

LIMITED ACCESS

This improvement is especially designed for through traffic and has been declared a limited access highway or freeway by action of the Director, Department of Transportation, in accordance with the provisions of Section 5511.02 of the Revised Code of Ohio.

For design exceptions, see sheet no. 2

S-8-L

STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION  
FRA-315-2.39 PART 1  
(FORMERLY FRA-670-1.25-C-2)  
CITY OF COLUMBUS  
FRANKLIN COUNTY

NOTE: All references to FRA-670-1.25-C-2 shall be considered to read FRA-315-2.39. All references to IR 670-6 (54) 98 shall be considered to read NH-670-6 (54). All references to M-1K 78 (6) shall be considered to read STP-1K 78 (6).

FOR PART 2 SEE FRA-315-2.39

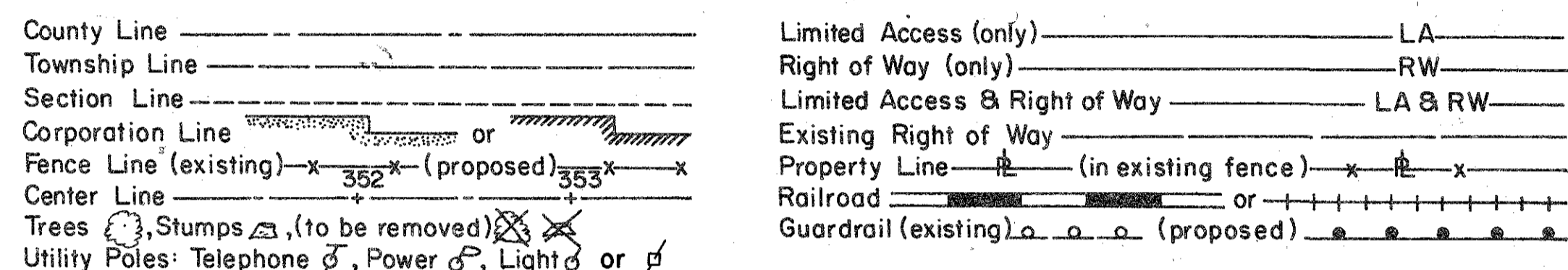
FRANKLIN COUNTY  
FRA-315-2.39  
NH 670-6 (54)  
STP-1K 78 (6)

1995 SPECIFICATIONS

The standard specifications of the State of Ohio, Department of Transportation, 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 require the closing to traffic of the highway and that detours will be provided as indicated on the plans. Under authority of Section 4511.21, Division (1) of the Revised Code of Ohio, the revised prima facie speed limits as indicated herein are determined to be reasonable and safe, and are hereby established for the duration of this project. The prima facie speed limit or limits hereby established shall become effective when appropriate signs giving notice thereof are erected.

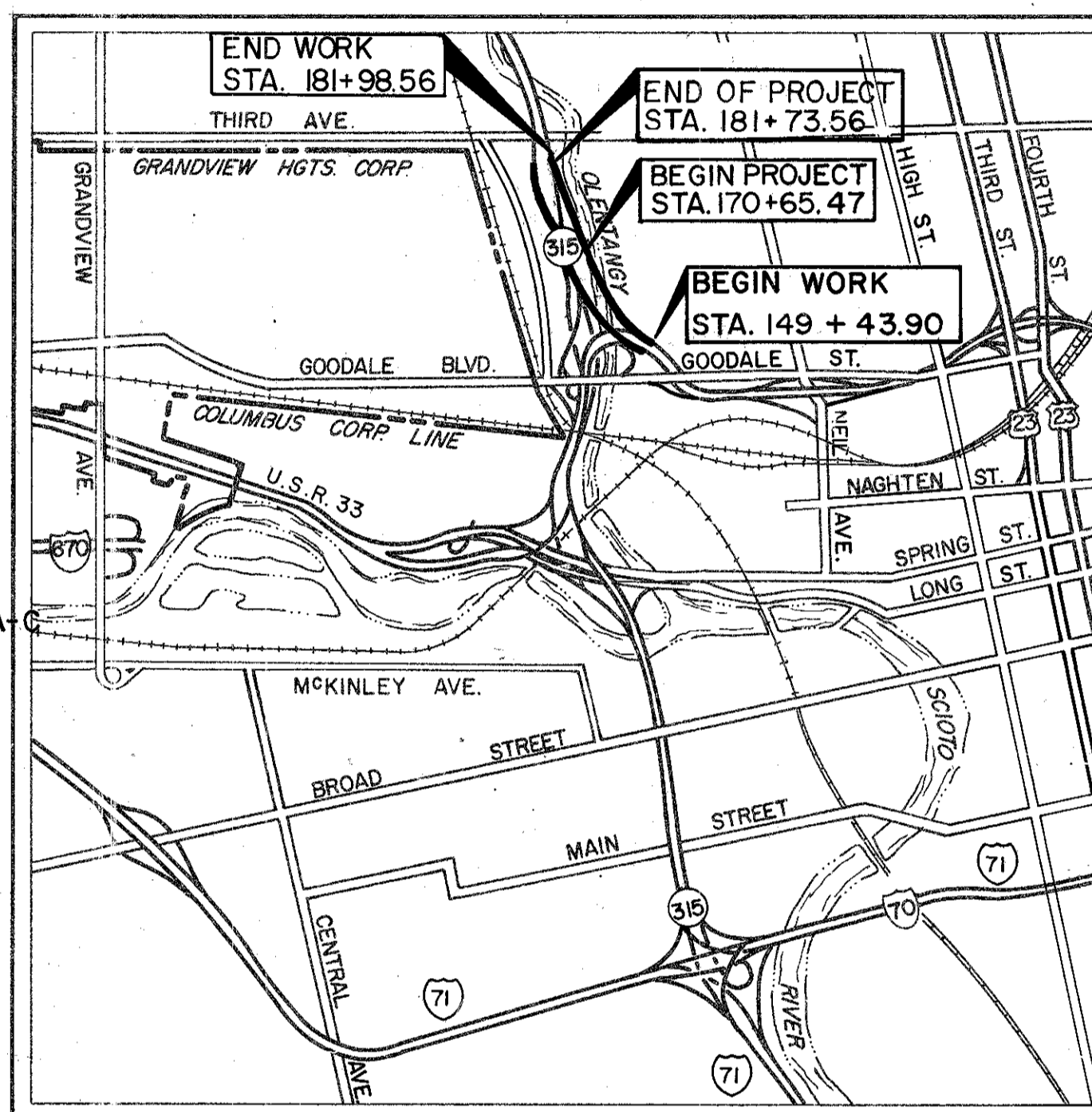
CONVENTIONAL SIGNS



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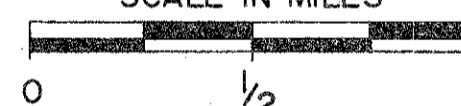
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LOCATION MAP

SCALE IN MILES



FOR STATE OF OHIO

DISTRICT DEPUTY DIRECTOR OF TRANSPORTATION  
B. D. Hallam  
ENGINEER, BUREAU OF BRIDGES AND STRUCTURAL DESIGN  
Christopher L. Runyan  
DEPUTY DIRECTOR OF DESIGN  
Jerry Whay  
DIRECTOR, DEPARTMENT OF TRANSPORTATION

7/1/93  
10/1/93  
8-10-94  
8-10-94  
DATE

FOR CITY OF COLUMBUS

Clyde R. Seidley  
STATE-FEDERAL PROJECTS ENGINEER  
Robert Smith  
CITY ENGINEER  
J. Herbert Mack  
DIRECTOR OF PUBLIC SERVICE  
James P. Jones, P.E.  
DIRECTOR OF UTILITIES  
Susan M. Gault  
DIRECTOR OF RECREATION AND PARKS

DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
APPROVED:  
DIVISION ADMINISTRATOR  
DATE

SPECIAL PROVISIONS  
FRA-315-2.39 PART 2  
MARCH 15, 1995

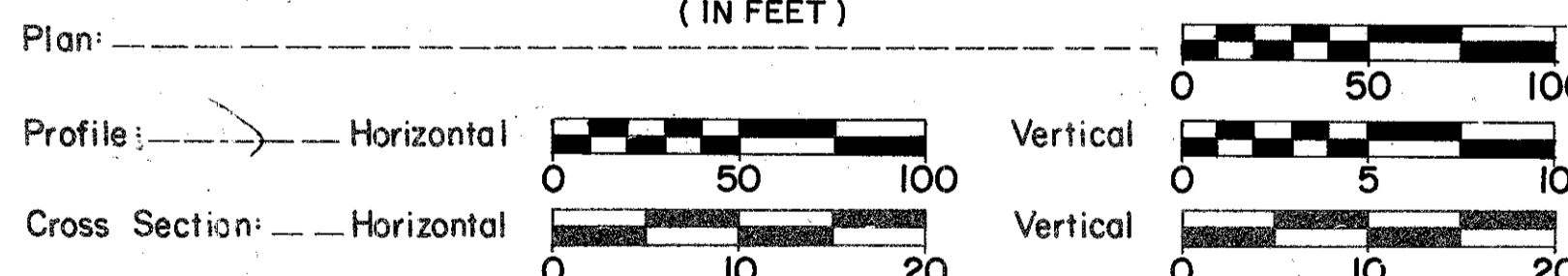
LINE DATA

	BEGIN PROJECT	END PROJECT	NET LENGTH OF PROJECT
S.R. 315 S.B.	STA. 170+65.47	STA. 181+35.08	1,069.61 L.F.
S.R. 315 N.B.	STA. 171+55.38	STA. 181+73.56	1018.18 L.F.
Total			2,087.79 L.F. or 0.395 Mi.
	BEGIN WORK	END WORK	LENGTH OF WORK
S.R. 315 S.B.	STA. 170+65.47	STA. 181+62.53	1,097.06 L.F.
S.R. 315 N.B.	STA. 171+55.38	STA. 181+98.56	1,043.18 L.F.
Subtotal S.R. 315			2,140.24 L.F. or 0.405 Mi.
Add for Approaches:			
ROAD OD	STA. 149+43.90	STA. 170+65.47	2,121.57 L.F.
ROAD OE	STA. 151+13.11	STA. 171+55.38	2,042.27 L.F.
ROAD OF	STA. 145+29.60	STA. 161+87.16	1,657.56 L.F.
BIKEWAY	STA. 158+28.01	STA. 183+94.32	2,566.31 L.F.
OLENTANGY RIV. RD.	STA. 50+00.00	STA. 88+50.00	3,850.00 L.F.
Total			14,377.95 L.F. or 2.723 Mi.

BIKEWAY: STA. 159+51.90 (AHEAD) = STA. 159+57.86 (BACK)

Plan Prepared By:  
JOHN E. FOSTER AND ASSOCIATES INC.  
555 BUTTLES AVE.  
COLUMBUS, OHIO 43215

Portion to be improved  
State & Federal Routes  
Other Roads



SUPPLEMENTAL SPECIFICATIONS

802	4-13-90
931	7-19-94
942	3-18-92
944	5-2-94
910	5-20-91
820	3-18-92

UNDERGROUND UTILITIES  
2 WORKING DAYS  
BEFORE YOU DIG  
CALL 800-362-2764 (TOLL FREE)  
OHIO UTILITIES PROTECTION SERVICE.  
NON-MEMBERS  
MUST BE CALLED DIRECTLY

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS

BP-1.1	2-21-92	BP-2.1	10-28-94	F-5	5-1-76	GR-5.3	10-30-92	TC-7.65	3-1-79	HL-10.31	5-1-87	TC-35.10	8-29-84
AS-1-81	11-27-81	BP-2.2	10-28-94	F-6	5-1-76	I-3A&B	4-1-80	TC-21.10	9-01-92	HL-20.21	5-1-87	GR-1.1	5-6-91
BR-1	5-29-79	BP-3.1	2-21-92	MC-9.1	10-30-92	MH-1	12-18-84	TC-22.20	9-01-92	HL-20.22	5-1-87	GR-1.2	10-30-92
FB-1-82	5-10-82	BP-4.1	2-21-92	CB-3	5-1-79	MH-3	12-18-84	TC-31.21	9-01-92	HL-20.23	5-1-87	GR-2.1	5-6-91
EXJ-4-87	1-5-89	BP-2.3	2-21-92	MC-9.3	10-30-92	GR-2.2	10-30-92	TC-32.10	9-01-92	HL-30.11	5-1-87	MH-2	4-12-75
SD-1-69	6-12-69	BP-5.1	10-28-94	CB-2-3 & 2-4	5-1-79	MC-1	6-13-69	TC-32.11	9-01-92	HL-40.10	5-1-87	GR-3.1	5-6-91
MT-95.70	10-10-88	F-1	11-10-83	MH-5	6-12-75	MC-4	7-26-76	TC-42.10	8-19-77	HL-50.11	5-1-87	GR-3.2	5-6-91
MT-95.70	2-23-90	F-3	5-1-76	HW-1	6-1-65	MC-7	10-15-76	TC-42.20	3-26-79	HL-60.21	5-1-87	GR-3.4	5-6-91
MT-95.81	2-23-90	BP-7.1	10-30-92	CB-8	11-10-83	MC-9.4	10-30-92	TC-51.10	1-20-84	HL-60.31	5-1-87	GR-1.3	2-21-92
MT-99.10	11-14-86	BP-8.1	10-28-94	CB-3A	5-1-79	TC-41.10	8-29-84	TC-52.10	4-3-79	TC-81.20	1-20-84	GR-4.2	5-6-91
MT-102.10	8-25-89	MT-105.10	7-1-92	HW-3	6-1-65	MC-11	8-1-78	TC-52.20	4-3-79	TC-82.10	1-20-84	CB-4.5&A	5-1-79
EXJ-2-81	4-2-84	HL-30.31	5-1-87	HW-4B	4-1-80	MC-9.2	5-6-91	TC-41.20	3-26-79	TC-83.20	1-20-84	GR-5	2-5-82
MT-105.11	7-1-92	HL-30.33	5-1-87	CB-5	11-10-83	MC-5	6-12-75	TC-72.20	2-26-82	TC-85.20	1-20-84	GR-8.1	1-31-94

Project: FRA-315-2.39 (FORMERLY FRA-670-1.25-C-2)  
Date of Letting: 19, Contract No.

FRANKLIN COUNTY  
FRA-670-1.25-C-2

CURVE DATA - ROAD OD

P.I. = STA. 149+92.94  
Δ = 6° 51' 31"  
Dc = 7° 00' 00"  
Rc = 818.51'  
T = 49.05'  
Lc = 97.98'  
E = 1.47'

CURVE DATA - ROAD OD

P.I. = STA. 151+42.20  
Θs = 10° 30' 00"  
Ls = 300.00'  
X = 298.99'  
Y = 18.28'  
Lc = 200.35'  
S.T. = 100.32'

CURVE DATA - ROAD OD

P.I. = STA. 162+40.01  
Δ = 50° 52' 43"  
Dc = 7° 30' 00"  
Rc = 763.94'  
Θs = 15° 00' 00"  
Lc = 278.38'  
Ls = 400.00'  
X = 397.27'  
Y = 34.74'  
L.T. = 267.63'  
S.T. = 134.21'  
Ts = 567.07'  
Es = 91.66'

CURVE DATA - S.B.

P.I. = STA. 176+09.46  
Δ = 30° 07' 56.12"  
Dc = 4° 30' 00"  
Rc = 1273.24'  
Θs = 9° 00' 00"  
Lc = 269.61'  
Ls = 400.00'  
X = 399.01'  
Y = 20.91'  
L.T. = 267.01'  
S.T. = 133.65'  
Ts = 543.98'  
Es = 50.74'

CURVE DATA BIKEWAY

P.I. = STA. 159+03.65  
Δ = 25° 21' 22.2"  
R = 249.11'  
Dc = 23° 00' 00"  
T = 56.04'  
L = 110.24'  
E = 6.23'

CURVE DATA BIKEWAY

P.I. = STA. 160+60.74  
Δ = 20° 34' 22.25"  
R = 318.31'  
Dc = 18° 00' 00"  
T = 57.77'  
L = 114.29'  
E = 5.20'

CURVE DATA BIKEWAY

P.I. = STA. 163+53.49  
Δ = 12° 36' 37.26"  
R = 572.96'  
Dc = 10° 00' 00"  
T = 63.31'  
L = 126.10'  
E = 3.49'

CURVE DATA BIKEWAY

P.I. = STA. 165+49.49  
Δ = 5° 42' 38.22"  
R = 1432.39'  
Dc = 4° 00' 00"  
T = 63.31'  
L = 126.10'  
E = 1.78'

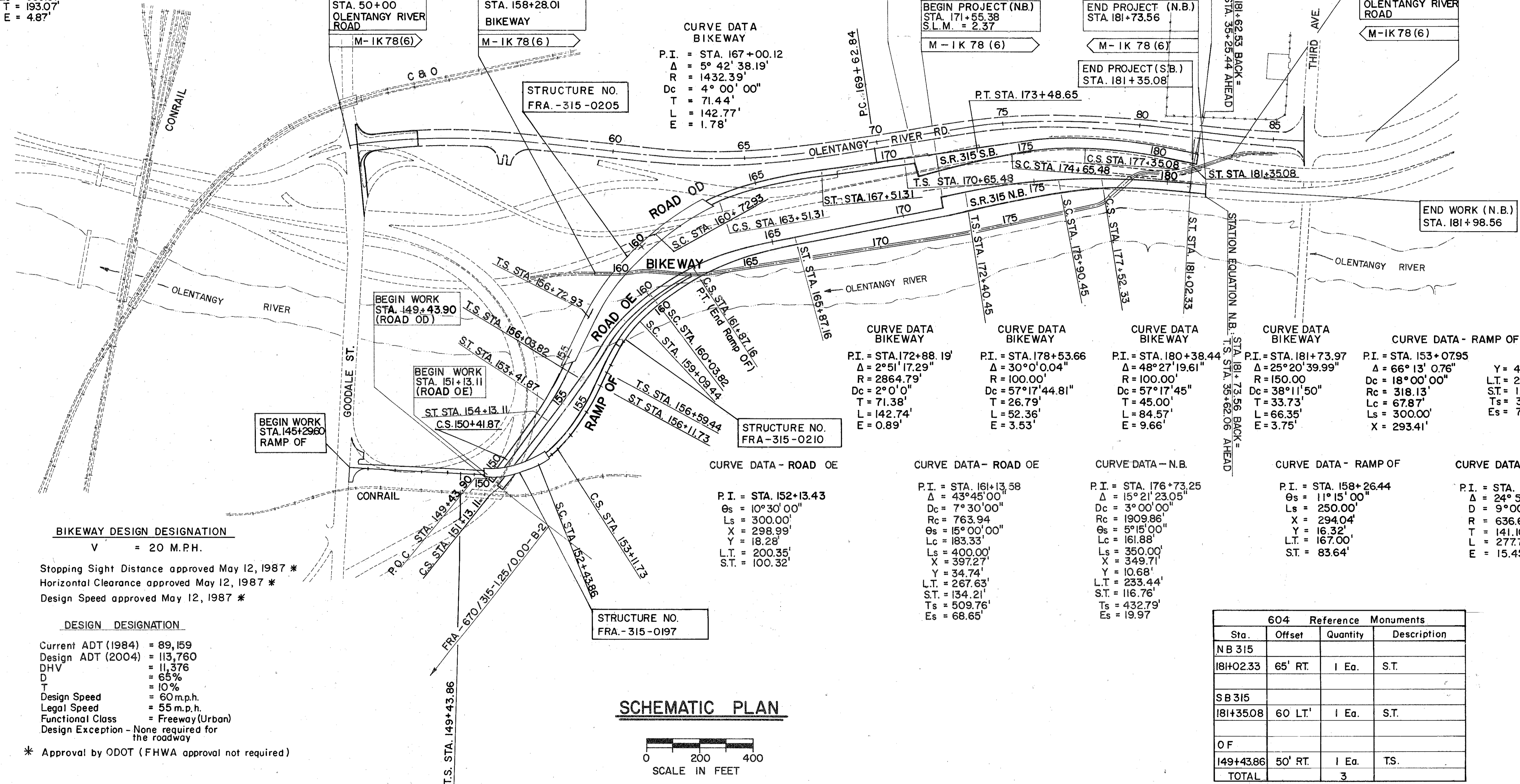
CURVE DATA BIKEWAY

P.I. = STA. 167+00.12  
Δ = 5° 42' 38.19"  
R = 1432.39'  
Dc = 4° 00' 00"  
T = 71.44'  
L = 142.77'  
E = 1.78'

ROADS OD and OE are funded by  
NH-670-6 (54) 98. (formerly IR-670-6 (54) 98)  
RAMP OF is funded by STP-1K 78 (6)  
(formerly M-1K 78 (6)).

CURVE DATA - ROAD OD

P.I. = STA. 171+55.91  
Δ = 5° 47' 05"  
Dc = 1° 29' 58"  
Rc = 3821.22'  
Lc = 385.81'  
T = 193.07'  
E = 4.87'

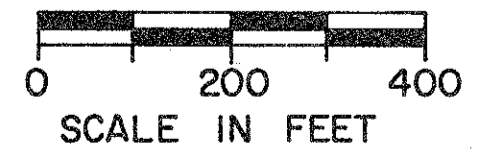


**BIKEWAY DESIGN DESIGNATION**  
V = 20 M.P.H.  
Stopping Sight Distance approved May 12, 1987 \*  
Horizontal Clearance approved May 12, 1987 \*  
Design Speed approved May 12, 1987 \*

**DESIGN DESIGNATION**  
Current ADT (1984) = 89,159  
Design ADT (2004) = 113,760  
DHV = 11.376  
D = 65%  
T = 10%  
Design Speed = 60 m.p.h.  
Legal Speed = 55 m.p.h.  
Functional Class = Freeway (Urban)  
Design Exception - None required for the roadway

\* Approval by ODOT (FHWA approval not required)

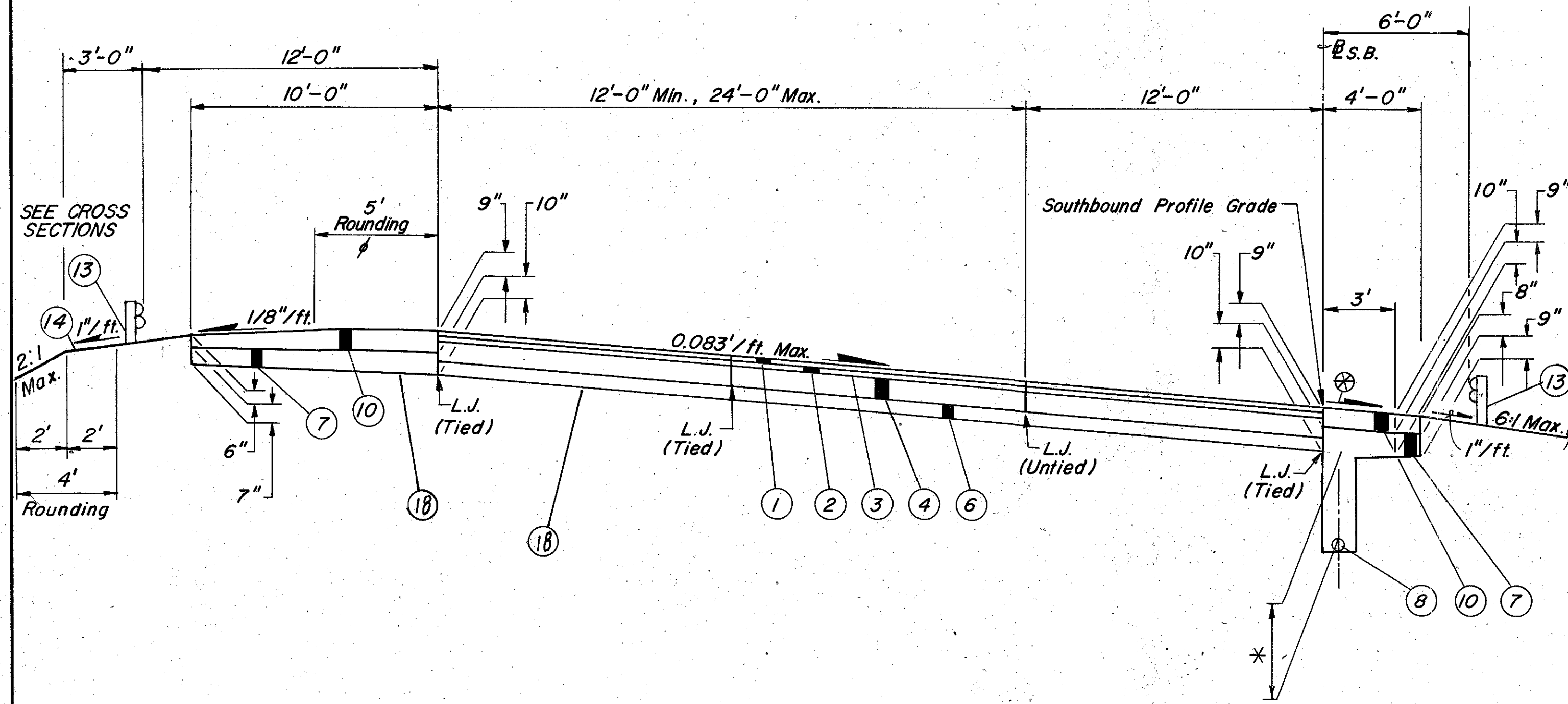
**SCHEMATIC PLAN**



604 Reference Monuments			
Sta.	Offset	Quantity	Description
NB 315			
181+02.33	65' RT.	1 Ea.	S.T.
SB 315			
181+35.08	60 LT.	1 Ea.	S.T.
OF			
149+43.86	50' RT.	1 Ea.	TS.
TOTAL		3	

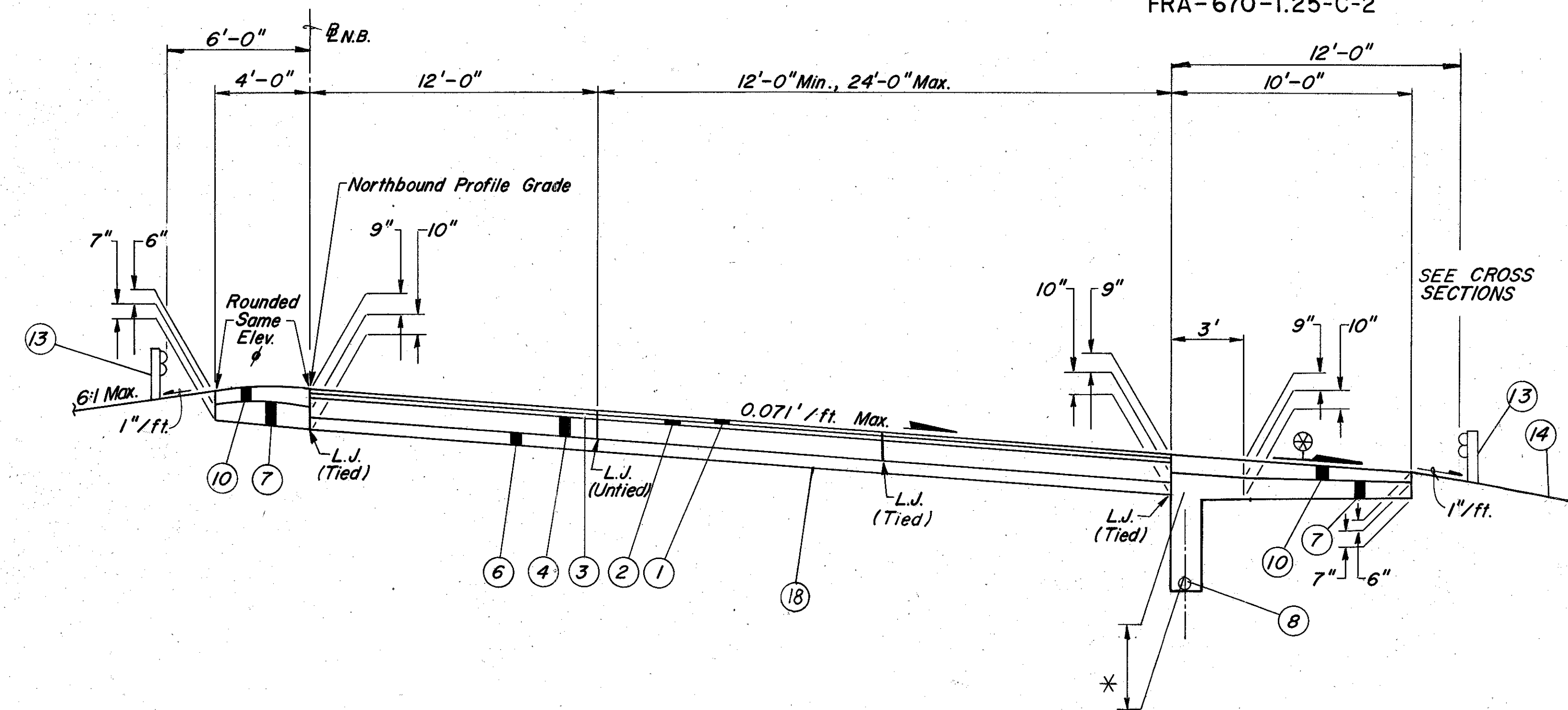
# TYPICAL SECTIONS

## TYPE 446 ON 305



### SOUTHBOUND MAINLINE - SUPERELEVATED SECTION

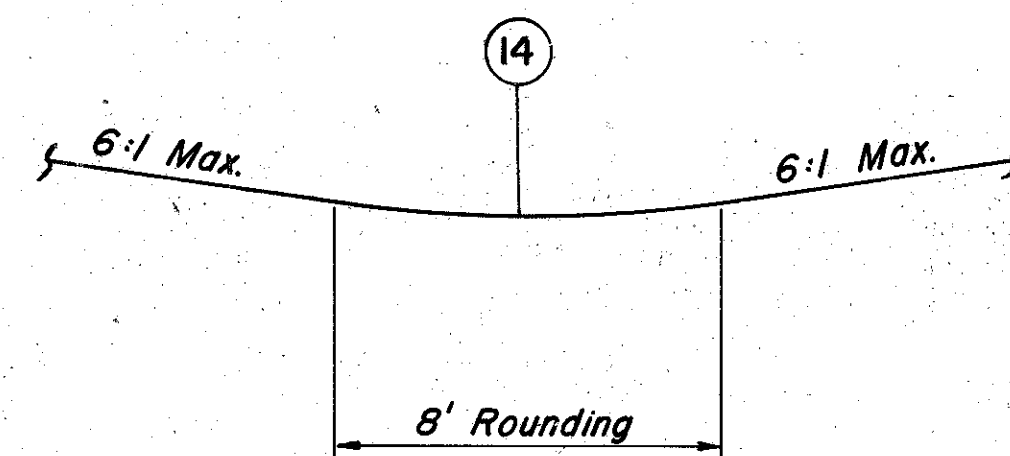
Section Applies: S.B. Sta. 170+65.47 to Sta. 174+65.47 (0.009469 ft/ft to 0.083 ft/ft)  
 S.B. Sta. 174+65.47 to Sta. 177+35.08 (0.083 ft/ft)  
 S.B. Sta. 177+35.08 to Sta. 181+35.08 (0.083 ft/ft to 0.01238 ft/ft)



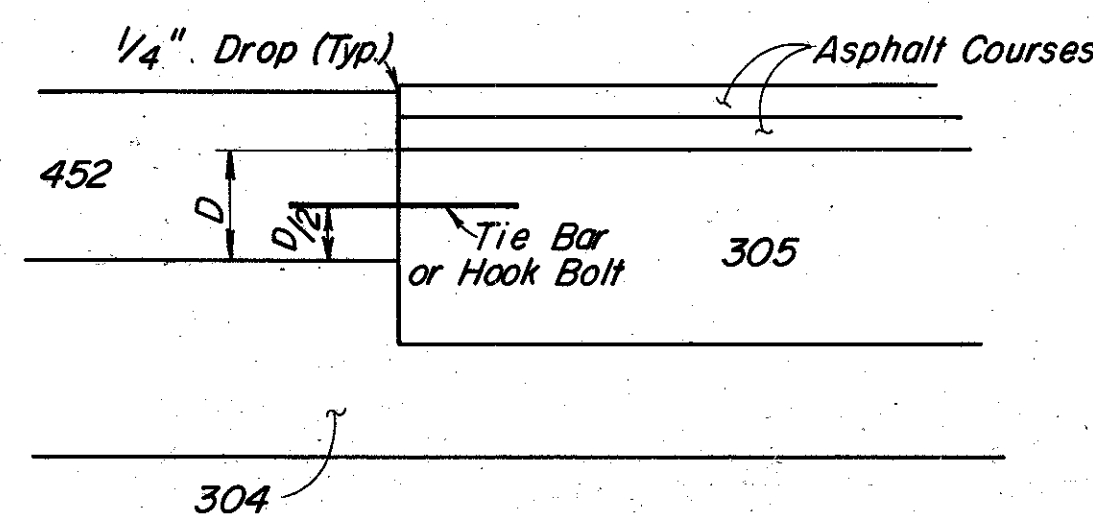
### NORTHBOUND MAINLINE - SUPERELEVATED SECTION

Section Applies: N.B. Sta. 171+55.38 to Sta. 173+17.47 (Crown Removal)  
 N.B. Sta. 173+17.47 to Sta. 175+90.45 (0.015625 ft/ft to 0.071 ft/ft)  
 N.B. Sta. 175+90.45 to Sta. 177+52.33 (0.071 ft/ft)  
 N.B. Sta. 177+52.33 to Sta. 181+73.56 (0.071 ft/ft to -0.01667 ft/ft)

- \* Place Underdrains 50" Deep in Cuts, 30" in Fills.
- ⊕ 1/2" per ft. or Rate of Superelevation, whichever is greater.
- ∅ Varies: 1/8" per ft. min., 1/2" per ft. max. Break at E.P. / Shoulders ≠ 7%. Rounded (same elevation) when Pavement Slope exceeds 0.059 ft./ft.

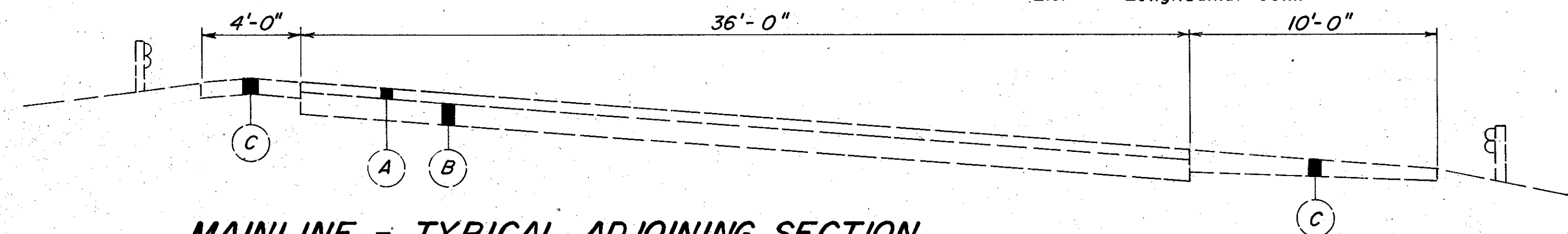


### MEDIAN SECTION



### TIE BAR DETAIL

NOTE: Along the longitudinal joint between the mainline concrete base (Item 305) and the concrete shoulders (Item 452), the tie bars or hook bolts should be placed so that the bars or bolts split the vertical interval where the base and shoulder abut, as per the Tie Bar Detail.



### MAINLINE - TYPICAL ADJOINING SECTION

Section Applies: N.B. Sta. 181+73.56 (-0.01667 ft/ft)  
 S.B. Sta. 181+35.06 (Shoulders Reversed) (0.01238 ft/ft)

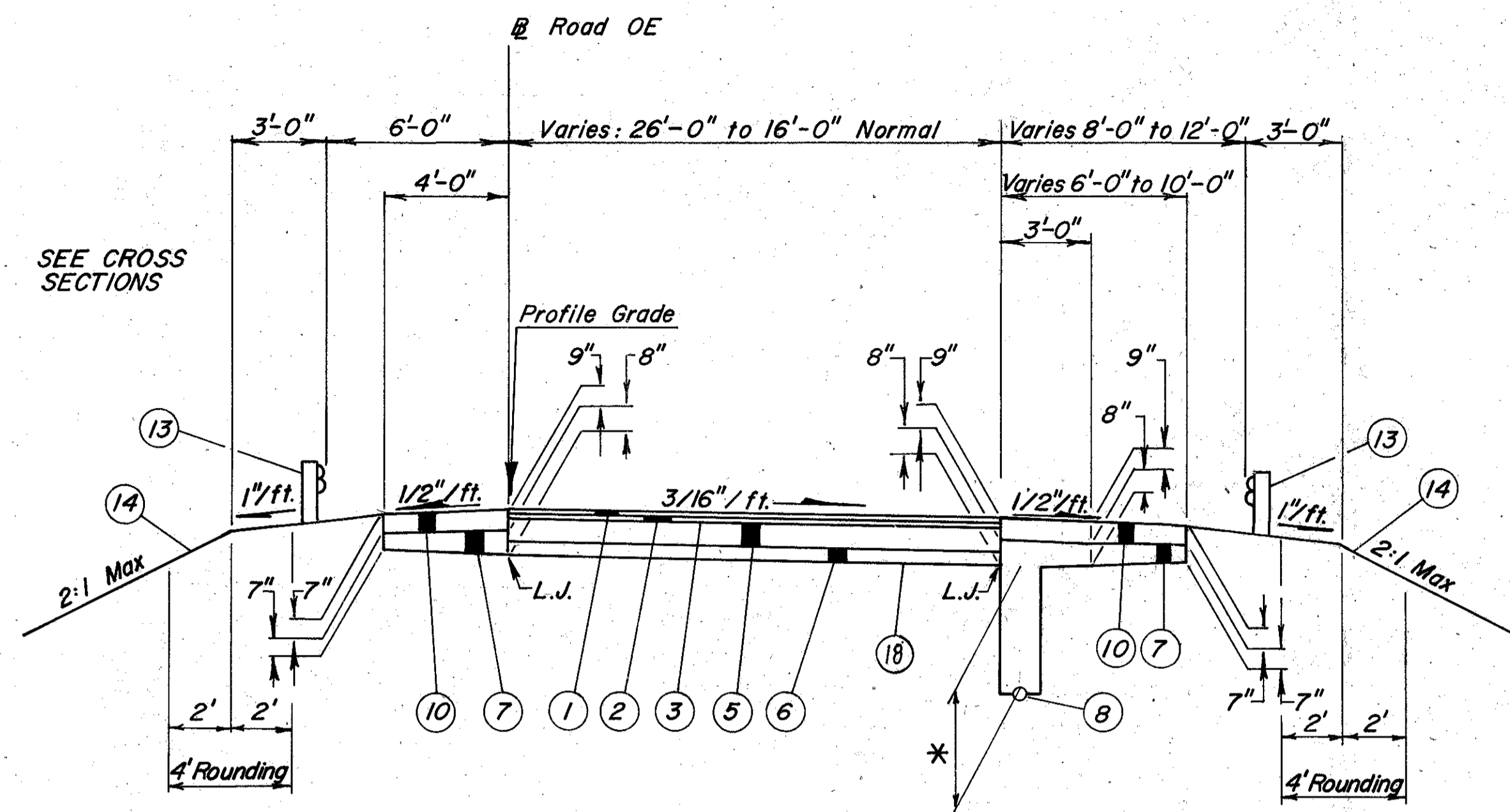
### LEGEND

- |   |  |                                     |
|---|--|-------------------------------------|
| (1) Item 446 1 1/4" Asphalt Concrete Surface Course, Type 1, AC-20      | (10) Item 452 Plain Concrete Pavement, Thickness as shown    | (A) Existing Asphalt Wearing Course |
| (2) Item 446 1 3/4" Asphalt Concrete Intermediate Course, Type 2, AC-20 | (11) Not Used  | (B) Existing Concrete Base          |
| (3) Item 407 Tack Coat, see General Notes                               | (12) Item 622 Concrete Barrier, Type C-50                    | (C) Existing Concrete Shoulder      |
| (4) Item 305 10" Concrete Base, as per plan ( See General Notes )       | (13) Item 606 Guardrail, Type 5                              |                                     |
| (5) Item 305 8" Concrete Base, as per plan (See General Notes)          | (14) Item 659 Seeding and Mulching                           |                                     |
| (6) Item 304 6" Aggregate Base (See Proposal Note)                      | (15) Item 408 Bituminous Prime Coat at 0.40 Gal. per sq. yd. |                                     |
| (7) Item 304 Aggregate Base, Thickness as shown (See Proposal Note)     | (16) Item 404 2 1/2" Asphalt Concrete, AC-20                 |                                     |
| (8) Item 605 6" Shallow Pipe Underdrains                                | (17) Item 611 Reinforced Concrete Approach Slabs (t=15")     |                                     |
| (9) Item 605 Aggregate Drains at 50' Intervals                          | (18) Item 203 Subgrade Compaction                            |                                     |



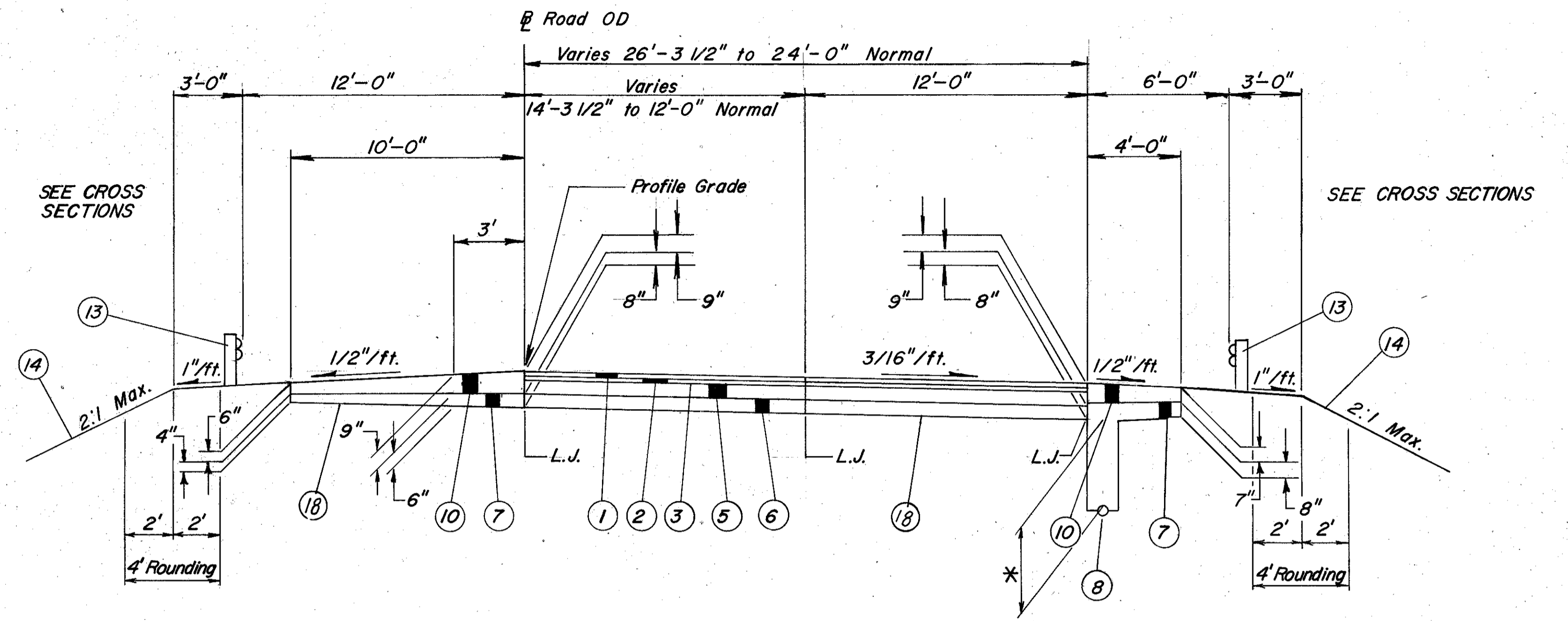
# TYPICAL SECTIONS

## TYPE 446 ON 305



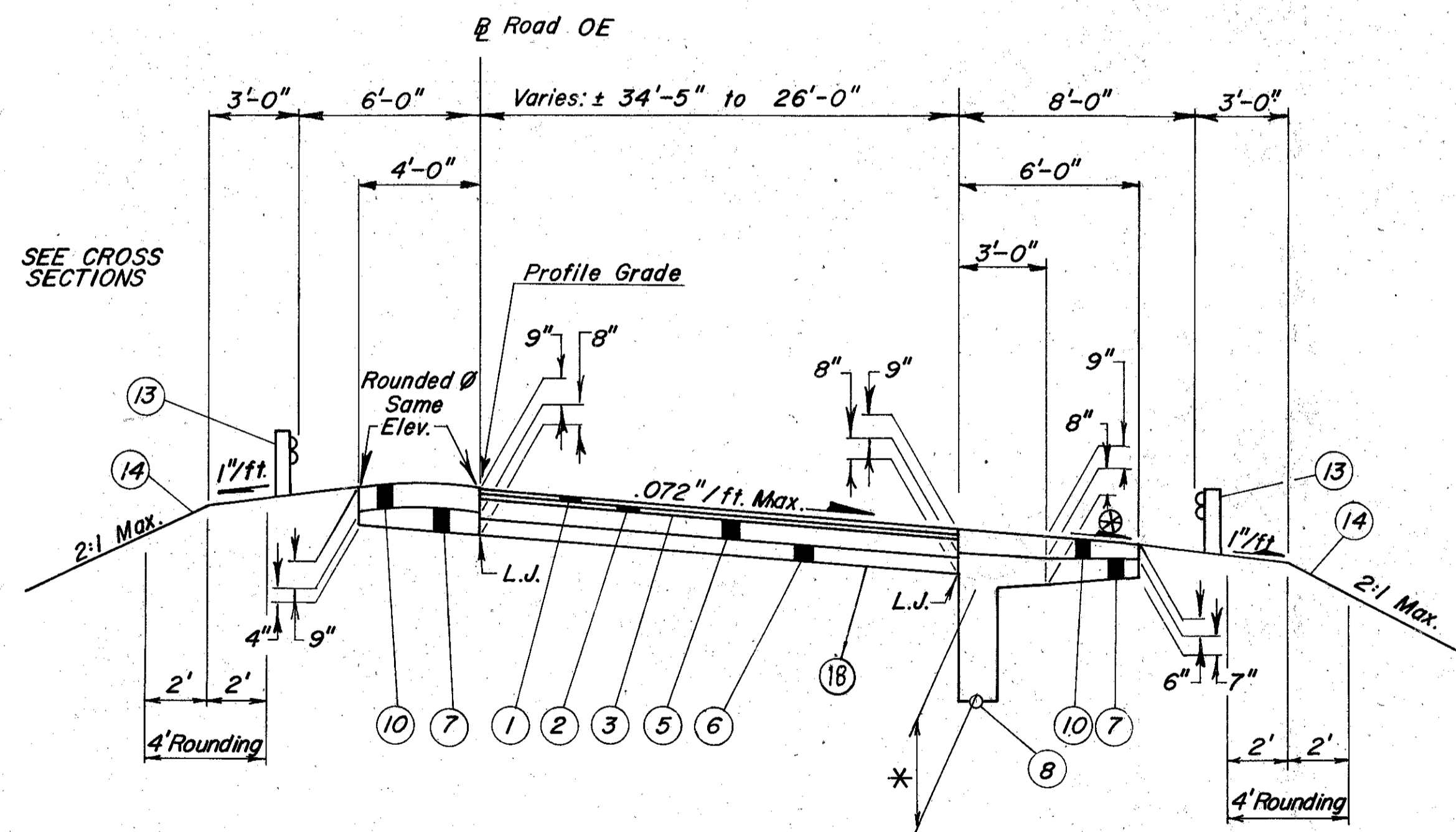
### ONE LANE DIRECTIONAL ROADWAY

Section Applies: Road OE Sta. 165+87.16 to Sta. 169+87.15 (Pav't Width Varies from 26'-0" to 16'-0")  
Road OE Sta. 169+87.15 to Sta. 171+55.38 (Shoulder Width varies from 6'-0" Normal to 10'-0")



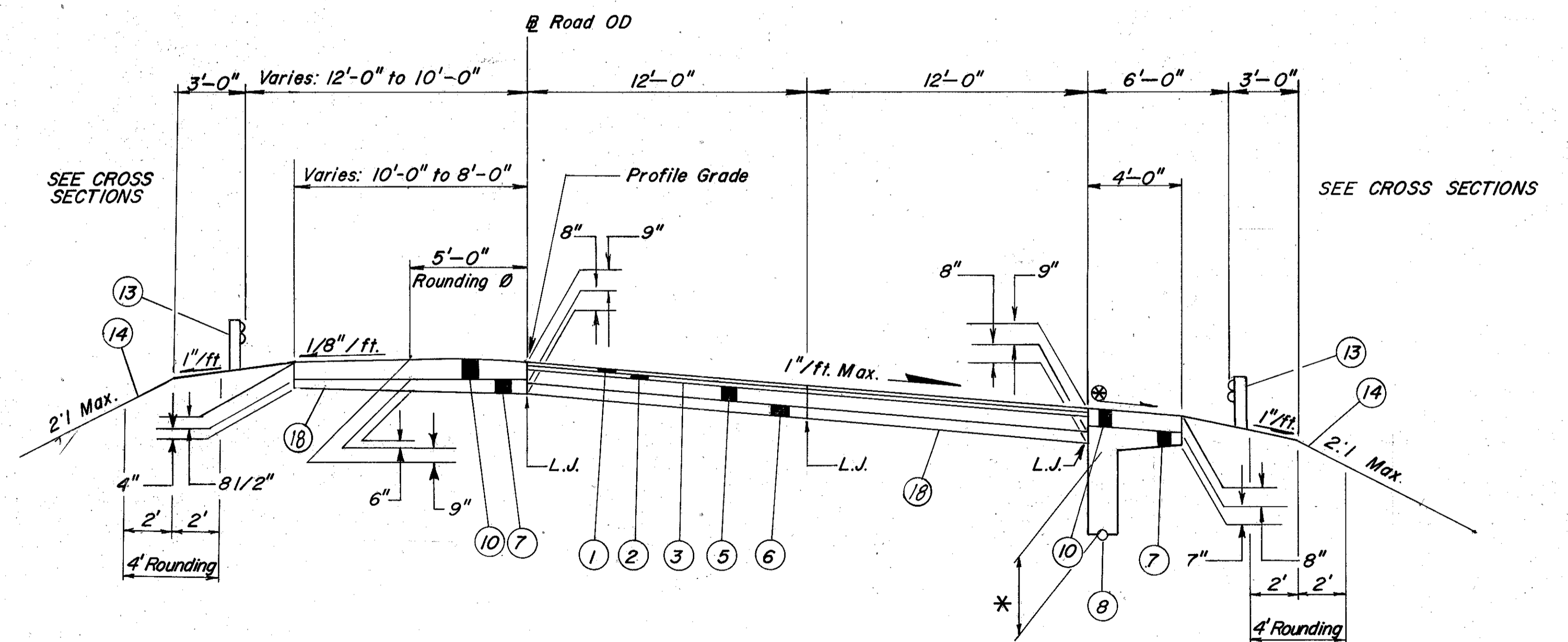
### TWO LANE DIRECTIONAL ROADWAY

Section Applies: Road OD Sta. 167+51.31 to Sta. 169+62.84 (Pav't Width = 24'-0")  
Road OD Sta. 169+62.84 to Sta. 170+94.55 (Pav't Width Varies from 24'-0" to 26'-3 1/2")



### SUPERELEVATED ONE LANE DIRECTIONAL ROADWAY

Section Applies: Road OE Sta. 164+57.98 to Sta. 165+87.16 (0.072414 ft/ft. to 0.015625 ft/ft)



### SUPERELEVATED TWO LANE DIRECTIONAL ROADWAY

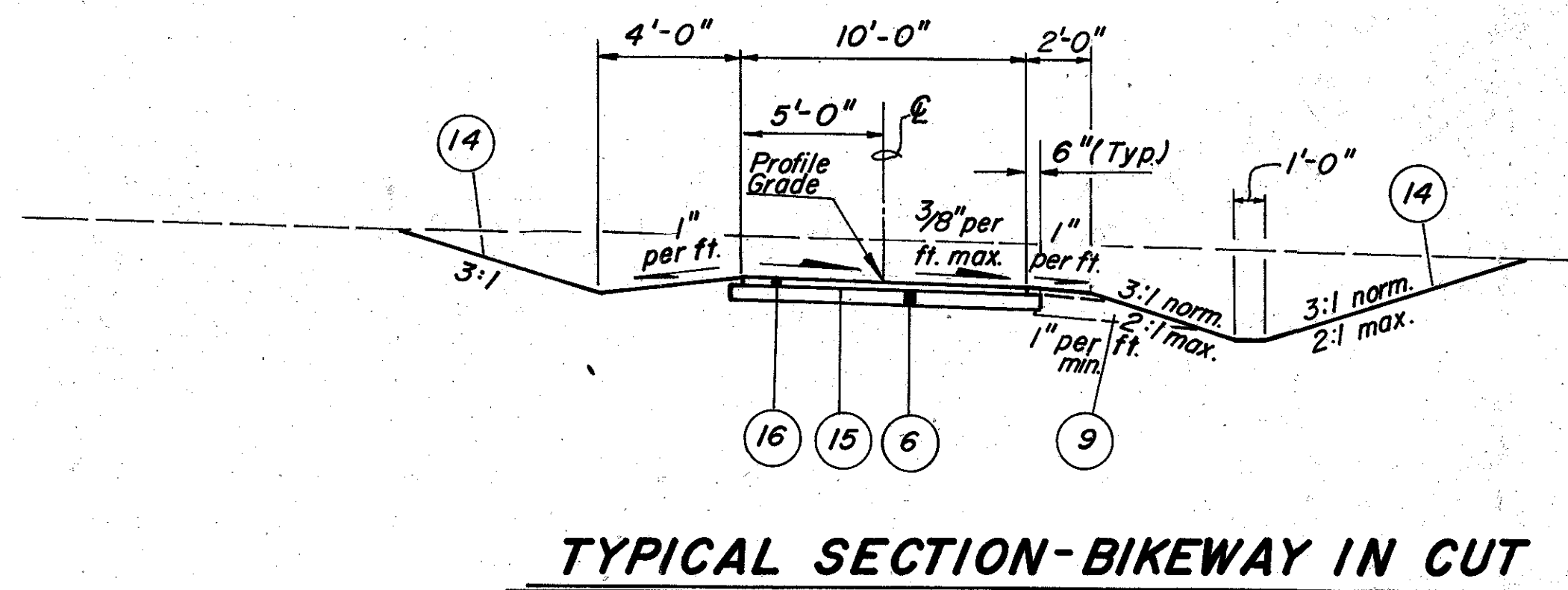
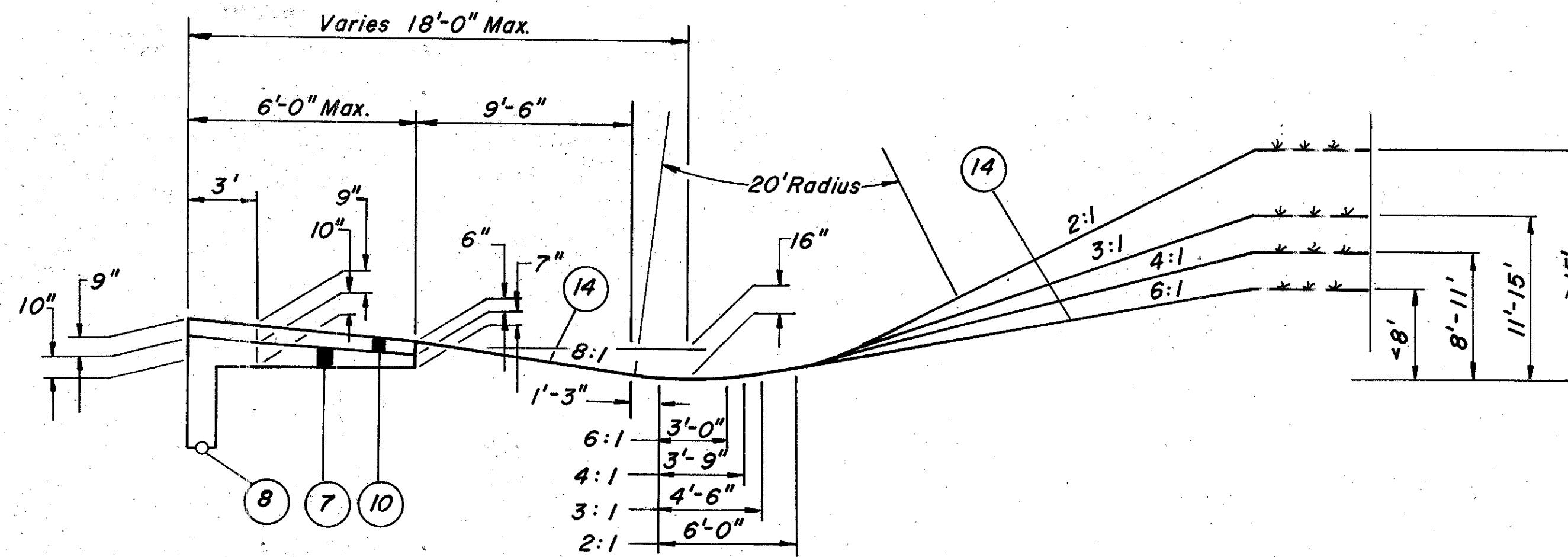
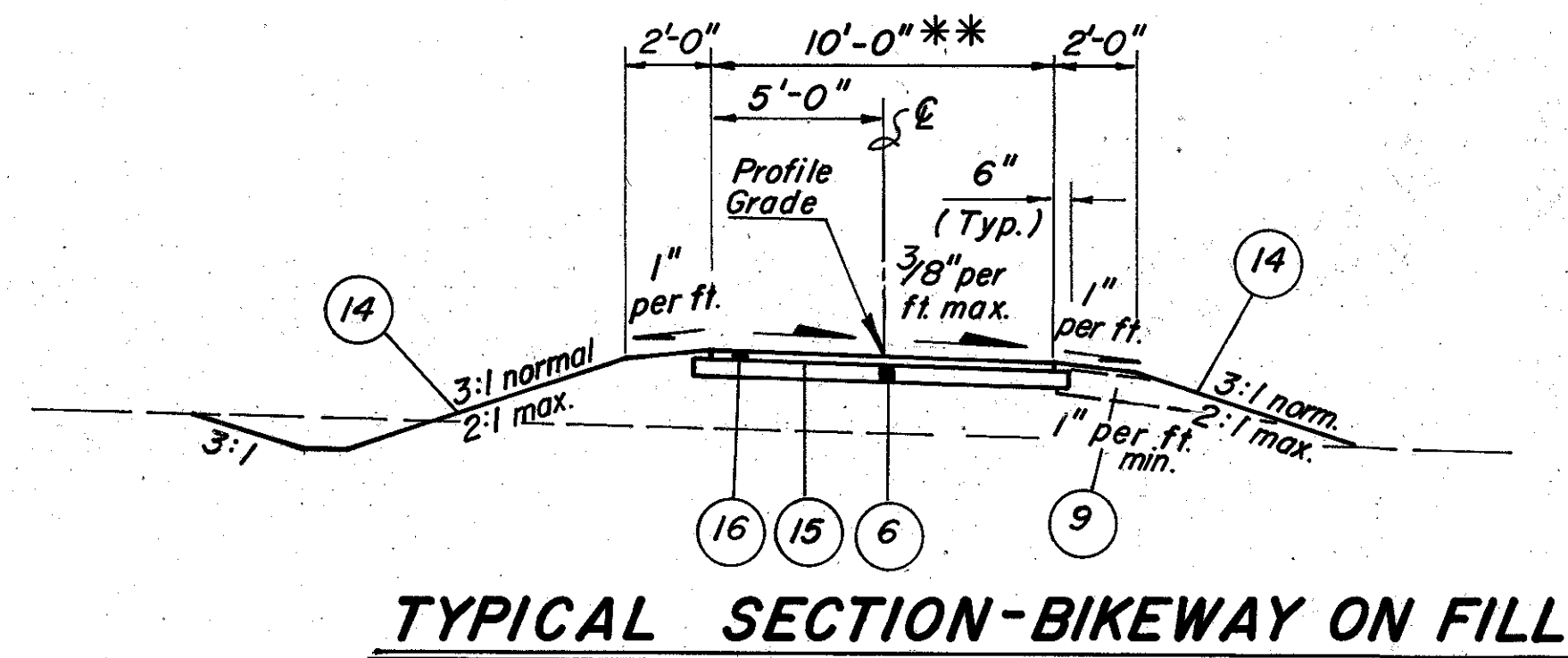
Section Applies: Road OD Sta. 163+05.77 to Sta. 163+51.31 (0.083 ft/ft)  
Road OD Sta. 163+51.31 to Sta. 167+51.31 (0.083 ft/ft. to 0.015625 ft/ft)

- \* Place Underdrains 50" deep in cuts, 30" deep in Fills.
- ⊗ 1/2" per ft. or rate of superelevation, whichever is greater.
- ⊘ Varies: 1/8" Per ft. min., 1/2" Per ft. max. break @ E.P./Shoulder ± 7% Rounded (same elev.) when Pav't Slope exceeds 0.059 ft/ft.

NOTE: For Legend, See Sheet No. 3

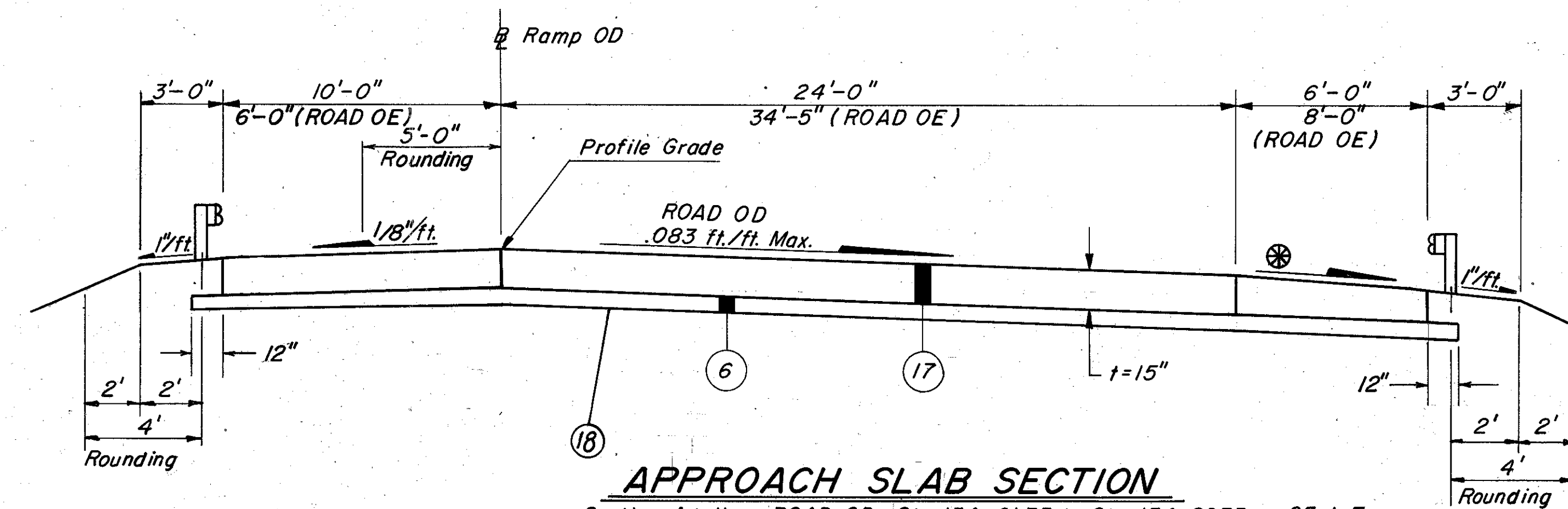
# TYPICAL SECTIONS

\*\* Bikeway pavement to be 12'-0" wide from Sta. 180+00 (Box Culvert) to Sta. 183+94.32 (End Work) Stripe 10'-0" wide

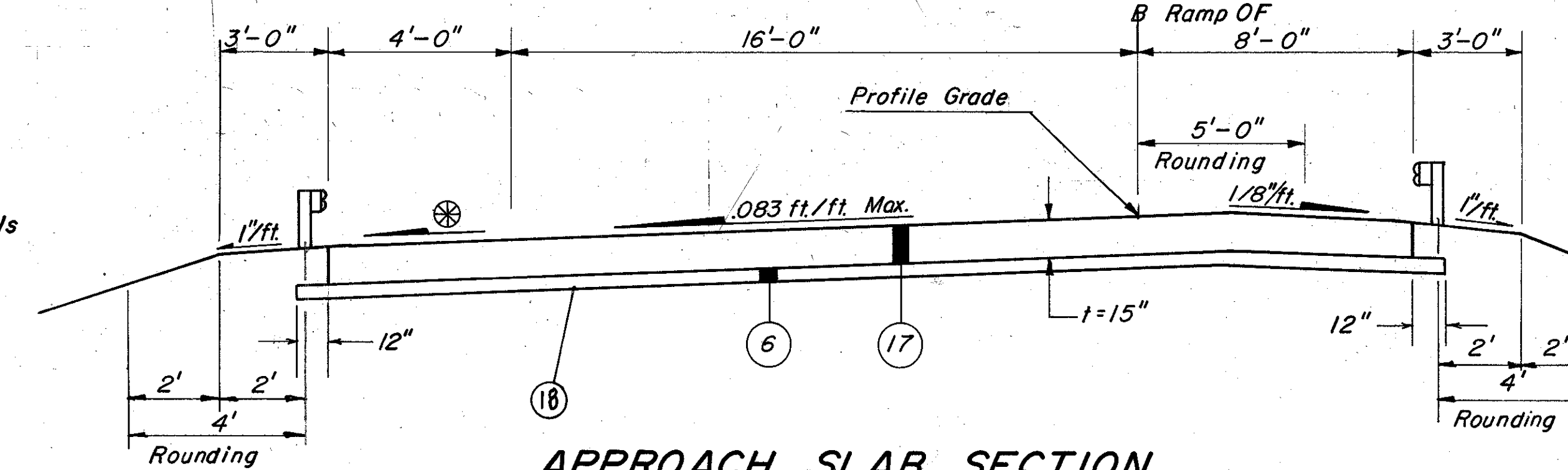


**CUT SHOULDER SECTION AT RAMPS**

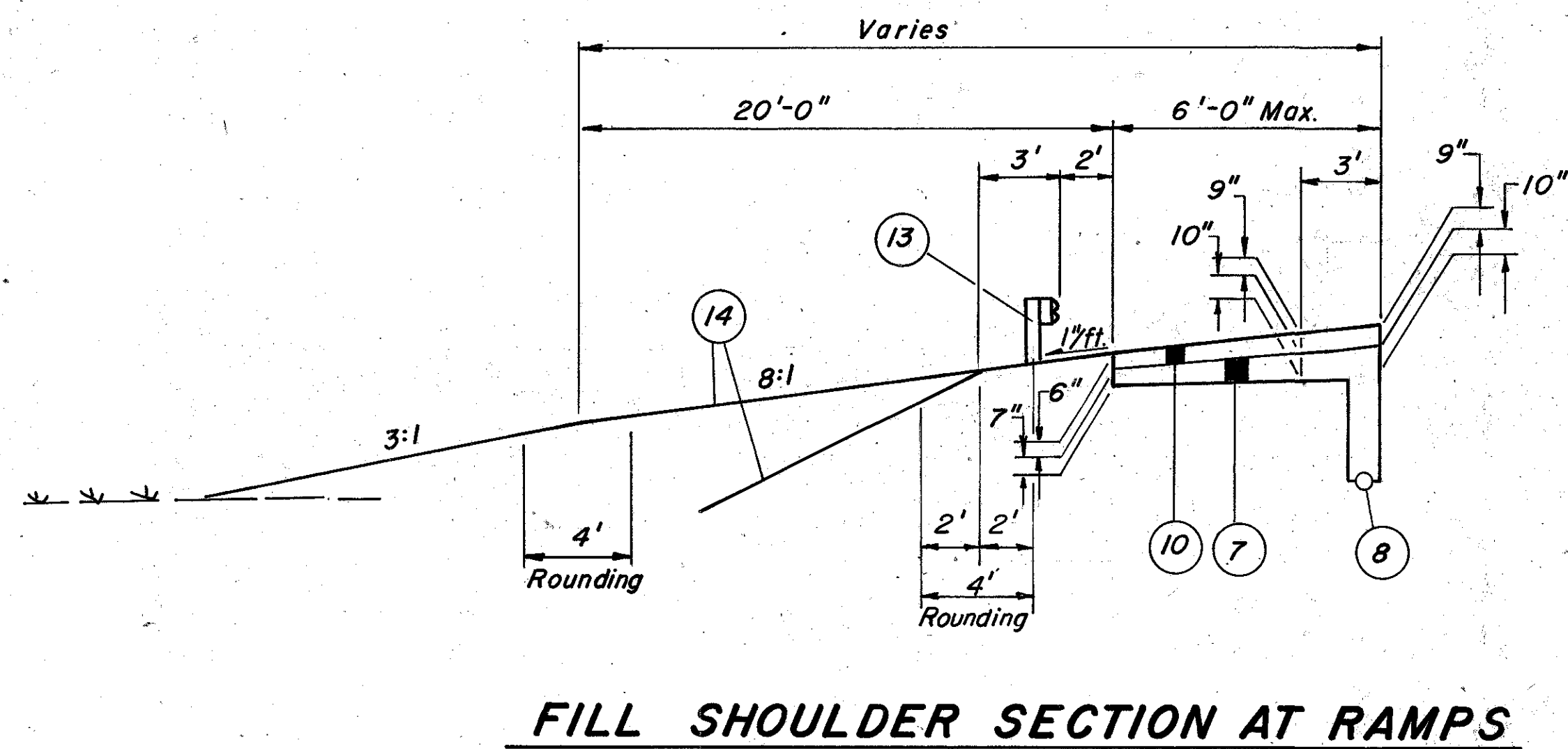
NOTE: For Legend, See Sheet No. 3



Section Applies: ROAD OD; Sta. 154+61.35 to Sta. 154+86.35 = 25 L.F.  
Sta. 162+80.77 to Sta. 163+05.77 = 25 L.F.  
ROAD OE Sta. 164+32.98 to Sta. 164+57.98 = 25 L.F.  
(0.0239 ft. to 0.0201 ft./ft.)  
Sta. 156+51.66 to Sta. 156+76.66 = 25 L.F.

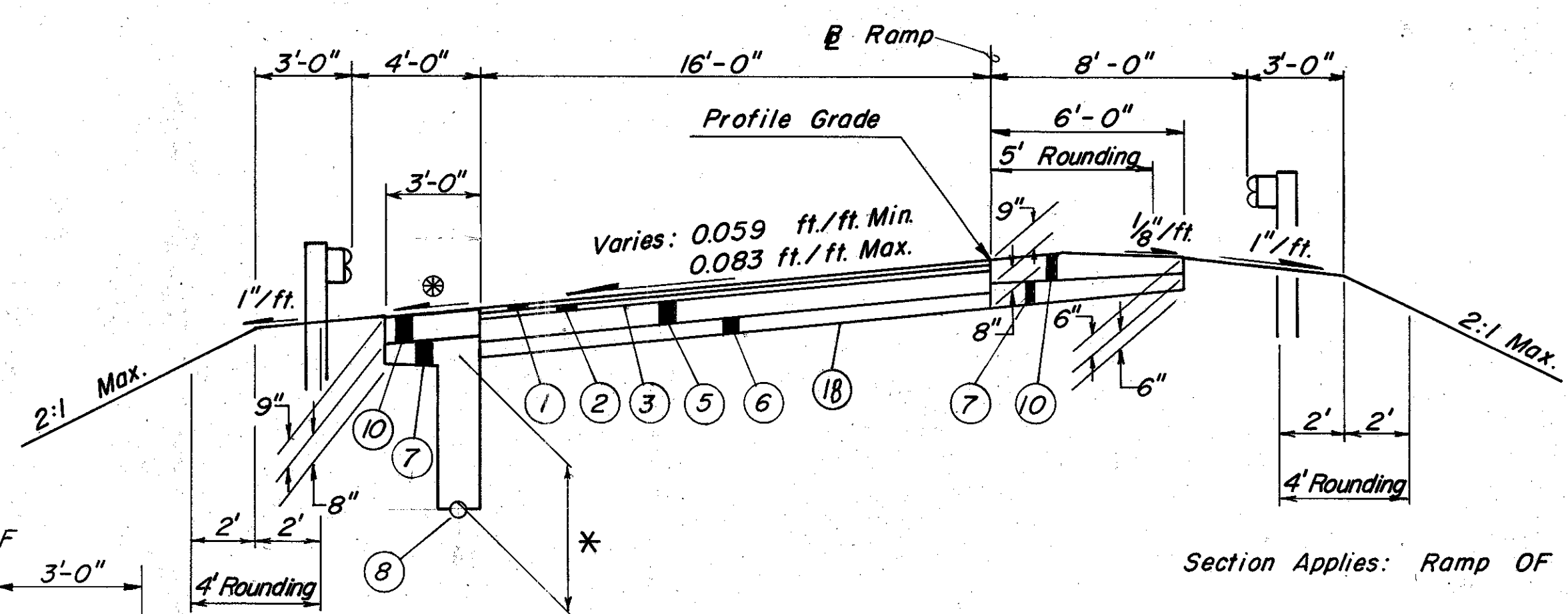
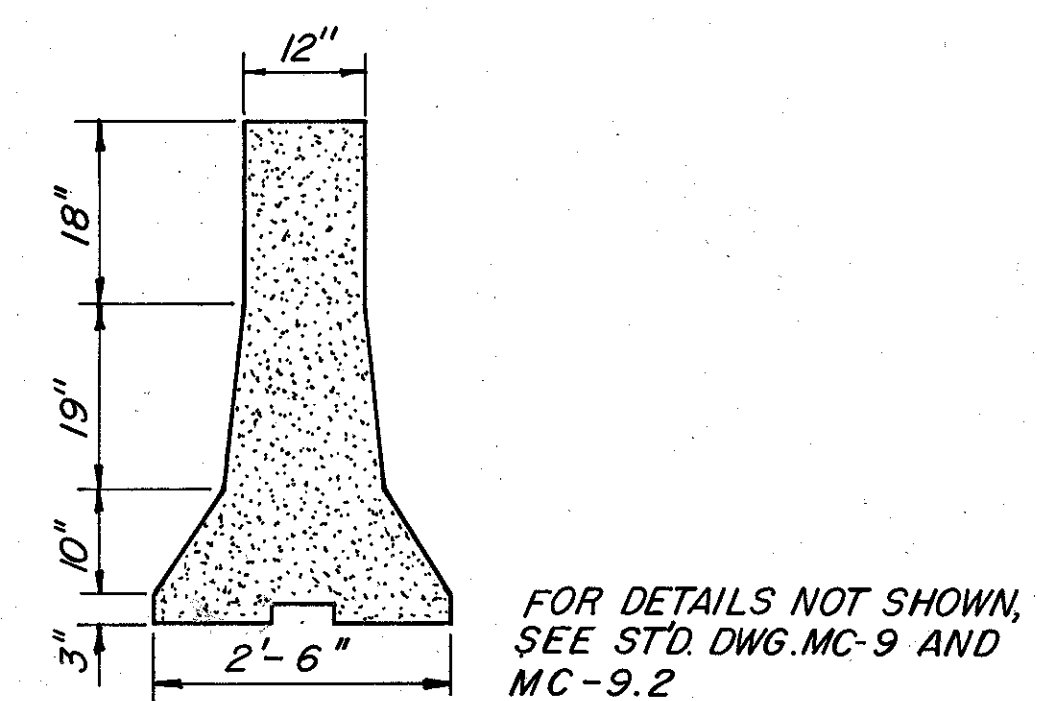
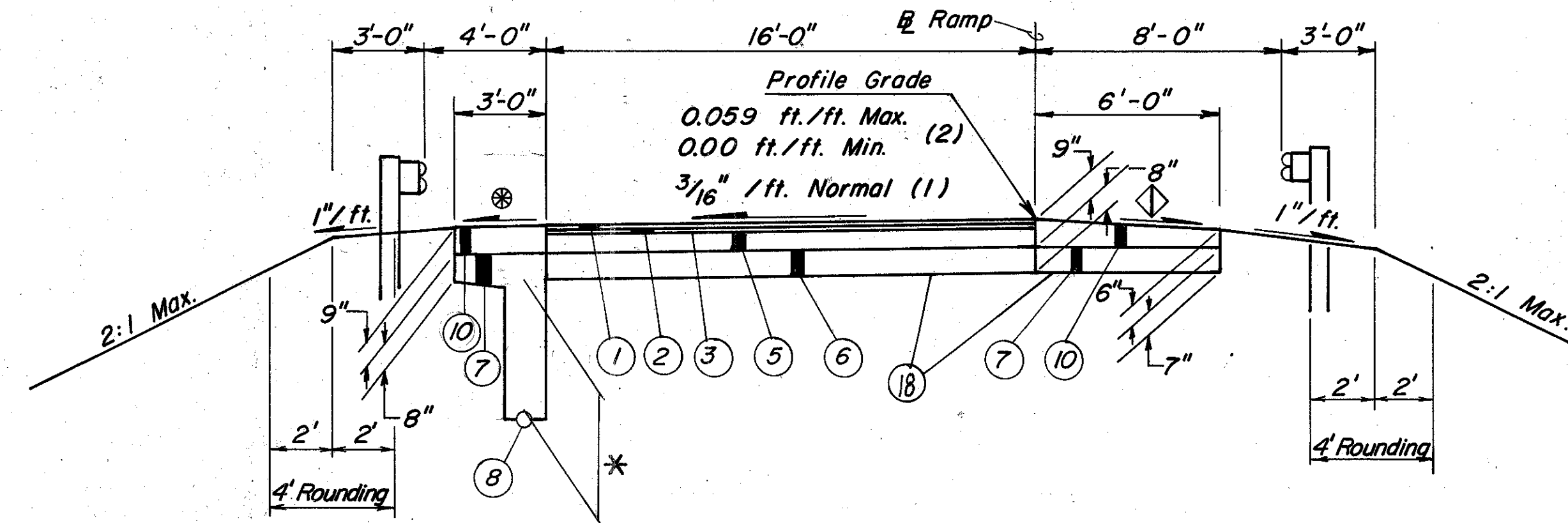
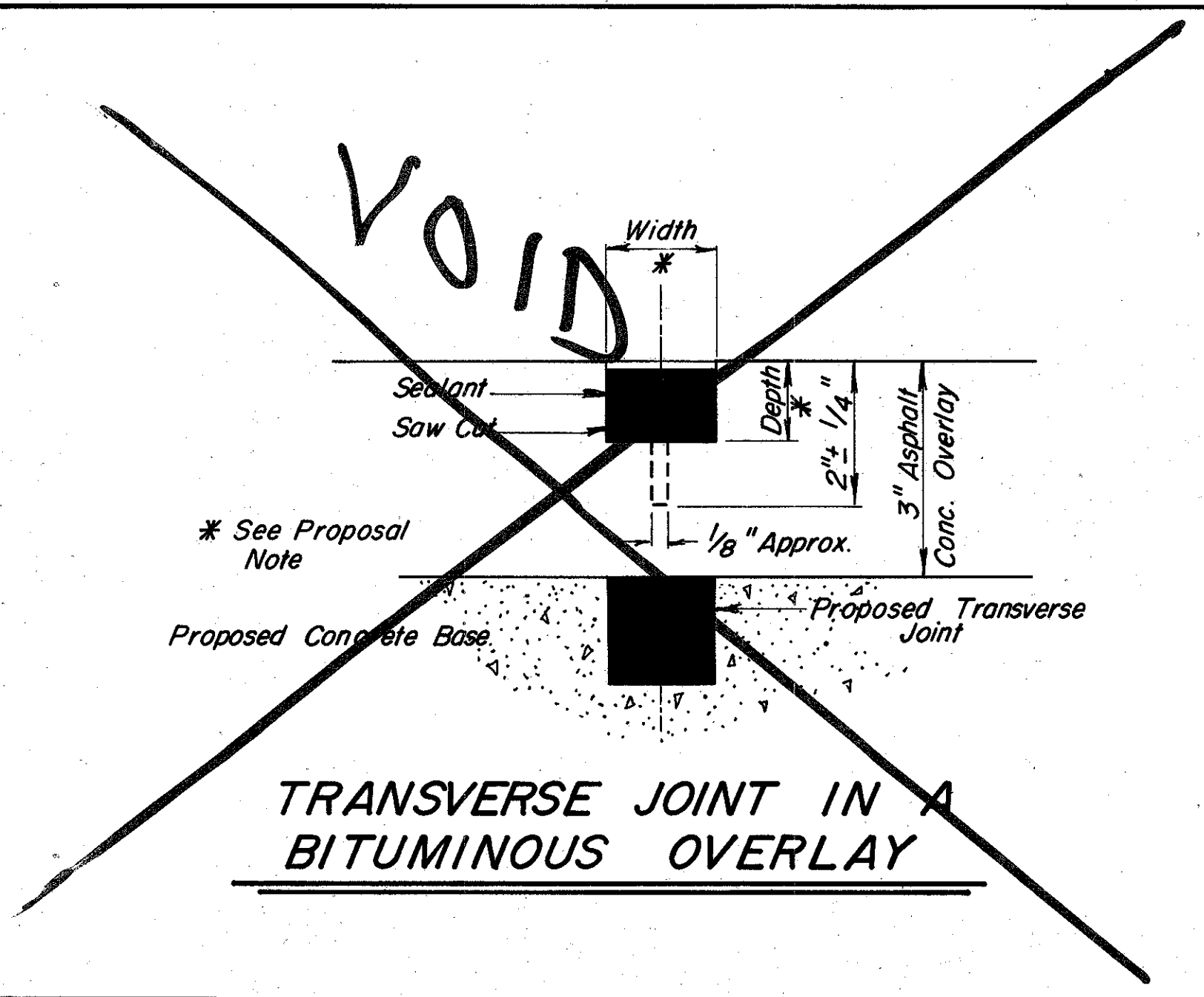


Section Applies: RAMP OF; Sta. 150+40.25 to Sta. 150+65.25 = 25 L.F.  
Sta. 152+42.25 to Sta. 152+67.25 = 25 L.F.



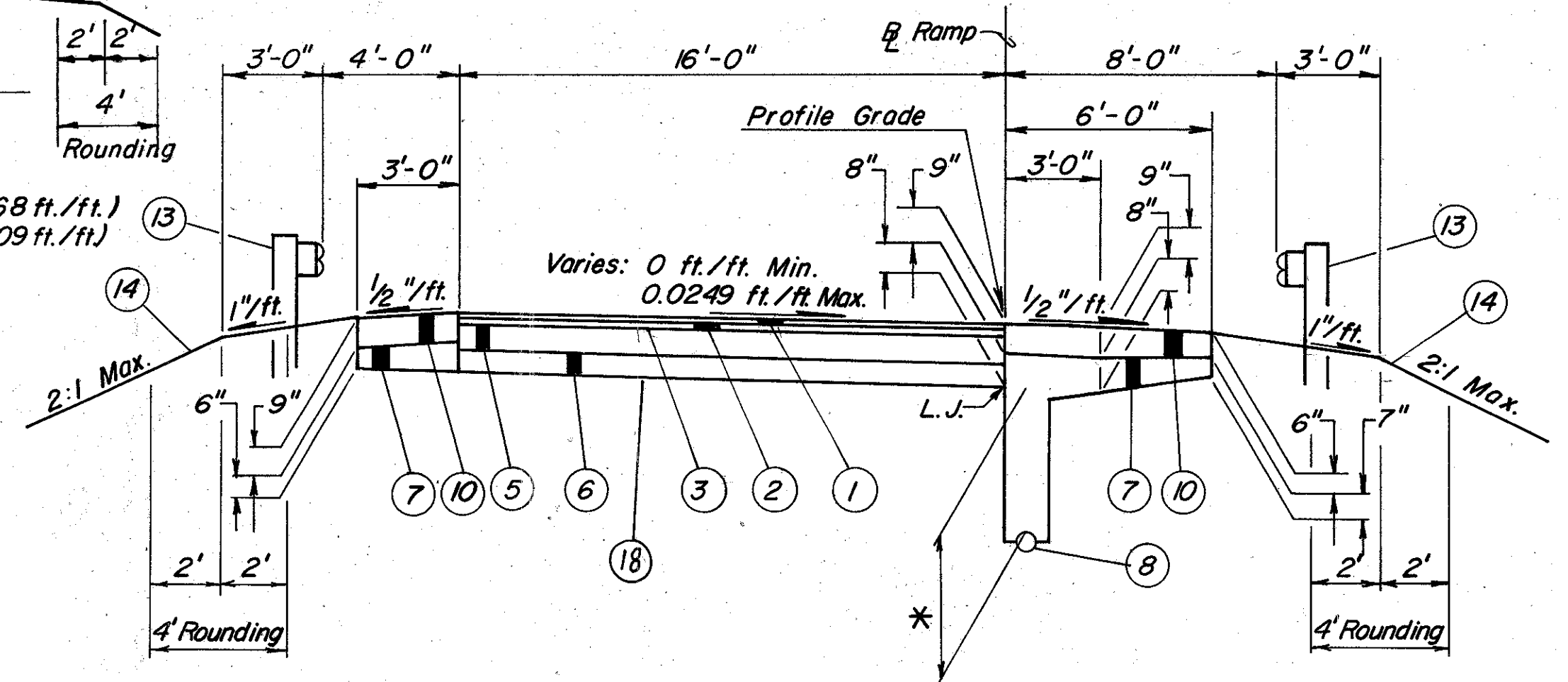
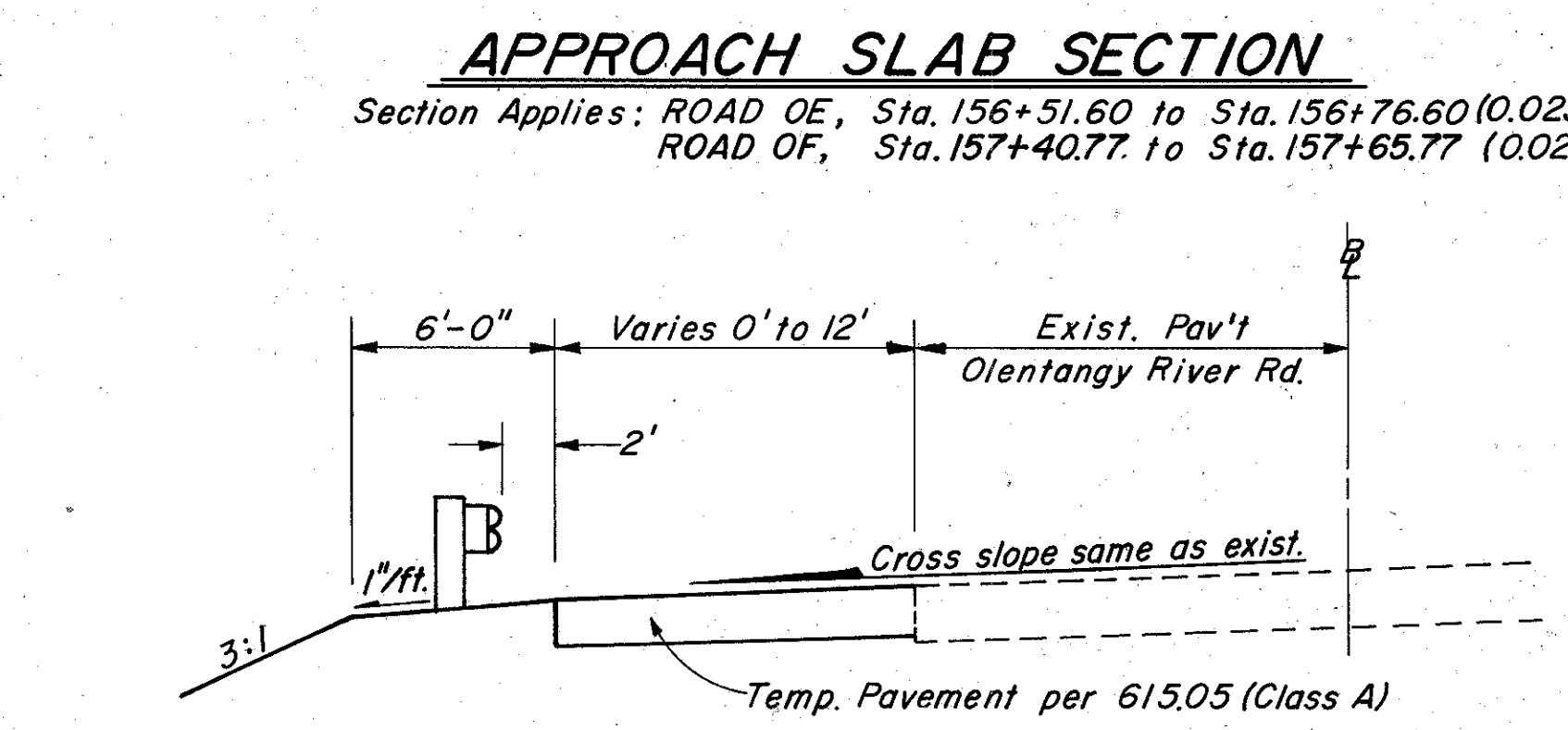
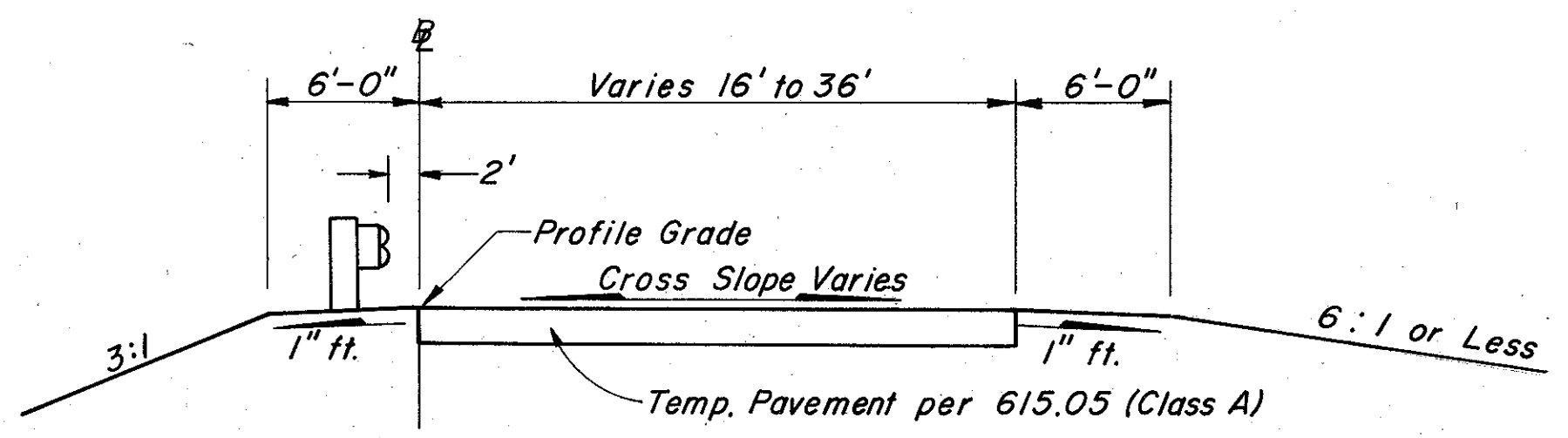
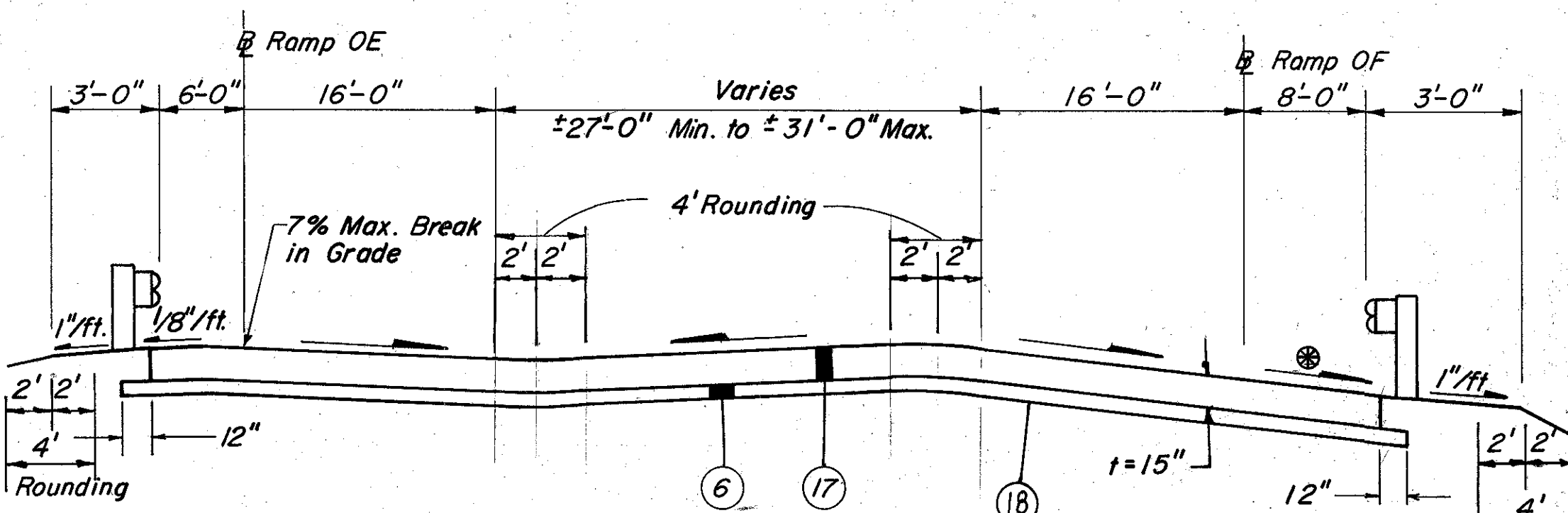
- \* Place underdrain 50" Deep in cuts, 30" Deep in fills
- L.J. Longitudinal Joint
- ⊗ 1/2" per ft. or rate of superelevation, whichever is greater.

# TYPICAL SECTIONS TYPE 446 ON 305

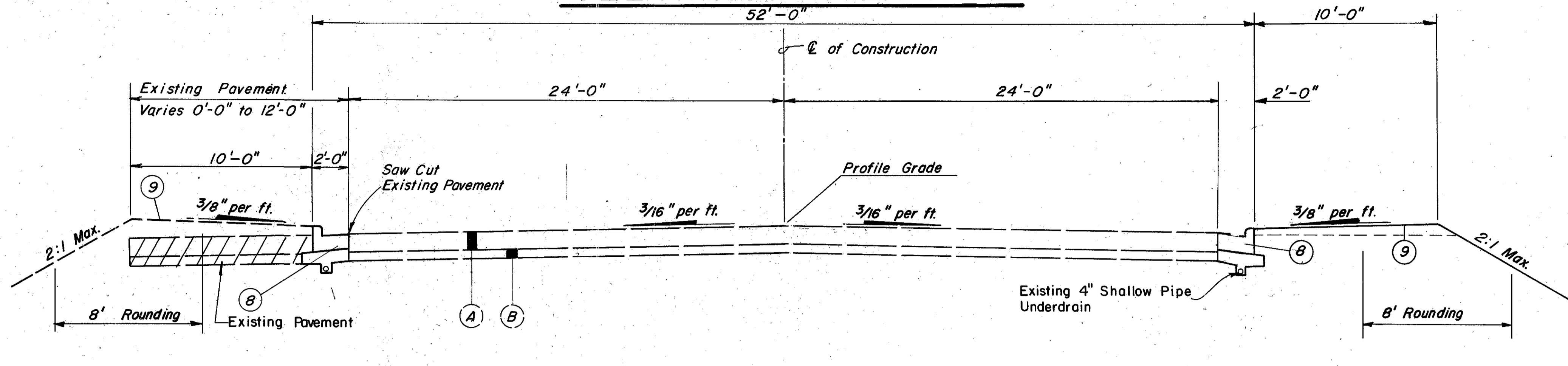


NOTE: For Legend, See Sheet No. 3

- \* Place underdrains 50" deep in cuts, 30" in fills.
- ⊗ 1/2" per ft. or rate of superelevation, whichever is greater.
- ◊ 1/2" per ft. normal, 1/8" per ft. min. Break between ramp & shoulder pavement shall not exceed 7%



# TYPICAL SECTIONS OLENTANGY RIVER ROAD

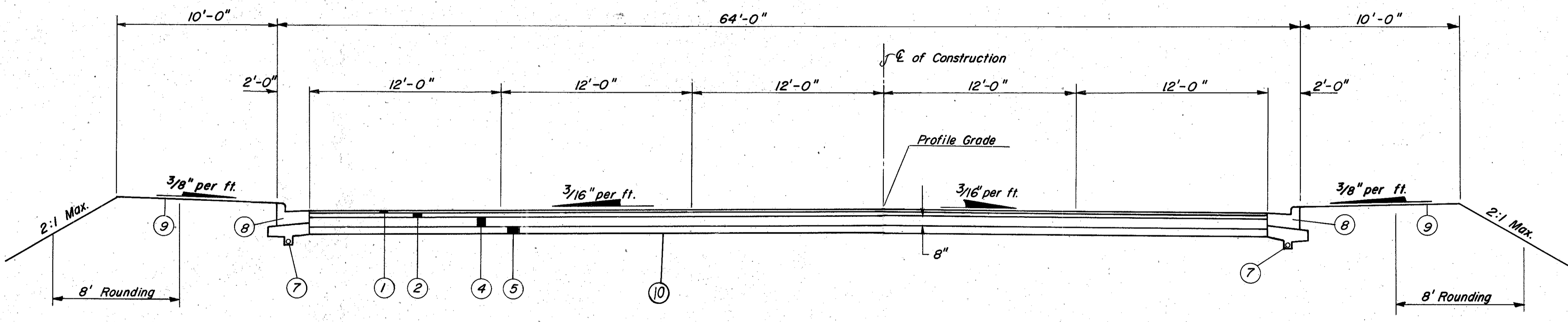
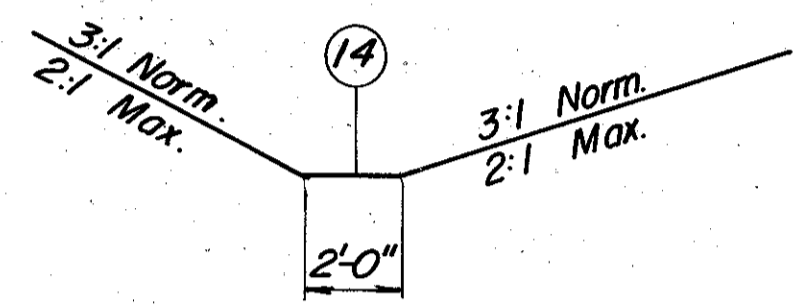


Section Applies: Sta. 62+40 Lt. to Sta. 78+10 Lt.  
Olentangy River Road

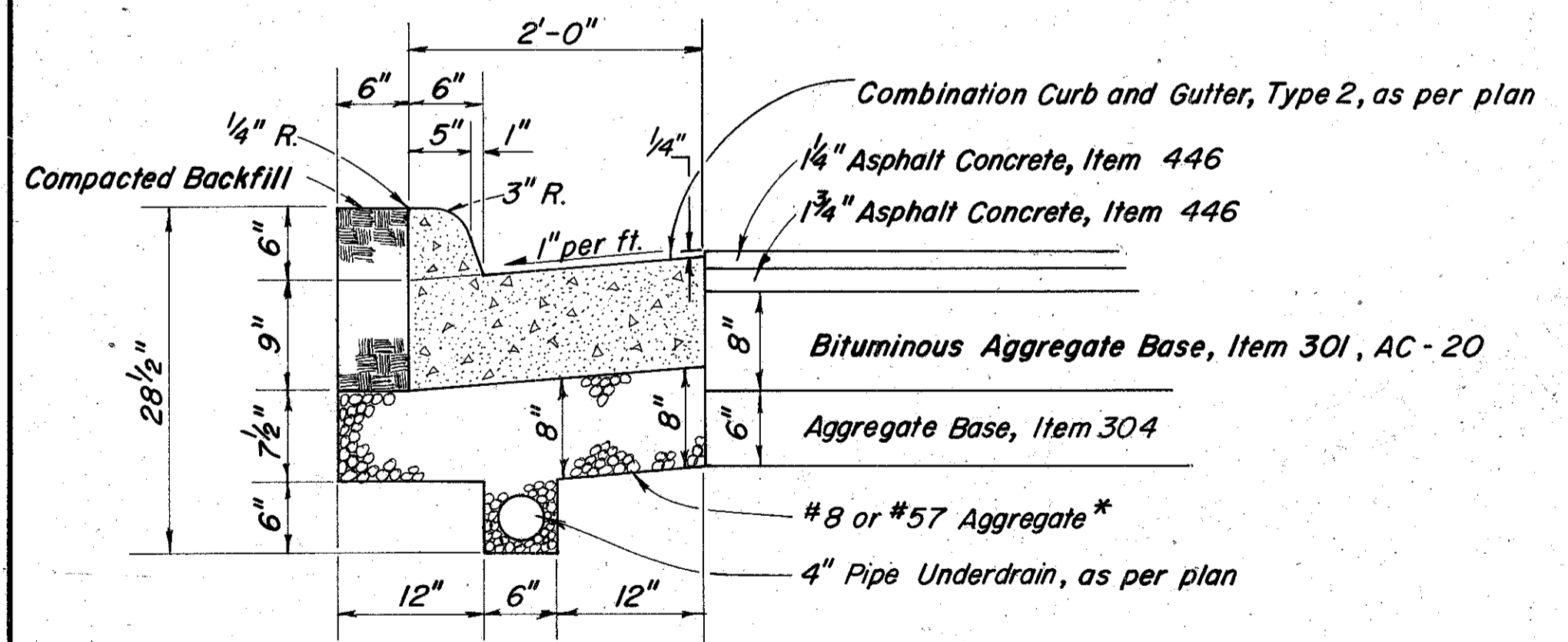
Section Applies: Sta. 61+00 Rt. to Sta. 65+10 Rt.  
and Sta. 68+90 Rt. to Sta. 79+00 Rt.  
Olentangy River Road.

NOTE: Wherever 448 is mentioned,  
446 is meant.

- (A) Existing Asphalt and Bituminous Roadway.
- (B) Existing Aggregate Base



Section Applies: Sta. 50+26 to Sta. 52+50 - 224.00 Lin. Ft.



\* Included with Item 605 Underdrains  
for Payment

### LEGEND

- (1) Item 446 1 1/4" Asph. Conc. Surface Course, Type 1, AC-20
- (2) Item 446 1 3/4" Asph. Conc. Intermediate Course, Type 2, AC-20
- (3) Not Used
- (4) Item 301 Bituminous Aggregate Base, AC-20 Thickness as Shown
- (5) Item 304 6" Aggregate Base
- (6) Not Used
- (7) Item 605 4" Shallow Pipe Underdrains, as per plan (See Detail this Sheet)
- (8) Item 609 Combination Curb and Gutter, Type 2, as per plan. (See Detail this Sheet)
- (9) Item 659 Seeding and Mulching
- (10) Item 203 Subgrade Compaction



ESTIMATED PAVEMENT QUANTITIES

REF. No.	Station		LIN FT.	203	301	304	305	407	452	446		609	**	255	611	305
	FROM	TO		SQ. YD.	CU. YD.	CU. YD.	SQ. YD.	GAL.	SQ. YD.	CU. YD.	CU. YD.	LIN FT.	LIN FT.	SQ. YD.	SQ. YD.	
ROAD OE	151+13.11	156+51.66	538.55	1645.57		336.59		71.81	688.15	33.24	46.54					957.42
	156+51.66	SKEW		356.43		3.92		1.01	10.09	.47	.65				319.44	13.45
	164+57.98	164+74.62		204.08		5.57		1.96	7.27	.91	1.27				144.44	26.19
	164+74.62	165+87.16	112.54	467.72		81.60		23.70	125.04	11.90	16.66					342.68
	165+87.16	169+87.16	400.00	1377.77		250.00		70.00	444.44	32.41	45.37					933.33
169+87.16	171+55.38	168.22	486.00		89.57		22.43	186.92	10.38	14.54					299.08	
SR 315 NB	171+55.38	176+75.38	520.00	3264.45		607.47	2455.56	184.17	808.89	85.26	119.37					
	176+75.38	181+73.56	498.18	2767.67		522.01	1992.72	149.45	774.95	69.19	96.87					
ROAD OD	149+43.90	149+88.61	44.71	312.97		64.24		14.90	114.26	6.90	9.66					198.71
	149+88.61	154+61.82	473.21	2484.35		559.39		94.64	1222.46	43.82	61.34					1261.89
	154+61.82	SKEW		232.48		14.98		2.40	12.92	1.11	1.56				155.56	32.00
	163+05.77	167+51.31	445.54	1970.56		311.81		87.72	637.40	40.61	56.84				138.89	1169.63
	167+51.31	169+62.84	211.53	893.13		154.06		42.31	329.05	19.59	27.42					564.08
169+62.84	170+94.55	131.71	572.86		97.09		27.60	204.88	12.78	17.89					367.98	
SR 315 SB	170+65.47	170+95.43	29.96	126.49		25.39	79.89	7.99	46.60	2.77	3.88					
	170+95.43	173+47.75	252.32	2200.79		398.34	1808.29	135.62	392.50	62.79	87.90					
	173+47.75	175+75.43	227.68	1483.34		275.68	1129.17	84.69	354.17	39.21	54.89					
	175+75.43	181+35.08	559.65	3109.17		588.15	2238.60	167.90	870.57	77.73	108.82					
RAMP OF	145+89.94	150+40.75	450.81	1335.58		227.49		60.11	450.81	27.83	38.95				83.33	801.44
	152+62.25	157+23.17	460.92	1363.66		232.60		61.46	460.92	28.45	39.83				83.33	819.41
	157+23.17	157+38.30	15.13	23.53		4.48		1.01	10.09	.47	.65					13.45
INTERSECTION RAMP OF GOODALE ST.	145+06.57	145+89.94	83.37			159.20		40.22	179.54	18.62	26.07					357.51
	DR. OPPOSITE								96.50		94.0					
OLENTANGY RIVER ROAD MAIN LINE	51+00	52+50	150	1000	222.22	166.66				34.72	48.61	300	300			
	83+16 RT.					16.28			76.50							
	62+40 LT.	78+10 LT.	1570									1570	1570			
	61+00 RT.	65+10 RT.	410									410	410			
	68+90 RT.	79+10 RT.	1020									1020	1020			
INTERSECTION AT GOODALE ST.	50+50 LT.			64.21	10.74	8.02				1.67	2.34	71.80	71.8			
	50+50 RT.			75.54	13.07	9.75				2.03	2.85	75.8	4.6			
	97+75	99+00	125	139.80	26.80	20.00				4.17	5.83	89.10	5.4			
	50+25	51+00	75	505.79	111.67	83.33				17.37	24.31	26.10	1.6			
TOTALS			28,463.94	384.50	5313.67	9,704.23	1355.10	8504.92	686.40	960.91	3,656.80	383.40**	3000	924.99	8158.25	

\*\*For Estimating Purposes Only, Paid For With Underdrain.

CONVERT INCHES TO FEET  
 $((\frac{1}{4}"/12")/12)(1 Ft.) = 0.1042'$   
 $((\frac{3}{4}"/12")/12)(1 Ft.) = 0.14583'$

I-P INTERSECTION

Sta. 50 + 50 Lt, Δ = 84.8055556 R = 50

- 304  $(432.88)(\frac{6}{12})(\frac{1}{27}) = 8.02$  Cu. Yd.
- 301  $(432.88)(\frac{1}{27})(0.67) = 10.74$  Cu. Yd.
- 446  $(432.88)(0.1042)(\frac{1}{27}) = 1.67$  Cu. Yd.
- 446  $(432.88)(0.14583)(\frac{1}{27}) = 2.34$  Cu. Yd.
- 203  $(432.88 + 145.04)(\frac{1}{9}) = 64.21$  Sq. Yd.

Sta. 50 + 25 to 51 + 00

- 304  $(75)(60)(\frac{6}{12})(\frac{1}{27}) = 83.33$  Cu. Yd.
- 301  $(75)(60)(\frac{1}{27})(0.67) = 111.67$  Cu. Yd.
- 446  $(75)(60)(0.1042)(\frac{1}{27}) = 17.37$  Cu. Yd.
- 446  $(75)(60)(0.14583)(\frac{1}{27}) = 24.31$  Cu. Yd.
- 203  $[(75)(60) + 2(26.06)](\frac{1}{9}) = 505.79$  Sq. Yd.

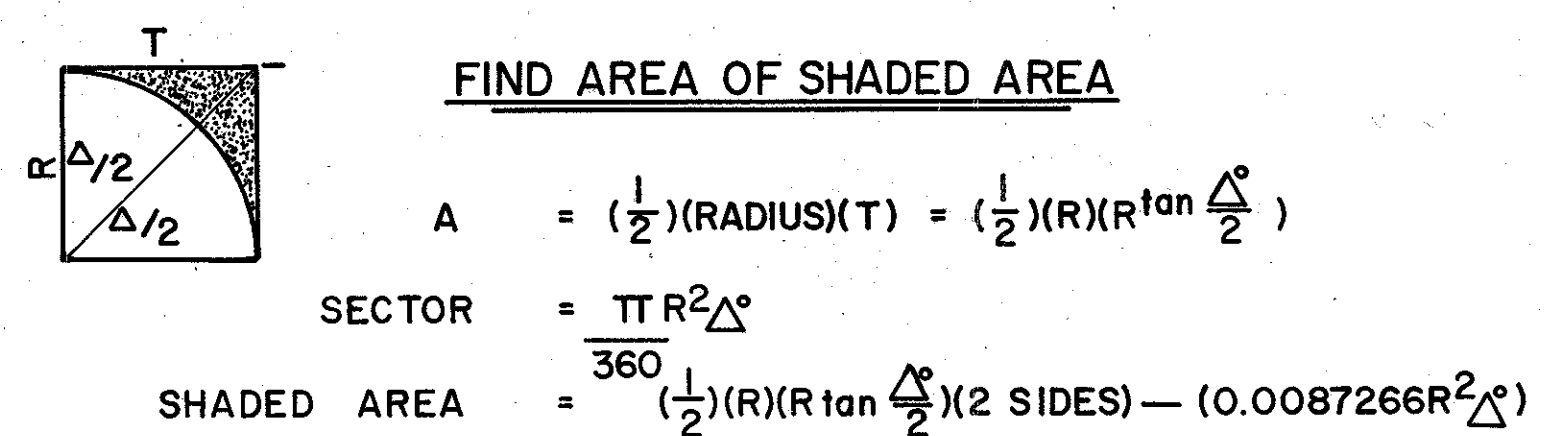
Sta. 50 + 50 Rt, Δ = 89.5477778 R = 50

- 304  $(526.7)(\frac{6}{12})(\frac{1}{27}) = 9.75$  Cu. Yd.
- 301  $(526.7)(\frac{1}{27})(0.67) = 13.07$  Cu. Yd.
- 446  $(526.7)(0.1042)(\frac{1}{27}) = 2.03$  Cu. Yd.
- 446  $(526.7)(0.14583)(\frac{1}{27}) = 2.85$  Cu. Yd.
- 203  $(526.7 + 153.2)(\frac{1}{9}) = 75.54$  Cu. Yd.

Sta. 97 + 75 to Sta. 99 + 00 GOODALE

- 304 2.7 UNITS @  $(\frac{20^2}{UNIT}) @ (\frac{6}{12}) @ (\frac{1}{27}) = 20.00$  Cu. Yd.
- 301 2.7 UNITS @  $(\frac{20^2}{UNIT}) @ (\frac{1}{27})(0.67) = 26.80$  Cu. Yd.
- 446 2.7 UNITS @  $(\frac{20^2}{UNIT}) @ (0.1042)(\frac{1}{27}) = 4.17$  Cu. Yd.
- 446 2.7 UNITS @  $(\frac{20^2}{UNIT}) @ (0.14583)(\frac{1}{27}) = 5.83$  Cu. Yd.
- 203  $[2.7 UNITS @ (\frac{20^2}{UNIT}) + 89.1(2)](\frac{1}{9}) = 139.80$  Cu. Yd.

SPECIAL CALCULATIONS



FRANKLIN COUNTY  
FRA-670-1.25-C-2

STA 149 + 43.90 to STA 149 + 88.61 (OD and OE)

446	1.25"/12 x 40' x 44.71' x 1/27	=	6.90 Cu. Yd.
446	1.75"/12 x 40' x 44.71' x 1/27	=	9.66 Cu. Yd.
407	40' x 44.71' x 1/9 x 0.075 Gal./Sq. Yd.	=	14.90 Gal.
305	40' x 44.71' x 1/9	=	198.71 Sq. Yd.
304	6"/12 x 40' x 44.71' x 1/27	=	33.12 Cu. Yd.
304	(6" + 8")/2/12 x 5' + 8"/12 x 3' + (8" + 12")/2/12 x 6' + 8"/12 x 3' + (10" + 8")/2/12 x 2.5' + 8"/12 x 3' + (8" + 4")/2/12 x 6' x 44.71' x 1/27	=	31.12 Cu. Yd.
452	(2.5' + 3' + 6' + 2.5' + 3' + 6') x 44.71' x 1/9	=	114.26 Sq. Yd.
622		=	44.71 L.F.

STA 149 + 88.61 - STA 154 + 61.82 (OD)

446	1.25"/12 x 24' x 473.21"/27	=	43.82 Cu. Yd.
446	1.75"/12 x 24' x 473.21"/27	=	61.34 Cu. Yd.
407	24' x 473.21' x 1/9 x 0.075 Gal./Sq. Yd.	=	94.64 Gal.
305	24' x 473.21'/9	=	1261.89 Sq. Yd.
304	6"/12 x 24' x 473.21'/27	=	210.32 Cu. Yd.
304	[(8" + 6")/2/12 x 8' + 12"/12 x 15.25'] x 473.21'/27	=	349.07 Cu. Yd.
452	[8' + (24.5' + 6')/2] x 473.21'/9	=	1222.46 Sq. Yd.

PAVEMENT IN SKEW (OD)

446	1.25"/12 x 24' x 24'/2 /27	=	1.11 Cu. Yd.
446	1.75"/12 x 24' x 24'/2 /27	=	1.56 Cu. Yd.
407	24' x 24'/2 x 1/9 x 0.075 Gal./Sq. Yd.	=	2.40 Gal.
305	24' x 24'/2 /9	=	32.00 Sq. Yd.
304	6"/12 x 24' x 24' /27	=	10.67 Cu. Yd.
304	12"/12 x 15.25 x 15.25/2 /27	=	4.31 Cu. Yd.
452	15.25 x 15.25/2 /9	=	12.92 Sq. Yd.

STA 163 + 05.77 - STA 167 + 51.31 (OD)

446	1.25"/12 x 24' x 445.54' /27	=	41.25 Cu. Yd.
446	1.75"/12 x 24' x 445.54'/27	=	57.76 Cu. Yd.
407	24' x 445.54' /9 x 0.075 Gal./Sq. Yd.	=	89.11 Gal.
305	24' x 445.54'/9	=	1188.11 Sq. Yd.
304	6"/12 x 24' x 445.54'/27	=	198.00 Cu. Yd.
304	[(4" + 8")/2/12 x (8' + 10')/2 + 8"/12 x 4'] x 445.54'/27	=	118.26 Cu. Yd.
452	[(3' + 5')/2 + 5' + 4'] x 445.54'/9	=	643.56 Sq. Yd.

STA 163 + 05.77 (OD) IN SKEW, QUANTITIES SUBTRACTED

446	1.25"/12 x 24' x 13.86'/2 x 1/27	=	.64 Cu. Yd.
446	1.75"/12 x 24' x 13.86'/2 x 1/27	=	.90 Cu. Yd.
407	24' x 13.86'/2 /9 x 0.075 Gal./Sq. Yd.	=	1.39 Gal.
305	24' x 13.86'/2 x 1/9	=	18.48 Sq. Yd.
304	6"/12 x 24' x 13.86'/2 x 1/27	=	3.08 Cu. Yd.
304	8"/12 x 4' x 13.86' x 1/27	=	1.37 Cu. Yd.
452	4' x 13.86' x 1/9	=	6.16 Sq. Yd.

STA 167 + 51.31 - STA 169 + 62.84 (OD)

446	1.25"/12 x 24' x 211.53' x 1/27	=	19.59 Cu. Yd.
446	1.75"/12 x 24' x 211.53' x 1/27	=	27.42 Cu. Yd.
407	24' x 211.53'/9 x 0.075 Gal./Sq. Yd.	=	42.31 Gal.
305	24' x 211.53' x 1/9	=	564.08 Sq. Yd.
304	6"/12 x 24' x 211.53' x 1/27	=	94.00 Cu. Yd.
304	[(4" + 8")/2/12 x 10' + 8"/12 x 4'] x 211.53 x 1/27	=	60.06 Cu. Yd.
452	[5' + 5' + 4'] x 211.53 x 1/9	=	329.05 Sq. Yd.

STA 169 + 62.84 to STA 170 + 94.55 (OD)

446	1.25"/12 x (24' + 26.29')/2 x 131.71' x 1/27	=	12.78 Cu. Yd.
446	1.75"/12 x (24' + 26.29')/2 x 131.71' x 1/27	=	17.89 Cu. Yd.
407	(24' + 26.29')/2 x 131.71' x 1/9 x 0.075 Gal./Sq. Yd.	=	27.60 Gal.
305	(24' + 26.29')/2 x 131.71' x 1/9	=	367.98 Sq. Yd.
304	6"/12 x (24' + 26.29')/2 x 131.71' x 1/27	=	61.32 Cu. Yd.
304	[(4" + 6")/2/12 x 7' + (6" + 8")/2/12 x 3' + 8"/12 x 4'] x 131.71' x 1/27	=	35.77 Cu. Yd.
452	(10' + 4') x 131.71'/9	=	204.88 Sq. Yd.

STA 170 + 65.47 - STA 170 + 95.43 (SR 315 SB)

446	1.25"/12 x 24' x 29.96' x 1/27	=	2.77 Cu. Yd.
446	1.75"/12 x 24' x 29.96' x 1/27	=	3.88 Cu. Yd.
407	24' x 29.96'/9 x 0.075 Gal./Sq. Yd.	=	5.99 Gal.
305	24' x 29.96' x 1/9	=	79.89 Sq. Yd.
304	6"/12 x 24' x 29.96' x 1/27	=	13.32 Cu. Yd.
304	[(7" + 10")/2/12 x 5' + 10"/12 x 5' + (10" + 9")/2/12 x 4'] x 29.96' x 1/27	=	12.07 Cu. Yd.
452	(10' + 4') x 29.96'/9	=	46.60 Sq. Yd.

STA 170 + 95.43 to STA 173+47.75 (SR 315 SB)

446	1.25"/12 x (75' + 54')/2 x 252.32' x 1/27	=	62.79 Cu. Yd.
446	1.75"/12 x (75' + 54')/2 x 252.32' x 1/27	=	87.90 Cu. Yd.
407	(75' + 54')/2 x 252.32'/9 x 0.075 Gal./Sq. Yd.	=	135.62 Gal.
305	(75' + 54')/2 x 252.32' x 1/9	=	1808.29 Sq. Yd.
304	6"/12 x (75' + 54')/2 x 252.32 x 1/27	=	301.38 Cu. Yd.
304	[(7" + 10")/2/12 x 10' + 10"/12 x 3' + (10" + 9")/2/12 x 1'] x 252.32' x 1/27	=	96.96 Cu. Yd.
452	(10' + 4') x 252.32'/9	=	392.50 Sq. Yd.

STA 173 + 47.75 to STA 175 +75.43 (SR 315 SB)

446	1.25"/12 x (53.27' + 36')/2 x 227.68' x 1/27	=	39.21 Cu. Yd.
446	1.75"/12 x (53.27' + 36')/2 x 227.68' x 1/27	=	54.89 Cu. Yd.
407	(53.27' + 36')/2 x 227.68'/9 x 0.075 Gal./Sq. Yd.	=	84.69 Gal.
305	(53.27' + 36')/2 x 227.68' x 1/9	=	1129.17 Sq. Yd.
304	6"/12 x (53.27' + 36')/2 x 227.68' x 1/27	=	188.19 Cu. Yd.
304	[(7" + 10")/2/12 x 10' + 10"/12 x 3' + (10" + 9")/2/12 x 1'] x 227.68' x 1/27	=	87.49 Cu. Yd.
452	(10' + 4') x 227.68' x 1/9	=	354.17 Sq. Yd.

STA 175 + 75.43 to STA 181 + 35.08 (South Bound)

446	1.25"/12 x 36' x 559.65' x 1/27	=	77.73 Cu. Yd.
446	1.75"/12 x 36' x 559.65' x 1/27	=	108.82 Cu. Yd.
407	36' x 559.65'/9 x 0.075 Gal./Sq. Yd.	=	167.90 Gal.
305	36 x 559.65' x 1/9	=	2238.60 Sq. Yd.
304	6"/12 x 36 x 559.65' x 1/27	=	373.10 Cu. Yd.
304	[(7" + 10")/2/12 x 10' + 10"/12 x 3' + (10" + 9")/2/12 x 1'] x 559.65' x 1/27	=	215.05 Cu. Yd.
452	(10' + 4') x 559.65' x 1/9	=	870.57 Sq. Yd.

STA 151 + 13.11 to STA 156 + 51.66 (OE)

446	1.25"/12 x 16' x 538.55' x 1/27	=	33.24 Cu. Yd.
446	1.75"/12 x 16' x 538.55' x 1/27	=	46.54 Cu. Yd.
407	16' x 538.55'/9 x 0.075 Gal./Sq. Yd.	=	71.81 Gal.
305	16' x 538.55' x 1/9	=	957.42 Sq. Yd.
304	6"/12 x 16' x 538.55' x 1/27	=	159.57 Cu. Yd.
304	[8"/12 x 3' + (8" + 10")/2/12 x 2.5' + 8"/12 x 3' + (8" + 4")/2/12 x 6'] x 538.55' x 1/27	=	177.02 Cu. Yd.
452	(2.5' + 3' + 6') x 538.55' x 1/9	=	688.15 Sq. Yd.
622		=	538.55 L.F.

Add Quantities for Skew (OE)

446	1.25"/12 x 16' x 15.13'/2 x 1/27	=	0.47 Cu. Yd.
446	1.75"/12 x 16' x 15.13'/2 x 1/27	=	0.65 Cu. Yd.
407	16' x 15.13'/2/9 x 0.075 Gal./Sq. Yd.	=	1.01 Gal.
305	16' x 15.13'/2 x 1/9	=	13.45 Sq. Yd.
304	6"/12 x 16' x 15.13'/2 x 1/27	=	2.24 Cu. Yd.
304	(8" + 4")/2/12 x 15.13' x 6' x 1/27	=	1.68 Cu. Yd.
452	6' x 15.13' x 1/9	=	10.09 Sq. Yd.

STA 164 + 57.98 to STA 164 + 74.62 (OE in Skew)

446	1.25"/12 x (28.81' x 16.36')/2 x 20.83'/2 x 1/27	=	.91 Cu. Yd.
446	1.75"/12 x (28.81' x 16.36')/2 x 20.83'/2 x 1/27	=	1.27 Cu. Yd.
407	(28.81' x 16.36')/2/9 x 20.83'/2 x 0.075 Gal./Sq. Yd.	=	1.96 Gal.
305	(28.81' x 16.36')/2 x 20.83'/2 x 1/9	=	26.19 Sq. Yd.
304	6"/12 x (28.81' x 16.36')/2 x 20.83'/2 x 1/27	=	4.36 Cu. Yd.
304	(4" + 8")/2/12 x 4' x 16.36' x 1/27	=	1.21 Cu. Yd.
452	4' x 16.36' x 1/9	=	7.27 Sq. Yd.

STA 164 + 74.62 to STA 165 + 87.16 (OE)

446	1.25"/12 x (28.81' + 26')/2 x 112.54' x 1/27	=	11.90 Cu. Yd.
446	1.75"/12 x (28.81' + 26')/2 x 112.54' x 1/27	=	16.66 Cu. Yd.
407	(28.81' + 26')/2 x 112.54'/9 x 0.075 Gal./Sq. Yd.	=	25.70 Gal.
305	(28.81' + 26')/2 x 112.54' x 1/9	=	342.68 Sq. Yd.
304	6"/12 x (28.81' + 26')/2 x 112.54 x 1/27	=	57.11 Cu. Yd.
304	[(4" + 8")/2/12 x 4' + 8"/12 x 3' + (8" + 7")/2/12 x 3'] x 112.54 x 1/27	=	24.49 Cu. Yd.
452	(4' + 6') x 112.54'/9	=	125.04 Sq. Yd.

STA 165 + 87.16 to STA 169 + 87.16 (OE)

446	1.25"/12 x (26' + 16')/2 x 400' x 1/27	=	32.41 Cu. Yd.
446	1.75"/12 x (26' + 16')/2 x 400' x 1/27	=	45.37 Cu. Yd.
407	(26' + 16')/2 x 400'/9 x 0.075 Gal./Sq. Yd.	=	70.00 Gal.
305	(26' + 16')/2 x 400' x 1/9	=	933.33 Sq. Yd.
304	6"/12 x (26' + 16')/2 x 400' x 1/27	=	155.56 Cu. Yd.
304	[(7" + 8")/2/12 x 4' + 8"/12 x 3' + (8" + 7")/2/12 x 3'] x 400' x 1/27	=	94.44 Cu. Yd.
452	(4' + 6') x 400' x 1/9	=	444.44 Sq. Yd.

STA 169 + 87.15 to STA 171 + 55.38 (OE)

446	1.25"/12 x 16' x 168.23' x 1/27	=	10.38 Cu. Yd.
446	1.75"/12 x 16' x 168.23' x 1/27	=	14.54 Cu. Yd.
407	16' x 168.23'/9 x 0.075 Gal./Sq. Yd.	=	22.43 Gal.
305	16' x 168.23' x 1/9	=	299.08 Sq. Yd.
304	6"/12 x 16' x 168.23 x 1/27	=	49.85 Cu. Yd.
304	[(7" + 8")/2/12 x 4' + 8"/12 x 3' + (8" + 7")/2/12 x 3'] x 168.23' x 1/27	=	39.72 Cu. Yd.
452	(4' + 6') x 168.23 x 1/9	=	186.92 Sq. Yd.

STA 171 + 55.38 to STA 176 + 75.38 (SR 315 NB)

446	1.25"/12 x (49' + 36')/2 x 520' x 1/27	=	85.26 Cu. Yd.
446	1.75"/12 x (49' + 36')/2 x 520' x 1/27	=	119.37 Cu. Yd.
407	(49' + 36')/2 x 520'/9 x 0.075 Gal./Sq. Yd.	=	184.17 Gal.
305	(49' + 36')/2 x 520' x 1/9	=	2455.56 Sq. Yd.
304	6"/12 x (49' + 36')/2 x 520' x 1/27	=	409.26 Cu. Yd.
304	[(7" + 10")/2/12 x 4' + 10"/12 x 3' + (10" + 7")/2/12 x 7'] x 520' x 1/27	=	198.21 Cu. Yd.
452	(7' + 7') x 520' x 1/9	=	808.89 Sq. Yd.

STA 176 + 75.38 to STA 181 + 73.56 (SR 315 NB)

446	1.25"/12 x 36' x 498.18' x 1/27	=	69.19 Cu. Yd.
446	1.75"/12 x 36' x 498.18' x 1/27	=	96.87 Cu. Yd.
407	36' x 498.18'/9 x 0.075 Gal./Sq. Yd.	=	149.45 Gal.
305	36' x 498.18' x 1/9	=	1992.72 Sq. Yd.
304	6"/12 x 36' x 498.18' x 1/27	=	332.12 Cu. Yd.
304	[(7" + 10")/2/12 x 4' + 10"/12 x 3' + (10" + 7")/2/12 x 7'] x 498.18' x 1/27	=	189.89 Cu. Yd.
452	(7' + 7') x 498.18' x 1/9	=	774.95 Sq. Yd.

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STA 145 + 89.94 to STA 150 + 40.75 (Ramp OF)

446	1.25"/12 x 16' x 450.81' x 1/27	=	27.83 Cu. Yd.
446	1.75"/12 x 16' x 450.81' x 1/27	=	38.95 Cu. Yd.
407	16' x 450.81'/9 x 0.075 Gal./Sq. Yd.	=	60.11 Gal.
305	16' x 450.81' x 1/9	=	801.44 Sq. Yd.
304	6"/12 x 16' x 450.81' x 1/27	=	133.57 Cu. Yd.
304	[(5" + 8"/2)/12 x 3' + 8"/12 x 6'] x 450.81' x 1/27	=	93.92 Cu. Yd.
452	(6' + 3') x 450.81' x 1/9	=	450.81 Sq. Yd.

STA 152 + 62.25 to STA 157 + 23.17 (Ramp OF)

446	1.25"/12 x 16' x 460.92' x 1/27	=	28.45 Cu. Yd.
446	1.75"/12 x 16' x 460.92' x 1/27	=	39.83 Cu. Yd.
407	16' x 460.92'/9 x 0.075 Gal./Sq. Yd.	=	61.46 Gal.
305	16' x 460.92' x 1/9	=	819.41 Sq. Yd.
304	6"/12 x 16' x 460.92' x 1/27	=	136.57 Cu. Yd.
304	[(5" + 8"/2)/12 x 3' + 8"/12 x 6'] x 460.92' x 1/27	=	96.03 Cu. Yd.
452	(6' + 3') x 460.92' x 1/9	=	460.92 Sq. Yd.

STA 157 + 23.17 to STA 157 + 38.30 (Ramp OF in Skew)

446	1.25"/12 x (16' x 15.13')/2 x 1/27	=	.47 Cu. Yd.
446	1.75"/12 x (16' x 15.13')/2 x 1/27	=	.65 Cu. Yd.
407	(16' x 15.13')/2/9 x 0.075 Gal./Sq. Yd.	=	1.01 Gal.
305	(16' x 15.13')/2 x 1/9	=	13.45 Sq. Yd.
304	6"/12 x (16' x 15.13')/2 x 1/27	=	2.24 Cu. Yd.
304	8"/12 x 6' x 15.13' x 1/27	=	2.24 Cu. Yd.
452	6' x 15.13' x 1/9	=	10.09 Sq. Yd.

APPROACH SLAB RAMP OF OVER ROAD OD & OE

End App. Slab STA 150 + 65.75

W = 30'	30' x 25'/9 =	83.33 Sq. Yd.
L = 25'		
Item 304 =	6"/12 x 83.33/3 =	13.89 Cu. Yd.
304 =	1.33 x 30'/27/2 =	.74 Cu. Yd.
TOTAL =		14.63 Cu. Yd.

Begin App. Slab STA 152 + 37.25

Same as above	83.33 Sq. Yd.
TOTAL =	14.63 Cu. Yd.

DRIVEWAY PAVEMENT

STA 109+00 Goodale (At Ramp OF)

Item 452 = (45 x 15 - 3.14 x 15 x 15/2)/9	=	35.75 Sq. Yd.
609 = 3.14 x 15'	=	47.1 Lin. Ft.

STA 109+48.74 Goodale (At Ramp OF)

Item 452 = (15 x 15 + 45 x 15 - 3.14 x 15 x 15/2)/9	=	60.75 Sq. Yd.
609 = 3.14 x 15'	=	47.1 Lin. Ft.

STA 159 + 51.90 to 178 + 89.23 (1,937.33')

304	6"/12 x 11/27 x L = .2037 x L	=	394.64 Cu. Yd.
408	.4 x 10' x L/9 = .4444 x L	=	861.04 Gal.
404	2.5/12 x 10'/27 x L = .0772 x L	=	149.49 Cu. Yd.

Wearing Surface for Box Culvert  
STA 178 + 89.23 TO 180 + 00 (110.77')

1" 404 Asphalt Concrete			
404	1"/12 x 10'/27 x L = .0309 x L	=	3.42 Cu. Yd.
407	.4 x 10' x L/9 = .444 x L	=	49.23 Gal.

STA 180 + 00 to 183 + 94.32 (394.32')

304	6"/12 x 13/27 x L =	94.93 Cu. Yd.
408	0.4 x 12' x L/9 =	210.30 Gal.
404	2.5/12 x 12'/27 x L =	36.51 Cu. Yd.

APPROACH SLABS FOR BRIDGE OE & OF OVER OLENTANGY RIVER

End Approach Slab STA 156 + 76.66 Baseline OE

W = 115'	115' x 25'/9 =	319.44 Sq. Yd.
L = 25'		
Thick = 15"		
Item 304 =	6" x 319.44/12/3 =	53.24 Cu. Yd.
304 =	1.33 x 115/27/2 =	2.83 Cu. Yd.
TOTAL =		56.07 Cu. Yd.

Begin Approach Slab STA 164 + 32.98 Baseline OE

W = 52'	52' x 25'/9 =	144.44 Sq. Yd.
L = 25'		
Concrete Deck		
Item 304 =	6" x 144.44/12/3 =	24.07 Cu. Yd.
304 =	1.33 x 52'/27/2 =	1.28 Cu. Yd.
TOTAL =		25.35 Cu. Yd.

APPROACH SLABS FOR BRIDGE OD OVER OLENTANGY RIVER AND S.R. 315

Begin Approach Slab STA 154 + 61.82

W = 56'	56' x 25'/9 =	155.56 Sq. Yd.
L = 25'		
Item 304 =	6" x 155.56'/12/3 =	25.93 Cu. Yd.
304 =	1.33 x 56'/27/2 =	1.38 Cu. Yd.
TOTAL 304 =		27.31 Cu. Yd.

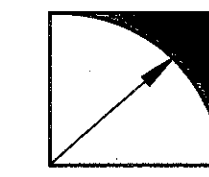
Begin Approach Slab STA 162 + 80.77

W = 50'	50' x 25'/9 =	138.89 Sq. Yd.
L = 25'		
Item 304 =	6"/12 x 138.89'/3 =	23.15 Cu. Yd.
304 =	1.33 x 50'/27/2 =	1.23 Cu. Yd.
TOTAL =		24.38 Cu. Yd.

BIKEWAY TURNAROUND STA 180 + 20

304	6"/12 x 13/27 x 20 =	4.81 Cu. Yd.
408	.4 x 12' x 20/9 =	10.67 Gal.
404	2.5/12 x 12'/27 x 20 =	1.85 Cu. Yd.

TURNAROUND RADIUSSES (R = 15')



SHADED AREA = 15<sup>2</sup> - [3.14 (15<sup>2</sup>) x 1/4] 1/9 = 5.36 Sq. Yd.

304	6"/36 x 5.36 x 2 =	1.79 Cu. Yd.
408	.4 x 5.36 x 2 =	4.29 Gal.
404	2.5/36 x 5.36 x 2 =	0.74 Cu. Yd.

BIKEWAY DRIVEWAY TO OLENTANGY RIVER ROAD

STA 183 + 10 (ORR STA 83 + 16 RT.)

452	35 x 12 x 1/9 =	46.67 Sq. Yd.
	1/2 [50 x 50 - 3.14 (25 x 25)] x 1/9 =	29.83 Sq. Yd.
TOTAL =		76.50 Sq. Yd.
404	12 x 12 x 1/27 x 2.5/12 =	1.11 Cu. Yd.
408	.4 x 12 x 12/9 =	6.40 Gal.
304	6"/12 x 13 x 47/27 =	11.31 Cu. Yd.
	1/2 [(50 x 50) - 3.14 (25 x 25)] x 6"/12 x 1/27 =	4.98 Cu. Yd.
TOTAL =		16.29 Cu. Yd.

ROCK CHANNEL PROTECTION, TYPE A WITH FILTER

STA. 157+00 (ROAD OE)

601	13,080 SQ.FT. (PLANIMETER) x 2.5' x 1/27 =	1211.1 Cu.Yd.
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ROCK CHANNEL PROTECTION, TYPE C WITH FILTER

STA. 164+20 (ROAD OE)

601	1,360 SQ. FT. (PLANIMETER) x 2.0' x 1/27 =	100.7 Cu.Yd.
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# GENERAL NOTES

CALC. BY	JSS	1/90
CHECKED BY	WED	4/92

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**TEMPORARY STREAM FILL AND COFFERDAMS** The Contractor shall not place any temporary fill in the stream.

Cofferdams used for pier construction shall be steel sheet pile placed and removed at a time and in a manner which will minimize turbidity and sediment suspension.

**SPILL MANAGEMENT** The Contractor shall take all necessary precautions to prevent pollution to any streams or waterways as per 108.04.

**DUST CONTROL** The following quantities have been included in the General Summary for Project Dust Control.

Item 616	Calcium Chloride	50 Tons
Item 616	Water	500 M-Gal.

**OPEN BURNING** No open burning of debris will be permitted in connection with the project within permanent or temporary right-of-way.

**ROUNDING OF CORNERS SHOWN ON CROSS SECTIONS** The rounded corners shown on the typical sections, apply to all cross sections even though otherwise shown on these plans.

**UNDERGROUND UTILITIES** The locations of the underground utilities shown on the plans are as obtained from the owners of the utility as required by Section 153.64 ORC.

**UTILITY OWNERSHIP** The following utilities and owners are located within the work limits of this project:

- Electric Columbus and Southern Ohio Electric Co.  
215 N. Front St.  
Columbus, Ohio 43215  
(614) 464-7911
- Telephone Ohio Bell Telephone Co.  
150 E. Gay St. Rm. 6C  
Columbus, Ohio 43215  
(614) 223-8535
- Water City of Columbus, Division of Water  
910 Dublin Rd.  
Columbus, Ohio 43215  
(614) 645-7677
- Gas Columbia Gas Co.  
939 W. Goodale  
Columbus, Ohio 43212  
(614) 460-2079
- Electric City of Columbus, Division of Electricity  
910 Dublin Rd.  
Columbus, Ohio 43215  
(614) 645-7098
- Sanitary Sewers City of Columbus  
Division of Sewerage and Drainage  
910 Dublin Rd.  
Columbus, Ohio 43215  
(614) 645-7175

**CONTINGENCY QUANTITIES** The contractor shall not order materials or perform work listed in the General Summary for items designated by plan note to be used "as directed by the Engineer" unless authorized by the Engineer. The actual work locations and quantities used at the Engineer's discretion shall be made a matter of record by incorporation into the final change order governing completion of this project.

**MONUMENTS** Monuments shall be constructed in accordance with details shown on Standard Construction Drawing MC-1. For locations, see Sheet No. 2

**SEEDING** Quantities for seeding are calculated for the soil areas between the right-of-way fence lines, between the right-of-way lines in unfenced areas, and within the work limits for areas outside the right-of-way lines covered by work agreement or slope easement.

**SEEDING AND MULCHING** All slopes steeper than 3:1 shall be seeded with crown vetch (*Coronilla Varia*) at the rate specified under CMS 659.09. The cost of crown vetch shall be included in the cost per square yard for Item 659, Seeding and Mulching.

**WATERING AND MOWING PERMANENT SEEDED AREAS** The following estimated quantities are to be used as directed by the Engineer to promote growth and to care for the permanent seeded areas, as per 659.09:

659	Water	133	M Gal.
659	Mowing	138	M Sq. Ft.

**EROSION CONTROL** Items 601 and 660 are provided in the plans for erosion control. Rock of a stable nature will not be removed in order to place any of these items, and turf of a stable nature will not be removed in order to place 660. The Engineer shall check and non-perform quantities or adjust locations and quantities for these items where indicated by field conditions during construction. In addition, these items shall meet the requirements of 108.04, Limitation of Operations.

**SANITARY FLOW INTO HIGHWAY DRAINAGE SYSTEMS** This plan makes no provision for connecting, nor shall the Engineer or Contractor connect, any existing or new drainage into the highway drainage system when such drains carry flow from any plumbing fixtures, including floor drains and sink drains.

Existing pipe carrying flow which comes within the category outlined above, shall be plugged with Class C concrete in the right-of-way line. Payment for said plugging shall be included in the unit price bid for Item 203, Excavation.

**COOPERATION BETWEEN CONTRACTORS** The Contractor is advised of the presence of other construction contracts within the work limits or in the vicinity of this project. Contracts FRA - Olentangy River Road, FRA-670-2.95 and/or FRA-670/315-2.48/1.88 may be going on concurrently with these projects and close cooperation between Contractors is required to ensure that the traffic maintenance operations for each project are at all times compatible. Any conflicts shall be resolved by the Engineer. See also TMP note on Sheet No. 18.

**LOCATION OF GUARDRAIL** The location of guardrail runs as shown in these plans, are subject to adjustment prior to final acceptance. The Engineer shall be satisfied that all installations will afford maximum protection for traffic.

**GUARDRAIL REPLACEMENT** No hazard shall be left unprotected except for the actual time necessary to remove, grade and reinstall guardrail in a continuous operation. The removal of all guardrail shall at all times be as directed by the Engineer. No guardrail shall be removed until the replacement material is on the site, ready for installation. Failure to comply with this requirement shall be deemed sufficient cause to order work suspended on this project until such time that the Engineer is assured of said compliance.

**UNRECORDED SANITARY CONNECTIONS** Any unrecorded active connection to a sanitary sewer encountered during construction shall be reconnected to the existing sewer, as directed by the Engineer. The following estimated quantities have been included in the General Summary for the work noted above:

Item 603-100 Lin. Ft. 6" Conduit, Type C 706.01, 706.02, 706.08 with joints as per 706.11 or 706.12

Item 603-100 Lin. Ft. 6" Conduit, Type B, 706.01 Cl. 3, 706.02 or 706.08 with joints, as per 706.11 or 706.12

None of the above materials shall be ordered by the Contractor until authorized by the Engineer.

**PRECAST REINFORCED CONCRETE OUTLETS** Erosion control pads and animal guards shall be provided at the outlet end of all pipe underdrains, as per detail on Sheet 116, except when they outlet into a drainage structure.

**CONNECTION TO EXISTING PIPE** Where the plans provide for proposed conduit to be connected to, or to cross either over or under an existing sewer, it shall be the responsibility of the Contractor to locate the existing pipe both as to line and grade before he starts to lay the proposed conduit.

Payment for all operations described above shall be included in the unit price bid for the pertinent 603 conduit items.

**LAW ENFORCEMENT OFFICER AND/OR LAW ENFORCEMENT OFFICER WITH PATROL CAR** The Contractor shall provide the services of a Law Enforcement Officer with or without patrol car per work area as required below. The work areas where these services shall be provided are at all signalized intersections while the signal is out of service and during installation and removal of barricades and detour signs on freeways. If the Contractor desires to use a Law Enforcement Officer outside of the areas described above, in lieu of a flagger, this shall be permitted; however, the cost of the Officer shall be borne by the Contractor. All patrol cars shall be equipped with standard top mounted flashing lights. The Contractor shall make arrangements for these services with the Deputy Chief, Service Subdivision, Columbus Police Department (614) 645-4795. The Law Enforcement Officers are considered to be employed by the Contractor and the Contractor shall be responsible for their actions. Although they are employed by the Contractor, the Project Engineer shall have control over placement.

Payment shall be made at the unit price bid for actual number of hours required for Item Special-Law Enforcement Officer or Item 614 - Law Enforcement Officer with Patrol Car. The following estimated quantities have been established:

Item 614 - Law Enforcement Officer..... 50 hours  
Item 614 - Law Enforcement Officer with Patrol Car..... 50 hours

In addition to the requirements above, the services of a Law Enforcement Officer with or without Patrol Car may be required by City Permit. The following estimated quantities have been provided for this work:

Item 614 - Law Enforcement Officer..... 50 hours \*  
Item 614 - Law Enforcement Officer with Patrol Car..... 50 hours \*  
\* 100% City of Columbus Participation

# GENERAL NOTES (CONTINUED)

CALC. BY	JSS	1/90
CHECKED BY	WED	4/92

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**407 TACK COAT** The Plan quantities indicate average application rates of 0.075 gallons per square yard of Tack Coat for estimating purposes only.

**PAVEMENT JOINTS** The Contractor's attention is directed to Section 401.15 of the State of Ohio, Department of Transportation Construction and Material Specifications. Coating of the finished surface of longitudinal or transverse joint shall not be permitted.

**REVIEW OF DRAINAGE FACILITIES** Before any work is started on the project and again before final acceptance by the State, representatives of the State and the Contractor, along with local representatives, shall make an inspection of the existing sewers within the work limits which are to remain in service and which may be affected by the work. The condition of the existing conduits and their appurtenances shall be determined from field observations. Records of the inspections shall be kept in writing by the State. All new conduits, inlets, catch basins and manholes constructed as a part of the project shall be free of all foreign matter and in a clean condition before they will be accepted by the State. All existing sewers inspected initially by the above-mentioned parties shall be maintained and left in a condition reasonably comparable to that determined by the original inspection. Any change in the condition resulting from the Contractor's operations shall be corrected by the Contractor to the satisfaction of the Engineer.

Payment for all operations described above shall be included in the unit price bid for the pertinent 603 Conduit items of the Contract.

**CONDUIT STRENGTH REQUIREMENTS** The design procedure used throughout this plan for structural design of conduit is the wide trench installation shown in the Concrete Pipe Design Manual available from the American Concrete Pipe Association. Any revisions to the conduit provided in this plan must be selected by using this procedure.

**CONTROL SURVEY NOTE** The City of Columbus control monuments as referenced on these plans are as set by Thomas Engineer & Surveying Company's report on control survey for Interstate 670 dated November, 1982, copies of which are available at the City of Columbus, Division of Engineering & Construction located at 109 N. Front Street.

**CITY OF COLUMBUS STREET CLOSURE PERMIT** Prior to the closure of any portion of a street, the Contractor shall apply for a permit at the Division of Engineering and Construction (Phone # 645-7348). A copy of these plans and a plan of operations must be presented at the time of application. The permit will then be reviewed by the Division of Traffic and the Division of Police, and issued by the Division of Engineering and Construction. A red ink signature copy of this permit shall be retained at the job at all times.

**ITEM SPECIAL - FILL AND PLUG EXISTING CONDUIT** This item shall consist of the construction of bulkheads in the existing conduit and filling the area thus sealed off with sand or other granular material approved by the Engineer.

Bulkheads shall be located at the limits of the area to be filled as indicated on the plans. The bulkheads shall consist of brick or concrete masonry with a minimum thickness of 12 inches.

The fill material shall be pumped into place or placed by some other means approved by the Engineer, so that, after settlement, at least 90 percent of the cross-sectional area of the conduit, for its entire length, shall be filled. The footage of filled and plugged conduit to be paid for shall be the actual number of linear feet (measured along the centerline of the conduit from outer face to outer face of bulkheads) filled and plugged as described above.

In lieu of filling and plugging the existing conduit, the pipe can be crushed and backfilled in accordance with the provisions of 203, or it can be removed.

The footage, measured as provided above, shall be paid for at the contract unit price bid per linear foot for "Item Special, Fill and Plug Existing Conduit", which price and payment shall constitute full compensation for furnishing, hauling, and placing all the necessary materials, and for all labor, equipment, tools, and incidentals necessary to complete this item.

## TEMPORARY SOIL EROSION AND SEDIMENT CONTROL

The following estimated quantities are to be used as directed by the Engineer, for temporary erosion and sediment control measures:

207	Temporary Seeding and Mulching	12,275 Sq. Yd.
207	Straw or Hay Bales	212 Each
207	Temporary Slope Drains	612 Lin. Ft.
207	Temporary Benches, Dams and Sediment Basins	3060 Cu. Yd.
207	Filter Fabric Fence	400 Lin. Ft.
601	Type C Rock Channel Protection without filter	25 Cu. Yd.
659	Mowing	35 M Sq. Ft.
659	Commercial Fertilizer	0.69 Ton
659	Repair Seeding and Mulching	3069 Sq. Yd.
659	Water	33 M. Gal.

## ITEM 207 - FILTER FABRIC FENCE

Filter fabric shall meet the requirement of Item 207.02.

The bottom of the fence shall be buried 6" below the ground. The fence shall be high enough to retain sediment laden water and adequately supported to prevent collapse or bursting.

The Filter Fabric Fence shall, at the direction of the Engineer, be maintained to be functional. This shall include removal of trapped sediment and required cleaning, repair, and/or replacement of the filter fabric.

The cost of all materials, construction, maintenance and removal required shall be paid for under Item 207 Lin. Ft. Filter Fabric Fence.

**ITEM 207 - TEMPORARY BENCHES, DAMS AND SEDIMENT BASINS** THE sediment basin quantities listed in the Temporary Erosion and Sediment Control Plan on Pages 171 are the storage volumes required for the Sediment Basin. The Pay Quantity for each basin shall be determined as the actual amount of excavation or embankment required to provide that storage volume.

**ITEM 305-CONCRETE BASE AS PER PLAN** The maximum joint spacing shall be 17' for both Item 305 and Item 452 and the joints shall match.

**CONTRACTION JOINTS IN THE SHOULDERS** Dowel bars as shown on standard construction drawing BP22 shall not be used in contraction joints in the shoulders.

**CONTRACTION AND EXPANSION JOINTS** Although specific locations of certain expansion and contraction joints have been detailed on this plan, no waiver of the specifications is intended. Provision of expansion joints at all major structures and the maximum spacing between contraction joints, shall in all cases, be in accordance with Standard Construction Drawings and the Specifications.

**JOINT SEALERS** All references to 705.01 or 705.02, appearing on standard drawings or on the plans, shall be considered to read 705.04.

**PRESSURE RELIEF JOINTS** When pressure relief joints are specified, they shall extend across the concrete shoulders.

**CONTRACTOR'S MAINTENANCE RESPONSIBILITY** On this project, the Contractor's responsibility for maintenance of the existing pavement, per Item 614, shall be limited to those portions of the existing highway lying within the proposed work limits. Necessary upkeep of the adjoining pavements which are used for traffic maintenance but are outside of the right-of-way for the proposed highway relocation will be provided by others.

**PROOF ROLLING** An estimated quantity for this item has been provided in the general summary for use as directed by the Engineer.

**PRE-MARKING INSPECTION** The Contractor shall notify the City of Columbus, Division of Traffic Engineering, at least two (2) working days prior to the placement of the pre-marking for permanent pavement marking so that a representative of the Division can be present to inspect the work and insure accuracy (Phone (614) 645-7790, Operations Section).

**REMOVAL OF TREES OR STUMPS** All trees and stumps specifically marked for removal within the construction limits of this project shall be removed under the lump sum price bid for Item 201, Clearing and Grubbing, except that those trees for which protection and preservation work is indicated elsewhere in these plans shall not be removed.

The State of Ohio reserves the right to order the removal of additional trees or stumps outside of the limits of construction but within the right-of-way and/or easement lines. Payment for the removal of these additional trees or stumps shall be included in the lump sum price bid for Item 201, Clearing and Grubbing.

**BENCHING OF FOUNDATION SLOPES** Although cross sections on this plan indicate specific widths and depths of proposed benching of the embankment foundation in certain areas, no waiver of the specifications is intended, and all other sloped foundation areas shall be benched as set forth in 203.09. No additional payment will be made for benching required by the provisions of 203.09.

**CONSTRUCTION NOISE** Commitments for mitigating construction noise were made in the Environmental Impact Statement for the FRA-670-1.25 project. The following practices will be adhered to for this project.

- 1.) The control of construction equipment noise levels at the source in accordance with OSHA standards.
- 2.) The control of hours of construction with no construction permitted between the hours of 11:00 P.M. and 6:00 A.M., except as indicated in the Maintenance of Traffic Plan.

**CONTRACT C-1** The Project Designation for this Contract is Olentangy River Road Extension (formerly known as FRA. 670-1.25-C-1). For a complete list of current and former project designation, see below.

PROJECT DESIGNATION	FORMER DESIGNATION
FRA - 670 - 1.02	FRA - 670 - 1.25 - A1
FRA - 33 - 14.65	FRA - 670 - 1.25 - A2
FRA - SOUDER AVENUE	FRA - 670 - 1.25 - A3
FRA - 670/315-2.12/1.43	FRA - 670 - 1.25 - A4
FRA - 315 - 0.93	FRA - 670 - 1.25 - A5
FRA - 670 - 3.17	FRA - 670 - 1.25 - B1
FRA - 670 - 2.95	FRA - 670 - 1.25 - B2
FRA - 670 - 2.61	FRA - 670 - 1.25 - B3
FRA - NATIONWIDE BLVD.	FRA - 670 - 1.25 - B4
FRA - OLENTANGY RIVER RD	FRA - 670 - 1.25 - C1
FRA - 315 - 2.39	FRA - 670 - 1.25 - C2
FRA - 670/315-2.48/1.88	FRA - 670 - 1.25 - C3
FRA - 315 - 0.49	FRA - 670 - 1.25 - D

# GENERAL NOTES (CONTINUED)

CALC. BY: JSS 1/90  
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OHIO FHWA 5 REGION FEDERAL PROJECT	14 275
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FRANKLIN COUNTY  
FRA-670-1.25-C-2

~~Item 304 AGGREGATE BASE, AS PER PLAN~~

~~Materials furnished for this (these) item(s) shall exclude all except granulated slag washed air-cooled blast furnace sand. The maximum total percent passing the no. 200 sieve for 304 shall be 5 percent as opposed to the 13 percent shown in 304.~~

**ITEM 607-FENCE, TYPE CLT, AS PER PLAN**

This item shall consist of furnishing and erecting fence of the type designated per 607, except that the fence fabric shall be chain link glare screen fabric with one inch mesh and with a knuckled selvage on both top and bottom. Fabric shall be aluminum coated or vinyl coated in accordance with 710.03. The cost of all materials, construction and maintenance required shall be paid for under Item 607-Lin. Ft., Fence, Type CLT, As Per Plan.

**CONSTRUCTION INITIATION**

The contractor will advise the District Communications officer at 614-363-1251 extension 261 or by FAX at 614-469-0235 seven days prior to the start of construction activities. The Project Engineer will provide assistance/clarification for any questions.

**614 WORK ZONE MARKING SIGNS**

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND SUBSEQUENTLY REMOVE WORK ZONE MARKING SIGNS (OW-167 AND OW-168) WITHIN THE WORK LIMITS IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS.

THE CONTRACTOR MAY USE SIGNS AND SUPPORTS IN USED BUT GOOD CONDITION PROVIDED THE SIGNS MEET CURRENT DEPARTMENT SPECIFICATIONS. SIGN FACES SHALL BE REFLECTORIZED WITH TYPE G SHEETING COMPLYING WITH THE REQUIREMENTS OF 730.19. WORK ZONE MARKING SIGNS SHALL BE PROVIDED WITH SUITABLE YIELDING SUPPORTS OF SUFFICIENT STRENGTH AND STABILITY.

WORK ZONE MARKING SIGNS WILL BE MEASURED AS THE NUMBER OF SIGN INSTALLATIONS, INCLUDING THE SIGN AND NECESSARY SUPPORTS. ALL OTHER WORK ZONE SIGNS SHALL BE INCLUDED IN 614 MAINTAINING TRAFFIC UNLESS SEPARATELY ITEMIZED.

PAYMENT FOR ACCEPTED QUANTITIES, COMPLETE, IN PLACE WILL BE MADE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, INCIDENTALS AND EQUIPMENT FOR PLACEMENT, MAINTENANCE AND REMOVAL OF THE SIGNS.

ITEM	UNIT	DESCRIPTION
614	EACH	WORK ZONE MARKING SIGNS

A QUANTITY OF 10 EACH WORK ZONE MARKING SIGNS ("NO EDGE LINES" OW-167 AND "UNMARKED NO-PASSING ZONES" OW-168) ARE CARRIED TO THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER.

~~ITEM SPECIAL - SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS, 708.04~~

An estimated quantity of 3000 L.F. of this item shall be constructed per the proposal note and the detail as shown on Sheet No. 7 and as directed by the Engineer. For quantity calculation see Sheet No. 8.

**ITEM 614 - MAINTENANCE OF TRAFFIC**

Sequence of Construction Notes, General Notes and the Summary of Quantities for Item 614 - Maintenance of Traffic are found on Sheets 18 thru 45.

**ITEM 604 - INLETS, VARIOUS, AS PER PLAN** All reinforcing steel listed in the steel list on the standard construction drawings shall be epoxy-coated in accordance with 509.10 of the CMS.

All costs of this coating shall be included in the cost of this item.

**ITEM 606 ANCHOR ASSEMBLY, TYPE E**

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING AN ET-2000, OPTION "B", GUARDRAIL END TERMINAL AS MANUFACTURED BY SYRO STEEL COMPANY, 1170 N. STATE STREET, GIRARD, OHIO 44420 (TELEPHONE: 216-545-4373).

THE LENGTH OF THE ET-2000 SYSTEM IS CONSIDERED TO BE 50', INCLUSIVE OF TWO 25' LONG RAIL ELEMENTS. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND AT THE LOCATIONS SHOWN IN THE PLANS.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT BID PRICE FOR ITEM 606, EACH, ANCHOR ASSEMBLY, TYPE E AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING ALL RELATED HARDWARE, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.







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ITEM	SHEET NUMBER																	PARTICIPATION			ITEM	ITEM EXT.	TOTAL QUANT.	UNIT	DESCRIPTION	REF. NO.			
	2	9	12	13	15	16									114	115				NH							STP	100% CITY	
201																				LUMP			201	11000	LUMP		CLEARING AND GRUBBING		
202																							202	23000	15,767	SQ.YD.	PAVEMENT REMOVED		
202					15083										684					6000	9767		202	23500	208	SQ.YD.	WEARING COURSE REMOVED		
202					208																208		202	23800	1538	SQ.YD.	BASE REMOVED		
202					300										1238						1538		202	32000	3778	LIN.FT.	CURB REMOVED		
202					2582										1196					1270	2508		202	35100	905	LIN.FT.	PIPE REMOVED, 24" AND UNDER		
202					905															464	441		202	38000	2432	LIN.FT.	GUARDRAIL REMOVED		
202					2257										175					635	1797		202	58000	2	EACH	MANHOLE REMOVED		
202					2															1	1		202	58300	23	EACH	CATCH BASIN OR INLET REMOVED		
202					23															5	18		202	58700	2	EACH	MANHOLE ABANDONDED		
202					2																2		202	75000	470	LIN.FT.	FENCE REMOVED		
202					470																470		202	98100	1	EACH	REMOVAL-MISCELLANEOUS: REMOVE IMPACT ATTENUATOR FOR SALVAGE		
202					1																1		202						
203					3																		203	12000	30233	CU.YD.	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION		
203					30233																60257	47372		203	20000	107629	CU.YD.	EMBANKMENT	
203					10																5	5		203	45000	10	HOUR	PROOF ROLLING	
203					28,464																11004	17460		203	50000	28,464	SQ.YD.	SUBGRADE COMPACTION	
604	3																				3		604	40500	3	EACH	REFERENCE MONUMENT		
606					5698.19																242969	3268.50		606	13000	5698.19	LIN.FT.	GUARDRAIL, TYPE 5	
606					50																50		606	13011	50	LIN.FT.	GUARDRAIL, TYPE 5 WITH TUBULAR BACKUP, AS PER PLAN	183	
606					2																1	1	606	26500	2	EACH	ANCHOR ASSEMBLY, TYPE T		
606					5																1	4	606	26100	5	EACH	ANCHOR ASSEMBLY, TYPE E		
606					6																3	3	606	35000	6	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1		
606					3																1	2	606	35100	3	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 2		
606					2																2		606	35140	2	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 4		
607					4848																584	4264	607	23000	4848	LIN.FT.	FENCE, TYPE CLT		
607					1445																400	1045	607	23001	1445	LIN.FT.	FENCE, TYPE CLT, AS PER PLAN	14	
616					500																300	300	616	10000	600	M.GAL	WATER		
616					50																26	26	616	20000	52	TON	CALCIUM CHLORIDE		
207					12275																6138	6137	207	10000	12275	SQ.YD.	TEMPORARY SEEDING AND MULCHING		
207					400																1850	1300	207	30000	3150	LIN.FT.	FILTER FABRIC FENCE		
207					612																306	306	207	40000	612	LIN.FT.	TEMPORARY SLOPE DRAIN		
207					3060																2082	2104	207	50000	4186	CU.YD.	TEMPORARY BENCHES, DAMS, AND SEDIMENT BASINS		
207					212																106	106	207	70000	212	EACH	STRAW OR HAY BALES		
601					5.56																6		601	28100	6	CU.YD.	DUMPED ROCK FILL		
601					1211																811	400	601	32000	1211	CU.YD.	ROCK CHANNEL PROTECTION, TYPE A WITH FILTER		
601					1423																116	27	601	32200	143	CU.YD.	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER		
601					25																13	13	601	34200	26	CU.YD.	ROCK CHANNEL PROTECTION, TYPE C WITHOUT FILTER		
601					45																	45	601	37500	45	LIN.FT.	PAVED GUTTER, TYPE 1-2		
659																					23034	38340	659	10000	61374	SQ.YD.	SEEDING AND MULCHING	12	
659					3069																1534	1535	659	14000	3069	SQ.YD.	REPAIR SEEDING AND MULCHING		
659					0.69																2.4	3.8	659	20000	6.2	TON	COMMERCIAL FERTILIZER		
659					133																63	103	659	35000	166	M.GAL	WATER		
659					138																66	107	659	40000	173	M.SQ.FT.	MOWING		
660					65																65		660	20000	65	SQ.YD.	REINFORCED SODDING		
660					281																191	90	660	30000	281	SQ.YD.	SODDING		
SPECIAL																					120	346	SPECIAL	20270000	466	LIN.FT.	FILL AND PLUG EXISTING CONDUIT	13	
603																						100	603	00900	100	LIN.FT.	6" CONDUIT, TYPE B, 706.01 CL.3, 706.02 OR 706.08 WITH JOINTS AS PER 706.11 OR 706.12		
603																						100	603	01100	100	LIN.FT.	6" CONDUIT, TYPE C, 706.01, 706.02, 706.08 WITH JOINTS AS PER 706.11 OR 706.12		
603																						451	603	16401	451	LIN.FT.	36" CONDUIT, TYPE B, 706.03 WITH 706.11 JOINTS 3000 D LOAD, AS PER PLAN	117	
602					376																31.3	6.3	602	20000	37.6	CU.YD.	CONCRETE MASONRY		
603					99																21	78	603	00900	99	LIN.FT.	6" CONDUIT, TYPE B		
603																					176	210	603	01100	386	LIN.FT.	6" CONDUIT, TYPE C		
603																						40	603	01500	40	LIN.FT.	6" CONDUIT, TYPE F, 707.17, ASTM 3034 SDR 35, SS931 OR SS944		
603																						40	603	01500	120	LIN.FT.	6" CONDUIT, TYPE F		
603																						20	603	02600	20	LIN.FT.	8" CONDUIT, TYPE F		
603																						100	603	04400	100	LIN.FT.	12" CONDUIT, TYPE B, 706.02		
603																						710	603	04600	710	LIN.FT.	12" CONDUIT, TYPE C, 706.02		
603																						369	685	603	05900	1054	LIN.FT.	15" CONDUIT, TYPE B, 706.02	
603																						72	88	603	06100	160	LIN.FT.	15" CONDUIT, TYPE C, 706.02	
603																						321	603	07400	321	LIN.FT.	18" CONDUIT, TYPE B, 706.02		
603																						226	603	07600	226	LIN.FT.	18" CONDUIT, TYPE C, 706.02		

# GENERAL SUMMARY

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F.H.W.A. REGION	STATE	PROJECT
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ITEM	SHEET NUMBER																	PARTICIPATION			ITEM	ITEM EXT.	TOTAL QUANT.	UNIT	DESCRIPTION	REF. NO.
	9	10	11	12	13	15	16	114	115	117	161	171	NH	STP	100% CITY											
DRAINAGE (CONTINUED)																										
603						69													69	603	08900	69	LIN.FT.	21" CONDUIT, TYPE B, 706.02		
603						85													85	603	10400	85	LIN.FT.	24" CONDUIT, TYPE B, 706.02		
603						201													201	603	13400	201	LIN.FT.	30" CONDUIT, TYPE B, 706.02, 1750 D-LOAD		
603						150													150	603	22400	150	LIN.FT.	54" CONDUIT, TYPE B, 706.03 WITH 706.11 JOINTS 1750 D LOAD		
604							5												5	604	00500	5	EACH	CATCH BASIN, NO.3 WITH V-GRATE		
604							8												8	604	00700	8	EACH	CATCH BASIN, NO.3-A WITH V-GRATE		
604							8												3	604	01600	8	EACH	CATCH BASIN, NO.5		
604							3												3	604	02800	3	EACH	CATCH BASIN, NO.8		
604							9												3	604	04900	9	EACH	CATCH BASIN, NO.2-3		
604							1												1	604	05300	1	EACH	CATCH BASIN, NO. 2-4		
604							1												1	604	09500	1	EACH	CATCH BASIN RECONSTRUCTED TO GRADE		
604							2												2	604	14601	2	EACH	INLET NO. 3B, AS PER PLAN	14	
604							3												2	604	31500	3	EACH	MANHOLE NO.3 WITH 706.11 JOINTS		
604							4												2	604	32100	4	EACH	MANHOLE NO. 5 WITH 706.11 JOINTS		
604						1													1	604	34500	1	EACH	MANHOLE ADJUSTED TO GRADE		
SPECIAL							1												1	SPECIAL	604 36600	1	EACH	PRECAST REINFORCED CONCRETE OUTLET	116	
604							1												1	604	98000	1	EACH	DRAINAGE STRUCTURE MISC.: HEADWALL WITH FLAP GATE	116	
605							200												200	605	05101	200	LIN.FT.	4" SHALLOW PIPE UNDERDRAIN, AS PER PLAN	8	
605							3248												1095	605	11100	3248	LIN.FT.	6" SHALLOW PIPE UNDERDRAIN		
605							1767												1439	605	13300	1767	LIN.FT.	6" UNCLASSIFIED PIPE UNDERDRAIN		
605							196												196	605	31100	196	LIN.FT.	AGGREGATE DRAIN		
603							172												172	603	13400	172	LIN.FT.	30" CONDUIT, TYPE B, 706.02, 1500 D-LOAD		
PAVEMENT																										
254							1400												1400	254	01000	1400	SQ.YD.	PAVEMENT PLANING, BITUMINOUS		
301	385																		385	301	10002	385	CU.YD.	BITUMINOUS AGGREGATE BASE, AC-20	13	
304	5314																		2074	304	20000	5989	CU.YD.	AGGREGATE BASE (SEE PROPOSAL NOTE)		
305	8158																		6167	305	12001	8158	SQ.YD.	8" CONCRETE BASE, AS PER PLAN	13	
305	9704																		9704	305	14001	9704	SQ.YD.	10" CONCRETE BASE, AS PER PLAN	13	
404																			252	404	20000	252	CU.YD.	ASPHALT CONCRETE, AC-20 (BIKEWAY)		
407	1355					59													463	407	10000	1404	GAL	TACK COAT		
408																			1093	408	10000	1093	GAL	BITUMINOUS PRIME COAT		
446	961																		300	446	01200	961	CU.YD.	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, AC-20		
446	686																		274	446	01400	686	CU.YD.	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AC-20		
255	3000																		3000	255	20000	3000	LIN.FT.	FULL DEPTH PAVEMENT SAWING		
451	147																		76	SPECIAL	451 30000	147	LIN.FT.	PRESSURE RELIEF JOINT, TYPE A		
452	8505																		3983	452	17000	8505	SQ.YD.	VARIABLE THICKNESS PLAIN CONCRETE PAVEMENT, 6" TO 9"		
608																			1340	608	10000	1340	SQ.FT.	4" CONCRETE WALK		
608																			2	608	50000	2	EACH	CURB RAMP, TYPE 1		
609																			55	609	10000	55	LIN.FT.	ASPHALT CONCRETE CURB, AC-20 TYPE 1		
609	3657																		2890	609	12001	6587	LIN.FT.	COMBINATION CURB AND GUTTER, TYPE 2, AS PER PLAN	8	
609																			52	609	26000	77	LIN.FT.	CURB, TYPE 6		
611	925																		758	611	25000	925	SQ.YD.	REINFORCED CONCRETE APPROACH SLAB (T=15")		
622																			160	622	23300	160	LIN.FT.	CONCRETE BARRIER, TYPE "A"		
622																			163	622	23500	163	LIN.FT.	CONCRETE BARRIER, TYPE "C"		
622																			970	622	23504	970	LIN.FT.	CONCRETE BARRIER, TYPE C-50		
TRAFFIC CONTROL--FOR SUMMARY SEE SHEET 120																										
TRAFFIC SIGNALS--FOR SUMMARY SEE SHEET 135																										
TRAFFIC SURVEILLANCE--FOR SUMMARY SEE SHEET 122 B																										
LIGHTING--FOR SUMMARY SEE SHEET 146																										
STRUCTURES OVER 20' SPAN																										
FOR SUMMARY OF BRIDGE FRA-315-0205, SEE SHEET 208																										
FOR SUMMARY OF BRIDGE FRA-315--0210, SEE SHEET 235																										
FOR SUMMARY OF BRIDGE FRA-315-0197, SEE SHEET 185																										
FOR SUMMARY OF BRIDGE FRA-315-0250N, SEE SHEET 183																										
FOR SUMMARY OF RETAINING WALL, SEE SHEET 267																										
MAINTENANCE OF TRAFFIC--FOR SUMMARY SEE SHEET 18B																										
614																				614	11000	LUMP	MAINTENANCE OF TRAFFIC			
623																			LUMP	623	10000	LUMP	CONSTRUCTION LAYOUT STAKES			
624																			LUMP	624	10000	LUMP	MOBILIZATION			
619																			LUMP	619	15020	LUMP	FIELD OFFICE, TYPE C			
																			SPECIAL	619 25010	LUMP		COMPUTER EQUIPMENT FOR TYPE B or C OFFICE (See Proposal Note)			

# MAINTENANCE OF TRAFFIC - GENERAL NOTES

## COVERING OF SIGNS

WHERE THE PLANS CALL FOR A PERMANENT SIGN TO BE COVERED, THE CONTRACTOR SHALL DO SO IN SUCH A MANNER SO AS TO AVOID DAMAGING THE PERMANENT SIGN WHEN THE COVER IS REMOVED. THE COVER SHALL BE TOTALLY OPAQUE. THE USE OF ADHESIVE TAPE APPLIED DIRECTLY TO A SIGN FACE IS STRICTLY PROHIBITED.

## ITEM 202 - REMOVAL MISC. REBOUNDBLE TUBULAR PYLONS

EXISTING REBOUNDBLE TUBULAR PYLONS INSTALLED AT THE INTERSECTION OF THIRD AND OLENTANGY RIVER ROAD UNDER CONTRACT C-1 SHALL BE REMOVED AND DISPOSED OF AS DIRECTED BY THE ENGINEER. THE METHOD OF MEASUREMENT WILL BE EACH PYLON REMOVED WITH PAYMENT AS ITEM SPECIAL - REMOVAL OF REBOUNDBLE TUBULAR PYLONS. THE COST OF REMOVING, AND DISPOSING OF THE EXISTING PYLONS SHALL BE INCLUDED IN THIS ITEM.

THE CONTRACTOR SHALL MAINTAIN TRAFFIC AT ALL TIMES IN ACCORDANCE WITH THE REQUIREMENTS OF ITEM 614. TWO-WAY, TWO LANE TRAFFIC SHALL BE MAINTAINED AT ALL TIMES ON THIRD AVENUE. NORTHBOUND AND SOUTHBOUND S.R. 315 TRAFFIC SHALL BE MAINTAINED AS PER THE MAINTENANCE OF TRAFFIC PLANS.

EXISTING OPERATION OF GOODALE STREET DURING CONSTRUCTION WILL BE MAINTAINED.

NORMAL OPERATION OF THIRD AVENUE DURING CONSTRUCTION WILL BE AS SHOWN ON SHEETS 22, 26 & 35.

SIGN REMOVALS ALONG S.R. 315 AND THIRD AVENUE, LISTED UNDER TRAFFIC CONTROL, SHALL BE PERFORMED IN CONJUNCTION WITH THE MAINTENANCE OF TRAFFIC ITEMS SHOWN, AS DIRECTED BY THE ENGINEER.

SEE THE FOLLOWING SHEETS FOR SEQUENCE OF CONSTRUCTION NOTES:

PHASE I - SHEET 21  
PHASE II - SHEET 25  
PHASE III - SHEET 33

QUANTITIES AS LISTED IN THE MAINTENANCE OF TRAFFIC GENERAL SUMMARY AND ALL COSTS REQUIRED FOR TRAFFIC MAINTENANCE, EXCEPT LAW ENFORCEMENT OFFICERS AND LAW ENFORCEMENT OFFICERS WITH PATROL CARS, SHALL BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR ITEM 614 MAINTAINING TRAFFIC.

THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE MAINTENANCE OF TRAFFIC GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER:

614	20	EACH	OBJECT MARKER
SPECIAL	150	EACH	PLASTIC SAFETY DRUM
614	300	S.F.	SIGNS, FLAT SHEET, TYPE G, AS PER PLAN
SPECIAL	1	EACH	FLASHING ARROW PANEL
SPECIAL	25	EACH	REBOUNDBLE TUBULAR 36 INCH PYLON
622	250	L.F.	PORTABLE CONCRETE BARRIER, 32"

THE ABOVE ITEMS ARE TO BE USED WHEN IT HAS BEEN DETERMINED BY THE ENGINEER THAT ADDITIONAL DRUMS, BARRICADES, SIGNS, FLASHING ARROW PANELS OR REBOUNDBLE PYLONS NOT SHOWN IN THE MAINTENANCE OF TRAFFIC PLANS ARE REQUIRED.

DRUMS, BARRICADES, SIGNS, PAVEMENT MARKINGS, REBOUNDBLE PYLONS OR FLASHING ARROW PANELS FURNISHED WILL BE IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS FOR THE ORIGINAL.

SIGNS FURNISHED UNDER THIS ITEM SHALL INCLUDE SUPPORT AND MOUNTING HARDWARE.

## COORDINATION WITH THE TRAFFIC MANAGEMENT PROGRAM

THE CONTRACTOR SHALL NOTIFY TRAFFIC MANAGEMENT PROGRAM (TMP) OF THE EXPECTED MAINTENANCE OF TRAFFIC ON THIS PROJECT ON A WEEKLY BASIS. UPDATES ON THE ANTICIPATED MAINTENANCE OF TRAFFIC FOR THE FOLLOWING WEEK SHOULD BE RELAYED TO THE TMP COORDINATOR (645-7395) EACH FRIDAY MORNING.

## SUPPORTS FOR TEMPORARY SIGNS

TEMPORARY SIGNS NOT PROTECTED BY GUARDRAIL, SHALL BE MOUNTED ON YIELDING OR BREAKAWAY SUPPORTS SUCH AS THOSE SPECIFIED FOR PERMANENT SIGNS ON STANDARD DRAWING MT-41.10 AND TC-41.20 OR THEY SHALL BE MOUNTED ON LIGHTWEIGHT PORTABLE SIGN SUPPORT STANDARDS OR TRAILER TYPE SIGN SUPPORT STANDARDS WEIGHING LESS THAN 100 POUNDS INCLUDING SIGN.

WHERE BALLASTING IS NECESSARY FOR STABILITY, IT SHALL CONSIST OF SANDBAGS MOUNTED NOT MORE THAN 1-FOOT ABOVE PAVEMENT SURFACE. TEMPORARY SIGNS SHALL NOT BE MOUNTED ON AUTOMOTIVE AXLE/DIFFERENTIAL ASSEMBLIES OR OTHER SIMILAR HEAVY SUPPORT DEVICES.

614 BARRIER REFLECTORS and 614 Object Markers.  
REFLECTORS and Object Markers SHALL CONFORM TO *Proposed*  
*Note* and THAT SPACING SHALL BE 25'.

## ITEM SPECIAL - REBOUNDBLE TUBULAR 36 INCH PYLON

THIS ITEM SHALL CONSIST OF INSTALLING A TRAFFIC CHANNELIZING DEVICE IN THE LOCATIONS AS SHOWN ON THE PLANS.

## QUANTITY:

THE BASE BID SHALL INCLUDE THE NUMBER INDICATED OF REBOUNDBLE TUBULAR 36 INCH PYLONS AS HEREIN SPECIFIED.

## MATERIAL:

THE PYLONS SHALL BE TUBULAR SHAPED LOW-DENSITY, CO-EXTRUDED POLYETHYLENE WITH ULTRAVIOLET INHIBITORS, 36 INCHES IN LENGTH.

## COLOR:

THE TUBE COLOR SHALL BE ORANGE

## REFLECTIVE:

THE TUBULAR PYLON SHALL HAVE TWO (2) 3 INCH WHITE TYPE G REFLECTORIZED BANDS AS PER 730.19, LOCATED AT 2 INCHES AND 8 INCHES RESPECTIVELY FROM THE TOP OF THE PYLON.

## BASE:

THE SURFACE MOUNT ASSEMBLY SHALL BE A TWIST LOCK OR PIN LOCK DESIGN OF HIGH-IMPACT STYRENE, EPOXY MOUNTED AND EASILY REPLACEABLE.

REBOUNDBLE TUBULAR PYLONS TO BE APPROVED EQUAL IN QUALITY, DESIGN AND PERFORMANCE TO SAFE-HIT CORPORATION, DESIGN NO. SH 348SMAOS OR CARSONITE INTERNATIONAL.

## METHOD OF MEASUREMENT:

THE METHOD OF MEASUREMENT WILL BE EACH IN PLACE WITH PAYMENT AS ITEM SPECIAL - REBOUNDBLE TUBULAR 36 INCH PYLON. THE COST OF FURNISHING, INSTALLING, AND REPLACING ANY DAMAGED TUBULAR MARKERS SHALL BE INCLUDED IN THIS ITEM.

## DEVICES FROM PREVIOUS CONTRACT (C-1)

AT THE COMMENCEMENT OF THIS PROJECT, THE CONTRACTOR SHALL ASSUME MAINTENANCE RESPONSIBILITY FOR ALL LIGHTS, SIGNS, BARRICADES AND OTHER DEVICES USED TO REDIRECT TRAFFIC DURING CONSTRUCTION OF PROJECT FRA-670-125-C-1 AND DIRECTED TO BE LEFT IN PLACE AT THE COMPLETION OF THAT PROJECT. THE CONTRACTOR SHALL KEEP THESE DEVICES CLEAN AND IN GOOD REPAIR, AND SHALL REPLACE LIGHT BULBS, BATTERIES AND OTHER PARTS, OR ENTIRE INSTALLATIONS, WHEN AND AS DIRECTED BY THE ENGINEER.

AT THE COMPLETION OF THIS PROJECT, THE CONTRACTOR SHALL ARRANGE TO LEAVE IN PLACE THOSE LIGHTS, SIGNS, BARRICADES AND OTHER DEVICES DEEMED NECESSARY BY THE ENGINEER TO REDIRECT TRAFFIC DURING CONSTRUCTION OF PROJECT FRA-670-125-C-3. ALL OF THESE DEVICES SHALL BE CLEAN AND IN GOOD REPAIR AT THE TIME OF TRANSFER OF MAINTENANCE RESPONSIBILITY.

THE CONTRACTOR SHALL COOPERATE WITH THE C-1 AND C-3 CONTRACTORS IN ACCOMPLISHING THE ABOVE. ANY CONFLICTS SHALL BE RESOLVED BY THE ENGINEER.

## MAINLINE (SR 315) TRAFFIC SHIFTS

THE CONTRACTOR SHALL PERFORM ALL SR 315 TRAFFIC SHIFTS BETWEEN THE HOURS OF 10:00 PM TO 6:00 AM (MONDAY THRU THURSDAY) WITH PRIOR APPROVAL OF THE ENGINEER. TRAFFIC SHIFTS SHALL NOT BE MADE ON HOLIDAYS OR THE DAYS BEFORE OR AFTER HOLIDAYS.

THE CONTRACTOR MAY STOP TRAFFIC FOR UP TO TEN (10) MINUTES IN EACH DIRECTION (SR 315 SB AND NB) IN ORDER TO PLACE THE NECESSARY PAVEMENT MARKINGS, SIGNS, DRUMS, BARRICADES AND OTHER DEVICES NECESSARY TO MAKE THE TRAFFIC SHIFT.

## TRAFFIC CONTROL STANDARD CONSTRUCTION DRAWINGS

REFERENCES TO SUPPLEMENTAL SPECIFICATIONS 857, 858, 861, 957, 958 AND 961 ON THE TRAFFIC CONTROL STANDARD CONSTRUCTION DRAWINGS IN THESE PLANS SHALL BE CONSIDERED TO READ AS RESPECTIVE REFERENCES TO ITEMS 630, 631, 633, 730, 731 AND 733.

## CENTER LINES (BIKEWAY)

WHERE THE BIKEWAY CENTER LINE IS BROKEN, IT SHALL CONSIST OF A 3 FOOT DASH FOLLOWED BY A 9 FOOT SPACE.

## 630 REMOVAL OF GROUND MOUNTED SIGN AND STORAGE

## 630 REMOVAL OF OVERHEAD MOUNTED SIGN AND STORAGE

THE ABOVE ITEMS SHALL BE STORED ON THE PROJECT FOR PICKUP BY THE CITY OF COLUMBUS, DIVISION OF TRAFFIC ENGINEERING.

## WINTER TRAFFIC LIMITATIONS

ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC BETWEEN NOVEMBER 30 AND APRIL 1. NOVEMBER 30 SHALL BE CONSIDERED TO CONSTITUTE AN INTERIM COMPLETION DATE AND LIQUIDATED DAMAGE SHALL BE ASSESSED IN ACCORDANCE WITH SECTION 108.07 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS FOR EACH CALENDAR DAY THAT ALL LANES ARE NOT OPEN AND AVAILABLE TO TRAFFIC.

# MAINTENANCE OF TRAFFIC GENERAL NOTES

CALC. BY JSS 1/90  
CHECKED BY WED 4/92

OHIO  
FHWA  
REGION 5  
FEDERAL  
PROJECT

18A  
275

FRANKLIN COUNTY  
FRA-670-1.25-C-2

ITEM 614 - TEMPORARY IMPACT ATTENUATOR (G.R.E.A.T. TYPE)

THIS WORK SHALL CONSIST OF FURNISHING IMPACT ATTENUATORS AS REQUIRED IN THE PLANS. THIS ITEM SHALL INCLUDE ALL RELATED HARDWARE, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER TO CONSTRUCT COMPLETE AND FUNCTIONAL G.R.E.A.T. IMPACT ATTENUATOR SYSTEMS. THE ATTENUATORS SHALL BE PLACED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND AT THE LOCATIONS SHOWN ON THE PLANS. THE IMPACT ATTENUATOR SHALL BE MANUFACTURED BY THE ENERGY ABSORPTION SYSTEMS, INC., ONE EAST WACKER DRIVE, CHICAGO, ILLINOIS 60601; TELEPHONE (312) 467-6750. FOR A TEMPORARY INSTALLATION THE NOSE COVER SHALL MEET THE REQUIREMENTS OF STANDARD DRAWING MT-95.81.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSPECTION, REPAIRING, AND OTHERWISE RESTORING THE IMPACT ATTENUATOR IN ACCORDANCE WITH THE MANUFACTURER'S MAINTENANCE INSTRUCTIONS WHILE IT IS IN USE ON THE PROJECT. SUCH REPAIRS SHALL BE PERFORMED WITHIN 24 HOURS OF THE INCIDENT WHICH CAUSED DAMAGE TO THE PROJECT. IN ADDITION TO ANY EXTRA UNITS SUPPLIED FOR THIS PROJECT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING ALL NECESSARY MATERIALS, LABOR AND EQUIPMENT REQUIRED TO PERFORM THE ABOVE DESCRIBED RESTORATION OF THE ATTENUATOR.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR EACH, ITEM 614 TEMPORARY IMPACT ATTENUATOR AND SHALL BE CONSIDERED FULL PAYMENT FOR FURNISHING, INSTALLING AT THE SPECIFIED LOCATIONS, RESTORATION AFTER EACH VEHICLE IMPACT, INCLUDING ALL LABOR, TOOLS, EQUIPMENT AND MISCELLANEOUS HARDWARE AND MATERIALS NECESSARY TO COMPLETE THESE ITEMS OF WORK.

ITEM SPECIAL - REMOVE AND REPLACE IMPACT ATTENUATOR

THIS ITEM SHALL INCLUDE THE COST OF DISMANTLING THE IMPACT ATTENUATOR, TRANSPORTING TO A NEW LOCATION AND REASSEMBLY FOR A COMPLETE FUNCTIONAL IMPACT ATTENUATOR SYSTEM. THE FINAL REMOVAL COST OF THE IMPACT ATTENUATOR FROM THIS PROJECT IS INCLUDED IN THE ORIGINAL COST OF THE IMPACT ATTENUATOR.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR EACH, "ITEM SPECIAL - REMOVE AND REPLACE IMPACT ATTENUATOR" AND SHALL BE CONSIDERED FULL PAYMENT FOR DISMANTLING, TRANSPORTATION TO A NEW LOCATION AND REASSEMBLY.

ITEM 614 - TEMPORARY IMPACT ATTENUATOR, G.R.E.A.T. TYPE (REPLACEMENT)

THIS ITEM SHALL INCLUDE THE COST OF ASSEMBLY AT PLAN LOCATION, MAINTENANCE AND REMOVAL OF THE SPARE IMPACT ATTENUATOR WHEN NO LONGER REQUIRED FOR THIS WORK AS DIRECTED BY THE ENGINEER. THE COST OF REMOVING THE DAMAGED ATTENUATOR IS INCLUDED IN THE ORIGINAL COST OF THE IMPACT ATTENUATOR.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR EACH, "ITEM 614 - TEMPORARY IMPACT ATTENUATOR, G.R.E.A.T. TYPE (REPLACEMENT) AND SHALL BE CONSIDERED FULL PAYMENT FOR ASSEMBLY, MAINTENANCE AND REMOVAL.

614 WORK ZONE SPEED LIMIT SIGN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN, COVER DURING SUSPENSION OF WORK, AND REMOVE WORK ZONE SPEED LIMIT SIGNS AND SUPPORTS (R-10-48) (45 MPH) WITHIN THE WORK LIMITS IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS.

THE CONTRACTOR SHALL COVER OR REMOVE ANY EXISTING SPEED LIMIT OR MINIMUM SPEED SIGNS WITHIN THE REDUCED SPEED ZONE. THESE SIGNS SHALL BE RESTORED DURING SUSPENSION OR TERMINATION OF THE REDUCED SPEED LIMIT. THE EXPENSE OF COVERING OR REMOVAL AND RESTORATION OF EXISTING SPEED LIMIT OR MINIMUM SPEED SIGNS IS INCIDENTAL TO THE PAY ITEM FOR THE WORK ZONE SPEED LIMIT SIGNS.

THE WORK ZONE SPEED LIMIT SIGNS MAY BE ERECTED AND COVERED PRIOR TO STARTING WORK OR MAY BE ERECTED UNCOVERED NO MORE THAN 4 HOURS BEFORE THE ACTUAL START OF WORK. THE SIGNS SHALL BE REMOVED OR COVERED NO LATER THAN 4 HOURS FOLLOWING RESTORATION OF ALL LANES OF TRAFFIC WITH NO RESTRICTIONS OR SOONER AS DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL ERECT A WORK ZONE SPEED LIMIT SIGN IN ADVANCE OF ANY LANE RESTRICTION EXPECTED TO LAST AT LEAST 30 DAYS OR AS DIRECTED BY THE ENGINEER. THE SIGN SHALL BE MOUNTED ON BOTH SIDES OF DIVIDED HIGHWAYS, 500 FEET IN ADVANCE OF THE LANE REDUCTION TAPER. THE SIGN SHALL BE MOUNTED ON THE RIGHT SIDE, 250 FEET IN ADVANCE OF THE LANE REDUCTION TAPER ON UNDIVIDED HIGHWAYS. THE SIGN SHALL BE REPEATED, ON THE SIDE NEAREST TRAFFIC, EVERY 1 MILE FOR 55 MPH ZONES AND EVERY 1/2 MILE FOR 45 MPH ZONES. THESE SIGNS SHALL ALSO BE ERECTED IMMEDIATELY AFTER EACH ENTRANCE RAMP WITHIN THE ZONE. A SIGN TO INDICATE THE RESUMPTION OF THE STATUTORY SPEED LIMIT SHALL BE ERECTED AT THE END OF ANY REDUCED SPEED ZONE. THIS SIGN SHALL BE A R-8A.

THE CONTRACTOR MAY USE SIGNS AND SUPPORTS IN USED BUT GOOD CONDITION PROVIDED THE SIGNS MEET CURRENT ODOT SPECIFICATIONS. SIGN FACES SHALL BE REFLECTORIZED WITH TYPE G SHEETING COMPLYING WITH THE REQUIREMENTS OF 730.19 AND U.S. DEPARTMENT OF TRANSPORTATION SUPPLEMENTAL SPECIFICATION FOR TYPE III-C SHEETING, FP-85. WORK ZONE SPEED LIMIT SIGNS SHALL BE MOUNTED ON TWO (2) ITEM 630 GROUND MOUNTED SUPPORTS, NO. 4 POSTS.

WORK ZONE SPEED LIMIT SIGN AND SUPPORTS WILL BE MEASURED AS THE NUMBER OF SIGN INSTALLATIONS, INCLUDING THE SIGN AND NECESSARY SUPPORTS. IF A SIGN AND SUPPORT COMBINATION IS REMOVED AND RE-ERECTED AT ANOTHER LOCATION WITHIN THE PROJECT DUE TO CHANGES IN THE SPEED ZONE DIRECTED BY THE ENGINEER, IT SHALL BE CONSIDERED ANOTHER UNIT.

PAYMENT FOR ACCEPTED QUANTITIES, COMPLETE, IN PLACE WILL BE MADE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, INCIDENTALS AND EQUIPMENT FOR FURNISHING, ERECTION, MAINTENANCE, COVERING DURING SUSPENSION OF WORK, AND REMOVAL OF THE SIGNS AND SUPPORTS.

ITEM UNIT DESCRIPTION

614 EACH WORK ZONE SPEED LIMIT SIGN

A QUANTITY OF 10 EACH WORK ZONE SPEED LIMIT SIGNS ARE CARRIED TO THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER.

ITEM 622-PORTABLE CONCRETE BARRIER, 50" AS PER PLAN

THIS WORK SHALL CONSIST OF THE FURNISHING, INSTALLATION, MAINTENANCE AND SUBSEQUENT REMOVAL OF A 50 INCH PORTABLE CONCRETE BARRIER AT THE LOCATIONS SHOWN ON THE PLANS.

PORTABLE CONCRETE BARRIER, 32" WITH AN 18 INCH MINIMUM HEIGHT GLARE SCREEN MAY BE USED AT THE OPTION OF THE CONTRACTOR.

THE PORTABLE CONCRETE BARRIER, 32", WITH GLARE SCREEN, SHALL BE CONSTRUCTED USING ONE (1) OF THE FOLLOWING SYSTEMS OR AN APPROVED EQUAL:

CARSONITE MODULAR GLARE SCREEN  
CARSONITE INTERNATIONAL  
2909 LOCKHEED WAY  
CARSON CITY, NEVADA 89701  
702-893-5104 OR 800-648-7974

FORWARD GLARE SCREEN  
PROVEN PRODUCTS, INC.  
7560 SW LAVIEW DRIVE  
PORTLAND, OREGON 97219  
503-244-9185

SYRO GLAREFOIL SYRO STEEL COMPANY  
1170 N. STATE STREET  
GIRARD, OHIO 44420  
216-545-4373

PADDLE OR INTERMITTENT TYPE GLARE SCREEN SHALL BE DESIGNED USING A 20 DEGREE CUTOFF ANGLE BASED ON TANGENT ALIGNMENT. THAT SPACING SHALL BE USED THROUGHOUT THE BARRIER LENGTH WITHOUT REGARD TO THE BARRIER CURVATURE.

THE GLARE SCREEN SYSTEM ATTACHED TO THE 32 INCH PORTABLE CONCRETE BARRIER SHALL BE SECURELY FASTENED USING THE HARDWARE AND PROCEDURES SPECIFIED BY THE MANUFACTURER.

PAYMENT SHALL INCLUDE ALL LABOR, MATERIAL AND EQUIPMENT NECESSARY TO PERFORM THE WORK AND SHALL BE PAID FOR AT THE UNIT PRICE BID PER LINEAL FOOT FOR ITEM 622-PORTABLE CONCRETE BARRIER, 50", AS PER PLAN.

ITEM SPECIAL - FLASHING ARROW PANEL, FURNISH ONLY

THIS WORK SHALL CONSIST OF FURNISHING, INSTALLATION, MAINTENANCE AND ARRANGING TO LEAVE IN PLACE AT THE COMPLETION OF THIS PROJECT THE ARROW PANEL AT THE LOCATION SHOWN ON THE PLANS. THIS DEVICE SHALL BE CLEAN AND IN GOOD REPAIR AT THE TIME OF TRANSFER OF MAINTENANCE RESPONSIBILITY.

PAYMENT SHALL INCLUDE ALL LABOR, MATERIAL AND EQUIPMENT NECESSARY TO PERFORM THE WORK AND SHALL BE PAID FOR AT THE UNIT PRICE BID PER EACH FOR ITEM SPECIAL--FLASHING ARROW PANEL, FURNISH ONLY

ITEM 622 - PORTABLE CONCRETE BARRIER, 32-IN. AS PER PLAN

THIS WORK SHALL CONSIST OF FURNISHING, PLACING, MAINTAINING AND ARRANGING TO LEAVE IN PLACE AT THE COMPLETION OF THIS PROJECT THE PORTABLE CONCRETE BARRIER AT THE LOCATIONS SHOWN ON THE PLANS.

PAYMENT SHALL INCLUDE ALL LABOR, MATERIAL AND EQUIPMENT NECESSARY TO PERFORM THE WORK AND SHALL BE PAID FOR AT THE UNIT PRICE BID PER LINEAL FOOT FOR ITEM 622 - PORTABLE CONCRETE BARRIER, 32", AS PER PLAN.

642 EDGE LINES ON NEW ASPHALT PAVEMENTS

EDGE LINES SHALL BE IN ACCORDANCE WITH 642 EXCEPT THAT (1) ON EVERY ROADWAY AND RAMP, EDGE LINES SHALL BE IN PLACE PRIOR TO EXPOSING IT TO TRAFFIC, (2) WHERE THE EDGE LINES ARE NOT LIABLE TO BE TRACKED, EITHER CONVENTIONAL OR FAST DRY PAINT MAY BE USED FOR 641.02; AND (3) WHEN APPLIED TO NEW ASPHALT PAVEMENT THE SPECIFIED APPLICATION RATE SHALL BE 24 GALLONS PER MILE.

614 WORK ZONE MARKING SIGNS

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND SUBSEQUENTLY REMOVE WORK ZONE MARKING SIGNS (OW-15" AND OW-168") WITHIN THE WORK LIMITS IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS.

THE CONTRACTOR MAY USE SIGNS AND SUPPORTS IN USED BUT GOOD CONDITION PROVIDED THE SIGNS MEET CURRENT DEPARTMENT SPECIFICATIONS. SIGN FACES SHALL BE REFLECTORIZED WITH TYPE G SHEETING COMPLYING WITH THE REQUIREMENTS OF 730.19. WORK ZONE MARKING SIGNS SHALL BE PROVIDED WITH SITABLE YIELDING SUPPORTS OF SUFFICIENT STRENGTH AND STABILITY.

WORK ZONE MARKING SIGNS WILL BE MEASURED AS THE NUMBER OF SIGN INSTALLATIONS, INCLUDING THE SIGN AND NECESSARY SUPPORTS. ALL OTHER WORK ZONE SIGNS SHALL BE INCLUDED IN 614 MAINTAINING TRAFFIC UNLESS SEPARATELY ITEMIZED.

PAYMENT FOR ACCEPTED QUANTITIES,

COMPLETE, IN PLACE WILL BE MADE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, INCIDENTALS AND EQUIPMENT FOR PLACEMENT, MAINTENANCE AND REMOVAL OF THE SIGNS.

ITEM UNIT DESCRIPTION

614 EACH WORK ZONE MARKING SIGNS

A QUANTITY OF 10 EACH WORK ZONE MARKING SIGNS ARE CARRIED TO THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER.

PHASE II INTERMEDIATE COMPLETION TIME

PHASE II OF THE MAINTENANCE OF TRAFFIC PLANS INCLUDES WORK WHICH REQUIRES SB SR 315 TRAFFIC TO BE TEMPORARILY DETOURED ONTO OLENTANGY RIVER ROAD VIA KINNEAR ROAD. IT IS THE INTENT OF THESE PLANS THAT SB SR 315 BE TEMPORARILY DETOURED FOR NO MORE THAN 75 CALENDAR DAYS.

THE CONTRACTOR SHALL COMPLETE THE FOLLOWING WORK WITHIN 75 CALENDAR DAYS:

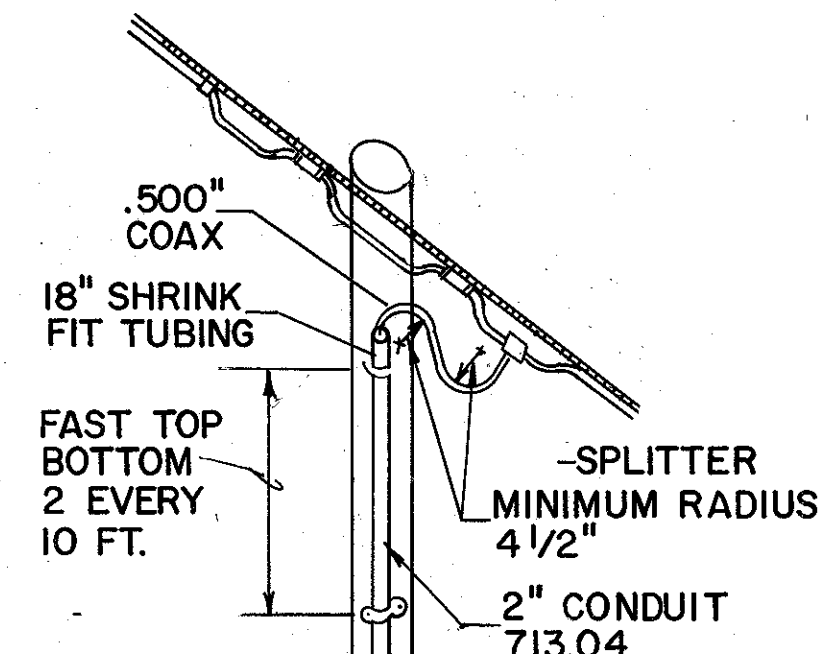
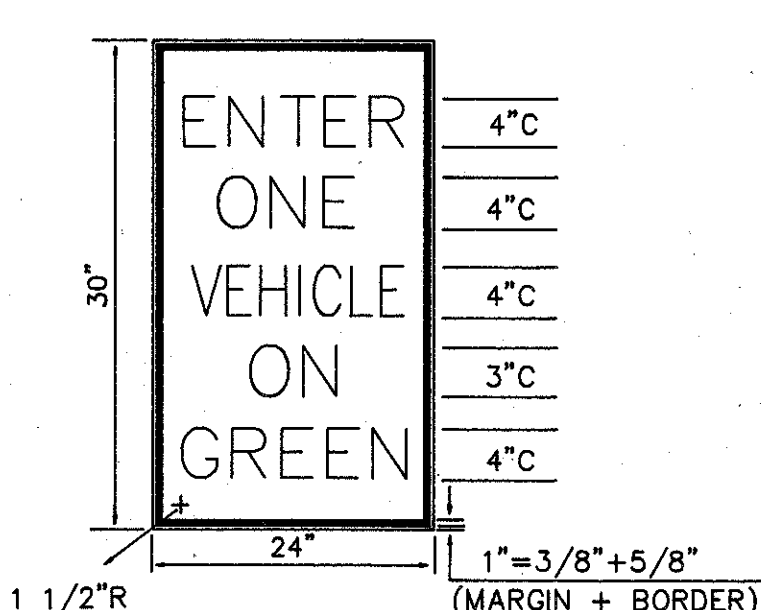
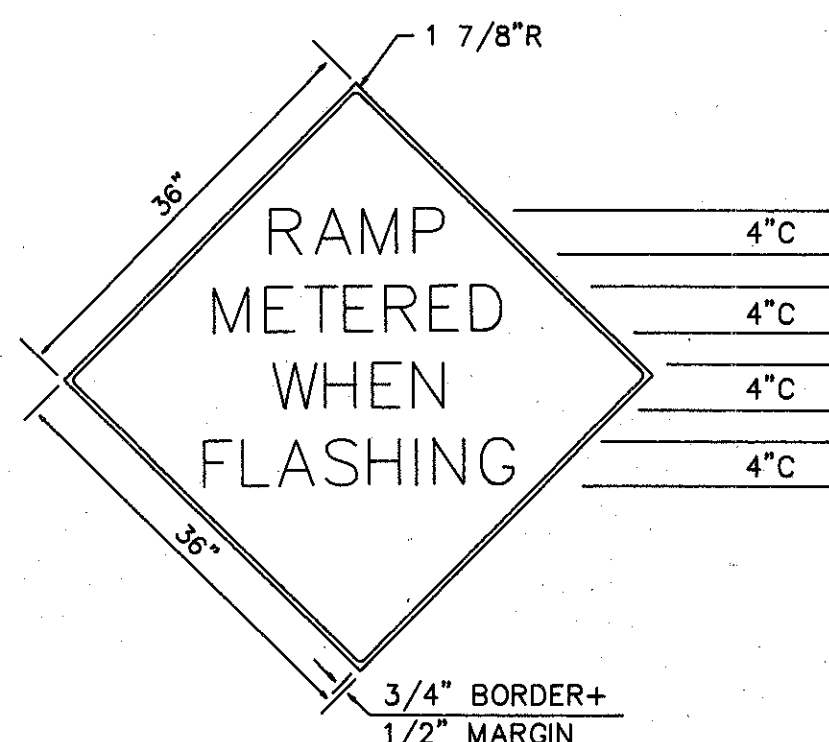
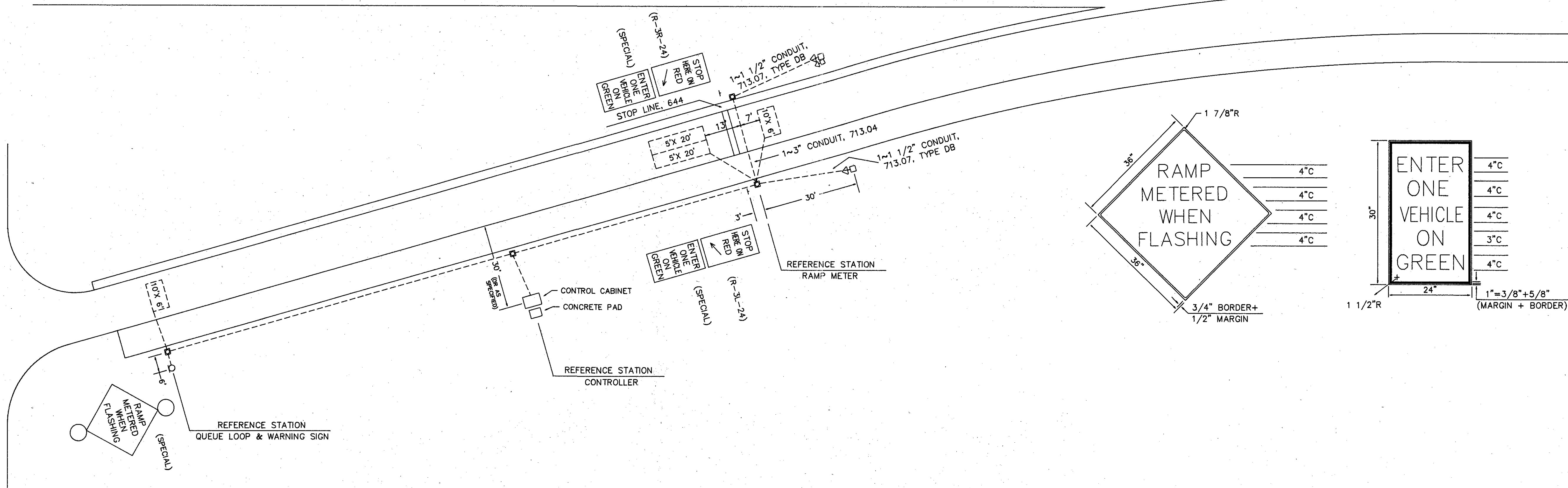
1. DETOUR SB SR 315 TRAFFIC ONTO OLENTANGY RIVER ROAD;
2. BUILD CROSSOVER, TEMPORARY ROAD "F" AND PROPOSED SB SR 315 (FROM STA. 175+00 TO STA. 181+35.08) AND DIVERT NB SR 315 TRAFFIC ONTO TEMPORARY ROAD "F" AND CROSSOVER;
3. CONSTRUCT BIKEWAY TUNNEL AND NB SR 315 FROM STA. 175+00 TO STA. 181+02.33 AND REMAINING SB SR 315 FROM STA. 171+00 TO 175+00;
4. FINAL PAVEMENT MARKING, SIGN INSTALLATIONS AND OTHER WORK AS DIRECTED BY THE ENGINEER NECESSARY TO OPEN ROADS OD AND OE TO SR 315 TRAFFIC; AND
5. SHIFT SR 315 TRAFFIC ONTO ROADS OD AND OE.

THE CONTRACTOR SHALL COORDINATE HIS ACTIVITIES WITH THE ENGINEER AND THE FRA-670-2.95 (FORMERLY FRA-670/1.25-B-2) CONTRACTOR TO INSURE THAT ROADS OD AND OE WILL BE OPEN TO TRAFFIC AT THE END OF THE INTERMEDIATE COMPLETION TIME.

615 - TEMPORARY PAVEMENT, CLASS A, AS PER PLAN

CONSTRUCTION OF TEMPORARY ROADS MAY PROCEED THRU THE WINTER MONTHS IF DIRECTED BY THE ENGINEER. RIGID PAVEMENT (PORTLAND CEMENT CONCRETE) MAY BE REQUIRED FOR TEMPORARY ROAD CONSTRUCTION DURING THE WINTER MONTHS. THE CONTRACTOR MAY BE REQUIRED TO USE A FAST-SETTING PORTLAND CEMENT CONCRETE AS PER ITEM 615 IN ORDER TO FACILITATE PROPOSED PAVEMENT TIE-INS AND MAINTENANCE OF TRAFFIC.





2" MODIFIED RISER DETAIL

**ITEM 633 - RAMP METER CONTROLLER**

CONTROL EQUIPMENT, CABINET AND CABINET ITEMS SHALL CONFORM TO TRAFFIC SIGNAL CONTROL EQUIPMENT SPECIFICATIONS, CURRENT EDITION, PUBLISHED BY THE CALIFORNIA BUSINESS, TRANSPORTATION & HOUSING AGENCY, DEPARTMENT OF TRANSPORTATION, P.O. BOX 942874, SACRAMENTO, CA 94274-0001. EACH RAMP METER CONTROLLER SHALL CONSIST OF ALL HARDWARE NEEDED TO BE FULLY FUNCTIONAL. AT A MINIMUM, THE FOLLOWING HARDWARE SHALL BE FURNISHED:

- 1 EA. MODEL 170 CONTROLLER
- 1 EA. MODEL 414 PROGRAM MODULE
- 2 EA. MODEL 200 SWITCH PACK
- 1 EA. MODEL 204 FLASHER UNIT
- 4 EA. MODEL 222 TWO CHAN LOOP DETECTORS
- 1 EA. MODEL 334 CABINET
- 1 EA. MODEL 208 MONITOR
- 1 EA. MODEL 206 POWER SUPPLY MODULE

THE RAMP METERING SOFTWARE SHALL BE FURNISHED BY THE CONTRACTOR. THE SOFTWARE SHALL BE CAPABLE OF OPERATING IN A TRAFFIC RESPONSIVE MODE. UPSTREAM MAINLINE LOOPS AND RAMP LOOPS SHALL BE MONITORED FOR FREEWAY AND RAMP TRAFFIC CONDITIONS. THE SOFTWARE SHALL BE CAPABLE OF SELECTING METERING RATES BASED UPON FREEWAY TRAFFIC FLOW. METERING RATES SHALL ALSO BE ADJUSTABLE ON THE BASIS OF RAMP QUEUES. THE RAMP METERING SOFTWARE SHALL BE CAPABLE OF ACTUATING THE RAMP METERING SIGN FLASHERS WHEN IN THE METERING MODE. THE RAMP METERING SOFTWARE SHALL BE OF THE TYPE USED BY CALTRANS, DISTRICT 7, WASHINGTON DOT IN SEATTLE, OR APPROVED EQUAL. THE RAMP METERING SOFTWARE MUST BE A FINISHED PRODUCT, CURRENTLY IN USE IN THE UNITED STATES OR CANADA. NO PROTOTYPES WILL BE ACCEPTED.

IN ADDITION TO THE HARDWARE DOCUMENTATION REQUIRED BY THE CALTRANS SPECIFICATIONS, FIVE (5) COPIES OF THE RAMP METERING SOFTWARE OPERATION MANUALS AND DOCUMENTATION SHALL BE FURNISHED SIX (6) WEEKS PRIOR TO DELIVERY OF THE CONTROLLER. ONE COPY OF THE HARDWARE AND SOFTWARE DOCUMENTATION SHALL BE FURNISHED TO THE ENGINEER. THE REMAINING COPIES SHALL BE MAILED TO:

CITY OF COLUMBUS  
DIVISION OF TRAFFIC ENGINEERING  
109 NORTH FRONT STREET  
COLUMBUS, OH 43215  
ATTN: FREEWAY ENGINEER

UPON RECEIPT OF THESE COPIES, THE CITY OF COLUMBUS WILL FURNISH THE ENGINEER WITH THE DATA NEEDED TO START UP THE SYSTEM.

THE CONTRACTOR SHALL FURNISH THE CITY OF COLUMBUS WITH AT LEAST FOUR HOURS OF TRAINING ON OPERATION OF THE SOFTWARE. THE TRAINING IS TO BE PRESENTED BY THE SOFTWARE SUPPLIER. A WORKING MODEL 170 CONTROLLER SHALL BE USED TO DEMONSTRATE THE SOFTWARE AND TO PROVIDE "HANDS ON" TRAINING. THE PRESENTATION SHALL COVER THE THEORY OF OPERATION, DATA BASE AND TABLE CREATION, TROUBLESHOOTING, MODIFICATION OF DATA BASE AND TABLES, AND PRESERVATION OF THE DATA BASE AND TABLES. THIS PRESENTATION SHALL BE MADE BETWEEN THE TIME OF THE DELIVERY OF THE MANUALS AND TURNING ON THE SYSTEM.

**ITEM 632 - RAMP METER SIGNAL DISPLAY**

THE FOUNDATION, TRANSFORMER BASE AND PEDESTAL SHAFT SHALL CONFORM TO STANDARD CONSTRUCTION DRAWING TC-83.20. SIGNAL HEADS SHALL BE 8", TWO SECTION, RED OVER GREEN, AND SHALL CONFORM TO 732.01. THE LOW MOUNTED SIGNAL HEAD SHALL BE MOUNTED AS SHOWN ON STANDARD CONSTRUCTION DRAWING TC-85.10.

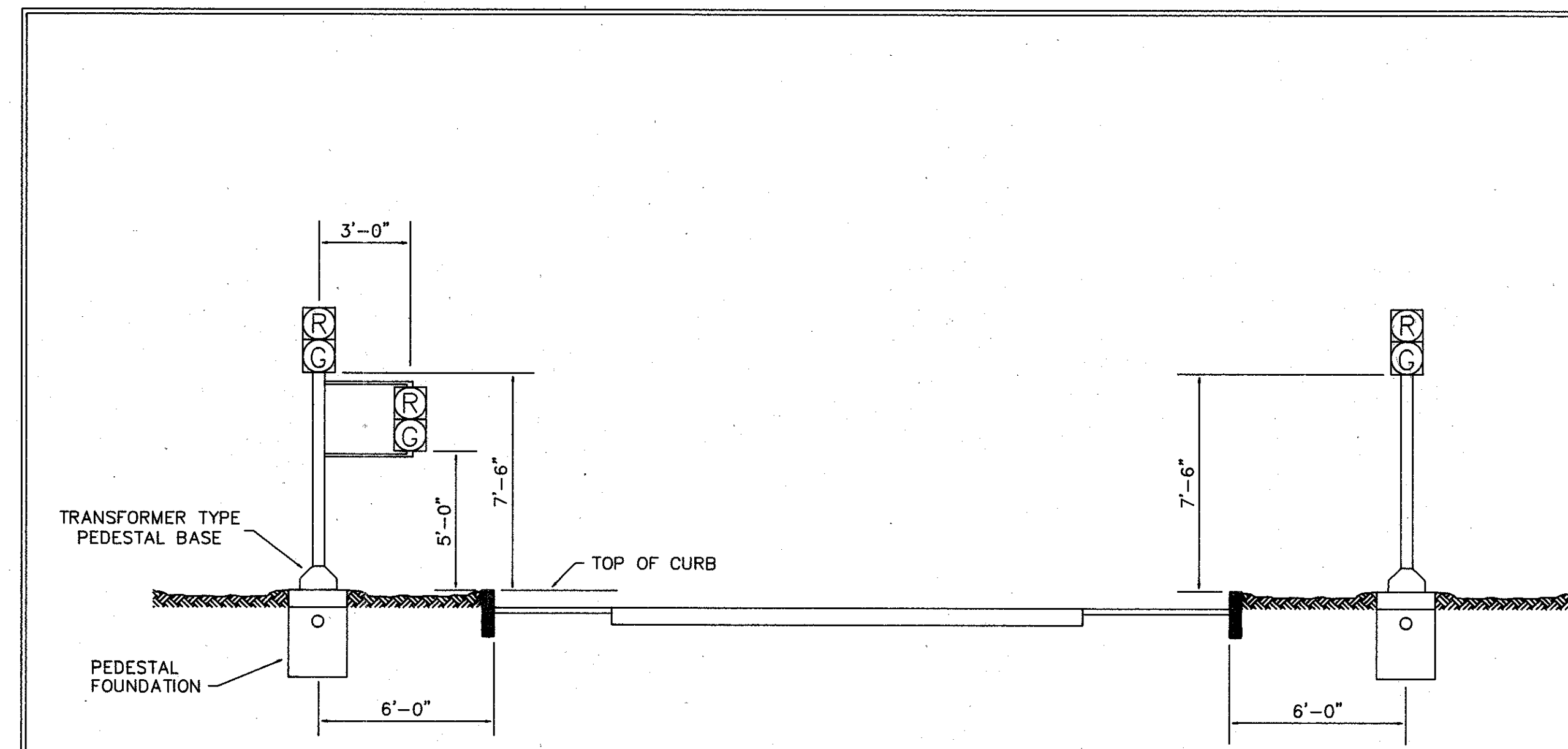
PAYMENT WILL BE MADE UNDER ITEM 632 - "RAMP METER", AND SHALL INCLUDE THE FOUNDATION EXCAVATION, FOUNDATION CONCRETE, ANCHOR BOLTS, TRANSFORMER BASE, PEDESTAL SHAFT, SIGNAL HEADS COMPLETE WITH BULBS, REFLECTORS AND LENSES, ATTACHING HARDWARE AND ALL OTHER ITEMS NECESSARY FOR A COMPLETE INSTALLATION. ELECTRICAL CABLE WILL BE PAID AS A SEPARATE ITEM.

