

S-170(2)

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	S-170(2)	Postwar

HOL-39-(16.69-17.29)

STATE OF OHIO  
DEPARTMENT OF HIGHWAYS

HOL-39-(16.69-17.29)  
HOLMES COUNTY  
HARDY TOWNSHIP & VILLAGE OF MILLERSBURG

CONVENTIONAL SIGNS

COUNTY LINE	-----
TOWNSHIP LINE	-----
SECTION LINE	-----
CORPORATION LINE	-----
PROPERTY LINE	-----
FENCE LINE	---x---x---x---
CENTER LINE	-----
RAIL ROADS	=====
POLE LINE	-----
GUARD RAIL	-----

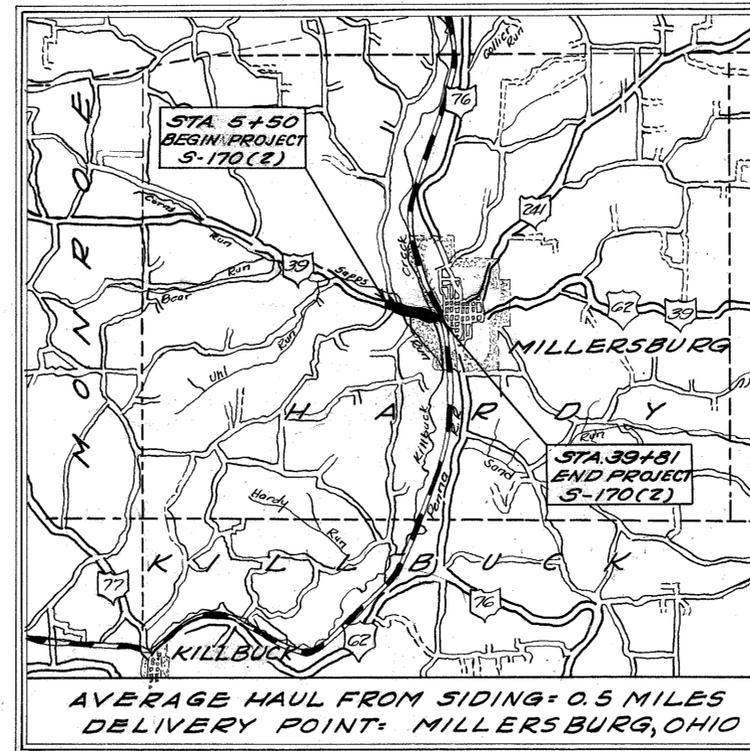
TELEPHONE & POWER  
NEW OLD

INDEX OF SHEETS

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LINE DATA

Begin Project	Sta. 5+50
End Project	Sta. 39+81
No additions or deductions	
Net length of Project	3431 Lin. Ft. or 0.649 Mile
Net length of Rural	3142 Lin. Ft. or 0.595 Mile
Net length of Municipal	289 Lin. Ft. or 0.054 Mile



LOCATION PLAN

Scale 1" = 1 Mile

PORTION TO BE IMPROVED	=====
STATE HIGHWAYS	-----
OTHER ROADS	-----
FEDERAL HIGHWAYS	-----

SCALES

PLAN	1" = 50'
PROFILE HORIZONTAL	1" = 50'
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 Richard Bourgeois  
Date: 12-3-51 Division Deputy Director/Acting

Approved \_\_\_\_\_  
Date \_\_\_\_\_ Chief Engineer, Bureau of Maintenance.

Approved Richard Orth  
Date: 11-3-51 Chief Engineer, Bureau of Bridges and R.R. Crossings.

Approved L. F. Schaeublin  
Date: 11-15-51 Chief Engineer, Bureau of Location & Design.

Approved \_\_\_\_\_  
Date: 11-15-51 First Assistant Director & Chief Engineer.

Approved W. H. Miller  
Date: 11-15-51 Director of Highways.



DEPARTMENT OF COMMERCE  
BUREAU OF PUBLIC ROADS

RECOMMENDED FOR APPROVAL:

\_\_\_\_\_  
DISTRICT ENGINEER      DATE

APPROVED:

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

\* Submitted to B.P.R. for Approval

STANDARD DRAWINGS	
I-12	3-15-48 P-1-49
G-9.07 *	5-1-51 9-27 P.C. 3
RT-1 *	5-16-51 I-1, 2, 3, 4 & 5
L-3	4-1-50 I-8 C.B. 1-2A & B
L-3-A	4-1-50 I-8 C.B. No. 3-A *
5-27 P.C. 2	3-15-48 I-15 No. 1
	7-27-49 A-1-49
	2-20-45 I-15 No. 2
	2-20-45 AS-3-47-A5-A-47
	1-2-51 C5-1-47
	5-15-51 C9B-1-47Sh1 & 2
	3-1-47 L-1
	7-27-49
	6-17-49
	7-27-49
	1-20-48
	8-25-49
	4-1-50

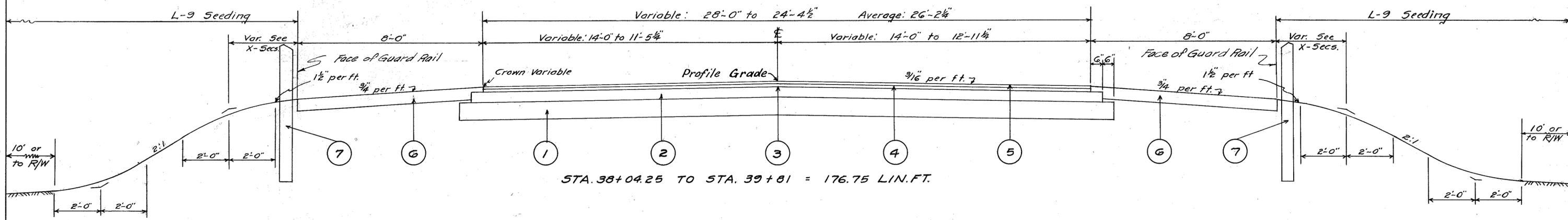
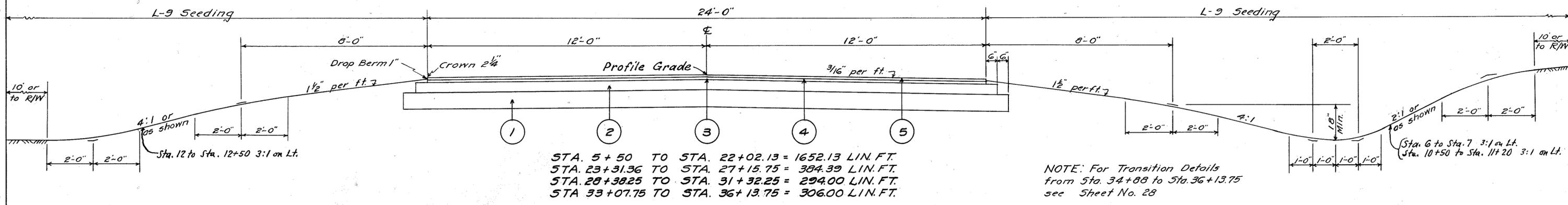
SUPPLEMENTAL SPECIFICATIONS	
5	5-28-48
31	6-13-49
T-171.19 Rev.	7-31-50

FILE NO.	HOL-39-(16.69-17.29)
DATE OF LETTING	
CONTRACT NO.	

# TYPICAL SECTIONS

## TYPE T-35 ON B-20

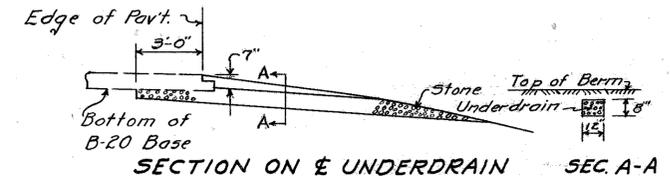
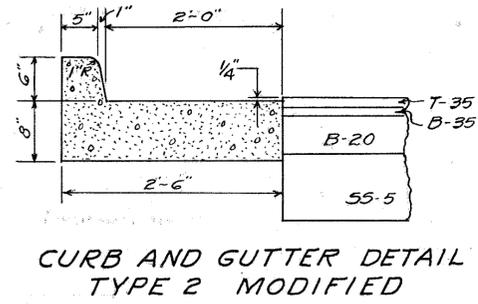
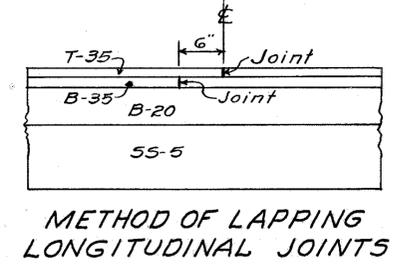
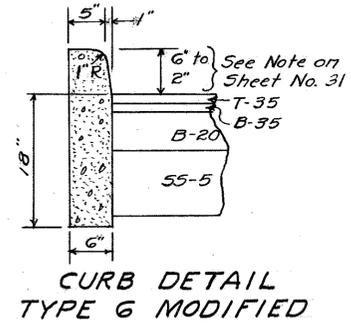
SCALE 1" = 2'-0"



### KEY

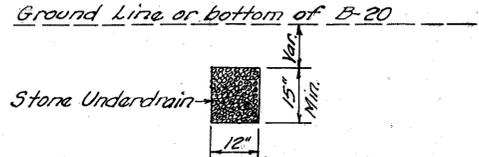
- ① Item 55-5 - 9" 55-5, Grading Cor D.
- ② Item B-20 - 5" Waterbound Macadam Base Course.
- ③ Item T-30 - Bituminous Prime Coat using 0.35 Gal. per Sq. Yd.
- ④ Item B-35 - 1 1/4" min. Asphaltic Concrete Leveling Course.
- ⑤ Item T-35 - 1 1/4" Asphaltic Concrete Surface Course, Type A.
- ⑥ Item I-17 - 6" Berm Material.
- ⑦ Item I-15 - Guard Rail.

# TYPICAL DETAILS AND GENERAL NOTES



Stone Underdrain shall be placed as directed by the Engineer at all locations where there is a concentration of water in the subgrade of the pavement, at the low points on vertical curves and at approximately 200' intervals throughout the project. Estimated Quantity: 400 Lin. Ft. Rural and 100 Lin. Ft. Municipal. These quantities are carried direct to the General Summary.

**DETAIL OF NO. 2 STONE UNDERDRAIN**



NOTE: No. 1 Stone Underdrains shall be placed at the low points in cut sections, at the junction of cuts and fills, and at other locations determined by the Engineer. Estimated Quantity = 200 Lin. Ft. Carried direct to General Summary.

**DETAIL OF NO. 1 STONE UNDERDRAIN**

**CURVES:** ~ Superelevated curves shall be built without crown. The crown shall be worked out of the pavement in that portion between the beginning of the transition and the point where the superelevation equals twice the crown.

**BERMS AND SLOPES:** ~ Berms and slopes shall be finished in accordance with the typical sections except where otherwise shown on the cross sections. While the cross sections, as drawn, show straight lines and angles, in construction all corners shall be rounded as shown in the typical sections.

**TREES:** ~ Payment for the removal of trees and stumps shall be included in the bid Item E-1. Excavation, in accordance with Sec. E-1.02. Approximately twenty two (22) trees and stumps, 12 inches or more in diameter, are to be removed.

**EMBANKMENT:** ~ In lieu of the requirements for full width construction under Sec. E-1.05 the embankment, where traffic is maintained, may be placed in part width construction.

**UTILITY ADJUSTMENT:** ~ Any and all work required for Public or Private Utilities will be done by the respective owners, and the Contractor shall co-operate with the utility companies by arranging his work in such a manner that needless conflicts will be avoided.

**FIELD HOUSE:** ~ The Contractor shall provide a suitable "Field Office" in accordance with Sec. 5-0.01(b) having a minimum of 120 square feet of floor space. The Contractor shall have telephone installed and maintained during construction of this project.

**I-17 GRADING REQUIREMENTS:** ~ The grading requirements for material passing the No. 200 mesh sieve, as specified in Sec. I-17.02 may be modified as follows: ~  
Passing 200 mesh - 0% to 20% provided compaction is obtained in accordance with Sec. I-17.02.

**RIPRAP:** ~ Riprap on outlet end of all structures and drain pipes shall be roughened by placing stones so that they protrude 3 inches above flow line at one (1) foot centers each direction, random position, to retard discharge velocity.

**COMPACTION:** ~ Compaction will not be required on the top four (4) inches of the areas to be seeded.

**SEEDED AREAS:** ~ The area of Seeding, Item L-9, is estimated to extend ten (10) feet beyond the slope limits or to the right of way line if it is less than ten (10) feet beyond the limits of work. Areas unnecessarily disturbed by the Contractor, in the opinion of the Engineer, beyond the limits estimated, shall be seeded according to the requirements of Item L-9 at the Contractor's expense.

**EXISTING GUARD RAIL:** ~ Existing guard rail shall be removed and become the property of the Contractor and shall be disposed of by him. Cost of this work shall be included in the price bid per cubic yard for Roadway Excavation.

**DESIGN SPEED:** ~ The design speed is fifty (50) miles per hour.

**TRAFFIC:** ~ The Contractor shall maintain traffic at all times in accordance with the requirements of Sec. 6-8.07. The item of "Maintaining Traffic" shall include furnishing lights, signs, barricades and watchmen necessary to secure the flow of traffic twenty four (24) hours daily.

**TEMPORARY RUN-AROUND:** ~ Temporary Run-around Bridge and Approaches for Bridge No. HO-39-173 shall be provided within 60 days after the date of the contract since the existing bridge is in poor condition and will then be closed to traffic.

# SUMMARY OF QUANTITIES

Rural	Ref. No.	Station	See Sheet	Removals		Excavation Structure Cu. Yds.	Concrete Cu. Yds. Class "E"	Pipe for Roadway Culverts Lin. Ft. 36"	Riprap Sq. Yds.
				Dispose of Pipe 15" Under Lin. Ft.	Dispose of Pipe Over 15" Lin. Ft.				
	1-5	10+33	6	47					
	2-5	12+74	30		64	5	3.3	87	52
Total to Recap.				47					52
Total to Summary					64	5	3.3	87	

Rural	Station		Excavation - Cu. Yds. Roadway	Embankment Cu. Yds.	Emb. + 20% Cu. Yds.	Seeding Sq. Yds.	Fertilizer Lbs.	Lime Lbs.
	From	To						
	5+50	13+73	6192	3160	6192	8793	1583	7914
	13+73	36+92	4595	44,588	53,506	45,477	8186	10,929
	21+70	24+00				411	74	370
	26+60	28+50				462	83	416
Totals (Rural)			10,787	49,748	59,698	55,143	9,926	49,629
Mun.	36+92	39+81	338	7,657	9,188	3,227	581	2,904
Totals (Municipal)			338	7,657	9,188	3,227	581	2,904

Rural	Total of Sheet No.	Pipe - Lin. Ft.		I-17 Aggr. Cu. Yds.	No. 2 (Mod.) Curb & Gutter Lin. Ft.	4" Concrete Sidewalks Sq. Ft.	No. 3-A Catch Basins Each	Channel Excavation Cu. Yds.	Riprap Sq. Yds.
		For Driveways 15"	Storm Sewer Outlets 12"						
	6	68		13					5
	7			93					
	8			74					
	9		50		115	688	1	1	
Total to Recap.						688			5
Total to Summary				68	50	207	115	1	1

Rural	Total of Sheet No.	4" Concrete Sq. Ft.	Type 6 (Mod.) Curb Lin. Ft.	Remove & Dispose Sq. Ft.
	9	105	4	
Total to Recap. 233				
Total to Summary. 4 208				
Mun.	9	210	8	
Total to Summary. 210 8				

Borrow (Rural) - 59,698 - 10,787 = 48,911 Cu. Yds. - 1067 Cu. Yds. (50% of E-3) = 47,844 Cu. Yds.  
 Borrow (Municipal) - 9,188 - 338 = 8,850 Cu. Yds.

\* 15% for Compaction.

Rural	Total of Sheet No.	Remove & Dispose Lin. Ft.	New Lin. Ft.
	7	486	39.5
	8	1800	36.5
	9	148	75
Total to Summary * 2606 151			
Mun.	9		250
Total to Summary. 250			

Rural	Total of Sheet No.	Remove & Dispose Sq. Yds.
	7	2461
	8	2150
	9	303
Total to Summary. 6361		
Mun.	9	610
Total to Summary. 610		

Rural	Total of Sheet No.	Slab Sq. Yds.	7-35 Surface Sq. Yds.	T-30 Tack Coat @ 0.1 gal. per Sq. Yd. Gals.
	8	160	160	16
	9	48.3	46.7	5
Total to Summary. 288.3 * 286.7 29				
Mun.	9	48.3	46.7	5
Total to Summary. 48.3 * 46.7 5				

\* Carried to pavement Calculations. (Sheet No. 5)

\* See Note on Sheet 3

Rural	Total of Sheet No.	Riprap Sq. Yds.
	7	33
Total to Recap. 164		

Rural	Total of Sheet No.	Removal & Disposal of Pipe 15" Under Lin. Ft.	Pipe 12" Lin. Ft.	1-2-A Catch Basins Each
	7	83	82	
Total to Recap. 145				
Total to Summary. 123 1				

Municipal	Total of Sheet No.	Dowel Holes Lin. Ft.	Reinf'g. Steel Lbs.	Class "E" Concrete Cu. Yds.
Total to Recap.				
Total to Summary. 6 18 1.7				

Rural	From Table	Remove & Dispose of Pipe 15" Under Lin. Ft.	Riprap Sq. Yds.	4" Concrete Sidewalks Sq. Ft.
A			5	688
SW				233
G			164	
SS	145			
Total to Summary. 192 221 921				

# SUMMARY OF QUANTITIES

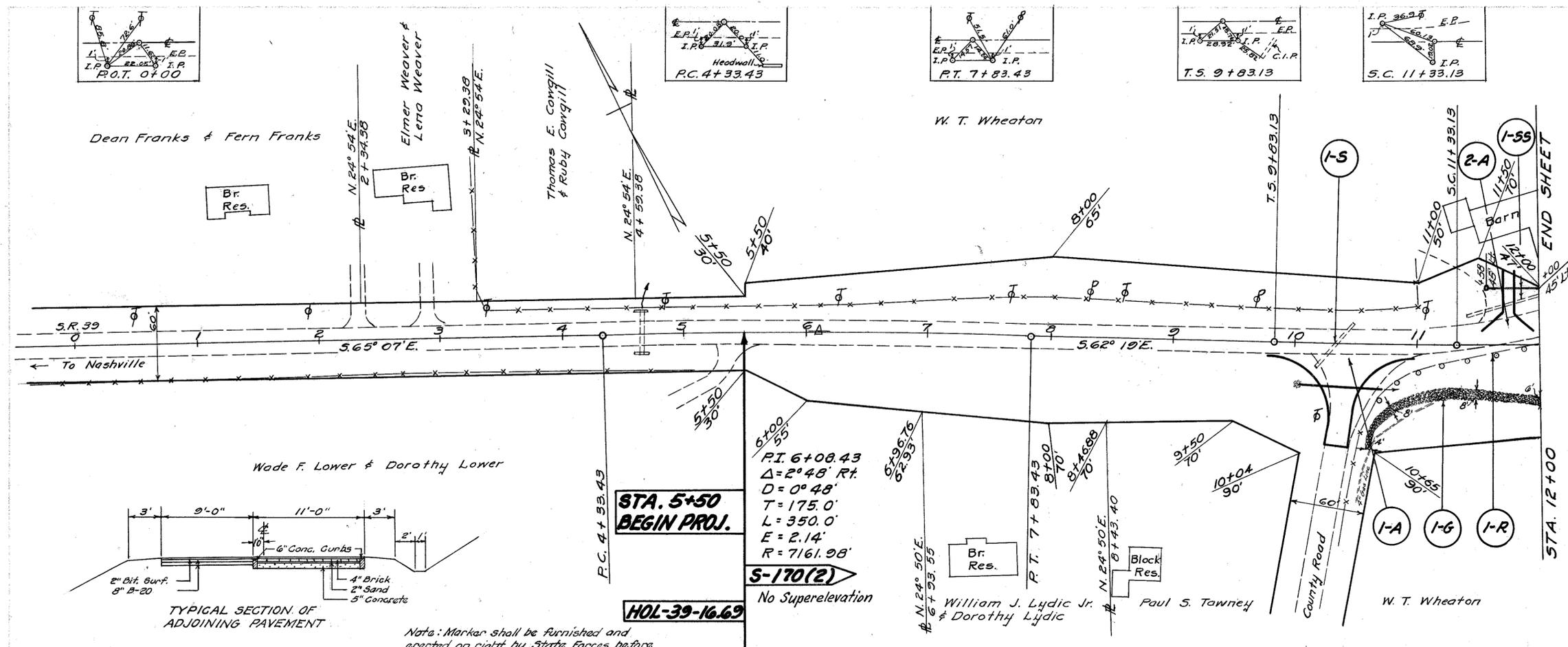
HOL-39-(16.69-17.29)

## PAVEMENT CALCULATIONS

<b>RURAL</b>			
Sta. 5+50 to Sta. 22+02.13	=	1652.13 Lin. Ft.	
Sta. 23+31.36 to Sta. 27+15.75	=	384.39 Lin. Ft.	
Sta. 28+38.25 to Sta. 31+32.25	=	294.00 Lin. Ft.	
Sta. 33+07.75 to Sta. 34+88	=	180.25 Lin. Ft.	
Total length 24' Pavement	=	2510.77 Lin. Ft.	
2510.77 x 24 ÷ 9	=	6695.4 Sq. Yds.	
Sta. 34+88 to Sta. 36+13.75	=	125.75 Lin. Ft.	
125.75 x 25 (Avge. width) ÷ 9	=	349.3 Sq. Yds.	
From Approach Sheets. (296+379+480+354)	=	1509.0 Sq. Yds.	
From Approach Slab Table (See sheet 4)	=	286.7 Sq. Yds.	
Total Pavement Area	=	8840.4 Sq. Yds.	
1 1/4" T-35 Surface Course	=		307 Cu. Yds.
8840.4 x 1.25 ÷ 36	=		
1 1/4" B-35 Leveling Course	=		415 Cu. Yds.
8840.4 x 1.25 ÷ 36 = 307 + Extra leveling (54 x 200)	=		
T-30 Bituminous Prime	=		
2510.77 x 25 ÷ 9	=	6974.4 Sq. Yds.	
125.75 x 26 ÷ 9	=	363.3 Sq. Yds.	
From Approach Sheets. (300+388+494+354)	=	1536.0 Sq. Yds.	
Total Prime Area	=	8873.7 Sq. Yds.	
8873.7 x 0.35	=		3106 Gal's.
5" B-20 Base Course	=		8874 Sq. Yds.
Same as Prime Area	=		
9" SS-5	=		
2510.77 x 26 ÷ 9	=	7253.3 Sq. Yds.	
125.75 x 27 ÷ 9	=	377.3 Sq. Yds.	
From Approach Sheet No. 28	=	354.0 Sq. Yds.	
Total Area	=	7984.6 Sq. Yds.	
7984.6 x 9 ÷ 36 + (90 x 26 x 0.75 ÷ 27) + (15 x 30 x 0.75 ÷ 27)	=		2074 Cu. Yds.
(for approach slabs)	=		
<b>MUNICIPAL</b>			
Sta. 38+04.25 to Sta. 39+01	=	176.75 Lin. Ft.	
176.75 x 26.19 (Avge. width) ÷ 9	=	514.3 Sq. Yds.	
From Approach Sheet No. 29	=	411.0 Sq. Yds.	
From Approach Slab Table (See sheet No. 4)	=	46.7 Sq. Yds.	
Total Pavement Area	=	972.0 Sq. Yds.	
1 1/4" T-35 Surface Course	=		34 Cu. Yds.
972 x 1.25 ÷ 36	=		
1 1/4" B-35 Leveling Course	=		40 Cu. Yds.
972 x 1.25 ÷ 36 = 34 + Extra leveling (0.033 x 200)	=		
T-30 Bituminous Prime	=		
176.75 x 27.19 (Avge. width) ÷ 9	=	534 Sq. Yds.	
From Approach Sheet No. 29	=	432 Sq. Yds.	
Total Prime Area	=	966 Sq. Yds.	
966 x 0.35	=		338 Gal's.
5" B-20 Base Course	=		966 Sq. Yds.
1012.7 - 46.7 (Approach Slab)	=		
9" SS-5	=		
176.75 x 28.19 ÷ 9	=	553.7 Sq. Yds.	
From Approach Sheet No. 28	=	451.0 Sq. Yds.	
Total Area	=	1004.7 Sq. Yds.	
1004.7 x 9 ÷ 36 + (15 x 30 x 0.75 ÷ 27) for approach slabs	=		264 Cu. Yds.
6" I-17 Berm Material	=		
L't Side - Sta. 38+04.25 to Sta. 39+75.5	=	171.25 Lin. Ft.	
171.25 x 7.5 (Avge. width) x 0.5 ÷ 27	=		23.8 Cu. Yds.
R't Side - Sta. 38+04.25 to Sta. 38+29.25	=	25.0 Lin. Ft.	
Sta. 39+01.5 to Sta. 39+87.5	=	86.0 Lin. Ft.	
Total	=	111 Lin. Ft.	
111 x 7.9 (Avge. width) x 0.5 ÷ 27	=		16.2 Cu. Yds.
Total I-17	=		40 Cu. Yds.
+15% for Compaction = 6 Cu. Yds. Grand Total I-17	=		46 Cu. Yds.

WATER  
 Rural - 5 x 49,748 = 249 M. Gal's.  
 Municipal - 5 x 7,657 = 39 M. Gal's.

GENERAL SUMMARY					
ITEM No.	CODE TYPE 6201 QUANTITY			UNIT	DESCRIPTION
	RURAL	MUN.	TOTAL		
<b>ROADWAY</b>					
E-1	10,787	338	11,125	Cu. Yds.	Roadway Excavation, as per Plan.
E-4	47,344	8850	56,694	Cu. Yds.	Borrow.
E-8	6,361	610	6,971	Sq. Yds.	Removal and Disposal of Existing Pavement.
E-8	208		208	Sq. Ft.	Removal and Disposal of Existing Sidewalk.
E-11	249	39	288	M. Gal's.	Water.
E-12	192		192	Lin. Ft.	Pipe Removed and Disposed of, 15" and Under.
E-12	64		64	Lin. Ft.	Pipe Removed and Disposed of, Over 15".
I-13	921	210	1131	Sq. Ft.	4" Concrete Sidewalks.
I-15	151	250	401	Lin. Ft.	Guard Rail, Steel Beam Type (Deep).
I-17	207	46	253	Cu. Yds.	Side Approaches, Mail Box Turnouts and Berm Material, As Per Plan.
L-9	55,143	3227	58,370	Sq. Yds.	Seeding and Protecting, Type "A".
L-9	4.36	0.29	5.25	Tons.	Commercial Fertilizer. (10-6-4)
L-9	24.81	1.45	26.26	Tons.	Agricultural Ground Limestone.
M-10	14	2	16	Tons.	Calcium Chloride for Maintaining Traffic.
T-10	700	100	800	Cu. Yds.	Traffic Compacted Surface Course for Maintaining Traffic.
<b>DRAINAGE</b>					
E-2	5		5	Cu. Yds.	Excavation for Structures.
E-3	1		1	Cu. Yds.	Channel Excavation.
I-1	68		68	Lin. Ft.	15" Pipe for Driveways.
I-2	123		123	Lin. Ft.	12" Storm Sewers.
I-2	50		50	Lin. Ft.	12" Outlets For Storm Sewers
I-9	200		200	Lin. Ft.	Stone Underdrains, No. 1
I-8	1		1	Each	Standard No. 1-2-A Catch Basin
I-8	1		1	Each	Standard No. 3-A Catch Basin
I-9	400	100	500	Lin. Ft.	Stone Underdrains, No. 2.
I-10	221		221	Sq. Yds.	Riprap, Type "A" Grout Filled, as per plan.
S-1		1.7	1.7	Cu. Yds.	Concrete for Structures, Class "E", Retaining Wall as per plan
S-1	3.3		3.3	Cu. Yds.	Concrete for Structures, Class "E"
S-4		18	18	Lbs.	Reinforcing Steel.
S-23		6	6	Lin. Ft.	Dowel Holes.
S-27		87	87	Lin. Ft.	36" Pipe for Roadway Culverts.
<b>PAVEMENT</b>					
SS-5	2074	264	2338	Cu. Yds.	Classified Embankment Material, Grading C or D.
B-20	8874	966	9840	Sq. Yds.	5" Waterbound Macadam Base Course.
B-35	415	40	455	Cu. Yds.	Asphaltic Concrete Leveling Course. (85-100).
T-30	3106	338	3444	Gal's.	Bituminous Prime Coat, Sec. M-5.7, RT-2 or 3.
T-30	29	5	34	Gal's.	Bituminous Tack Coat, Sec. M-5.5 MS-2 or SS-1
T-35	307	34	341	Cu. Yds.	Asphaltic Concrete Surface Course, Type "A". (85-100).
I-7	289	48	337	Sq. Yds.	Reinforced Concrete Approach Slabs, as per plan.
I-12	115		115	Lin. Ft.	Std. Type 2 Combination Curb and Gutter, Modified As Per Plan
I-12	4	8	12	Lin. Ft.	Std. Type 6 Curb, Modified AS Per Plan.
<b>STRUCTURES OVER 20' SPAN</b>					
See Sheet Nos. 36, 40, 43 & 45 for Quantities.					



**STRUCTURES-20' SPAN & UNDER**

Ref. No.	Station	Sec	Removals		New Work			
			Type	Size	Type	Size	Length	
1-5	10+33		C.I.P. #K3.P	14"	47'			

**APPROACHES**

Ref. No.	Station	Side	Sec	Pipe Lin. Ft.	I-17 Aggr. Cu. Yds.	Riprap Sq. Yds.
2-A	11+75	Lt.	12		13	
Sheet Totals				68	13	5

**STORM SEWERS**

Ref. No.	Station From	Station To	Side	Remove Lin. Ft.	Pipe Lin. Ft.	I-2A Basins Each
Sheet Totals				62	41	1

**PAVEMENT REMOVAL**

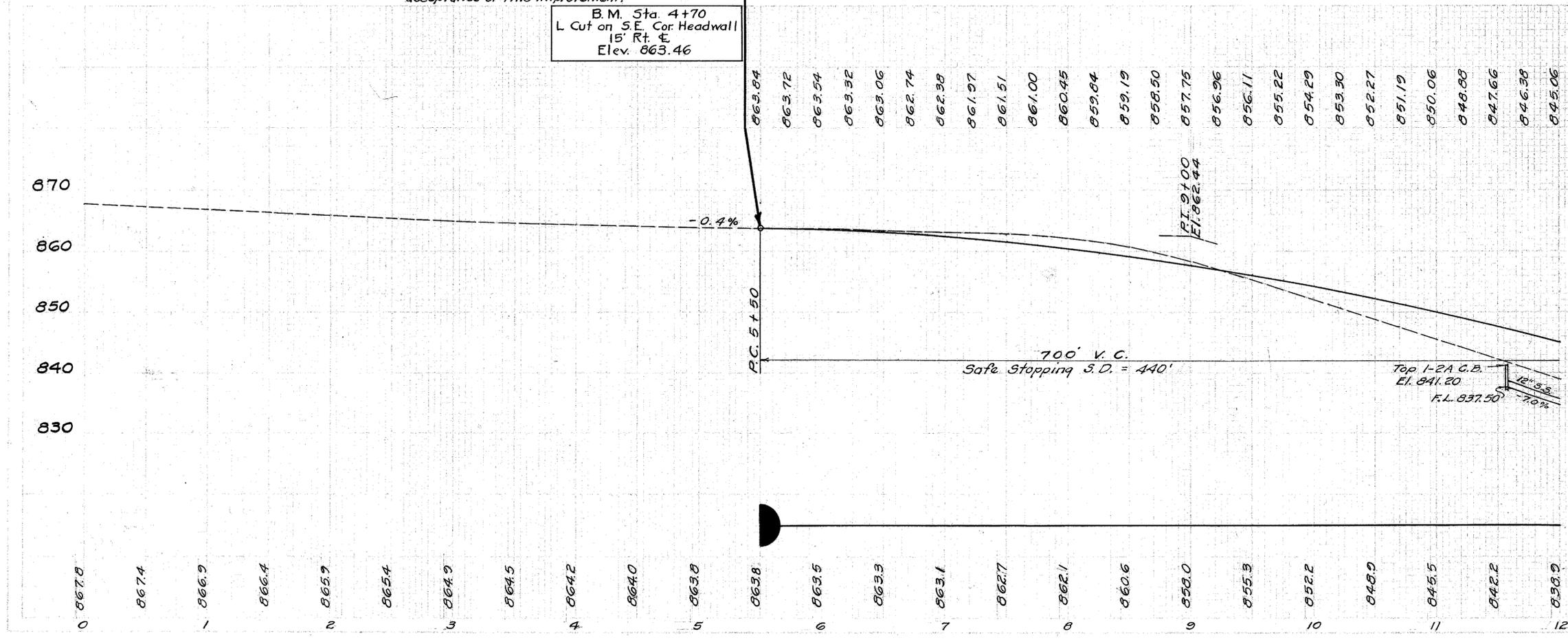
Station From	Station To	Pavm't Sq. Yds.	
			5+50
Sheet Totals			1447

**GUARD RAILS**

Ref. No.	Station From	Station To	Side	Remove Lin. Ft.	
					1-R
Sheet Totals					172

**GUTTERS**

Ref. No.	Station From	Station To	Side	Riprap Sq. Yds.	
					1-6
Sheet Totals					131

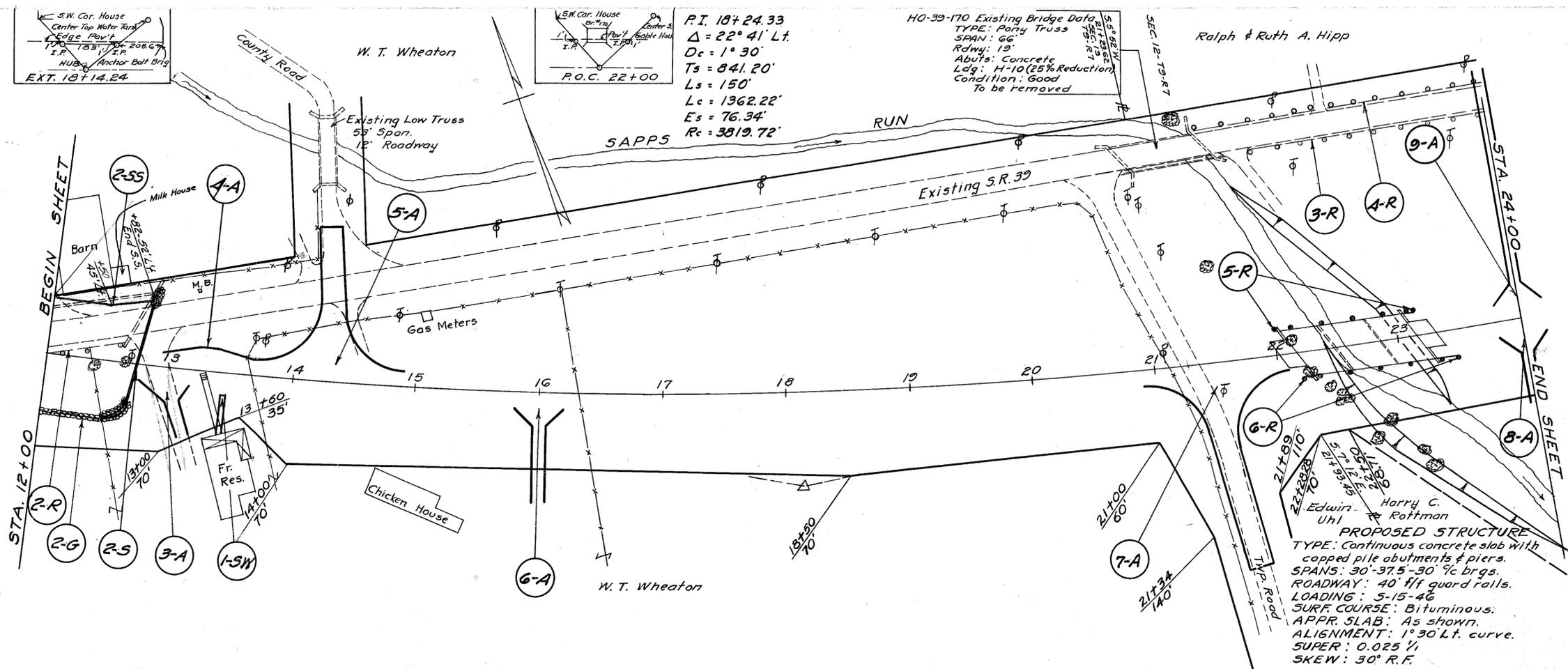


B.M. Sta 4+70  
 L Cut on S.E. Cor. Headwall  
 15' Rt. E.  
 Elev. 863.46

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

**STA. 5+50 BEGIN PROJ.**  
**HOL-39-16.69**  
 No Superelevation

P.I. 6+08.43  
 $\Delta = 2^\circ 48' Rt.$   
 $D = 0^\circ 48'$   
 $T = 175.0'$   
 $L = 350.0'$   
 $E = 2.14'$   
 $R = 7161.98'$



**STRUCTURES - 20' SPAN & UNDER**

Ref. No.	Station	See Sheet	Removals		New Work	
			Type	Size	Type	Size
2-5	12+74	30	C.M.P.	24"	Pipe	36"
Sheet Totals						

**APPROACHES**

Ref. No.	Station	Side	See Sheet	I-17 Appr. Cu. Yds.	
				Rt.	Lt.
3-A	12+91	Rt.	13	13	
4-A	13+30	Lt.	26	6	
5-A	14+36	Lt.	13	19	
6-A	16+00	Rt.	17	15	
7-A	21+40	Rt.	17	40	
8-A	24+00	Lt.			
9-A	24+00	Lt.			
Sheet Totals			93		

