

STATE OF OHIO  
DEPARTMENT OF HIGHWAYS  
**HOL-62-(10.00-14.10)**  
KILLBUCK TOWNSHIP  
HOLMES COUNTY

**S-141(6)**

FED. RD. DIVISION	STATE	PROJECT	1 126
2	OHIO		

HOL-62-(10.00-14.10)

**CONVENTIONAL SIGNS**

COUNTY LINE	-----
TOWNSHIP LINE	-----
SECTION LINE	-----
CORPORATION LINE	-----
CENTER LINE	-----
PROPERTY LINE	-----
POLE LINE	-----
FENCE LINE	-----
RAIL ROADS	-----
GUARD RAIL	-----
DRAIN PIPE	-----

TELEPHONE & ELECTRIC	⊕
NEW	.....
OLD	.....
NEW	-----
OLD	-----

**INDEX OF SHEETS**

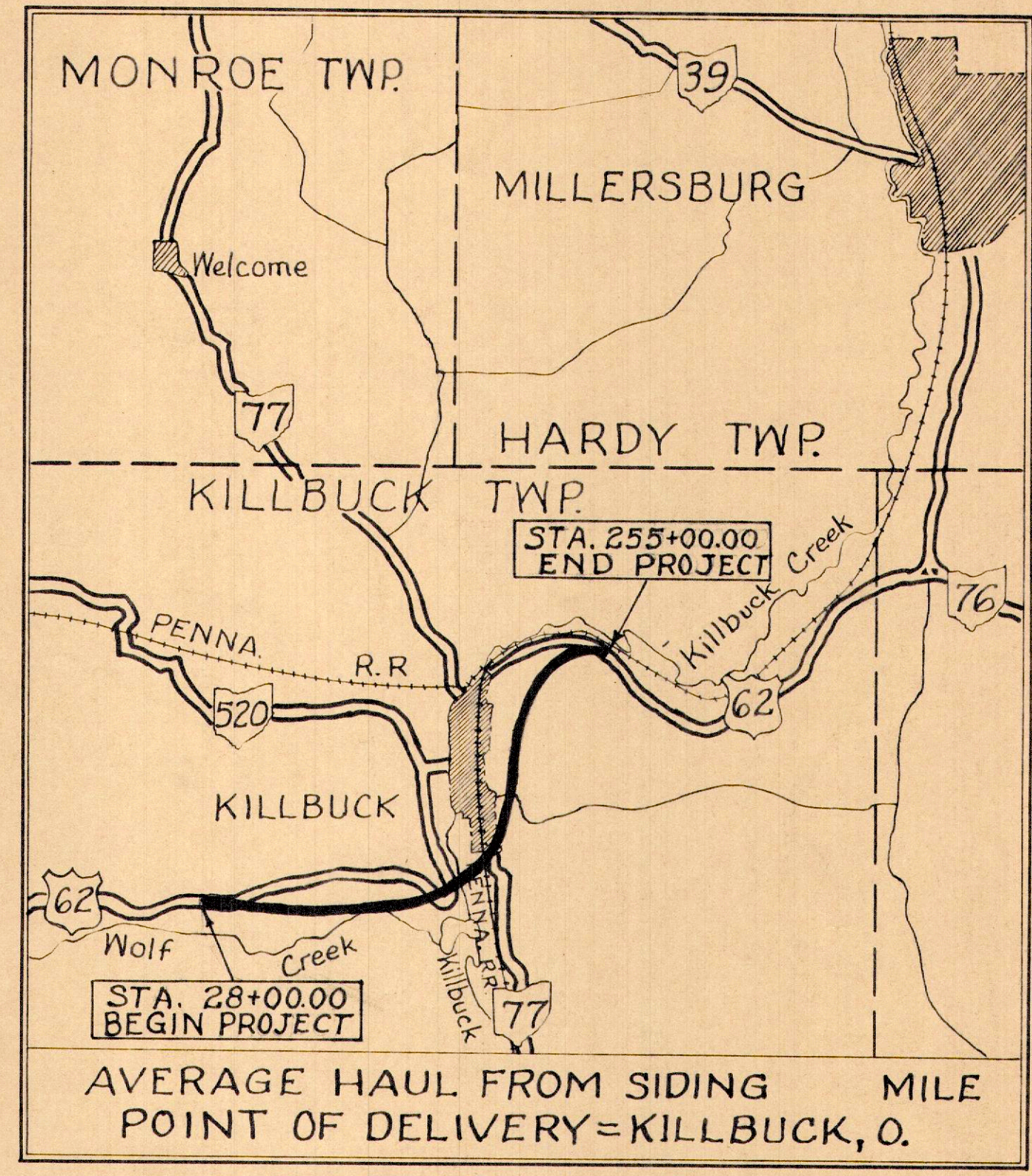
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**LINE DATA**

BEGIN PROJECT -	STA. 28+00
END PROJECT -	STA. 255+00
GROSS LENGTH OF PROJECT	22,700.00 LIN. FT.
DEDUCT FOR R.R. CROSSING	14.24 LIN. FT.
NET LENGTH OF PROJECT	22,685.76 LIN. FT. OR 4.296 MILES

ADD FOR WORK -	
STA. 27+00 to STA. 28+00	100.00 LIN. FT.
STA. 255+00 to STA. 256+00	100.00 LIN. FT.
APPROACH LT. STA. 192+25	388.00 LIN. FT.
APPROACH LT. STA. 249+00	837.23 LIN. FT.
NET LENGTH OF WORK	24,110.99 LIN. FT. OR 4.566 MILES



**LOCATION PLAN**  
SCALE 1 IN. = 1 MI.

PORTION TO BE IMPROVED

FEDERAL ROADS	
STATE ROADS	
OTHER ROADS	

**SCALES**

PLAN	1" = 100'
PROFILE - HORIZONTAL	1" = 100'
PROFILE - VERTICAL	1" = 10'
CROSS SECTIONS	1" = 10'

The Standard Specifications of the State of Ohio, Department of Highways, including changes and Supplemental Specifications listed in the proposal shall govern this improvement.

I hereby approve these plans and declare that the making of this improvement will not require the closing to traffic of the highway and that provisions for maintenance and safety of traffic will be as set forth in these plans and estimates.

The Right of Way for this improvement will be provided by the State of Ohio.

- Approved: \_\_\_\_\_  
Date: \_\_\_\_\_ Division Deputy Director
- Approved: \_\_\_\_\_  
Date: \_\_\_\_\_ Deputy Director of Planning and Programming
- Approved: \_\_\_\_\_  
Date: \_\_\_\_\_ Engineer of Bridges.
- Approved: \_\_\_\_\_  
Date: \_\_\_\_\_ Engineer of Location and Design.
- Approved: \_\_\_\_\_  
Date: \_\_\_\_\_ Deputy Director of Design and Construction.
- Approved: \_\_\_\_\_  
Date: \_\_\_\_\_ First Assistant Director.
- Approved: \_\_\_\_\_  
Date: \_\_\_\_\_ Director of Highways.

FILE No	HOLMES COUNTY HOL-62-(10.00-14.10)
Date of Letting	195
Contract No.	

**STANDARD DRAWINGS**

DR-1	3	I-15 N° 2	3-27 P.C.4
G-707		I-15 N° 2-A	T-35
I-1,2,3,4,5		I-15 N° 2-B	AS-1-54
I-8 C.B. 2-2-A&B		I-15 N° 3	SP-53
I-8 C.B. 2-3&2-4		L-3	
I-12		L-3-A	
I-14G		RI-1	
I-15 N° 1		3-27 P.C.3	

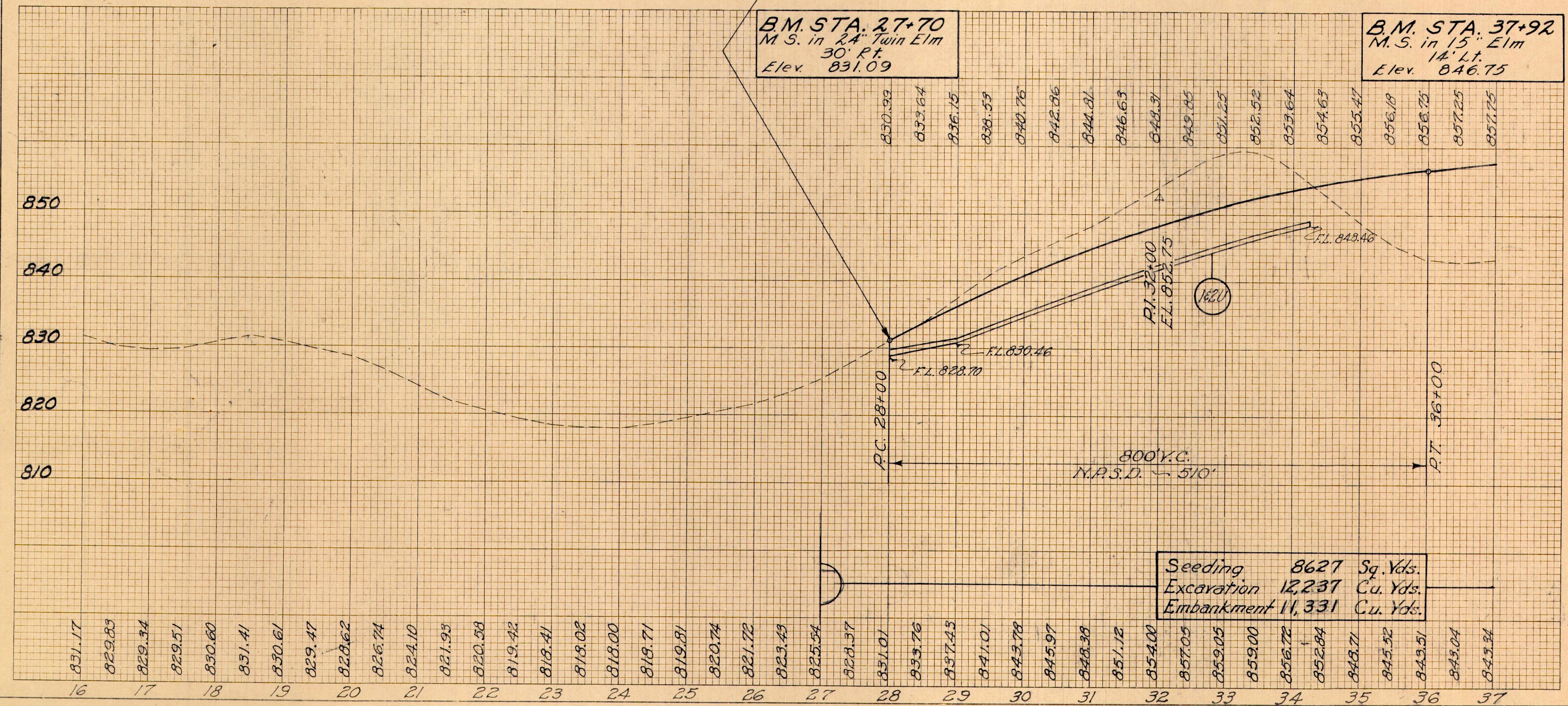
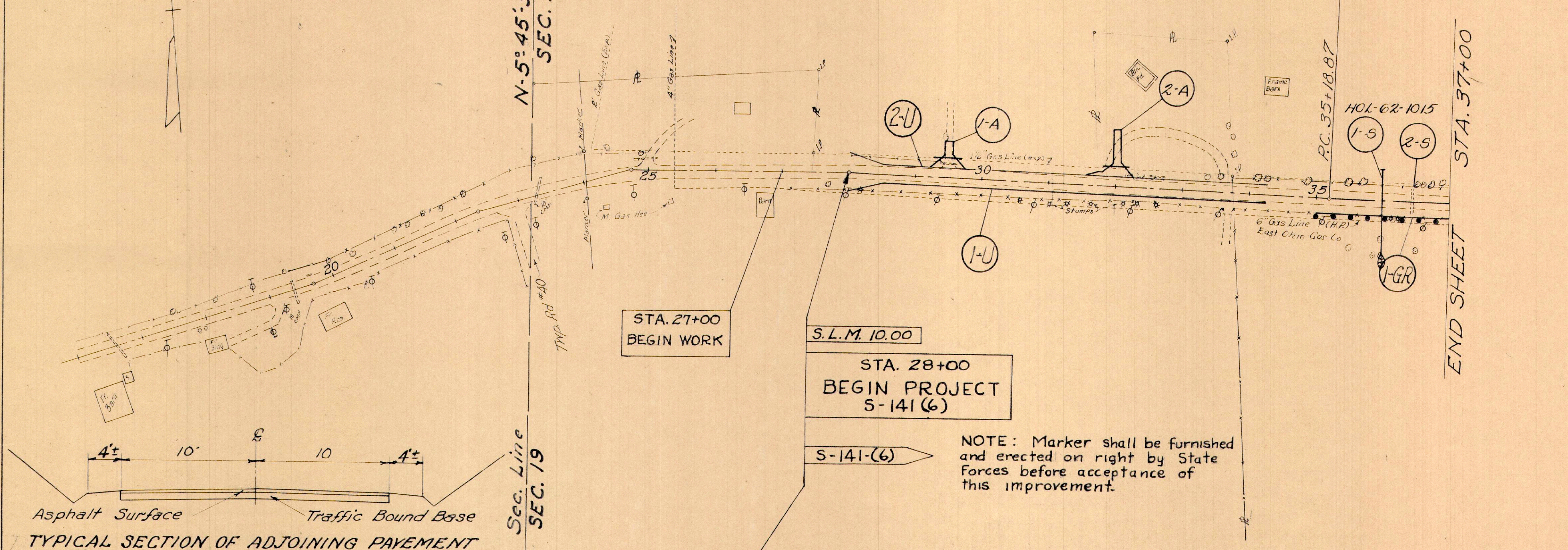
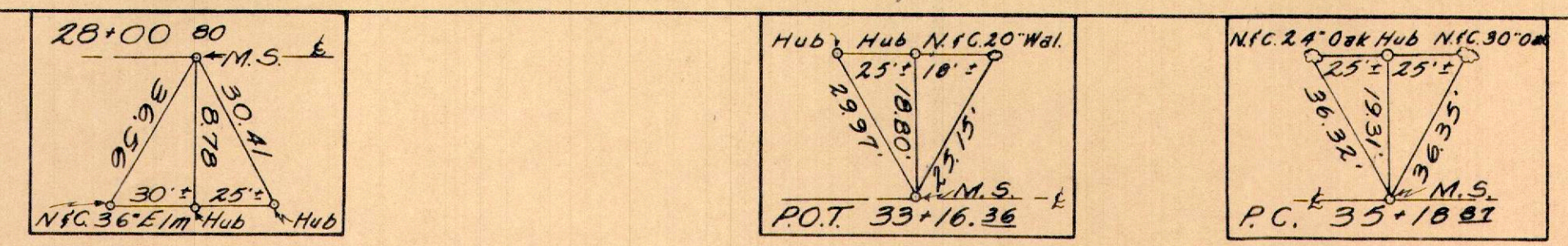
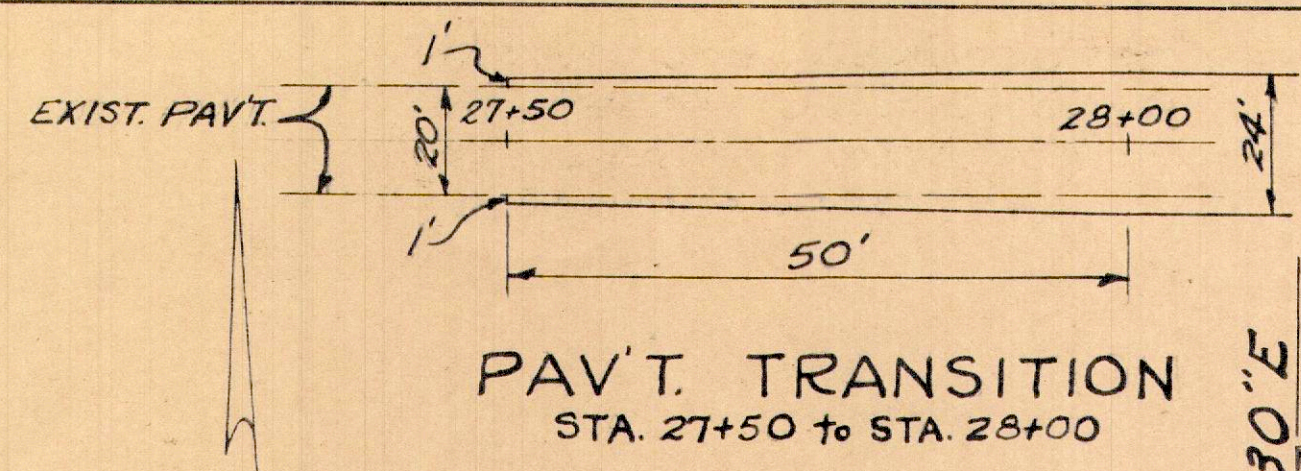
**SUPPLEMENTAL SPECIFICATIONS**


DEPARTMENT OF COMMERCE  
BUREAU OF PUBLIC ROADS

APPROVED: \_\_\_\_\_

DIVISION ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_

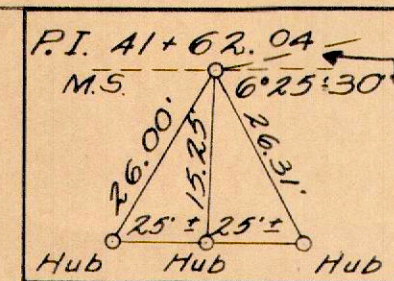




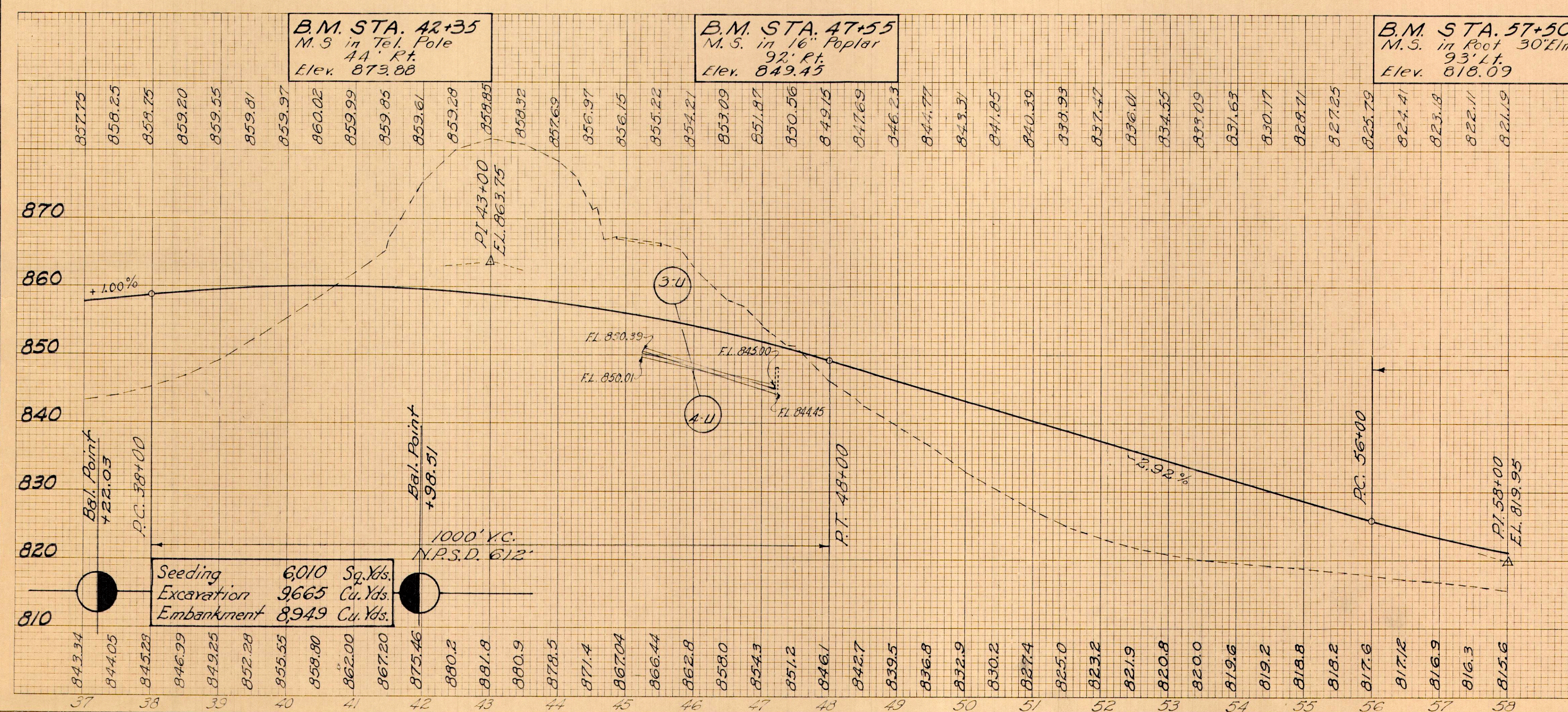
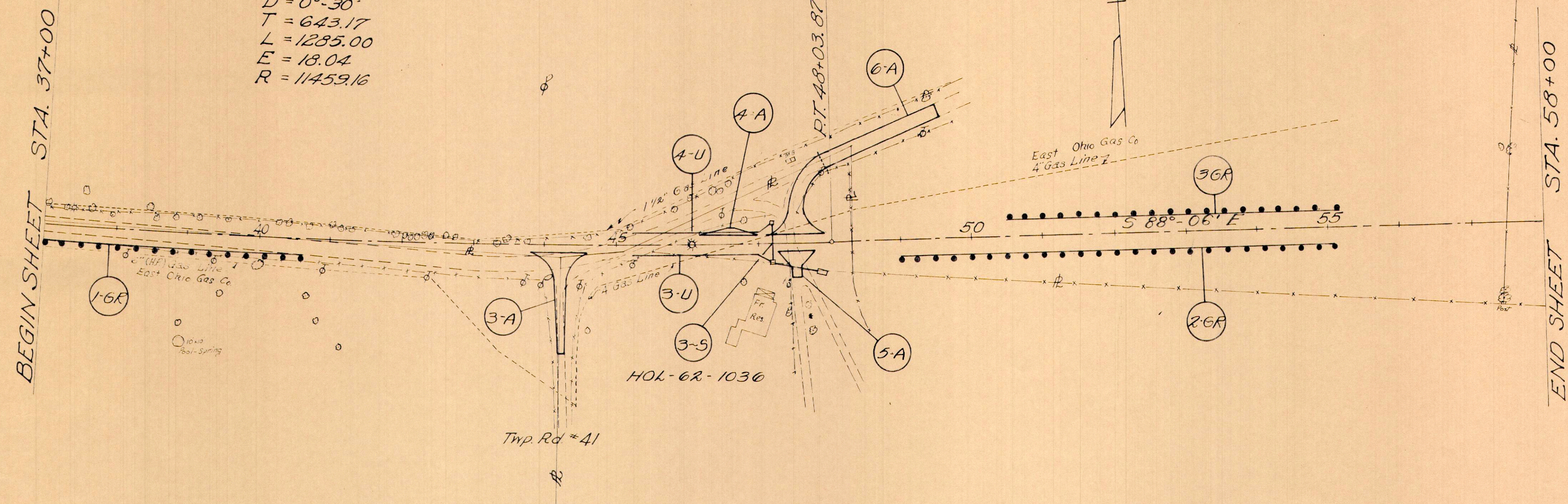
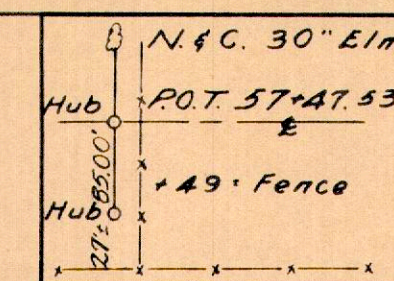
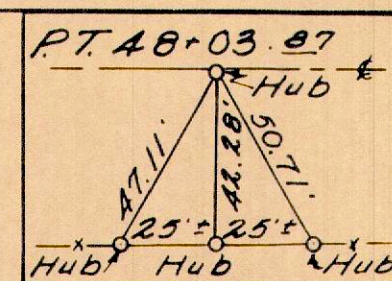
REF. NO.	STATION TO STATION	SIDE	ESTIMATED QUANTITIES	PIPE FOR CURV. 24" M.C. 40	PIPE FOR I-22	B-19	T-30	T-35	B-35	SEE SHEET NO.
1-A	29+57	Lt								92
2-A	32+00	Lt								
1-S	36+00	Rt								
2-S	36+43	Lt								
1-GR	35+00 - 37+00	Rt								
1-U	28+00 - 34+25	Rt								
2-U	28+00 - 34+25	Lt								
Part. Transition 27+50 to 28+00										
TOTALS										

PLAN & PROFILE -- STA. 28+00 TO STA. 37+00





$PI = 41+62.04$   
 $\Delta = 6^\circ 25' 30'' \text{ Lt}$   
 $D = 0^\circ - 30'$   
 $T = 643.17$   
 $L = 1235.00$   
 $E = 18.04$   
 $R = 11459.16$



Seeding 6010 Sq. Yds.  
 Excavation 3665 Cu. Yds.  
 Embankment 8949 Cu. Yds.

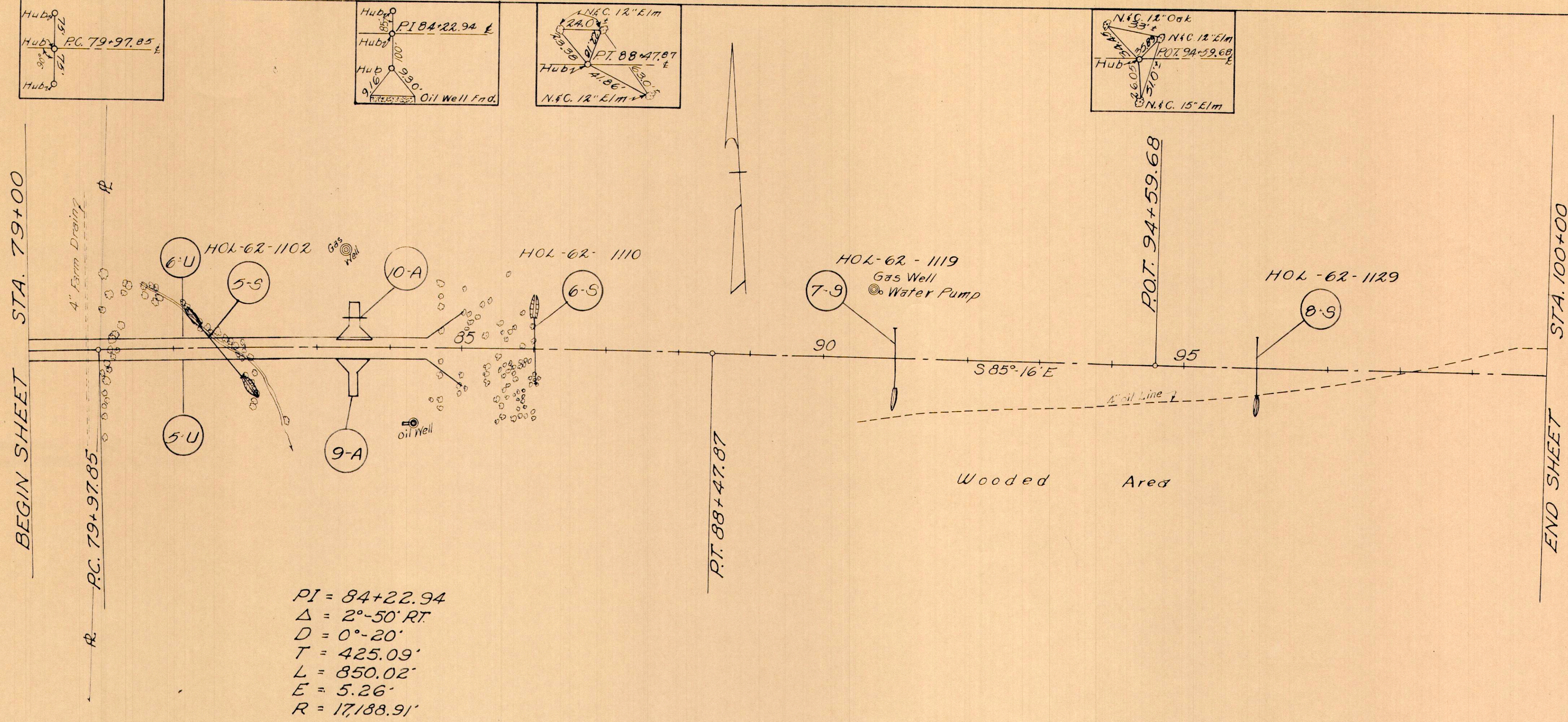
REF. NO.	STATION TO STATION	SIDE	Pipe Guard Excav. Removed Rail Over 15' Lin. Ft.	Class A 16" Pipe for 24" SS Under Structure Under Amcorin Mod. Lin. Ft.	2-3 C.B. Mod. E each	Dumped Rock (Crumb) C.Y.	ESTIMATED QUANTITIES	SEE SHEET NO.		
3A	41+28.5	Rt						78		
4A	46+60	Lt						78		
5A	47+55	Rt						79		
6A	47+55	Lt	34					79		
3-5	47+22	Lt		AR 6A	R			93		
1-6R	37+00 - 40+61.22	Rt								
2-6R	49+00 - 55+12.5	Rt								
3-6R	50+00 - 55+12.5	Lt								
3-U	45+25 - 47+22	Rt								
4-U	45+25 - 47+22	Lt								
TOTALS							56			
TOTALS								2489	412	734

PLAN & PROFILE -- STA. 37+00 TO STA. 58+00

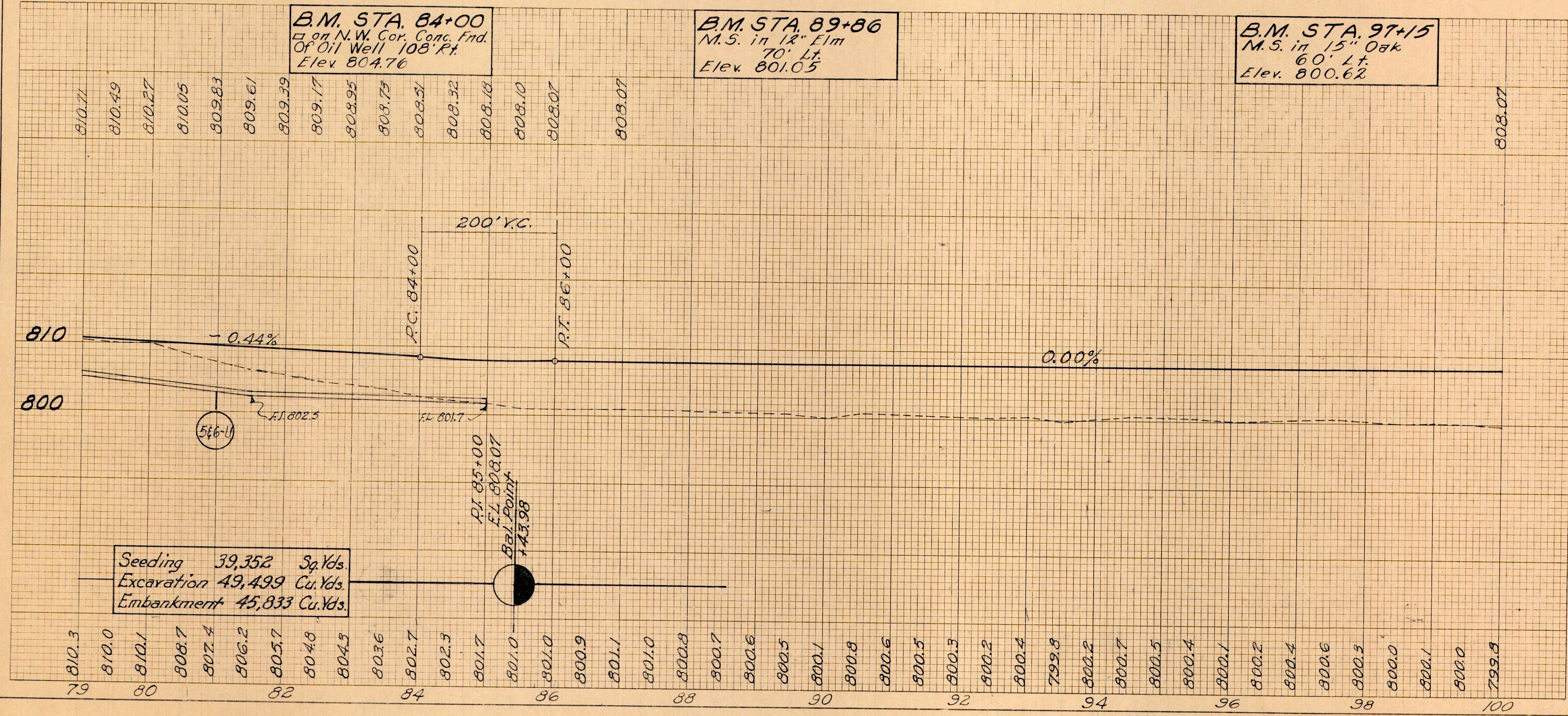








$PI = 84+22.94$   
 $\Delta = 2^{\circ}-50' RT$   
 $D = 0^{\circ}-20'$   
 $T = 425.09'$   
 $L = 850.02'$   
 $E = 5.26'$   
 $R = 17,188.91'$