**ITEM 632 - RAMP METER SIGN**

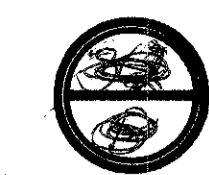
RAMP METER SIGN AND WARNING FLASHERS SHALL BE INSTALLED AS PER THE PTSWF SIGN DRAWING. THE SIGN COPY WILL BE REVISED TO READ "RAMP METERED WHEN FLASHING" AND THE RELAY ASSEMBLY AND FLASHER ARE NOT USED. THE SIGN FLASHERS WILL BE POWERED DIRECTLY FROM THE RAMP METER CONTROLLER.

PAYMENT WILL BE MADE UNDER ITEM 632 - "RAMP METER SIGN", AND SHALL INCLUDE THE FOUNDATION EXCAVATION, FOUNDATION CONCRETE, ANCHOR BOLTS, BREAKAWAY BASE, POLE, SIGN, SIGN BRACKETS, SIGN LUMINAIRE, FLASHERS, MOUNTING HARDWARE AND ALL OTHER ITEMS NECESSARY FOR A COMPLETE INSTALLATION.

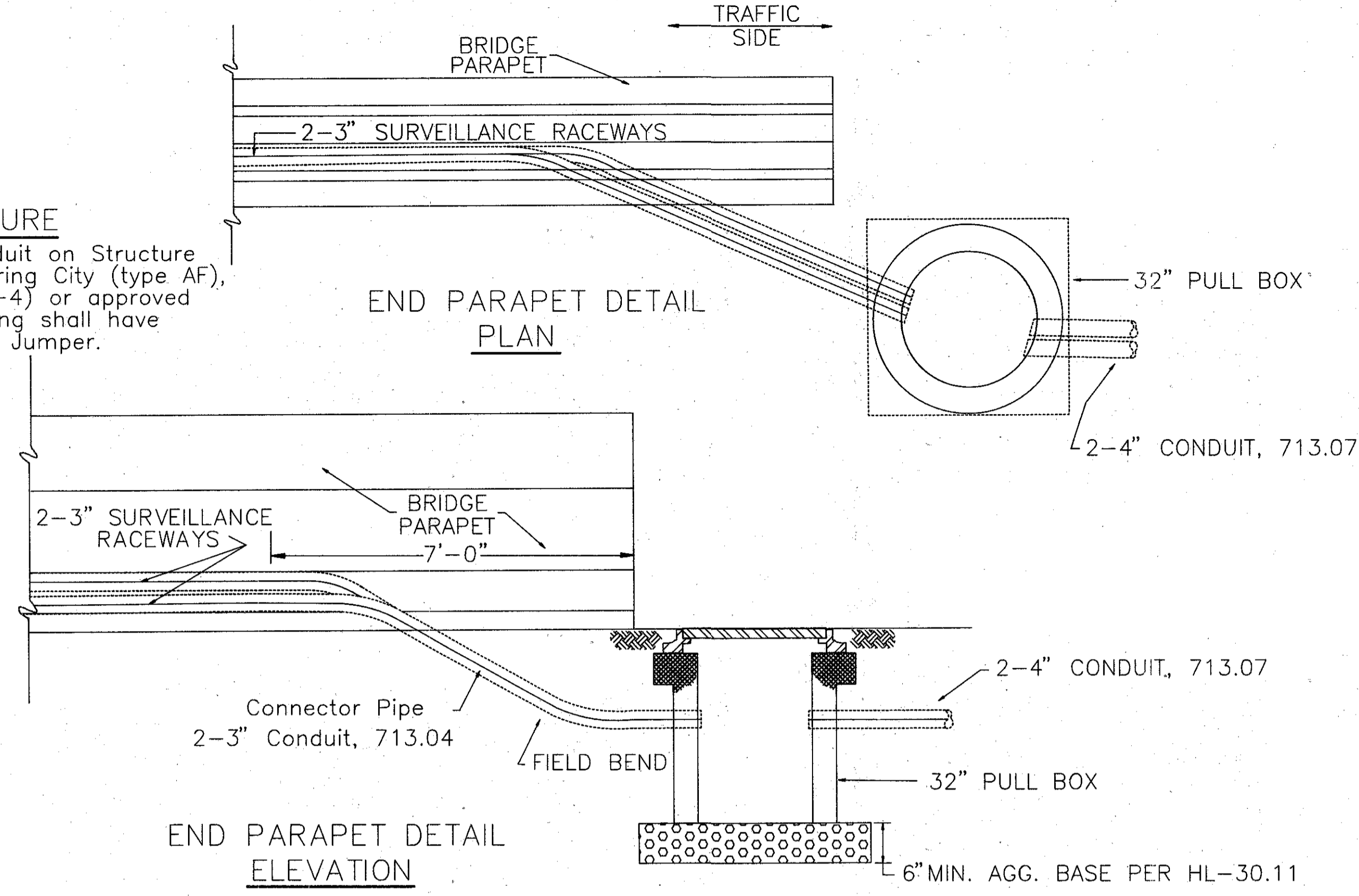
ELECTRICAL CABLE WILL BE PAID AS A SEPARATE ITEM. A QUANTITY OF SIGNAL CABLE, 5 CONDUCTOR, #14 AWG IS PROVIDED FOR THE FLASHERS. LUMINAIRE POWER IS TAKEN FROM THE NEAREST ACCESS TO THE STREET LIGHTING CIRCUIT. ALL OF THESE QUANTITIES ARE TO BE PAID UNDER THE APPROPRIATE ROADWAY LIGHTING ITEMS.



TYPICAL RAMP METER INSTALLATION



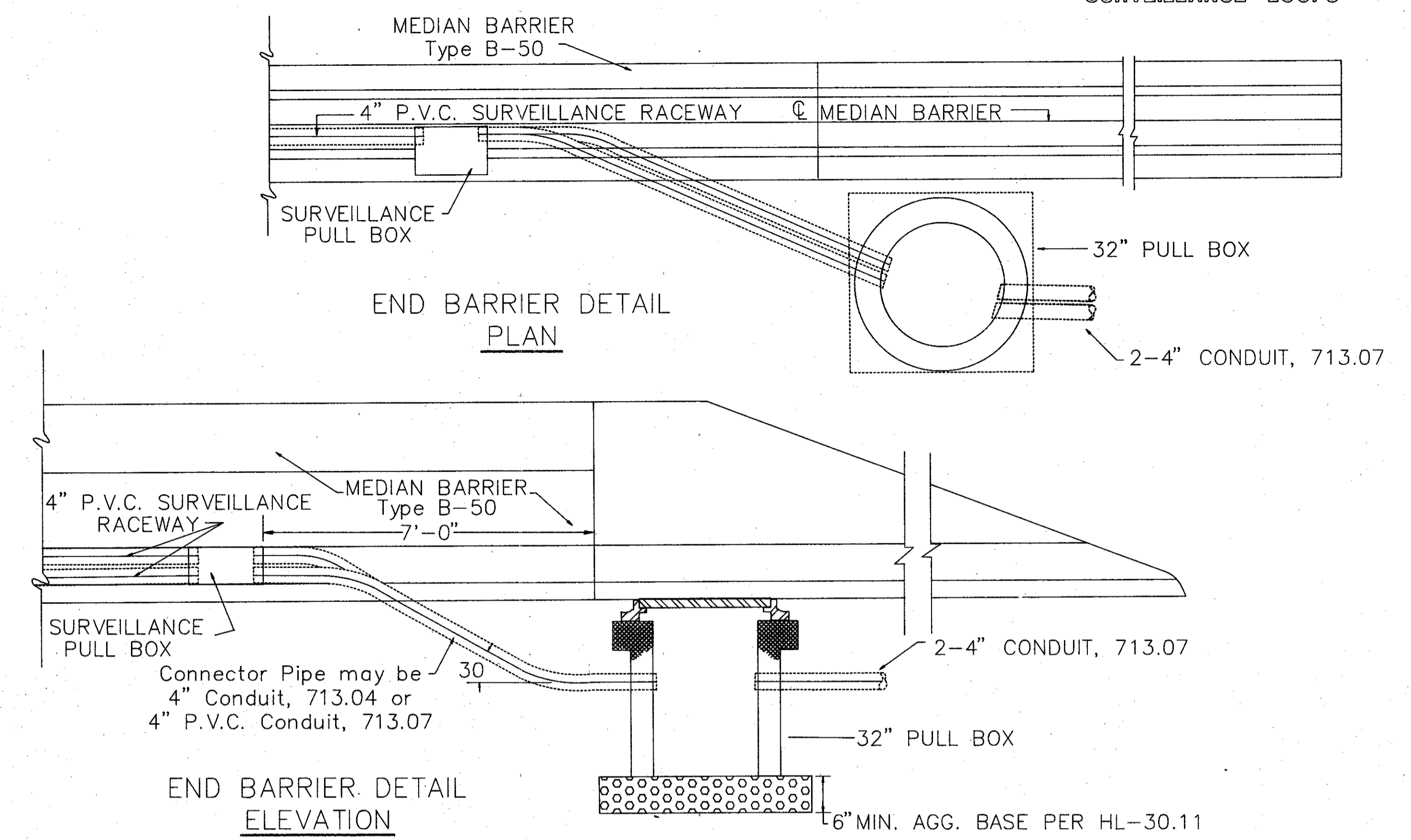
TYPICAL SURVEILLANCE CONDUIT TREATMENT AT END OF BRIDGE PARAPET



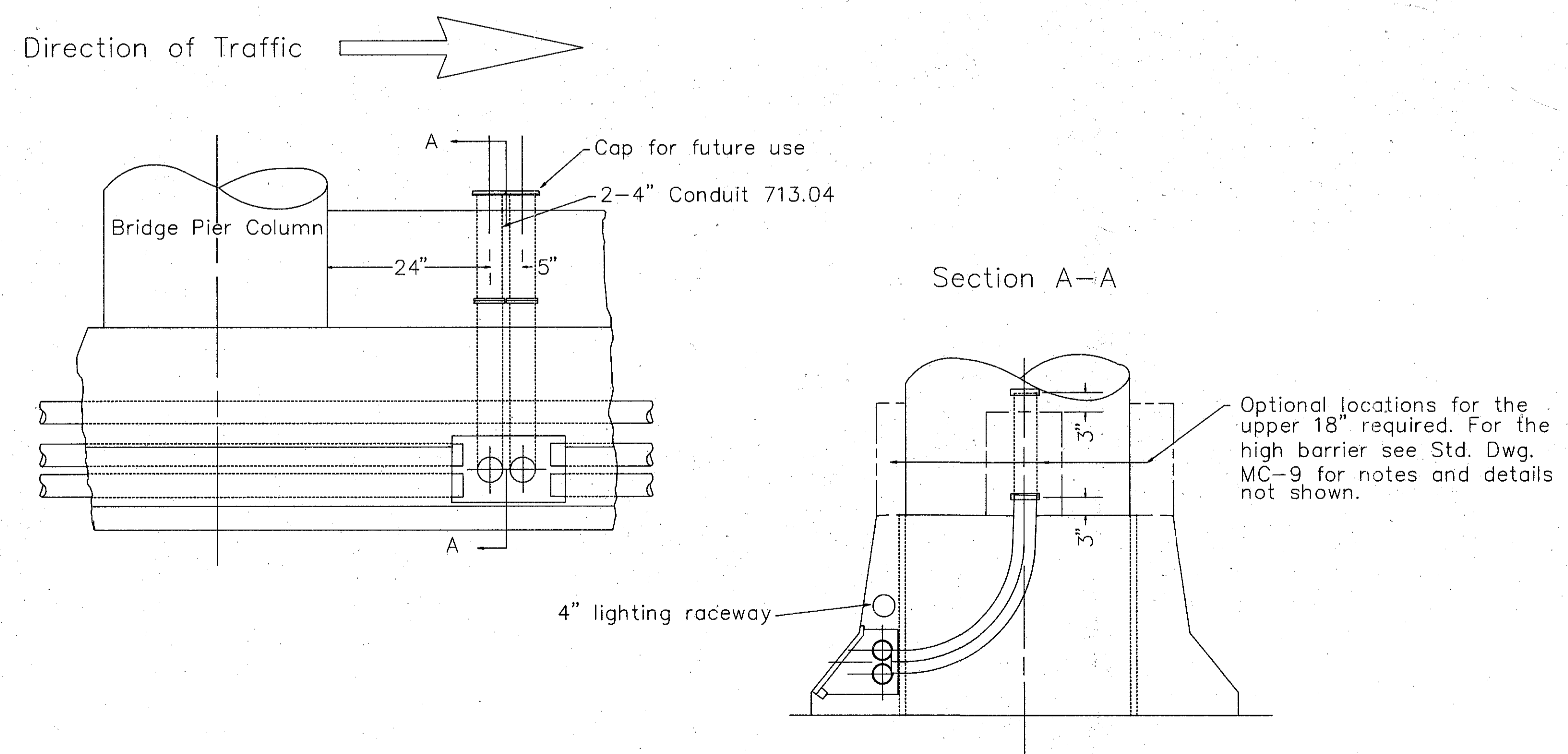
CONDUIT ON STRUCTURE

Expansion fittings for Conduit on Structure shall be OZ (type AX), Spring City (type AF), or Crouse-Hinds (type XJ-4) or approved equal. Each expansion fitting shall have a copper external Bonding Jumper.

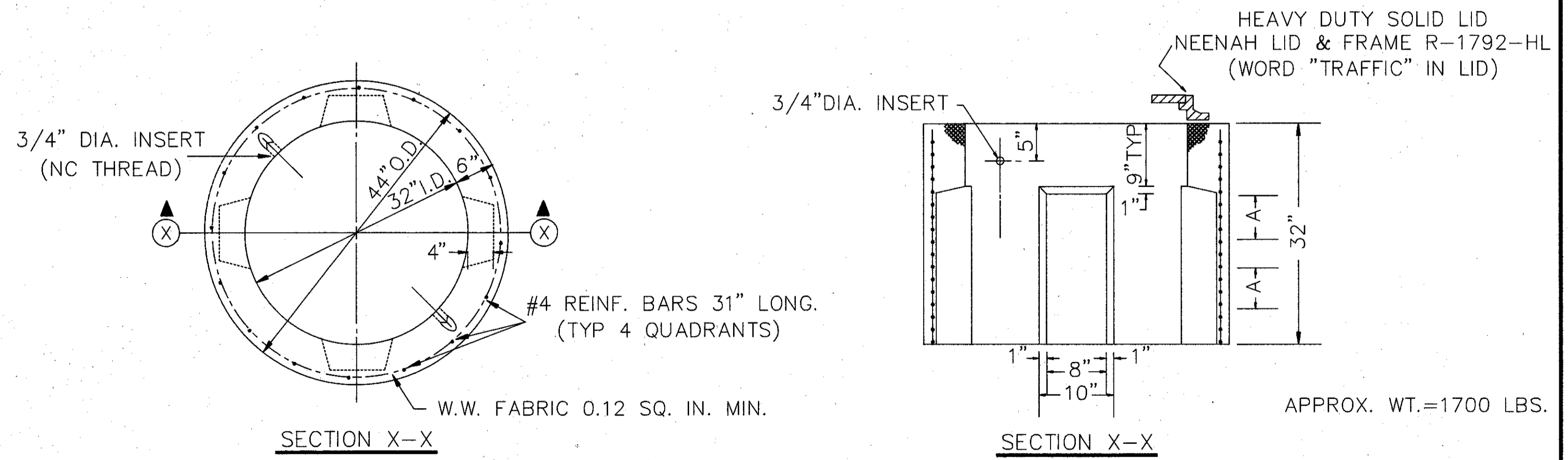
TYPICAL SURVEILLANCE CONDUIT TREATMENT AT END BARRIER WALL



BRIDGE PIER RISER



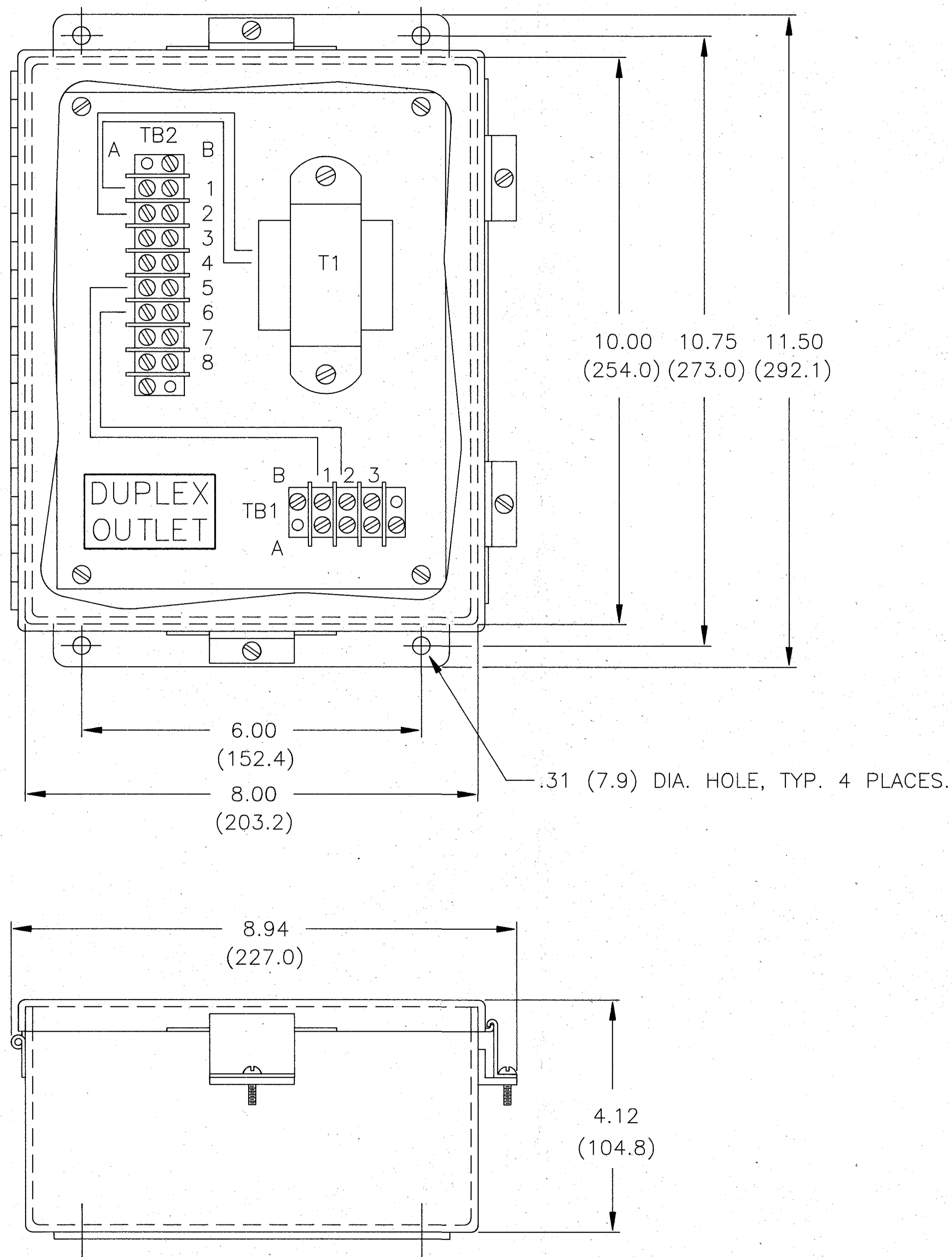
ITEM 625 32" PULL BOX



"A" Cut out 4 wires in the area of the reduced wall section. Also include the vertical wire for removal.  
Concrete Comp. Strength-4000psi min. Design.  
Concrete Air Entrainment to be 6% + 1 1/2%.  
Coating of protective Acrylic is to be applied to the top 12" of the outside face and total inside face.  
Lid Ring Load transfer is to be distributed by use of a preformed mastic joint material.

APPROX. WT.=1700 LBS.

REV. 6-29-90



NOTES:

- 1) ALL DIMENSIONS IN PARENTHESES ARE IN MILLIMETERS.
- 2) SPECIFICATIONS: MATERIAL: STEEL  
FINISH: GREY  
WEIGHT: 10 lbs. (4.5 kgs.)  
NEMA RATING: NEMA 4 TYPE
- 3) CUSTOMER TO DRILL AND INSTALL CABLE FITTINGS PER SITE REQUIREMENTS.
- 4) CUSTOMER TO INSTALL BNC CONNECTORS AFTER COAXIAL CABLE HAS BEEN SLIPPED THRU CONDUIT FITTINGS. ATTACH COAXIAL CABLE TO PANEL WITH THE TIE WRAP SUPPLIED.

WIRING SCHEDULE

TB1 (SIDE FIELD WIRING)		CUSTOMER SUPPLIED	TB2 (SIDE FIELD WIRING)		CABLE FROM FASTSCAN DOME
A	B		A	B	
1	1	AC HOT	1	1	BLK 24VAC
2	2	AC NEUT	2	2	BRN 24VAC
3	3	AC GND	3	3	BLK DATA -
			4	4	RED DATA +
			5	5	BLK 120VAC
			6	6	BLU 120VAC
			7	7	WHT 120VAC
			8	8	BLK 120VAC

RG-6 {

NOTE:

ARCOR CABLE  
RKA2V1-EXTRATUFF.



FHWA REGION	STATE	PROJECT
5	OHIO	

18F  
275

FRA-670-125 C-2  
SURVEILLANCE LOOPS



LIGHTNING PROTECTION SYSTEM AS PER HL-10.31.

TYPICAL CAST IRON OR MALLEABLE STEEL POLE TOP.

BAND POLE SADDLE TO POLE WITH (5) STAINLESS STEEL STRAPPING BANDS.

DIAMOND ELECTRONICS

PART No.	DESCRIPTION
517116-5030	SC-105 COLOR CAMERA WITH 10-100mm LENS
515900-5040	SMARTSCAN FOR SC-1051C
517124-4040	WEATHER DOME / DRONE DOME
517026-1000	BOTTOM DOME CLEAR
515683-4740	HEATER BLOWER OPTION FOR SMARTSCAN
515904-1030	DWM-18 WALL MOUNT
908701-0075	STRUT ST-1
517014-1730	POLE MOUNT ADAPTER WD-CD FOR DWM-18
450043-0000	POLE MOUNT ADAPTER FOR STRUT ST-1
643102-2903	J-BOX
643102-2802	CAMERA CABLE (6ft.)

"J" BOX

6ft. CAMERA CABLE FROM DOME.

3/4" CONDUIT, 713.04 & LB. (FRONT COVER)

LIGHT POLE DESIGN ATON45D.

NOTE:

MOUNT "J" BOX SO CAMERA CABLE GOES FROM DOME TO "J" BOX TERMINAL STRIP. NO SPLICES PERMITTED ON CAMERA CABLE.

HENNESSEY HP 392420 CABINET W/ RACK FRAME ASSEMBLY # 230823.

STAINLESS STEEL PIANO HINGE 9 1/2" FASTENED W/ (4) ALUMINUM RIVETS PER SIDE.

5'-0" TYPICAL

24"x10'-0" FOUNDATION AS PER HL-20.11.

6' OR AS DIRECTED BY THE ENGINEER.

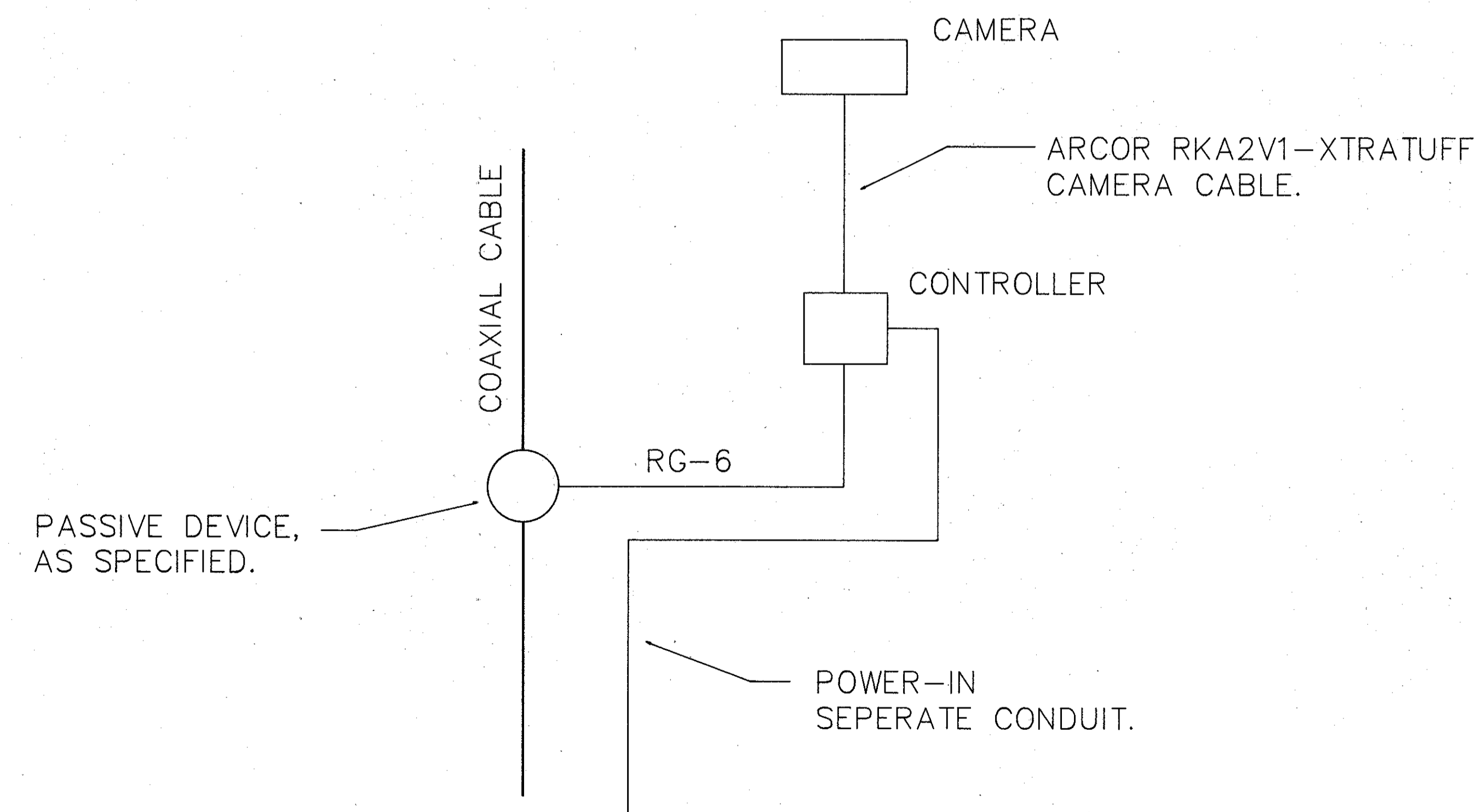
32" HD PULL BOX, AS PER PLAN.

6'-0" OR AS DIRECTED BY THE ENGINEER.

POLE FOUNDATION

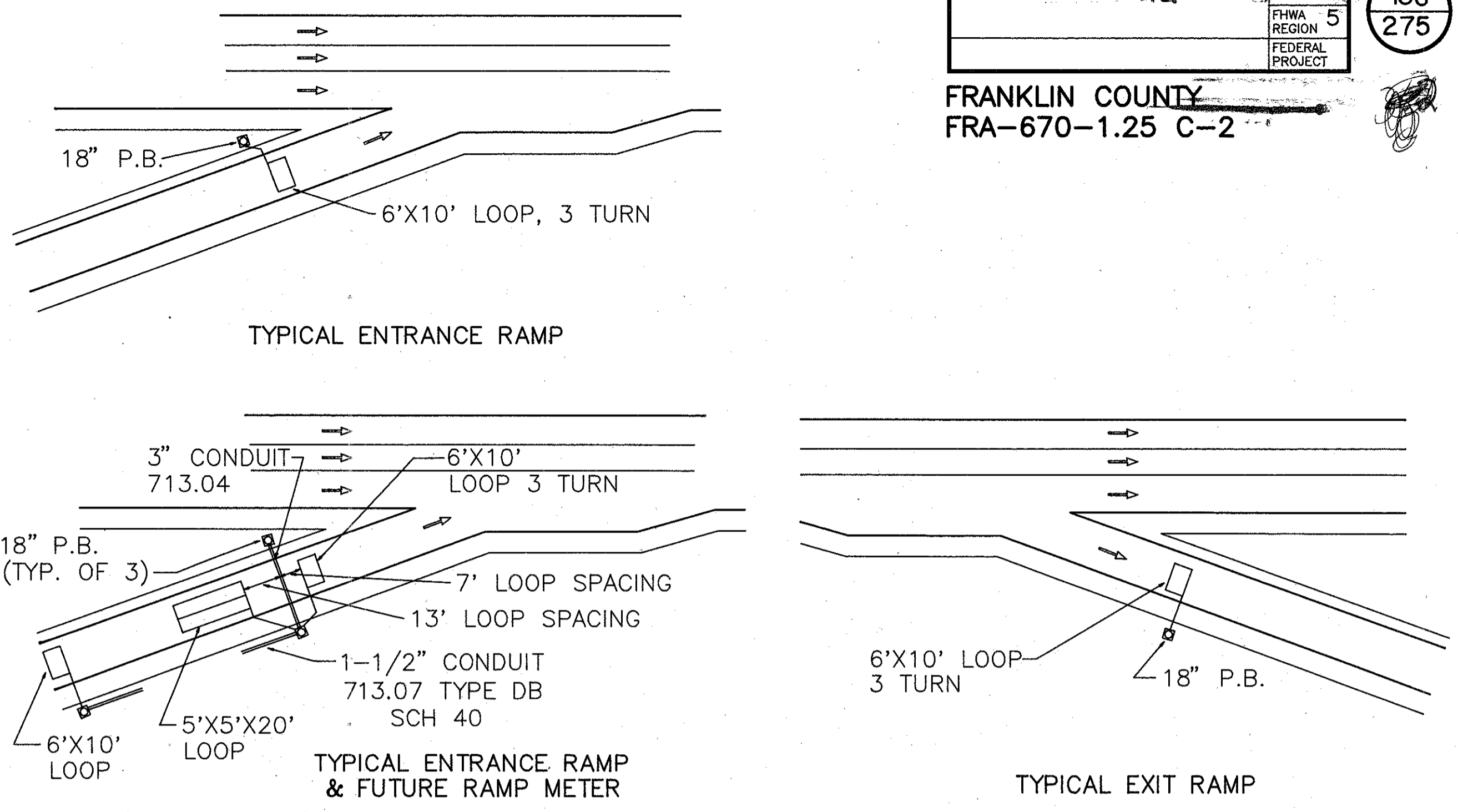
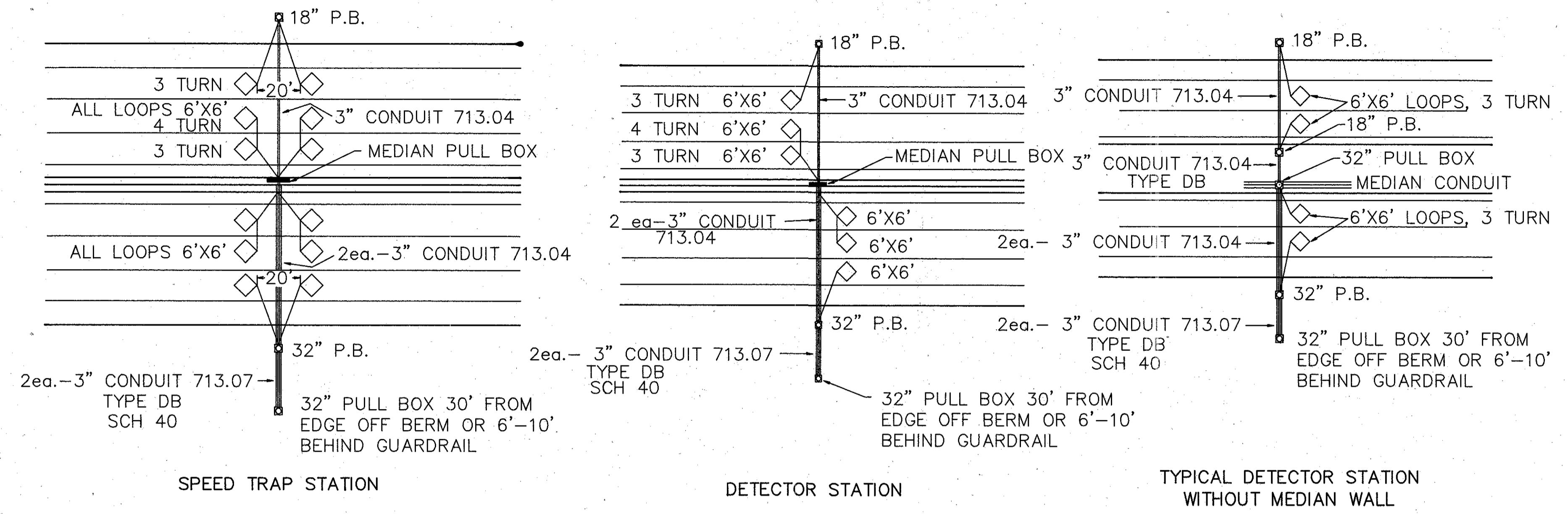
2~3" CONDUITS, 713.04 BUSHINGS REQUIRED ON EACH END.

PULL BOX & CONDUIT DETAIL

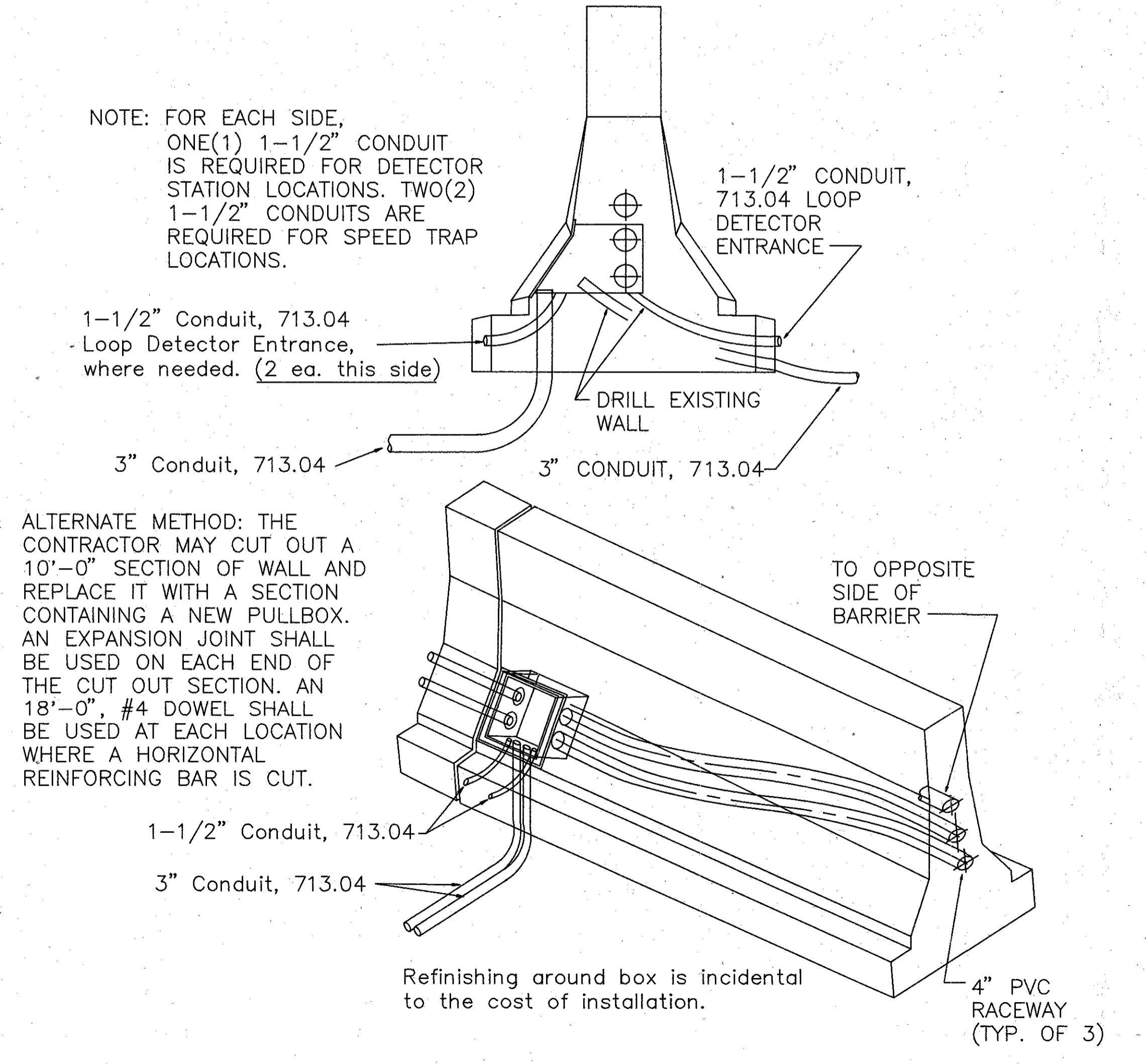


ELECTRICAL & COMMUNICATIONS DETAIL

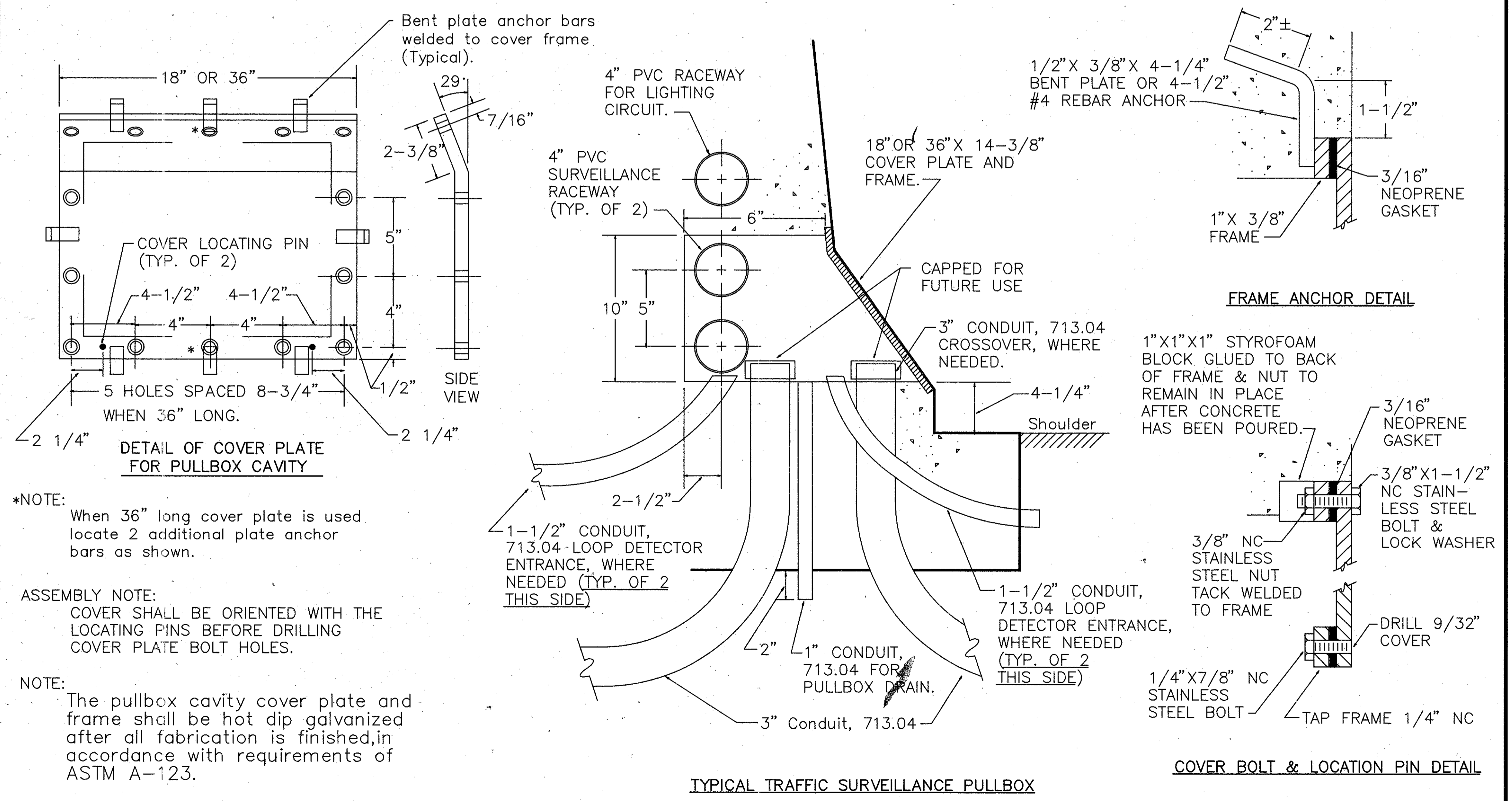
### LOOP PLACEMENT



### SURVEILLANCE PULL BOX & CONDUIT MODIFICATIONS TO EXISTING MEDIAN PULL BOX



### NEW SURVEILLANCE MEDIAN PULL BOX & CONDUIT



F.H.W.A. REGION	STATE	PROJECT
5	OHIO	

18H  
275

FRANKLIN COUNTY  
FRA-670-1.25 C-2



625 - LIGHT POLE, MISC., LIGHT POLE DESIGN ATON45D: The pole used for camera mounting shall be as per the CCTV Camera Detail sheet, Sheet 18F, and Standard Construction Drawings HL-10.11, HL-10.12 and HL-10.13. The Style V pole shall be used. The special feature is the top cap.

625 - LIGHT POLE FOUNDATION, MISC., LIGHT POLE FOUNDATION, 24" X 10' DEEP: A standard HL-20.11 pole foundation shall be used, except a 10 foot depth shall be substituted for the 9 foot depth indicated on HL-20.11 Note #1. Payment for the conduit between the pull box and the foundation shall be a part of this item.

632 - PULLBOX, MISC., PULL BOX, HEAVY DUTY, 32" This item describes a 32 inch interior diameter concrete pull box as shown on the Surveillance Details & Typical Sheet, Sheet 18D. Drains shall be installed as per Standard Construction Drawing HL-30.11. A Jordan Number 1475A frame and lid may be substituted for the Neenah R-1792-HL frame and lid shown on the typical. The unit may be poured in place or pre-cast.

632 - PULLBOX, MISC., BRIDGE TRANSITION PULLBOX: A Special 32 inch Pull Box shall be used at the transition between bridge parapet conduit and the direct burial conduit as shown on the Surveillance Details & Typical Sheet, Sheet 18D. The pull box, expansion fittings and all conduit bending shall be paid for under this item.

632 - SIGNAL CABLE, MISC., COAXIAL CABLE, .750 INCH, P-III: This item includes all messenger wire, lashing wire, hangers and any other accessories necessary to install the coaxial trunk cable.

The cable shall consist of a copper clad aluminum inner conductor, foam insulated, with an outer conductor of aluminum and a black polyethylene jacket. The minimum nominal outside conductor diameter shall be .750 inches. The characteristic impedance shall be 75 plus or minus 2 ohms. Attenuation shall not be greater than .90 dB/100 ft at 300 Mhz.

- a. Inner Conductor - The inner conductor shall be uninsulated copper clad aluminum.
- b. Dielectric - The dielectric shall consist of Type III expanded foam. Polyethylene before foaming shall meet the requirements of federal specification SP-390 and ASTM specification D-1248. Dielectric shall be bonded to the center conductor with use of adhesive.
- c. Outer Conductor - The outer conductor shall consist of an electrical grade aluminum tube.
- d. Jacket - The jacket compound shall be polyethylene. Carbon black and antioxidant shall be present in proper quantities to result in satisfactory aging characteristics.

632 - CONDUIT RISER, 2" DIA., AS PER PLAN: This item shall be a 2" Conduit Riser, 713.04, except the conventional weatherhead shall be replaced with an 18" section of shrink fit tubing. A drip loop shall be formed with the coaxial cable as it enters the top of the riser, as shown on the 2" Modified Riser Detail, Sheet Number 18C.

632 - SIGNALIZATION, MISC; RAMP METER SIGN: This sign shall be fabricated with black lettering on a Type G yellow background. Copy and layout details are shown on the Surveillance Details and Typical sheet, Sheet 18C.

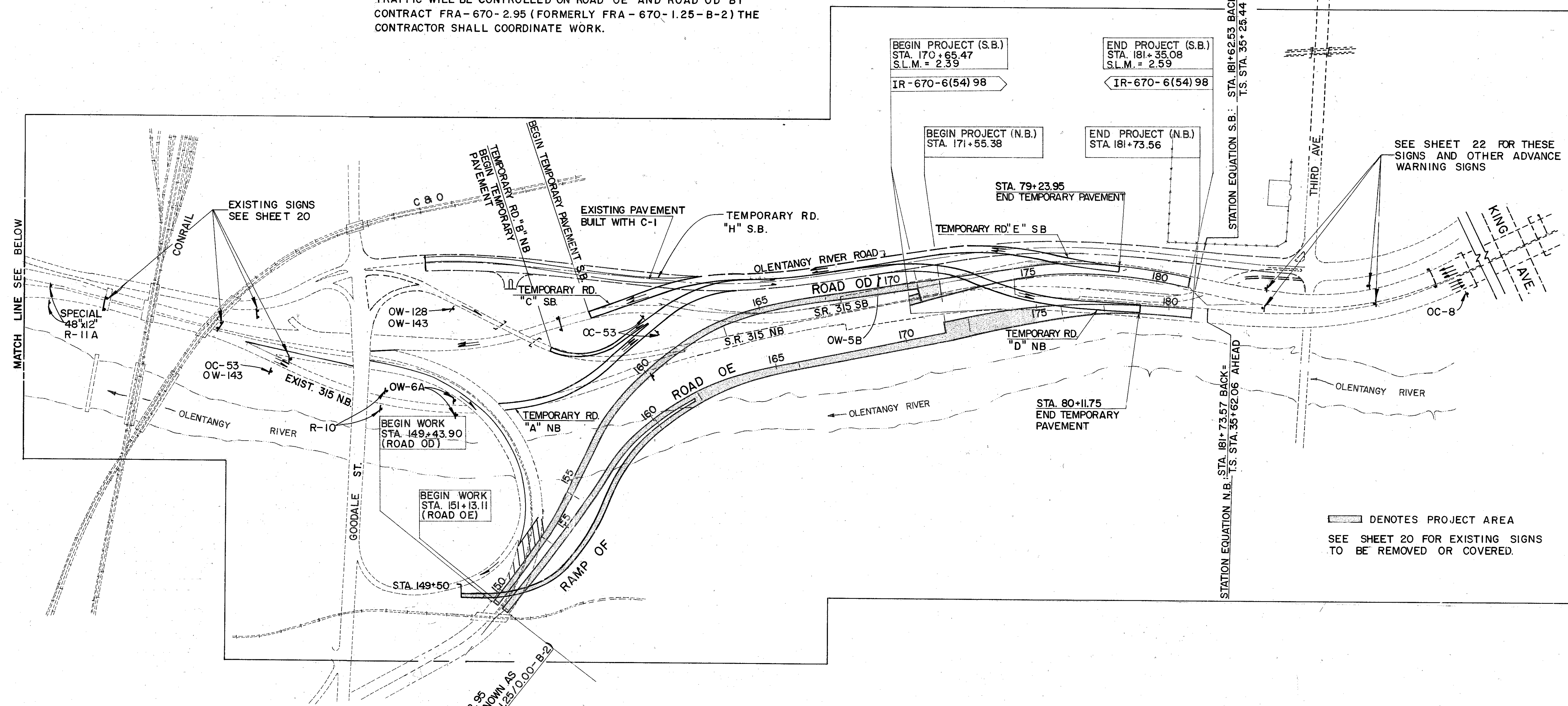
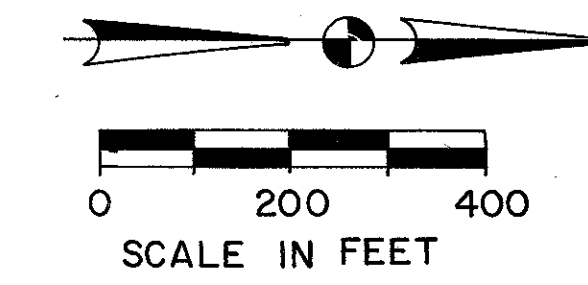
632 - SIGNALIZATION, MISC; CCTV CAMERA: This item shall consist of furnishing and installing all of the hardware and items necessary for a complete CCTV Camera installation, as shown on CCTV Camera Detail sheets 18E and 18F, except the pole, pole foundation and the heavy duty pull box, which are paid for under separate items. All hardware shall be compatible with the City's existing CCTV system and shall be controllable with the existing equipment in the Traffic Engineering Computer Room without modification of the existing CCTV control equipment. All camera equipment shall be the Diamond Electronics parts described on Sheet 18F, or the current equivalent of that part. Any item furnished by the contractor that is not of the specific part number shall be accompanied by a statement from the manufacturer that the substituted part is no longer available, that the substituted part is functionally equivalent to the specified part, that the substituted part can be used to directly replace the specified part anywhere in the City's CCTV system and that the substituted part will function transparently in respect to the other CCTV camera locations in the system.

**PHASE I MAINTENANCE OF TRAFFIC**

SOUTHBOUND AND NORTHBOUND S.R. 315 IS TO BE DIVERTED ONTO TEMPORARY ROADS AFTER THE TEMPORARY ROADS ARE CONSTRUCTED.

FOR PHASE I SEQUENCE OF CONSTRUCTION, SEE SHEET NO. 21

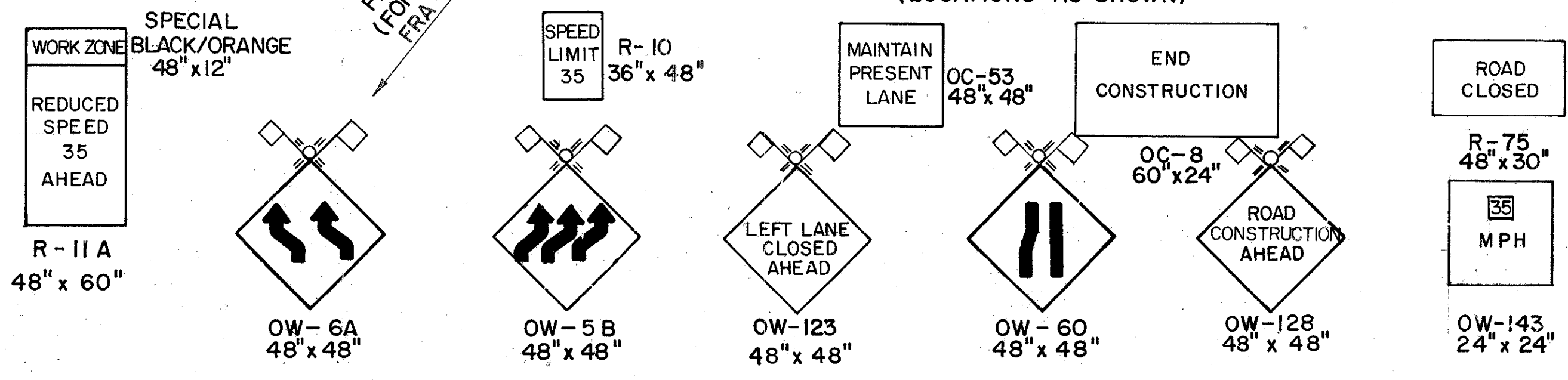
TRAFFIC WILL BE CONTROLLED ON ROAD OE AND ROAD OD BY CONTRACT FRA-670-2.95 (FORMERLY FRA-670-1.25-B-2) THE CONTRACTOR SHALL COORDINATE WORK.



SEE SHEET 22 FOR THESE SIGNS AND OTHER ADVANCE WARNING SIGNS

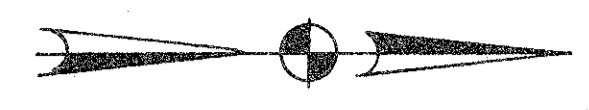
▨ DENOTES PROJECT AREA  
SEE SHEET 20 FOR EXISTING SIGNS TO BE REMOVED OR COVERED.

**ROAD CONSTRUCTION SIGNS (LOCATIONS AS SHOWN)**

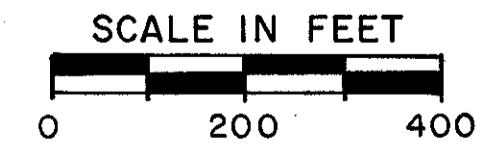
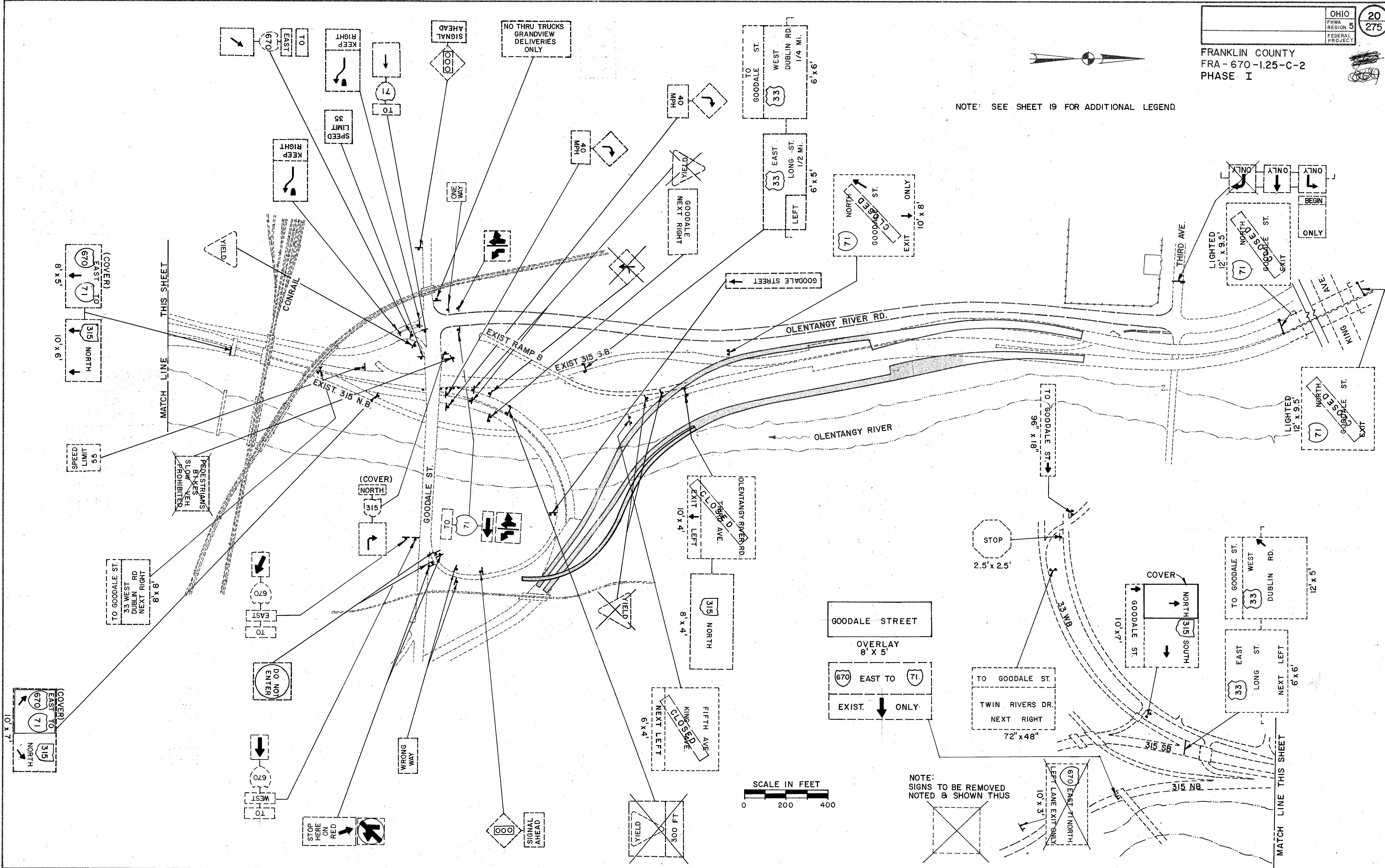


NOTE: HIGH INTENSITY FLAGS AND FLASHING TYPE A LIGHTS SHALL BE DISPLAYED WITH ALL OW DIAMONDS

FRANKLIN COUNTY  
FRA-670-1.25-C-2  
PHASE I

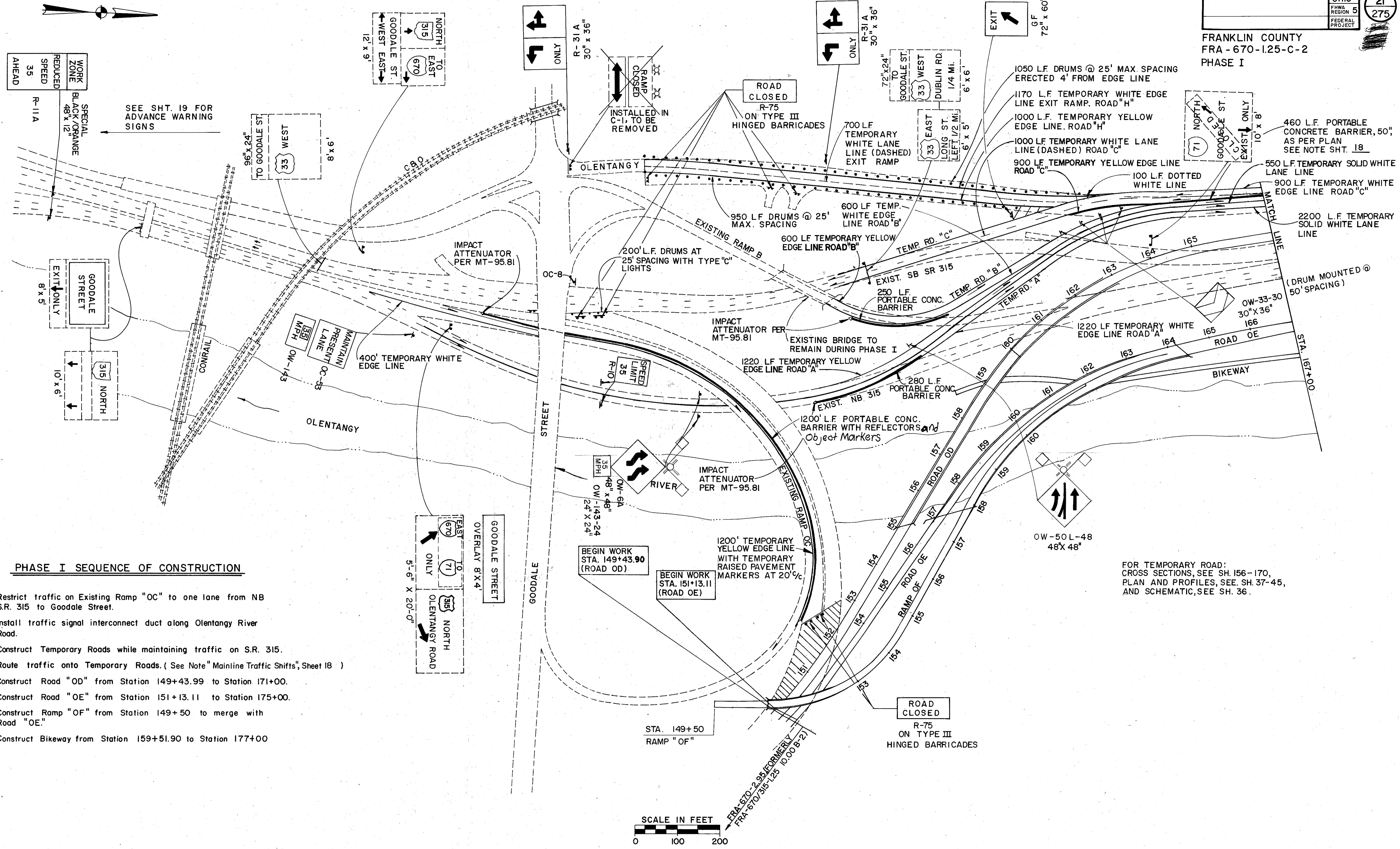


NOTE: SEE SHEET 19 FOR ADDITIONAL LEGEND.



NOTE:  
SIGNS TO BE REMOVED  
NOTED & SHOWN THUS

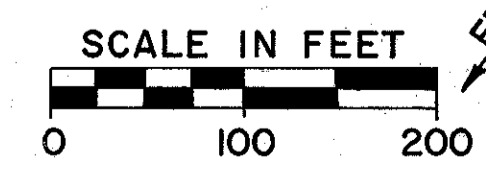
C-2 PHASE I EXISTING SIGNS TO BE REMOVED OR COVERED



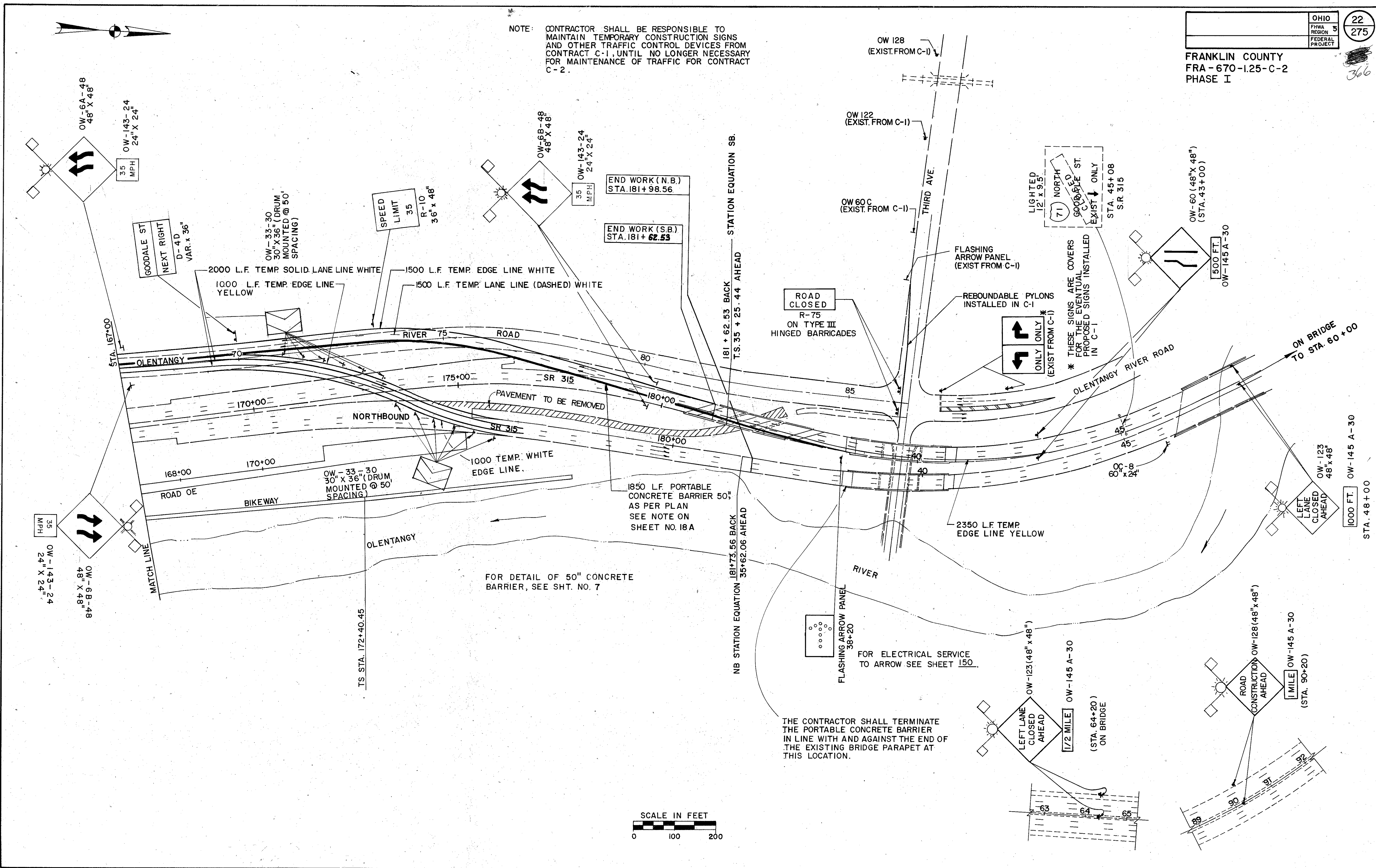
**PHASE I SEQUENCE OF CONSTRUCTION**

1. Restrict traffic on Existing Ramp "OC" to one lane from NB S.R. 315 to Gooddale Street.
2. Install traffic signal interconnect duct along Olentangy River Road.
3. Construct Temporary Roads while maintaining traffic on S.R. 315.
4. Route traffic onto Temporary Roads. ( See Note " Mainline Traffic Shifts", Sheet 18 )
5. Construct Road "OD" from Station 149+43.99 to Station 171+00.
6. Construct Road "OE" from Station 151+13.11 to Station 175+00.
7. Construct Ramp "OF" from Station 149+50 to merge with Road "OE."
8. Construct Bikeway from Station 159+51.90 to Station 177+00

FOR TEMPORARY ROAD:  
 CROSS SECTIONS, SEE SH. 156-170,  
 PLAN AND PROFILES, SEE. SH. 37-45,  
 AND SCHEMATIC, SEE SH. 36.



NOTE: CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN TEMPORARY CONSTRUCTION SIGNS AND OTHER TRAFFIC CONTROL DEVICES FROM CONTRACT C-1, UNTIL NO LONGER NECESSARY FOR MAINTENANCE OF TRAFFIC FOR CONTRACT C-2.



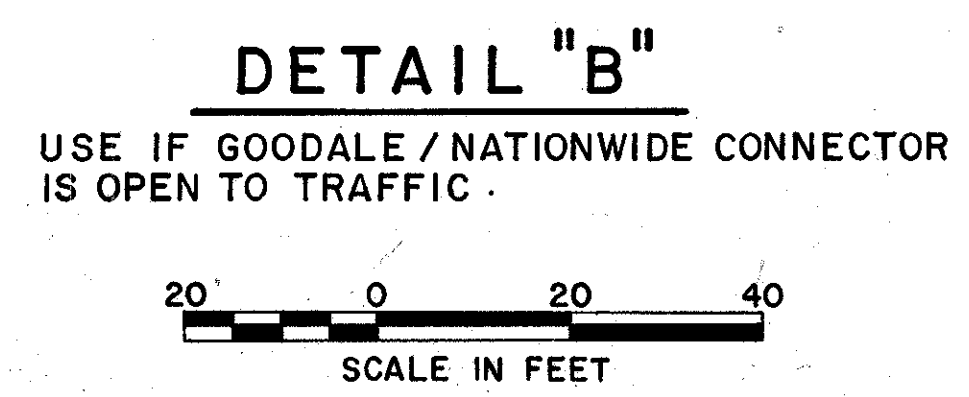
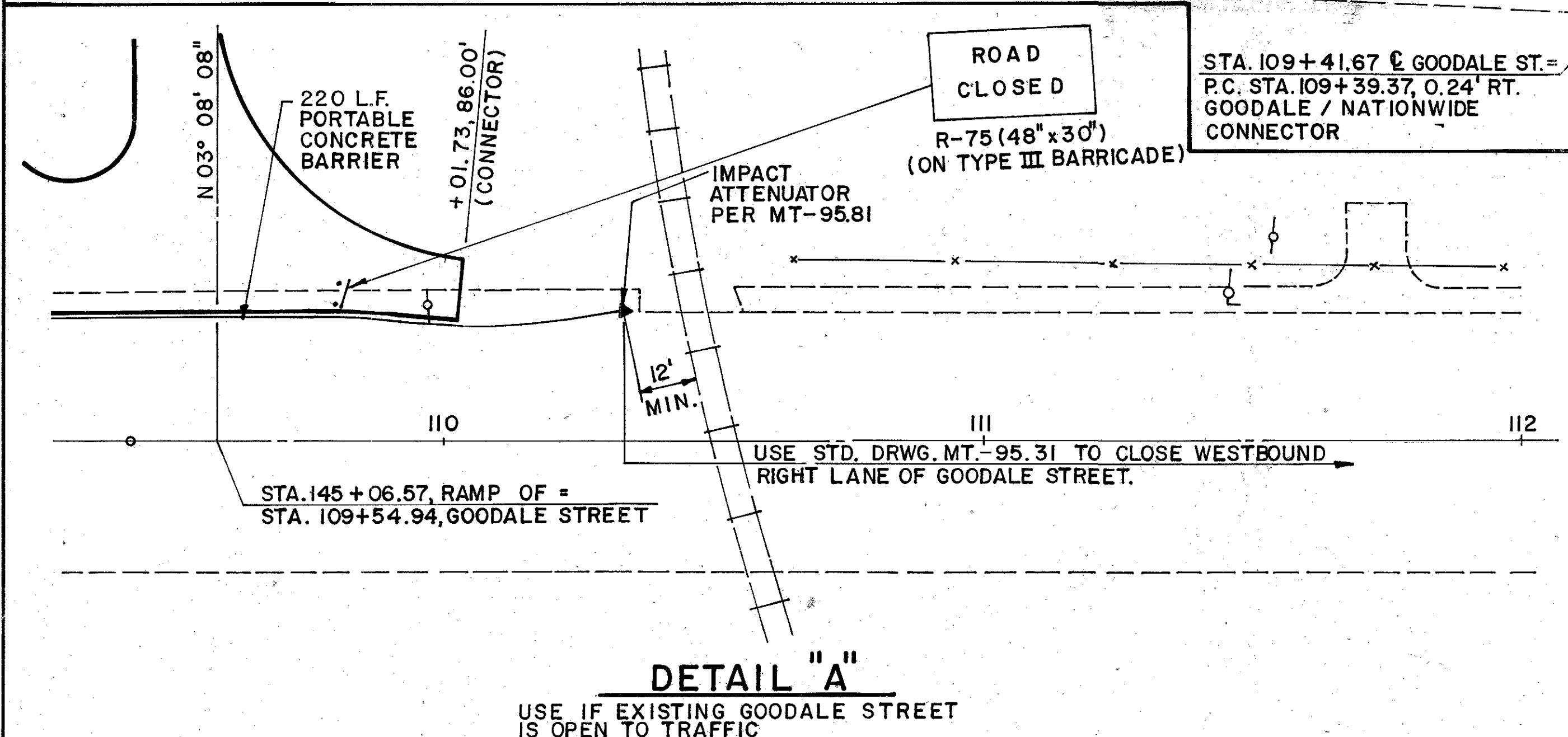
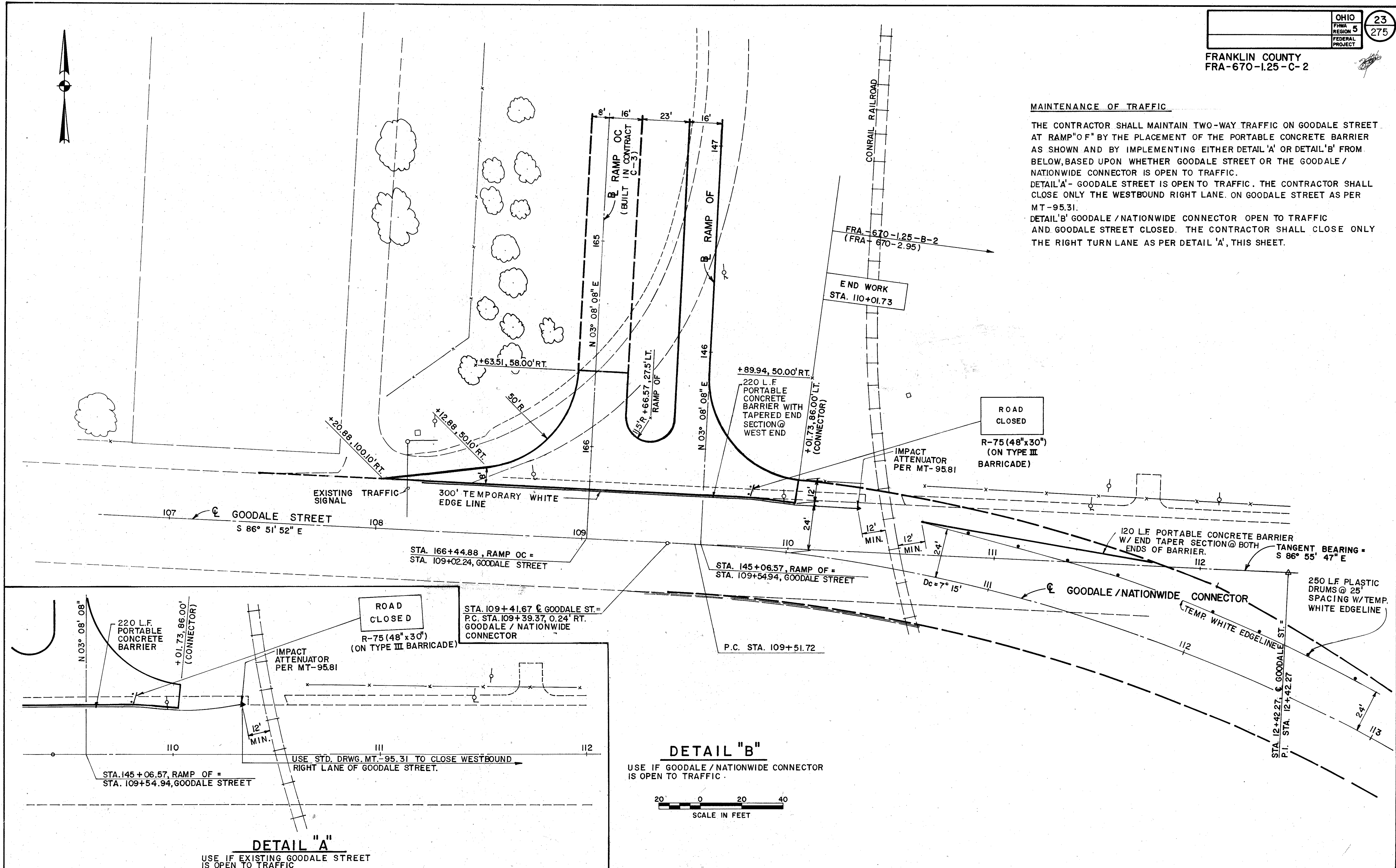
C-2 PHASE I MAINTENANCE OF TRAFFIC— STA. 167+00 TO STA. 60+00

**MAINTENANCE OF TRAFFIC**

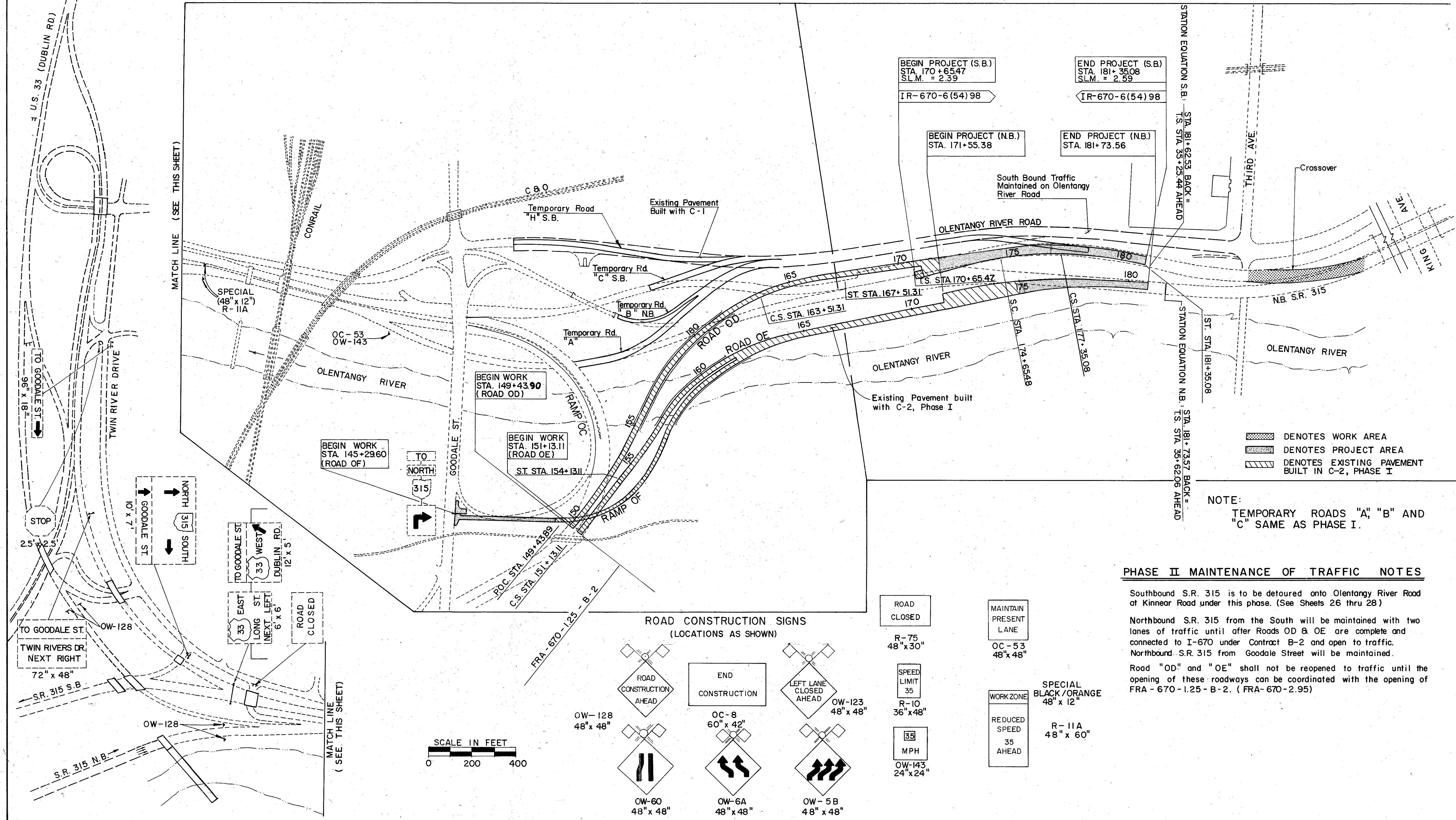
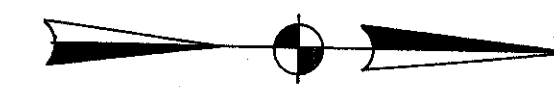
THE CONTRACTOR SHALL MAINTAIN TWO-WAY TRAFFIC ON GOODALE STREET AT RAMP "O F" BY THE PLACEMENT OF THE PORTABLE CONCRETE BARRIER AS SHOWN AND BY IMPLEMENTING EITHER DETAIL "A" OR DETAIL "B" FROM BELOW, BASED UPON WHETHER GOODALE STREET OR THE GOODALE / NATIONWIDE CONNECTOR IS OPEN TO TRAFFIC.

DETAIL "A" - GOODALE STREET IS OPEN TO TRAFFIC. THE CONTRACTOR SHALL CLOSE ONLY THE WESTBOUND RIGHT LANE ON GOODALE STREET AS PER MT-95.31.

DETAIL "B" - GOODALE / NATIONWIDE CONNECTOR OPEN TO TRAFFIC AND GOODALE STREET CLOSED. THE CONTRACTOR SHALL CLOSE ONLY THE RIGHT TURN LANE AS PER DETAIL "A", THIS SHEET.







- DENOTES WORK AREA
- DENOTES PROJECT AREA
- DENOTES EXISTING PAVEMENT BUILT IN C-2, PHASE I

NOTE:  
TEMPORARY ROADS "A", "B" AND "C" SAME AS PHASE I.

**PHASE II MAINTENANCE OF TRAFFIC NOTES**

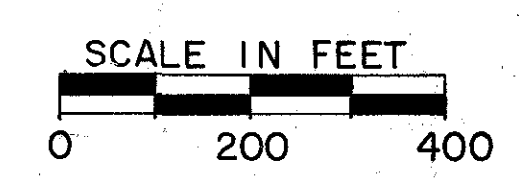
Southbound S.R. 315 is to be detoured onto Olentangy River Road at Kinnear Road under this phase. (See Sheets 26 thru 28)

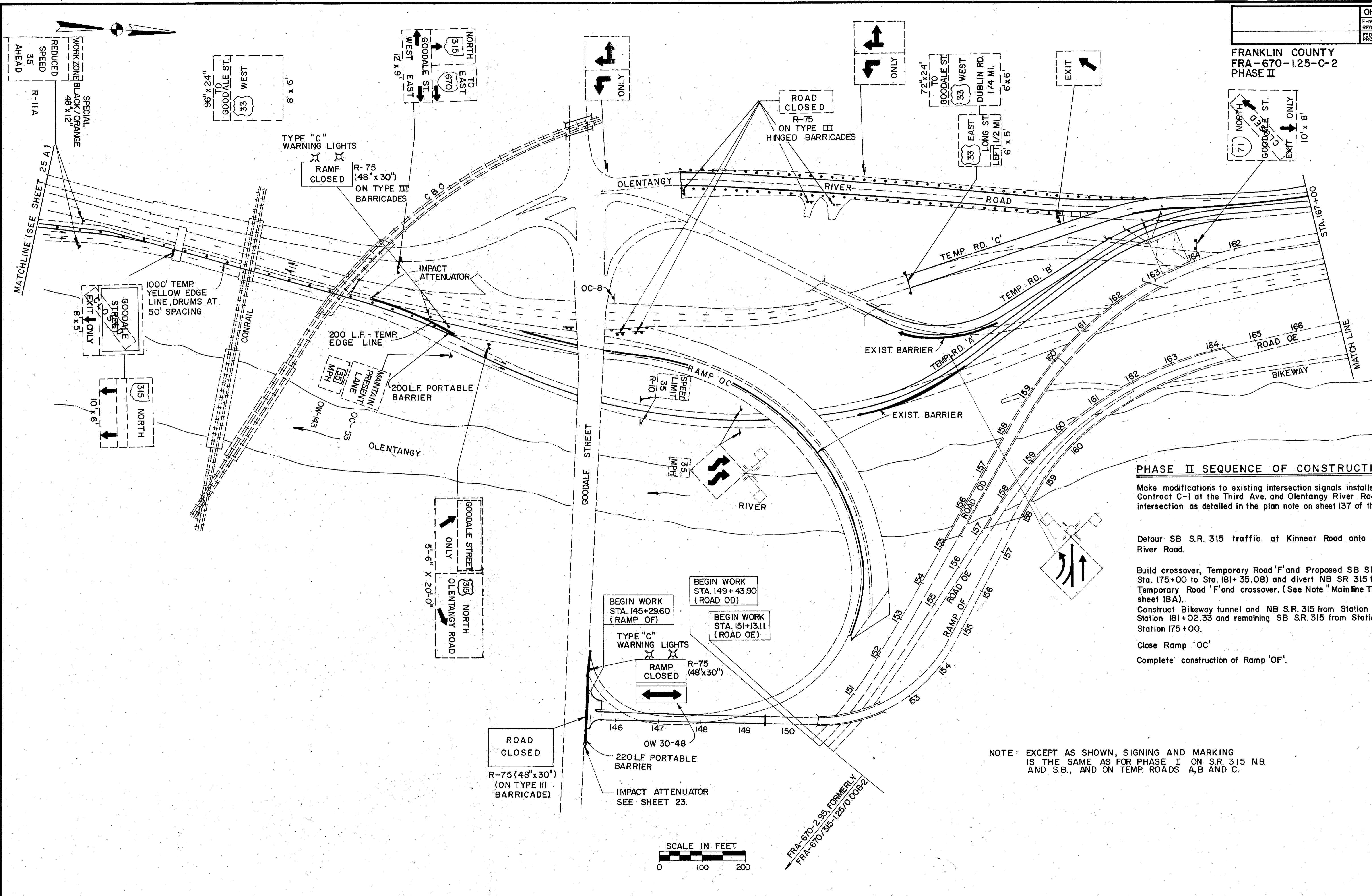
Northbound S.R. 315 from the South will be maintained with two lanes of traffic until after Roads OD & OE are complete and connected to I-670 under Contract B-2 and open to traffic. Northbound S.R. 315 from Goodale Street will be maintained.

Road "OD" and "OE" shall not be reopened to traffic until the opening of these roadways can be coordinated with the opening of FRA-670-1.25-B-2. (FRA-670-2.95)

**ROAD CONSTRUCTION SIGNS (LOCATIONS AS SHOWN)**

 R-75 48" x 30"	 OC-53 48" x 48"
 R-10 36" x 48"	 R-11A 48" x 60"
 OW-128 48" x 48"	 OC-8 60" x 42"
 OW-123 48" x 48"	 OW-60 48" x 48"
 R-11A 48" x 60"	 OW-6A 48" x 48"
 OW-143 24" x 24"	 OW-5B 48" x 48"





**PHASE II SEQUENCE OF CONSTRUCTION**

Make modifications to existing intersection signals installed under Contract C-1 at the Third Ave. and Olentangy River Road intersection as detailed in the plan note on sheet 137 of these plans.

Detour SB S.R. 315 traffic at Kinnear Road onto Olentangy River Road.

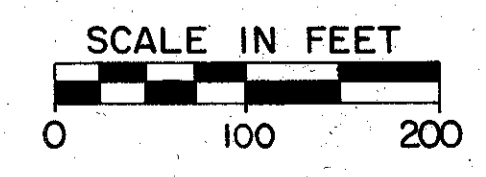
Build crossover, Temporary Road 'F' and Proposed SB SR 315 (from Sta. 175+00 to Sta. 181+35.08) and divert NB SR 315 traffic onto Temporary Road 'F' and crossover. (See Note "Mainline Traffic Shifts, sheet 18A).

Construct Bikeway tunnel and NB S.R. 315 from Station 175+00 to Station 181+02.33 and remaining SB S.R. 315 from Station 171+00 to Station 175+00.

Close Ramp 'OC'

Complete construction of Ramp 'OF'.

NOTE: EXCEPT AS SHOWN, SIGNING AND MARKING IS THE SAME AS FOR PHASE I ON S.R. 315 N.B. AND S.B., AND ON TEMP. ROADS A, B AND C.



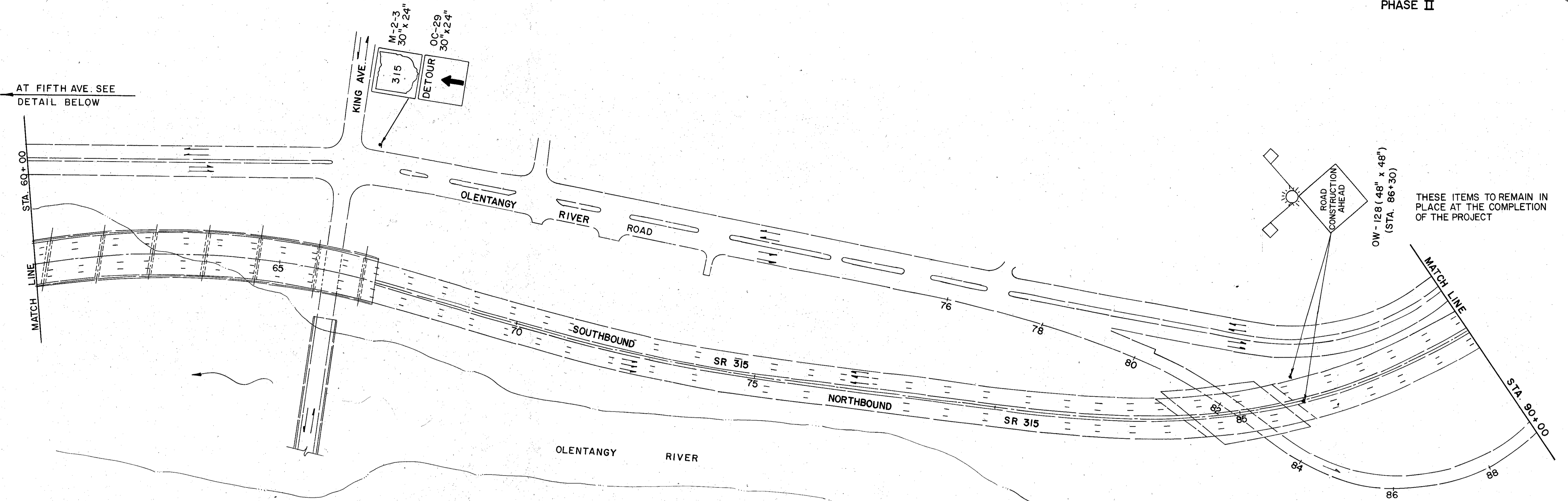
FRA-670-2.85 FORMERLY  
 FRA-670-386-125-000B2



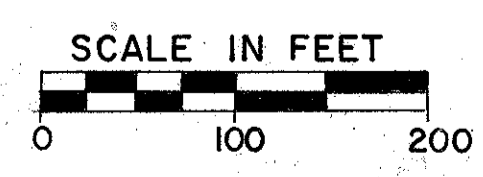
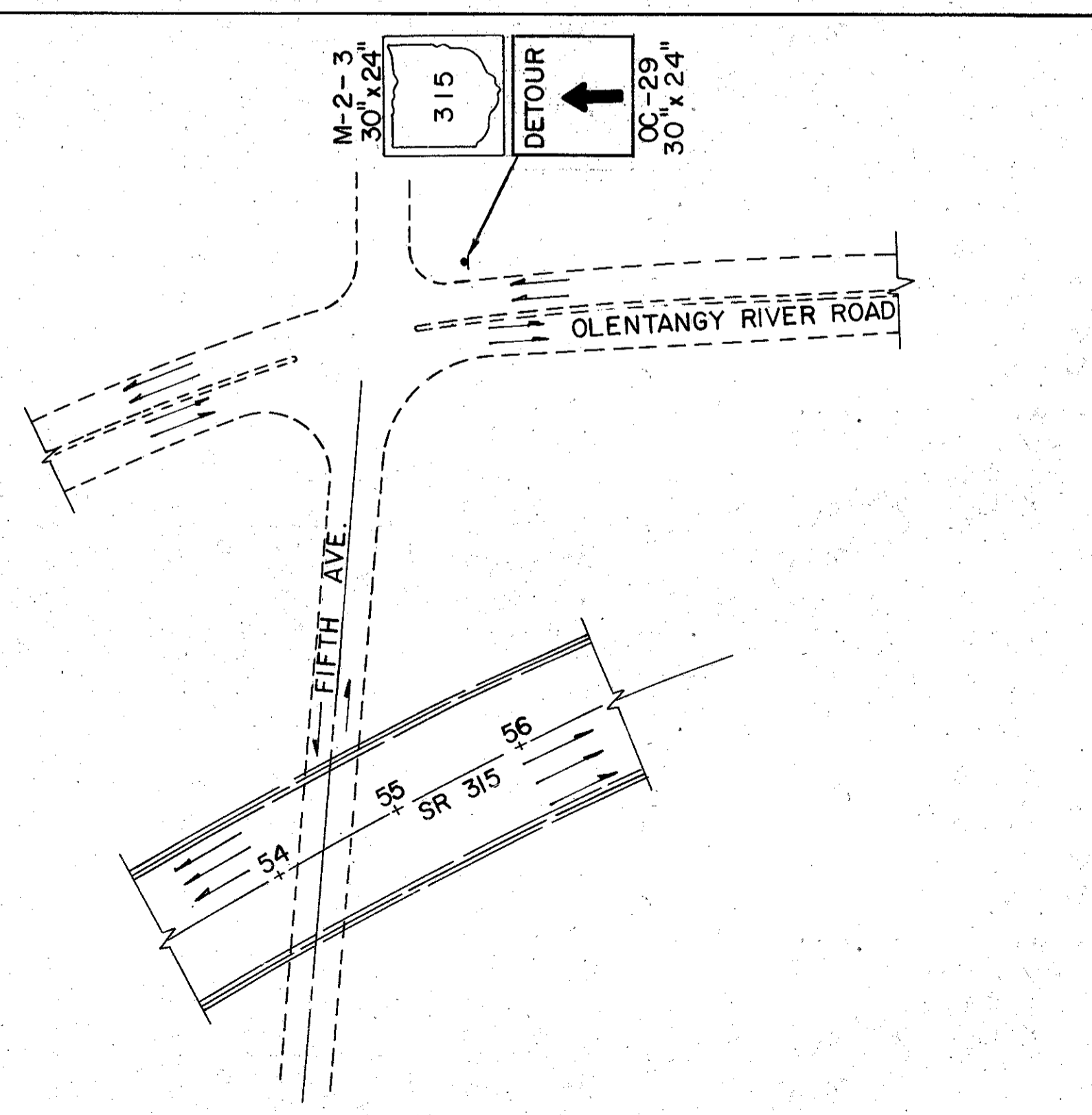


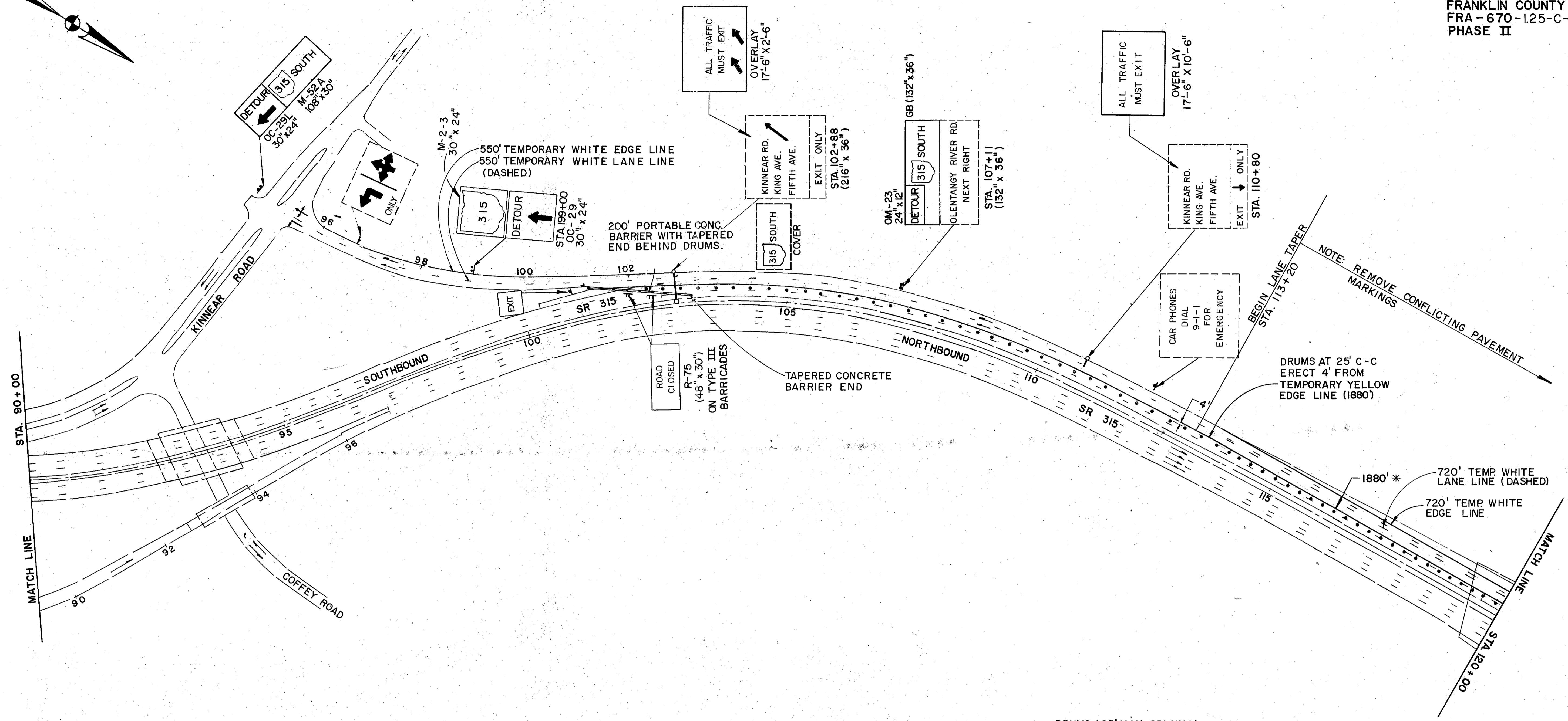
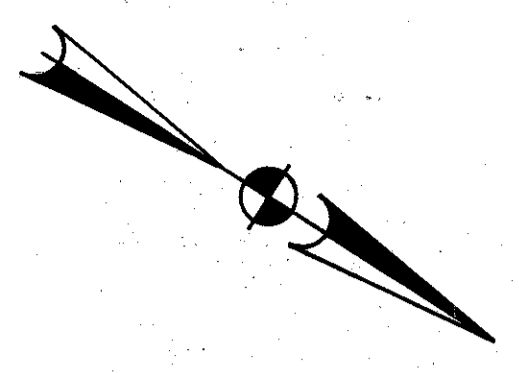


AT FIFTH AVE. SEE  
 DETAIL BELOW

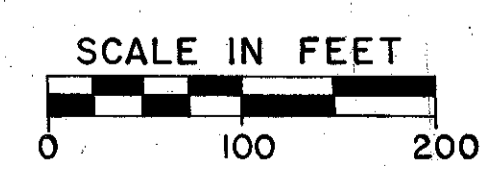


THESE ITEMS TO REMAIN IN PLACE AT THE COMPLETION OF THE PROJECT





\*DRUMS (25' MAX. SPACING)





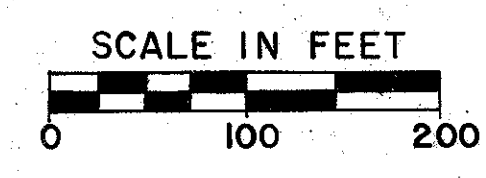
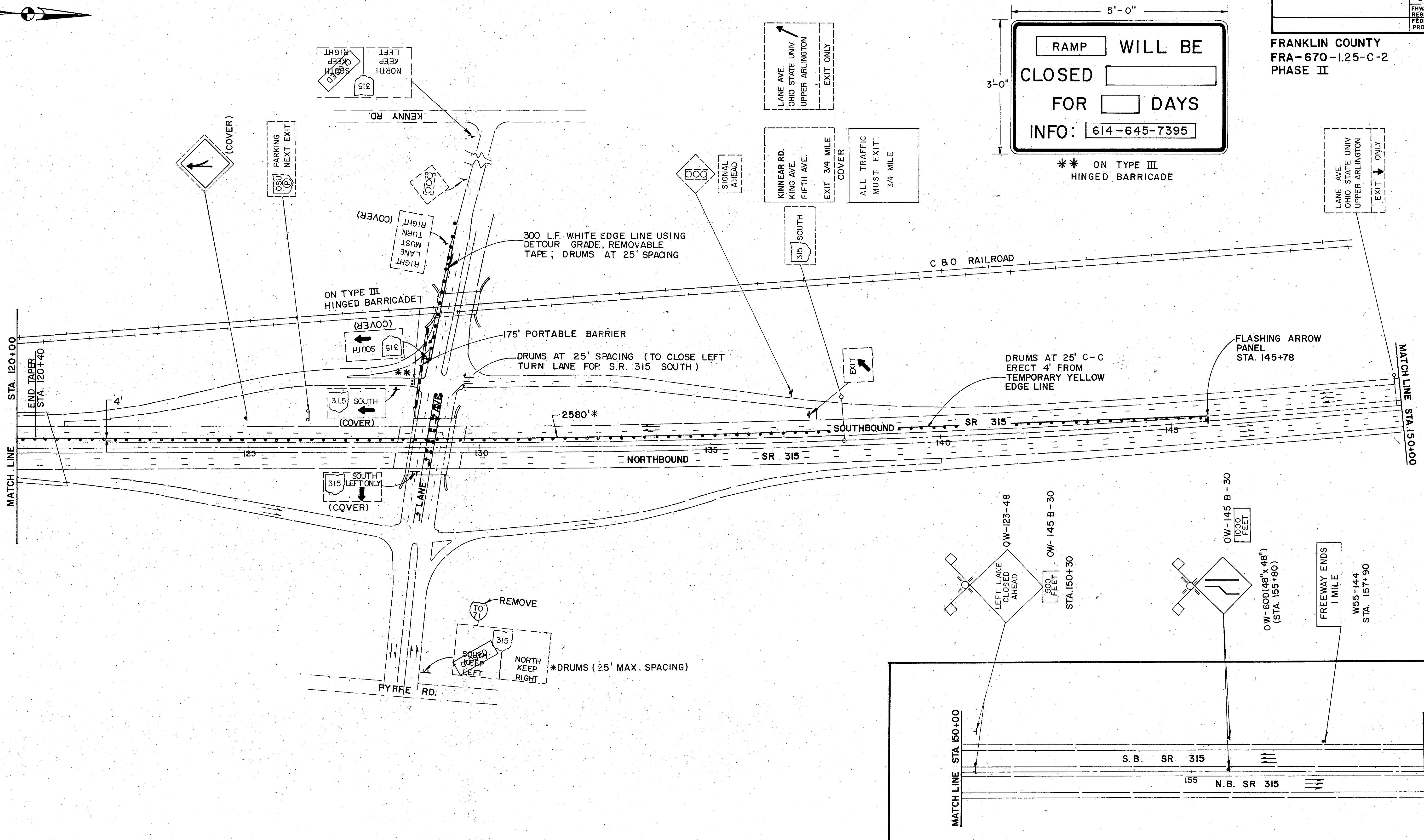
FRANKLIN COUNTY  
 FRA-670-1.25-C-2  
 PHASE II

5'-0"

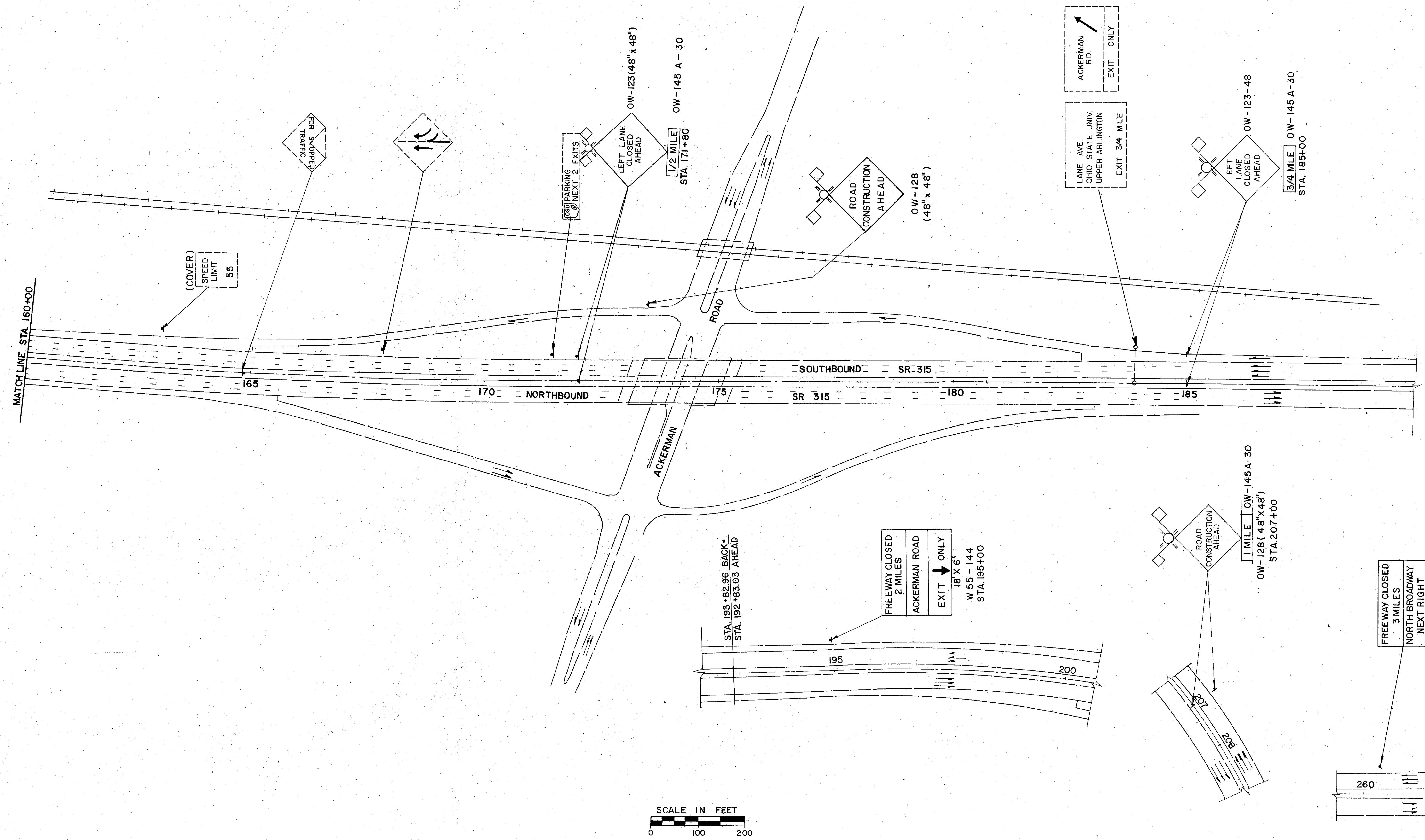
3'-0"

RAMP WILL BE  
 CLOSED [ ]  
 FOR [ ] DAYS  
 INFO: 614-645-7395

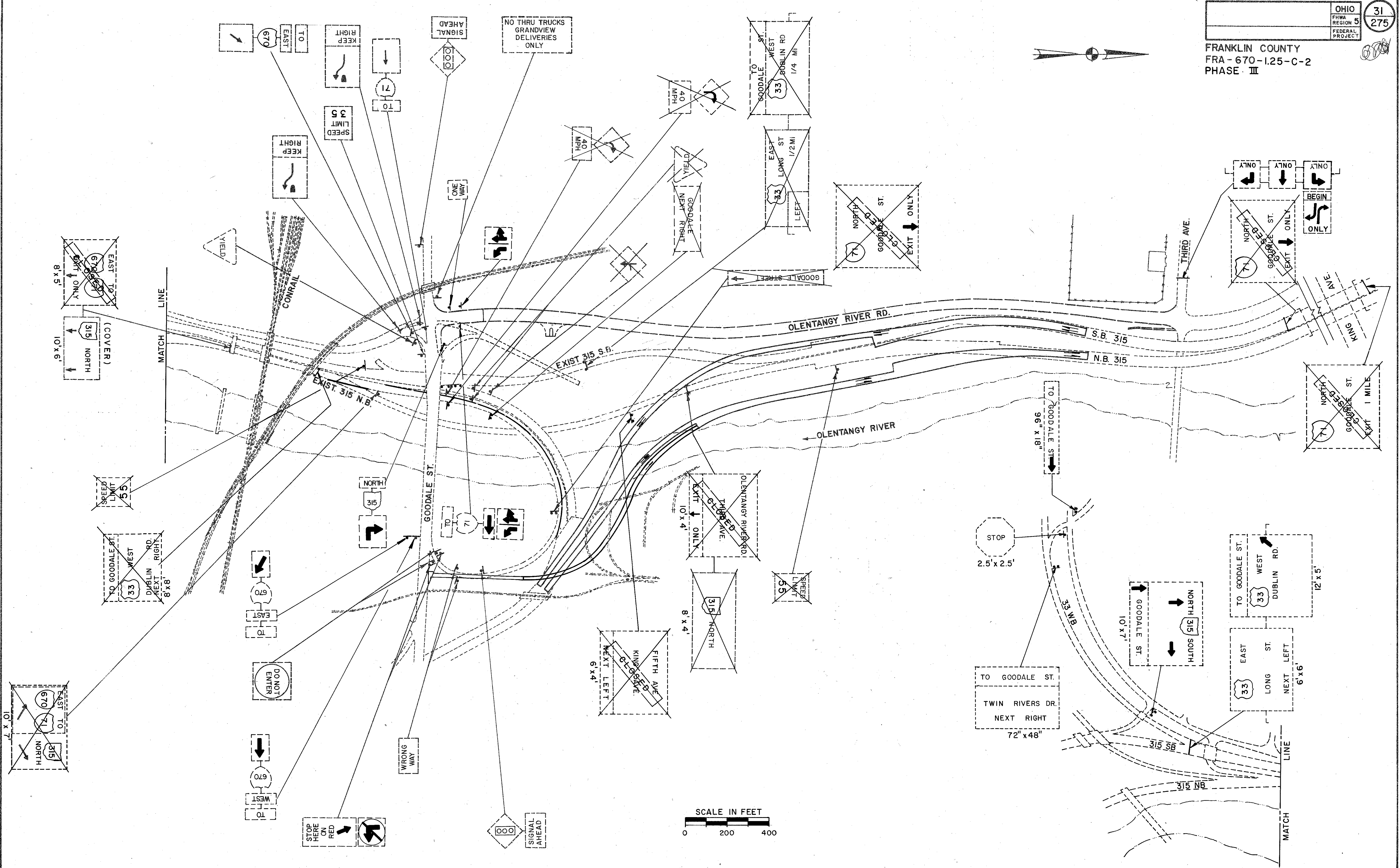
\*\* ON TYPE III  
 HINGED BARRICADE



FRANKLIN COUNTY  
 FRA-670-1.25-C-2  
 PHASE II



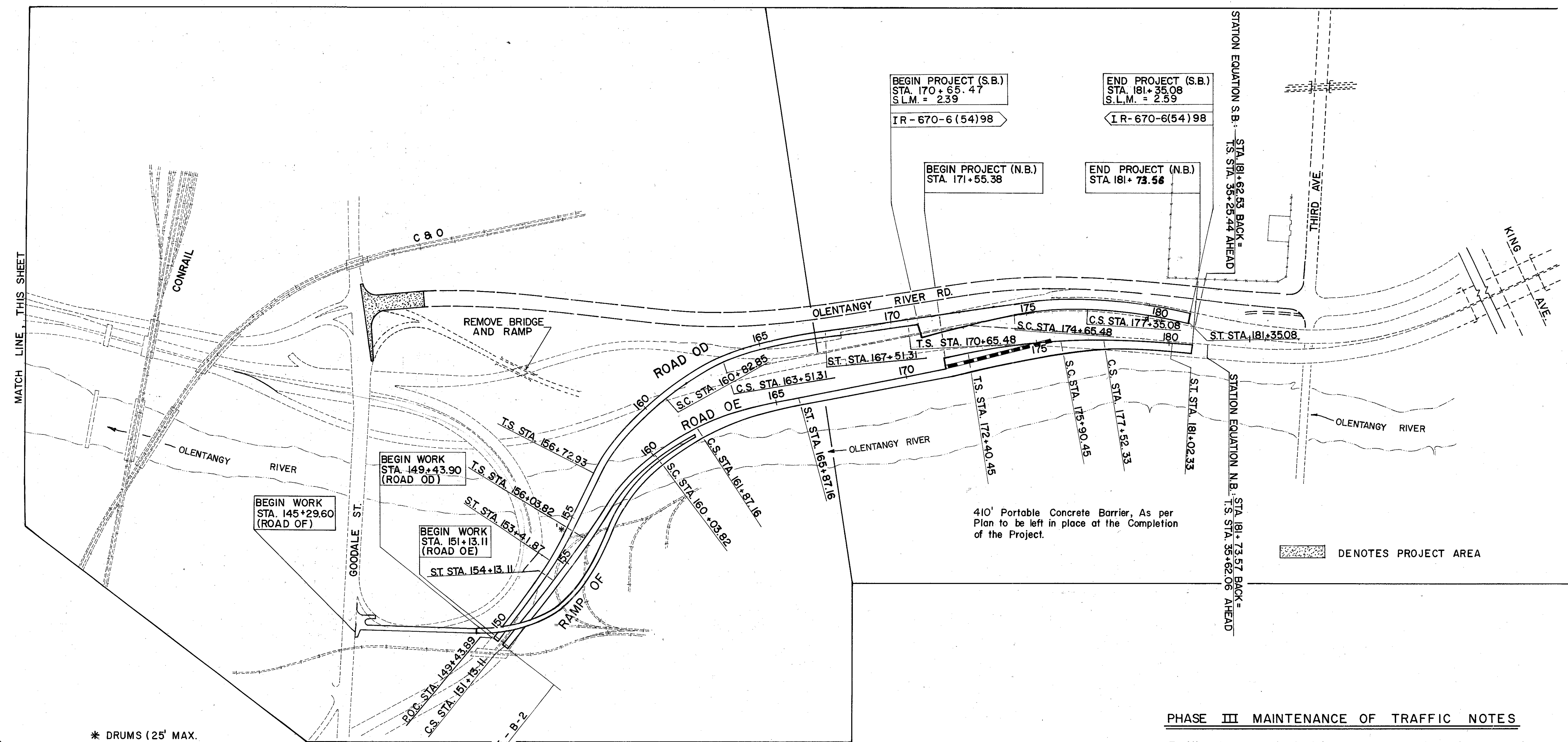




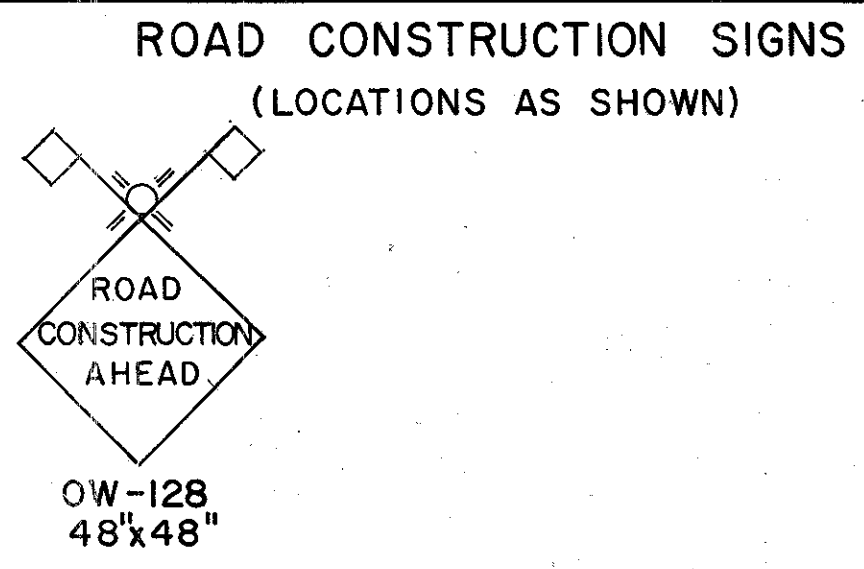
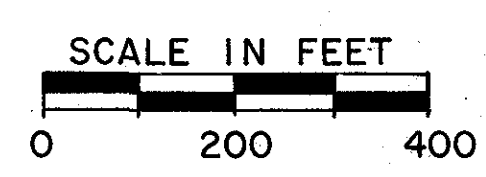
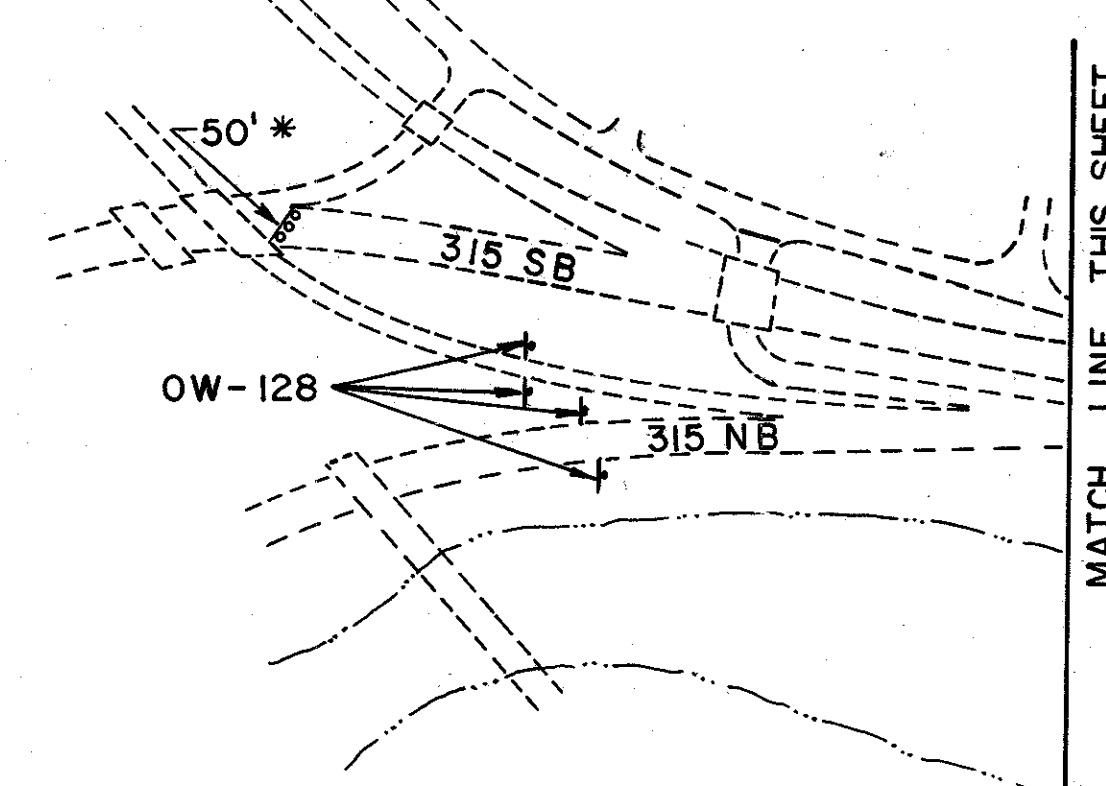
C-2 PHASE III EXISTING SIGNS TO BE REMOVED



FRANKLIN COUNTY  
FRA-670-1.25-C-2  
PHASE III



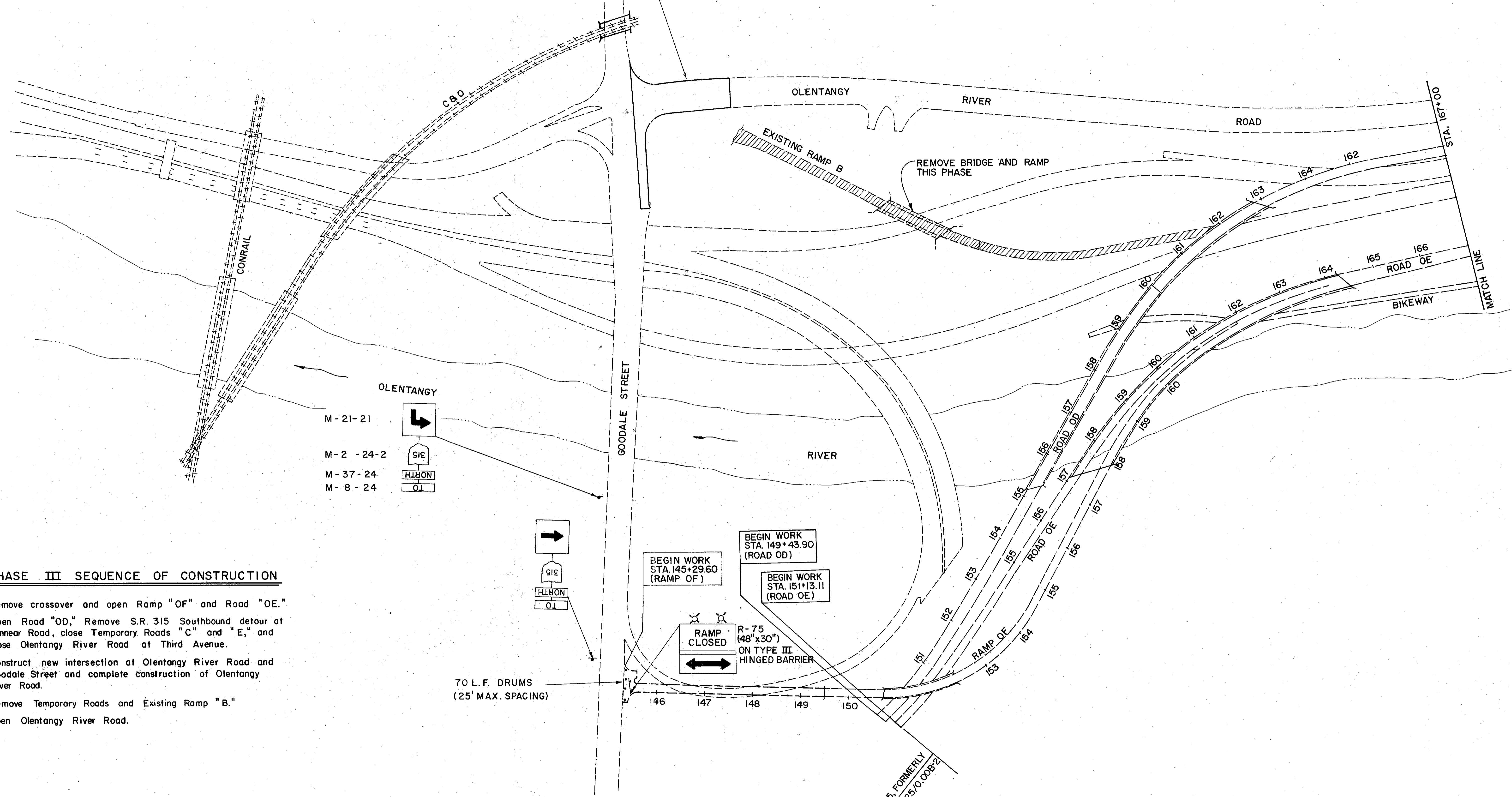
\* DRUMS (25' MAX. SPACING)



PHASE III MAINTENANCE OF TRAFFIC NOTES

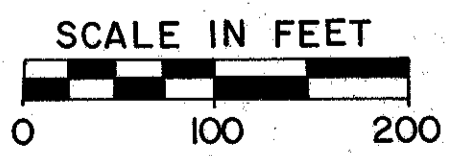
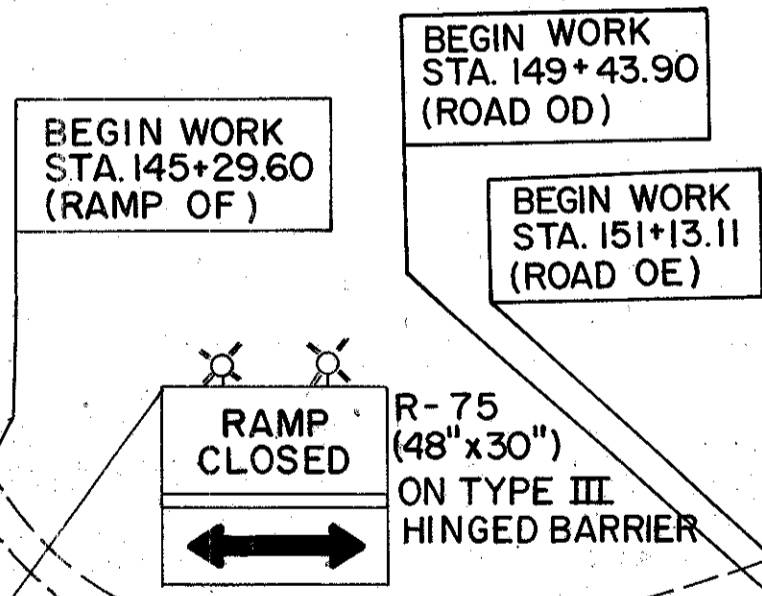
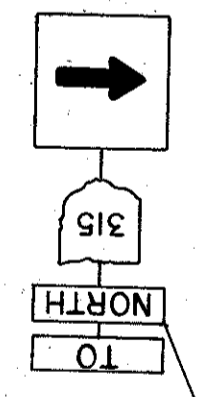
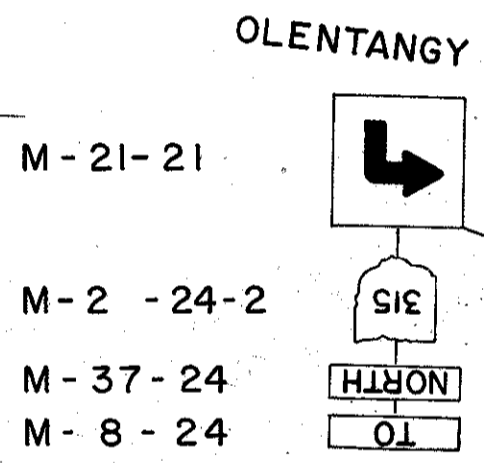
Traffic shall be maintained as per the Phase II Maintenance of Traffic Plan until such time as the opening of Road "OD", "OE" and Ramp "OF" can be coordinated with the opening of FRA-670-2.95 (Formerly FRA-670/1.25-B-2) and S.R. 315 through Contract FRA-670/315-2.12/1.43 (Formerly FRA-670-1.25-A-5) has been closed.

FOR DETAILS SEE SHEET 34

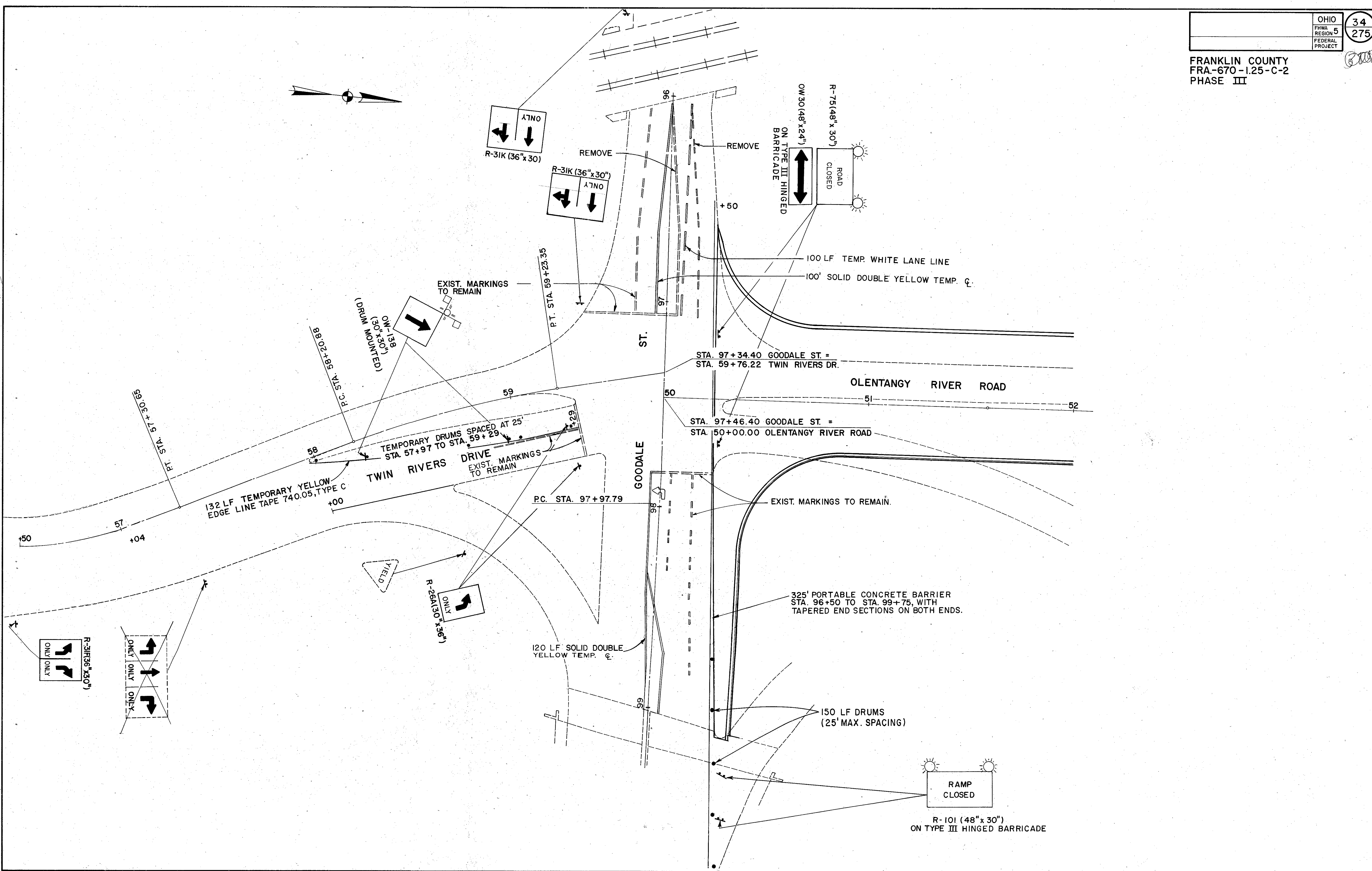


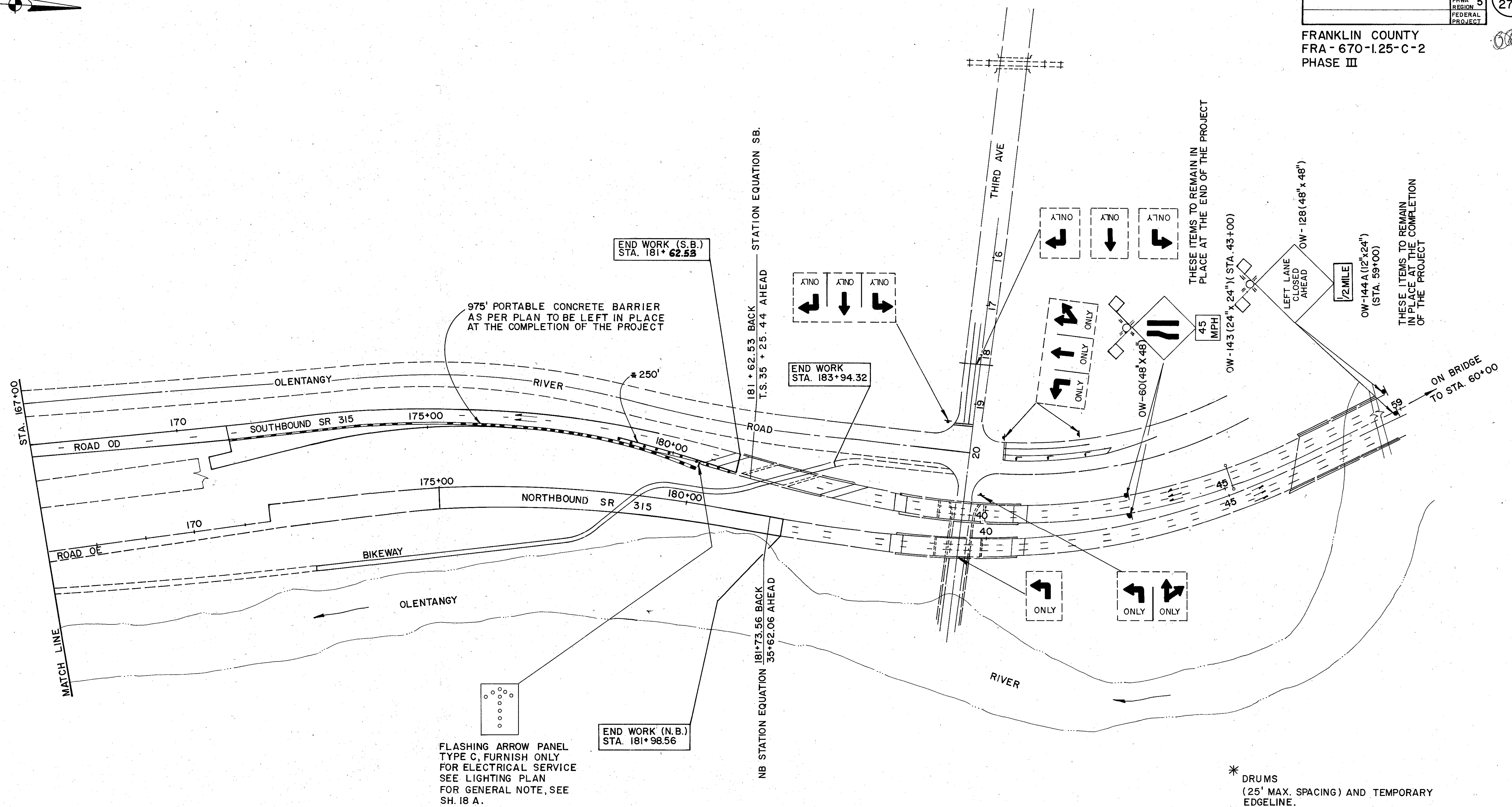
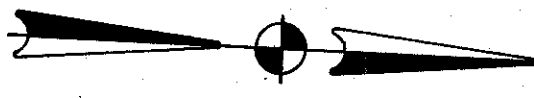
**PHASE III SEQUENCE OF CONSTRUCTION**

1. Remove crossover and open Ramp "OF" and Road "OE."
2. Open Road "OD," Remove S.R. 315 Southbound detour at Kinnear Road, close Temporary Roads "C" and "E," and close Olentangy River Road at Third Avenue.
3. Construct new intersection at Olentangy River Road and Goodale Street and complete construction of Olentangy River Road.
4. Remove Temporary Roads and Existing Ramp "B."
5. Open Olentangy River Road.



FRA-670-2.95 FORMERLY  
FRA-670/315-1.25/0.008-2

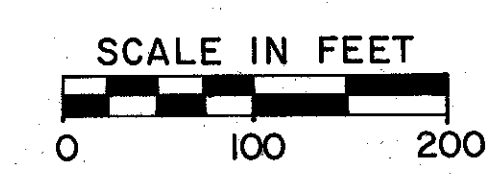




FLASHING ARROW PANEL TYPE C, FURNISH ONLY FOR ELECTRICAL SERVICE SEE LIGHTING PLAN FOR GENERAL NOTE, SEE SH. 18 A.

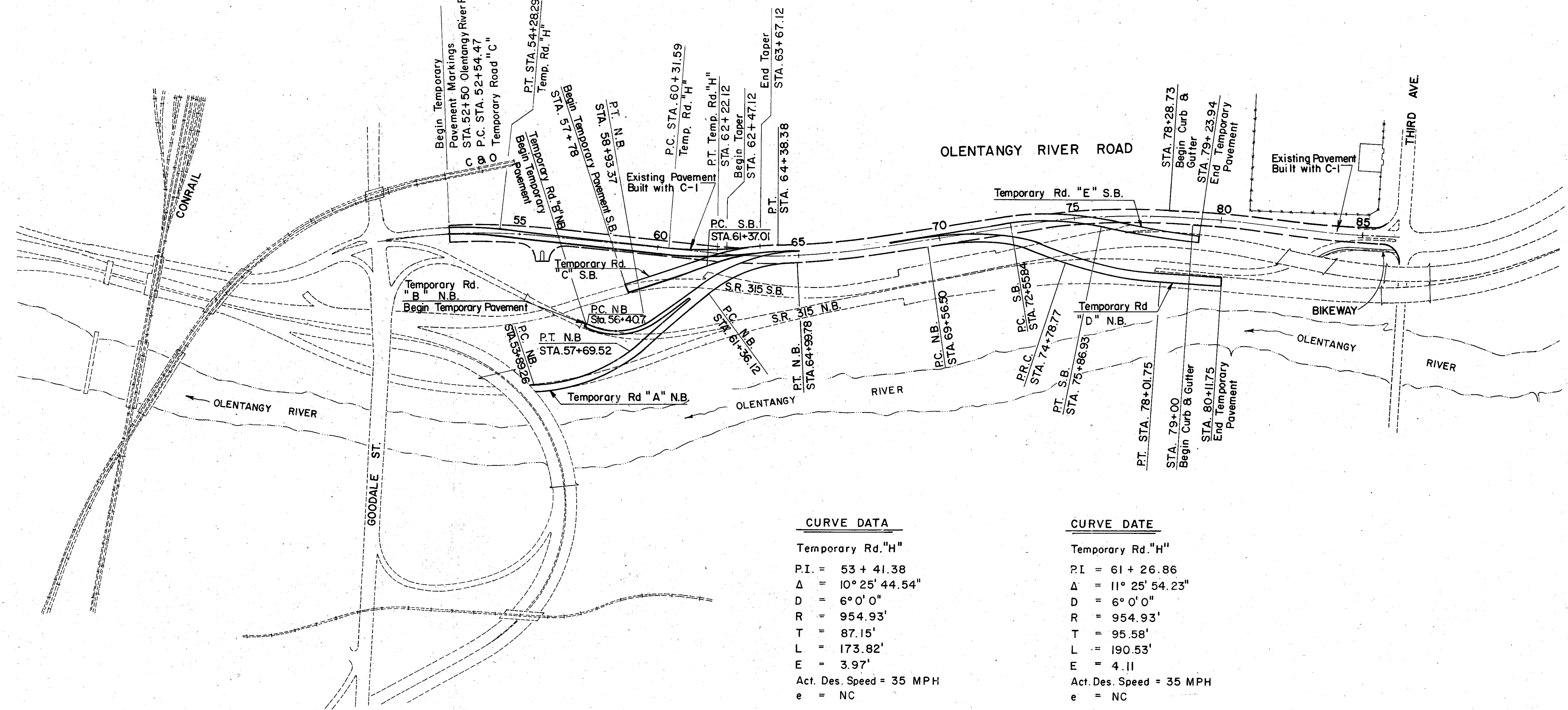
\* DRUMS (25' MAX. SPACING) AND TEMPORARY EDGELINE.

NOTE: USE SIGNS AND TRAFFIC CONTROL DEVICES AS SHOWN ON SHEET 22 TO CLOSE OLENTANGY RIVER ROAD SOUTH AT THIRD AVENUE IN ORDER TO PERFORM INTERSECTION CONSTRUCTION AT GOODALE AVENUE AND OLENTANGY RIVER ROAD AS SHOWN ON SHEET 34.





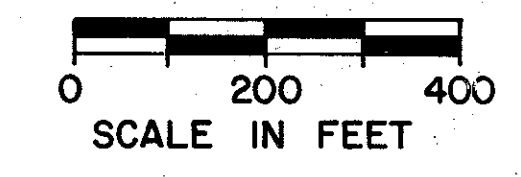
CURVE DATA		CURVE DATA		CURVE DATA		CURVE DATA		CURVE DATA		CURVE DATA		CURVE DATA	
Temporary Rd. "A"		Temporary Rd. "A"		Temporary Rd. "B"		Temporary Rd. "C"		Temporary Rd. "D"		Temporary Rd. "D"		Temporary Rd. "E"	
P.I. = STA. 55+85.23	P.I. = STA. 63+24.31	P.I. = STA. 57+77.97	P.I. = STA. 62+88.96	P.I. = STA. 72+24.38	P.I. = STA. 76+41.83	P.I. = STA. 74+23.10							
$\Delta = 34^\circ 13' 12.0''$	$\Delta = 36^\circ 21' 57.6''$	$\Delta = 55^\circ 35' 38.4''$	$\Delta = 18^\circ 4' 55.92''$	$\Delta = 18^\circ 4' 20' 24.0''$	$\Delta = 19^\circ 22' 48.0''$	$\Delta = 19^\circ 22' 48.0''$							
D = 9° 0' 0.0"	D = 10° 0' 0.0"	D = 22° 0' 0.0"	D = 6° 0' 0.0"	D = 6° 0' 0.0"	D = 6° 0' 0.0"	D = 6° 0' 0.0"							
R = 636.62'	R = 572.96'	R = 260.44'	R = 954.93'	R = 954.53'	R = 954.93'	R = 954.93'							
T = 195.97'	T = 188.19'	T = 137.30'	T = 151.95'	T = 151.95'	T = 163.06'	T = 167.26'							
L = 380.26'	L = 363.66'	L = 252.70'	L = 301.37'	L = 522.27'	L = 322.98'	L = 331.09'							
E = 1.97'	E = 30.11'	E = 33.97'	E = 12.02'	E = 36.86'	E = 13.82'	E = 14.54'							
Act. Des. Speed = 35 M.P.H.	Act. Des. Speed = 35 M.P.H.	Act. Des. Speed = 30 M.P.H.	Act. Des. Speed = 35 M.P.H.	Act. Des. Speed = 35 M.P.H.	Act. Des. Speed = 35 M.P.H.	Act. Des. Speed = 35 M.P.H.							
e = 0.022 ft./ft.	e = 0.024 ft./ft.	e = 0.035	e = NC	e = NC	e = NC	e = NC							



CURVE DATA		CURVE DATA	
Temporary Rd. "H"		Temporary Rd. "H"	
P.I. = 53 + 41.38	P.I. = 61 + 26.86		
$\Delta = 10^\circ 25' 44.54''$	$\Delta = 11^\circ 25' 54.23''$		
D = 6° 0' 0"	D = 6° 0' 0"		
R = 954.93'	R = 954.93'		
T = 87.15'	T = 95.58'		
L = 173.82'	L = 190.53'		
E = 3.97'	E = 4.11'		
Act. Des. Speed = 35 MPH	Act. Des. Speed = 35 MPH		
e = NC	e = NC		

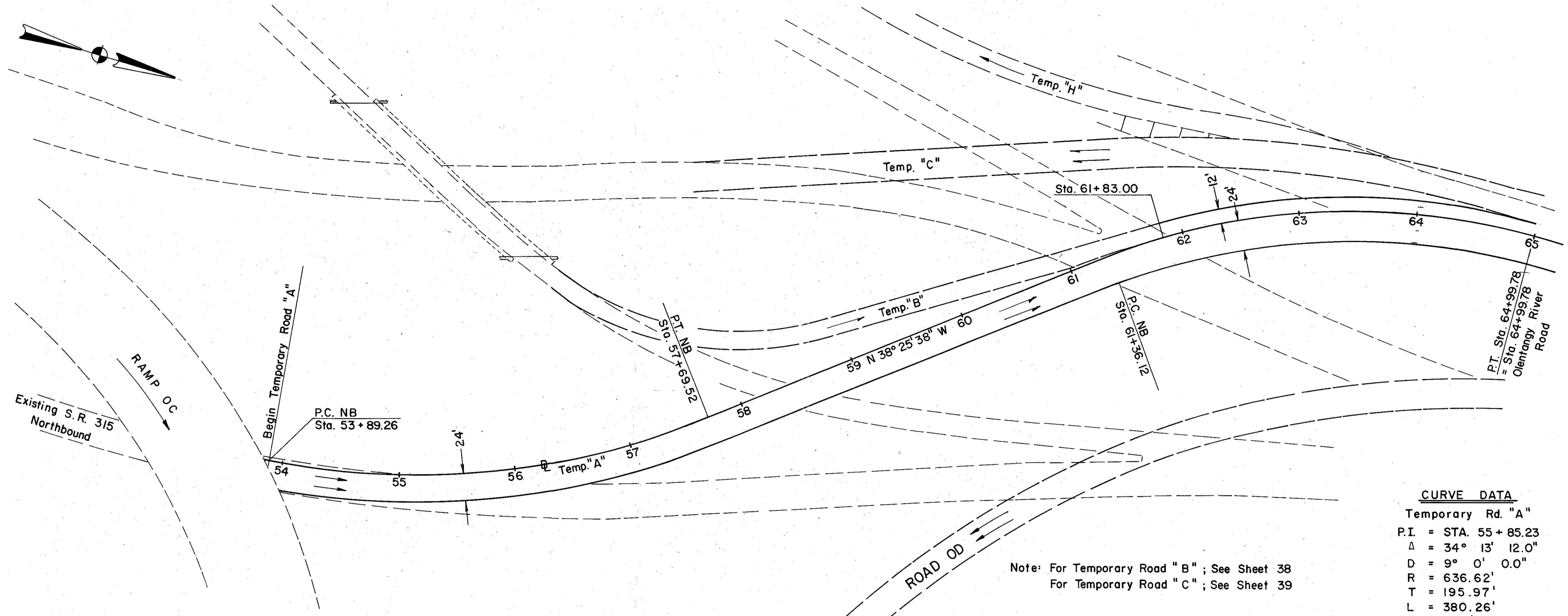
NOTE: SEE SHEETS 37 THRU 45 FOR PLAN & PROFILE OF TEMPORARY ROADS.

TEMPORARY ROADS SCHEMATIC (PHASE I)



FINAL SURVEY PLOTTED DATE 03/08/14

ORIGINAL SURVEY PLOTTED DATE 03/08/14



CURVE DATA		CURVE DATA	
Temporary Rd. "A"		Temporary Rd. "A"	
P.I.	= STA. 55 + 85.23	P.I.	= STA. 63 + 24.31
Δ	= 34° 13' 12.0"	Δ	= 36° 21' 57.6"
D	= 9° 0' 0.0"	D	= 10° 0' 0.0"
R	= 636.62'	R	= 572.96'
T	= 195.97'	T	= 188.19'
L	= 380.26'	L	= 363.66'
E	= 1.97'	E	= 30.11'
Act. Des Speed	= 35 MPH	Act. Des. Speed	= 35 MPH.
e	= 0.022 ft./ft.	e	= 0.024 ft./ft.

Note: For Temporary Road "B"; See Sheet 38  
For Temporary Road "C"; See Sheet 39

Class A Pavement =  
Approx. 2890 Sq. Yd

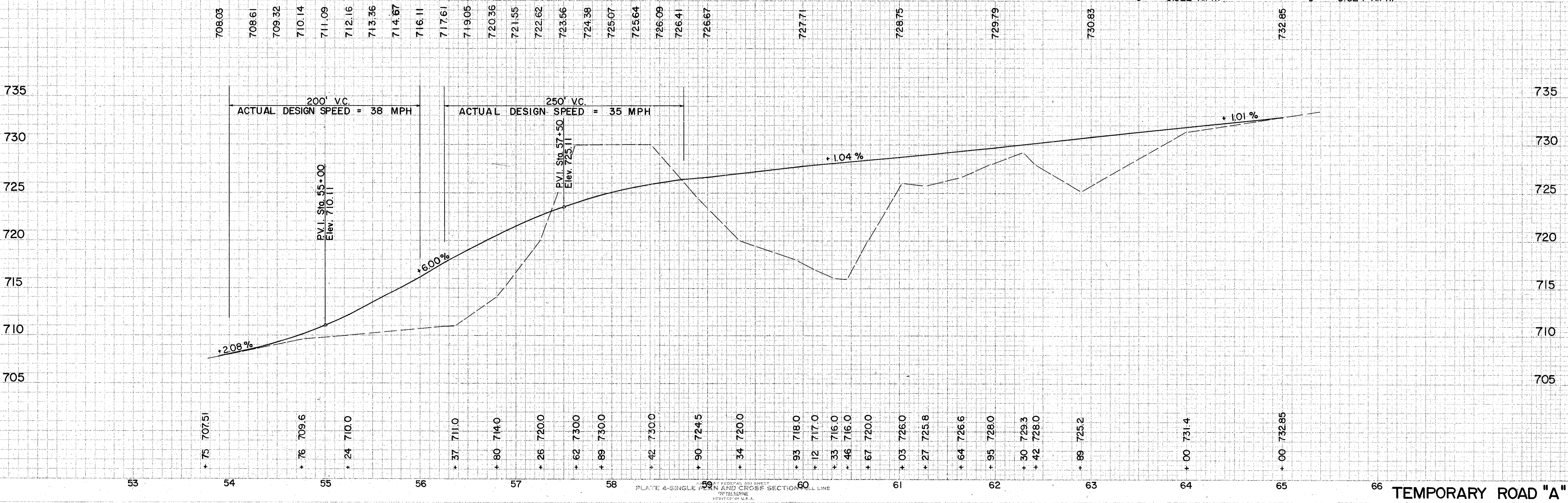
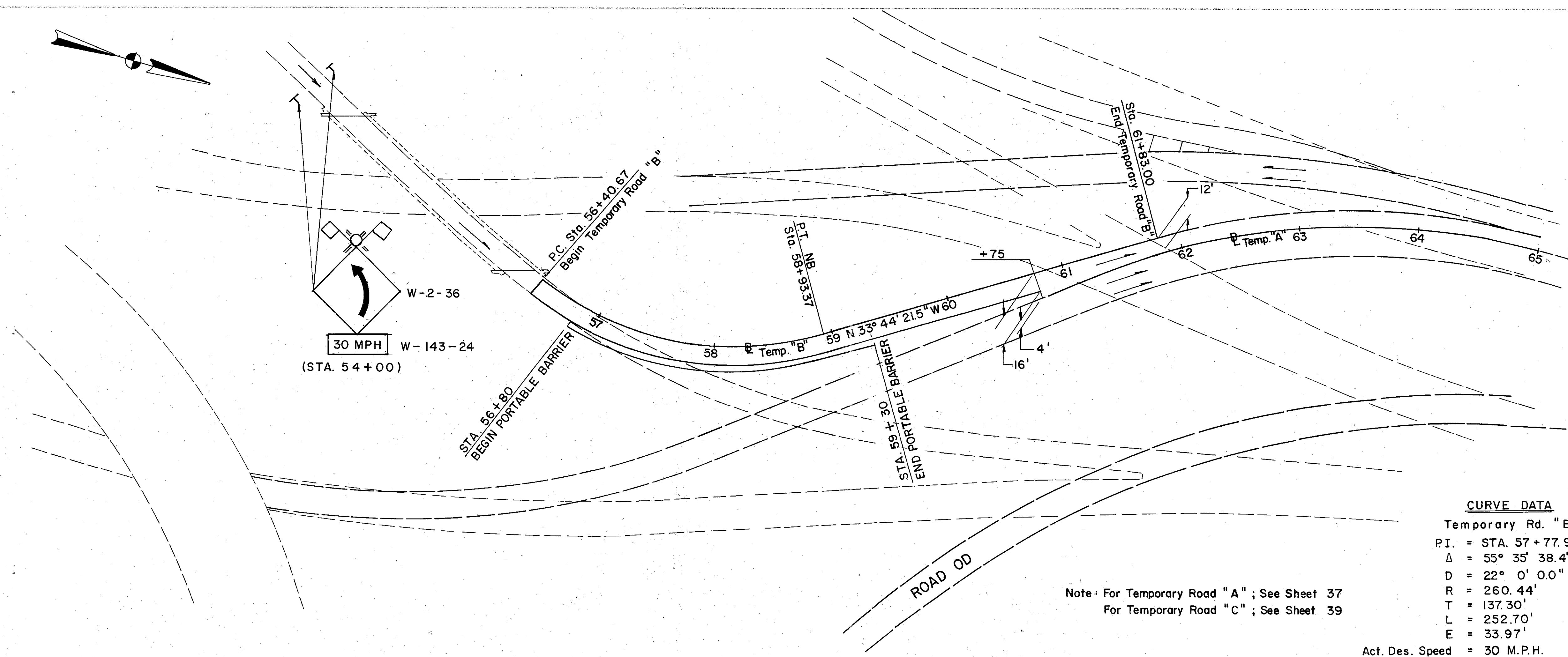


PLATE 4-SINGLE PLAN AND CROSS SECTION FULL LINE

FINAL SURVEY  
 DATE: 11/20/2011  
 DRAWN BY: J.S.S.  
 CHECKED BY: K.C.W.  
 PROJECT: FRANKLIN COUNTY  
 SHEET: 38 OF 38  
 SCALE: AS SHOWN  
 NOTES: SEE DRAWING FOR DETAILS

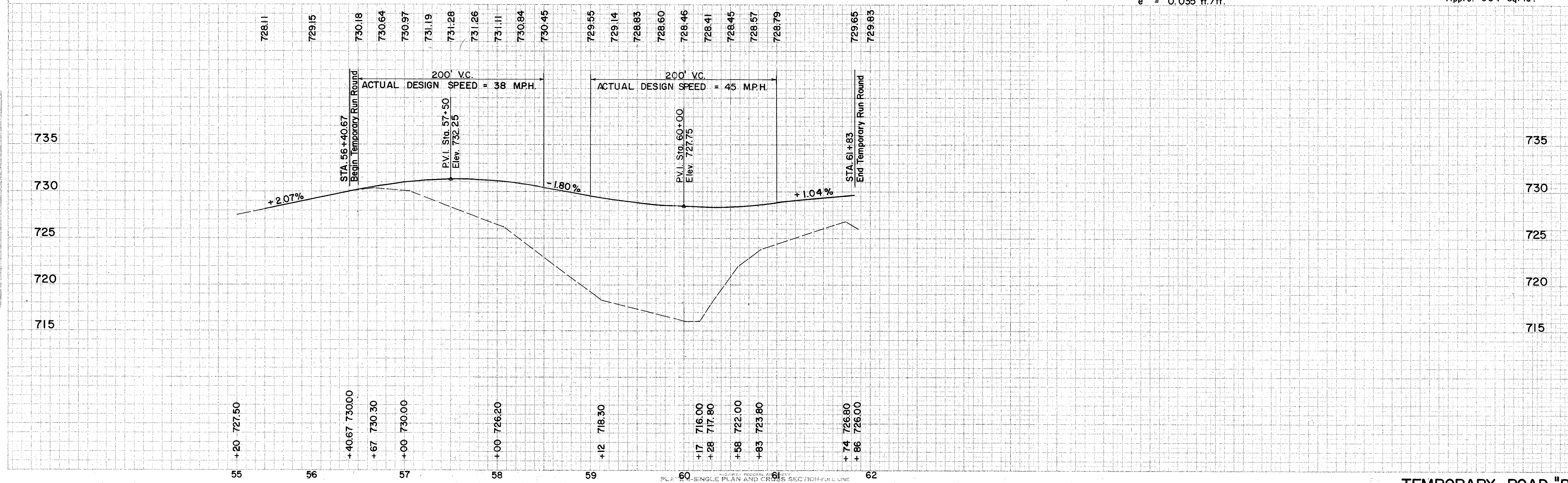


**CURVE DATA**  
 Temporary Rd. "B"  
 P.I. = STA. 57+77.97  
 $\Delta = 55^\circ 35' 38.4''$   
 $D = 22^\circ 0' 0.0''$   
 $R = 260.44'$   
 $T = 137.30'$   
 $E = 33.97'$   
 Act. Des. Speed = 30 M.P.H.  
 $e = 0.035 \text{ ft./ft.}$

Note: For Temporary Road "A"; See Sheet 37  
 For Temporary Road "C"; See Sheet 39

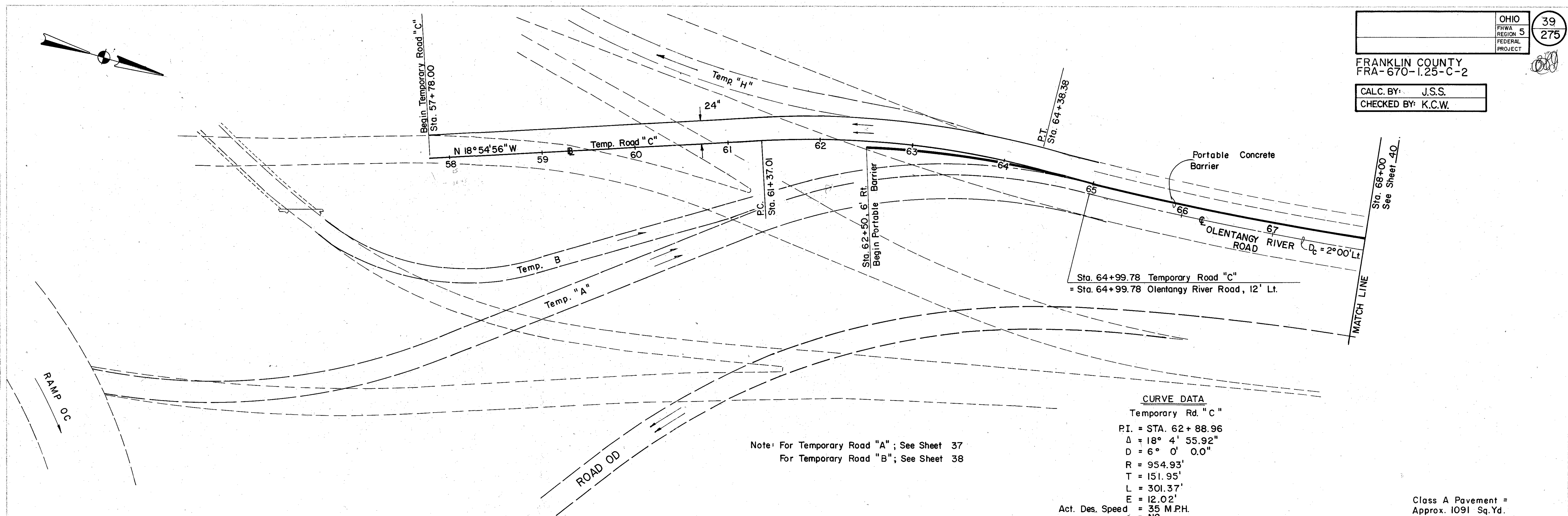
Class A Pavement =  
 Apprx. 964 Sq. Yd.

ORIGINAL SURVEY  
 DATE: 11/20/2011  
 DRAWN BY: J.S.S.  
 CHECKED BY: K.C.W.  
 PROJECT: FRANKLIN COUNTY  
 SHEET: 38 OF 38  
 SCALE: AS SHOWN  
 NOTES: SEE DRAWING FOR DETAILS





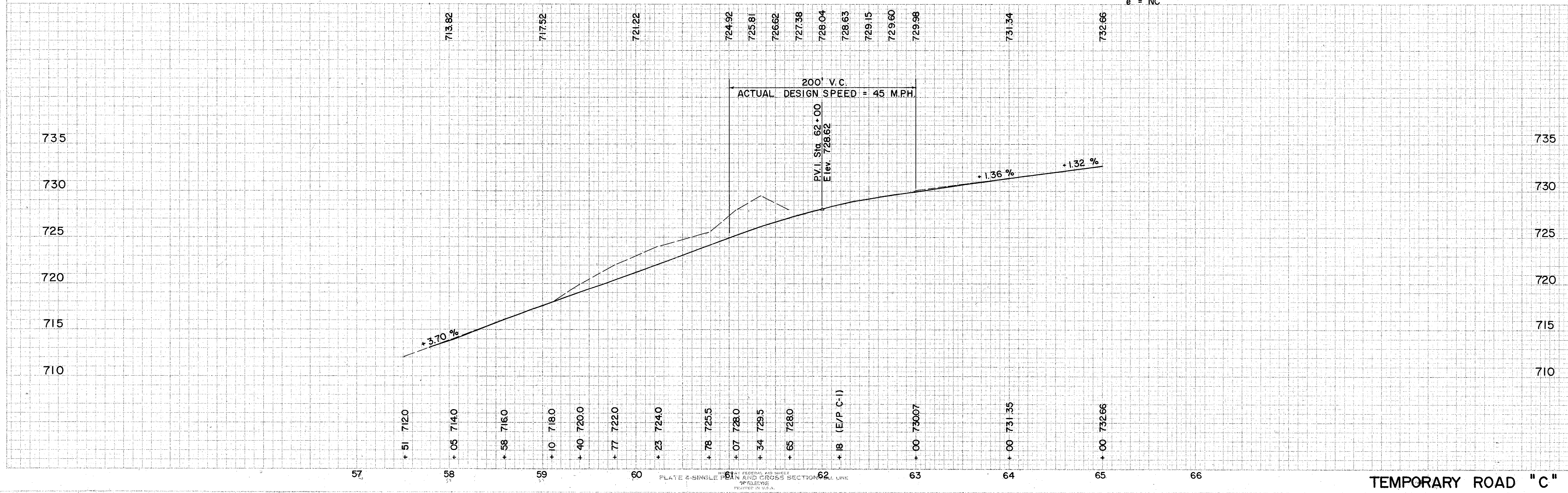
FINAL SURVEY  
 DATE: 11/15/11  
 DRAWN BY: J.S.S.  
 CHECKED BY: K.C.W.  
 SCALE: AS SHOWN  
 PROJECT: FRA-670-1.25-C-2



Note: For Temporary Road "A"; See Sheet 37  
 For Temporary Road "B"; See Sheet 38

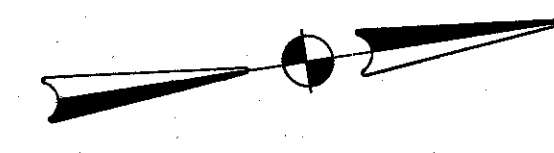
**CURVE DATA**  
 Temporary Rd. "C"  
 P.I. = STA. 62+88.96  
 $\Delta = 18^\circ 4' 55.92''$   
 $D = 6^\circ 0' 0.0''$   
 $R = 954.93'$   
 $T = 151.95'$   
 $L = 301.37'$   
 $E = 12.02'$   
 $e = NC$   
 Act. Des. Speed = 35 M.P.H.

Class A Pavement =  
 Approx. 1091 Sq.Yd.

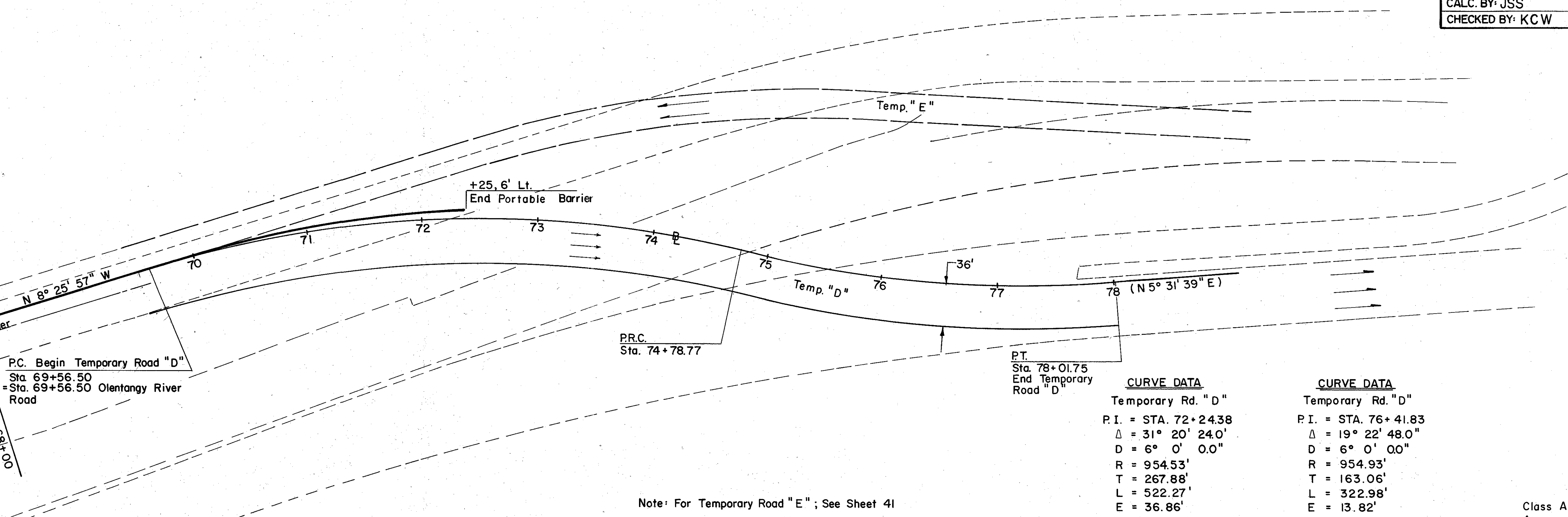


FRANKLIN COUNTY  
FRA-670-1.25-C-2

CALC. BY: JSS  
CHECKED BY: KCW



PT Sta. 69+18.34  
Olentangy River Road  
MATCH LINE 39  
SEE SHEET 39



P.C. Begin Temporary Road "D"  
Sta. 69+56.50  
= Sta. 69+56.50 Olentangy River Road

+25.6' Lt.  
End Portable Barrier

P.R.C.  
Sta. 74+78.77

P.T.  
Sta. 78+01.75  
End Temporary Road "D"

**CURVE DATA**  
Temporary Rd. "D"  
P.I. = STA. 72+24.38  
Δ = 31° 20' 24.0"  
D = 6° 0' 0.0"  
R = 954.53'  
T = 267.88'  
L = 522.27'  
E = 36.86'  
Act. Des. Speed = 35 M.P.H.  
e = NC

**CURVE DATA**  
Temporary Rd. "D"  
P.I. = STA. 76+41.83  
Δ = 19° 22' 48.0"  
D = 6° 0' 0.0"  
R = 954.93'  
T = 163.06'  
L = 322.98'  
E = 13.82'  
Act. Des. Speed = 35 M.P.H.  
e = NC

Note: For Temporary Road "E"; See Sheet 41

Class A Pavement =  
Approx. 2855 Sq. Yd.

DATE: \_\_\_\_\_  
BY: \_\_\_\_\_  
CHECKED BY: \_\_\_\_\_  
SCALE: \_\_\_\_\_  
PROJECT NO.: \_\_\_\_\_  
SHEET NO.: \_\_\_\_\_

DATE: \_\_\_\_\_  
BY: \_\_\_\_\_  
CHECKED BY: \_\_\_\_\_  
SCALE: \_\_\_\_\_  
PROJECT NO.: \_\_\_\_\_  
SHEET NO.: \_\_\_\_\_

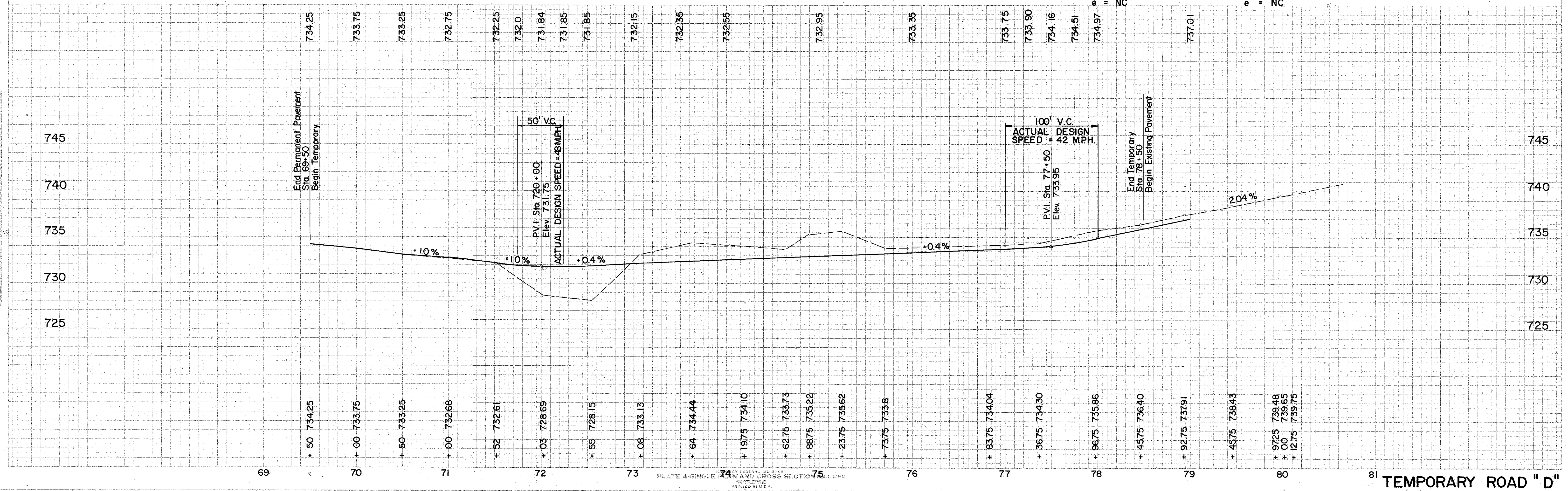
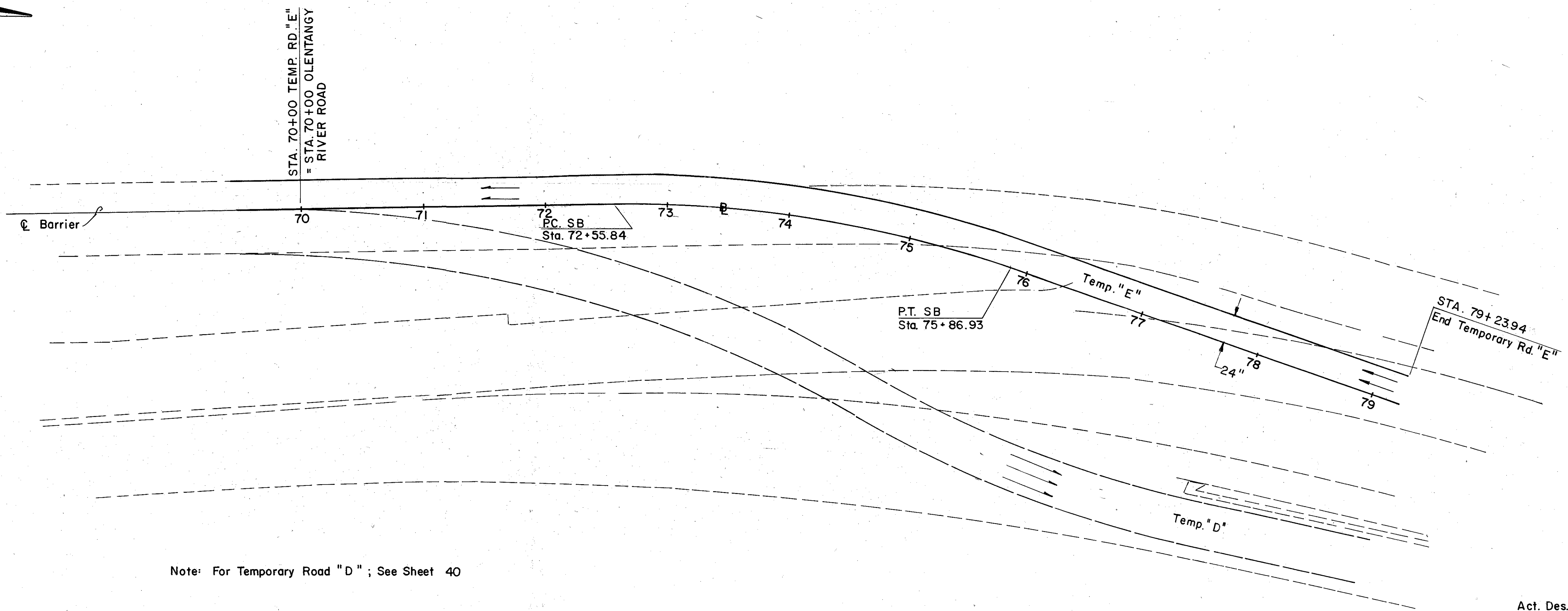
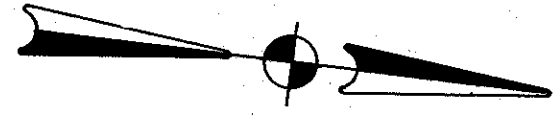


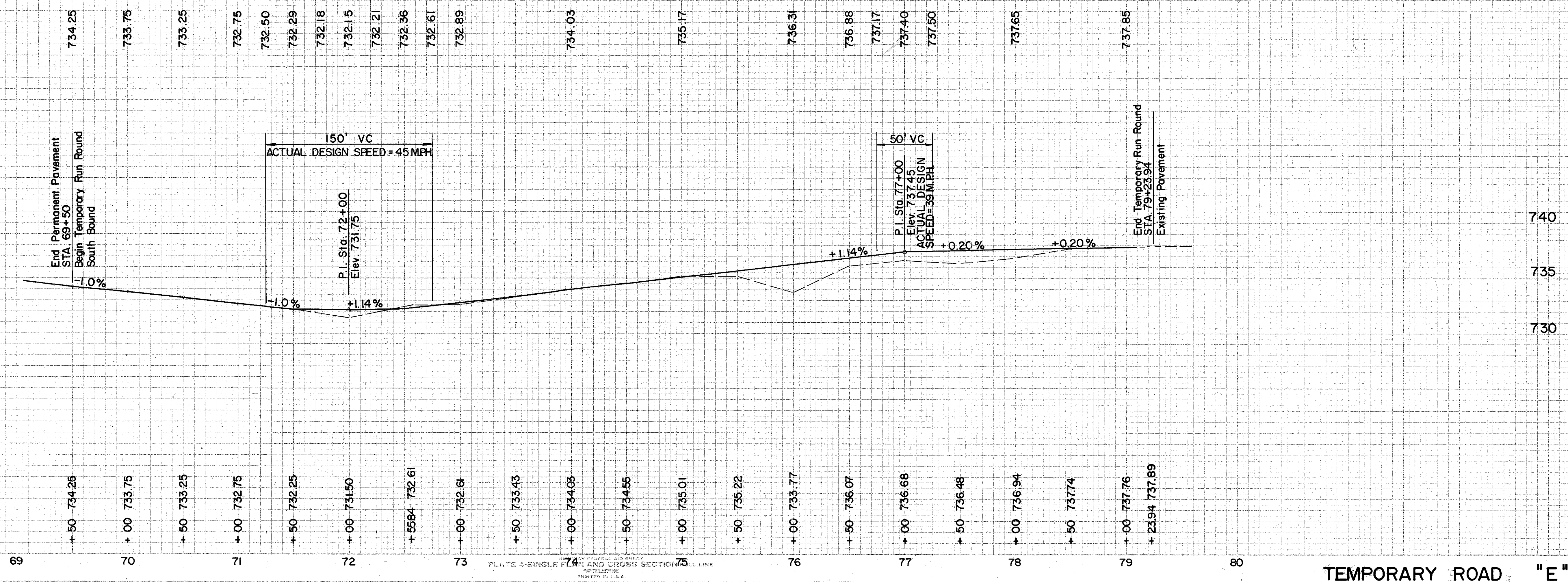
PLATE 4-SINGLE PLAN AND CROSS SECTIONAL LINE

81 TEMPORARY ROAD "D"



Note: For Temporary Road "D"; See Sheet 40

**CURVE DATA**  
 Temporary Rd. "E"  
 P.I. = STA. 74 + 23.10  
 $\Delta$  = 19° 52' 12"  
 D = 6° 0' 00"  
 R = 954.93'  
 T = 167.26'  
 L = 331.09'  
 E = 14.54'  
 Act. Des. Speed = 35 M.P.H.  
 e = NC  
 Class A Pavement =  
 Approx. 1890 Sq. Yd.



FINAL SURVEY PLOTTED BY DATE

PERSONAL SURVEY PLOTTED BY DATE

FINAL SURVEY BY DATE  
 REVISIONS  
 NO. DATE BY

ORIGINAL SURVEY BY DATE  
 REVISIONS  
 NO. DATE BY

NOTE: FOR TEMP. ROAD "A"; SEE SHEET 37  
 FOR TEMP. ROAD "B"; SEE SHEET 38  
 FOR TEMP. ROAD "C"; SEE SHEET 39



F H W A REGION	STATE	PROJECT
5	OHIO	

41A  
275

FRANKLIN COUNTY  
 FRA-670-1.25- C-2

QUANTITIES	
CALCULATED	
CHECKED	

**CURVE DATA**

P.I. STA. 53+41.38  
 $\Delta = 10^\circ 25' 44.54''$   
 $D = 6^\circ 0' 0''$   
 $R = 954.93'$   
 $T = 87.15'$   
 $L = 173.82'$   
 $E = 3.97'$   
 ACT DESIGN SPEED = 35 MPH  
 $e = NC$

**CURVE DATA**

P.I. STA. 61+26.86  
 $\Delta = 11^\circ 25' 54.23''$   
 $D = 6^\circ 0' 0''$   
 $R = 954.93'$   
 $T = 95.58'$   
 $L = 190.53'$   
 $E = 4.11'$   
 ACT. DESIGN SPEED = 35 MPH  
 $e = NC$

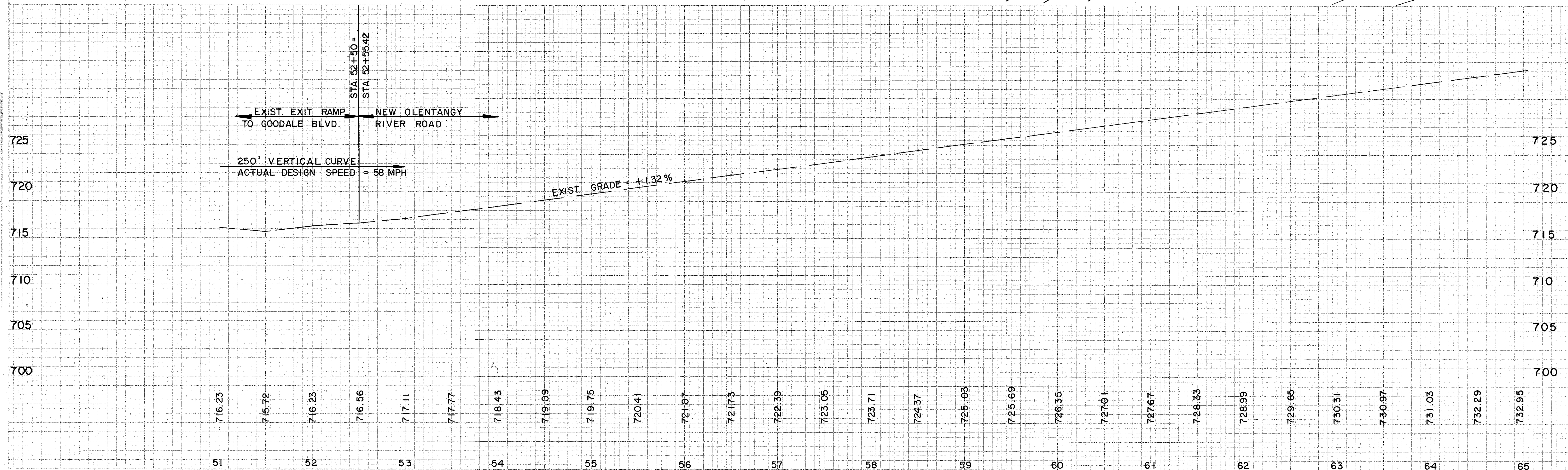
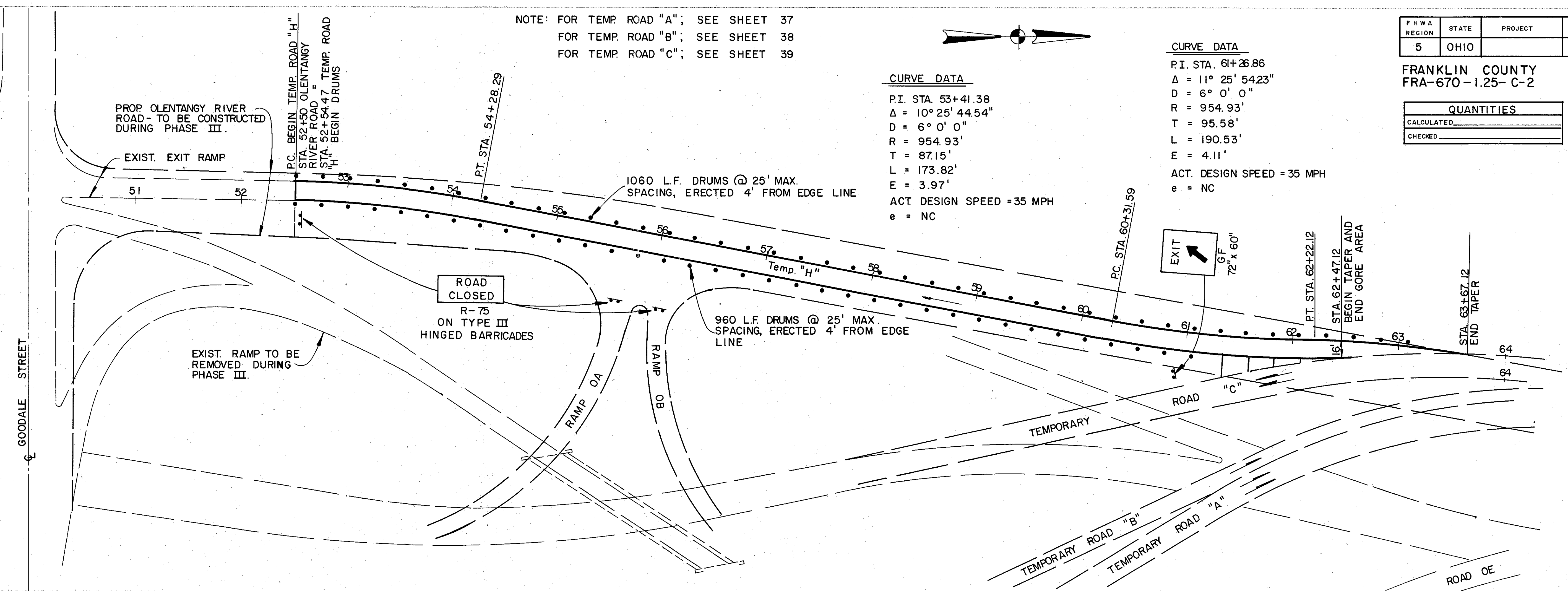


PLATE 4-SINGLE PLAN AND CROSS SECTION-FULL LINE  
 HIGHWAY FEDERAL AID SHEET  
 PREPARED BY THE STATE OF OHIO  
 PRINTED IN U.S.A.

TEMPORARY ROAD "H"

**CURVE DATA**

TEMPORARY ROAD 'F'  
P.I. STA. 74+85.34  
 $\Delta = 19^{\circ}51'55''$   
D = 6°00'00"  
R = 954.93'  
T = 167.22'  
L = 331.09'  
E = 14.53'

**CURVE DATA**

TEMPORARY ROAD 'F'  
P.I. STA. 84+83.65  
 $\Delta = 9^{\circ}25'07''$   
D = 4°00'00"  
R = 1432.39'  
T = 118.00'  
L = 235.47'  
E = 4.85'

**CURVE DATA**

TEMPORARY ROAD 'F'  
P.I. STA. 90+42.15  
 $\Delta = 25^{\circ}14'18''$   
D = 7°30'00"  
R = 763.94'  
T = 171.03'  
L = 336.51'  
E = 18.91'

**CURVE DATA**

TEMPORARY ROAD 'G'  
P.I. STA. 75+83  
 $\Delta = 16^{\circ}09'13''$   
D = 4°00'00"  
R = 1432.39'  
T = 203.27'  
L = 403.84'  
E = 14.35'

ACT. DES. SPEED=35 MPH  
e = NC

ACT. DES. SPEED = 40 MPH  
e = NC

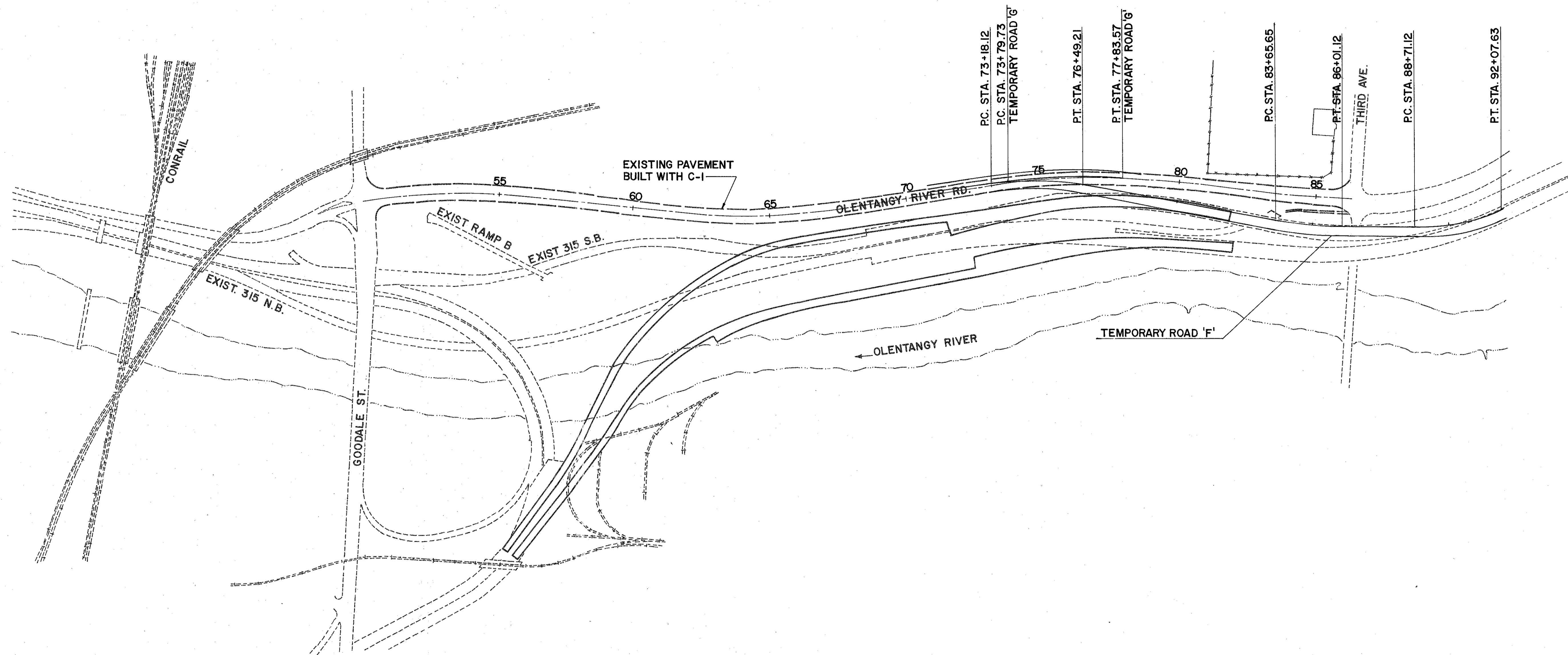
ACT. DES. SPEED = 35 MPH  
e = 0.019 ft./ft.

ACT. DES. SPEED = 40 MPH  
e = NC

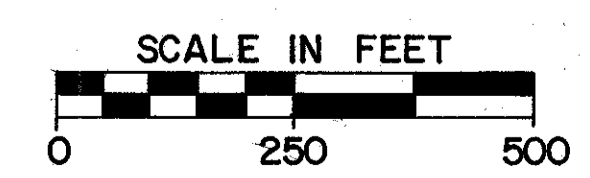
NOTE: TEMPORARY ROADS 'A', 'B' AND 'C' FROM PHASE I REMAIN IN SERVICE DURING PHASE II. SEE SHEET 36.

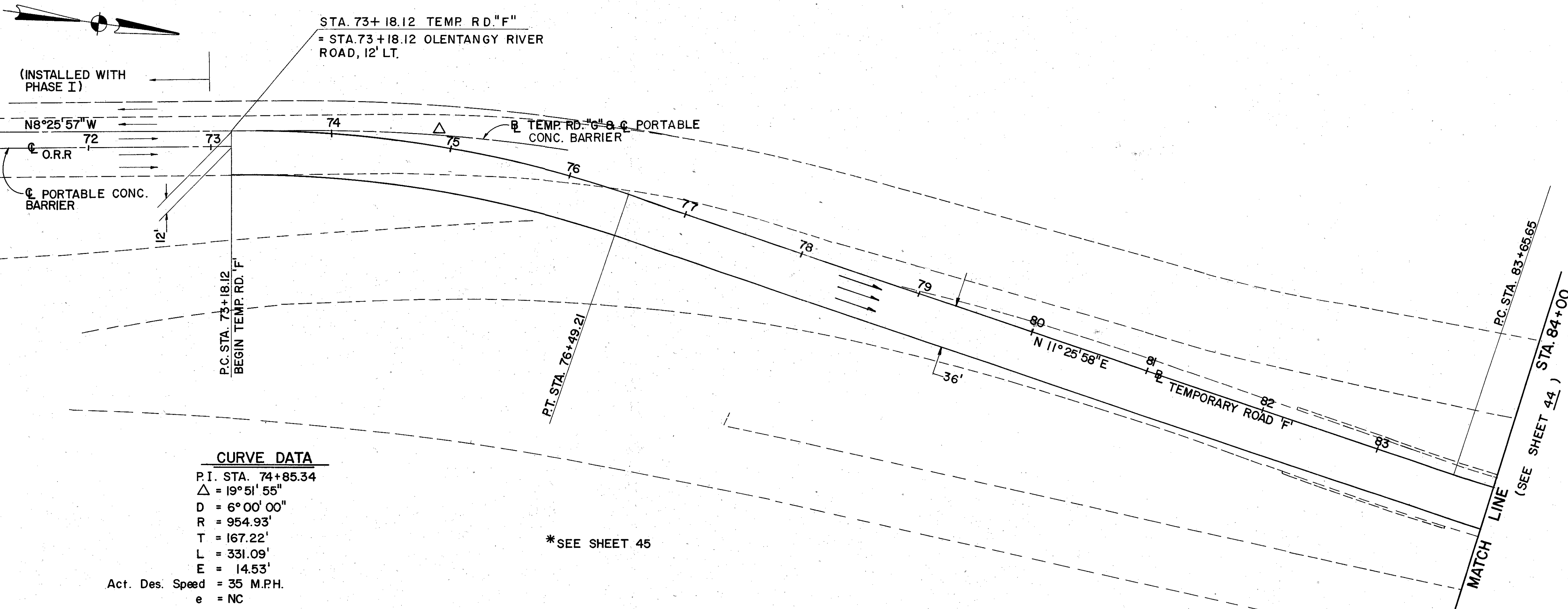
FOR TEMPORARY ROAD 'F' CROSS SECTIONS, SEE SHEETS 167 & 168.

FOR TEMPORARY ROAD 'G' CROSS SECTIONS, SEE SHEETS 169 & 170.



**TEMPORARY ROADS SCHEMATIC (PHASE II)**



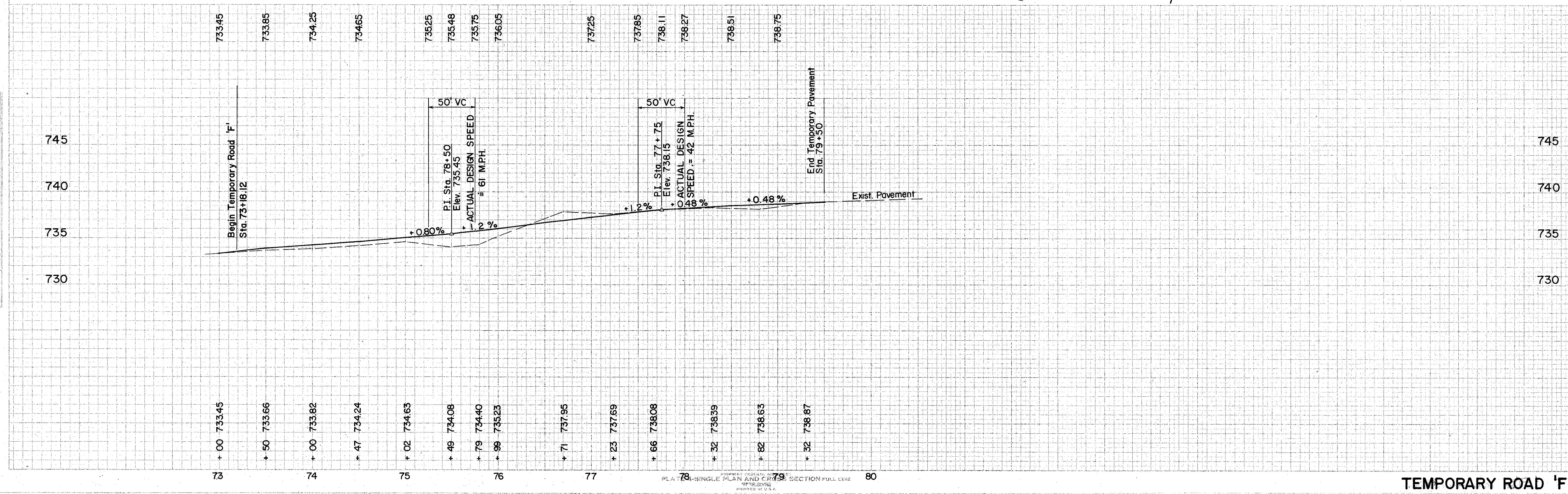


**CURVE DATA**

P.I. STA. 74+85.34  
 Δ = 19°51'55"  
 D = 6°00'00"  
 R = 954.93'  
 T = 167.22'  
 L = 331.09'  
 E = 14.53'  
 Act. Des. Speed = 35 M.P.H.  
 e = NC

\*SEE SHEET 45

Class A Pavement =  
 Approx. 3530 Sq. Yd.



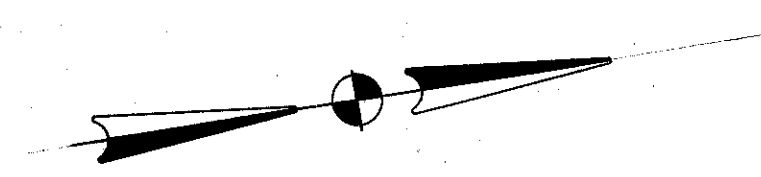
**TEMPORARY ROAD 'F'**

FINAL SURVEY  
 ENGINEERED  
 PLANNED  
 PROJECT  
 DATE: 10/89  
 PROJECT NO.: FRA-670-1.25-C-2

ORIGINAL SURVEY  
 ENGINEERED  
 PLANNED  
 PROJECT  
 DATE: 10/89  
 PROJECT NO.: FRA-670-1.25-C-2

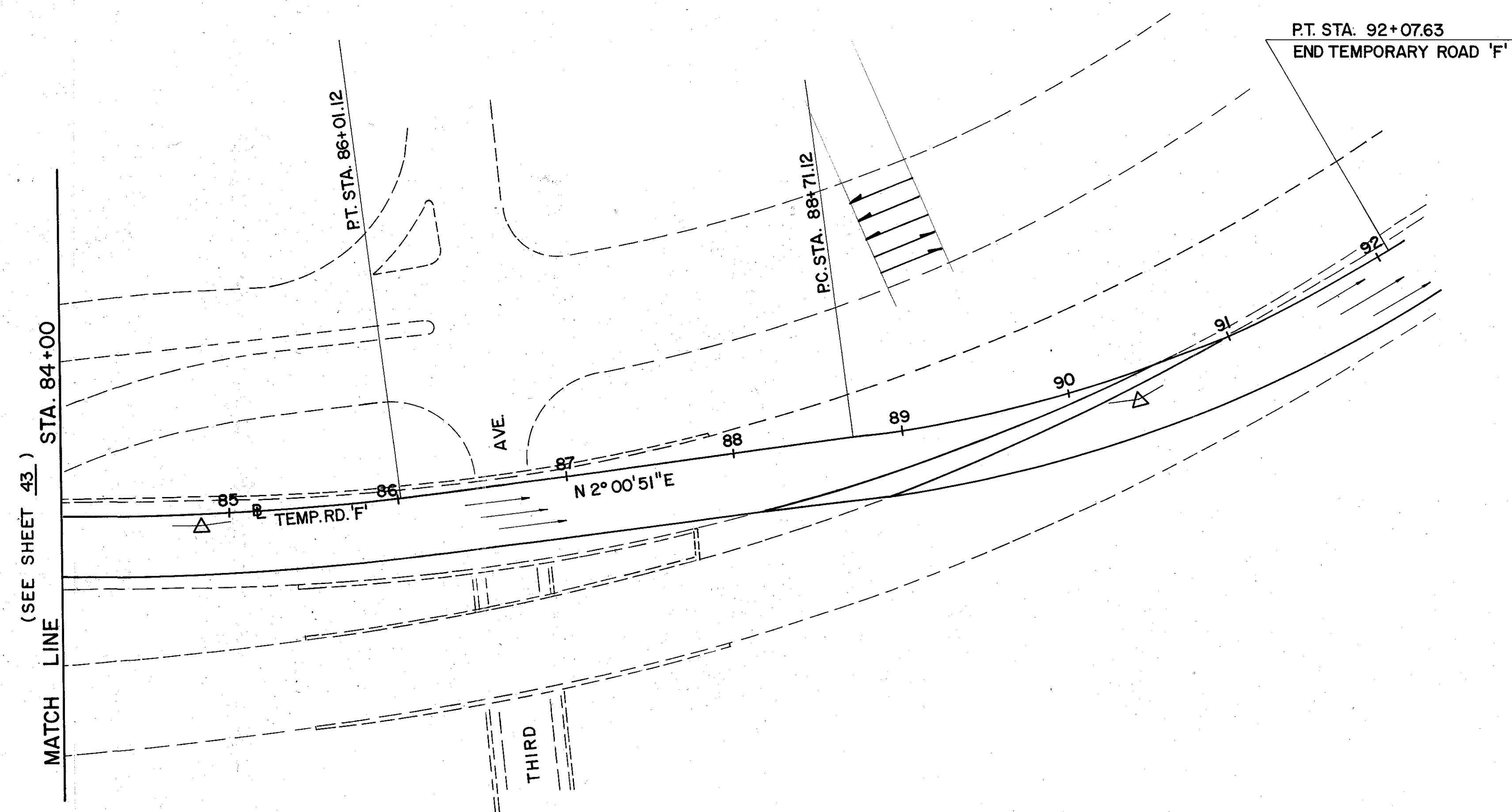
FRANKLIN COUNTY  
 FRA-670-1.25-C-2

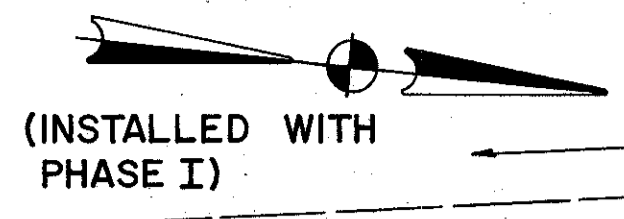
CALC. BY: JSS 10/89  
 CHECKED BY: KW 11/89



**CURVE DATA**

CURVE DATA	
P.I. STA. 84+83.65	P.I. STA. 90+42.15
$\Delta = 9^\circ 25' 07''$	$\Delta = 25^\circ 14' 18''$
D = 4'00"00"	D = 7'30"00"
R = 1432.39'	R = 763.94'
T = 118.00'	T = 171.03'
L = 235.47'	L = 336.51'
E = 4.85'	E = 18.91'
Act. Des. Speed = 40 M.P.H.	Act. Des. Speed = 35 M.P.H.
e = NC	e = 0.19 ft/ft.

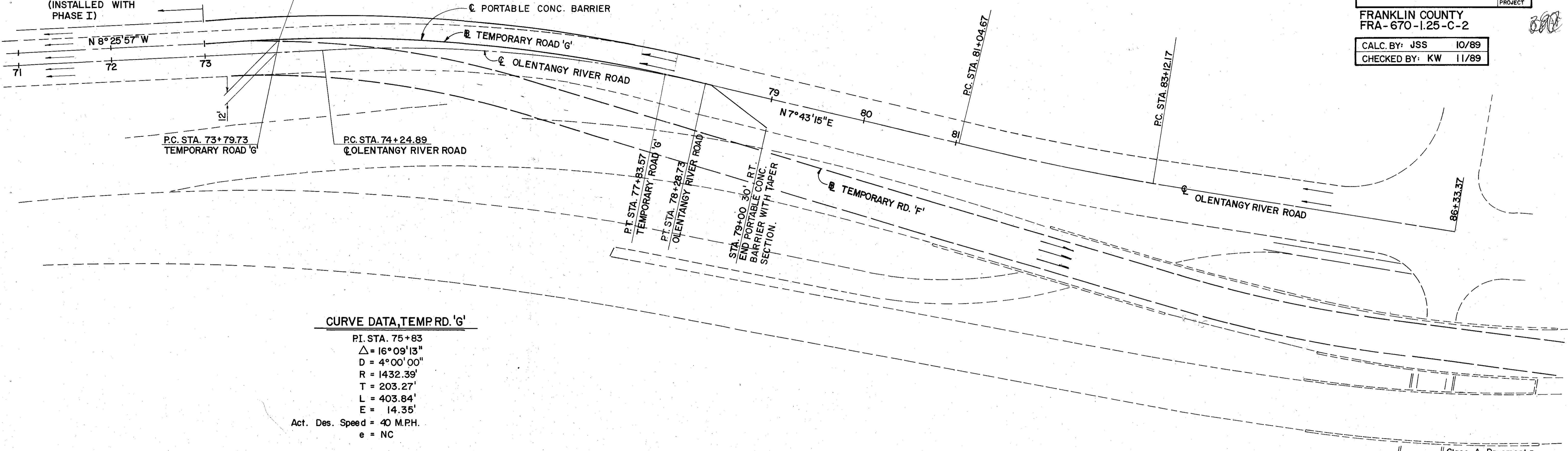




(INSTALLED WITH PHASE I)

STA. 73+79.73 TEMP. RD. 'G'  
= STA. 73+79.73 OLENTANGY RIVER ROAD, 12' LT.

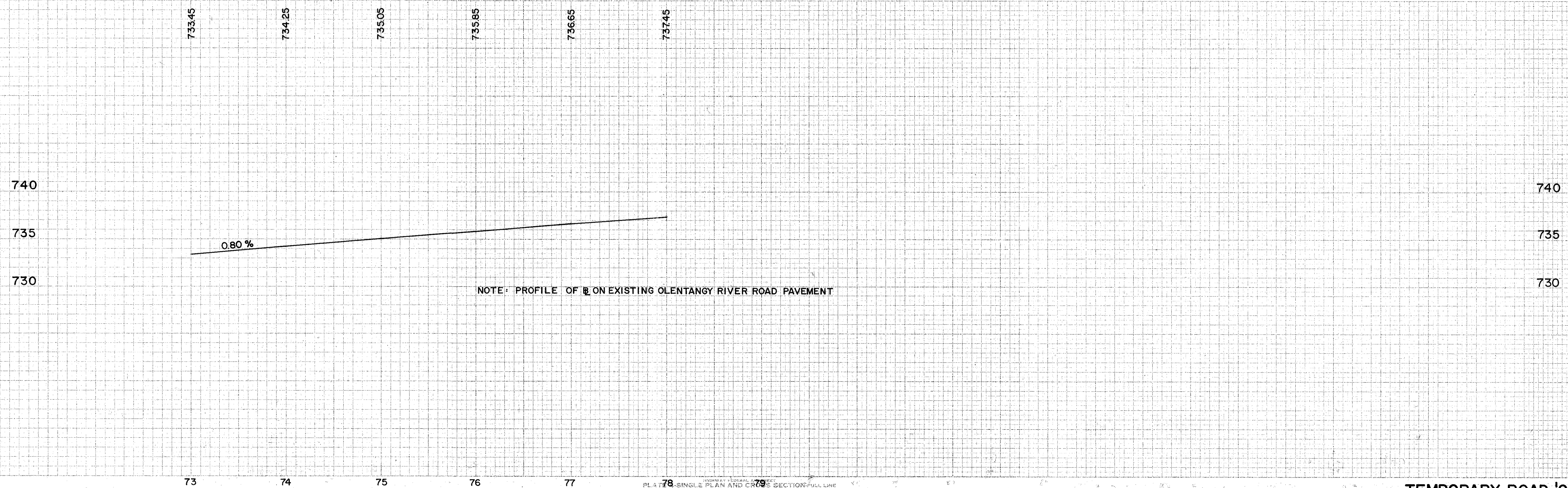
OHIO	45
FHWA REGION 5	275
FRANKLIN COUNTY FRA-670-1.25-C-2	
CALC. BY: JSS	10/89
CHECKED BY: KW	11/89



**CURVE DATA, TEMP. RD. 'G'**

P.I. STA. 75+83  
 $\Delta = 16^{\circ} 09' 13''$   
 $D = 4^{\circ} 00' 00''$   
 $R = 1432.39'$   
 $T = 203.27'$   
 $L = 403.84'$   
 $E = 14.35'$   
 Act. Des. Speed = 40 M.P.H.  
 e = NC

Class A Pavement =  
Approx. 267 Sq. Yd.



NOTE: PROFILE OF  $\mathbb{B}$  ON EXISTING OLENTANGY RIVER ROAD PAVEMENT

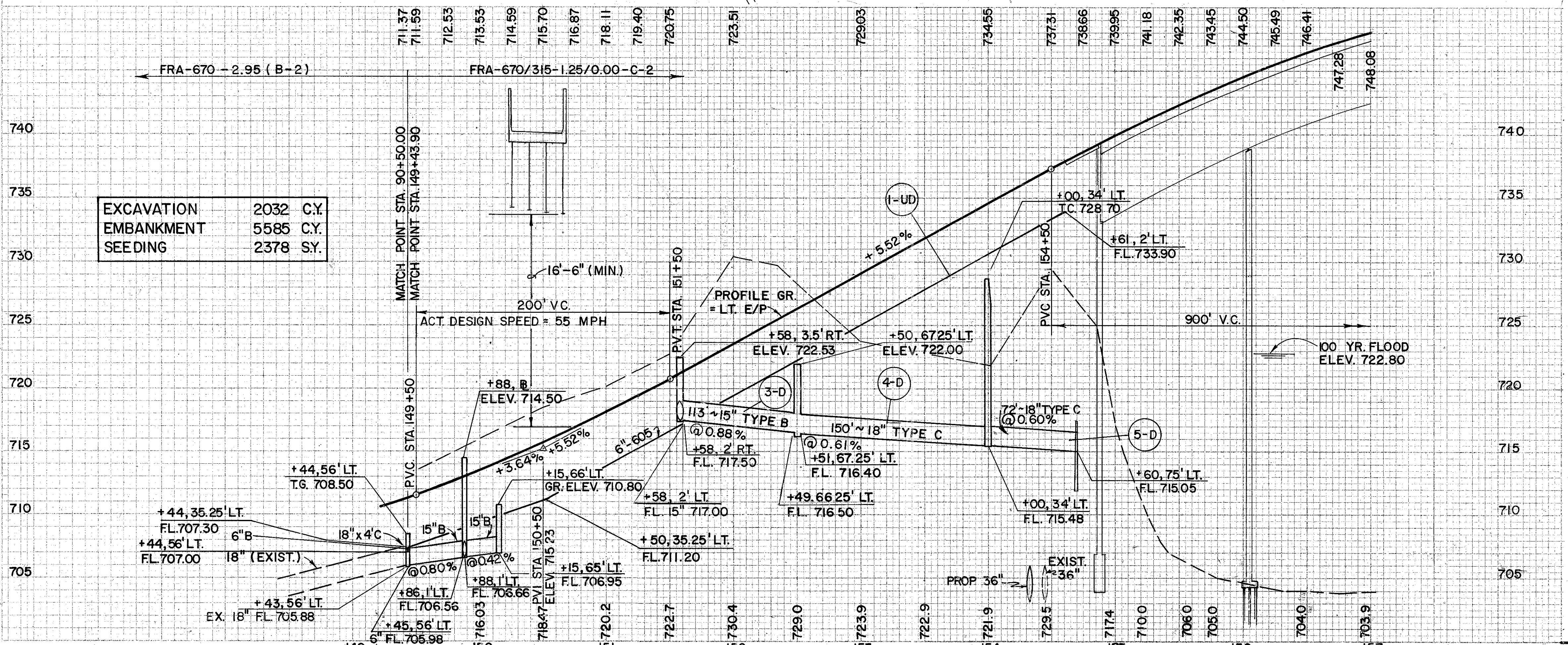
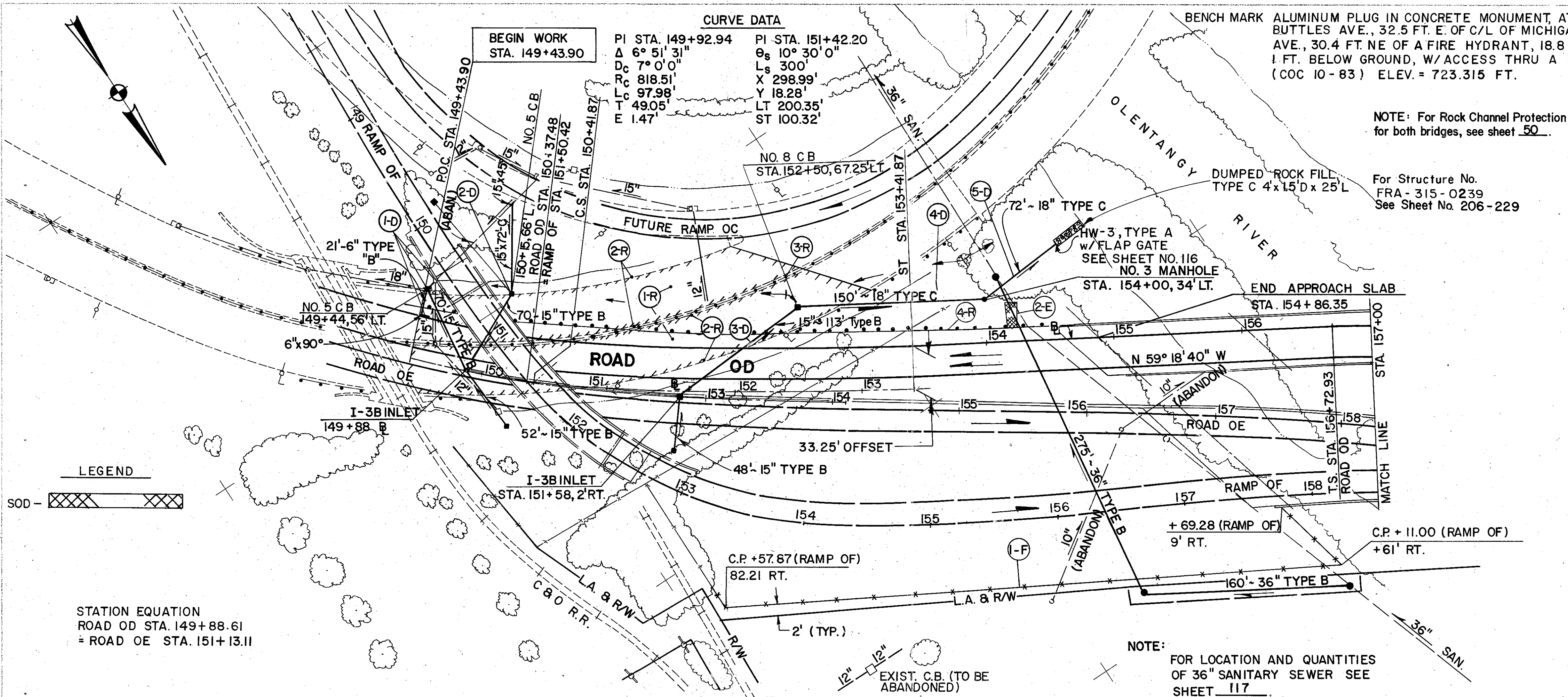
GENERAL SURVEY  
 DATE: \_\_\_\_\_  
 BY: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_  
 APPROVED BY: \_\_\_\_\_  
 TITLE: \_\_\_\_\_  
 NO. OF BOOKS: \_\_\_\_\_  
 SHEET NO.: \_\_\_\_\_  
 AREA: \_\_\_\_\_  
 SCALE: \_\_\_\_\_

GENERAL SURVEY  
 DATE: \_\_\_\_\_  
 BY: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_  
 APPROVED BY: \_\_\_\_\_  
 TITLE: \_\_\_\_\_  
 NO. OF BOOKS: \_\_\_\_\_  
 SHEET NO.: \_\_\_\_\_  
 AREA: \_\_\_\_\_  
 SCALE: \_\_\_\_\_



ORIGINAL SURVEY REVISIONS  
 DATE REVISION BY  
 NO. REVISION BY

ORIGINAL SURVEY REVISIONS  
 DATE REVISION BY  
 NO. REVISION BY



EXCAVATION	2032 C.Y.
EMBANKMENT	5585 C.Y.
SEEDING	2378 SY.

**CURVE DATA**

PI STA. 149+92.94	PI STA. 151+42.20
$\Delta$ 6° 51' 31"	$\theta_s$ 10° 30' 0"
$D_c$ 7° 0' 0"	$L_s$ 300'
$R_c$ 818.51'	$X$ 298.99'
$L_c$ 97.98'	$Y$ 18.28'
$T$ 49.05'	$LT$ 200.35'
$E$ 1.47'	$ST$ 100.32'

BENCH MARK ALUMINUM PLUG IN CONCRETE MONUMENT, AT INTERSECTION OF MICHIGAN AVE. AND BUTTLES AVE., 32.5 FT. E. OF C/L OF MICHIGAN AVE., 21.4 FT. S. OF C/L OF BUTTLES AVE., 30.4 FT. NE OF A FIRE HYDRANT, 18.8 FT. W. OF A 12 IN. SYCAMORE TREE, 1 FT. BELOW GROUND, W/ ACCESS THRU A 8 IN. CLAY TILE W/A CAST IRON LID. (COC 10-83) ELEV. = 723.315 FT.

