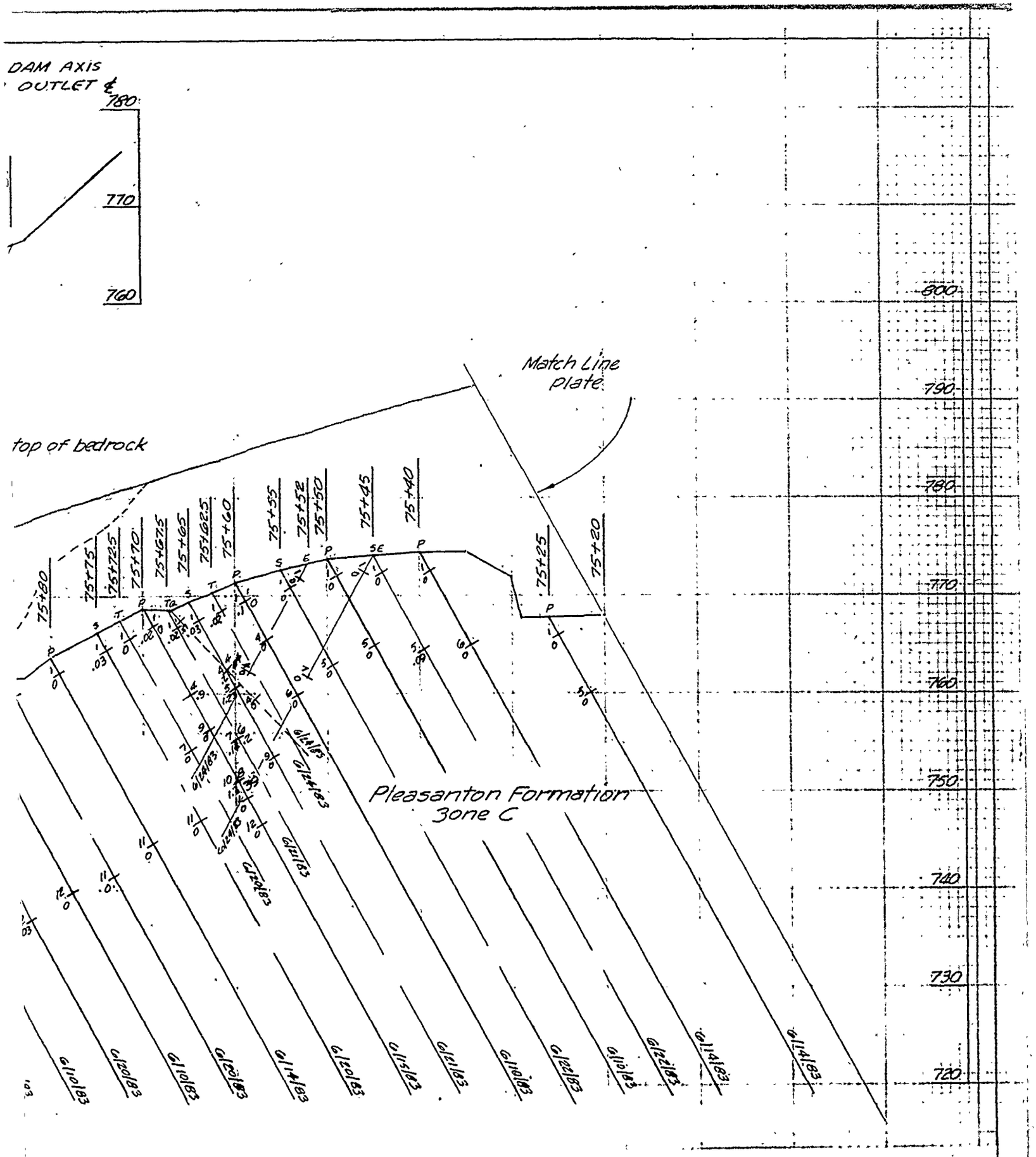
LINE A 5 FEET DOWNSTREAM STA 7

LOOKING DOWNSTREAM

0 10

SCALE IN FEET

for

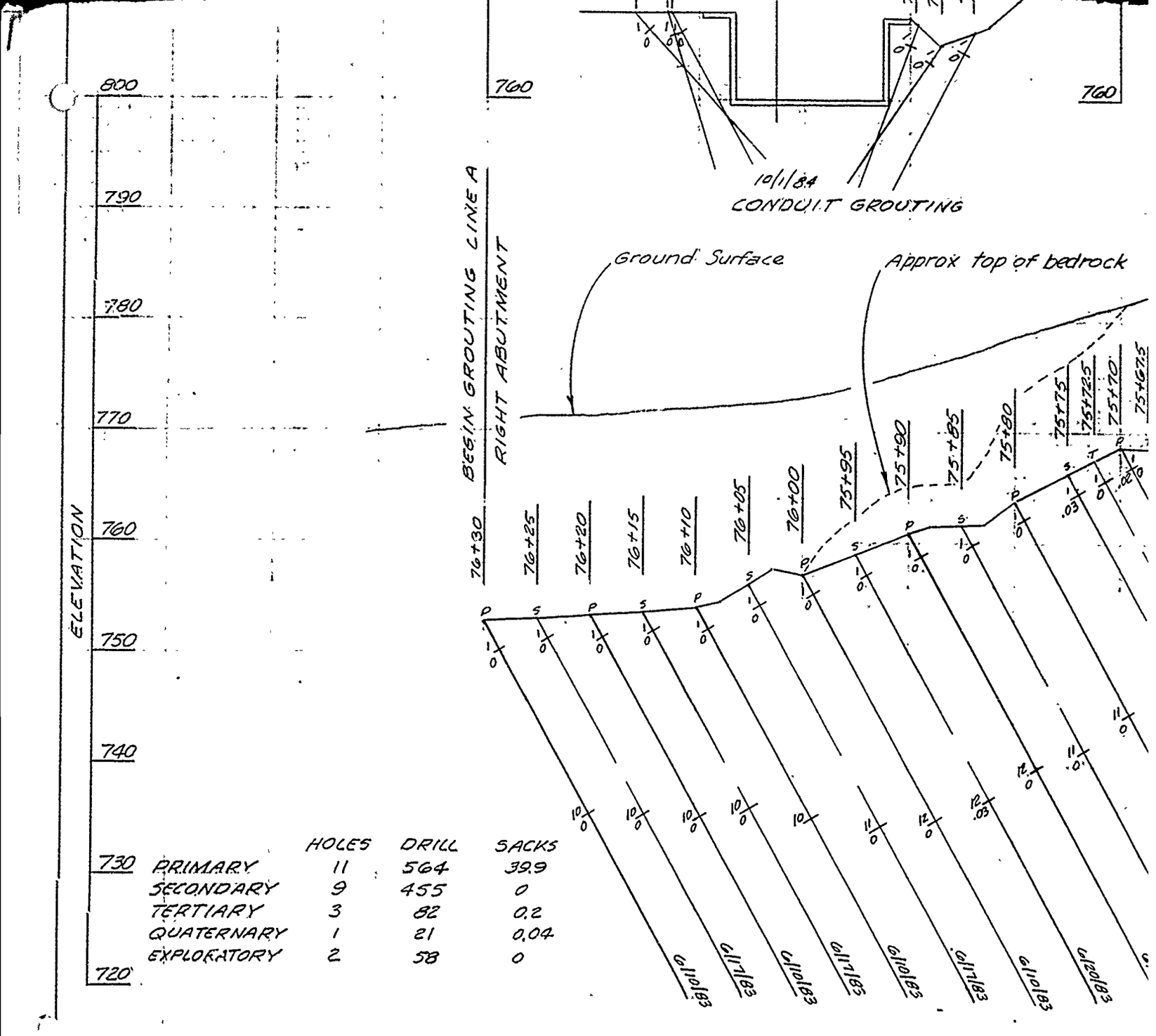


PROFILE RIGHT ABUTMENT

M STA 76+30 TO STA 75+20

REAM

U. S. ARMY ENGINEER DISTRICT CORPS OF ENGINEERS KANSAS CITY, MISSOURI	
Designed by:	EAST FORK LITTLE BLUE RIVER, MISSOURI BLUE SPRINGS LAKE
Drawn by: V.A.	CONSTRUCTION FOUNDATION REPORT GROUT CURTAIN PROFILE RIGHT ABUTMENT LINE A



	HOLES	DRILL	SACKS
PRIMARY	11	564	39.9
SECONDARY	9	455	0
TERTIARY	3	82	0.2
QUATERNARY	1	21	0.04
EXPLORATORY	2	58	0

BLUE SPRINGS LAKE GROUT CURTAIN PROFILE

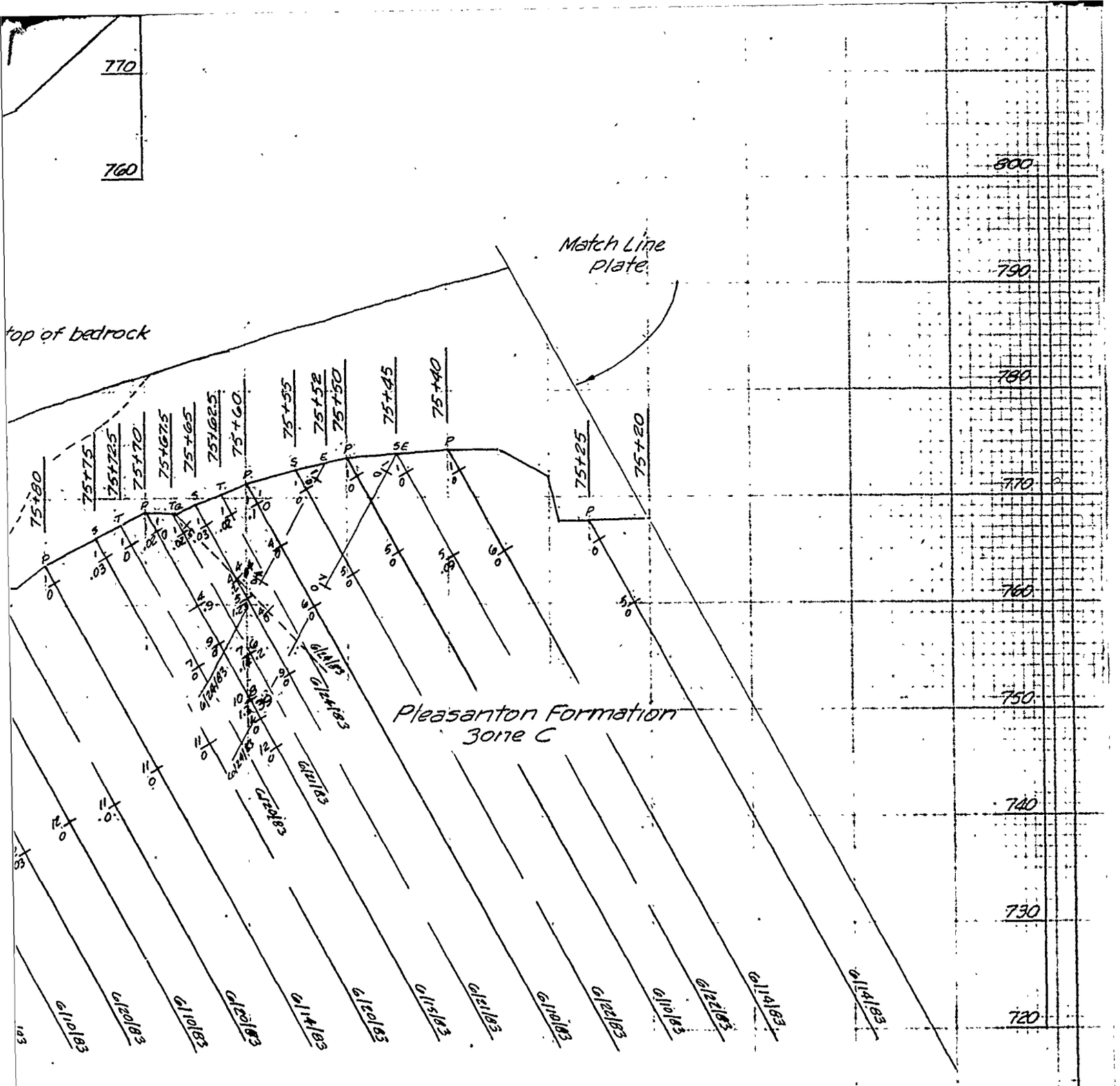
LINE A 5 FEET DOWNSTREAM STA 76+

LOOKING DOWNSTREAM

0 10

SCALE IN FEET

for



PROFILE RIGHT ABUTMENT

M STA 76+30 TO STA 75+20

TREAM

for legend see Plate 44

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:

Drawn by: V.A.

Checked by: C.H.

Submitted by:

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

GROUT CURTAIN PROFILE
RIGHT ABUTMENT LINE A
STA. 76+30 TO STA. 75+20

Scale: AS SHOWN

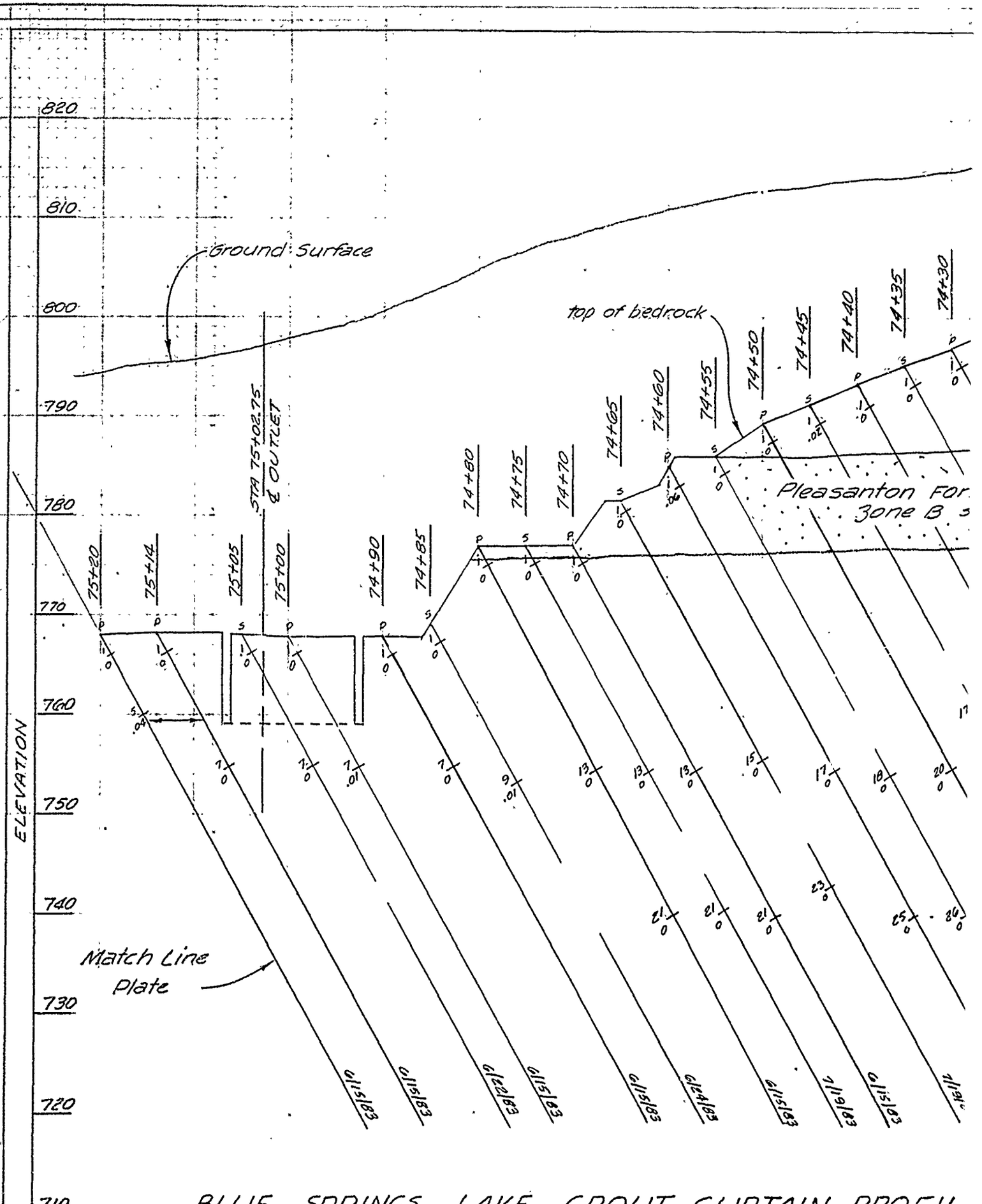
Date: JUNE 1990

Drawing No.:

Sheet number: 61

File No.: RBL-2-1281

PLATE NO. 61

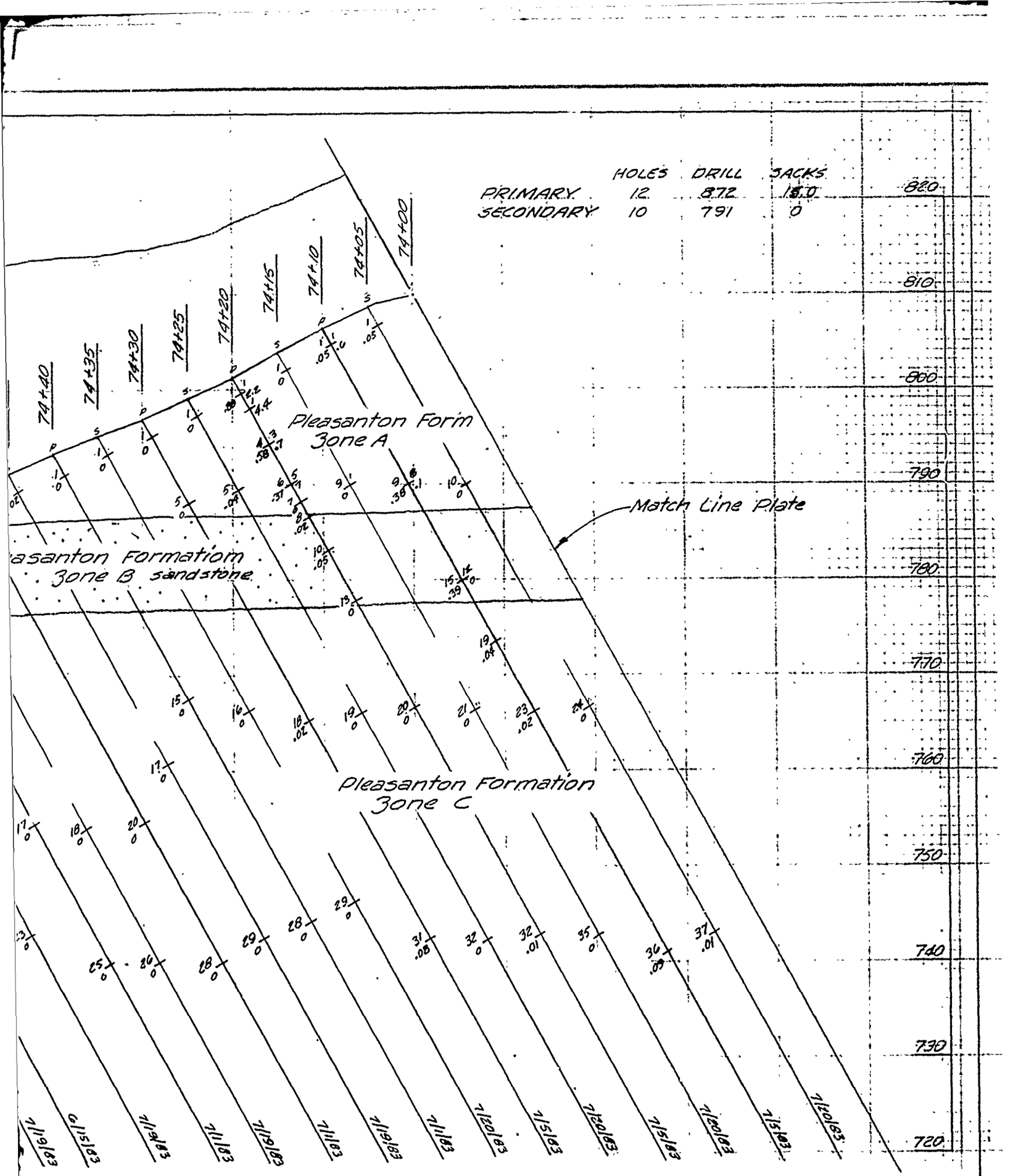


BLUE SPRINGS LAKE GROUT CURTAIN PROFIL

LINE A 5 FEET DOWNSTREAM STA 75

LOOKING DOWNSTREAM

0 10



N PROFILE RIGHT ABUTMENT

3M STA 75+20 TO STA 74+00

WNSTREAM

10

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

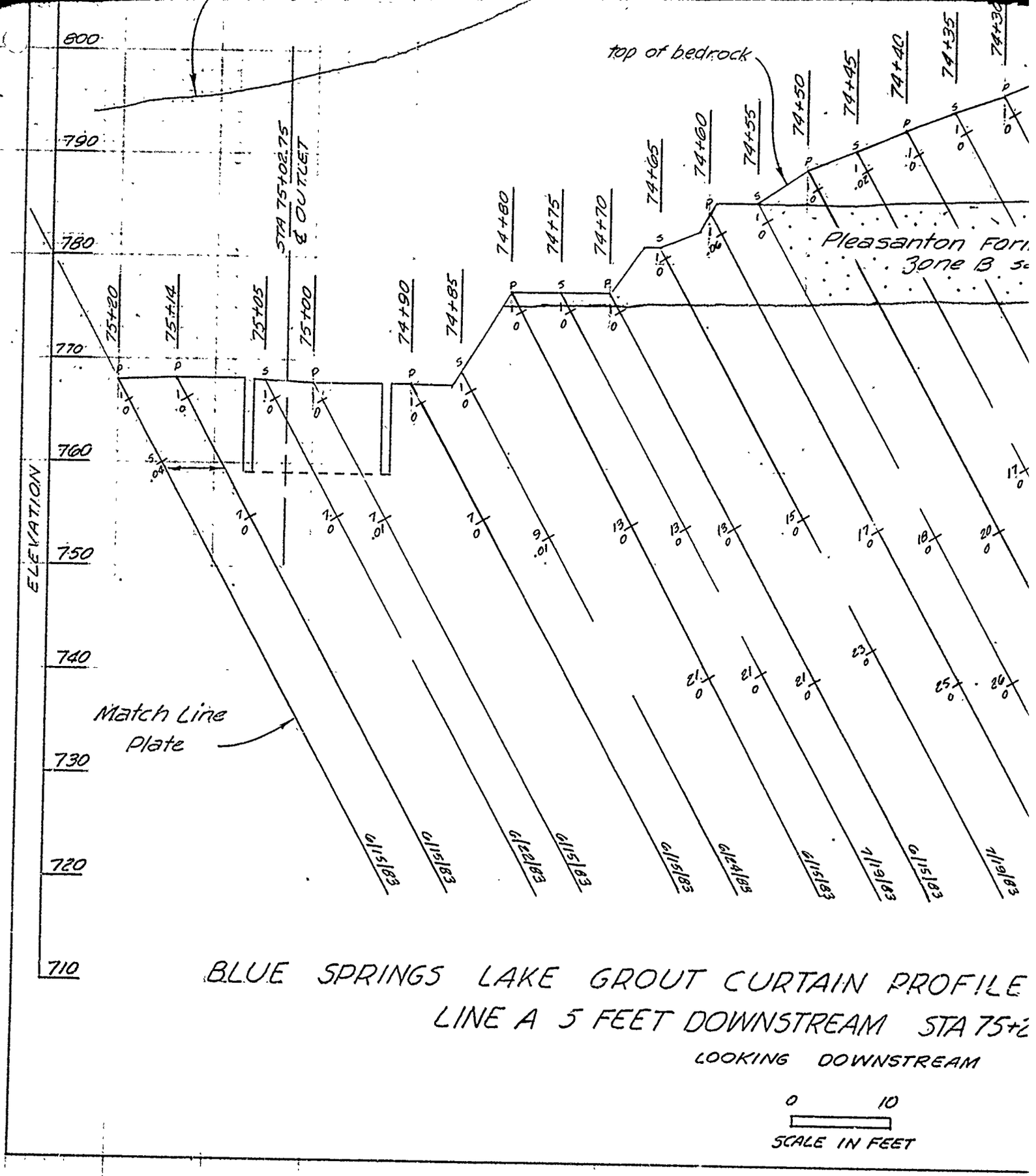
Designed by:

Drawn by: V.A.

Checked by: C.H.

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

GROUT CURTAIN PROFILE
RIGHT ABUTMENT LINE A
STA. 75+20 TO STA. 74+00



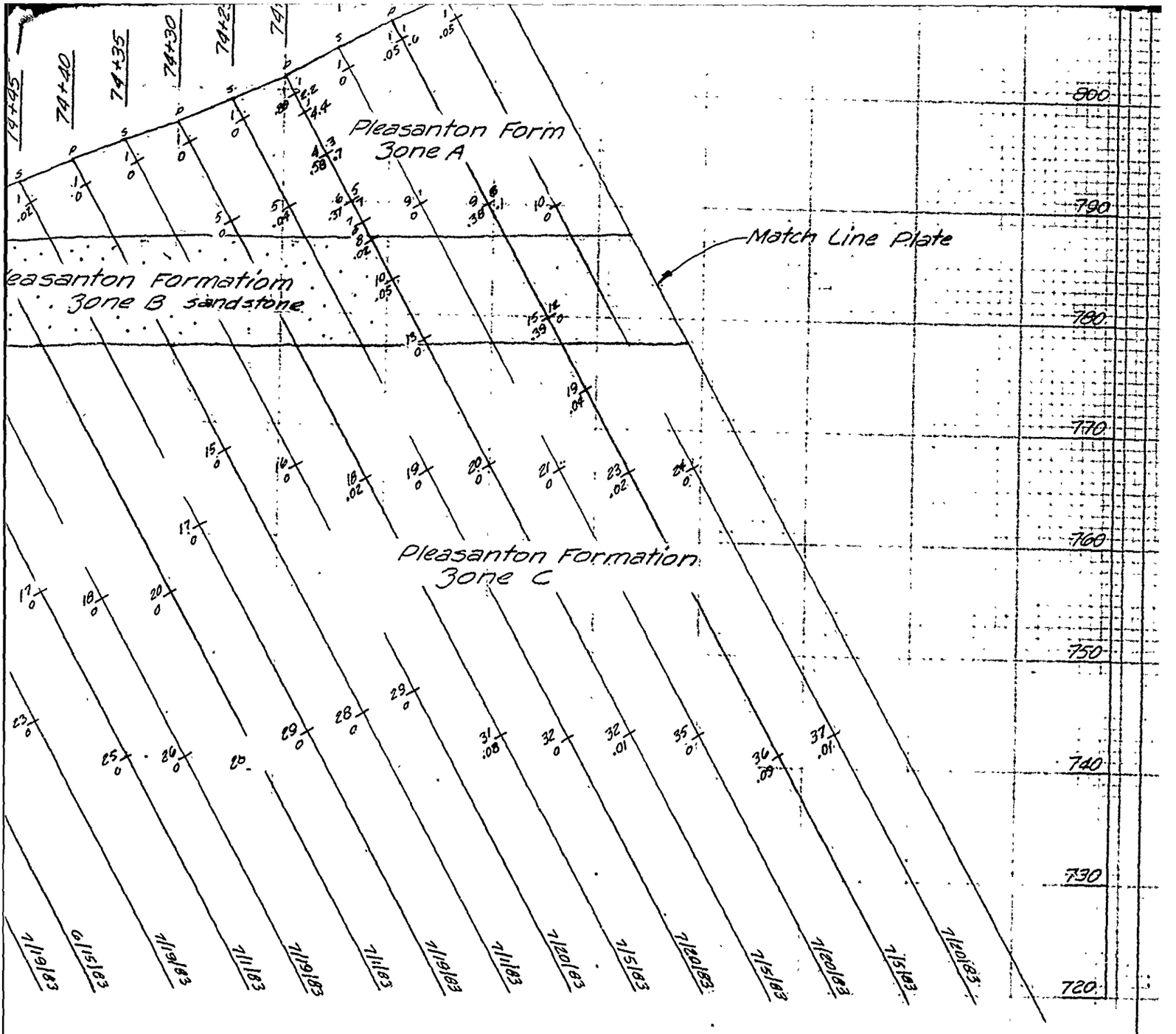
BLUE SPRINGS LAKE GROUT CURTAIN PROFILE

LINE A 5 FEET DOWNSTREAM STA 75+2

LOOKING DOWNSTREAM

0 10

SCALE IN FEET



N PROFILE RIGHT ABUTMENT
4M STA 75+20 TO STA 74+00
WNSTREAM

10
N FEET

for legend see Plate 44

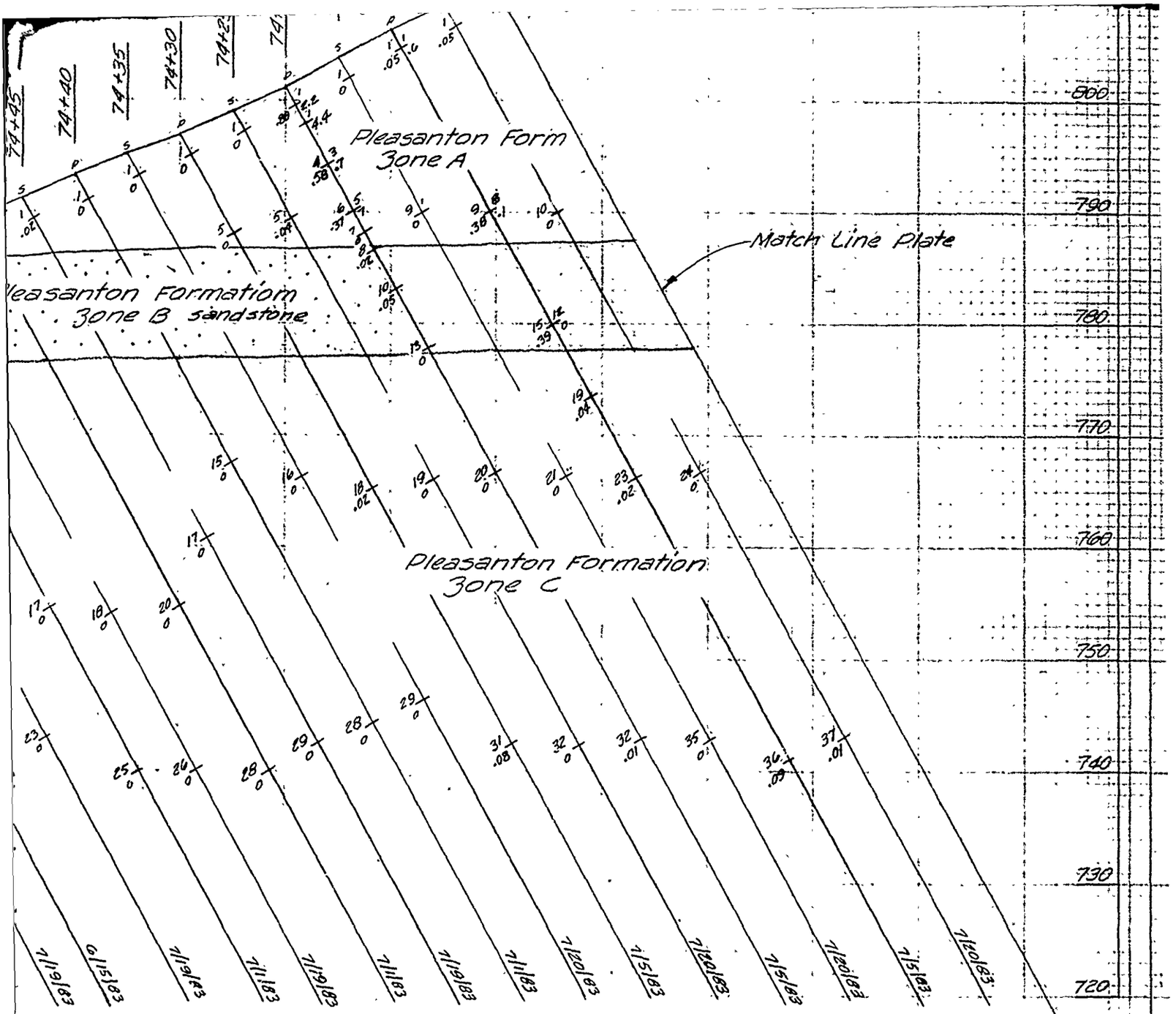
U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by: V.A.
Checked by: C.H.
Submitted by:

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT
GROUT CURTAIN PROFILE
RIGHT ABUTMENT LINE A
STA. 75+20 TO STA. 74+00

Scale: AS SHOWN
Date: JUNE 1990
Sheet Number: 62
Proj. No.: RBL-2-1282

PLATE NO. 62



N PROFILE RIGHT ABUTMENT

AM STA 75+20 TO STA 74+00

OWNSTREAM

10

IN FEET

for legend see Plate 44

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:

Drawn by: V.A.

Checked by: C.H.

Submitted by:

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

GROUT CURTAIN PROFILE
RIGHT ABUTMENT LINE A
STA. 75+20 TO STA. 74+00

Scale: AS SHOWN

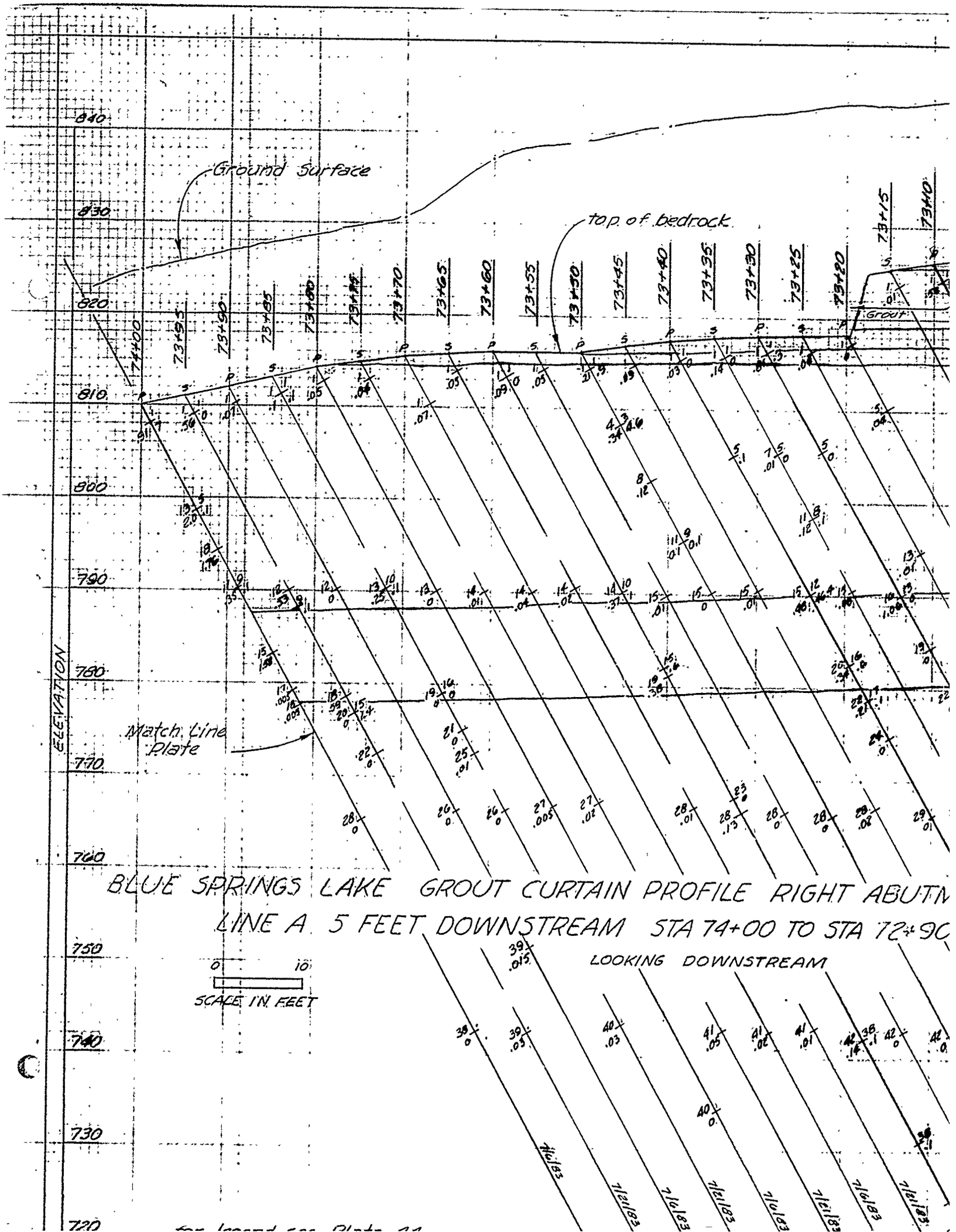
Date: JUNE 1990

Sheet Number: 62

Dwg. No.:

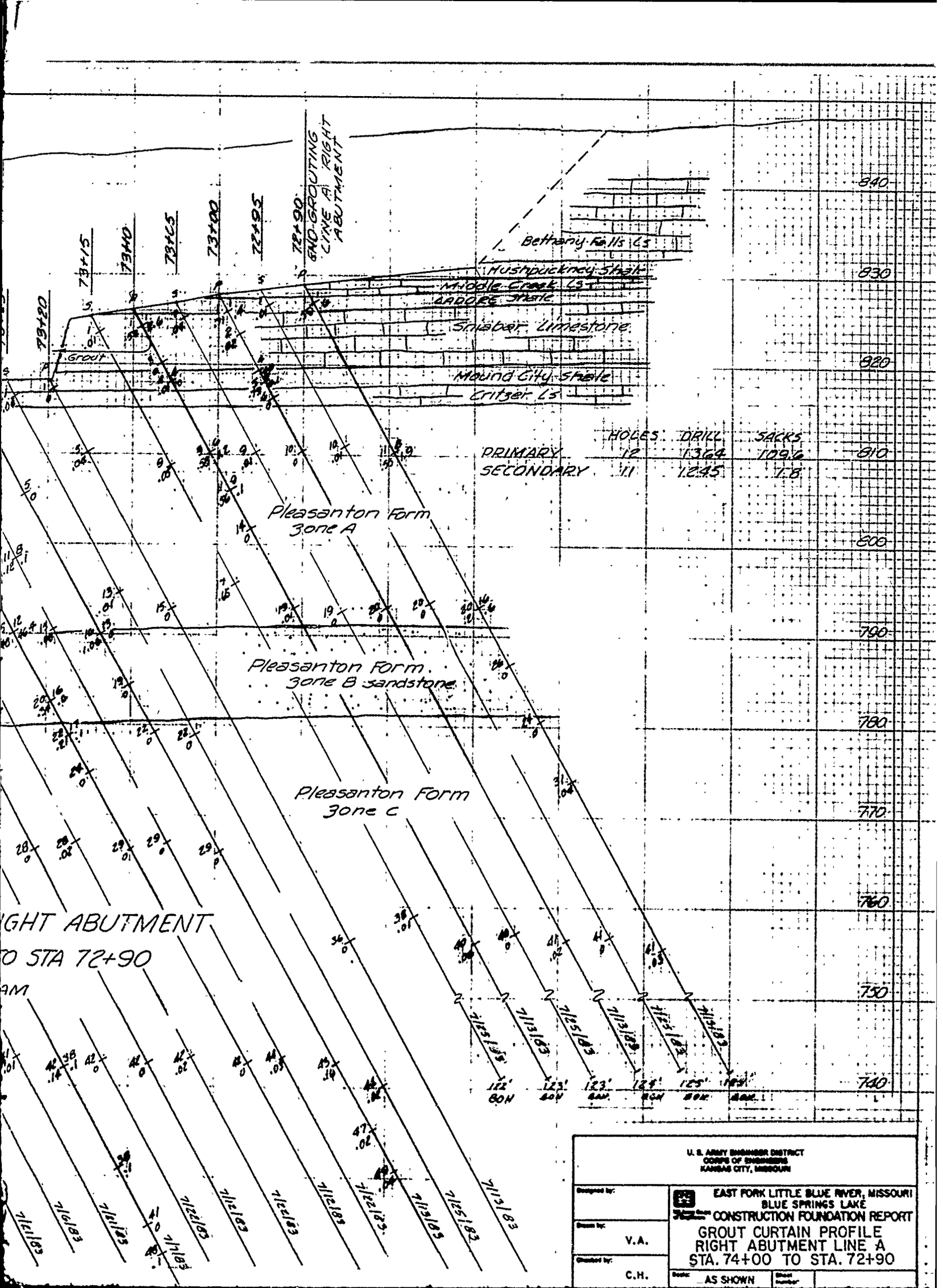
File No.: RBL-2-1282

PLATE NO. 62



BLUE SPRINGS LAKE GROUT CURTAIN PROFILE RIGHT ABUTM

LINE A 5 FEET DOWNSTREAM STA 74+00 TO STA 72+90



U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:

Drawn by: V.A.

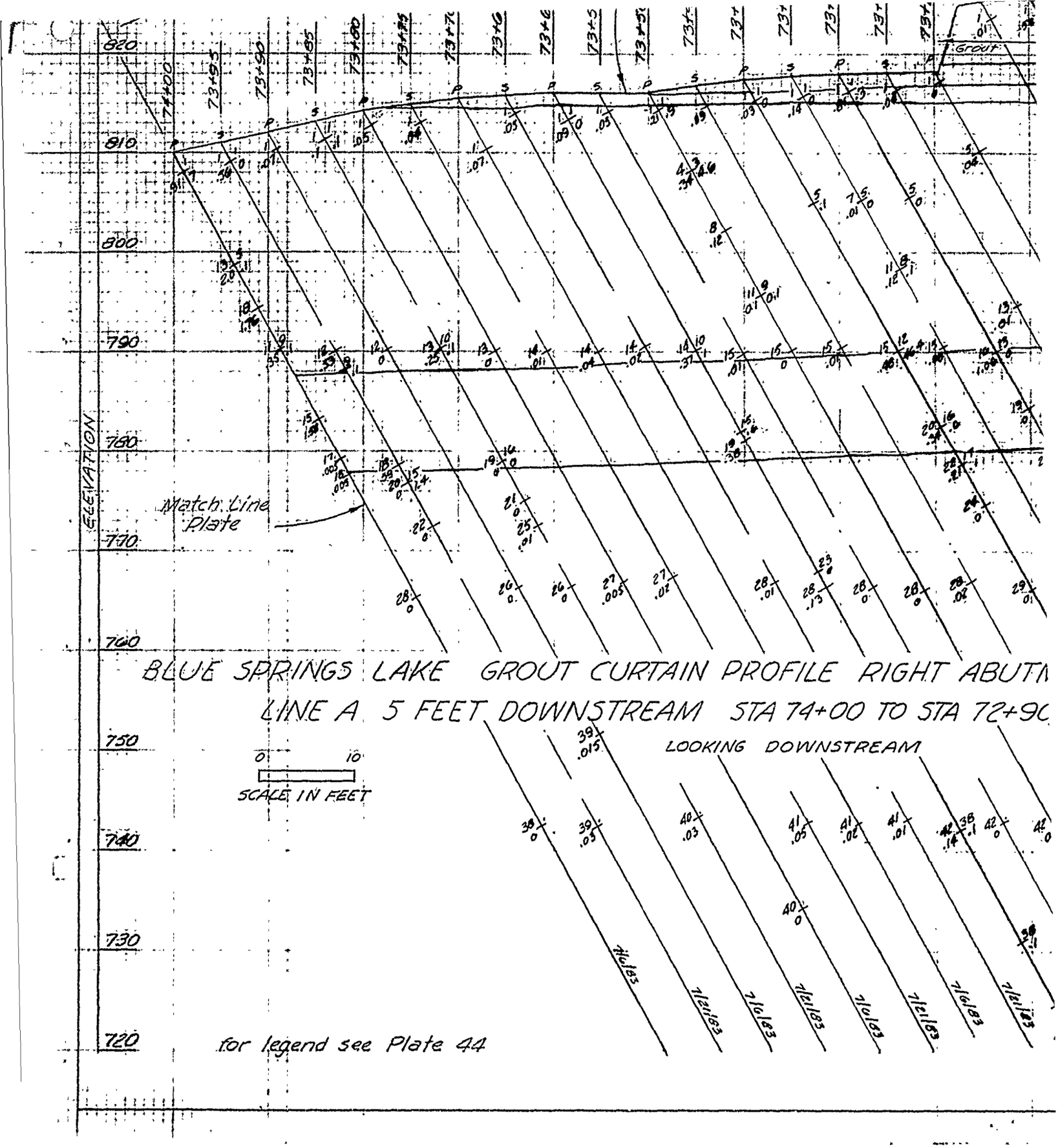
Checked by: C.H.

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

GROUT CURTAIN PROFILE
RIGHT ABUTMENT LINE A
STA. 74+00 TO STA. 72+90

Scale: AS SHOWN

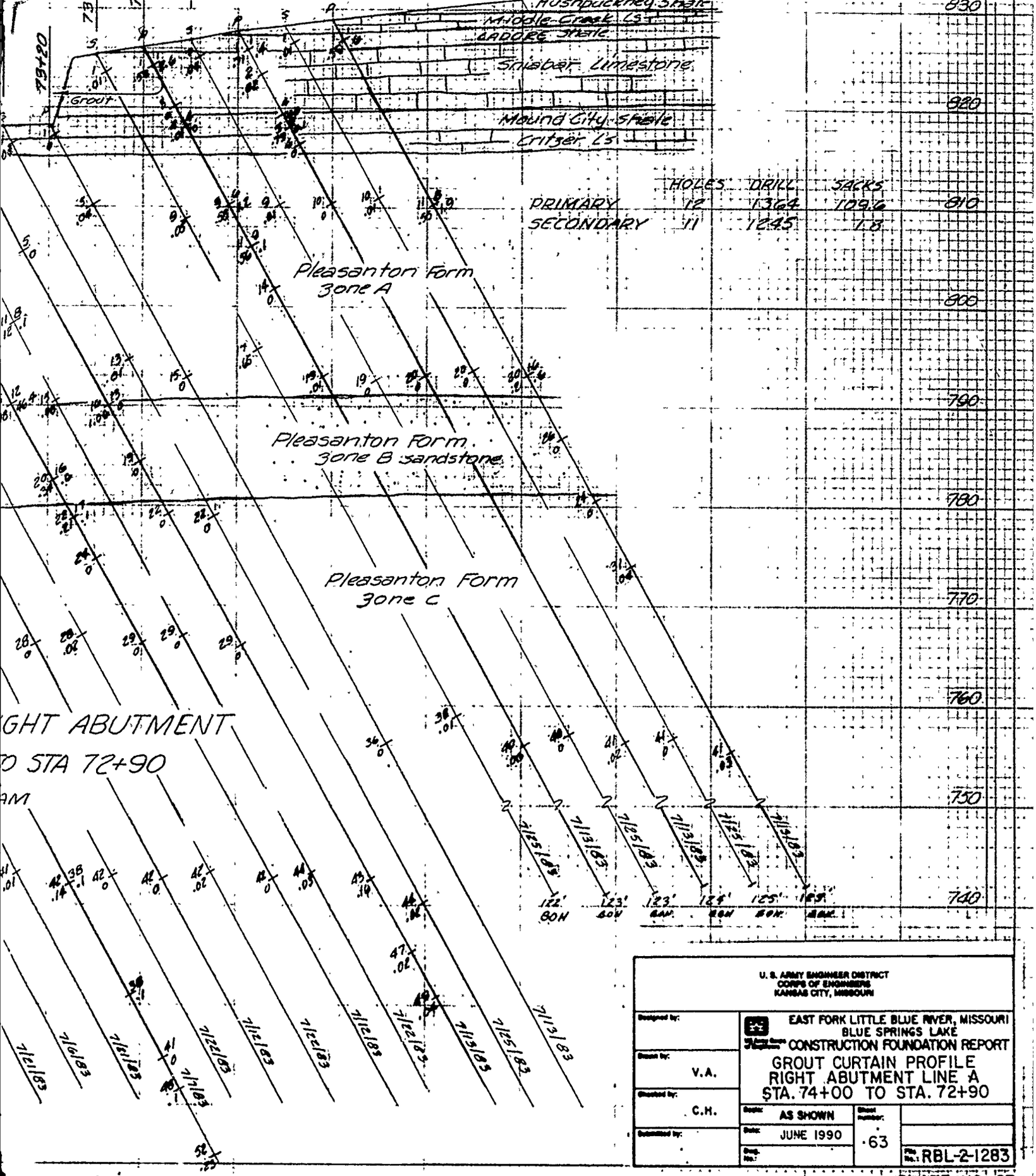
Sheet Number



BLUE SPRINGS LAKE GROUT CURTAIN PROFILE RIGHT ABUTM

LINE A 5 FEET DOWNSTREAM STA 74+00 TO STA 72+90

for legend see Plate 44



U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

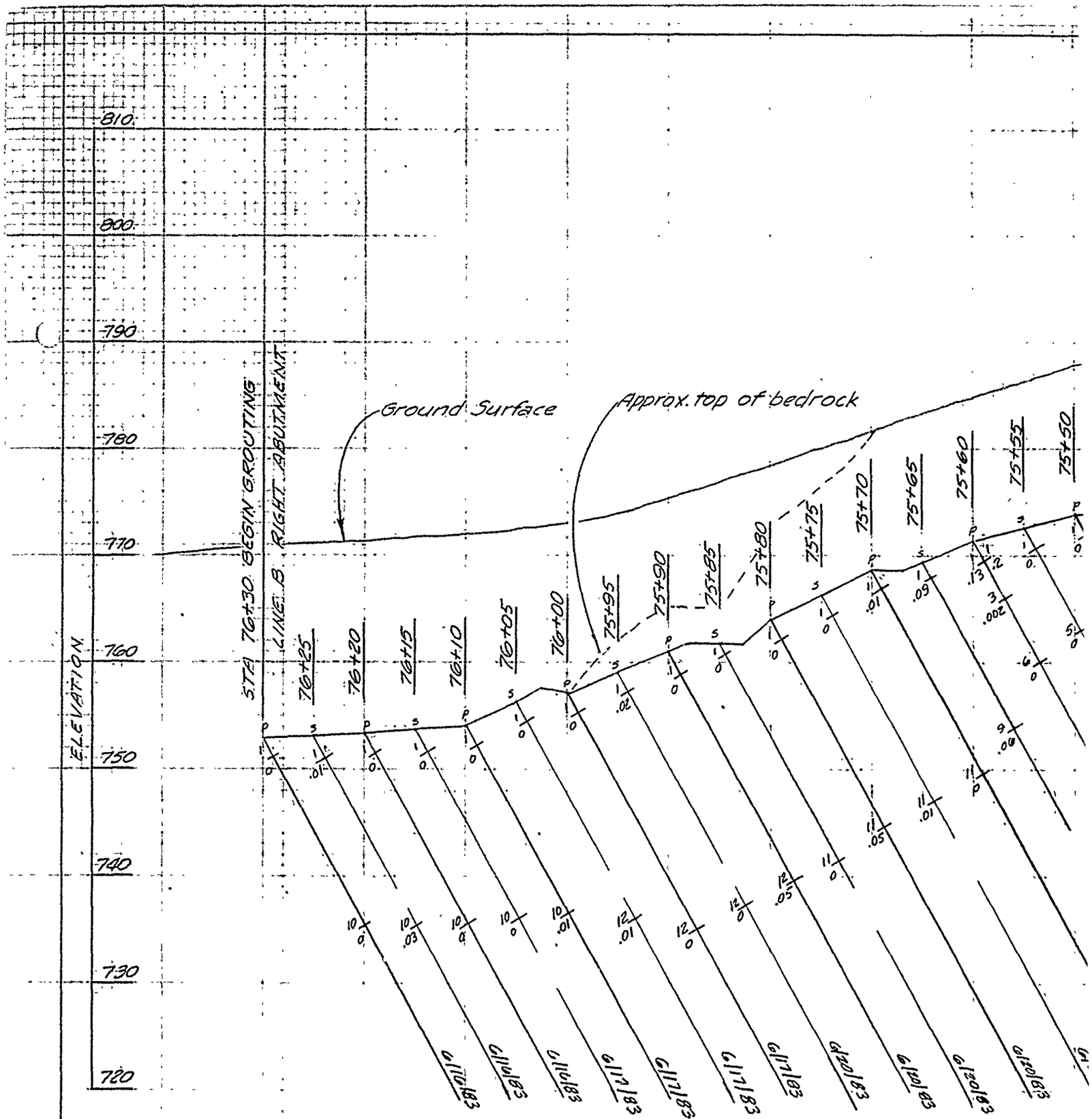
EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

GROUT CURTAIN PROFILE RIGHT ABUTMENT LINE A STA. 74+00 TO STA. 72+90

Designed by:
Drawn by: V.A.
Checked by: C.H.
Submitted by:

Scale: AS SHOWN
Date: JUNE 1990
Drwg. No.:
Sheet number: 63
File No.: RBL-2-1283

PLATE NO. 63



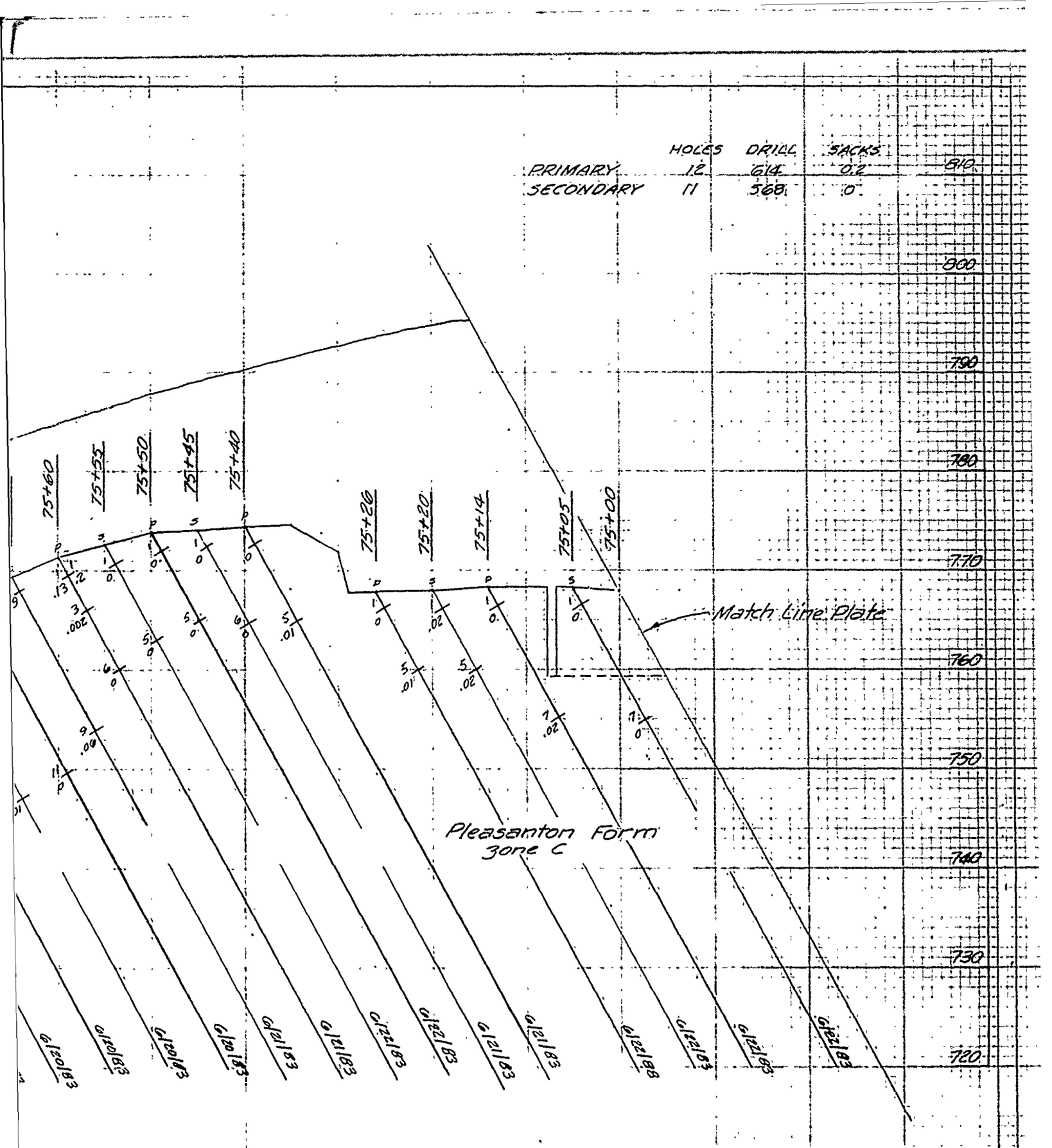
BLUE SPRINGS LAKE GROUT CURTAIN PRO

LINE B 5 FEET UPSTREAM STA

LOOKING DOWNSTREAM

0 10

SCALE IN FEET



RTAIN PROFILE RIGHT ABUTMENT
AM STA 76+30 TO STA 75+00

for legend see Plate 44

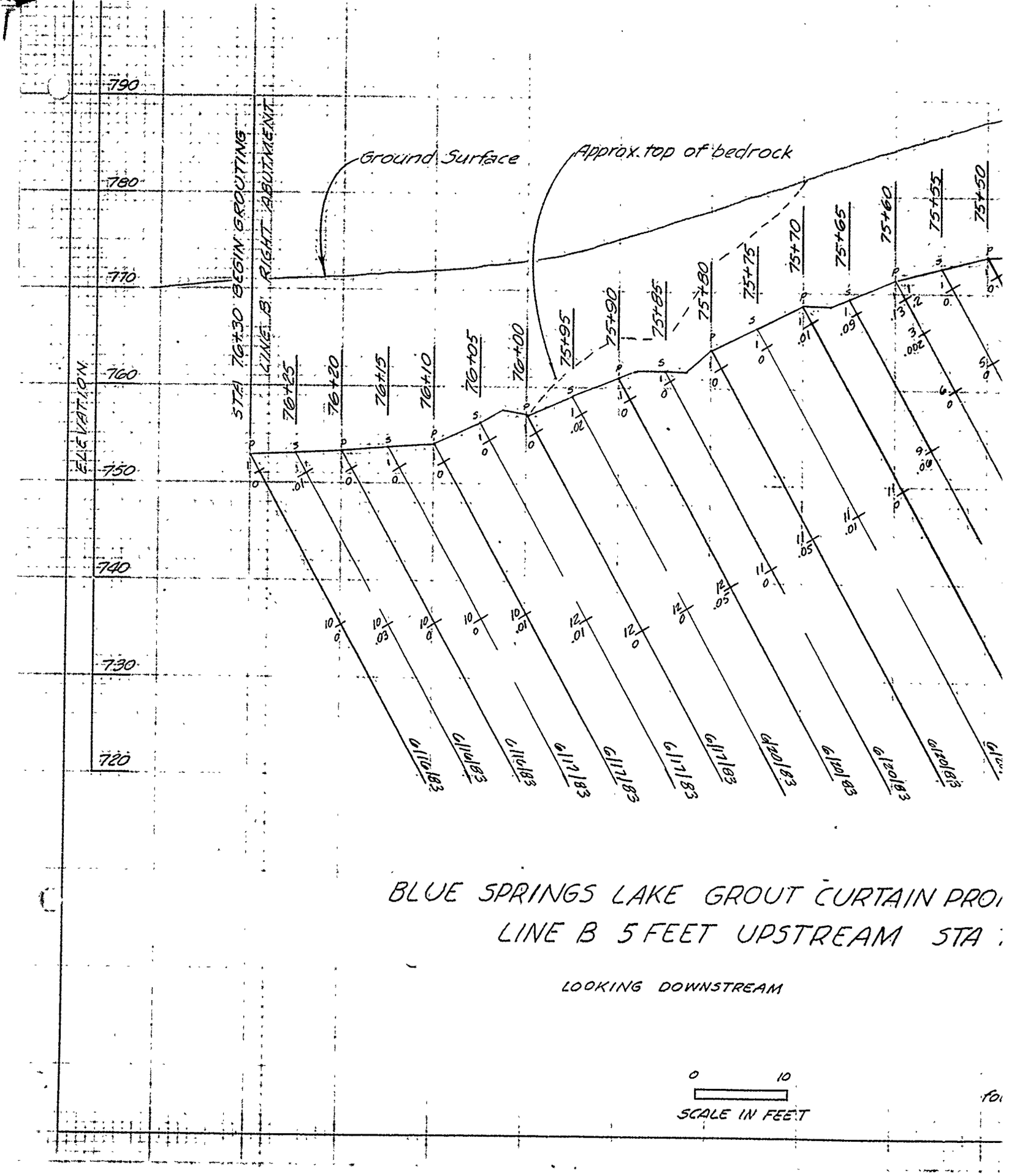
U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by: V.A.
Checked by: C.H.
Submitted by:

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

GROUT CURTAIN PROFILE
RIGHT ABUTMENT LINE B
STA. 76+30 TO STA. 75+00

Scale: AS SHOWN
Date: JUNE 1990
Sheet number: 64

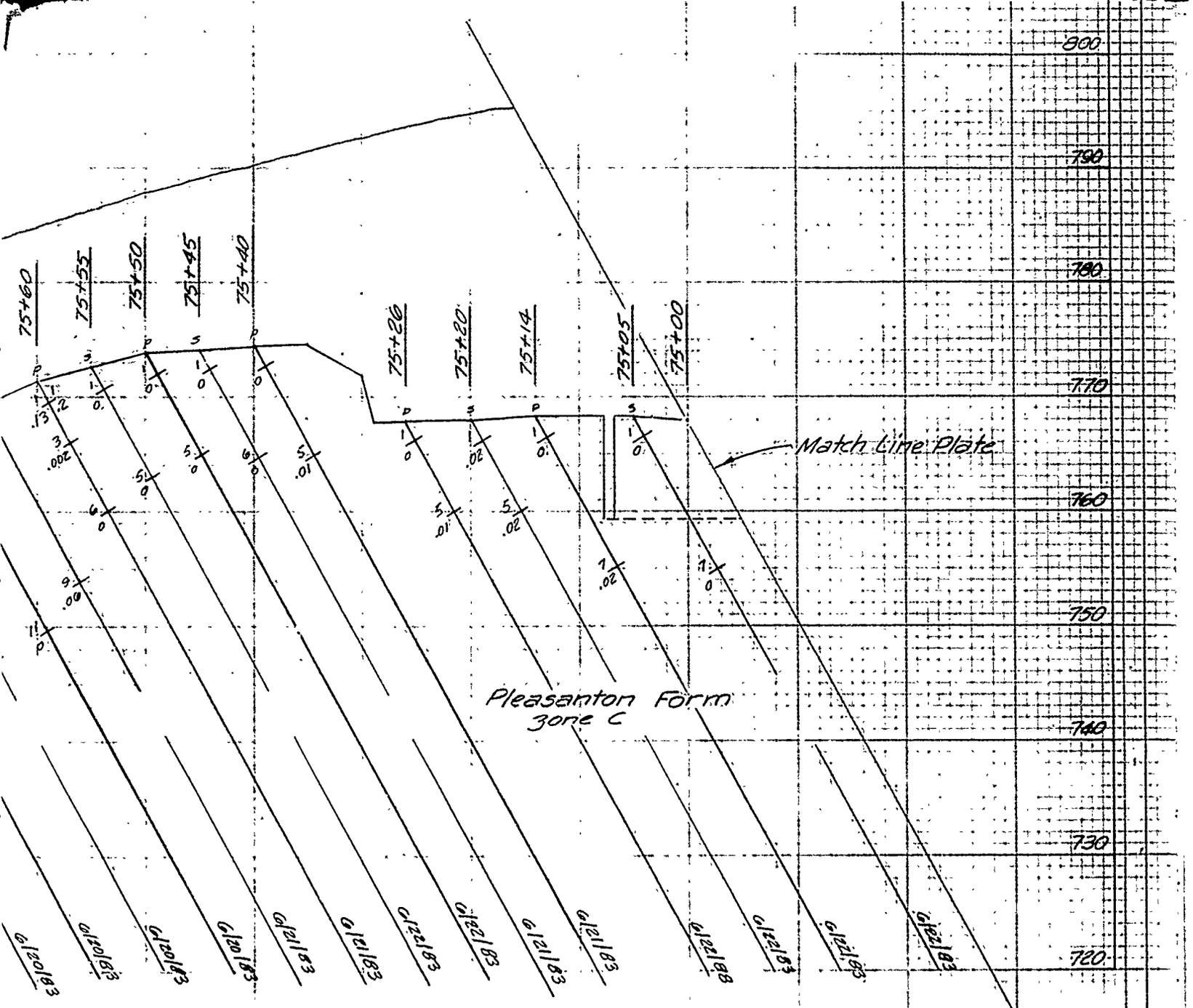


BLUE SPRINGS LAKE GROUT CURTAIN PRO
LINE B 5 FEET UPSTREAM STA

LOOKING DOWNSTREAM

0 10

SCALE IN FEET



RTAIN PROFILE RIGHT ABUTMENT
AM STA 76+30 TO STA 75+00

for legend see Plate 44

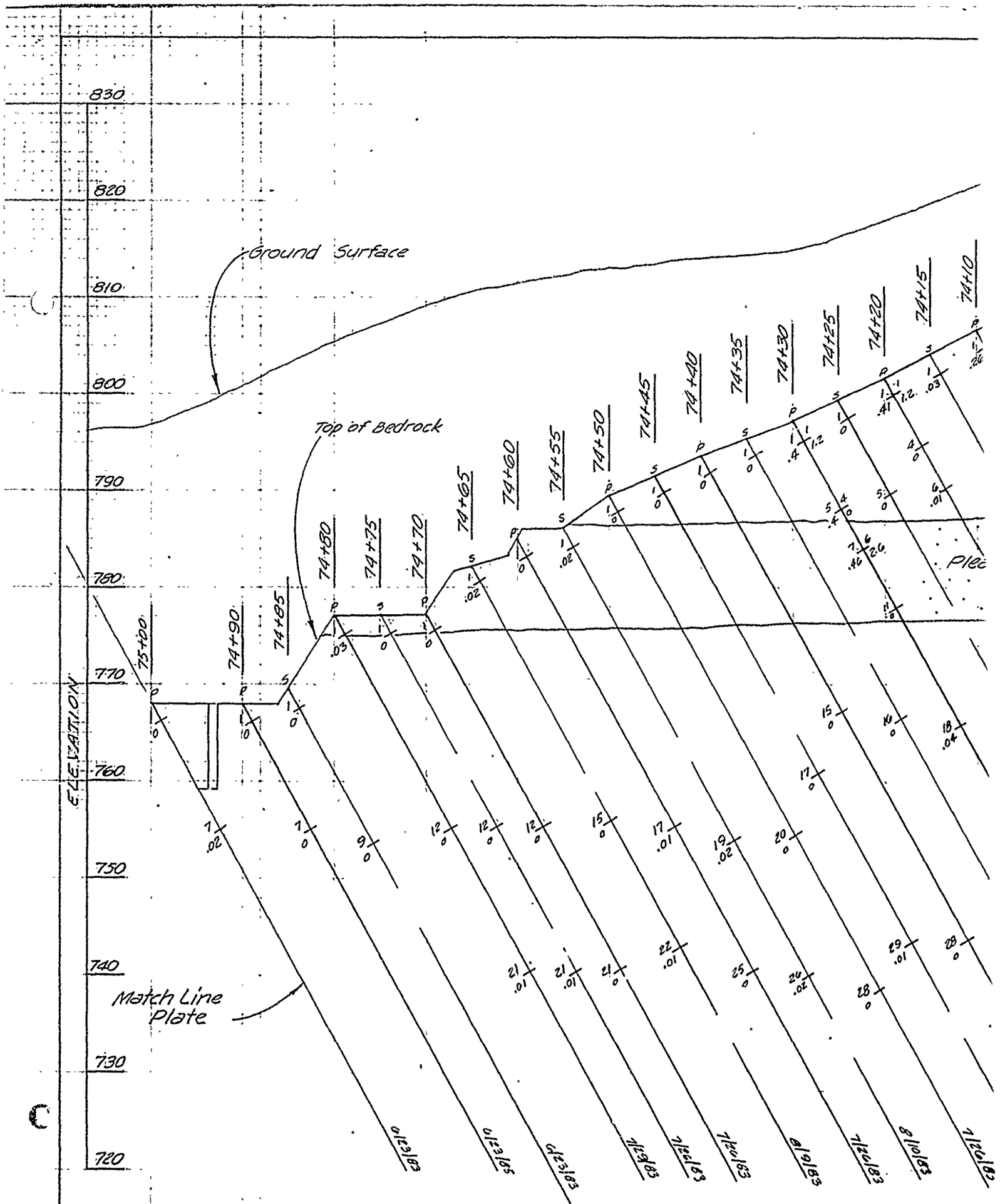
U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

GROUT CURTAIN PROFILE
RIGHT ABUTMENT LINE B.
STA. 76+30 TO STA. 75+00

Designed by:	
Drawn by:	V.A.
Checked by:	C.H.
Submitted by:	
Scale:	AS SHOWN
Date:	JUNE 1990
Sheet Number:	64
File No.:	RBL-2-1284

PLATE NO. 64

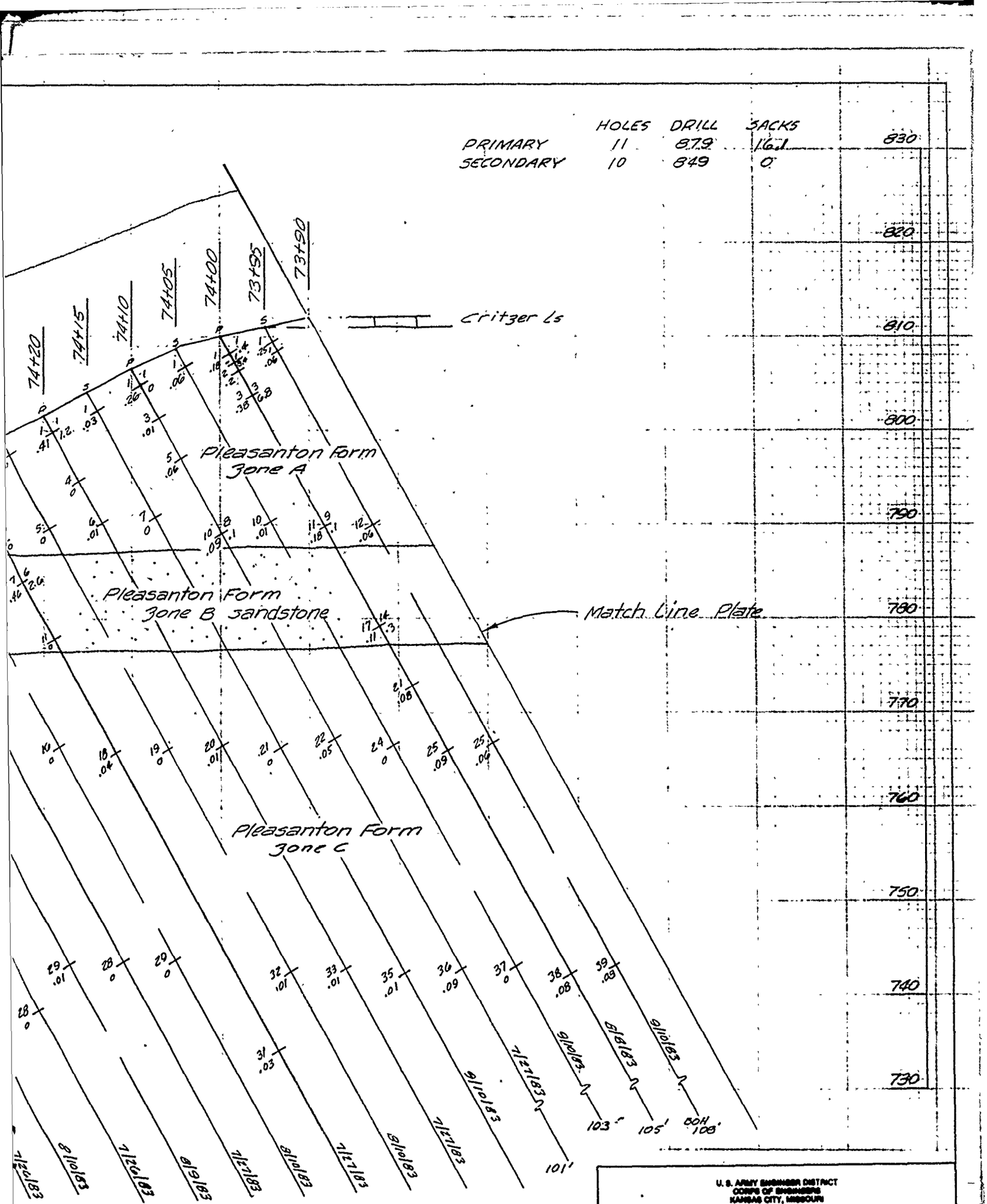


BLUE SPRINGS LAKE GROUT CURTAIN PROFILE R

LINE B 5 FEET UPSTREAM STA 75+00

LOOKING DOWNSTREAM

0 10



PROFILE RIGHT ABUTMENT
STA 75+00 TO STA 73+90

0 10

for legend see Plate 44

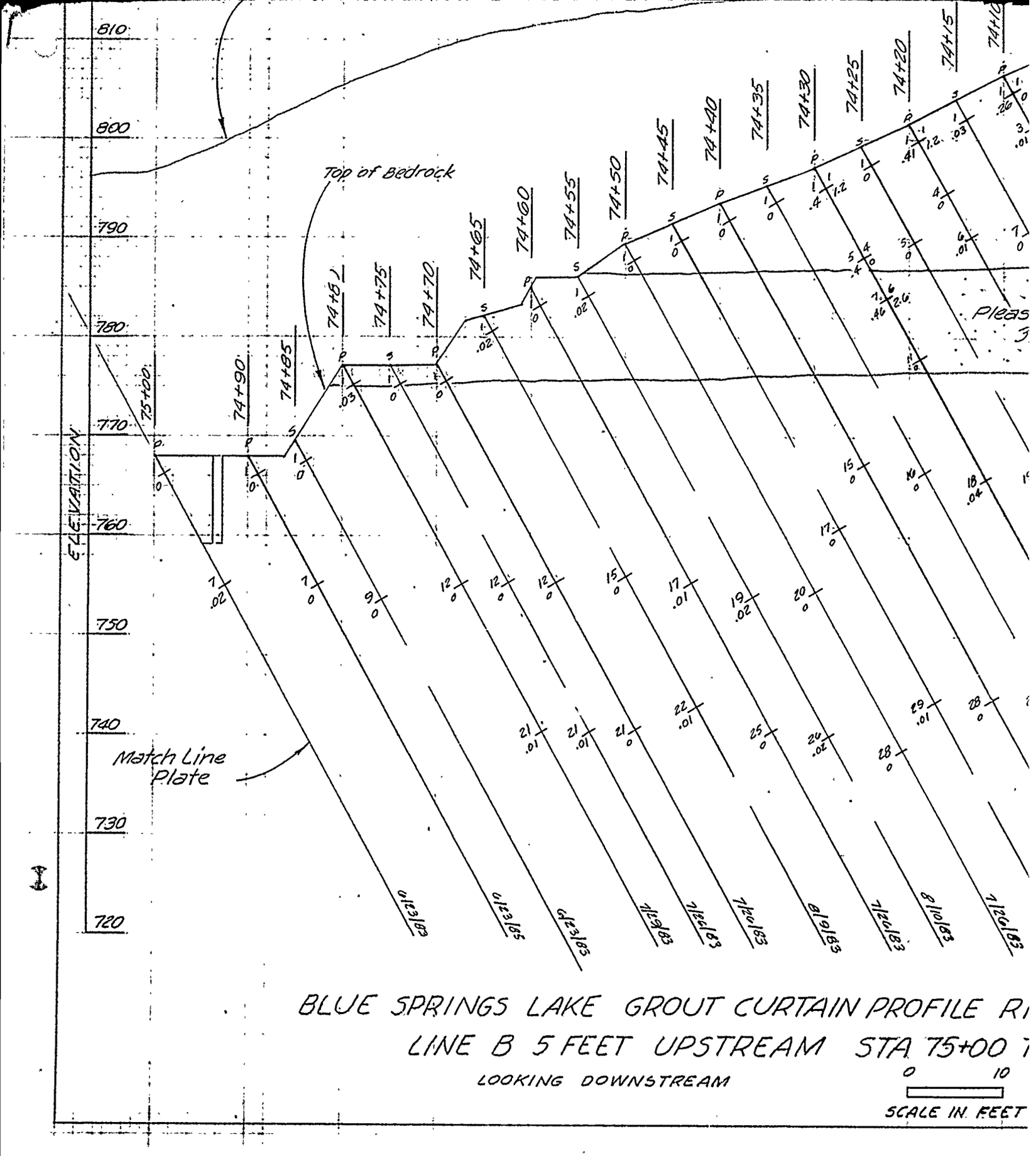
SCALE IN FEET

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by: V.A.
Checked by: C.H.
Submitted by:

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT
GROUT CURTAIN PROFILE
RIGHT ABUTMENT LINE B
STA. 75+00 TO STA. 73+90

Scale: AS SHOWN
Date: JUNE 1990
Sheet Number: 65



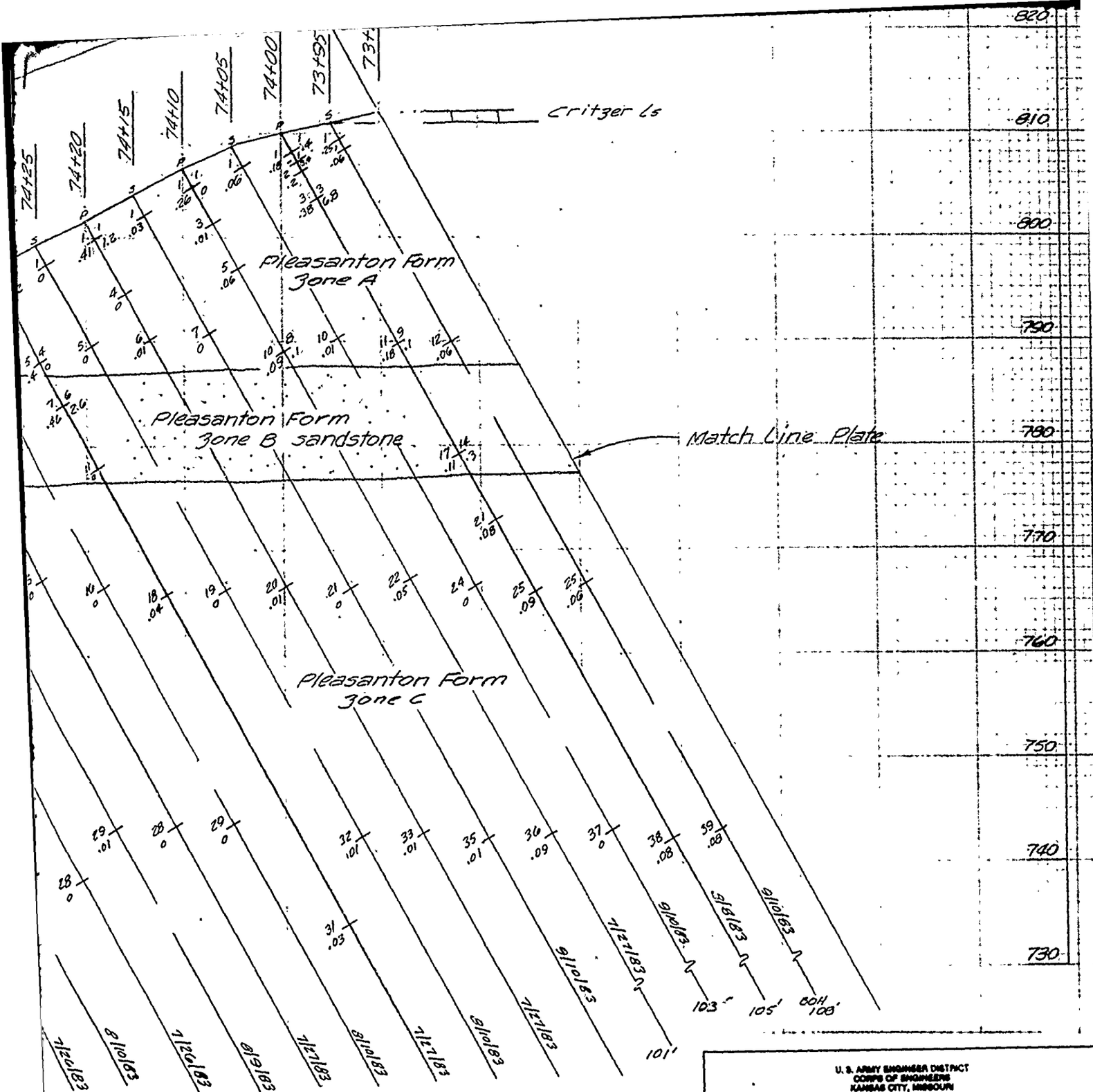
BLUE SPRINGS LAKE GROUT CURTAIN PROFILE R

LINE B 5 FEET UPSTREAM STA 75+00

LOOKING DOWNSTREAM

0 10

SCALE IN FEET



PROFILE RIGHT ABUTMENT
STA 75+00 TO STA 73+90

0 10

SCALE IN FEET

for legend see Plate 44

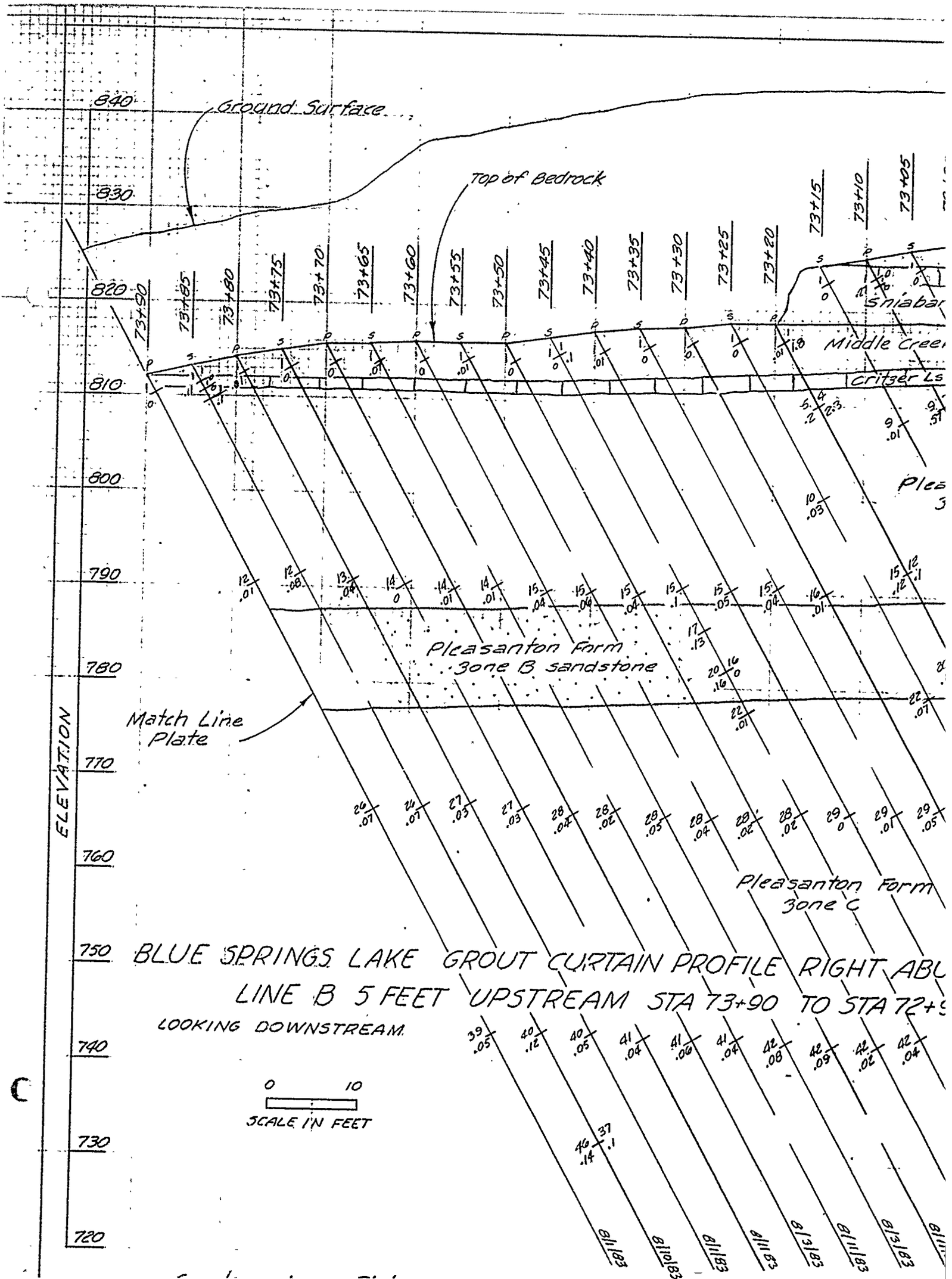
U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

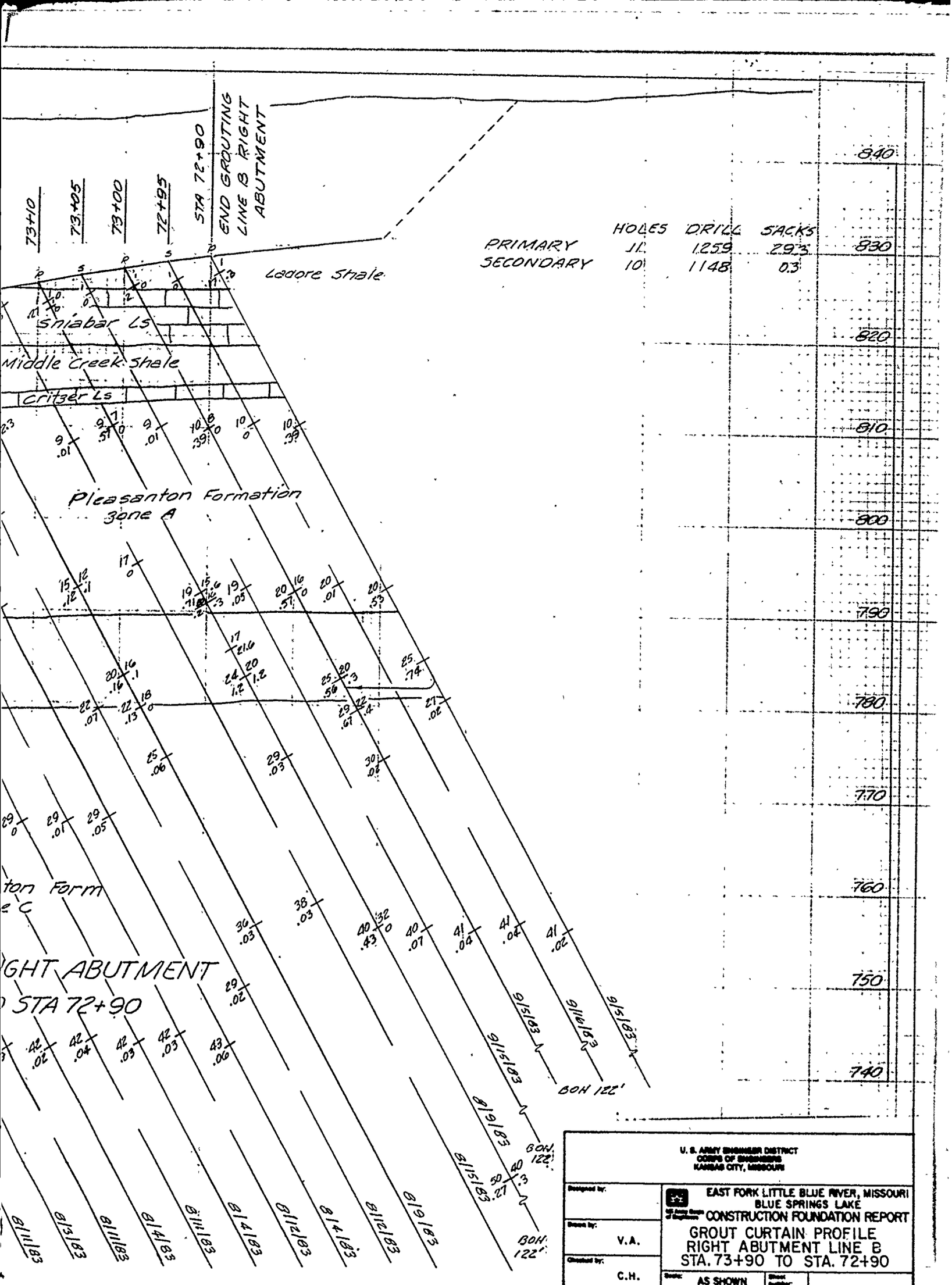
EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

GROUT CURTAIN PROFILE
RIGHT ABUTMENT LINE B
STA. 75+00 TO STA. 73+90

Designed by:	
Drawn by:	V.A.
Checked by:	C.H.
Submitted by:	
Scale:	AS SHOWN
Date:	JUNE 1990
Drawing No.:	
Sheet number:	65
File No.:	RBL-2-1285

PLATE NO. 65


Ground Surface
Top of Bedrock
840
830
820
810
800
790
780
770
760
750
740
730
720
ELEVATION
73+90
73+85
73+80
73+75
73+70
73+65
73+60
73+55
73+50
73+45
73+40
73+35
73+30
73+25
73+20
73+15
73+10
73+05
Sniabar
Middle Creek
Critzer Ls
Pleasanton Form
Zone B sandstone
Match Line
Plate
Pleasanton Form
Zone C
BLUE SPRINGS LAKE GROUT CURTAIN PROFILE RIGHT ABU
LINE B 5 FEET UPSTREAM STA 73+90 TO STA 72+9
LOOKING DOWNSTREAM
0
10
SCALE IN FEET
8/11/83
8/10/83
8/11/83
8/11/83
8/13/83
8/11/83
8/13/83



U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:

Drawn by: V.A.

