

F.A.P. 165-(2)
F.A.P. 582-H-(1)

FED. RD. DIST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR
10	OHIO	F.A.P. 165-(2) F.A.P. 582-H-(1)	1939

1
34

S.H. 9 SEC. FAYETTEVILLE (PT) (PT)
BROWN COUNTY

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

MILFORD-HILLSBORO ROAD

S.H. No. 9 SEC. FAYETTEVILLE PT, P PT.

BROWN COUNTY

PERRY TOWNSHIP

NET LENGTH VILLAGE OF FAYETTEVILLE 1.452 MILE
NET LENGTH OF F.A.P. 582-H-(1) 766.92 LIN. FT. 1.452 MILE

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 traffic will be maintained as provided for on these plans and estimates.

The right of way necessary for this improvement will be provided by the State of Ohio.

Approved _____
Date _____ Resident District Deputy Director

Approved Arthur D. Peake P.E. # 4246
Date 1/18/39 Resident Division Deputy Director

Approved _____
Date _____ Chief Engr. Bureau of Maintenance.

Approved W.S. Wideman P.E. 2629
Date 9/8/39 Chief Engr. Bureau of Bridges

Approved J.P. Jones P.E. 25
Date 9-12-39 Chief Engr. Location & Right of Way

Approved J.P. Jones
Date 9-12-39 First Asst. Director & Chief Engr.

Approved R.H. C. Beigther
Date 9-12-39 Director of Highways.

RECOMMENDED FOR APPROVAL

DISTRICT ENGINEER
PUBLIC ROADS ADMINISTRATION
FEDERAL WORKS AGENCY

APPROVED

COMMISSIONER
PUBLIC ROADS ADMINISTRATION
FEDERAL WORKS AGENCY

CONSTRUCTION BUREAU
AUG 13 1939
GROUND PHOTOLAB

CONVENTIONAL SIGNS

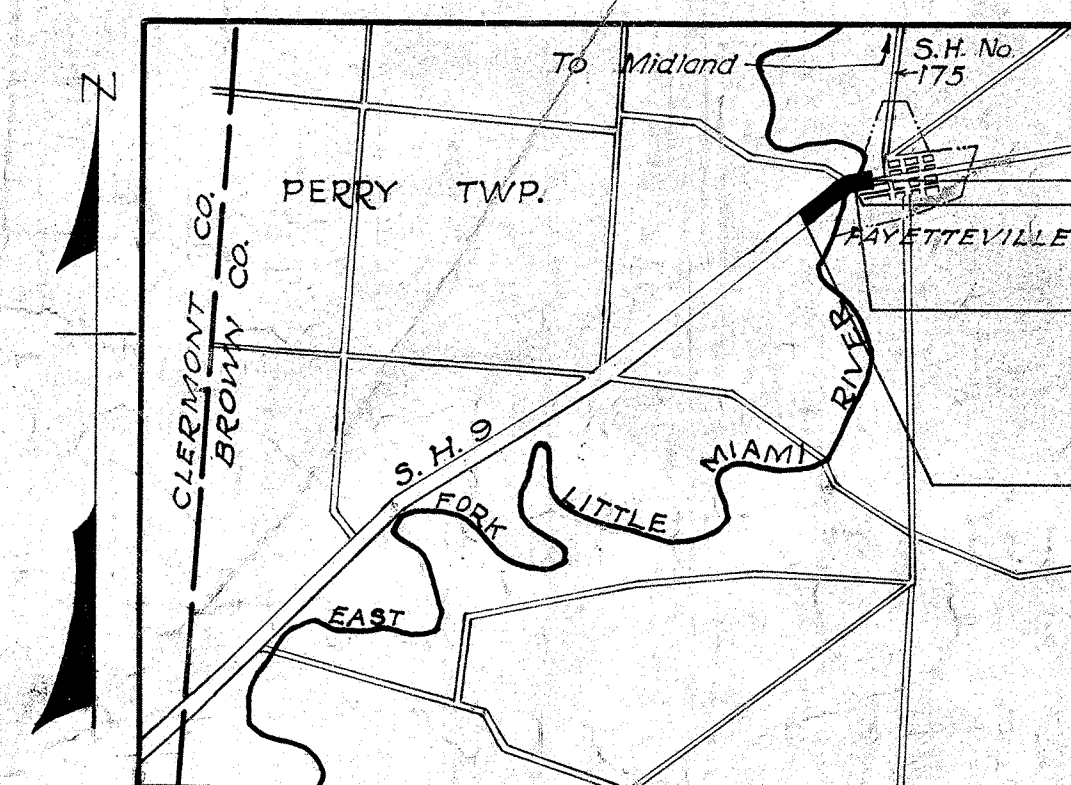
TOWNSHIP LINE
CENTER LINE
FENCE LINE

INDEX OF SHEETS

TITLE SHEET	1
TYPICAL SECTION	2
PLAN & PROFILE	3 & 4
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CROSS SECTIONS	6 to 12
STRUCTURES UNDER 20' SPAN	16 to 21 & 17-A
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LINE DATA

BEGIN F.A.P. 165-(2) STA. 206+00
END F.A.P. 165-(2) " 236+17.96
LENGTH OF F.A.P. 165-(2) 3017.96 LIN. FT.
DEDUCTIONS OR ADDITIONS NONE
NET LENGTH OF F.A.P. 165-(2) 3017.96 LIN. FT. = 0.571 MILE
APPROACH STA. 205+00 TO 206+00
NET LENGTH OF APPROACH = 100.00 LIN. FT.
BEGIN F.A.P. 582-H-(1) STA. 236+17.96
END F.A.P. 582-H-(1) " 243+84.88
LENGTH OF F.A.P. 582-H-(1) 766.92 LIN. FT.
DEDUCTIONS OR ADDITIONS NONE
NET LENGTH OF F.A.P. 582-H-(1) 766.92 LIN. FT. = 0.145 MILE
NET LENGTH OF WORK = 3884.88 LIN. FT. = 0.735 MILES



LOCATION MAP

PORTION TO BE IMPROVED
STATE HIGHWAYS
COUNTY ROADS
DELIVERY POINT
AVERAGE HAUL
MIDLAND 9 MILES

SUPPLEMENTAL SPECIFICATIONS
-No- T-110
-Date- (Rev. 8-3-36)

SCALES

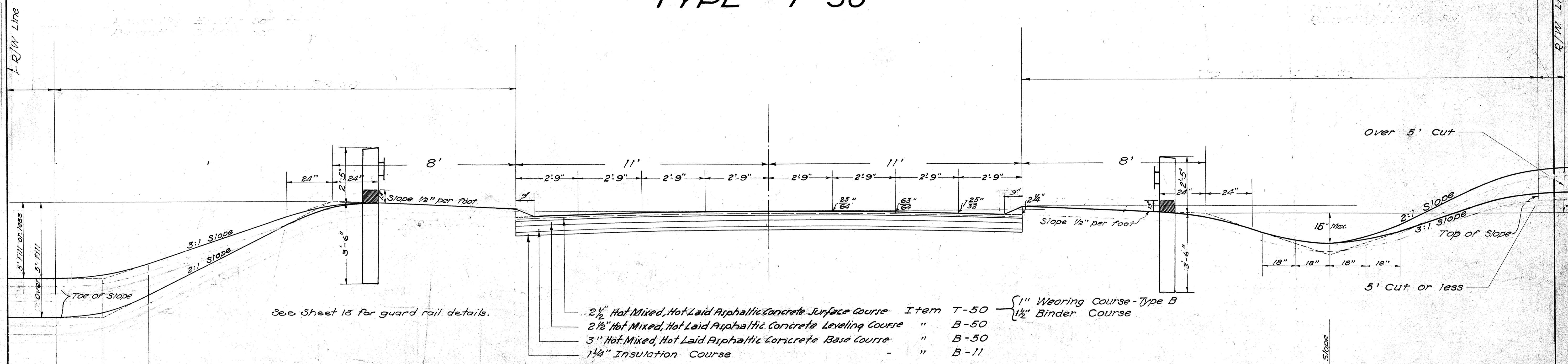
PLAN _____ " = 100'
PROFILE - VERTICAL _____ " = 10'
" HORIZONTAL _____ " = 100'
CROSS SECTIONS _____ " = 5'

STANDARD DRAWINGS			
S-27 P.C. 1	3-1-39	E-5 No 1	8-25-39
S-27 P.C. 2	3-1-39	AS-35	3-8-39
S-27 P.C. 3	3-1-39	MBD-36	3-8-39
F-1, 2, 3, 4, & 5	3-1-39	CSS-35	9-6-35
G-7.07	10-1933		
B-T 50-70-71 E No. 1	10-1933		
LBC-33	3-8-39		
SBC-34	3-8-39		

FILE NO. 289
BROWN, S.H. 9, SEC. D(P) & FAYETTEVILLE (P)
Date of Letting 1939
Contract No.

TYPICAL SECTION

TYPE T-50

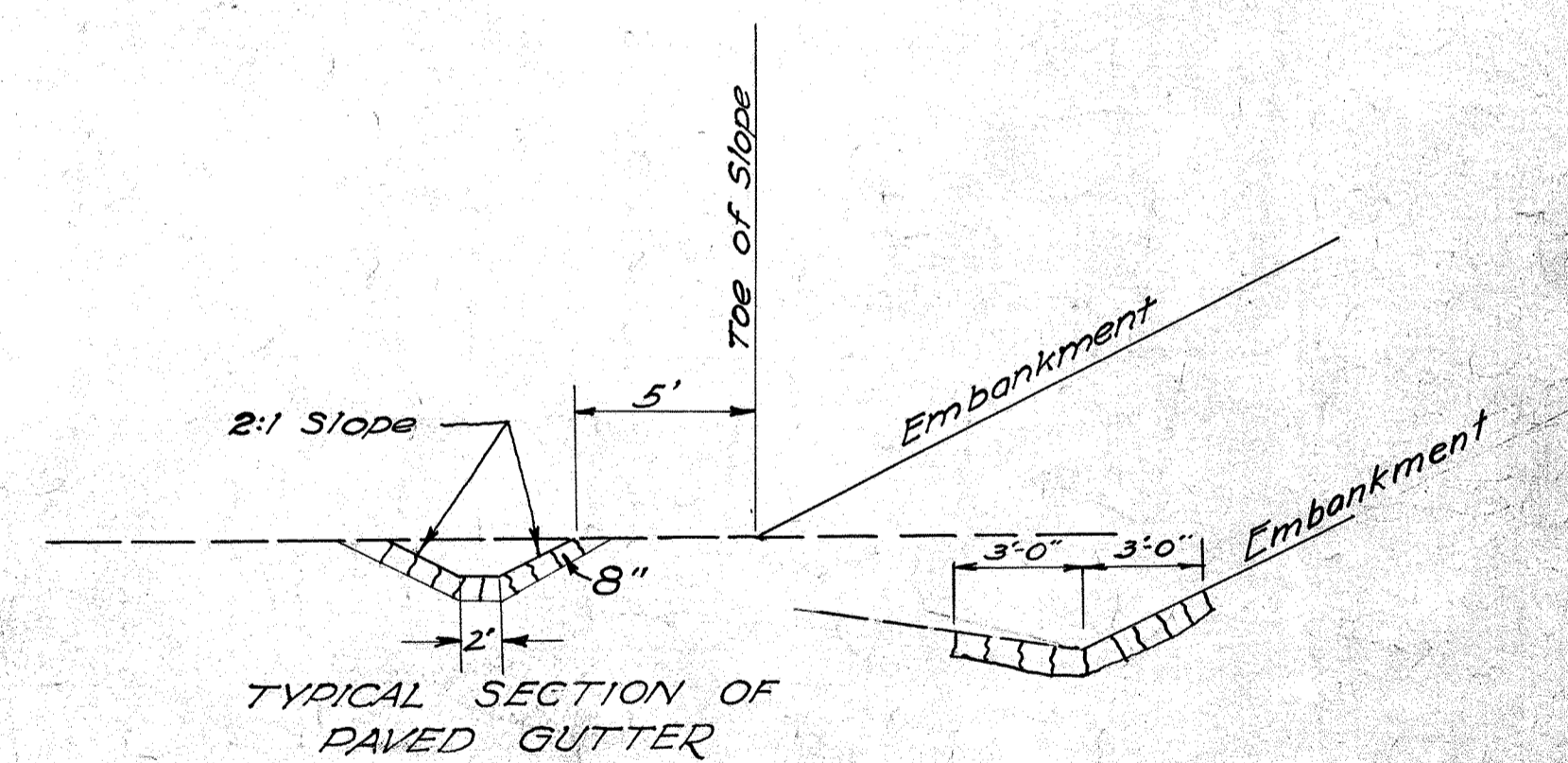


See Sheet 15 for guard rail details.

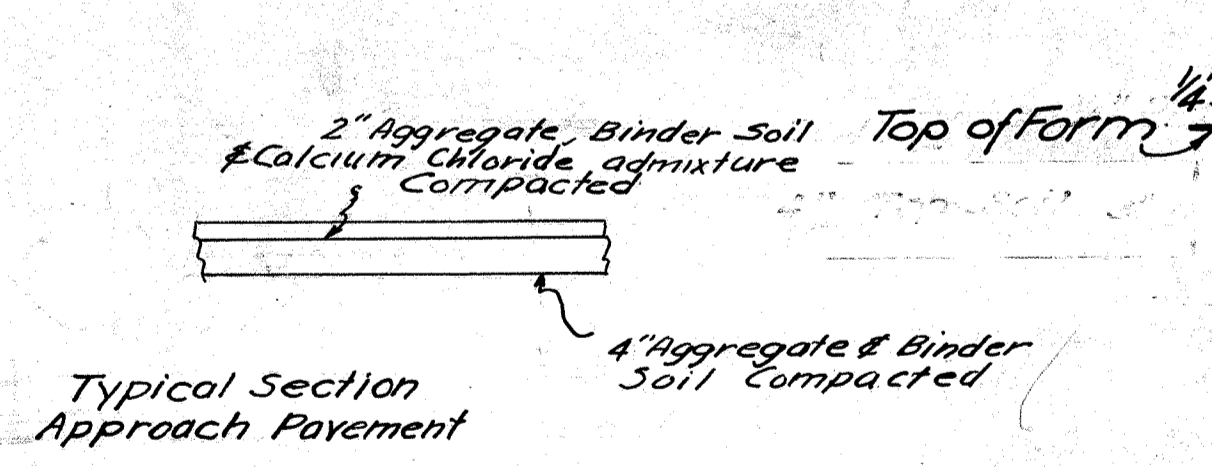
- 2 1/2" Hot Mixed, Hot Laid Asphaltic Concrete Surface Course Item T-50
 - 2 1/2" Hot Mixed, Hot Laid Asphaltic Concrete Leveling Course " B-50
 - 3" Hot Mixed, Hot Laid Asphaltic Concrete Base Course " B-50
 - 1 1/4" Insulation Course " B-11
- 1" Wearing Course - Type B
1/2" Binder Course

TYPICAL SECTION STA. 206+00 to 243+84.88

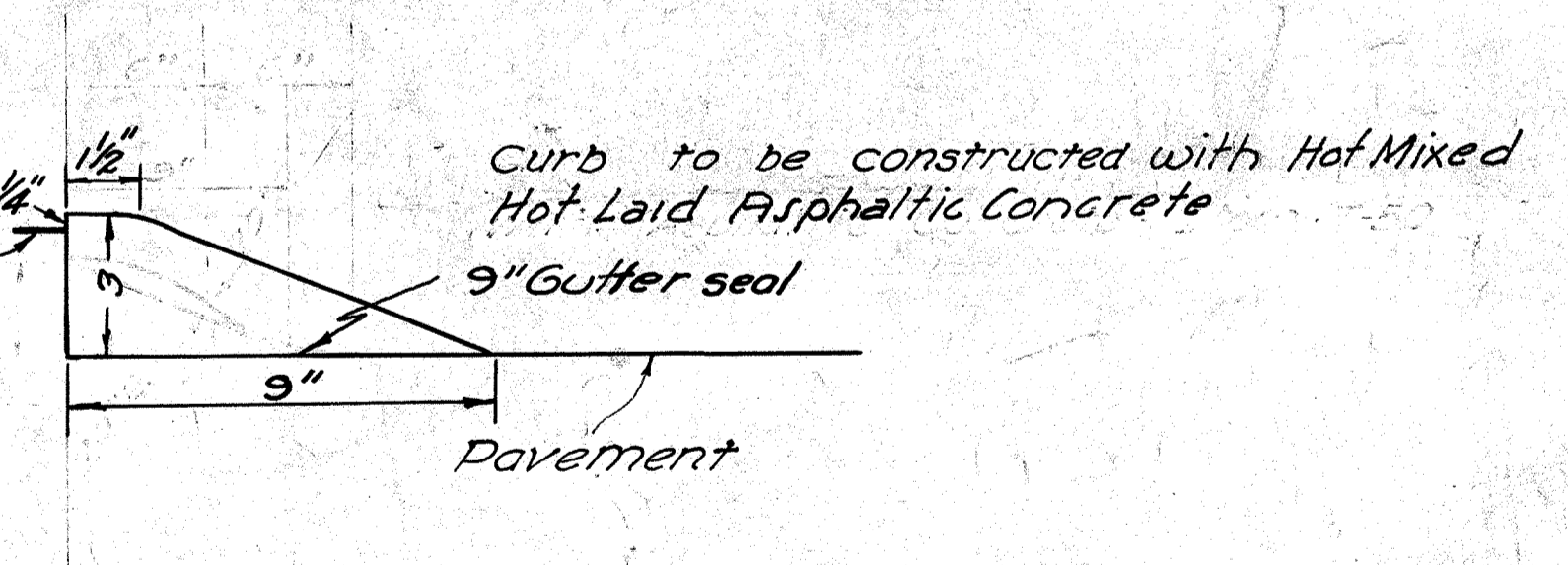
NOTE - For detail of connection of old pavement to new pavement, Sta. 205 to Sta 207, see sheet No. 16



TYPICAL SECTION OF PAVED GUTTER

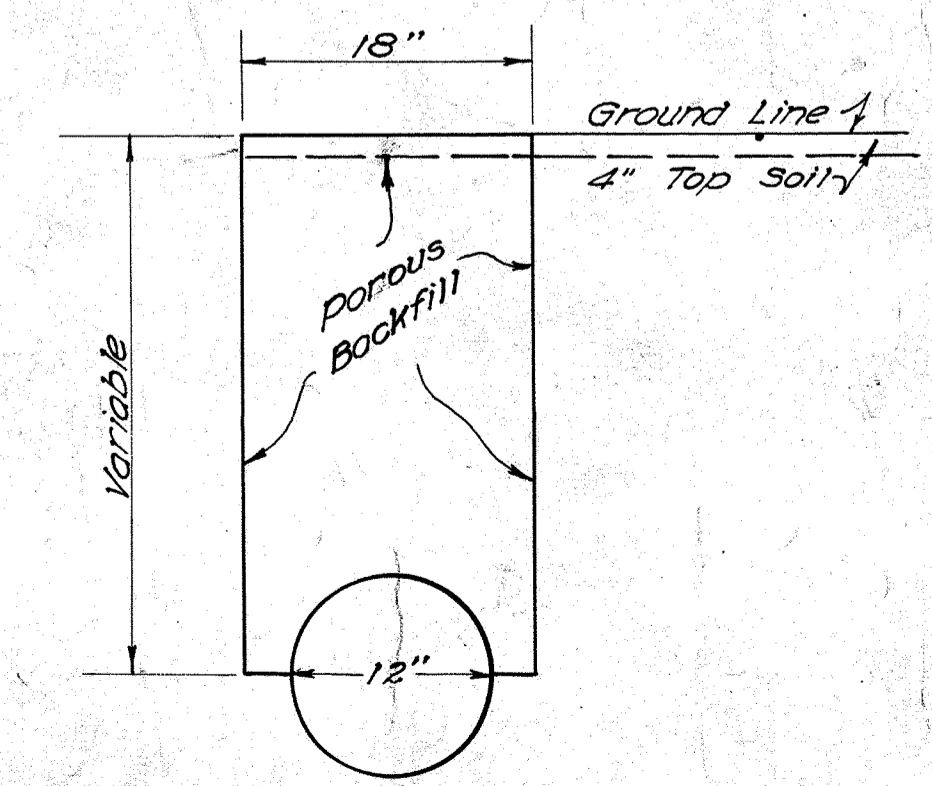


Typical Section Approach Pavement



DETAIL OF CURB
Scale: 3" = 1'-0"

NOTE
If the contractor arranges his operations so as to be able to use the temporary embankment in the roadway fill, an equivalent amount of borrow will be deducted from final quantities.



TYPICAL SECTION OF DITCH FOR ROADWAY DRAINAGE

The thickness of the subgrade in cuts to be compacted on this project will be eight inches, loose measurement; the width will be the width of the pavement plus eighteen inches on each side of the road pavement.

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.

The Contractor shall maintain two way traffic over this project at all times. He shall conduct his operations so as to inconvenience the traveling public as little as possible. Temporary traffic lanes shall be constructed of T-110 material and treated with a dust laying chemical. The traffic lanes shall be maintained to the satisfaction of the Engineer. All the above items except the T-110 material and the dust laying chemical will be included for payment in the lump sum bid for maintaining traffic, including lights, signs, barricades and watch men, twenty four hour service.

DRAIN BASIN F.A.P. 165(2)						PAVED GUTTER F.A.P. 165(2)				
Item No.	Station		Rtor Lt.	Std. No. / Drain Basin Unit	Rain. Conc. Drain Outlet Lin. Ft.	Type of Terminal	Item No.	Station		Paved Gutter Lin. Ft.
	From	To						From	To	
1-B	211+08	211+35	LI	1	41	R	1-G	205+50	208+20	270
2-B	212+27	212+54	RT	1	64	R	2-G	209+00	211+50	250
3-B	220+53.96	220+82.96	LI	1	21	R	3-G	211+60	213+50	190
4-B	220+84.18	220+91.18	RT	1	21	R				
Total										710

See Sheet #20 for details.

TREE REMOVAL F.A.P. 165(2)			
Item No.	Station		
	From	To	
1-T	208+70	212+24	12
Total			12

DRIVES & ROAD APPRS F.A.P. 165(2)				
Item No.	Sheet No.	Station	T-11 Pavt. Sq. Yds.	12" Pipe Lin. Ft.
1-A	13	208+21.6	65.8	20
2-A	13	212+24	73.6	82
Total			139.4	30.5

STRUCTURES 20' SPAN & UNDER F.A.P. 165(2)														
Item No.	Sheet No.	Station	Perus. at Fill Cuts	Type	Size	18" Pipe L. Ft.	Excavation Struc. C.Y.	Chon. C.Y.	Class. Conc. C.Y.	Class. Conc. C.Y.	Dowel Holes Unit	Removal Exist. C&C Conc. Box Unit	Reinf. Steel Lbs.	Waterproof. Sp. Yds.
3-C	19	220+89	Pipe	18"	36	26	2	1.3			4		9	
2-C	17-17A	211+90	Box cul.	18"	36	105	171						27651	205107
1-C	16	208+10	Pipe	18"	58	7	0.8	3.3	8				18	
Totals					94	469	107	173.1	3.3	12	1		27678	205107

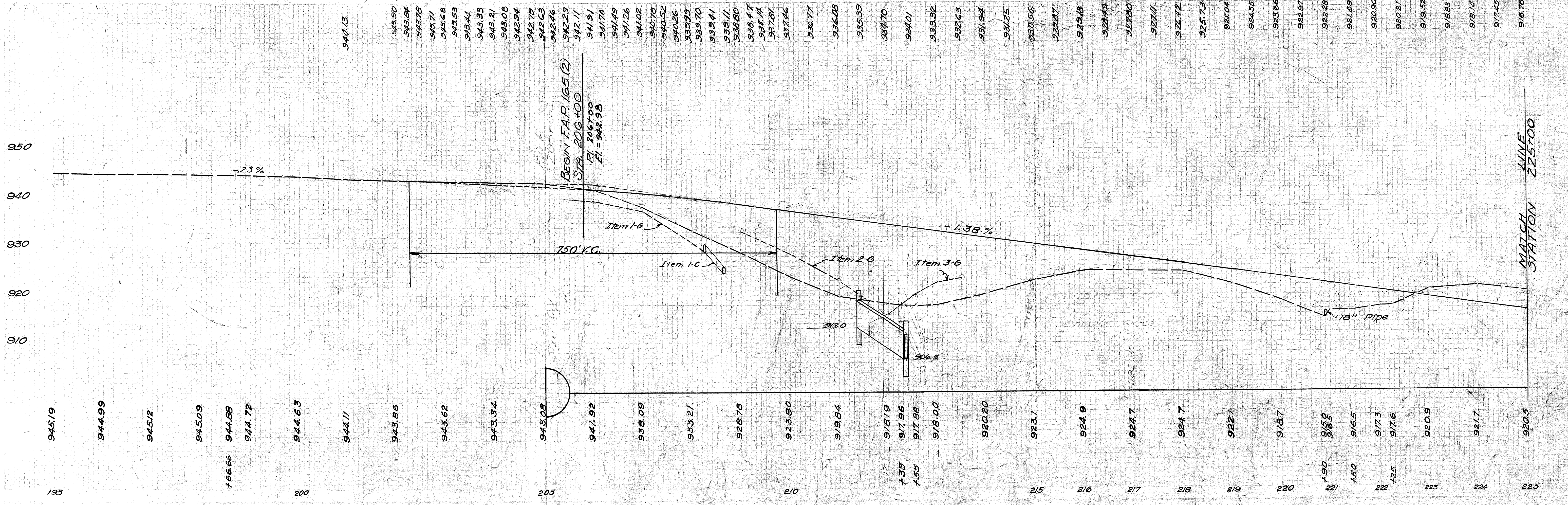
Marker to be furnished and erected on the Rt. by the State before acceptance of this project.

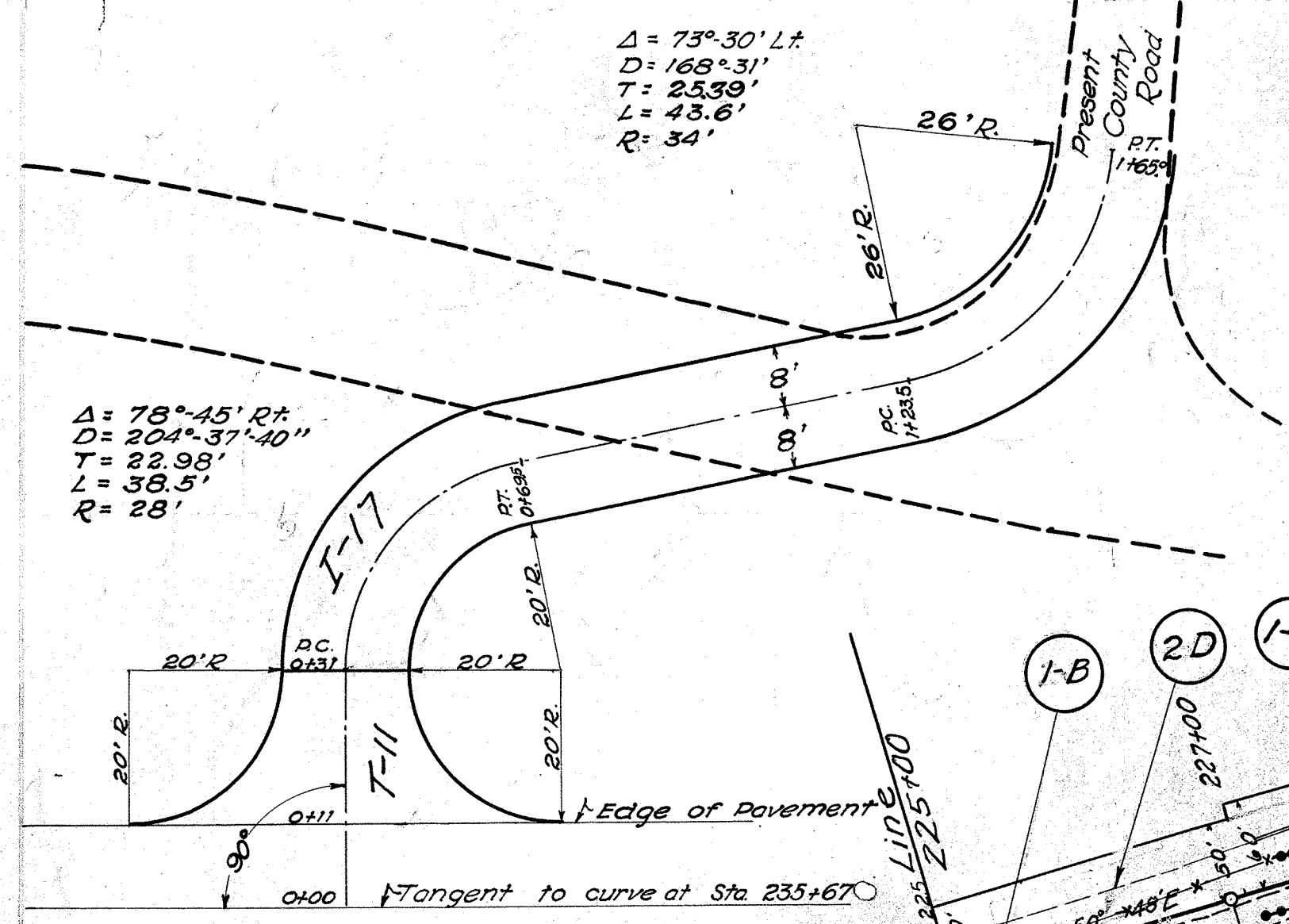
STA. 206+00 OF F.A.P. 165 (2) =
 STA. 206+07 OF F.A.P. 165

Note - For details of Pavement connection see sheet #16

GUARD RAIL				
Item No.	From Station	To Station	Side	Lin. Ft.
1-GR	206+82	208+10	Rt.	128
2-GR	206+84	215+16	Lt.	832
3-GR	208+72	211+92	Rt.	320
4-GR	212+34	216+18	Rt.	384
TOTAL				1664

TYPICAL SECTION EXISTING PAVEMENT AT BEGINNING OF PROJECT





PLAN OF COUNTY ROAD APPROACH LEFT OF STA. 235+67 SCALE: 1"=20'

STRUCTURES 20' SPAN & UNDER F.A.P. 165(2)								
Item No	Page No	Station	Rt-Lt of & Type	Size	Class G Corp.	Keim Stages	Dowel Holes	Excavation
1-C	20	226+68.5	Rt+Lt	3x2' Box	11.3	1102	28	7 5
Total					11.3	1102	28	7 5

DRAIN BASIN							
Item No	Station	Lt or Rt	Std. #1 Drain Basin	Std. #2 Drain Basin	Rein. C. Unit	Type C. Unit	Type of Terminal
F.A.P. 165(2)							
1-B	225+09	225+36	Lt	1	6	1	
2-B	225+09	225+36	Rt	1	6		B
3-B	223+30	223+50	Rt	1	33		B
Total				2	45	1	
F.A.P. 582-H(1)							
4-B	239+10	239+37	Rt	1	42		B
Total				1	42		

ROADWAY DRAINAGE F.A.P. 582-H(1)					
Item No	Station	Remove 5" Pipe	10" Pipe Inc. 10' V. SR L.F.	10" Pipe Inc. 10' V. SR L.F.	10" Pipe Under Drive
1-D	241+80	213+84	61	184	20
3-D	239+80	243+50			370
Total			61	184	20

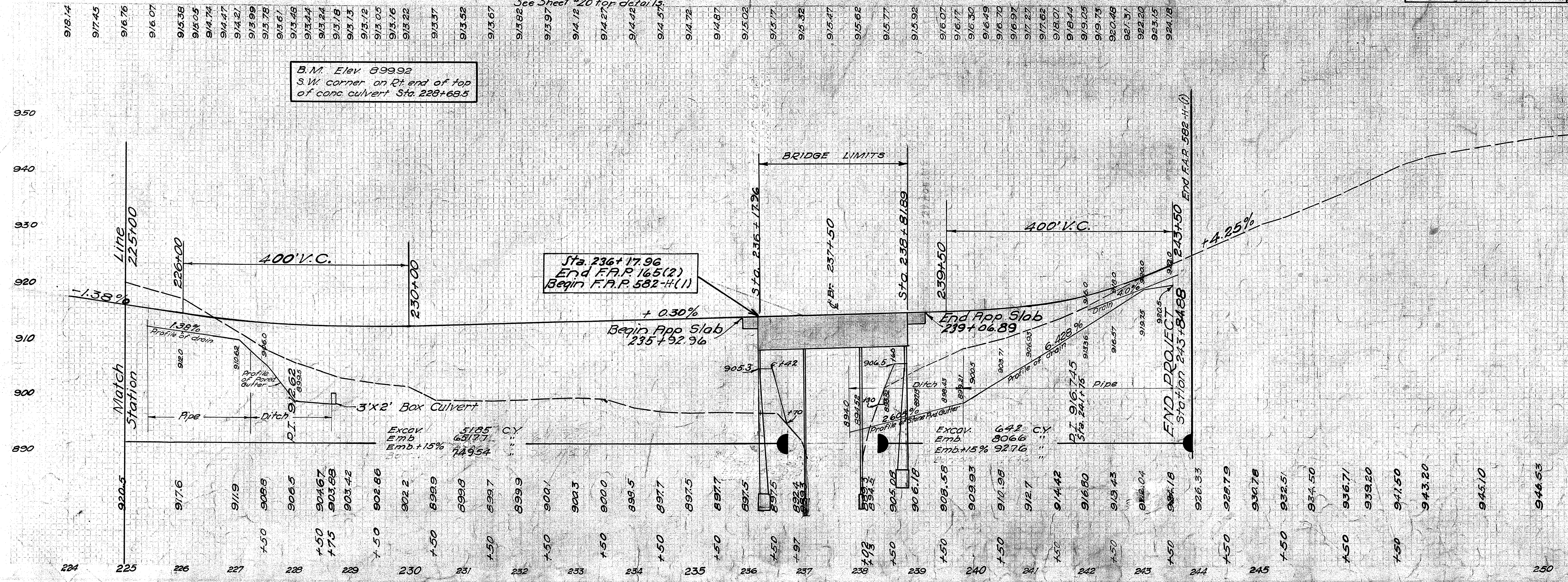
PRIVATE DRIVES & ROAD APPR'S F.A.P. 165(2)				
Item No	Station	FIT Mat. Cu. Yds.	Type Fill	Sheet No.
1-A	230+00	21	41.3	14
2-A	235+67	40	54.6	14
Total		61	95.9	
F.A.P. 582-H(1)				
3-A	240+08	16	63.5	15
4-A	242+00	3	41.3	15
Total		19	104.8	

PAV'T REMOVAL			
Item No	Station	Rem. Sq. Yds.	
1-R	231+50	236+97	1280
Total			1280
F.A.P. 582-H(1)			
2-R	241+50	243+88	522
Total			522

GUARD RAIL				
Item No	From Station	To Station	Side	Lin. Ft.
1-GR	227+10	229+92	Rt.	272
2-GR	227+20	1+65 (CR)	Lt.	976
3-GR	230+22	235+98	Rt.	576
4-GR	1+65 (CR)	236+38	Lt.	208
TOTAL F.A.P. 165(2)				2032
5-GR	238+62	239+90	Rt.	128
6-GR	240+26	241+38	Rt.	112
7-GR	239+02	241+90	Lt.	288
TOTAL F.A.P. 582-H(1)				528

TREE ROOT AERATION			
STATION	TREE SIZE	No. 3/4" CUPS	
242+28 Lt	10" M.	14	
242+39 Lt	18" Hch	14	
242+55 Lt	11" M.	14	
242+71 Lt	12" M.	19	
242+86 Lt	16" M.	24	
TOTAL			85

Aggregate for tree root aeration shall be performed according to Item L 805



B.M. Elev 89992 S.W. corner on Rt end of top of conc culvert Sta. 223+68.5

Sta. 236+17.96 End F.A.P. 165(2) Begin F.A.P. 582-H(1)

Begin App Slab 235+92.96

End App Slab 239+06.89

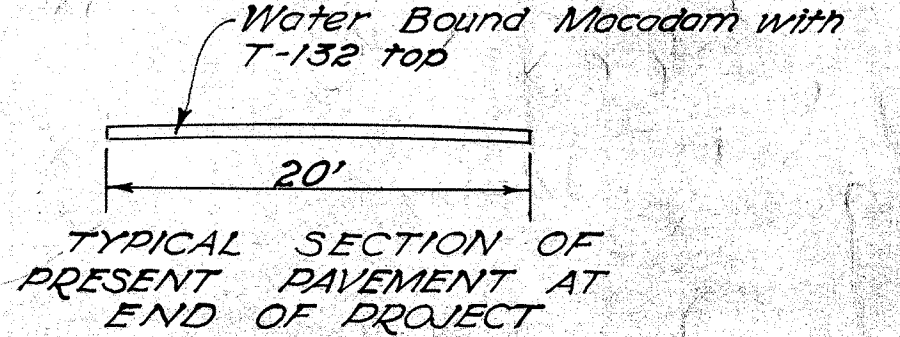
END PROJECT Station 243+84.88

PROPOSED STRUCTURE
 Type: Continuous Steel Girders with Concrete deck and substructure
 Spans: 80'-100'-80' % brgs.
 Roadway: 25'+3'0" Sidewalk N. side.
 Loading: H-15-33
 Skew: 40° L.F.
 Wearing Surface: 3/4" Mono Conc.
 Approach Slabs: 25' Long
 Alignment: 2° curve Rt
 Superelevation: 0.042' per ft.