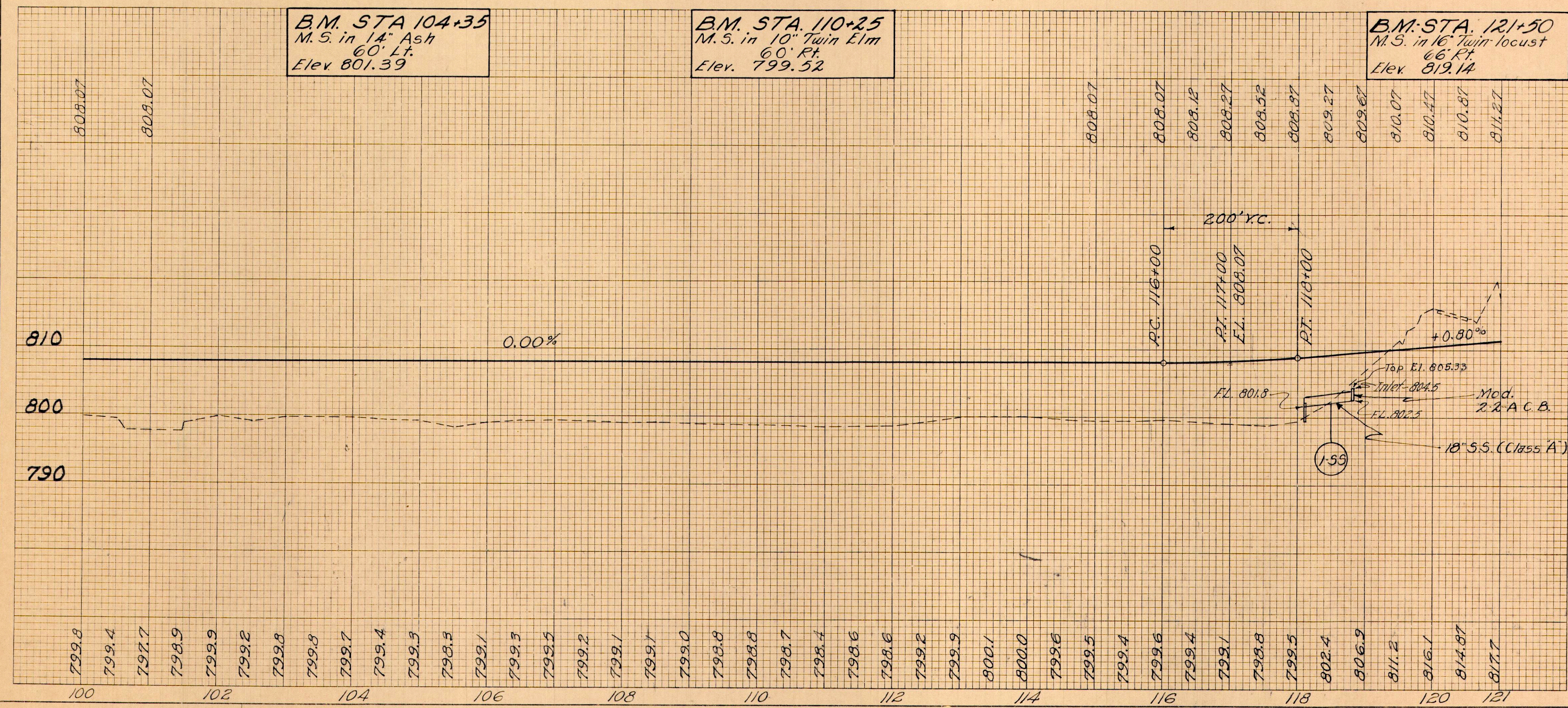
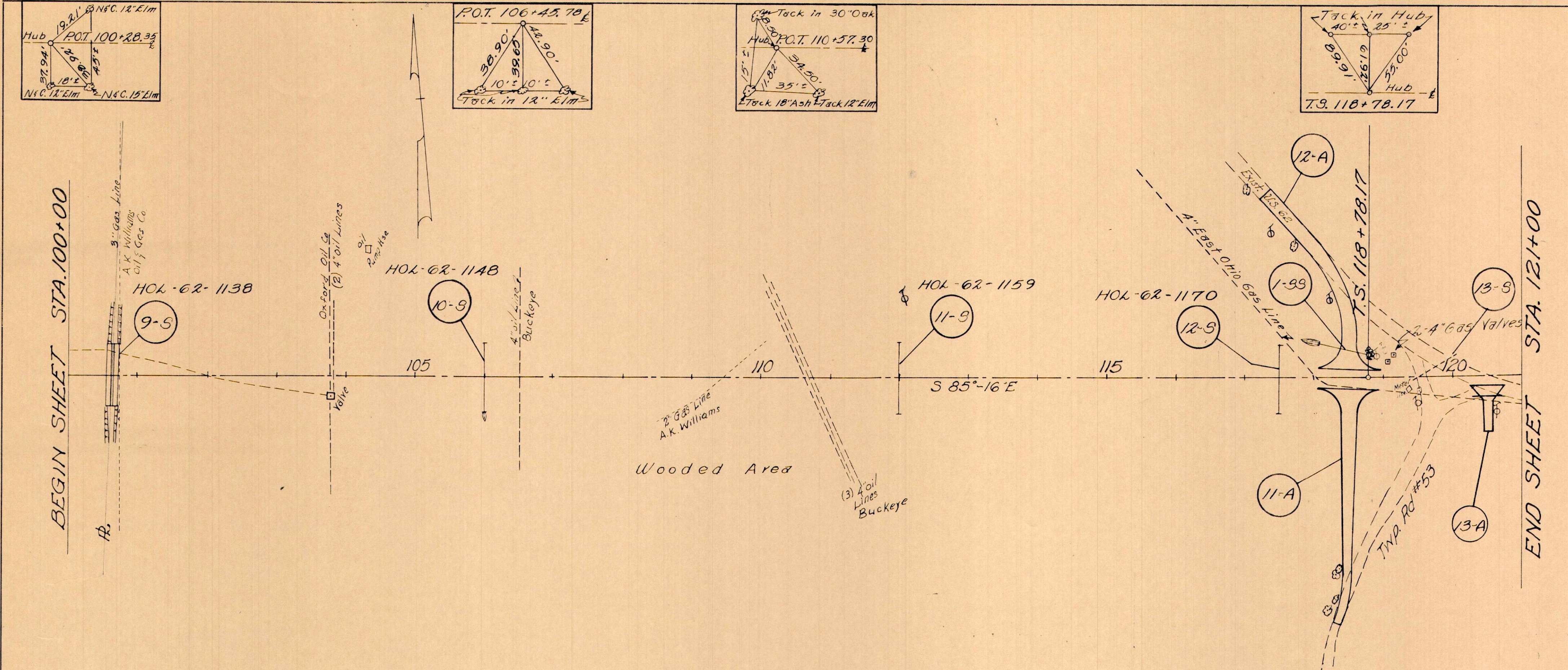
ESTIMATED QUANTITIES		SEE SHEET NO.
REF. NO.	STATION TO STATION	SEE SHEET NO.
9-A	83+50	95
10-A	83+50	96
5-S	81+61	96
6-S	86+00	96
7-S	91+00	96
8-S	96+00	97
5-U	79+00 - 85+00	
6-U	79+00 - 85+00	
TOTALS		49.1

STATION TO STATION	SIDE	Excav. for Struc. C.Y.	Chan. Excav. C.Y.	Pipe for Dr. 6\" Drain Lin. Ft.	Pipe Outlet 6\" Pipe Lin. Ft.	Riprap Dumped Rec. Chan. C.Y.	Riprap Under Type A S. Y.	Excav. for Dr. 6\" Under Drain Lin. Ft.	Pipe for 18\" 30\" Culk Lin. Ft.
83+50	Lt.	19	7	30					
81+61	Lt.	16	1				5		0.6
86+00	Lt.	17	1						1.0
91+00	Lt.	17	1						1.0
79+00 - 85+00	Rt.				10				
79+00 - 85+00	Lt.				10				
TOTALS		69	10	30	20	5			3.6

PLAN & PROFILE -- STA. 79+00 TO STA. 100+00

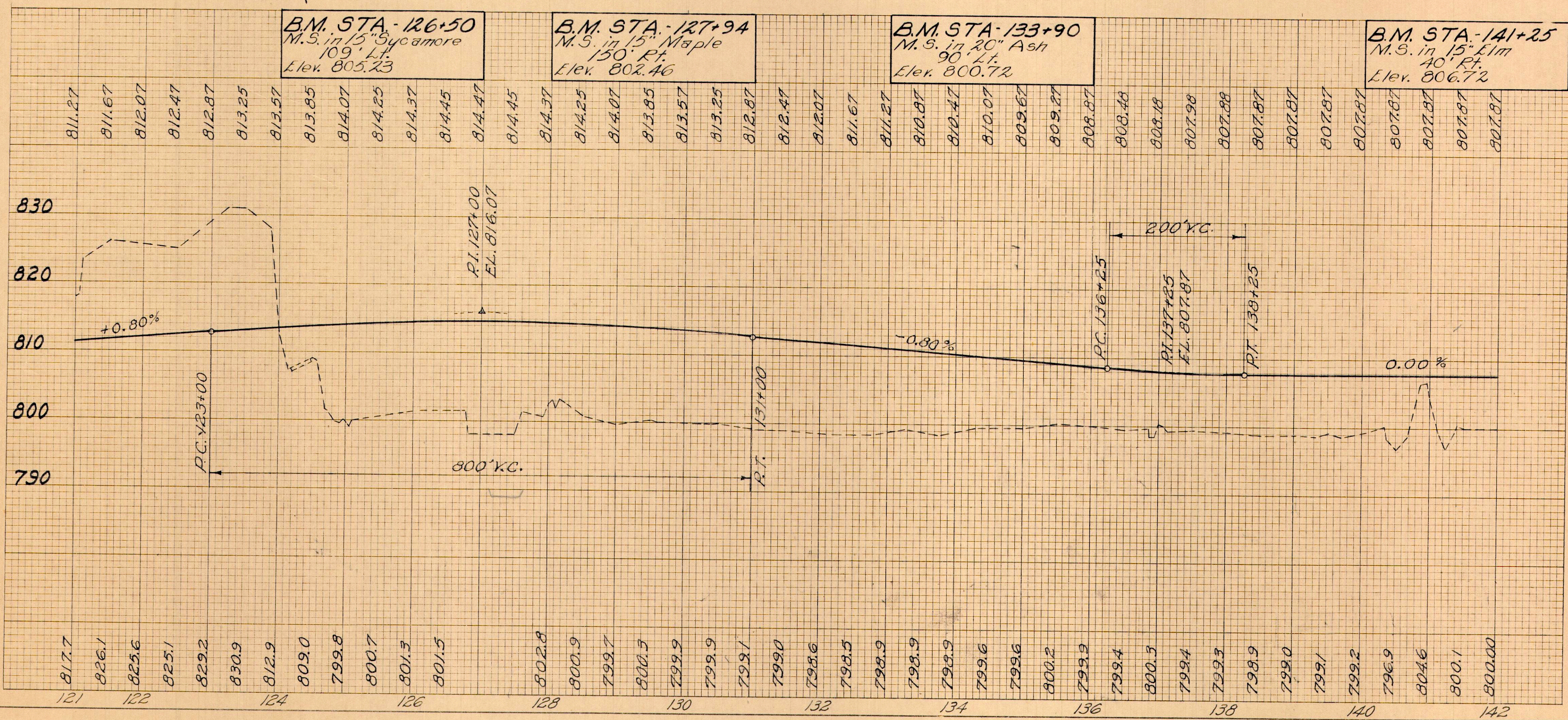
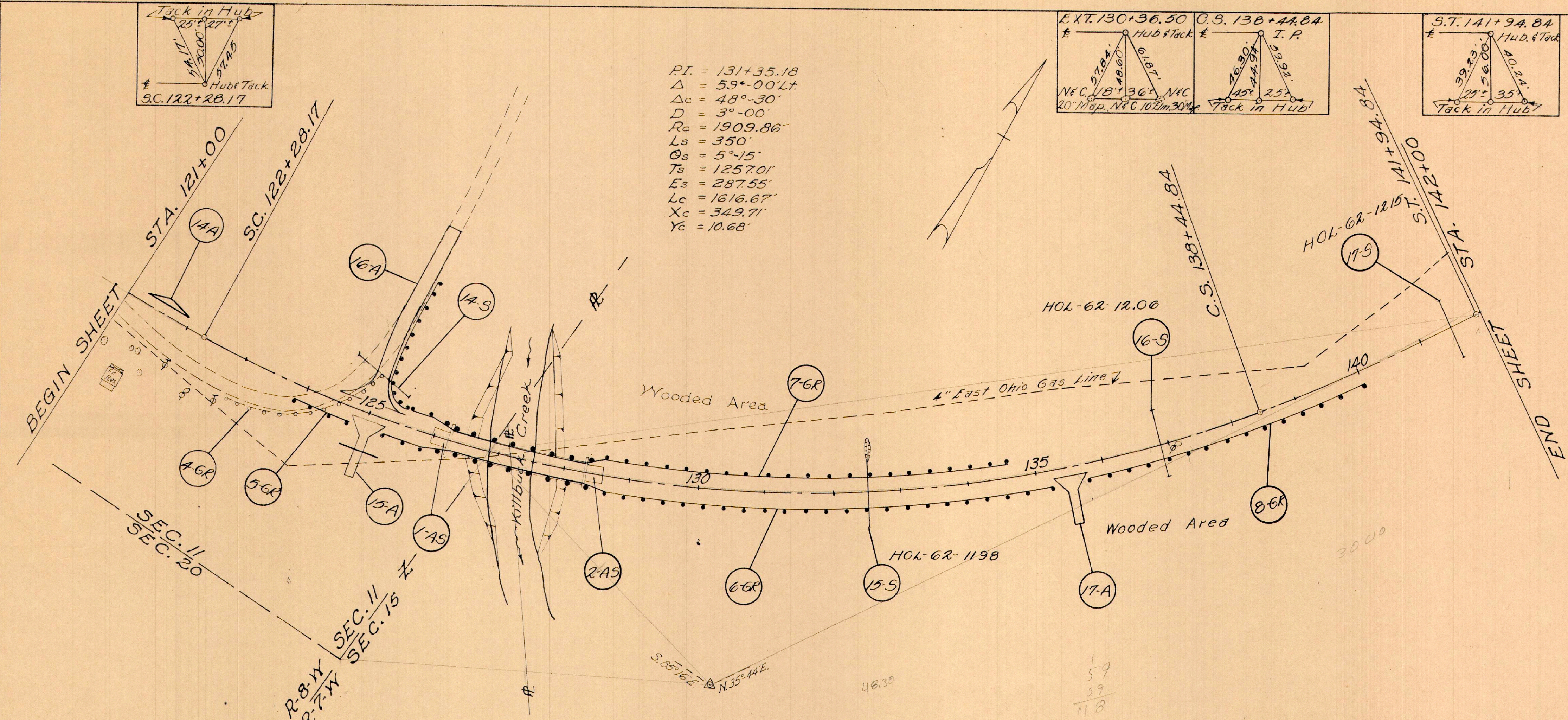




REF. NO.	STATION TO STATION	SIDE	Pipe Removed for 1/2\"/>
1-A	118+50	RT	Excav
1-B	118+50	LT	Excav
1-B	120+20	RT	Excav
9-5	100+00		Excav
10-5	106+00		Excav
11-5	118+00		Excav
13-5	119+75	LT	Excav
1-59	118+10 - 119+80	LT	Excav
TOTALS			

PLAN & PROFILE -- STA. 100+00 TO STA. 121+00

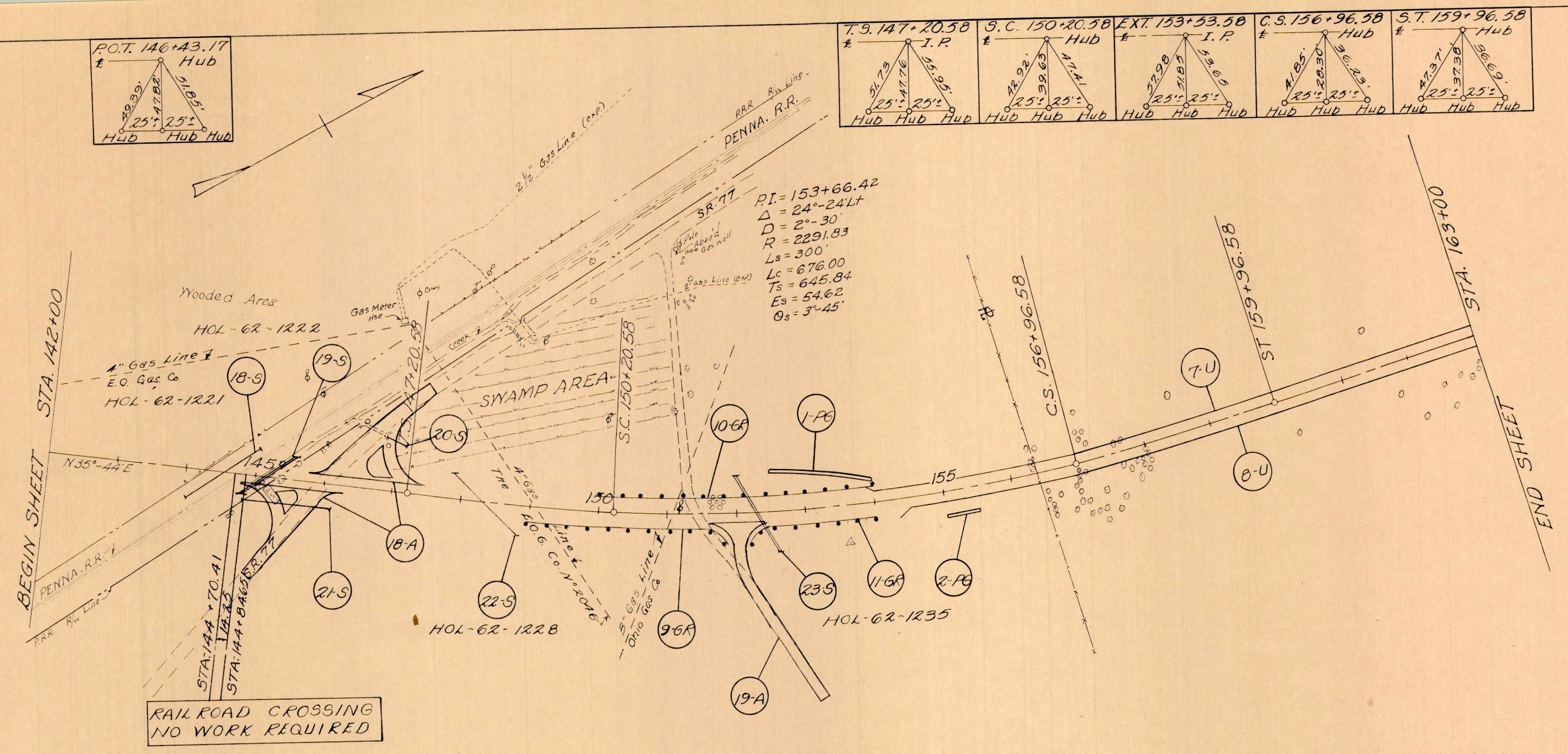
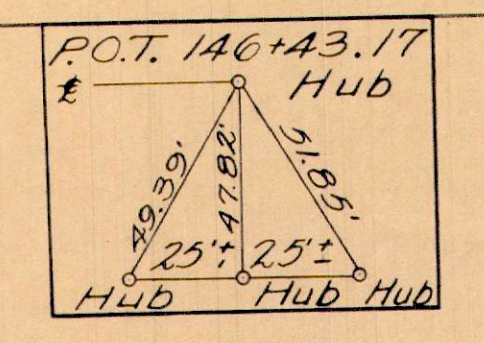
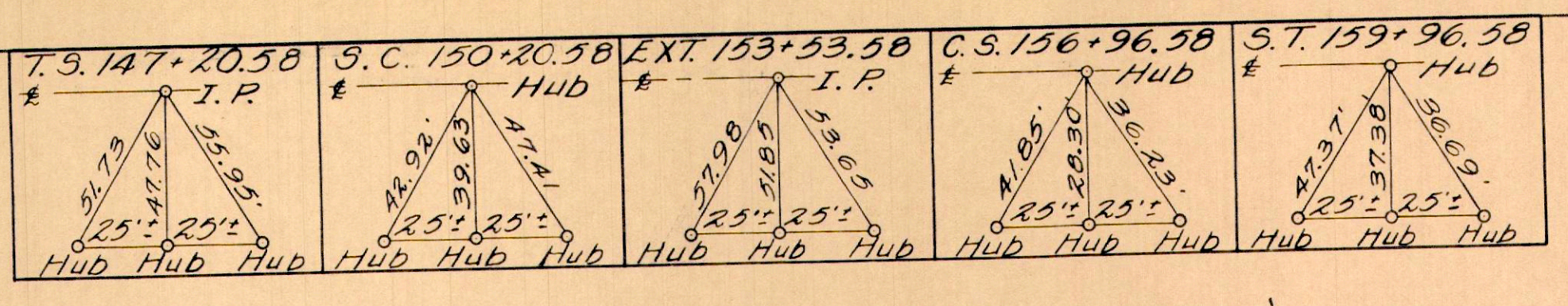




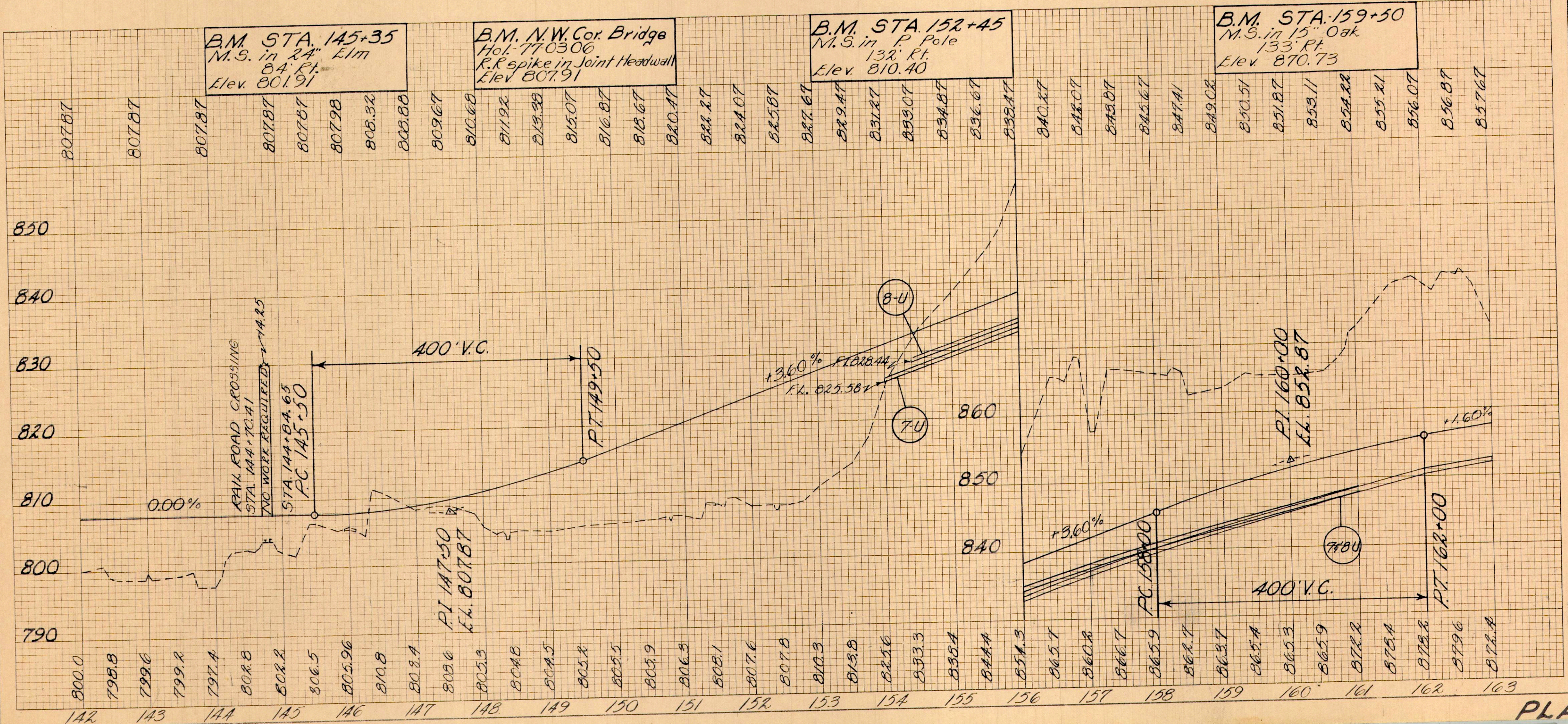
REF. NO.	STATION TO STATION	SIDE	Excav. for Struc. C.Y.	Chan. Excav. C.Y.	Pipe for Conc. Dim. (ft.) Class	Pipe for Guard Rail C.Y.	ESTIMATED QUANTITIES	I-22 Cu Yds.	B-19 Cu Yds.	T-30 Gravel	B-35 Keveling Cu Yds.	T-35 Cu Yds.	Remit. Cont. Appr. Strip Sq. Yds.	SEE SHEET NO.
14A	121+60	Lt.												100
15A	125+00	Rt.												101
16A	125+00	Lt.												101
17A	135+50	Rt.												102
14S	3+35 on Appr. 16-A		18	1	6R	9R	50	10.1	4.3	1.1	50.6	1.7	66.7	
15S	132+50		18					22.0	2.9				66.7	
16S	136+50		19					127.5	26.8				66.7	
17S	141+50		18					23.3					66.7	
1AS	125+94.74 to 126+20.74													
2AS	128+33.26 to 128+58.26													
4G	129+00	Lt.												
5G	129+00	Rt.												
6G	129+00	Lt.												
7G	129+00	Rt.												
8G	135+76	Lt.												
9G	135+76	Rt.												
TOTALS			67	1	6R	9R	92	10.1	180.1	2.79	50.6	32.2	133.4	

Do not include Guard Rail Between Bridge Limits





RAILROAD CROSSING  
NO WORK REQUIRED

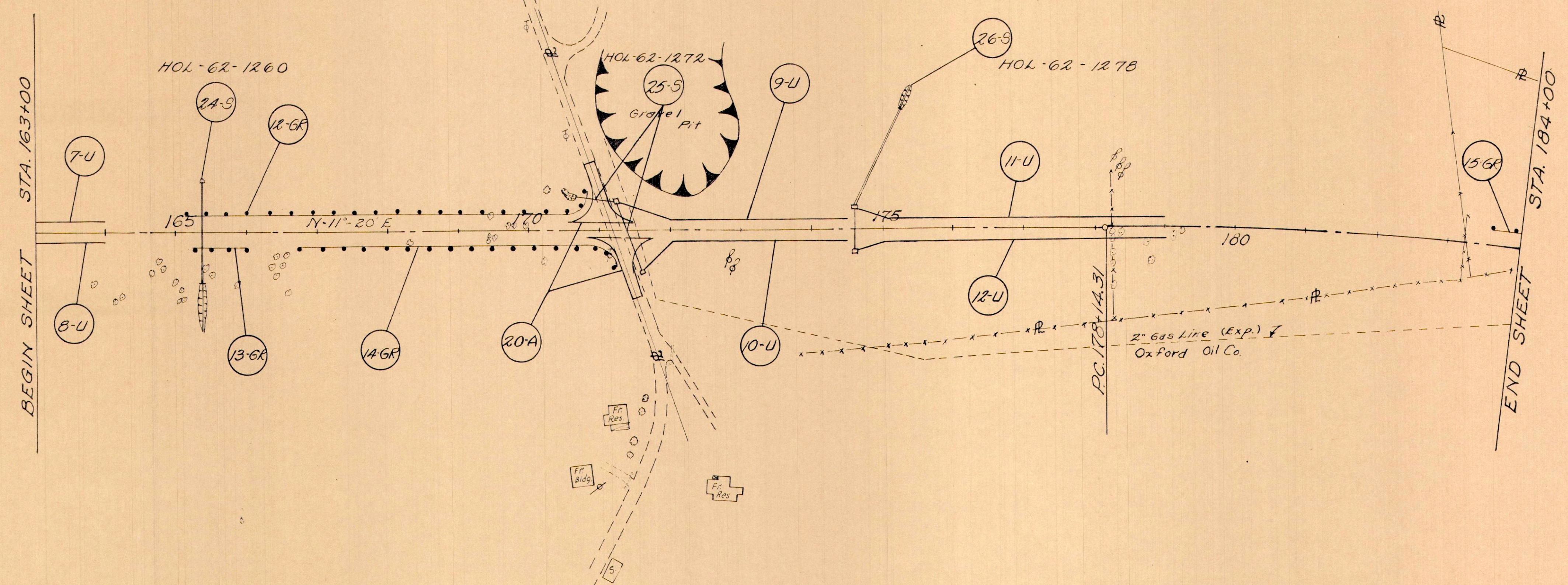


ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	Excav. for Struc.	Chain Excav.	6" Pipe Outlet Under drain	Rein. Steel	Rein. Dowel	Pipe for Foot Path	Type Paved	T-22	B-19	B-35	SEE SHEET NO.
18A	146+00	L.H.S.											83
19A	152+00	R.H.											100
18S	144+58		83										102
19S	145+15		30										103
20S	142 on Appl. 18-A		58										104
21S	149 on Appl. 18-A		35										104
22S	148+34		30										104
23S	152+30												104
<p>9'-6" 148+98.22 to 0+42.99 on 19-A (4)</p> <p>10 GR 150+00 - 154+03.88 LT</p> <p>11 GR 144+29 on 19-A to 154+03.89 RT</p>													
7U	153+90 - 163+00 LT												102
8U	154+30 - 163+00 RT												103
1-76	152+30 - 154+00 LT												103
2-76	155+00 - 155+50 RT												104
<p>TOTALS</p>													