**STORM SEWERS**

Ref. No.	Station	Side	Remove Lin. Ft.	Pipe 15" Lin. Ft.
2-5	12+00	12+92	Lt.	83
Sheet Totals			83	82

**GUARD RAILS**

Ref. No.	Station	Side	Remove Lin. Ft.	New Lin. Ft.	Remarks
2-R	12+00	12+60	Lt.	60	
3-R	21+98	24+00	Lt.	192	
4-R	21+54	24+00	Lt.	234	
5-R	22+02.08	23+44.58	Lt.	13.5	39' is Bridge Railing
6-R	22+18.92	23+43.92	Rt.	26	39' is Bridge Railing
Sheet Totals			486	395	

**PAVEMENT REMOVAL**

Station	From	To	Pavem. Sq. Yds.
12+00	20+20	1945	
21+60	24+00	516	
Sheet Totals			2461

**APPROACH SLABS**

Station	From	To	See Sheet	Slab Sq. Yds.	7-35 Surface Sq. Yds.	Remarks
22+02.13	22+17.13	40	40	AS-4-47		
23+16.36	23+31.36	40	40			
Sheet Totals			80	80		

**SIDEWALKS**

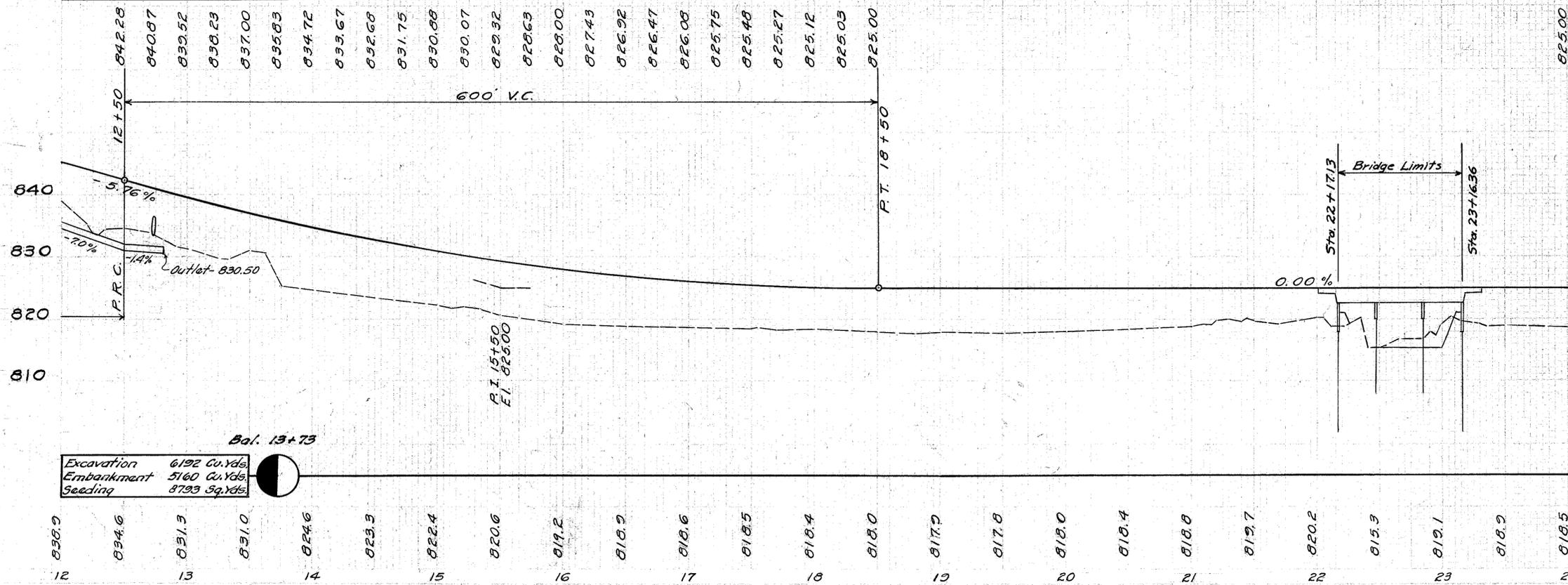
Ref. No.	Station	Side	Remove Sq. Ft.	New 4'-4' Sq. Ft.
1-5W	13+45	Rt.	208	128
Sheet Totals			208	128

**GUTTERS**

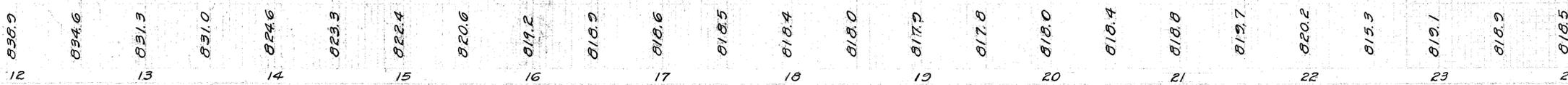
Ref. No.	Station	Side	Riprap Sq. Yds.	
2-G	12+00	12+50	Rt.	33
Sheet Totals			33	

B.M. Sta. 12+05  
 Bottom of Weatherboard on Barn  
 50' Lt. E.  
 Elev. 839.32

B.M. Sta. 21+75  
 L Cut on Cor. of S.E. Wing  
 160' Lt. E.  
 Elev. 823.17

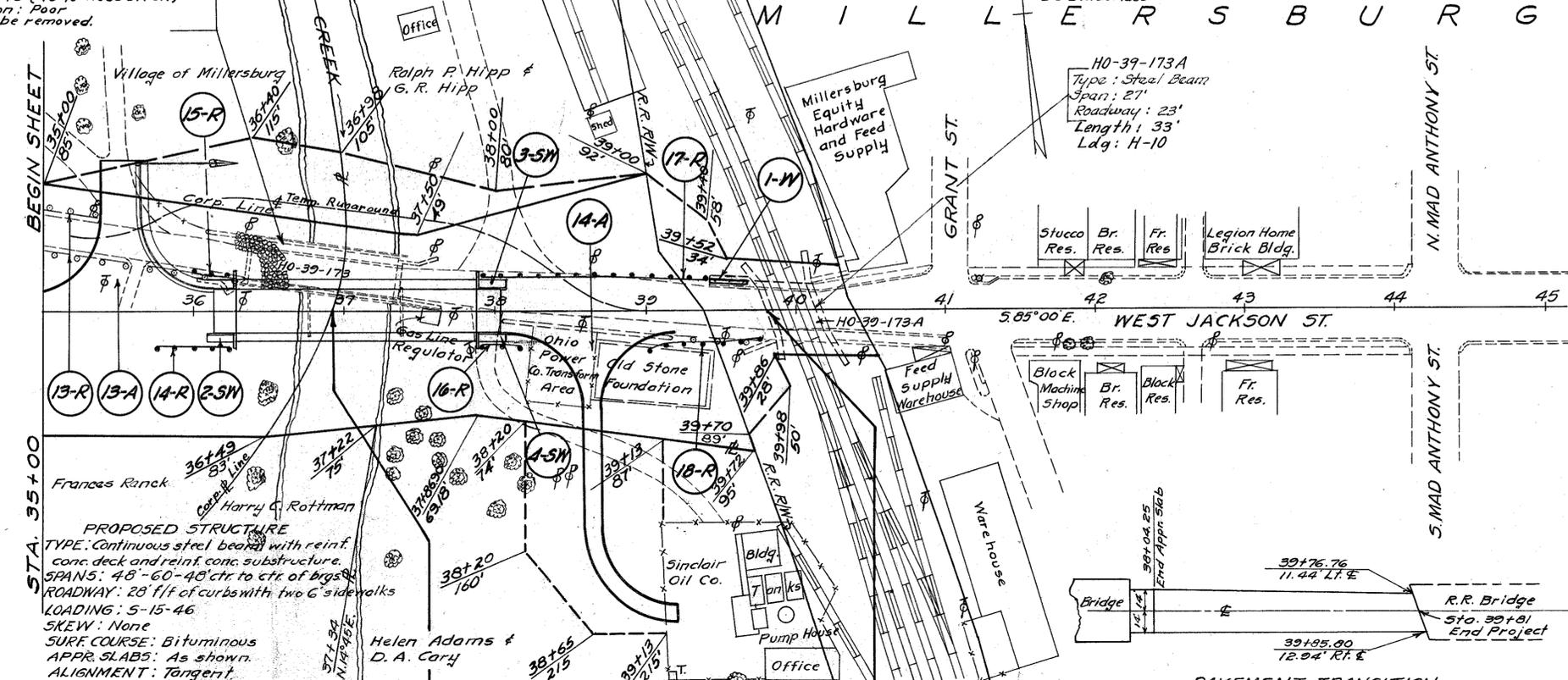
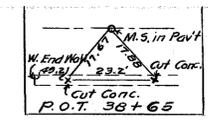
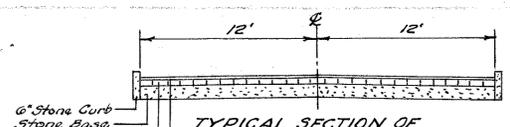
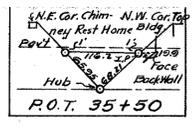


**Excavation** 6192 Cu. Yds.  
**Embankment** 5160 Cu. Yds.  
**Seeding** 8793 Sq. Yds.

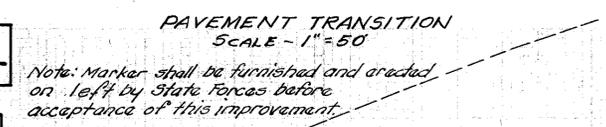




EXISTING BRIDGE DATA-HO-39-173  
 Type: Thru Truss  
 Span: 30'  
 Rdwy: 20'  
 Sidewalk: 1 on Lt. @ 6'  
 Abuts.: Rear: Conc. Fwd: Stone  
 Ldg: H-10 (75% Reduction)  
 Condition: Poor  
 To be removed.



PROPOSED STRUCTURE  
 TYPE: Continuous steel beam with reinf. conc. deck and reinf. conc. substructure.  
 SPANS: 48'-60'-48' ctr. to ctr. of bays  
 ROADWAY: 28' f.f. of curbs with two 6' sidewalks  
 LOADING: S-15-46  
 SKEW: None  
 SURF COURSE: Bituminous  
 APPR. SLABS: As shown.  
 ALIGNMENT: Tangent.



**APPROACHES**

Ref. No.	Station	Side	Sec	No. 2 (Mod) 4" Conc. Curbs/Other Sidewalks Lin. Ft.	Sq. Ft.	No. 3-A Catch Basins/Outlets Each	12" 3.5. Lin. Ft.	Channel Excavat'n Cu. Yds.
13-A	35+50	Lt.	28	115	688	1	50	1
Sheet Totals (Rural)				115	688	1	50	1
14-A	38+65	Rt.	29					
Sheet Totals (Mun.)								

**GUARD RAILS**

Ref. No.	Station	Side	Remove Lin. Ft.	New Lin. Ft.	
13-R	35+00	Lt.	148		
14-R	35+77	Rt.		50	
15-R	36+02	Lt.		25	
Sheet Totals (Rural)				148	75
16-R	37+91	Rt.		25	
17-R	37+91	Lt.		150	
18-R	39+00	Rt.		75	
Sheet Totals (Mun.)					250

**PAVEMENT REMOVAL**

Station	From	To	Pavam't. Sq. Yds.	
35+00	36+36		303	
Sheet Totals (Rural)				303
37+37	39+81		610	
Sheet Totals (Mun.)				610

**APPROACH SLABS**

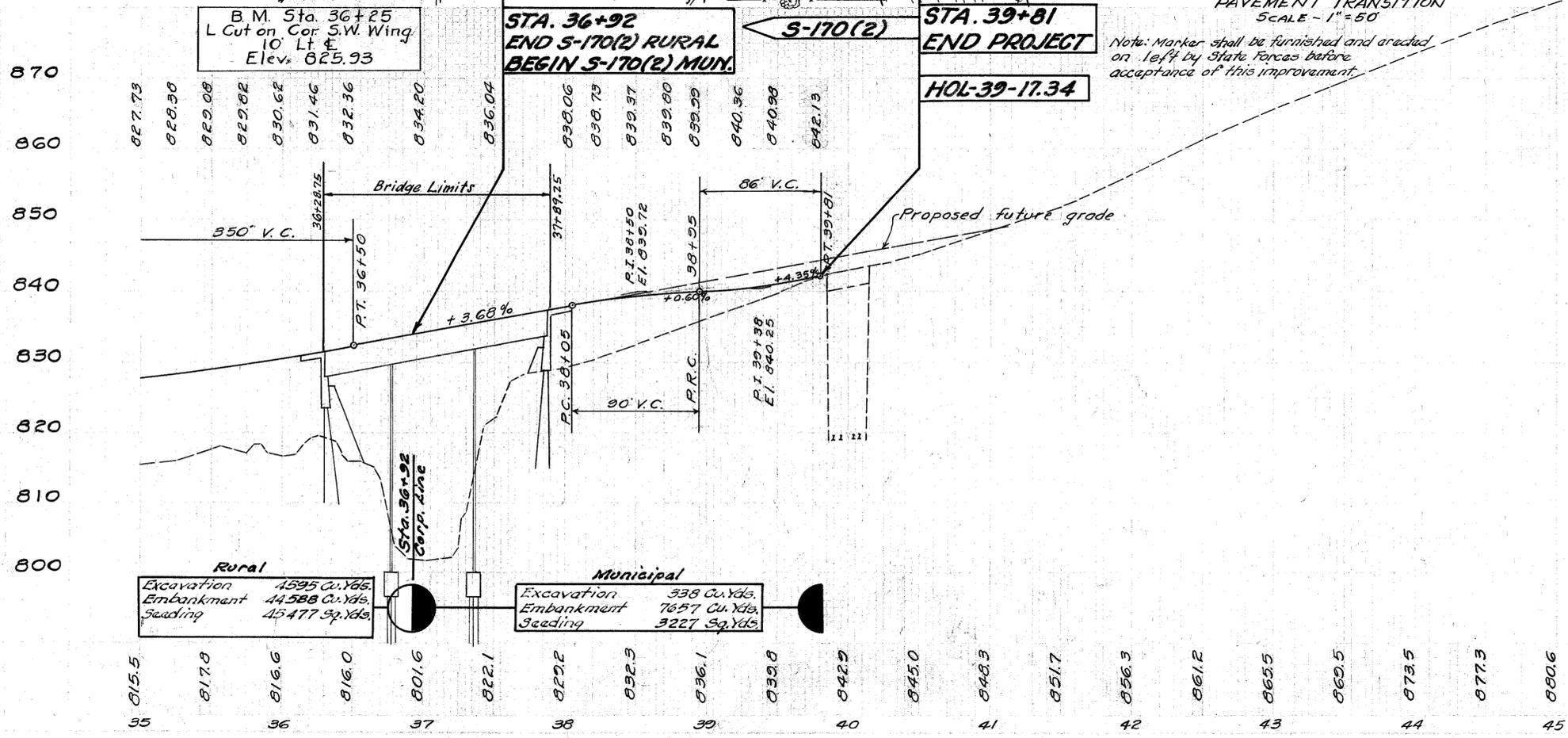
Station	From	To	Slab Sq. Yds.	T-35 Surface Sq. Yds.	Remarks
36+13.75	36+28.75	31	48.3	46.7	AS-4-47 (As per plan)
Sheet Totals (Rural)				48.3	46.7
37+89.25	38+04.25	31	48.3	46.7	AS-4-47 (As per plan)
Sheet Totals (Mun.)				48.3	46.7

**SIDEWALKS**

Ref. No.	Station	Side	4"x5.5' Sq. Ft.	Type 6 (Mod) Curb Lin. Ft.	
2-SW	36+09.75	Rt.	105	4	
Sheet Totals (Rural)				105	4
3-SW	37+89.25	Lt.	105	4	
4-SW	37+89.25	Rt.	105	4	
Sheet Totals (Mun.)				210	8

**RETAINING WALL**

Ref. No.	Station	Sec	Dowel Holes Lin. Ft.	Reinf'g. Steel Lbs.	Class "E" Concrete Cu. Yds.	
1-W	39+43.5	31	6	18	1.7	
Sheet Totals (Mun.)				6	18	1.7



Excavation	Embankment	Seeding
1595 Cu. Yds.	44588 Cu. Yds.	45477 Sq. Yds.
338 Cu. Yds.	7657 Cu. Yds.	3227 Sq. Yds.

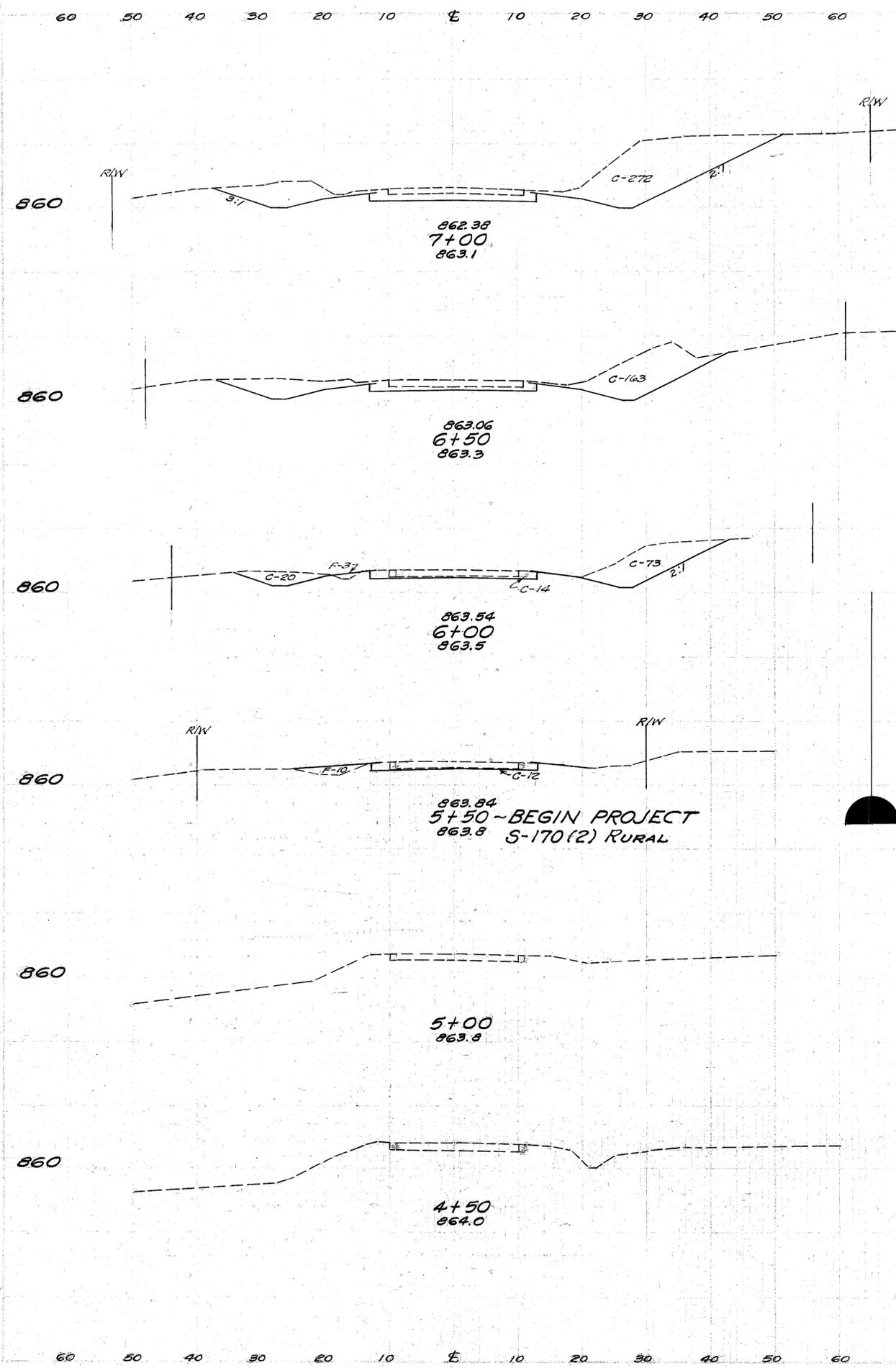
# CURVE TABLES

T.S. 9+83.13 D = 1°30' L.T.				S.T. 26+45.35			
LEFT				RIGHT			
Edge of Pav't.	Deduct Crown	Width	STATION	Profile Grade	Width	Add Super	Edge of Pav't.
857.29	0.19	12.00	9+08.88	857.48	12.00	0.00	857.29
856.77			+25	856.96		0.04	856.81
855.92			+50	856.11		0.10	856.02
855.03			+75	855.22		0.16	855.19
854.73			T.S.+83.13	854.92		0.19	854.92
854.10			10+00	854.29		0.24	854.34
853.11			+25	853.30		0.30	853.41
852.08			+50	852.27		0.37	852.45
851.00			+75	851.19		0.44	851.44
849.87			11+00	850.06		0.51	850.38
848.69			+25	848.88		0.58	849.27
848.30			S.C.+38.13	848.49		0.60	848.90
847.47			+50	847.66			848.07
846.19			+75	846.38			846.79
844.87			12+00	845.06			845.47
843.51			+25	843.70			844.11
842.09			+50	842.28			842.69
840.68			+75	840.87			841.28
839.33			13+00	839.52			839.93
838.04			+25	838.23			838.64
836.81			+50	837.00			837.41
835.64			+75	835.83			836.24
834.53			14+00	834.72			835.13
833.48			+25	833.67			834.08
832.49			+50	832.68			833.09
831.56			+75	831.75			832.16
830.69			15+00	830.88			831.29
829.88			+25	830.07			830.48
829.13			+50	829.32			829.73
828.44			+75	828.63			829.04
827.81			16+00	828.00			828.41
827.24			+25	827.43			827.84
826.73			+50	826.92			827.33
826.28			+75	826.47			826.88
825.89			17+00	826.08			826.49
825.56			+25	825.75			826.16
825.29			+50	825.48			825.89
825.08			+75	825.27			825.68
824.93			18+00	825.12			825.53
824.84			+25	825.03			825.44
824.81			+50	825.00			825.41
			+75				
			19+00				
			+25				
			+50				
			+75				
			20+00				
			+25				
			+50				
			+75				
			21+00				
			+25				
			+50				
			+75				
			22+00				
			+25				
			+50				
			+75				
			23+00				
824.81	0.19	12.00	+25	825.00	12.00	0.60	825.41

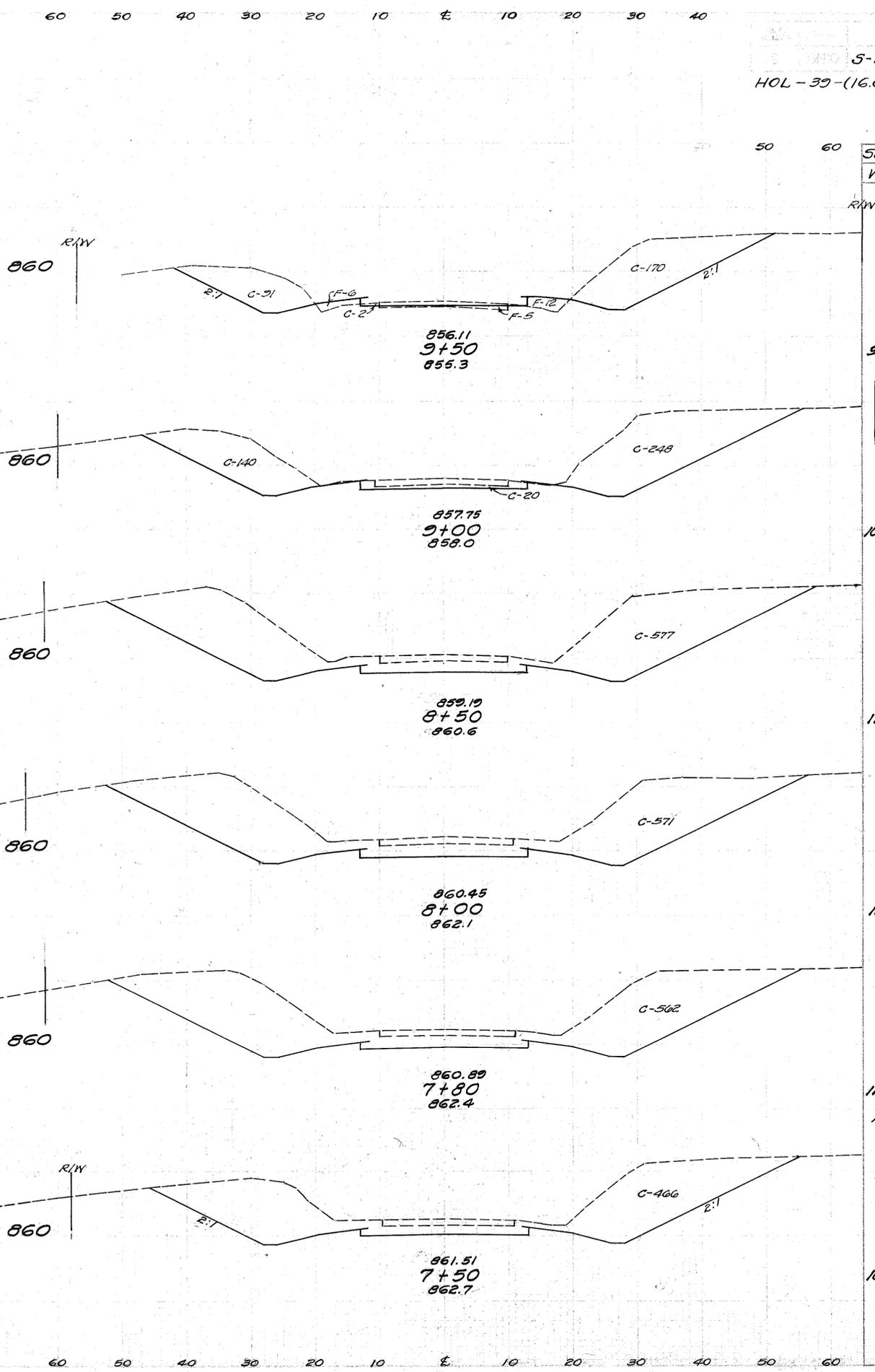
CONTINUED IN COLUMN ON RIGHT

LEFT			RIGHT				
Edge of Pav't.	Deduct Crown	Width	STATION	Profile Grade	Width	Add Super	Edge of Pav't.
824.81	0.19	12.00	23+50	825.00	12.00	0.60	825.41
			+75				
			24+00				
			+25				
			+50				
			+75				
			C.S.+95.35			0.60	825.41
			25+00			0.59	825.40
			+25			0.52	825.33
			+50			0.45	825.26
			+75			0.38	825.19
			26+00			0.31	825.12
			+25			0.24	825.05
			S.T.+45.35			0.19	825.00
			+50			0.18	824.99
			+75			0.11	824.92
			27+00			0.05	824.86
			+19.60				824.83
			+25				824.82
824.81	0.19	12.00	+50	825.00	12.00	0.60	824.81

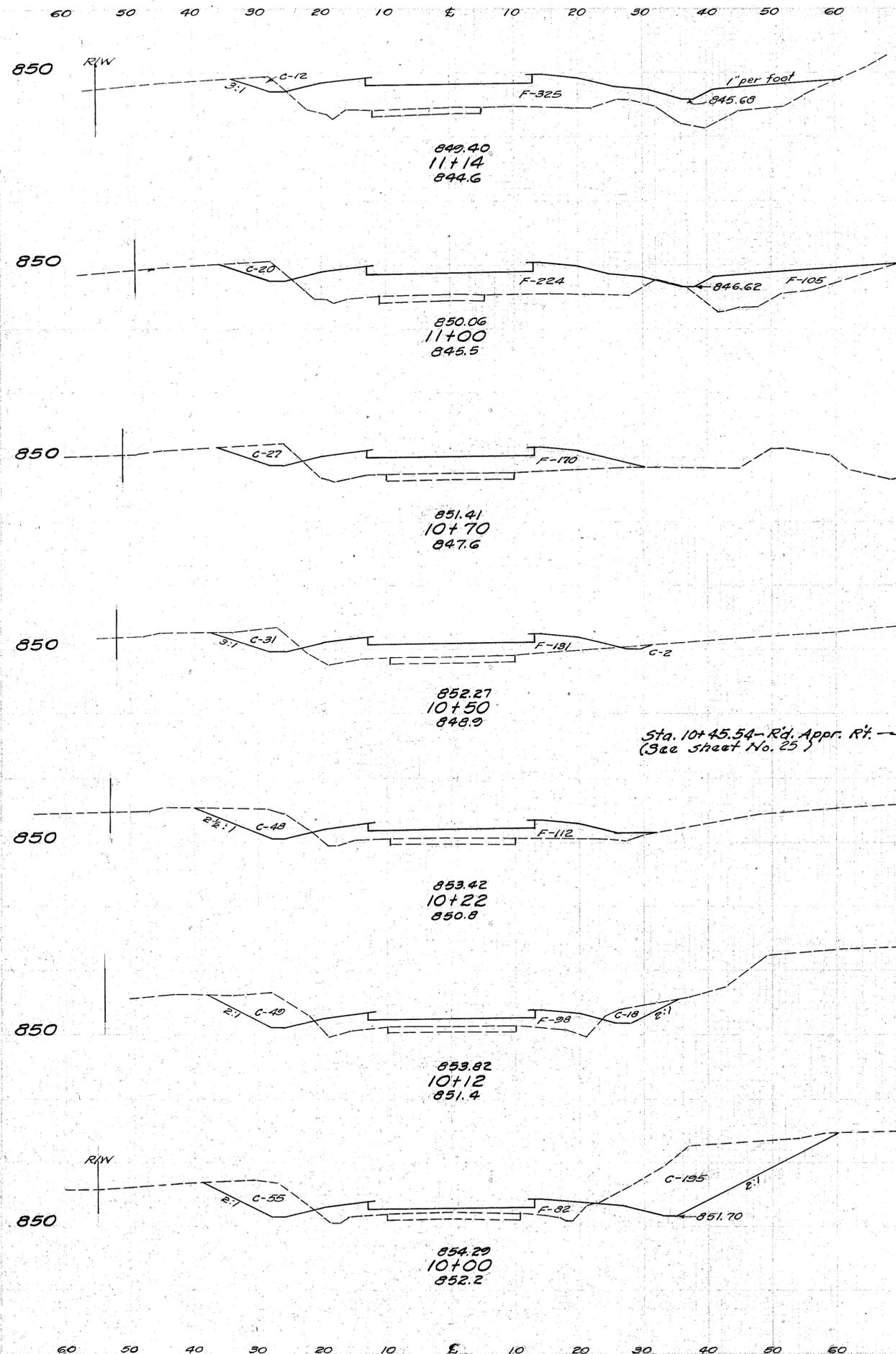
NOTE: The design speed is 50 Mph.



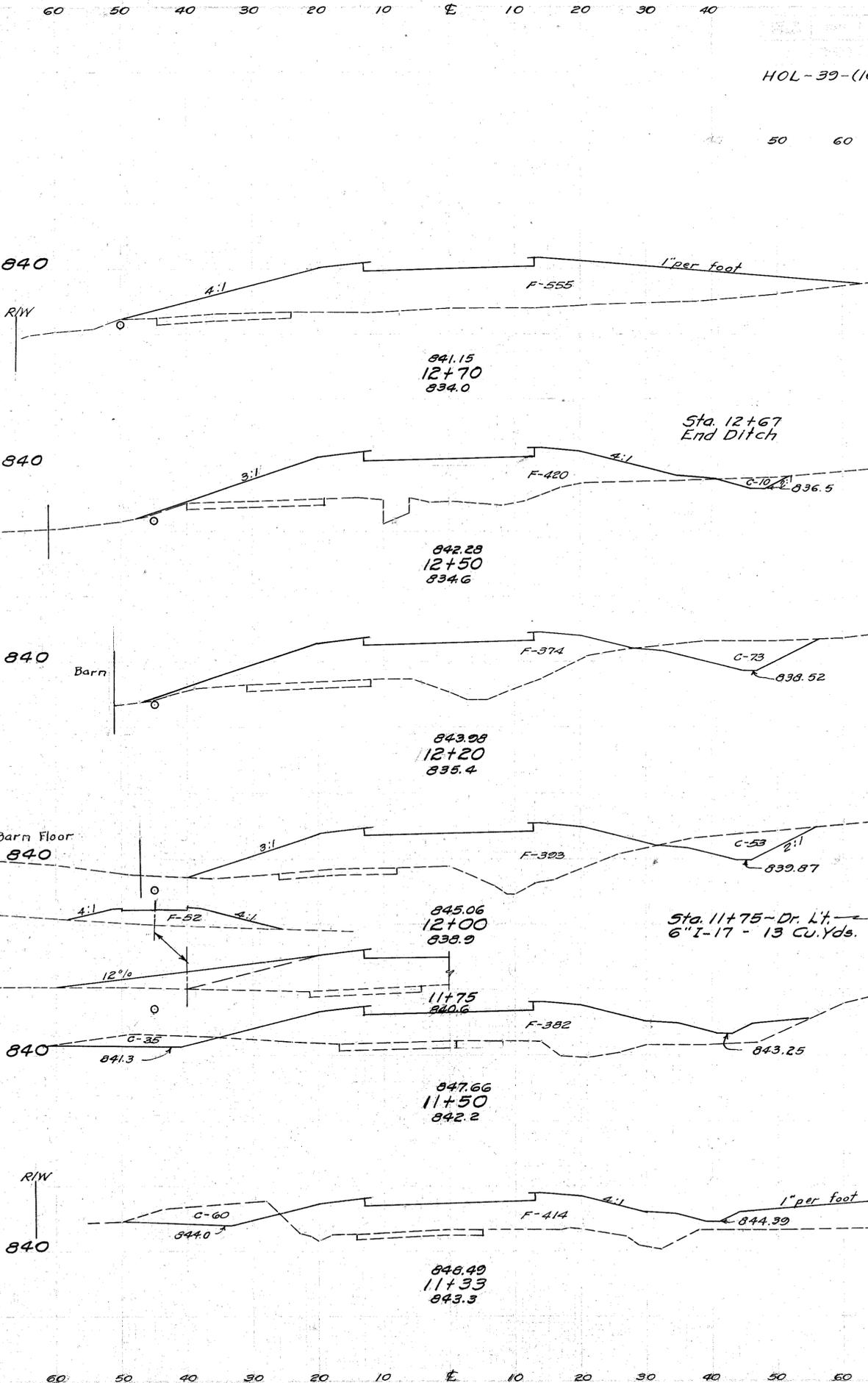
Seeding	End Area	Cu. Yds.
W. S.Y. Cut	Fill	Cut Fill
528	683	0
88	272	0
458	403	0
77	163	0
422	250	3
75	107	3
319	110	12
40	12	10



Seeding	End Area	Cu. Yds.
W. S.Y. Cut	Fill	Cut Fill
536	475	97
94	263	23
550	621	21
104	408	0
623	912	0
113	577	0
622	1063	0
111	571	0
246	420	0
110	562	0
353	571	0
102	466	0



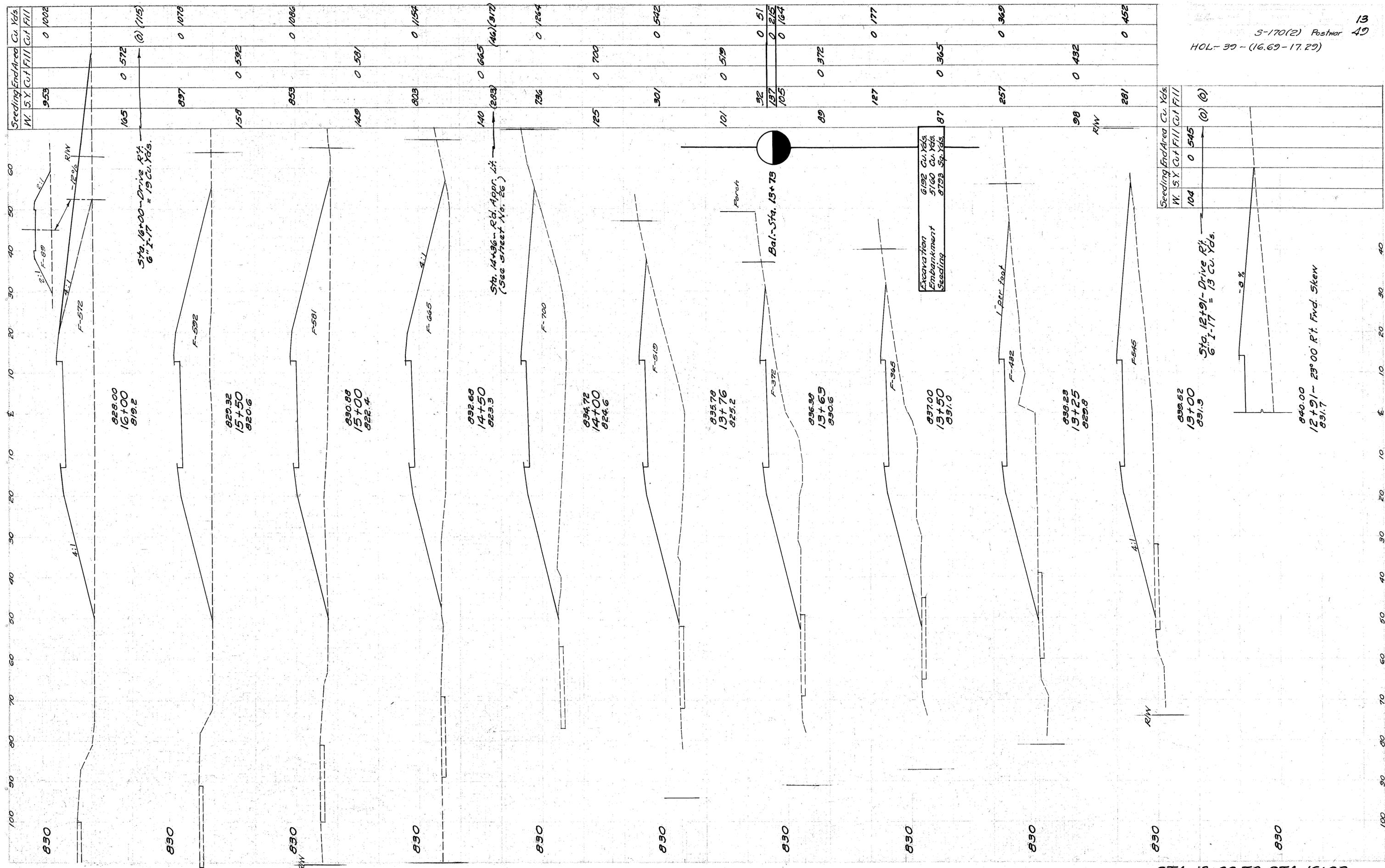
Seeding	End Area		Cu. Yds.	
	W.	S.Y.	Cut	Fill
222			25	260
91	12	325		
151			8	170
103	20	329		
278			26	277
64	27	170		
144			22	111
66	33	131		
(293)			(260)	(128)
210			42	126
69	48	112		
78			21	39
71	67	98		
113			70	40
99	250	82		



Seeding	End Area		Cu. Yds.	
	W.	S.Y.	Cut	Fill
353			0	611
108	0	555		
0	10			
228			6	361
97	10	420		
322			46	441
96	73	374		
209			47	294
92	53	393	(0)	(48)
567			81	718
112	35	382		
218			30	251
119	60	414		

Sta. 10+45.54 - Rd. Appr. Rt.  
(See Sheet No. 25)

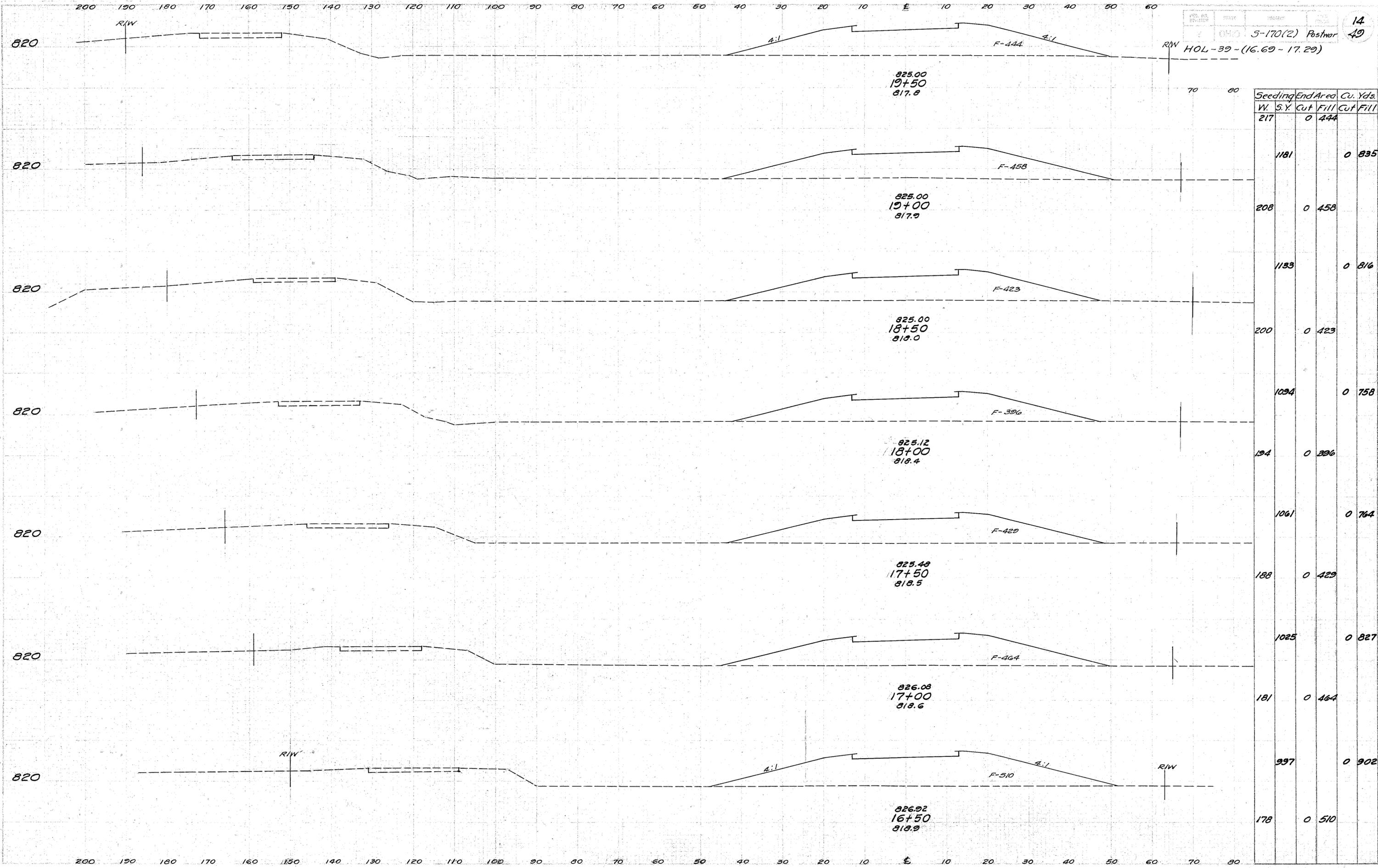
Sta. 11+75 - Dr. Lt.  
6" I-17 - 13 Cu. Yds.