EXISTING STRUCTURE TO BE REMOVED
 Type: Thru Truss
 Span: Clear Span 149.8' 0 to 0 154.0'
 Rwy Clear: 17.0' Strip Floor (Bit W.S.)
 Abut: Stone (Cunited)

Markers to be furnished and erected on the Lt & Rt by STATE before acceptance of this project.

Marker to be furnished and erected on the Left by STATE before acceptance of this project.



STONE PAVED GUTTER F.A.P. 165(2)			
Item No	Station	Pavement Lin. Ft.	
1-B	227+00	228+70	150
2-B	237+80	239+80	200
Totals			350

See Sheet #20 for details.

Excav. Emb. 5185 C.Y. Emb.+15% 74954

Excav. Emb. 642 C.Y. Emb.+15% 9276

Excav. Emb. 8066 C.Y. Emb.+15% 9276

CURVE TABLE

PC. 226+89.05				RT. 242+34.88			
2°-00' CURVE - RT.				2°-00' CURVE - RT.			
+	ELEV. LEFT EDGE PAV'T.	WIDTH	STATION	GRADE	WIDTH	ELEV. RIGHT EDGE PAV'T.	-
.00	916.03	11'	225+39.06	916.22	11'	916.03	.19
.01	915.89		+50	916.07		915.88	
.02	915.84		+54.05	916.01		915.82	
.07	915.69		+69.05	915.81		915.62	
.11	915.64		+75	915.72		915.53	
.17	915.58		+84.05	915.60		915.47	
.29	915.48		+99.05	915.38		915.19	
.29	915.48		226+00	915.38		915.19	
.46	915.45		+14.05	915.18		914.99	
.58	915.44		+25	915.05		914.86	
.63	915.44		+29.05	915.05		914.81	
.75	915.37		+44.05	914.81		914.62	
.80	915.35		+50	914.74		914.55	
.85	915.29		+59.05	914.63		914.44	
.90	915.19		+74.05	914.48		914.29	
.90	915.18		+75	914.47		914.28	
.92	915.05		227+00	914.32		914.13	
	914.94		227+00	914.21		914.02	
	914.72		+25	913.99		913.80	
	914.51		+50	913.78		913.59	
	914.34		+75	913.61		913.42	
	914.21		228+00	913.48		913.29	
	914.17		+25	913.44		913.25	
	913.97		+50	913.24		913.05	
	913.91		+75	913.18		912.99	
	913.86		229+00	913.13		912.94	
	913.85		+25	913.12		912.93	
	913.78		+50	913.05		912.86	
	913.69		+75	913.16		912.97	
	913.95		230+00	913.22		913.03	
	914.03		+25	913.30		913.11	
	914.10		+50	913.37		913.18	
	914.18		+75	913.45		913.26	
	914.25		231+00	913.52		913.33	
	914.33		+25	913.60		913.41	
	914.40		+50	913.67		913.48	
	914.48		+75	913.75		913.56	
	914.55		232+00	913.82		913.63	
	914.63		+25	913.90		913.71	
	914.70		+50	913.97		913.78	
	914.78		+75	914.05		913.86	
	914.85		233+00	914.12		913.93	
	914.93		+25	914.20		914.01	
	915.00		+50	914.27		914.08	
	915.08		+75	914.35		914.16	
	915.15		234+00	914.42		914.23	
	915.23		+25	914.50		914.31	
	915.30		+50	914.57		914.38	
	915.38		+75	914.65		914.46	
	915.45		235+00	914.72		914.53	
	915.53		+25	914.80		914.61	
	915.60		+50	914.87		914.68	
	915.68		+75	914.95		914.76	
	915.75		236+00	915.02		914.83	
	915.83		+25	915.10		914.91	
	915.90		+50	915.17		914.98	
	915.98		+75	915.25		915.06	
	916.05		237+00	915.32		915.13	
	916.13		+25	915.40		915.21	
	916.20		+50	915.47		915.28	
	916.28		+75	915.55		915.36	
	916.35		238+00	915.62		915.43	
	916.43		+25	915.70		915.51	
	916.50		+50	915.77		915.58	
	916.58		+75	915.85		915.66	
	916.65		239+00	915.92		915.73	
	916.73		+25	916.00		915.81	
	916.80		+50	916.07		915.88	
	916.88		+75	916.17		915.98	
	917.03		240+00	916.30		916.11	
	917.22		+25	916.49		916.30	
	917.43		+50	916.70		916.51	
	917.70		+75	916.97		916.78	
	918.00		241+00	917.27		917.08	
	918.35		+25	917.62		917.43	
	918.74		+50	918.01		917.82	
	919.17		+75	918.44		918.25	
	919.78		242+00	919.05		918.86	
	920.46		+25	919.73		919.54	
.92	920.75		243+00	920.02		919.83	
.90	921.19		+49.88	920.48		920.29	
.90	921.19		+50	920.48		920.29	
.85	921.62		+64.88	920.96		920.77	
.79	921.91		+75	921.31		921.12	
.75	922.03		+79.88	921.47		921.28	
.63	922.45		+94.88	922.01		921.82	
.57	922.58		243+00	922.20		922.01	
.46	922.84		+09.88	922.57		922.38	
.29	923.25		+24.88	923.15		922.96	
.29	923.25		+25	923.15		922.96	
.17	923.74		+39.88	923.76		923.57	
.10	924.09		+50	924.18		923.99	
.07	924.27		+54.88	924.39		924.20	
.02	924.85		+69.88	925.02		924.83	
.01	925.06		+75	925.24		925.05	
.00	925.47	11'	+84.88	925.66	11'	925.47	.19

-NOTE -
Elevation of top of curb is 3" higher than the elevations shown in this table for edge of pavement.

END AREA CUT FILL
 CUT FILL CUT FILL

0 201 0 770
 0 215

Sta. 221+00

0 554

0 84

0 259

0 56

0 289

0 100

24 417

13 125

24 904

0 363

0 201

0 739

0 3367

0 1079

0 2219

0 1583

0 1225

0 1423

923.66
 220+00
 918.7

924.04
 219+00
 922.1

926.42
 218+00
 924.7

927.83
 217+00
 924.7

929.18
 216+00
 924.9

930.56
 215+00
 923.7

931.94
 214+00
 920.2

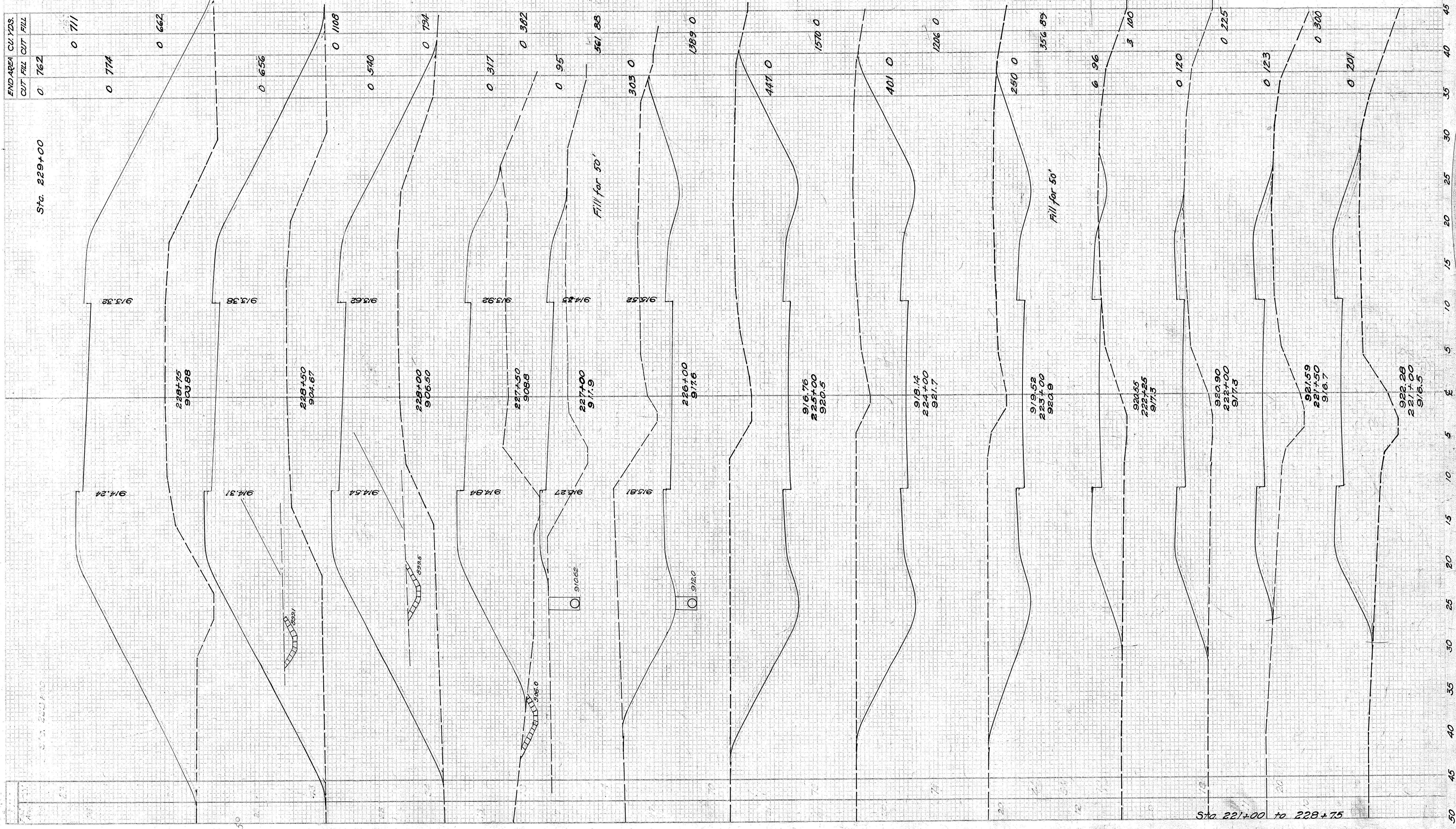
933.32
 213+00
 918.0

933.94
 212+55
 917.9

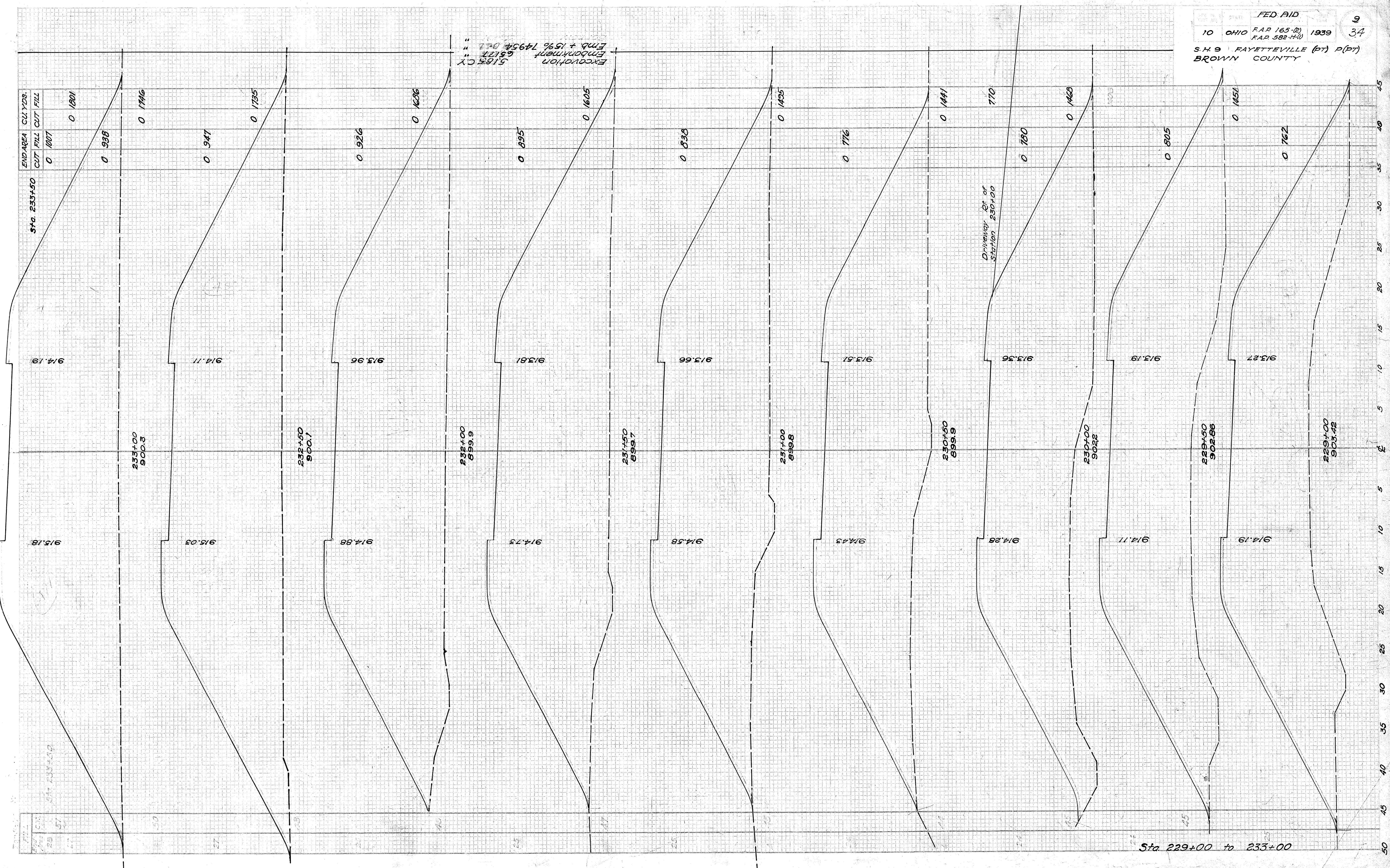
934.24
 212+35
 918.0

Sta. 215+00 to Sta. 220+00

40 35 30 25 20 15 10 5 5 10 15 20 25 30 35 40 45 50

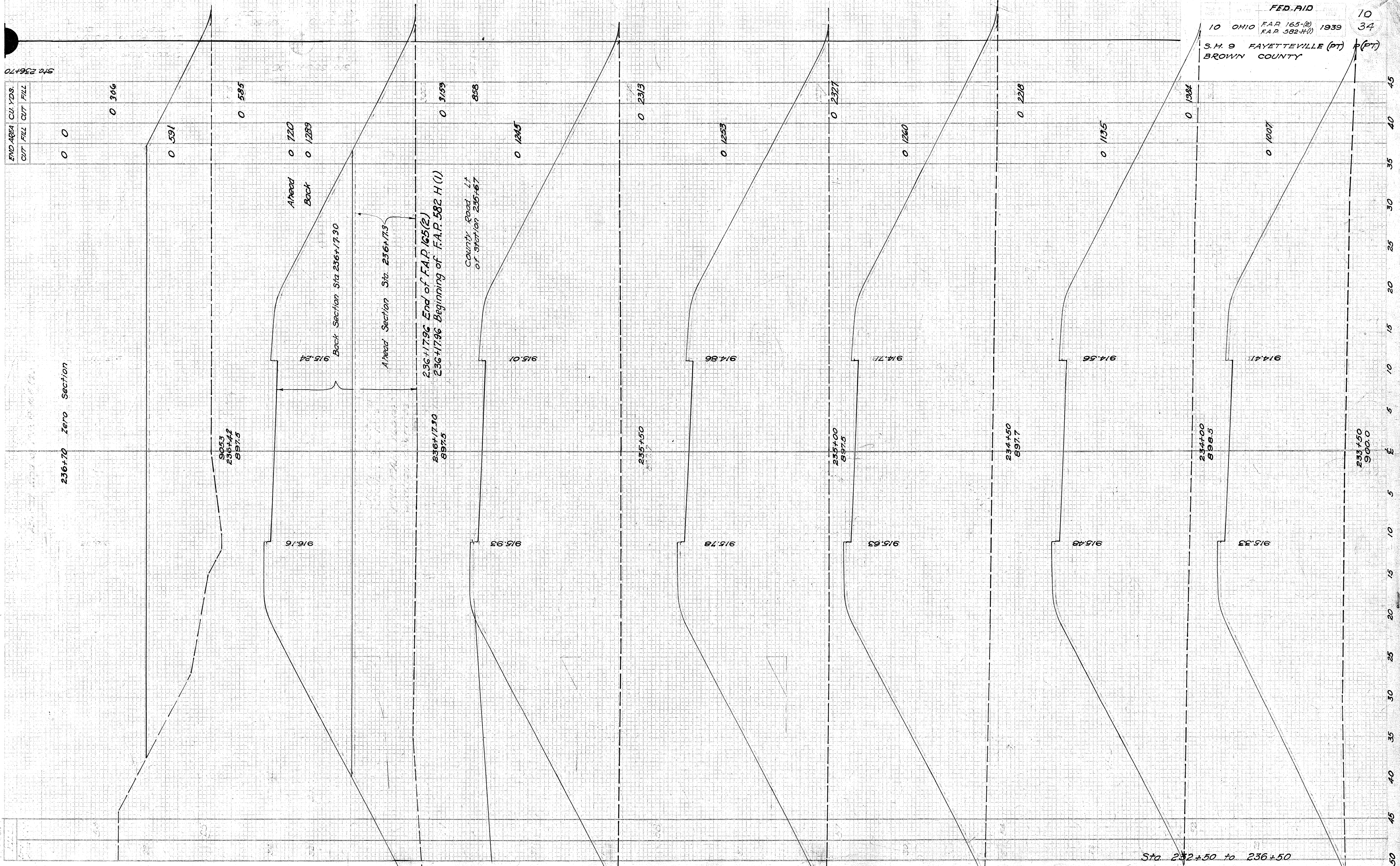


Sta. 221+00 to 228+75



END AREA CU. YDS.
 CUT FILL CUT FILL

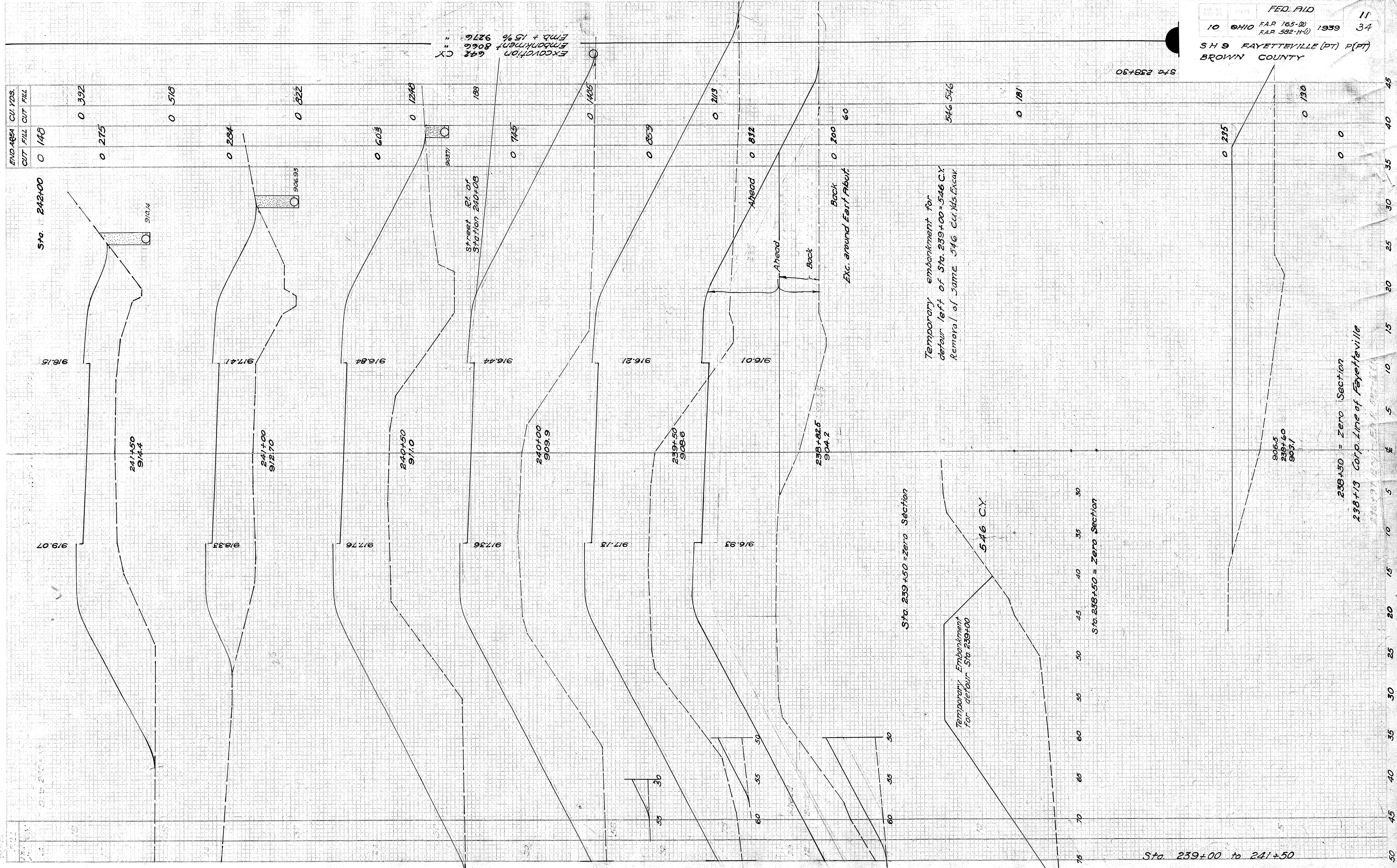
236+70 zero Section



Station	Cut (CU. YDS.)	Fill (CU. YDS.)
232+50	0	0
233+00	0	0
233+50	0	0
234+00	0	0
234+50	0	0
235+00	0	0
235+50	0	0
236+00	0	0
236+50	0	0

Sta. 232+50 to 236+50

END AREA CU. YDS.	
CUT	FILL
0 148	0 392
0 275	0 510
0 284	0 522
0 603	0 1248
0 745	0 1465
0 859	0 2113
0 812	0 100
0 181	0 130
0 235	0 0
0 0	0 0



Sta. 238+30

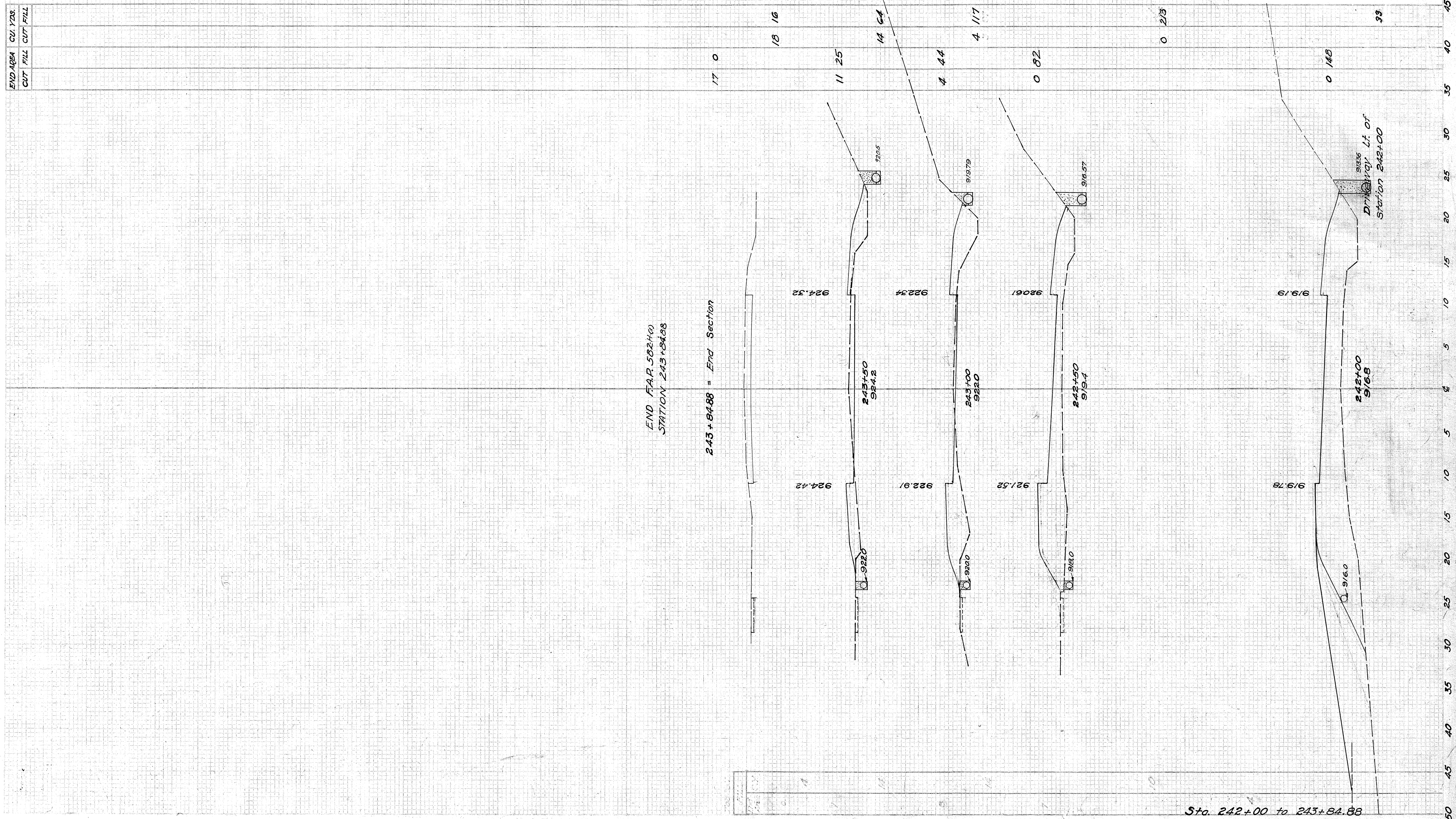
Sta. 239+50 = Zero Section

Sta. 238+50 = Zero Section

Sta. 239+00 to 241+50

238+50 = Zero Section
 238+13 Corp. Line of Fayetteville

END AREA
 CUT FILL
 CU. YDS.
 CUT FILL



END F.A.P. 582-F(1)
 STATION 243+84.88

243+84.88 = End Section

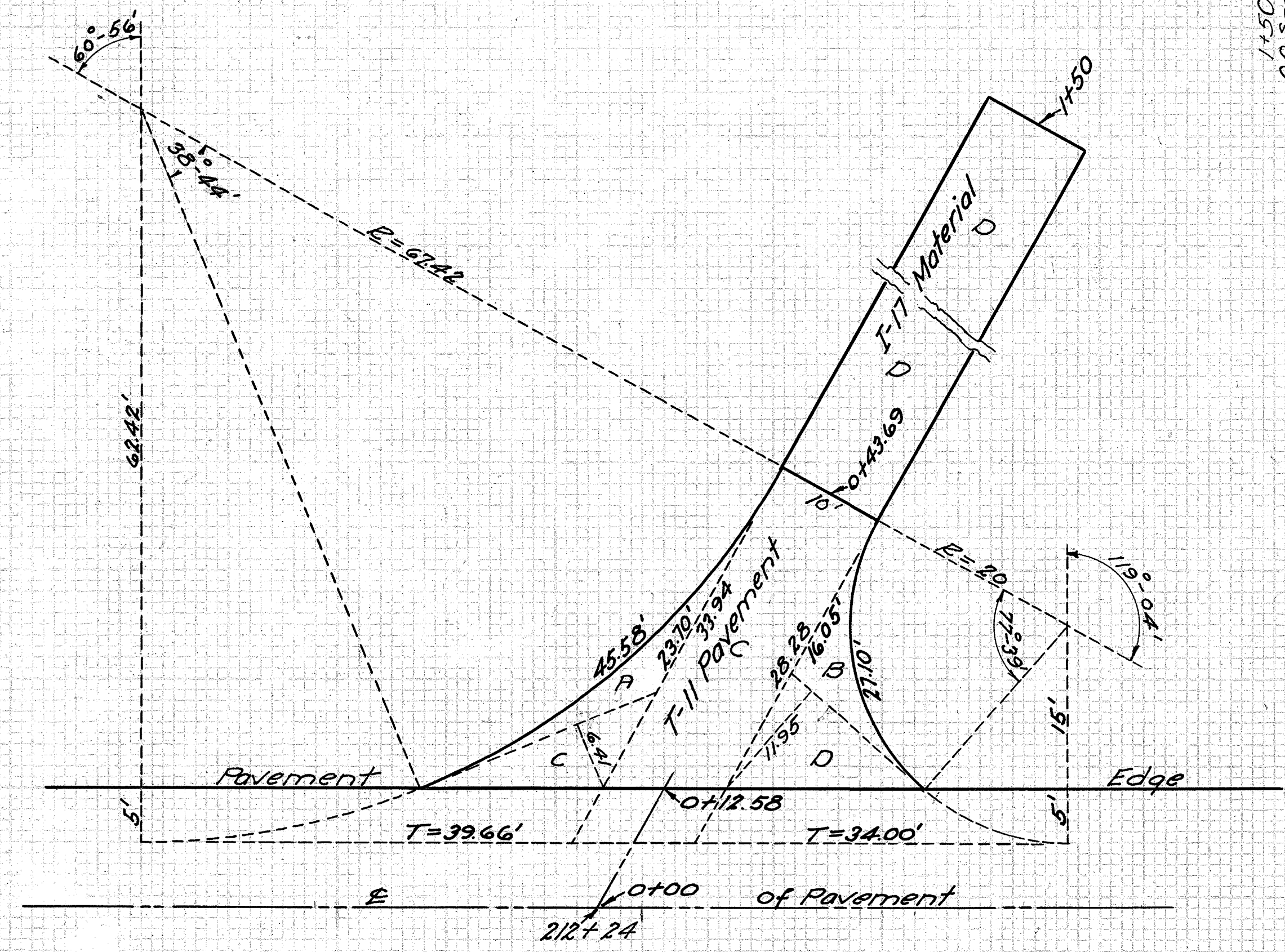
9136
 Dr. King, Lt. of
 Station 242+00

Sta. 242+00 to 243+84.88

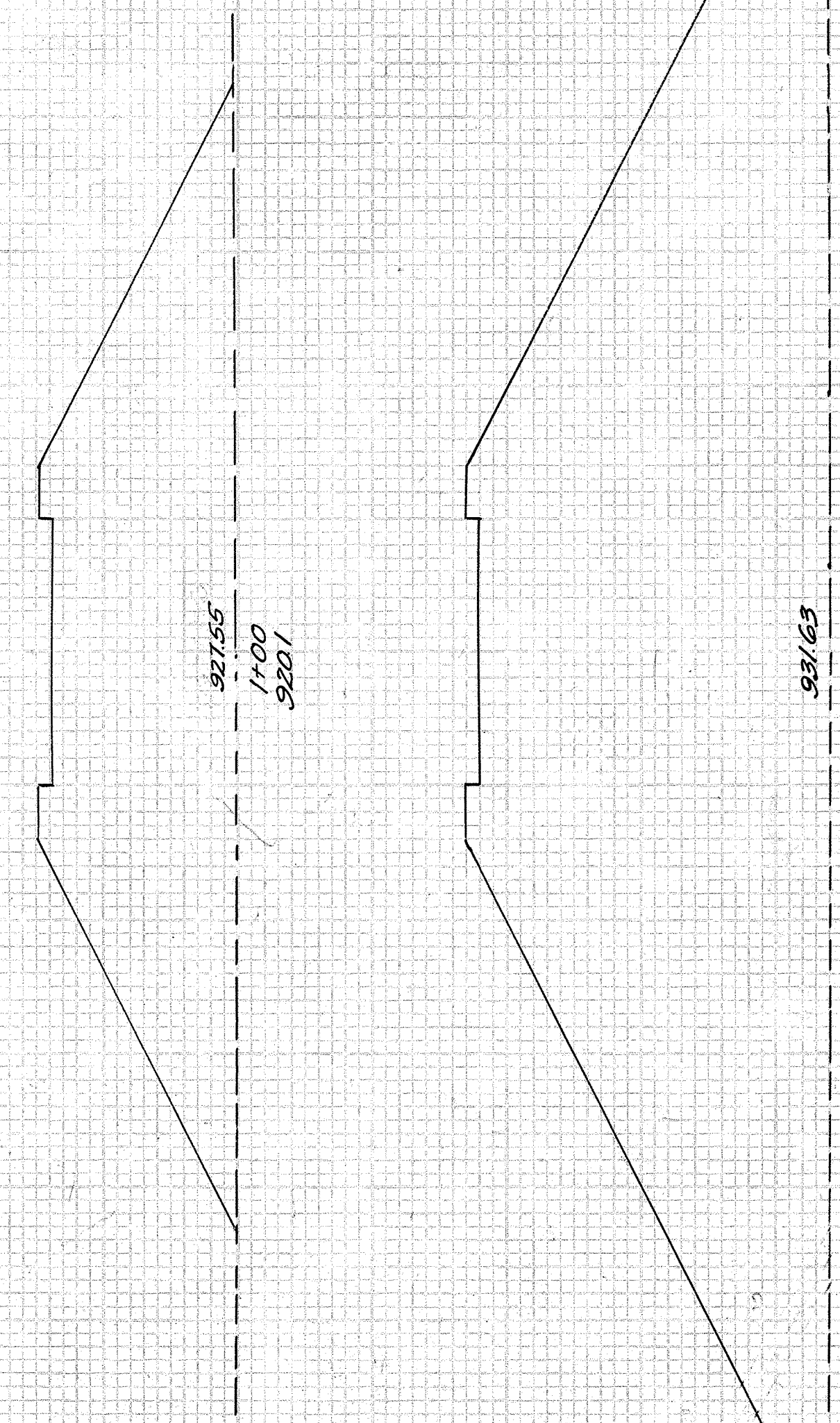
-CALCULATIONS-

Area D $\frac{16.05 \times 11.95}{2} = 95.90 \text{ Sq. Ft.}$
 Area C $\frac{23.70 \times 6.41}{2} = 75.96 \text{ Sq. Ft.}$
 Area A $\frac{67.42 (23.70 - 45.58)}{2} = 61.35 \text{ Sq. Ft.}$
 Area B $\frac{20 (16.05 - 27.10)}{2} = 48.00 \text{ Sq. Ft.}$
 Area C $31.11 \times 10.0 = 311.10 \text{ Sq. Ft.}$
 Total T-11 Pavement = 592.31 Sq. Ft. or 65.8 Sq. Yds.