NOTE: For Rock Channel Protection for both bridges, see sheet 50.

For Structure No. FRA-315-0239 See Sheet No. 206-229

NOTE: FOR LOCATION AND QUANTITIES OF 36" SANITARY SEWER SEE SHEET 117

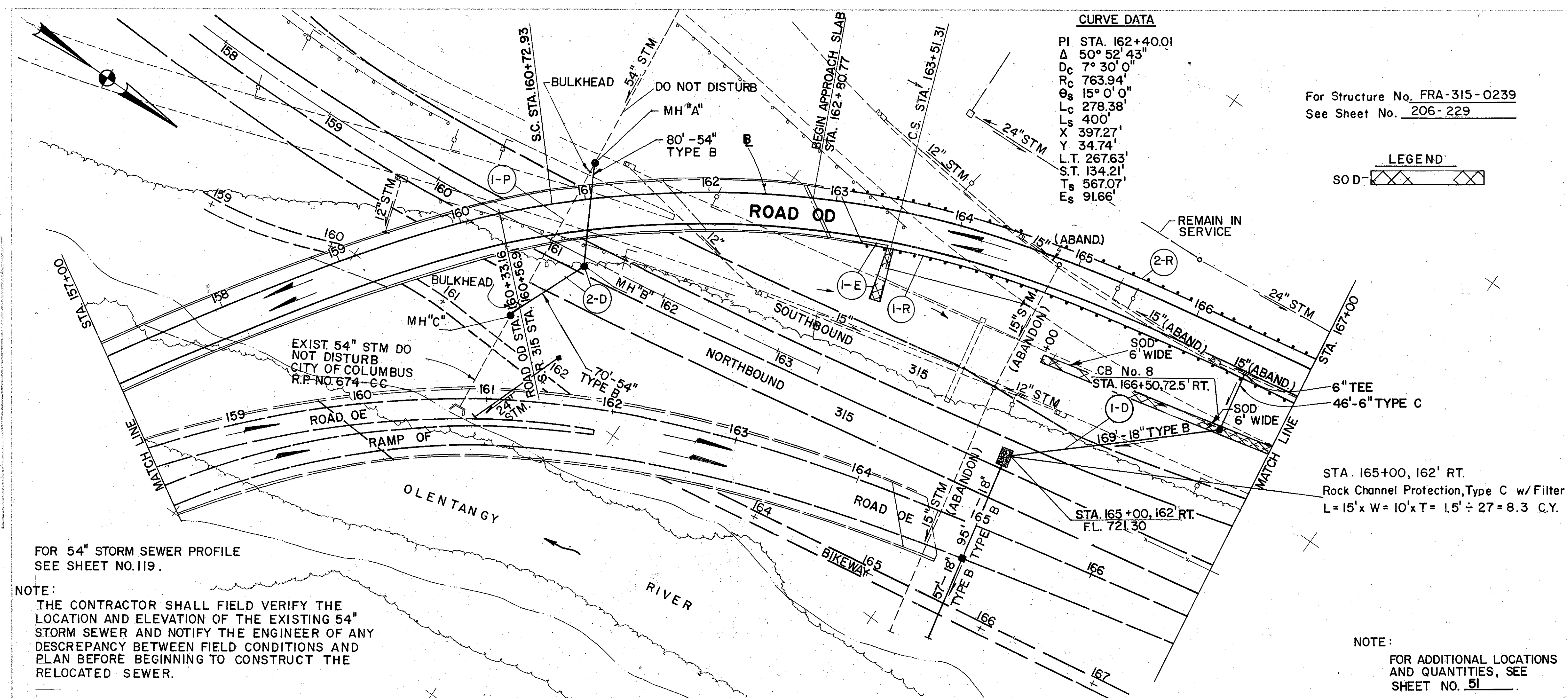
**ESTIMATED QUANTITIES**

Ref. No.	Station to Station	Side	Pipe Removed & Under	Catch Basin or Inlet Removal	Concrete Masonry	6" Shallow Pipe Underdrains	Fence Type CLT	Conduit (Lin. Ft.)			No. 5 Catch Basin	No. 3 Manhole w/706II Joints	No. 8 Catch Basin	Type T Anchor Assembly	Curb Removed	Pavement Removed	Guardrail Removed	Headwall with Flapgate	Type I Bridge Term. Assembly	Dumped Rock Fill, Type C
								B*	C*	C*										
1-D	149+40 to 149+88	Lt.	50					70	72	113										
2-D	149+88 to 150+15	Lt.						70	72											
3-D	151+58 to 152+50	Lt.																		
4-D	151+58 to 154+00	Lt.																		
1-JD	149+44 to 154+61	Lt.																		
5-D	154+00 to 154+60	Lt.																		
1-R	149+43.90 to 153+10	Lt. & Rt.																		
2-R	149+43.90 to 153+10	Lt. & Rt.																		
3-R	149+43.90 to 153+10	Lt. & Rt.																		
4-R	149+43.90 to 153+10	Lt. & Rt.																		
1-F	151+330 to 157+00	Rt.																		
2-E	154+20	Lt.																		
	Totals		50	3	6.7	516	584	253	72	226	21		500	1270	6000	635			5.56	

ROAD OD PLAN AND PROFILE - STA 149+00 TO STA. 157+00

**CURVE DATA**  
 PI STA. 162+40.01  
 Δ 50° 52' 43"  
 Dc 7° 30' 00"  
 Rc 763.94'  
 θs 15° 0' 0"  
 Lc 278.38'  
 Ls 400'  
 X 397.27'  
 Y 34.74'  
 L.T. 267.63'  
 S.T. 134.21'  
 Ts 567.07'  
 Es 91.66'

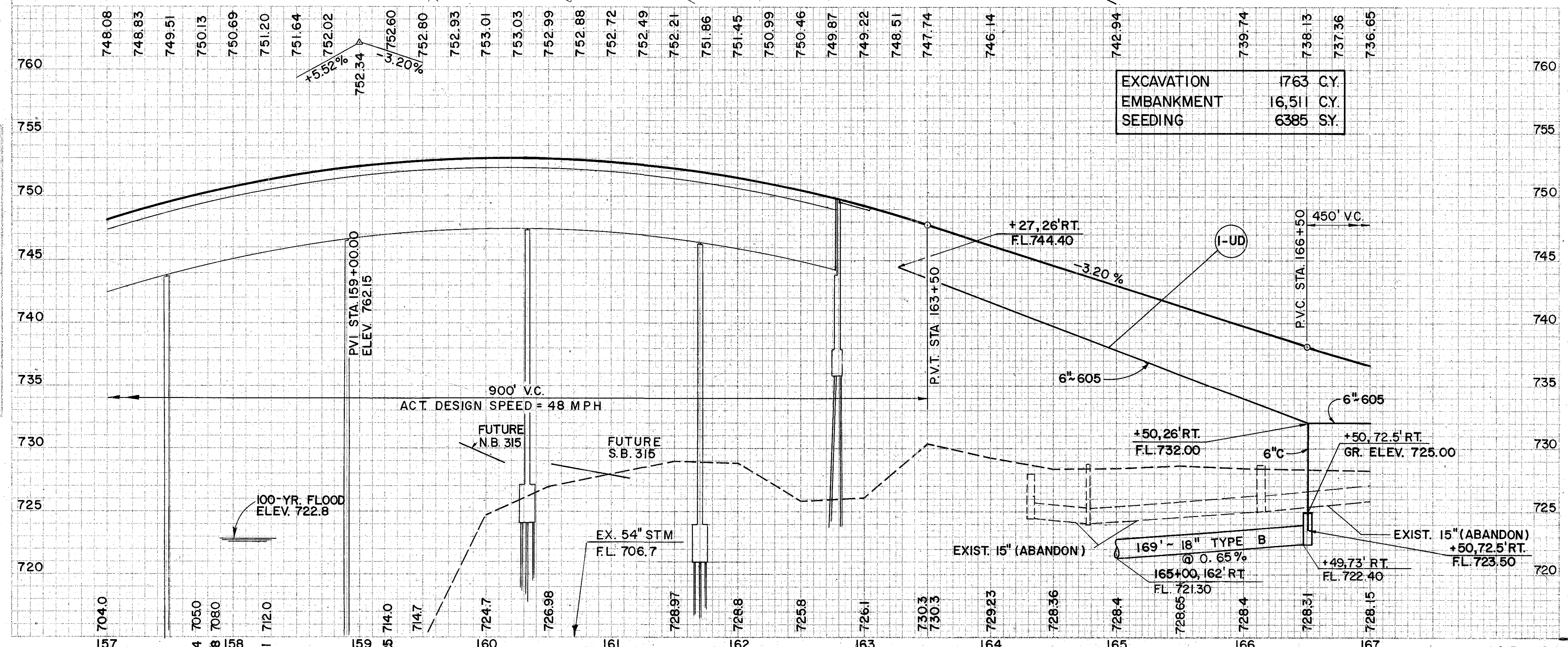
For Structure No. FRA-315-0239  
 See Sheet No. 206-229



FOR 54" STORM SEWER PROFILE  
 SEE SHEET NO. 119.

NOTE:  
 THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND ELEVATION OF THE EXISTING 54" STORM SEWER AND NOTIFY THE ENGINEER OF ANY DISCREPANCY BETWEEN FIELD CONDITIONS AND PLAN BEFORE BEGINNING TO CONSTRUCT THE RELOCATED SEWER.

NOTE:  
 FOR ADDITIONAL LOCATIONS AND QUANTITIES, SEE SHEET NO. 51



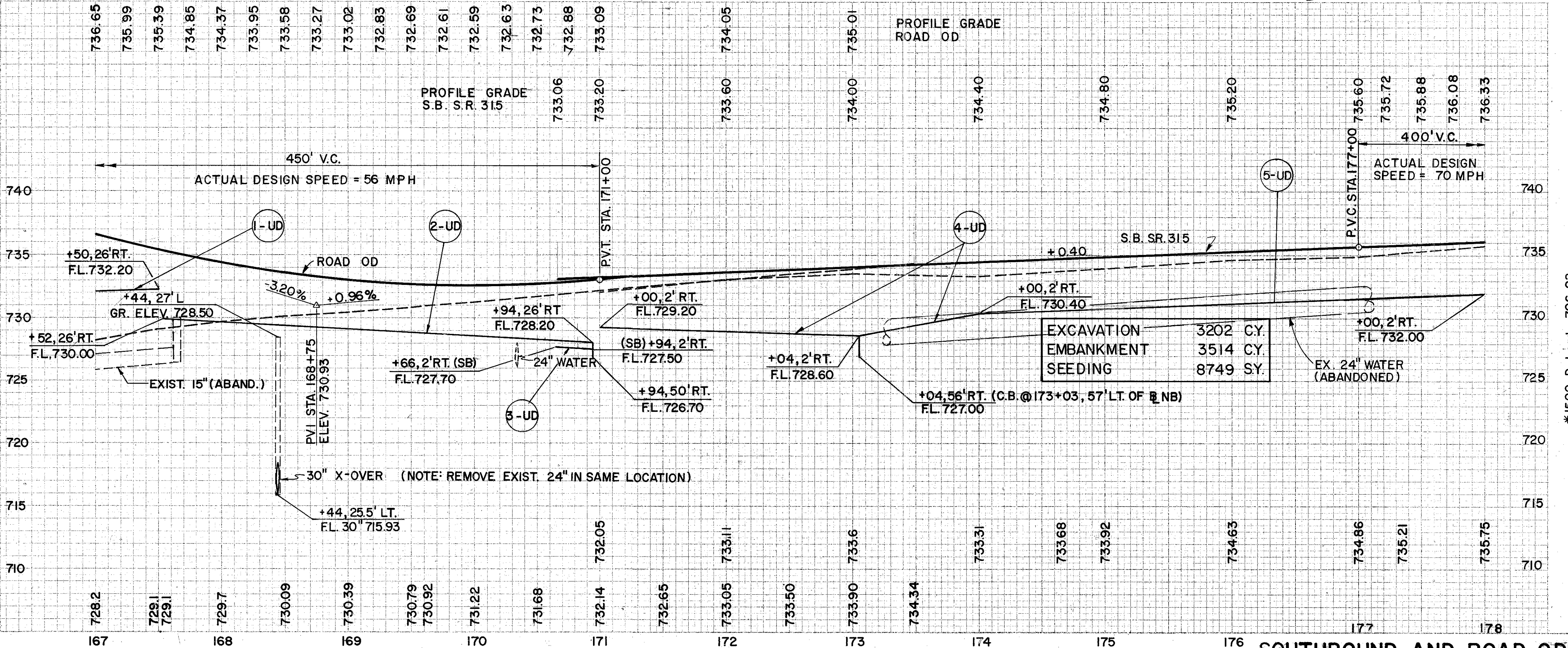
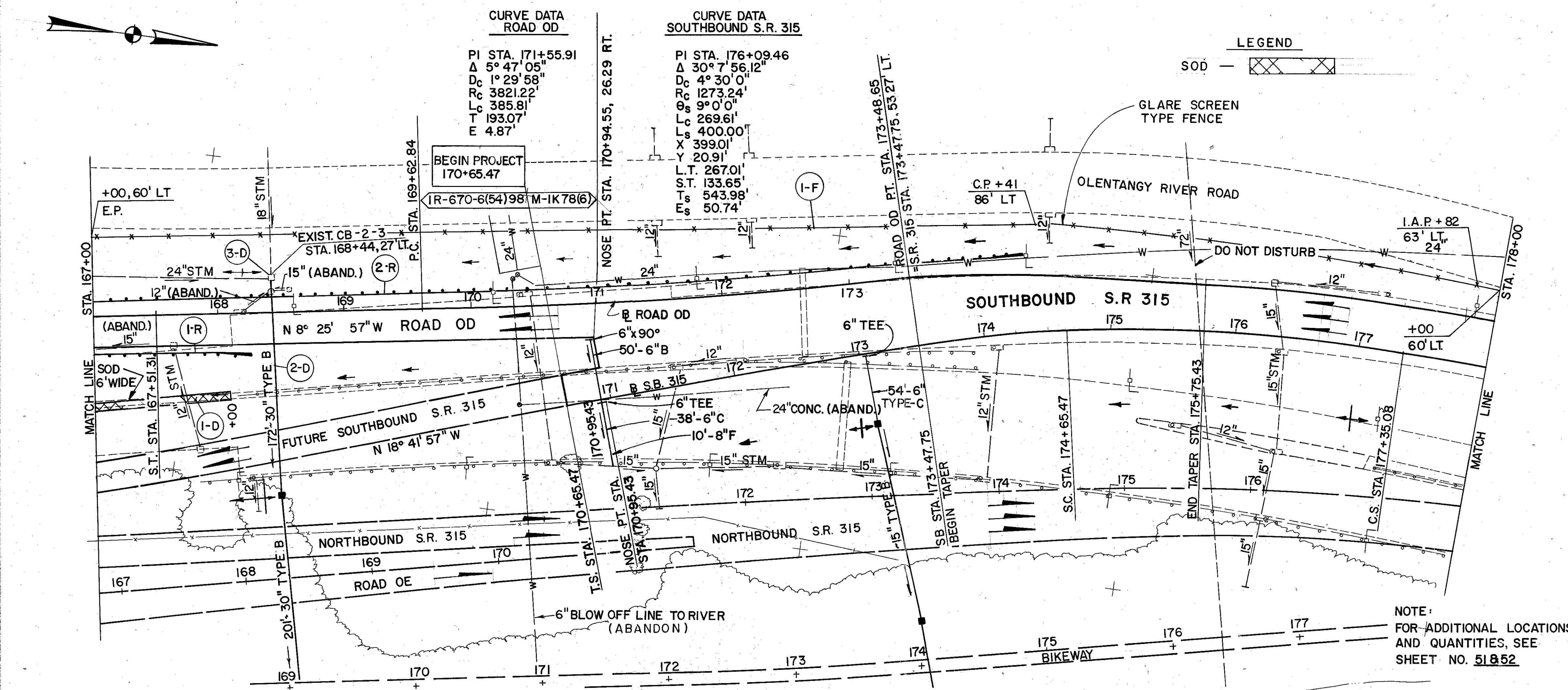
EXCAVATION 1763 C.Y.  
 EMBANKMENT 16,511 C.Y.  
 SEEDING 6385 S.Y.

Ref. No.	Station to Station	Side	ESTIMATED QUANTITIES				See Sheet No.
			Conduit (Lin. Ft.)	Rock Channel Protection (Cu. Yd.)	Guardrail (Lin. Ft.)	Other	
I-D	165+00 to 166+53	Rt.	169	8.3			
2-D	161+00 (Mainline)	Lt. & Rt.	46				
I-UD	163+27 to 167+00	Rt.					
I-P	161+00 (Mainline)	Lt. & Rt.					
I-R	163+15 to 167+00	Rt.					
2-R	162+90 to 167+00	Lt.					
I-E	163+48	Rt.					
2-E	154+20	Lt.					
Totals			169	8.3			

ROAD OD PLAN AND PROFILE - STA. 157+00 TO STA. 167+00

ORIGINAL SURVEY  
DATE: \_\_\_\_\_  
BY: \_\_\_\_\_  
CHECKED: \_\_\_\_\_  
DATE: \_\_\_\_\_

ORIGINAL SURVEY  
DATE: \_\_\_\_\_  
BY: \_\_\_\_\_  
CHECKED: \_\_\_\_\_  
DATE: \_\_\_\_\_



Ref. No.	Station to Station	Side	Manhole Removed	Catch Basin or Inlet Removed	Conduit (Lin. Ft.)	Catch Basin Reconstruction To Grade	6" Shallow Pipe Underdrains	6" Sodding	6" Unclassified Pipe Underdrain	Guardrail Type 5	Anchor Assembly Type E	Fence Type CLT As Per Plan	See Sheet No.
I-D	167+00 to 168+00	Rt.	1	2	172	1		667					74
2-D	168+44	Lt.											
3-D	168+44	Lt.											
1-UD	167+00 to 167+50	Rt.			10								
2-UD	167+52 to 170+94	Rt.											
3-UD	170+66 to 170+94	Rt.											
4-UD	171+00 to 174+00	Rt.											
5-UD	174+00 to 178+00	Rt.											
1-R	167+00 to 168+21.53	Rt.								109.0			
2-R	167+00 to 174+50.5	Lt.								750.5			
I-F	167+00 to 178+00	Lt.										1100	14
Totals													

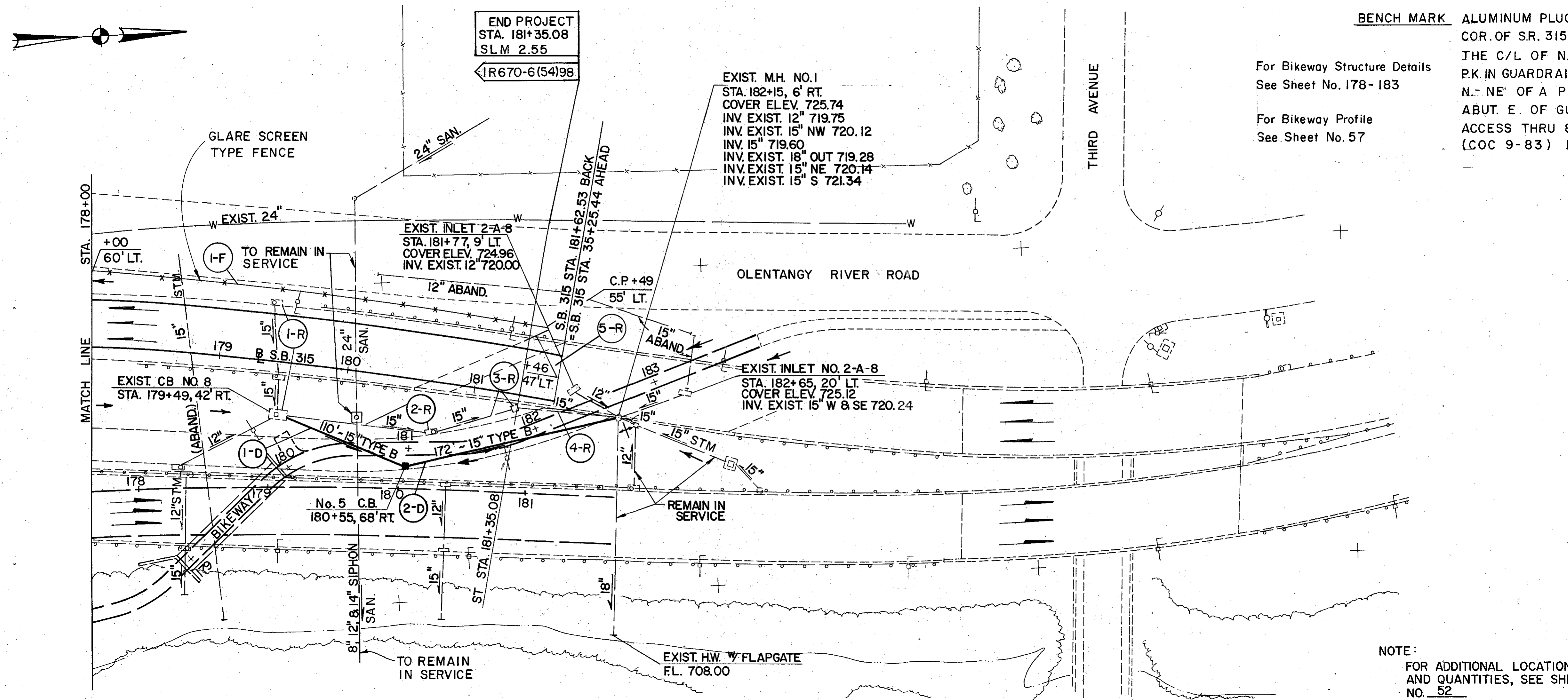
\* 1500 D-Load, 706.02

SOUTHBOUND AND ROAD OD PLAN AND PROFILE - STA. 167+00 TO STA. 178+00

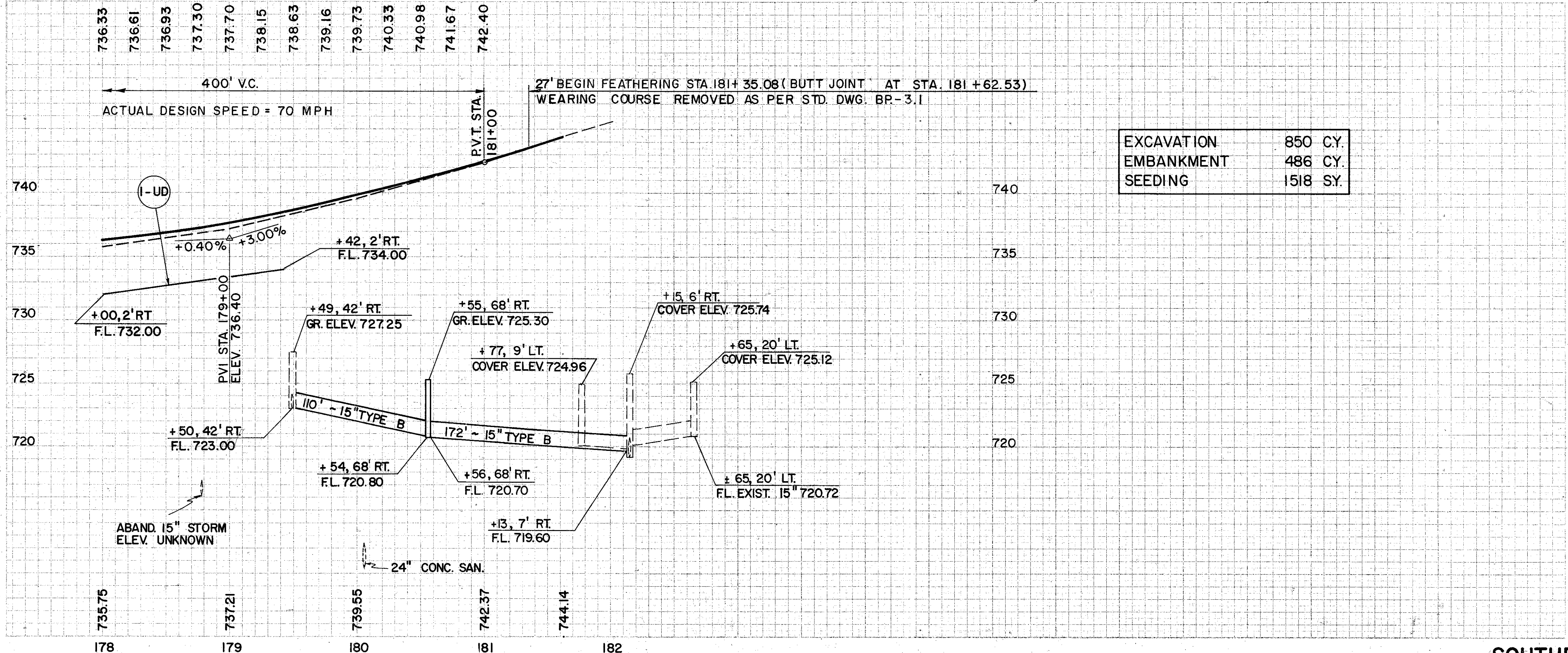
BENCH MARK ALUMINUM PLUG IN CONCRETE MONUMENT, IN THE NE COR. OF S.R. 315 OVERPASS O/ 3 RD. AVE., 36'E. OF THE C/L OF N. BOUND LANES OF S.R. 315, 26.9' S. OF PK. IN GUARDRAIL POST, 165' SE OF A MANHOLE, 8.9' N. - NE' OF A PK. IN THE NE COR. OF THE BR. ABUT. E. OF GUARDRAIL, 1' BELOW GROUND, W/ ACCESS THRU 8" CLAY TILE W/ CAST IRON LID. (COC 9-83) ELEV. = 752.201 FT.

OHIO 49  
 FHWA REGION 5 275  
 FEDERAL PROJECT  
 FRANKLIN COUNTY  
 FRA-670-1.25-C-2

For Bikeway Structure Details  
 See Sheet No. 178-183  
 For Bikeway Profile  
 See Sheet No. 57



NOTE:  
 FOR ADDITIONAL LOCATIONS AND QUANTITIES, SEE SHEET NO. 52



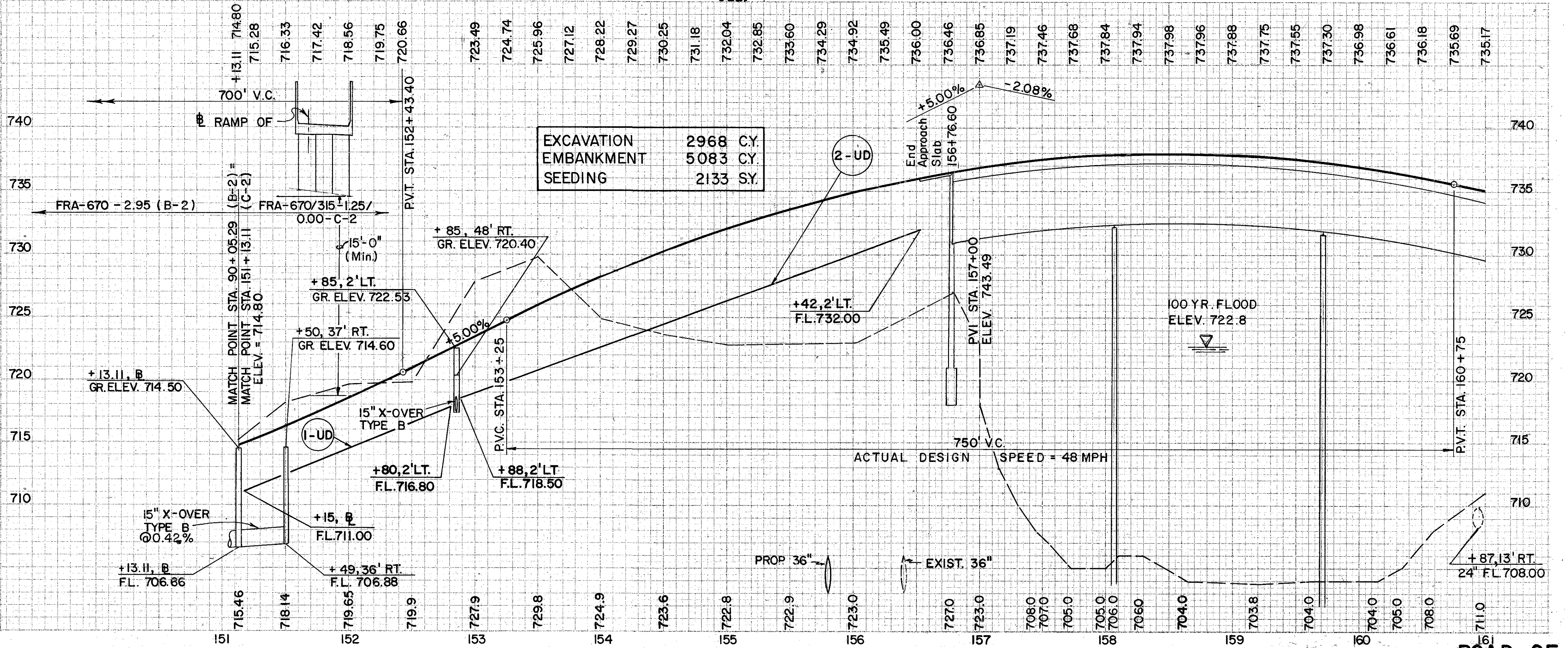
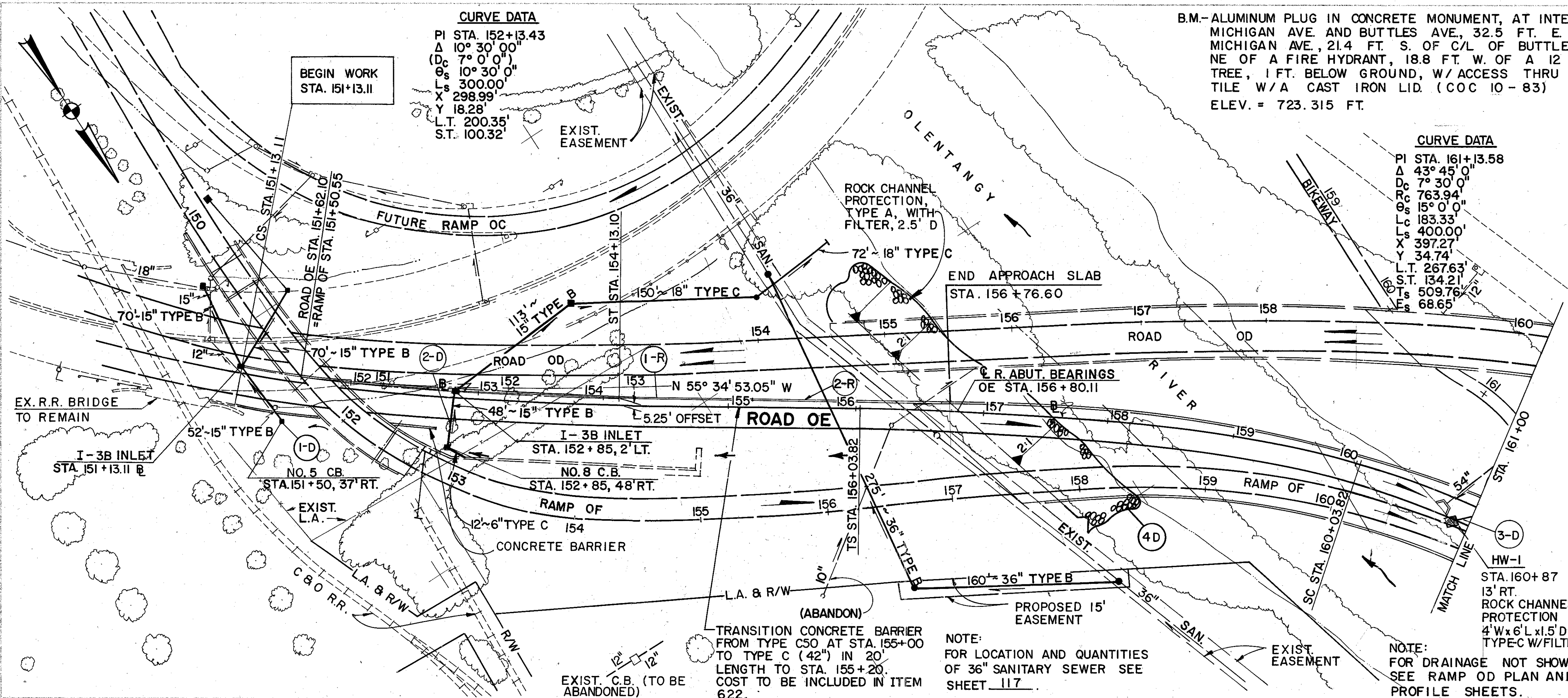
Ref. No.	Station to Station	Side	Pipe		Remov'd	202	203		204	205	206	207	See Sheet No.
			24" & Under	Remov'd			Conduit (Lin. Ft.)	Type					
1-D	179+49 to 180+55	Rt.	86	2									
2-D	180+55 to 181+15	Rt.	122	1									
1-UD	178+00 to 179+42	Rt.							142				
1-R	179+39 to 179+49	Lt. & Rt.											
2-R	179+49 to 180+75	Rt.											
3-R	180+75 to 181+33	Rt.											
4-R	181+33 to 182+15	Rt.											
5-R	181+62.53 to 181+97.53	Rt.											
1-F	178+00 to 181+35.08	Lt.											
Totals			354	4					142				
													14
													345
													345

SOUTHBOUND PLAN AND PROFILE - STA. 178+00 TO 181+62.53

B.M.-ALUMINUM PLUG IN CONCRETE MONUMENT, AT INTERSECTION OF MICHIGAN AVE AND BUTTLES AVE, 32.5 FT. E. OF C/L OF MICHIGAN AVE, 21.4 FT. S. OF C/L OF BUTTLES AVE., 30.4 FT. NE OF A FIRE HYDRANT, 18.8 FT. W. OF A 12 IN. SYCAMORE TREE, 1 FT. BELOW GROUND, W/ACCESS THRU AN 8 IN. CLAY TILE W/A CAST IRON LID. (COC 10-83)  
 ELEV. = 723.315 FT.

**CURVE DATA**  
 PI STA. 152+13.43  
 $\Delta 10^{\circ} 30' 00''$   
 $D_c 7^{\circ} 0' 00''$   
 $\rho_s 10^{\circ} 30' 00''$   
 $L_s 300.00'$   
 $X_s 298.99'$   
 $Y_s 18.28'$   
 $L.T. 200.35'$   
 $S.T. 100.32'$

**CURVE DATA**  
 PI STA. 161+13.58  
 $\Delta 45^{\circ} 45' 00''$   
 $D_c 7^{\circ} 30' 00''$   
 $\rho_s 15^{\circ} 0' 00''$   
 $L_s 183.33'$   
 $X_s 400.00'$   
 $Y_s 397.27'$   
 $L.T. 267.63'$   
 $S.T. 134.21'$   
 $T_s 509.76'$   
 $E_s 68.65'$

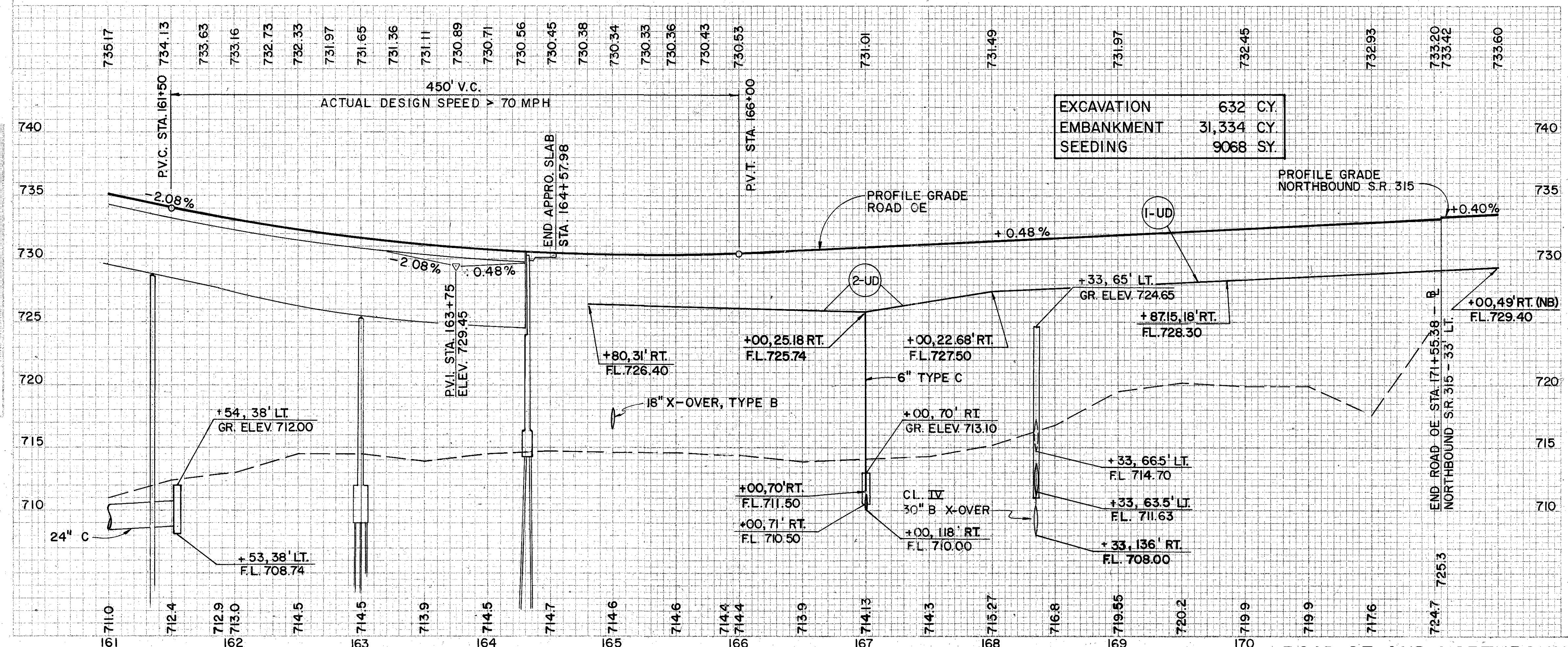
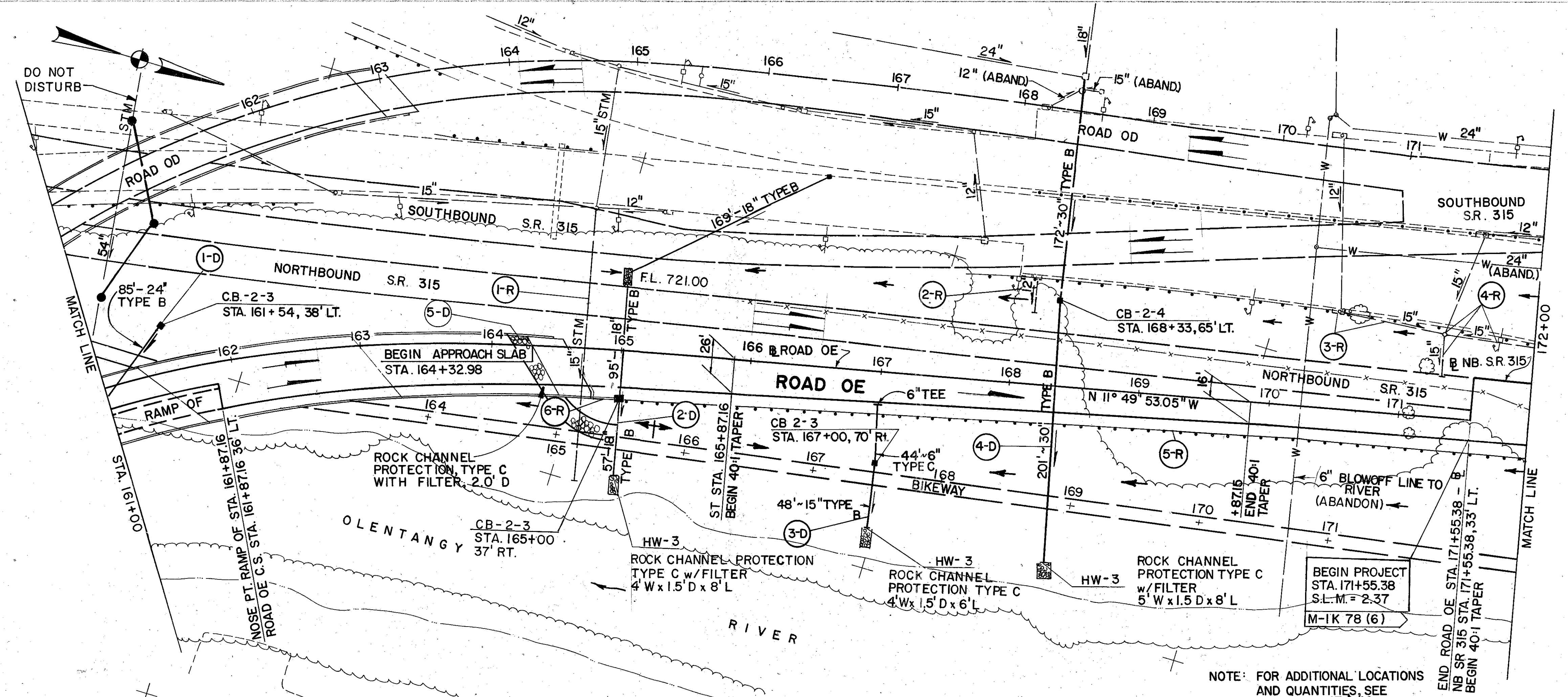


EXCAVATION 2968 CY.  
 EMBANKMENT 5083 CY.  
 SEEDING 2133 SY.

**ESTIMATED QUANTITIES**

Ref. No.	Station to Station	Side	Item Description	Cu. Yd.	Cu. Yd.	Conduit Lin. Ft.		Type	B#	B#	24	See Sheet No.	Lin. Ft.
						6"	12"						
1-D	151+13.11 - 151+50	Rt.	1-3 B Median Inlet As Per Plan										
2-D	152+85	Rt.	No. 5 Catch Basin	52									
3-D	160+87 - 161+00	Lt.	No. 8 Catch Basin	48									
4-D	157+00	Lt.	Rock Channel Protection Type C w/Filter										
1-UD	151+15 to 152+80	Lt.	Concrete Masonry										
2-UD	152+88 to 156+42	Lt.	Rock Channel Protection Type A w/Filter										
1-R	151+13.11 to 155+00	Lt.	Concrete Barrier Type C										
2-R	155+00 to 156+63	Lt.	Concrete Barrier Type C50										
3-R	151+13.11 to 152+73.11	Rt.	Concrete Barrier Type A										
<b>Totals</b>				100	12	13							160

ROAD OE PLAN AND PROFILE - STA. 151+13.11 TO STA. 161+00



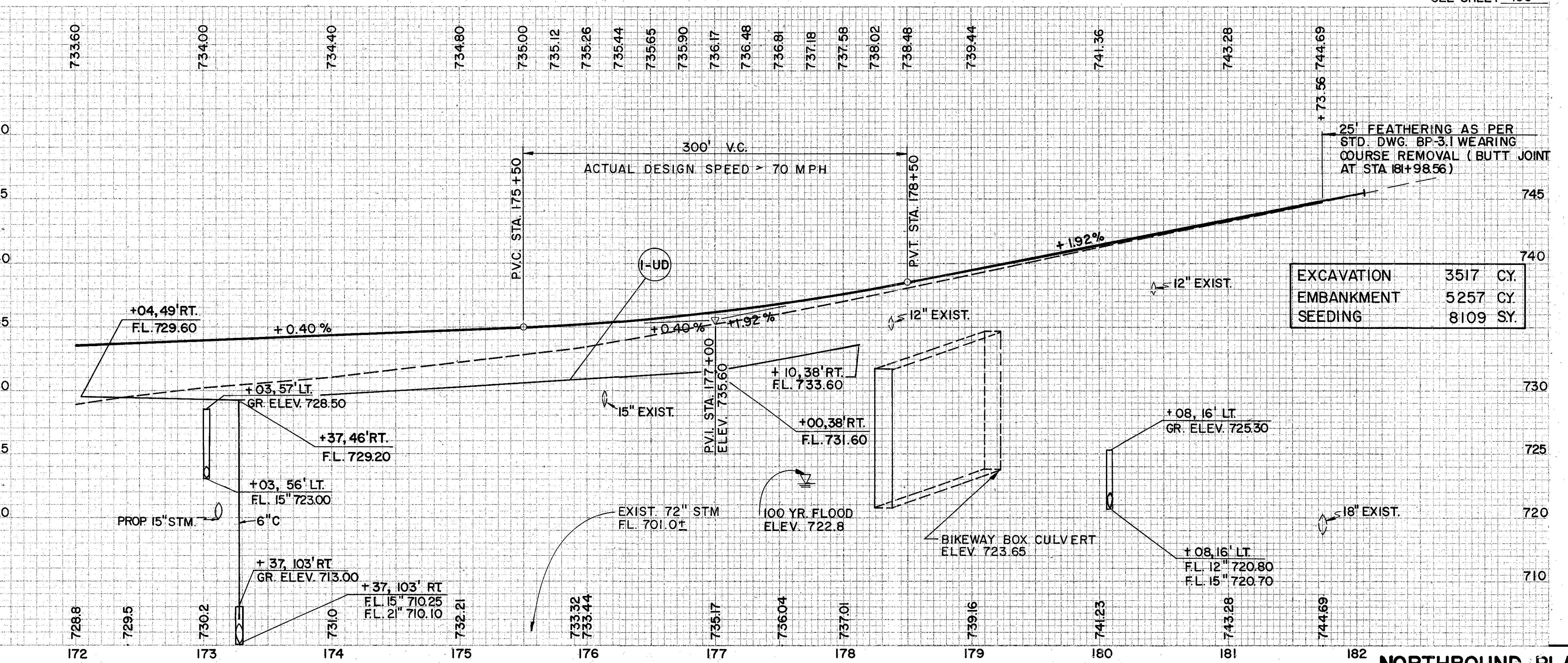
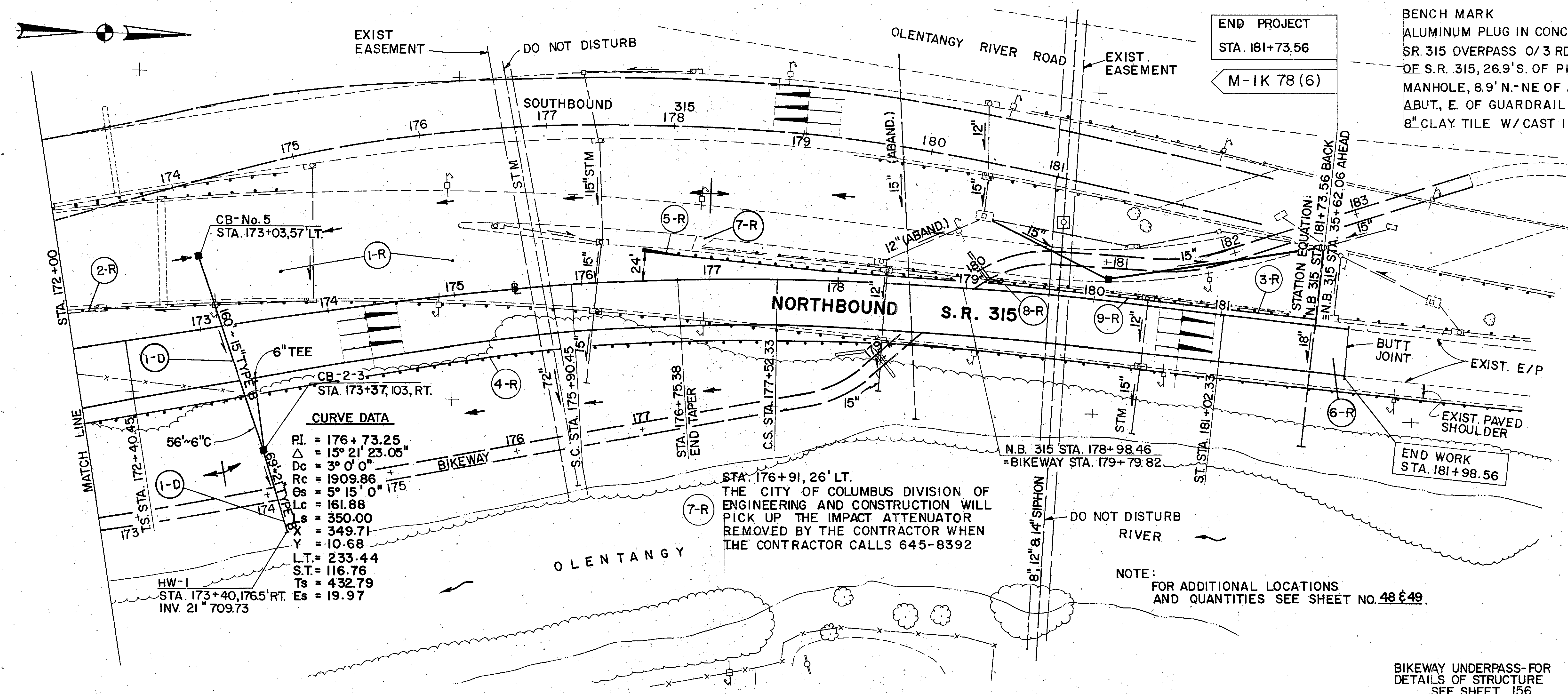
\* 1750 D-Load, 706.02 \*\* 706.02

Ref. No.	Station to Station	Side	Description	Unit	Quantity	ESTIMATED QUANTITIES			
						603	604	605	606
609			Combination Curb & Gutter Type 2 As Per Plan	Lin. Ft.	20				
601			Rock Channel Protection Type C w/ Filter	Cu. Yd.	106.0				
605			6" Shallow Pipe Underdrains	Lin. Ft.	400				
605			6" Unclassified Pipe Underdrains	Lin. Ft.	320				
606			Bridge Terminal Assembly Type 2	Each	1				
606			Guardrail Type 5	Lin. Ft.	728.77				
604			2-4 Catch Basin	Each	1				
604			2-3 Catch Basin	Each	3				
603			Conduit	Lin. Ft.	201				
603			Conduit	Lin. Ft.	152				
603			Conduit	Lin. Ft.	48				
603			Conduit	Lin. Ft.	44				
602			Concrete Masonry	Cu. Yd.	21.3				
202			Manhole Removed	Each	1				
202			Catch Basin or Inlet Removed	Each	2				
202			Pipe Removed 24" & Under	Lin. Ft.	414				
			Totals						

ROAD OE AND NORTHBOUND PLAN AND PROFILE - STA. 161+00 TO STA. 172+00

ORIGINAL SURVEY PLOTTING  
 BY: DATE:  
 CHECKED: DATE:  
 APPROVED: DATE:

ORIGINAL SURVEY PLOTTING  
 BY: DATE:  
 CHECKED: DATE:  
 APPROVED: DATE:



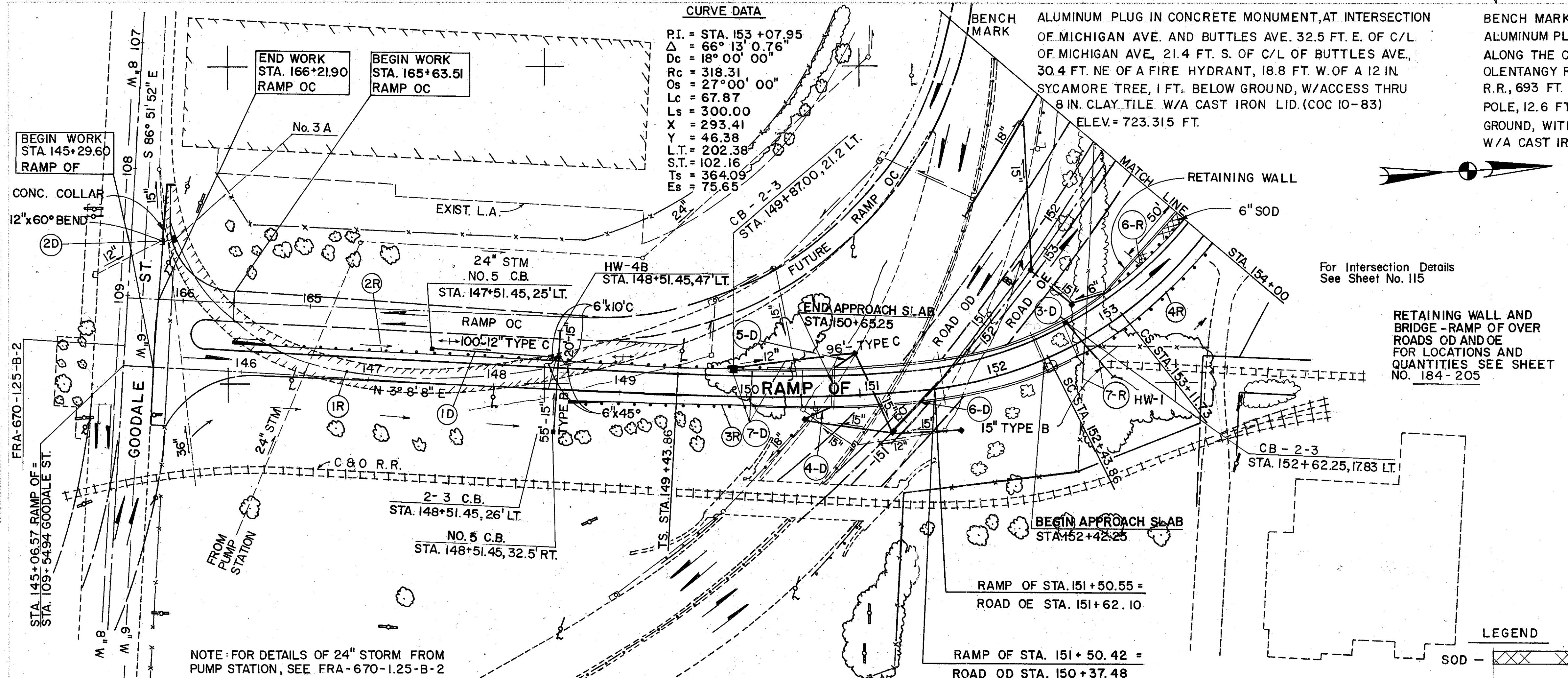
**NORTHBOUND PLAN AND PROFILE- STA. 172+00 TO STA. 181+73.56**

**BENCH MARK**  
 ALUMINUM PLUG IN CONCRETE MONUMENT, IN THE NE COR. OF SR 315 OVERPASS O/3 RD. AVE., 36' E. THE C/L OF BOUND LANES OF S.R. 315, 26.9' S. OF PK IN GUARDRAIL POST, 165' SE OF A MANHOLE, 8.9' N.-NE OF A PK IN THE NE COR. OF THE BR. ABUT., E. OF GUARDRAIL, 1' BELOW GROUND, W/ ACCESS THRU 8" CLAY TILE W/ CAST IRON LID. (COC 9-83) ELEV.=752.201 FT.

**OHIO REGION 52 275**

**FRANKLIN COUNTY FRA-670-125-C-2**

Ref. No.	Station to Station	Side	ESTIMATED QUANTITIES			See Sheet No.
			Conduit Lin. Ft.	Conduit Type	Quantity	
I-D	173+03 to 173+40	Lt.	69	15"	6	86
I-UD	172+04 to 178+10	Rt.	160	15"	6	86
1-R	172+00 to 181+73.57	Lt.	69	15"	6	86
2-R	172+00 to 181+73.57	Lt.	69	15"	6	86
3-R	177+00 to 181+73.57	Lt.	69	15"	6	86
4-R	172+00 to 179+00	Rt.	69	15"	6	86
5-R	176+50 to 179+00	Lt.	69	15"	6	86
6-R	181+73.56	Rt.	69	15"	6	86
7-R	176+90	Lt.	69	15"	6	86
8-R	179+00 to 179+50	Lt.	69	15"	6	86
9-R	179+50 to 181+73.56	Lt.	69	15"	6	86
<b>Totals</b>			<b>69</b>	<b>15"</b>	<b>6</b>	<b>86</b>



**CURVE DATA**

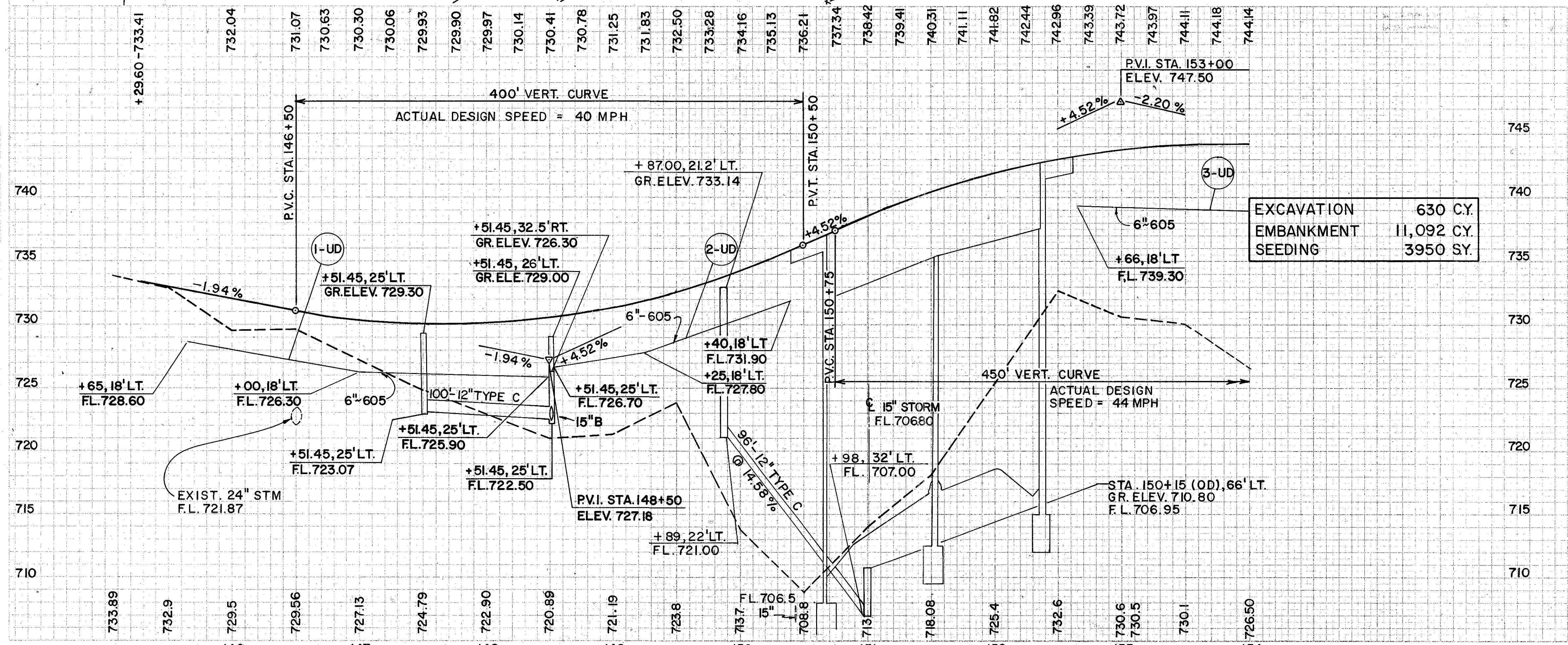
PI.	= STA. 153 + 07.95
Δ	= 66° 13' 0.76"
Dc	= 18° 00' 00"
Rc	= 318.31
Os	= 27° 00' 00"
Lc	= 67.87
Ls	= 300.00
X	= 293.41
Y	= 46.38
L.T.	= 202.38
S.T.	= 102.16
Ts	= 364.09
Es	= 75.65

BENCH MARK  
ALUMINUM PLUG IN CONCRETE MONUMENT, 540 FT. E  
ALONG THE CONRAIL R.R. TRACKS FROM THE BR. O/  
OLENTANGY RIVER, E. OF THE CROSSING OF THE C/O  
R.R., 693 FT. E. OF MI. MARKER, 56.4 FT. N. OF A P/  
POLE, 12.6 FT. N.E. SET OF TRACKS, 1 FT. BELOW  
GROUND, WITH ACCESS THROUGH 8 IN. CLAY TILE  
W/A CAST IRON LID. (COC II-83) ELEV. = 723.427 FT.

For Intersection Details  
See Sheet No. 115

RETAINING WALL AND  
BRIDGE - RAMP OF OVER  
ROADS OD AND OE  
FOR LOCATIONS AND  
QUANTITIES SEE SHEET  
NO. 184-205

NOTE: FOR DETAILS OF 24" STORM  
FROM  
PUMP STATION, SEE FRA-670-1.25-B-2

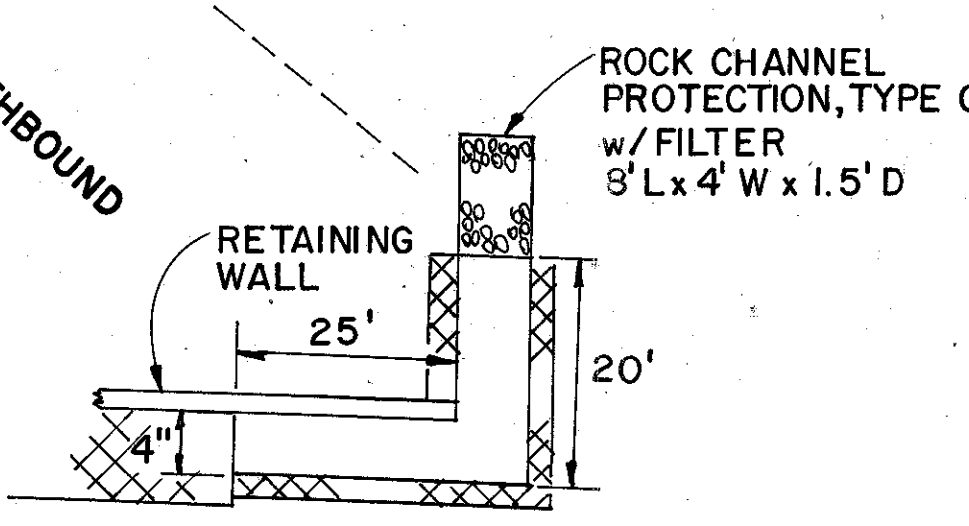
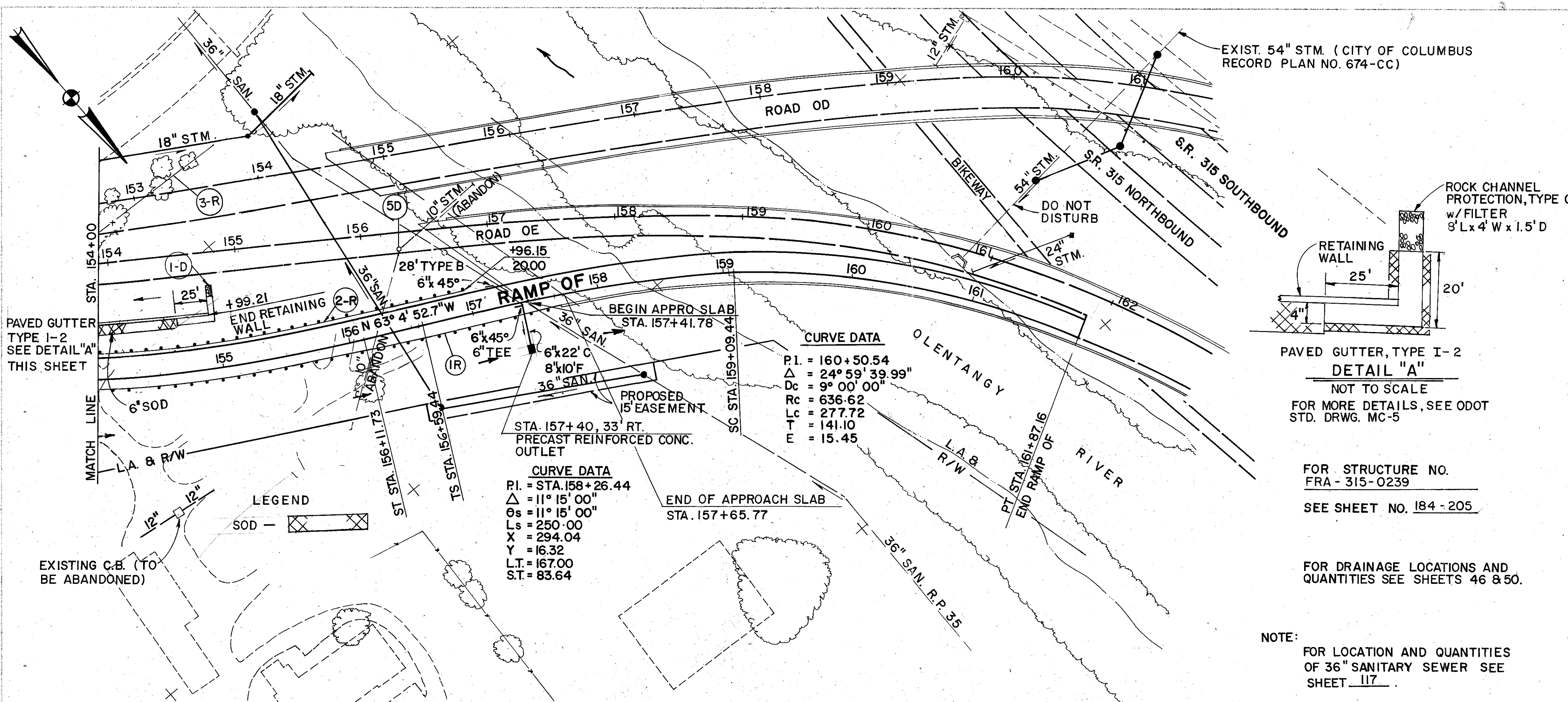


EXCAVATION 630 CY.  
EMBANKMENT 11,092 CY.  
SEEDING 3950 SY.

Ref No.	Station to Station	Side	ESTIMATED QUANTITIES		
			EACH	SQ. YD.	LIN. FT.
1D	147+51.45 to 148+51.45	LT.	1		
2D	145+29.60	LT.	1		
4D	150+47 to 150+65	RT.	1		
5D	150+65 to 150+88	LT.	1		
6D	151+13 to 151+52	LT.	1		
1R	145+29.60 to 149+40	LT.		1000	
2R	145+90 to 150+15.00	LT.			
3R	148+63.11 to 150+00.61	RT.			
4R	152+78.48 to 154+00	RT.			
6R	153+08.74 to 154+00	LT.			
1-UD	148+51.45 to 148+51.45	LT.			
2-UD	148+51.45 to 150+40	LT.			
3-UD	152+66 to 154+00	LT.			
7-D	149+87 to 151+00	LT.			
1-S	153+48 to 154+00	LT.			
3-D	152+12.25	LT.			
202			1	1000	
202					900
202					360
602					1.7
202					1.95
602					360
202					127
603					114
603					202
604					2
604					3
606					775.28
606					2
606					2
606					25
609					25
609					35
660					35

RAMP OF PLAN AND PROFILE - STA. 145+29.60 TO STA. 154+00

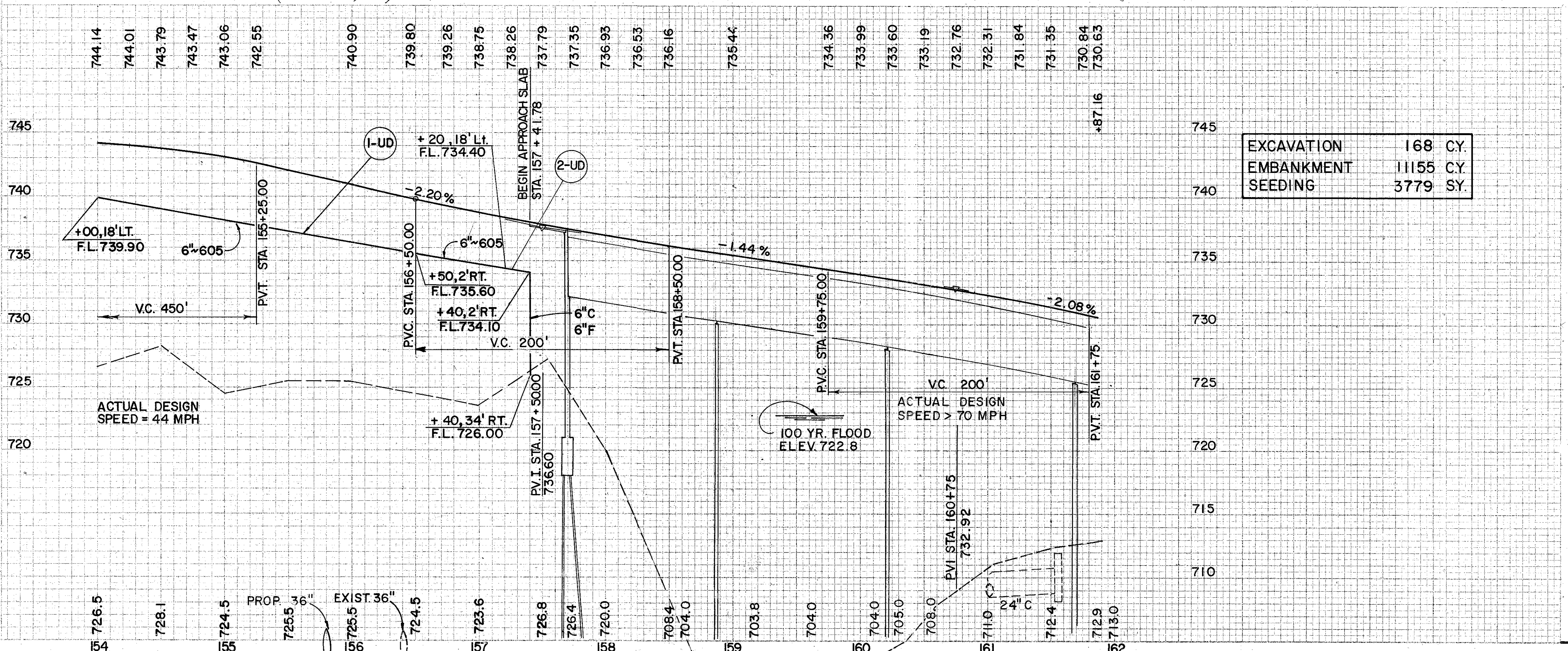




FOR STRUCTURE NO. FRA-315-0239  
 SEE SHEET NO. 184-205

FOR DRAINAGE LOCATIONS AND QUANTITIES SEE SHEETS 46 & 50.

NOTE:  
 FOR LOCATION AND QUANTITIES OF 36" SANITARY SEWER SEE SHEET 117.



Ref. No.	Station to Station	Side	603 Conduit		605 6" Shallow Pipe Underdrains	606 Guardrail Type 5	606 Bridge Term. Assembly Type I	606 Anchor Assembly Type T	202 Fence Removed	202 Manhole Abandoned	Special Precast Rein. Conc. Outlet	601 Rock Channel Protection, Type C w/ Filter	601 Paved Gutter Type I-2	600 Sodding	See Sheet No.
			Lin. Ft.	Type											
IR	154+00 to 157+69.50	Rt.	289.50	1											
2-R	154+00 to 156+96.15	Lt.	274.23	1					110						
3-R	154+00	Lt.													
1-UD	154+00 to 157+20	Lt.			320	28									
2-UD	156+50 to 157+40	Rt.			90										
1-D	154+99.21	Lt.													
5-D	156+57	Lt.													
<b>Totals</b>															

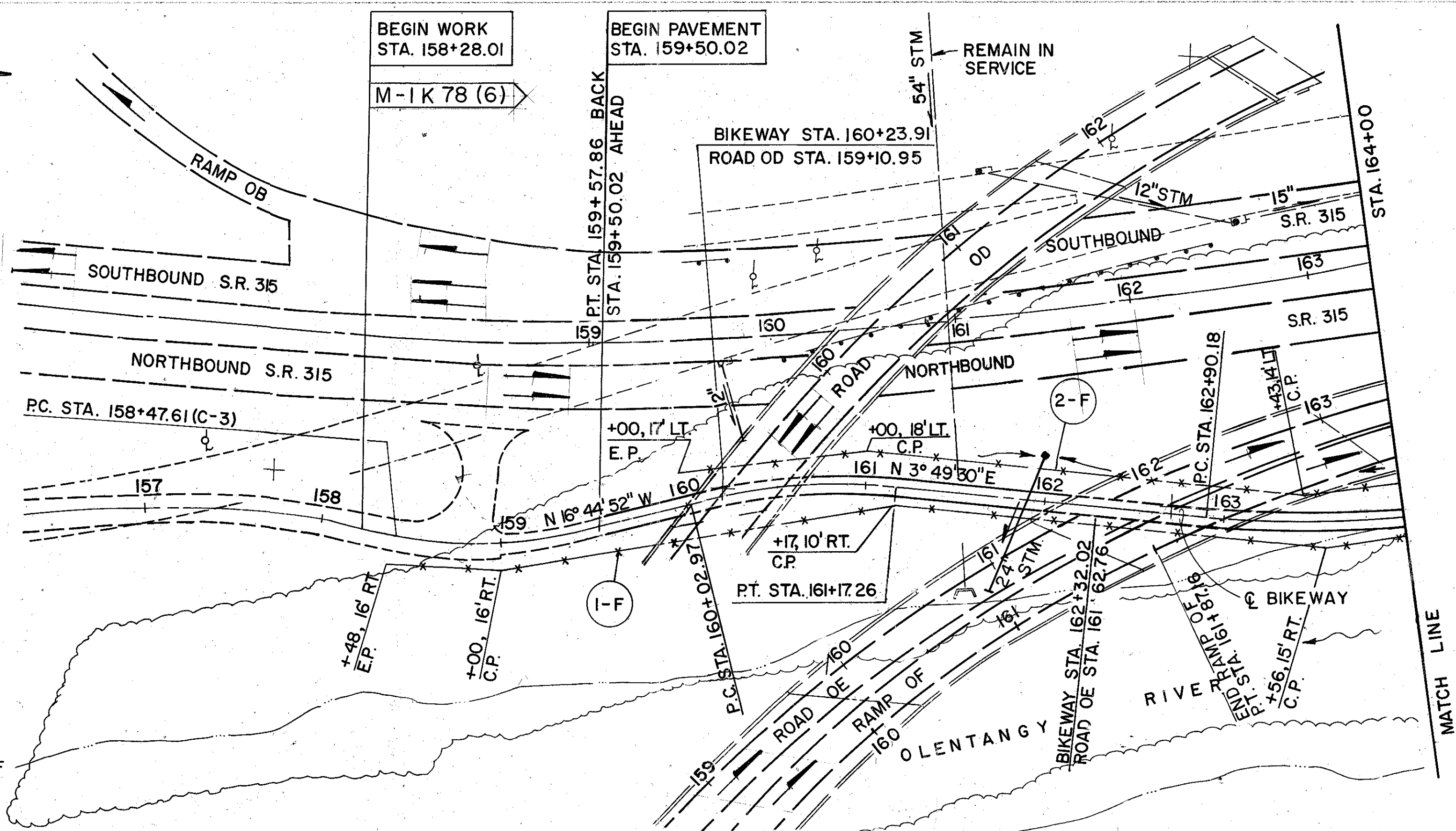
RAMP OF PLAN AND PROFILE - STA. 154+00 TO STA. 161+87.16

FINAL SURVEY RECORD  
 PROJECT NO. 670-1.25-C-2  
 SHEET NO. 55 OF 275  
 DATE 10/15/13

ORIGINAL SURVEY RECORD  
 PROJECT NO. 670-1.25-C-2  
 SHEET NO. 55 OF 275  
 DATE 10/15/13

**BENCH MARK**  
 ALUMINUM PLUG IN CONCRETE MONUMENT, 400' W. OF CONRAIL R.R. BR. O/OLENTANGY RIVER, 301' W. OF R.R. MI. MARKER #1, NEAR S.W. COR. OF CONRAIL R.R. BR. O/TWIN RIVERS DR., 16.0' S. R.R. TRACKS, 11.5' W. OF A NAIL IN SW ABUT., 1' BELOW GROUND, WITH ACCESS THRU AN 8" FARM TILE W/A CAST IRON LID. (COC 8-83) ELEV. = 725.281 FT.

NOTE: ALL FENCE LOCATIONS ARE FROM  $\odot$  BIKEWAY, UNLESS OTHERWISE NOTED.



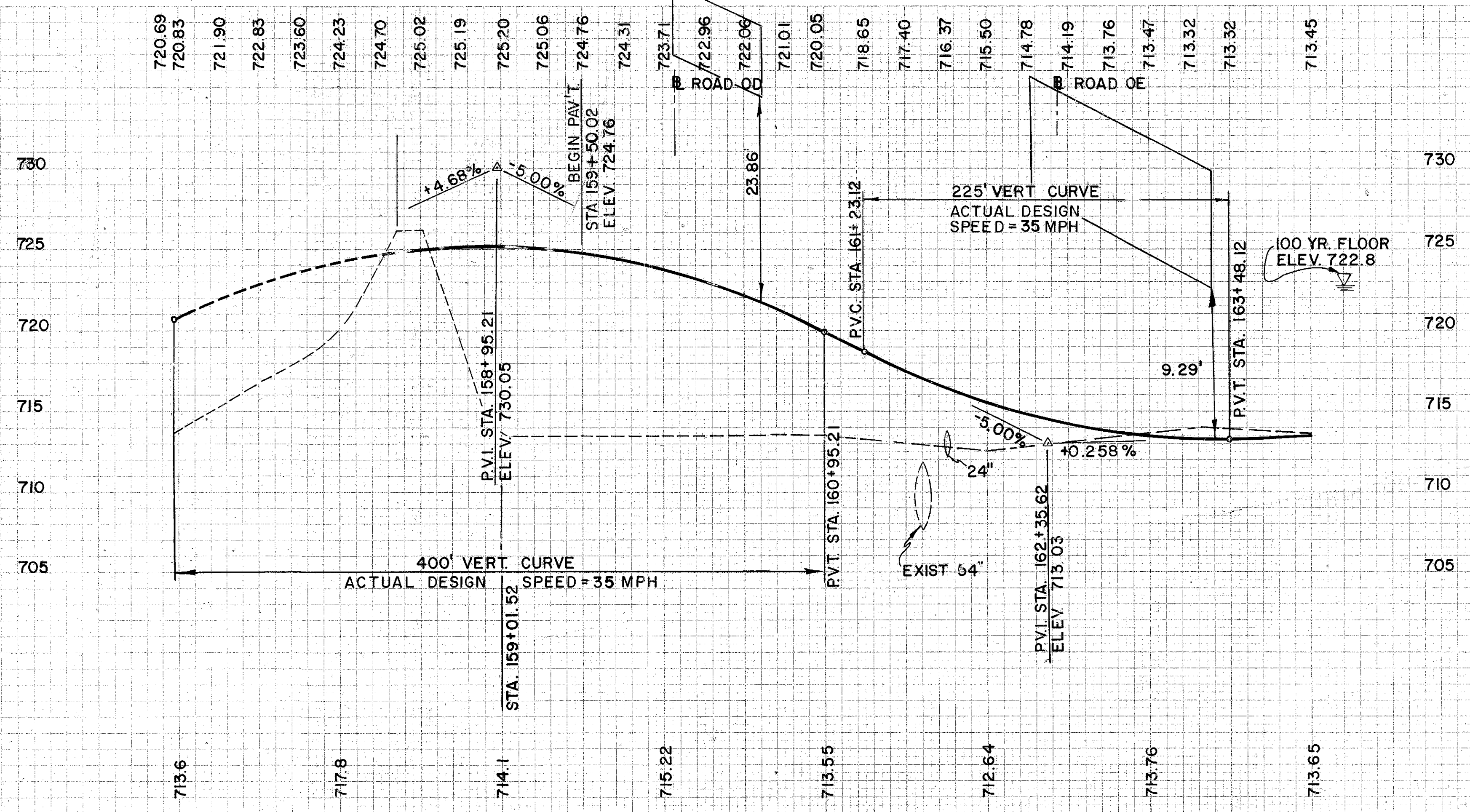
**CURVE DATA**  
 P.I. STA. 159+03.65  
 $\Delta$  25° 21' 22.2"  
 R 249.11'  
 Dc 23° 00' 00"  
 T 56.04'  
 L 110.24'  
 E 6.23'

**CURVE DATA**  
 P.I. STA. 160+60.74  
 $\Delta$  20° 34' 22.25"  
 R 318.31'  
 Dc 18° 00' 00"  
 T 57.77'  
 L 114.29'  
 E 5.20'

**CURVE DATA**  
 P.I. STA. 163+53.49  
 $\Delta$  12° 36' 37.26"  
 R 572.96'  
 Dc 10° 00' 00"  
 T 63.31'  
 L 126.10'  
 E 3.49'

NOTE: FOR LOCATIONS AND QUANTITIES SEE SHEET NO. 51

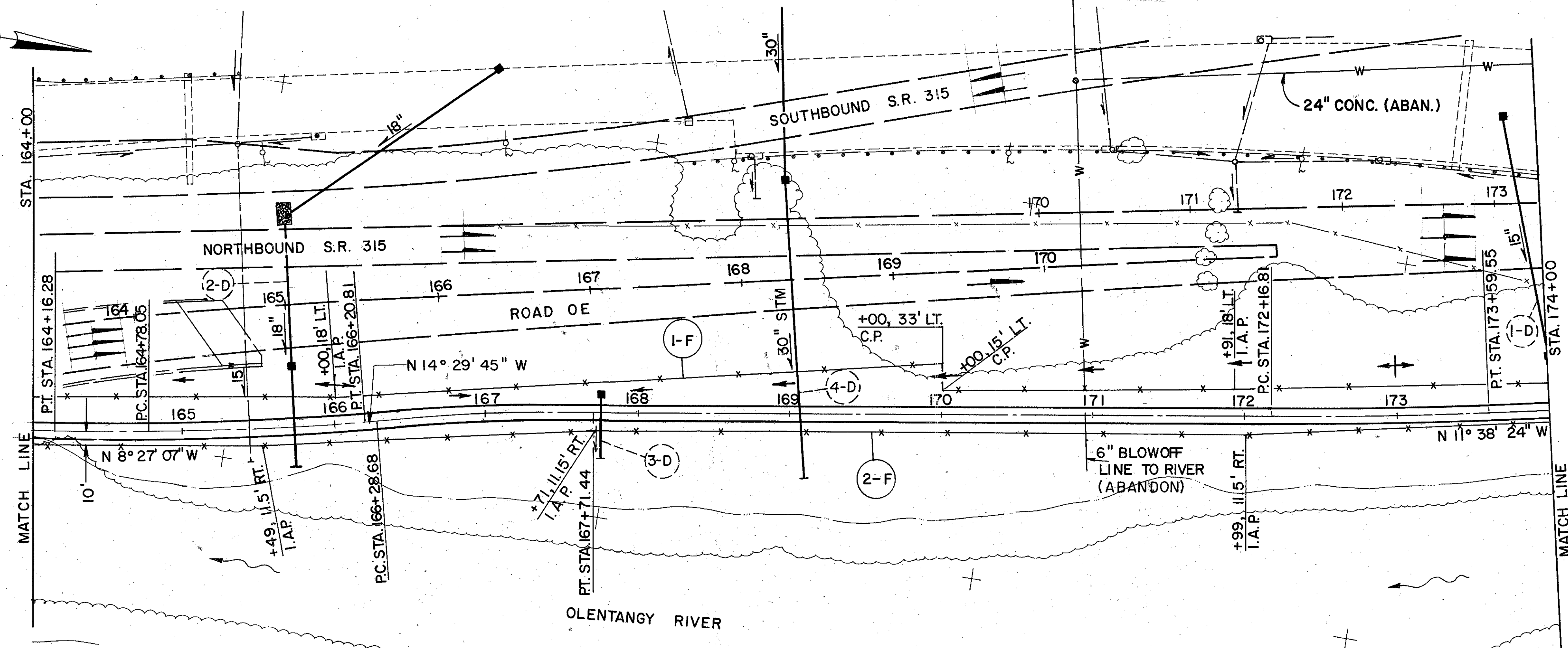
EXCAVATION 328 CY.  
 EMBANKMENT 4003 CY.  
 SEEDING 1308 SY.



ESTIMATED QUANTITIES

Ref No.	Station to Station	Side	FENCE TYPE	CLT	Lin. FT	Totals
1-F	158+48 TO 164+00	RT.		574		
2-F	160+00 TO 164+00	LT.		405		
607						979

BIKEWAY PLAN AND PROFILE STA. 158+47.61 TO STA. 164+00.00

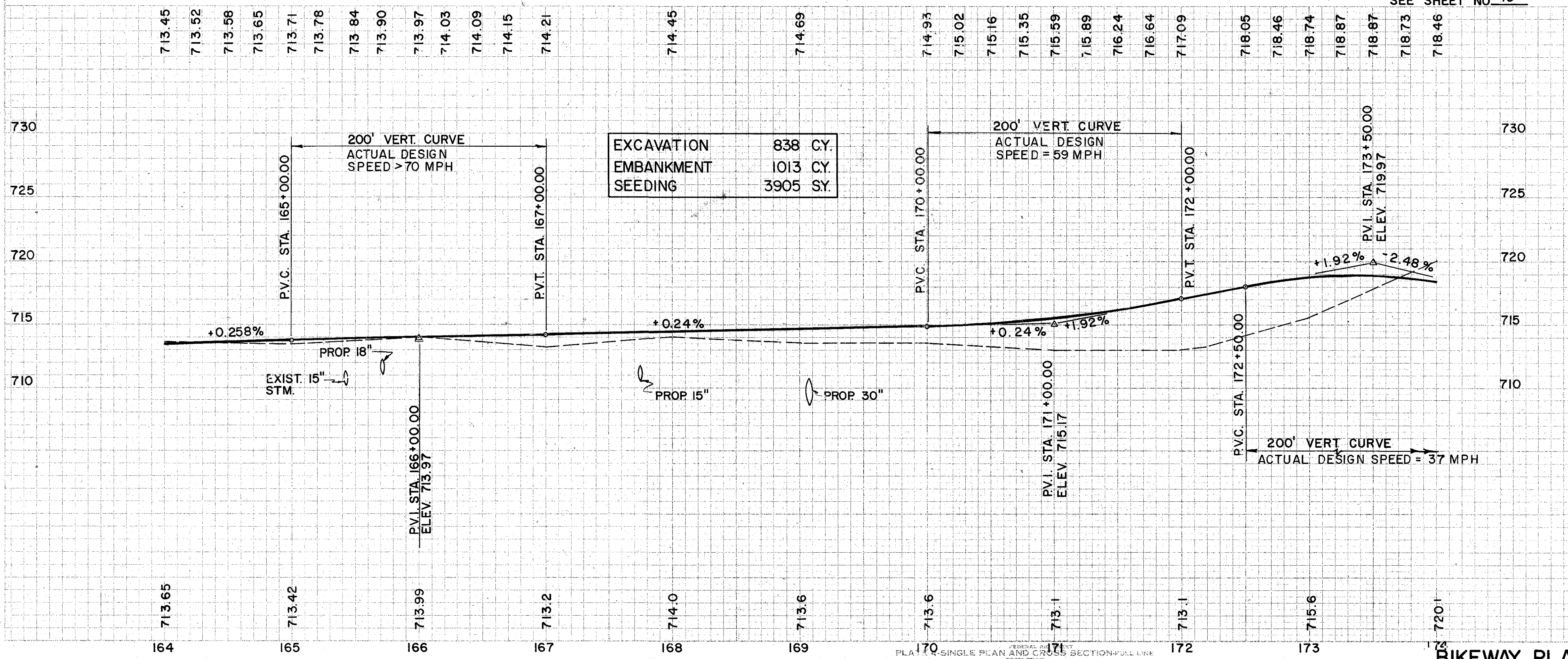


**CURVE DATA**  
 P.I. STA. 165+49.49  
 Δ 5° 42' 38.22"  
 R 1432.39'  
 Dc 4° 00' 00"  
 T 63.31'  
 L 126.10'  
 E 1.78'

**CURVE DATA**  
 P.I. STA. 167+00.12  
 Δ 5° 42' 38.19"  
 R 1432.39'  
 Dc 4° 00' 00"  
 T 71.44'  
 L 142.77'  
 E 1.78'

**CURVE DATA**  
 P.I. STA. 172+88.19  
 Δ 2° 51' 17.29"  
 R 2864.79'  
 Dc 2° 0' 0"  
 T 71.38'  
 L 142.74'  
 E 0.89'

NOTE:  
 FOR LOCATIONS AND  
 QUANTITIES SEE  
 SEE SHEET NO. 48

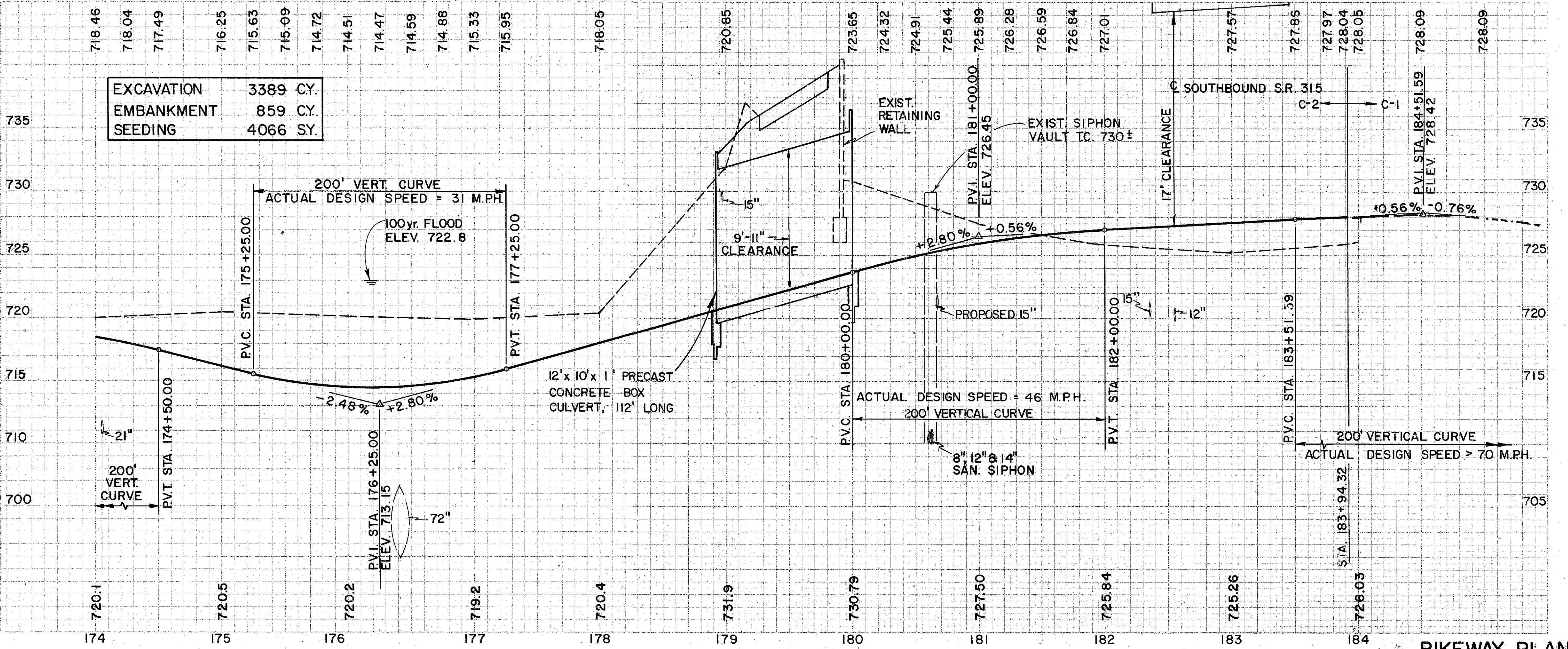
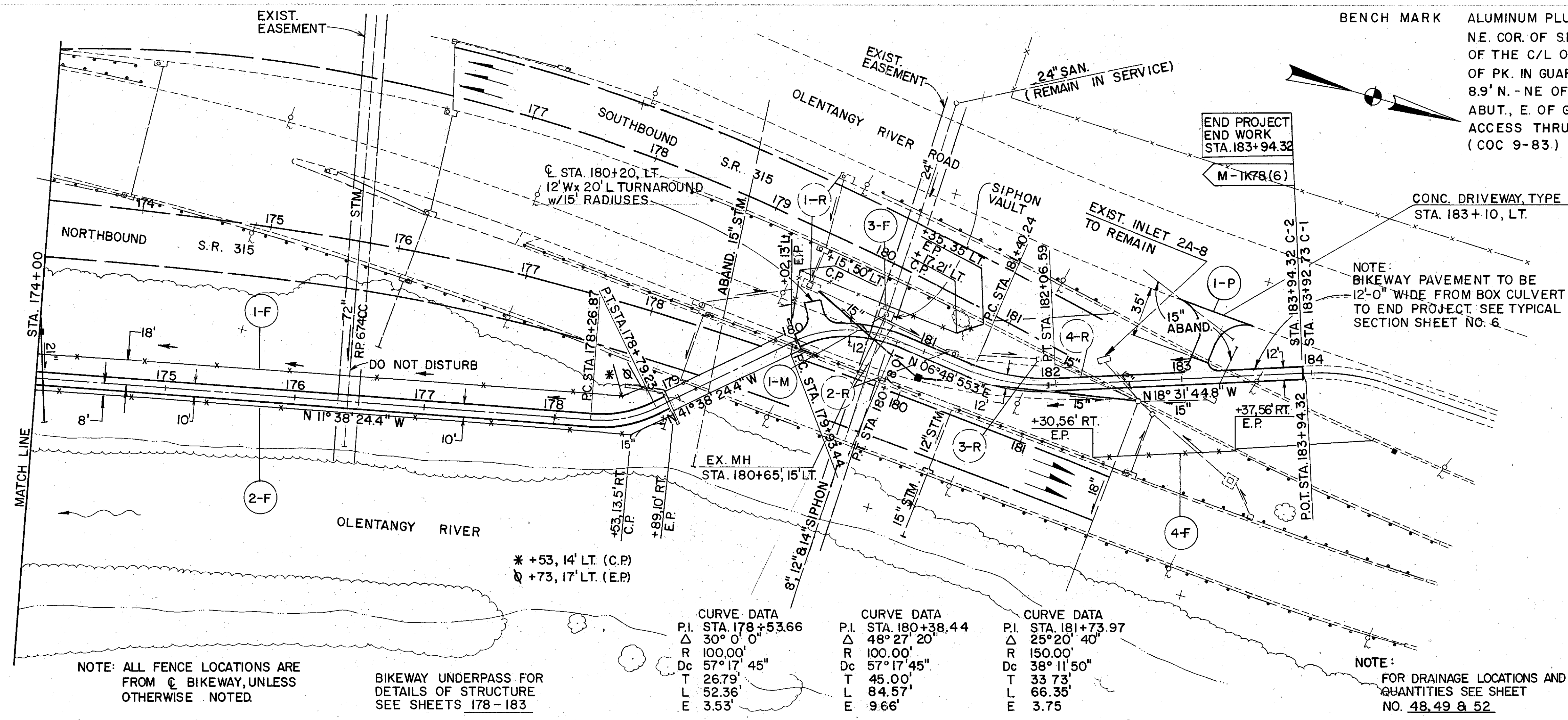


**ESTIMATED QUANTITIES**

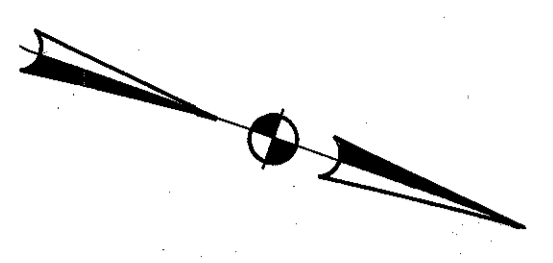
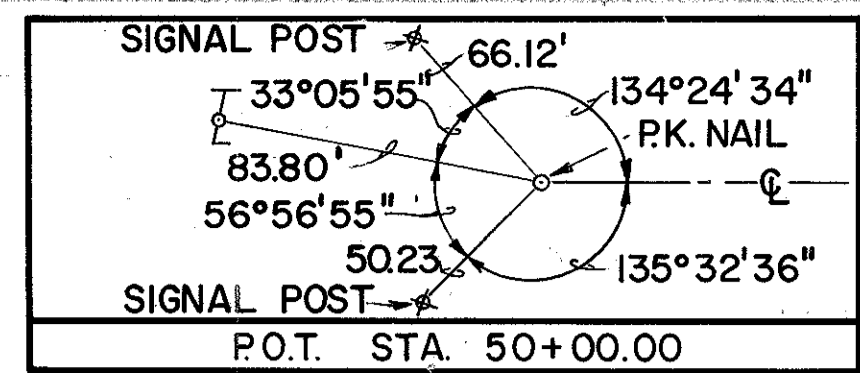
Ref No	Station to Station	Side	Fence Type	CLT	Lin. Ft.	Totals
I-F	164+00 TO 174+00	LT.	607	CLT	1021	2023
2-F	164+00 TO 174+00	RT.	607	CLT	1002	
					<b>Totals</b>	

**BIKEWAY PLAN AND PROFILE STA. 164+00.00 TO STA. 174+00.00**

BENCH MARK  
ALUMINUM PLUG IN CONCRETE MONUMENT IN THE N.E. COR. OF S.R. 315 OVERPASS O/3 RD. AVE., 36' E. OF THE C/L OF N. BOUND LANES OF S.R. 315, 26.9' S. OF PK. IN GUARDRAIL POST, 165' SE OF A MANHOLE, 8.9' N. - NE OF A PK IN THE NE COR. OF THE BR. ABUT., E. OF GUARDRAIL, 1' BELOW GROUND, W/ ACCESS THRU 8" CLAY W/CAST IRON LID. (COC 9-83.) ELEV. = 752.201 FT.



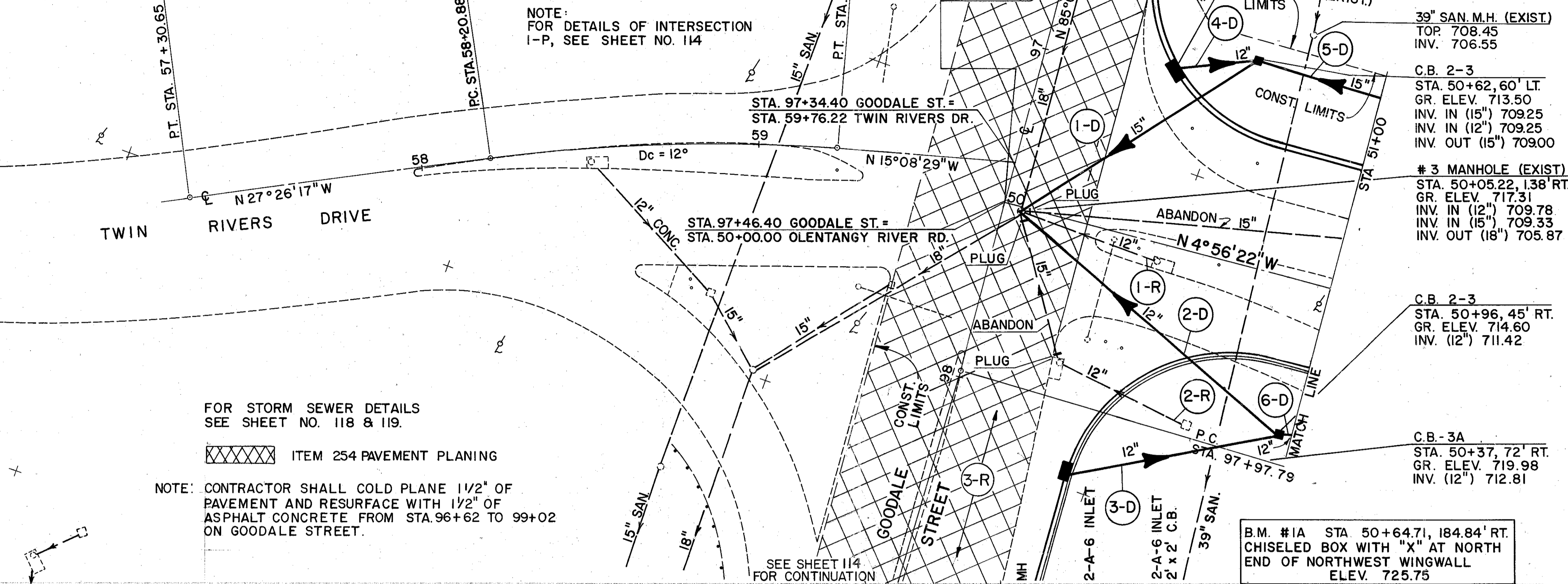
BIKEWAY PLAN AND PROFILE - STA. 174+00.00 TO STA. 183+92.73



CALC. BY W.E.H. 6/87  
CHECKED BY J.S.S 7/87

OHIO  
FHWA REGION 5  
FEDERAL PROJECT  
58  
275

FRANKLIN COUNTY  
FRA - 670 - 1.25 - C-2



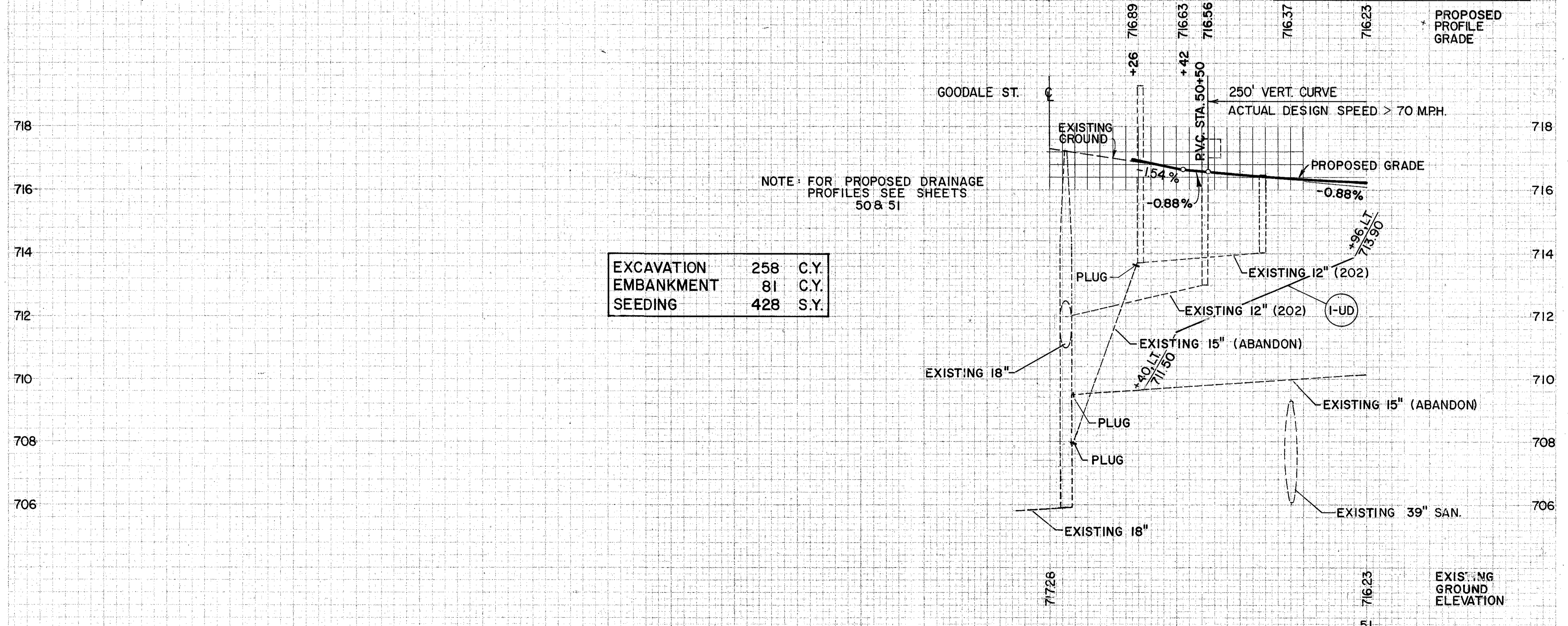
FOR STORM SEWER DETAILS  
SEE SHEET NO. 118 & 119.

ITEM 254 PAVEMENT PLANING

NOTE: CONTRACTOR SHALL COLD PLANE 1/2" OF  
PAVEMENT AND RESURFACE WITH 1/2" OF  
ASPHALT CONCRETE FROM STA. 96+62 TO 99+02  
ON GOODALE STREET.

NOTE: FOR PROPOSED DRAINAGE  
PROFILES SEE SHEETS  
50 & 51

EXCAVATION	258 C.Y.
EMBANKMENT	81 C.Y.
SEEDING	428 S.Y.



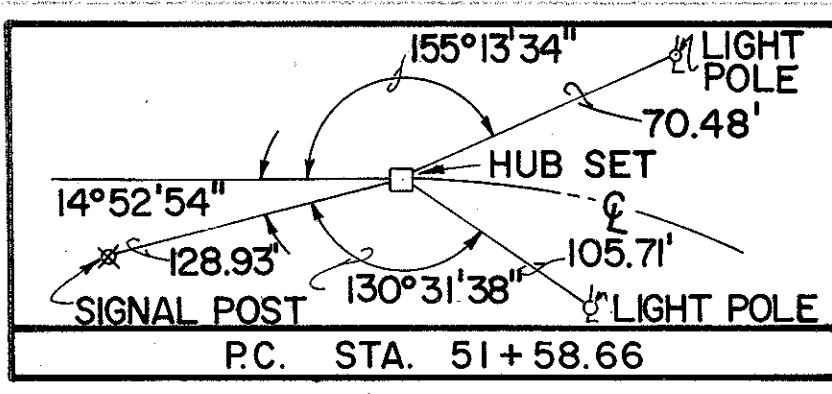
\* WITH V - GRADE

Ref No.	Station to Station	Side	Quantity	Unit
254			Pavement Planing, Bituminous	Sq. Yd.
404			Asphalt Concrete	Cu. Yd.
605			Shallow Pipe Under Plan, As Per Plan	Lin. Ft.
604			Catch Basin No. 3A	Each
603			Catch Basin Type B	Each
603			Catch Basin Type C	Each
202			Pipe Removed 24" and Under	Lin. Ft.
202			Catch Basin or Inlet Removed	Each
Totals				

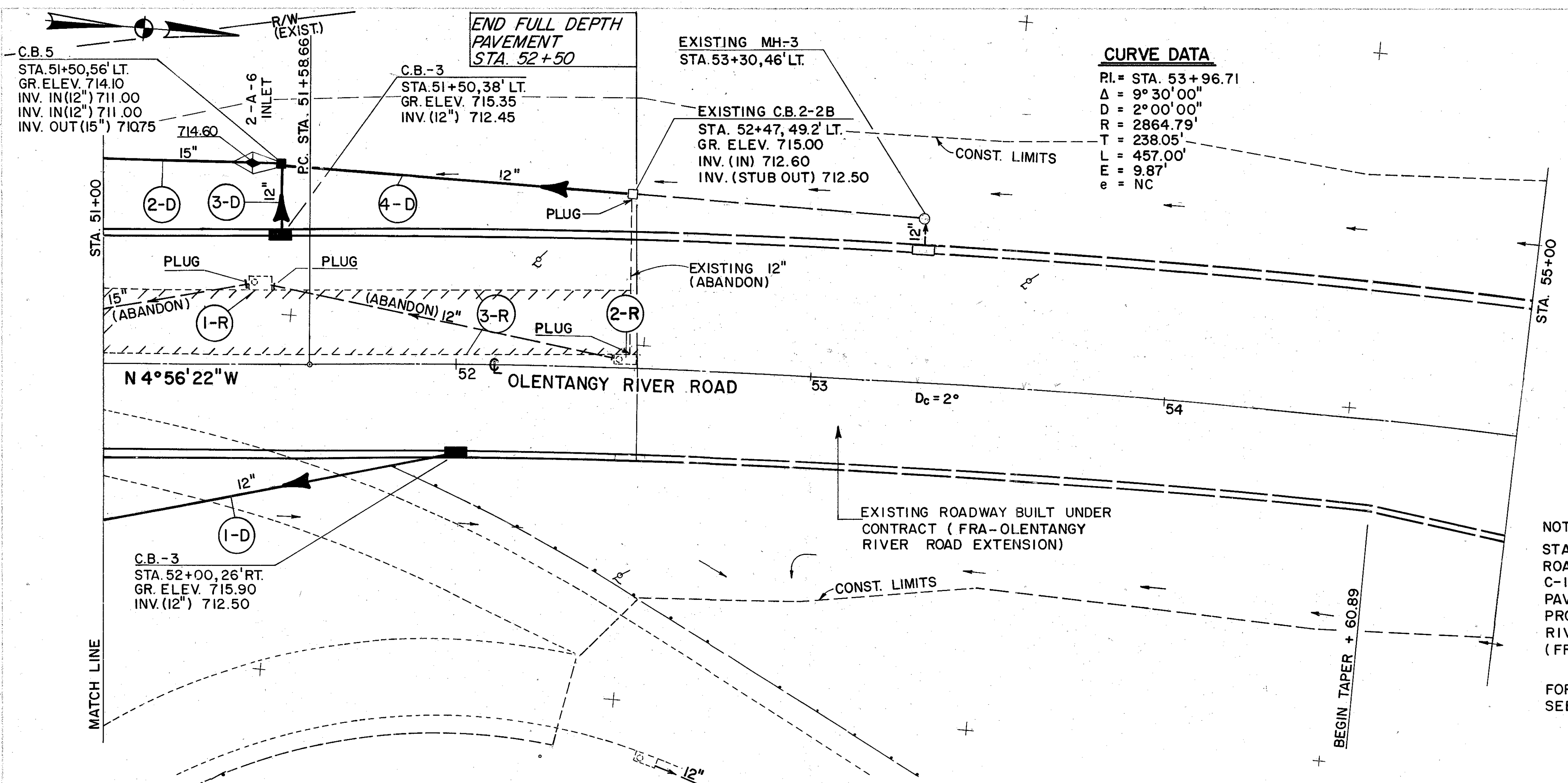
OLENTANGY RIVER RD. PLAN AND PROFILE - STA 50+00 TO STA. 51+00

FRANKLIN COUNTY  
FRA-670-1.25-C-2

CALC. BY WE.H. 6/87  
CHECKED BY J.S.S. 7/87

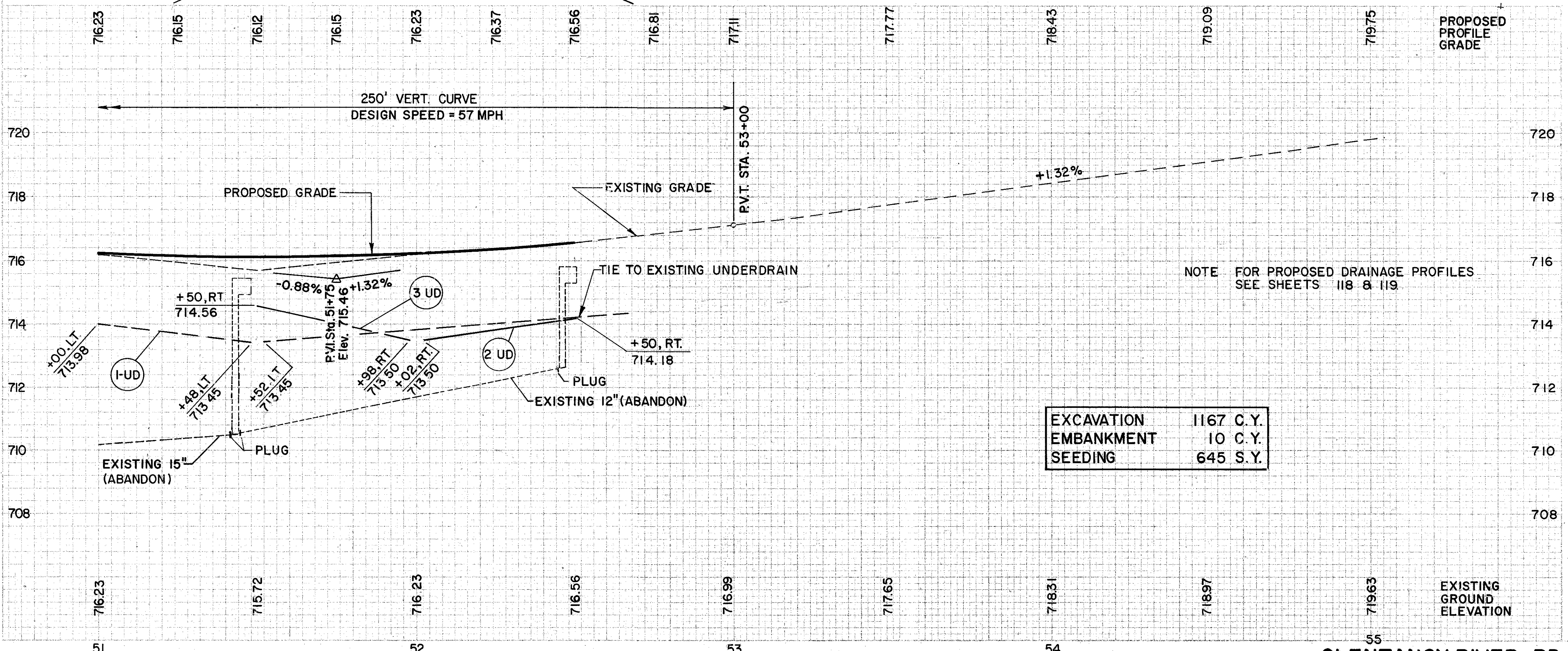


**CURVE DATA**  
 P.I. = STA. 53+96.71  
 Δ = 9°30'00"  
 D = 2°00'00"  
 R = 2864.79'  
 T = 238.05'  
 L = 457.00'  
 E = 9.87'  
 e = NC



NOTE:  
 STA. 55+00 TO STA. 59+00  
 ROADWAY COMPLETE UNDER  
 C-1. FOR EXISTING  
 PAVEMENT DETAILS SEE  
 PROJECT FRA-OLENTANGY  
 RIVER ROAD EXTENSION  
 (FRA-670-1.25-C-1).

FOR STORM SEWER PROFILES  
 SEE SHEET NO. 118 & 119.



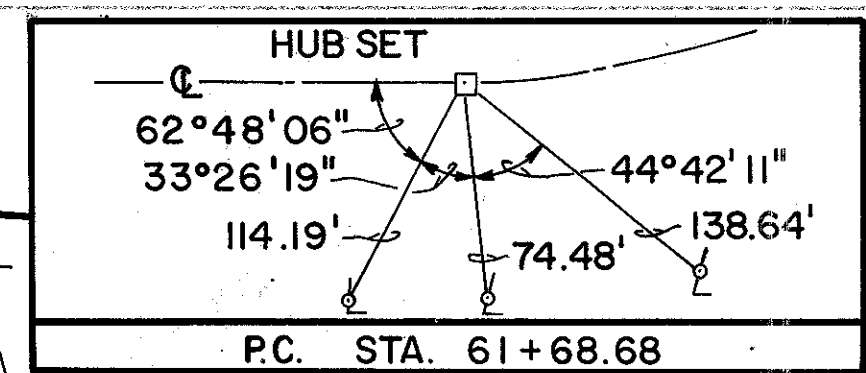
**ESTIMATED QUANTITIES**

Ref. No.	Station to Station	Side	Lin. Ft.	Lin. Ft.	Each	Each	Each	Each	Each	Each
1-D	51+00 to 52+00	Rt.								
2-D	51+00 to 51+50	Lt.	102							
3-D	51+50	Lt.	19							
4-D	51+50 to 53+30	Lt.	97							
1-R	51+45	Lt.								
2-R	52+48	Lt.								
3-R	51+00 to 52+50	Lt. & Rt.								
1-UD	51+00 to 51+48	Lt.								
2-UD	52+02 to 52+50	Rt.								
3 UD	51+50 to 51+98	Rt.								
Totals										
202	Base Removed	Lin. Ft.				300				300
202	Curb Removed	Lin. Ft.				300				300
605	4" Shallow Pipe Underdrain, as per Plan.	Lin. Ft.					48	48	48	144
604	Catch Basin No. 3 W/V Grate	Each								2
604	Catch Basin No. 5	Each								1
603	12" Conduit Type C 706.02	Lin. Ft.	102							218
603	15" Conduit Type C 706.02	Lin. Ft.		50						50
202	Catch Basin or Inlet Removed	Each								2

OLENTANGY RIVER RD. PLAN AND PROFILE - STA. 51+00 TO STA. 55+00

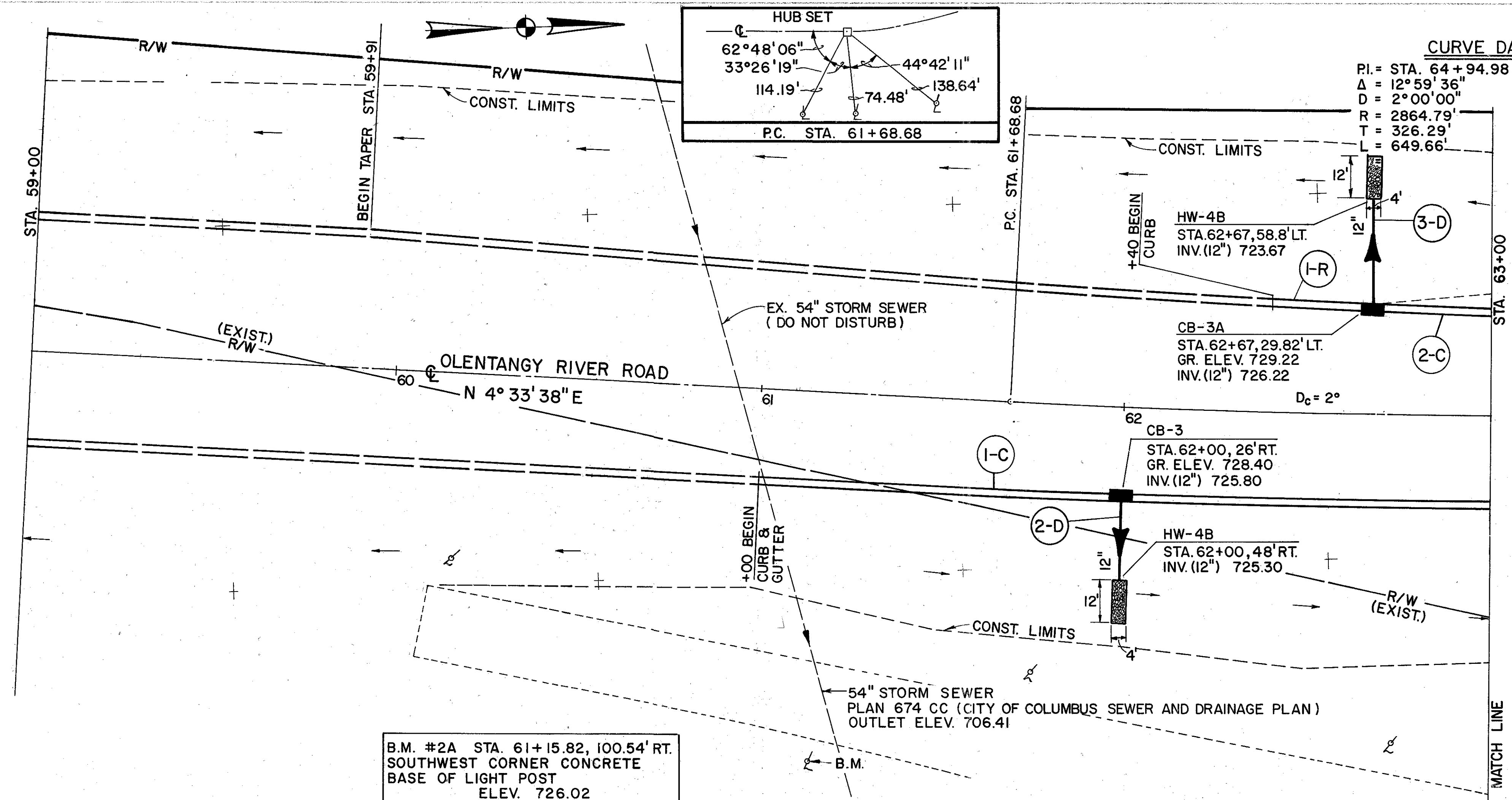
CALC. BY W.E.H. 6/87  
 CHECKED BY J.S.S. 7/87

FRANKLIN COUNTY  
 FRA-670-1.25-C-2

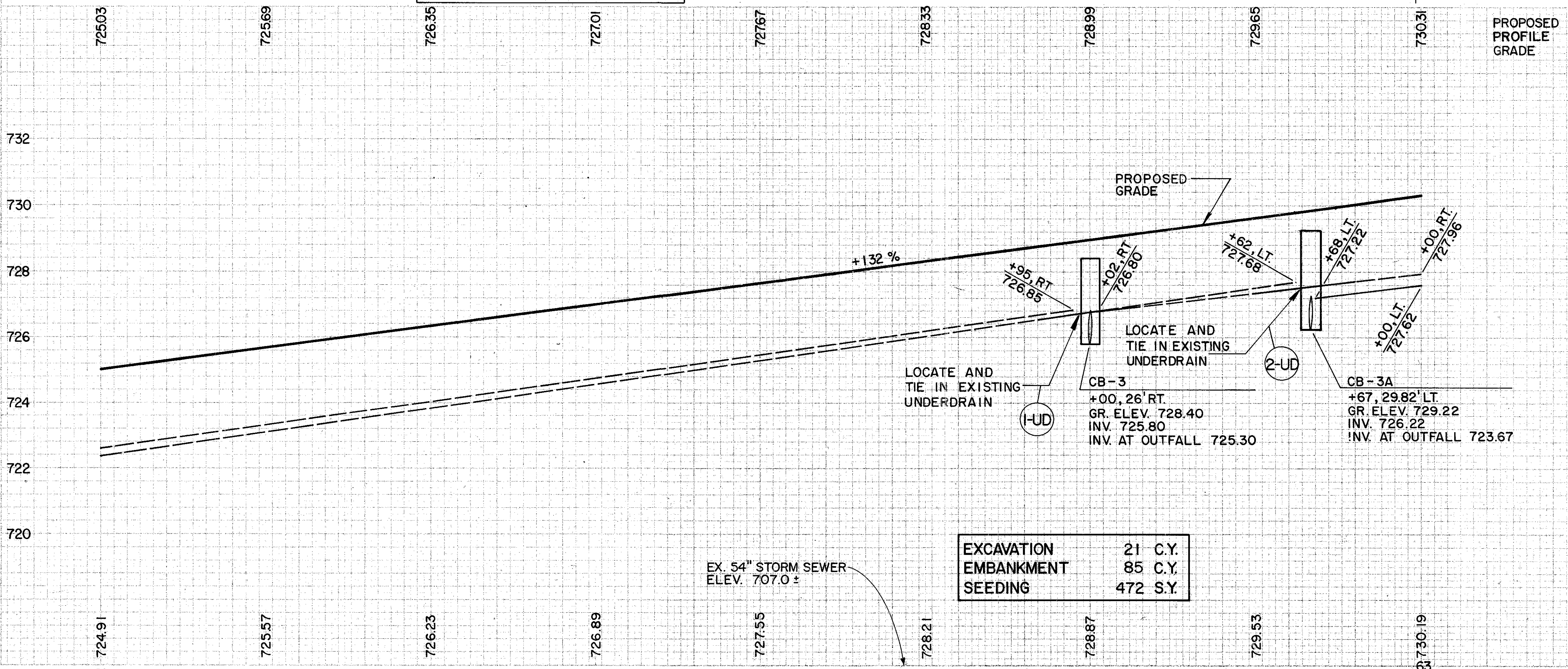


**CURVE DATA**

PI = STA. 64+94.98	E = 18.51'
Δ = 12°59'36"	e = NC
D = 2°00'00"	
R = 2864.79'	
T = 326.29'	
L = 649.66'	



B.M. #2A STA. 61+15.82, 100.54' RT.  
 SOUTHWEST CORNER CONCRETE  
 BASE OF LIGHT POST  
 ELEV. 726.02



\* 707.17 Nonperforated ASTM 3034 SDR 35 or SS 931 of SS 944

\*\* WITH V - GRATE

**ESTIMATED QUANTITIES**

Ref. No.	Station to Station	Side	Unit	Quantity
2-D	62+00	Rt.		
3-D	62+67	Lt.		
1-UD	62+00	Rt.		
2-UD	62+67	Lt.		
1-C	61+00 to 63+00	Rt.		
2-C	62+40 to 63+00	Lt.		
1-R	62+40 to 62+50	Lt.		
<b>Totals</b>				

Item No.	Description	Unit	Quantity
202	Curb Removed	Lin. Ft.	10
609	Combination Curb and Gutter, Type 2 as per plan	Lin. Ft.	200 60
603	6" Conduit, Type F *	Lin. Ft.	20 20
604	Catch Basin No. 3A *	Each	1
604	Catch Basin No. 3 *	Each	1
603	12" Conduit, Type C 706.02	Lin. Ft.	23 30
602	Concrete Masonry	Cu. Yd.	0.20 0.20
601	Rock Channel Protection Type C w/Filter (18" Thick)	Cu. Yd.	2.67 2.67

OLENTANGY RIVER RD. PLAN AND PROFILE - STA. 59+00 TO STA. 63+00

CALC. BY W.E.H. 6/87  
 CHECKED BY J.S.S. 7/87

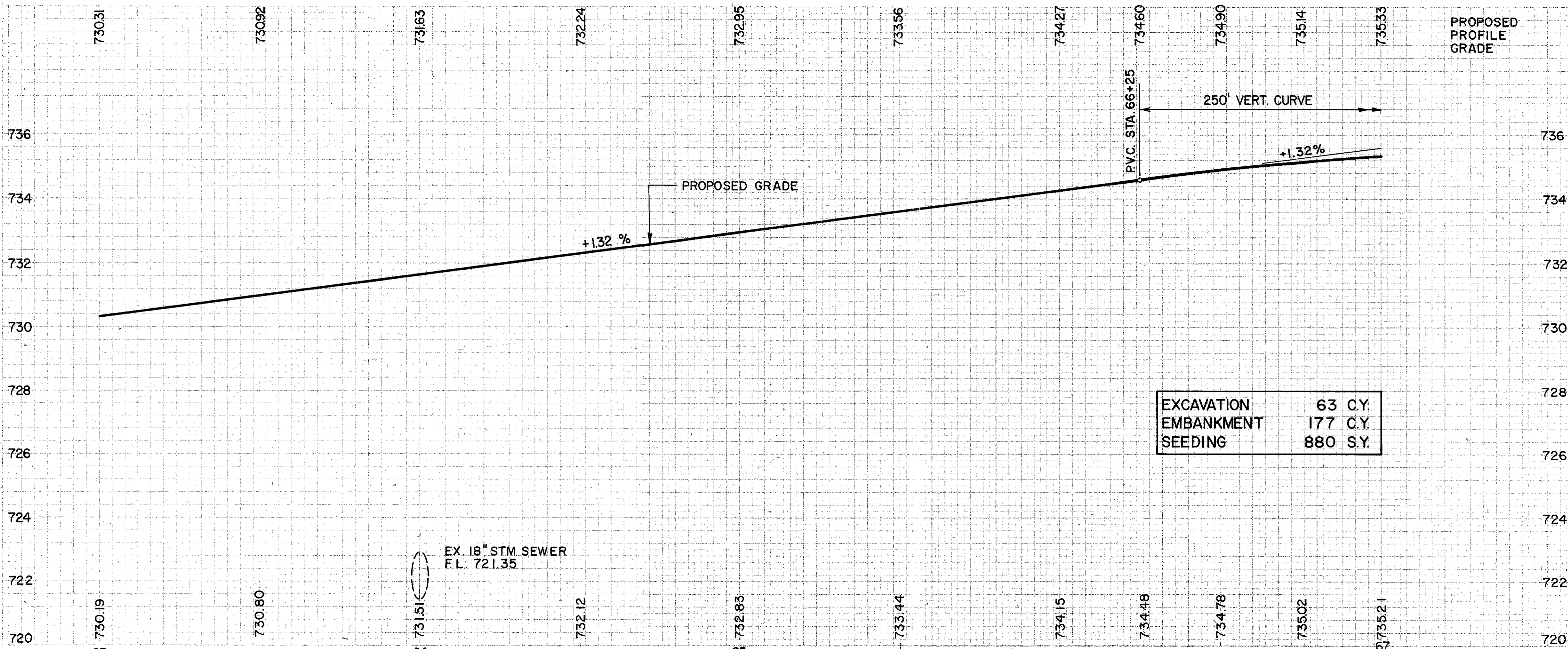
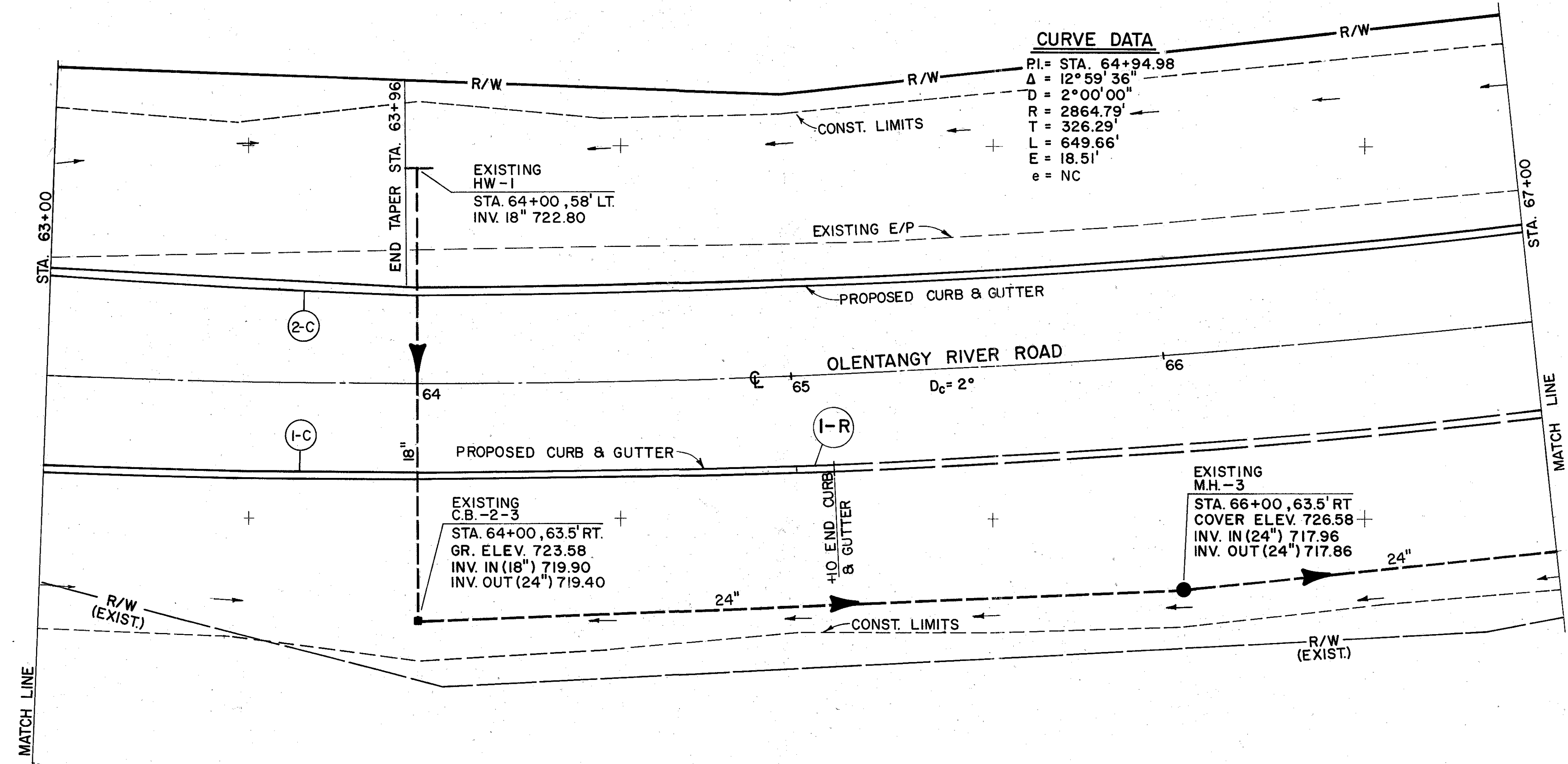
OHIO  
 REGION 5  
 FEDERAL PROJECT

FRANKLIN COUNTY  
 FRA-670-1.25-C-2

61  
 275

**CURVE DATA**

PI. = STA. 64+94.98  
 $\Delta = 12^\circ 59' 36''$   
 $D = 2^\circ 00' 00''$   
 $R = 2864.79'$   
 $T = 326.29'$   
 $L = 649.66'$   
 $E = 18.51'$   
 $e = NC$



EXCAVATION 63 C.Y.  
 EMBANKMENT 177 C.Y.  
 SEEDING 880 S.Y.

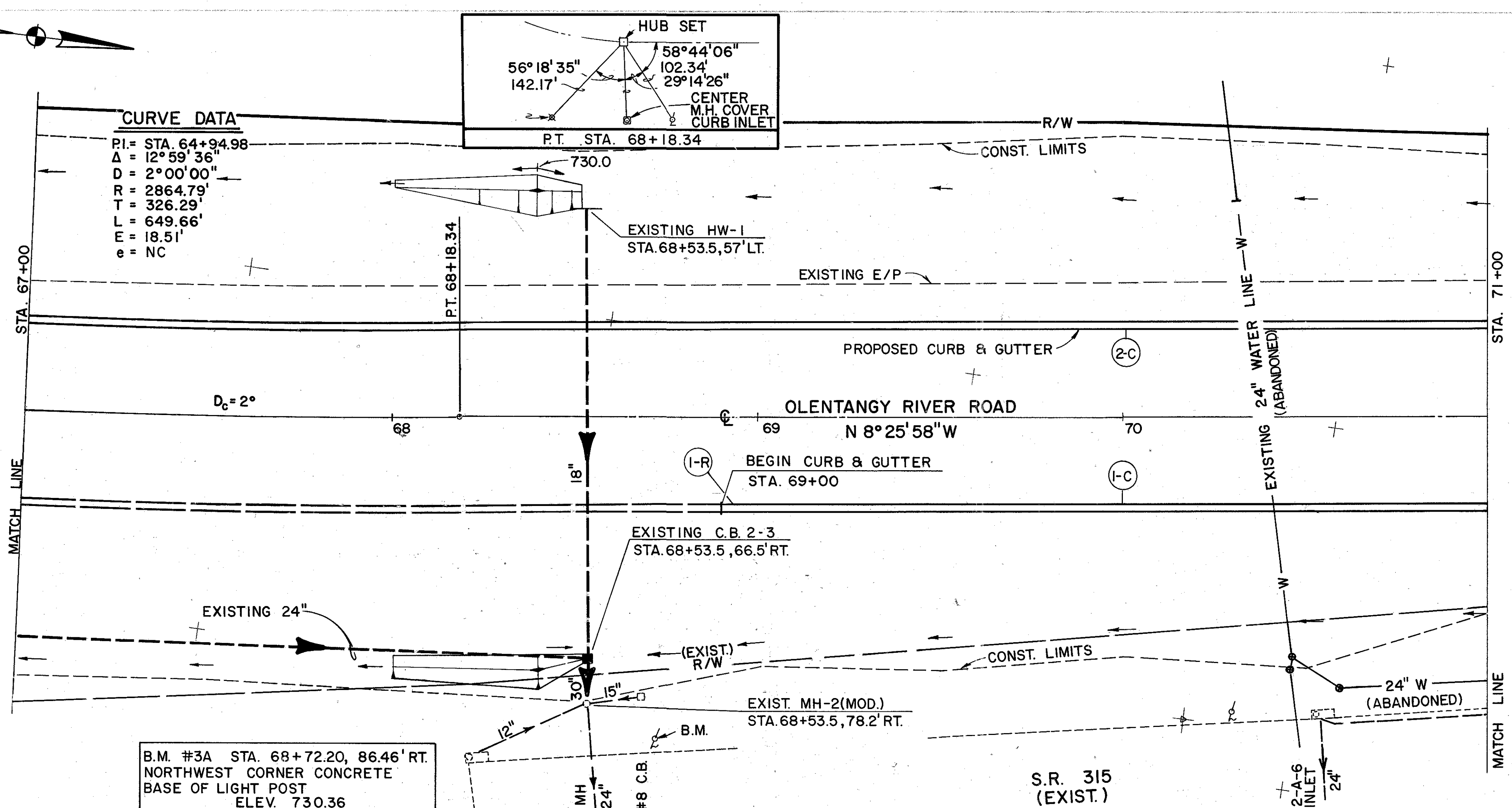
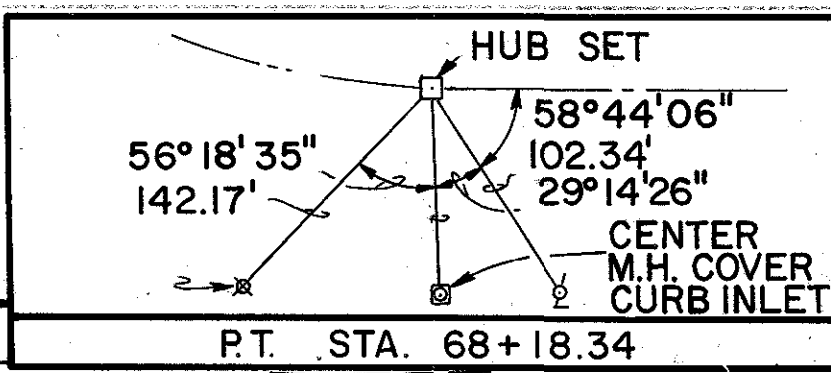
ESTIMATED QUANTITIES		See Sheet No.		
Ref. No	Station to Station	Side	Lin. Ft.	Totals
I-R	65+00 to 65+10		10	
I-C	63+00 to 65+10	RT.		
2-C	63+00 to 67+00	Lt.	210	
			400	
202		Curb Removed		10
609		Combination Curb and Gutter Type 2 As Per Plan		610
				Totals

OLENTANGY RIVER RD. PLAN AND PROFILE - STA. 63+00 TO STA. 67+00

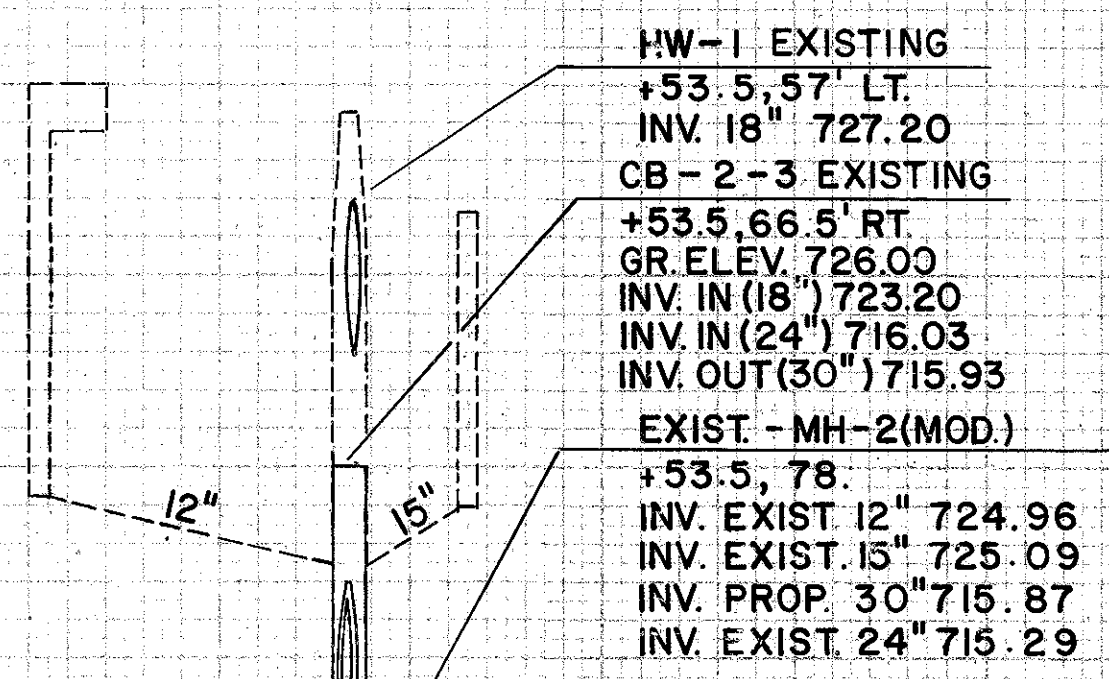
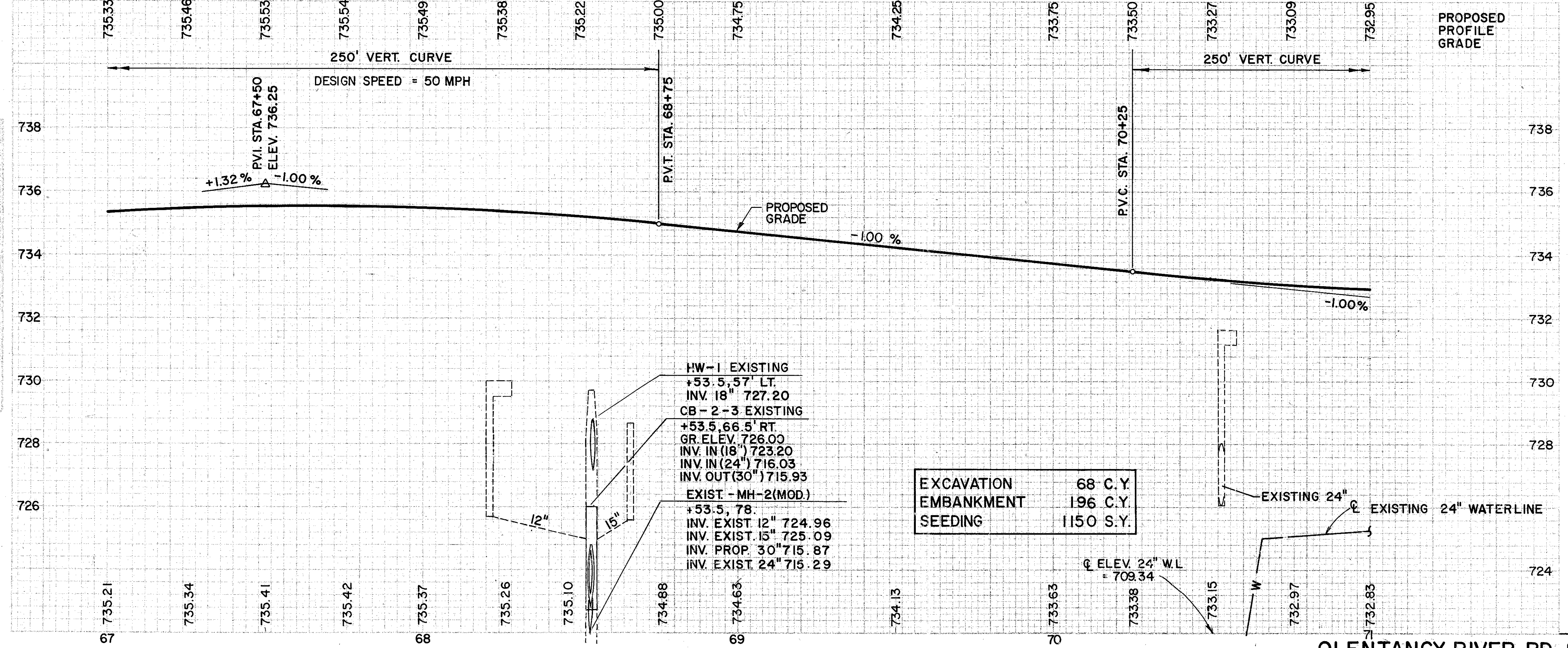


**CURVE DATA**

PI = STA. 64+94.98  
 Δ = 12° 59' 36"  
 D = 2° 00' 00"  
 R = 2864.79'  
 T = 326.29'  
 L = 649.66'  
 E = 18.51'  
 e = NC



B.M. #3A STA. 68+72.20, 86.46' RT.  
 NORTHWEST CORNER CONCRETE  
 BASE OF LIGHT POST  
 ELEV. 730.36

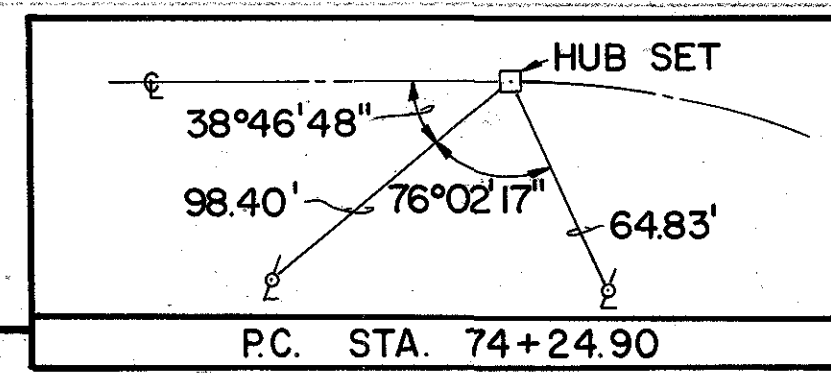
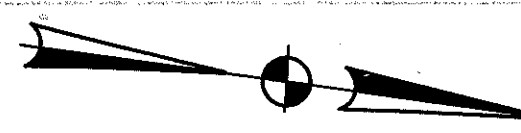


EXCAVATION 68 C.Y.  
 EMBANKMENT 196 C.Y.  
 SEEDING 1150 S.Y.

**ESTIMATED QUANTITIES**

Ref. No.	Station to Station	Side	Quantity	Unit	Totals
1-C	69+00 to 71+00	Rt.			
2-C	67+00 to 71+00	Lt.			
1-R	68+90 to 69+00	Rt.	10		
609	Combination Curb and Gutter Type 2 As Per Plan	Lin. Ft.	120	400	520
202	Curb Removed	Lin. Ft.			10
<b>Totals</b>					

OLENTANGY RIVER RD. PLAN AND PROFILE - STA. 67+00 TO STA. 71+00

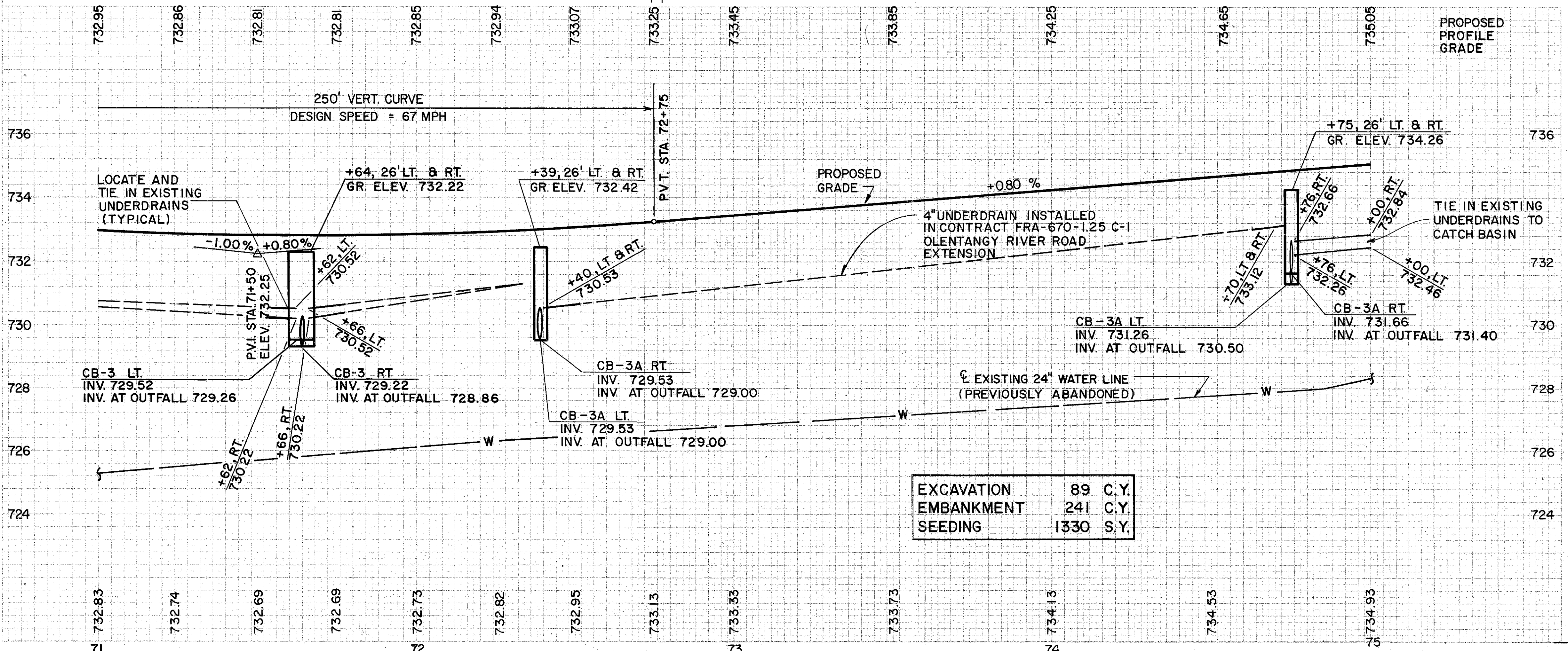
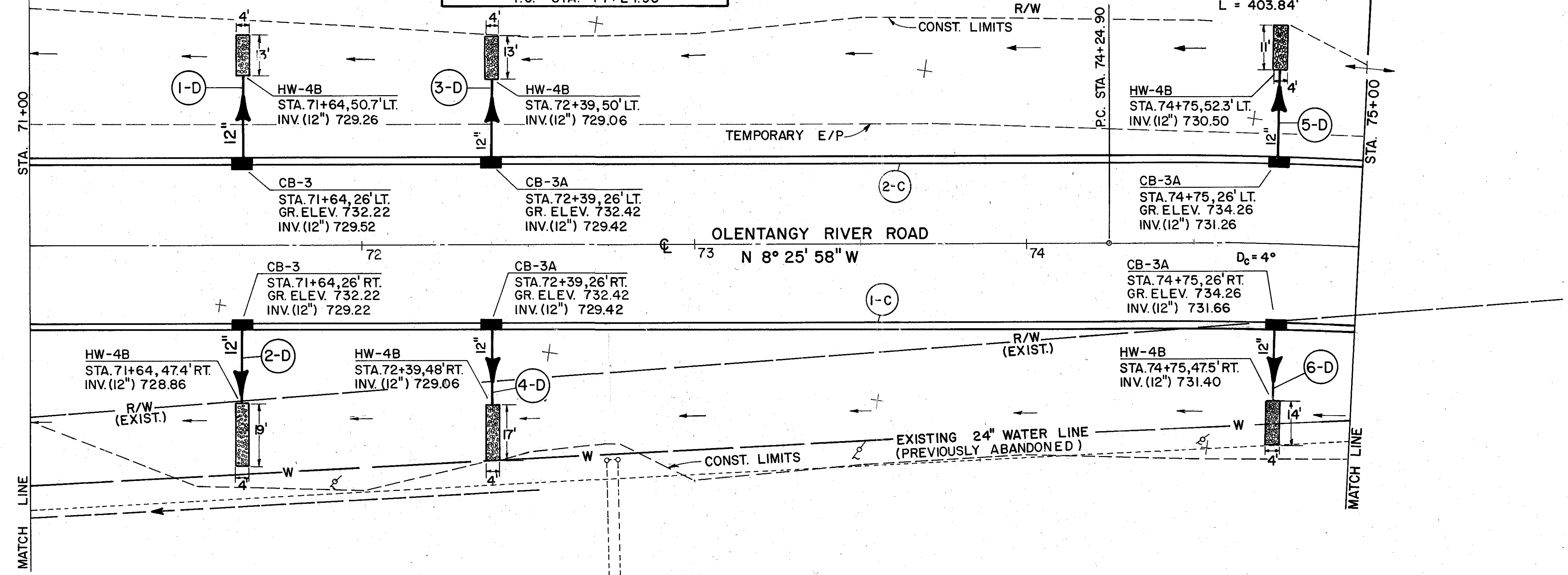


**CURVE DATA**

PI. = STA. 76+28.16	E = 14.35'
$\Delta = 16^\circ 09' 13''$	e = NC
D = 4°00'00"	
R = 1432.39'	
T = 203.27'	
L = 403.84'	

CALC. BY W.E.H. 6/87  
CHECKED BY J.S.S. 7/87

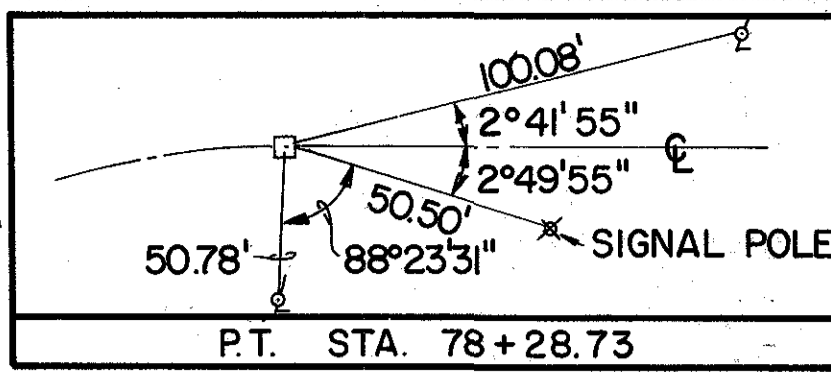
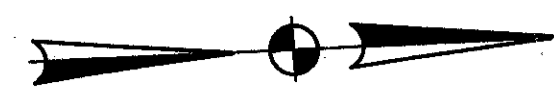
FRANKLIN COUNTY  
FRA-670-1.25-C-2



EXCAVATION	89 C.Y.
EMBANKMENT	241 C.Y.
SEEDING	1330 S.Y.

Ref. No.	Station to Station	Side	Material	Unit	Quantity
1-D	71+64	Lt.	Concrete	Each	1
2-D	71+64	Rt.	Concrete	Each	1
3-D	72+39	Lt.	Concrete	Each	1
4-D	72+39	Rt.	Concrete	Each	1
5-D	74+75	Lt.	Concrete	Each	1
6-D	74+75	Rt.	Concrete	Each	1
1-C	71+00 to 75+00	Rt.	6" Conduit Type F	Lin. Ft.	120
2-C	71+00 to 75+00	Lt.	6" Conduit Type F	Lin. Ft.	120
			12" Conduit Type C w/Filter	Lin. Ft.	144
			Rock Channel Protection Type C w/Filter (18" Thick)	Cu. Yd.	19.56
			Concrete Masonry	Cu. Yd.	1.20
			Catch Basin No. 3	Each	2
			Catch Basin No. 3A	Each	4
			Combination Curb and Gutter Type 2 As Per Plan	Lin. Ft.	400
			Combination Curb and Gutter Type 2 As Per Plan	Lin. Ft.	400
			Totals		

OLENTANGY RIVER RD. PLAN AND PROFILE - STA. 71+00 TO STA. 75+00

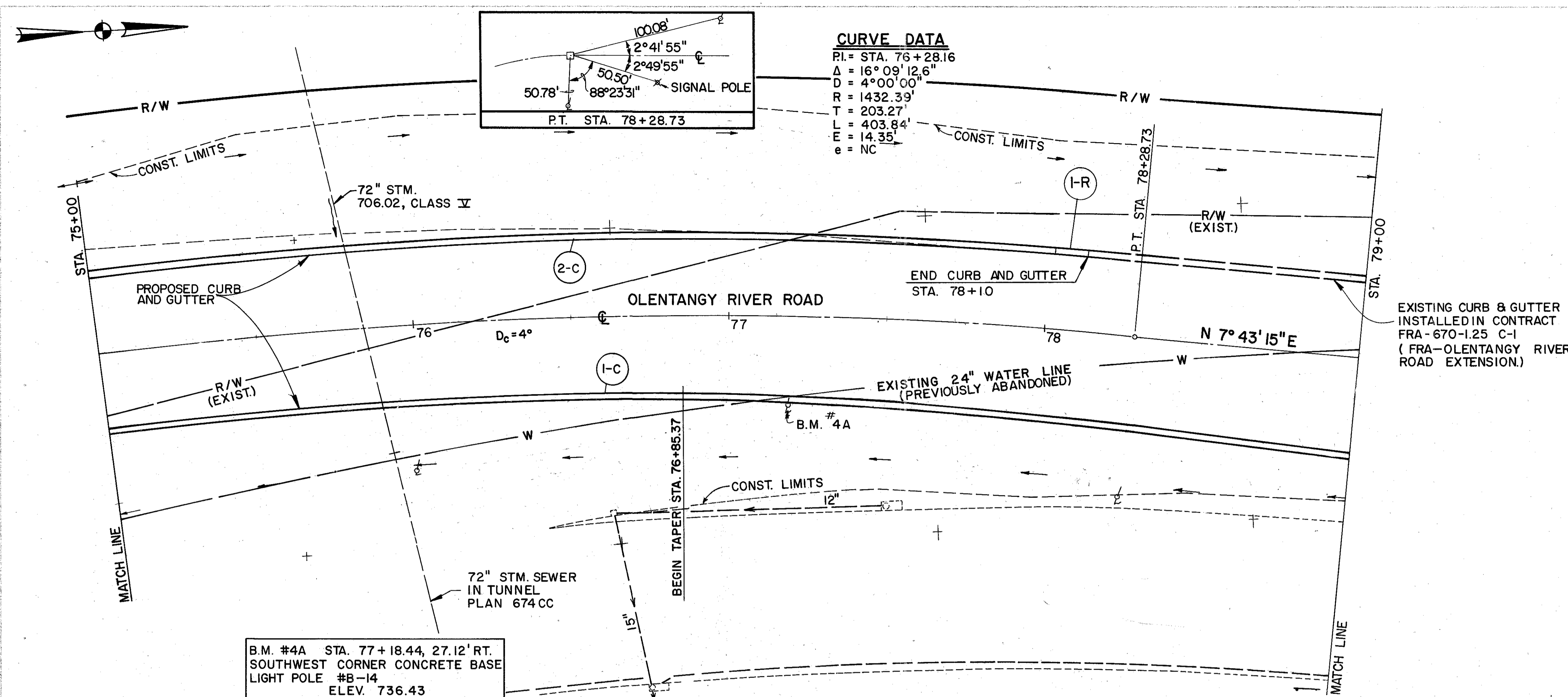


**CURVE DATA**  
 P.I. = STA. 76+28.16  
 $\Delta = 16^{\circ}09'12.6''$   
 $D = 4^{\circ}00'00''$   
 $R = 1432.39'$   
 $T = 203.27'$   
 $L = 403.84'$   
 $E = 14.35'$   
 $e = NC$

CALC. BY W.E.H. 6/87  
 CHECKED BY J.S.S. 7/87

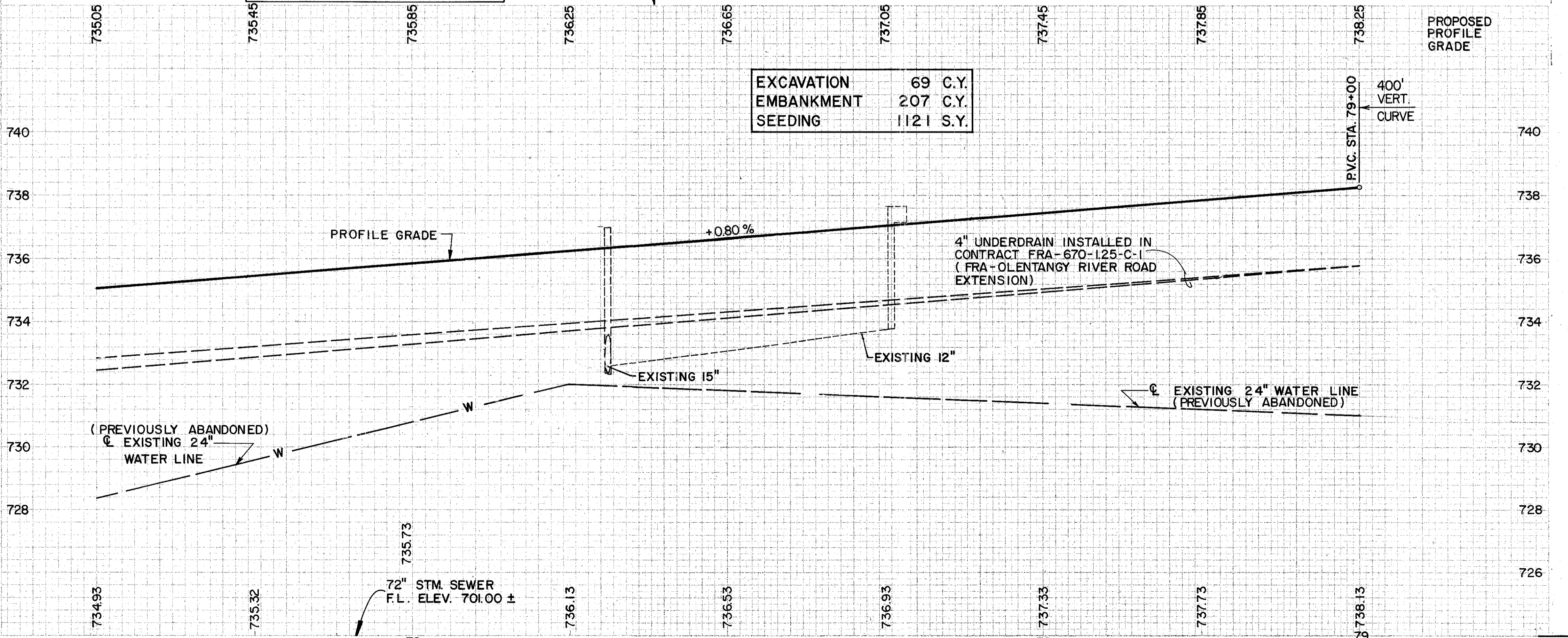
OHIO  
 REGION 5  
 FEDERAL PROJECT  
 64  
 275

FRANKLIN COUNTY  
 FRA-670-1.25-C-2



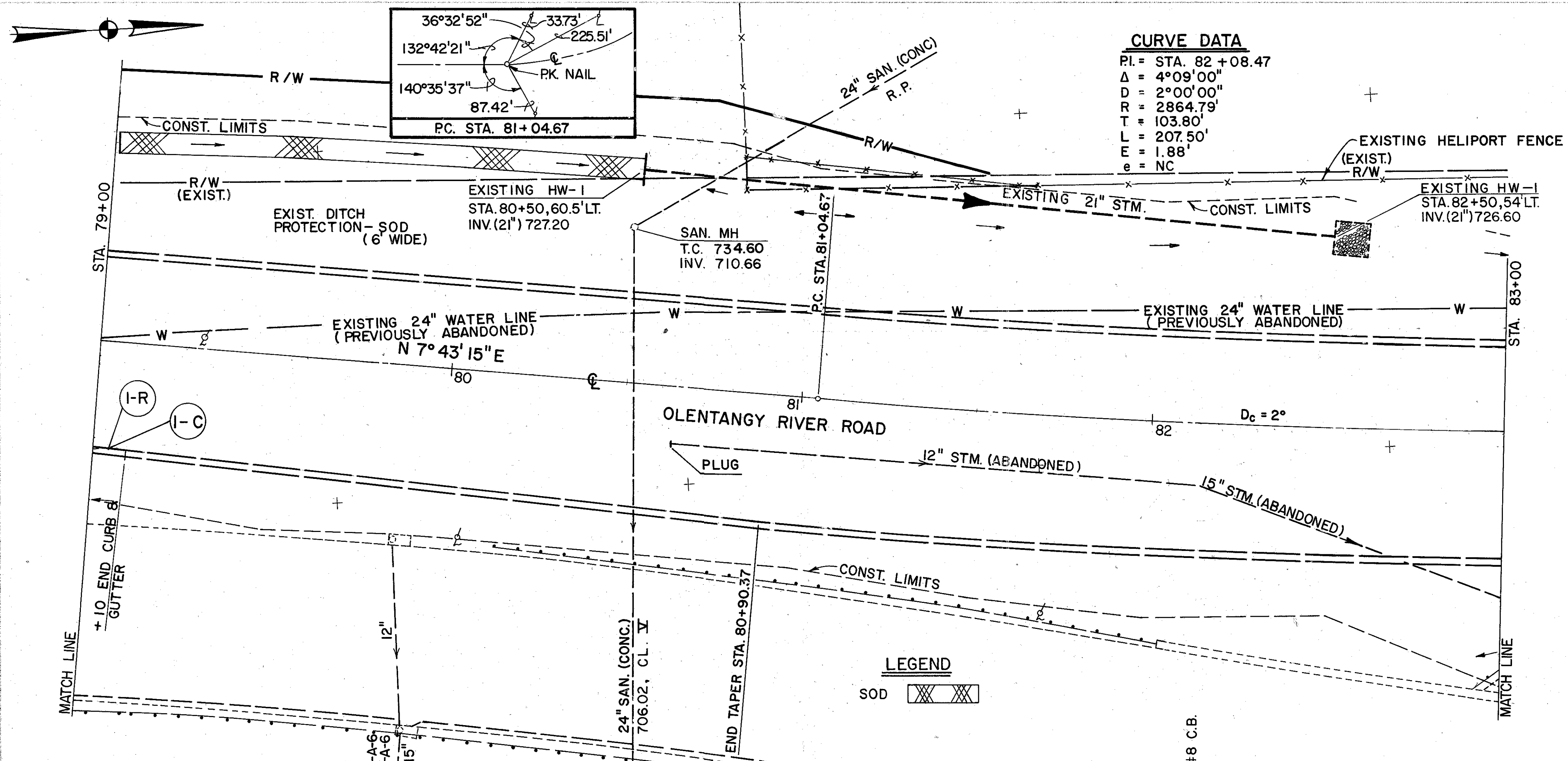
B.M. #4A STA. 77+18.44, 27.12' RT.  
 SOUTHWEST CORNER CONCRETE BASE  
 LIGHT POLE #B-14  
 ELEV. 736.43

EXCAVATION 69 C.Y.  
 EMBANKMENT 207 C.Y.  
 SEEDING 1121 S.Y.



ESTIMATED QUANTITIES		See Sheet No.		
609	Combination Curb and Gutter, Type 2 as per plan	Lin. Ft.	400 310	710
202	Curb Removed	Lin. Ft.	10	10
	Side	Rt.		
	Station to Station			
	Ref. No			
				Totals

OLENTANGY RIVER RD. PLAN AND PROFILE - STA. 75+00 TO STA. 79+00



**CURVE DATA**

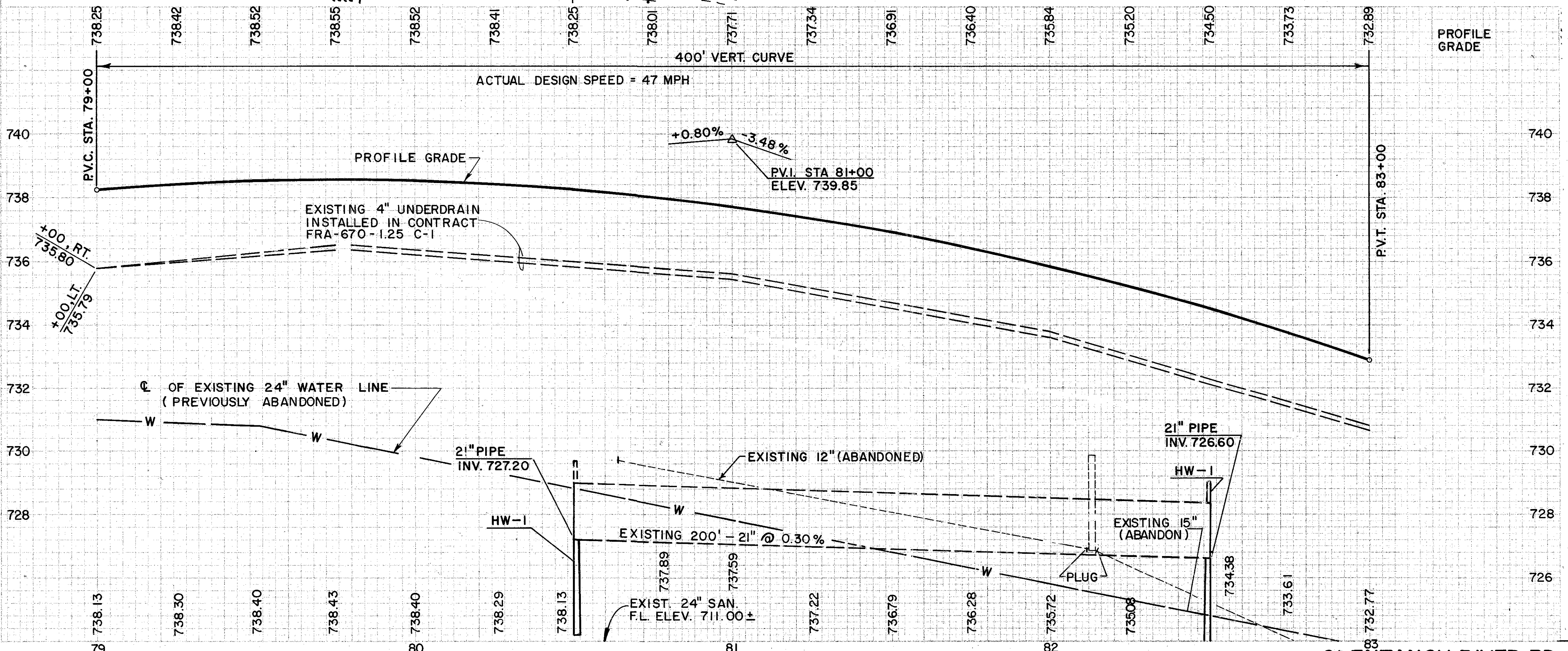
P.I. = STA. 82 + 08.47  
 $\Delta$  = 4°09'00"  
 D = 2°00'00"  
 R = 2864.79'  
 T = 103.80'  
 L = 207.50'  
 e = 1.88'  
 e = NC

CALC. BY W.E.H. 6/87  
 CHECKED BY J.S.S. 7/87

OHIO  
 FHWA  
 REGION 5  
 FEDERAL  
 PROJECT

FRANKLIN COUNTY  
 FRA-670-1.25-C-2

65  
 275



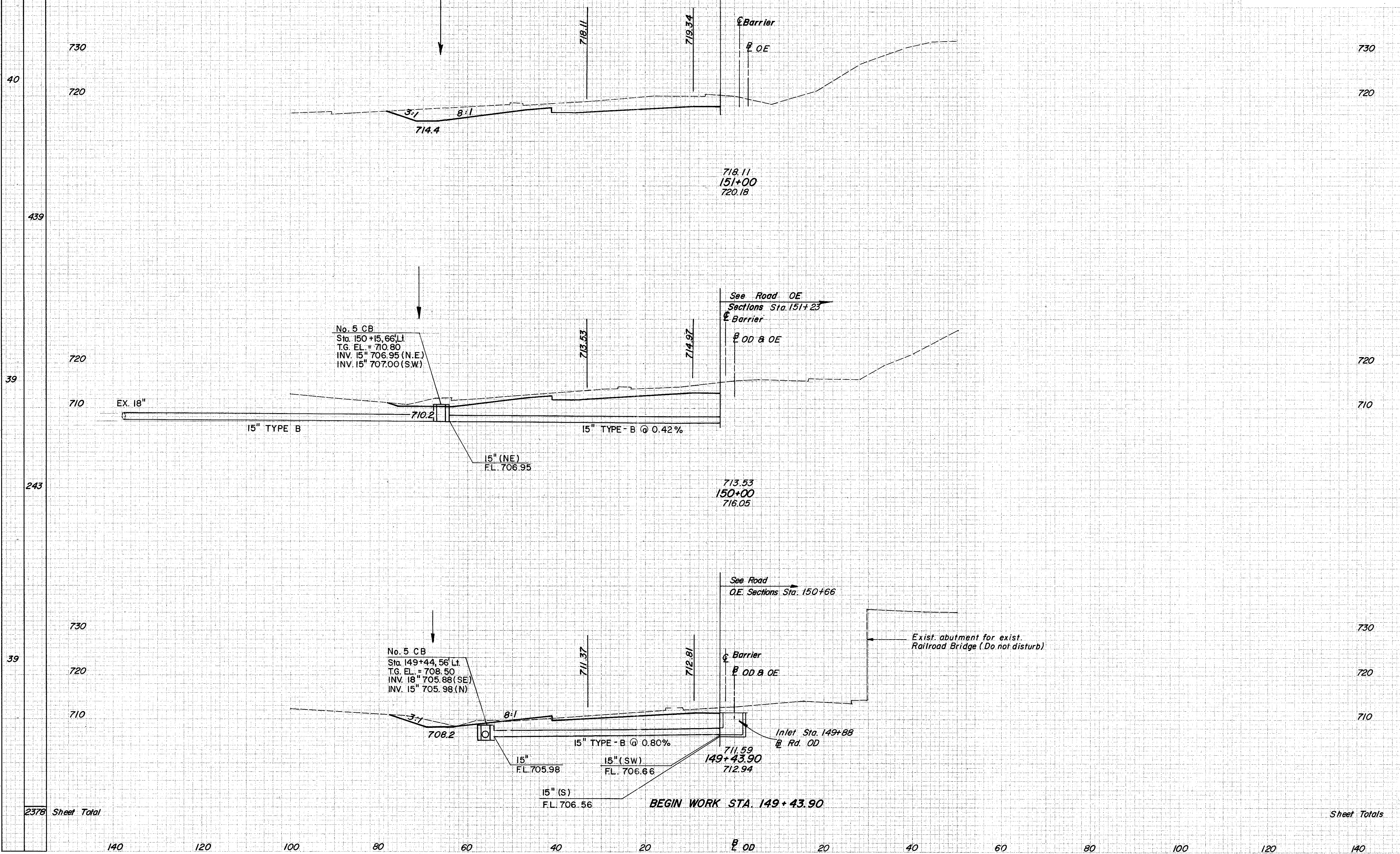
ESTIMATED QUANTITIES				
Ref. No.	Station to Station	Side	Quantity	Totals
I-C	79+00 to 79+10	Rt.	10	
I-R	79+00 to 79+10	Rt.	10	
				20

OLENTANGY RIVER RD. PLAN AND PROFILE - STA. 79+00 TO STA. 83+00

SEEDING 140 120 100 80 60 40 20 0 20 40 60 80 100

END SQ. WIDTH YDS.

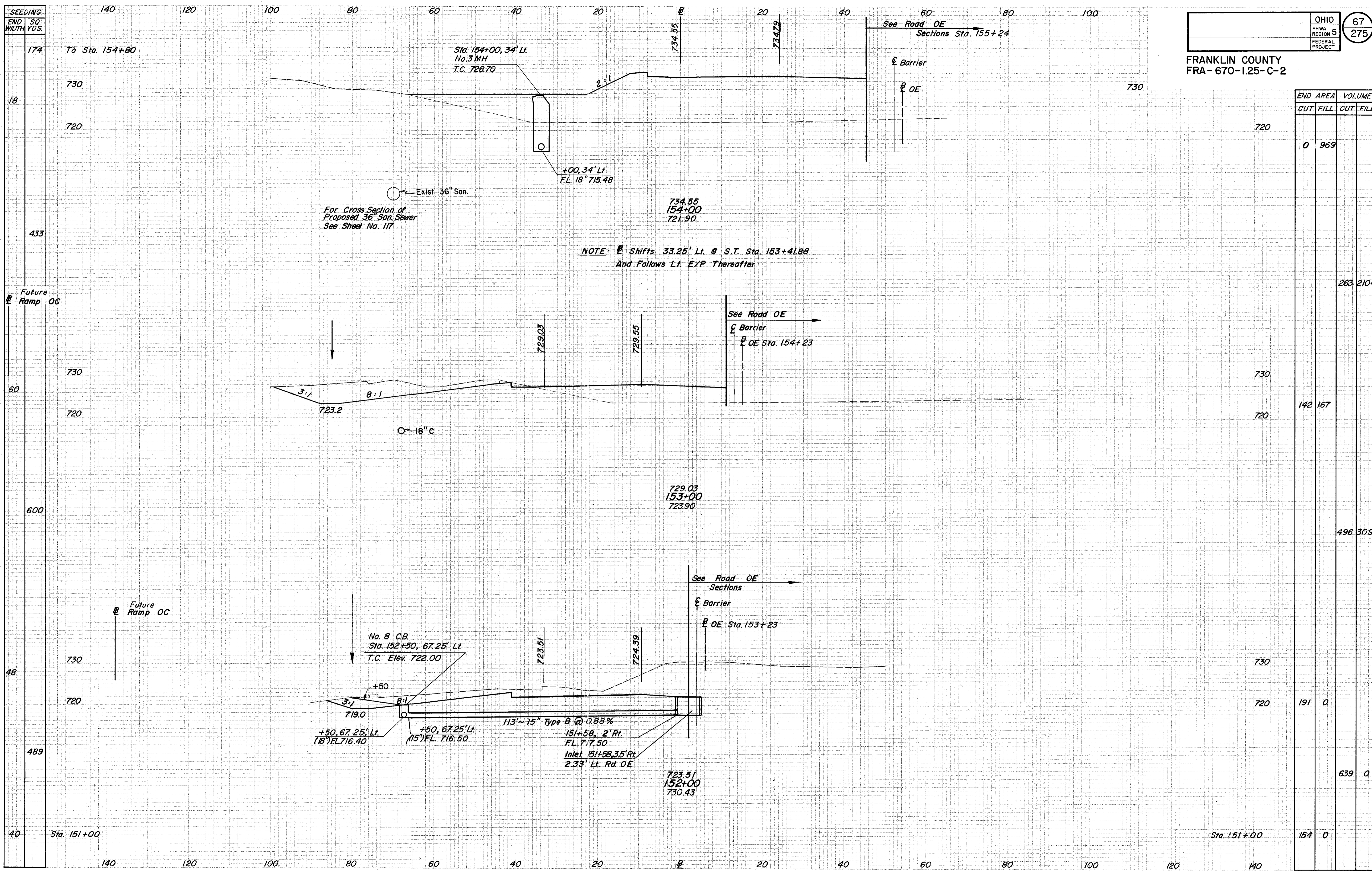
FRANKLIN COUNTY  
 FRA-670-1.25-C-2



END AREA		VOLUME	
CUT	FILL	CUT	FILL
730			
720	154	0	
439			470
720			
710	100	0	
243			149
730			
720			
710	43	3	
2378	Sheet Total		Sheet Totals
			2032
			5585

ORIGINAL SURVEY PLANNED  
 DATE RECORDED  
 DATE RECORDED  
 DATE RECORDED

ORIGINAL SURVEY PLANNED  
 DATE RECORDED  
 DATE RECORDED  
 DATE RECORDED



SEEDING  
END SQ.  
WIDTH YDS.

140 120 100 80 60 40 20 0 20 40 60 80 100

OHIO	68
FHWA REGION 5	275
FEDERAL PROJECT	

FRANKLIN COUNTY  
FRA-670-1.25-C-2

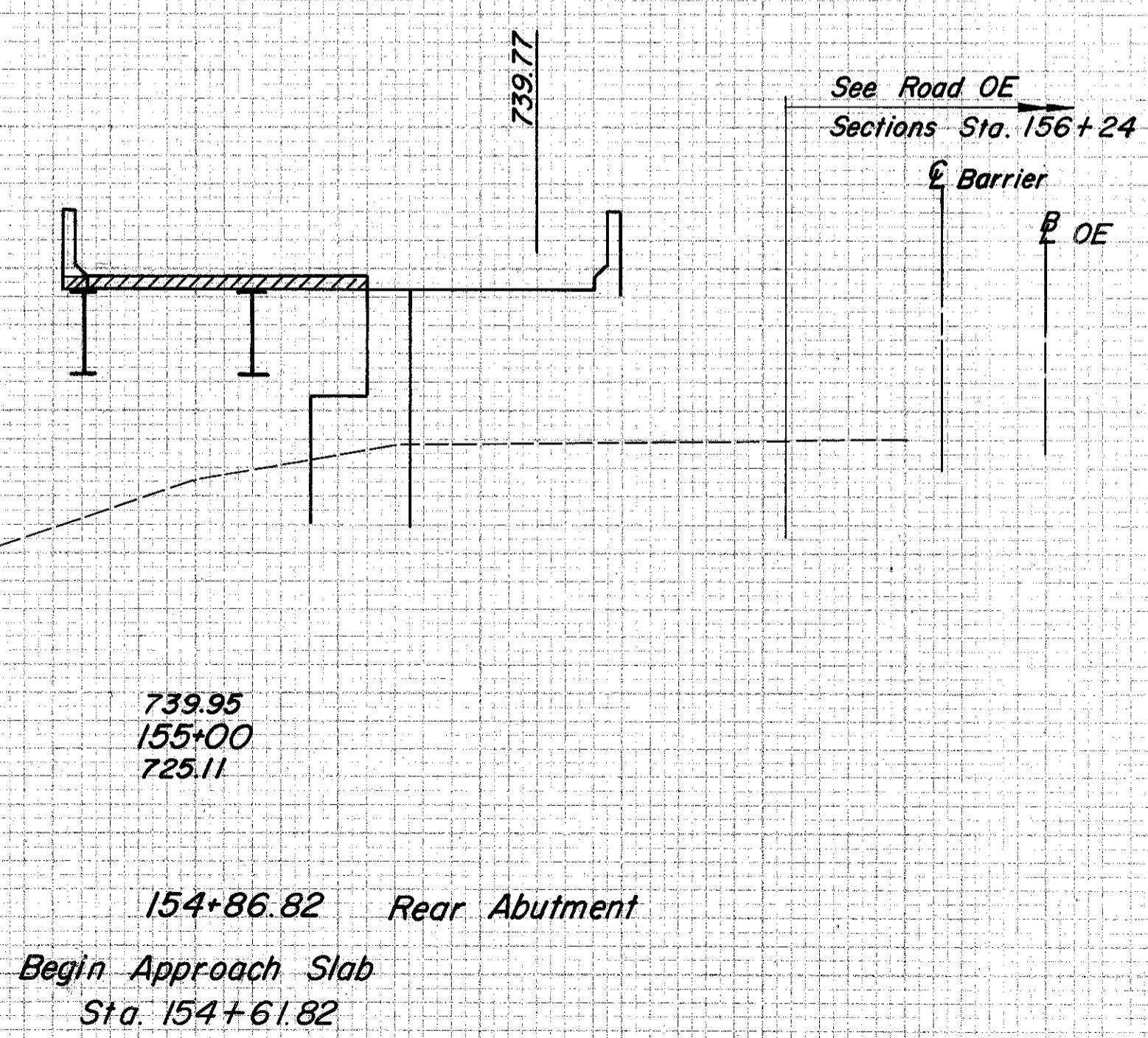
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 SURVEY: \_\_\_\_\_  
 DATE: \_\_\_\_\_  
 NO. \_\_\_\_\_

DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 CHECKED: \_\_\_\_\_  
 SURVEY: \_\_\_\_\_  
 DATE: \_\_\_\_\_  
 NO. \_\_\_\_\_

740  
730  
720  
710  
700

140 120 100 80 60 40 20 0 20 40 60 80 100 120

HIGHWAY FEDERAL AID SHEET  
 PLATE 3 FULL CROSS SECTION FULL LINE  
 DIVISION OF HIGHWAYS



END AREA		VOLUME	
CUT	FILL	CUT	FILL
			+15. +10
0	737		
		0	3159
		0	969

ROAD OD CROSS SECTION STA. 155+00

SEEDING:  
END SQ.  
WIDTH YDS.

100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100

FRANKLIN COUNTY  
FRA-670-1.25-C-2

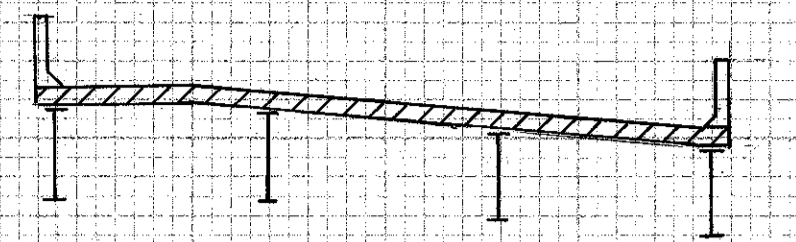
END AREA		VOLUME	
CUT	FILL	CUT	FILL

750

740

730

720



Future  
S.R. 315

By Others CONTRACT FRA-315-1.25-C-3

752.72  
161+00  
728.30

740

730

720

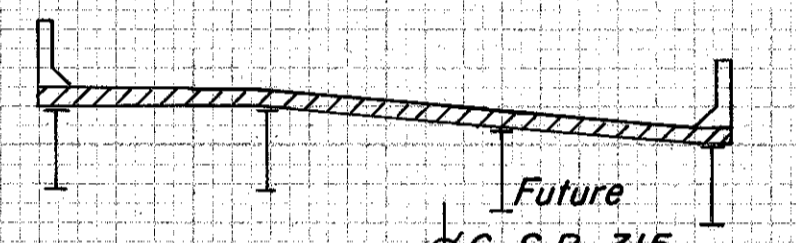
750

740

730

720

710



Future  
S.R. 315

By Others

752.99  
160+50  
726.98

750

740

730

720

710

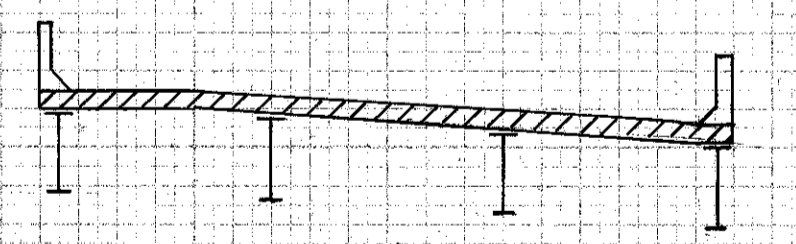
750

740

730

720

710



Future  
S.R. 315

By Others

753.01  
160+00  
724.71

Bikeway  
Sta. 161+53 ±

PROPOSED  
24"

750

740

730

720

710

100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130

PLATE 3-FULL CROSS SECTION-FULL LINE

ROAD OD CROSS SECTION STA. 160+00 TO STA. 161+00

DATE: \_\_\_\_\_  
BY: \_\_\_\_\_  
CHECKED: \_\_\_\_\_  
APPROVED: \_\_\_\_\_

DATE: \_\_\_\_\_  
BY: \_\_\_\_\_  
CHECKED: \_\_\_\_\_  
APPROVED: \_\_\_\_\_

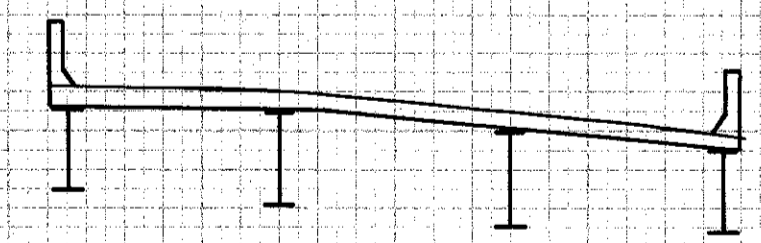
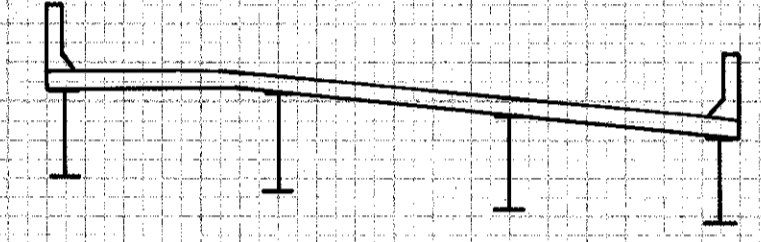
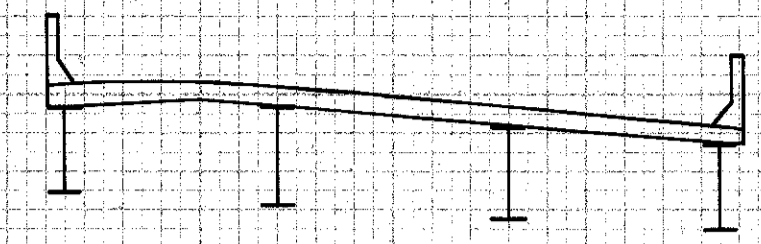


SEEDING  
END SQ  
WIDTH YDS

100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100

FRANKLIN COUNTY  
FRA-670-125-C-2

750  
740  
730  
720  
750  
740  
730  
720  
710  
750  
740  
730  
720  
710



By Others CONTRACT FRA-315-125-C3

See Road OE  
Sections Sta. 162+82 ±  
Future  
← S.R. 315

Future  
← S.R. 315

750.46  
162+50  
725.80

751.45  
162+00  
728.83

752.21  
161+50  
728.97

END AREA	VOLUME	
	CUT	FILL
750		
740		
730		
720		
750		
740		
730		
720		
710		
750		
740		
730		
720		
710		

100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130

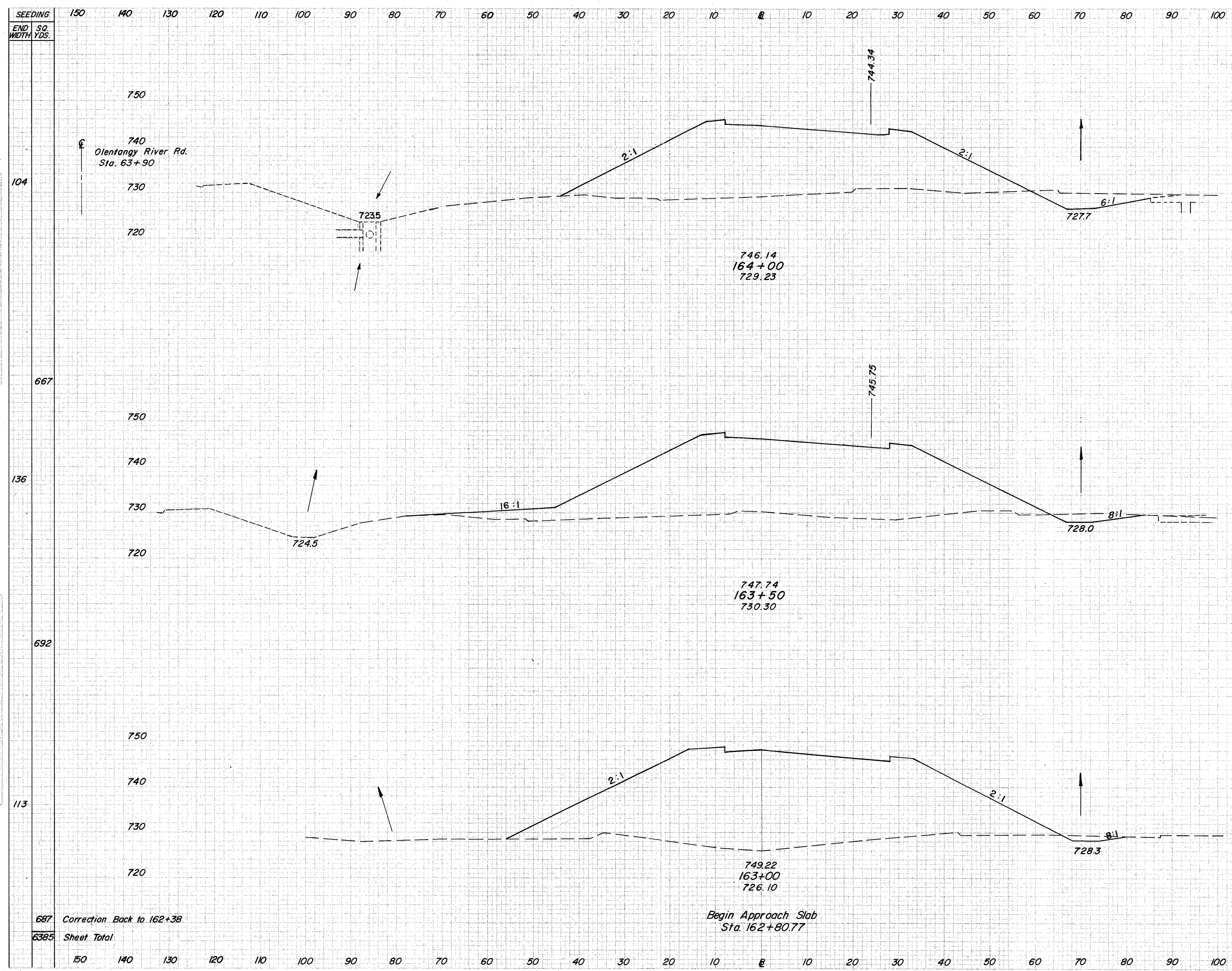
ROAD OD CROSS SECTION STA. 161+50 TO STA. 162+50

FINAL  
REVISIONS  
DATE  
BY

ORIGINAL  
SURVEY  
DATE  
BY

PLATE 3-FULL CROSS SECTION-FULL LINE

FRANKLIN COUNTY  
FRA-670-125-C-2



Sta.	ELEVATION	END AREA		VOLUME	
		CUT	FILL	CUT	FILL
750					
Sta. 164+36					
See Road OE					
Sections	740				
@ Future	S.B. 315	57	1074		
	730				
	720				
				77	2216
See Road OE	750				
Sections Sta. 164+00					
@ Future	S.B. 315				
	730	26	1319		
	720				
				34	2722
See Road OE	750				
Sections Sta. 163+61					
@ Future	S.B. 315				
	740				
@ Future	N.B. 315	11	1621		
	730				
	720				
				0	2295
Correction Back to 162+38					
Sheet Totals				1763	16511

687 Correction Back to 162+38  
6385 Sheet Total

Begin Approach Slab  
Sta. 162+80.77

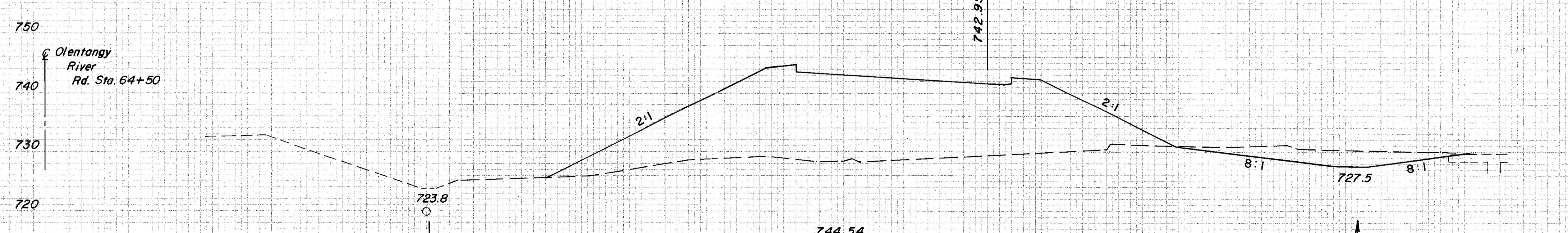
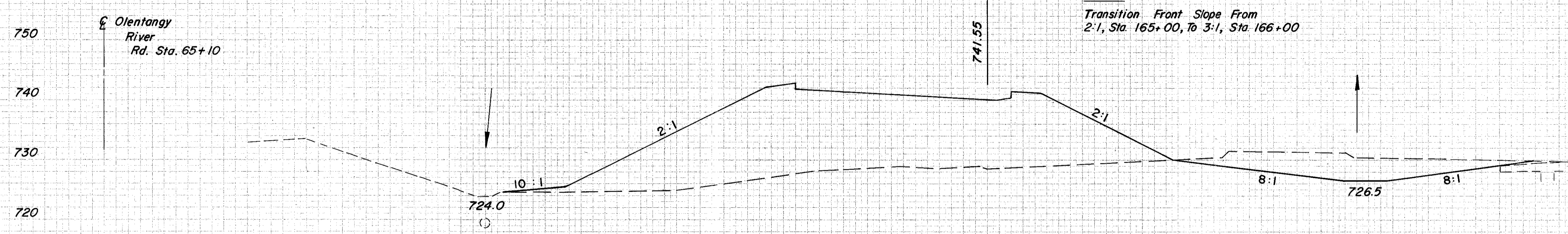
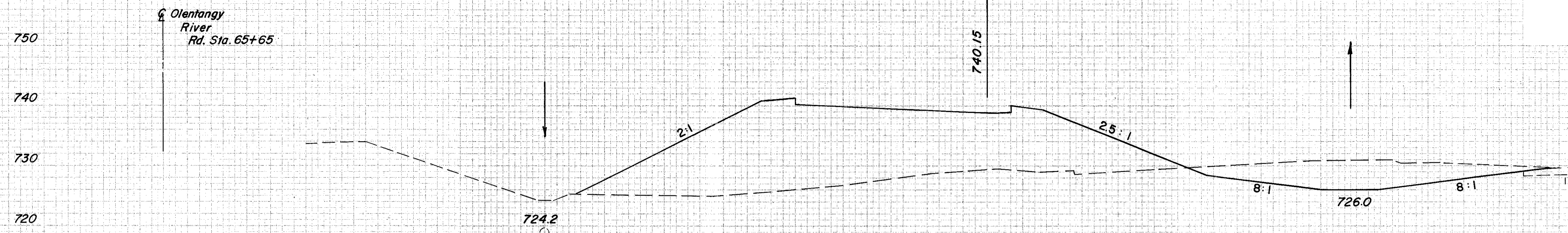
Correction Back to 162+38

ROAD OD CROSS SECTION STA. 163+00 TO STA. 164+00

SEEDING  
END SO.  
WIDTH YDS.

130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100

FRANKLIN COUNTY  
FRA-670-1.25-C-2



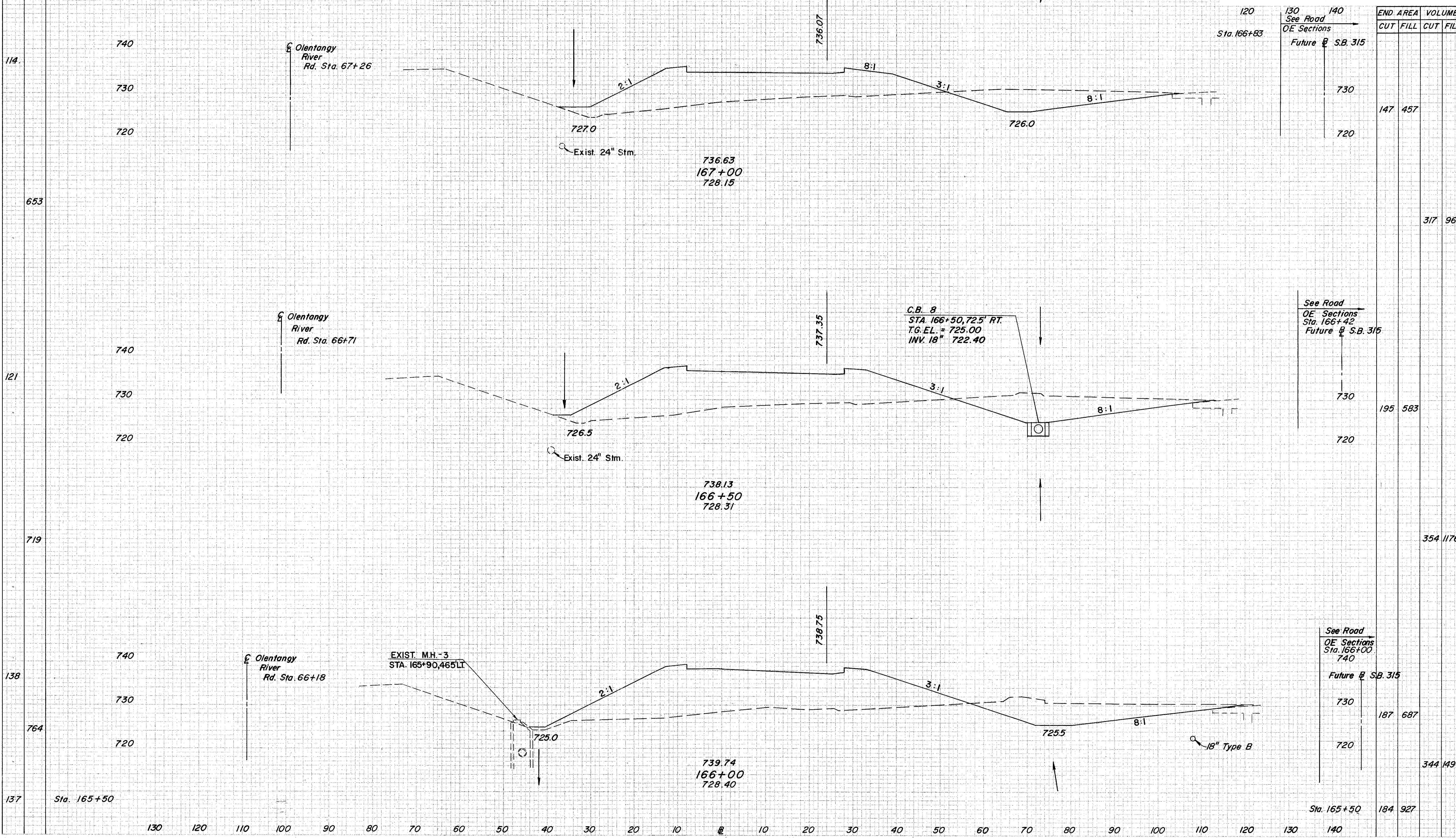
ELEVATION	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
750				
740				
730	184	927		
720				
306 1786				
750				
740				
730	147	1002		
720				
207 1896				
750				
740				
730	77	1046		
720				
124 1963				
750				
740				
730				
720				
57 1074				

ROAD OD CROSS SECTION STA. 164+50 TO STA. 165+50

SEEDING END SQ. WIDTH YDS. 130 120 110 100 90 80 70 60 50 40 30 20 10 @ 10 20 30 40 50 60 70 80 90 100 110

FRANKLIN COUNTY  
FRA-670-1.25-C-2

NOTE:  
Transition Left Shoulder From 8'  
Sta. 167+00, To 10', Sta. 167+50



ROAD OD CROSS SECTION STA. 166+00 TO STA. 167+00

ORIGINAL SURVEY  
DATE: \_\_\_\_\_  
BY: \_\_\_\_\_  
CHECKED BY: \_\_\_\_\_  
DATE: \_\_\_\_\_

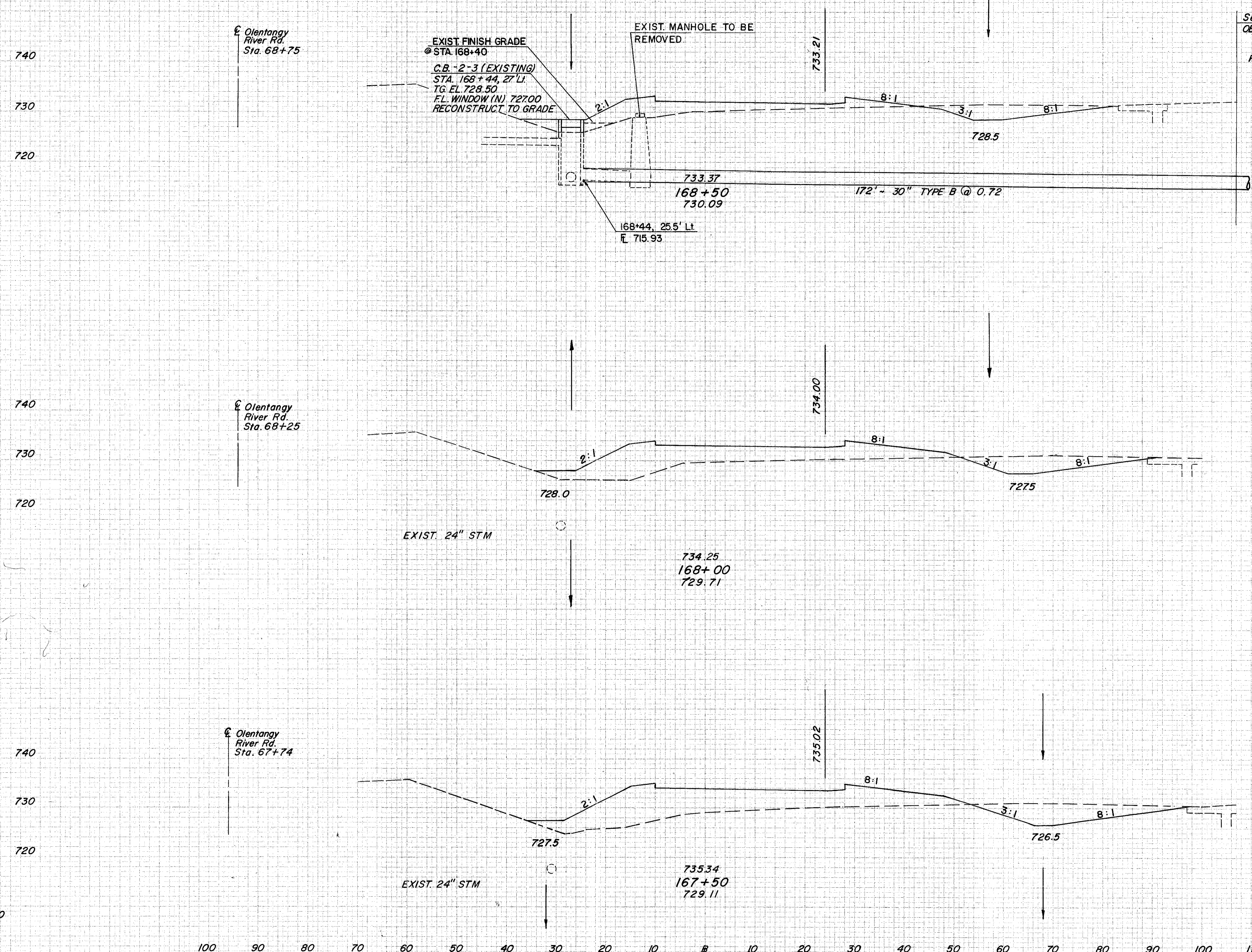
ORIGINAL SURVEY  
DATE: \_\_\_\_\_  
BY: \_\_\_\_\_  
CHECKED BY: \_\_\_\_\_  
DATE: \_\_\_\_\_

PLATE 3-FULL CROSS SECTION-FULL LINE  
DATE: \_\_\_\_\_  
BY: \_\_\_\_\_

SEEDING	END SQ. WIDTH YDS.
	86
	497
	93
	539
	101
	597
	114
8749	Sheet Total

130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110

FRANKLIN COUNTY  
FRA-670-1.25-C-2



ELEVATION	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
740				
730	62	154		
720			130	378
740				
730	78	254		
720			171	564
740				
730	107	355		
720			235	752
740				
730	147	457		
720			3202	3514
Sheet Totals	147	457	3202	3514

ROAD OD CROSS SECTION STA. 167+50 TO STA. 168+50

PLATE 3-FULL CROSS SECTION-FULL LINE

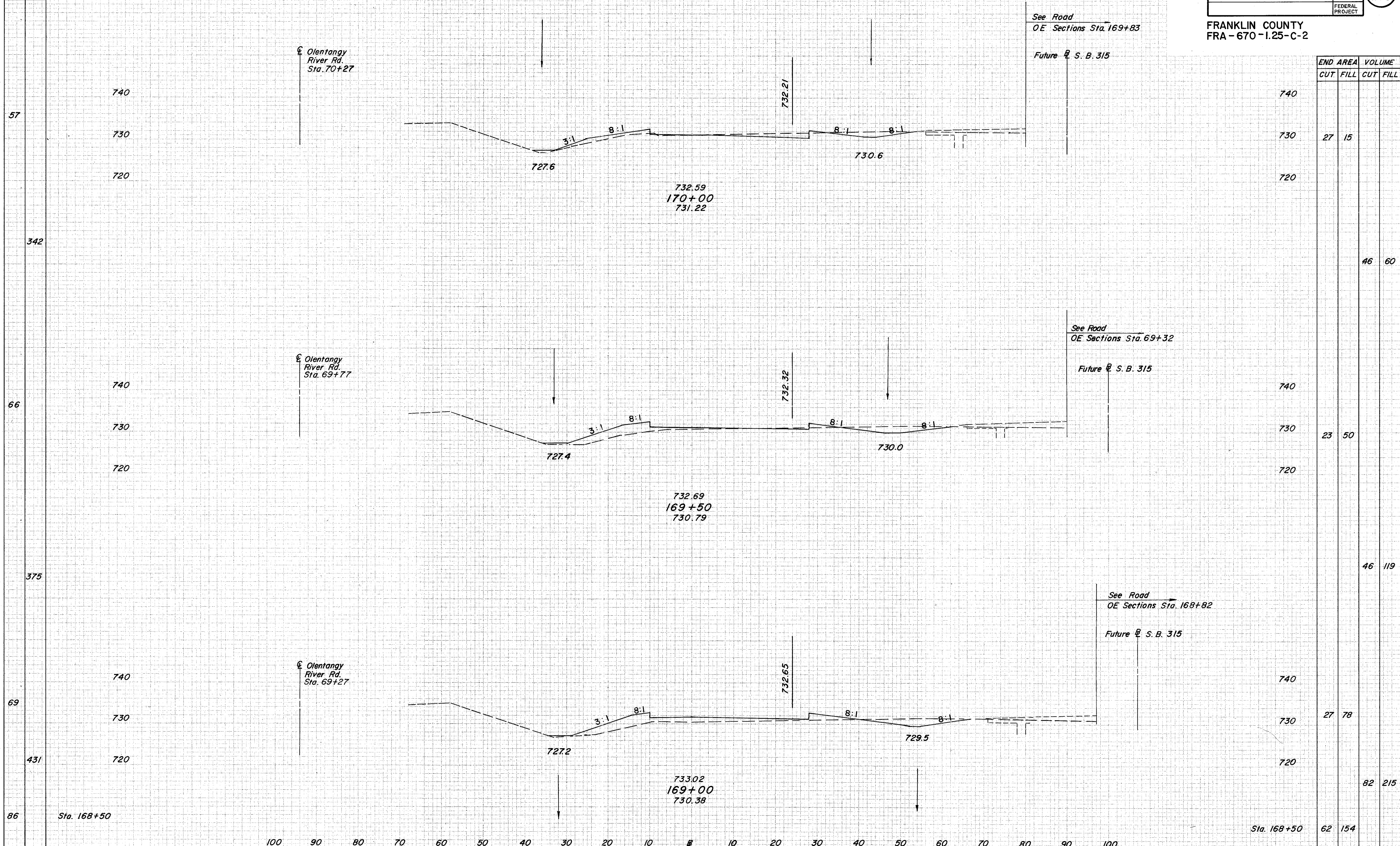
SEEDING  
END SQ.  
WIDTH YDS.

100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100

OHIO  
FHWA  
REGION 5  
FEDERAL  
PROJECT

75  
275

FRANKLIN COUNTY  
FRA-670-1.25-C-2



ROAD OD CROSS SECTION STA. 169+00 TO STA. 170+00

PLATE S-FULL CROSS SECTION FULL LINE

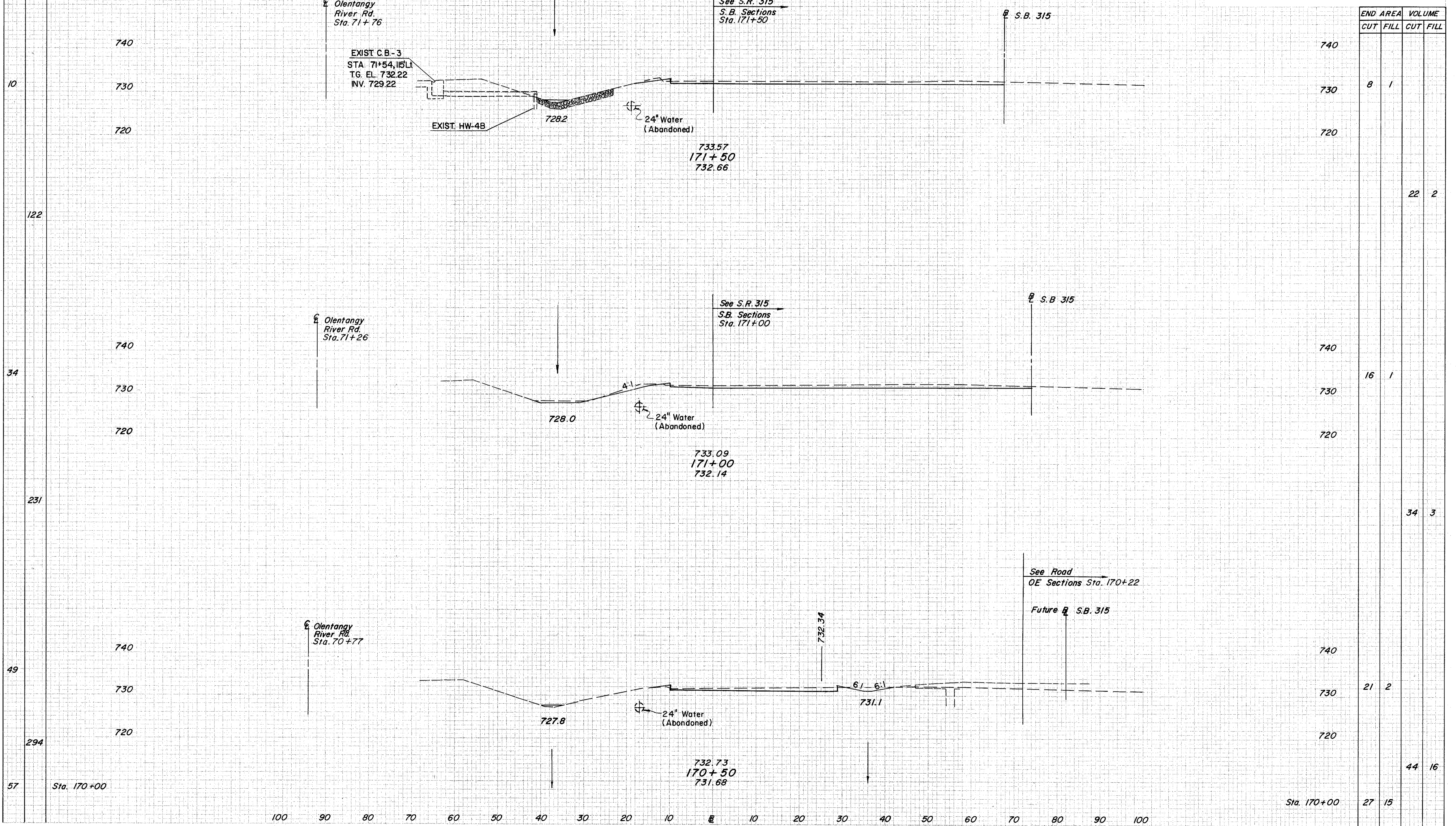
SEEDING  
END SQ.  
WIDTH YDS.