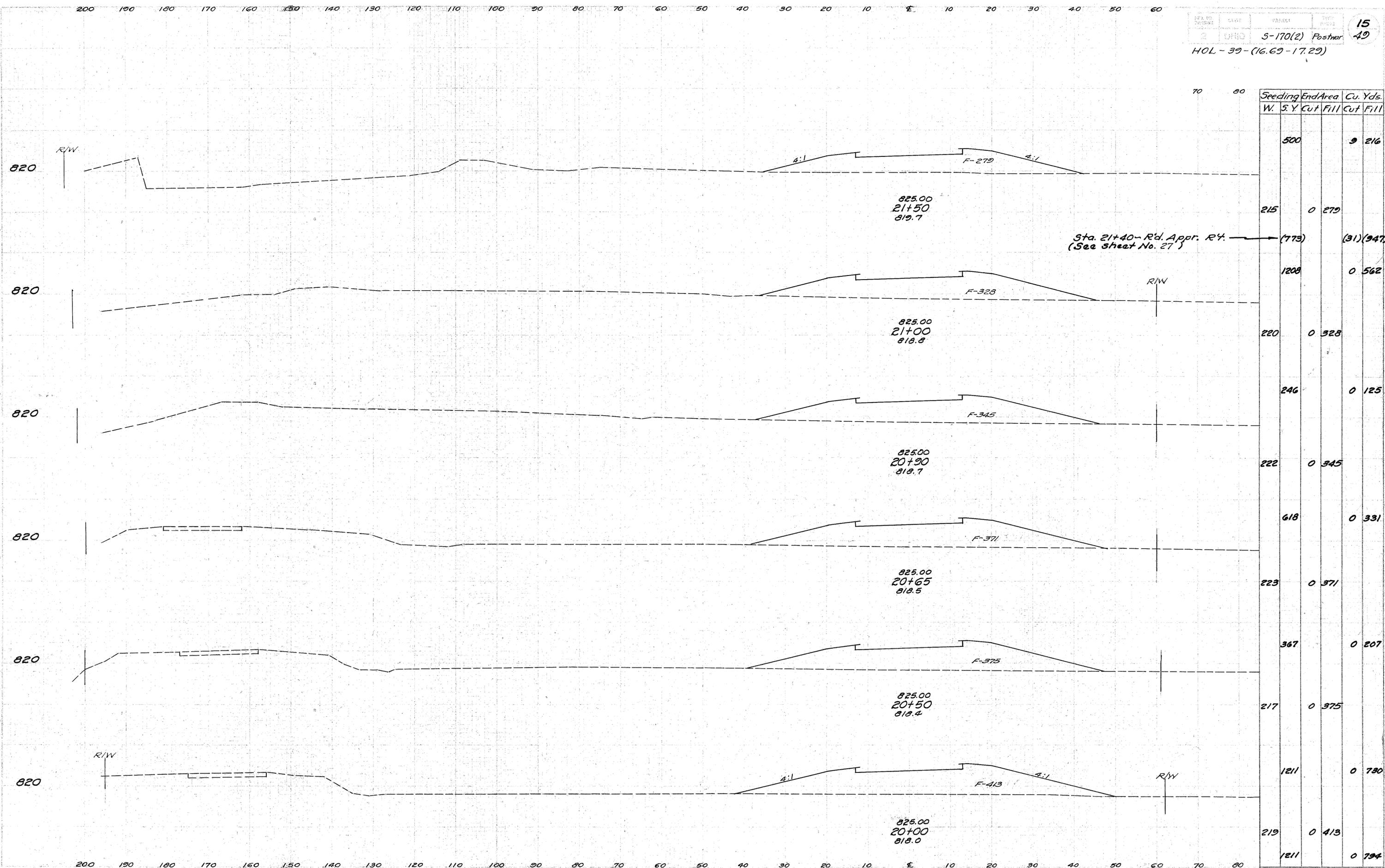
Stading	End Area	Cu. Yds.
W. S.Y.	Cut/Fill	Cut/Fill
953	0	0
105	0	0
897	0	0
158	0	0
853	0	0
149	0	0
803	0	0
140	0	0
736	0	0
125	0	0
301	0	0
101	0	0
32	0	0
137	0	0
105	0	0
89	0	0
127	0	0
257	0	0
98	0	0
281	0	0

Stading	End Area	Cu. Yds.
W. S.Y.	Cut/Fill	Cut/Fill
104	0	0
	0	0

5-170(2) Postwar  
 HOL-39 - (16.69-17.29)

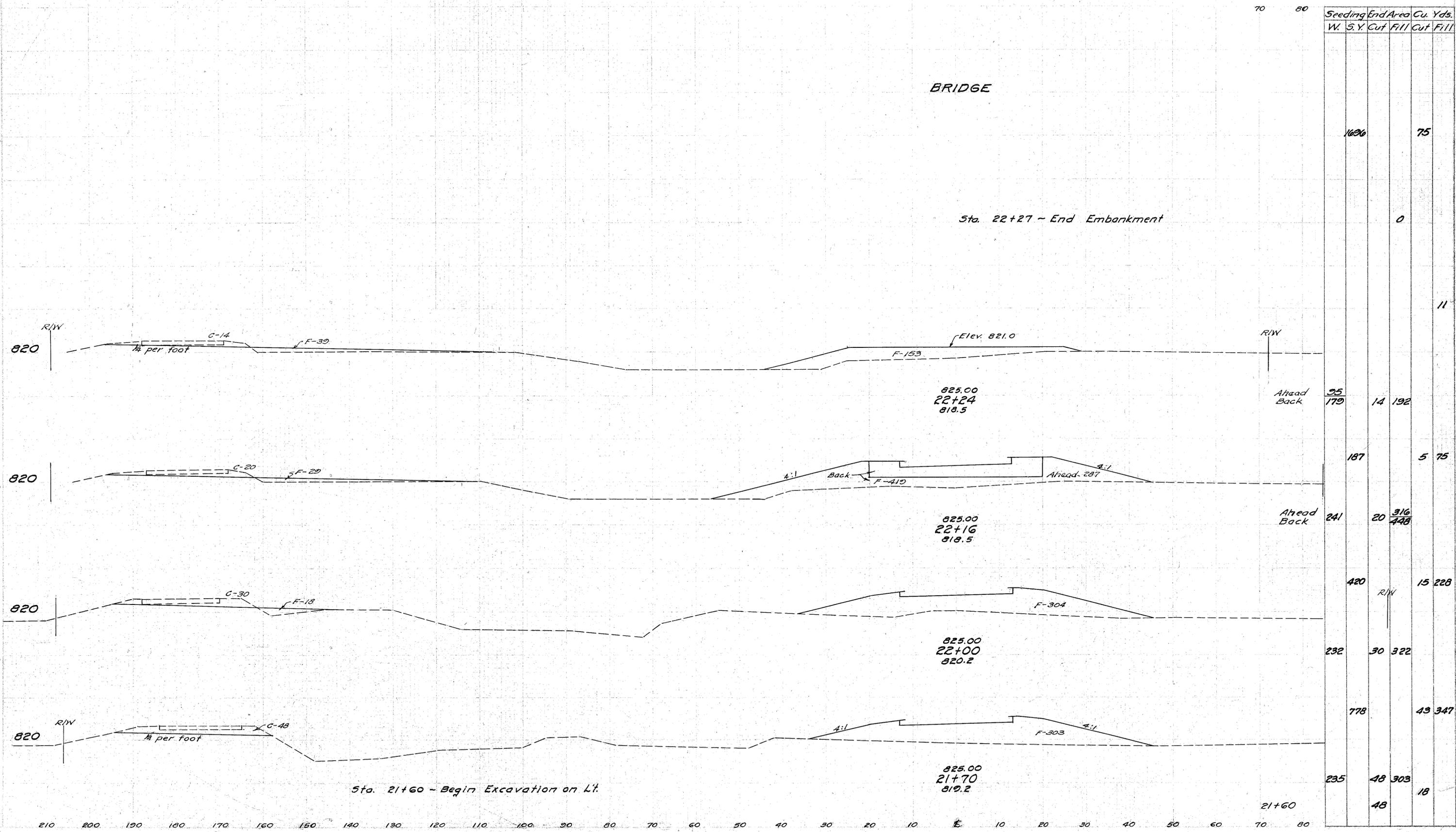


STA. 16+50 TO STA. 19+50



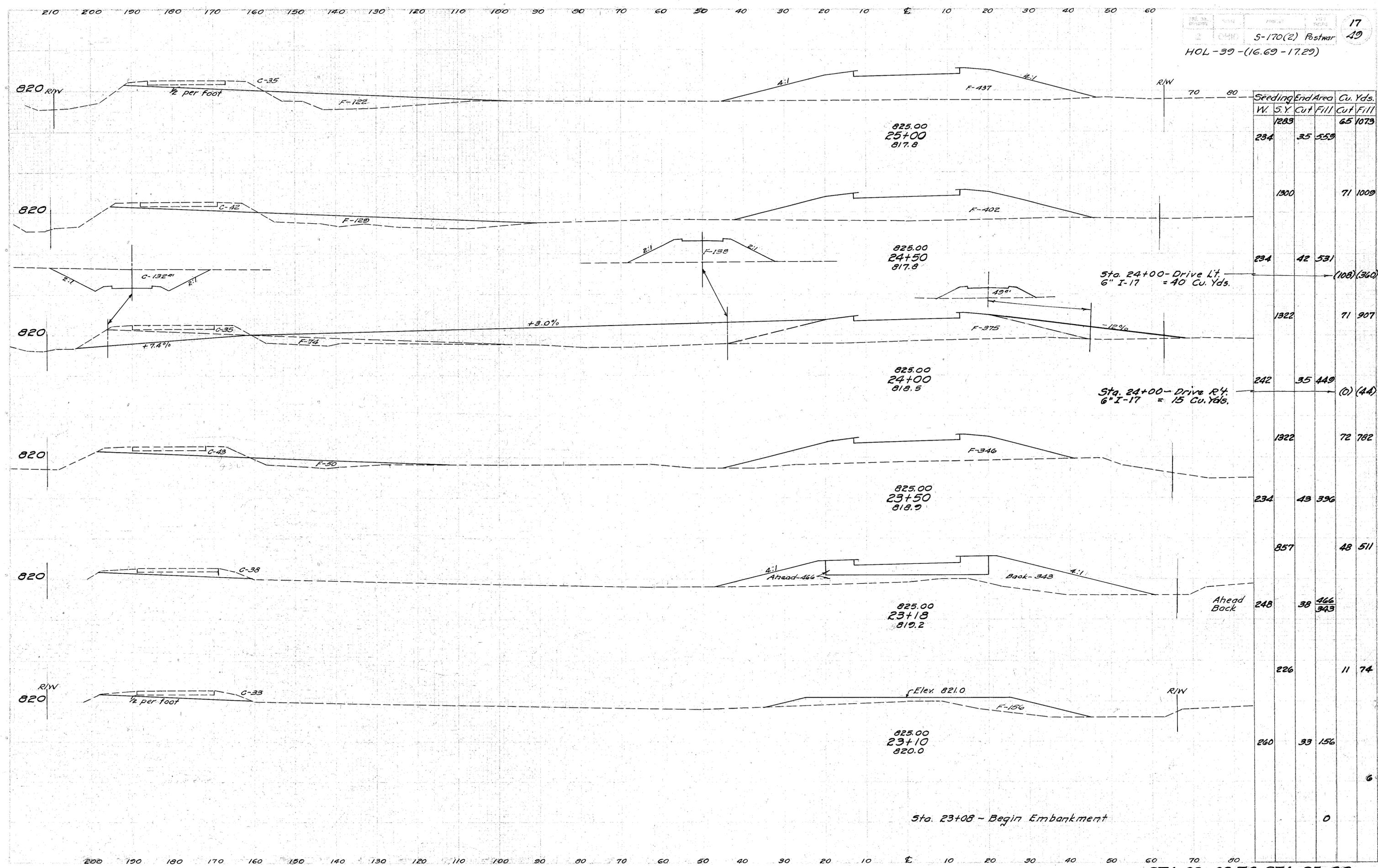
Seeding W.	End Area		Cu. Yds.	
	5.Y	Cut	Cut	Fill
500			9	216
215	0	279		
		(773)	(31)	(947)
1208			0	562
220	0	328		
246			0	125
222	0	345		
618			0	331
223	0	371		
367			0	207
217	0	375		
1211			0	730
219	0	413		
1211			0	794

STA. 20+00 TO STA. 21+50

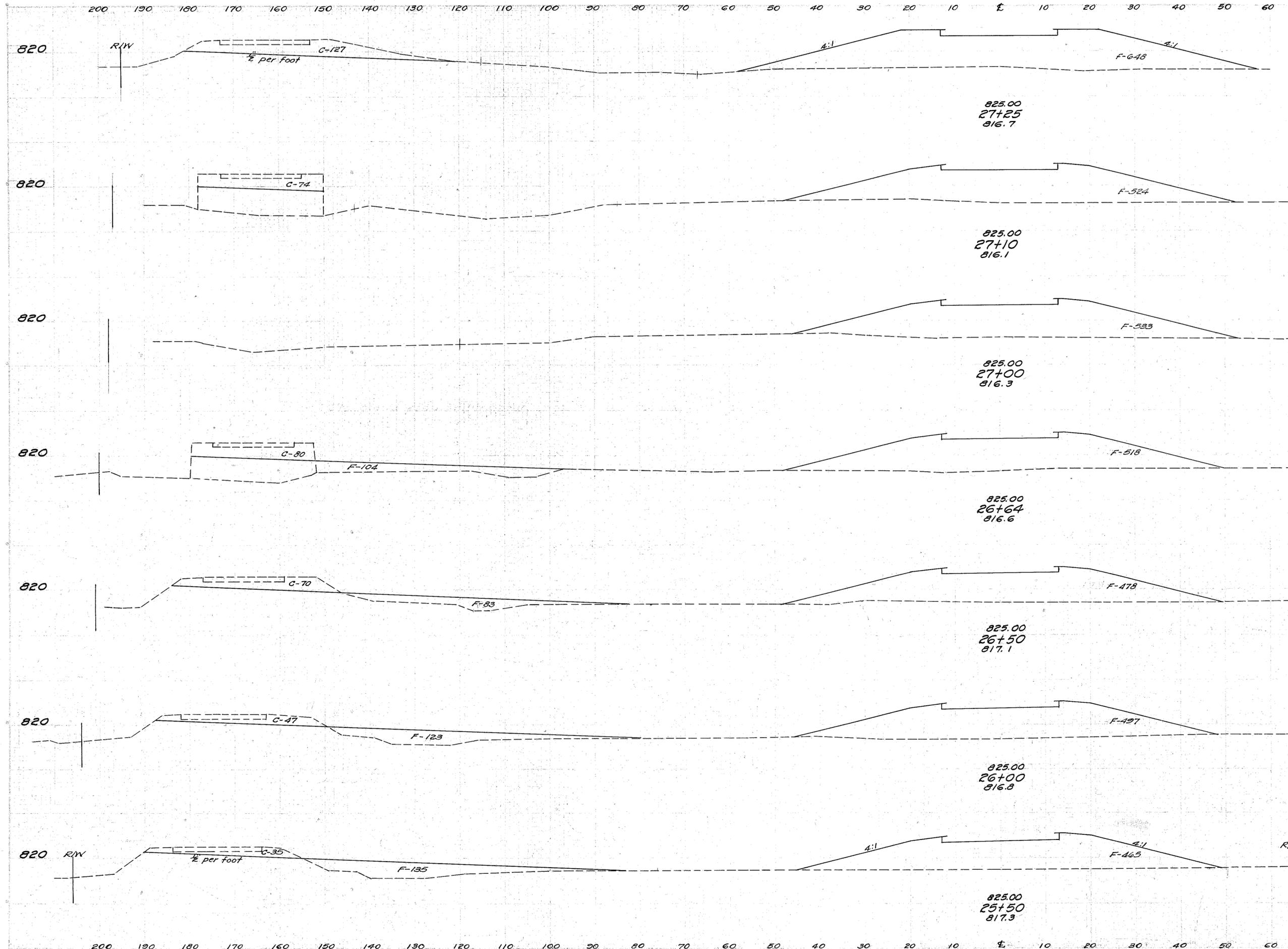


Seeding	End Area		Cu. Yds.	
	W. S. Y.	Cut	Fill	Cut Fill
		1626		75
			0	
				11
Ahead	25			
Back	179	14	192	
		187		5 75
Ahead	241	20	316	
Back			448	
		420		15 228
			R/W	
	232	30	322	
		778		43 347
	235	48	303	
		48		18

STA. 21+70 TO STA. 22+27



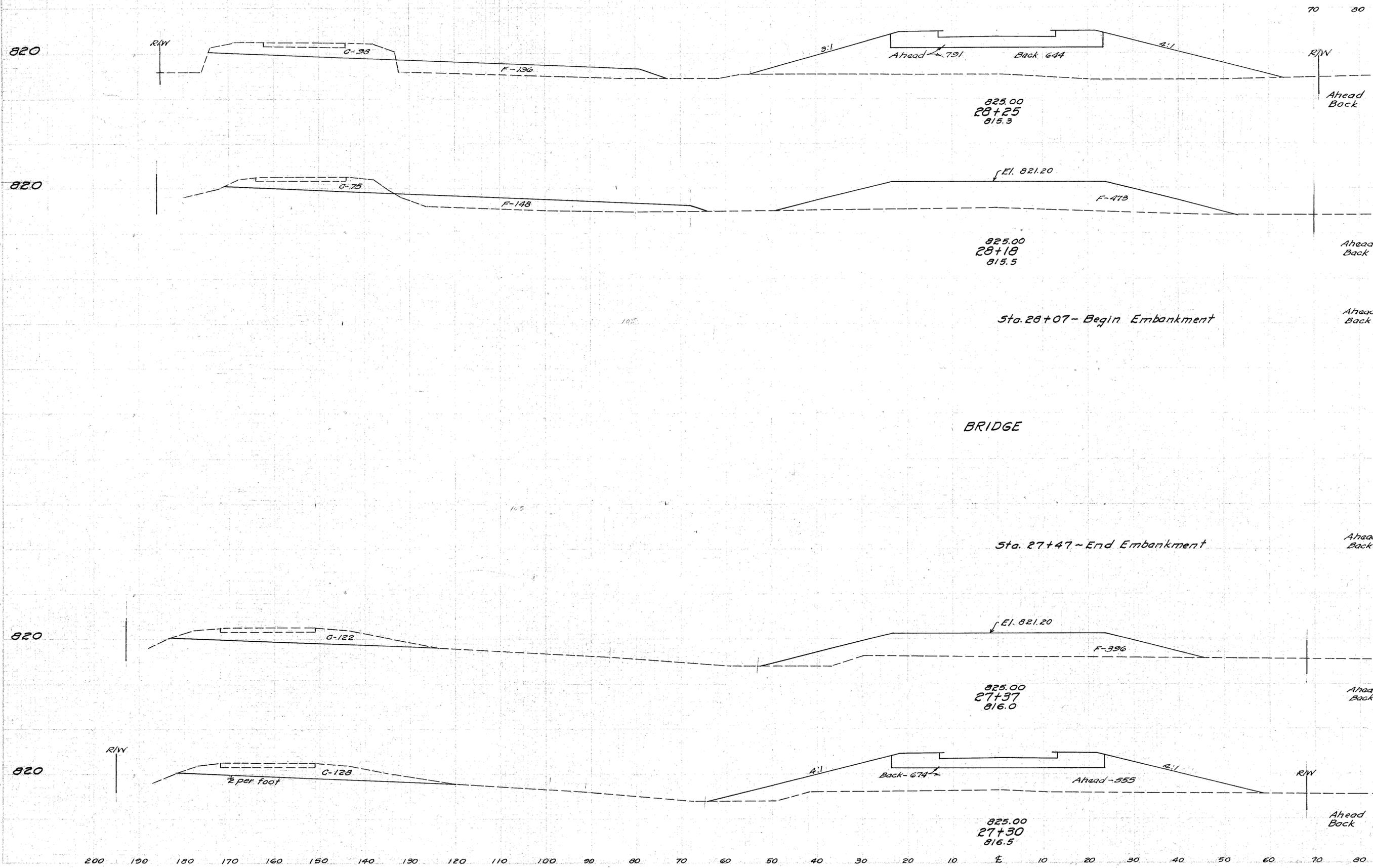
Sta.	Seeding		End Area		Cu. Yds.	
	W.	S.Y.	Cut	Fill	Cut	Fill
23+00	1283				65	1073
23+10	234	35	553			
23+50			1300			71 1009
24+00	234	42	531			
24+00					(108)	(360)
24+00	1322				71	907
24+00	242	35	449			(0) (44)
24+00						
24+50	1322				72	782
23+50	234	43	396			
23+18	857				48	511
23+18	248	38	466			
23+18						
23+10	226				11	74
23+10	260	33	156			
23+08						0



5-170(2) Postwar 18  
 49  
 HOL-39-(16.69-17.29)  
 R/W

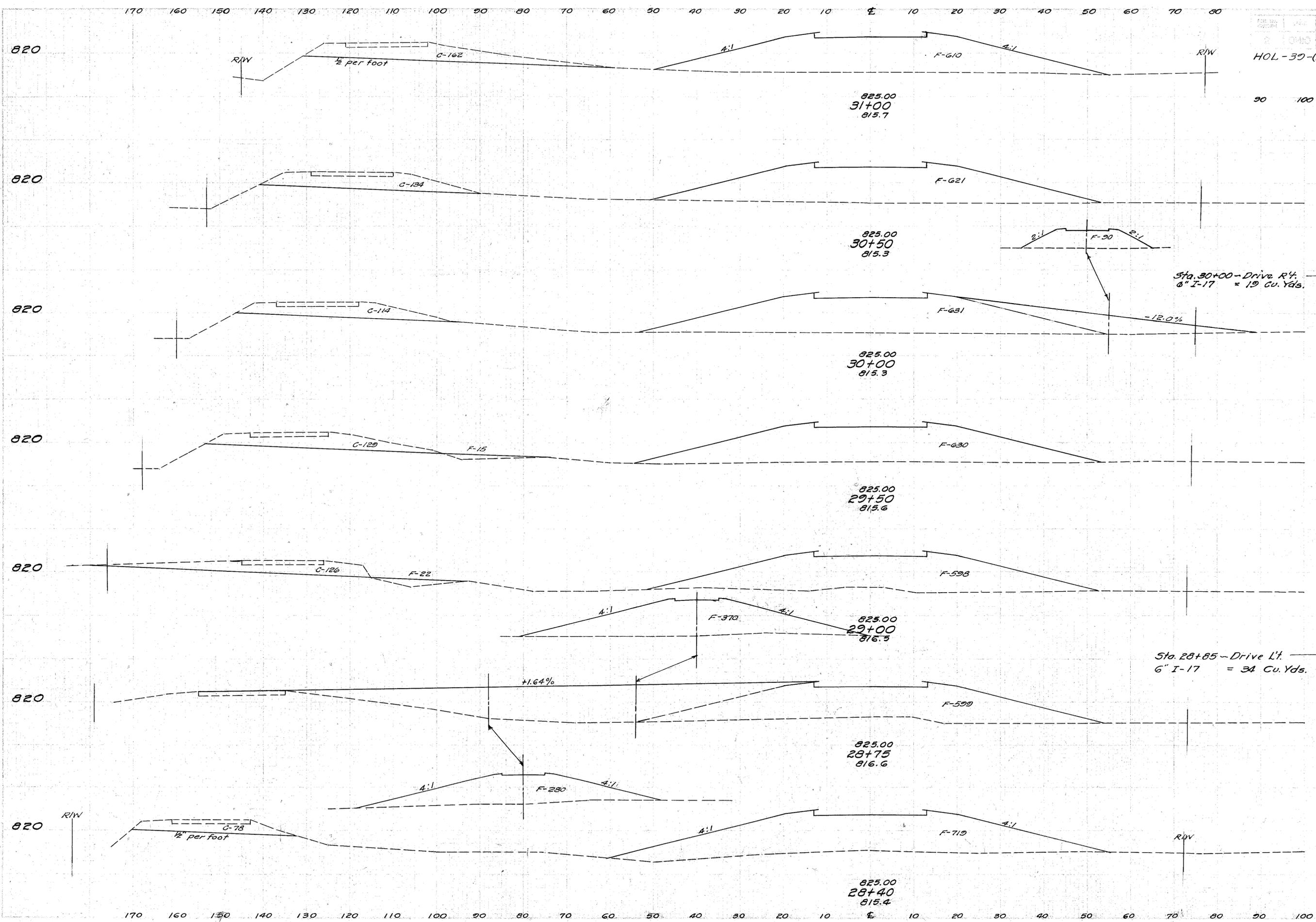
Stn.	Seeding		End Area		Cu. Yds.	
	W.	S.Y.	Cut	Fill	Cut	Fill
27+25	186		127	648		
27+10		293			56	326
27+00	166		74	524		
26+64	126		0			
26+50		161			0	196
26+35	163		0	533		
26+25		774			0	701
26+10	224		0	518		
26+00	80		622			
25+50		352			39	307
25+35	228		70	561		
25+25		1272			108	1034
25+10	230		47	620		
25+00		1272			76	1130
24+50	228		35	600		

STA. 25+50 TO STA. 27+25



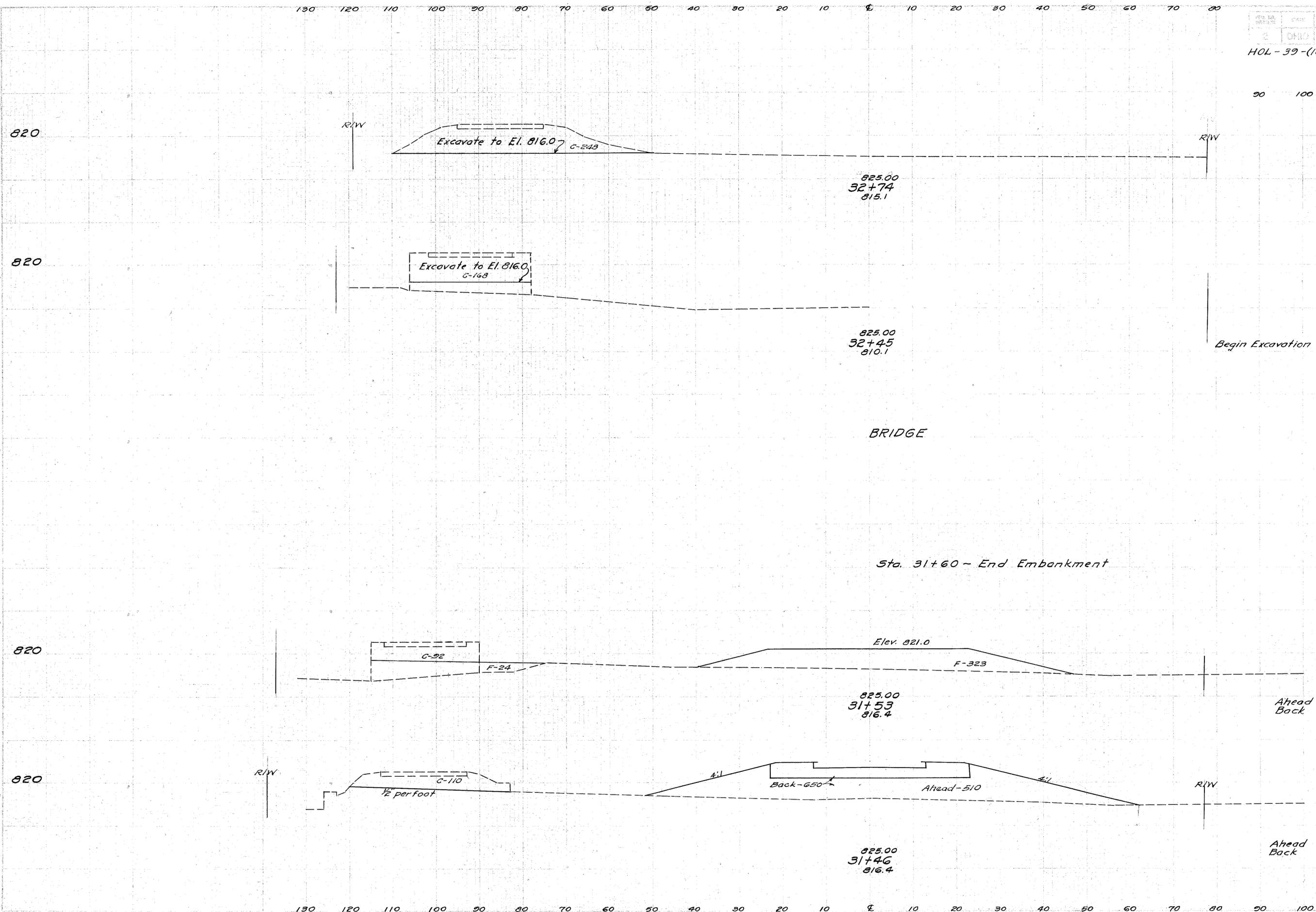
Stn.	Seeding		End Area		Cu. Yds.	
	W.	S.Y.	Cut	Fill	Cut	Fill
28+07			305		49	457
28+10	207		98	927	780	
28+15			168		22	182
28+20	224		75	621		
28+25	153		190		127	
27+30	153		105	0		
27+35			700		296	
27+40	105		105	0		
27+45			169		73	
27+50	151		122	396		
27+55	214		166		32	123
27+60			212	128	555	674
27+65			111		24	122

STA. 27+30 TO STA. 28+25

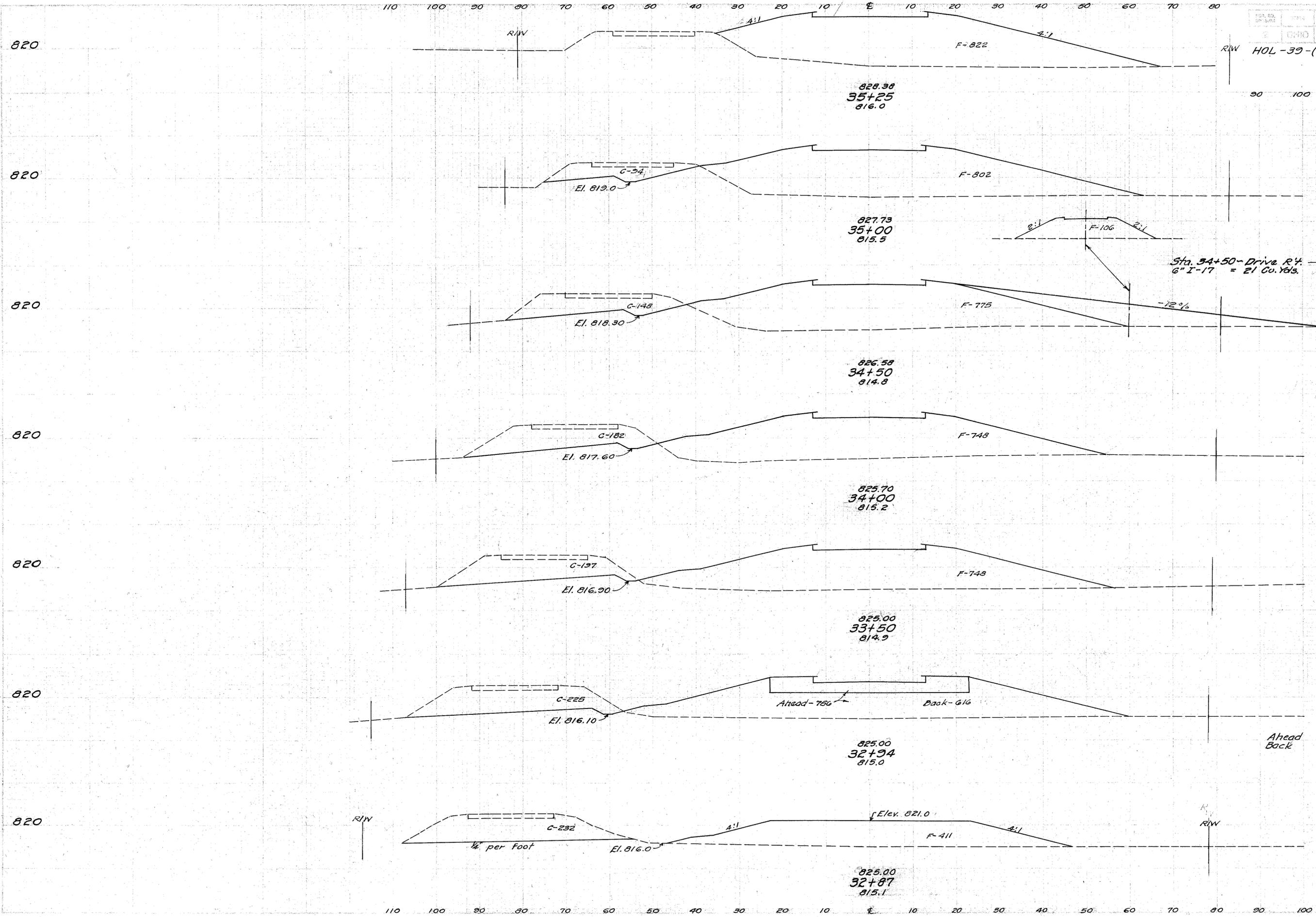


Station	Seeding W.	End Area 5.Y. Cut	Area Fill	Cu. Yds. Cut	Cu. Yds. Fill
182		162	610		
189		1031		274	1140
189		134	621		
1069				(0)	(117)
196		114	631		
1106				225	1181
202		129	645		
1156				236	1171
214		126	620		
579				(0)	(386)
203		0	599		
704				51	854
159		78	719		