Checked by: C.H.

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

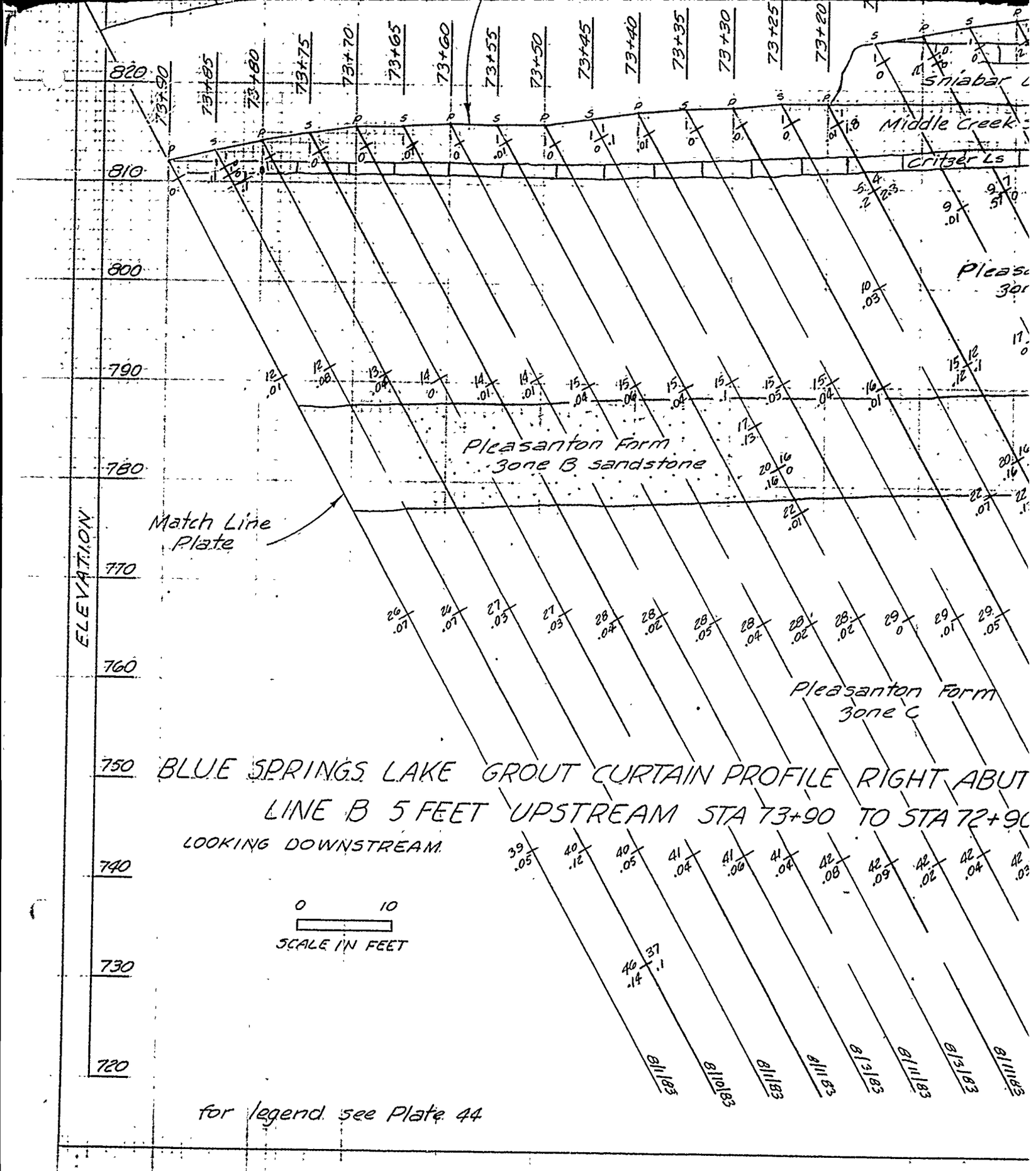
GROUT CURTAIN PROFILE RIGHT ABUTMENT LINE B STA. 73+90 TO STA. 72+90

Scale: AS SHOWN

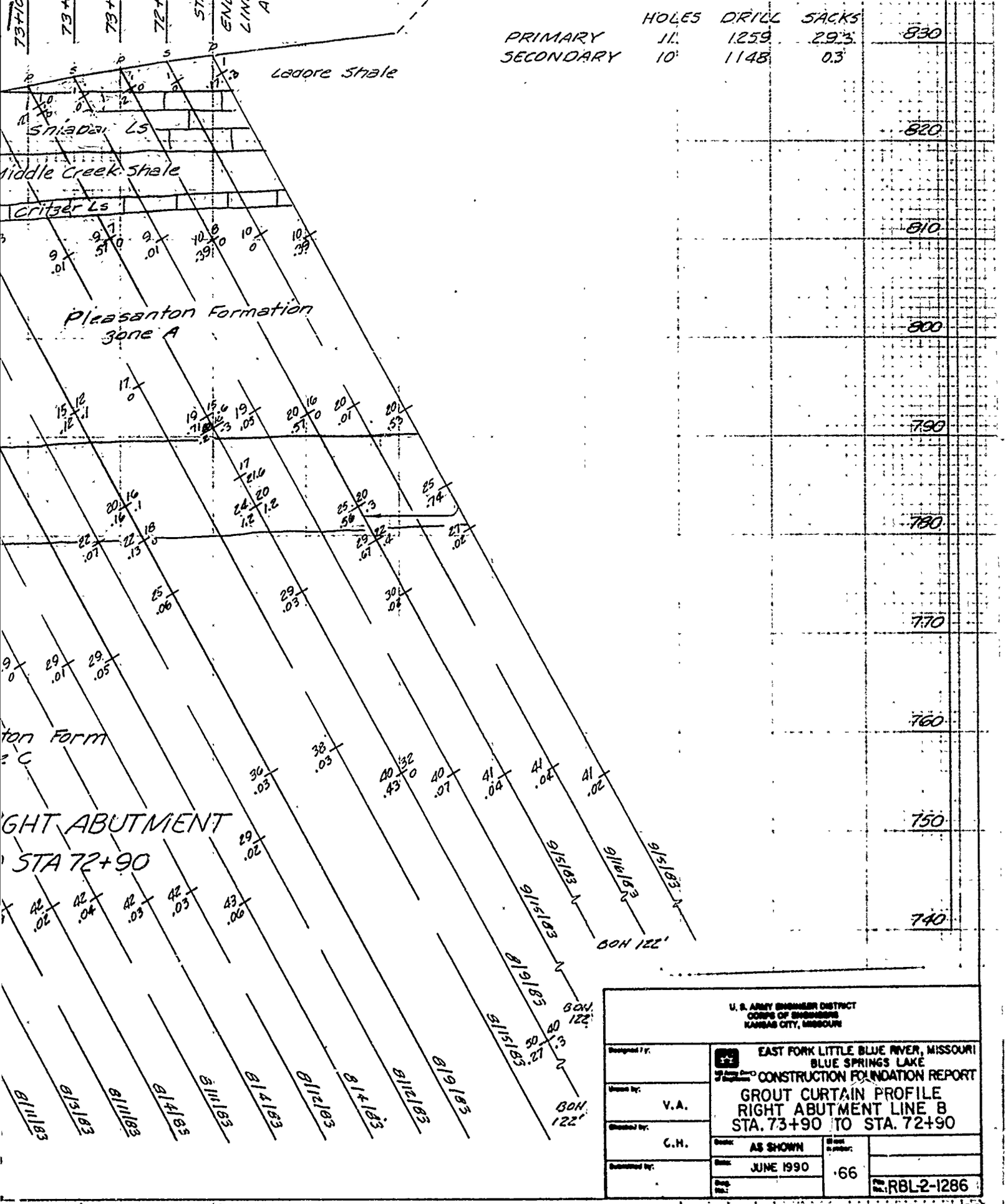
Sheet Number:

Date:

Submitted by:



for legend see Plate 44



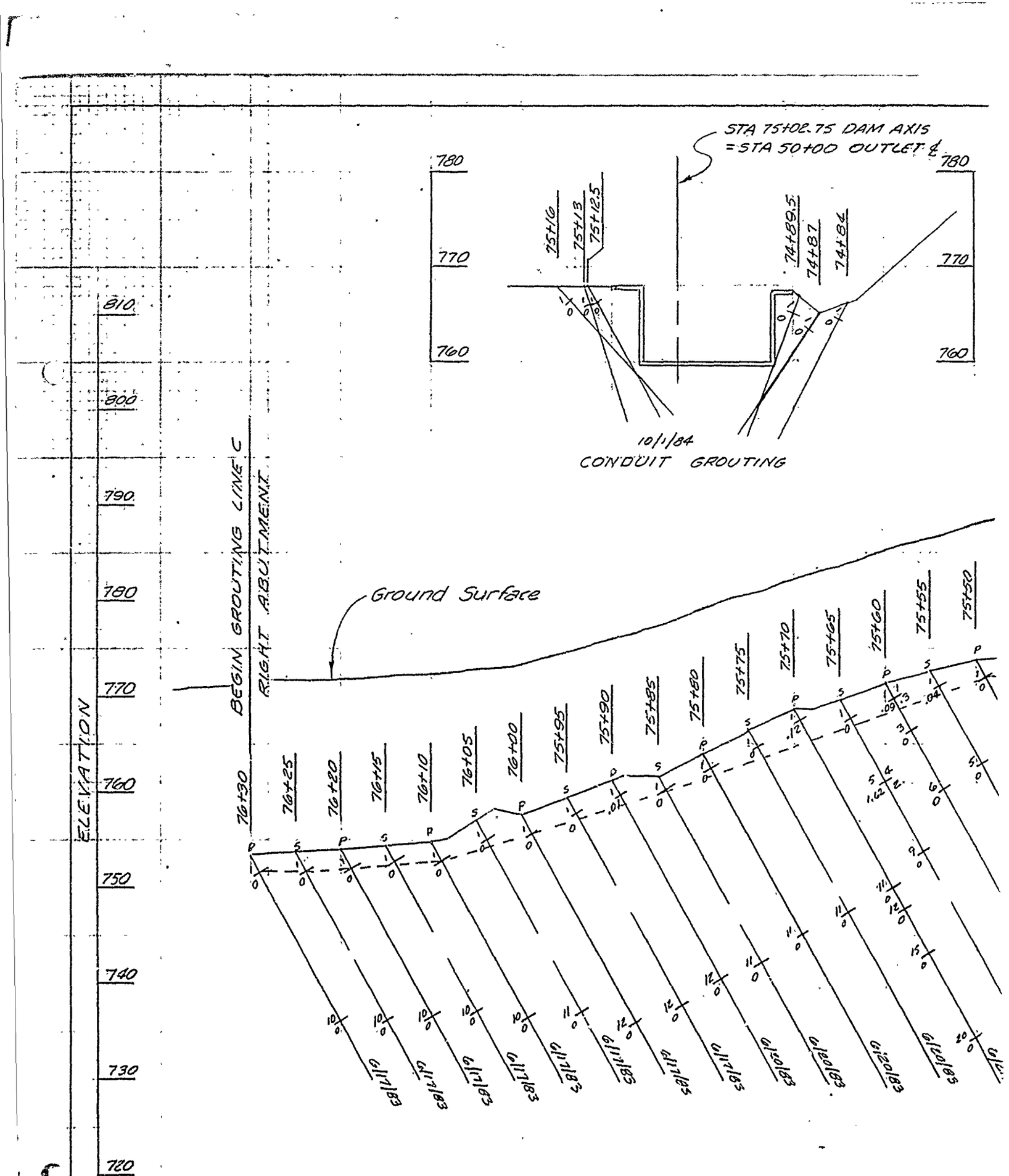
U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

GROUT CURTAIN PROFILE
RIGHT ABUTMENT LINE B
STA. 73+90 TO STA. 72+90

Designed by:	
Drawn by:	V.A.
Checked by:	C.H.
Submitted by:	
Scale:	AS SHOWN
Date:	JUNE 1990
Drawing No.:	
Sheet number:	66
File No.:	RBL-2-1286

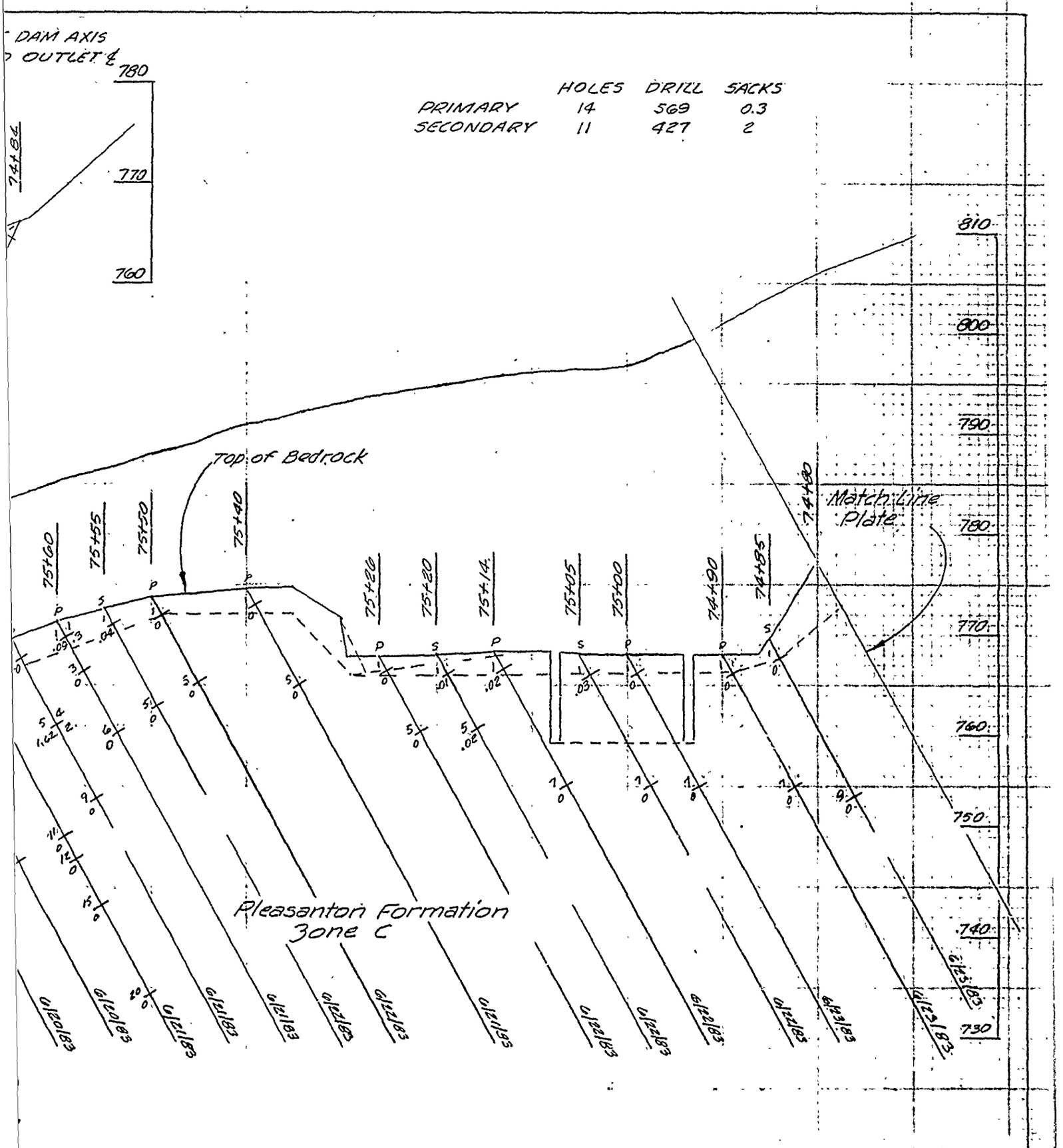
PLATE NO. 66



BLUE SPRINGS LAKE GROUT CURTAIN PROFILE

LINE C ON DAM AXIS STA 76+30

LOOKING DOWNSTREAM



N PROFILE RIGHT ABUTMENT

FA 76+30 TO STA 74+80

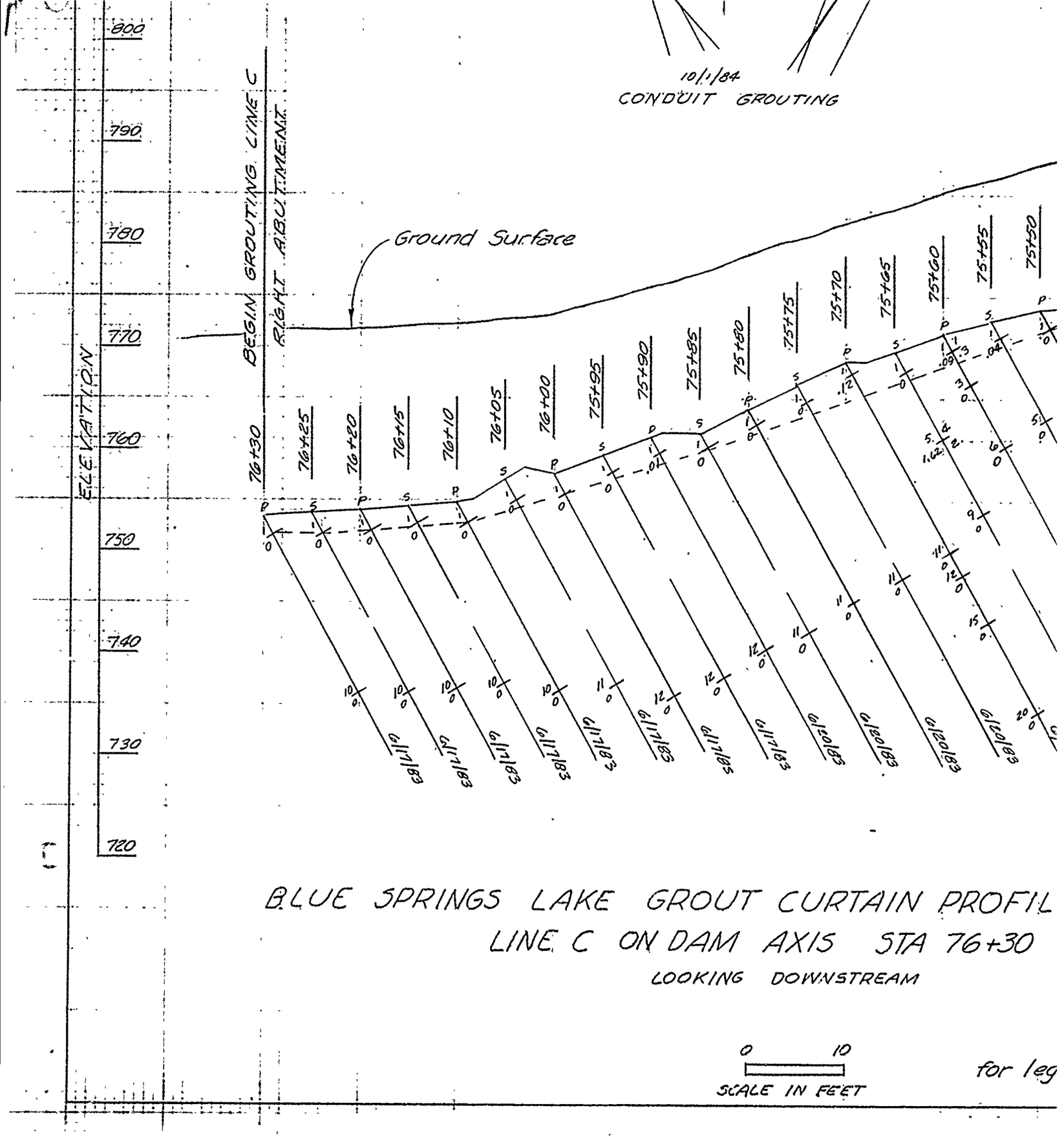
U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:

Drawn by: V. A.

Checked by:

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT
GROUT CURTAIN PROFILE
RIGHT ABUTMENT LINE C
STA. 76+30 TO STA. 74+80



BLUE SPRINGS LAKE GROUT CURTAIN PROFIL

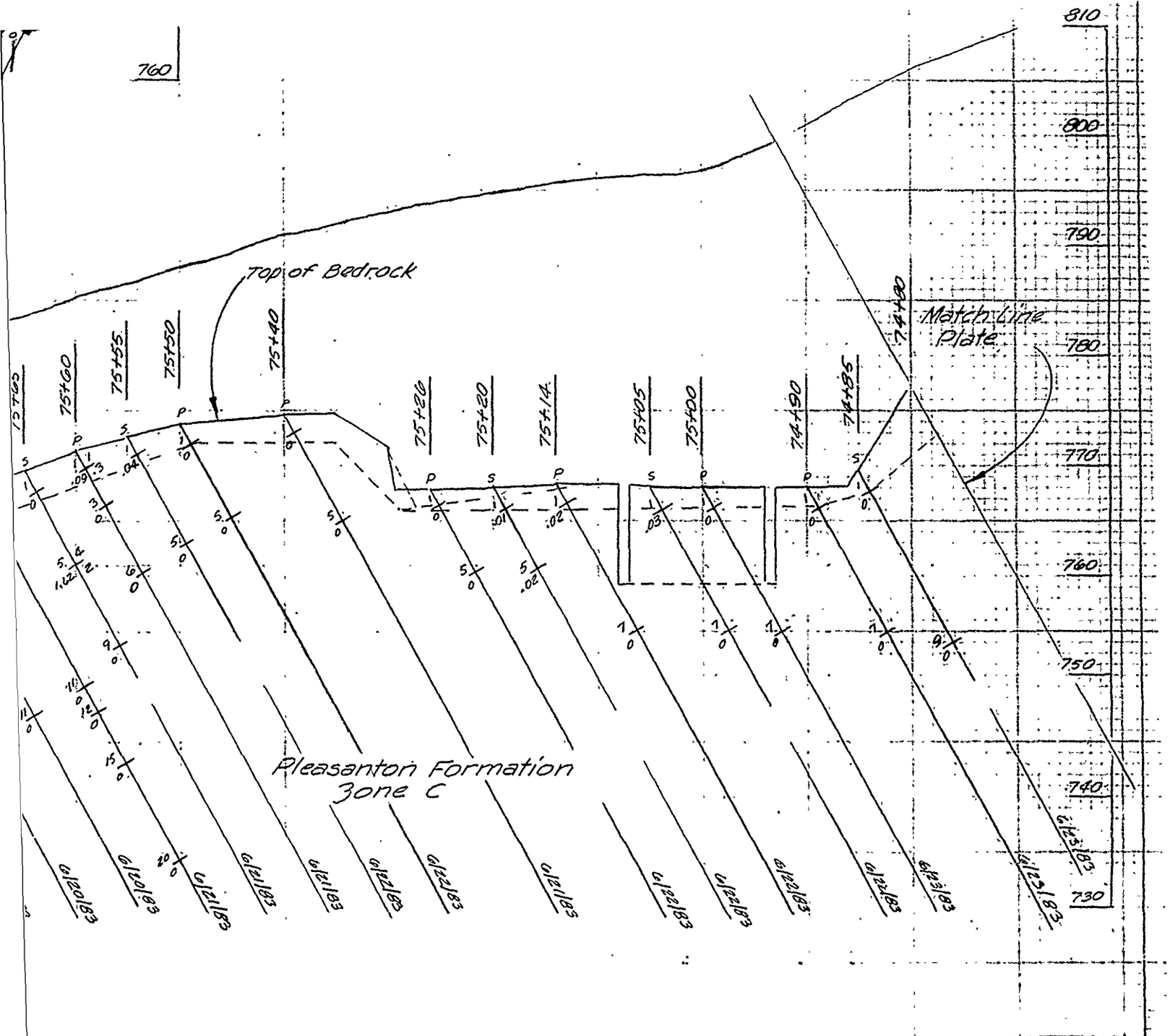
LINE C ON DAM AXIS STA 76+30

LOOKING DOWNSTREAM

0 10

SCALE IN FEET

for leg



N PROFILE RIGHT ABUTMENT
TA 76+30 TO STA 74+80
IM

for legend see Plate 44

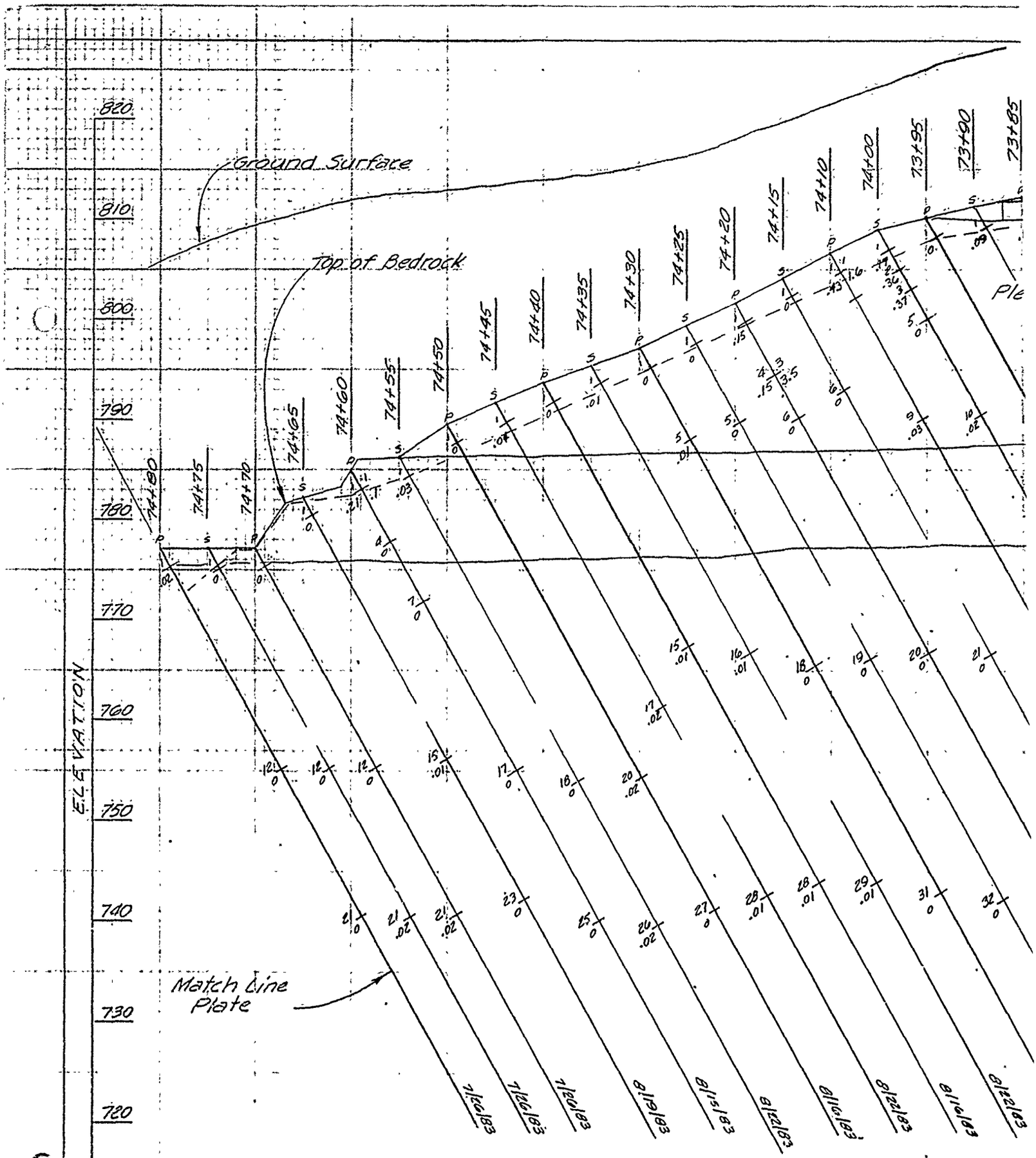
U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

GROUT CURTAIN PROFILE
RIGHT ABUTMENT LINE C
STA. 76+30 TO STA. 74+80

Designed by:	
Drawn by:	V.A.
Checked by:	C.H.
Submitted by:	
Scale:	AS SHOWN
Date:	JUNE 1990
Drawing No.:	67
File No.:	RBL-2-1287

PLATE NO. 67

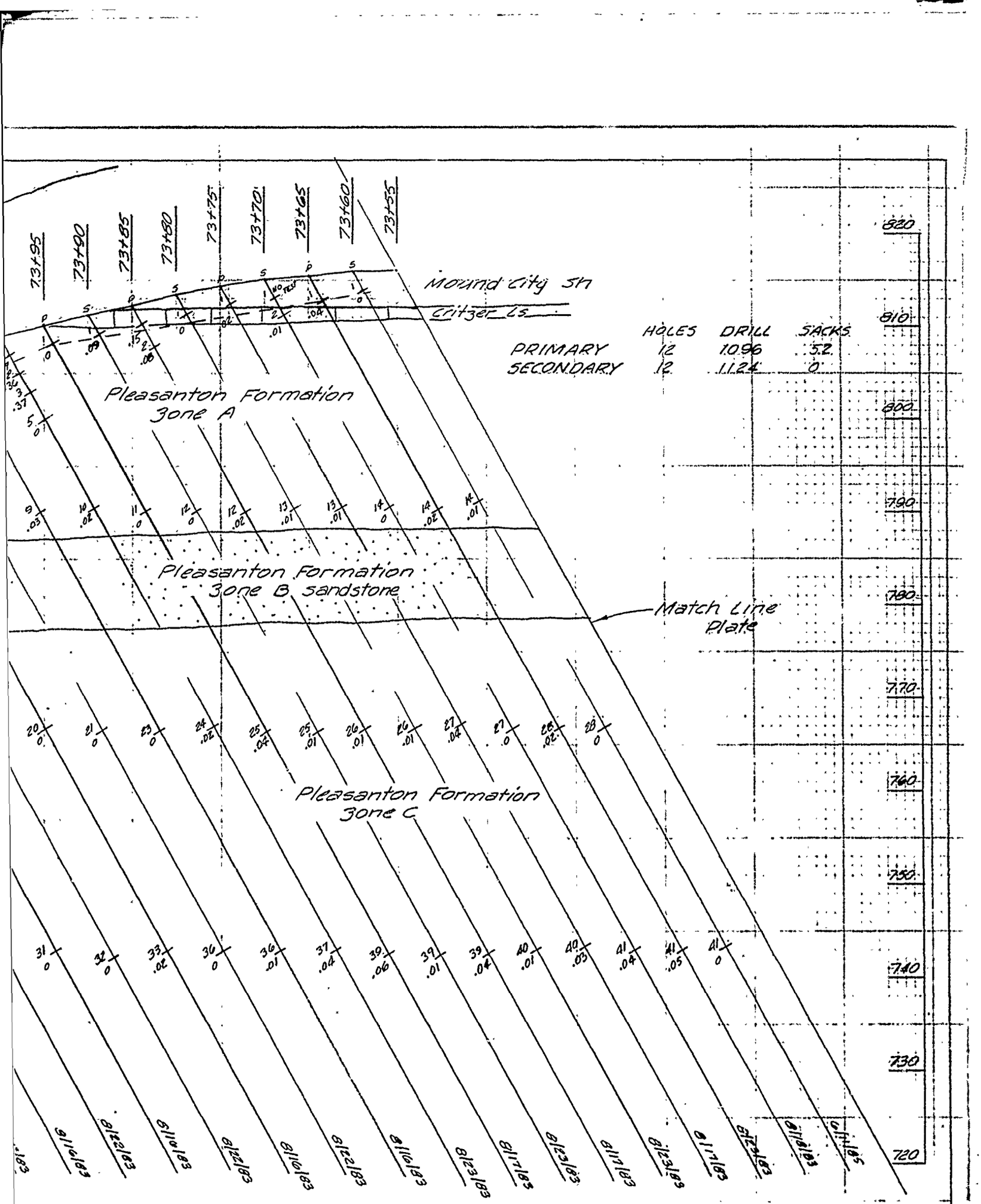


BLUE SPRINGS LAKE GROUT CURTAIN PROFIL

LINE C ON DAM AXIS STA 74+80

LOOKING DOWNSTREAM

0 10



1 PROFILE RIGHT ABUTMENT

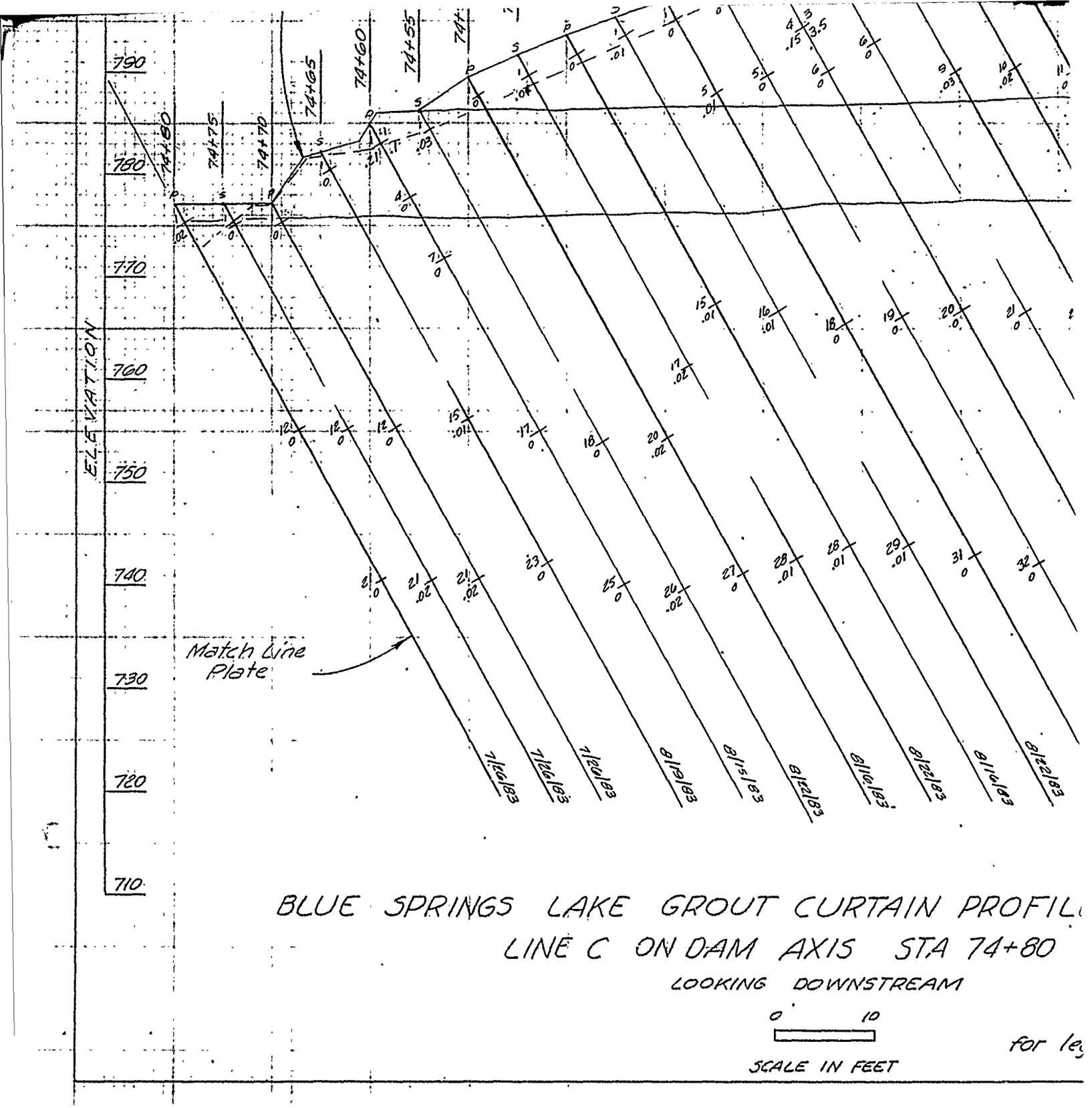
4 74+80 TO STA 73+55

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:

Drawn by:

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT
GROUT CURTAIN PROFILE



BLUE SPRINGS LAKE GROUT CURTAIN PROFIL

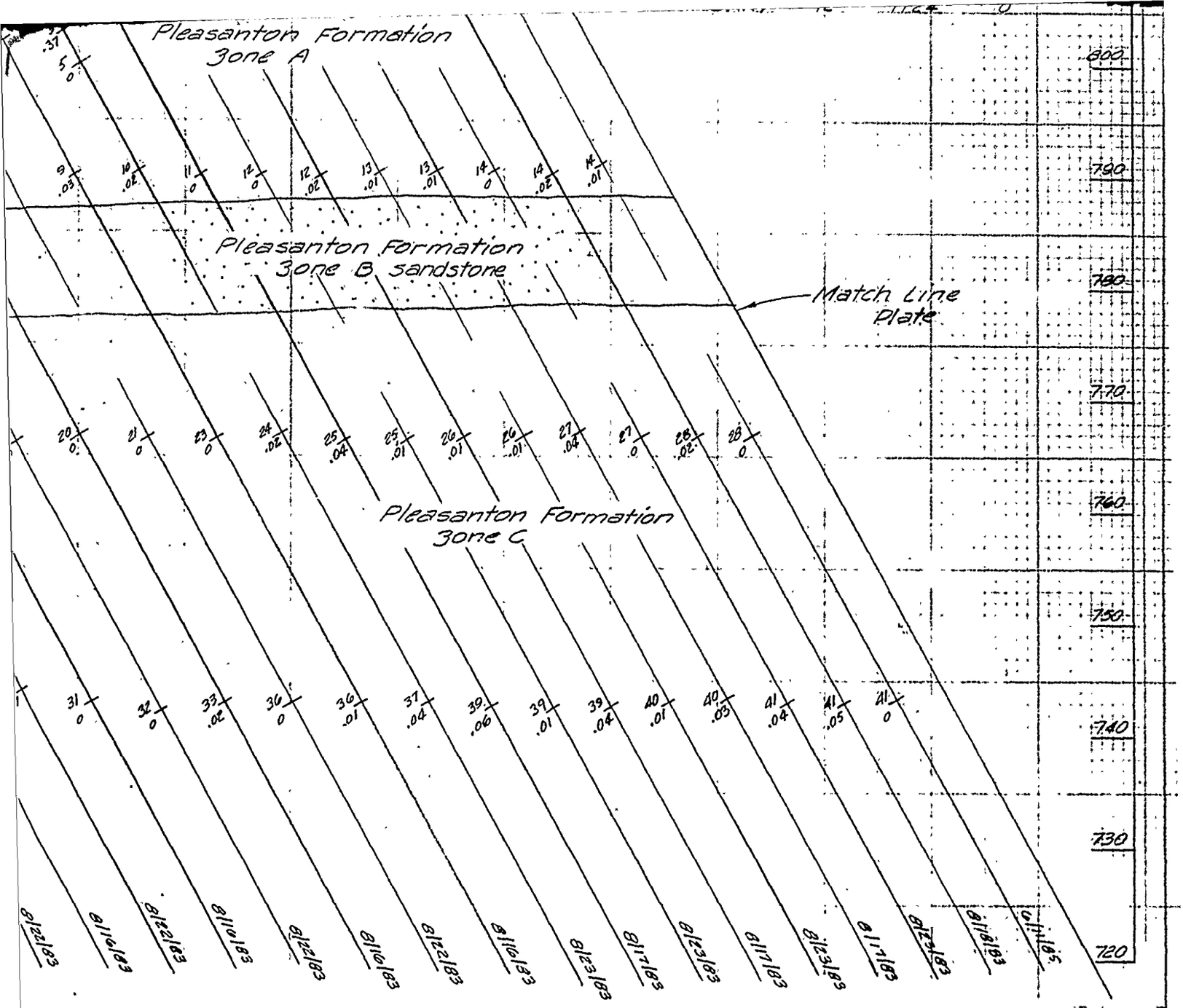
LINE C ON DAM AXIS STA 74+80

LOOKING DOWNSTREAM

0 10

SCALE IN FEET

for le



'N PROFILE RIGHT ABUTMENT
TA 74+80 TO STA 73+55
:AM

for legend see Plate 44

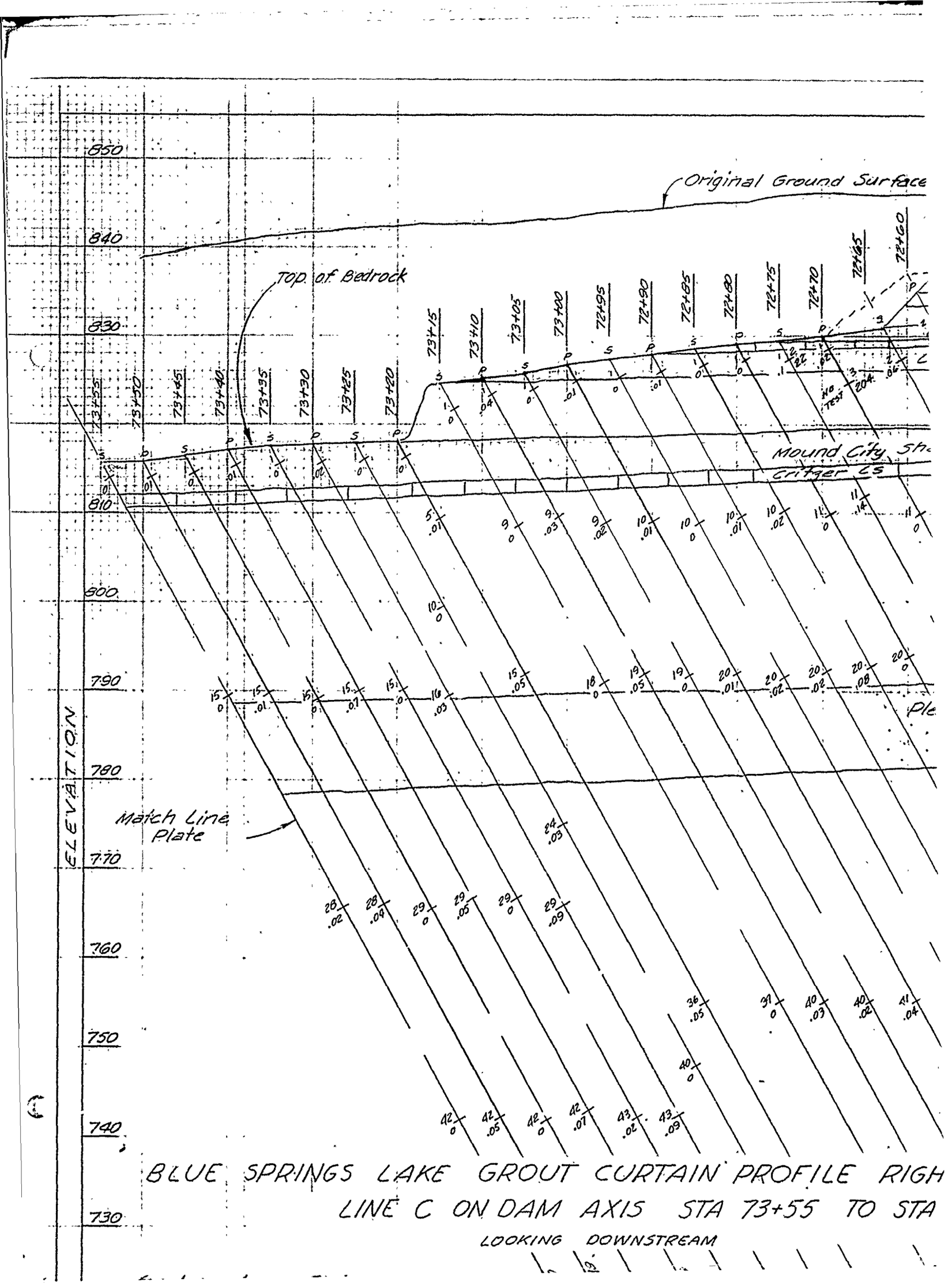
U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

GROUT CURTAIN PROFILE
RIGHT ABUTMENT LINE C
STA. 74+80 TO STA. 73+55

Designed by:	
Drawn by:	V.A.
Checked by:	C.H.
Submitted by:	
Date:	AS SHOWN
	JUNE 1990
Sheet number:	68
File No.:	RBL-2-1288

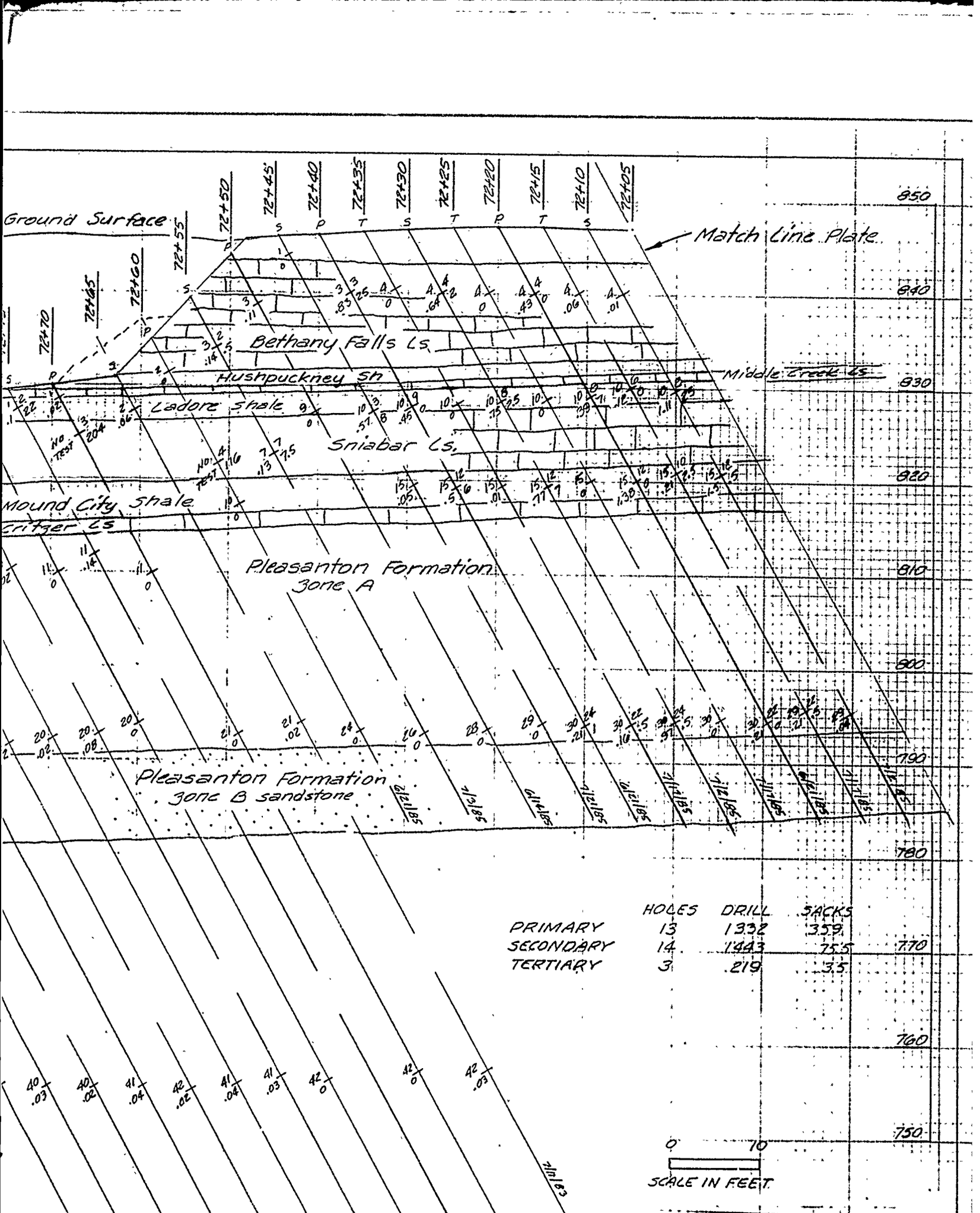
PLATE NO. 68



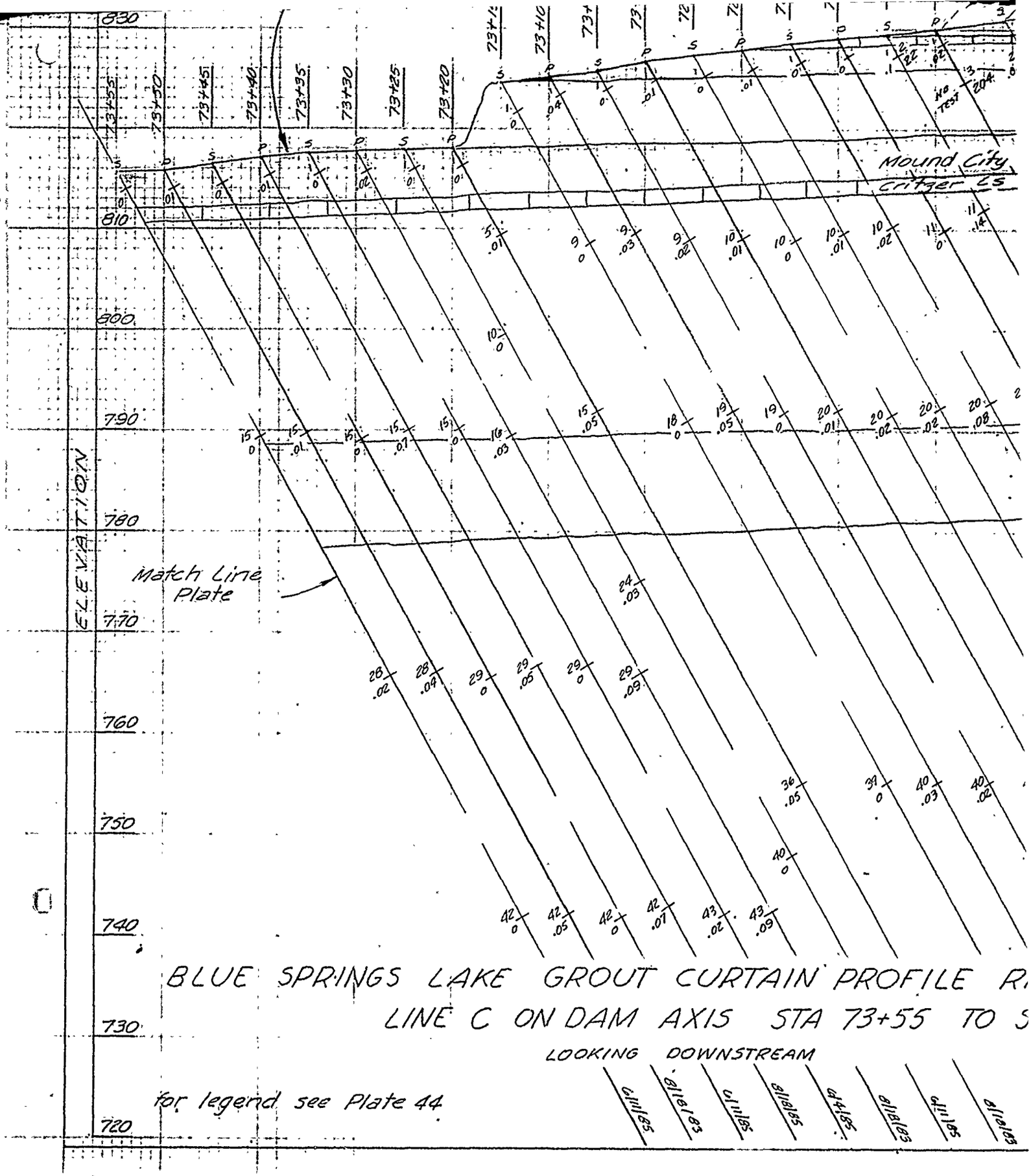
BLUE SPRINGS LAKE GROUT CURTAIN PROFILE RIGH

LINE C ON DAM AXIS STA 73+55 TO STA

LOOKING DOWNSTREAM



OFILE RIGHT ABUTMENT
55 TO STA 72+05

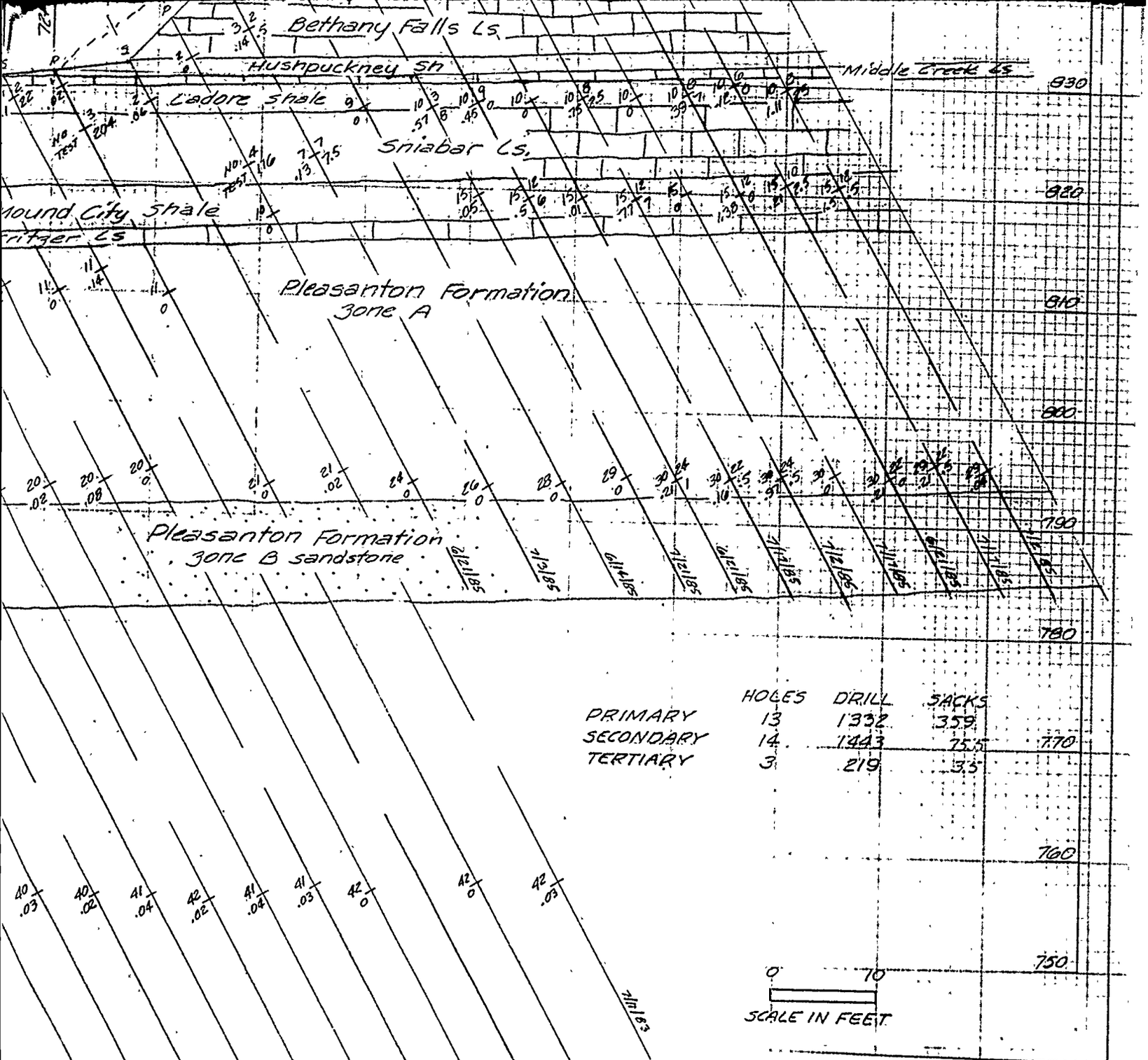


BLUE SPRINGS LAKE GROUT CURTAIN PROFILE R

LINE C ON DAM AXIS STA 73+55 TO S

LOOKING DOWNSTREAM

for legend see Plate 44



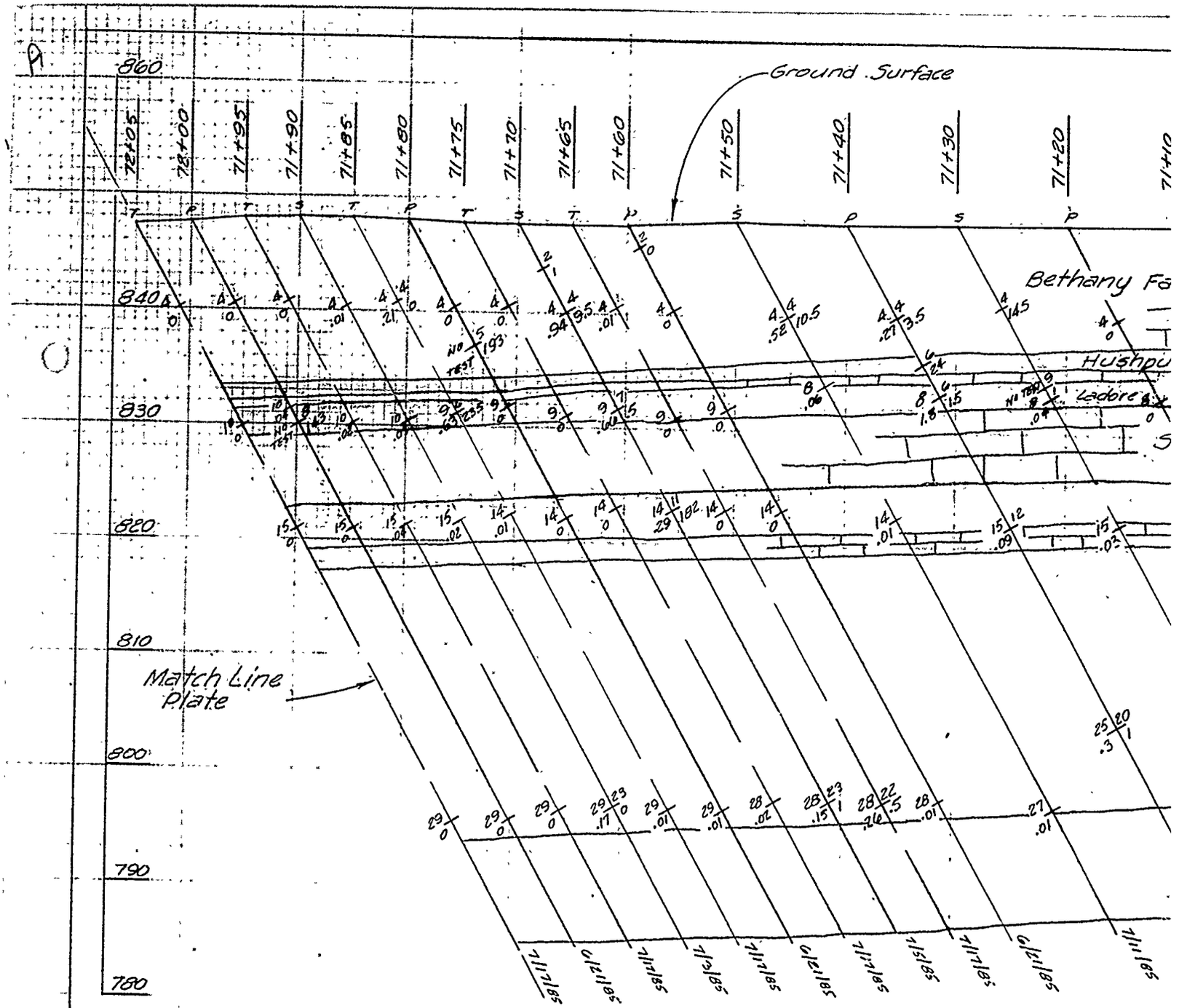
FILE RIGHT ABUTMENT
5 TO STA 72+05

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT
GROUT CURTAIN PROFILE
RIGHT ABUTMENT LINE B
STA. 73+55 TO STA. 72+05

Designed by:
Drawn by: V.A.
Checked by: C.H.
Submitted by:
Scale: AS SHOWN
Date: JUNE 1990
Sheet number: 69
Dwg. No.:
File No.: RBL-2-1289

PLATE NO. 69



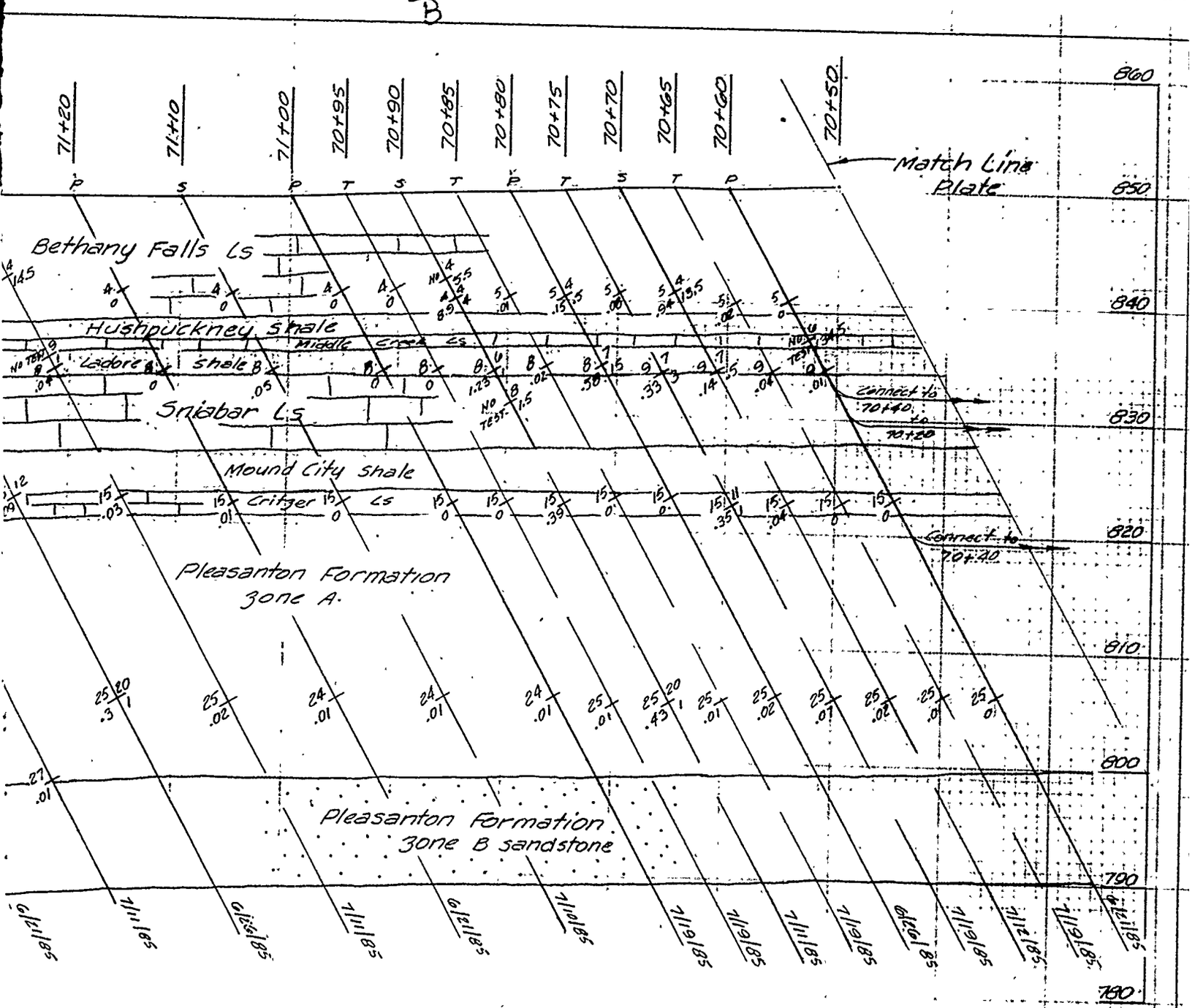
BLUE SPRINGS LAKE GROUT CURTAIN PROFILE R

LINE C ON DAM AXIS STA 72+05 TO

LOOKING DOWNSTREAM

0 10

B



	HOLES	DRILL	SACKS
PRIMARY	8	585'	517.
SECONDARY	7	511'	240
TERTIARY	9	666'	28.

'OFILE RIGHT ABUTMENT
+05 TO STA 70+50

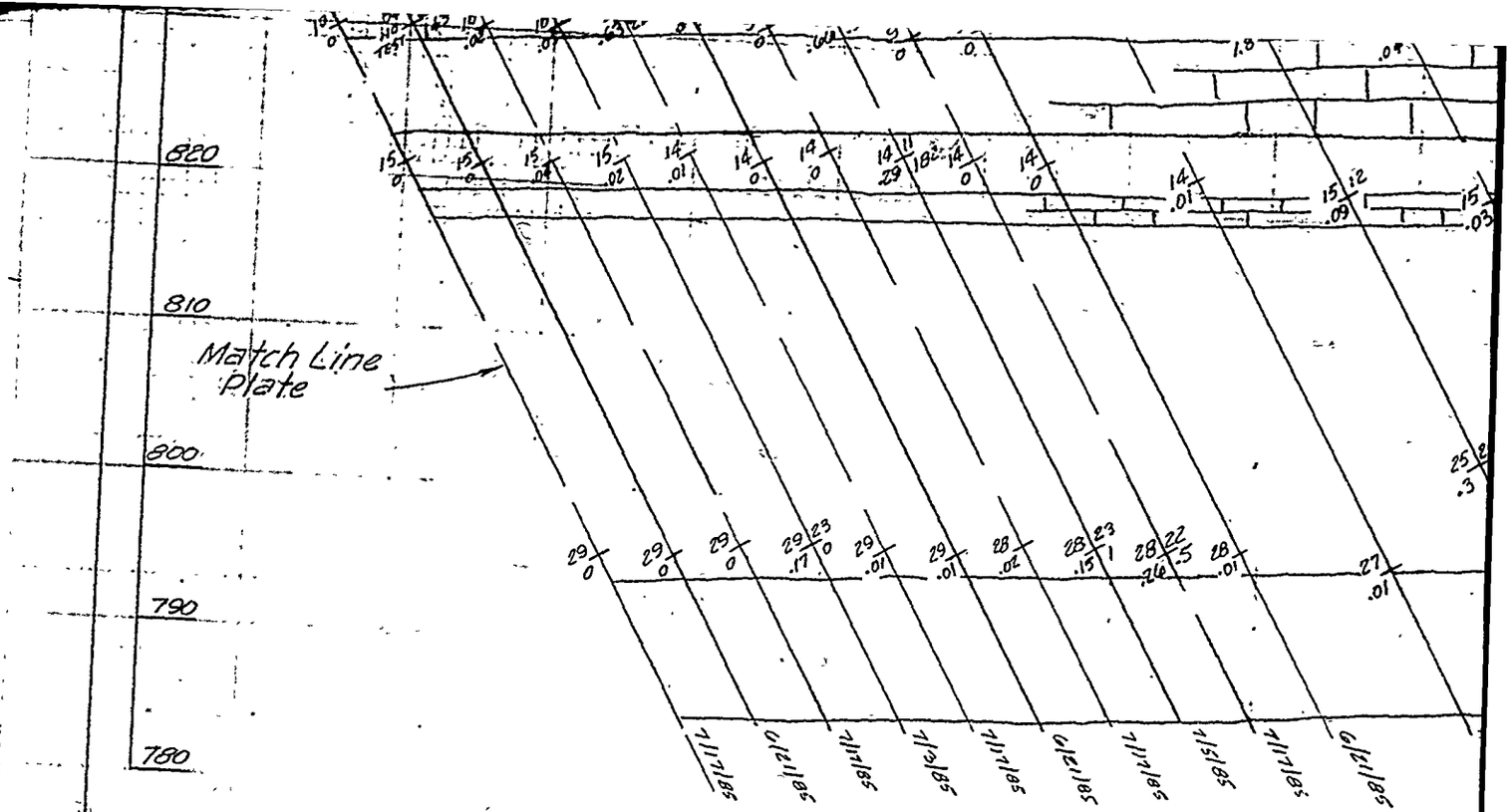
for legend see Plate 44

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by: V.A.
Checked by: C.H.
Submitted by:

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT
GROUT CURTAIN PROFILE
RIGHT ABUTMENT LINE C
STA. 72+05 TO STA. 70+50

Scale: AS SHOWN
Date: JUNE 1990
Sheet Number: 70



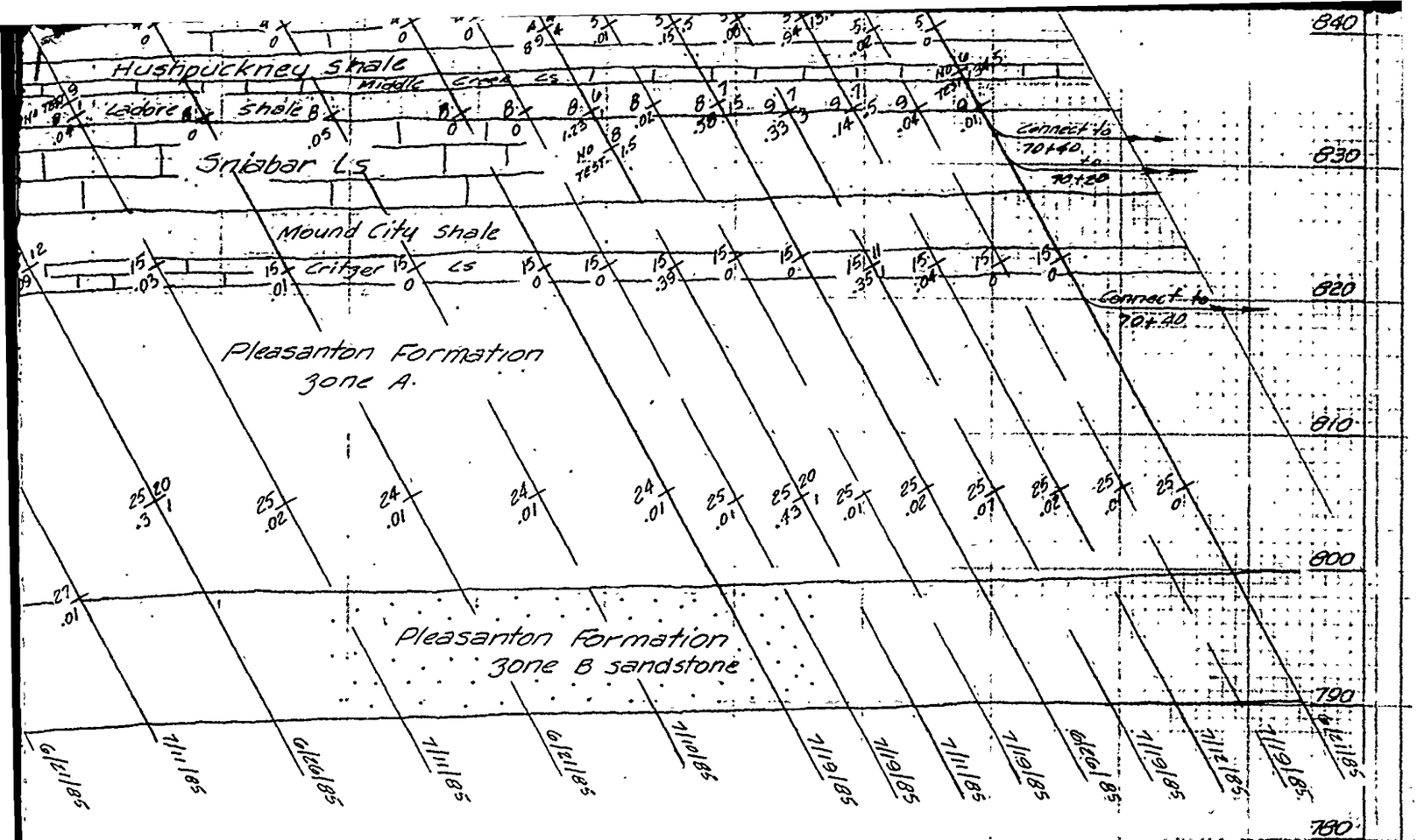
BLUE SPRINGS LAKE GROUT CURTAIN PROFILE

LINE C ON DAM AXIS STA 72+05 T

LOOKING DOWNSTREAM

0 10

SCALE IN FEET



	HOLES	DRILL	SACKS
PRIMARY	8	585'	517.
SECONDARY	7	511'	240
TERTIARY	9	666'	28

?OFILE RIGHT ABUTMENT
?+05 TO STA 70+50

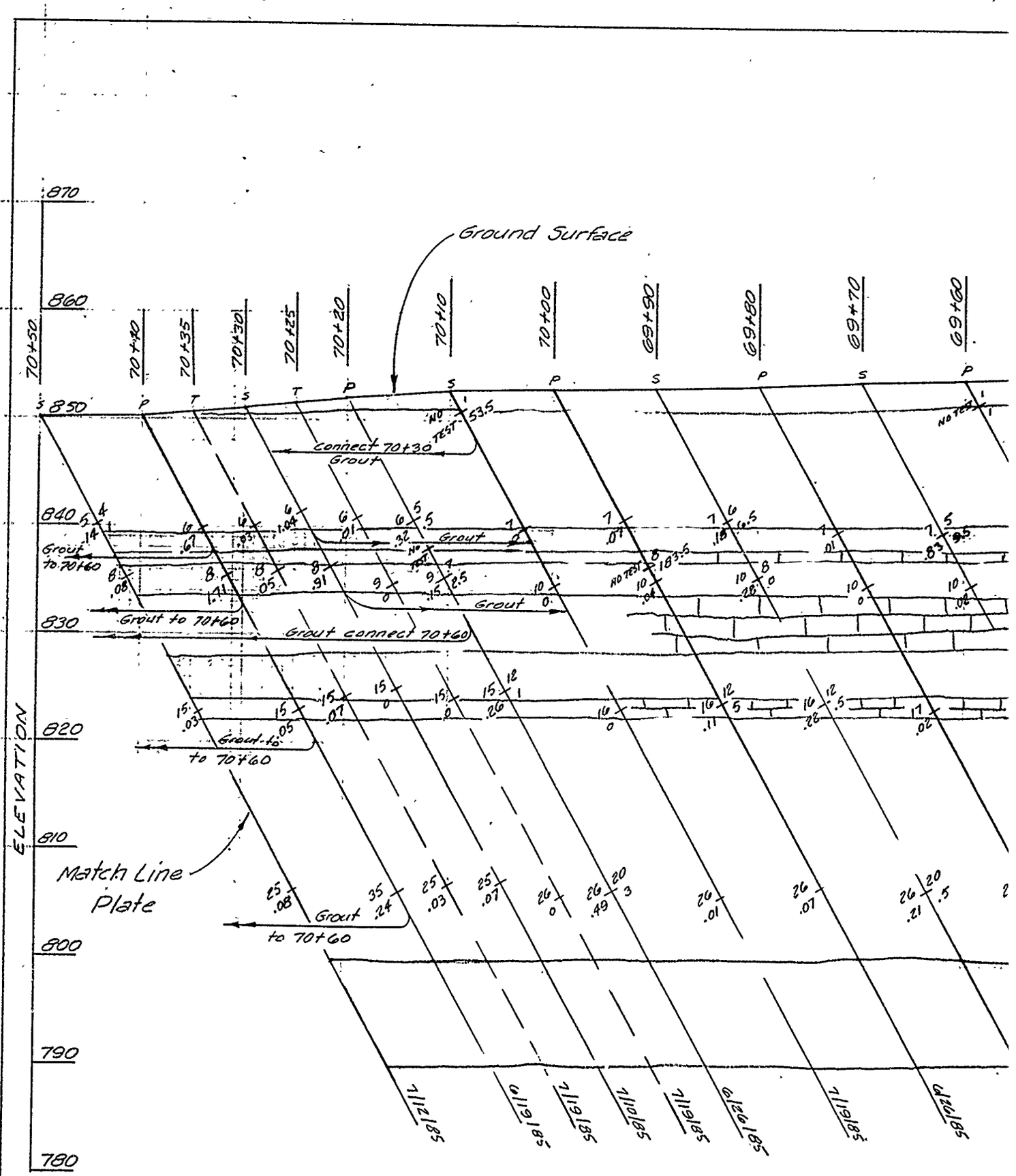
for legend see Plate 44

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT
GROUT CURTAIN PROFILE
RIGHT ABUTMENT LINE C
STA. 72+05 TO STA. 70+50

Designed by:	
Drawn by:	V.A.
Checked by:	C.H.
Submitted by:	
Scale:	AS SHOWN
Date:	JUNE 1990
Drawing No.:	
Sheet number:	70
File No.:	RBL-2-1290

PLATE NO. 70

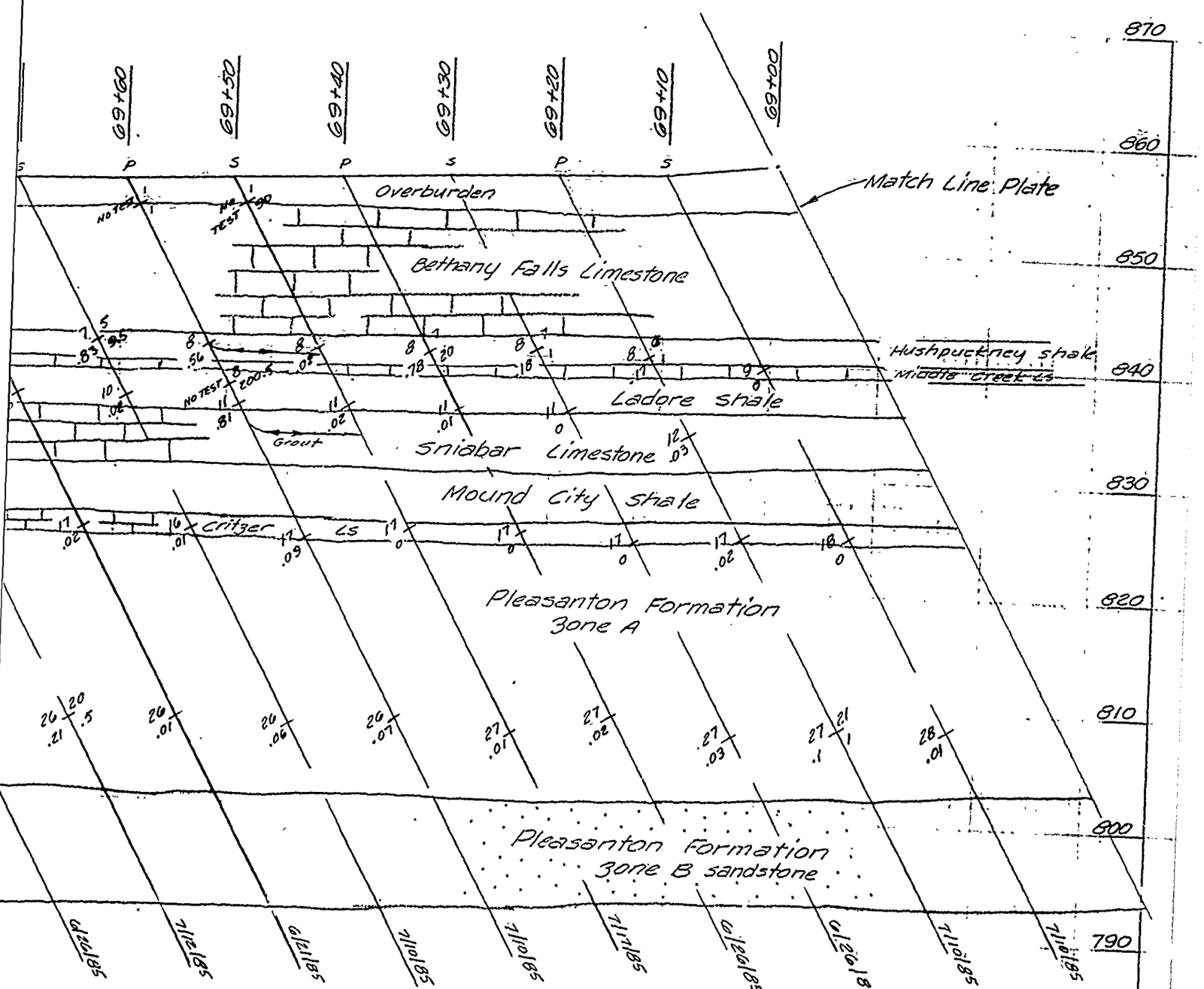


BLUE SPRINGS LAKE GROUT CURTAIN PROFILE

LINE C ON DAM AXIS STA 70+50

LOOKING DOWNSTREAM

	HOLES	DRILL	SACKS
PRIMARY	7	540	418
SECONDARY	8	618	162.5
TERTIARY	2	153	0



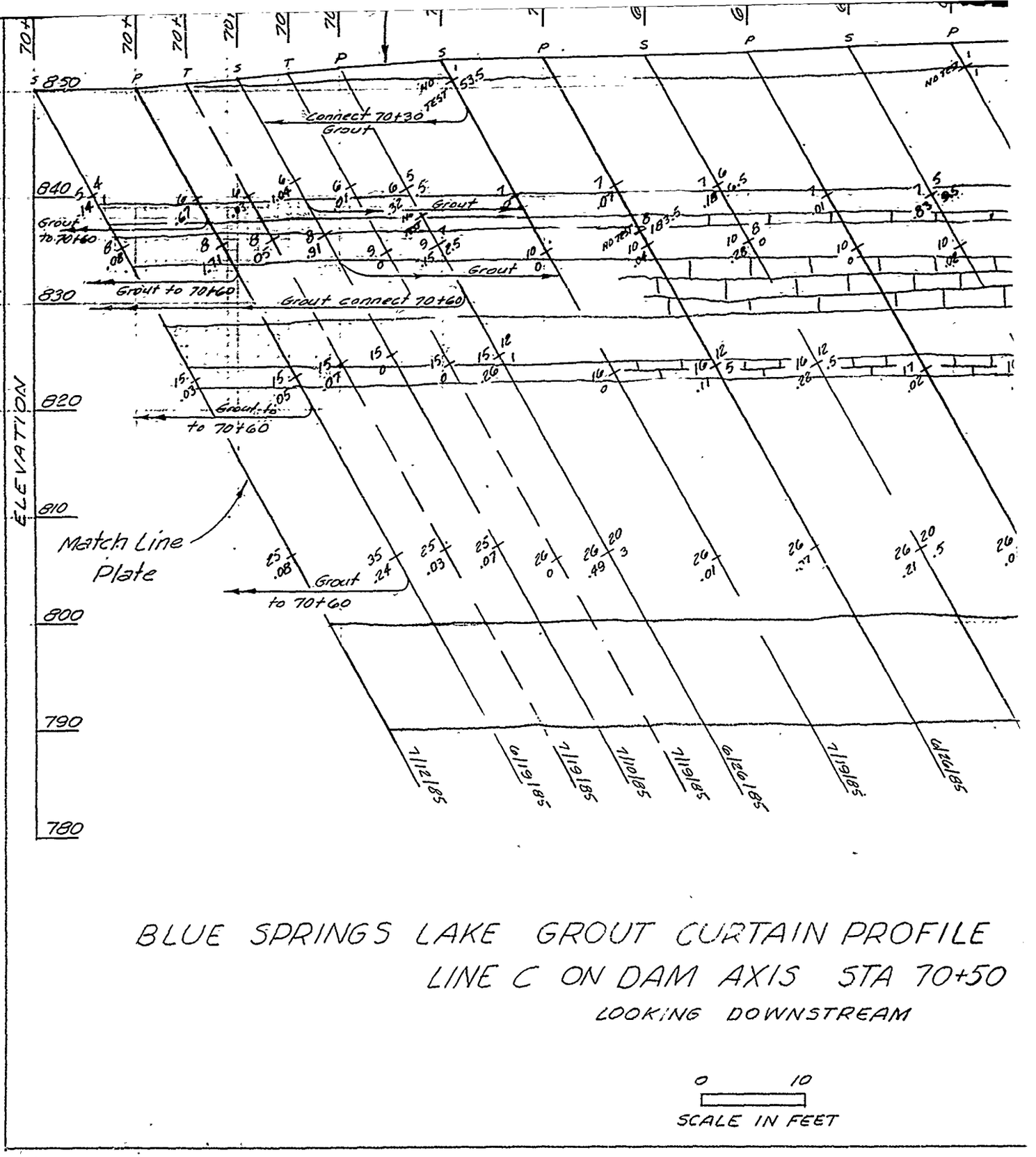
PROFILE RIGHT ABUTMENT
STA 70+50 TO STA 69+00
EAM

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:

Drawn by: V.A.