I-17 Material
 Area D $106.31 \times 10 \times 0.5 \div 27 = 20 \text{ Cu. Yds.}$



1+50
 0.0 Section



Note 12" pipe to be placed as directed by the engineer

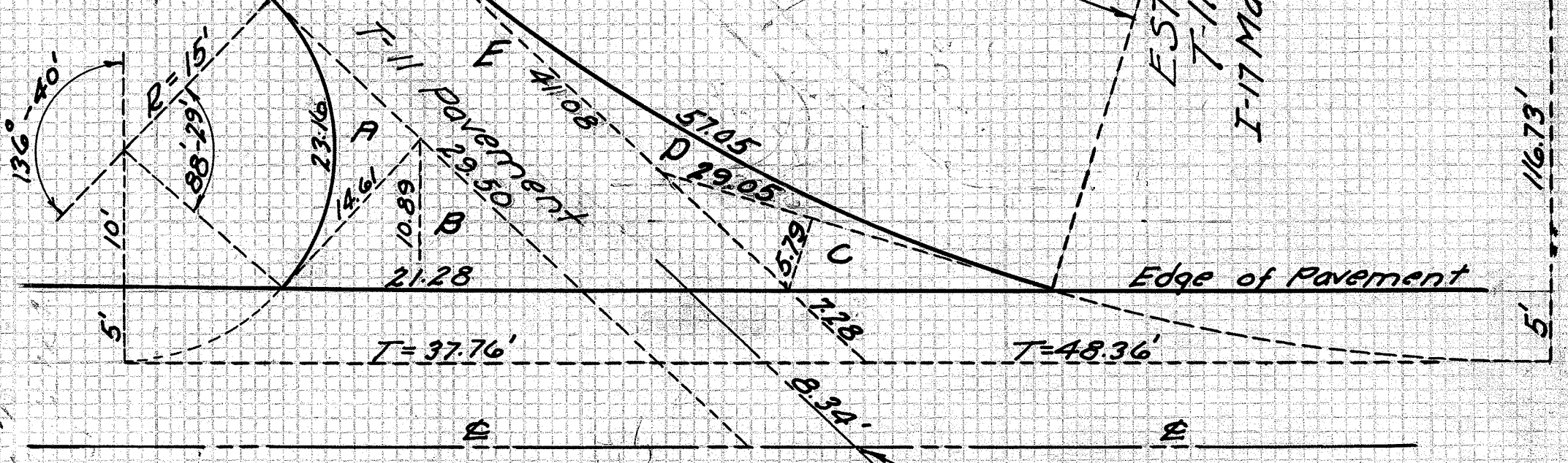
ESTIMATED QUANTITIES
 T-11 Pav't = 658.39 Yds
 12" Pipe = 82 lin. ft.
 I-17 Material = 20 Cu. Yds.

Item 2-A
 Sta. 212+24
 Sheet No. 3

Area A $15 (14.61 - \frac{23.6}{2}) = 45.45 \text{ Sq. Ft.}$
 Area B $\frac{21.28 \times 10.89}{2} = 115.87 \text{ " "$
 Area C $\frac{28.26 \times 5.59}{2} = 78.99 \text{ " "$
 Area D $\frac{121.73 (29.05 - 27.05)}{2} = 64.52 \text{ " "$
 Area E $\frac{41.08 \times 29.50}{2} = 357.90 \text{ " "$
 Total T-11 Pavement = 662.63 Sq. Ft. or 73.6 Sq. Yds.
 I-17 Material = 10.5 Cu. Yds.

Total
 25
 20
 15
 10
 5

End Areas	Cu. Yds.
Cut	Fill
0	0
0	197
0	213
0	562
0	531
0	458
0	186

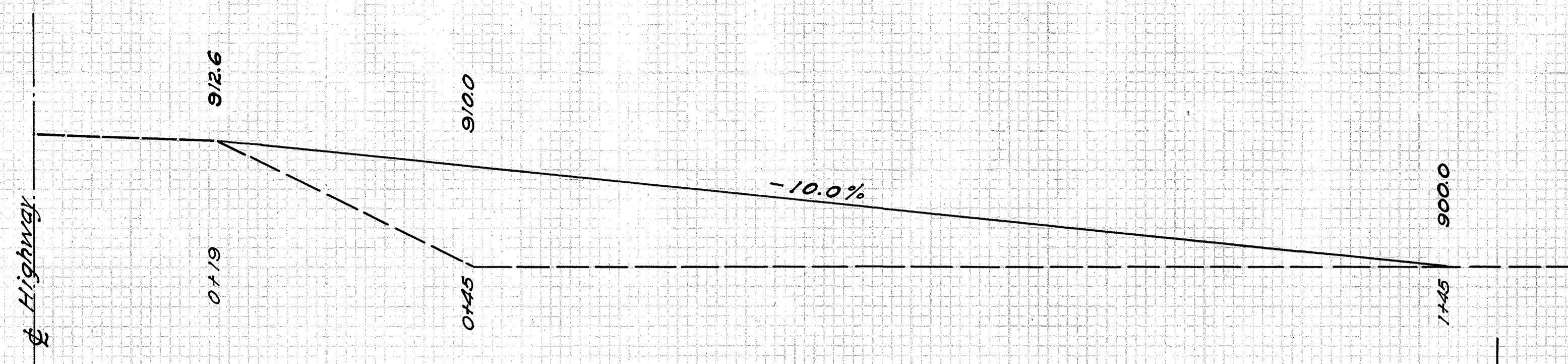


ESTIMATED QUANTITIES
 T-11 Pav't = 73.6 Sq. Yds.
 I-17 Material = 10.5 Cu. Yds.

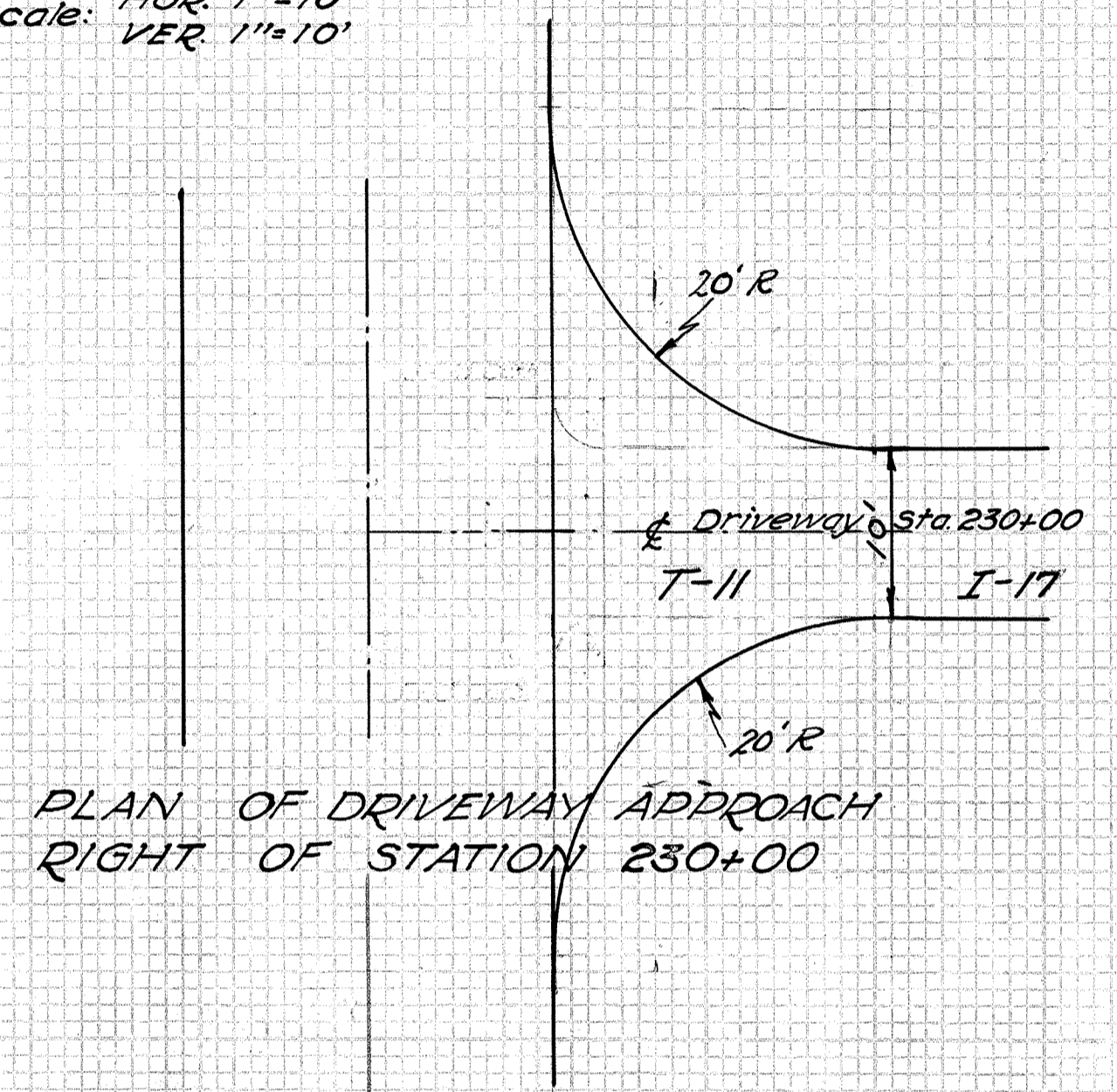
ITEM 1-A
 STATION 208+21.6
 SHEET #3

End Area	Cu. Yds.
Cut	Fill
0	0
0	105
0	129
0	74
0	177

Total
 15
 10
 5



PROFILE OF DRIVEWAY
 RIGHT OF STATION 230+00
 Scale: HOR 1"=10'
 VER 1"=10'



PLAN OF DRIVEWAY APPROACH
 RIGHT OF STATION 230+00

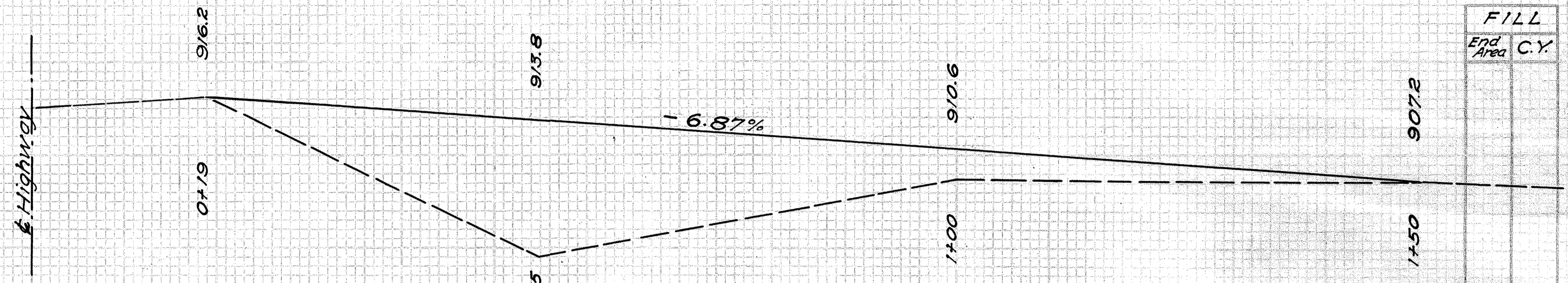


ESTIMATED QUANTITIES
 T-11 Pav't = 41.3 sq.yds.
 I-17 Material = 21.0 Co.Yds.

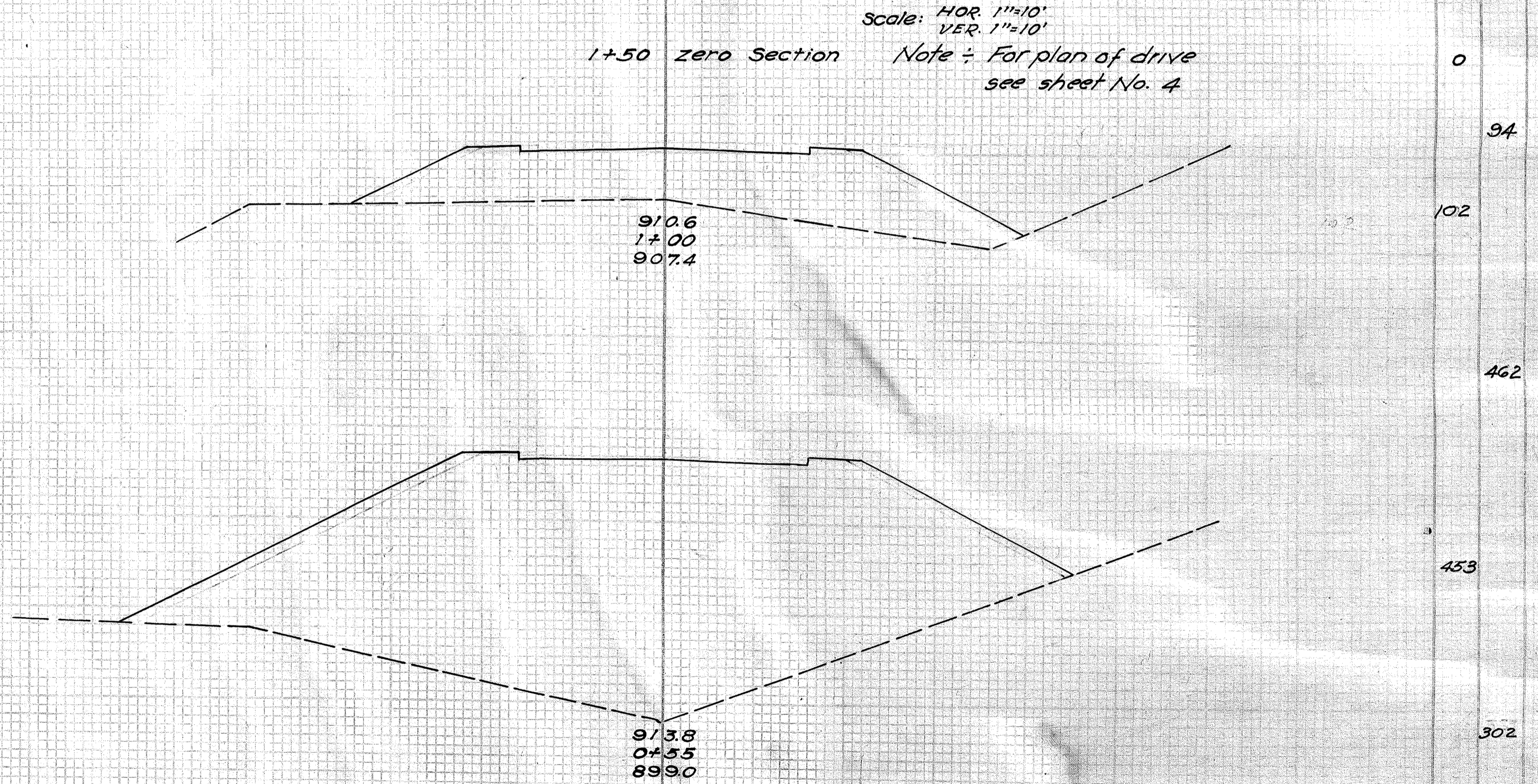
CROSS SECTIONS FOR DRIVEWAY
 AT STATION 230+00

FILL	
End Area	C.Y.
0	0
611	611
330	330
159	159
0	0

Total Fill 770 C.Y.



PROFILE OF COUNTY ROAD APPROACH
 LEFT OF STATION 235+67
 Scale: HOR 1"=10'
 VER 1"=10'

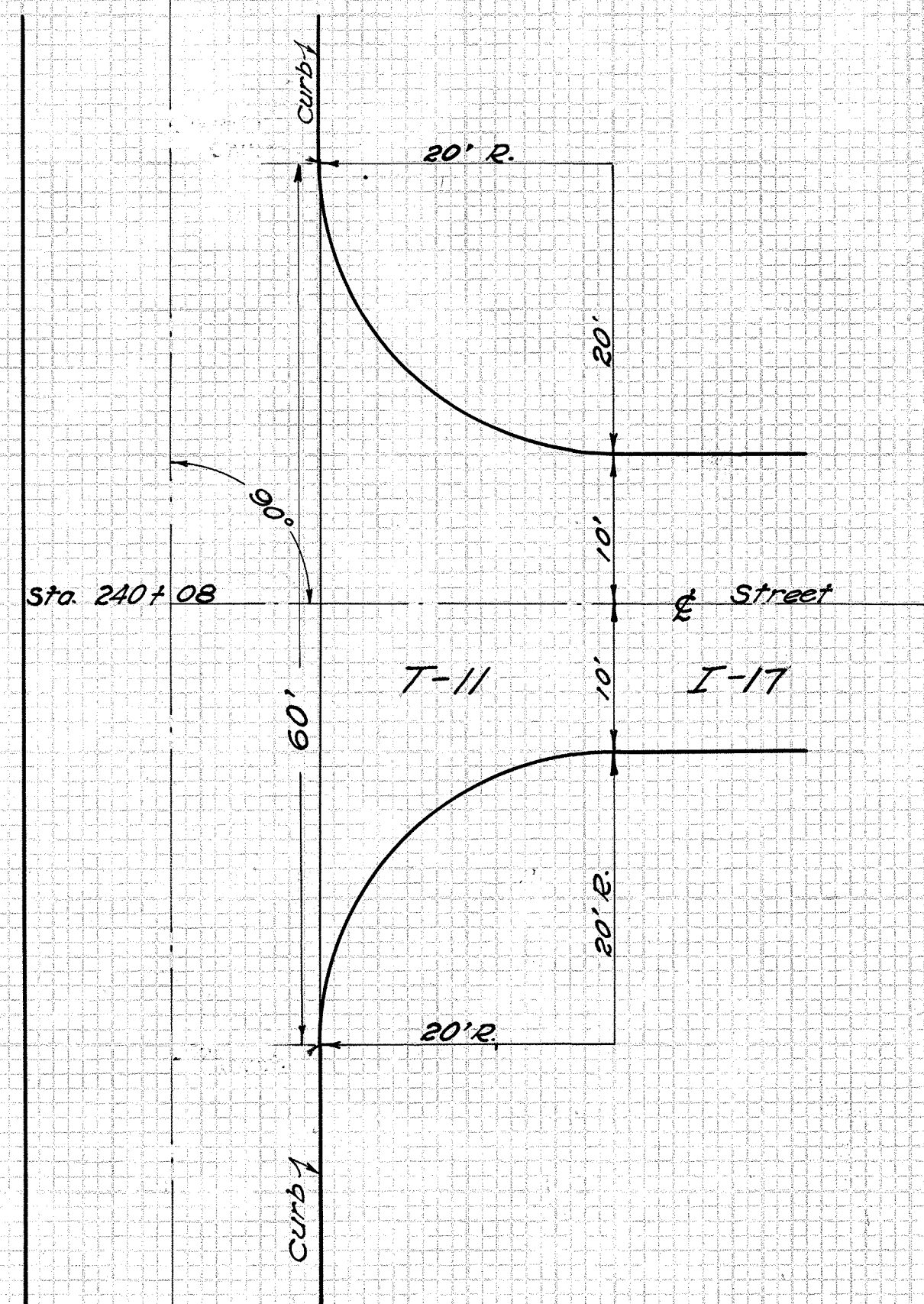


ESTIMATED QUANTITIES
 T-11 Pav't = 54.65 sq.yds.
 I-17 Material = 40 Co.Yds.

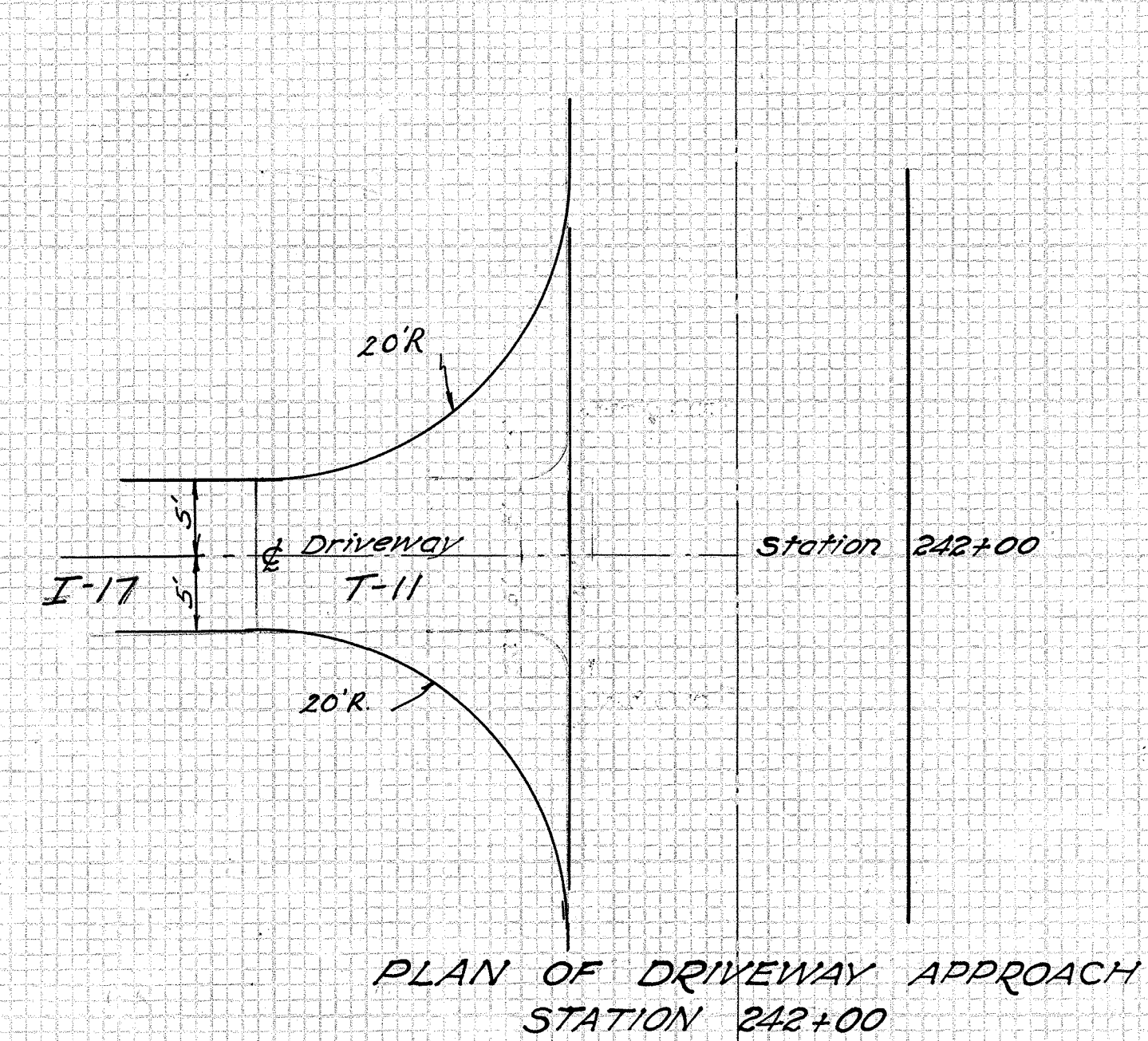
CROSS SECTIONS FOR COUNTY ROAD APPROACH
 AT STATION 235+67

FILL	
End Area	C.Y.
0	0
94	94
102	102
462	462
453	453
302	302
0	0

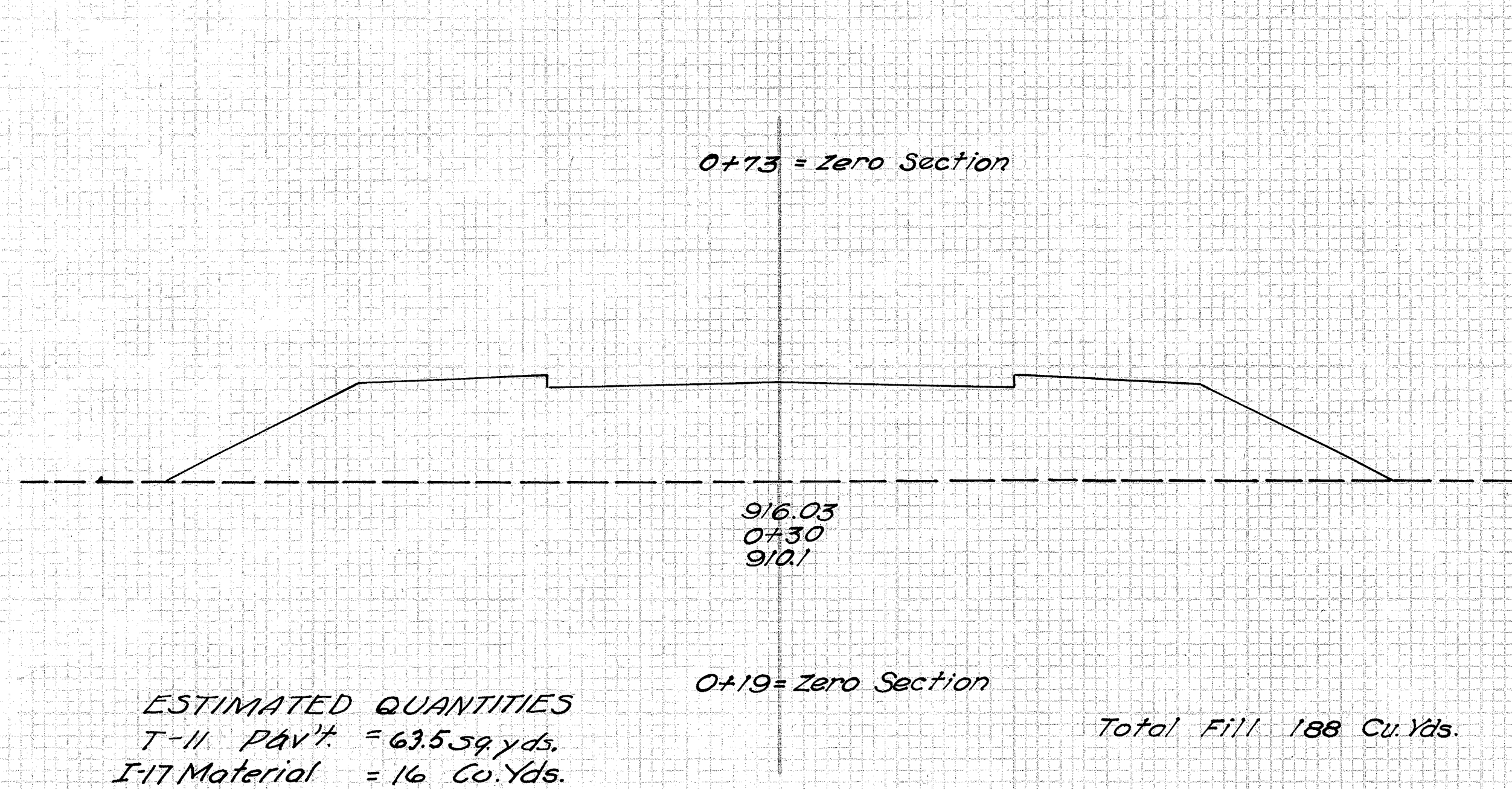
Total Fill 858 C.Y.