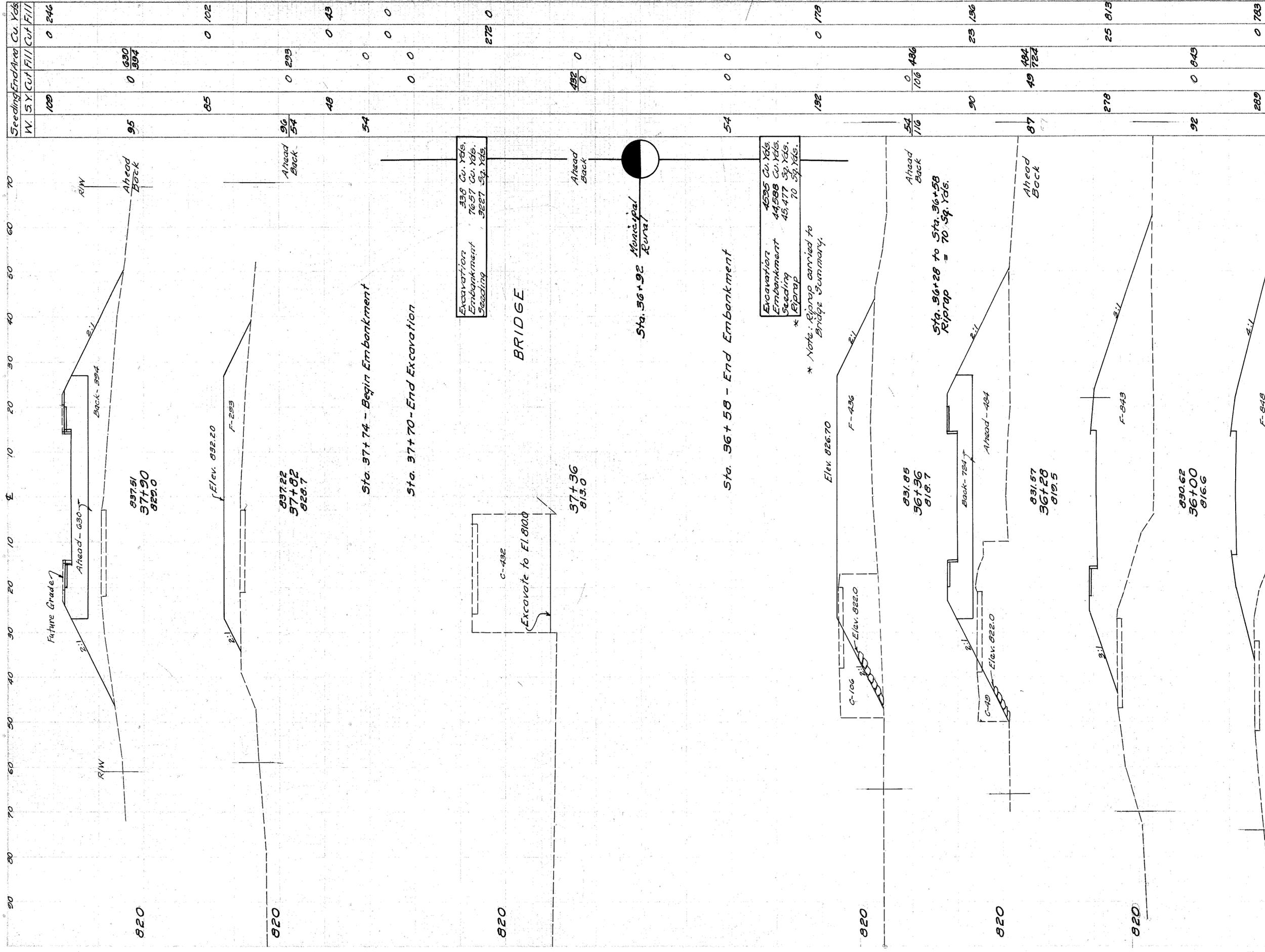
STA. 28+40 TO STA. 31+00



Sta.	Seeding		End Area		Cu. Yds.	
	W.	S.Y.	Cut	Fill	Cut	Fill
31+46					116	99
31+53	171		248	0		
31+60		321			223	0
31+60	28		168	0		
31+60					0	0
31+60	48		0	0		
31+60		37			0	45
31+60	48		0			
31+60	180		92	347		
31+60		130			26	111
31+60	178		110	510		
31+60				650		
31+60	920				232	1073



Sta.	Seeding		End Area		Cu. Yds.	
	W.	S.Y.	Cut	Fill	Cut	Fill
124			0	822		
			347		44	752
126			94	802		
			719		224	1460
128			148	775		
			725		306	1410
128			182	748		
			767		351	1385
148			197	748		
			343		438	1560
155			225	756		
			155	676		
126					59	133
168			232	411		



Station	Seeding	End Area	Cu. Yds.
35+50	109	0	0
36+00	85	630	246
36+50	54	394	0
37+00	48	293	102
37+50	54	0	0
37+90	49	0	43
38+00	192	492	0
38+50	90	0	178
39+00	87	436	23
39+50	278	404	136
40+00	92	49	813
40+50	289	0	783

Station	W. S.Y.	Cut	Fill	Cut	Fill
35+50	116	0	848	0	788
36+00	926	R/W			
36+50	119	0	790	(64)	(220)
37+00	338				0

Excavation 338 Cu. Yds.  
Embankment 76.57 Cu. Yds.  
Seeding 3227 Sq. Yds.

Excavation 4595 Cu. Yds.  
Embankment 44,588 Cu. Yds.  
Seeding 45,477 Sq. Yds.  
Riprap 70 Sq. Yds.

\* Note: Riprap carried to Bridge Summary.

Excavation 829.82  
Embankment 35+75  
817.1

Excavation 829.08  
Embankment 35+50  
817.8

Excavation 831.85  
Embankment 36+36  
818.7

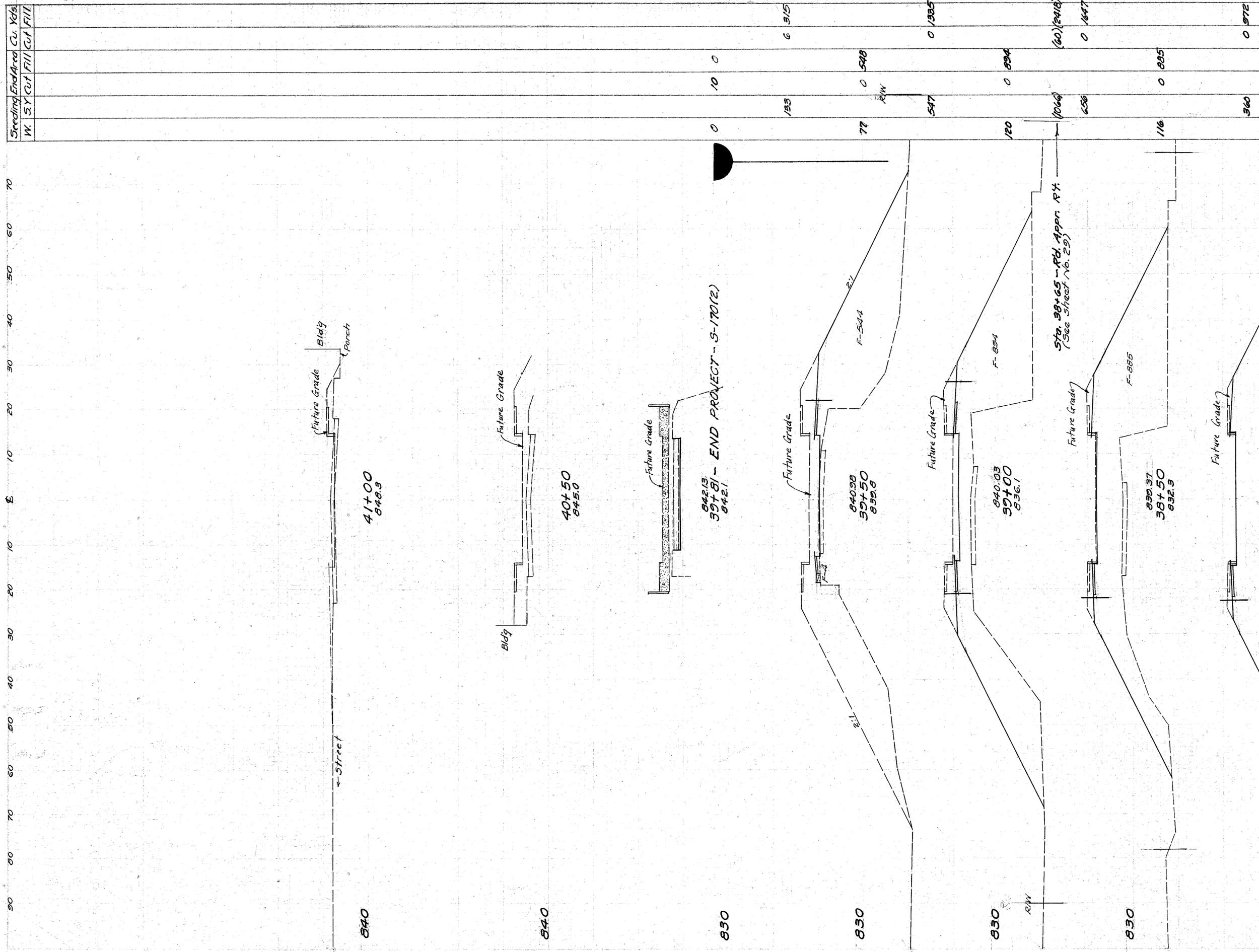
Excavation 831.57  
Embankment 36+28  
819.5

Excavation 830.52  
Embankment 36+00  
816.6

Excavation 829.82  
Embankment 35+75  
817.1

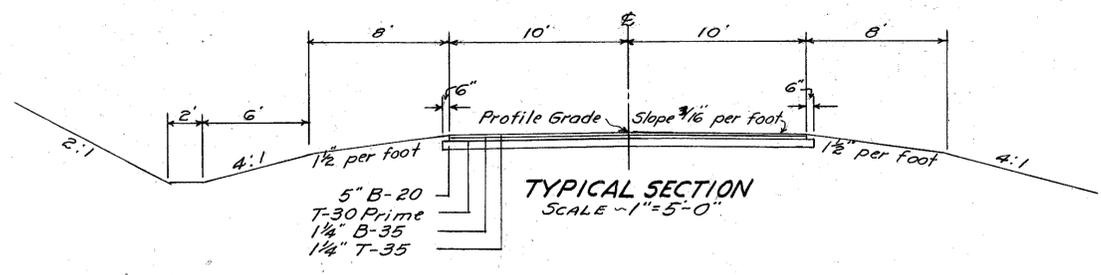
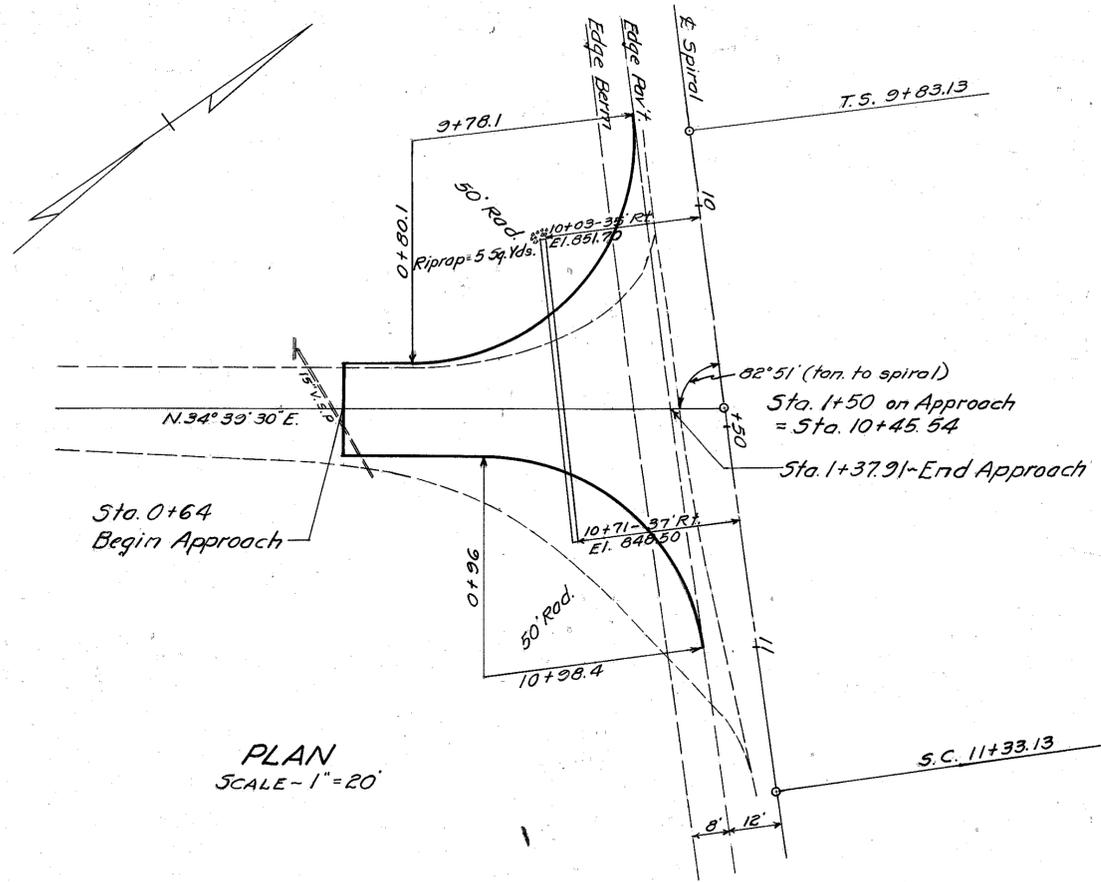
Excavation 829.08  
Embankment 35+50  
817.8

Sta. 35+50 - R'd. Appr. Lt.  
(See sheet No. 28)



Station	Seeding	End Area	Cu. Yds.
W	5.5' Cut	Fill	Cut/Fill
840	0	10	0
840	133	0	6 3/5
830	77	0	528
830	120	0	1385
830	1064	656	(60)(2418)
830	116	0	0 1647
830	360	0	0 972
830	100	0	804
830	223	R/W	0 579
830	101	0	0 700

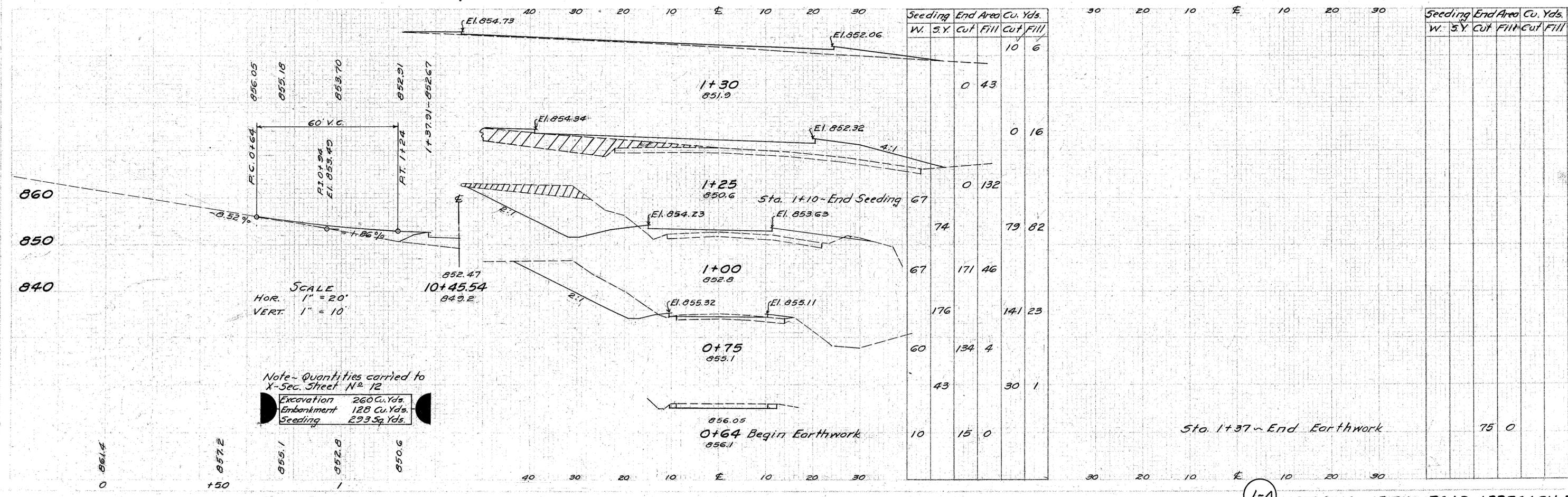
STA. 38+00 TO STA. 39+81

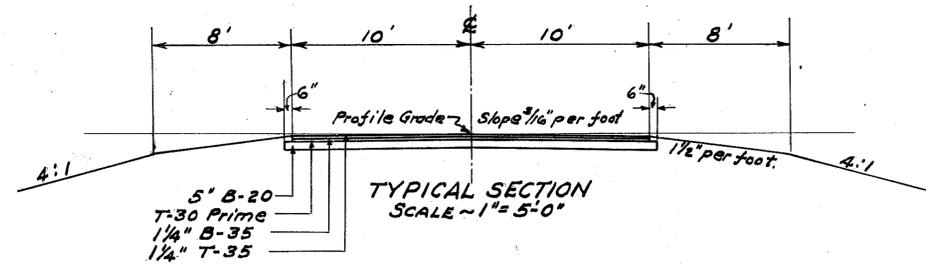


**ESTIMATED QUANTITIES**

* Pavement Area	296 Sq. Yds.
* 5" Water-bound Macadam Base Area	300 Sq. Yds.
* Bituminous Prime Area	300 Sq. Yds.
15" Pipe for Driveways	68 Lin. Ft.
Riprap	5 Sq. Yds.

\* Carried to pavement calculations. (Sheet 5)

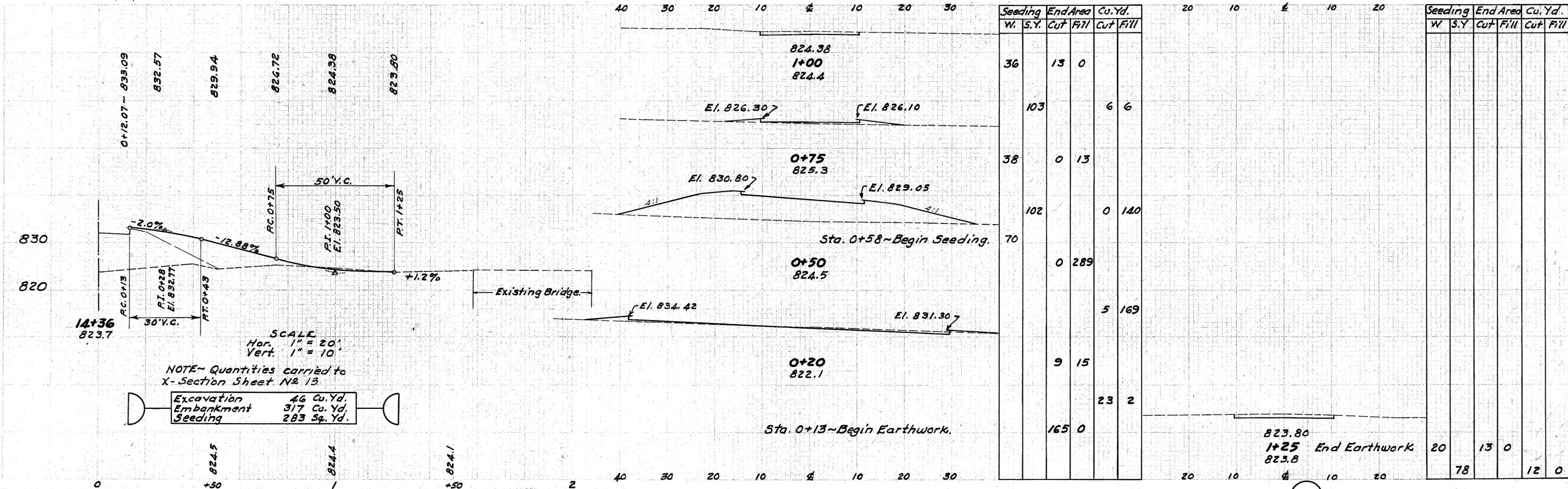
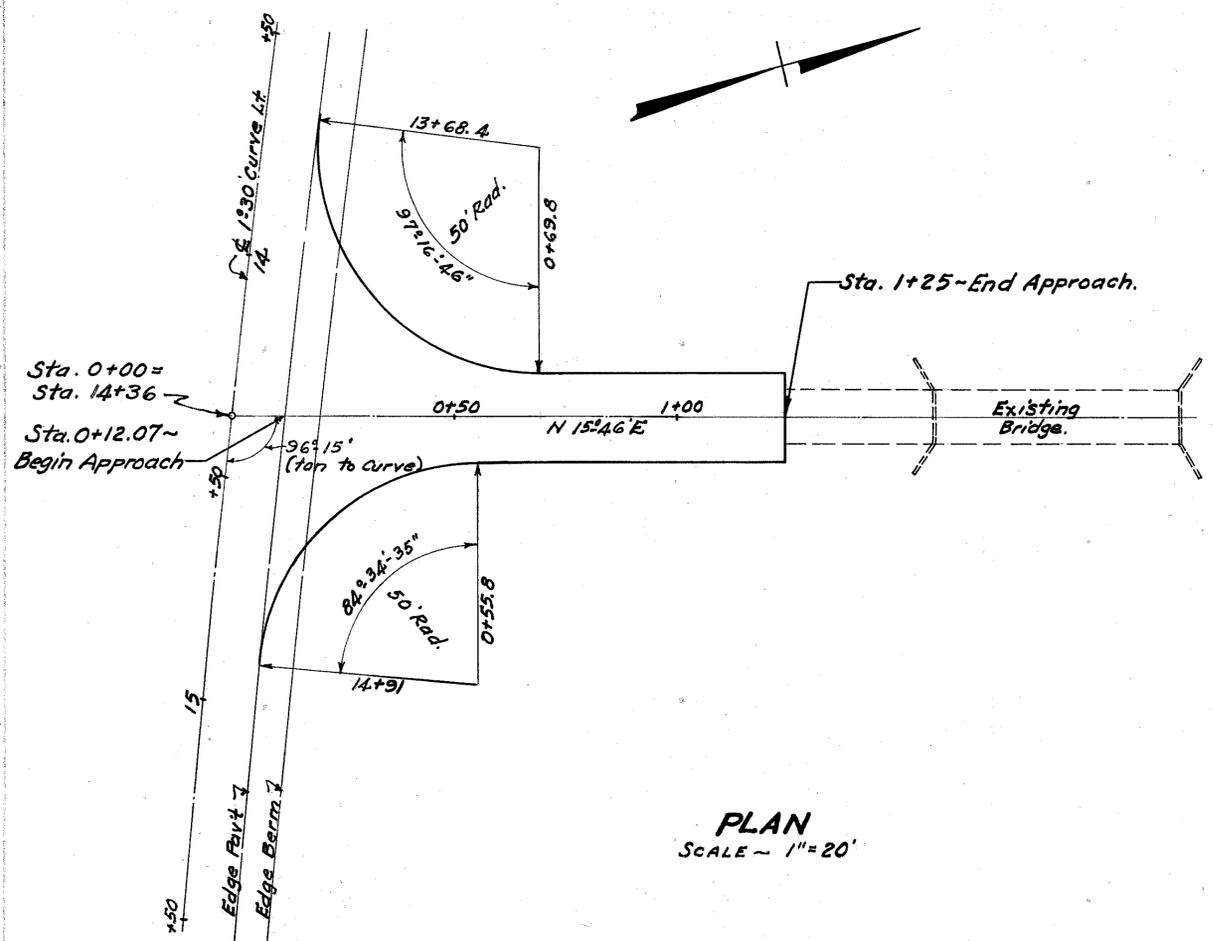


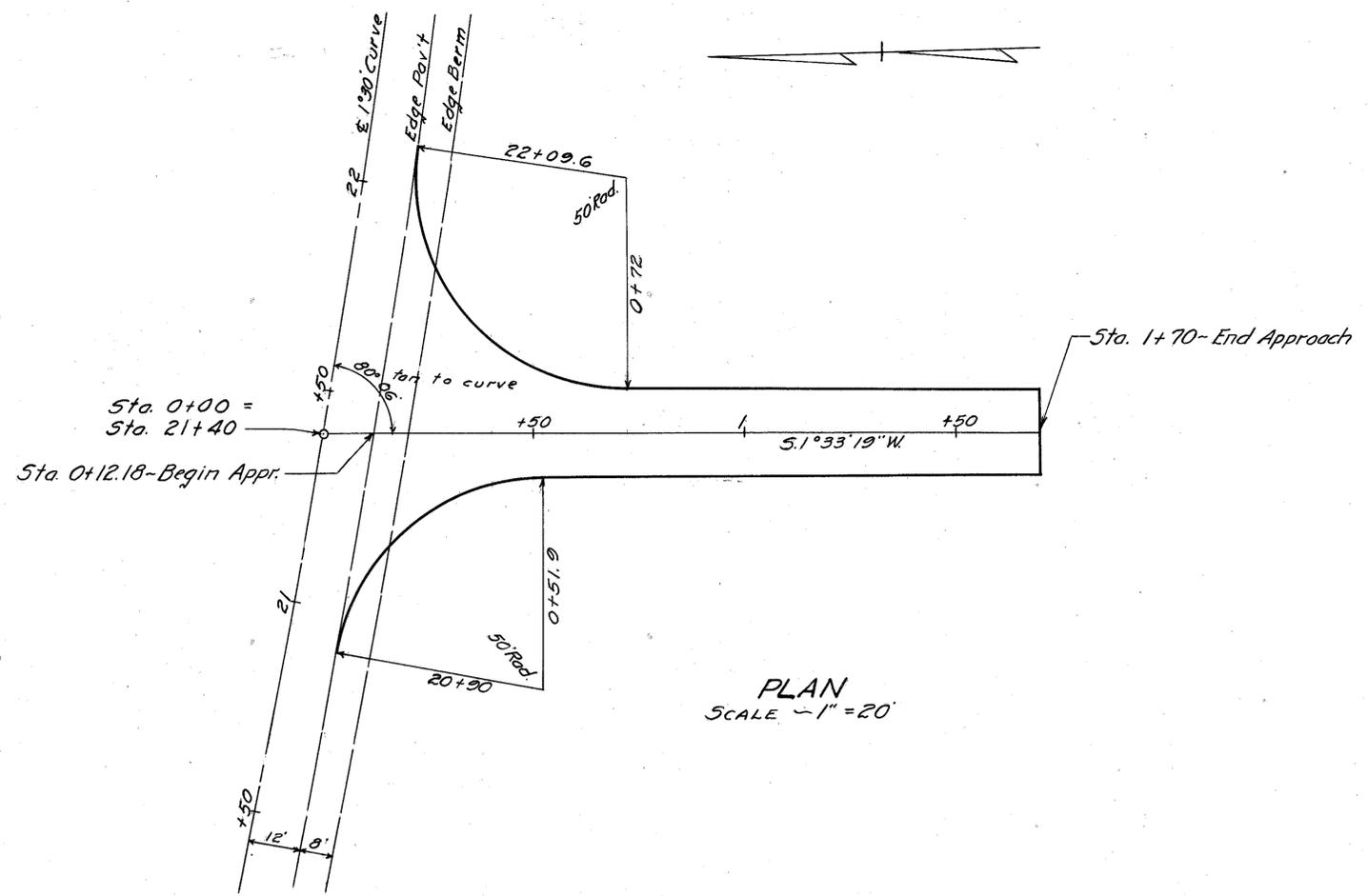
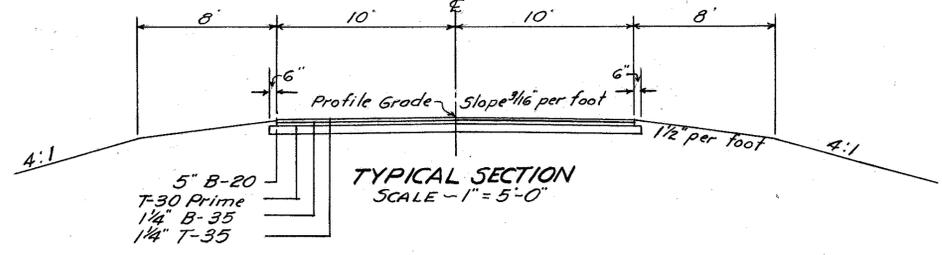


**ESTIMATED QUANTITIES**

* Pavement Area.	379	Sq. Yd.
* 5" Water bound Macadam Base Area.	388	Sq. Yd.
* Bituminous Prime Area.	388	Sq. Yd.

\* Carried to pavement calculations. (Sheet No. 5)

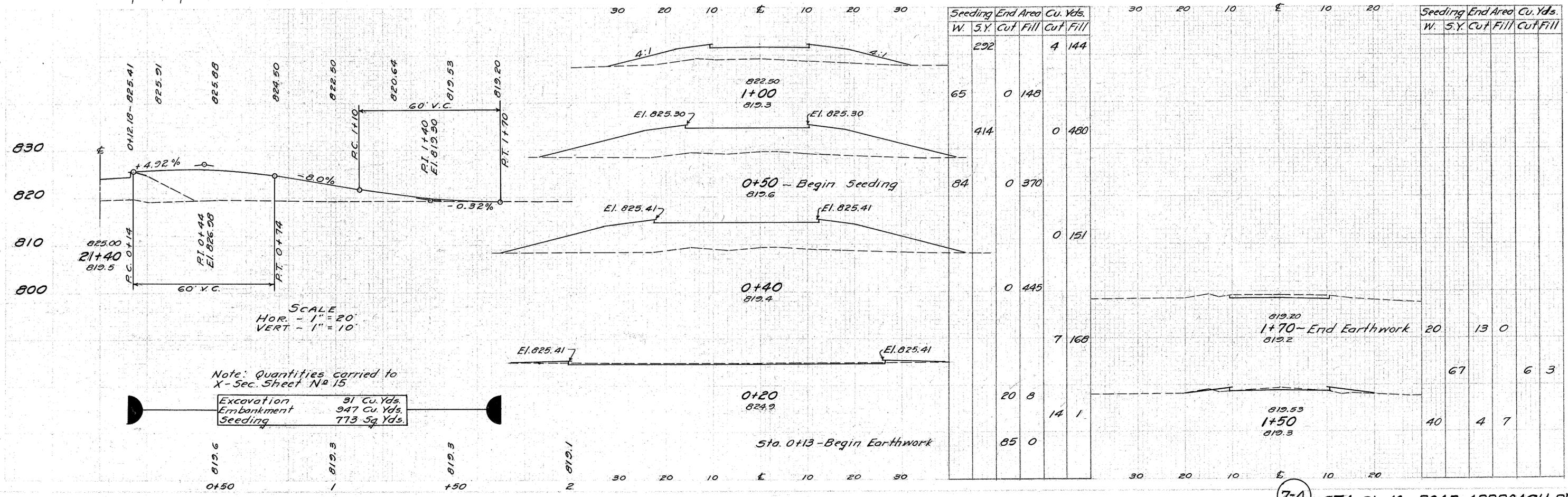


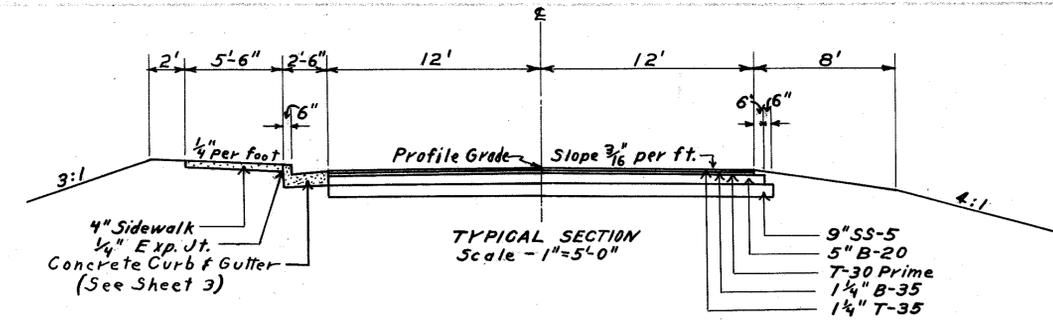
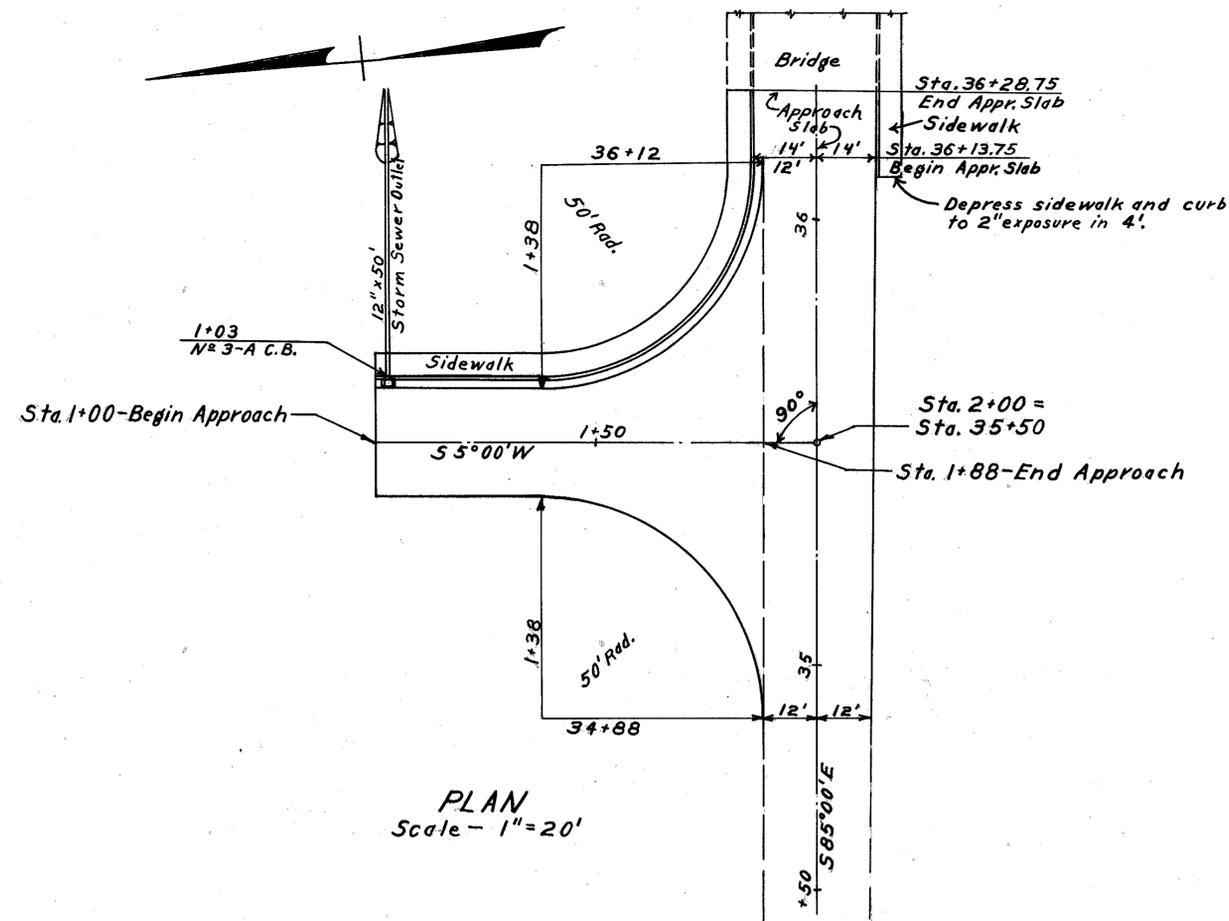


**ESTIMATED QUANTITIES**

- \* Pavement Area 480 Sq. Yds.
- \* 5" Waterbound Macadam Base Area 494 Sq. Yds.
- \* Bituminous Prime Area 494 Sq. Yds.