100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100

FRANKLIN COUNTY  
FRA-670-1.25-C-2

ORIGINAL SURVEY PLANS  
DATE: 10/1/54  
BY: J. W. HARRIS  
CHECKED: J. W. HARRIS  
DATE: 10/1/54

ORIGINAL SURVEY PLANS  
DATE: 10/1/54  
BY: J. W. HARRIS  
CHECKED: J. W. HARRIS  
DATE: 10/1/54



END STA.	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
740				
730	8	1		
720			22	2
740				
730	16	1		
720			34	3
740				
730	21	2		
720			44	16
Sta. 170+00	27	15		

PLATE 3-FULL CROSS SECTION FULL LINE

ROAD OD CROSS SECTION STA. 170+50 TO STA. 171+50

SEEDING  
END SQ.  
WIDTH YDS.

100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100

OHIO  
FHWA  
REGION 5  
FEDERAL  
PROJECT

77  
275

FRANKLIN COUNTY  
FRA-670-1.25-C-2

END ROAD OD STA. 173+48.65

24  
131

23

97

12

61

10

740

730

720

740

730

720

740

730

720

Sta. 171+50

Olentangy  
River Rd.  
Sta. 73+20

Olentangy  
River Rd.  
Sta. 72+77

Olentangy  
River Rd.  
Sta. 72+27  
EXIST. C.B. 3A  
STA. 172+36.58 ft

729.0

24" Water  
(Abandoned)

735.01  
173+00  
733.90

728.7

734.53  
172+50  
733.51

728.4

24" Water  
(Abandoned)

734.05  
172+00  
733.05

EXIST. HW-4B

See S.R. 315 S.B.  
Sections Sta. 173+00

See S.R. 315 S.B.  
Sections Sta. 172+50

See S.R. 315 S.B.  
Sections Sta. 172+00

S.B. 315

S.B. 315

S.B. 315

END AREA  
CUT FILL

VOLUME  
CUT FILL

740

730

720

740

730

720

740

730

720

Sta. 171+50

END AREA	VOLUME
CUT	FILL
740	
10	18
730	
720	
	42 31
740	
35	15
730	
720	
	60 19
740	
30	5
730	
720	
	35 6
8	1

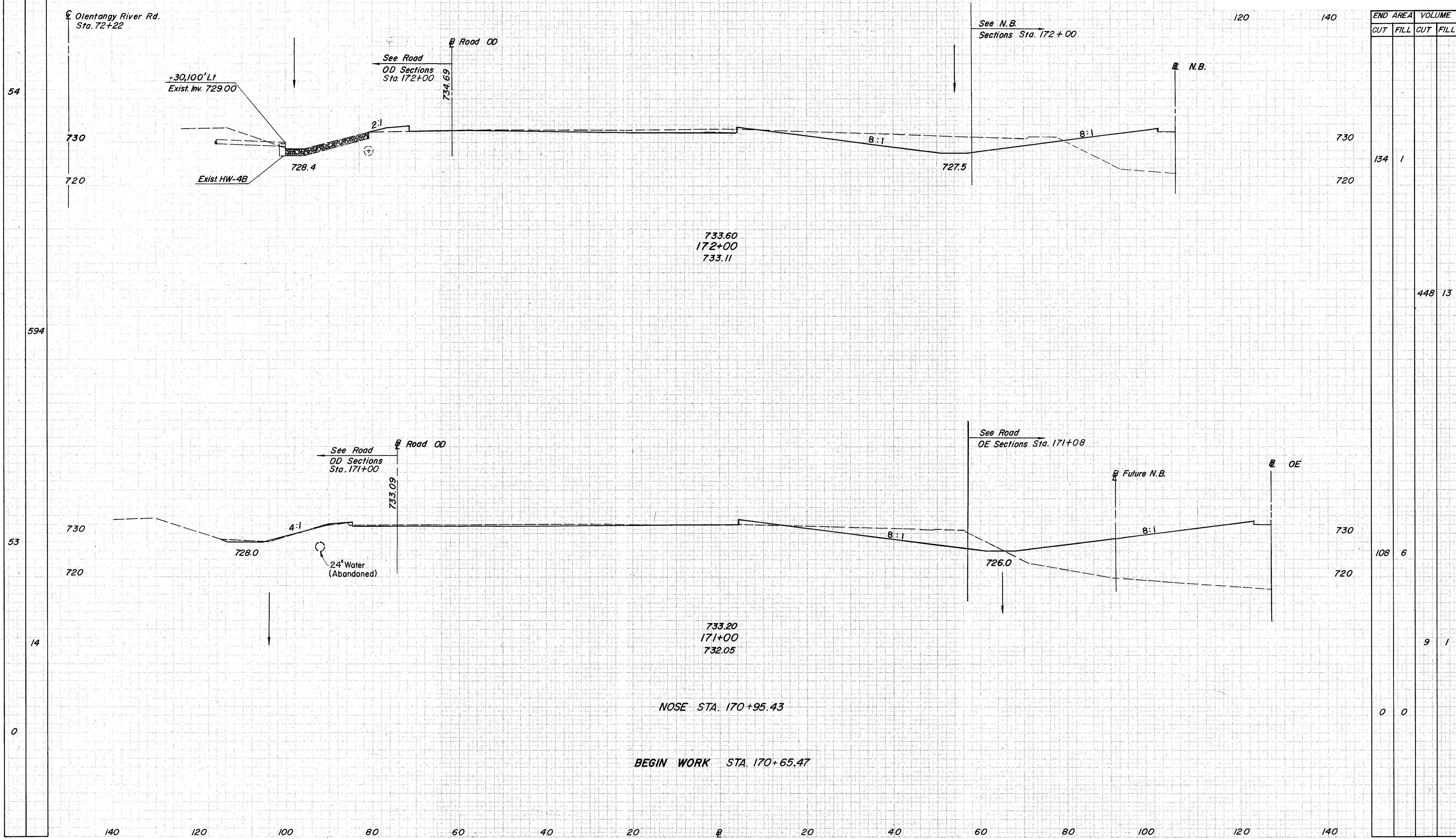
PLATE 3-FULL CROSS SECTION-FULL LINE  
DATE: 10/1/00

ROAD OD CROSS SECTION STA. 172+00 TO STA. 173+00



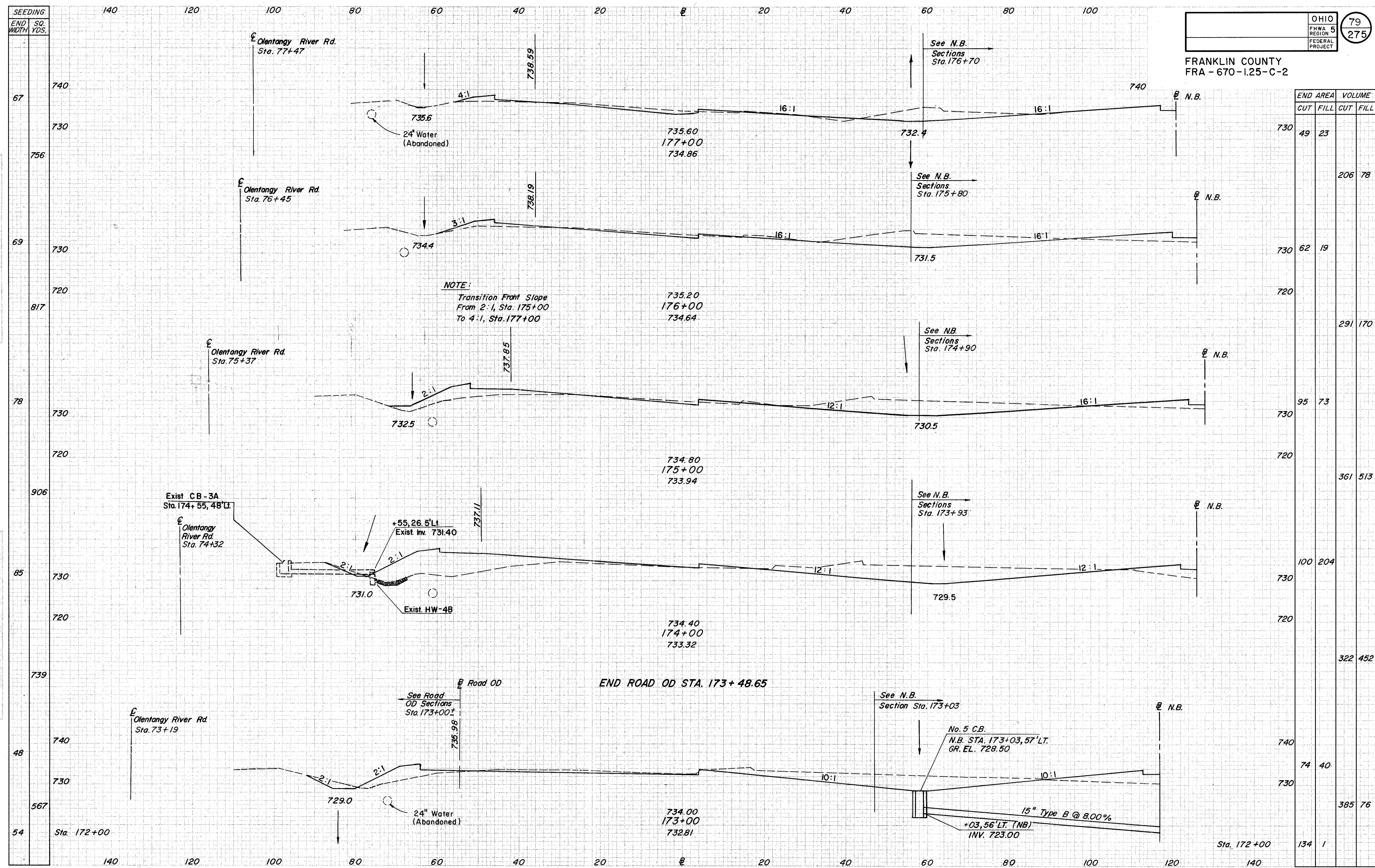
SEEDING  
END SQ  
WDTH YDS.

FRANKLIN COUNTY  
FRA-670-1.25-C-2



END AREA	VOLUME	
	CUT	FILL
134	1	
448	13	
108	6	
9	1	
0	0	

S.B.-S.R. 315 CROSS SECTION STA. 171+00 TO STA. 172+00



**NOTE:**  
Transition Front Slope  
From 2:1, Sta. 175+00  
To 4:1, Sta. 177+00

END ROAD OD STA. 173+48.65

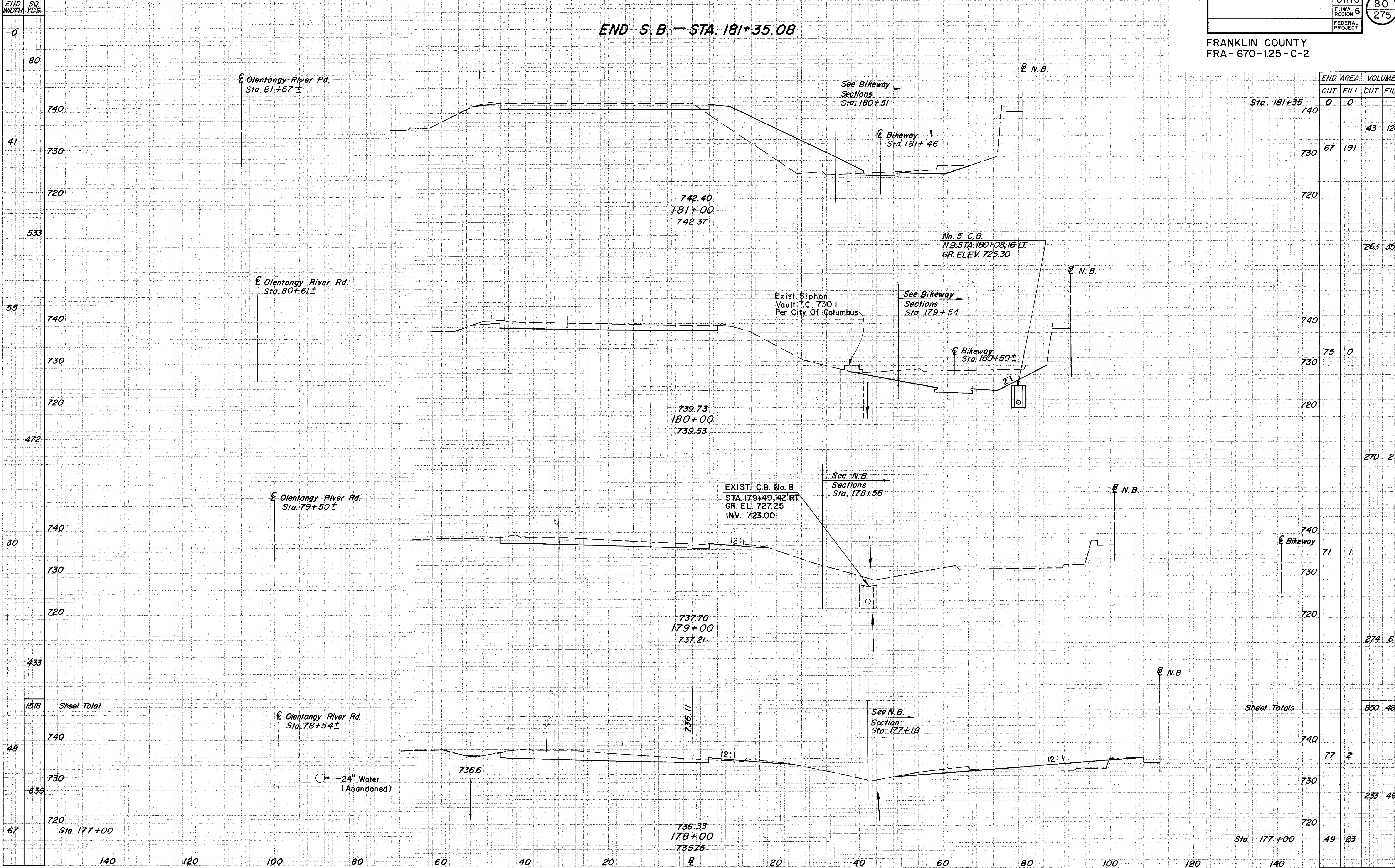
No. 5 C.B.  
N.B. STA. 173+03, 57' LT.  
GR. EL. 728.50

15" Type B @ 8.00%  
+03.56' LT. (NB)  
INV. 723.00

SEEDING 140 120 100 80 60 40 20 0 20 40 60 80 100

FRANKLIN COUNTY  
FRA-670-1.25-C-2

END S.B. - STA. 181+35.08



Sta.	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
Sta. 181+35	0	0		
740			43	124
730	67	191		
720			263	354
740				
730	75	0		
720				
740			270	2
730	71	1		
720			274	6
740				
730	77	2		
720			233	46
740				
730	49	23		
720				
Sheet Totals			850	486
Sta. 177+00				

FINAL  
DESIGNED  
SURVEY  
NOTES  
DATE: 10/1/80  
BY: J. J. ...

ORIGINAL  
DESIGNED  
SURVEY  
NOTES  
DATE: 10/1/80  
BY: J. J. ...

PLATE 3 FULL CROSS SECTION-FULL LINE

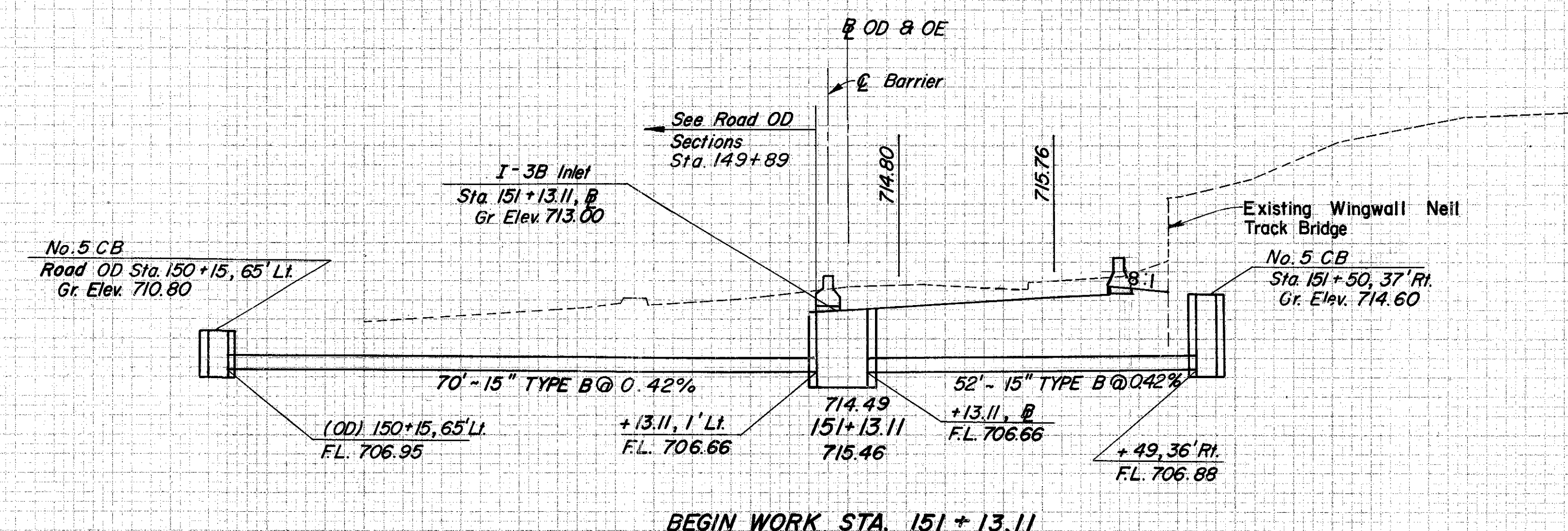
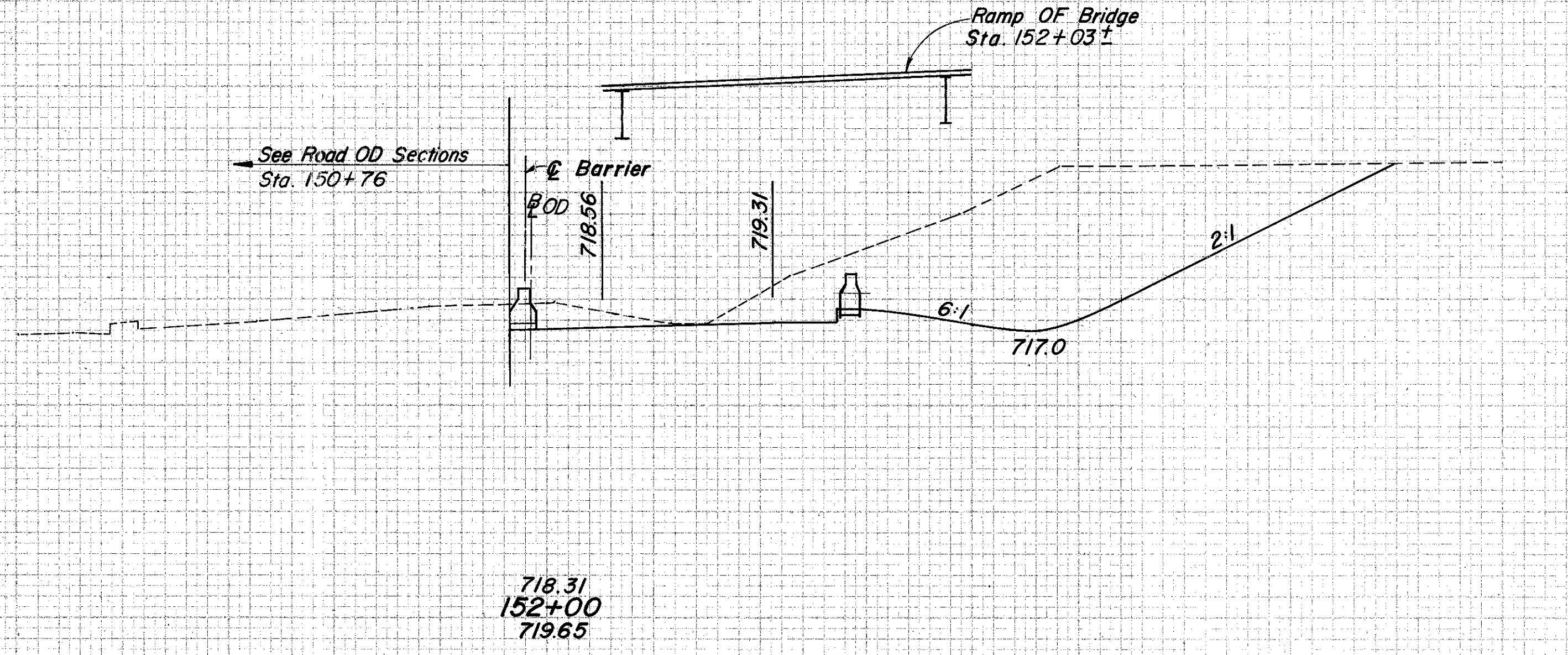
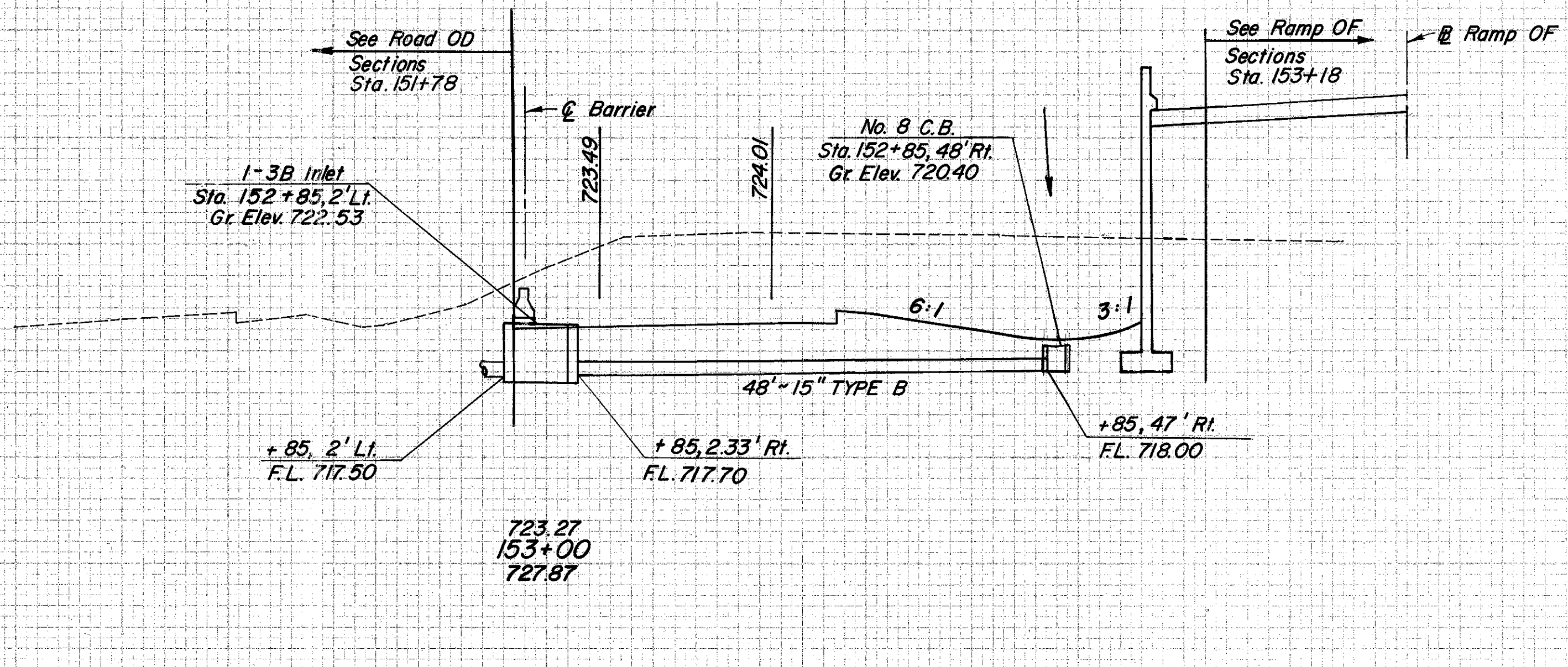
SEEDING 140 120 100 80 60 40 20 0 20 40 60 80 100

END SQ. WIDTH YDS.

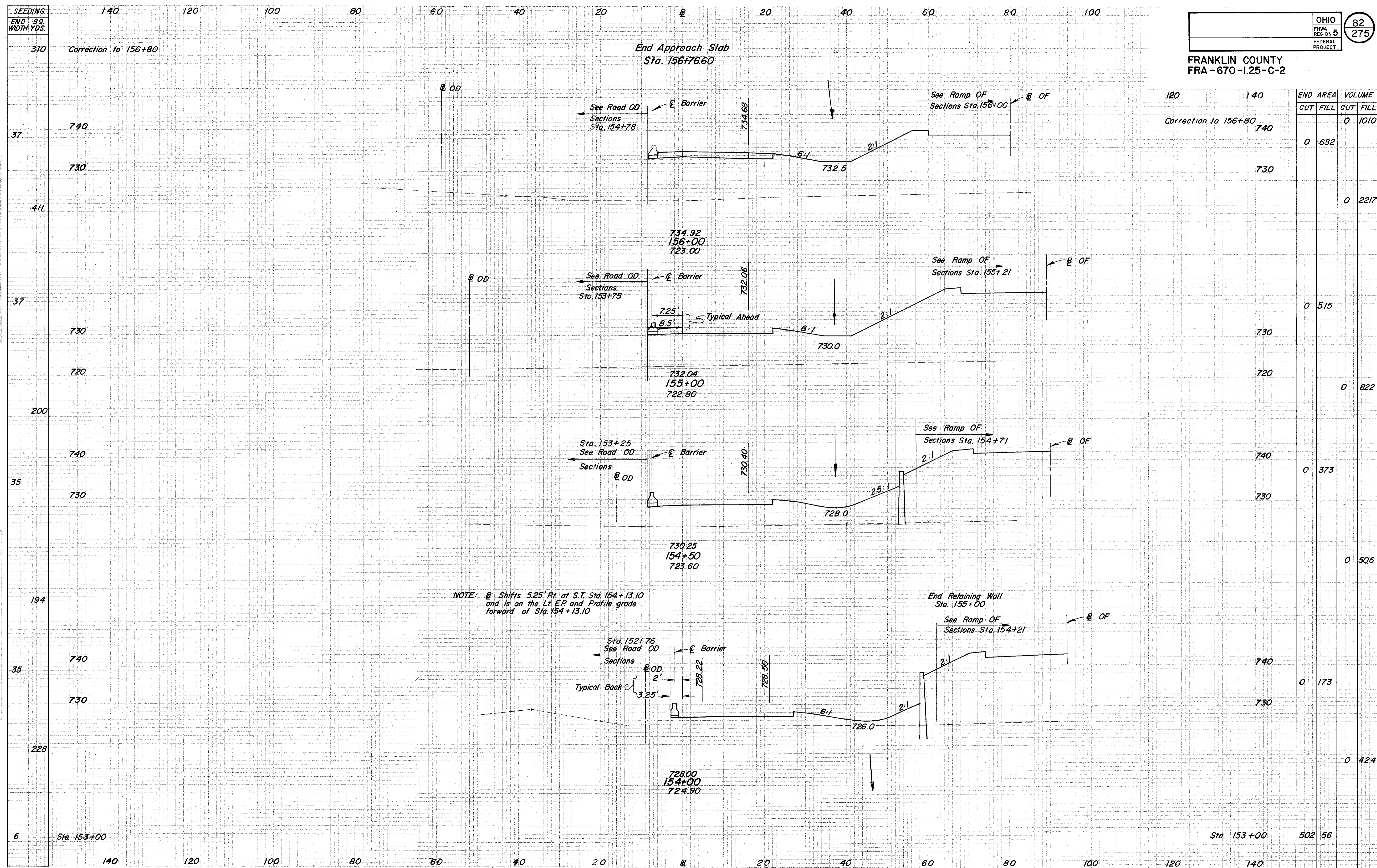
FRANKLIN COUNTY FRA-670-1.25-C-2

6  
730  
720  
356  
58  
730  
720  
710  
434  
32  
730  
720  
710  
2133 Sheet Total

120	140	END AREA		VOLUME	
		CUT	FILL	CUT	FILL
730	730				
720	720	502	56		
				1961	104
730	730				
720	720	557	0		
710	710			1007	0
730	730				
720	720	69	0		
710	710				
Sheet Totals		2968	6083		

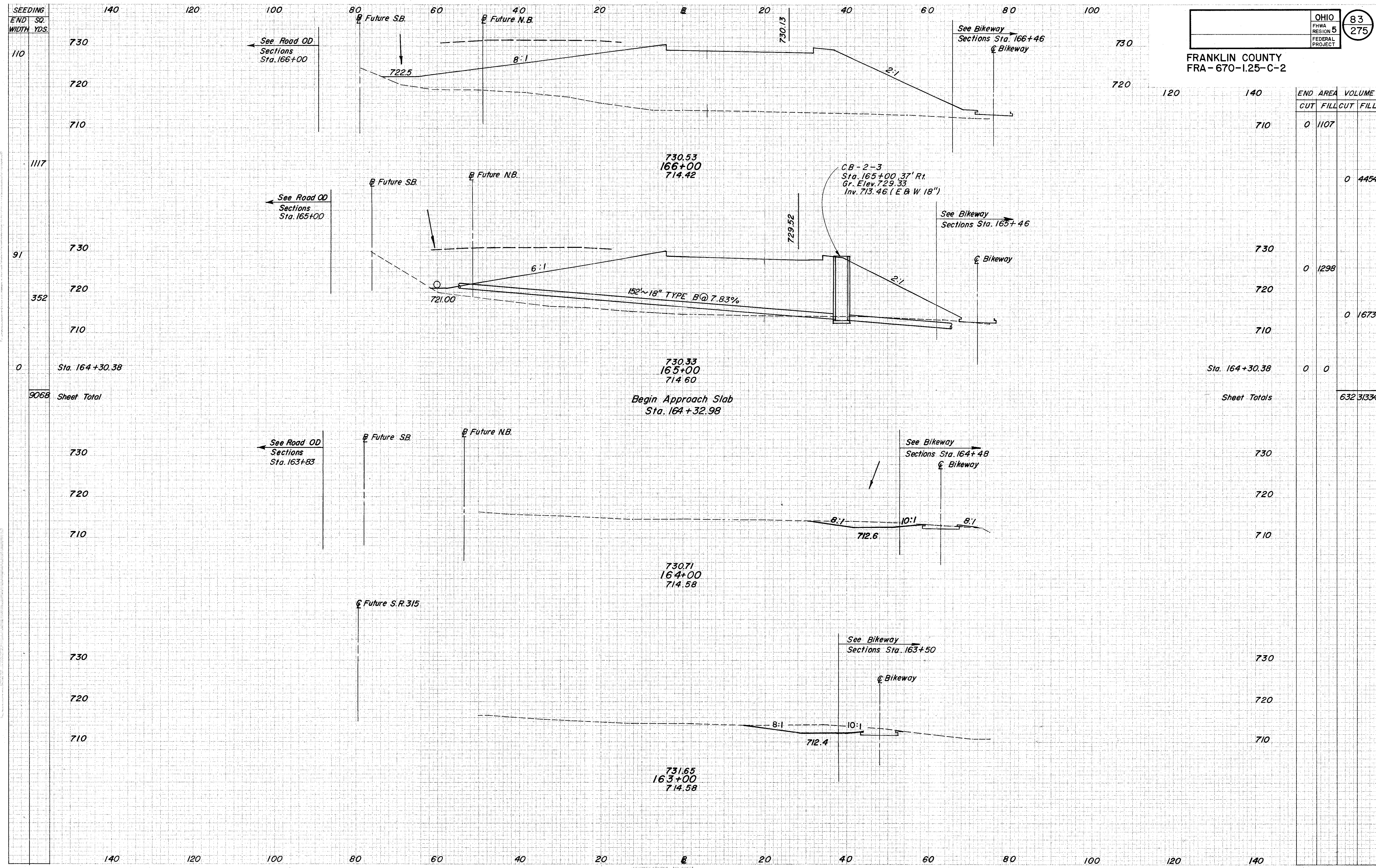


BEGIN WORK STA. 151+13.11



STATION	CORRECTION	END AREA		VOLUME	
		CUT	FILL	CUT	FILL
120	140				
Correction to 156+80	740	0	682	0	1010
	730			0	2217
	730	0	515		
	720			0	822
	740	0	373		
	730			0	506
	740			0	173
	730			0	424
Sta. 153+00		502	56		

FRANKLIN COUNTY  
FRA-670-1.25-C-2



END STA.	AREA	VOLUME	
		CUT	FILL
140	710	0	1107
120	730	0	4454
140	720	0	1298
140	710	0	1673
Sta. 164+30.38		0	0
Sheet Totals		632	3134

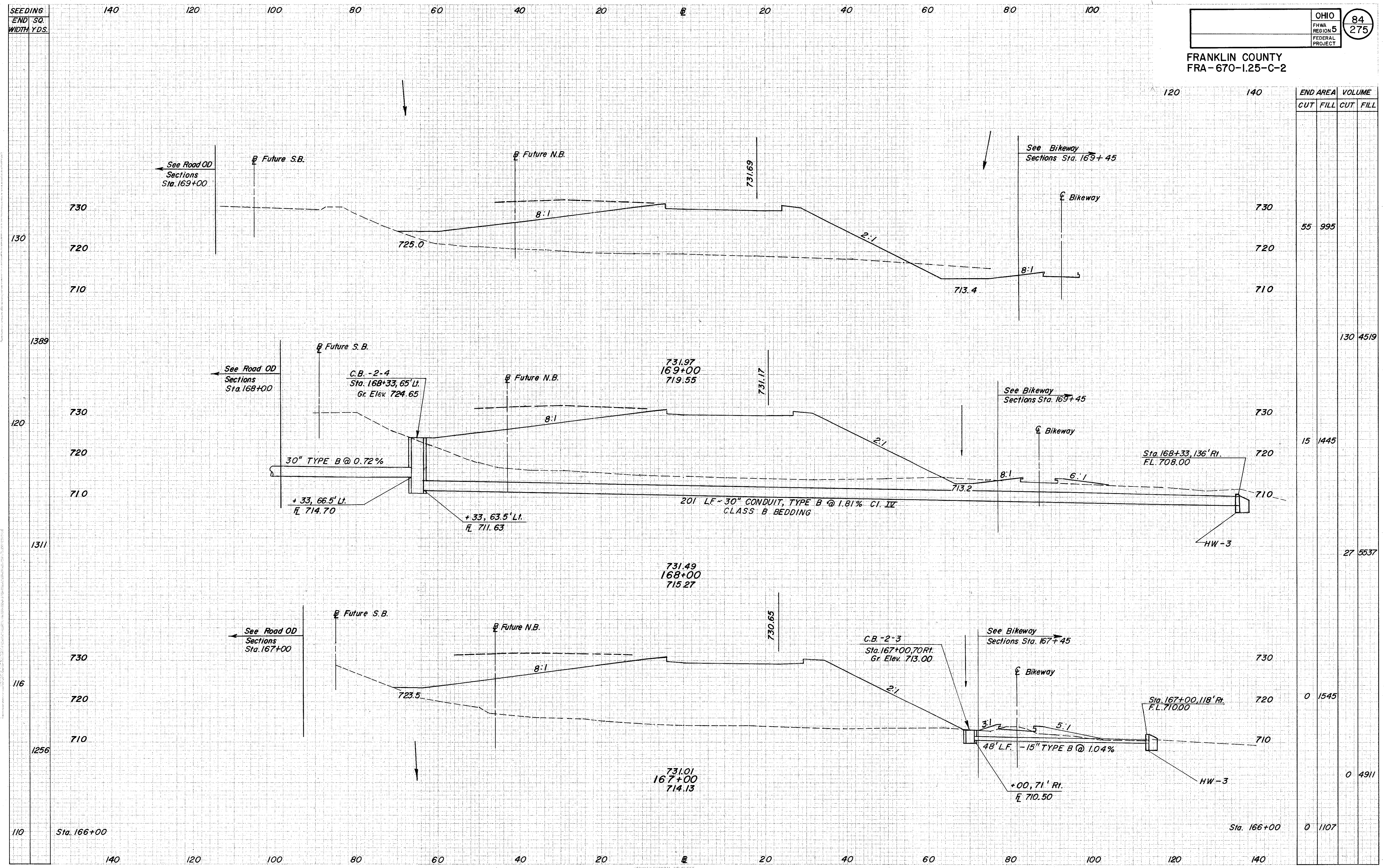
ORIGINAL SURVEY  
 DATE: 11/17/11  
 BY: [illegible]  
 CHECKED: [illegible]  
 APPROVED: [illegible]

ORIGINAL SURVEY  
 DATE: 11/17/11  
 BY: [illegible]  
 CHECKED: [illegible]  
 APPROVED: [illegible]

PLATE 3-FULL CROSS SECTION-FULL LINE

ROAD OE CROSS SECTION STA.163+00 TO STA.166+00

FRANKLIN COUNTY  
 FRA-670-1.25-C-2



END STA.	CUT	FILL	END AREA		VOLUME	
			SQ. FT.	CUB. YDS.	SQ. FT.	CUB. YDS.
120						
140						
130	55	995				
1389						
120	15	1445				
1311						
116	0	1545				
1256						
110	0	4911				
110	0	1107				

PLATE 3-FULL CROSS SECTION-FULL LINE

ROAD OE CROSS SECTION STA. 167+00 TO STA. 169+00

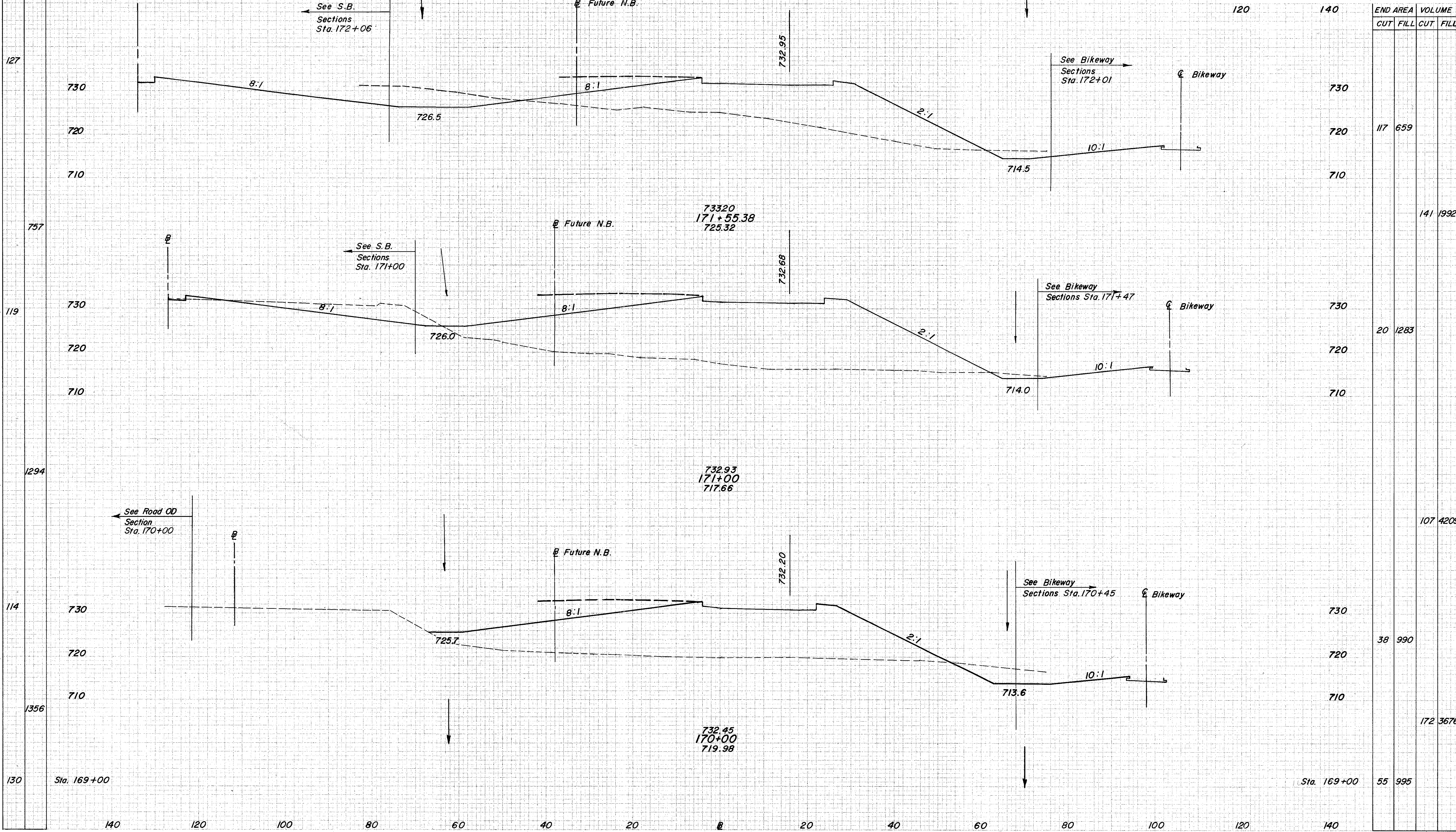
SEEDING  
END SQ.  
WIDTH YDS.

140 120 100 80 60 40 20 0 20 40 60 80 100

END ROAD OE  
STA. 171+55.38

OHIO	85
FHWA REGION 5	275
FEDERAL PROJECT	

FRANKLIN COUNTY  
FRA-670-1.25-C-2

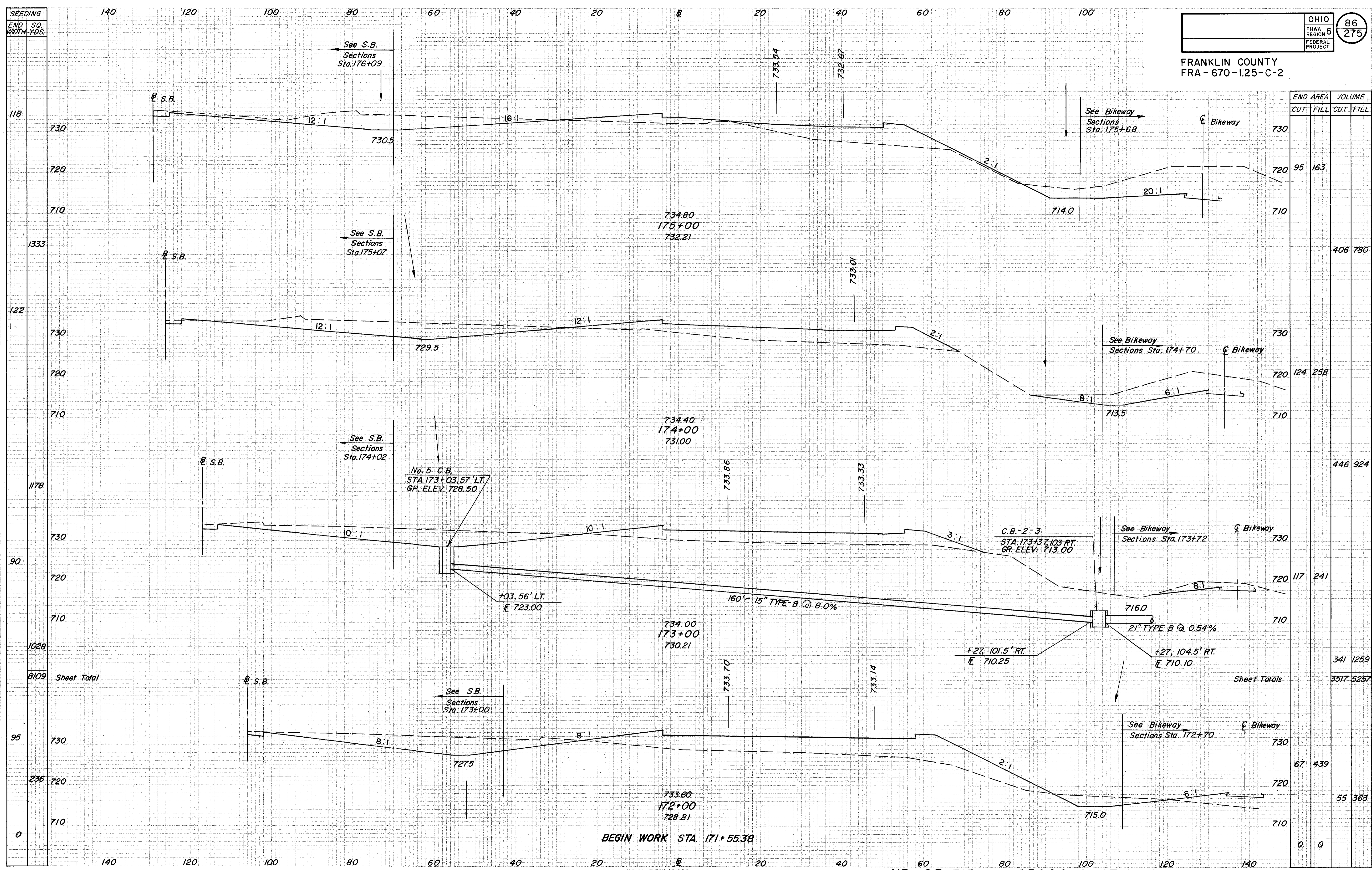


END AREA	VOLUME	
	CUT	FILL
117	659	
141	1992	
20	1283	
107	4209	
38	990	
172	3676	
55	995	

ROAD OE CROSS SECTION STA. 170+00 TO STA. 171+55



FRANKLIN COUNTY  
 FRA-670-1.25-C-2



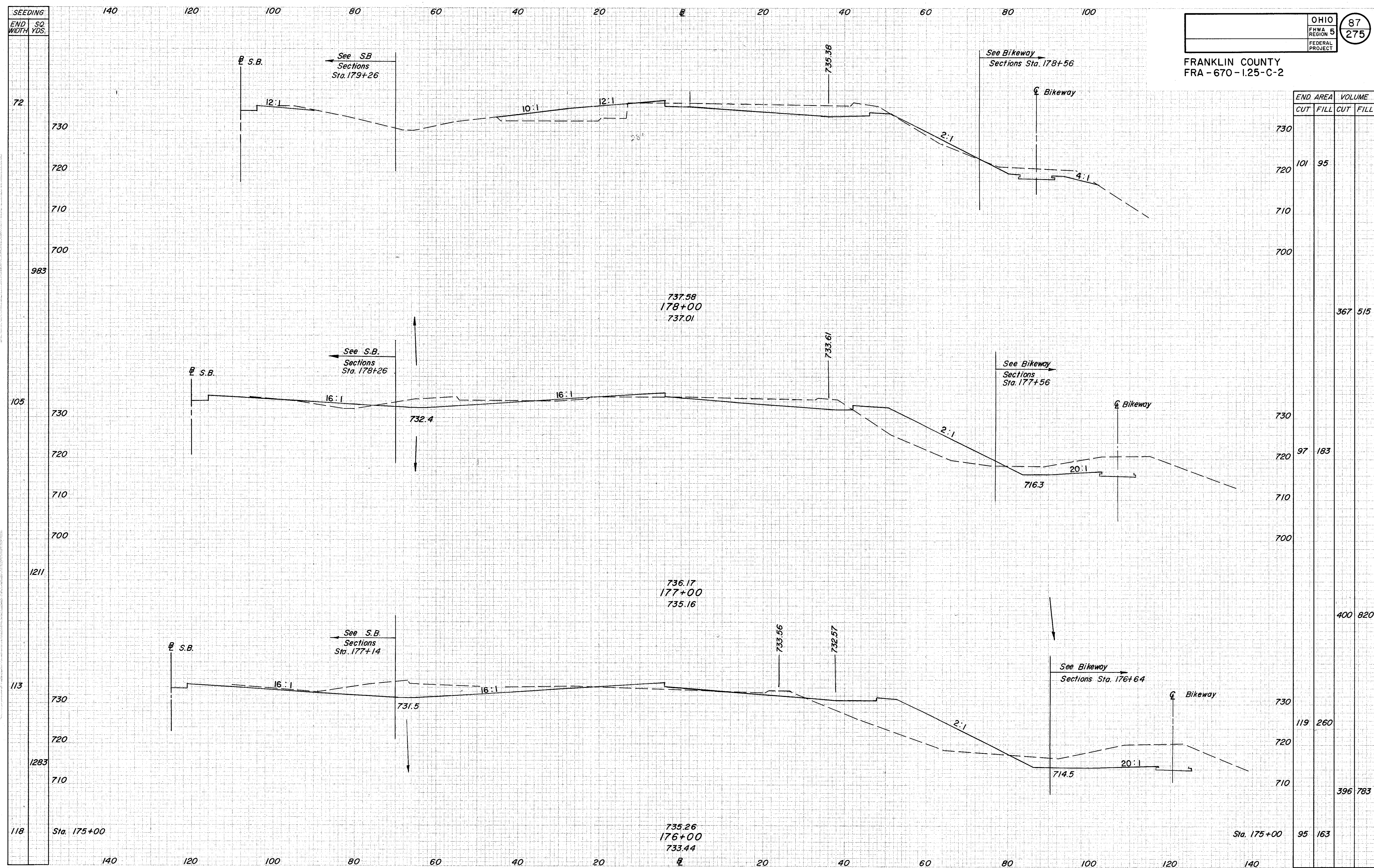
END AREA	VOLUME	
	CUT	FILL
730		
720	95	163
710		
1333		
730		
720		
710		
122		
730		
720	124	258
710		
1178		
730		
720		
710		
90		
730		
720		
710		
1028		
8109		
Sheet Total		
730		
720		
710		
95		
730		
720	67	439
710		
236		
730		
720		
710		
0		
0		
Sheet Totals	341	1259
	3517	5257

NB-SR 315 CROSS SECTION STA. 172+00 TO STA. 175+00

ORIGINAL SURVEY  
 DATE: 10/1/84  
 BY: [Illegible]  
 CHECKED: [Illegible]  
 APPROVED: [Illegible]

ORIGINAL SURVEY  
 DATE: 10/1/84  
 BY: [Illegible]  
 CHECKED: [Illegible]  
 APPROVED: [Illegible]

NON-CAT FEDERAL SPECIFICATIONS  
 PLATE 3-FULL CROSS SECTION-FULL LINE  
 4" SPEEDS  
 1/8" = 1' SCALE



END STA.	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
72				
730				
720	101	95		
710				
700				
983				
105				
730				
720	97	183		
710				
700				
1211				
113				
730				
720	119	260		
710				
1283				
118				
730				
720	95	163		
710				
118				

N.B. S.R. 315 CROSS SECTION STA. 176+00 TO STA. 178+00

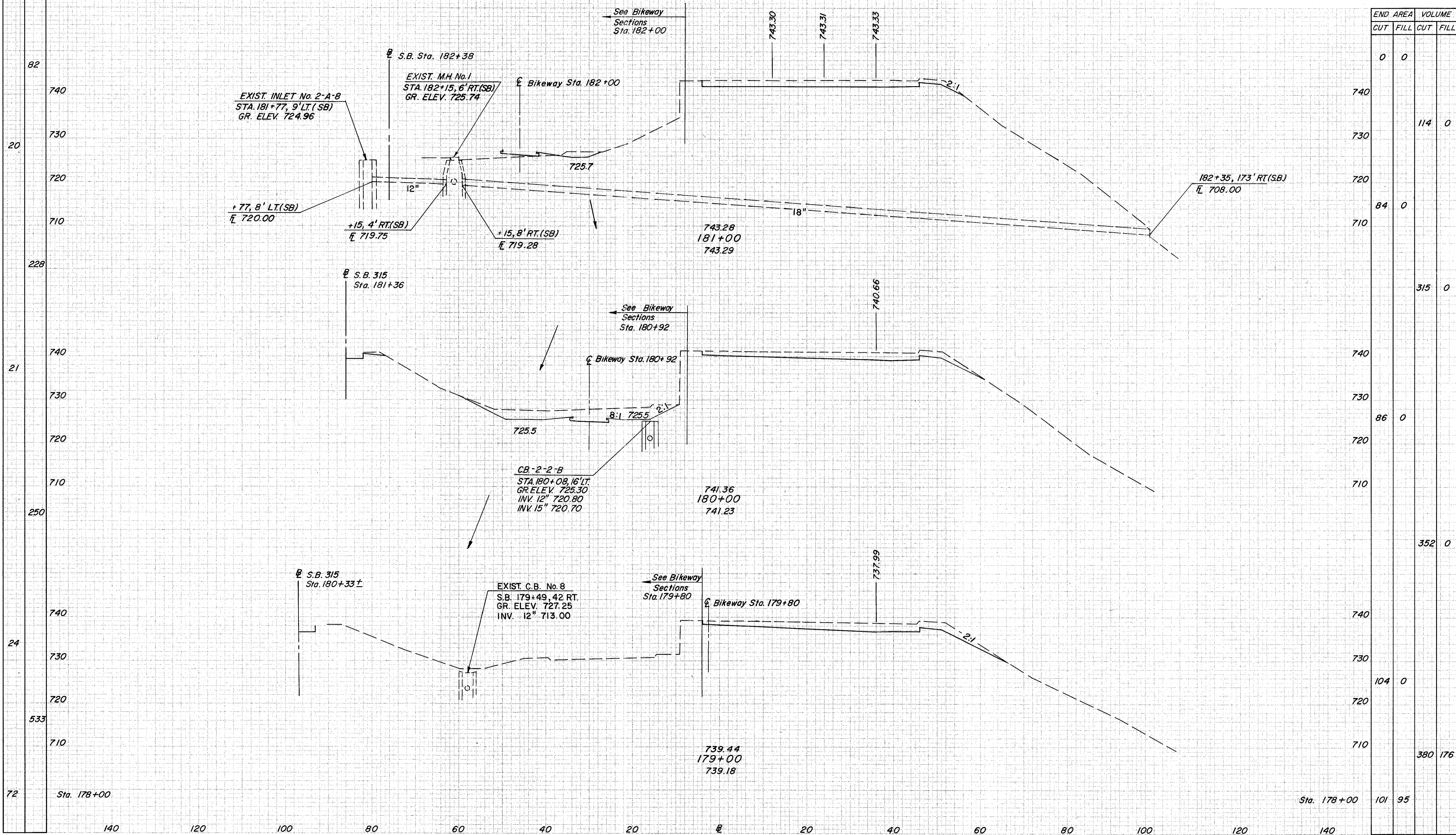
SEEDING 140 120 100 80 60 40 20 0 20 40 60 80 100

END SQ. WIDTH YDS.

END N.B. - STA. 181+73.56

OHIO	88
FHWA REGION 5	275
FEDERAL PROJECT	

FRANKLIN COUNTY  
FRA-670-1.25-C-2



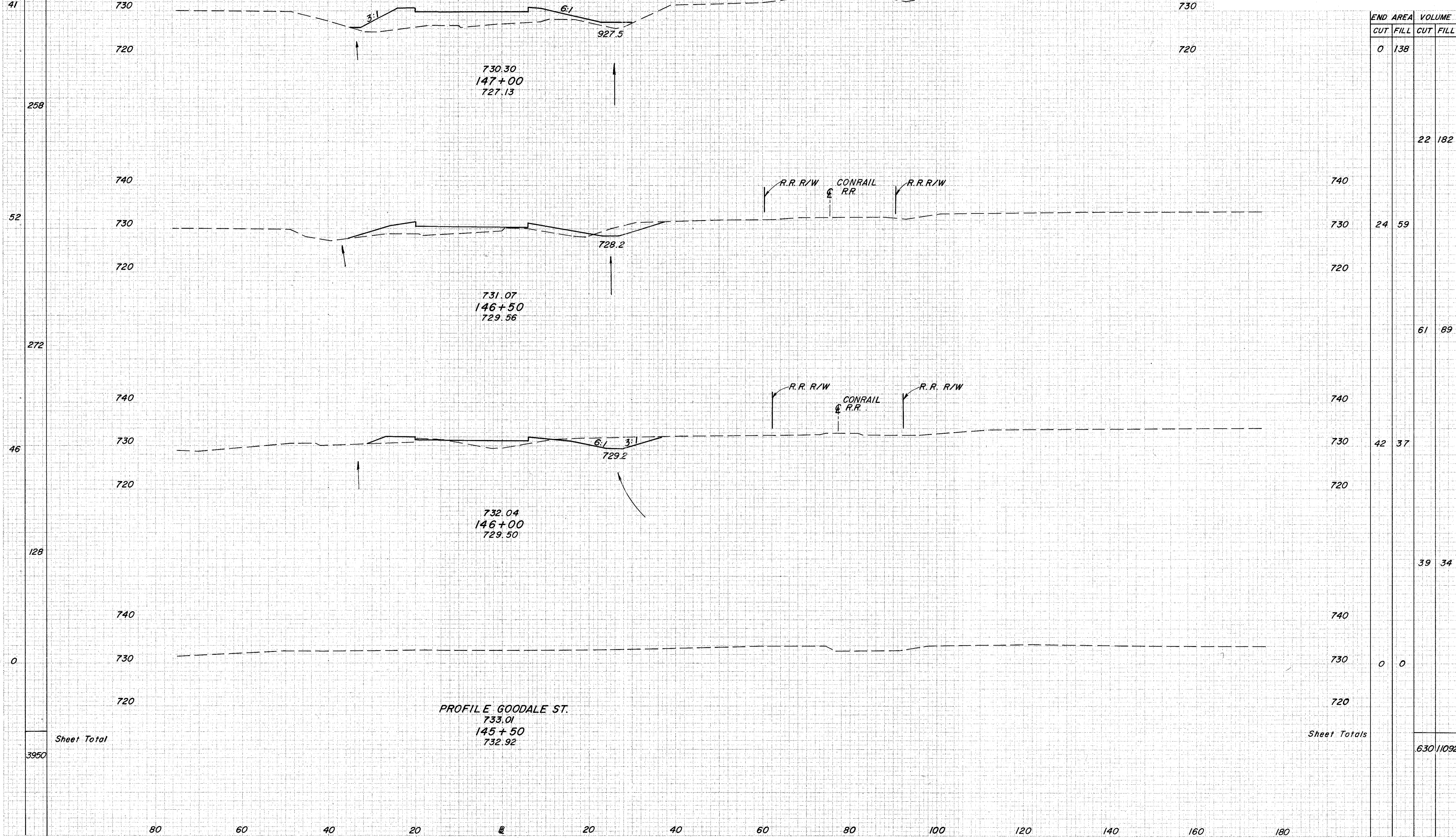
END AREA	VOLUME	
	CUT	FILL
0	0	0
114	0	0
315	0	0
352	0	0
380	176	0
101	95	0

PLATE 3-FULL CROSS SECTION-FULL LINE

N.B. S.R. 315 CROSS SECTION STA. 179+00 TO STA. 181+00

SEEDING  
END SQ.  
WIDTH YDS.

FRANKLIN COUNTY  
FRA-670-1.25-C-2



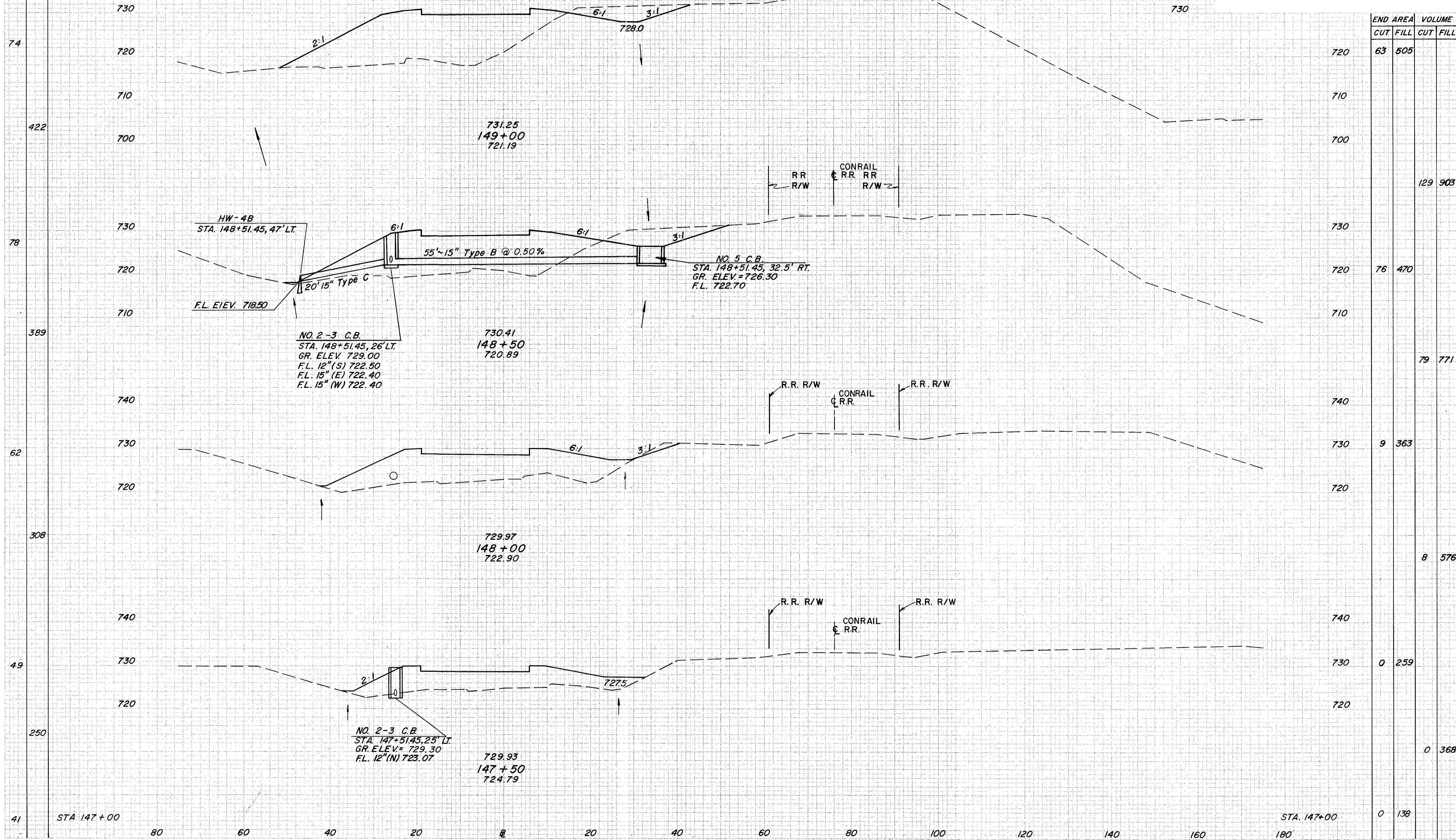
FINAL  
SURVEY  
DATE

ORIGINAL  
SURVEY  
DATE

PROFILE GOODALE ST.  
733.01  
145+50  
732.92

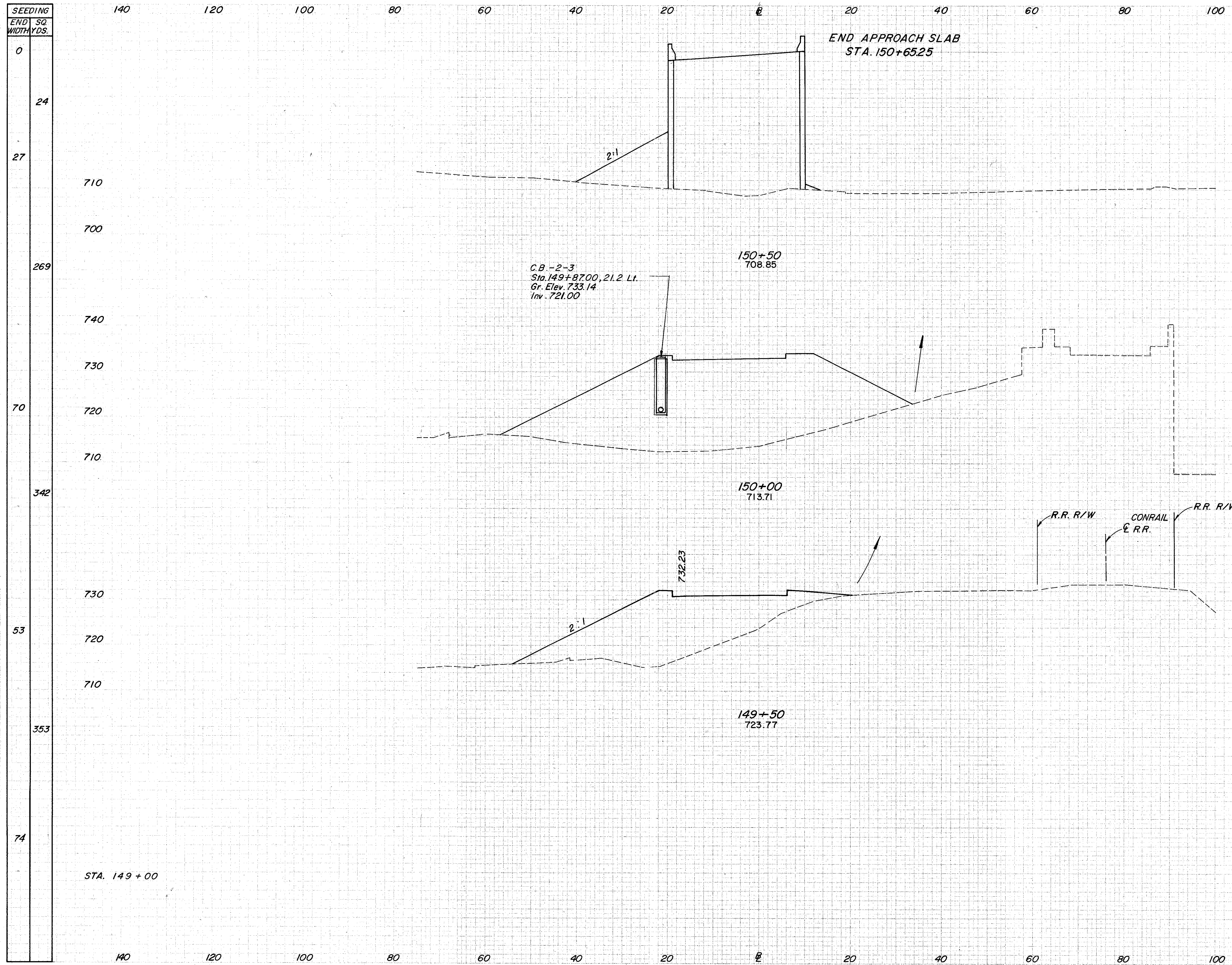
SEEDING  
END SQ.  
WIDTH YDS.

FRANKLIN COUNTY  
FRA-670-1.25-C-2



END AREA		VOLUME	
CUT	FILL	CUT	FILL
63	505		
		129	903
76	470		
		79	771
9	363		
		8	576
0	259		
		0	368
0	138		

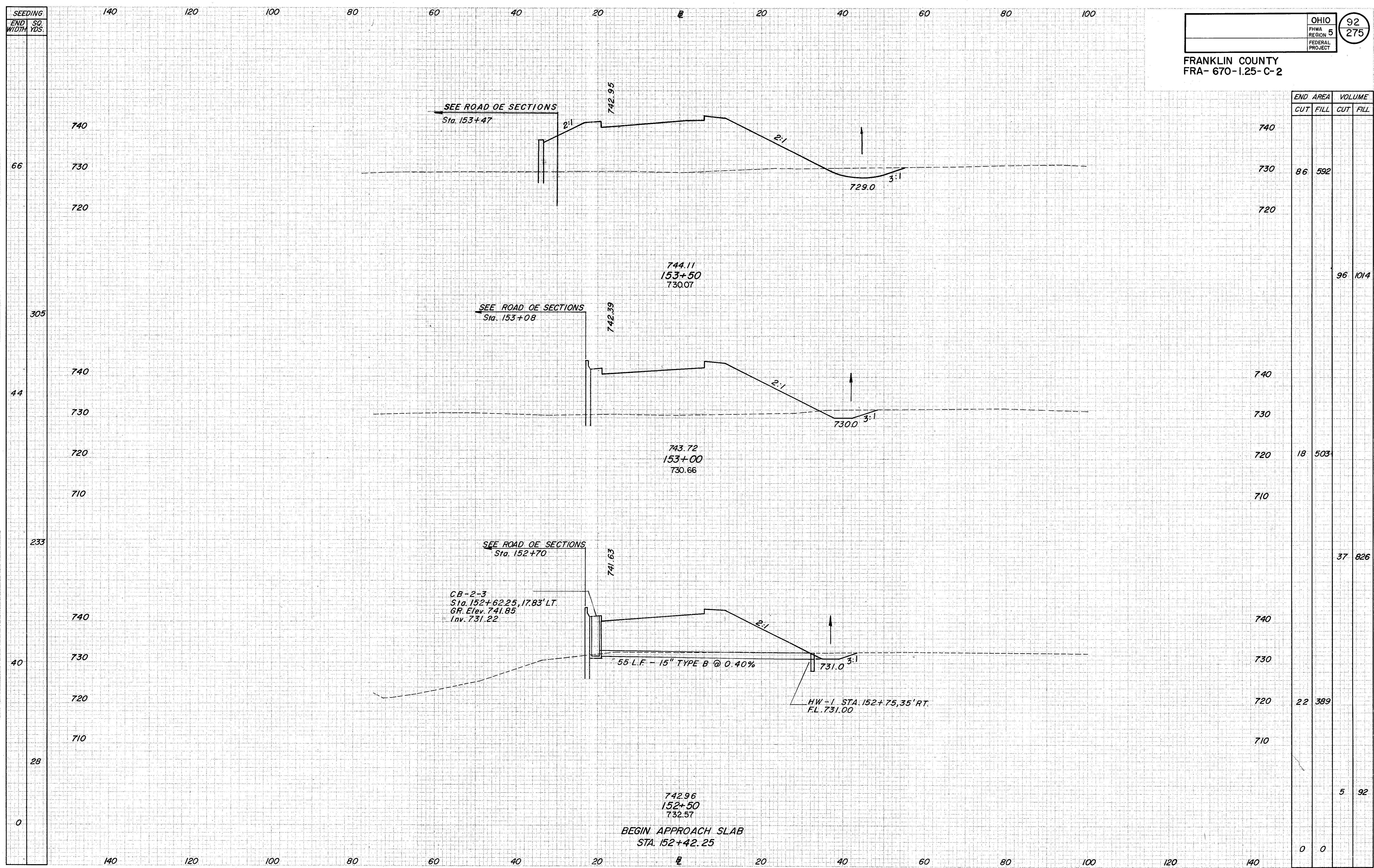
RAMP OF CROSS SECTION STA. 147+50 TO STA. 149+00



END STA.	AREA		VOLUME	
	CUT	FILL	CUT	FILL
0	0	0	0	271
24	0	930	0	1958
27	0	1185	0	1605
269	0	548	58	975
270	0	505	63	505
269	0	1185	0	1958
70	0	1185	0	1605
342	0	548	0	1605
53	0	548	0	1605
353	0	548	0	1605
74	63	505	63	505

RAMP OF CROSS SECTION STA. 149+50 TO STA. 150+50

FRANKLIN COUNTY  
 FRA-670-1.25-C-2



APPROVED FOR THE PROJECT BY:  
 DATE: \_\_\_\_\_

APPROVED FOR THE PROJECT BY:  
 DATE: \_\_\_\_\_

SEEDING  
END SQ  
WIDTH YDS.

140 120 100 80 60 40 20 0 20 40 60 80 100

OHIO  
FHWA  
REGION 5  
FEDERAL  
PROJECT

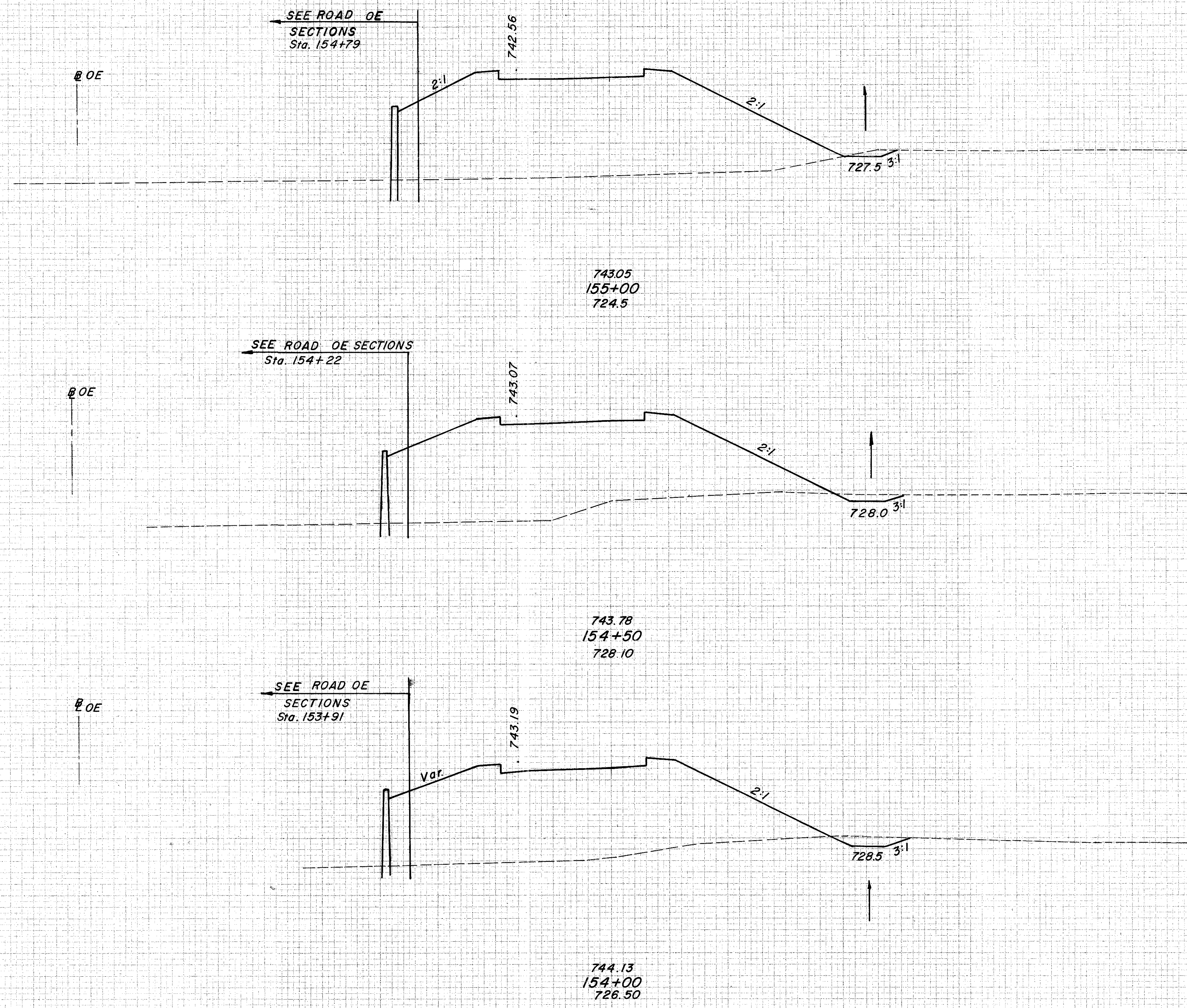
93  
275

END RETAINING WALL  
STA. 155+00 ROAD OE

FRANKLIN COUNTY  
FRA-670-1.25-C-2

65  
369  
68  
375  
3779  
67  
369  
66

740  
730  
720  
740  
730  
720  
740  
730  
720  
740  
730  
720  
740  
730  
720



743.05  
155+00  
724.5

743.78  
154+50  
728.10

744.13  
154+00  
726.50

END AREA  
CUT FILL

END AREA	VOLUME
CUT	FILL
8	1053
19	1846
12	941
28	1751
168	1155
18	950
96	1428
86	592

Sheet Total

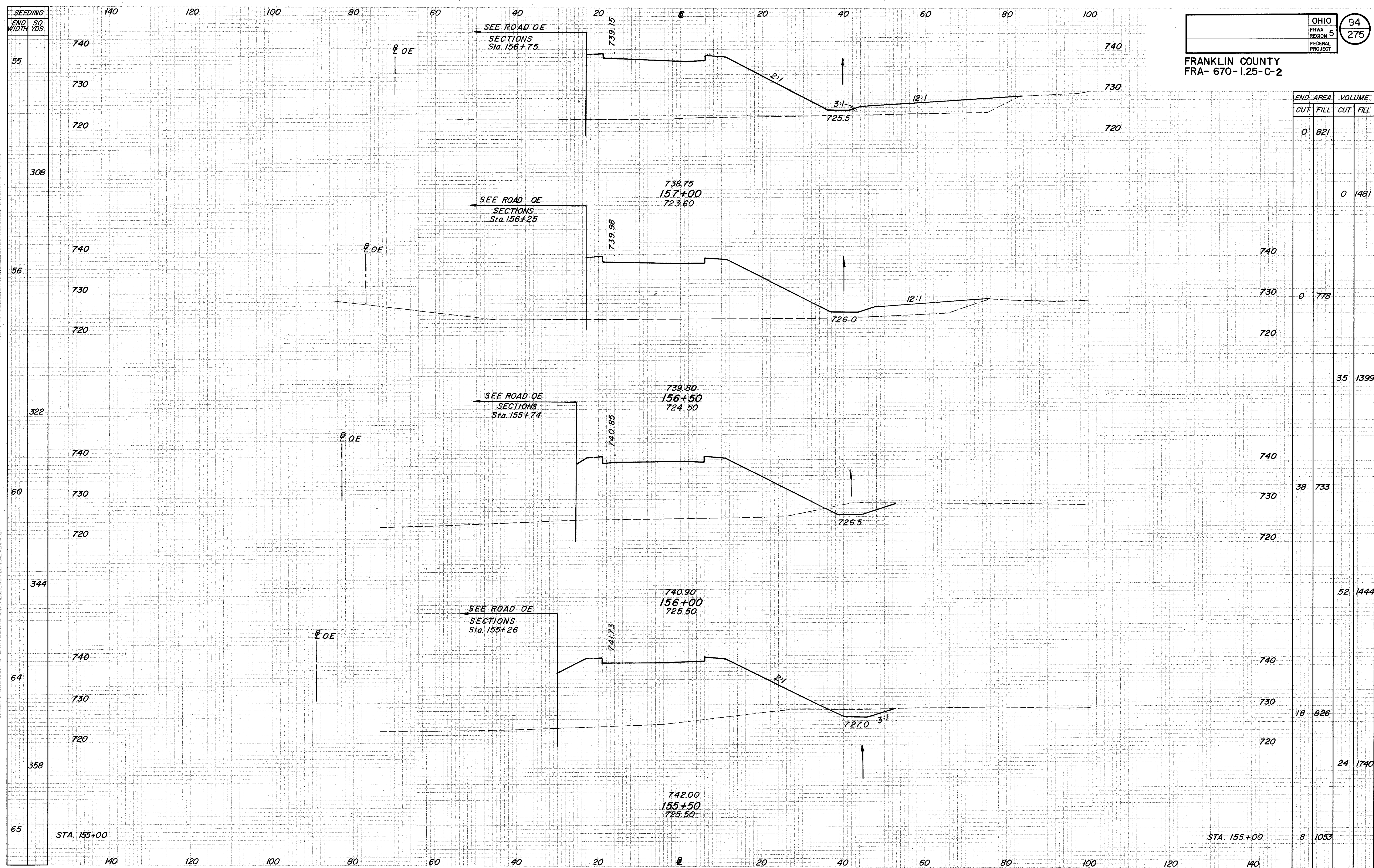
Sheet Totals

STA. 153+50

STA. 153+50



FRANKLIN COUNTY  
FRA-670-1.25-C-2



END STA.	AREA		VOLUME	
	CUT	FILL	CUT	FILL
55	0	821		
56	0	778	0	1481
60	38	733	35	1399
64	18	826	52	1444
65	8	1053	24	1740

FINAL SURVEY  
 PROJECT NO. 670-1.25-C-2  
 DATE 11/15/94

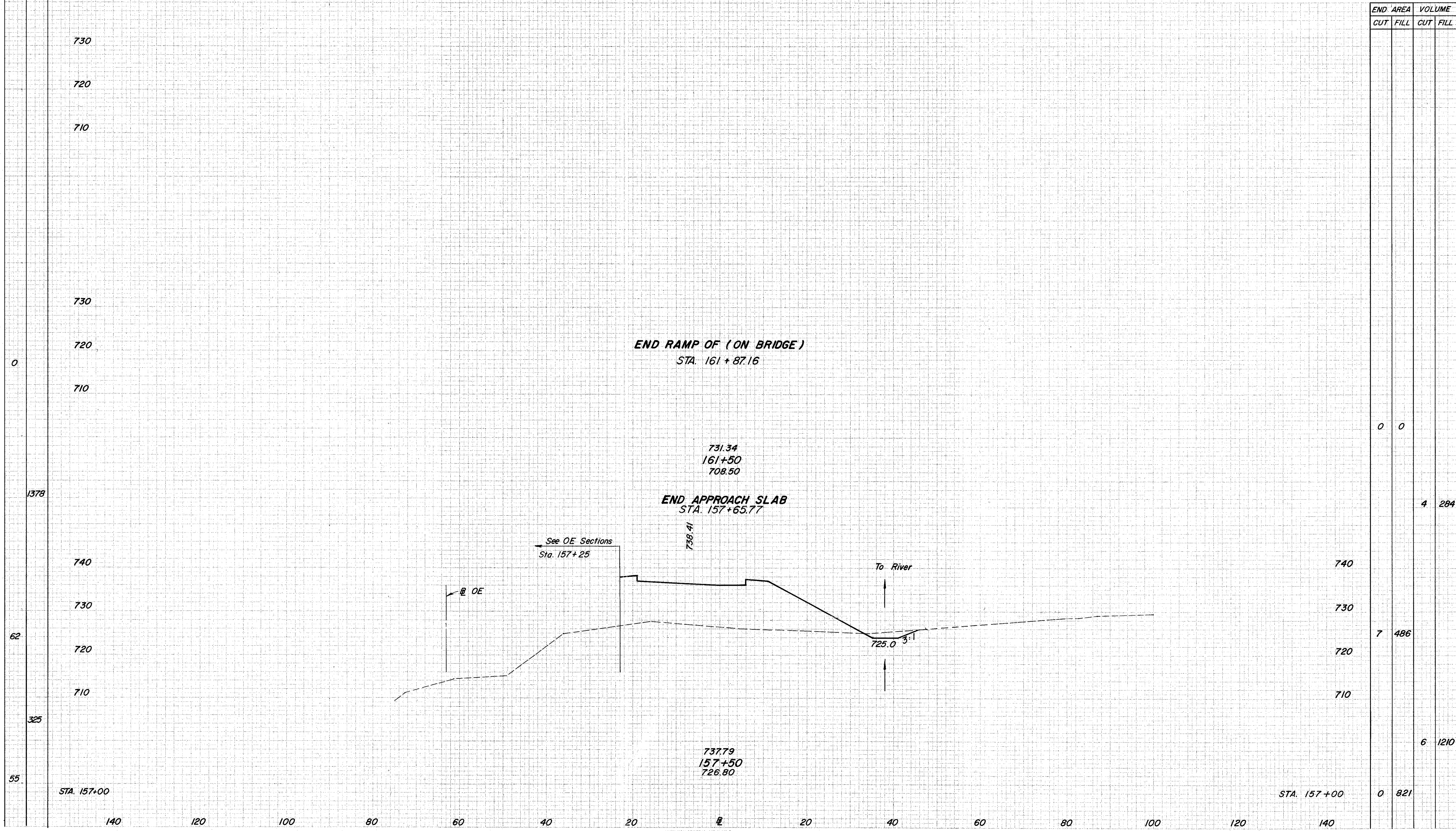
CONSERVATION SURVEY  
 PROJECT NO. 670-1.25-C-2  
 DATE 11/15/94

SEEDING END SQ. WIDTH YDS. 140 120 100 80 60 40 20 0 20 40 60 80 100

FRANKLIN COUNTY  
FRA-670-1.25-C-2

FINAL SURVEY  
DATE: \_\_\_\_\_  
BY: \_\_\_\_\_  
CHECKED BY: \_\_\_\_\_  
DATE: \_\_\_\_\_

ORIGINAL SURVEY  
DATE: \_\_\_\_\_  
BY: \_\_\_\_\_  
CHECKED BY: \_\_\_\_\_  
DATE: \_\_\_\_\_

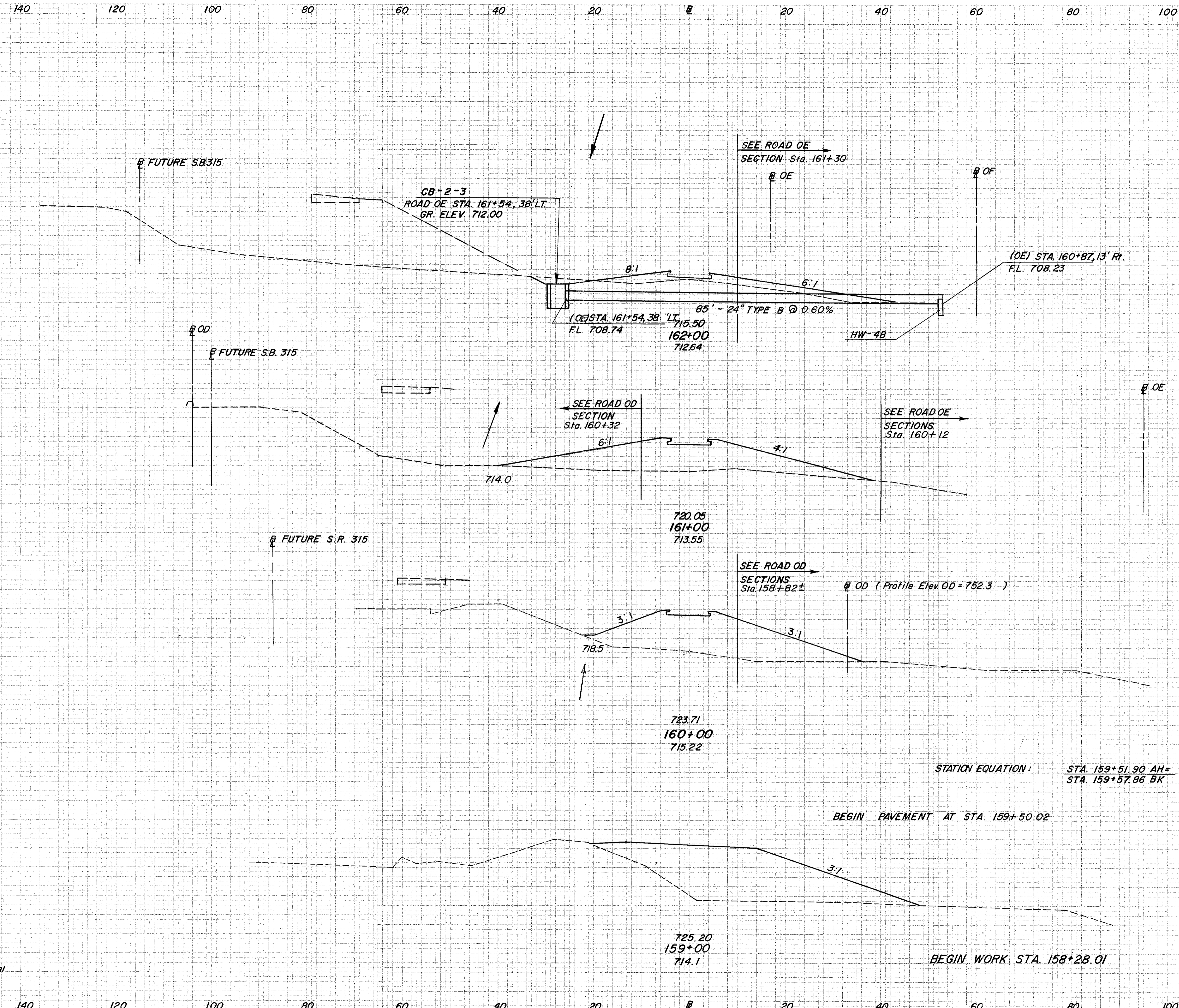


END AREA		VOLUME	
CUT	FILL	CUT	FILL
0	0		
		4	284
7	486		
		6	1210
0	821		

PLATE 2-FULL CROSS SECTION-FULL LINE  
PRINTED ON 11" X 17" SHEET

RAMP OF CROSS SECTION STA. 157+50 TO STA. 161+87.16

SEEDING	SQ. YDS.
24	372
43	383
26	153
0	0
0	0
0	0
1308	Sheet Total



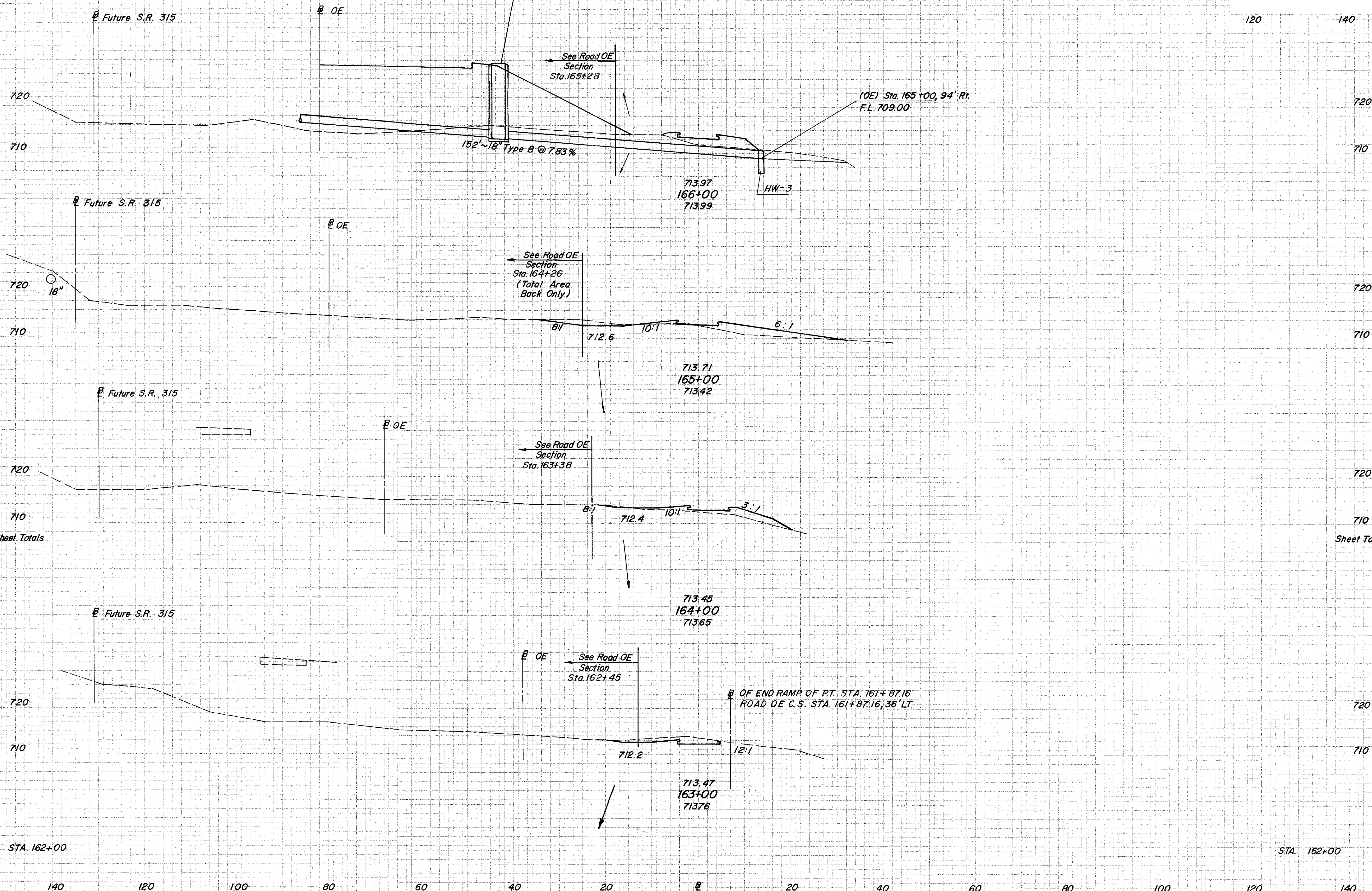
END AREA	VOLUME	
	CUT	FILL
9	69	
17	656	
8	285	
0	1107	
0	313	
0	1497	
0	450	
0	600	
0	0	
Sheet Totals	328	4,003

STATION EQUATION:  $\frac{STA. 159+51.90 AH = STA. 159+57.86 BK}{}$

BEGIN PAVEMENT AT STA. 159+50.02

BEGIN WORK STA. 158+28.01

SEEDING	END SQ. WIDTH	YDS.
	140	34
	120	361
	100	31
	80	261
	60	16
	40	3905
	20	178
	0	16
	20	222
	40	24

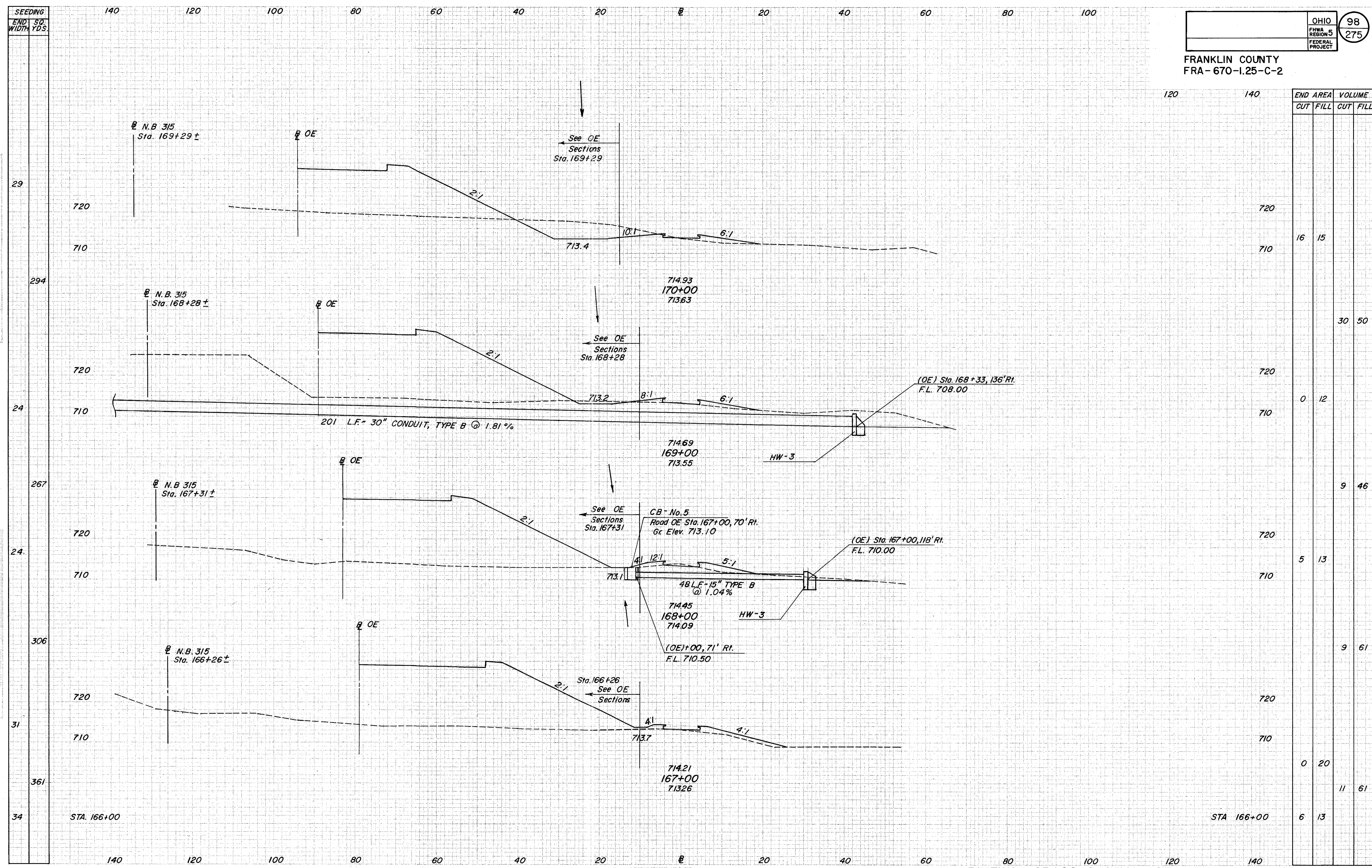


END AREA	VOLUME	
	CUT	FILL
6	13	
100	24	
48	0	
261	15	
93	8	
<b>Sheet Totals</b>	<b>838</b>	<b>1013</b>
233	15	
33	0	
78	128	
9	69	

FINAL SURVEY  
 NOTES BOOK 10, P. 10  
 DATE 10/1/00

ORIGINAL SURVEY  
 NOTES BOOK 10, P. 10  
 DATE 10/1/00

FRANKLIN COUNTY  
FRA-670-1.25-C-2



END STA.	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
120				
140				
29	16	15		
294			30	50
24	0	12		
267			9	46
24	5	13		
306			9	61
31	0	20		
361			11	61
34	6	13		

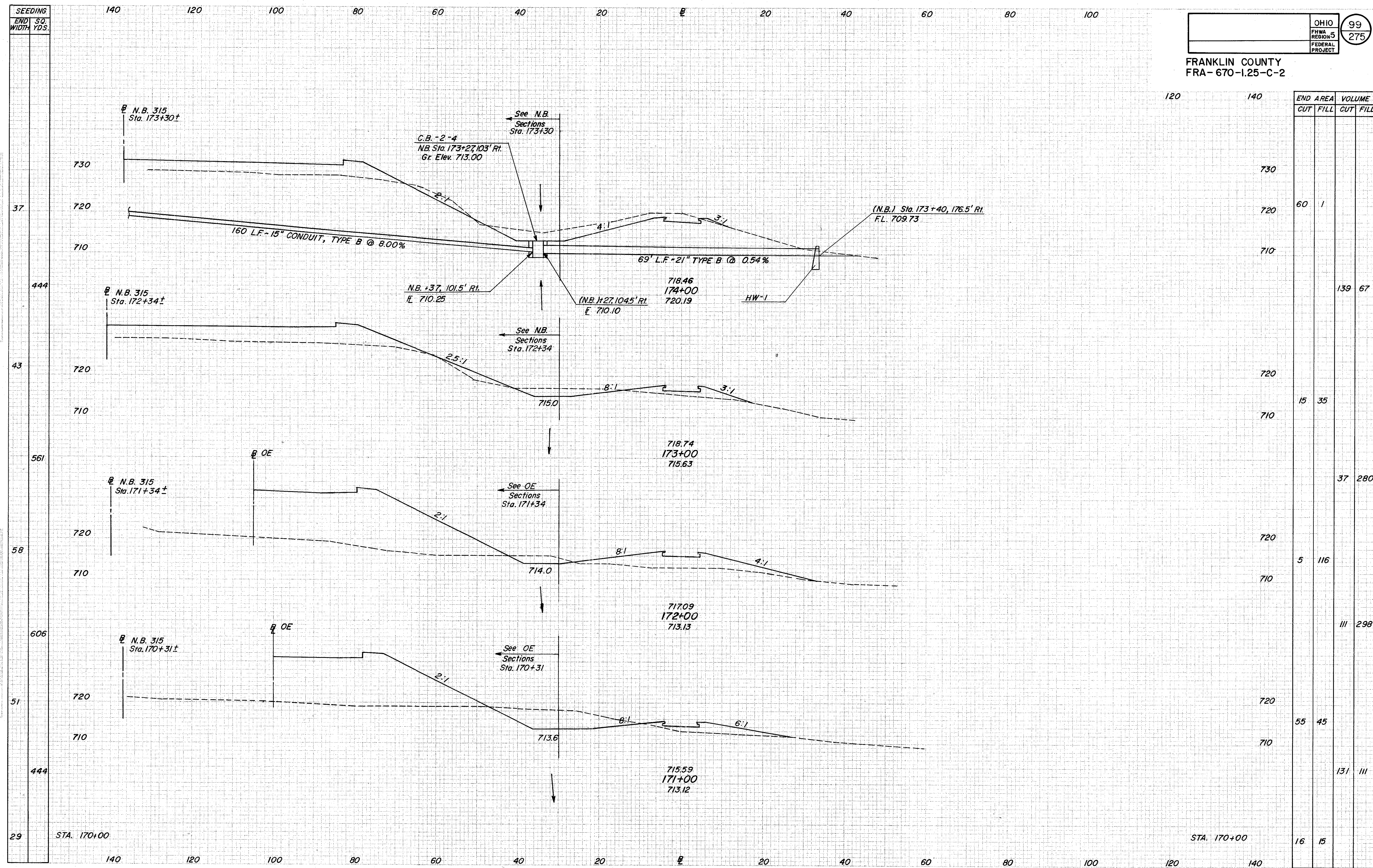
BIKEWAY CROSS SECTION STA. 167+00 TO STA. 170+00

ORIGINAL DRAWING  
 SURVEY  
 DATE 10/10/00  
 NO. 100

ORIGINAL DRAWING  
 SURVEY  
 DATE 10/10/00  
 NO. 100

PLATE 3-FULL CROSS SECTION-FULL LINE  
 DATE 10/10/00

FRANKLIN COUNTY  
FRA-670-1.25-C-2



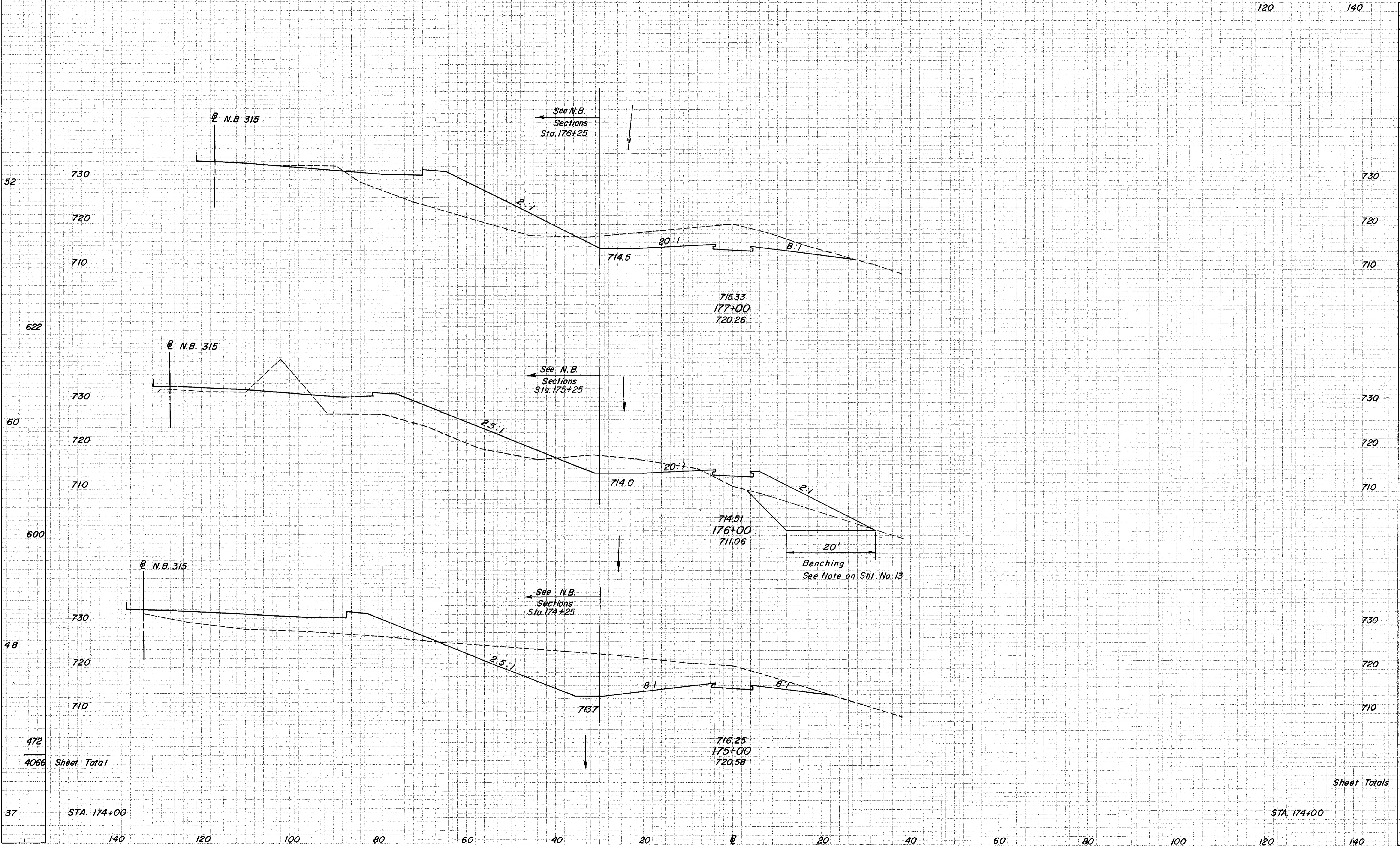
END STA.	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
174+00	60	1		
173+00			139	67
172+00	15	35		
171+00			37	280
170+00	5	116		
170+00			111	298
170+00	55	45		
170+00			131	111
170+00	16	15		

PLATE 3 FULL CROSS SECTION-FULL LINE

BIKEWAY CROSS SECTION STA. 171+00 TO STA. 174+00

SEEDING SO. END WIDTH YDS. 140 120 100 80 60 40 20 0 20 40 60 80 100

FRANKLIN COUNTY  
 FRA-670-1.25-C-2



END AREA		VOLUME	
CUT	FILL	CUT	FILL
182	0		
		606	331
145	179		
		718	331
243	0		
		561	2
<b>Sheet Totals</b>		<b>3389</b>	<b>859</b>
60	1		

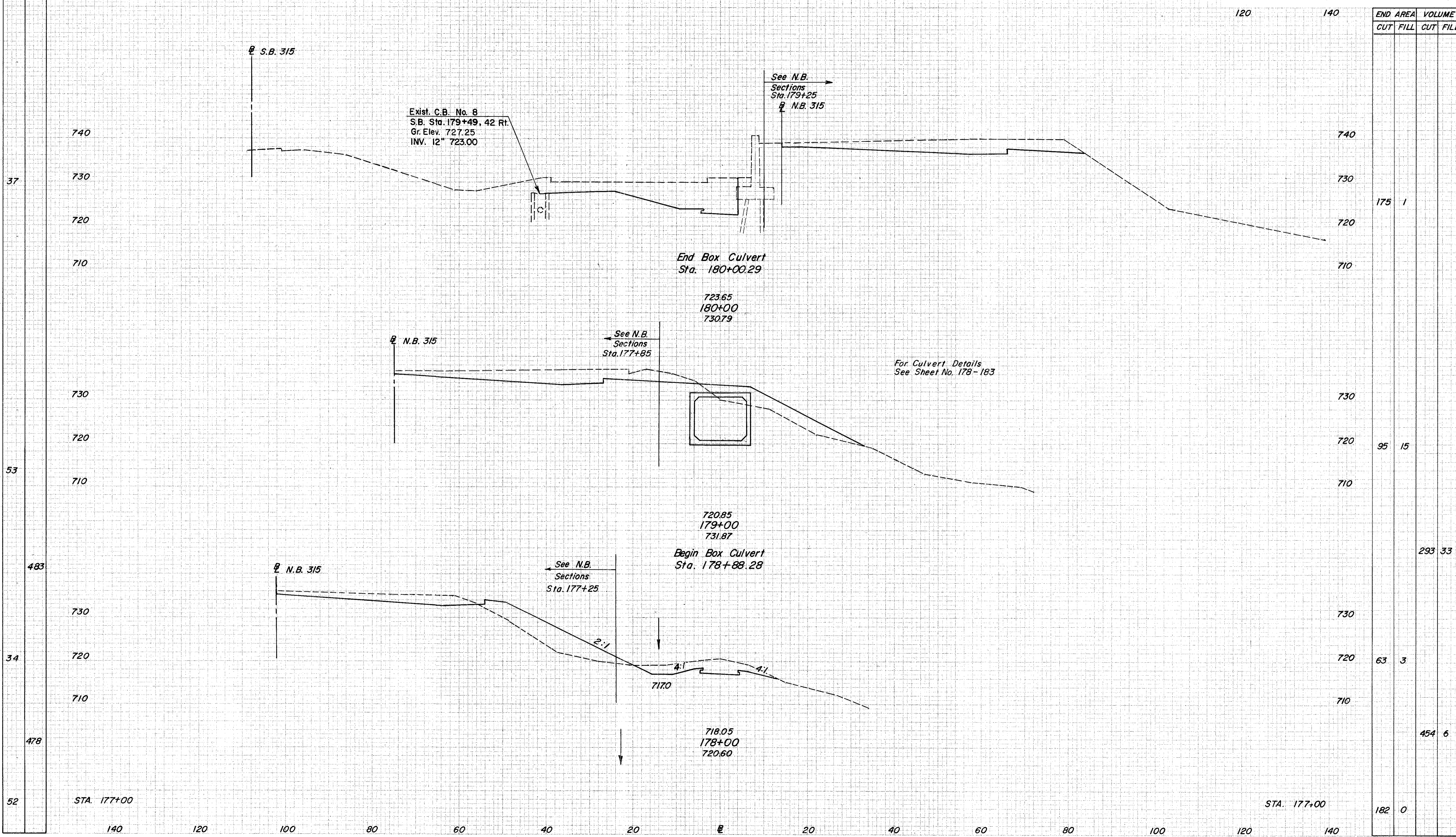
472  
 4066 Sheet Total

37 STA. 174+00

STA. 174+00

SEEDING  
END SQ. WIDTH YDS.

FRANKLIN COUNTY  
FRA-670-1.25-C-2



END AREA		VOLUME	
CUT	FILL	CUT	FILL
175	1		
95	15		
		293	33
63	3		
		454	6
182	0		

BIKEWAY CROSS SECTION STA. 178+00 TO STA. 180+00

ORIGINAL SURVEY DATA  
DATE OF SURVEY  
SCALE OF DRAWING  
DATE OF PLOTTING  
SCALE OF PLOT

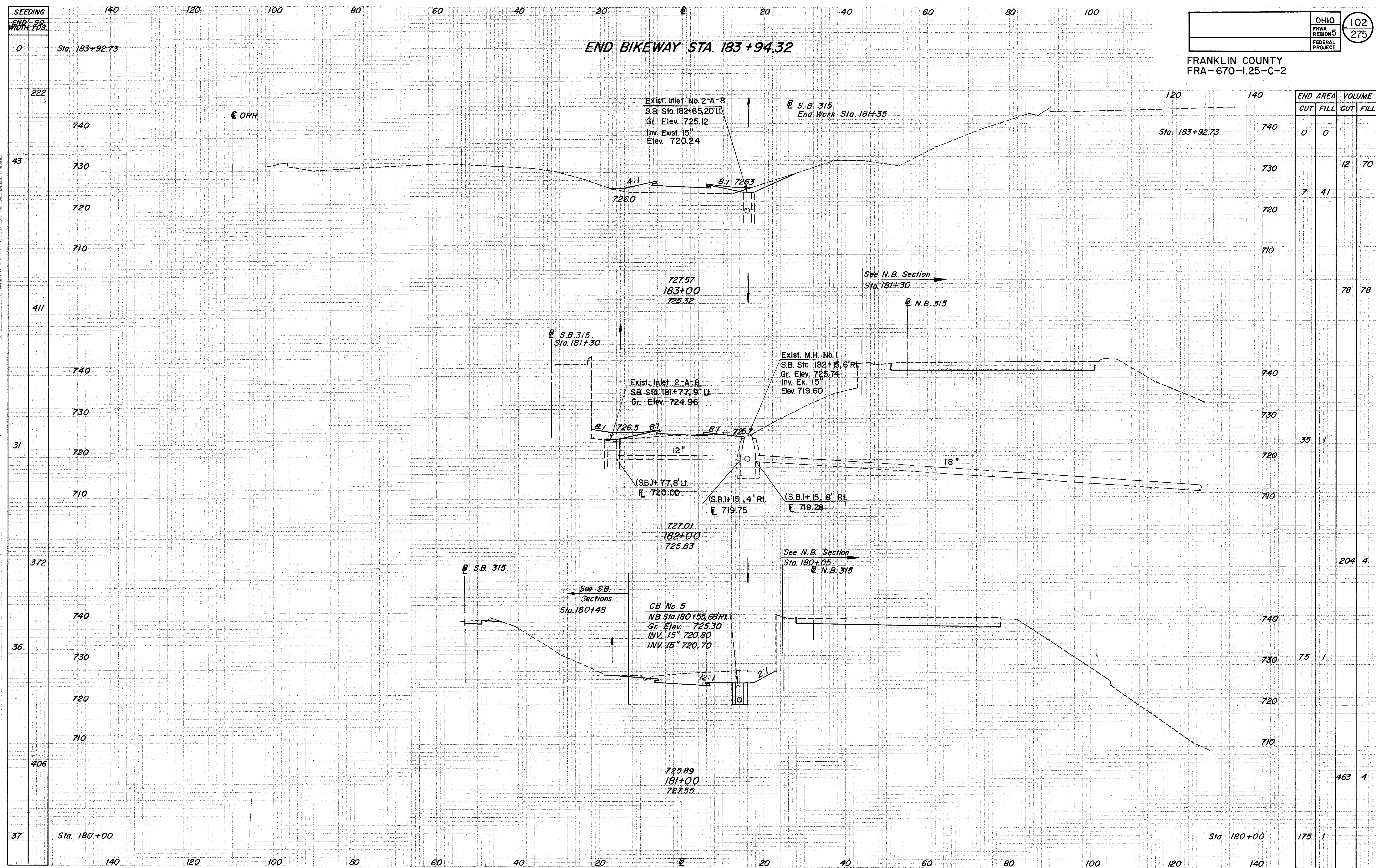
ORIGINAL SURVEY DATA  
DATE OF SURVEY  
SCALE OF DRAWING  
DATE OF PLOTTING  
SCALE OF PLOT

PLATE 3-FULL CROSS SECTION-FULL LINE  
DATE OF PLOTTING  
SCALE OF PLOT



FRANKLIN COUNTY  
 FRA-670-1.25-C-2

END BIKEWAY STA. 183+94.32

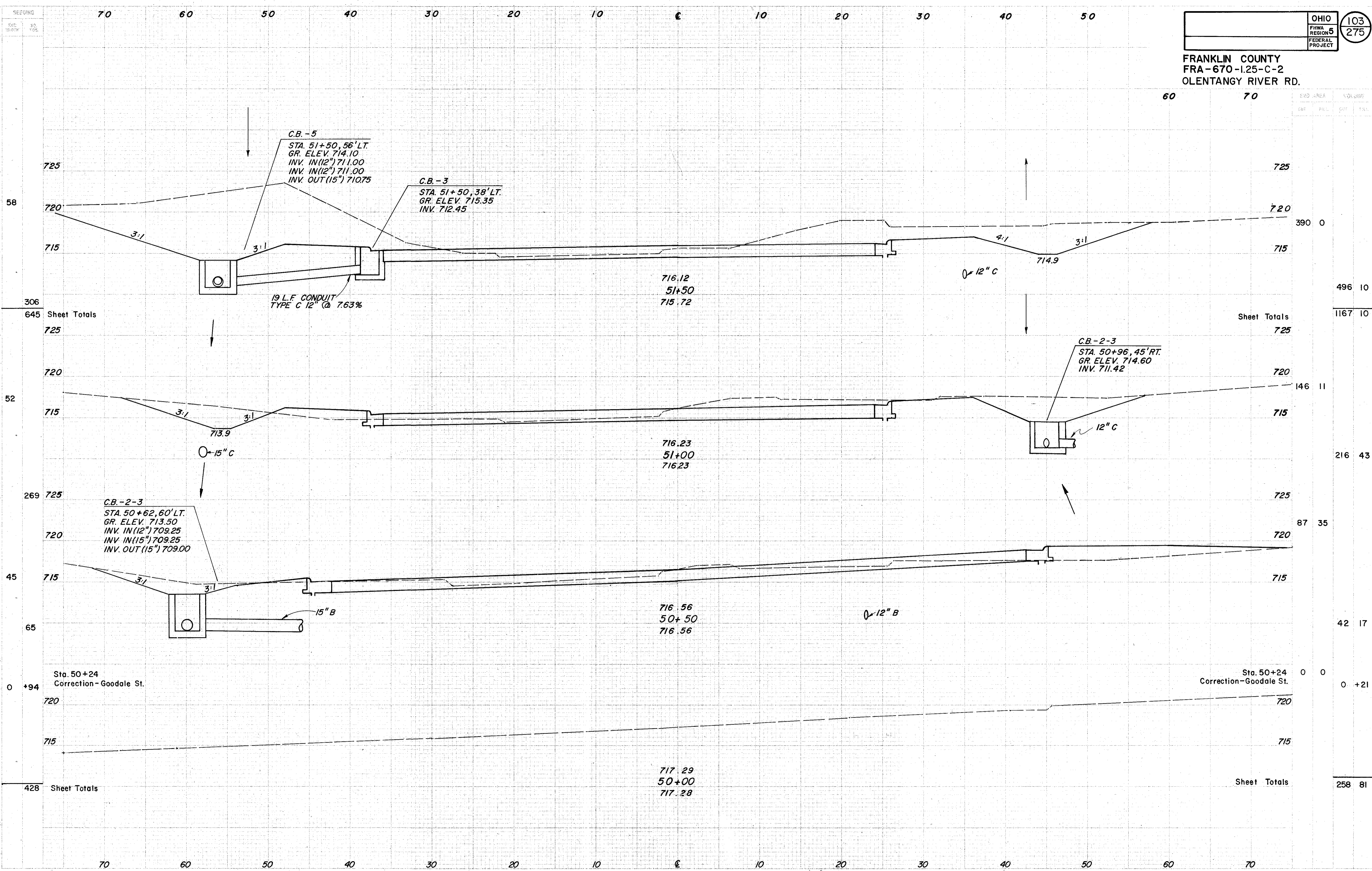


END AREA		VOLUME	
CUT	FILL	CUT	FILL
0	0		
		12	70
7	41		
		78	78
		35	1
		204	4
		75	1
		463	4
175	1		

FINANCIAL ENGINEER  
 SURVEY  
 MOYER SURVEYING  
 100 S. MAIN ST., COLUMBUS, OHIO 43215  
 (614) 266-1111

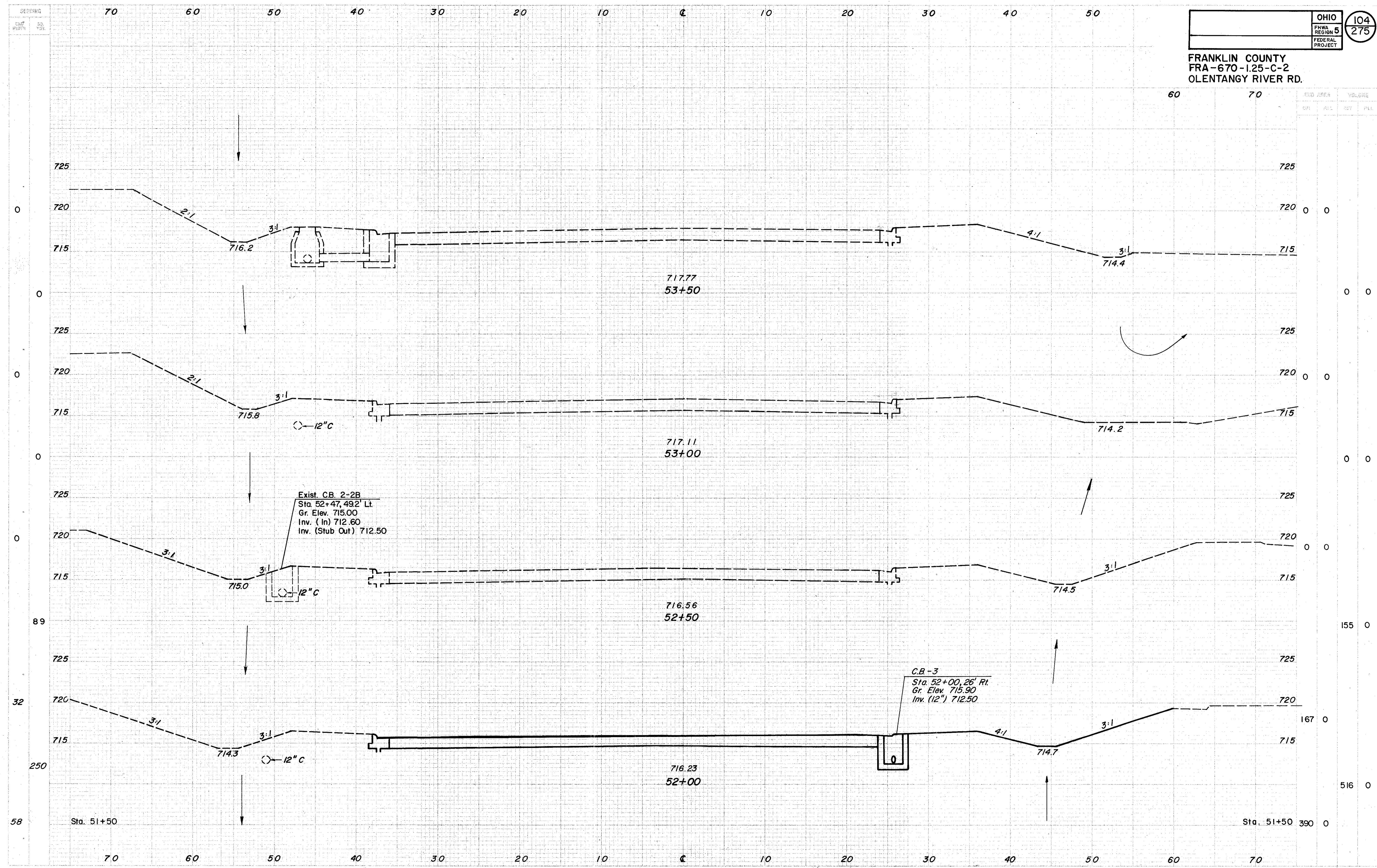
FINANCIAL ENGINEER  
 SURVEY  
 MOYER SURVEYING  
 100 S. MAIN ST., COLUMBUS, OHIO 43215  
 (614) 266-1111

FRANKLIN COUNTY  
FRA-670-1.25-C-2  
OLENTANGY RIVER RD.



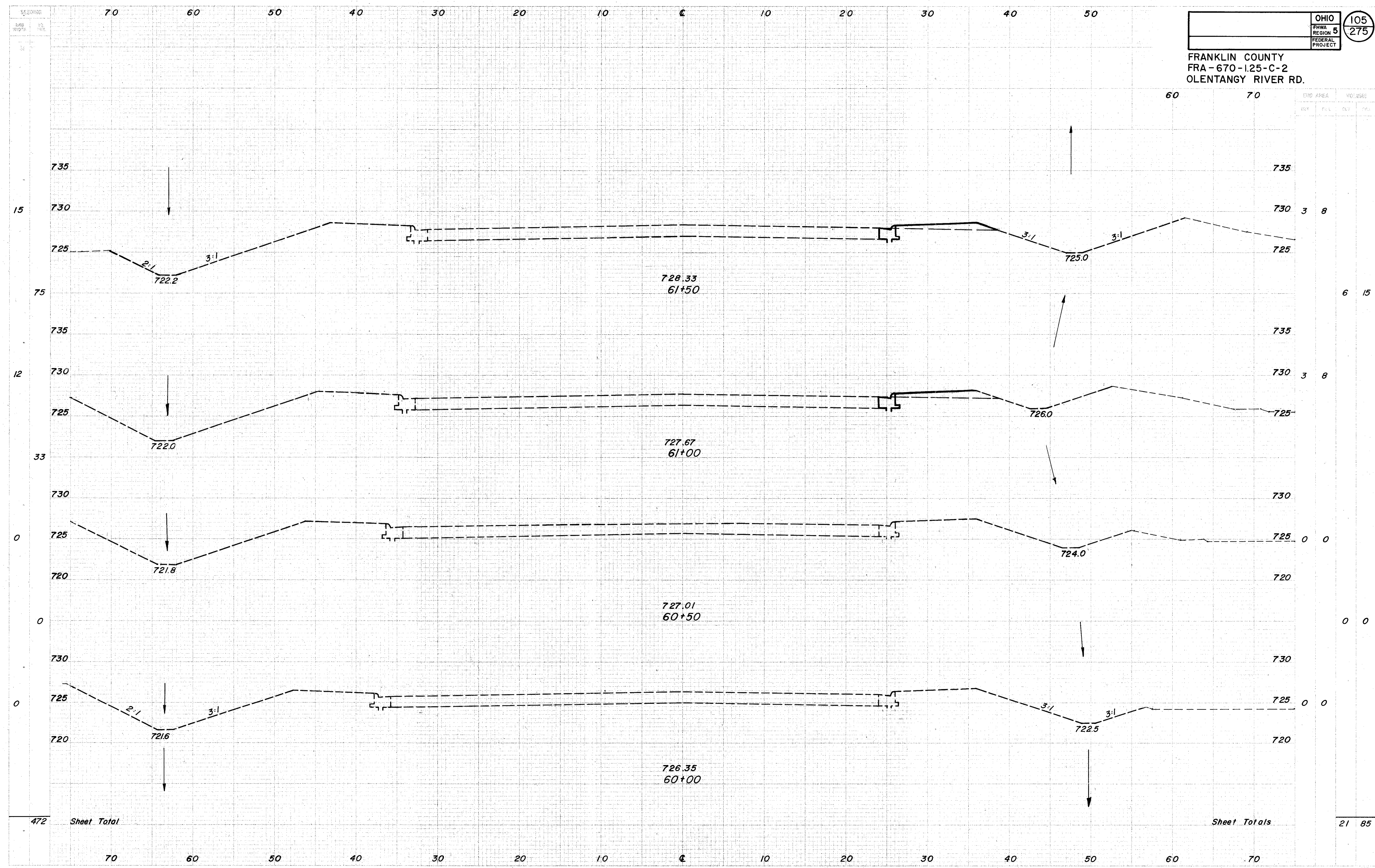
OLENTANGY RIVER RD. CROSS SECTIONS STA. 50+00 TO STA. 51+00

FRANKLIN COUNTY  
FRA-670-1.25-C-2  
OLENTANGY RIVER RD.



OLENTANGY RIVER RD. CROSS SECTIONS STA. 52+00 TO 53+50

FRANKLIN COUNTY  
 FRA-670-1.25-C-2  
 OLENTANGY RIVER RD.



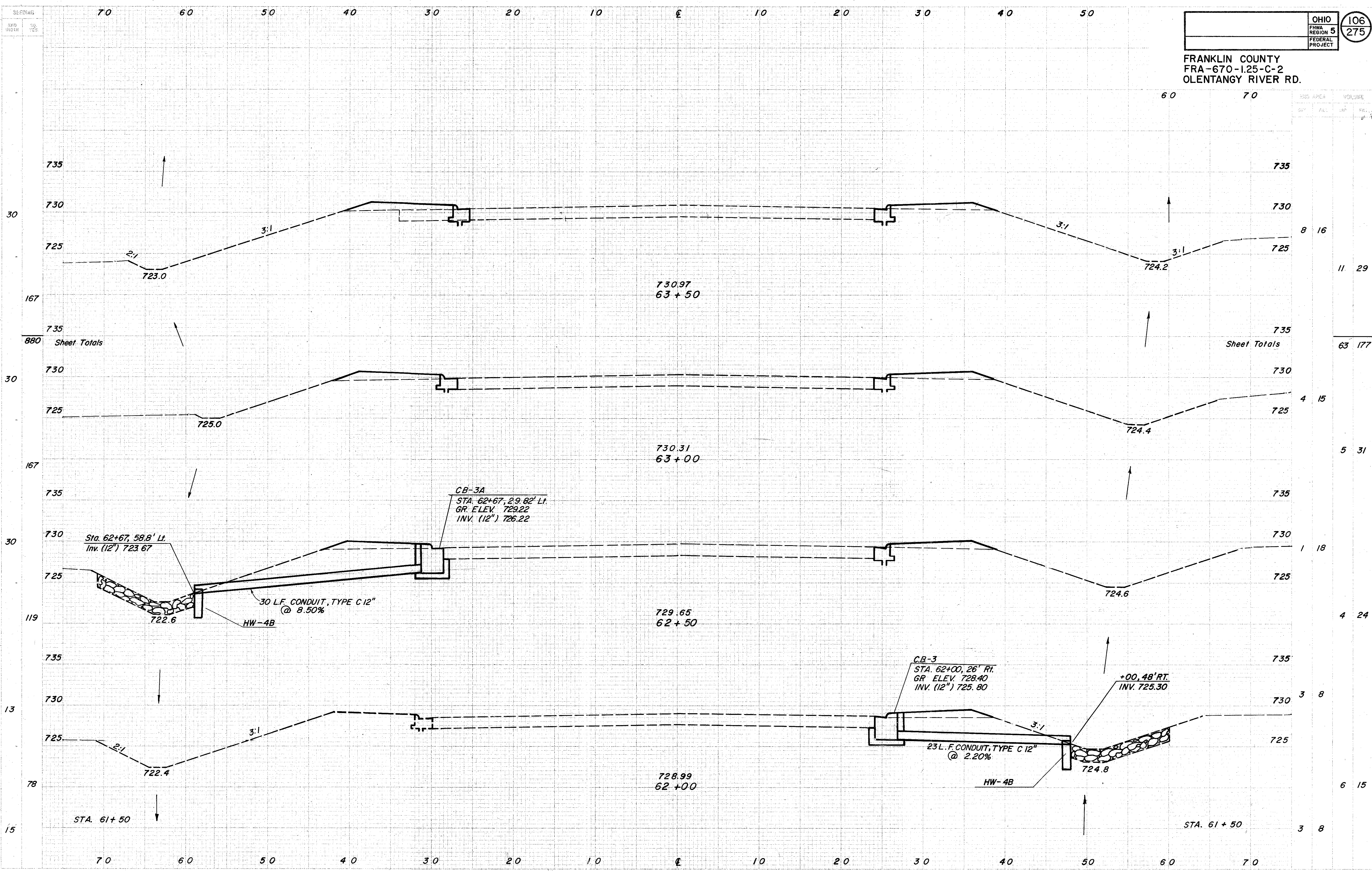
OLENTANGY RIVER RD. CROSS SECTIONS STA. 60+00 TO STA. 61+50

472 Sheet Total

Sheet Totals

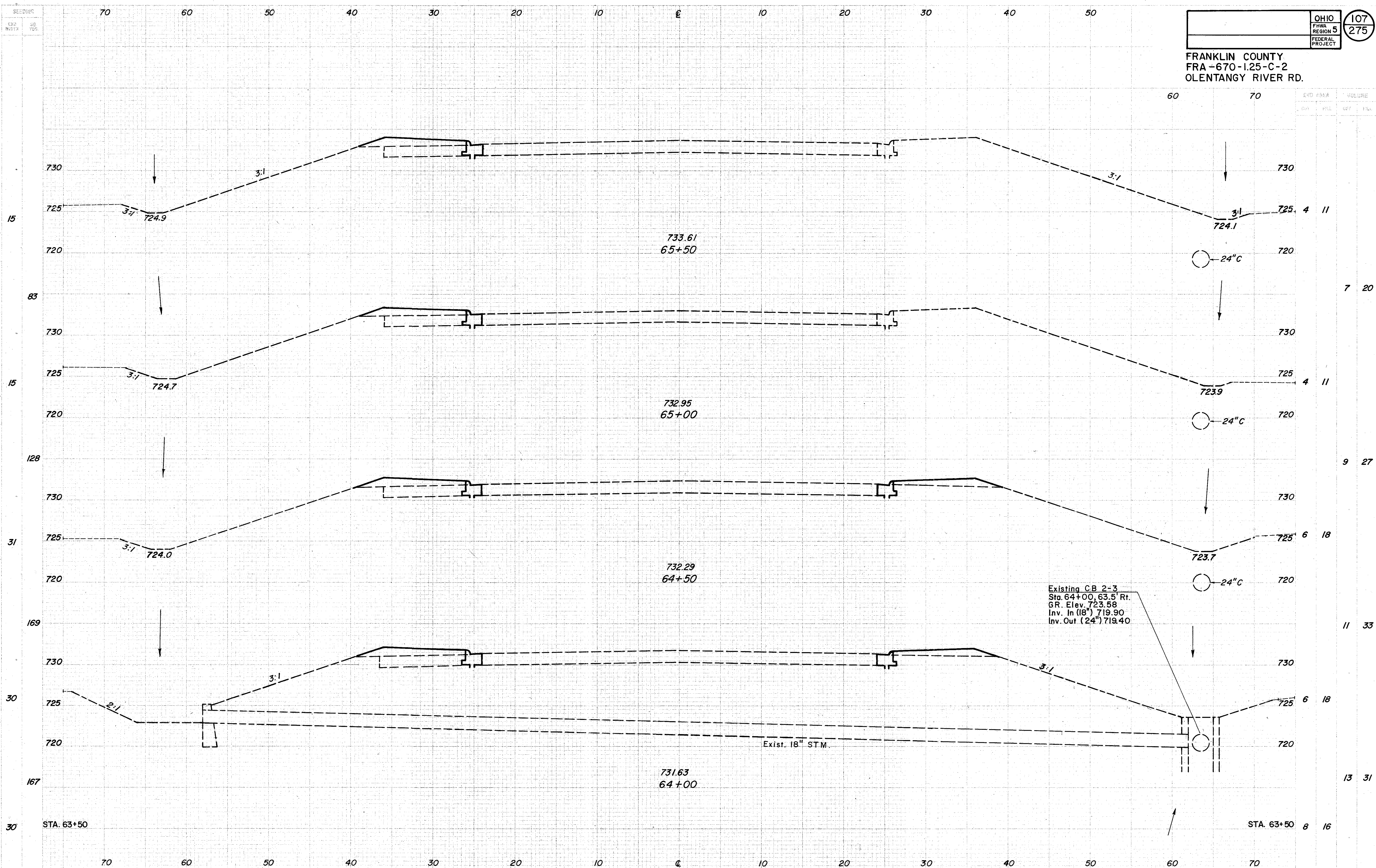
21 85

FRANKLIN COUNTY  
 FRA-670-1.25-C-2  
 OLENTANGY RIVER RD.

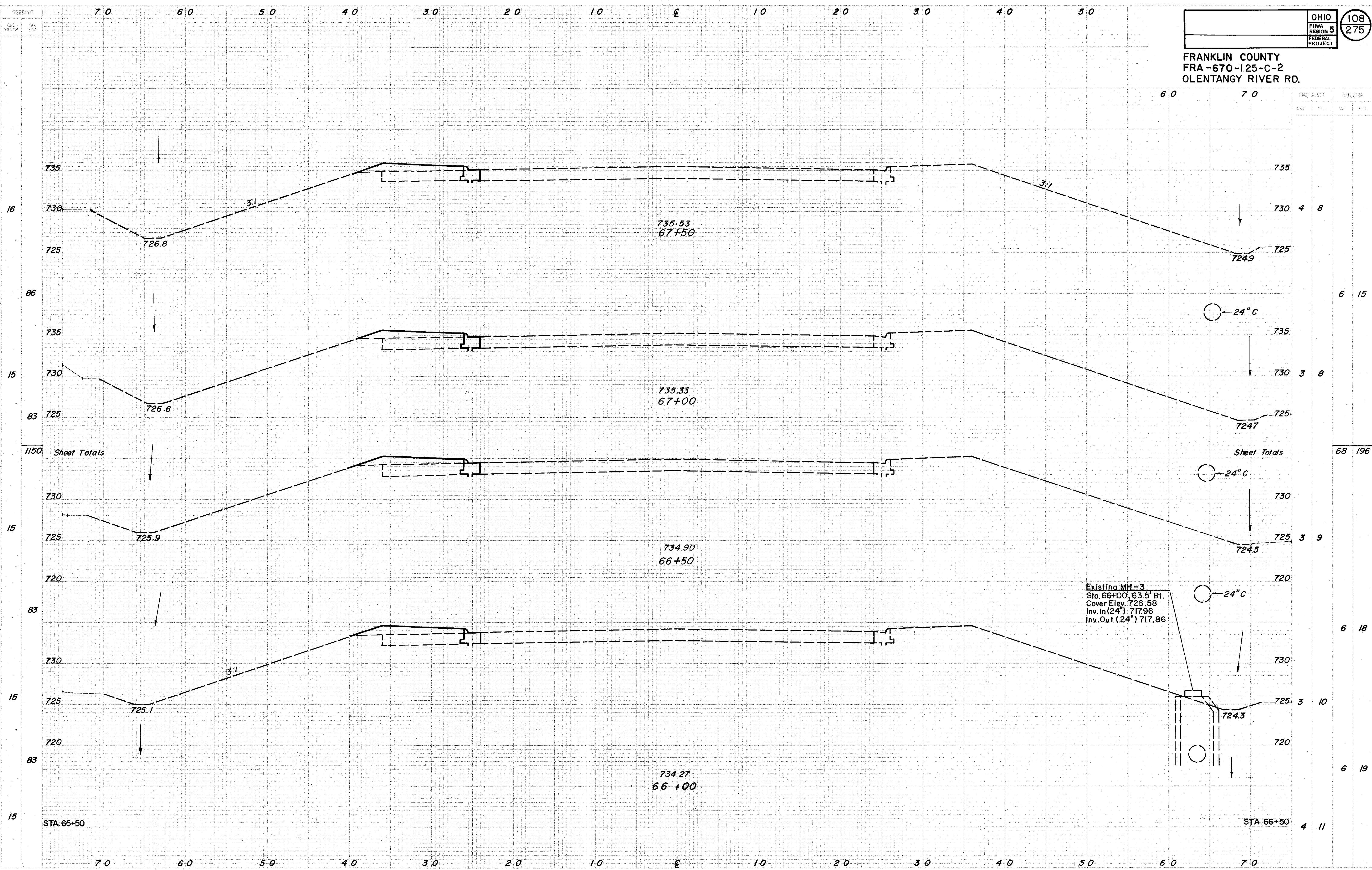


OLENTANGY RIVER RD. CROSS SECTIONS STA. 62+00 TO 63+50

FRANKLIN COUNTY  
 FRA-670-1.25-C-2  
 OLENTANGY RIVER RD.



OLENTANGY RIVER RD. CROSS SECTIONS STA. 64+00 TO STA. 65+50



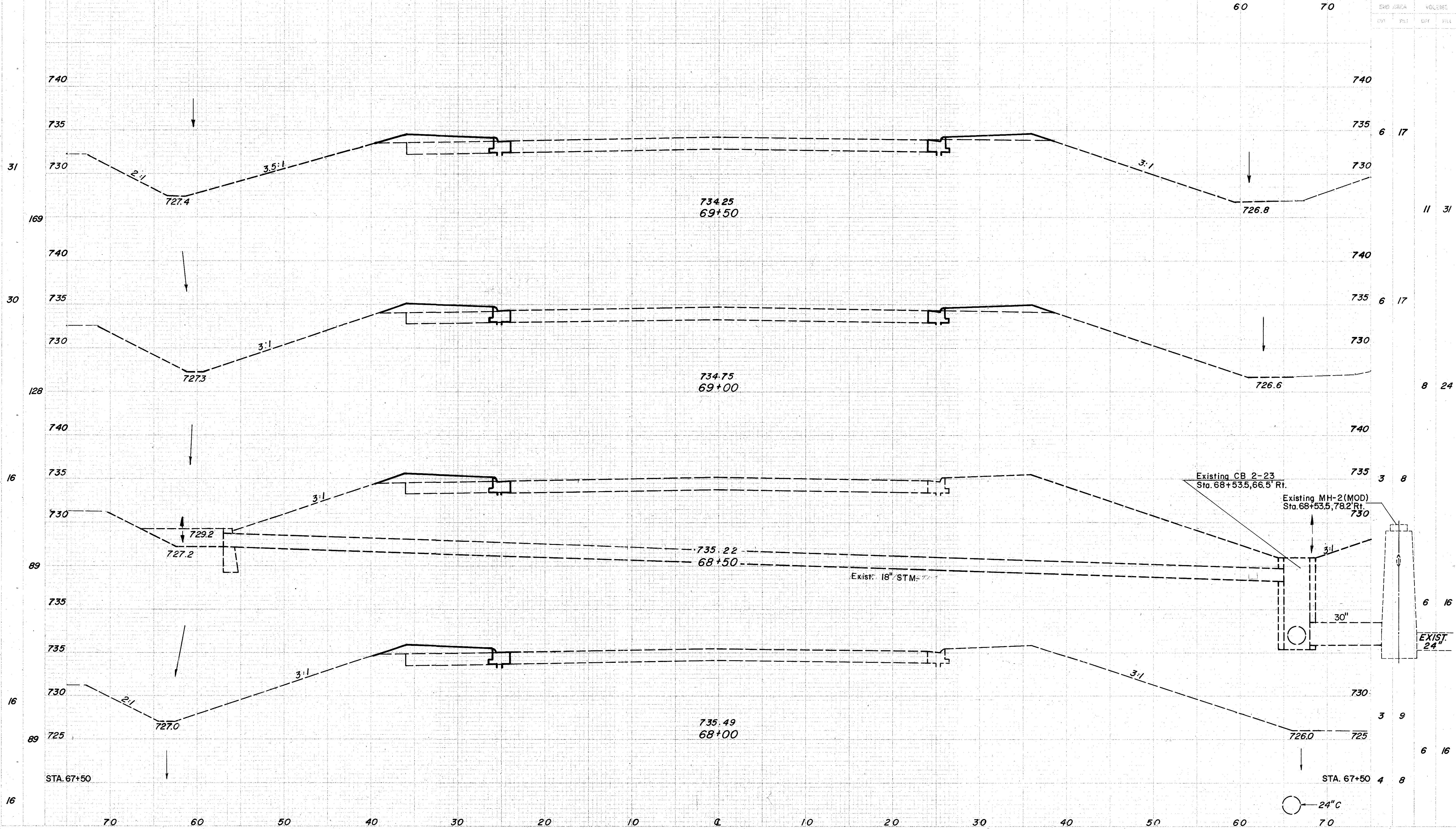
FRANKLIN COUNTY  
FRA-670-125-C-2  
OLENTANGY RIVER RD.

CUT		FILL		TOTAL	
ST. 60	ST. 70	ST. 60	ST. 70	ST. 60	ST. 70
4	8	6	15	68	196
3	8	3	9	6	18
3	10	6	19	4	11

OLENTANGY RIVER RD. CROSS SECTIONS STA. 66+00 TO STA. 67+50

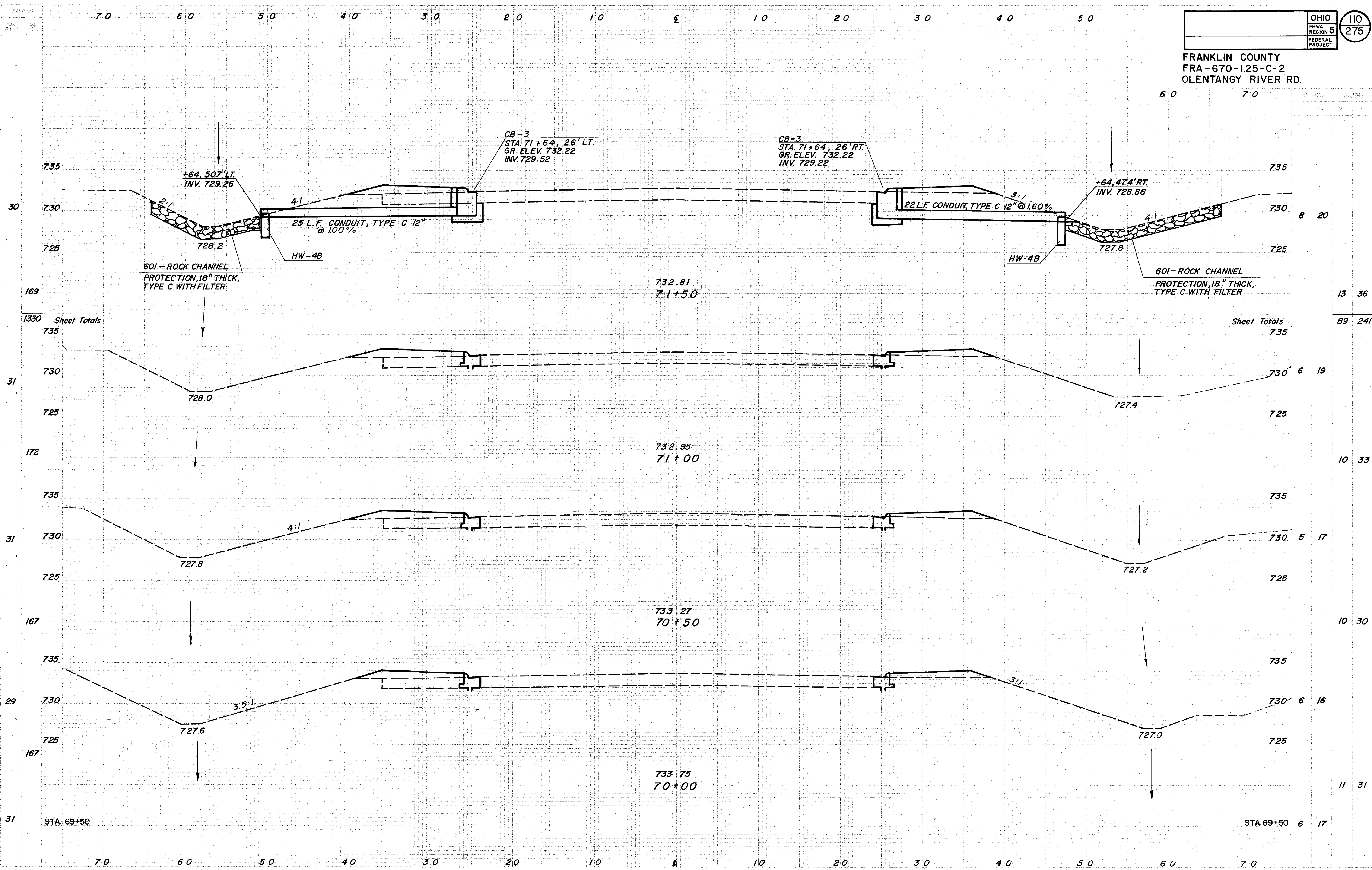
70 60 50 40 30 20 10 0 10 20 30 40 50

FRANKLIN COUNTY  
 FRA-670-1.25-C-2  
 OLENTANGY RIVER RD.



OLENTANGY RIVER RD. CROSS SECTIONS STA. 68+00 TO 69+50





FRANKLIN COUNTY  
 FRA-670-1.25-C-2  
 OLENTANGY RIVER RD.

6 0 7 0

CROSS AREA VOLUME

8 20

13 36

69 241

6 19

10 33

5 17

10 30

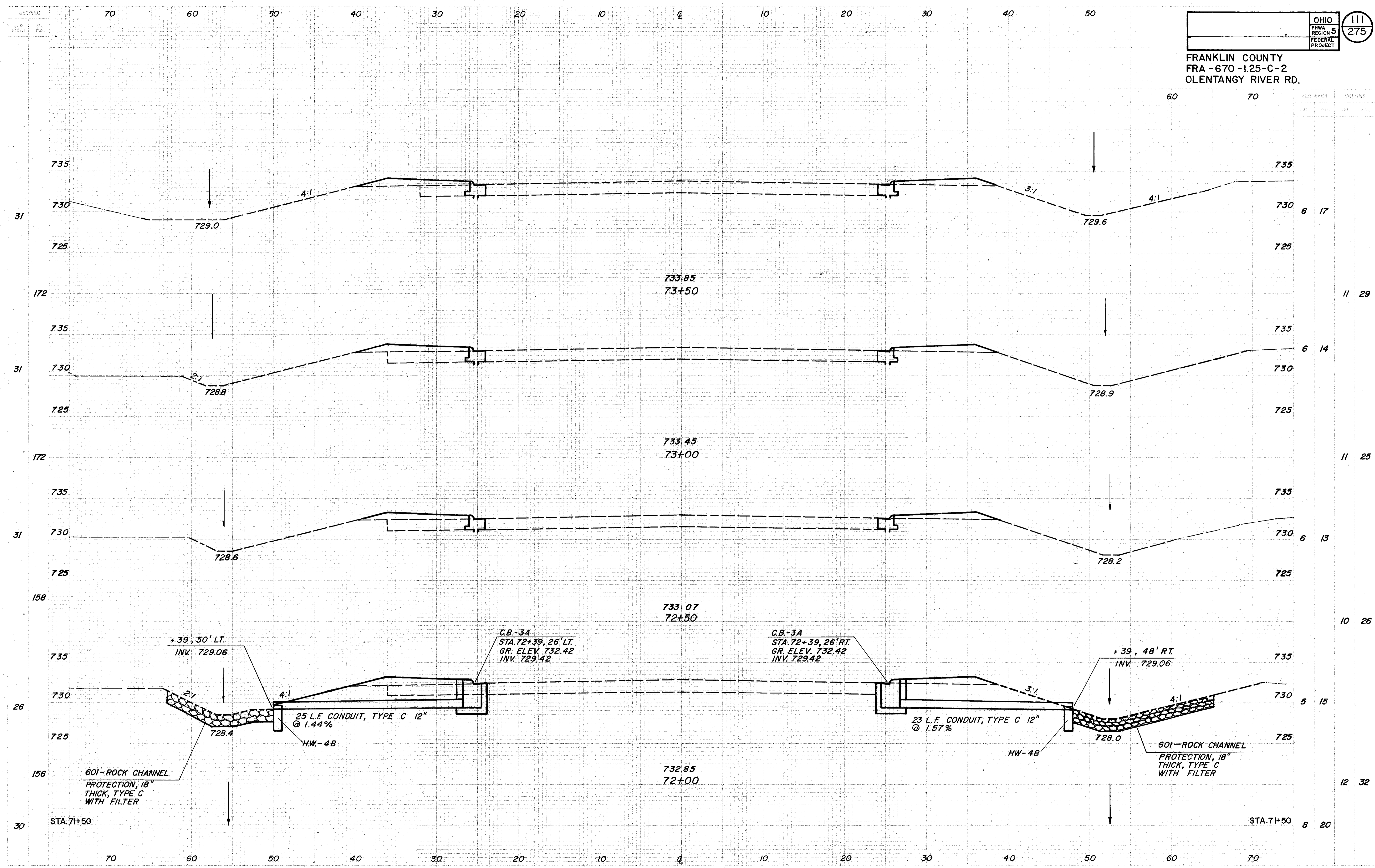
6 16

11 31

6 17

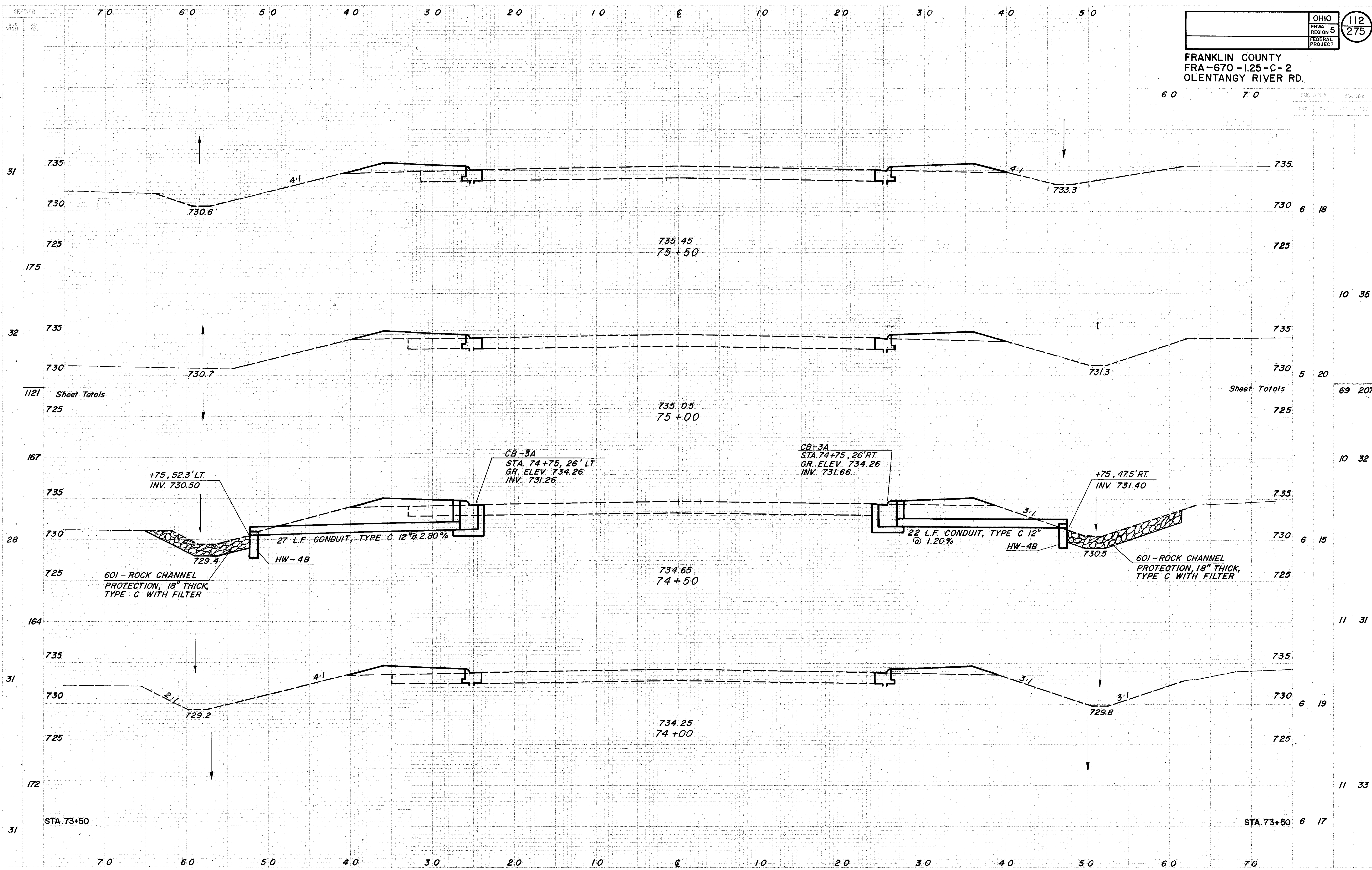
OLENTANGY RIVER RD. CROSS SECTIONS STA. 70+00 TO 71+50

FRANKLIN COUNTY  
FRA-670-1.25-C-2  
OLENTANGY RIVER RD.



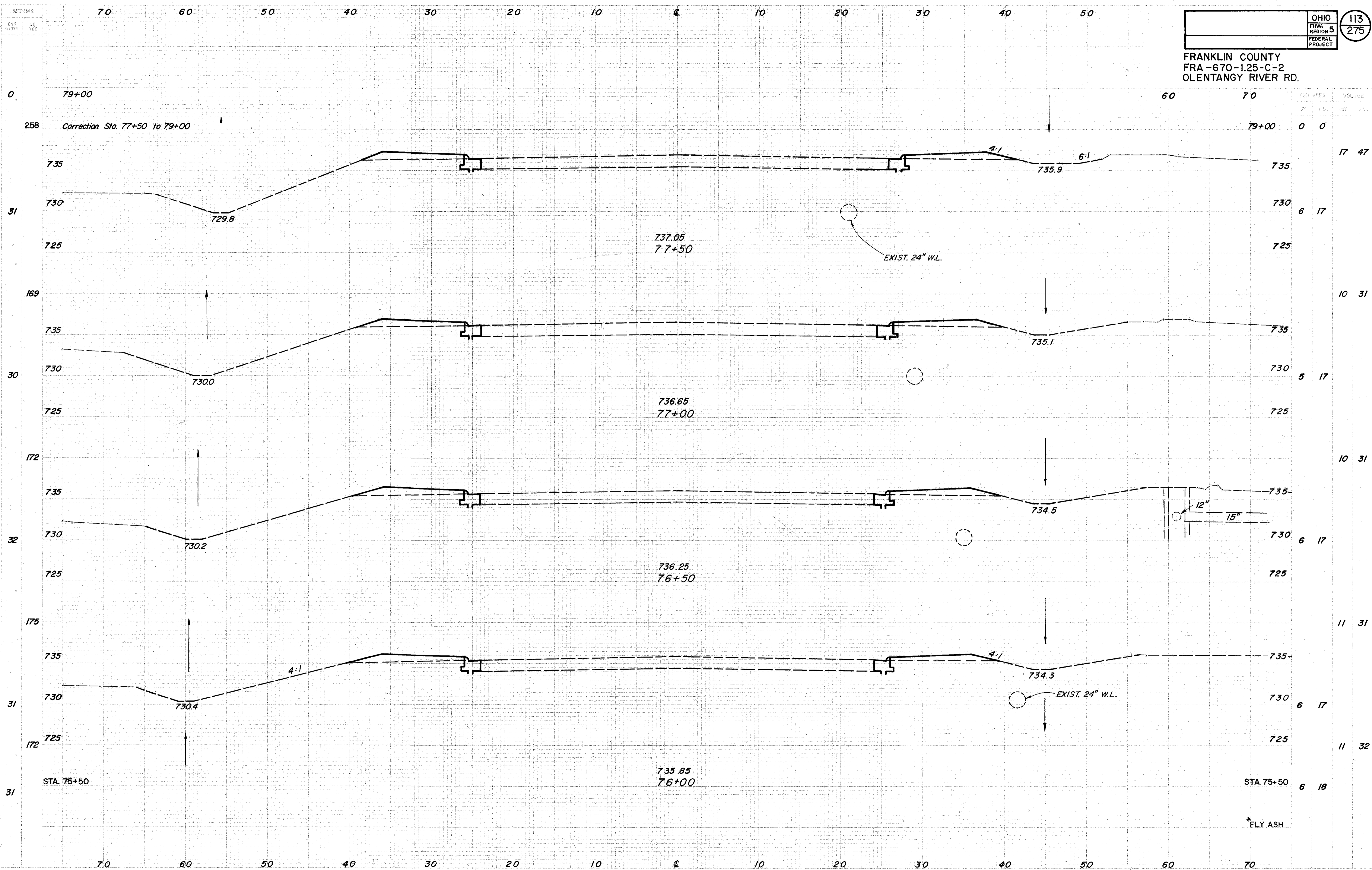
OLENTANGY RIVER RD. CROSS SECTIONS STA. 72+00 TO STA. 73+50

FRANKLIN COUNTY  
 FRA-670-1.25-C-2  
 OLENTANGY RIVER RD.



OLENTANGY RIVER RD. CROSS SECTIONS STA. 74+00 TO 75+50

FRANKLIN COUNTY  
FRA-670-1.25-C-2  
OLENTANGY RIVER RD.



OLENTANGY RIVER RD. CROSS SECTIONS STA. 76+00 TO STA. 77+50

\*FLY ASH

CALC. BY W.E.H. 6/87  
 CHECKED BY J.S.S. 7/87

OHIO  
 FHWA REGION 5  
 FEDERAL PROJECT

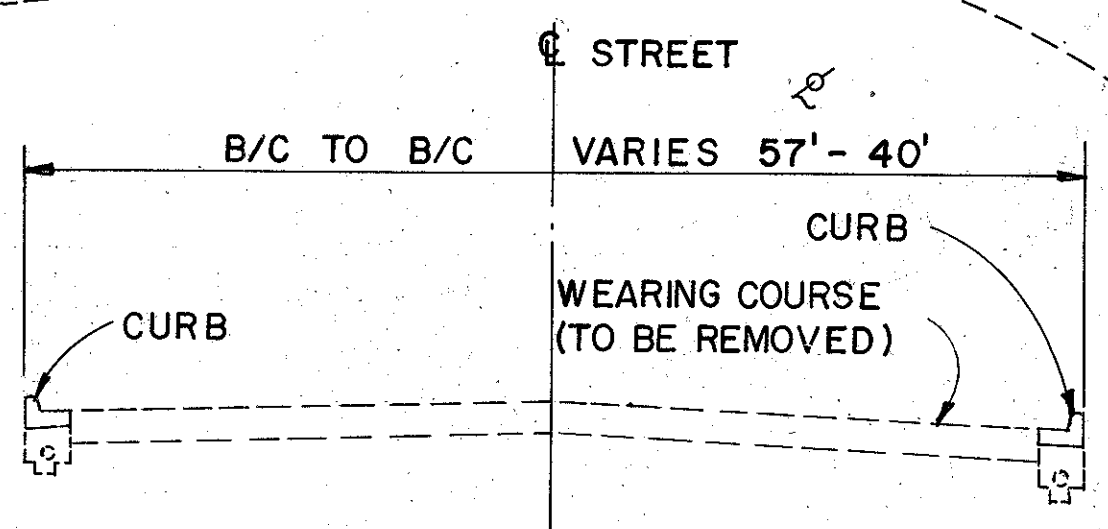
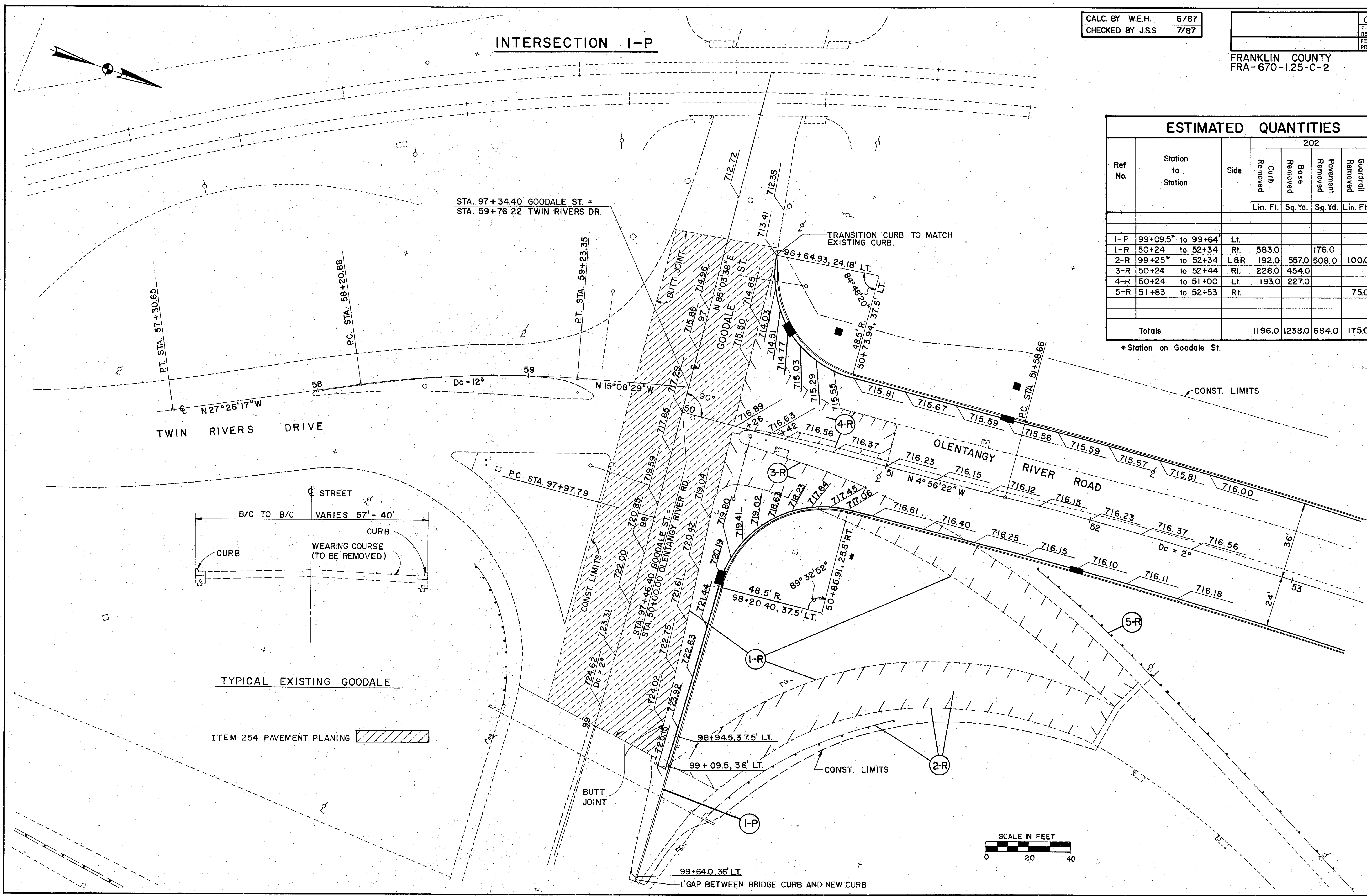
114  
 275

FRANKLIN COUNTY  
 FRA-670-1.25-C-2

INTERSECTION I-P

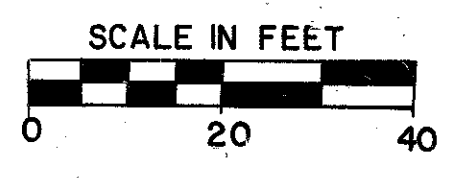
		ESTIMATED QUANTITIES			
Ref No.	Station to Station	Side	202		609
			Curb Removed	Base Removed	Asphalt Concrete Type 1
			Lin. Ft.	Sq. Yd.	Lin. Ft.
1-P	99+09.5* to 99+64*	Lt.			54.5
1-R	50+24 to 52+34	Rt.	583.0	176.0	
2-R	99+25* to 52+34	L&R	192.0	557.0	100.0
3-R	50+24 to 52+44	Rt.	228.0	454.0	
4-R	50+24 to 51+00	Lt.	193.0	227.0	
5-R	51+83 to 52+53	Rt.			75.0
Totals			1196.0	1238.0	684.0

\* Station on Goodale St.



TYPICAL EXISTING GOODALE

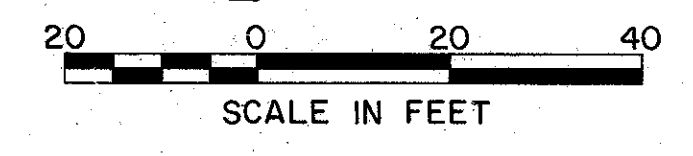
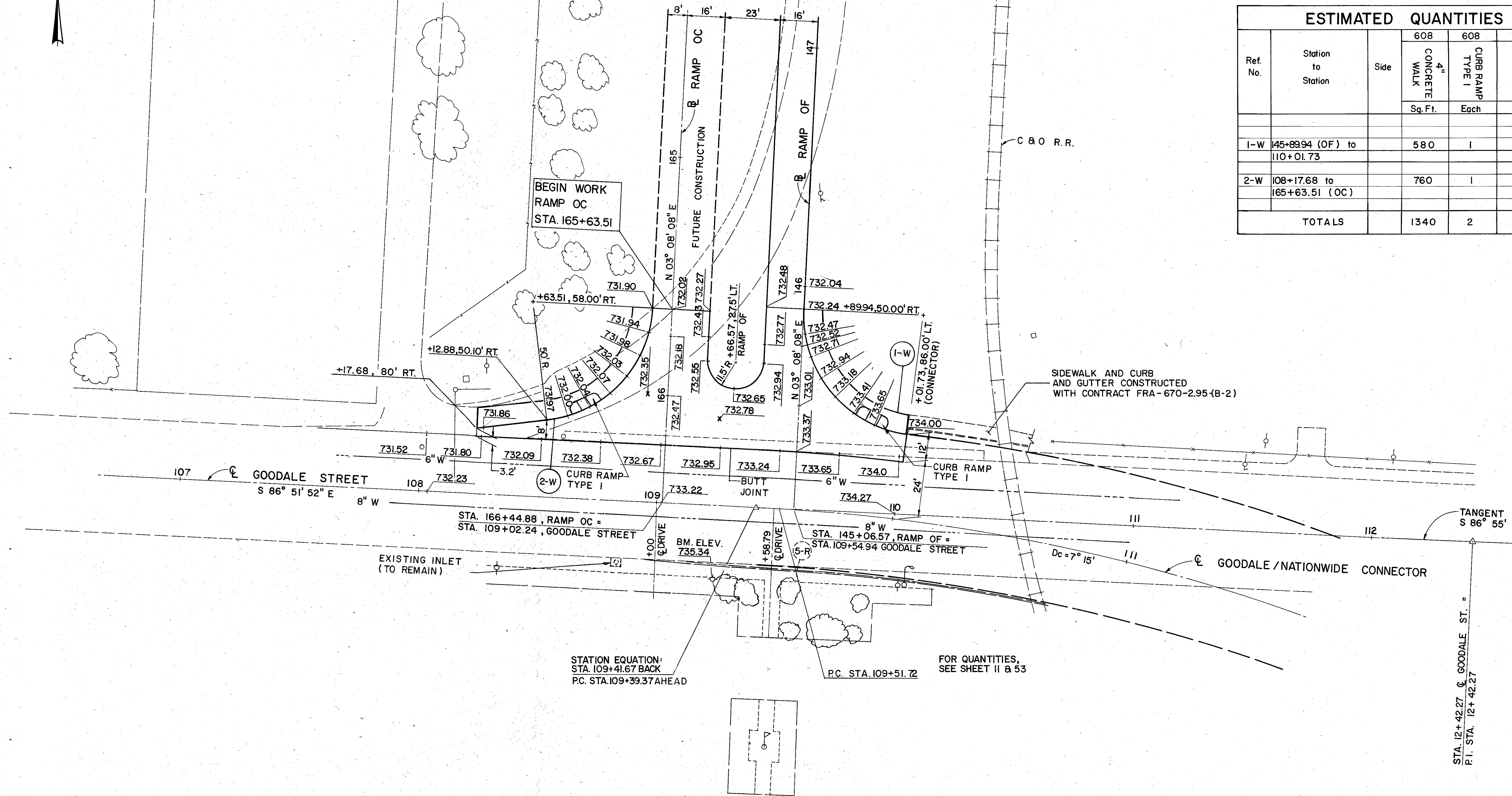
ITEM 254 PAVEMENT PLANING

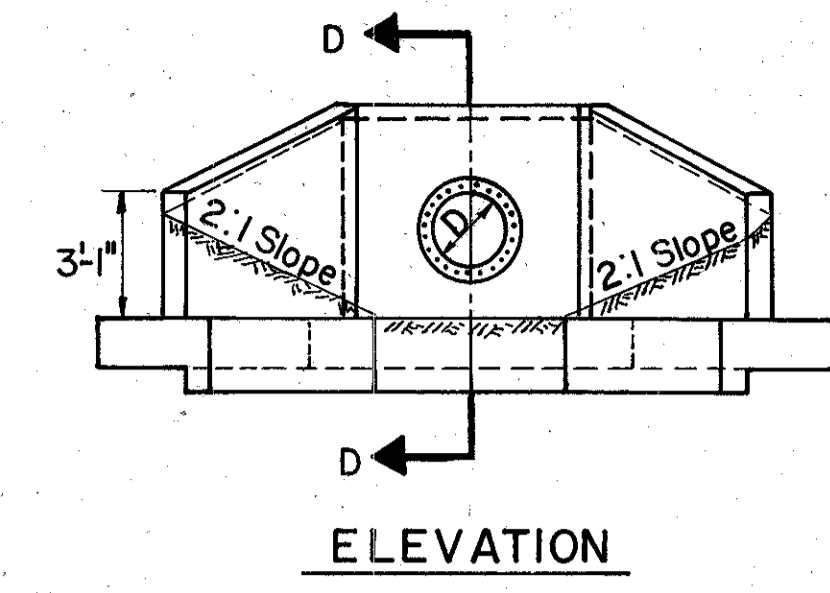


INTERSECTION I-P DETAIL

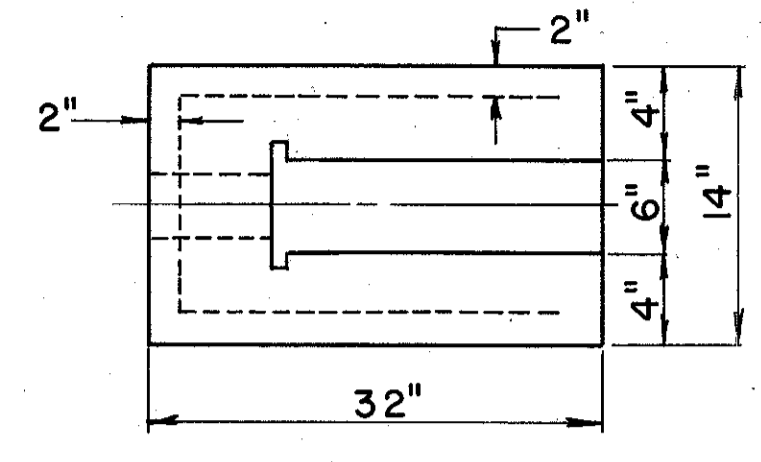


ESTIMATED QUANTITIES				
Ref. No.	Station to Station	Side	608	608
			4" CONCRETE WALK Sq. Ft.	CURB RAMP TYPE I Each
1-W	145+89.94 (OF) to 110+01.73		580	1
2-W	108+17.68 to 165+63.51 (OC)		760	1
TOTALS			1340	2



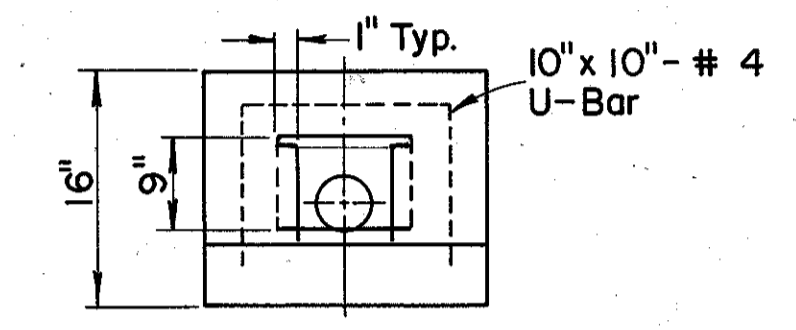
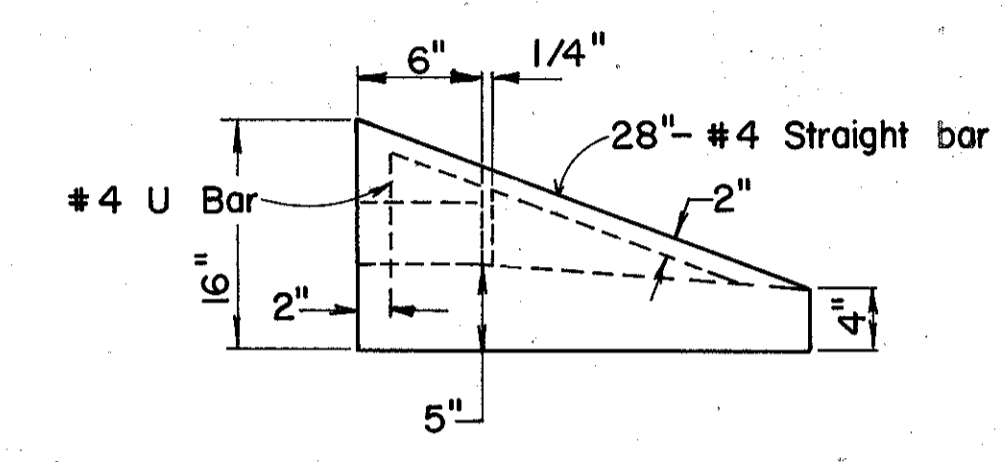
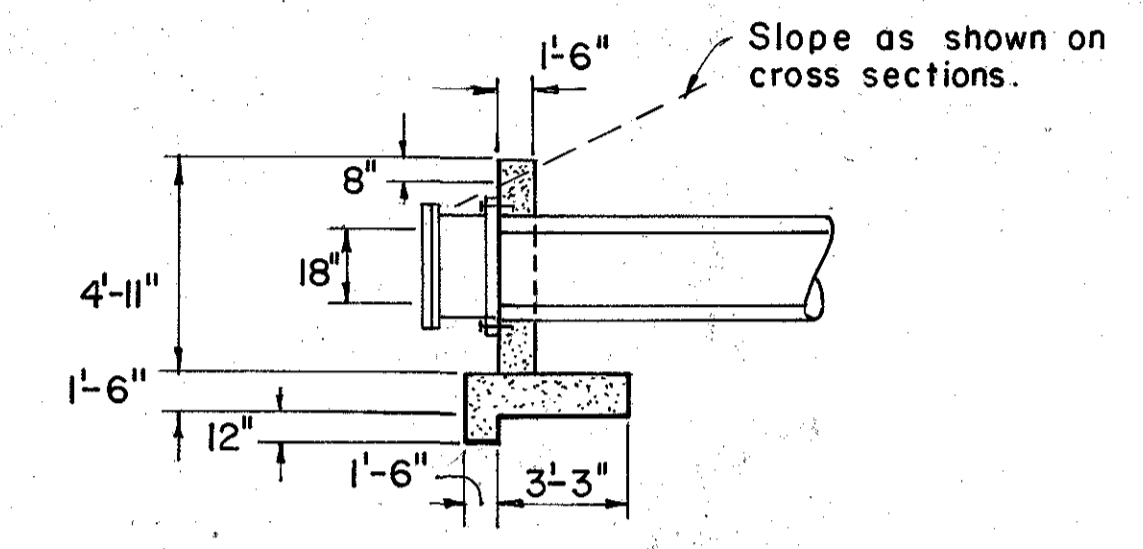
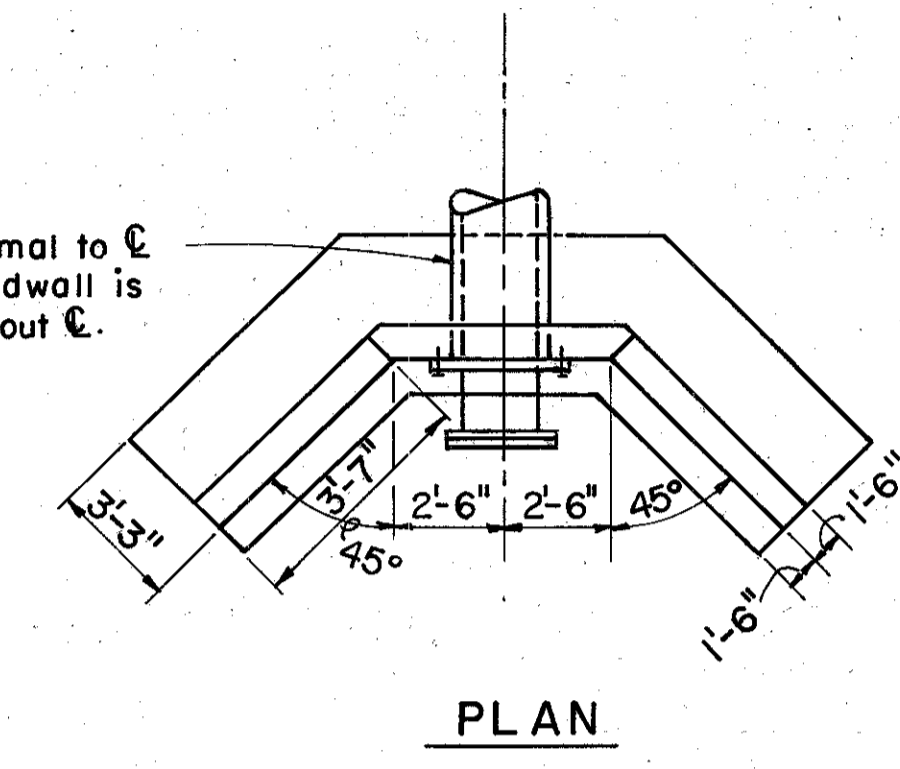


FLAP VALVE: CLOW MFG. NO. F-3012, NEENAH NO. R-5040-F9 OR AN APPROVED EQUAL. ITEM TO INCLUDE BRASS OR BRONZE HINGES AND MOUNTING BOLTS FOR ALL FLANGE HOLES. BOLTS SHALL PENETRATE CONCRETE HEADWALL A MINIMUM DEPTH OF THREE (3) INCHES EACH AND BE USED WITH LEAD ANCHORS.

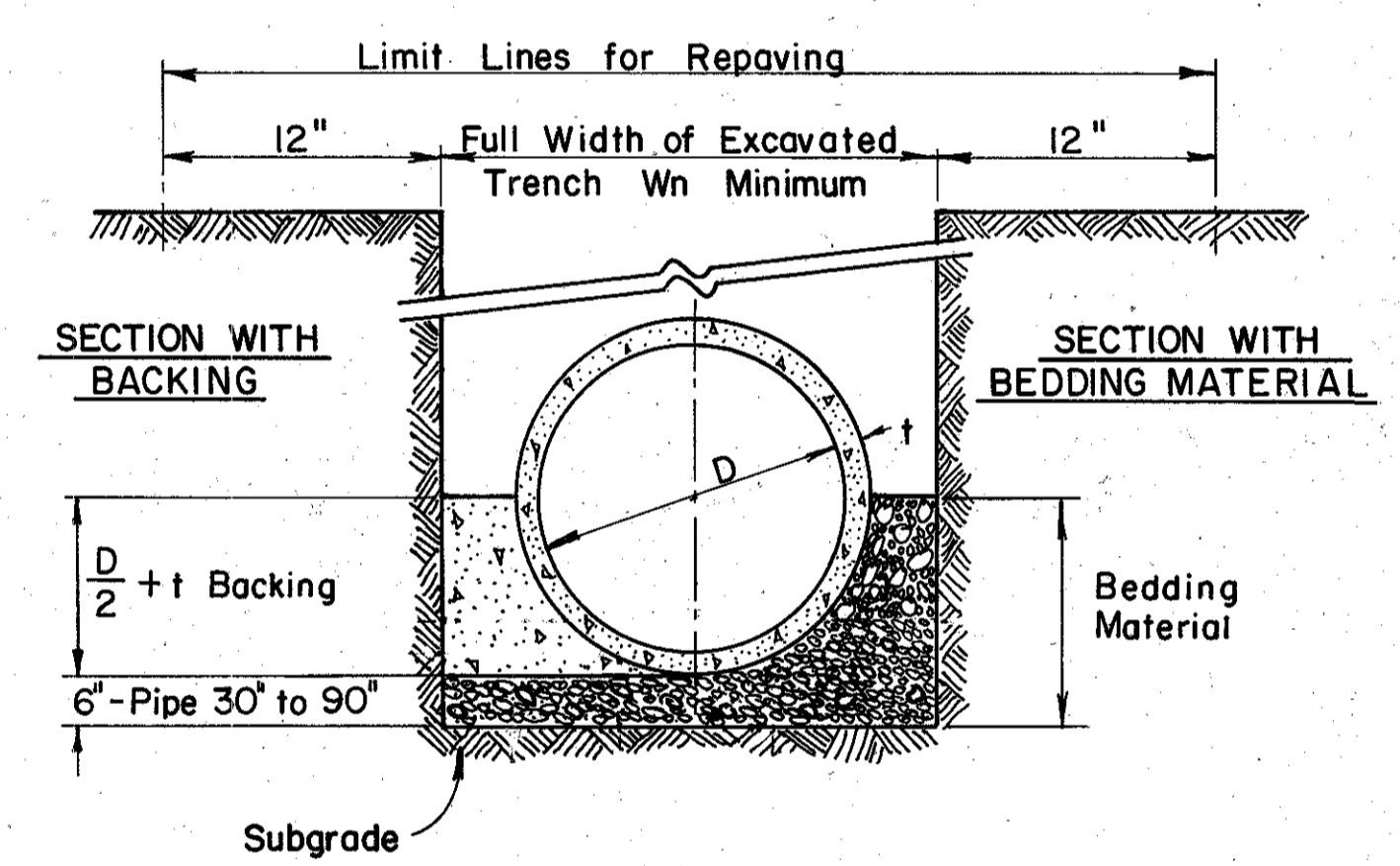


The Concrete outlet shall meet the requirements of Item 604 in the Construction & Materials Specifications. Payment shall be made on an Each basis. Payment shall include the cost of the sod and wire cloth.

℄ of culvert normal to ℄ of roadway. Headwall is symmetrical about ℄.



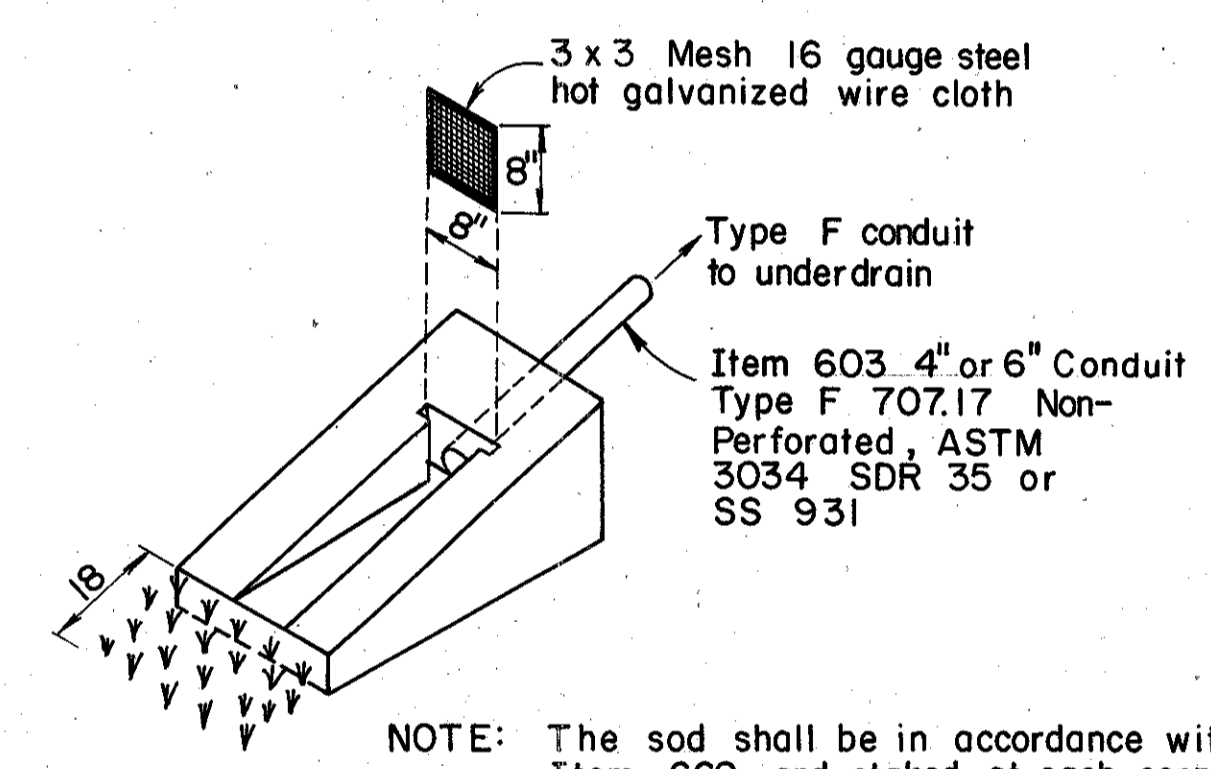
**FLAP VALVE DETAIL**  
 STA. 154 + 60 RAMP OD



NOTES:  
 Sections symmetrical about ℄.  
 Pipe dimensions on chart are minimum and expressed in inches.  
 On sanitary sewer construction trench dams are required as specified under 901.04

D	t	Wn	Backing Cu.Yd./L.F.	Bedding Material Cu.Yd./L.F.	Minimum Repaving Sq.Yd./L.F.
36	4	74	.228	.337	.907
54	5 1/2	95	.368	.514	1.102

**TYPE I BEDDING FOR SEWER PIPE**  
 30" — 108" DIAMETER



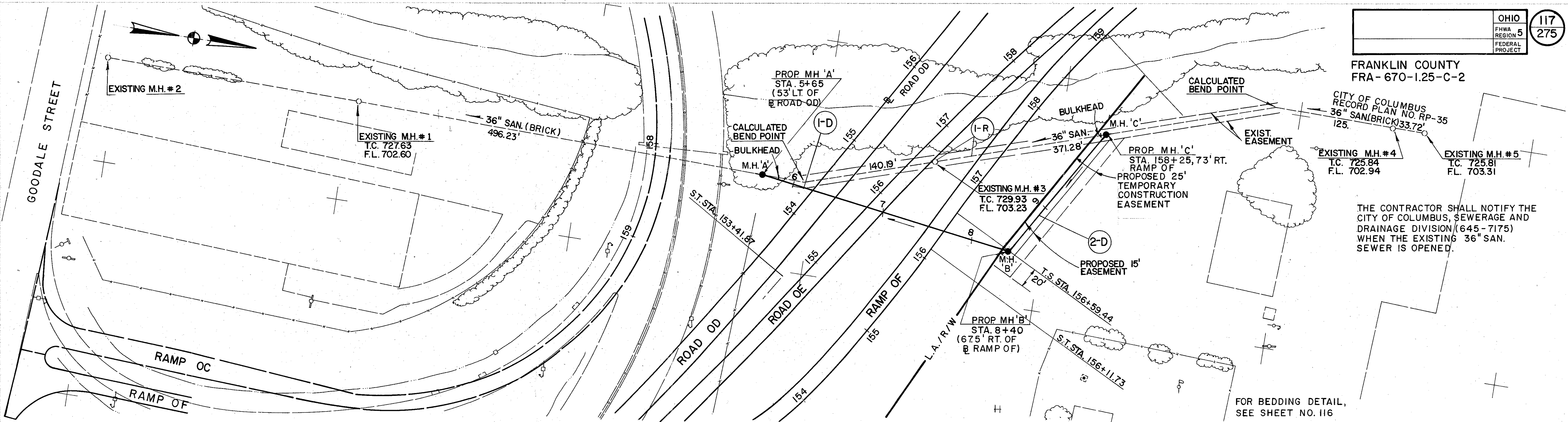
NOTE: The sod shall be in accordance with Item 660 and staked at each corner approximately 3 inches in from the edge.

**ITEM SPECIAL — PRECAST REINFORCED CONCRETE OUTLET**

FRANKLIN COUNTY  
FRA-670-1.25-C-2

CITY OF COLUMBUS  
RECORD PLAN NO. RP-35  
36" SAN (BRICK) 33.72'  
125.

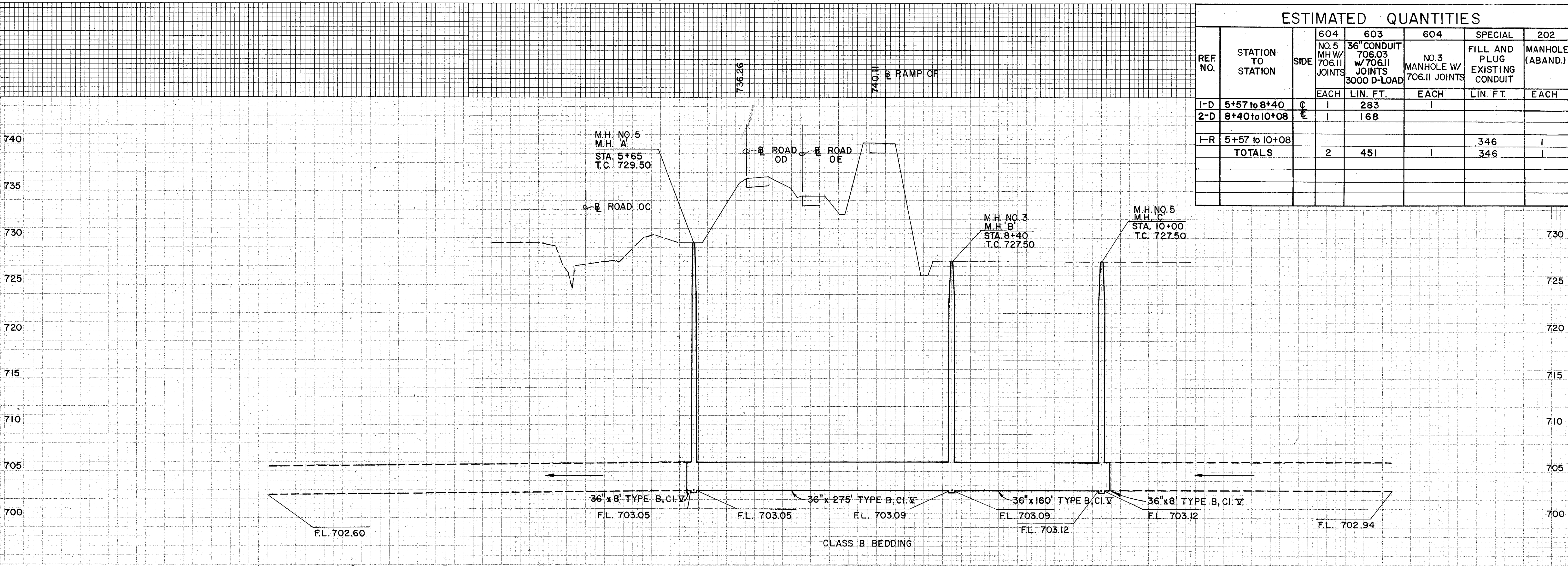
THE CONTRACTOR SHALL NOTIFY THE  
CITY OF COLUMBUS, SEWERAGE AND  
DRAINAGE DIVISION (645-7175)  
WHEN THE EXISTING 36" SAN.  
SEWER IS OPENED.



FOR BEDDING DETAIL,  
SEE SHEET NO. 116

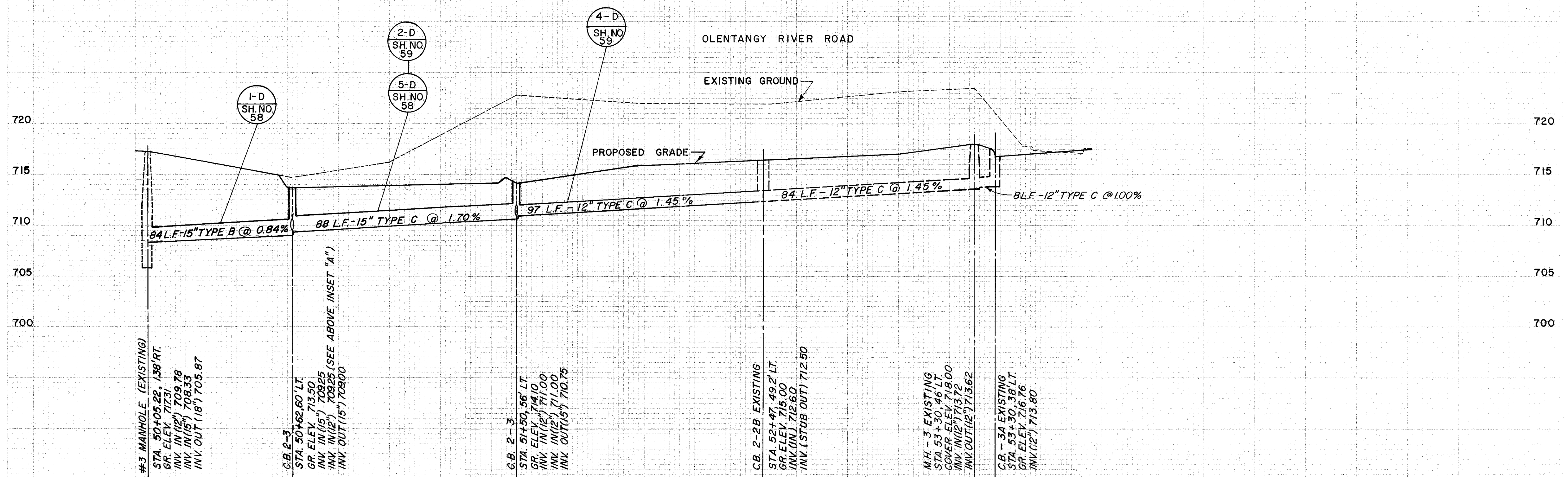
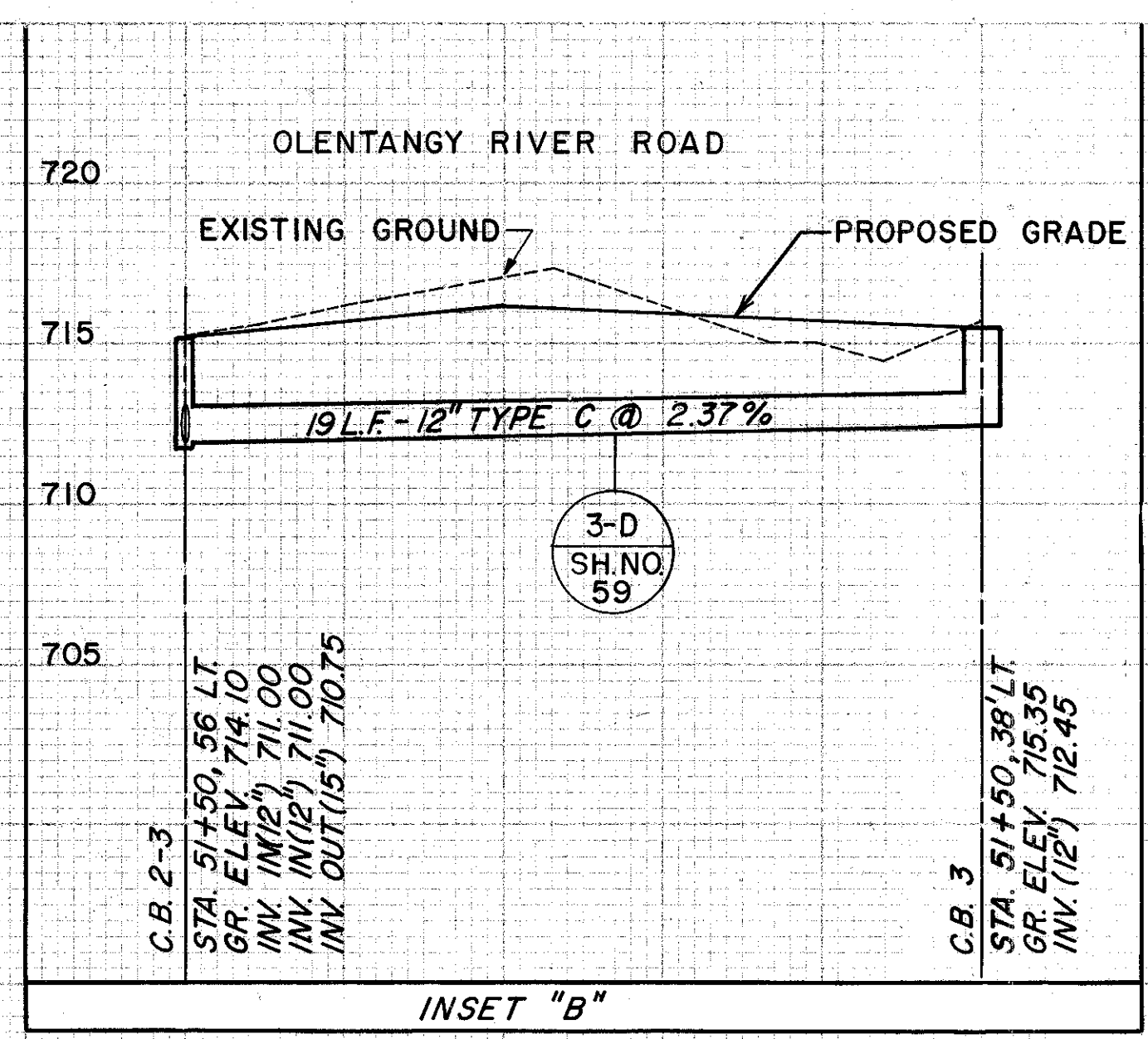
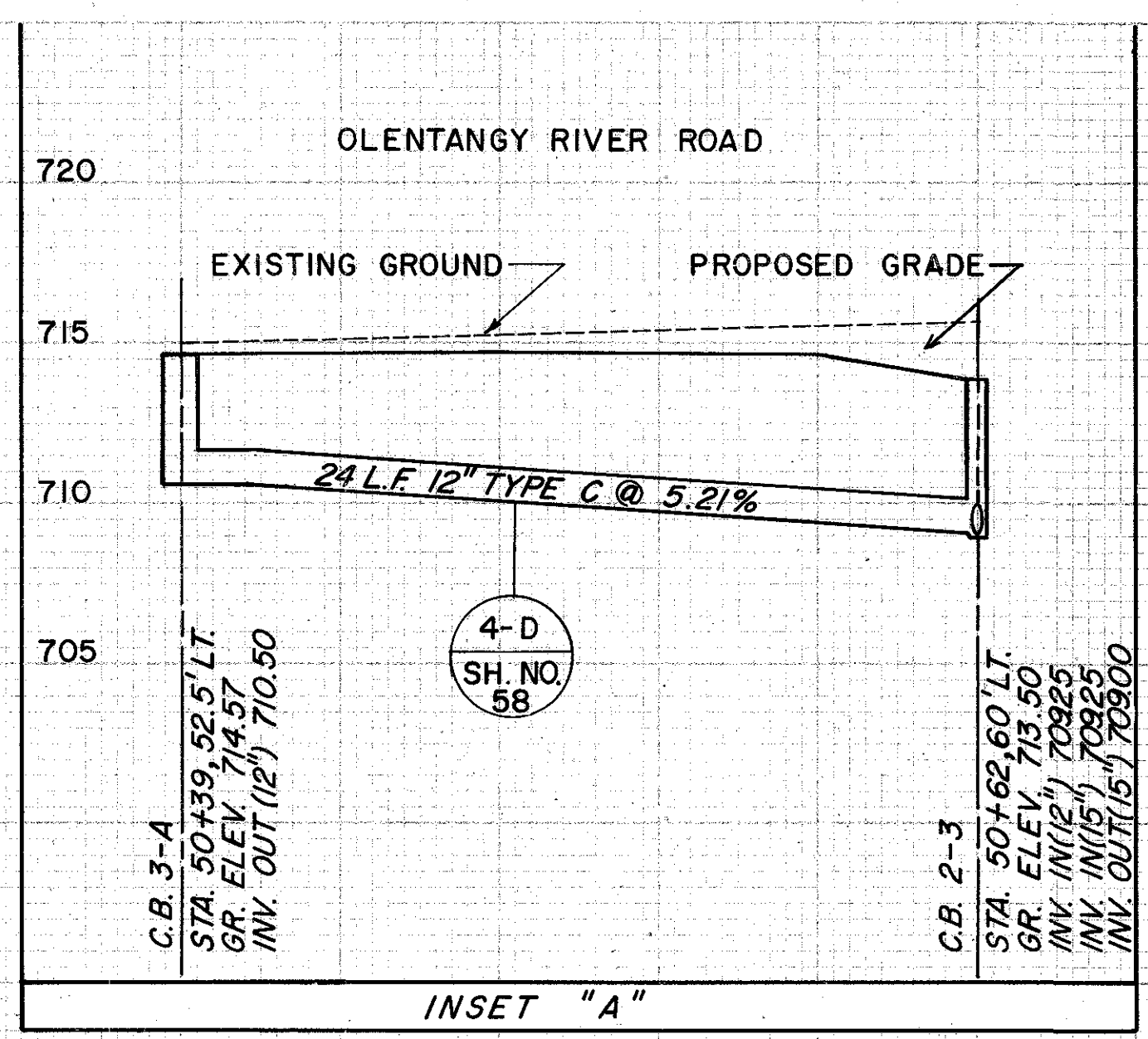
ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	604	603	604	SPECIAL	202
			NO. 5 M.H. W/ JOINTS	36" CONDUIT W/ JOINTS 3000 D-LOAD	NO. 3 MANHOLE W/ JOINTS	FILL AND PLUG EXISTING CONDUIT	MANHOLE (ABAND.)
			EACH	LIN. FT.	EACH	LIN. FT.	EACH
I-D	5+57 to 8+40	C	1	283	1		
2-D	8+40 to 10+08	C	1	168			
I-R	5+57 to 10+08					346	1
<b>TOTALS</b>			<b>2</b>	<b>451</b>	<b>1</b>	<b>346</b>	<b>1</b>

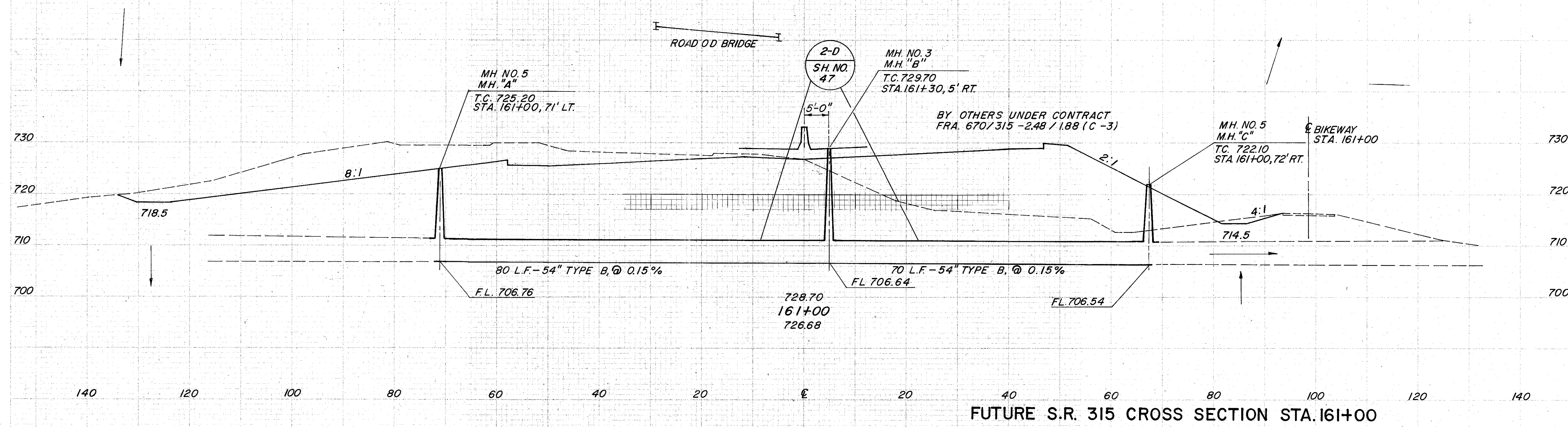


36" SANITARY SEWER RELOCATION

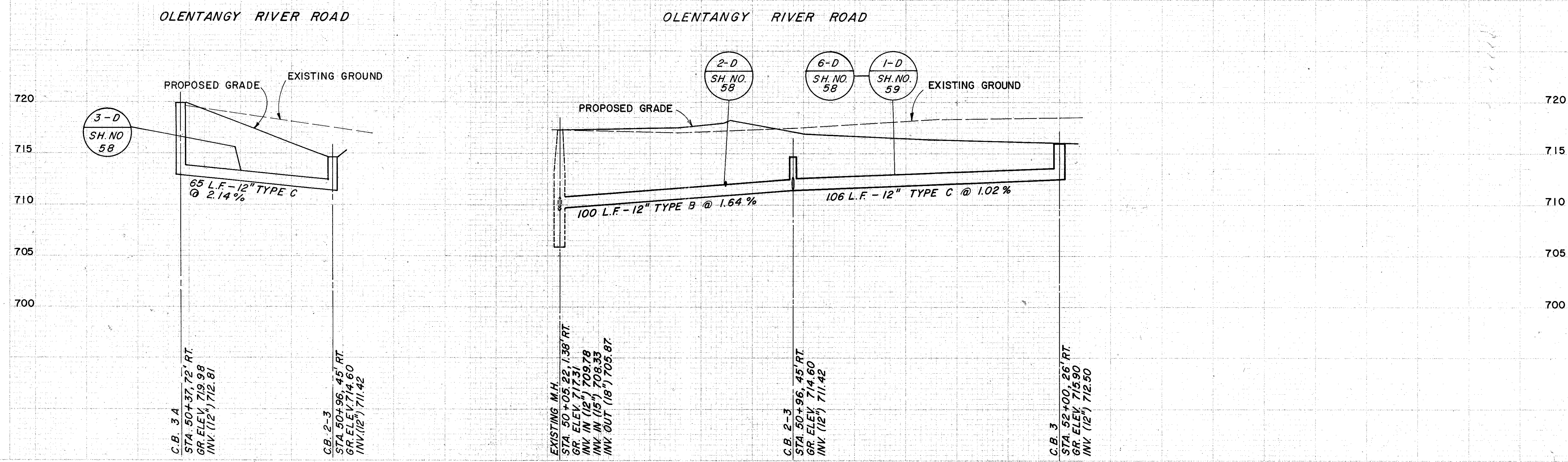




CUT AREA		VOLUME	
STATION	FEET	CUT	FILL



FUTURE S.R. 315 CROSS SECTION STA. 161+00



STORM SEWER PROFILE 50+05.22 TO 52+00, RT.