PLAN & PROFILE - STA. 142+00 TO STA. 163+00





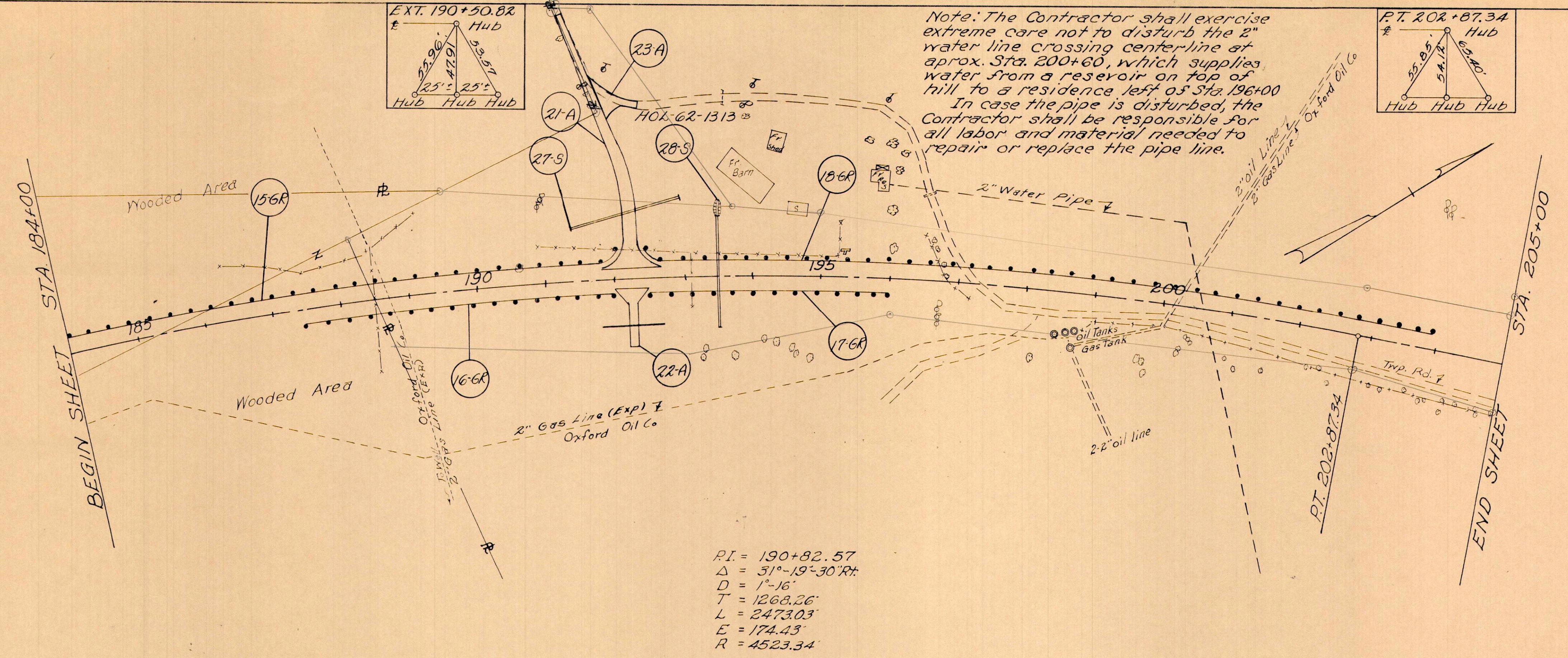
Station	Profile Elevation	Ground Elevation
163	857.67	872.4
164	858.47	859.0
165	859.27	864.3
166	860.07	856.8
167	860.87	863.1
168	861.67	842.0
169	862.47	868.7
170	863.27	867.8
171	864.07	842.2
172	864.87	838.8
173	865.67	839.7
174	866.47	836.5
175	867.27	839.1
176	868.07	839.1
177	868.87	836.6
178	869.67	838.7
179	870.47	831.1
180	871.27	833.1
181	872.07	836.6
182	872.87	838.2
183	873.67	836.5
184	874.47	835.3
	875.27	834.5
	876.07	838.8
	876.87	
	877.67	
	878.47	
	879.27	
	880.07	
	880.87	
	881.67	
	882.47	
	883.27	
	884.07	
	884.87	
	885.65	
	886.38	
	887.07	
	887.71	
	888.31	
	888.88	
	889.37	
	889.83	

SEE SHEET NO.	Project	7-35	7-30	7-19	18" Pipe	Pipe for	ESTIMATED QUANTITIES
	Cutter Type (Inch)	C.Y.	Grd. C.Y.	C.Y.	Mc.Gd. Lin. Ft.	Excav for Sump, Man. Box, etc.	Excav for Sewer, Storm, etc.
80			102.3	102.3	102.3		
105						50.0	50.0
106							
107							
TOTALS			140	140	140	50.0	50.0

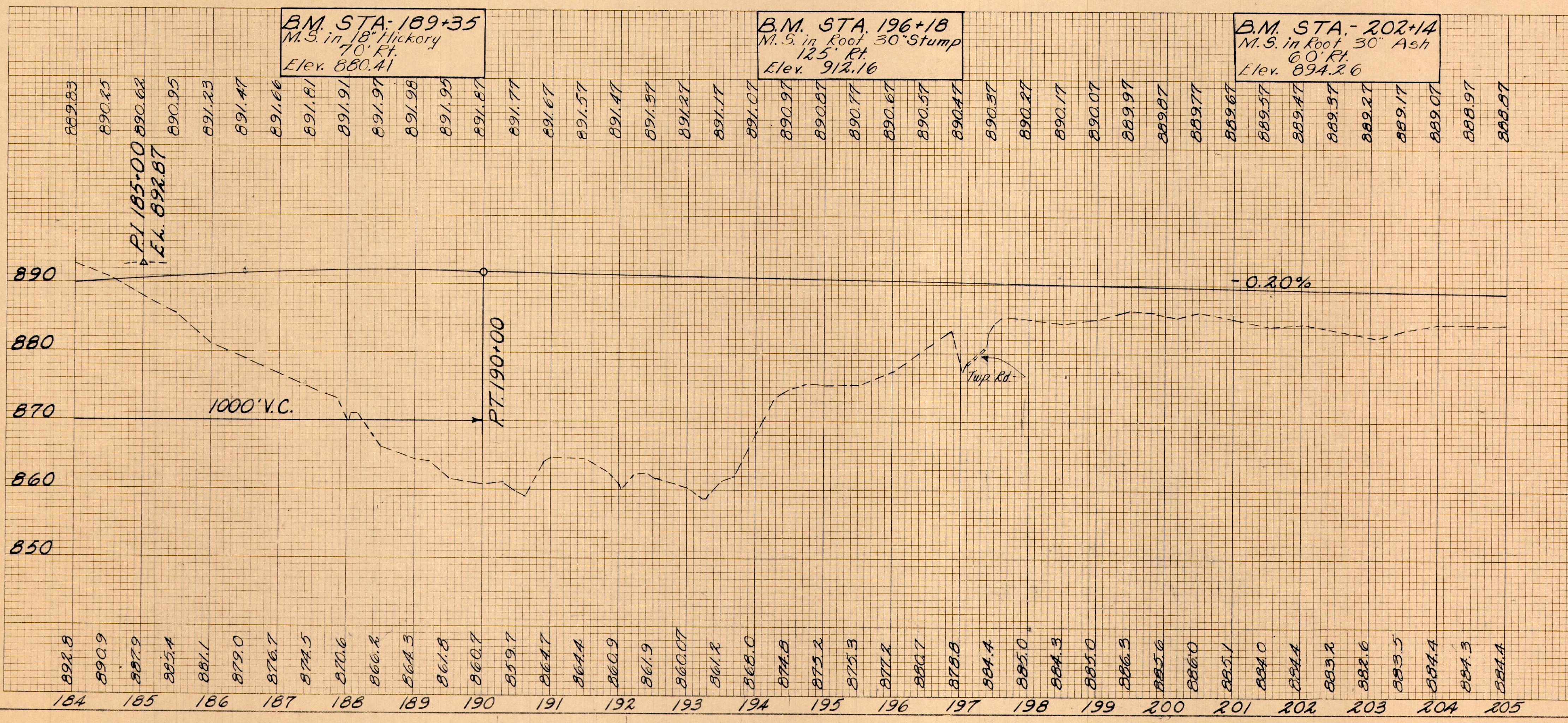
PLAN & PROFILE - STA. 163+00 TO STA. 184+00



Note: The Contractor shall exercise extreme care not to disturb the 2" water line crossing center-line at approx. Sta. 200+60, which supplies water from a reservoir on top of hill to a residence left of Sta. 196+00. In case the pipe is disturbed, the Contractor shall be responsible for all labor and material needed to repair or replace the pipe line.



$PI = 190+82.57$   
 $\Delta = 31^\circ-19'-30''R$   
 $D = 1'-16''$   
 $T = 1268.26'$   
 $L = 2473.03'$   
 $E = 174.43'$   
 $R = 4523.34'$



ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	Excav Pipe for Rip up (18" dia) 10' Long	Rip up Pipe 18" dia 10' Long	Dumped Pipe 18" dia 10' Long	42" Pipe M-6 (10' Long)	Guard Rail (G. Rail) Conc			SEE SHEET NO.	
							28" R. 5th	L.F.	L.F.		
R1A 192+25		L.F.								87	
R2A 192+25		R.F.									
R3A R10 on Appr. R1A		L.F.	90								
R7.5 A+05 on Appr. R1A		L.F.	37	8	11	156					
R8.5 193+50		L.F.		11	28						
156 RBM 100 to 4+66.37 on R1A		L.F.									
166 RBM 174+80 to 192+00		R.F.									
176 RBM 190 to 196+45.58		R.F.									
186 RBM 203.57 on R1A to 205+00		L.F.									
TOTALS			59	90	19	39	156	164	1836.45	368	7.5

PLAN & PROFILE ~ STA. 184+00 TO STA. 205+00

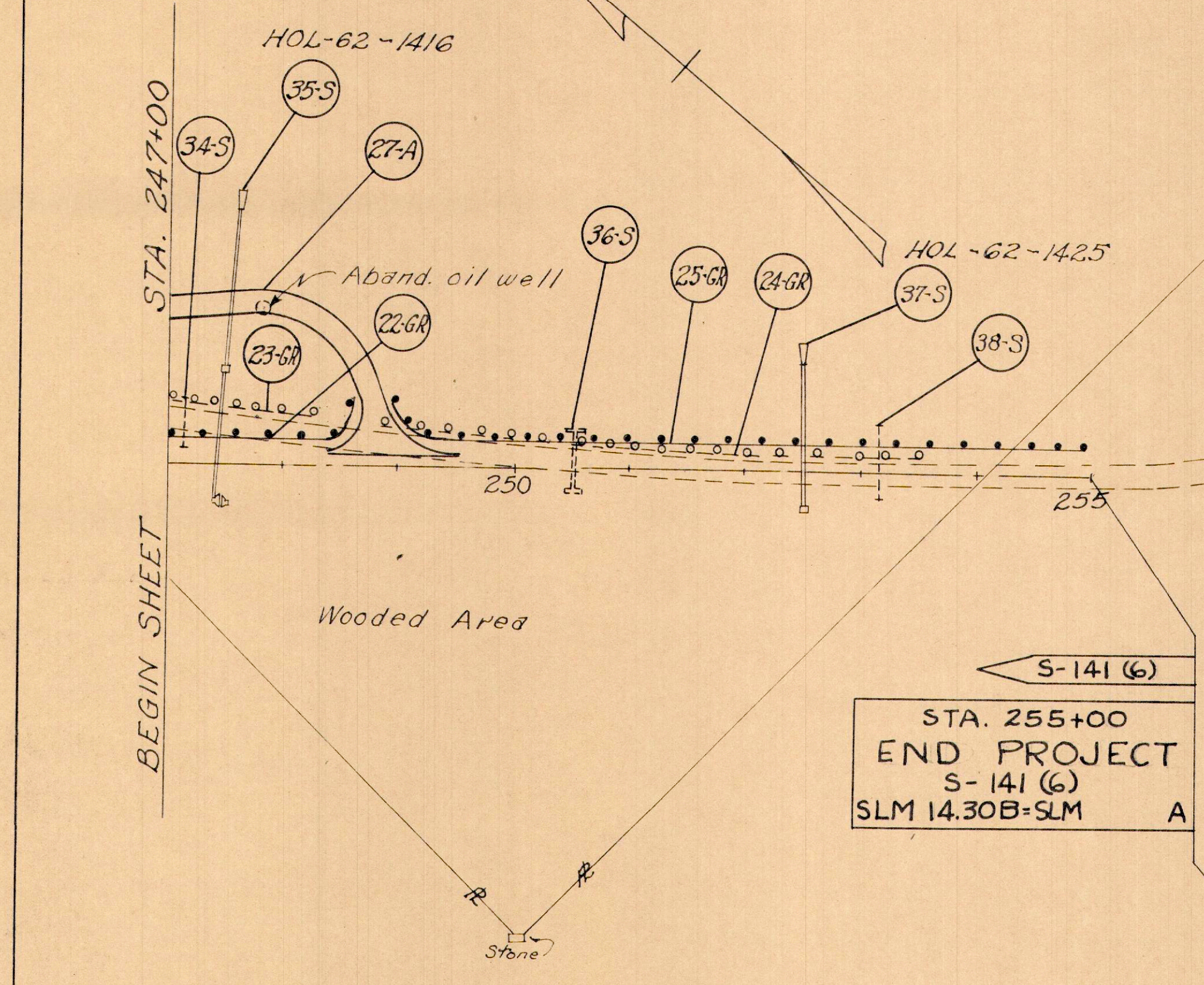
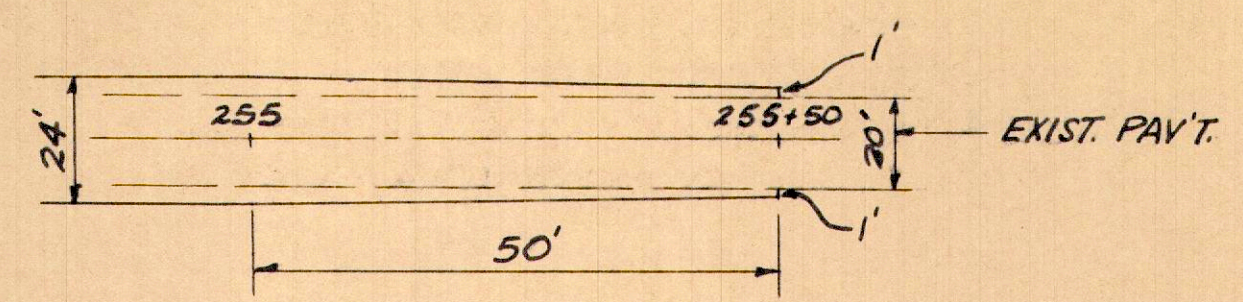
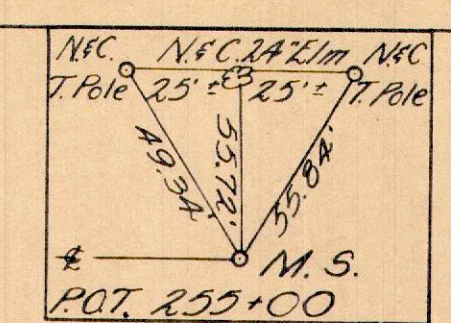
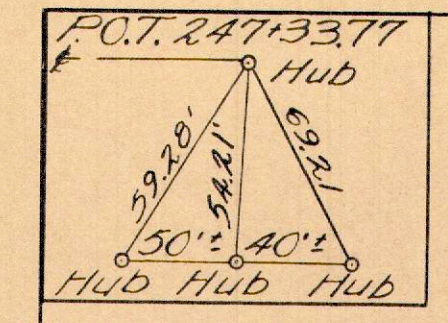






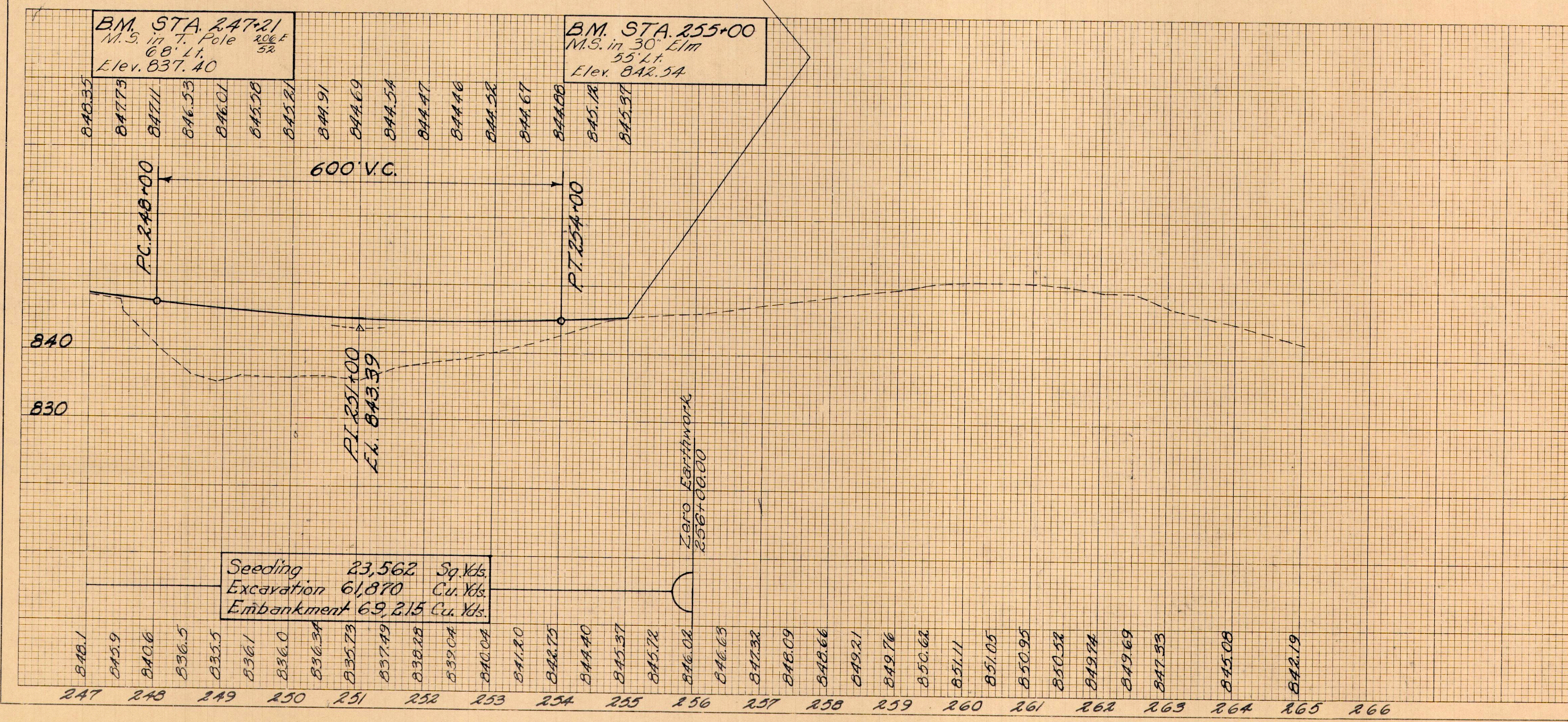
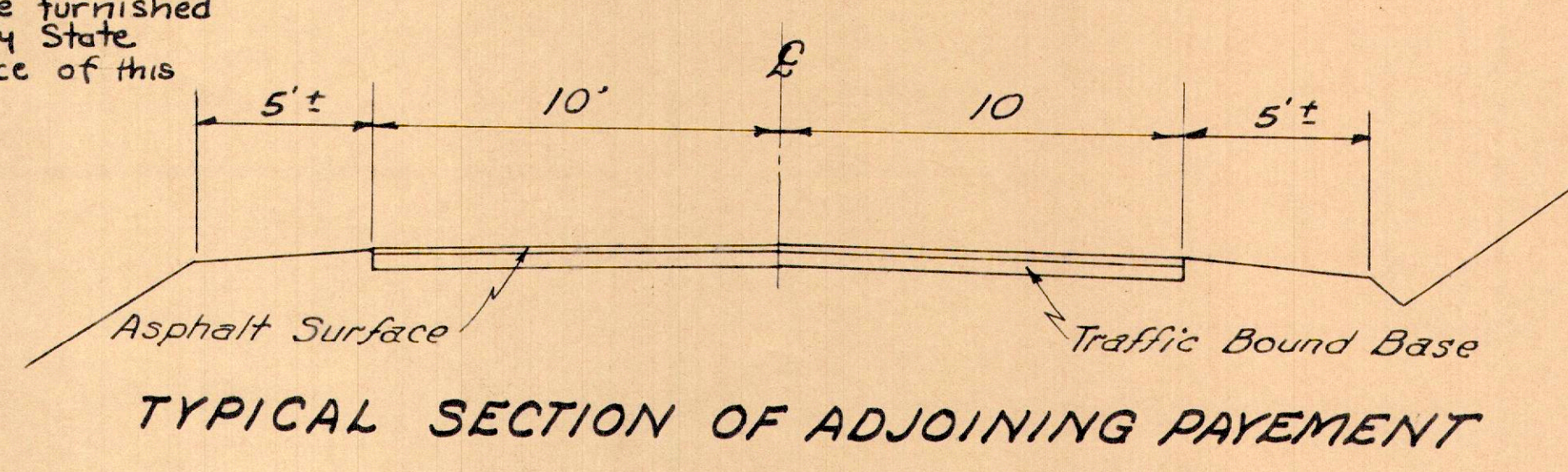






NOTE: Marker shall be furnished and erected on Left by State Forces before acceptance of this improvement.

STA. 255+00  
END PROJECT  
S-141 (6)  
SLM 14.30B-SLM A

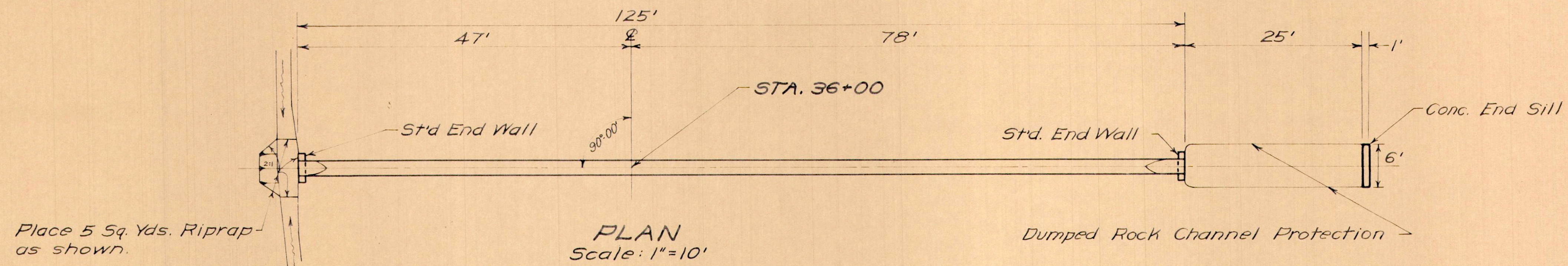


Seeding 23,562 Sq.Yds.  
Excavation 61,870 Cu.Yds.  
Embankment 69,215 Cu.Yds.

REF. NO.	STATION TO STATION	SIDE	ESTIMATED QUANTITIES
27A	Pav't. Transition 255+00 to 255+50	~	
	R49+00	LT	
34S	R47+15	LT	
35S	R47+41.7	LT	
36S	R50+51.1		
37S	R58+50		
38S	R23+13		
	R262+00 to TRASH ALLEY		
	R362+00 to R46+20	LT	
	R462+00 to R23+50	LT	
	R562+00 to R254+48.5	LT	
	TOTALS		

PLAN & PROFILE ~ STA. 247+00 TO STA. 255+00

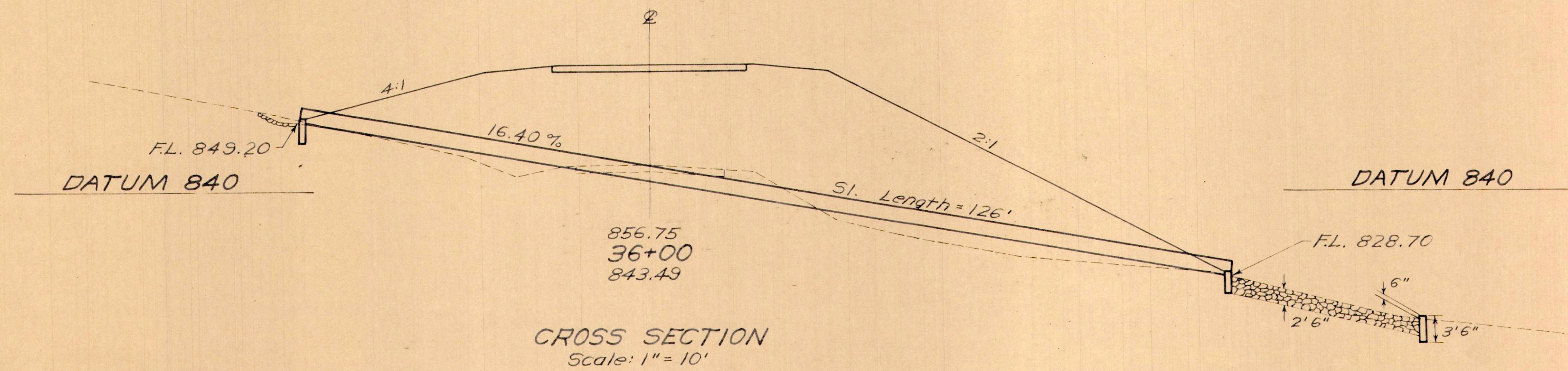




**WORK REQUIRED**  
Build Std Pipe Culvert as Shown.

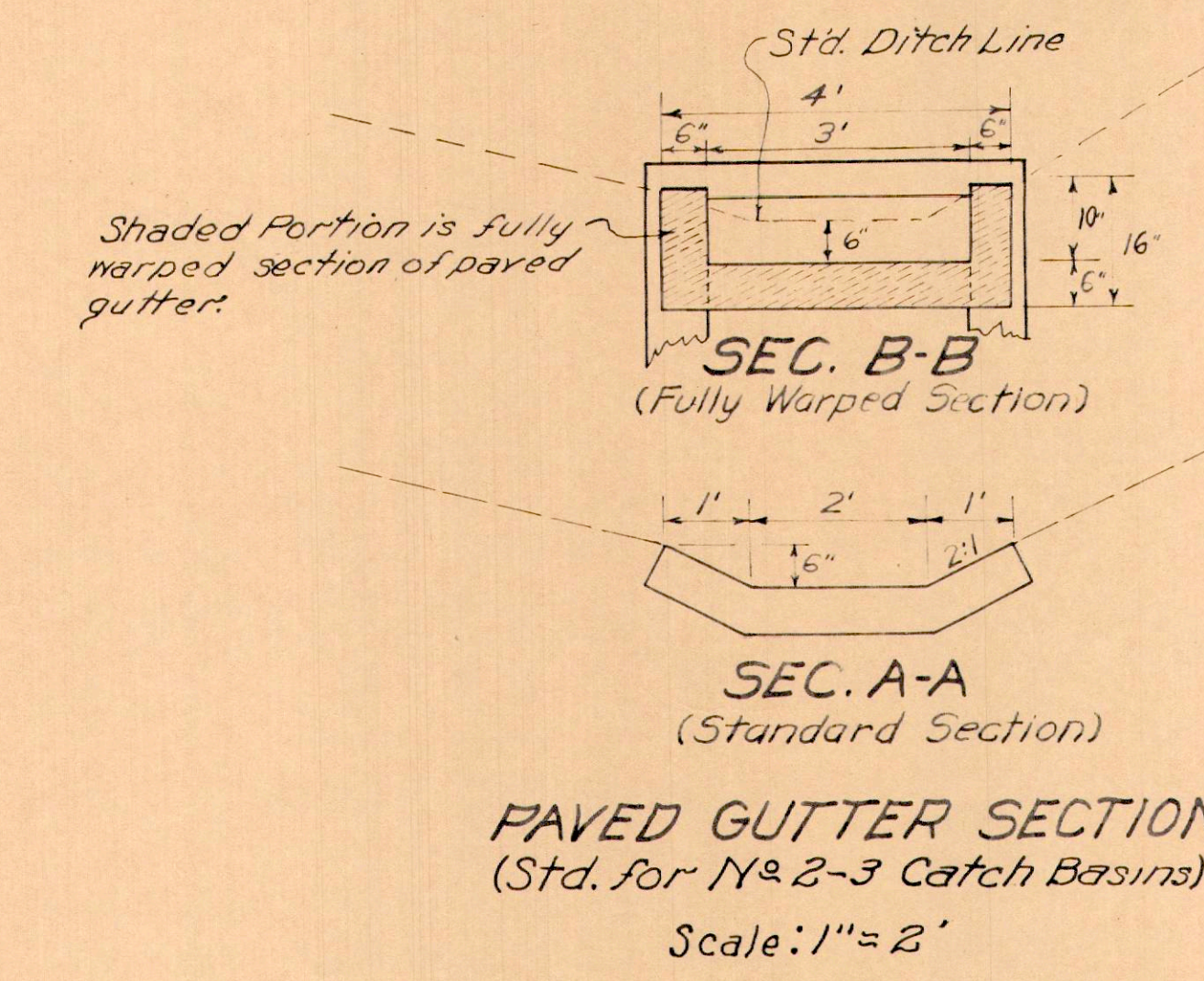
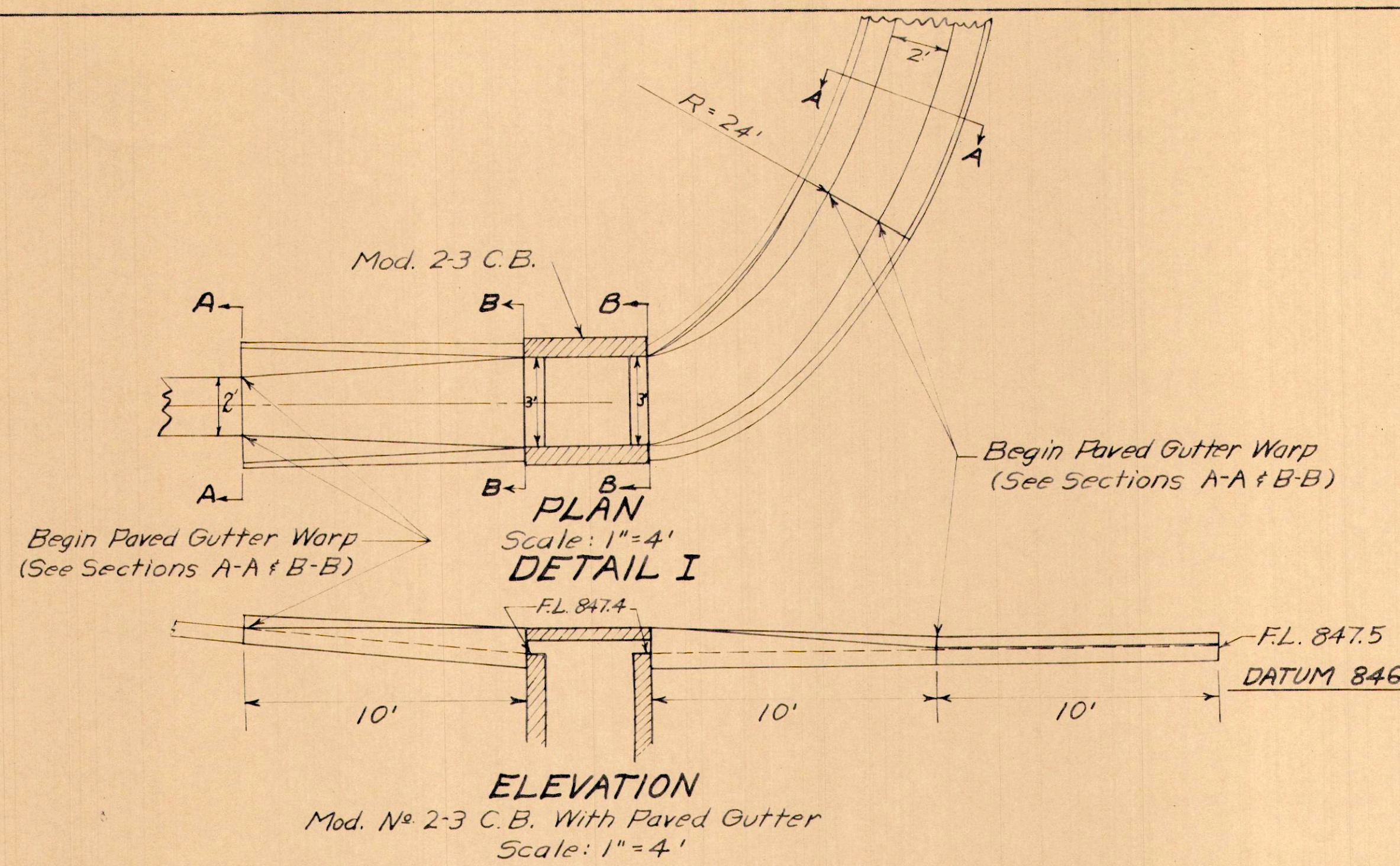
**ESTIMATED QUANTITIES**  
 24" Paved Bit. Coated C.M. Pipe, Sec. M-6.4 (d) 126 Lin. Ft.  
 Excavation for Structures 18 Cu. Yds.  
 Dumped Rock Channel Protection 14 Cu. Yds.  
 Concrete for Structures, Class "E" 1.6 Cu. Yds.  
 Riprap 5 Sq. Yds.