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT
GROUT CURTAIN PROFILE
RIGHT ABUTMENT LINE C



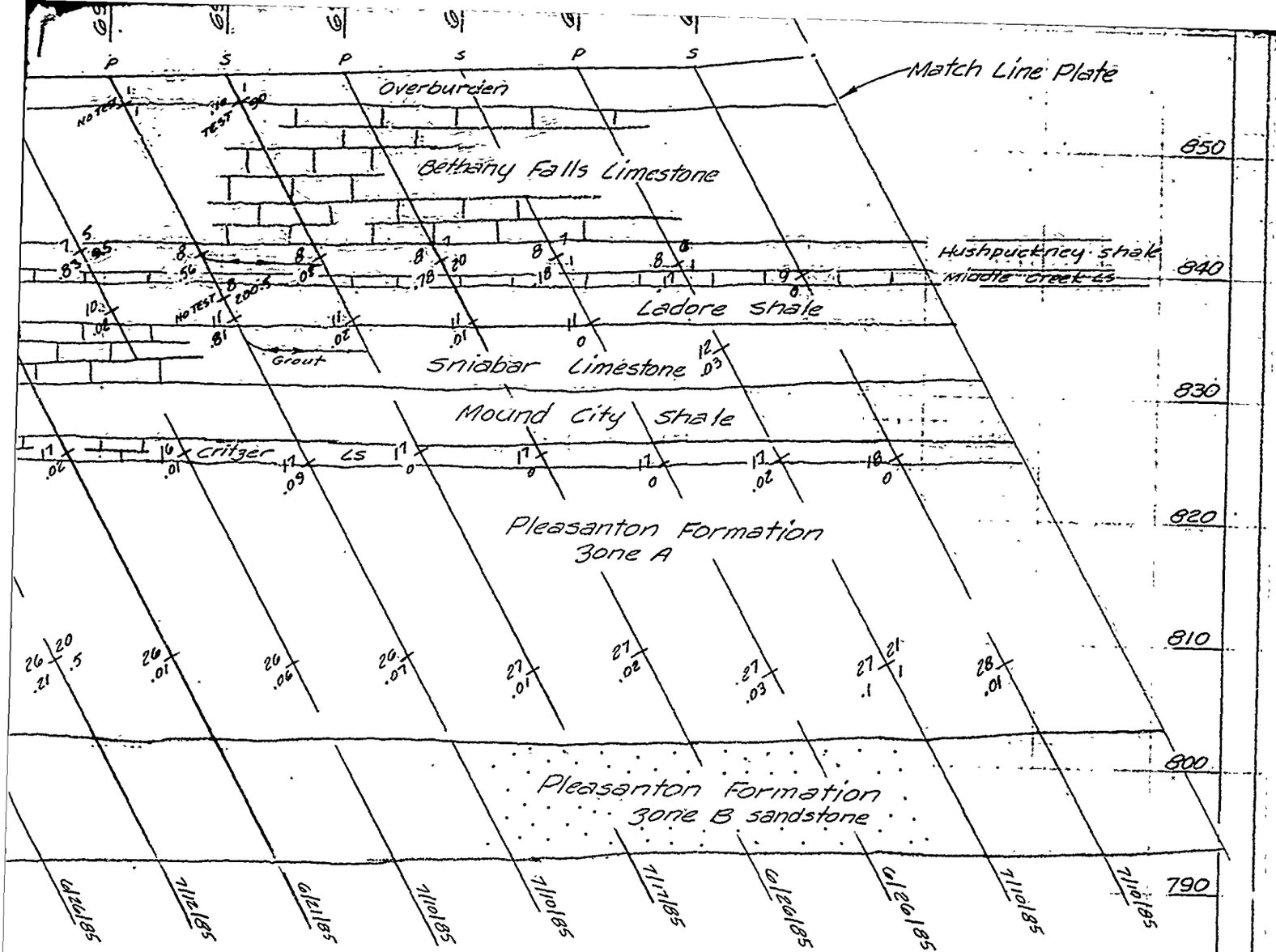
BLUE SPRINGS LAKE GROUT CURTAIN PROFILE

LINE C ON DAM AXIS STA 70+50

LOOKING DOWNSTREAM

0 10

SCALE IN FEET



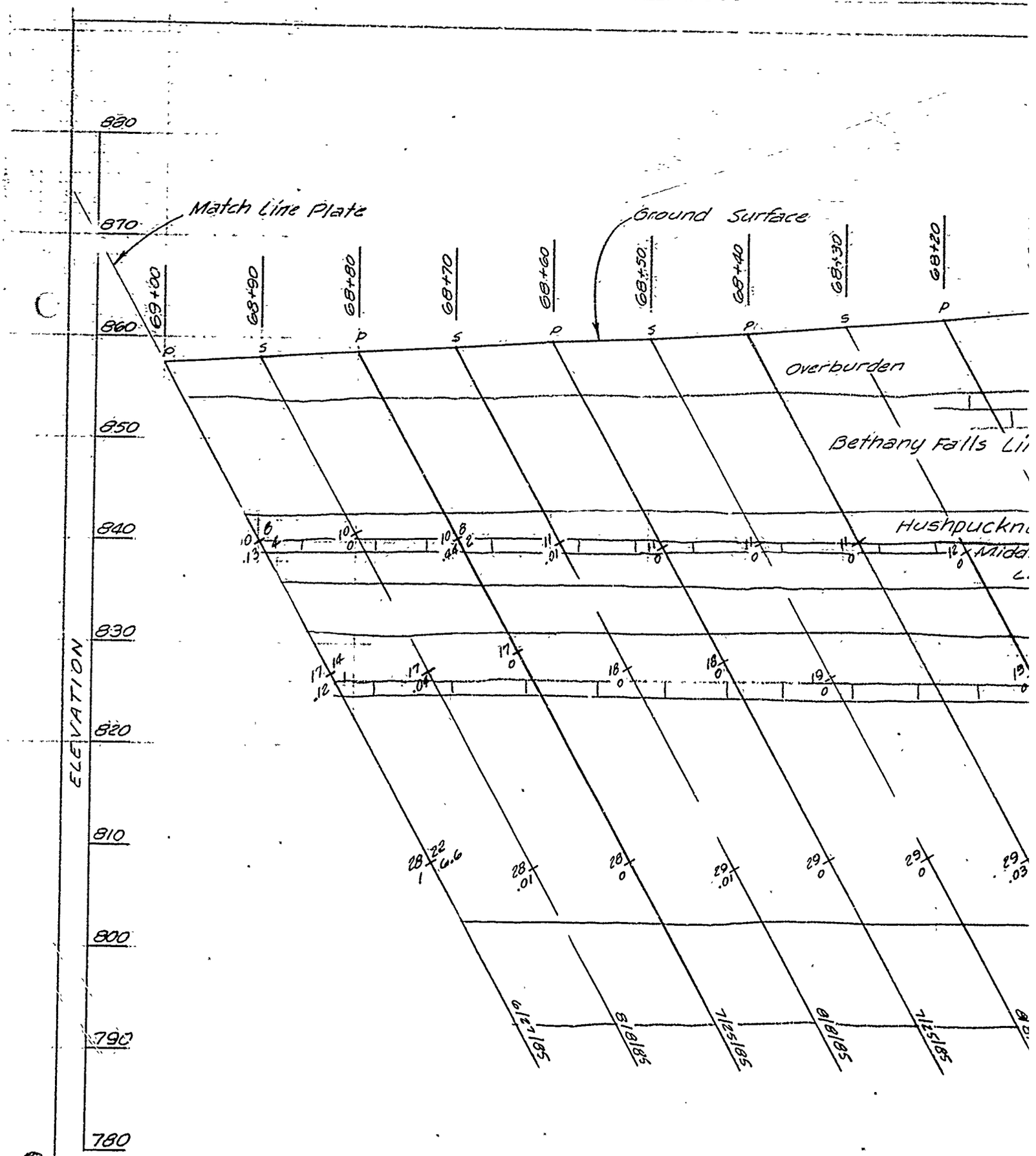
OFILE RIGHT ABUTMENT
A 70+50 TO STA 69+00
M

For Legend see Plate 44

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

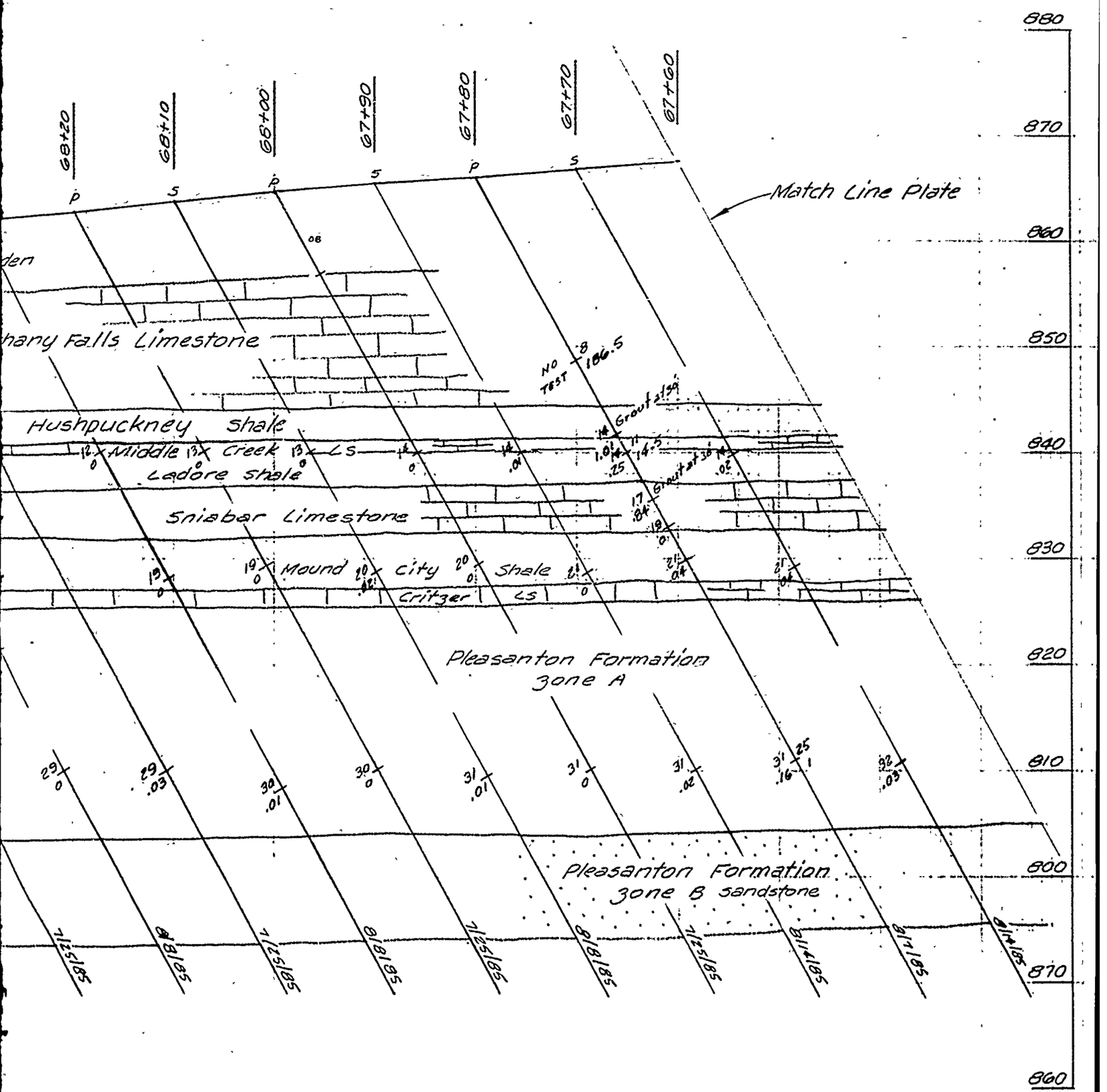
Designed by:	EAST FORK LITTLE BLUE RIVER, MISSOURI BLUE SPRINGS LAKE CONSTRUCTION FOUNDATION REPORT
Drawn by: V.A.	GROUT CURTAIN PROFILE RIGHT ABUTMENT LINE C STA. 70+50 TO STA. 69+00
Checked by: C.H.	Scale: AS SHOWN — Sheet Number: 71
Submitted by:	Date: JUNE 1990 — Dwg No.: — File No.: RBL-2-1291

PLATE NO. 71



BLUE SPRINGS LAKE GROUT CURTAIN PROFILE
LINE C ON DAM AXIS STA 69+00
LOOKING DOWNSTREAM

	HOLES	DRILL	SACKS
PRIMARY	7	585'	215.6
SECONDARY	7	590'	0

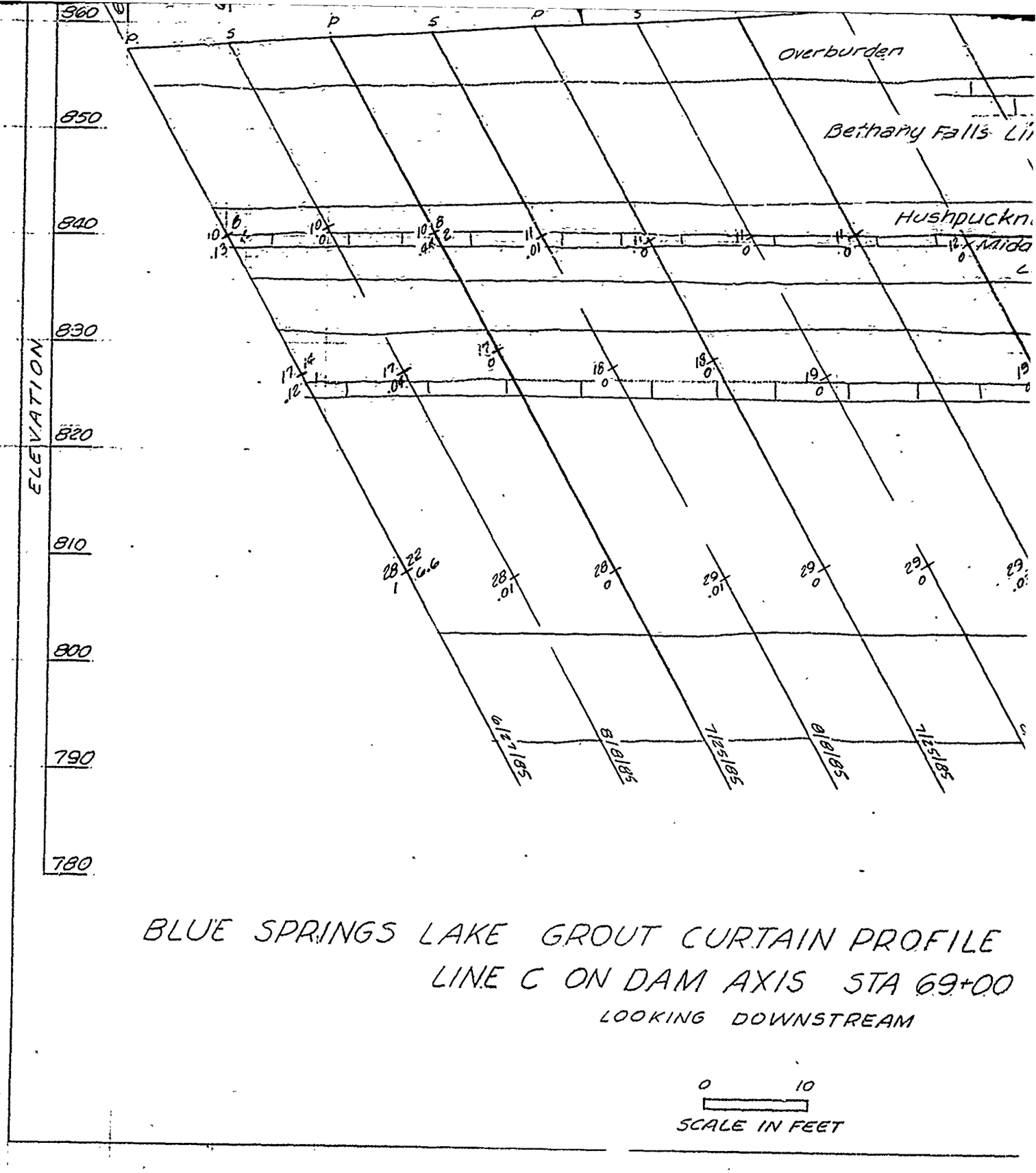


PROFILE RIGHT ABUTMENT
STA 69+00 TO STA 67+60
TEAM

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT



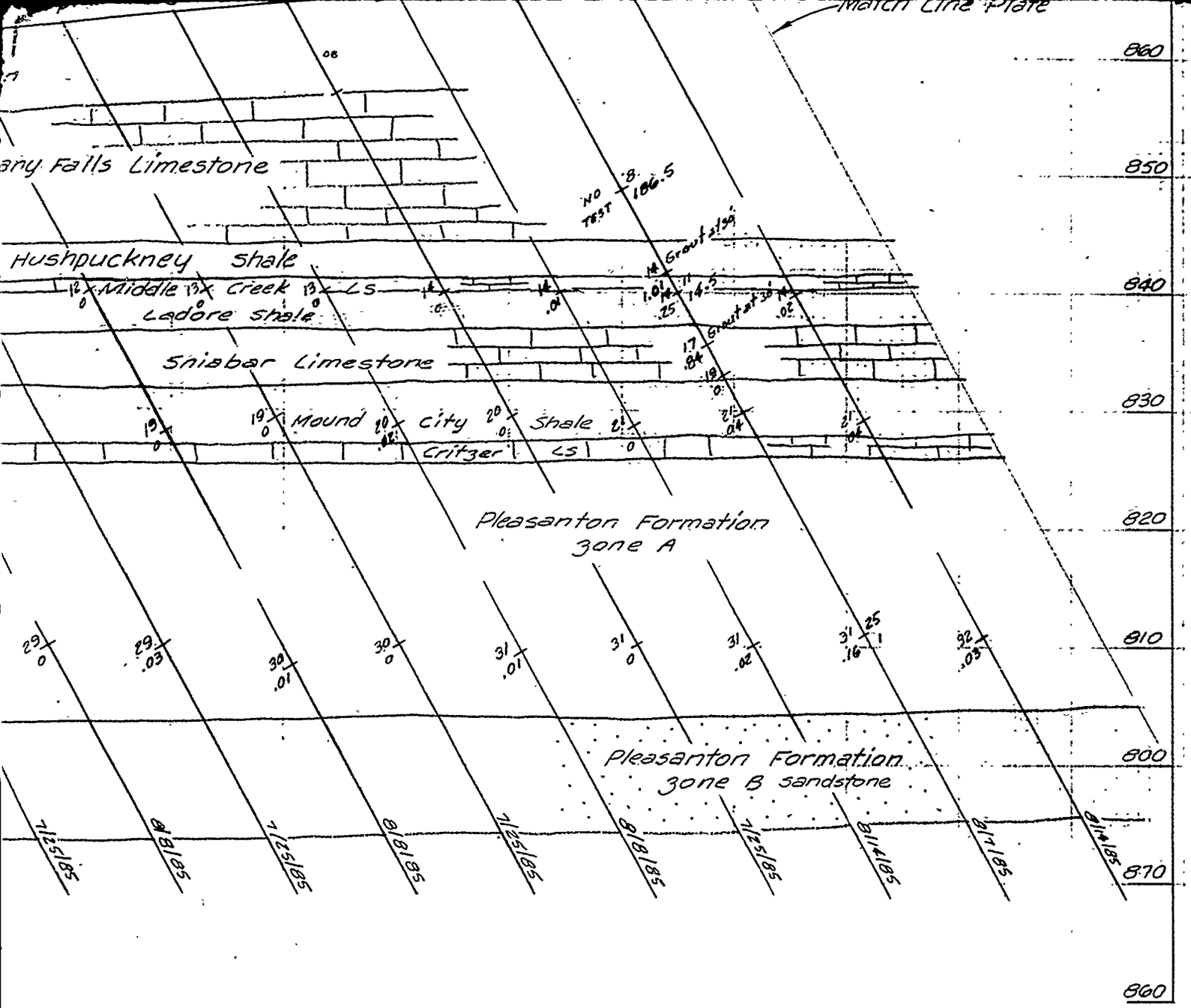
BLUE SPRINGS LAKE GROUT CURTAIN PROFILE

LINE C ON DAM AXIS STA 69+00

LOOKING DOWNSTREAM

0 10

SCALE IN FEET



ROFILE RIGHT ABUTMENT
TA 69+00 TO STA 67+60

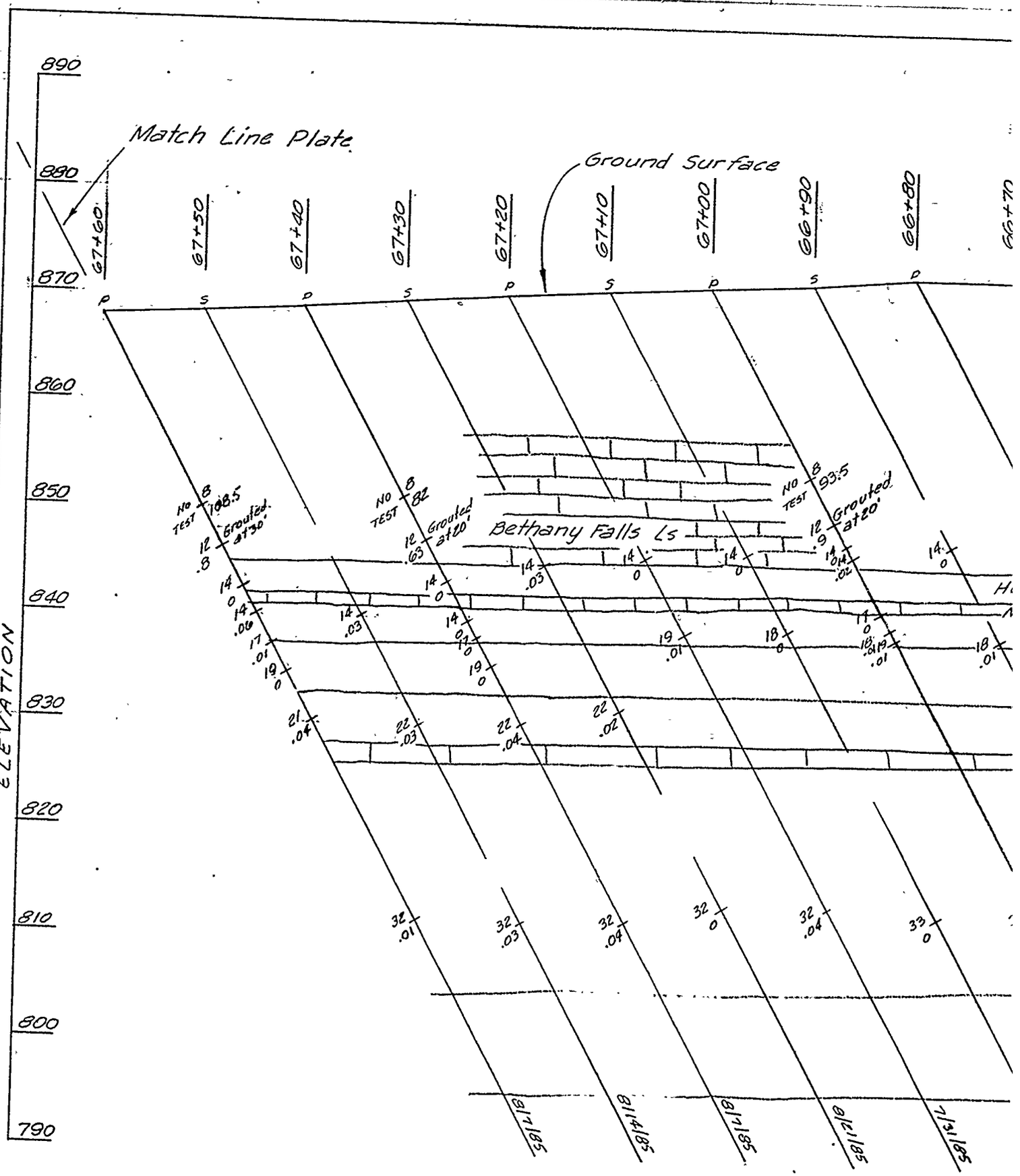
4M

For legend see Plate 44

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

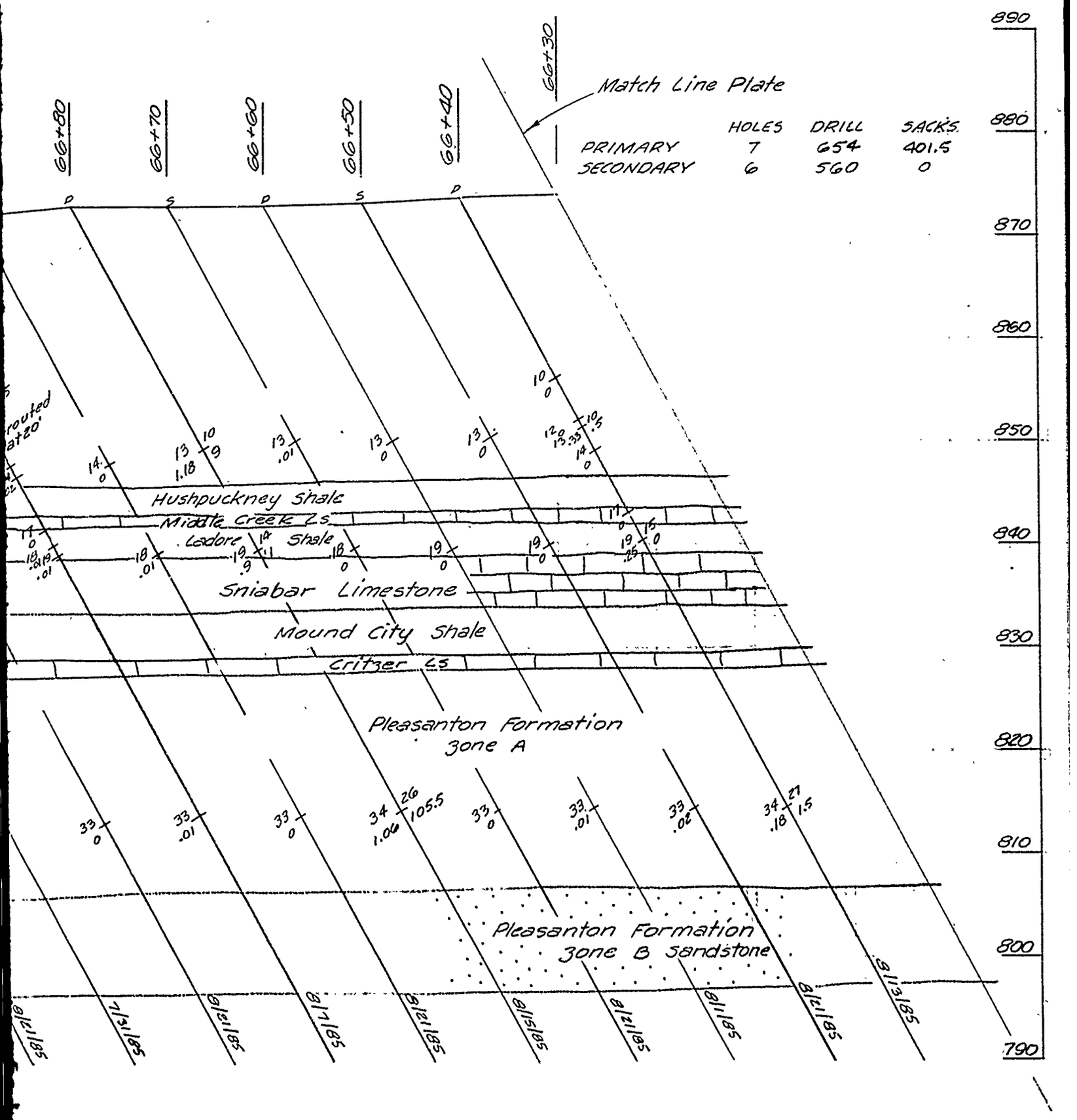
Designed by:	EAST FORK LITTLE BLUE RIVER, MISSOURI BLUE SPRINGS LAKE US Army Corps of Engineers CONSTRUCTION FOUNDATION REPORT
Drawn by: V.A.	GROUT CURTAIN PROFILE RIGHT ABUTMENT LINE C STA. 69+00 TO STA. 67+60
Checked by: C.H.	Scale: AS SHOWN; Sheet number: 72
Submitted by:	Date: JUNE 1990; Dwg. No.:
	File No. RBL-2-1292

PLATE NO. 72



BLUE SPRINGS LAKE GROUT CURTAIN PROFILE
LINE C ON DAM AXIS STA 67+60

LOOKING DOWNSTREAM



PROFILE RIGHT ABUTMENT
STA 67+60 TO STA 66+30

AM

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

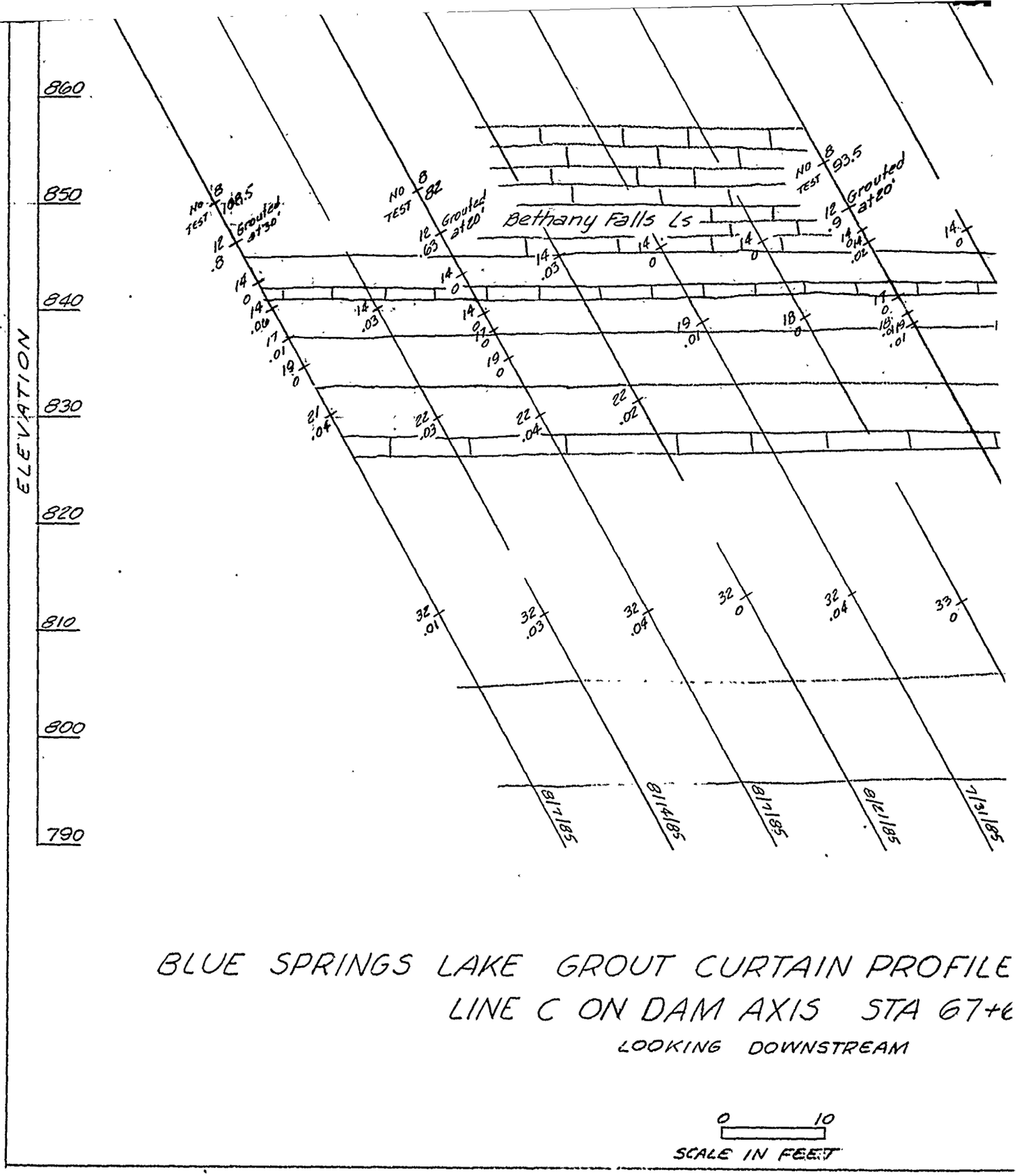
Designed by:

Drawn by: V.A.

Checked by:

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

GROUT CURTAIN PROFILE
RIGHT ABUTMENT LINE C
STA. 67+60 TO STA. 66+30



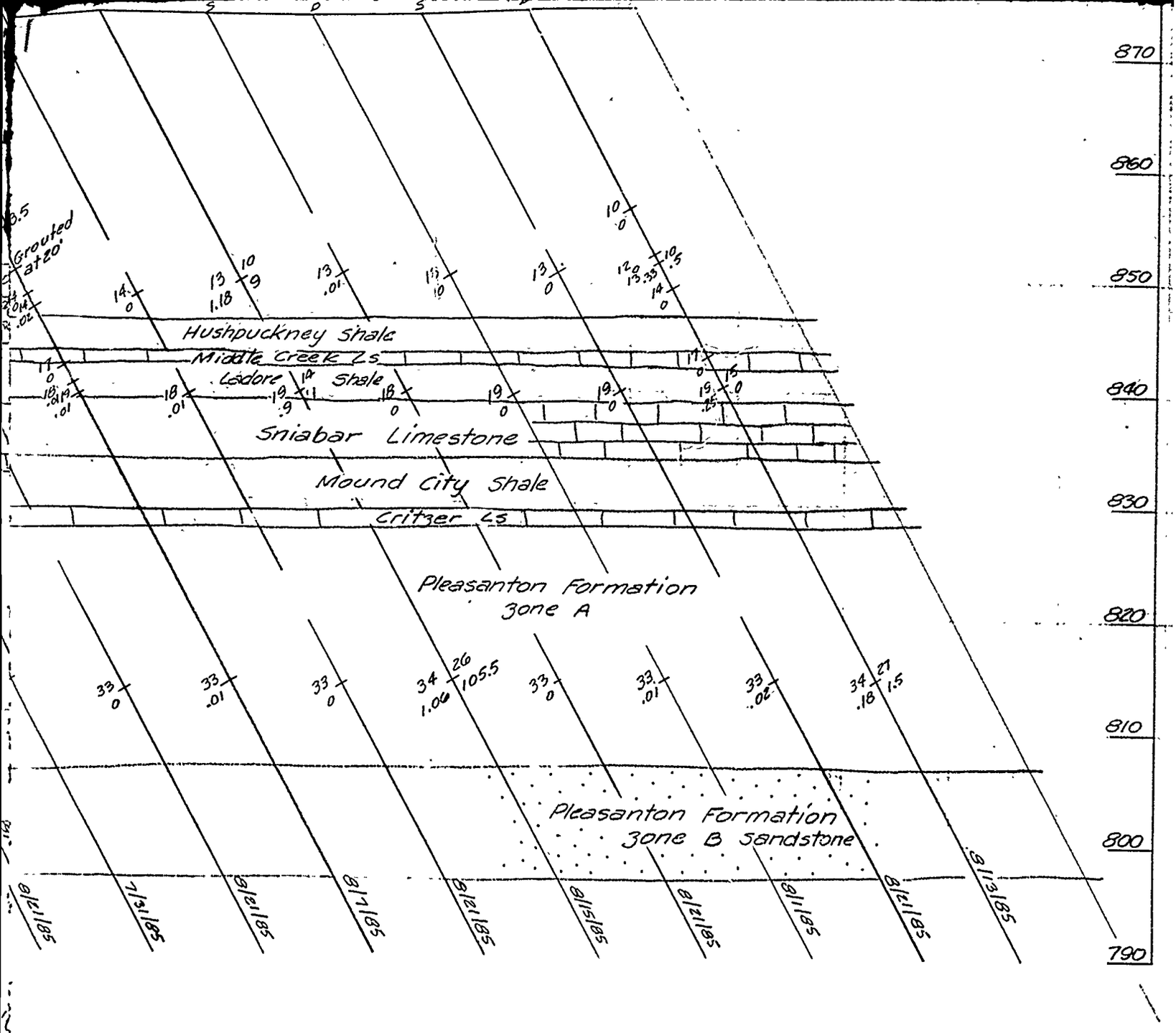
BLUE SPRINGS LAKE GROUT CURTAIN PROFILE

LINE C ON DAM AXIS STA 67+6

LOOKING DOWNSTREAM

0 10

SCALE IN FEET



PROFILE RIGHT ABUTMENT
STA 67+60 TO STA 66+30

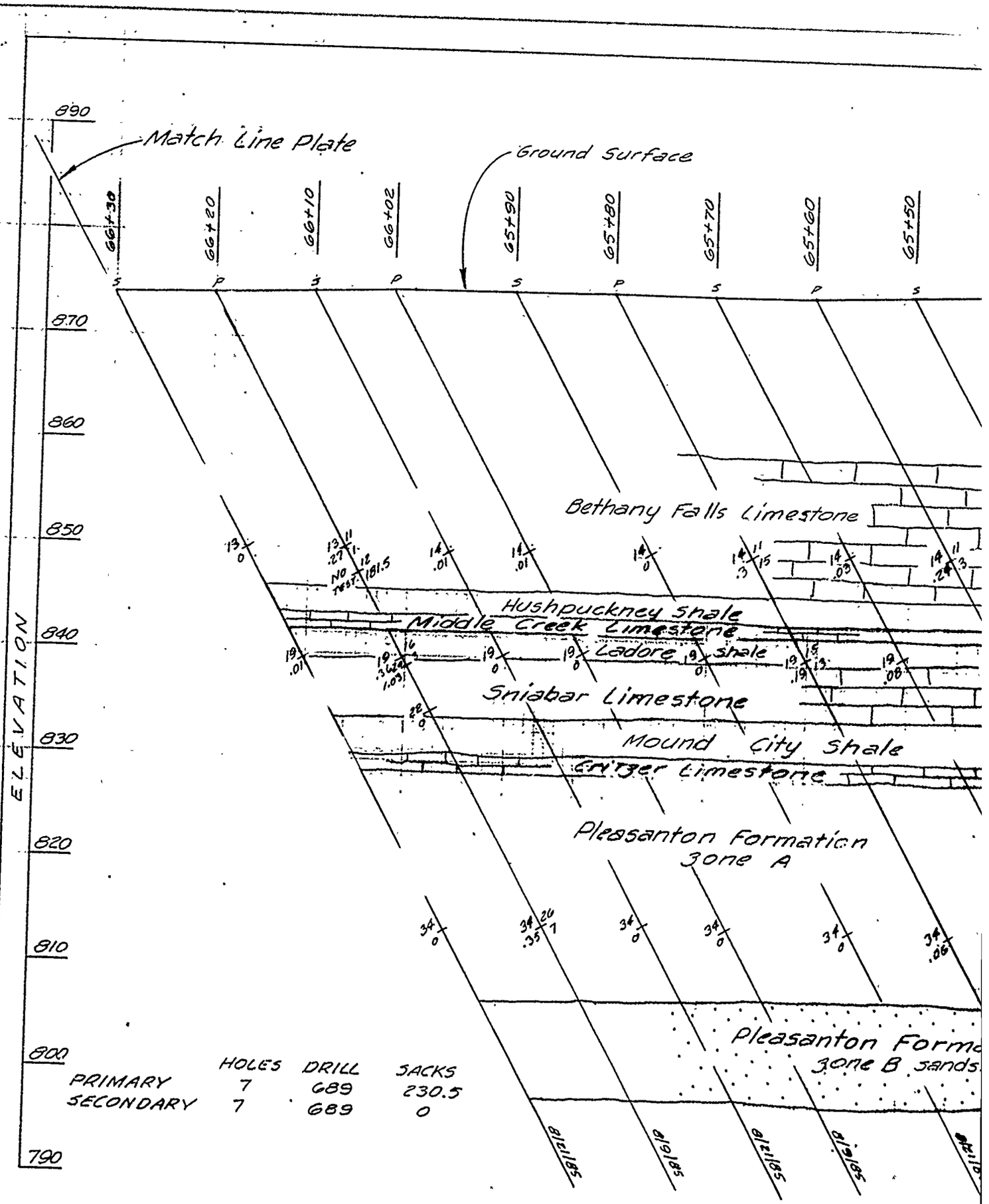
EAM

For legend see Plate 44

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:	EAST FORK LITTLE BLUE RIVER, MISSOURI BLUE SPRINGS LAKE CONSTRUCTION FOUNDATION REPORT
Drawn by: V.A.	GROUT CURTAIN PROFILE RIGHT ABUTMENT LINE C STA. 67+60 TO STA. 66+30
Checked by: C.H.	Scale: AS SHOWN; Sheet number: 73
Submitted by:	Date: JUNE 1990; Dwg. No.: ; File No.: RBL-2-1293

PLATE NO. 73

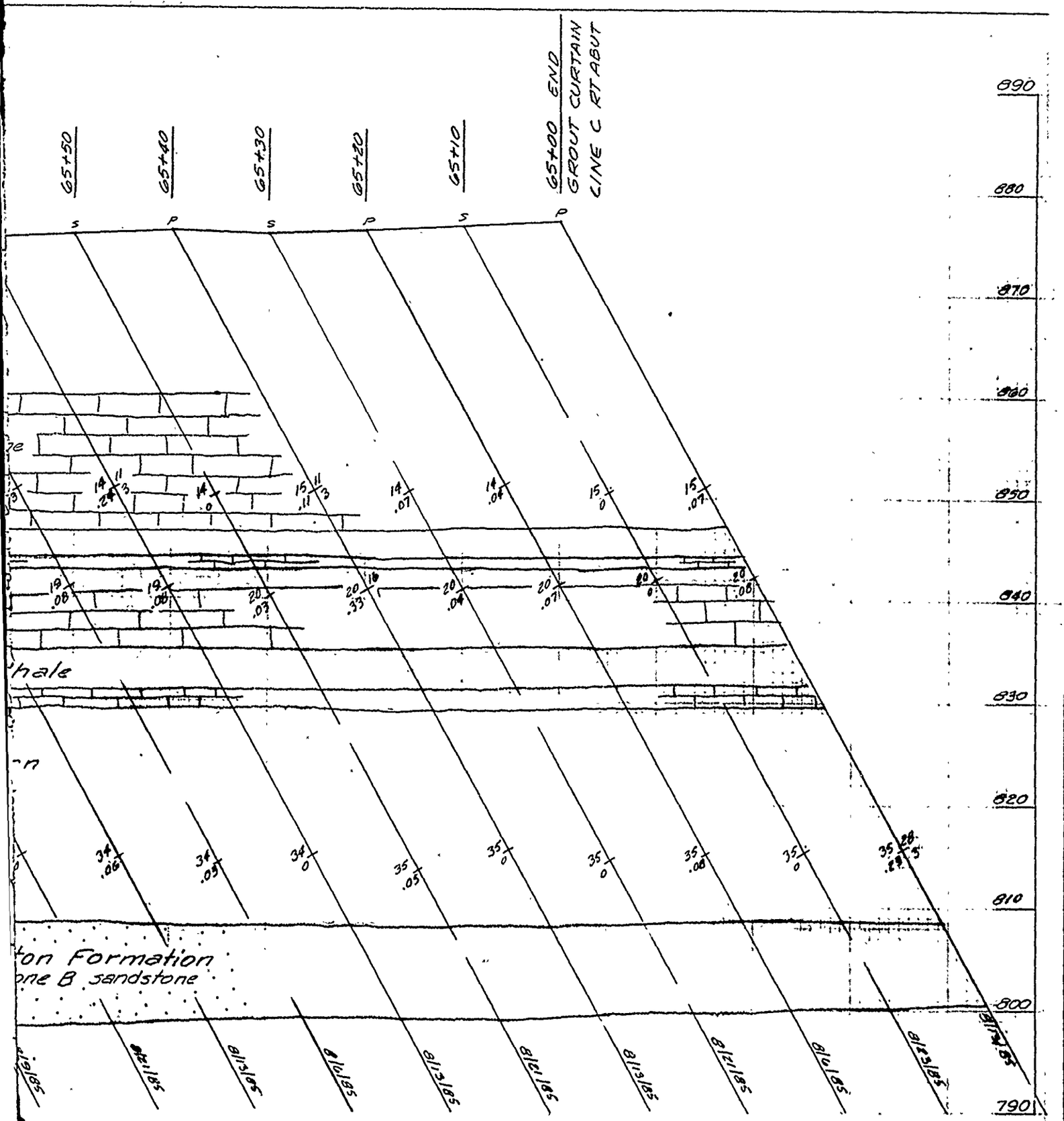


	HOLES	DRILL	SACKS
PRIMARY	7	689	230.5
SECONDARY	7	689	0

BLUE SPRINGS LAKE GROUT CURTAIN PROFILE

LINE C ON DAM AXIS STA 66+3

LOOKING DOWNSTREAM

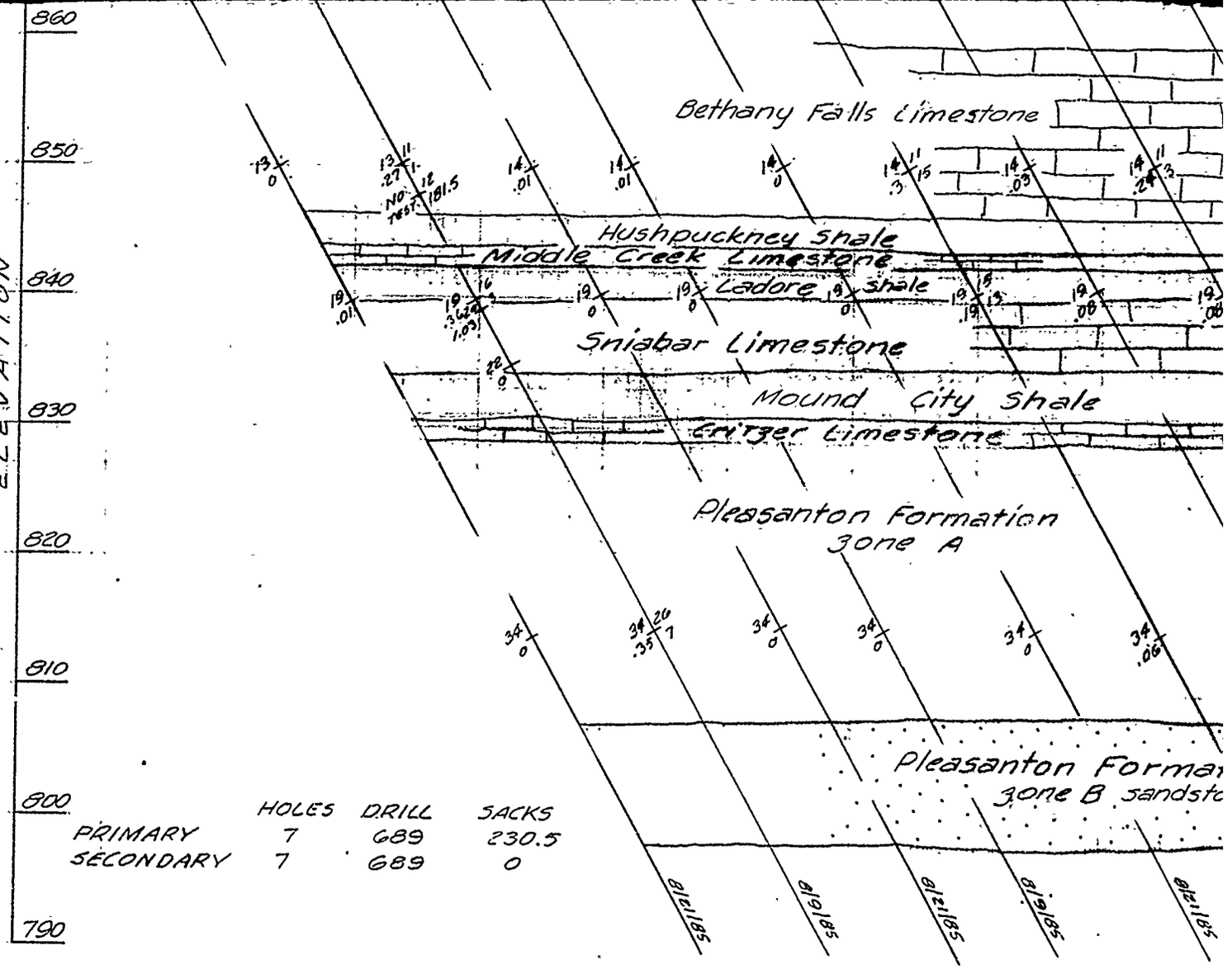


PROFILE RIGHT ABUTMENT
STA 66+30 TO STA 65+00
GRAM

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by: V.A.
Checked by: C.H.

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT
GROUT CURTAIN PROFILE
RIGHT ABUTMENT LINE C
STA. 66+30 TO STA. 65+00



	HOLES	DRILL	SACKS
PRIMARY	7	689	230.5
SECONDARY	7	689	0

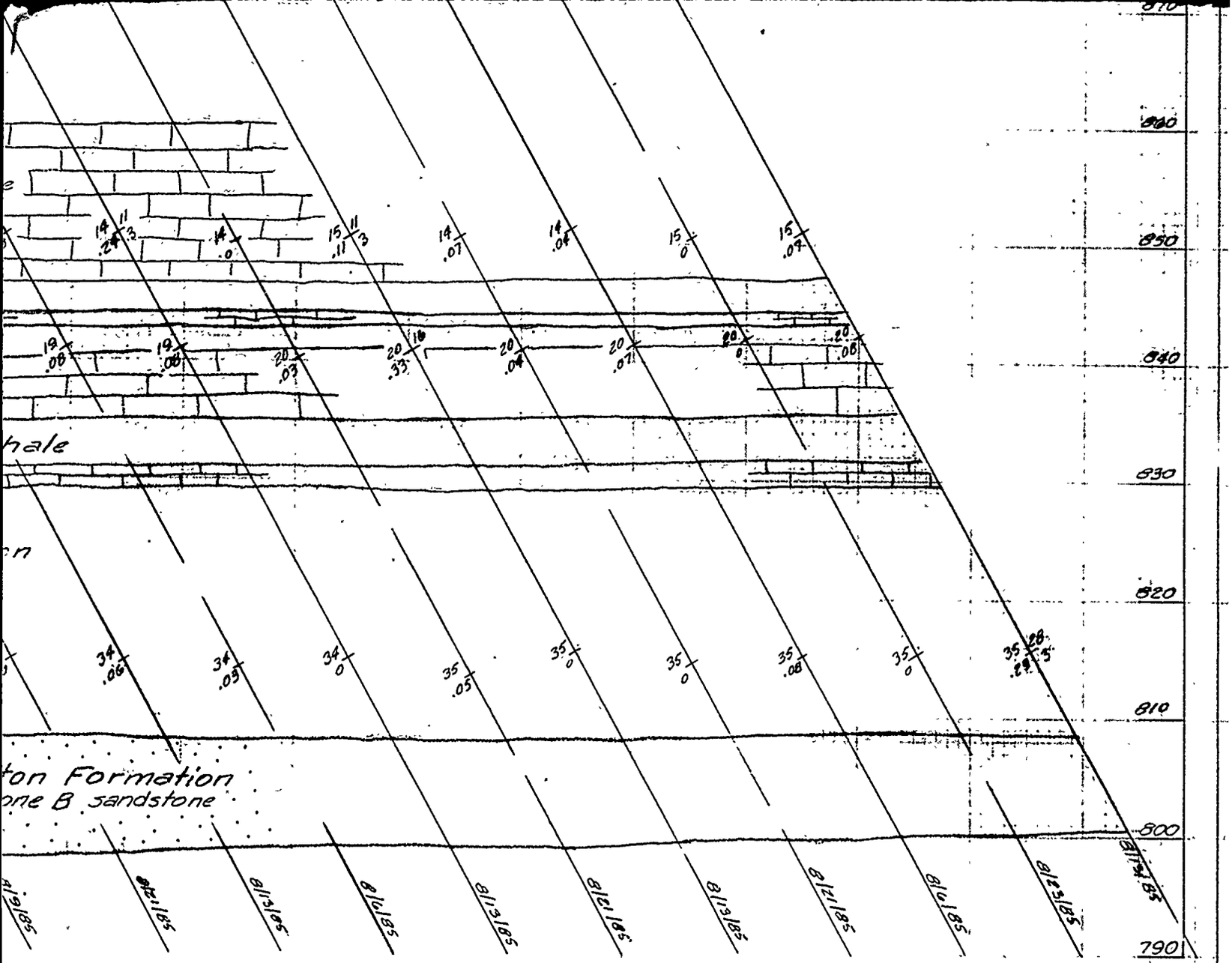
BLUE SPRINGS LAKE GROUT CURTAIN PROFILE

LINE C ON DAM AXIS STA 66+30

LOOKING DOWNSTREAM

0 10

SCALE IN FEET



PROFILE RIGHT ABUTMENT
STA 66+30 TO STA 65+00
EAM

For legend see Plate 44

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:	EAST FORK LITTLE BLUE RIVER, MISSOURI BLUE SPRINGS LAKE CONSTRUCTION FOUNDATION REPORT
Drawn by: V.A.	GROUT CURTAIN PROFILE RIGHT ABUTMENT LINE C STA. 66+30 TO STA. 65+00
Checked by: C.H.	Scale: AS SHOWN; Sheet number: 74
Submitted by:	Date: JUNE 1990; Dwg. No.:
	File No.: RBL-2-1294

PLATE NO. 74

GEOLOGIC UNIT
BETHANY FALLS LIMESTONE
HUSHPUCKNEY SHALE
MIDDLE CREEK LIMESTONE
LADORE SHALE
SNIABAR LIMESTONE
MOUND CITY SHALE
CRITZER LIMESTONE
PLEASANTON ZONE A
ZONE B
ZONE C

LEFT ABUTMENT

SACKS OF CEMENT INJECTED

LINE A	LINE B	LINE C	TOTAL
1483.4			1483.4
	29.5	16.0	45.5
0.2	11.0	8.5	19.7
2.6			2.6
187.8	2.0	142.0	331.8
282.3	19.8	17.5	319.6
181.7	57.0	32.0	270.7
0.4	2.0		2.4
12.0	1.0		13.0
2150.4	122.3	216.0	2488.7

LEFT ABUTMENT

	HOLES	DRILL	SACKS
LINE A	P-58	4410	1069.8
	S-58	4415	1030.5
	T-6	436	1.6
	EXP-2	170	48.5
	124	9431'	2150.4
LINE B	P-59	4365	77.3
	S-58	4308	38.5
	T-2	179	6.5
	119	8852'	122.3
LINE C	P-59	4477	48.5
	S-58	4363	145.0
	T-3	213	0
	EXP-1	75	22.5
	121	9128'	216.0
TOTALS	364	27,411'	2,488.7

BLUE SPRINGS DAM SUMMARY OF GROUTING

MENT

	TOTAL	
JECTED		%
	1483.4	59.6
	45.5	1.8
	19.7	0.8
	2.6	
	331.8	13.3
	319.6	12.8
	270.7	10.8
	2.4	
	13.0	
	2488.7	

RIGHT ABUTMENT

LINE A	LINE B	LINE C	TOTAL	
SACKS OF CEMENT INJECTED				%
		1118.0	1118.0	38.8
		55.5	55.5	1.9
	1.9	140.5	142.4	4.9
0.6	0.3	660.0	660.9	22.9
3.0		341.5	344.5	12.0
40.2		200.0	240.2	8.3
		7.5	7.5	
33.3	16.6	140.2	190.1	6.6
47.7	26.1	0.1	73.9	2.6
41.74	1.0	2.3	45.04	1.6
166.54	45.9	2665.6	2878.04	

T

SACKS
1069.8
1030.5
1.6
48.5
2150.4
77.3
38.5
6.5
122.3
48.5
145.0
0
22.5
210.0
2,488.7

RIGHT ABUTMENT

	HOLES	DRILL	SACKS
LINE A	P - 35	2800	164.5
	S - 30	2491	1.8
	T - 3	82	0.2
	Q - 1	21	.04
	EXP - 2	58	0
	71	5452'	166.54
LINE B	P - 34	2752	45.6
	S - 31	2566	0.3
	65	5318'	45.9
LINE C	P - 75	6050	2147.1
	S - 72	5962	487.0
	T - 14	1038	31.5
	161	13,050'	2665.6
TOTALS	297	23,820'	2,878.04

GROUTING

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:

Drawn by: V.A.

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

SUMMARY OF GROUTING

LADORE SHALE	2.6			2.6
SNIABAR LIMESTONE	187.8	2.0	142.0	331.8
MOUND CITY SHALE	282.3	19.8	17.5	319.6
CRITZER LIMESTONE				
PLEASANTON ZONE A	181.7	57.0	32.0	270.7
ZONE B	0.4	2.0		2.4
ZONE C	12.0	1.0		13.0
	2150.4	122.3	216.0	2488.7

	LEFT ABUTMENT HOLES	DRILL	SACKS
LINE A	P-58	4410	1069.8
	S-58	4415	1030.5
	T-6	436	1.6
	EXP-2	170	48.5
	124	9431'	2150.4
LINE B	P-59	4365	77.3
	S-58	4308	38.5
	T-2	179	6.5
	119	8852'	122.3
LINE C	P-59	4477	48.5
	S-58	4363	145.0
	T-3	213	0
	EXP-1	75	22.5
	121	9128'	216.0
TOTALS	364	27,411'	2,488.7

BLUE SPRINGS DAM SUMMARY OF GROUTING

19.7	0.8		1.9	140.5	142.4	4.9
2.6		0.6	0.3	660.0	660.9	22.9
331.8	13.3	3.0		341.5	344.5	12.0
319.6	12.8	40.2		200.0	240.2	8.3
				7.5	7.5	
270.7	10.8	33.3	16.6	140.2	190.1	6.6
2.4		47.7	26.1	0.1	73.9	2.6
13.0		41.74	1.0	2.3	45.04	1.6
2488.7		166.54	45.9	2665.6	2878.04	

SACKS
1069.8
1030.5
1.6
48.5
2150.4
77.3
38.5
6.5
122.3
48.5
145.0
0
22.5
216.0
2488.7

RIGHT ABUTMENT

	HOLES	DRILL	SACKS
LINE A	P - 35	2800	164.5
	S - 30	2491	1.8
	T - 3	82	0.2
	Q - 1	21	.04
	EXP - 2	58	0
	71	5452'	166.54
LINE B	P - 34	2752	45.6
	S - 31	2566	0.3
	65	5318'	45.9
LINE C	P - 75	6050	2147.1
	S - 72	5962	487.0
	T - 14	1038	31.5
	161	13,050'	2665.6
TOTALS	297	23,820'	2,878.04

ROUTING

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:

Drawn by: V.A.

Checked by: C.H.

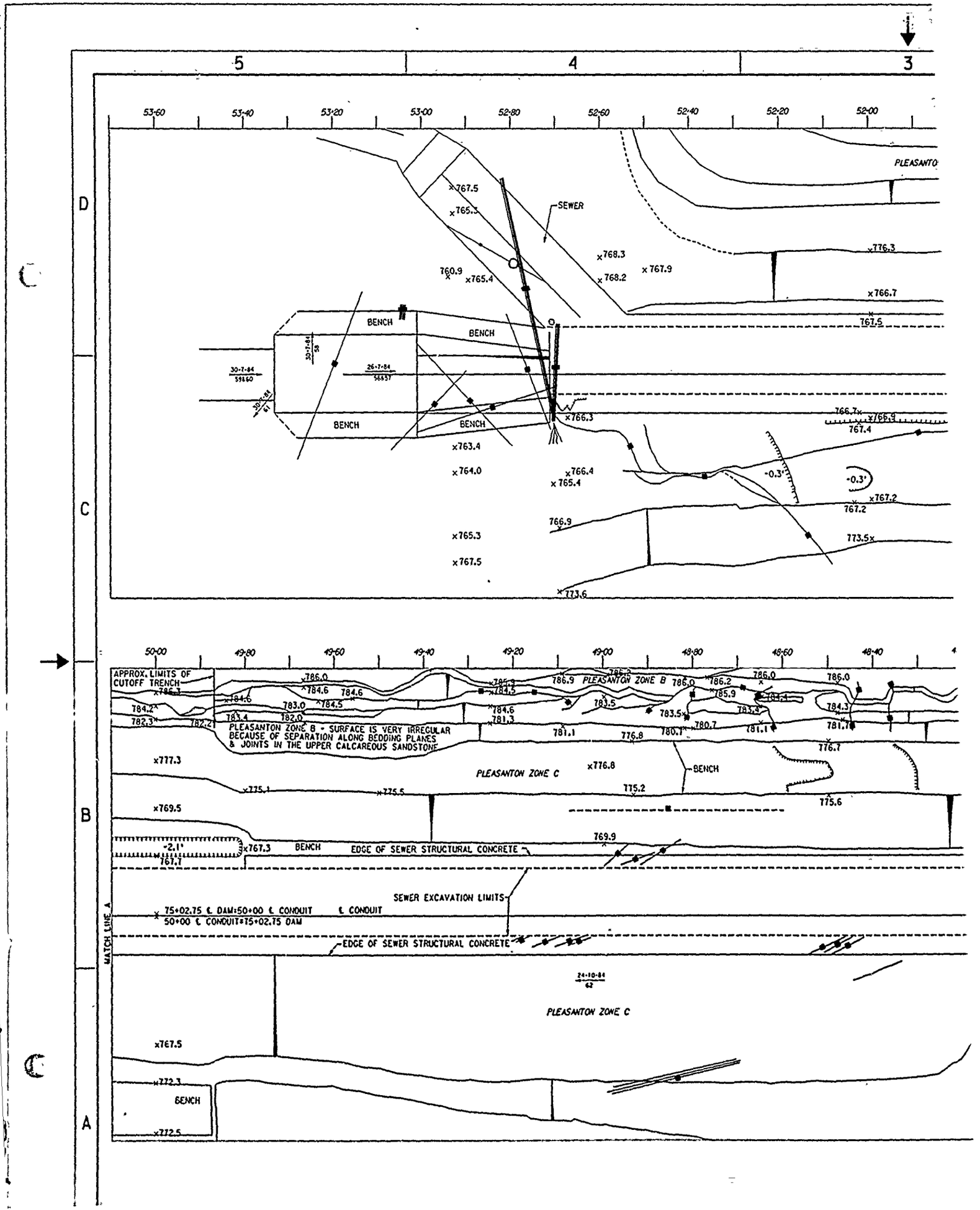
Submitted by:

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

SUMMARY OF GROUTING

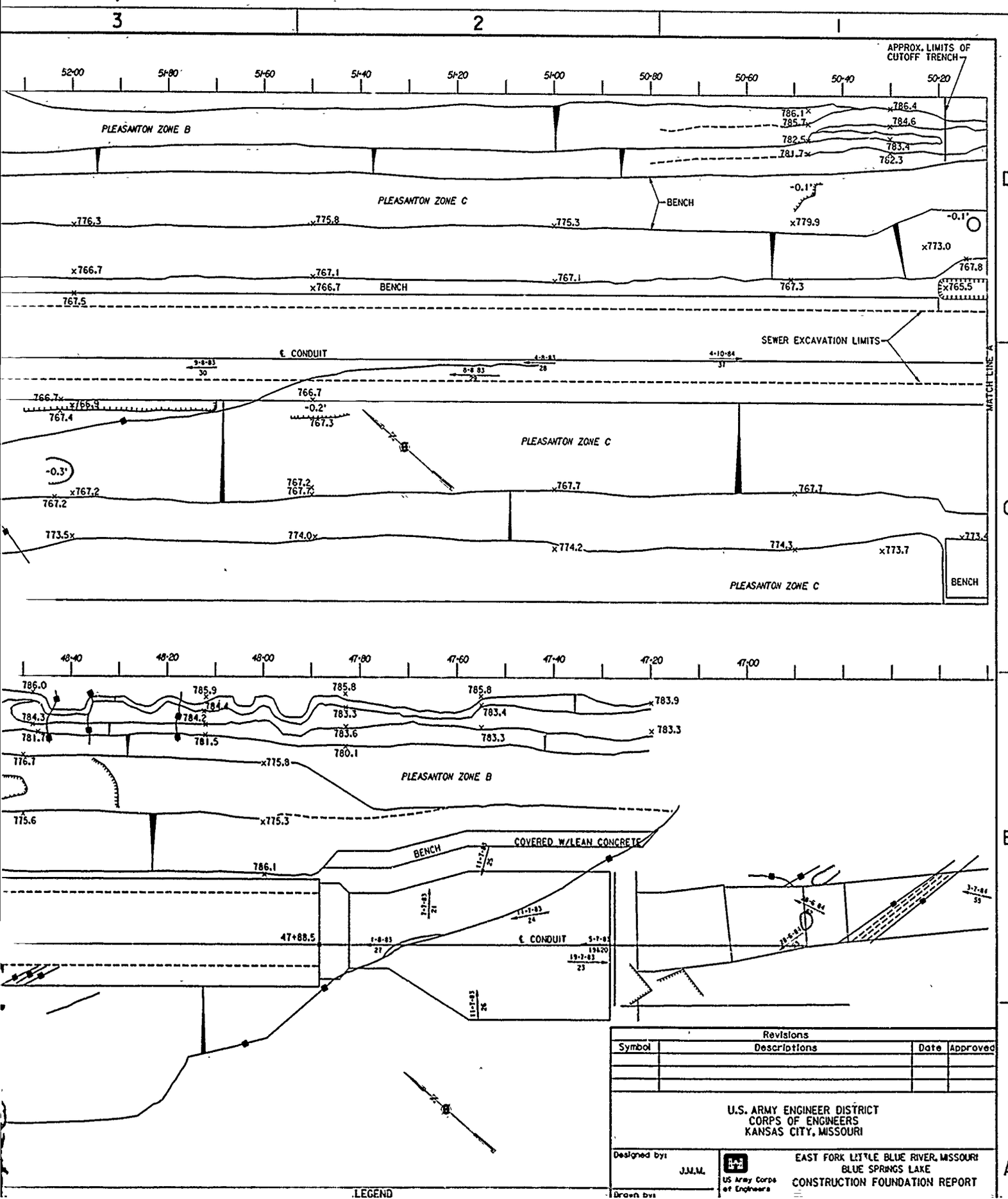
Scale: AS SHOWN
Date: JUNE 1990
Dwg. No:
Sheet number: 75
File No.: RBL-2-1295

PLATE NO. 75



5
4
3
D
C
B
A
53+60
53+40
53+20
53+00
52+80
52+60
52+40
52+20
52+00
PLEASANTO
SEWER
BENCH
BENCH
BENCH
BENCH
30-7-84
59&60
30-7-84
58
26-7-84
56&57
30-7-84
61
767.5
765.3
768.3
768.2
767.9
760.9
765.4
776.3
766.7
767.5
766.3
766.7
766.9
767.4
763.4
764.0
766.4
765.4
-0.3'
-0.3'
767.2
767.2
766.9
765.3
767.5
773.5
773.6
50+00
49+80
49+60
49+40
49+20
49+00
48+80
48+60
48+40
APPROX. LIMITS OF CUTOFF TRENCH
PLEASANTON ZONE B
PLEASANTON ZONE B - SURFACE IS VERY IRREGULAR BECAUSE OF SEPARATION ALONG BEDDING PLANES & JOINTS IN THE UPPER CALCAREOUS SANDSTONE
PLEASANTON ZONE C
BENCH
777.3
776.8
775.1
775.5
775.2
775.6
769.5
769.9
-2.1'
767.3
767.7
BENCH
EDGE OF SEWER STRUCTURAL CONCRETE
SEWER EXCAVATION LIMITS
75+02.75 ℄ DAM=50+00 ℄ CONDUIT
50+00 ℄ CONDUIT=75+02.75 DAM
℄ CONDUIT
EDGE OF SEWER STRUCTURAL CONCRETE
MATCH LINE A
24-10-84
62
PLEASANTON ZONE C
767.5
772.3
BENCH
772.5

VALUE ENGINEERING PAYS

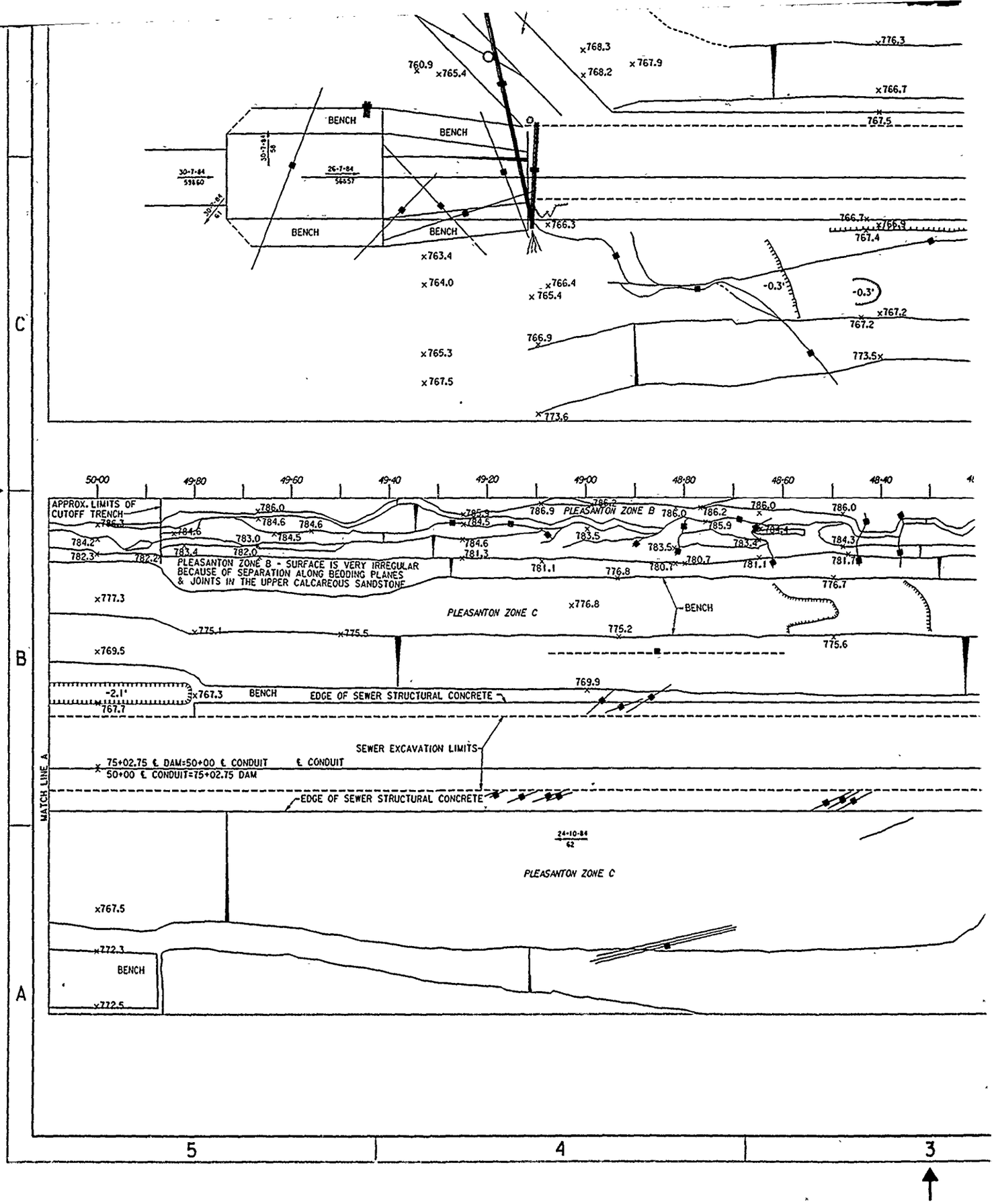


Revisions			
Symbol	Descriptions	Date	Approved

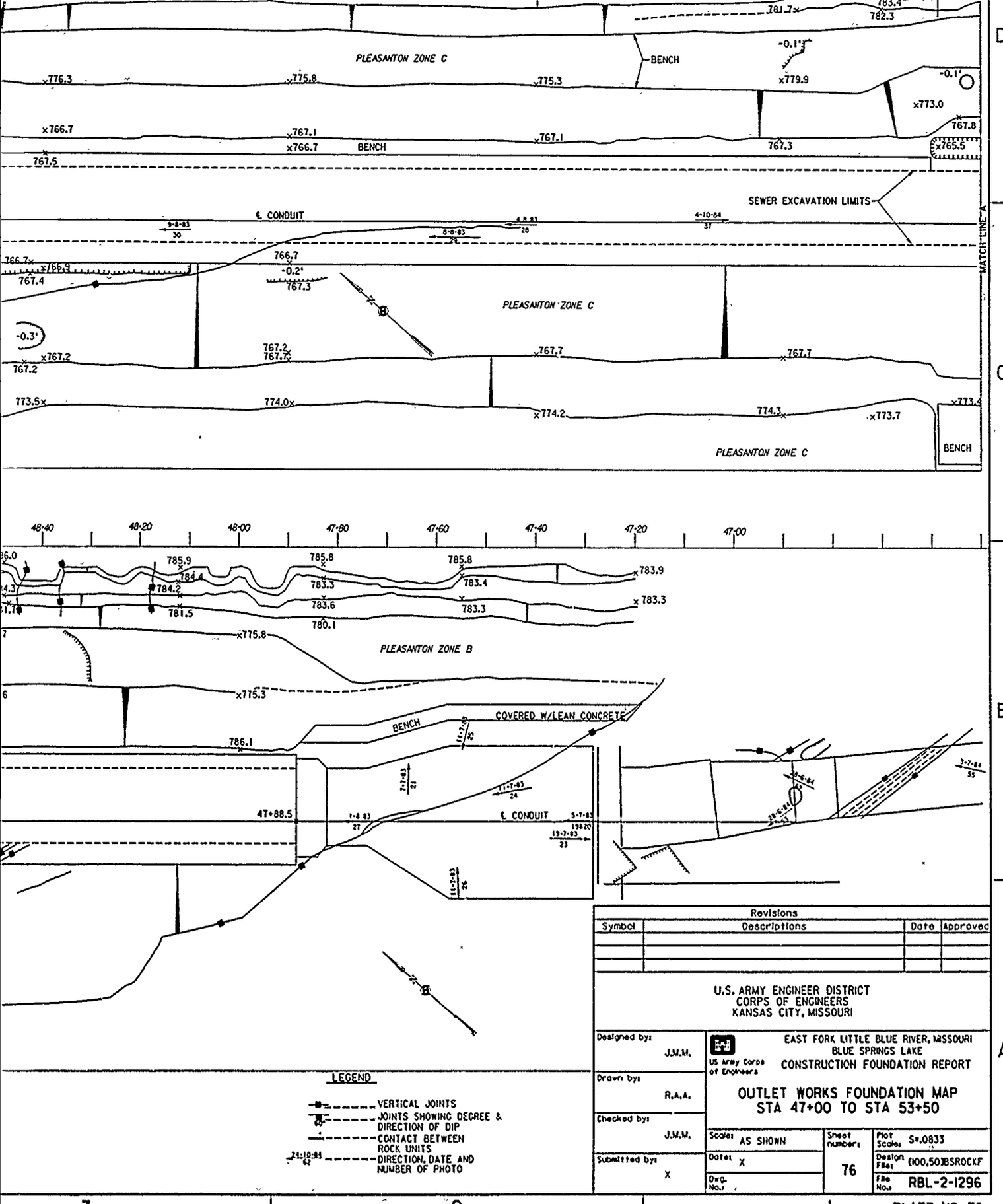
U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by: J.M.M.
Drawn by:
US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT



BENCH
BENCH
BENCH
BENCH
30-7-84
59860
26-7-84
56657
30-7-84
61
30-7-84
58
760.9
765.4
768.3
768.2
767.9
776.3
766.7
767.5
766.3
766.7
766.9
767.4
763.4
764.0
766.4
765.4
-0.3'
-0.3'
767.2
767.2
766.9
765.3
767.5
773.5
773.6
C
50-00
49-80
49-60
49-40
49-20
49-00
48-80
48-60
48-40
APPROX. LIMITS OF CUTOFF TRENCH
786.0
784.6
784.6
784.6
784.5
783.0
784.5
784.2
782.3
782.2
783.4
782.0
PLEASANTON ZONE B - SURFACE IS VERY IRREGULAR BECAUSE OF SEPARATION ALONG BEDDING PLANES & JOINTS IN THE UPPER CALCAREOUS SANDSTONE
785.3
784.5
786.9
786.2
PLEASANTON ZONE B
786.0
786.2
786.0
786.0
785.9
784.4
784.3
783.5
783.5
783.4
781.3
781.1
776.8
780.7
780.7
781.1
781.7
776.7
777.3
PLEASANTON ZONE C
776.8
BENCH
775.1
775.5
775.2
775.6
769.5
769.9
-2.1'
767.3
BENCH
EDGE OF SEWER STRUCTURAL CONCRETE
767.7
SEWER EXCAVATION LIMITS
75+02.75 ℄ DAM=50+00 ℄ CONDUIT
℄ CONDUIT
50+00 ℄ CONDUIT=75+02.75 DAM
MATCH LINE A
EDGE OF SEWER STRUCTURAL CONCRETE
24-10-84
62
PLEASANTON ZONE C
767.5
772.3
BENCH
772.5
B
A
5
4
3



LEGEND

- VERTICAL JOINTS
- JOINTS SHOWING DEGREE & DIRECTION OF DIP
- CONTACT BETWEEN ROCK UNITS
- DIRECTION, DATE AND NUMBER OF PHOTO

Revisions			
Symbol	Descriptions	Date	Approved

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

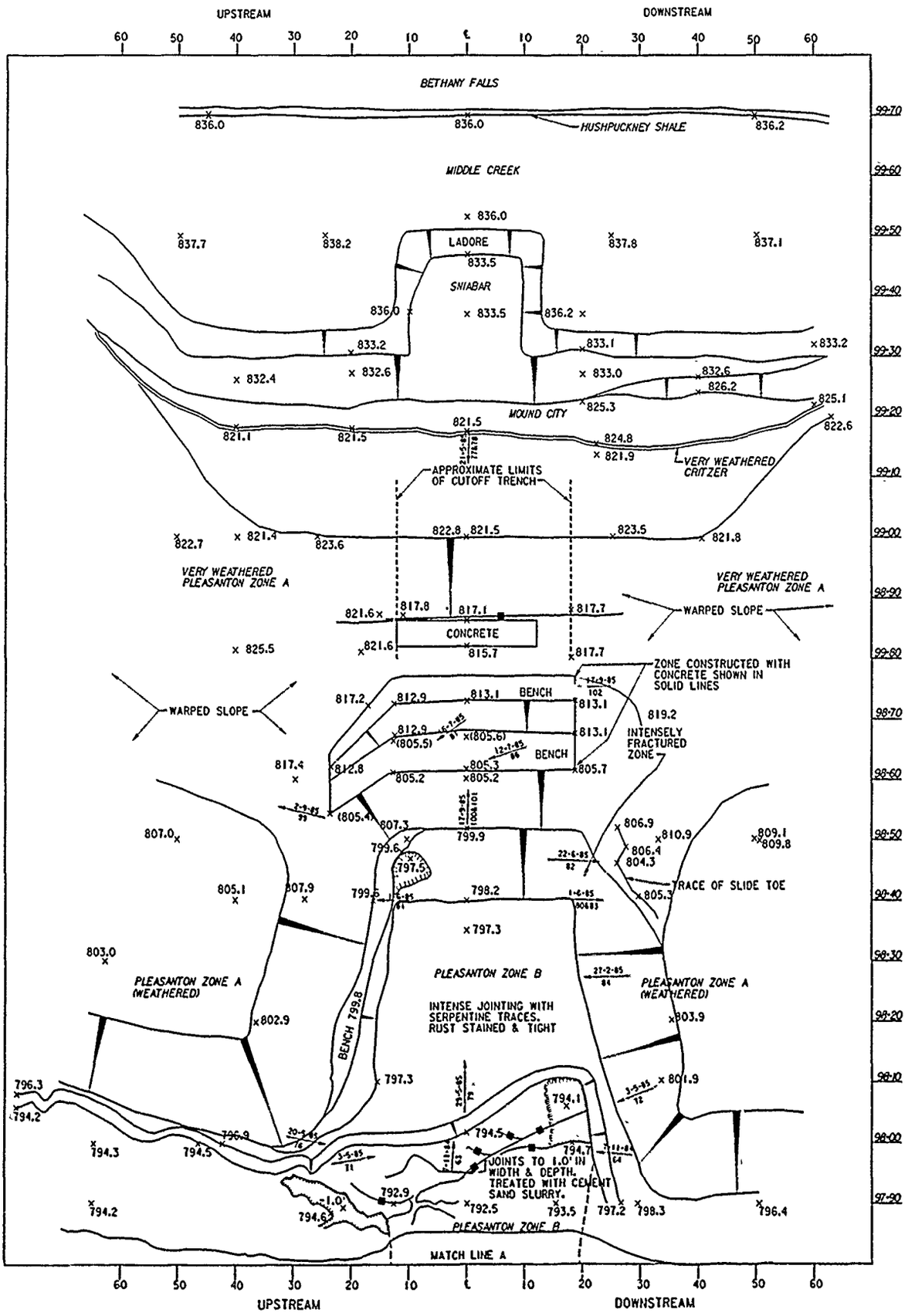
US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

OUTLET WORKS FOUNDATION MAP
STA 47+00 TO STA 53+50

Designed by: J.M.M.	Scale: AS SHOWN	Sheet numbers: 76	Plot Scale: S=.0833
Drawn by: R.A.A.	Date: X		Design File: (100,50)BSROCKF
Checked by: J.M.M.	Dwg. No.:		File No.: RBL-2-1296
Submitted by: X			

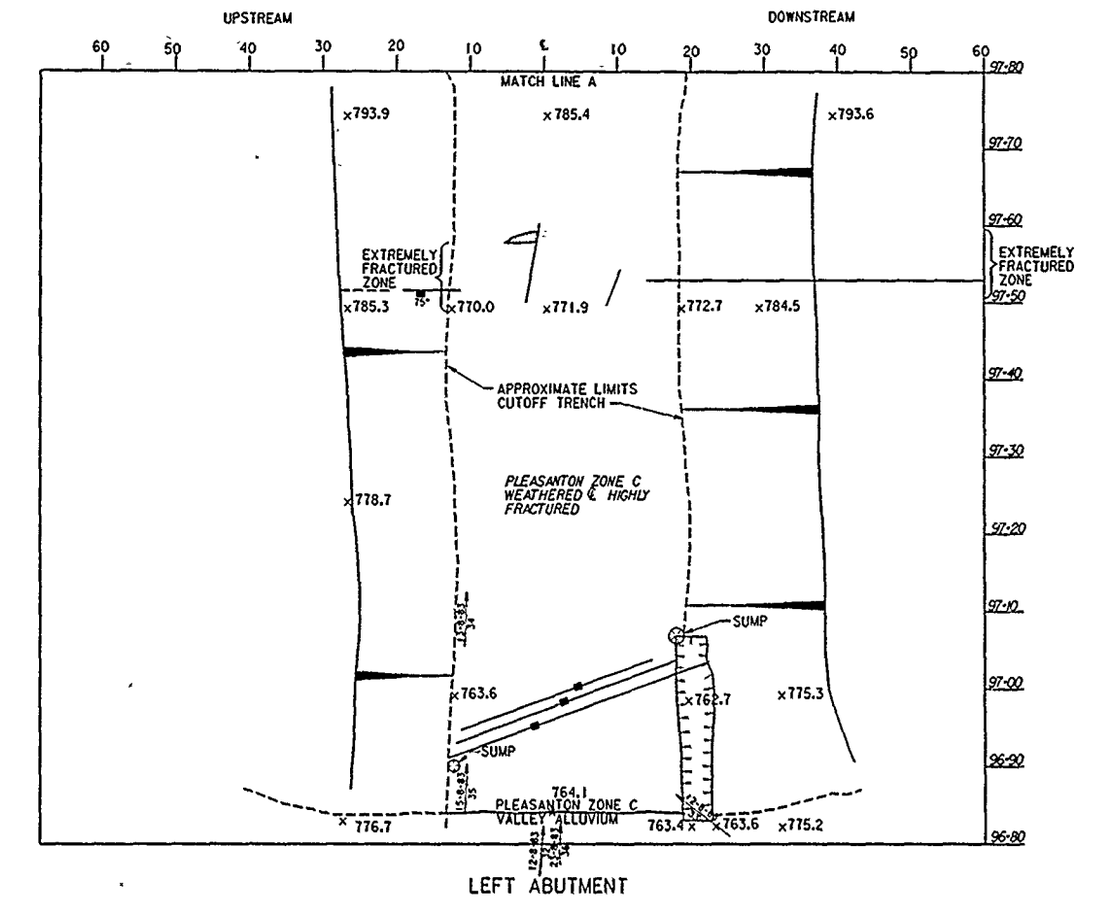
PLATE NO. 76



LEFT ABUTMENT

VALUE ENGINEERING PAYS

3 2 1



D C B A

LEGEND

- VERTICAL JOINTS
- JOINTS SHOWING DEGREE & DIRECTION OF DIP
- CONTACT BETWEEN ROCK UNITS
- DIRECTION, DATE AND NUMBER OF PHOTO