# GENERAL SUMMARY

CALC. BY \_\_\_\_\_  
CHECK BY \_\_\_\_\_

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

120  
275

FRANKLIN COUNTY  
FRA-670-1.25-C-2

ITEM	SHEET NUMBER												PARTICIPATION			ITEM	ITEM EXT.	TOTAL QUANT.	UNIT	DESCRIPTION	REF. NO.
	121	122	123	125	126	127	128	129	133	133A	NH	STP	100% CITY								
620			9									9		620	10300	9	EACH	DELINEATOR, TYPE C, POST MOUNTED			
620			4									4		620	11000	4	EACH	DELINEATOR, TYPE C, BRACKET MOUNTED			
620			9									9		620	15300	9	EACH	DELINEATOR, TYPE D, POST MOUNTED			
620			4									4		620	16000	4	EACH	DELINEATOR, TYPE D, BRACKET MOUNTED			
625		5										3	2	625	32000	5	EACH	GROUND ROD			
630		50.5										34.5	16	630	00000	50.5	CU.YD.	CONCRETE FOR ANCHOR BASE FOUNDATION			
630	531.5													630	03100	532	LIN.FT.	GROUND MOUNTED SUPPORT, NO. 3 POST			
630	156.0											64	92	630	04100	156.0	LIN.FT.	GROUND MOUNTED SUPPORT, NO. 4 POST			
630		1											1	630	20400	1	EACH	OVERHEAD SIGN SUPPORT, TYPE TC-12.30 DESIGN 4			
630		1											1	630	36000	1	EACH	OVERHEAD SIGN SUPPORT, TYPE TC-7.65 DESIGN 6, 60'-0" SPAN			
630		1										1		630	36500	1	EACH	OVERHEAD SIGN SUPPORT, TYPE TC-7.65 DESIGN 6, 65'-0" SPAN			
630		1										1		630	45500	1	EACH	OVERHEAD SIGN SUPPORT, TYPE TC-7.65 DESIGN 8, 53'-0" SPAN			
630		1										1		630	48500	1	EACH	OVERHEAD SIGN SUPPORT, TYPE TC-7.65 DESIGN 8, 85'-0" SPAN			
630		12										6	6	630	75000	12	EACH	SIGN ATTACHMENT ASSEMBLY			
630		22										12	10	630	75106	22	EACH	LUMINAIRE SUPPORT ASSEMBLY,TYPE TC-31.21			
630	259.0											36	223	630	80102	259	SQ.FT.	SIGN, FLAT SHEET, TYPE G			
630	18.0	1071										569	520	630	80204	1089	SQ.FT.	SIGN, EXTRUSHEET, TYPE G			
630	33												33	630	85000	33	EACH	REMOVAL OF GROUND MOUNTED SIGN AND STORAGE			
630	1												1	630	85100	1	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION			
630	21												21	630	86002	21	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL			
630	4												4	630	87000	4	EACH	REMOVAL OF OVERHEAD MOUNTED SIGN AND STORAGE			
630	1												1	630	89810	1	EACH	REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL, TYPE TC-17.10			
631		5											3	2	631	84000	5	EACH	SIGN SERVICE		
631		12											6	6	631	84300	12	EACH	SIGN WIRED		
631		5											3	2	631	85100	5	EACH	DISCONNECT SWITCH WITH ENCLOSURE, TYPE X		
631		10											6	4	631	87102	10	EACH	BALLAST, TYPE CMRI-100-480, INTEGRAL		
631		12											6	6	631	87202	12	EACH	BALLAST, TYPE CMRI-175-480, INTEGRAL		
631		10											6	4	631	89100	10	EACH	MERCURY VAPOR LUMINAIRE, TYPE TC-31.21, WITH 100 WATT LAMP		
631		12											6	6	631	89200	12	EACH	MERCURY VAPOR LUMINAIRE, TYPE TC-31.21, WITH 175 WATT LAMP		
642			.24				0.05						0.29	642	00090	0.29	MILE	EDGE LINE, 5"			
642							0.13						0.13	642	00190	0.13	MILE	LANE LINE, 5"			
642			.46				0.02			0.04			0.52	642	00290	0.52	MILE	CENTER LINE, 5"			
642										5			5	642	00490	5	LIN.FT.	STOP LINE, 20"			
642							1						1	642	01290	1	EACH	LANE ARROW			
643										435	131		435	131	643	30000	566	LIN.FT.	REMOVAL OF PAVEMENT MARKING		
644			2.98				0.02						0.79	2.21	644	00100	3.00	MILE	EDGE LINE, 5"		
644			0.84				1.28			.03			0.41	1.74	644	00200	2.15	MILE	LANE LINE, 5"		
644							0.90			0.07				0.97	644	00300	0.97	MILE	CENTER LINE, 5"		
644			450				1381			515				2346	644	00400	2346	LIN.FT.	CHANNELIZING LINE, 10"		
644							181			84	91			265	91	644	00500	356	LIN.FT.	STOP LINE, 20"	
644							614			484	323			1098	323	644	00600	1421	LIN.FT.	CROSSWALK LINE, 10"	
644			110				573			683				683	644	00700	683	LIN.FT.	TRANSVERSE LINE, 20"		
644							13			22				22	644	01300	22	EACH	LANE ARROW		
644							6			9				9	644	01400	9	EACH	WORD ON PAVEMENT, 72"		
802						100							37	63	802	00100	100	EACH	BARRIER REFLECTOR, TYPE A		
802						90							75	15	802	00200	90	EACH	BARRIER REFLECTOR, TYPE B		
621				133						418				80	471	621	00100	551	EACH	RAISED PAVEMENT MARKER	

SEE SHEET 135 FOR SIGNALIZATION SUMMARY

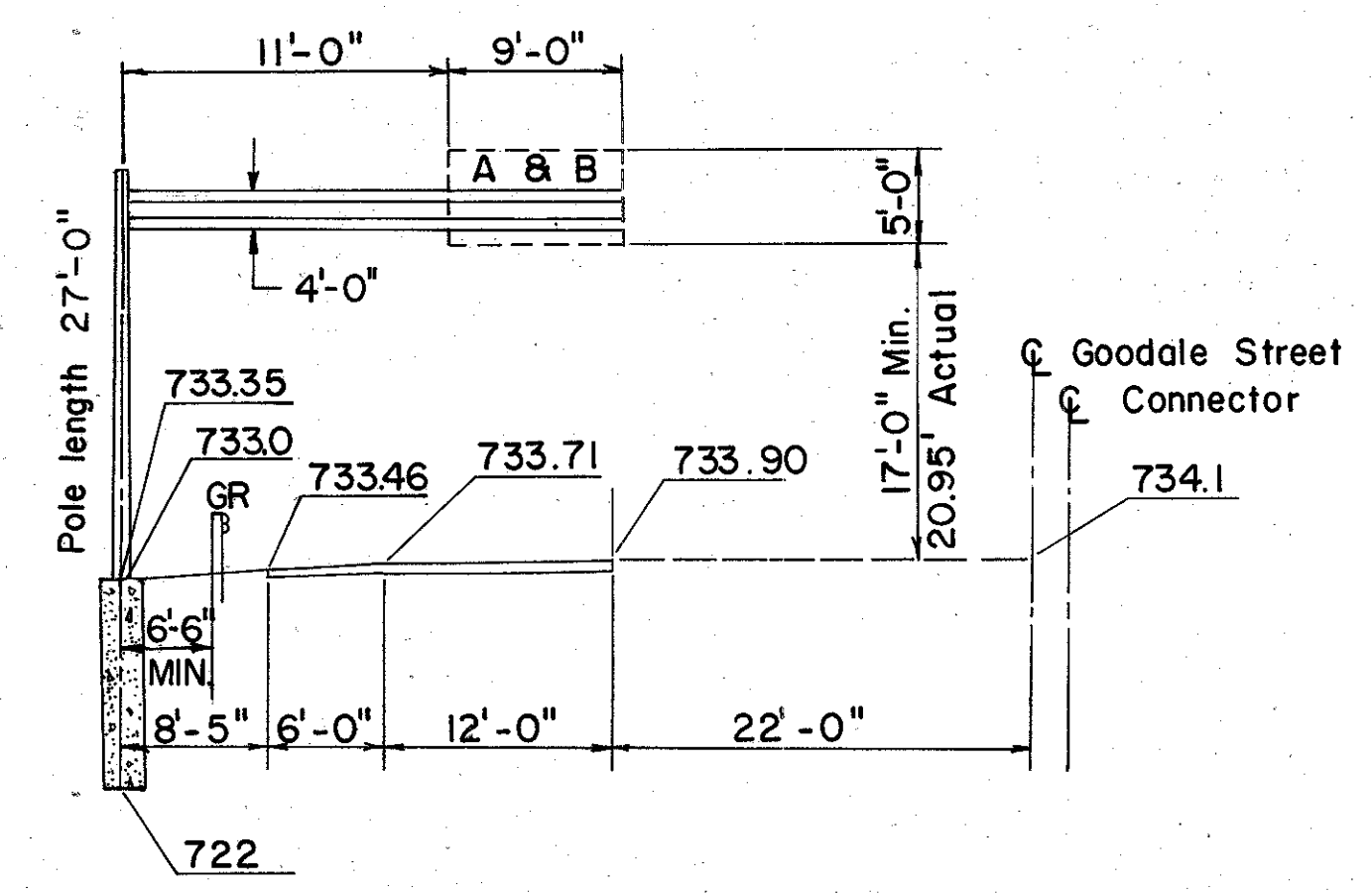


# SIGNING SUBSUMMARY AND DETAILS

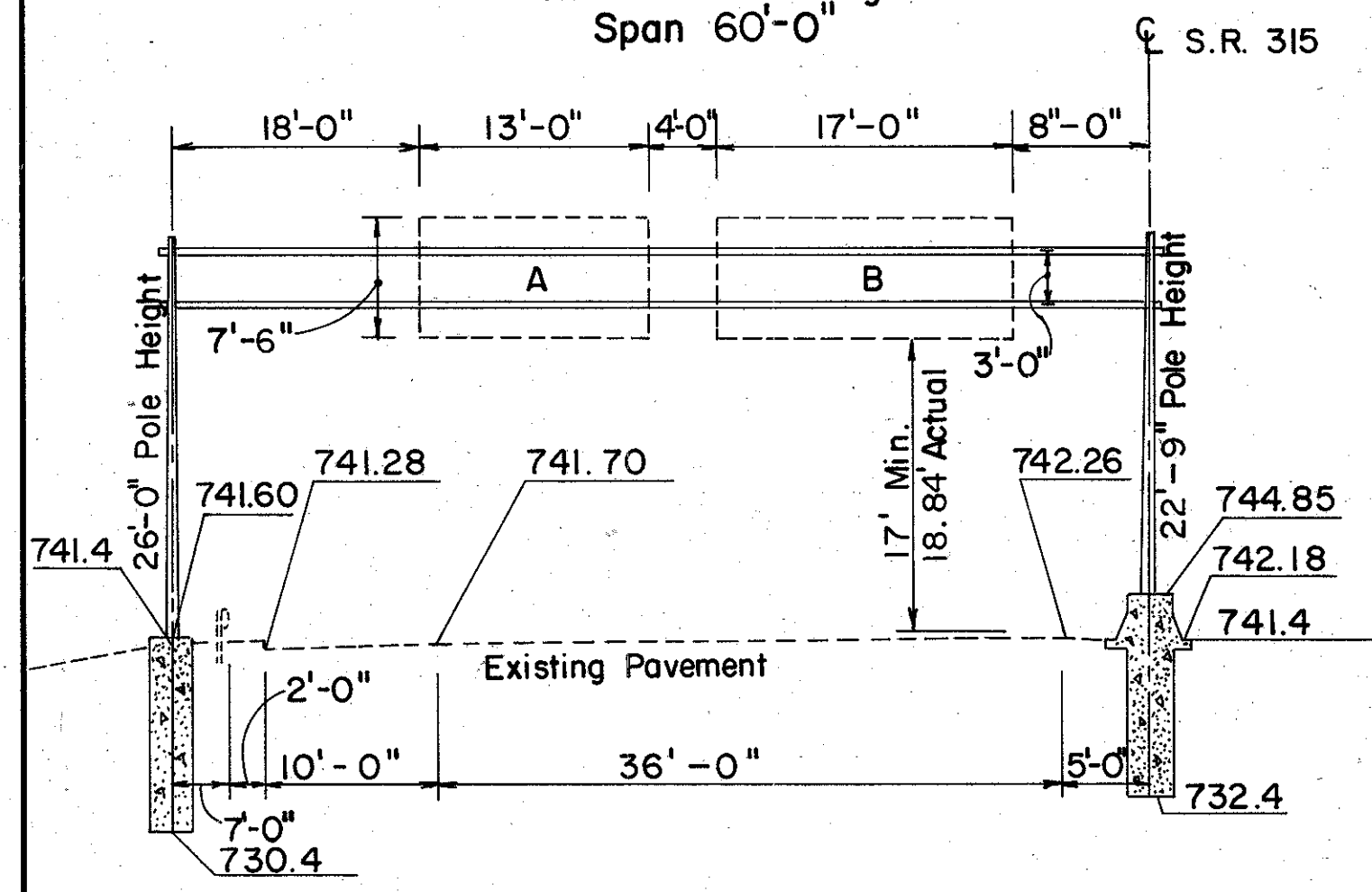
CALCULATED KCW 12-22-88  
CHECKED WMH 12-23-88

FRANKLIN COUNTY  
FRA-670-1.25-C-2

NO. 6  
STA. 145+55 RAMP OF  
STA. 109+99.24 GOODALE ST.  
NO. TC-12.30 Design 4  
Arm 20'-0"

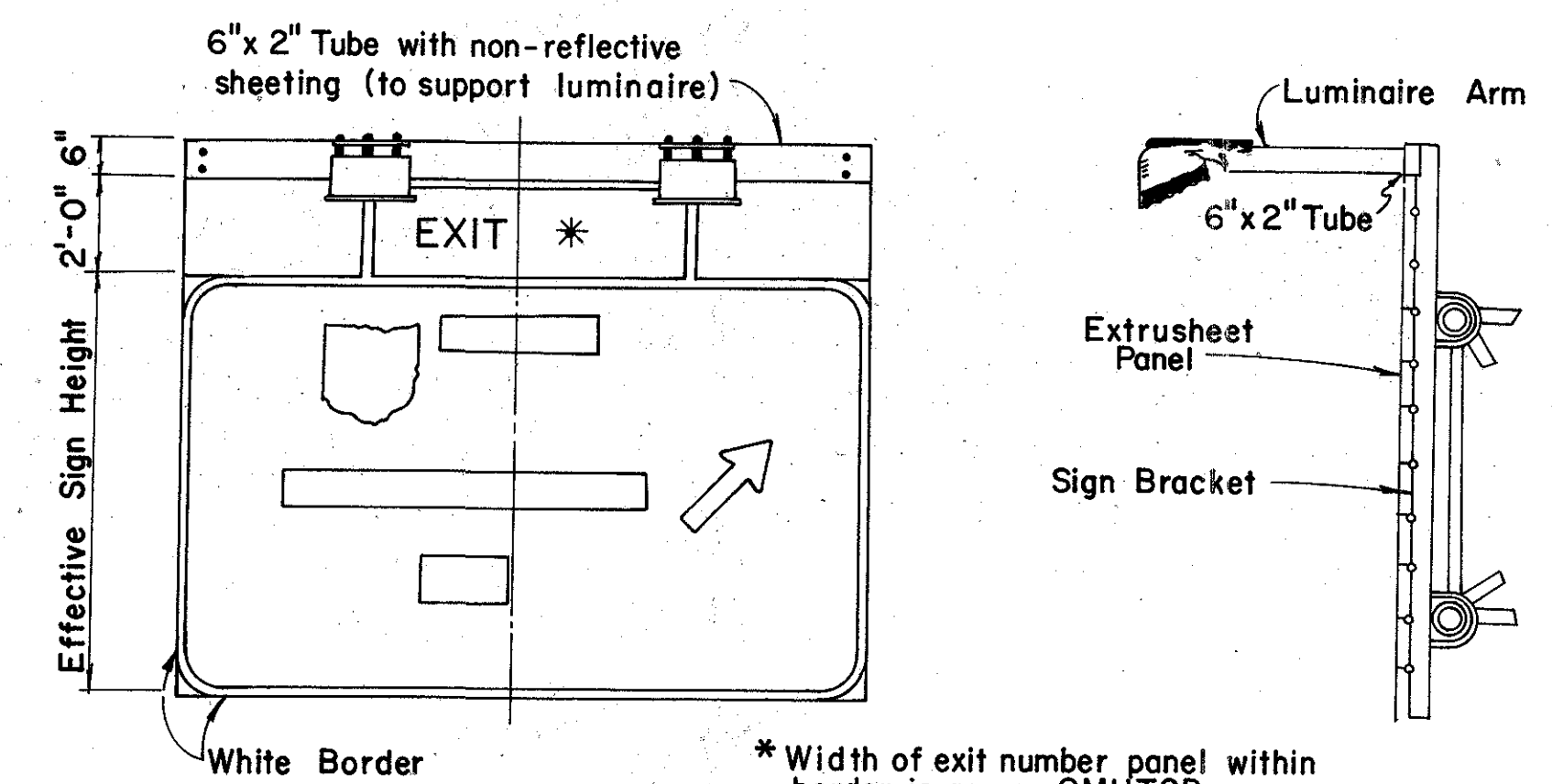


NO. 5  
STA. 77+00 S.R. 315 (Southbound)  
No. TC-7.65 Design 6  
Span 60'-0"



NOTE:  
THIS SIGN DETAIL IS DRAWN  
LOOKING BACKWARDS INSTEAD  
OF LOOKING AHEAD.

OVERHEAD LIGHTING DETAILS  
FOR GUIDE SIGN



\* Width of exit number panel within border is as per OMUTCD.  
For details not shown see: Std. TC-31.21  
Luminaire arm length based on overall sign height with max: 5'-9" arm for any sign 14'-0" high.

Support Number	Sheet Number	Location	Sign Designation	Sign Size	Extrusheet, Type G	630 OVERHEAD SIGN SUPPORTS						Sign Attachment Assembly	Sign Service	Sign Wired	Disconnect Switch with Type X Enclosure	631			Ground Rod				
						S F	TC 7.65 Design 6		TC 7.65 Design 8		TC 12.30 Design 4					Luminaire Support Assembly Type TC 31.21	Concrete for Anchor Base Foundations	Ballast Type CMRI 100 Integral		Ballast Type CMRI 175	Mercury Vapor Luminaire with 100 Watt Lamp	Mercury Vapor Luminaire with 175 Watt Lamp	
							Ea	Span 65'-0"	Span 60'-0"	Ea													Span 53'-0"
1	123	154 + 50 OD	a	12' x 7'	84	1						2	2	14.0		1	1	1	2	2	2	1	
			b	16' x 6'	96							2	2						2	2			
2	123	164 + 00 OD	a	12' x 7'	84			1				2	2	10.5		1	1	1	2	2	2	1	
			b	16' x 6'	96							2	2						2	2			
3	125	173 + 25 OD	a	17' x 7'	119				1			2	2	10.0		1	1	1	2	2	2	1	
			b	15' x 6'	90							2	2						2	2			
4	126	45 + 08 SB	a	16' x 7'	112							2	2						2	2	2		
			b	15' x 6'	90							2	2						2	2			
5	126	77 + 00 SB	a	13' x 7'	91		1					2	2	13.0		1	1	1	2	2	2	1	
			b	17' x 7'	119							2	2						2	2			
6	123	145 + 55 OF	a	9' x 5'	45					1		2	1	3.0		1	1	1	1	1	1	1	
			b	9' x 5'	45							1	1						1	1			
TOTALS					1071	1	1	1	1	1		12	22	50.5		5	12	5	10	12	10	12	5

N.B. S.R. 315 NORTHBOUND  
S.B. S.R. 315 SOUTHBOUND  
OD ROAD OD  
OF RAMP OF  
OE ROAD OE

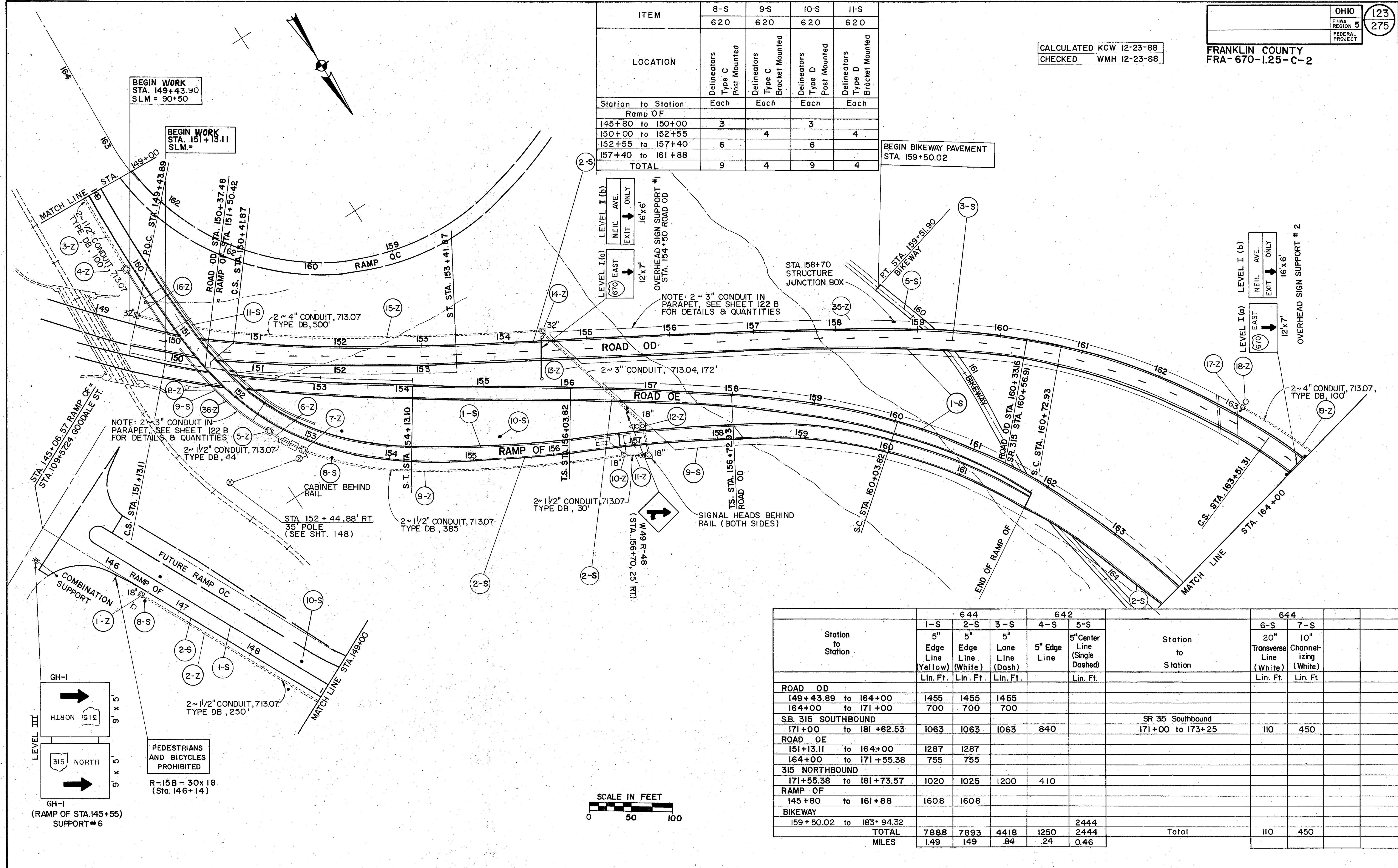




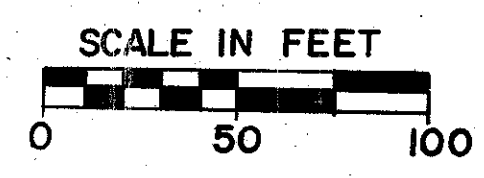
CALCULATED KCW 12-23-88  
CHECKED WMH 12-23-88

ITEM	8-S	9-S	10-S	11-S
	620	620	620	620
LOCATION	Delineators Type C Post Mounted	Delineators Type C Bracket Mounted	Delineators Type D Post Mounted	Delineators Type D Bracket Mounted
Station to Station	Each	Each	Each	Each
Ramp OF				
145+80 to 150+00	3		3	
150+00 to 152+55		4		4
152+55 to 157+40	6		6	
157+40 to 161+88				
<b>TOTAL</b>	<b>9</b>	<b>4</b>	<b>9</b>	<b>4</b>

BEGIN BIKEWAY PAVEMENT STA. 159+50.02

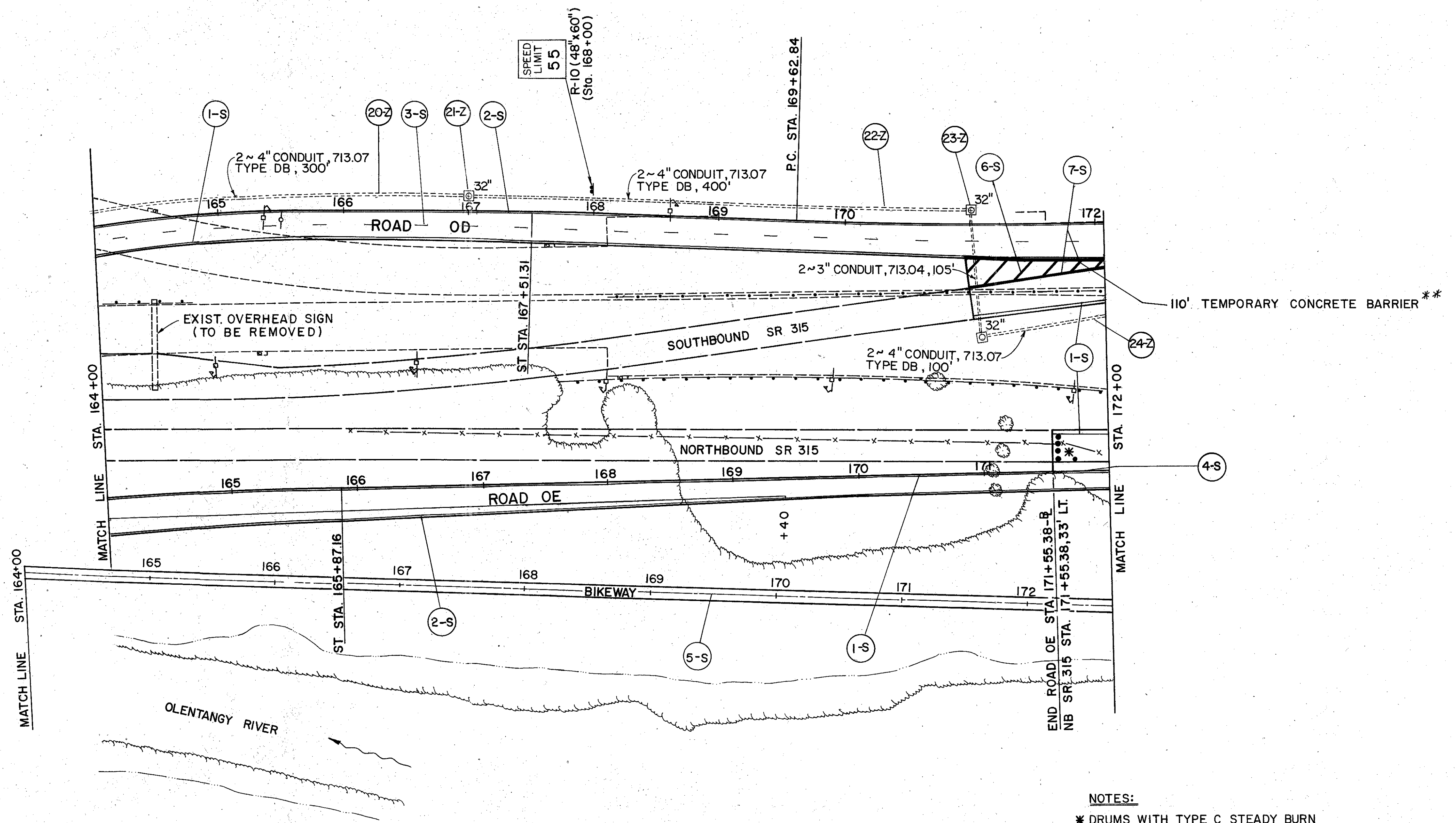
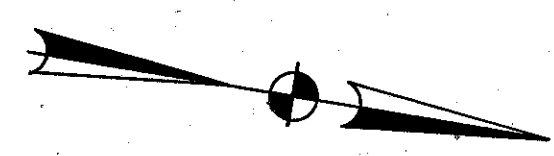


Station to Station	644			642		Station to Station	644	
	1-S 5" Edge Line (Yellow)	2-S 5" Edge Line (White)	3-S 5" Lane Line (Dash)	4-S 5" Edge Line	5-S 5" Center Line (Single Dashed)		6-S 20" Transverse Line (White)	7-S 10" Channelizing (White)
	Lin. Ft.	Lin. Ft.	Lin. Ft.		Lin. Ft.		Lin. Ft.	Lin. Ft.
<b>ROAD OD</b>								
149+43.89 to 164+00	1455	1455	1455					
164+00 to 171+00	700	700	700					
<b>S.B. 315 SOUTHBOUND</b>						SR 35 Southbound		
171+00 to 181+62.53	1063	1063	1063	840		171+00 to 173+25	110	450
<b>ROAD OE</b>								
151+13.11 to 164+00	1287	1287						
164+00 to 171+55.38	755	755						
<b>315 NORTHBOUND</b>								
171+55.38 to 181+73.57	1020	1025	1200	410				
<b>RAMP OF</b>								
145+80 to 161+88	1608	1608						
<b>BIKEWAY</b>								
159+50.02 to 183+94.32					2444			
<b>TOTAL</b>	<b>7888</b>	<b>7893</b>	<b>4418</b>	<b>1250</b>	<b>2444</b>	<b>Total</b>	<b>110</b>	<b>450</b>
<b>MILES</b>	<b>1.49</b>	<b>1.49</b>	<b>.84</b>	<b>.24</b>	<b>0.46</b>			



TRAFFIC CONTROL STA. 149 + 43.89 TO STA. 164 + 00

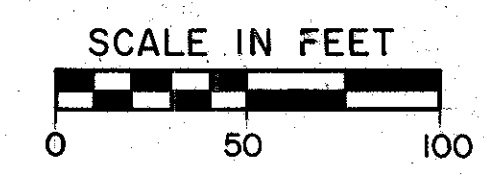


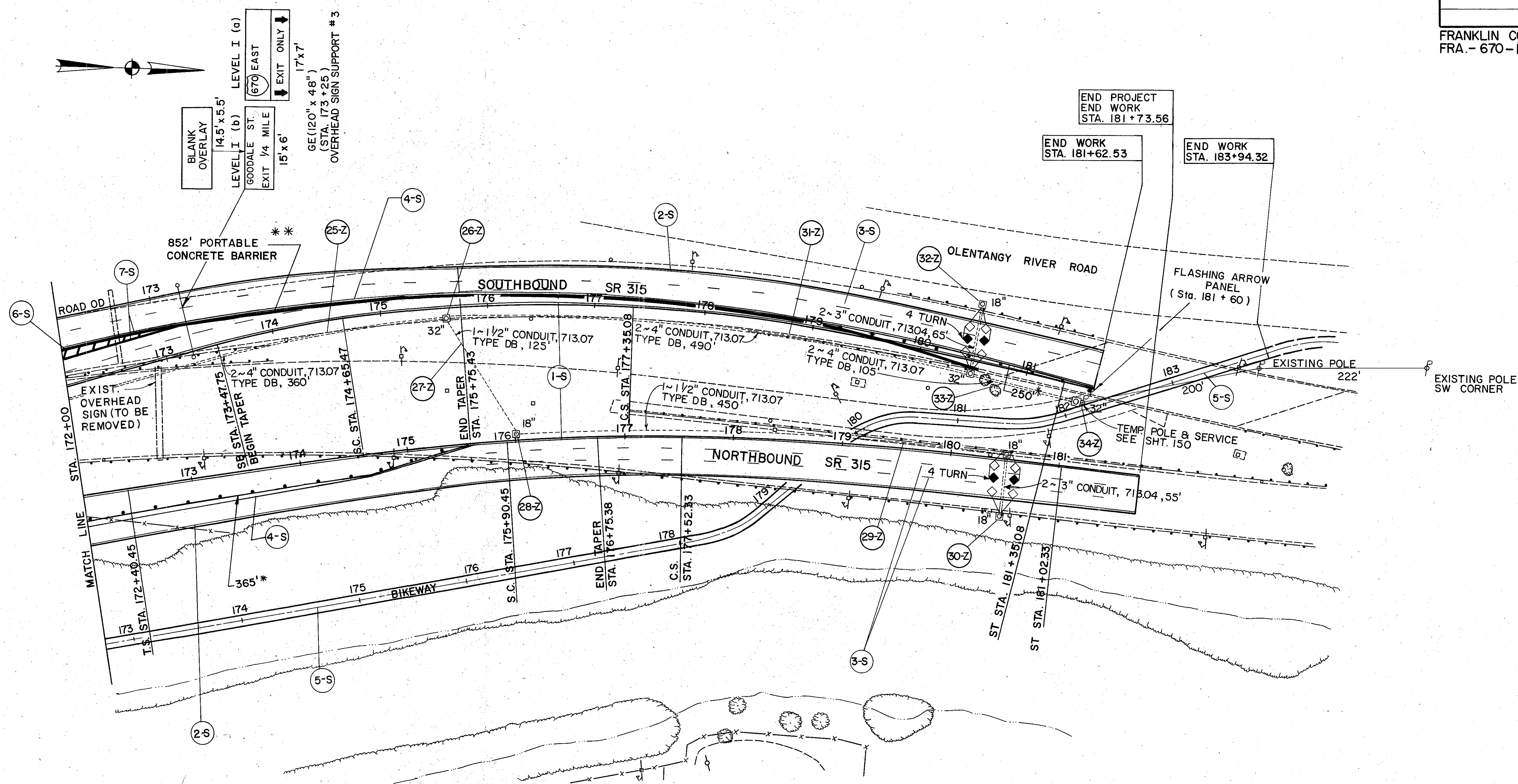


**NOTES:**

- \* DRUMS WITH TYPE C STEADY BURN WARNING LIGHTS, 50' MAX. SPACING.
- \*\* THESE ITEMS TO REMAIN IN PLACE AT COMPLETION OF THIS PROJECT.

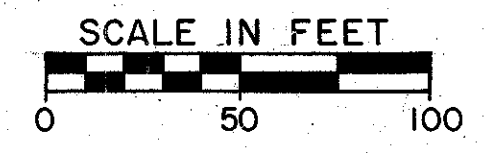
TEMPORARY CONCRETE BARRIERS TO BE INCLUDED FOR PAYMENT UNDER ITEM 614, MAINTENANCE OF TRAFFIC. BARRIERS SHALL INCLUDE 10'-0" END TERMINALS AND BARRIER REFLECTORS AS PER SUPPLEMENTAL SPEC. 802.

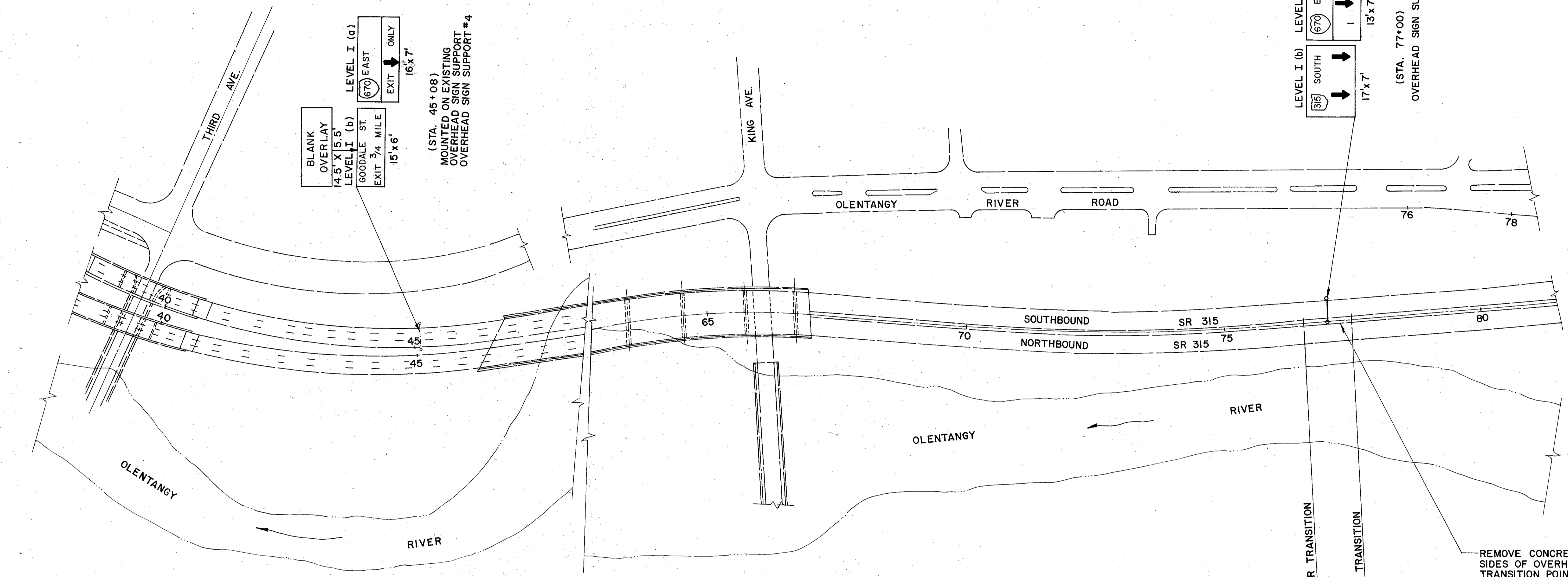
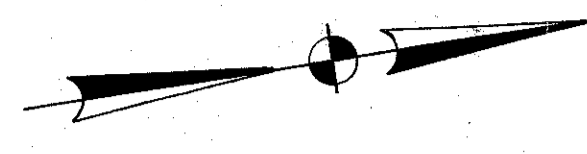




ITEM 62/ RAISED PAVEMENT MARKERS		CHANNELIZING LINE 1-WAY (WHITE)	LANE LINE 2-WAY (WHITE / RED)	EDGE LINE 1-WAY (WHITE)	LOCATION
Station to Station	Lines# Each	Lines# Each	Lines# Each	Lines# Each	
ROAD OD 149+43.89 to 170+65.47	(1) 27 @ 80'	(2) 54 @ 80'	(1) 14 @ 80'	(2) 12 @ 80'	
SOUTHBOUND 315 170+65.47 to 181+62.53	(1) 14 @ 80'	(1) 14 @ 80'	(2) 12 @ 80'		
NORTHBOUND 315 175+90.45 to 181+02.33	(2) 12 @ 80'	(2) 12 @ 80'			
BIKEWAY 175+90.45 to 181+02.33					
<b>TOTALS</b>					<b>53</b>

\*DRUMS, 50' MAX. SPACING  
\*\*THESE ITEMS TO REMAIN IN PLACE AT COMPLETION OF THIS PROJECT.





SHEET	STATION TO STATION	SIDE	BARRIER REFLECTOR TYPE A		BARRIER REFLECTOR TYPE B	
			EACH	EACH	EACH	EACH
46	149+76.61 TO 154+64.11	LT.	10		3	
	154+64 TO 157+00	LT.			2 x 13	
	149+43.90 TO 157+00	CL				
47	157+00 TO 163+00	LT & RT.			2 x 12	
	163+00 TO 167+00	LT & RT.			2 x 8	
48	167+00 TO 168+21.53	RT.	3			
	167+00 TO 174+50.5	LT.	8			
50	157+00 TO 161+00	CL			8	
51	161+00 TO 164+50	LT & RT.			2 x 7	
	164+78 TO 172+00	RT.	8			
52	176+50 TO 179+00	LT.	14			
	145+95 TO 150+32.50	LT.	5			
	148+71.26 TO 149+96.26	RT.	3			
53	152+57.73 TO 154+00	RT.	6			
	153+11.73 TO 154+00	LT.	4		2 x 4	
	149+96 TO 153+11	LT & RT.				
54	154+00 TO 157+69.50	RT.	7			
	154+00 TO 156+96.15	LT.	6			
	157+69 TO 161+00	RT.	7			
	TOTAL		100		90	

BLANK OVERLAY  
14.5' X 15.5'

LEVEL I (b)  
GOODALE ST.  
EXIT 3/4 MILE  
15' x 6'

LEVEL I (a)  
EXIT ONLY  
16' x 7'

(STA. 45+08)  
MOUNTED ON EXISTING  
OVERHEAD SIGN SUPPORT  
OVERHEAD SIGN SUPPORT #4

LEVEL I (b)  
SOUTH  
SR 315  
17' x 7'

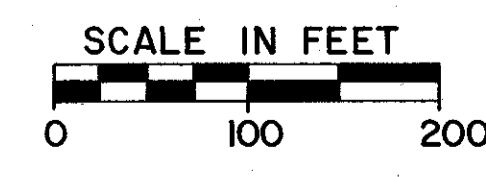
LEVEL I (c)  
EAST  
SR 670  
1 MILE  
13' x 7'

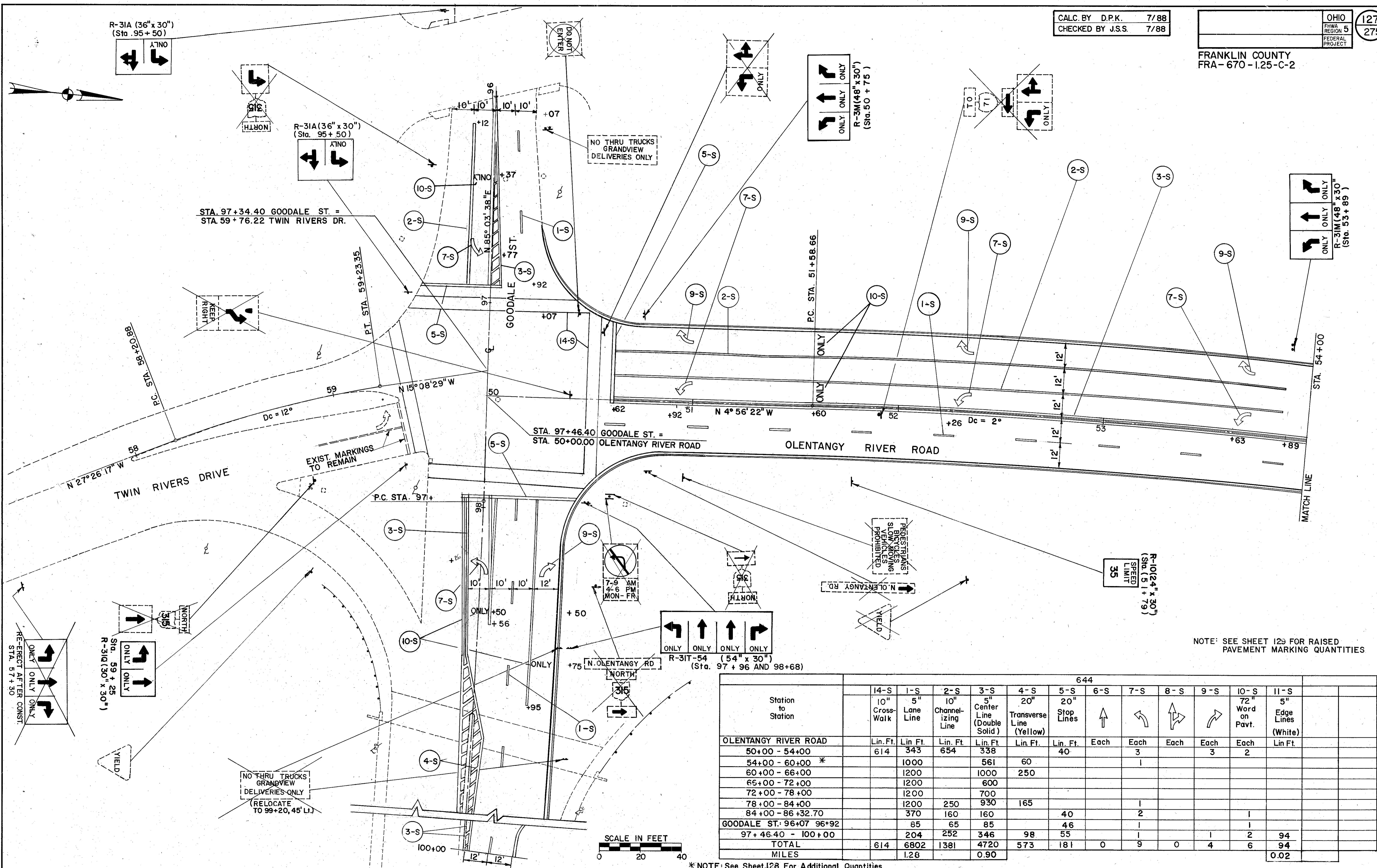
(STA. 77+00)  
OVERHEAD SIGN SUPPORT #5

REMOVE CONCRETE BARRIER ON BOTH SIDES OF OVERHEAD SIGN SUPPORT BEYOND TRANSITION POINT TO NEAREST JOINT IN BARRIER (JOINTS SPACED AT 20' ON CENTER). REPLACE BARRIER, FORMING A TRANSITION FOR THE OVERHEAD SIGN SUPPORT ACCORDING TO STANDARD DRAWING MC-9.

BEGIN BARRIER TRANSITION  
STA. 76+55

END BARRIER TRANSITION  
STA. 77+45





NOTE: SEE SHEET 129 FOR RAISED PAVEMENT MARKING QUANTITIES

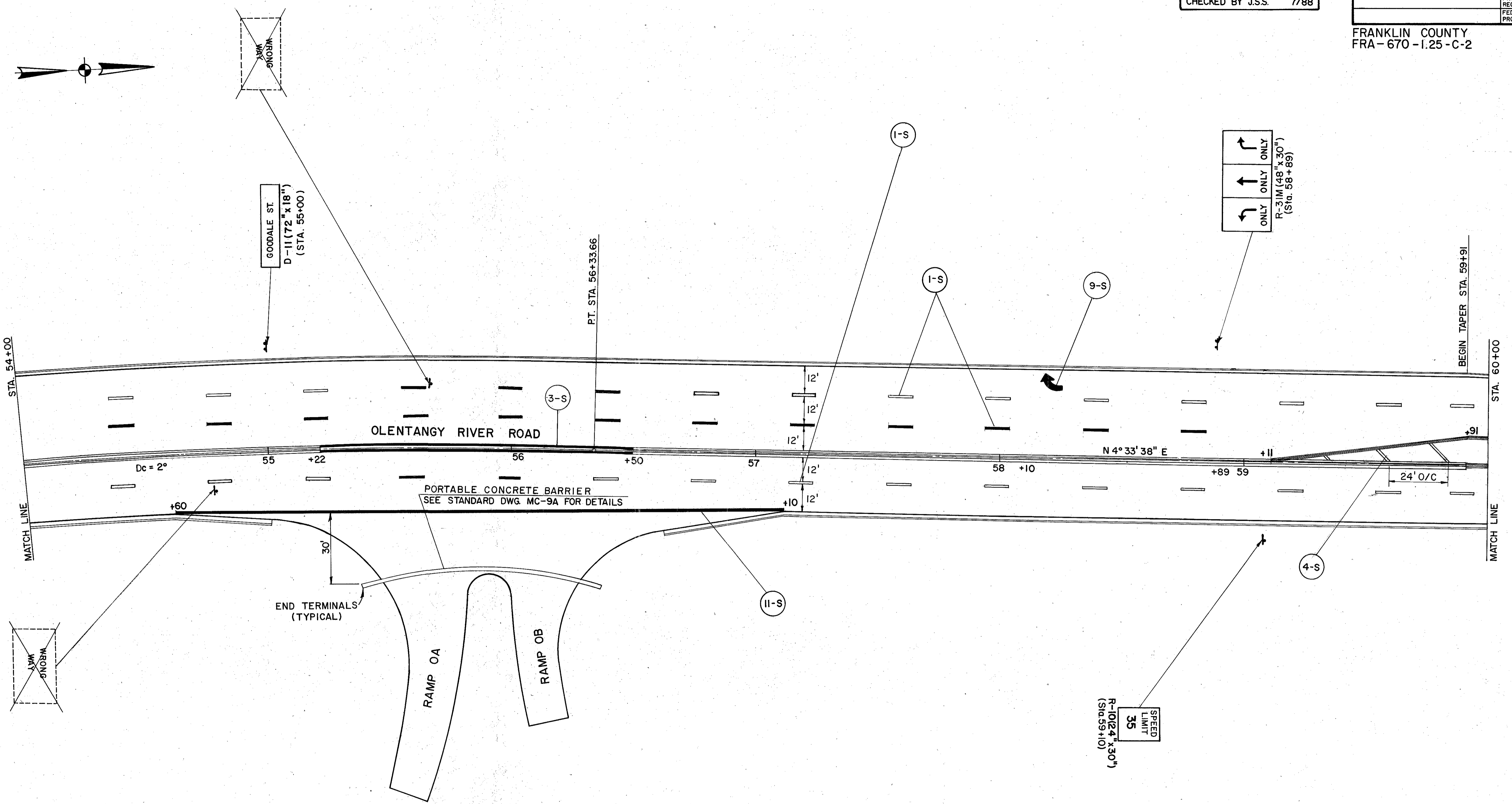
Station to Station	644											Edge Lines (White)
	14-S 10" Cross-Walk	1-S 5" Lane Line	2-S 10" Channelizing Line	3-S 5" Center Line (Double Solid)	4-S 20" Transverse Line (Yellow)	5-S 20" Stop Lines	6-S ↑	7-S ↶	8-S ↷	9-S ↸	10-S 72" Word on Pavt.	
OLENTANGY RIVER ROAD	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Each	Each	Each	Each	Each	Lin. Ft.
50+00 - 54+00	614	343	654	338	60	40		3		3	2	
54+00 - 60+00 *		1000		561	250			1				
60+00 - 66+00		1200		1000								
66+00 - 72+00		1200		600								
72+00 - 78+00		1200		700								
78+00 - 84+00		1200	250	930	165			1				
84+00 - 86+32.70		370	160	160		40		2			1	
GOODDALE ST: 96+07 96+92		85	65	85	98	46		1			1	
97+46.40 - 100+00		204	252	346	55			1		1	2	94
TOTAL	614	6802	1381	4720	573	181	0	9	0	4	6	94
MILES			1.28	0.90								0.02

\*NOTE: See Sheet 128 For Additional Quantities

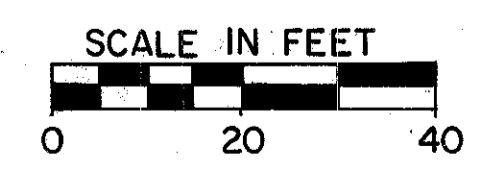
CALC. BY DPK. 7/88  
 CHECKED BY J.S.S. 7/88

OHIO 128  
 REGION 5  
 FEDERAL PROJECT 275

FRANKLIN COUNTY  
 FRA-670-1.25-C-2

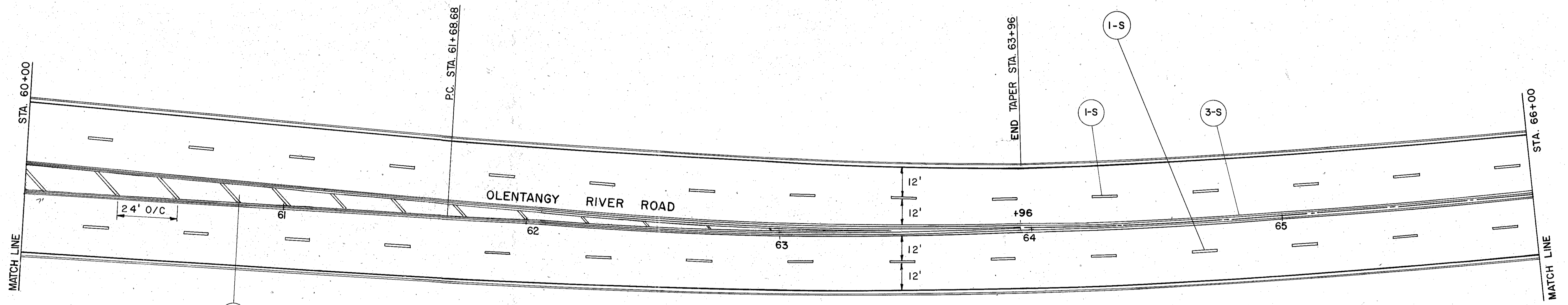
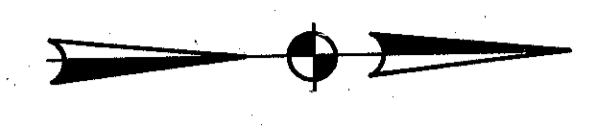


NOTE:  
 — ITEM 642 (PAINTED MARKINGS)  
 — ITEM 644 (THERMOPLASTIC MARKINGS)

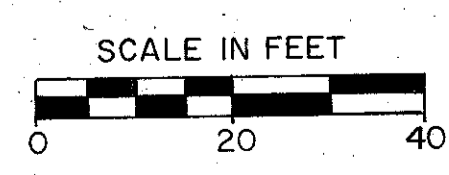


STATION TO STATION	642			
	1-S 5" LANE LINE	3-S 5" CENTER LINE	9-S LANE ARROWS	11-S EDGE LINES (WHITE)
OLENTANGY RIVER ROAD 54+00 TO 60+00	LIN. FT. 685	LIN. FT. 128	EACH 1	LIN. FT. 250
MILES	0.13	0.02		0.05

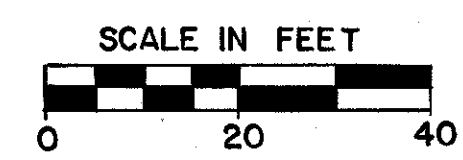
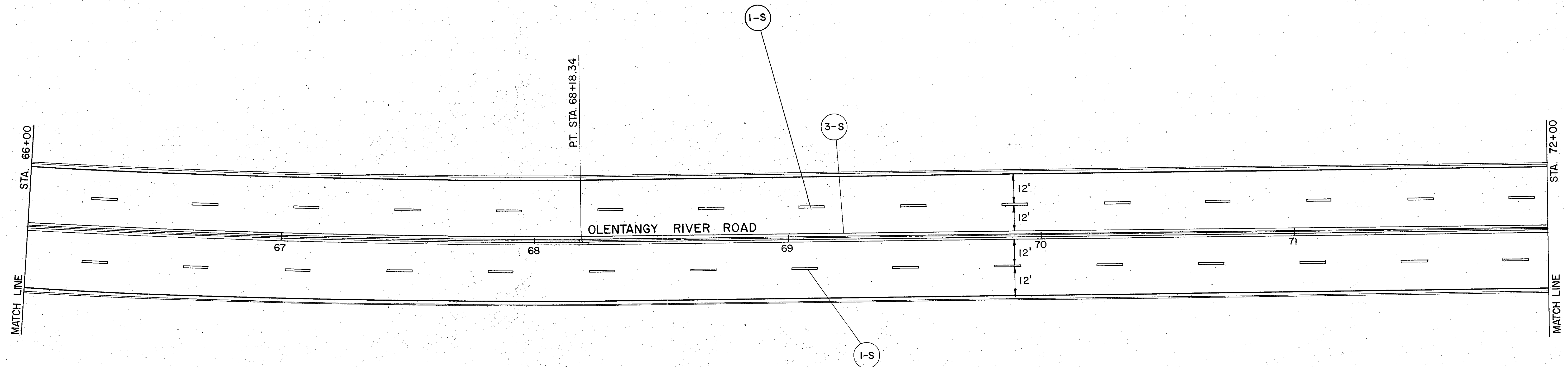
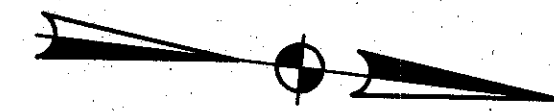
TRAFFIC CONTROL - STA. 54+00 TO STA. 60+00

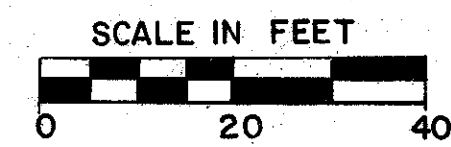
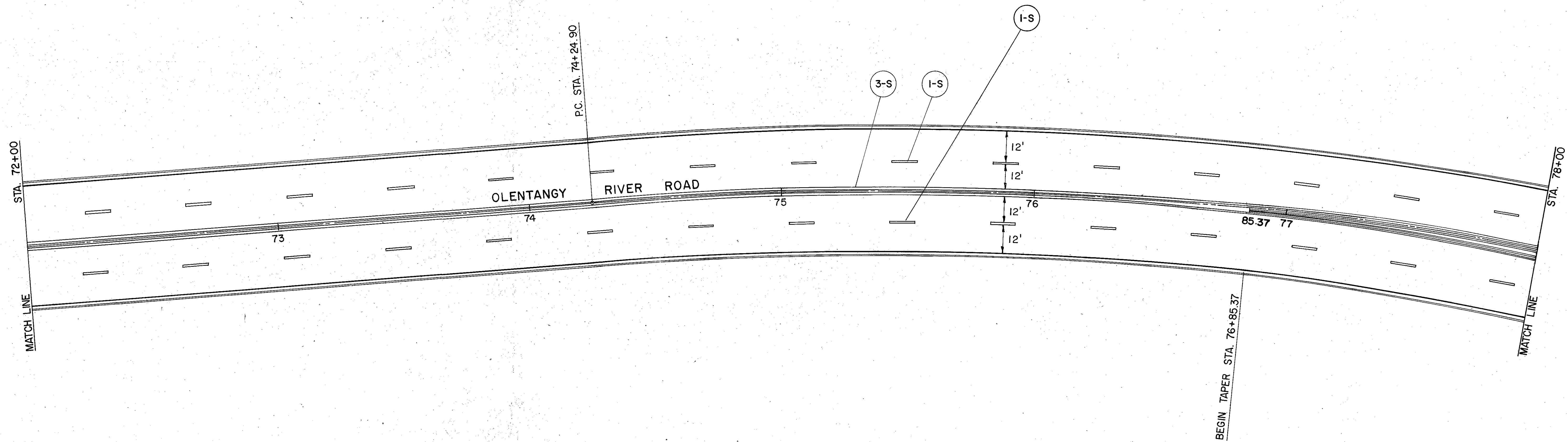


LOCATION	ITEM 2/1 RAISED PAVEMENT MARKERS			
	Station to Station	EDGE LINE 1-WAY (WHITE)	LANE LINE 2-WAY (WHITE / RED)	CHANNELIZING LINE 1-WAY (WHITE)
	Lines # Space Each	Lines # Space Each	Lines # Space Each	Lines # Space Each
GODDARD ST.				
96+00 to 97+00	(1) 3 @ 40'	(1) 3 @ 40'	(2) 10 @ 20'	
96+27 to 97+00		(1) 5 @ 20'		
98+00 to 98+70		(1) 6 @ 20'	(1) 4 @ 20'	
98+00 to 98+95	(1) 6 @ 20'	(1) 3 @ 40'		
98+00 to 100+00		(1) 5 @ 40'		
98+70 to 100+00			(2) 4 @ 40'	
98+95 to 100+00	(1) 3 @ 40'			
OLENTANGY RIVER ROAD				
50+62 to 51+60	(1) 5 @ 20'			
51+60 to 55+20	(1) 9 @ 20'		(2) 5 @ 20'	
51+60 to 54+60	(1) 4 @ 80'		(1) 9 @ 40'	
50+60 to 54+00		(2) 8 @ 40'		
50+60 to 76+50		(1) 32 @ 80'		
55+21 to 81+00	(1) 32 @ 80'			
54+00 to 85+50	(1) 39 @ 80'			
57+10 to 76+50	(1) 25 @ 80'			
56+50 to 83+50				(1) 68 @ 40'
59+11 to 63+10				(1) 10 @ 40'
76+50 to 81+00	(1) 12 @ 40'			(1) 12 @ 40'
81+50 to 85+50			(1) 20 @ 20'	
81+00 to 85+50	(2) 23 @ 20'		(1) 23 @ 40'	
76+50 to 85+50				
OLENTANGY RIVER ROAD (NORTH OF THIRD)				
272+24 to 273+54	(1) 4 @ 20'	(1) 7 @ 20'	(1) 7 @ 20'	
THIRD AVE.				
18+30 to 19+43	(1) 3 @ 40'	(1) 6 @ 20'	(1) 6 @ 20'	
TOTALS	119	102	60	137
			418	



TRAFFIC CONTROL - STA. 60+00 TO STA. 66+00



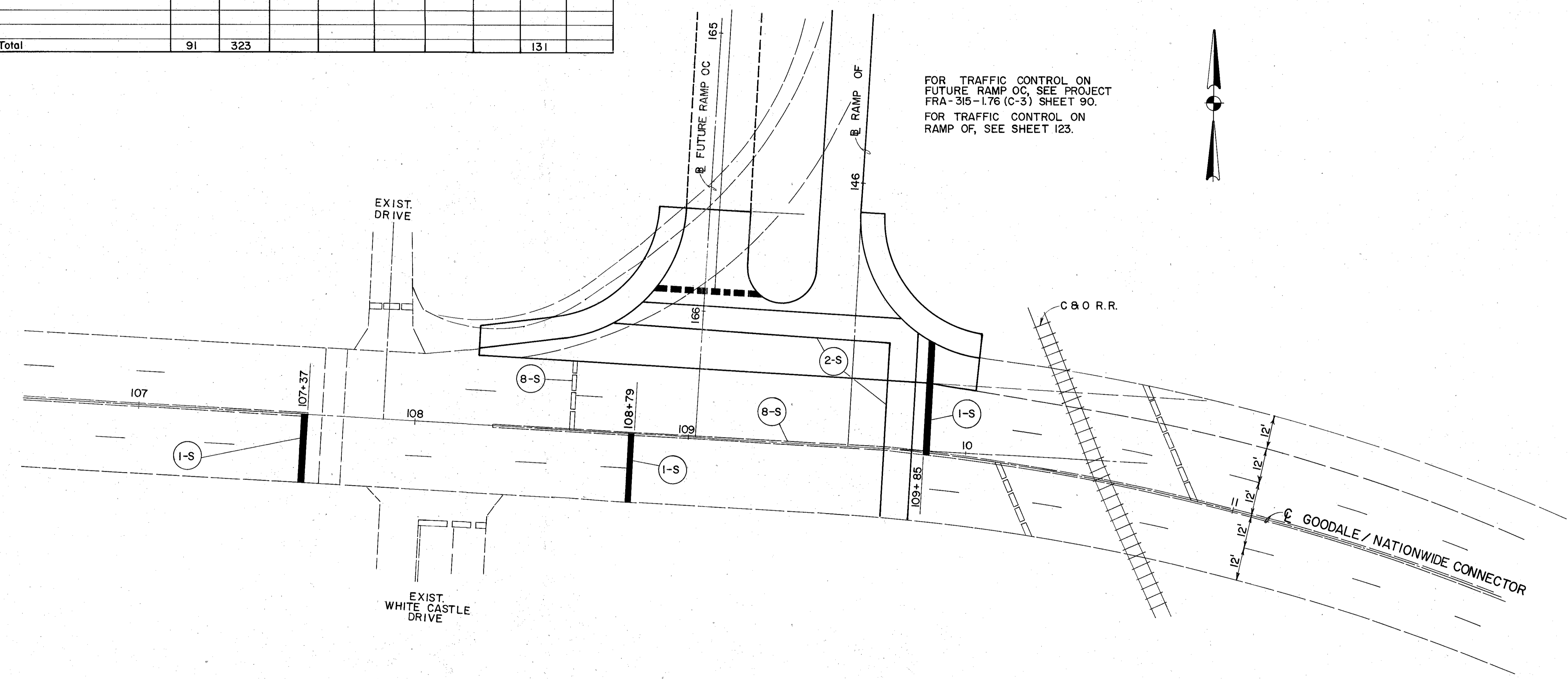








Station to Station	644							643
	1-S	2-S	3-S	4-S	5-S	6-S	7-S	8-S
	20" Stop Lines Lin. Ft.	10" Cross-walk Lin. Ft.						Removal of Pavement Marking Lin. Ft.
GOODALE STREET								
109+85	41	323						
108+79	25							
107+61	25							
108+79 to 109+85 108+58								106 25
Total	91	323						131



FOR TRAFFIC CONTROL ON  
FUTURE RAMP OC, SEE PROJECT  
FRA-315-1.76 (C-3) SHEET 90.  
FOR TRAFFIC CONTROL ON  
RAMP OF, SEE SHEET 123.

FOR TRAFFIC CONTROL ON  
GOODALE STREET FROM  
STA. 109+85 TO EAST,  
UNLESS OTHERWISE MARKED,  
SEE PROJECT FRA-670-2.95 (B-2).

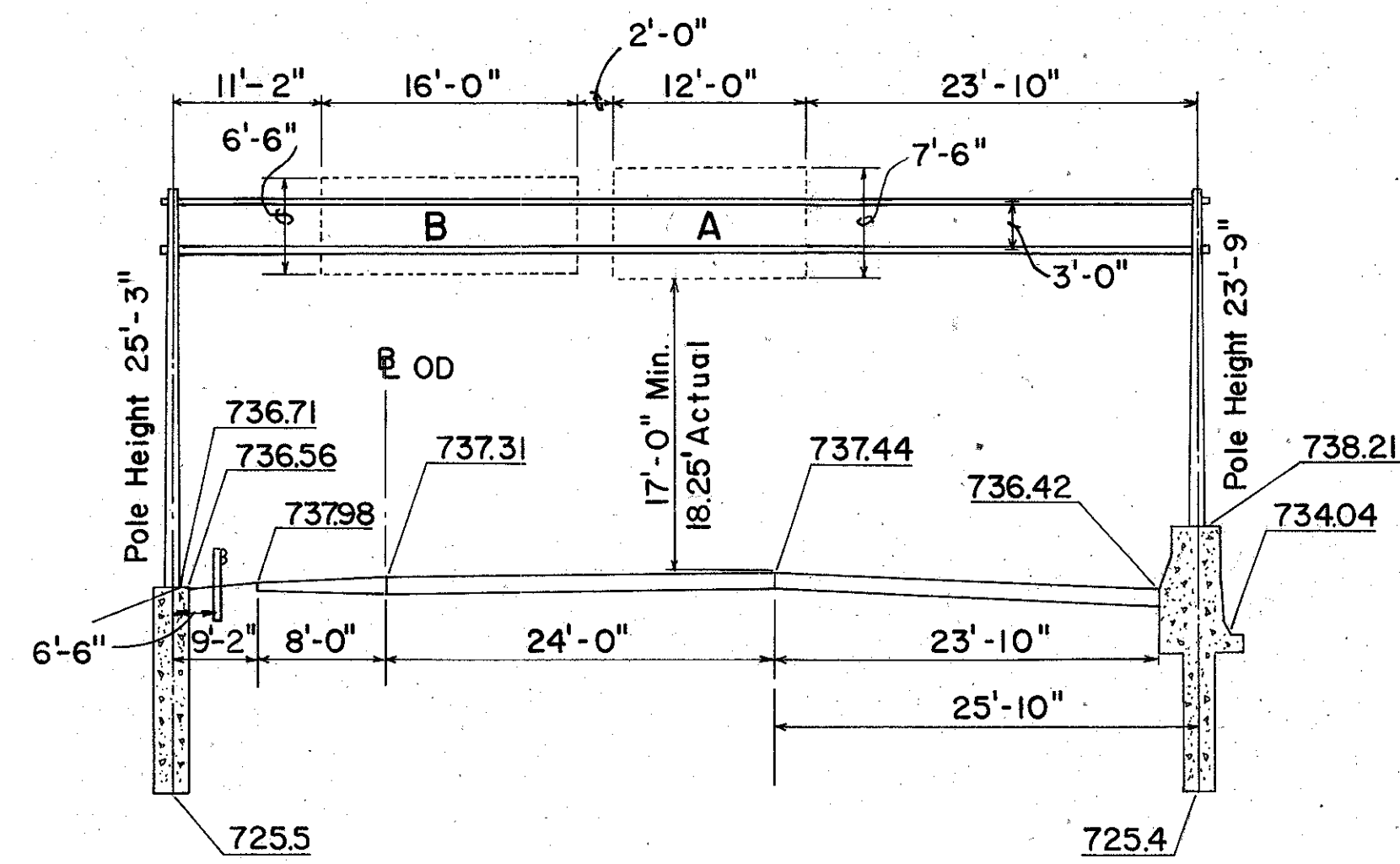
NOTE: THESE SIGN DETAILS ARE DRAWN LOOKING BACKWARDS INSTEAD OF LOOKING AHEAD.

CALCULATED	KCW 3/89
CHECKED	WHH 3/89

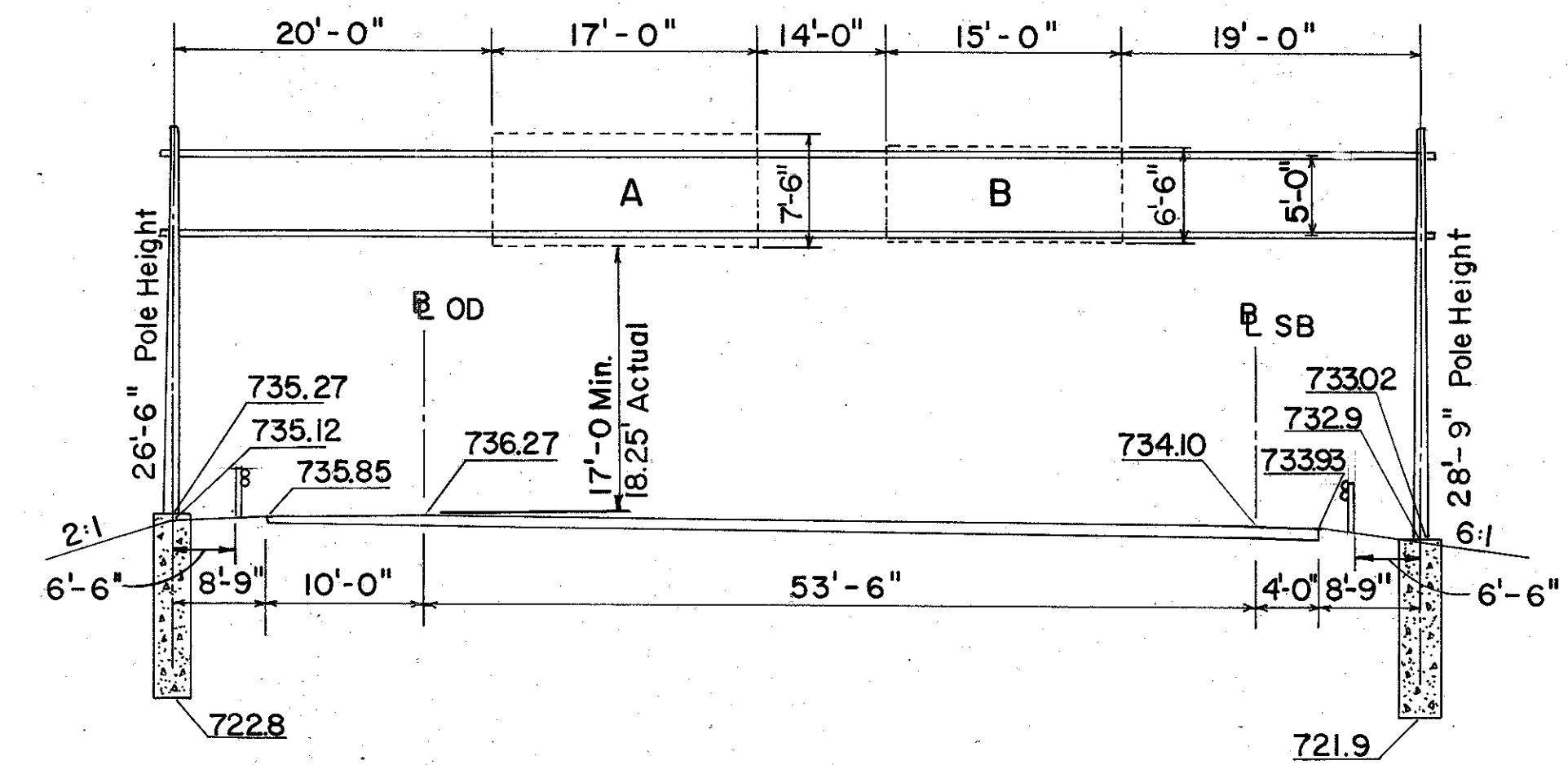
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134  
275

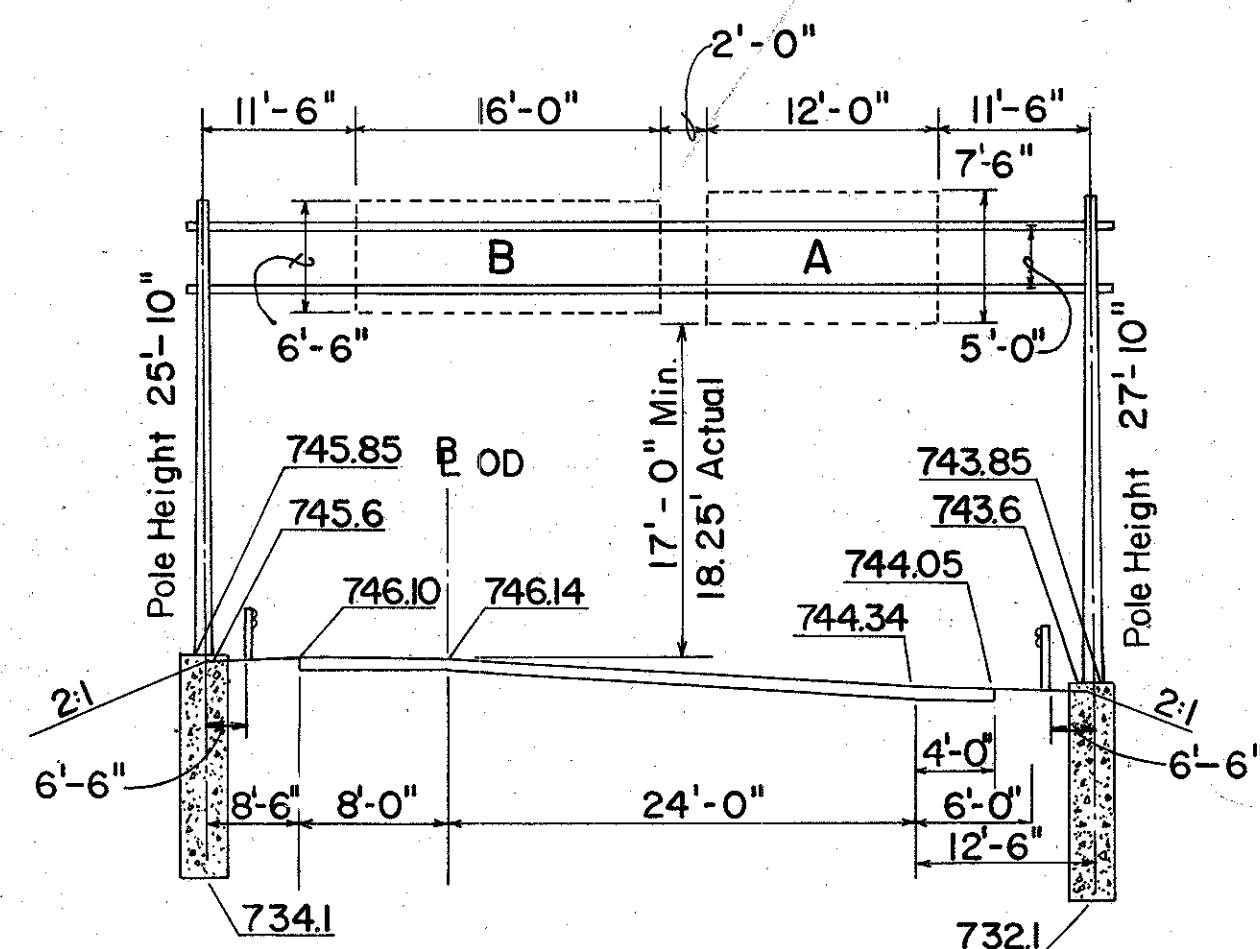
FRANKLIN COUNTY  
FRA-670-1.25-C-2



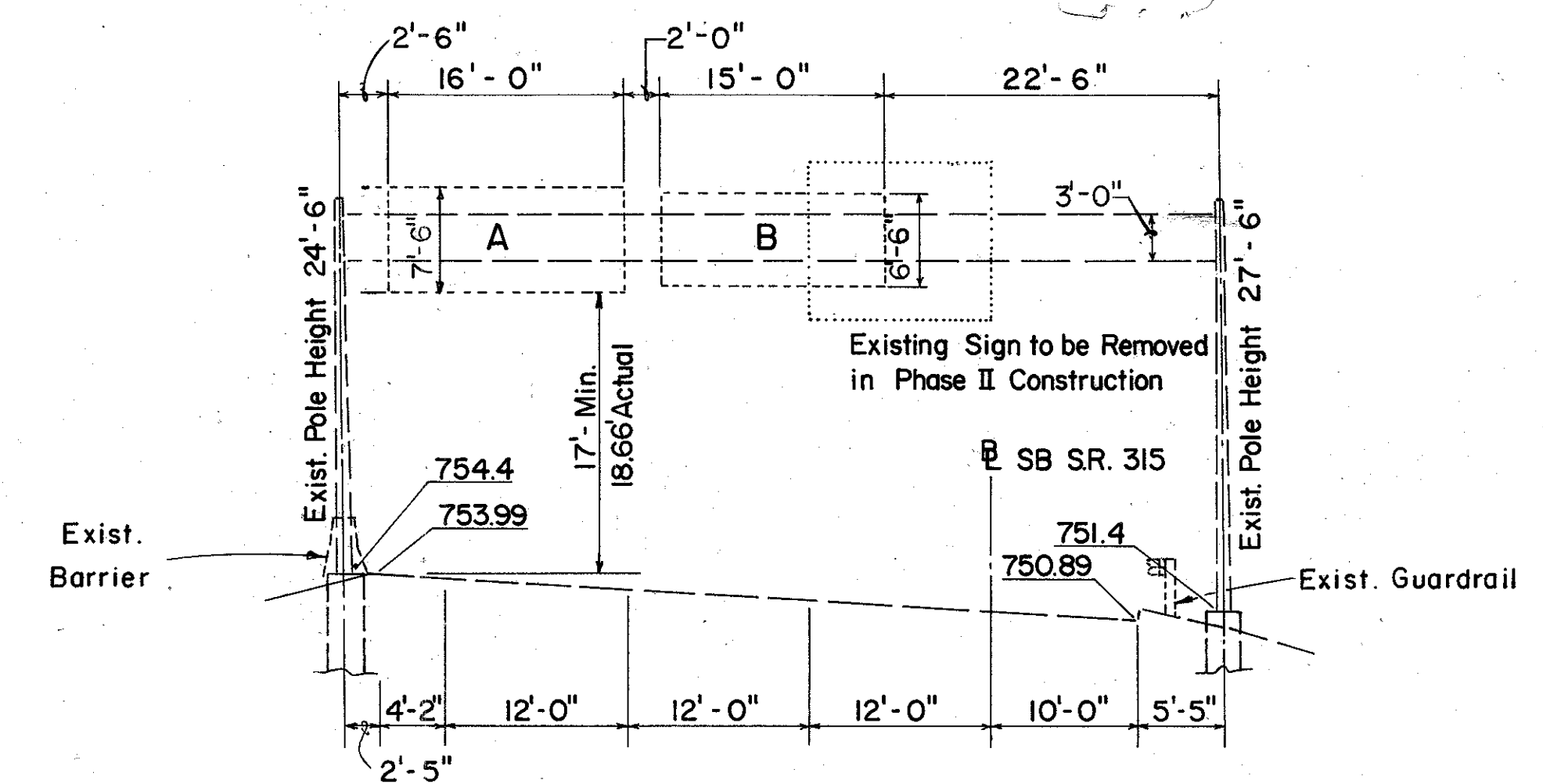
NO. 1  
STA. 154+50 ROAD OD  
No. TC-765 Design 6  
Span 66'-0"



NO. 3  
STA. 173+25 ROAD OD  
No. TC-765 Design 8  
Span 85'-0"



NO. 2  
STA. 164+00 ROAD OD  
No. TC-765 Design 8  
Span 53'-0"

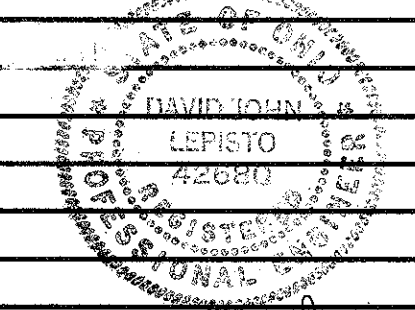


NO. 4  
STA. 45+08 SB SR 315  
Existing Sign Support  
Span 58'-0"  
No. - 7.4 Design 1

# TRAFFIC SIGNALS GENERAL SUMMARY

CALC. W.D.L. BY: J.L.L. DATE: 12-2-92	FRANKLIN COUNTY FRA- 1-670-1.25-C-2	OHIO FHWA REGION <b>5</b>	135 275
CHKD. BY: D.J.L. DATE: 12-2-92			FEDERAL PROJECT

ITEM	SHEET NUMBER						PARTICIPATION			ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION TRAFFIC	AS PER PLAN SHEET
	142	141	140	139	143B	143C	NH	STP	100% CITY						
625	610							610			610	LIN FT	CONDUIT, 3", 713.04, AS PER PLAN	142	
625		4842	3490	124	285			8741			8741	LIN FT	CONDUIT, 3", 713.07, AS PER PLAN	137	
625	25	2421	1745	116	214			4521			4521	LIN FT	TRENCH		
625			107		58			165			165	LIN FT	TRENCH IN PAVED AREA, TYPE A		
625				2	3			5			5	EACH	PULL BOX, 713.08, 18"		
625		10	10					20			20	EACH	PULL BOX, 713.08, 48", AS PER PLAN	143C	
625		2	1	3	9			15			15	EACH	GROUND ROD		
630					3			3			3	EACH	SIGN HANGER ASSEMBLY, SPAN WIRE		
630					2			2			2	EACH	SIGN HANGER ASSEMBLY, MAST ARM		
630				10	12			22			22	SQ.FT.	SIGN, FLAT SHEET, TYPE "G"		
632				9	9			18			18	EACH	VEHICULAR SIGNAL HEAD 3 SECTION, 12" LENS, 1 WAY, AS PER PLAN	137	
632				2				2			2	EACH	VEHICULAR SIGNAL HEAD 4 SECTION, 12" LENS, 1 WAY, AS PER PLAN	137	
632					1			1			1	EACH	VEHICULAR SIGNAL HEAD 5 SECTION, 12" LENS, 1 WAY, AS PER PLAN	137	
632					2			2			2	EACH	VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED, 3 SECTION, 12" LENS, 1 WAY		
632					2			2			2	EACH	VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED, 5 SECTION, 12" LENS, 1 WAY		
632				8	8			16			16	EACH	PEDESTRIAN SIGNAL HEAD, AS PER PLAN (SIGNALIZATION MISCELLANEOUS)	137	
632					14			14			14	EACH	COVERING OF VEHICULAR SIGNAL HEAD		
632				4	4			8			8	EACH	PEDESTRIAN PUSHBUTTON, AS PER PLAN	143C	
632				5	5			10			10	EACH	LOOP DETECTOR UNIT, 2 CHANNEL, DELAY AND EXTENSION TYPE		
632				4	5			9			9	EACH	SIGNALIZATION, MISC; MICROLOOP SENSOR PROBE (2-PROBE SET; 6'-50')		
632				727	604			1331			1331	LIN FT	LOOP DETECTOR PAVEMENT CUTTING		
632		190			197			387			387	LIN FT	MESSENGER WIRE 7 STRAND, 1/4" DIA., WITH ACCESSORIES		
632					456			456			456	LIN FT	MESSENGER WIRE 7 STRAND, 3/8" DIA., WITH ACCESSORIES		
632				555	617			1172			1172	LIN FT	SIGNAL CABLE, 2 CONDUCTOR NO. 14 AWG		
632				557	1074			1631			1631	LIN FT	SIGNAL CABLE, 5 CONDUCTOR NO. 14 AWG		
632				843	1391			2234			2234	LIN FT	SIGNAL CABLE, 7 CONDUCTOR NO. 14 AWG		
632	610	2790	1990					5390			5390	LIN FT	INTERCONNECT CABLE, MISC: COAXIAL .500 INCH P III UNDERGROUND TRUNK	137	
632				2460	1648			4108			4108	LIN FT	LOOP DETECTOR WIRE, TYPE E		
632				1405	2289			3694			3694	LIN FT	LOOP DETECTOR LEAD-IN CABLE		
632				252	56			308			308	LIN FT	POWER CABLE, 2 CONDUCTOR NO. 8 AWG		
632					52			52			52	LIN FT	SERVICE CABLE, 3 CONDUCTOR NO. 8 AWG		
632				1	1			2			2	EACH	POWER SERVICE, AS PER PLAN	136	
632		2						2			2	EACH	CONDUIT RISER, 3 INCH DIA.		
632					10			10			10	EACH	CABLE SUPPORT ASSEMBLY		
632				5.4	19.20			24.6			24.6	CU. YD.	CONCRETE FOR ANCHOR BASE FOUNDATION		
632				1				1			1	EACH	SIGNAL SUPPORT TYPE TC-81.20 DESIGN 4, 37' MAST ARM		
632					8			8			8	EACH	STRAIN POLE TYPE TC-81.10 DESIGN 5, 26 FEET, AS PER PLAN	137	
632				1				1			1	EACH	REMOVAL OF SIGNAL SUPPORT AND REERECTION		
632				1	1			2			2	EACH	MISCELLANEOUS TRAFFIC SIGNAL ITEM: REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN	136	
633				1	1			2			2	EACH	CONTROLLER ITEM, MISC: TRANSCEIVER INTERFACE		
633				1	1			2			2	EACH	CONTROLLER, ACTUATED, 8 PHASE, SOLID STATE DIGITAL MICROPROCESSOR, AS PER PLAN	137	
633		05	05	1.85	1.85			4.7			4.7	CU. YD.	CONCRETE FOR CABINET FOUNDATION		
633				12.5	11			23.5			24	SQ. FT.	CONTROLLER WORK PAD		
608		22	11					33			33	SQ. FT.	4" CONCRETE WALK		
632		2	1					3			3	EACH	SIGNALIZATION, MISC: BI-DIRECTIONAL, AMPLIFIER AUTOMATIC LEVEL CONTROL, CABINET MOUNTED, TYPE II		
632								3			3	EACH	SIGNALIZATION, MISC: AMPLIFIER CABINET TYPE I, TRANSFORMER BASE		
632		2	2	1				2			2	EACH	SIGNALIZATION, MISC: BRIDGE STANDOFF	137	
632		30						30			30	EACH	SIGNALIZATION, MISC: PIPE SUPPORT BRACKET	137	

  
 David J. Lepisto

# TRAFFIC CONTROL NOTES

CALC. BY: WDL DATE: 2-7-89	FRANKLIN COUNTY	OHIO
CALC. BY: DJL DATE: 2-7-89	FRA-670-1.25-C-2	FWHA REGION 5
		FEDERAL PROJECT

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## MAINTENANCE OF TRAFFIC SIGNAL/FLASHER INSTALLATIONS

### SCOPE

THESE NOTES ARE SPECIFICATIONS TO SUPPLEMENT THE STATE OF OHIO CONSTRUCTION AND MATERIAL SPECIFICATIONS AND THE SUPPLEMENTAL SPECIFICATIONS NOTED ON THE TITLE SHEET. THE WORK TO BE PERFORMED BY THE CONTRACTOR IN CONNECTION WITH THE TRAFFIC CONTROL DEVICES OF THIS PROJECT CONSIST OF FURNISHING LABOR, SUPPLIES, EQUIPMENT, MATERIALS AND PERFORMING ALL OPERATIONS NECESSARY FOR THE ACCEPTABLE INSTALLATION OF THE TRAFFIC CONTROL DEVICES, IN STRICT ACCORDANCE WITH THESE PLANS, NOTES AND SPECIFICATIONS. THESE NOTES, SCHEDULES AND DRAWINGS ARE INTENDED TO PROVIDE FOR ALL MATERIAL AND LABOR REQUIRED TO FURNISH AND INSTALL A COMPLETE TRAFFIC CONTROL SYSTEM.

### TRAFFIC CONTROL STANDARD CONSTRUCTION DRAWINGS

REFERENCES TO SUPPLEMENTAL SPECIFICATIONS 857, 858, 861, 957, 958, AND 961 ON THE TRAFFIC CONTROL STANDARD CONSTRUCTION DRAWINGS IN THESE PLANS SHALL BE CONSIDERED TO READ AS RESPECTIVE REFERENCES TO ITEMS 630, 631, 633, 730, 731 AND 733. REFERENCES TO ITEM 608 4" CONCRETE WALK FOR CONTROLLER WORK PADS SHALL BE CONSIDERED TO READ AS REFERENCES TO ITEM 633 CONTROLLER WORK PAD. REFERENCES TO STANDARD CONSTRUCTION DRAWING HL-2 SHALL BE CONSIDERED TO READ AS REFERENCE TO STANDARD CONSTRUCTION DRAWING HL-10.12.

### UNDERGROUND UTILITIES

THE LOCATIONS OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS OF THE UTILITY AS REQUIRED BY SECTION 153.64 ORC.

### NOTIFICATION TO THE CITY

THE CONTRACTOR SHALL NOTIFY IN WRITING THE ENGINEER, WITH A COPY TO THE SERVICE DIRECTOR OF THE CITY, OF HIS INTENTIONS TO PROCEED WITH WORK ON THIS PROJECT. THIS NOTIFICATION SHALL OCCUR NOT LESS THAN TWO (2) WEEKS NOR MORE THAN THREE (3) WEEKS IN ADVANCE OF STARTING WORK.

THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH A COPY TO THE SERVICE DIRECTOR OF THE CITY WITH A WEEKLY WORK SCHEDULE INDICATING THE LOCATION AND DESCRIPTION OF WORK TO BE PERFORMED, EQUIPMENT AND MATERIAL TO BE USED AND THE APPROXIMATE NUMBER OF MEN TO BE WORKING. THIS SCHEDULE SHALL BE SUBMITTED ON THE THURSDAY PRECEDING THE WEEK FOR WHICH THE SCHEDULE APPLIES.

THE SERVICE DIRECTOR OF THE CITY SHALL BE NOTIFIED THREE (3) DAYS PRIOR TO THE CONTRACTOR TURNING ON NEWLY INSTALLED EQUIPMENT.

### 632 POWER SERVICE, AS PER PLAN

THE CONTRACTOR SHALL INSTALL THE POWER CABLE ACCORDING TO THE PLAN, EXCEPT THAT A METER-BASE IS NOT REQUIRED AND THAT A DISCONNECT SWITCH SHALL NOT BE USED WHEN THE CONTROLLER CABINET IS POLE MOUNTED. WHEN THE CONTROLLER CABLE SHALL BE ROUTED INSIDE THE POLE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING THE ARRANGEMENTS FOR THE POWER HOOKUP, AT ALL INTERSECTIONS OF CLENTANGY LIVER ROAD WITH GOODALE AVENUE AND GOODALE AVENUE WITH RAMPS OC & OF, WITH COLUMBUS AND SOUTHERN OHIO ELECTRIC COMPANY. POWER SUPPLIED SHALL BE 120 VOLTS.

### 632 AND 633 WORKING DRAWINGS

IN ADDITION TO THE REQUIREMENTS OF THE 632.03 AND 633.04, THE CONTRACTOR SHALL SUBMIT ONE ADDITIONAL COPY (TOTAL NINE) OF ALL SHOP DRAWINGS, CATALOG CUTS, SPECIFICATIONS, BROCHURES, DATA SHEETS, ETC., OF ALL TRAFFIC SIGNAL EQUIPMENT AND SIGNAL CONTROLLERS. THE CONTRACTOR SHALL SUBMIT THIS ADDITIONAL COPY DIRECTLY TO THE CITY, ATTENTION DIVISION OF TRAFFIC ENGINEERING. ANY COMMENTS RESULTING FROM THE DIVISION OF TRAFFIC ENGINEERING'S REVIEW OF THIS MATERIAL WILL BE FORWARDED DIRECTLY TO THE ENGINEER OF CONSTRUCTION, OHIO DEPARTMENT OF TRANSPORTATION.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TRAFFIC SIGNAL/FLASHER INSTALLATIONS WITHIN THE PROJECT UNDER THE FOLLOWING CONDITIONS:

- A) NEW OR REUSED SIGNAL/FLASHER INSTALLATIONS OR DEVICES, INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF THESE FROM THE TIME OF INSTALLATION UNTIL THE WORK IS ACCEPTED.
- B) THE CONTRACTOR SHALL BE RESPONSIBLE FOR NEW OR REUSED SIGNAL / FLASHER INSTALLATIONS OR DEVICES INSTALLED, AND THE MAINTENANCE OF THESE FROM THE TIME OF INSTALLATION UNTIL THE WORK IS ACCEPTED.

THE CONTRACTOR SHALL CORRECT WITHIN 4 HOURS ALL OUTAGES OR MALFUNCTIONS. HE SHALL PROVIDE THE STATE, ENGINEER AND THE CITY SERVICE DIRECTOR SUCH ADDRESSES AND PHONE NUMBERS WHERE HIS MAINTENANCE FORCES CAN BE CONTACTED. THE CONTRACTOR SHALL PROVIDE ONE OR MORE PERSONS TO RECEIVE ALL CALLS AND DISPATCH THE NECESSARY MAINTENANCE FORCES TO CORRECT OUTAGES. SUCH A PERSON OR PERSONS MAY BE USED TO PERFORM OTHER DUTIES AS LONG AS PROMPT ATTENTION IS GIVEN TO THESE CALLS AND A PERSON IS READILY AVAILABLE CONTINUOUSLY 24 HOURS A DAY. 7 DAYS A WEEK. ALL LAMP OUTAGES, CABLE OUTAGES, ELECTRICAL FAILURES, EQUIPMENT MALFUNCTIONS AND MISALIGNED SIGNAL HEADS SHALL BE CORRECTED TO THE SATISFACTION OF THE STATE, ENGINEER AND THE CITY SERVICE DIRECTOR WITH THE SIGNAL BACK TO SERVICE WITHIN FOUR HOURS AFTER THE CONTRACTOR HAS BEEN NOTIFIED OF THE OUTAGE.

IN THE EVENT NEW SIGNALS ARE DAMAGED PRIOR TO ACCEPTANCE ALL DAMAGED EQUIPMENT EXCEPT POLES AND CONTROL EQUIPMENT SHALL BE REPLACED BY THE CONTRACTOR TO THE SATISFACTION OF THE STATE, ENGINEER AND THE CITY SERVICE DIRECTOR WITH THE SIGNAL BACK IN SERVICE WITHIN 8 HOURS AFTER THE CONTRACTOR'S NOTIFICATION OF THE OUTAGE.

IF POLES AND/OR CONTROL EQUIPMENT ARE DAMAGED AND MUST BE REPLACED, THE CONTRACTOR SHALL MAKE TEMPORARY REPAIRS AS NECESSARY TO BRING THE SIGNAL BACK INTO FULL OPERATION WITHIN THE ALLOWED 8-HOUR PERIOD, AND SHALL MAKE PERMANENT REPAIRS OR REPLACEMENT AS SOON THEREAFTER AS POSSIBLE.

NONE OF THE ABOVE SHALL BE CONSTRUED AS COLLECTIVE OR CONSECUTIVE OUTAGE TIME PERIODS AT ANY ONE LOCATION. THAT IS, WHERE MORE THAN ONE OUTAGE OCCURS AT ANY ONE LOCATION, THEN THE ALLOTTED TIME LIMIT SHALL BE FOR THE WORST SINGLE OUTAGE.

WHERE OUTAGES ARE THE DIRECT RESULT OF A VEHICLE ACCIDENT THE RESPONSE OF THE CONTRACTOR SHALL BE AS OUTLINED ABOVE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COLLECTION OF ANY COMPENSATION FOR THIS WORK FROM THOSE PARTIES RESPONSIBLE FOR THE DAMAGE.

WHERE THE CONTRACTOR HAS FAILED TO OR CANNOT RESPOND TO AN OUTAGE OR SIGNAL EQUIPMENT MALFUNCTION, AT THESE LOCATIONS WITHIN HIS RESPONSIBILITY, WITHIN PERIODS AS SPECIFIED ABOVE, THE ENGINEER MAY INVOKE THE PROVISIONS OF SECTION 105.15 AND ANY SUBSEQUENT BILLINGS TO THE CITY OF COLUMBUS FOR POLICE SERVICES AND MAINTENANCE SERVICE BY CITY FORCES SHALL BE DEDUCTED FROM MONIES DUE OR TO BECOME DUE THE CONTRACTOR IN ACCORDANCE WITH PROVISIONS OF SECTION 105.15.

THE CONTRACTOR SHALL PROVIDE THE MAINTENANCE SERVICE ENTIRELY WITH HIS FORCES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO ANY TRAFFIC SIGNAL COMPONENTS REQUIRED TO BE HANDLED DURING THE RELOCATION OF POLES AND REVISIONS TO THE SIGNAL SYSTEM.

WHEN A TRAFFIC SIGNAL MUST BE TAKEN OUT OF SERVICE BY THE CONTRACTOR, DUE TO CONSTRUCTION PROCEDURES, THIS OUTAGE SHALL NOT EXCEED 4 HOURS AND SHALL NOT INCLUDE THE HOURS OF 7:00 A.M. TO 7:00 P.M.. ANY SIGNALIZED INTERSECTION, WHERE THE SIGNAL IS OUT OF SERVICE DUE TO CONSTRUCTION PROCEDURES, OR DUE TO AN OUTAGE OR MALFUNCTION OF EQUIPMENT AS DESCRIBED ABOVE, SHALL BE PROTECTED, BY THE CONTRACTOR BY THE INSTALLATION OF "STOP" SIGNS.

ANY VEHICULAR TRAFFIC SIGNAL HEAD, EITHER NEW OR EXISTING WHICH WILL BE OUT OF OPERATION SHALL BE COVERED IN THE MANNER DESCRIBED IN 632.24.

ALL COSTS RESULTING FROM THE ABOVE REQUIREMENTS SHALL BE CONSIDERED TO BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614, MAINTAINING TRAFFIC.

## GUARANTEE

THE CONTRACTOR SHALL GUARANTEE THAT THE TRAFFIC CONTROL SYSTEM INSTALLED AS PART OF THIS CONTRACT SHALL OPERATE SATISFACTORILY FOR A PERIOD OF 180 DAYS FOLLOWING COMPLETION OF THE 10-DAY PERFORMANCE TEST. IN THE EVENT OF UNSATISFACTORY OPERATION, THE CONTRACTOR SHALL CORRECT FAULTY INSTALLATIONS, MAKE REPAIRS AND REPLACE DEFECTIVE PARTS WITH NEW PARTS OF EQUAL OR BETTER QUALITY. EQUIPMENT, MATERIAL AND LABOR COSTS INCURRED IN CORRECTING AN UNSATISFACTORY OPERATION SHALL BE BORNE BY THE CONTRACTOR.

THE GUARANTEE SHALL COVER THE FOLLOWING ITEMS OF THE TRAFFIC CONTROL SYSTEM: CONTROLLERS AND ASSOCIATED EQUIPMENT, DETECTOR UNITS, INTERCONNECTION ITEMS AND MASTER CONTROL EQUIPMENT.

CUSTOMARY MANUFACTURER'S GUARANTEES FOR THE FOREGOING ITEMS SHALL BE TURNED OVER TO THE ENGINEER OR THE MAINTAINING AGENCY FOLLOWING ACCEPTANCE OF THE EQUIPMENT.

THE COST OF GUARANTEEING THE TRAFFIC CONTROL SYSTEM WILL BE INCIDENTAL TO AND INCLUDED IN THE CONTRACT UNIT PRICE OF THE VARIOUS ITEMS MAKING UP THE SYSTEM.

### 632 REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN

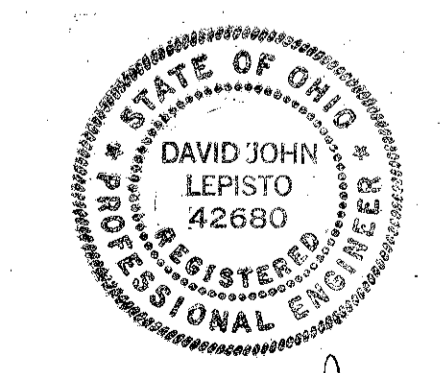
THIS ITEM OF WORK SHALL CONSIST OF THE REMOVAL OF TRAFFIC SIGNAL HEADS, CONTROLLER WITH CABINET, MESSENGER WIRE, CONDUIT RISERS, POLES AND ALL OTHER PORTIONS OF THE EXISTING TRAFFIC SIGNAL INSTALLATION.

WITH THE EXCEPTION OF ITEMS WHOSE REMOVAL IS NECESSARY TO PERMIT THE INSTALLATION OF THE NEW SIGNAL EQUIPMENT, NO ITEM SHALL BE REMOVED UNTIL THE NEW INSTALLATION IS IN FULL OPERATION, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL MAKE ARRANGEMENTS WITH THE COLUMBUS AND SOUTHERN ELECTRIC COMPANY TO DISCONNECT THE EXISTING POWER SERVICE BEFORE THE EXISTING SIGNAL INSTALLATION IS REMOVED.

SOME OF THE REMOVED ITEMS SHALL BECOME THE PROPERTY OF THE CONTRACTOR WHO SHALL PROPERLY DISPOSE OF THEM. OTHER REMOVED ITEMS SHALL BE STORED ON THE PROJECT FOR SALVAGE BY THE CITY OF COLUMBUS AND SHALL REMAIN THE PROPERTY OF THE CITY OF COLUMBUS. POLES SHALL BE REMOVED WITHOUT BURNING; CONCRETE SHALL BE REMOVED FROM THE BOTTOM OF POLES.

DESCRIPTION OF ITEMS TO BE REMOVED BY THE CONTRACTOR	ITEMS TO BE STORED FOR THE CITY OF COLUMBUS	ITEMS TO BE DISPOSED OF BY THE CONTRACTOR
ALL CONTROLLERS W/ CABINETS AND ACCESSORIES	X	
ALL SIGNAL HEADS	X	
MESSENGER WIRE AND SIGNAL CABLE		X
EXISTING STRAIN POLES	X	



*David J. Lepisto*

# TRAFFIC CONTROL NOTES

CALC. BY: WDL DATE: 2/7/89	FRANKLIN COUNTY	OHIO
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		FEDERAL PROJECT

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632 VEHICULAR SIGNAL HEAD, 3,4 OR 5 SECTION, 12" LENS 1 WAY, AS PER PLAN

SECTION 732.01 OF THE SPECIFICATIONS IS MODIFIED FOR THIS PROJECT AS FOLLOWS:

- A) ALL SIGNAL HEADS SHALL HAVE CUTAWAY VISORS.
- B) ALL LENSES SHALL BE GLASS.
- C) THE BOTTOM OF THE LOWEST HEAD SHALL BE A MINIMUM OF 15 FEET, 6 INCHES ABOVE THE PAVEMENT SURFACE.

632 ANCHOR BASE FOUNDATIONS

EACH STRAIN POLE FOUNDATION SHALL HAVE A MINIMUM OF ONE (1) CONDUIT ELLS, 2 INCHES IN DIAMETER. THE ORIENTATION OF THE CONDUIT ELLS SHALL BE 180 DEGREES APART AND PARALLEL TO THE CENTER LINE OF GOODALE AVENUE. ANY UNUSED CONDUIT ELL SHALL BE CAPPED AND SEALED AT BOTH ENDS.

632 STRAIN POLE, AS PER PLAN

EACH STRAIN POLE SHALL HAVE A WEATHERHEAD WITH A 2 INCH MINIMUM DIAMETER. THE WEATHERHEAD SHALL BE LOCATED ON THE SAME SIDE OF THE STRAIN POLE AS THE SIGNAL HEAD MESSENGER WIRE AND PREFERABLY ABOVE THE MESSENGER WIRE.

632 LOOP DETECTOR UNIT, 2 CHANNEL, DELAY AND EXTENSION TYPE

IN LIEU OF 722.07, LOOP DETECTOR UNITS SHALL ABIDE BY THE CITY OF COLUMBUS SPECIFICATIONS.

632 INTERCONNECT CABLE, COAXIAL, .500 INCH, P III UNDERGROUND TRUNK

THE CONTRACTOR SHALL INSTALL A COAXIAL, .500 INCH P III UNDERGROUND TRUNK INTERCONNECT SYSTEM IN ACCORDANCE WITH DESIGN PLANS. THE COAXIAL CABLE SYSTEM SHALL BE INSTALLED IN CITY OWNED OR CONTRACTOR INSTALLED UNDERGROUND CONDUIT AND SHALL INCLUDE THE FOLLOWING ITEMS: MESSENGER WIRE, BRIDGE STANDOFF, PIPE SUPPORT BRACKET, CONDUIT, TRENCH, RISER GROUND ROD, PULL BOX, AMPLIFIER AND CABINET AS SHOWN IN THE PLANS. ALL ITEMS SHALL ABIDE BY THE CITY OF COLUMBUS SPECIFICATIONS DATED MARCH 8, 1993.

633 CONTROLLER, ACTUATED, 8 PHASE, SOLID STATE DIGITAL MICROPROCESSOR, AS PER PLAN

THIS WORK SHALL CONSIST OF FURNISHING AND INSTALLING TRAFFIC SIGNAL CONTROL EQUIPMENT INCLUDING: CONTROLLER, CABINET AND AUXILIARY EQUIPMENT AS SET FORTH IN THE CITY OF COLUMBUS SPECIFICATIONS DATED MARCH 8, 1993.

632 PEDESTRIAN SIGNAL HEAD, AS PER PLAN

THE CONTRACTOR SHALL INSTALL ONLY THE PEDESTRIAN SIGNAL HEADS PROVIDED BY THE CITY OF COLUMBUS AT THE LOCATIONS SHOWN IN THE PLANS. PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS, TOOLS, EQUIPMENT AND OTHER INCIDENTALS NECESSARY FOR EACH ITEM FURNISHED, IN PLACE, ALL CONNECTIONS MADE AND WIRING COMPLETED, TESTED AND ACCEPTED.

625 CONDUIT, 2" OR 3", 713.07, AS PER PLAN

ALL CONDUIT USED IN THIS PROJECT SHALL BE TYPE "DB" AND SHALL ABIDE BY ALL REQUIREMENTS AS SET FORTH BY 625 AND 713.07.

632 BI-DIRECTIONAL AMPLIFIER, AUTOMATIC LEVEL CONTROL, CABINET MOUNTED, TYPE II

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING AND INSTALLING BI-DIRECTIONAL AMPLIFIER, AUTOMATIC LEVEL CONTROL, CABINET MOUNTED, TYPE II, AS SET FORTH IN THE CITY OF COLUMBUS SPECIFICATIONS DATED MARCH 8, 1993.

632 AMPLIFIER CABINET TYPE I, TRANSFORMER BASE

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING AND INSTALLING AMPLIFIER CABINET TYPE I, TRANSFORMER BASE, AS SET FORTH IN THE CITY OF COLUMBUS SPECIFICATIONS DATED MARCH 8, 1993.

632 BRIDGE STANDOFF

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING AND INSTALLING BRIDGE STANDOFF, AS SET FORTH IN THE CITY OF COLUMBUS SPECIFICATIONS DATED MARCH 8, 1993.

632 PIPE SUPPORT BRACKET

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING AND INSTALLING PIPE SUPPORT BRACKETS, AS SET FORTH IN THE PLANS AND THE CITY OF COLUMBUS SPECIFICATIONS DATED MARCH 8, 1993.

632 REMOVAL OF SIGNAL SUPPORT AND REERECTION

THIS ITEM OF WORK SHALL CONSIST OF THE REMOVAL AND REERECTION OF SIGNAL SUPPORT P1 AT THE INTERSECTION OF GOODALE AND OLENTANGY RIVER ROAD. THE CONTRACTOR SHALL DISCONNECT THE EXISTING SIGNAL CABLE BEFORE THE EXISTING SIGNALS ARE REMOVED.

633 CONTROLLER WORK PAD

A QUANTITY OF 4" CONCRETE WALK IS INCLUDED FOR USE AS DIRECTED BY THE ENGINEER. THIS IS TO PROVIDE PLATFORMS ADJACENT TO BASE MOUNTED CABINETS IN UNPAVED AREAS, FROM WHICH SIGNAL MAINTENANCE PERSONNEL CAN CONVENIENTLY REACH THE SIGNAL EQUIPMENT FOR SERVICE

625 TRENCH

TRENCHING WILL BE MEASURED IN ACCORDANCE WITH 625.24. PAYMENT WILL BE AT THE CONTRACT UNIT PRICE PER LINEAR FOOT FOR 625 TRENCH AND SHALL BE FULL COMPENSATION FOR LABOR, EQUIPMENT, TOOLS, MATERIAL AND INCIDENTALS NECESSARY TO PERFORM THE WORK INCLUDING BACKFILLING AND SURFACE RESTORATION.

GENERAL REQUIREMENT

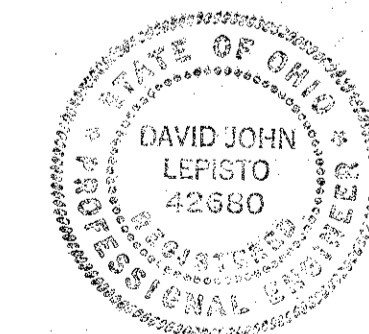
THE CITY OF COLUMBUS, DIVISION OF TRAFFIC ENGINEERING, WILL NOT ACCEPT THE SIGNAL EQUIPMENT UNTIL ALL SIGNAL RELATED WORK IS ONE HUNDRED PERCENT (100 %) COMPLETE AND CONFORMS TO ALL SPECIFICATIONS. DIVISION OF TRAFFIC ENGINEERING PERSONNEL WILL INSPECT THE SIGNAL WORK PRIOR TO ACCEPTANCE. THE CONTRACTOR OR THE PROJECT ENGINEER SHALL NOTIFY THE SYSTEMS ENGINEER IN WRITING THAT THE SIGNAL INSTALLATION IS 100 % COMPLETE AND READY TO BE INSPECTED. NOTIFY THE SYSTEMS ENGINEER AT THE DIVISION OF TRAFFIC ENGINEERING, 109 N. FRONT STREET, COLUMBUS, OHIO 43215.

633 TRANSCEIVER INTERFACE

THIS COMMUNICATIO UNIT WILL BE SUPPLIED BY THE CITY OF COLUMBUS, DIVISION OF TRAFFIC ENGINEERING. CONTACT THE SYSTEMS ENGINEER AT 645-7790 WHEN COAXIAL CABLE SYSTEM IS COMPLETE AND INTERSECTIONS ARE READY TO BRING ON LINE WITH COMPUTER. SYSTEM OPERATION (WITH COMPUTER) WILL BE TESTED AS PART OF THE TEST PROCEDURE PER CITY OF COLUMBUS SPECIFICATIONS DATED MARCH 8, 1993.

COOPERATION NOTE

POLE INSTALLATION AND ASSOCIATED WORK NEEDED TO MAKE SIGNAL HEADS ON POLE P2 OPERATIONAL WILL NEED TO TAKE PLACE IN THE FIRST SIX MONTHS OF CONSTRUCTION AND SHALL BE COORDINATED WITH CONSTRUCTION ON FRA-GOODALE.



*David J. Lepisto*

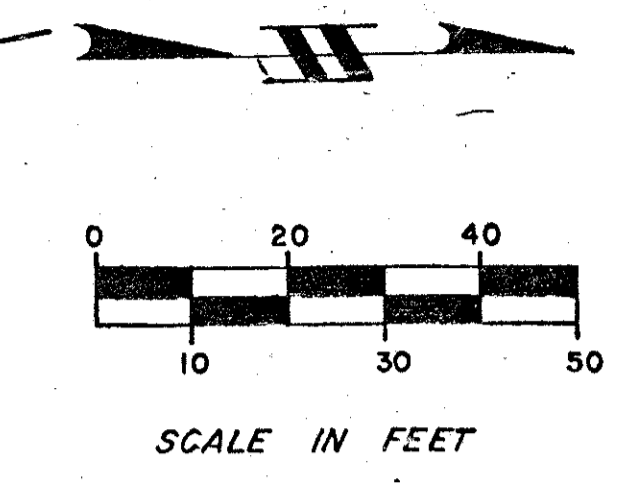
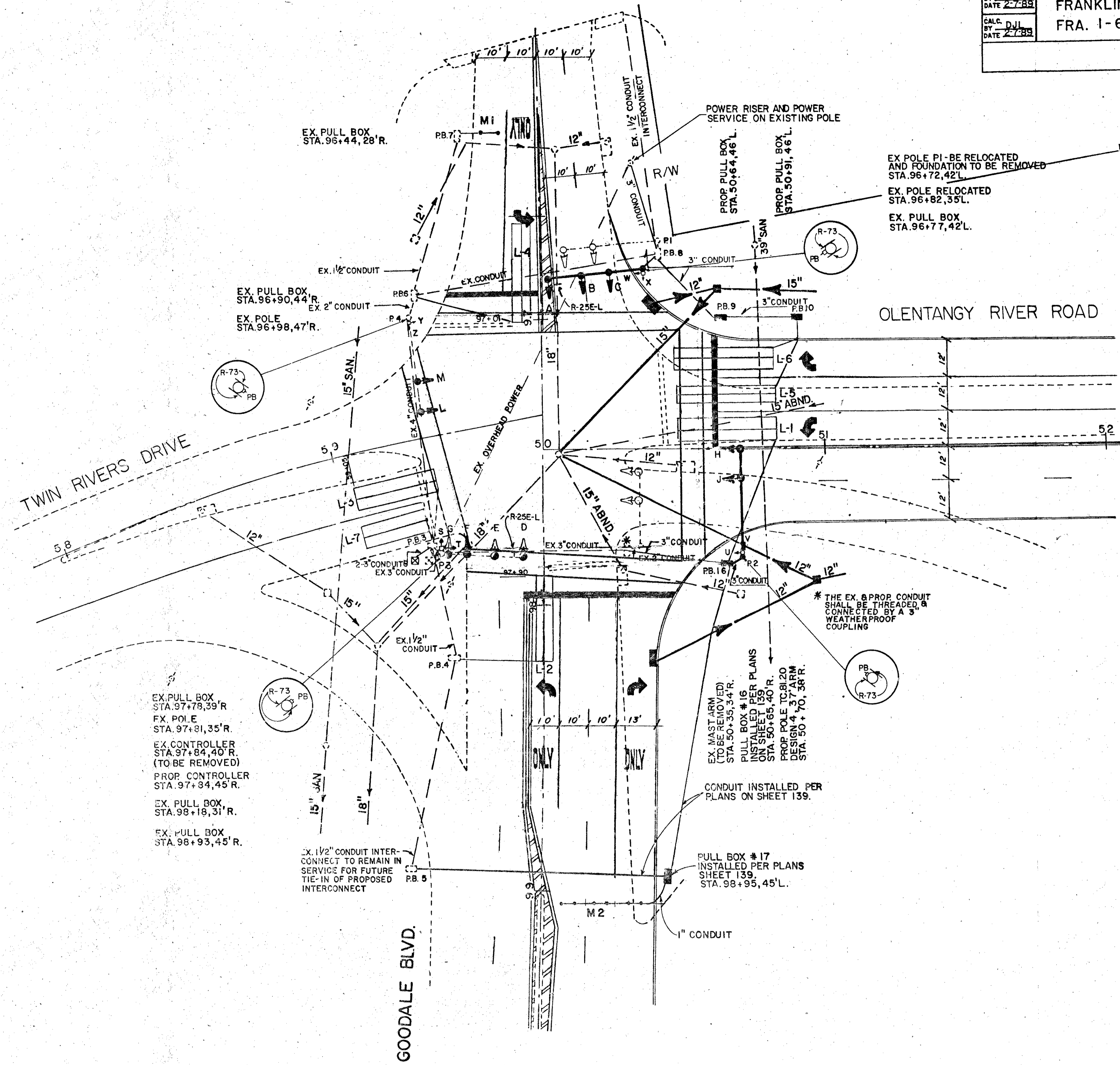
INT. #: 4071 INT. NAME: GOODALE ST AT OLENTANGY RIVER RD/TWIN RIVERS DR  
 TRUNK ID: 5 DROP NUMBER: 121

CICU INPUT CONNECTOR

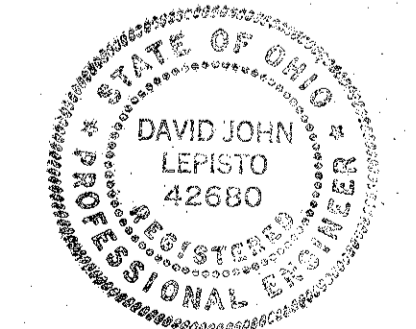
HARNESS PIN	HARNESS FUNCTION	BOX FUNCTION
13	PHASE 1 GREEN	EB LT GREEN (PHASE 1)
8	PHASE 2 GREEN	WB THRU GREEN (PHASE 2)
7	PHASE 3 GREEN	NB LT GREEN (PHASE 3)
6	PHASE 4 GREEN	SB THRU GREEN (PHASE 4)
12	PHASE 5 GREEN	WB LT GREEN (PHASE 5)
11	PHASE 6 GREEN	EB THRU GREEN (PHASE 6)
18	PHASE 7 GREEN	SB LT GREEN (PHASE 4)
3	PHASE 8 GREEN	NB THRU GREEN (PHASE 3)
10	WALK 1 MONITOR	PHASE 3 WALK
16	WALK 2 MONITOR	PHASE 4 WALK
22	PED CALL 1 (SYSTEM DETECTOR 7)	PHASE 3 PED CALL
36	PED CALL 2 (SYSTEM DETECTOR 8)	PHASE 4 PED CALL
4	FLASH	SIGNAL POWER
15	PREEMPT	POLICE MANUAL SWITCH
2	SPECIAL FUNCTION 1 MONITOR	
1	SPECIAL FUNCTION 2 MONITOR	
5	SPECIAL FUNCTION 3 MONITOR	
24	ADDRESS-1	GROUND
25	ADDRESS-2	
30	ADDRESS-4	
31	ADDRESS-8	GROUND
32	ADDRESS-16	GROUND
26	ADDRESS-32	GROUND
27	ADDRESS-64	GROUND
21	ADDRESS-128	GROUND
29	SYSTEM DETECTOR 1	
34	SYSTEM DETECTOR 2	
35	SYSTEM DETECTOR 3	
17	SYSTEM DETECTOR 4	
13	SYSTEM DETECTOR 5	
28	SYSTEM DETECTOR 6	
20	RETURN FOR AC MONITOR	GROUND
23	RETURN FOR NEMP MONITOR	GROUND

CICU OUTPUT CONNECTOR

HARNESS PIN	HARNESS FUNCTION	BOX FUNCTION
21	HOL (COMMON)	GROUND
21	HOL (N.O.)	MAX II (RING 1 & 2) CALL-TO-NONACTUATED I PED RECYCLE (RING 1 & 2)
23	HOLD (COMMON)	GROUND
5	HOLD (N.O.)	PHASES 2 & 6 HOLD
8	FORCE OFF 1 (COMMON)	GROUND
10	FORCE OFF 1 (N.O.)	FORCE OFF 1 (RING 1)
31	FORCE OFF 2 (COMMON)	GROUND
20	FORCE OFF 2 (N.O.)	FORCE OFF 2 (RING 2)
24	CALL ALL (COMMON)	GROUND
30	CALL ALL (N.O.)	PHASES 1, 3, 4 & 5 VEH CALL (DIODE SEPARATE)
12	FLASH (COMMON)	GROUND
4	FLASH (N.O.)	FLASH SYNCHRONIZER
32	SPECIAL FUNCTION 1 (COMMON)	GROUND
26	SPECIAL FUNCTION 1 (N.O.)	
17	SPECIAL FUNCTION 2 (COMMON)	GROUND
11	SPECIAL FUNCTION 2 (N.O.)	
27	SPECIAL FUNCTION 3 (COMMON)	GROUND
9	SPECIAL FUNCTION 3 (N.O.)	
1	AC+	AC+
2	AC-	AC-
3	GROUND	GROUND



NOTE: FOR SIGNAL SUPPORT DETAILS SEE SHEET 143



David J. Lepisto

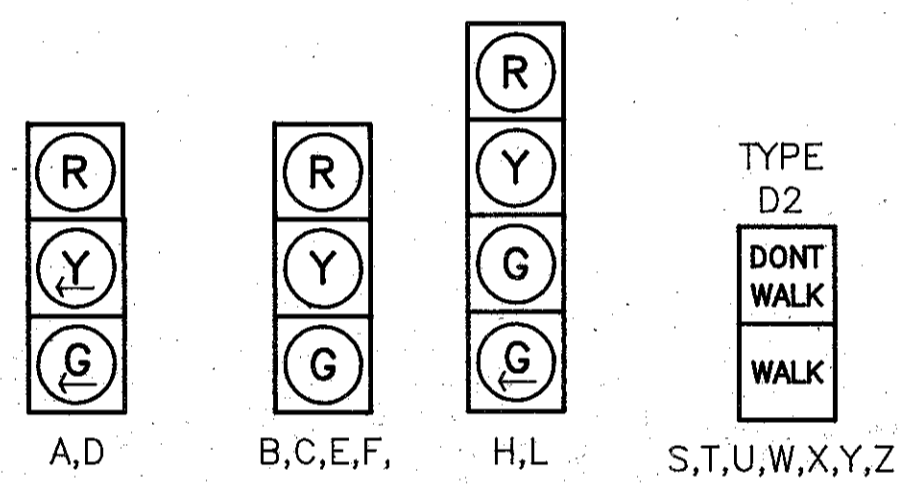


### SIGNAL DISPLAY CHART

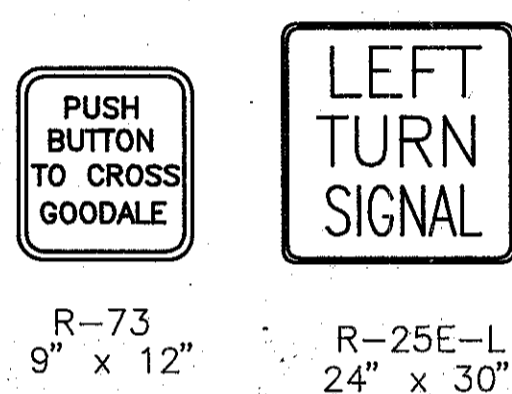
SIGNAL HEAD	ø1 + ø5		ø1 + ø6		ø2 + ø5		ø2 + ø6		ø3		ø4		FLASH
	R/W	CLEAR	R/W	CLEAR	R/W	CLEAR	R/W	CLEAR	R/W	CLEAR	R/W	CLEAR	
A	R	R	R	R	R	R	R	R	R	R	R	R	R
B	R	R	R	R	R	R	R	R	R	R	R	R	R
C	R	R	R	R	R	R	R	R	R	R	R	R	R
D	R	R	R	R	R	R	R	R	R	R	R	R	R
E	R	R	R	R	R	R	R	R	R	R	R	R	R
F	R	R	R	R	R	R	R	R	R	R	R	R	R
G	R	R	R	R	R	R	R	R	R	R	R	R	R
H	R	R	R	R	R	R	R	R	R	R	R	R	R
J	R	R	R	R	R	R	R	R	R	R	R	R	R
L	R	R	R	R	R	R	R	R	R	R	R	R	R
M	R	R	R	R	R	R	R	R	R	R	R	R	R
S	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW
T	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW
U	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW
V	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW
W	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW
X	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW
Y	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW
Z	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW

- NOTES:
- ① REMAINS ← IF ø2 + ø5 NEXT
  - ② REMAINS ← IF ø1 + ø6 NEXT

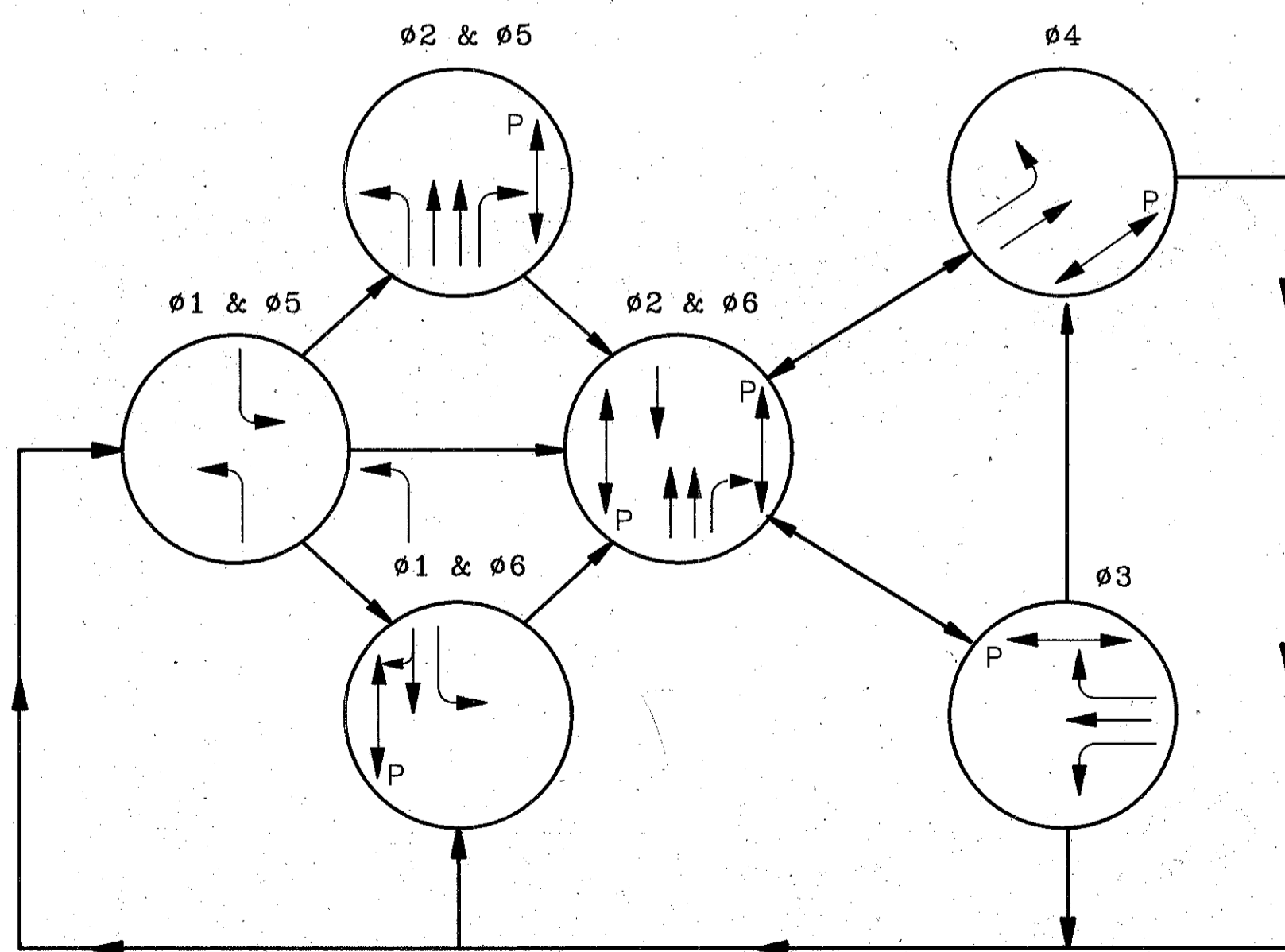
### ALL 12" SIGNAL HEADS



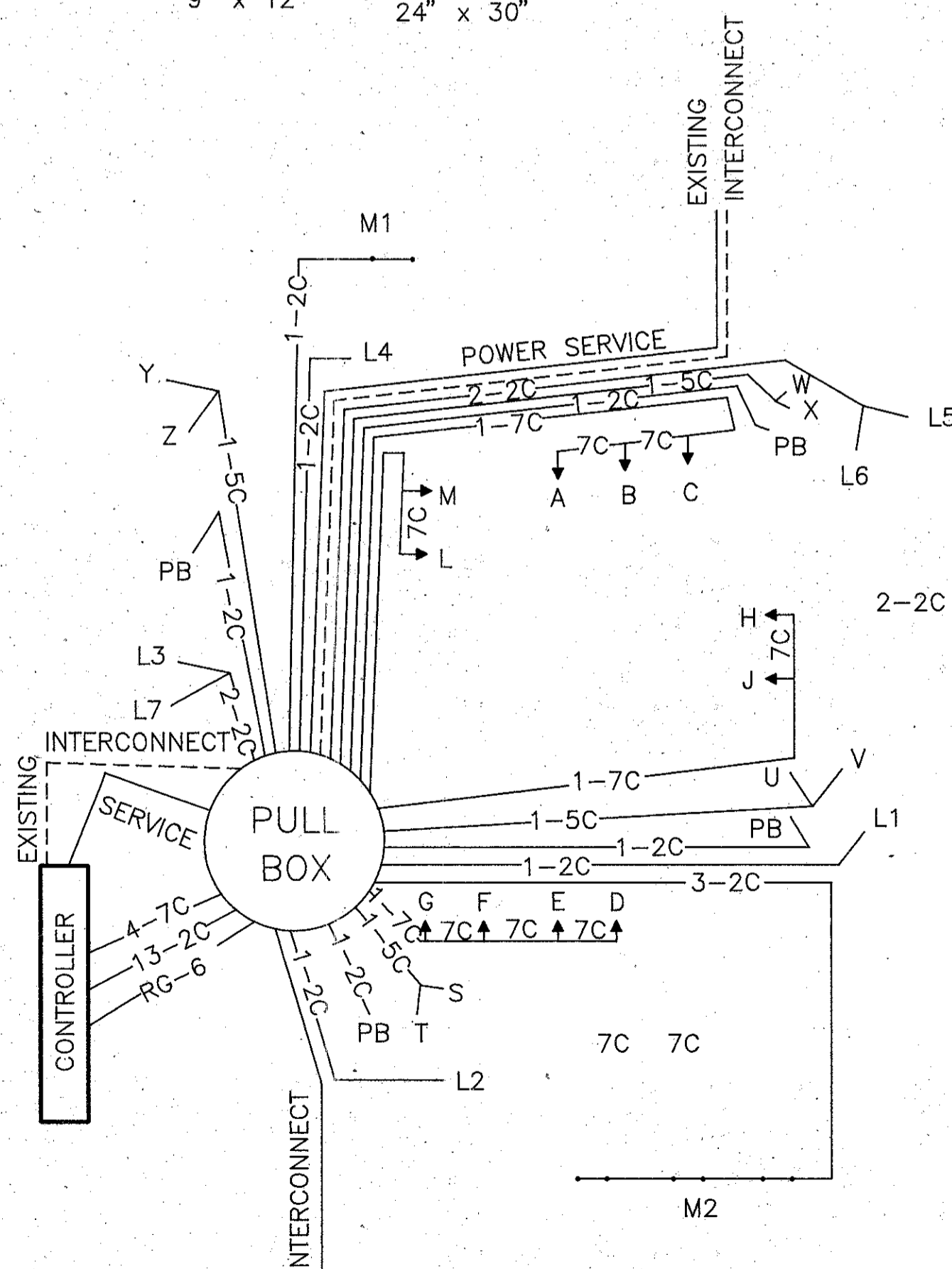
### PROPOSED SIGNS



### PHASING DIAGRAM



### WIRING DIAGRAM



### DETECTOR CHART

LOOP	SIZE	NUMBER OF TURNS	MODE	DELAY (SEC)	UNIT	CHANNEL	PHASE INPUT
L1	4'x4'x35'	2-4-2	PRESENCE	1	2	1	4
L2	3'x3'x30'	2-4-2	PRESENCE	1	3	1	5
L3	4'x4'x35'	2-4-2	PRESENCE	1	4	1	3
L4	3'x3'x30'	2-4-2	PRESENCE	1	3	2	1
L5	3'x3'x30'	2-4-2	PRESENCE	1	2	2	4
L6	4'x4'x35'	2-4-2	PRESENCE	5	5	1	4
L7	4'x4'x23'	2-4-2	PRESENCE	1	4	2	3
M1	MICROLOOP	---	PULSE	---	1	1	6
M2	MICROLOOP	---	PULSE	---	1	2	2

### SIGNAL TIMING

FUNCTION	ø1	ø2	ø3	ø4	ø5	ø6
MOVEMENT	EB.LT.	WB.	NBT&LT	SBT.&LT	WB.LT.	EB.
MINIMUM GREEN	7	24	10	10	7	24
PED WALK		7	7	7		7
PED CLEARANCE		20	20	17		20
GREEN EXTENSION	3.0	3.7	3.7	3.7	3.0	3.7
MAX I GREEN	30	40	40	40	30	40
MAX II GREEN	99	40	99	99	99	40
YELLOW CLEARANCE	4.5	4.5	3.8	3.8	4.5	4.5
ALL RED CLEARANCE	1	1	1	1	1	1
RECALL	NL	PED	NL	NL	NL	PED

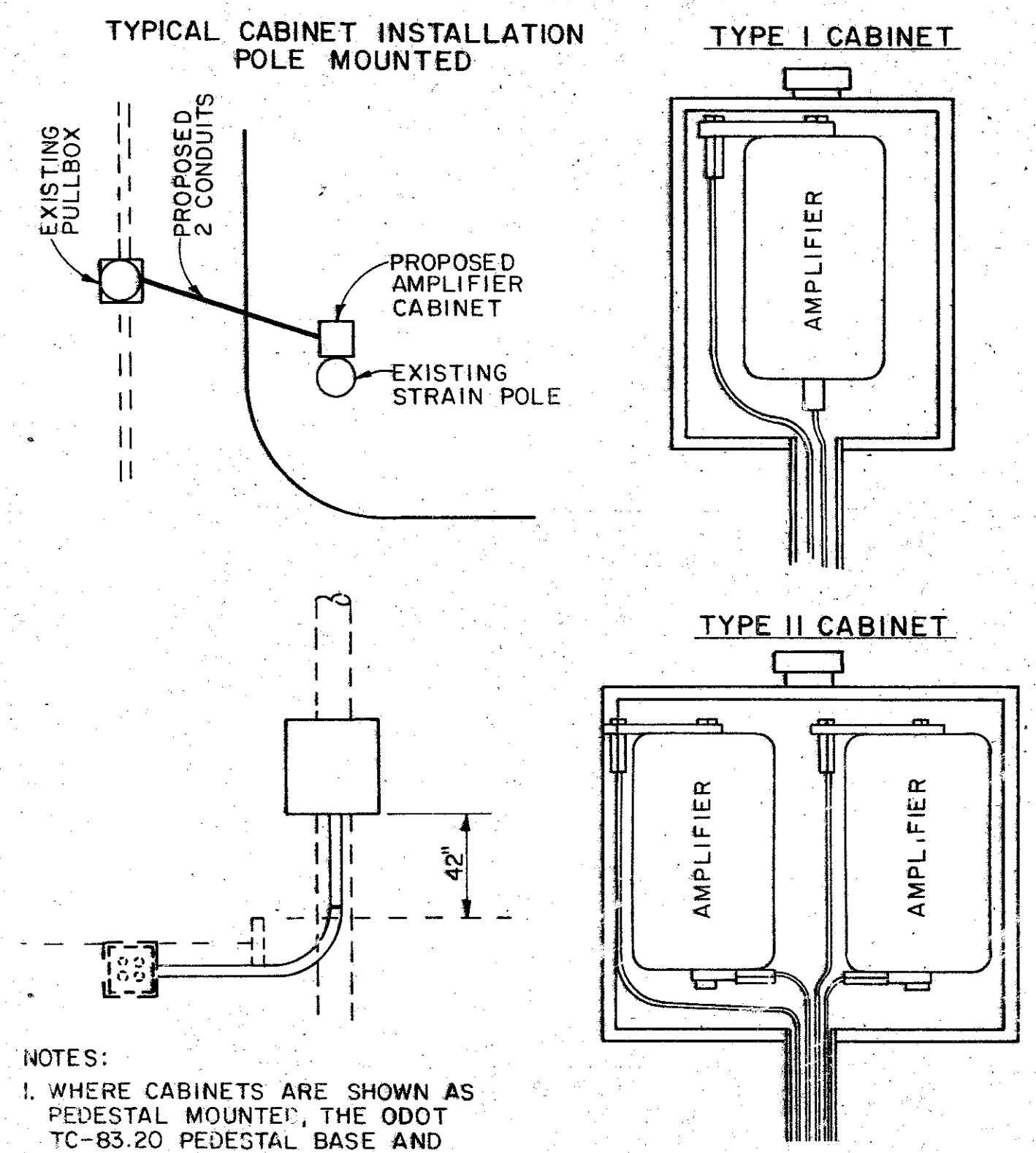
- NOTES:
- ① CNAI SET FOR PHASE 2 & 6
  - ② ø 2 ON OMTS ø 1
  - ③ ø 6 ON OMTS ø 5

### SUB-SUMMARY

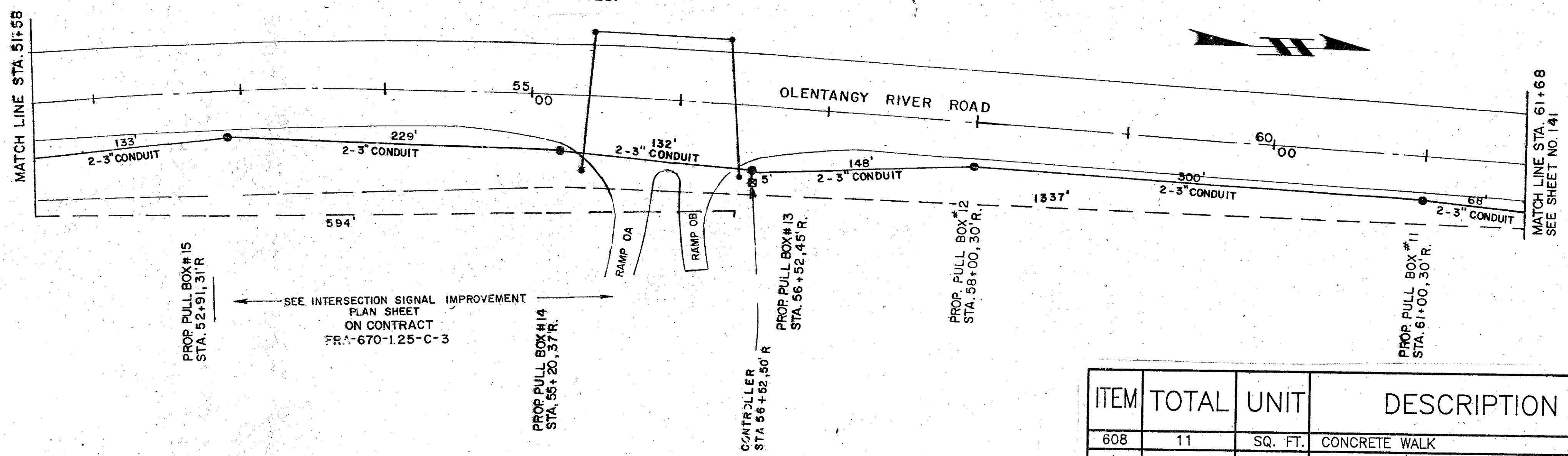
ITEM	TOTAL	UNIT	DESCRIPTION
625	3	EACH	GROUND ROD
625	2	EACH	PULLBOX, 713.08, 18"
625	124	LIN FT	CONDUIT, 3" 713.07, AS PER PLAN
625	116	LIN FT	TRENCH
632	9	EACH	VEHICULAR SIGNAL HEAD, 3 SECT., 12" LENS, 1-WAY, AS PER PLAN
632	2	EACH	VEHICULAR SIGNAL HEAD, 4 SECT., 12" LENS, 1-WAY, AS PER PLAN
632	8	EACH	PEDESTRIAN SIGNAL HEAD, AS PER PLAN
632	4	EACH	PEDESTRIAN PUSHBUTTON, AS PER PLAN
632	5	EACH	LOOP DETECTOR UNIT, 2 CHANNEL DELAY AND EXTENSION TYPE
632	4	EACH	MICROLOOP SENSOR PROBE (2-PROBE SET; 6'-50')
632	727	LIN FT	LOOP DETECTOR PAVEMENT CUTTING
632	5.4	CU YD	CONCRETE FOR ANCHOR BASE FOUNDATIONS
632	1	EACH	SIGNAL SUPPORT, TYPE TC-81.20, DESIGN NO.4, 37' ARM
632	577	LIN FT	SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG
632	843	LIN FT	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG
632	555	LIN FT	SIGNAL CABLE, 2 CONDUCTOR, NO. 14 AWG
632	2460	LIN FT	LOOP DETECTOR WIRE, TYPE E
632	1405	LIN FT	LOOP DETECTOR LEAD-IN CABLE
632	1	EACH	REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN
632	1	EACH	REMOVAL OF SIGNAL SUPPORT AND REERECTION
632	252	LIN FT	POWER CABLE, 2 CONDUCTOR, NO. 8 AWG
632	1	EACH	POWER SERVICE, AS PER PLAN
633	12.5	SQ FT	CONTROLLER WORK PAD
633	1.85	CU YD	CONCRETE FOR CABINET FOUNDATION
633	1	EACH	CONTROLLER, ACTUATED, 8 PHASE
633	1	EACH	SOLID STATE DIGITAL MICROPROCESSOR, AS PER PLAN
633	1	EACH	TRANSCIVER INTERFACE
630	2	EACH	SIGN HANGER ASSEMBLY, MAST ARM
630	10	SQ FT	SIGN, FLAT SHEET, TYPE "G"



**AMPLIFIER CABINETS**

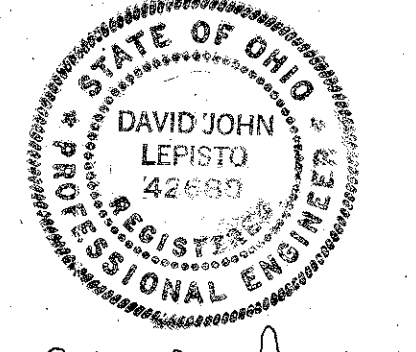
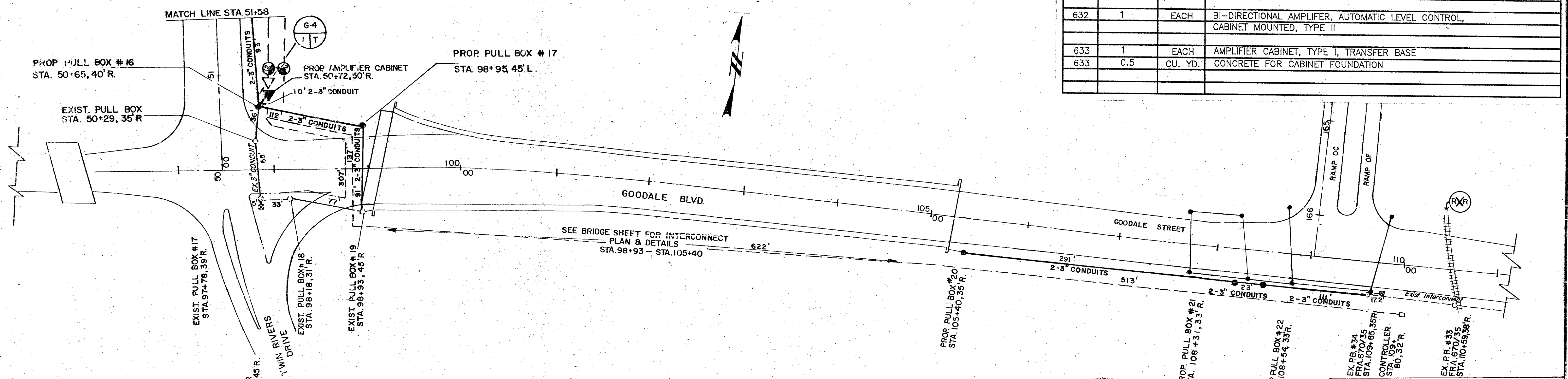


**NOTE:**  
 CONTRACTOR SHALL INSTALL 2-3" CONDUITS IN AREA OF RAMPS OA AND OB AFTER THESE TEMPORARY RAMPS HAVE BEEN REMOVED.



**NOTES:**  
 1. WHERE CABINETS ARE SHOWN AS PEDESTAL MOUNTED, THE ODOT TC-83.20 PEDESTAL BASE AND 4 1/2" STEEL SHAFTS SHALL BE USED.

ITEM	TOTAL	UNIT	DESCRIPTION
608	11	SQ. FT.	CONCRETE WALK
625	1	EACH	GROUND ROD
625	10	EACH	PULLBOX, 713.08, 48", AS PER PLAN
625	3490	LIN FT	CONDUIT, 3", 713.07, AS PER PLAN
625	1745	LIN FT	TRENCH
625	107	LIN. FT.	TRENCH IN PAVED AREA, TYPE A
632	1990	LIN FT	INTERCONNECT CABLE COAXIAL, .500 INCH, P III UNDERGROUND TRUNK,
632	1	EACH	BI-DIRECTIONAL AMPLIFIER, AUTOMATIC LEVEL CONTROL, CABINET MOUNTED, TYPE II
633	1	EACH	AMPLIFIER CABINET, TYPE I, TRANSFER BASE
633	0.5	CU. YD.	CONCRETE FOR CABINET FOUNDATION

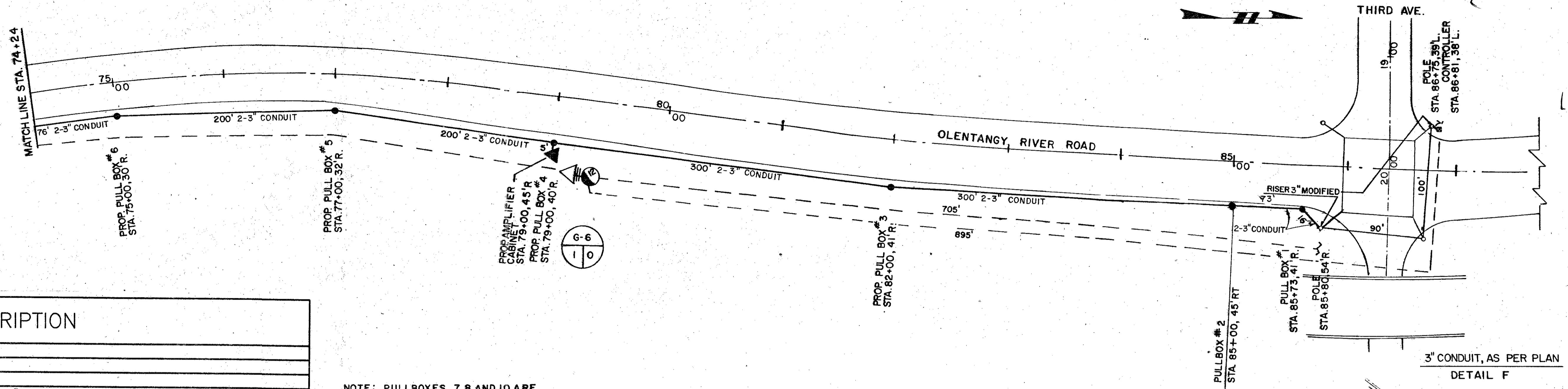


*David J. Lepisto*

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 WILLOUGHBY, OHIO

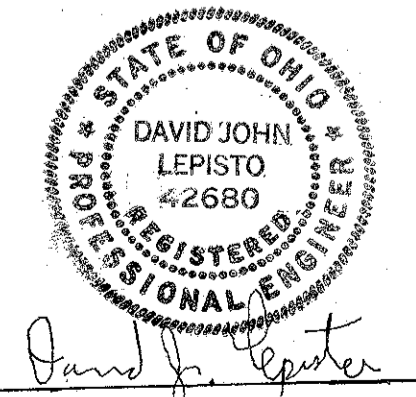
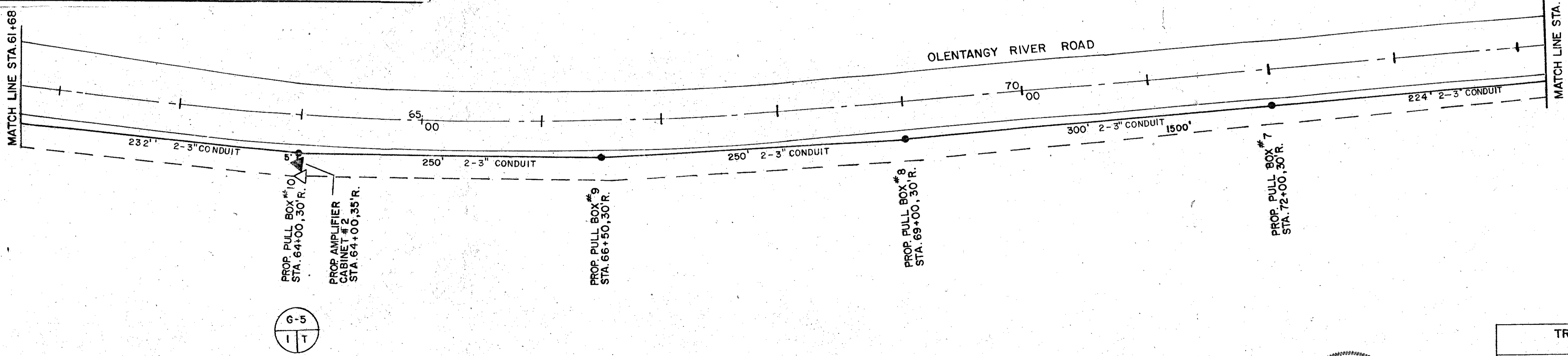
**STATE OF OHIO**  
 DEPARTMENT OF TRANSPORTATION  
**SIGNAL INTERCONNECT**

DESIGNED	DRAWN	TRACED	CHECKED	REVIEW	DATE	REVISED



ITEM	TOTAL	UNIT	DESCRIPTION
608	22	SQ. FT.	CONCRETE WALK
625	2	EACH	GROUND ROD
625	10	EACH	PULLBOX, 713.08, 48", AS PER PLAN
625	4842	LIN FT	CONDUIT, 3", 713.07, AS PER PLAN
625	2421	LIN FT	TRENCH
632	2790	LIN FT	INTERCONNECT CABLE COAXIAL, .500 INCH, P III UNDERGROUND TRUNK,
632	190	LIN FT	MESSENGER WIRE, 7 STRAND, 1/4" DIA. WITH ACCESSORIES
632	2	EACH	CONDUIT RISER, 3 INCH DIA.
632	2	EACH	BI-DIRECTIONAL AMPLIFIER, AUTOMATIC LEVEL CONTROL, CABINET MOUNTED, TYPE II
633	2	EACH	AMPLIFIER CABINET, TYPE I, TRANSFER BASE
633	0.5	CU. YD.	CONCRETE FOR CABINET FOUNDATION

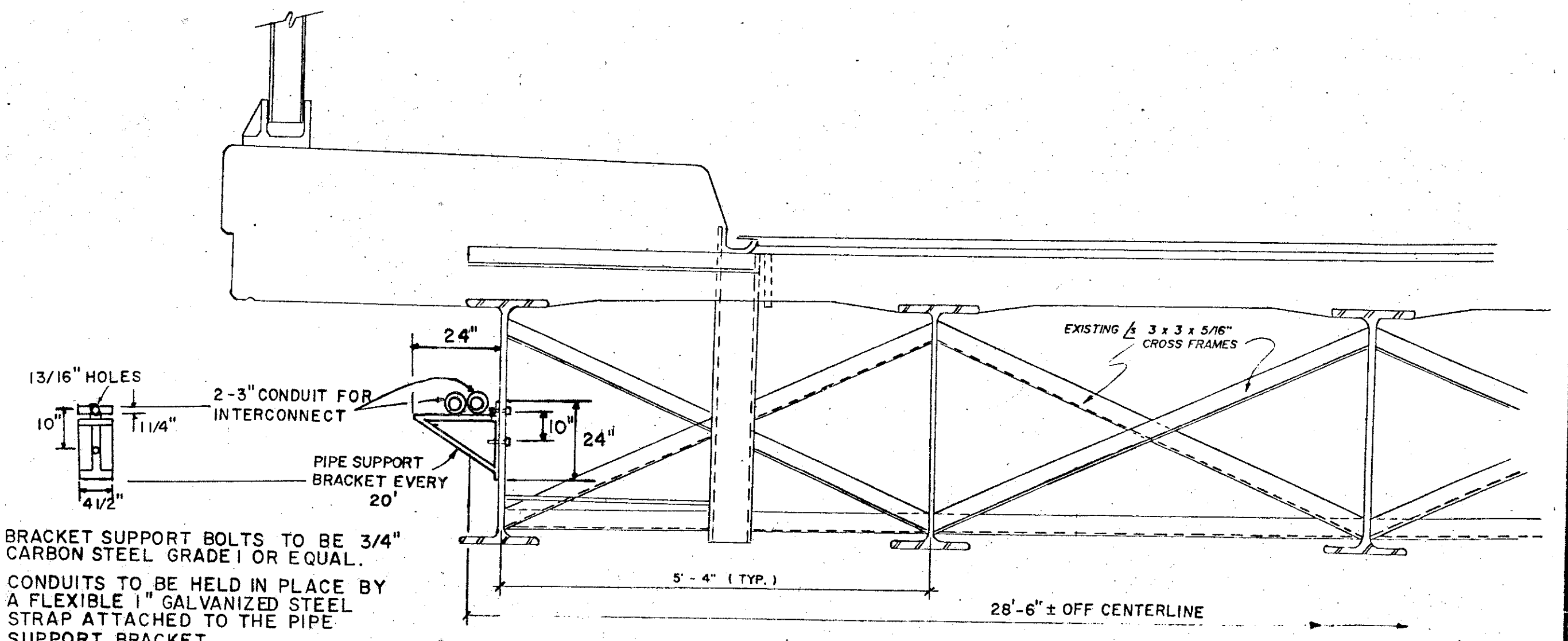
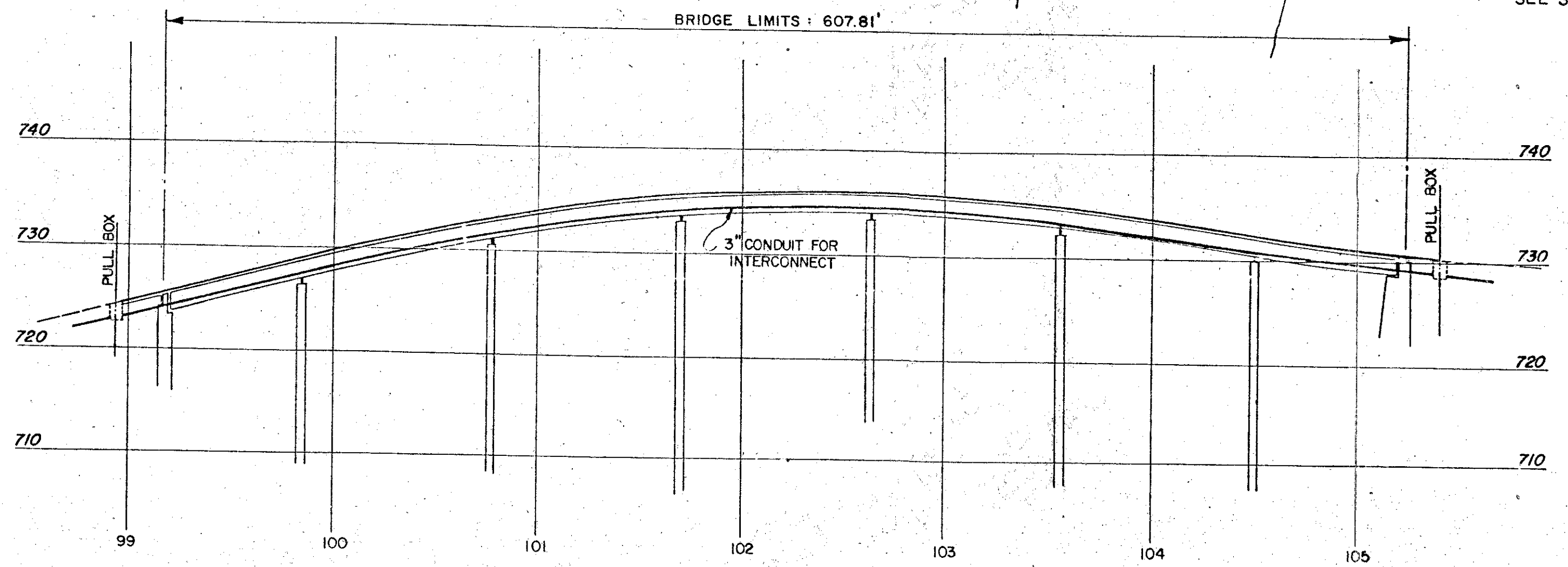
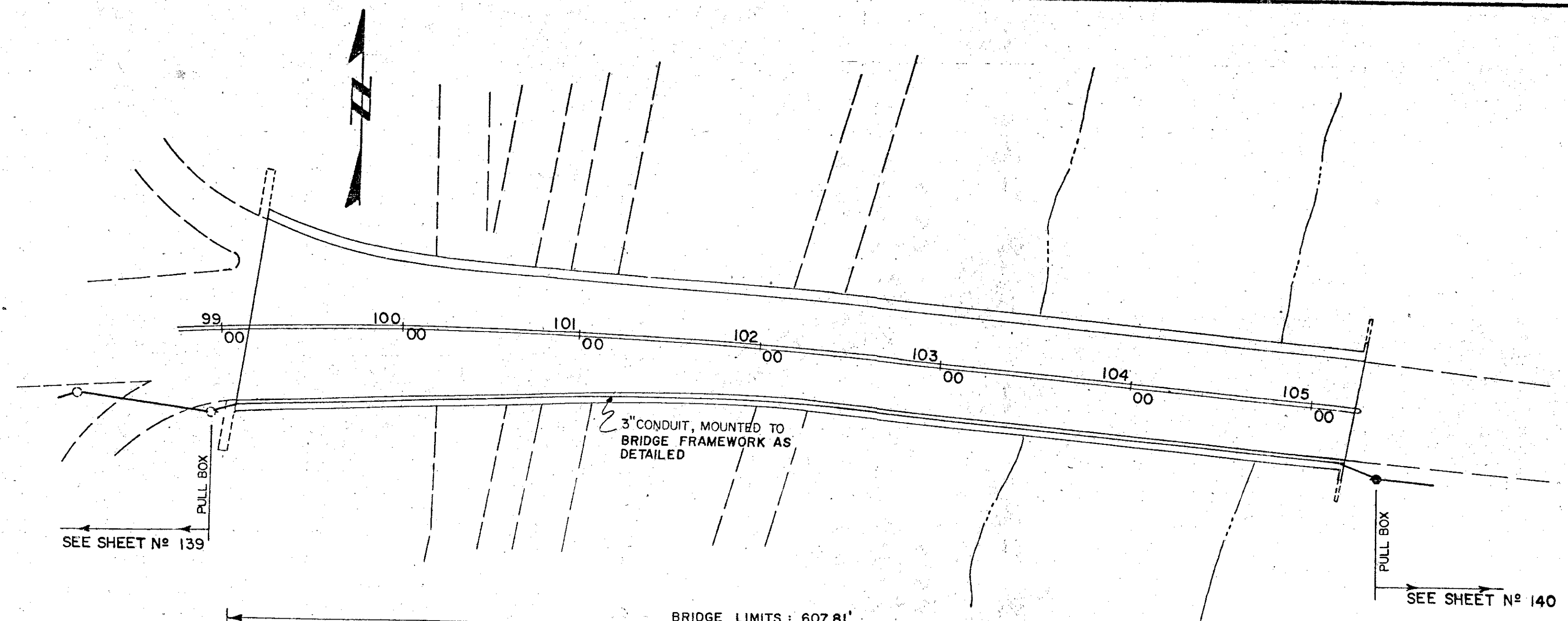
NOTE: PULLBOXES 7, 8 AND 10 ARE TO BE INSTALLED IN PHASE I CONSTRUCTION WITH HEAVY DUTY COVERS SET AT THE APPROPRIATE GRADE FOR THE TEMPORARY ROAD PAVEMENT. SEPARATE PAYMENT WILL BE MADE TO ADJUST THESE COVERS TO GRADE DURING PHASE III WHEN THE TEMPORARY ROADS ARE REMOVED.



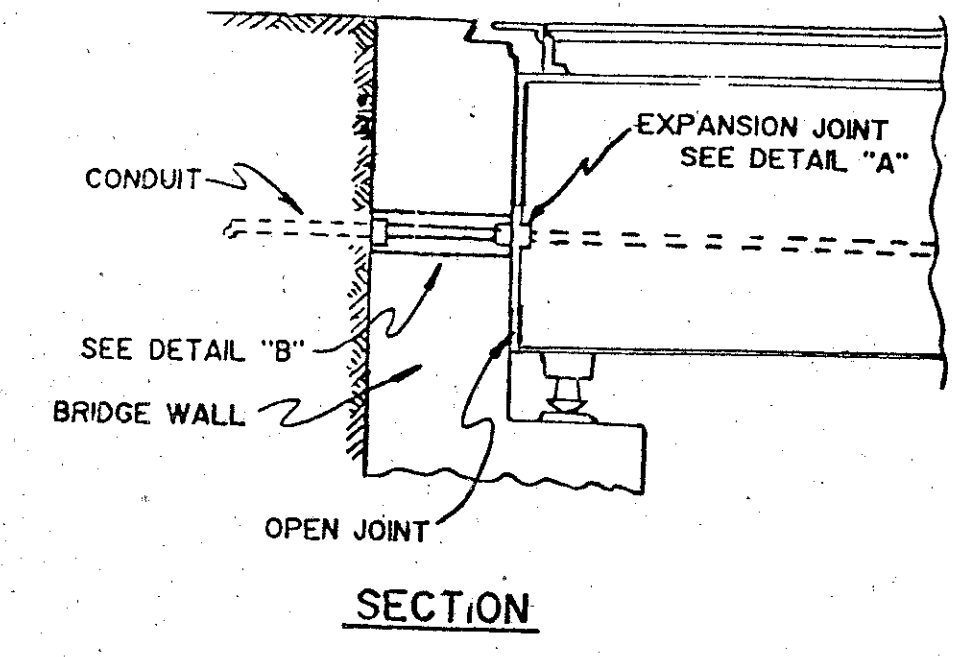
TRAFF-PRO CONSULTANTS INC.  
WILLOUGHBY, OHIO

**STATE OF OHIO**  
DEPARTMENT OF TRANSPORTATION  
**SIGNAL**  
INTERCONNECT

DESIGNED	DRAWN	TRACED	CHECKED	REVIEW	DATE	REVISED

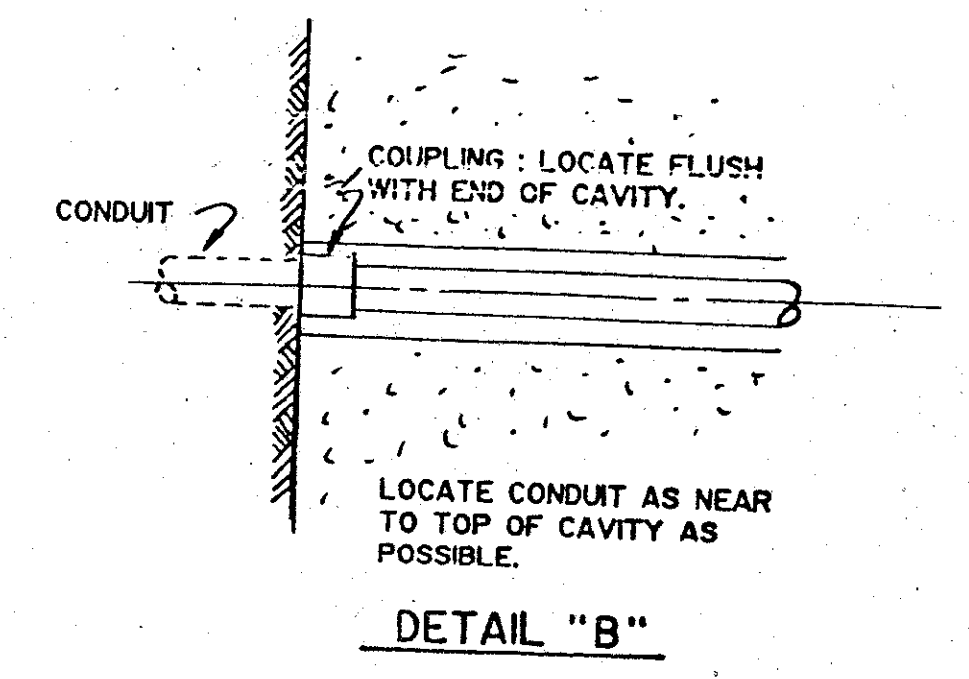
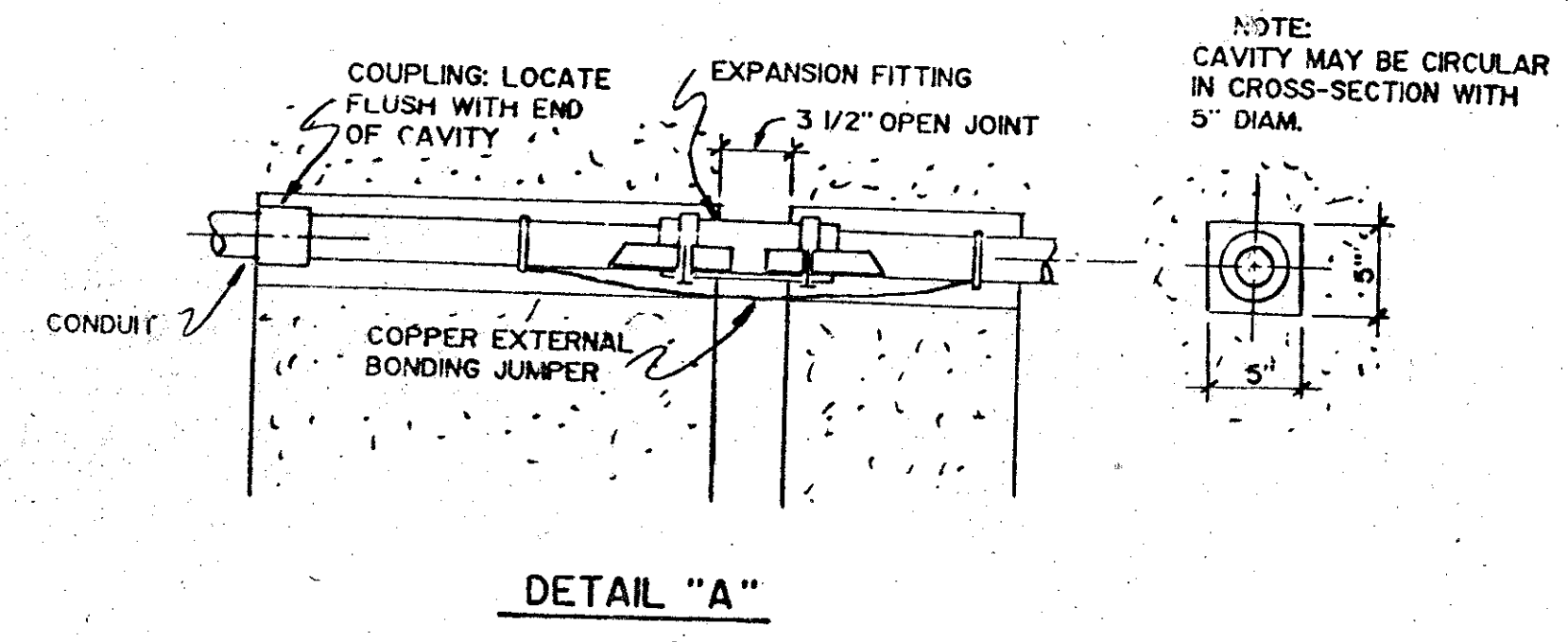


- NOTE: 1. BRACKET SUPPORT BOLTS TO BE 3/4" CARBON STEEL GRADE 1 OR EQUAL.  
2. CONDUITS TO BE HELD IN PLACE BY A FLEXIBLE 1" GALVANIZED STEEL STRAP ATTACHED TO THE PIPE SUPPORT BRACKET.



NOTES

1. FILL SPACE AROUND THE CONDUIT AND/OR FITTINGS WITHIN THE CAVITY WITH A POLYURETHANE FOAM OR OTHER APPROVED COLD APPLIED JOINT SEALER.
2. ALL CONDUIT OPENINGS IN JUNCTION BOXES SHALL BE BOSSED DRILLED AND TAPPED. COVERS SHALL BE 1/4" MIN. THICK CAST IRON.



ITEM	TOTAL	UNIT	DESCRIPTION
625	610	LIN FT	CONDUIT, 3", 713.04, AS PER PLAN
625	25	LIN FT	TRENCH
632	610	LIN FT	INTERCONNECT CABLE COAXIAL, .500 INCH, P III UNDERGROUND TRUNK
632	2	EACH	BRIDGE STANDOFF
632	30	EACH	PIPE SUPPORT BRACKET

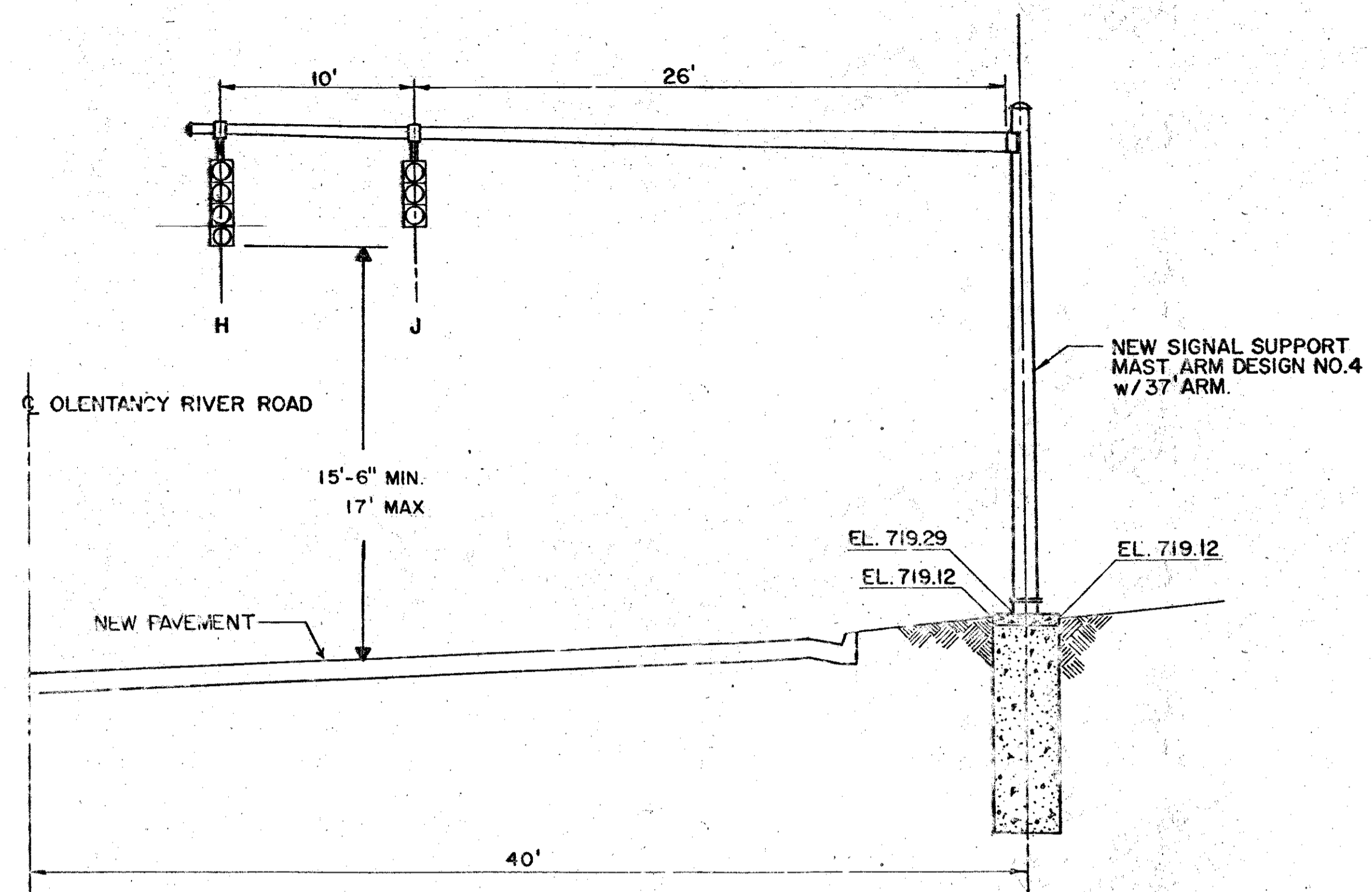
STATE OF OHIO  
REGISTERED PROFESSIONAL ENGINEER  
DAVID JOHN LEPISTO  
42680  
*David J. Lepisto*

TRAFF-PRO CONSULTANTS INC.  
WILLOUGHBY, OHIO

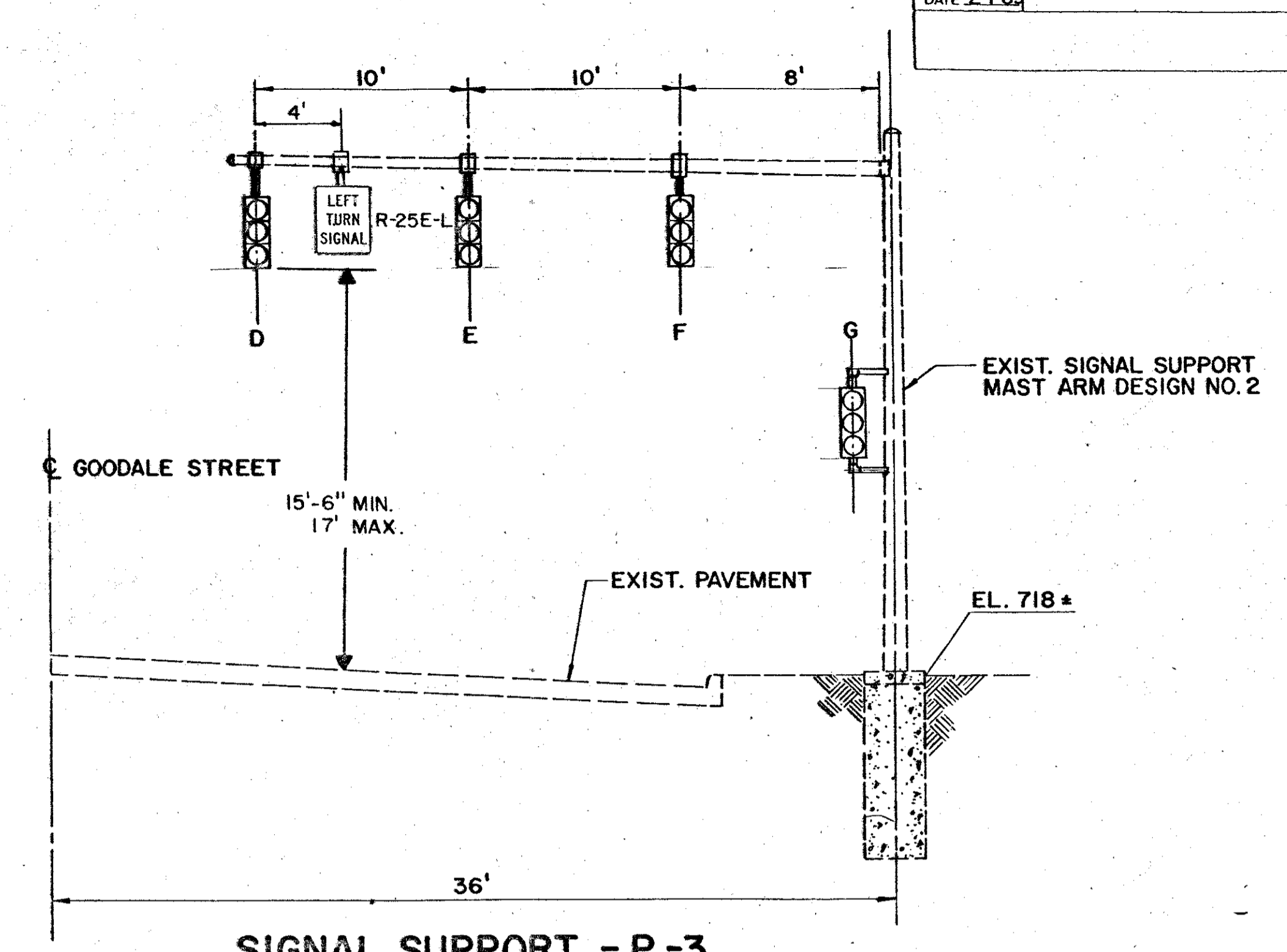
STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION

BRIDGE DETAIL  
FOR INTERCONNECT

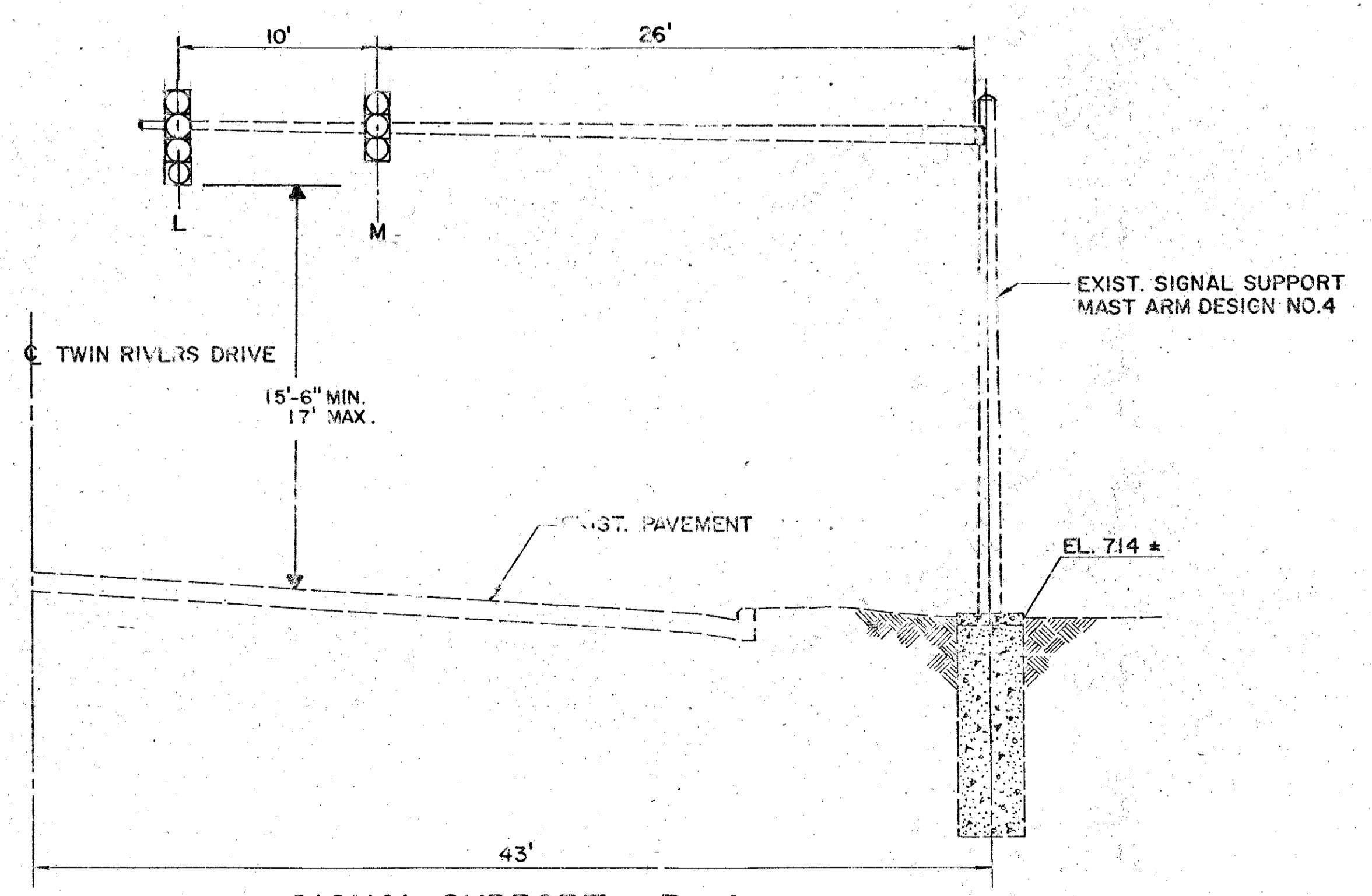
DESIGNED	DRAWN	TRACED	CHECKED	REVIEW	DATE	REVISED



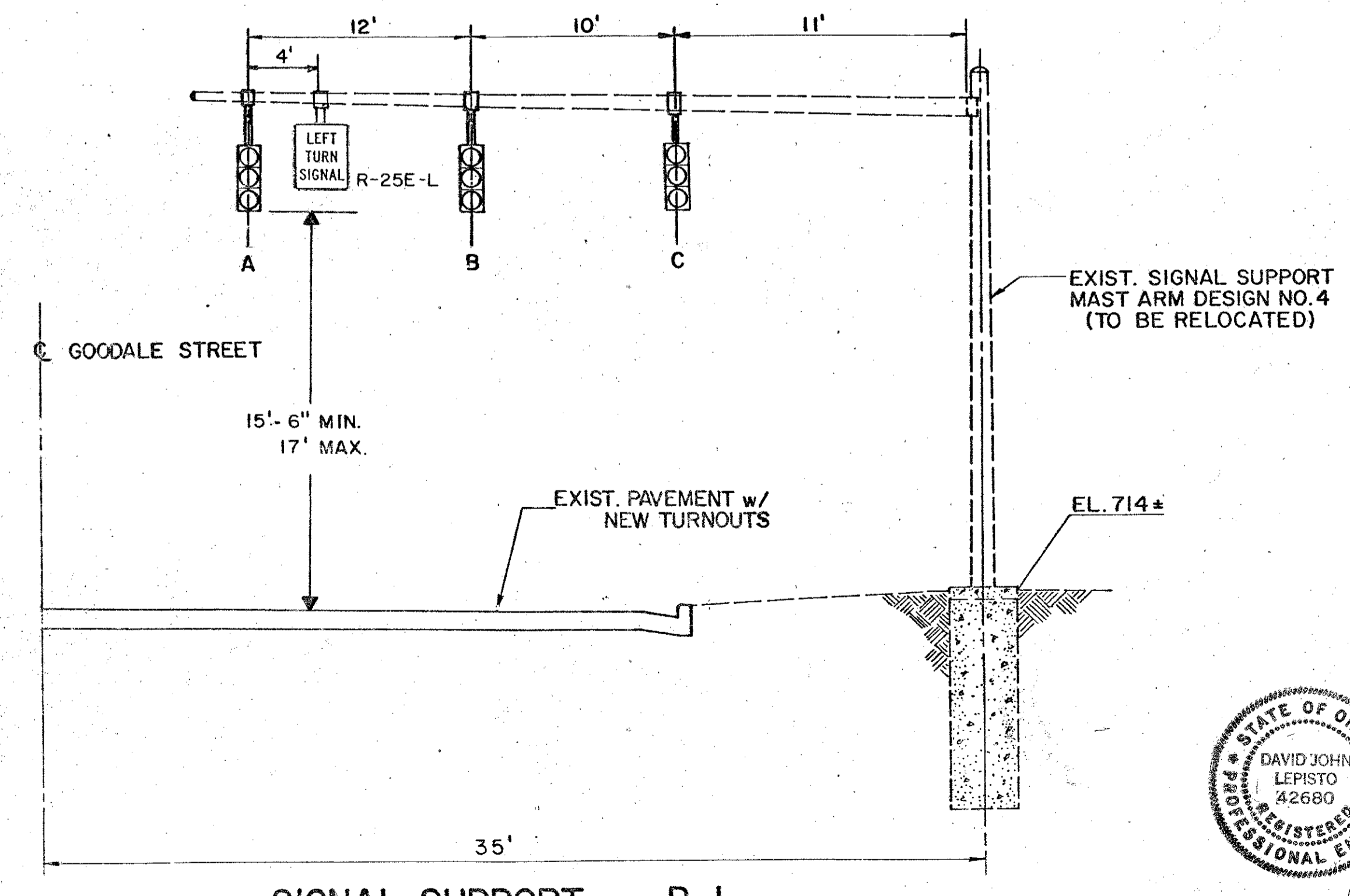
**SIGNAL SUPPORT - P-2**  
 STA. 50+70, 40' RT. OLENTANGY RIVER RD.  
 (LOOKING NORTH FROM INTERSECTION)



**SIGNAL SUPPORT - P-3**  
 STA. 97+82, 36' RT. GOODALE ST.  
 (LOOKING EAST FROM INTERSECTION)



**SIGNAL SUPPORT - P-4**  
 STA. 59+34, 43' LT. TWIN RIVERS DR.  
 (LOOKING SOUTH FROM INTERSECTION)



**SIGNAL SUPPORT - P-1**  
 STA. 96+82, 35' LT. GOODALE ST.  
 (LOOKING WEST FROM INTERSECTION)



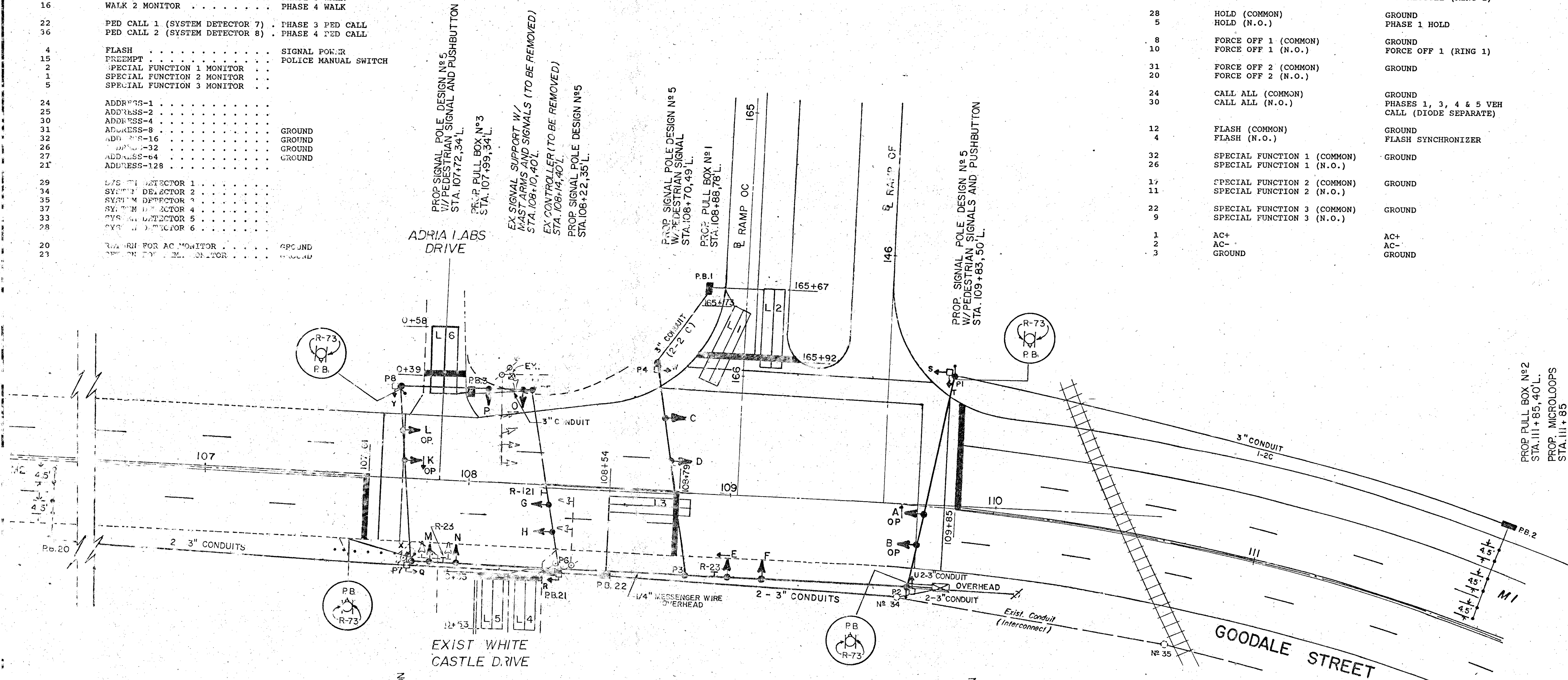
*David J. Lepisto*

INT. #: 4070 INT. NAME: GOODALE ST AT RAMPS OC & OF  
 TRUNK ID: 5 DROP NUMBER: 120

CALC. BY: _____	FRANKLIN COUNTY FRA-1-670-1.25-C-2	OHIO	143A 275
DATE: _____		FHWA	
CHKD. BY: _____		REGION	
DATE: _____		FEDERAL	
		PROJECT	

CICU INPUT CONNECTOR		
HARNESS PIN	HARNESS FUNCTION	BOX FUNCTION
13	PHASE 1 GREEN	EB LT GREEN (PHASE 5)
8	PHASE 2 GREEN	WB THRU GREEN (PHASE 1)
7	PHASE 3 GREEN	ADRIA DRIVE GREEN (PHASE 4)
6	PHASE 4 GREEN	SB RAMP GREEN (PHASE 3)
12	PHASE 5 GREEN	EB THRU GREEN (PHASE 1)
11	PHASE 6 GREEN	SB RAMP GREEN (PHASE 3)
18	PHASE 7 GREEN	WHITE CASTLE GREEN (PHASE 4)
3	PHASE 8 GREEN	WHITE CASTLE GREEN (PHASE 4)
10	WALK 1 MONITOR	PHASE 3 WALK
16	WALK 2 MONITOR	PHASE 4 WALK
22	PED CALL 1 (SYSTEM DETECTOR 7)	PHASE 3 PED CALL
36	PED CALL 2 (SYSTEM DETECTOR 8)	PHASE 4 PED CALL
4	FLASH	SIGNAL POWER
15	PREEMPT	POLICE MANUAL SWITCH
2	SPECIAL FUNCTION 1 MONITOR	
1	SPECIAL FUNCTION 2 MONITOR	
5	SPECIAL FUNCTION 3 MONITOR	
24	ADDRESS-1	
25	ADDRESS-2	
30	ADDRESS-4	
31	ADDRESS-8	GROUND
32	ADDRESS-16	GROUND
26	ADDRESS-32	GROUND
27	ADDRESS-64	GROUND
21	ADDRESS-128	GROUND
29	SYSTEM DETECTOR 1	
34	SYSTEM DETECTOR 2	
35	SYSTEM DETECTOR 3	
37	SYSTEM DETECTOR 4	
33	SYSTEM DETECTOR 5	
28	SYSTEM DETECTOR 6	
20	RESERVE FOR AC MONITOR	GROUND
23	RESERVE FOR AC MONITOR	GROUND

CICU OUTPUT CONNECTOR		
HARNESS PIN	HARNESS FUNCTION	BOX FUNCTION
25	HOL (COMMON)	GROUND
21	HOL (N.O.)	MAX II (RING 1) CALL-TO-NONACTUATED I PED RECYCLE (RING 1)
28	HOLD (COMMON)	GROUND
5	HOLD (N.O.)	PHASE 1 HOLD
8	FORCE OFF 1 (COMMON)	GROUND
10	FORCE OFF 1 (N.O.)	FORCE OFF 1 (RING 1)
31	FORCE OFF 2 (COMMON)	GROUND
20	FORCE OFF 2 (N.O.)	FORCE OFF 2 (RING 1)
24	CALL ALL (COMMON)	GROUND
30	CALL ALL (N.O.)	PHASES 1, 3, 4 & 5 VEH CALL (DIODE SEPARATE)
12	FLASH (COMMON)	GROUND
4	FLASH (N.O.)	FLASH SYNCHRONIZER
32	SPECIAL FUNCTION 1 (COMMON)	GROUND
26	SPECIAL FUNCTION 1 (N.O.)	
17	SPECIAL FUNCTION 2 (COMMON)	GROUND
11	SPECIAL FUNCTION 2 (N.O.)	
22	SPECIAL FUNCTION 3 (COMMON)	GROUND
9	SPECIAL FUNCTION 3 (N.O.)	
1	AC+	AC+
2	AC-	AC-
3	GROUND	GROUND



PROP. PULL BOX #20  
 INSTALLED PER PLANS  
 ON SHEET 143  
 STA. 105+40.35 R.

EX. SIGNAL SUPPORT W/  
 MAST ARM AND SIGNALS  
 (TO BE REMOVED)  
 STA. 107+75.29 L.

PROP. SIGNAL POLE DESIGN #5  
 W/PEDESTRIAN SIGNAL AND PUSHBUTTON  
 STA. 107+78.31 R.

PROP. PULL BOX #21  
 INSTALLED PER PLANS  
 ON SHEET 140  
 STA. 108+31.33 R.

PROP. SIGNAL POLE DESIGN #5  
 W/PEDESTRIAN SIGNAL  
 STA. 108+33.31 R.

EX. SIGNAL SUPPORT W/  
 MAST ARM AND SIGNALS  
 (TO BE REMOVED)  
 STA. 108+40.29 R.

PROP. PULL BOX #22  
 INSTALLED PER PLANS  
 ON SHEET 140  
 STA. 108+54.33 R.

PROP. SIGNAL POLE DESIGN #5  
 STA. 108+84.31 R.

EX. PULL BOX #34  
 FRA. 670/35  
 STA. 109+65.35 R.

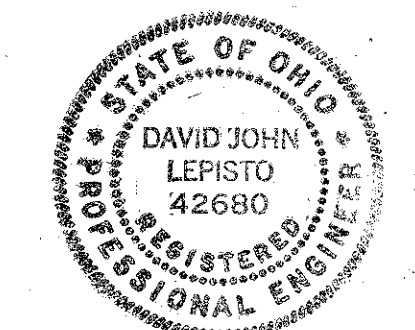
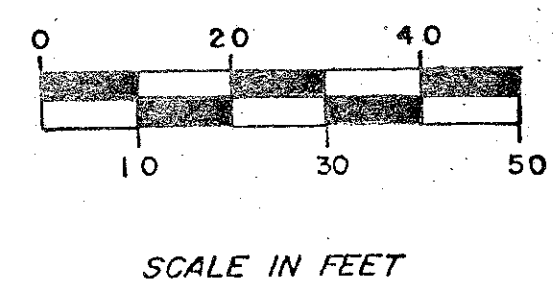
PROP. SIGNAL POLE DESIGN #5  
 W/PEDESTRIAN SIGNAL AND PUSHBUTTON  
 STA. 109+68.31 R.

PROP. CONTROLLER  
 STA. 109+80.32 R.

EX. POLE (POWER SERVICE)  
 PROP. POWER RISER  
 STA. 110+13.32 R.

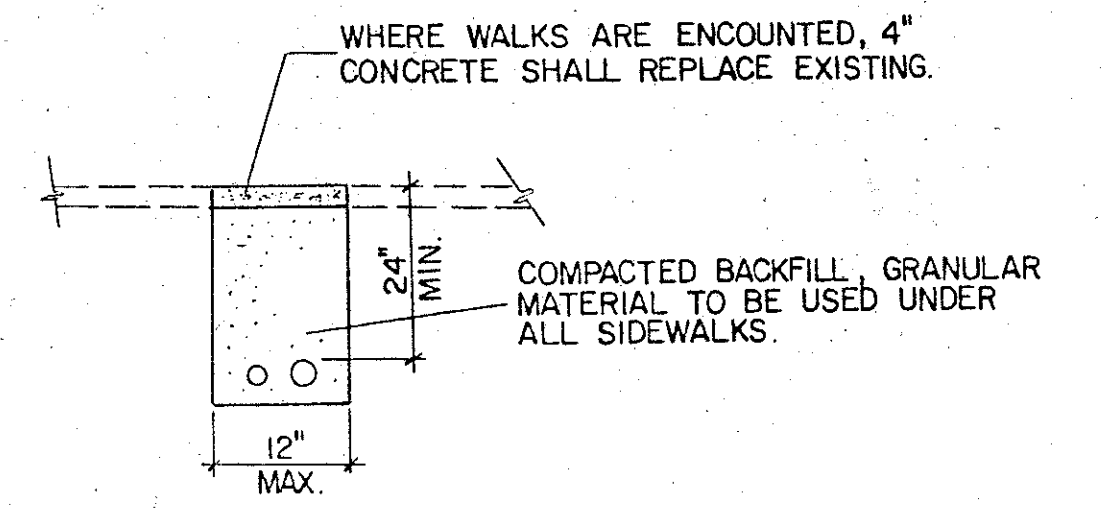
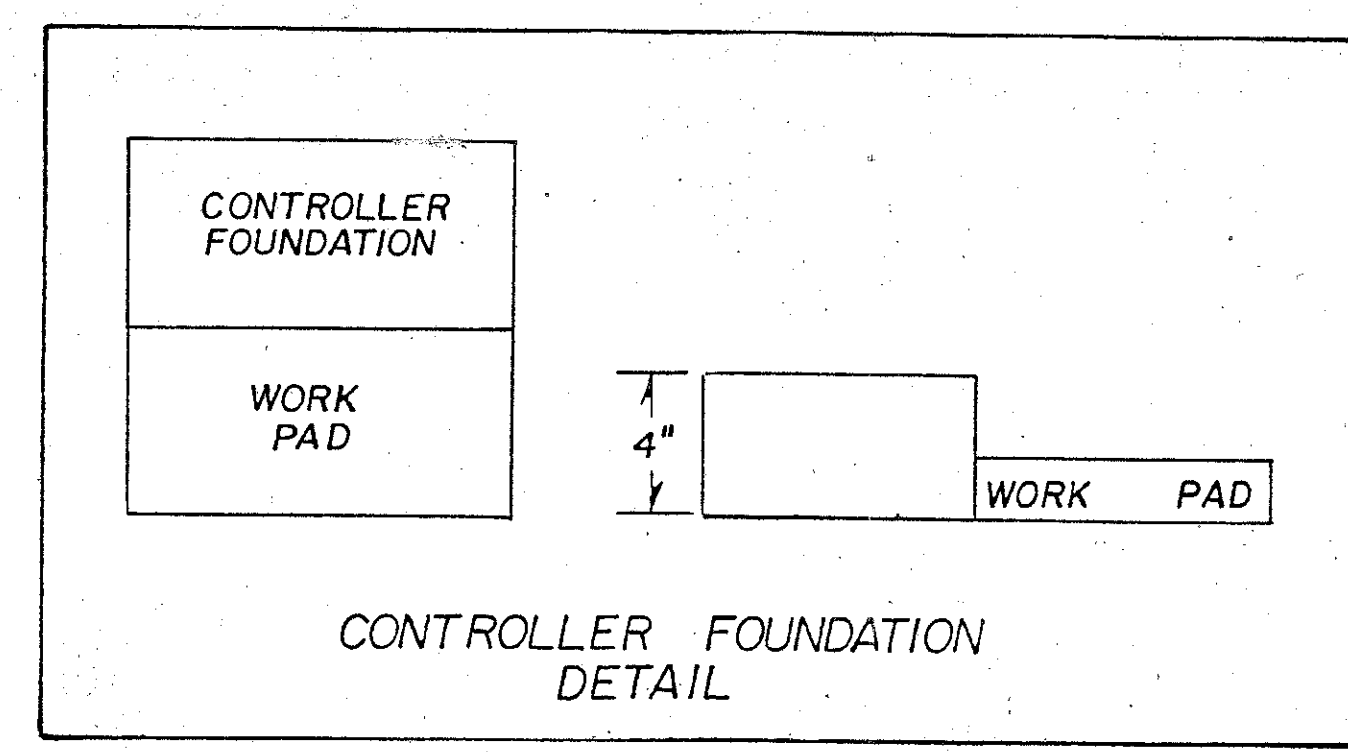
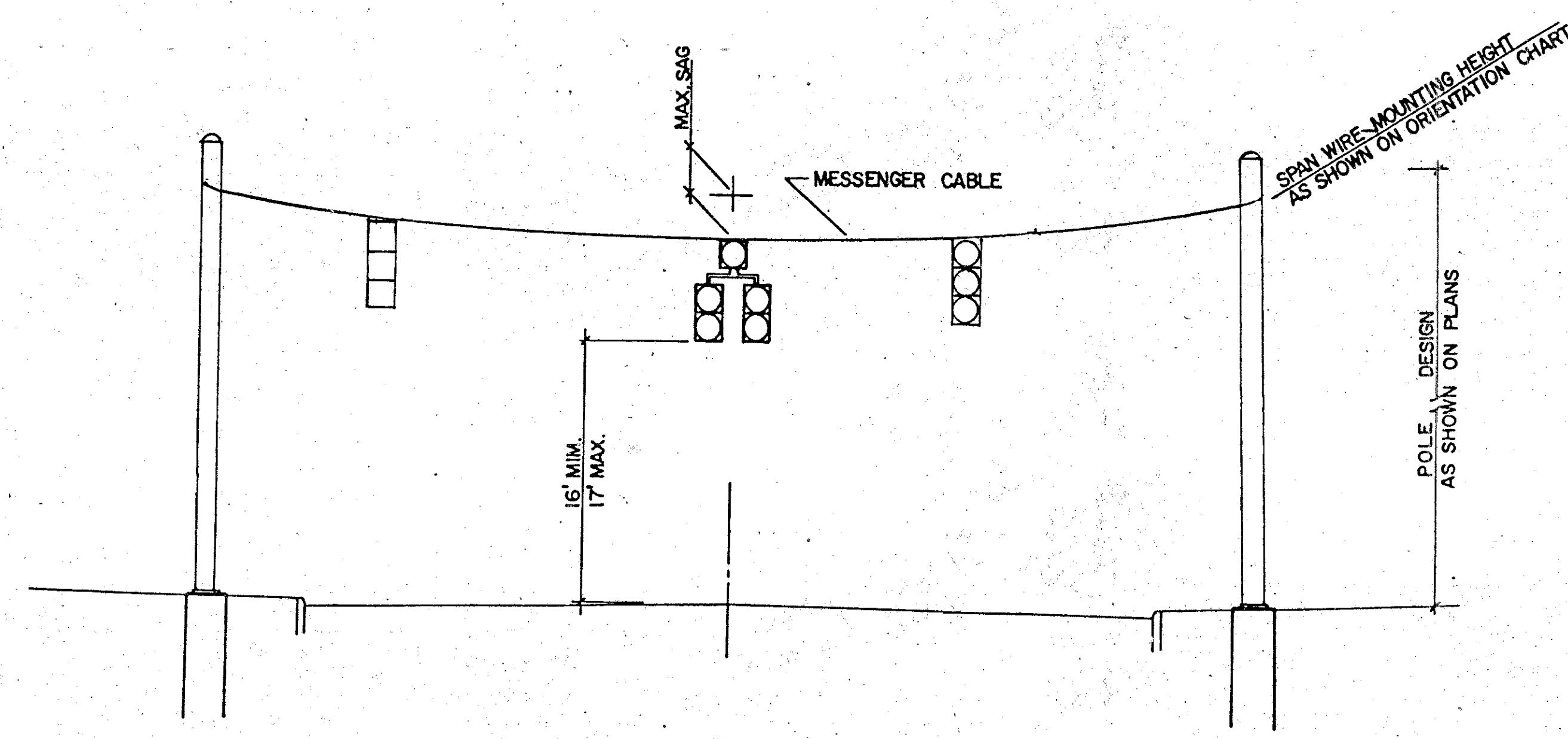
EX. PULL BOX #33  
 FRA. 670/35  
 STA. 110+59.38 R.

PROP. PULL BOX #2  
 STA. 111+86.40 L.  
 PROP. MICROLOOPS  
 STA. 111+85



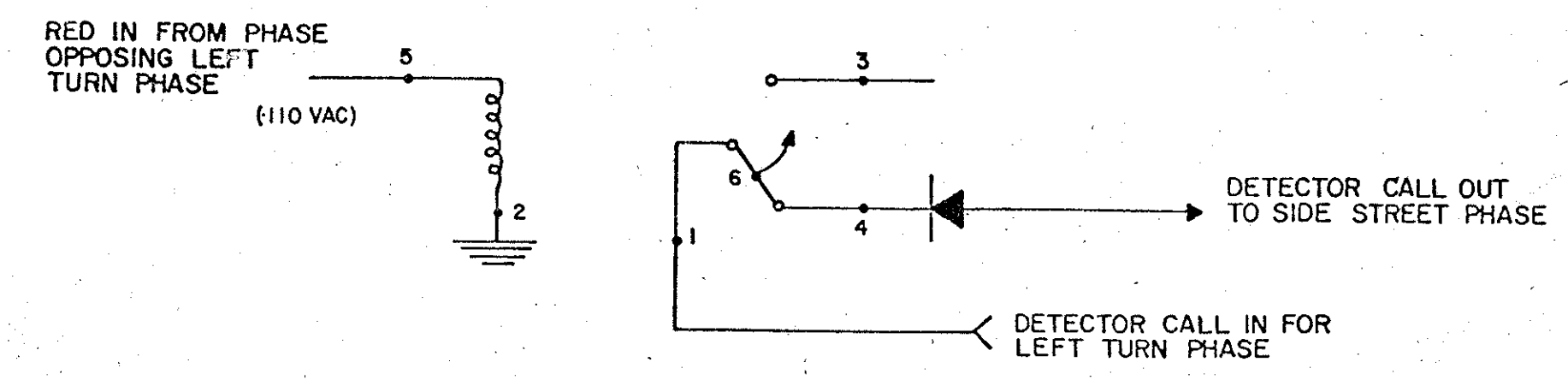
David J. Lepisto





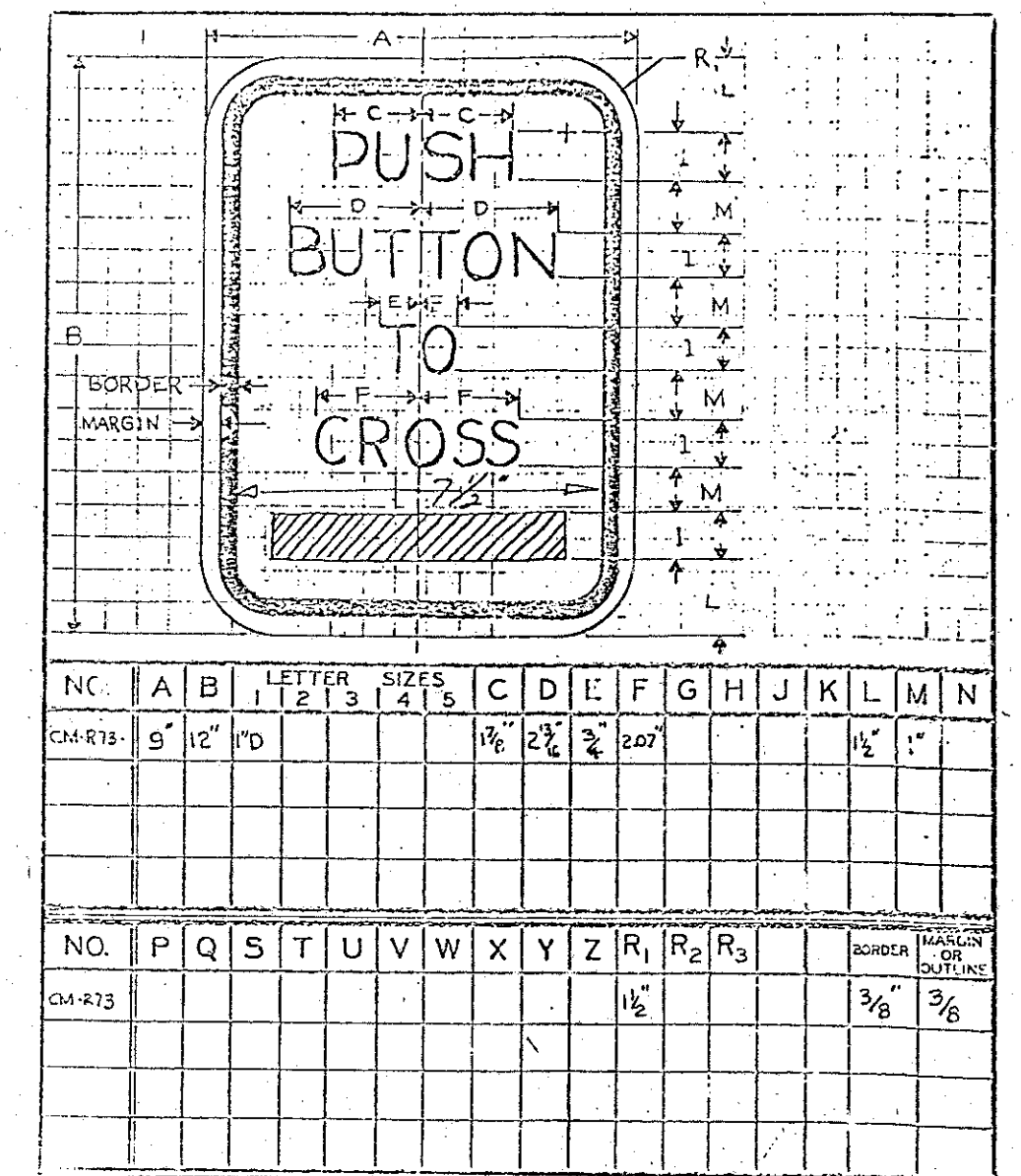
ORIENTATION ANGLES

INTERSECTION	ITEM	POLE TYPE TC-81.10 OR TC-9.30 DESIGN NO.	SPAN WIRE MOUNTING HEIGHT		ANCHOR BASE AND BOLTS ANGLE	HANDHOLE DEG	CONDUIT ELLS IN FOUNDATION OR UNDERGROUND		SIGNAL WEATHERHEAD BLIND HALF COUPLING		PED SIGNAL BRACKET ARM		PED BUTTONS		POWER WEATHERHEAD 2" BLIND HALF COUPLING		CONTROLLER HINGE LOCATION
			DEG	HEIGHT FEET			DEG	SIZE INCHES	DEG	HEIGHT FEET	DEG	HEIGHT FEET	DEG	HEIGHT FEET	DEG	HEIGHT FEET	
GOODALE STREET AND RAMPS OC & OF	P1 TC-81.10	5-26'	135	25.0	0-90	270	9	3"	135	24.0'	270	8'	0	3'-8"	0	24.0'	
	P2 TC-81.10	5-26'	180	25.0	0-90	90	0	2-3"	325	24.0'	0	8'	0	3'-8"	0	24.0'	
	P3 TC-81.10	5-26'	180	25.0	0-90	90	270	3"-CAP									
	P4 TC-81.10	5-26'	45	25.0	0-90	270	304	3"	45	24.0'	270	8'					
	P5 TC-81.10	5-26'	90	24.3	0-90	270	170	3"	135	23.3'							
	P6 TC-81.10	5-26'	180	24.3	0-90	90	0	3"-CAP	270	23.3'	180	8'					
	P7 TC-81.10	5-26'	270	24.3	0-90	90	180	3"-CAP	315	23.3'	0	8'	270	3'-8"			
	P8 TC-81.10	5-26'	90	24.3	0-90	180	180	3"-CAP	90	23.3'	180	0'	90	3'-8"			
CONTROLLER					0-90		165	3"									SOUTHEAST CORNER

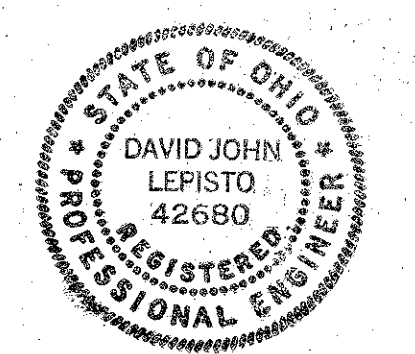


WHEN OPPOSING PHASE RED (5) ENERGIZES RELAY CALL (2) & MAGNET (3), SWITCH (6) GOES FROM NORMALLY CLOSED (1&4) TO OPEN (1&3). PHASE 1&5 DETECTORS CALL, BUT DOES NOT EXTEND PHASE 8.