Area: 9 acres  
Q<sub>10</sub>: 22 cfs

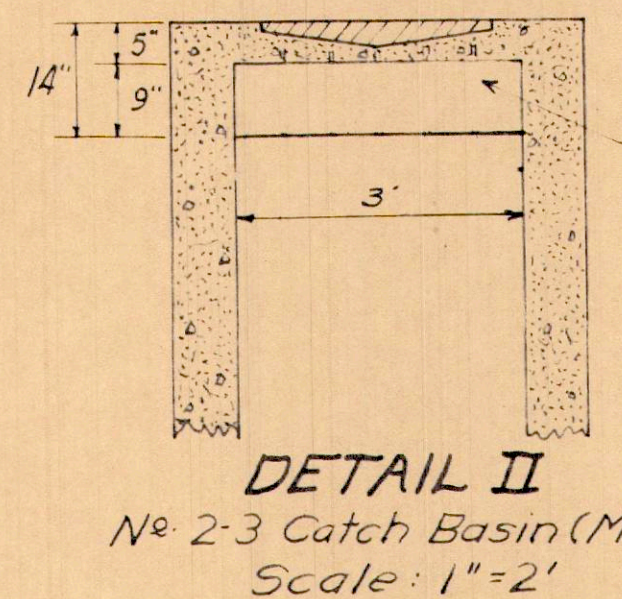


**STA. 36+00**  
**24" x 126' PIPE CULVERT**

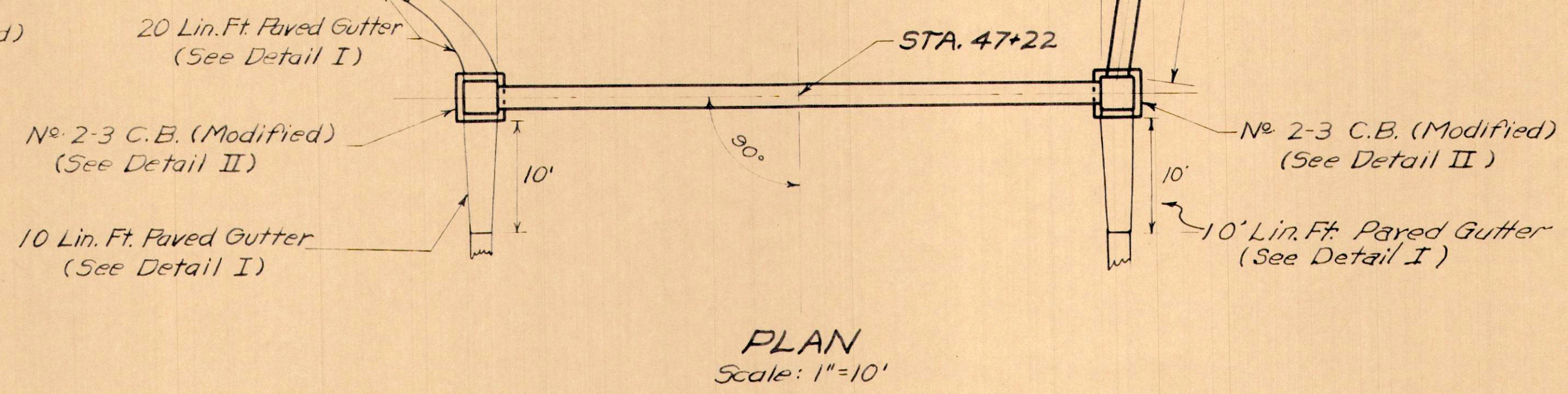




DATUM 846



NOTE: Window inlet 3'x9", will be placed on both sides of C.B. to Lt. of  $\Phi$  and in the up-hill side only of C.B. to Rt. of  $\Phi$  for this structure. (others as per plan)

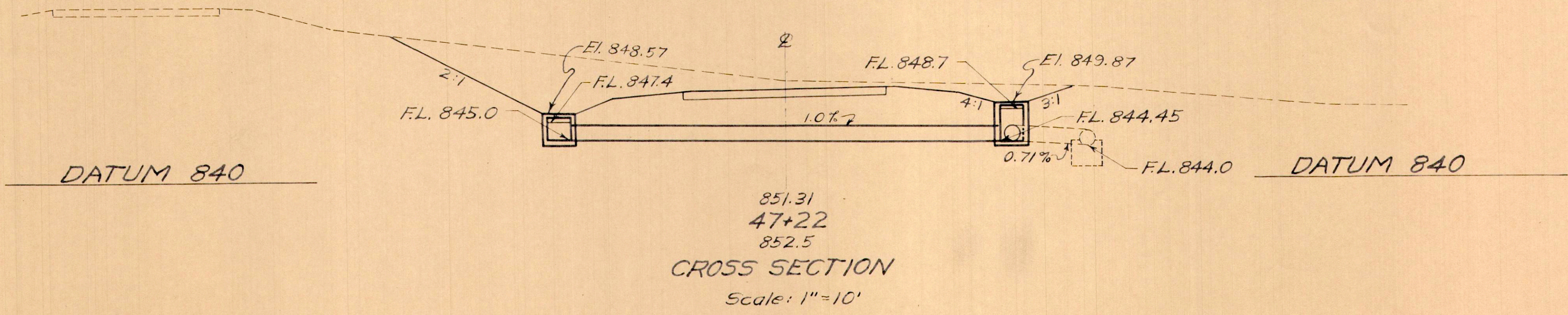


**WORK REQUIRED**  
Build Pipe Culvert and Storm Sewer as Shown.

**ESTIMATED QUANTITIES**

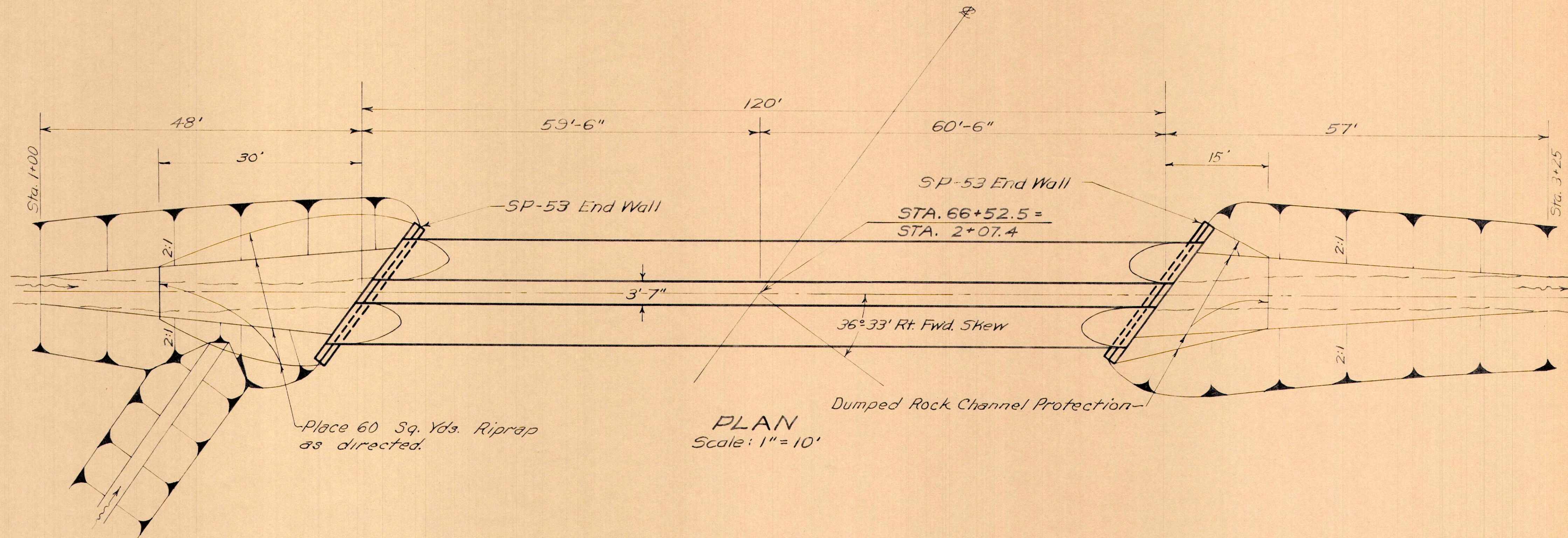
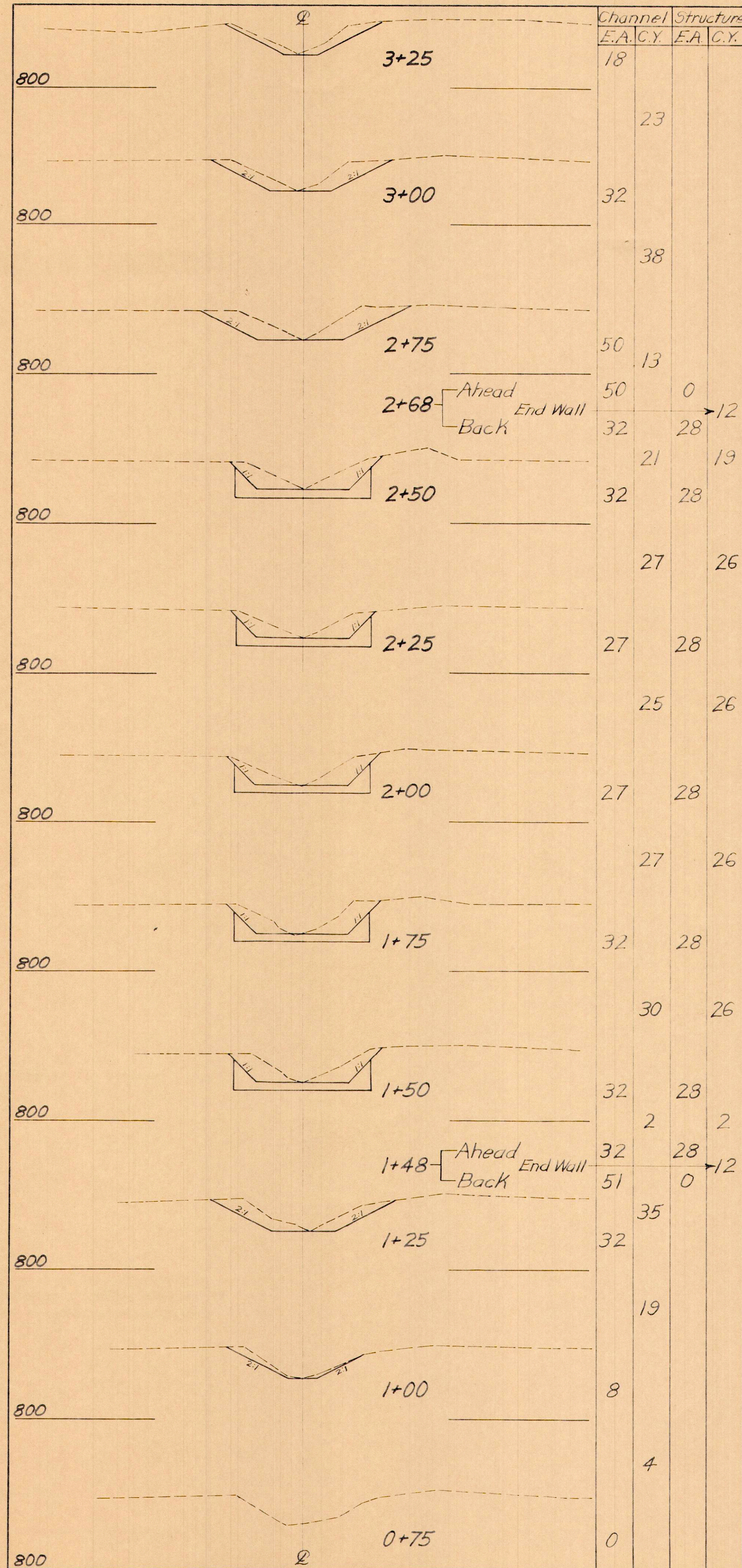
24" Pipe for Roadway Culverts	56 Lin. Ft.
No 2-3 Catch Basin (Modified)	2 Each
24" Class "A" Storm Sewer Under Pvm't. or Appr.	64 Lin. Ft.
Excavation for Structures	42 Cu. Yds.
Concrete for Structures, Class "E"	0.4 Cu. Yds.
Dumped Rock Channel Protection	8 Cu. Yds.
Paved Gutter, Type I (Modified)	40 Lin. Ft.

Area: 8 acres  
Q<sub>10</sub>: 18 cfs



**STA. 47+22**  
**24" x 55' PIPE CULVERT**  
**24" x 64' STORM SEWER**





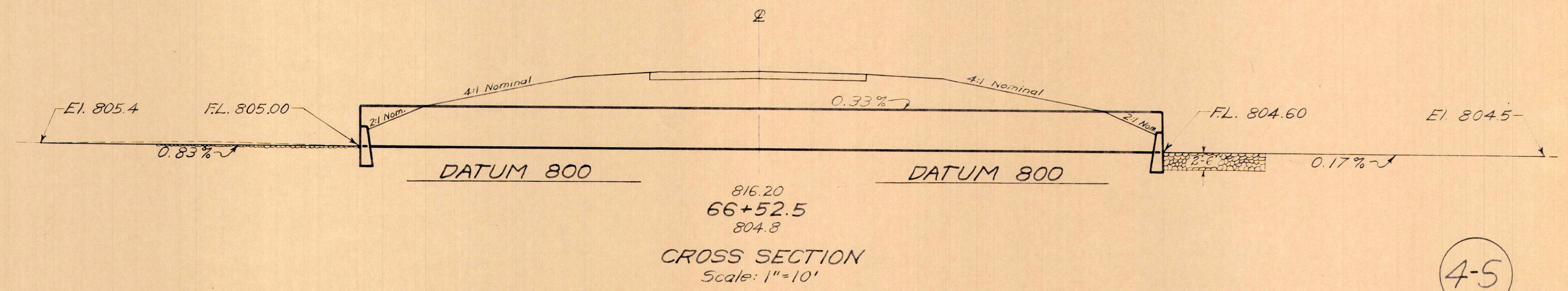
NOTE: The four end sections of this structure will be factory-cast (from Std. sections of 8 ft. length) to the given skew.

WORK REQUIRED  
Build Std Twin Pipe Culverts as Shown.

ESTIMATED QUANTITIES

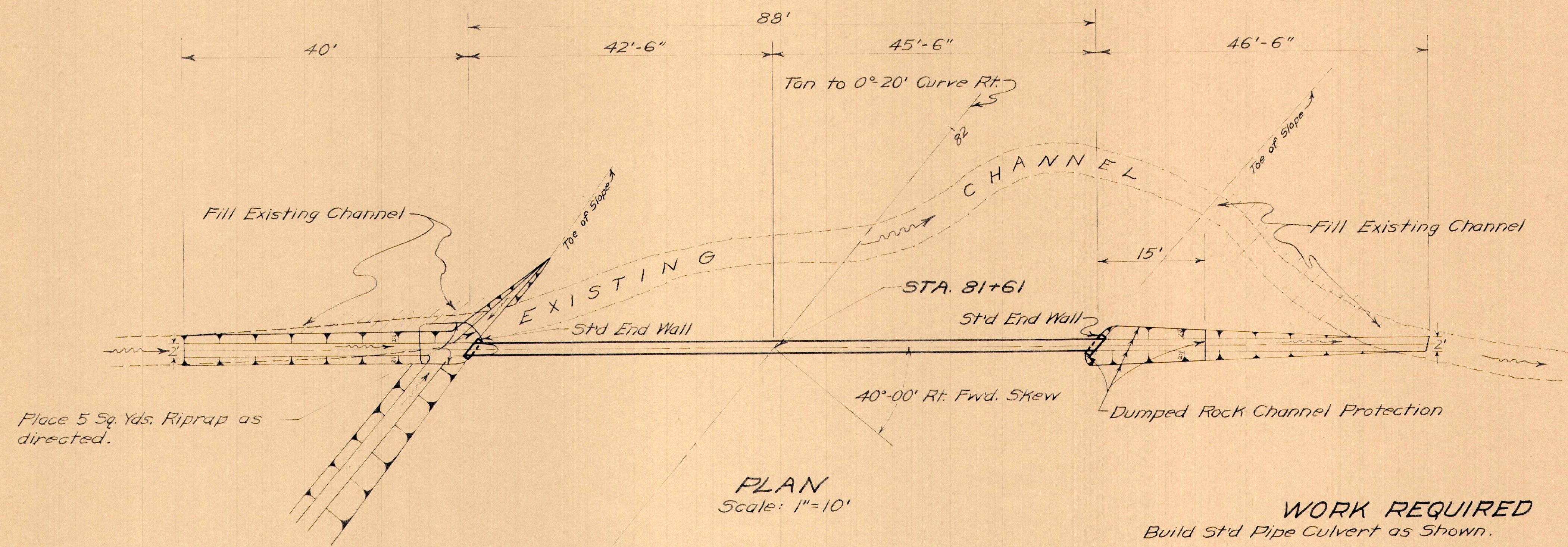
72" Std Strength Reinforced Concrete Culvert Pipe, Sec. M-6.6 (b)	240	Lin. Ft.
Excavation for Structures	149	Cu. Yds.
Channel Excavation	264	Cu. Yds.
Concrete for Structures, Class "E"	12.1	Cu. Yds.
Riprap	60	Sq. Yds.
Dumped Rock Channel Protection	22	Cu. Yds.

Area: 698 acres  
Q<sub>10</sub>: 380 cfs



STA. 66+52.5  
TWIN 72" x 120' CONC. PIPE CULVER



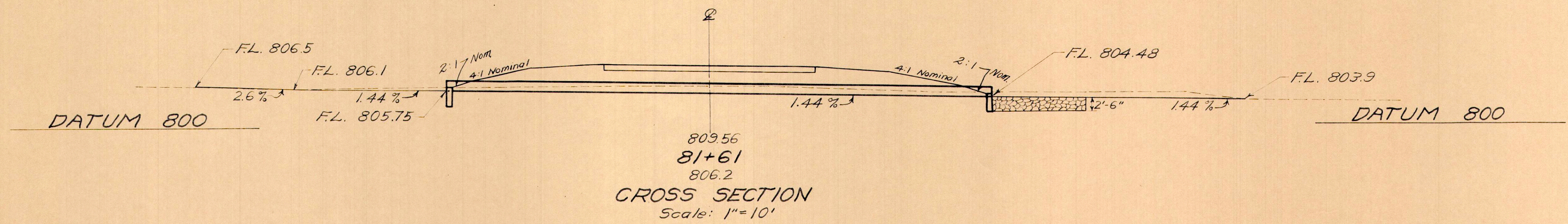


**WORK REQUIRED**  
Build Std Pipe Culvert as Shown.

**ESTIMATED QUANTITIES**

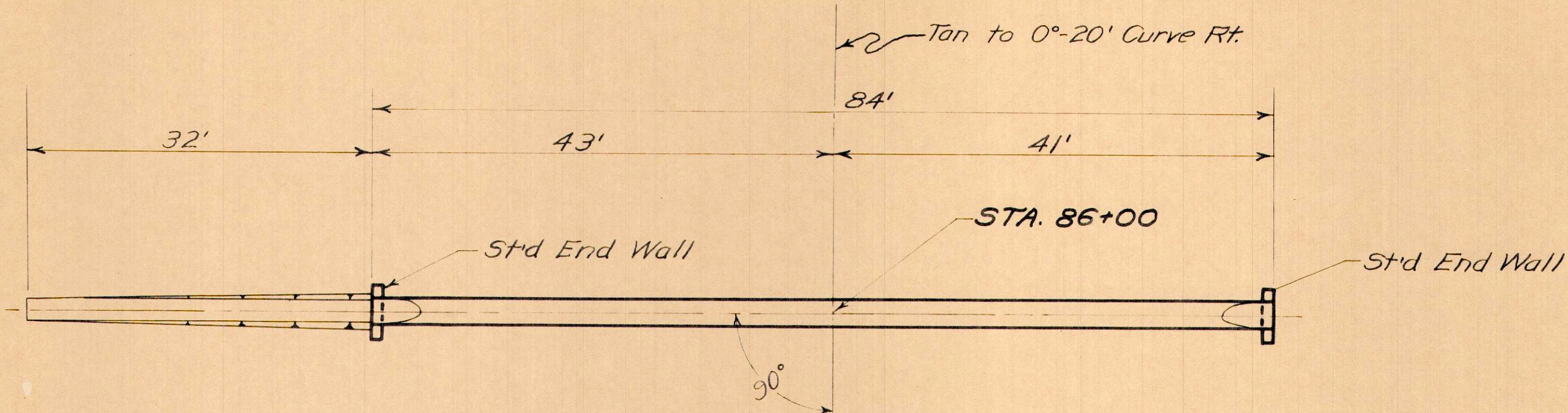
18" Pipe for Roadway Culverts	88	Lin. Ft.
Excavation for Structures	19	Cu. Yds.
Channel Excavation	7	Cu. Yds.
Concrete for Structures, Class "E"	0.6	Cu. Yds.
Riprap	5	Sq. Yds.
Dumped Rock Channel Protection	8	Cu. Yds.

Area : 81 acres  
Q<sub>10</sub> : 93 cfs



**STA. 81+61**  
**18" x 88' PIPE CULVERT**



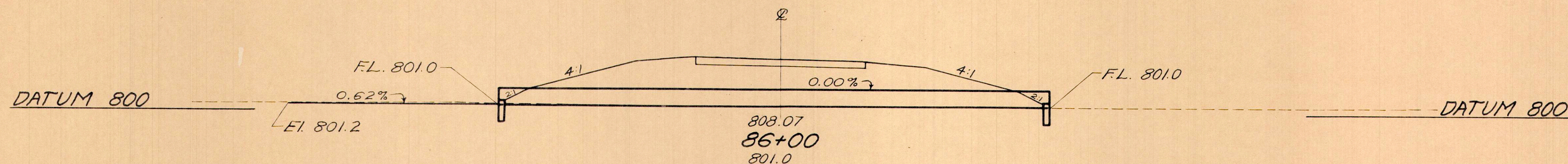


**PLAN**  
Scale: 1"=10'

**WORK REQUIRED**  
Build Std Pipe Culvert as Shown.

**ESTIMATED QUANTITIES**

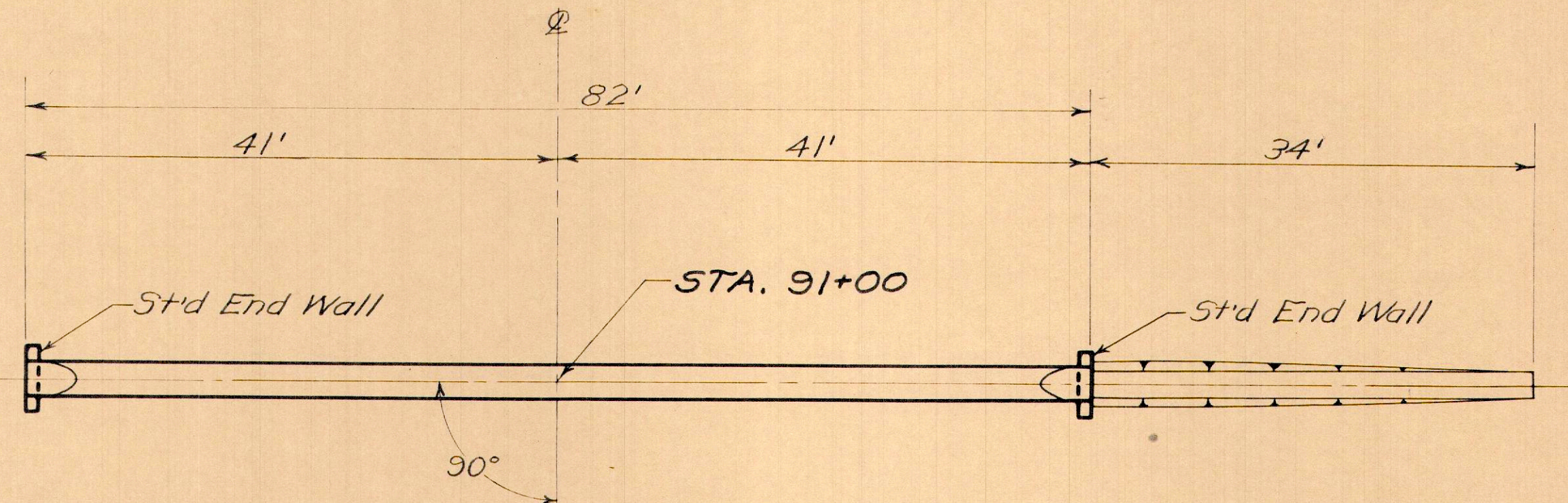
30" Pipe for Roadway Culverts	84	Lin. Ft.
Excavation for Structures	16	Cu. Yds.
Channel Excavation	1	Cu. Yds.
Concrete for Structures, Class "E"	1.0	Cu. Yds.



**CROSS SECTION**  
Scale: 1"=10'

**STA. 86+00**  
**30" x 84' PIPE CULVERT**

6-5

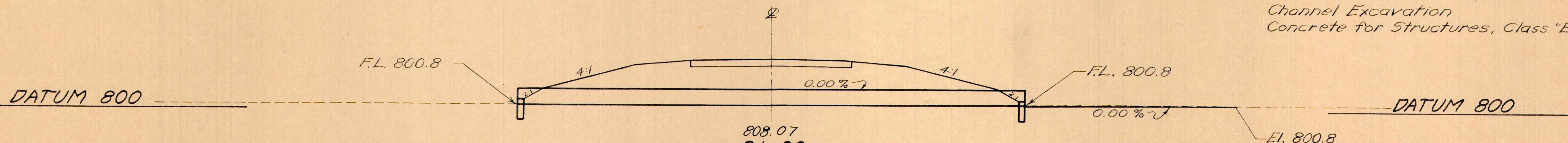


**PLAN**  
Scale: 1"=10'

**WORK REQUIRED**  
Build Std Pipe Culvert as Shown.

**ESTIMATED QUANTITIES**

30" Pipe for Roadway Culverts	82	Lin. Ft.
Excavation for Structures	17	Cu. Yds.
Channel Excavation	1	Cu. Yds.
Concrete for Structures, Class "E"	1.0	Cu. Yds.

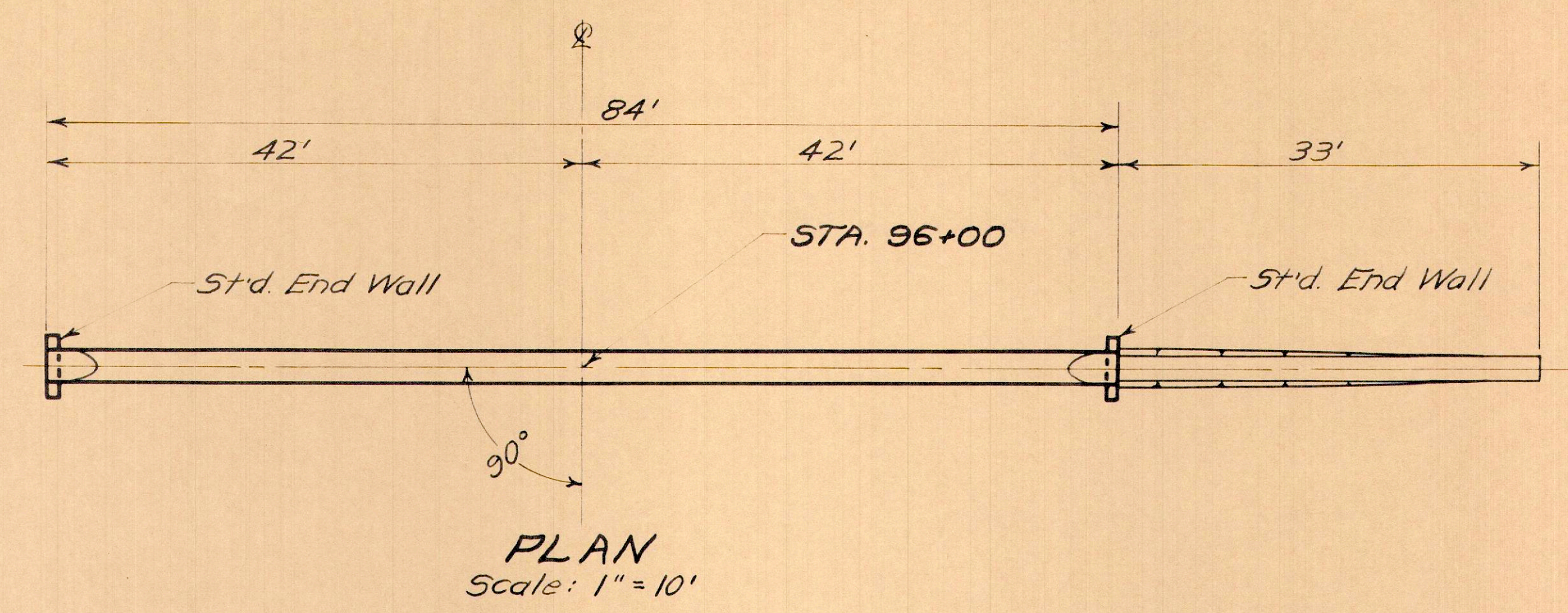


**CROSS SECTION**  
Scale: 1"=10'

**STA. 91+00**  
**30" x 82' PIPE CULVERT**

7-5



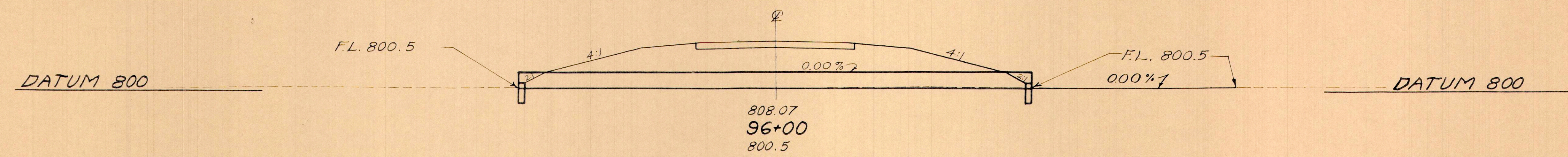


PLAN  
Scale: 1"=10'

**WORK REQUIRED**  
Build Std Relief Pipe Culvert as Shown.

**ESTIMATED QUANTITIES**

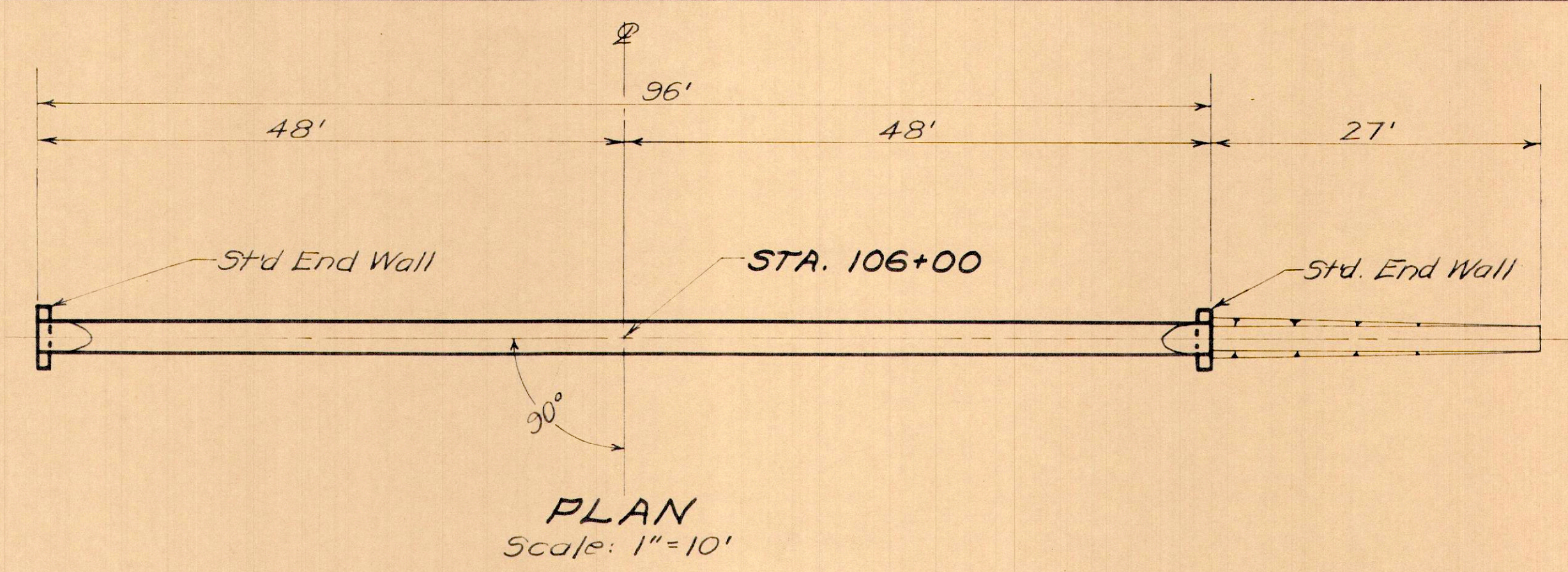
30" Pipe for Roadway Culverts	84	Lin. Ft.
Excavation for Structures	17	Cu. Yds.
Channel Excavation	1	Cu. Yds.
Concrete for Structures, Class "E"	1.0	Cu. Yds.