Revisions			
Symbol	Descriptions	Date	Approved

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

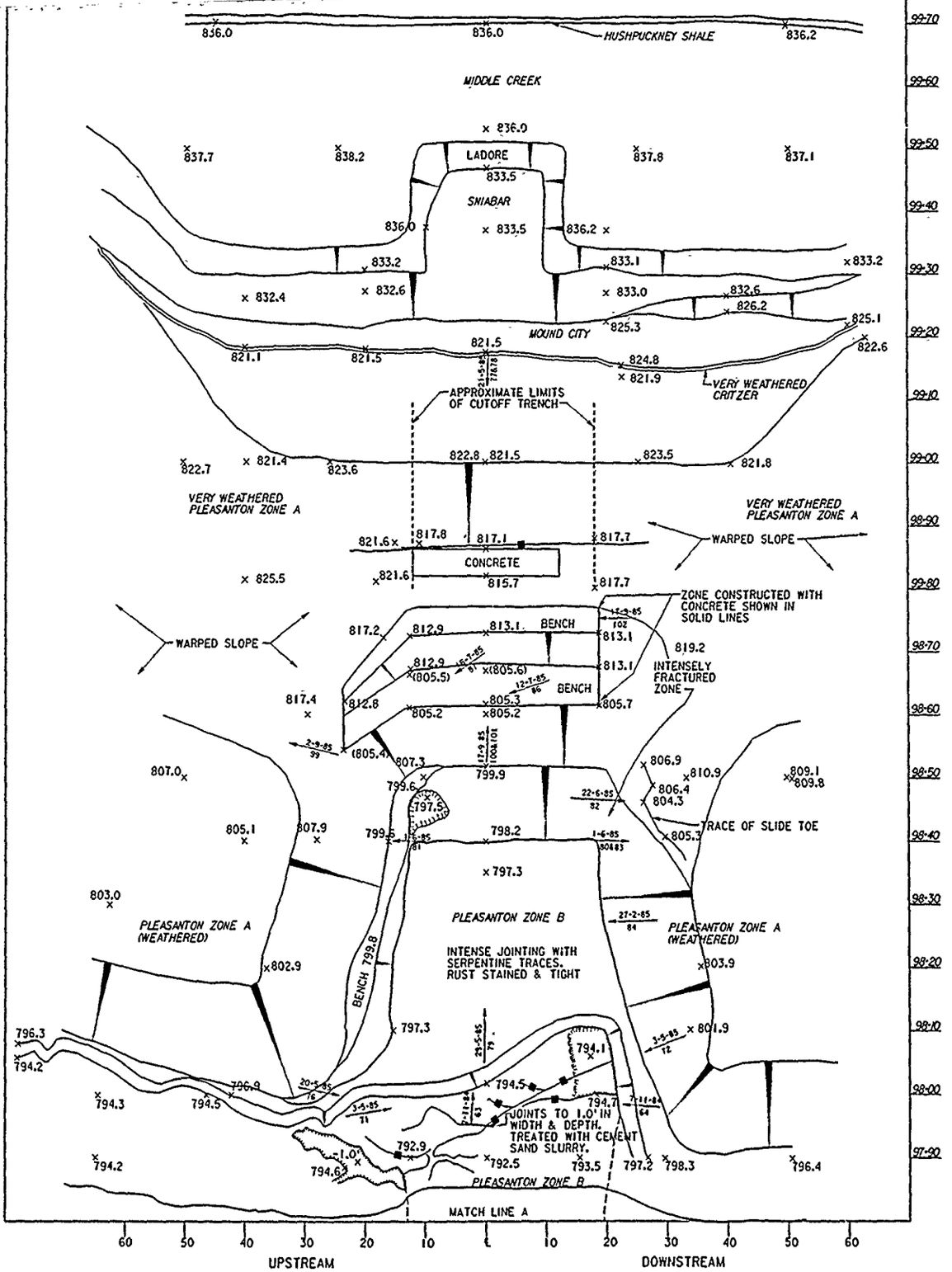
Designed by: J.M.M.
Drawn by: R.A.A.
Checked by: J.M.M.
Submitted by: X

US Army Corps of Engineers

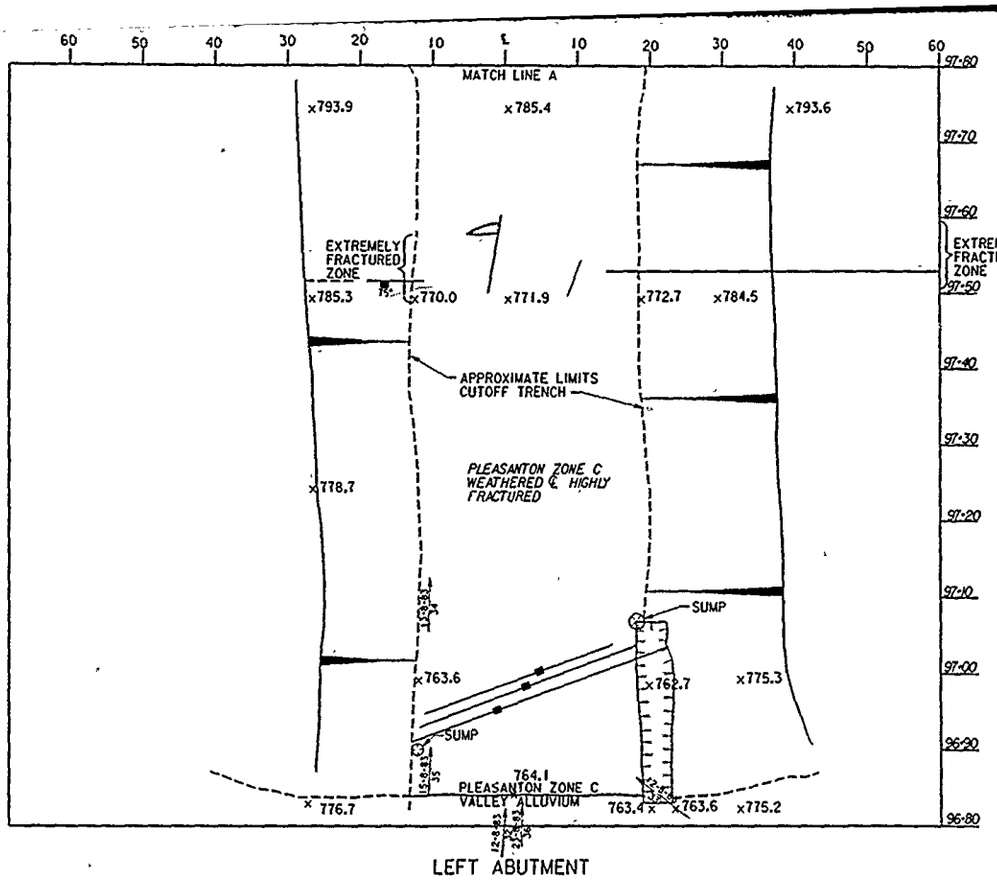
EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

LEFT ABUTMENT CUTOFF TRENCH
STA 99+70 TO STA 96+80

Scale: AS SHOWN
Dates: X
Sheet numbers: 77
Plot Scale: S=.0833
Design Files: (100,30)BSCF77



LEFT ABUTMENT



LEFT ABUTMENT

LEGEND

- VERTICAL JOINTS
- 60° JOINTS SHOWING DEGREE & DIRECTION OF DIP
- CONTACT BETWEEN ROCK UNITS
- 27-2-85 / 84 DIRECTION, DATE AND NUMBER OF PHOTO

Revisions			
Symbol	Descriptions	Date	Approved

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

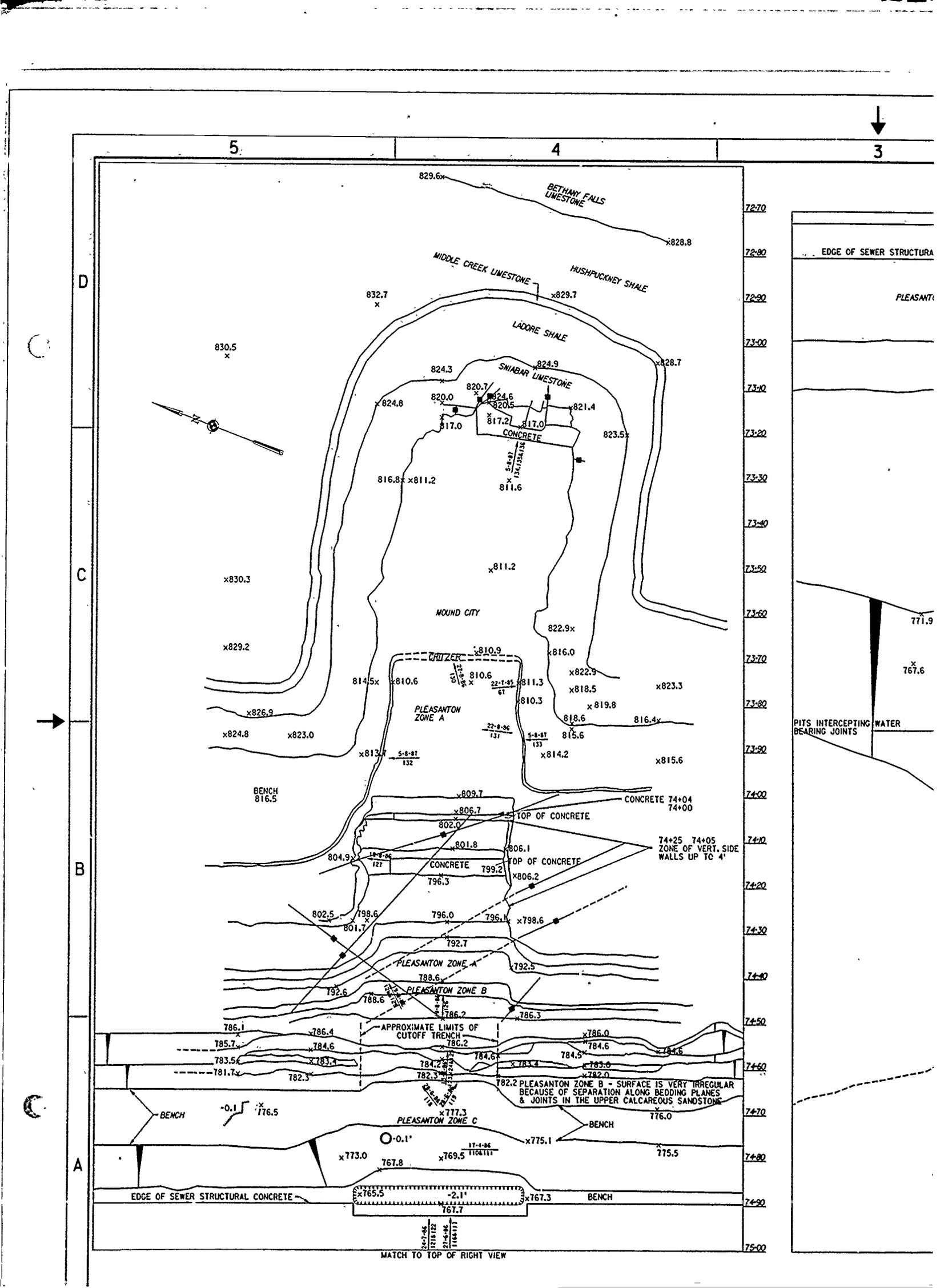
LEFT ABUTMENT CUTOFF TRENCH
STA 99+70 TO STA 96+80

Designed by: J.M.M.	Scale: AS SHOWN	Sheet numbers: 77	Plot Scale: S=.0833
Drawn by: R.A.A.	Date: X		Design File: E100,30J8SCF77
Checked by: J.M.M.	Dwg. No.:		File No.: RBL-2-1297
Submitted by: X			

PLATE NO. 77

D C B A

3 2 1


5
4
3
D
C
B
A
BETHANY FALLS LIMESTONE
MIDDLE CREEK LIMESTONE
HUSHPUCKNEY SHALE
LADORE SHALE
SNIABAR LIMESTONE
MOUND CITY
CRITZER
PLEASANTON ZONE A
PLEASANTON ZONE B
PLEASANTON ZONE C
CONCRETE
TOP OF CONCRETE
BENCH
APPROXIMATE LIMITS OF CUTOFF TRENCH
PLEASANTON ZONE B - SURFACE IS VERY IRREGULAR BECAUSE OF SEPARATION ALONG BEDDING PLANES & JOINTS IN THE UPPER CALCAREOUS SANDSTONE
EDGE OF SEWER STRUCTURAL CONCRETE
CONCRETE 74+04 74+00
74+25 74+05 ZONE OF VERT. SIDE WALLS UP TO 4'
PITS INTERCEPTING WATER BEARING JOINTS
MATCH TO TOP OF RIGHT VIEW
72-70
72-80
72-90
73-00
73-10
73-20
73-30
73-40
73-50
73-60
73-70
73-80
73-90
74-00
74-10
74-20
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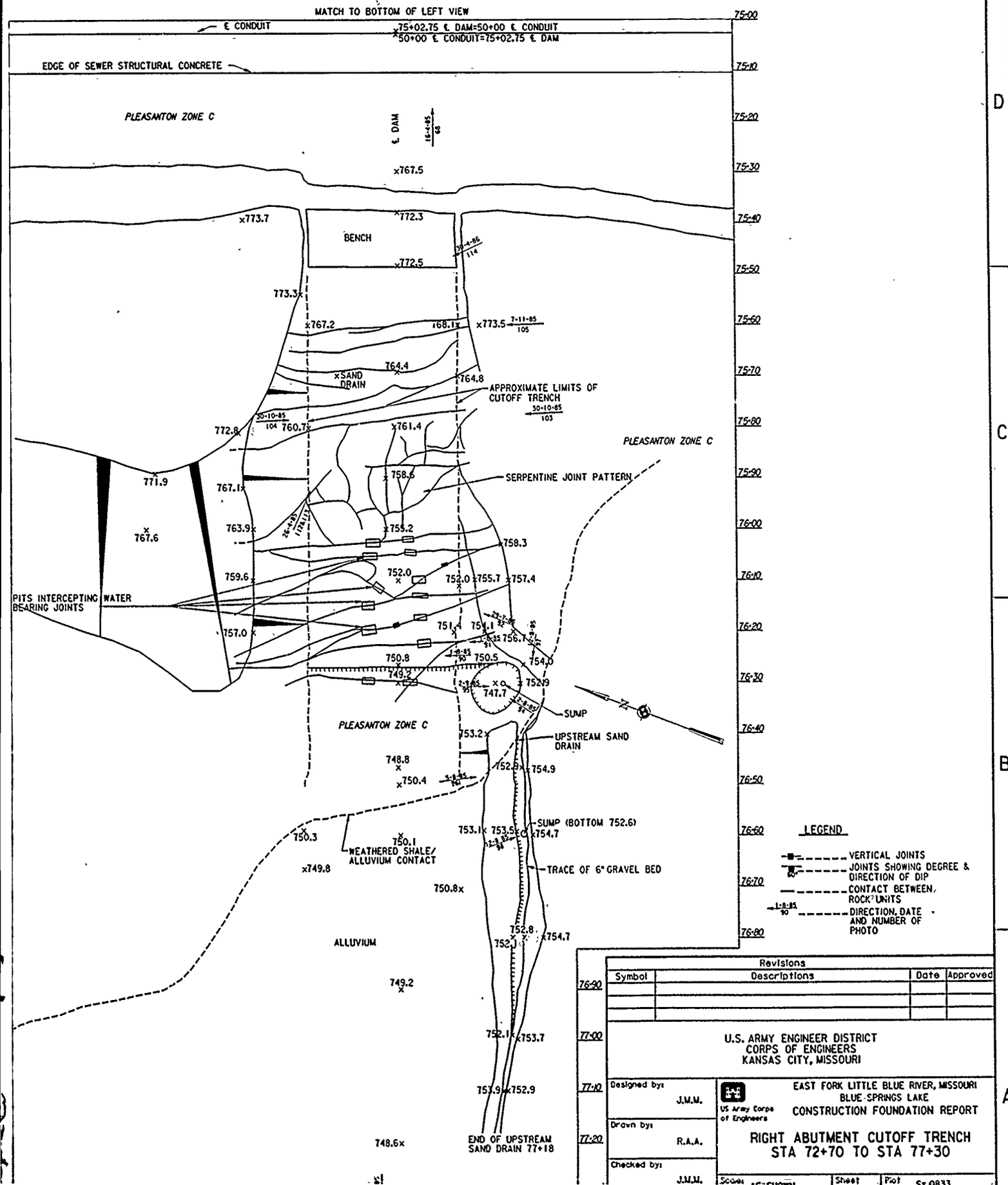
74-40
74-50
74-60
74-70
74-80
74-90
75-00

VALUE ENGINEERING PAYS

3 2 1



Revisions			
Symbol	Descriptions	Date	Approved

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

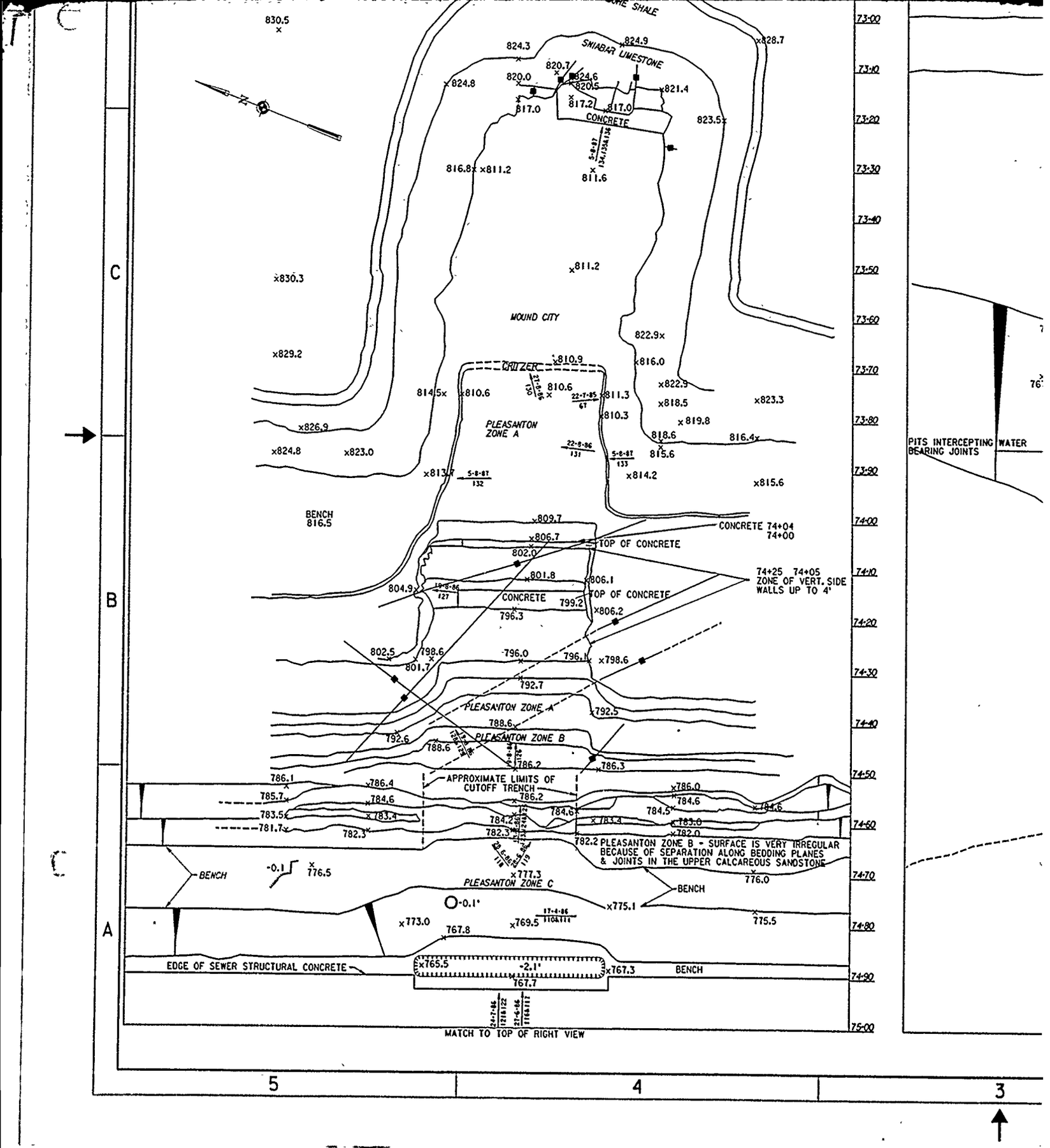
Designed by: J.M.M.
Drawn by: R.A.A.
Checked by: J.M.M.

US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

RIGHT ABUTMENT CUTOFF TRENCH
STA 72+70 TO STA 77+30

Scale | Sheet | Plot Sx 0833


SNIABAR LIMESTONE
CONCRETE
MOUND CITY
CRITZER
PLEASANTON ZONE A
BENCH 816.5
CONCRETE 74+04 74+00
TOP OF CONCRETE
74+25 74+05 ZONE OF VERT. SIDE WALLS UP TO 4'
CONCRETE
TOP OF CONCRETE
PLEASANTON ZONE A
PLEASANTON ZONE B
APPROXIMATE LIMITS OF CUTOFF TRENCH
PLEASANTON ZONE B - SURFACE IS VERY IRREGULAR BECAUSE OF SEPARATION ALONG BEDDING PLANES & JOINTS IN THE UPPER CALCAREOUS SANDSTONE
BENCH
PLEASANTON ZONE C
BENCH
EDGE OF SEWER STRUCTURAL CONCRETE
BENCH
PITS INTERCEPTING WATER BEARING JOINTS
MATCH TO TOP OF RIGHT VIEW
A
B
C
5
4
3
73·00
73·10
73·20
73·30
73·40
73·50
73·60
73·70
73·80
73·90
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74·90
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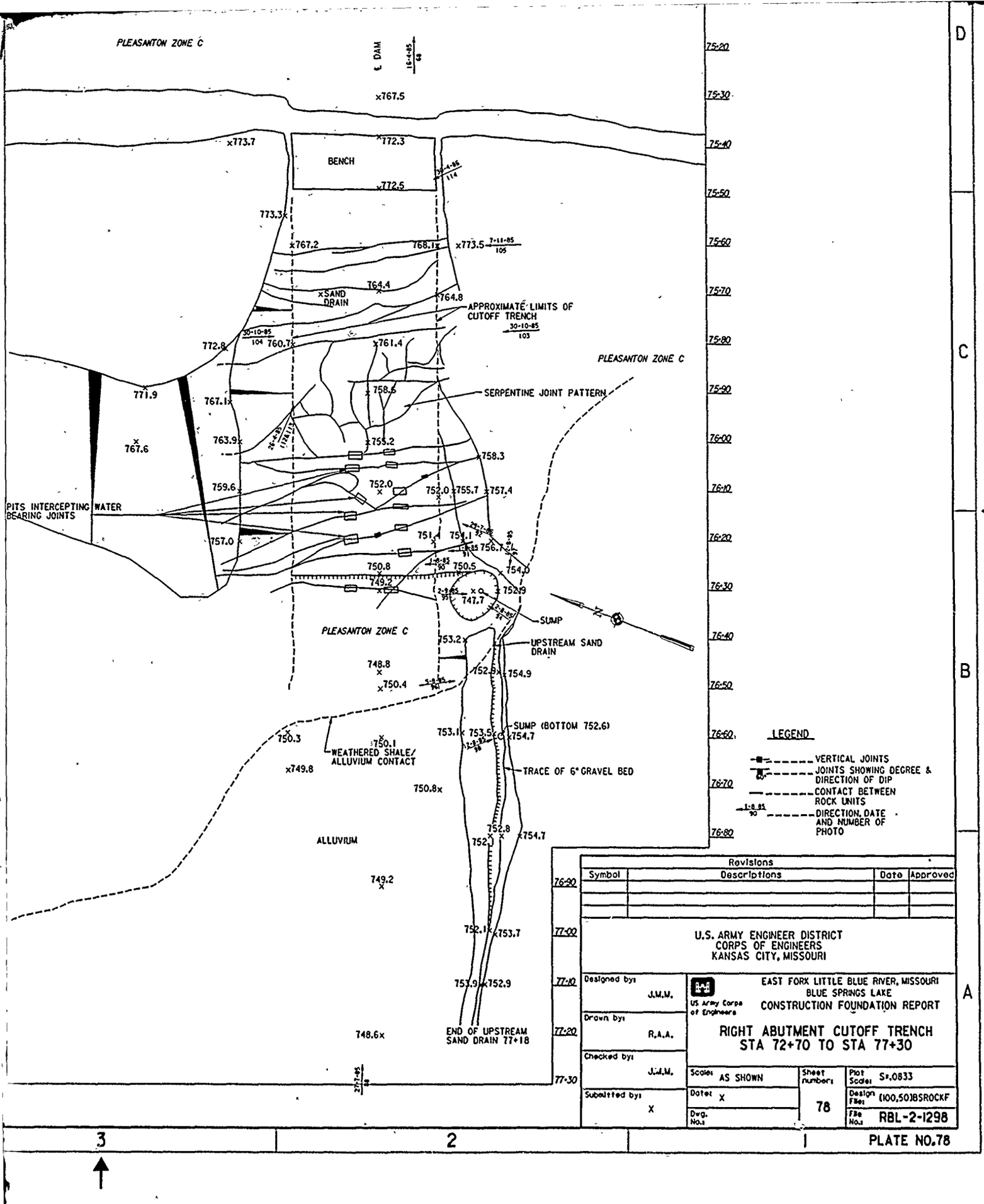


Revisions			
Symbol	Descriptions	Date	Approved

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

RIGHT ABUTMENT CUTOFF TRENCH STA 72+70 TO STA 77+30

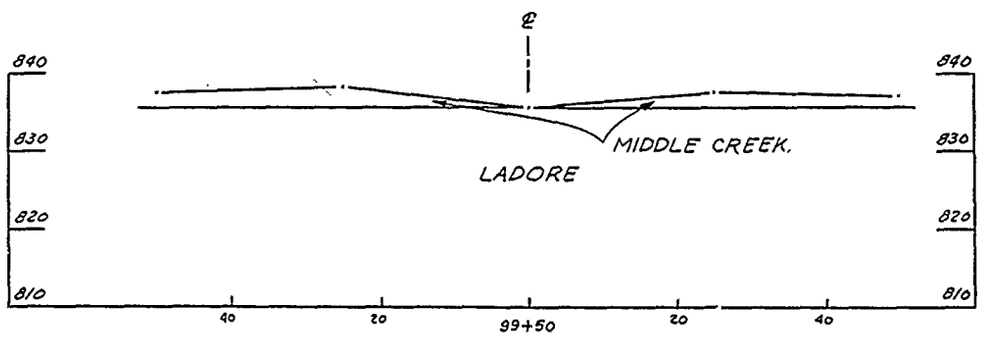
Designed by: J.M.M.	Scale: AS SHOWN	Sheet number: 78	Plot Scale: 1"=0833
Drawn by: R.A.A.	Date: X		Design File: (100,50)BSROCKF
Checked by: J.M.M.	Dwg. No.:		File No.: RBL-2-1298
Submitted by: X			

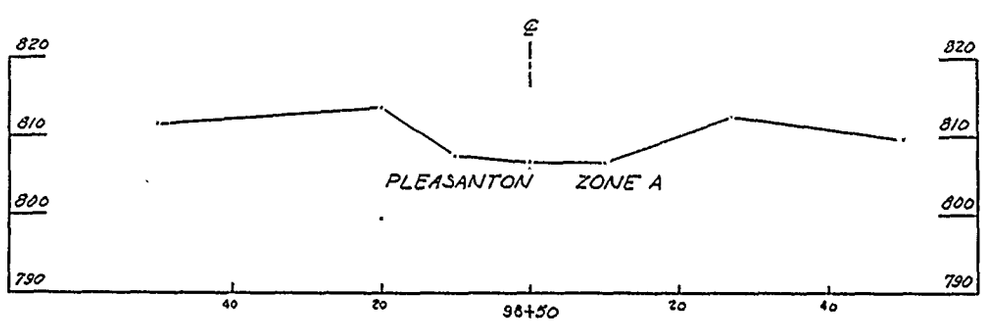
PLATE NO. 78

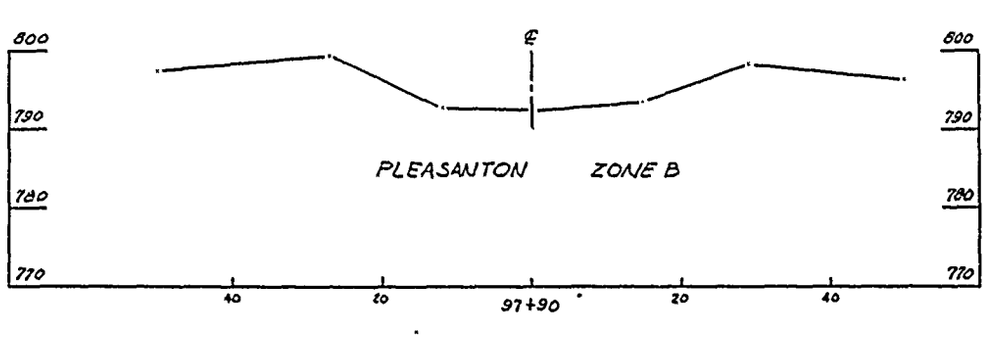
5 4 3

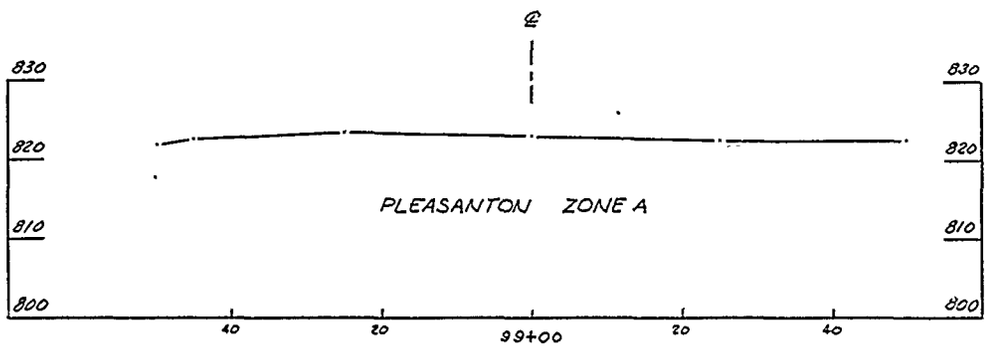
D C B A

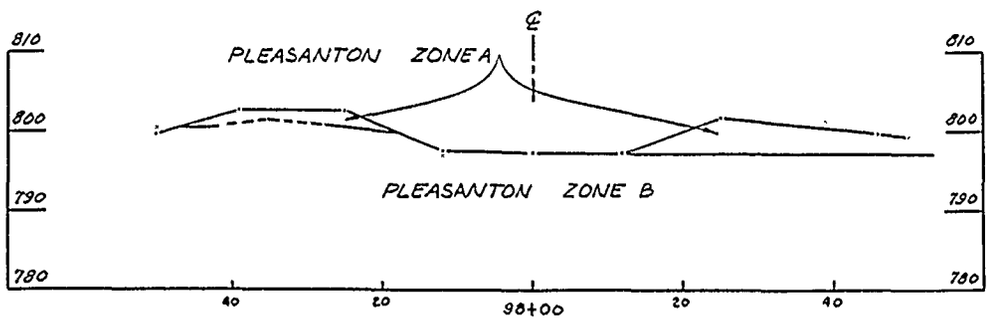
ELEVATION IN FEET BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929











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U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:

Drawn by:

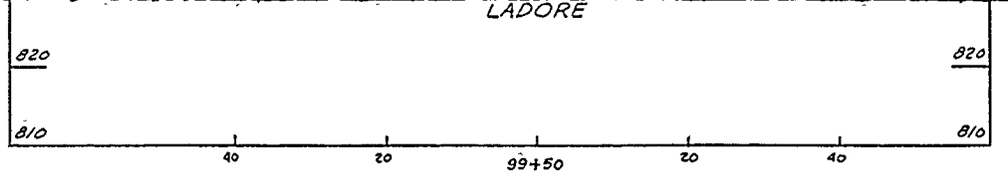
Checked by:

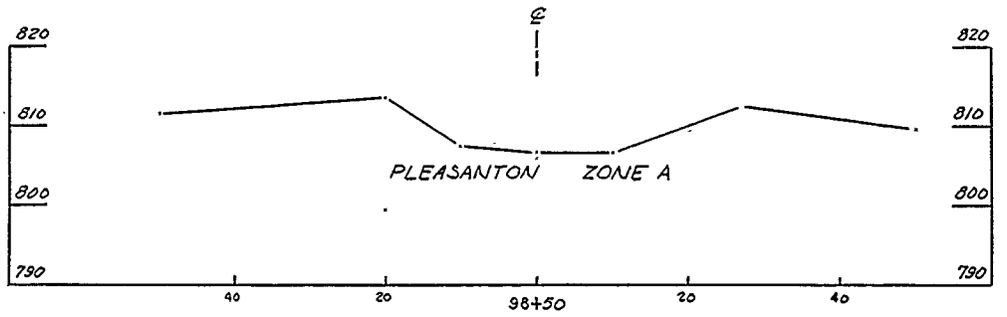
US Army Corps of Engineers

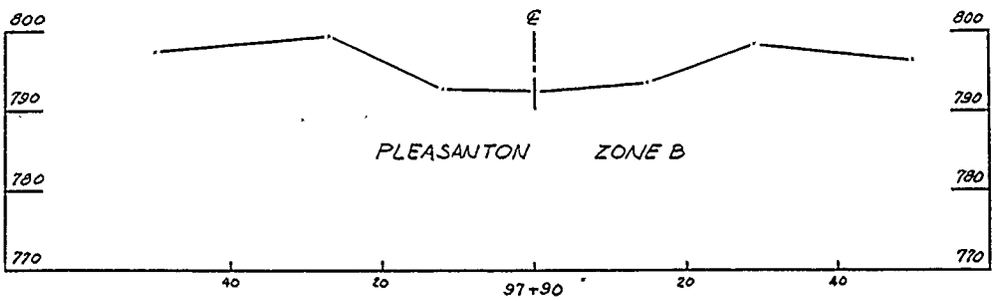
EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

CUTOFF TRENCH
FINAL CROSS SECTIONS
STA. 99+50 TO STA. 97+90

ELEVATION IN FEET BASED ON NATIONAL GEODETIC VERTICAL DATUM OF







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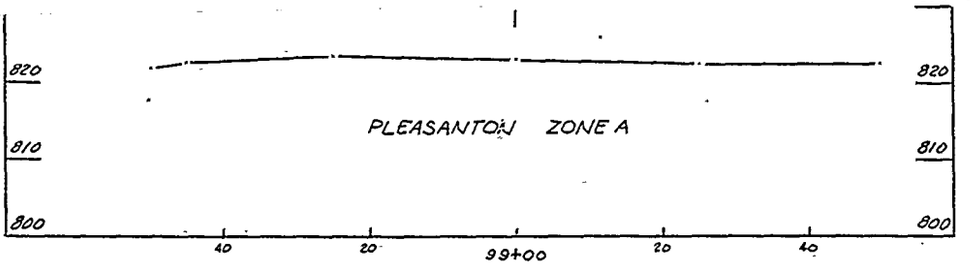

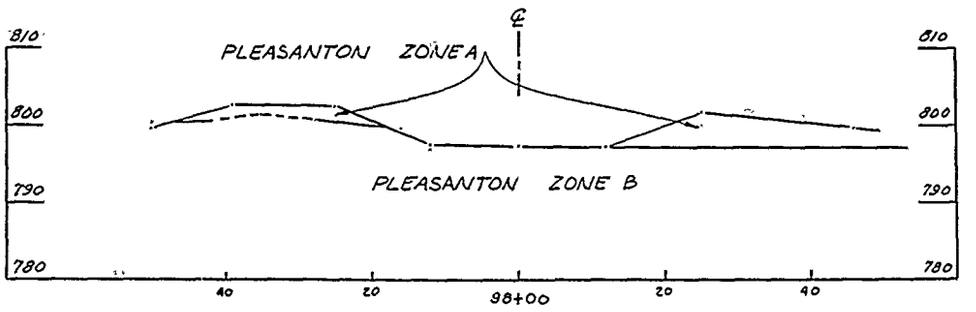

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Checked by:
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EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

CUTOFF TRENCH
FINAL CROSS SECTIONS
STA. 99+50 TO STA. 97+90

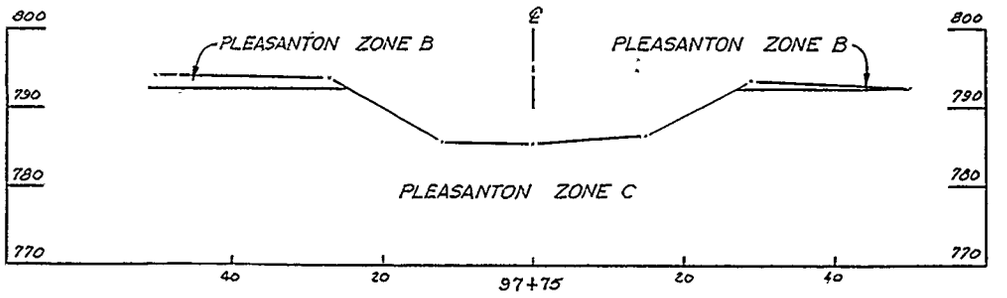
Scale: AS SHOWN
Date: JUNE 1990
Dwg. No.:
Sheet number: 79
File No.: RBL-2-1299

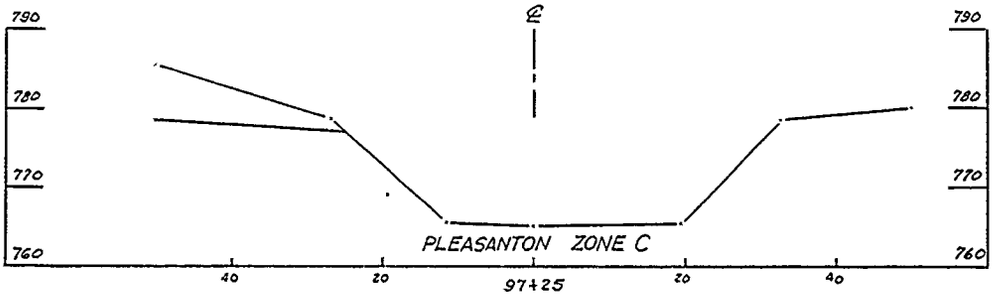
PLATE NO. 79

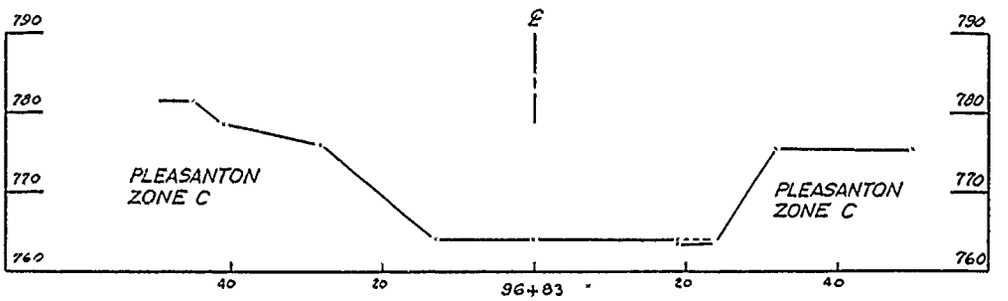
5 4 3

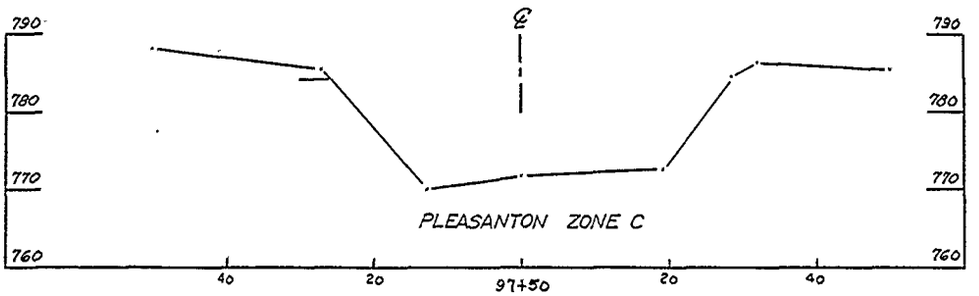
D C B A

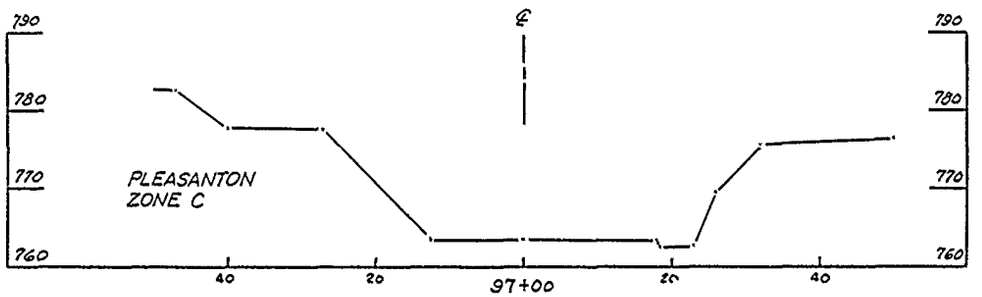
ELEVATION IN FEET BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929











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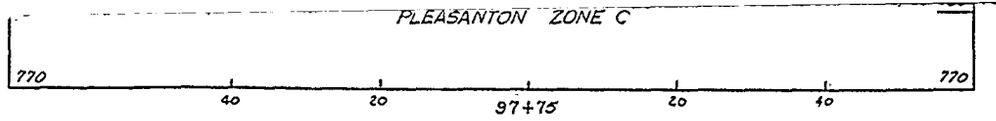
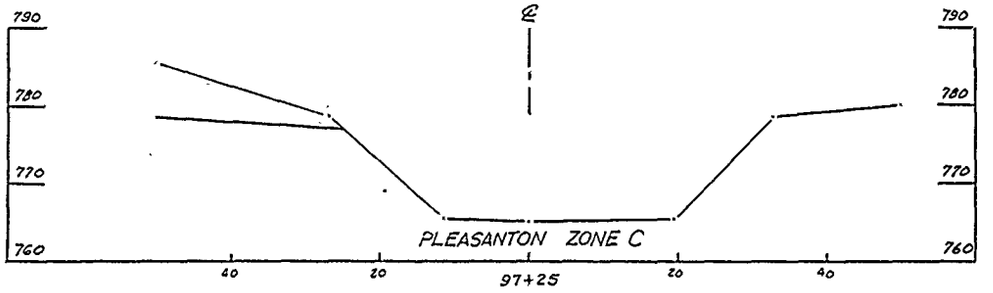
EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

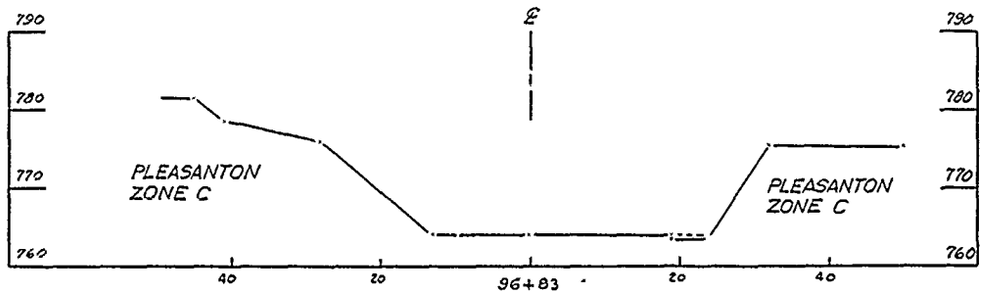
CUTOFF TRENCH
FINAL CROSS SECTIONS
STA. 97+75 TO STA. 96+83

Scale: AS SHOWN
Date: JUNE 1990
Dwg. No.:
Sheet number: 80
File No.: RBL-2-1300

PLATE NO. 80







ELEVATION IN FEET BASED ON NATIONAL GEODETIC VERTICAL DATUM

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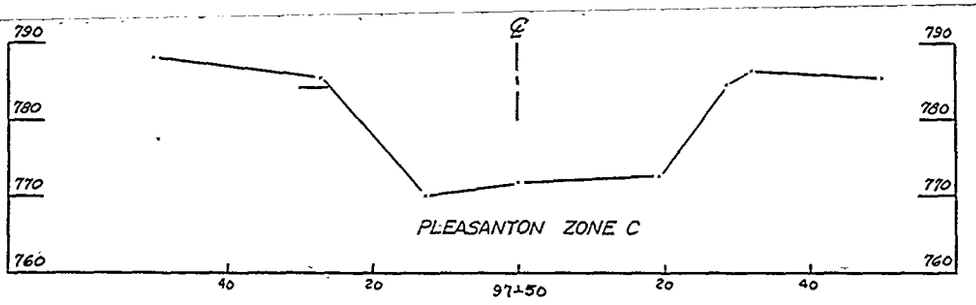

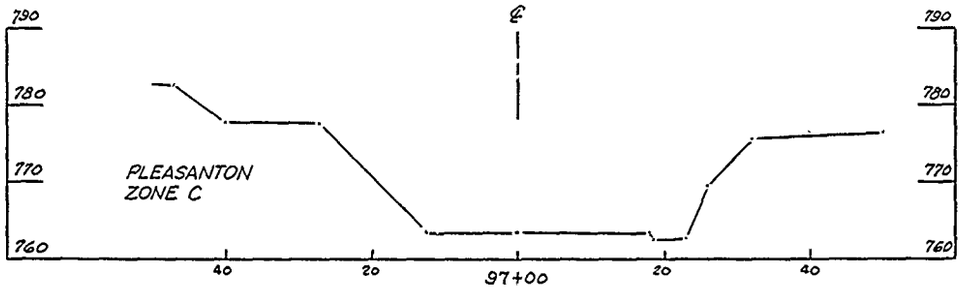

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US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

CUTOFF TRENCH
FINAL CROSS SECTIONS
STA. 97+75 TO STA. 96+83

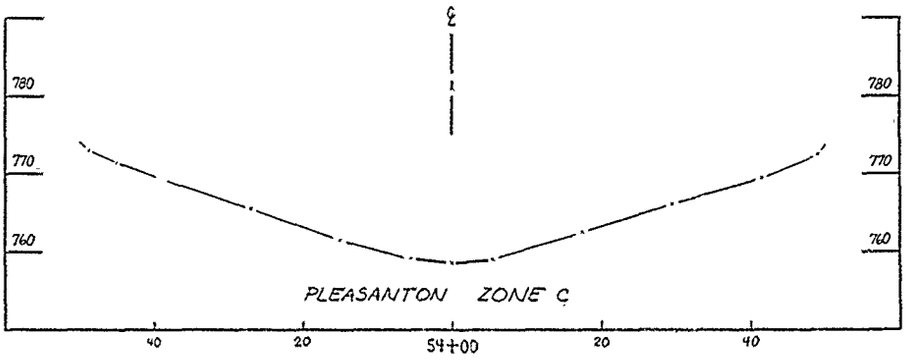
Scale: AS SHOWN
Date: JUNE 1990
Dwg. No.:
Sheet number: 80
File No.: RBL-2-1300

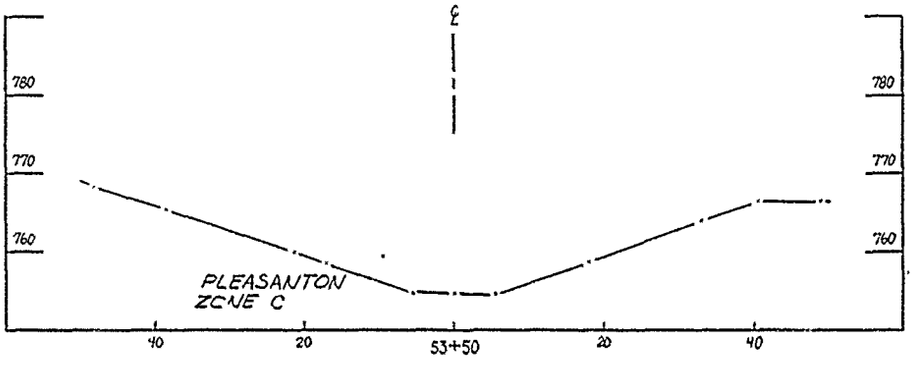
PLATE NO. 80

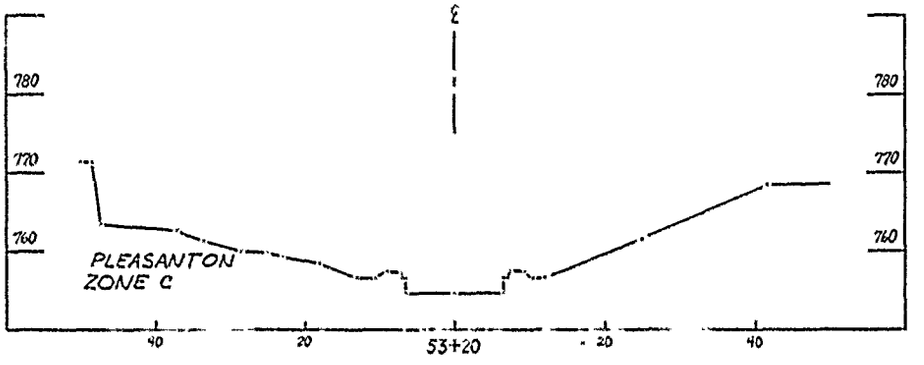
5 4 3

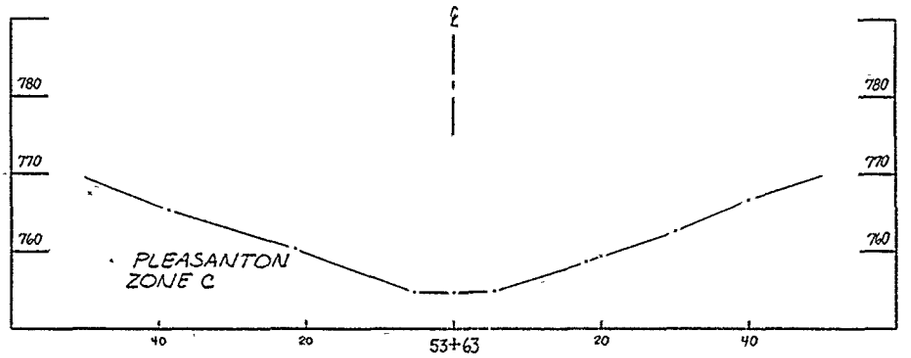
D C B A

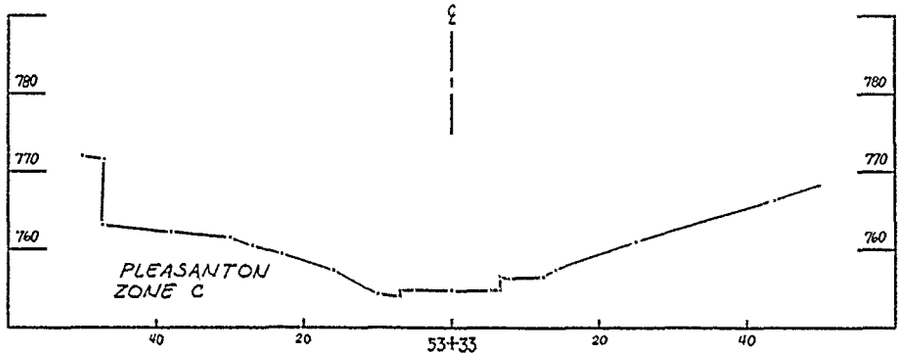
ELEVATION IN FEET BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929













Revisions			
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KANSAS CITY, MISSOURI

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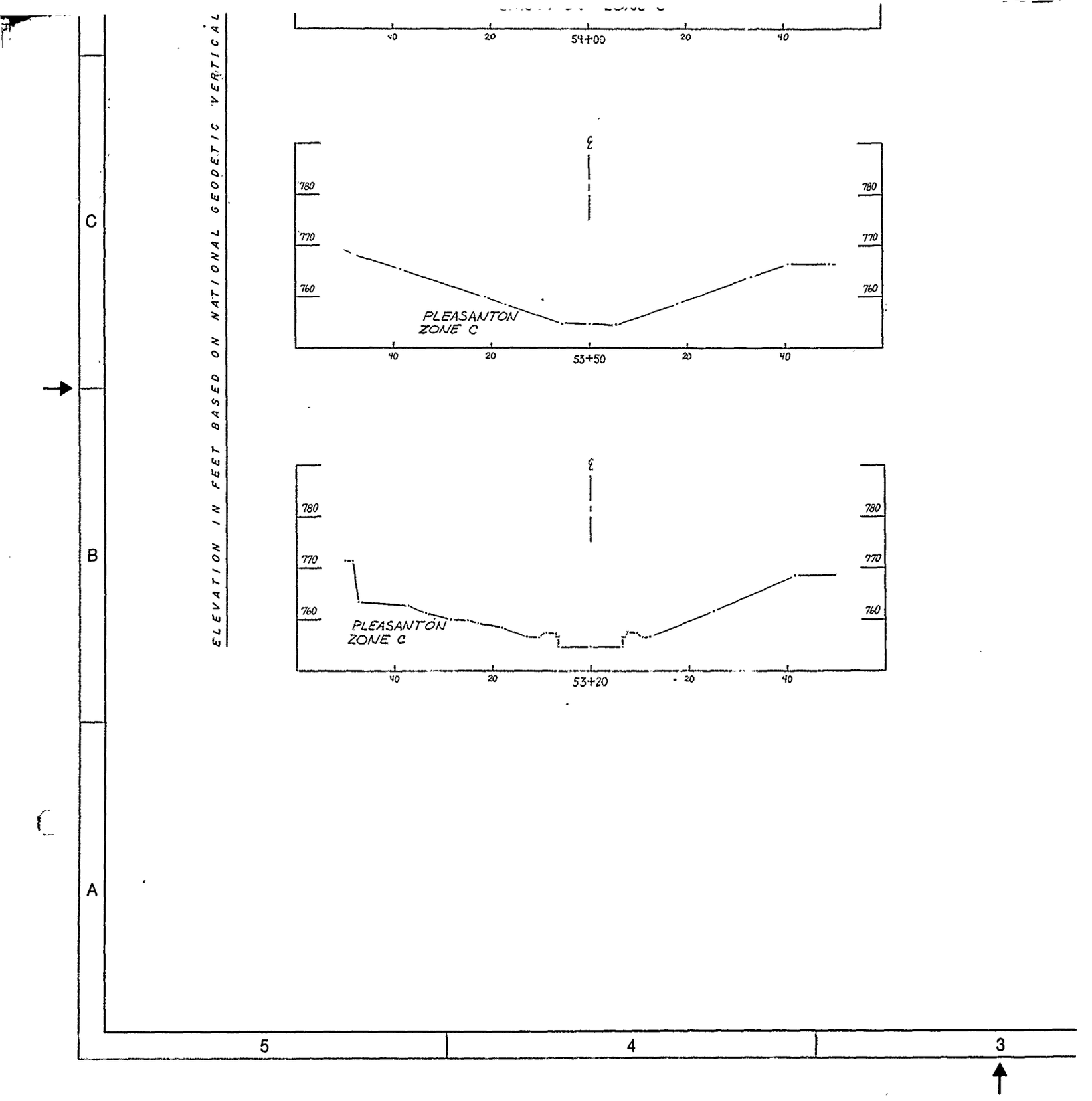
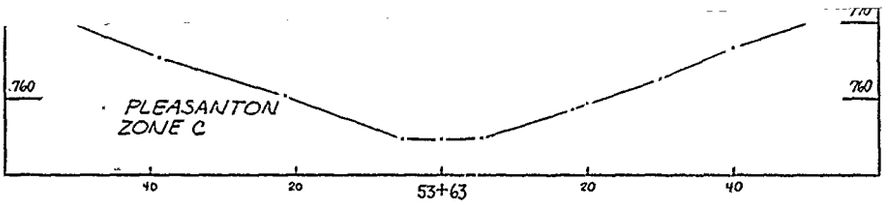
US Army Corps of Engineers

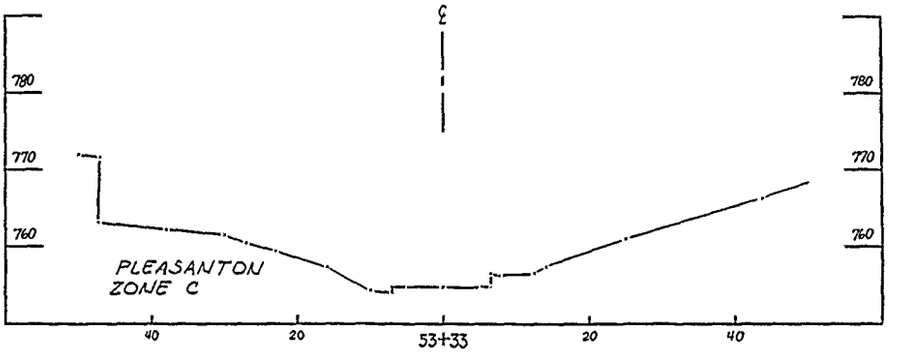
EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

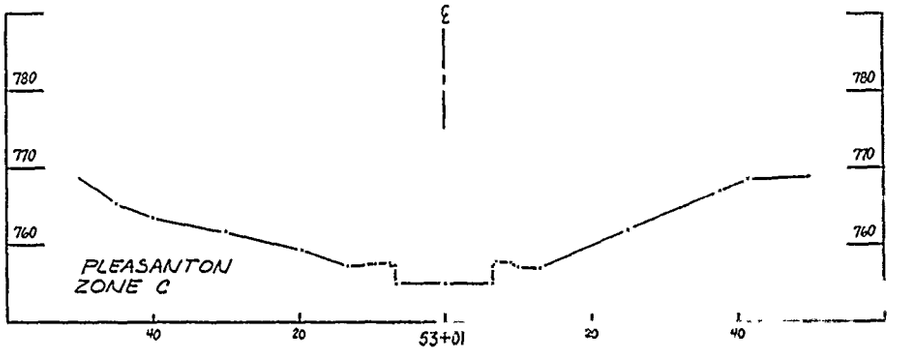
OUTLET WORKS
FINAL CROSS SECTIONS
STA. 54+00 TO STA. 53+01

Scale: AS SHOWN
Date: JUNE 1990
Dwg. No.:
Sheet number: 81
File No. RBL-2-1301


ELEVATION IN FEET BASED ON NATIONAL GEODETIC VERTICAL
54+00
40
20
20
40
℄
780
770
760
PLEASANTON
ZONE C
53+50
53+20
C
B
A
5
4
3







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EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

OUTLET WORKS
FINAL CROSS SECTIONS
STA. 54+00 TO STA. 53+01

Scale: AS SHOWN
Date: JUNE 1990
Dwg. No.: 81
Sheet number:
File No.: RBL-2-1301

PLATE NO. 81

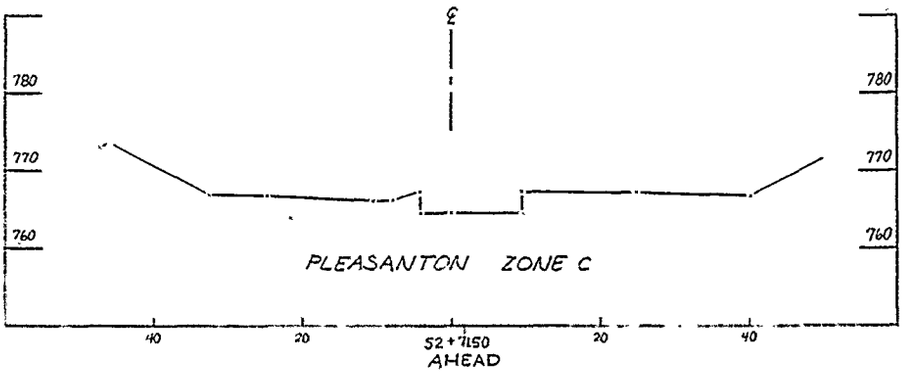
C
B
A

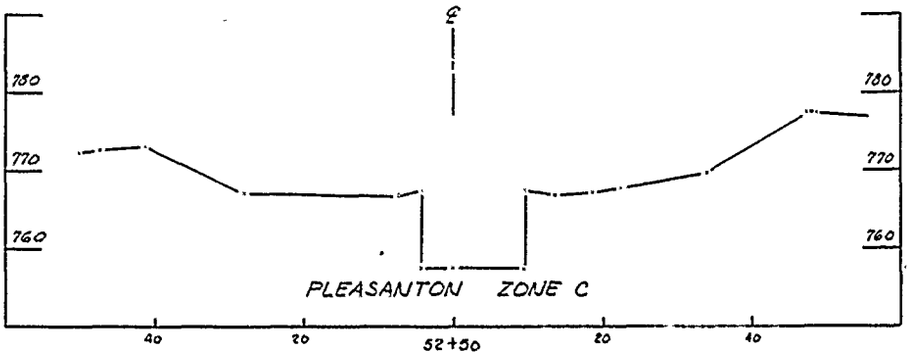
3 2 1

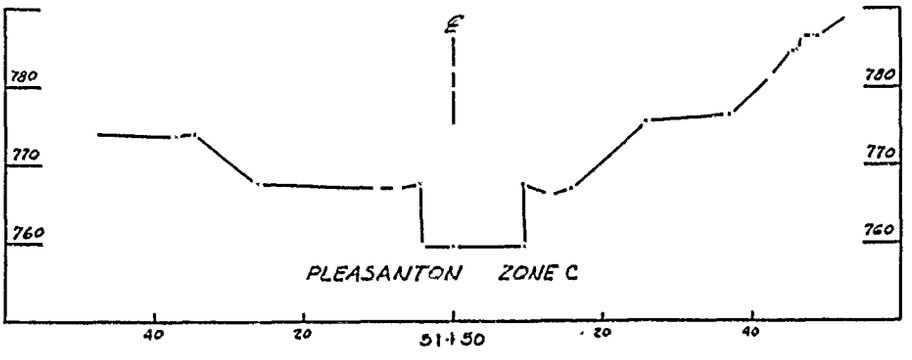
5 4 3

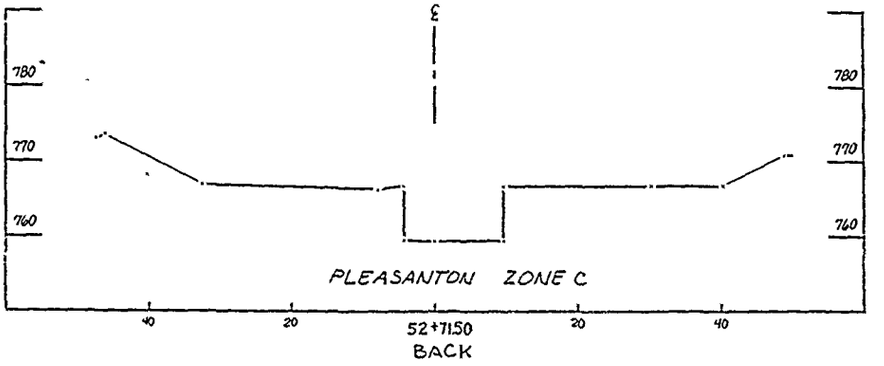
D C B A

ELEVATION IN FEET BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929









52+71.50
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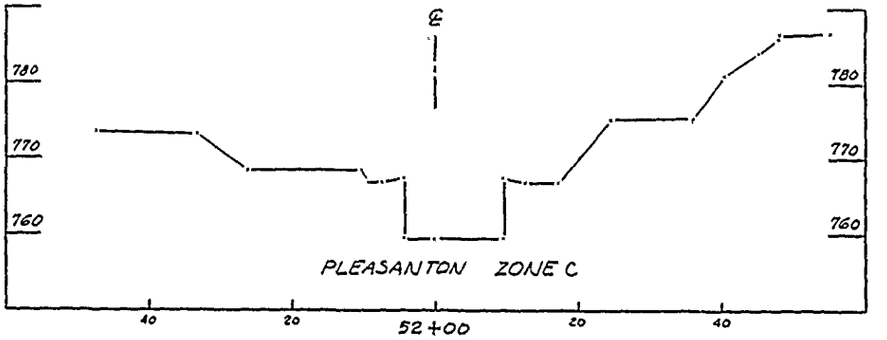
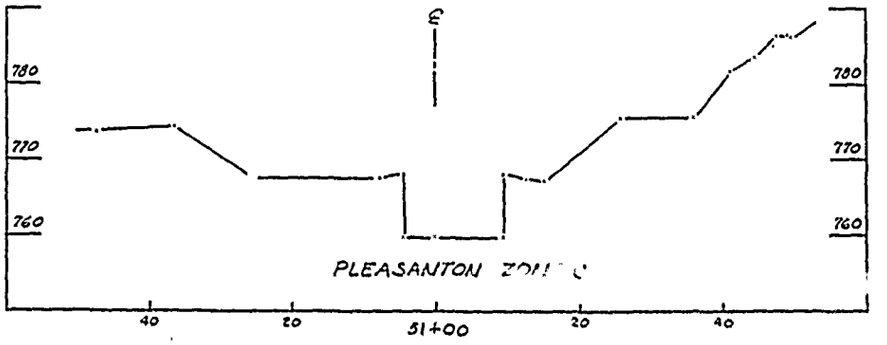


52+00



51+00

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U. S. ARMY ENGINEER DISTRICT
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KANSAS CITY, MISSOURI

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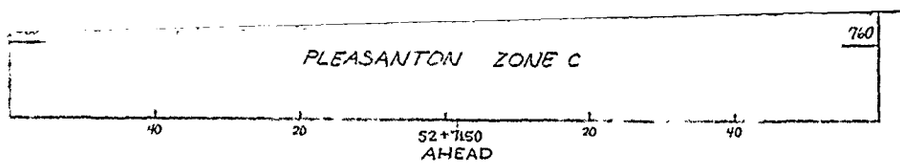
EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

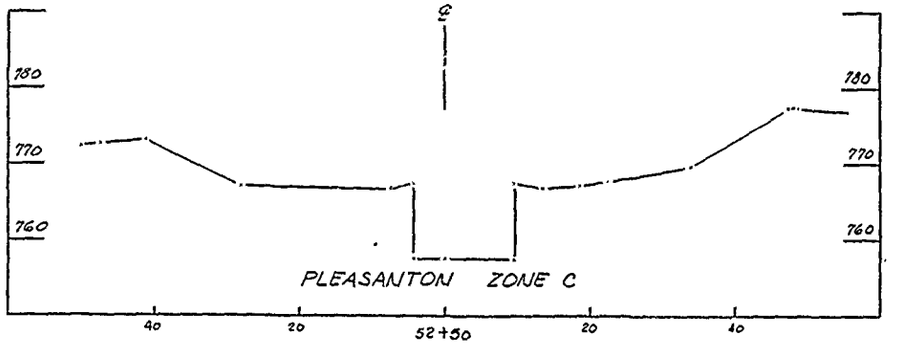
OUTLET WORKS
FINAL CROSS SECTIONS
STA. 52+71.5 TO STA. 51+00

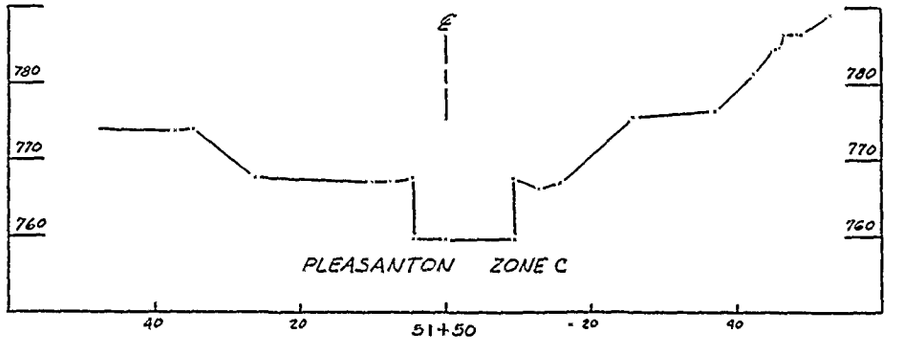
Scale: AS SHOWN
Date: JUNE 1990
Dwg. No.:
Sheet number: 82
File No: RBL-2-1302

PLATE NO. 82

ELEVATION IN FEET BASED ON NATIONAL GEODETIC VERTICAL DA







C

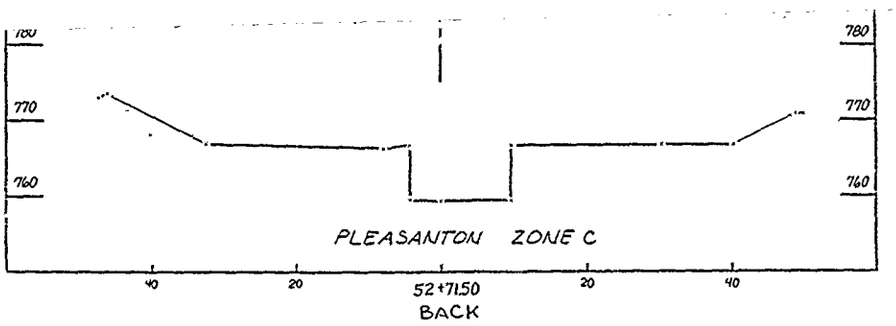
B

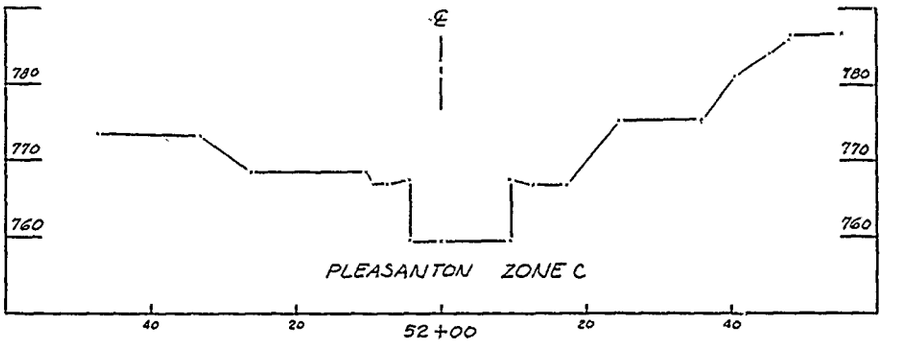
A

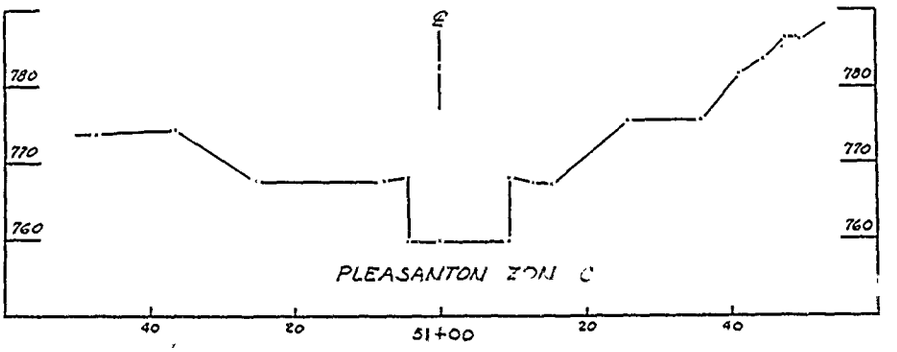
5

4

3







Revisions			
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Checked by:
Submitted by:

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EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

OUTLET WORKS
FINAL CROSS SECTIONS
STA. 52+71.5 TO STA. 51+00

Scale: AS SHOWN
Date: JUNE 1990
Dwg. No.:
Sheet number: 82
File No.: RBL-2-1302

PLATE NO. 82

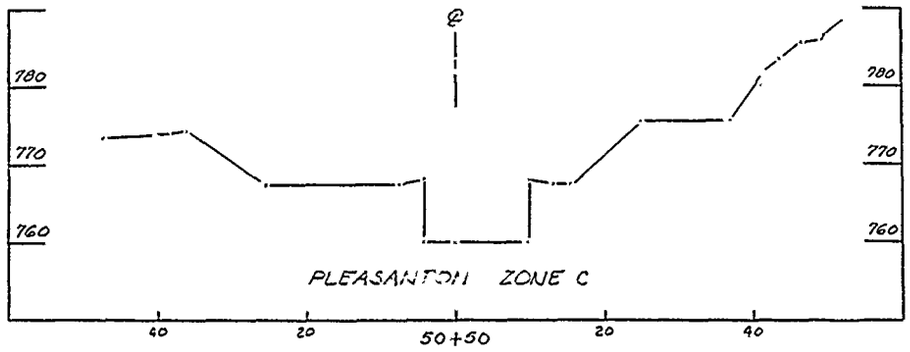
D C B A

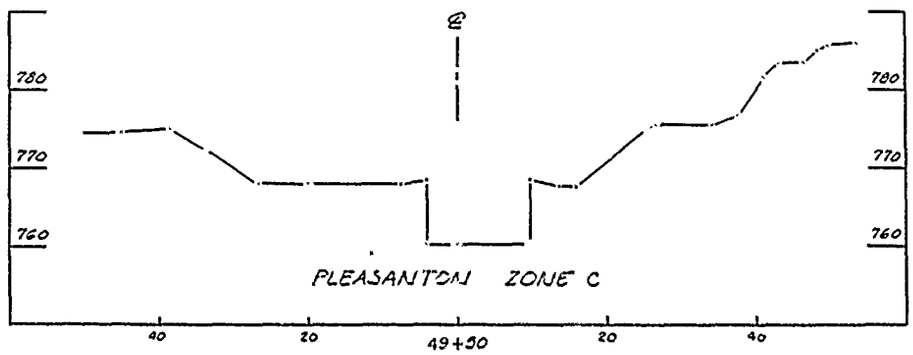
3 2 1

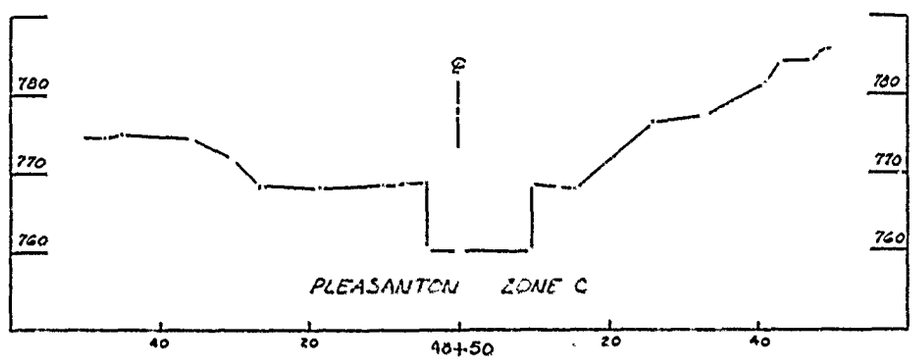
5 4 3

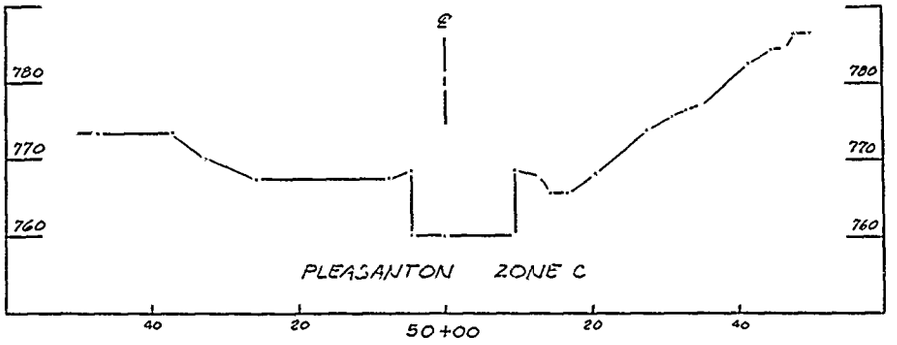
D C B A

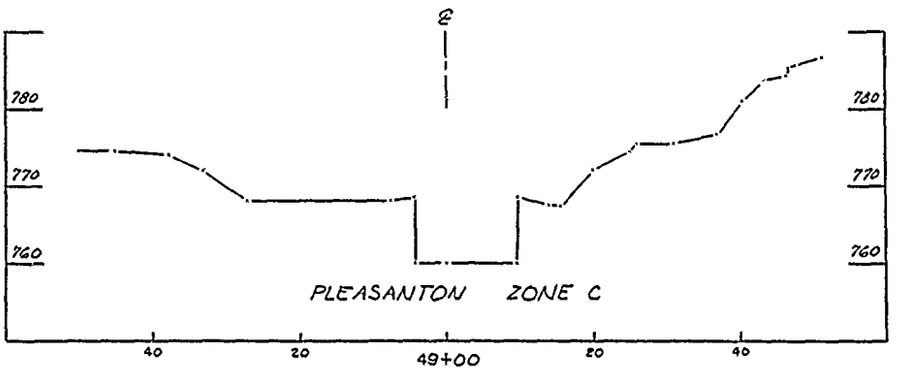
ELEVATION IN FEET BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929











Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

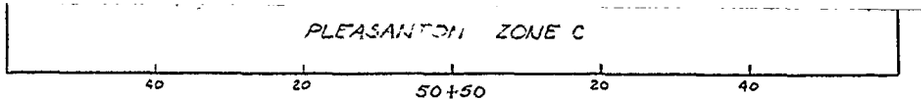
Designed by:
Drawn by:
Checked by:

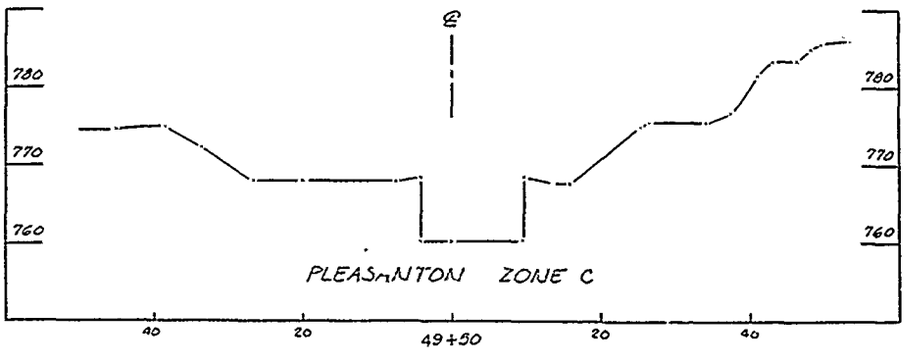
US Army Corps of Engineers

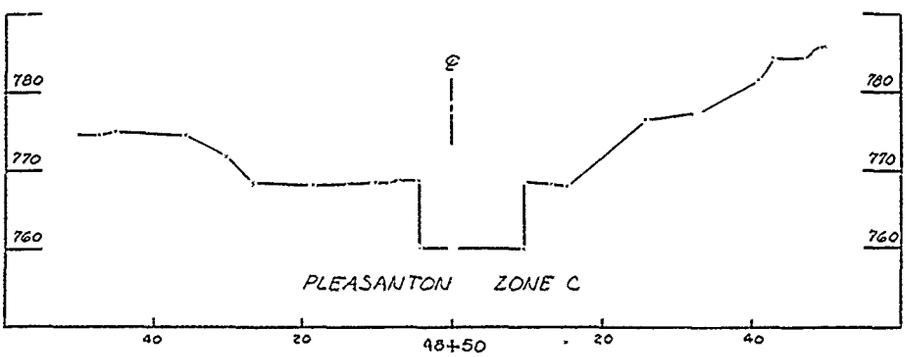
EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT
OUTLET WORKS
FINAL CROSS SECTIONS
STA. 50+50 TO STA. 48+50

Scale: AS SHOWN
Sheet number:

ELEVATION IN FEET BASED ON NATIONAL GEODETIC VERTICAL DA







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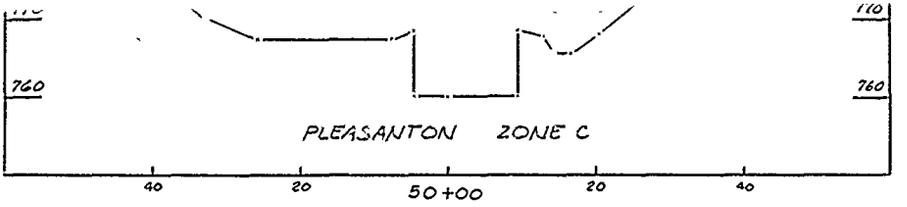

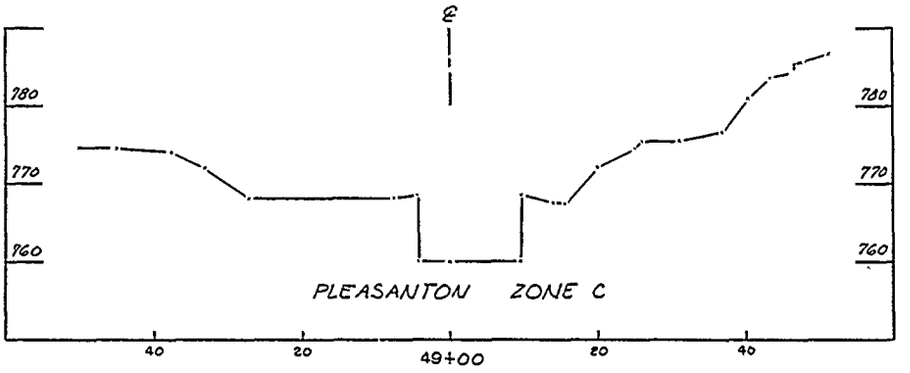

C

B

A

Revisions			
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U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
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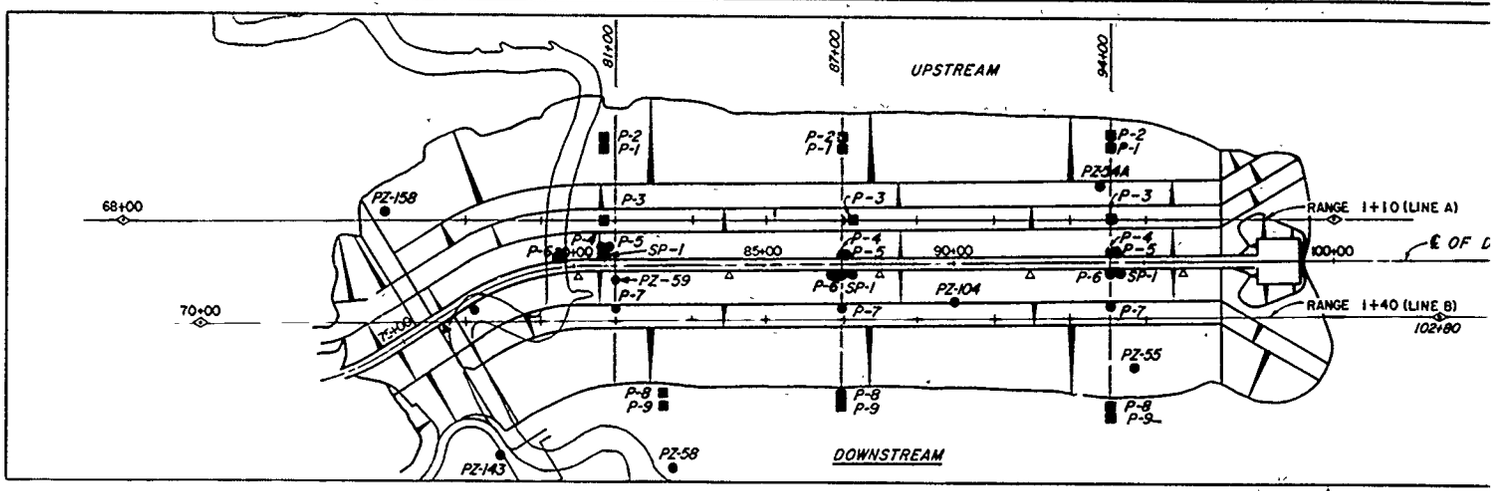
US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

OUTLET WORKS
FINAL CROSS SECTIONS
STA. 50+50 TO STA. 48+50

Scale: AS SHOWN
Date: JUNE 1990
Dwg. No.:
Sheet number: 83
File No.: RBL-2-1303

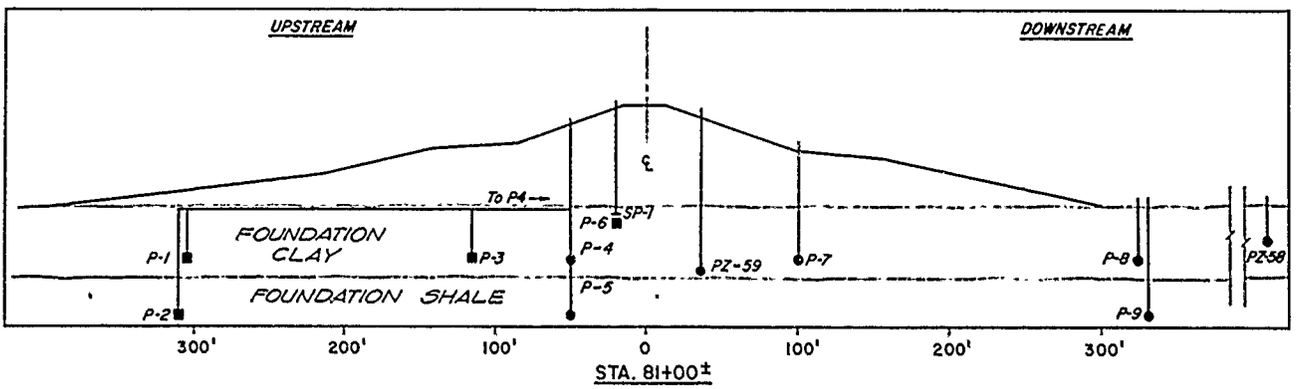
3 2 1 PLATE NO. 83



PLAN

200 0 200 400
SCALE IN FEET

NOTE: See Schedule for device lo



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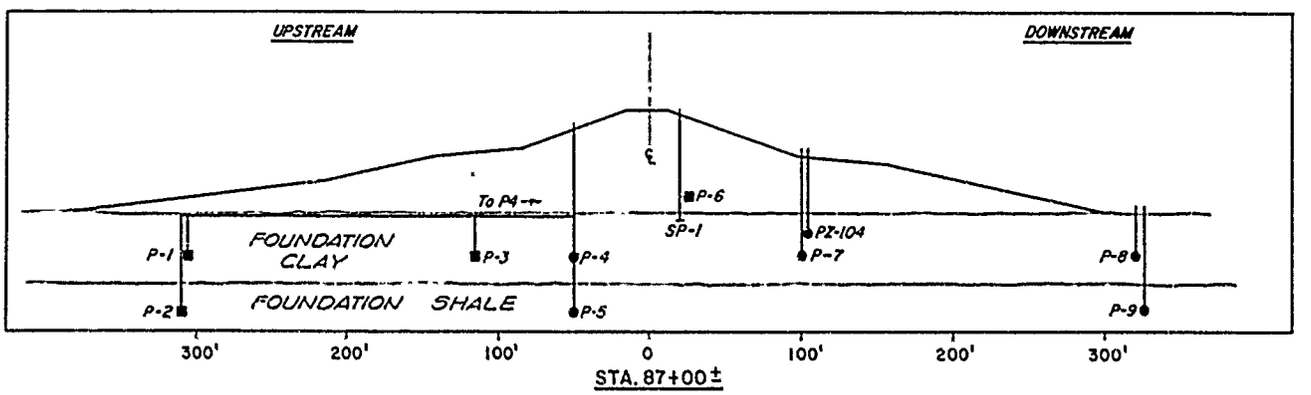
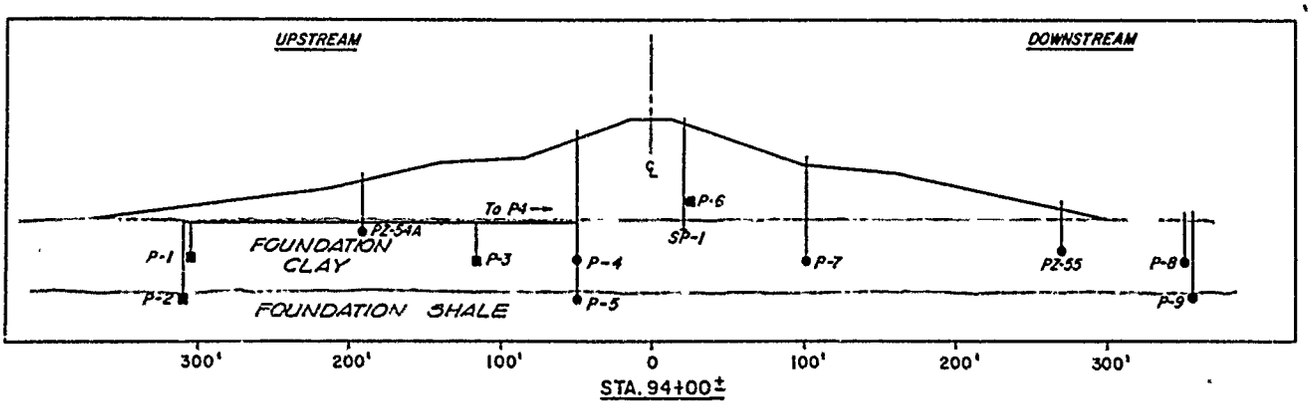
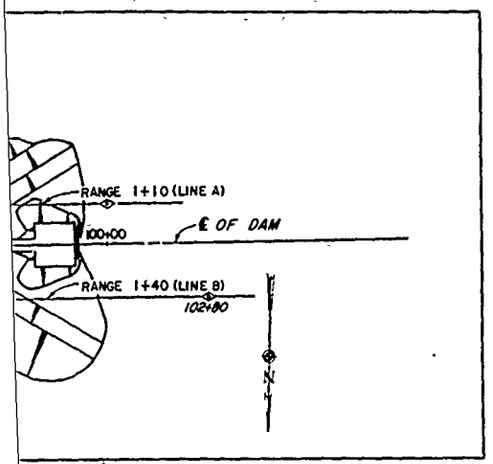


STA. 87+00±



STA. 94+00±



'E.' See Schedule for device location.