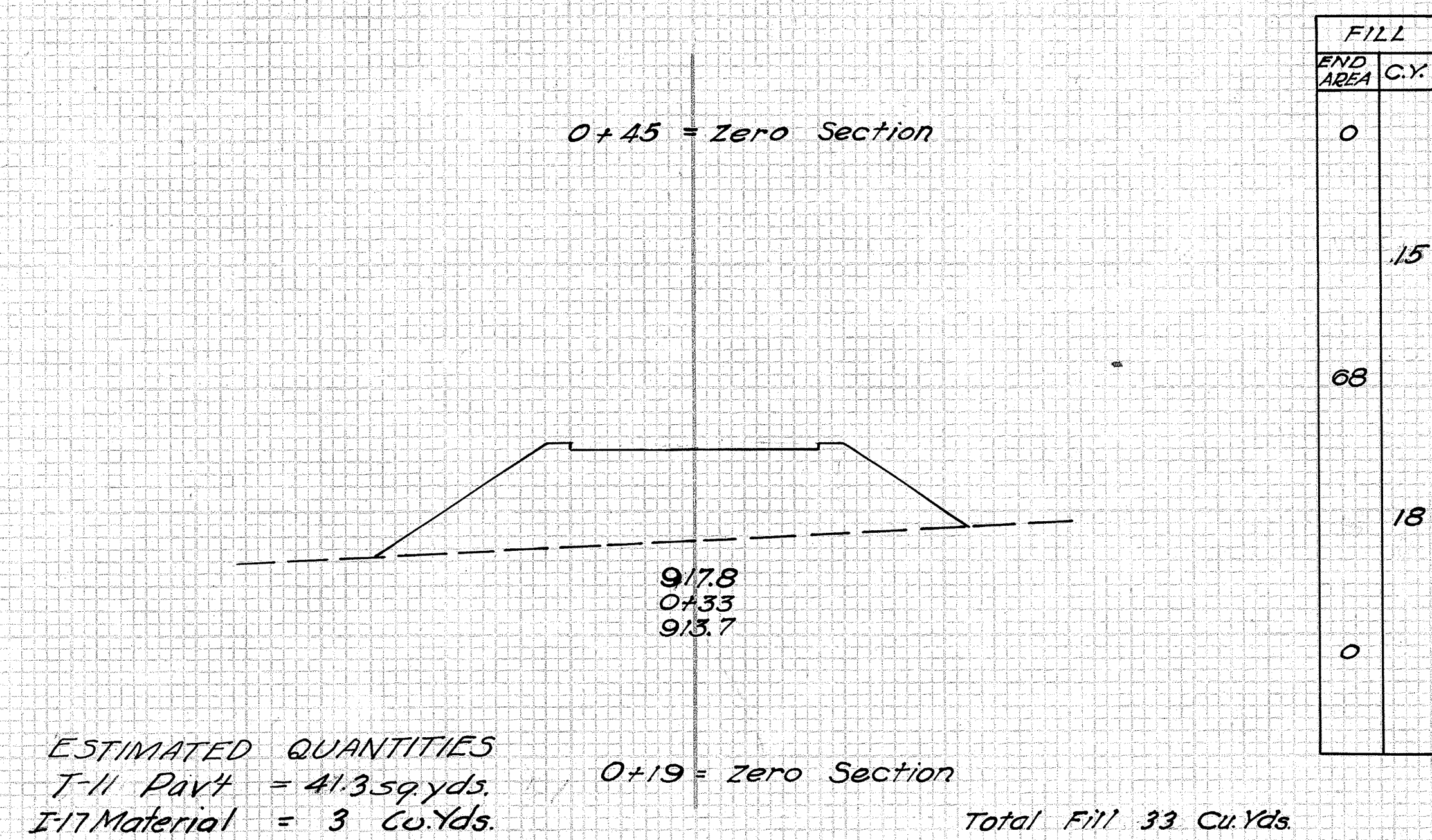
PLAN OF STREET APPROACH
 STATION 240+08



PLAN OF DRIVEWAY APPROACH
 STATION 242+00



CROSS SECTIONS FOR ROAD APPROACH (STREET)
 RIGHT OF STATION 240+08

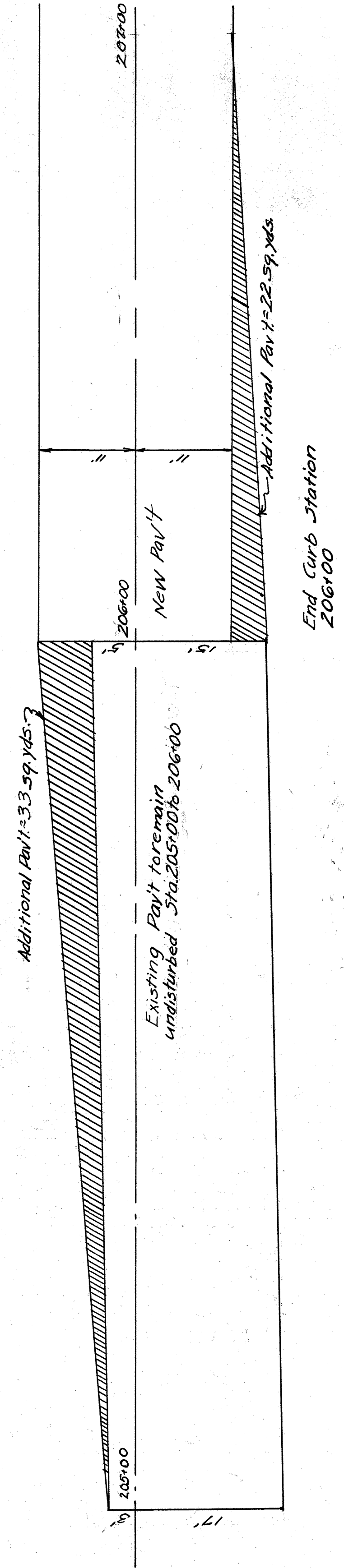


CROSS SECTIONS FOR DRIVEWAY APPROACH
 LEFT OF STATION 242+00

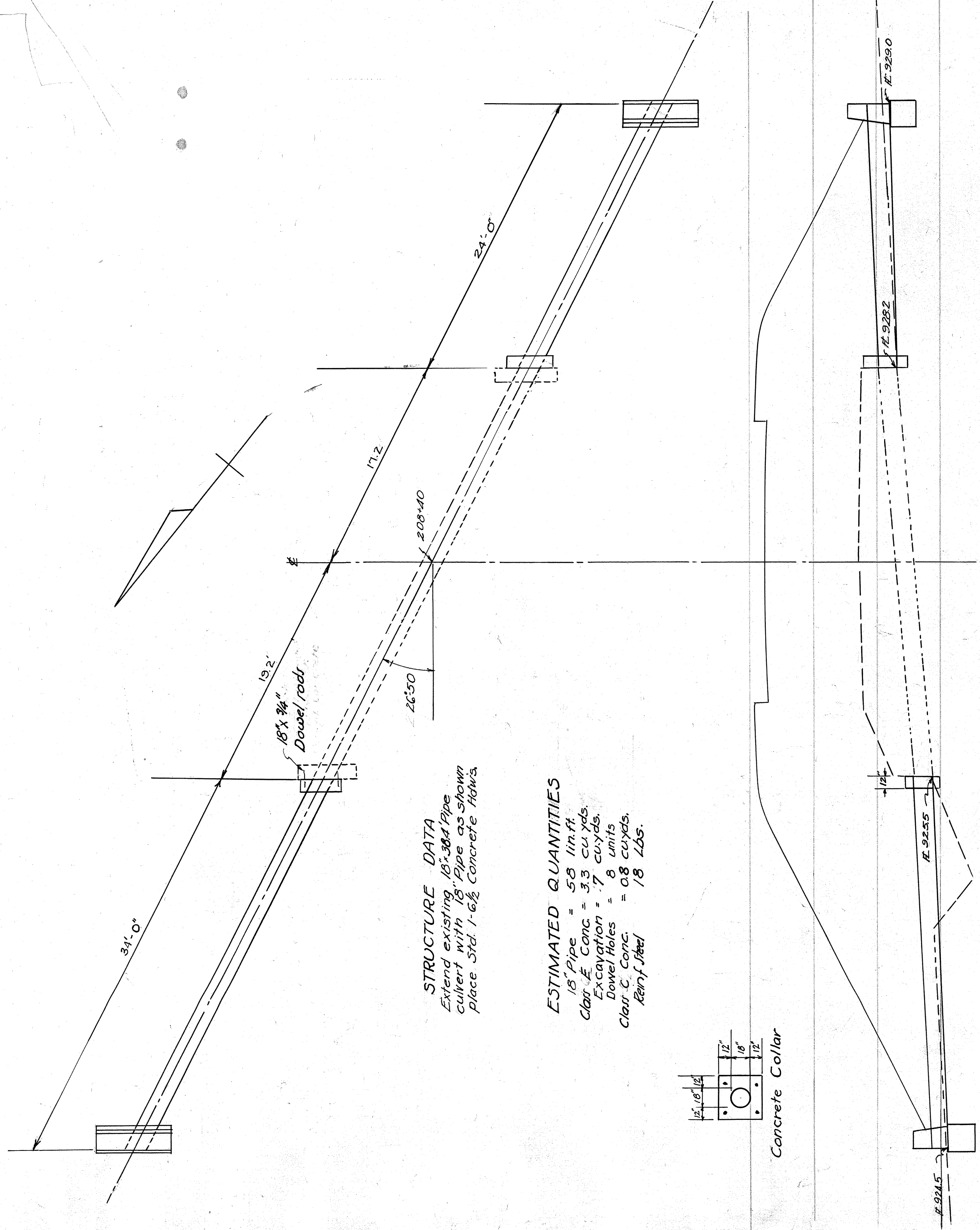
FED. RD. DIST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR
10	OHIO	F.A.P. 165 (2) F.A.P. 562R(1)	1935

16
34

S.H.9 SEC. FAYETTEVILLE (PT) P (PT)
BROWN COUNTY

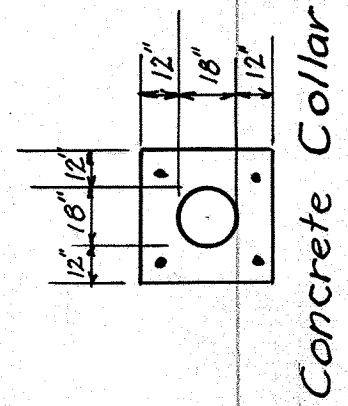


Detail Pavement Connection
See sheet #3



STRUCTURE DATA
 Extend existing 18" 304 Pipe
 Culvert with 18" Pipe as shown
 place Std. 1-6 1/2 Concrete Flats.

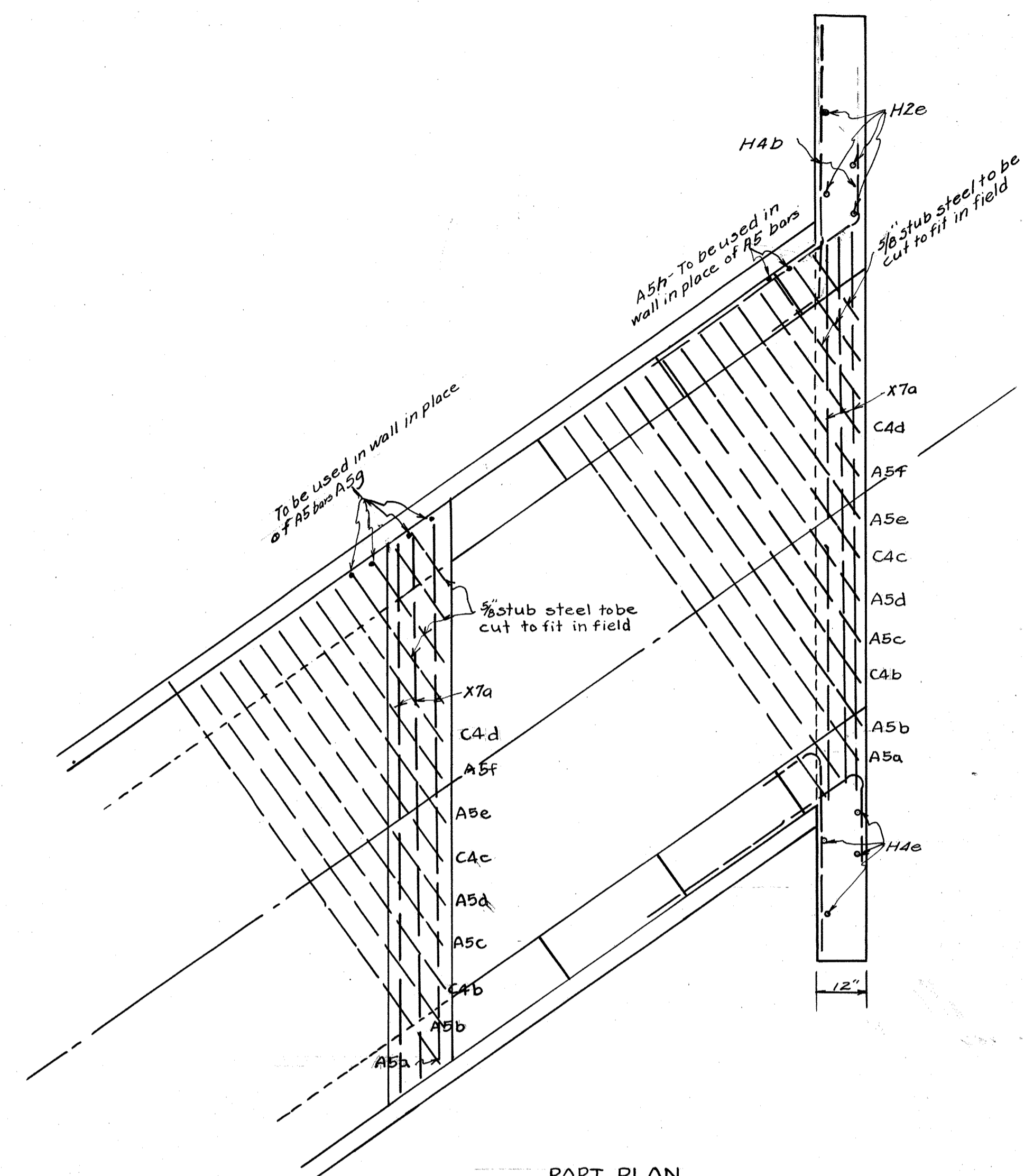
ESTIMATED QUANTITIES
 18" Pipe = 58 lin. ft.
 Clar. E. Conc. = 3.3 cu. yds.
 Excavation = .7 cu. yds.
 Dowel Holes = 8 units
 Clar. C. Conc. = 0.8 cu. yds.
 Reinf. Steel = 18 Lbs.



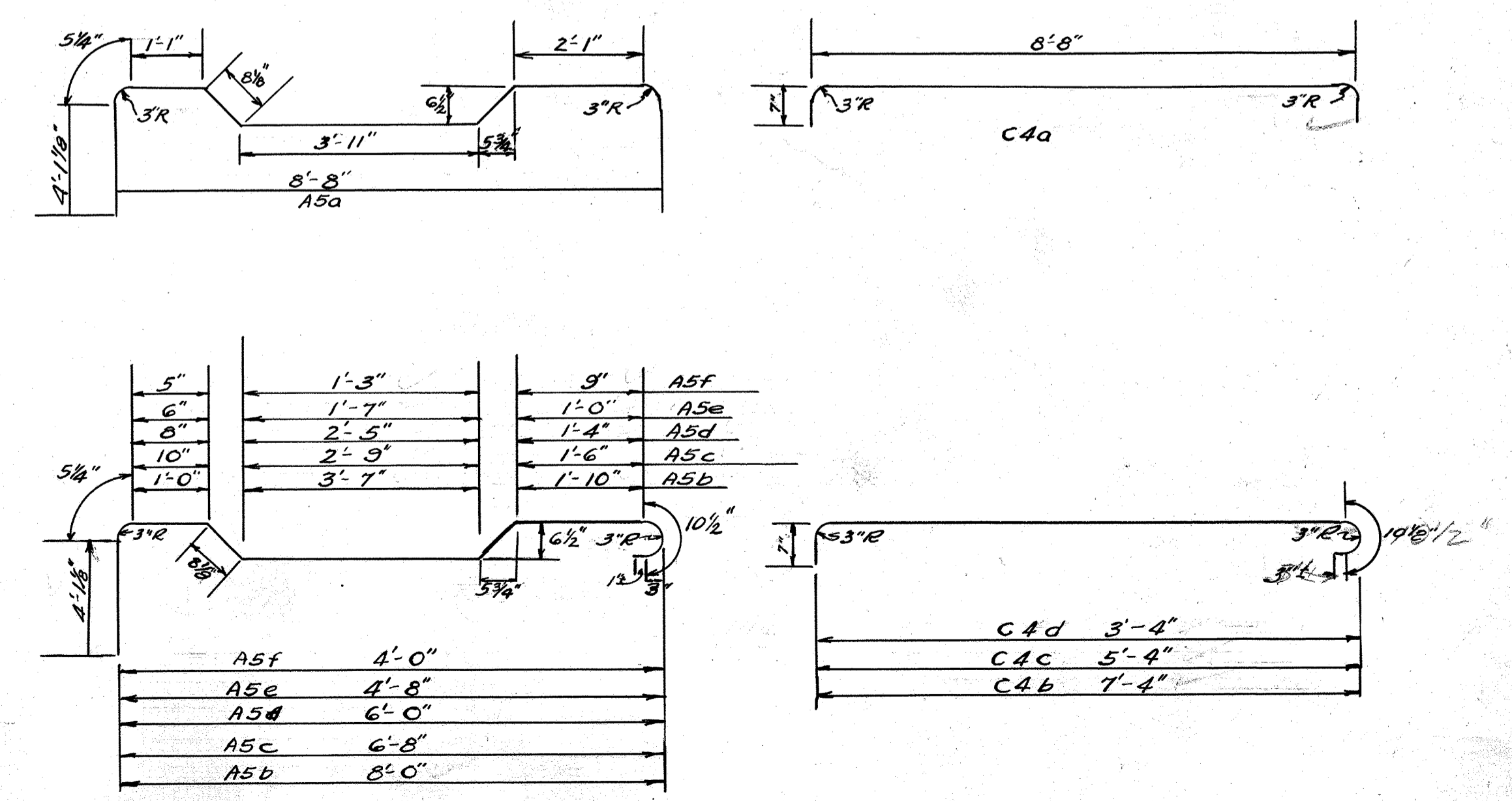
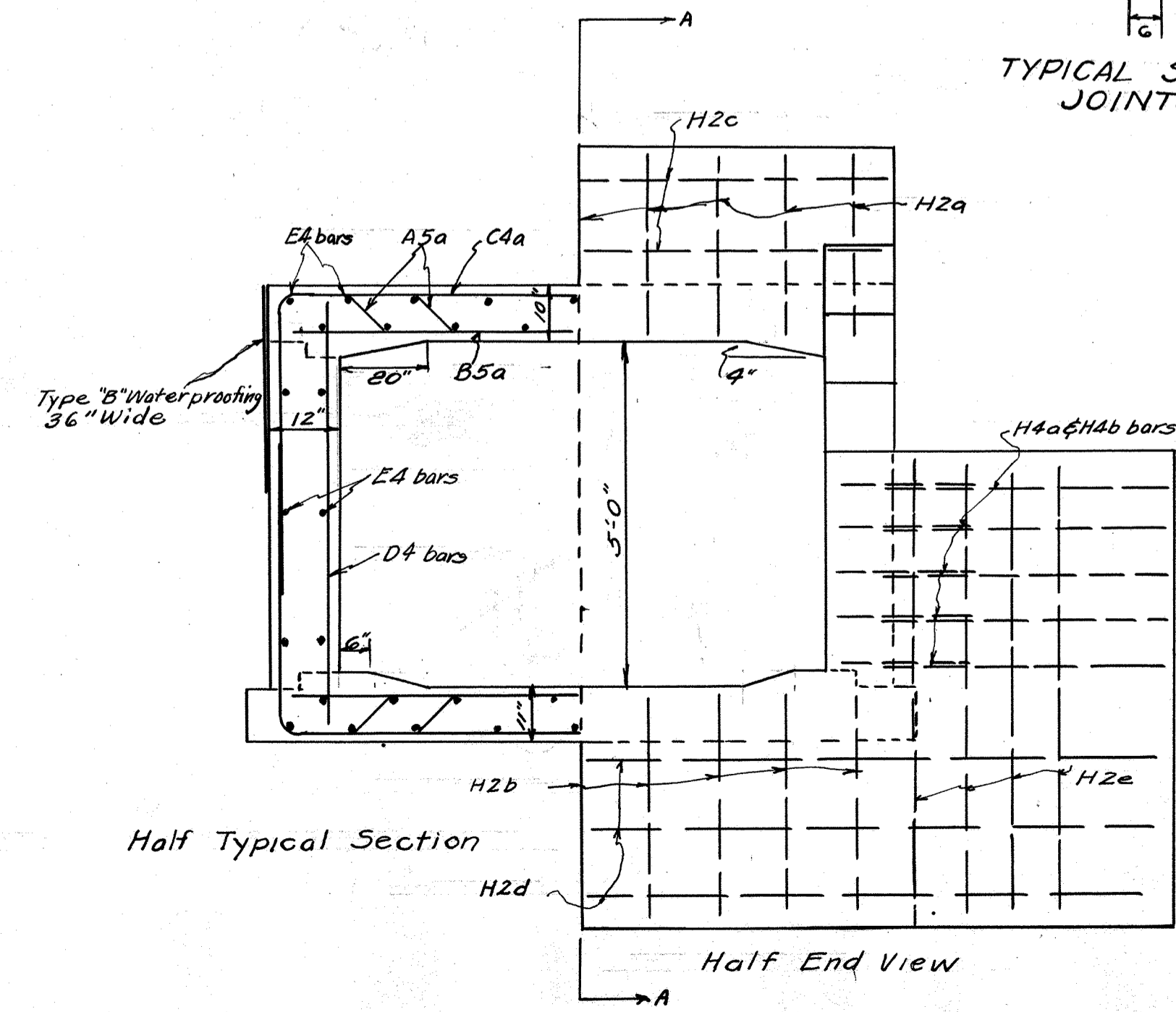
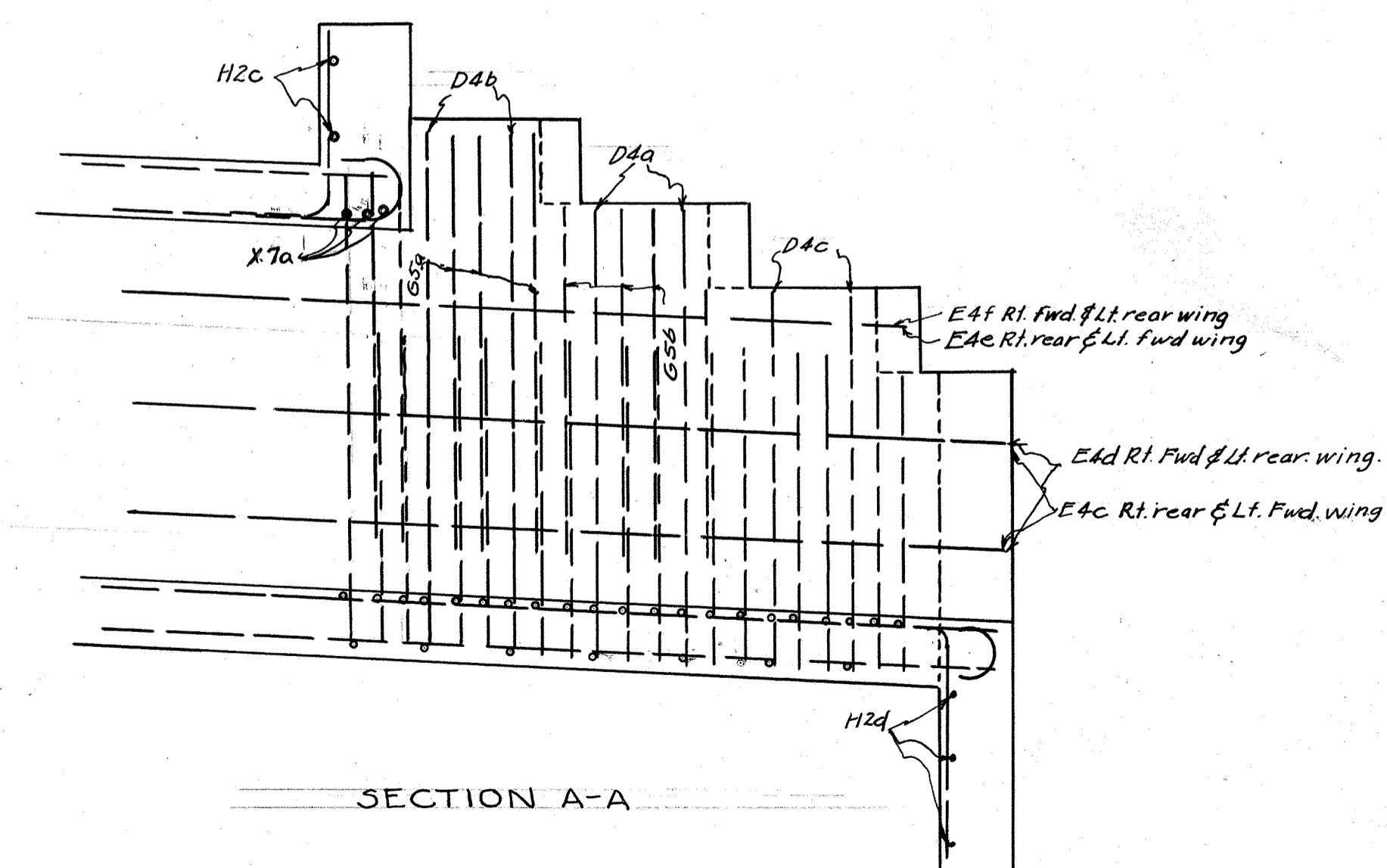
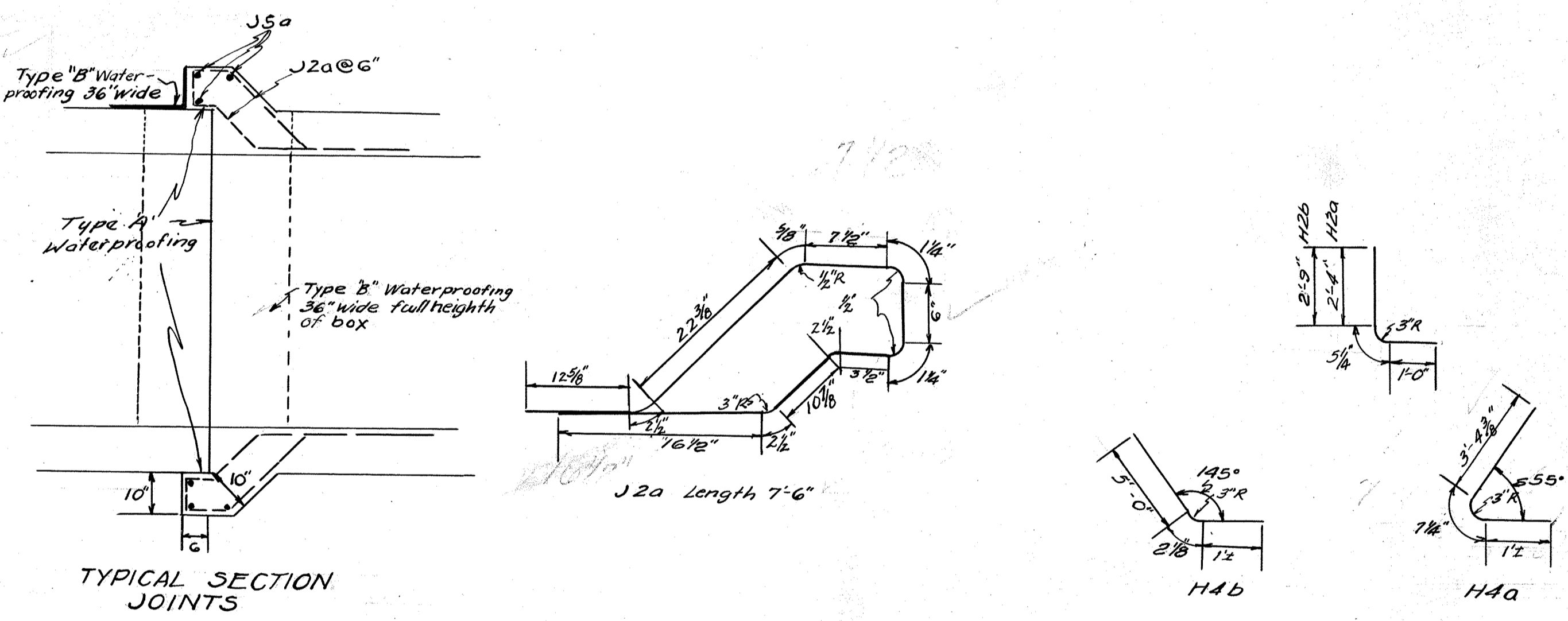
STRUCTURE # 1-C
 STATION 208+40
 SHEET #3

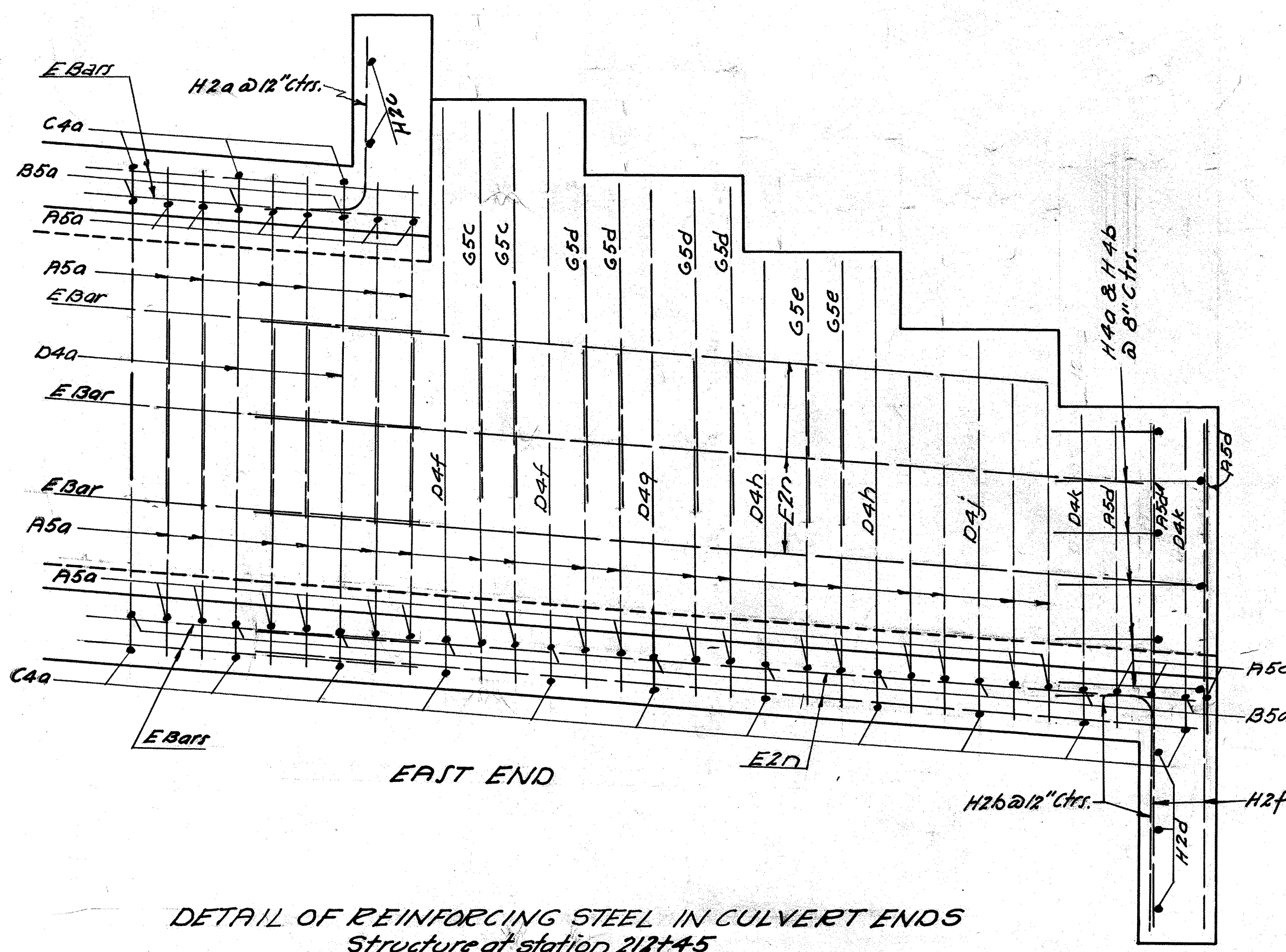
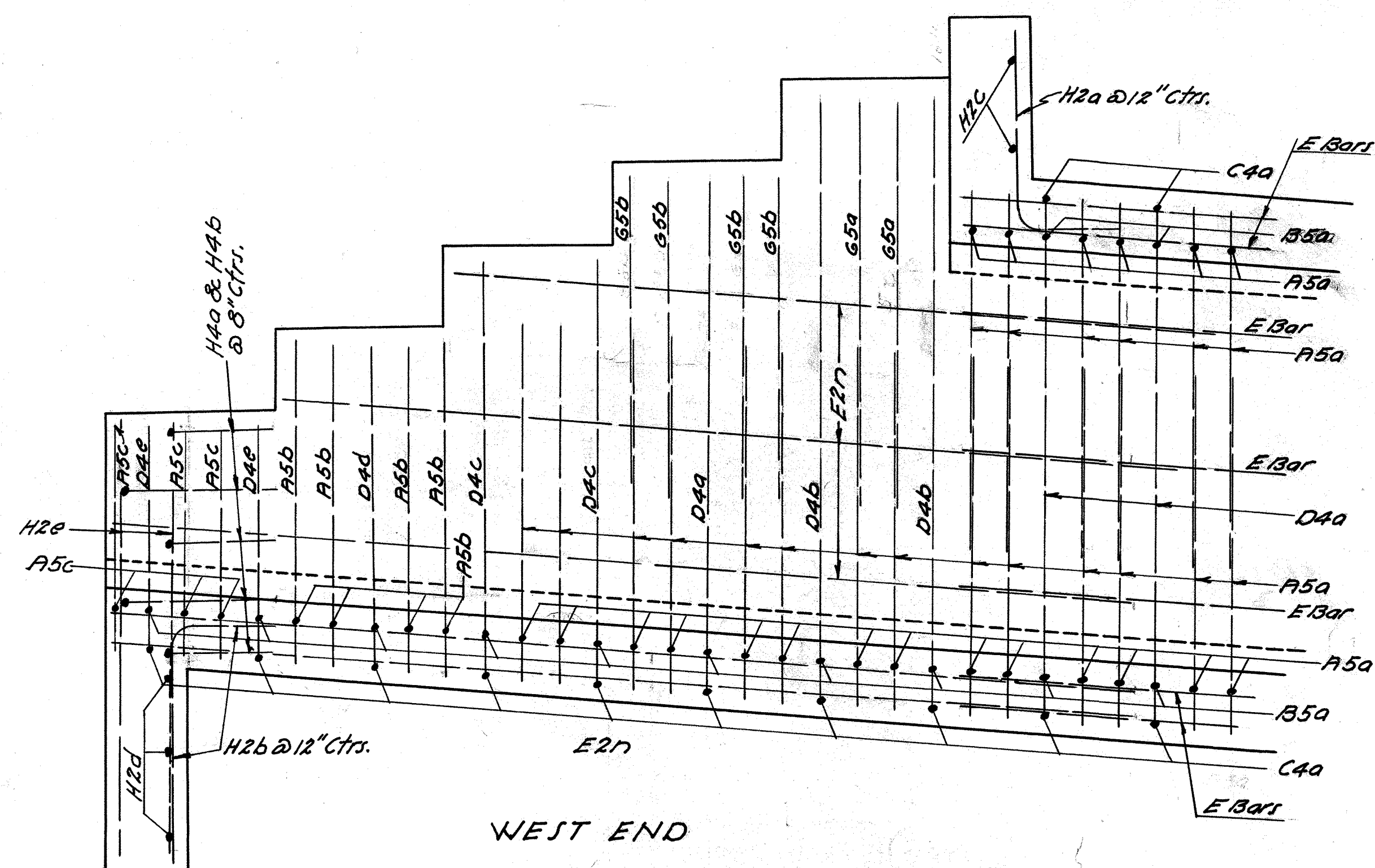
STEEL LIST						
MARK	SIZE	LOCATION	SPAC'G.	STRAIGHT OR BENT	LENGTH	NO WEIGHT
A5a	3/4" Ø	Slabs	5 1/2"	Bent	17'-6"	42.4 11,145
A5b	3/4" Ø	Slabs	5 1/2"	Bent	13'-3"	4 30
A5c	3/4" Ø	Slabs	5 1/2"	Bent	12'-0"	4 72
A5d	3/4" Ø	Slabs	5 1/2"	Bent	11'-3"	4 68
A5e	3/4" Ø	Slabs	5 1/2"	Bent	10'-0"	4 60
A5f	3/4" Ø	Slabs	5 1/2"	Bent	9'-3"	4 36
A5g	3/4" Ø	Walls, Alternates at ends	5 1/2"	Straight	4'-4"	8 53
A5h	3/4" Ø	Walls, Alternates at ends	5 1/2"	Straight	4'-0"	4 24
B5a	3/4" Ø	Slabs	16 1/2"	Straight	8'-0"	212 2707
B5b	3/4" Ø	Slabs	16 1/2"	Straight	7'-2"	4 43
B5c	3/4" Ø	Slabs	16 1/2"	Straight	5'-2"	4 31
B5d	3/4" Ø	Slabs	16 1/2"	Straight	3'-2"	4 19
C4a	3/8" Ø	Slabs	16 1/2"	Bent	9'-6"	212 2101
C4b	3/8" Ø	Slabs	16 1/2"	Bent	8'-8"	4 36
C4c	3/8" Ø	Slabs	16 1/2"	Bent	6'-8"	4 28
C4d	3/8" Ø	Slabs	16 1/2"	Bent	4'-8"	4 20
D4a	3/8" Ø	Walls	16 1/2"	Straight	6'-3"	234 1525
D4b	3/8" Ø	Walls	16 1/2"	Straight	6'-11"	8 58
D4c	3/8" Ø	Walls	16 1/2"	Straight	4'-4"	8 36
G5a	3/4" Ø	Walls	5 1/2"	Straight	5'-6"	12 99
G5b	3/4" Ø	Walls	5 1/2"	Straight	4'-6"	12 81
H2a	1/2" Ø	Hdw.	12"	Bent	3'-9"	22 55
H2b	1/2" Ø	Cut off Wall	12"	Bent	4'-2"	22 61
H2c	1/2" Ø	Hdw.	12"	Straight	10'-6"	4 28
H2d	1/2" Ø	Cut off Wall	12"	Straight	18'-0"	6 72
H2e	1/2" Ø	Wing	-	Straight	6'-0"	16 64
H4a	3/8" Ø	Turn Back	8"	Bent	4'-11"	18 92
H4b	3/8" Ø	Turn Back	8"	Bent	2'-3"	18 117
E4a	5/8" Ø	Walls	-	Straight	26'-5"	48 1323
E4a	5/8" Ø	Slabs	-	Straight	26'-5"	136 3748
E4b	5/8" Ø	Top Slab End Sections Rt. rear & Lt. rear	76 1/2" cut to fit	Straight	32'-10"	17 411
E4c	5/8" Ø	Rt. rear & Lt. rear	-	Straight	23'-3"	8 194
E4d	5/8" Ø	Rt. rear & Lt. rear	-	Straight	23'-7"	8 247
E4e	5/8" Ø	Rt. rear & Lt. rear	-	Straight	22'-1"	4 92
E4f	5/8" Ø	Rt. rear & Lt. rear	-	Straight	28'-5"	4 115
E4g	5/8" Ø	Top Slab End section	-	Straight	23'-8"	34 825
E4h	5/8" Ø	Splice for E4g bars	-	Straight	30'-0"	6 188
J2a	1/2" Ø	Joints	6"	Bent	7'-6"	180 902
J5a	3/4" Ø	Joints	-	Straight	8'-6"	30 383
X7a	1" Ø	Headwalls & cut off walls	-	Straight	10'-6"	12 336
Stub Steel	5/8" Ø	-	-	Straight	25'-0"	2 52
Total						27651