CROSS SECTION  
Scale: 1"=10'

**STA. 96+00**  
**30"x84' PIPE CULVERT**

8-5

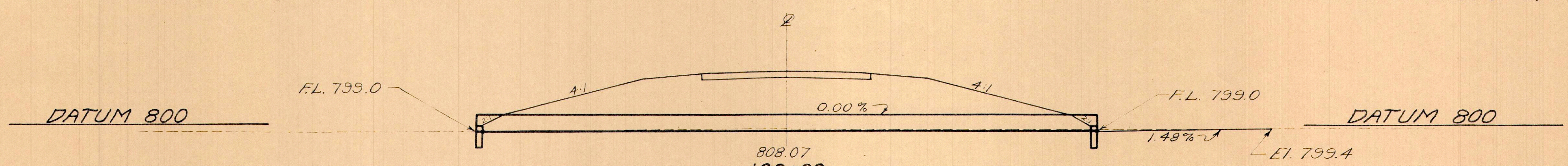


PLAN  
Scale: 1"=10'

**WORK REQUIRED**  
Build Std Relief Pipe Culvert as Shown.

**ESTIMATED QUANTITIES**

30" Pipe for Roadway Culverts	96	Lin. Ft.
Excavation for Structures	21	Cu. Yds.
Channel Excavation	1	Cu. Yds.
Concrete for Structures, Class "E"	1.0	Cu. Yds.

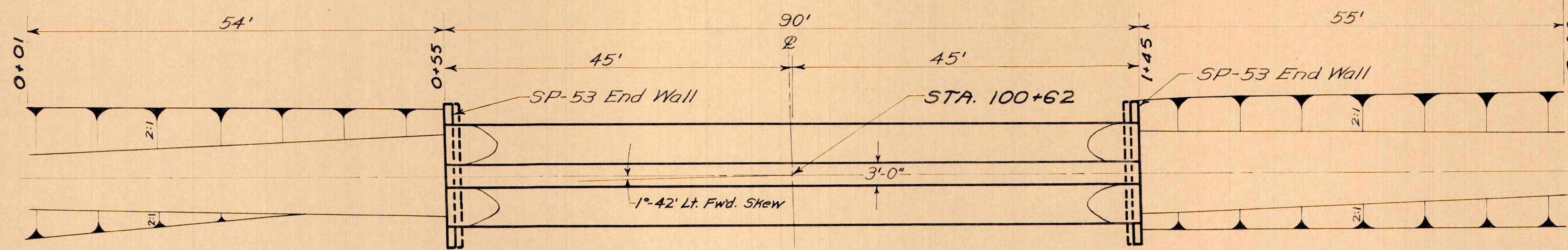


CROSS SECTION  
Scale: 1"=10'

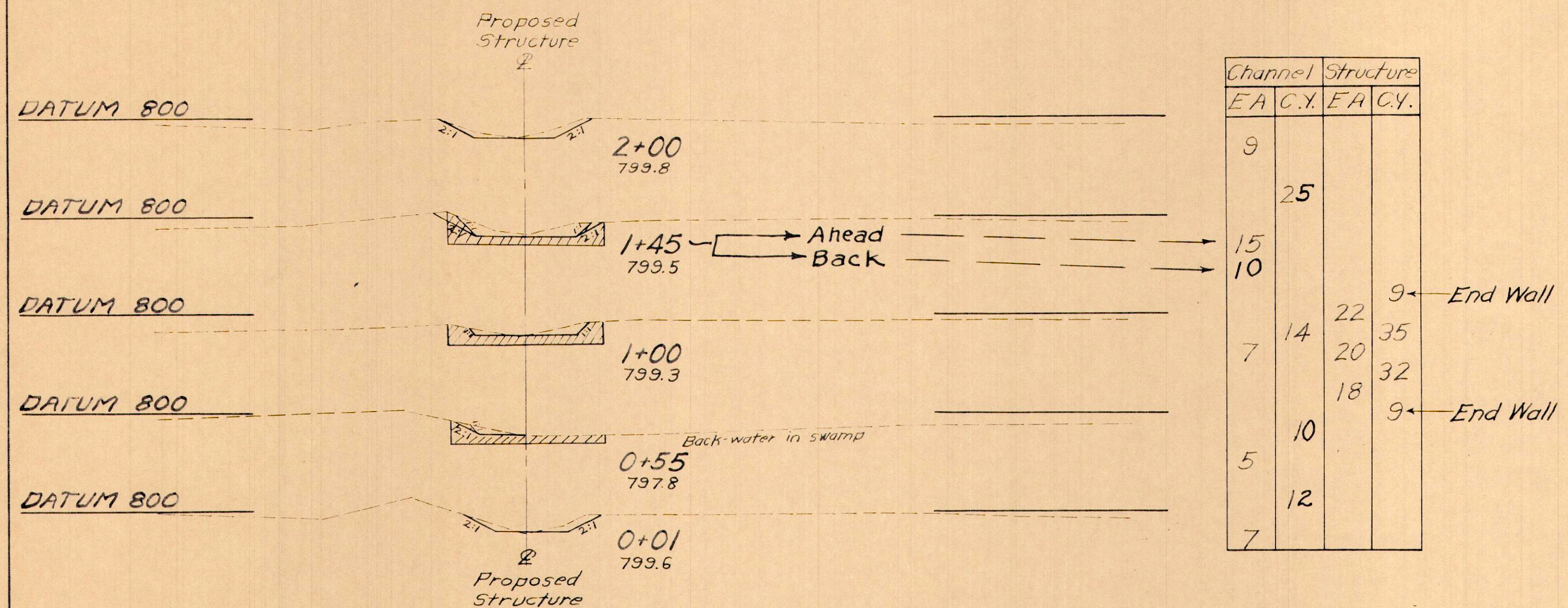
**STA. 106+00**  
**30"x96' PIPE CULVERT**

10-5





PLAN  
Scale: 1"=10'

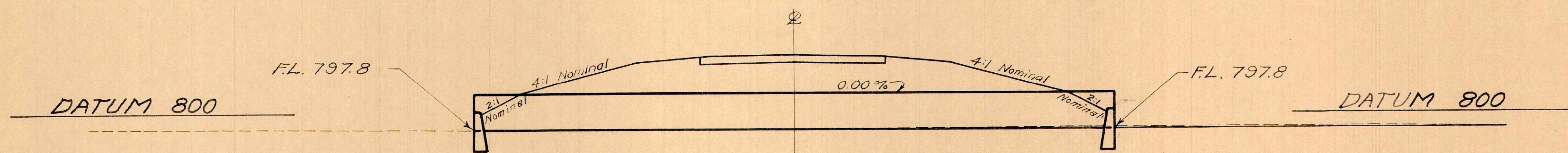


**WORK REQUIRED**  
Build Std. Twin Pipe Culverts as Shown.

**ESTIMATED QUANTITIES**

60" Pipe for Roadway Culverts	180	Lin. Ft.
Excavation for Structures	85	Cu. Yds.
Channel Excavation	61	Cu. Yds.
Concrete for Structures, Class "E"	9.0	Cu. Yds.

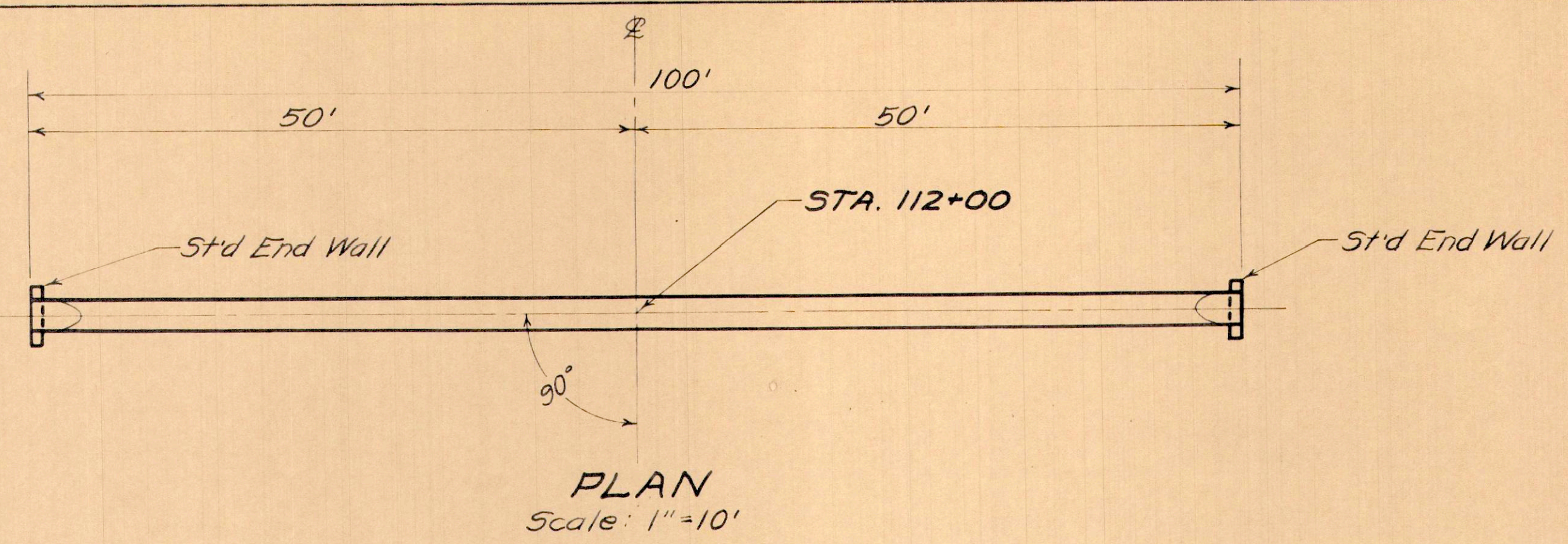
Area: 480 acres  
Q<sub>10</sub>: 302 cfs



808.07  
100+62  
897.8  
CROSS SECTION  
Scale: 1"=10'

STA. 100+62  
TWIN 60" x 90' PIPE CULVERTS

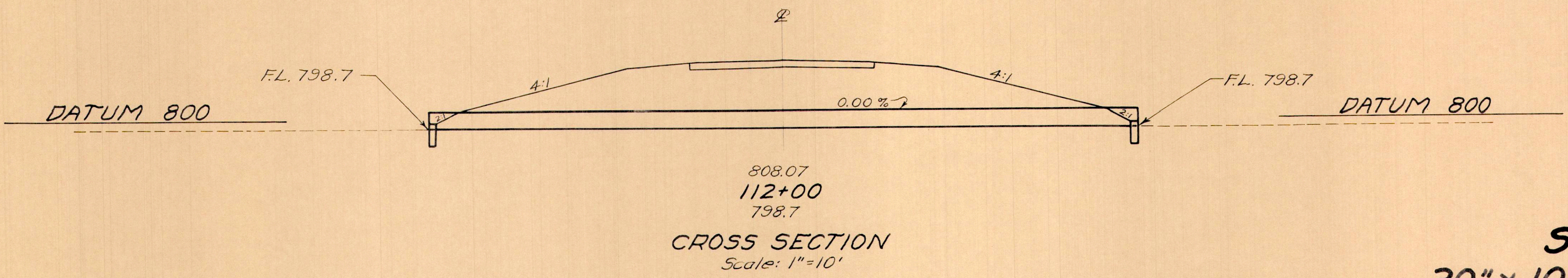




**WORK REQUIRED**  
Build Std Relief Pipe Culvert as Shown.

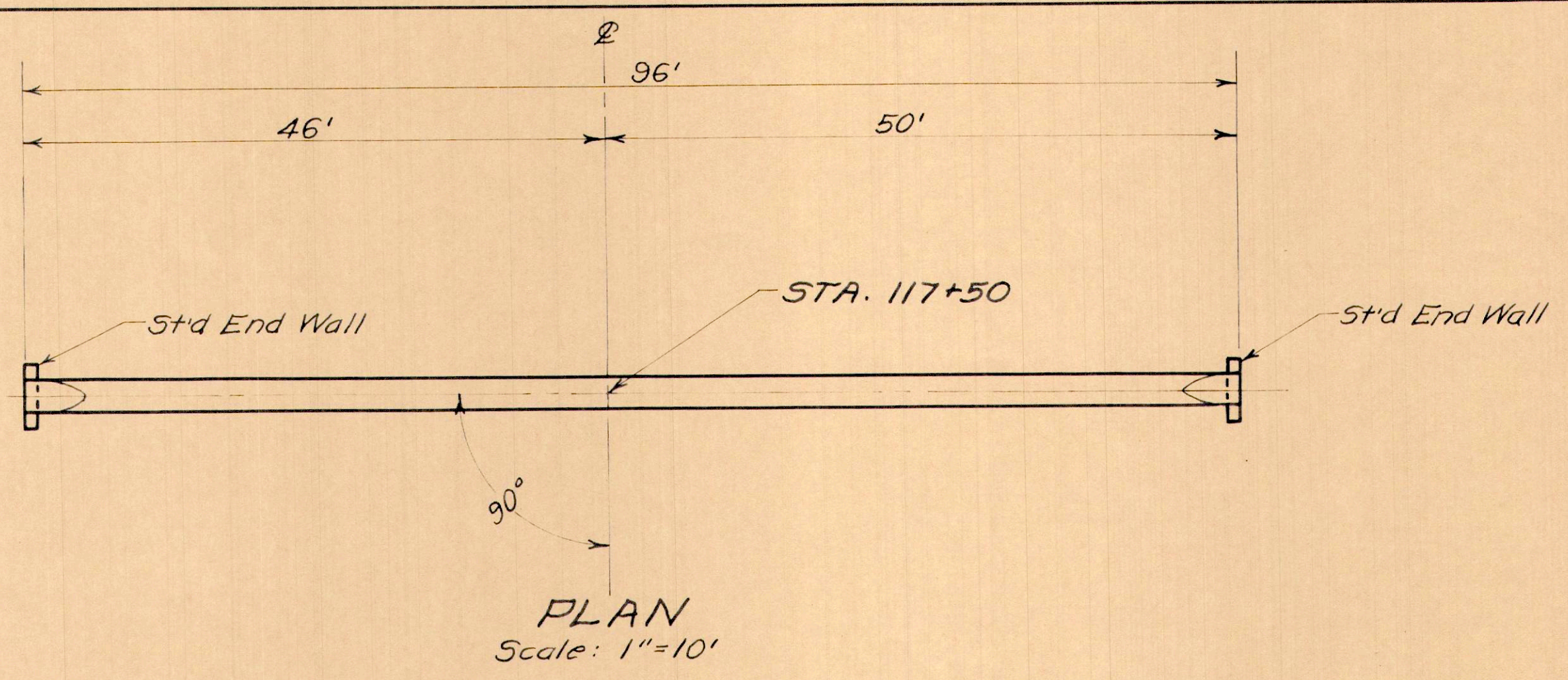
**ESTIMATED QUANTITIES**

30" Pipe for Roadway Culverts	100 Lin. Ft.
Excavation for Structures	18 Cu. Yds.
Concrete for Structures, Class "E"	1.0 Cu. Yds.



**STA. 112+00**  
**30" x 100' PIPE CULVERT**

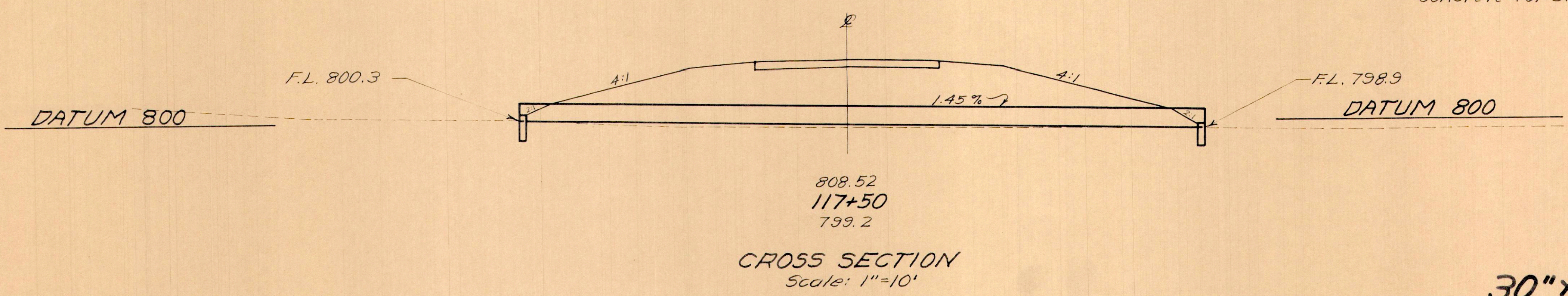
11-5



**WORK REQUIRED**  
Build Std Relief Pipe Culvert as Shown.

**ESTIMATED QUANTITIES**

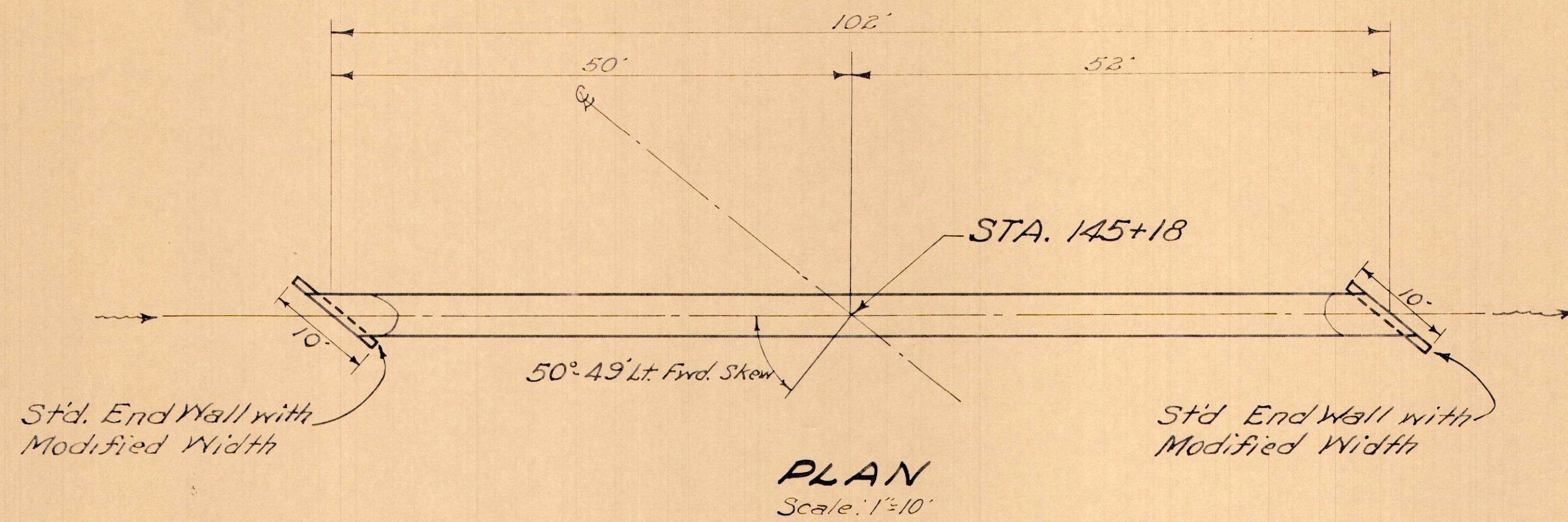
30" Pipe for Roadway Culverts	96 Lin. Ft.
Excavation for Structures	13 Cu. Yds.
Concrete for Structures, Class "E"	1.0 Cu. Yds.



**STA. 117+50**  
**30" x 96' PIPE CULVERT**

12-5





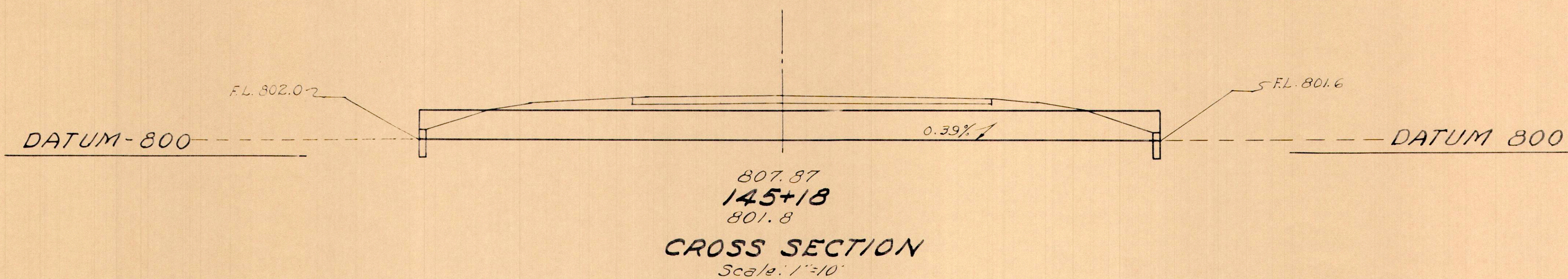
**WORK REQUIRED**

Build Std. Relief Pipe Culvert as shown

**ESTIMATED QUANTITIES**

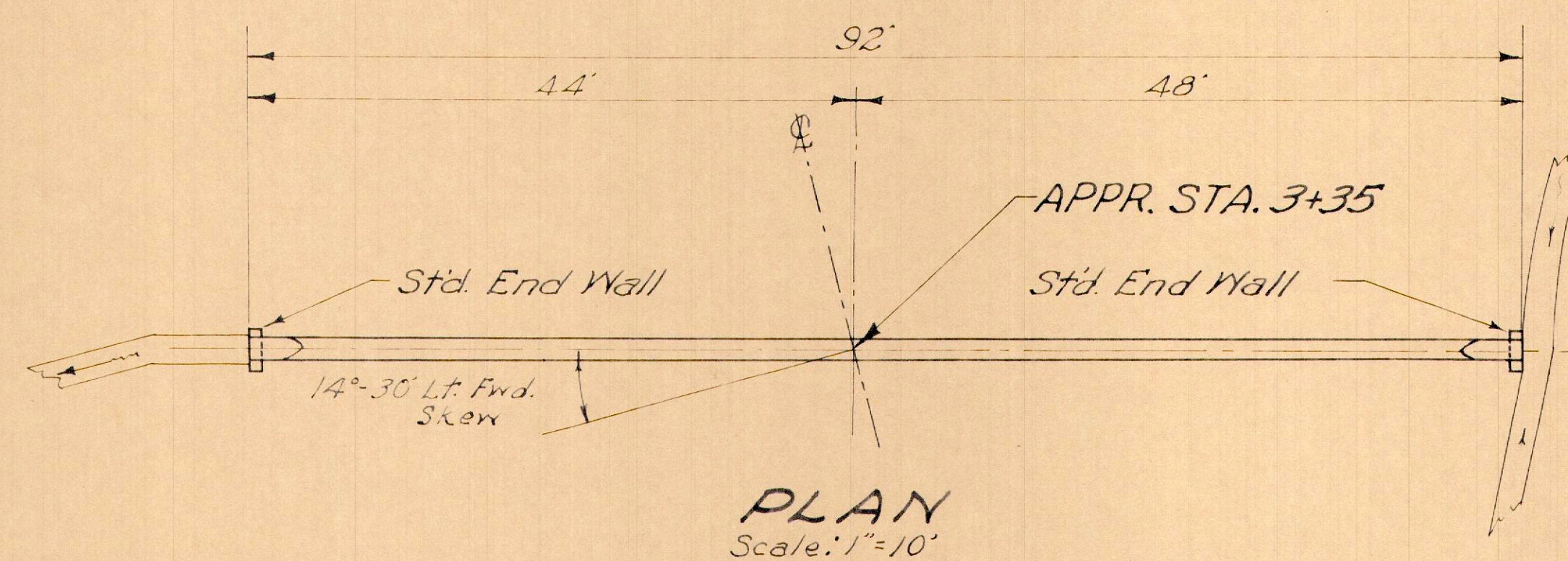
48" Pipe for Roadway Culvert	102 Lin. Ft.
Excavation for Structures	30 Cu. Yds.
Concrete for Structures, Class "E"	2.4 Cu. Yds.

Note: If Concrete Pipe is used, the end sections of this Structure will be factory-cast (from Std. Sections of 8 ft. Length) to the given skew.



**STA. 145+18  
48"x102' PIPE CULVERT**

19-5



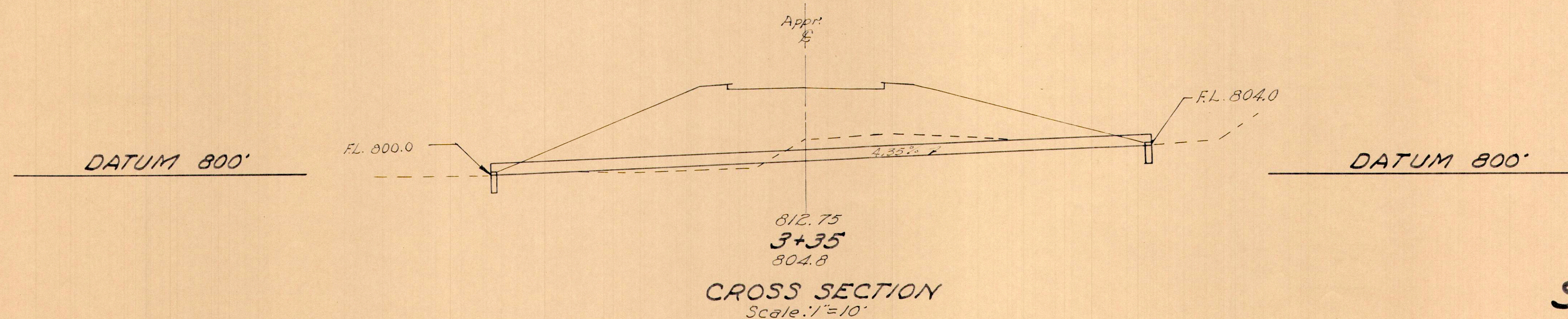
**WORK REQUIRED**

Build Std. Pipe Culvert as Shown

**ESTIMATED QUANTITIES**

18" Pipe for Roadway Culvert	92 Lin. Ft.
Excavation for Structures	1.8 Cu. Yds.
Concrete for Structures, Class "E"	0.6 Cu. Yds.

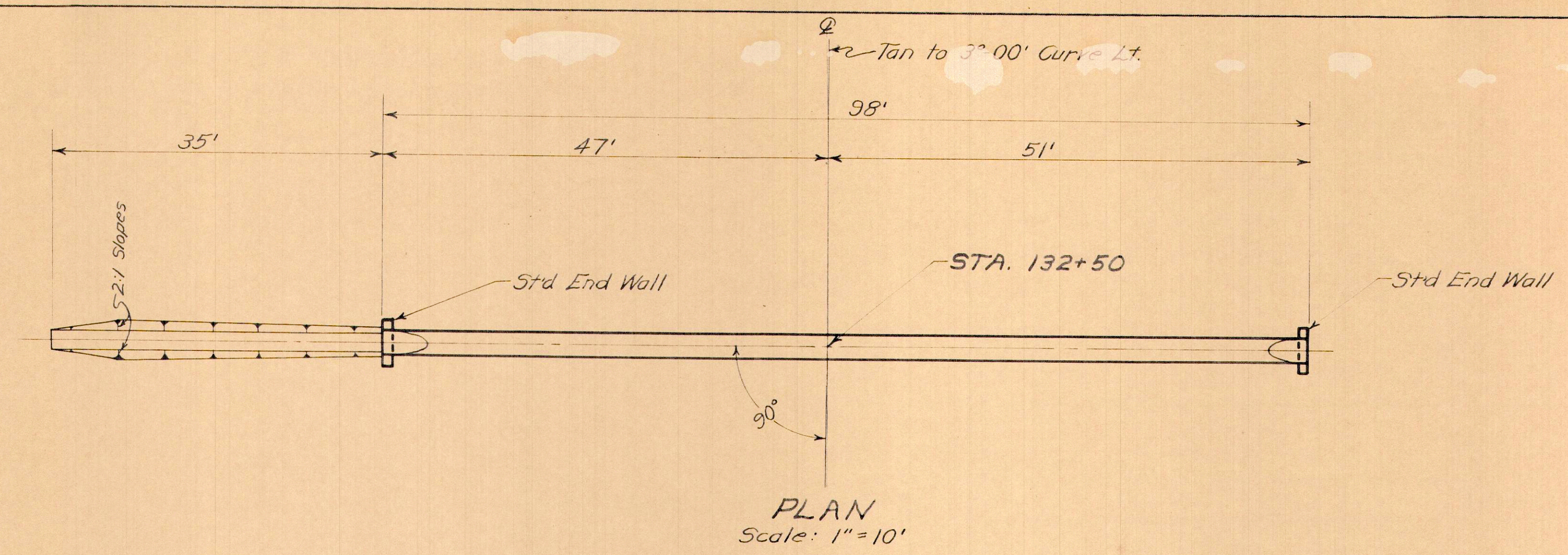
Area: 2 Acres  
Q<sub>10</sub>: 7 c.f.s.



**STA. 3+35 (APPR. LT. STA. 125+00)  
18"x92' PIPE CULVERT**

14-5

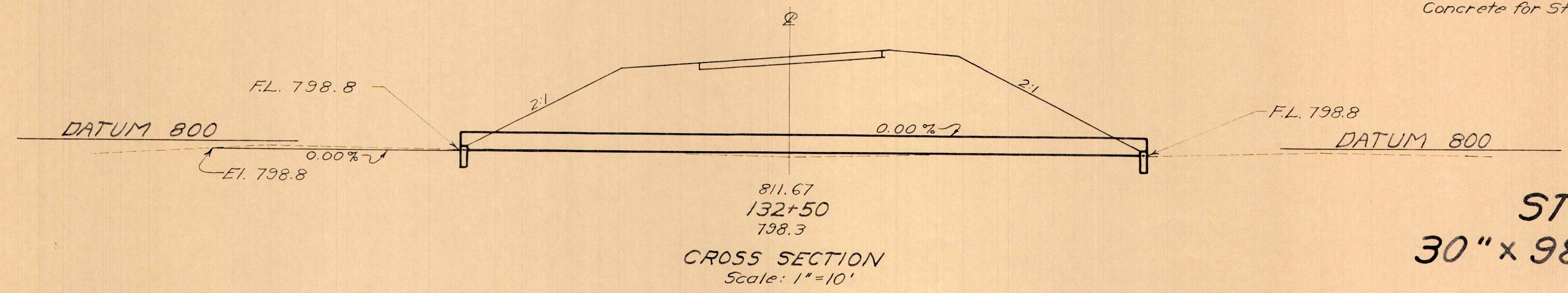




**WORK REQUIRED**  
Build Std. Relief Pipe Culvert as Shown.

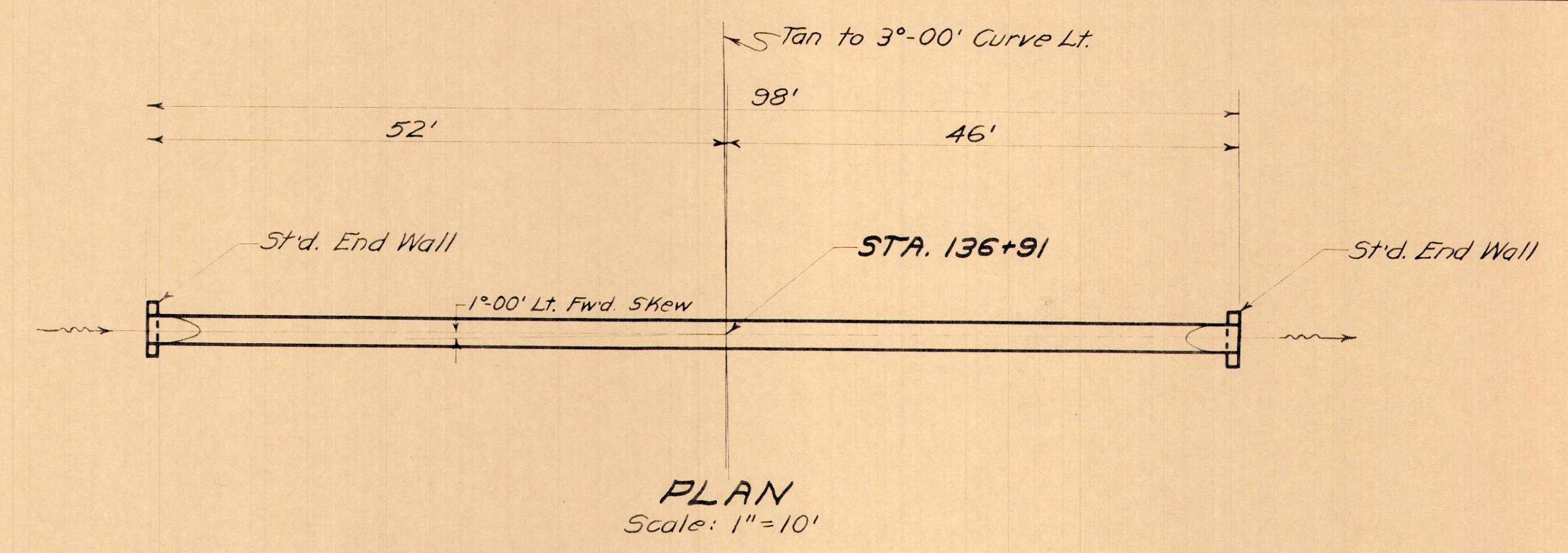
**ESTIMATED QUANTITIES**

30" Pipe for Roadway Culverts	98	Lin. Ft.
Excavation for Structures	18	Cu. Yds.
Channel Excavation	1	Cu. Yds.
Concrete for Structures, Class "E"	1.0	Cu. Yds.