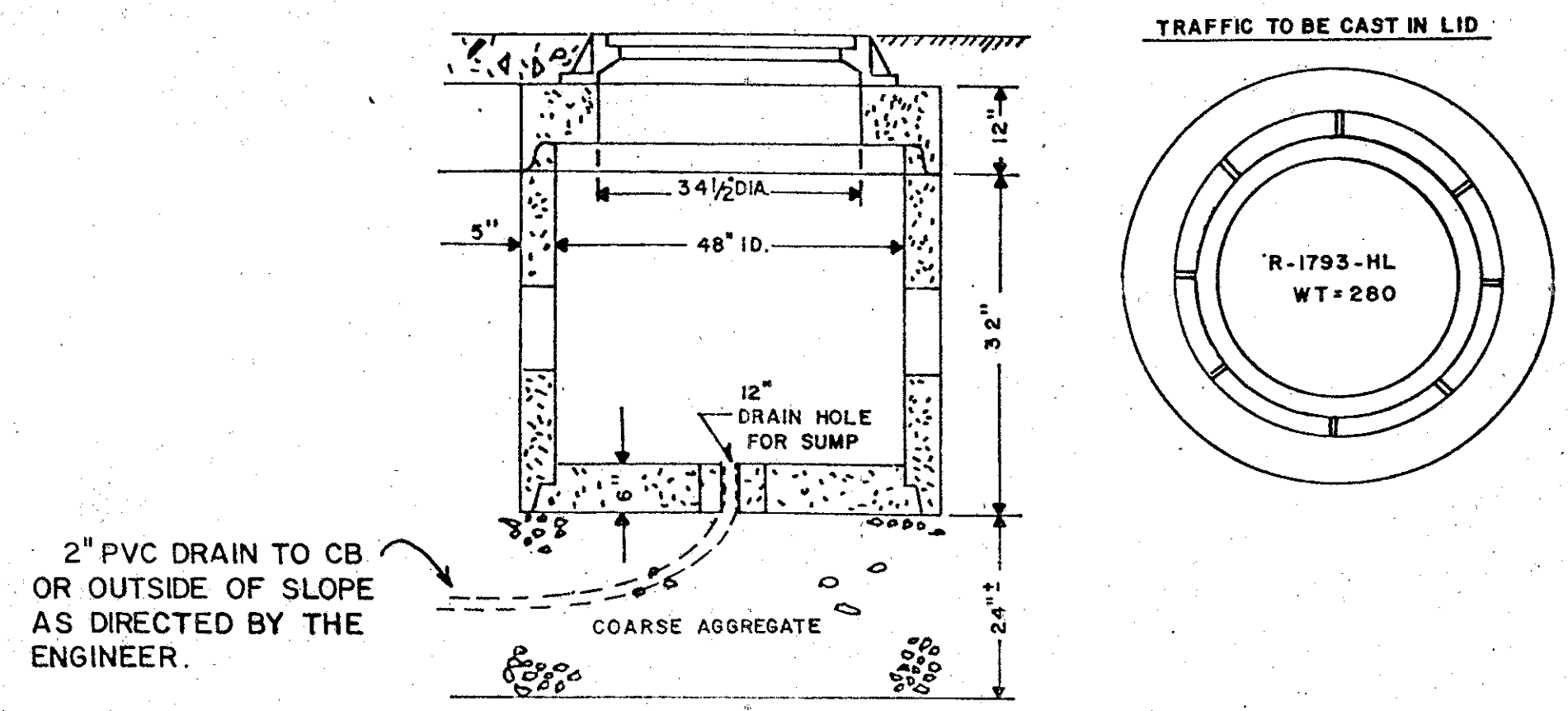
DETECTOR CUTOFF TYPICAL (TO CALL A PHASE, BUT NOT EXTEND IT)



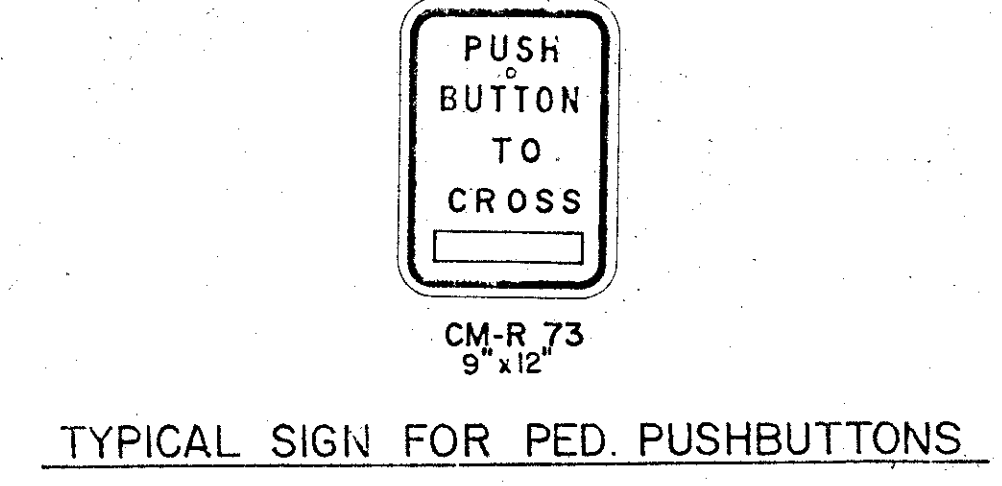
- NOTES
- THE BASELINE FOR ALL ANGLES IS PARALLEL TO THE CENTERLINE OF THE FIRST STREET LISTED. WHEN 0° BEING PARALLEL TO SAID CENTERLINE MEASURED IN A CLOCKWISE DIRECTION (SEE EACH PLAN SHEET)
  - TYPE OF PEDESTRIAN SIGNAL MOUNTING  
 A - THREADED BLIND HALF COUPLING  
 B - BANDED PIPE BRACKET  
 C - BANDED CLAMSHELL
  - POLE HEIGHTS SHALL BE AS SHOWN ON TC-81.10 EXCEPT AS NOTED
  - POLE FOUNDATIONS SHALL BE AS SHOWN ON TC-21.20
  - ALL UNUSED CONDUIT ELLS SHALL BE CAPPED



David J. Lepisto



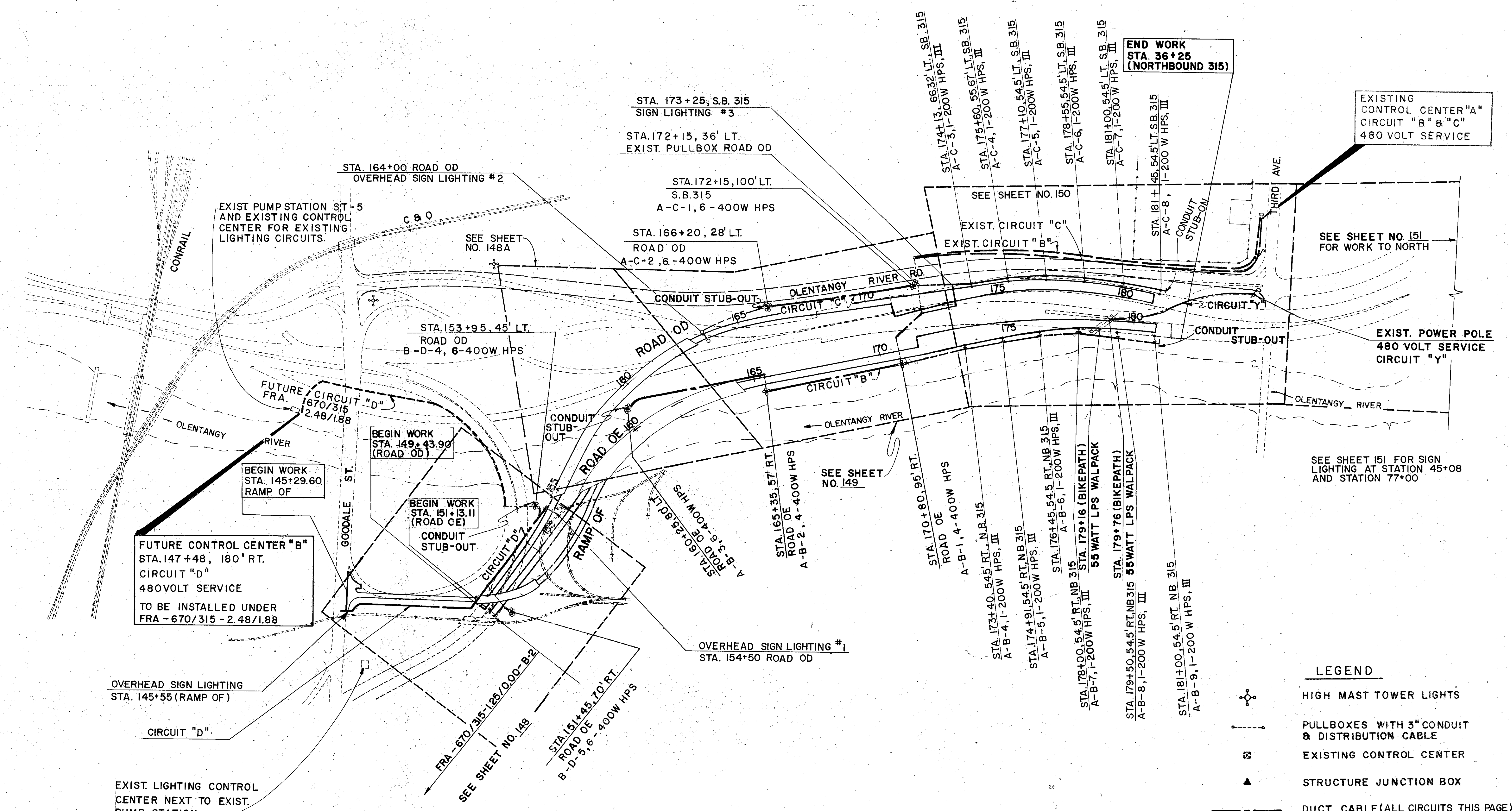
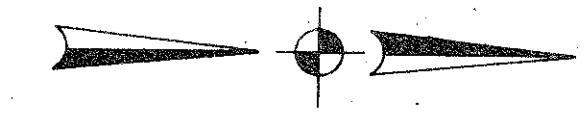
48" CONCRETE PULL BOX-DETAIL (ROUND)



TYPICAL SIGN FOR PED. PUSHBUTTONS

TRAFF-PRO CONSULTANTS INC. WICKLIFFE, OHIO						
STATE OF OHIO DEPARTMENT OF TRANSPORTATION						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEW	DATE	REVISED





FUTURE CONTROL CENTER "B"  
 STA. 147+48, 180' RT.  
 CIRCUIT "D"  
 480VOLT SERVICE  
 TO BE INSTALLED UNDER  
 FRA - 670/315 - 2.48/1.88

END WORK  
 STA. 36+25  
 (NORTHBOUND 315)

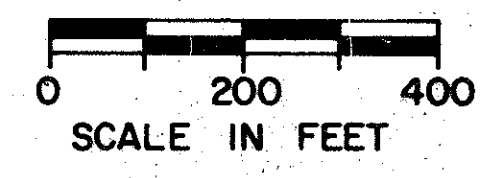
EXISTING CONTROL CENTER "A"  
 CIRCUIT "B" & "C"  
 480 VOLT SERVICE

SEE SHEET NO. 151  
 FOR WORK TO NORTH

EXIST. POWER POLE  
 480 VOLT SERVICE  
 CIRCUIT "Y"

SEE SHEET 151 FOR SIGN  
 LIGHTING AT STATION 45+08  
 AND STATION 77+00

**SCHEMATIC PLAN**



**LEGEND**

- HIGH MAST TOWER LIGHTS
- PULLBOXES WITH 3" CONDUIT & DISTRIBUTION CABLE
- EXISTING CONTROL CENTER
- STRUCTURE JUNCTION BOX
- DUCT CABLE (ALL CIRCUITS THIS PAGE)
- TOWER MAINTENANCE PLATFORM
- EXISTING LIGHT POLE REMOVED
- EXISTING PULLBOXES REMOVED
- HIGH MAST TOWER LIGHTS WITH CONDUIT STUB-OUT
- PULLBOX

EXIST. CIRCUIT

# LIGHTING GENERAL NOTES

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		145 275

FRANKLIN COUNTY  
FRA-670-1.25-C-2

## 625.03 - POWER SERVICE

THE POWER SUPPLYING AGENCIES FOR THIS PROJECT ARE:

CITY OF COLUMBUS  
DIVISION OF ELECTRICITY (MELP)  
910 DUBLIN ROAD  
COLUMBUS, OHIO 43215  
(614) 645-7758

IN ADDITION TO THE REQUIREMENTS OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PAYMENT OF ALL CHARGES MADE BY THE POWER COMPANY FOR THE ESTABLISHMENT OF ELECTRICAL SERVICE AT EACH POINT SPECIFIED IN THE PLANS.

ELECTRICAL ENERGY FROM EXISTING POWER SERVICES SHALL CONTINUE TO BE CHARGED TO THE MAINTAINING AGENCY. THE CONTRACTOR SHALL PAY ELECTRICAL ENERGY CHARGES FOR NEW POWER SERVICES ESTABLISHED BY THIS PROJECT. UPON COMPLETION OF THIS PROJECT, POWER SERVICE ELECTRICAL ENERGY ACCOUNTS SHALL BE TRANSFERRED TO THE MAINTAINING AGENCIES NOTED IN THE PLANS. THIS SHALL INCLUDE NEW POWER SERVICE ESTABLISHED BY THIS PROJECT AS WELL AS REASSIGNMENT OF EXISTING SERVICE DUE TO WORK PERFORMED BY THIS PROJECT.

## 713.14 LAMPS

HIGH PRESSURE SODIUM LAMPS SHALL BE GENERAL ELECTRIC "LUCALOX", PHILIPS "CERAMALUX", SYLVANIA "LUMALUX", OR EQUAL APPROVED BY THE ENGINEER.

## UNDERDRAINS FOR PULL BOXES

REFERENCE IS MADE TO STANDARD DRAWING HL 30.11 FOR DETAILS OF DRAINING PULL BOXES. UNDERDRAINS FOR PULL BOXES SHALL BE USED AS DIRECTED BY THE ENGINEER AND SHALL BE PROVIDED WHERE THE LENGTH REQUIRED FOR A SATISFACTORY OUTLET DOES NOT EXCEED APPROXIMATELY 20 FEET. AN ESTIMATED QUANTITY OF "50 LINEAR FEET OF ITEM 603, 4" CONDUIT TYPE E IS INCLUDED IN THE LIGHTING GENERAL SUMMARY FOR THIS PURPOSE.

## PADLOCKS AND KEYS

PADLOCKS FURNISHED SHALL BE BRASS OR BRONZE, MASTER NO. 4BKA OR WILSON BOHONNAN 660A, OR EQUAL AS APPROVED BY THE ENGINEER AND SHALL BE KEYPED IN ACCORDANCE WITH SPECIFICATION 631.08. PAYMENT SHALL BE INCLUDED IN THE BID FOR THE ITEM(S) BEING LOCKED.

## 625.07 - 713.11 LUMINAIRES

STYLE B LUMINAIRES SHALL HAVE SINGLE RATED 480 VOLT, 200 WATT, INTEGRAL REGULATOR BALLASTS FOR USE WITH HIGH PRESSURE SODIUM LAMPS AND SHALL BE GENERAL ELECTRIC M400, CROUSE-HINDS OVM, AMERICAN 25/26, OR EQUAL APPROVED BY THE ENGINEER.

## LIGHT POLE REMOVED FOR STORAGE, AS PER PLAN

THE ITEM OF WORK SHALL CONSIST OF REMOVING AN EXISTING LIGHT POLE INCLUDING THE BRACKET ARM(S) AND TRANSFORMER BASE (IF USED). ALL ITEMS REMOVED SHALL BE SEPARATED AND STORED ON SITE FOR REMOVAL BY CITY FORCES.

PAYMENT WILL BE MADE AT THE UNIT BID PRICE FOR EACH ITEM 202 - LIGHT POLE REMOVED FOR STORAGE, AS PER PLAN, SHALL INCLUDE THE REMOVAL AND STORAGE OF THE LIGHT POLE AND ALL EQUIPMENT, LABOR AND MATERIALS NECESSARY TO COMPLETE THE WORK.

## PULLBOX REMOVED, AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF REMOVING AN EXISTING PULLBOX WHICH SHALL THEN BE PROPERLY DISPOSED OF. THE RESULTANT OPENING SHALL THEN BE BACKFILLED TO GRADE WITH SUITABLE COMPACTED SOIL AND RESTORED TO MATCH THE SURROUNDING AREA.

PAYMENT WILL BE MADE FOR EACH ITEM 202 "CONCRETE PULLBOX REMOVED, AS PER PLAN."

## LUMINAIRE REMOVED FOR STORAGE, AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF REMOVING AN EXISTING LUMINAIRE, AND STORING ON THE PROJECT FOR REMOVAL BY CITY FORCES.

PAYMENT WILL BE MADE FOR EACH ITEM 202 "LUMINAIRE REMOVED FOR STORAGE, AS PER PLAN."

## ELECTRICAL SERVICE FOR ILLUMINATED SIGNS

THE PAY ITEMS IN THE LIGHTING GENERAL SUMMARY INCLUDE THE PULL BOX OR JUNCTION BOX ADJACENT TO EACH LIGHTED SIGN AND THE ELECTRICAL SERVICE CONNECTIONS LEADING INTO THE BOX, INCLUDING SPLICES OR CONNECTOR KITS IN THE PULL BOX OR JUNCTION BOX. QUANTITIES FOR ELECTRICAL SERVICE FROM THE CONNECTION IN THE PULL BOX OR JUNCTION BOX TO THE SIGN ARE INCLUDED IN THE TRAFFIC CONTROL GENERAL SUMMARY.

## ITEM SPECIAL - DISCONNECT EXISTING CIRCUIT

THIS ITEM OF WORK SHALL CONSIST OF THE DISCONNECTION OF AN EXISTING LIGHT CIRCUIT AT A PULL BOX OR AT A LIGHT POLE.

DISCONNECTION AT A PULL BOX SHALL INVOLVE CUTTING THE EXISTING CIRCUIT AND REMOVING ALL SPLICE KITS. ANY CABLE THAT IS TO BE ABANDONED SHALL BE TERMINATED IN A MANNER SUCH THAT NO CABLE IS LEFT REMAINING IN THE PULL BOX.

DISCONNECTION AT A LIGHT POLE SHALL INVOLVE THE REMOVAL OF THAT PART OF CABLE THAT IS TO BE ABANDONED FROM THE POLE. THESE ENDS OF THE CONNECTOR KITS FROM WHICH THE ABANDONED CABLE IS REMOVED SHALL BE STUBBED AND TAPED.

ANY CABLE THAT IS TO BE REUSED IN A PULL BOX OR LIGHT POLE SHALL BE CUT IN A MANNER SO THAT THERE IS SUFFICIENT LENGTH OF CABLE LEFT FOR RECONNECTION. CABLE SPLICE KITS AND CONNECTOR KITS WILL BE PAID FOR RESPECTIVELY UNDER EACH ITEM 625.

PAYMENT WILL BE MADE AT THE UNIT BID PRICE FOR EACH ITEM SPECIAL "DISCONNECT EXISTING CIRCUIT" AND SHALL BE FULL COMPENSATION INCLUDING ALL LABOR, MATERIALS, AND INCIDENTALS REQUIRED TO COMPLETE THE WORK.

## ITEM 625 - 55 WATT 480 VOLT LOW PRESSURE SODIUM UNDERPASS LUMINAIRE

THE LUMINAIRE HOUSING AND LENS SHALL BE ONE PIECE MOLDED POLYCARBONATE MATERIAL WITH PRISMATIC DESIGN FOR DIRECTIONAL LIGHT OUTPUT. HOUSING AND LENS SHALL BE HINGED AND SECURED TO WATER TIGHT ALUMINUM BODY.

THE LUMINAIRE BODY SHALL BE PRECISION DIE-CAST CORROSION RESISTANT ALUMINUM, PROVIDING MOUNTING FOR ALL ELECTRICAL COMPONENTS.

THE LUMINAIRE FINISH SHALL BE BRONZE, INTERNALLY APPLIED TO POLYCARBONATE HOUSING AND EXTERNALLY APPLIED TO ALUMINUM BODY AND THE REFLECTOR SHALL BE OF TEXTURED ANODIZED ALUMINUM.

THE LAMP SOCKET SHALL BE HIGH TEMPERATURE, FLAME-RETARDANT THERMOSET MATERIAL WITH SELF-WIPING SILVER PLATED COOPER ALLOY CONTACTS AND THE LAMP SUPPORT SHALL BE SPRING WIRE TYPE FOR POSITIVE LAMP RETENTION.

THE GASKET SHALL BE CLOSED CELL NEOPRENE RUBBER. PROVIDING WEATHER TIGHT SEAL BETWEEN HOUSING AND BODY.

THE BALLAST SHALL BE SUITABLE FOR OPERATING ONE SOX-55 WATT LOW PRESSURE SODIUM LAMP AND SHALL BE RATED REACTOR (480V) TYPE; POWER FACTOR CORRECTED 90% (55 WATT) WITH LAMP WATTAGE REGULATION OF  $\pm 5\%$  WITH LINE VOLTAGE FLUCTUATION OF THE BALLAST SHALL BE SUITABLE FOR HIGH AND LOW AMBIENT OPERATION. INTEGRALLY MOUNTED WITHIN SEPARATE COMPARTMENT WITH REMOVABLE COVER FOR WIRING AND MAINTENANCE.

THE LUMINAIRE SHALL PROVIDE TWO (ONE TOP AND ONE SIDE) SURFACE WIRE CONDUIT ENTRY HOLES TAPPED 1/2" NPS, 3-5/16" KNOCKOUTS FOR WALL FASTENERS AND KNOCKOUTS FOR MOUNTING TO STANDARD RECESSED BOXES FOR THRU WALL WIRING. THE ENTIRE UNIT SHALL BE PREWIRED AND READY FOR INSTALLATION AND SHALL BE SUPPLIED COMPLETE WITH A 55 WATT SOX LAMP.

THE LUMINAIRE SHALL BE AN APPROVED EQUAL IN APPEARANCE, QUALITY AND DESIGN TO: AMERICAN ELECTRIC, ORDERING CODE /SWP55L48MI-C.

## HIGH MAST LUMINAIRES

THE LUMINAIRE ARRAYS AND ASSOCIATED ILLUMINATION TEST AREAS SPECIFIED IN SECTION 713.21 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS ARE HEREBY WAIVED FOR THIS PROJECT. INSTEAD, THE LUMINAIRES FOR TOWER LIGHTING SHALL MEET THE FOLLOWING REQUIREMENTS.

ASYMMETRIC, TYPE II OR III, LUMINAIRES FOR TOWER LIGHTING MAY BE HOLOPHANE "HMST" TEST #36648, OR GENERAL ELECTRIC "HM" TEST #7349, OR COOPER "HMC" TEST # 764130.

SYMMETRIC, TYPE V, LUMINAIRES FOR TOWER LIGHTING MAY BE HOLOPHANE "HMST" TEST #36383, OR GENERAL ELECTRIC "HM" TEST #6289, OR COOPER "HAL" TEST # 48381.

IN ADDITION, OTHER LUMINAIRES WILL BE CONSIDERED IF THE DESIGNED INTENSITY AND UNIFORMITY ARE PROVIDED USING THE DESIGNED POLE LOCATIONS AND THE DESIGNED NUMBER AND TYPE OF FIXTURES PER POLE.

## PORTABLE POWER UNIT - 713.21

THE CONTRACTOR SHALL SUPPLY A PORTABLE POWER UNIT AS SPECIFIED IN THE O.D.O.T. CONSTRUCTION AND MATERIAL SPECIFICATIONS. A QUANTITY OF "1 EACH" OF ITEM 625, "PORTABLE POWER UNIT - 713.21" IS INCLUDED IN THE GENERAL SUMMARY FOR THIS PURPOSE.

## LIGHT TOWER DETAILS

STANDARD DRAWING HL-10.31, AS OF 2/9/88, HAS BEEN REVISED AS FOLLOWS: THE TWO DIMENSIONS SHOWN AS A 4-3/4 INCHES BETWEEN THE CENTER-LINES OF THE DRIVE SUPPORT TUBE AND THE WINCH INPUT SHAFT SHOULD READ 3-3/4 INCHES.

## HIGH MAST LIGHT TOWERS

THE MANUFACTURER SHALL SUBMIT A REPORT FROM AN INDEPENDENT TESTING LABORATORY TO SHOW THAT THE LUMINAIRES DO NOT RECEIVE MORE THAN THE SPECIFIED ACCELERATION LOAD. THE TESTING LABORATORY'S REPORT SHALL SPECIFY IN DETAIL THE MOUNTING LOCATIONS OF THE ACCELEROMETERS AND THE TEST PROCEDURES USED. IN ADDITION TO THIS REPORT O.D.O.T. RESERVES THE RIGHT TO CONDUCT FIELD MEASUREMENTS OF THOSE ACCELERATION LOADS AND TO ACCEPT ONLY THOSE DESIGNS IN WHICH THE TESTED INSTALLATIONS MEET THE SPECIFICATIONS.

THE TERMINAL BLOCK SHOWN ON THE STANDARD CONSTRUCTION DRAWINGS SHALL BE INCLUDED IN THE PRICE OF THE TOWER.

## ITEM SPECIAL MAINTAIN EXISTING LIGHTING AND TEMPORARY LIGHTING

EXISTING ROADWAYS WHICH ARE TO REMAIN OPEN TO TRAFFIC DURING CONSTRUCTION OF THIS PROJECT AND WHICH ARE LIGHTED SHALL HAVE THE LIGHTING MAINTAINED AS DESCRIBED HEREIN.

BEFORE ANY WORK IS STARTED IN THE IMMEDIATE VICINITY OF ANY EXISTING LIGHTING CIRCUITS, REPRESENTATIVES OF THE STATE, THE MAINTAINING AGENCY AND THE CONTRACTOR SHALL MAKE A VISUAL INSPECTION OF THE EXISTING ROADWAY LIGHTING CIRCUITS TO BE MAINTAINED. DURING THIS INSPECTION, A WRITTEN RECORD OF THE CONDITION OF THE EXISTING LIGHTING SHALL BE MADE BY THE STATE'S REPRESENTATIVE. THIS WRITTEN REPORT SHALL NOTE INDIVIDUAL LUMINARIES WHICH ARE NOT IN WORKING ORDER, INDIVIDUAL POLES WHICH ARE NOT STANDING, AND INDIVIDUAL CIRCUITS WHICH ARE NOT IN WORKING ORDER. THE COMPLETED REPORT SHALL BE SIGNED BY THE REPRESENTATIVES OF THE STATE, THE MAINTAINING AGENCY AND THE CONTRACTOR.

IF, AS A RESULT OF THIS INSPECTION, IT IS DETERMINED THAT THE CONDITION OF THE EXISTING SYSTEM IS BELOW THAT REQUIRED FOR THE SAFETY OF THE TRAVELING PUBLIC, THEN THE MAINTAINING AGENCY SHALL MAKE REPAIRS NECESSARY TO RETURN THE SYSTEM TO AN ACCEPTABLE CONDITION. FOLLOWING THESE REPAIRS, THE SYSTEM SHALL AGAIN BE INSPECTED AND A REPORT MADE AND SIGNED AS OUTLINED HEREIN.

WHEN THE EXISTING SYSTEM IS IN AN ACCEPTABLE CONDITION, IT SHALL BE TURNED OVER TO THE CONTRACTOR WHO SHALL THEN BE REQUIRED TO MAINTAIN THE EXISTING LIGHTING TO THE CONDITION OUTLINED IN THIS REPORT WITH THE EXCEPTION OF KNOCKDOWNS DUE TO TRAFFIC ACCIDENTS.

REPLACEMENT OF KNOCKED DOWN UNITS SHALL BE DONE ONLY WHEN THE ENGINEER HAS DETERMINED THAT THE REPLACEMENT OF THE KNOCKED DOWN UNIT IS NECESSARY AND SHALL BE PAID SEPARATELY ON A UNIT BASIS.

BETTERMENTS SHALL BE COVERED IN ITEMS OF WORK PERTAINING TO THE CONSTRUCTION OF PERMANENT IMPROVEMENTS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADEQUATE TEMPORARY LIGHTING FOR THE TEMPORARY ROADS AS SHOWN ON THE PLANS. SHOULD THE CONTRACTOR DESIRE THE REMOVAL OF THE EXISTING LIGHTING BEFORE THE NEW LIGHTING IS OPERATIONAL, THE CONTRACTOR SHALL THEN BE RESPONSIBLE FOR ADEQUATE TEMPORARY LIGHTING OF THAT PORTION OF THE EXISTING ROADWAY AFFECTED BY THE REMOVAL OF THE EXISTING LIGHTING.

PRIOR TO INSTALLING SUCH LIGHTING, THE CONTRACTOR SHALL PREPARE AND SUBMIT FOUR (4) SETS OF THE TEMPORARY LIGHTING PLAN TO THE DIRECTOR FOR REVIEW AND APPROVAL.

FOR CONTINUATION OF NOTES, SEE SH. 145A

# LIGHTING GENERAL NOTES

F.H.W.A. REGION	STATE	PROJECT
5	OHIO	

145A
275

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## ITEM SPECIAL—MAINTAIN EXISTING LIGHTING AND TEMPORARY LIGHTING. CONT'D

THIS PLAN SHALL SHOW LOCATION OF POLES, LENGTH OF BRACKET ARMS, STYLE OF LUMINARIES, MOUNTING HEIGHT, WIRING METHODS AND OTHER PERTINENT INFORMATION. THE TEMPORARY LIGHTING SHALL PROVIDE AN AVERAGE INITIAL INTENSITY OF 1.2 FOOTCANDLES WITH AN AVERAGE TO MINIMUM UNIFORMITY NOT TO EXCEED 4:1. MOUNTING HEIGHT FOR TEMPORARY LUMINARIES SHALL NOT BE LESS THAN 27 FEET AND MINIMUM OVERHEAD CONDUCTOR CLEARANCE SHALL BE 20 FEET. TEMPORARY OVERHEAD CONSTRUCTION SHALL NOT BE LESS THAN GRADE "A" FOR STRENGTH REQUIREMENT AS DEFINED BY THE NATIONAL ELECTRIC SAFETY CODE. WOOD POLES WITH OVERHEAD WIRING MAY BE USED. HOWEVER, TEMPORARY LIGHTING SHALL MEET FEDERAL AND STATE SAFETY CRITERIA. IF BREAKAWAY POLES ARE USED TO MEET THESE CRITERIA, THEN UNDERGROUND WIRING SHALL BE USED. RECONDITIONED OR USED MATERIALS MAY BE FURNISHED FOR TEMPORARY LIGHTING.

ALL MATERIALS NECESSARY TO COMPLETE THE TEMPORARY LIGHTING SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. WHEN NO LONGER NEEDED, THE TEMPORARY LIGHTING INSTALLATION SHALL BE REMOVED AND PROPERLY DISPOSED OF BY THE CONTRACTOR.

THE MAINTAINING AGENCY WILL PAY FOR ELECTRICAL ENERGY CONSUMED BY EXISTING POWER SERVICES AND BY PROPOSED PERMANENT POWER SERVICES AFTER ACCEPTANCE. THE CONTRACTOR WILL PAY FOR ELECTRICAL ENERGY, INSTALLATION, REMOVAL AND MAINTENANCE OF ANY TEMPORARY POWER SERVICES.

THE LUMP SUM PRICE BID FOR ITEM 625 "TEMPORARY LIGHTING" SHALL INCLUDE PAYMENT FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO PROVIDE TEMPORARY LIGHTING FOR THE TEMPORARY ROADS AS SHOWN IN THE PLANS.

THE LUMP SUM PRICE BID FOR ITEM SPECIAL "MAINTAIN EXISTING LIGHTING" SHALL INCLUDE PAYMENT FOR ALL LABOR, EQUIPMENT, AND MATERIALS AND INCIDENTALS NECESSARY TO MAINTAIN THE EXISTING LIGHTING AS SPECIFIED HEREIN.

THE UNIT PRICE BID FOR ITEM SPECIAL "REPLACEMENT OF EXISTING LIGHTING UNIT" SHALL BE FULL PAYMENT FOR THE REPLACEMENT OF AN EXISTING LIGHTING UNIT WHICH HAS BEEN KNOCKED DOWN AFTER THE AFOREMENTIONED INSPECTION AND SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO PROVIDE A REPLACEMENT FOR SUCH UNIT.

## UTILITIES NOTIFICATION

AT LEAST TWO WORKING WORKING DAYS PRIOR TO COMMENCING CONSTRUCTION OPERATIONS IN ANY AREA WHICH MAY INVOLVE UNDERGROUND FACILITIES, THE CONTRACTOR SHALL NOTIFY PROJECT ENGINEER, THE REGISTERED UNDERGROUND UTILITY PROTECTION SERVICES AND THE OWNERS OF ALL UNDERGROUND UTILITY FACILITIES SHOWN IN THE PLANS.

## SAFETY NOTE

THIS CONTRACT INVOLVES WORK ON LIGHTING CIRCUITS WHICH ARE MAINTAINED BY THE CITY OF COLUMBUS, DIVISION OF ELECTRICITY. THE CONTRACTOR SHALL CONFORM TO THE DIVISION OF ELECTRICITY'S EXISTING SAFETY POLICY, COPIES OF WHICH ARE AVAILABLE FROM THE DIVISION OF ELECTRICITY.

PRIOR TO PERFORMING ANY WORK ON ANY PART OF A LIGHTING CIRCUIT WHICH COULD AFFECT THE DIVISION OF ELECTRICITY, THE CONTRACTOR SHALL NOTIFY THEM AT 645-7627. HE SHALL AGAIN CALL THE DIVISION OF ELECTRICITY THAT SAME DAY WHEN HE IS CLEAR OF THAT WORK.

## ITEM 625 — SERVICE TO UNDERPASS LIGHTING

THIS ITEM SHALL CONSIST OF PROVIDING COMPLETE ELECTRICAL SERVICE, EXCEPT FOR LUMINAIRES AND STRUCTURE GROUNDING, FOR AN UNDERPASS LIGHTING SYSTEM. THE INSTALLATION WORK SHALL INCLUDE CONDUITS, CONDUIT GROUNDING, MOUNTINGS, FITTINGS, JUNCTION BOXES, CABLES, AND ALL INCIDENTALS NECESSARY TO COMPLETE, READY FOR USE, THE SERVICE AS DETAILED IN THE PLANS. THE LUMP SUM PRICE BID FOR "ITEM 625 — SERVICE TO UNDERPASS LIGHTING" SHALL INCLUDE PAYMENT FOR ALL EQUIPMENT, LABOR, AND MATERIALS NECESSARY TO COMPLETE THE WORK AS SPECIFIED. COMPONENT PARTS NOT SPECIFICALLY MENTIONED BUT REQUIRED FOR SATISFACTORY OPERATION OF THIS ITEM SHALL BE FURNISHED AND CONSIDERED PAID FOR AS PART OF THE ITEM.

# LIGHTING GENERAL SUMMARY

CALC. BY	
CHECK BY	

F.H.W.A. REGION	STATE	PROJECT
5	OHIO	

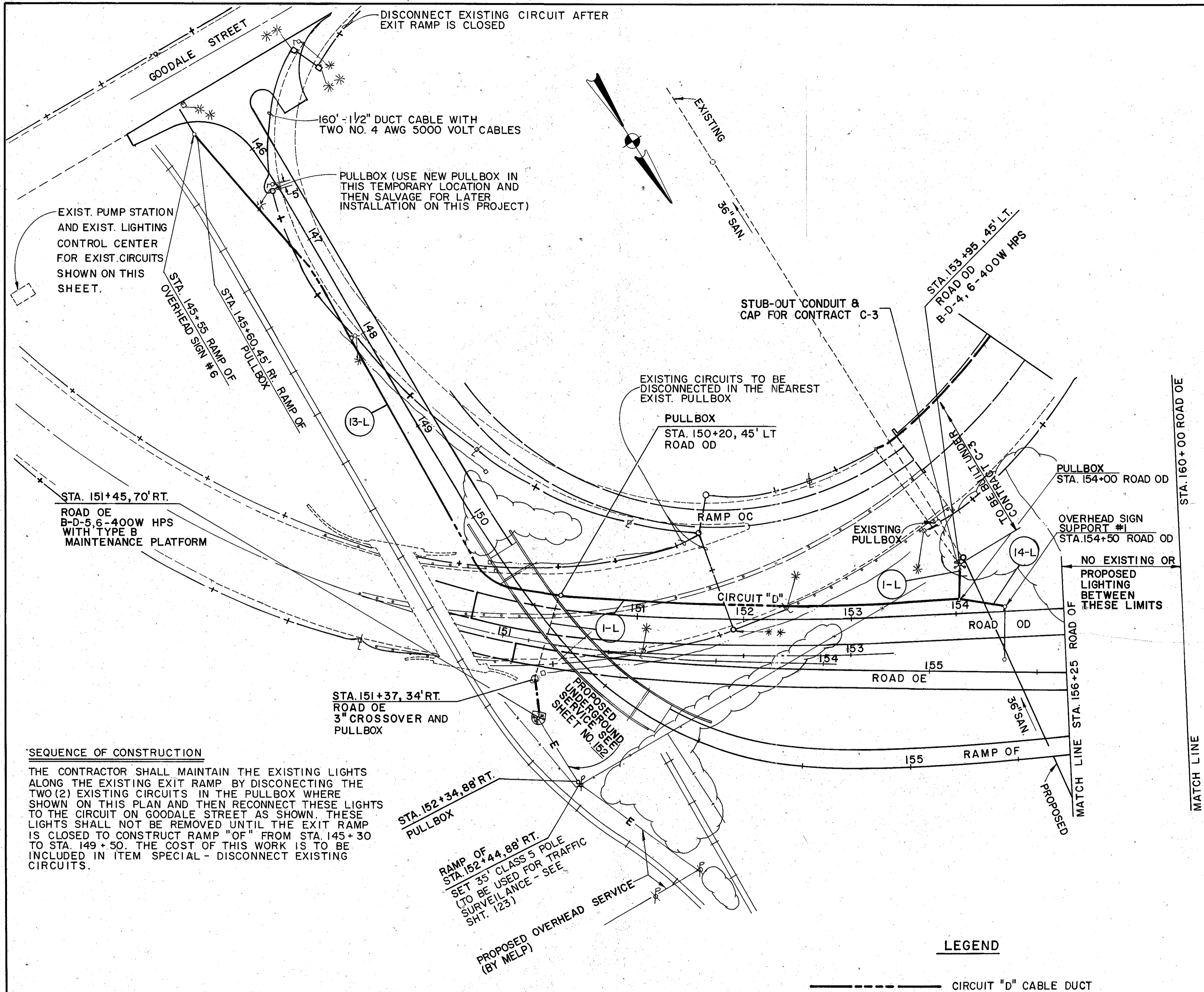
146
275

FRANKLIN COUNTY  
FRA-670-1.25-C-2

ITEM	SHEET NUMBER										PARTICIPATION			ITEM	ITEM EXT.	TOTAL QUANT.	UNIT	DESCRIPTION	REF. NO.
	145	145A	147								NH	STP	100% CITY						
202			11								5	6		202	75301	11	EACH	PULLBOX REMOVED, AS PER PLAN ✓	145
202			45								14	31		202	75403	45	EACH	LIGHT POLE REMOVED FOR STORAGE, AS PER PLAN ✓	145
202			45								14	31		202	75501	45	EACH	LIGHT POLE FOUNDATION REMOVED, AS PER PLAN	145
202			45								14	31		202	75505	45	EACH	LUMINAIRE REMOVED FOR STORAGE, AS PER PLAN ✓	145
625			12									12		625	00500	12	EACH	CONNECTOR KIT, TYPE II	
603	50										25	25		603	00400	50	LIN.FT.	4" CONDUIT, TYPE "E"	
625			12									12		625	00600	12	EACH	CONNECTOR KIT, TYPE III	
625			18								7	11		625	01500	18	EACH	CABLE SPLICING KIT	
625			12									12		625	04500	12	EACH	LIGHT POLE, DESIGN AT18B34.2	
625			1									1		625	10500	1	EACH	LIGHT POLE, MISC: 25' CLASS 5 WOOD POLE	
625			2								1	1		625	13400	2	EACH	LIGHT TOWER BBBB 100	
625			1								1			625	13410	1	EACH	LIGHT TOWER BBBB 130	
625			2								2			625	13204	2	EACH	LIGHT TOWER BBBB 110	
625			1									1		625	13208	1	EACH	LIGHT TOWER BBBB 120	
625			1								1			625	13406	1	EACH	LIGHT TOWER BBBB 120	
625			12									12		625	14100	12	EACH	LIGHT POLE FOUNDATION 24" x 8' DEEP	
625			2								1	1		625	15200	2	EACH	LIGHT TOWER FOUNDATION, 36" x 25' DEEP	
625			2								1	1		625	15300	2	EACH	LIGHT TOWER FOUNDATION, 36" x 30' DEEP	
625			1								1			625	15400	1	EACH	LIGHT TOWER FOUNDATION, 42" x 25' DEEP	
625			2								2			625	15700	2	EACH	LIGHT TOWER FOUNDATION, 36" x 40' DEEP	
625	1												1	625	20000	1	EACH	PORTABLE POWER UNIT, 713.21	
625			1								1			625	21100	1	EACH	LIGHT TOWER MAINTENANCE PLATFORM, TYPE B	
625			2								1	1		625	21200	2	EACH	LIGHT TOWER MAINTENANCE PLATFORM, TYPE C	
625			1272									1272		625	23400	1272	LIN.FT.	NO. 10 AWG POLE AND BRACKET CABLE	
625			6881								3639	3242		625	24100	6881	LIN.FT.	1-1/2" DUCT CABLE WITH TWO NO. 4 AWG 5000 VOLT CABLES	
625			394								394			625	25500	394	LIN.FT.	CONDUIT 3", 713.04	
625			12									12		625	26300	12	EACH	LUMINAIRE, STYLE B, TYPE III, 200 WATT HPS, 713.11, 480V	
625			8								4	4		625	27000	8	EACH	LUMINAIRE ASYMMETRIC, 400 WATT HPS, 713.21, 480 V	
625			30								30			625	27200	30	EACH	LUMINAIRE SYMMETRIC, 400 WATT HPS, 713.21, 480 V	
625			2									2		625	27500	2	EACH	LUMINAIRE, UNDERPASS LPS, 713.13, 55W, 480 V	
625			6646								3684	2962		625	29002	6646	LIN.FT.	TRENCH, 24" DEEP	
625			1									1		625	29901	1	EACH	JUNCTION BOX, AS PER PLAN	152
625			12								6	6		625	31320	12	EACH	PULLBOX, 713.081, 18" x 18"	
625			27								10	17		625	32000	27	EACH	GROUND ROD	
625			1								1			625	34001	1	EACH	POWER SERVICE, AS PER PLAN	152
625			1									1		625	37100	1	EACH	SERVICE TO UNDERPASS LIGHTING	145A
625	LUMP												LUMP	625	38000	LUMP		HIGH VOLTAGE TEST	
625	LUMP												LUMP	625	39000	LUMP		TEMPORARY LIGHTING	
SPECIAL	LUMP										LUMP			SPECIAL	625 40000	LUMP		MAINTAINING EXISTING LIGHTING	145
SPECIAL			2								2			SPECIAL	625 40010	2	EACH	REPLACEMENT OF EXISTING LIGHTING UNIT	145A
SPECIAL			3								3			SPECIAL	625 40020	3	EACH	DISCONNECT EXISTING CIRCUIT	145
625			250									250		625	98100	250	LIN.FT.	LIGHTING, MISC.: NO. 6 AWG 120 V SERVICE CABLE, AS PER PLAN	

248E\GEN-1  
1-1 33.5.22.0 08.75  
02/25/03 MFP



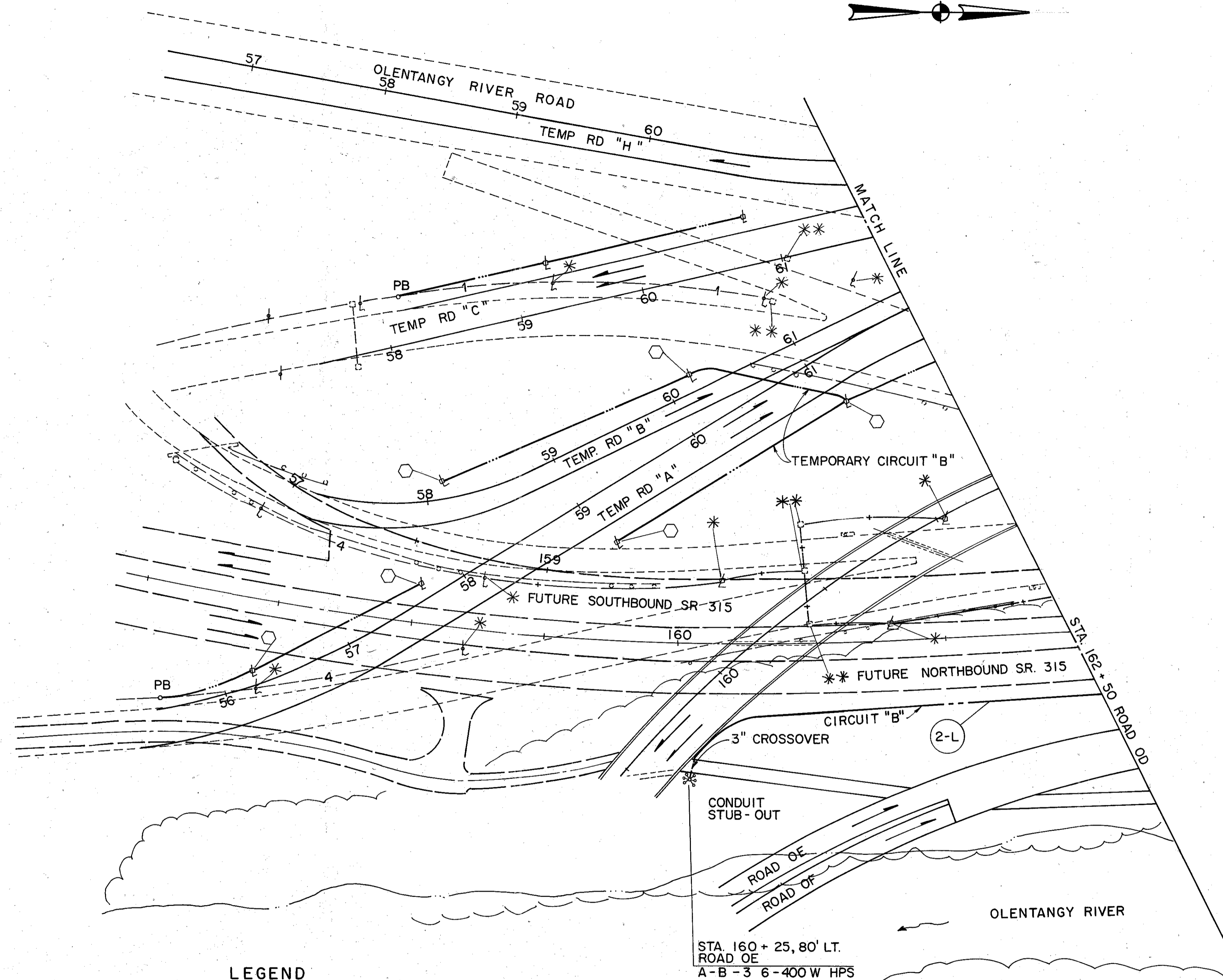


**SEQUENCE OF CONSTRUCTION**

THE CONTRACTOR SHALL MAINTAIN THE EXISTING LIGHTS ALONG THE EXISTING EXIT RAMP BY DISCONNECTING THE TWO (2) EXISTING CIRCUITS IN THE PULLBOX WHERE SHOWN ON THIS PLAN AND THEN RECONNECT THESE LIGHTS TO THE CIRCUIT ON GOODALE STREET AS SHOWN. THESE LIGHTS SHALL NOT BE REMOVED UNTIL THE EXIT RAMP IS CLOSED TO CONSTRUCT RAMP "OF" FROM STA. 145+30 TO STA. 149+50. THE COST OF THIS WORK IS TO BE INCLUDED IN ITEM SPECIAL - DISCONNECT EXISTING CIRCUITS.

**LEGEND**

--- CIRCUIT "D" CABLE DUCT

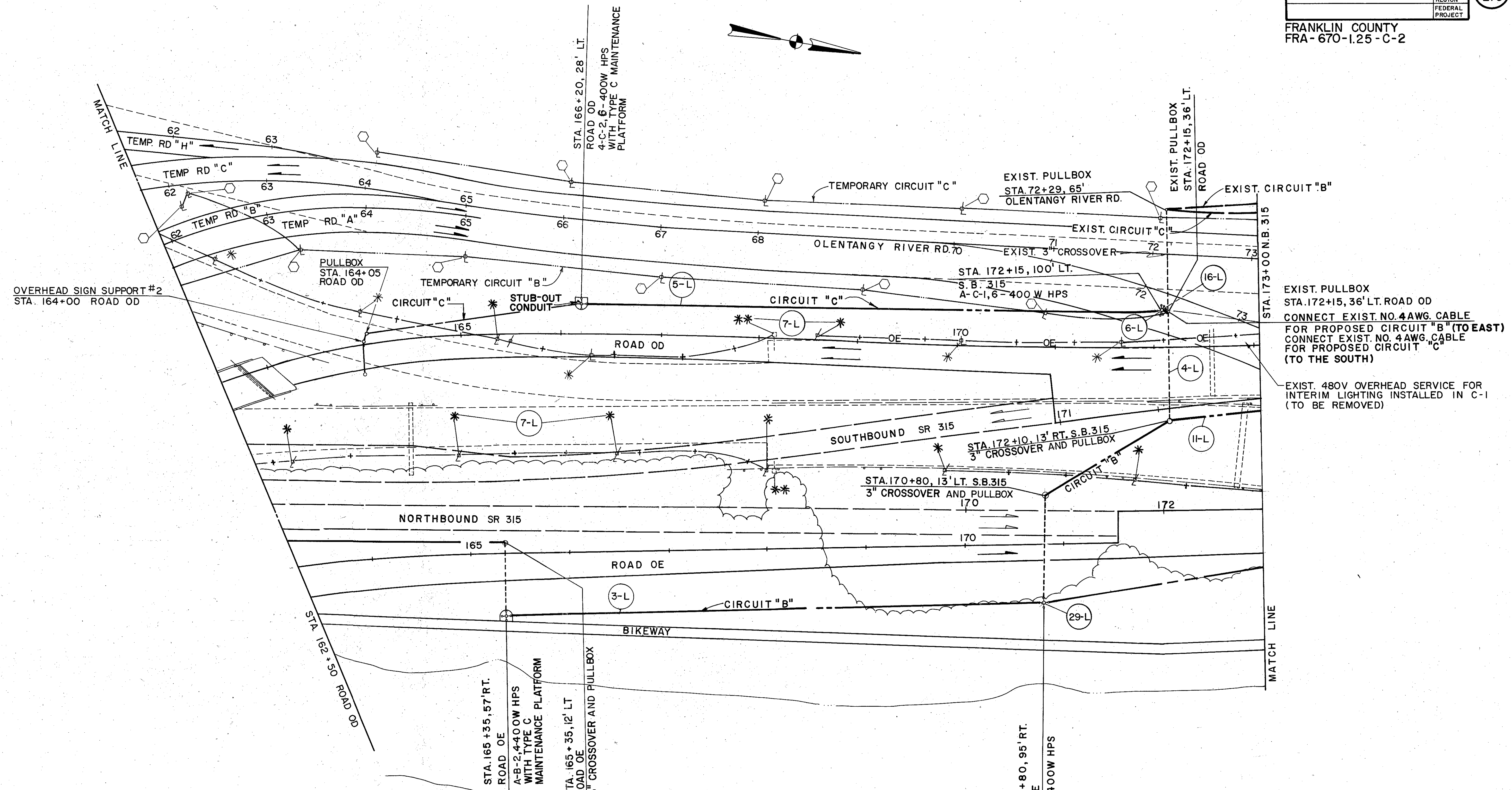


**LEGEND**

- CIRCUIT "B" CABLE DUCT
- \* EXIST. LIGHT POLE MAINTAINED UNTIL END OF PROJECT
- PB TEMPORARY PULLBOX
- TEMPORARY LIGHT POLE
- TEMPORARY CIRCUIT "B"

**SAFETY POLICY**

THE CONTRACTOR SHALL CONFORM TO THE CITY OF COLUMBUS, DIVISION OF ELECTRICITY'S SAFETY POLICY, COPIES OF WHICH ARE AVAILABLE FROM THE DIVISION OF ELECTRICITY, 910 DUBLIN ROAD, COLUMBUS, OHIO 43215.



EXIST. PULLBOX STA. 172+15, 36' LT. ROAD OD  
 CONNECT EXIST. NO. 4 AWG. CABLE FOR PROPOSED CIRCUIT "B" (TO EAST)  
 CONNECT EXIST. NO. 4 AWG. CABLE FOR PROPOSED CIRCUIT "C" (TO THE SOUTH)  
 EXIST. 480V OVERHEAD SERVICE FOR INTERIM LIGHTING INSTALLED IN C-1 (TO BE REMOVED)

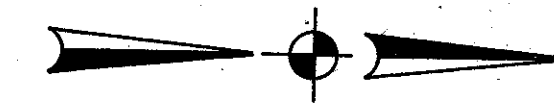
**LEGEND**

- CIRCUIT "B" CABLE DUCT
- CIRCUIT "C" CABLE DUCT
- OE EXIST. 480V OVERHEAD ELEC. SERVICE
- TEMPORARY LIGHT POLE
- TEMPORARY CIRCUIT

SEE SAFETY NOTE ON SHEET 145A



FRANKLIN COUNTY  
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EXIST. 120 V SERVICE TO FLASHING ARROW PANEL (INSTALLED IN C-1) TO BE MAINTAINED

STA. 17+73.5, 35' RT.  
EXIST. CONTROL CENTER  
EXIST. CIRCUITS "A", "B" & "C"

EXIST. 2- WOOD POLES SET IN CONTRACT C-1 WITH OVERHEAD #6 AWG SERVICE CABLE

STA. 181+35, 24' RT.  
25' CLASS 5  
TEMPORARY WOOD POLE FOR 120V SERVICE TO FLASHING ARROW

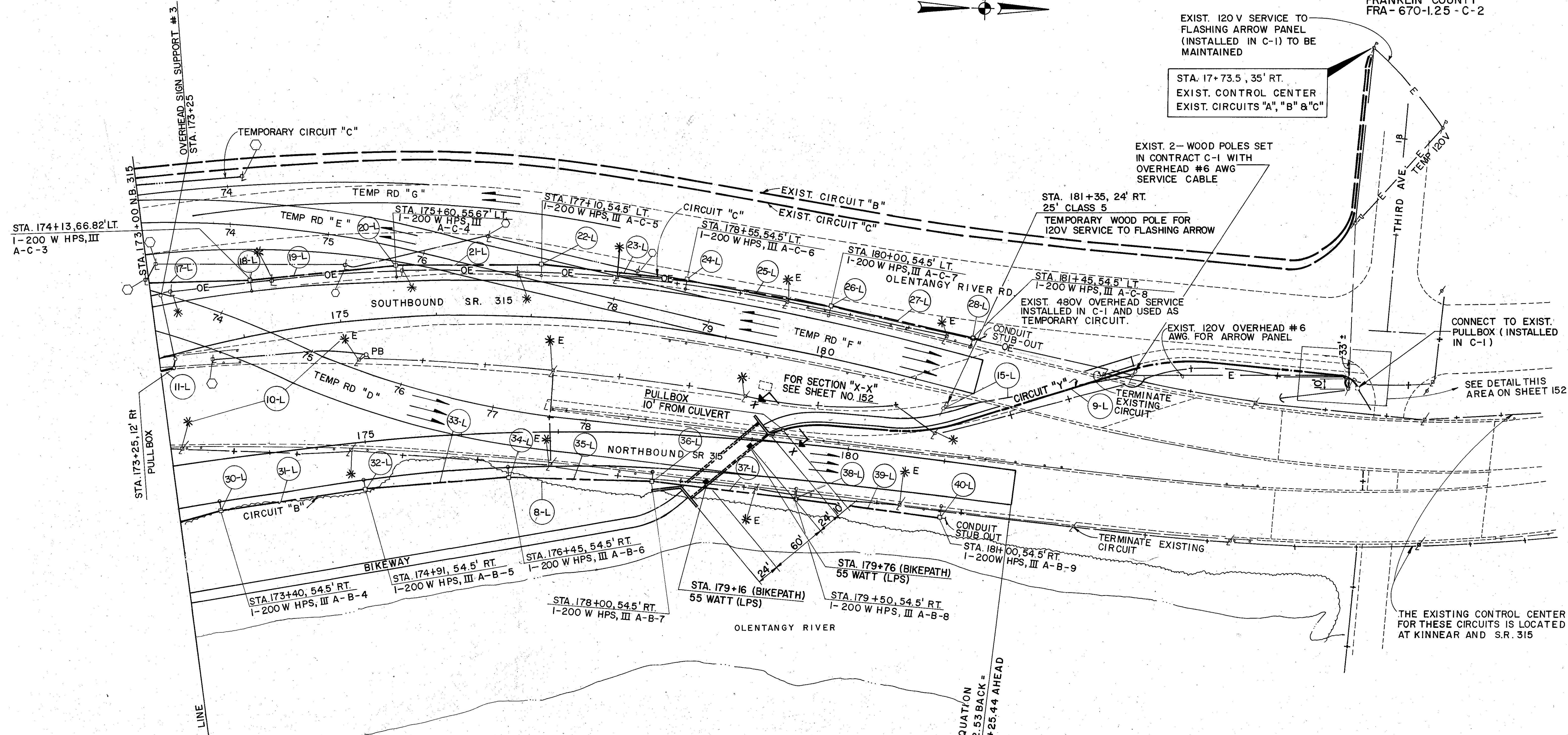
EXIST. 480V OVERHEAD SERVICE INSTALLED IN C-1 AND USED AS TEMPORARY CIRCUIT.

EXIST. 120V OVERHEAD #6 AWG. FOR ARROW PANEL

CONNECT TO EXIST. PULLBOX (INSTALLED IN C-1)

SEE DETAIL THIS AREA ON SHEET 152

THE EXISTING CONTROL CENTER FOR THESE CIRCUITS IS LOCATED AT KINNEAR AND S.R. 315

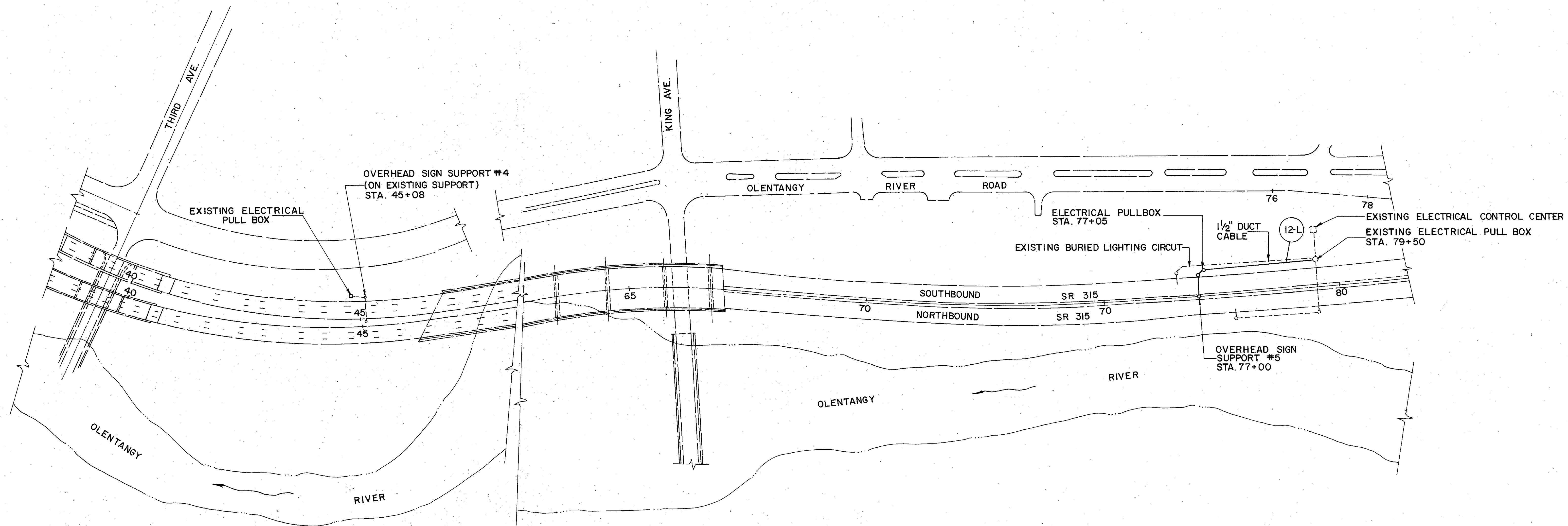
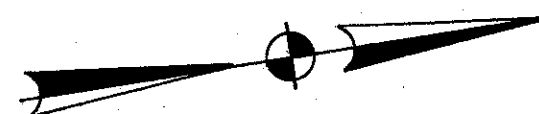


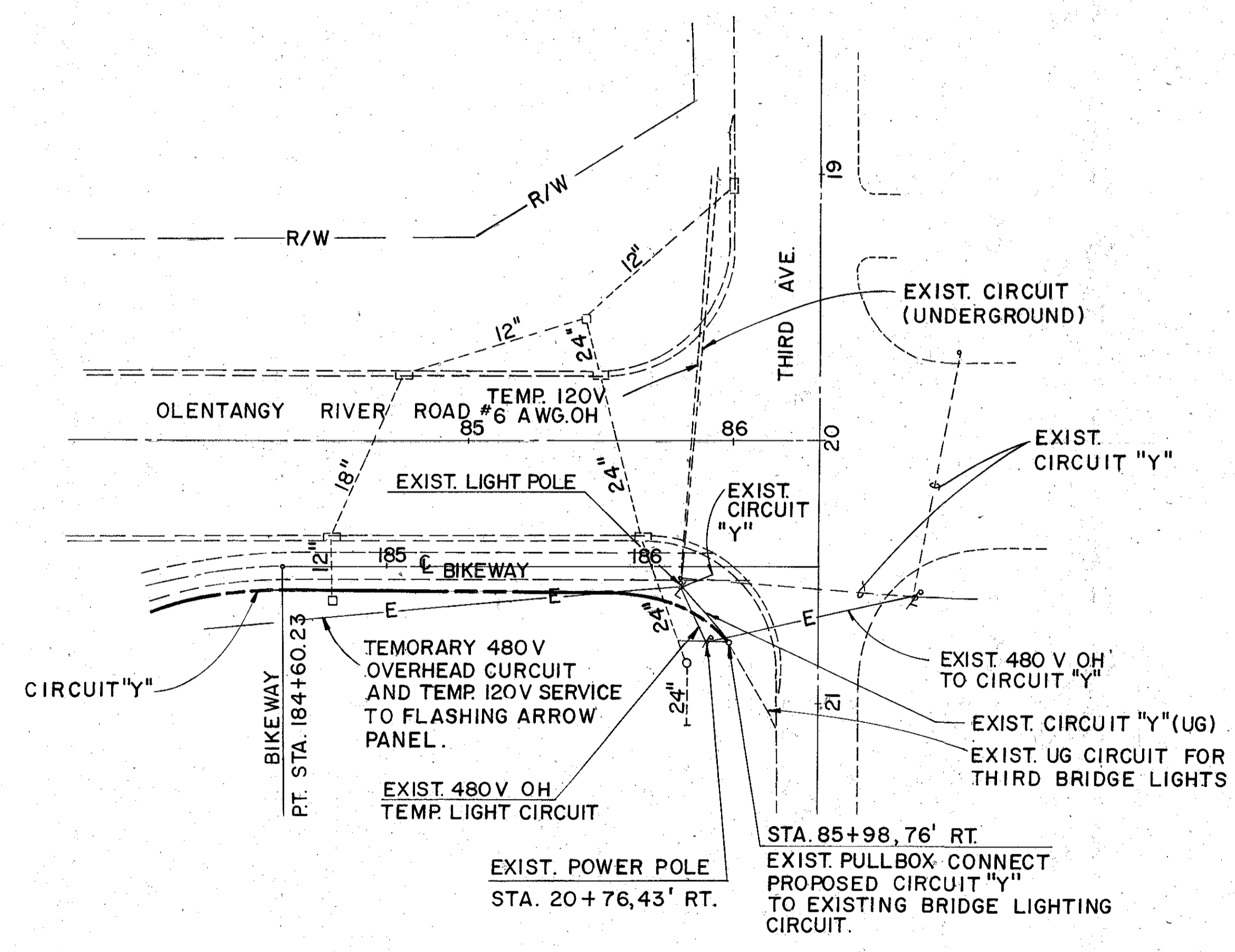
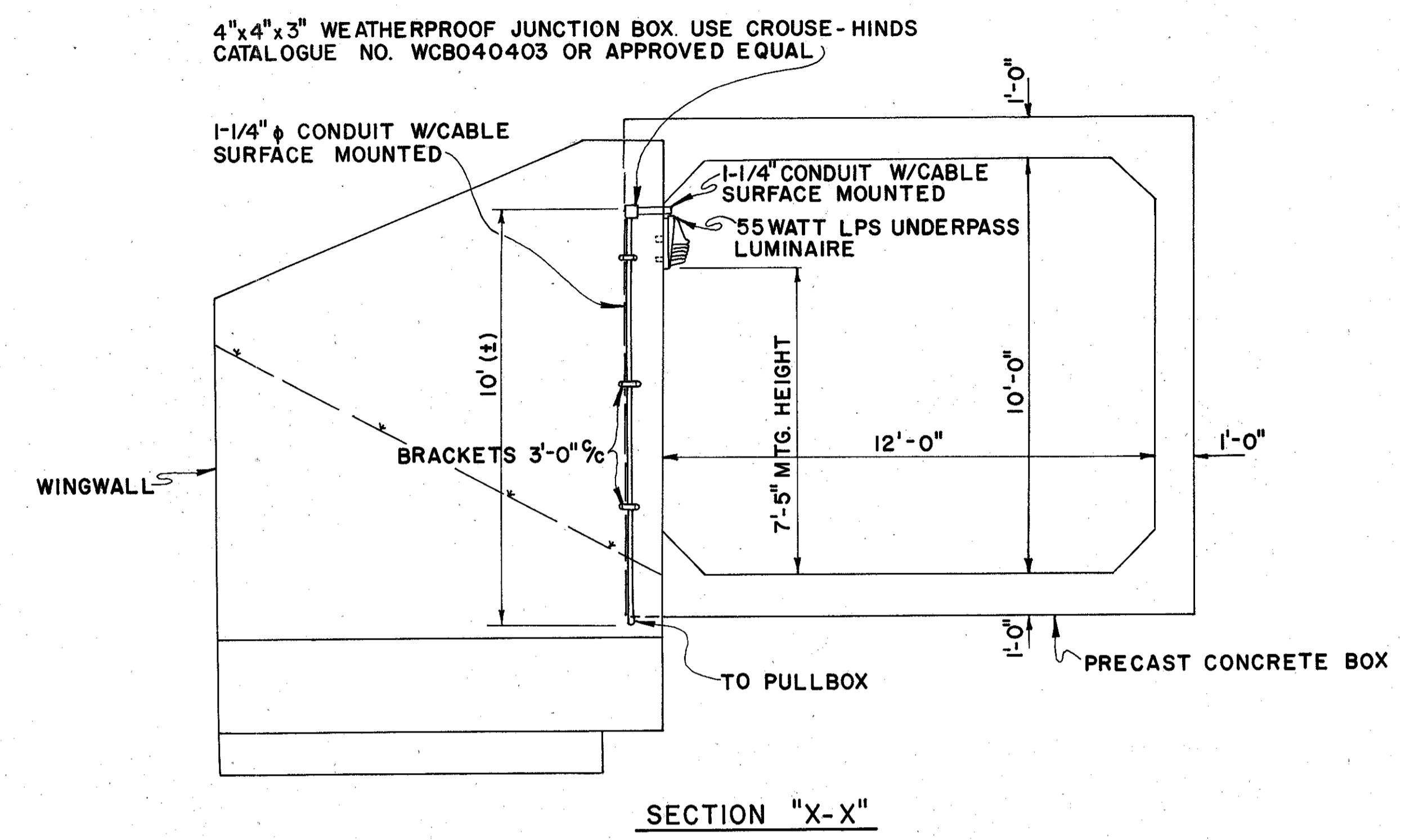
**LEGEND**

- CIRCUIT "B" CABLE DUCT
- CIRCUIT "Y" CABLE DUCT
- OE — EXIST. 480V OVERHEAD ELEC. SERVICE
- PB TEMPORARY PULLBOX
- \* E EXIST. LIGHT POLE MAINTAINED UNTIL END OF PROJECT
- TEMPORARY LIGHT POLE
- TEMPORARY CIRCUIT
- STREET LIGHT POLE, BRACKET ARM AND LUMINAIRE

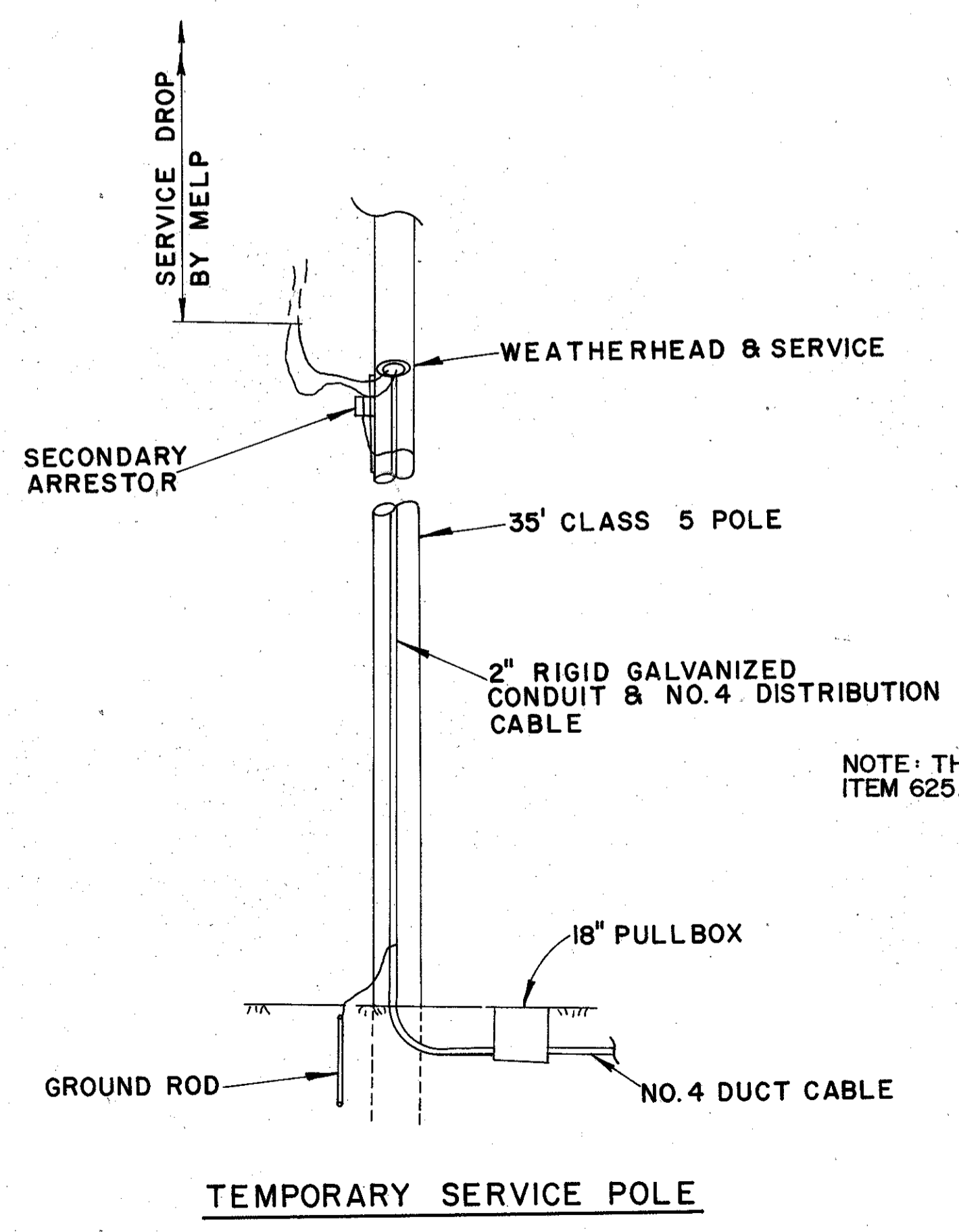
STATION EQUATION  
STA. 181+62.53 BACK =  
T.S. STA. 35+25.44 AHEAD

NOTE: MAINTAIN DROP FOR 120V TEMPORARY SERVICE TO FLASHING ARROW PANEL WITH LOCAL DISCONNECT. (SEE SHEET 22 FOR LOCATION OF ARROW PANEL)  
SEE SAFETY NOTE ON SHEET 145 A.



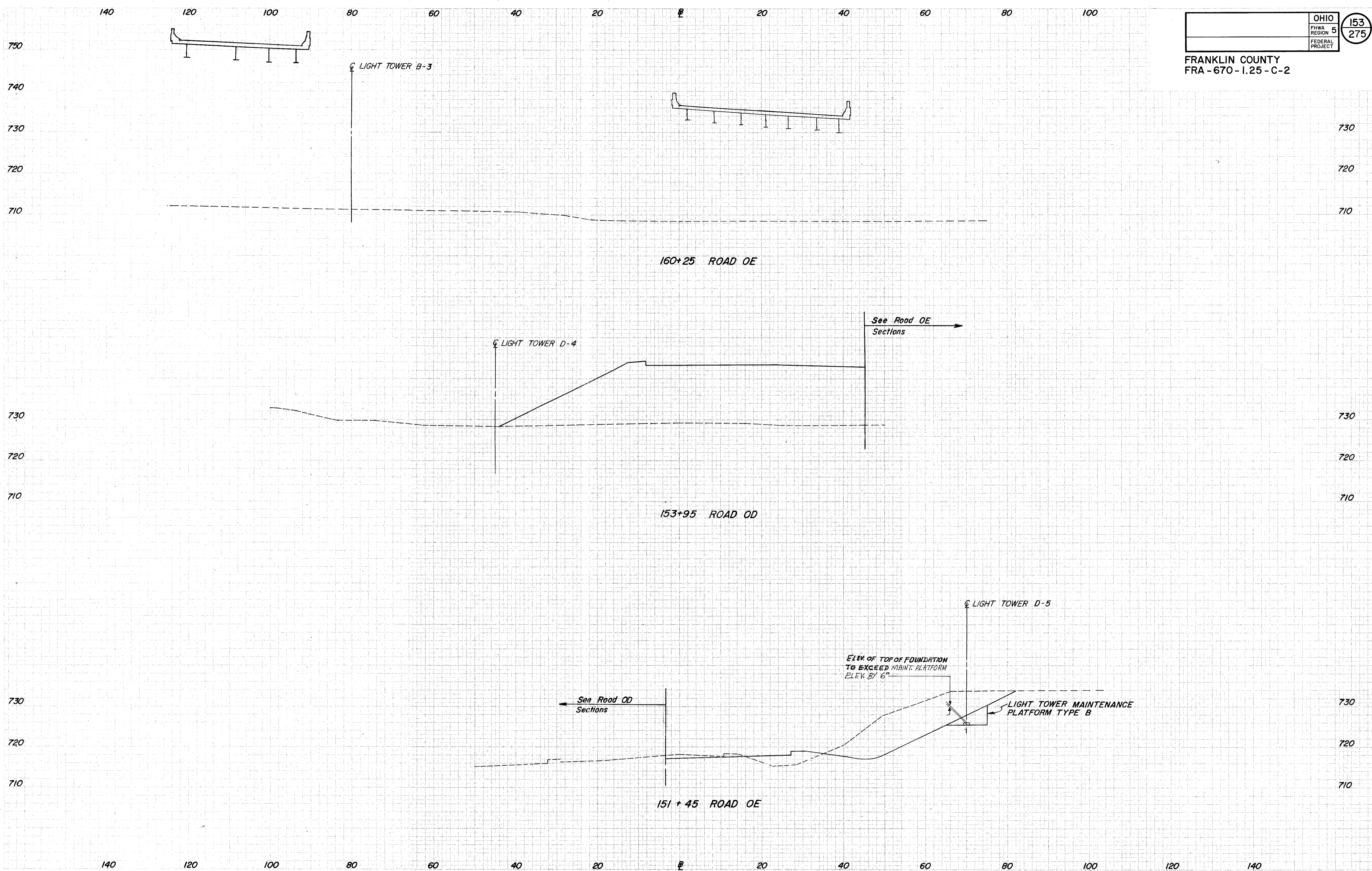


DETAIL OF SOUTH EAST CORNER OF  
INTERSECTION OF THIRD AVENUE  
AND OLENTANGY RIVER ROAD  
(SEE SHEET 150)



NOTE: THESE ITEMS PAID FOR UNDER ITEM 625, POWER SERVICE, AS PER PLAN.

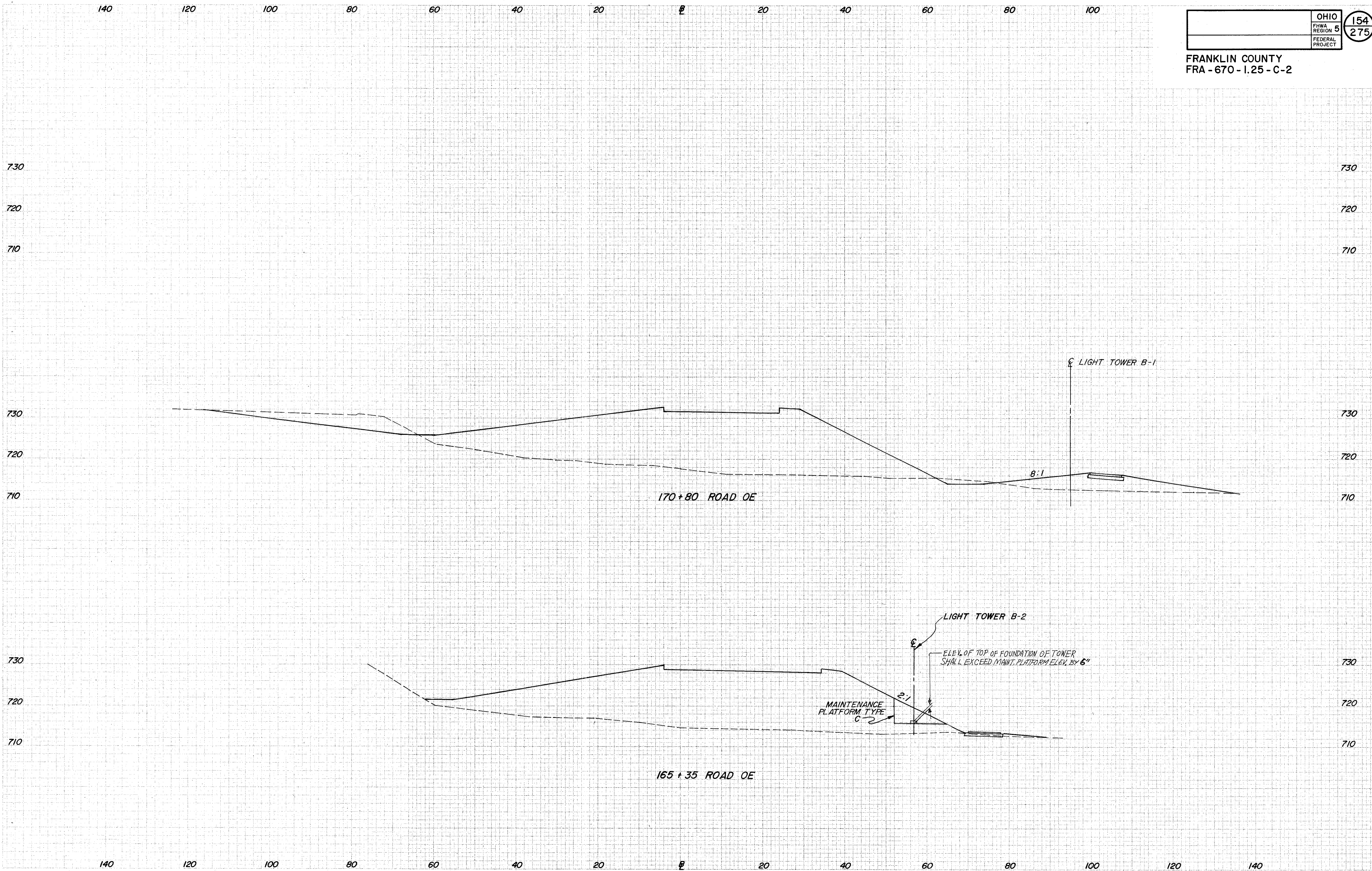
TOWER MOUNTING HEIGHTS & FOUNDATION SIZE			
LIGHT TOWER		FOUNDATION	
LOCATION	MOUNTING HEIGHT	DEPTH	DIAMETER
STA. 151+45 ROAD OE	100'	25'	36"
STA. 153+95 ROAD OD	120'	30'	36"
STA. 160+25 ROAD OE	130'	25'	42"
STA. 165+35 ROAD OE	110'	30'	36"
STA. 170+80 ROAD OE	120'	25'	36"



DESIGNER: [illegible]  
 CHECKED: [illegible]  
 DATE: [illegible]

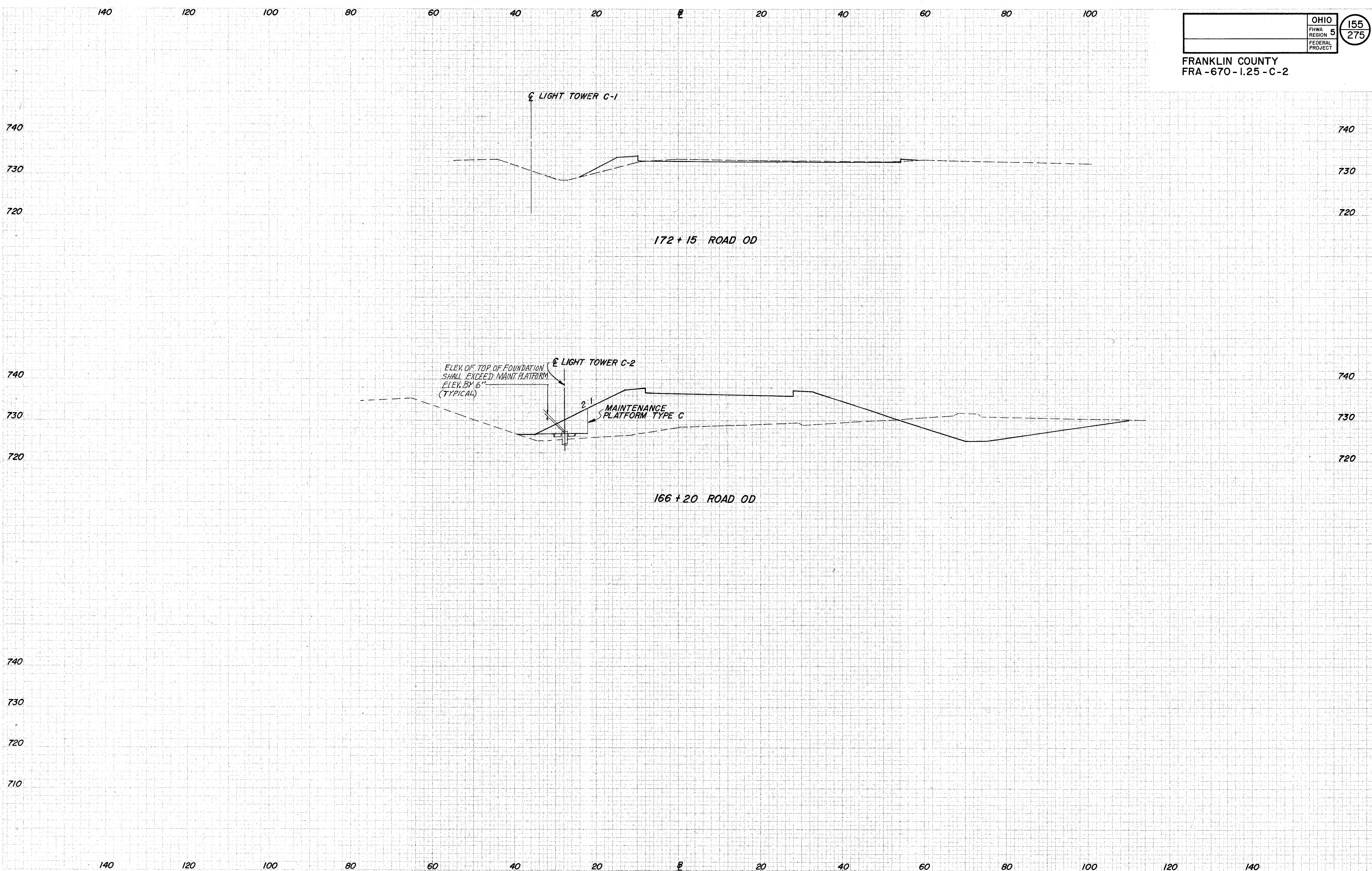
PROJECT: [illegible]  
 SHEET: [illegible]

HIGHWAY FEDERAL AID DISTRICT  
 PLATE 3-F FULL CROSS SECTION FULL LINE  
 MILELENGE  
 PROJECT NO. 153-275



ORIGINAL SURVEY  
 DATE 10/15/1954  
 BY J. W. BROWN  
 NOTE: SEE SHEET C-1

ORIGINAL SURVEY  
 DATE 10/15/1954  
 BY J. W. BROWN  
 NOTE: SEE SHEET C-1

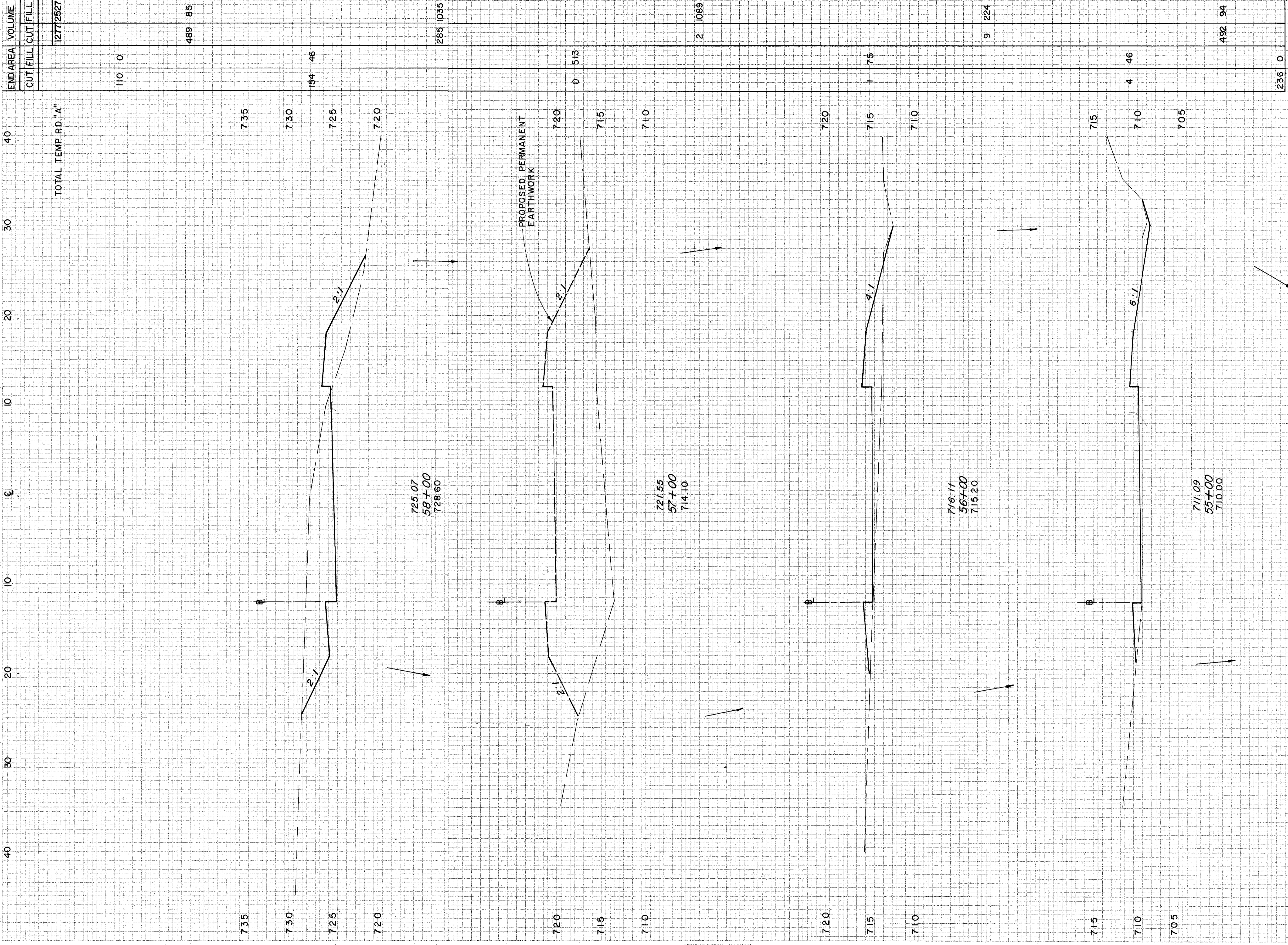


ORIGINAL SURVEY  
 STATE OF OHIO  
 SURVEYOR  
 STATE OF OHIO  
 SURVEYOR  
 STATE OF OHIO  
 SURVEYOR

ORIGINAL SURVEY  
 STATE OF OHIO  
 SURVEYOR  
 STATE OF OHIO  
 SURVEYOR  
 STATE OF OHIO  
 SURVEYOR

ORIGINAL SURVEY  
 DATE: \_\_\_\_\_  
 DRAWN BY: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_  
 PROJECT NO.: \_\_\_\_\_  
 SHEET NO.: \_\_\_\_\_

ORIGINAL SURVEY  
 DATE: \_\_\_\_\_  
 DRAWN BY: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_  
 PROJECT NO.: \_\_\_\_\_  
 SHEET NO.: \_\_\_\_\_



FRANKLIN COUNTY  
 FRA-670-1.25-C-2

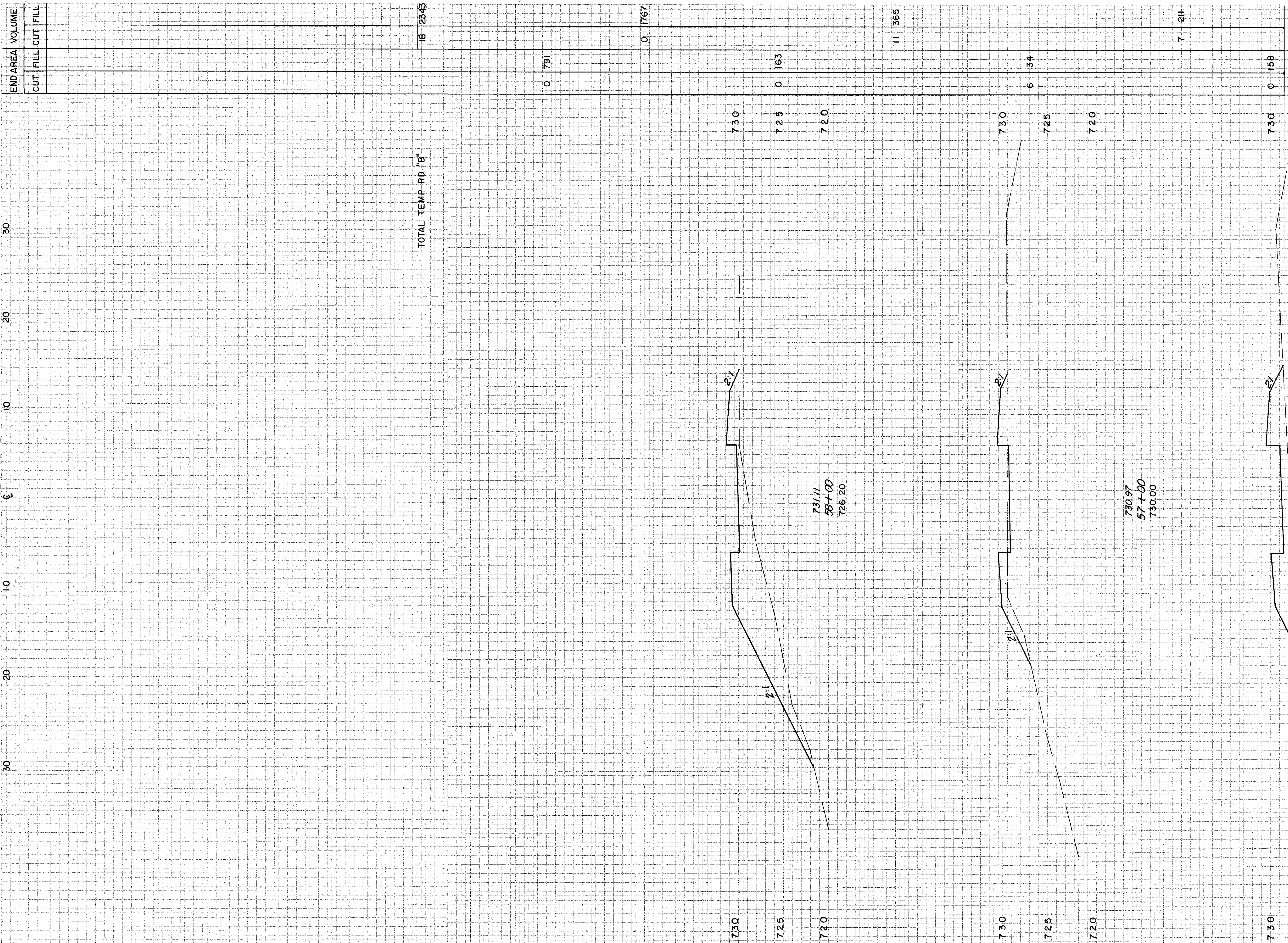
OHIO	156
FHWA REGION 5	275
FEDERAL PROJECT	

HIGHWAY DESIGN AND CONSTRUCTION  
 PLATE 3-FULL CROSS SECTION-FULL LINE  
 DRAWN BY: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_  
 DATE: \_\_\_\_\_

TEMP. RD. "A" STA. 53+89.26 TO STA. 58+00

FINAL SURVEY  
 DATE: \_\_\_\_\_  
 BY: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_

ORIGINAL SURVEY  
 DATE: \_\_\_\_\_  
 BY: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_



FRANKLIN COUNTY  
 FRA-670-125-C-2

OHIO  
 FHWA REGION 5  
 FEDERAL PROJECT

157  
 275

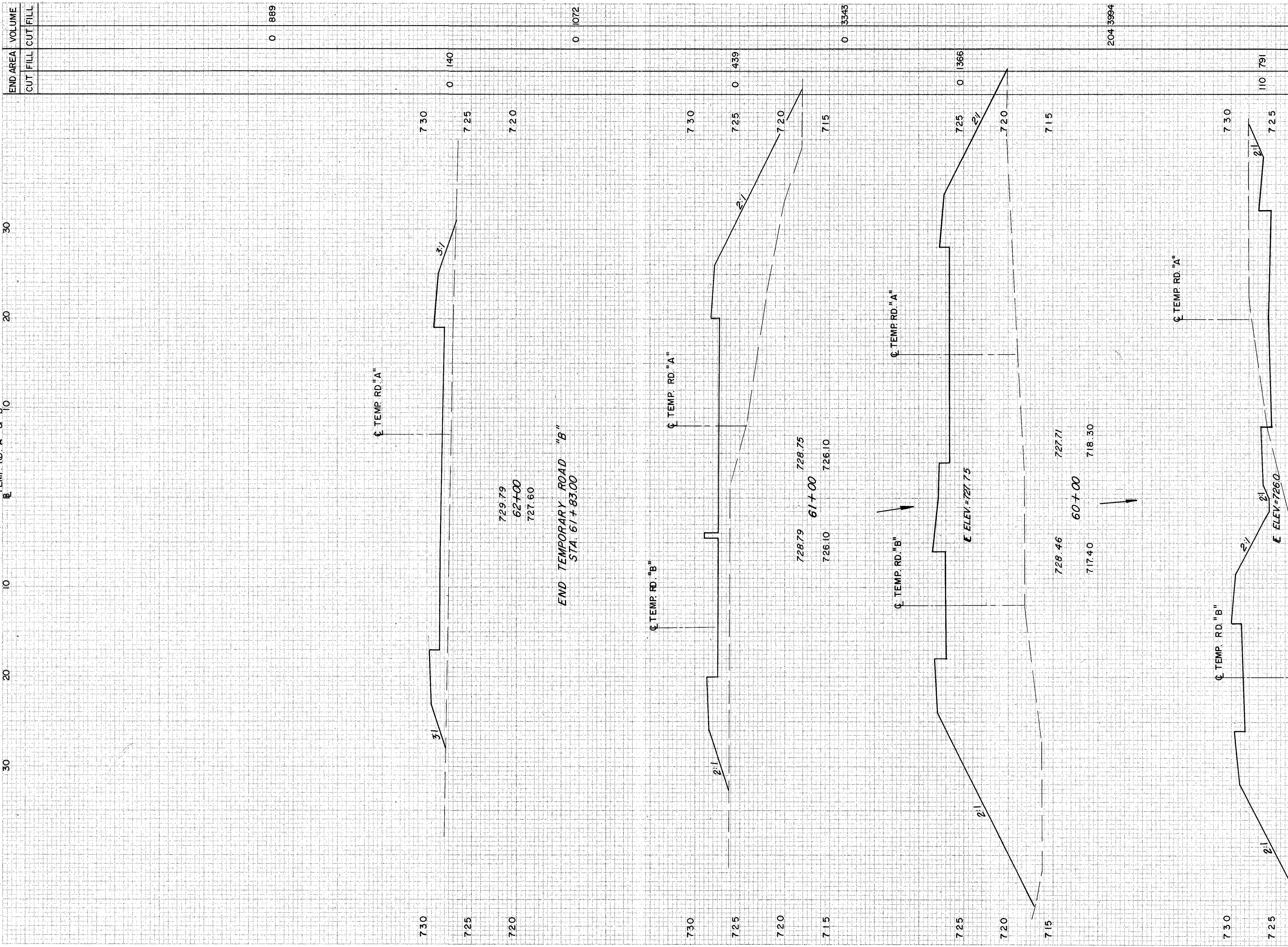
PLATE 3 - FULL CROSS SECTION - FULL LINE  
 PRINTED IN U.S.A.

TEMP ROAD "B" CROSS SECTION STA. 56+40.67 TO STA. 58+00



ORIGINAL SURVEY FACILITY  
 NOTES: BLOCK, ELEVATION, DISTANCE  
 DATE: 12/22/2004

ORIGINAL SURVEY FACILITY  
 NOTES: BLOCK, ELEVATION, DISTANCE  
 DATE: 12/22/2004



END AREA	VOLUME
CUT	
FILL	
	0 889
	0 1072
	0 3343
	204 3994

FRANKLIN COUNTY  
 FRA-670-1.25-C-2

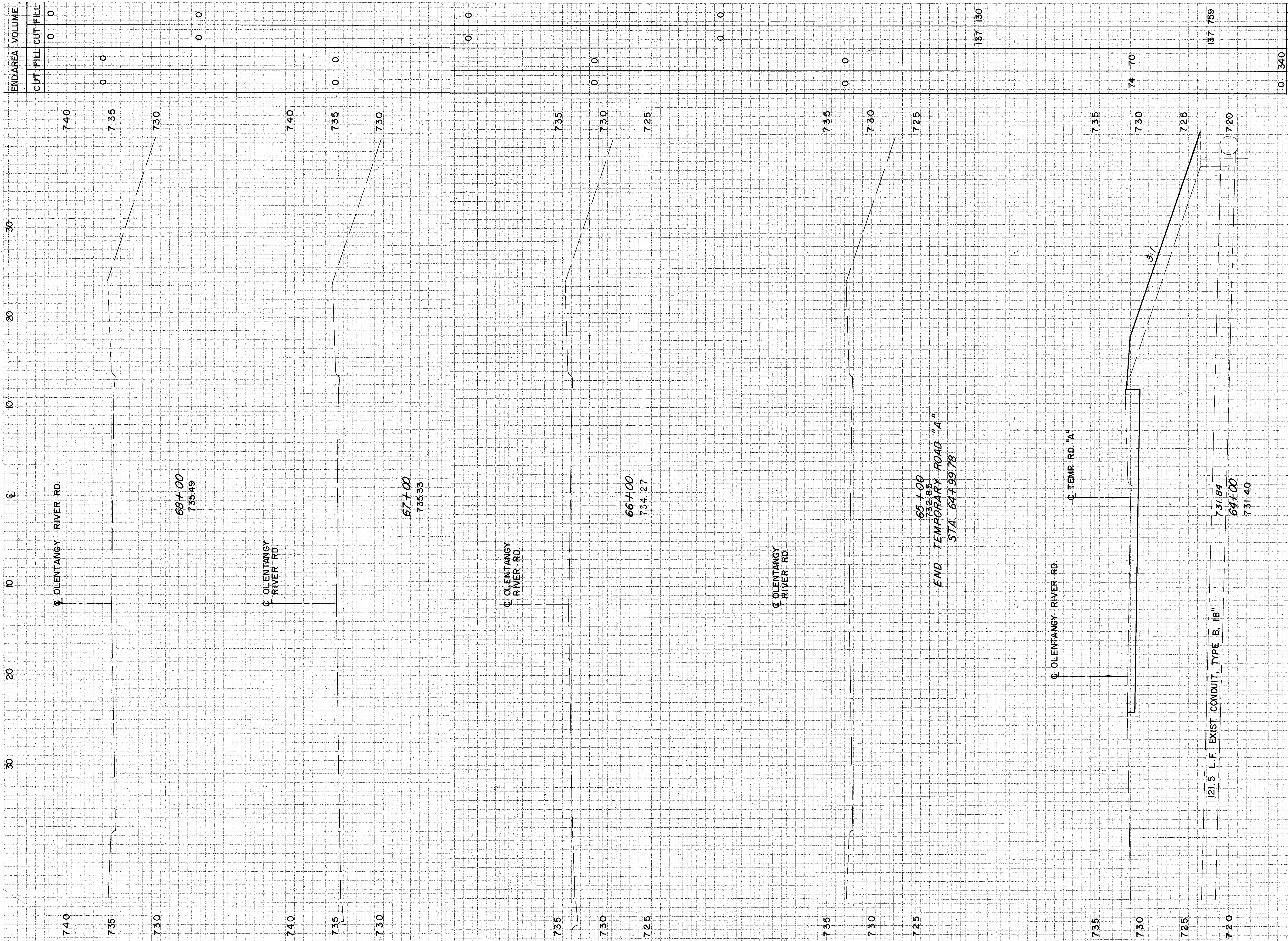
OHIO	158
FHWA REGION 5	275
FEDERAL PROJECT	

HIGHWAY FEDERAL AID SHEET  
 PLATE 3-FULL CROSS SECTION-FULL LINE  
 DATE: 12/22/2004

TEMP. ROADS "A" & "B" CROSS SECTION STA. 59+00 TO STA. 62+00

ORIGINAL SURVEY  
 DATE: \_\_\_\_\_  
 BY: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_  
 TITLE: \_\_\_\_\_  
 PROJECT NO.: \_\_\_\_\_  
 DRAWING NO.: \_\_\_\_\_

ORIGINAL SURVEY  
 DATE: \_\_\_\_\_  
 BY: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_  
 TITLE: \_\_\_\_\_  
 PROJECT NO.: \_\_\_\_\_  
 DRAWING NO.: \_\_\_\_\_



OHIO  
 FHWA  
 REGION 5  
 FEDERAL  
 PROJECT

159  
 275

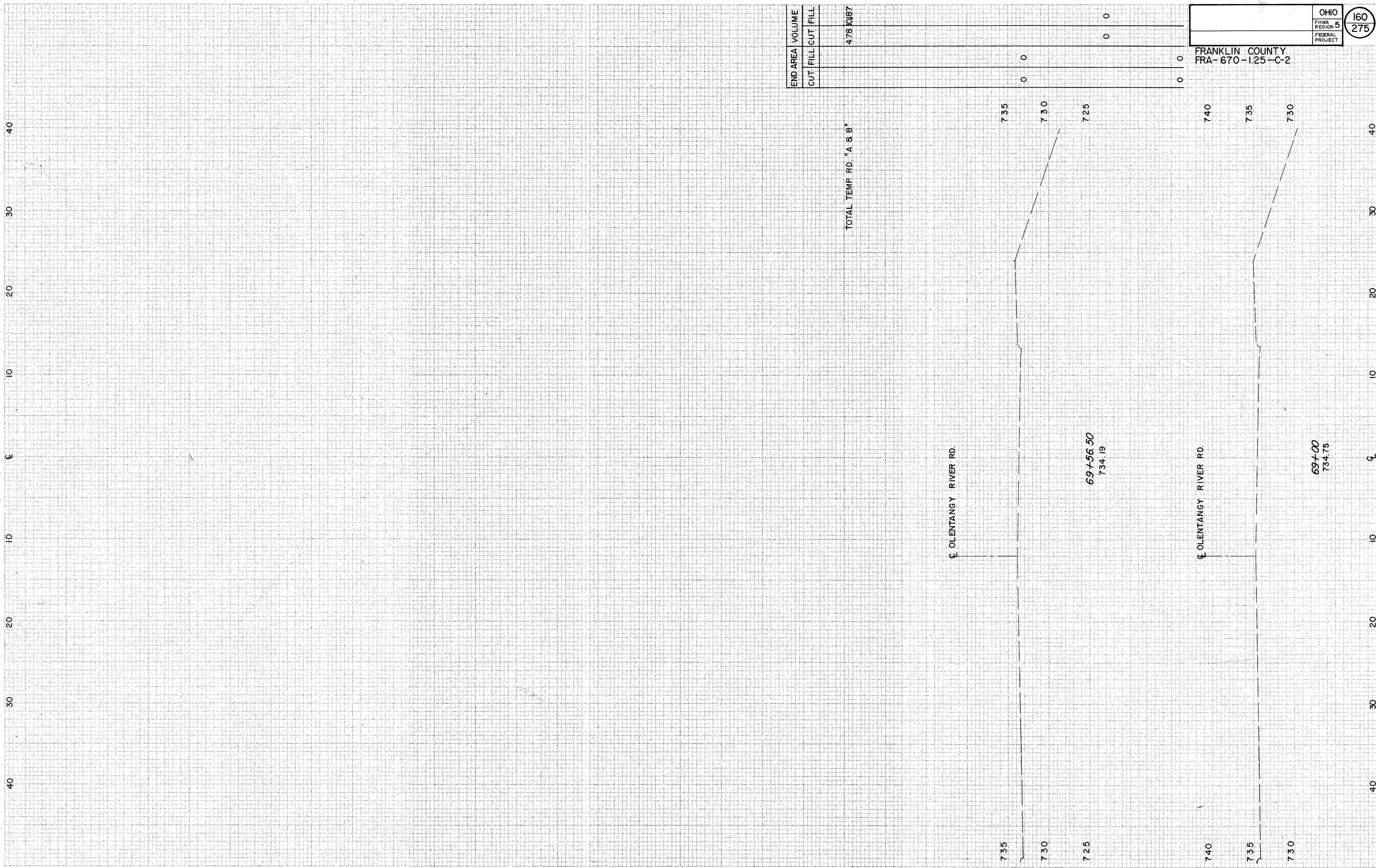
FRANKLIN COUNTY  
 FRA-670-125-C-2

HIGHWAY FEDERAL AID DIST.  
 PLATE 3-FILL CROSS SECTION-FULL LINE  
 PRINTED IN U.S.A.

TEMP. ROADS "A" & "B" CROSS SECTION STA. 63+00 TO STA. 68+00

FINAL	DATE
SURVEY	BY
NOTED	DATE
BY	

ORIGINAL	DATE
SURVEY	BY
NOTED	DATE
BY	



END AREA	VOLUME	
	CUT	FILL
0	0	0
0	0	0
0	0	0
0	0	0
478	10187	

FRANKLIN COUNTY  
FRA-670-1.25-C-2

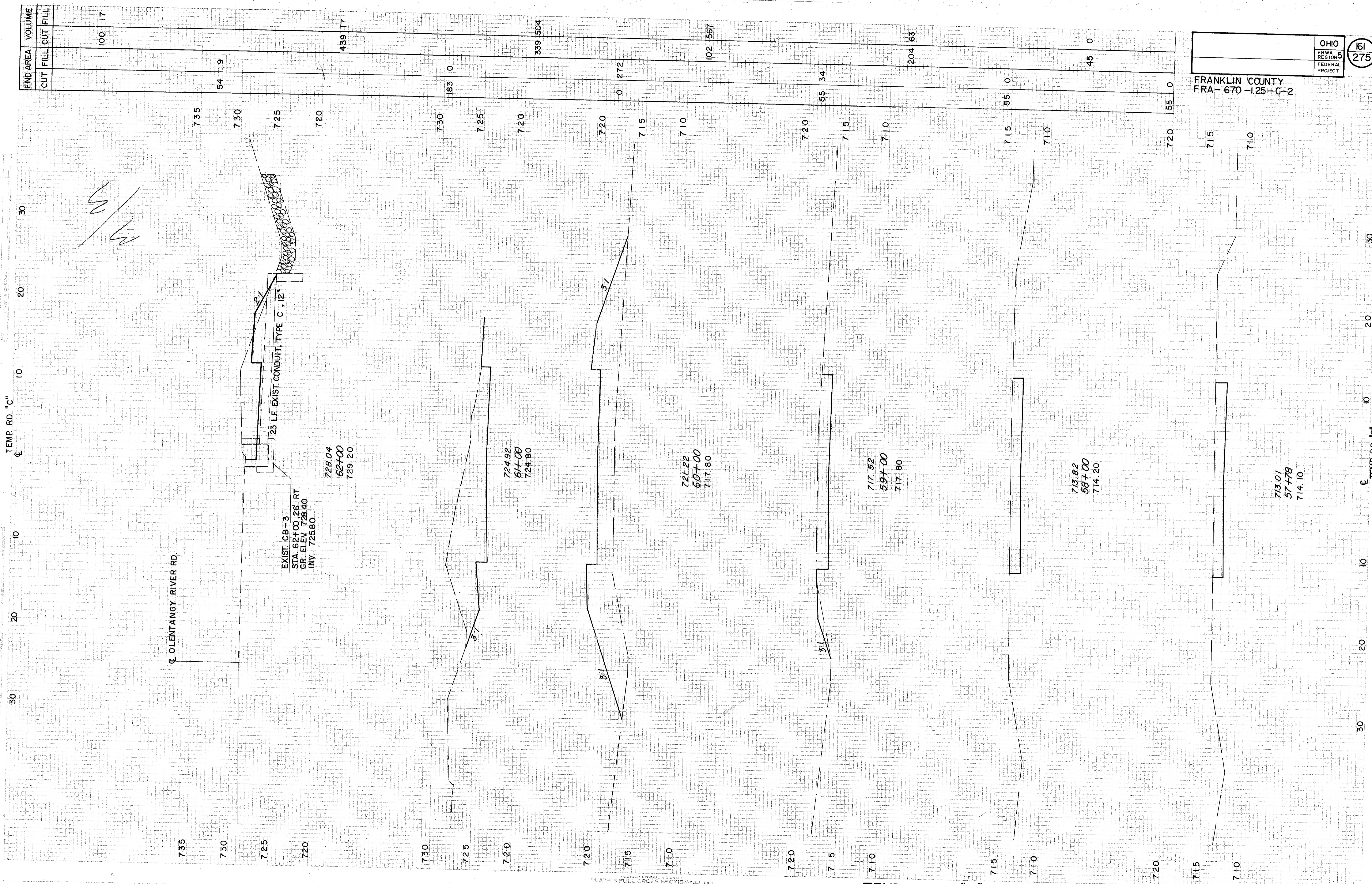
OHIO	160
REGION 5	275
FEDERAL PROJECT	

PLATE 3-FULL CROSS SECTION-FULL LINE  
DATE: 10/18/87

TEMP ROADS "A" & "B" CROSS SECTION STA. 69+00 TO STA. 69+56.50

MCSO

PROJECT NO. 670-1.25-C-2  
DATE: 10/15/2010  
SCALE: AS SHOWN  
DRAWN BY: J. B. BROWN  
CHECKED BY: J. B. BROWN  
APPROVED BY: J. B. BROWN



END AREA	CUT	FILL	CUT	FILL	VOLUME
100	17				
735		54	9		
730					
725					
720					439 17
730		183	0		
725					
720					339 504
720					
715					0 272
710					
720					102 567
715					
710					55 34
720					
715					
710					204 63
715					
710					55 0
720					
715					
710					45 0
720					55 0

FRANKLIN COUNTY  
FRA-670-1.25-C-2

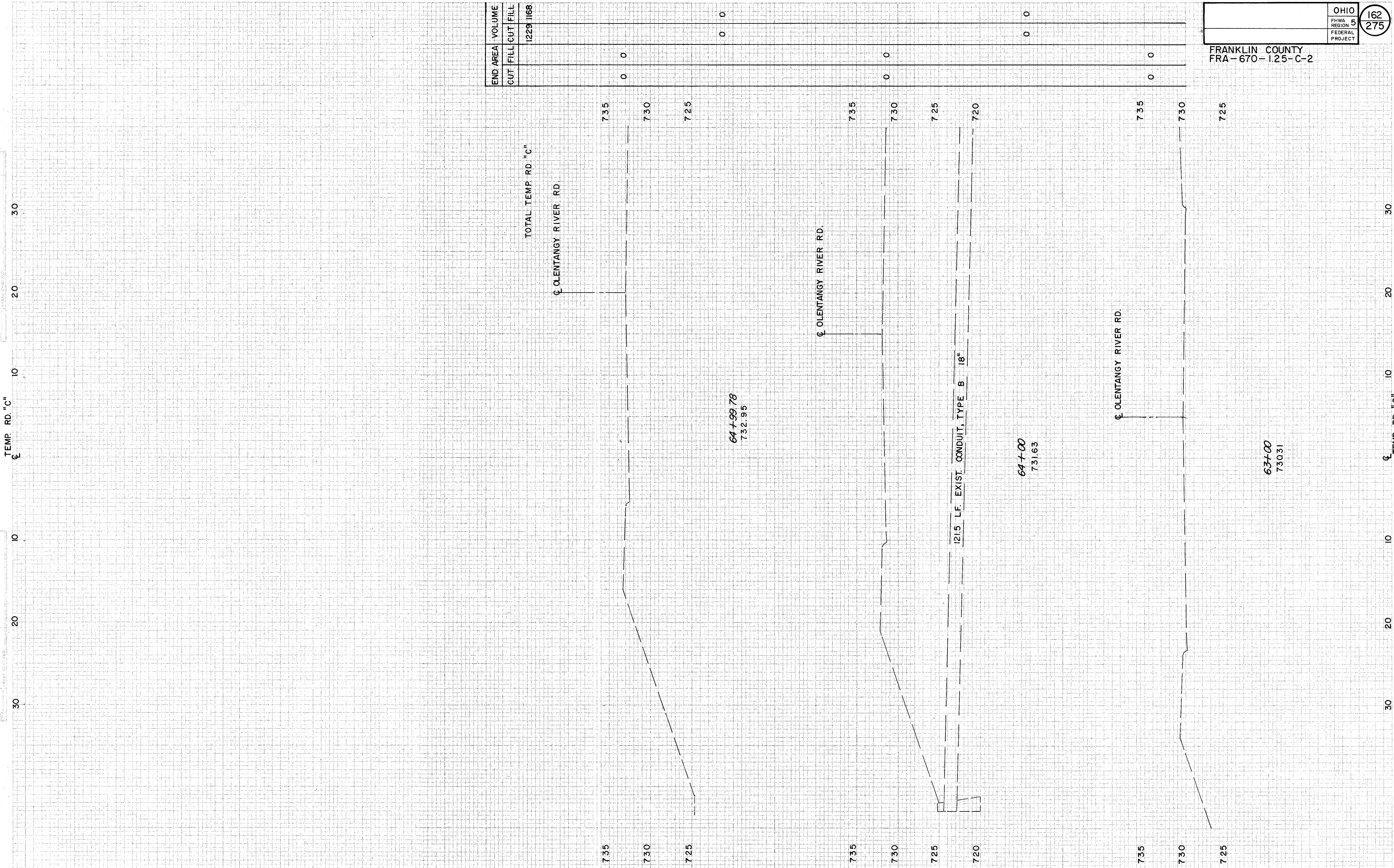
OHIO  
FHWA REGION 5  
FEDERAL PROJECT

61  
275

TEMP. ROAD "C" CROSS SECTION STA. 57+78 TO STA. 62+00

DATE	BY
REVISION	BY
APPROVED	BY
CHECKED	BY
DRAWN	BY
DESIGNED	BY
PROJECT	NO.
DATE	BY

DATE	BY
REVISION	BY
APPROVED	BY
CHECKED	BY
DRAWN	BY
DESIGNED	BY
PROJECT	NO.
DATE	BY



END AREA	VOLUME
CUT	1229.168
FILL	0
CUT	0
FILL	0

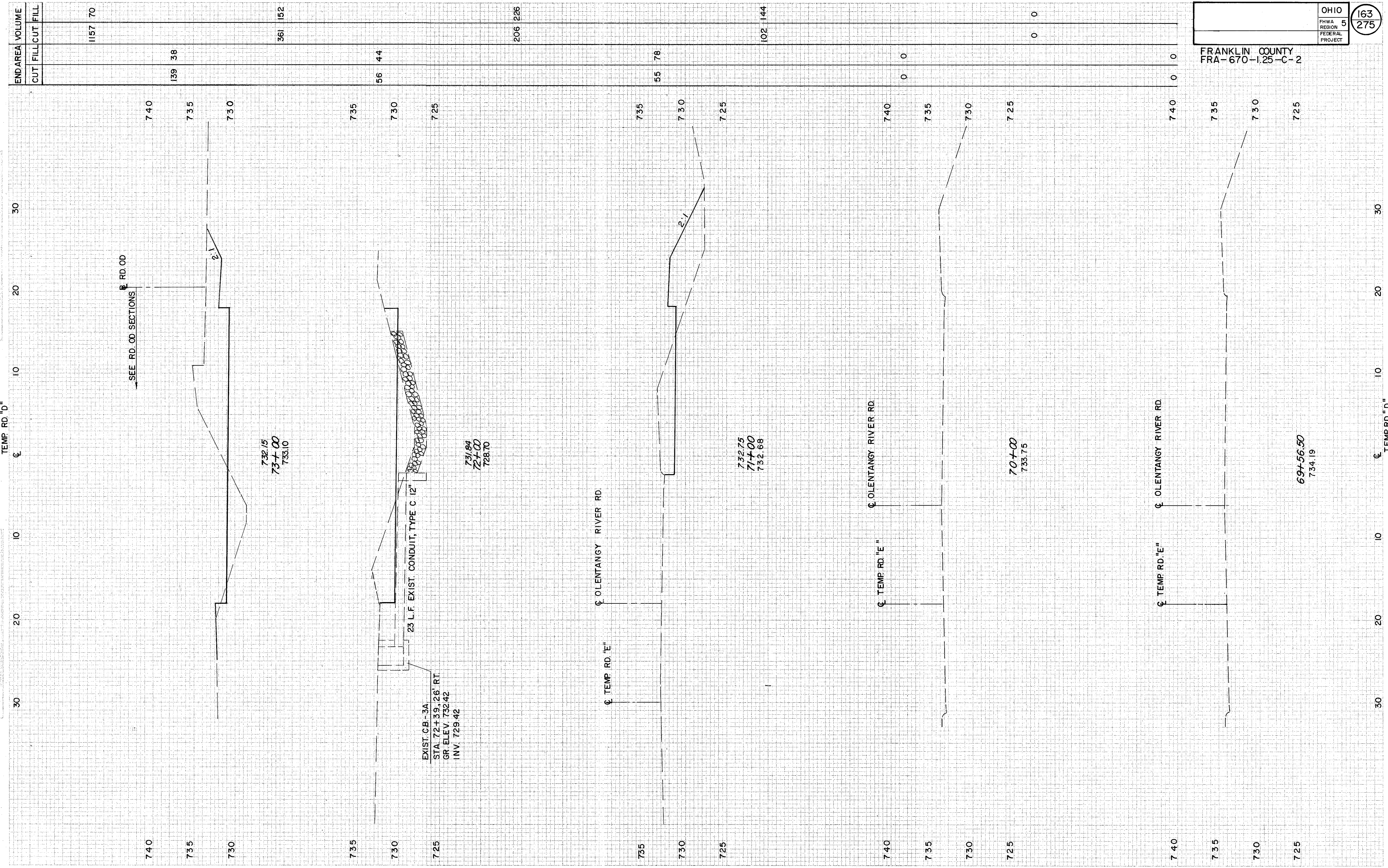
FRANKLIN COUNTY  
FRA-670-1.25-C-2

PLATE 3-FULL CROSS SECTION-FULL LINE  
SCALE 1"=20'

TEMP. ROAD "C" CROSS SECTION STA. 63+00 TO STA. 64+99.78

PROJECT: BRANTWOOD  
 SURVEY: PROJECT  
 DATE: 10/15/09  
 DRAWN BY: J. W. BROWN  
 CHECKED BY: J. W. BROWN  
 SCALE: AS SHOWN

PROJECT: BRANTWOOD  
 SURVEY: PROJECT  
 DATE: 10/15/09  
 DRAWN BY: J. W. BROWN  
 CHECKED BY: J. W. BROWN  
 SCALE: AS SHOWN



HIGHERY PERSONAL AND SHEET  
 PLATE 3-FULL CROSS SECTION-PILA LINE  
 10/15/09  
 PRINTED IN U.S.A.

TEMP ROAD "D" CROSS SECTION STA. 69+56.50 TO STA. 73+00

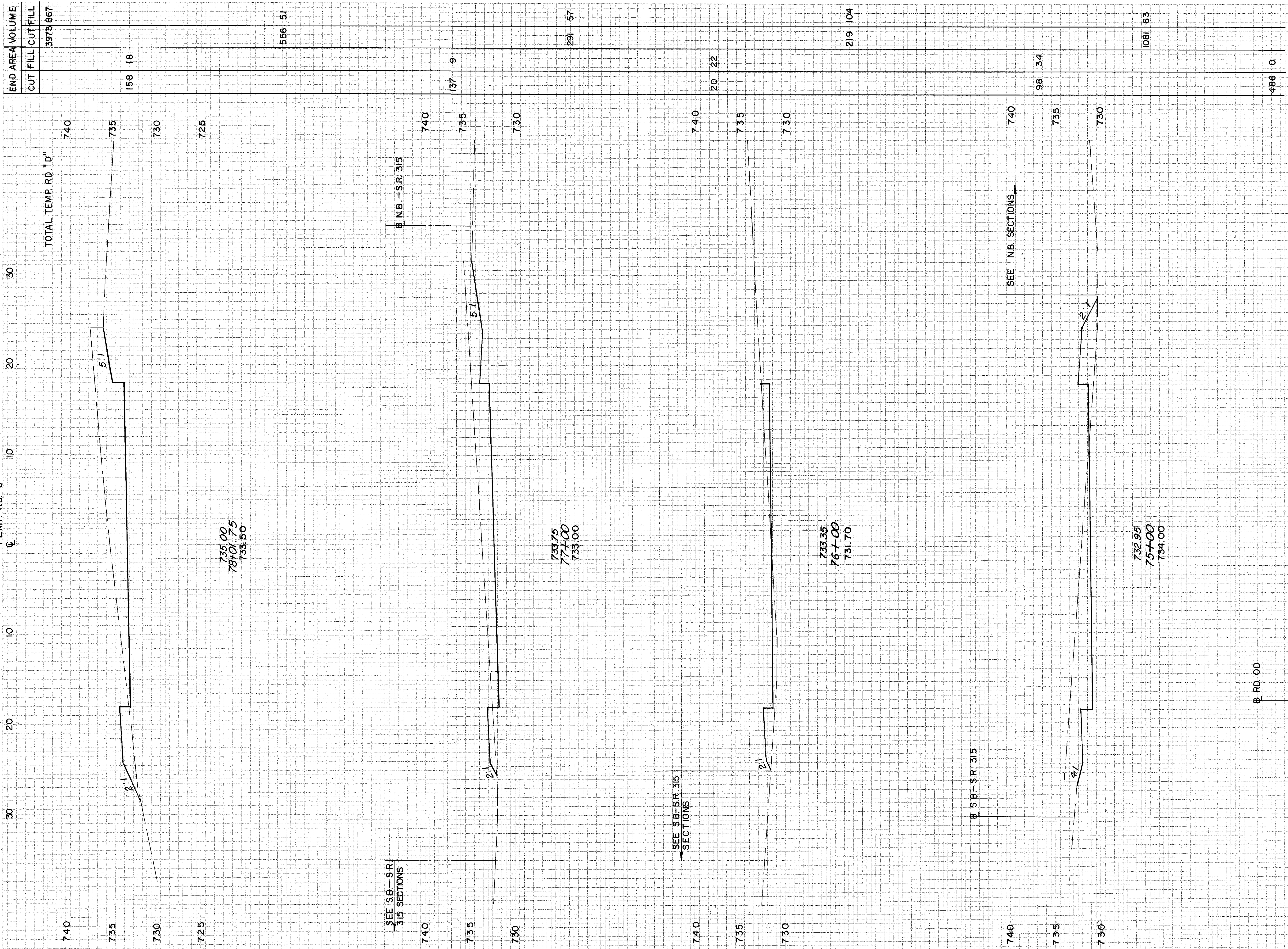
END AREA VOLUME	
CUT	FILL CUT FILL
1157	70
139	38
361	152
206	226
102	144
0	0
0	0

FRANKLIN COUNTY  
 FRA-670-1.25-C-2

OHIO	163
FHWA	5
REGION	275
FEDERAL	
PROJECT	

DATE	
BY	
CHECKED	
APPROVED	
PROJECT	
DATE	
BY	
CHECKED	
APPROVED	

FINAL	
SURVEY	
NOTE BOOK	
DATE	
BY	
CHECKED	
APPROVED	



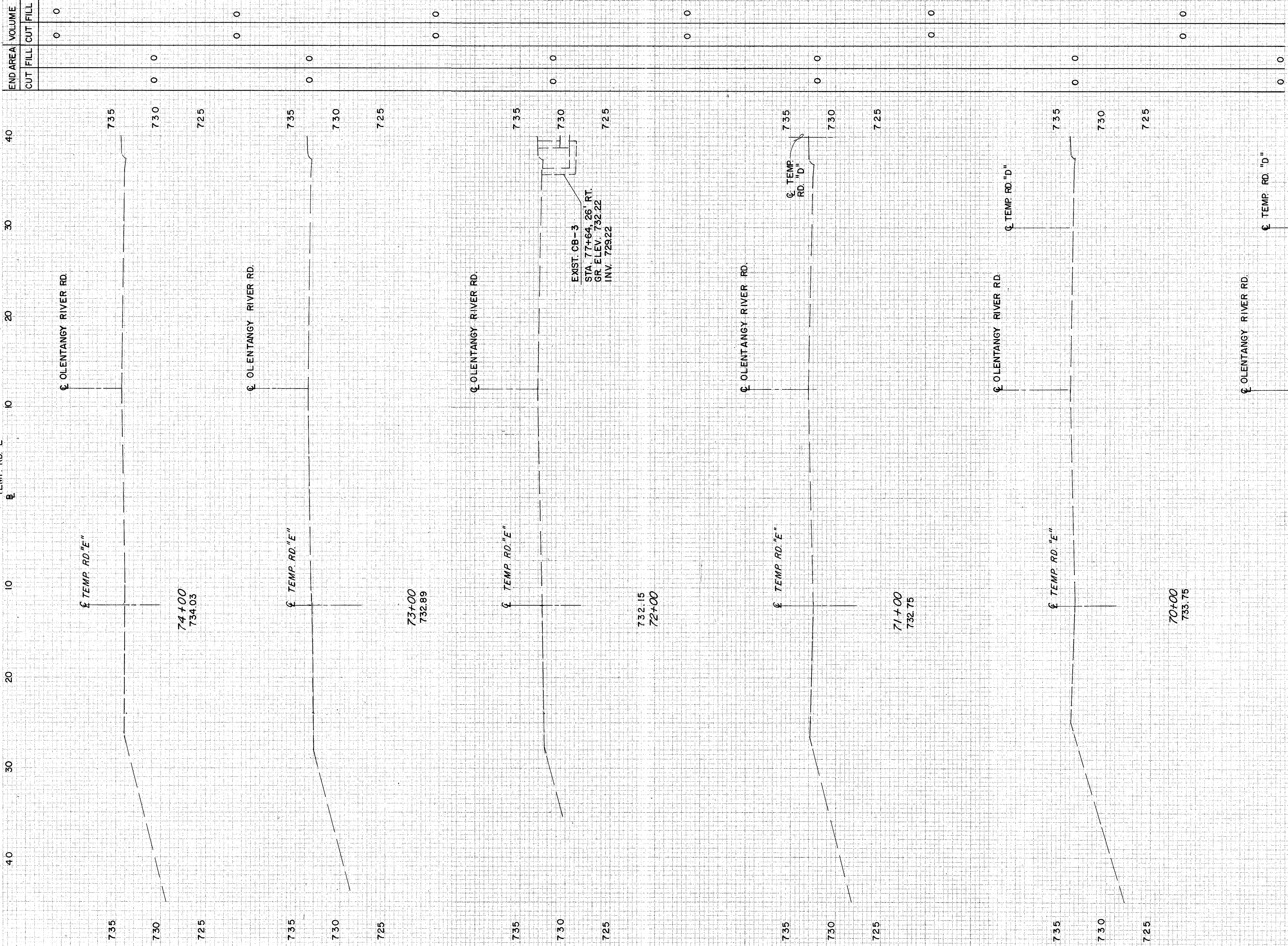
FRANKLIN COUNTY  
FRA-670-1.25-C-2

OHIO	164
FHWA REGION 5	275
FEDERAL PROJECT	

TEMP. ROAD "D" CROSS SECTION STA. 74+00 TO STA. 78+01.75

ORIGINAL SURVEY  
 DATE: 11/11/11  
 BY: J. J. ...  
 CHECKED: ...  
 APPROVED: ...

ORIGINAL SURVEY  
 DATE: 11/11/11  
 BY: J. J. ...  
 CHECKED: ...  
 APPROVED: ...



STATION	END AREA VOLUME	
	CUT	FILL
69+50	0	0
70+00	0	0
71+00	0	0
72+00	0	0
73+00	0	0
74+00	0	0

FRANKLIN COUNTY  
 FRA-670-1.25-C-2

OHIO FHWA REGION 5 FEDERAL PROJECT	165 275
--	------------

PLATE 3 - FULL CROSS SECTION - FULL LINE

TEMP. RD. "E" STA. 69+50 TO STA. 74+00



FINAL SURVEY  
 DATE: 11/13/25  
 PROJECT: FRA-670-1.25-C-2  
 SHEET: 166 OF 275

ORIGINAL SURVEY  
 DATE: 11/13/25  
 PROJECT: FRA-670-1.25-C-2  
 SHEET: 166 OF 275

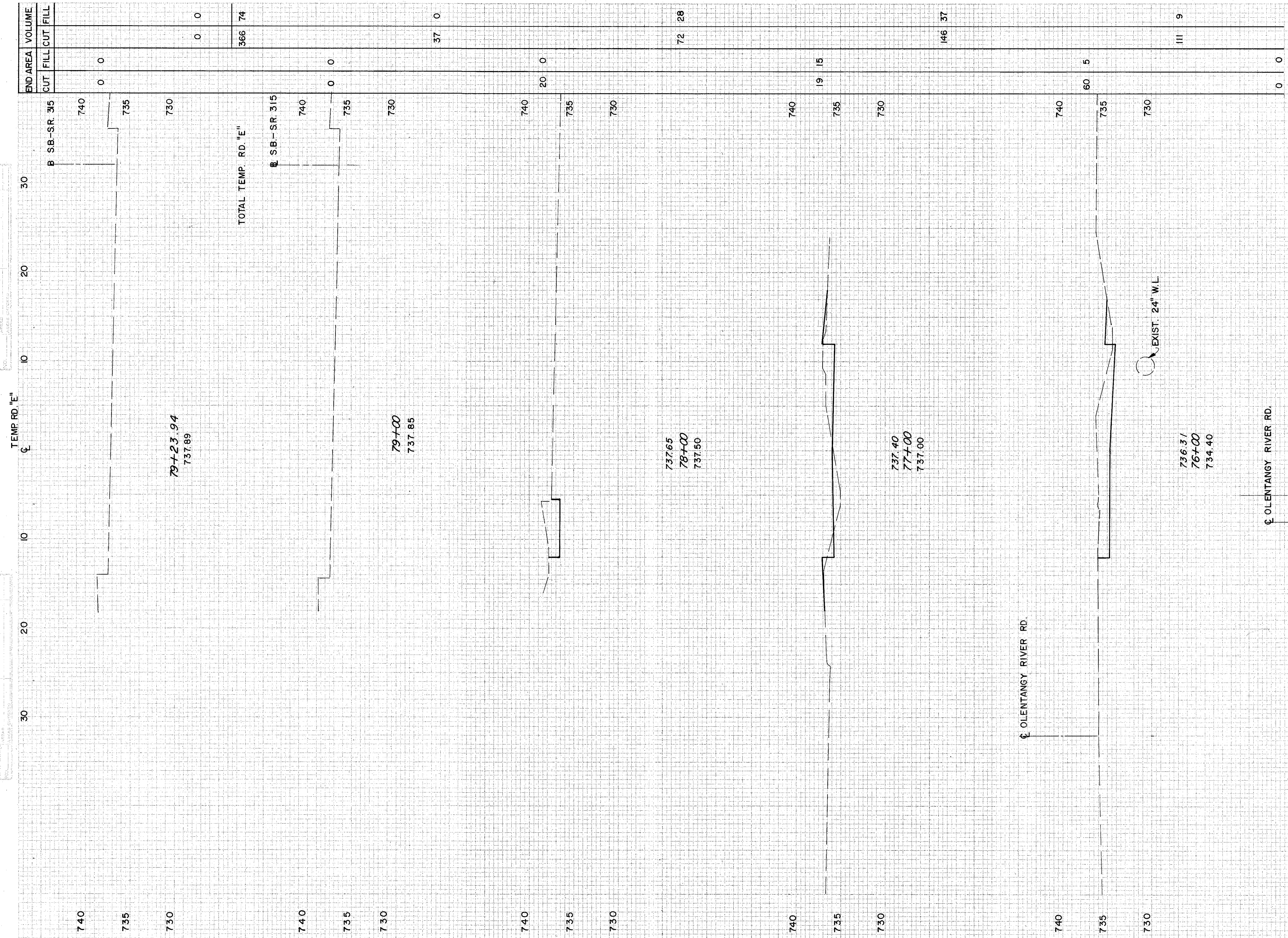
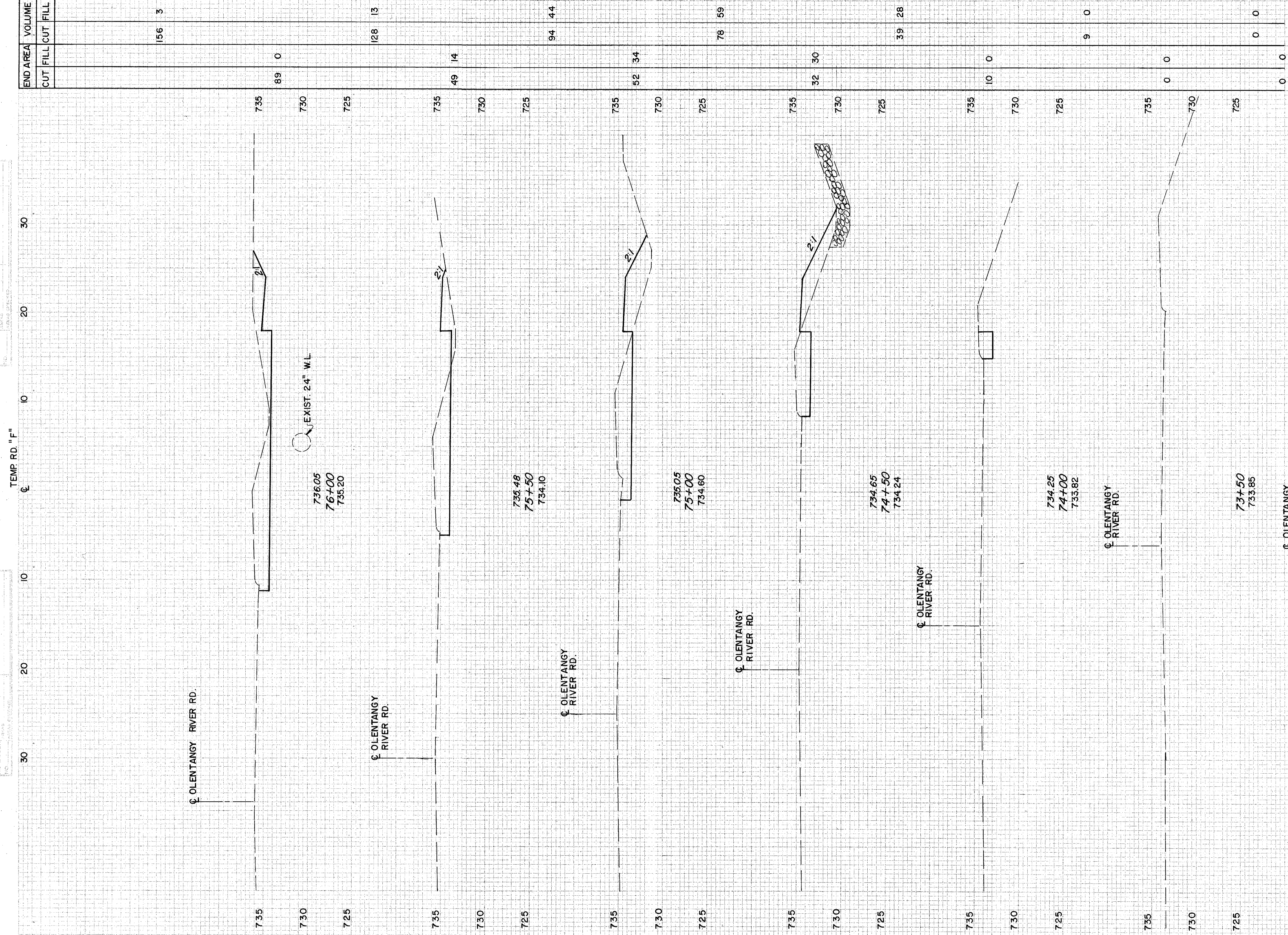


PLATE 3-FULL CROSS SECTION-FULL LINE  
 1/4" = 1'-0"

TEMP. RD. "E" STA. 75+00 TO STA. 79+00

ORDINARY SURVEY  
 PROJECT: ...  
 SHEET NO. ...

FIELD SURVEY  
 PROJECT: ...  
 SHEET NO. ...



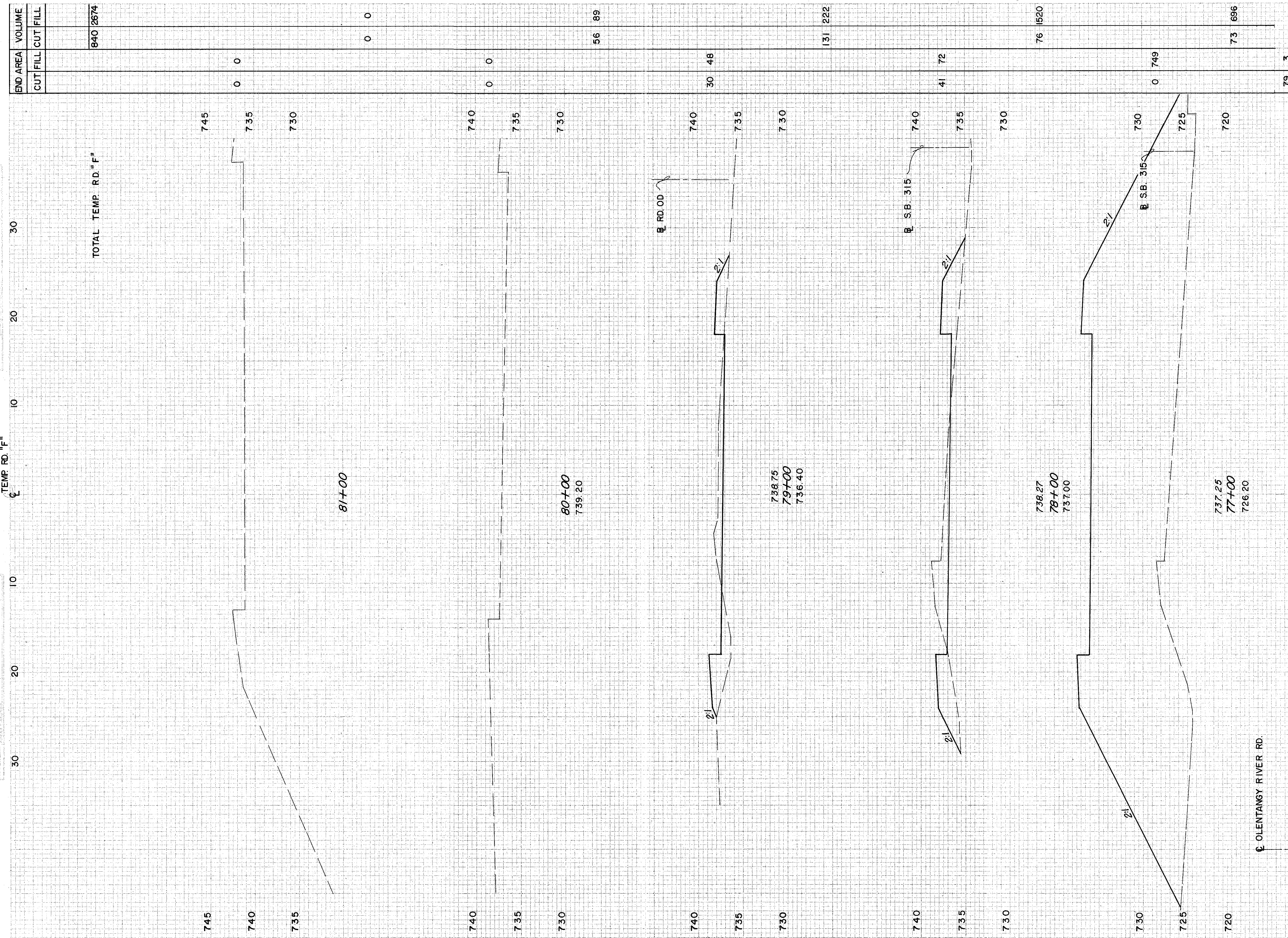
END AREA		VOLUME
CUT	FILL	
		156 3
89	0	
		128 13
49	14	
		94 44
		76 59
		39 28
10	0	
		9 0
0	0	
		0 0

PLATE 2-F FULL CROSS SECTION-FULL LINE  
 INVERT: 2.12

TEMP. ROAD "F" CROSS SECTION STA 73+18.12 TO STA. 76+00

FRANKLIN COUNTY  
SURVEY  
NO. 168  
DATE: 12/15/2011  
BY: J. W. HARRIS  
PROJECT: FRANKLIN COUNTY  
ROADWAY IMPROVEMENTS  
FRANKLIN COUNTY  
ROADWAY IMPROVEMENTS  
FRANKLIN COUNTY  
ROADWAY IMPROVEMENTS

FRANKLIN COUNTY  
SURVEY  
NO. 168  
DATE: 12/15/2011  
BY: J. W. HARRIS  
PROJECT: FRANKLIN COUNTY  
ROADWAY IMPROVEMENTS  
FRANKLIN COUNTY  
ROADWAY IMPROVEMENTS  
FRANKLIN COUNTY  
ROADWAY IMPROVEMENTS



END AREA	VOLUME		
CUT	FILL	CUT	FILL
		840	2674
		0	0
		0	0
		56	89
		131	222
		76	1520
		73	696
		79	3

FRANKLIN COUNTY  
FRA-670-1.25-C-2

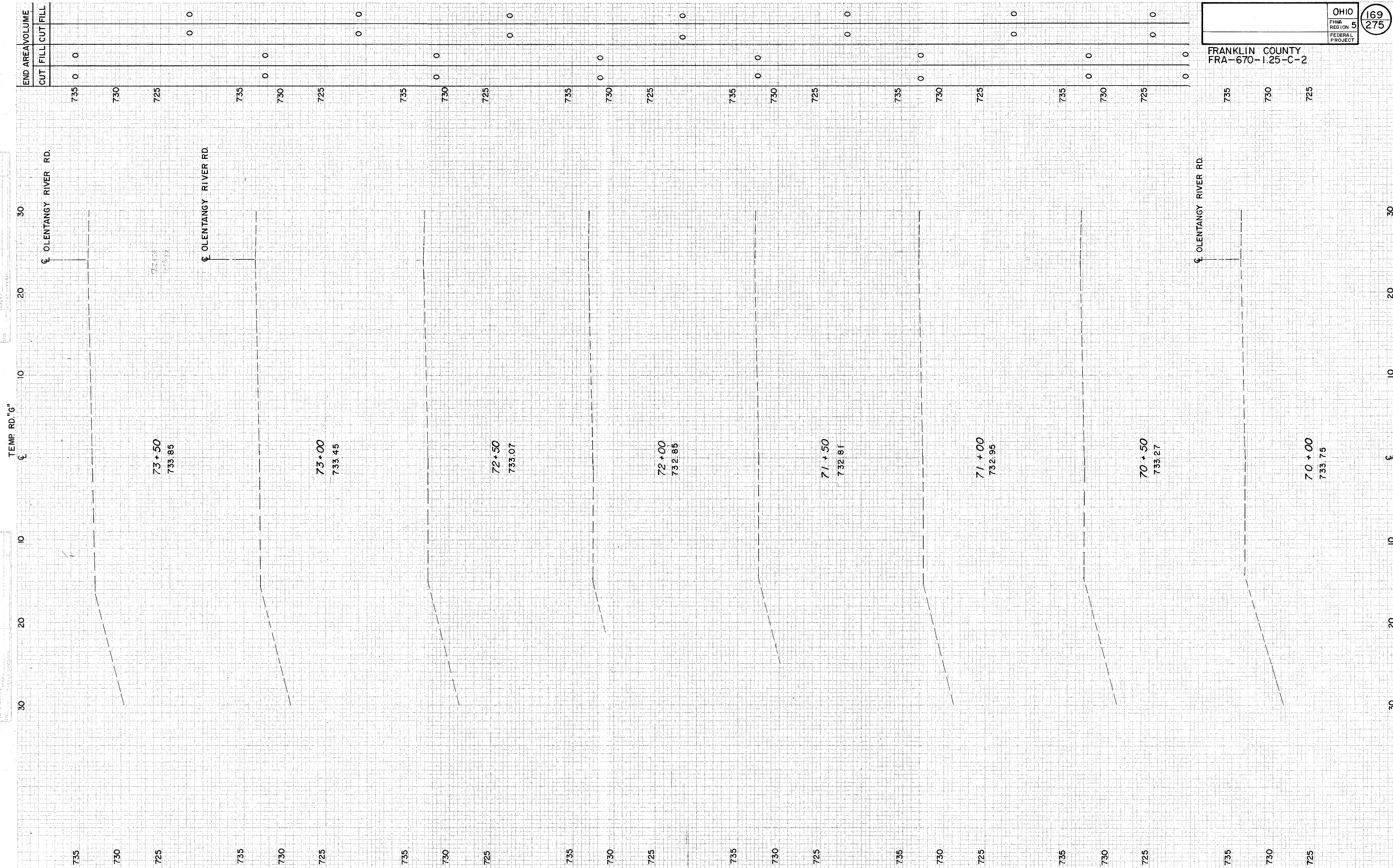
OHIO	168
FHWA	275
REGION	5
FEDERAL	
PROJECT	

PLATE 3-FULL CROSS SECTION-FULL LINE  
NO TELEPHONE  
FRANKLIN COUNTY, OHIO

TEMP. ROAD "F" CROSS SECTION STA. 76+50 TO STA. 81+00

ORIGINAL SURVEY  
 DATE: 12/12/12  
 BY: [Signature]

ORIGINAL SURVEY  
 DATE: 12/12/12  
 BY: [Signature]



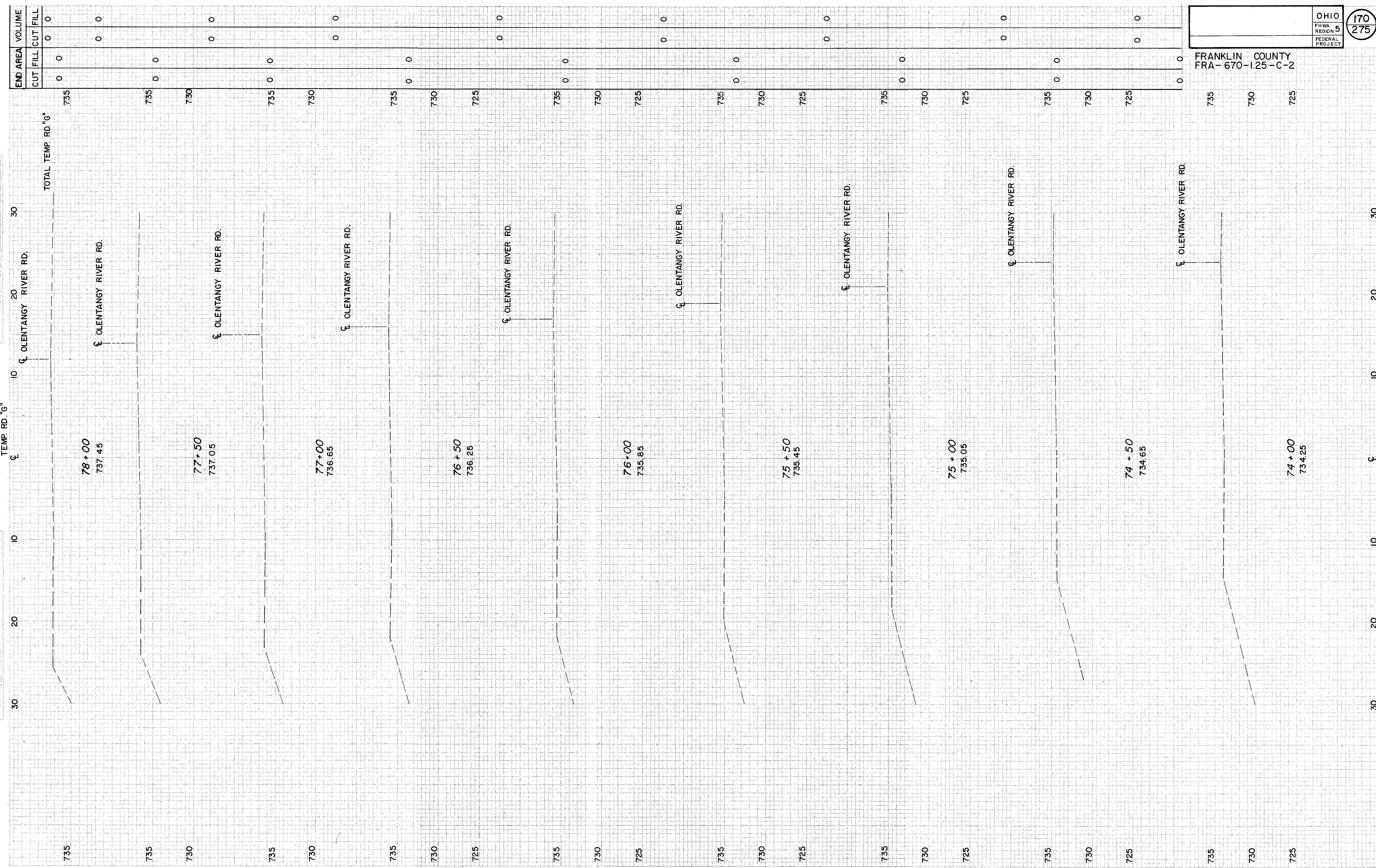
OHIO  
 FHW  
 RES. ON 5  
 FEDERAL  
 PROJECT  
 169  
 275  
 FRANKLIN COUNTY  
 FRA-670-1.25-C-2

PLATE 3-FULL CROSS SECTION-FULL LINE  
 PRINTED IN U.S.A.

TEMP. ROAD "G" CROSS SECTION STA. 70+00 TO STA. 73+50

ORIGINAL SURVEY  
 PHOTO BOOK  
 NO. \_\_\_\_\_  
 DATE \_\_\_\_\_  
 PROJECT NO. \_\_\_\_\_  
 DRAWING NO. \_\_\_\_\_  
 SHEET NO. \_\_\_\_\_

ORIGINAL SURVEY  
 PHOTO BOOK  
 NO. \_\_\_\_\_  
 DATE \_\_\_\_\_  
 PROJECT NO. \_\_\_\_\_  
 DRAWING NO. \_\_\_\_\_  
 SHEET NO. \_\_\_\_\_



FRANKLIN COUNTY  
 FRA-670-1.25-C-2

HIGHWAY FEDERAL AID BRIDGE  
 PLATE 3-FULL CROSS SECTION-FULL LINE  
 PRINTED IN U.S.A.

TEMP. ROAD "G" CROSS SECTION STA. 74+00 TO STA. 78+00

# TEMPORARY EROSION CONTROL PLAN

SCALE: 1" = 200'



ITEM 207 TEMPORARY SEEDING AND MULCHING  
 PERMANENT SEEDING AREA = 61,374 SQ.YD.  
 20% X 61,374 SQ.YD. = 12,275 SQ.YD.  
 TOTAL TO GENERAL NOTES = 12,275 SQ.YD.

ITEM 207 TEMPORARY SLOPE DRAINS  
 ESTIMATED QUANTITY = 612 LIN. FT.  
 TOTAL TO GENERAL NOTES = 612 LIN. FT.

ITEM 659 WATER  
 12,275 SQ.YD X (9 SQ.FT./1 SQ.YD.)  
 X (240 GAL./1000 SQ.FT.) = 26.5 M. GAL.  
 3069 SQ.YD. X (9 SQ.FT./1 SQ.YD.) X  
 (240 GAL./1000 SQ.FT.) = 6.6 M. GAL.  
 TOTAL TO GENERAL NOTES = 33 M. GAL.

ITEM 659 REPAIR SEEDING AND MULCHING  
 5% OF PERMANENT SEEDING AREA  
 5% X 61,374 SQ.YD. = 3,069 SQ.YD.  
 TOTAL TO GENERAL NOTES = 3,069 SQ.YD.

ITEM 659 MOWING  
 25% OF PERMANENT SEEDING AREA  
 25% X 61,374 SQ.YD. X (9 SQ.FT./1 SQ.YD.)  
 = 138.1 M SQ.FT.  
 TOTAL TO GENERAL NOTES = 138 M SQ.FT.

ITEM 207 TEMPORARY BENCHES, DAMS, AND  
 SEDIMENT BASINS  
 ESTIMATED QUANTITY 5 X 612 = 3060 CU.YD.  
 TOTAL TO GENERAL NOTES = 3060 CU.YD.

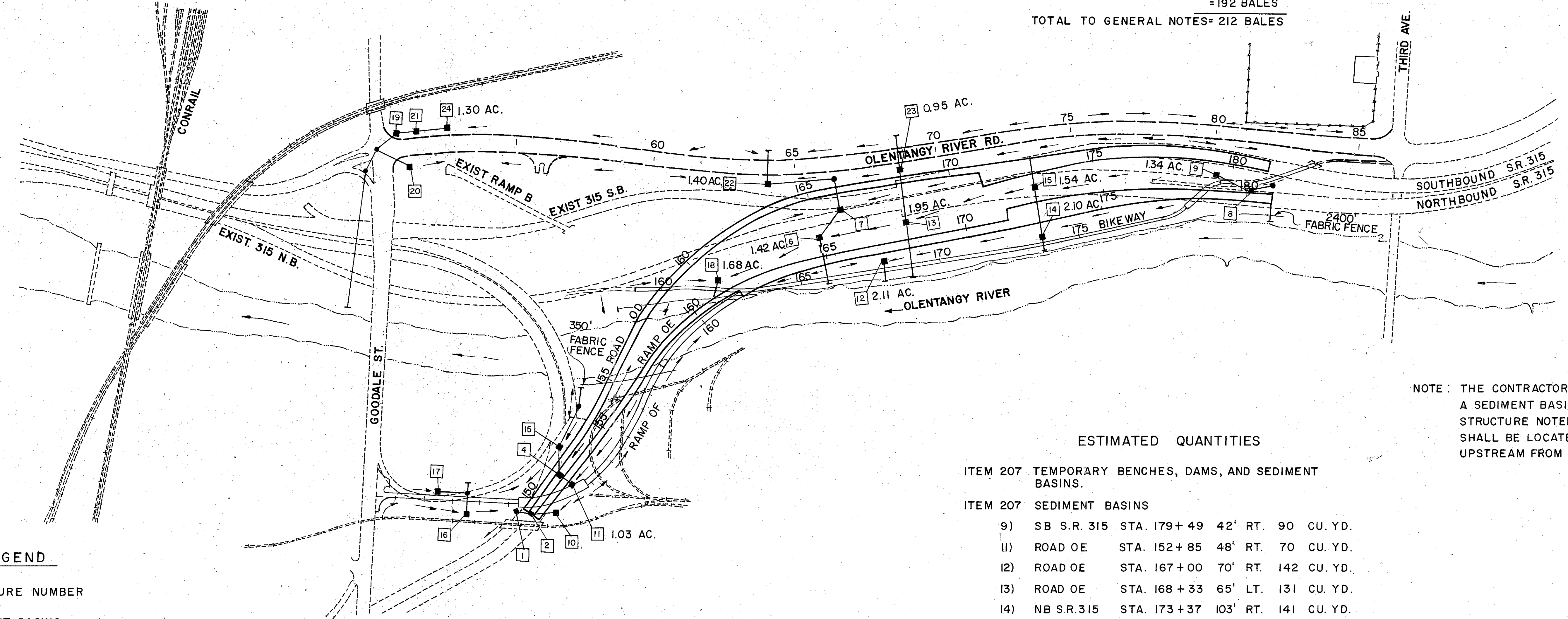
ITEM 601 TYPE C ROCK CHANNEL PROTECTION  
 ESTIMATED QUANTITY = 25 CU.YD.  
 TOTAL TO GENERAL NOTES = 25 CU.YD.

ITEM 207 FABRIC FILTER FENCE  
 AS DIRECTED BY ENGINEER = 400 LIN.FT.  
 TOTAL TO GENERAL NOTES = 400 LIN.FT.

ITEM 207 FABRIC FILTER FENCE = 2750 LIN.FT.  
 TOTAL TO GENERAL SUMMARY = 2750 LIN.FT.

ITEM 207 STRAW OR HAY BALES  
 4 DITCH CHECKS X 5 BALES / DITCH CHECK  
 = 20 BALES  
 24 INLET FILTERS X 8 BALES / INLET FILTER  
 = 192 BALES  
 TOTAL TO GENERAL NOTES = 212 BALES

ITEM 659 COMMERCIAL FERTILIZER (12-12-12)  
 (A) TEMPORARY SEEDING AREA = 12,275 SQ. YD.  
 12,275 SQ.YD. X (9 SQ.FT./1 SQ.YD.) X  
 (10 LBS./1000 SQ.FT.) X (1 TON/2000 LBS.) = 0.6 TONS.  
 (B) PERMANENT SEEDING AREA = 61,374 SQ. YD.  
 61,374 SQ. YD. X (9 SQ.FT./1 SQ.YD.) X  
 (7.5 LBS./1000 SQ.FT.) X (1 TON/2000 LBS.) = 2 TONS  
 (C) REPAIR SEEDING AREA = 3069 SQ. YD.  
 3069 SQ. YD. X (9 SQ.FT./1 SQ.YD.) X (7.5 LBS./1000 SQ.FT.)  
 X (1 TON/2000 LBS.) = 0.1 TONS  
 TOTAL TO GENERAL NOTES = 2.7 TONS



**LEGEND**

- STRUCTURE NUMBER
- SEDIMENT BASINS
- ⬡ SEDIMENT DAMS

NOTE: IN LIEU OF SEDIMENT DAMS OR LARGE SEDIMENT BASINS, A SERIES OF SMALL SEDIMENT BASINS MAY BE USED.

**DITCH CHECKS**

- 1) O.R. ROAD STA. 64+00 58' LT.
- 2) O.R. ROAD STA. 68+53.5 57' LT.
- 3) O.R. ROAD STA. 80+50 60.5' LT.
- 4) O.R. ROAD STA. 58+00 50' LT.

**ESTIMATED QUANTITIES**

ITEM 207	TEMPORARY BENCHES, DAMS, AND SEDIMENT BASINS.	
ITEM 207	SEDIMENT BASINS	
9)	SB S.R. 315 STA. 179+49	42' RT. 90 CU. YD.
11)	ROAD OE STA. 152+85	48' RT. 70 CU. YD.
12)	ROAD OE STA. 167+00	70' RT. 142 CU. YD.
13)	ROAD OE STA. 168+33	65' LT. 131 CU. YD.
14)	NB S.R. 315 STA. 173+37	103' RT. 141 CU. YD.
15)	NB S.R. 315 STA. 173+03	57' LT. 97 CU. YD.
22)	O.R. ROAD STA. 64+00	63.5' RT. 94 CU. YD.
23)	O.R. ROAD STA. 68+53.5	78.2' RT. 64 CU. YD.
24)	O.R. ROAD STA. 52+47	49.2' LT. 88 CU. YD.
6)	ROAD OD STA. 165+00	162' RT. 96 CU. YD.
18)	RAMP OE STA. 161+54	38' LT. 113 CU. YD.
		TOTAL 1126 CU. YD.

NOTE: THE CONTRACTOR SHALL CONSTRUCT A SEDIMENT BASIN FOR EACH STRUCTURE NOTED THE SEDIMENT BASIN SHALL BE LOCATED A MIN. OF 10' UPSTREAM FROM THE STRUCTURE.

# ROAD "OD"

FRANKLIN COUNTY  
FRA-670-1.25-C-2

STATION	SUPER ELEV.	B. ELEV.	24' RT.(MED. E/P ELEV.)	STATION	SUPER ELEV.	B. ELEV.	24' RT.(MED. E/P ELEV.)
149+43.90	.06	711.37	712.81	SC 160+72.93	**	**	750.91
149+50.00	.06	711.59	713.03	160+75.00	**	**	750.89
149+75.00	.06	712.53	713.97	161+00.00	**	**	750.73
150+00.00	.06	713.53	714.97	161+25.00	**	**	750.50
150+25.00	.06	714.59	716.03	161+50.00	**	**	750.22
CS 150+41.87	.06	715.33	716.77	161+75.00	**	**	749.87
150+50.00	.0584	715.70	717.10	162+00.00	**	**	749.46
150+75.00	.0534	716.87	718.15	162+25.00	**	**	749.00
151+00.00	.0484	718.11	719.27	162+50.00	**	**	748.47
151+25.00	.0434	719.40	720.44	162+75.00	**	**	747.88
151+50.00	.0384	720.75	721.67	163+00.00	-.083	749.22	747.23
151+75.00	.0334	722.13	722.93	163+25.00	-.083	748.51	746.52
152+00.00	.0284	723.51	724.19	163+50.00	-.083	747.74	747.75
152+25.00	.0234	724.89	725.45	CS 163+51.31	-.083	747.70	745.71
152+50.00	.0184	726.27	726.71	163+75.00	-.0790	746.94	745.04
152+75.00	.0134	727.65	727.97	164+00.00	-.0748	746.14	744.34
153+00.00	.00837	729.03	729.23	164+25.00	-.0706	745.35	743.65
153+25.00	.00337	730.41	730.49	164+50.00	-.0664	744.54	742.95
ST 153+41.87	00	731.34	731.34	164+75.00	-.0622	743.74	742.25
153+50.00	-.00163	731.79	731.75	165+00.00	-.0579	742.94	741.55
153+75.00	-.00663	733.17	733.01	165+25.00	-.0537	742.14	740.85
154+00.00	-.0116	734.55	734.27	165+50.00	-.0495	741.34	740.15
154+20.00	-.0156	735.65	735.28	165+75.00	-.0453	740.54	739.45
154+50.00	-.0156	737.31	736.94	166+00.00	-.0411	739.74	738.75
155+00.00	**	**	739.58	166+25.00	-.0369	738.94	738.05
155+50.00	**	**	741.98	166+50.00	-.0327	738.13	737.35
156+00.00	**	**	744.13	166+75.00	-.0285	737.36	736.68
156+50.00	**	**	746.04	167+00.00	-.0242	736.65	736.07
TS 156+72.93	**	**	746.84	167+25.00	-.0200	735.99	735.51
156+75.00	**	**	746.90	167+50.00	-.0158	735.39	735.01
157+00.00	**	**	747.60	ST 167+51.31	-.0156	735.36	734.99
157+25.00	**	**	748.24	167+75.00	-.0156	734.85	734.48
157+50.00	**	**	748.82	168+00.00	-.0156	734.37	734.00
154+75.00	**	**	749.34	168+25.00	-.0156	733.95	733.58
158+00.00	**	**	749.80	168+50.00	-.0156	733.58	733.21
158+25.00	**	**	750.21	168+75.00	-.0156	733.27	732.90
158+50.00	**	**	750.55	169+00.00	-.0156	733.02	732.65
158+75.00	**	**	750.83	169+25.00	-.0156	732.83	732.46
159+00.00	**	**	751.05	169+50.00	-.0156	732.69	732.32
159+25.00	**	**	751.21	169+75.00	-.0156	732.61	*
159+50.00	**	**	751.30	170+00.00	-.0156	732.59	*
159+75.00	**	**	751.33	170+25.00	-.0156	732.63	*
160+00.00	**	**	751.31	170+50.00	-.0156	732.73	*
160+25.00	**	**	751.23	170+75.00	-.0156	732.88	*
160+50.00	**	**	751.09	170+94.55	-.0156	733.04	*

\* SEE PAVEMENT DETAIL SHEET 176

\*\* FOR BRIDGE NO. FRA-315-0205 DECK CONTROL ELEVATIONS, SEE SHEET 226.

# ROAD "OE"

FRANKLIN COUNTY  
FRA-670-1.25-C-2

STATION	SUPER ELEV.	B ELEV.	DISTANCE B - E/P	RT E/P ELEV.	STATION	SUPER ELEV.	B ELEV.	DISTANCE B - E/P	RT E/P ELEV.
CS 151+13.11	.06	714.80	16'	715.76	162+75.00	*	731.97	33.80'	*
151+25.00	.0582	715.28	16'	716.21	163+00.00	*	731.65	33.18'	*
151+50.00	.0545	716.33	16'	717.20	163+25.00	*	731.36	32.55'	*
151+75.00	.0508	717.42	16'	718.23	163+50.00	*	731.11	31.93'	*
152+00.00	.0471	718.56	16'	719.31	163+75.00	*	730.89	31.30'	*
152+25.00	.0434	719.75	16'	720.44	164+00.00	*	730.71	30.68'	*
152+50.00	.0398	720.99	16'	721.63	164+25.00	*	730.56	30.05'	*
152+75.00	.0361	722.24	16'	722.82	164+50.00	-.0367	730.45	29.43'	729.37
153+00.00	.0324	723.49	16'	724.01	164+75.00	-.0329	730.38	28.80'	729.43
153+25.00	.0287	724.74	16'	725.20	165+00.00	-.0290	730.34	28.18'	729.52
153+50.00	.0250	725.96	16'	726.36	165+11.98	-.0272	730.33	27.88'	729.57
153+75.00	.0213	727.12	16'	727.46	165+25.00	-.0252	730.33	27.55'	729.64
154+00.00	.0176	728.22	16'	728.50	165+50.00	-.0213	730.36	26.93'	729.79
ST 154+13.11	.0156	728.78	16'	729.03	165+75.00	-.0175	730.43	26.30'	729.97
154+25.00	.0136	729.27	16'	729.49	ST 165+87.16	-.0156	730.47	26'	730.06
154+50.00	.0095	730.25	16'	730.40	166+00.00	-.0156	730.53	25.68'	730.13
154+75.00	.0054	731.18	16'	731.27	166+25.00	-.0156	730.65	25.05'	730.26
155+00.00	.0014	732.04	16'	732.06	166+50.00	-.0156	730.77	24.43'	730.39
155+28.52	-.0033	732.96	16'	732.91	166+62.46	-.0156	730.83	24.12'	730.45
155+50.00	-.0068	733.60	16'	733.49	167+00.00	-.0156	731.01	23.18'	730.65
155+75.00	-.0109	734.29	16'	734.12	167+50.00	-.0156	731.25	21.93'	730.91
156+00.00	-.0150	734.92	16'	734.68	168+00.00	-.0156	731.49	20.68'	731.17
TS 156+03.82	-.0156	735.01	16'	734.76	168+50.00	-.0156	731.73	19.43'	731.43
156+25.00	-.0188	735.49	16'	735.19	169+00.00	-.0156	731.97	18.18'	731.69
156+50.00	-.0227	736.00	16'	735.64	169+50.00	-.0156	732.21	16.92'	731.95
156+75.00	-.0265	736.46	16'	736.04	169+87.16	-.0156	732.39	16'	732.14
157+00.00	*	736.85	16'	*	170+00.00	-.0156	732.45	16'	732.20
157+25.00	*	737.19	16'	*	170+50.00	-.0156	732.69	16'	732.44
157+50.00	*	737.46	16'	*	171+00.00	-.0156	732.93	16'	732.68
157+75.00	*	737.68	16'	*	171+50.00	-.0156	733.17	16'	732.92
158+00.00	*	737.84	16'	*	171+55.38	-.0156	733.20	16'	732.95
158+25.00	*	737.94	16'	*					
158+50.00	*	737.98	16'	*					
158+75.00	*	737.96	16'	*					
159+00.00	*	737.88	16'	*					
159+25.00	*	737.75	16'	*					
159+50.00	*	737.55	16'	*					
159+75.00	*	737.30	16'	*					
160+00.00	*	736.98	16'	*					
SC 160+03.82	*	736.93	16'	*					
160+50.00	*	736.18	16'	*					
161+00.00	*	735.17	16'	*					
161+50.00	*	734.13	16'	*					
CS 161+87.16	*	733.40	36'	*					
162+00.00	*	733.16	35.68'	*					
162+25.00	*	732.73	35.05'	*					
162+50.00	*	732.33	34.43'	*					

\* FOR BRIDGE NO. FRA-315-0210  
DECK CONTROL ELEVATIONS,  
SEE SHEET 262.



# RAMP "OF"

FRANKLIN COUNTY  
FRA-670-1.25-C-2

STATION	SUPER ELEV.	16' LEFT E/P ELEV.	B ELEV.	STATION	SUPER ELEV.	16' LEFT E/P ELEV.	B ELEV.
TS 149+43.86	-.0156	732.08	732.33	159+25.00	*	*	735.08
149+50.00	-.0170	732.23	732.50	159+50.00	*	*	734.72
149+75.00	-.0226	732.92	733.28	159+75.00	*	*	734.36
150+00.00	-.0282	733.71	734.16	160+00.00	*	*	733.99
150+25.00	-.0338	734.59	735.13	160+25.00	*	*	733.60
150+50.00	-.0395	735.58	736.21	160+50.00	*	*	733.19
150+75.00	**	**	737.34	160+75.00	*	*	732.76
151+00.00	**	**	738.42	161+00.00	*	*	732.31
151+25.00	**	**	739.41	161+25.00	*	*	731.84
151+50.00	**	**	740.31	161+50.00	*	*	731.35
151+75.00	**	**	741.11	161+75.00	*	*	730.84
152+00.00	**	**	741.82	PT 161+87.16	*	*	730.63
152+25.00	**	**	742.44				
SC 152+43.86	-.083	741.50	742.83				
152+50.00	-.083	741.63	742.96				
152+75.00	-.083	742.06	743.39				
153+00.00	-.083	742.39	743.72				
CS 153+11.73	-.083	742.52	743.85				
153+25.00	-.0796	742.70	743.97				
153+50.00	-.0733	742.94	744.11				
153+75.00	-.0671	743.10	744.17				
154+00.00	-.0608	743.16	744.13				
154+25.00	-.0546	743.13	744.00				
154+50.00	-.0483	743.01	743.78				
154+75.00	-.0420	742.79	743.46				
155+00.00	-.0358	742.48	743.05				
155+25.00	-.0295	742.08	742.55				
155+50.00	-.0232	741.63	742.00				
155+75.00	-.0169	741.18	741.45				
156+00.00	-.0107	740.73	740.90				
ST 156+11.73	-.0077	740.52	740.64				
156+25.00	-.0044	740.28	740.35				
156+50.00	.0019	739.83	739.80				
TS 156+59.44	.0043	739.66	739.59				
156+75.00	.0082	739.39	739.26				
157+00.00	.0145	738.98	738.75				
157+25.00	.0207	738.59	738.26				
157+50.00	.0270	738.22	737.79				
157+75.00	*	*	737.35				
158+00.00	*	*	736.93				
158+25.00	*	*	736.53				
158+50.00	*	*	736.16				
158+75.00	*	*	735.80				
159+00.00	*	*	735.44				
SC 159+09.44	*	*	735.30				

\* FOR BRIDGE NO. FRA-315-0210  
DECK CONTROL ELEVATIONS,  
SEE SHEET 262.

\*\* FOR BRIDGE NO. FRA-315-0197  
DECK CONTROL ELEVATIONS,  
SEE SHEET 201.

### S.R. 315 NB

STATION	SUPER ELEV.	B. ELEV.	DISTANCE	LANE SUPER ELEV.	PAV'T ELEV.	DISTANCE	LANE SUPER ELEV.	PAV'T ELEV.
		733.42	12' RT.	.0156	733.61	24' RT.	-.0156	733.42
		733.50	12' RT.	.0117	733.64	24' RT.	-.0156	733.45
		733.60	12' RT.	.0075	733.69	24' RT.	-.0156	733.50
		733.70	12' RT.	.0025	733.73	24' RT.	-.0156	733.54
TS		733.76	12' RT.	.000	733.76	24' RT.	-.0156	733.57
		733.80	12' RT.	-.00194	733.78	24' RT.	-.0156	733.59
		733.90	12' RT.	-.0070	733.82	24' RT.	-.0156	733.63
		734.00	12' RT.	-.0121	733.85	24' RT.	-.0156	733.66
	-.0172	734.10	24' RT.		733.69			
	-.0222	734.20	24' RT.		733.68			
	-.0273	734.30	24' RT.		733.64			
	-.0324	734.40	24' RT.		733.62			
	-.0374	734.50	24' RT.		733.60			
	-.0425	734.60	24' RT.		733.58			
	-.0476	734.70	24' RT.		733.56			
	-.0527	734.80	24' RT.		733.54			
	-.0577	734.90	24' RT.		733.52			
	-.0628	735.00	24' RT.		733.49			
	-.0679	735.12	24' RT.		733.49			
SC	-.071	735.20	24' RT.		733.50			
	-.071	735.26	24' RT.		733.56			
	-.071	735.44	24' RT.		733.74			
	-.071	735.65	24' RT.		733.95			
	-.071	735.90	24' RT.		734.20			
	-.071	735.90	36' RT.		733.34			
	-.071	736.17	36' RT.		733.61			
	-.071	736.48	36' RT.		733.92			
	-.071	736.81	36' RT.		734.25			
CS	-.071	736.85	36' RT.		734.29			
	-.0663	737.18	36' RT.		734.79			
	-.0611	737.58	36' RT.		735.38			
	-.0559	738.02	36' RT.		736.01			
	-.0507	738.48	36' RT.		736.65			
	-.0455	738.96	36' RT.		737.32			
	-.0403	739.44	36' RT.		737.99			
	-.0351	739.92	36' RT.		738.66			
	-.0299	740.40	36' RT.		739.32			
	-.0247	740.88	36' RT.		739.99			
	-.0195	741.36	36' RT.		740.66			
	-.0142	741.84	36' RT.		741.33			
	-.00905	742.32	36' RT.		741.99			
	-.00384	742.80	36' RT.		742.66			
	.00136	743.28	36' RT.		743.33			
ST	.00184	743.32	36' RT.		743.39			
	.00656	743.76	36' RT.		744.00			
	.0118	744.24	36' RT.		744.66			
	.01667	744.69	36' RT.		745.29			

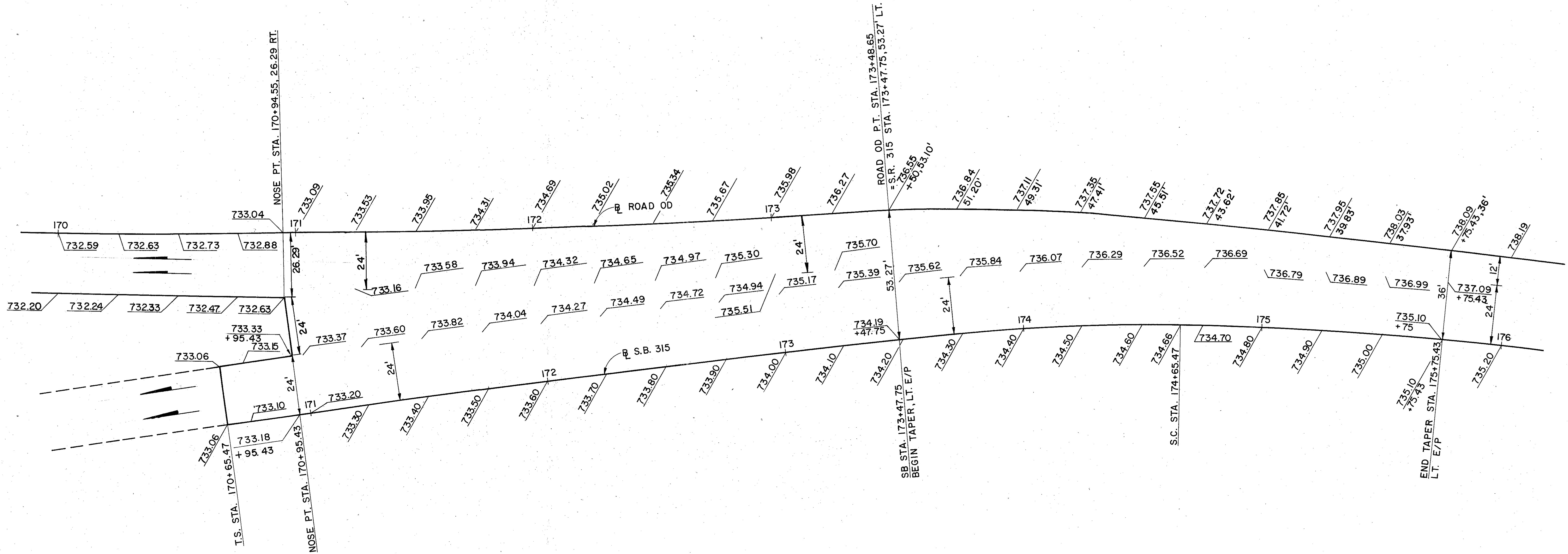
### S.R. 315 SB

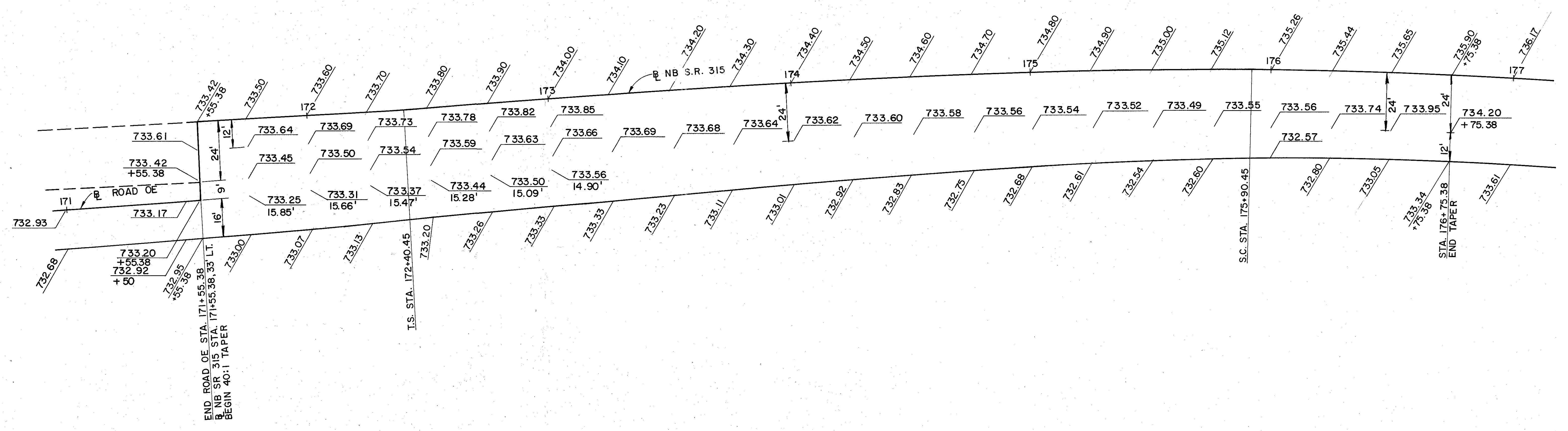
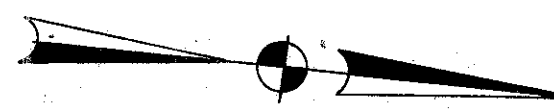
STATION	SUPER ELEV.	B. ELEV.	DISTANCE	LANE SUPER ELEV.	PAV'T ELEV.
TS		733.06	24' LT.		733.06
	.00198	733.10	24' LT.		733.15
	.00716	733.20	24' LT.		733.37
	.0124	733.30	24' LT.		733.60
	.0175	733.40	24' LT.		733.82
	.0227	733.50	24' LT.		734.04
	.0279	733.60	24' LT.		734.27
	.0331	733.70	24' LT.		734.49
	.0383	733.80	24' LT.		734.72
	.0435	733.90	24' LT.		734.94
	.0487	734.00	24' LT.		735.17
	.0539	734.10	24' LT.		735.39
	.0586	734.19	24' LT.		735.60
	.0590	734.20	24' LT.		735.62
	.0642	734.30	24' LT.		735.84
	.0694	734.40	24' LT.		736.07
	.0746	734.50	24' LT.		736.29
	.0798	734.60	24' LT.		736.52
SC		734.66	24' LT.		736.65
	.083	734.70	24' LT.		736.69
	.083	734.80	24' LT.		736.79
	.083	734.90	24' LT.		736.89
	.083	735.00	24' LT.		736.99
	.083	735.10	24' LT.		737.09
	.083	735.10	36' LT.		738.09
	.083	735.20	36' LT.		738.19
	.083	735.30	36' LT.		738.29
	.083	735.40	36' LT.		738.39
	.083	735.50	36' LT.		738.49
	.083	735.60	36' LT.		738.59
	.083	735.72	36' LT.		738.71
CS		735.78	36' LT.		738.77
	.0799	735.88	36' LT.		738.76
	.0747	736.08	36' LT.		738.77
	.0695	736.33	36' LT.		738.83
	.0643	736.61	36' LT.		738.92
	.0592	736.93	36' LT.		739.06
	.0540	737.30	36' LT.		739.24
	.0488	737.70	36' LT.		739.46
	.0436	738.15	36' LT.		739.72
	.0384	738.63	36' LT.		740.01
	.0332	739.16	36' LT.		740.36
	.0280	739.73	36' LT.		740.74
	.0228	740.33	36' LT.		741.15
	.0177	740.98	36' LT.		741.62
	.0125	741.67	36' LT.		742.12
	.00728	742.40	36' LT.		742.66
	.00209	743.15	36' LT.		743.23
ST		743.45	36' LT.		743.45

OHIO	175
FHWA REGION 5	275
FEDERAL PROJECT	

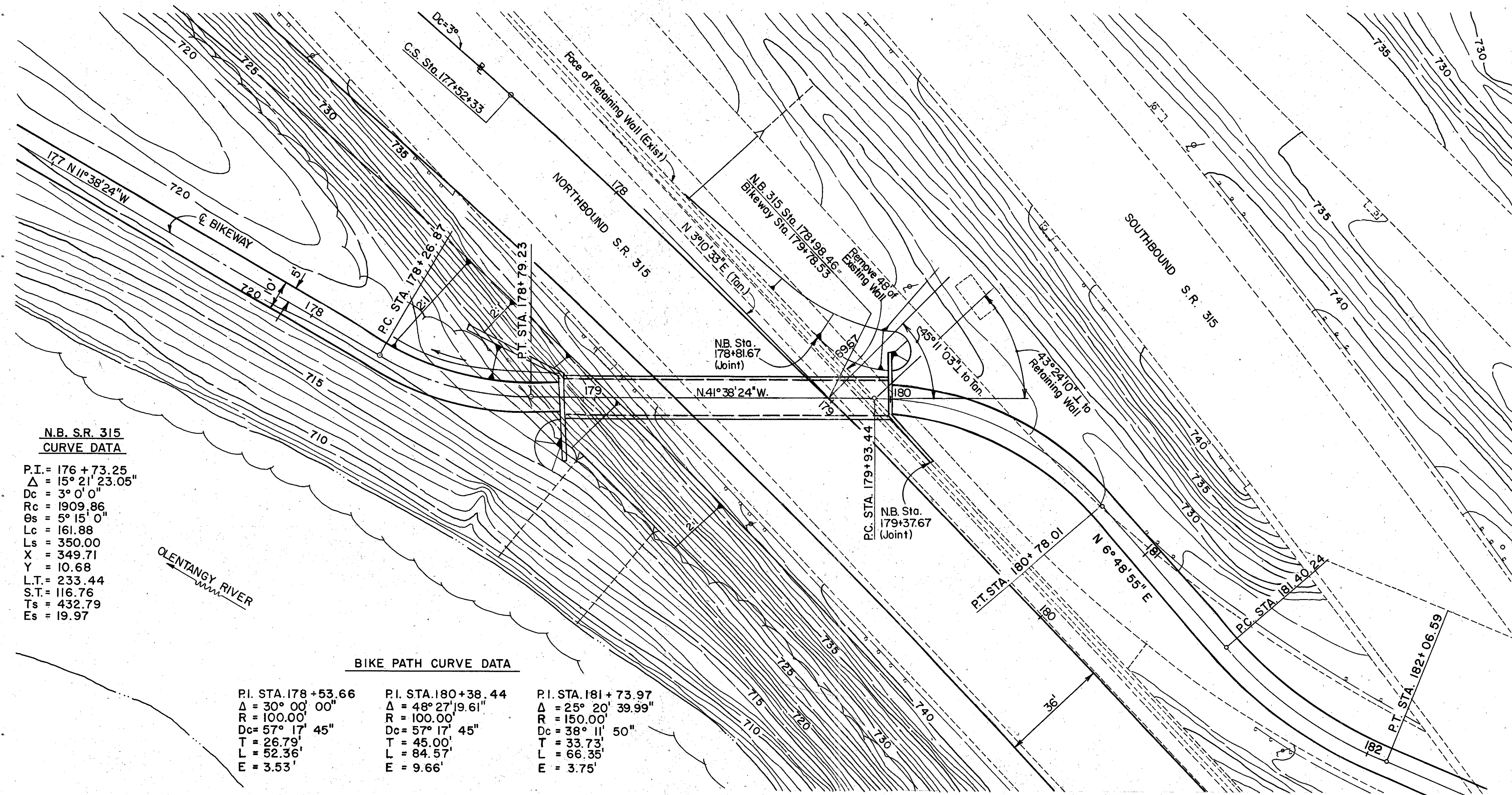
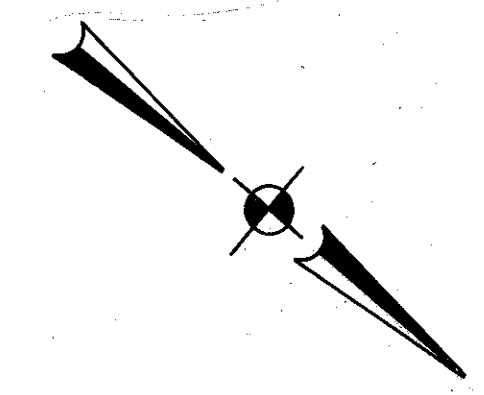
FRANKLIN COUNTY  
FRA-670-1.25-C-2

CA/ADP/248E/315  
STA B 8/17/92 MF





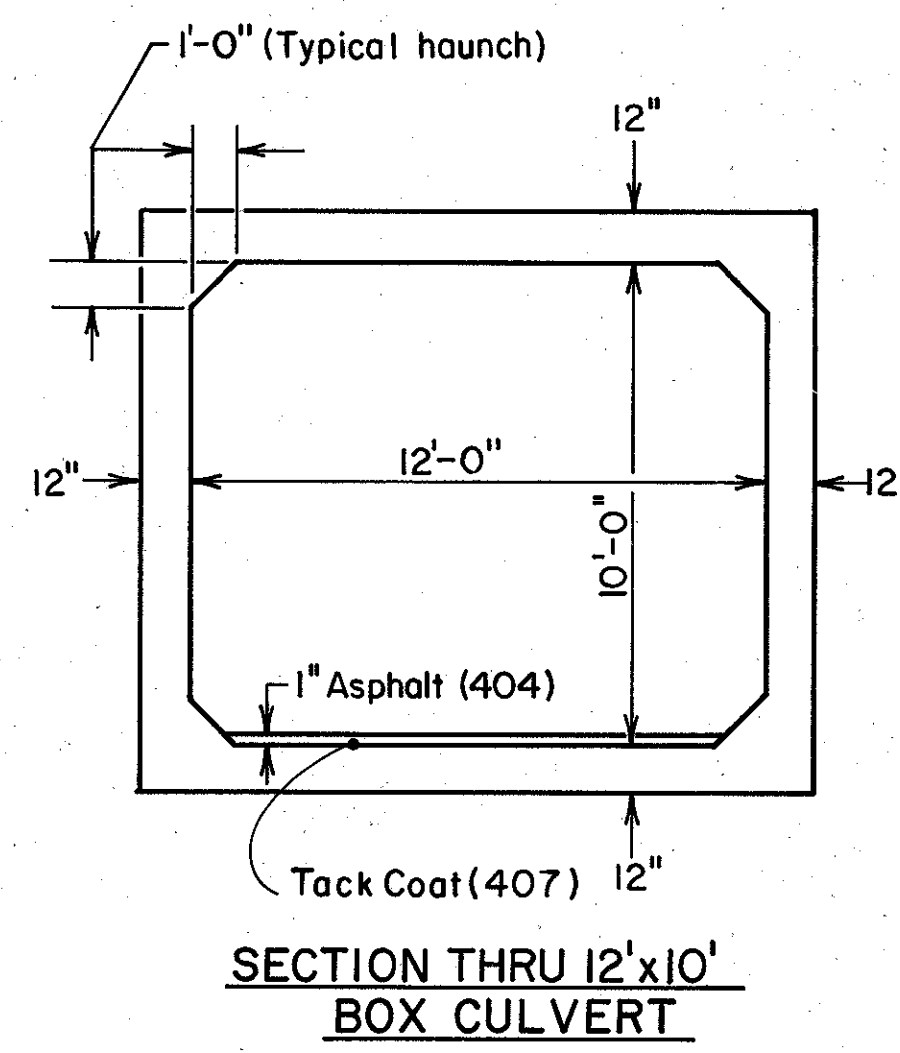
ROAD OE /S.R. 315 NORTHBOUND PAVEMENT DETAILS - STA. 171+00 TO STA. 177+00



**N.B. S.R. 315  
CURVE DATA**  
 P.I. = 176 + 73.25  
 $\Delta = 15^\circ 21' 23.05''$   
 Dc = 3° 0' 0"  
 Rc = 1909.86  
 Os = 5° 15' 0"  
 Lc = 161.88  
 Ls = 350.00  
 X = 349.71  
 Y = 10.68  
 L.T. = 233.44  
 S.T. = 116.76  
 Ts = 432.79  
 Es = 19.97

**BIKE PATH CURVE DATA**

P.I. STA. 178 + 53.66 $\Delta = 30^\circ 00' 00''$ R = 100.00' Dc = 57° 17' 45" T = 26.79' L = 52.36' E = 3.53'	P.I. STA. 180 + 38.44 $\Delta = 48^\circ 27' 19.61''$ R = 100.00' Dc = 57° 17' 45" T = 45.00' L = 84.57' E = 9.66'	P.I. STA. 181 + 73.97 $\Delta = 25^\circ 20' 39.99''$ R = 150.00' Dc = 38° 11' 50" T = 33.73' L = 66.35' E = 3.75'
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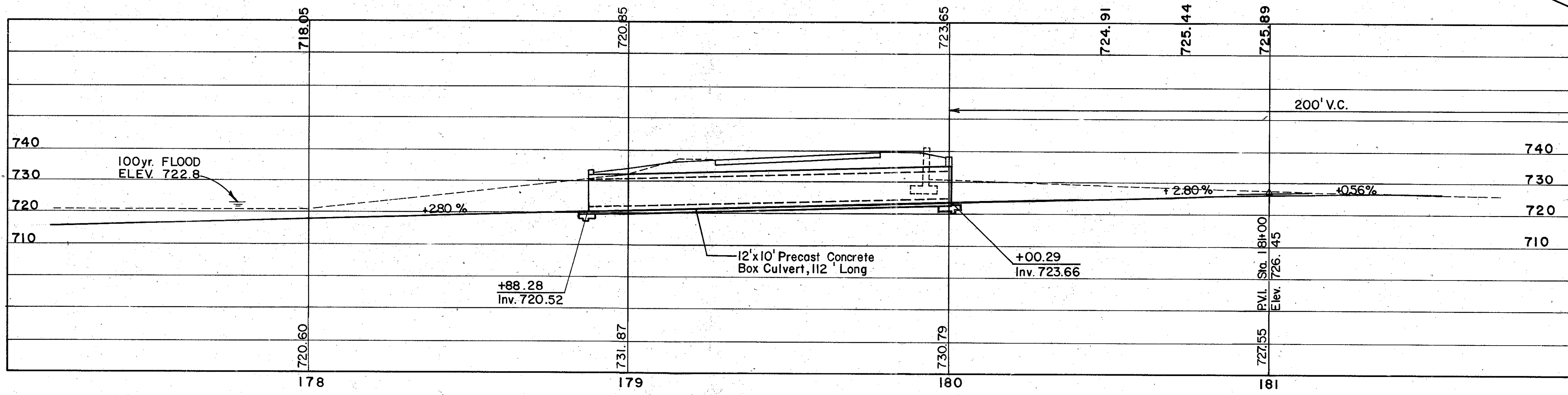


EXISTING STRUCTURE : None

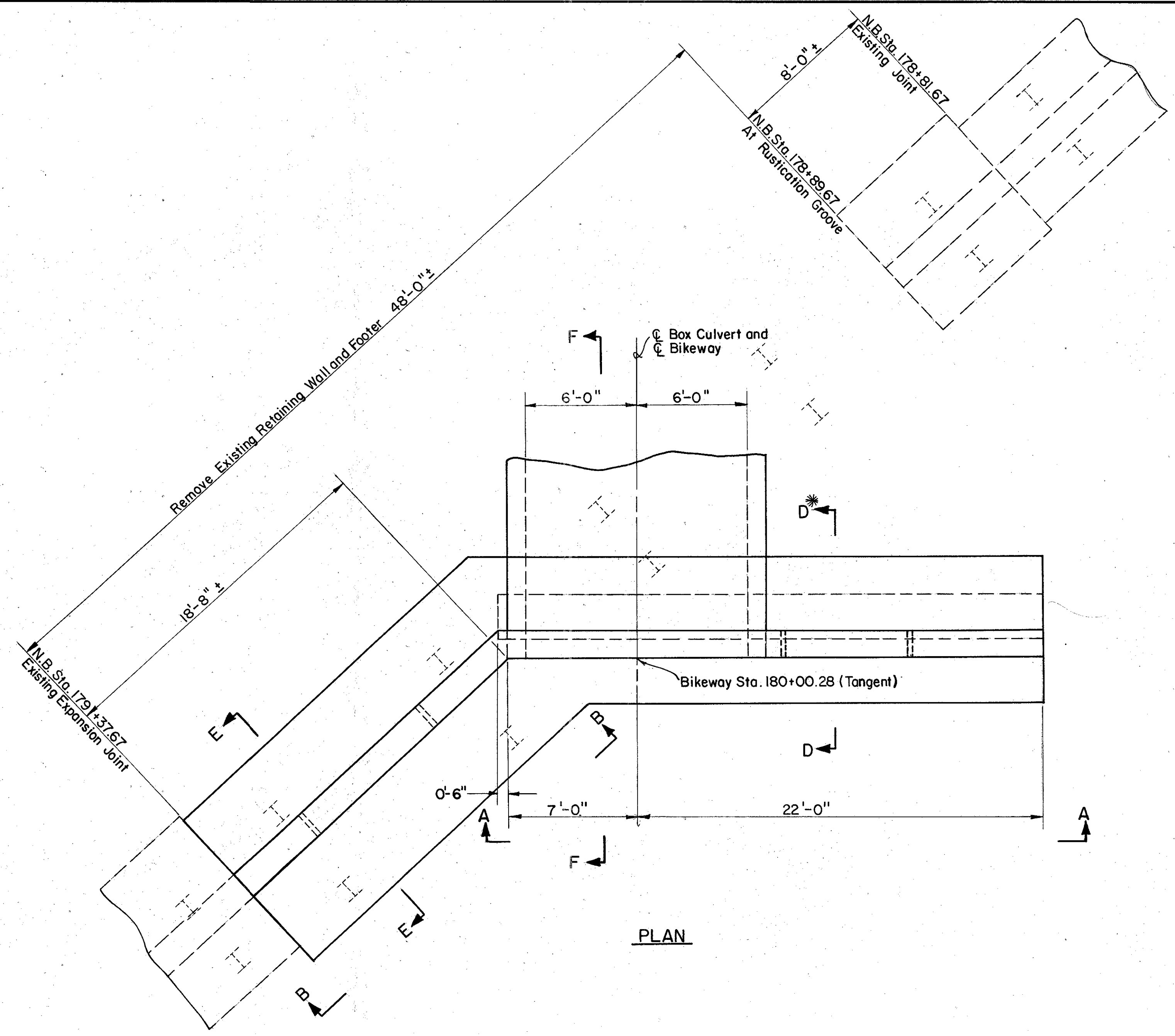
**PROPOSED STRUCTURE**  
 TYPE : 12' x 10' Precast Concrete Box Culvert with Reinforced Concrete Wingwalls  
 LOADING : HS20-44 and the Alternate Military Loading  
 SKEW : None  
 WEARING COURSE : 1" Asphalt Concrete (404)  
 APPROACH SLABS : None  
 ALIGNMENT : Tangent

JOHN E. FOSTER AND ASSOCIATES, INC.  
 555 Buttes Ave., Columbus, Ohio 43215

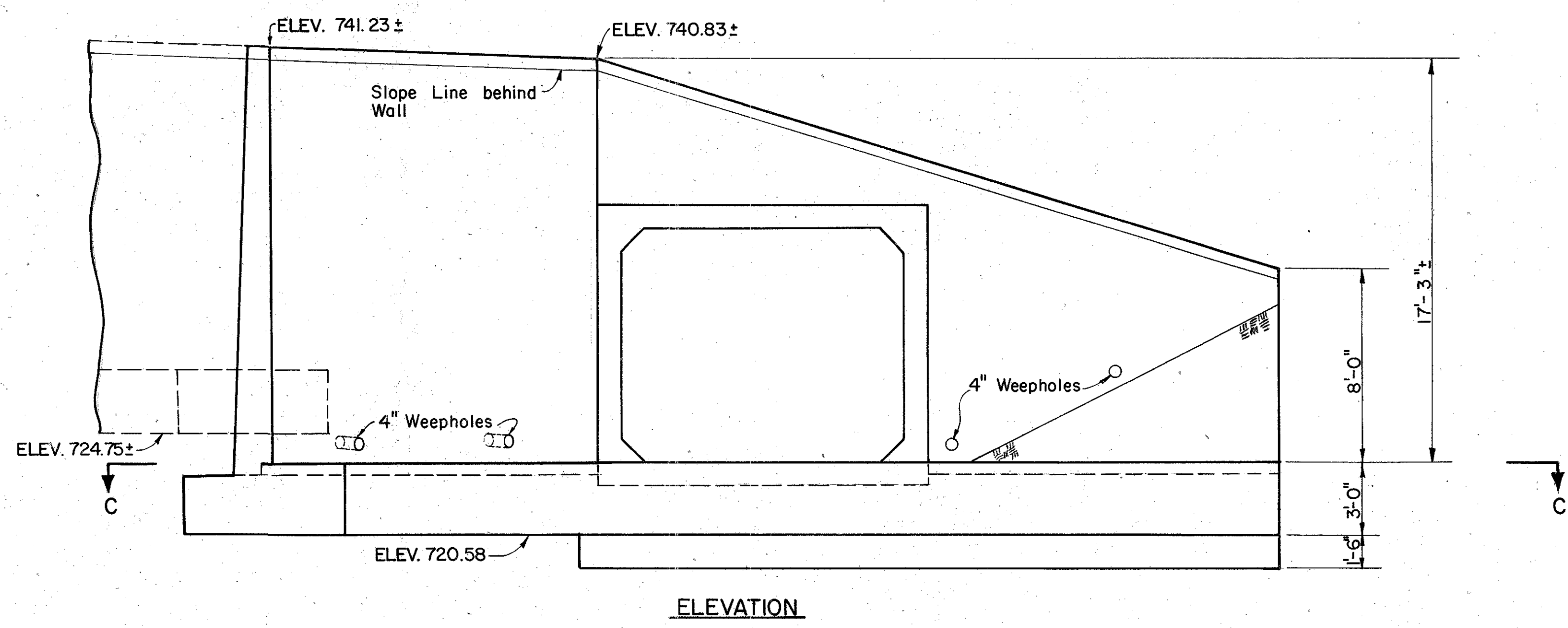
**SITE PLAN**  
 STRUCTURE NO. FRA-315-0250N  
 OLENTANGY BIKEWAY UNDER S.R. 315  
 NORTHBOUND  
 FRANKLIN COUNTY



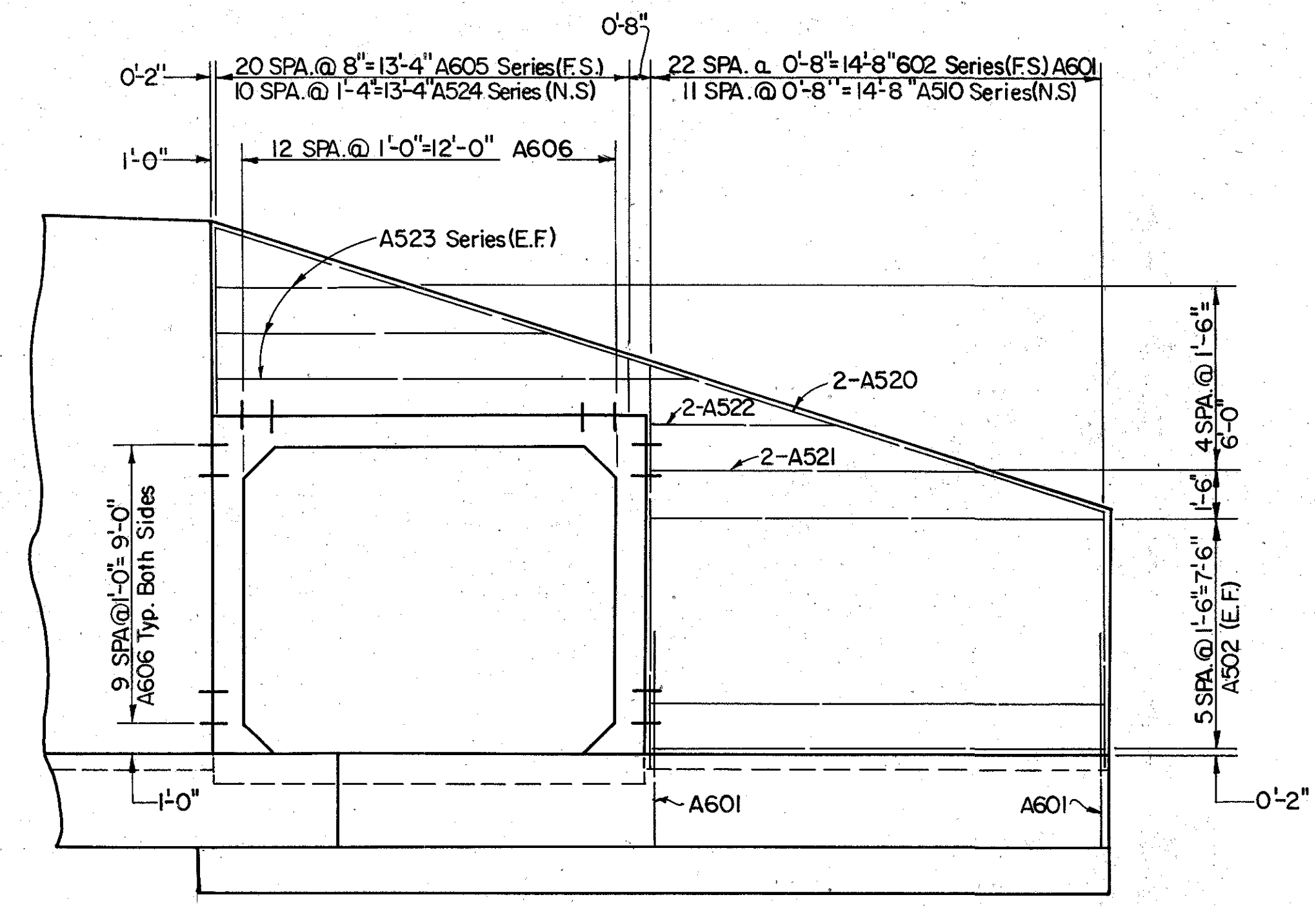
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JS	LK	JB		JDH 11-6-86	



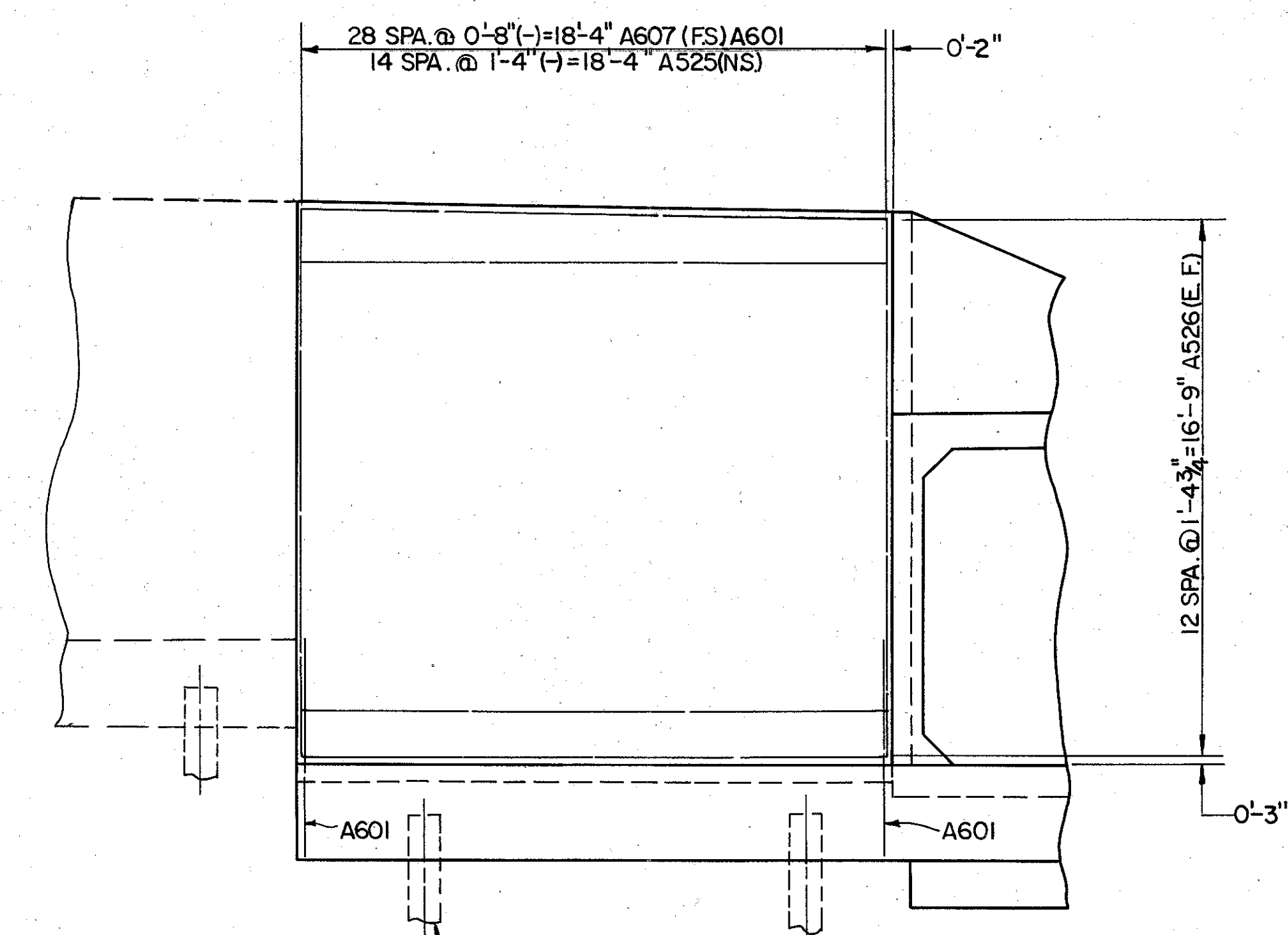
\* FOR SECTION D-D SEE SHEET 182 (EAST HEADWALL DETAILS)



JOHN E. FOSTER AND ASSOCIATES, INC. 2/6						
555 Buttles Ave., Columbus, Ohio 43215						
<b>BOX CULVERT DETAIL</b>						
STRUCTURE NO. FRA-315-0250N						
OLENTANGY BIKEWAY UNDER S.R. 315						
NORTHBOUND						
FRANKLIN COUNTY						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.D.H.	M.L.F.		J.C.S.	J.S.S.	1/9/88	

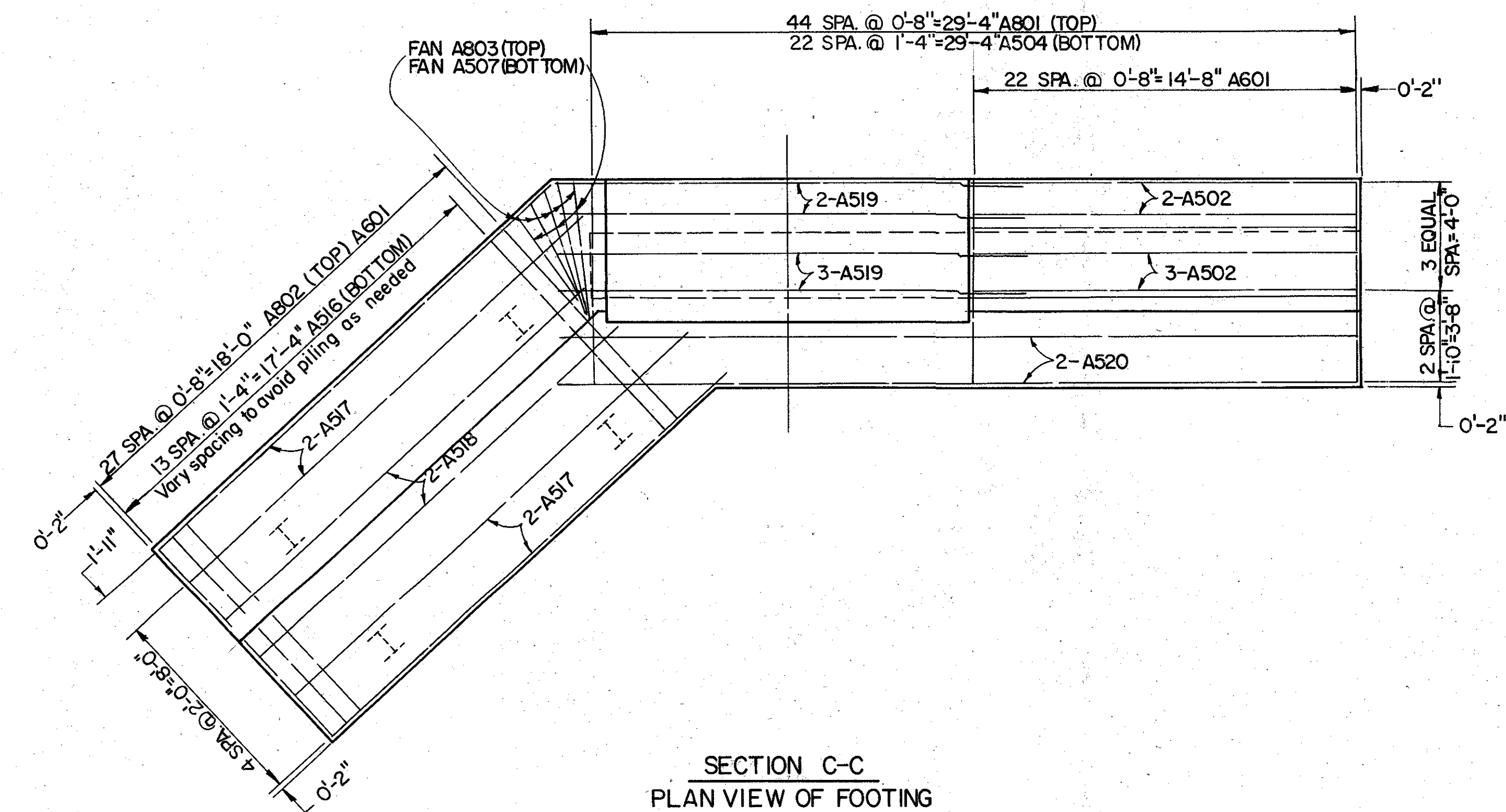


VIEW A-A

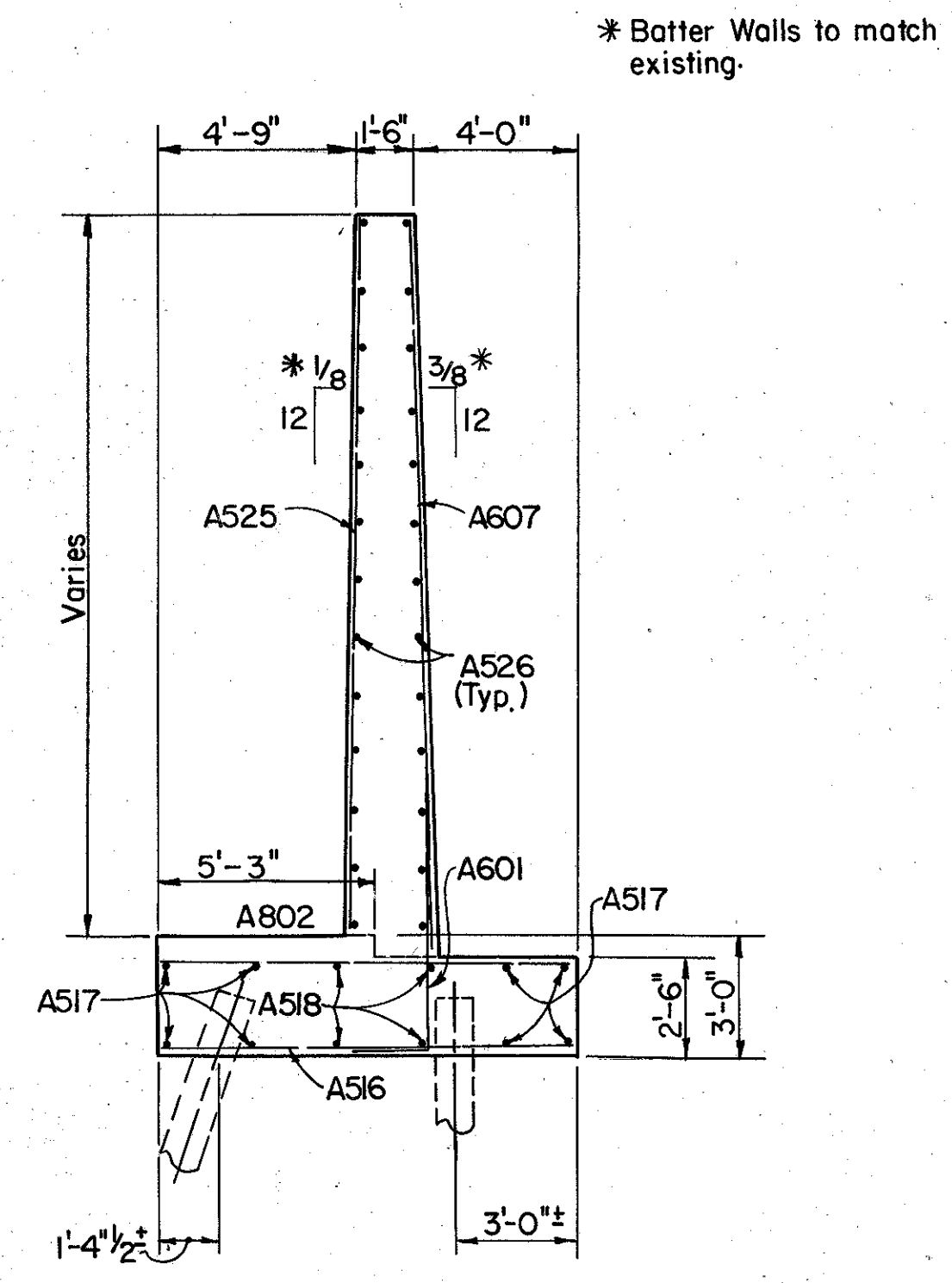


Existing 12 BP 53 Piling. Cut top of Piling at Elev. 722.08 (Typ)