\* Carried to pavement calculations. (Sheet No. 5)

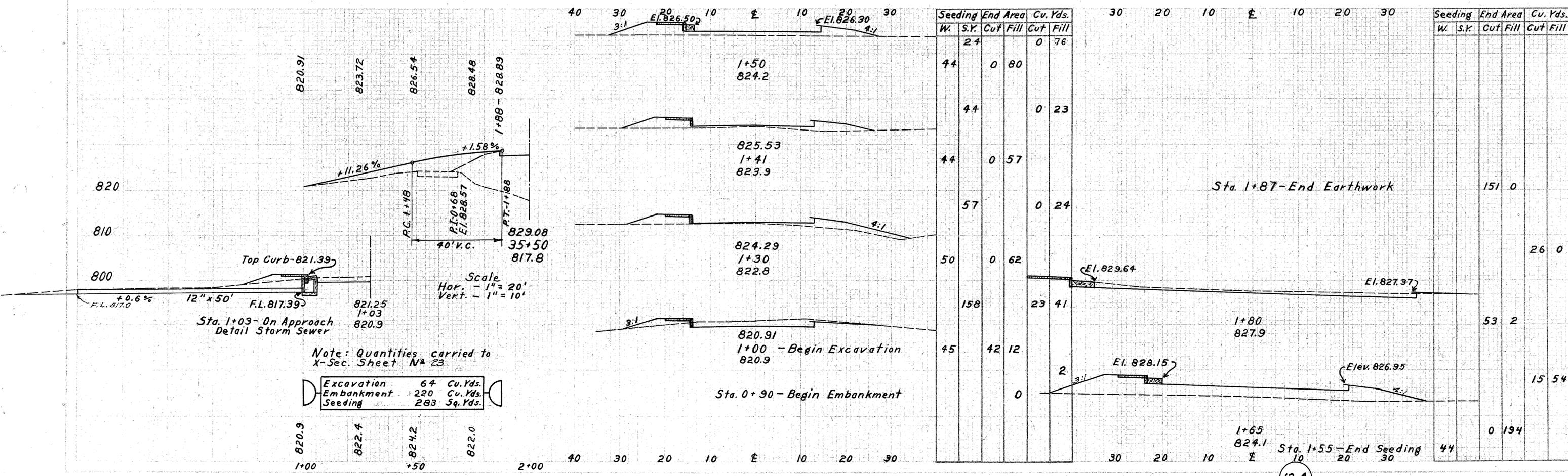


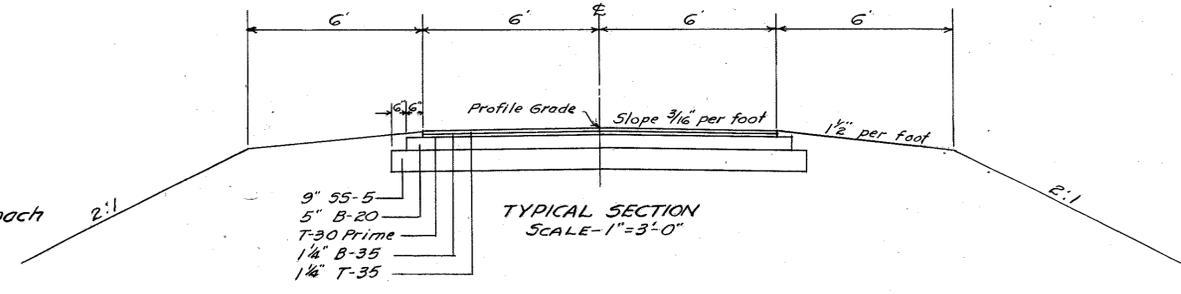
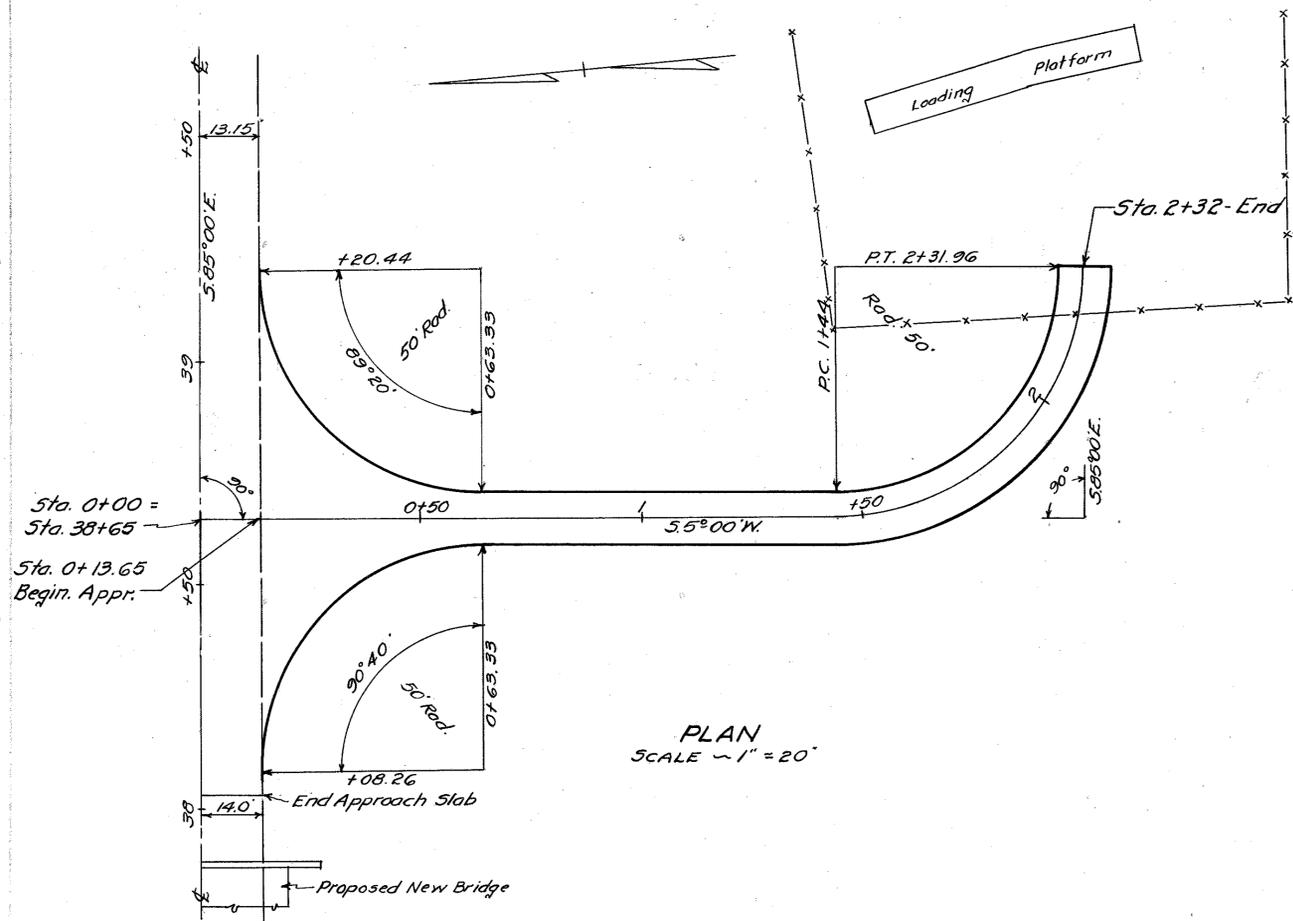


### ESTIMATED QUANTITIES

* Pavement Area	354 Sq. Yds.
* 5" Waterbound Macadam Base Area	354 Sq. Yds.
* 9" SS-5 Area	354 Sq. Yds.
* Bituminous Prime Area	354 Sq. Yds.
N#2 (Mod) Curb and Gutter	115 Lin. Ft.
4" Sidewalks	688 Sq. Ft.
N#3-A Catch Basins	1 Each
12" Storm Sewer Outlet Pipe	50 Lin. Ft.
Channel Excavation	1 Cu. Yds.

\* Carried to pavement calculations. (Sheet No. 5)

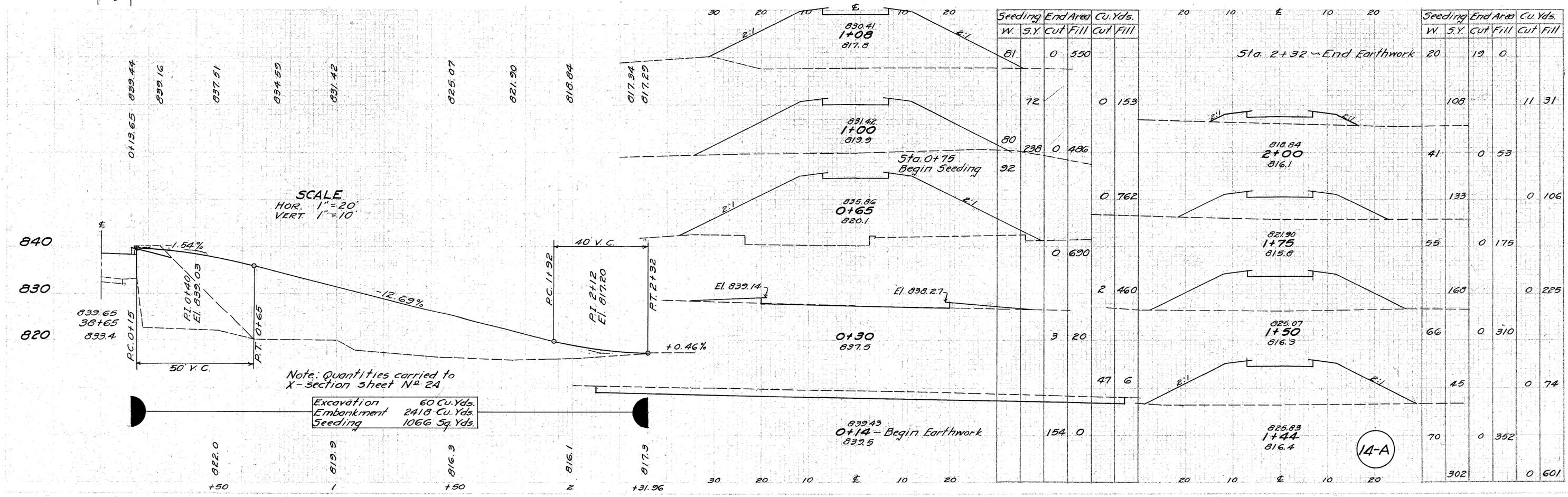


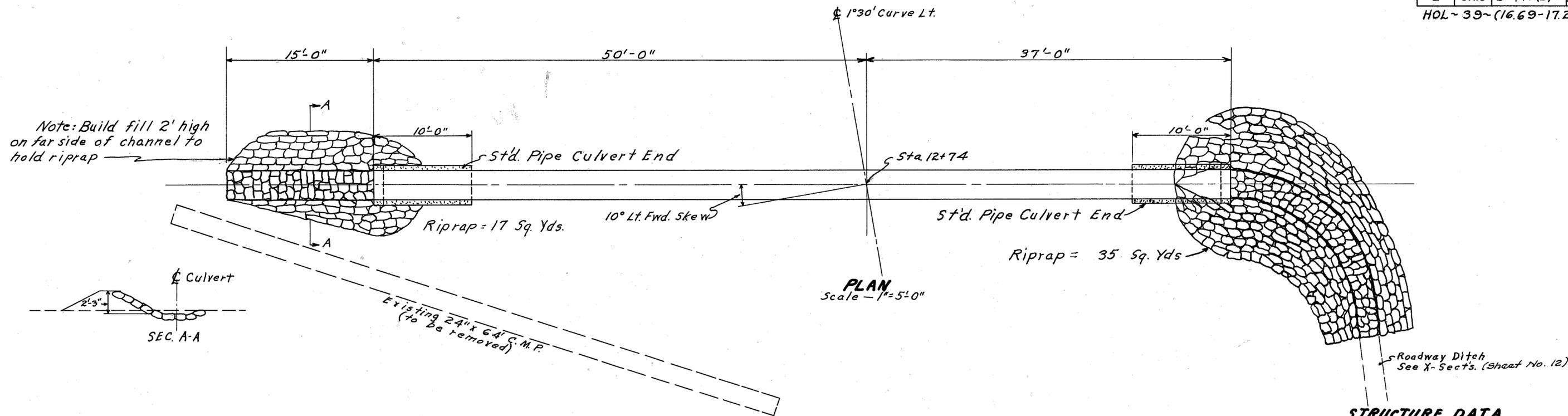


**ESTIMATED QUANTITIES**

* Pavement Area	=	411 Sq. Yds.
* 5" Waterbound Macadam Base Area	=	432 Sq. Yds.
* 9" 55-5 Area	=	451 Sq. Yds.
* Bituminous Prime Area	=	432 Sq. Yds.

\* Carried to pavement calculations. (Sheet No. 5)





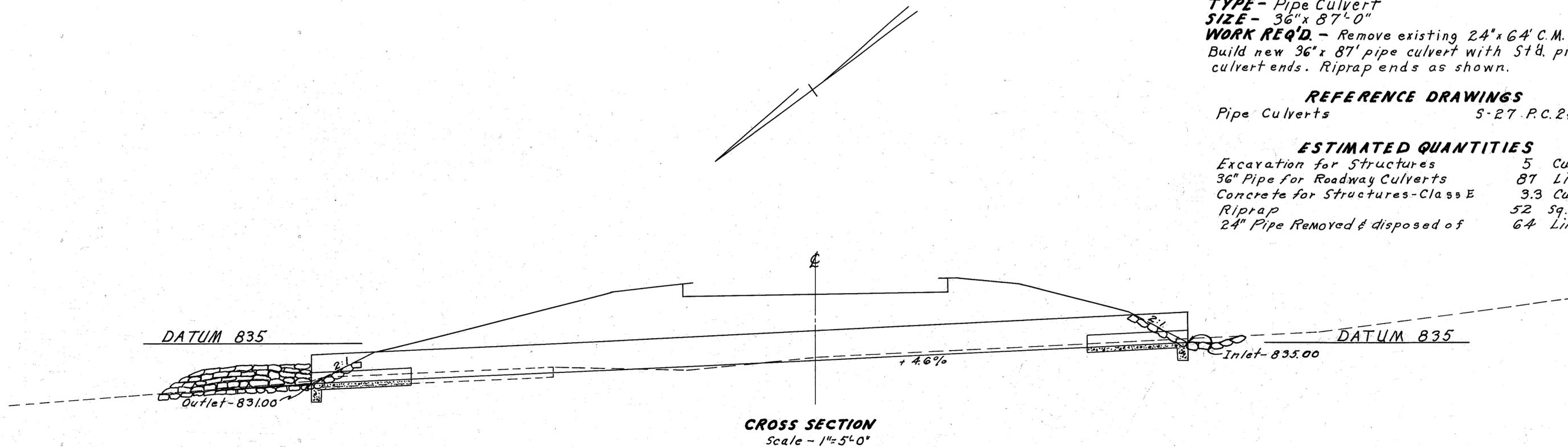
**PLAN**  
Scale - 1" = 5'-0"

**STRUCTURE DATA**  
**TYPE** - Pipe Culvert  
**SIZE** - 36" x 87'-0"  
**WORK REQ'D.** - Remove existing 24" x 64" C.M. Pipe. Build new 36" x 87' pipe culvert with Std. pipe culvert ends. Riprap ends as shown.

**REFERENCE DRAWINGS**  
 Pipe Culverts S-27 P.C. 2 & 3

**ESTIMATED QUANTITIES**

Excavation for Structures	5 Cu. Yds.
36" Pipe for Roadway Culverts	87 Lin. Ft.
Concrete for Structures-Class E	3.3 Cu. Yds.
Riprap	52 Sq. Yds.
24" Pipe Removed & disposed of	64 Lin. Ft.

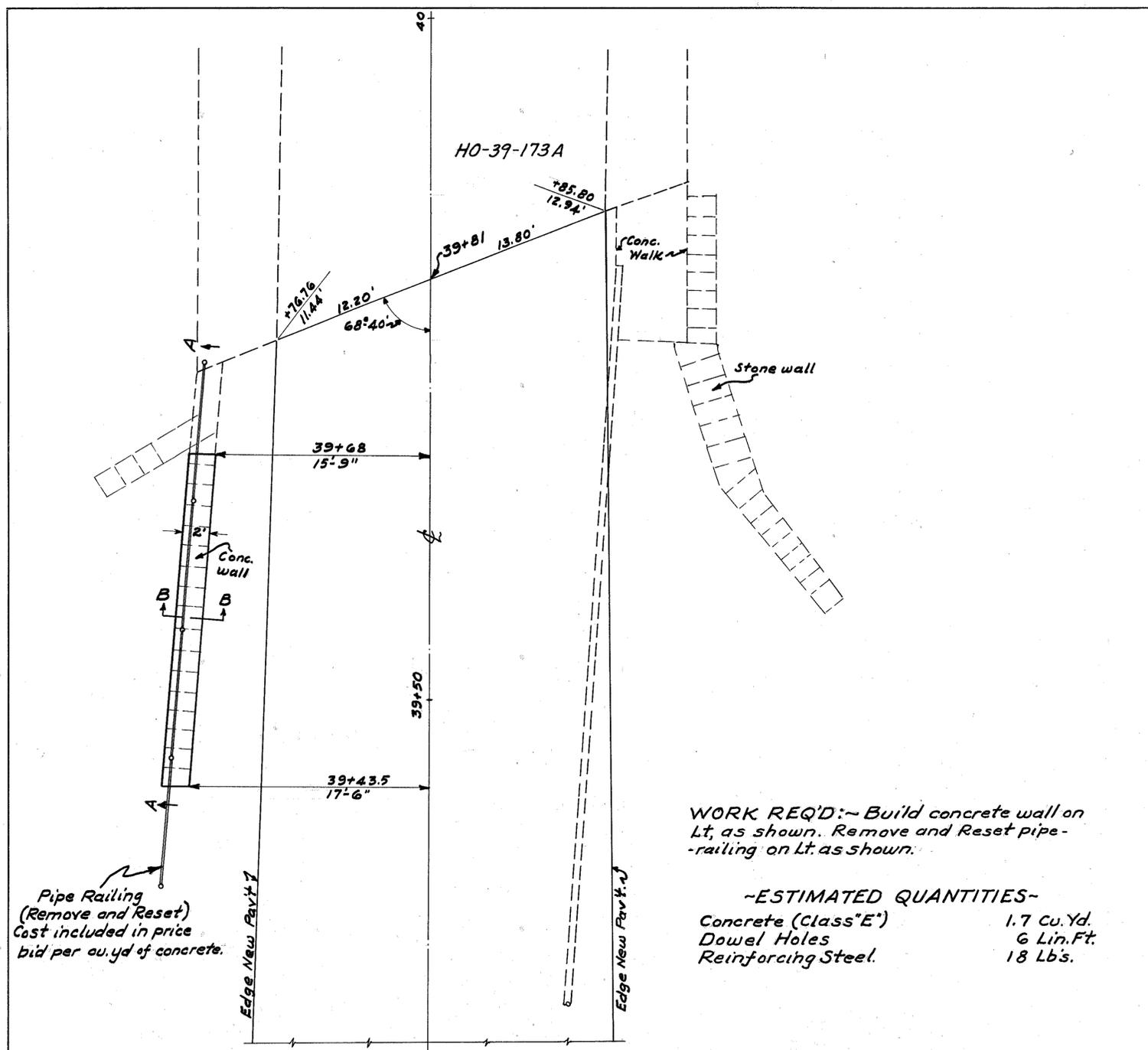


**CROSS SECTION**  
Scale - 1" = 5'-0"

840.93  
12+74  
833.6

2-5

STA. 12+74  
36" x 87'-0" PIPE CULVERT

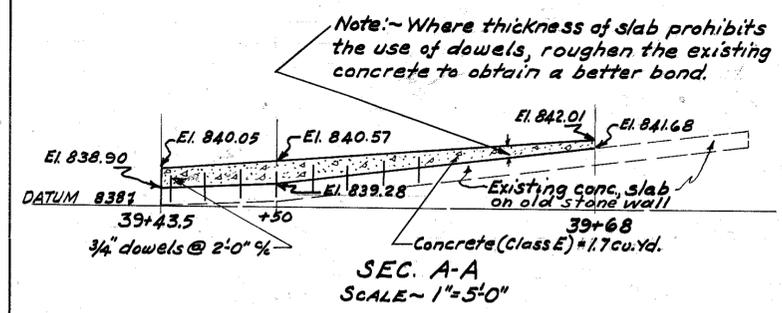


Pipe Railing  
(Remove and Reset)  
Cost included in price  
bid per cu.yd of concrete.

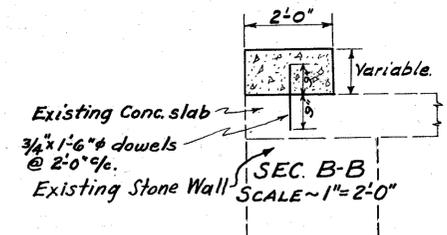
WORK REQ'D:~ Build concrete wall on Lt, as shown. Remove and Reset pipe-railing on Lt, as shown.

-ESTIMATED QUANTITIES-  
Concrete (Class "E") 1.7 Cu.Yd.  
Dowel Holes 6 Lin.Ft.  
Reinforcing Steel 18 Lb's.

Resetting of existing Railing shall be in accordance with Item 5-14 of the Construction and Material Specifications. SCALE 1"=5'-0"

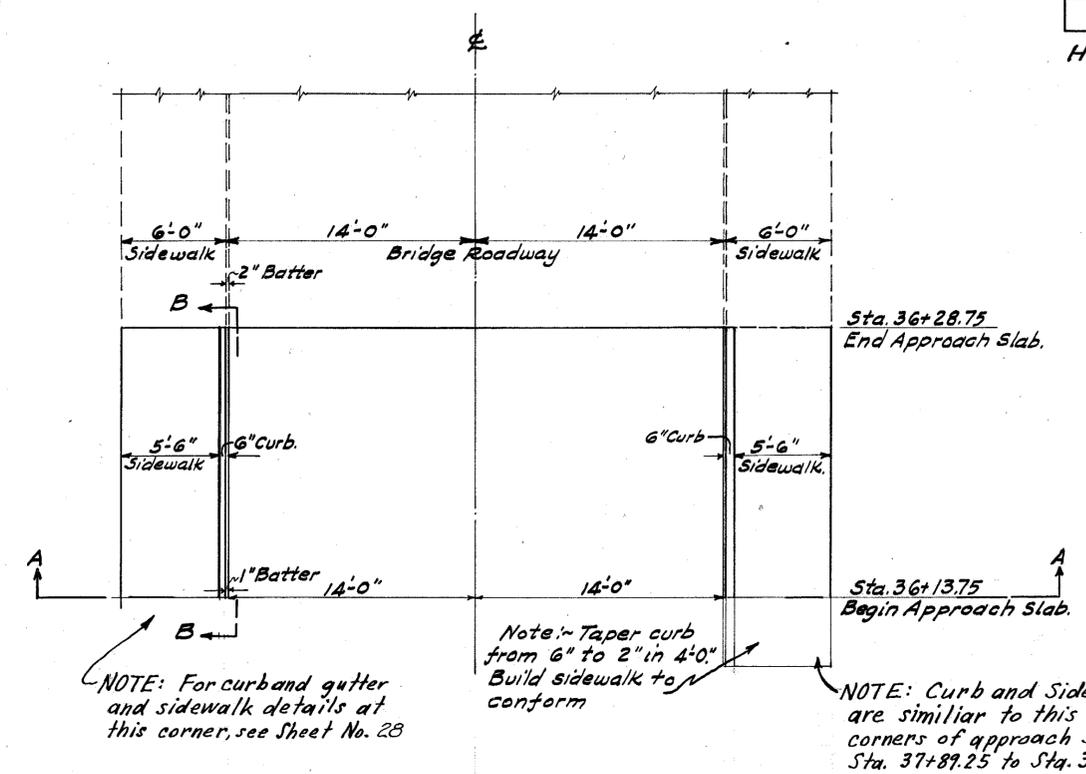


SEC. A-A  
SCALE 1"=5'-0"



SEC. B-B  
SCALE 1"=2'-0"

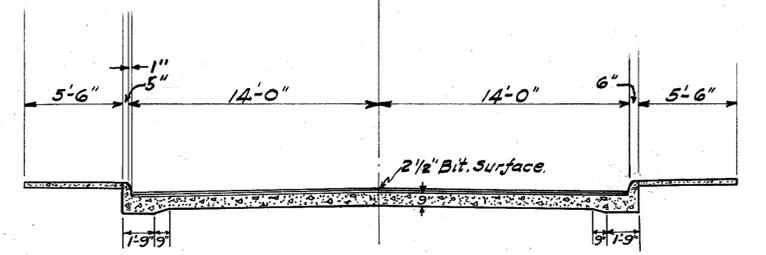
STA. 39+43.5 TO STA. 39+68  
RETAINING WALL.



NOTE: For curb and gutter and sidewalk details at this corner, see Sheet No. 28

Note:~ Taper curb from 6" to 2" in 4'-0". Build sidewalk to conform

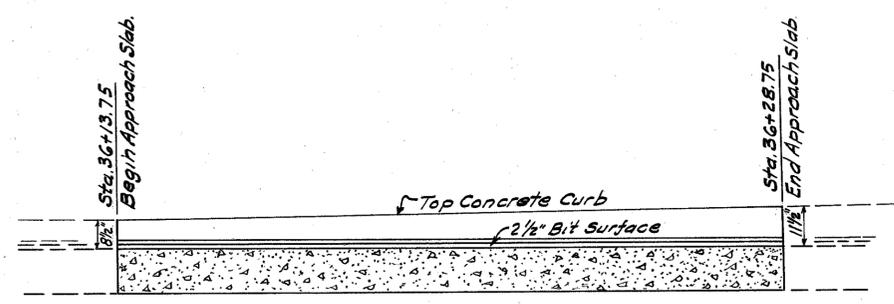
NOTE: Curb and Sidewalk details are similar to this at both corners of approach slab from Sta. 37+89.25 to Sta. 38+04.25.



SEC. A-A  
SCALE 1"=5'-0"

ESTIMATED QUANTITIES  
Approach Slab 48.3 Sq.Yd.

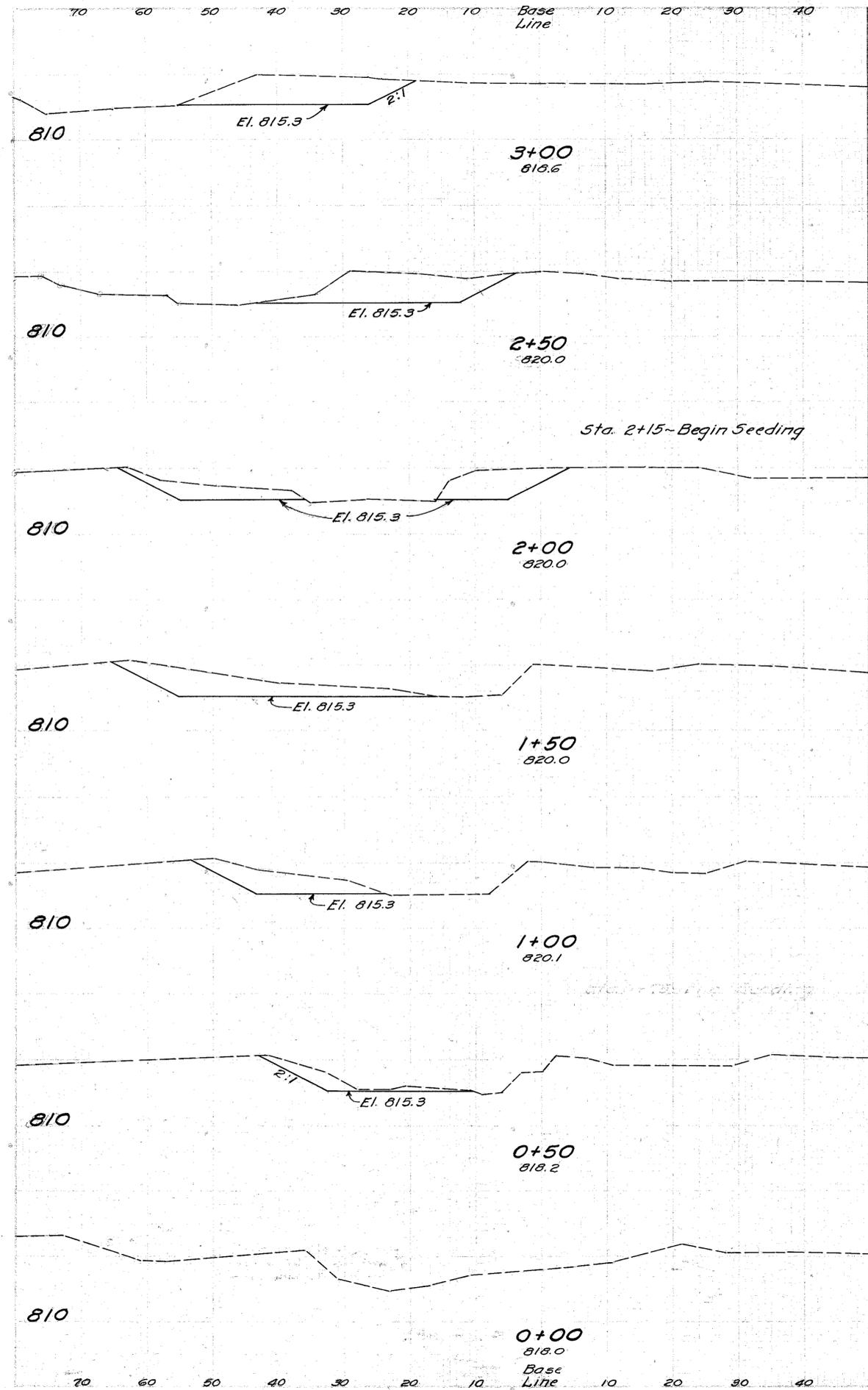
NOTE: Approach Slab from Sta. 37+89.25 to Sta. 38+04.25 is similar to slab detailed on this sheet.



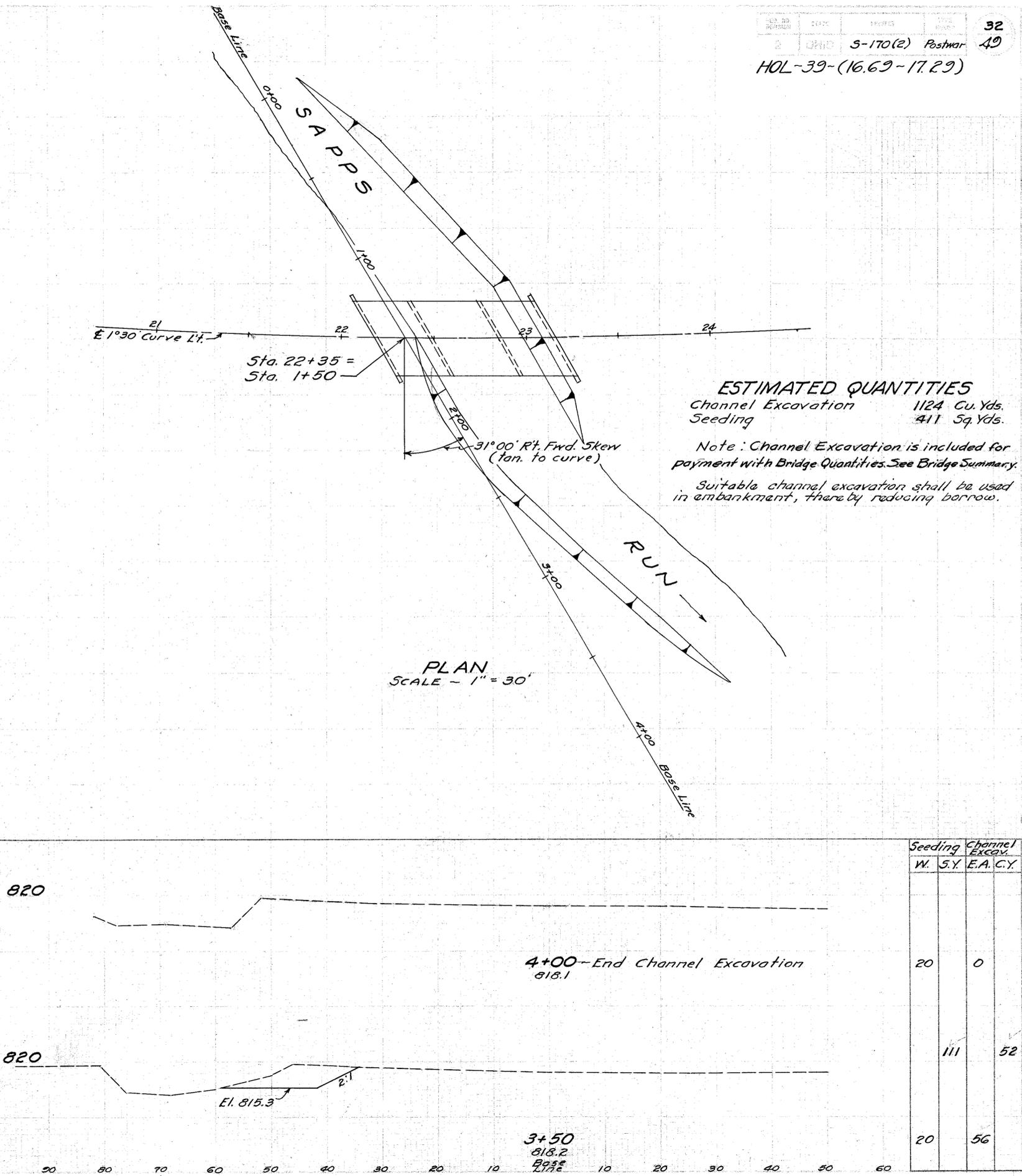
SEC. B-B  
SCALE 1"=2'-0"

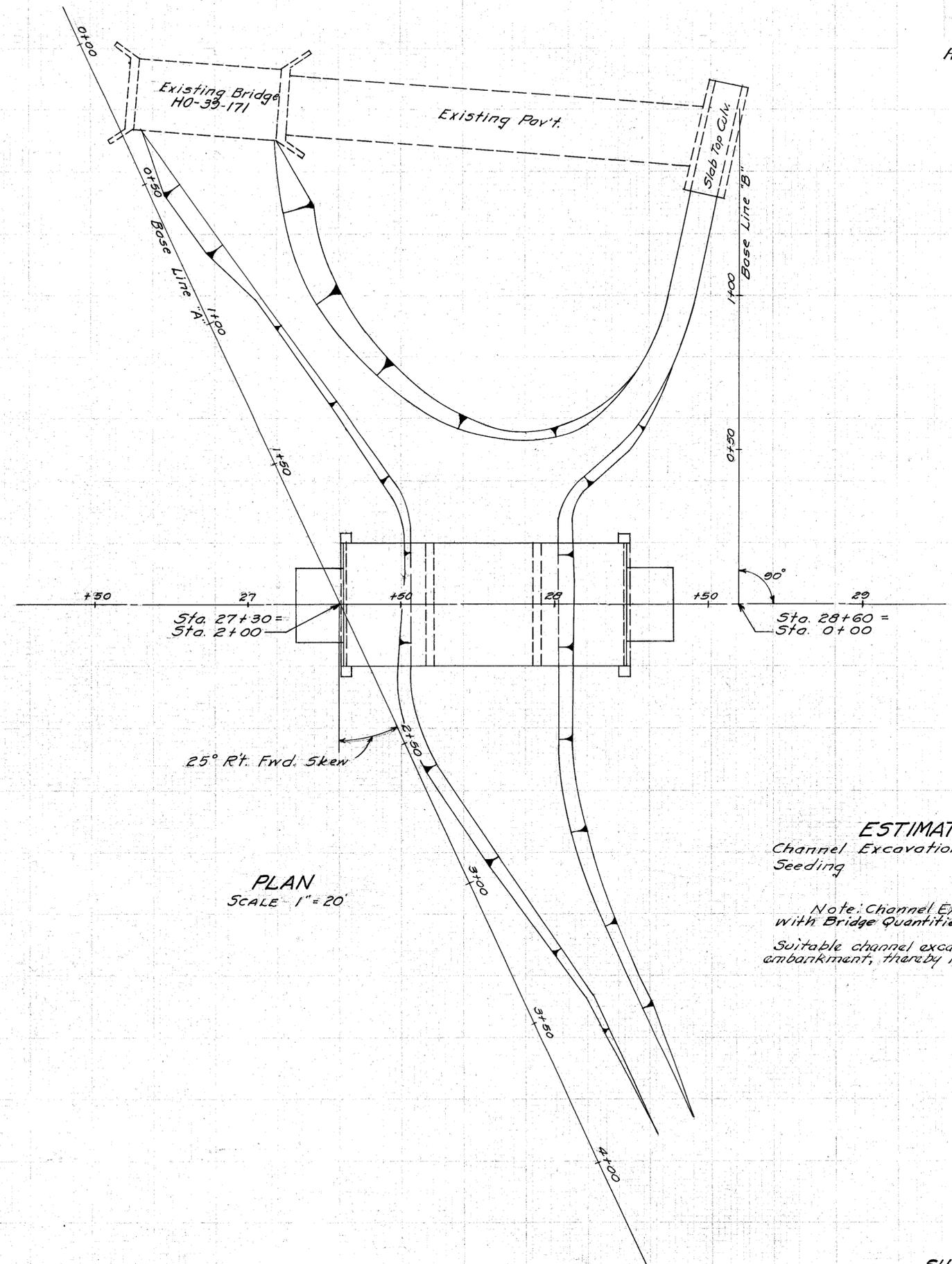
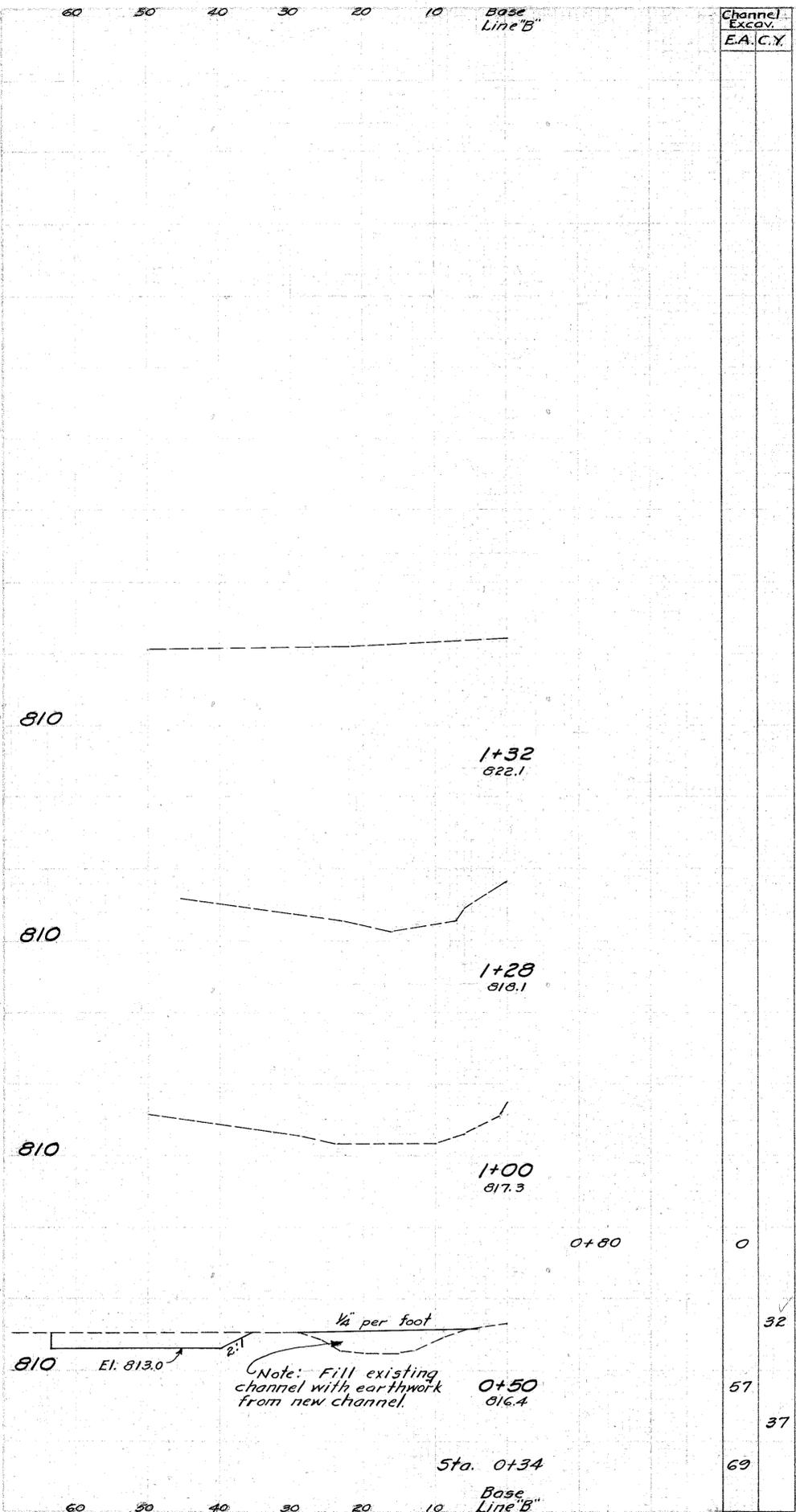
NOTE: For approach slab details not shown hereon refer to Std. Dwg. AS-4-47.