**STA. 132+50**  
**30" x 98' PIPE CULVERT**

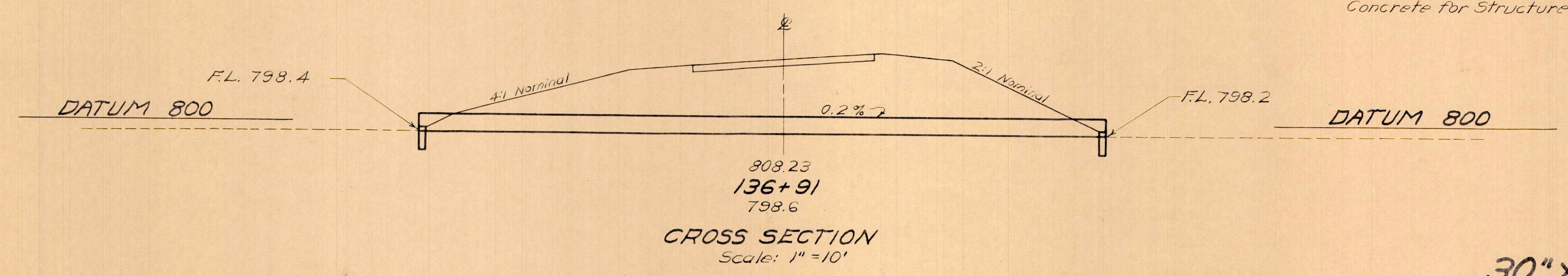
15-S



**WORK REQUIRED**  
Build Std. Relief Pipe Culvert as Shown.

**ESTIMATED QUANTITIES**

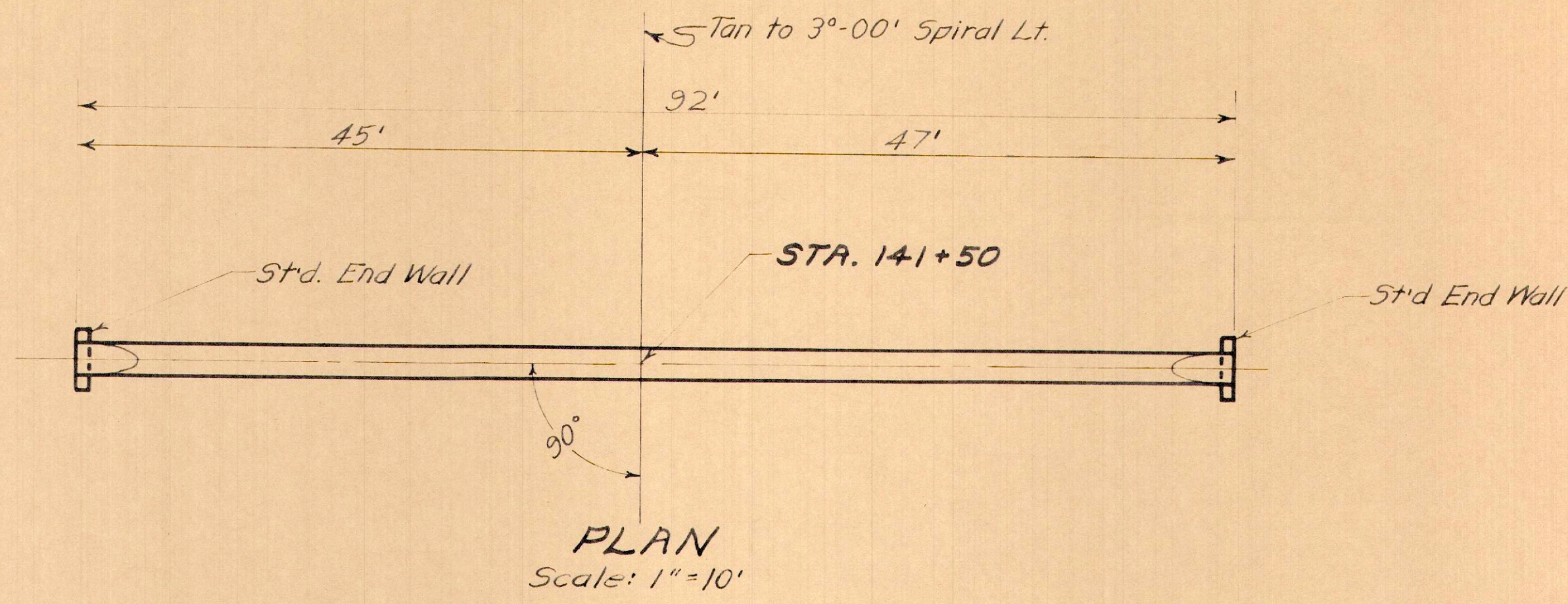
30" Pipe for Roadway Culverts	98	Lin. Ft.
Excavation for Structures	19	Cu. Yds.
Concrete for Structures, Class "E"	1.0	Cu. Yds.



**STA. 136+91**  
**30" x 98' PIPE CULVERT**

16-S

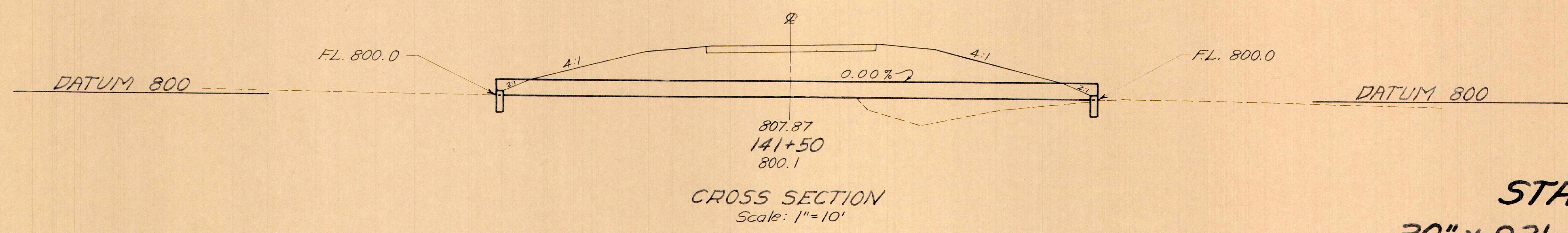




**WORK REQUIRED**  
Build Std. Relief Pipe Culvert as Shown.

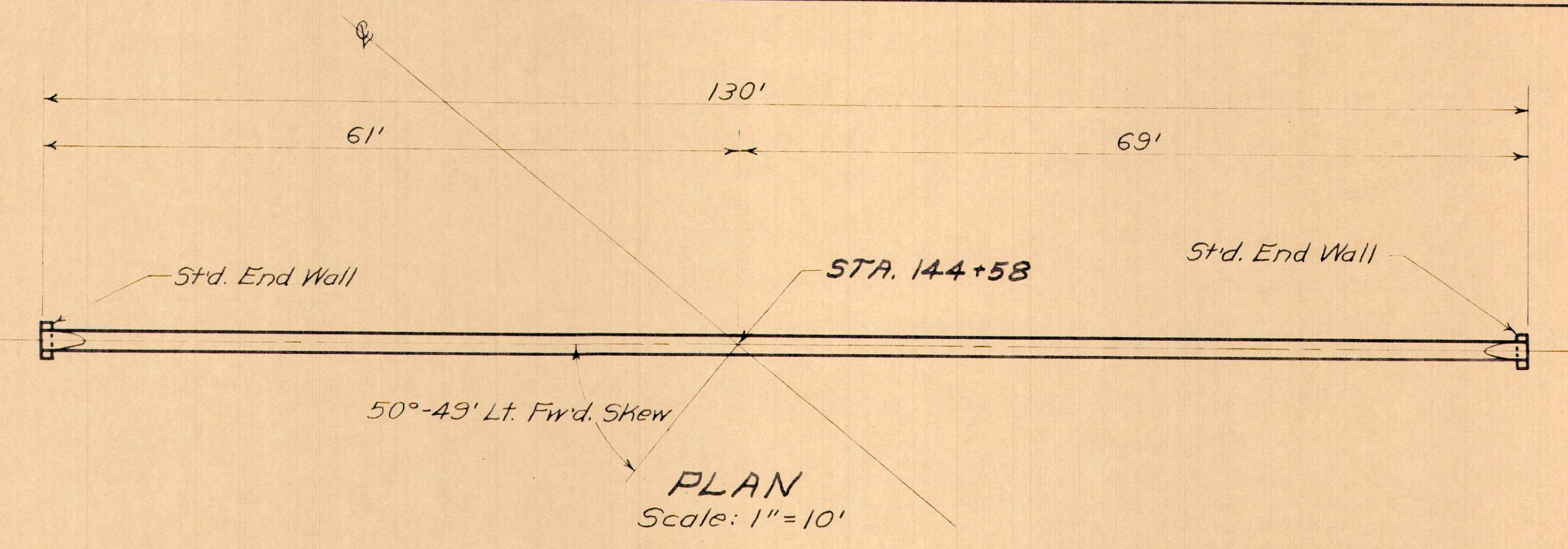
**ESTIMATED QUANTITIES**

30" Pipe for Roadway Culverts	92 Lin. Ft.
Excavation for Structures	12 Cu. Yds.
Concrete for Structures, Class "E"	1.0 Cu. Yds.



**STA. 141+50**  
**30" x 92' PIPE CULVERT**

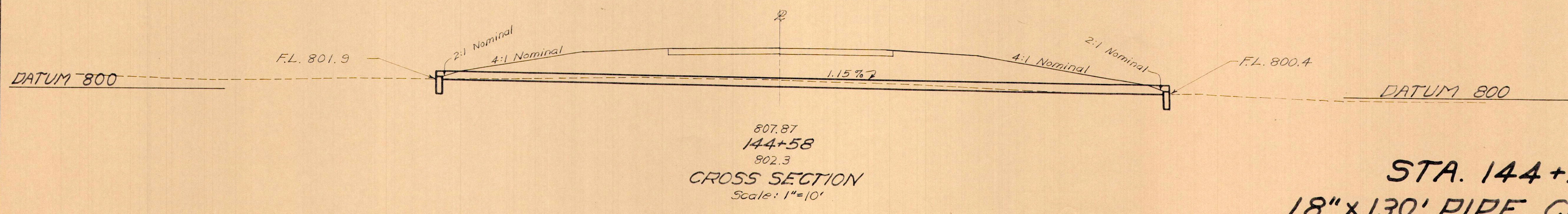
17-5



**WORK REQUIRED**  
Build Std. Relief Pipe Culvert as Shown.

**ESTIMATED QUANTITIES**

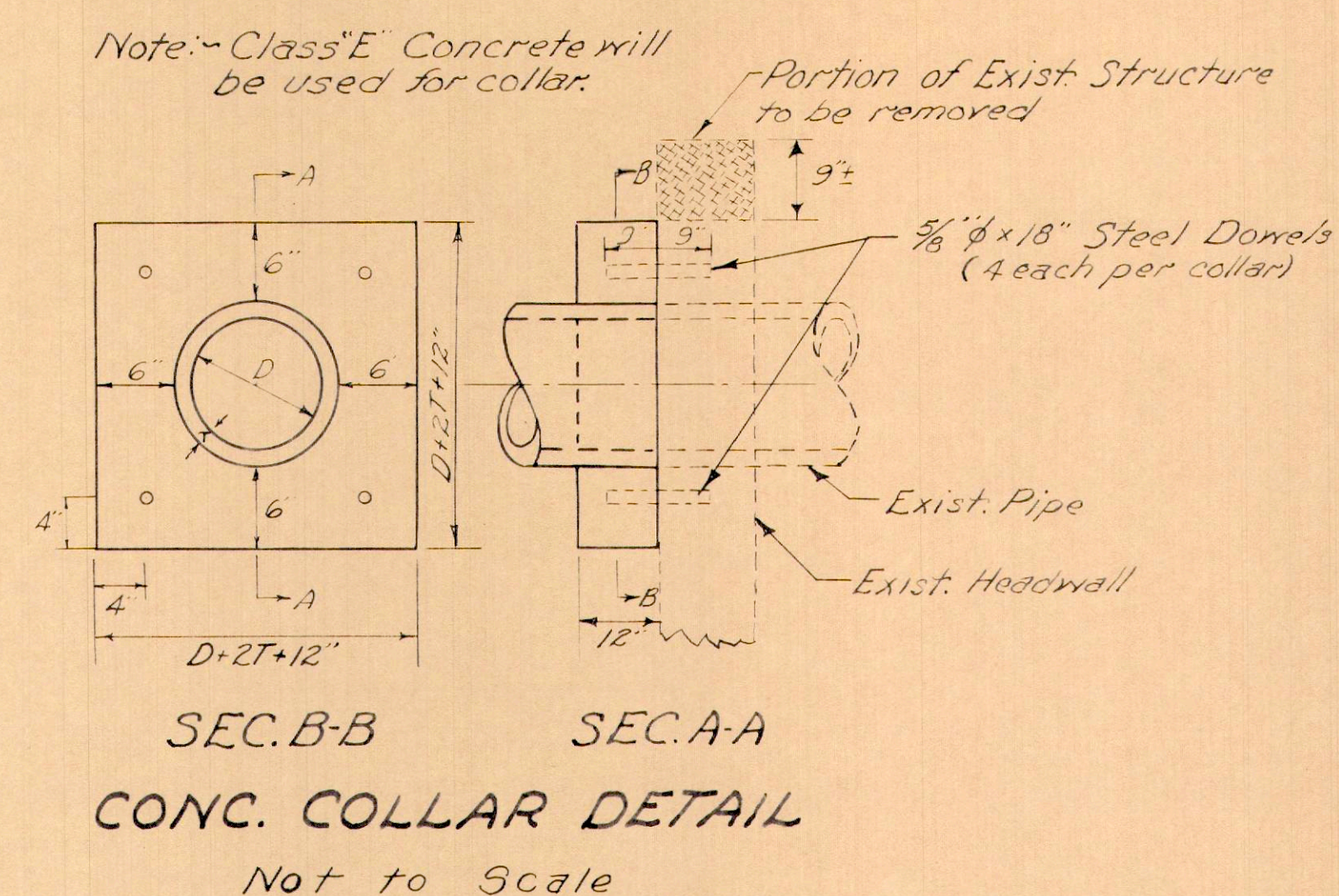
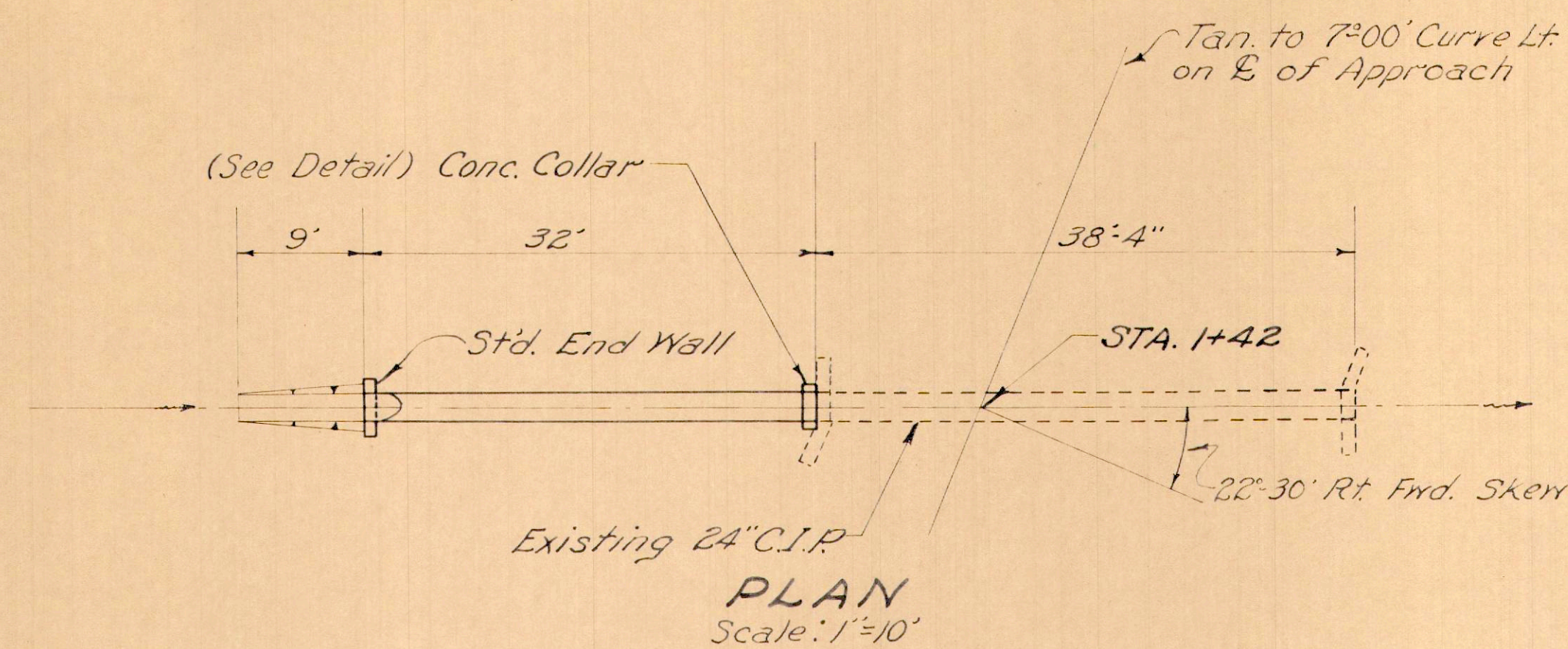
18" Pipe for Roadway Culverts	130 Lin. Ft.
Excavation for Structures	23 Cu. Yds.
Concrete for Structures, Class "E"	0.6 Cu. Yds.



**STA. 144+58**  
**18" x 130' PIPE CULVERT**

18-5

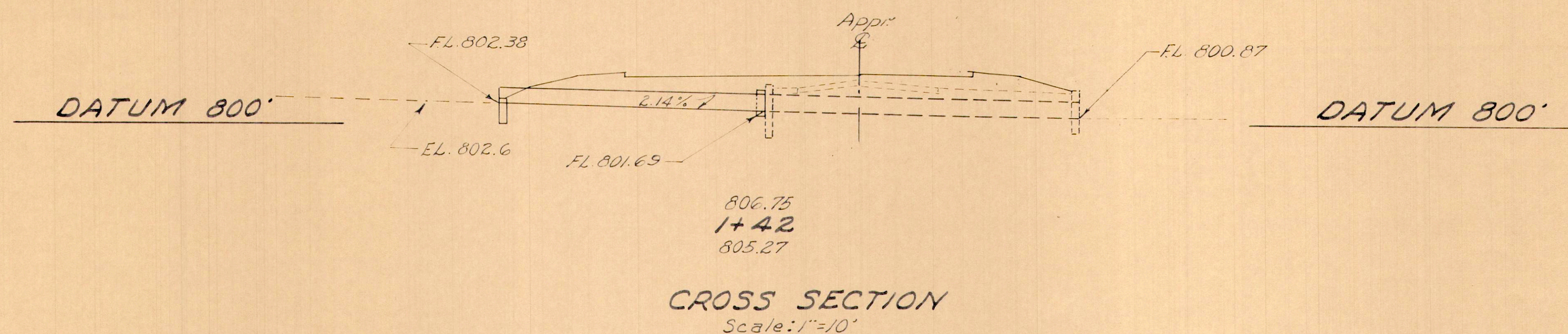




**WORK REQUIRED**  
Build Std. Pipe Culvert Extension as Shown

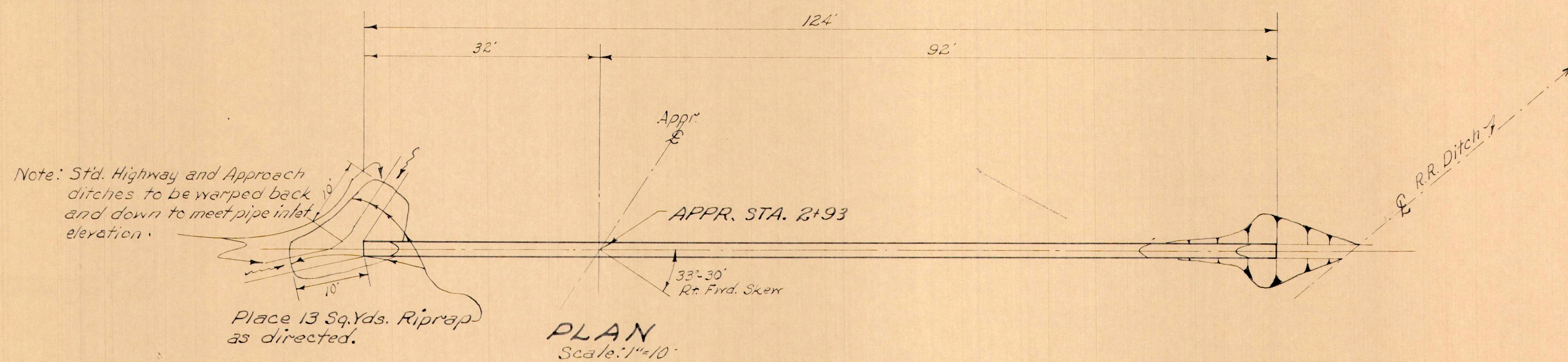
**ESTIMATED QUANTITIES**

24" Pipe for Roadway Culvert	32 Lin. Ft.
Excavation for Structures	4 Cu. Yds.
Concrete for Structures "Class E"	0.7 Cu. Yds.
Channel Excavation	1 Cu. Yds.
Removal of Portions of Existing Structures	0.2 Cu. Yds.
Dowel Holes	3 Lin. Ft.
Reinforcing Steel, 5/8" φ	7 Lbs.



20-5

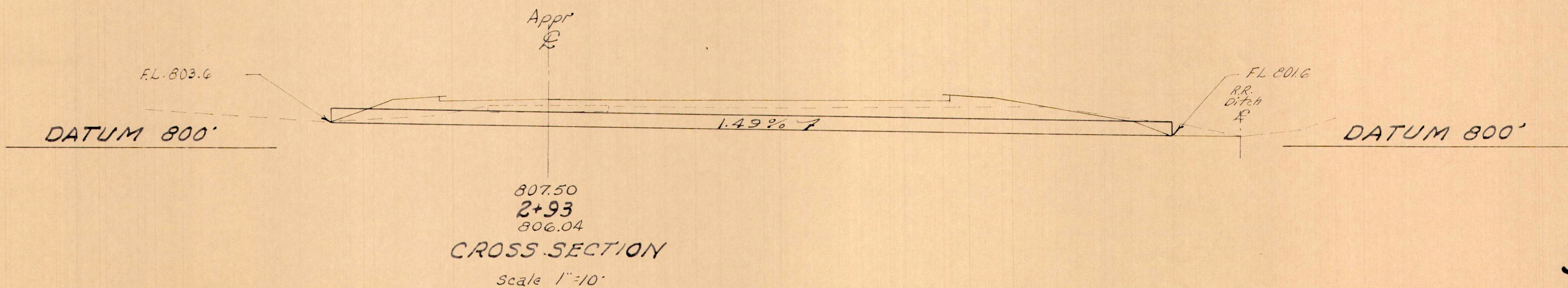
**STA. 1+42 (APPR. LT. STA. 146+00)  
24" x 32' PIPE CULVERT EXTENSION**



**WORK REQUIRED**  
Build Std. Relief Culvert as Shown

**ESTIMATED QUANTITIES**

24" Pipe for Roadway Culvert	124 Lin. Ft.
Excavation for Structures	58 Cu. Yds.
Channel Excavation	6 Cu. Yds.
Riprap	13 Sq. Yds.



21-5

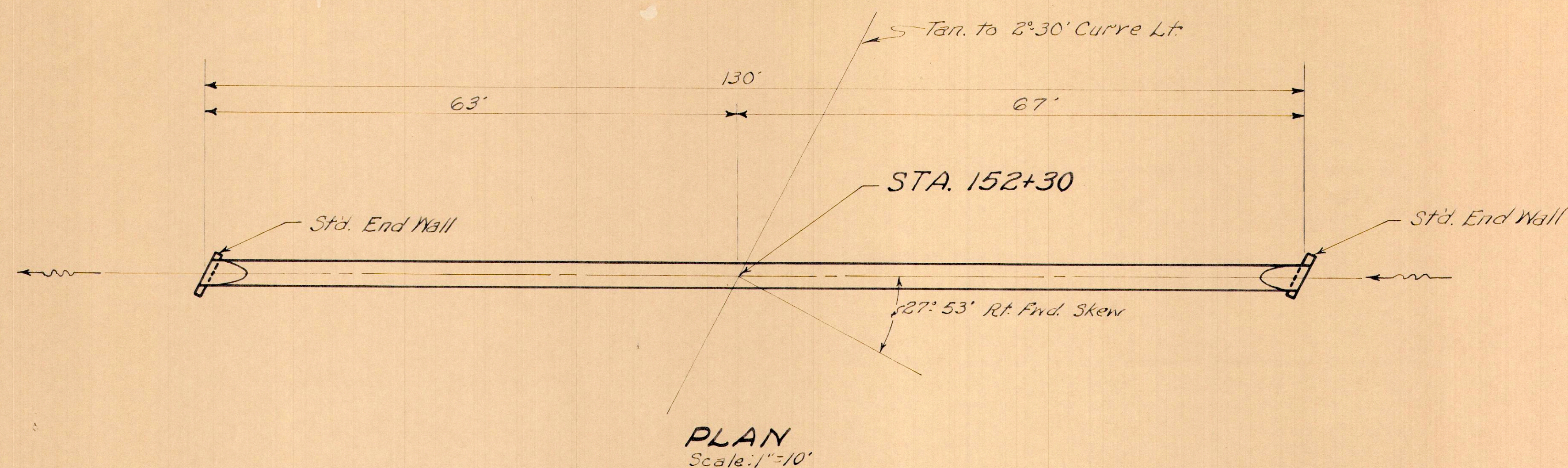
**STA. 2+93 (APPR. RT. STA. 146+00)  
24" x 124' PIPE CULVERT**



FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

104

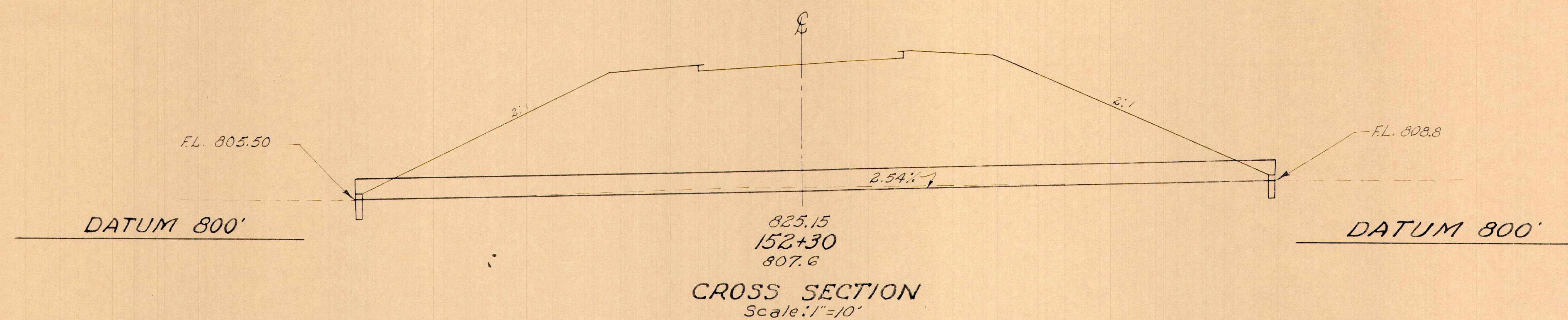
HOL-62-(10.00-14.10)



**WORK REQUIRED**  
Build Std. Relief Pipe Culvert as Shown

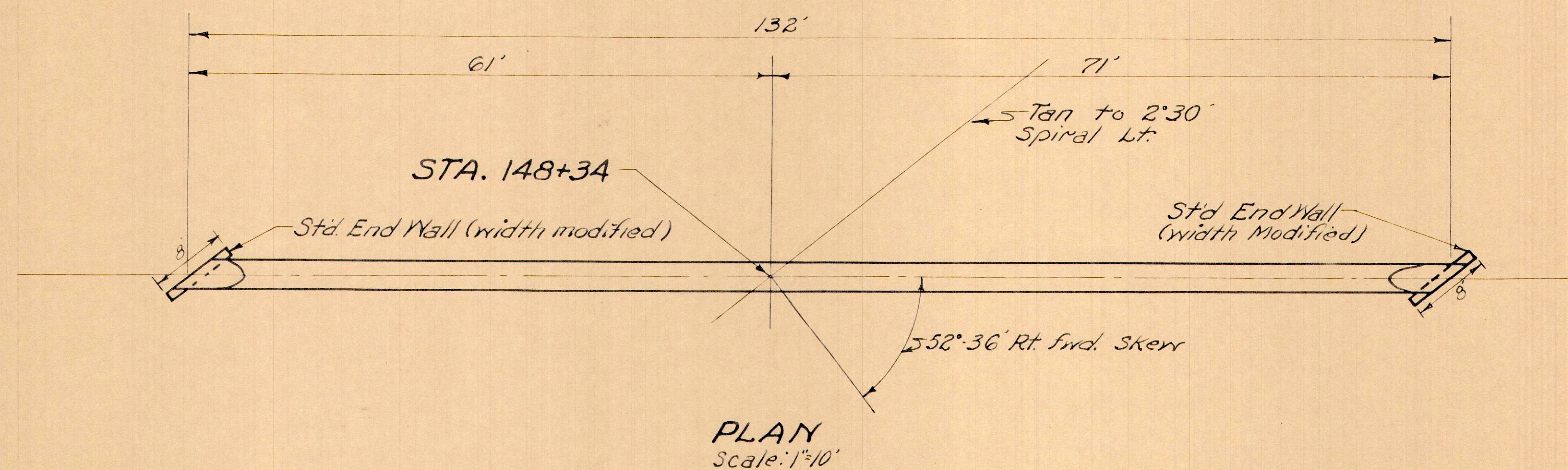
**ESTIMATED QUANTITIES**

36" Pipe for Roadway Culvert	130 Lin. Ft.
Excavation for Structures	30 Cu. Yds.
Concrete for Structures, Class "E"	1.2 Cu. Yds.



**STA. 152+30**  
**36" x 130' PIPE CULVERT**

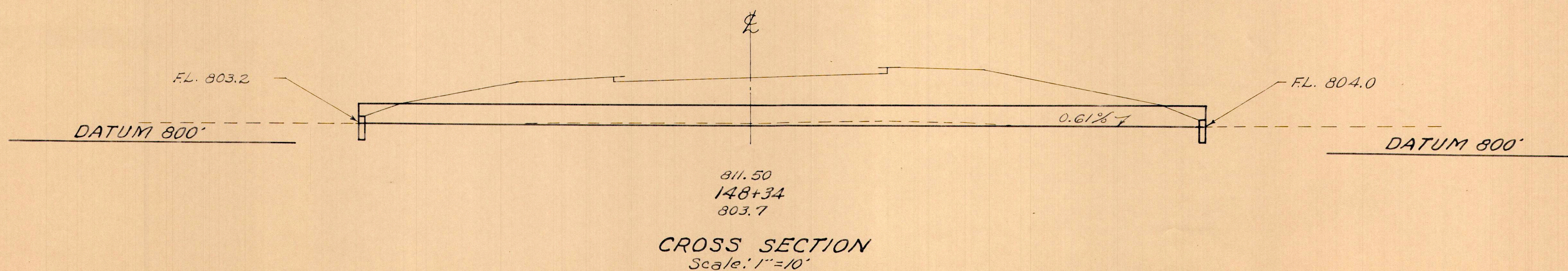
23-5



**WORK REQUIRED**  
Build Std. Relief Pipe Culvert as Shown

**ESTIMATED QUANTITIES**

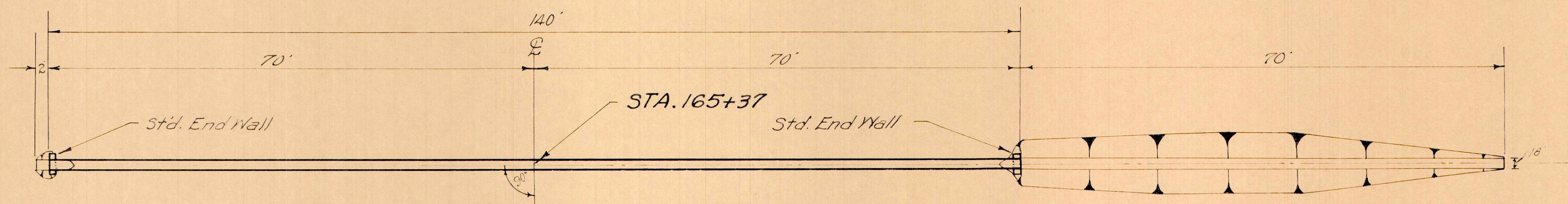
36" Pipe for Roadway Culverts	132 Lin. Ft.
Excavation for Structures Class "E"	35 Cu. Yds.
Concrete for Structures, Class "E"	2.0 Cu. Yds.