OBSERVATION DEVICE SCHEDULE

GAGE NO.	STATION	RANGE	TIP ELEVATION	TYPE PZ	MATERIAL
P-81-1	80+70	3+05U	740	AIR	CLAY
P-81-2	80+70	3+10U	705	AIR	SHALE
P-81-3	80+70	1+15U	740	AIR	CLAY
P-81-4	80+70	0+50U	740	OPEN	CLAY
P-81-5	80+75	0+50U	705	OPEN	SHALE
P-81-7	81+00	1+02D	740	OPEN	CLAY
P-81-8	82+20	3+25D	740	OPEN	CLAY
P-81-9	82+20	3+30D	705	OPEN	SHALE
P-87-1	87+00	3+05U	745	AIR	CLAY
P-87-2	87+00	3+10U	710	AIR	SHALE
P-87-3	87+00	1+15U	745	AIR	CLAY
P-87-4	87+00	0+50U	745	OPEN	CLAY
P-87-5	87+05	0+50U	710	OPEN	SHALE
P-87-7	87+00	1+02D	745	OPEN	CLAY
P-87-8	87+00	3+20D	745	OPEN	CLAY
P-87-9	87+00	3+25D	710	OPEN	SHALE
P-94-1	94+00	3+05U	750	AIR	CLAY
P-94-2	94+00	3+10U	725	AIR	SHALE
P-94-3	94+00	1+15U	750	AIR	CLAY
P-94-4	94+00	0+50U	750	OPEN	CLAY
P-94-5	94+05	0+50U	725	OPEN	SHALE
P-94-7	94+00	1+02D	750	OPEN	CLAY
P-94-8	94+00	3+50D	750	OPEN	CLAY
P-94-9	94+00	3+55D	725	OPEN	SHALE
SP-81-1	79+65	0+20U	770	SETTLEMENT & OPEN	CLAY
SP-87-1	87+00	0+20D	770	SETTLEMENT & OPEN	CLAY
SP-94-1	94+00	0+20D	770	SETTLEMENT & OPEN	CLAY
I-77-1	77+00	0+20D	705	INCLINOMETER	SHALE
I-94-1	94+00	0+20D	710	INCLINOMETER	SHALE

EXISTING OBSERVATION DEVICES

PIEZ. NO.	STATION	RANGE	TIP ELEVATION	TYPE PZ	MATERIAL
PZ 54A	93+70	1+90U	766	OPEN	CLAY
PZ 55	94+75	2+70D	755	OPEN	CLAY
PZ 58	82+55	5+15D	754	OPEN	CLAY
PZ 59	81+45	0+35D	757	OPEN	CLAY
PZ 104	90+00	1+00D	760	OPEN	CLAY
PZ 143	77+95	4+80D	746	OPEN	CLAY
PZ 158	74+90	1+35U	747	OPEN	CLAY

NOTES:
1. USE EXTENDED CENTERLINE OF DAM FOR LOCATION OF PIEZOMETERS 143 AND 158.
2. THE EXISTING PIEZOMETERS ARE TO REMAIN OPERATIVE THROUGHOUT THE CONTRACT AND SHALL BE EXTENDED UP THROUGH THE EMBANKMENT AS REQUIRED.

LEGEND

- ● OPEN TUBE PIEZOMETERS
- ■ AIR OPERATED PIEZOMETERS
- ⊥ SETTLEMENT GAGE AND OPEN TUBE PIEZOMETERS
- + ALINEMENT MONUMENTS
- ⊕ INCLINOMETERS
- △ CREST SETTLEMENT MONUMENTS
- ◇ INSTRUMENT MONUMENTS

Revisions			
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CORPS OF ENGINEERS
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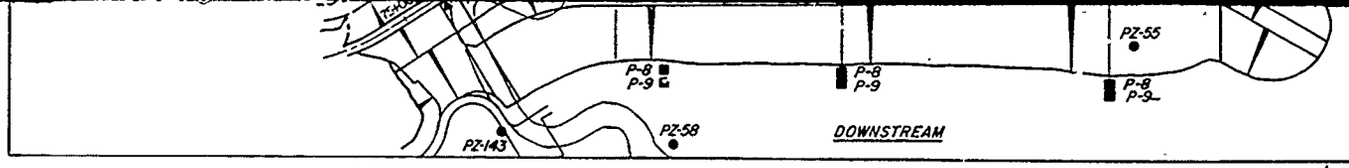
EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

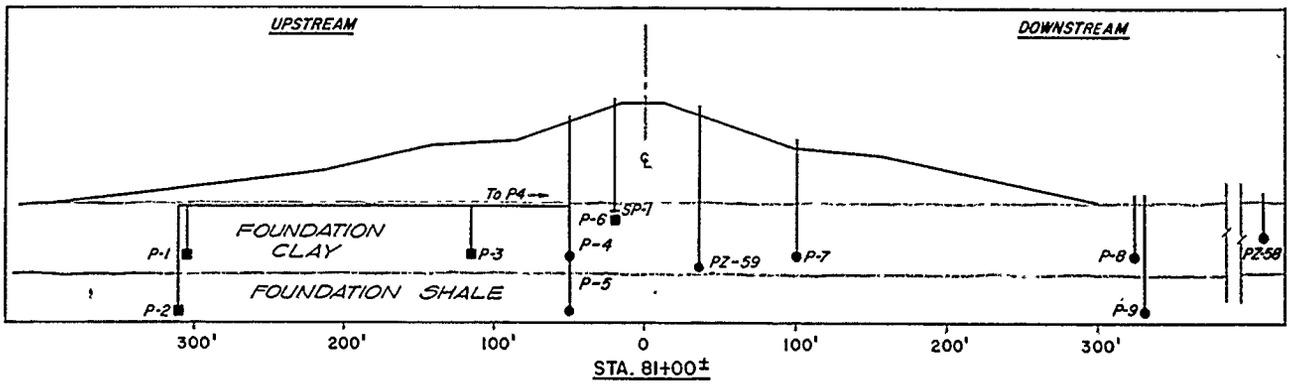
OBSERVATION DEVICES PLAN, SECTIONS AND SCHEDULES



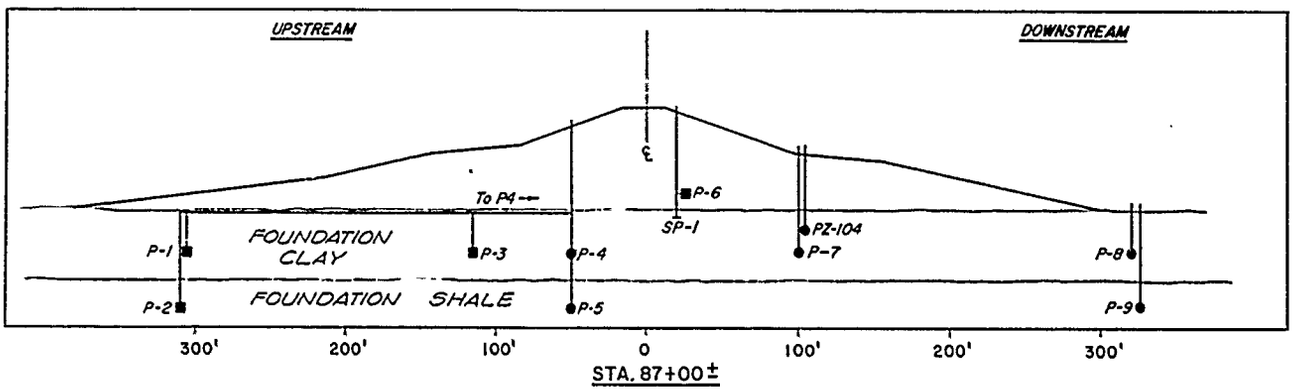
NOTE: See Schedule for devic

PLAN

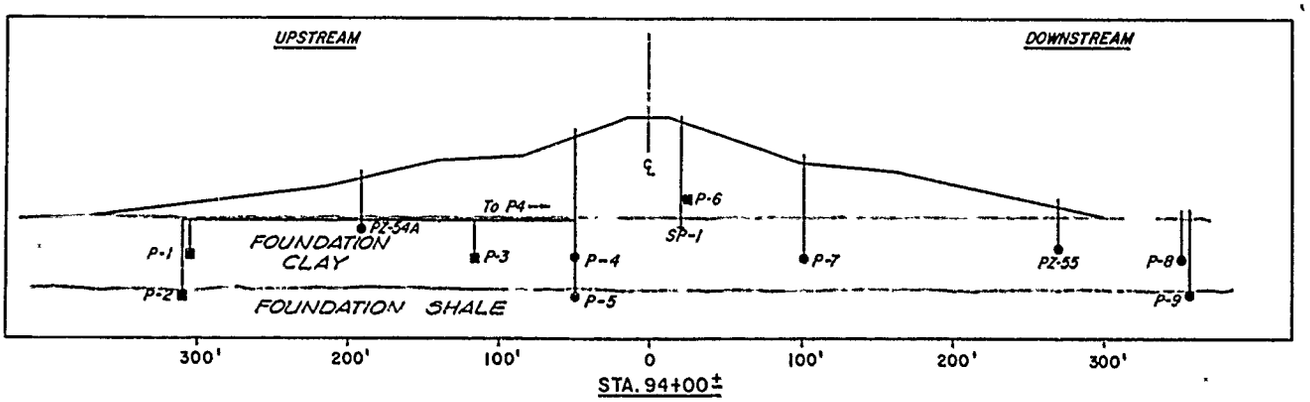
200 0 200 600
SCALE IN FEET



STA. 81+00±



STA. 87+00±



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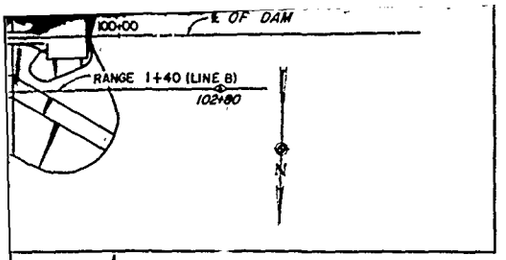

NOTE: See Schedule for device location.

P-81-7	81+00	1+02D	740	OPEN	CLAY
P-81-8	82+20	3+25D	740	OPEN	CLAY
P-81-9	82+20	3+30D	705	OPEN	SHALE
P-87-1	87+00	3+05U	745	AIR	CLAY
P-87-2	87+00	3+10U	710	AIR	SHALE
P-87-3	87+00	1+15U	745	AIR	CLAY
P-87-4	87+00	0+50U	745	OPEN	CLAY
P-87-5	87+05	0+50U	710	OPEN	SHALE
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P-87-8	87+00	3+20D	745	OPEN	CLAY
P-87-9	87+00	3+25D	710	OPEN	SHALE
P-94-1	94+00	3+05U	750	AIR	CLAY
P-94-2	94+00	3+10U	725	AIR	SHALE
P-94-3	94+00	1+15U	750	AIR	CLAY
P-94-4	94+00	0+50U	750	OPEN	CLAY
P-94-5	94+05	0+50U	725	OPEN	SHALE
P-94-7	94+00	1+02D	750	OPEN	CLAY
P-94-8	94+00	3+50D	750	OPEN	CLAY
P-94-9	94+00	3+55D	725	OPEN	SHALE
SP-81-1	79+65	0+20U	770	SETTLEMENT & OPEN	CLAY
SP-87-1	87+00	0+20D	770	SETTLEMENT & OPEN	CLAY
SP-94-1	94+00	0+20D	770	SETTLEMENT & OPEN	CLAY
I-77-1	77+00	0+20D	705	INCLINOMETER	SHALE
I-94-1	94+00	0+20D	710	INCLINOMETER	SHALE

PZ-58

EXISTING OBSERVATION DEVICES

PIEZ. NO.	STATION	RANGE	TIP ELEVATION	TYPE PZ	MATERIAL
PZ 54A	93+70	1+90U	766	OPEN	CLAY
PZ 55	94+75	2+70D	755	OPEN	CLAY
PZ 58	82+55	5+15D	754	OPEN	CLAY
PZ 59	81+45	0+35D	757	OPEN	CLAY
PZ 104	90+00	1+00D	760	OPEN	CLAY
PZ 143	77+95	4+80D	746	OPEN	CLAY
PZ 158	74+90	1+35U	747	OPEN	CLAY

NOTES:
1. USE EXTENDED CENTERLINE OF DAM FOR LOCATION OF PIEZOMETERS 143 AND 158.
2. THE EXISTING PIEZOMETERS ARE TO REMAIN OPERATIVE THROUGHOUT THE CONTRACT AND SHALL BE EXTENDED UP THROUGH THE EMBANKMENT AS REQUIRED.

LEGEND

- ● OPEN TUBE PIEZOMETERS
- ■ AIR OPERATED PIEZOMETERS
- ⊥ SETTLEMENT GAGE AND OPEN TUBE PIEZOMETERS
- + ALINEMENT MONUMENTS
- ⊕ INCLINOMETERS
- △ CREST SETTLEMENT MONUMENTS
- ⊙ INSTRUMENT MONUMENTS

Revisions			
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U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
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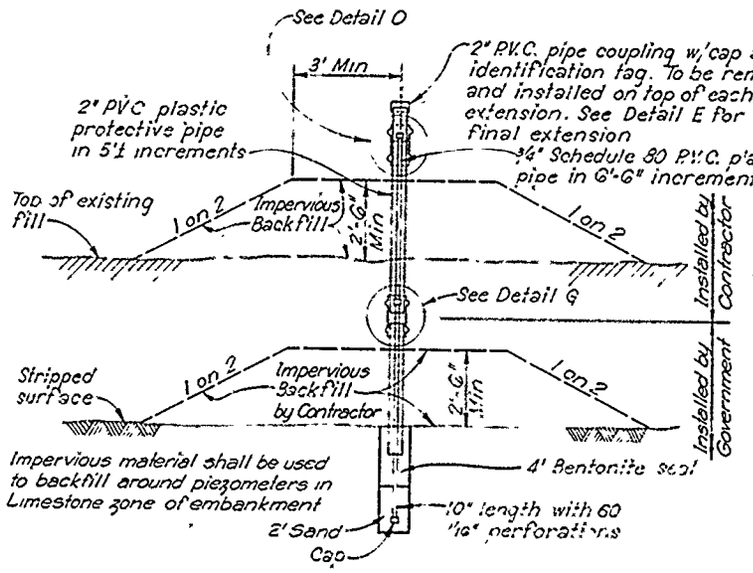
US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

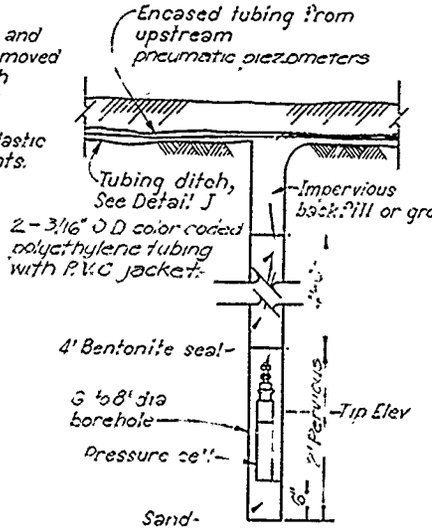
OBSERVATION DEVICES PLAN, SECTIONS AND SCHEDULES

Scale: AS SHOWN
Date: JUNE 1990
Dwg. No.:
Sheet number: 84
File No. RBL-2-1304

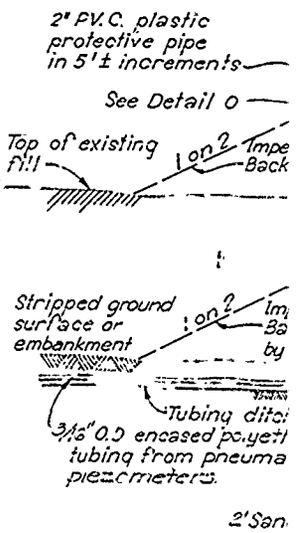
PLATE NO. 84



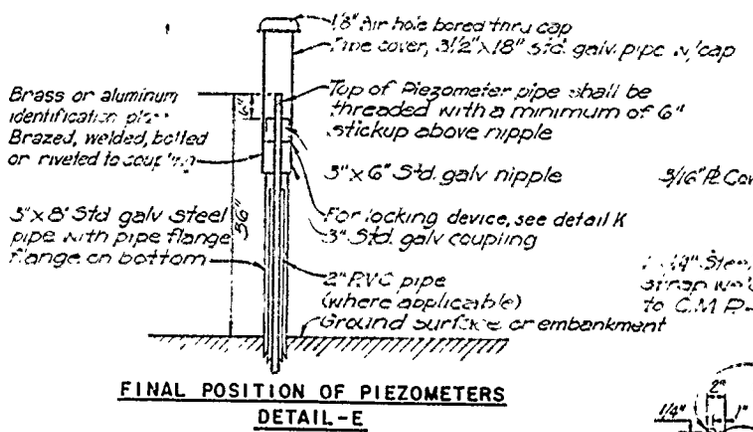
OPEN TUBE PIEZOMETER
INSTALLATION AND EXTENSION
DETAIL-A



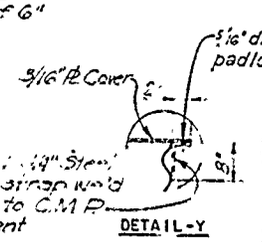
PNEUMATIC
PIEZOMETER INSTALLATION
DETAIL-B



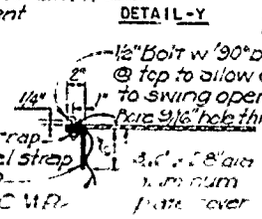
2' Sand
OP
WITH TUBING



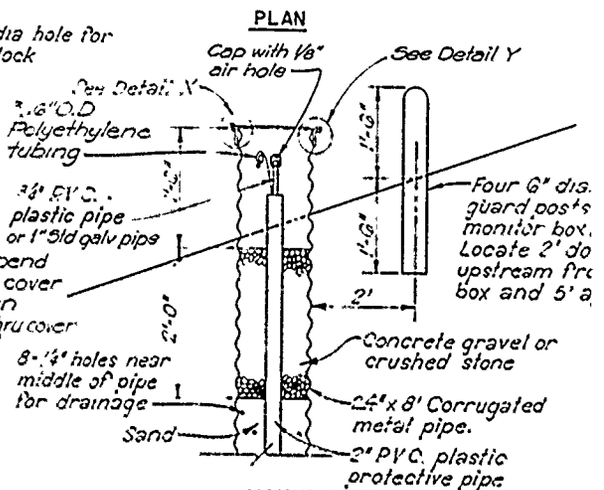
FINAL POSITION OF PIEZOMETERS
DETAIL-E



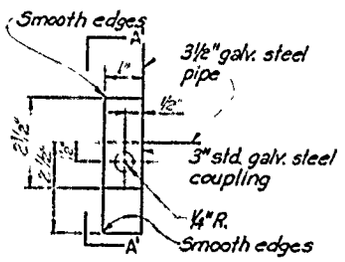
DETAIL-Y



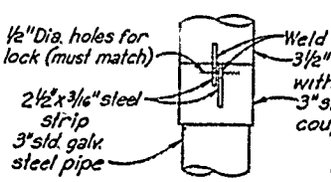
DETAIL-X



MONITOR BOX
DETAIL-F

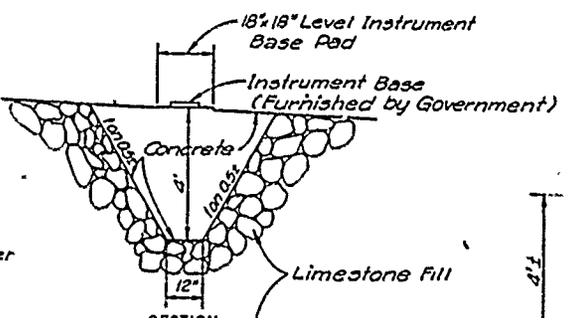


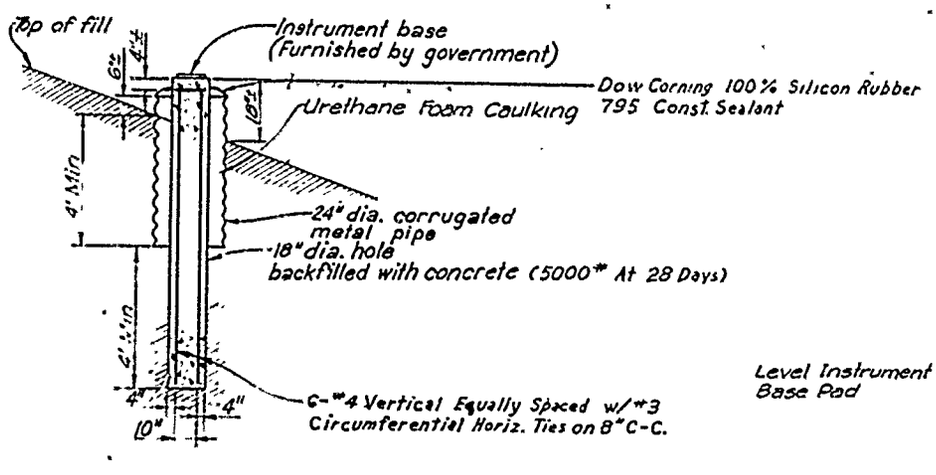
LOCKING DEVICE
DETAIL K



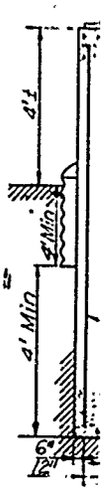
LOCKING DEVICE
SECTION A'

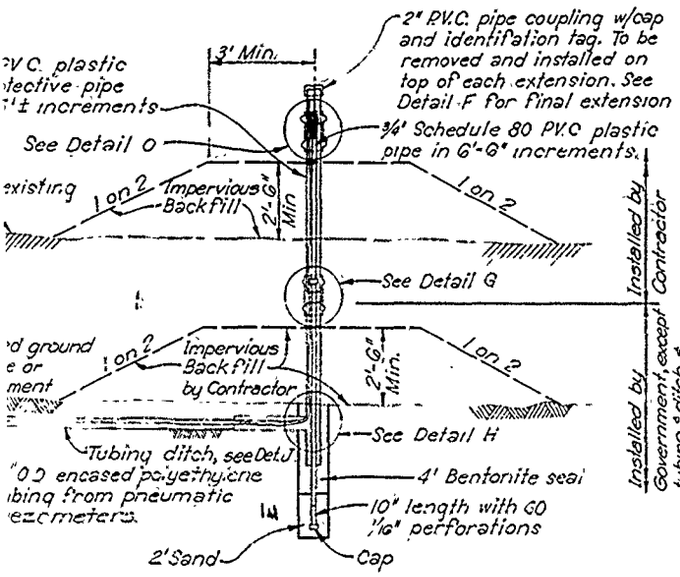
Note:
Cold galv. welds and strips after welding



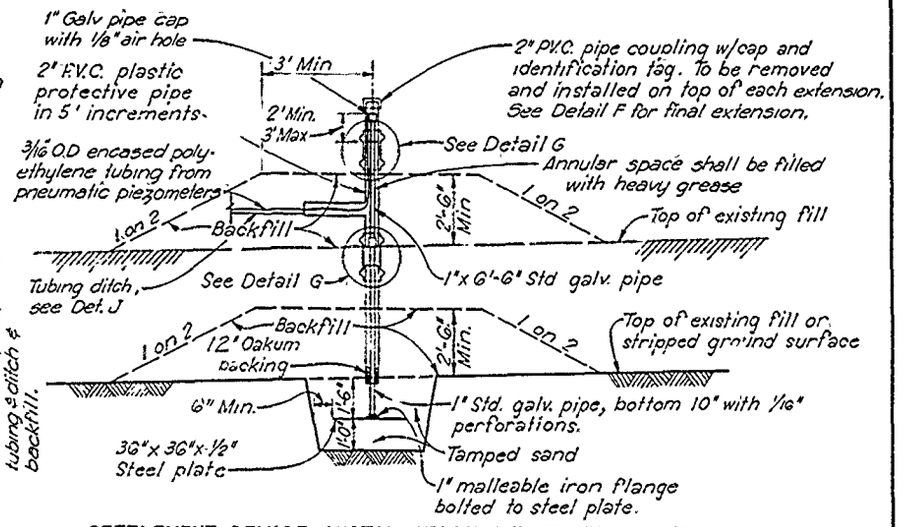


SOIL FILL AREAS

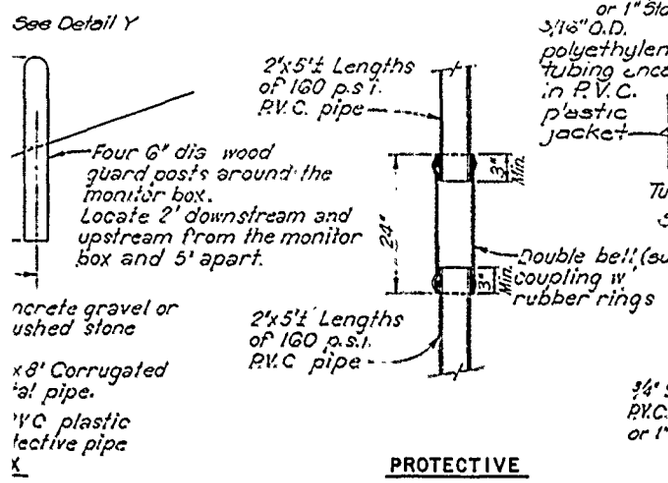




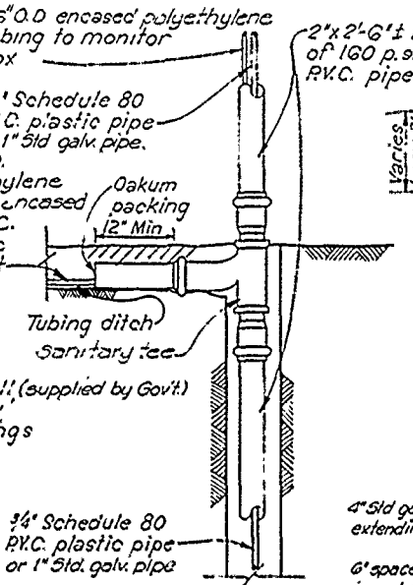
OPEN TUBE PIEZOMETER
WITH TUBING FROM PNEUMATIC PIEZOMETER
DETAIL-C



SETTLEMENT DEVICE INSTALLATION AND EXTENSION (By Contractor)
DETAIL-D

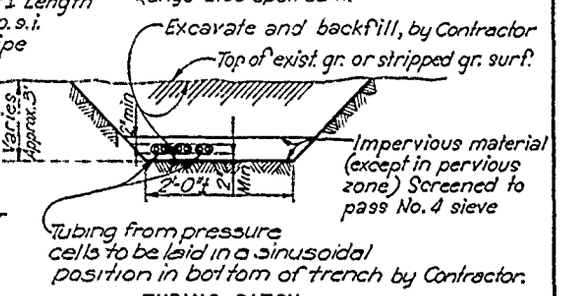


PROTECTIVE
PIPE COUPLING
DETAIL-G

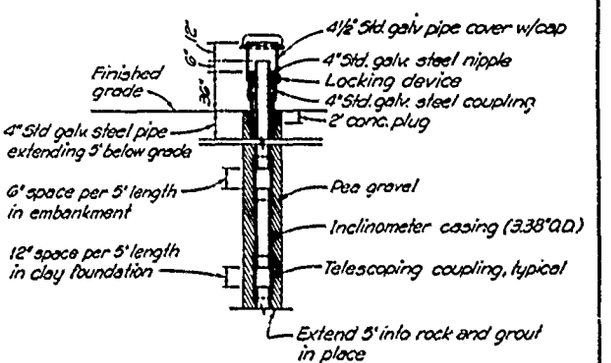


TEE CONNECTION
DETAIL-H

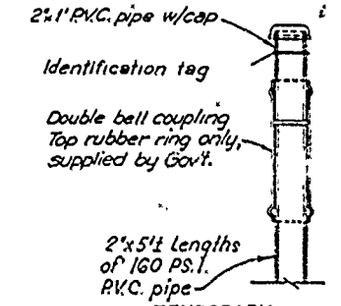
NOTE:
A 3' length bentonite plug shall be placed in tubing ditch @ 50' intervals beginning at Range 2+50 upstream.



TUBING DITCH
DETAIL-J

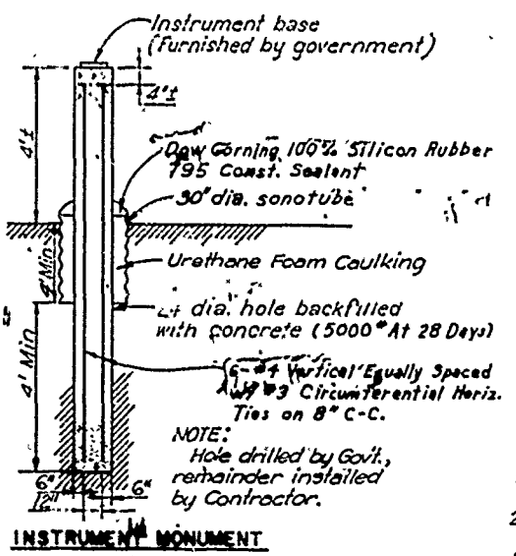


INCLINOMETER CASING WITH SETTLEMENT
COUPLINGS AND PROTECTIVE CAP
(Installed by Government)



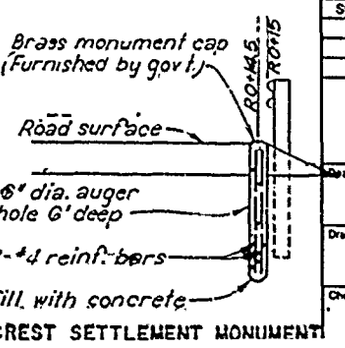
TEMPORARY
PROTECTIVE PIPE COVER
DETAIL-O

NOTE:
Contractor shall keep caps and identification tags on pipes and in sight at all times



NOTE:
Hole drilled by Govt., remainder installed by Contractor.

INSTRUMENT MONUMENT
DETAIL-M



CREST SETTLEMENT MONUMENT

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

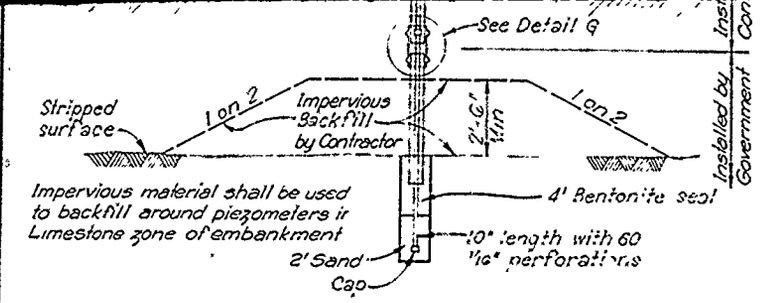
Designed by:
Drawn by:
Checked by:

US Army Corps of Engineers

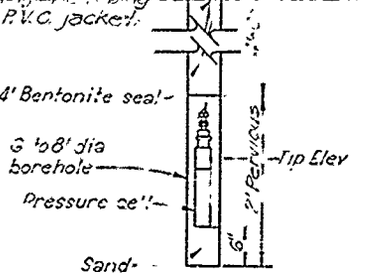
EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

OBSERVATION DEVICE
INSTALLATION DETAILS

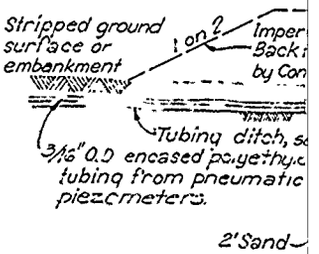
Scale: AS SHOWN
Sheet number

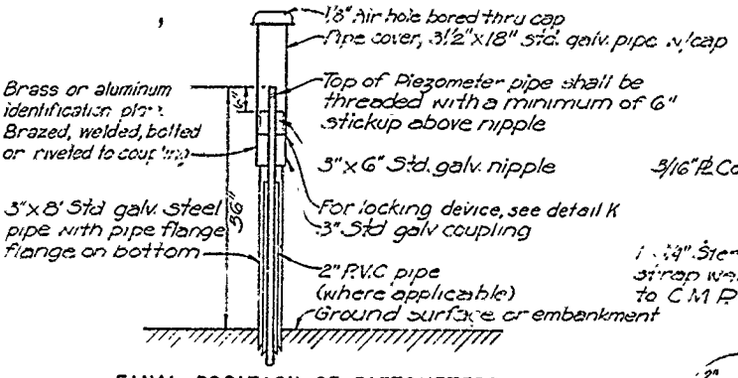


OPEN TUBE PIEZOMETER INSTALLATION AND EXTENSION
DETAIL-A

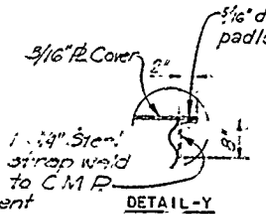


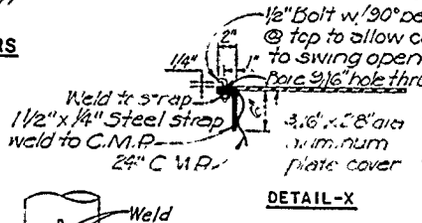
PNEUMATIC PIEZOMETER INSTALLATION
DETAIL-B

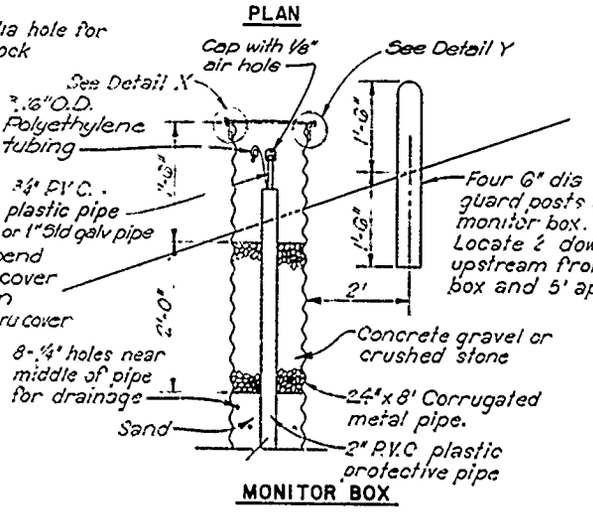




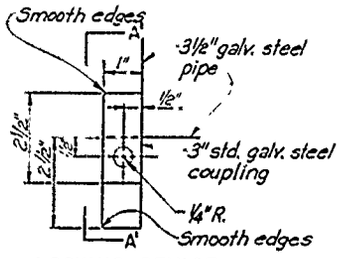
FINAL POSITION OF PIEZOMETERS
DETAIL-E



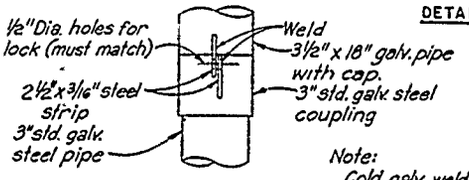




MONITOR BOX
DETAIL-F

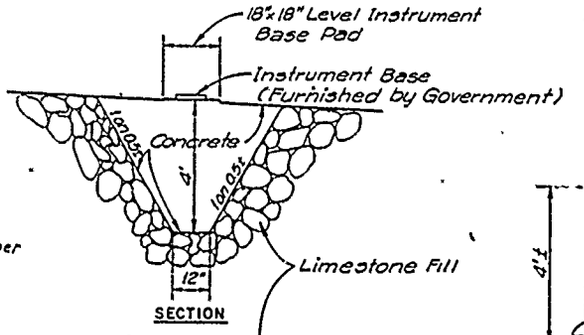


LOCKING DEVICE
DETAIL K

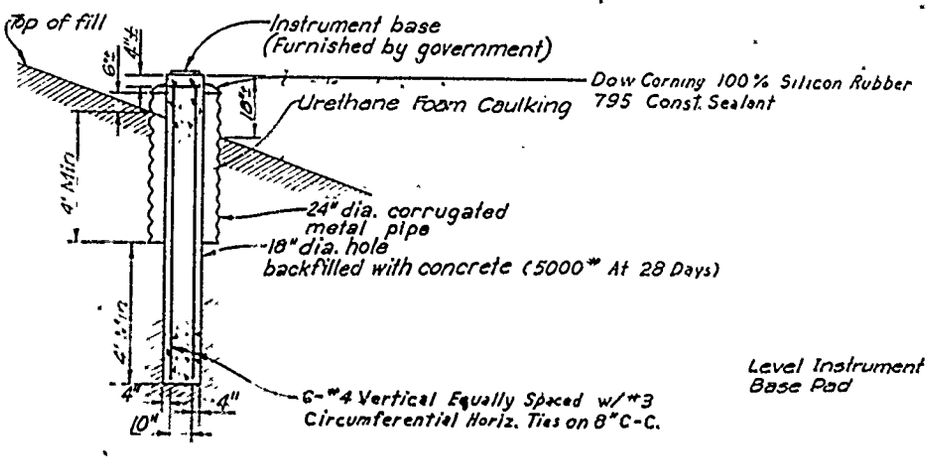


LOCKING DEVICE
SECTION A'

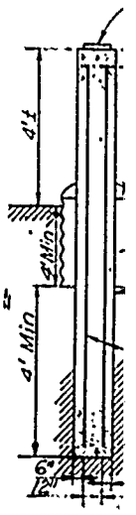
Note:
Cold galv. welds and strips after welding



LIMESTONE FILL AREA

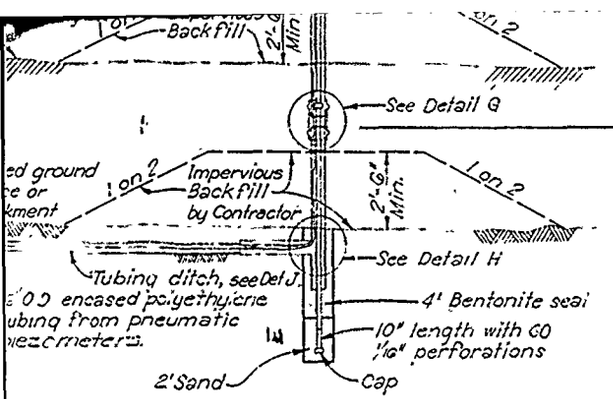


SOIL FILL AREAS

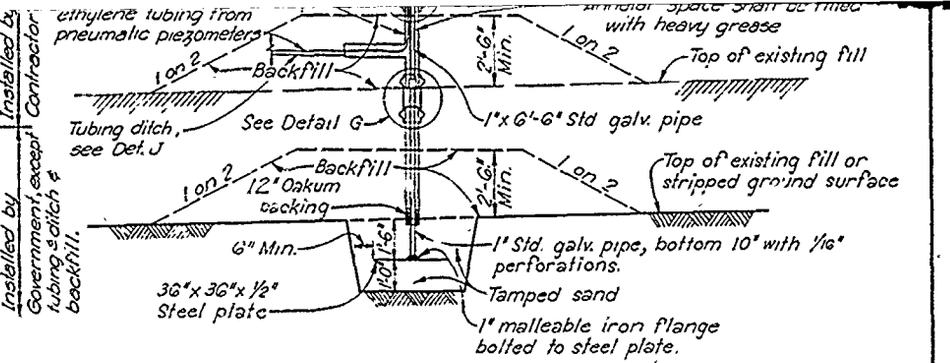


INSTRUMEN
DET

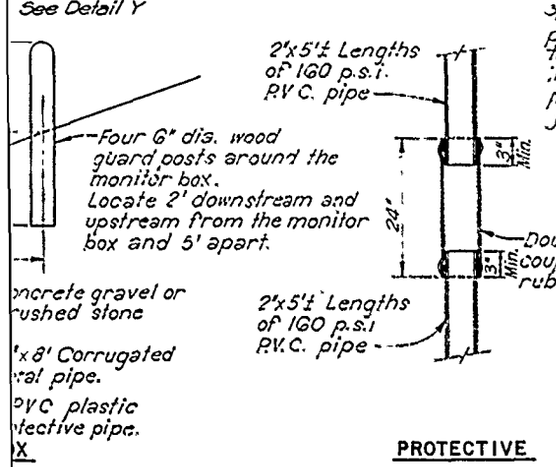
ALINEMENT MONUMENTS
DETAIL-L



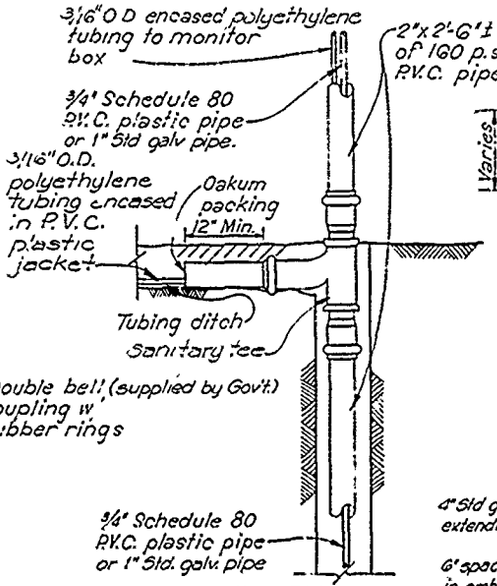
OPEN TUBE PIEZOMETER
WITH TUBING FROM PNEUMATIC PIEZOMETER
DETAIL-C



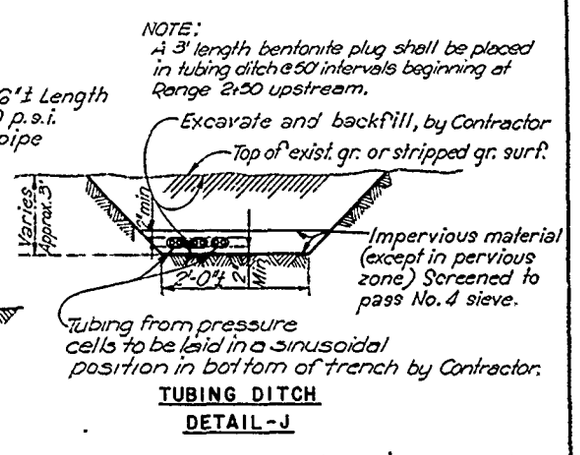
SETTLEMENT DEVICE INSTALLATION AND EXTENSION (By Contractor)
DETAIL-D



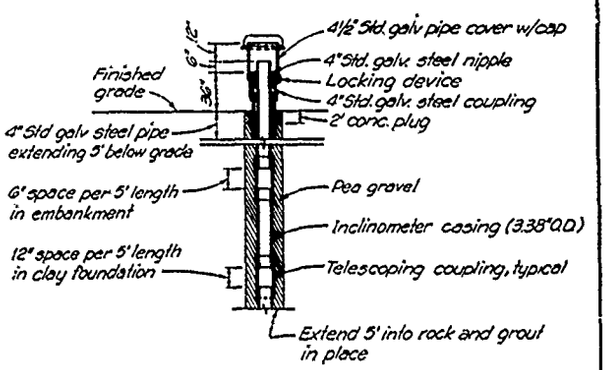
PROTECTIVE
PIPE COUPLING
DETAIL-G



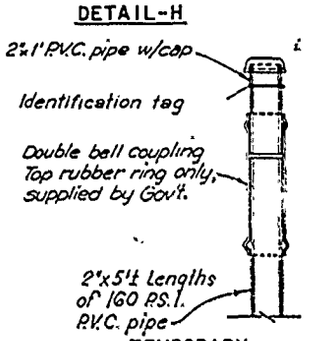
TEE CONNECTION
DETAIL-H



TUBING DITCH
DETAIL-J

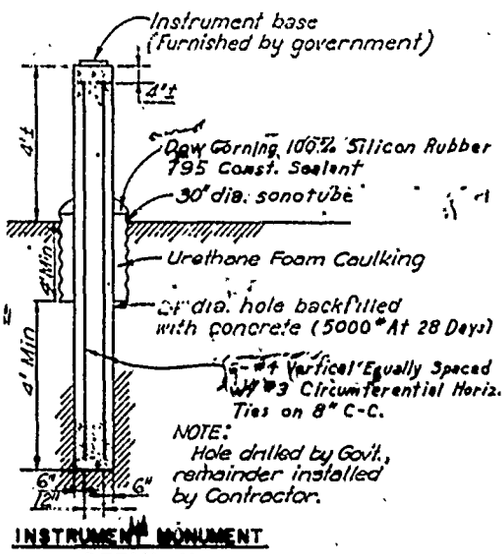


INCLINOMETER CASING WITH SETTLEMENT
COUPLINGS AND PROTECTIVE CAP
(Installed by Government)

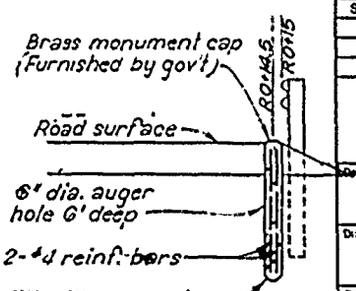


TEMPORARY
PROTECTIVE PIPE COVER
DETAIL-O

NOTE:
Contractor shall keep caps and identification tags on pipes and in sight at all times



INSTRUMENT MONUMENT
DETAIL-M



CREST SETTLEMENT MONUMENT
DETAIL-N

Revisions			
Symbol	Descriptions	Date	Approved

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:
Drawn by:
Checked by:
Submitted by:

US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

OBSERVATION DEVICE
INSTALLATION DETAILS

Scale: AS SHOWN
Date: JUNE 1990
Dwg. No.:
Sheet number: 85
File No.: RBL-2-1305

PLATE NO. 85

BLUE SPRINGS BLASTING

SHOT NO.	DATE	GEOLOGIC LOCATION	ELEV.	LOCATION STATION	LOCATION RANGE	PURPOSE	NO. OF HOLES	DEPTH (FT.)	SPACING (FT.)	BURDEN (FT.)	STEM (FT.)	SHOT VOL.	EX
1	10/22/82	BETHANY FALLS LIMESTONE	853-843	99+85		PRE-SPLIT	24	8'-16'	20"	0	TOTAL		560' 200 GR. 40' E
2	10/26/82	BETHANY FALLS LIMESTONE	858	99+85	34' DS TO 91 US	PRE-SPLIT	62	20'	2'	0	TOTAL	2125 SQ. FT.	1600' 200 GR. 13(
3	11/16/82	BETHANY FALLS LIMESTONE	846	72+75	45' US TO 40' DS	PRE-SPLIT	48	18'-20'	20"	0	TOTAL ¾" GRAVEL	1805 SQ. FT.	1200' 200 GR. 10(
4	11/17/82	SNIABAR	832	99+26	103' DS TO 63' US	PRE-SPLIT	100	7.3'-9'	20"	0	TOTAL	1253 SQ. FT.	1100' 200 GR. 17
5	11/22/82	SNIABAR	832	99+25	45 US TO 50' DS	PRE-SPLIT	57	7'-9'	20"	0	TOTAL ¾" GRAVEL	713 SQ. FT.	500' 200 GR 100'
6	11/22/82	SNIABAR	832	99+26	16 DS TO 16' US	PRE-SPLIT	19	8.5'	20"	0	TOTAL ¾" GRAVEL	272 SQ. FT.	400' 200 GR. 40' E
7	12/8/82	BETHANY FALLS LIMESTONE	846	73+35-73+85	60' US	PRE-SPLIT	28	14'-19'	20"	0	TOTAL ¾" GRAVEL	850 SQ. FT.	500' 200 GR. 60' E
8	12/9/82	BETHANY FALLS LIMESTONE	846	73+35-72+75	60 DS TO 40' DS	PRE-SPLIT	41	17'	20"	0	TOTAL ¾" GRAVEL	1146 SQ. FT.	850' 200 GR. 75' E
9	12/14/82	BETHANY FALLS LIMESTONE	841	72+75	45 US TO 60' US	PRE-SPLIT	12	8'-12'	20"	0	TOTAL ¾" GRAVEL	200 SQ. FT.	250' 200 GR. 25' E
10	12/16/82	WINTERSET		17+50-18+70	LEFT SIDE	PRE-SPLIT	72	12'-16'	0	20"-36"	¾" GRAVEL	2271 SQ. FT.	1700' 200 GR. 50(
1	11/2/82	BETHANY FALLS LIMESTONE	854	99+85-99+20	100' US TO 65 DS	PRODUCTION	84	8'-14'	10'-8'	7'-6'	4½"	1750 CU. YDS.	1275* MAYNES 1
2	11/3/82	BETHANY FALLS LIMESTONE	855±	14+80-14+50	℄ TO 115 RT.	PRODUCTION	43	7'-11'	9'	7'	4½"	920 CU. YDS.	500* MAYNES 11
3	11/4/82	BETHANY FALLS LIMESTONE	855±	14+80-14+50	℄ T.O 90' LT	PRODUCTION	42	5'-9'	9'	7'	5'	595 CU. YDS.	450* MAYNES 50*
4	11/8/82	BETHANY FALLS LIMESTONE	855	15+75-15+10	100' LT. TO 100' RT.	PRODUCTION	143	16'	10'	7'	5'	7100 CU. YDS.	5050* MAYNES 4(
5	11/18/82	BETHANY FALLS LIMESTONE	860	15+75-16+25	100' LT. TO 100' RT.	PRODUCTION	54	18.5'	16'	12'	9'	6465 CU. YDS.	6500* MAYNES 10
6	12/8/82	SNIABAR	832	99+26	97' US TO 72' DS	PRODUCTION	60	7.5'	7'	5'	4½"	798 CU. YDS.	425* UNIGEL
7	12/13/82	BETHANY FALLS LIMESTONE		16+25 16+73	100' LT TO 108 RT	PRODUCTION	42-29	19' 19'	16'-10'	12'-7'	8½" 4'	7000 CU. YDS.	9315* MAYNES 5(
8	12/14/82	BETHANY FALLS LIMESTONE	842-836	72+75-73+85	60' US TO 60' DS	PRODUCTION	127	6'-14'	9'	7'	4'	2900 CU. YDS.	2000* MAYNES 5'
9	12/20/82	WINTERSET		17+50-17+90	108' LT. TO ℄	PRODUCTION	129	5½'-8'	7'-10'	6'	4'	1360 CU. YDS.	1450* MAYNES 7(
10	12/22/82	WINTERSET		17+90-18+35	120' LT. TO ℄	PRODUCTION	137	8.7'	7'-10'	6'	4'	2665 CU. YDS.	2400* MAYNES 4(
11	12/23/82	WINTERSET		18+35-18+90	30' LT. 120' LT.	PRODUCTION	91	10'	10'	6'	4'	1978 CU. YDS.	1750* MAYNES 1
11	1/12/83	BETHANY FALLS LIMESTONE		72+75	50'-115' DS	PRE-SPLIT	32	6'-15'	2'		⅜" GRAVEL	480 SQ. FT.	600' 200 GRAIN TO
12	1/25/83	SNIABAR	828.5	73+15-73+80	20' LT. TO 20' RT.	PRE-SPLIT	139	9'	20"			2115 SQ. FT.	1700' 200 GRAIN 2
13	1/28/83	SNIABAR		74+00	45'-157' DS	PRE-SPLIT	67	9'	20"		¾" GRAVEL	1008 SQ. FT.	1000' 200 GRAIN 1
14	2/4/83	BETHANY FALLS LIMESTONE	841	72+50	121' US TO 73' DS	PRE-SPLIT	96	18'	2'		¾" GRAVEL	3456 SQ. FT.	2100' 200 GRAIN 2
15	3/10/83	WINTERSET		18+32 19+41	LEFT SIDE	PRE-SPLIT	39	14'	30"		¾" GRAVEL	1350 SQ. FT.	1500' 200 GRAIN 1
16	3/18/83	WINTERSET		18+00-20+80	LEFT SIDE	PRE-SPLIT	94	5'-11½'	30"		¾" GRAVEL	2940 SQ. FT.	2000' 200 GRAIN
16A	3/23/83	WINTERSET		20+80-22+70	RIGHT SIDE	PRE-SPLIT	51	8'-15'	30"		CRUSHED STONE	1500 SQ. FT.	850' 200 GRAIN 15
17	3/23/83	WINTERSET		20+80-22+70	RIGHT SIDE	PRE-SPLIT	51	8'-15'	30"		CRUSHED STONE	1500 SQ. FT.	850' 200 GRAIN 15
18	3/28/83	PLEASANTON	785	52+47-51+06		PRE-SPLIT	53	12'	2'-3'		TOTAL, STONE	1692 SQ. FT.	1350' 200 GRAIN 1
19	3/31/83	PLEASANTON	785	51+06 47+00	75+03 DAM AXIS	PRE-SPLIT	155	12'	2'-2½'		¾" STONE	4872 SQ. FT.	4000' 200 GRAIN
20	4/15/83	PLEASANTON		11+88-10+50		PRE-SPLIT	46	12'	2½'-3'		¾" STONE	1656 SQ. FT.	100' 200 GRAIN 78
21	4/18/83	PLEASANTON		10+50-9+48		PRE-SPLIT	25	12'	30"		¾" STONE	780 SQ. FT.	430' 200 GRAIN
22	4/26/83	BETHANY FALLS LIMESTONE		12+88-14+02	RIGHT SIDE	PRE-SPLIT	35	7'-13	2'-3'		¾" GRAVEL	756 SQ. FT.	400' 200 GRAIN 30
23	5/5/83	BETHANY FALLS LIMESTONE		14+05-16+08	195' RT. OF ℄	PRE-SPLIT	55	13'-20	2½'-3'		¾" GRAVEL	2288 SQ. FT.	400' 200 GRAIN 95(
24	5/9/83	BETHANY FALLS LIMESTONE		16+09 17+00	195' RT. OF ℄	PRE-SPLIT	26	20	30"		¾" ROCK	1900 SQ. FT.	325' 200 GRAIN 36(
25	5/17/83	BETHANY FALLS LIMESTONE		25+18 24+50	195 RT. OF ℄	PRE-SPLIT	29	18'	2½'-3'		¾" GRAVEL	1224 SQ. FT.	100' 200 GRAIN 27'
26	5/19/83	BETHANY FALLS LIMESTONE		24+50-23+05	195' RT. OF ℄	PRE-SPLIT	47	21'	3'		6'	2961 SQ. FT.	1250' E CORD 225*
27	5/23/83	BETHANY FALLS LIMESTONE		20+70-20+30	210' LT. OF ℄	PRE-SPLIT	63	18'	2½'-3'		¾" GRAVEL	3150 SQ. FT.	1512' 200 GRAIN 5
28	5/24/83	BETHANY FALLS LIMESTONE		21+70-20+00	210' LT. OF ℄	PRE-SPLIT	14	22'	2½'-3'		¾" GRAVEL	814 SQ. FT.	460' 200 GRAIN 12'
29	6/1/83	BETHANY FALLS LIMESTONE		15+35-17+00	210' LT. OF ℄	PRE-SPLIT	82	13.3'	30"		¾" GRAVEL	2727 SQ. FT.	2400' 200 GRAIN 2
30	7/22/83	BETHANY FALLS LIMESTONE		16+93 18+00	210' LT. OF ℄	PRE-SPLIT	52	21	2½'-3'		¾" GRAVEL	2919 SQ. FT.	1700' 200 GRAIN 6(
31	7/26/83	BETHANY FALLS LIMESTONE		17+00-18+00	195' RT. OF ℄	PRE-SPLIT	25	21	3'		6'	1575 SQ. FT.	120* HERCOSPLIT
12	1/4/83	WINTERSET		18+90 19+50	30 RT. OF PRE-SPL.	PRODUCTION	112	7.3'	7'-10'	5'-6'	4'	1232 CU. YDS.	1100* MAYNES 175
13	1/5/83	WINTERSET		17+40-17+80	90' LT. OF ℄	PRODUCTION	118	5.6'	7'	5'	4'	820 CU. YDS.	600* UNIGEL 15* M
14	1/6/83	WINTERSET		17+90-18+70	℄ TO 100 LT.	PRODUCTION	157	9.1'	10'	6'-7'	4'	3400 CU. YDS.	2800* MAYNES 550
15	1/11/83	WINTERSET		18+70-19+50	100' 200' LT. OF PRE-SPL.	PRODUCTION	128	7'-10½	9'-10'	5' 10'	4'	2900 CU. YDS.	2325* MAYNES 175'
16	1/13/83	BETHANY FALLS LIMESTONE		92+75-93+70	40 DS TO 130' DS	PRODUCTION	122	8'	9'	6'	4'	2560 CU. YDS.	1750* MAYNES 175
17	1/17/83	WINTERSET		19+50	100'-200' RT. OF LT. PRE-SPL	PRODUCTION	172	6.4'	6'-9'	5½'	4'	2300 CU. YDS.	1475* MAYNES 200
18	1/18/83	WINTERSET		17+50-18+00	200'-300' RT. OF LT. PRE-SPL.	PRODUCTION	146	5½'-7'	7'-9'	5'	4'	1320 CU. YDS.	800* MAYNES 445*
19	1/20/83	WINTERSET		18+00-18+60	200'-300' RT. OF LT. PRE-SPL.	PRODUCTION	137	9'	9'-10'	6'	4'	2160 CU. YDS.	2100* MAYNES 150
20	1/31/83	SNIABAR		73+20-74+25	35' DS TO 60' US	PRODUCTION	105	6.5'			4'	820 CU. YDS.	450* MAYNES 650*
21	2/2/83	SNIABAR		74+00-74+27	30'-155' DS	PRODUCTION	68	7'	7'	5'	4'	1135 CU. YDS.	250* MAYNES 375*
22	2/8/83	BETHANY FALLS LIMESTONE		72+50 72+75	170 US TO 80 DS	PRODUCTION	127	7'-14'				2400 CU. YDS.	2250* MAYNES 250'
23	2/10/83	WINTERSET		18+50-19+25	50' LT TO 50' RT OF ℄	PRODUCTION	116	12.3'	10'	7'	4'	3400 CU. YDS.	3850* MAYNES 200'
24	2/11/83	WINTERSET		19+75 20+25	200'-300' RT. OF PRE-SPL.	PRODUCTION	93	10.2'	10'	7'	4'	2390 CU. YDS.	2200* MAYNES 225'
25	2/22/83	WINTERSET		20+00 20+50	200'-300' LT. OF PRE-SPL.	PRODUCTION	176	6.6	6'	7'	4'	1660 CU. YDS.	1400* MAYNES 550'
26	2/25/83	WINTERSET		17+50-18+00	60' LT. TO 155 LT.	PRODUCTION	103	6.2'	7	5'	4'	995 CU. YDS.	475* UNIGEL 50* M
27	3/1/83	WINTERSET		18+00-18+55	70' RT. TO 170' RT. OF PRESPLIT	PRODUCTION	113	8.1'	9'	6'	4'	1620 CU. YDS.	1450* MAYNES 550'
28	3/3/83	WINTERSET		18+50-19+25		PRODUCTION	124	11.0	10'	7'	4'	3600 CU. YDS.	3500* MAYNES 150'
29	3/11/83	WINTERSET		18+30-19+60		PRODUCTION	35	5' 1'	7'	5'	4'	760 CU. YDS.	500* MAYNES 41* L
30	3/11/83	WINTERSET		19+50-20+00	℄ TO 100' RT	PRODUCTION	107	10.7'	10'	6'	4'	2354 CU. YDS.	2625* MAYNES 150'
31	3/15/83	WINTERSET		20+50-21+50	100' RT TO ℄	PRODUCTION	21	6.8'	9	6'	4'	2100 CU. YDS.	2400* MAYNES 250'
32	3/24/83	WINTERSET		21+50 22+50	TO 150' LT OF PRESPLIT	PRODUCTION	220	6.2'	8'	6'	4'	2600 CU. YDS.	1600* MAYNES 400'
33	3/25/83	WINTERSET			40' SIDE TO 122' RT.	PRODUCTION	102	8'	9'	6'	4'	1724 CU. YDS.	1500* MAYNES 200'
34	3/29/83	PLEASANTON	785	52+47-51+55	LOGE TO 85' LT.	PRODUCTION	142	8'	9'	6'	4'	2281 CU. YDS.	1950* MAYNES 150*
35	4/6/83	PLEASANTON	785	47+45-49+00	15+00 16+00 DAM STA)	PRODUCTION	153	8'	9'	6'	4'	2400 CU. YDS.	1900* MAYNES 175*
36	4/7/83	PLEASANTON	785	49+08-50+00	15+00-15+75 (DAM STA)	PRODUCTION	160	9'	9'	6'	4'	2480 CU. YDS.	2400* MAYNES 275*
37	4/8/83	PLEASANTON	785	50+00-50+90	75+00-76+00	PRODUCTION	166	8'	9'	6'	4'	2750 CU. YDS.	2650* MAYNES 275*
38	4/11/83	PLEASANTON	785	50+90-51+62		PRODUCTION	134	8'	9'	6'	4'	2280 CU. YDS.	2100* MAYNES 200*
39	4/18/83	PLEASANTON		11+86-10+00		PRODUCTION	108	8'	9'	6'	4'	1150 CU. YDS.	1900* MAYNES 150*
40	4/20/83	WINTERSET		19+50-21+00		PRODUCTION	147	8'	9'	6'	4'	2400 CU. YDS.	1225* MAYNES 105(
41	4/21/83	WINTERSET		19+50-18+50		PRODUCTION	103	6.5	8'	5'	4'	1092 CU. YDS.	525* MAYNES 450*
42	4/25/83	WINTERSET				PRODUCTION	51	5'	7'	5'	4'	360 CU. YDS.	75* MAYNES 150* L
43	5/3/83	BETHANY FALLS LIMESTONE		13+12-13+75	195' TO 95' RT. ℄	PRODUCTION	76	9'	8'	6'	4'	2016 CU. YDS.	550* MAYNES 625*
44	5/3/83	BETHANY FALLS LIMESTONE		14+02 14+60	195' TO 100' RT. ℄	PRODUCTION	59	12'	10'	6	4'	1750 CU. YDS.	1700* MAYNES 175*
45	5/10/83	BETHANY FALLS LIMESTONE		14+50 15+30	195' TO 110' RT. ℄	PRODUCTION	72	15'	10'	7	4'	2940 CU. YDS.	3300* MAYNES 400*
46	5/11/83	BETHANY FALLS LIMESTONE		15+30-16+00	195' TO 110' RT. ℄	PRODUCTION	43	18'	10'	8'	4	2314 CU. YDS.	2450* MAYNES 260*
47	6/2/83	BETHANY FALLS LIMESTONE		15+35-15+75	210' TO 95' LT ℄	PRODUCTION	135	9'	10'	6	4'	2160 CU. YDS.	1450* MAYNES 375*
48	6/7/83	BETHANY FALLS LIMESTONE		15+75-16+25	210' TO 100' LT ℄	PRODUCTION	134	13'	9'	7'	4'	3500 CU. YDS.	3150* MAYNES 112
49	6/10/83	BETHANY FALLS LIMESTONE		16+25 16+70	210' LT TO 60' LT ℄	PRODUCTION	98	17	10	7'	4'	4628 CU. YDS.	4925* MAYNES 237*

VALUE ENGINEERING PAYS

3 | 2 | 1

E SPRINGS BLASTING REPORT

SHOT VOL.	EXPLOSIVES (LBS.)	NO. OF CAPS	DELAYS IN MILLISEC	CARTRIDGE STRENGTH	REMARKS
	560' 200 GR. 40' E CORD	2	0	PRIMACORD, ENSIGN BICKFORD	NORMAL TO DAM AXIS; 3" HOLES
2125 SQ. FT.	1600' 200 GR. 130' E CORD	2	0	PRIMACORD	NORMAL TO DAM; 3" HOLES
1805 SQ. FT.	1200' 200 GR. 100' E CORD	2	0	PRIMACORD	3" HOLES, NORMAL TO AXIS
1253 SQ. FT.	1100' 200 GR. 175' E CORD	1	0	PRIMACORD	NORMAL TO DAM; 3½" HOLES
713 SQ. FT.	500' 200 GR. 100' E CORD	1	0	PRIMACORD	3½" HOLES, NORMAL TO DAM, RESHOOT 4
272 SQ. FT.	400' 200 GR. 40' E CORD	1	0	PRIMACORD	3½" HOLES, NORMAL TO AXIS, RESHOOT 4
850 SQ. FT.	500' 200 GR. 60' E CORD	1	0	PRIMACORD	3" PARALLEL TO AXIS
1146 SQ. FT.	650' 200 GR. 75' E CORD	1	0	PRIMACORD	3" HOLES, PARALLEL AND AT ANGLE TO DAM AXIS
200 SQ. FT.	250' 200 GR. 25' E CORD	1	0	PRIMACORD	NORMAL TO AXIS, 3" HOLES
2271 SQ. FT.	1700' 200 GR. 500' E CORD 67 LBS.	1	0	PRIMACORD, ¼"X2" HERCULES HERCOSPLIT	3 HOLES, LEFT SIDE OF SPILLWAY
1750 CU. YDS.	1275# MAYNES 181# UNIGEL	84	0-9	50# SACKS MAYNES MIX #1, UNIGEL 2"X8" AND 2¼"X 16"	3½" HOLES, POWDER FACTOR 0.83
920 CU. YDS.	500# MAYNES 112# UNIGEL	43	0-7	50# SACKS MAYNES MIX #1, HERCULES UNIGEL 2"X8", 2¼"X16"	3½" HOLES, SPILLWAY 0.67 LBS./YD.
595 CU. YDS.	450# MAYNES 50# UNIGEL	42	0-7	50# SACKS MAYNES MIX #1, HERCULES UNIGEL 2"X8"	3½" HOLES, SPILLWAY 0.76 LBS./YD.
1100 CU. YDS.	5050# MAYNES 400# UNIGEL	143	0-11	50# SACKS MAYNES, 2"X8" AND 2¼"X16" HERCULES UNIGEL	3½" HOLES, SPILLWAY 0.77 LBS./YD.
3465 CU. YDS.	6500# MAYNES 100# UNIGEL 105# TITAN G BOOSTER	54	0-8	50# SACKS MAYNES, 2"X8" AND 2¼"X16" UNIGEL, 2"X4" TITAN	6¾" HOLES, SPILLWAY 1.04 LBS./YD.
798 CU. YDS.	425# UNIGEL	60	0-10	HERCULES UNIGEL 2¼"X16" AND 2"X8"	3½" HOLES, POWDER FACTOR 0.53
1900 CU. YDS.	9815# MAYNES 50# UNIGEL 40# TITAN	71	0-8	50# SACKS MAYNES MIX #1, 5"X30" MAYNES MIX CTG. 2"X8" HERCULES UNGEL, 3"X3" TITAN G BOOSTER	3½" & 6¾" HOLES, SPILLWAY
900 CU. YDS.	2000# MAYNES 550# UNIGEL	127	0-12	50# SACKS OF MAYNES MIX #1, UNIGEL 2"X8" AND 2¼"X16"	3-3½" HOLES, 0.88 POWDER FACTOR
360 CU. YDS.	1450# MAYNES 700# UNIGEL	129	0-8	50# SACKS OF MAYNES MIX #1, UNIGEL 2"X8" AND 2¼"X16"	3½" HOLES, SPILLWAY 1.58 POWDER FACTOR MEASURED OFF PRESPLIT
1665 CU. YDS.	2400# MAYNES 475# UNIGEL	137	0-11	50# SACKS OF MAYNES MIX #1, UNIGEL 2"X8" AND 2¼"X16"	3½" HOLES, SPILLWAY 1.08 POWDER FACTOR MEASURED OFF PRESPLIT
978 CU. YDS.	1750# MAYNES 125# UNIGEL	91	0-9	50# SACKS OF MAYNES MIX #1, UNIGEL 2"X8" AND 2¼"X16"	3½" HOLES, SPILLWAY, MEASURED OFF PRESPLIT
480 SQ. FT.	600' 200 GRAIN 70' E CORD	1	0	ENSION BICKFORD PRIMACORD	3" HOLES
2115 SQ. FT.	1700' 200 GRAIN 250' E CORD	2	0	PRIMACORD	3" HOLES
1008 SQ. FT.	1000' 200 GRAIN 150' E CORD	2	0	PRIMACORD	3" HOLES
3456 SQ. FT.	2100' 200 GRAIN 200' E CORD	1	0	PRIMACORD	3" HOLES
1356 SQ. FT.	1500' 200 GRAIN 110' E CORD	1	6	PRIMACORD	3" HOLES, SPILLWAY
2940 SQ. FT.	2000' 200 GRAIN	2	0-1	PRIMACORD	3" HOLES, SPILLWAY
1500 SQ. FT.	850' 200 GRAIN 150' E CORD	1	0	PRIMACORD	3" HOLES, SPILLWAY
1500 SQ. FT.	850' 200 GRAIN 150' E CORD	1	2	PRIMACORD	3" HOLES, SPILLWAY
1692 SQ. FT.	1350' 200 GRAIN 150' E CORD	1	0	PRIMACORD	3" HOLES, OUTLET WORKS
4872 SQ. FT.	4000' 200 GRAIN	2	0-1	PRIMACORD	3" HOLES, OUTLET WORKS
1656 SQ. FT.	1100' 200 GRAIN 780' E CORD 92# HERCOSPLIT	1	0	PRIMACORD, ¼"X2" HERCULES HERCOSPLIT	3" HOLES, N. SERVICE ROAD
780 SQ. FT.	430' 200 GRAIN	1	0	PRIMACORD	3" HOLES, N. SERVICE ROAD
756 SQ. FT.	400' 200 GRAIN 300' E CORD 40# HERCOSPLIT	1	0	PRIMACORD, ¼"X2" HERCULES HERCOSPLIT	SPILLWAY 195' FROM ℄, 3" HOLES
2288 SQ. FT.	400' 200 GRAIN 950' E CORD 185# HERCOSPLIT	1	0	PRIMACORD, ¼"X2" HERCULES HERCOSPLIT	3" HOLES, SPILLWAY
900 SQ. FT.	325' 200 GRAIN 360' E CORD 54# HERCOSPLIT	1	0	PRIMACORD, ¼"X2" HERCULES HERCOSPLIT	3" HOLES, SPILLWAY
224 SQ. FT.	700' 200 GRAIN 275' E CORD 50# HERCOSPLIT	1	0	PRIMACORD, ¼"X2" HERCULES HERCOSPLIT	3" HOLES, SPILLWAY
961 SQ. FT.	1250' E CORD 225# HERCOSPLIT	1	0	PRIMACORD, ¼"X2" HERCULES HERCOSPLIT	3" HOLES, SPILLWAY
1150 SQ. FT.	1512' 200 GRAIN 515' E CORD 71.4# HERCOSPLIT	1	0	PRIMACORD, ¼"X2" HERCULES HERCOSPLIT	3" HOLES, SPILLWAY
814 SQ. FT.	460' 200 GRAIN 125' E CORD 19.2# HERCOSPLIT	1	0	PRIMACORD, ¼"X2" HERCULES HERCOSPLIT	3" HOLES, SPILLWAY
1727 SQ. FT.	2400' 200 GRAIN 220' E CORD	1	0	PRIMACORD, ¼"X2" HERCULES HERCOSPLIT	3" HOLES, LT. SIDE OF SPILLWAY
1919 SQ. FT.	1700' 200 GRAIN 600' E CORD 78# HERCOSPLIT	1	14	PRIMACORD, ¼"X2" HERCULES HERCOSPLIT	3" HOLES, SPILLWAY
515 SQ. FT.	120# HERCOSPLIT	1	18	PRIMACORD, ¼"X2" HERCULES HERCOSPLIT	3" HOLES, SPILLWAY
232 CU. YDS.	1100# MAYNES 175# UNIGEL	112	0-8	50# SACKS OF MAYNES MIX #1, UNIGEL 2"X8" AND 2¼"X16"	3½" HOLES, SPILLWAY 1.03 LBS./YD.
60 CU. YDS.	600# UNIGEL 15# MAYNES HERCOMIX #1	118	0-9	50# SACKS OF MAYNES MIX #1, UNIGEL AND 2¼"X16"	3½" HOLES, SPILLWAY 0.15 LBS./YD.
400 CU. YDS.	2800# MAYNES 550# UNIGEL	157	0-13	50# SACKS OF MAYNES MIX #1, UNIGEL 2"X8" AND 2¼"X16"	3½" HOLES, SPILLWAY 0.99 LBS./YD.
300 CU. YDS.	2325# MAYNES 175# UNIGEL	128	0-12	50# SACKS OF MAYNES MIX #1, UNIGEL 2"X8" AND 2¼"X16"	3½" HOLES, SPILLWAY 0.86 LBS./YD.
360 CU. YDS.	1750# MAYNES 175 UNIGEL	122	0-12	50# SACKS OF MAYNES MIX #1, UNIGEL 2"X8" AND 2¼"X16"	3½" HOLES, SPILLWAY 0.77 LBS./YD. POWDER FACTOR
1100 CU. YDS.	1475# MAYNES 200# UNIGEL	172	0-12	50# SACKS OF MAYNES MIX #1, 2"X8" HERCULES UNIGEL	3½" HOLES, SPILLWAY 0.73 #/YD.
120 CU. YDS.	800# MAYNES 445# UNIGEL	146	0-12	50# SACKS OF MAYNES MIX #1, 2"X8" AND 2¼"X16" UNIGEL	3½" HOLES, SPILLWAY 0.93 #/YD.
60 CU. YDS.	2700# MAYNES 150# UNIGEL	137	0-12	50# SACKS OF MAYNES MIX #1, 2"X8" AND 2¼"X16" UNIGEL	3½" HOLES, LEFT SIDE OF SPILLWAY, 1.32 #/YD.
20 CU. YDS.	450# MAYNES 650# UNIGEL	105	0-7	50# SACKS OF MAYNES MIX #1, 2"X8" AND 2¼"X16" UNIGEL	3½" HOLES, 1.36 #/YD. POWDER FACTOR
35 CU. YDS.	250# MAYNES 375# UNIGEL	68	0-13	50# SACKS OF MAYNES MIX #1, 2"X8" AND 2¼"X16" UNIGEL	3½" HOLES, 0.55 #/YD.
400 CU. YDS.	2250# MAYNES 250# UNIGEL	127	0-13	50# SACKS OF MAYNES MIX #1, 2¼"X16" AND 2"X8" UNIGEL	3½" HOLES, 1.04 #/YD.
400 CU. YDS.	3850# MAYNES 200# UNIGEL	116	0-14	50# SACKS OF MAYNES MIX #1, 2"X8" AND 2¼"X16" UNIGEL	3½" HOLES, SPILLWAY 1.19#/YD.
190 CU. YDS.	2200# MAYNES 225# UNIGEL	99	0-13	50# SACKS OF MAYNES MIX #1, 2"X8" AND 2¼"X16" UNIGEL	3½" HOLES, SPILLWAY 1.01 #/YD.
60 CU. YDS.	1400# MAYNES 550# UNIGEL	116	0-13	50# SACKS OF MAYNES MIX #1, 2¼"X16" AND 2"X8" UNIGEL	3½" HOLES, LEFT SIDE OF SPILLWAY, 1.17 #/YD.
95 CU. YDS.	475# UNIGEL 50# MAYNES	108	0-13	50# SACKS OF MAYNES MIX #1, 2¼"X16" AND 2"X8" UNIGEL	3½" HOLES, RIGHT PRE-SPLIT IN SPILLWAY 0.53 #/YD.
[illegible] CU. YDS.	1450# MAYNES 550# UNIGEL	113	0-13	50# SACKS OF MAYNES MIX #1, 2¼"X16" AND 2"X8" UNIGEL	RT. PRESPLIT LINE OF SPILLWAY, 3½" HOLES 1.25 #/YD.
60 CU. YDS.	3500# MAYNES 150# HERCODYNE 325	124	0-13	50# SACKS OF MAYNES MIX #1, 2"X8" HERCULES UNIGEL	3½" HOLES, SPILLWAY 1.01 #/YD POWDER FACTOR
30 CU. YDS.	500# MAYNES 41# UNIGEL	35	0-8	50# SACKS OF MAYNES MIX #1, 2"X8" HERCULES UNIGEL	3½" HOLES, NEXT TO PRE-SPL ON LEFT SIDE OF SPILLWAY, 0.11#/YD
50 CU. YDS.	2625# MAYNES 150# UNIGEL	107	0-13	50# SACKS OF MAYNES MIX #1, 2"X8" HERCULES UNIGEL	3½" HOLES, SPILLWAY
60 CU. YDS.	2400# MAYNES 250# 325 125# UNIGEL	217	0-13	50# SACKS OF MAYNES MIX #1, 2"X8" HERCODYNE 325, 2¼"X16" UNIGEL	3½" HOLES, SPILLWAY 1.03#/YD
[illegible] CU. YDS.	1600# MAYNES 400# UNIGEL 200# 325	+ 220	+ 0 15	50# SACKS OF MAYNES MIX #1, 2"X8" HERCODYNE 325, 2¼"X16" UNIGEL	+ 3½" HOLES, RIGHT SIDE OF SPILLWAY 0.85#/YD.
[illegible] CU. YDS.	1500# MAYNES 200# UNIGEL 150# 325	+ 102	+ 0 12	50# SACKS OF MAYNES MIX #1, 2¼"X16" HERCODYNE 325, 2"X8" UNIGEL	+ 3½" HOLES, RIGHT SIDE OF SPILLWAY 1.07#/YD.
[illegible] CU. YDS.	1950# MAYNES 150# 325 125# UNIGEL	+ 142	+ 0-11	50# SACKS OF MAYNES MIX #1, 2¼"X16" UNIGEL, 2"X8" HERCODYNE 325	+ 3½" HOLES, OUTLET WORKS RT. PRESPLIT LINE 0.98#/YD.
[illegible] CU. YDS.	1300# MAYNES 75# 325 425# UNIGEL	+ 153	+ 0 15	50# SACKS MAYNES MIX #1, 2"X8" 325 HERCODYNE, 2¼"X16" HERCULES UNIGEL	+ 3½" HOLES, OUTLET WORKS, 0.87#/YD.
80 CU. YDS.	2400# MAYNES 275# UNIGEL	160	+ 0-13	50# SACKS MAYNES MIX #1, 2"X8" UNIGEL 2¼"X16" UNIGEL	3½" HOLES, OUTLET WORKS, 1.08#/YD.
50 CU. YDS.	2650# MAYNES 275# UNIGEL	166	-	50# SACKS MAYNES MIX #1, 2"X8" AND 2 3/4"X16" UNIGEL	3½" HOLES, OUTLET WORKS, 1.06#/YD.
83 CU. YDS.	2100# MAYNES 200# UNIGEL	134	0-10	50# SACKS MAYNES MIX #1, 2"X8" AND 2¼"X16" UNIGEL	3½" HOLES, OUTLET WORKS, 1.01#/YD.
50 CU. YDS.	1900# MAYNES 150# UNIGEL	108	0-11	50# SACKS MAYNES MIX #1, 2"X8" HERCULES UNIGEL	3½" HOLES, NO. SERVICE RD., 1.17#/YD.
50 CU. YDS.	1225# MAYNES 1050# UNIGEL	141	0-13	50# SACKS MAYNES MIX #1, 2"X8" AND 2¼"X16" UNIGEL	3½" HOLES, SPILLWAY 0.99#/YD.
42 CU. YDS.	525# MAYNES 450# UNIGEL	103	0-13	50# SACKS MAYNES MIX #1, 2"X8" AND 2¼"X16" UNIGEL	3½" HOLES, SPILLWAY 0.93#/YD.
30 CU. YDS.	75# MAYNES 150# UNIGEL	51	0-7	50# SACKS MAYNES MIX #1, 2"X8" AND 2¼"X16" UNIGEL	3½" HOLES, SPILLWAY 0.63#/YD.
8 CU. YDS.	550# MAYNES 625# UNIGEL	76	0-10	50# SACKS MAYNES MIX #1, 2"X8" AND 2¼"X16" UNIGEL	3½" HOLES, SPILLWAY 0.59#/YD.
50 CU. YDS.	1700# MAYNES 175# UNIGEL	59	-	50# SACKS MAYNES MIX #1, 2¼"X16" AND 2"X8" UNIGEL	3½" HOLES, SPILLWAY 1.01#/CAL.
40 CU. YDS.	3300# MAYNES 400# UNIGEL	72	0-9	50# SACKS MAYNES MIX #1, 2"X8" AND 2¼"X16" UNIGEL	3½" HOLES, SPILLWAY 1.26#/YD.
4 CU. YDS.	2450# MAYNES 200# UNIGEL	43	0-6	50# SACKS MAYNES MIX #1, 2"X8" AND 2¼"X16" HERCULES UNIGEL	3½" HOLES, 1.15#/YD. SPILLWAY
30 CU. YDS.	1450# MAYNES 375# UNIGEL	130	0-13	50# SACKS MAYNES MIX #1, 2"X8" AND 2¼"X16" UNIGEL	3½" HOLES, 0.84#/YD. SPILLWAY
30 CU. YDS.	3150# MAYNES 1125# UNIGEL	134	0-15	50# SACKS MAYNES MIX #1, 2¼"X16" AND 2"X8" UNIGEL	3½" HOLES, 1.22#/YD. SPILLWAY
28 CU. YDS.	4925# MAYNES 231# UNIGEL	98	-	50# SACKS MAYNES M.X #1, 2¼"X16" AND 2"X8" UNIGEL	3½" HOLES, 1.12#/YD. SPILLWAY

Revisions			
Symbol	Descriptions	Date	Approved

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:

Drawn by: J.E.K./V.A.S.