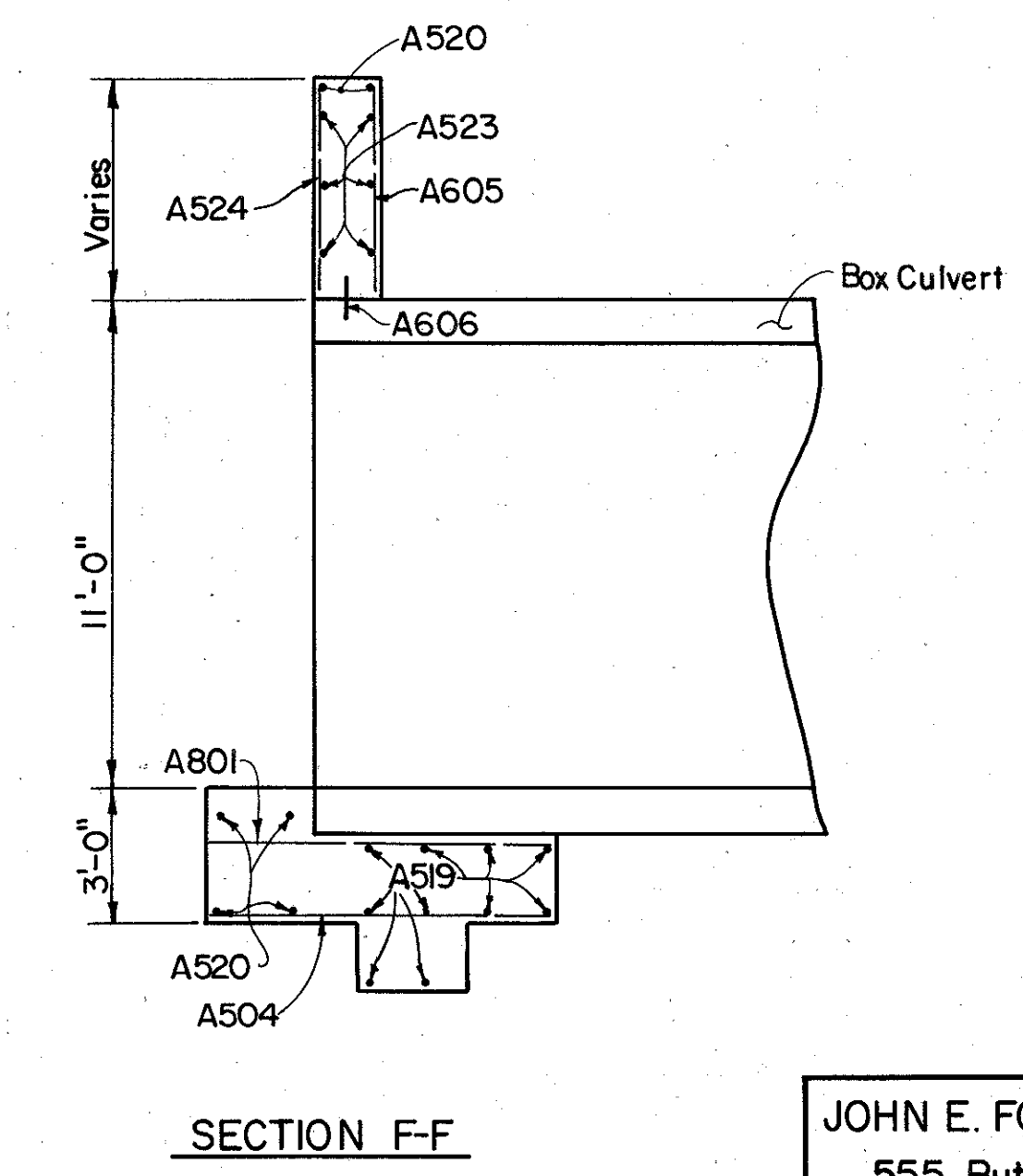
VIEW B-B



SECTION C-C  
PLAN VIEW OF FOOTING



SECTION E-E

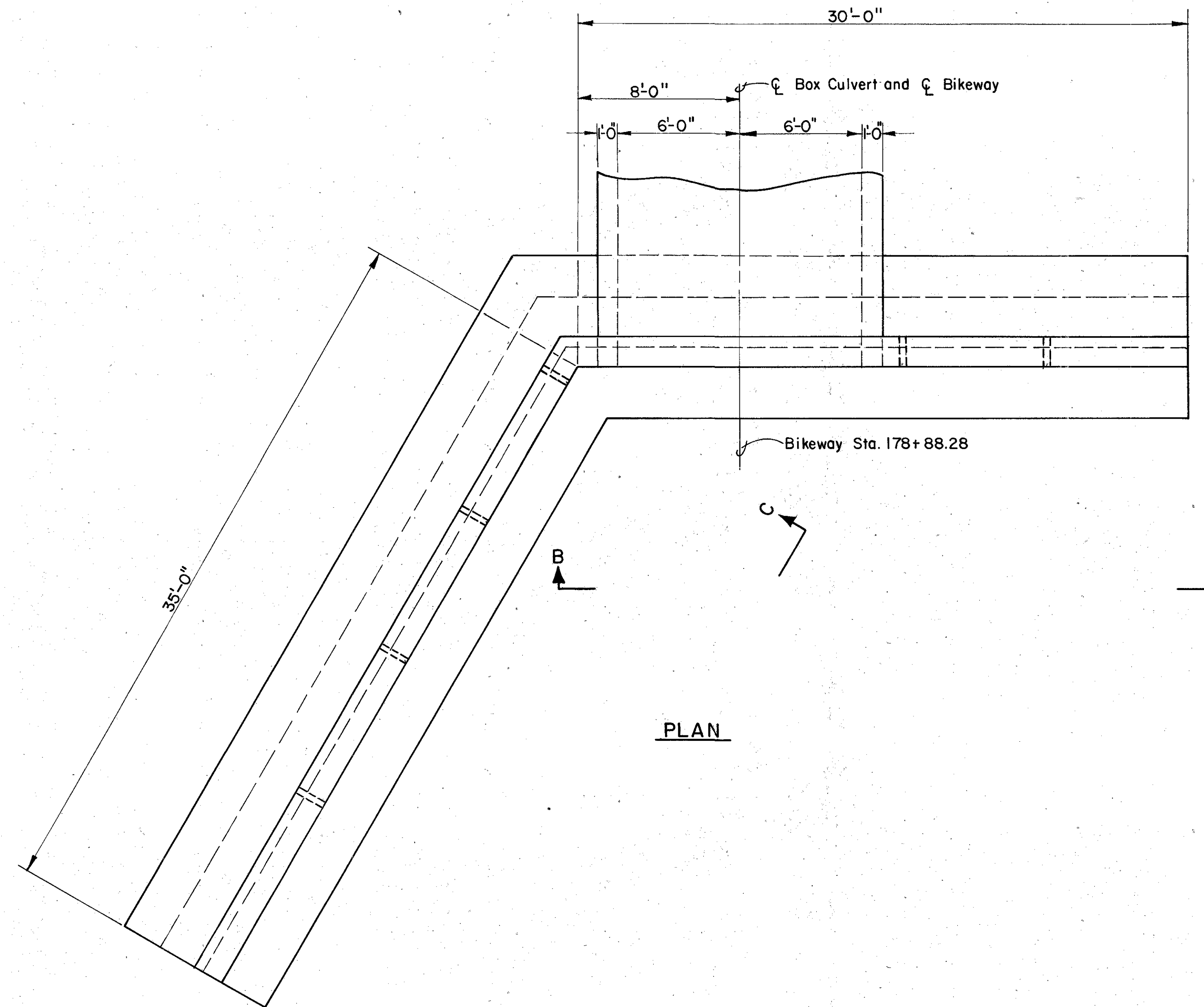


SECTION F-F

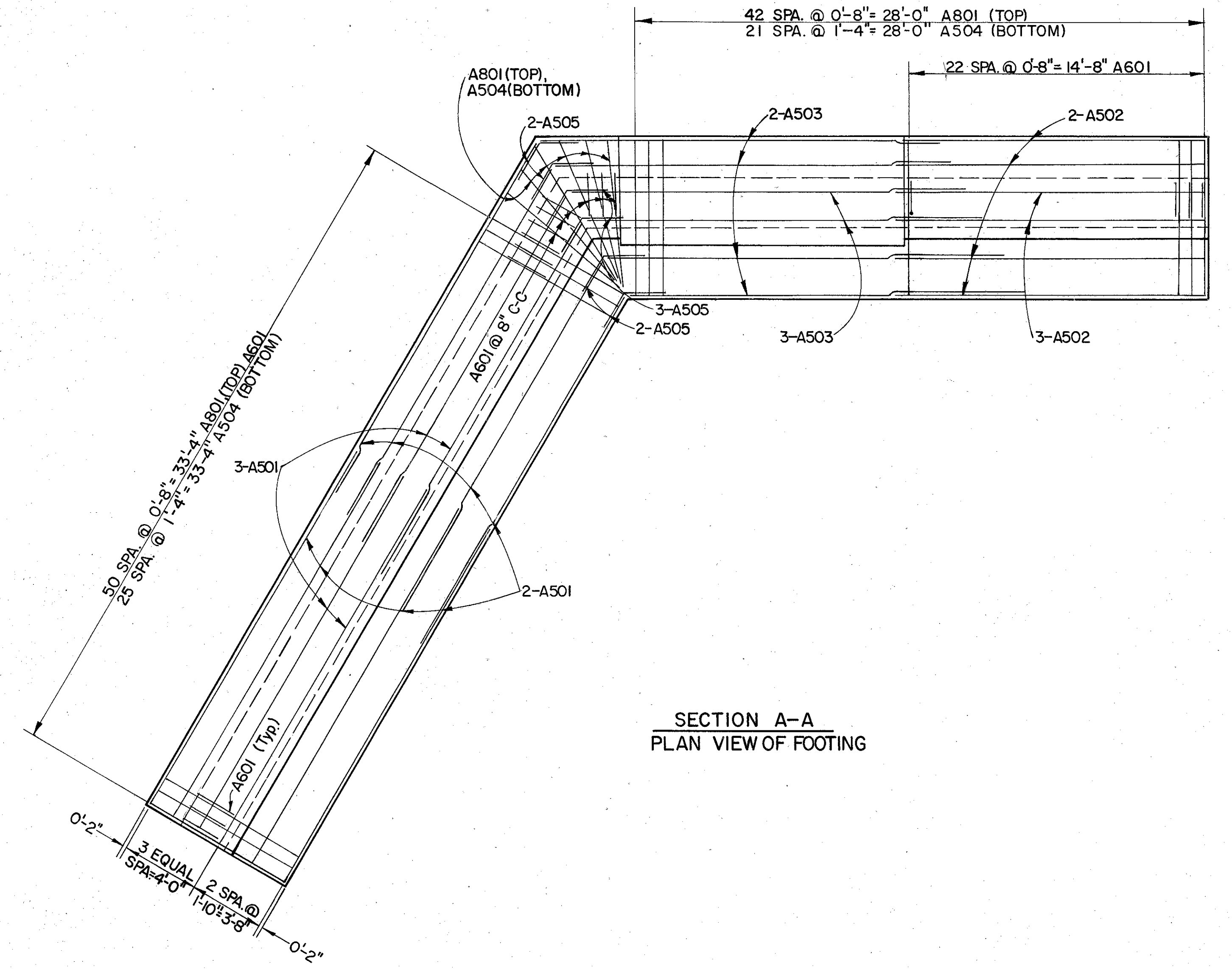
N.S. : NEAR SIDE  
F.S. : FAR SIDE  
E.F. : EACH FACE

JOHN E. FOSTER AND ASSOCIATES, INC. 555 Buttles Ave., Columbus, Ohio 43215						
<b>BOX CULVERT DETAIL</b>						
STRUCTURE NO. FRA-315-0250N OLENTANGY BIKEWAY UNDER S.R. 315 NORTHBOUND FRANKLIN COUNTY						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.D.H.	M.L.F.		J.C.S.	JSS	1/9/88	

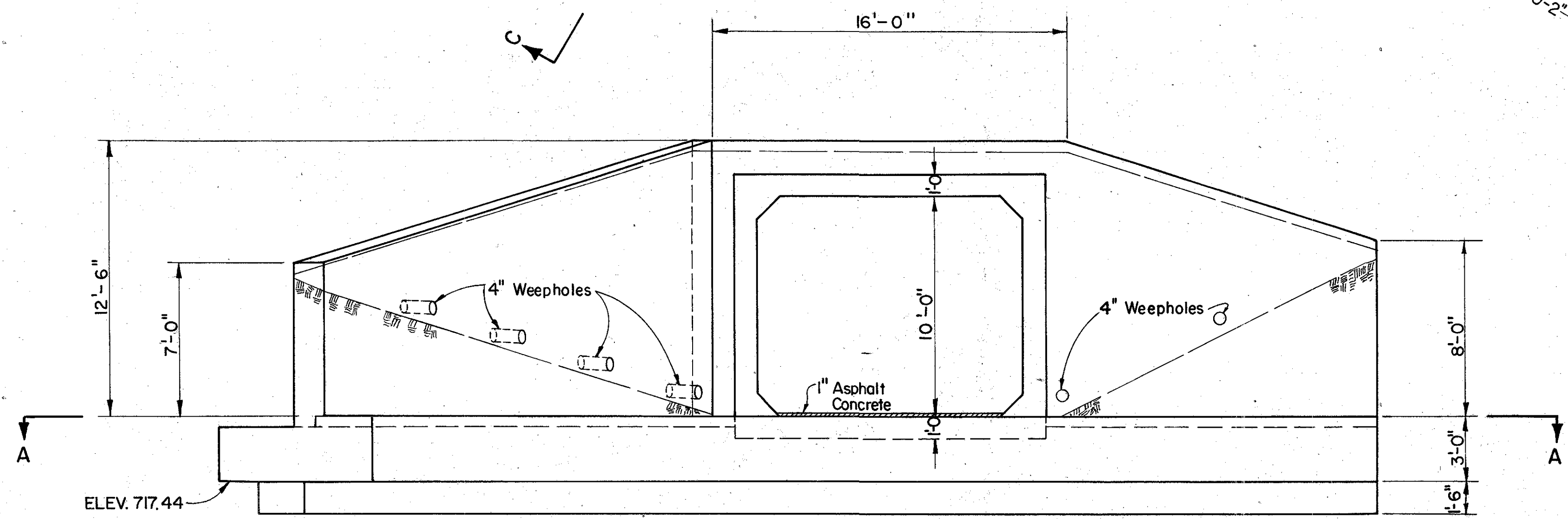
FRANKLIN COUNTY  
FRA-670-1.25-C-2



PLAN



SECTION A-A  
PLAN VIEW OF FOOTING



ELEVATION

JOHN E. FOSTER AND ASSOCIATES, INC. 4/6  
555 Buttlers Ave., Columbus, Ohio 43215

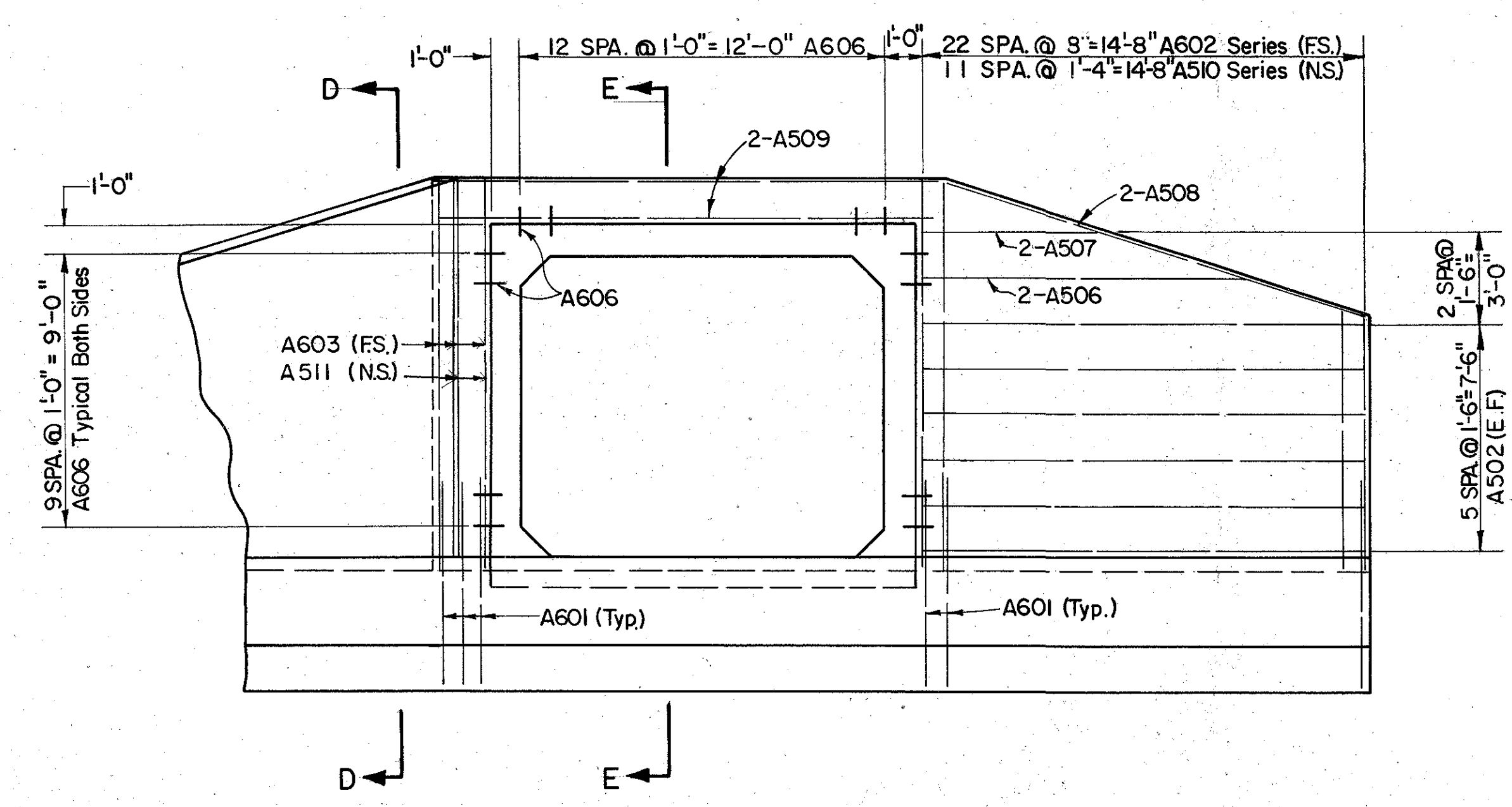
**BOX CULVERT DETAIL**  
STRUCTURE NO. FRA-315-0250N  
OLENTANGY BIKEWAY UNDER S.R. 315  
NORTHBOUND  
FRANKLIN COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
J.D.H.	M.L.F.		J.C.S.	J.S.S. 1/9/88	

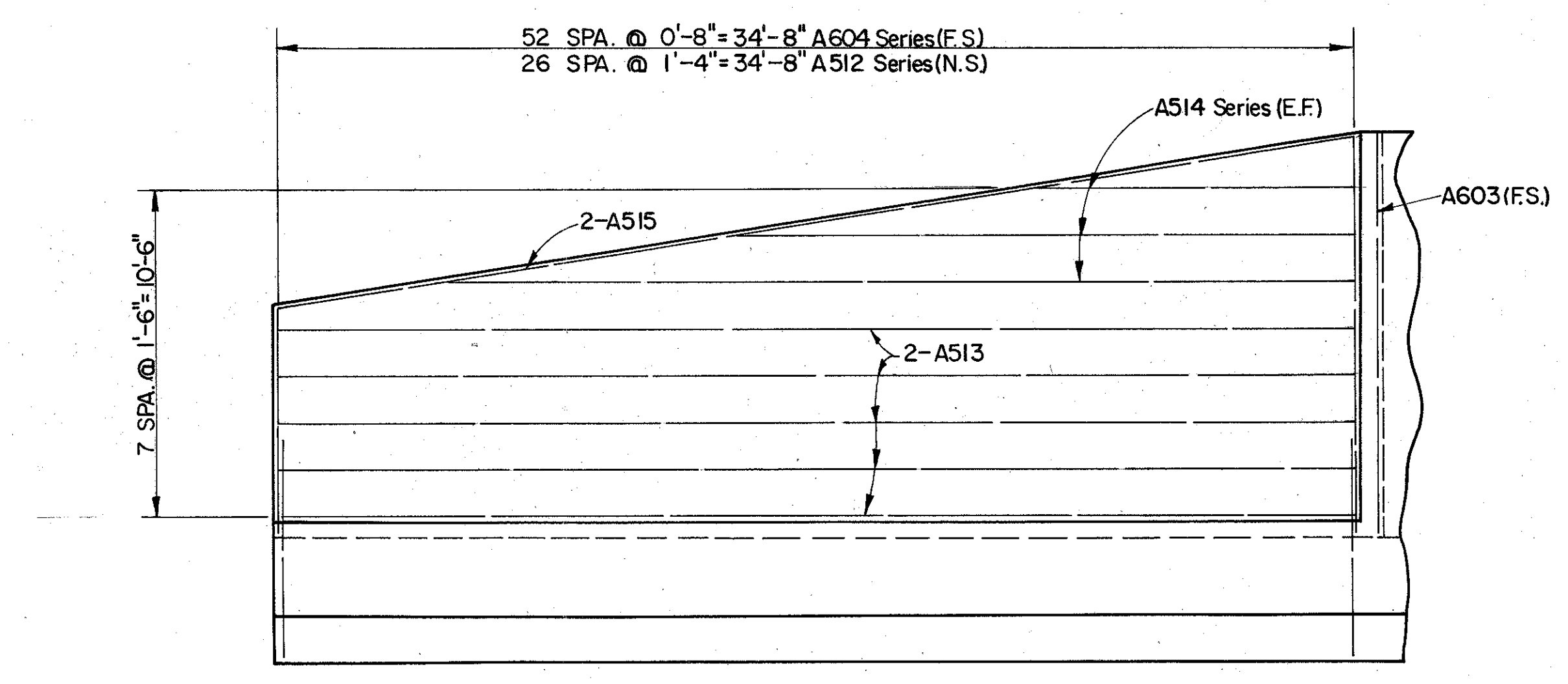
EAST HEADWALL DETAILS



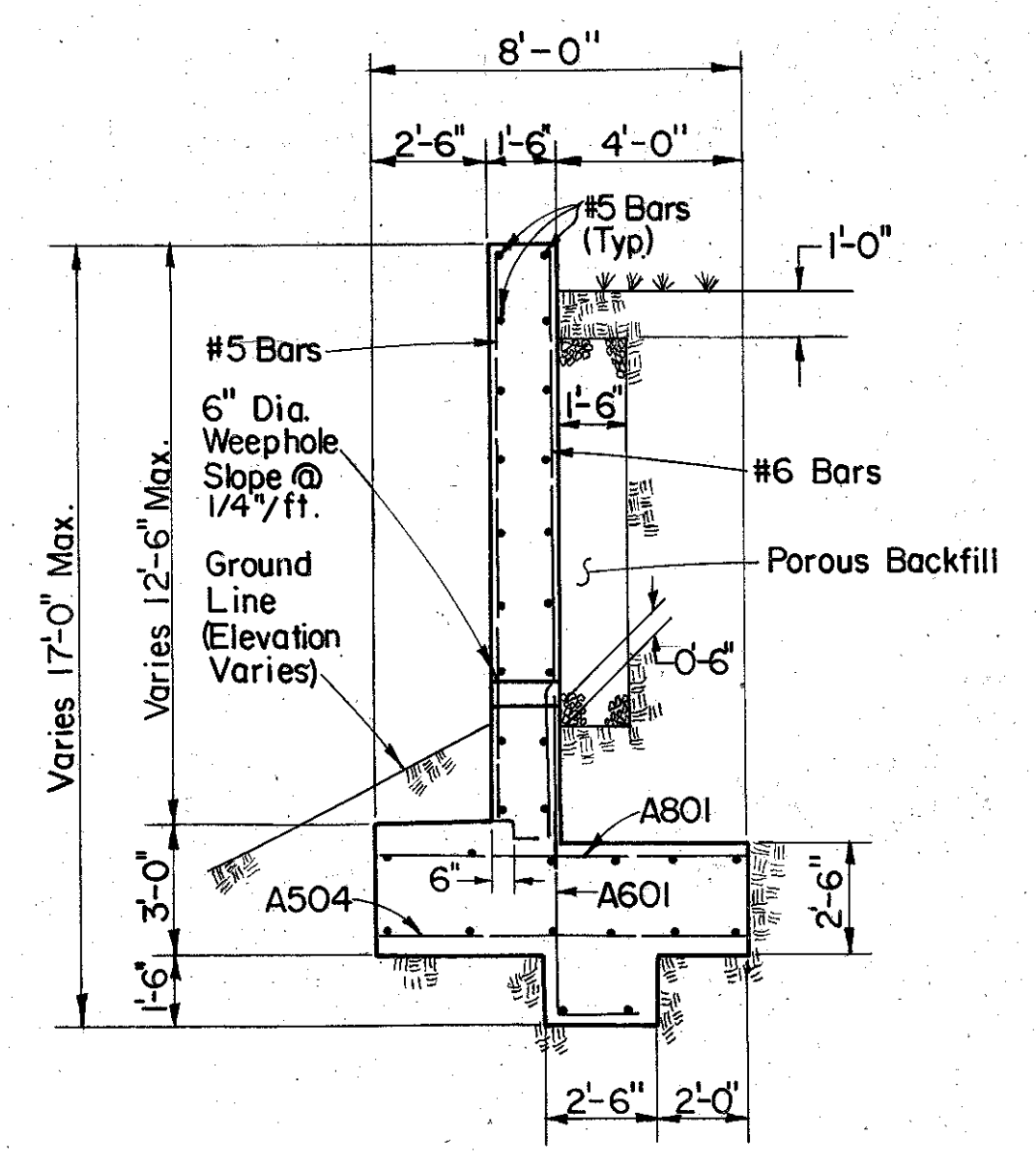
FRANKLIN COUNTY  
 FRA-670-1.25-C-2



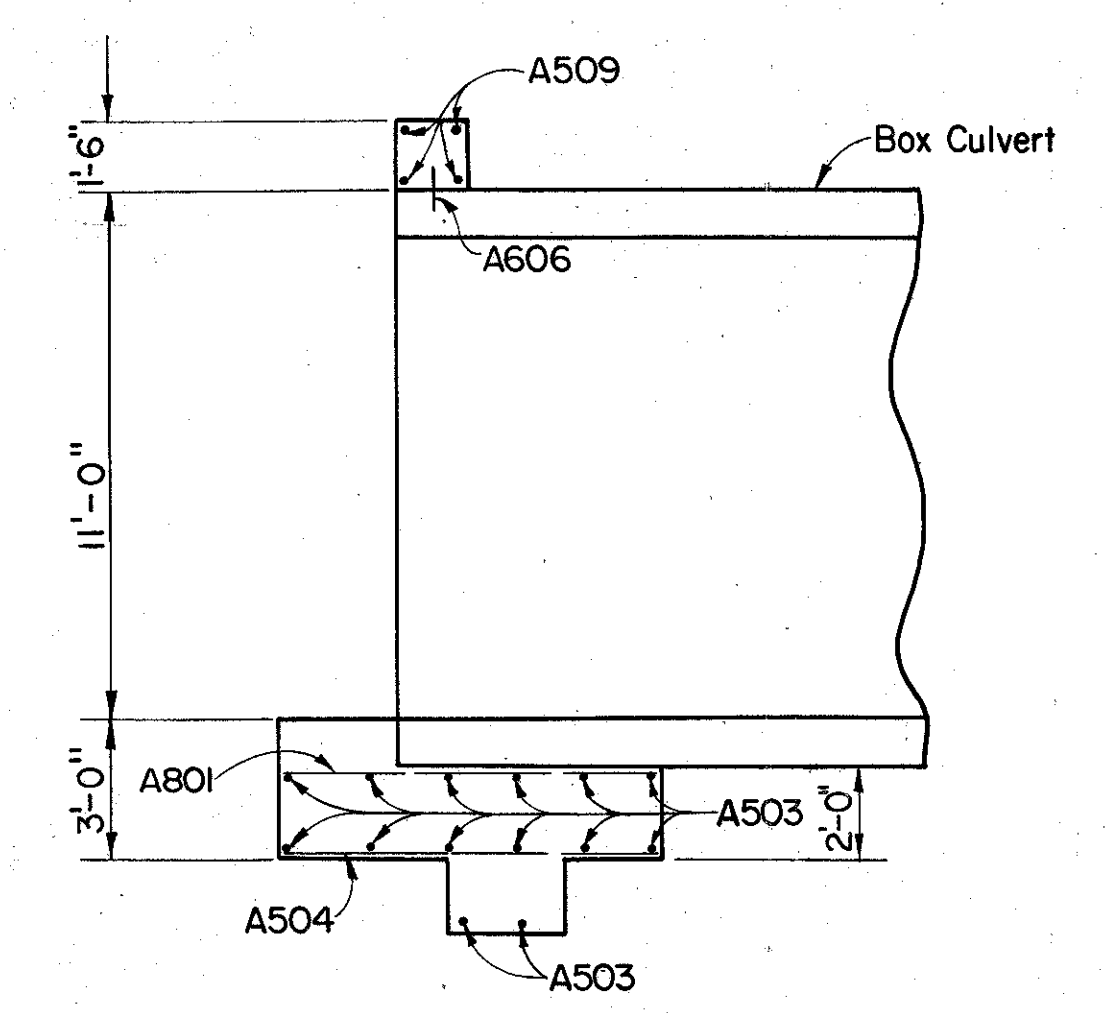
VIEW B-B



VIEW C-C



SECTION D-D



SECTION E-E

N.S. : NEAR SIDE  
 F.S. : FAR SIDE  
 E.F. : EACH FACE

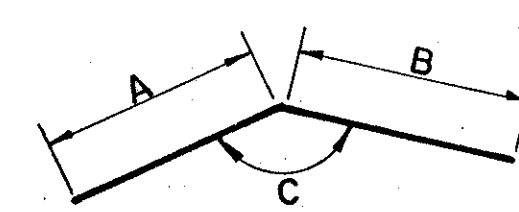
JOHN E. FOSTER AND ASSOCIATES, INC. 5  
 555 Buttlers Ave., Columbus, Ohio 43215

**BOX CULVERT DETAIL**  
 STRUCTURE NO. FRA-315-0250N  
 OLENTANGY BIKEWAY UNDER S.R. 315  
 NORTHBOUND  
 FRANKLIN COUNTY

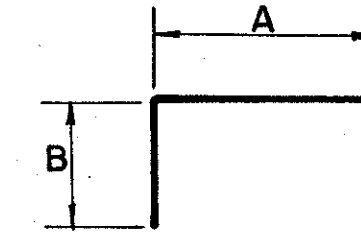
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.D.H.	M.L.F.		J.C.S.	J.S.S.	1/9/88	

**REINFORCING STEEL LIST**

BAR MARK	EAST HEADWALL	WEST HEADWALL	TOTAL	LENGTH	WEIGHT	SHAPE TYPE	DIMENSIONS					
							A	B	C	D	E	F
A 501	28		28	20'-0"	584	ST.						
A 502	26	22	48	14'-8"	734	ST.						
A 503	14		14	19'-6"	285	ST.						
A 504	54	23	77	7'-8"	616	ST.						
A 505	14		14	3'-11"	57	I	2'-0"	2'-0"	120°			
A 506	2		2	10'-9"	22	ST.						
A 507	2	3	5	6'-0"	31	ST.						
A 508	2		2	14'-6"	30	ST.						
A 509	4		4	16'-4"	68	ST.						
A510 Series	1 Series of 12	1 Series of 12	2 Series	7'-8" to 12'-2"	248	ST.	Increment by 0'-5" (-)					
A 511	2		2	12'-2"	25	ST.						
A512 Series	1 Series of 27		1 Series	6'-8" to 12'-2"	265	ST.	Increment by 0'-2 1/2" (+)					
A 513	10		10	34'-8"	362	ST.						
A514 Series	2 Series of 3		2 Series	11'-4" to 30'-5"	131	ST.	Increment by 9'-6 1/2"					
A 515	2		2	35'-1"	73	ST.						
A 516		14	14	9'-11"	145	ST.						
A 517		8	8	20'-6"	171	ST.						
A 518		4	4	18'-9"	78	ST.						
A 519		10	10	18'-0"	188	ST.						
A 520		6	6	30'-0"	188	ST.						
A 521		2	2	11'-0"	23	ST.						
A 522		2	2	6'-4"	13	ST.						
A523 Series		2 Series of 3	2 Series	6'-3" to 15'-6"	68	ST.	Increment by 4'-7 1/2"					
A524 Series		1 Series of 11	1 Series	1'-9" to 5'-10"	44	ST.	Increment by 0'-5" (-)					
A 525		15	15	16'-11"	265	ST.						
A 526		26	26	18'-8"	494	ST.						
A 601	80	80	160	8'-11"	2143	2	6'-11"	2'-2"				
A602 Series	1 Series of 23	1 Series of 23	2 Series	8'-2" to 12'-8"	720	ST.	Increment by 0'-2 1/2" (-)					
A 603	4		4	12'-8"	76	ST.						
A604 Series	1 Series of 53		1 Series	7'-2" to 12'-8"	789	ST.	Increment by 0'-1 1/4" (+)					
A605 Series		1 Series of 21	1 Series	1'-9" to 5'-10"	120	ST.	Increment by 0'-2 1/2" (-)					
A 606	33	33	66	1'-0"	99	ST.						
A 607		29	29	17'-4"	755	ST.						
A 801	100	45	145	7'-8"	2968	ST.						
A 802		28	28	9'-11"	741	ST.						
A 803		5	5	6'-0"	80	ST.						
			TOTAL WEIGHT		13,699							



TYPE 1

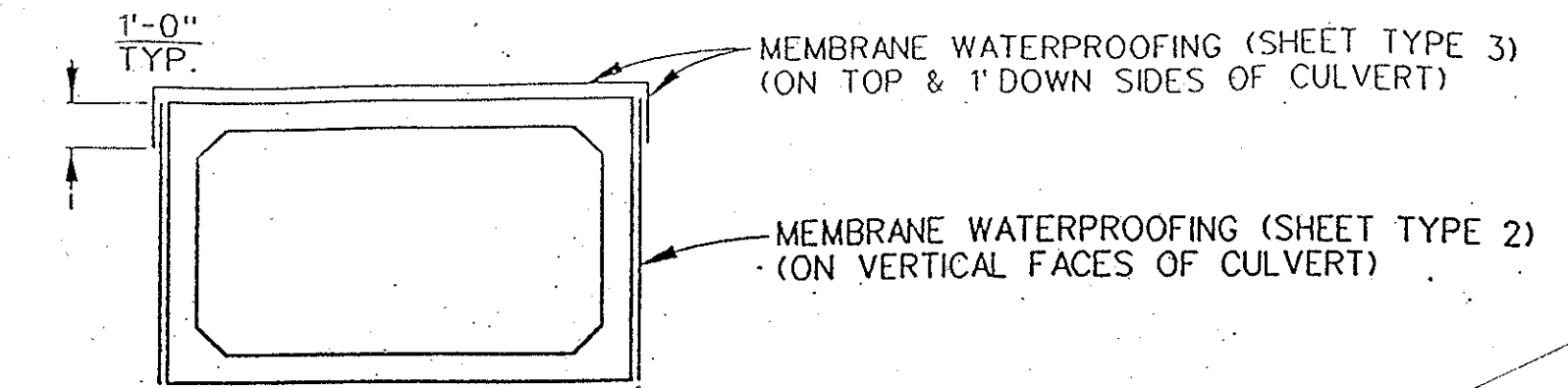


TYPE 2

This work is funded totally by STP funding

ESTIMATED QUANTITIES FRA-315-0250N				
ITEM	EXTENSION	TOTAL	UNIT	DESCRIPTION
202	11200	LUMP		PORTIONS OF STRUCTURE REMOVED
404	20000	4	CU. YD.	ASPHALT CONCRETE, AC-20
SPECIAL 51267020	299		SQ. YD.	MEMBRANE WATERPROOFING (SHEET TYPE 2) *
602	20000	177.5	CU. YD.	CONCRETE MASONRY
603	9620	112	LIN. FT.	12'x10' CONDUIT, TYPE A, 706.05, As Per Plan
SPECIAL 51267030	199		SQ. YD.	MEMBRANE WATERPROOFING (SHEET TYPE 3) *

\* SEE PROPOSAL NOTE.

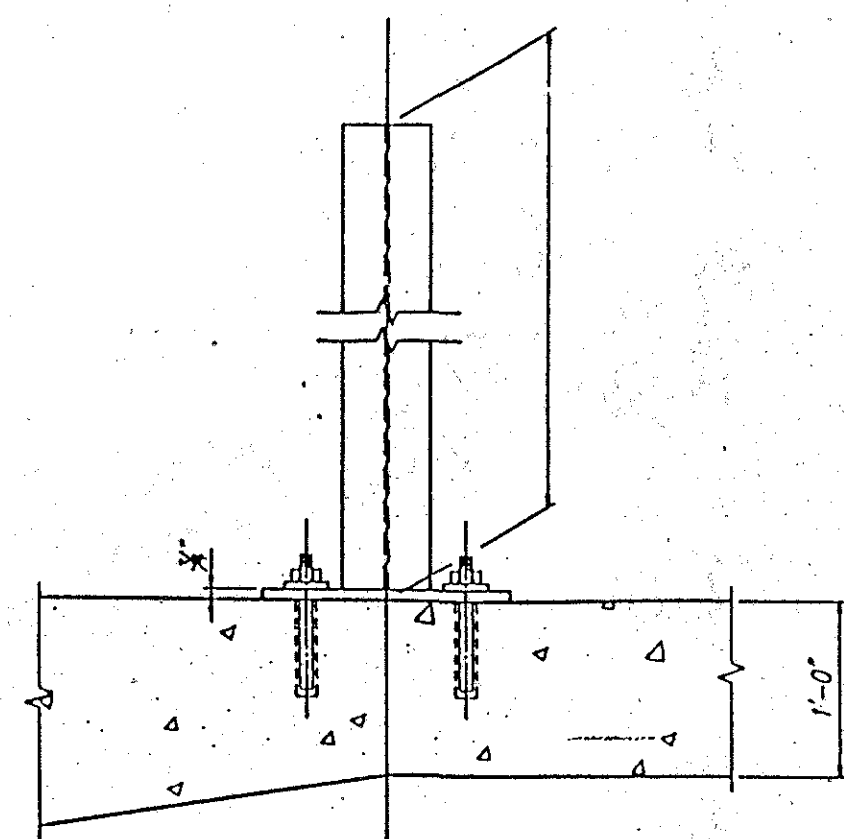


CULVERT SECTION  
(SHOWING WATERPROOFING)

**PLAN NOTES  
PRECAST REINFORCED CONCRETE BOX SECTIONS**

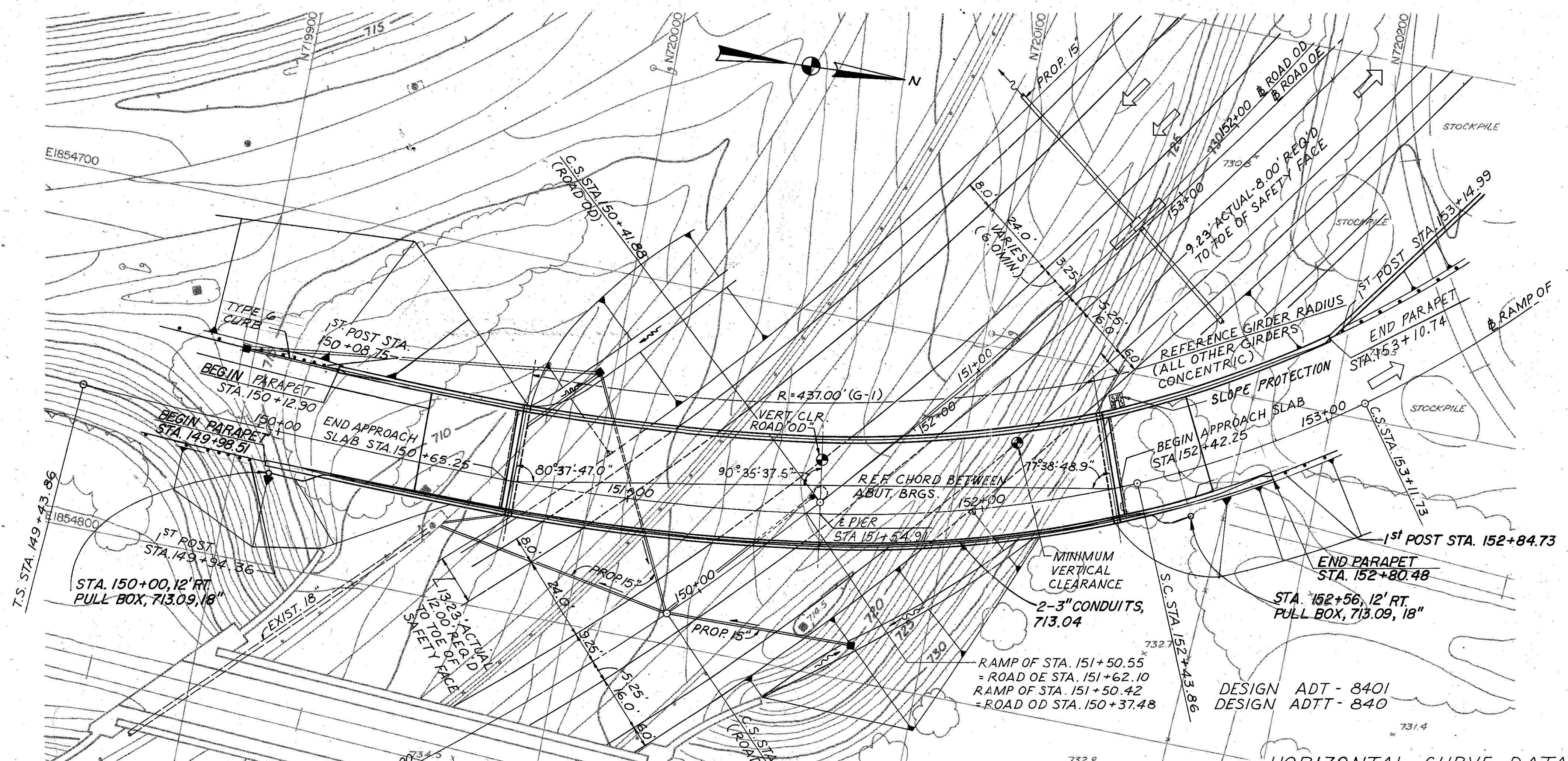
**ITEM 603 CONDUIT TYPE A, 706.05, AS PER PLAN**

MEMBRANE WATERPROOFING (SHEET TYPE 3) SHALL BE APPLIED TO THE TOP SURFACE OF THE PRECAST CULVERT SECTIONS AND SHALL EXTEND 1'-0" VERTICALLY DOWN THE SIDES. MEMBRANE WATERPROOFING (SHEET TYPE 2) SHALL BE APPLIED TO THE SIDES OF THE PRECAST CULVERT SECTIONS. THE EXTERIOR JOINT GAP ON THE TOP AND SIDES BETWEEN THE PRECAST CULVERT SECTIONS SHALL BE FILLED WITH PORTLAND CEMENT MORTAR PRIOR TO INSTALLING THE MEMBRANE WATERPROOFING. PAYMENT FOR THE MEMBRANE WATERPROOFING SHALL BE AT THE CONTRACT PRICE BID PER SQUARE YARD FOR ITEM SPECIAL - MEMBRANE WATERPROOFING (SHEET TYPE 2 OR 3).



GUARDRAIL POST MOUNTING  
ON SLAB  
(For additional details see Std. Detg. GR-2.2)

ITEM 606, GUARDRAIL TYPE 5 WITH TUBULAR BACKUP, AS PER PLAN:  
Railing post anchorages shall be partial depth (expansion shield anchors or partial depth resin-bonded anchors) as described on Standard Drawing GR-2.2. Through-bolting will not be permitted.



FOR TRAFFIC SURVEILLANCE QUANTITIES,  
SEE SHEET 122 B.  
FOR PARAPET DETAIL, SEE SHEET 199

DESIGN ADT - 8401  
DESIGN ADTT - 840

**VERTICAL CURVE DATA**

	RAMP OF	ROAD OD	ROAD OE
P.V.I. STA.	153+00.00	150+50.00	148+93.40
ELEV.	747.50	715.23	703.16
G <sub>1</sub>	+4.52%	+3.64%	-0.40%
G <sub>2</sub>	-2.20%	+5.52%	+5.00%
L	450'	200'	700'

**HORIZONTAL CURVE DATA**

RAMP OF	NORTH COORDINATE	EAST COORDINATE
T.S. STA. 149+43.86	719854.781	1854759.812
S.P.I. STA. 151+44.14	720056.856	1854770.882
S.T. STA. 152+43.86	720150.285	1854455.088
ROAD OD		
C.S. STA. 150+41.88	720063.746	1854752.453
S.P.I. STA. 151+41.83	720129.812	1854676.957
S.T. STA. 153+41.88	720232.068	1854504.663
ROAD OE		
C.S. STA. 151+13.11	720027.378	1854791.380
S.P.I. STA. 152+13.06	720098.215	1854720.341
S.T. STA. 154+13.11	720211.461	1854555.064

**SPIRAL 1:**

$\Delta = 66^{\circ}13'$   
 $\theta_s = -27^{\circ}00'00''$   
 $L_s = 300.00'$   
 $LT = 202.3770'$   
 $ST = 102.1644'$   
 $X = 293.4062'$   
 $Y = 46.3817'$   
 $T_s = 364.0886'$   
 $C = 297.0495'$   
 $DC = 1213.0736'$   
 $DC = 18^{\circ}00'00''$   
 $R = 318.3099'$

**SPIRAL 2:** SPIRAL 2 SAME AS SPIRAL 1

**ROAD OD:**

$\Delta_c = 6^{\circ}51'31.339''$   
 $DC = 70^{\circ}00'00''$   
 $R = 818.5114'$   
 $L_c = 97.9815'$   
 $T = 49.0494'$   
 $C_c = 97.9230'$   
 $E = 1.4683'$   
 $M = 1.4657'$   
 $\theta_s = -10^{\circ}29'59.990''$   
 $L_s = 300.000'$   
 $LT = 200.3530'$   
 $ST = 100.3210'$   
 $X = 298.9940'$   
 $Y = 18.2820'$   
 $T_s = 357.8778'$   
 $C_s = 299.5525'$

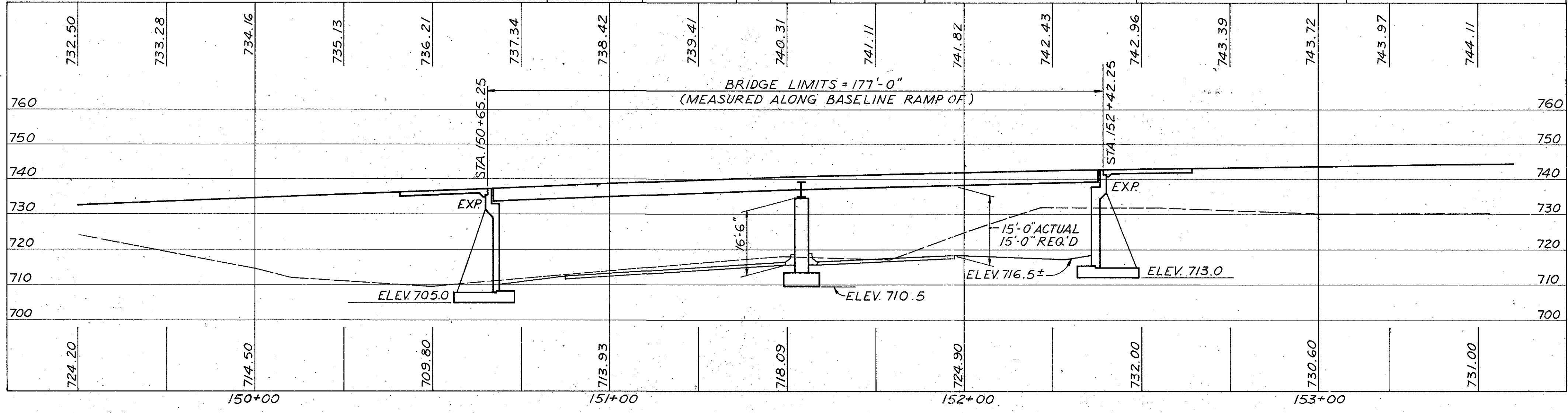
**ROAD OE:**

$\theta_s = -10^{\circ}30'0.079''$   
 $L_s = 300.000'$   
 $LT = 200.3530'$   
 $ST = 100.3209'$   
 $X = 298.9941'$   
 $Y = 18.2821'$   
 $R = 818.5095'$   
 $C_s = 299.5525'$

**EXISTING STRUCTURE**  
NONE

**PROPOSED STRUCTURE**  
TYPE: TWO CONTINUOUS SPANS, WELDED CURVED GIRDERS (A572 PAINTED) WITH COMPOSITE REINFORCED CONCRETE DECK, REINFORCED CONCRETE HIGH WALL ABUTMENTS, STEEL CAP PIER WITH REINFORCED CONCRETE COLUMN AND FOOTING.  
SPAN: 87'-5" (-), 85'-1 1/8" (-) 1/8" BEARINGS (ALONG RAMP OF.)  
ROADWAY: 28'-0" TOE/TOE PARAPETS  
LOADING: HS20-44(CASE II) AND THE ALTERNATE MILITARY LOADING.  
ALIGNMENT: SPIRAL  
SUPERELEVATION: VARIES, 0.082 FT/FT MAX.  
WEARING SURFACE: 1" MONOLITHIC CONCRETE  
APPROACH SLABS: AS-1-81 (25' LONG)  
CROSSING: TWO LANE AND SINGLE LANE DIRECTIONAL ROADS BOTH WITH SHOULDERS.  
SKEW: ALL SUBSTRUCTURE UNITS RADIAL WITH RESPECT TO RAMP OF.  
SEE PLAN FOR RELATIONSHIP WITH REFERENCE CHORD.

NOTE: EARTHWORK LIMITS SHOWN ARE APPROXIMATE.  
ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.



JOHN E. FOSTER AND ASSOCIATES, INC. 1/22  
555 Buttles Ave., Columbus, Ohio 43215

**SITE PLAN**  
BRIDGE No. FRA- 315-0197  
RAMP OF OVER ROADS OD AND OE

FRANKLIN COUNTY STA. 150+65.75  
STA. 152+37.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
	M.J.R.	D.M.T.				

ESTIMATED QUANTITIES

DESIGNED BY: E.S. DATE: 12/89  
CHECKED BY: C.E.M. DATE: 1/90

FRANKLIN COUNTY  
FRA-670 -1.25 -C-2

GENERAL NOTES

DESIGN SPECIFICATIONS:  
THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1983 INCLUDING THE 1984, 1985, 1986, 1987 AND 1988 INTERIM SPECIFICATIONS AND THE OHIO "SUPPLEMENT" TO THESE SPECIFICATIONS.

DESIGN DATA:  
DESIGN LOADING - HS20-44 CASE I AND THE ALTERNATE MILITARY LOADING  
CONCRETE CLASS S - UNIT STRESS 1,500 PSI FOR SUPERSTRUCTURE.  
CONCRETE CLASS C - UNIT STRESS 1,333 PSI FOR SUBSTRUCTURE.  
REINFORCING STEEL - ASTM A615, A616, A617 - GRADE 60 UNIT STRESS 24,000 PSI  
STRUCTURAL STEEL - ASTM A572 - (PAINTED) UNIT STRESS 27,000 PSI.  
DECK PROTECTION METHOD - EPOXY COATED REINFORCING STEEL, BOTH MATS.  
MONOLITHIC WEARING SURFACE IS ASSUMED FOR DESIGN PURPOSES TO BE 1" THICK.

SUPPLEMENTAL SPECIFICATIONS:  
REFERENCE SHALL BE MADE TO SUPPLEMENTAL SPECIFICATIONS

REFERENCE DRAWINGS:  
REFERENCE SHALL BE MADE TO STANDARD DRAWINGS  
AS-1-81, DATED 11/27/81  
EXJ-2-81, DATED 4/2/84  
SD-1-69, DATED 6/12/69

DIMENSIONS:  
DIMENSIONS GIVEN ARE MEASURED HORIZONTALLY AND AT 60°F, UNLESS OTHERWISE NOTED.

ITEM SPECIAL - SEALING OF CONCRETE SURFACES (EPOXY):  
A CONCRETE SEALER, (EPOXY), SHALL BE APPLIED TO THE DESIGNATED CONCRETE SURFACES. SEE THE PROPOSAL FOR SURFACE PREPARATION REQUIREMENTS, APPLICATION RATES, MATERIAL REQUIREMENTS AND APPLICATION PROCEDURES.

EMBANKMENT CONSTRUCTION:  
THE APPROACH EMBANKMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PROVISIONS OF THE PILE DRIVING CONSTRAINTS NOTE CONTAINED HEREINAFTER. BEFORE THE BACKWALL IS CONSTRUCTED THE EMBANKMENT SHALL BE PLACED UP TO THE LEVEL OF THE SUBGRADE WITH A 1:1 SLOPE FROM THE BRIDGE SEAT. PAYMENT FOR BACKFILL AND NEW EMBANKMENT, 503.10, REQUIRED IN EXCESS OF 503, 518 AND 203 QUANTITIES SHALL BE INCLUDED IN THE PRICE BID FOR ITEM 203 EMBANKMENT.

ITEM 507-14 INCH CAST-IN-PLACE REINFORCED CONCRETE PILES, AS PER PLAN:  
PILE WALL THICKNESS: THE RESPONSIBILITY OF CHOOSING AND PROVIDING A SATISFACTORY PILE WALL THICKNESS FOR THIS PROJECT SHALL BE BORNE BY THE CONTRACTOR EXCEPT THAT THE PILE WALL THICKNESS SHALL NOT BE LESS THAN 0.31 INCHES. IF A PILE WALL THICKNESS GREATER THAN 0.31 INCHES IS NECESSARY TO RESIST THE PILE INSTALLATION DRIVING STRESS, THE CONTRACTOR SHALL MAKE THIS DETERMINATION AND SHALL FURNISH A PILE WITH AN ACCEPTABLE WALL THICKNESS. IF MONOTUBE PILES ARE USED, MONOTUBE PILES SHALL HAVE A MINIMUM WALL THICKNESS OF 0.22 INCHES.  
PILE HAMMER: THE PILE DRIVING EQUIPMENT TO BE FURNISHED BY THE CONTRACTOR SHALL BE SUBJECT TO THE APPROVAL OF THE DIRECTOR. PREREQUISITE TO SUCH APPROVAL, THE CONTRACTOR SHALL SUBMIT A COMPLETED EQUIPMENT DATA FORM (WEAP87-DATA REQUEST FORM) FOR EACH HAMMER PROPOSED FOR USE ON THIS PROJECT. A COPY OF THIS FORM CAN BE REQUESTED AND OBTAINED FROM THE DIRECTOR. A WAVE EQUATION ANALYSIS WILL BE PERFORMED BY BUREAU OF BRIDGES. CONTRACTOR NOTIFICATION OF ACCEPTANCE OR REJECTION OF THE DRIVING SYSTEM WILL BE MADE WITHIN 21 DAYS AFTER SUBMITTAL OF THE WEAP87 DATA REQUEST FORM. THE PILING SHALL NOT BE INSTALLED PRIOR TO RECEIVING APPROVAL OF THE CONTRACTOR'S DRIVING SYSTEM BY THE DIRECTOR. THE DIRECTOR WILL FURNISH THE PILE DRIVING CRITERIA.

PILE DRIVING CONSTRAINTS: PRIOR TO DRIVING PILES FOR THE ABUTMENTS, THE BRIDGE APPROACH EMBANKMENT BEHIND THE ABUTMENTS SHALL BE CONSTRUCTED ON A 1.5:1 SLOPE PROJECTED FROM THE TOP OF THE HEEL OF THE REAR ABUTMENT FOOTING AND ON A 1:1 SLOPE PROJECTED FROM THE HEEL OF THE FORWARD ABUTMENT FOOTING UP TO THE LEVEL OF THE SUBGRADE ELEVATION FOR A MINIMUM DISTANCE OF 150 FEET BACK OF THE FOOTING. THE EXCAVATION FOR THE FOOTINGS OF THE ABUTMENTS AND THE INSTALLATION OF THE ABUTMENT PILES SHALL NOT BEGIN UNTIL AFTER THE ABOVE REQUIRED EMBANKMENT HAS BEEN CONSTRUCTED. NOTE THAT THE WINGWALLS MUST BE CONSTRUCTED PRIOR TO PLACING ANY OF THE APPROACH EMBANKMENT BEHIND THE ABUTMENTS.

ITEM 506-STATIC LOAD TEST, AS PER PLAN:  
THE CONTRACTOR SHALL PERFORM A STATIC LOAD TEST ON ONE OF THE INITIALLY INSTALLED PILES OR ON A PILE INSTALLED NEAR AN ABUTMENT OR PIER LOCATION. THE INSTALLED LENGTHS OF THE PILES TO BE LOAD TESTED SHALL NOT BE MORE THAN THE PLAN ESTIMATED PAY LENGTHS. THE CONTRACTOR SHALL FURNISH THE DIRECTOR (ATTENTION BUREAU OF BRIDGES) A COPY OF A WRITTEN REPORT DESCRIBING THE PROCEDURES AND RESULTS OF THE STATIC LOAD TEST. PAYMENT FOR THIS REPORT IS CONSIDERED INCIDENTAL TO THE COST OF THE STATIC LOAD TEST.

PILE DESIGN LOADS:  
THE DESIGN LOAD FOR THE ABUTMENT PILES IS 50 TONS PER PILE AND THE DESIGN LOAD FOR THE PIER PILES IS 50 TONS PER PILE.

JOHN E. FOSTER AND ASSOCIATES, INC. 2/22  
555 Buttles Ave., Columbus, Ohio 43215

ESTIMATED QUANTITIES  
AND GENERAL NOTES

BRIDGE NO. FRA -315-0197

RAMP "OF" OVER ROAD "OD" AND "OE".

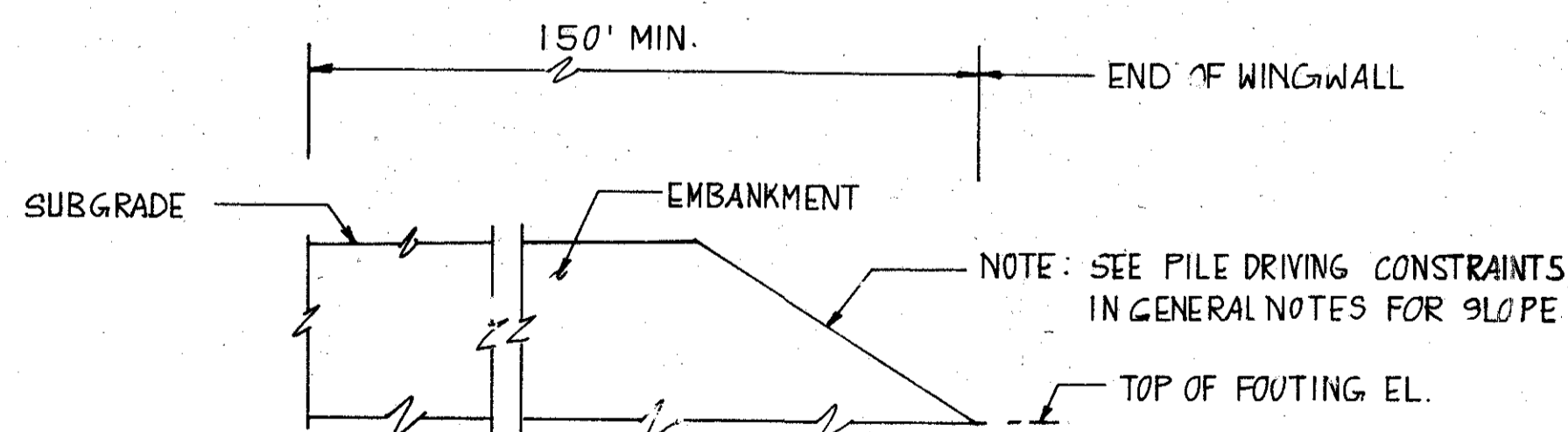
DESIGNED	DRAWN	TRACED	CHECKED	REVILED	DATE	REVISED
ES	TH		JFS			

ITEM	ITEM EXTEN.	TOTAL	UNIT	DESCRIPTION	SUPER-STRUCTURE	REAR ABUTMENT	PIER	FORWARD ABUTMENT	GENERAL
503	11100	L.S.		COFFERDAMS, CRIBS AND SHEETING					L.S.
503	21100	769	CU.YD.	UNCLASSIFIED EXCAVATION		159	107	503	
505	11100	L.S.		PILE DRIVING EQUIPMENT MOBILIZATION					
506	11101	L.S.		STATIC LOAD TEST, AS PER PLAN					L.S.
507	42201	2,955	LIN.FT.	14" CAST-IN-PLACE REINFORCED CONCRETE PILES (OVER 1000' TOTAL) As per Plan		1410	360	1185	
509	15840	165,287	LB	EPOXY COATED REINFORCING STEEL, GRADE 60	46,315	55,222	10,428	53,322	
511	32404	217	CU.YD.	Class S concrete superstructure using shrinkage compensating cement					
511	32410	L.S.		Class S concrete using shrinkage compensating cement for pre-placement testing					
511	31500	217	CU.YD.	CLASS S CONCRETE, SUPERSTRUCTURE	217				
511	41500	11	CU.YD.	CLASS C CONCRETE, PIER (COLUMN) ABOVE FOOTINGS			11		
511	45100	184	CU.YD.	CLASS C CONCRETE, ABUTMENTS ABOVE FOOTING		95		89	
511	46000	391	CU.YD.	CLASS C CONCRETE, RETAINING WALL OR WINGWALL		203		188	
511	46500	539	CU.YD.	CLASS C CONCRETE, FOOTING		267	37	235	
513	14800	14,233	LB.	FRACTURE CRITICAL STRUCTURAL STEEL (AISC CATEGORY III)			14,233		
513	13500	160,684	LB.	STRUCTURAL STEEL A572-50 (AISC CATEGORY I)	160,684				
513	20000	15,78	EACH	WELDED STUD SHEAR CONNECTOR	1578				
514	00610	174,917	LB.	FIELD PAINTING OF NEW STEEL SYSTEM (ZEU)	160,684		14,233		
516	10900	62	LIN.FT.	ELASTOMERIC COMPRESSION SEALS FOR STRUCTURAL STL. JOINTS. 3" WIDTH		31		31	
516	44000	8	EACH	ELASTOMERIC BEARING (0'-9"x1'-4"x0'-1 3/4") WITH INTERNAL LAMINATES AND (0'-10 1/2"x1'-6"x0'-1 1/2") STEEL LOAD PLATES		4		4	
518	12200	3	EACH	SCUPPERS, INCLUDING SUPPORTS	3				
518	21100	396	CU.YD.	POROUS BACKFILL		235		161	
518	41100	273	LIN.FT.	6" PERFORATED, HELICAL CORRUGATED STEEL PIPE, 707.0I		144		129	
518	41200	36	LIN.FT.	6" NON-PERFORATED, HELICAL CORRUGATED STEEL PIPE, INCLUDING SPECIALS, 707.0I		18		18	
518	62100	136	LIN.FT.	6" GALVANIZED STEEL PIPE INCLUDING SPECIALS, 707.08		73	63		
523	11100	6	HOUR	DYNAMIC LOAD TESTS					G
601	20000	1	SQ.YD.	CRUSHED AGGREGATE SLOPE PROTECTION				1	
SPECIAL	51267604	174	SQ.YD.	SEALING OF CONCRETE SURFACES (NON-EPOXY)					
SPECIAL	51267502	588	SQ.YD.	SEALING OF CONCRETE SURFACES (EPOXY)	414	94		80	

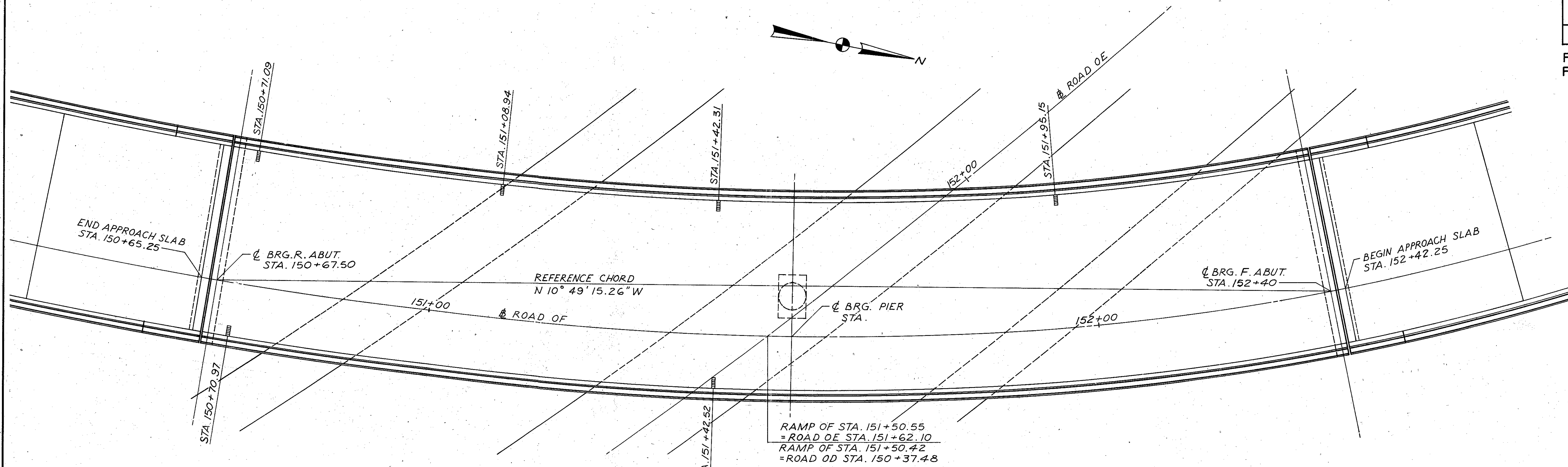
THIS WORK IS FUNDED TOTALLY BY STP FUNDING

▲ = See Proposal Note

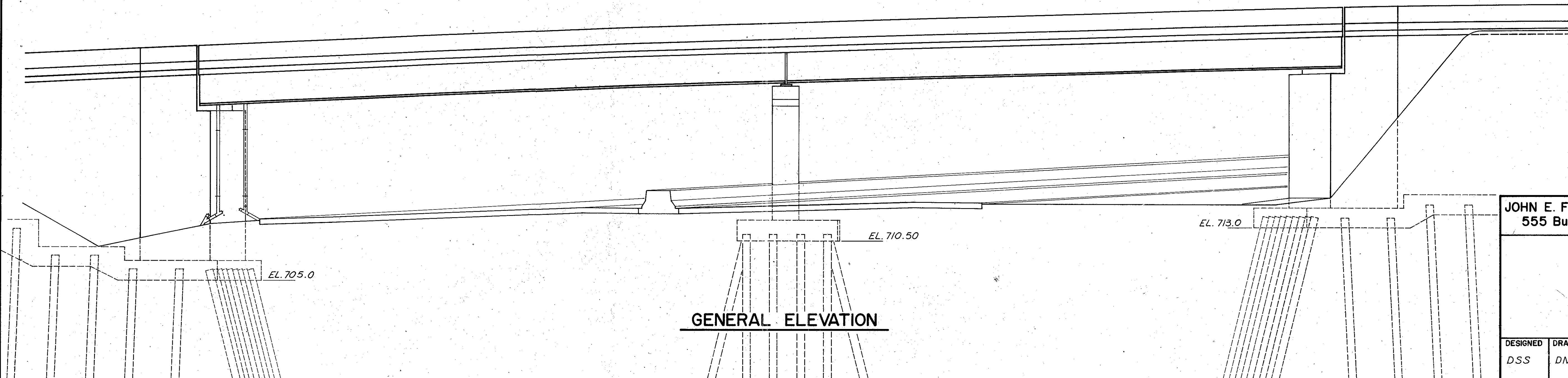
× These two items shall constitute one alternate bid to class S concrete, superstructure



APPROACH EMBANKMENT MODIFICATION  
N.T.S.



**GENERAL PLAN**

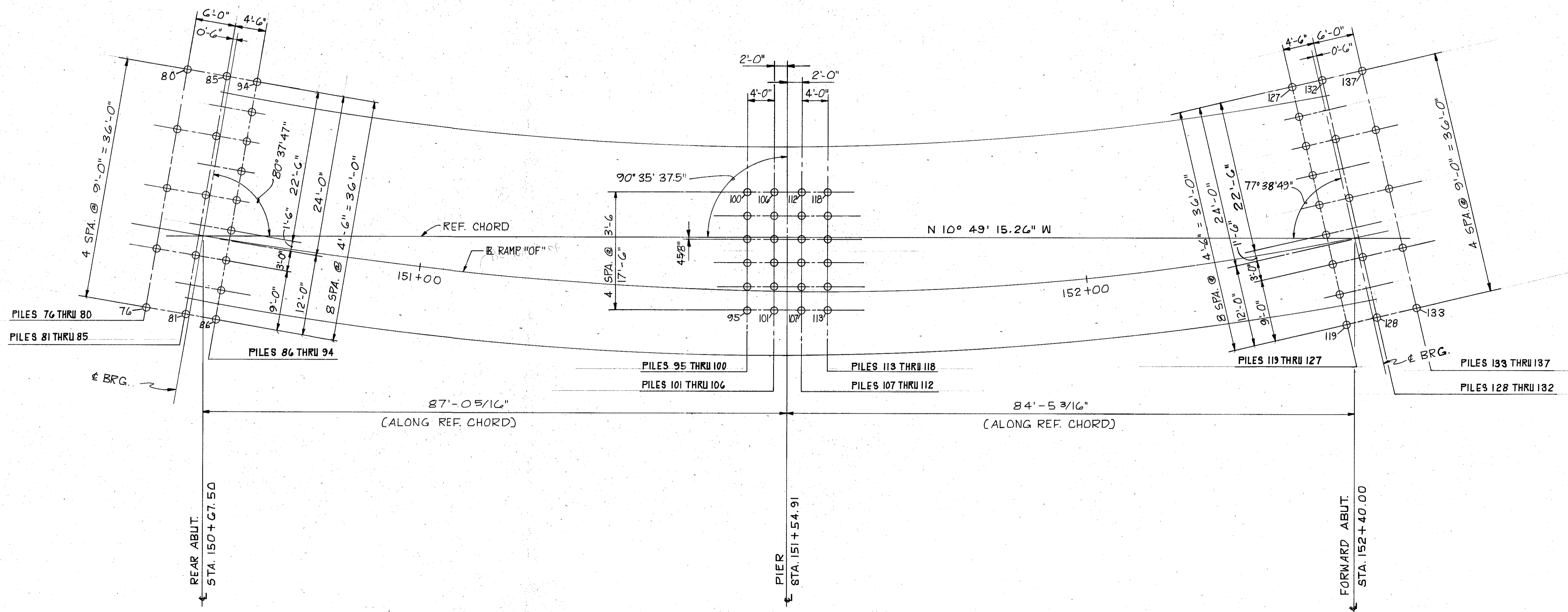
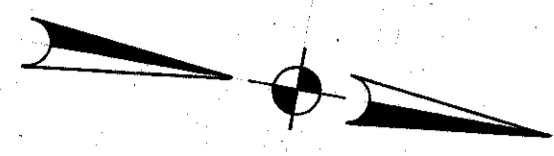


**GENERAL ELEVATION**

JOHN E. FOSTER AND ASSOCIATES, INC. 3/22  
555 Buttes Ave., Columbus, Ohio 43215

**GENERAL PLAN  
& ELEVATION - I**  
BRIDGE NO. FRA-315-0197  
RAMP OF OVER ROAD "OD" & OE

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DSS	DMT	DMT	HWR			



**FOUNDATION LAYOUT PLAN**

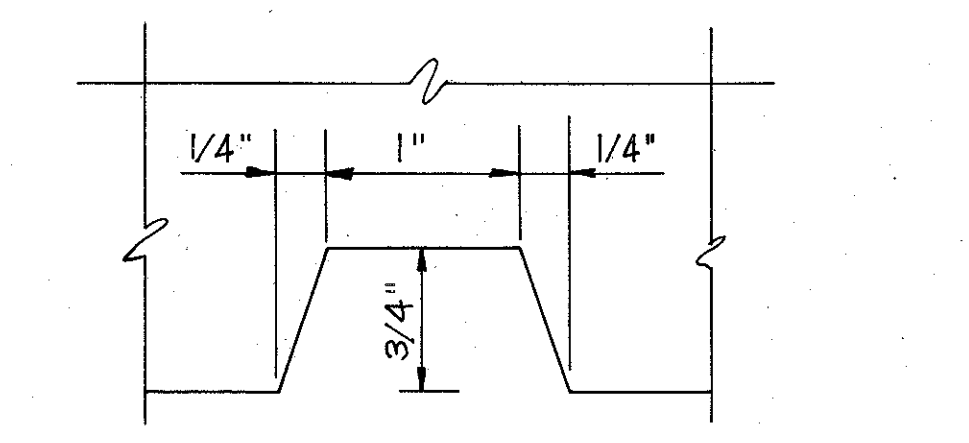
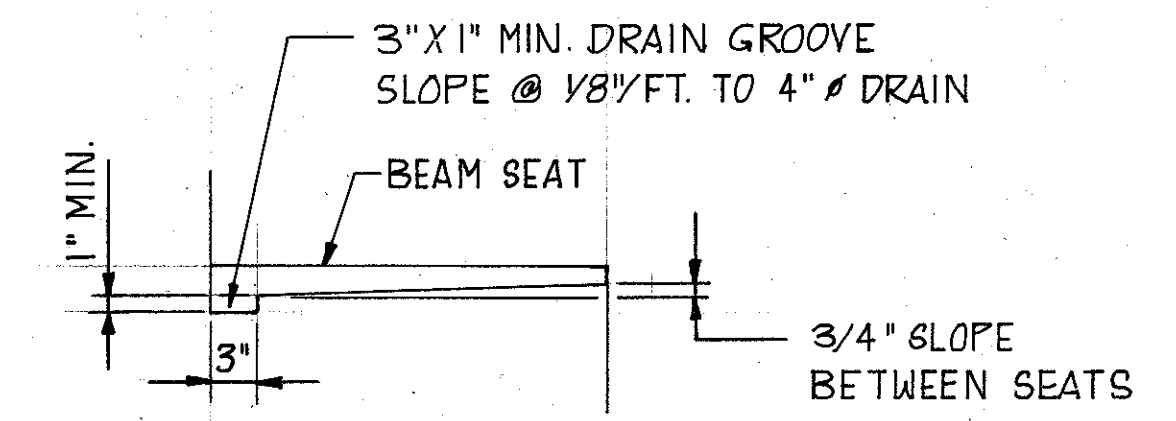
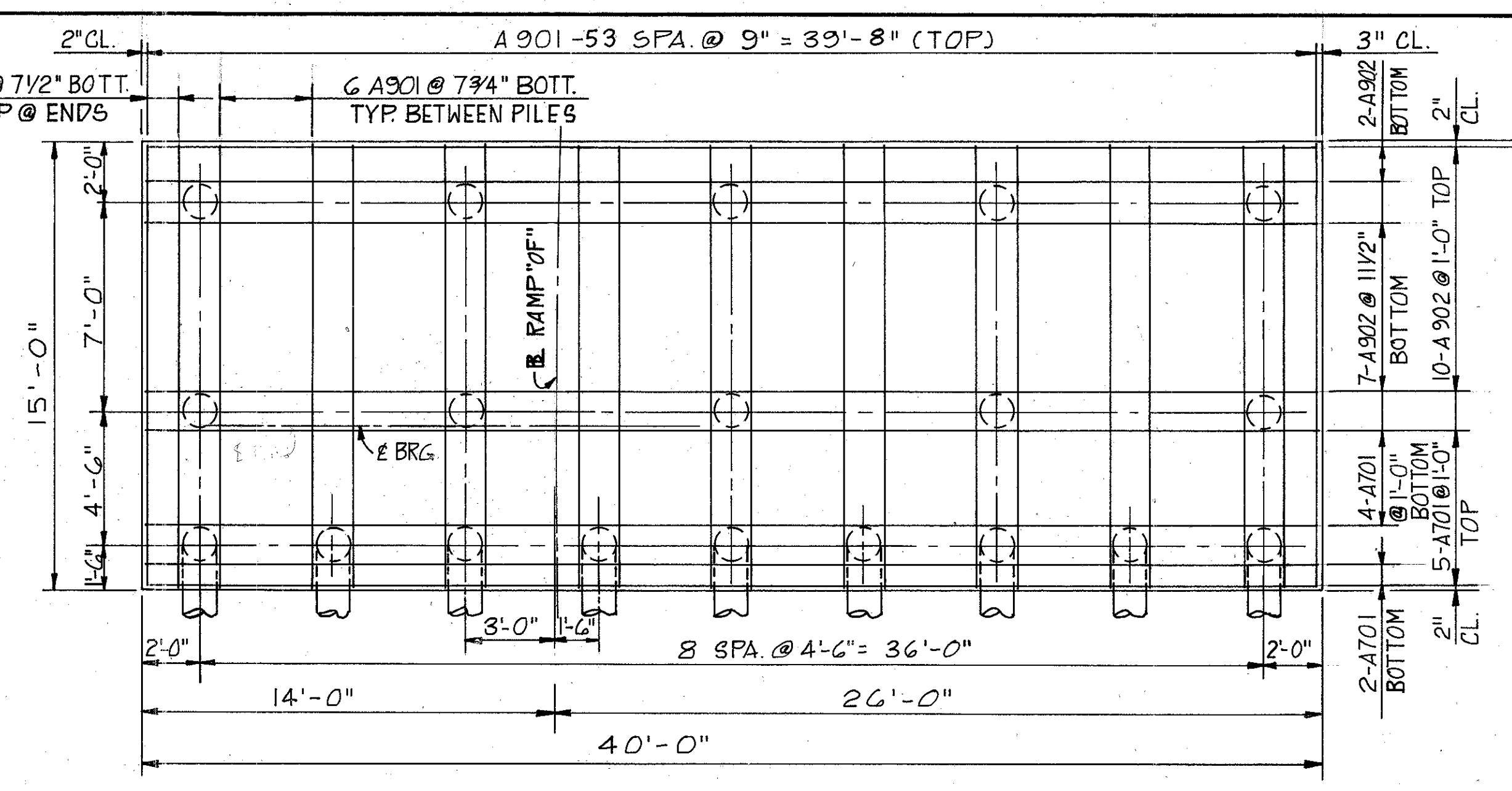
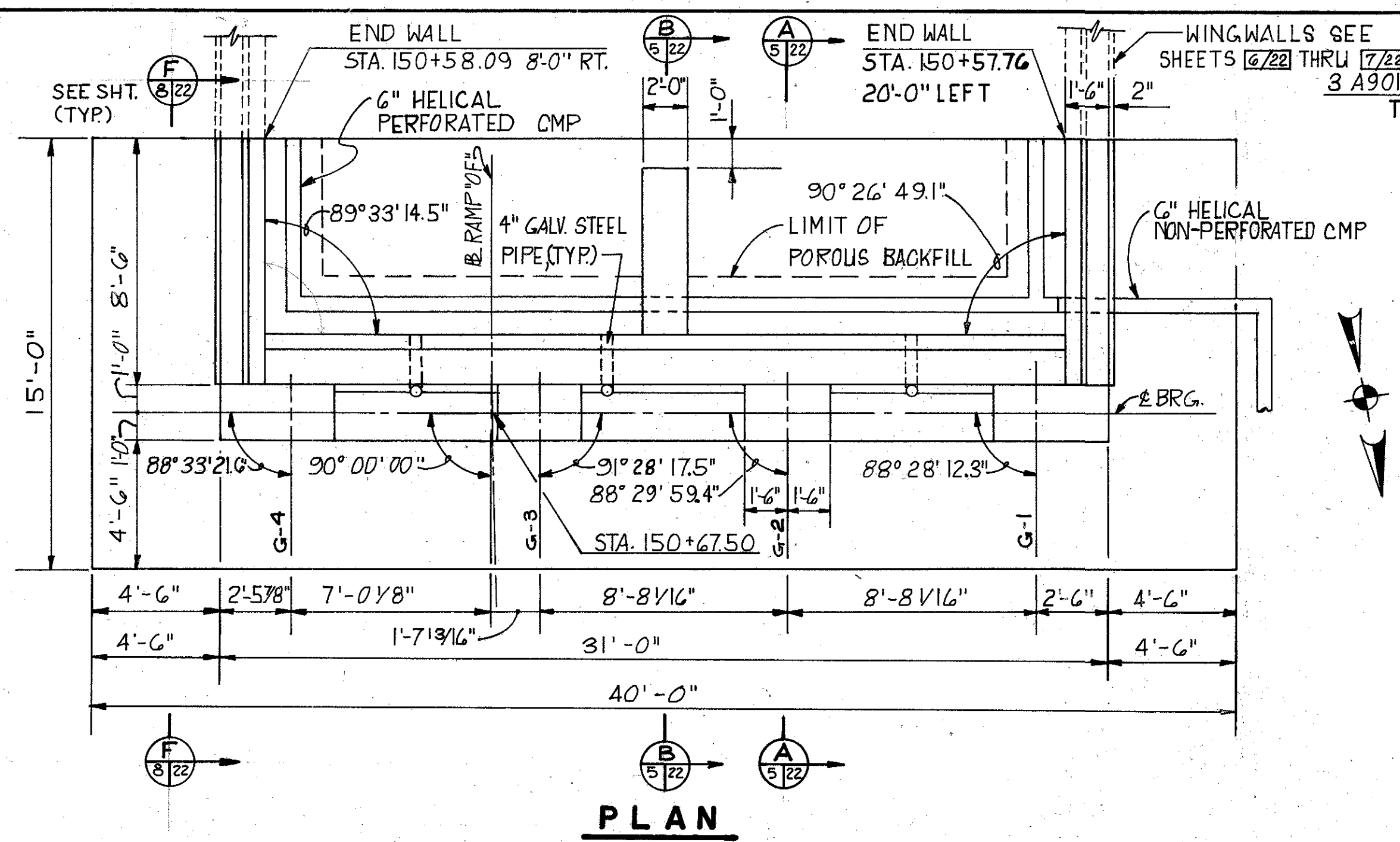
NOTE: 1. FOR PILE SIZE AND BATTER  
SEE SHEET 5722 R. ABUT.  
8722 F. ABUT.  
11722 PIER

JOHN E. FOSTER AND ASSOCIATES, INC. 4/22  
555 Buttles Ave., Columbus, Ohio 43215

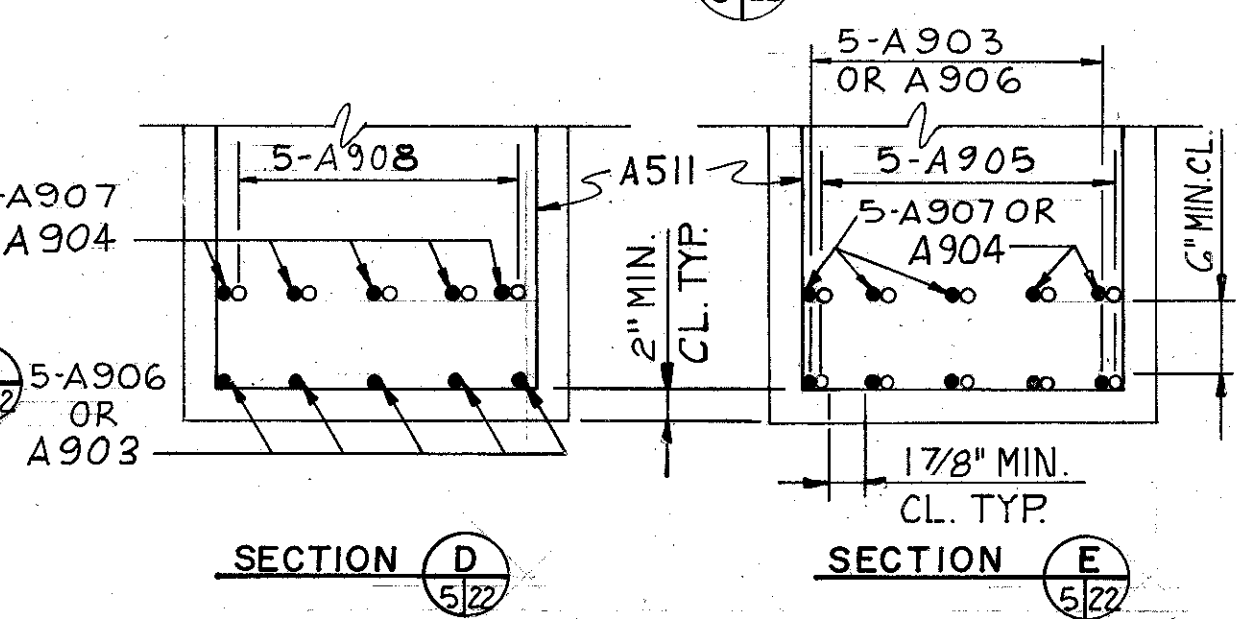
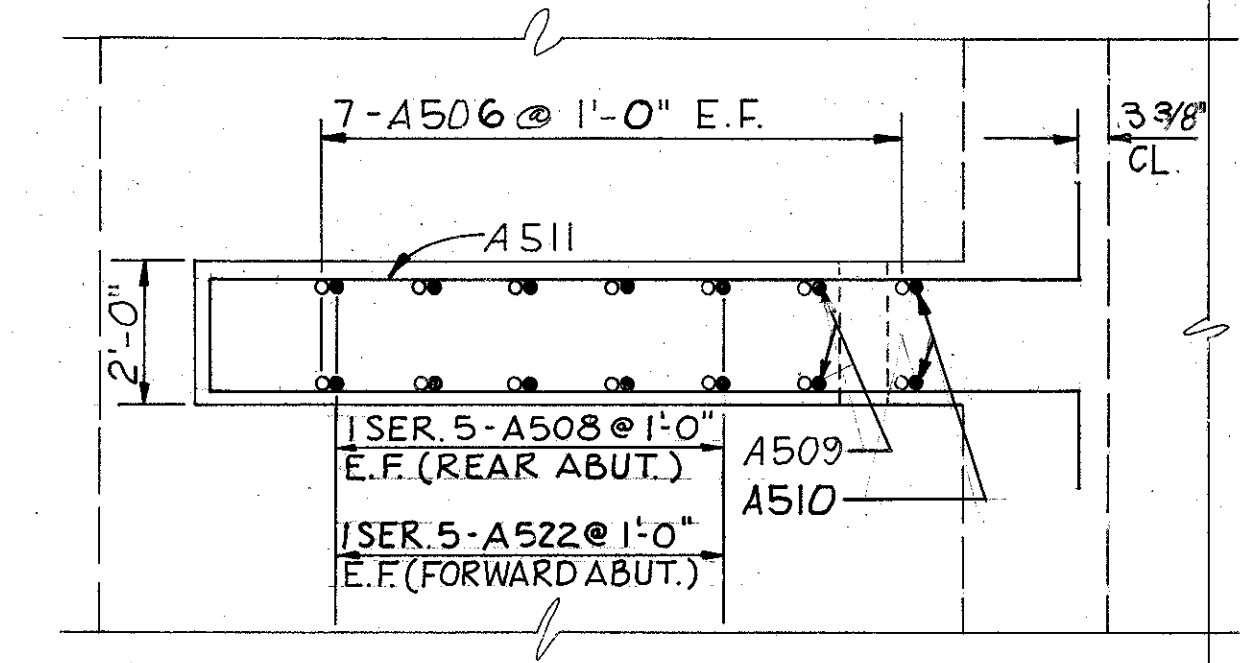
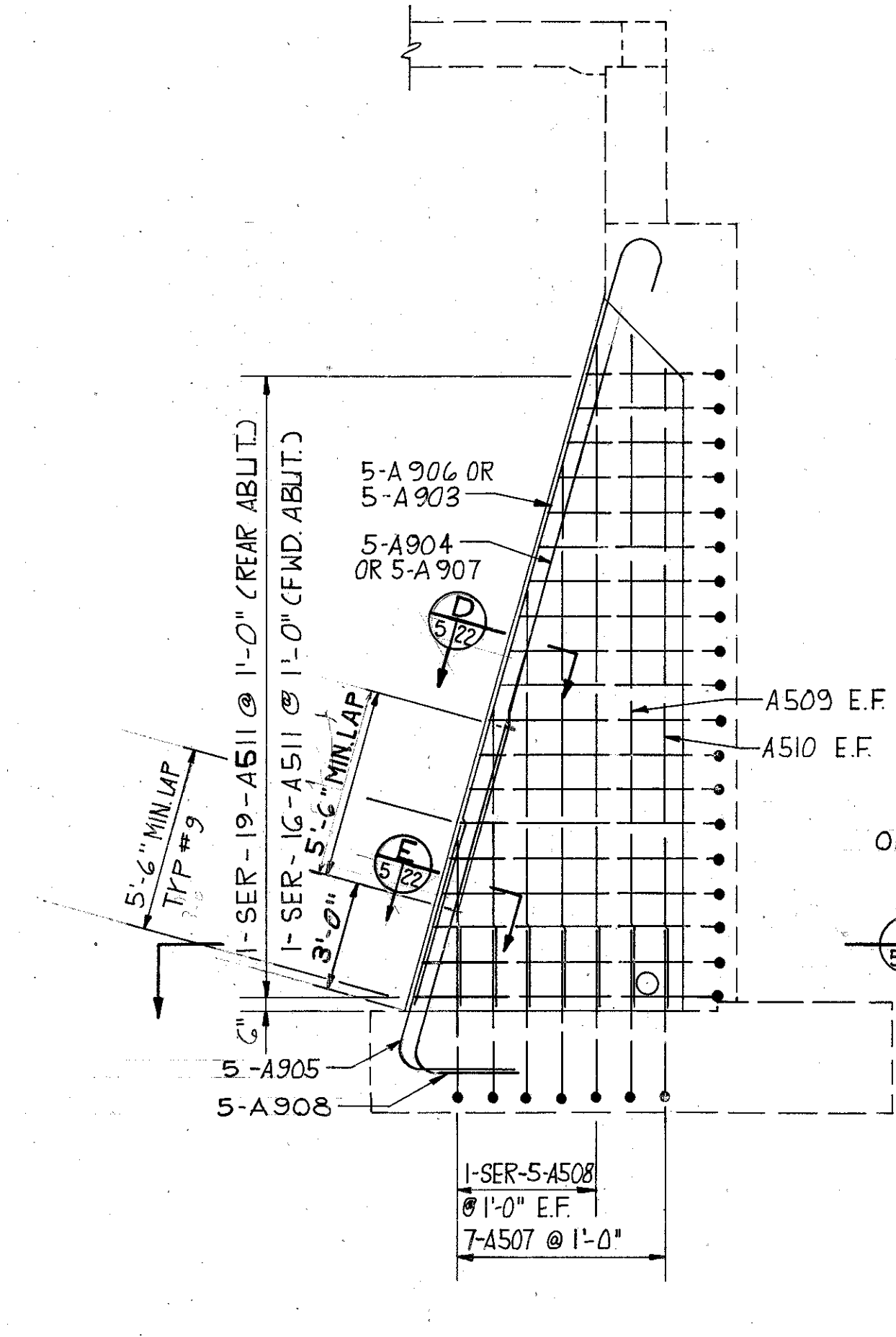
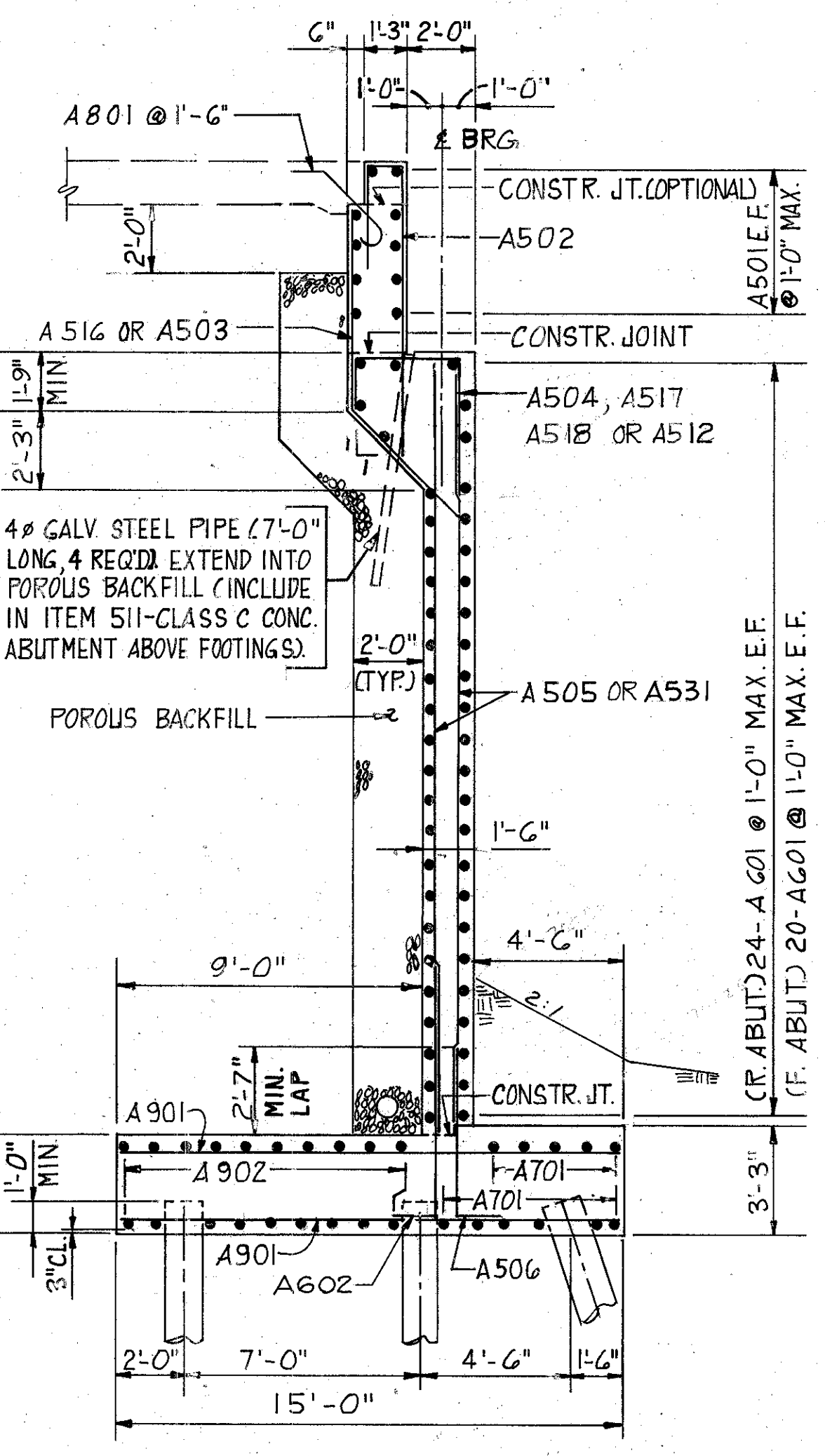
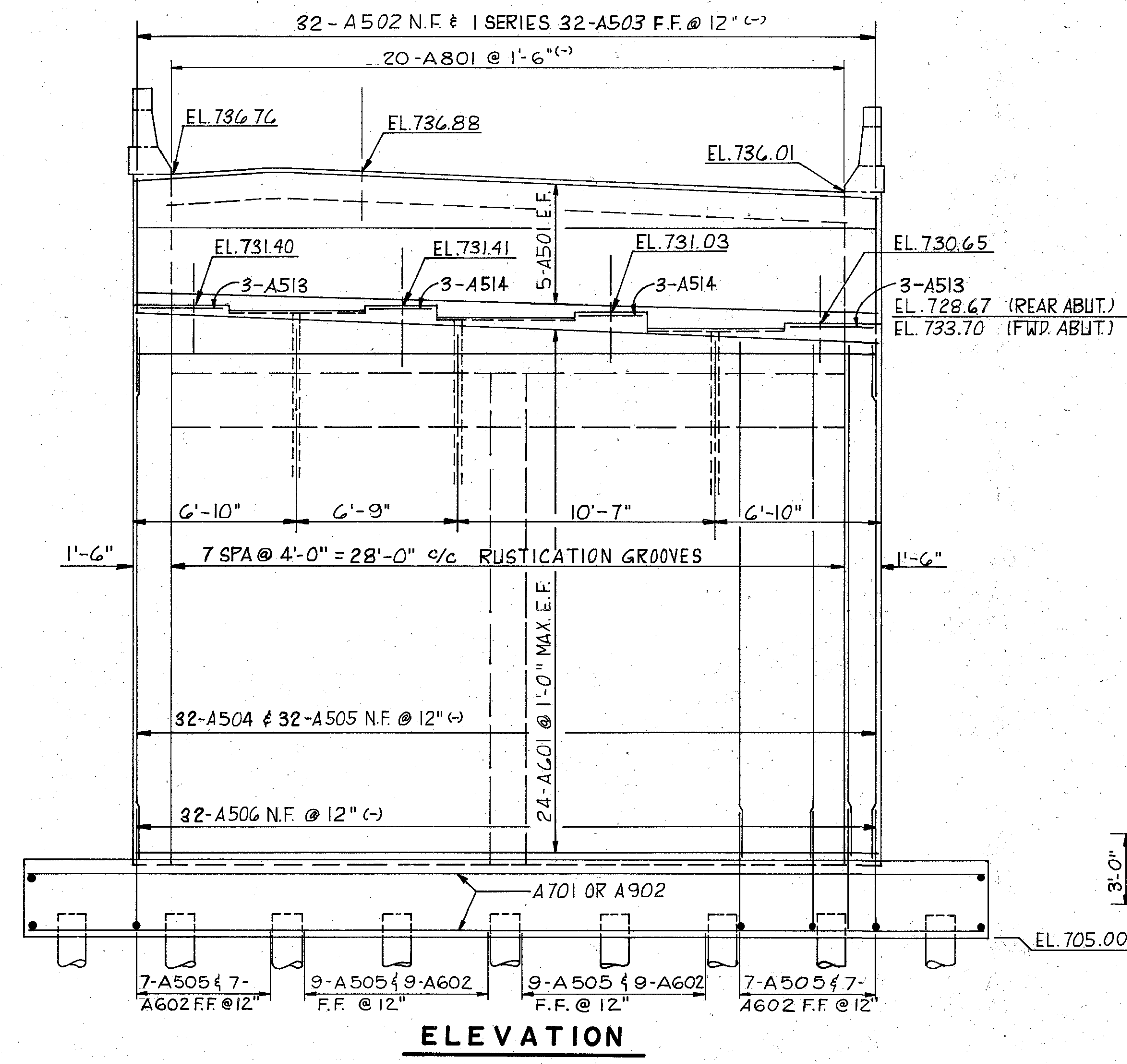
**FOUNDATION LAYOUT PLAN**  
BRIDGE NO. FRA.-315-0197  
RAMP "OF" OVER ROAD "OD" & "OE".

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CEM	TH	ES	DFS			

FRANKLIN COUNTY  
FRA-670-125-C-2



**NOTE:** 1. ALL PILES ARE 14" DIAMETER CAST-IN-PLACE REINFORCED CONCRETE PILES.  
2. ALL BATTERED PILES SHALL BE INCLINED 4 TO 12 IN DIRECTION SHOWN.

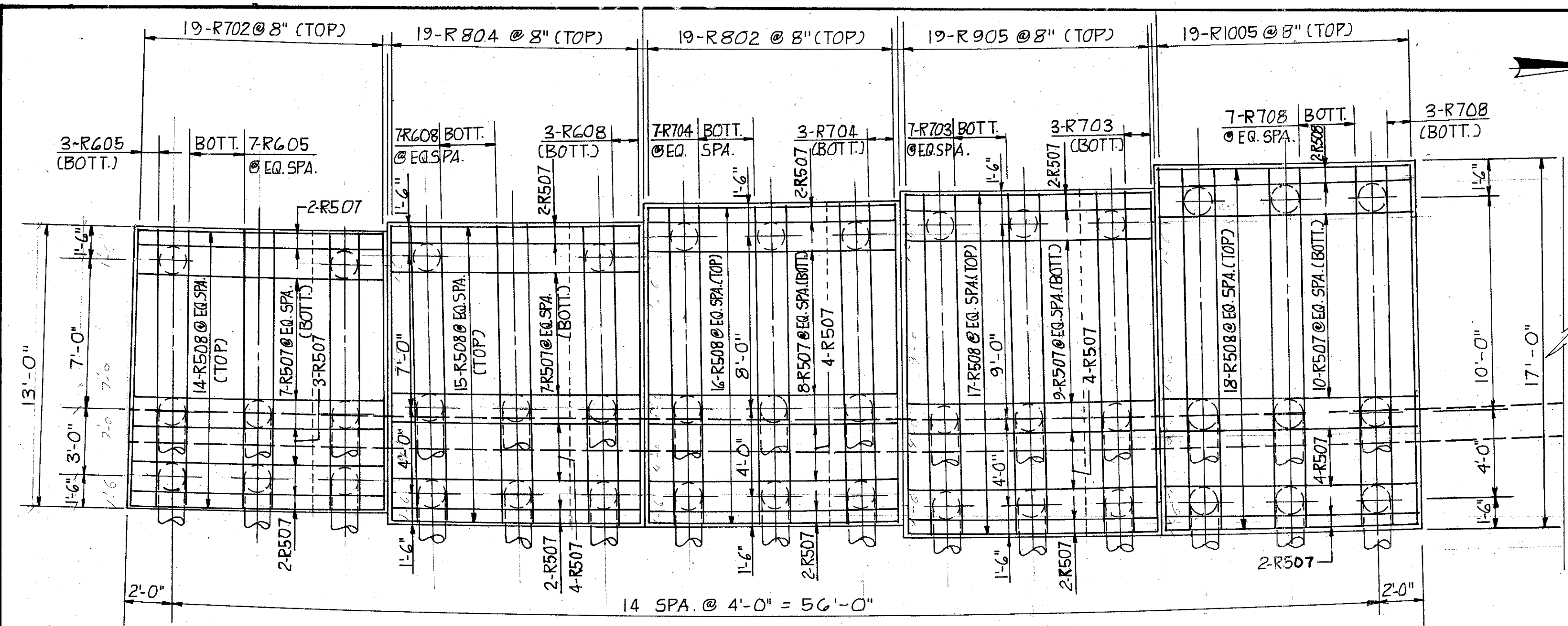


**ABBREVIATIONS:**  
E.F. INDICATES EACH FACE  
N.F. INDICATES NEAR FACE  
F.F. INDICATES FAR FACE

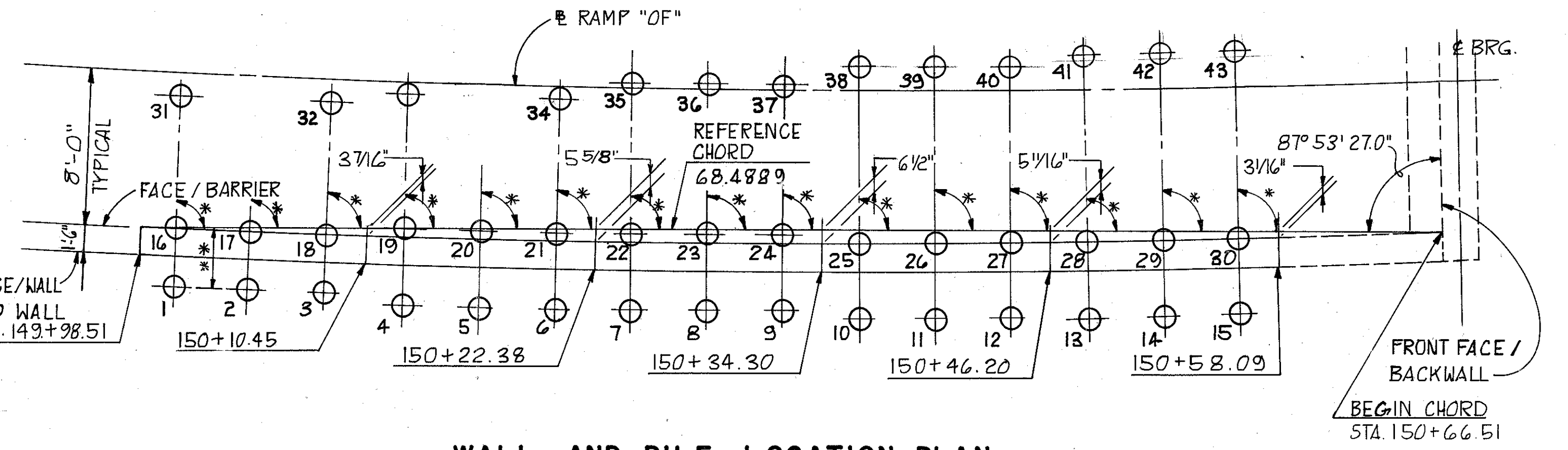
JOHN E. FOSTER AND ASSOCIATES, INC. 15/22  
555 Buttles Ave., Columbus, Ohio 43215

**REAR ABUTMENT  
PLAN, ELEVATION & SECTIONS**  
BRIDGE No. FRA-315-0197  
RAMP "OF" OVER ROADS "OD" AND "OE"

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
HSS	ES	TH	CEM			

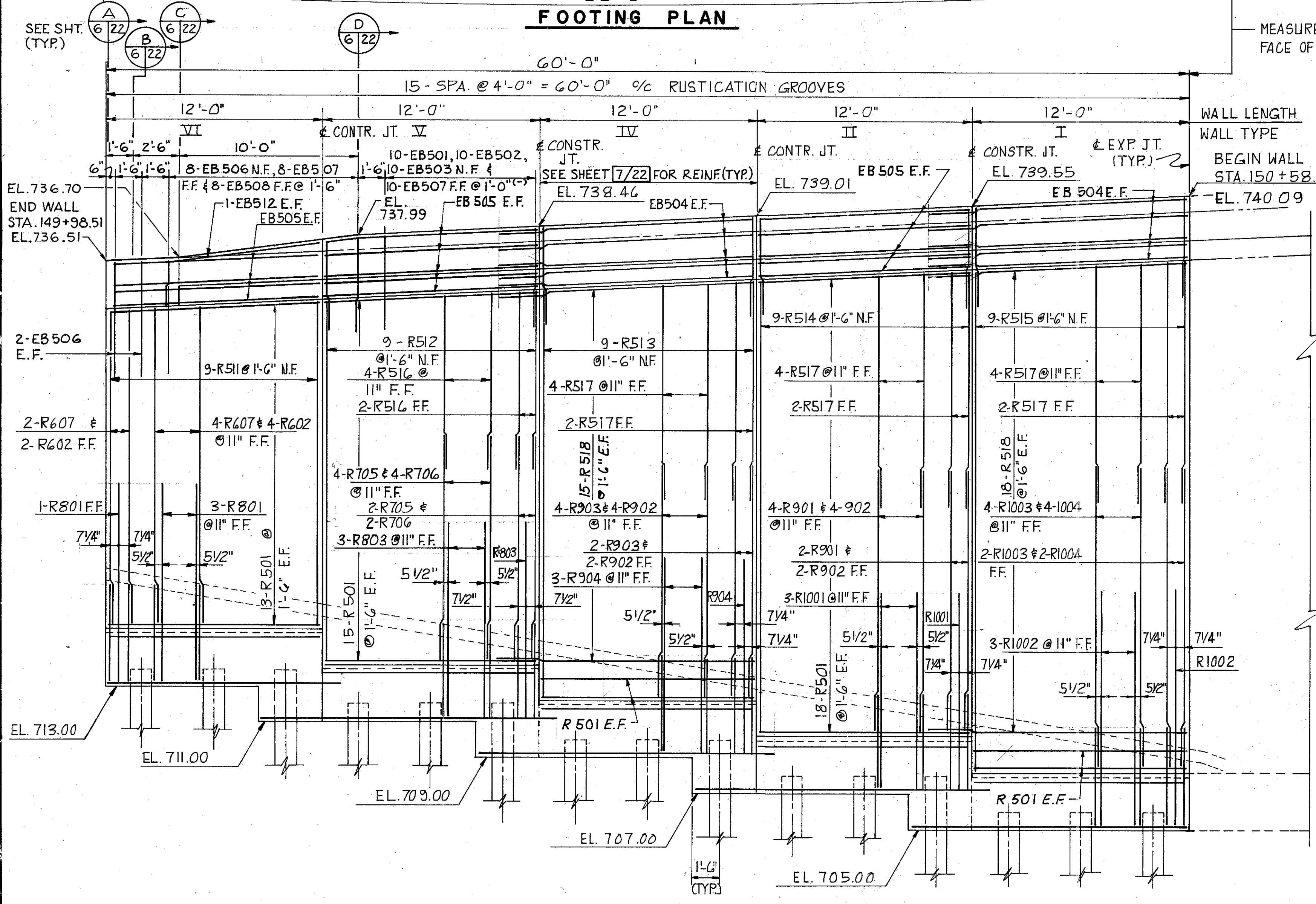


**FOOTING PLAN**



**WALL AND PILE LOCATION PLAN**

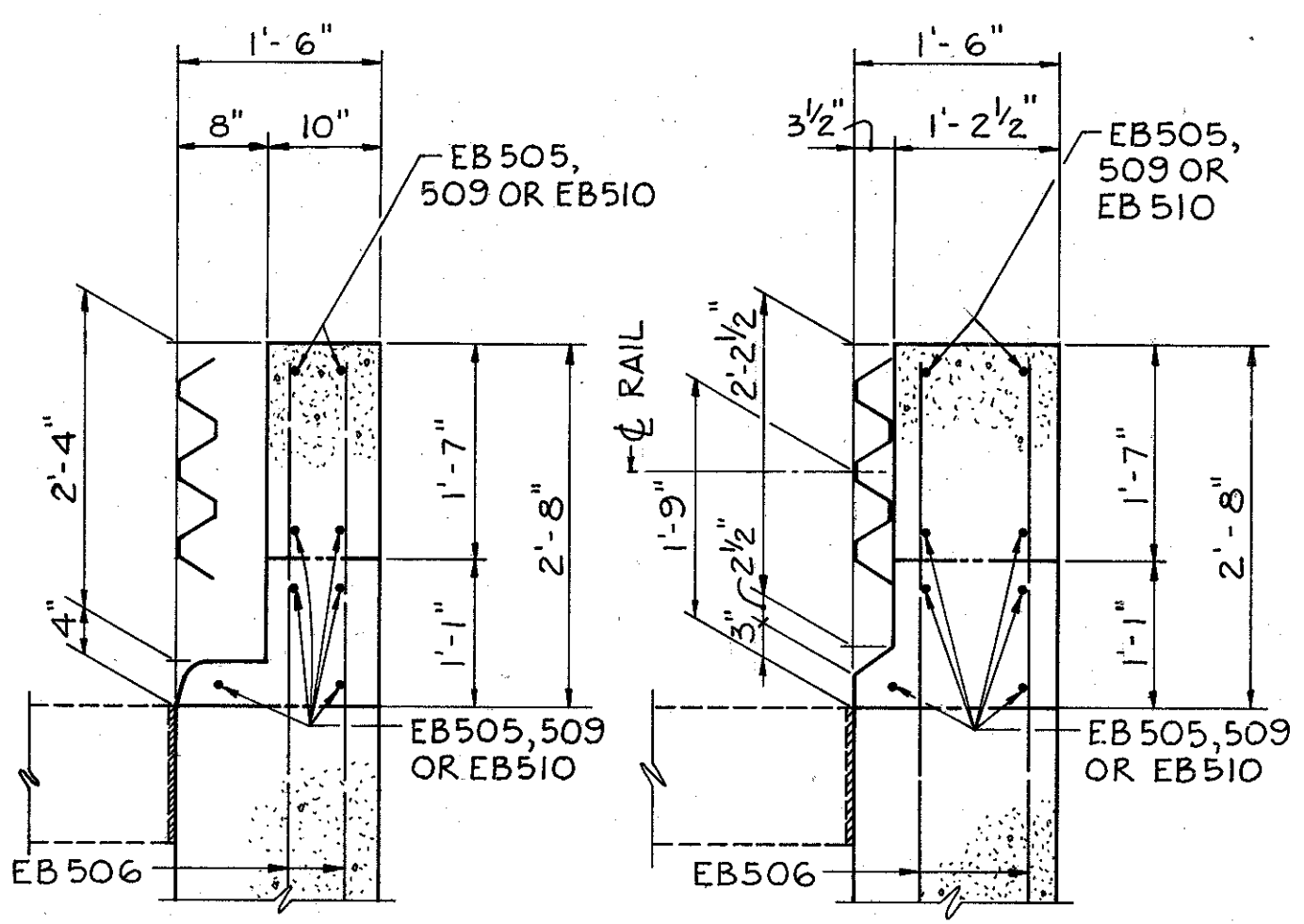
NOTE: PILES ARE NORMAL TO CHORDS BETWEEN WALL JOINTS.



**WALL ELEVATION**

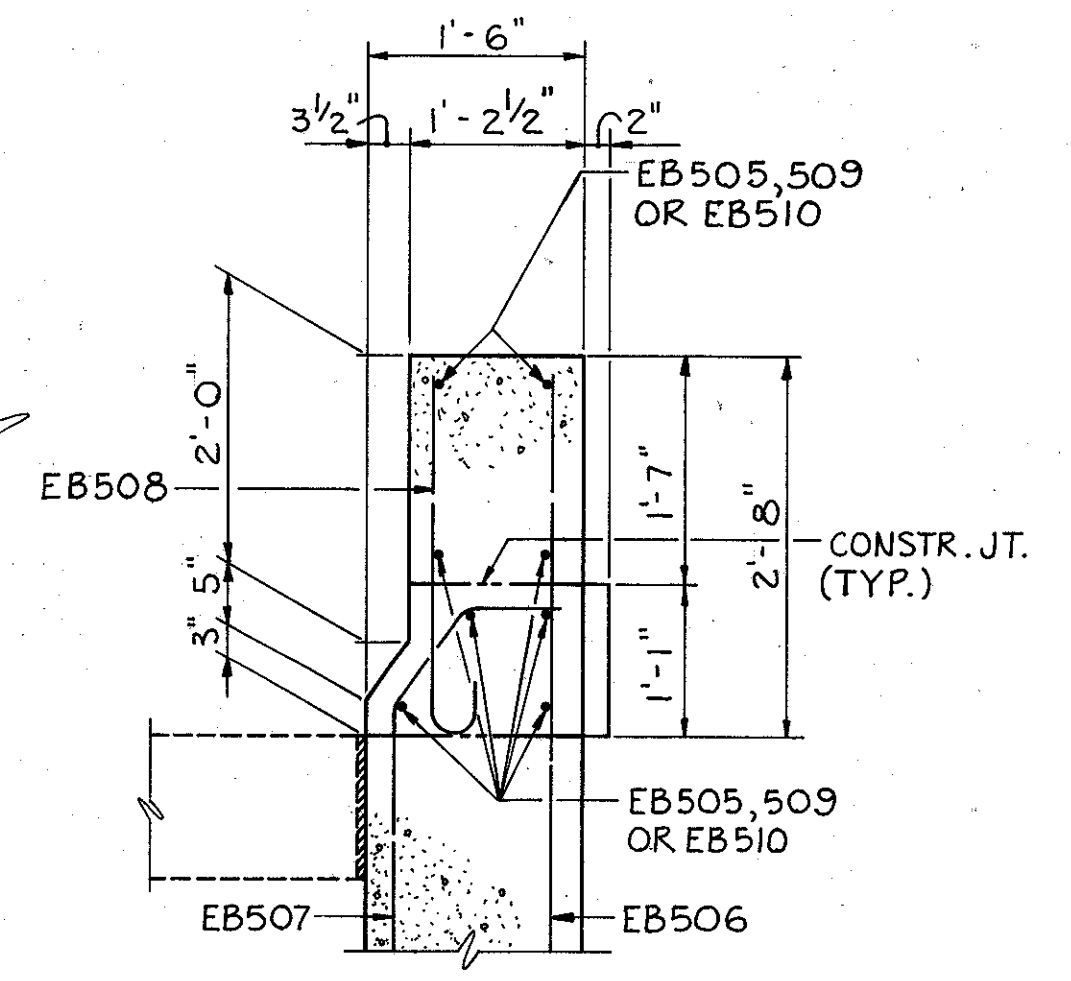
PILE	DIST. ALONG REF CHORD	* ANGLE	* DIST. - CHORD TO CENTER OF PILE
1	66.4883'	88° 38' 21.5"	3.0475'
2	62.4872'	"	3.1425'
3	58.4861'	"	3.2375'
4	54.4877'	89° 06' 48.7"	3.8159'
5	50.4872'	"	3.8778'
6	46.4867'	"	3.9397'
7	42.4911'	89° 40' 18.1"	3.9821'
8	38.4910'	"	4.0050'
9	34.4909'	"	4.0279'
10	30.4970'	90° 18' 49.8"	4.5284'
11	26.4969'	"	4.5065'
12	22.4969'	"	4.4846'
13	18.5026'	91° 02' 23.7"	4.4374'
14	14.5020'	"	4.3648'
15	10.5013'	"	4.2922'

**PILE LOCATION TABLE**

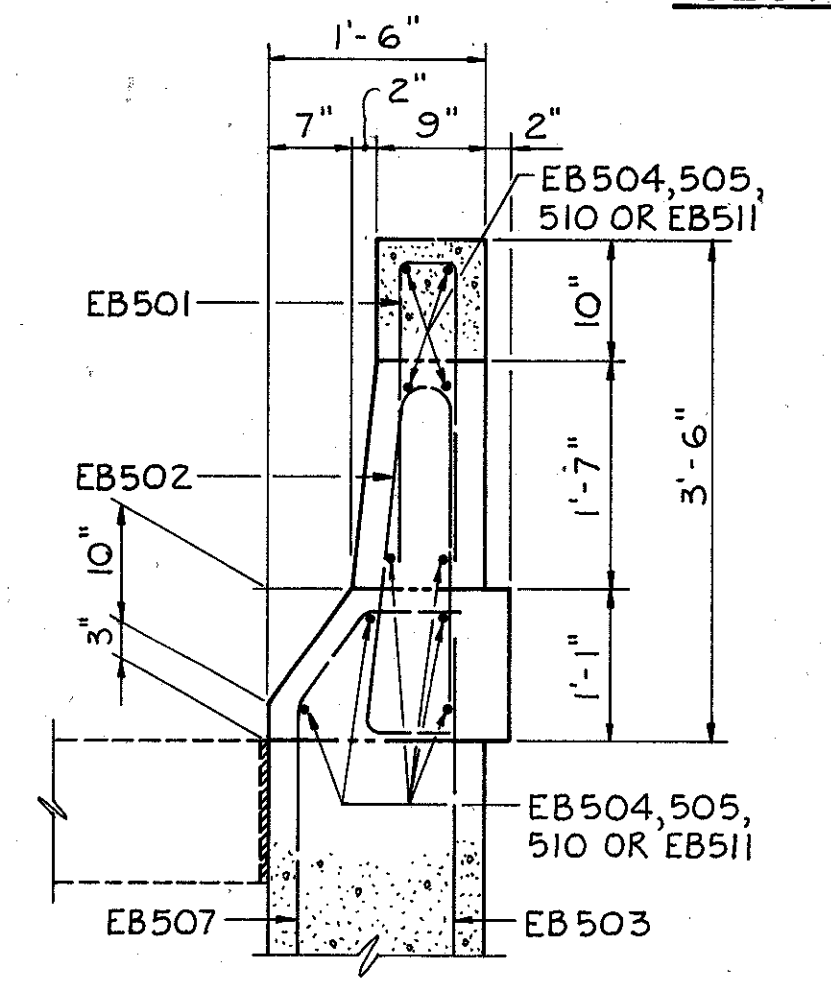


**SECTION A**

**SECTION B**



**SECTION C**



**SECTION D**

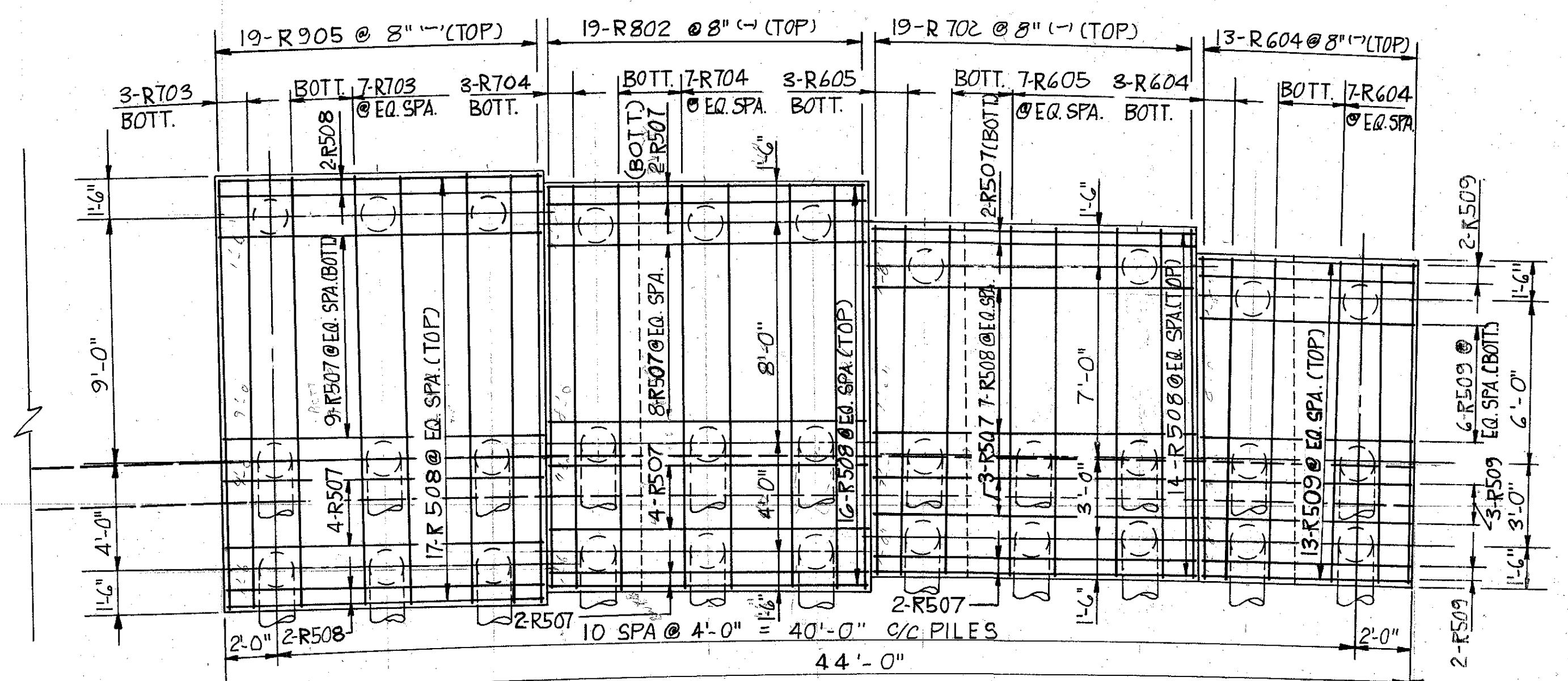
NOTE: SEE STANDARD DRAWING GR-3.1 FOR ADDITIONAL NOTES AND DETAILS (TYP.)

JOHN E. FOSTER AND ASSOCIATES, INC. 6/22  
555 Buttles Ave., Columbus, Ohio 43215

**WINGWALLS**  
**EAST WALL-REAR ABUTMENT**  
BRIDGE No. FRA.-315-0197  
RAMP "OF" OVER ROADS "OD" AND "OE"

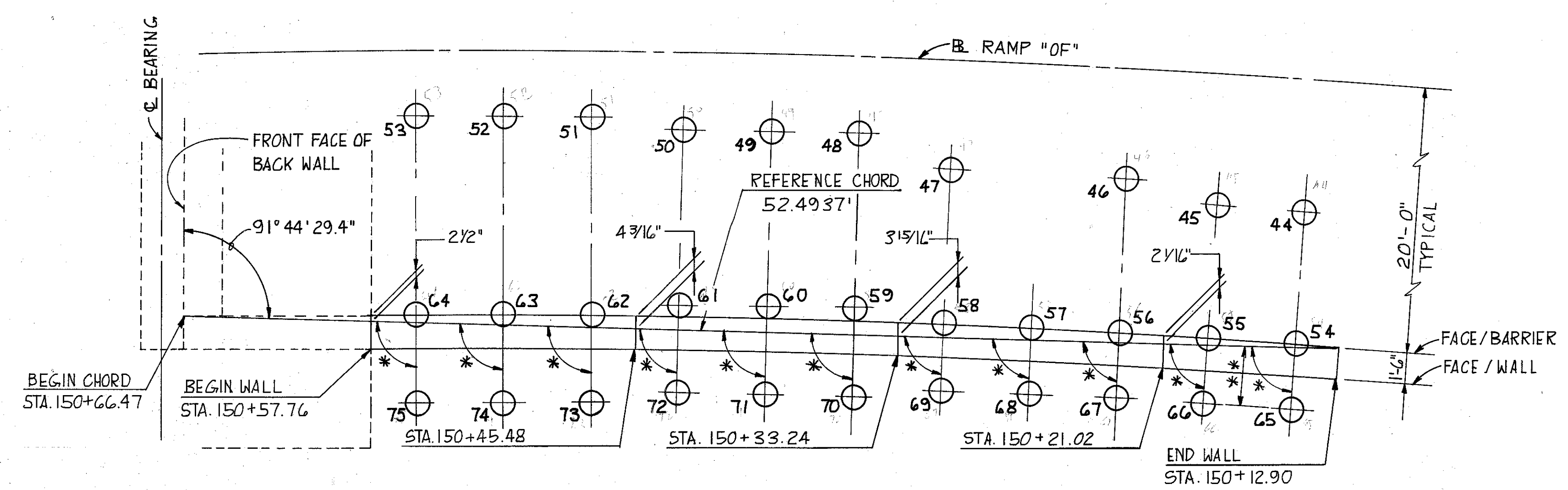
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CEM	TH	ES	DFS			





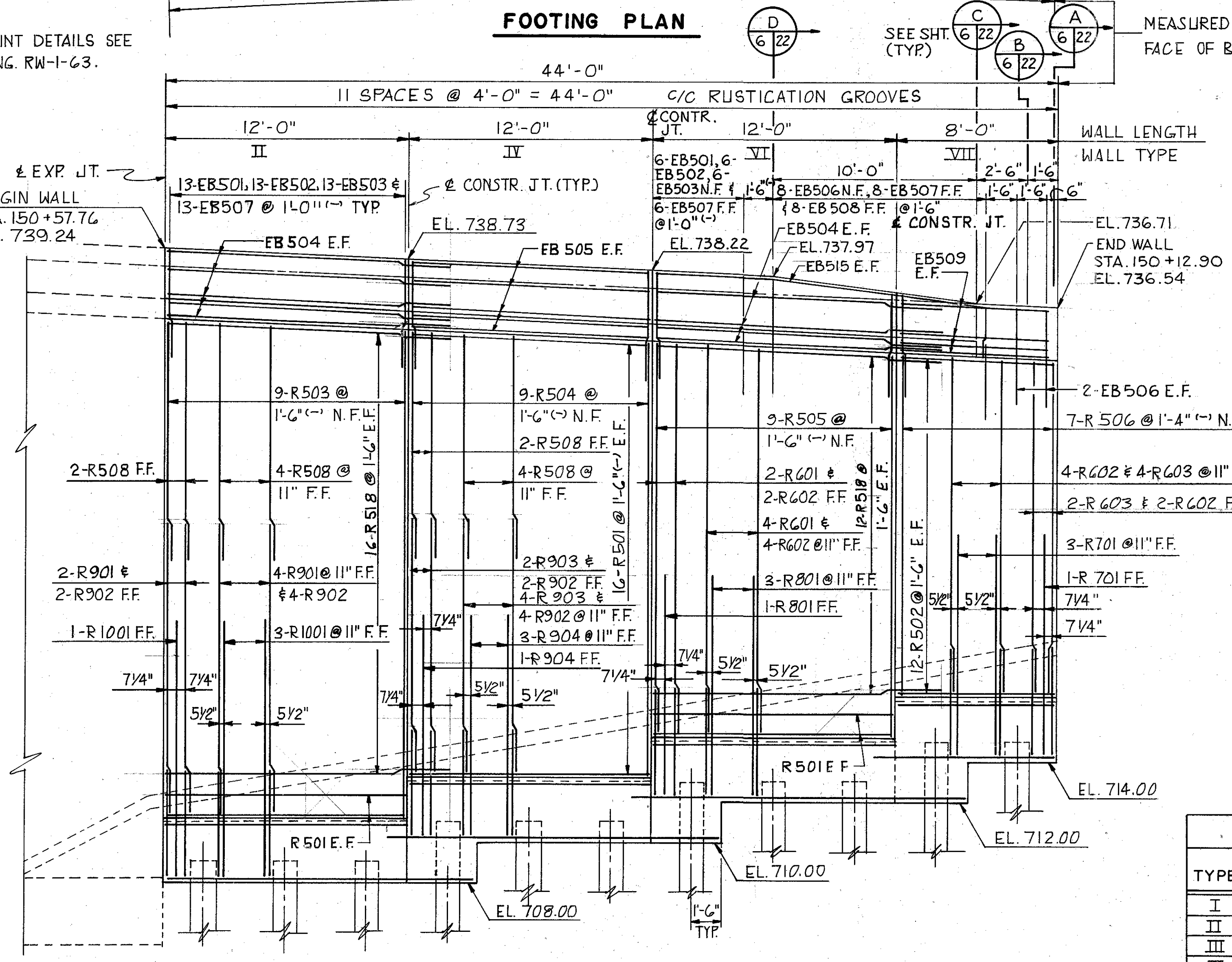
NOTE:  
FOR JOINT DETAILS SEE  
STD. DWG. RW-1-63.

**FOOTING PLAN**

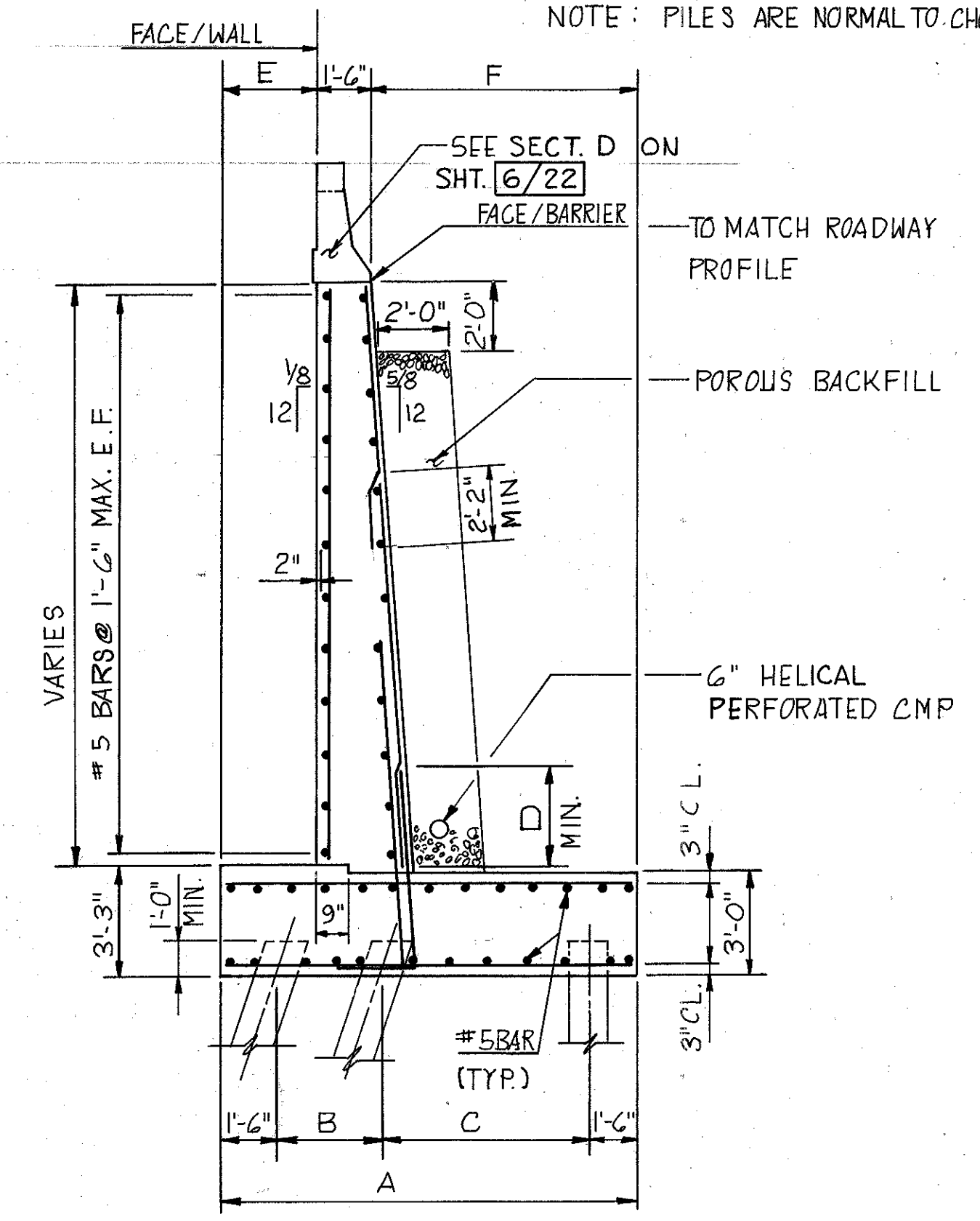


**WALL AND PILE LOCATION PLAN**

NOTE: PILES ARE NORMAL TO CHORD BETWEEN WALL JOINTS.



**WALL ELEVATION**



**TYPICAL WALL SECTION**

PILE LOCATION TABLE			
PILE	DIST. ALONG REF. CHORD	*ANGLE	**DIST.-CHORD TO CENTER OF PILE
68	50.4932'	88°45'37.4"	2.9567'
69	46.4923'	"	2.8702'
70	42.4931'	89°14'53.0"	2.8007'
71	38.4928'	"	2.7482'
72	34.4924'	"	2.6957'
73	30.4961'	89°54'55.1"	3.1665'
74	26.4961'	"	3.1606'
75	22.4961'	"	3.1547'
76	18.5007'	90°40'29.8"	3.6752'
77	14.5004'	"	3.7224'
78	10.5001'	"	3.7695'

WALL TABLE						
TYPE	A	B	C	D	E	F
I	17'-0"	4'-0"	10'-0"	6'-10"	4'-0"	11'-6"
II	16'-0"	4'-0"	9'-0"	5'-5"	4'-0"	10'-6"
III	15'-0"	4'-0"	8'-0"	6'-10"	4'-0"	9'-6"
IV	15'-0"	4'-0"	8'-0"	5'-5"	3'-6"	10'-0"
V	14'-0"	4'-0"	7'-0"	3'-3"	3'-6"	9'-0"
VI	13'-0"	3'-0"	7'-0"	2'-8"	3'-0"	8'-6"
VII	12'-0"	3'-0"	6'-0"	2'-8"	3'-0"	7'-6"

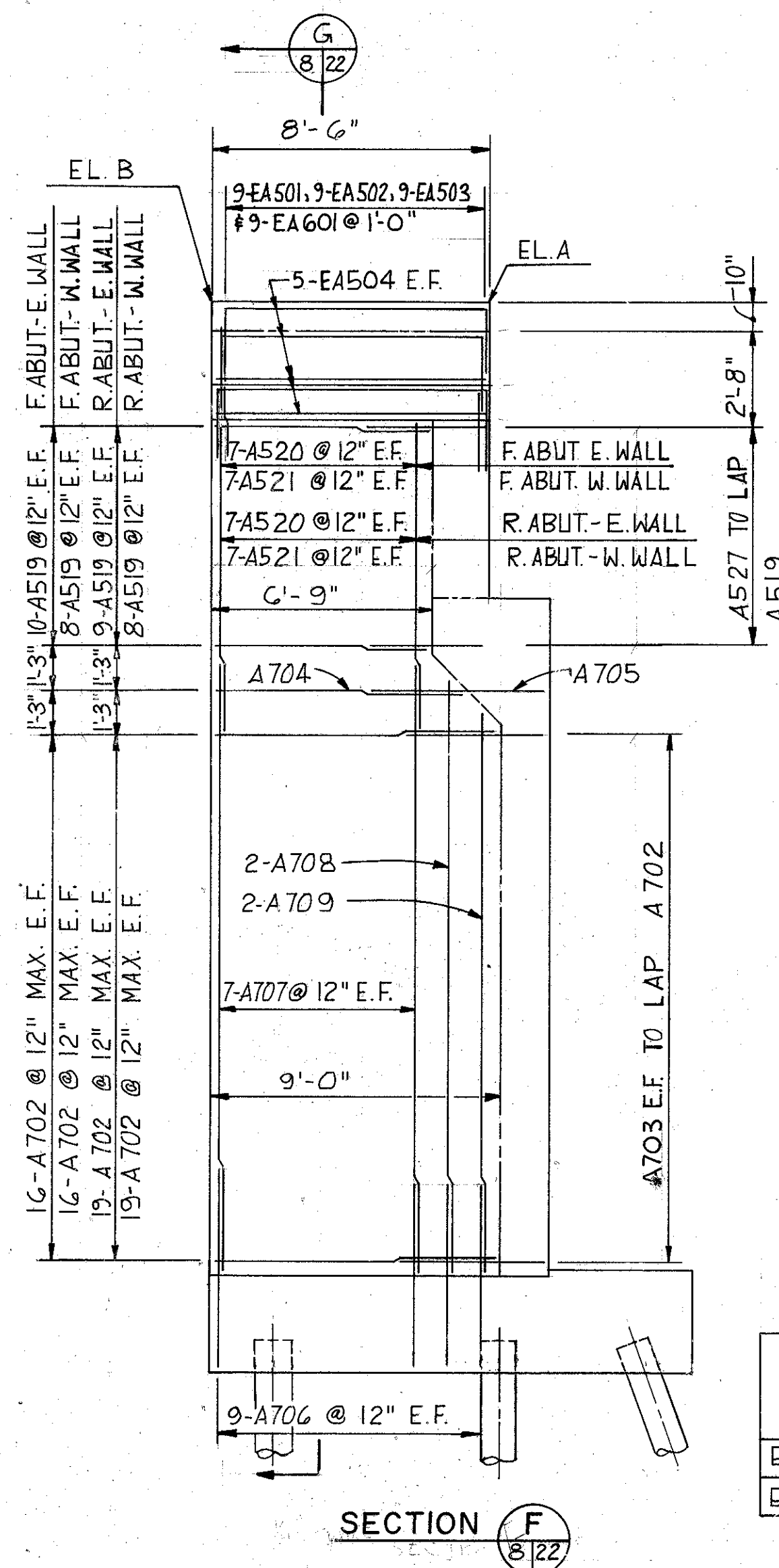
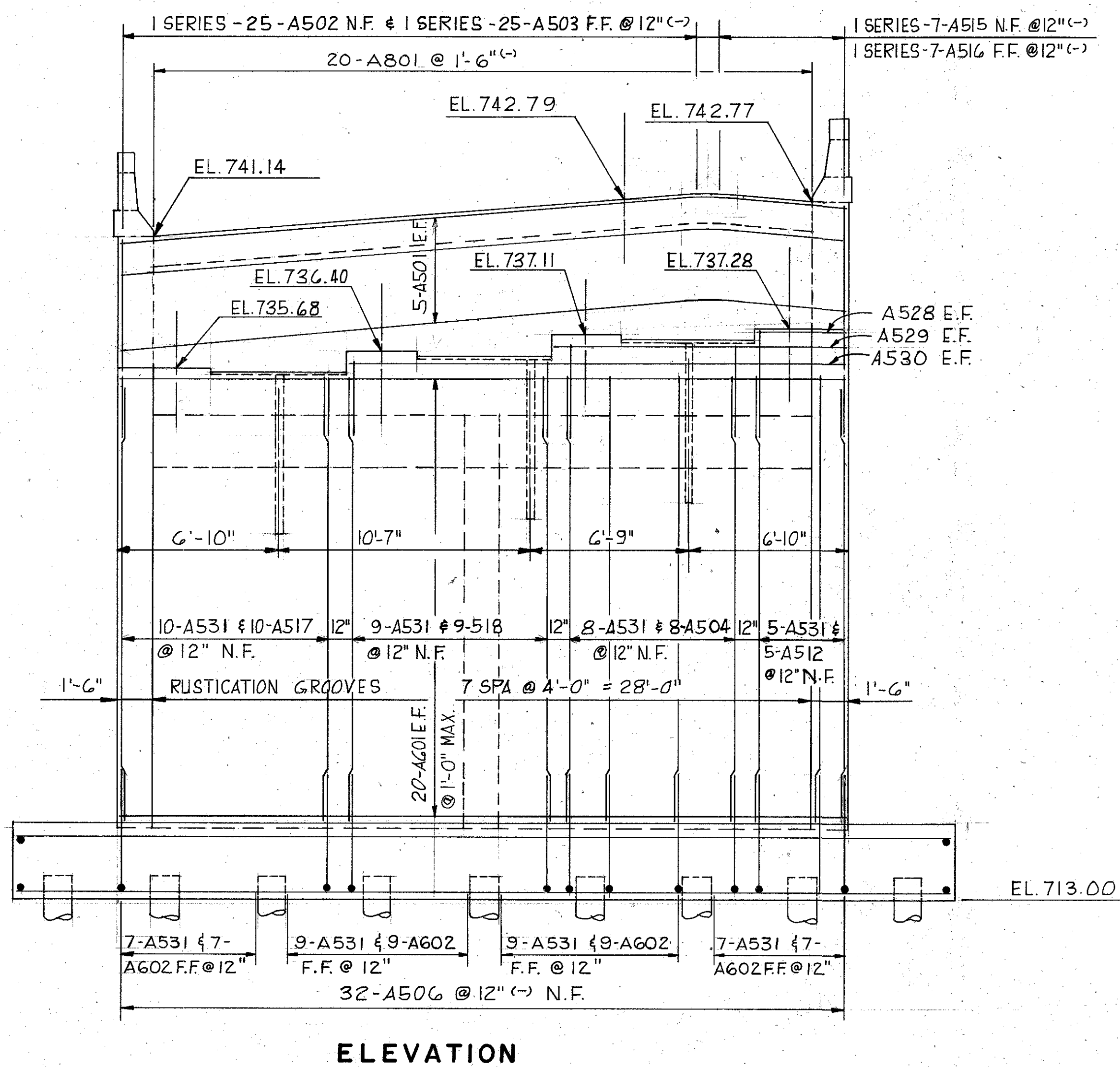
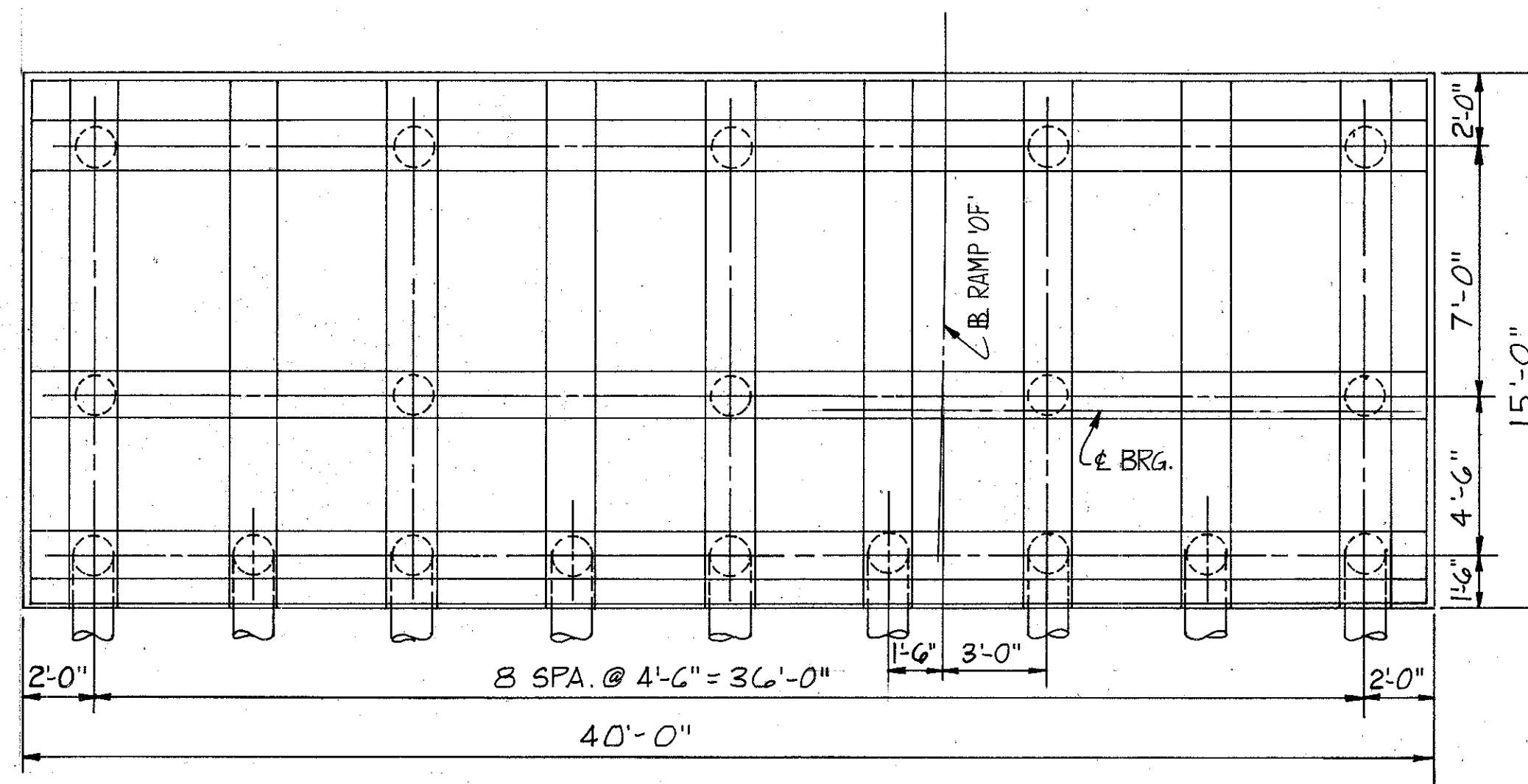
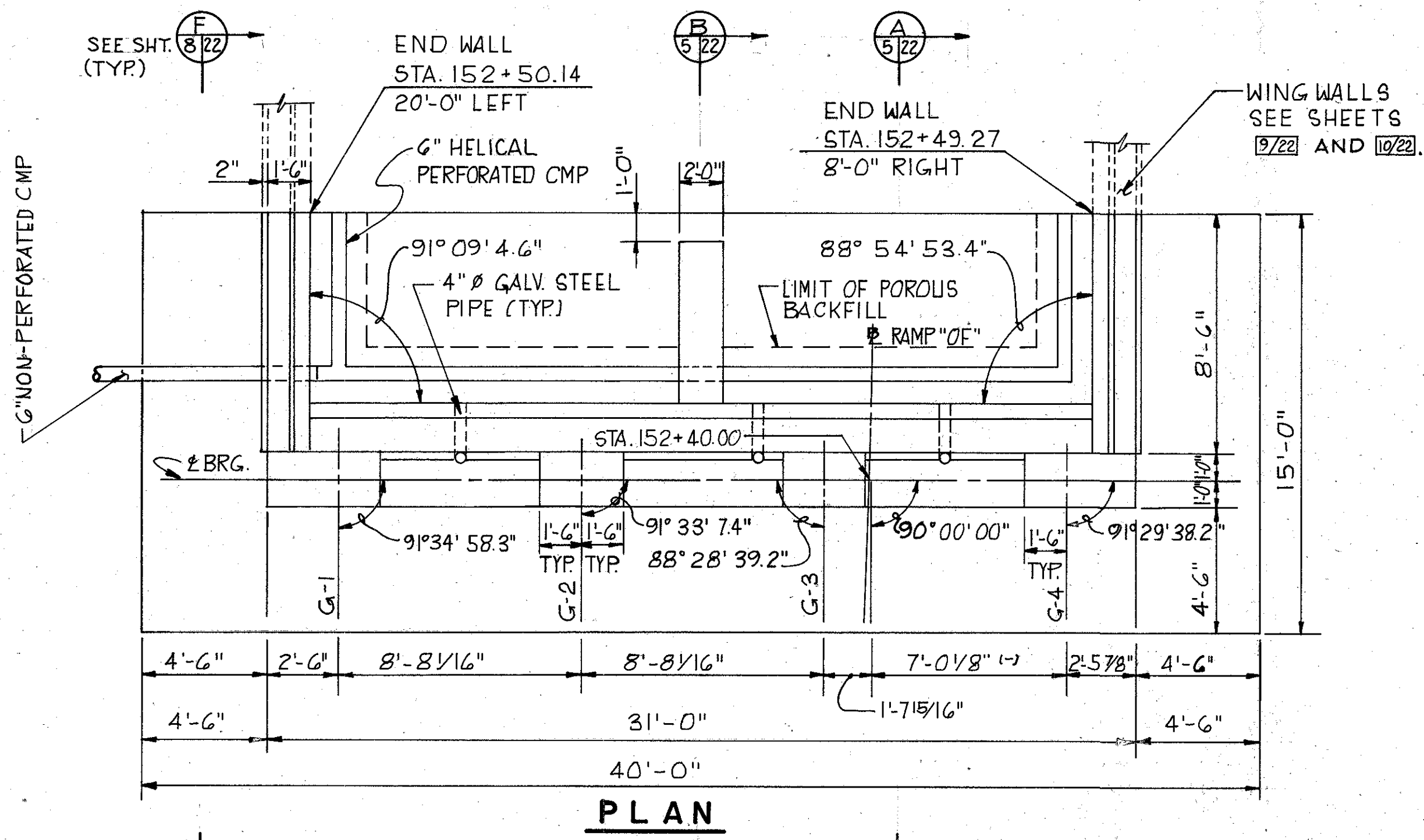
JOHN E. FOSTER AND ASSOCIATES, INC. 1/22  
555 Buttles Ave., Columbus, Ohio 43215

**WINGWALLS**  
**WEST WALL-REAR ABUTMENT**  
BRIDGE No. FRA.-315-0197  
RAMP "OF" OVER ROADS "OD" AND "OE"

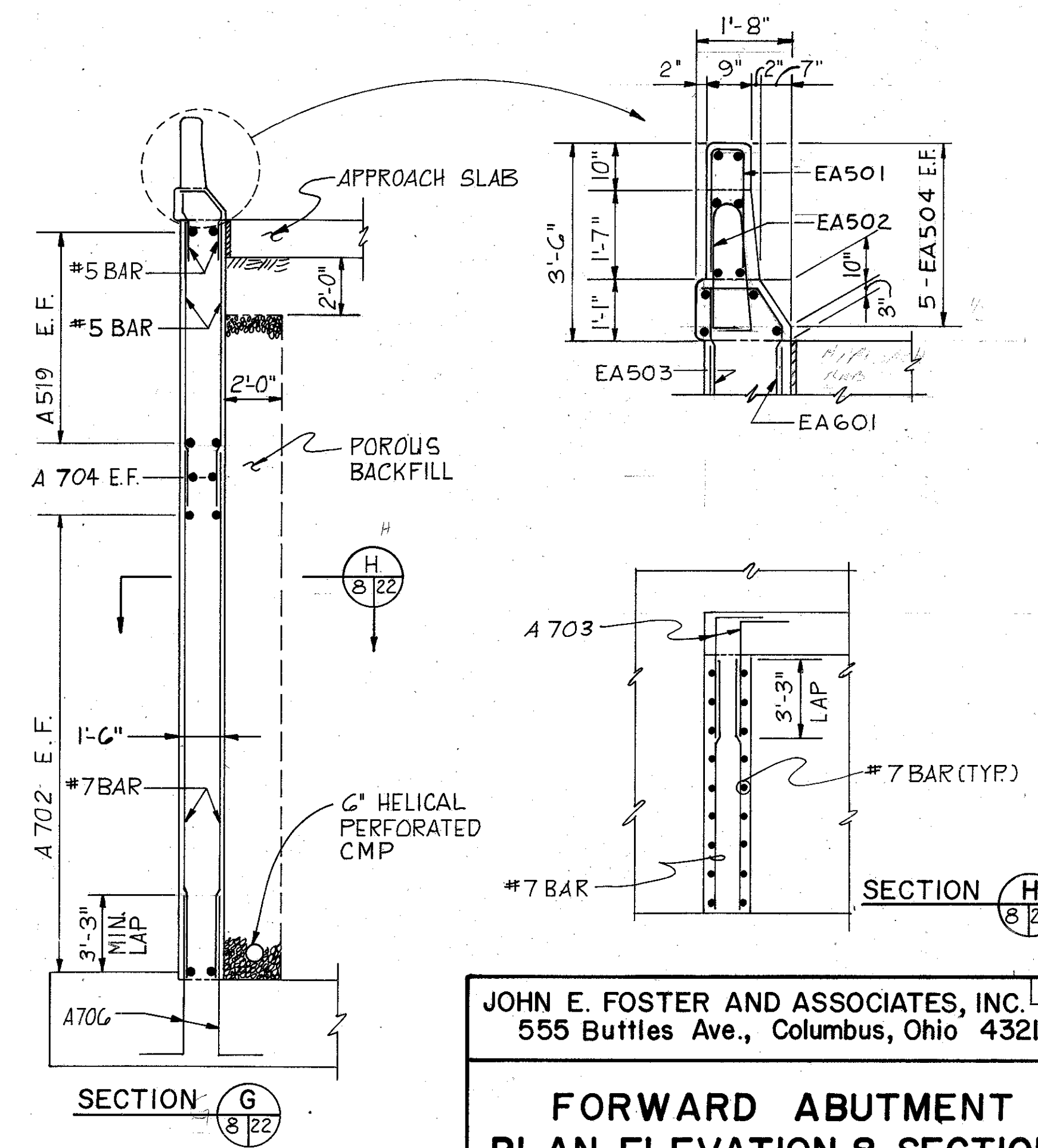
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CEM	TH	ES	DFS			

**NOTES**

- ALL PILES ARE 14" DIAMETER CAST-IN-PLACE REINFORCED CONCRETE PILES.
- ALL BATTERED PILES SHALL BE INCLINED 4 TO 12 IN DIRECTION SHOWN.
- POROUS BACKFILL, 2 FT. THICK, SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE AND Laterally TO THE WINGWALLS.
- FOR WINGWALL EXTENSIONS SEE SHEETS 9/22 AND 10/22.
- BACKWALL CONCRETE: IN ADDITION TO THE PROVISIONS OF 5108, BACKWALL CONCRETE ABOVE THE OPTIONAL CONSTRUCTION JOINT AT THE APPROACH SLAB SEAT SHALL NOT BE PLACED UNTIL AFTER THE DECK CONCRETE HAS BEEN PLACED.
- FOR APPROACH SLAB DETAILS - SEE STANDARD DRAWING AS-1-81.



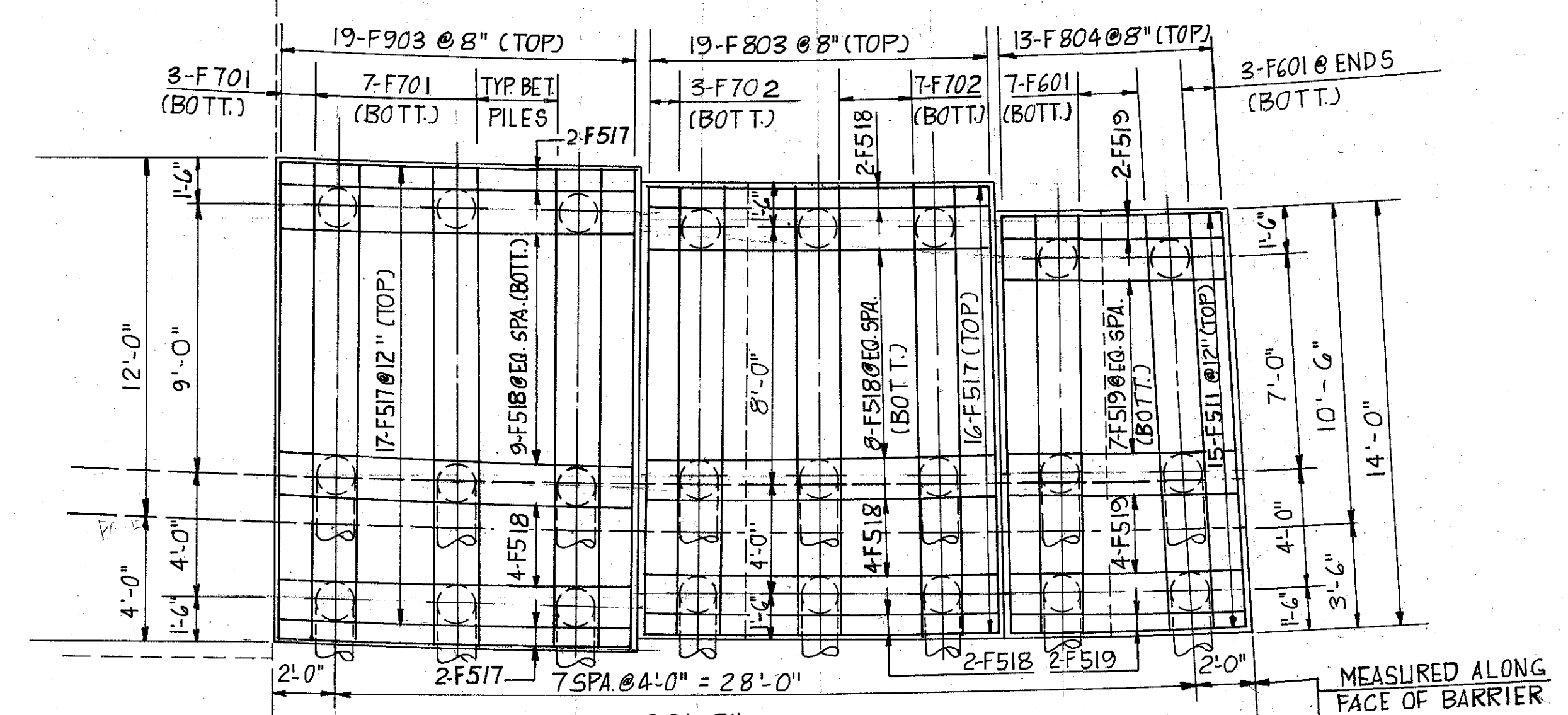
	REAR ABUTMENT		FORWARD ABUTMENT	
	EAST PARAPET	WEST PARAPET	EAST PARAPET	WEST PARAPET
ELEV. A	740.40	739.69	746.30	744.66
ELEV. B	740.09	739.40	746.43	744.81



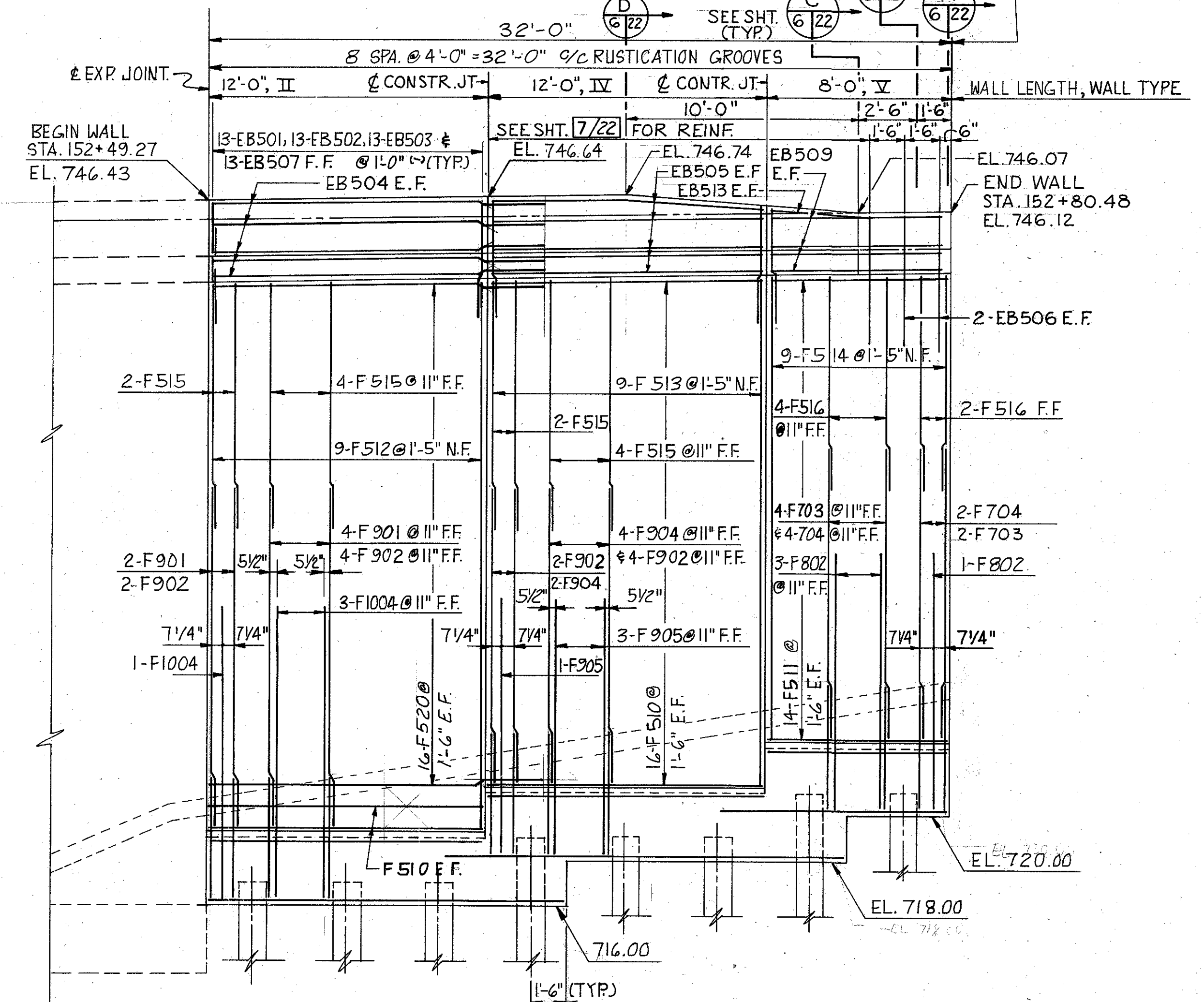
JOHN E. FOSTER AND ASSOCIATES, INC. 8/22  
555 Buttles Ave., Columbus, Ohio 43215

**FORWARD ABUTMENT  
PLAN, ELEVATION & SECTIONS**  
BRIDGE No. FRA-315-0197  
RAMP "OF" OVER ROADS "OD" AND "OE"

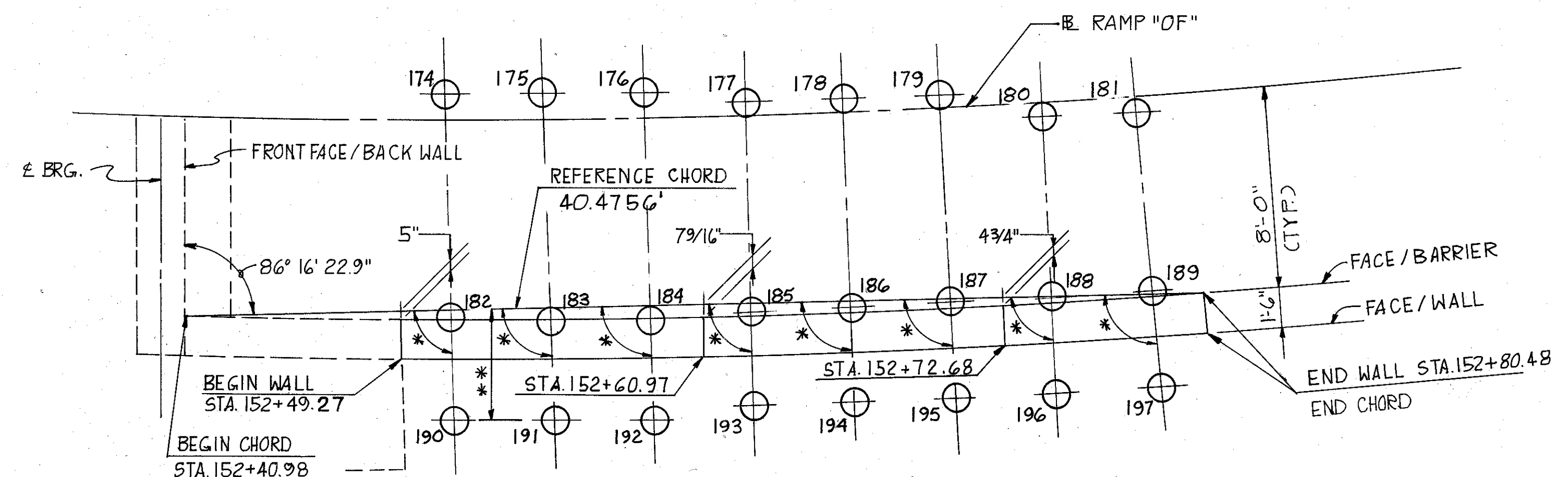
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
HSS	TH	ES	CEM			



**FOOTING PLAN**



**WALL ELEVATION**



**WALL AND PILE LOCATION PLAN**

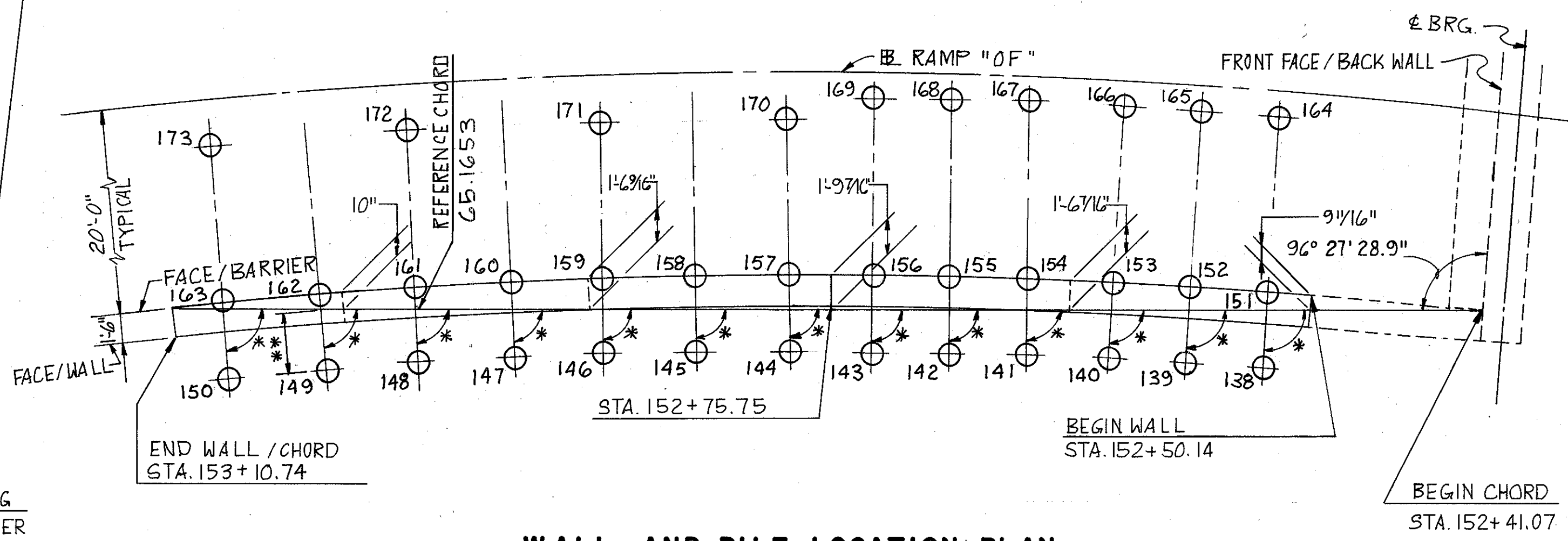
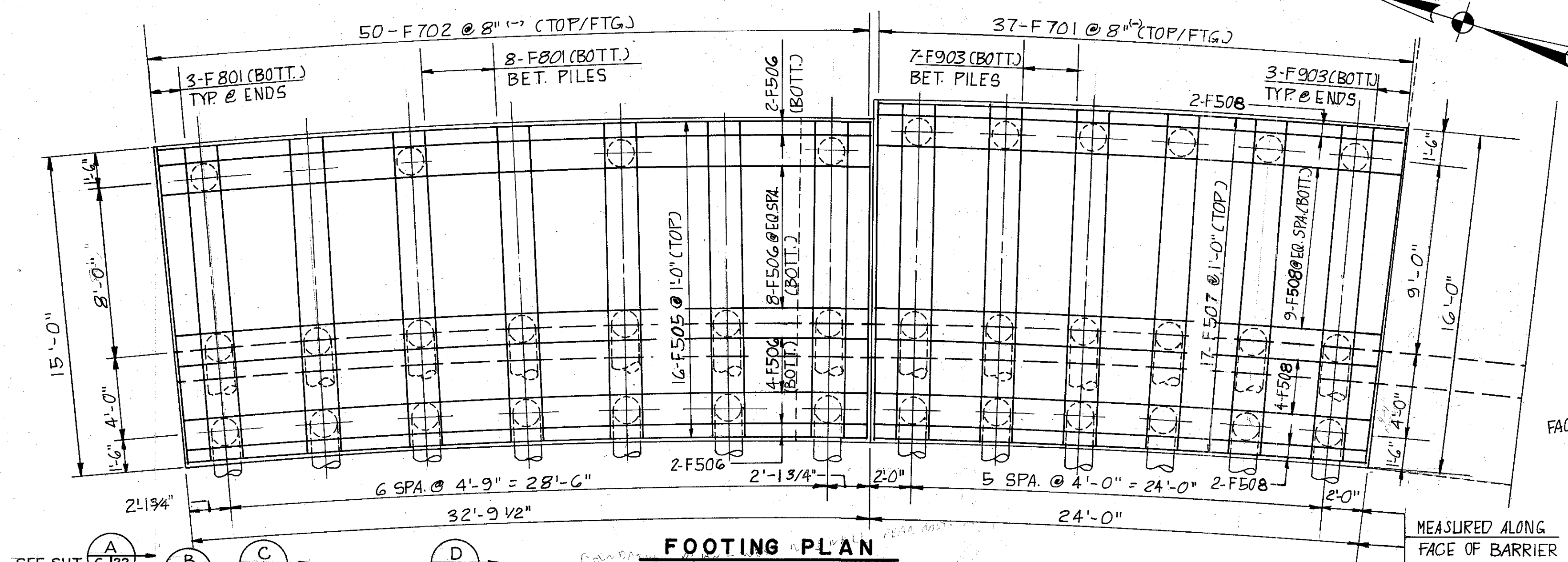
NOTE: PILES ARE RADIAL TO RAMP "OF"

PILE LOCATION TABLE			
PILE	DIST. ALONG REF. CHORD	* ANGLE	** DIST. CHORD TO CENTER OF PILE
184	10.5044'	88° 16' 57.2"	4.4798'
185	14.4990'	88° 59' 05.6"	4.5751'
186	18.4919'	89° 41' 14.1"	4.6213'
187	22.4843'	90° 23' 22.5"	4.1187'
188	26.4773'	91° 05' 31.0"	4.0670'
189	30.4722'	91° 47' 39.4"	3.9664'
190	34.4702'	92° 29' 47.9"	3.8168'
191	38.4725'	93° 11' 56.3"	3.6179'

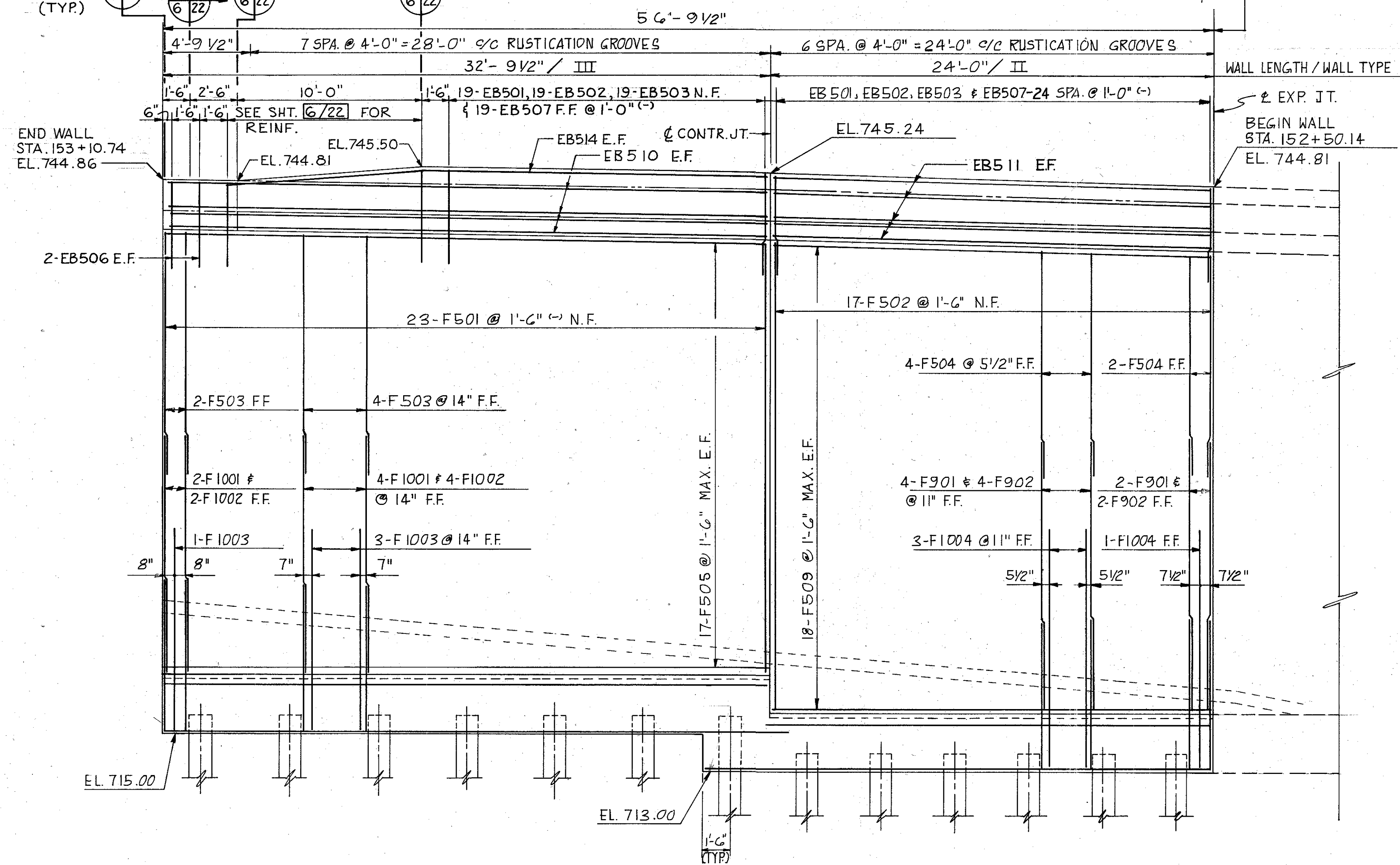
JOHN E. FOSTER AND ASSOCIATES, INC. 19/22  
 555 Buttles Ave., Columbus, Ohio 43215

**WING WALLS**  
**EAST WALL-FORWARD ABUTMENT**  
 BRIDGE No. FRA-315-0197  
 RAMP "OF" OVER ROADS "OD" AND "OE"

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CEM	TH	ES	DFS			



**WALL AND PILE LOCATION PLAN**  
NOTE: PILES ARE RADIAL TO RAMP "OF"



**WALL ELEVATION**

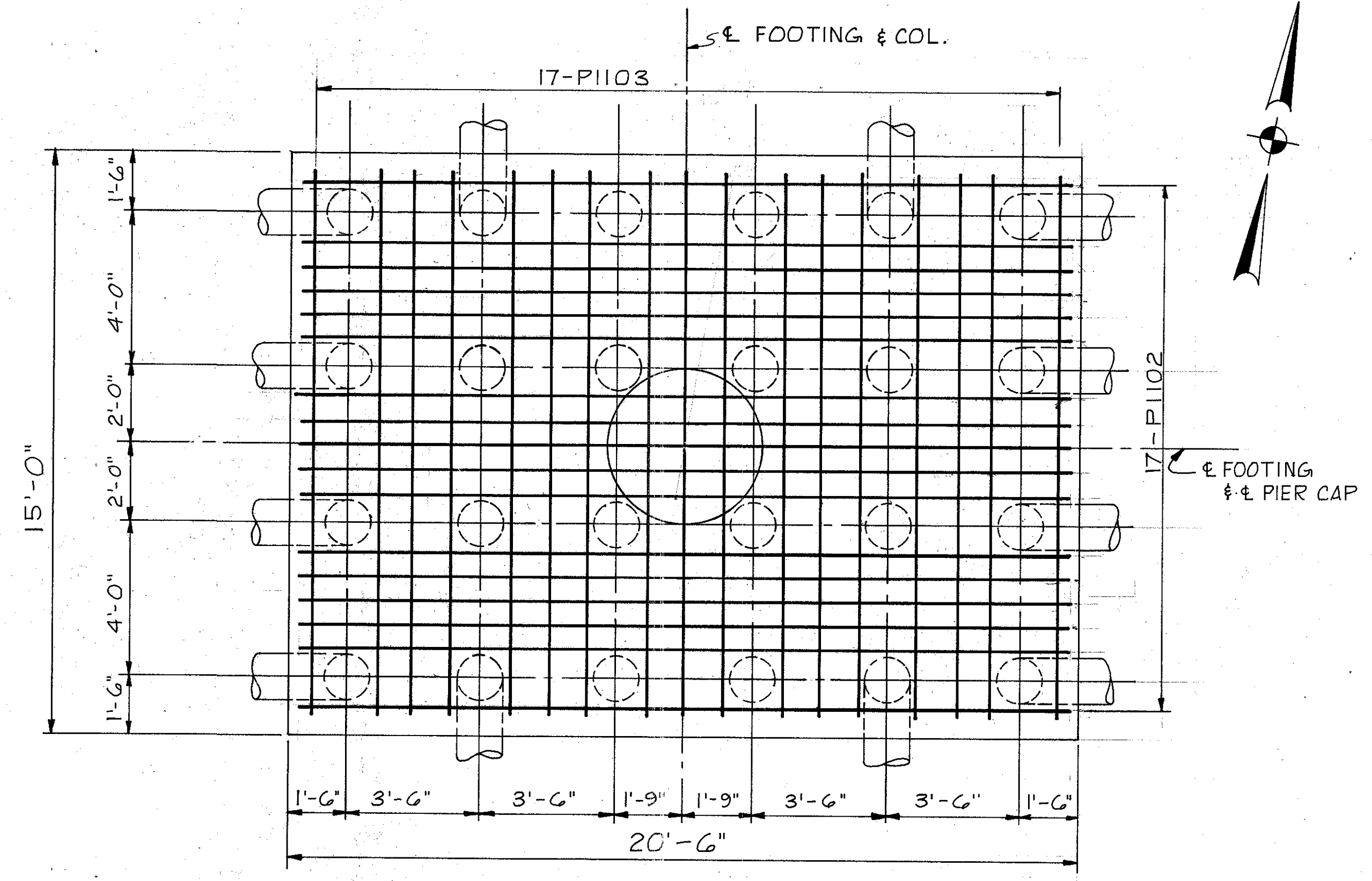
PILE LOCATION TABLE			
PILE	DIST. ALONG REF. CHORD	* ANGLE	** DIST.- CHORD TO CENTER OF PILE
141	10.5243'	94° 14' 36.7"	3.0244'
142	14.5205'	93° 28' 30.9"	2.7555'
143	18.5081'	92° 42' 25.1"	2.5405'
144	22.4907'	91° 56' 19.3"	2.3791'
145	26.4697'	91° 10' 13.6"	2.2711'
146	30.4465'	90° 24' 07.8"	2.2165'
147	34.5675'	89° 36' 21.2"	2.2162'
148	39.2901'	88° 41' 36.8"	2.2863'
149	44.0161'	87° 46' 52.5"	2.4317'
150	48.7480'	86° 52' 08.1"	2.6525'
151	53.4882'	85° 57' 23.8"	2.9491'
152	58.2390'	85° 02' 39.4"	3.3218'
153	63.0020'	84° 07' 55.7"	3.7711'

JOHN E. FOSTER AND ASSOCIATES, INC. 110/22  
555 Buttles Ave., Columbus, Ohio 43215

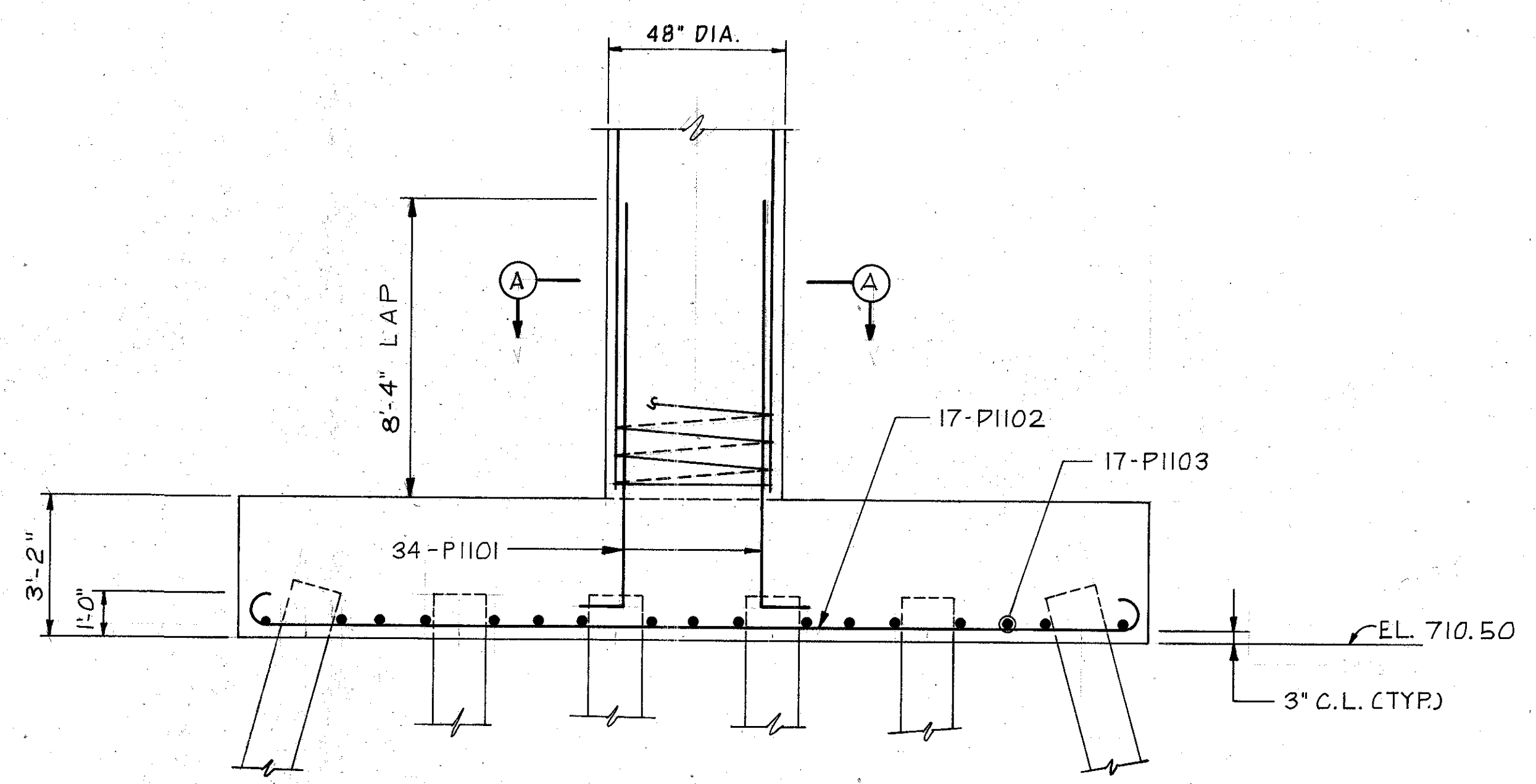
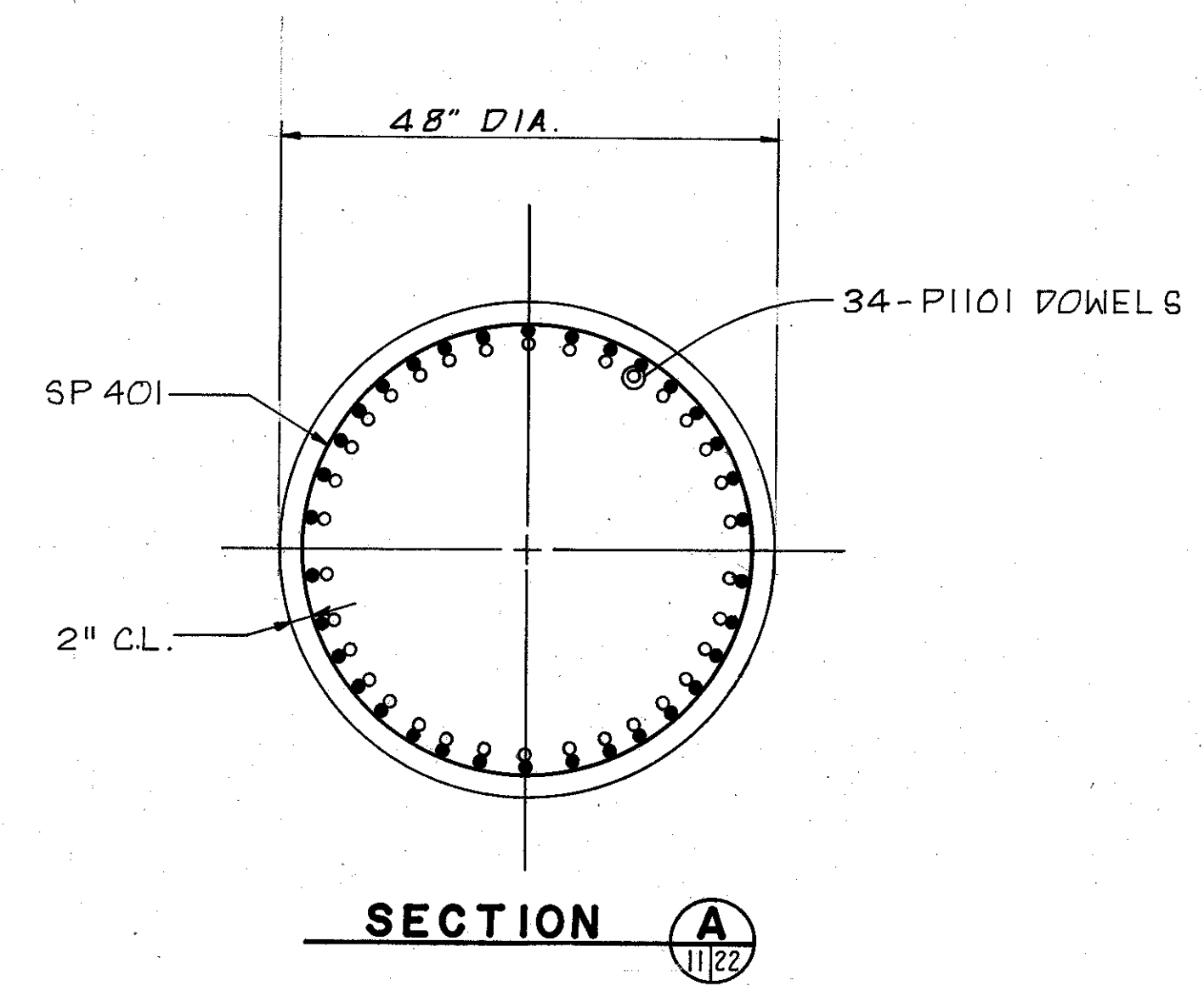
**WING WALLS**  
**WEST WALL-FORWARD ABUTMENT**  
BRIDGE No. FRA.-315-0197  
RAMP "OF" OVER ROADS "OD" AND "OE"

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CEM	TH	ES	DFS			

FRANKLIN COUNTY  
FRA-670-1.25-C-2



**FOOTING PLAN**



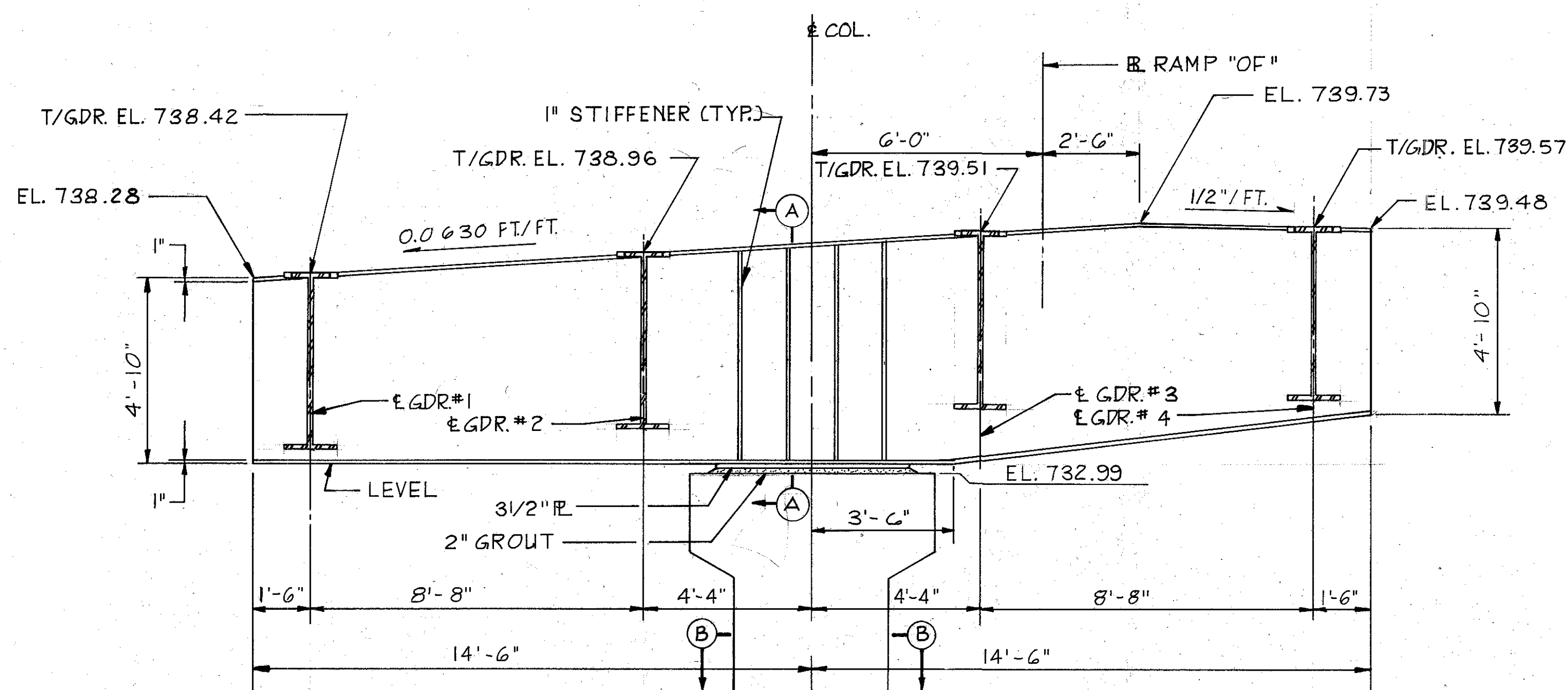
**PARTIAL ELEVATION**

- NOTES:**
1. ALL PILES ARE 14" DIAMETER CAST-IN-PLACE REINFORCED CONCRETE PILES.
  2. ALL BATTERED PILES SHALL BE INCLINED 3 TO 12 IN DIRECTION SHOWN.

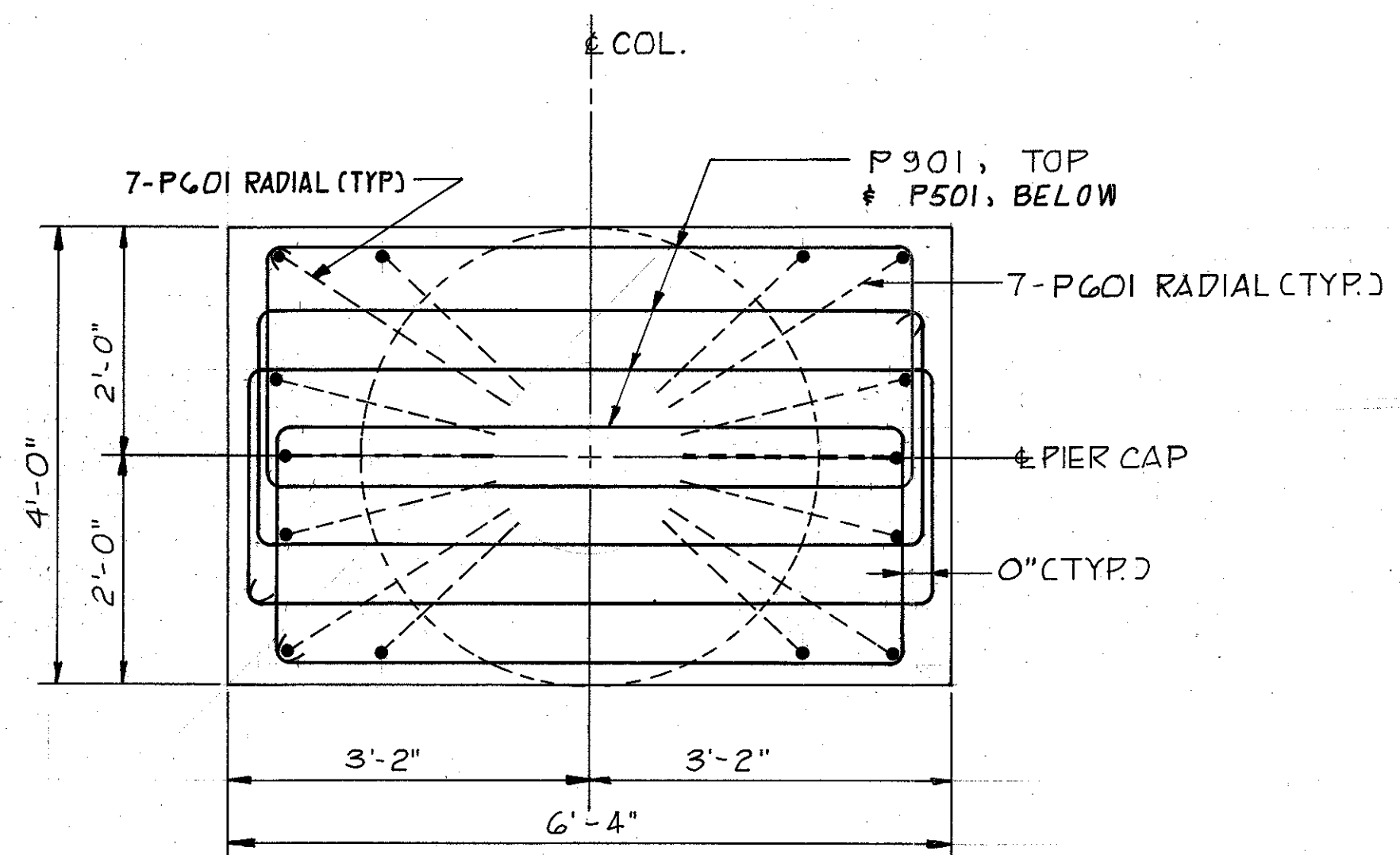
JOHN E. FOSTER AND ASSOCIATES, INC. 11/22  
555 Buttles Ave., Columbus, Ohio 43215

**PIER FOOTING**  
BRIDGE NO. FRA-315-0197  
RAMP "OF" OVER ROAD "OD" & "OE"

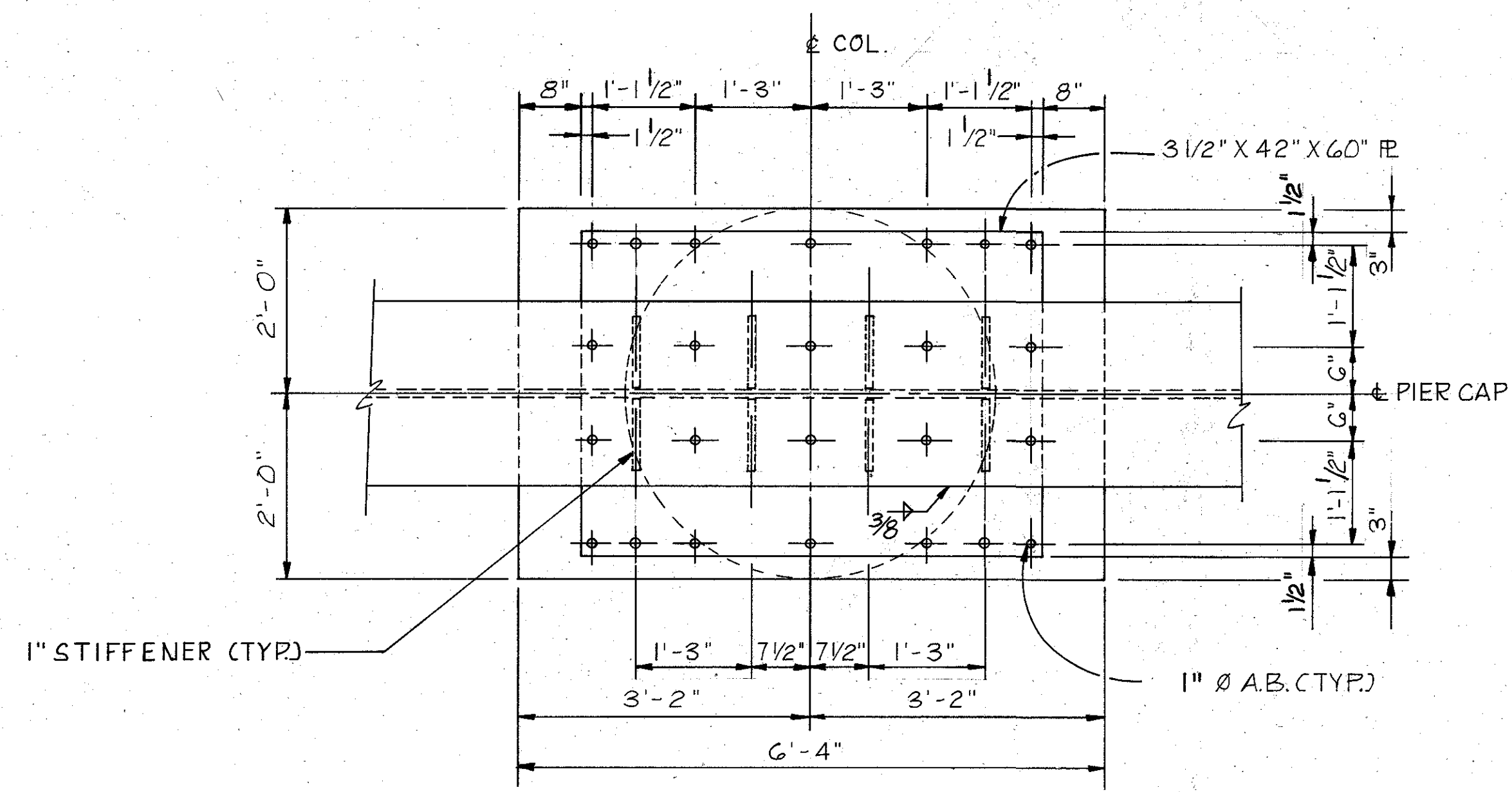
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DFS	TH		CEM			



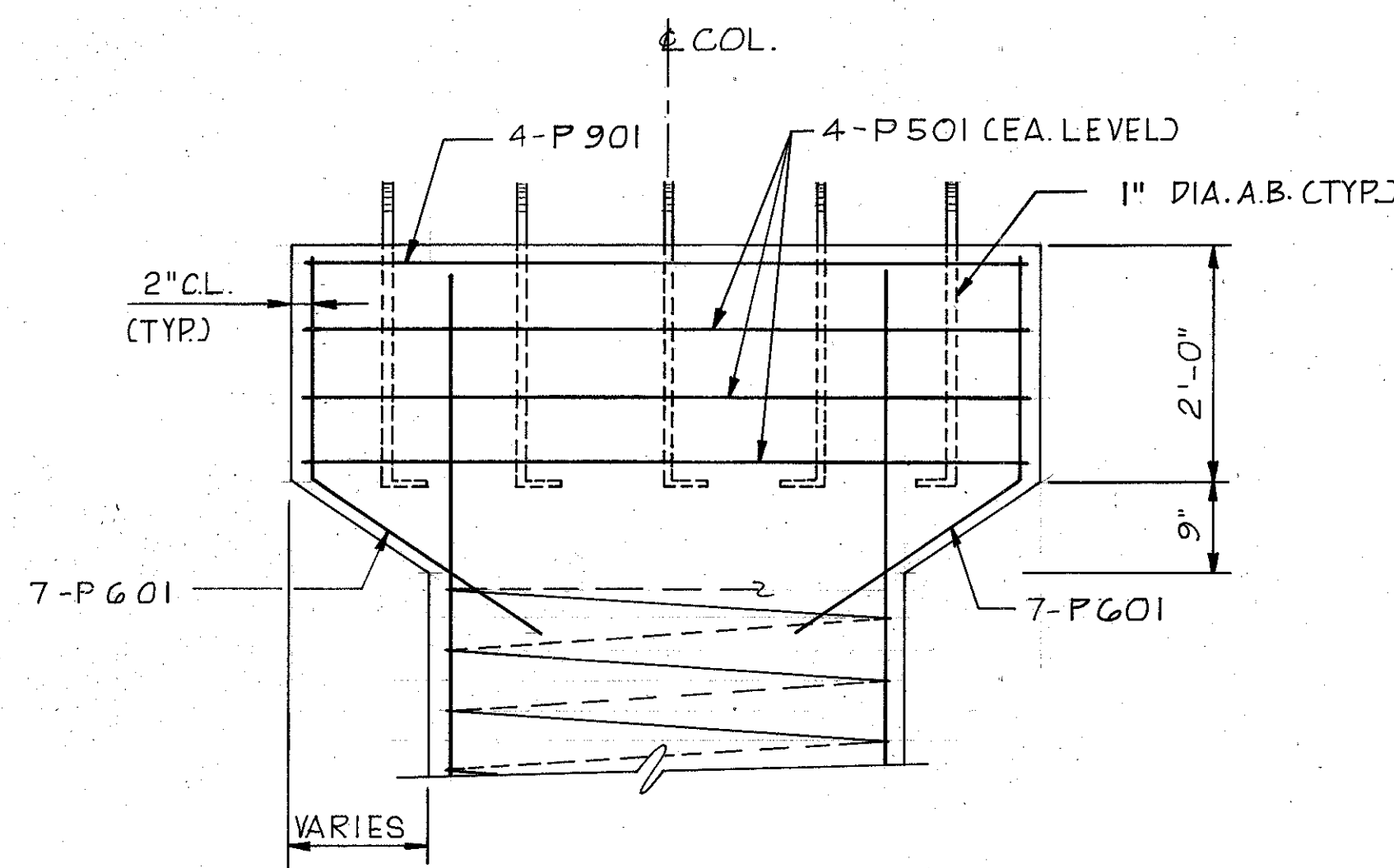
**CAP ELEVATION**



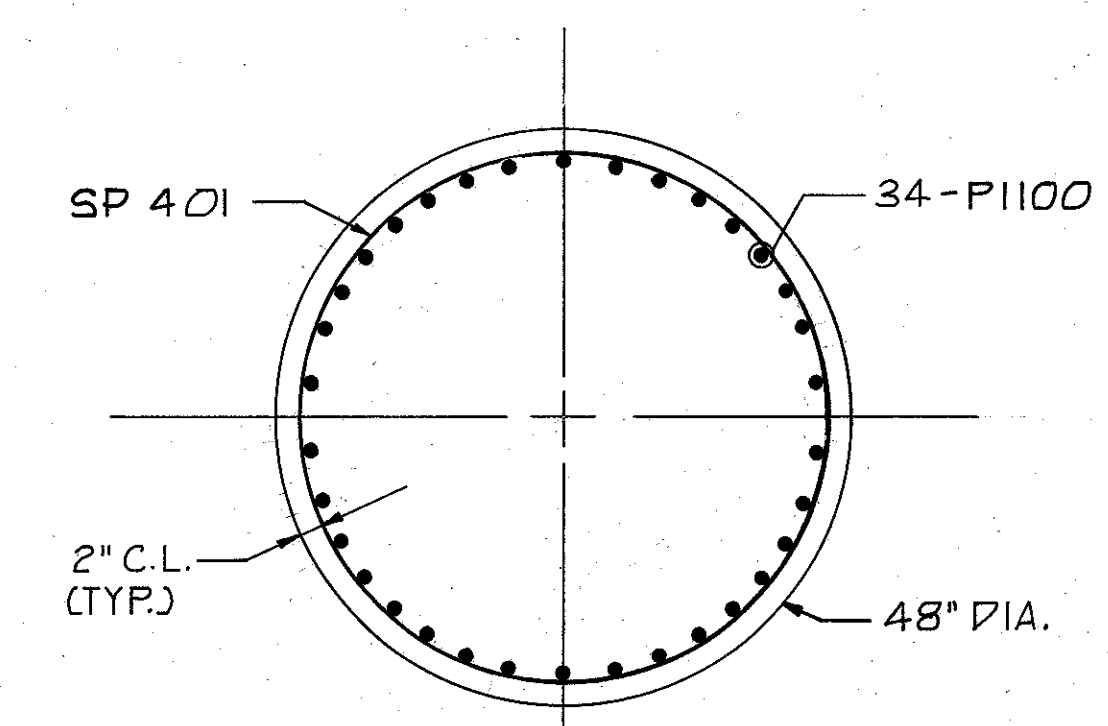
**CAP PLAN REINFORCING**



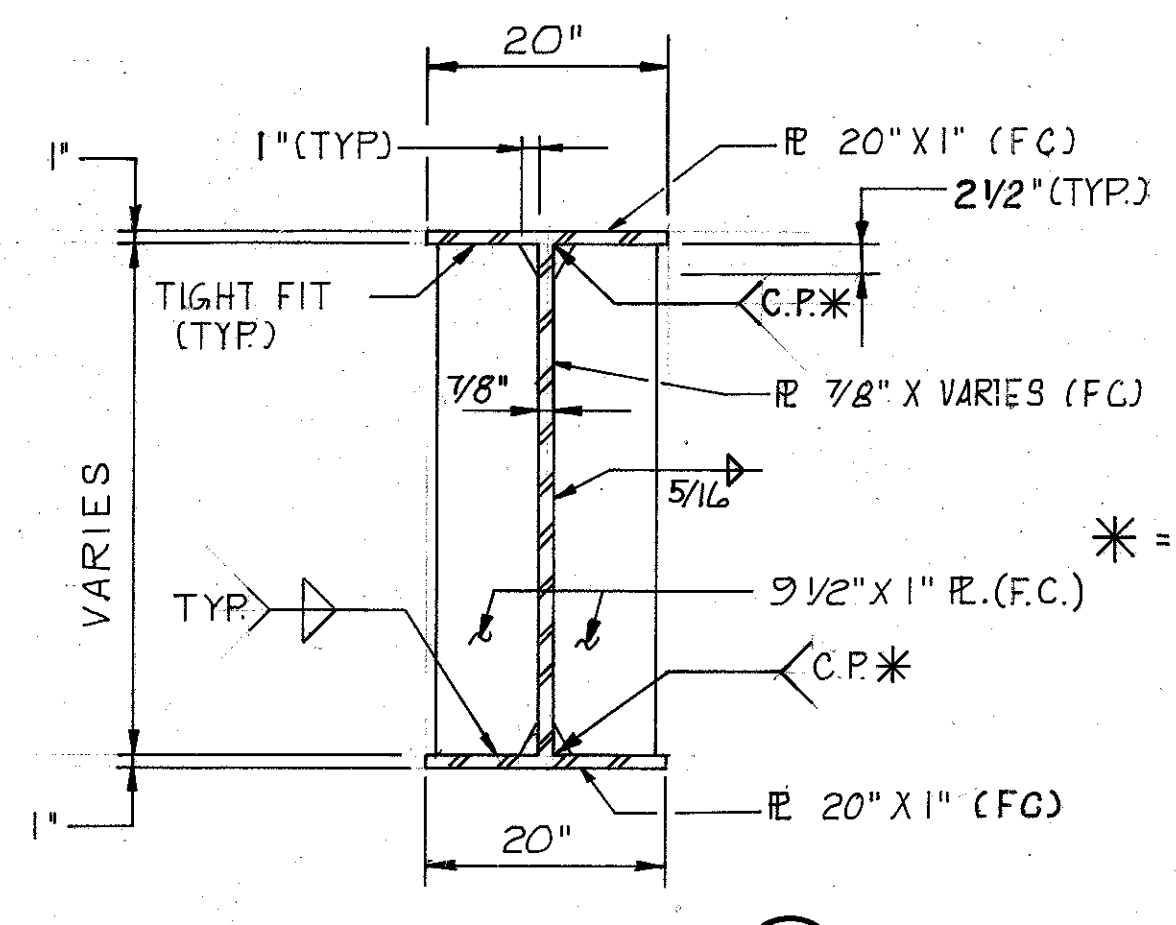
**CAP PLAN**



**CAP ELEV. REINFORCING**



**SECTION B**



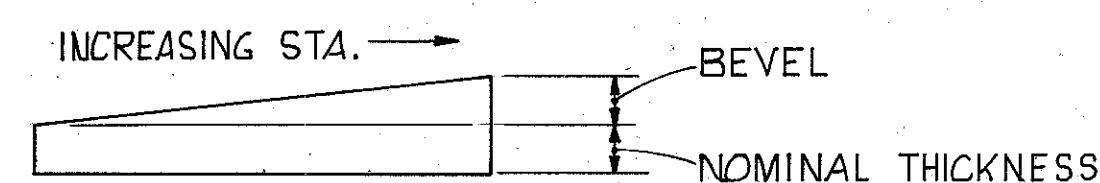
**SECTION A**

- NOTES:**
1. STRUCTURAL STEEL SHALL BE ASTM A572.
  2. ANCHOR BOLTS SHALL BE ASTM A325.
  3. WHEN A PLATE OR SHAPE IS DESIGNATED (F.C.) THE MATERIAL SHALL BE SUBJECT TO THE FRACTURE CONTROL PLAN (FCP), OUTLINED IN "GUIDE SPECIFICATIONS FOR FRACTURE-CRITICAL NON-REDUNDANT STEEL BRIDGE MEMBERS" BY AASHTO INCLUDING ALL INTERIMS TO THIS SPECIFICATION THROUGH 1989. THE INSPECTION REQUIREMENTS OF THE (FCP) WHICH PERTAIN TO THE ENGINEER SHALL NOT BE BINDING ON THE ENGINEER OR HIS REPRESENTATIVES. IN TABLE 701, ZONE 2 SHALL APPLY.
  4. FOR CONTINUOUS GIRDERS SPLICE DETAILS SEE SHEET [13/22].