ESTIMATED QUANTITIES
 CONCRETE FOR STRUCTURES CLASS C 171 CU. YDS.
 REINFORCING STEEL 27651 LBS.
 TYPE 'B' WATERPROOFING 36" WIDE 107 SQ. YDS.
 TYPE 'A' WATERPROOFING 20.5 SQ. YDS.
 EXCAVATION FOR STRUCTURES 436 CU. YDS.
 REMOVAL & DISPOSAL OF EXISTING STRUCTURE 105 CU. YDS. LUMP



STRUCTURE DATA
 Remove existing 6'x4'x60" Concrete Box Culvert
 Place new 7'x5'x161'-6" concrete Box Culvert as detailed. All details not shown will be found on Std. Dwg. #LBC-33

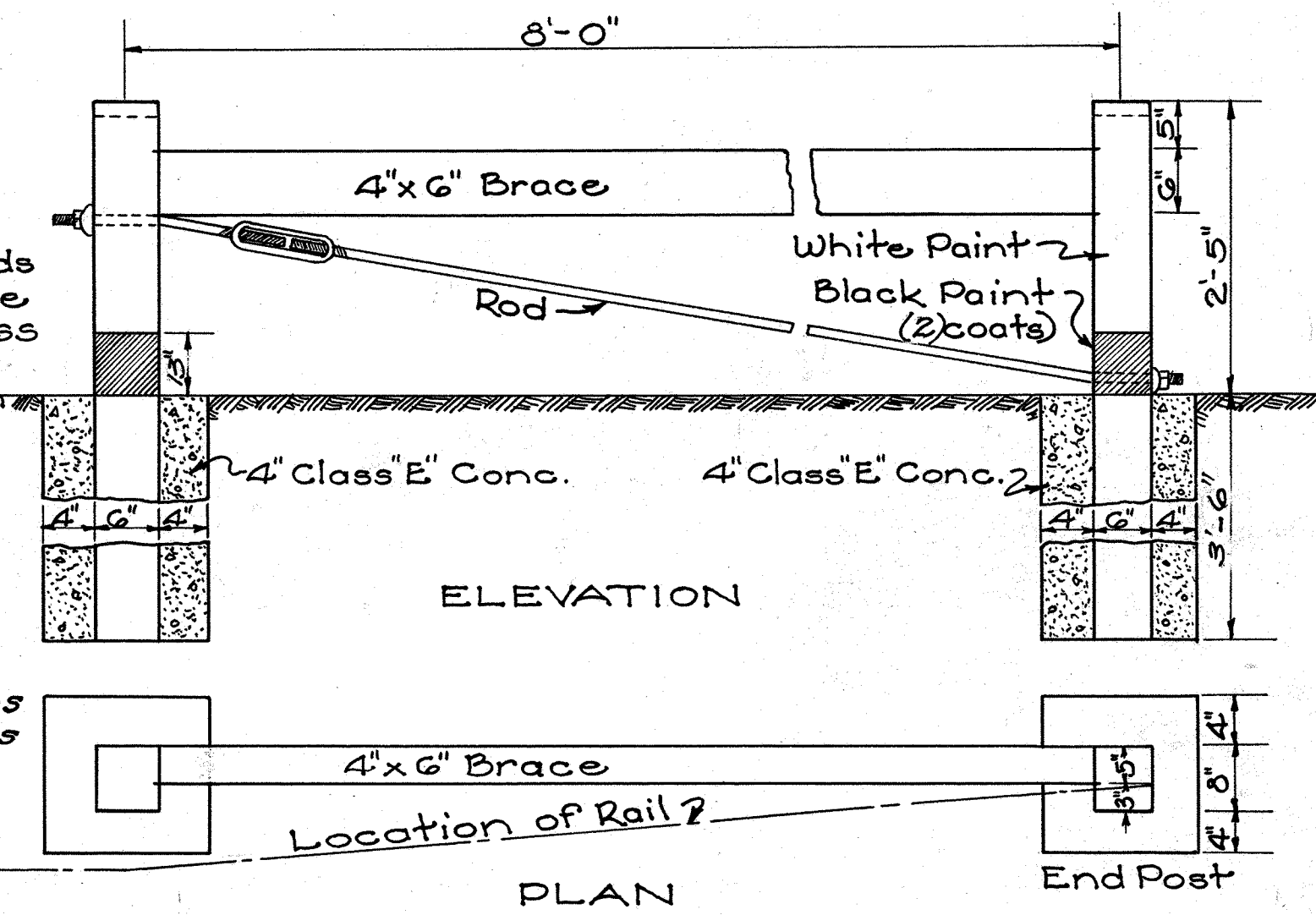




DETAIL OF REINFORCING STEEL IN CULVERT ENDS
Structure at station 217+45
Scale 3/4" = 1"

ALTERNATE END ANCHOR DETAIL FOR FLEXIBLE STEEL PLATE TENSION TYPE GUARD RAIL

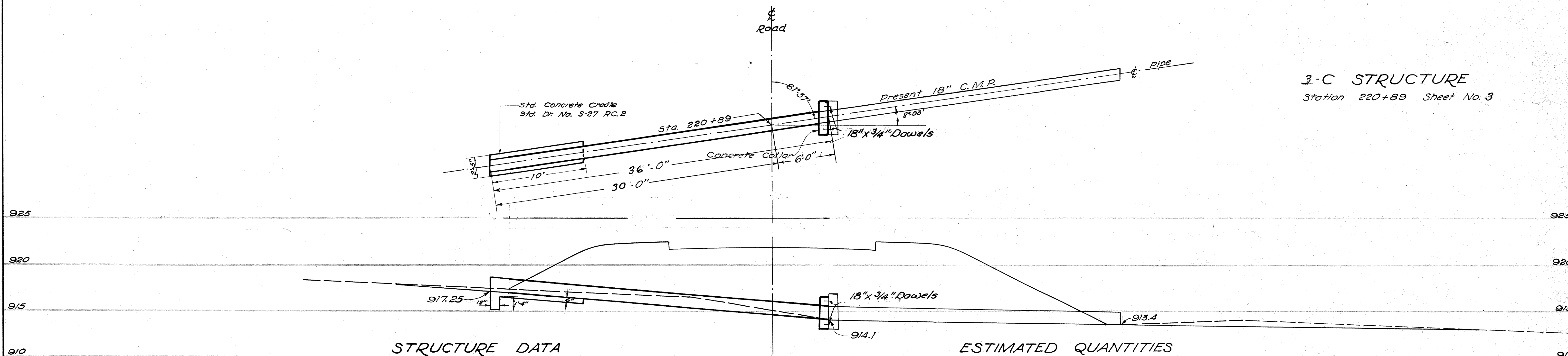
End anchors at the four corners of the structure shall be as shown herewith, other ends may be anchored in the same manner or by 30"x30"x8" class E concrete deadmen.
The two end posts at each end of each run shall be encased with 4" of Class "E" concrete.
All posts shall be full 6"x8" sawed wood posts as per Sec. M-8.6, butt treated.



Bolt holes shall be bored and tops of posts trimmed after the posts have been set.

No end anchorage will be required for the Steel Beam Guard Rail, except that the three end posts shall be encased with 4" of class "E" concrete.

3-C STRUCTURE
Station 220+89 Sheet No. 3



STRUCTURE DATA

Type: Pipe Culvert Extension
 Size: 18" x 40'-0"
 Work Required: Extend 18" Pipe Culvert to left of center-line on 8°03' R.F. skew. Construct new concrete collar at left end of present culvert. Clean out ditch at right end of pres. culv. Construct Std. Concrete Cradle on left end of extension. Std. Dr. No. S-27 RC.2

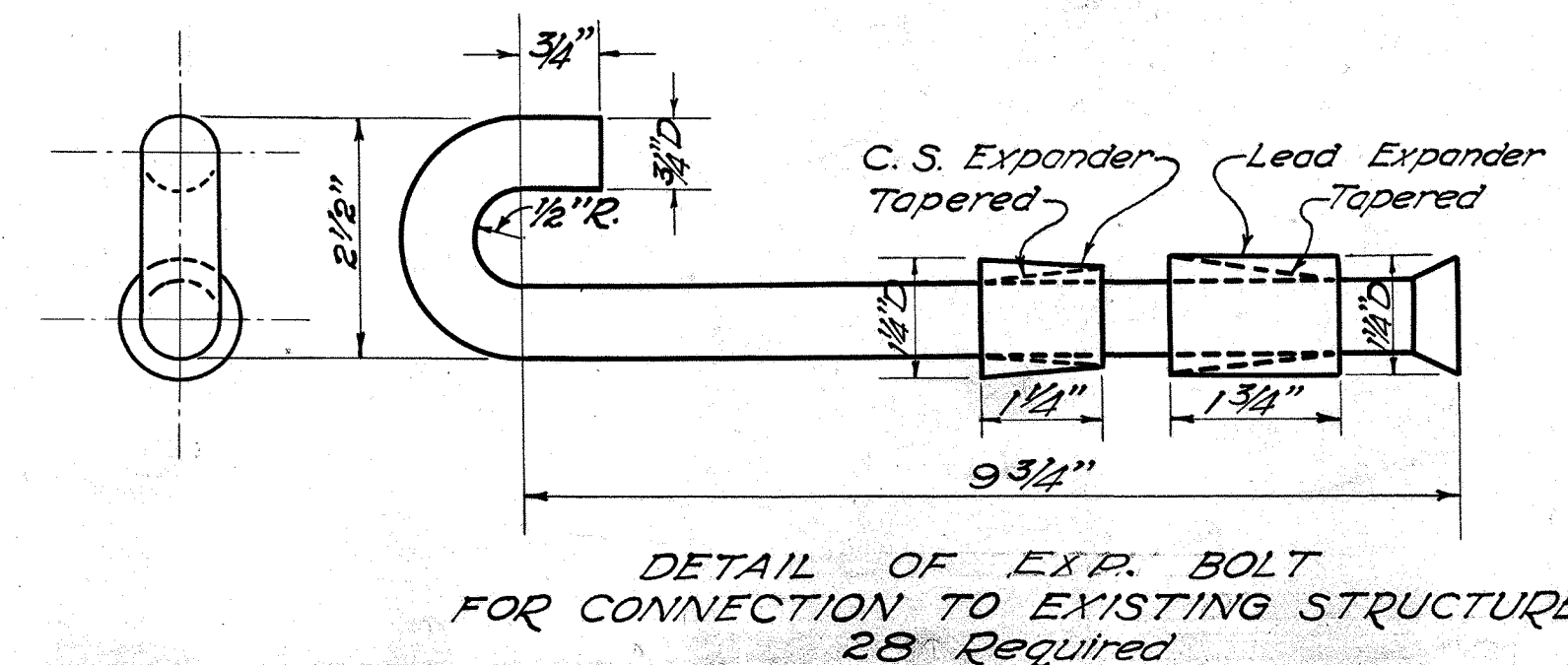
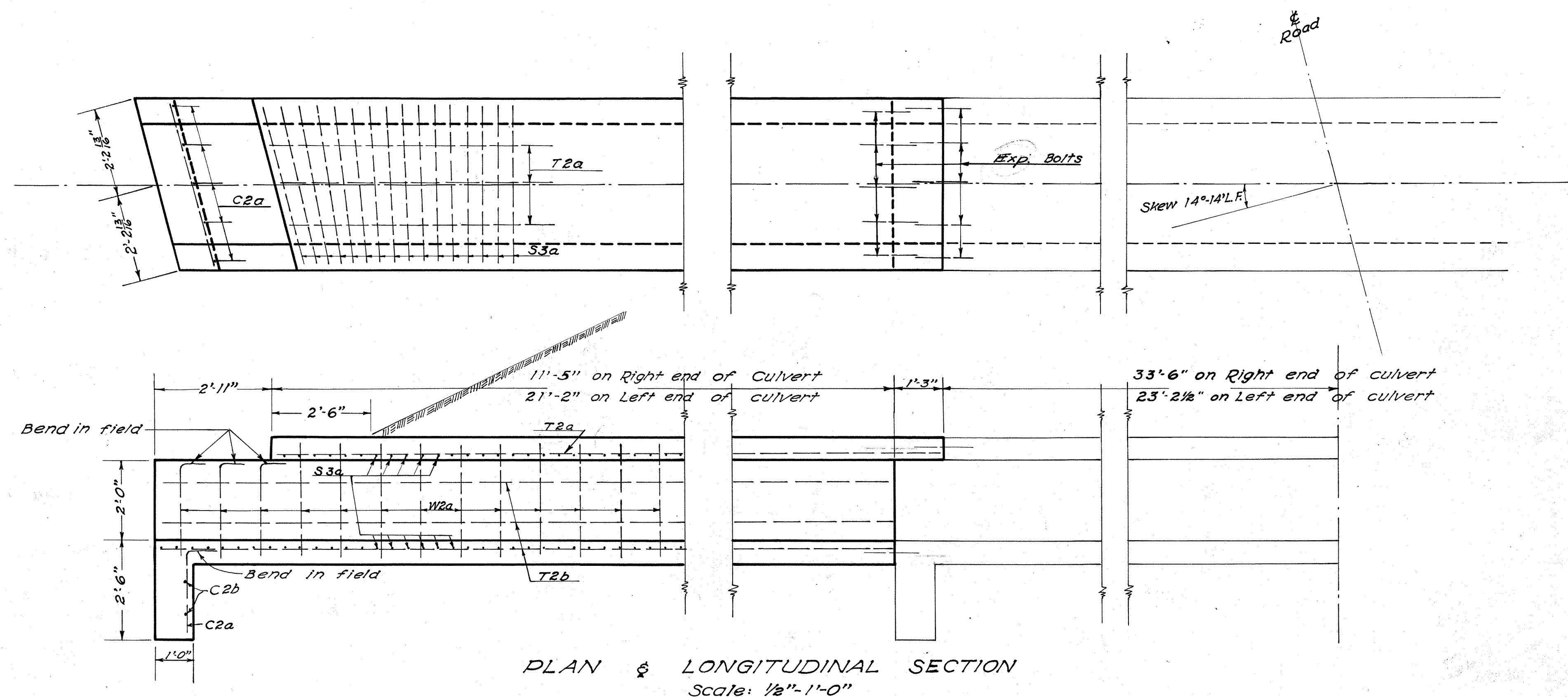
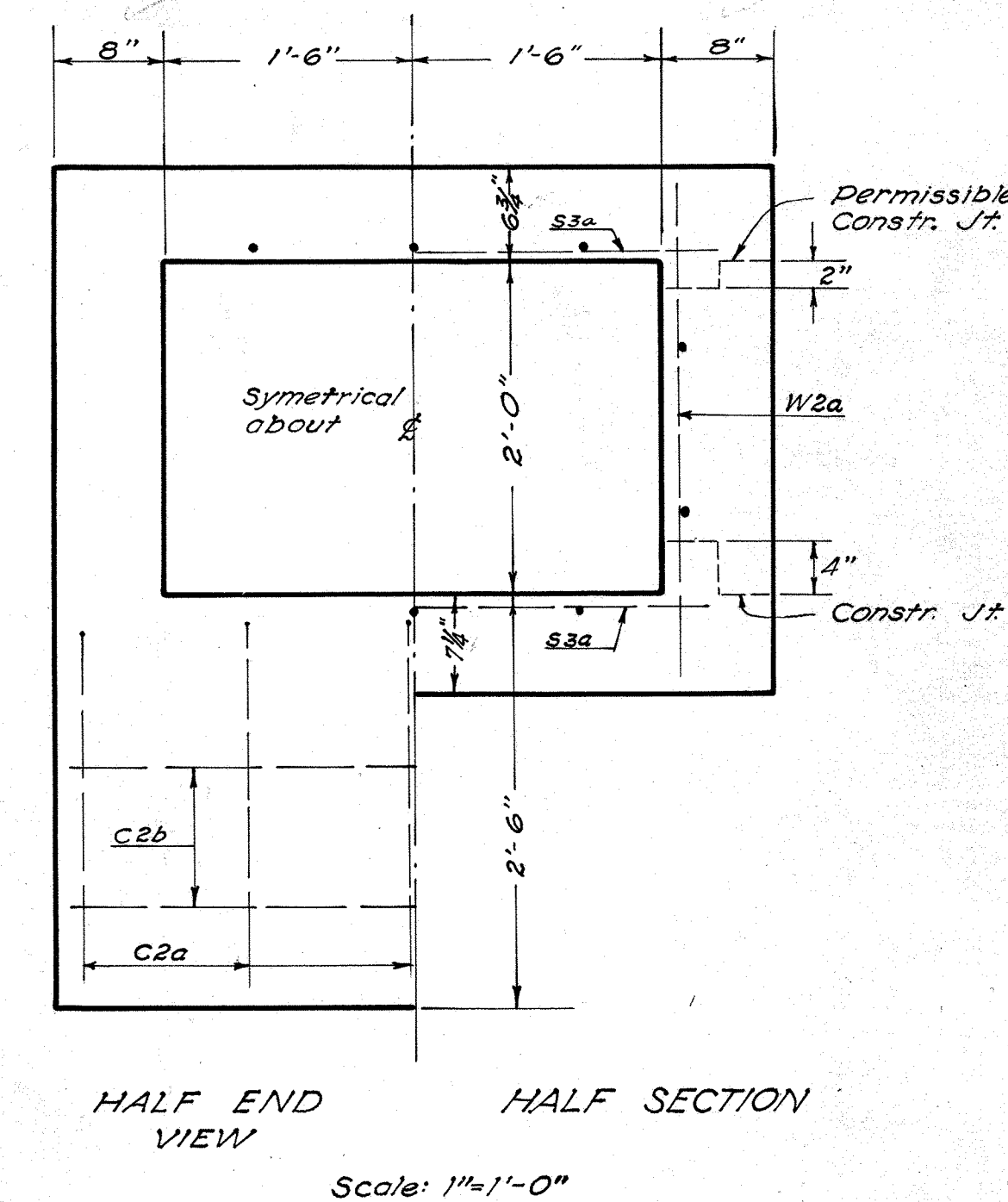
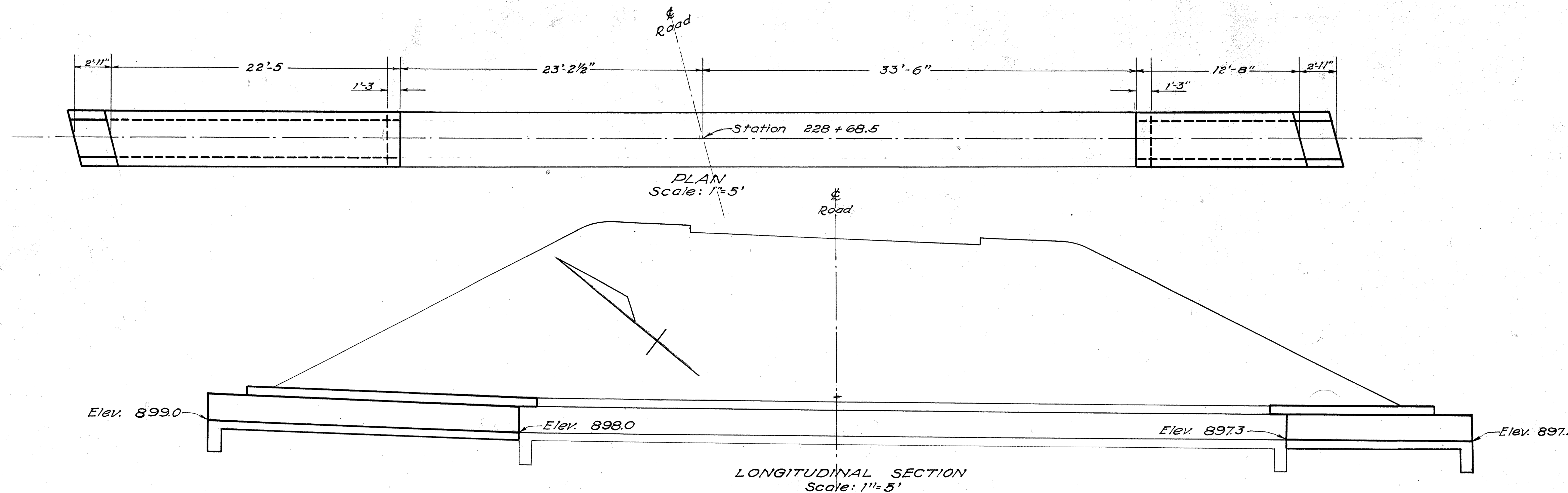
ESTIMATED QUANTITIES

Excavation (Channel)	2	Cu. Yds.
Excavation (Structure)	26	Cu. Yds.
18" Pipe	36	Lin. Ft.
1-5/8 Concrete Class C	1.3	Cu. Yd.
Dowel Holes	4	Units
Reinf. Steel	9	Lbs

For Detail of Collar see sheet No. 16

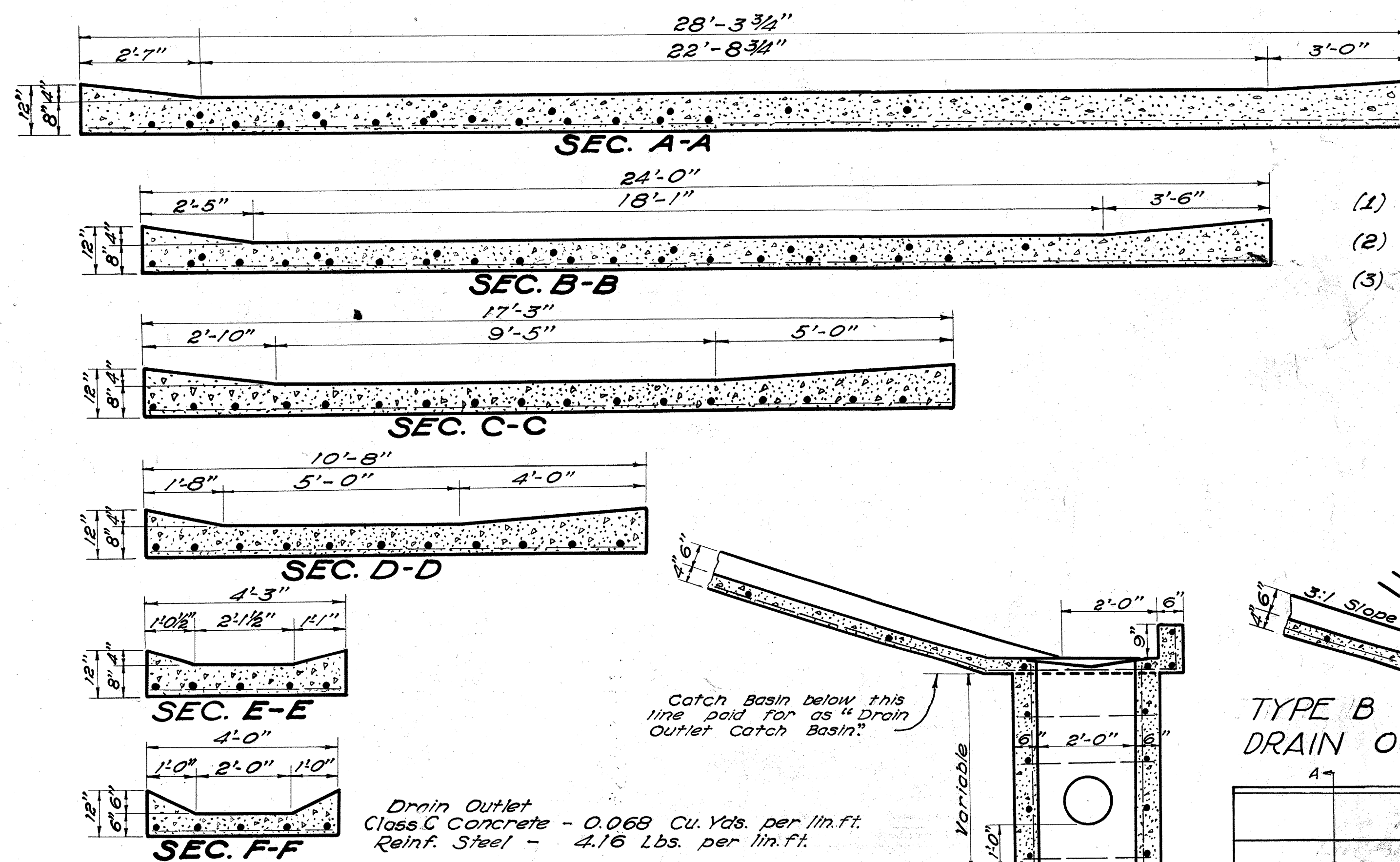
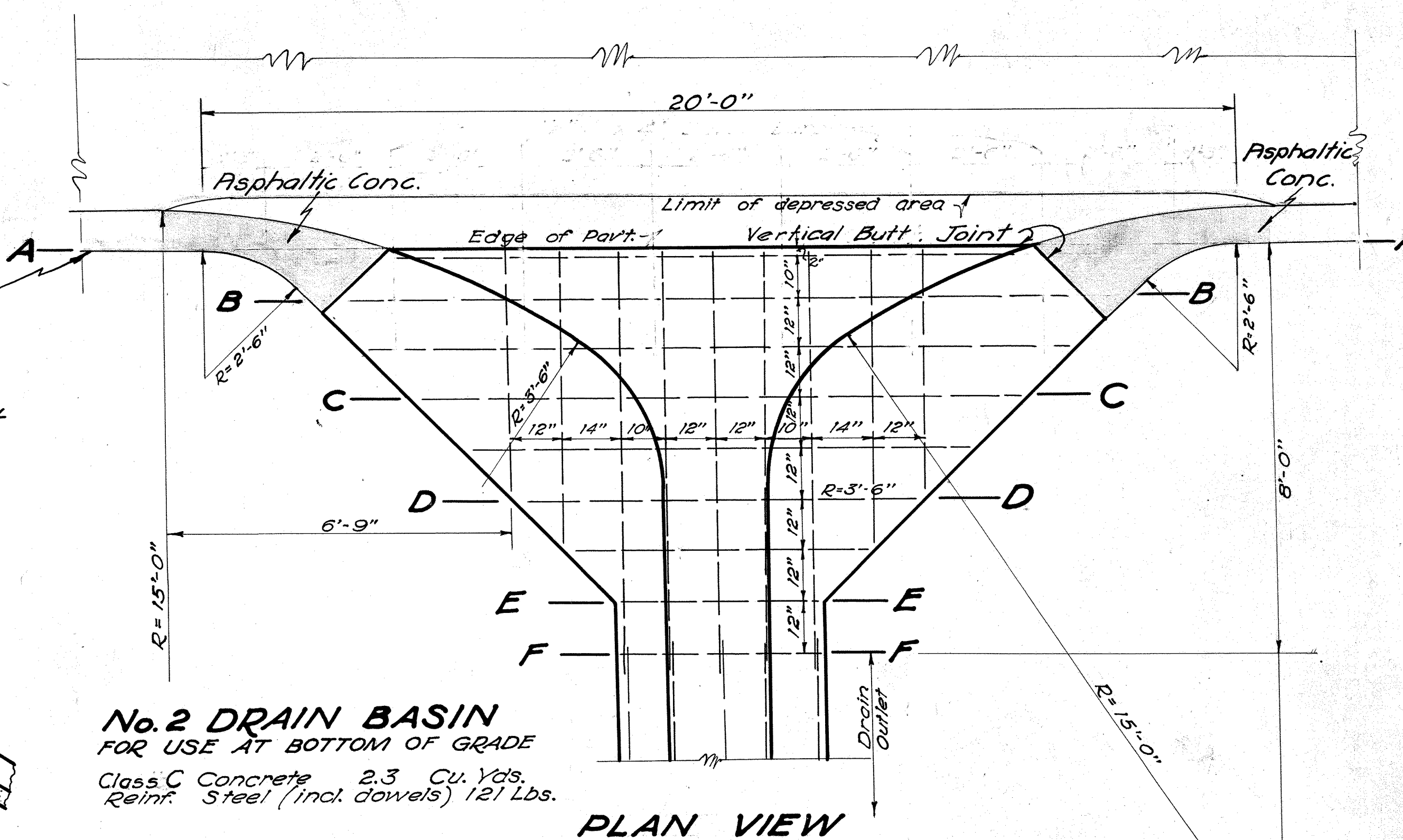
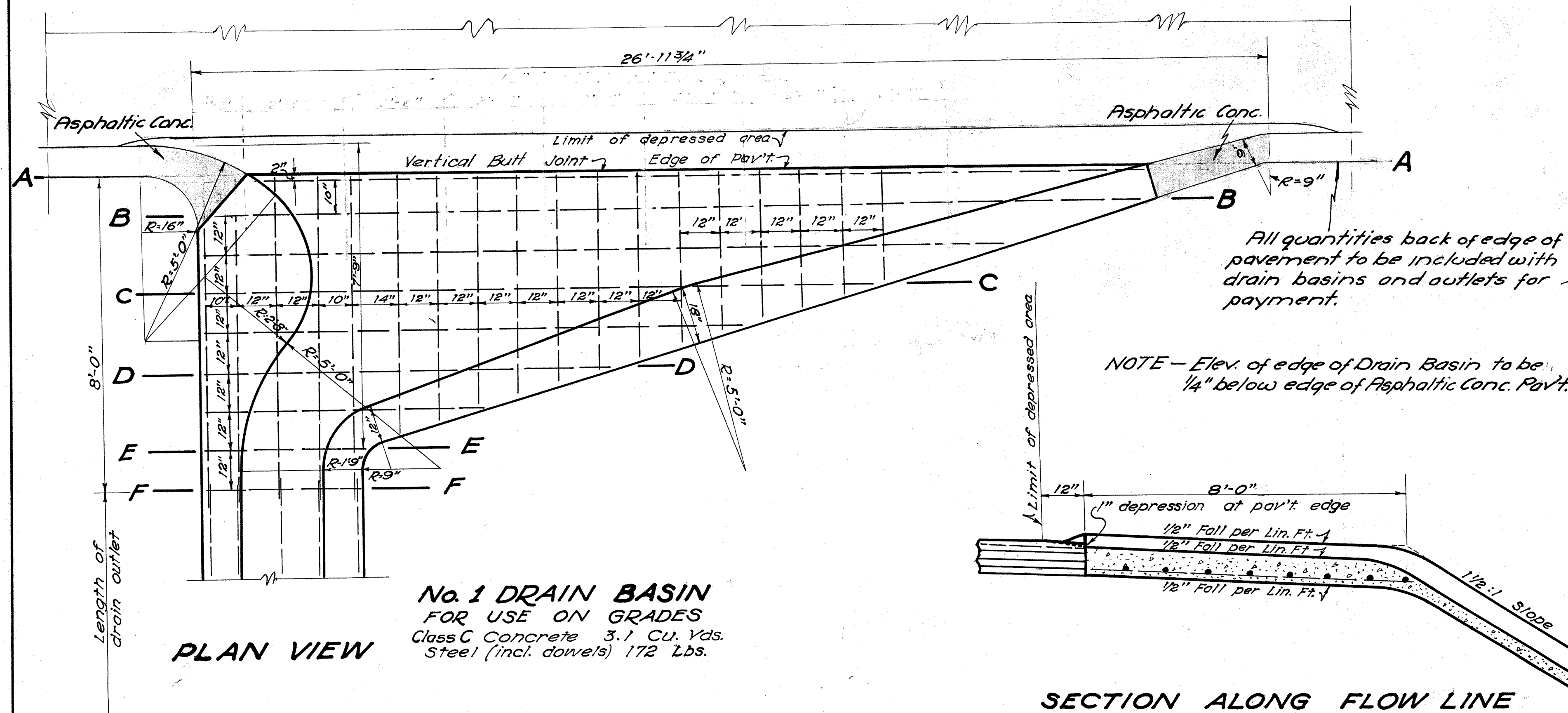
S. H. 9 FAYETTEVILLE (PT) P (PT)
BROWN COUNTY