**STA. 148+34**  
**36" x 132' PIPE CULVERT**

22-5





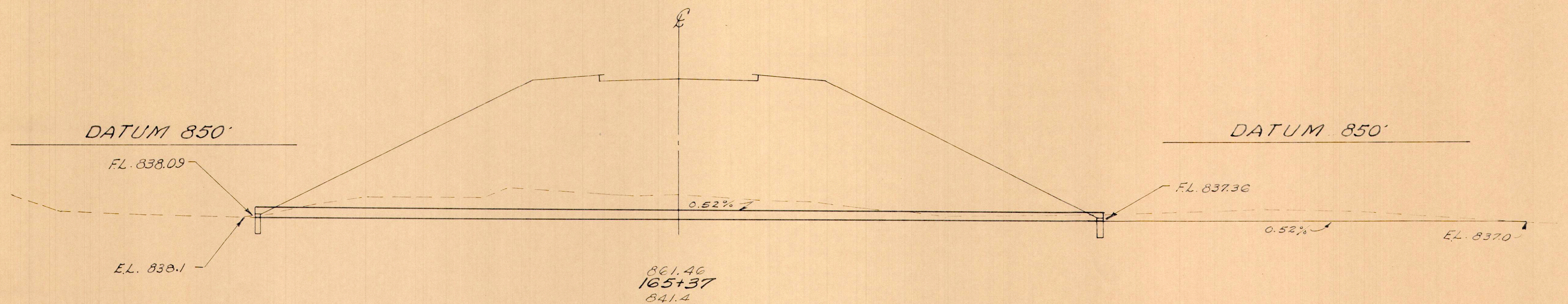
PLAN  
Scale: 1"=10'

**WORK REQUIRED**  
Build Std. Pipe Culvert as Shown

**ESTIMATED QUANTITIES**

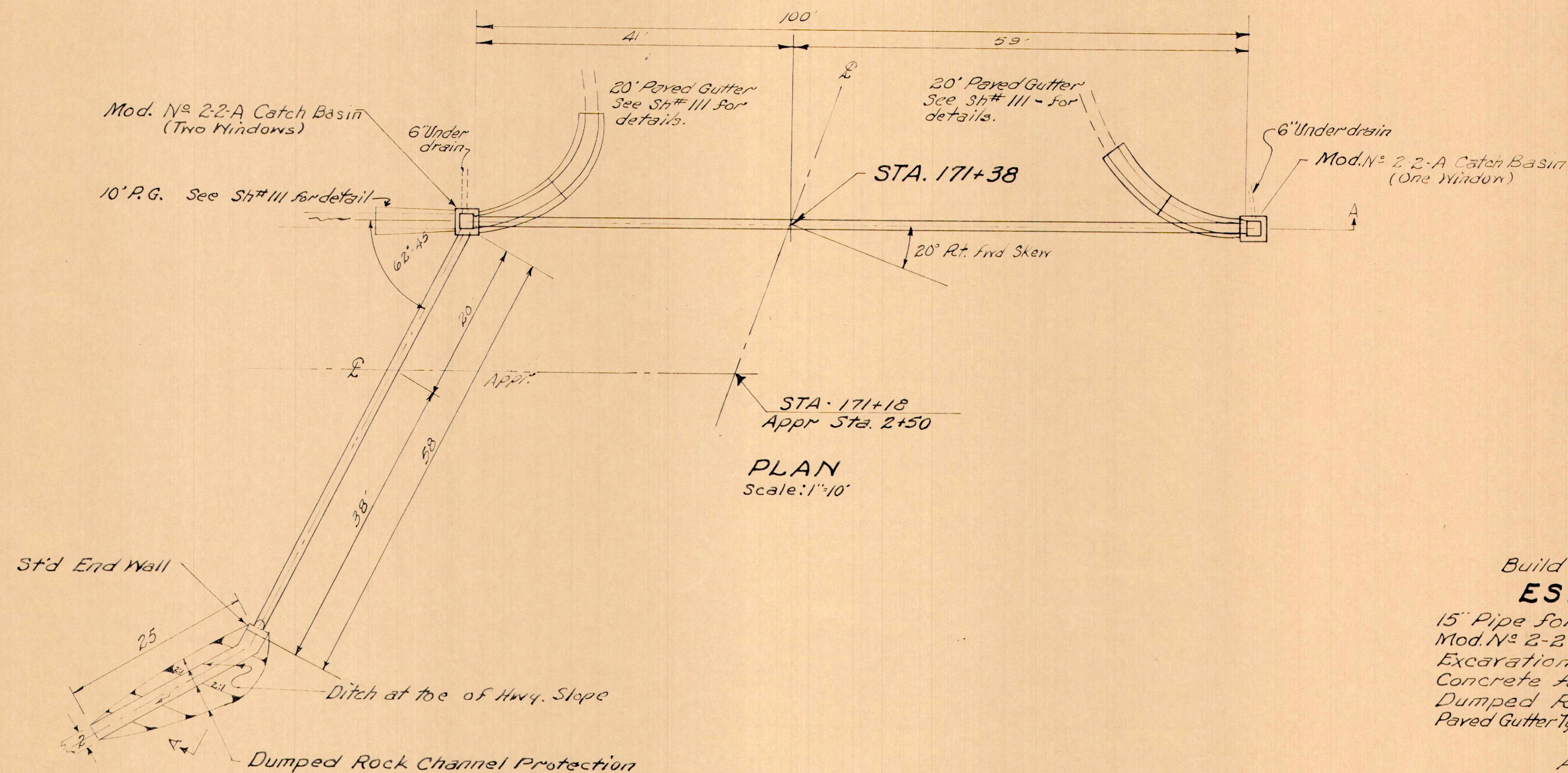
18" Pipe for Roadway Culverts - M-6.6(a) or M-6.4(a)	140 Lin. Ft.
Excavation for Structures	55 Cu. Yds.
Channel Excavation	18 Cu. Yds.
Concrete for Structures "Class E"	0.6 Cu. Yds.

Area: 2 Acres  
Q<sub>10</sub>: 7 c.f.s.



CROSS SECTION  
Scale: 1"=10'

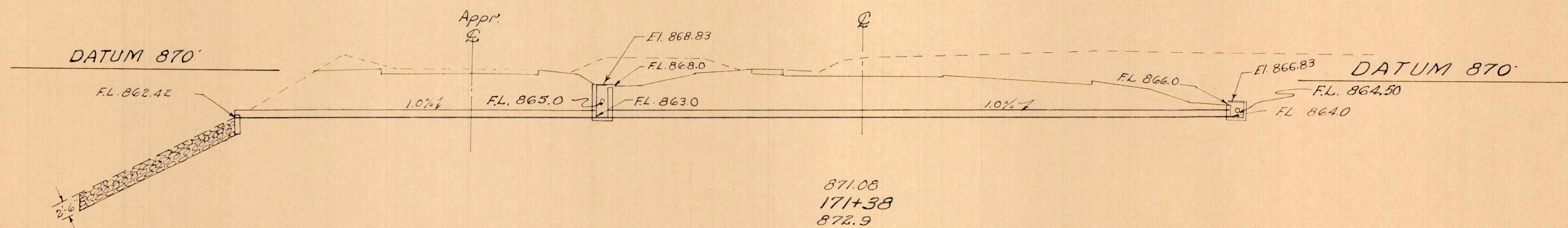




**WORK REQUIRED**  
 Build Std. Pipe Culvert as Shown  
**ESTIMATED QUANTITIES**

15" Pipe for Roadway Culvert	158 Lin. Ft.
Mod. No. 2-2 A Catch Basin	2 Each
Excavation for Structures	98 Cu. Yds
Concrete for Structures, Class "E"	0.3 Cu. Yds
Dumped Rock Channel Protection	14 Cu Yds
Paved Gutter Type I (Mod.) as per plan	50 Lin. Ft.

Area: 1 A<sup>s</sup>  
 Q<sub>10</sub>: 4 c.f.s.



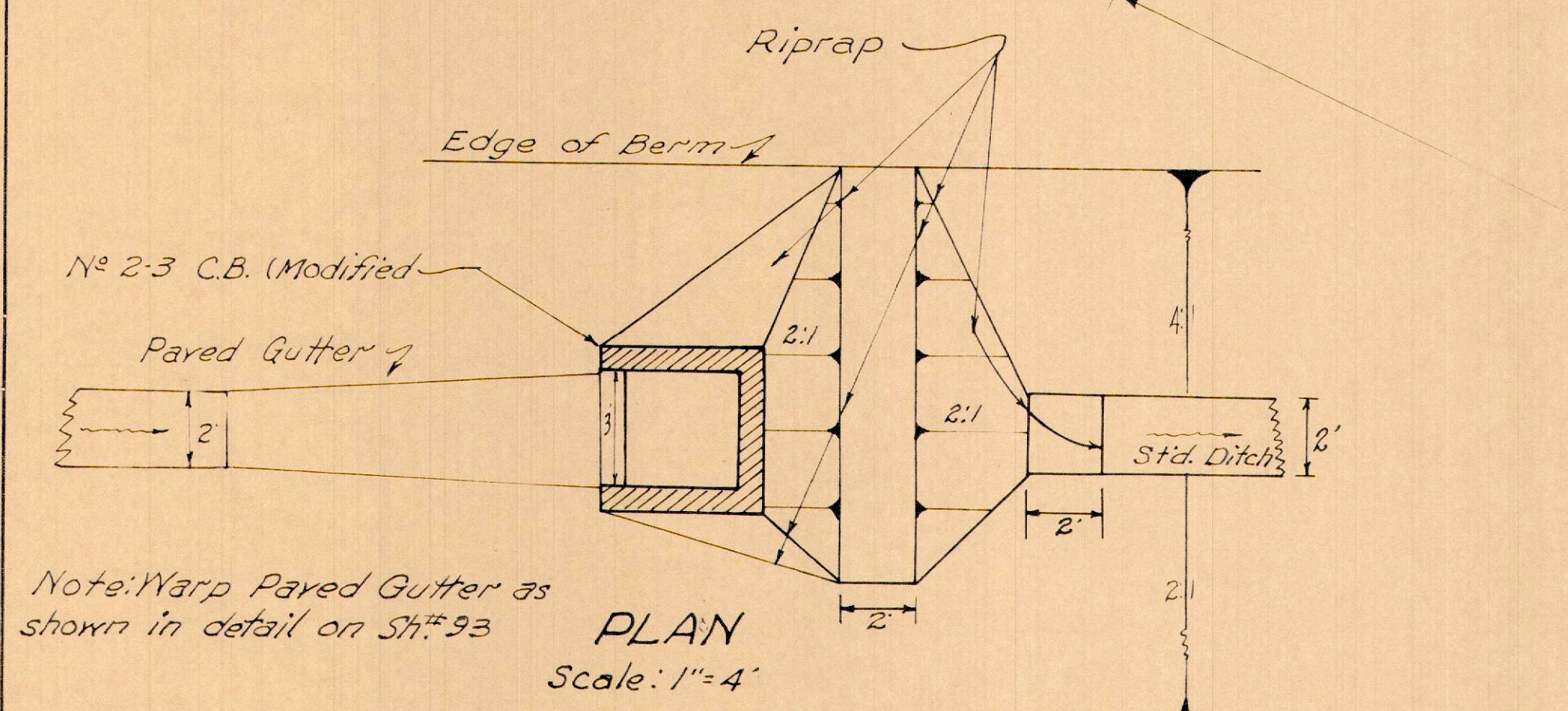
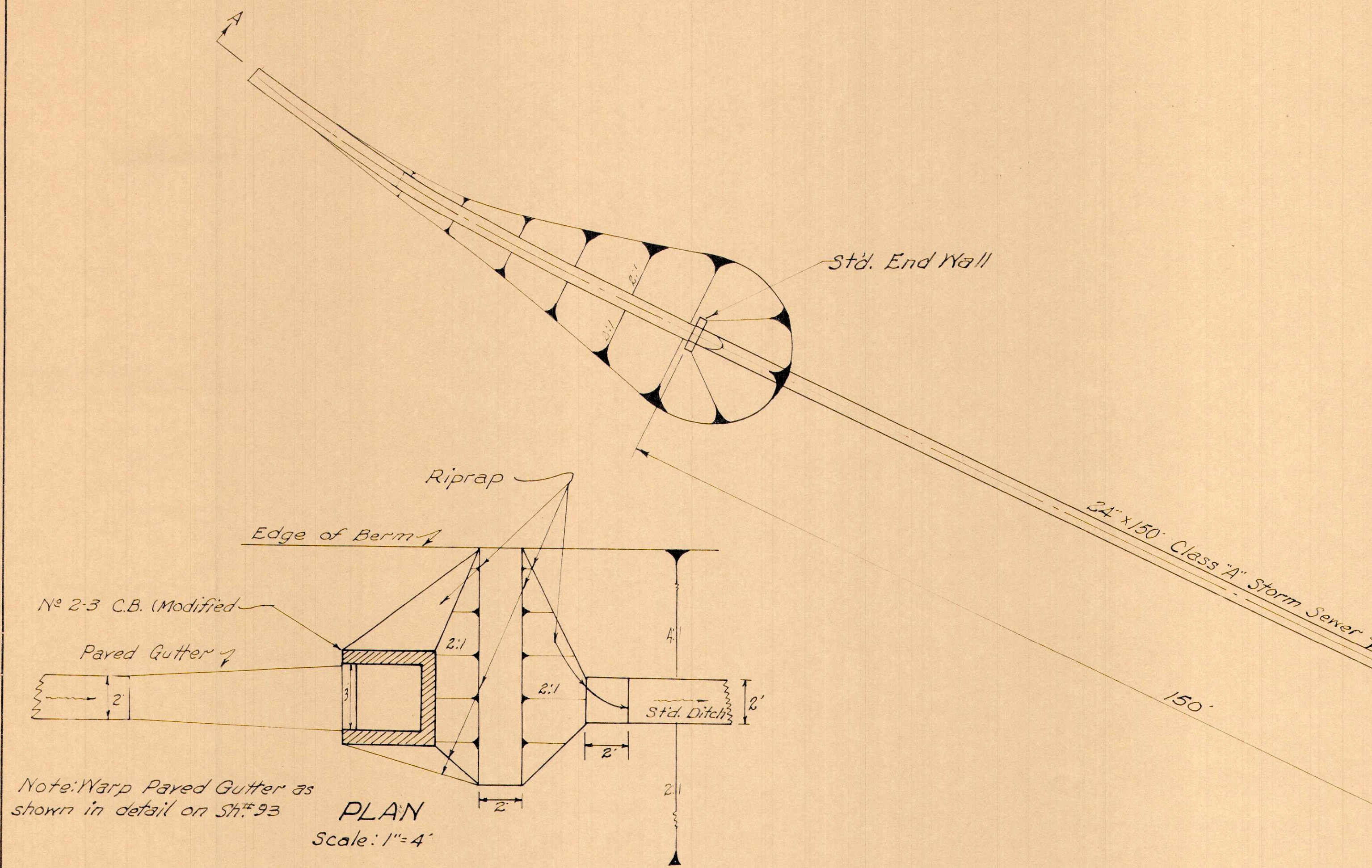
**CROSS SECTION**  
 Scale: 1"=10'



**WORK REQUIRED**  
Build Std. Pipe Culvert as Shown  
**ESTIMATED QUANTITIES**

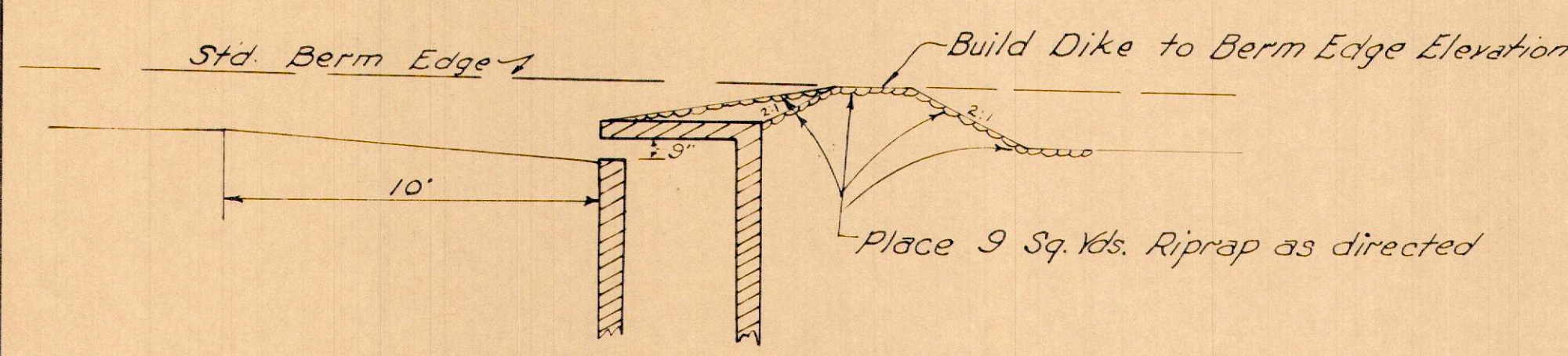
24" Pipe for Roadway Culverts	56 Lin. Ft.
24" Class "A" Storm Sewer	150 Lin. Ft.
N <sup>o</sup> 2-3 Catch Basins (Modified)	2 Each
Excavation for Structures	50 Cu. Yd.
Channel Excavation	51 Cu. Yd.
Concrete for Structures, Class "E"	0.4 Cu. Yd.
Riprap	18 Sq. Yd.
Paved Gutter-Type I (Mod.) as per plan	20 Lin. Ft.

Area: 12 Acres  
Q<sub>10</sub>: 25 c.f.s.



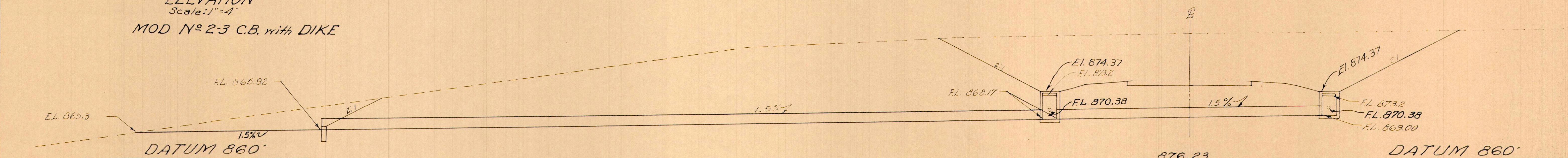
Note: Warp Paved Gutter as shown in detail on Sh. # 93

**PLAN**  
Scale: 1"=4'

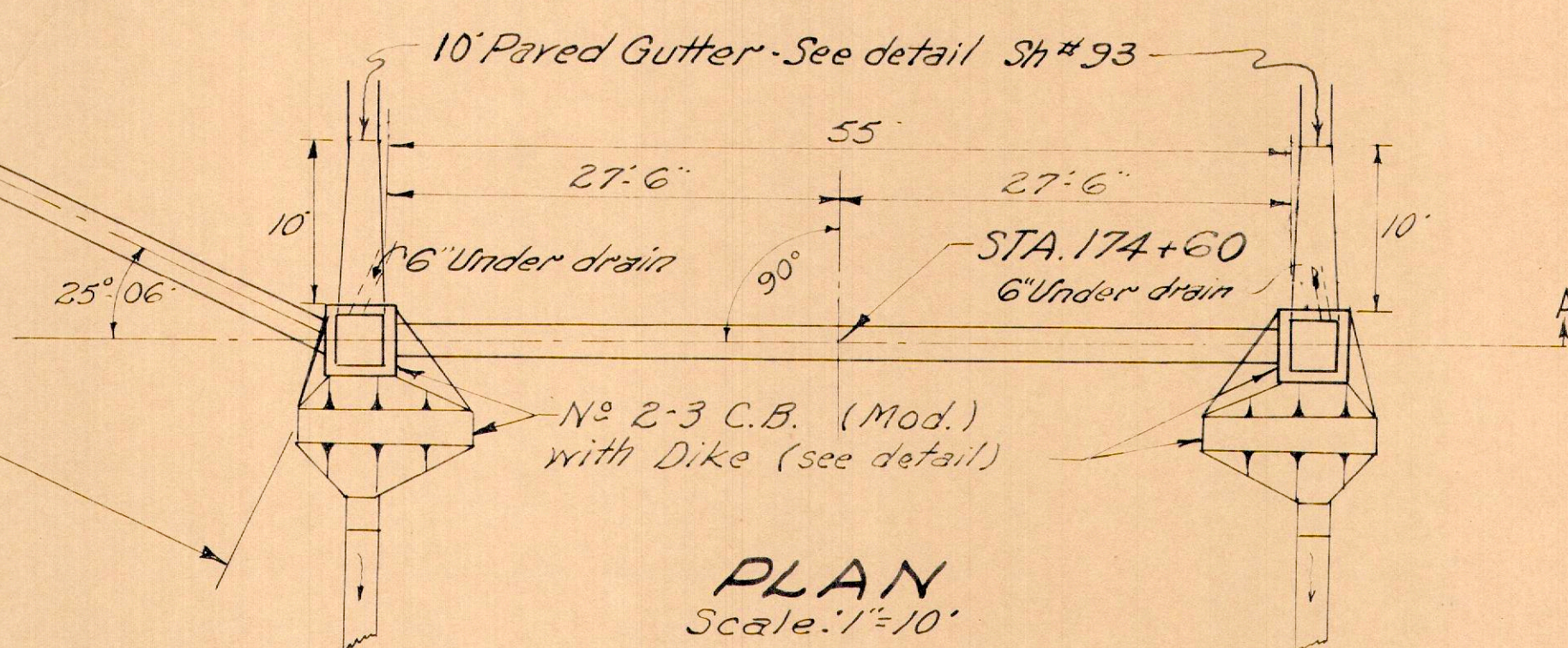


**ELEVATION**  
Scale: 1"=4'

**MOD N<sup>o</sup> 2-3 C.B. with DIKE**



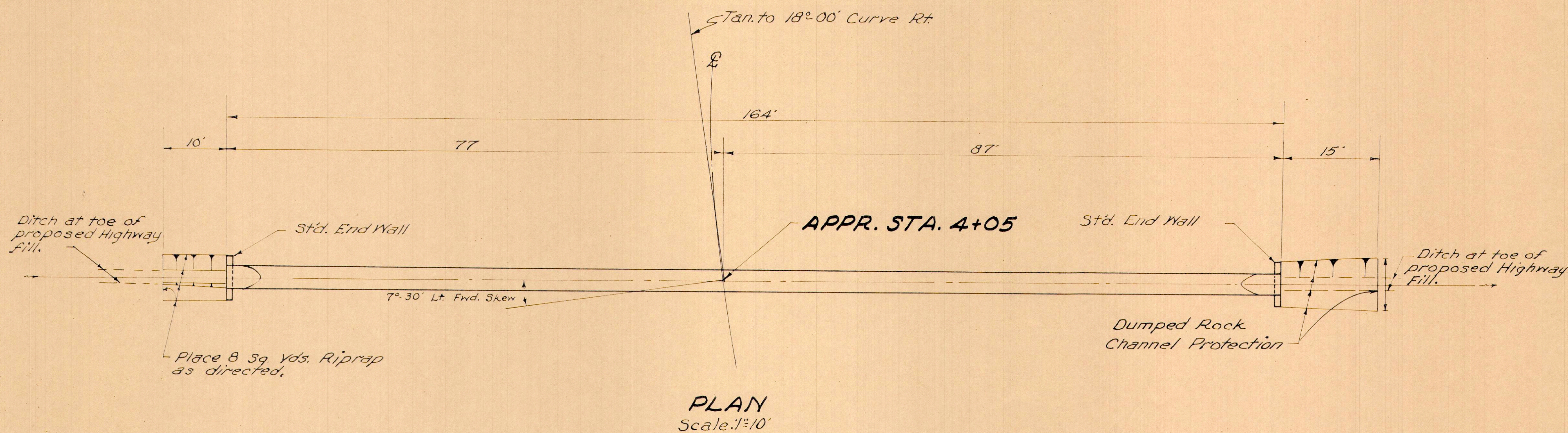
876.23  
174+60  
885.9  
**CROSS SECTION-A-A**  
Scale: 1"=10'



**PLAN**  
Scale: 1"=10'

**STA. 174+60**  
**24" x 55' PIPE CULVERT**  
**24" x 150' STORM SEWER**



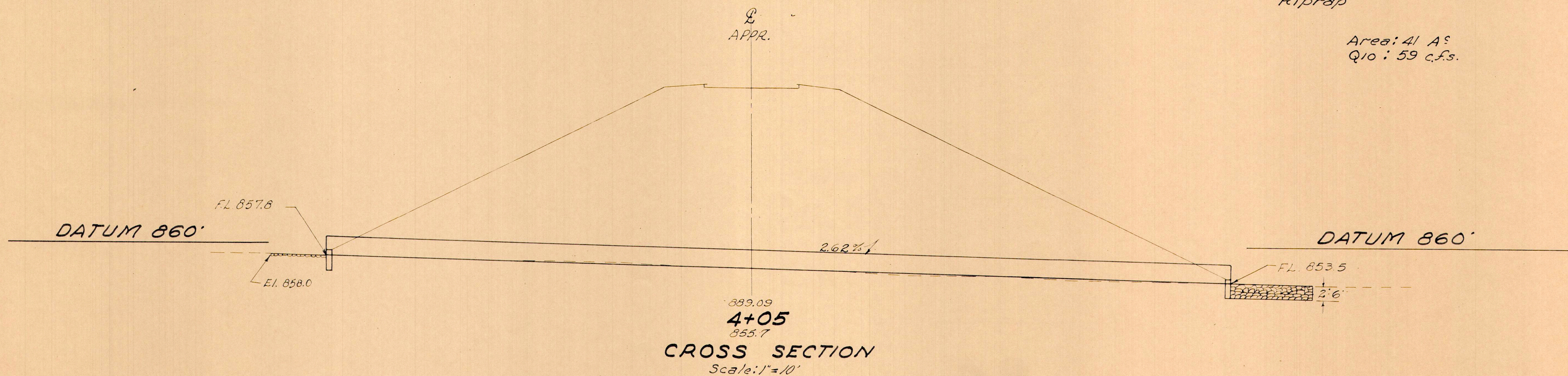


**WORK REQUIRED**  
Build Std. Pipe Culvert as Shown

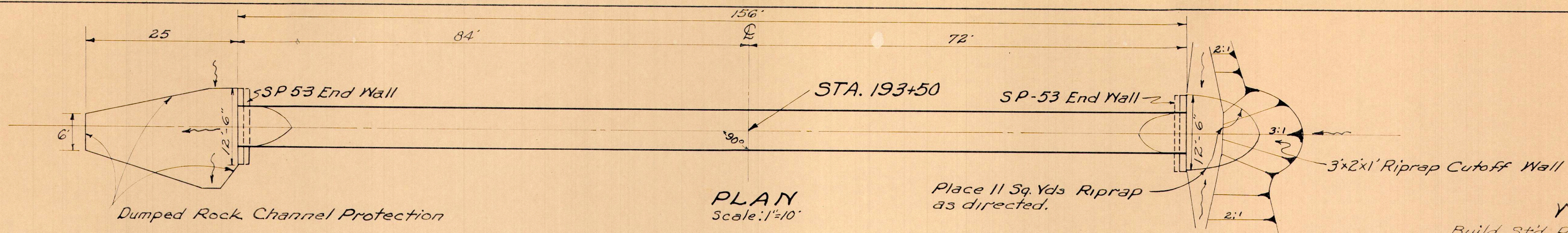
**ESTIMATED QUANTITIES**

42" C.M. Pipe, Sec. M-6.4 (d) Gage 10	164 Lin. Ft.
Excavation for Structures	22 Cu. Yds
Concrete for Structures, Class "E"	1.5 Cu. Yds
Dumped Rock Channel Protection	11 Cu. Yds.
Riprap	8 Sq. Yds.

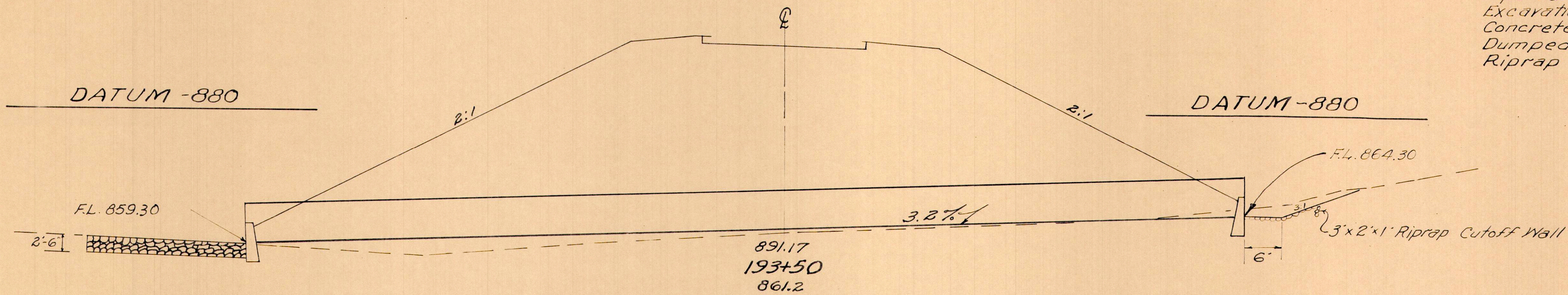
Area: 41 A<sup>s</sup>  
Q<sub>10</sub>: 59 c.f.s.







**PLAN**  
Scale: 1"=10'



**CROSS SECTION**  
Scale: 1"=10'

**WORK REQUIRED**  
Build Std. Pipe Cattle Pass Structures as Shown

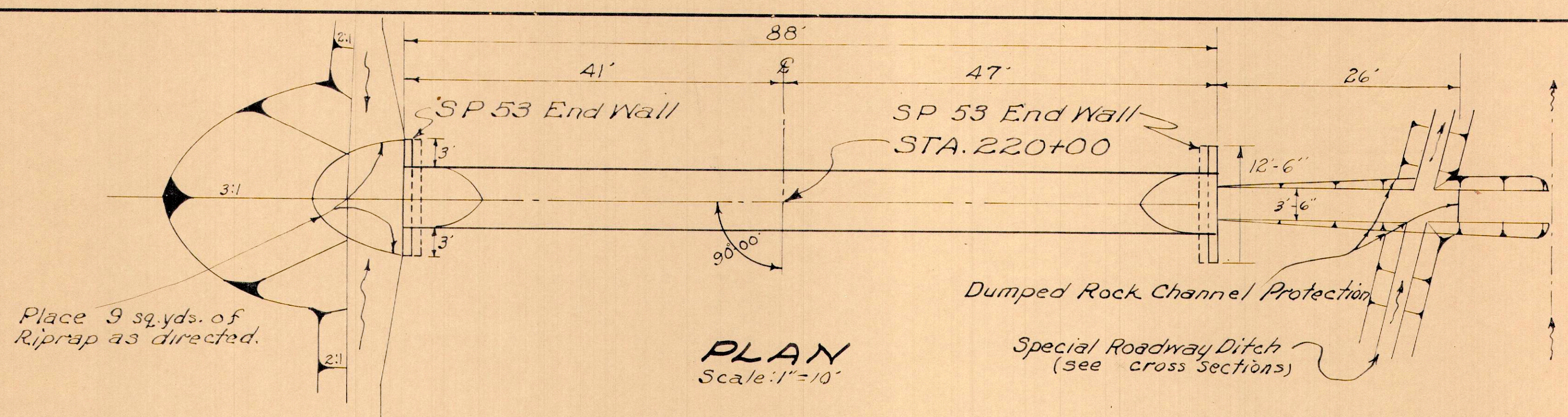
**ESTIMATED QUANTITIES**

Pipe Cattle Pass Structure, Design A-6, B-5, or C-3.	156 Lin. Ft.
Excavation for Structures	37 Cu. Yd.
Concrete for Structures, Class "E"	6.0 Cu. Yd.
Dumped Rock Channel Protection	23 Cu. Yd.
Riprap	11 Sq. Yd.