STA. 36+13.75 TO STA. 36+28.75  
APPROACH SLAB.



Seeding		Channel Excav.	
W.	S.Y.	E.A.	C.Y.
		111	163
20		120	
	111	213	
20		110	
	78	204	
20		110	
	207		
	114		
	170		
	70		
	90		
	27		
	25		
	0		



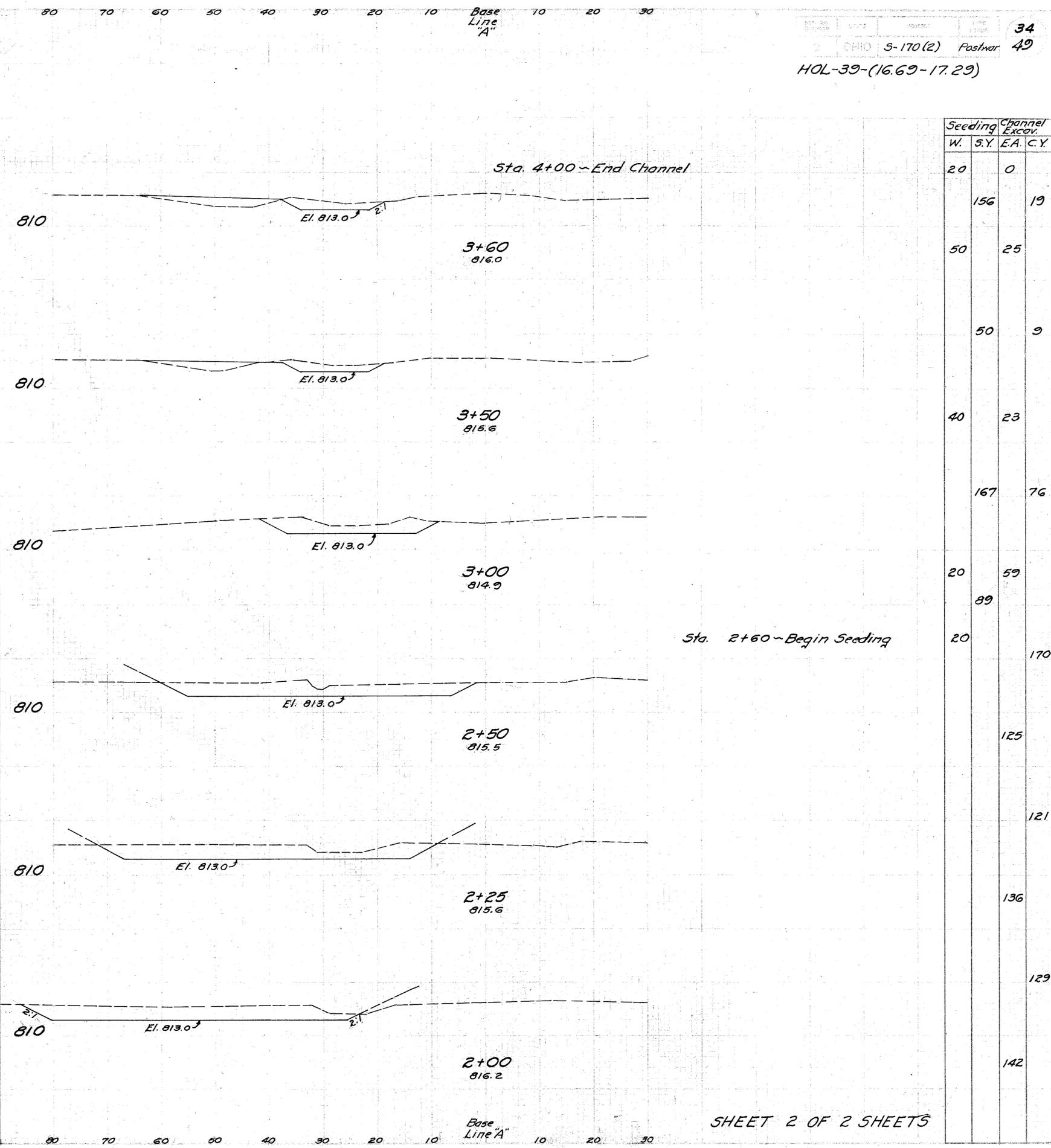
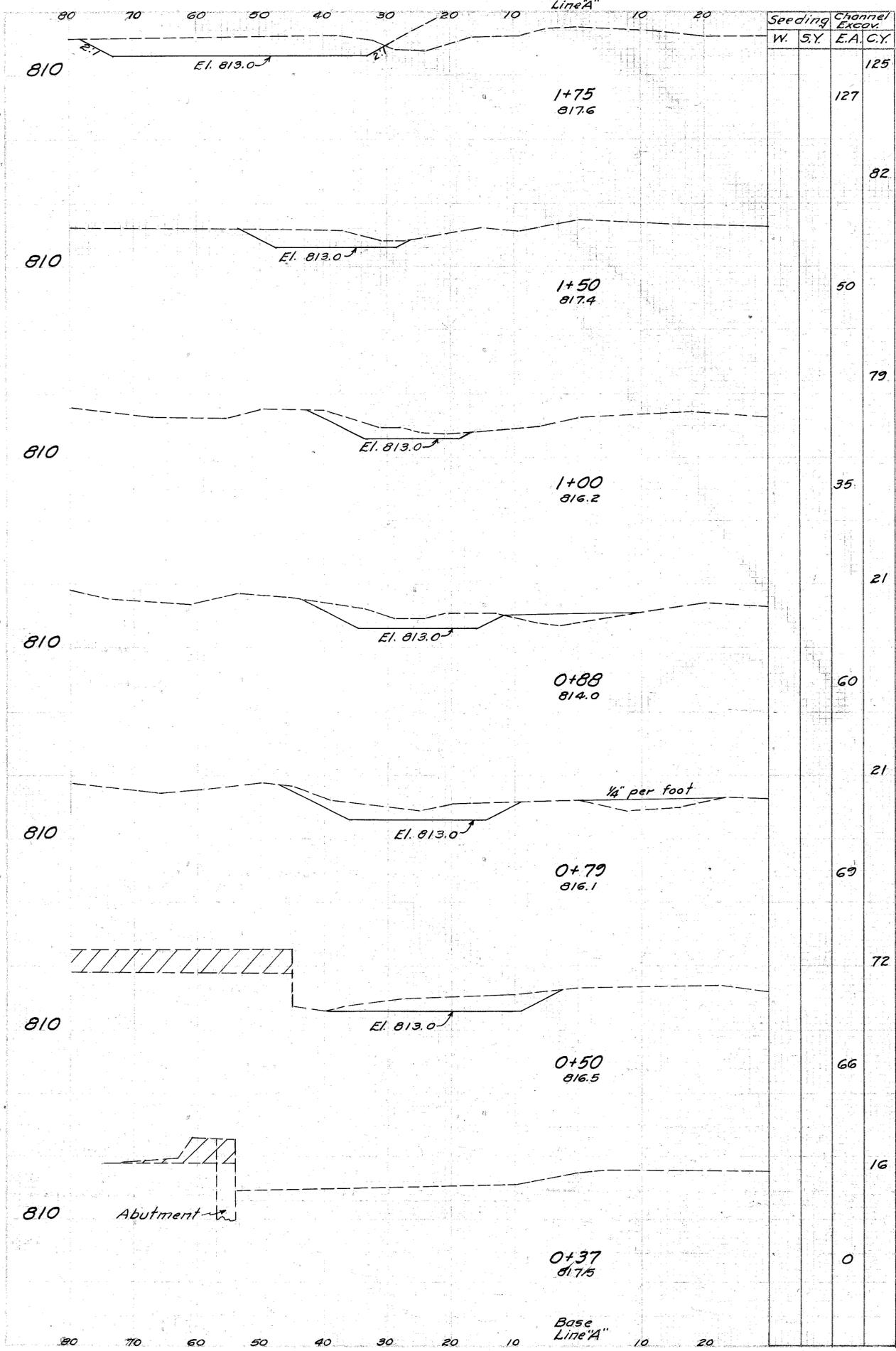


**ESTIMATED QUANTITIES**

Channel Excavation	1009 Cu. Yds.
Seeding	462 Sq. Yds.

Note: Channel Excavation is included for payment with Bridge Quantities. See Bridge Summary.

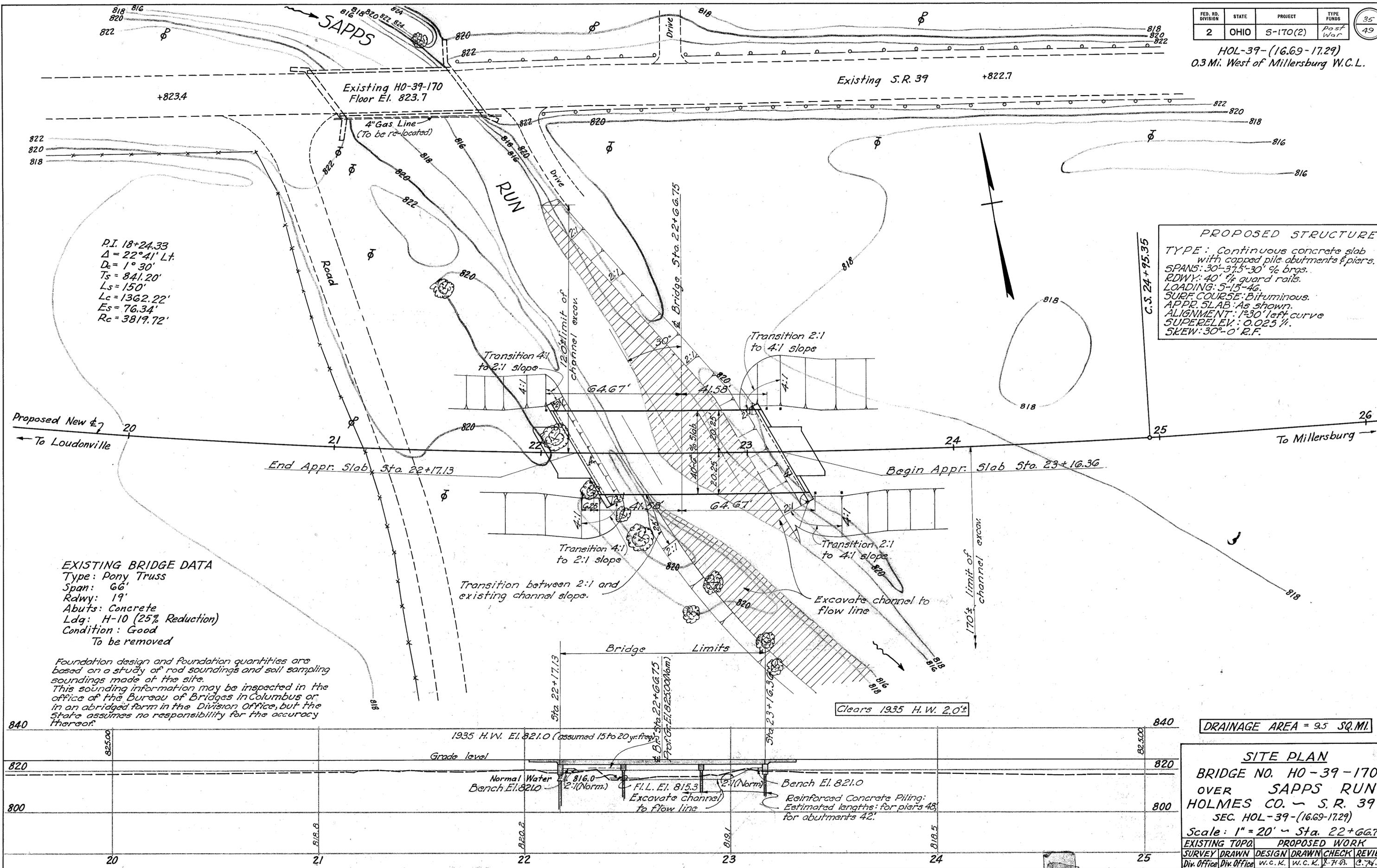
Suitable channel excavation shall be used in embankment, thereby reducing borrow.



FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	S-170(2)	Post War

35  
49

HOL-39-(16.69-17.29)  
0.3 Mi. West of Millersburg W.C.L.



P.I. 18+24.33  
 $\Delta = 22^\circ 41' Lt.$   
 $D_c = 1^\circ 30'$   
 $T_s = 841.20'$   
 $L_s = 150'$   
 $L_c = 1362.22'$   
 $E_s = 76.34'$   
 $R_c = 3819.72'$

**PROPOSED STRUCTURE**  
 TYPE: Continuous concrete slab with capped pile abutments & piers.  
 SPANS: 30'-37.5'-30' 3/4 brgs.  
 RDWY: 40' 1/4 guard rails.  
 LOADING: S-15-46.  
 SURF COURSE: Bituminous.  
 APPR. SLAB: As shown.  
 ALIGNMENT: 1°30' left curve  
 SUPERELEV: 0.025 1/4".  
 SKEW: 30°-0' R.F.

**EXISTING BRIDGE DATA**  
 Type: Pony Truss  
 Span: 66'  
 Rdwy: 19'  
 Abuts: Concrete  
 Ldg: H-10 (25% Reduction)  
 Condition: Good  
 To be removed

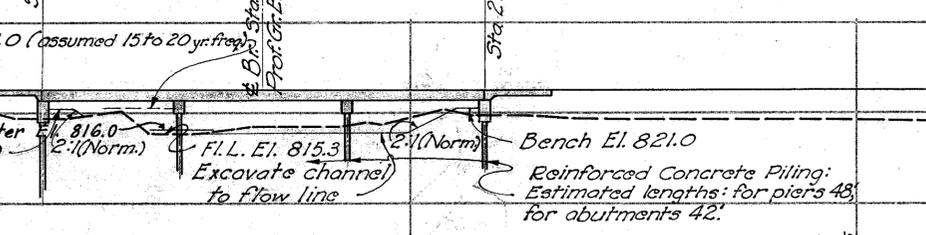
Foundation design and foundation quantities are based on a study of rod soundings and soil sampling soundings made at the site. This sounding information may be inspected in the office of the Bureau of Bridges in Columbus or in an abridged form in the Division Office, but the State assumes no responsibility for the accuracy thereof.

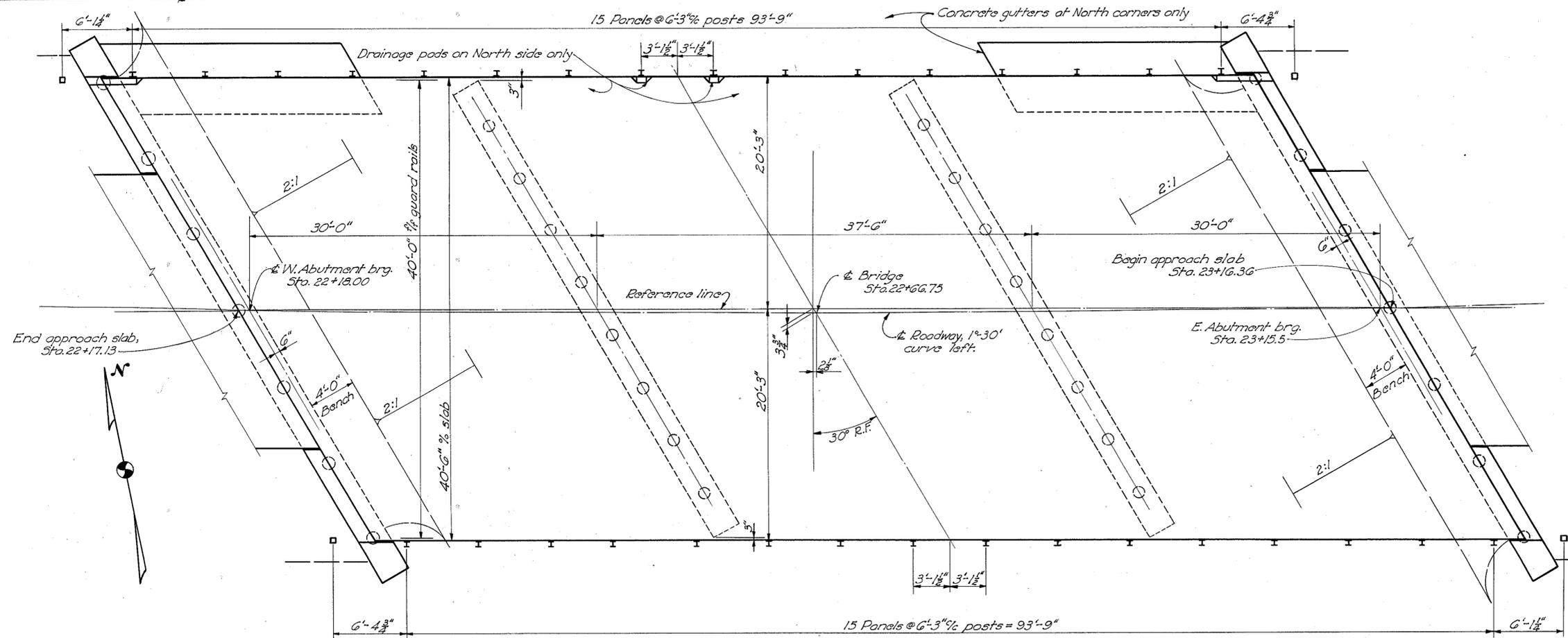
DRAINAGE AREA = 9.5 SQ. MI.

**SITE PLAN**  
 BRIDGE NO. HO-39-170  
 OVER SAPP'S RUN  
 HOLMES CO. - S.R. 39  
 SEC. HOL-39-(16.69-17.29)  
 Scale: 1" = 20' - Sta. 22+66.75

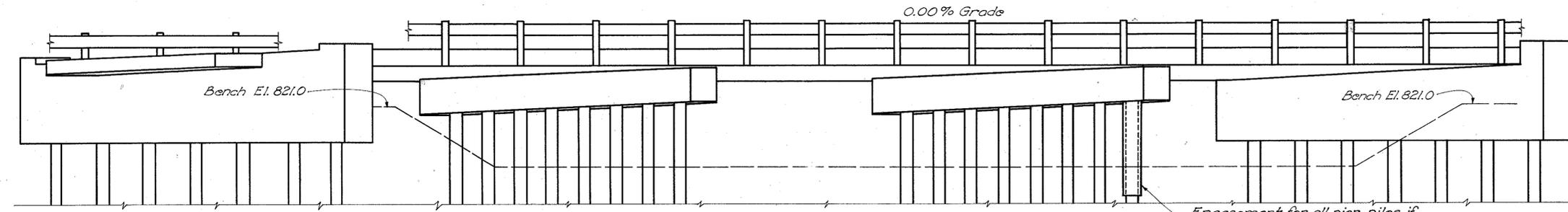
EXISTING TOPG.	PROPOSED WORK
SURVEY	DRAWN
DESIGN	DRAWN
CHECK	REVIEW
Div. Office	Div. Office

W.C.K. W.C.K. J.H.B. C.F.A.  
 BFG JMC 8-24-51





GENERAL PLAN



GENERAL ELEVATION

Encasement for all pier piles if the cast-in-place type is used. Encasement shall extend from 3 feet below flow line to bottom of pier cap.

ESTIMATED QUANTITIES							
ITEM	TOTAL	UNIT	DESCRIPTION	SUPERSTR	ABUTS.	PIERS	GENERAL
E-2	60	Cu. Yd.	Unclassified excavation		60		
E-3	1124	Cu. Yd.	Channel excavation				1124
S-1	226	Cu. Yd.	Class "C" concrete, superstructure (including pier caps)	201		25	
S-1	60	Cu. Yd.	Class "C" concrete, abutments		60		
S-3	447	Sq. Yd.	Type "C" waterproofing	447			
S-4	61,768	Lbs.	Reinforcing steel	51,617	6212	3,739	150
S-9	17	Sq. Ft.	1/2" Premolded expansion joint filler				17
S-14	198	Lin. Ft.	Railing (Type I-15.13 guard rail with steel posts)	198			
S-16	Lump	Sum	First test pile				Lump
S-18	1356	Lin. Ft.	Reinforced concrete piling, 12" cast-in-place or 14" precast		588	768	
S-24	Lump	Sum	Removal of existing structure				Lump
I-14	45	Lin. Ft.	Concrete gutter				45
T-35	31	Cu. Yd.	Asphaltic concrete surface course, Type "A" or "C" (85-100)	31			

**GENERAL NOTES**

REFERENCE shall be made to Standard Drawings C5-1-47 revised 1-20-48; and P-1-49, dated 7-27-49.

PILING shall be driven to a minimum bearing capacity of 25 tons at the abutments and 35 tons at the piers.

CONCRETE GUTTERS shall be 6 ft wide and 6 in. thick, and shall be depressed 6 in. at the center. They shall extend from face of abutment down to El. 814.0 and shall be centered under edge of deck. Reinforcing bars 1/2" #1-6" centers, both directions, included in price per lin. ft.

SURFACE FINISH OF CONCRETE: Fascia of deck slab shall receive a rubbed surface finish. All other exposed surfaces shall be governed by the provisions of Item 5-1.

BITUMINOUS SURFACE COURSE: 2 1/2" Asphaltic concrete surface course, Item T-35, laid in two 1 1/4" courses.

EXCAVATION quantity includes the removal of fill material between top of earth bench and bottom of abutment crossbeam.

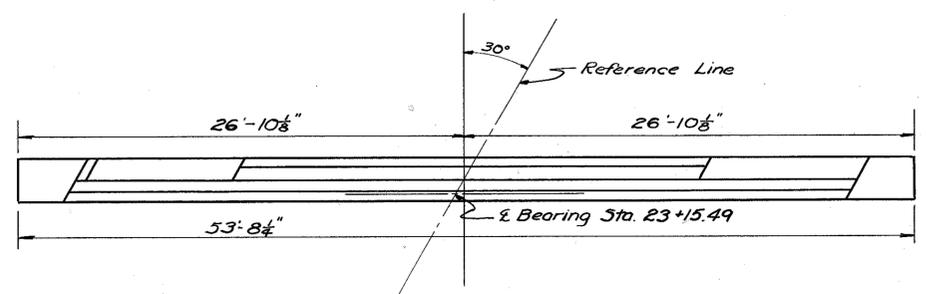
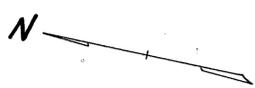
REMOVAL OF EXISTING BRIDGE: When no longer needed to maintain traffic the existing structure shall be removed. Floor beams, stringers and trusses shall be piled along the right-of-way of the disposal of Holmes County. Trusses shall be left assembled. The remainder of the removed materials shall become the property of the Contractor. The existing abutments shall be left in place. The 4" gas line carried on the existing structure will be removed and re-located by the owner of the line before the superstructure is removed.

STATE OF OHIO  
DEPARTMENT OF HIGHWAYS  
BUREAU OF BRIDGES AND RAILROAD CROSSINGS

**GENERAL PLAN AND ELEVATION,  
NOTES AND ESTIMATED QUANTITIES  
BRIDGE NO. HO-39-170  
OVER SAPP'S RUN**

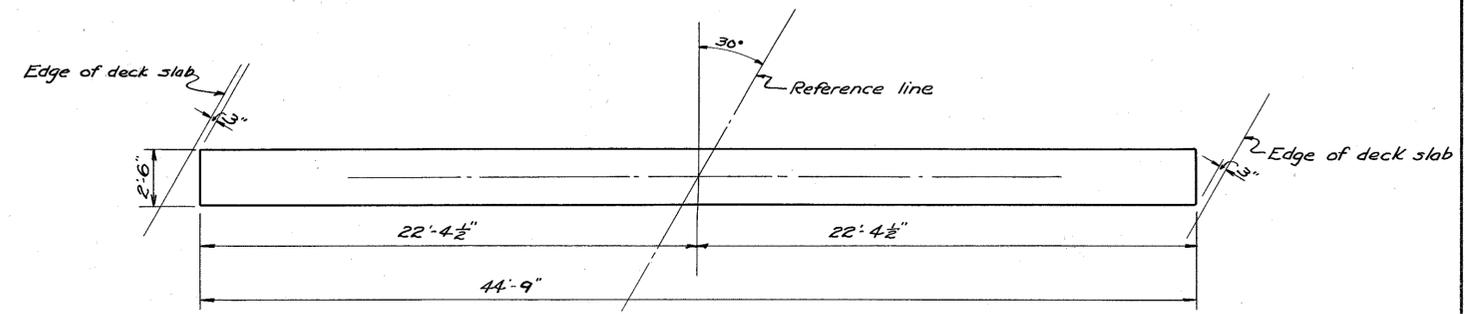
HOLMES COUNTY  
SEC. HOL-39-(16.69-17.29) STA. 22+66.75

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JWS	JWS	GPH	V.A.E.	WJR	8-24-51	



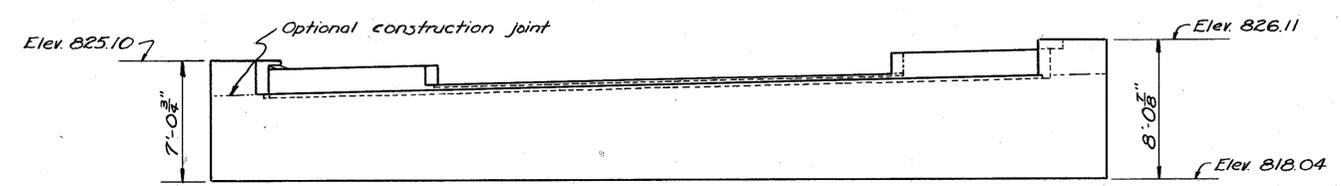
**PART PLAN EAST ABUTMENT**

NOTE: For details not shown see West Abutment Detail Sheet.

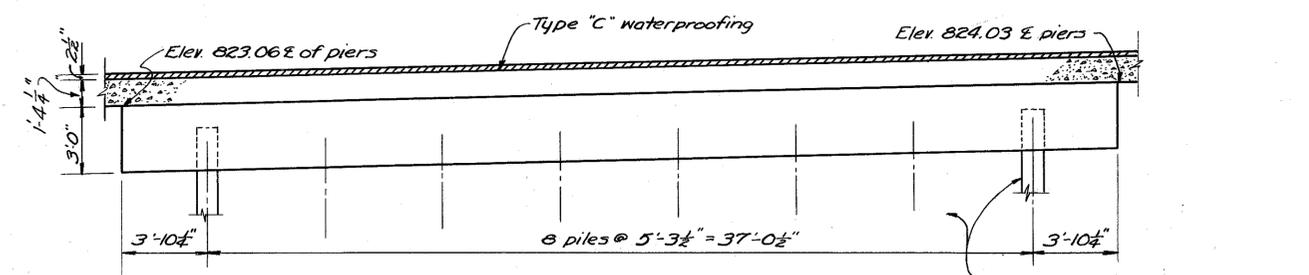


**PIER PART PLAN**

NOTE: For pier details not shown, see Std. Drg. P-1-49.



**PART ELEVATION EAST ABUTMENT**



**PIER PART ELEVATION**

**REINFORCING STEEL LIST**

SUPERSTRUCTURE					BENDING DIAGRAMS					ABUTMENTS											
MARK	SIZE	NO.	LENGTH	WEIGHT	SHAPE						MARK	SIZE	NO.	LENGTH	WEIGHT	SHAPE					
A	1 1/8"	90	35'-3"	13,650	S						A7a	1"	48	28'-4"	3,631	S					
B	1 1/8"	30	25'-10"	3,335	B						A7a	1"	44	10'-3"	470	B					
C	1 1/8"	30	22'-10"	2,948	B						A7b	1"	56	9'-7"	560	B					
D	1 1/8"	15	22'-9"	1,468	S						A7c	1"	56	8'-11"	521	B					
E	1 1/8"	15	18'-9"	1,210	S						A7d	1"	44	8'-3"	379	B					
F	1 1/8"	74	28'-7"	9,101	S						A7e	1"	38	3'-0"	119	S					
G	1 1/8"	38	17'-4"	2,834	S						A2a	1/2"	56	5'-3"	197	B					
H	1 1/8"	36	13'-7"	2,104	S						A2b	1/2"	8	6'-8"	36	B					
J	3/4"	38	21'-6"	1,227	S						A2c	1/2"	8	7'-0"	37	B					
K	3/4"	19	20'-3"	578	S						A2d	1/2"	88	3'-6"	206	S					
L	3/4"	252	24'-4"	8,482	S						A2e	1/2"	8	10'-5"	56	S					
M	3/4"	128	24'-4"	4,680	S						REPLACEMENT BARS					RE0	1 1/2"	1	8'-2"	43	S
PIERS											RE9	1 1/2"	2	7'-9"	67	S					
POa	1 1/2"	8	25'-0"	1,063	S						RE7	1"	1	7'-6"	20	S					
PTa	1"	32	24'-7"	2,100	S						RES	3/4"	1	6'-6"	10	S					
P2a	1/2"	64	5'-3"	225	B						RE4	3/8"	1	6'-1"	6	S					
P2b	1/2"	58	10'-4"	401	B						RE2	1/2"	1	5'-8"	4	S					

NOTE: The bar size designations shown in the Steel List do not correspond with the size designations given in the January 1, 1951 edition of the Construction and Material Specifications.

STATE OF OHIO  
DEPARTMENT OF HIGHWAYS  
BUREAU OF BRIDGES AND RAILROAD CROSSINGS

**PART PLAN & ELEVATION of PIER & EAST ABUTMENT, & STEEL LIST**  
BRIDGE NO HO-39-170  
over SAPP'S RUN

HOLMES COUNTY  
SEC. HOL-39-(16.69-17.29) STA. 22+66.75

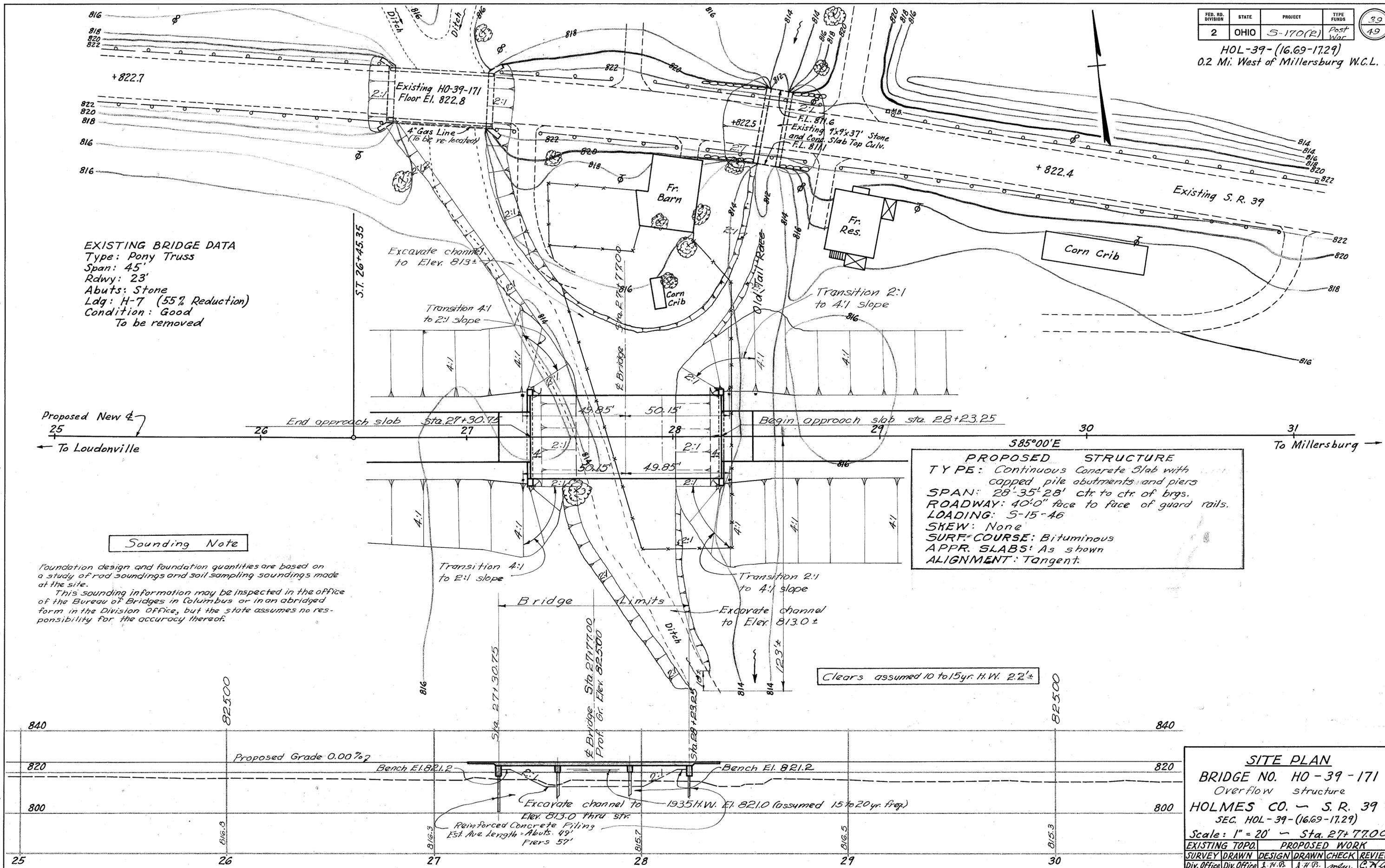
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
Jewell	Jewell	E.M.P.	V.A.E.	BFG	8-24-51	



FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	S-170(R)	Post War

3.9  
4.9

HOL-39-(16.69-17.29)  
0.2 Mi. West of Millersburg W.C.L.