STRUCTURE No. 1-C
Station 228+68.5 Sheet No. 4

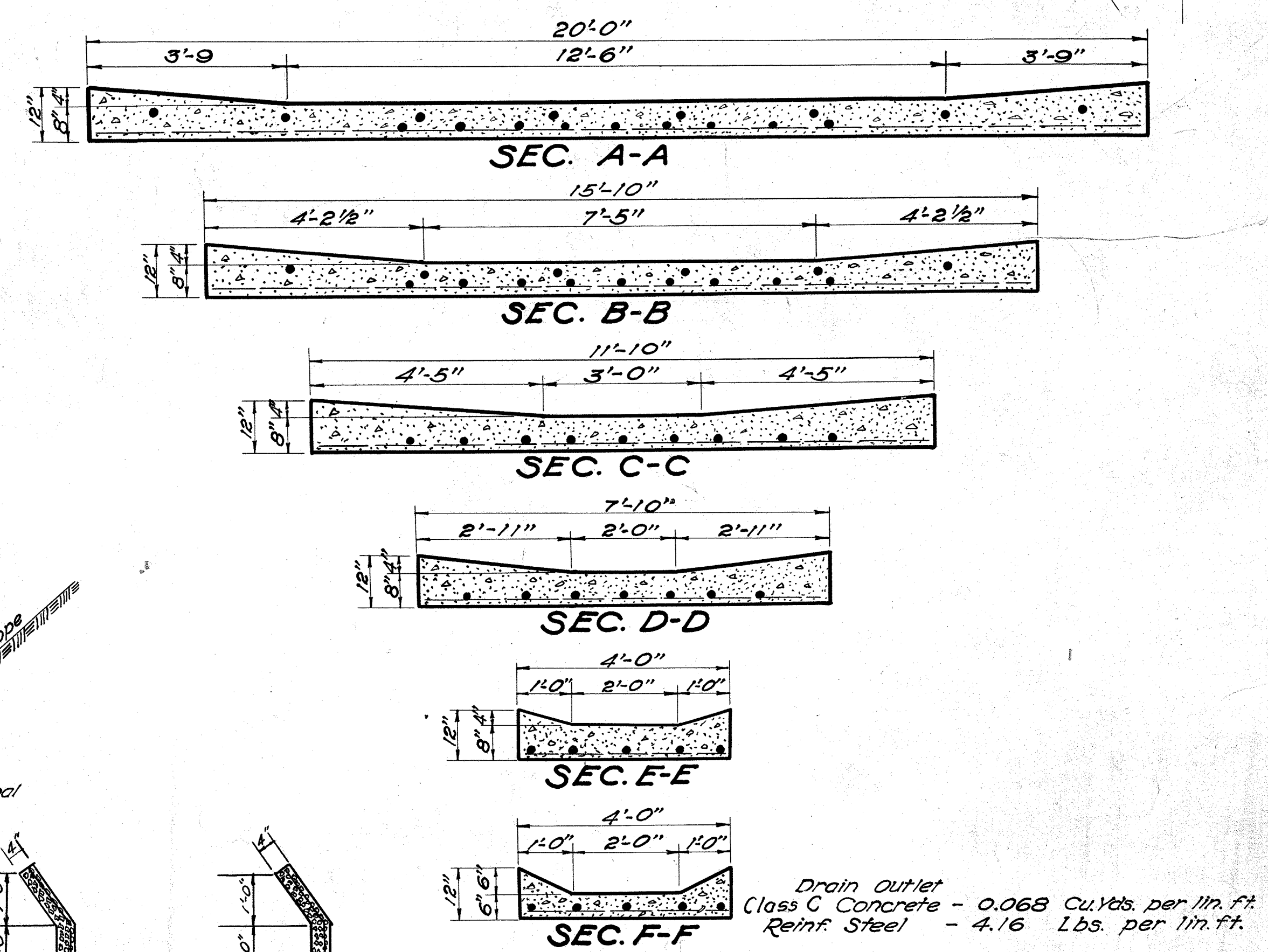
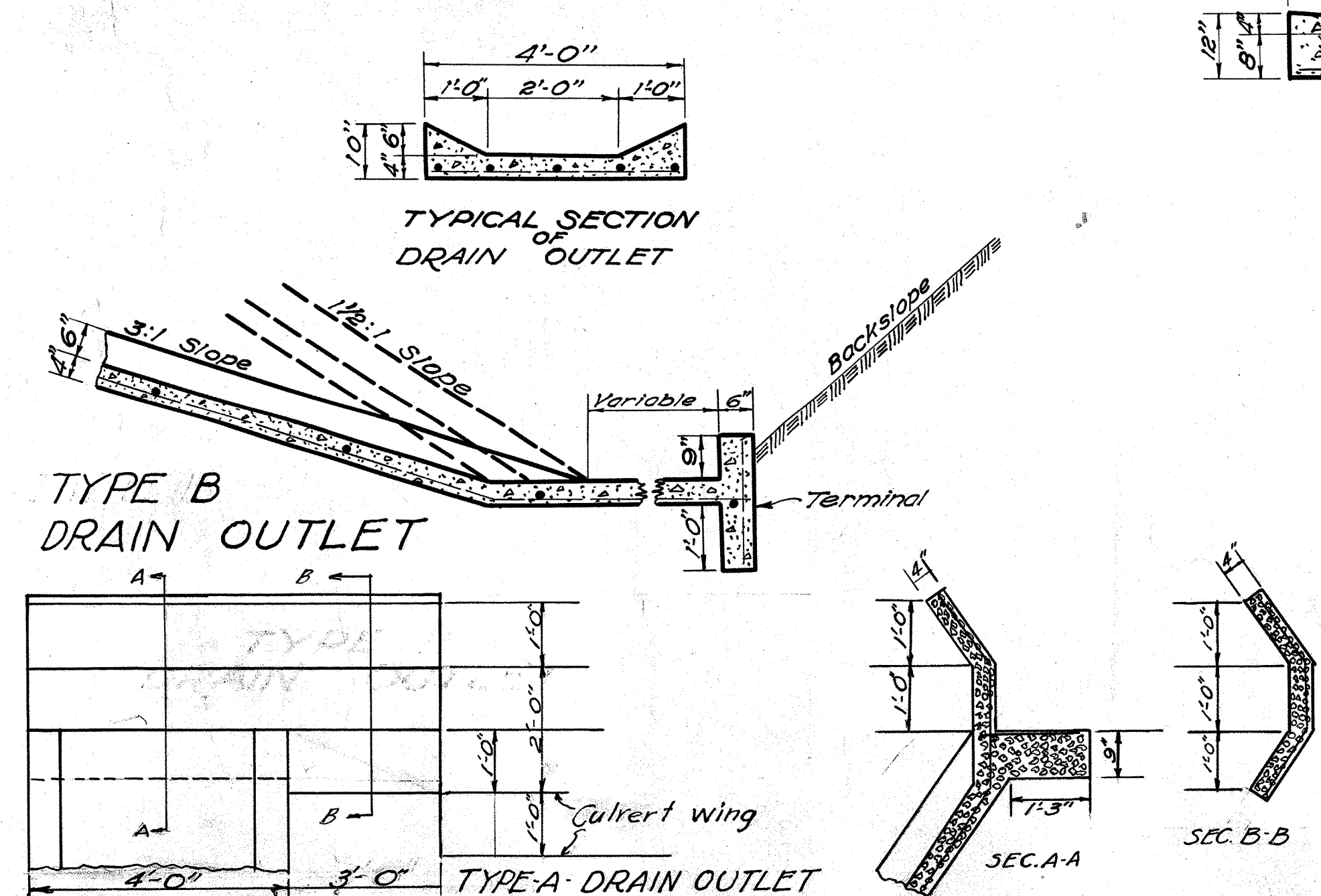


Price of Exp. Bolts to be included in price bid for concrete.

STEEL SCHEDULE						
Mark	No.	Size	Shape	Location	Length	Weight
LEFT END OF CULVERT						
W2a	6	1/2" #	Bent	Wings	3'-0"	12
W2a	4	1/2" #	ST	Walls	3'-0"	84
T2a	3	1/2" #	"	Top Slab	21'-11"	44
T2b	7	1/2" #	"	Slab & Walls	23'-7"	110
S3a	123	1/2"	"	Slabs	4'-1"	427
C2a	5	1/2" #	Bent	cut-off Walls	3'-3"	11
C2b	2	1/2" #	ST.	"	4'-1"	5
Total						693
RIGHT END OF CULVERT						
W2a	6	1/2" #	Bent	Wings	3'-0"	12
W2a	23	1/2" #	ST.	Walls	3'-0"	46
T2a	3	1/2" #	"	Top Slab	12'-2"	24
T2b	7	1/2" #	"	Slab & Walls	13'-10"	65
S3a	71	1/2"	"	Slabs	4'-1"	246
C2a	5	1/2" #	Bent	cut-off Walls	3'-3"	11
C2b	2	1/2" #	ST.	"	4'-1"	5
Total						409
QUANTITIES						
LEFT END OF CULVERT						
Excavation (Channel)					3	C.Y.
" (Structure)					4	C.Y.
Concrete Class C					7.05	C.Y.
Dowel Holes (1 1/2" Diam)					14	Units
Reinforcing Steel					693	Lbs.
RIGHT END OF CULVERT						
Excavation (Channel)					2	C.Y.
" (Structure)					3	C.Y.
Concrete Class C					4.25	C.Y.
Dowel Holes (1 1/2" Diam)					14	Units
Reinforcing Steel					409	Lbs.
TOTAL QUANTITIES						
Excavation (Channel)					5	C.Y.
" (Structure)					7	C.Y.
Concrete Class C					11.3	C.Y.
Reinforcing Steel					1102	Lbs.
Dowel Holes (1 1/2" Diam)					28	Units



- NOTES**
- (1) Concrete to be Class C.
 - (2) All reinforcing steel is 1/2" φ
 - (3) Payment for drain outlet is per lin. ft. and includes terminal.



Curve Data
 A = 30°-55' Lt.
 D = 2°-0'
 T = 792.25'
 E = 2864.79'
 L = 1545.83
 E = 107.59

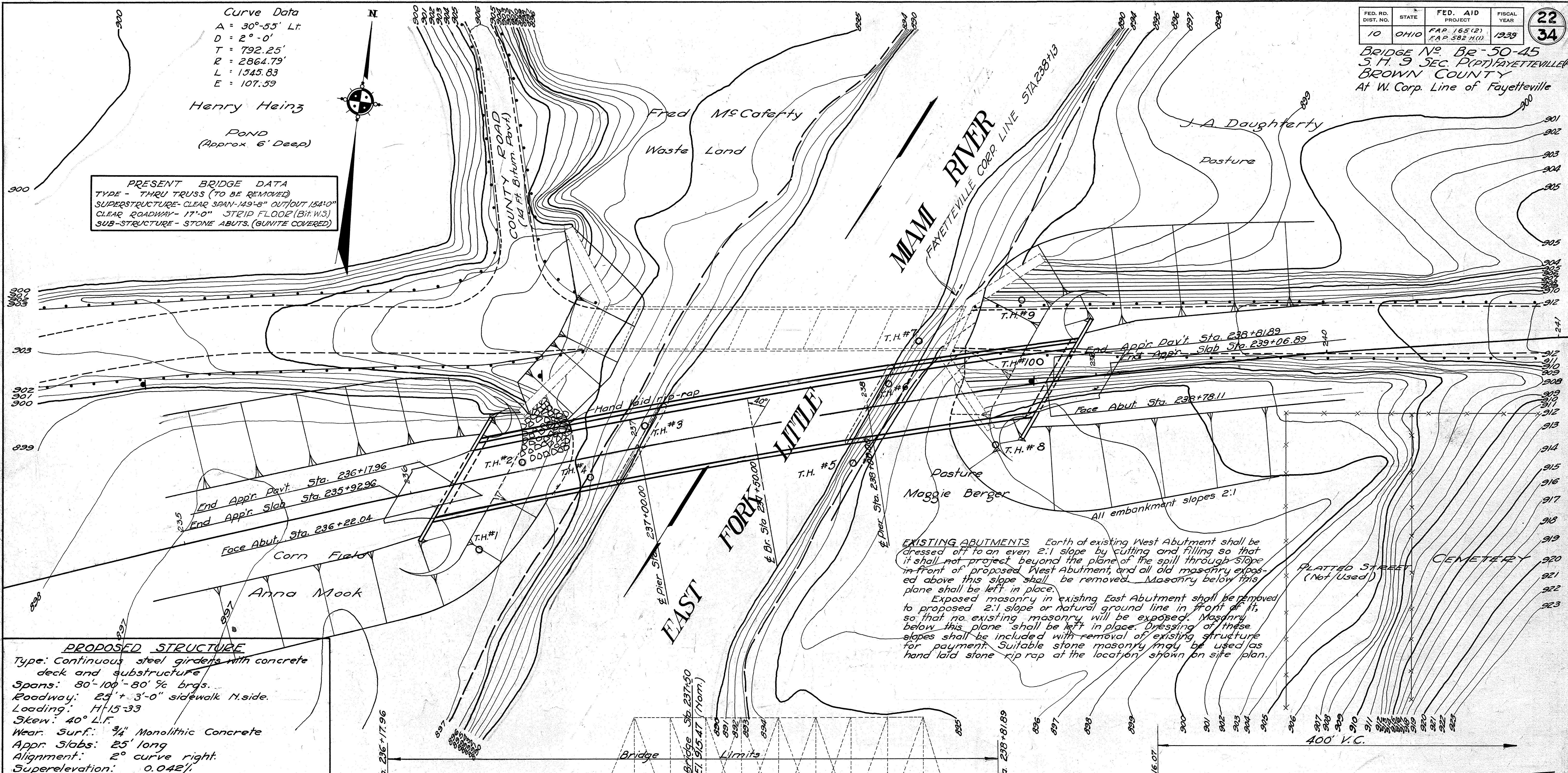
Henry Heinz
 Pond
 (Approx 6' Deep)

PRESENT BRIDGE DATA
 TYPE - THRU TRUSS (TO BE REMOVED)
 SUPERSTRUCTURE - CLEAR SPAN - 149'-6" OUT/OUT (54'-0")
 CLEAR ROADWAY - 17'-0" STRIP FLOOR (BIT. W.S.)
 SUB-STRUCTURE - STONE ABUTS. (GUNITE COVERED)

FED. RD. DIST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR
10	OHIO	FAP 165(2) FAP 582 H(1)	1939

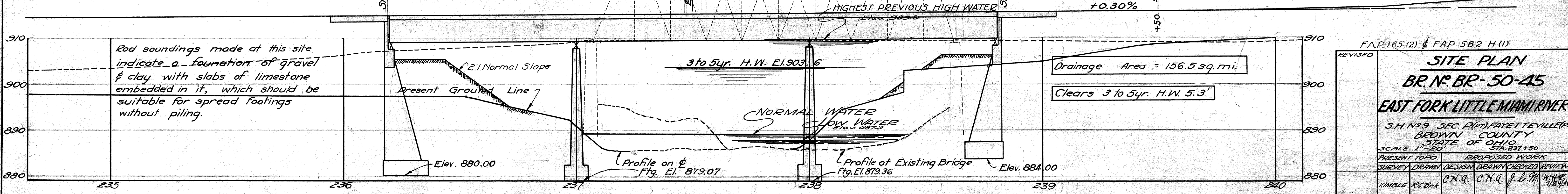
22
34

BRIDGE No BR-50-45
 S.H. 9 SEC. P(PT) FAYETTEVILLE
 BROWN COUNTY
 At W. Corp. Line of Fayetteville



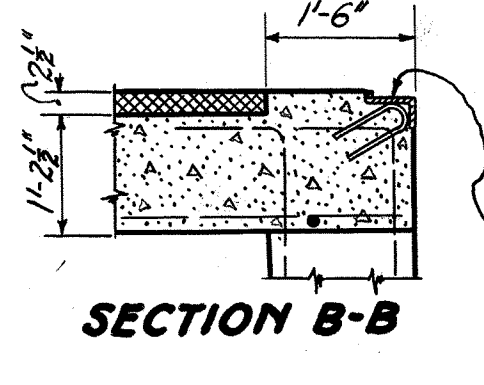
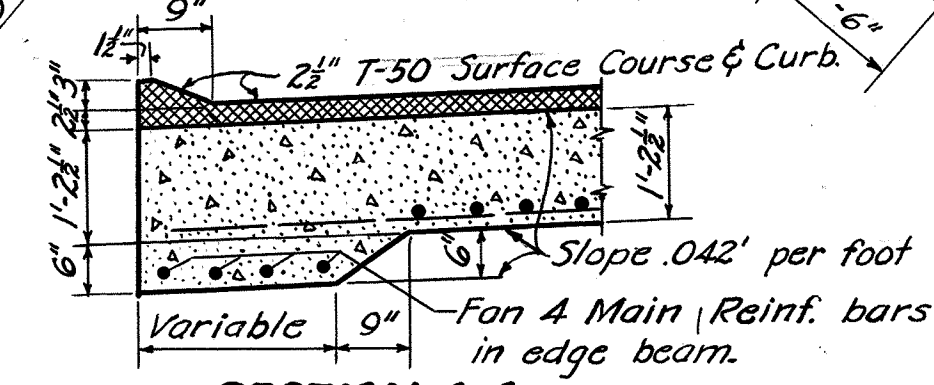
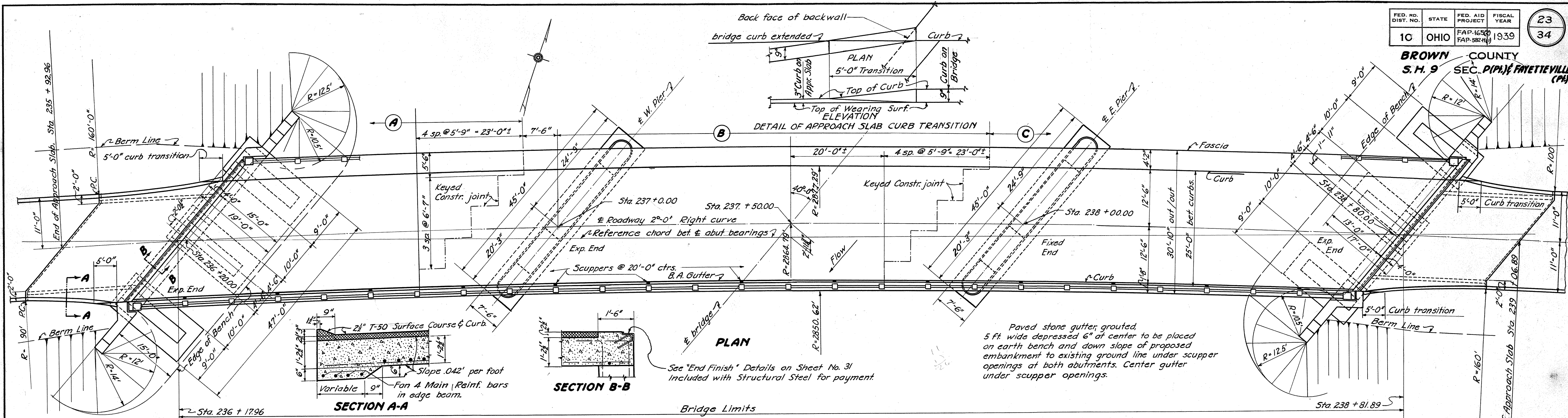
PROPOSED STRUCTURE
 Type: Continuous steel girders with concrete deck and substructure
 Spans: 80'-100'-80' % brgs.
 Roadway: 25' + 3'-0" sidewalk N. side.
 Loading: H-15-33
 Skew: 40° L.F.
 Wear Surf.: 3/4" Monolithic Concrete
 Appr Slabs: 25' long
 Alignment: 2° curve right.
 Superelevation: 0.042/1'

EXISTING ABUTMENTS Earth at existing West Abutment shall be dressed off to an even 2:1 slope by cutting and filling so that it shall not project beyond the plane of the spill through slope in front of proposed West Abutment, and all old masonry exposed above this slope shall be removed. Masonry below this plane shall be left in place.
 Exposed masonry in existing East Abutment shall be removed to proposed 2:1 slope or natural ground line in front of it, so that no existing masonry will be exposed. Masonry below this plane shall be left in place. Dressing of these slopes shall be included with removal of existing structure for payment. Suitable stone masonry may be used as hand laid stone rip rap at the location shown on site plan.

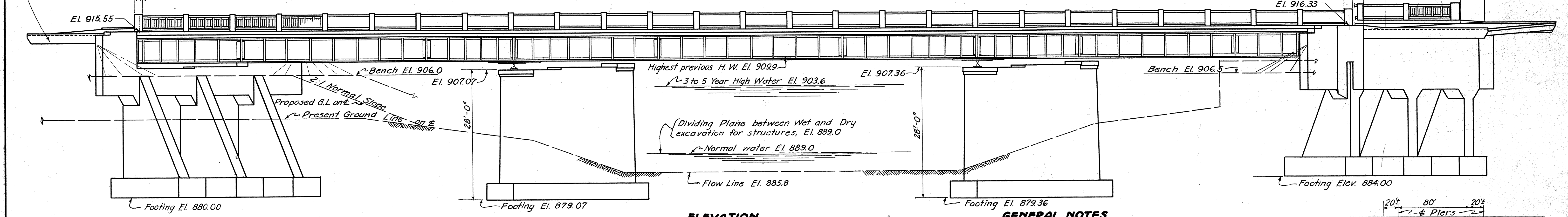


Rod soundings made at this site indicate a formation of gravel & clay with slabs of limestone embedded in it, which should be suitable for spread footings without piling.

FAP 165(2) & FAP 582 H(1)
 REVISION
SITE PLAN
BR. No. BR-50-45
EAST FORK LITTLE MIAMI RIVER
 S.H. No. 9 SEC. P(PT) FAYETTEVILLE
 BROWN COUNTY
 STATE OF OHIO
 SCALE 1" = 20'
 PRESENT TOPO. PROPOSED WORK
 SURVEY DRAWN DESIGN DRAWN CHECKED REVIEW
 KIMBLE R.C. BISHOP C.N.C. C.N.C. J.L.M. W.H.E. 1/28/39



Reinforced concrete approach slab 25 ft. long x 14 1/2" thick with 2 1/2" T-50 Surface course and curb to be constructed as shown on this drawing and in conformance with Std. Drawing No. AS-35. Except that mud jacking holes are to be omitted.
 26 Panels 'A' @ 9'-0" + 25 Posts @ 1'-0" = 259'-0" f/f End Posts on low side.
 26 Panels 'B' @ 8'-11 1/2" + 25 Posts @ 1'-0" = 257'-4 1/2" f/f End Posts on high side.



ESTIMATED QUANTITIES										
ITEM	DESCRIPTION	W. ABUT.	E. ABUT.	W. PIER	E. PIER	SUPERSTR.	GENERAL	TOTAL	Ch&OrdNo	REV. AS BUILT
E-2	Cofferdams & pumping.						Lump	Lump sum		
E-2	Excavation for structures, wet.	231	116	160	160			667 cu. yd.		
E-2	Excavation for structures, dry.	200	380	20	20			620 cu. yd.		
S-1	Class "C" concrete, superstructure.					245		245 cu. yd.		
S-1	Class "E" concrete, walls.	157	138	161	161			617 cu. yd.		
S-1	Class "E" concrete, footings.	76	68	44	44			232 cu. yd.		
S-3	Type "B" waterproofing		30	27				57 sq. yds.		
S-4	Reinforcing steel.	14,170	11,980	4,600	4,600	47,170	80	82,600 lbs.		
S-7	Structural steel. (Except field painting).					291,300		291,300 lbs.	C.O.I +300	291,300-lb.
S-7	Steel castings. (Except field painting).					7660		7,660 lbs.		
S-8	Field painting of str. steel & steel castings.					298,960		298,960 lbs.	C.O.I +300	298,960-lb.
S-14	Bridge railing (steel with conc. posts).					523.4		523.4 lin. ft.		
S-24	Removal of existing structure.						Lump	Lump sum		
I-10	Stone riprap, grouted, Type "A"	75						75 sq. yd.		
I-14	Paved gutter grouted, stone.	45	40					85 lin. ft.		

GENERAL NOTES

FOR DETAILS of cast steel shoes, approach slabs, scuppers, gutters and end finish not shown on these drawings, reference shall be made to Std. Dwg. CSS-35, AS-35 and MBD-36.

EXISTING SUPERSTRUCTURE shall be removed and stored at roadside at the disposal of the State's forces when no longer needed to maintain traffic.

TRAFFIC to be maintained over existing structure. N.E. wing to be built after new bridge is opened to traffic. Maintenance of traffic to be included with approach quantities for payment.

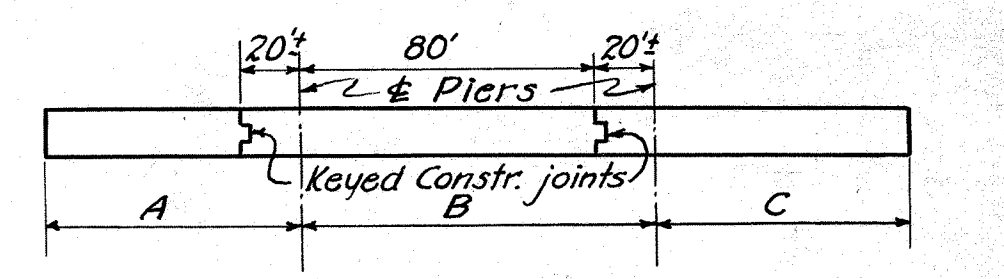
EXISTING ABUTMENTS. See note on Sheet No. 22.

STEEL RAILING shall be painted in accordance with Item S-8. Painting is included with railing for payment.

CHAMFER exposed edges 3/4" unless otherwise shown.

WELDING is Class "A."

WELDING SYMBOLS conform to symbol system of the American Welding Society (1938).



Construction joints in the concrete deck shall be made normal to centerline of roadway and stepped as shown on General Plan and placed as follows:
 Place section "A" first, then "B", starting at far end and progressing toward section "A", then "C", starting at far end and progressing toward section "B". Section "A" may begin at either end of bridge.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

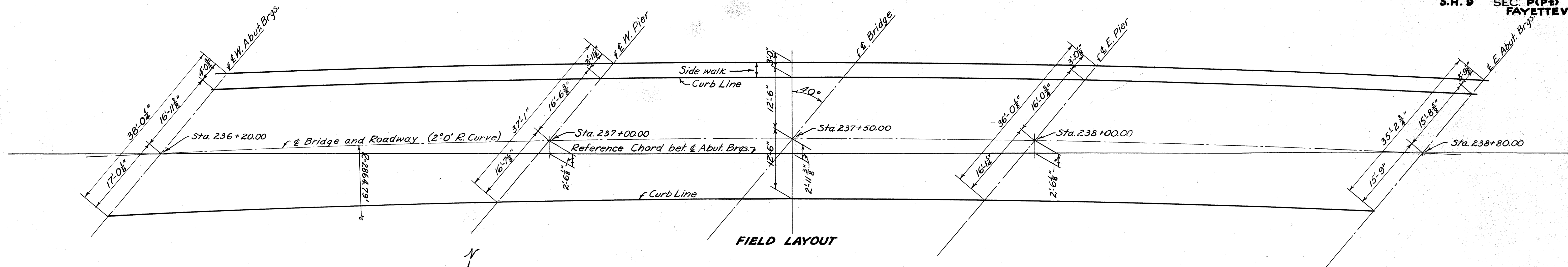
GENERAL PLAN & ELEVATION, NOTES AND ESTIMATED QUANTITIES

BRIDGE No. BR-50-45
OVER EAST FORK OF LITTLE MIAMI RIVER

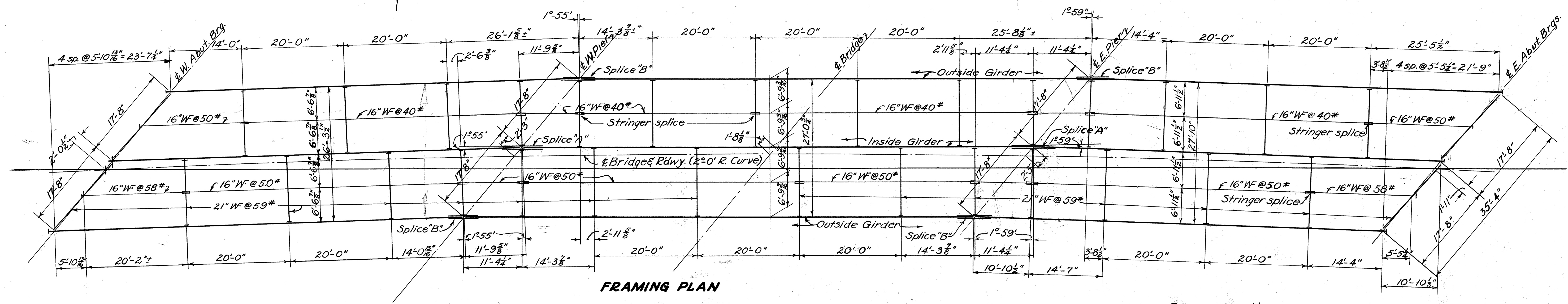
BROWN COUNTY S.H. 9
SECTION P(P) FAYETTEVILLE (PA) STA. 237 + 50
FAP-165 (2) & FAP-582-1(1)

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
K.E.D.	K.E.D.	C.D.	W.C.K.	M.C.C.	7/27/39	11/10/39

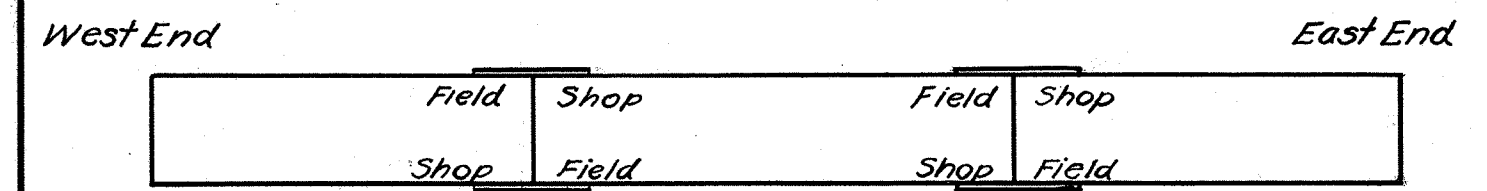
BROWN COUNTY
S.H. 9 SEC. P (PT) FAYETTEVILLE (PT)



FIELD LAYOUT



FRAMING PLAN



ERECTION DIAGRAM showing the arrangement of shop and field rivets in girder splices, assuming that erection begins at the west end.