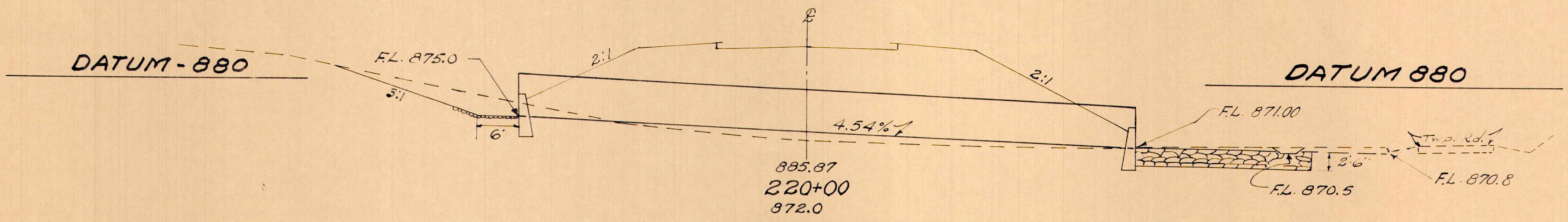
Area: 40 Acres  
Q10: 59 c.f.s.

28-S

**STA. 193+50**  
**156' PIPE CATTLE PASS**



**PLAN**  
Scale: 1"=10'



**CROSS SECTION**  
Scale: 1"=10'

**WORK REQUIRED**  
Build Std. Pipe Cattle Pass Structure as Shown

**ESTIMATED QUANTITIES**

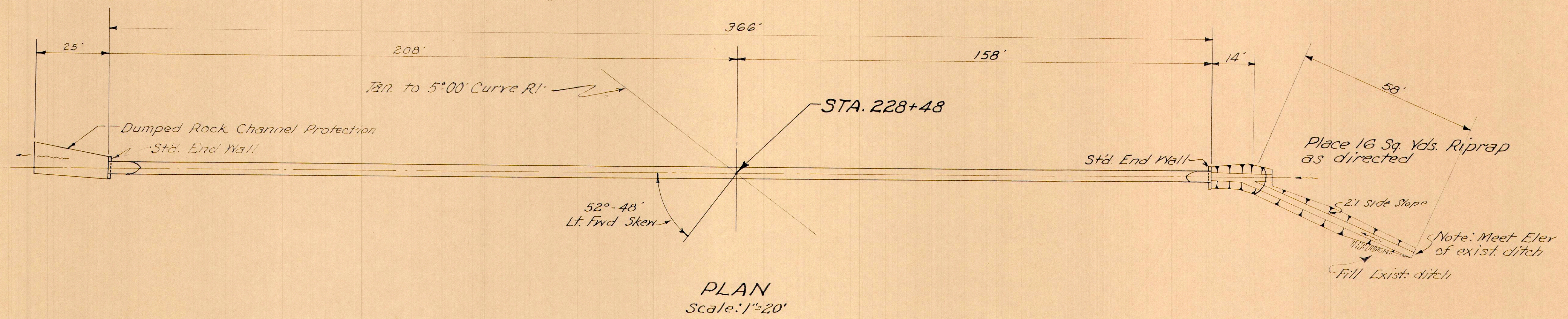
Pipe Cattle Pass Structure, Design A-2, B-1 or C-1.	88 Lin. Ft.
Excavation for Structures	50 Cu. Yds.
Channel Excavation	20 Cu. Yds.
Concrete for Structures, Class "E"	6.0 Cu. Yds.
Riprap	9 Sq. Yds.
Dumped Rock Channel Protection	12 Cu. Yds.

Area: 13 Acres  
Q10: 28 C.F.S.

29-S

**STA. 220+00**  
**88' PIPE CATTLE PASS**



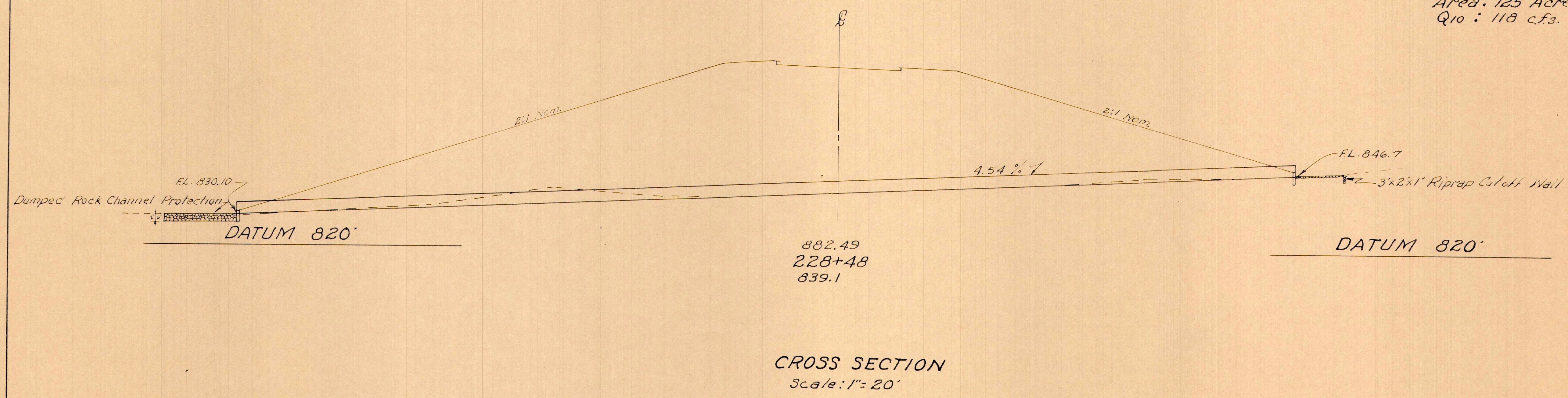


Note: The 48" corrugated metal pipe shall be shop strutted by use of horizontal wires to produce and maintain a 5% vertical elongation. The wire struts shall be satisfactorily removed from the inside of the pipe immediately after completion of the overlying embankment construction.

**WORK REQUIRED**  
Build Std. Pipe Culvert as Shown  
**ESTIMATED QUANTITIES**

48" Paved Bituminous Coated Corrugated Metal Pipe, Sec. M-6.4(d) Gage 8 - Strutted.	366 Lin. Ft.
Excavation for Structures	93 Cu. Yds.
Channel Excavation	12 Cu. Yds.
Concrete for Structures, Class "E"	1.7 Cu. Yds.
Dumped Rock Channel Protection	21 Cu. Yds.
Riprap	16 Sq. Yds.

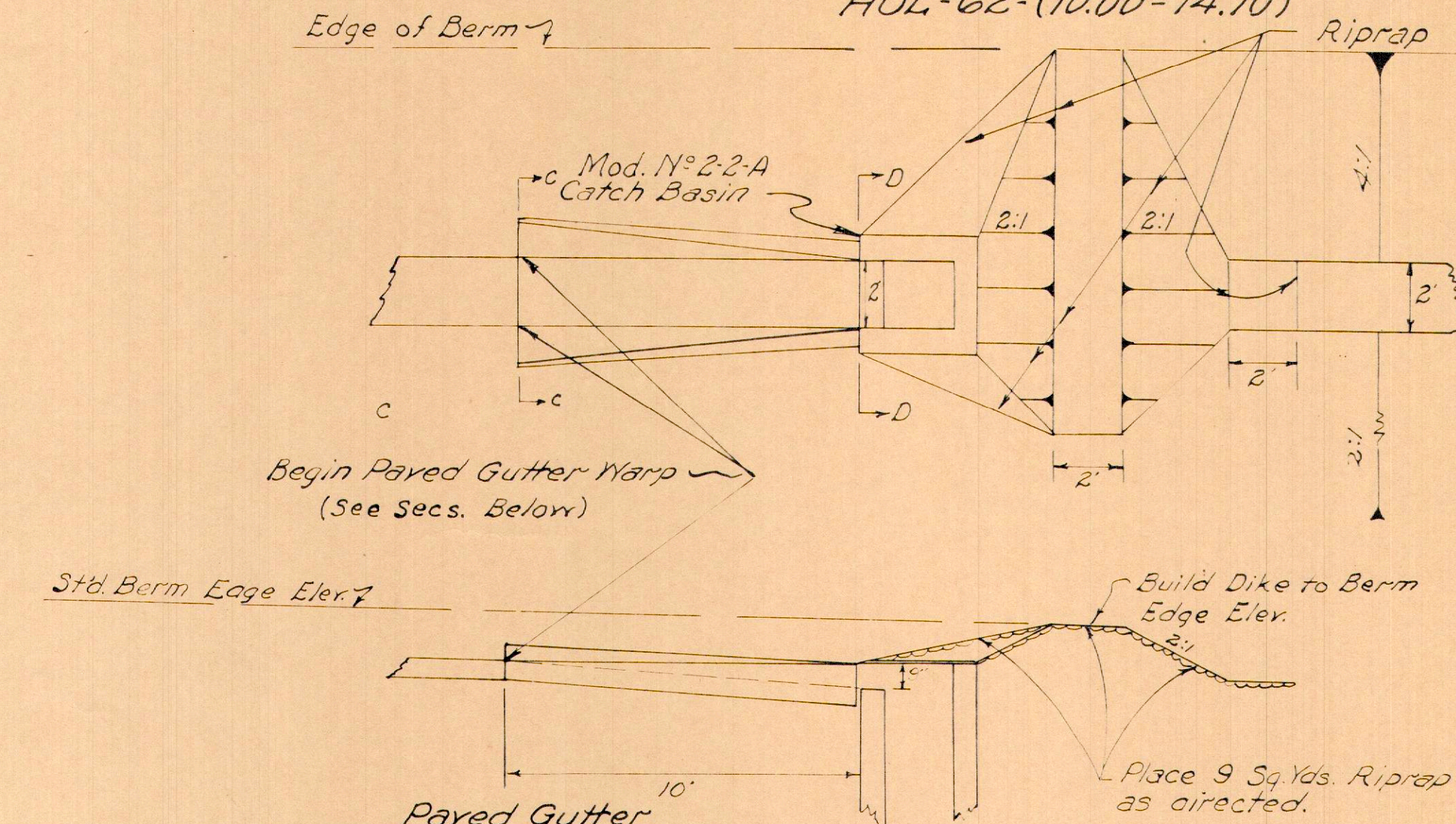
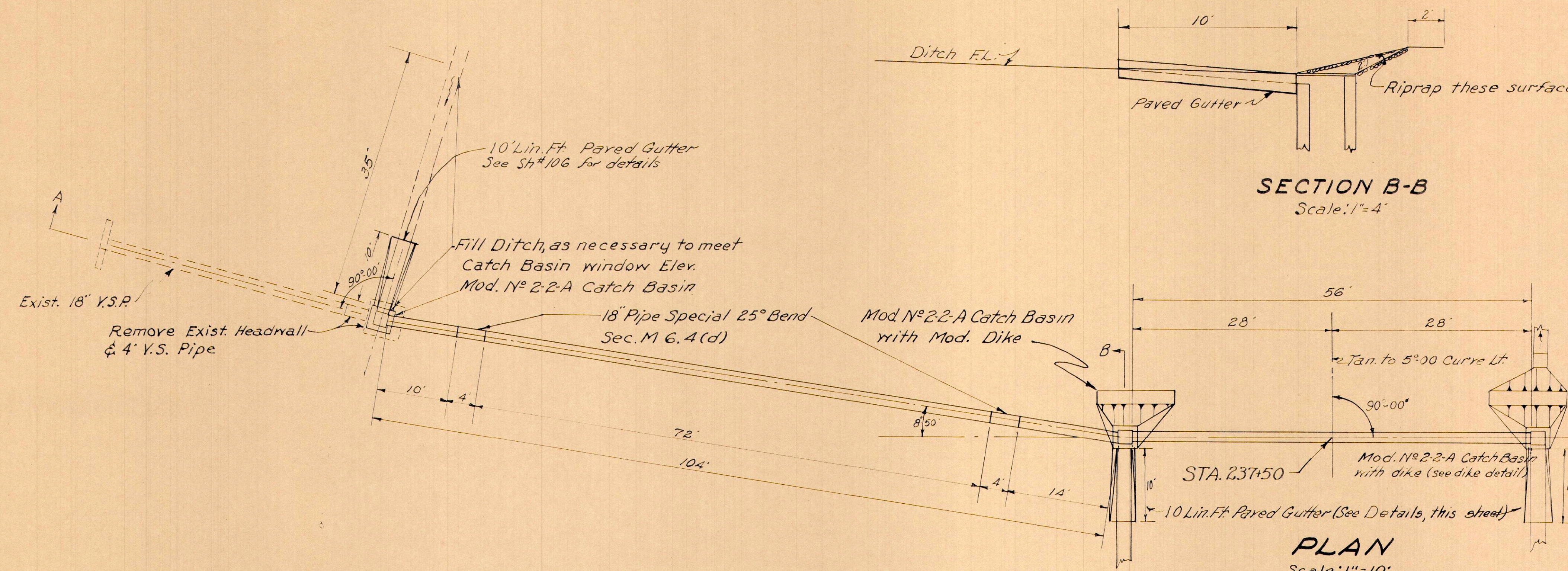
Area: 125 Acres  
Q<sub>10</sub>: 118 c.f.s.



CROSS SECTION  
Scale: 1"=20'

**STA. 228+48**  
**48'x366' PIPE CULYERT**

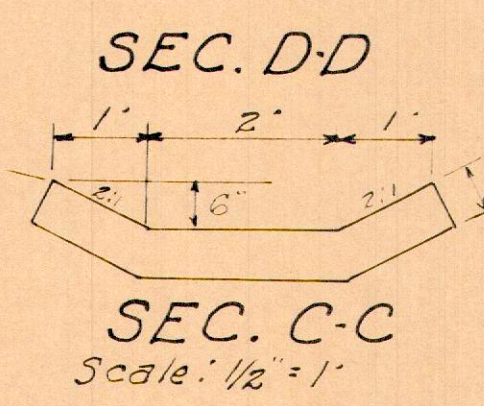




**WORK REQUIRED**  
Build Pipe Culvert System as Shown  
**ESTIMATED QUANTITIES**

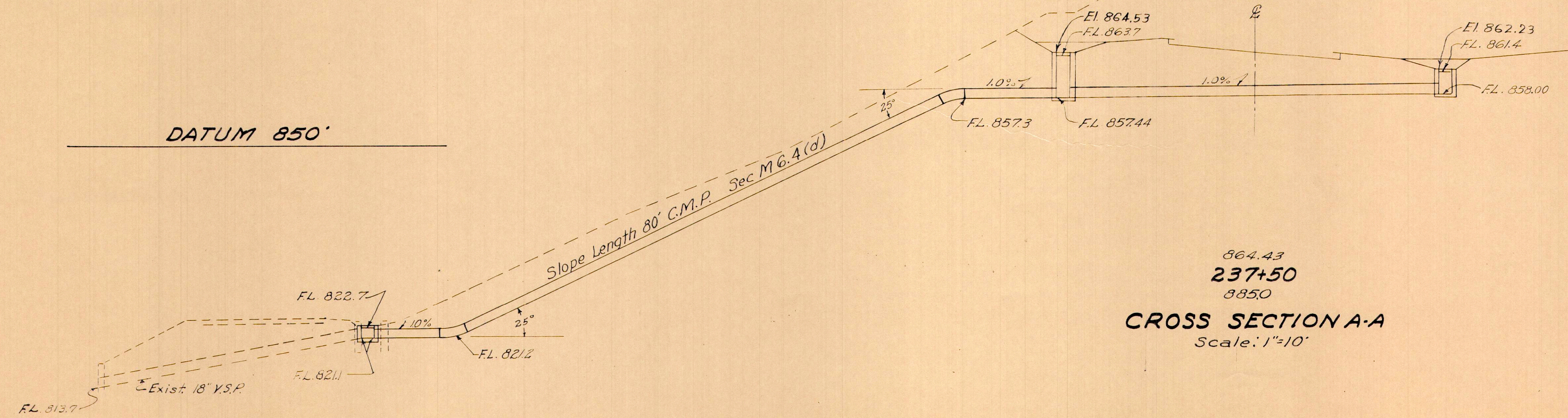
18" Pipe for Roadway Culvert	56 Lin. Ft.
18" Paved Bituminous Coated Corrugated Metal Pipe, Sec. M-6.4 (d)	104 Lin. Ft.
18" Pipe Special, 25° Bend, Sec. M-6.4 (d)	2 Each
18" Y.S. Pipe, Sec. M-6.8 (b)	4 Lin. Ft.
Mod. No. 2-2-A Catch Basin	3 Each
Riprap	15 Sq. Yds.
Removal of Portions of Existing Structures	2 Cu. Yds.
Excavation for Structures	101 Cu. Yds.
18" Pipe Removed	4 Lin. Ft.
Paved Gutter, Type I (Mod) as per plan	30 Lin. Ft.
Area: 4 Acres	
Q10: 12 c.f.s.	

**MOD. NO. 2-2-A CATCH BASIN**  
Scale: 1/2"=1'



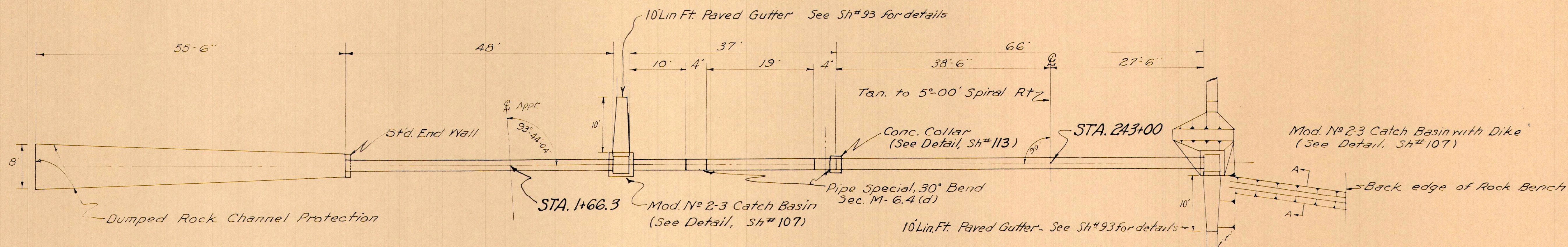
DATUM 850'

DATUM 850'



**STA. 237+50**  
**18" x 168' PIPE CULVERT**





PLAN  
Scale: 1"=10'

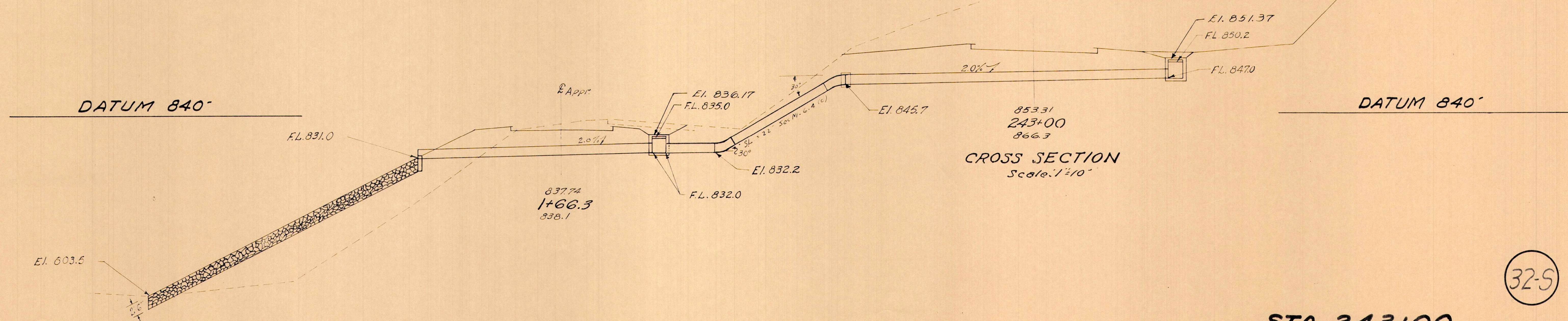
SECTION A-A  
(Not to Scale)

**WORK REQUIRED**  
Build Pipe Culvert System as Shown

**ESTIMATED QUANTITIES**

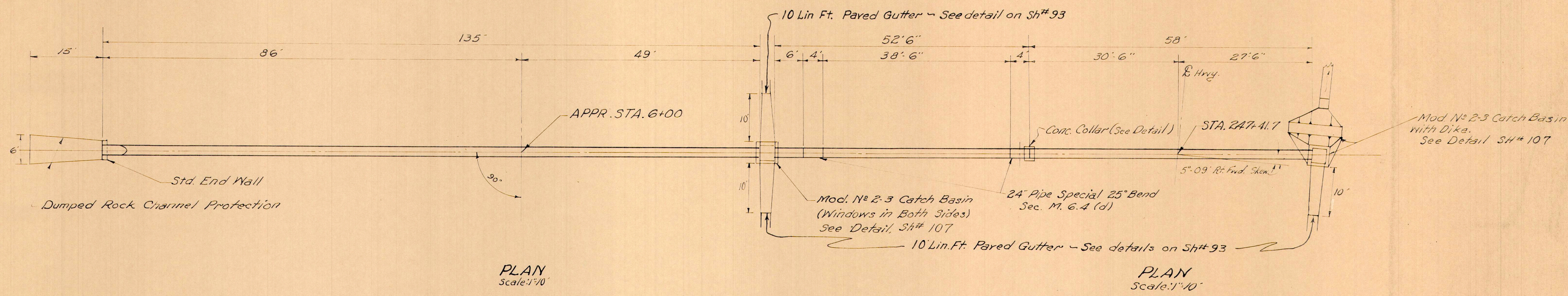
24" Pipe for Roadway Culvert	114 Lin. Ft.
24" Paved Bit Coated C.M. Pipe (Sec. M6.4(d))	32 Lin. Ft.
24" Pipe Special 30° Bend, Sec. M6.4 (d)	2 Each
Mod. No 2-3 Catch Basin	2 Each
Excavation for Structures	99 Cu. Yds.
Concrete for Structures, Class "E"	0.9 Cu. Yds.
Dumped Rock Channel Protection	35 Cu. Yds.
Riprap	9 Sq. Yds.
Paved Gutter-Type I (Mod) as per plan	20 Lin. Ft.

Area: 6 Acres  
Q<sub>10</sub>: 16 c.f.s.



CROSS SECTION  
Scale: 1"=10'



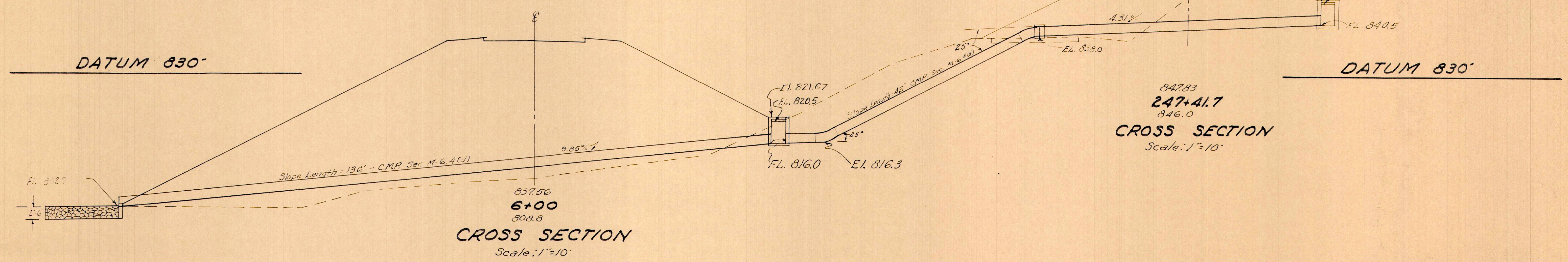
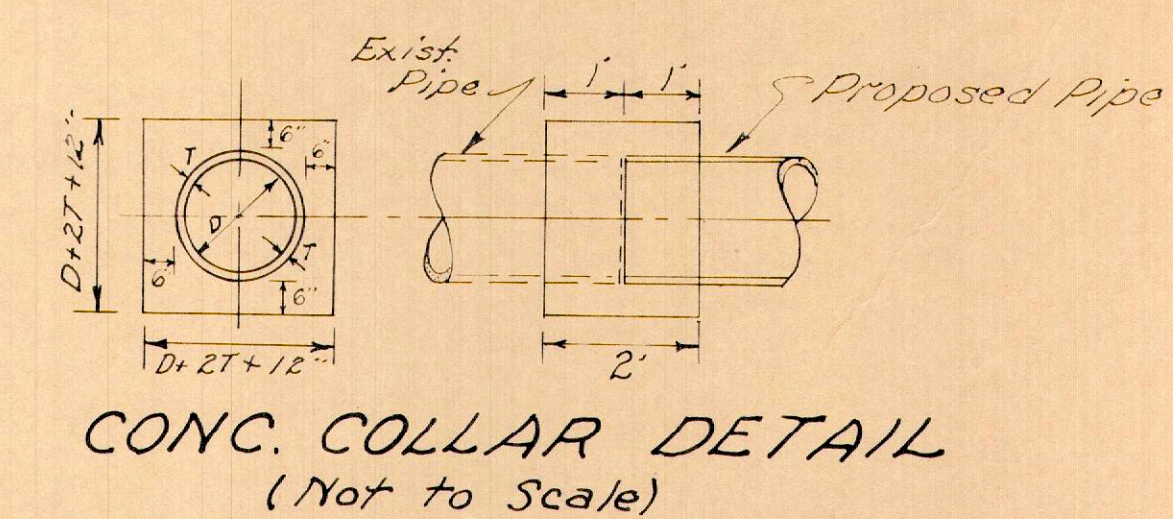


**WORK REQUIRED**  
Build Pipe Culvert System as Shown

**ESTIMATED QUANTITIES**

24" Pipe for Roadway Culvert	58 Lin. Ft.
24" Paved Bit Coated C.M. Pipe Sec. M-6.4(d)	184 Lin. Ft.
24" Pipe Special 25" Bend, Sec. M-6.4(d)	2 Each
Mod. No 2-3 Catch Basin	2 Each
Excavation for Structures	72 Cu. Yds.
Concrete for Structures Class "E"	0.9 Cu. Yds.
Dumped Rock Channel Protection	7 Cu. Yds.
Riprap	9 Sq. Yds.
Paved Gutter, Type I (Mod.) as per plan	30 Lin. Ft.

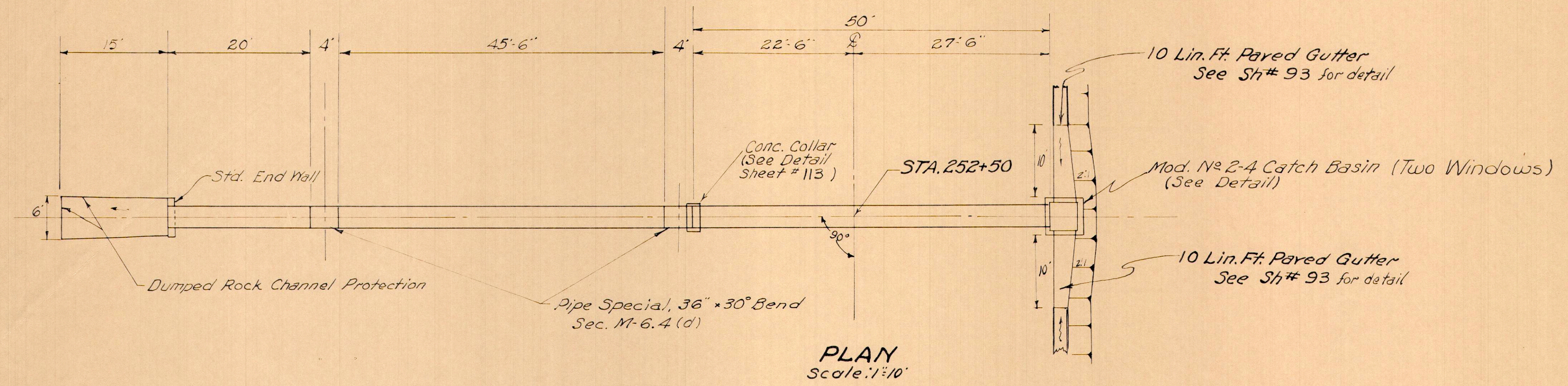
Note: Concrete for Collar shall be Class "E"



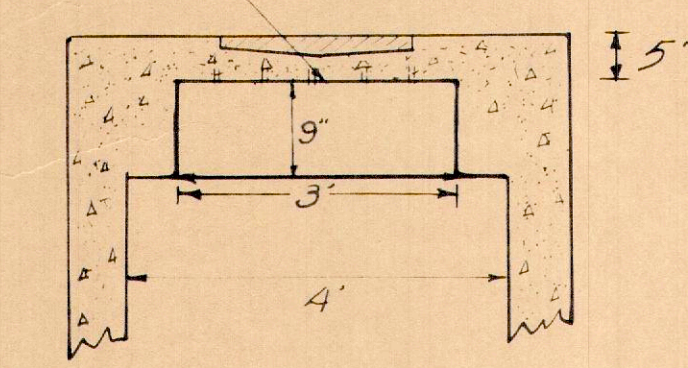
Area 11 Acres  
Q<sub>10</sub> 25 C.F.S.

**STA. 247+41.7**  
**24x250' PIPE CULVERT**





Note: Windows will be placed on both sides of basin

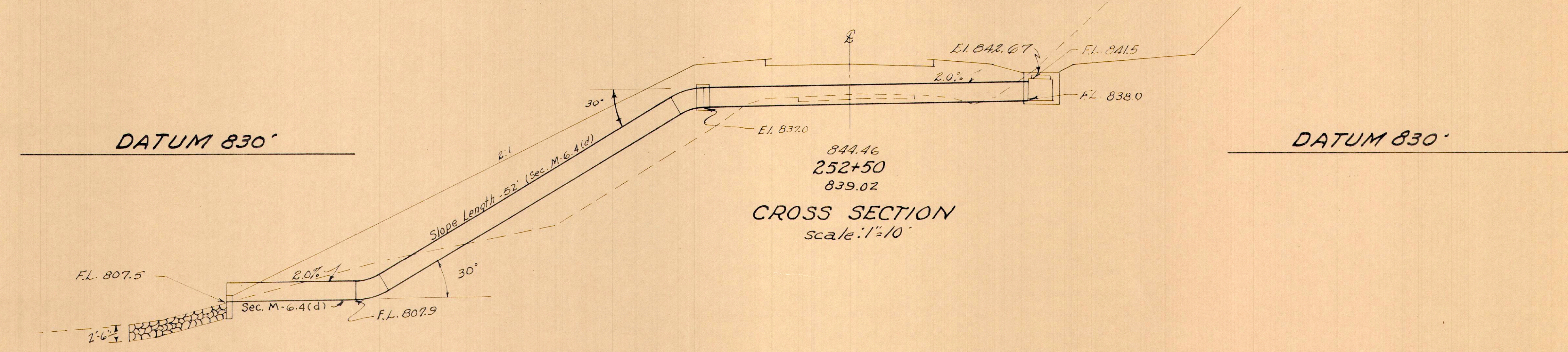


**WORK REQUIRED**  
Build Std. Pipe Culvert as Shown

**ESTIMATED QUANTITIES**

36" Pipe for Roadway Culverts	50 Lin. Ft.
36" Paved Bit. Coated C.M. Pipe Sec. M-6.4(d)	72 Lin. Ft.
36" Pipe Special 30° Bend, Sec. M-6.4(d)	2 Each
Mod. No 2-4 Catch Basin	1 Each
Excavation for Structures	42 Cu. Yds.
Concrete for Structures, Class "E"	1.4 Cu. Yds.
Dumped Rock Channel Protection	8 Cu. Yds.
Paved Gutter, Type I (Mod.) as per plan	20 Lin. Ft.

Area: 15 AS  
Q10: 30 c.f.s.



37-5

STA. 252+50  
36"x130' PIPE CULVERT