**EXISTING BRIDGE DATA**  
 Type: Pony Truss  
 Span: 45'  
 Rdwy: 23'  
 Abuts: Stone  
 Ldg: H-7 (55% Reduction)  
 Condition: Good  
 To be removed

**Sounding Note**

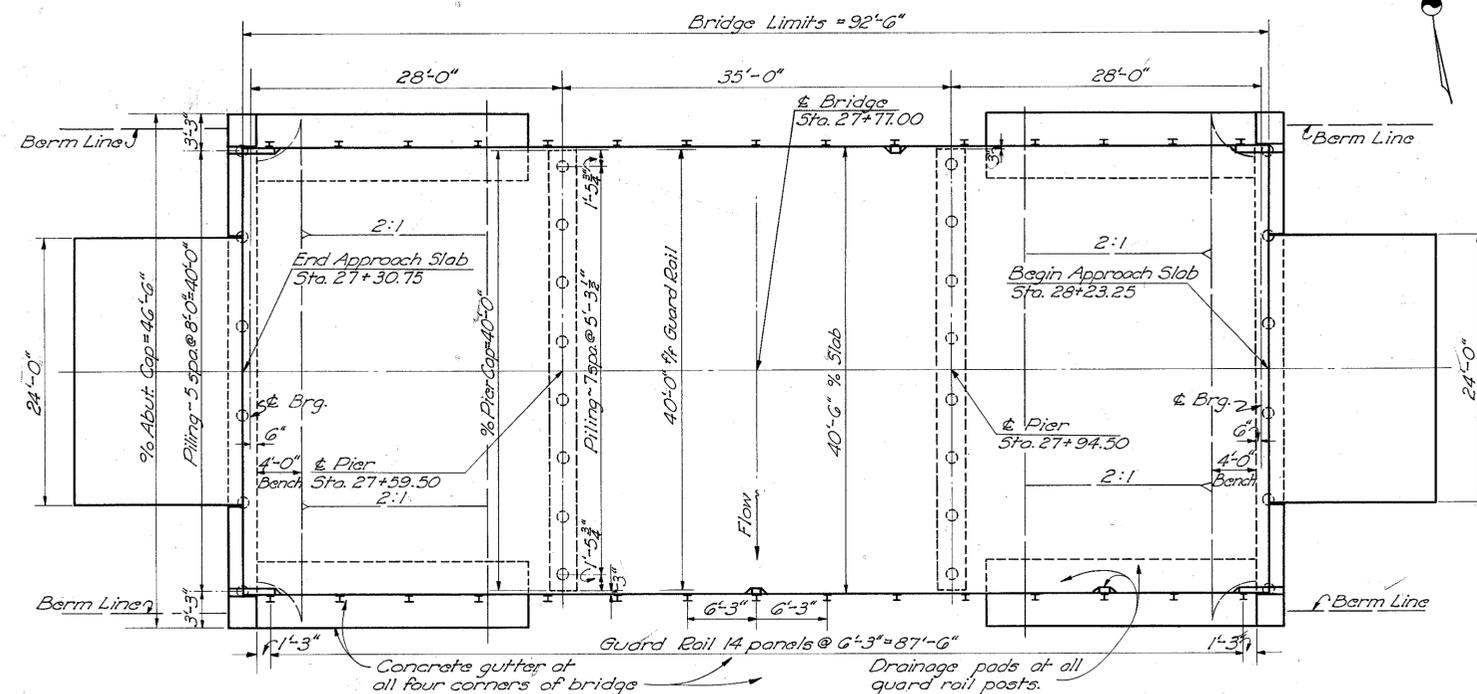
Foundation design and foundation quantities are based on a study of rod soundings and soil sampling soundings made at the site.  
 This sounding information may be inspected in the office of the Bureau of Bridges in Columbus or in an abridged form in the Division Office, but the state assumes no responsibility for the accuracy thereof.

**PROPOSED STRUCTURE**  
 TYPE: Continuous Concrete Slab with copped pile abutments and piers  
 SPAN: 28'-35'-28' ctr to ctr of brgs.  
 ROADWAY: 40'-0" face to face of guard rails.  
 LOADING: S-15-46  
 SKEW: None  
 SURF COURSE: Bituminous  
 APPR. SLABS: As shown  
 ALIGNMENT: Tangent.

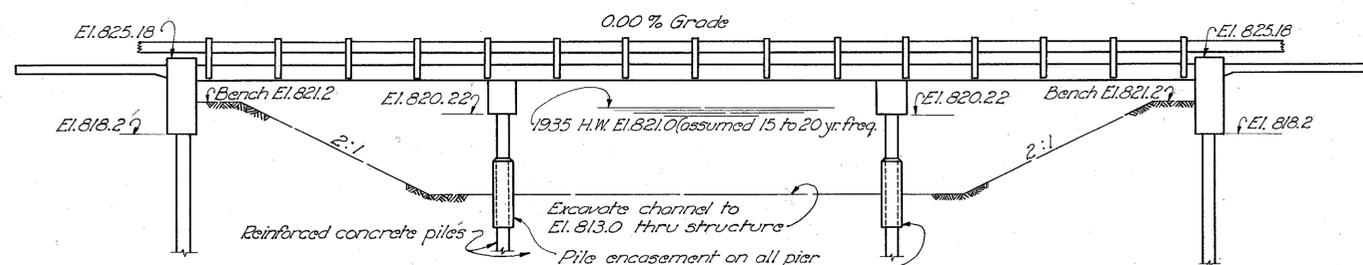
**SITE PLAN**  
 BRIDGE NO. HO-39-171  
 Overflow structure  
 HOLMES CO. - S. R. 39  
 SEC. HOL-39-(16.69-17.29)  
 Scale: 1" = 20' - Sta. 27+77.00

EXISTING TOPO.	PROPOSED WORK
SURVEY DRAWN	DESIGN DRAWN
CHECK REVIEW	CHECK REVIEW
Div. Office	Div. Office

J. N. B. J. N. B. J. N. B. J. N. B.  
 C. N. A.  
 BFG 8-24-51



GENERAL PLAN



GENERAL ELEVATION  
GENERAL NOTES

REFERENCE shall be made to Standard Drawings CS-1-47 revised 1-20-48, A-1-49 dated 7-27-49, and P-1-49 dated 7-27-49.

**REMOVAL OF EXISTING STRUCTURES:** When no longer needed to maintain traffic, existing structure No. HO-39-171 and existing 9'x9' box culvert shall be removed. Floor beams, stringers and trusses shall be piled along the right-of-way at the disposal of Holmes County. Trusses shall be left assembled. The remainder of removed materials shall become the property of the Contractor. The abutments for bridge No. HO-39-171 shall be removed to El. 816.0 and banks dressed back at 2:1 slope. The walls of the 9'x9' box culvert shall be removed to the existing flow line and the banks dressed back at 2:1 slope. Dressing of banks at both structures shall be included with Removal of Existing Structures for payment. Suitable waste masonry may be disposed of as bank protection as directed by the Engineer. The 4" gas line carried on the existing structures, will be removed and re-located by the owner of the line before the structures are removed.

**PILING** shall be driven to a minimum bearing capacity of 35 tons at the piers and 24 tons at the abutments.

**CONCRETE GUTTERS** shall be 6' wide and 6" thick and shall be depressed 6" at the center; they shall extend from face of abutment down to El. 811.0, and shall be centered under edges of deck. Reinforcing bars  $\frac{1}{2}$ " @ 1'-6" centers, both directions, included in price per lin. ft. of gutter.

**EXCAVATION** quantity includes the removal of fill material between top of earth bench and bottom of abutment crossbeam.

**SURFACE FINISH OF CONCRETE:** Fascia of deck slab shall receive a rubbed surface finish. All other exposed surfaces shall be governed by the provisions of Item 5-1.

**ASPHALTIC CONCRETE SURFACE COURSE** Item T-35,  $2\frac{1}{2}$ " thick, shall be laid in two  $1\frac{1}{2}$ " courses.

REINFORCING STEEL LIST						BENDING DIAGRAM	
MARK	SIZE	NO.	LENGTH	WEIGHT	SHP.		
<b>SUPERSTRUCTURE</b>							
A	1"	99	33'-0"	11,108	S	Bending diagram for bars A, B, C, D, E, F, G, H, J, K, L, M.	
B	1"	34	24'-3"	2803	B		
C	1"	34	21'-5"	2476	B		
D	1"	17	21'-6"	1243	S		
E	1"	17	18'-3"	1055	S		
F	1"	86	21'-0"	6140	S		
G	1"	44	10'-6"	1571	S		
H	1"	44	7'-3"	1085	S		
J	$\frac{3}{8}$ "	44	20'-3"	1338	S		
K	$\frac{3}{8}$ "	22	19'-6"	644	S		
L	$\frac{3}{8}$ "	94	40'-0"	5648	S		
M	$\frac{3}{8}$ "	60	40'-0"	3605	S		
<b>ABUTMENTS</b>							
A7a	1"	48	24'-9"	3172	S		
A4a	$\frac{3}{8}$ "	128	8'-5"	1124	B		
A4b	$\frac{3}{8}$ "	30	3'-0"	94	S		
A2a	$\frac{3}{8}$ "	48	5'-3"	168	B		
A2b	$\frac{3}{8}$ "	8	6'-8"	36	B		
A2c	$\frac{3}{8}$ "	8	6'-0"	32	B		
A2d	$\frac{3}{8}$ "	88	3'-6"	206	S		
A2e	$\frac{3}{8}$ "	8	9'-0"	48	S		
<b>PIERS</b>							
P0a	$\frac{1}{2}$ "	8	21'-11"	932	S		
P7a	1"	32	21'-6"	1837	S		
P2a	$\frac{1}{2}$ "	64	5'-3"	225	B		
P2b	$\frac{1}{2}$ "	58	10'-4"	400	B		
<b>REPLACEMENT BARS</b>							
RE0	$\frac{1}{2}$ "	1	8'-2"	43	S		
RE8	1"	1	7'-4"	25	S		
RE7	1"	1	7'-4"	20	S		
RE5	$\frac{3}{8}$ "	1	6'-6"	10	S		
RE4	$\frac{3}{8}$ "	1	6'-1"	6	S		
RE2	$\frac{3}{8}$ "	1	5'-8"	4	S		

NOTE: The bar size designations shown here do not correspond with the size designations given in the January 1, 1951 edition of the Construction and Material Specifications.

ESTIMATED QUANTITIES						
ITEM	TOTAL	UNIT	DESCRIPTION	ABUT.	PIER	SUPERSTR.
E-2	49	Cu. Yd.	Unclassified excavation	49		
E-3	1009	Cu. Yd.	Channel excavation			1009
5-1	197	Cu. Yd.	Class "C" concrete, superstructure and pier caps		23	174
5-1	47	Cu. Yd.	Class "C" concrete, abutments	47		
5-3	417	Sq. Yd.	Type "C" waterproofing			417
5-4	47,098	Lbs.	Reinforcing steel	4880	33,94	38,716
5-9	14	Sq. Ft.	$\frac{1}{2}$ " premolded expansion joint filler			14
5-14	185	Lin. Ft.	Railing (Type I-15.13 guard rail with steel posts)			185
5-16	Lump	Sum	First test pile			Lump
5-18	1500	Lin. Ft.	Reinforced concrete piling, 12" cast-in-place or 14" precast	588	912	
5-24	Lump	Sum	Removal of existing structures			Lump
I-14	107	Lin. Ft.	Concrete gutter			107
T-35	29	Cu. Yd.	Asphaltic concrete surface course, Type "A" or "C" (85-100)			29

STATE OF OHIO  
DEPARTMENT OF HIGHWAYS  
BUREAU OF BRIDGES AND RAILROAD CROSSINGS

**GENERAL PLAN & ELEVATION, NOTES  
ESTIMATED QUANTITIES & STEEL LIST  
BRIDGE NO. HO-39-171  
OVERFLOW STRUCTURE**

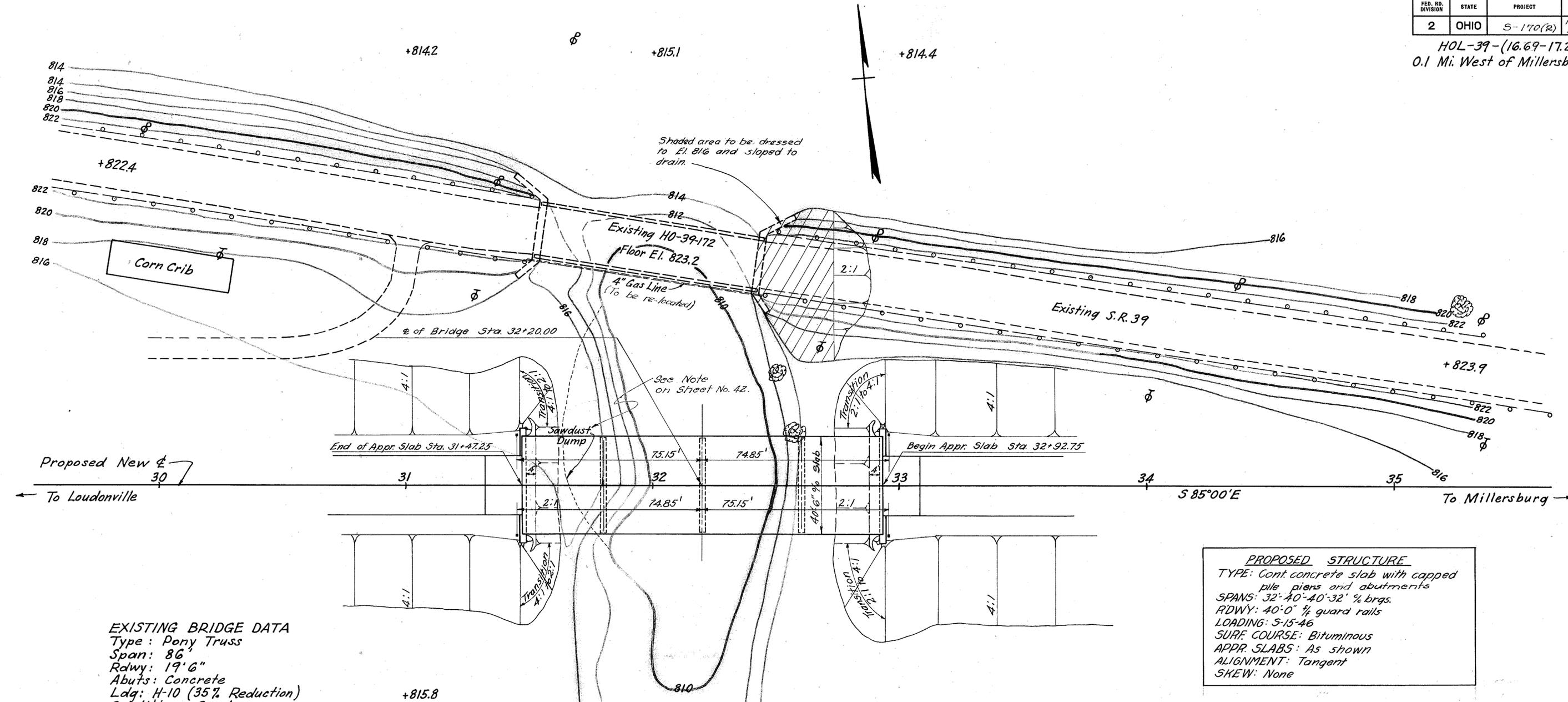
HOLMES COUNTY  
SEC. HOL-39-(16.69-17.29) STA. 27+77.00

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISION
RH	RH	GPH	V.A.E.	WMC	8-24-51	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	S-170(R)	POST WAR

41  
49

HOL-39-(16.69-17.29)  
0.1 Mi. West of Millersburg W.C.L.

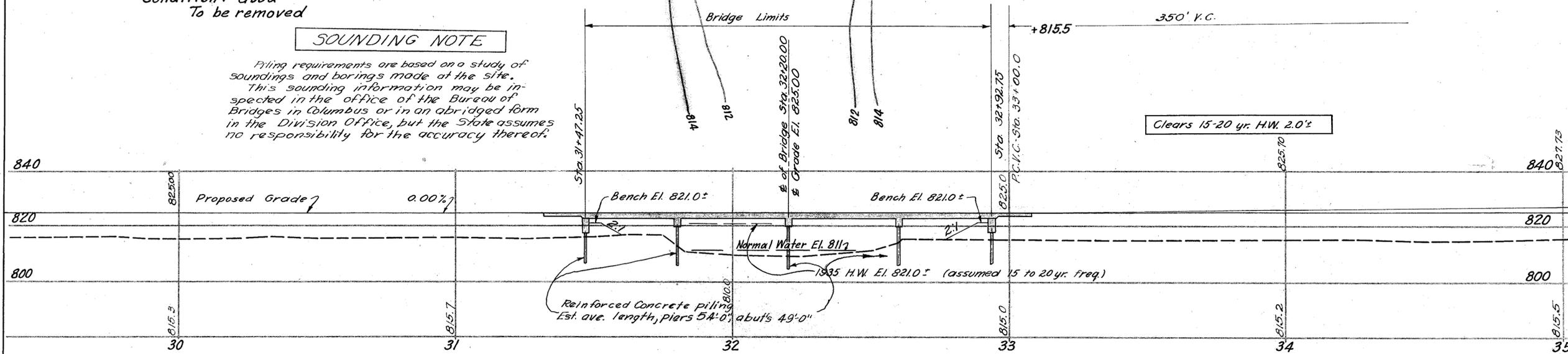


**EXISTING BRIDGE DATA**  
 Type: Pony Truss  
 Span: 86'  
 Rdwy: 19'6"  
 Abuts: Concrete  
 Ldg: H-10 (35% Reduction)  
 Condition: Good  
 To be removed

**PROPOSED STRUCTURE**  
 TYPE: Cont concrete slab with capped pile piers and abutments  
 SPANS: 32'-40'-40'-32' % brgs.  
 RDWY: 40'-0" 1/4 guard rails  
 LOADING: S-15-46  
 SURF COURSE: Bituminous  
 APPR. SLABS: As shown  
 ALIGNMENT: Tangent  
 SKEW: None

**SOUNDING NOTE**

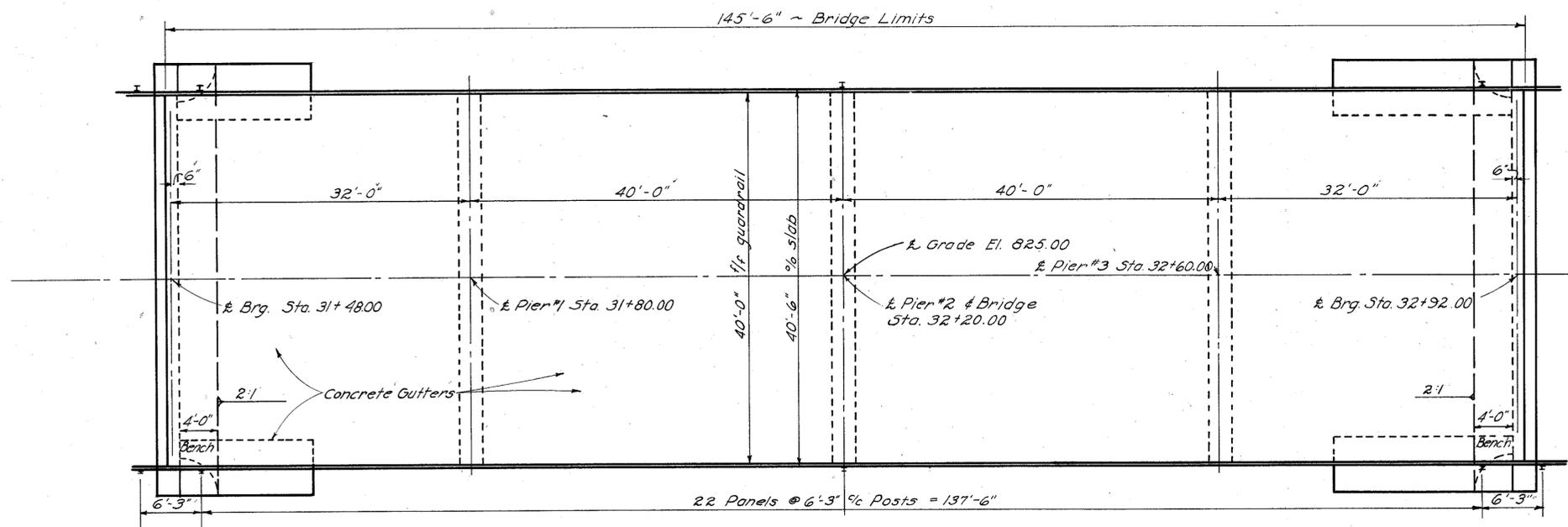
Piling requirements are based on a study of soundings and borings made at the site. This sounding information may be inspected in the office of the Bureau of Bridges in Columbus or in an abridged form in the Division Office, but the State assumes no responsibility for the accuracy thereof.



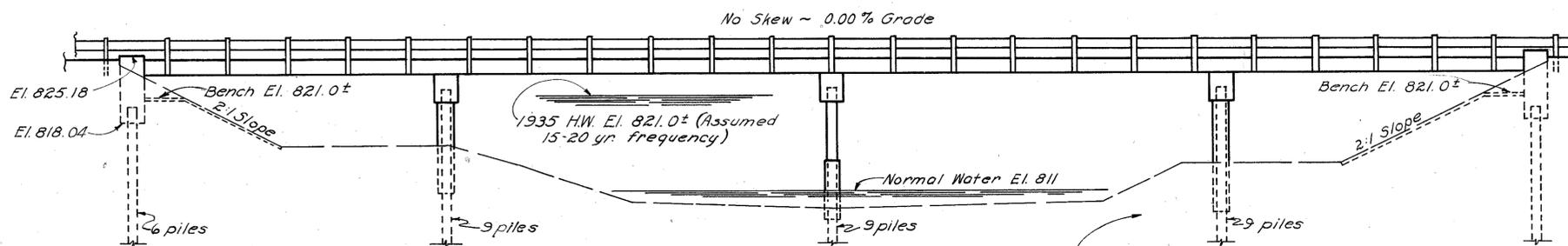
**SITE PLAN**  
 BRIDGE NO. HO-39-172  
 OVER KILLBUCK CR. OVERFLOW  
 HOLMES CO. - S. R. 39  
 SEC. HOL-39-(16.69-17.29)  
 Scale: 1" = 20' - Sta. 32+20.0

EXISTING TOPD.	PROPOSED WORK
SURVEY	DRAWN
DESIGN	DRAWN
CHECK	REVIEW
Div. Office	Div. Office

8-24-51



GENERAL PLAN



GENERAL ELEVATION

GENERAL NOTES

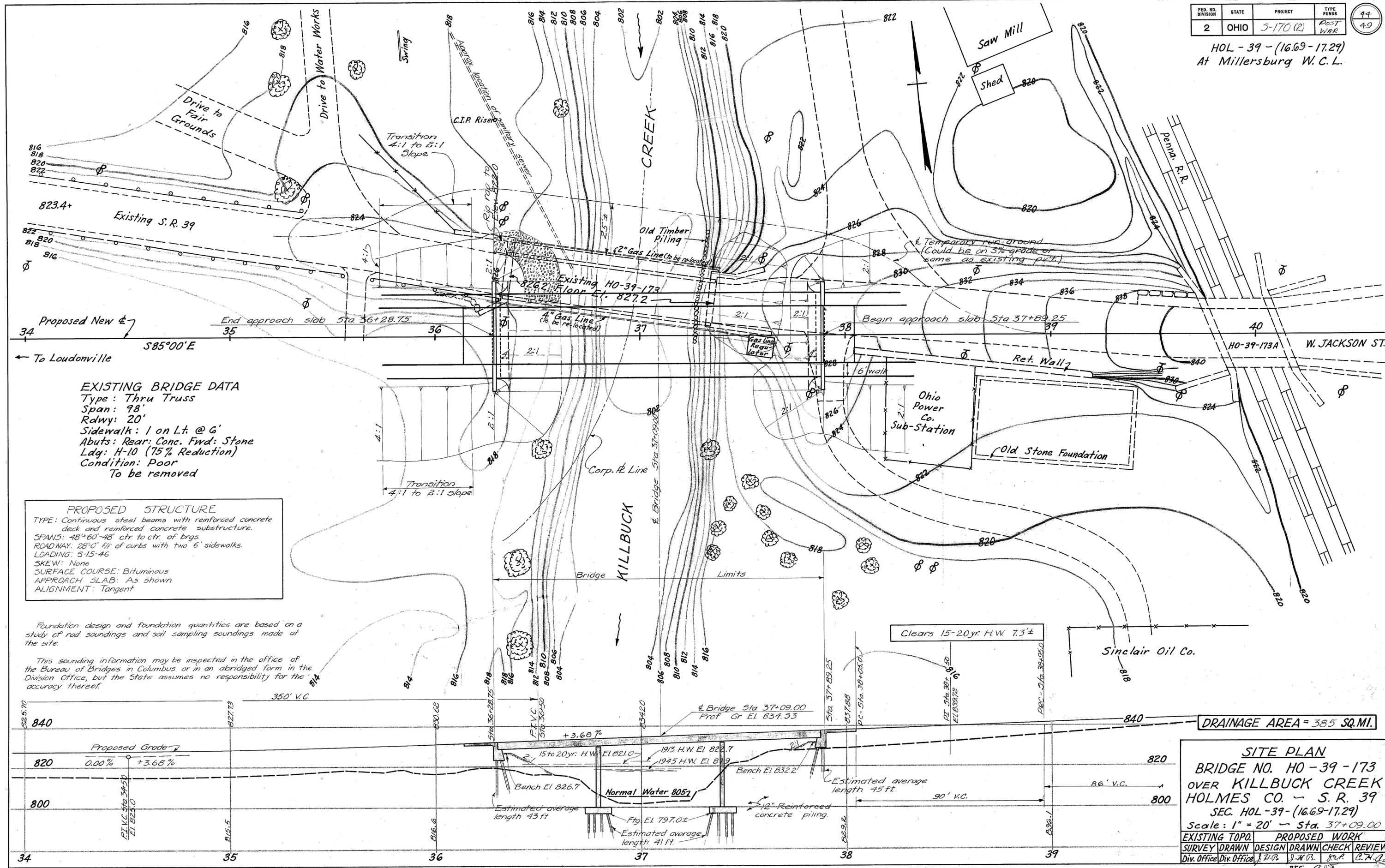
- REFERENCE shall be made to Standard Drawings CS-1-47 revised 1-20-48, A-1-49 dated 7-27-49 and P1-49 dated 7-27-49.
- CONSTRUCTION JOINTS. One transverse construction joint in bridge slab shall be placed at center of both interior spans.
- EXCAVATION quantity includes the removal of fill material between top of earth bench and bottom of abutment crossbeam.
- PILING shall be driven to a minimum bearing capacity of 27 tons at abutments and 35 tons at piers.
- CONCRETE GUTTERS shall be 6ft. wide and 6 in. thick, and shall be depressed 6 in. at the center. They shall extend from face of abutment down to El. 816.0 at West abutment and El. 814.0 at East abutment. They shall be centered under edge of the deck. Reinforcing bars  $\frac{1}{2}$ "  $\phi$  @ 1'-6" centers, both directions, included in price per lin. ft. of gutter.
- BITUMINOUS SURFACE COURSE -  $2\frac{1}{2}$ " Asphaltic concrete surface course, Item T-35; laid in two  $\frac{1}{4}$ " courses.
- REMOVAL OF EXISTING BRIDGE. When no longer needed to maintain traffic the existing structure shall be removed. Floor beams, stringers and trusses shall be piled along the right-of-way at the disposal of Holmes County. Trusses shall be left assembled. The remainder of the removed materials shall become the property of the Contractor. The existing west abutment shall be removed to ground line in front of abutment. The east abutment shall be removed to Elevation 812. Embankment back of east abutment shall be removed to El. 815 and dressed back as shown on Site Plan. Removal of earth back of abutment included with "Removal of Existing Structure" for payment. Suitable waste masonry may be disposed of as bank protection as directed by the Engineer. The 4 inch gas line carried on the existing structure will be removed and relocated by the owner of the line before the structure is removed.
- ENCASEMENT for piles in piers #1 and #3 shall extend from bottom of pier cap to 5 ft. below finished ground line; in pier #2 from 3 ft. above to 3 ft. below normal water.
- SURFACE FINISH OF CONCRETE. Fascia of deck slab shall receive a rubbed surface finish. All other exposed surfaces shall be governed by the provisions of Item 5-1.
- SAWDUST DUMP. The sawdust dump shall be carefully investigated by the Engineer before starting embankment. In the event the sawdust pile extends back under or near the proposed fill, the unsuitable material shall be removed and disposed of prior to construction of the new fill. The number of cubic yards of such sawdust dump removed will be paid for at the contract unit price per cu. yd. bid for "Special - Removal of sawdust dump." A quantity of 150 cu. yds. has been estimated for this item in anticipation of a need for some such removal. Payment will be made for the actual quantity removed.

STATE OF OHIO DEPARTMENT OF HIGHWAYS BUREAU OF BRIDGES AND RAILROAD CROSSINGS						
GENERAL PLAN & ELEVATION GENERAL NOTES						
BRIDGE No HO-39-172 over KILLBUCK CREEK OVERFLOW						
HOLMES Co Sta. 32+20.00 HOL-39-(16.69-17.29)						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
REJ	REJ	W.H.T.	V.A.E.	W.H.K.	8-24-51	



FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS	44
2	OHIO	5-170 (2)	POST WAR	49

HOL - 39 - (16.69 - 17.29)  
At Millersburg W.C.L.



**EXISTING BRIDGE DATA**  
 Type: Thru Truss  
 Span: 98'  
 Rdwy: 20'  
 Sidewalk: 1 on Lt. @ 6'  
 Abuts: Rear: Conc. Fwd: Stone  
 Ldg: H-10 (75% Reduction)  
 Condition: Poor  
 To be removed

**PROPOSED STRUCTURE**  
 TYPE: Continuous steel beams with reinforced concrete deck and reinforced concrete substructure.  
 SPANS: 48'-60'-48' ctr to ctr. of brgs.  
 ROADWAY: 28'-0" 4' of curbs with two 6' sidewalks.  
 LOADING: 5-15-46  
 SKEW: None  
 SURFACE COURSE: Bituminous  
 APPROACH SLAB: As shown  
 ALIGNMENT: Tangent

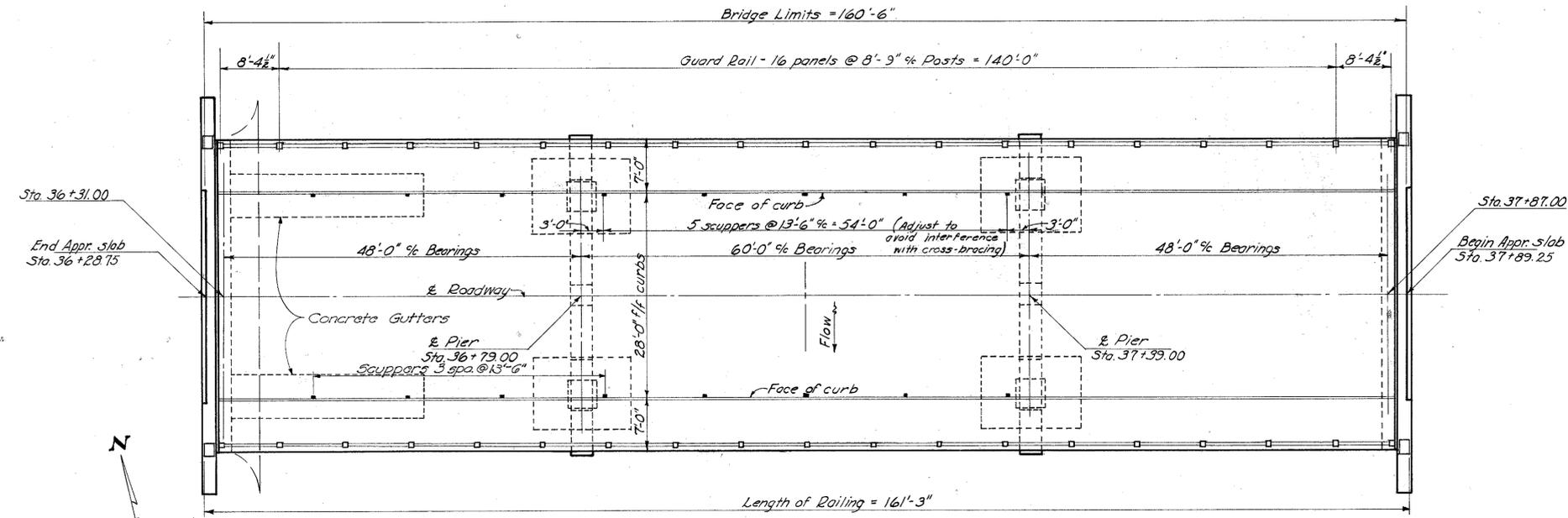
Foundation design and foundation quantities are based on a study of red soundings and soil sampling soundings made at the site.  
 This sounding information may be inspected in the office of the Bureau of Bridges in Columbus or in an abridged form in the Division Office, but the State assumes no responsibility for the accuracy thereof.

DRAINAGE AREA = 385 SQ. MI.

**SITE PLAN**  
 BRIDGE NO. HO - 39 - 173  
 OVER KILLBUCK CREEK  
 HOLMES CO. - S. R. 39  
 SEC. HOL - 39 - (16.69-17.29)  
 Scale: 1" = 20' - Sta. 37+09.00

EXISTING TOPD.	PROPOSED WORK
SURVEY DRAWN	DESIGN DRAWN
Div. Office	Div. Office
J. B. O'S.	J. W. O'S.
g.p.	C. T. O.

BFG 983



PLAN

ESTIMATED QUANTITIES									
Item	Total	Unit	Description	Superst.	Abuts.	Piers	General	Notes	Ref.
E-2	Lump	Sum	Cofferdams, cribs & sheeting						
E-2	540	cu. yd.	Unclassified excavation		92	448	Lump		
S-1	177	cu. yd.	Class "C" concrete, superstructure	177					
S-1	95	cu. yd.	Class "C" concrete, abutments		95				
S-1	119	cu. yd.	Class "C" concrete, pier columns, caps & struts			119			
S-1	59	cu. yd.	Class "C" concrete, pier footings			59			
S-3	484	sq. yd.	Type "C" waterproofing	484					
S-4	72,626	lb.	Reinforcing steel	37,076	9504	25,934	112		
S-7	156,900	lb.	Structural steel	156,900					
S-8	156,900	lb.	Field painting of structural steel	156,900					
S-14	322.5	lin. ft.	Railing (Steel with concrete endposts)	322.5					
S-15	Lump	Sum	Temporary run-around bridge & approaches				Lump		
S-16	Lump	Sum	First test pile				Lump		
S-18	3200	lin. ft.	12" Reinforced concrete piling, cast-in-place or precast		1230	1970			
S-24	Lump	Sum	Removal of existing structure				Lump		
S-29	316	lin. ft.	Subdrainage for wearing surface course	316					
I-10	70	sq. yd.	Type "A" riprap				70		
I-14	66	lin. ft.	Concrete gutter				66		
T-35	33	cu. yd.	Asphaltic concrete surface course, Type AorC, (85-100)	33					

GENERAL NOTES

REFERENCE shall be made to Standard Drawing CSB-1-47, sheets 1&2, revised 8-25-49.

REMOVAL OF EXISTING UTILITIES. Contractor shall make arrangements with utilities concerned, for removal of their equipment from the existing structure before the structure is removed.

REMOVAL OF EXISTING BRIDGE. Existing superstructure shall be dismantled, match-marked and piled along the right-of-way at the disposal of Holmes county. Remainder of removed materials shall become the property of the Contractor.

Existing west abutment to be removed to 1ft. below finished ground line and where necessary for new construction. East abutment to be removed to 1ft. below existing ground line at face of abutment, and where necessary for new construction, and slopes dressed 2:1; dressing slopes included with removal of existing structure for payment. Suitable waste masonry may be used as riprap where shown on plans.

Old timber piling to be removed where necessary for new construction.

TEMPORARY RUN-AROUND BRIDGE AND APPROACHES shall be paid for as lump sum under Item S-15, except furnishing and placing approach surface course. Surface course aggregate shall be paid for per cu. yd. and be governed by Item T-10, except that rolling will be required. Calcium chloride (M-10) applied to surface course, shall be paid for per ton. Amount of surface material applied and paid for, to be directed by the Engineer. Embankment to be substantially in accordance with E-1.05 with side slopes not steeper than 1 1/2:1. Items T-10 and M-10 are included in roadway quantities for payment. WELDING shall be Class "A" except as shown.

\*See note on sheet no. 3

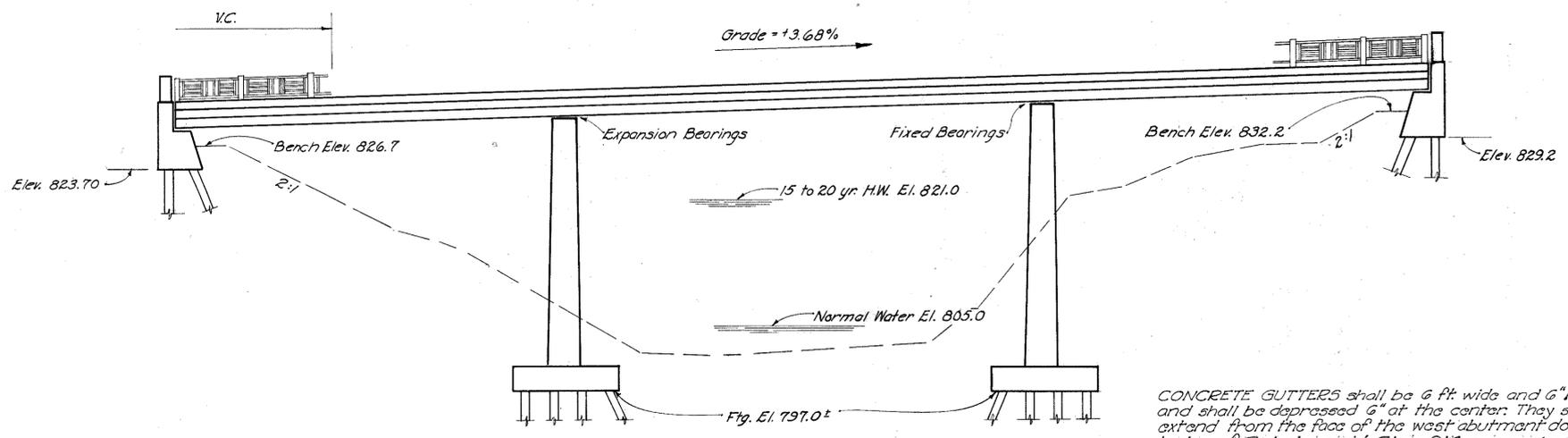
EXCAVATION QUANTITY includes the removal of fill material between top of earth bench and bottom of abutment cross beam.