TABLE OF CASTINGS			
Location		Upper Shoe	Lower Shoe
W. Abut.	Ins. Girder	1~U-160-A	1~R-160
	Out. Girder	2~U-100-A	2~R-100
W. Pier	Ins. Girder	1~U-280	1~R-280
	Out. Girder	2~U-280	2~R-280
E. Pier	Ins. Girder	1~U-280	1~B-280
	Out. Girder	2~U-280	2~B-280
E. Abut.	Ins. Girder	1~U-160-A	1~R-160
	Out. Girder	2~U-100-A	2~R-100

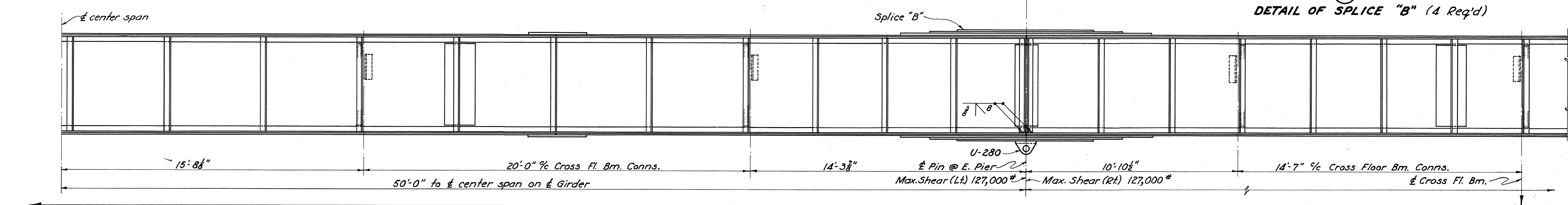
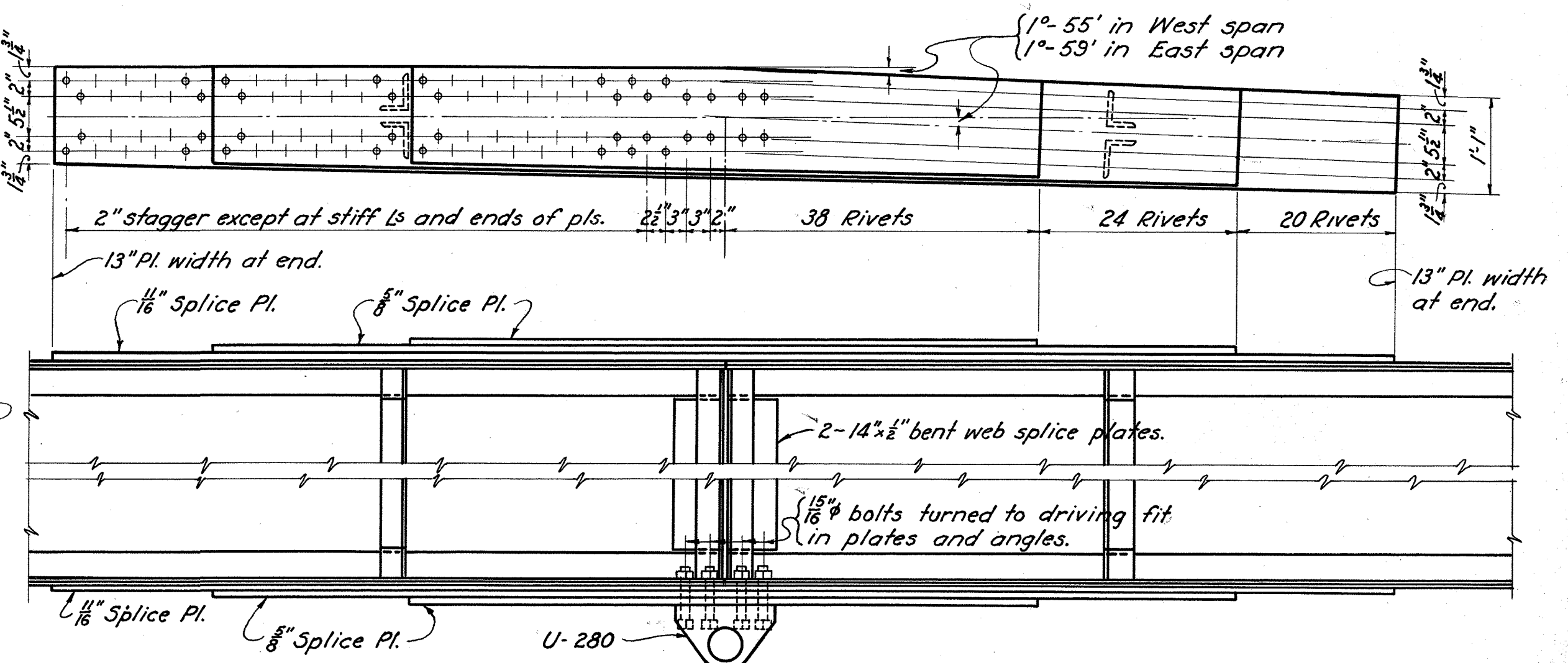
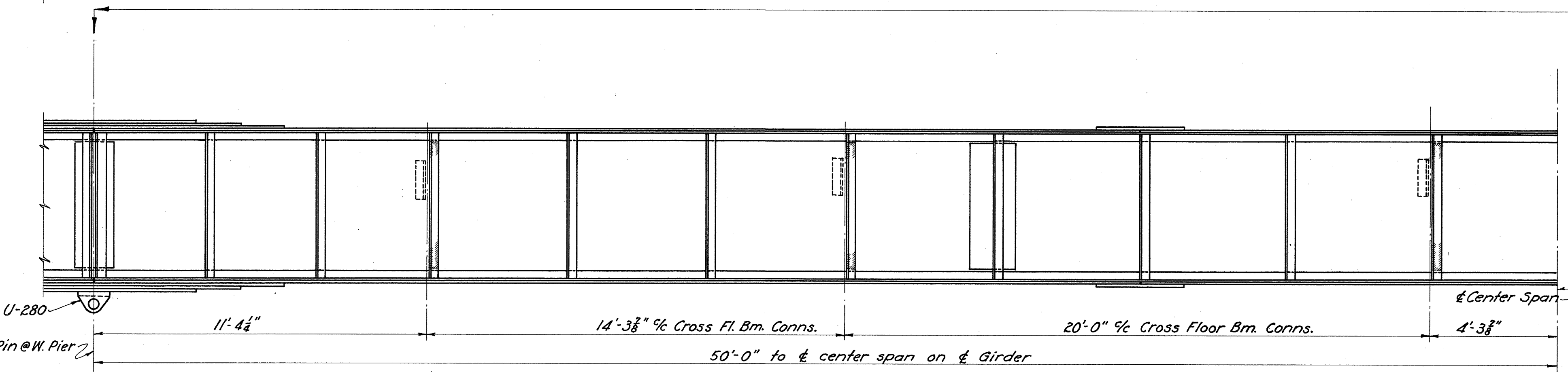
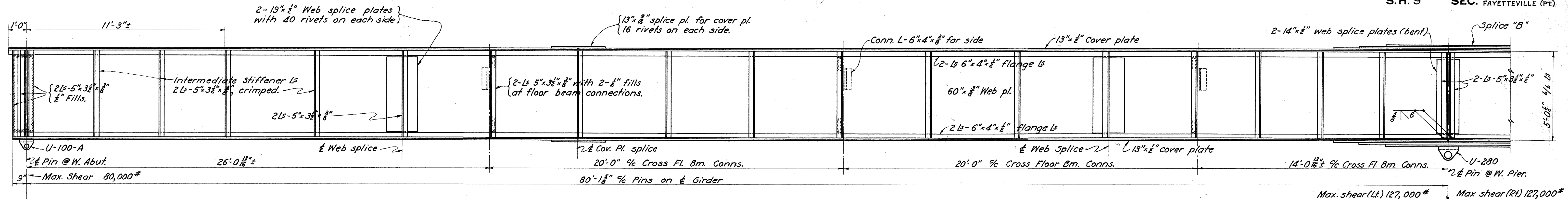
LOCATION	INSIDE GIRDER		OUTSIDE GIRDER	
	End Span	Middle Span	End Span	Middle Span
Deflection due to weight of Steel	1/8"	1/8"	1/8"	1/8"
Deflection due to Remaining D.L.	5/8"	3/4"	5/8"	7/8"
TOTAL REQUIRED CAMBER	3/4"	7/8"	3/4"	1"

- ERECTION NOTE
- Riveting procedure for field splices of girders shall be as follows:
- (1) Lightly pin and bolt together all structural steel.
 - (2) Thoroughly pin, bolt, and rivet bottom flange splice at first pier.
 - (3) Raise ends of outside girders at first abut. 3" and inside girder 2 1/2".
 - (4) Rivet top flange splices at first pier.
 - (5) Thoroughly pin, bolt, and rivet bottom flange splices at second pier.
 - (6) Raise ends of outside girders at second abut. 3" and inside girder 2 1/2".
 - (7) Rivet top flange splice of second pier.
 - (8) Lower ends of girders of both abutments.

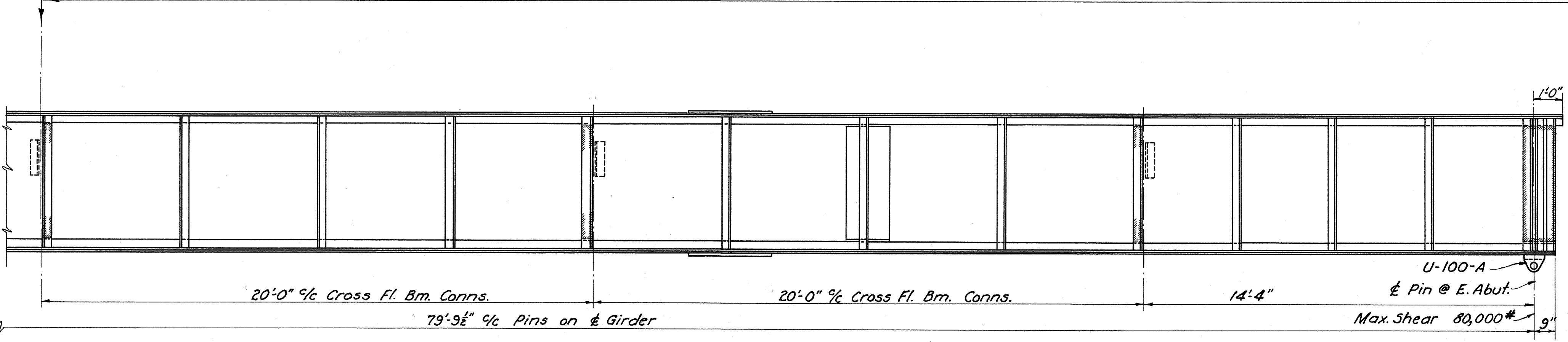
STATE OF OHIO DEPARTMENT OF HIGHWAYS BUREAU OF BRIDGES				
FRAMING PLAN, CASTINGS TABLE AND ERECTION DIAGRAM				
BRIDGE NO. BR-50-45 OVER EAST FORK OF LITTLE MIAMI RIVER				
BROWN COUNTY SEC. P (PT) FAYETTEVILLE (PT) FAP-16.5(2) FAP-582(11)			S.H. 9 STA. 237+50	
DESIGNED R.E.D.	DRAWN W.C.H.	TRACED W.C.H.	CHECKED W.C.H.	REVIEWED G.U.S. DATE 7/24/39

BROWN COUNTY
S.H. 9 SEC. FAYETTEVILLE (Pt.) & SEC. FAYETTEVILLE (Pt.)

1-2 1/2
4 1/2
1-7"

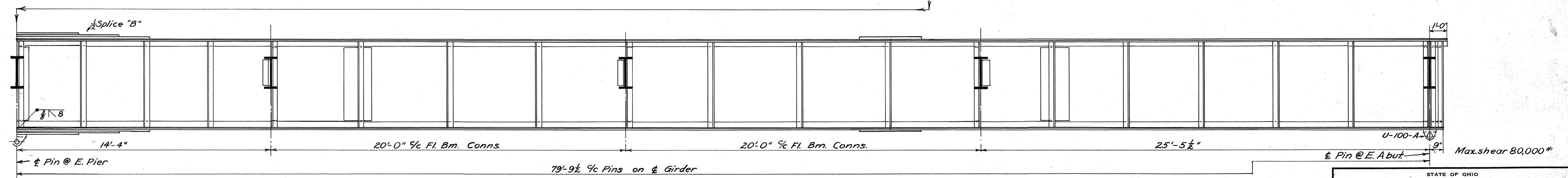
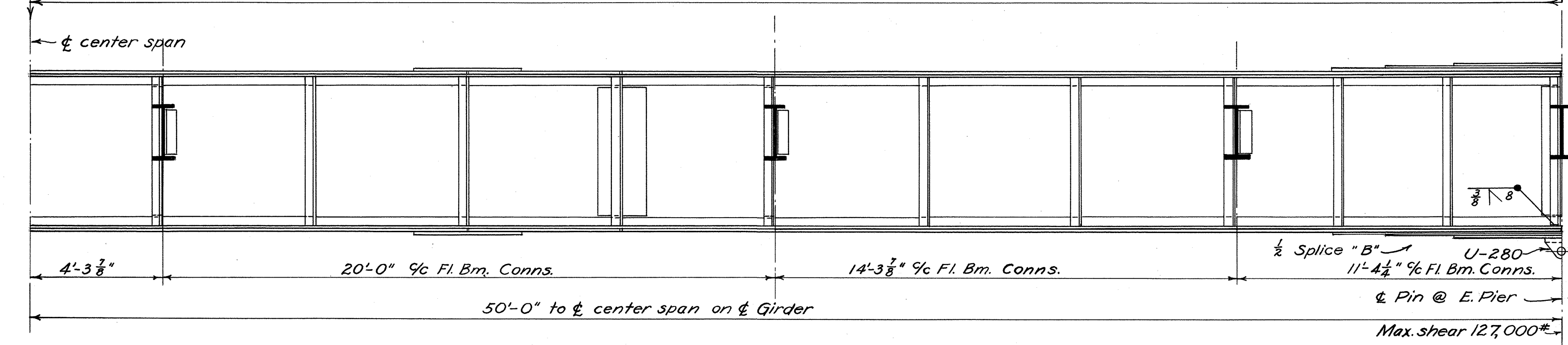
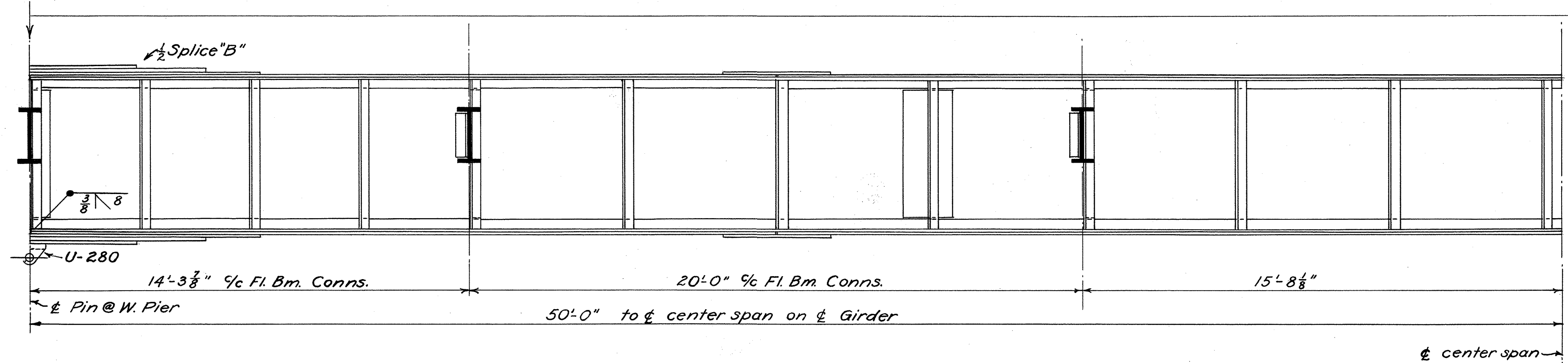
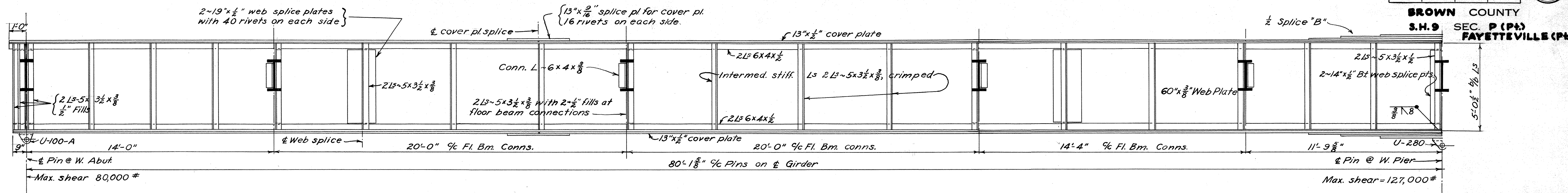


RIVETS to be 3/4"



STATE OF OHIO DEPARTMENT OF HIGHWAYS BUREAU OF BRIDGES					
OUTSIDE LINE OF GIRDERS ON SOUTH SIDE					
BRIDGE NO. BR-50-45 OVER EAST FORK OF LITTLE MIAMI RIVER					
BROWN COUNTY				S.H. 9	
SEC. P (Pt.) & FAYETTEVILLE (Pt.)				STA. 237+50	
DESIGNED DRAWN TRACED CHECKED REVIEWED DATE REVISION					
K.E.D.	K.E.D.	GWS	N.C.K.	C.U.D.	7/24/39

BROWN COUNTY
S.H. 9 SEC. P (P+) FAYETTEVILLE (P+)



RIVETS to be $\frac{7}{8}$ " ϕ .

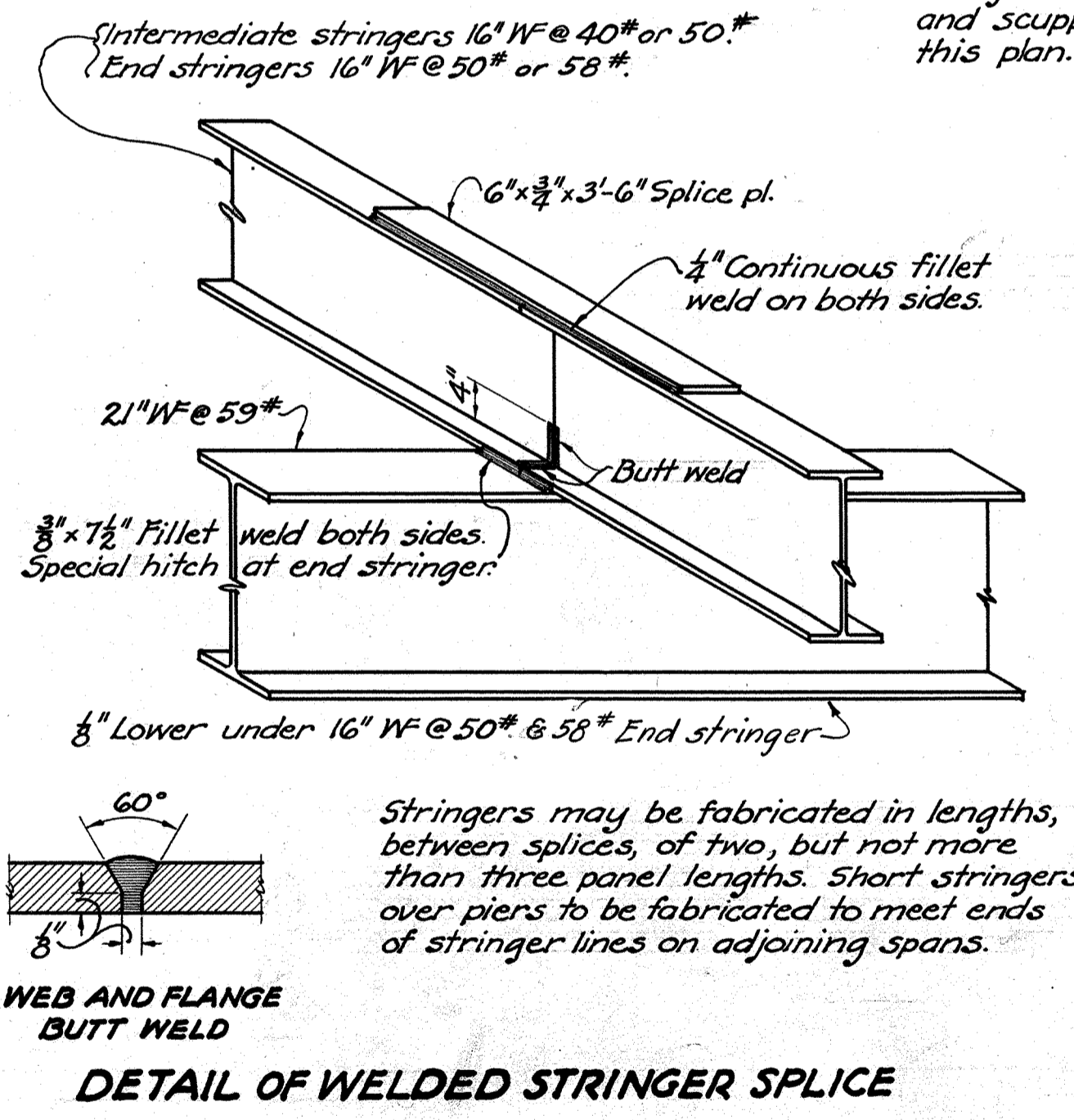
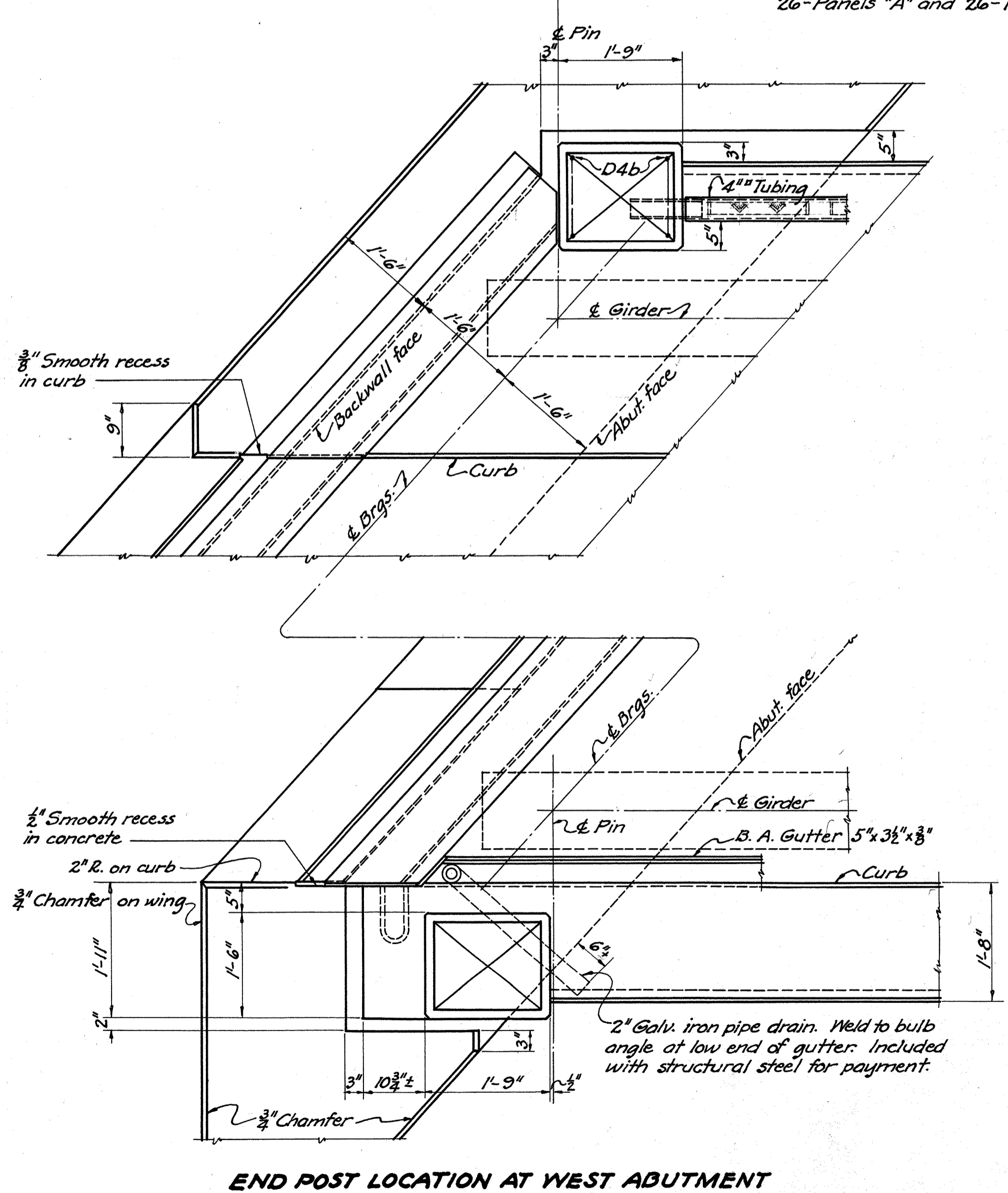
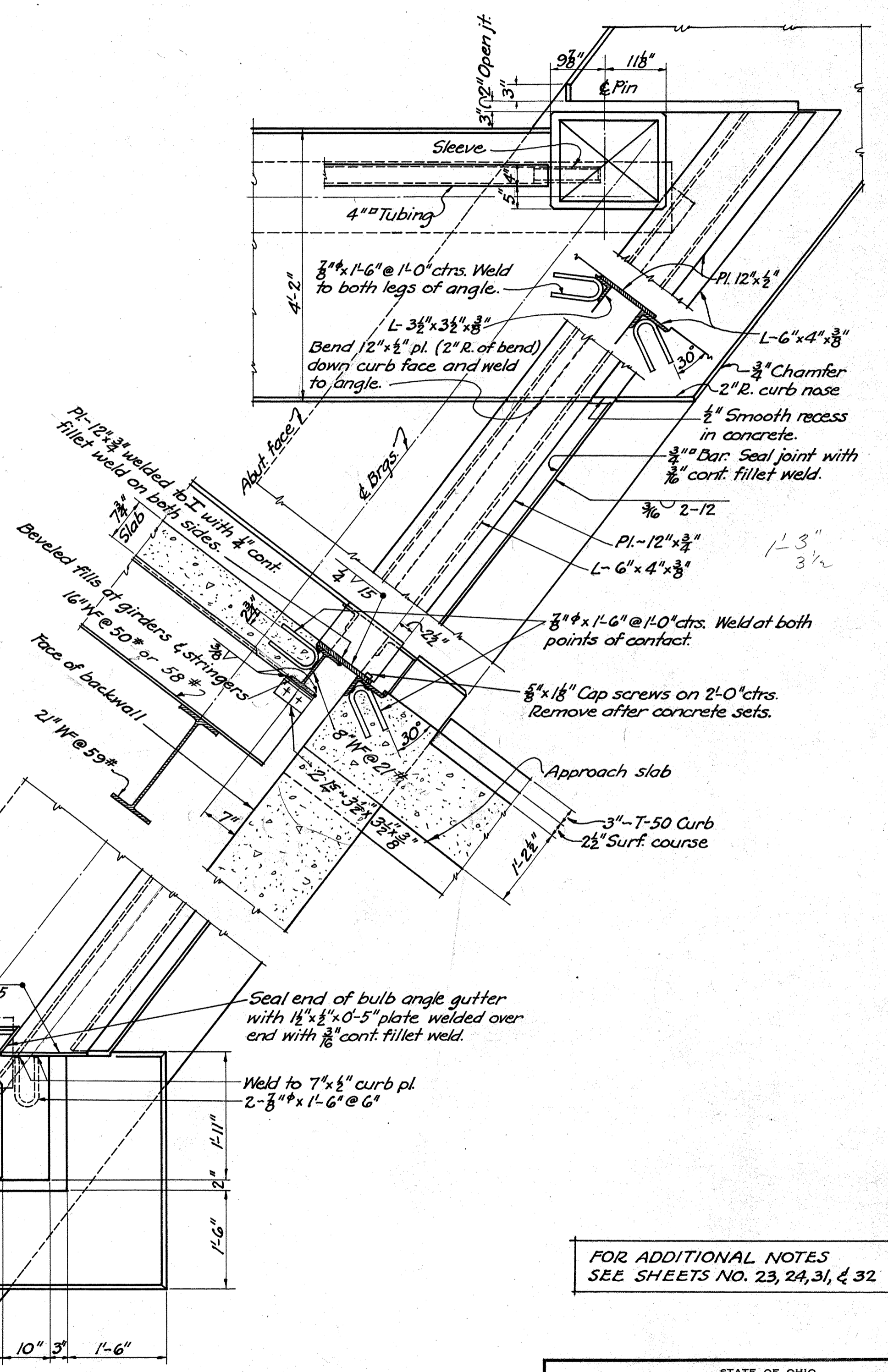
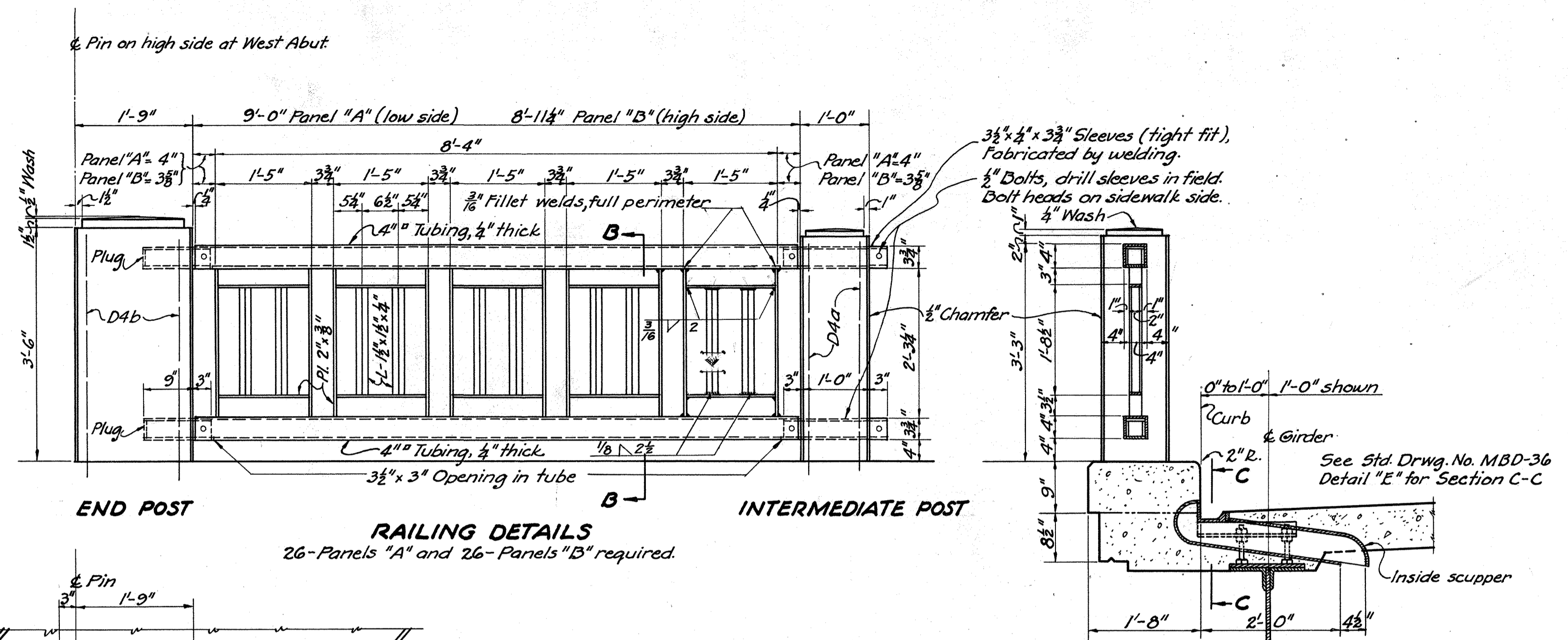
FOR ADDITIONAL NOTES SEE SHEETS No. 23, 24, 31 & 32

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES

OUTSIDE LINE OF GIRDERS ON NORTH SIDE

BRIDGE NO. BR-50-45
OVER EAST FORK OF LITTLE MIAMI RIVER
BROWN COUNTY S.H. 9
SEC. P (P+) FAYETTEVILLE (P+) Sta. 237+50
FAP-165 (2) FAP-582 (1)

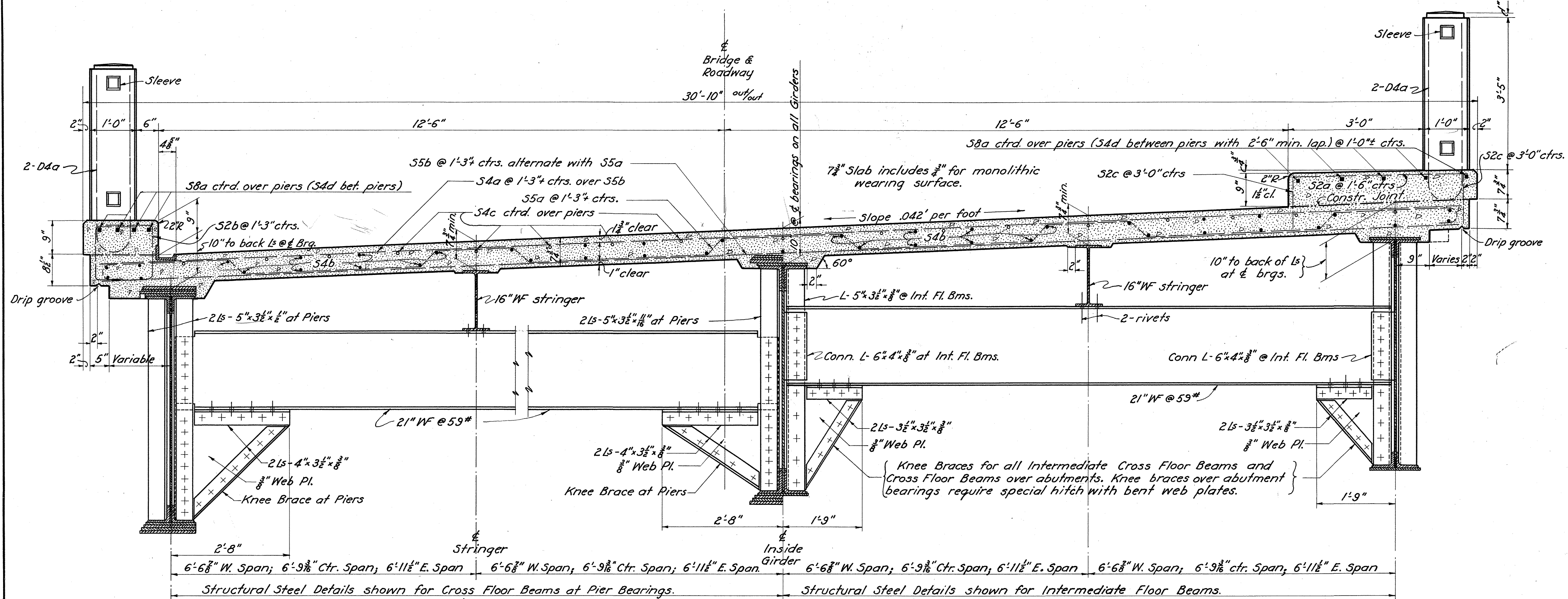
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H. C. B.	H. C. B.	J. K. W.	M. C. K.	E. V. S.	7/24/39	



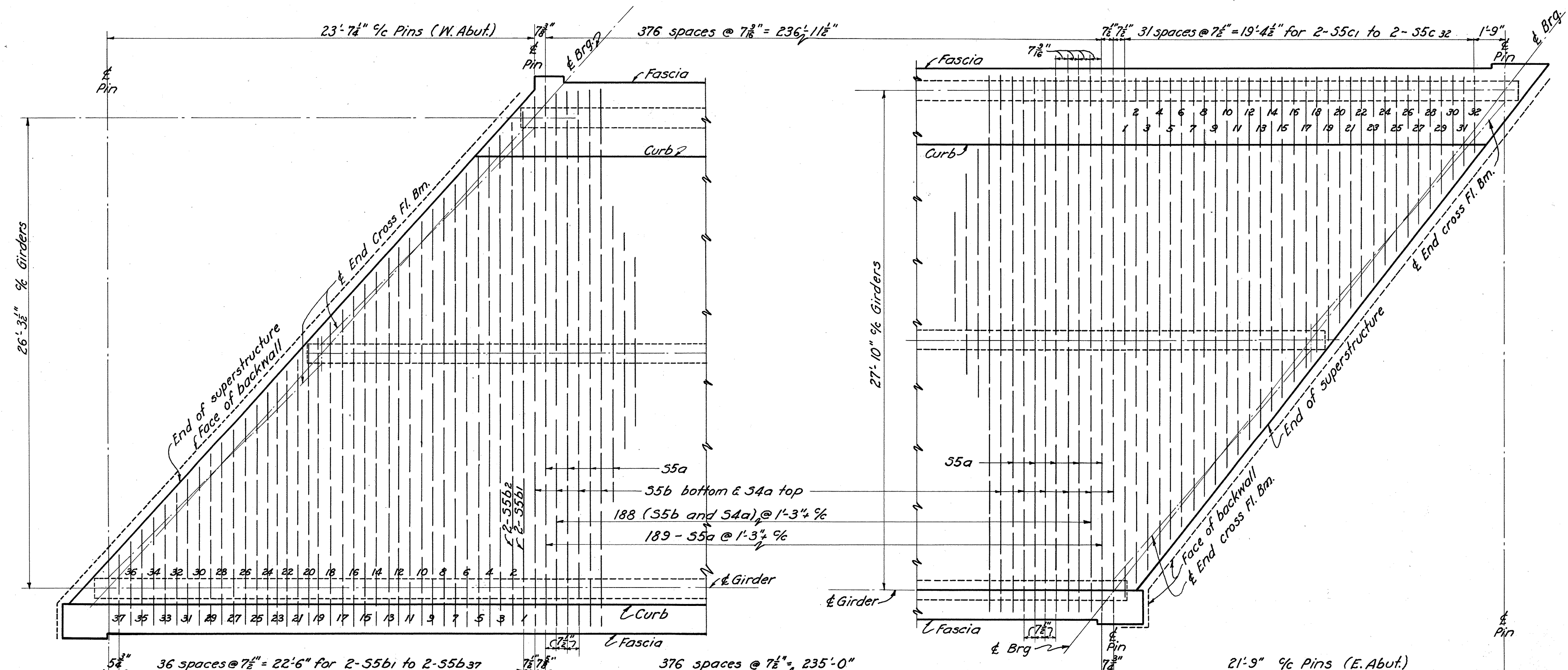
COPPER-BEARING STEEL
All elements of end finish above tops of beveled stringers and girder fills, bulb angle gutters and scuppers, and all elements of metal railing shall be copper-bearing steel.