Checked by:

US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

BLASTING SCHEDULE

Scale: | Sheet:

D C B A

7	1 8 82	BETHANY FALLS LIMESTONE	832	99+26	16 DS TO 16' US	PRE-SPLIT	19	8.5'	20"	0	TOTAL	¾" GRAVEL	272 SQ. FT.	400 200 GR. 40'E CORD
8	12/9/82	BETHANY FALLS LIMESTONE	846	73+35-73+85	60' US	PRE-SPLIT	28	14'-19'	20"	0	TOTAL	¾" GRAVEL	850 SQ. FT.	500' 200 GR. 60'E CORD
9	12/14/82	BETHANY FALLS LIMESTONE	846	73+35-72+75	60' DS TO 40' DS	PRE-SPLIT	41	17'	20"	0	TOTAL	¾" GRAVEL	1146 SQ. FT.	850' 200 GR. 75'E CORD
10	12/14/82	BETHANY FALLS LIMESTONE	841	72+75	45' US TO 60' US	PRE-SPLIT	12	8' 12'	20"	0	TOTAL	¾" GRAVEL	200 SQ. FT.	250' 200 GR. 25'E CORD
10	12/16/82	WINTERSET		17+50-18+70	LEFT SIDE	PRE-SPLIT	72	12'-16'	0	20"-36"		¾" GRAVEL	2271 SQ. FT.	1700' 200 GR. 500'E COR
1	11/2/82	BETHANY FALLS LIMESTONE	854	99+85-99+20	100' US TO 65 DS	PRODUCTION	84	8'-14'	10'-8'	7'-6'		4½'	1150 CU. YDS.	1275* MAYNES 181* UNI
2	11/3/82	BETHANY FALLS LIMESTONE	855±	14+80-14+50	℄ TO 115' RT.	PRODUCTION	43	7'-11'	9'	7'		4½'	920 CU. YDS.	500* MAYNES 112* UNIC
3	11/4/82	BETHANY FALLS LIMESTONE	855±	14+80-14+50	℄ T.O 90' LT	PRODUCTION	42	5'-9'	9'	7'		5'	595 CU YDS.	450* MAYNES 50* UNIGE
4	11/8/82	BETHANY FALLS LIMESTONE	855	15+75-15+10	100' LT. TO 100 RT.	PRODUCTION	143	16'	10'	7'		5'	7100 CU YDS	5050* MAYNES 400* UNI
5	11/18/82	BETHANY FALLS LIMESTONE	860	15+75-16+25	100' LT. TO 100' RT.	PRODUCTION	54	18.5'	16'	12"		9'	6465 CU. YDS.	6500* MAYNES 100* UNIG
6	12/8/82	SNIABAR	832	99+26	91' US TO 72 DS	PRODUCTION	60	7.5'	7'	5'		4½'	798 CU. YDS.	425* UNIGEL
7	12/13/82	BETHANY FALLS LIMESTONE		16+25-16+73	100' LT TO 108 RT	PRODUCTION	42-29	19'-19'	16'-10'	12'-7'		8½' 4'	7000 CU. YDS.	9815* MAYNES 50* UNIG
8	12/14/82	BETHANY FALLS LIMESTONE	842-836	72+75-73+85	60 US TO 60' DS	PRODUCTION	127	6'-14'	9'	7'		4'	2900 CU. YDS.	2000* MAYNES 550* UNI
9	12/20/82	WINTERSET		17+50-17+90	108' LT. TO ℄	PRODUCTION	129	5½'-8'	7'-10'	6'		4'	1360 CU. YDS.	1450* MAYNES 700* UNI
10	12/22/82	WINTERSET		17+90-18+35	120' LT. TO ℄	PRODUCTION	137	8.7'	7'-10'	6'		4'	2665 CU. YDS.	2400* MAYNES 475* UNI
11	12/23/82	WINTERSET		18+35-18+90	30' LT. 120' LT	PRODUCTION	91	10'	10'	6'		4'	1978 CU. YDS.	1750* MAYNES 125* UNI
11	1/12/83	BETHANY FALLS LIMESTONE		72+75	50'-115 DS	PRE-SPLIT	32	6'-15'	2'			¾" GRAVEL	480 SQ. FT.	600' 200 GRAIN 70'E COR
12	1/25/83	SNIABAR	828.5	73+15-73+80	20' LT. TO 20' RT.	PRE-SPLIT	139	9'	20"				2115 SQ. FT.	1700' 200 GRAIN 250'E C
13	1/28/83	SNIABAR		74+00	45'-157' DS	PRE-SPLIT	67	9'	20"			¾" GRAVEL	1008 SQ. FT.	1000' 200 GRAIN 150'E C
14	2/4/83	BETHANY FALLS LIMESTONE	841	72+50	121 US TO 73 DS	PRE-SPLIT	96	18'	2'			¾" GRAVEL	3456 SQ. FT.	2100' 200 GRAIN 200'E C
15	3/10/83	WINTERSET		18+32-19+41	LEFT SIDE	PRE-SPLIT	39	14'	30"			¾" GRAVEL	1350 SQ. FT.	1500' 200 GRAIN 110'E C
16	3/18/83	WINTERSET		18+00-20+80	LEFT SIDE	PRE-SPLIT	94	5'-11½'	30"			¾" GRAVEL	2940 SQ. FT.	2000' 200 GRAIN
16A	3/23/83	WINTERSET		20+80-22+70	RIGHT SIDE	PRE-SPLIT	51	8'-15'	30"			CRUSHED STONE	1500 SQ. FT.	850' 200 GRAIN 150'E CO
17	3/23/83	WINTERSET		20+80-22+70	RIGHT SIDE	PRE-SPLIT	51	8'-15'	30"			CRUSHED STONE	1500 SQ. FT.	850' 200 GRAIN 150'E CO
18	3/28/83	PLEASANTON	785	52+47-51+06		PRE-SPLIT	53	12'	2'-3'			TOTAL, STONE	1692 SQ. FT.	1350' 200 GRAIN 150'E C
19	3/31/83	PLEASANTON	785	51+06-47+00	75+03 DAM AXIS	PRE-SPLIT	155	12'	2'-2½'			¾" STONE	4872 SQ. FT.	4000' 200 GRAIN
20	4/15/83	PLEASANTON		11+88-10+50		PRE-SPLIT	46	12'	2½'-3'			¾" STONE	1656 SQ. FT.	1100' 200 GRAIN 780'E CO
21	4/18/83	PLEASANTON		10+50-9+48		PRE-SPLIT	25	12'	30"			¾" STONE	780 SQ. FT.	430' 200 GRAIN
22	4/26/83	BETHANY FALLS LIMESTONE		12+88-14+02	RIGHT SIDE	PRE-SPLIT	35	7'-13'	2'-3'			¾" GRAVEL	756 SQ. FT.	400' 200 GRAIN 300'E CO
23	5/5/83	BETHANY FALLS LIMESTONE		14+05-16+08	195 RT. OF ℄	PRE-SPLIT	55	12'-20'	2½'-3'			¾" GRAVEL	2288 SQ. FT.	400' 200 GRAIN 950'E CO
24	5/9/83	BETHANY FALLS LIMESTONE		16+09 17+00	195' RT. OF ℄	PRE-SPLIT	26	20'	30"			¾" ROCK	1900 SQ. FT.	325' 200 GRAIN 360'E CO
25	5/17/83	BETHANY FALLS LIMESTONE		25+18-24+50	195' RT. OF ℄	PRE-SPLIT	29	18'	2½'-3'			¾" GRAVEL	1224 SQ. FT.	700' 200 GRAIN 275'E CO
26	5/19/83	BETHANY FALLS LIMESTONE		24+50-23+05	195' RT. OF ℄	PRE-SPLIT	47	21'	3'			6'	2961 SQ. FT.	1250'E CORD 225* HERCO
27	5/23/83	BETHANY FALLS LIMESTONE		20+70-20+30	210 LT. OF ℄	PRE-SPLIT	63	18'	2½'-3'			¾" GRAVEL	3150 SQ. FT.	1512' 200 GRAIN 515'E C
28	5/24/83	BETHANY FALLS LIMESTONE		21+70-20+00	210' LT. OF ℄	PRE-SPLIT	14	22'	2½'-3'			¾" GRAVEL	814 SQ. FT.	460' 200 GRAIN 125'E CO
29	6/1/83	BETHANY FALLS LIMESTONE		15+35-17+00	210' LT. OF ℄	PRE-SPLIT	82	13.3	30"			¾" GRAVEL	2727 SQ. FT.	2400' 200 GRAIN 220'E C
30	7/22/83	BETHANY FALLS LIMESTONE		16+93 18+00	210' LT. OF ℄	PRE-SPLIT	52	21	2½'-3'			¾" GRAVEL	2919 SQ. FT.	1700' 200 GRAIN 600'E C
31	7/26/83	BETHANY FALLS LIMESTONE		17+00-18+00	195 RT. OF ℄	PRE-SPLIT	25	21'	3'			6'	1575 SQ. FT.	120* HERCOSPLIT
12	1/4/83	WINTERSET		18+90-19+50	30' RT. OF PRE-SPL.	PRODUCTION	112	7.3'	7'-10'	5'-6		4'	1232 CU. YDS.	1100* MAYNES 175* UNIG
13	1/5/83	WINTERSET		17+40-17+80	90' LT. OF ℄	PRODUCTION	118	5.6'	7'	5'		4'	820 CU. YDS.	600* UNIGEL 15* MAYNES
14	1/6/83	WINTERSET		17+90-18+70	℄ TO 100' LT.	PRODUCTION	157	9.1'	10'	6'-7'		4'	3400 CU. YDS.	2800* MAYNES 550* UNIG
15	1/11/83	WINTERSET		18+70-19+50	100'-200' LT OF PRE-SPL.	PRODUCTION	128	7'-10½'	9'-10'	5'-10'		4'	2900 CU. YDS.	2325* MAYNES 175* UNIG
16	1/12/83	BETHANY FALLS LIMESTONE		92+75-93+70	40 DS TO 130' DS	PRODUCTION	122	8'	9'	6'		4'	2560 CU. YDS.	1750* MAYNES 175 UNIGEL
17	1/17/83	WINTERSET		19+50	100'-200' RT. OF LT. PRE-SPL	PRODUCTION	172	6.4'	6'-9'	5½'		4'	2300 CU. YDS.	1475* MAYNES 200* UNIG
18	1/18/83	WINTERSET		17+50-18+00	200'-300' RT. OF LT. PRE-SPL.	PRODUCTION	146	5½'-7'	7'-9'	5'		4'	1320 CU. YDS.	800* MAYNES 445* UNIGEL
19	1/20/83	WINTERSET		18+00-18+60	200'-300' RT. OF LT. PRE-SPL.	PRODUCTION	137	9'	9'-10'	6'		4'	2160 CU. YDS.	2700* MAYNES 150* UNIG
20	1/31/83	SNIABAR		73+ -74+25	35' DS TO 60' US	PRODUCTION	105	6.5'				4	820 CU. YDS.	450* MAYNES 650* UNIGEL
21	2/2/83	SNIABAR		74+00-74+27	30'-155' DS	PRODUCTION	68	7'	7'	5'		4'	1135 CU. YDS.	250* MAYNES 375* UNIGEL
22	2/8/83	BETHANY FALLS LIMESTONE		72+50-72+15	120' US TO 80 DS	PRODUCTION	127	7'-14'					2400 CU. YDS.	2250* MAYNES 250* UNIG
23	2/10/83	WINTERSET		18+50-19+25	50' LT TO 50' RT OF ℄	PRODUCTION	116	12.3'	10'	7'		4'	3400 CU. YDS.	3850* MAYNES 200* UNIG
24	2/11/83	WINTERSET		19+75-20+25	200'-300' RT. OF PRE-SPL.	PRODUCTION	93	10.2'	10'	7'		4'	2390 CU. YDS.	2200* MAYNES 225* UNIG
25	2/22/83	WINTERSET		20+00-20+50	200'-300 LT. OF PRE-SPL.	PRODUCTION	176	6.6'	6'	7'		4'	1660 CU. YDS.	1400* MAYNES 550* UNIG
26	2/25/83	WINTERSET		17+50-18+00	60' LT. TO 155' LT.	PRODUCTION	108	6.2'	7'	5'		4'	995 CU. YDS.	475* UNIGEL 50* MAYNES
27	3/1/83	WINTERSET		18+00-18+55	70' RT. TO 170 RT. OF PRESPLIT	PRODUCTION	113	8.1'	9'	6'		4'	1620 CU. YDS.	1450* MAYNES 550* UNIG
28	3/3/83	WINTERSET		18+50-19+25		PRODUCTION	124	11.0'	10'	7'		4'	3600 CU. YDS.	3500* MAYNES 150* HERC
29	3/11/83	WINTERSET		18+30-19+60		PRODUCTION	35	5'-11'	7'	5'		4'	760 CU. YDS.	500* MAYNES 41* UNIGEL
30	3/11/83	WINTERSET		19+50-20+00	℄ TO 100' RT	PRODUCTION	107	10.7'	10'	6'		4'	2354 CU. YDS.	2625* MAYNES 150* UNIG
31	3/15/83	WINTERSET		20+50-21+50	100' RT TO ℄	PRODUCTION	217	6.8'	9'	6'		4'	2700 CU. YDS.	2400* MAYNES 250* 325
32	3/24/83	WINTERSET		21+50-22+50	TO 150' LT OF PRESPLIT	PRODUCTION	220	6.2'	8'	6'		4'	2600 CU. YDS.	1600* MAYNES 400* UNIG
33	3/25/83	WINTERSET			RT. SIDE TO 122' RT.	PRODUCTION	102	8'	9'	6'		4'	1728 CU. YDS.	1500* MAYNES 200* UNIG
34	3/29/83	PLEASANTON	785	52+47-51+55	EDGE TO 85' LT.	PRODUCTION	142	8'	9'	6'		4'	2281 CU. YDS.	1950* MAYNES 150* 325
35	4/6/83	PLEASANTON	785	47+50-43+00	75+00-76+00 (DAM STA)	PRODUCTION	153	8'	9'	6'		4'	2400 CU. YDS.	1900* MAYNES 75* 325 42
36	4/7/83	PLEASANTON	785	49+08-50+00	75+00-75+95 (DAM STA)	PRODUCTION	160	8'	9'	6'		4'	2480 CU. YDS.	2400* MAYNES 275* UNIGE
37	4/8/83	PLEASANTON	785	50+00-50+90	75+00-76+00	PRODUCTION	166	8'	9'	6'		4'	2750 CU. YDS.	2650* MAYNES 275* UNIGE
38	4/11/83	PLEASANTON	785	50+90-51+62		PRODUCTION	134	8'	9'	6'		4'	2280 CU. YDS.	2100* MAYNES 200* UNIGE
39	4/18/83	" ANTON		11+85-10+00		PRODUCTION	108	8'	9'	6'		4'	1750 CU. YDS.	1900* MAYNES 150* UNIGE
40	4/20/83	"		19+50-21+00		PRODUCTION	147	8'	9'	6'		4'	2400 CU. YDS.	1225* MAYNES 1050* UNIG
41	4/21/83	"		19+50-18+50		PRODUCTION	103	6.5'	8'	5'		4'	1092 CU. YDS.	525* MAYNES 450* UNIGEL
42	4/25/83	" SET				PRODUCTION	57	5'	7'	5'		4'	360 CU. YDS.	75* MAYNES 150* UNIGEL
43	5/3/83	ANY FALLS LIMESTONE		13+12-13+75	195 TO 95' RT. ℄	PRODUCTION	76	9'	8'	6'		4'	2016 CU. YDS.	550* MAYNES 625* UNIGEL
44	5/3/83	BETHANY FALLS LIMESTONE		14+02-14+50	195' TO 100' RT. ℄	PRODUCTION	59	12'	10'	6		4'	1150 CU. YDS.	1700* MAYNES 175* UNIGE
45	5/10/83	BETHANY FALLS LIMESTONE		14+50 15+30	155' TO 110' RT. ℄	PRODUCTION	72	15'	10'	7'		4'	2940 CU. YDS.	3300* MAYNES 400* UNIGE
46	5/11/83	BETHANY FALLS LIMESTONE		15+30-16+00	195 TO 110' RT. ℄	PRODUCTION	43	16'	10'	8'		4'	2314 CU. YDS.	2450* MAYNES 200* UNIGE
47	6/2/83	BETHANY FALLS LIMESTONE		15+35-15+75	210 TO 90 LT. ℄	PRODUCTION	130	9'	10'	6		4'	2160 CU. YDS.	1450* MAYNES 375* UNIGE
48	6/7/83	BETHANY FALLS LIMESTONE		15+75-16+25	210 TO 100 LT. ℄	PRODUCTION	134	13'	9'	7'		4'	3500 CU. YDS.	3150* MAYNES 1125* UNIG
49	6/10/83	BETHANY FALLS LIMESTONE		16+25 16-70	210 LT. TO 60 LT. ℄	PRODUCTION	98	17	10	7'		4'	4678 CU. YDS.	4925* MAYNES 237* UNIGE

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PRINGS BLASTING REPORT

VOL.	EXPLOSIVES (LBS.)	NO. OF CAPS	DELAYS IN MILLISEC	CARTRIDGE STRENGTH	REMARKS
	560' 200 GR. 40° E CORD	2	0	PRIMACORD, ENSIGN BICKFORD	NORMAL TO DAM AXIS; 3" HOLES
SQ. FT.	1600' 200 GR. 130' E CORD	2	0	PRIMACORD	NORMAL TO DAM; 3" HOLES
SQ. FT.	1200' 200 GR. 100' E CORD	2	0	PRIMACORD	3" HOLES, NORMAL TO AXIS
SQ. FT.	1100' 200 GR. 175' E CORD	1	0	PRIMACORD	NORMAL TO DAM; 3" HOLES
SQ. FT.	500' 200 GR. 100' E CORD	1	0	PRIMACORD	3½" HOLES, NORMAL TO DAM, RESHOOT 4
SQ. FT.	400' 200 GR. 40' E CORD	1	0	PRIMACORD	3½" HOLES, NORMAL TO AXIS, RESHOOT 4
SQ. FT.	500' 200 GR. 60' E CORD	1	0	PRIMACORD	3" PARALLEL TO AXIS
SQ. FT.	850' 200 GR. 75' E CORD	1	0	PRIMACORD	3" HOLES, PARALLEL AND AT ANGLE TO DAM AXIS
SQ. FT.	250' 200 GR. 25' E CORD	1	0	PRIMACORD	NORMAL TO AXIS, 3" HOLES
SQ. FT.	1700' 200 GR. 500' E CORD 67 LBS.	1	0	PRIMACORD, ¼"X2" HERCULES HERCOSPLIT	3 HOLES, LEFT SIDE OF SPILLWAY
CU. YDS.	1275° MAYNES 181° UNIGEL	84	0-9	50° SACKS MAYNES MIX °1, UNIGEL 2"X8" AND 2¼"X 16°	3½" HOLES, POWDER FACTOR 0.83
CU. YDS.	500° MAYNES 112° UNIGEL	43	0-7	50° SACKS MAYNES MIX °1, HERCULES UNIGEL 2"X8", 2¼"X16"	3½" HOLES, SPILLWAY 0.67 LBS./YD.
CU. YDS.	450° MAYNES 50° UNIGEL	42	0-7	50° SACKS MAYNES MIX °1, HERCULES UNIGEL 2"X8"	3½" HOLES, SPILLWAY 0.76 LBS./YD.
CU. YDS.	5050° MAYNES 400° UNIGEL	143	0-11	50° SACKS MAYNES, 2"X8" AND 2¼"X16" HERCULES UNIGEL	3½" HOLES, SPILLWAY 0.77 LBS./YD.
CU. YDS.	6500° MAYNES 100° UNIGEL 105° TITAN G BOOSTER	54	0-8	50° SACKS MAYNES, 2"X8" AND 2¼"X16" UNIGEL, 2"X4" TITAN	6¾" HOLES, SPILLWAY 1.04 LBS./YD.
CU. YDS.	425° UNIGEL	60	0-10	HERCULES UNIGEL 2¼"X16" AND 2"X8"	3½" HOLES, POWDER FACTOR 0.53
CU. YDS.	9815° MAYNES 50° UNIGEL 40° TITAN	71	0-8	50° SACKS MAYNES MIX °1, 5½"X30" MAYNES MIX CTG. 2"X8" HERCULES UNGEL. 3"X3" TITAN G BOOSTER	3½" & 6¾" HOLES, SPILLWAY
CU. YDS.	2000° MAYNES 550° UNIGEL	127	0-12	50° SACKS OF MAYNES MIX °1, UNIGEL 2"X8" AND 2¼"X16"	3-3½" HOLES, 0.88 POWDER FACTOR
CU. YDS.	1450° MAYNES 700° UNIGEL	129	0-8	50° SACKS OF MAYNES MIX °1, UNIGEL 2"X8" AND 2¼"X16"	3½" HOLES, SPILLWAY 1.58 POWDER FACTOR MEASURED OFF PRESPLIT
CU. YDS.	2400° MAYNES 475° UNIGEL	137	0-11	50° SACKS OF MAYNES MIX °1, UNIGEL 2"X8" AND 2¼"X16"	3½" HOLES, SPILLWAY 1.08 POWDER FACTOR MEASURED OFF PRESPLIT
CU. YDS.	1750° MAYNES 125° UNIGEL	91	0-9	50° SACKS OF MAYNES MIX °1, UNIGEL 2"X8" AND 2¼"X16"	3½" HOLES, SPILLWAY, MEASURED OFF PRESPLIT
SQ. FT.	600' 200 GRAIN 70' E CORD	1	0	ENSIGN BICKFORD PRIMACORD	3" HOLES
SQ. FT.	1700' 200 GRAIN 250' E CORD	2	0	PRIMACORD	3" HOLES
SQ. FT.	1000' 200 GRAIN 150' E CORD	2	0	PRIMACORD	3" HOLES
SQ. FT.	2100' 200 GRAIN 200' E CORD	1	0	PRIMACORD	3" HOLES
SQ. FT.	1500' 200 GRAIN 110' E CORD	1	6	PRIMACORD	3" HOLES, SPILLWAY
SQ. FT.	2000' 200 GRAIN	2	0-1	PRIMACORD	3" HOLES, SPILLWAY
SQ. FT.	850' 200 GRAIN 150' E CORD	1	0	PRIMACORD	3" HOLES, SPILLWAY
SQ. FT.	850' 200 GRAIN 150' E CORD	1	0	PRIMACORD	3" HOLES, SPILLWAY
SQ. FT.	1350' 200 GRAIN 150' E CORD	1	0	PRIMACORD	3" HOLES, OUTLET WORKS
SQ. FT.	4000' 200 GRAIN	2	0-1	PRIMACORD	3" HOLES, OUTLET WORKS
SQ. FT.	100' 200 GRAIN 780' E CORD 92° HERCOSPLIT	1	0	PRIMACORD, ¼"X2" HERCULES HERCOSPLIT	3" HOLES, N. SERVICE ROAD
SQ. FT.	430' 200 GRAIN	1	0	PRIMACORD	3" HOLES, N. SERVICE ROAD
SQ. FT.	400' 200 GRAIN 300' E CORD 40° HERCOSPLIT	1	0	PRIMACORD, ¼"X2" HERCULES HERCOSPLIT	SPILLWAY 195' FROM E, 3" HOLES
SQ. FT.	400' 200 GRAIN 950' E CORD 185° HERCOSPLIT	1	0	PRIMACORD, ¼"X2" HERCULES HERCOSPLIT	3" HOLES, SPILLWAY
SQ. FT.	325' 200 GRAIN 360' E CORD 54° HERCOSPLIT	1	0	PRIMACORD, ¼"X2" HERCULES HERCOSPLIT	3" HOLES, SPILLWAY
SQ. FT.	700' 200 GRAIN 275' E CORD 50° HERCOSPLIT	1	0	PRIMACORD, ¼"X2" HERCULES HERCOSPLIT	3" HOLES, SPILLWAY
SQ. FT.	1250' E CORD 225° HERCOSPLIT	1	0	PRIMACORD, ¼"X2" HERCULES HERCOSPLIT	3" HOLES, SPILLWAY
SQ. FT.	1512' 200 GRAIN 515' E CORD 71.4° HERCOSPLIT	1	0	PRIMACORD, ¼"X2" HERCULES HERCOSPLIT	3" HOLES, SPILLWAY
SQ. FT.	460' 200 GRAIN 125' E CORD 19.2° HERCOSPLIT	1	0	PRIMACORD, ¼"X2" HERCULES HERCOSPLIT	3" HOLES, SPILLWAY
SQ. FT.	2400' 200 GRAIN 220' E CORD	1	0	PRIMACORD, ¼"X2" HERCULES HERCOSPLIT	3" HOLES, LT. SIDE OF SPILLWAY
SQ. FT.	1700' 200 GRAIN 600' E CORD 78° HERCOSPLIT	1	14	PRIMACORD, ¼"X2" HERCULES HERCOSPLIT	3" HOLES, SPILLWAY
SQ. FT.	120° HERCOSPLIT	1	18	PRIMACORD, ¼"X2" HERCULES HERCOSPLIT	3" HOLES, SPILLWAY
CU. YDS.	1100° MAYNES 175° UNIGEL	112	0-8	50° SACKS OF MAYNES MIX °1, UNIGEL 2"X8" AND 2¼"X16"	3½" HOLES, SPILLWAY 1.03 LBS./YD.
CU. YDS.	600° UNIGEL 15° MAYNES HERCOMIX °1	118	0-9	50° SACKS OF MAYNES MIX °1, UNIGEL AND 2¼"X16"	3½" HOLES, SPILLWAY 0.75 LBS./YD.
CU. YDS.	2800° MAYNES 550° UNIGEL	157	0-13	50° SACKS OF MAYNES MIX °1, UNIGEL 2"X8" AND 2¼"X16"	3½" HOLES, SPILLWAY 0.99 LBS./YD.
CU. YDS.	2325° MAYNES 175° UNIGEL	128	0-12	50° SACKS OF MAYNES MIX °1, UNIGEL 2"X8" AND 2¼"X16"	3½" HOLES, SPILLWAY 0.86 LBS./YD.
CU. YDS.	1750° MAYNES 175 UNIGEL	122	0-12	50° SACKS OF MAYNES MIX °1, UNIGEL 2"X8" AND 2¼"X16"	3½" HOLES, SPILLWAY 0.77 LBS./YD. POWDER FACTOR
CU. YDS.	1475° MAYNES 200° UNIGEL	172	0-12	50° SACKS OF MAYNES MIX °1, 2"X8" HERCULES UNIGEL	3½" HOLES, SPILLWAY 0.73 °/YD.
CU. YDS.	800° MAYNES 445° UNIGEL	146	0-12	50° SACKS OF MAYNES MIX °1, 2"X8" AND 2¼"X16" UNIGEL	3½" HOLES, SPILLWAY 0.93 °/YD.
CU. YDS.	2700° MAYNES 150° UNIGEL	137	0-12	50° SACKS OF MAYNES MIX °1, 2"X8" AND 2¼"X16" UNIGEL	3½" HOLES, LEFT SIDE OF SPILLWAY, 1.32 °/YD.
CU. YDS.	450° MAYNES 650° UNIGEL	105	0-7	50° SACKS OF MAYNES MIX °1, 2"X8" AND 2¼"X16" UNIGEL	3½" HOLES, 1.34 °/YD. POWDER FACTOR
CU. YDS.	250° MAYNES 375° UNIGEL	68	0-13	50° SACKS OF MAYNES MIX °1, 2"X8" AND 2¼"X16" UNIGEL	3½" HOLES, 0.55 °/YD.
CU. YDS.	2250° MAYNES 250° UNIGEL	127	0-13	50° SACKS OF MAYNES MIX °1, 2¼"X16" AND 2"X8" UNIGEL	3½" HOLES, 1.04 °1 YD.
CU. YDS.	3650° MAYNES 200° UNIGEL	116	0-14	50° SACKS OF MAYNES MIX °1, 2"X8" AND 2¼"X16" UNIGEL	3½" HOLES, SPILLWAY 1.19°/YD.
CU. YDS.	2200° MAYNES 225° UNIGEL	99	0-13	50° SACKS OF MAYNES MIX °1, 2"X8" AND 2¼"X16" UNIGEL	3½" HOLES, SPILLWAY 1.01 °/YD.
CU. YDS.	1400° MAYNES 550° UNIGEL	176	0-13	50° SACKS OF MAYNES MIX °1, 2¼"X16" AND 2"X8" UNIGEL	3½" HOLES, LEFT SIDE OF SPILLWAY, 1.17 °/YD.
CU. YDS.	475° UNIGEL 50° MAYNES	108	0-13	50° SACKS OF MAYNES MIX °1, 2¼"X16" AND 2"X8" UNIGEL	3½" HOLES, RIGHT PRE-SPLIT IN SPILLWAY 0.53 °/YD.
CU. YDS.	1450° MAYNES 550° UNIGEL	113	0-13	50° SACKS OF MAYNES MIX °1, 2¼"X16" AND 2"X8" UNIGEL	RT. PRESPLIT LINE OF SPILLWAY, 3½" HOLES 1.23 °/YD.
CU. YDS.	3500° MAYNES 150° HERCOOYNE 325	124	0-13	50° SACKS OF MAYNES MIX °1, 2"X8" HERCULES UNIGEL	3½" HOLES, SPILLWAY 1.0 °/YD POWDER FACTOR
CU. YDS.	500° MAYNES 41° UNIGEL	35	0-8	50° SACKS OF MAYNES MIX °1, 2"X8" HERCULES UNIGEL	3½" HOLES, NEXT TO PRE-SPL ON LEFT SIDE OF SPILLWAY, 0.71°/YD
CU. YDS.	2625° MAYNES 150° UNIGEL	107	0-13	50° SACKS OF MAYNES MIX °1, 2"X8" HERCULES UNIGEL	3½" HOLES, SPILLWAY
CU. YDS.	2400° MAYNES 250° 325 125° UNIGEL	217	0-13	50° SACKS OF MAYNES MIX °1, 2"X8" HERCOOYNE 325, 2¼"X16" UNIGEL	3½" HOLES, SPILLWAY 1.03°/YD
CU. YDS.	1600° MAYNES 400° UNIGEL 200° 325	220	0-15	50° SACKS OF MAYNES MIX °1, 2"X8" HERCOOYNE 325, 2¼"X16" UNIGEL	3½" HOLES, RIGHT SIDE OF SPILLWAY 0.85°/YD.
CU. YDS.	1500° MAYNES 200° UNIGEL 150° 325	102	0-12	50° SACKS OF MAYNES MIX °1, 2¼"X16" HERCOOYNE 325, 2"X8" UNIGEL	3½" HOLES, RIGHT SIDE OF SPILLWAY 1.07°/YD.
CU. YDS.	1950° MAYNES 150° 325 125° UNIGEL	142	0-11	50° SACKS OF MAYNES MIX °1, 2¼"X16" UNIGEL, 2"X8" HERCOOYNE 325	3½" HOLES, OUTLET WORKS-RT PRESPLIT LINE 0.98°/YD.
CU. YDS.	1900° MAYNES 75° 325 425° UNIGEL	153	0-15	50° SACKS MAYNES MIX °1, 2"X8" 325 HERCOOYNE, 2¼"X16" HERCULES UNIGEL	3½" HOLES, OUTLET WORKS, 0.87°/YD.
CU. YDS.	2400° MAYNES 275° UNIGEL	160	0-13	50° SACKS MAYNES MIX °1, 2"X8" UNIGEL 2¼"X16" UNIGEL	3½" HOLES, OUTLET WORKS, 1.08°/YD.
CU. YDS.	2650° MAYNES 275° UNIGEL	166	-	50° SACKS MAYNES MIX °1, 2"X8" AND 2 3/4"X16" UNIGEL	3½" HOLES, OUTLET WORKS, 1.06°/YD.
CU. YDS.	2100° MAYNES 200° UNIGEL	134	0-10	50° SACKS MAYNES MIX °1, 2"X8" AND 2¼"X16" UNIGEL	3½" HOLES, OUTLET WORKS, 1.01°/YD.
CU. YDS.	1900° MAYNES 150° UNIGEL	108	0-11	50° SACKS MAYNES MIX °1, 2"X8" HERCULES UNIGEL	3½" HOLES, NO. SERVICE RD., 1.17°/YD.
CU. YDS.	1225° MAYNES 1050° UNIGEL	147	0-13	50° SACKS MAYNES MIX °1, 2"X8" AND 2¼"X16" UNIGEL	3½" HOLES, SPILLWAY 0.95°/YD.
CU. YDS.	525° MAYNES 450° UNIGEL	103	0-13	50° SACKS MAYNES MIX °1, 2"X8" AND 2¼"X16" UNIGEL	3½" HOLES, SPILLWAY 0.89°/YD.
CU. YDS.	15° MAYNES 150° UNIGEL	57	0-7	50° SACKS MAYNES MIX °1, 2"X8" AND 2¼"X16" UNIGEL	3½" HOLES, SPILLWAY 0.63°/YD.
CU. YDS.	550° MAYNES 625° UNIGEL	76	0-10	50° SACKS MAYNES MIX °1, 2"X8" AND 2¼"X16" UNIGEL	3½" HOLES, SPILLWAY 0.69°/YD.
CU. YDS.	1700° MAYNES 175° UNIGEL	59	-	50° SACKS MAYNES MIX °1, 2¼"X16" AND 2"X8" UNIGEL	3½" HOLES, SPILLWAY 1.01°/GAL.
CU. YDS.	3300° MAYNES 400° UNIGEL	72	0-9	50° SACKS MAYNES MIX °1, 2"X8" AND 2¼"X16" UNIGEL	3½" HOLES, SPILLWAY 1.26°/YD.
CU. YDS.	2450° MAYNES 200° UNIGEL	43	0-6	50° SACKS MAYNES MIX °1, 2"X8" AND 2¼"X16" HERCULES UNIGEL	3½" HOLES, 1.15°/YD. SPILLWAY
CU. YDS.	1450° MAYNES 375° UNIGEL	130	0-13	50° SACKS MAYNES MIX °1, 2"X8" AND 2¼"X16" UNIGEL	3½" HOLES, 0.84°/YD. SPILLWAY
CU. YDS.	3150° MAYNES 1125° UNIGEL	134	0-15	50° SACKS MAYNES MIX °1, 2¼"X16" AND 2"X8" UNIGEL	3½" HOLES, 1.22°/YD. SPILLWAY
CU. YDS.	4925° MAYNES 237° UNIGEL	98		50° SACKS MAYNES MIX °1, 2¼"X16" AND 2"X8" UNIGEL	3½" HOLES, 1.12°/YD. SPILLWAY

Revisions			
Symbol	Descriptions	Date	Approved

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:

Drawn by: J.E.K./V.A.B.

Checked by:

Submitted by:

US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

BLASTING SCHEDULE

Scale: AS SHOWN | Sheet numbers: 86 | Plot Scale: S=.0833

Dates: JUNE 1990 | Design Files: (100,63)BSLDGN

Dwg. Nos: | File Nos: RBL-2-1306

3 | 2 | 1 | PLATE NO. 86

BLUE SPRINGS DAM BLASTING

SHOT NO.	DATE	GEOLOGIC LOCATION	ELEV.	LOCATION STATION	LOCATION RANGE	PURPOSE	NO. OF HOLES	DEPTH (FT.)	SPACING (FT.)	BURDEN (FT.)	STEM (FT.)	SHOT VOL.	EXPLOSIVES
50	6/16/83	BETHANY FALLS		23+00	30' LT. TO 10' RT. ℄	PRODUCTION	116	17'	10'	7'	4'	5415 CU. YDS.	4100# MAYNES 900# UNIGEL
51	6/20/83	BETHANY FALLS		25+50-24+50	EDGE TO 150' LT. PRESPLIT	PRODUCTION	91	18'	10'	7'	4'	3175 CU. YDS.	2300# MAYNES 375# UNIGEL
52	6/22/83	BETHANY FALLS		23+50-24+50	EDGE TO 170' RT.	PRODUCTION	86	19'	10'	7'	4'	4376 CU. YDS.	4050# MAYNES 550# UNIGEL
53	6/24/83	BETHANY FALLS		24+00-23+50	EDGE TO 60' RT	PRODUCTION	44	19'	10'	7'	4'	2318 CU. YDS.	2050# MAYNES 350# UNIGEL
54	7/1/83	BETHANY FALLS		22+50-22+00	30'-110' LT ℄	PRODUCTION	82	18'	10'	7'	4'	3780 CU. YDS.	3225# MAYNES 900# UNIGEL
55	7/7/83	BETHANY FALLS		22+00		PRODUCTION	100	18'	10'	7'	4'	5022 CU. YDS	4625# MAYNES 475# UNIGEL
56	7/13/83	BETHANY FALLS		20+50-21+50		PRODUCTION	127	17'	10'	7'	3½'	5950 CU. YDS.	5650# MAYNES 175# UNIGEL
57	7/15/83	BETHANY FALLS		21+15-20+50	EDGE TO 110' RT	PRODUCTION	72	18'	10'	7'	4'	4250 CU. YDS	4200# MAYNES 100# UNIGEL
58	7/19/83	BETHANY FALLS		23+30-23+80	5' TO 100' LT. OF PRESPLIT	PRODUCTION	89	20'	10'	7'	4'	4433 CU. YDS.	4600# MAYNES 750# UNIGEL
59	7/25/83	BETHANY FALLS		23+30-23+90	℄ TO 100' RT.	PRODUCTION	77	21'	10'	7'	3½'	4900 CU. YDS.	4225# MAYNES 500# UNIGEL
60	7/29/83	BETHANY FALLS		16+20-17+20	195' TO 110' LT ℄	PRODUCTION	89	22'	10'	7'	3½'	4360 CU. YDS.	5350# MAYNES 205# UNIGEL
61	8/2/83	BETHANY FALLS		17+00-17+43	130' TO 40' LT ℄	PRODUCTION	90	22'	10'	7'	3½'	5133 CU. YDS.	5800# MAYNES 115# UNIGEL
62	8/4/83	BETHANY FALLS			165' RT. OF RT. PRE-SPLIT TO 60' LT. ℄	PRODUCTION	94	22'	10'	7'	3½'	5544 CU. YDS.	5450# MAYNES 115# UNIGEL
63	8/8/83	BETHANY FALLS		17+00-17+50	80'-170' LT. OF RT. PRESPLIT	PRODUCTION	130	22.5'	10'	7'	3½'	6750 CU. YDS.	8900# MAYNES 150# UNIGEL
64	8/11/83	BETHANY FALLS		16+75 17+75	EDGE TO 64' LT.	PRODUCTION	108	22.5'	10'	7'	3½'	7300 CU. YDS.	7150# MAYNES 150# UNIGEL
65	8/15/83	BETHANY FALLS		22+00	10' TO 100' RT. ℄	PRODUCTION	89	22'	10'	7'	3½'	5166 CU. YDS.	6100# MAYNES 260# UNIGEL
66	8/17/83	BETHANY FALLS		20+50-20+00	70' LT TO 50' RT ℄	PRODUCTION	82	21.5'	10'	8'	3½'	5160 CU. YDS.	5500# MAYNES 100# UNIGEL
67	8/19/83	BETHANY FALLS		20+00-20+40	50' TO 110' RT.	PRODUCTION	58	21.5'	10'	9'	3½'	4379 CU. YDS.	4000# MAYNES 75# UNIGEL
1	8/22/84	HUSHPUCKNEY SH, MIDDLE CREEK LS, LADORE & SNABAR	842 ±	12+72-15+65	195 RT ℄	PRE-SPLIT	114	7'-12	2'		¼" GRAV	2280 SQ. FT.	3500' 200 GR. 250' E CORD.
2	8/24/84	HUSHPUCKNEY MIDDLE CREEK LADORE & SNABAR	842 ±	15+65-17+00	195 RT ℄	PRE-SPLIT	49	12'	2'		¼" GRAV.	1152 SQ. FT.	1200' 200 GR. 100' E CORD
3	8/27/84	BETHANY FALLS	866	18+00-18+50	195' RT ℄	PRE-SPLIT	12	23' ±	2½'		¼" GRAV.	690 SQ. FT.	600' 200 GR. 40 E CORD.
4	10/1/84	BETHANY FALLS	864	18+54-20+42		PRE-SPLIT	52	22' ±	2½'		¼" GRAV.	2860 SQ. FT.	2500' 200 GR. 140' E CORD.
5	10/2/84	BETHANY FALLS	864	20+42-21+75		PRE-SPLIT	50	22'	2½'		¼" GRAV.	2750 SQ. FT.	2300' 200 GR.
6	10/4/84	BETHANY FALLS	864	21+75-23+15	195' RT. ℄	PRE-SPLIT	54	21'	30"		¼" GRAV.	2835 SQ. FT.	2500' 200 GR. 160' E CORD
7	11/2/84	BETHANY FALLS	864	17+50-18+28	210' LT OF ℄	PRE-SPLIT	32	22'	30"		¼" GRAV.	1716 SQ. FT.	1600' 200 GR. 100' E CORD.
8	11/7/84	BETHANY FALLS	864	18+28-19+10	210' LT. OF ℄	PRE-SPLIT	29	21'	30"		¼" GRAV.	1525 SQ. FT.	1500' 200 GR. 100' E CORD.
9	11/13/84	BETHANY FALLS	864	19+00-20+00	210' LT OF ℄	PRE-SPLIT	52	21'	30"		¼" GRAV.	2667 SQ. FT.	2350' 200GR. 190' E CORD.
10	11/24/84	BETHANY FALLS	854	25+40-25+52	195' RT. OF ℄	PRE-SPLIT	6	12'	2'		¼" GRAV.	192 SQ. FT.	150' 200 GR. 15' E CORD.
11	12/1/84	HUSHPUCKNEY MIDDLE CREEK LADORE & SNABAR	842 ±	23+50-24+83	182' RT OF ℄	PRE-SPLIT	57	16'	2'		¼" GRAV.	1922 SQ. FT.	1800' 200 GR. 130' E CORD.
12	12/7/84	HUSHPUCKNEY MIDDLE CREEK LADORE & SNABAR	842 ±	24+83-26+05	182' RT OF ℄	PRE-SPLIT	61	16'	2'		¼" GRAV.	1708 SQ. FT.	1650' 200 GR. 130' E CORD.
13	12/11/84	HUSHPUCKNEY MIDDLE CREEK LADORE & SNABAR	842	17+00-16+01	197' LT. OF ℄	PRE-SPLIT	65	16'	2'		¼" GRAV.	2044 SQ. FT.	2200' 200 GR. 135' E CORD.
14	12/12/84	HUSHPUCKNEY MIDDLE CREEK LADORE & SNABAR	842	16+01-15+42	197' LT OF ℄	PRE-SPLIT	36	16'	2'		¼" GRAV	1152 SQ. FT.	1100' 200 GR. 100' E CORD.
15	12/13/84	HUSHPUCKNEY MIDDLE CREEK LADORE & SNABAR	842	15+42-15+38	197' LT. OF ℄	PRE-SPLIT	13	16	2'		¼" GRAV.	416 SQ. FT.	400' 200 GR. 35' E CORD.
1	8/25/84	SNABAR	836	12+76-13+10	195' TO 100' RT. ℄	PRODUCTION	92	7.5'	7'	5'	4½'	720 CU. YDS.	850# MAYNES 105# UNIGEL
2	8/28/84	HUSHPUCKNEY MIDDLE CREEK LADORE & SNABAR	838	13+15-13+40	185' TO 60' RT ℄	PRODUCTION	87	7.5'	7'	5	3½'	900 CU. YDS.	850# MAYNES 105# UNIGEL
3	8/31/84	HUSHPUCKNEY MIDDLE CREEK LADORE & SNABAR	841	13+40-14+00	℄ TO 195' RT	PRODUCTION	157	8'-12'	7'	6	3½'	1900 CU. YDS.	2350# MAYNES 190# UNIGEL
4	9/6/84	HUSHPUCKNEY MIDDLE CREEK LADORE & SNABAR	841	14+50-14+90	℄ TO 195 RT.	PRODUCTION	131	9'-13'	7	6'	4'	2020 CU. YDS.	2000# MAYNES 175# UNIGEL
5	9/11/84	HUSHPUCKNEY MIDDLE CREEK LADORE & SNABAR	842	14+70-15+00	℄ TO 195' RT	PRODUCTION	155	10'-12'	7	6'	5'	2508 CU. YDS.	2400# MAYNES 400# UNIGEL
6	9/13/84	HUSHPUCKNEY MIDDLE CREEK LADORE & SNABAR	841	15+30-15+50	℄ TO 195 RT	PRODUCTION	125	11.5'	7	6'	5	2150 CU. YDS.	2350# MAYNES 225# UNIGEL
7	9/20/84	HUSHPUCKNEY MIDDLE CREEK LADORE & SNABAR	842	15+42-15+75	℄ TO 195' RT.	PRODUCTION	122	11.5'	7	6'	5'	2108 CU. YDS.	2150# MAYNES 200# UNIGEL
8	9/22/84	HUSHPUCKNEY MIDDLE CREEK LADORE & SNABAR	843	15+85-16+13	℄ TO 185' LT	PRODUCTION	122	11.5'	7'	6'	5'	2108 CU. YDS.	2100# MAYNES 250# UNIGEL
9	9/26/84	HUSHPUCKNEY MIDDLE CREEK LADORE & SNABAR	843	16+13-16+45	℄ TO 195' RT	PRODUCTION	121	12'	7'	6'	5'	2200 CU. YDS.	2250# MAYNES 250# UNIGEL
10	10/8/84	HUSHPUCKNEY MIDDLE CREEK LADORE & SNABAR	842	15+50 16+50	℄ TO 30' LT.	PRODUCTION	69	12'	7'	6'	5'	1213 CU. YDS.	1525# MAYNES 113# UNIGEL
11	10/10/84	HUSHPUCKNEY MIDDLE CREEK LADORE & SNABAR	842	15+50-16+50	30' LT TO 60' LT	PRODUCTION	70	13'	7'	6'	5'	1372 CU. YDS.	1750# MAYNES 150# UNIGEL
12	10/12/84	HUSHPUCKNEY MIDDLE CREEK LADORE & SNABAR	842	15+50-16+50	60'-90' LT.	PRODUCTION	72	12.5'	7'	6'	5'	1400 CU. YDS.	1350# MAYNES 300# UNIGEL
13	11/5/84	BETHANY FALLS	864 ±	17+75-18+25	110' TO 195' RT	PRE-SPLIT	45	21'	9'	8'	3½'	2200 CU. YDS.	1700# 16.2 300# UNIMITE
16	4/12.85	HUSHPUCKNEY MIDDLE CREEK LADORE & SNABAR	840	15+45 14+65	℄ TO 197' LT	PRE-SPLIT	36	14'	2'	0	¾" GRAV.	900 CU. YDS.	1000' 200 GR. 100' E CORD.
14	4/16/85	SNABAR	832	15+00-16+00	50' LT TO ℄	PRODUCTION	153	6'	6'	4'	3'	850 CU. YDS.	1025# MAYNES 130# UNIGEL
15	4/18/85	SNABAR	935	15+00-16+00	70' LT TO ℄	PRODUCTION	97	6'-11'	5'	5'	3½'	1260 CU. YDS.	1200# MAYNES 100# UNIGE
16	4/19/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SNABAR	0940	15+00-16+00	95' LT TO ℄	PRODUCTION	60	10'	8'	5'	4	815 CU. YDS.	1025# MAYNES 65# UNIGEL
17	4/24/85	BETHANY FALLS	921	17+20-17+40	120' LT. ℄	PRODUCTION	42	21'	10'	8'	8'	2315 CU. YDS.	1650# MAYNES 74# UNMITE
18	5/3/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SNABAR	840	17+00-16+50	140 LT. TO ℄	PRODUCTION	32	12'-14'	8'	5	4'	540 CU. YDS.	700# MAYNES 40# UNIGEL
19	5/22/85	BETHANY FALLS	863	17+50-18+00	100' LT TO ℄	PRODUCTION	44	21'	10'	8'	4'	2695 CU. YDS.	1720# MAYNES 96# UNMITE
-	6/25/86	BOULDERS	-	07+00-17+50	LT. TO ℄	-	67	8'X2'	-	-	-	-	3# HERCUSPLIT 5.5# UNIGEL
-	6/26/86	BOULDERS	-	17+00-17+50	100' RT. TO ℄	-	20	-	-	-	-	-	4# UNIGEL
20	6/27/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNABAR	?	26+00-25+60	112' RT OF ℄	PRODUCTION	91	9'	7'	5'	4'	911 CU. YDS.	400# MAYNES 150# UNIMITE
21	7/1/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SNABAR	837-840	25+50-25+00	105' RT TO ℄	PRODUCTION	79	9'-12'	7	5'	4'	1070 CU. YDS.	900# MAYNES 356# UNIGEL
22	7/3/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SNABAR	0840	25+00-24+50	108' RT. TO ℄	PRODUCTION	76	12	8'	6'	4'	1365 CU. YDS.	1000# MAYNES 210# UNIGE
23	7/5/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SNABAR	841	24+12-24+48	106 RT TO ℄	PRODUCTION	57	13.5'	8'	6'	4'	1152 CU. YDS.	1100# MAYNES 70# UNIGEL
24	9/12/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SNABAR	842	23+75-24+10	112' RT TO ℄	PRODUCTION	59	12.5'	8'	6'	-	1070 CU. YDS.	1125# MAYNES 66# UNIGEL
25	9/16 85	HUSHPUCKNEY MIDDLE CREEK LADORE & SNABAR	942	23+25-23+70	100' RT TO ℄	PRODUCTION	69	12.5	8'	6'	4'	1263 CU. YDS.	1025# MAYNES 400# UNIGE
26	9/18.85	HUSHPUCKNEY MIDDLE CREEK LADORE & SNABAR	837	24+50-25+00	100' RT. TO ℄	PRODUCTION	109	5-11'	7'	5	4'	1404 CU. YDS.	900# MAYNES 300# UNIGEL
27	9/20 85	HUSHPUCKNEY MIDDLE CREEK LADORE & SNABAR	836	24+00-24+50	25' RT. TO ℄	PRODUCTION	104	5-11	7	5'	4'	1120 CU. YDS.	1100# MAYNES 100# UNIGE
28	9/26.85	HUSHPUCKNEY MIDDLE CREEK LADORE & SNABAR	938	24+00-25+00	80 RT. TO ℄	PRODUCTION	61	5-13'	7-8'	5'		1000 CU. YDS.	1100# MAYNES 100# UNIGE
29	10.2 85	HUSHPUCKNEY MIDDLE CREEK LADORE & SNABAR	835	24+00-24+30	RT. OF ℄	PRODUCTION	46	8'	7'	5'		480 CU. YDS.	450# MAYNES 75# UNIGEL
30	10.3/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SNABAR		24+00-23+50	80' RT. TO ℄	PRODUCTION	72	7-9'	7'	5'		810 CU. YDS.	850# MAYNES 66# UNIGEL
31	10.7/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SNABAR		24+00-23+75	40' RT TO ℄	PRODUCTION	72	10'	8'	5'		815 CU. YDS.	900# MAYNES 16# UNIGEL
32	10/8/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SNABAR			RT. OF ℄	PRODUCTION	35	10.5'	8'	5'		535 CU. YDS.	700# MAYNES 40# UNIGEL
33	10.17.85	HUSHPUCKNEY MIDDLE CREEK LADORE & SNABAR		23+00 22+50		PRODUCTION	86	11'	8'	5'		1470 CU. YDS	1650# MAYNES 100# UNIGE

VALUE ENGINEERING PAYS

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D C B A

E SPRINGS DAM BLASTING REPORT

SHOT VOL.	EXPLOSIVES (LBS.)	NO. OF CAPS	DELAYS IN MILLISEC	CARTRIDGE STRENGTH	REMARKS
5415 CU. YDS.	4100# MAYNES 900# UNIGEL	116	0-11	50# SACKS MAYNES MIX #1, 2¼"X16" AND 2"X8" UNIGEL	3½" HOLES, 0.92#/YD. SPILLWAY
75 CU. YDS.	2300# MAYNES 375# UNIGEL	91	0-9	50# SACKS MAYNES MIX#1, 2"X8" AND 2¼"X16" UNIGEL	3½" HOLES, RT. PRESPLIT SPILLWAY, 0.71#/YD.
4376 CU. YDS.	5050# MAYNES 550# UNIGEL	86	0-10	50# SACKS MAYNES MIX #1, 2"X8" AND 2¼"X16" UNIGEL	3½" HOLES, 1.05#/YD. SPILLWAY
3318 CU. YDS.	2050# MAYNES 350# UNIGEL	44	0-7	50# SACKS MAYNES MIX #1, 2"X8" AND 2¼"X16" UNIGEL	3½" HOLES, 1.04#/YD. SPILLWAY
3780 CU. YDS.	3625# MAYNES 900# UNIGEL	82	0-10	50# SACKS MAYNES MIX #1, 2¼"X16" AND 2"X8" UNIGEL	3½" HOLES, 1.09#/YD. SPILLWAY
5022 CU. YDS.	4425# MAYNES 475# UNIGEL	100	0-10	50# SACKS MAYNES MIX #1, 2¼"X16" AND 2"X8" UNIGEL	3½" HOLES, SPILLWAY 1.02#/YD.
3950 CU. YDS.	5650# MAYNES 175# UNIGEL	127	0-10	50# SACKS MAYNES MIX #1, 2¼"X16" AND 2"X8" UNIGEL	3½" HOLES, SPILLWAY 0.98#/YD.
1250 CU. YDS.	4200# MAYNES 100# UNIGEL	72	0-10	50# SACKS MAYNES MIX #1, 2"X8" UNIGEL	3½" HOLES LEFT PRESPLIT OF SPILLWAY 1.01#/YD.
1433 CU. YDS.	4600# MAYNES 750# UNIGEL	88	3-8	50# SACKS MAYNES MIX #1, 2"X8" AND 2¼"X16" UNIGEL	3½" HOLES, RIGHT PRESPLIT, 1.21#/YD. SPILLWAY
1900 CU. YDS.	4225# MAYNES 500# UNIGEL	77	0-9	50# SACKS MAYNES MIX #1, 2"X8" AND 2¼"X16" UNIGEL	3½" HOLES, SPILLWAY 0.96#/YD.
1360 CU. YDS.	5350# MAYNES 205# UNIGEL	90	0-9	50# SACKS MAYNES MIX #1, 2"X8" AND 2¼"X16" HERCULES UNIGEL	3½" HOLES, 1.27#/YD. SPILLWAY
33 CU. YDS.	5800# MAYNES 115# UNIGEL	90	0-9	50# SACKS MAYNES MIX #1, 2"X8" AND 2¼"X16" UNIGEL	3½" HOLES, 1.15#/YD. SPILLWAY
1544 CU. YDS.	5450# MAYNES 115# UNIGEL	94	0-9	50# SACKS MAYNES MIX #1, 2"X8" AND 2¼"X16" UNIGEL	3½" HOLES, 1#/YD. SPILLWAY
750 CU. YDS.	8900# MAYNES 150# UNIGEL	130	0-12	50# SACKS MAYNES MIX #1, 2"X8" AND 2¼"X16" UNIGEL	3½" HOLES, 1.34#/YD. SPILLWAY
300 CU. YDS.	7150# MAYNES 150# UNIGEL	109	0-12	50# SACKS MAYNES MIX #1, 2"X8" AND 2¼"X16" HERCULES UNIGEL	3½" HOLES, 1.19#/YD. RIGHT PRESPLIT OF SPILLWAY
166 CU. YDS.	6100# MAYNES 260# UNIGEL	90	0-11	50# SACKS MAYNES MIX #1, 2"X8" AND 2¼"X16" UNIGEL	3½" HOLES, 1.23#/YD. SPILLWAY
160 CU. YDS.	5500# MAYNES 100# UNIGEL	83	0-11	50# SACKS MAYNES MIX #1, 2"X8" AND 2¼"X16" UNIGEL	3½" HOLES, 1.01#/YD. SPILLWAY
379 CU. YDS.	4000# MAYNES 75# UNIGEL	60	0-9	50# SACKS OF MAYNES MIX #1, 2"X8" HERCULES UNIGEL	3½" HOLES, 0.93#/YD. SPILLWAY
3280 SQ. FT.	3500' 200 GR. 250'E CORD.	1	0	ENSIGN BICKFORD PRIMACORD	3" HOLES, SPILLWAY
1452 SQ. FT.	1200' 200 GR. 100'E CORD.	1	0	PRIMACORD	3" HOLES, SPILLWAY
690 SQ. FT.	600' 200 GR. 40 E CORD.	1	0	PRIMACORD	3" HOLES SPILLWAY
2860 SQ. FT.	2500' 200 GR. 140'E CORD.	1	12	PRIMACORD	3" HOLES, SPILLWAY
1750 SQ. FT.	2300' 200 GR.	1	12	PRIMACORD	3" HOLES RIGHT SIDE OF SPILLWAY
3835 SQ. FT.	2500' 200 GR. 160'E CORD 2.4# HERCOSPLIT	1	12	PRIMACORD, ½"X2" HERCULES HERCOSPLIT	3" HOLES, RIGHT SIDE OF SPILLWAY
716 SQ. FT.	1600' 200 GR. 100'E CORD.	1	-	PRIMACORD	3" HOLES SPILLWAY
525 SQ. FT.	1500' 200 GR. 100'E CORD.	1	-	PRIMACORD	3" HOLES SPILLWAY
2667 SQ. FT.	2350' 200GR. 190'E CORD.	1	-	PRIMACORD	3" HOLES, SPILLWAY
192 SQ. FT.	150' 200 GR. 15'E CORD.	1	-	PRIMACORD	3" HOLES, SPILLWAY
922 SQ. FT.	1800' 200 GR. 130'E CORD.	1	0	PRIMACORD	3" HOLES, SPILLWAY
708 SQ. FT.	1650' 200 GR. 130'E CORD.	1	0	PRIMACORD	3" HOLES, SPILLWAY
044 SQ. FT.	2200' 200 GR. 135'E CORD.	1	0	PRIMACORD	3" HOLES, SPILLWAY
152 SQ. FT.	1100' 200 GR. 100'E CORD.	1	0	PRIMACORD	3" HOLES, SPILLWAY
116 SQ. FT.	400' 200 GR. 35'E CORD.	1	0	PRIMACORD	3" HOLES, SPILLWAY
20 CU. YDS.	850# MAYNES 105# UNIGEL	92	0-10	50# SACKS MAYNES MIX #1, 2"X8" UNIGEL	3½" HOLES, RT. SIDE OF SPILLWAY, 1.3#/YD.
00 CU. YDS.	850# MAYNES 105# UNIGEL	87	0-10	50# SACKS OF MAYNES MIX #1, 2"X8" HERCULES UNIGEL	3" HOLES, SPILLWAY 1.06#/YD. POWDER FACTOR
10 CU. YDS.	2350# MAYNES 190# UNIGEL	157	0-10	50# SACKS MAYNES MIX #1, 2¼"X16" & 2"X8" UNIGEL	3" HOLES, SPILLWAY
420 CU. YDS.	2000# MAYNES 175# UNIGEL	131	0-14	50# SACKS MAYNES MIX #1, 2¼"X16" & 2"X8" UNIGEL	3" HOLES, RT. SIDE OF SPILLWAY, 1.03#/YD.
459 CU. YDS.	2400# MAYNES 400# UNIGEL	155	0-15	50# SACKS MAYNES MIX #1, 2¼"X16" & 2"X8" UNIGEL	3" HOLES, RT. SIDE OF SPILLWAY, 1.12#/YD.
341 CU. YDS.	2350# MAYNES 225# UNIGEL	125	0-15	50# SACKS MAYNES MIX #1, 2¼"X16" & 2"X8" UNIGEL	3" HOLES, SPILLWAY 1.2#/YD.
108 CU. YDS.	2150# MAYNES 200# UNIGEL	122	0-13	50# SACKS MAYNES MIX #1, 2¼"X16" & 2"X8" UNIGEL	3" HOLES, SPILLWAY
108 CU. YDS.	2100# MAYNES 250# UNIGEL	122	0-13	50# SACKS MAYNES MIX #1, 2¼"X16" & 2"X8" HERCULES UNIGEL	3" HOLES, SPILLWAY 1.11#/YD.
100 CU. YDS.	2750# MAYNES 250# UNIGEL	121	0-13	50# SACKS MAYNES MIX #1, 2¼"X16" & 2"X8" HERCULES UNIGEL	3" HOLES, SPILLWAY 1.14#/YD.
18 CU. YDS.	1525# MAYNES 113# UNIGEL	69	0-9	50# SACKS MAYNES MIX #1, 2"X8" & 2¼"X16" UNIGEL	3" HOLES, SPILLWAY
72 CU. YDS.	1750# MAYNES 150# UNIGEL	70	0-9	50# SACKS MAYNES MIX #1, 2"X8" & 2¼"X16" UNIGEL	3" HOLES, SPILLWAY 1.4#/YD.
50 CU. YDS.	1350# MAYNES 300# UNIGEL	73	-	50# SACKS MAYNES MIX #1, 2¼"X16" & 2"X8" UNIGEL	3" HOLES, SPILLWAY 1.18#/YD.
00 CU. YDS.	1700# 162 300# UNIMITE 100# UNIGEL	45	0-12	40# & 50# SACKS OF HERCULES H.P. 162, 2¼"X16" UNIMITE & 2"X8" UNIGEL	3" HOLES, SPILLWAY 0.95#/YD.
0 CU. YDS.	1000' 200 GR. 100'E CORD.	1	0	PRIMACORD	3" HOLES, LEFT SIDE OF SPILLWAY
0 CU. YDS.	1025# MAYNES 130# UNIGEL	153	0-10	50# SACKS MAYNES 2½"X16", 2"X8" UNIGEL	3" HOLES LT. SIDE OF SPILLWAY 1.24#/CU. YD.
60 CU. YDS.	1200# MAYNES 100# UNIGEL	97	0-10	50# SACKS MAYNES 2"X8" UNIGEL	3" HOLES, SPILLWAY 1.03#/CU. YD.
5 CU. YDS.	1025# MAYNES 65# UNIGEL	60	0-8	50# SACKS MAYNES 2"X8" UNIGEL	3" HOLES, SPILLWAY 1.33#/CU. YD.
15 CU. YDS.	1650# MAYNES 74# UNIMITE 47# UNIGEL	42	0-8	40# SACKS 2½"X16", 2"X8"	3" HOLES, SPILLWAY 1.36#/CU. YD.
10 CU. YDS.	700# MAYNES 40# UNIGEL	32	0-6	50# SACKS MAYNES 2"X8" UNIGEL	3" HOLES, LT. SIDE SPILLWAY 1.36#/CU. YD.
95 CU. YDS.	1720# MAYNES 96# UNIMITE 50# UNIGEL	46	1-9	40# BAGS MAYNES 2¼"X16" 2"X8"	3½" HOLES LT. SPILLWAY 0.69#/CU. YD.
-	3# HERCUSPLIT 5.5# UNIGEL 6.5# UNIGEL			½"X24", 2"X8", 1¼"X8"	65 BOULDERS IN SPILLWAY 1¼" DIA. HOLES
-	4# UNIGEL			1¼"X8"	BOULDERS LT. SIDE OF SPILLWAY, 1¼" HOLES
CU. YDS.	400# MAYNES 150# UNIMITE 350# UNIGEL 100# UNIGEL	92	0-9	50# SACKS 2¼"X16", 2½"X16", 2"X8"	RT. SIDE OF SPILLWAY 3" HOLES 1.1 #/CU. YD.
0 CU. YDS.	900# MAYNES 356# UNIGEL	79	0-9	50# BAGS 2"X16"	RT. SIDE OF SPILLWAY 3" HOLES 1.17#/CU. YDS.
5 CU. YDS.	1000# MAYNES 210# UNIGEL 100# UNIGEL	76	0-9	50# SACKS 2½"X16", 2"X8"	3" HOLES, SPILLWAY 0.96#/CU. YD.
5 CU. YDS.	1100# MAYNES 70# UNIGEL 70# UNIGEL	57	0-8	50# SACKS 2½"X16", 2"X8"	RT. SIDE OF SPILLWAY 3" HOLES 1.08# CU. YDS.
0 CU. YDS.	1125# MAYNES 66# UNIGEL 55# UNIGEL	59	0-9	50# SACKS 2"X8", 2½"X16"	RT. SIDE OF SPILLWAY 3" HOLES 1.16#/CU. YD.
4 CU. YDS.	1025# MAYNES 400# UNIGEL 75# UNIGEL	69	0-11	50# SACKS 2½"X16", 2"X8"	RT. SIDE OF SPILLWAY 3" HOLES 1.2#/CU. YD.
4 CU. YDS.	900# MAYNES 300# UNIGEL 150# UNIGEL	103	0-12	50# SACKS 2½"X16", 2"X8"	RT. SIDE OF SPILLWAY 3" HOLE 0.9#/CU. YD.
CU. YDS.	1100# MAYNES 100# UNIGEL 125# UNIGEL			50# SACKS 2½"X16", 2"X8"	RT. SIDE OF SPILLWAY 3" HOLES 1.16#/CU. YD.
CU. YDS.	1100# MAYNES 100# UNIGEL 100# UNIGEL	69	0-12	50# SACKS 2½"X16", 2"X8"	3" HOLES, SPILLWAY 1.3#/CU. YD.
1 CU. YDS.	450# MAYNES 75# UNIGEL 50# UNIGEL	46	0-2	50# SACKS 2½"X16" 2"X8"	3" HOLES, SPILLWAY 1.2#/CU. YD.
3 CU. YDS.	850# MAYNES 66# UNIGEL 100# UNIGEL	72	0-10	50# SACKS 2½"X16", 2"X8"	RT. SIDE SPILLWAY, 3" HOLE 1.25#/CU. YD.
5 CU. YDS.	900# MAYNES 16# UNIGEL 60# UNIGEL	56	0-9	50# SACKS 2½"X16", 2"X8"	RT. SIDE OF SPILLWAY, 3" HOLES 1.2#/CU. YD.
CU. YDS.	700# MAYNES 40# UNIGEL	36	0-8	50# SACKS 2½"X16", 2"X8"	RT. SIDE OF SPILLWAY, 3" HOLES 1.3#/CU. YD.
1 CU. YDS.	1650# MAYNES 100# UNIGEL 100# UNIGEL	86	0-10	50# SACKS 2½"X16", 2"X8"	3" HOLES 1.2#/CU. YD.

Revisions			
Symbol	Descriptions	Date	Approved

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:

Drawn by: V.A.B.

Checked by:

Submitted by:

US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

BLASTING SCHEDULE

Scale: AS SHOWN | Sheet number: 87 | Plot Scale: 5=.0833

Date: JUNE 1990 | Design File: D00,633BS2.DGN

SHOT NO.	DATE	GEOLOGIC LOCATION	ELEV.	LOCATION STATION	LOCATION RANGE	PURPOSE	NO. OF HOLES	DEPTH (FT.)	SPACING (FT.)	BURDEN (FT.)	STEM (FT.)	SHOT VOL.	EXPLO
50	6/16/83	BETHANY FALLS		23+00	30' LT. TO 70' RT. ℄	PRODUCTION	116	17'	10'	7'	4'	5415 CU. YDS.	4100# MAYNES 900# L
51	6/20/83	BETHANY FALLS		23+50-24+50	EDGE TO 150' LT. PRESPLIT	PRODUCTION	91	18'	10'	7'	4'	3715 CU. YDS.	2300# MAYNES 375# L
52	6/22/83	BETHANY FALLS		23+50-24+50	EDGE TO 170' RT.	PRODUCTION	86	19'	10'	7'	4'	4376 CU. YDS.	4050# MAYNES 550# L
53	6/24/83	BETHANY FALLS		24+00-23+50	EDGE TO 60' RT.	PRODUCTION	44	19'	10'	7'	4'	2318 CU. YDS.	2050# MAYNES 350# L
54	7/1/83	BETHANY FALLS		22+50-22+00	30'-110' LT ℄	PRODUCTION	82	18'	10'	7'	4'	3780 CU. YDS.	3225# MAYNES 900# L
55	7/7/83	BETHANY FALLS		22+00		PRODUCTION	100	18'	10'	7'	4'	5022 CU. YDS.	4625# MAYNES 475# L
56	7/13/83	BETHANY FALLS		20+50-21+50		PRODUCTION	127	17'	10'	7'	3½'	5950 CU. YDS.	5650# MAYNES 175# L
57	7/15/83	BETHANY FALLS		21+15-20+50	EDGE TO 110' RT.	PRODUCTION	72	18'	10'	7'	4'	4250 CU. YDS.	4200# MAYNES 100# L
58	7/19/83	BETHANY FALLS		23+30-23+80	5' TO 100' LT OF PRESPLIT	PRODUCTION	88	20'	10'	7'	4'	4433 CU. YDS.	4600# MAYNES 750# L
59	7/25/83	BETHANY FALLS		23+50-23+90	℄ TO 100' RT	PRODUCTION	77	21'	10'	7'	3½'	4900 CU. YDS	4225# MAYNES 500# L
60	7/29/83	BETHANY FALLS		16+20-17+20	195' TO 110' LT ℄	PRODUCTION	89	22'	10'	7'	3½'	4360 CU. YDS.	5350# MAYNES 205# L
61	8/2/83	BETHANY FALLS		17+00-17+43	130' TO 40' LT. ℄	PRODUCTION	90	22'	10'	7'	3½'	5133 CU. YDS.	5800# MAYNES 115# L
62	8/4/83	BETHANY FALLS			165' RT. OF RT. PRE-SPLIT TO 60' LT. ℄	PRODUCTION	94	22'	10'	7'	3½'	5544 CU. YDS.	5450# MAYNES 115# L
63	8/8/83	BETHANY FALLS		17+00-17+50	80'-170' LT. OF RT. PRESPLIT	PRODUCTION	130	22.5'	10'	7'	3½'	6750 CU. YDS.	8900# MAYNES 150# L
64	8/11/83	BETHANY FALLS		16+75-17+75	EDGE TO 64' LT	PRODUCTION	108	22.5'	10'	7'	3½'	7300 CU. YDS.	7150# MAYNES 150# L
65	8/15/83	BETHANY FALLS		22+00	10' TO 100' RT. ℄	PRODUCTION	89	22'	10'	7'	3½'	5166 CU. YDS.	6100# MAYNES 260# L
66	8/17/83	BETHANY FALLS		20+50-20+00	70' LT TO 50' RT. ℄	PRODUCTION	82	21.5'	10'	8'	3½'	5160 CU. YDS.	5500# MAYNES 100# L
67	8/19/83	BETHANY FALLS		20+00-20+40	50' TO 110' RT	PRODUCTION	58	21.5'	10'	9'	3½'	4379 CU. YDS.	4000# MAYNES 75# UN
1	8/22/84	HUSHPUCKNEY SH, MIDDLE CREEK LS, LADORE & SMABAR	842±	12+72-15+65	195' RT. ℄	PRE-SPLIT	114	7'-12'	2'		¾" GRAV.	2280 SQ. FT.	3500' 200 GR. 250' E C
2	8/24/84	HUSHPUCKNEY MIDDLE CREEK LADORE & SMABAR	842 ±	15+65-17+00	195' RT ℄	PRE-SPLIT	49	12'	2'		¾" GRAV.	1152 SQ. FT.	1200' 200 GR. 100' E
3	8/27/84	BETHANY FALLS	866	18+00-18+50	195' RT. ℄	PRE-SPLIT	12	23' ±	2½'		¾" GRAV.	690 SQ. FT	600' 200 GR. 40 E CO
4	10/1/84	BETHANY FALLS	864	18+54-20+42		PRE-SPLIT	52	22' ±	2½'		¾" GRAV.	2860 SQ. FT.	2500' 200 GR. 140' E C
5	10/2/84	BETHANY FALLS	864	20+42-21+75		PRE-SPLIT	50	22'	2½'		¾" GRAV.	2750 SQ. FT.	2300' 200 GR.
6	10/4/84	BETHANY FALLS	864	21+75-23+15	195' RT ℄	PRE-SPLIT	54	21'	30"		¾" GRAV.	2835 SQ. FT.	2500' 200 GR 160' E C
7	11/2/84	BETHANY FALLS	864	17+50-18+28	210' LT. OF ℄	PRE-SPLIT	32	22'	30"		¾" GRAV.	1716 SQ. FT.	1600' 200 GR. 100' E
8	11/7/84	BETHANY FALLS	864	18+28-19+10	210' LT. OF ℄	PRE-SPLIT	29	21'	30"		¾" GRAV.	1525 SQ. FT.	1500' 200 GR. 100' E
9	11/13/84	BETHANY FALLS	864	19+00-20+00	210' LT. OF ℄	PRE-SPLIT	52	21'	30"		¾" GRAV.	2667 SQ. FT.	2350' 200GR. 190' E C
10	11/24/84	BETHANY FALLS	854	25+40-25+52	195' RT OF ℄	PRE-SPLIT	6	12'	2'		¾" GRAV.	192 SQ. FT.	150' 200 GR. 15' E COR
11	12/1/84	HUSHPUCKNEY MIDDLE CREEK LADORE & SMABAR	842 ±	23+50-24+83	182' RT. OF ℄	PRE-SPLIT	57	16'	2'		¾" GRAV.	1922 SQ. FT.	1800' 200 GR. 130' E
12	12/7/84	HUSHPUCKNEY MIDDLE CREEK LADORE & SMABAR	842 ±	24+83-26+05	182' RT. OF ℄	PRE-SPLIT	61	16	2'		¾" GRAV.	1708 SQ. FT.	1650' 200 GR. 130' E
13	12/11/84	HUSHPUCKNEY MIDDLE CREEK LADORE & SMABAR	842	17+00-16+01	197' LT OF ℄	PRE-SPLIT	65	16'	2'		¾" GRAV.	2044 SQ. FT.	2200' 200 GR. 135' E
14	12/12/84	HUSHPUCKNEY MIDDLE CREEK LADORE & SMABAR	842	16+01-15+42	197' LT. OF ℄	PRE-SPLIT	36	16'	2'		¾" GRAV.	1152 SQ. FT.	1100' 200 GR. 100' E
15	12/13/84	HUSHPUCKNEY MIDDLE CREEK LADORE & SMABAR	842	15+42-15+38	197' LT. OF ℄	PRE-SPLIT	13	16'	2'		¾" GRAV.	416 SQ. FT.	400' 200 GR. 35' E COR
1	8/25/84	SMABAR	834	12+76-13+10	195' TO 100' RT ℄	PRODUCTION	92	7.5'	7'	5'	4½'	720 CU. YDS.	850# MAYNES 105# UN
2	8/28/84	HUSHPUCKNEY MIDDLE CREEK LADORE & SMABAR	838	13+15-13+40	185' TO 60' RT. ℄	PRODUCTION	87	7.5'	7'	5	3½'	900 CU. YDS.	850# MAYNES 105# UN
3	8/31/84	HUSHPUCKNEY MIDDLE CREEK LADORE & SMABAR	841	13+40-14+00	℄ TO 195' RT	PRODUCTION	157	8'-12'	7	6'	3½'	1900 CU. YDS.	2350# MAYNES 190# L
4	9.6/84	HUSHPUCKNEY MIDDLE CREEK LADORE & SMABAR	841	14+50-14+90	℄ TO 195' RT.	PRODUCTION	131	9'-13'	7'	6'	4'	2020 CU. YDS.	2000# MAYNES 175# L
5	9/11/84	HUSHPUCKNEY MIDDLE CREEK LADORE & SMABAR	842	14+70-15+00	℄ TO 195' RT	PRODUCTION	155	10'-12'	7'	6'	5'	2508 CU. YDS.	2400# MAYNES 400# U
6	9/13/84	HUSHPUCKNEY MIDDLE CREEK LADORE & SMABAR	841	15+30-15+50±	℄ TO 195' RT	PRODUCTION	125	11.5'	7'	6'	5'	2150 CU. YDS.	2350# MAYNES 225# U
7	9/20/84	HUSHPUCKNEY MIDDLE CREEK LADORE & SMABAR	842	15+42-15+75	℄ TO 195' RT	PRODUCTION	122	11.5'	7'	6'	5'	2108 CU. YDS.	2150# MAYNES 200# L
8	9/22/84	HUSHPUCKNEY MIDDLE CREEK LADORE & SMABAR	843	15+85-16+13	℄ TO 185' LT.	PRODUCTION	122	11.5'	7'	6'	5'	2108 CU. YDS.	2100# MAYNES 250# L
9	9/26/84	HUSHPUCKNEY MIDDLE CREEK LADORE & SMABAR	843	16+13-16+45	℄ TO 195' RT	PRODUCTION	121	12'	7'	6'	5'	2200 CU. YDS.	2250# MAYNES 250# U
10	10/8/84	HUSHPUCKNEY MIDDLE CREEK LADORE & SMABAR	842	15+50-16+50	℄ TO 30' LT.	PRODUCTION	69	12'	7'	6'	5'	1213 CU. YDS.	1525# MAYNES 113# U
11	10/10/84	HUSHPUCKNEY MIDDLE CREEK LADORE & SMABAR	842	15+50-16+50	30' LT TO 60' LT	PRODUCTION	70	13'	7	6'	5'	1372 CU. YDS.	1750# MAYNES 150# U
12	10/12/84	HUSHPUCKNEY MIDDLE CREEK LADORE & SMABAR	842	15+50-16+50	60'-90' LT.	PRODUCTION	72	12.5'	7'	6'	5'	1400 CU. YDS.	1350# MAYNES 300# U
13	11/5/84	BETHANY FALLS	864 ±	17+15-18+25	110' TO 195' RT	PRE-SPLIT	45	21'	9'	8'	3½'	2200 CU. YDS.	1700# 16.2 300# UNI
16	4/12/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SMABAR	840	15+45-14+65	℄ TO 197' LT	PRE-SPLIT	36	14'	2'	0	¾" GRAV.	900 CU. YDS.	1000' 200 GR. 100' E
14	4/16/85	SMABAR	832	15+00-16+00	50' LT TO ℄	PRODUCTION	153	6'	6'	4'	3'	850 CU. YDS.	1025# MAYNES 130# L
15	4/18/85	SMABAR	935	15+00-16+00	70' LT. TO ℄	PRODUCTION	97	6'-11'	5'	5'	3½'	1260 CU. YDS.	1200# MAYNES 100#
16	4/19/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SMABAR	0940	15+00-16+00	95' LT. TO ℄	PRODUCTION	60	10'	8'	5'	4	815 CU. YDS.	1025# MAYNES 65# UN
17	4/24/85	BETHANY FALLS	921	17+20-17+40	120' LT. TO ℄	PRODUCTION	42	21'	10'	8'	8'	2315 CU. YDS.	1650# MAYNES 74# UN
18	5/3/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SMABAR	840	17+00-16+50	140 LT. TO ℄	PRODUCTION	32	12'-14'	8'	5'	4'	540 CU. YDS.	700# MAYNES 40# UNI
19	5/22/85	BETHANY FALLS	863	17+50-18+00	100' LT TO ℄	PRODUCTION	44	21'	10'	8'	4'	2695 CU. YDS.	1720# MAYNES 96# UN
-	6/25/86	BOULDERS	-	07+00-17+50	LT. TO ℄	-	67	8'X2'	-	-	-	-	3# HERCUSPLIT 5.5# U
-	6/26/86	BOULDERS	-	17+00-17+50	100' RT. TO ℄	-	20	-	-	-	-	-	4# UNIGEL
20	6/27/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SMABAR	?	26+00-25+60	112' RT OF ℄	PRODUCTION	91	9'	7'	5'	4'	911 CU. YDS.	400# MAYNES 150# UN
21	7/1/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SMABAR	837-840	25+50-25+00	105' RT. TO ℄	PRODUCTION	79	9-12'	7'	5'	4'	1070 CU. YDS.	900# MAYNES 356# UN
22	7/3/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SMABAR	0840	25+00-24+50	108' RT. TO ℄	PRODUCTION	76	12'	8'	6'	4'	1365 CU. YDS.	1000# MAYNES 210# L
23	7/5/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SMABAR	841	24+12-24+48	106' RT. TO ℄	PRODUCTION	57	13.5'	8'	6'	4'	1152 CU. YDS.	1100# MAYNES 70# UN
24	9/12/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SMABAR	842	23+75-24+10	112' RT TO ℄	PRODUCTION	59	12.5'	8'	6'	-	1070 CU. YDS.	1125# MAYNES 66# UN
25	9/16/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SMABAR	942	23+25-23+70	100' RT. TO ℄	PRODUCTION	69	12.5	8'	6'	4'	1263 CU. YDS.	1025# MAYNES 400# L
26	9/18/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SMABAR	837	24+50-25+00	100' RT. TO ℄	PRODUCTION	109	5-11	7'	5'	4'	1404 CU. YDS.	900# MAYNES 300# UN
27	9/20/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SMABAR	836	24+00-24+50	25' RT. TO ℄	PRODUCTION	104	5-11'	7'	5'	4'	1120 CU. YDS.	1100# MAYNES 100#
28	9/26/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SMABAR	938	24+00-25+00	80' RT. TO ℄	PRODUCTION	61	5-13'	7-8'	5		1000 CU. YDS.	1100# MAYNES 90#
29	10/2/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SMABAR	835	24+00-24+30	RT. OF ℄	PRODUCTION	46	8'	7'	5'		480 CU. YDS.	450# MAYNES 75# UNI
30	10/3/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SMABAR		24+00-23+50	80' RT TO ℄	PRODUCTION	72	7-9'	7'	5'		810 CU. YDS.	850# MAYNES 66# UNI
31	10/7/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SMABAR		24+00-23+75	40' RT. TO ℄	PRODUCTION	72	10'	8'	5'		815 CU. YDS.	900# MAYNES 16# UNI
32	10/8/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SMABAR			RT. OF ℄	PRODUCTION	35	10.5'	8'	5'		535 CU. YDS.	700# MAYNES 40# UNI
33	10/17/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SMABAR		23+00-22+50		PRODUCTION	86	11'	8'	5'		1470 CU. YDS.	1650# MAYNES 100# L

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DAM BLASTING REPORT

VOL.	EXPLOSIVES (LBS.)	NO. OF CAPS	DELAYS IN MILI/SEC	CARTRIDGE STRENGTH	REMARKS
CU. YDS.	4100* MAYNES 900* UNIGEL	116	0-11	50* SACKS MAYNES MIX *1, 2¾"X16" AND 2"X8" UNIGEL	3½" HOLES, 0.92*/YD. SPILLWAY
CU. YDS.	2300* MAYNES 375* UNIGEL	91	0-9	50* SACKS MAYNES MIX*1, 2"X8" AND 2¾"X16" UNIGEL	3½" HOLES, RT. PRESPLIT SPILLWAY, 0.71*/YD.
CU. YDS.	4050* MAYNES 550* UNIGEL	86	0-10	50* SACKS MAYNES MIX *1, 2"X8" AND 2¾"X16" UNIGEL	3½" HOLES, 1.05*/YD. SPILLWAY
CU. YDS.	2050* MAYNES 350* UNIGEL	44	0-7	50* SACKS MAYNES MIX *1, 2"X8" AND 2¾"X16" UNIGEL	3½" HOLES, 1.04*/YD. SPILLWAY
CU. YDS.	3225* MAYNES 500* UNIGEL	82	0-10	50* SACKS MAYNES MIX *1, 2¾"X16" AND 2"X8" UNIGEL	3½" HOLES, 1.09*/YD. SPILLWAY
CU. YDS.	4625* MAYNES 475* UNIGEL	100	0-10	50* SACKS MAYNES MIX *1, 2¾"X16" AND 2"X8" UNIGEL	3½" HOLES, SPILLWAY 1.02*/YD.
CU. YDS.	5650* MAYNES 175* UNIGEL	127	0-10	50* SACKS MAYNES MIX *1, 2¾"X16" AND 2"X8" UNIGEL	3½" HOLES, SPILLWAY 0.98*/YD.
CU. YDS.	4200* MAYNES 100* UNIGEL	72	0-10	50* SACKS MAYNES MIX *1, 2"X8" UNIGEL	3½" HOLES LEFT PRESPLIT OF SPILLWAY 1.01*/YD.
CU. YDS.	4600* MAYNES 750* UNIGEL	88	3-8	50* SACKS MAYNES MIX *1, 2"X8" AND 2¾"X16" UNIGEL	3½" HOLES, RIGHT PRESPLIT, 1.21*/YD. SPILLWAY
CU. YDS.	4225* MAYNES 500* UNIGEL	77	0-9	50* SACKS MAYNES MIX *1, 2"X8" AND 2¾"X16" UNIGEL	3½" HOLES, SPILLWAY 0.96*/YD.
CU. YDS.	5350* MAYNES 205* UNIGEL	90	0-9	50* SACKS MAYNES MIX *1, 2"X8" AND 2¾"X16" HERCULES UNIGEL	3½" HOLES, 1.27*/YD. SPILLWAY
CU. YDS.	5800* MAYNES 115* UNIGEL	90	0-9	50* SACKS MAYNES MIX *1, 2"X8" AND 2¾"X16" UNIGEL	3½" HOLES, 1.15*/YD SPILLWAY
CU. YDS.	5450* MAYNES 115* UNIGEL	94	0-9	50* SACKS MAYNES MIX *1, 2"X8" AND 2¾"X16" UNIGEL	3½" HOLES, 1*/YD. SPILLWAY
CU. YDS.	8900* MAYNES 150* UNIGEL	130	0-12	50* SACKS MAYNES MIX *1, 2"X8" AND 2¾"X16" UNIGEL	3½" HOLES, 1.34*/YD. SPILLWAY
CU. YDS.	7150* MAYNES 150* UNIGEL	109	0-12	50* SACKS MAYNES MIX *1, 2"X8" AND 2¾"X16" HERCULES UNIGEL	3½" HOLES, 1.19*/YD. RIGHT PRESPLIT OF SPILLWAY
CU. YDS.	6100* MAYNES 260* UNIGEL	90	0-11	50* SACKS MAYNES MIX *1, 2"X8" AND 2¾"X16" UNIGEL	3½" HOLES, 1.23*/YD. SPILLWAY
CU. YDS.	5500* MAYNES 100* UNIGEL	83	0-11	50* SACKS MAYNES MIX *1, 2"X8" AND 2¾"X16" UNIGEL	3½" HOLES, 1.01*/YD. SPILLWAY
CU. YDS.	4000* MAYNES 75* UNIGEL	60	0-9	50* SACKS OF MAYNES MIX *1, 2"X8" HERCULES UNIGEL	3½" HOLES, 0.93*/YD. SPILLWAY
SQ. FT.	3500' 200 GR. 250' E CORD.	1	0	ENSIGN BICKFORD PRIMACORD	3" HOLES, SPILLWAY
SQ. FT.	1200' 200 GR. 100' E CORD.	1	0	PRIMACORD	3" HOLES, SPILLWAY
SQ. FT.	600' 200 GR. 40 E CORD.	1	0	PRIMACORD	3" HOLES SPILLWAY
SQ. FT.	2500' 200 GR. 140' E CORD.	1	12	PRIMACORD	3" HOLES, SPILLWAY
SQ. FT.	2300' 200 GR.	1	12	PRIMACORD	3" HOLES RIGHT SIDE OF SPILLWAY
SQ. FT.	2500' 200 GR. 160' E CORD 2.4* HERCOSPLIT	1	12	PRIMACORD, ⅛"X2' HERCULES HERCOSPLIT	3" HOLES, RIGHT SIDE OF SPILLWAY
SQ. FT.	1600' 200 GR. 100' E CORD.	1	-	PRIMACORD	3" HOLES SPILLWAY
SQ. FT.	1500' 200 GR. 100' E CORD.	1	-	PRIMACORD	3" HOLES SPILLWAY
SQ. FT.	2350' 200GR. 190' E CORD.	1	-	PRIMACORD	3" HOLES, SPILLWAY
SQ. FT.	150' 200 GR. 15' E CORD.	1	-	PRIMACORD	3" HOLES, SPILLWAY
SQ. FT.	1800' 200 GR. 130' E CORD.	1	0	PRIMACORD	3" HOLES, SPILLWAY
SQ. FT.	1650' 200 GR. 130' E CORD.	1	0	PRIMACORD	3" HOLES, SPILLWAY
SQ. FT.	2200' 200 GR. 135' E CORD.	1	0	PRIMACORD	3" HOLES, SPILLWAY
SQ. FT.	1100' 200 GR. 100' E CORD.	1	0	PRIMACORD	3" HOLES, SPILLWAY
SQ. FT.	400' 200 GR. 35' E CORD.	1	0	PRIMACORD	3" HOLES, SPILLWAY
CU. YDS.	850* MAYNES 105* UNIGEL	92	0-10	50* SACKS MAYNES MIX *1, 2"X8" UNIGEL	3½" HOLES, RT. SIDE OF SPILLWAY, 1.3*/YD.
CU. YDS.	850* MAYNES 105* UNIGEL	87	0-10	50* SACKS OF MAYNES MIX *1, 2"X8" HERCULES UNIGEL	3" HOLES, SPILLWAY -1.06*/YD. POWDER FACTOR
CU. YDS.	2350* MAYNES 190* UNIGEL	157	0-10	50* SACKS MAYNES MIX *1, 2¾"X16" & 2"X8" UNIGEL	3" HOLES, SPILLWAY
CU. YDS.	2000* MAYNES 175* UNIGEL	131	0-14	50* SACKS MAYNES MIX *1, 2¾"X16" & 2"X8" UNIGEL	3" HOLES, RT. SIDE OF SPILLWAY, 1.09*/YD.
CU. YDS.	2400* MAYNES 400* UNIGEL	155	0-15	50* SACKS MAYNES MIX *1, 2½"X16" & 2"X8" UNIGEL	3" HOLES, RT. SIDE OF SPILLWAY, 1.12*/YD.
CU. YDS.	2350* MAYNES 225* UNIGEL	125	0-15	50* SACKS MAYNES MIX *1, 2½"X16" & 2"X8" UNIGEL	3" HOLES, SPILLWAY 1.2*/YD.
CU. YDS.	2150* MAYNES 200* UNIGEL	122	0-13	50* SACKS MAYNES MIX *1, 2½"X16" & 2"X8" UNIGEL	3" HOLES, SPILLWAY
CU. YDS.	2100* MAYNES 250* UNIGEL	122	0-13	50* SACKS MAYNES MIX *1, 2½"X16" & 2"X8" HERCULES UNIGEL	3" HOLES, SPILLWAY 1.11*/YD.
CU. YDS.	2250* MAYNES 250* UNIGEL	121	0-13	50* SACKS MAYNES MIX *1, 2½"X16" & 2"X8" HERCULES UNIGEL	3" HOLES, SPILLWAY 1.14*/YD.
CU. YDS.	1525* MAYNES 113* UNIGEL	69	0-9	50* SACKS MAYNES MIX *1, 2"X8" & 2¾"X16" UNIGEL	3" HOLES, SPILLWAY
CU. YDS.	1750* MAYNES 150* UNIGEL	70	0-9	50* SACKS MAYNES MIX *1, 2"X8" & 2¾"X16" UNIGEL	3" HOLES, SPILLWAY 1.4*/YD.
CU. YDS.	1350* MAYNES 300* UNIGEL	73	-	50* SACKS MAYNES MIX *1, 2½"X16" & 2"X8" UNIGEL	3" HOLES, SPILLWAY 1.18*/YD.
CU. YDS.	1700* 16.2 300* UNIMITE 100* UNIGEL	45	0-12	40* & 50* SACKS OF HERCULES H.P. 162, 2¾"X16" UNIMITE & 2"X8" UNIGEL	3" HOLES, SPILLWAY 0.95*/YD.
CU. YDS.	1000' 200 GR. 100' E CORD.	1	0	PRIMACORD	3" HOLES, LEFT SIDE OF SPILLWAY
CU. YDS.	1025* MAYNES 130* UNIGEL	153	0-10	50* SACKS MAYNES 2½"X16", 2"X8" UNIGEL	3" HOLES LT. SIDE OF SPILLWAY 1.24*/CU. YD.
CU. YDS.	1200* MAYNES 100* UNIGEL	97	0-10	50* SACKS MAYNES 2"X8" UNIGEL	3" HOLES, SPILLWAY 1.03*/CU. YD.
CU. YDS.	1025* MAYNES 65* UNIGEL	60	0-8	50* SACKS MAYNES 2"X8" UNIGEL	3" HOLES, SPILLWAY 1.33*/CU. YD.
CU. YDS.	1650* MAYNES 74* UNIMITE 47* UNIGEL	42	0-8	40* SACKS 2¾"X16", 2"X8"	3" HOLES, SPILLWAY 1.36*/CU. YD.
CU. YDS.	700* MAYNES 40* UNIGEL	32	0-6	50* SACKS MAYNES 2"X8" UNIGEL	3" HOLES, LT SIDE SPILLWAY 1.36*/CU. YD.
CU. YDS.	1720* MAYNES 96* UNIMITE 50* UNIGEL	46	1-9	40* BAGS MAYNES 2¾"X16" 2"X8"	3½" HOLES LT. SPILLWAY 0.69*/CU. YD.
-	3* HERCUSPLIT 5.5* UNIGEL 6.5* UNIGEL			½"X24", 2"X8", 1¼"X8"	65 BOULDERS IN SPILLWAY 1¼" DIA. HOLES
-	4* UNIGEL			1¼"X8"	BOULDERS LT. SIDE OF SPILLWAY, 1¼" HOLES
CU. YDS.	400* MAYNES 150* UNIMITE 350* UNIGEL 100* UNIGEL	92	0-9	50* SACKS 2¾"X16", 2½"X16", 2"X8"	RT SIDE OF SPILLWAY 3" HOLES 1.1 */CU. YD.
CU. YDS.	900* MAYNES 356* UNIGEL	79	0-9	50* BAGS 2"X16"	RT. SIDE OF SPILLWAY 3" HOLES 1.17*/CU. YDS.
CU. YDS.	1000* MAYNES 210* UNIGEL 100* UNIGEL	76	0-9	50* SACKS 2½"X16", 2"X8"	3" HOLES, SPILLWAY 0.96*/CU. YD.
CU. YDS.	1100* MAYNES 70* UNIGEL 70* UNIGEL	57	0-8	50* SACKS 2½"X16", 2"X8"	RT. SIDE OF SPILLWAY 3" HOLES 1.08* CU. YDS.
CU. YDS.	1125* MAYNES 66* UNIGEL 55* UNIGEL	59	0-9	50* SACKS 2"X8", 2½"X16"	RT. SIDE OF SPILLWAY 3" HOLES 1.16*/CU. YD.
CU. YDS.	1025* MAYNES 400* UNIGEL 75* UNIGEL	69	0-11	50* SACKS 2½"X16", 2"X8"	RT. SIDE OF SPILLWAY 3" HOLES 1.2*/CU. YD.
CU. YDS.	900* MAYNES 300* UNIGEL 150* UNIGEL	109	0-12	50* SACKS 2½"X16", 2"X8"	RT. SIDE OF SPILLWAY 3" HOLE 0.9*/CU. YD.
CU. YDS.	1100* MAYNES 100* UNIGEL 125* UNIGEL			50* SACKS 2½"X16", 2"X8"	RT. SIDE OF SPILLWAY 3" HOLES 1.18*/CU. YD.
CU. YDS.	1100* MAYNES 100* UNIGEL 100* UNIGEL	69	0-12	50* SACKS 2½"X16", 2"X8"	3" HOLES, SPILLWAY 1.3*/CU. YD.
CU. YDS.	450* MAYNES 75* UNIGEL 50* UNIGEL	46	0-9	50* SACKS 2½"X16" 2"X8"	3" HOLES, SPILLWAY 1.2*/CU. YD.
CU. YDS.	850* MAYNES 66* UNIGEL 100* UNIGEL	72	0-10	50* SACKS 2½"X16", 2"X8"	RT. SIDE SPILLWAY, 3" HOLE, 1.25*/CU. YD.
CU. YDS.	900* MAYNES 16* UNIGEL 60* UNIGEL	56	0-9	50* SACKS 2½"X16", 2"X8"	RT. SIDE OF SPILLWAY, 3" HOLES, 1.2*/CU. YD.
CU. YDS.	700* MAYNES 40* UNIGEL	36	0-8	50* SACKS 2½"X16", 2"X8"	RT. SIDE OF SPILLWAY, 3" HOLES, 1.3*/CU. YD.
CU. YDS.	1650* MAYNES 100* UNIGEL 100* UNIGEL	86	0-10	50* SACKS 2½"X16", 2"X8"	3" HOLES 1.2*/CU. YD.