PILING shall be driven to a minimum bearing capacity of 25 tons at the abutments and 35 tons at the piers. (See note below.)

SURFACE FINISH OF CONCRETE. Railing end posts, curb faces and fascias of deck shall receive a rubbed surface finish. Bottom of deck slab and sidewalk surface shall be governed by the provisions of Item S-1. All other exposed surfaces shall be grout cleaned as per Section S-1.22. Form liner shall be reused for all surfaces to be grout cleaned.

COPPER-BEARING STEEL requirement for certain items detailed on the Standard Drawing CSB-1-47, is waived.

Note: PIER PILING shall not be driven until after all piles in adjacent abutment have been driven.



ELEVATION

CONCRETE GUTTERS shall be 6 ft wide and 6" thick and shall be depressed 6" at the center. They shall extend from the face of the west abutment down to toe of 2:1 slope, at Elev. 814, approximately, and shall be centered under the scuppers. Reinforcing bars #6 @ 1'-6" centers, both directions included in price, per lin. ft.

STATE OF OHIO  
DEPARTMENT OF HIGHWAYS  
BUREAU OF BRIDGES AND RAILROAD CROSSINGS

**GENERAL PLAN AND ELEVATION  
NOTES AND ESTIMATED QUANTITIES  
BRIDGE NO. HO-39-173  
OVER KILLBUCK CREEK**

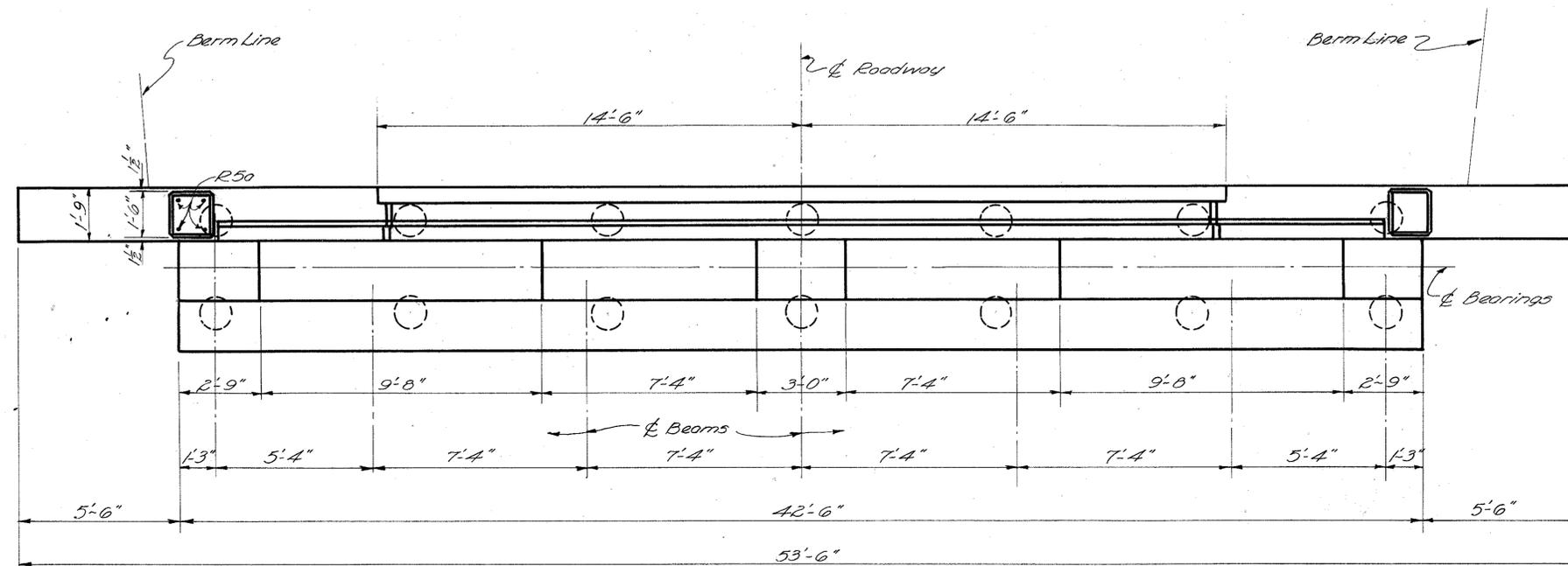
HOLMES COUNTY  
SEC. HOL-39-(16.69-17.29) STA. 37+09.0

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	BY
D.J.M.	D.J.M.	W.H.T.	R.J.C.	A.P.	9/27/51	

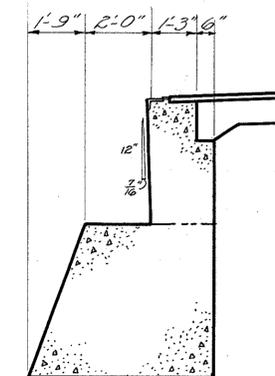
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	5-170(2)	Post War

46  
49

HOL-39-(16.69-17.29)

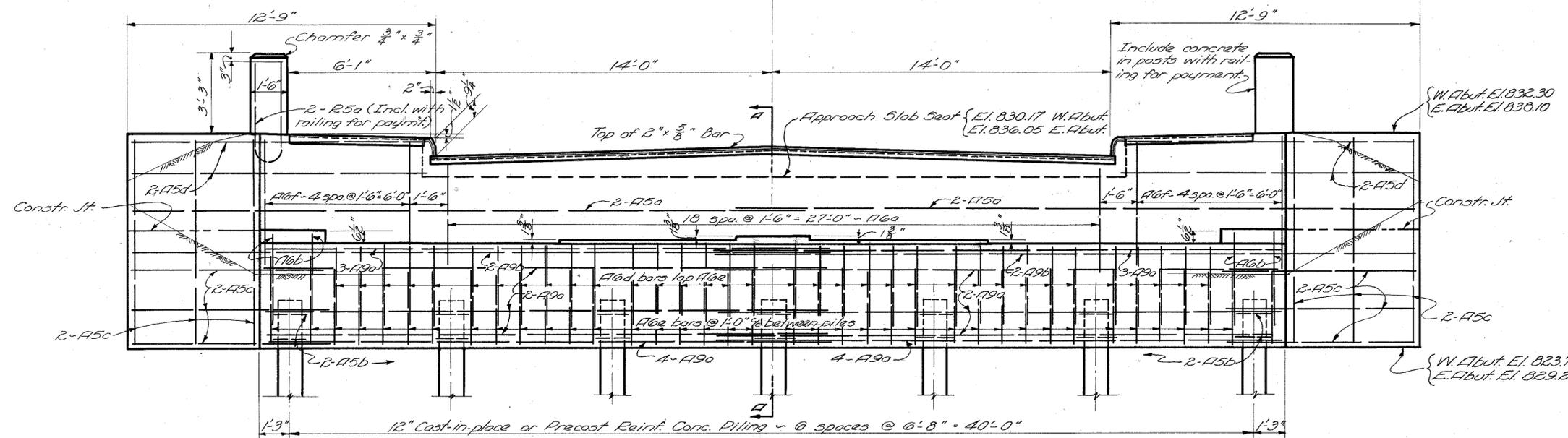


**PLAN**

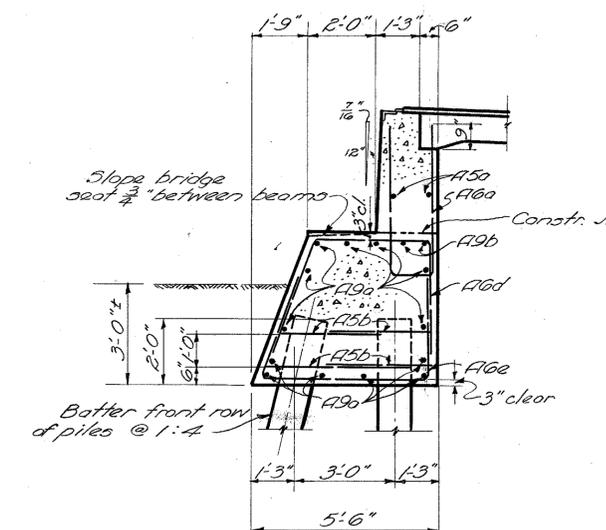


**SECTION A-A  
EAST ABUTMENT**

Details not shown same as Sec. A-A, W. Abut.



**ELEVATION**



**SECTION A-A  
WEST ABUTMENT**

Note: All earth fill around abutments shall be made full height of earth bench. Excavation shall then be made for abutment cap, after which piling shall be driven. If bottom forms for abutment cap are used, they shall be left in place.  
Concrete above bridge seat construction joint shall not be placed until after steel work is erected. Steel end finish shall be used as a template for top of backwall.  
All reinforcing steel 2" clear unless otherwise indicated.

West Abutment	828.30	827.76	827.88	827.99	827.00	827.76	828.30
East Abutment	834.02	833.48	833.60	833.71	833.60	833.48	834.02

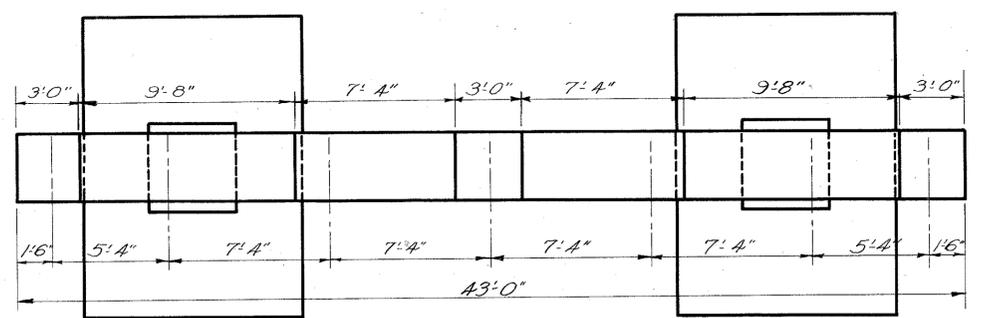
ABUTMENT ELEVATIONS

STATE OF OHIO  
DEPARTMENT OF HIGHWAYS  
BUREAU OF BRIDGES AND RAILROAD CROSSINGS

**ABUTMENT DETAILS**  
BRIDGE NO. **HO-39-173**  
OVER KILLBUCK CREEK

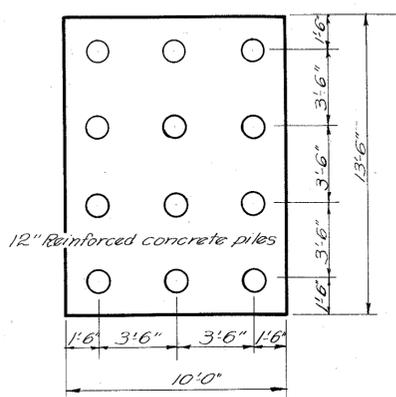
HOLMES COUNTY  
SEC. HOL-39-(16.69-17.29) 572.37+09.00

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.J.M.	D.J.M.	S.P.	R.J.C.	B.P.G.	9/27/57	

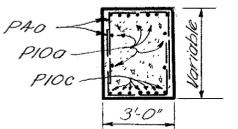


**PLAN**

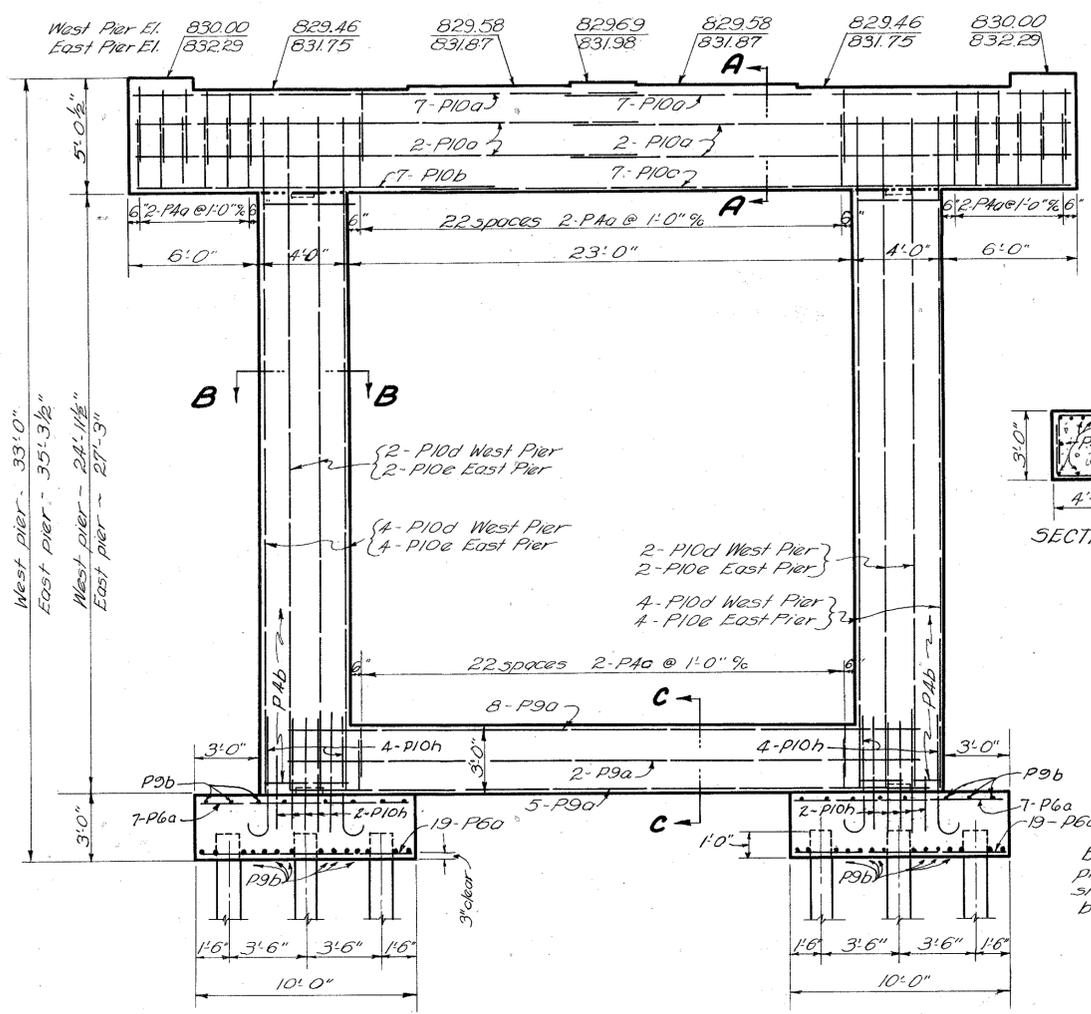
All reinforcing 2" clear unless otherwise noted. Place P4a bars to clear anchor bars.



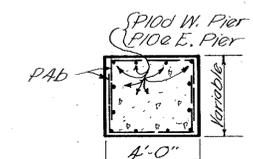
**PILING PLAN**



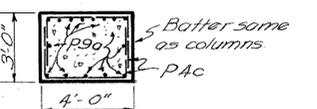
**SECTION A-A**



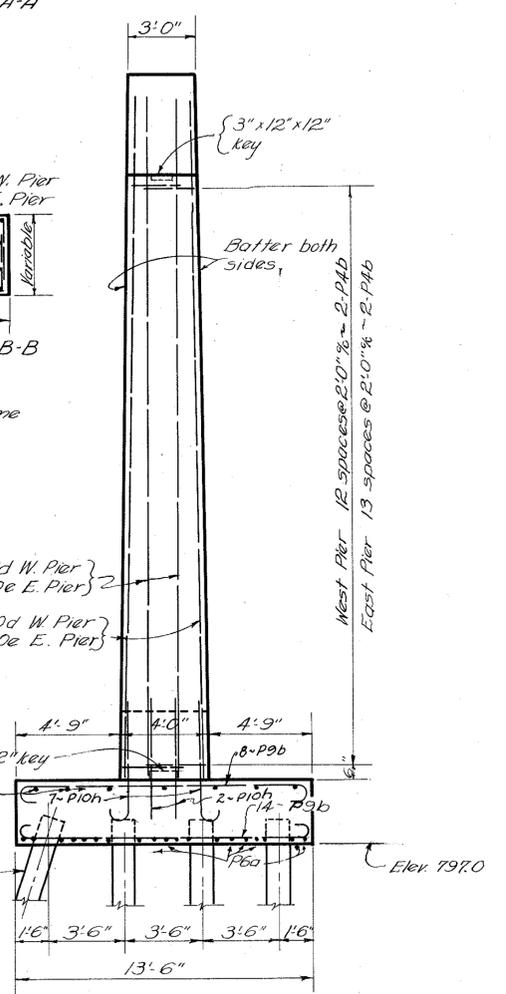
**ELEVATION**



**SECTION B-B**



**SECTION C-C**



**END VIEW**

Mark	No.	Length	Weight	Shp.
<b>SUPERSTRUCTURE</b>				
S6a	16A	31'-10"	7841	B
S6b	221	30'-6"	10,124	S
S5a	450	28'-0"	13,142	S
S5b	52	24'-0"	1,302	S
S4a	314	7'-8"	1,609	B
S4b	314	6'-8"	1,399	S
S4c	314	3'-10"	803	B
S4d	314	4'-1"	856	B
<b>ABUTMENTS</b>				
A9a	52	23'-0"	4066	S
A9b	8	28'-6"	775	S
A6a	38	10'-0"	571	B
A6b	8	10'-9"	129	B
A6d	68	10'-0"	1021	B
A6e	76	11'-9"	1341	B
A6f	20	11'-6"	345	B
A5a	8	27'-9"	232	S
A5b	56	7'-3"	423	B
A5c	48	8'-0"	401	S
A5d	16	12'-0"	200	S
<b>PIERS</b>				
P10a	44	23'-0"	4355	S
P10b	14	17'-3"	1044	S
P10c	14	28'-6"	1717	S
P10d	24	28'-3"	2917	S
P10e	24	30'-6"	3150	S
P10h	72	6'-6"	2014	B
P9a	30	28'-8"	2924	S
P9b	88	15'-2"	4538	B
P6a	104	9'-6"	1484	S
P4a	140	7'-11"	740	B
P4b	108	8'-3"	595	B
P4c	92	7'-5"	456	B
<b>REPLACEMENT BARS</b>				
RE0	1	8'-3"	36	
RE9	1	7'-9"	26	
RE7	1	6'-11"	14	
RE0	2	6'-6"	20	
RE5	2	6'-11"	12	
RE4	1	5'-8"	A	

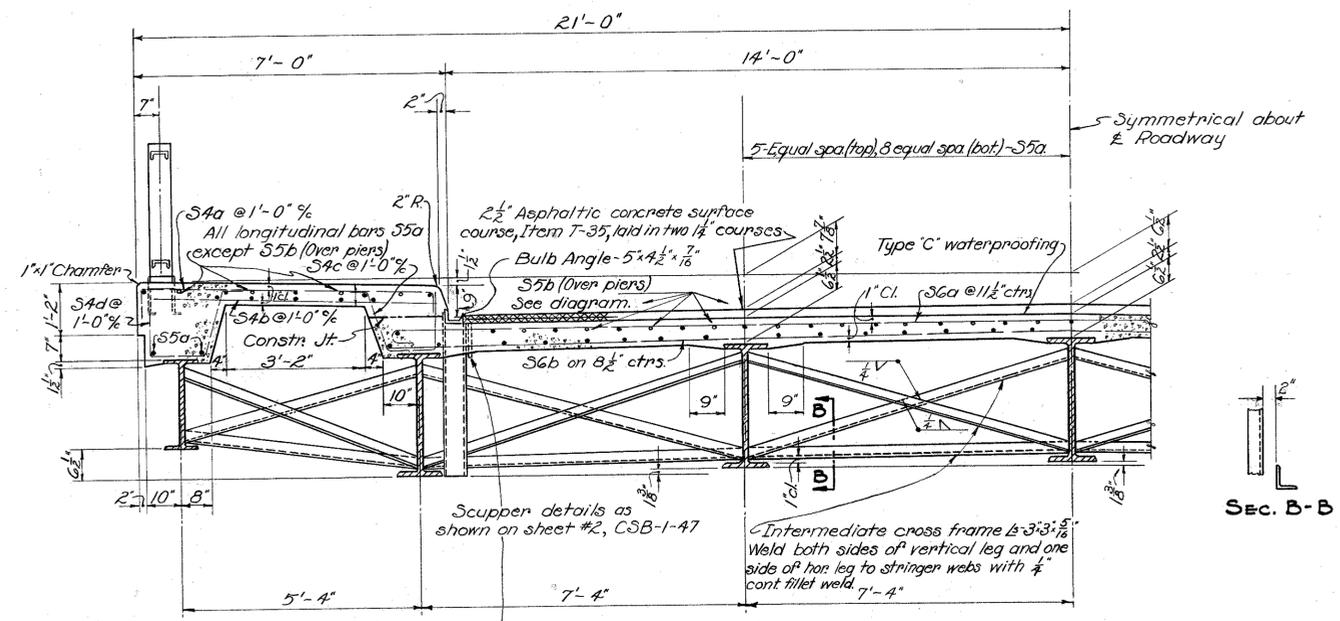
NOTE: In the reinforcing steel bar marks, the numeral following the first letter is the Bar Number which indicates the size of the bar.

STATE OF OHIO  
DEPARTMENT OF HIGHWAYS  
BUREAU OF BRIDGES AND RAILROAD CROSSINGS

**PIER DETAILS & REINFORCING STEEL LIST**  
BRIDGE NO. HO-39-173  
OVER KILLBUCK CREEK

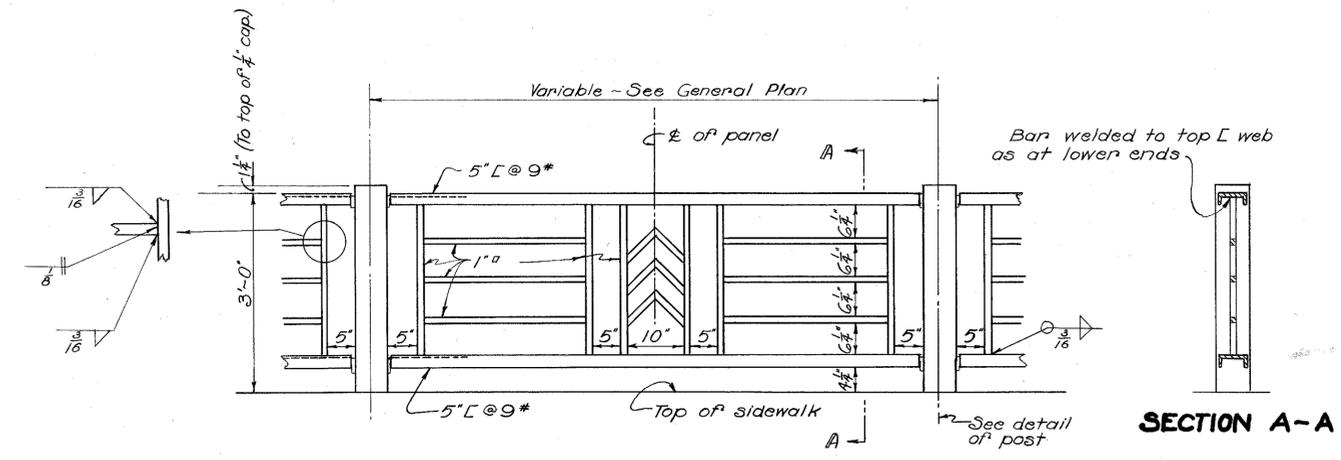
HOLMES CO.  
SEC. HOL-39-(16.69-17.29) STA. 37+09.00

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.G.	R.G.	R.V.	R.J.C.	BFG	4/27/51	

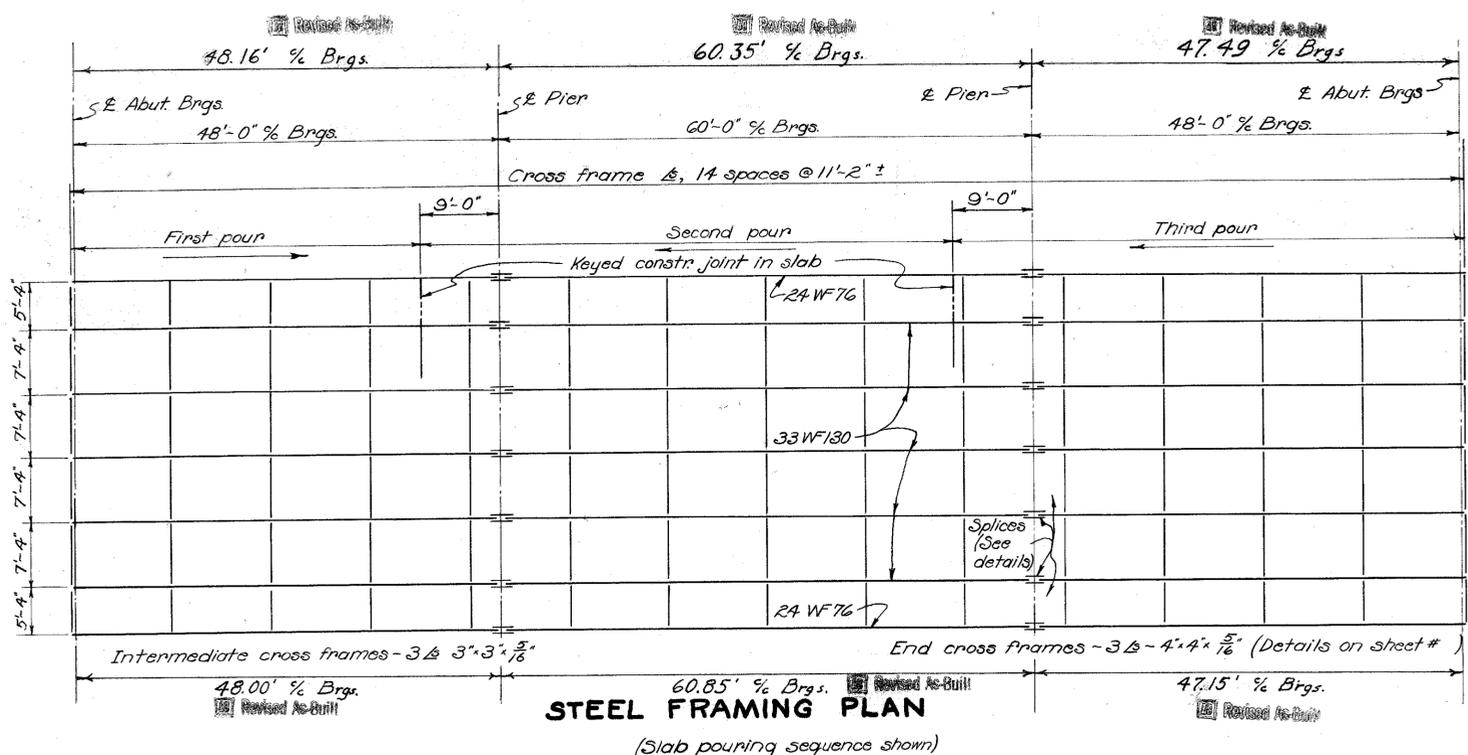


Subdrainage as per Sec. S-29.07 except drains may be copper tubes or steel pipes. Drainage tube at low end of bridge to be placed within one ft of end finish.

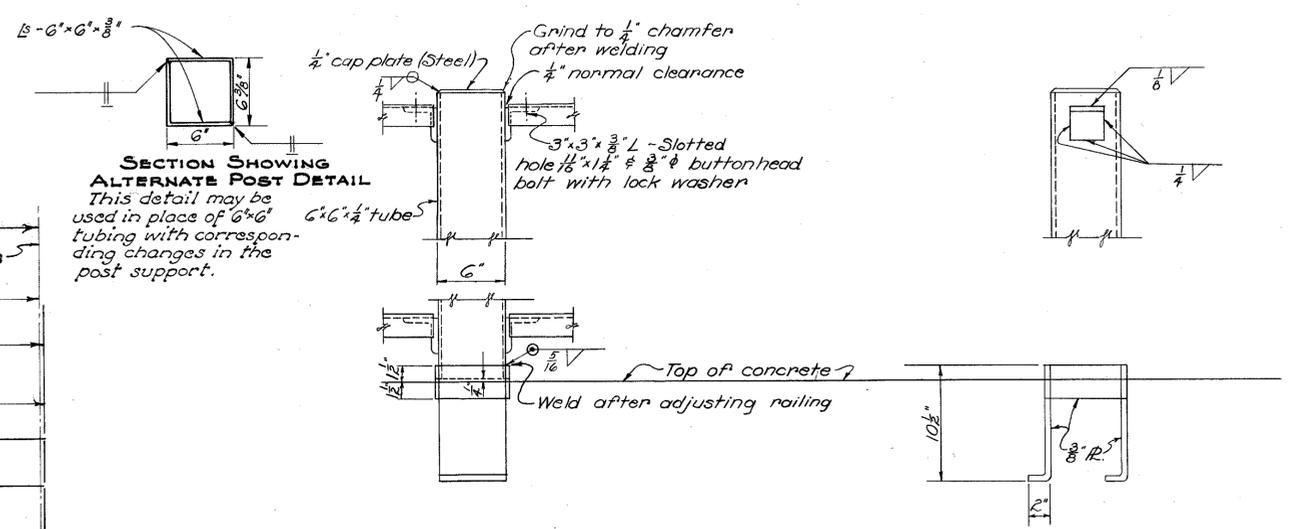
**TRANSVERSE HALF SECTION**



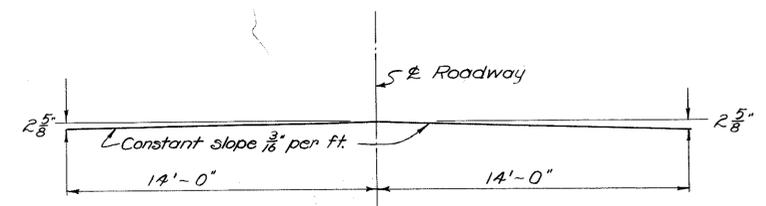
**RAILING ELEVATION**



**STEEL FRAMING PLAN**  
(Slab pouring sequences shown)



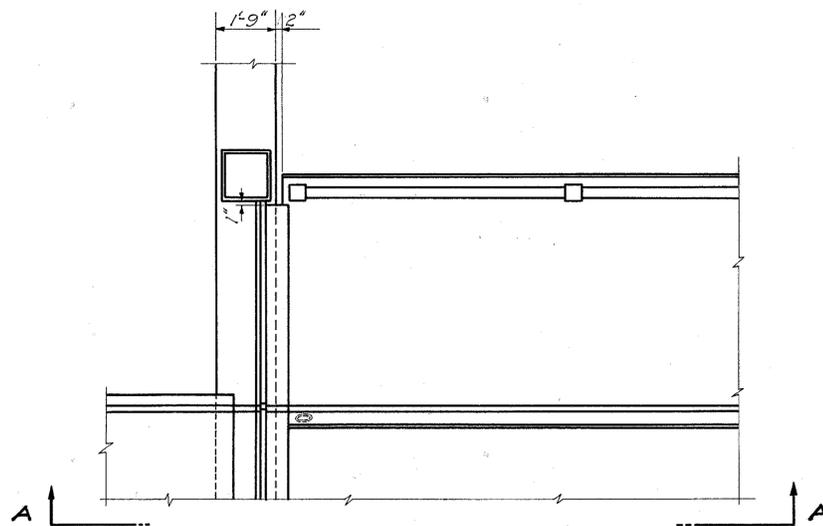
**RAILING POST DETAILS**



**BRIDGE ROADWAY CROWN**

STATE OF OHIO DEPARTMENT OF HIGHWAYS BUREAU OF BRIDGES AND RAILROAD CROSSINGS						
<b>SUPERSTRUCTURE DETAILS</b>						
<b>BRIDGE NO - HO-39-173</b>						
<b>OVER KILLBUCK CREEK</b>						
HOLMES COUNTY						
SEC. HOL-39-(16.69-17.29) Sta. 37+09.00						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DJM	DJM	E.L.B.	RJC	BFG	9/27/51	

Per C.O.#4  
M.H.I. 3-30-56



PLAN AT ABUTMENT

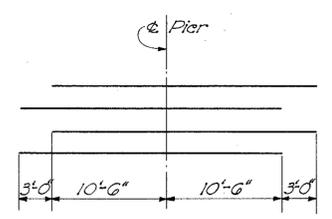
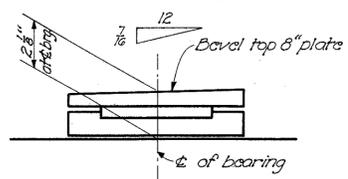
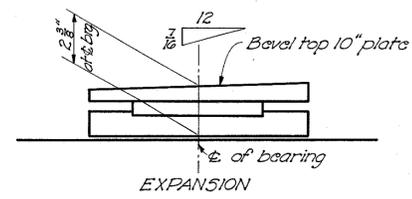


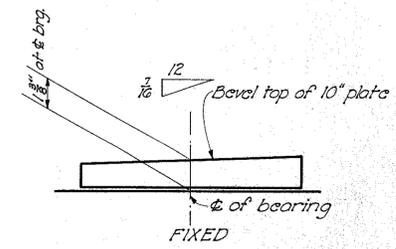
DIAGRAM SHOWING STAGGER OF S5b BARS OVER PIERS



ABUTMENT BEARING PLATES  
Detail showing bevel of top plate. For additional details see Dwg. CSB-1-47, sh. 2. Bumper angles are not required.

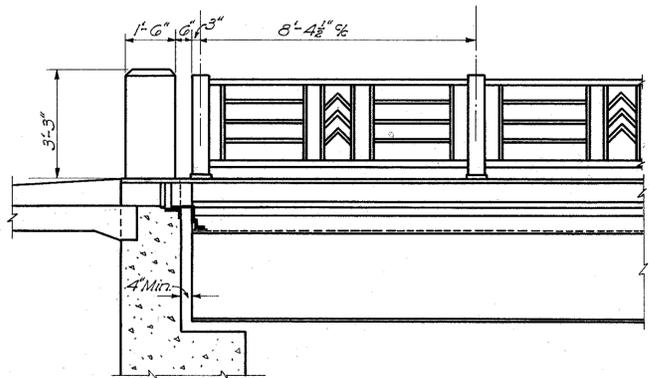


PIER BEARING PLATES  
Details showing bevel of plates. For additional details see Dwg. CSB-1-47, sh. 2.



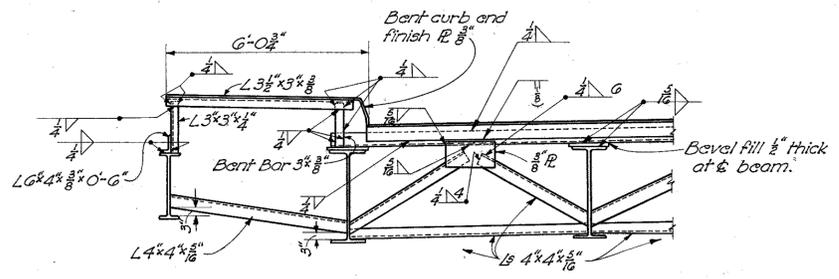
PIER BEARING PLATES  
Details showing bevel of plates. For additional details see Dwg. CSB-1-47, sh. 2.

NOTE: Cast leaded bronze bearing plates and sheet lead are included with Structural Steel for payment.



SECTION A-A

For details of curb plate, roadway and finish, gutters and scuppers see sheet 2, CSB-1-47.

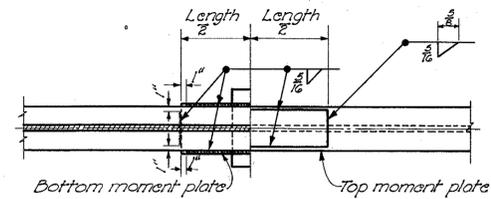


END CROSS FRAME

BEAM SPLICE DETAILS			
BEAM	TOP PLATE	BOTTOM PLATE	"R"
24" WF 76"	7" x 3/8" x 13'-6"	10 1/2" x 11'-4"	1 1/2"
33" WF 130"	10 1/2" x 7/8" x 3'-6"	12 1/2" x 3/8" x 3'-7"	3/4"

WELDING PROCEDURE

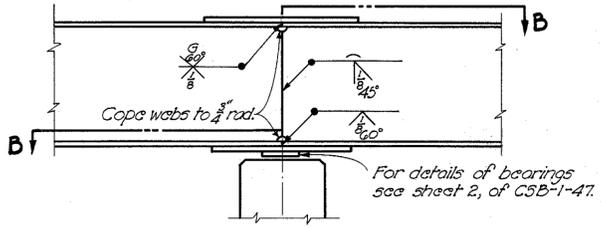
- At first pier, weld bottom flange splice plate to beam on middle span side of joint only.
- Raise end of beam at first abutment "R" inches.
- Weld beam flanges and web at first pier.
- Weld top flange splice plate at first pier (both sides of joint) and complete welding of bottom flange splice plate at first pier.
- Repeat steps 1 to 4 inclusive at second pier and second abutment.
- Lower ends of beams at both abutments.



SECTION B-B

	24 WF 76		33 WF 130	
	END SPAN	CENTER SPAN	END SPAN	CENTER SPAN
Deflec. due to wt. of steel	0.06"	0.07"	0.03"	0.04"
Deflec. due to remaining D.L.	0.54"	0.63"	0.20"	0.24"
Required Shop Camber	3/8"	3/8"	None	

NOTE: Erect beams with convex side up.



SPLICE ELEVATION

STATE OF OHIO  
DEPARTMENT OF HIGHWAYS  
BUREAU OF BRIDGES AND RAILROAD CROSSINGS

**SUPERSTRUCTURE DETAILS**

BRIDGE NO. HO-39-173  
OVER KILLBUCK CREEK

HOLMES CO.  
Sec. HOL-39-(16.69-17.29) STA. 37+09.00

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DJM	DJM	GPH	luc	BFG	9/27/51	