FOR ADDITIONAL NOTES
SEE SHEETS NO. 23, 24, 31, & 32

STATE OF OHIO DEPARTMENT OF HIGHWAYS BUREAU OF BRIDGES						
DETAILS OF RAILING, END FINISH, AND STRINGER SPLICE						
BRIDGE NO. BR-50-45 OVER EAST FORK OF LITTLE MIAMI RIVER BROWN COUNTY S. H. 9 SECTION P (PT.) FAYETTEVILLE (PT.) STA. 237+50 F.A.P. 165(2) AND F.A.P. 582 H(1)						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
K.E.B.	K.E.B.	J.P.	W.C.R.	G.V.S.	7/24/39	9/27/39 11/19/39



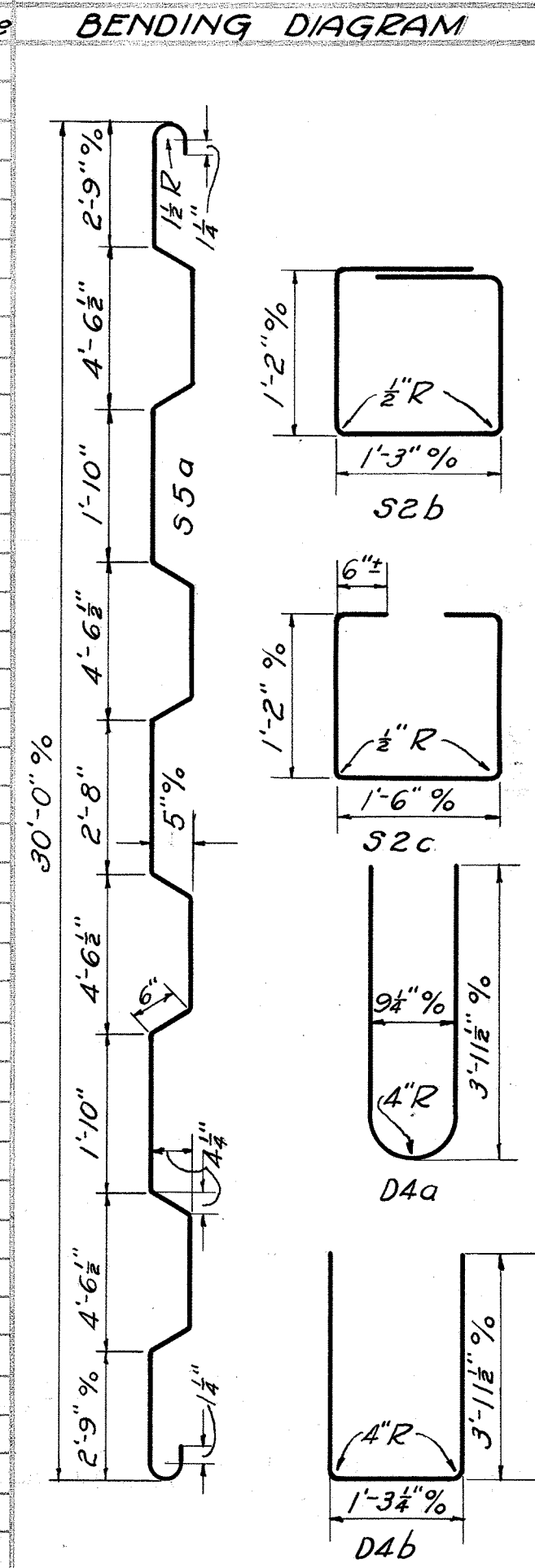
TYPICAL ROADWAY CROSS SECTION



LAYOUT FOR MAIN REINFORCING STEEL IN SUPERSTRUCTURE

STATE OF OHIO DEPARTMENT OF HIGHWAYS BUREAU OF BRIDGES						
SUPERSTRUCTURE DETAILS						
BRIDGE NO. BR-50-45 OVER EAST FORK OF LITTLE MIAMI RIVER						
BROWN COUNTY SEC. P (Pt.) FAYETTEVILLE (Pt.) F.A.P. 165 (2), F.A.P. 582-H (1)					S.H. 9 STA. 237+50	
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
K.E.D.	K.E.D.	GWS	W.G.K.	E.V.S.	7/24/39	

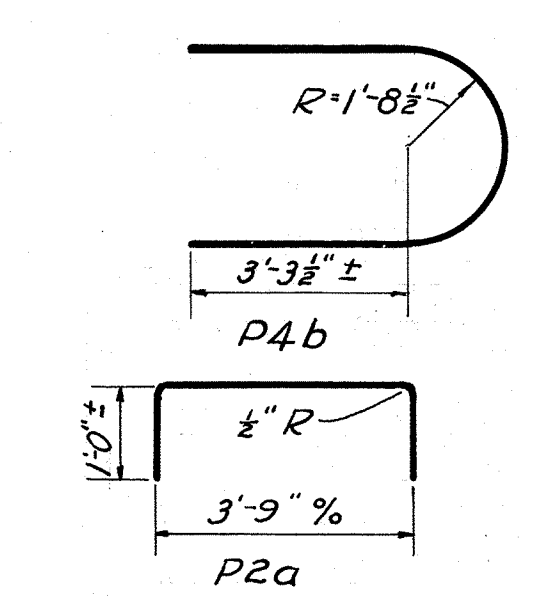
REINFORCING STEEL LIST					SUPERSTRUCTURE		BENDING DIAGRAM	
Mark	Size	No	Length	Weight	Shape			
S8a	1"Ø	18	40'-0"	2450	St.			
S5a	3/4"Ø	189	32'-0"	9090	Bt.			
S5b	3/4"Ø	190	30'-0"	8570	St.			
S4a	5/8"Ø	190	30'-0"	5950	St.			
S4b	3/8"Ø	320	35'-0"	11630	St.			
S4c	3/8"Ø	34	40'-0"	1420	St.			
S4d	3/8"Ø	54	33'-0"	1860	St.			
S2a	1/2"Ø	175	3'-9"	440	St.			
S2b	1/2"Ø	210	5'-6"	770	Bt.			
S2c	1/2"Ø	180	4'-9"	570	Bt.			
D4a	3/8"Ø	100	8'-3"	860	Bt.			
D4b	3/8"Ø	8	8'-9"	70	Bt.			
S5b1	3/4"Ø	2	29'-0"	90	St.			
S5b2	3/4"Ø	2	28'-4"	90	St.			
S5b3	3/4"Ø	2	27'-7"	80	St.			
S5b4	3/4"Ø	2	26'-11"	80	St.			
S5b5	3/4"Ø	2	26'-2"	80	St.			
S5b6	3/4"Ø	2	25'-6"	80	St.			
S5b7	3/4"Ø	2	24'-10"	70	St.			
S5b8	3/4"Ø	2	24'-1"	70	St.			
S5b9	3/4"Ø	2	23'-5"	70	St.			
S5b10	3/4"Ø	2	22'-8"	70	St.			
S5b11	3/4"Ø	2	22'-0"	70	St.			
S5b12	3/4"Ø	2	21'-4"	60	St.			
S5b13	3/4"Ø	2	20'-7"	60	St.			
S5b14	3/4"Ø	2	19'-11"	60	St.			
S5b15	3/4"Ø	2	19'-2"	60	St.			
S5b16	3/4"Ø	2	18'-6"	60	St.			
S5b17	3/4"Ø	2	17'-10"	50	St.			
S5b18	3/4"Ø	2	17'-1"	50	St.			
S5b19	3/4"Ø	2	16'-5"	50	St.			
S5b20	3/4"Ø	2	15'-8"	50	St.			
S5b21	3/4"Ø	2	15'-0"	50	St.			
S5b22	3/4"Ø	2	14'-4"	40	St.			
S5b23	3/4"Ø	2	13'-7"	40	St.			
S5b24	3/4"Ø	2	12'-11"	40	St.			
S5b25	3/4"Ø	2	12'-2"	40	St.			
S5b26	3/4"Ø	2	11'-6"	30	St.			
S5b27	3/4"Ø	2	10'-10"	30	St.			
S5b28	3/4"Ø	2	10'-1"	30	St.			
S5b29	3/4"Ø	2	9'-5"	30	St.			
S5b30	3/4"Ø	2	8'-8"	30	St.			
S5b31	3/4"Ø	2	8'-0"	20	St.			
S5b32	3/4"Ø	2	7'-4"	20	St.			
S5b33	3/4"Ø	2	6'-7"	20	St.			
S5b34	3/4"Ø	2	5'-11"	20	St.			
S5b35	3/4"Ø	2	5'-2"	20	St.			
S5b36	3/4"Ø	2	4'-6"	10	St.			
S5b37	3/4"Ø	2	3'-10"	10	St.			



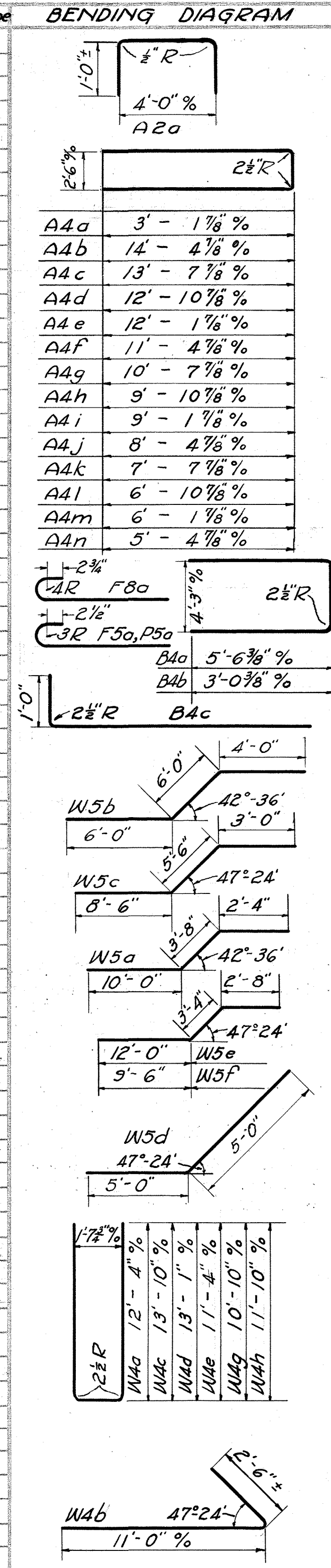
REINFORCING STEEL LIST					SUPERSTRUCTURE		BENDING DIAGRAM	
Mark	Size	No	Length	Weight	Shape			
S5c1	3/4"Ø	2	29'-0"	90	St.			
S5c2	3/4"Ø	2	28'-2"	80	St.			
S5c3	3/4"Ø	2	27'-5"	80	St.			
S5c4	3/4"Ø	2	26'-7"	80	St.			
S5c5	3/4"Ø	2	25'-10"	80	St.			
S5c6	3/4"Ø	2	25'-0"	80	St.			
S5c7	3/4"Ø	2	24'-2"	70	St.			
S5c8	3/4"Ø	2	23'-5"	70	St.			
S5c9	3/4"Ø	2	22'-7"	70	St.			
S5c10	3/4"Ø	2	21'-10"	70	St.			
S5c11	3/4"Ø	2	21'-0"	60	St.			
S5c12	3/4"Ø	2	20'-2"	60	St.			
S5c13	3/4"Ø	2	19'-5"	60	St.			
S5c14	3/4"Ø	2	18'-7"	60	St.			
S5c15	3/4"Ø	2	17'-10"	50	St.			
S5c16	3/4"Ø	2	17'-0"	50	St.			
S5c17	3/4"Ø	2	16'-2"	50	St.			
S5c18	3/4"Ø	2	15'-5"	50	St.			
S5c19	3/4"Ø	2	14'-7"	40	St.			
S5c20	3/4"Ø	2	13'-10"	40	St.			
S5c21	3/4"Ø	2	13'-0"	40	St.			
S5c22	3/4"Ø	2	12'-2"	40	St.			
S5c23	3/4"Ø	2	11'-5"	30	St.			
S5c24	3/4"Ø	2	10'-7"	30	St.			
S5c25	3/4"Ø	2	9'-10"	30	St.			
S5c26	3/4"Ø	2	9'-0"	30	St.			
S5c27	3/4"Ø	2	8'-2"	20	St.			
S5c28	3/4"Ø	2	7'-5"	20	St.			
S5c29	3/4"Ø	2	6'-7"	20	St.			
S5c30	3/4"Ø	2	5'-10"	20	St.			
S5c31	3/4"Ø	2	5'-0"	20	St.			
S5c32	3/4"Ø	2	4'-2"	10	St.			

PIER STEEL LIST				
Mark	Size	No	Length	Weight
P5a	3/4"Ø	128	6'-0"	1160
P5b	3/4"Ø	128	24'-0"	4630
D4a	3/8"Ø	64	37'-0"	2470
D4b	3/8"Ø	64	12'-0"	800
P2a	1/2"Ø	36	5'-9"	140

REPLACEMENT BARS				
Mark	Size	No	Length	Weight
RE8	1"Ø	1	8'-0"	30
RE7	1"Ø	1	8'-0"	20
RE5	3/4"Ø	2	7'-0"	20
RE4	5/8"Ø	2	7'-0"	10
RE2	1/2"Ø	1	6'-0"	0



REINFORCING STEEL LIST					WEST ABUTMENT		BENDING DIAGRAM	
Mark	Size	No	Length	Weight	Shape			
W7a	1"Ø	5	12'-0"	160	St.			
W7b	1"Ø	8	14'-0"	300	St.			
W5a	3/4"Ø	7	16'-0"	170	Bt.			
W5b	3/4"Ø	7	16'-0"	170	Bt.			
W5c	3/4"Ø	5	17'-0"	130	Bt.			
W5d	3/4"Ø	6	10'-0"	90	Bt.			
W5e	3/4"Ø	5	18'-0"	140	Bt.			
W5f	3/4"Ø	1	15'-6"	20	Bt.			
W4a	3/8"Ø	9	26'-0"	240	Bt.			
W4b	3/8"Ø	4	13'-6"	60	Bt.			
W4c	3/8"Ø	2	29'-0"	60	Bt.			
W4d	3/8"Ø	2	27'-6"	60	Bt.			
W4e	3/8"Ø	3	24'-0"	80	Bt.			
W4f	3/8"Ø	10	12'-0"	130	Bt.			
A8a	1"Ø	18	28'-0"	1720	St.			
A8b	1"Ø	9	26'-0"	800	St.			
A8c	1"Ø	18	35'-0"	2150	St.			
A8d	1"Ø	22	25'-0"	1870	St.			
A5a	3/4"Ø	18	20'-0"	540	St.			
A5b	3/4"Ø	12	15'-0"	270	St.			
A5c	3/4"Ø	6	12'-0"	110	St.			
A5d	3/4"Ø	6	8'-6"	80	St.			
A4a	3/8"Ø	39	8'-6"	350	Bt.			
A4b	3/8"Ø	3	31'-0"	100	Bt.			
A4c	3/8"Ø	3	29'-6"	90	Bt.			
A4d	3/8"Ø	3	28'-0"	90	Bt.			
A4e	3/8"Ø	3	26'-6"	80	Bt.			
A4f	3/8"Ø	3	25'-0"	80	Bt.			
A4g	3/8"Ø	3	23'-6"	70	Bt.			
A4h	3/8"Ø	3	22'-0"	70	Bt.			
A4i	3/8"Ø	3	20'-6"	60	Bt.			
A4j	3/8"Ø	3	19'-0"	60	Bt.			
A4k	3/8"Ø	3	17'-6"	50	Bt.			
A4l	3/8"Ø	3	16'-0"	50	Bt.			
A4m	3/8"Ø	3	14'-6"	50	Bt.			
A4n	3/8"Ø	3	13'-0"	40	Bt.			
A2a	1/2"Ø	15	6'-0"	60	Bt.			
B4a	5/8"Ø	41	15'-0"	640	Bt.			
B4b	5/8"Ø	41	10'-0"	430	Bt.			
B4c	5/8"Ø	34	11'-0"	390	Bt.			
B4d	5/8"Ø	12	11'-0"	140	St.			
B4e	5/8"Ø	16	22'-0"	370	St.			
B4g	5/8"Ø	34	9'-0"	320	St.			
F8a	1"Ø	27	8'-0"	740	Bt.			
F5a	3/4"Ø	54	6'-0"	490	Bt.			



REINFORCING STEEL LIST					EAST ABUTMENT		BENDING DIAGRAM	
Mark	Size	No	Length	Weight	Shape			
W7a	1"Ø	5	12'-0"	160	St.			
W7c	1"Ø	6	9'-0"	140	St.			
W5g	3/4"Ø	5	9'-6"	70	St.			
W5h	3/4"Ø	3	15'-0"	70	Bt.			
W5i	3/4"Ø	5	9'-6"	70	Bt.			
W5j	3/4"Ø	5	18'-6"	140	Bt.			
W5k	3/4"Ø	6	13'-6"	120	Bt.			
W5l	3/4"Ø	6	8'-0"	70	Bt.			
W4a	3/8"Ø	2	26'-0"	50	Bt.			
W4c	3/8"Ø	2	29'-0"	60	Bt.			
W4e	3/8"Ø	1	24'-0"	30	Bt.			
W4f	3/8"Ø	14	12'-0"	180	St.			
W4g	3/8"Ø	2	23'-0"	50	Bt.			
W4h	3/8"Ø	4	25'-0"	100	Bt.			
A8e	1"Ø	15	25'-0"	1280	St.			
A8f	1"Ø	9	22'-0"	670	St.			
A8g	1"Ø	18	31'-9"	1950	St.			
A8h	1"Ø	22	23'-0"	1720	St.			
A5b	3/4"Ø	6	15'-0"	140	St.			
A5c	3/4"Ø	6	12'-0"	110	St.			
A5d	3/4"Ø	6	8'-6"	80	St.			
A5e	3/4"Ø	18	16'-0"	430	St.			
A4a	3/8"Ø	33	8'-6"	290	Bt.			
A4d	3/8"Ø	3	28'-0"	90	Bt.			
A4e	3/8"Ø	3	26'-6"	80	Bt.			
A4f	3/8"Ø	3	25'-0"	80	Bt.			
A4g	3/8"Ø	3	23'-6"	70	Bt.			
A4h	3/8"Ø	3	22'-0"	70	Bt.			
A4i	3/8"Ø	3	20'-6"	60	Bt.			
A4j	3/8"Ø	3	19'-0"	60	Bt.			
A4k								

SUMMARY OF QUANTITIES

CURB CALCULATION

F.A.P. 582H(1)	Begin Curb Station 239+06.89	
	End Curb Station 243+84.88	
	Gross Length Curb 477.99 x 2	955.98 lin. ft.
	Deduction for Drain Basin Station 239+10 to 239+37	27 lin. ft.
	Net Length Curb	928.98 lin. ft.
	Add for Approach Slab	47.00 lin. ft.
	Total Curb	975.98 lin. ft.

PAVEMENT CALCULATION

F.A.P. 165(2)	Begin Pavement Station 206+00	
	End Pavement Station 235+92.96	
	Gross Length of Pavement	2992.96 lin. ft.
	No Additions or Deductions	
	Net Length of Pavement	2992.96 lin. ft.
	Pavement Area 2992.96×22	7316 sq. yds.
	Additional Pavement for Temporary Connection	55 sq. yds.
	Total Pavement Area	7,371 sq. yds.

PAVEMENT CALCULATION

F.A.P. 165(2)	Pavement Area =	7371	Sq. Yds.
	3" Hot Mixed, Hot Laid Asphaltic Conc. Base Course	$7371 \div 12 =$	614.25 Cu. Yds.
	2 1/2" Hot Mixed, Hot Laid Asphaltic Conc. Leveling Course	$7371 \div 14.40 =$	511.88 Cu. Yds.

F.A.P. 582H(1)	Begin Pavement Station 239+06.89	
	End Pavement Station 243+84.88	
	Gross Length Pavement	477.99 lin. ft.
	No Additions or Deductions	
	Net Length Pavement	477.99 lin. ft.
	Pavement Area 477.99×22	1169 sq. yds.

F.A.P. 582H(1)	Pavement Area =	1169	Sq. Yds.
	3" Hot Mixed, Hot Laid Asphaltic Conc. Base Course	$1169 \div 12 =$	97.42 Cu. Yds.
	2 1/2" Hot Mixed, Hot Laid Asphaltic Conc. Leveling Course	$1169 \div 14.40 =$	81.18 Cu. Yds.

CURB CALCULATION

F.A.P. 165(2)	Begin Curb Station 206+00	
	End Curb Station 235+92.96	
	Gross Length of Curb 2992.96 x 2	5,985.92 lin. ft.
	Deduction for Drain Basin Station 211+08 to 211+35 (Lt)	27
	" " " " Station 212+27 to 212+54 (Rt)	27
	" " " " Station 220+55.96 to 220+82.96 (Lt)	27
	" " " " Station 220+64.18 to 220+91.18 (Rt)	27
	" " " " Station 225+09 to 225+36 (Lt)	27
	" " " " Station 225+09 to 225+36 (Rt)	27
	" " " " Station 229+30 to 229+50 (Rt)	20

Total Deductions 182
Net Length Curb 5803.92 lin. ft.
Add for Approach Slab 47.00 = 5850.92 lin. ft.

PLANT MIXED T-11 PAVEMENT 6" THICK (APPROACHES)
F.A.P. 165(2) Pavement Area 235.3 Sq. Yds.

$235.3 \times 2 \times 4000 = 26.1$ Tons Mixture mixed with Chemical

$235.3 \times 4 \times 4000 = 52.3$ Tons Mixture not mixed with Chemical

$235.3 \times 0.6 \div 2000 = 0.71$ Tons Calcium Chloride

F.A.P. 582H(1) Pavement Area 104.8 Sq. Yds.

$104.8 \times 2 \times 4000 = 11.6$ Tons Mixture mixed with Chemical

$104.8 \times 4 \times 4000 = 23.3$ Tons Mixture not mixed with Chemical

$104.8 \times 0.6 \div 2000 = 0.31$ Tons Calcium Chloride

No.	Station		Excavation Cu. Yds.	Embankment Cu. Yds.	Emb. +15% Cu. Yds.	Borrow Cu. Yds.
	From	To				
F.A.P. 165(2)						
	205+00	236+70	5185	65177	74954	69769
Total						
F.A.P. 582H(1)						
	238+50	243+84.88	642	8066	9276	8634
GRAND TOTAL			5827	73243	84230	78403

STRUCTURES 20' SPAN & UNDER											
Item No.	Sheet No.	Barus 8" x 11" Cu. Yds.	Removal 18" Pipe Units	18" Pipe Excav. Cu. Yds.	Conc. Cu. Yds.	Dowel Holes Lin. Ft.	Reinf. Steel Lbs.	Waterproofing Sq. Yds.	Item No.	Sheet No.	
F.A.P. 165(2)											
1-C-3-C	3		1	94	469	107	173.1	3.3	12	27678	20.5
1-C	4			7	5		11.3		28	1102	
Total			1	94	476	112	184.4	3.3	40	28780	20.5
F.A.P. 582H(1)											

TREE REMOVALS			
Item No.	Sheet No.		
F.A.P. 165(2)			
1-T	3	12	
Total		12	

DRIVES & ROAD APPRS

Item No.	Sheet No.	7" Pav't Sq. Yds.	12" Pipe Lin. Ft.	1 1/2" Material Cu. Yds.
F.A.P. 165(2)				
1-A-2-A	3	139.4	82	30.5
1-A-2-A	4	95.9	61	
Total		235.3	82	91.5
F.A.P. 582H(1)				
3-A-4-A	4	104.8		19.0
GRAND TOTAL		340.1	82	110.5

DRAIN OUTLETS					
Item No.	Sheet No.	Std. 12" Drain Basin Units	Std. 18" Drain Basin Units	Reinf. Conc. Drain Outlet Lin. Ft.	Type C Outlet C.B. Unit
F.A.P. 165(2)					
1-B-4-B	3	4		147	
1-B-3-B	4	2		45	
Total		6		192	
F.A.P. 582H(1)					
4-B	4			42	
Total				42	
GRAND TOTAL		7		234	

GUARD RAIL		
Item No.	Sheet No.	Guard Rail
F.A.P. 165(2)		
1-G-4-G	3	1664
1-G-4-G	4	2032
Total F.A.P. 165(2)		3696
F.A.P. 582H(1)		
5-G-4-G	4	528
Total F.A.P. 582H(1)		528

ROADWAY DRAINAGE					
Item No.	Sheet No.	Remove 6" Stone 18" x 18" Lin. Ft.	10" Pipe Under Dr. 18" x 18" Lin. Ft.	10" Pipe incl. Per. Backfill Lin. Ft.	12" Pipe incl. Per. Backfill Lin. Ft.
F.A.P. 582H(1)					
1-D-3-D	4	61	20	184	370
Total		61	20	184	370
F.A.P. 165(2)					
2-D	4				184
Total					184
GRAND TOTAL		61	20	184	554

PAVEMENT REMOVAL			
Item No.	Sheet No.	Pav't Sp. Yds.	Rem.
F.A.P. 165(2)			
1-R	4	1280	
Total		1280	
F.A.P. 582H(1)			
2-R	4	522	
GRAND TOTAL		1802	

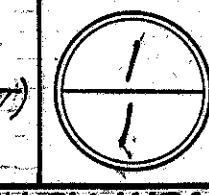
PAVED GUTTER			
Item No.	Sheet No.	Pav't Lin. Ft.	Rem.
F.A.P. 165(2)			
1-G-3-G	3	710	
1-G	4	150	
Total		860	
F.A.P. 582H(1)			
2-G	4	200	
Total		200	
GRAND TOTAL		1060	

TREE ROOT AERATION	
SHEET NO.	N. 30' AGGREGATE FOR TREE AERATION
4	855 CUBIC YDS.
	255

GENERAL SUMMARY OF QUANTITIES					
ITEM	DESCRIPTION	F.A.P. 165(2)	F.A.P. 582H(1)	QUANTITY	UNIT
ROADWAY					
E-1	Roadway Excavation (Unclassified)	5185	642	5827	cu. yds.
E-4	Borrow (Contractor to Furnish)	69769	8634	78403	cu. yds.
E-11	Water	327	46	373	M. gals.
E-8	Removal and Disposal of Existing Pavement	1280	522	1802	sq. yds.
E-9	Removal of Trees and Stumps	12		12	units
I-1	12" Pipe for Driveways	82		82	lin. ft.
I-3	10" Pipe for Roadway Drainage (incl. full depth porous backfill)	184		184	lin. ft.
I-3	12" Pipe for Roadway Drainage (incl. full depth porous backfill)	370	184	554	lin. ft.
E-12	10" V.S.P. Removed and Stored	61		61	lin. ft.
I-6	#1 Drain Basin as per plan	6		7	units
I-8	#2 Drain Basin as per plan	1		1	unit
I-8	Type "C" Drain Outlet Catch Basins as per plan			1	unit
I-14	Reinforced Conc. Drain Outlet as per plan	192	42	234	lin. ft.
I-14	Stone Paved Gutter as per plan	860	200	1060	lin. ft.
I-3	10" Pipe under drives	20		20	lin. ft.
T-10	Aggregate for Temporary traffic lanes	850	229	1079	cu. yds.
M-10	Calcium Chloride or Calcium Magnesium Chloride	7.7	2.0	9.7	Tons
I-11	Traffic Bound Side Approaches	91.5	19.0	110.5	cu. yds.
T-11	Completed Mixture Delivered (Mixed with Calcium Chloride)	26.1	11.6	37.7	Tons
T-11	Completed Mixture Delivered (Not Mixed with Chemical)	52.3	23.3	75.6	Tons
T-11	Calcium Chloride	0.71	0.31	1.02	Tons
T-11	Spreading, Shaping and Compacting	235.3	104.8	340.1	sq. yds.
E-15	Standard Strength Flexible Steel Plate Tension Type Guard Rail, Sec. I-15.03 or Steel Beam Type Guard Rail, Sec. I-15.05	3696	528	4224	Lin. Ft.
L-8	Aggregate for aeration of trees		85	85	cu. yds.
PAVEMENT					
T-50	2 1/2" Hot Mixed, Hot Laid Asphaltic Conc. Sur. Course	7434	1232	8666	sq. yds.
B-50	3" Hot Mixed, Hot Laid Asphaltic Conc. Base Course	614.3	97.4	711.7	cu. yds.
B-50	2 1/2" Hot Mixed, Hot Laid Asphaltic Conc. Leveling Course	511.9	81.2	593.1	cu. yds.
T-19	1/4" Insulation Course	7371	1169	8540	sq. yds.
S-5	1 1/2" Reinforced Concrete Approach Slabs	63	63	126	sq. yds.
Special	Hot Mixed, Hot Laid Asp. Conc. Curb	5851.0	976.0	6827.0	lin. ft.
STRUCTURES 20 FT. SPAN & UNDER					
E-2	Structure Excavation (Unclassified)	476		476	cu. yds.
E-3	Channel Excavation	112		112	cu. yds.
S-1	Concrete for Structures (Class C)	1844		1844	cu. yds.
S-1	Concrete for Headwalls (Class E)	3.3		3.3	cu. yds.
S-3	Waterproofing (Type A)	20.5		20.5	sq. yds.
S-3	Waterproofing (Type B)	107		107	sq. yds.
S-4	Reinforcing Steel	28780		28780	Lbs.
S-23	Dowel Holes (9" Deep)	40		40	Unit
S-24	Removal of Existing Structure (6x4x60 Conc. Box)	Lump		Lump	
S-27	18" Pipe for Roadway Culverts	94		94	Lin. Ft.
STRUCTURES OVER 20 FT. SPAN SEE SHEET NO. 23					

BROWN-3

BROWN-3



PARCEL 3
 Henry Hieng
 2316 Washington Ave.
 Norwood, Ohio.

PARCEL-4
 Fred McCaferty
 Fayetteville, Ohio.

PARCEL 6 & 6A
 J. A. Daugherty
 1835 Sherman Ave.
 Norwood, Ohio.

PARCEL -2
 Dr. D. J. Whites
 4848 Riddle Road
 Cincinnati, Ohio

$\Delta = 50^{\circ}-55'$ Rt.
 $D = 2^{\circ}-00'$
 $T = 792.25'$
 $R = 2864.79'$
 $L = 1545.83'$
 $E = 107.59'$

PARCEL 1
 Mrs. Josephine Crone
 Fayetteville Ohio

PARCEL-3
 Henry Hieng
 2316 Washington Ave.
 Norwood Ohio

PARCEL 2
 Dr. D. J. Whites
 4848 Riddle Road
 Cincinnati, Ohio