Revisions			
Symbol	Descriptions	Date	Approved

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:

Drawn by: V.A.B.

Checked by:

Submitted by:

US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

BLASTING SCHEDULE

Scale: AS SHOWN | Sheet numbers: 87 | Plot Scale: S=.0833

Date: JUNE 1990 | Design File: (100,63)BS2.DGN

Drg. No.: | File No.: RBL-2-1307

PLATE NO. 87

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BLUE SPRINGS DAM BLASTING

SHOT NO.	DATE	GEOLOGIC LOCATION	ELEV.	LOCATION STATION	LOCATION RANGE	PURPOSE	NO. OF HOLES	DEPTH (FT.)	SPACING (FT.)	BURDEN (FT.)	STEM (FT.)	SHOT VOL.	EXPLOSIVES
34	10/17/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR		23+50-23+00	RT. OF ℄	PRODUCTION	40	11	8'	5'	4'	611 CU. YDS.	825# MAYNES 50# UNIGEL
35	10/22/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR		24+00-23+50	LT. OF ℄	PRODUCTION	57	6'	6'	5'		480 CU. YDS.	300# MAYNES 50# UNIGEL
36	10/23/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR		23+00	LT. OF ℄	PRODUCTION	70	11.5'	8'	5.5'	4'	1288 CU. YDS.	1375# MAYNES 50# UNIGEL
37	10/24/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR		24+00-23+50	LT. OF ℄	PRODUCTION	72	8 5'	7'	5'	4'	776 CU. YDS.	825# MAYNES 50# UNIGEL
38	10/25/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR		23+00-23+30	60' LT. TO ℄	PRODUCTION						990 CU. YDS.	1075# MAYNES 10# UNIGEL
39	10/26/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR		23+00-22+30	40' LT. TO ℄	PRODUCTION	71	12.0'	8'	5.5'	4'	1396 CU. YDS.	1650# MAYNES 50# UNIGEL
40	10/28/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR		23+00-22+70	℄	PRODUCTION	51	12.0	8'	5.5'	4'	976 CU. YDS.	1000# MAYNES 50# UNIGEL
41	10/30/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR		22+80-22+60	25 LT. TO ℄	PRODUCTION	62	12'	8'	5'	4'	960 CU. YDS.	1300# MAYERS 30# UNIGEL
42	10/31/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR		22+50-23+00	70' RT. TO ℄	PRODUCTION	26	12'	8'	5'	4'	428 CU. YDS.	500# MAYNES 7# UNIGEL 30#
43	11/4/85	BETHANY FALLS		20+00-20+50	140 LT. TO ℄	PRODUCTION	44	22'	10'	8'	X	871 CU. YDS.	1560 # H.P. 162, 200# MAYN
44	11/7/85	BETHANY FALLS		18+00	40' LT. TO ℄	PRODUCTION	39	21'	10'	8'	X	2587 CU. YDS.	1360# H.P. 162, 225# MAYNES
45	11/8/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR		23+11-23+30	137 RT. TO ℄	PRODUCTION	53	12'	8'	5'	X	960 CU. YDS.	1025# MAYNES 10# UNIGEL
46	11/21/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR		23+50-23+00	100' LT TO ℄	PRODUCTION	34	6'	5'	5'	4'	222 CU. YDS.	175# MAYNES 35# UNIGEL 3
47	11/22/85	LADORE MIDDLE CREEK SNIABAR		23+00-23+50	LT. OF ℄	PRODUCTION	34	7.5'	6'	5'	4'	333 CU. YDS.	200# MAYNES 110# UNIGEL
48	11/25/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR		23+00-23+55	150' LT. TO ℄	PRODUCTION	35	11'	7'	5'	4'	500 CU. YDS.	650# MAYNES 40# UNIGEL
49	11/27/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR		23+00	100' TO 150' LT. OF ℄	PRODUCTION	34	12'	7'	5'	4'	467 CU. YDS.	600# MAYNES 50# UNIGEL
17	4/12/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR	846	20+25-20+75	197' LT. OF ℄	PRE-SPLIT	23	16'	2-2.5'		⅜" GRAV.		800' 200GR.
18	4/15/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR	846	20+75--21+70	197' LT. OF ℄	PRE-SPLIT	48	16'	2'		⅜" GRAV.	1184 SQ. FT.	1650' 200GR.
19	4/16/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR	846	21+70-22+35	197' LT. OF ℄	PRE-SPLIT	36	8'-16'	2'		⅜" GRAV.	959 SQ. FT.	950' 200GR.
50	3/4/86	FILL MIDDLE CREEK LADORE & SNIABAR	840	14+35-14+50	50'-90' LT.	PRODUCTION	27	8'	7'	5'	5'	500 CU. YDS.	425# MAYNES 55# UNIGEL
51	3/4/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR	844	14+60-15+50	95'-120 LT. ℄	PRODUCTION	40	12'	8'	5'	5'	972 CU. YDS.	625# MAYNES 55# UNIGEL
52	3/6/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR	846	15+20-15+60	160 -124' LT. OF ℄	PRODUCTION	50	12'	8'	6'	5'	1090 CU. YDS.	950# MAYNES 72# UNIGEL
53	3/7/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR	846	15+40-16+40	110'-144' LT. ℄	PRODUCTION	42	13'	8'	6'	5'	1063 CU. YDS.	850# MAYNES 40# UNIGEL
54	3/8/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR	846	15+00-15+50	155 -185' LT. ℄	PRODUCTION	42	12'	8'	6	5'	907 CU. YDS.	750# MAYNES 86# UNIGEL
55	3/17/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR	846	15+50-15+85	155'-185' LT. OF ℄	PRODUCTION	48	13	8'	6	5'	1136 CU. YDS.	1025 # MAYNES 85# UNIGEL
56	3/20/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR	846	15+50-15+80	155'-135' LT. OF ℄	PRODUCTION	55	12.8'	8'	6	5'	1221 CU. YDS.	1250# MAYNES 323# UNIGEL
57	3/21/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR	846	16+00-16+50	155'-185' LT. OF ℄	PRODUCTION	57	13'	8'	5.5'	5'	1248 CU. YDS.	1150# MAYNES 163# UNIGEL
58	3/21/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR	845	23+30-23+10	50'-90' LT. ℄	PRODUCTION	21	12'	8'	5'	5'	430 CU. YDS.	450# MAYNES 46# UNIGEL
59	3/24/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR	845	23+10-22+90	100'-150' LT. ℄	PRODUCTION	20	13'	8'	5'	5'	405 CU. YDS.	450# MAYNES 25# UNIGEL
60	3/25/86	BETHANY FALLS			50'-122' RT. ℄	PRODUCTION	24	22'	12'	10	4'	2464 CU. YDS.	1650# MAYNES 9# UNIMITE 2
61	3/27/86	BETHANY FALLS	866	17+80-18+20	195'-115' RT ℄	PRODUCTION	37	22'	10'	8	4'	2205 CU. YDS.	1400# MAYNES 105#UNIGEL
62	3/29/86	BETHANY FALLS	866	18+10-18+50	130'-55' LT. ℄	PRODUCTION	30	22.5'	12'	10'	4'	2250 CU. YDS.	2000# 100, 47# 62, 35# UNI
63	4/1/86	BETHANY FALLS	866	18+70-18+30	55' LT. TO 30' RT	PRODUCTION	29	22.5'	12'	10'	4'	2800 CU. YDS.	2050# 100, 33# UNIGEL 19#
64	4/5/86	BETHANY FALLS	866	18+50-18+80	30'-124' RT ℄	PRODUCTION	28	22.5'	12'	10'	4'	2800 CU. YDS.	2000# 100, 50# 62, 33# UNI
65	4/7/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR	846	23+00-22+50	25' LT. TO ℄	PRODUCTION	46	12.5'	8'	6'	4'	1000 CU. YDS.	1200# 100, 50# 62, 62# UNI
67	4/9/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR	846	21+00-21+50	55' TO 85' LT. ℄	PRODUCTION	45	12'	8'	6'	4'	853 CU. YDS.	800# 100, 80# 62, 72.5# UN
68	4/10/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR	846	21+25-20+75	125 TO 135 LT. ℄	PRODUCTION	42	12'	8'	6	4'	960 CU. YDS.	700# MAYNES 162# 62, 75#
69	4/11/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR	846	21+00-20+50	135' TO 155' LT.	PRODUCTION	42	12'	8'	5	4'	830 CU. YDS.	850# MAYNES 80# 162, 72#
70	4/17/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR	846-839	22+50-22+80	197' TO 145' LT. ℄	PRODUCTION	50	7'-12'	7'	5	4	425 CU. YDS.	600# MAYNES 583# UNIGEL
71	4/18/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR	846	22+00-22+25	197' TO 133' LT. ℄	PRODUCTION	56	12.5'	8'	5	4'	1137 CU. YDS.	1050# MAYNES 97# UNIGEL
72	4/19/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR	846	21+50-22+00	100' TO 135' LT ℄	PRODUCTION	53	12.5'	8'	5'		1000 CU. YDS.	1100# MAYNES 165# UNIGEL
73	4/21/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR	846	22+00-21+00	135 TO 157' LT. ℄	PRODUCTION	54	12.5'	8'	5	4'	1336 CU. YDS.	1200# MAYNES 110# UNIGEL
74	4/22/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR	846	20+25-20+75	150' TO 180' LT ℄	PRODUCTION	52	12.5'	8'	5'		750 CU. YDS.	1000# MAYNES 150# UNIGEL
75	4/23/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR	846	20+25-21+10	150' TO 185' LT ℄	PRODUCTION	53	12.5'	8'	5'		900 CU. YDS.	1075# MAYNES 90# UNIGEL
76	4/24/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR	846	21+50-22+00	185' TO 155' LT. ℄	PRODUCTION	35	12.5'	8'	6'	4'	55 CU. YDS.	800# MAYNES 50# UNIGEL
77	4/25/86	BETHANY FALLS				PRODUCTION	37	8'-13'	9'	6'		560 CU. YDS.	600# MAYNES 90# UNIGEL
78	4/26/86	BETHANY FALLS				PRODUCTION	30	12'-15'	9'	6'	4'	670 CU. YDS.	575# MAYNES 35# UNIGEL
79	4/29/86	BETHANY FALLS				PRODUCTION	39	12'	9'	6'	4½'	800 CU. YDS.	825# MAYNES 45# UNIGEL
80	4/30/86	BETHANY FALLS				PRODUCTION	48	9.5'-11'	9'	6'	4½'	703 CU. YDS.	715# MAYNES 53# UNIGEL
81	5/1/86	BETHANY FALLS				PRODUCTION	70	7'-8'	9'-8'	5'	4'	802 CU. YDS.	700# MAYNES 66# UNIGEL
82	5/5/86					PRODUCTION	100	6.5'	7'	4'	4'	567 CU. YDS.	600# MAYNES 116# UNIGEL
83	8/9/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR	844	16+50-16+76	130' RT. TO ℄	PRODUCTION	71	12'	8'	6	4'	1480 CU. YDS.	1450# MAYNES 105# UNIGEL
84	8/13/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR	844	16+50-16+75	℄ TO 120' RT.	PRODUCTION	65	12'	8'	6'	4'	1390 CU. YDS.	1425# MAYNES 98# UNIGEL
85	8/14/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR	844	16+75-17+00	℄ TO 120' RT.	PRODUCTION	67	12'	8'	6'	4'	1290 CU. YDS.	1350# MAYNES 85# UNIGEL
86	8/18/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR	844	16+75 17+00	RT OF ℄ TO ℄	PRODUCTION	94	12'	8'	5'	5'	1600 CU. YDS.	1850# MAYNES 125# UNIGEL
87	8/20/86	BETHANY FALLS	865	18+50-18+70	195' RT. TO ℄	PRODUCTION	35	22'	10'	8'		1408 CU. YDS.	1200# E.P. 102, 150# MAYNES MX 30
88	8/21/86	BETHANY FALLS	865	17+50-18+00	170' LT. TO ℄	PRODUCTION	12	22'	12'	10'	5'	1236 CU. YDS.	800# MAYNES, 30# HDR, E.P. 142, 14#
89	8/22/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR	865	17+00 17+25	100' RT. TO ℄	PRODUCTION	61	11	8'	5'	4'	896 CU. YDS.	1150# MAYNES 67# UNIGEL
90	8/25/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR	845	17+25-17+00	37'-67' RT OF ℄	PRODUCTION	60	12'	8'	6'	4'	1044 CU. YDS.	1150# MAYNES 3# UNIGEL 7
91	8/26/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR	845	17+00 17+75	70' 130' LT OF ℄	PRODUCTION	45	12'	8'	5'	4'	800 CU. YDS.	825# MAY, 50# IRECO UNIGEL
92	8/28/86	BETHANY FALLS	865	18+50 19+00	65' RT. TO 15' LT. OF ℄	PRODUCTION	30	21'	12'	10'		2426 CU. YDS.	1350# MAYNES 33# UNIGEL 10# IRE
93	9/2/86	BETHANY FALLS	865	18+10-19+10	15'-100' LT. OF ℄	PRODUCTION	28	21'	12'	10'		2613 CU. YDS.	20# H.P.-162, 1625# MAYNES
94	9/3/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR	843	21+00		PRODUCTION	49	12'	8'	5.5'		906 CU. YDS.	1000# MAYNES 61.5 UNIGEL
95	9/4/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR	843	22+00		PRODUCTION	55	12	8'	5.5'	4'	970 CU. YDS.	1050# MAYNES 50# UNIGEL
96	9/5/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR	843	21+00-21+50	72 160' LT. OF ℄	PRODUCTION	32	12'	8'	6'		640 CU. YDS.	650# MAYNES 35# UNIGEL 1
97	9/9/86	BETHANY FALLS	865	18+00-18+50	70-160' LT. OF ℄	PRODUCTION	30	21'	12'	10'	4	2800 CU. YDS.	1900# MAYNES 33# UNIGEL 3
98	9/10/86	BETHANY FALLS		18+50		PRODUCTION	18	21'	12'	10'	4'	1563 CU. YDS.	1125# MAYNES 40# H.P. 162, 35# UN
99	7/14/87	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR	843	16+50-17+65	181-141 RT OF ℄	PRODUCTION	80	10'	8'	5'	4'	1111 CU. YDS.	1150# MAYNES 100# UNIGEL
100	7/17/87	BETHANY FALLS	860	19+00-19+50		PRODUCTION	26	21.5'	12'	10'		2570 CU. YDS.	1350# MAYNES 29# UNIGEL 10# UNIG
101	7/20/87	BETHANY FALLS	867	19+50-20+00	195'-135' RT OF ℄	PRODUCTION	25	21.5'	12'	10'	4'	1600 CU. YDS.	1375# MAYNES 100# UNIGEL 32# UN
102	7/22/87	HUSHPUCKNEY MIDDLE CREEK LADORE & SNIABAR	843	17+65 18+20	173 61' RT OF ℄	PRODUCTION	105	10' 12'	8	5	4'	600 CU. YDS.	1475# MAYNES 35# UNIGEL

VALUE ENGINEERING PAYS

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SPRINGS DAM BLASTING REPORT

OT VOL.	EXPLOSIVES (LBS.)	NO. OF CAPS	DELAYS IN MIL/SEC	CARTRIDGE STRENGTH	REMARKS
CU. YDS.	825* MAYNES 50* UNIGEL	40	0-10	50* SACKS 2"X8"	RT. SIDE OF SPILLWAY, 3" HOLES, 1.4*/CU. YD.
CU. YDS.	300* MAYNES 50* UNIGEL	57	0-10	50* SACKS 2"X8"	RT. SIDE OF SPILLWAY, 3" HOLES, 0.90*/CU. YD.
CU YDS.	1375* MAYNES 50* UNIGEL	70	0-11	50* SACKS 2"X8"	LT. OF ℄ 3" HOLES, 1.1*/CU. YD.
CU. YDS.	825* MAYNES 50* UNIGEL		0-11	50* SACKS 2"X8"	3" HOLES, 1.1*/CU. YD.
CU. YDS.	1075* MAYNES 10* UNIGEL 70* UNIGEL	61	0-11	50* SACKS 2½"X16", 2"X8"	LT. SIDE OF SPILLWAY, 3" HOLES, 1.2*/CU. YD.
CU YDS.	1650* MAYNES 50* UNIGEL 10* UNIGEL	71	0-10	50* SACKS 2"X8", 2½"X16"	LT. SIDE OF SPILLWAY, 3" HOLES, 1.2*/CU. YDS.
CU YDS.	1000* MAYNES 50* UNIGEL 60* UNIGEL	51	0-10	50* SACKS 2½"X16", 2"X8"	NEAR ℄ 3" HOLES, 1.1*/CU. YD.
CU. YDS.	1300* MAYERS 30* UNIGEL 70* UNIGEL	62	0-10	50* SACKS 2½"X16", 2"X8"	3" HOLES, 1.4 CU. YDS.
CU. YDS.	500* MAYNES 7* UNIGEL 30* UNIGEL	26	0-8	50* SACKS 2½"X16", 2"X8"	3" HOLES, 1.25*/CU. YD.
CU. YDS.	1560 * H.P. 162, 200* MAYNES	45	0-15	40* SACKS 50* SACKS	LT. SIDE OF SPILLWAY, 3½" HOLES, 1.4*/CU. YD.
CU. YDS.	1360* H.P. 162, 225* MAYNES, 35* UNIMITE, 50* UNIGEL	39	0-8	40* SACKS, 50* SACKS, 2¼"X16", 2"X8"	LT. SIDE OF SPILLWAY 3½" HOLES, 1.5*/CU. YD.
CU. YDS.	1025* MAYNES 10* UNIGEL 60* UNIGEL	53	0-11	50* SACKS 2½"X16", 2"X8"	RT. SIDE OF SPILLWAY 3" HOLES, 1.14*/CU. YD.
CU YDS.	175* MAYNES 35* UNIGEL 37* UNIGEL	34	0-7	50* SACKS 2½"X16", 2"X8"	LT. SIDE OF SPILLWAY 3" HOLES, 1.1*/CU. YD.
CU YDS.	200* MAYNES 110* UNIGEL 40* UNIGEL	35	0-9	50* SACKS 2½"X16", 2"X8"	LT. OF ℄ 3" DIA. HOLES 1.1*/CU. YD.
CU. YDS.	650* MAYNES 40* UNIGEL	35	0-10	50* SACKS 2"X8"	3" HOLES 1.18*/CU. YD.
CU. YDS.	600* MAYNES 50* UNIGEL 40* UNIGEL	34	0-11	50* SACKS 2½"X16", 2"X8"	LT. SIDE OF SPILLWAY 3" HOLES, 1.47*/CU. YD.
	800' 200GR.	1	15	ENSIGN BICKFORD PRIMACORD	3" HOLES, SPILLWAY
4 SQ. FT.	1650' 200GR.	1	-	PRIMACORD	3" HOLES, SPILLWAY
3 SQ. FT.	950' 200GR.	1	-	PRIMACORD	3" HOLES, SPILLWAY
CU. YDS.	425* MAYNES 55* UNIGEL	27	-	50* SACKS MAYNES MIX *1, 2"X8" HERCULES UNIGEL	3" HOLES, SPILLWAY 0.91*/YD.
CU YDS.	625* MAYNES 55* UNIGEL	40	0-9	50* SACKS MAYNES MIX *1, 2"X8"& 2 3/4"X16" UNIGEL (HERCULES)	3" HOLES, SPILLWAY 0.70*/YD.
CU. YDS.	950* MAYNES 72* UNIGEL	50	0-9	50* SACKS MAYNES MIX *1, 2"X8" & 2¼"X16" IRECO UNIGEL	3" HOLES, SPILLWAY, 0.94*/YD.
CU. YDS.	850* MAYNES 40* UNIGEL	42	0-9	50* SACKS MAYNES MIX *1, 2"X8" IRECO UNIGEL	3" HOLES, SPILLWAY, 0.84*/YD.
CU. YDS.	750* MAYNES 86* UNIGEL	42	0-9	50* SACKS MAYNES MIX *1, 2½"X16" AND 2"X8" IRECO UNIGEL	3" HOLES, SPILLWAY, 0.90*/YD.
CU. YDS.	1025 * MAYNES 85* UNIGEL	48	0-9	50* SACKS MAYNES MIX *1, 2½"X16" & 2"X8" IRECO UNIGEL	3" HOLES, SPILLWAY 0.98*/YD.
CU. YDS.	1250* MAYNES 323* UNIGEL	55	-	50* SACKS MAYNES MIX *1, 2½"X16" & 2"X8" IRECO UNIGEL	3" HOLES, SPILLWAY 1.1*/YD.
CU. YDS.	1150* MAYNES 163* UNIGEL	57	0-10	50* SACKS MAYNES MIX *1, 2"X8" & 2½"X16" IRECO UNIGEL	3" HOLES, SPILLWAY 1.0*/YD.
CU. YDS.	450* MAYNES 46* UNIGEL	21	0-9	50* SACKS MAYNES MIX *1, 2"X8" & 2½"X16" IRECO UNIGEL	3" HOLES, SPILLWAY 1*/YD.
CU. YDS.	450* MAYNES 25* UNIGEL	20	0-8	50* SACKS MAYNES MIX *1, 2"X8" IRECO UNIGEL	3" HOLES, SPILLWAY 1*/YD.
CU. YDS.	1650* MAYNES 9* UNIMITE 25* UNIGEL	25	0-6	50* SACKS MAYNES MIX *1, 2"X8" IRECO UNIGEL, 2¼"X16" IRECO UNIMITE	3½" HOLES, SPILLWAY 0.68*/YD.
CU. YDS.	1400* MAYNES 105* UNIGEL	37	0-12	50* SACKS MAYNES MIX *1, 2"X8" & 2½"X16" IRECO UNIGEL	3½" HOLES, SPILLWAY 0.68*/YD.
CU. YDS.	2000* 100, 47* 62, 35* UNIGEL	30	0-10	50* SACKS IREMEX 100, 2¼"X16" IREMITE 62, 2"X8" UNIGEL	3½" HOLES, SPILLWAY 0.92*/YD.
CU. YDS.	2050* 100, 33* UNIGEL 19* 62	29	0-8	50* SACKS IRECO 100, 2"X8" IRECO UNIGEL 2¼"X16" IREMITE 62	3½" HOLES, SPILLWAY 0.75*/YD.
CU. YDS.	2000* 100, 50* 62, 33* UNIGEL	29	0-8	50* SACKS IREMEX 100, 2¼"X16" IREMITE 62, 2"X8" IRECO UNIGEL	3½" HOLES, 0.75*/YD. SPILLWAY
CU. YDS.	1200* 100, 50* 62, 62* UNIGEL	46	0 10	50* SACKS IRECO IREMITE 100, 2"X8" IRECO UNIGEL, 2¼"X16" IRECO IREMITE 62	3" HOLES, SPILLWAY 1.2*/YD.
CU. YDS.	800* 100, 80* 62, 12.5* UNIGEL	45	0-11	50* SACKS IREMIX 100, 2¼"X16" IREMITE 62, 2½"X16" IRECO UNIGEL	SPILLWAY
CU. YDS.	700* MAYNES 162* 62, 75* UNIMITE 50* UNIGEL	42	0-10	50* SACKS MAYNES MX *1, 2"X8" IRECO UNIGEL, 2½"X16" IRECO UNIMITE, 2¼"X16" IRECO IREMITE 62	3" HOLES, SPILLWAY 1*/YD.
CU. YDS.	850* MAYNES 80* 162, 72* UNIGEL	42	0-10	50* SACKS MAYNES MX *1, 2½"X16" IRECO IREMITE 162, 2"X8" AND 2½"X16" IRECO UNIGEL	3" HOLES, SPILLWAY 1.2*/YD
CU YDS.	600* MAYNES 583* UNIGEL 38* 62	50	0-11	50* SACKS MAYNES MX *1, 2"X8" IRECO UNIGEL, 2½"X16" UNIGEL 2¼"X16" IREMITE 62	3" HOLES, SPILLWAY 1.5*/YD.
CU YDS.	1050* MAYNES 97* UNIGEL 36* 62	57	0-11	50* SACKS MAYNES MIX *1, 2½"X16" AND 2"X8" IRECO UNIGEL, 2¼"X16" IREMITE 62	3" HOLES, SPILLWAY 1.0*/YD.
CU YDS.	1100* MAYNES 165* UNIGEL 23* 62	53	0-13	50* SACKS MAYNES MX *1, 2½"X16" & 2"X8" IRECO UNIGEL, 2¼"X16" IREMITE 62	3" HOLES, SPILLWAY 1.29*/YD.
CU YDS.	1200* MAYNES 110* UNIGEL	54	0-14	50* SACKS MAYNES MIX *1, 2½"X16" AND 2"X8" IRECO UNIGEL	3" HOLES, SPILLWAY 1.0*/YD.
CU. YDS.	1000* MAYNES 150* UNIGEL 30* 62	52	0-12	50* SACKS MAYNES MIX *1, 2"X8" & 2½"X16" UNIGEL, 2¼"X16" IREMITE 62	3" HOLES, SPILLWAY 1.5*/YD.
CU. YDS.	1075* MAYNES 90* UNIGEL 34* 62	53	0-12	50* SACKS MAYNES MX *1, 2½"X16" AND 2"X8" UNGEL, 2½"X16" IRECO REMITE 62	3" HOLES, SPILLWAY 1.3*/YD.
CU. YDS.	800* MAYNES 50* UNIGEL	35	0-10	50* SACKS MAYNES MIX *1, 2"X8" & 2½"X16" IRECO UNIGEL	3" HOLES, SPILLWAY 1.5*/YD.
CU. YDS.	600* MAYNES 90* UNIGEL	37	0-8	50* SACKS MAYNES MIX *1, 2"X8" & 2½"X16" IRECO UNIGEL	3" HOLES, HAUL ROAD, 1.2*/YD.
CU. YDS.	575* MAYNES 35* UNIGEL	30	0-8	50* SACKS MAYNES MIX *1, 2"X8" IRECO UNIGEL	3" HOLES, HAUL ROAD, 0.90*/YD.
CU. YDS.	825* MAYNES 45* UNIGEL	39	0-10	50* SACKS MAYNES MIX *1, 2"X8" IRECO UNIGEL	3" HOLES, HAUL ROAD, 1.1*/YD.
CU. YDS.	1175* MAYNES 53* UNIGEL	48	0-12	50* SACKS MAYNES MIX *1, 2"X8" IRECO UNIGEL	3" HOLES, HAUL ROAD 1.2*/YD.
CU. YDS.	1700* MAYNES 66* UNIGEL	70	0-12	50* SACKS MAYNES MIX *1, 2"X8" IRECO UNIGEL	3" HOLES, HAUL ROAD, 0.95*/YD.
CU. YDS.	600* MAYNES 116* UNIGEL	100	-	50* SACKS MAYNES MIX *1, 2"X8" & 2½"X16" IRECO UNIGEL	3" HOLES, HAUL ROAD, 1.26*/YD.
CU. YDS.	1450* MAYNES 105* UNIGEL	71	0-14	50* SACKS MAYNES MIX *1, 2"X8" & 2½"X16" IRECO UNIGEL	3" HOLES, SPILLWAY 1.05*/YD.
CU. YDS.	1425* MAYNES 98* UNIGEL	65	-	50* SACKS MAYNES MIX *1, 2½"X16" & 2"X8" IRECO UNIGEL	3" HOLES, SPILLWAY 1.1*/YD.
CU. YDS.	1350* MAYNES 85* UNIGEL	67	0-13	50* SACKS MAYNES MIX *1, 2"X8" & 2½"X16" IRECO UNIGEL	3" HOLES, SPILLWAY 1.5*/YD.
CU. YDS.	1850* MAYNES 125* UNIGEL	94	0-15	50* SACKS 2"X8", 2½"X16"	3" HOLES, SPILLWAY 1.2*/CU. YD.
CU. YDS.	1200* EP, 102, 150* MAYNES MX 30* IRECO REMIT 62, 35* UNIGEL	35	0-14	40* SACKS, 50* SACKS, 2¼"X16", 2"X8"	3½" HOLES, SPILLWAY 1.0*/YD.
CU. YDS.	800* MAYNES, 30* HER, E.P. 162, 14* IRE. UNGEL	12	0-8	50* SACKS, 40* SACKS, 2"X8"	3½" HOLES, SPILLWAY 0.68*/CU. YD.
CU. YDS.	1150* MAYNES 67* UNIGEL	61	0-12	50* SACKS 2"X8"	3" HOLES, SPILLWAY 1.36*/CU. YDS.
CU. YDS.	1150* MAYNES 3* UNIGEL 70* UNIGEL	60	0-12	50* SACKS 2½"X16", 2"X8"	3" HOLES, SPILLWAY 1.2*/CU. YD.
CU. YDS.	825* MAY. 50* IRECO UNIGEL 4* IRECO 62, 10* UNIGEL	45	0-9	50* SACKS 2"X8", 2¼"X16", 2½"X16"	3" HOLES, SPILLWAY 1.1*/CU. YD.
CU. YDS.	1960* MAYNES 31* UNGEL 10* IRECO 62	30	0-10	50* SACKS 2"X8", 2½"X16"	3½" HOLES, SPILLWAY 0.82*/CU. YD.
CU. YDS.	20* H.P.-162, 1625* MAYNES 35* UNIGEL 60* UNIGEL	29	0-8	40* SACKS 50* SACKS 2"X8", 2¼"X16"	3½" HOLES, SPILLWAY 0.67*/CU. YD.
CU. YDS.	1000* MAYNES 61.5 UNIGEL	49	0-13	50* SACKS, 2"X8", 2½"X16"	3" HOLES, SPILLWAY 1.17*/CU. YD.
CU. YDS.	1050* MAYNES 50* UNIGEL 60* UNIGEL	55	0-15	50* SACKS 2½"X16", 2"X8"	3" HOLES, SPILLWAY 1.2*/CU. YD.
CU. YDS.	650* MAYNES 35* UNIGEL 13* UNIGEL	32	0-14	50* SACKS 2"X8", 2½"X16"	3" HOLES, SPILLWAY 1.1*/CU. YD.
CU. YDS.	1900* MAYNES 33* UNIGEL 38* UNIMITE	34	0-12	50* SACKS 2"X8", 2½"X16"	3½" HOLES, SPILLWAY 0.70*/CU. YD.
CU. YDS.	1125* MAYNES 40* HP, 162, 35* UNIGEL 24* UNIMITE	18	0-8	50* SACKS 40* SACKS 2"X8", 2¼"X16"	3½" HOLES, SPILLWAY 0.78*/CU. YD.
CU. YDS.	1150* MAYNES 100* UNIGEL 77* UNIGEL	80	0-8	50* SACKS 2½"X16", 2"X8"	3" HOLES, SPILLWAY 1.1*/CU. YD.
CU. YDS.	1250* MAYNES, 29* UNGEL, 10* UNIGEL, 30* H.P. 162	26	0-10	50* BAGS 2"X8", 2½"X16", 2¼"X16"	3½" HOLES, SPILLWAY 0.7*/CU. YD.
CU. YDS.	1375* MAYNES, 100* UNIGEL, 32* UNIGEL, 28* UNIGEL	25	0-14	50* BAGS, 2¼"X16", 2½"X16", 2"X8"	3½" HOLES, SPILLWAY 0.92*/CU. YD.
CU. YDS.	1475* MAYNES 35* UNIGEL 115* UNIGEL	106	0-12	50* SACKS 2½"X16", 2"X8"	3" HOLES, SPILLWAY 1.0*/CU. YD.

Revisions			
Symbol	Descriptions	Date	Approved

U.S. ARMY ENGINEER-DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:

Drawn by: V.A.B.

Checked by:

Submitted by:

US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

BLASTING SCHEDULE

Scales: AS SHOWN | Dates: JUNE 1990 | Sheet numbers: 88 | Plot Scales: S=.0833 | Design file: E100,633BS3.DGN

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36	10/23/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SNAABAR			23+00	LT OF ℄	PRODUCTION	70	11.5'	8'	5.5'	4'	1288 CU. YDS.	1375° MAYNES 30° UNIGEL
37	10/24/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SNAABAR			24+00-23+50	LT OF ℄	PRODUCTION	72	8.5'	7'	5'	4'	776 CU. YDS.	825° MAYNES 50° UNIGEL
38	10/25/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SNAABAR			23+00-23+30	60' LT. TO ℄	PRODUCTION						990 CU. YDS.	1075° MAYNES 10° UNIGEL 70
39	10/26/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SNAABAR			23+00-22+30	40' LT TO ℄	PRODUCTION	71	12.0'	8	5.5'	4'	1396 CU. YDS.	1650° MAYNES 50° UNIGEL 1
40	10/28/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SNAABAR			23+00-22+70	℄	PRODUCTION	51	12.0	8'	5.5'	4'	976 CU. YDS.	1000° MAYNES 50° UNIGEL 6
41	10/30/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SNAABAR			22+80-22+60	25' LT TO ℄	PRODUCTION	62	12'	8'	5'	4'	960 CU. YDS.	1300° MAYERS 30° UNIGEL 7
42	10/31/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SNAABAR			22+50-23+00	70' RT. TO ℄	PRODUCTION	26	12'	8'	5'	4'	428 CU. YDS.	500° MAYNES 7° UNIGEL 30°
43	11/4/85	BETHANY FALLS			20+00-20+50	140 LT. TO ℄	PRODUCTION	44	22'	10'	8'	X	871 CU. YDS.	1560 ° H.P. 162, 200° MAYNE
44	11/7/85	BETHANY FALLS			18+00	40' LT TO ℄	PRODUCTION	39	21'	10'	8'	X	2587 CU. YDS.	1360° H.P. 162, 225° MAYNES
45	11/8/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SNAABAR			23+11-23+30	137 RT. TO ℄	PRODUCTION	53	12'	8'	5'	X	960 CU. YDS.	1025° MAYNES 10° UNIGEL 6
46	11/21/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SNAABAR			23+50-23+00	100' LT TO ℄	PRODUCTION	34	6'	5'	5'	4'	222 CU. YDS.	175° MAYNES 35° UNIGEL 37
47	11/22/85	LADORE MIDDLE CREEK SNAABAR			23+00-23+50	LT OF ℄	PRODUCTION	34	7.5'	6'	5'	4'	333 CU. YDS.	200° MAYNES 110° UNIGEL 4
48	11/25/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SNAABAR			23+00-23+55	150' LT. TO ℄	PRODUCTION	35	11'	7'	5'	4'	500 CU. YDS	650° MAYNES 40° UNIGEL
49	11/27/85	HUSHPUCKNEY MIDDLE CREEK LADORE & SNAABAR			23+00	100' TO 150' LT. OF ℄	PRODUCTION	34	12'	7'	5'	4'	467 CU. YDS.	600° MAYNES 50° UNIGEL 40
17	4/12/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNAABAR	846	20+25-20+75	197' LT OF ℄	PRE-SPLIT	23	16'	2-2.5'		½" GRAV.		800' 200GR.	
18	4/15/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNAABAR	846	20+75--21+70	197' LT OF ℄	PRE-SPLIT	48	16'	2'		½" GRAV.	1184 SQ. FT.	1650' 200GR.	
19	4/16/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNAABAR	846	21+70-22+35	197' LT. OF ℄	PRE-SPLIT	36	8'-16'	2'		½" GRAV.	959 SQ. FT.	950' 200GR.	
50	3/4/86	FILL MIDDLE CREEK LADORE & SNAABAR	840	14+35-14+50	50'-90' LT	PRODUCTION	27	8	7'	5'	5'	500 CU. YDS.	425° MAYNES 55° UNIGEL	
51	3/4/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNAABAR	844	14+60-15+50	95'-120' LT ℄	PRODUCTION	40	12'	8'	5'	5'	972 CU. YDS.	625° MAYNES 55° UNIGEL	
52	3/6/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNAABAR	846	15+20-15+60	160'-124' LT OF ℄	PRODUCTION	50	12'	8'	6'	5'	1090 CU. YDS	950° MAYNES 72° UNIGEL	
53	3/7/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNAABAR	846	15+40-16+40	110'-144' LT. ℄	PRODUCTION	42	13'	8'	6'	5'	1063 CU. YDS.	850° MAYNES 40° UNIGEL	
54	3/8/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNAABAR	846	15+00-15+50	155'-185' LT. ℄	PRODUCTION	42	12'	8'	6'	5'	907 CU. YDS.	750° MAYNES 86° UNIGEL	
55	3/17/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNAABAR	846	15+50-15+85	155'-185' LT OF ℄	PRODUCTION	48	13'	8'	6'	5'	1136 CU. YDS.	1025 ° MAYNES 85° UNIGEL	
56	3/20/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNAABAR	846	15+50-15+80	155'-185' LT. OF ℄	PRODUCTION	55	12.8'	8'	6'	5'	1221 CU. YDS.	1250° MAYNES 323° UNIGEL	
57	3/21/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNAABAR	846	16+00-16+50	155'-185' LT OF ℄	PRODUCTION	57	13'	8'	5.5'	5'	1248 CU. YDS.	1150° MAYNES 163° UNIGEL	
58	3/21/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNAABAR	845	23+30-23+10	50'-90' LT ℄	PRODUCTION	21	12'	8'	5'	5'	430 CU. YDS.	450° MAYNES 46° UNIGEL	
59	3/24/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNAABAR	845	23+10-22+90	100'-150' LT ℄	PRODUCTION	20	13'	8'	5'	5'	405 CU. YDS.	450° MAYNES 25° UNIGEL	
60	3/25/86	BETHANY FALLS			50'-122' RT ℄	PRODUCTION	24	22'	12'	10'	4'	2464 CU. YDS.	1650° MAYNES 9° UNIMIYE 2	
61	3/27/86	BETHANY FALLS	866	17+80-18+20	195'-115' RT ℄	PRODUCTION	37	22'	10'	8'	4'	2205 CU. YDS.	1400° MAYNES 105°UNIGEL	
62	3/29/86	BETHANY FALLS	866	18+10-18+50	130'-55' LT ℄	PRODUCTION	30	22.5'	12'	10'	4'	2250 CU. YDS.	2000° 100, 47° 62, 35° UNIG	
63	4/1/86	BETHANY FALLS	866	18+70-18+30	55' LT TO 30' RT	PRODUCTION	29	22.5'	12'	10'	4'	2800 CU. YDS.	2050° 100, 33° UNIGEL 19°	
64	4/5/86	BETHANY FALLS	866	18+50-18+80	30'-124' RT. ℄	PRODUCTION	28	22.5'	12'	10'	4'	2800 CU. YDS.	2000° 100, 50° 62, 33° UNIG	
65	4/7/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNAABAR	846	23+00-22+50	25' LT TO ℄	PRODUCTION	46	12.5'	8'	6'	4'	1000 CU. YDS	1200° 100, 50° 62, 62° UNIG	
67	4/9/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNAABAR	846	21+00-21+50	55' TO 85' LT. ℄	PRODUCTION	45	12'	8'	6'	4'	853 CU. YDS.	800° 100, 80° 62, 72.5° UNI	
68	4/10/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNAABAR	846	21+25-20+75	125' TO 135' LT. ℄	PRODUCTION	42	12'	8'	6'	4'	960 CU. YDS.	700° MAYNES 162° 62, 75° L	
69	4/11/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNAABAR	846	21+00-20+50	135' TO 155' LT.	PRODUCTION	42	12'	8'	5'	4'	830 CU. YDS.	850° MAYNES 80° 162, 72° L	
70	4/17/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNAABAR	846-839	22+50-22+80	197' TO 145' LT. ℄	PRODUCTION	50	7'-12'	7'	5'	4'	425 CU. YDS.	600° MAYNES 583° UNIGEL 3	
71	4/18/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNAABAR	846	22+00-22+25	197' TO 133' LT. ℄	PRODUCTION	56	12.5'	8'	5'	4'	1137 CU. YDS.	1050° MAYNES 97° UNIGEL 3	
72	4/19/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNAABAR	846	21+50-22+00	100' TO 135' LT ℄	PRODUCTION	53	12.5'	8'	5		1000 CU. YDS.	1100° MAYNES 165° UNIGEL	
73	4/21/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNAABAR	846	22+00-21+00	135' TO 157' LT ℄	PRODUCTION	54	12.5'	8'	5'	4'	1336 CU. YDS.	1200° MAYNES 110° UNIGEL	
74	4/22/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNAABAR	846	20+25-20+75	150' TO 180' LT. ℄	PRODUCTION	52	12.5'	8'	5'		750 CU. YDS.	1000° MAYNES 150° UNIGEL	
75	4/23/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNAABAR	846	20+25-21+10	150' TO 185' LT. ℄	PRODUCTION	53	12.5'	8'	5'		900 CU. YDS.	1075° MAYNES 90° UNIGEL	
76	4/24/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNAABAR	846	21+50-22+00	185' TO 155' LT ℄	PRODUCTION	35	12.5'	8'	6'	4'	55 CU. YDS.	800° MAYNES 50° UNIGEL	
77	4/25/86	BETHANY FALLS				PRODUCTION	37	8'-13'	9'	6'		560 CU. YDS.	600° MAYNES 90° UNIGEL	
78	4/26/86	BETHANY FALLS				PRODUCTION	30	12'-15'	9'	6'	4'	670 CU. YDS.	575° MAYNES 35° UNIGEL	
79	4/29/86	BETHANY FALLS				PRODUCTION	39	12'	9'	6'	4½'	800 CU. YDS.	825° MAYNES 45° UNIGEL	
80	4/30/86	BETHANY FALLS				PRODUCTION	48	9.5'-11'	9'	6'	4½'	703 CU. YDS.	715° MAYNES 53° UNIGEL	
81	5/1/86	BETHANY FALLS				PRODUCTION	70	7'-8'	9'-8'	5'	4'	802 CU. YDS.	700° MAYNES 66° UNIGEL	
82	5/5/86					PRODUCTION	100	6.5'	7'	4'	4'	567 CU. YDS.	600° MAYNES 116° UNIGEL	
83	8/9/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNAABAR	844	16+50-16+76	130' RT TO ℄	PRODUCTION	71	12'	8'	6'	4'	1480 CU. YDS.	1450° MAYNES 105° UNIGEL	
84	8/13/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNAABAR	844	16+50-16+75	℄ TO 120' RT	PRODUCTION	65	12'	8'	6'	4'	1390 CU. YDS.	1425° MAYNES 98° UNIGEL	
85	8/14/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNAABAR	844	16+75-17+00	℄ TO 120' RT.	PRODUCTION	67	12'	8'	6'	4'	1290 CU. YDS.	1350° MAYNES 85° UNIGEL	
86	8/18/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNAABAR	844	16+75-17+00	RT OF ℄ TO ℄	PRODUCTION	94	12'	8'	5'	5'	1600 CU. YDS.	1850° MAYNES 125° UNIGEL	
87	8/20/86	BETHANY FALLS	865	18+30-18+70	195' RT TO ℄	PRODUCTION	35	22'	10'	8'		1408 CU. YDS.	1200° E.P. 102, 150° MAYNES MX 30	
88	8/21/86	BETHANY FALLS	865	17+50-18+00	170' LT. TO ℄	PRODUCTION	12	22'	12'	10'	5'	1236 CU. YDS.	800° MAYNES, 30° HER. E.P. 162, 14	
89	8/22/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNAABAR	865	17+00-17+25	100' RT TO ℄	PRODUCTION	61	11'	8'	5'	4'	896 CU. YDS.	1150° MAYNES 67° UNIGEL	
90	8/25/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNAABAR	845	17+25-17+00	37'-67' RT OF ℄	PRODUCTION	60	12'	8'	6'	4'	1044 CU. YDS.	1150° MAYNES 3° UNIGEL 7	
91	8/26/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNAABAR	845	17+00-17+75	70'-130' LT OF ℄	PRODUCTION	45	12'	8'	5'	4'	800 CU. YDS.	825° MAY, 50° IRECO UNIGEL	
92	8/28/86	BETHANY FALLS	865	18+50-19+00	65' RT. TO 15' LT OF ℄	PRODUCTION	30	21'	12'	10'		2426 CU. YDS.	1950° MAYNES 33° UNGEL 10° IREC	
93	9/2/86	BETHANY FALLS	865	18+70-19+10	15'-100' LT. OF ℄	PRODUCTION	28	21'	12'	10'		2613 CU. YDS.	20° H.P.-162, 162°° MAYNES	
94	9/3/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNAABAR	843	21+00		PRODUCTION	49	12'	8'	5.5'		906 CU. YDS.	1000° MAYNES 61.5 UNIGEL	
95	9/4/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNAABAR	843	22+00		PRODUCTION	55	12'	8'	5.5'	4'	970 CU. YDS.	1050° MAYNES 50° UNIGEL	
96	9/5/86	HUSHPUCKNEY MIDDLE CREEK LADORE & SNAABAR	843	21+00-21+50	72 160' LT. OF ℄	PRODUCTION	32	12'	8'	6'		640 CU. YDS.	650° MAYNES 35° UNIGEL	
97	9/9/86	BETHANY FALLS	865	18+00-18+50	70-160' LT. OF ℄	PRODUCTION	30	21'	12'	10'	4'	2800 CU. YDS.	1900° MAYNES 33° UNIGEL	
98	9/10/86	BETHANY FALLS		18+50		PRODUCTION	18	21'	12'	10'	4'	1563 CU. YDS.	1125° MAYNES 40° H.P. 162, 35° UN	
99	4/87	HUSHPUCKNEY MIDDLE CREEK LADORE & SNAABAR	843	16+50-17+65	181-141 RT OF ℄	PRODUCTION	80	10'	8'	5'	4'	1111 CU. YDS.	1150° MAYNES 100° UNIGEL	
100	7/17/87	BETHANY FALLS	860	19+00-19+50		PRODUCTION	26	21.5'	12'	10'		2570 CU. YDS.	1350° MAYNES, 23° UNIGEL, 10° UNG	
101	7/20/87	BETHANY FALLS	867	19+50-20+00	195'-135' RT OF ℄	PRODUCTION	25	21.5'	12'	10'	4'	1600 CU. YDS.	1325° MAYNES, 100° UNIGEL, 32° UN	
102	7/22/87	HUSHPUCKNEY MIDDLE CREEK LADORE & SNAABAR	843	17+65-18+20	121' 61' RT OF ℄	PRODUCTION	105	10'-12'	8'	5'	4'	1600 CU. YDS.	1475° MAYNES 35° UNGEL	

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RINGS DAM BLASTING REPORT

VOL.	EXPLOSIVES (LBS.)	NO. OF CAPS	DELAYS IN MLI/SEC	CARTRIDGE STRENGTH	REMARKS
YDS.	825# MAYNES 50# UNIGEL	40	0-10	50# SACKS 2"X8"	RT. SIDE OF SPILLWAY, 3" HOLES, 1.4#/CU. YD.
YDS.	300# MAYNES 50# UNIGEL	57	0-10	50# SACKS 2"X8"	RT. SIDE OF SPILLWAY, 3" HOLES, 0.90#/CU. YD.
YDS.	1375# MAYNES 50# UNIGEL	70	0-11	50# SACKS 2"X8"	LT. OF ℄ 3" HOLES, 1.1#/CU. YD.
YDS.	825# MAYNES 50# UNIGEL		0-11	50# SACKS 2"X8"	3" HOLES, 1.1#/CU. YD.
YDS.	1075# MAYNES 10# UNIGEL, 70# UNIGEL	61	0-11	50# SACKS 2½"X16", 2"X8"	LT. SIDE OF SPILLWAY, 3" HOLES, 1.2#/CU. YD.
YDS.	1650# MAYNES 50# UNIGEL 10# UNIGEL	71	0-10	50# SACKS 2"X8", 2½"X16"	LT. SIDE OF SPILLWAY, 3" HOLES, 1.2#/CU. YDS.
YDS.	1000# MAYNES 50# UNIGEL 60# UNIGEL	51	0-10	50# SACKS 2½"X16", 2"X8"	NEAR ℄ 3" HOLES, 1.1#/CU. YD.
YDS.	1300# MAYERS 30# UNIGEL 70# UNIGEL	62	0-10	50# SACKS 2½"X16", 2"X8"	3" HOLES, 1.4 CU. YDS.
YDS.	500# MAYNES 7# UNIGEL 30# UNIGEL	26	0-8	50# SACKS 2½"X16", 2"X8"	3" HOLES, 1.25#/CU. YD.
YDS.	1560 # H.P. 162, 200# MAYNES	45	0-15	40# SACKS 50# SACKS	LT. SIDE OF SPILLWAY, 3½" HOLES, 1.4#/CU. YD.
YDS.	1360# H.P. 162, 225# MAYNES, 35# UNIMITE, 50# UNIGEL	39	0-8	40# SACKS, 50# SACKS, 2½"X16", 2"X8"	LT. SIDE OF SPILLWAY 3½" HOLES, 1.5#/CU. YD.
YDS.	1025# MAYNES 10# UNIGEL 60# UNIGEL	53	0-11	50# SACKS 2½"X16", 2"X8"	RT. SIDE OF SPILLWAY 3" HOLES, 1.14#/CU. YD.
YDS.	475# MAYNES 35# UNIGEL 37# UNIGEL	34	0-7	50# SACKS 2½"X16", 2"X8"	LT. SIDE OF SPILLWAY 3" HOLES, 1.1#/CU. YD.
YDS.	200# MAYNES 110# UNIGEL 40# UNIGEL	35	0-9	50# SACKS 2½"X16", 2"X8"	LT. OF ℄ 3" DIA. HOLES 1.1#/CU. YD.
YDS.	650# MAYNES 40# UNIGEL	35	0-10	50# SACKS 2"X8"	3" HOLES 1.18#/CU. YD.
YDS.	1600# MAYNES 50# UNIGEL 40# UNIGEL	34	0-11	50# SACKS 2½"X16", 2"X8"	LT. SIDE OF SPILLWAY 3" HOLES, 1.47#/CU. YD.
	800' 200GR.	1	15	ENSIGN BICKFORD PRIMACORD	3" HOLES, SPILLWAY
.FT.	1650' 200GR.	1	-	PRIMACORD	3" HOLES, SPILLWAY
FT.	950' 200GR.	1	-	PRIMACORD	3" HOLES, SPILLWAY
YDS.	425# MAYNES 55# UNIGEL	27	-	50# SACKS MAYNES MIX #1, 2"X8" HERCULES UNIGEL	3" HOLES, SPILLWAY 0.91#/YD.
YDS.	625# MAYNES 55# UNIGEL	40	0-9	50# SACKS MAYNES MIX #1, 2"X8" & 2-3/4"X16" UNIGEL (HERCULES)	3" HOLES, SPILLWAY 0.70#/YD.
YDS.	950# MAYNES 72# UNIGEL	50	0-9	50# SACKS MAYNES MIX #1, 2"X8" & 2½"X16" IRECO UNIGEL	3" HOLES, SPILLWAY, 0.94#/YD.
YDS.	850# MAYNES 40# UNIGEL	42	0-9	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	3" HOLES, SPILLWAY, 0.84#/YD.
YDS.	750# MAYNES 86# UNIGEL	42	0-9	50# SACKS MAYNES MIX #1, 2½"X16" AND 2"X8" IRECO UNIGEL	3" HOLES, SPILLWAY, 0.90#/YD.
YDS.	1025 # MAYNES 85# UNIGEL	48	0-9	50# SACKS MAYNES MIX #1, 2½"X16" & 2"X8" IRECO UNIGEL	3" HOLES, SPILLWAY 0.98#/YD.
YDS.	1250# MAYNES 323# UNIGEL	55	-	50# SACKS MAYNES MIX #1, 2½"X16" & 2"X8" IRECO UNIGEL	3" HOLES, SPILLWAY 1.1#/YD.
YDS.	1150# MAYNES 163# UNIGEL	57	0-10	50# SACKS MAYNES MIX #1, 2"X8" & 2½"X16" IRECO UNIGEL	3" HOLES, SPILLWAY 1.0#/YD.
YDS.	450# MAYNES 46# UNIGEL	21	0-9	50# SACKS MAYNES MIX #1, 2"X8" & 2½"X16" IRECO UNIGEL	3" HOLES, SPILLWAY 1#/YD.
YDS.	450# MAYNES 25# UNIGEL	20	0-8	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	3" HOLES, SPILLWAY 1#/YD.
YDS	1650# MAYNES 9# UNIMITE 25# UNIGEL	25	0-6	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL, 2½"X16" IRECO UNIMITE	3½" HOLES, SPILLWAY 0.68#/YD.
YDS.	1400# MAYNES 105# UNIGEL	37	0-12	50# SACKS MAYNES MIX #1, 2"X8" & 2½"X16" IRECO UNIGEL	3½" HOLES, SPILLWAY 0.68#/YD.
YDS.	2000# 100, 47# 62, 35# UNIGEL	30	0-10	50# SACKS IREMEX 100, 2¼"X16" IREMITE 62, 2"X8" UNIGEL	3½" HOLES, SPILLWAY 0.92#/YD.
YDS.	2050# 100, 33# UNIGEL 19# 62	29	0-8	50# SACKS IRECO 100, 2"X8" IRECO UNIGEL 2¼"X16" IREMITE 62	3½" HOLES, SPILLWAY 0.75#/YD.
YDS.	2000# 100, 50# 62, 33# UNIGEL	29	0-8	50# SACKS IREMEX 100, 2¼"X16" IREMITE 62, 2"X8" IRECO UNIGEL	3½" HOLES, 0.75#/YD. SPILLWAY
YDS.	1200# 100, 50# 62, 62# UNIGEL	46	0-10	50# SACKS IRECO IREMITE 100, 2"X8" IRECO UNIGEL, 2¼"X16" IRECO IREMITE 62	3" HOLES, SPILLWAY 1.2#/YD.
YDS.	800# 100, 80# 62, 72.5# UNIGEL	45	0-11	50# SACKS IREMIX 100, 2¼"X16" IREMITE 62, 2½"X16" IRECO UNIGEL	SPILLWAY
YDS.	700# MAYNES 162# 62, 75# UNIMITE 50# UNIGEL	42	0-10	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL, 2½"X16" IRECO UNIMITE, 2¼"X16" IRECO IREMITE 62	3" HOLES, SPILLWAY 1#/YD.
YDS.	850# MAYNES 80# 162, 72# UNIGEL	42	0-10	50# SACKS MAYNES MIX #1, 2½"X16" IRECO IREMITE 162, 2"X8" AND 2½"X16" IRECO UNIGEL	3" HOLES, SPILLWAY 1.2#/YD.
YDS.	600# MAYNES 583# UNIGEL 38# 62	50	0-11	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL, 2½"X16" UNIGEL, 2¼"X16" IREMITE 62	3" HOLES, SPILLWAY 1.5#/YD.
YDS.	1050# MAYNES 97# UNIGEL 36# 62	57	0-11	50# SACKS MAYNES MIX #1, 2½"X16" AND 2"X8" IRECO UNIGEL, 2¼"X16" IREMITE 62	3" HOLES, SPILLWAY 1.0#/YD.
YDS.	1100# MAYNES 165# UNIGEL 23# 62	53	0-13	50# SACKS MAYNES MIX #1, 2½"X16" & 2"X8" IRECO UNIGEL, 2¼"X16" IREMITE 62	3" HOLES, SPILLWAY 1.29#/YD.
YDS.	1200# MAYNES 110# UNIGEL	54	0-14	50# SACKS MAYNES MIX #1, 2½"X16" AND 2"X8" IRECO UNIGEL	3" HOLES, SPILLWAY 1.0#/YD.
YDS.	1000# MAYNES 150# UNIGEL 30# 62	52	0-12	50# SACKS MAYNES MIX #1, 2"X8" & 2½"X16" UNIGEL, 2¼"X16" IREMITE 62	3" HOLES, SPILLWAY 1.5#/YD.
YDS.	1075# MAYNES 90# UNIGEL 34# 62	53	0-12	50# SACKS MAYNES MIX #1, 2½"X16" AND 2"X8" UNIGEL, 2¼"X16" IRECO IREMITE 62	3" HOLES, SPILLWAY 1.3#/YD.
YDS.	800# MAYNES 50# UNIGEL	35	0-10	50# SACKS MAYNES MIX #1, 2"X8" & 2½"X16" IRECO UNIGEL	3" HOLES, SPILLWAY 1.5#/YD.
YDS.	600# MAYNES 90# UNIGEL	37	0-8	50# SACKS MAYNES MIX #1, 2"X8" & 2½"X16" IRECO UNIGEL	3" HOLES, HAUL ROAD, 1.2#/YD.
YDS.	575# MAYNES 35# UNIGEL	30	0-8	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	3" HOLES, HAUL ROAD, 0.90#/YD.
YDS.	825# MAYNES 45# UNIGEL	39	0-10	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	3" HOLES, HAUL ROAD, 1.1#/YD.
YDS.	1175# MAYNES 53# UNIGEL	48	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	3" HOLES, HAUL ROAD 1.2#/YD.
YDS.	700# MAYNES 66# UNIGEL	70	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	3" HOLES, HAUL ROAD, 0.95#/YD.
YDS.	600# MAYNES 116# UNIGEL	100	-	50# SACKS MAYNES MIX #1, 2"X8" & 2½"X16" IRECO UNIGEL	3" HOLES, HAUL ROAD, 1.26#/YD.
YDS.	1450# MAYNES 105# UNIGEL	71	0-14	50# SACKS MAYNES MIX #1, 2"X8" & 2½"X16" IRECO UNIGEL	3" HOLES, SPILLWAY 1.05#/YD.
YDS.	1425# MAYNES 98# UNIGEL	65	-	50# SACKS MAYNES MIX #1, 2½"X16" & 2"X8" IRECO UNIGEL	3" HOLES, SPILLWAY 1.1#/YD.
YDS.	1350# MAYNES 85# UNIGEL	67	0-13	50# SACKS MAYNES MIX #1, 2"X8" & 2½"X16" IRECO UNIGEL	3" HOLES, SPILLWAY 1.5#/YD.
YDS.	1850# MAYNES 125# UNIGEL	94	0-15	50# SACKS 2"X8", 2½"X16"	3" HOLES, SPILLWAY 1.2#/CU. YD.
YDS.	1200# E.P. 102, 150# MAYNES MX 30# IRECO #REMIT 62, 38# UNIGEL	35	0-14	40# SACKS, 50# SACKS, 2½"X16", 2"X8"	3½" HOLES, SPILLWAY 1.0#/YD.
YDS.	800# MAYNES, 30# HER. E.P. 162, 14# IRE. UNIGEL	12	0-8	50# SACKS, 40# SACKS, 2"X8"	3½" HOLES, SPILLWAY 0.68#/CU. YD.
DS.	1150# MAYNES 67# UNIGEL	61	0-12	50# SACKS 2"X8"	3" HOLES, SPILLWAY 1.36#/CU. YDS.
YDS.	1150# MAYNES 3# UNIGEL 70# UNIGEL	60	0-12	50# SACKS 2½"X16", 2"X8"	3" HOLES, SPILLWAY 1.2#/CU. YD.
DS.	1825# MAY. 50# IRECO UNIGEL 4# IRECO 62, 10# UNIGEL	45	0-9	50# SACKS 2"X8", 2¼"X16", 2½"X16"	3" HOLES, SPILLWAY 1.1#/CU. YD.
YDS.	1950# MAYNES 33# UNIGEL 10# IRECO 62	30	0-10	50# SACKS 2"X8", 2½"X16"	3½" HOLES, SPILLWAY 0.82#/CU. YD.
YDS.	20# H.P.-162, 1625# MAYNES 35# UNIGEL 60# UNIGEL	29	0-8	40# SACKS 50# SACKS 2"X8", 2½"X16"	3½" HOLES, SPILLWAY 0.67#/CU. YD.
DS.	1000# MAYNES 61.5 UNIGEL	49	0-13	50# SACKS, 2"X8", 2½"X16"	3" HOLES, SPILLWAY 1.17#/CU. YD.
DS.	1050# MAYNES 50# UNIGEL 60# UNIGEL	55	0-15	50# SACKS 2½"X16", 2"X8"	3" HOLES, SPILLWAY 1.2#/CU. YD.
DS.	650# MAYNES 35# UNIGEL 13# UNIGEL	32	0-14	50# SACKS 2"X8", 2½"X16"	3" HOLES, SPILLWAY 1.1#/CU. YD.
YDS.	1900# MAYNES 33# UNIGEL 38# UNIMITE	34	0-12	50# SACKS 2"X8", 2½"X16"	3½" HOLES, SPILLWAY 0.70#/CU. YD.
YDS.	1125# MAYNES 40# H.P. 162, 35# UNIGEL 24# UNIMITE	18	0-8	50# SACKS 40# SACKS 2"X8", 2½"X16"	3½" HOLES, SPILLWAY 0.78#/CU. YD.
YDS.	1150# MAYNES 100# UNIGEL 77# UNIGEL	80	0-8	50# SACKS 2½"X16", 2"X8"	3" HOLES, SPILLWAY 1.11#/CU. YD.
YDS.	1250# MAYNES 29# UNIGEL, 10# UNIGEL, 30# H.P. 162	26	0-10	50# BAGS 2"X8", 2½"X16", 2¼"X16"	3½" HOLES, SPILLWAY 0.7#/CU. YD.
YDS.	1325# MAYNES, 100# UNIGEL, 32# UNIGEL, 28# UNIGEL	25	0-14	50# BAGS, 2¼"X16", 2½"X16", 2"X8"	3½" HOLES, SPILLWAY 0.92#/CU. YD.
YDS.	1475# MAYNES 35# UNIGEL 115# UNIGEL	106	0-12	50# SACKS 2½"X16", 2"X8"	3" HOLES, SPILLWAY 1.0#/CU. YD.

Revisions			
Symbol	Descriptions	Date	Approved

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:

Drawn by: V.A.B.

Checked by:

Submitted by:

US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

BLASTING SCHEDULE

Scale: AS SHOWN
Date: JUNE 1990
Dwg. No.:
Sheet number: 88
Plot Scale: S=.0833
Design File: (100,63)BS3.DGN
File No.: RBL-2-1308

PLATE NO. 88

3 2 1

BLUE SPRINGS DAM BLASTING

SHOT NO.	DATE	GEOLOGIC LOCATION	ELEV.	LOCATION STATION	LOCATION RANGE	PURPOSE	NO. OF HOLES	DEPTH (FT.)	SPACING (FT.)	BURDEN (FT.)	STEM (FT.)	SHOT VOL.	EXPLOSIVES
103	7/24/87	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	843	17+60-18+20	61 RT. TO 51 LT OF ℄	PRODUCTION	98	10'	8'	5'	4'	1460 CU. YDS.	1325# MAYNES 50° UNIGEL
104	7/28/87	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	846	17+25-17+55	32-130 LT. OF ℄	PRODUCTION	90	10'	8'	5'	4'	1075 CU. YDS.	1225# MAYNES 16° UNIGEL
105	7/28/87	BETHANY FALLS		17+50-18+00	207-159' LT. OF ℄	PRODUCTION	32	21'	12'	10'	4'	3130 CU. YDS.	1950# MAYNES IREMITE #62
106	7/30/87	BETHANY FALLS		17+75-18+25	210-110' LT. OF ℄	PRODUCTION	38	21'	12'	10'	4'	3080 CU. YDS.	2150# MAYNES 40° IRECO #6
107	8/1/87	BETHANY FALLS		18+20-18+50	210' LT TO 135 LT.	PRODUCTION	32	21'	12'	10'	4'	2415 CU. YDS.	1800# MAYNES 4° IRECO #62
20	7/10/87	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	843	16+94-18+00	184.4' RT. ℄	PRE-SPLIT	38	14'	2'	-		1038 SQ. FT.	1300' 200GR, 80' E. CORD.
21	7/11/87	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	843	18+00-18+50	184.4' RT. ℄	PRE-SPLIT	19	14'	2'	-		532 SQ. FT.	580' 200GR, 45 E. CORD.
22	8/6/87	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	832	18+50-19+75	184.0' RT. ℄	PRE-SPLIT	50	13.5'	2'	-		1377 SQ. FT.	1500' 200GR. 125' E. CORD.
23	8/31/87	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	748	17+00-17+70	197.0' LT. ℄	PRE-SPLIT	48	14'	2'	-		1288 SQ. FT.	1600' 200GR.
24	10/19/87	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	849	?	192.0' RT. ℄	PRE-SPLIT	50	14'	2'	-		700 SQ. FT.	1400' SEISMIC 50' 25GR.
25	1/28/88	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	847	17+30-18+70	197.0' LT. ℄	PRE-SPLIT	97	12'	-	-		2328 SQ. FT.	2400' SEISMIC 200GR., 225 E.
26	4/6/88	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	843	20+29-19+64	186' LT. ℄ 190 RT ℄	PRE-SPLIT	44	15'	2'	-		1232 SQ. FT.	1250' SEISMIC 200GR, 100 E.
27	4/7/88	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	844	18+75-19+65	190' LT ℄ 196 LT. ℄	PRE-SPLIT	60	14'	2'	-		1680 SQ. FT.	1300' SEISMIC 200GR. 130 E.
108	8/10/87	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	850	18+50-18+00	183-100' RT. OF ℄	PRODUCTION	67	11	8'	5'	4'	1015	1200# MAYNES 75° UNIGEL
109	8/12/87	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	846	18+00-18+50	100 RT. TO ℄	PRODUCTION	82	10.5'	8'	5'	4'	1307	1200# MAYNES 91° UNIGEL
110	8/17/87	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	847	18+00-18+50	℄ TO 125' LT.	PRODUCTION	100	10.5'	8'	5'	4'	1643	1600# MAYNES 50° UNIGEL
111	8/20/87	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	843	18+70-19+00	184'-52' RT. OF ℄	PRODUCTION	55	12'	8'	5'	4'	1466	950# MAYNES 100° UNIGEL 6
112	8/21/87	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	870	18+50-19+00	135'-95' LT. OF ℄	PRODUCTION	27	21'	12'	10'	5'	2430	40° E.P. 162, 1350# MAYNES 32° IREC
113	8/24/87	BETHANY FALLS	870	20+50-20+00	195-62' RT. OF ℄	PRODUCTION	49	21'	12'	10'	5'	4043	2550# MAYNES 80° IRECO 62, 80° UN
114	8/29/87	BETHANY FALLS	870	20+50-20+00	195'-71' RT. OF ℄	PRODUCTION	38	21'	12'	10'	5'	2900	2150# MAYNES 45° UNIGEL
115	9/2/87	BETHANY FALLS	870	21+00	195'-71' RT. OF ℄	PRODUCTION	37	21'	12'	10'	5'	2900	2000# MAYNES, 30° IRECO 62, 15° UN
116	9/2/87	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	848	17+00-17+90	160-110' LT. OF ℄	PRODUCTION	93	11'	8'	5'		1630	1550# MAYNES 105° UNIGEL
117	9/9/87	BETHANY FALLS	870		195-85 RT. OF ℄	PRODUCTION	38	21'	12'	10'	4'	3010	2300# MAYNES 70° IRECO 62, 6° UNI
118	9/12/87	BETHANY FALLS	869	22+50-21+50	195'-100' RT. OF ℄	PRODUCTION	75	21'	12'	8'		6022	427.5# MAYNES 85° UNIGEL
118A	9/14/87	BETHANY FALLS	869	22+00-22+50	110-50' RT. OF ℄	PRODUCTION	5	20'	12'	10'		1170	250# MAYNES 6° UNIGEL
119	9/17/87	BETHANY FALLS	870	19+50-20+50	80'-50' RT. OF ℄	PRODUCTION	32	21'	12'	10'		3080	1650# MAYNES 100° IRECO 6
120	9/21/87	BETHANY FALLS	870	20+50-21+50	45'-60' RT. OF ℄	PRODUCTION	33	21'	12'	10'		2940	2100# MAYNES 24° IRECO 62,
121	9/23/87	BETHANY FALLS	870	19+50-20+50	℄ TO 30' RT.	PRODUCTION	38	21	12'	10'		2940	2400# MAYNES 43° UNIGEL 4°
121a	9/23/87	BETHANY FALLS	870	22+00	30'-80' RT. OF ℄	PRODUCTION	16	21'	10'	10'		1170	515# MAYNES 11° UNIGEL
122	9/25/87	BETHANY FALLS	870	20+50-21+50	30'-60' RT. OF ℄	PRODUCTION	27	21'	12'	10'		2520	1650# MAYNES 30° UNIGEL
123	10/1/87	BETHANY FALLS	870	19+00 21+00	20' RT. TO 30' LT. OF ℄	PRODUCTION	49	21'	12'	10'	4'	3850	2900# MAYNES 55° UNIGEL
124	10/2/87	BETHANY FALLS	870	18+25-19+00	40'-125' LT. OF ℄	PRODUCTION	22	21'	12'	10'		2310	1300# MAYNES 25° UNIGEL
125	10/5/87	BETHANY FALLS	870	20+50-21+00	15' RT. TO 40' LT. OF ℄	PRODUCTION	13	21'	10'	8'	4'	1540	775# MAYNES 15° UNIGEL
126	10/6/87	BETHANY FALLS	870	20+00-20+50	℄ ±	PRODUCTION	13	21'	10'	10'	4'	1360	825# MAYNES 15° UNIGEL
127	10/7/87	BETHANY FALLS	870	21+00-20+30	25' LT. TO 30' RT. OF ℄	PRODUCTION	13	21'	10'	10'		1540	775# MAYNES 15° UNIGEL
128	10/9/87	BETHANY FALLS	870	19+50-20+50	40' LT. TO ℄	PRODUCTION	24	21'	10'	10'		2500	1800# MAYNES 40° UNIGEL
129	10/13/87	BETHANY FALLS	870	19+00-20+50	25' LT. TO 10' RT. OF ℄	PRODUCTION	46	21'	10'	10'		3800	2700# MAYNES 50° UNIGEL
130	10/15/87	BETHANY FALLS	870	18+50-18+80	70'-154' LT. OF ℄	PRODUCTION	22	21	11	10'	4'	2160	1350# MAYNES 25° UNIGEL
131	11/2/87	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	849	18+30-19+30	83 178' RT. OF ℄	PRODUCTION	87	12'	7'	5'		1267	1700# MAYNES 350° IRECO 1
132	11/5/87	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	849	19+50	80'-170 RT. OF ℄	PRODUCTION	87	12'	7'	5'		1270	1950# MAYNES 262° IRECO 62
133	11/6/87	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	849	19+50-19+70	75'-170' RT. OF ℄	PRODUCTION	71	12'	7'	5'		1067	1650# MAYNES 62° IRECO 62,
134	11/9/87	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	849	19+50-20+00	75'-170 RT. OF ℄	PRODUCTION	91	12'	7'	5'		1270	2075# MAYNES 75° IRECO 62,
135	11/11/87	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	849	19+80-20+20	75 -170' RT. OF ℄	PRODUCTION	88	12'	7'	5		1270	2150# MAYNES 48° IRECO 62,
136	11/13/87	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	849	20+20-20+60	75 170' RT. OF ℄	PRODUCTION	88	12'	7'	5'		1270	2150# MAYNES 48° IRECO 62,
137	11/13/87	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	849	20+60-21+00	75 -170' RT. OF ℄	PRODUCTION	90	21'	7'	5'		1267	2150# MAYNES 52° IRECO 62,
138	11/16/87	BETHANY FALLS	870	19+00-20+75	110'-180 LT. OF ℄	PRODUCTION	37	21	12'	10'	4'	3380	2100# MAYNES 125° IRECO 62
139	11/18/87	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	849	20+56-21+00	75' 170' RT. OF ℄	PRODUCTION	89	21'	7'	5'	4½'	1270	2075# MAYNES 300° IRECO 62
140	11/19/87	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	849	21+00-21+45	75 170' RT. OF ℄	PRODUCTION	90	12'	7	5		1270	2300# MAYNES 50° IRECO 62,
141	11/21/87	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	848	22+00-22+75	120'-170' RT. OF ℄	PRODUCTION	78	11'	7'	5'		1000	1650# MAYNES 85° UNIGEL
142	11/21/87	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	849	18+50-19+50	55-75' RT. OF ℄	PRODUCTION	82	13'	7'	5		1260	2100# MAYNES 90° UNIGEL
143	11/23/87	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	849	21+50-22+00	75'-170' RT. OF ℄	PRODUCTION	90	12'	7'	5'		1270	2250# MAYNES 100° IREMITE
144	11/24/87	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	849	22+00	75' RT. ℄ 170' RT. ℄	PRODUCTION	60	12'	7'	5'		844 CU. YDS.	1200# MAYNES 70° UNIGEL
145	12/1/87	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	849	21+50-22+25	75 RT. ℄ 170 RT. ℄	PRODUCTION	116	11	7	5		1660 CU. YDS.	2250# MAYNES 50° IREMITE 6
146	12/2/87	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	849	19+50-21+50	55' RT. ℄ 75' RT. ℄	PRODUCTION	134	11.5'	7'	5'		2087 CU. YDS.	3100# MAYNES 250° IREMITE
147	12/3/87	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	849	?	35 RT. ℄ 55' RT. ℄	PRODUCTION	80	12'	7'	5		1244 CU. YDS.	1850# MAYNES 10° IREMITE 64
148	12/4/87	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	849	19+25-21+00	35 RT. ℄ 55' RT. ℄	PRODUCTION	84	12'	7'	5'		1307 CU. YDS.	2100# MAYNES 15° IREMITE 64
149	12/5/87	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	849	21+00 21+80	35 RT. ℄ 55 RT. ℄	PRODUCTION	84	12'	7'	5'		1307 CU. YDS.	2100# MAYNES 15° IREMITE 62
150	12/7/87	BETHANY FALLS	870	18+70-19+50	6° LT. ℄ 210 LT. ℄	PRODUCTION	49	21'	12'	10'		4410 CU. YDS.	3100# MAYNES 55° UNIGEL
151	12/8/87	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	849	18+25-19+75	15 RT. ℄ 35 RT. ℄	PRODUCTION	98	13'	7'	5'		1630 CU. YDS.	2200# MAYNES 110° UNIGEL
152	12/10/87	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	849	19+75-21+50	5 RT. ℄ 15 RT. ℄	PRODUCTION	108	11.5	7'	5'		1720 CU. YDS.	2500# MAYNES 120° UNIGEL
153	12/11/87	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	849	18+25-19+50	5 LT. ℄ 15 RT. ℄	PRODUCTION	92	12'	7'	5		1495 CU. YDS.	2050# MAYNES 50° IREMITE 62
154	12/12/87	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	849	19+50-21+25	5 LT. ℄ 15 RT. ℄	PRODUCTION	114	12'	7'	5'		1840 CU. YDS.	2500# MAYNES 125° UNIGEL
155	12/13/87	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	848	19+50-21+00	5 LT. ℄ 15' LT. ℄	PRODUCTION	97	11	7'	5'		1565 CU. YDS.	2100# MAYNES 100° IREMITE 6
156	1/4/88	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	847	18+00-19+50	15' LT. ℄ 35 LT. ℄	PRODUCTION	100	10'	7'	5'		1244 CU. YDS.	2100# MAYNES #1, 100° IREMI
157	1/6/88	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	847	19+60-20+80	35 LT. ℄ 55 LT. ℄	PRODUCTION	72	10'	7'	5		933 CU. YDS.	1500# MAYNES 100° UNIGEL
158	1/8/88	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	847	18+2 19+60	35 LT ℄ 55 LT. ℄	PRODUCTION	54	10'	7'	5'		726 CU. YDS.	1100# MAYNES 35° IREMITE 62
159	1/11/88	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	847	18+10	35 LT. ℄ 55 LT. ℄	PRODUCTION	48	10'	7'	5		677 CU. YDS.	1050# MAYNES 55° UNIGEL
160	1/12/88	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	847	19+70-20+80	55 LT. ℄ 75 LT. ℄	PRODUCTION	64	10'	7'	5		830 CU. YDS.	1250# MAYNES 70° UNIGEL 23°
161	1/13/88	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	847	19+70-20+70	55 LT. ℄ 105 LT. ℄	PRODUCTION	93	10'	7'	5		1065 CU. YDS.	1800# MAYNES #1, 50° IREMITE
162	1/15/88	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	848	17+30-12+80	55 LT. ℄ 75 LT. ℄	PRODUCTION	117	11.5'	7'	5'		1610 CU. YDS.	2550# MAYNES #1, 130° UNIGE
163	1/16/88	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	848	17+80 19+80	75 LT. ℄ 95 LT. ℄	PRODUCTION	116	11.5'	7'	5'		1610 CU. YDS.	2500# MAYNES #1, 128° UNIGE

VALUE ENGINEERING PAYS

JE SPRINGS DAM BLASTING REPORT

SHOT VOL.	EXPLOSIVES (LBS.)	NO. OF CAPS	DELAYS IN MILLISEC	CARTRIDGE STRENGTH	REMARKS
1460 CU. YDS.	1325# MAYNES 50° UNIGEL 109° UNIGEL	98	0-10	50# SACKS 2¼"X16", 2"X8"	3" HOLES, SPILLWAY 1.0#/CU. YD.
1075 CU. YDS.	1225# MAYNES 16° UNIGEL 100° UNIGEL	90	0-10	50# SACKS 2¼"X16", 2"X8"	3" HOLES, SPILLWAY 1.2#/CU. YD.
3130 CU. YDS.	1950# MAYNES IREMITE #62 UNIGEL	32	0-10	50# SACKS 2¼"X16", 2"X8"	3" HOLES, SPILLWAY 0.66#/CU. YD.
3080 CU. YDS.	2150# MAYNES 40° IRECO #62, 30° UNIGEL	38	0-20	50# SACKS 2¼"X16", 2"X8"	3½" HOLES, SPILLWAY 0.72#/CU. YD.
2415 CU. YDS.	1800# MAYNES 4# IRECO #62, 36° UNIGEL	32	0-8	50# SACKS 2¼"X16", 2"X8"	3½" HOLES, SPILLWAY 0.72#/CU. YD.
038 SQ. FT.	1300' 200GR. 80 E. CORD.	1	1	PRIMACORD	3" HOLES ¼ct ANGLE
532 SQ. FT.	580' 200GR. 45' E. CORD.	1	1	PRIMACORD	3" HOLES ¼ct ANGLE
1377 SQ. FT.	1500' 200GR 125' E. CORD.	1	0	PRIMACORD	3" HOLES ¼ct ANGLE
1288 SQ. FT.	1600' 200GR.	1	0	PRIMACORD	3" HOLE ¼ct ANGLE
700 SQ. FT.	1400' SEISMIC 50' 25GR.	1		PRIMACORD	3" HOLE ¼ct ANGLE
2328 SQ. FT.	2400' SEISMIC 200GR., 225' E. CORD.	2	10.7	PRIMACORD	3½" HOLE ¼ct ANGLE
1232 SQ. FT.	1250' SEISMIC 200GR. 100' E. CORD.	1	0	PRIMACORD	3" HOLE ¼ct ANGLE
1680 SQ. FT.	1300' SEISMIC 200GR. 130' E. CORD.	1	0	PRIMACORD	3" HOLE ¼ct ANGLE
1015	1200# MAYNES 75° UNIGEL	67	0-9	50# SACKS 2"X8"	3" HOLES, SPILLWAY 1.03#/CU. YD.
1307	1200# MAYNES 91° UNIGEL	82	0-10	50# SACKS 2"X8"	3" HOLES, SPILLWAY 0.99#/CU. YD.
1643	1600# MAYNES 50° UNIGEL 110° UNIGEL	100	0-10	50# SACKS 2½"X16", 2"X8"	3" HOLES, SPILLWAY 1.07#/CU. YD.
1466	950# MAYNES 100° UNIGEL 65° UNIGEL	55	0-8	50# SACKS 2½"X16", 2"X8"	3" HOLES, SPILLWAY 0.8#/CU. YD.
2430	40# E.P. 162, 1350# MAYNES, 32# IRECO 62, 26# UNIGEL, 30° UNIGEL	27	0-8	50# SACKS 2¼"X16", 2½"X16", 2"X8"	3½" HOLES, SPILLWAY 0.60#/CU. YD.
4043	2650# MAYNES 80# IRECO 62, 80# UNIGEL, 55# UNIGEL	49	0-10	50# SACKS 2¼"X16", 2½"X16", 2"X8"	3½" HOLES, SPILLWAY 0.68#/CU. YD.
2900	2150# MAYNES 45# UNIGEL 10# IRECO 62	83	0-10	50# SACKS 2"X8", 2¼"X16"	3½" HOLES, SPILLWAY 0.75#/CU. YD.
2900	2000# MAYNES, 30# IRECO 62, 16# UNIGEL, 45# UNIGEL	37	0-12	50# SACKS 2¼"X16", 2½"X16", 2"X8	3½" HOLES, SPILLWAY 0.71#/CU. YD.
1630	1550# MAYNES 105# UNIGEL 6# UNIGEL	93	0-11	50# SACKS 2"X8", 2½"X16"	3" HOLES, SPILLWAY 1.02#/CU. YD.
3010	2300# MAYNES 70# IRECO 62, 6# UNIGEL 45# UNIGEL	38	0-12	50# SACKS 2¼"X16", 2½"X16", 2"X8"	3½" HOLES, SPILLWAY 1.02#/CU. YD.
6022	427.5# MAYNES 85# UNIGEL	75	0-8	50# SACKS	3½" HOLES, SPILLWAY 0.72#/CU. YD.
1170	250# MAYNES 6# UNIGEL	5	0-2	50# SACKS 2"X8"	3½" HOLES, SPILLWAY 0.25#/CU. YD.
3080	1850# MAYNES 100# IRECO 62, 40# UNIGEL	32	0-8	50# SACKS 2¼"X16", 2"X8"	3½" HOLES, SPILLWAY 0.65#/CU. YDS.
2940	2100# MAYNES 24# IRECO 62, 40# UNIGEL	33	0-7	50# SACKS 2¼"X16", 2"X8"	3½" HOLES, SPILLWAY 0.73#/CU. YD.
2940	2400# MAYNES 43# UNIGEL 4# IRECO 62	39	0-9	50# SACKS 2"X8", 2¼"X16"	3½" HOLES, SPILLWAY 0.8#/CU. YD.
1170	575# MAYNES 11# UNIGEL	10	0-5	50# SACKS 2"X8"	3½" HOLES, SPILLWAY 0.5#/CU. YD.
2520	1650# MAYNES 30# UNIGEL	27	0-5	50# SACKS 2"X8"	3½" HOLES, SPILLWAY 0.67#/CU. YD.
3850	2900# MAYNES 55# UNIGEL	51	0-5	50# SACKS 2"X8"	3½" HOLES, SPILLWAY 0.76#/CU. YD.
2310	1300# MAYNES 25# UNIGEL	22	1-5	50# SACKS 2"X8"	3½" HOLES, SPILLWAY 0.6#/CU. YD.
1540	775# MAYNES 15# UNIGEL	14	0-6	50# SACKS 2"X8"	3½" HOLES, SPILLWAY 0.51#/CU. YD.
1360	825# MAYNES 15# UNIGEL	13	0-5	50# SACKS 2"X8"	3½" HOLES, SPILLWAY 0.61#/CU. YD.
1540	775# MAYNES 15# UNIGEL	13	0-7	50# SACKS 2"X8"	3½" HOLES, SPILLWAY 0.51#/CU. YD.
2500	1800# MAYNES 40# UNIGEL	24	0-5	50# SACKS 2"X8"	3½" HOLES, SPILLWAY 0.74#/CU. YD.
3800	2100# MAYNES 50# UNIGEL	46	0-5	50# SACKS 2"X8"	3½" HOLES, SPILLWAY 0.72#/CU. YD.
2160	1350# MAYNES 25# UNIGEL	22	1-7	50# SACKS 2"X8"	3½" HOLES, SPILLWAY 0.63#/CU. YD.
1267	1700# MAYNES 350# IRECO 162, 95# UNIGEL	88	0-10	50# SACKS 2¼"X16", 2"X8"	3½" HOLES, SPILLWAY 1.70#/CU. YD.
1270	1950# MAYNES 262# IRECO 62, 100# UNIGEL	87	0-10	50# SACKS 2¼"X16", 2"X8"	3½" HOLES, SPILLWAY 1.8#/CU. YD.
1067	1650# MAYNES 62# IRECO 62, 90# UNIGEL	71	0-12	50# SACKS 2¼"X16", 2"X8"	3½" HOLES, SPILLWAY 1.70#/CU. YD.
1270	2015# MAYNES 75# IRECO 62, 100# UNIGEL	91	0-12	50# SACKS 2¼"X16", 2"X8"	3½" HOLES, SPILLWAY 1.8#/CU. YD.
1270	2150# MAYNES 48# IRECO 62, 47# UNIGEL	88	0-12	50# SACKS 2¼"X16", 2"X8"	3½" HOLES, SPILLWAY 1.8#/CU. YD.
1270	2150# MAYNES 48# IRECO 62, 97# UNIGEL	88	0-12	50# SACKS 2¼"X16", 2"X8"	3½" HOLES, SPILLWAY 1.8#/CU. YD.
1267	2150# MAYNES 52# IRECO 62, 100# UNIGEL	90	0-15	50# SACKS 2¼"X16", 2"X8"	3½" HOLES, SPILLWAY 1.8#/CU. YD.
3380	2100# MAYNES 125# IRECO 62, 41# UNIGEL	37	0-7	50# SACKS 2¼"X16", 2"X8"	3½" HOLES, SPILLWAY 0.67#/CU. YD.
1270	2075# MAYNES 300# IRECO 62, 100# UNIGEL	89	0-15	50# SACKS 2¼"X16", 2"X8"	3½" HOLES, SPILLWAY 1.8#/CU. YD.
1270	2300# MAYNES 50# IRECO 62, 100# UNIGEL	90	0-14	50# SACKS 2¼"X16", 2"X8"	3½" HOLES, SPILLWAY 1.7#/CU. YD.
1000	1650# MAYNES 85# UNIGEL	78		50# SACKS 2"X8"	3½" HOLES, SPILLWAY 1.7#/CU. YD.
1260	2100# MAYNES 90# UNIGEL	82	0-12	50# SACKS 2"X8"	3½" HOLES, SPILLWAY 1.7#/CU. YD.
1270	2250# MAYNES 100# IREMITE 62, 100# UNIGEL	90	0-12	50# SACKS 2¼"X16", 2"X8"	3½" HOLES, SPILLWAY 1.9#/CU. YD.
844 CU. YDS.	1200# MAYNES 70# UNIGEL	60	1-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.5#/YD. 3½" VERTICAL HOLES SPILLWAY
660 CU. YDS.	2550# MAYNES 50# IREMITE 62, 125# UNIGEL	116	0-9	50# SACKS MAYNES MIX #1, 2¼"X16" IRECO IREMITE 62, 2"X8" IRECO UNIGEL	1.6# YD. 3½" VERTICAL HOLES SPILLWAY
1087 CU. YDS.	3100# MAYNES 250# IREMITE 62, 145# UNIGEL	134	0-15	50# SACKS MAYNES MIX #1, 2¼"X16" IRECO IREMITE 62, 2"X8" IRECO UNIGEL	1.7#/YD. 3½" VERTICAL HOLES SPILLWAY
1244 CU. YDS.	1850# MAYNES 10# IREMITE 62, 90# UNIGEL	80	0-15	50# SACKS MAYNES MIX #1, 2¼"X16" IRECO IREMITE 62, 2"X8" IRECO UNIGEL	1.6#/YD. 3½" VERTICAL HOLES SPILLWAY
1307 CU. YDS.	2100# MAYNES 15# IREMITE 62, 90# UNIGEL	84	0-15	50# SACKS MAYNES MIX #1, 2¼"X16" IRECO IREMITE 62, 2"X8" IRECO UNIGEL	1.7#/YD. 3½" VERTICAL HOLES SPILLWAY
1307 CU. YDS.	2100# MAYNES 15# IREMITE 62, 90# UNIGEL	84	1-12	50# SACKS MAYNES MIX #1, 2¼"X16" IRECO IREMITE 62, 2"X8" IRECO UNIGEL	1.7#/YD. 3½" VERTICAL HOLES SPILLWAY
14 0 CU. YDS.	3100# MAYNES 55# UNIGEL	51	0-10	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	0.7#/YD. 3½" VERTICAL HOLES SPILLWAY
630 CU. YDS.	2200# MAYNES 110# UNIGEL	98	0-15	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.4#/YD. 3½" VERTICAL HOLES SPILLWAY
930 CU. YDS.	2500# MAYNES 120# UNIGEL	108	0-15	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.5#/YD. 3½" VERTICAL HOLES SPILLWAY
495 CU. YDS.	2050# MAYNES 50# IREMITE 62, 101# UNIGEL	92	0-15	50# SACKS MAYNES MIX #1, 2¼"X16" IRECO IREMITE 62, 2"X8" IRECO UNIGEL	1.5#/YD. 3½" VERTICAL HOLES SPILLWAY
840 CU. YDS.	2500# MAYNES 125# UNIGEL	114	0-14	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.4#/YD. 3½" VERTICAL HOLES SPILLWAY
565 CU. YDS.	2100# MAYNES 100# IREMITE 62, 110# UNIGEL	97	0-13	50# SACKS MAYNES MIX #1, 2¼"X16" IRECO IREMITE 62, 2"X8" IRECO UNIGEL	1.5#/YD. 3½" VERTICAL HOLES SPILLWAY
244 CU. YDS.	2100# MAYNES #1, 100# IREMITE 110# UNIGEL	100	0-15	50# SACK MAYNES 2¼" 6" IRECO IREMITE 2"X8" IRECO UNIGEL	3½" HOLE VERTICAL 1.86#/YD. SPILLWAY
933 CU. YDS.	1500# MAYNES 100# UNIGEL	72	0-15	50# SACK MAYNES 2"X8" RECO UNIGEL	1.7#/YD. 3½" HOLE VERTICAL SPILLWAY
726 CU. YDS.	1100# MAYNES 35# IREMITE 62, 60# UNIGEL	54	0-15	50# SACK MAYNES #1, 2¼"X16" IRECO IREMITE 2"X8" IRECO UNIGEL	1.61#/YD. 3½" VERTICAL HOLE SPILLWAY
577 CU. YDS.	1050# MAYNES 45# UNIGEL	48	0-12	50# SACKS MAYNES #1, 2"X8" IRECO UNIGEL	1.66# YD. 3½" VERTICAL HOLES SPILLWAY
1430 CU. YDS.	1250# MAYNES 70# UNIGEL 23# IREMITE	64	0-15	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL 2¼"X16" IRECO IREMITE 62	1.6# YD. 3½" VERTICAL HOLE SPILLWAY
965 CU. YDS.	1800# MAYNES #1, 50# IREMITE 62, 102# UNIGEL	93	0-12	50# SACKS MAYNES MIX 2¼"X16" IRECO IREMITE 2"X8" IRECO UNIGEL	1.8#/YD. 3½" VERTICAL HOLE SPILLWAY
970 CU. YDS.	2550# MAYNES #1, 130# UNIGEL	117	0-15	50# SACKS MAYNES MIX 2"X8" IRECO UNIGEL	1.6#/YD. 3½" VERTICAL HOLE SPILLWAY
6.0 CU. YDS.	2500# MAYNES #1, 128# UNIGEL	116	0 15	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.65#/YD. 3½" VERTICAL HOLE SPILLWAY

Revisions			
Symbol	Descriptions	Date	Approved

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:

Drawn by: V.A.B.

Checked by:

Submitted by:

US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

BLASTING SCHEDULE

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Date: JUNE 1990
Dwg. Nos.
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Plot Scale: S=.0833
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		[illegible] LADORE & SWABAR	748	17+00-17+70	197.0' LT. ℄	PRE-SPLIT	30	13.5'	2'				1377 SQ. FT.	1500' 200GR. 125' E.
24	10/19/8	HUSHPUCKNEY WOODLE CREEK LADORE & SWABAR	849	7	192.0' RT. ℄	PRE-SPLIT	50	14'	2'	-			1288 SQ. FT.	1600' 200GR.
25	1/28/88	HUSHPUCKNEY WOODLE CREEK LADORE & SWABAR	847	17+30-18+70	197.0 LT. ℄	PRE-SPLIT	97	12'	-	-			700 SQ. FT.	1400' SEISMIC 50' 2
26	4/6/88	HUSHPUCKNEY WOODLE CREEK LADORE & SWABAR	843	20+29-19+64	186' LT. ℄ 190' RT ℄	PRE-SPLIT	44	15'	2'	-			2328 SQ. FT.	2400' SEISMIC 200G
27	4/7/88	HUSHPUCKNEY WOODLE CREEK LADORE & SWABAR	844	18+75-19+65	190' LT. ℄ 196 LT.℄	PRE-SPLIT	60	14'	2'	-			1232 SQ. FT.	1250' SEISMIC 200G
108	8/10/87	HUSHPUCKNEY WOODLE CREEK LADORE & SWABAR	850	18+50-18+00	183-100' RT. OF ℄	PRODUCTION	67	11	8'	5'	4'		1680 SQ. FT.	1300' SEISMIC 200G
109	8/12/87	HUSHPUCKNEY WOODLE CREEK LADORE & SWABAR	846	18+00 18+50	100' RT. TO ℄	PRODUCTION	82	10.5'	8'	5'	4'		1015	1200* MAYNES 75*
110	8/17/87	HUSHPUCKNEY WOODLE CREEK LADORE & SWABAR	847	18+00-18+50	℄ TO 125' LT.	PRODUCTION	100	10.5'	8'	5'	-		1307	1200* MAYNES 91*
111	8/20/87	HUSHPUCKNEY WOODLE CREEK LADORE & SWABAR	843	18+70-19+00	184'-52' RT. OF ℄	PRODUCTION	55	12'	8'	5'	4'		1643	1600* MAYNES 50*
112	8/21/87	HUSHPUCKNEY WOODLE CREEK LADORE & SWABAR	870	18+50-19+00	135'-95' LT. OF ℄	PRODUCTION	27	21'	12'	10'	5'		1466	950* MAYNES 100*
113	8/24/87	BETHANY FALLS	870	20+50-20+00	195-62' RT. OF ℄	PRODUCTION	49	21'	12'	10'	5'		2430	40* E.P. (62, 1350* MAYN
114	8/29/87	BETHANY FALLS	870	20+50-20+00	195'-71 RT. OF ℄	PRODUCTION	38	21'	12'	10'	5'		4043	2550* MAYNES 80* IRECO
115	9/2/87	BETHANY FALLS	870	21+00	195'-71' RT. OF ℄	PRODUCTION	37	21'	12'	10'	5'		2900	2150* MAYNES 45*
116	9/2/87	HUSHPUCKNEY WOODLE CREEK LADORE & SWABAR	848	17+00-17+90	160-110' LT. OF ℄	PRODUCTION	93	11'	8'	5'			2900	2000* MAYNES, 30* IRECO
117	9/9/87	BETHANY FALLS	870	-	195-85 RT. OF ℄	PRODUCTION	38	21'	12'	10'	4'		1630	1550* MAYNES 105*
118	9/12/87	BETHANY FALLS	869	22+50-21+50	195'-100' RT. OF ℄	PRODUCTION	75	21'	12'	8'			3010	2300* MAYNES 70* IRECO
118A	9/14/87	BETHANY FALLS	869	22+00-22+58	110-50' RT. OF ℄	PRODUCTION	5	20'	12'	10'			6022	4275* MAYNES 85* UNSCR
119	9/17/87	BETHANY FALLS	870	19+50-20+50	80'-50' RT. OF ℄	PRODUCTION	32	21'	12'	10'			1170	250* MAYNES 6* UNSCR
120	9/21/87	BETHANY FALLS	870	20+50-21+50	45'-60' RT. OF ℄	PRODUCTION	33	21'	12'	10'			3080	1850* MAYNES 100*
121	9/23/87	BETHANY FALLS	870	19+50-20+50	℄ TO 30' RT.	PRODUCTION	38	21'	12'	10'			2940	2100* MAYNES 24*
121A	9/23/87	BETHANY FALLS	870	22+00	30'-80' RT. OF ℄	PRODUCTION	10	21'	10'	10'			2940	2400* MAYNES 43*
122	9/25/87	BETHANY FALLS	870	20+50-21+50	30'-60' RT. OF ℄	PRODUCTION	27	21'	12'	10'			1170	575* MAYNES 11* UN
123	10/1/87	BETHANY FALLS	870	19+00-21+00	20' RT TO 30' LT. OF ℄	PRODUCTION	49	21'	12'	10'	4'		2520	1650* MAYNES 30*
124	10/2/87	BETHANY FALLS	870	18+25-19+00	40'-125' LT. OF ℄	PRODUCTION	22	21'	12'	10'			3850	2900* MAYNES 55*
125	10/5/87	BETHANY FALLS	870	20+50-21+00	15'RT.TO 50'LT.OF ℄	PRODUCTION	13	21'	10'	8'	4'		2310	1300* MAYNES 25*
126	10/6/87	BETHANY FALLS	870	20+00-20+50	℄ ℄	PRODUCTION	13	21'	10'	10'	4'		1540	775* MAYNES 15* UN
127	10/7/87	BETHANY FALLS	870	21+00-20+50	25' LT. TO 30' RT. OF ℄	PRODUCTION	13	21'	10	10'			1360	825* MAYNES 15* UN
128	10/9/87	BETHANY FALLS	870	19+50-20+50	40' LT. TO ℄	PRODUCTION	24	21'	10'	10'			1540	775* MAYNES 15* UN
129	10/13/87	BETHANY FALLS	870	19+00-20+50	25' LT. TO 10' RT. OF ℄	PRODUCTION	46	21'	10'	10'			2500	1800* MAYNES 40* U
130	10/15/87	BETHANY FALLS	870	18+50-18+80	70'-154' LT. OF ℄	PRODUCTION	22	21'	11'	10'	4'		3800	2700* MAYNES 50* U
131	11/2/87	HUSHPUCKNEY WOODLE CREEK LA[illegible] & SWABAR	849	18+30-19+30	83-178' RT. OF ℄	PRODUCTION	87	12'	7'	5'			2160	1350* MAYNES 25* U
132	11/5/87	HUSHPUCKNEY WOODLE CREEK LADORE & SWABAR	849	19+50	80'-170 RT. OF ℄	PRODUCTION	87	12'	7'	5'			1267	1700* MAYNES 350*
133	11/6/87	HUSHPUCKNEY WOODLE CREEK LADORE & SWABAR	849	19+50-19+70	74'-170' RT. OF ℄	PRODUCTION	71	12'	7'	5'			1270	1950* MAYNES 262*
134	11/9/87	HUSHPUCKNEY WOODLE CREEK LADORE & SWABAR	849	19+50-20+00	75'-170' RT. OF ℄	PRODUCTION	91	12'	7'	5'			1067	1650* MAYNES 62* IR
135	11/11/87	HUSHPUCKNEY WOODLE CREEK LADORE & SWABAR	849	19+80-20+20	75'-170' RT OF ℄	PRODUCTION	88	12'	7'	5'			1270	2075* MAYNES 75* IR
136	11/13/87	HUSHPUCKNEY WOODLE CREEK LADORE & SWABAR	849	20+20-20+60	75'-170' RT. OF ℄	PRODUCTION	88	12'	7'	5'			1270	2150* MAYNES 48* IR
137	11/13/87	HUSHPUCKNEY WOODLE CREEK LADORE & SWABAR	849	20+60-21+00	75'-170' RT. OF ℄	PRODUCTION	90	21'	7'	5'			1270	2150* MAYNES 48* IR
138	11/16/87	BETHANY FALLS	870	19+00-20+75	110'-180' LT. OF ℄	PRODUCTION	37	21'	12'	10'	4'		1267	2150* MAYNES 52* IR
139	11/18/87	HUSHPUCKNEY WOODLE CREEK LADORE & SWABAR	849	20+56-21+00	75'-170' RT. OF ℄	PRODUCTION	89	21'	7'	5'	4½'		3380	2100* MAYNES 125*
140	11/19/87	HUSHPUCKNEY WOODLE CREEK LADORE & SWABAR	849	21+00-21+45	75'-170' RT. OF ℄	PRODUCTION	90	12'	7'	5'			1270	2075* MAYNES 300*
141	11/21/87	HUSHPUCKNEY WOODLE CREEK LADORE & SWABAR	848	22+00-22+75	120'-170' RT. OF ℄	PRODUCTION	78	11'	7'	5'			1270	2300* MAYNES 50* IR
142	11/21/87	HUSHPUCKNEY WOODLE CREEK LADORE & SWABAR	849	18+50-19+50	55-75' RT OF ℄	PRODUCTION	82	13'	7'	5'			1000	1650* MAYNES 85* UN
143	11/23/87	HUSHPUCKNEY WOODLE CREEK LADORE & SWABAR	849	21+50-22+00	75'-170' RT. OF ℄	PRODUCTION	90	12'	7'	5'			1260	2100* MAYNES 90* UN
144	11/24/87	HUSHPUCKNEY WOODLE CREEK LADORE & SWABAR	849	22+00	75' RT. ℄ 170' RT. ℄	PRODUCTION	60	12'	7'	5'			1270	2250* MAYNES 100*
145	12/1/87	HUSHPUCKNEY WOODLE CREEK LADORE & SWABAR	849	21+50-22+25	75' RT. ℄ 170' RT. ℄	PRODUCTION	116	11'	7'	5'			844 CU. YDS.	1200* MAYNES 70* UN
146	12/2/87	HUSHPUCKNEY WOODLE CREEK LADORE & SWABAR	849	19+50-21+50	55' RT. ℄ 75' RT. ℄	PRODUCTION	134	11.5'	7'	5'			1660 CU. YDS.	2550* MAYNES 50* IRE
147	12/3/87	HUSHPUCKNEY WOODLE CREEK LADORE & SWABAR	849	7	35' RT. ℄ 55' RT. ℄	PRODUCTION	80	12'	7'	5'			2087 CU. YDS.	3100* MAYNES 250* IR
148	12/4/87	HUSHPUCKNEY WOODLE CREEK LADORE & SWABAR	849	19-25-21+00	35' RT. ℄ 55' RT. ℄	PRODUCTION	84	12'	7'	5'			1244 CU. YDS.	1850* MAYNES 10* IRE
149	12/5/87	HUSHPUCKNEY WOODLE CREEK LADORE & SWABAR	849	21+00-21+80	35' RT. ℄ 55' RT. ℄	PRODUCTION	84	12'	7'	5'			1307 CU. YDS.	2100* MAYNES 15* IRE
150	12/7/87	BETHANY FALLS	870	18+70-19+50	65 LT ℄ 210' LT. ℄	PRODUCTION	49	21'	12'	10'			1307 CU. YDS.	2100* MAYNES 15* IRE
151	12/8/87	HUSHPUCKNEY WOODLE CREEK LADORE & SWABAR	849	18+25-19+75	15' RT. ℄ 35' RT. ℄	PRODUCTION	98	12'	7'	5'			4410 CU. YDS.	3100* MAYNES 55* UN
152	12/10/87	HUSHPUCKNEY WOODLE CREEK LADORE & SWABAR	849	19+75-21+50	5' RT ℄ 15' RT. ℄	PRODUCTION	108	11.5'	7'	5'			1630 CU. YDS.	2200* MAYNES 110* U
153	12/11/87	HUSHPUCKNEY WOODLE CREEK LADORE & SWABAR	849	18+25-19+50	5' LT. ℄ 15' RT. ℄	PRODUCTION	92	12'	7'	5'			1730 CU. YDS.	2500* MAYNES 120* U
154	12/12/87	HUSHPUCKNEY WOODLE CREEK LADORE & SWABAR	849	19+50-21+25	5' LT. ℄ 15 RT. ℄	PRODUCTION	114	12'	7'	5'			1495 CU. YDS.	2050* MAYNES 50* IRE
155	12/13/87	HUSHPUCKNEY WOODLE CREEK LADORE & SWABAR	848	19+50-21+00	5' LT. ℄ 15' LT. ℄	PRODUCTION	97	11'	7'	5'			1840 CU. YDS.	2500* MAYNES 125* U
156	1/4/88	HUSHPUCKNEY WOODLE CREEK LADORE & SWABAR	847	18+00-19+50	15' LT. ℄ 35' LT. ℄	PRODUCTION	100	10'	7'	5'			1565 CU. YDS.	2100* MAYNES 100* IR
157	1/6/88	HUSHPUCKNEY WOODLE CREEK LADORE & SWABAR	847	19+60-20+80	35' LT. ℄ 55' LT. ℄	PRODUCTION	72'	10'	7'	5'			1244 CU. YDS.	2100* MAYNES *1, 100
158	1/8/88	HUSHPUCKNEY WOODLE CREEK LADORE & SWABAR	847	18+2-19+60	35' LT. ℄ 55' LT. ℄	PRODUCTION	54	10'	7'	5'			933 CU. YDS.	1500* MAYNES 100* U
159	1/11/88	HUSHPUCKNEY WOODLE CREEK LADORE & SWABAR	847	18+70	35 LT. ℄ 55 LT. ℄	PRODUCTION	48	10'	7'	5'			726 CU. YDS.	1100* MAYNES 35* IRE
160	1/12/88	HUSHPUCKNEY WOODLE CREEK LADORE & SWABAR	847	19+70-20+80	55' LT ℄ 75' LT. ℄	PRODUCTION	64	10'	7'	5'			677 CU. YDS.	1050* MAYNES 55* UNI
161	1/13/88	HUSHPUCKNEY WOODLE CREEK LADORE & SWABAR	847	19+70-20+70	55' LT. ℄ 105' LT. ℄	PRODUCTION	93	10'	7'	5'			830 CU. YDS.	1250* MAYNES 70* UNI
162	1/15/88	HUSHPUCKNEY WOODLE CREEK LADORE & SWABAR	848	17+80-12+80	55 LT. ℄ 75' LT. ℄	PRODUCTION	117	11.5'	7'	5'			1065 CU. YDS.	1800* MAYNES *1, 50*
163	1/16/88	HUSHPUCKNEY WOODLE CREEK LADORE & SWABAR	849	17+80-19+80	75' LT. ℄ 95' LT. ℄	PRODUCTION	116	11.5'	7'	5'			1670 CU. YDS.	2550* MAYNES *1, 130*
													1610 CU. YDS.	2500* MAYNES *1, 128*

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E SPRINGS DAM BLASTING REPORT

SHOT VOL.	EXPLOSIVES (LBS.)	NO. OF CAPS	DELAYS IN MILL/SEC	CARTRIDGE STRENGTH	REMARKS
1460 CU. YDS.	1325# MAYNES 50# UNIGEL 109# UNIGEL	98	0-10	50# SACKS 2½"X16", 2"X8"	3" HOLES, SPILLWAY 1.0#/CU. YD.
1075 CU. YDS.	1225# MAYNES 16# UNIGEL 100# UNIGEL	90	0-10	50# SACKS 2½"X16", 2"X8"	3" HOLES, SPILLWAY 1.2#/CU. YD.
3130 CU. YDS.	1950# MAYNES IREMITE #62 UNIGEL	32	0-10	50# SACKS 2¼"X16", 2"X8"	3" HOLES, SPILLWAY 0.66#/CU. YD.
3080 CU. YDS.	2150# MAYNES 40# IRECO #62, 30# UNIGEL	38	0-20	50# SACKS 2¼"X16", 2"X8"	3½" HOLES, SPILLWAY 0.72#/CU. YD.
2415 CU. YDS.	1800# MAYNES 4# IRECO #62, 36# UNIGEL	32	0-8	50# SACKS 2¼"X16", 2"X8"	3½" HOLES, SPILLWAY 0.72#/CU. YD.
1038 SQ FT.	1300' 200GR. 80' E. CORD.	1	1	PRIMACORD	3" HOLES ¾ell ANGLE
532 SQ. FT.	580' 200GR. 45' E. CORD.	1	1	PRIMACORD	3" HOLES ¾ell ANGLE
1377 SQ. FT.	1500' 200GR. 125' E. CORD.	1	0	PRIMACORD	3" HOLES ¾ell ANGLE
1288 SQ. FT.	1600' 200GR.	1	0	PRIMACORD	3" HOLE ¾ell ANGLE
700 SQ. FT.	1400' SEISMIC 50' 25GR.	1		PRIMACORD	3" HOLE ¾ell ANGLE
2328 SQ. FT.	2400' SEISMIC 200GR., 225' E. CORD.	2	10.7	PRIMACORD	3½" HOLE ¾ell ANGLE
1232 SQ. FT.	1250' SEISMIC 200GR. 100' E. CORD.	1	0	PRIMACORD	3" HOLE ¾ell ANGLE
1680 SQ. FT.	1300' SEISMIC 200GR. 130' E. CORD.	1	0	PRIMACORD	3" HOLE ¾ell ANGLE
1015	1200# MAYNES 75# UNIGEL	67	0-9	50# SACKS 2"X8"	3" HOLES, SPILLWAY 1.03#/CU. YD.
1307	1200# MAYNES 91# UNIGEL	82	0-10	50# SACKS 2"X8"	3" HOLES, SPILLWAY 0.99#/CU. YD.
1643	1600# MAYNES 50# UNIGEL 110# UNIGEL	100	0-10	50# SACKS 2½"X16", 2"X8"	3" HOLES, SPILLWAY 1.07#/CU. YD.
1466	950# MAYNES 100# UNIGEL 65# UNIGEL	55	0-8	50# SACKS 2½"X16", 2"X8"	3" HOLES, SPILLWAY 0.8#/CU. YD.
2430	40# E.P. 162, 1350# MAYNES, 32# IRECO 62, 26# UNIGEL, 30# UNIGEL	27	0-8	50# SACKS 2¼"X16", 2½"X16", 2"X8"	3½" HOLES, SPILLWAY 0.60#/CU. YD.
4043	2550# MAYNES 80# IRECO 62, 80# UNIGEL 55# UNIGEL	49	0-10	50# SACKS 2¼"X16", 2½"X16", 2"X8"	3½" HOLES, SPILLWAY 0.68#/CU. YD.
2900	2150# MAYNES 45# UNIGEL 10# IRECO 62	83	0-10	50# SACKS 2"X8", 2¼"X16"	3½" HOLES, SPILLWAY 0.75#/CU. YD.
2900	2000# MAYNES, 30# IRECO 62, 16# UNIGEL 45# UNIGEL	37	0-12	50# SACKS 2¼"X16", 2½"X16", 2"X8"	3½" HOLES, SPILLWAY 0.71#/CU. YD.
1630	1550# MAYNES 105# UNIGEL 6# UNIGEL	93	0-11	50# SACKS 2"X8", 2½"X16"	3" HOLES, SPILLWAY 1.02#/CU. YD.
3010	2300# MAYNES 70# IRECO 62, 6# UNIGEL 45# UNIGEL	38	0-12	50# SACKS 2¼"X16", 2½"X16", 2"X8"	3½" HOLES, SPILLWAY 1.02#/CU. YD.
6022	427.5# MAYNES 85# UNIGEL	75	0-8	50# SACKS	3½" HOLES, SPILLWAY 0.72#/CU. YD.
1170	250# MAYNES 6# UNIGEL	5	0-2	50# SACKS 2"X8"	3½" HOLES, SPILLWAY 0.25#/CU. YD.
3080	1850# MAYNES 100# IRECO 62, 40# UNIGEL	32	0-8	50# SACKS 2¼"X16", 2"X8"	3½" HOLES, SPILLWAY 0.65#/CU. YDS.
2940	2100# MAYNES 24# IRECO 62, 40# UNIGEL	33	0-7	50# SACKS 2¼"X16", 2"X8"	3½" HOLES, SPILLWAY 0.73#/CU. YD.
2940	2400# MAYNES 43# UNIGEL 4# IRECO 62	39	0-9	50# SACKS 2"X8", 2¼"X16"	3½" HOLES, SPILLWAY 0.8#/CU. YD.
1170	575# MAYNES 18# UNIGEL	10	0-5	50# SACKS 2"X8"	3½" HOLES, SPILLWAY 0.5#/CU. YD.
2520	1650# MAYNES 30# UNIGEL	27	0-5	50# SACKS 2"X8"	3½" HOLES, SPILLWAY 0.67#/CU. YD.
3850	2900# MAYNES 55# UNIGEL	51	0-5	50# SACKS 2"X8"	3½" HOLES, SPILLWAY 0.76#/CU. YD.
2310	1300# MAYNES 25# UNIGEL	22	1-5	50# SACKS 2"X8"	3½" HOLES, SPILLWAY 0.5#/CU. YD.
1540	775# MAYNES 15# UNIGEL	14	0-6	50# SACKS 2"X8"	3½" HOLES, SPILLWAY 0.51#/CU. YD.
1360	825# MAYNES 15# UNIGEL	13	0-5	50# SACKS 2"X8"	3½" HOLES, SPILLWAY 0.61#/CU. YD.
1540	775# MAYNES 15# UNIGEL	13	0-7	50# SACKS 2"X8"	3½" HOLES, SPILLWAY 0.51#/CU. YD.
2500	1800# MAYNES 40# UNIGEL	24	0-5	50# SACKS 2"X8"	3½" HOLES, SPILLWAY 0.74#/CU. YD.
3800	2700# MAYNES 50# UNIGEL	46	0-5	50# SACKS 2"X8"	3½" HOLES, SPILLWAY 0.72#/CU. YD.
2160	1350# MAYNES 25# UNIGEL	22	1-7	50# SACKS 2"X8"	3½" HOLES, SPILLWAY 0.63#/CU. YD.
1267	1700# MAYNES 350# IRECO 162, 95# UNIGEL	88	0-10	50# SACKS 2¼"X16", 2"X8"	3½" HOLES, SPILLWAY 1.70#/CU. YD.
1270	1950# MAYNES 262# IRECO 62, 100# UNIGEL	87	0-10	50# SACKS 2¼"X16", 2"X8"	3½" HOLES, SPILLWAY 1.8#/CU. YD.
1067	1650# MAYNES 62# IRECO 62, 90# UNIGEL	71	0-12	50# SACKS 2¼"X16", 2"X8"	3½" HOLES, SPILLWAY 1.70#/CU. YD.
1270	2075# MAYNES 75# IRECO 62, 100# UNIGEL	91	0-12	50# SACKS 2¼"X16", 2"X8"	3½" HOLES, SPILLWAY 1.8#/CU. YD.
1270	2150# MAYNES 48# IRECO 62, 47# UNIGEL	88	0-12	50# SACKS 2¼"X16", 2"X8"	3½" HOLES, SPILLWAY 1.8#/CU. YD.
1270	2150# MAYNES 48# IRECO 62, 97# UNIGEL	88	0-12	50# SACKS 2¼"X16", 2"X8"	3½" HOLES, SPILLWAY 1.8#/CU. YD.
1267	2150# MAYNES 52# IRECO 62, 100# UNIGEL	90	0-15	50# SACKS 2¼"X16", 2"X8"	3½" HOLES, SPILLWAY 1.8#/CU. YD.
3380	2100# MAYNES 125# IRECO 62, 41# UNIGEL	37	0-7	50# SACKS 2¼"X16", 2"X8"	3½" HOLES, SPILLWAY 0.67#/CU. YD.
1270	2075# MAYNES 200# IRECO 62, 100# UNIGEL	89	0-15	50# SACKS 2¼"X16", 2"X8"	3½" HOLES, SPILLWAY 1.8#/CU. YD.
1270	2300# MAYNES 50# IRECO 62, 100# UNIGEL	90	0-14	50# SACKS 2¼"X16", 2"X8"	3½" HOLES, SPILLWAY 1.7#/CU. YD.
1000	1650# MAYNES 85# UNIGEL	78		50# SACKS 2"X8"	3½" HOLES, SPILLWAY 1.7#/CU. YD.
1260	2100# MAYNES 90# UNIGEL	82	0-12	50# SACKS 2"X8"	3½" HOLES, SPILLWAY 1.7#/CU. YD.
1270	2250# MAYNES 100# IREMITE 62, 100# UNIGEL	90	0-12	50# SACKS 2¼"X16", 2"X8"	3½" HOLES, SPILLWAY 1.9#/CU. YD.
844 CU. YDS.	1200# MAYNES 70# UNIGEL	60	1-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.5#/YD. 3½" VERTICAL HOLES SPILLWAY
660 CU. YDS.	2550# MAYNES 50# IREMITE 62, 125# UNIGEL	116	0-9	50# SACKS MAYNES MIX #1, 2¼"X16" IRECO IREMITE 62, 2"X8" IRECO UNIGEL	1.6#/YD. 3½" VERTICAL HOLES SPILLWAY
987 CU. YDS.	3100# MAYNES 250# IREMITE 62, 145# UNIGEL	134	0-15	50# SACKS MAYNES MIX #1, 2¼"X16" IRECO IREMITE 62, 2"X8" IRECO UNIGEL	1.7#/YD. 3½" VERTICAL HOLES SPILLWAY
744 CU. YDS.	1350# MAYNES 10# IREMITE 62, 90# UNIGEL	80	0-15	50# SACKS MAYNES MIX #1, 2¼"X16" IRECO IREMITE 62, 2"X8" IRECO UNIGEL	1.8#/YD. 3½" VERTICAL HOLES SPILLWAY
1307 CU. YDS.	2100# MAYNES 15# IREMITE 62, 90# UNIGEL	84	0-15	50# SACKS MAYNES MIX #1, 2¼"X16" IRECO IREMITE 62, 2"X8" IRECO UNIGEL	1.7#/YD. 3½" VERTICAL HOLES SPILLWAY
1267 CU. YDS.	2100# MAYNES 15# IREMITE 62, 90# UNIGEL	84	1-12	50# SACKS MAYNES MIX #1, 2¼"X16" IRECO IREMITE 62, 2"X8" IRECO UNIGEL	1.7#/YD. 3½" VERTICAL HOLES SPILLWAY
4410 CU. YDS.	3100# MAYNES 55# UNIGEL	51	0-10	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	0.7#/YD. 3½" VERTICAL HOLES SPILLWAY
1630 CU. YDS.	2200# MAYNES 110# UNIGEL	98	0-15	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.4#/YD. 3½" VERTICAL HOLES SPILLWAY
1730 CU. YDS.	2500# MAYNES 120# UNIGEL	108	0-15	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.5#/YD. 3½" VERTICAL HOLES SPILLWAY
1495 CU. YDS.	2050# MAYNES 50# IREMITE 62, 101# UNIGEL	92	0-15	50# SACKS MAYNES MIX #1, 2¼"X16" IRECO IREMITE 62, 2"X8" IRECO UNIGEL	1.5#/YD. 3½" VERTICAL HOLES SPILLWAY
1840 CU. YDS.	2500# MAYNES 125# UNIGEL	114	0-14	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.4#/YD. 3½" VERTICAL HOLES SPILLWAY
1565 CU. YDS	2100# MAYNES 100# IREMITE 62, 110# UNIGEL	97	0-13	50# SACKS MAYNES MIX #1, 2¼"X16" IRECO IREMITE 62, 2"X8" IRECO UNIGEL	1.5#/YD. 3½" VERTICAL HOLES SPILLWAY
1744 CU. YDS.	2100# MAYNES #1, 100# IREMITE 110# UNIGEL	100	0-15	50# SACK MAYNES 2¼"X16" IRECO IREMITE 2"X8" IRECO UNIGEL	3½" HOLE VERTICAL 1.86#/YD. SPILLWAY
1533 CU. YDS.	1500# MAYNES 100# UNIGEL	72	0-15	50# SACK MAYNES 2"X8" IRECO UNIGEL	1.71#/YD. 3½" HOLE VERTICAL SPILLWAY
1776 CU. YDS.	1100# MAYNES 35# IREMITE 62, 60# UNIGEL	54	0-15	50# SACK MAYNES #1, 2¼"X16" IRECO IREMITE 2"X8" IRECO UNIGEL	1.61#/YD. 3½" VERTICAL HOLE SPILLWAY
1577 CU. YDS.	1050# MAYNES 55# UNIGEL	48	0-12	50# SACKS MAYNES #1, 2"X8" IRECO UNIGEL	1.66#/YD. 3½" VERTICAL HOLES SPILLWAY
1930 CU. YDS.	1250# MAYNES 70# UNIGEL 23# IREMITE	64	0-15	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL 2¼"X16" IRECO IREMITE 62	1.6#/YD. 3½" VERTICAL HOLE SPILLWAY
1965 CU. YDS.	1800# MAYNES #1, 50# IREMITE 62, 102# UNIGEL	93	0-12	50# SACKS MAYNES MIX 2¼"X16" IRECO IREMITE 2"X8" IRECO UNIGEL	1.8#/YD. 3½" VERTICAL HOLE SPILLWAY
1670 CU. YDS.	2550# MAYNES #1, 130# UNIGEL	117	0-15	50# SACKS MAYNES MIX 2"X8" IRECO UNIGEL	1.6#/YD. 3½" VERTICAL HOLE SPILLWAY
1610 CU. YDS.	2500# MAYNES #1, 128# UNIGEL	116	0-15	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.65#/YD. 3½" VERTICAL HOLE SPILLWAY

Revisions			
Symbol	Descriptions	Date	Approved

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:

Drawn by: V.A.B.

Checked by:

Submitted by:

US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

BLASTING SCHEDULE

Scale: AS SHOWN	Sheet number: 89	Plot Scale: S=.0833	
Date: JUNE 1990		Design File: I100,63)BS4.DGN	
Dwg. No.:		File No.: RBL-2-1309	

PLATE NO. 89

3 2 1

BLUE SPRINGS DAM BLASTIN

SHOT NO.	DATE	GEOLOGIC LOCATION	ELEV.	LOCATION STATION	LOCATION RANGE	PURPOSE	NO. OF HOLES	DEPTH (FT.)	SPACING (FT.)	BURDEN (FT.)	STEM (FT.)	SHOT VOL.	EXPLOSIV
164	1/18/88	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	848	17+80-18+80	95 LT. ℄ 115' LT ℄	PRODUCTION	59	11.5'	7'	5'		894 CU. YDS.	1350# MAYNES 65# UNIGE
165	1/21/88	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	848	18+70-19+45	95' LT. ℄ 115' LT. ℄	PRODUCTION	48	11.5'	7'	5'		716 CU. YDS.	1050# MAYNES 150# IREM
166	1/21/88	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	848	17+70-18+70	115 LT. ℄ 135' LT. ℄	PRODUCTION	60	11.5'	7'	5'		835 CU. YDS.	1110# MAYNES 50# IREMIT
167	1/23/88	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	848	18+70-19+55	115' LT. ℄ 135' LT. ℄	PRODUCTION	48	11.5'	7'	5'		716 CU. YDS.	1200# MAYNES 150# IREM
168	1/23/88	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	848	17+60-18+65	115' LT. ℄ 135' LT ℄	PRODUCTION	48	11.5'	7'	5'		855 CU. YDS.	1350# MAYNES 100# IREM
169	1/25/88	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	849	18+65-19+50	115' LT ℄ 125' LT. ℄	PRODUCTION	45	11.5'	7'	5'		716 CU. YDS.	1050# MAYNES 50# UNIGE
170	1/26/88	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	849	18+10-19+40	140' LT. ℄ 160' LT. ℄	PRODUCTION	62	11.5'	7'	5'		906 CU. YDS.	1400# MAYNES 70# UNIGE
171	1/29/88	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	847	17+50-18+50	160' LT ℄ 185' LT. ℄	PRODUCTION	85	10.0'	7'	5'		1037 CU. YDS.	1400# MAYNES 95# UNIGE
172	2/2/88	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	847	16+00-17+00	160 LT. ℄ 185' LT ℄	PRODUCTION	106	10'	7'	5'		1426 CU. YDS.	1875# MAYNES 75# IREMIT
173	2/3/88	BETHANY FALLS	868	20+50-21+00	?	PRODUCTION	12	21'	10'	10'		1190 CU. YDS.	700# MAYNES 10# UNIGEL
174	2/5/88	BETHANY FALLS	868	19+50-20+50	70' LT. ℄ 120' LT. ℄	PRODUCTION	24	21'	10'	10'		3500 CU. YDS.	1550# MAYNES 27# UNIGE
175	2/9/88	BETHANY FALLS	868	19+50-20+00	110' LT. ℄ 155' LT. ℄	PRODUCTION	32	21'	12'	8'		3584 CU. YDS.	2050# MAYNES 36# UNIGE
176	2/19/88	BETHANY FALLS	868	18+50-19+80	104' LT. ℄ 210' LT. ℄	PRODUCTION	73	21'	12'	8'		5600 CU. YDS.	4675# MAYNES 150# IREM
177	3/1/88	CRITZER PLEASANTON A	829	14+00-19+00	60' RT. ℄ 80 RT. ℄	PRODUCTION	246	4-6.5'	5-7'	4-5'		1385 CU. YDS.	1075#MAYNES 285# UNIGE
178	3/2/88	CRITZER PLEASANTON A	828	18+00-20+50	60' RT. ℄ 80' RT ℄	PRODUCTION	175	4-6.5'	6'	5'		1059 CU. YDS.	850# MAYNES 192# UNIGE
179	3/7/88	CRITZER PLEASANTON A	828	20+50-21+00	85' RT. ℄ 80' LT. ℄	PRODUCTION	45	4'	5'	4'		167 CU. YDS.	50# MAYNES 100# IREMITE
180	3/7/88	CRITZER PLEASANTON A	829	19+20-21+10	40' RT. ℄ 60' RT. ℄	PRODUCTION	136	5.25'	6'	5'		796 CU. YDS.	550# MAYNES 150# UNIGE
181	3/8/88	CRITZER PLEASANTON A	829	15+80-19+20	40' RT. ℄ 60' RT. ℄	PRODUCTION	177	5.7'	6'	5'		1436 CU. YDS.	1300# MAYNES 166# UNIG
182	3/9/88	CRITZER PLEASANTON A	829	14+00-16+85	20' RT. ℄ 40' RT. ℄	PRODUCTION	260	4-6.5'	6'	5'		975 CU. YDS.	850# MAYNES 285# UNIGE
183	3/10/88	CRITZER PLEASANTON A	829	14+00-15+85	20' RT. ℄ 40' RT. ℄	PRODUCTION	138	?	5-6'	4'-5'		685 CU. YDS.	500# MAYNES 158# UNIGE
184	3/11/88	CRITZER PLEASANTON A	829	17+00-19+70	20' RT. ℄ 40' RT. ℄	PRODUCTION	144	5.5'-7'	5'-6'	5'		1340 CU. YDS.	1200# MAYNES 158# UNIG
185	3/12/88	CRITZER PLEASANTON A	828	19+70-20+90	20' RT. ℄ 40' RT. ℄	PRODUCTION	84	5'	6'	5'		444 CU. YDS.	375# MAYNES 93# UNIGEL
186	3/14/88	CRITZER PLEASANTON A	827	21+10-21+50	20' RT. ℄ 60' RT. ℄	PRODUCTION	120	4'	5'	4'		356 CU. YDS.	250# MAYNES 132# UNIGEL
187	3/14/88	CRITZER PLEASANTON A	830	18+00-19+00	4' LT. ℄ 20' LT. ℄	PRODUCTION	62	7.5'	9'	6'		793 CU. YDS.	650# MAYNES 68# UNIGEL
188	3/15/88	CRITZER PLEASANTON A	830	15+75-18+00	5' LT. ℄ 20' RT. ℄	PRODUCTION	170	7'	8'	5'		1640 CU. YDS.	1400# MAYNES 190# UNIG
189	3/16/88	CRITZER PLEASANTON A	828	14+50-15+75	5 LT. ℄ 20' RT. ℄	PRODUCTION	70	5'	5'	5'		277 CU. YDS.	250# MAYNES 80# UNIGEL
190	3/16/88	CRITZER PLEASANTON A	831	16+00-18+50	4' LT. ℄ 30' LT. ℄	PRODUCTION	142	7.5'	8'	6'		1736 CU. YDS.	1400# MAYNES 156# UNIG
191	3/17/88	CRITZER PLEASANTON A	828	14+50-15+75	4' LT. ℄ 30' LT. ℄	PRODUCTION	75	5.5'	6'	5'		400 CU. YDS.	500# MAYNES 83# UNIGEL
192	3/18/88	CRITZER PLEASANTON A	828	14+35-15+00	4' LT. ℄ 30' LT. ℄	PRODUCTION	65	6'	5'	5'		300 CU. YDS.	275# MAYNES 73# UNIGEL
193	3/18/88	CRITZER PLEASANTON A	823	18+30-19+00	20' LT ℄ 45' LT. ℄	PRODUCTION	65	5'	?	5'		1393 CU. YDS.	1150# MAYNES 72# UNIGE
194	3/21/88	CRITZER PLEASANTON A	831	15+80-18+30	20' P ℄ 45' RT. ℄	PRODUCTION	129	5.9'-8.2'	9'	5'		1643.5 CU. YDS.	1475# MAYNES 129# UNIG
195	3/22/88	CRITZER PLEASANTON A	828	14+50-15+80	20' RT. ℄ 45' RT. ℄	PRODUCTION	88	4.5'	9'	5'		541.7 CU. YDS.	350# MAYNES 88# UNIGEL
196	3/22/88	CRITZER PLEASANTON A	831.5'	17+00-18+10	20' RT. ℄ 45' RT. ℄	PRODUCTION	90	8.5'	9'	5'		1338 CU. YDS.	1400# MAYNES 90# UNIGE
197	3/23/88	CRITZER PLEASANTON A	830.6	14+50-15+80	9' LT. ℄ 18' RT. ℄	PRODUCTION	124	6.9'	10'	6'		897 CU. YDS.	1000# MAYNES 124# UNIG
198	3/24/88	CRITZER PLEASANTON A	832.6	15+80-18+80	9' LT. ℄ 27' LT ℄	PRODUCTION	138	9.6'	10'	6'		1660 CU. YDS.	2400# MAYNES 138# UNIGE
199	3/25/88	CRITZER PLEASANTON A	829.5	14+50-15+80	9' LT. ℄ 27' LT. ℄	PRODUCTION	56	6.5'	8'	5'		563 CU. YDS.	500# MAYNES 56# UNIGEL
200	3/25/88	CRITZER PLEASANTON A	831.6	16+75-18+30	27' LT. ℄ 45' LT. ℄	PRODUCTION	80	8.6'	10'	6'		1003 CU. YDS.	1650# MAYNES 80# UNIGEL
201	3/26/88	CRITZER PLEASANTON A	830	14+50-16+75	27' LT. ℄ 45' LT. ℄	PRODUCTION	108	7.2'	9'	6'		1500 CU. YDS.	1250# MAYNES 119# UNIG
202	3/28/88	CRITZER PLEASANTON A	830	16+00-19+00	126' LT. ℄ 156' LT. ℄	PRODUCTION	130	9.2'	9'	6'		3393 CU. YDS.	3325# MAYNES 143# UNIGE
203	3/30/88	CRITZER PLEASANTON A	830	15+00-16+00	126' LT. ℄ 150' LT. ℄	PRODUCTION	116	7'	9'	6'		1322 CU. YDS.	1100# MAYNES 128# UNIG
204	3/31/88	CRITZER PLEASANTON A	828	19+50-20+00	10' RT. ℄ 10' LT. ℄	PRODUCTION	96	5'	6	5'		764 CU. YDS.	675# MAYNES 106# UNIGEL
205	4/4/88	CRITZER PLEASANTON A	827	21+00	10' RT. ℄ 10' LT. ℄	PRODUCTION	28	4.2'	5'	5'		191 CU. YDS.	160# MAYNES 31# UNIGEL
206	4/8/88	MOUND CITY CRITZER PLEASANTON	833	18+25-18+75	30' LT. ℄ 150' LT. ℄	PRODUCTION	141	11	9'	7'		2648 CU. YDS.	2425# MAYNES 155# UNIGE
207	4.9/88	MOUND CITY CRITZER PLEASANTON	830	19+30-20+70	10' LT. ℄ 55' LT. ℄	PRODUCTION	146	6'-8'	8.5'	7'		1578 CU. YDS.	1450# MAYNES 160# UNIGE
208	4/11/88	MOUND CITY CRITZER PLEASANTON	826	20+50-21+30	10' LT. ℄ 60' LT. ℄	PRODUCTION	147	5'	5.5	5'		740 CU. YDS.	550# MAYNES 150# UNIGEL
209	4/12/88	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	846	18+50-18+80	176' LT. ℄ 197' LT. ℄	PRODUCTION	18	11'-14'	10'	7'		554 CU. YDS.	425# MAYNES 23# IREMITE
210	4/13/88	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR MOUND CITY CRITZER PLEASANTON	846	18+80-19+60	84' LT. ℄ 194' LT. ℄	PRODUCTION	69	11'-22'	10'	7'		3120 CU. YDS.	3925# MAYNES 76# UNIGEL
211	4/14/89	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR MOUND CITY CRITZER PLEASANTON	846	19+60-19+90	84' LT. ℄ 194' LT. ℄	PRODUCTION	64	11'-22'	10'	7'		2870 CU. YDS.	3450# MAYNES 80# ?
212	4/15/88	?	?	?	?	PRODUCTION	67	9'-21'	?	?		?	3350# MAYNES 100# IREMI
213	4/20/89	?	?	?	?	PRODUCTION	67	9'-22'	?	?		?	3350# MAYNES 67# IREMIT

VALUE ENGINEERING PAYS

E SPRINGS DAM BLASTING REPORT

SHOT VOL.	EXPLOSIVES (LBS.)	NO. OF CAPS	DELAYS IN MILLISEC	CARTRIDGE STRENGTH	REMARKS
894 CU. YDS.	1350# MAYNES 65# UNIGEL 15# IREMITE	59	0-12	50# SACKS MAYNES MIX #1, 2¾"X16" IRECO IREMITE 62	1.6#/YD. 3½" VERTICAL HOLES SPILLWAY
716 CU YDS.	1050# MAYNES. 150# IREMITE 53# UNIGEL	48	0-11	50# SACKS MAYNES MIX #1, 2¾"X16" IRECO IREMITE 62, 2"X8" IRECO UNIGEL	1.75#/YD. 3½" VERTICAL HOLES SPILLWAY
835 CU. YDS.	110# MAYNES 50# IREMITE 66# UNIGEL	60	0-11	50# SACKS MAYNES MIX #1, 2¾" IRECO UNIGEL	1.46#/YD. 3½" VERTICAL HOLES SPILLWAY
16 CU. YDS.	1200# MAYNES 150# IREMITE 53# UNIGEL	7		50# SACKS MAYNES MIX #1, 2¾"X16" IRECO IREMITE 62, 2"X8" IRECO UNIGEL	1.96#/YD. 3½" VERTICAL HOLES SPILLWAY
855 CU YDS	1350# MAYNES 100# IREMITE 70# UNIGEL	62	0-12	50# SACKS MAYNES MIX #1, 2¾"X16" IRECO IREMITE 62, 2"X8" IRECO UNIGEL	1.77#/YD. 3½" VERTICAL HOLES SPILLWAY
6 CU. YDS.	1050# MAYNES 50# UNIGEL	45	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.5#/YD. 3½" VERTICAL HOLES SPILLWAY
906 CU. YDS.	1400# MAYNES 70# UNIGEL	62	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.6#/YD. 3½" VERTICAL HOLES SPILLWAY
1037 CU. YDS.	1400# MAYNES 95# UNIGEL	85	0-14	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.44#/YD. 3½" VERTICAL HOLES SPILLWAY
426 CU. YDS.	1875# MAYNES 75# IREMITE 120# UNIGEL	106	0-12	50# SACKS MAYNES MIX #1, 2¾"X16" IRECO IREMITE 62, 2"X8" IRECO UNIGEL	1.45#/YD. 3½" VERTICAL HOLES SPILLWAY
90 CU. YDS.	700# MAYNES 10# UNIGEL	12	0-6	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	0.6#/YD. 3½" VERTICAL HOLES SPILLWAY
3500 CU. YDS.	1550# MAYNES 27# UNIGEL	26	0-8	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	0.5#/YD. 3½" VERTICAL HOLES SPILLWAY
3584 CU. YDS.	2050# MAYNES 36# UNIGEL	33	0-7	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	0.58#/YD. 3½" VERTICAL HOLES SPILLWAY
5600 CU. YDS.	4875# MAYNES 150# IREMITE 80# UNIGEL	81	0-11	50# SACKS MAYNES MIX #1, 2¾"X16" IRECO IREMITE 62, 2"X8" IRECO IREMITE	0.91#/YD. 3½" VERTICAL HOLES SPILLWAY
1385 CU. YDS.	1075#MAYNES 285# UNIGEL	246	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	0.98#/YD. 3½" VERTICAL HOLES SPILLWAY
1059 CU. YDS.	850# MAYNES 192# UNIGEL	175	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	0.92#/YD. 3½" VERTICAL HOLES SPILLWAY
167 CU. YDS.	50# MAYNES 100# IREMITE	45	0-9	50# SACKS MAYNES MIX #1, 2¾"X16" IRECO IREMITE 62	0.9#/YD. 3½" VERTICAL HOLES SPILLWAY
796 CU. YDS.	550# MAYNES 150# UNIGEL	136	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	0.88#/YD. 3½" VERTICAL HOLES SPILLWAY
436 CU. YDS.	1300# MAYNES 166# UNIGEL	177	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1#/YD. 3½" VERTICAL HOLES SPILLWAY
475 CU. YDS.	850# MAYNES 285# UNIGEL	260	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.2#/YD. 3½" VERTICAL HOLES SPILLWAY
685 CU YDS.	500# MAYNES 158# UNIGEL	138	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	0.9#/YD. 3½" VERTICAL HOLES SPILLWAY
340 CU. YDS.	1200# MAYNES 158# UNIGEL	144	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.01#/YD. 3½" VERTICAL HOLES SPILLWAY
444 CU. YDS.	375# MAYNES 93# UNIGEL	84	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.05#/YD. 3½" VERTICAL HOLES SPILLWAY
356 CU. YDS	250# MAYNES 132# UNIGEL	120	0-9	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.07#/YD. 3½" VERTICAL HOLES SPILLWAY
793 CU. YDS.	650# MAYNES 68# UNIGEL	62	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	0.9#/YD. 3½" VERTICAL HOLES SPILLWAY
640 CU. YDS.	1400# MAYNES 190# UNIGEL	170	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	0.95#/YD. 3½" VERTICAL HOLES SPILLWAY
277 CU. YDS.	250# MAYNES 80# UNIGEL	7		50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.2#/YD. 3½" VERTICAL HOLES SPILLWAY
736 CU. YDS.	1400# MAYNES 156# UNIGEL	142	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	0.9#/YD. 3½" VERTICAL HOLES SPILLWAY
400 CU. YDS.	500# MAYNES 83# UNIGEL	75	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.45#/YD. 3½" VERTICAL HOLES SPILLWAY
300 CU. YDS.	275# MAYNES 73# UNIGEL	65	0-10	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.16#/YD. 3½" VERTICAL HOLES SPILLWAY
393 CU. YDS.	1150# MAYNES 72# UNIGEL	65	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.14#/YD. 3½" VERTICAL HOLES SPILLWAY
1435 CU. YDS.	1475# MAYNES 129# UNIGEL	129	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	0.98#/YD. 3½" VERTICAL HOLES SPILLWAY
417 CU. YDS.	350# MAYNES 88# UNIGEL	88	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	0.81#/YD. 3½" VERTICAL HOLES SPILLWAY
338 CU. YDS.	1400# MAYNES 90# UNIGEL	90	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.11#/YD. 3½" VERTICAL HOLES SPILLWAY
197 CU. YDS.	1000# MAYNES 124# UNIGEL	124	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.25#/YD. 3½" VERTICAL HOLES SPILLWAY
660 CU. YDS.	2400# MAYNES 138# UNIGEL	138	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.52#/YD. 3½" VERTICAL HOLES SPILLWAY
463 CU. YDS.	500# MAYNES 56# UNIGEL	56	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	0.98#/YD. 3½" VERTICAL HOLES SPILLWAY
803 CU. YDS.	1650# MAYNES 80# UNIGEL	80	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.72#/YD. 3½" VERTICAL HOLES SPILLWAY
500 CU. YDS.	1250# MAYNES 119# UNIGEL	108	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	0.91#/YD. 3½" VERTICAL HOLES SPILLWAY
393 CU. YDS.	3325# MAYNES 143# UNIGEL	130	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.02#/YD. 3½" VERTICAL HOLES SPILLWAY
322 CU. YDS.	1100# MAYNES 128# UNIGEL	116	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	0.93#/YD. 3½" VERTICAL HOLES SPILLWAY
64 CU YDS.	675# MAYNES 106# UNIGEL	96	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.02#/YD. 3½" VERTICAL HOLES SPILLWAY
91 CU. YDS.	160# MAYNES 31# UNIGEL	28	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.02#/YD. 3½" VERTICAL HOLES SPILLWAY
1548 CU. YDS.	2425# MAYNES 155# UNIGEL 25# IREMITE	141	0-14	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL 2¾"X16" IRECO IREMITE 62	0.98#/YD. 3½" VERTICAL HOLES SPILLWAY
8 CU. YDS.	1450# MAYNES 160# UNIGEL 15# IREMITE	146	0-15	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL 2¾"X16" IRECO IREMITE 62	1.02#/YD. 3½" VERTICAL HOLES SPILLWAY
4[illegible] CU. YDS.	550# MAYNES 150# UNIGEL	147	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.05#/YD. 3½" VERTICAL HOLES SPILLWAY
14 CU. YDS.	425# MAYNES 23# IREMITE 20# UNIGEL	18	0-10	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL 2¾"X16" IRECO IREMITE 62	0.84#/YD. 3½" VERTICAL HOLES SPILLWAY
CU. YDS.	3925# MAYNES 76# UNIGEL 15# IREMITE	69	0-10	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL 2¾"X16" IRECO IREMITE 62	1.3#/YD. 3½" VERTICAL HOLES SPILLWAY
70 CU. YDS.	3450# MAYNES 80# ?	64	0-11	50# SACKS MAYNES MIX #1	1.2#/YD. 3½" VERTICAL HOLES SPILLWAY
?	3350# MAYNES 100# IREMITE 67# UNIGEL	67	0-12	50# SACKS MAYNES MIX #1, 2¾"X16" IRECO IREMITE 62, 2"X8" IRECO UNIGEL	3½" VERTICAL HOLES SPILLWAY
?	3350# MAYNES 67# IREMITE 62	67	1-10	50# SACKS MAYNES MIX #1, 2"X8" IRECO IREMITE 62	3½" VERTICAL HOLES SPILLWAY

Revisions			
Symbol	Descriptions	Date	Approved

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:

Drawn by: V.A.B.

Checked by:

Submitted by:

US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

BLASTING SCHEDULE

Scale: AS SHOWN	Sheet number: 90	Plot Scale: S=.0833	
Dates: JUNE 1990		Design File: E100,633BS5.DGN	
Dwg. No.:		File No.: RBL-2-1310	

PLATE NO. 90

168	1/23/88	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	848	17+60-18+65	5' LT. ℄ 135' LT. ℄	PRODUCTION	48	11.5'	7'	5'		716 CU. YDS.	1200* MAYNES
169	1/25/88	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	849	18+65-19+50	115 LT. ℄ 125' LT. ℄	PRODUCTION	45	11.5'	7'	5'		855 CU. YDS.	1350* MAYNES
170	1/26/88	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	849	18+10-19+40	140' LT. ℄ 160' LT ℄	PRODUCTION	62	11.5'	7'	5'		716 CU. YDS.	1050* MAYNES
171	1/29/88	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	847	17+50-18+50	160' LT. ℄ 185' LT. ℄	PRODUCTION	85	10.0'	7'	5'		906 CU. YDS.	1400* MAYNES
172	2/2/88	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	847	16+00-17+00	160 LT. ℄ 185' LT ℄	PRODUCTION	106	10'	7'	5'		1037 CU. YDS.	1400* MAYNES
173	2/3/88	BETHANY FALLS	868	20+50-21+00	?	PRODUCTION	12	21'	10'	10'		1426 CU. YDS.	1835* MAYNES
174	2/5/88	BETHANY FALLS	868	19+50-20+50	70' LT. ℄ 120' LT. ℄	PRODUCTION	24	21'	10'	10'		1190 CU. YDS.	700* MAYNES
175	2/9/88	BETHANY FALLS	868	19+50-20+00	110' LT. ℄ 155' LT. ℄	PRODUCTION	32	21'	12'	8'		3500 CU. YDS.	1550* MAYNES
176	2/19/88	BETHANY FALLS	868	18+50-19+80	104' LT. ℄ 210' LT. ℄	PRODUCTION	73	21	12'	8'		3584 CU. YDS.	2050* MAYNES
177	3/1/88	CRITZER PLEASANTON A	829	14+00-19+00	60' RT. ℄ 80' RT. ℄	PRODUCTION	246	4-6.5'	5-7'	4-5'		5600 CU. YDS.	4875* MAYNES
178	3/2/88	CRITZER PLEASANTON A	828	18+00-20+50	60' RT. ℄ 80' RT. ℄	PRODUCTION	175	4-6.5'	6'	5'		1385 CU. YDS.	1075*MAYNES
179	3/7/88	CRITZER PLEASANTON A	828	20+50-21+00	85' RT. ℄ 80' LT. ℄	PRODUCTION	45	4'	5'	4'		1059 CU. YDS.	850* MAYNES
180	3/7/88	CRITZER PLEASANTON A	829	19+20-21+10	40' RT. ℄ 60' RT. ℄	PRODUCTION	136	5.25'	6'	5'		167 CU YDS.	50* MAYNES
181	3/8/88	CRITZER PLEASANTON A	829	15+80-.9+20	40' RT. ℄ 60' RT. ℄	PRODUCTION	177	5.7'	6'	5'		796 CU. YDS.	550* MAYNES
182	3/9/88	CRITZER PLEASANTON A	829	14+00-16+85	20' RT. ℄ 40' RT. ℄	PRODUCTION	260	4-6.5'	6'	5'		1436 CU. YDS.	1300* MAYNES
183	3/10/88	CRITZER PLEASANTON A	829	14+00-15+85	20' RT. ℄ 40' RT. ℄	PRODUCTION	139	?	5-6'	4'-5'		975 CU. YDS.	850* MAYNES
184	3/11/88	CRITZER PLEASANTON A	829	17+00-19+10	20' RT. ℄ 40' RT. ℄	PRODUCTION	144	5.5'-7'	5'-6'	5'		685 CU. YDS.	500* MAYNES
185	3/12/88	CRITZER PLEASANTON A	828	19+70-20+90	20' RT. ℄ 40' RT. ℄	PRODUCTION	84	5'	6'	5'		1340 CU. YDS.	1200* MAYNES
186	3/14/88	CRITZER PLEASANTON A	827	21+10-21+50	20' RT. ℄ 60' RT. ℄	PRODUCTION	120	4'	5'	4'		444 CU. YDS.	375* MAYNES
187	3/14/88	CRITZER PLEASANTON A	830	18+00-19+00	4' LT. ℄ 20' LT. ℄	PRODUCTION	62	7.5'	9'	6'		356 CU. YDS.	250* MAYNES
188	3/15/58	CRITZER PLEASANTON A	830	15+75-18+00	5' LT. ℄ 20' RT. ℄	PRODUCTION	170	7'	8'	5'		793 CU. YDS.	650* MAYNES
189	3/16/88	CRITZER PLEASANTON A	828	14+50-15+75	5' LT. ℄ 20' RT. ℄	PRODUCTION	70	5'	5'	5'		1640 CU. YDS.	1400* MAYNES
190	3/16/88	CRITZER PLEASANTON A	831	16+00-18+50	4' LT. ℄ 30' LT. ℄	PRODUCTION	142	7.5'	8'	6'		277 CU. YDS.	250* MAYNES
191	3/17/88	CRITZER PLEASANTON A	828	14+50-15+75	4' LT. ℄ 30' LT. ℄	PRODUCTION	75	5.5'	6'	5'		1736 CU. YDS.	1400* MAYNES
192	3/18/88	CRITZER PLEASANTON A	828	14+35-15+00	4' LT. ℄ 30' LT. ℄	PRODUCTION	65	6'	5'	5'		400 CU. YDS.	500* MAYNES
193	3/18/88	CRITZER PLEASANTON A	823	18+30-19+00	20' LT. ℄ 45' LT. ℄	PRODUCTION	65	5'	?	5'		300 CU. YDS.	275* MAYNES
194	3/21/88	CRITZER PLEASANTON A	831	15+80-18+00	20' RT. ℄ 45' RT. ℄	PRODUCTION	129	5.9'-8.2'	9'	5'		1393 CU. YDS.	1150* MAYNES
195	3/22/88	CRITZER PLEASANTON A	828	14+50-15+80	20' RT. ℄ 45' RT. ℄	PRODUCTION	88	4.5'	9'	5'		1643.5 CU. YDS.	1475* MAYNES
196	3/22/88	CRITZER PLEASANTON A	831.5'	17+00-18+70	20' RT. ℄ 45' RT. ℄	PRODUCTION	90	8.5'	9'	5'		541.7 CU. YDS.	350* MAYNES
197	3/23/88	CRITZER PLEASANTON A	830.6	14+50-15+80	9' LT. ℄ 18' RT. ℄	PRODUCTION	124	6 9'	10'	6'		1338 CU. YDS.	1400* MAYNES
198	3/24/88	CRITZER PLEASANTON A	832.6	15+80-18+80	9' LT. ℄ 27' LT. ℄	PRODUCTION	138	9 6'	10'	6'		897 CU. YDS.	1000* MAYNES
199	3/25/88	CRITZER PLEASANTON A	829.5	14+50-15+80	9' LT. ℄ 27' LT. ℄	PRODUCTION	56	6.5'	8'	5'		1660 CU. YDS.	2400* MAYNES
200	3/25/88	CRITZER PLEASANTON A	831.6	16+75-18+50	27' LT. ℄ 45' LT. ℄	PRODUCTION	80	8 6'	10'	6'		563 CU. YDS.	500* MAYNES
201	3/26/88	CRITZER PLEASANTON A	830	14+50-16+75	27 LT. ℄ 45' LT. ℄	PRODUCTION	108	7.2'	9'	6'		1003 CU. YDS.	1650* MAYNES
202	3/28/88	CRITZER PLEASANTON A	830	16+00-19+00	126' LT. ℄ 156 LT. ℄	PRODUCTION	130	9.2'	9'	6'		1500 CU. YDS	1250* MAYNES
203	3/30/88	CRITZER PLEASANTON A	830	15+00-16+00	126' LT. ℄ 150' LT. ℄	PRODUCTION	116	7'	9'	6'		3393 CU. YDS.	3325* MAYNES
204	3/31/88	CRITZER PLEASANTON A	828	19+50-20+00	10' RT. ℄ 10' LT. ℄	PRODUCTION	96	5'	6'	5'		1322 CU. YDS.	1100* MAYNES
205	4/4/88	CRITZER PLEASANTON A	827	21+00	10' RT. ℄ 10 LT. ℄	PRODUCTION	28	4.2'	5'	5'		764 CU. YDS.	675* MAYNES
206	4/8/88	MOUND CITY CRITZER PLEASANTON	833	18+25-18+75	30' LT. ℄ 150' LT. ℄	PRODUCTION	141	11'	9'	7'		191 CU. YDS.	160* MAYNES
207	4/9/88	MOUND CITY CRITZER PLEASANTON	830	19+30-20+70	10' LT. ℄ 55' LT. ℄	PRODUCTION	146	6'-8'	8.5'	7'		2648 CU. YDS.	2425* MAYNES
208	4/11/88	MOUND CITY CRITZER PLEASANTON	826	20+50-21+30	10' LT. ℄ 60' LT. ℄	PRODUCTION	147	5'	5.5'	5'		1578 CU. YDS.	1450* MAYNES
209	4/12/88	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR	846	18+50-18+80	176' LT. ℄ 197' LT. ℄	PRODUCTION	18	11'-14'	10'	7'		740 CU. YDS.	550* MAYNES
210	4/13/88	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR MOUND CITY CRITZER PLEASANTON	846	18+80-19+60	84' LT. ℄ 194' LT. ℄	PRODUCTION	69	11'-22'	10'	7'		554 CU. YDS. 3120 CU. YDS.	425* MAYNES 3925* MAYNES
211	4/14/88	HUSHPUCKNEY MIDDLE CREEK LADORE & SWABAR MOUND CITY CRITZER PLEASANTON	846	19+60-19+90	84' LT. ℄ 194' LT. ℄	PRODUCTION	64	11'-22'	10'	7'		2870 CU. YDS.	3450* MAYNES
212	4/15/88	?	?	?	?	PRODUCTION	67	9'-21'	?	?		?	3350* MAYNES
213	4/20/88	?	?	?	?	PRODUCTION	67	9'-22'	?	?		?	3350* MAYNES

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					REMARKS
894 CU. YDS.	1350# MAYNES 65# UNIGEL 15# IREMITE	59	0-12	50# SACKS MAYNES MIX #1, 2¼"X16" IRECO IREMITE 62	1.6#/YD 3½" VERTICAL HOLES SPILLWAY
716 CU. YDS.	1050# MAYNES 150# IREMITE 53# UNIGEL	48	0-11	50# SACKS MAYNES MIX #1, 2¼"X16" IRECO IREMITE 62, 2"X8" IRECO UNIGEL	1.75#/YD. 3½" VERTICAL HOLES SPILLWAY
835 CU. YDS.	110# MAYNES 50# IREMITE 66# UNIGEL	60	0-11	50# SACKS MAYNES MIX #1, 2¼" IRECO UNIGEL	1.46#/YD. 3½" VERTICAL HOLES SPILLWAY
716 CU. YDS.	1200# MAYNES 150# IREMITE 53# UNIGEL	7		50# SACKS MAYNES MIX #1, 2¼"X16" IRECO IREMITE 62, 2"X8" IRECO UNIGEL	1.96#/YD. 3½" VERTICAL HOLES SPILLWAY
855 CU. YDS.	1350# MAYNES 100# IREMITE 70# UNIGEL	62	0-12	50# SACKS MAYNES MIX #1, 2¼"X16" IRECO IREMITE 62, 2"X8" IRECO UNIGEL	1.77#/YD. 3½" VERTICAL HOLES SPILLWAY
716 CU. YDS.	1050# MAYNES 50# UNIGEL	45	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.5#/YD. 3½" VERTICAL HOLES SPILLWAY
906 CU. YDS.	1400# MAYNES 70# UNIGEL	62	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.6#/YD. 3½" VERTICAL HOLES SPILLWAY
1037 CU. YDS.	1400# MAYNES 95# UNIGEL	85	0-14	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.44#/YD. 3½" VERTICAL HOLES SPILLWAY
1426 CU. YDS.	1875# MAYNES 75# IREMITE 20# UNIGEL	106	0-12	50# SACKS MAYNES MIX #1, 2¼"X16" IRECO IREMITE 62, 2"X8" IRECO UNIGEL	1.45#/YD. 3½" VERTICAL HOLES SPILLWAY
1190 CU. YDS.	700# MAYNES 10# UNIGEL	12	0-6	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	0.6#/YD. 3½" VERTICAL HOLES SPILLWAY
3500 CU. YDS.	1550# MAYNES 27# UNIGEL	26	0-8	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	0.5#/YD. 3½" VERTICAL HOLES SPILLWAY
3584 CU. YDS.	2050# MAYNES 36# UNIGEL	33	0-7	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	0.58#/YD. 3½" VERTICAL HOLES SPILLWAY
5600 CU. YDS.	4875# MAYNES 150# IREMITE 80# UNIGEL	81	0-11	50# SACKS MAYNES MIX #1, 2¼"X16" IRECO IREMITE 62, 2"X8" IRECO IREMITE	0.91#/YD. 3½" VERTICAL HOLES SPILLWAY
1385 CU. YDS.	1075#MAYNES 285# UNIGEL	246	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	0.98#/YD. 3½" VERTICAL HOLES SPILLWAY
1059 CU. YDS.	850# MAYNES 192# UNIGEL	175	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	0.92#/YD. 3½" VERTICAL HOLES SPILLWAY
167 CU. YDS.	50# MAYNES 100# IREMITE	45	0-9	50# SACKS MAYNES MIX #1, 2¼"X16" IRECO IREMITE 62	0.9#/YD. 3½" VERTICAL HOLES SPILLWAY
796 CU. YDS.	550# MAYNES 150# UNIGEL	136	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	0.88#/YD. 3½" VERTICAL HOLES SPILLWAY
1436 CU. YDS.	1300# MAYNES 166# UNIGEL	177	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1#/YD. 3½" VERTICAL HOLES SPILLWAY
975 CU. YDS.	850# MAYNES 285# UNIGEL	260	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.2#/YD. 3½" VERTICAL HOLES SPILLWAY
685 CU. YDS.	500# MAYNES 158# UNIGEL	138	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	0.9#/YD. 3½" VERTICAL HOLES SPILLWAY
1340 CU. YDS.	1200# MAYNES 158# UNIGEL	144	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.01#/YD. 3½" VERTICAL HOLES SPILLWAY
444 CU. YDS.	375# MAYNES 93# UNIGEL	84	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.05#/YD. 3½" VERTICAL HOLES SPILLWAY
356 CU. YDS.	250# MAYNES 132# UNIGEL	120	0-9	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.07#/YD. 3½" VERTICAL HOLES SPILLWAY
793 CU. YDS.	650# MAYNES 68# UNIGEL	62	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	0.9#/YD. 3½" VERTICAL HOLES SPILLWAY
1640 CU. YDS.	1400# MAYNES 190# UNIGEL	170	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	0.95#/YD. 3½" VERTICAL HOLES SPILLWAY
277 CU. YDS.	250# MAYNES 80# UNIGEL	7		50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.2#/YD 3½" VERTICAL HOLES SPILLWAY
1736 CU. YDS.	1400# MAYNES 156# UNIGEL	142	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	0.9#/YD. 3½" VERTICAL HOLES SPILLWAY
400 CU. YDS.	500# MAYNES 83# UNIGEL	75	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.45#/YD. 3½" VERTICAL HOLES SPILLWAY
300 CU. YDS.	215# MAYNES 73# UNIGEL	65	0-10	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.16#/YD. 3½" VERTICAL HOLES SPILLWAY
1393 CU. YDS.	1150# MAYNES 72# UNIGEL	65	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.14#/YD. 3½" VERTICAL HOLES SPILLWAY
1643.5 CU. YDS.	1475# MAYNES 129# UNIGEL	129	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	0.98#/YD. 3½" VERTICAL HOLES SPILLWAY
541.7 CU. YDS.	350# MAYNES 88# UNIGEL	88	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	0.81#/YD. 3½" VERTICAL HOLES SPILLWAY
1338 CU. YDS.	1400# MAYNES 90# UNIGEL	90	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.11#/YD. 3½" VERTICAL HOLES SPILLWAY
897 CU. YDS.	1000# MAYNES 124# UNIGEL	124	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.25#/YD. 3½" VERTICAL HOLES SPILLWAY
1660 CU. YDS.	2400# MAYNES 138# UNIGEL	138	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.52#/YD. 3½" VERTICAL HOLES SPILLWAY
563 CU. YDS.	560# MAYNES 56# UNIGEL	56	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	0.98#/YD. 3½" VERTICAL HOLES SPILLWAY
1003 CU. YDS.	1650# MAYNES 80# UNIGEL	80	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.72#/YD. 3½" VERTICAL HOLES SPILLWAY
1500 CU. YDS.	1250# MAYNES 119# UNIGEL	108	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	0.91#/YD. 3½" VERTICAL HOLES SPILLWAY
3393 CU. YDS.	3325# MAYNES 143# UNIGEL	130	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.02#/YD. 3½" VERTICAL HOLES SPILLWAY
1222 CU. YDS.	1100# MAYNES 128# UNIGEL	116	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	0.93#/YD. 3½" VERTICAL HOLES SPILLWAY
764 CU. YDS.	675# MAYNES 106# UNIGEL	96	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.02#/YD. 3½" VERTICAL HOLES SPILLWAY
191 CU. YDS.	160# MAYNES 31# UNIGEL	28	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.02#/YD. 3½" VERTICAL HOLES SPILLWAY
2648 CU. YDS.	2425# MAYNES 155# UNIGEL 25# IREMITE	141	0-14	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL 2¼"X16" IRECO IREMITE 62	0.98#/YD. 3½" VERTICAL HOLES SPILLWAY
1578 CU. YDS.	1450# MAYNES 160# UNIGEL 15# IREMITE	146	0-15	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL 2¼"X16" IRECO IREMITE 62	1.02#/YD. 3½" VERTICAL HOLES SPILLWAY
740 CU. YDS.	550# MAYNES 150# UNIGEL	147	0-12	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL	1.05#/YD. 3½" VERTICAL HOLES SPILLWAY
554 CU. YDS.	425# MAYNES 23# IREMITE 20# UNIGEL	18	0-10	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL 2¼"X16" IRECO IREMITE 62	0.84#/YD. 3½" VERTICAL HOLES SPILLWAY
5120 CU. YDS.	3925# MAYNES 76# UNIGEL 15# IREMITE	69	0-10	50# SACKS MAYNES MIX #1, 2"X8" IRECO UNIGEL 2¼"X16" IRECO IREMITE 62	1.3#/YD. 3½" VERTICAL HOLES SPILLWAY
7870 CU. YDS.	3450# MAYNES 80# ?	64	0-11	50# SACKS MAYNES MIX #1	1.2#/YD. 3½" VERTICAL HOLES SPILLWAY
?	3350# MAYNES 100# IREMITE 67# UNIGEL	67	0-12	50# SACKS MAYNES MIX #1, 2¼"X16" IRECO IREMITE 62, 2"X8" IRECO UNIGEL	3½" VERTICAL HOLES SPILLWAY
?	3350# MAYNES 67# IREMITE 62	67	1-10	50# SACKS MAYNES MIX #1, 2"X8" IRECO IREMITE 62	3½" VERTICAL HOLES SPILLWAY

Revisions			
Symbol	Descriptions	Date	Approved

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
KANSAS CITY, MISSOURI

Designed by:

Drawn by: V.A.B.

Checked by:

Submitted by:

US Army Corps of Engineers

EAST FORK LITTLE BLUE RIVER, MISSOURI
BLUE SPRINGS LAKE
CONSTRUCTION FOUNDATION REPORT

BLASTING SCHEDULE

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