JOHN E. FOSTER AND ASSOCIATES, INC. 12/22  
555 Buttles Ave., Columbus, Ohio 43215

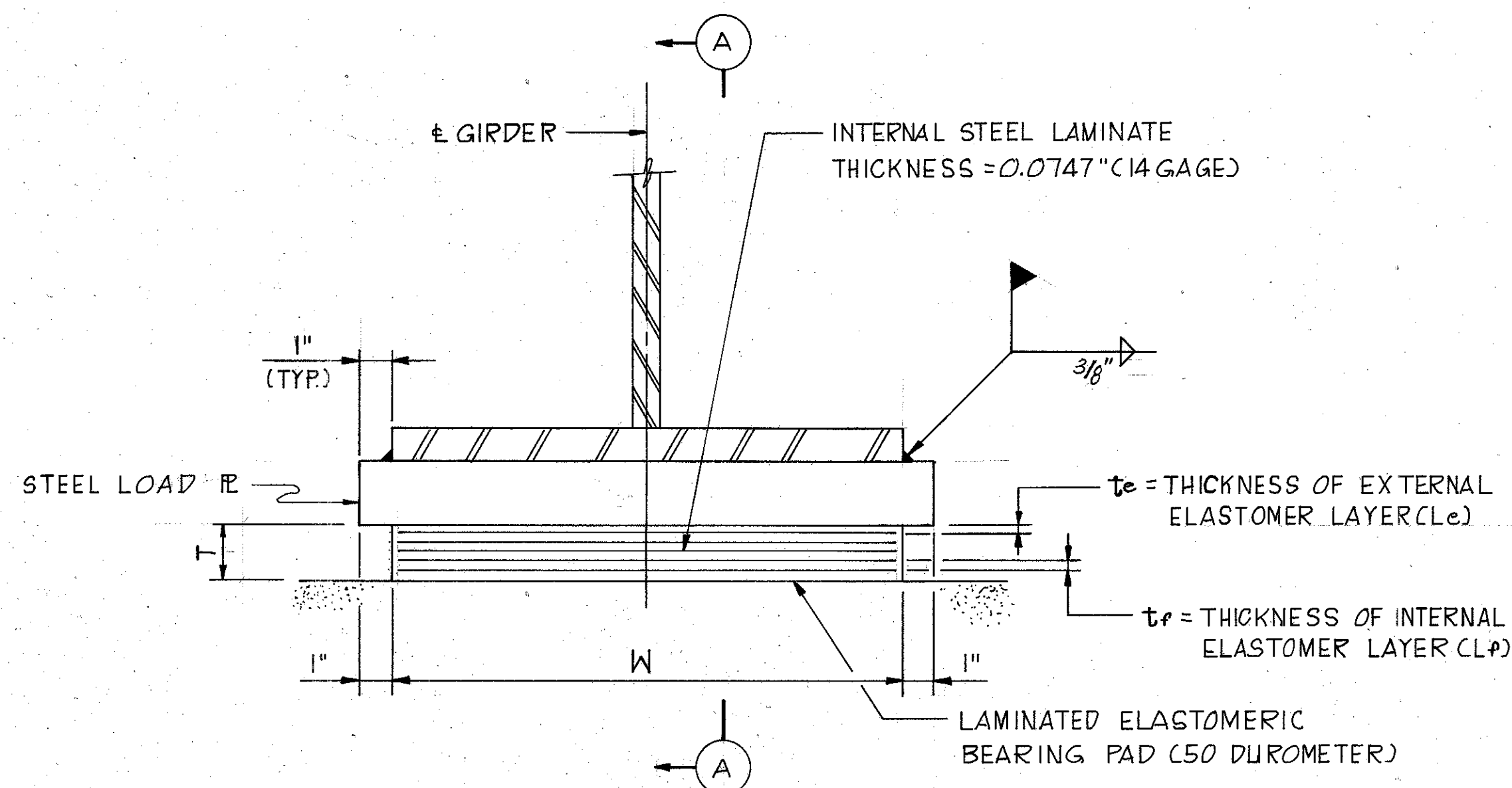
**PIER NO. 1  
PLAN ELEVATIONS & DETAILS**  
BRIDGE NO. FRA.-315-0197  
RAMP "OF" OVER ROAD "OD" & "OE"

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DFS	TH		CEM			



LOCATION	BEVEL
REAR ABUT.	1/2"
FWD. ABUT.	1/4"

**BEVELED LOAD PLATE DETAIL**



**NOTES**

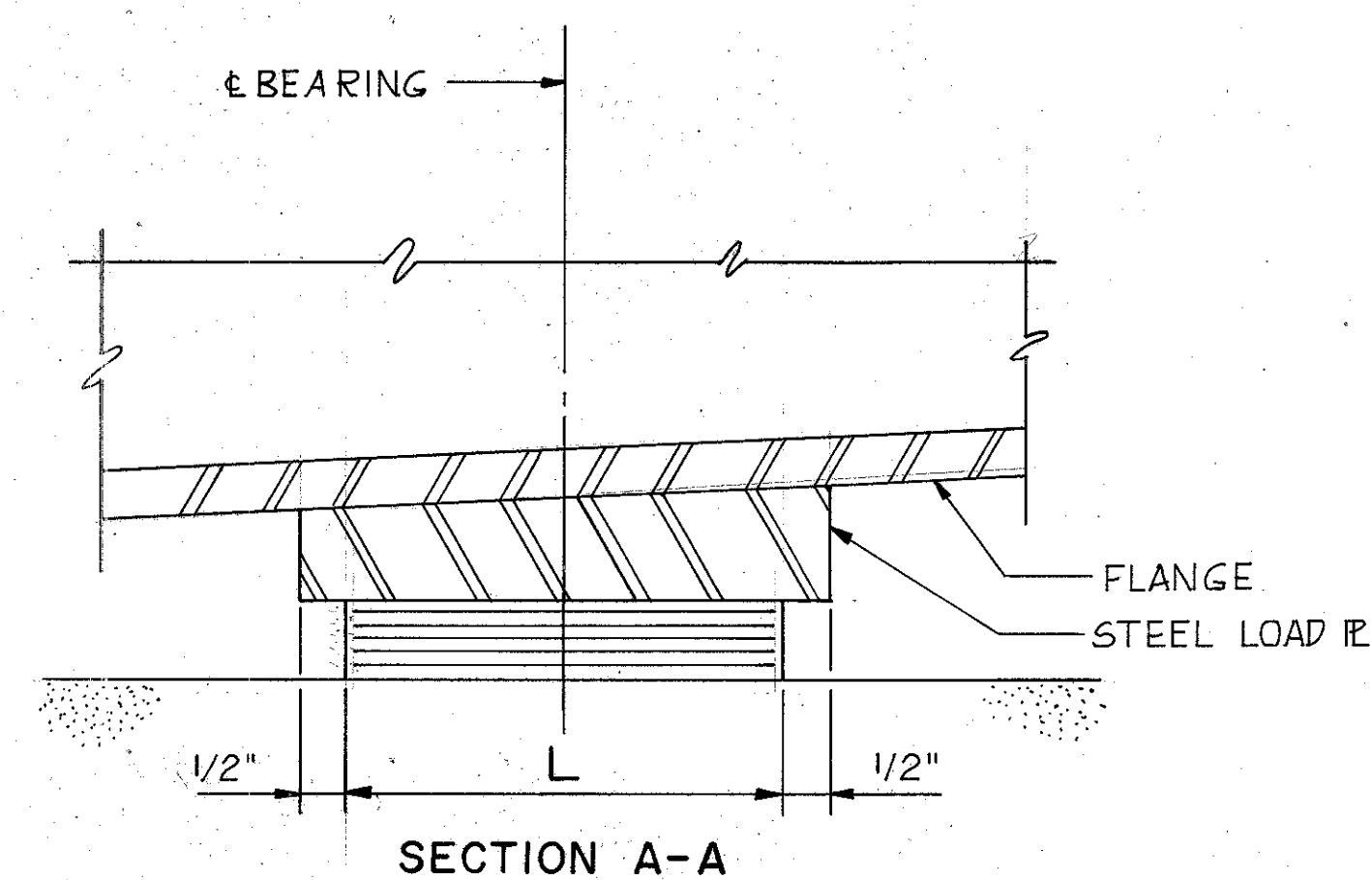
1. WELDING SHALL BE CONTROLLED SO THAT THE PLATE TEMPERATURE AT THE ELASTOMER BONDED SURFACE DOES NOT EXCEED 400°F AS DETERMINED BY USE OF PYROMETRIC STICKS OR OTHER TEMPERATURE MONITORING DEVICES.
2. THE STEEL LOAD PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS.
3. TOLERANCES: INDIVIDUAL LAYER THICKNESS ± 20% OF DESIGN VALUE (NOT TO EXCEED ± 1/8").

PLAN DIMENSIONS: — 0, + 1/4"  
 DESIGN THICKNESS ≤ 1/4" — 0, + 1/8"  
 DESIGN THICKNESS > 1/4" — 0, + 1/4"  
 EDGE COVER OF EMBEDDED LAMINATES — 0, + 1/8"

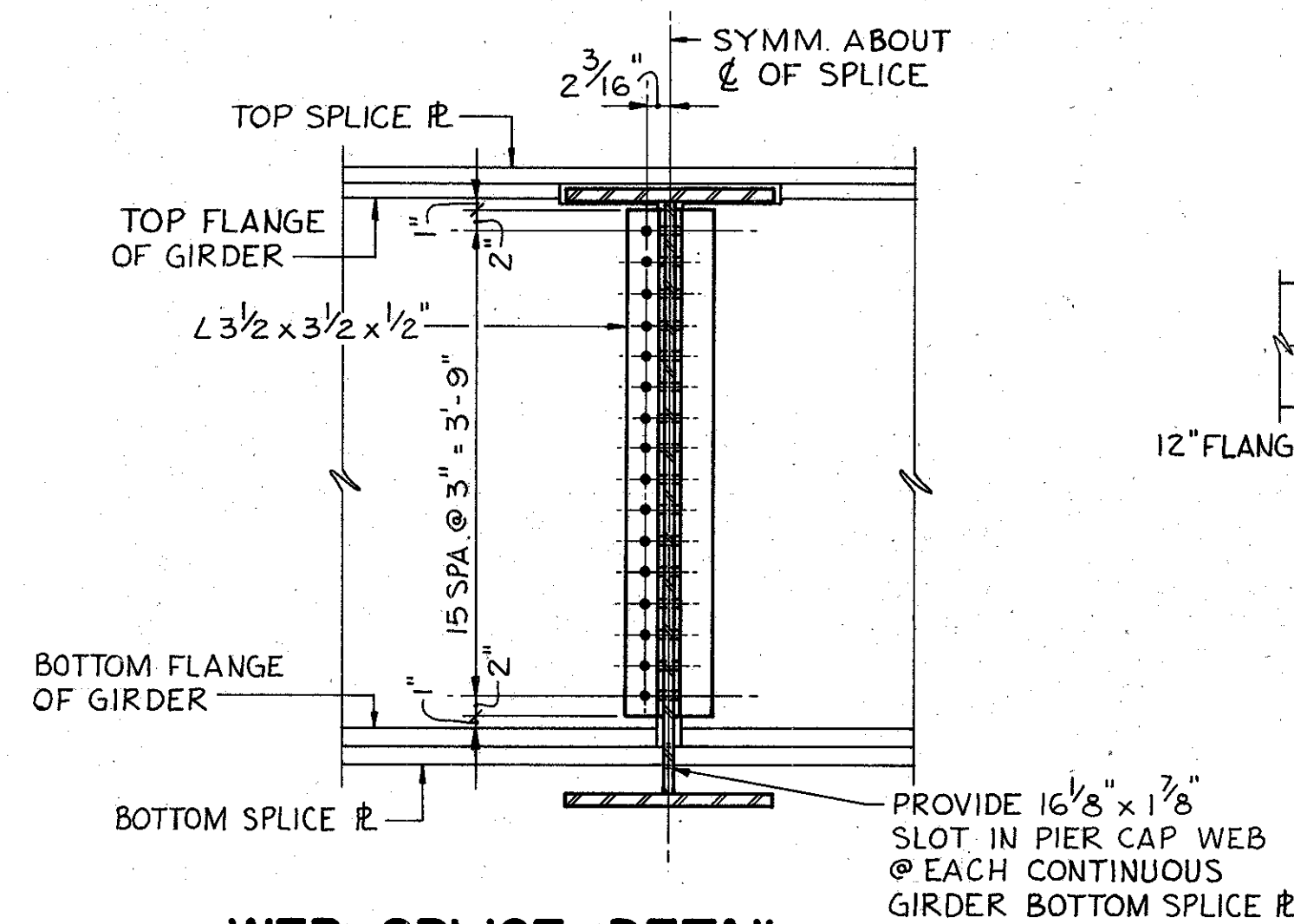
4. BEARING REPOSITIONING: IF DECK CONCRETE PLACED AT AN AMBIENT TEMPERATURE HIGHER THAN 80° OR LOWER THAN 40°F AND/OR ABUTMENT TILTING RESULTS IN THE BEARING SHEAR DEFLECTION EXCEEDING ONE SIXTH OF THE BEARING HEIGHT AT 60°F ± 10°F, THE GIRDERS SHALL BE RAISED TO ALLOW THE BEARINGS TO RETURN TO THEIR UNDEFORMED SHAPE AT 60°F ± 10°F.

LOCATION		TOTAL LOAD KIPS		SIZE		T	ti	te	NO. OF INTERNAL LAYERS	NO. OF STEEL LAMINATES	* STEEL LOAD PLATE SIZE
ABUTS.		L	W	IN.	IN.	IN.	IN.	IN.			
ABUTS.	140	0'-3 1/2"	1'-4"	0'-13 1/4"	0.254	0.181	4	5	0'-10 1/2" X 1'-6" X 0'-1 1/2"		

\* THIS IS THE NOMINAL PLATE SIZE AS REQUIRED BY DESIGN LOADING. LOAD PLATES SHALL BE BEVELED TO ACCOMMODATE GIRDER SLOPE AND ROTATION. SEE DETAIL THIS SHEET.

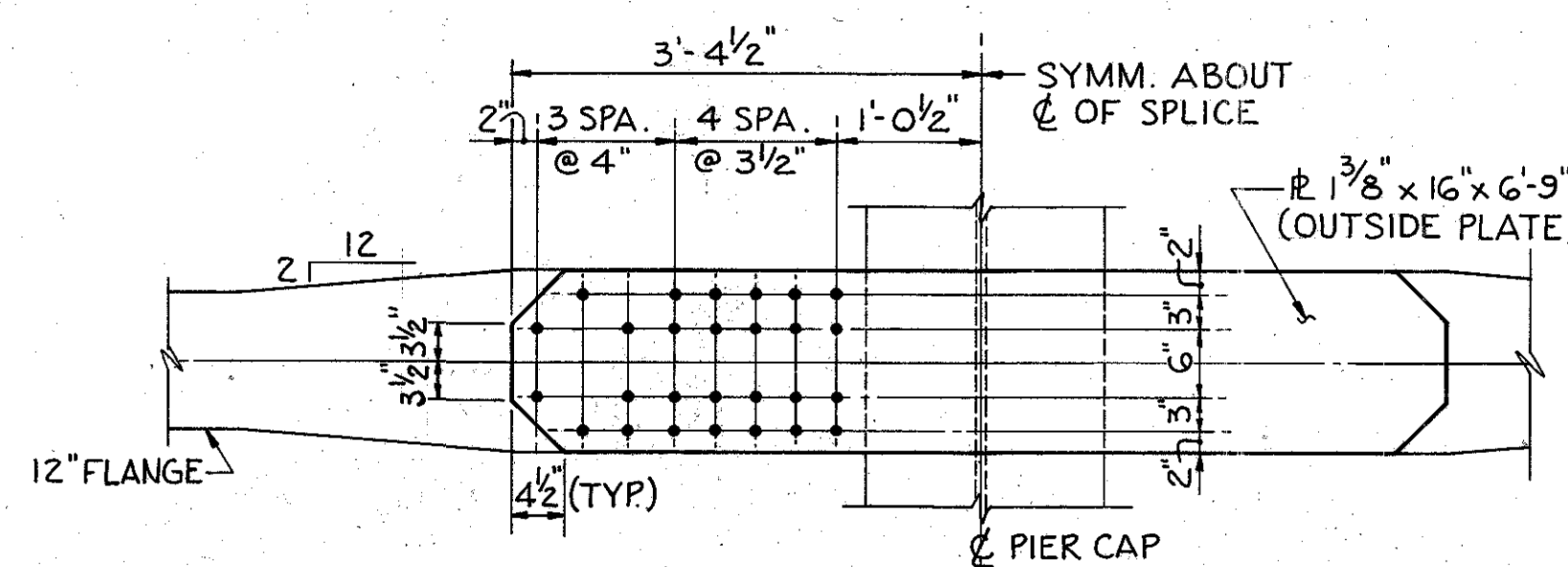


**LAMINATED ELASTOMERIC EXPANSION BEARING**



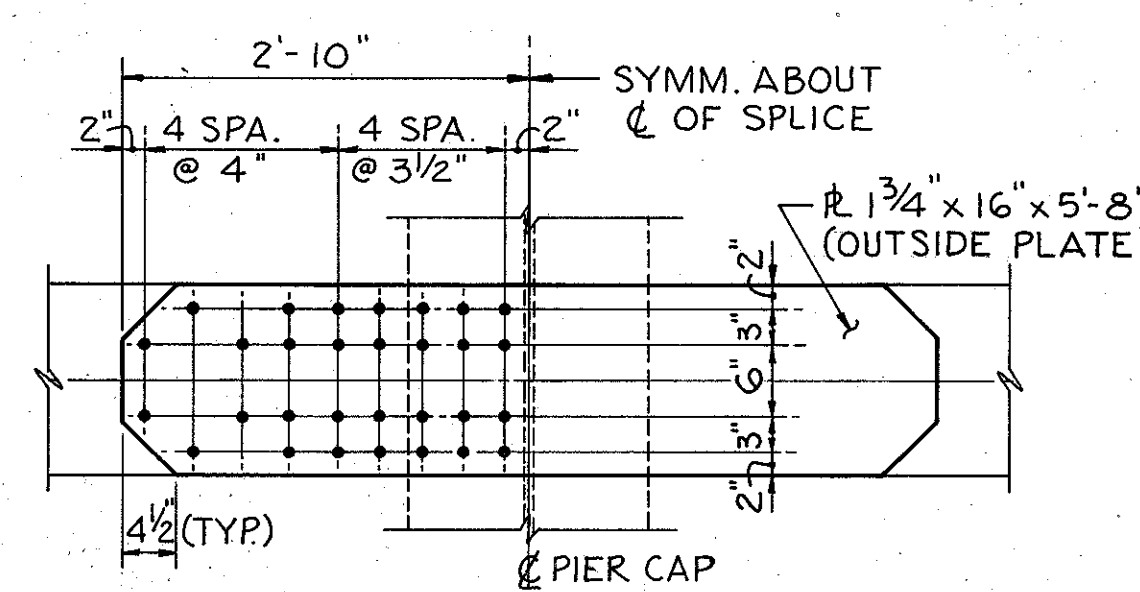
**WEB SPLICE DETAIL**

NOTE: USE 3/4" H.S. BOLTS (A-490).



**TOP FLANGE SPLICE**

NOTE: USE 1/8" H.S. BOLTS (A-490).



**BOTTOM FLANGE SPLICE**

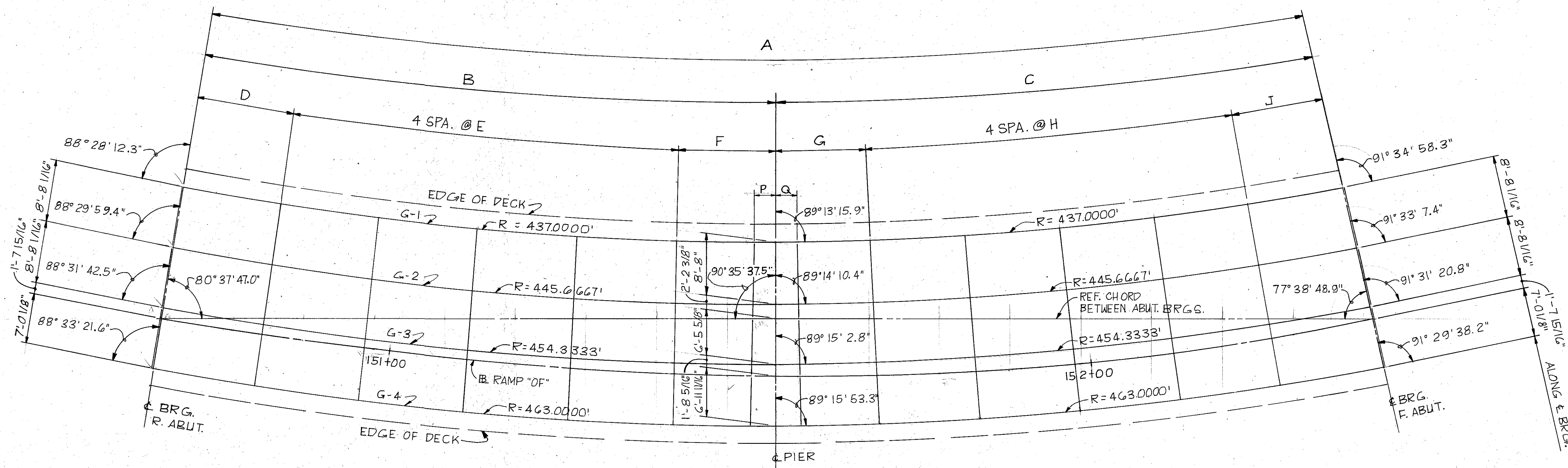
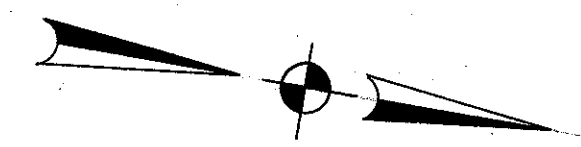
NOTE: USE 1/8" H.S. BOLTS (A-490).

JOHN E. FOSTER AND ASSOCIATES, INC. 13/22  
555 Buttles Ave., Columbus, Ohio 43215

**BEARING & SPLICE DETAILS**

BRIDGE NO. FRA.-315-0197  
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DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DFS	TH		HSS			



**FRAMING PLAN**

**NOTES:**

1. ANGLES ARE MEASURED AT TANGENT TO GIRDER AT & BRG.
2. & OF BEARINGS ARE RADIAL TO BASE LINE OF RAMP "OF".
3. SLAB OFFSETS ARE MEASURED AT GIRDER TENTH POINTS.

**TABLE OF GIRDER DIMENSIONS**

GIRDERS	DIMENSION										
	A	B	C	D	E	F	G	H	J	P	Q
G-1	165'-3 3/8"	84'-6 9/16"	80'-8 13/16"	14'-11 1/16"	14'-11 1/16"	14'-11 1/16"	13'-5 7/16"	13'-5 7/8"	13'-5 7/16"	3'-0"	3'-0"
G-2	168'-6 3/4"	85'-10 1/2"	82'-8 1/4"	14'-15 5/8"	14'-4 7/8"	14'-3"	13'-10 1/16"	13'-8 5/8"	13'-11 1/2"	3'-2"	3'-2"
G-3	171'-10 1/4"	87'-2 7/16"	84'-7 13/16"	14'-2 1/4"	14'-7 13/16"	14'-4 15/16"	14'-2 11/16"	13'-11 7/8"	14'-5 5/8"	3'-4"	3'-4"
G-4	175'-11 1/16"	88'-6 3/8"	86'-7 5/16"	14'-2 13/16"	14'-11 1/8"	14'-6 15/16"	14'-7 5/16"	14'-3 1/8"	14'-11 1/16"	3'-6"	3'-6"

**SLAB OFFSETS**

GIRDER	REAR ABUT.	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	PIER	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	FWD. ABUT.
G-1	2'-6"	2'-8 5/16"	2'-7 1/2"	2'-10 3/16"	2'-11 1/8"	2'-10 15/16"	2'-10 3/8"	2'-9 1/2"	2'-8 5/16"	2'-7"	2'-5 5/8"	2'-4 3/8"	2'-3 1/8"	2'-2 1/8"	2'-15 1/16"	2'-0 13/16"	2'-0 3/4"	2'-1 3/16"	2'-2 1/8"	2'-3 1/16"	2'-6"
G-4	2'-5 7/8"	2'-3 5/8"	2'-2 1/16"	2'-1 3/16"	2'-0 7/8"	2'-1 1/16"	2'-1 5/8"	2'-2 3/16"	2'-3 1/16"	2'-4 15/16"	2'-6 5/16"	2'-7 5/8"	2'-8 7/8"	2'-9 7/8"	2'-10 1/16"	2'-11 3/16"	2'-11 1/4"	2'-10 13/16"	2'-9 13/16"	2'-8 3/16"	2'-5 7/8"

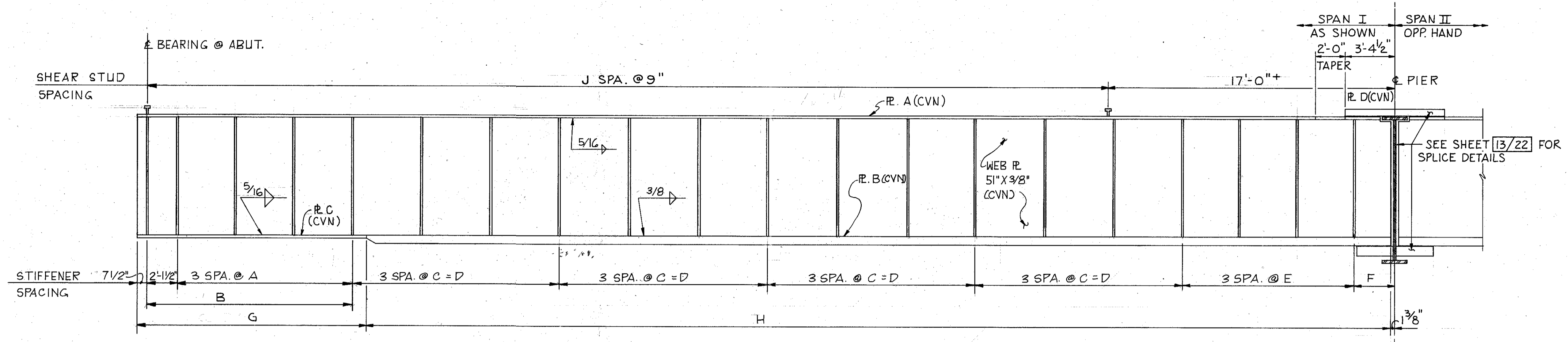
JOHN E. FOSTER AND ASSOCIATES, INC. 1/14/22  
555 Buttles Ave., Columbus, Ohio 43215

**FRAMING PLAN & DETAILS**

BRIDGE NO. FRA.-315-0197  
RAMP "OF" OVER ROAD "OD" & "OE".

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CEM	TH		DFS			





**GIRDER ELEVATION - GIRDERS G-1 THRU G-4**

TABLE OF GIRDER DIMENSIONS									
GIRDER	SPAN-1 DIMENSIONS								
	A	B	C	D	E	F	G	H	J
G-1	3'-11 7/8"	14'-1 1/8"	4'-8 3/8"	14'-1 1/8"	3'-8 5/16"	3'-0"	15'-7 1/2"	69'-5 3/4"	90
G-2	4'-0 1/16"	14'-1 1/16"	4'-9 1/2"	14'-4 7/16"	3'-8 5/16"	3'-2"	15'-11 1/16"	70'-6 1/8"	91
G-3	4'-0 1/4"	14'-2 1/4"	4'-10 5/8"	14'-7 3/16"	3'-8 3/16"	3'-4"	16'-2 5/8"	71'-6 1/2"	93
G-4	4'-0 7/16"	14'-2 3/16"	4'-11 3/4"	14'-11 1/8"	3'-8 3/16"	3'-6"	16'-6 3/16"	72'-6 7/8"	95

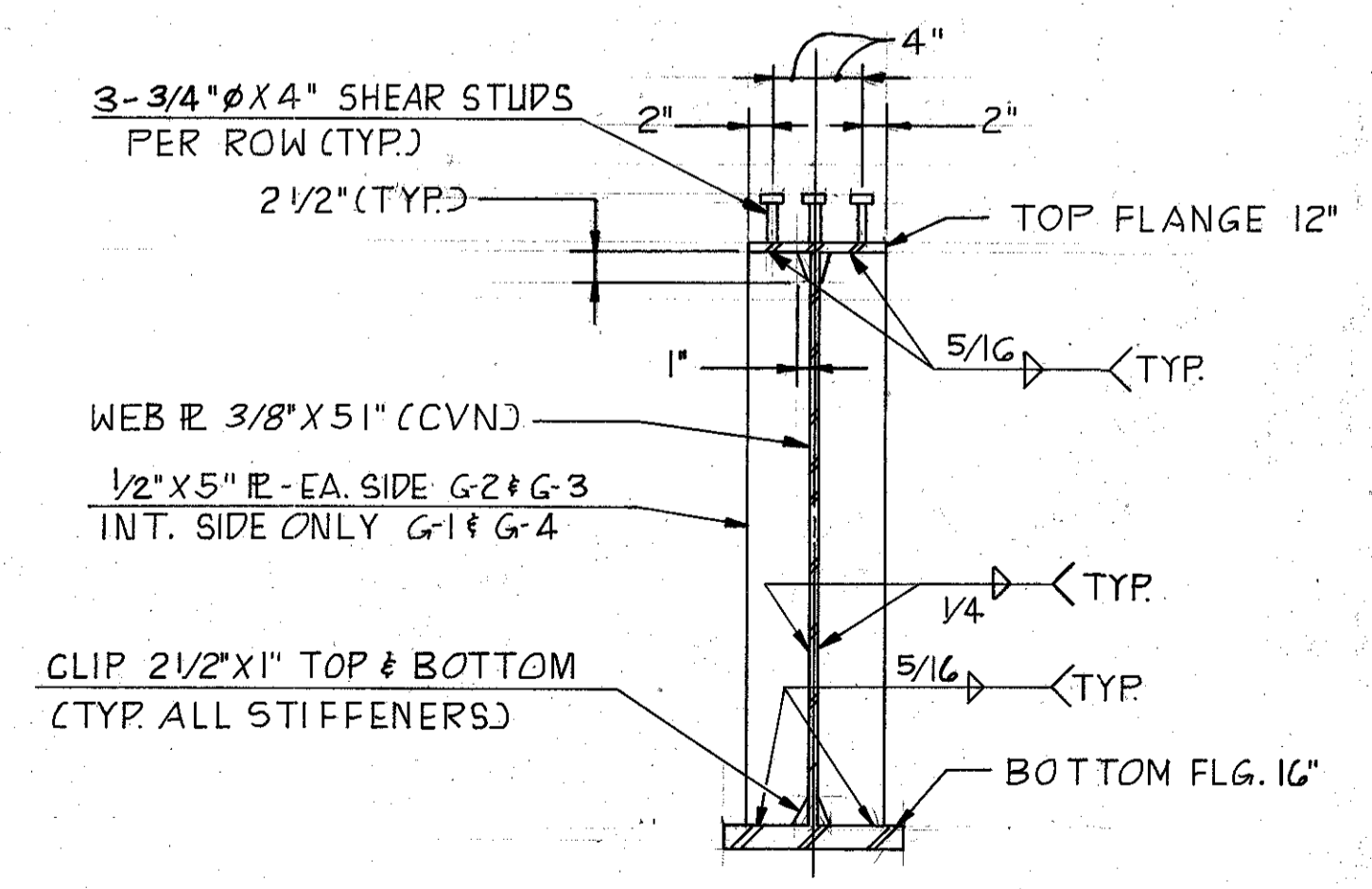
  

GIRDER	SPAN-2 DIMENSIONS								
	A	B	C	D	E	F	G	H	J
G-1	3'-9 5/16"	13'-5 7/16"	4'-5 13/16"	13'-5 7/16"	3'-5 3/16"	3'-0"	15'-0 1/2"	66'-1"	84
G-2	3'-11 3/8"	13'-11 9/16"	4'-6 7/8"	13'-8 11/16"	3'-6 1/16"	3'-2"	15'-5"	67'-10"	87
G-3	4'-1 3/8"	14'-5 5/8"	4'-7 5/16"	13'-11 7/8"	3'-7 9/16"	3'-4"	15'-8 3/8"	69'-6 1/8"	90
G-4	4'-3 3/8"	14'-11 1/16"	4'-9"	14'-3 1/16"	3'-8 7/16"	3'-6"	15'-11 7/8"	71'-2 1/8"	92

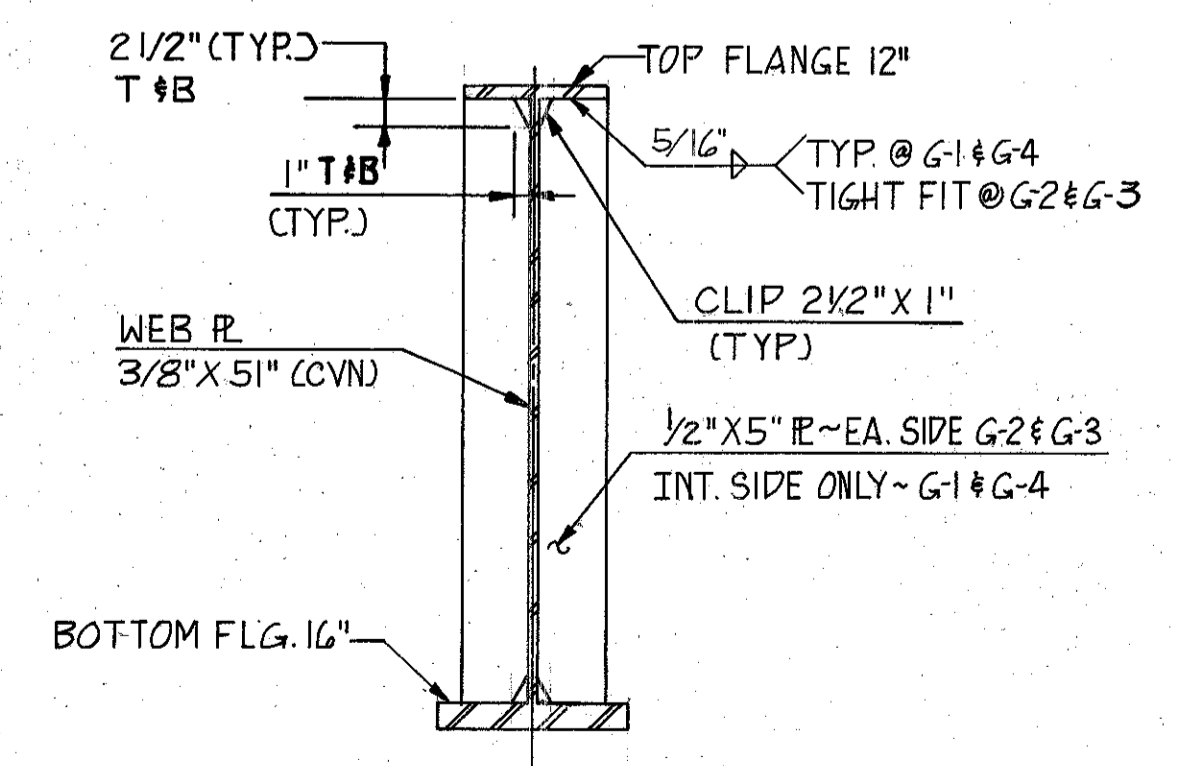
	FLANGE PLATE TABLE(CVN)			
	PLATE-A	PLATE-B	PLATE-C	PLATE-D
SPAN 1	12" X 1 3/8"	16" X 1 3/4"	16" X 1"	16" X 1 3/8"
SPAN 2	12" X 1 3/8"	16" X 1 3/4"	16" X 1"	16" X 1 3/8"

**NOTES**

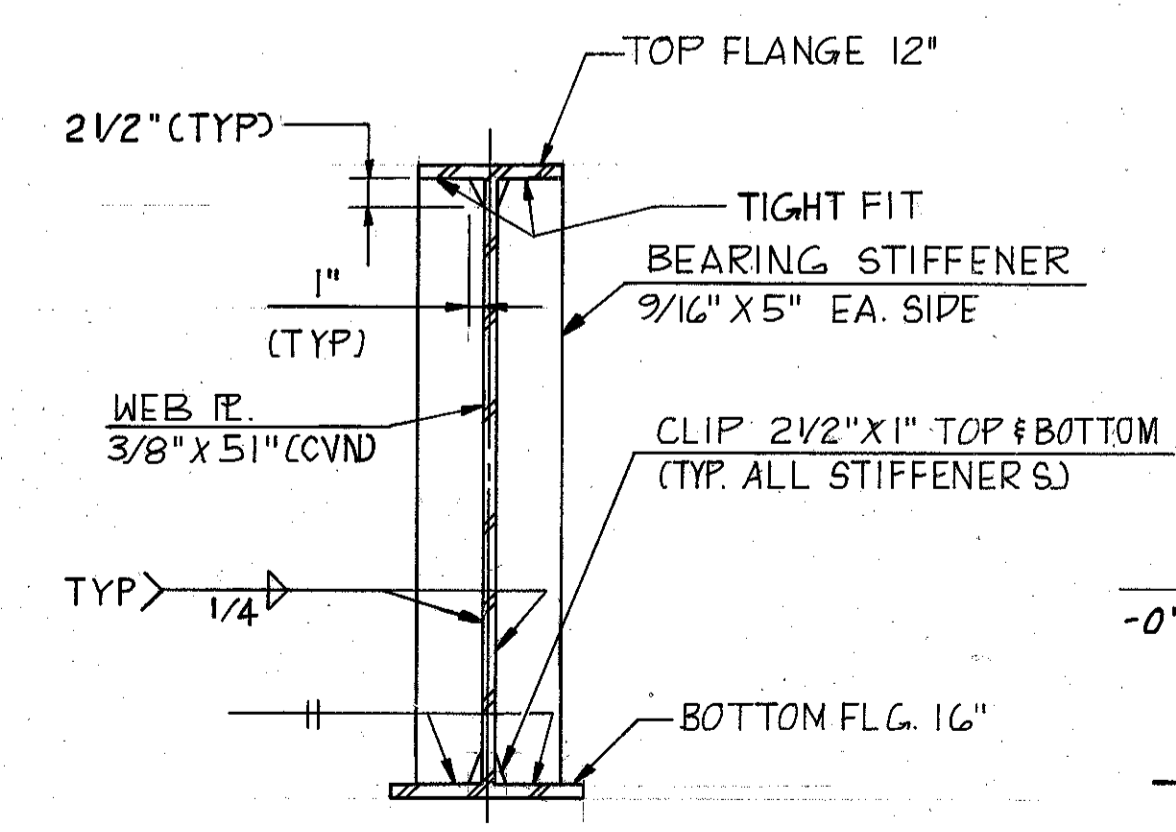
- A572 STEEL IS TO BE PAINTED. SEE CMS 514.04 FOR PAINTING REQUIREMENTS.
- ERECTION BOLTS: HOLE DIAMETER IN THE CROSSFRAMES AND GIRDER STIFFENERS SHALL BE RESPECTIVELY 1/16" AND 1/4" LARGER THAN THE DIAMETER OF THE ERECTION BOLTS, UNLESS REPLACED BY PERMANENT HIGH STRENGTH BOLTS. ERECTION BOLTS SHALL REMAIN IN PLACE. LOCK WASHERS SHALL BE FURNISHED FOR OTHER THAN FULLY TORQUED HIGH STRENGTH ERECTION BOLTS. BOLTS SHALL BE FURNISHED AS PART OF 513. IN LIEU OF ERECTION BOLTS AND AT THE OPTION OF THE CONTRACTOR, ALTERNATIVE MEANS OF TEMPORARY BRACING MAY BE USED SUBJECT TO THE APPROVAL OF THE DIRECTOR (501.067).
- WELDED ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE MAY BE MADE TO AREAS OF THE FASCIA STRINGER TOP COMPRESSION FLANGE, ATTACHMENTS SHALL NOT BE MADE TO BOTTOM TENSION FLANGE. FILLET WELDS TO COMPRESSION FLANGES SHALL BE NOT CLOSER THAN 1" FROM EDGE OF FLANGE, BE NOT MORE THAN 2" LONG, AND BE NOT SMALLER THAN THE MINIMUM SIZE REQUIRED BY AASHTO.
- FOR INTERMEDIATE CROSSFRAME DETAILS, SEE SHEET 16/22.
- PROVIDE TIGHT FIT FOR BEARING STIFFENERS AT COMPRESSION FLANGE.
- SHAPES OR PLATES DESIGNATED (CVN) SHALL MEET SPECIFIED MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01 OF LATEST EDITION OF OHIO D.O.T. CONSTRUCTION AND MATERIALS SPECIFICATIONS.



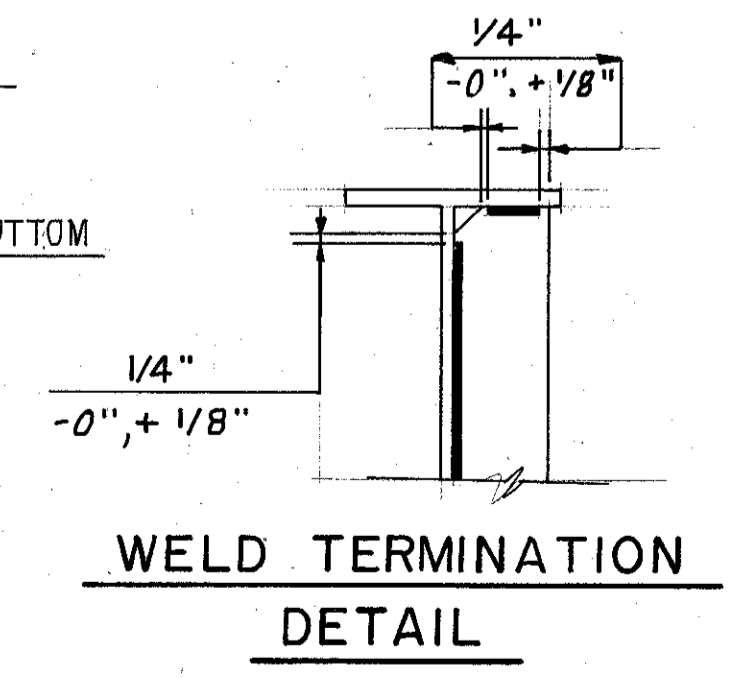
**STIFFENER AT CROSS FRAMES**



**INTERMEDIATE STIFFENER DETAIL**



**BEARING STIFFENER DETAIL**



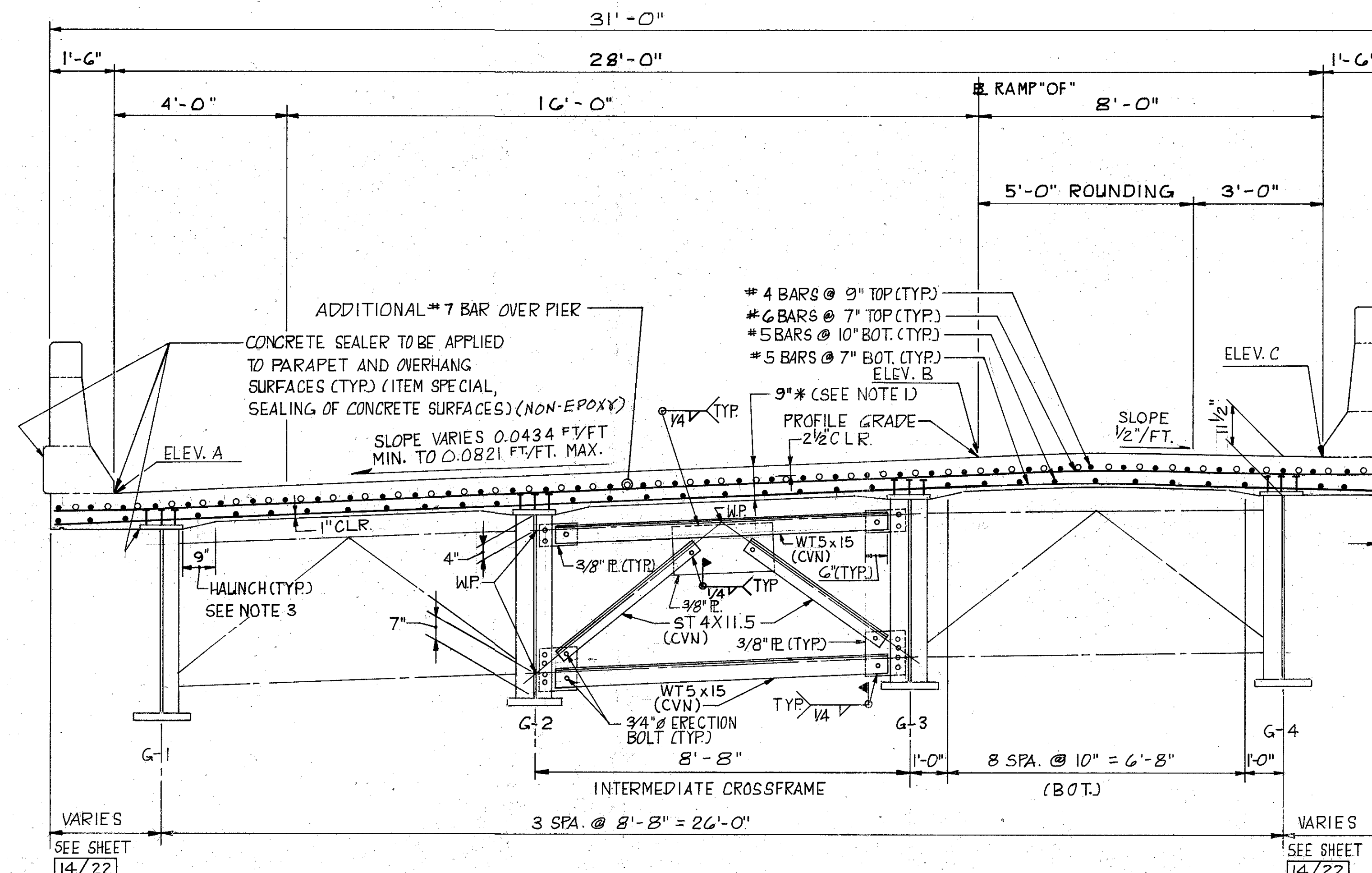
**WELD TERMINATION DETAIL**

JOHN E. FOSTER AND ASSOCIATES, INC. 15/22  
 555 Buttles Ave., Columbus, Ohio 43215

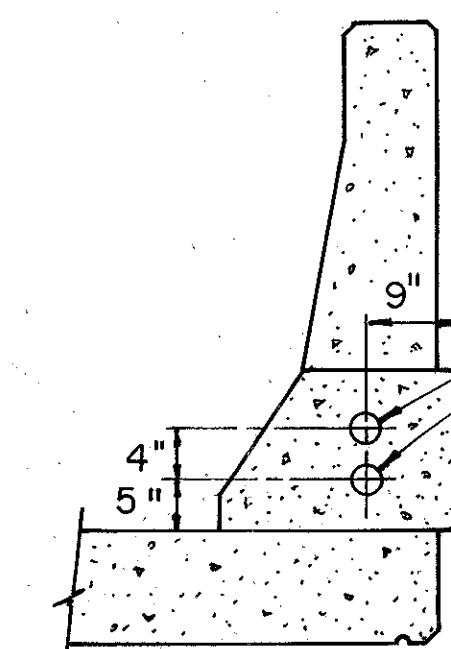
**GIRDER ELEVATION & DETAILS**  
 BRIDGE NO. FRA-315-0197  
 RAMP "OF" OVER ROAD "OD" & "OE"

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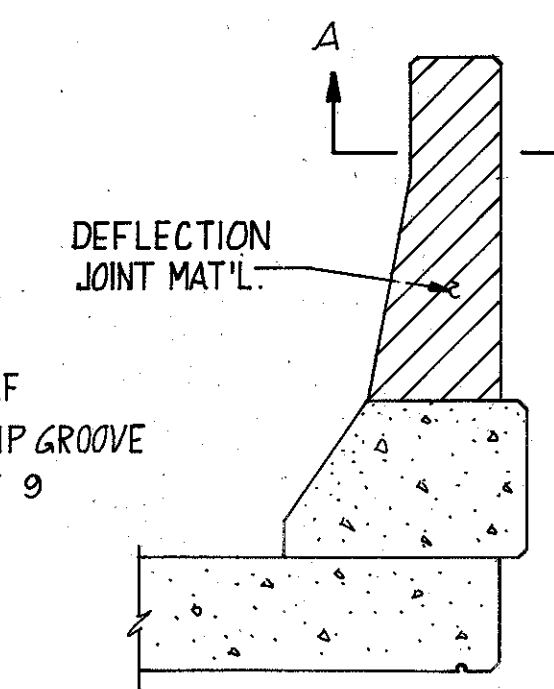
FRANKLIN COUNTY  
FRA-670-1.25-C-2



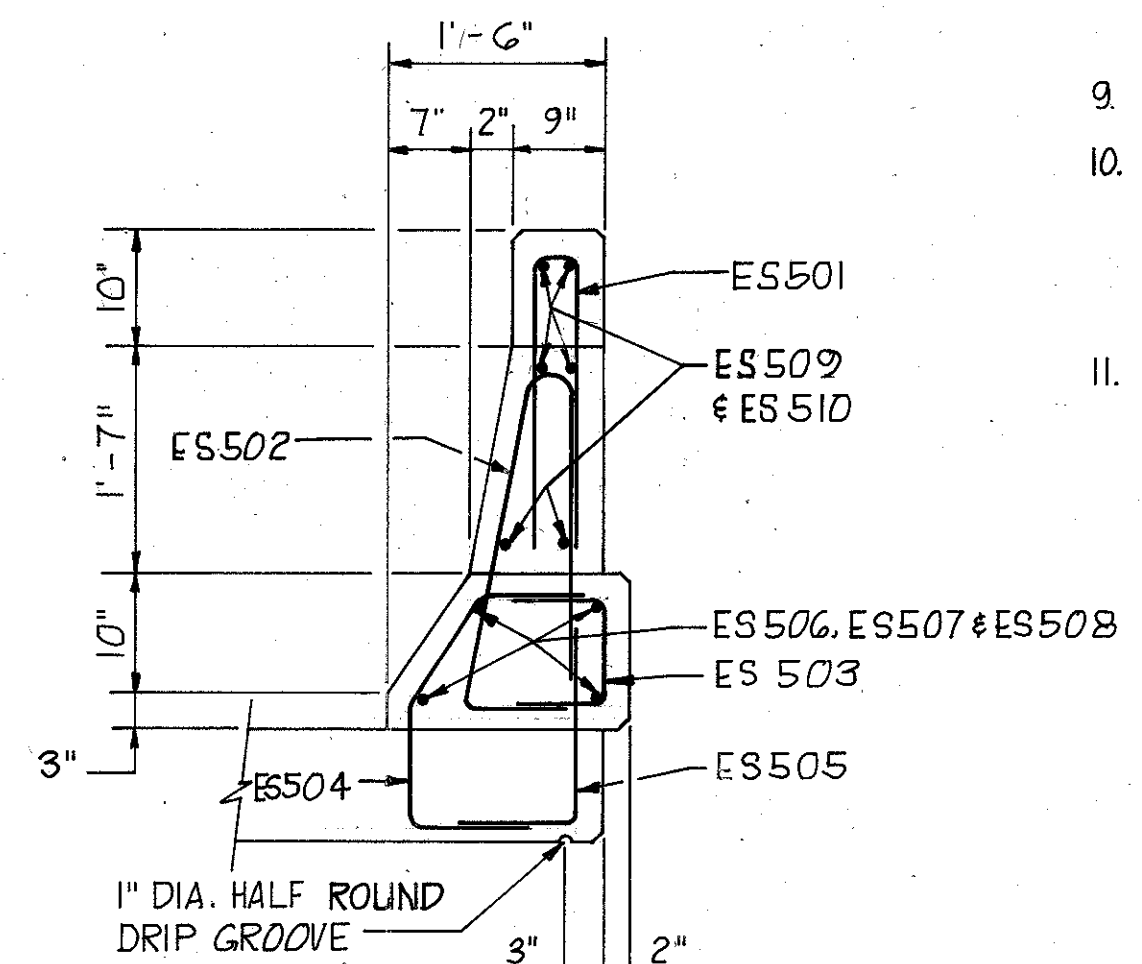
TYPICAL CROSS SECTION



PARAPET DETAIL FOR TRAFFIC SURVEILLANCE CONDUIT FOR DIMENSIONS NOT SHOWN, SEE DETAIL BELOW



SECTION A-A

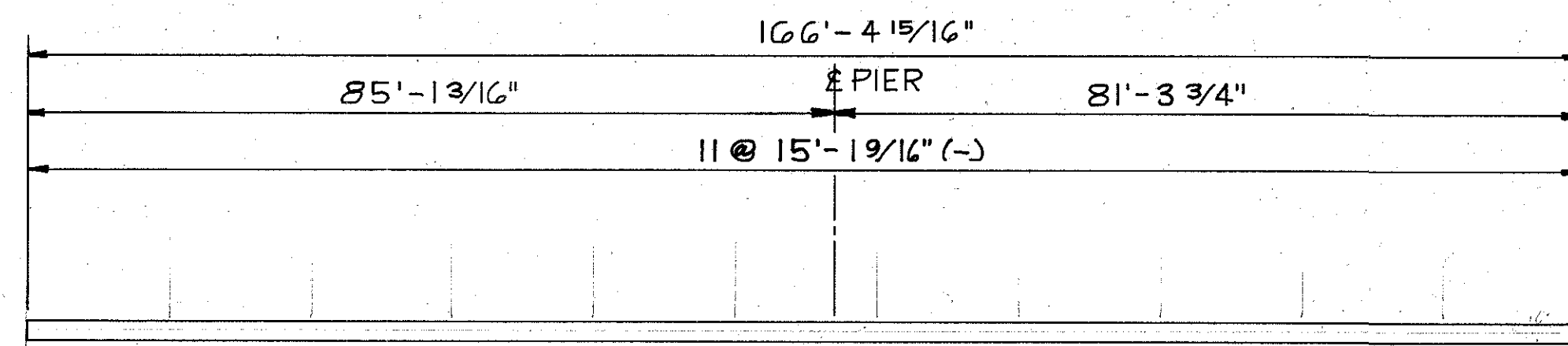


PARAPET DETAIL

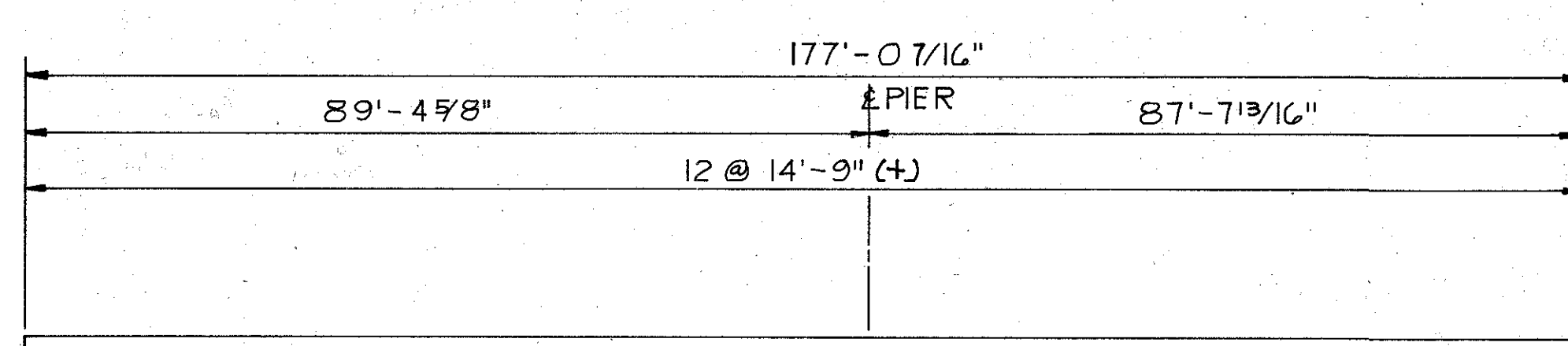
2-3" Surveillance Conduits. Cost to be included in the Unit Price Bid for Item 625-3" Conduit, 713.04 and included in the Traffic Surveillance General Summary

NOTES

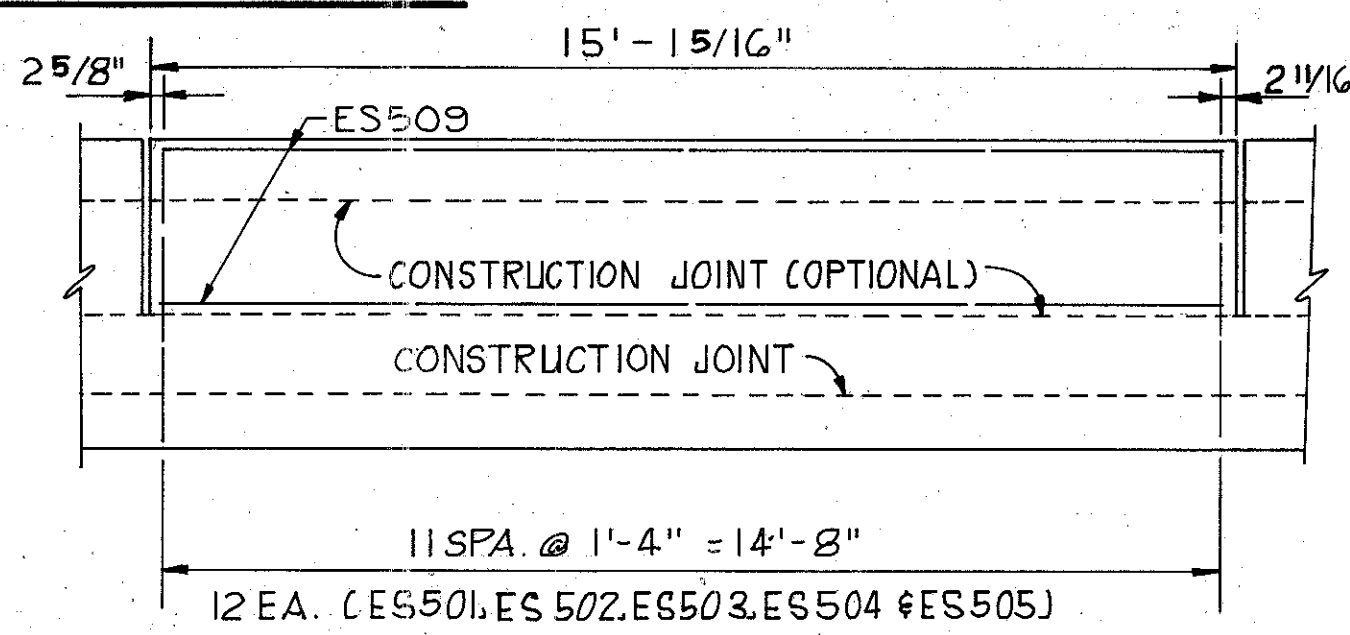
1. DECK SLAB DEPTH: \* THIS IS THE DESIGN DIMENSION. THE QUANTITY OF DECK CONCRETE TO BE PAID FOR SHALL BE BASED UPON THIS DIMENSION, EVEN THOUGH DEVIATION FROM IT MAY BE NECESSARY BECAUSE THE TOP FLANGE OF THE GIRDER MAY NOT HAVE THE EXACT CAMBER OR CONFORMATION REQUIRED TO PLACE IT PARALLEL TO THE FINISHED GRADE. DEDUCTION SHALL BE MADE FOR VOLUME OF ENCASED STEEL PLATES AS PER 511.18.
2. CONCRETE PARAPETS ABOVE UPPER CONSTRUCTION JOINT SHALL BE PLACED IN ALTERNATING SECTIONS BY THE USE OF BULKHEADS. CLOSING SECTIONS SHALL BE PLACED AFTER REMOVAL OF BULKHEADS AND AFTER PLACEMENT OF EXPANSION JOINT FILLER. EXPOSED EDGES OF THE FILLER SHALL BE FLUSH WITH THE SURFACE OF CONCRETE AND SHALL BE FREE OF MORTAR.
3. A TYPICAL HAUNCH WIDTH OF 9" SHALL BE USED FOR COMPUTING THE QUANTITY OF CONCRETE. HOWEVER, THE HAUNCH WIDTH MAY VARY BETWEEN 6" AND 12" PROVIDED THAT THE SLOPE SHALL NOT BE MORE THAN 1:4 FOR A HAUNCH LESS 9" IN WIDTH.
4. FOR ALL INTERMEDIATE CROSSFRAMES, BOLTS SHALL BE DRAWN UP AS TIGHT AS POSSIBLE WITHOUT BEING TIGHT ENOUGH TO PREVENT RELATIVE VERTICAL MOVEMENT OF GIRDERS DURING PLACEMENT OF THE CONCRETE FOR THE SUPERSTRUCTURE SLAB. THESE CONNECTIONS SHALL NOT BE WELDED UNTIL AFTER THE CONCRETE SLAB HAS BEEN PLACED.
5. CONCRETE FOR PARAPETS SHALL NOT BE PLACED UNTIL ALL CROSSFRAME AND BRACING MEMBERS HAVE BEEN PERMANENTLY FASTENED BY WELDING AND BOLTING AS SHOWN.
6. AT HIS OPTION, THE CONTRACTOR MAY PROPOSE A DIFFERENT MANNER OR SEQUENCE OF ERECTION, SUBJECT TO THE WRITTEN APPROVAL OF THE DIRECTOR.
7. THE PREFORMED EXPANSION JOINT FILLER IN THE RAILING, PARAPET DEFLECTION JOINTS MAY BE EITHER 1/4" GRAY SPONGE RUBBER OR 1/4" GRAY CELLULAR POLYVINYL CHLORIDE (PVC) SPONGE. IF RUBBER IS USED, IT SHALL MEET THE REQUIREMENTS OF AASHTO M-153, TYPE I. IF PVC IS USED, THE DENSITY OF PVC SPONGE SHALL NOT BE LESS THAN 20 LBS. PER CUBIC FOOT. THE DEFLECTION JOINT SHALL EXTEND FROM TOP OF PARAPET TO FIRST CONSTRUCTION JOINT AND SHALL BE INCLUDED FOR PAYMENT WITH SUPERSTRUCTURE CONCRETE.
8. ALL SLAB AND PARAPET STEEL REINFORCING BARS SHALL BE EPOXY COATED. THESE BARS ARE PREFIXED E.
9. DRIP GROOVES SHALL TERMINATE 2'-0" FROM FACES OF ABUTMENTS.
10. FIELD BEND TRANSVERSE BARS TO FIT CROWN. BENDING TO BE INCLUDED IN ITEM 509 FOR PAYMENT. EPOXY COATED BARS DAMAGED BY FIELD BENDING SHALL BE REPAIRED AS PER APPROVED MANUFACTURER'S RECOMMENDATIONS.
11. "S" BARS = SUPERSTRUCTURE REINFORCING.



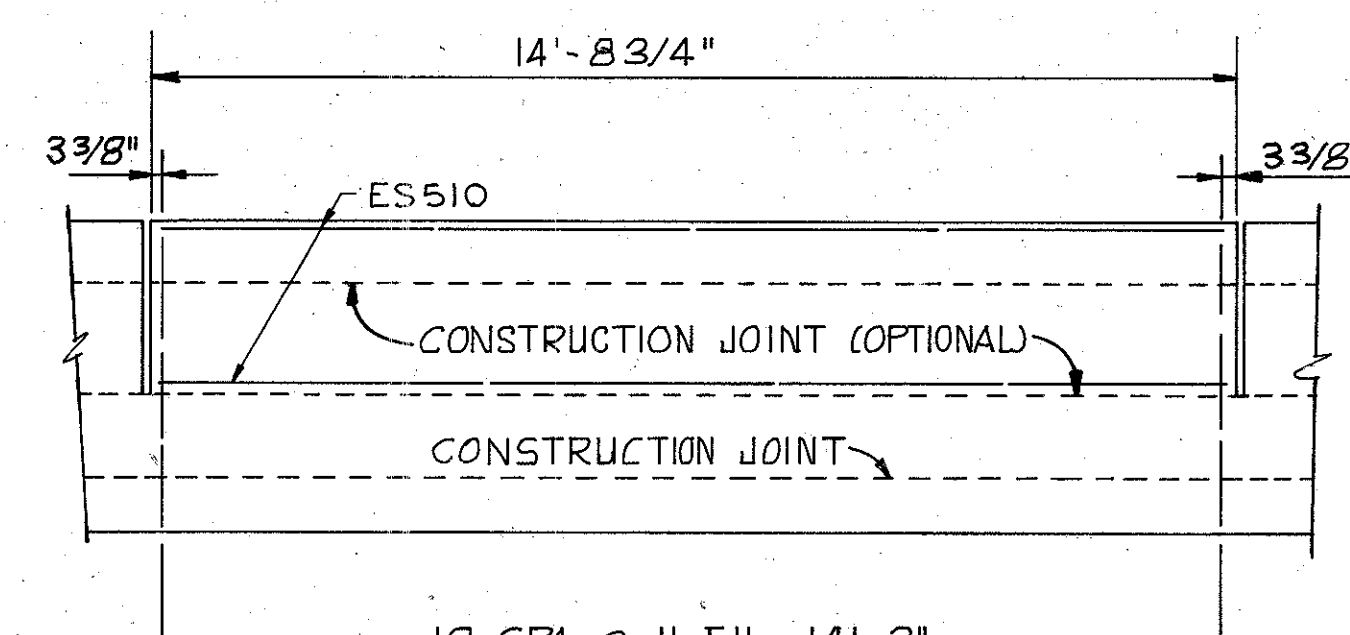
DEVELOPED WEST PARAPET ELEVATION



DEVELOPED EAST PARAPET ELEVATION



15'-19 1/16" c/c PANEL

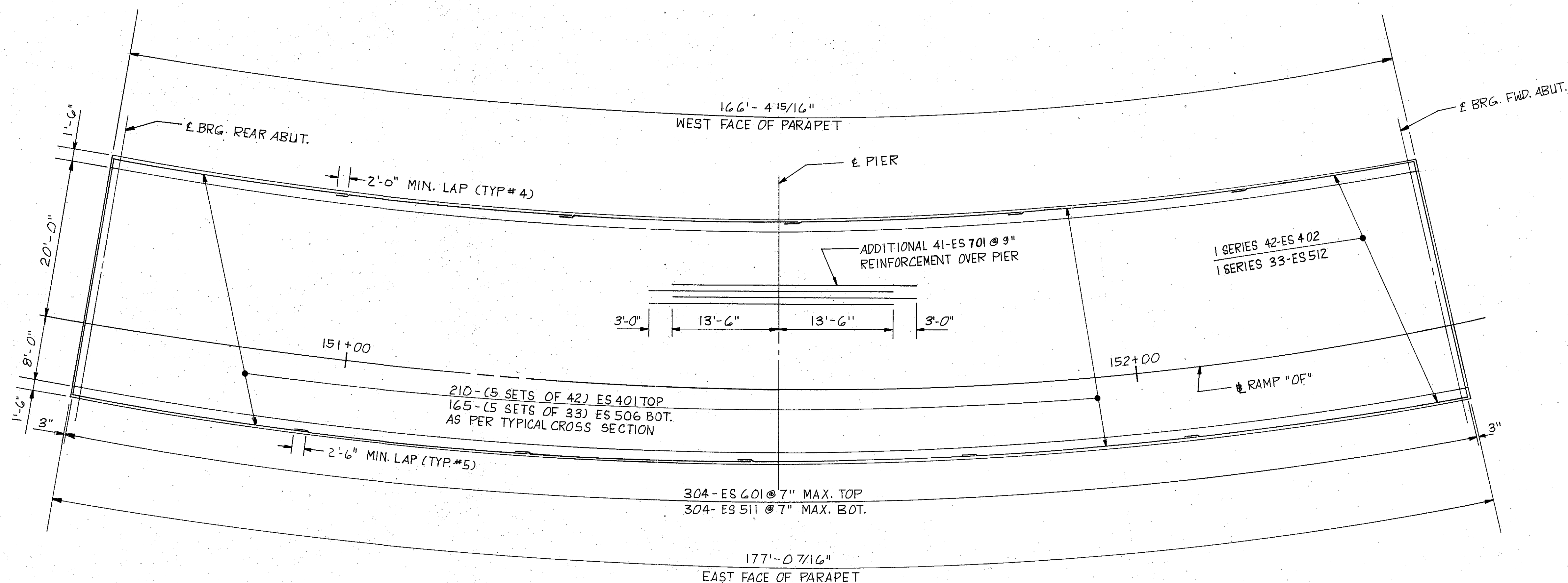
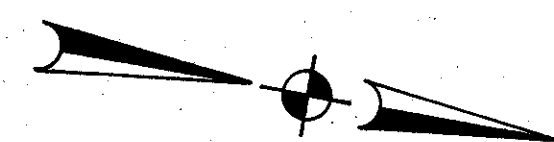


14'-9" c/c PANEL

JOHN E. FOSTER AND ASSOCIATES, INC. 1/6/22  
555 Buttles Ave., Columbus, Ohio 43215

TYPICAL DECK SECTION AND PARAPET DETAILS  
BRIDGE NO. FRA.-315-0197  
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**DECK PLAN**

**NOTES:**

1. BARS ES 511 AND ES 601 SHALL BE PLACED RADIALLY.

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555 Buttles Ave., Columbus, Ohio 43215

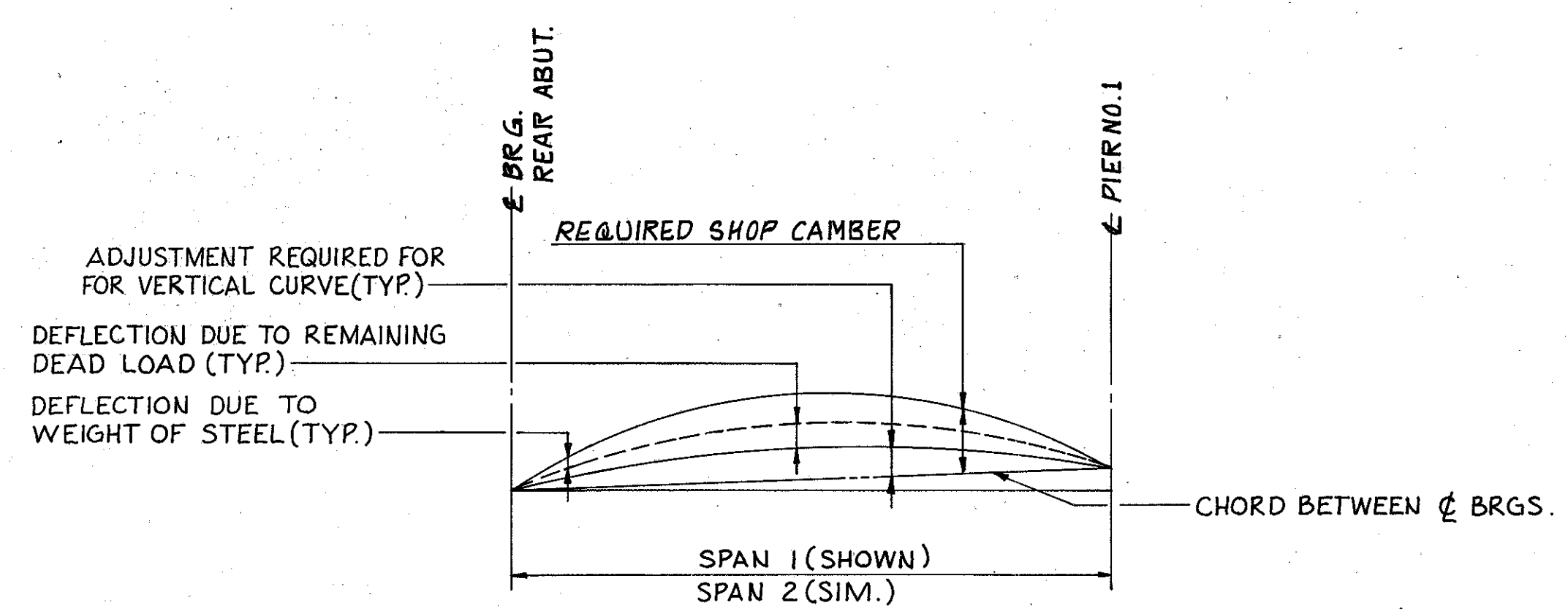
**DECK PLAN**

BRIDGE NO. FRA.-315-0197  
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ELEVATIONS AT TOP OF FINAL PAVEMENT ALONG CENTERLINE OF GIRDERS																					
SPAN - 1											SPAN - 2										
POINT ON SPAN	¢ BRG. R. ABUT.	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	¢ BRG. PIER 1	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	¢ BRG. F. ABUT.
GIRDER G-1	736.16	736.53	736.88	737.23	737.56	737.87	738.18	738.47	738.75	739.01	739.27	739.50	739.72	739.93	740.14	740.33	740.52	740.70	740.87	741.03	741.19
GIRDER G-2	736.54	736.92	737.30	737.66	738.00	738.34	738.66	738.96	739.26	739.54	739.81	740.06	740.30	740.53	740.75	740.96	741.16	741.36	741.55	741.73	741.91
GIRDER G-3	736.92	737.32	737.71	738.09	738.45	738.81	739.14	739.46	739.77	740.07	740.36	740.63	740.88	741.13	741.37	741.59	741.81	742.02	742.23	742.43	742.62
GIRDER G-4	736.91	737.31	737.69	738.07	738.44	738.80	739.15	739.49	739.81	740.13	740.44	740.72	741.00	741.27	741.52	741.76	741.99	742.20	742.41	742.60	742.77
DECK SCREED AND BASE LINE ELEVATION																					
ELEVATION A	736.12	736.51	736.89	737.24	737.58	737.90	738.20	738.48	738.74	738.98	739.20	739.47	739.73	739.96	740.18	740.39	740.56	740.73	740.87	741.00	741.11
ELEVATION B	736.99	737.44	737.88	738.29	738.68	739.04	739.37	739.68	739.96	740.22	740.47	740.80	741.11	741.40	741.67	741.92	742.13	742.32	742.48	742.63	742.76
ELEVATION C	736.87	737.34	737.78	738.21	738.61	738.98	739.31	739.62	739.90	740.16	740.40	740.74	741.06	741.37	741.64	741.90	742.11	742.30	742.47	742.61	742.73

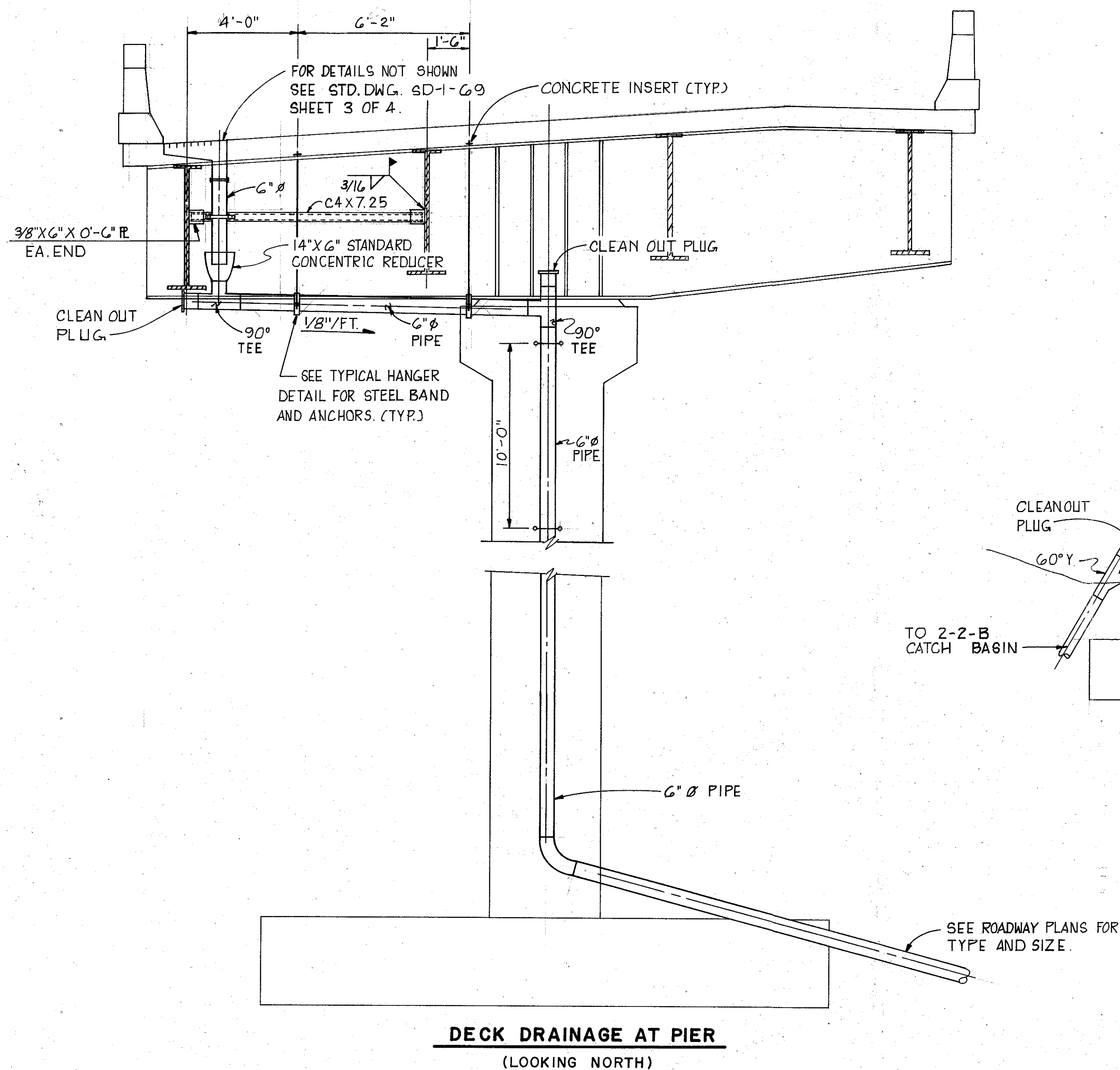
GIRDER DEAD LOAD DEFLECTION AND CAMBER																			
SPAN		1									2								
POINT ON SPAN		1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9
GIRDER 1	DEFLECTION DUE TO WEIGHT OF STEEL ONLY	1/16"	1/16"	1/8"	1/8"	1/8"	1/16"	1/16"	1/16"	0"	0"	0"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"
	DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	7/16"	1/2"	9/16"	3/4"	1/2"	3/8"	3/8"	1/16"	1/16"	1/8"	1/4"	5/16"	7/16"	7/16"	3/8"	5/16"	3/16"
	TOTAL DEFLECTION	1/4"	1/2"	5/8"	11/16"	11/16"	9/16"	7/16"	1/4"	1/16"	1/16"	1/8"	5/16"	3/8"	1/2"	1/2"	7/16"	3/8"	3/16"
	CAMBER AFTER COMPENSATING FOR LOSS DUE TO HEAT	1/4"	1/2"	5/8"	11/16"	11/16"	9/16"	7/16"	1/4"	1/16"	1/16"	1/8"	5/16"	3/8"	1/2"	1/2"	7/16"	3/8"	3/16"
	ADJUSTMENT REQUIRED FOR VERTICAL CURVE	1/16"	3/16"	5/8"	7/8"	7/8"	7/8"	5/8"	1/4"	5/8"	7/16"	13/16"	1"	1/4"	3/16"	3/16"	1/16"	3/4"	3/8"
	REQUIRED SHOP CAMBER	15/16"	1 1/16"	2 1/4"	2 3/16"	2 3/16"	2 1/16"	2 1/16"	1 1/2"	1 1/16"	1/2"	15/16"	1 5/16"	1 5/8"	1 1/16"	1 1/16"	1 1/2"	1 1/8"	9/16"
GIRDER 2	DEFLECTION DUE TO WEIGHT OF STEEL ONLY	1/16"	1/16"	1/8"	1/8"	1/8"	1/16"	1/16"	1/16"	0"	0"	0"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"	1/16"
	DEFLECTION DUE TO REMAINING DEAD LOAD	1/4"	9/16"	11/16"	3/4"	3/4"	5/8"	1/2"	1/4"	1/8"	1/16"	3/16"	5/16"	1/2"	5/8"	5/8"	9/16"	7/16"	3/16"
	TOTAL DEFLECTION	5/16"	5/8"	13/16"	7/8"	7/8"	3/4"	9/16"	5/16"	1/8"	1/16"	3/16"	3/8"	9/16"	11/16"	11/16"	5/8"	1/2"	1/4"
	CAMBER AFTER COMPENSATING FOR LOSS DUE TO HEAT	5/16"	5/8"	13/16"	7/8"	7/8"	3/4"	9/16"	5/16"	1/8"	1/16"	3/16"	3/8"	9/16"	11/16"	11/16"	5/8"	1/2"	1/4"
	ADJUSTMENT REQUIRED FOR VERTICAL CURVE	5/8"	1 1/4"	1 1/16"	1 3/16"	2"	1 7/8"	1 9/16"	1 1/4"	1 1/16"	1/2"	13/16"	1 1/16"	3/16"	3/16"	1 1/16"	1 5/16"	3/4"	3/8"
	REQUIRED SHOP CAMBER	15/16"	1 7/8"	2 1/2"	2 1/16"	2 3/8"	2 1/8"	1 9/16"	1 3/16"	1 1/16"	9/16"	1"	1 7/16"	1 3/4"	1 7/8"	1 3/4"	1 9/16"	1 1/4"	5/8"
GIRDER 3	DEFLECTION DUE TO WEIGHT OF STEEL ONLY	1/16"	1/16"	1/8"	1/8"	1/8"	1/16"	1/16"	1/16"	0"	0"	0"	1/16"	1/16"	1/8"	1/8"	1/16"	1/16"	1/16"
	DEFLECTION DUE TO REMAINING DEAD LOAD	5/16"	9/16"	11/16"	13/16"	3/4"	5/8"	1/2"	1/4"	1/8"	1/16"	1/4"	3/8"	9/16"	5/8"	5/8"	5/8"	1/2"	1/4"
	TOTAL DEFLECTION	3/8"	5/8"	13/16"	15/16"	7/8"	3/4"	9/16"	5/16"	1/8"	1/16"	1/4"	7/16"	5/8"	3/4"	3/4"	11/16"	9/16"	5/16"
	CAMBER AFTER COMPENSATING FOR LOSS DUE TO HEAT	3/8"	5/8"	13/16"	15/16"	7/8"	3/4"	9/16"	5/16"	1/8"	1/16"	1/4"	7/16"	5/8"	3/4"	3/4"	11/16"	9/16"	5/16"
	ADJUSTMENT REQUIRED FOR VERTICAL CURVE	1 1/16"	1 1/4"	1 5/8"	1 7/8"	2 1/16"	1 7/8"	1 9/16"	1 3/16"	5/8"	1/2"	13/16"	1 1/8"	1 1/4"	1 3/16"	1 1/8"	1 5/16"	3/4"	7/16"
	REQUIRED SHOP CAMBER	1 1/16"	1 7/8"	2 1/16"	2 13/16"	2 15/16"	2 3/8"	2 1/8"	1 1/2"	3/4"	9/16"	1 1/16"	1 9/16"	1 7/8"	1 15/16"	1 7/8"	1 5/8"	1 9/16"	3/4"
GIRDER 4	DEFLECTION DUE TO WEIGHT OF STEEL ONLY	1/16"	1/16"	1/8"	1/8"	1/8"	1/16"	1/16"	1/16"	0"	0"	0"	1/16"	1/16"	1/8"	1/8"	1/16"	1/16"	1/16"
	DEFLECTION DUE TO REMAINING DEAD LOAD	1/4"	1/2"	5/8"	11/16"	11/16"	9/16"	7/16"	3/16"	1/16"	1/16"	1/4"	5/16"	1/2"	9/16"	9/16"	1/2"	7/16"	3/16"
	TOTAL DEFLECTION	5/16"	9/16"	3/4"	13/16"	13/16"	11/16"	1/2"	1/4"	1/16"	1/16"	1/4"	3/8"	9/16"	11/16"	11/16"	5/8"	1/2"	1/4"
	CAMBER AFTER COMPENSATING FOR LOSS DUE TO HEAT	5/16"	9/16"	3/4"	13/16"	13/16"	11/16"	1/2"	1/4"	1/16"	1/16"	1/4"	3/8"	9/16"	11/16"	11/16"	5/8"	1/2"	1/4"
	ADJUSTMENT REQUIRED FOR VERTICAL CURVE	9/16"	1"	1 5/16"	1 9/16"	1 5/8"	1 9/16"	1 1/4"	1 1/16"	1/2"	9/16"	1"	1 1/16"	1 5/8"	1 3/4"	1 9/16"	1 7/16"	1 1/8"	5/8"
	REQUIRED SHOP CAMBER	7/8"	1 3/16"	2 1/16"	2 3/8"	2 7/16"	2 1/4"	1 15/16"	1 5/16"	9/16"	5/8"	1 1/4"	1 13/16"	2 3/16"	2 1/4"	2 1/16"	2 1/16"	1 5/8"	7/8"



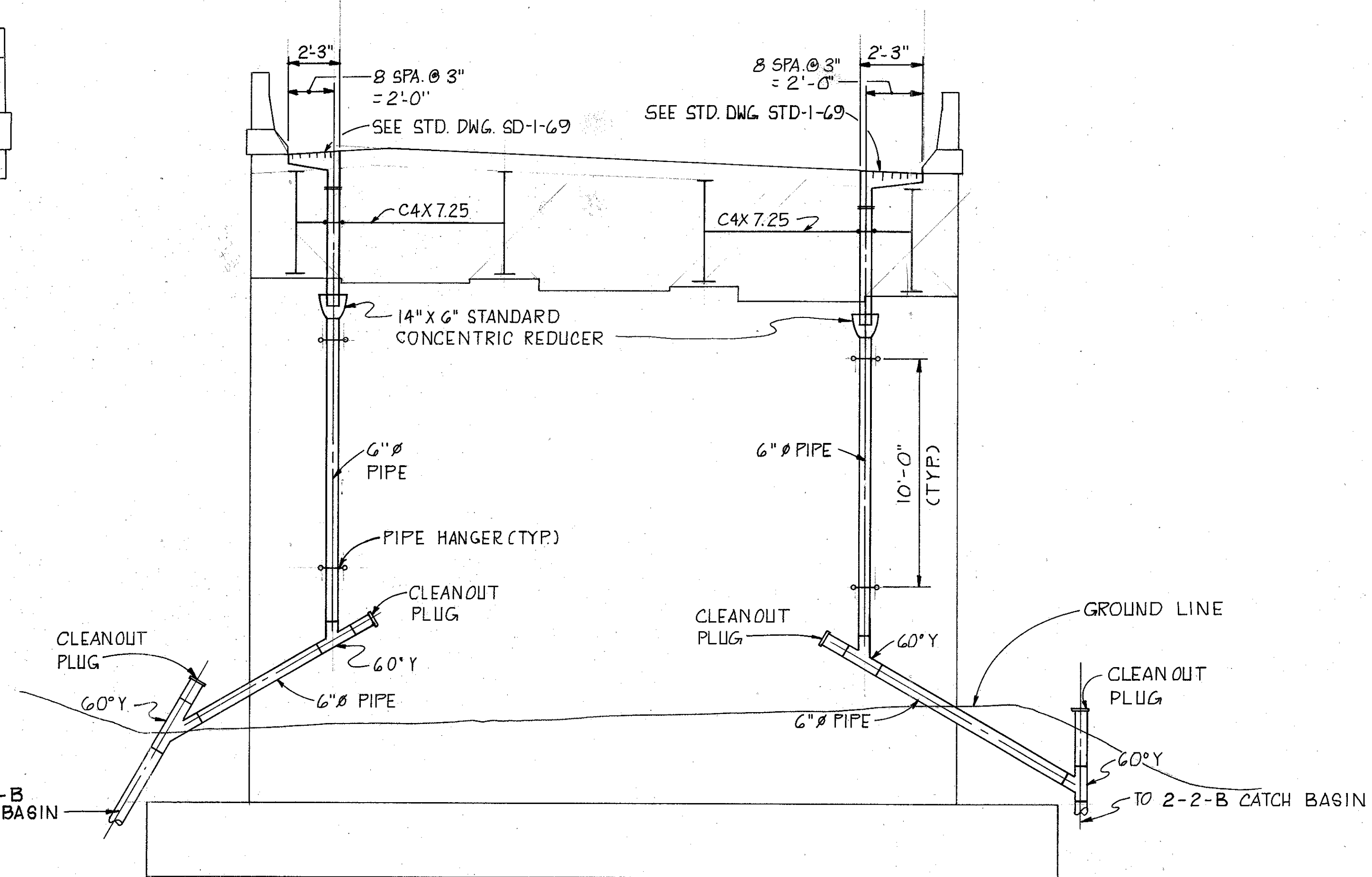
JOHN E. FOSTER AND ASSOCIATES, INC. 1/8/22  
555 Buttles Ave., Columbus, Ohio 43215

**DECK CONTROL ELEVATIONS**  
BRIDGE NO. FRA. - 315-0197  
RAMP "OF" OVER ROAD "OD" & "OE"

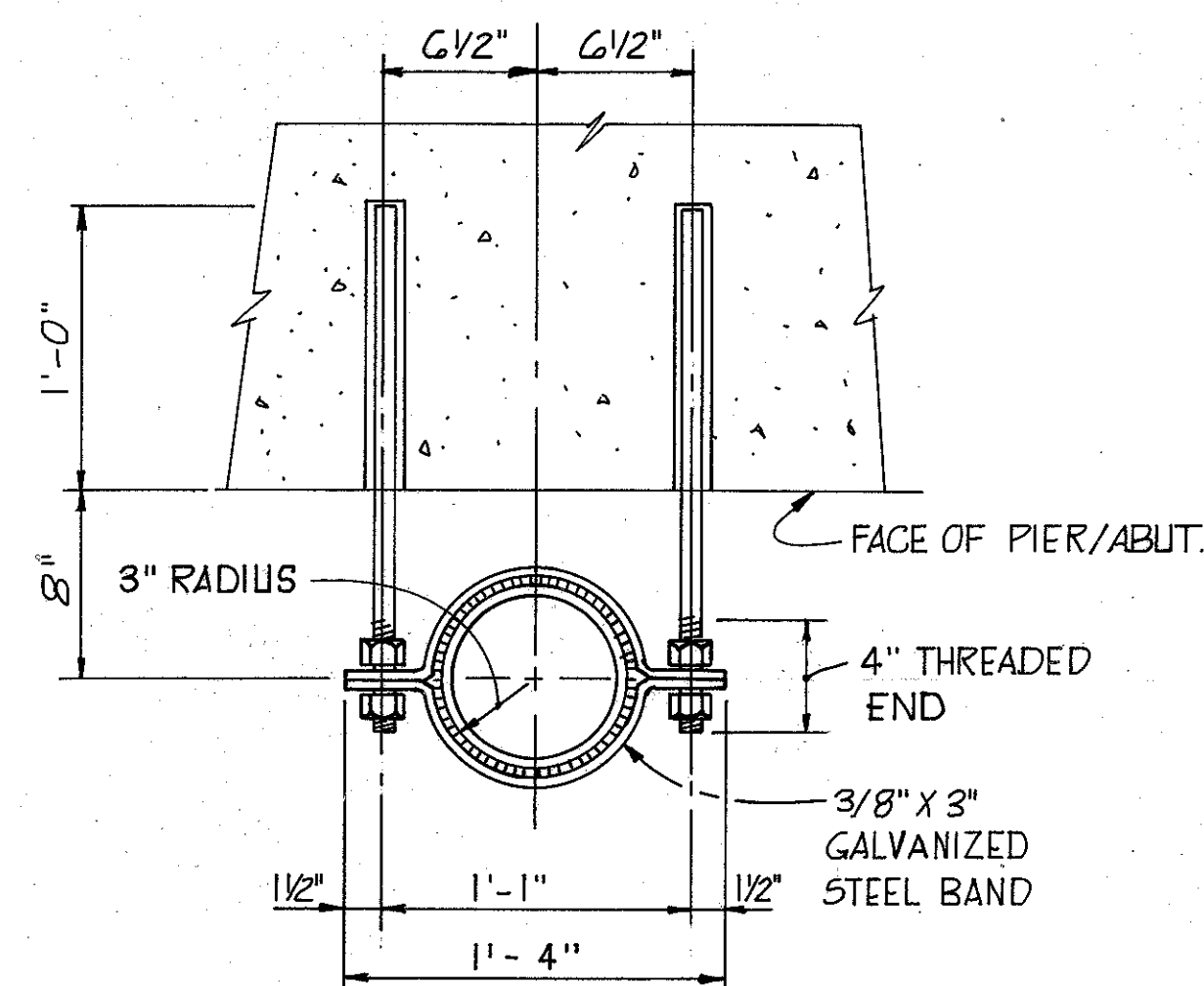
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CEM	TH		DFS			



**NOTE:**  
ALL PIPE SHALL CONFORM TO ITEM 707.08. GALVANIZED STEEL PIPE AND ALL SPECIALS AND SUPPORT STEEL SHALL BE INCLUDED WITH ITEM 518 FOR PAYMENT. SUPPORT STEEL SHALL BE A572 PAINTED.



**DECK DRAINAGE AT REAR ABUTMENT**  
(LOOKING SOUTH)



DRILL 1/2" Ø HOLES IN PIER AND USE EPOXY GROUT (SS 853) AT 1" Ø ANCHORS X 1'-10" LONG

**TYPICAL PIPE HANGER DETAIL**

JOHN E. FOSTER AND ASSOCIATES, INC. 1/9/22  
555 Buttles Ave., Columbus, Ohio 43215

**DRAINAGE DETAILS**

BRIDGE NO. FRA.-315-0197  
RAMP "OF" OVER ROAD "OD" & "OE"

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
ES	TH		CEM			

FRANKLIN COUNTY  
FRA-670-1.25-C-2

REINFORCING STEEL SCHEDULE									
REAR ABUTMENT									
MARK	NO.	LENGTH	TYPE	A	B	C	D	INCR.	WEIGHT
A501	10	30'-8"	STR						320
A502	32	11'-8"	4	7'-9"	0'-11"	3'-3"			304
A503	ISER	12'-0" TO	6	7'-6" TO	4'-6"	135°		A = 0 5/16"	414
	OF 32	12'-9"		8'-4"				LGTH = 0 5/16"	
A504	32	8'-7"	4	4'-0"	3'-5"	1'-5"			286
A505	64	22'-0"	STR						1469
A506	46	6'-4"	3	1'-5 1/2"	5'-0"				304
A507	NOT	USED							
A508	2SER	5'-0" TO	STR					LGTH = 3'-7"	127
	OF 5	19'-4"							
A509	2	19'-6"	STR						41
A510	2	18'-6"	STR						39
A511	ISER	12'-2" TO	12	1'-6"	4'-0" TO	1'-8"		B = 3 5/16"	390
	OF 19	22'-2"		9'-0"				LGTH = 6 1/16"	
A512	-								
A513	6	3'-8"	STR						23
A514	6	2'-8"	STR						
A515	70	A518	-						
A519	34	6'-5"	STR						228
A520	14	10'-0"	STR						146
A521	14	8'-6"	STR						124
A522	70	A526	-						
A527	34	3'-11"	STR						139
EA501	18	4'-5"	2	0'-5"	2'-1"				83
EA502	18	5'-3"	8	0'-7 1/2"	2'-2"				99
EA503	18	3'-0"	STR						56
EA504	10	8'-0"	STR						83
AG01	48	30'-8"	STR						2211
AG02	32	9'-1"	3	1'-6"	7'-9"				437
EA601	18	3'-9"	11	0'-9"	0'-6"	0'-8 1/2"	2'-5"		101
A701	11	39'-8"	STR						892
A702	76	8'-8"	STR						1347
A703	76	6'-2"	3	1'-6"	4'-10"				958
A704	2	7'-6"	STR						31
A705	2	5'-6"	STR						22
A706	36	7'-7"	3	1'-6"	6'-3"				578
A707	28	17'-6"	STR						1002
A708	4	16'-7"	STR						136
A709	4	15'-6"	STR						127
AB01	20	3'-7"	13	1'-0"	2'-7"				191
A901	108	14'-8"	STR						5386
A902	19	39'-8"	STR						2562
A903	5	2'-1"	10	23'-10"					426
A904	5	20'-0"	STR						349
A905	5	9'-6"	14	7'-6"	2'-0"				162
SUBTOTAL EPOXY COATED									21,523

REINFORCING STEEL SCHEDULE									
REAR ABUTMENT-WEST WINGWALL									
MARK	NO.	LENGTH	TYPE	A	B	C	D	INCR.	WEIGHT
EB501	32	4'-5"	2	0'-5"	2'-1"				147
EB502	32	5'-3"	8	0'-7 1/2"	2'-5"	2'-2"			175
EB503	32	3'-0"	STR						100
EB504	18	14'-2"	STR*						266
EB505	10	11'-6"	STR						120
EB506	12	6'-0"	STR						75
EB507	40	3'-7"	11	0'-8"	0'-6"	2'-1"	0'-8 1/2"		149
EB508	8	3'-1"	10	2'-6"					26
EB509	8	7'-6"	STR						63
EB510	-								
THRU									
EB514	-								
EB515	2	16'-4"	STR.*						34
R501	40	11'-6"	STR						480
R502	24	7'-6"	STR						188
R503	9	23'-8"	STR						222
R504	9	21'-2"	STR						199
R505	9	18'-8"	STR						175
R506	7	16'-3"	STR						119
R507	36	15'-2"	STR						569
R508	82	11'-6"	STR						984
R509	26	7'-6"	STR						203
R510 THRU R517, NOT USED AT WEST WALL									
R518	56	14'-2"	STR						827
R601	12	18'-8"	STR						336
R602	20	8'-0"	14	6'-0"	2'-0"				240
R603	8	16'-3"	STR						195
R604	26	11'-6"	STR						449
R605	20	12'-6"	STR						376
R701	5	11'-3"	14	9'-3"	2'-0"				115
R702	19	12'-6"	STR						185
R703	20	15'-6"	STR						634
R704	20	14'-6"	STR						593
R801	8	12'-5"	14	10'-5"	2'-0"				265
R802	19	14'-6"	STR						736
R901	12	15'-0"	STR						612
R902	24	12'-8"	14	10'-8"	2'-0"				1034
R903	12	13'-0"	STR						530
R904	8	10'-2"	14	8'-2"	2'-0"				277
R905	19	15'-6"	STR						1001
R1001	8	14'-11"	14	12'-11"	2'-0"				514
SUBTOTAL EPOXY COATED									13,513

REINFORCING STEEL SCHEDULE									
REAR ABUTMENT-EAST WINGWALL									
MARK	NO.	LENGTH	TYPE	A	B	C	D	INCR.	WEIGHT
EB501	49	4'-5"	2	0'-5"	2'-1"				226
EB502	49	5'-3"	8	0'-7 1/2"	2'-5"	2'-2"			268
EB503	49	3'-0"	STR						153
EB504	20	14'-2"	STR						296
EB505	28	11'-6"	STR*						336
EB506	12	6'-0"	STR						75
EB507	57	3'-7"	11	0'-8"	0'-6"	2'-1"	0'-8 1/2"		213
EB508	8	3'-1"	10	2'-6"					26
EB509	-								
THRU									
EB511	-								
EB512	2	8'-4"	STR.						17
R501	100	11'-6"	STR						1199
R502	-								
R503	-								
R504	-								
R505	-								
R506	-								
R507	78	15'-2"	STR						1234
R508	82	11'-6"	STR						984
R509	-								
R510	-								
R511	9	17'-0"	STR						160
R512	9	19'-9"	STR						185
R513	9	22'-6"	STR						211
R514	9	24'-9"	STR						232
R515	9	27'-4"	STR						257
R516	12	10'-0"	STR						125
R517	36	13'-0"	STR						488
R601	-								
R602	12	8'-0"	14	6'-0"	2'-0"				144
R603	-								
R604	-								
R605	20	12'-6"	STR						376
R606	-								
R607	12	17'-4"	STR						312
R608	20	13'-6"	STR						406
R701	-								
R702	19	12'-6"	STR						185
R703	20	15'-6"	STR						634
R704	20	14'-6"	STR						593
R705	12	13'-0"	STR						319
R706	12	8'-1"	14	6'-1"	2'-0"				198
R707	20	16'-6"	STR						675
R801	8	12'-5"	14	10'-5"	2'-0"				265
R802	19	14'-6"	STR						736
R803	8	13'-5"	14	11'-5"	2'-0"				287
R804	19	13'-6"	STR						685
R901	12	15'-0"	STR						612
R902	24	12'-8"	14	10'-8"	2'-0"				1034
R903	12	13'-0"	STR						530
R904	8	10'-2"	14	8'-2"	2'-0"				277
R905	19	15'-6"	STR						1001
R1001	8	14'-11"	14	12'-11"	2'-0"				514
R1002	8	15'-9"	14	13'-9"	2'-0"				542
R1003	12	18'-0"	STR						929
R1004	12	11'-7"	14	9'-7"	2'-0"				598
R1005	19	16'-6"	STR						1349
SUBTOTAL EPOXY COATED									20,186

JOHN E. FOSTER AND ASSOCIATES, INC. 20/22  
555 Buttles Ave., Columbus, Ohio 43215

**REINFORCING STEEL SCHEDULE**

BRIDGE NO. FRA. - 315-0197  
RAMP "OF" OVER ROAD "OD" & "OE"

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
ES	TH		HSS			

FRANKLIN COUNTY  
FRA-670-1.25-C-

**REINFORCING STEEL SCHEDULE**

**FORWARD ABUTMENT**

MARK	NO.	LENGTH	TYPE	A	B	C	D	INCR.	WEIGHT
A501	10	30'-8"	STR						320
A502	25	11'-8"	4	2'-9"	0'-11"	3'-3"			304
A503	ISER	10'-9" TO	6	6'-3" TO	4'-6"	135°	A =	1/2"	319
	OF 25	13'-9"		9'-3"			LGTH =	1/2"	
A504	8	8'-7"	4	4'-0"	3'-5"	1'-5"			72
A505	-								
A506	46	6'-4"	3	1'-5 1/2"	5'-0"				304
A507	AND	A508	-						
A509	2	16'-4"	STR.						34
A510	2	15'-4"	STR.						32
A511	ISER	12'-2" TO	12	1'-6"	4'-0" TO		B =	4"	286
	OF 16	22'-2"		9'-0"			LGTH =	8"	
A512	5	8'-7"	4	4'-0"	3'-5"	1'-5"			45
A513	AND	A514	-						
A515	7	10'-8"	4	6'-9"	0'-11"	3'-3"			78
A516	ISER	12'-3" TO	6	7'-9" TO	4'-6"	135°	A =	1"	91
	OF 7	12'-9"		8'-3"			LGTH =	1"	
A517	10	8'-7"	4	4'-0"	3'-5"	1'-5"			89
A518	9	8'-7"	4	4'-0"	3'-5"	1'-5"			81
A519	36	6'-5"	STR						241
A520	14	10'-0"	STR						146
A521	14	8'-6"	STR						124
A522	2SER	5'-0" TO	STR				LGTH =	2'-10"	111
	OF 5	16'-4"							
A523	TO								
A526	NOT								
USED									
A527	36	3'-11"	STR						147
A528	2	3'-6"	STR						7
A529	2	12'-3"	STR						26
A530	2	20'-11"	STR						44
A531	64	19'-3"	STR						1285
EA501	18	4'-5"	2	0'-5"	2'-1"				83
EA502	18	5'-3"	8	0'-7 1/2"	2'-5"	2'-2"			99
EA503	18	3'-0"	STR						56
EA504	10	8'-0"	STR						83
A601	40	30'-8"	STR						1842
A602	32	9'-1"	3	1'-6"	7'-9"				637
EA601	18	3'-9"	11	0'-9"	0'-6"	0'-8 1/2"	2'-5"		101
A701	11	39'-8"	STR						892
A702	64	8'-8"	STR						1134
A703	64	6'-2"	3	1'-6"	4'-10"				807
A704	2	7'-6"	STR						31
A705	2	5'-6"	STR						22
A706	36	7'-7"	3	1'-6"	6'-3"				558
A707	28	17'-6"	STR						1002
A708	4	16'-7"	STR						136
A709	4	15'-6"	STR						127
A801	20	3'-7"	13	1'-0"	2'-7"				191
A901	108	14'-8"	STR						5386
A902	19	39'-8"	STR						2562
A903	-								
A904	-								
A905	5	9'-6"	14	7'-6"	2'-0"				162
A906	5	22'-11"	10	20'-0"					375
A907	5	17'-6"	STR						298
A908	5	12'-6"	14	10'-6"	2'-0"				213
SUB TOTAL EPOXY COATED									20,983

**REINFORCING STEEL SCHEDULE**

**FORWARD ABUTMENT - WEST WINGWALL**

MARK	NO.	LENGTH	TYPE	A	B	C	D	E	WEIGHT
EB501	44	4'-5"	2	0'-5"	2'-1"				188
EB502	44	5'-3"	8	0'-7 1/2"	2'-5"	2'-2"			241
EB503	44	3'-0"	STR						138
EB504	-								
EB505	-								
EB506	12	6'-0"	STR						75
EB507	52	3'-7"	11	0'-8"	0'-6"	2'-1"	0'-8 1/2"		194
EB508	8	3'-1"	10	2'-6"					26
EB509	-								
EB510	8	32'-3"	STR*						269
EB511	10	23'-6"	STR						245
EB512	-								
EB513	-								
EB514	2	29'-2"	STR.*						61
F501	23	23'-0"	STR						552
F502	17	24'-6"	STR						434
F503	28	12'-0"	STR						350
F504	24	12'-5"	STR						313
F505	50	32'-3"	STR						1682
F506	16	33'-6"	STR						559
F507	17	23'-9"	STR						421
F508	17	27'-0"	STR						479
F509	36	23'-8"	STR						889
F701	37	15'-6"	STR						1172
F702	50	14'-6"	STR						1482
F801	54	14'-6"	STR						2091
F901	24	15'-0"	STR						1224
F902	24	10'-2"	14	8'-2"	2'-0"				830
F903	41	15'-6"	STR						2161
F1001	28	14'-0"	STR						1687
F1002	28	10'-2"	14	8'-2"	2'-0"				1225
F1003	20	13'-9"	14	11'-9"	2'-0"				1183
F1004	17	14'-11"	14	12'-11"	2'-0"				1091
F1004	8	14'-11"	14	12'-11"	2'-0"				513
SUB TOTAL EPOXY COATED									21,262

**REINFORCING STEEL SCHEDULE**

**FORWARD ABUTMENT - EAST WINGWALL**

MARK	NO.	LENGTH	TYPE	A	B	C	D	E	WEIGHT
EB501	19	4'-5"	2	0'-5"	2'-1"				88
EB502	19	5'-3"	8	0'-7 1/2"	2'-5"	2'-2"			104
EB503	19	3'-0"	STR						59
EB504	10	14'-2"	STR						148
EB505	10	11'-6"	STR*						120
EB506	12	6'-0"	STR						75
EB507	21	3'-7"	11	0'-8"	0'-6"	2'-1"	0'-8 1/2"		78
EB508	8	3'-1"	10	2'-6"					26
EB509	8	7'-6"	STR*						63
EB510	-								
EB511	-								
EB512	-								
EB513	2	4'-4"	STR.						9
F501	THRU								
F509	-								
F510	36	11'-6"	STR						432
F511	43	7'-6"	STR						336
F512	9	23'-2"	STR						217
F513	9	21'-4"	STR						200
F514	9	19'-8"	STR						185
F515	24	11'-4"	STR						285
F516	8	8'-0"	STR						67
F517	37	11'-8"	STR						450
F518	29	15'-2"	STR						459
F519	15	10'-0"	STR						156
F520	32	14'-2"	STR						473
F601	13	13'-6"	STR						264
F701	20	15'-6"	STR						634
F702	20	14'-6"	STR						593
F703	8	13'-0"	STR						213
F704	8	8'-0"	14	6'-0"	2'-0"				131
F801	-								
F802	5	13'-2"	14	11'-5"	2'-0"				176
F803	19	14'-6"	STR						736
F804	13	13'-6"	STR						469
F901	12	15'-0"	STR						612
F902	24	10'-2"	14	8'-2"	2'-0"				830
F903	19	15'-6"	STR						1001
F904	12	13'-0"	STR						530
F905	8	12'-8"	14	10'-8"	2'-0"				345
F1004	8	14'-11"	14	12'-11"	2'-0"				513
SUB TOTAL EPOXY COATED									11,077

JOHN E. FOSTER AND ASSOCIATES, INC. 2/22  
555 Buttles Ave., Columbus, Ohio 43215

**REINFORCING STEEL SCHEDULE**

BRIDGE NO. FRA-315-0197  
RAMP "OF" OVER ROAD "OD" & "OE"

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
ES	TH		HSS			

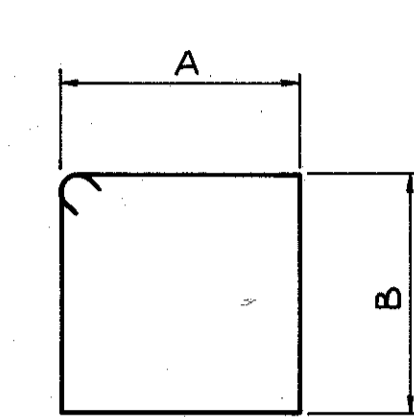
FRANKLIN COUNTY  
FRA-670-1.25-C-2

**REINFORCING STEEL SCHEDULE**

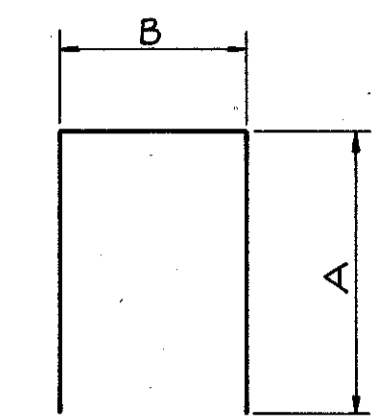
PIER									
MARK	NO.	LENGTH	TYPE	A	B	C	D	E	WEIGHT
SP401	1	16'-9"	5	0'-4 1/2"	49	3'-8"			427
P501	12	16'-6"	1						207
P601	14	4'-8"	6	1'-9"	2'-11"	124°			98
P901	4	16'-9"	1	6'-0"	2'-0"				228
PI100	34	19'-1"	STR						3447
PI101	34	12'-11"	3	2'-0"	11'-3"				2333
PI102	17	23'-2"	7	20'-0"					2092
PI103	17	17'-8"	7	14'-6"					1596
TOTAL EPOXY COATED									10,428

**REINFORCING STEEL SCHEDULE**

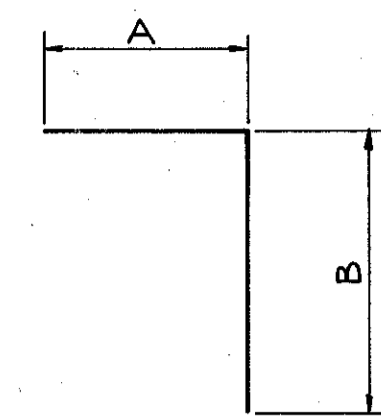
SUPERSTRUCTURE										
MARK	NO.	LENGTH	TYPE	A	B	C	D	INCR.	WEIGHT	
ES401	210	30'-0"	STR						4209	
ES402	1SER OF 42	26'-1" TO 36'-8"	STR					LGTH = 3 1/8" (-)	881	
ES501	264	4'-5"	2	0'-5"	2'-1"				1217	
ES502	264	5'-3"	8	0'-7 1/2"	2'-5"	2'-2"			1446	
ES503	264	2'-4"	2	0'-9"	0'-11"				642	
ES504	264	3'-0"	9	0'-10 1/2"	0'-9"	0'-8 1/2"	0'-6"		826	
ES505	264	2'-2"	3	0'-10 1/2"	1'-5"				598	
ES506	215	30'-0"	STR						6727	
ES507	5	29'-7"	STR						154	
ES508	5	39'-2"	STR						204	
ES509	66	14'-10"	STR						1021	
ES510	66	14'-3"	STR						981	
ES511	304	30'-8"	STR						9725	
ES512	1SER OF 33	28'-7" TO 39'-2"	STR					LGTH = 4" (-)	1166	
ES601	304	30'-8"							14004	
ES701	41	30'-0"							2514	
TOTAL EPOXY COATED									46,315	



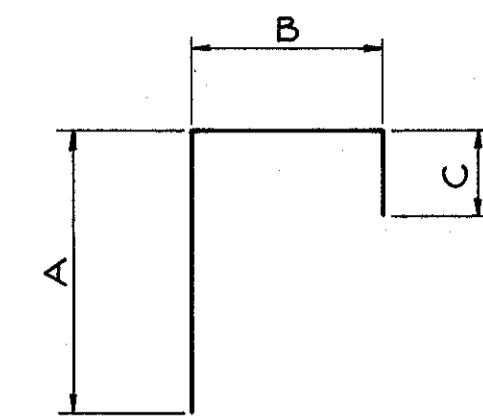
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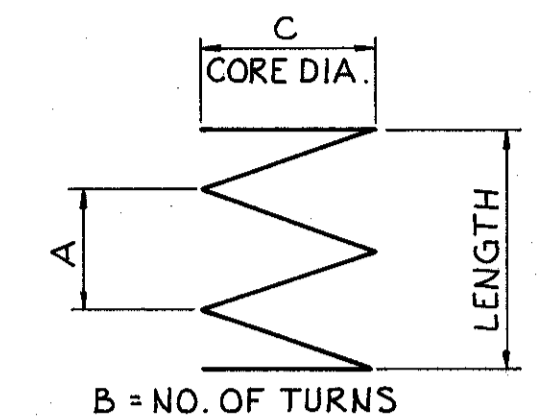
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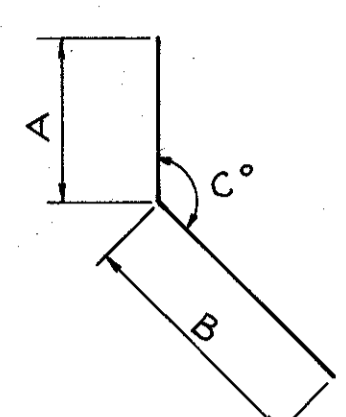
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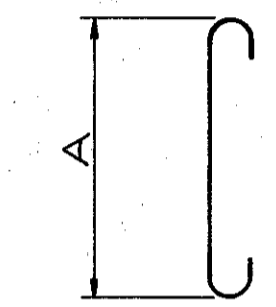
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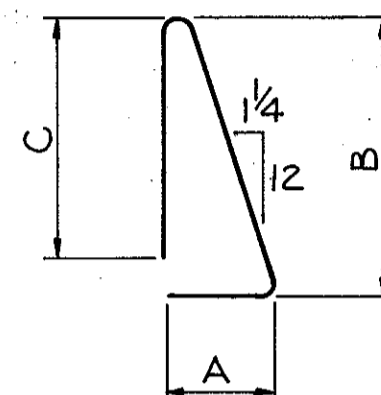
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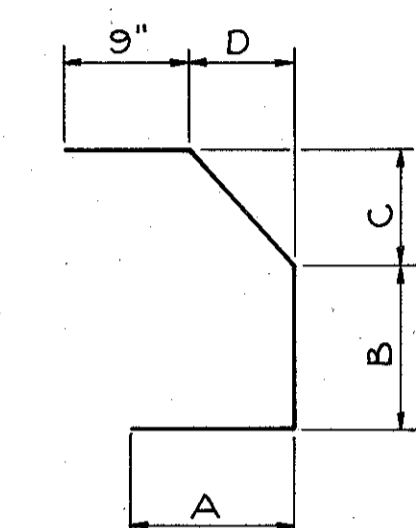
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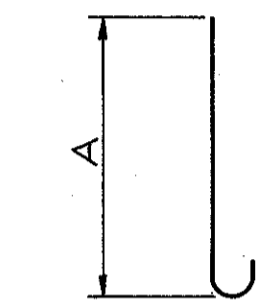
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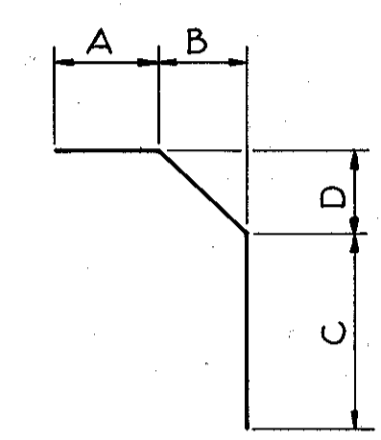
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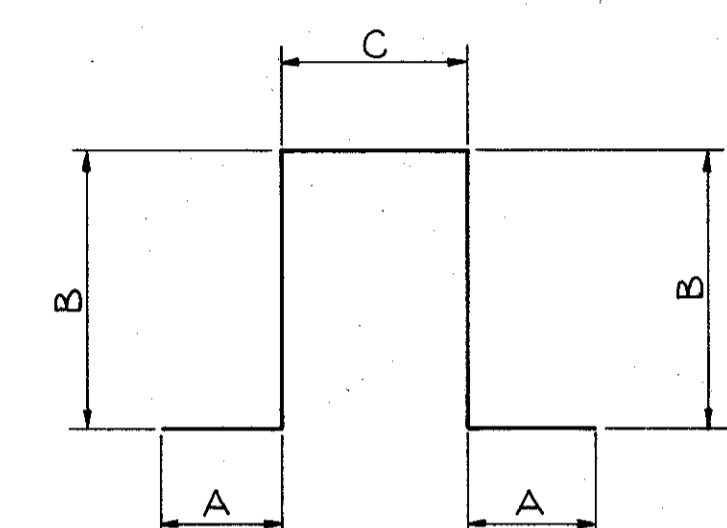
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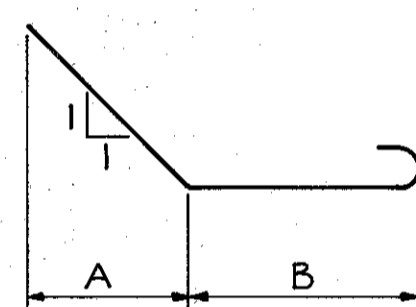
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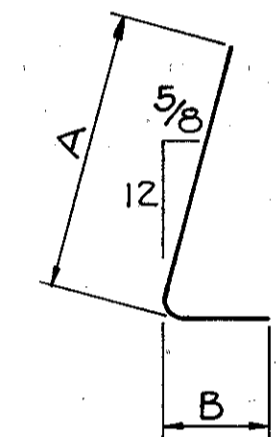
TYPE - 11



TYPE - 12



TYPE - 13



TYPE - 14

**NOTES**

- ESTIMATED WEIGHT IS BASED ON STEEL BARS WITHOUT THE WEIGHT OF EPOXY COATINGS.
- ALL BARS ARE TO BE EPOXY COATED.
- \* = BEND IN THE FIELD WHERE NECESSARY.

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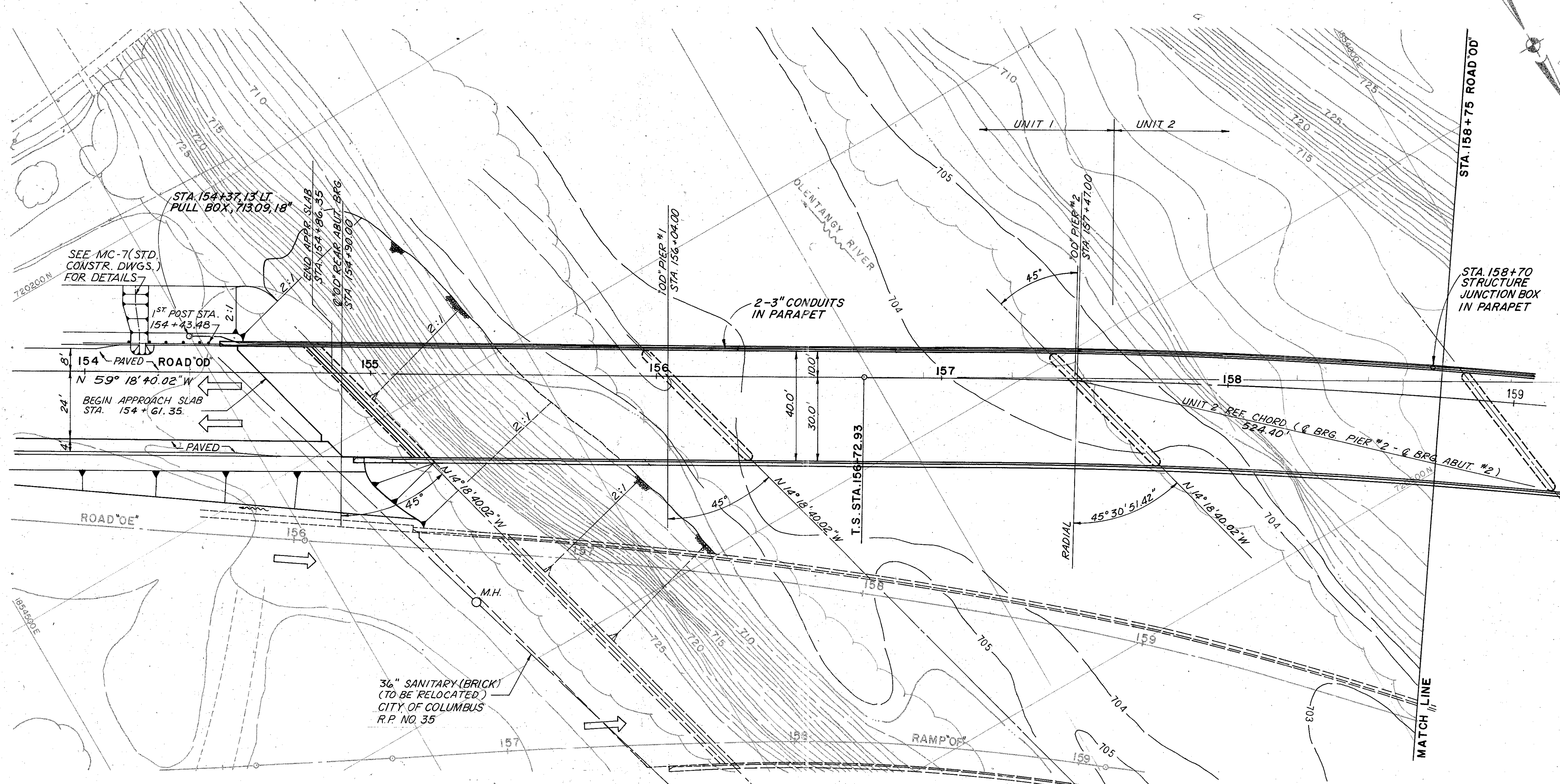
**REINFORCING STEEL SCHEDULE**

BRIDGE NO. FRA.- 315-0197  
RAMP "OF" OVER ROADS "OD" AND "OE"

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CEM	DMT		HSS			



FRANKLIN COUNTY  
FRA-670-1.25-C-2



**NEAREST EXISTING STRUCTURE**  
BRIDGE N<sup>o</sup> FRA-3-1547 (RAMPOC)  
(340' ± DOWNSTREAM)

TYPE: CONTINUOUS STEEL BEAMS WITH EXPANSION HINGES & REINFORCED CONCRETE SLAB & SUBSTRUCTURE  
SPANS: 54.38'-65.89'-72.69'-76.14'-74.83'-67.16'-57.49' ± BRG'S ALONG C.  
ROADWAY: EXISTING 78'-0" FIF 1'-10" SAFETY CURBS WITH 4'-0" MEDIAN, CONCRETE PARAPETS & ALUMINUM RAILING.  
LOADING: CF-2000  
WEARING SURFACE: ASPHALT CONCRETE  
ALIGNMENT: 10° CURVE  
SKEW: 27° 56' 04" L.F. WITH RESPECT TO REFERENCE  
DISPOSITION: NORTH HALF OF DECK TO BE REMOVED. SOUTH HALF OF DECK TO BE RECONSTRUCTED FOR USE AS RAMP OC

**TRAFFIC DATA**  
DESIGN ADT (2004) = 25469  
ADTT = 2547

EARTHWORK LIMITS SHOWN ARE APPROXIMATE ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.

**HYDRAULIC DATA**  
DRAINAGE AREA = 543 SQUARE MILES  
Q<sub>50</sub> = 14,000 C.F.S. ; V<sub>50</sub> = 4.3 HW<sub>50</sub> = ELEV 720.0  
Q<sub>100</sub> = 17,400 C.F.S. ; V<sub>100</sub> = 4.5 HW<sub>100</sub> = ELEV. 722.8

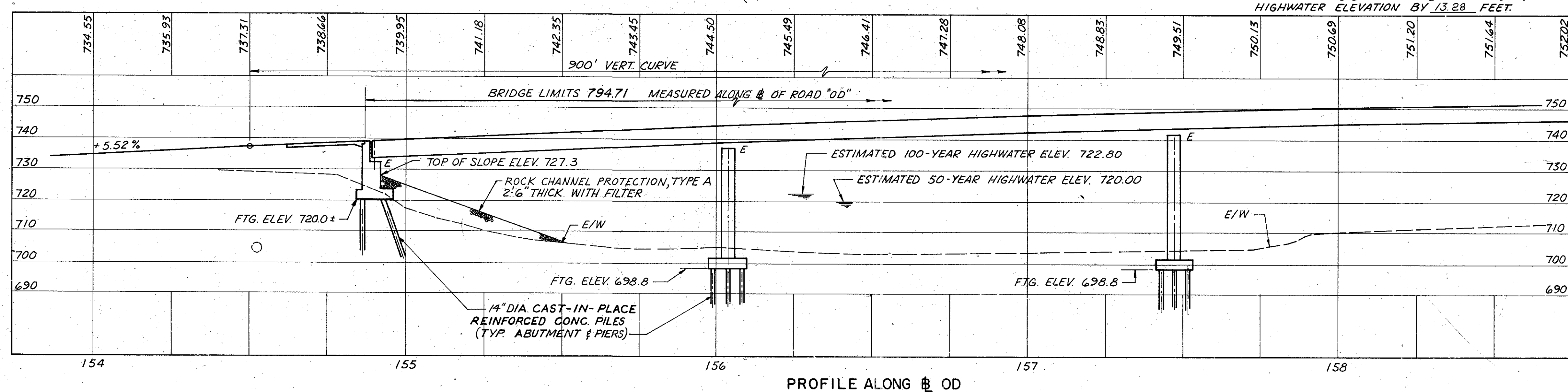
CURVED GIRDERS IN UNIT 2 ARE CIRCULAR CURVES. RADII TO WESTERLY FASCIA ARE:  
1.) 3300' 4.) 680'  
2.) 1208'  
3.) 865'  
OTHER GIRDERS ARE CONCENTRIC. THE STRUCTURE IS CONTINUOUS. UNITS 1 & 2 ARE DESIGNATED FOR DESIGN PURPOSES ONLY.

**PROPOSED STRUCTURE**  
TYPE: CONTINUOUS, COMPOSITE, WELDED STEEL PLATE GIRDERS (A-588) WITH REINFORCED CONCRETE DECK, PIERS & ABUTMENTS.

**VERTICAL CURVE DATA**  
SPANS: 114.0'-143.0'-143.0'-143.16'-136.14'-108.87'  
MEASURED ALONG C. OF ROAD "OD"  
ROADWAY: 40'-0" FACE TO FACE OF CURBS  
LOADING: HS 20-44 (CASE I) & ALTERNATE MILITARY LOADING.  
ALIGNMENT: TANGENT-SPIRAL-CIRCULAR CURVE  
WEARING SURFACE: 1" MONOLITHIC CONCRETE  
APPROACH SLABS: 25'-0" AS-1-82  
CROSSING: OLENTANGY RIVER & I-670/315 NORTHBOUND & SOUTHBOUND LANES  
SKEW: VARIES - SEE PLANS  
SUPERELEVATION: VARIES (0.083 1/1 MAX.)

JOHN E. FOSTER AND ASSOCIATES, INC. 1/24  
555 Buttles Ave., Columbus, Ohio 43215

**SITE PLAN-1**  
BRIDGE NO. FRA-315-0205  
ROAD "OD" OVER OLENTANGY RIVER AND RELOCATED S.R.315  
STA. 154+86.35 STA. 162+80.77



PROFILE ALONG C. OF OD

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DSS	MJR	MJR	DFS			



THIS WORK IS FUNDED TOTALLY BY NH FUNDING.

FRANKLIN COUNTY  
FRA-670-1.25-C-2

ESTIMATED QUANTITIES

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	FORWARD ABUTMENT	REAR ABUTMENT	PIER NO. 1	PIER NO. 2	PIER NO. 3	PIER NO. 4	PIER NO. 5	SUPER-STRUCTURE	GENERAL
503	11100	L.S.		COFFERDAMS, CRIBS, AND SHEETING									
503	21100	1,418	CU. YD.	UNCLASSIFIED EXCAVATION	211	544	126	117	256	45	119		
505	11100	L.S.		PILE DRIVING EQUIPMENT MOBILIZATION									
506	11101	L.S.		STATIC LOAD TEST, AS PER PLAN									L.S.
507	42201	6060	LIN. FT.	14" CAST-IN-PLACE REINFORCED CONCRETE PILES, AS PER PLAN			700	1,260	2,000	1,260	840		
509	15840	410,558	LB.	EPOXY COATED REINFORCING STEEL, GRADE 60	9,767	16,047	17,188	18,042	40,822	11,797	11,440	285,455	
511	31500	1,448	CU. YD.	CLASS S CONCRETE, SUPERSTRUCTURE								1,448	
511	42500	314	CU. YD.	CLASS C CONCRETE, PIER CAPS & COLUMNS			72	77	72	48	45		
511	44500	200	CU. YD.	CLASS C CONCRETE, ABUTMENTS ABOVE FOOTINGS	60	140							
511	46000	69	CU. YD.	CLASS C CONCRETE, RETAINING WALL OR WINGWALL	30	39							
511	46500	410	CU. YD.	CLASS C CONCRETE, FOOTINGS	49	71	47	47	120	38	38		
513	11500	1,044,462	LB.	STRUCTURAL STEEL, A588 AISC CATEGORY III								1,044,462	
513	20000	4,928	EACH	WELDED STUD SHEAR CONNECTORS									4,928
511	33404	1448	CU. YD.	Class S concrete, superstructure, using shrinkage compensating cement								1448	
511	33410	L.S.		Class S concrete, using shrinkage compensating cement for pre-placement testing									L.S.
516	11210	110	LIN. FT.	STRUCTURAL EXPANSION JOINTS INCL. ELASTOMERIC STRIP SEALS	50	60							
516	44400	8	EACH	LAMINATED ELASTOMERIC BEARINGS (1'-4 1/2" x 1'-6" x 0'-5 1/16") ELASTOMERIC PADS W/1'-5 1/2" x 1'-8" x 0'-2" STEEL LOAD PLATES	4	4							
516	44200	8	EACH	LAMINATED ELASTOMERIC BEARINGS (1'-10" x 2'-0" x 0'-3 1/16") ELASTOMERIC PADS W/1'-11" x 2'-2" x 0'-2" STEEL LOAD PLATES			4				4		
516	44200	8	EACH	LAMINATED ELASTOMERIC BEARING (1'-10" x 2'-0" x 0'-3 1/8") ELASTOMERIC PADS W/1'-11" x 2'-2" x 0'-2" STEEL LOAD PLATES				4			4		
516	44200	4	EACH	LAMINATED ELASTOMERIC BEARING (1'-11" x 2'-0" x 0'-3 1/8") ELASTOMERIC PADS W/1'-11" x 2'-8" x 0'-2" STEEL LOAD PLATES					4				
518	41200	153	LIN. FT.	6" NON-PERFORATED, HELICAL CORRUGATED STEEL PIPE, INCLUDING SPECIALS, 707.01	72	81							
518	41100	93	LIN. FT.	6" PERFORATED, HELICAL CORRUGATED STEEL PIPE, 707.01	41	52							
518	21100	183	CU. YD.	POROUS BACKFILL	55	128							
518	12300	15	EACH	SCUPPERS, INCLUDING SUPPORTS								15	
523	11100	6	HR.	DYNAMIC LOAD TESTS									6
601	20000	220	SQ. YD.	CRUSHED AGGREGATE SLOPE PROTECTION	220								
SPECIAL	51267500	672	SQ. YD.	SEALING OF CONCRETE SURFACES								672	

These two items shall constitute one alternate bid to Class S concrete, superstructure

GENERAL NOTES

**DESIGN SPECIFICATIONS:**  
THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1983 INCLUDING THE 1984, 1985, 1986, 1987 AND 1988 INTERIM SPECIFICATIONS AND THE OHIO "SUPPLEMENT" TO THESE SPECIFICATIONS.

**DESIGN DATA:**  
DESIGN LOADING - HS20-44 CASE I AND THE ALTERNATE MILITARY LOADING.

CONCRETE CLASS S - UNIT STRESS 1,500 P.S.I. FOR SUPERSTRUCTURE.  
CONCRETE CLASS C - UNIT STRESS 1,333 P.S.I. FOR SUBSTRUCTURE.  
REINFORCING STEEL - ASTM A615, A616, A617 - GRADE 60 UNIT STRESS 24,000 P.S.I.  
STRUCTURAL STEEL - ASTM A588 - UNIT STRESS 27,000 P.S.I.  
DECK PROTECTION METHOD - EPOXY COATED REINFORCING STEEL, BOTH MATS.  
MONOLITHIC WEARING SURFACE IS ASSUMED FOR DESIGN PURPOSES TO BE 1" THICK.

**SUPPLEMENTAL SPECIFICATIONS:**  
REFERENCE SHALL BE MADE TO SUPPLEMENTAL SPECIFICATIONS:

**REFERENCE DRAWINGS:**  
REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:  
AS-1-81, DATED 11/27/81  
FB-1-82, DATED 5/10/82  
EXJ-4-87 DATED 11/5/89  
SD-1-69, DATED 6/12/69

**DIMENSIONS:**  
DIMENSIONS GIVEN ARE MEASURED HORIZONTALLY AND AT 60°F, UNLESS OTHERWISE NOTED.

**ITEM SPECIAL - SEALING OF CONCRETE SURFACES (EPOXY):**  
A CONCRETE SEALER, (EPOXY), SHALL BE APPLIED TO THE DESIGNATED CONCRETE SURFACES. SEE THE PROPOSAL FOR SURFACE PREPARATION REQUIREMENTS, APPLICATION RATES, MATERIAL REQUIREMENTS AND APPLICATION PROCEDURES.

**EMBANKMENT CONSTRUCTION:**  
THE EMBANKMENTS SHALL BE CONSTRUCTED TO THE LEVEL OF THE SUBGRADE FOR A MINIMUM DISTANCE OF 200 FEET BACK OF THE ABUTMENTS. EXCAVATION MAY THEN BE MADE FOR THE ABUTMENTS AND PILES DRIVEN.

**ITEM 507-14 INCH CAST-IN-PLACE REINFORCED CONCRETE PILES, AS PER PLAN:**  
**PILE WALL THICKNESS:** THE RESPONSIBILITY OF CHOOSING AND PROVIDING A SATISFACTORY PILE WALL THICKNESS FOR THIS PROJECT SHALL BE BORNE BY THE CONTRACTOR BY THE CONTRACTOR EXCEPT THAT THE PILE WALL THICKNESS SHALL NOT BE LESS THAN 0.31 INCHES. IF A PILE WALL THICKNESS GREATER THAN 0.31 INCHES IS NECESSARY TO RESIST THE PILE INSTALLATION DRIVING STRESS, THE CONTRACTOR SHALL MAKE THIS DETERMINATION AND SHALL FURNISH A PILE WITH AN ACCEPTABLE WALL THICKNESS. IF MONOTUBE PILES ARE USED, MONOTUBE PILES SHALL HAVE A MINIMUM WALL THICKNESS OF 0.22 INCHES.

**PILE HAMMER:** THE PILE DRIVING EQUIPMENT TO BE FURNISHED BY THE CONTRACTOR SHALL BE SUBJECT TO THE APPROVAL OF THE DIRECTOR. PREREQUISITE TO SUCH APPROVAL, THE CONTRACTOR SHALL SUBMIT A COMPLETED EQUIPMENT DATA FORM (WEAP87 - DATA REQUEST FORM) FOR EACH HAMMER PROPOSED FOR USE ON THIS PROJECT. A COPY OF THIS FORM CAN BE REQUESTED AND OBTAINED FROM THE DIRECTOR. A WAVE EQUATION ANALYSIS WILL BE PERFORMED BY BUREAU OF BRIDGES. CONTRACTOR NOTIFICATION OF ACCEPTANCE OR REJECTION OF THE DRIVING SYSTEM WILL BE MADE WITHIN 21 DAYS AFTER SUBMITTAL OF THE WEAP87 DATA REQUEST FORM. THE PILING SHALL NOT BE INSTALLED PRIOR TO RECEIVING APPROVAL OF THE CONTRACTOR'S DRIVING SYSTEM BY THE DIRECTOR. THE DIRECTOR WILL FURNISH THE PILE DRIVING CRITERIA.

**ITEM 506 - STATIC LOAD TEST, AS PER PLAN:**  
THE CONTRACTOR SHALL PERFORM A STATIC LOAD TEST ON ONE OF THE INITIALLY INSTALLED PILES OR ON A PILE INSTALLED NEAR AN ABUTMENT OR PIER LOCATION. THE INSTALLED LENGTHS OF THE PILES TO BE LOAD TESTED SHALL NOT BE MORE THAN THE PLAN ESTIMATED PAY LENGTHS. THE CONTRACTOR SHALL FURNISH THE DIRECTOR (ATTENTION: BUREAU OF BRIDGES) A COPY OF A TYPED REPORT DESCRIBING THE PROCEDURES AND RESULTS OF THE STATIC LOAD TEST. PAYMENT FOR THIS REPORT IS CONSIDERED INCIDENTAL TO THE COST OF THE STATIC LOAD TEST.

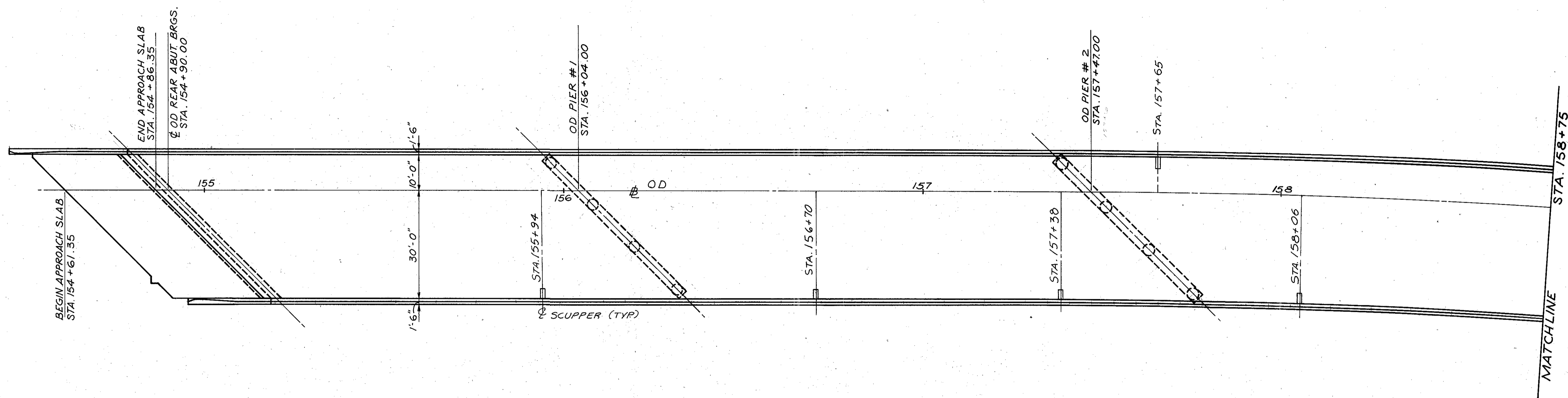
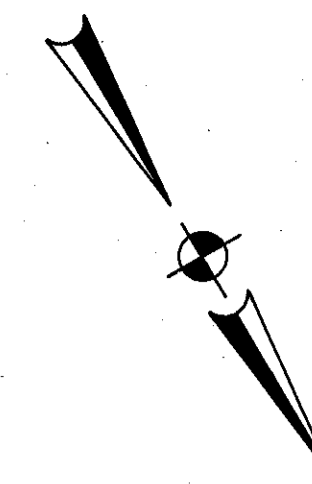
**PILE DESIGN LOADS:**  
THE DESIGN LOAD FOR THE ABUTMENT PILES IS 50 TONS PER PILE AND THE DESIGN LOAD FOR THE PIER PILES IS 50 TONS PER PILE.

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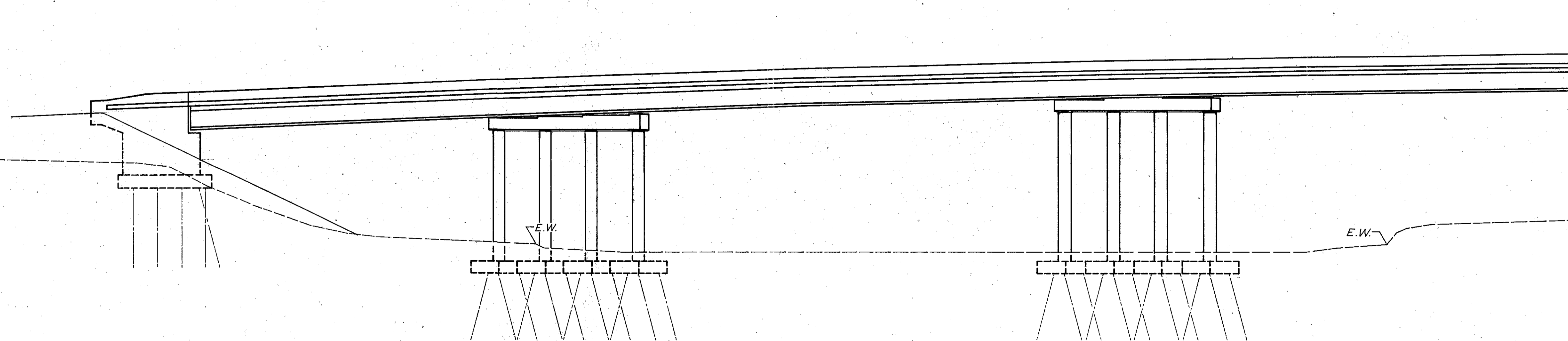
ESTIMATED QUANTITIES AND GENERAL NOTES

BRIDGE NO. FRA-315-0205  
ROAD "OD" OVER OLENTANGY RIVER  
AND RELOCATED S.R. 315

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DSS	JR	DMT	DFS			



**GENERAL PLAN**



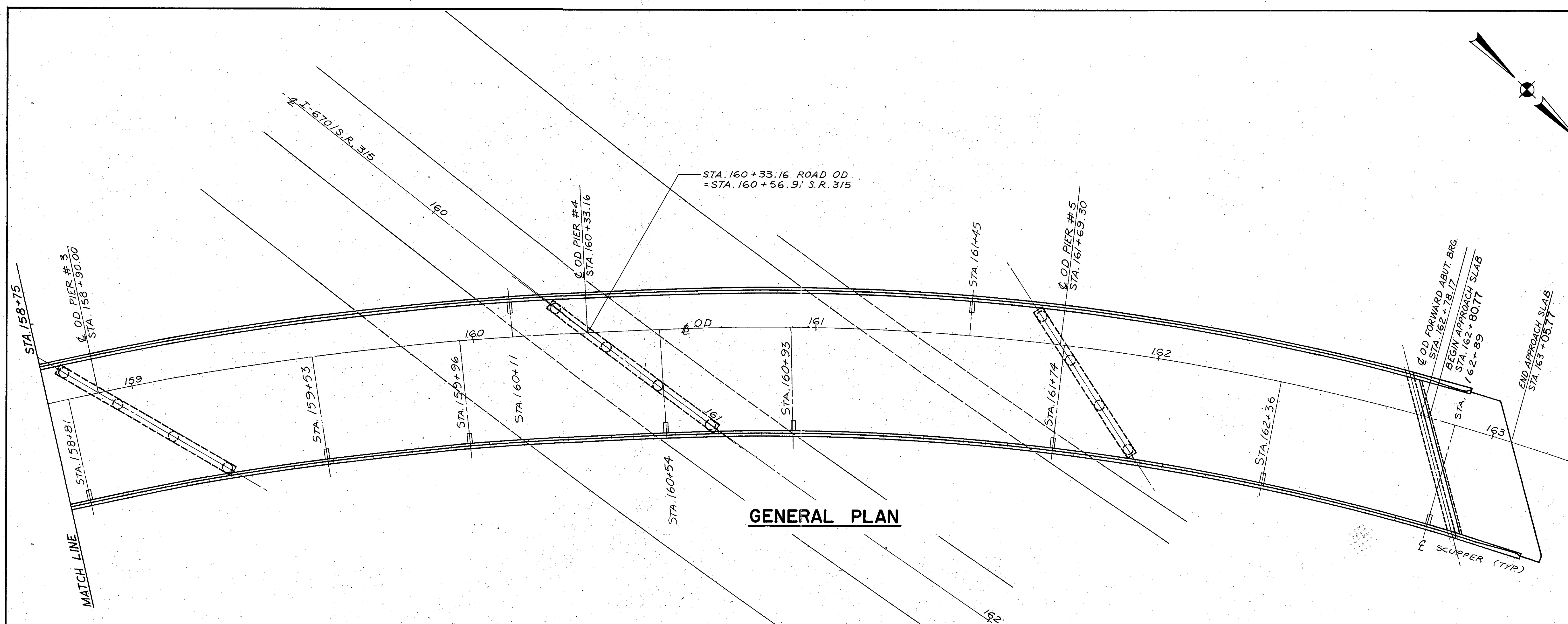
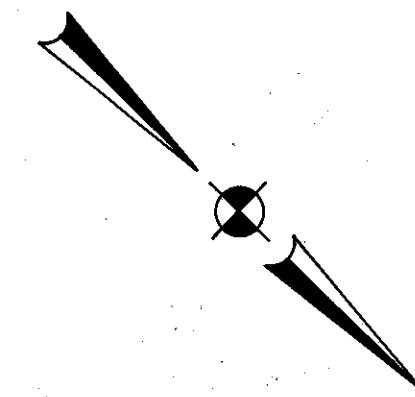
**DEVELOPED ELEVATION**

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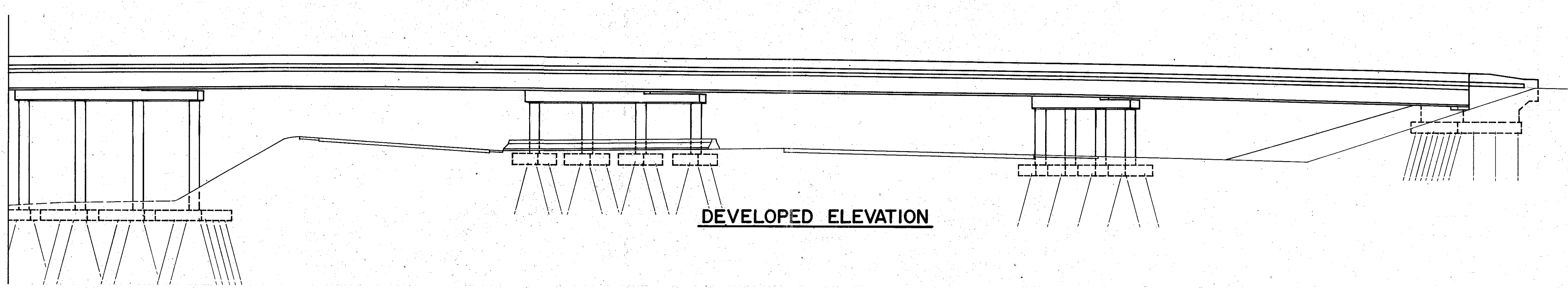
**GENERAL PLAN & ELEVATION-I**

BRIDGE NO. FRA-315-0205  
ROAD OD OVER OLENTANGY RIVER  
AND RELOCATED S.R. 315

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DSS	DMT	DMT	DFS			



**GENERAL PLAN**



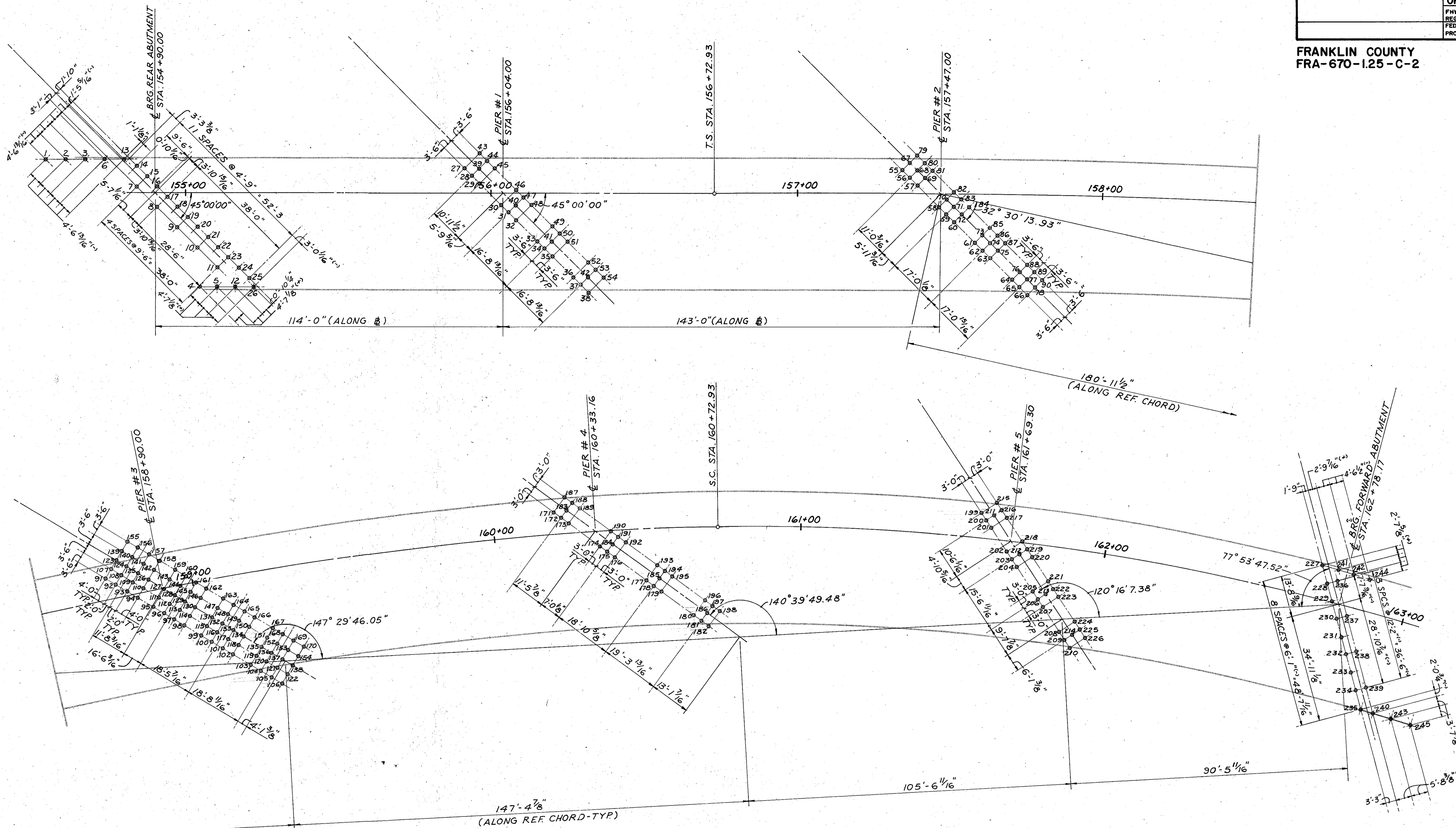
**DEVELOPED ELEVATION**

JOHN E. FOSTER AND ASSOCIATES, INC. 5/24  
555 Buttles Ave., Columbus, Ohio 43215

**GENERAL PLAN & ELEVATION-2**

BRIDGE NO. FRA-315-0205  
ROAD OD OVER OLENTANGY RIVER  
AND RELOCATED S.R. 315

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DSS	DMT	DMT	DFS			



**FOUNDATION LAYOUT PLAN**

NOTE: FOR PILE SIZES AND BATTERS REFER TO SHEETS 78,110/24

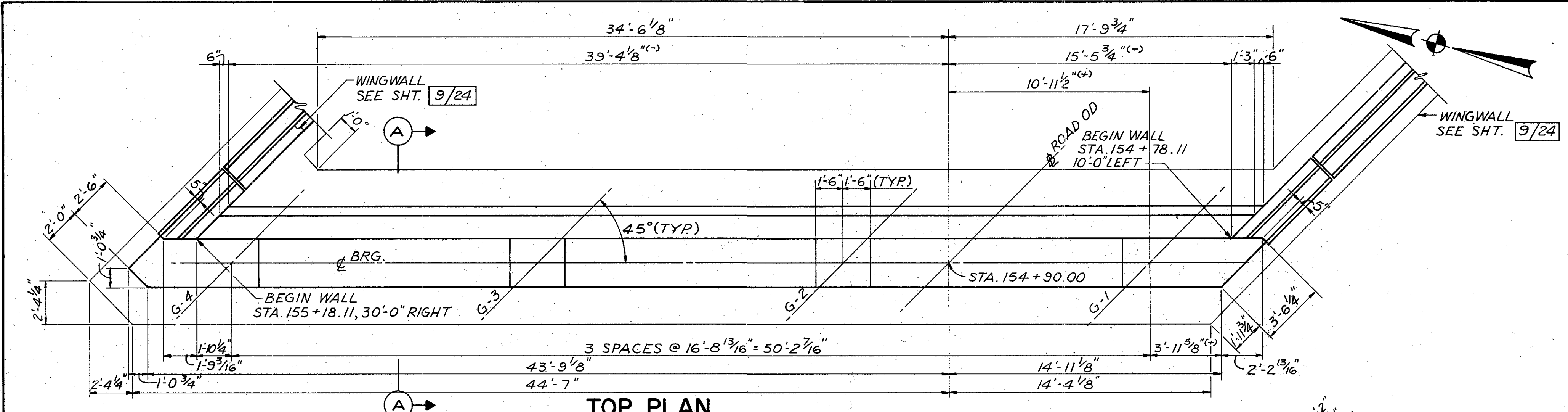
JOHN E. FOSTER AND ASSOCIATES, INC. 6/24  
555 Buttes Ave., Columbus, Ohio 43215

**FOUNDATION LAYOUT PLAN**

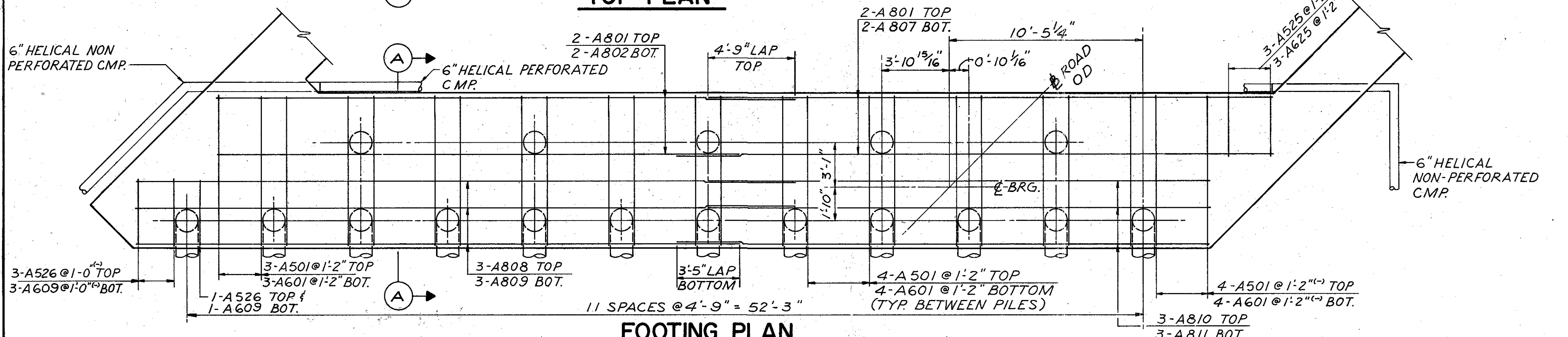
BRIDGE NO. FRA-315-0205  
ROAD OD OVER OLENTANGY RIVER  
AND RELOCATED S.R. 315

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DSS	DMT	DMT	DFS			

FRANKLIN COUNTY  
FRA-670-1.25-C-2

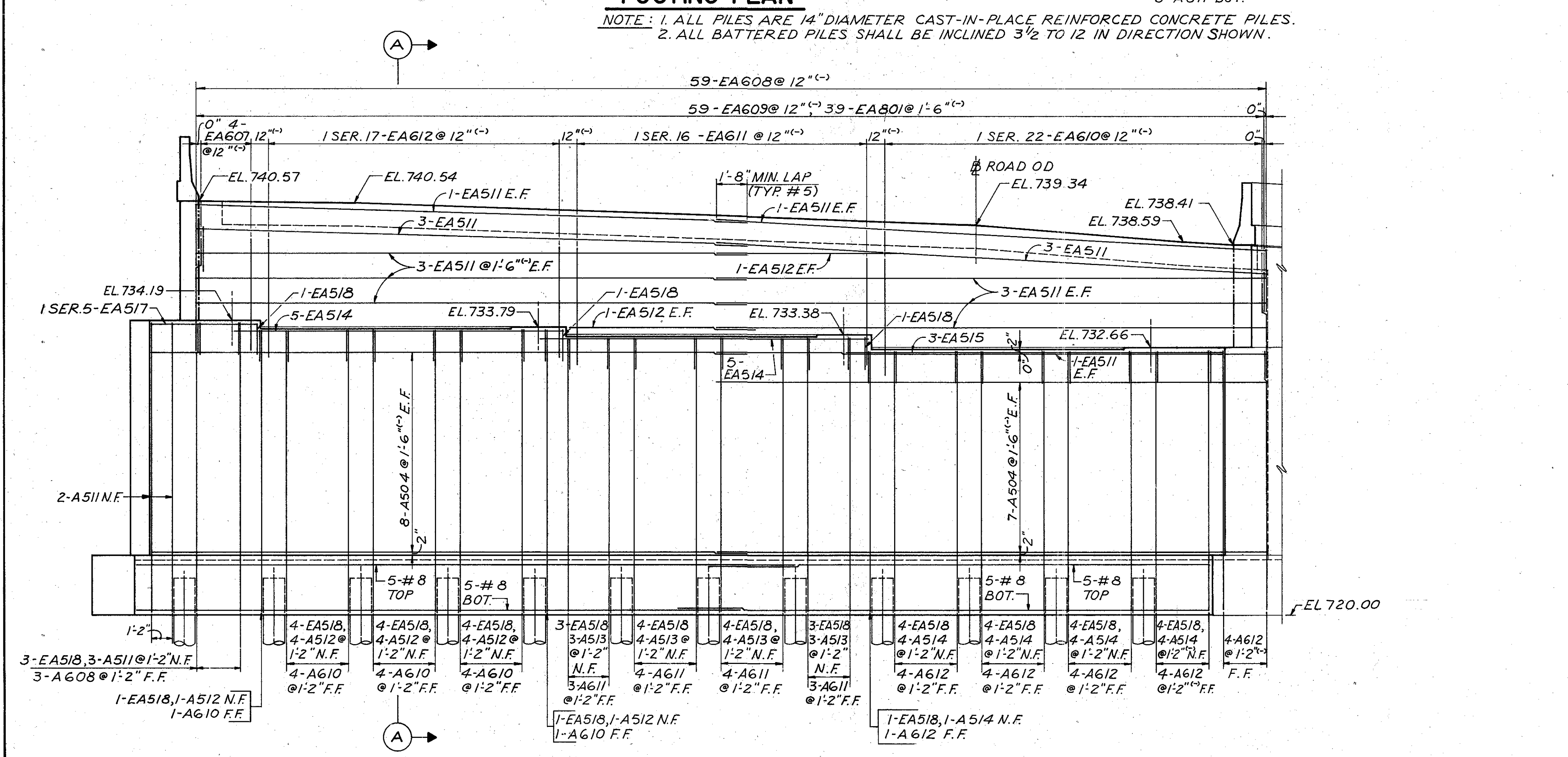


**TOP PLAN**

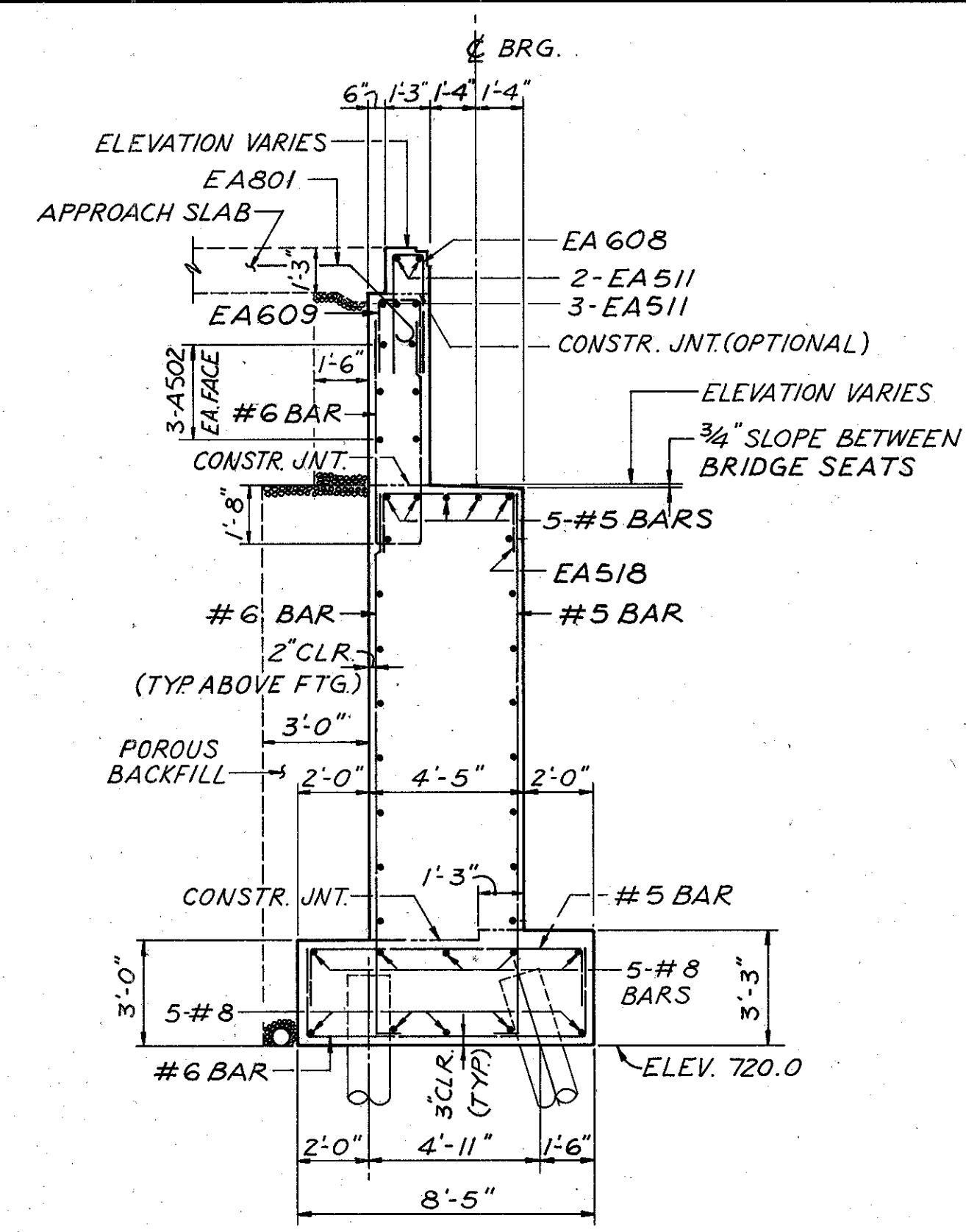


**FOOTING PLAN**

NOTE: 1. ALL PILES ARE 14" DIAMETER CAST-IN-PLACE REINFORCED CONCRETE PILES.  
2. ALL BATTERED PILES SHALL BE INCLINED 3/2 TO 12 IN DIRECTION SHOWN.



**ELEVATION**



**SECTION A-A**

**NOTES**

- BACKWALL CONCRETE: IN ADDITION TO THE PROVISIONS OF 511.08, BACKWALL CONCRETE ABOVE THE OPTIONAL CONSTRUCTION JOINT AT THE APPROACH SLAB SEAT SHALL NOT BE PLACED UNTIL AFTER THE DECK CONCRETE IN THE SPAN ADJACENT TO THE ABUTMENT HAS BEEN PLACED.
- POROUS BACKFILL, 1.5 FEET THICK, SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE AND Laterally TO THE ENDS OF THE WINGWALLS.

JOHN E. FOSTER AND ASSOCIATES, INC. 7/24  
555 Buttles Ave., Columbus, Ohio 43215

**REAR ABUTMENT  
PLAN, ELEVATION & SECTIONS**  
BRIDGE NO. FRA-315-0205  
ROAD OD OVER OLENTANGY RIVER  
AND RELOCATED S.R. 315

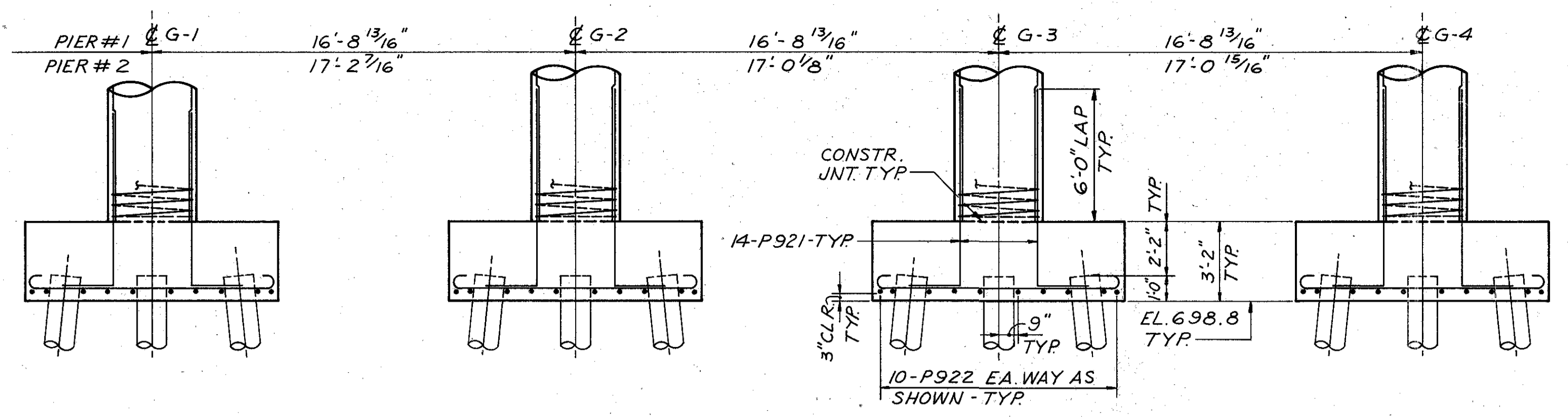
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DFS	DMT	DMT	HSS			



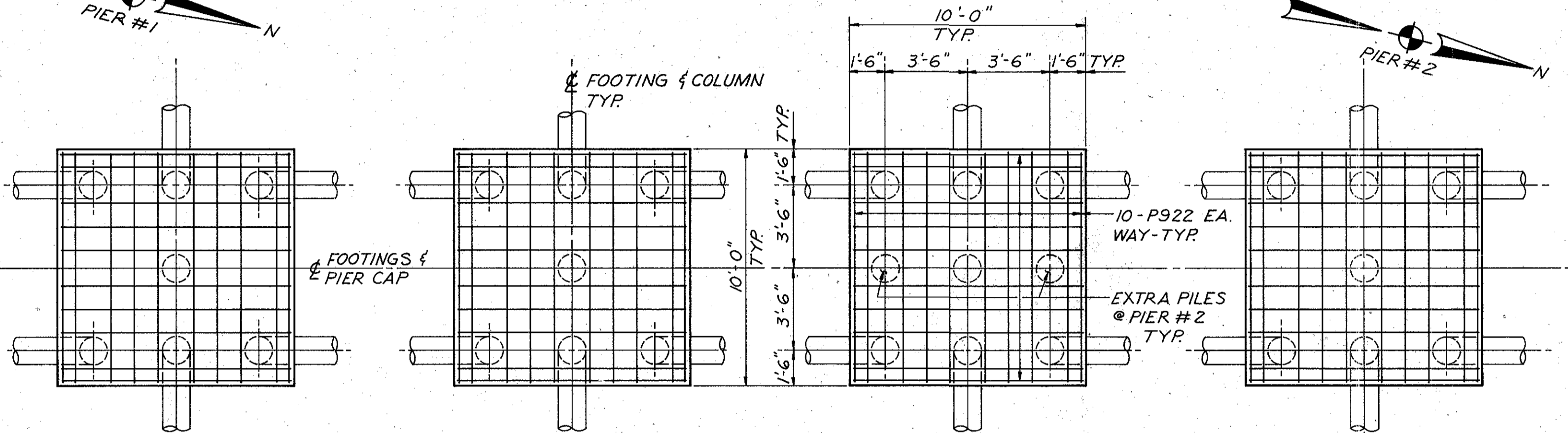
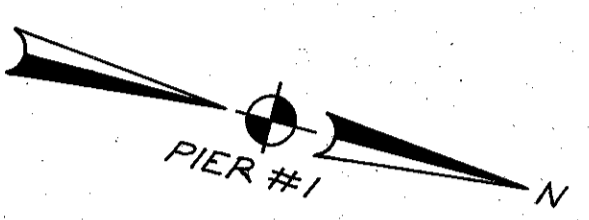




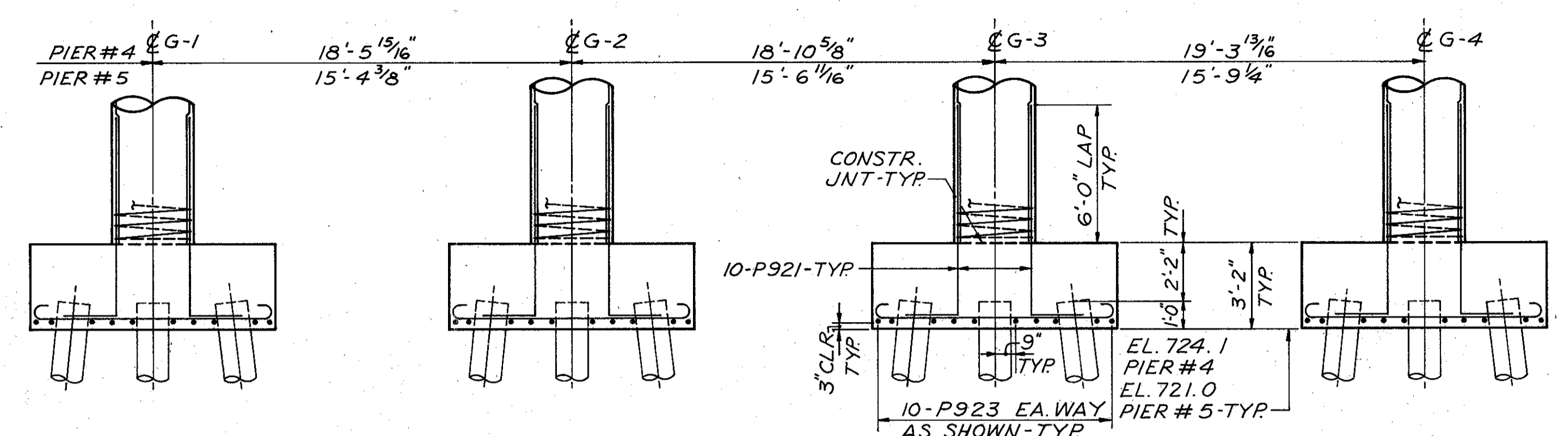
FRANKLIN  
FRA-670-1.25-C-2



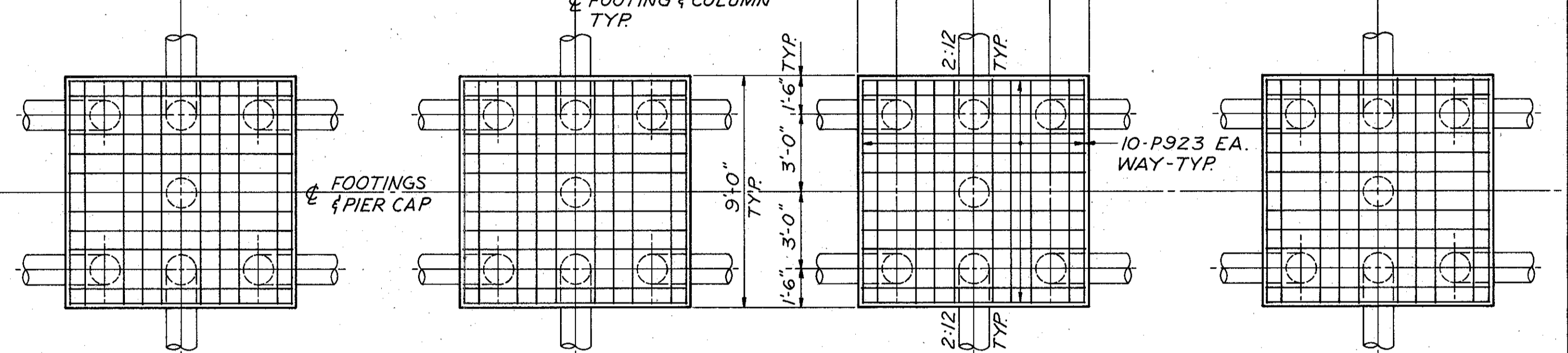
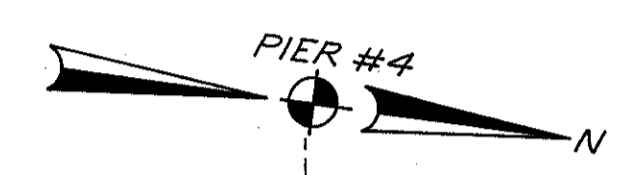
**PARTIAL ELEVATION-PIER #1 & PIER #2**



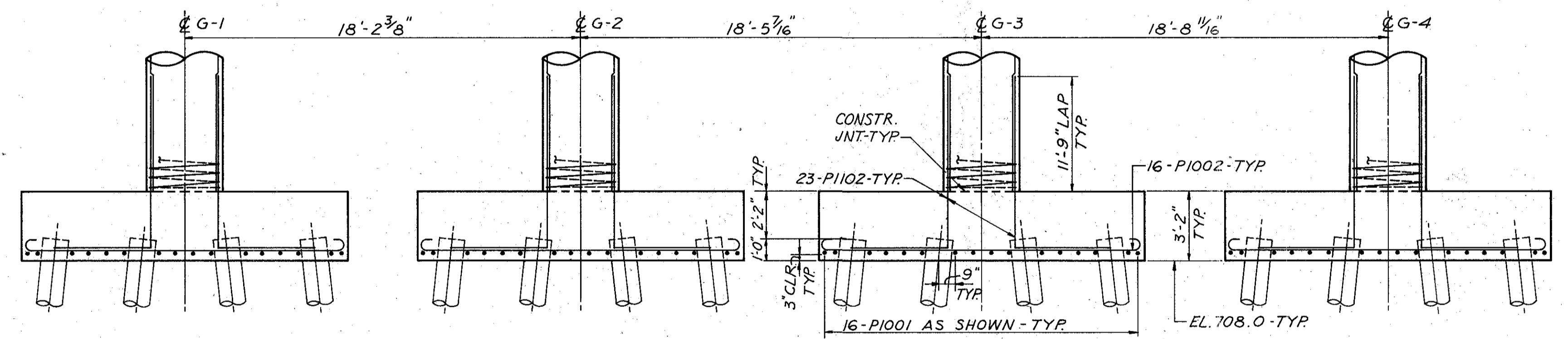
**FOOTING PLAN-PIER #1 & PIER #2**



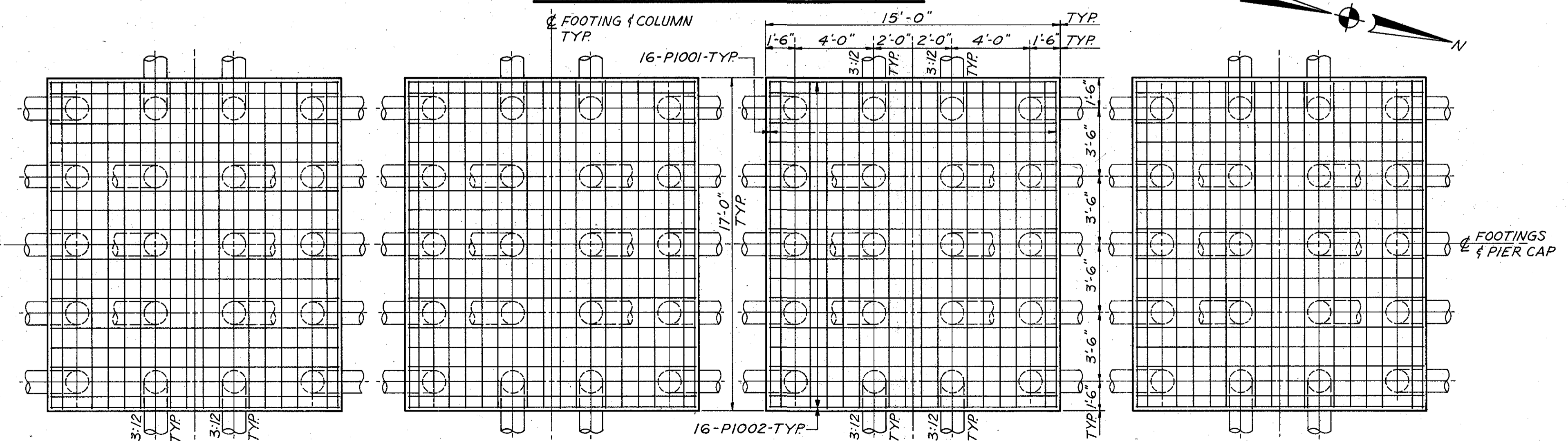
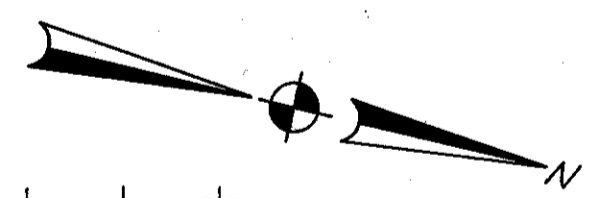
**PARTIAL ELEVATION - PIER #4 & PIER #5**



**FOOTING PLAN-PIER #4 & PIER #5**



**PARTIAL ELEVATION-PIER #3**



**FOOTING PLAN-PIER #3**

**NOTES**

1. ALL PILES ARE 14" DIAMETER CAST-IN-PLACE REINFORCED CONCRETE PILES.
2. ALL BATTERED PILES SHALL BE INCLINED 1/4 TO 1/2 IN DIRECTION SHOWN UNLESS NOTED OTHERWISE.

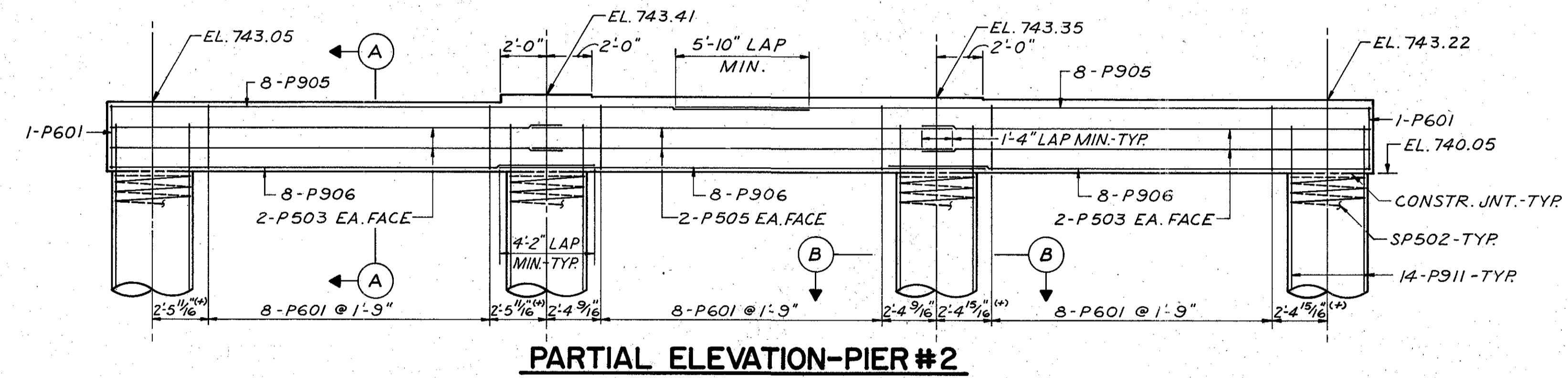
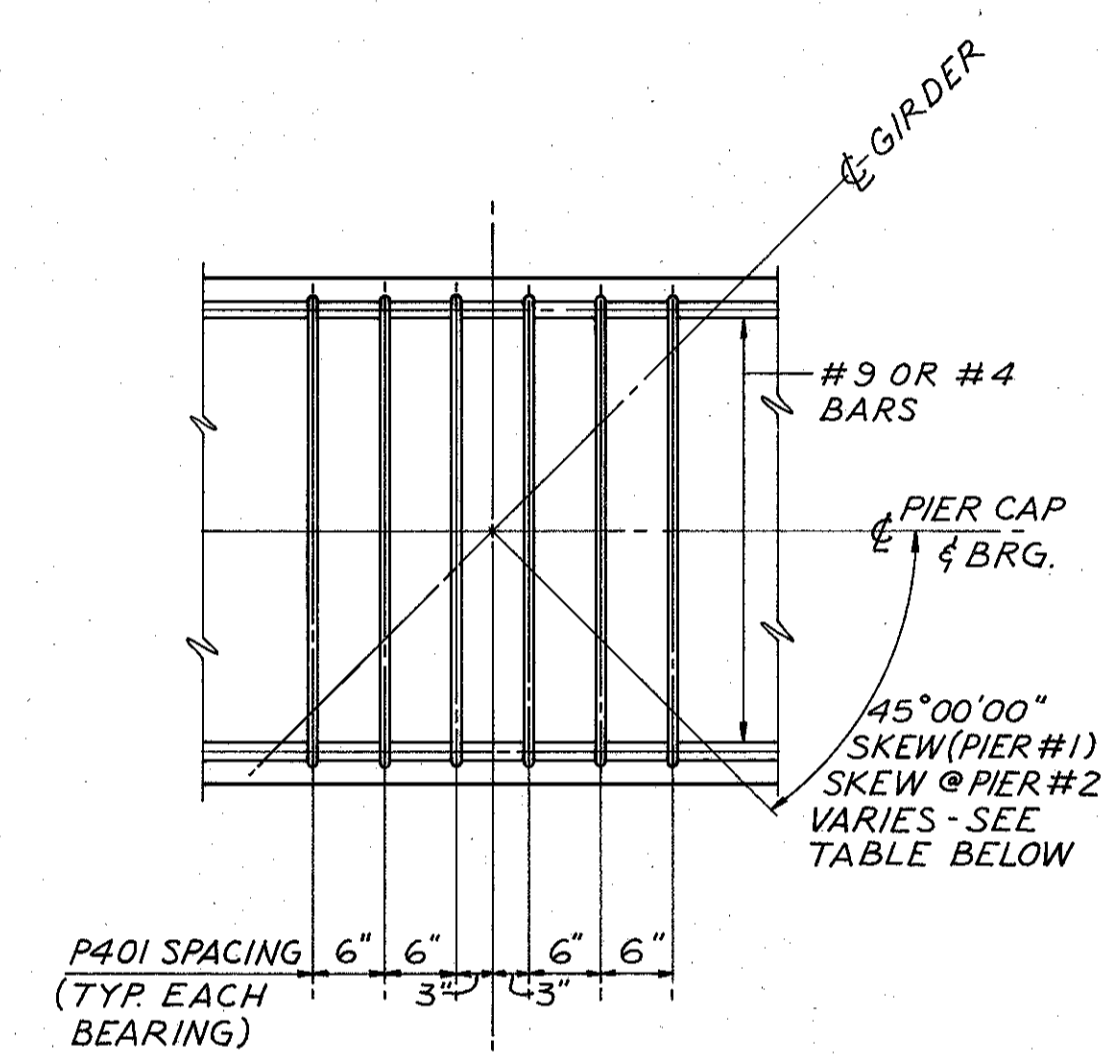
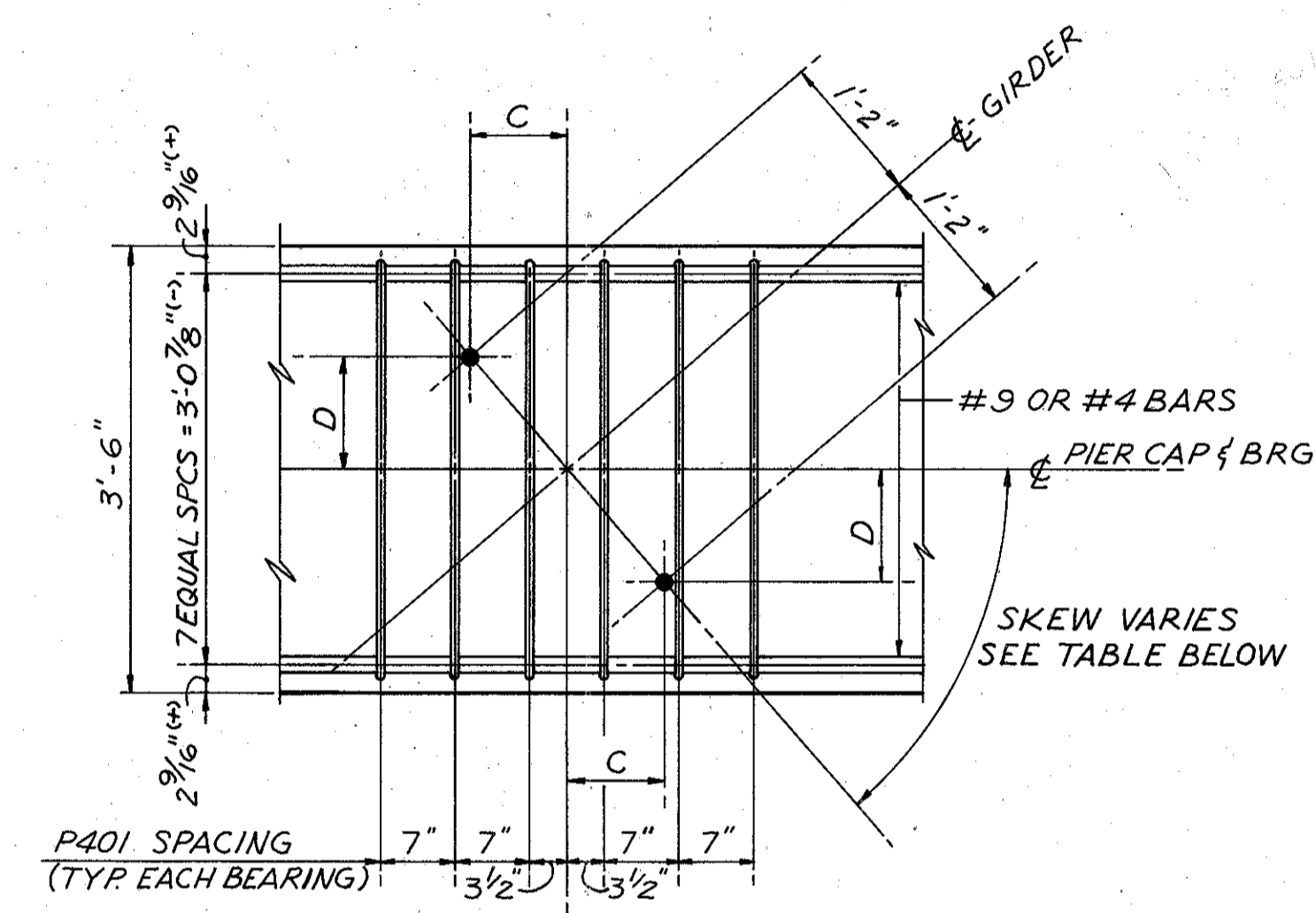
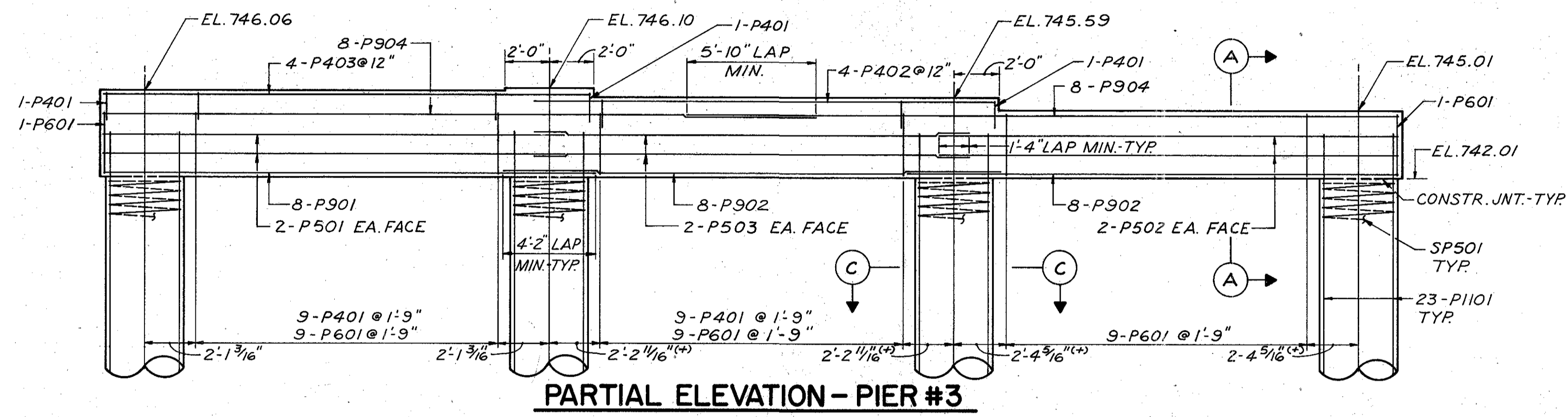
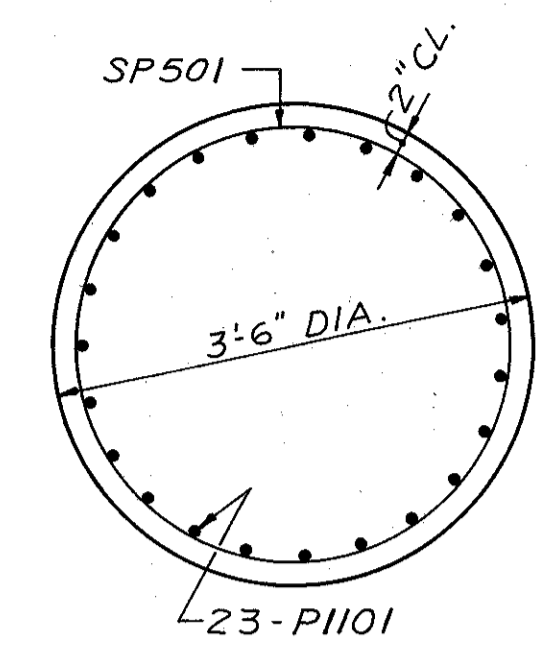
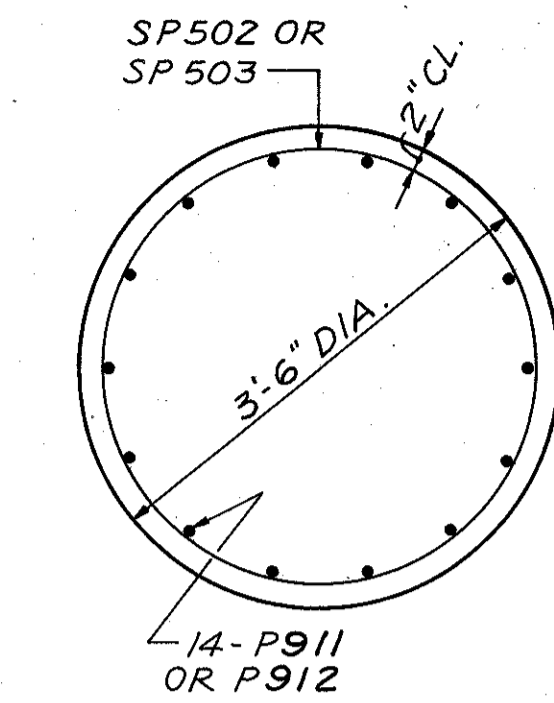
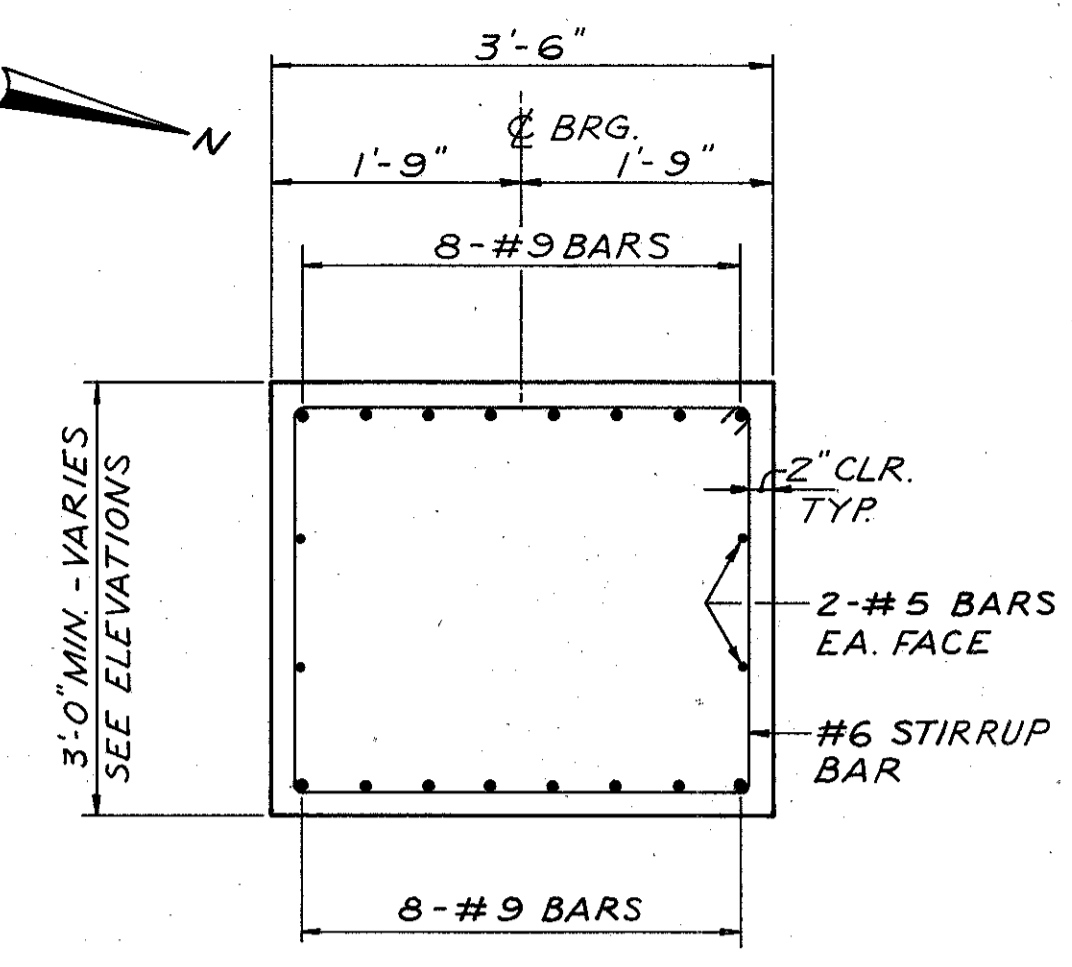
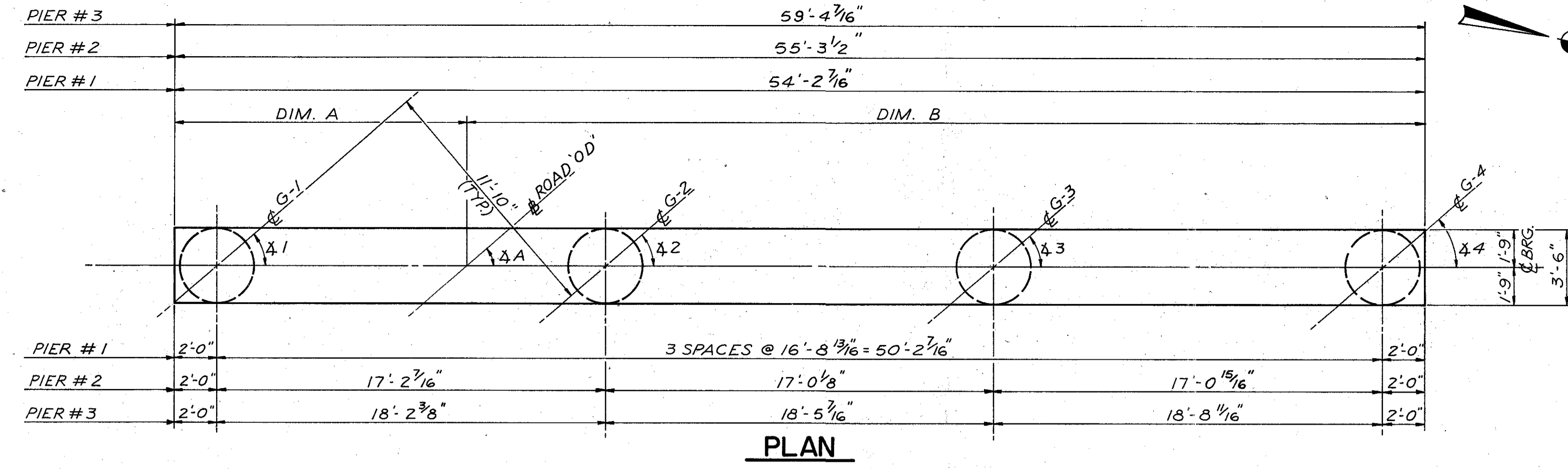
JOHN E. FOSTER AND ASSOCIATES, INC. 10/24  
555 Buttles Ave., Columbus, Ohio 43215

**PIER FOOTINGS**

BRIDGE NO. FRA-315-0205  
ROAD OD OVER OLENTANGY RIVER  
AND RELOCATED SR. 315

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DFs	DMT	DMT	HSS			

FRANKLIN COUNTY  
FRA-670-1.25-C-2

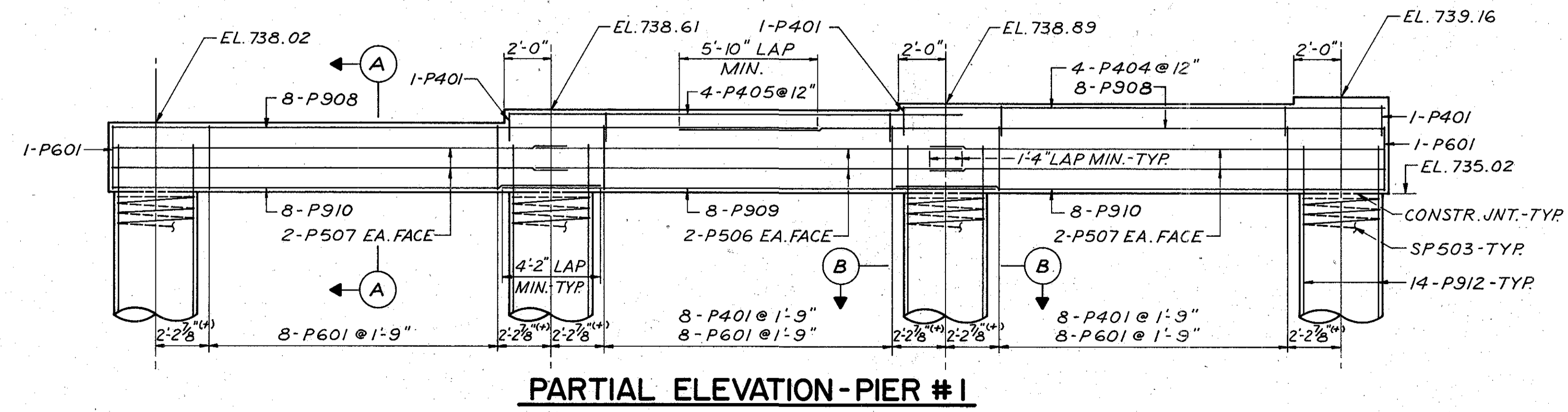


**FIXED BEARING ANCHOR BOLT PLAN**

**EXPANSION BEARING PLAN**

DIMENSION TABLE		
GIRDER	DIM. C	DIM. D
G-1	0'-9 3/16"	0'-10 9/16"
G-2	0'-9 1/16"	0'-10 1/16"
G-3	0'-8 15/16"	0'-10 13/16"
G-4	0'-8 3/4"	0'-10 15/16"

SKEW ANGLE AND BASE LINE LOCATION TABLE							
PIER	DIM. A	DIM. B	Δ1	Δ2	Δ3	Δ4	ΔA
PIER #1	12'-11 1/2"	41'-2 15/16"	45°00'00"	45°00'00"	45°00'00"	45°00'00"	45°00'00"
PIER #2	13'-3 5/16"	42'-0 3/16"	44°23'52.3"	44°11'12.8"	43°58'24.9"	43°45'28.4"	44°29'08.6"
PIER #3	13'-8 3/16"	45'-8 1/4"	40°13'27.6"	40°13'55.4"	39°33'2.1"	38°49'28.2"	40°34'57.9"



**NOTES**

- BRIDGE SEAT REINFORCING: REINFORCING STEEL IN THE VICINITY OF THE BRIDGE SEAT SHALL BE ACCURATELY PLACED TO AVOID INTERFERENCE WITH THE DRILLING OF BEARING ANCHOR HOLES OR THE PRE-SETTING OF BEARING ANCHORS.
- BEARING ANCHORS: AT THE OPTION OF THE CONTRACTOR, BEARING ANCHORS (OR FORMED HOLES), LOCATED AND SUPPORTED BY TEMPLATES, MAY BE CAST-IN-PLACE.

JOHN E. FOSTER AND ASSOCIATES, INC. 11/24  
555 Buttles Ave., Columbus, Ohio 43215

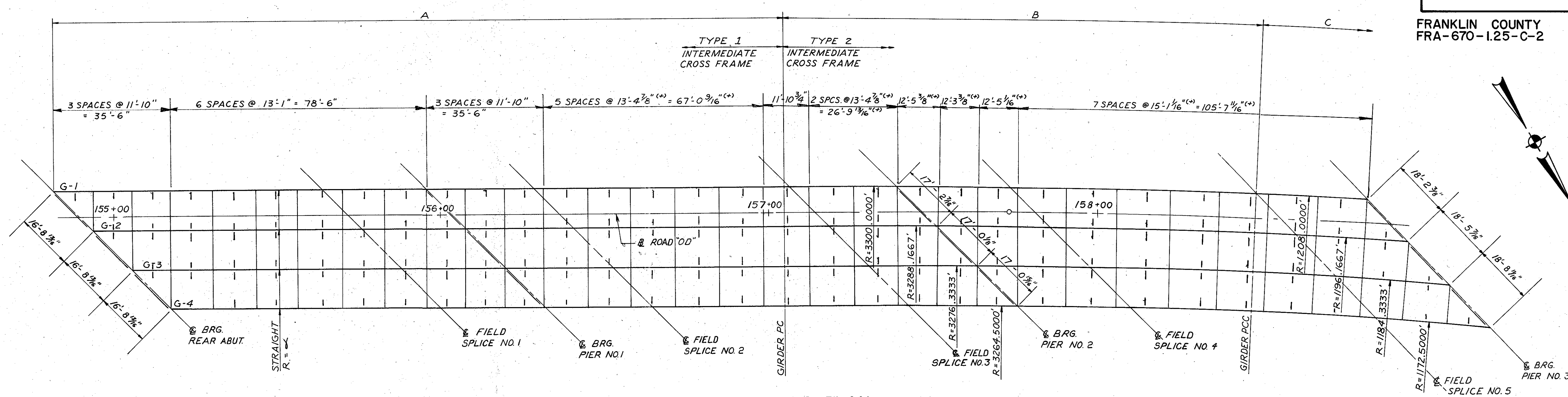
**PIERS NO. 1, NO. 2, AND NO. 3,  
PLAN ELEVATION AND DETAILS**

BRIDGE NO. FRA-315-0205  
ROAD OD OVER OLENTANGY RIVER  
AND RELOCATED S.R. 315

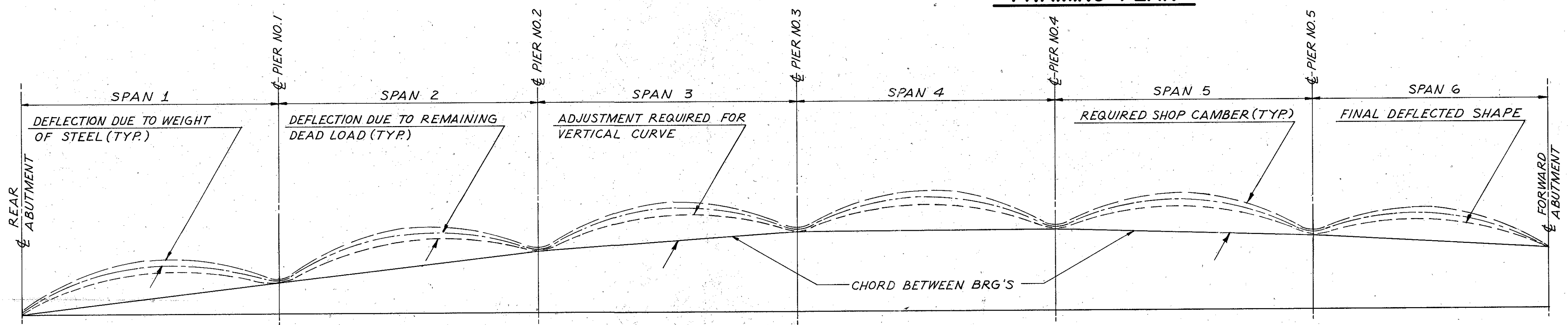
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.F.S.	DMT	DMT	H.S.S.			



FRANKLIN COUNTY  
FRA-670-1.25-C-2



**FRAMING PLAN**



DIM.	A	B	C	D	E
1	222'-3 <sup>3</sup> / <sub>8</sub> "	142'-10"	144'-7 <sup>7</sup> / <sub>16</sub> "	139'-6"	146'-5 <sup>1</sup> / <sub>16</sub> "
2	210'-5 <sup>3</sup> / <sub>8</sub> "	142'-3 <sup>3</sup> / <sub>8</sub> "	143'-2 <sup>1</sup> / <sub>16</sub> "	137'-7 <sup>1</sup> / <sub>16</sub> "	150'-10 <sup>1</sup> / <sub>2</sub> "
3	198'-7 <sup>3</sup> / <sub>8</sub> "	141'-9 <sup>1</sup> / <sub>16</sub> "	141'-9 <sup>1</sup> / <sub>16</sub> "	135'-8 <sup>3</sup> / <sub>16</sub> "	155'-4 <sup>1</sup> / <sub>16</sub> "
4	186'-9 <sup>3</sup> / <sub>8</sub> "	141'-3 <sup>9</sup> / <sub>16</sub> "	140'-4 <sup>7</sup> / <sub>16</sub> "	133'-9 <sup>1</sup> / <sub>4</sub> "	159'-11"

**NOTES**

1. ALL CROSSFRAME SPACING DIMENSIONS ARE GIVEN ALONG  $\phi$  OF G-1. TYPE 1 CROSSFRAMES ARE NORMAL TO GIRDER  $\phi$ S. ALL LINES OF TYPE 2 CROSSFRAMES ARE RADIAL.

SPAN	DIM	SHEAR	STUD	DIMENSIONS
1.	S	4'@1'-1 <sup>1</sup> / <sub>2</sub> "=4'-6"	6@1'-9"=10'-6"	13@2'-0"=26'-0"   12@2'-0"=24'-0"   6@1'-9"=10'-6"   5@0'-11"=4'-7"
2.	U	5@0'-11 <sup>3</sup> / <sub>4</sub> "=4'-10 <sup>3</sup> / <sub>4</sub> "	8@1'-4"=10'-8"	10@2'-0"=20'-0"   OPPOSITE HAND   OPPOSITE HAND   OPPOSITE HAND
3.	W	5@1'-0"=5'-0"	EE - SEE TABLE	9@2'-0"=18'-0"   OPPOSITE HAND   OPPOSITE HAND   OPPOSITE HAND
4.	Y	5@1'-0"=5'-0"	FF - SEE TABLE	9@2'-0"=18'-0"   OPPOSITE HAND   OPPOSITE HAND   OPPOSITE HAND
5.	AA	6@0'-6"=3'-0"	GG - SEE TABLE	9@2'-0"=18'-0"   OPPOSITE HAND   OPPOSITE HAND   OPPOSITE HAND
6.	CC	6@0'-10"=5'-0"	KK - SEE TABLE	10@2'-0"=20'-0"   12@2'-0"=24'-0"   HH - SEE TABLE   5@0'-11"=4'-7"

GIRDERS	W	Y	AA	CC	CC
	EE	FF	GG	HH	KK
G-1	8@1'-4 <sup>1</sup> / <sub>2</sub> "=11'-0"	8@1'-6 <sup>3</sup> / <sub>8</sub> "=12'-3"	8@1'-6"=12'-0"	6@1'-9 <sup>3</sup> / <sub>8</sub> "=10'-10 <sup>1</sup> / <sub>2</sub> "	7@1'-9 <sup>1</sup> / <sub>2</sub> "=12'-6 <sup>1</sup> / <sub>2</sub> "
G-2	8@1'-4 <sup>7</sup> / <sub>8</sub> "=11'-3"	8@1'-5 <sup>1</sup> / <sub>2</sub> "=11'-8"	8@1'-3"=10'-0"	6@1'-7 <sup>3</sup> / <sub>8</sub> "=9'-8 <sup>1</sup> / <sub>4</sub> "	7@1'-7 <sup>1</sup> / <sub>2</sub> "=11'-4 <sup>1</sup> / <sub>2</sub> "
G-3	8@1'-5 <sup>1</sup> / <sub>4</sub> "=11'-6"	8@1'-4 <sup>1</sup> / <sub>2</sub> "=11'-0"	8@1'-0"=8'-0"	6@1'-4"=8'-0"	7@1'-4 <sup>3</sup> / <sub>4</sub> "=9'-9 <sup>1</sup> / <sub>4</sub> "
G-4	8@1'-5 <sup>1</sup> / <sub>2</sub> "=11'-8"	8@1'-3 <sup>3</sup> / <sub>4</sub> "=10'-6"	8@0'-9"=6'-0"	6@1'-2 <sup>7</sup> / <sub>8</sub> "=7'-5 <sup>1</sup> / <sub>4</sub> "	7@1'-3 <sup>1</sup> / <sub>2</sub> "=9'-0 <sup>1</sup> / <sub>2</sub> "

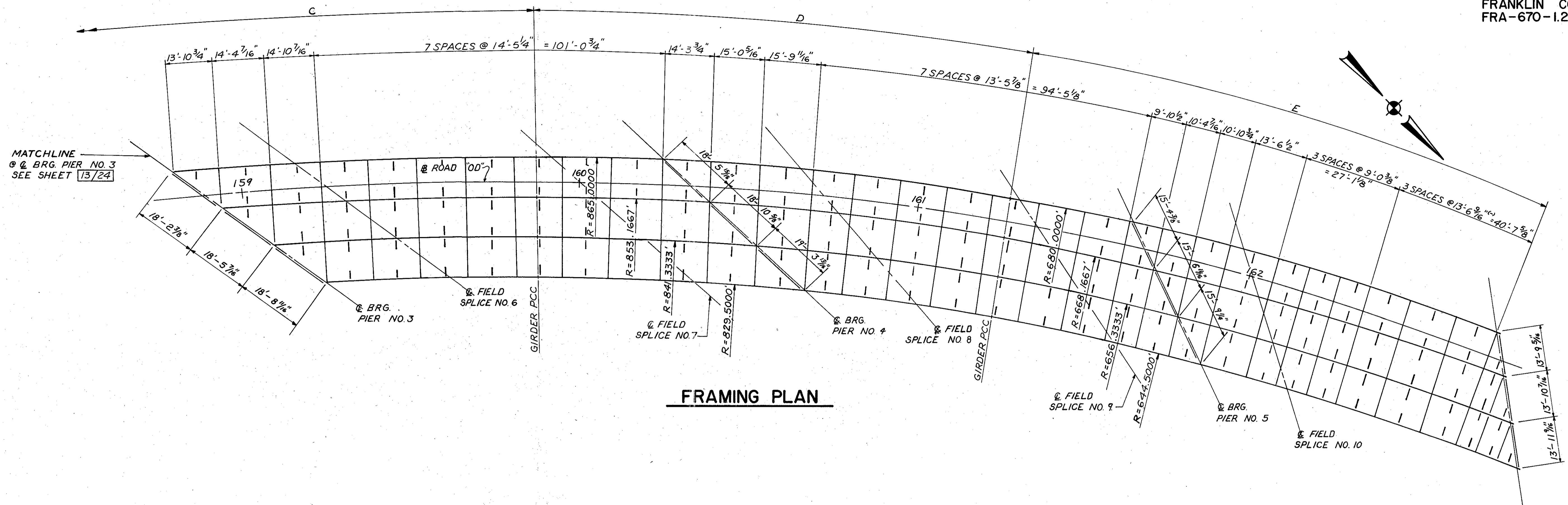
JOHN E. FOSTER AND ASSOCIATES, INC. 13/24  
555 Buttles Ave., Columbus, Ohio 43215

**FRAMING PLAN & DETAILS-I**

BRIDGE NO. FRA-315-0205  
ROAD OD OVER OLENTANGY RIVER  
AND RELOCATED S.R. 315

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.F.S.	E.S.	J.M.R.	H.S.S.			

FRANKLIN COUNTY  
FRA-670-1.25-C-2



	0	2	4	5	6	SPL	8	2	SPL	4	5	6	SPL	8	2	SPL	4	5	6	SPL	8	2	SPL	4	5	6	8											
DEFLECTION DUE TO WEIGHT OF STEEL	1/4"	5/16"	5/16"	1/4"	3/16"	1/8"	-	1/8"	5/16"	3/8"	5/16"	1/8"	-	1/8"	5/16"	3/8"	5/16"	1/8"	-	1/8"	5/16"	3/8"	5/16"	1/8"	-	1/16"	1/8"	3/16"	1/4"	1/4"	3/16"							
DEFLECTION DUE TO REMAINING DEAD LOAD	1 3/16"	1 1/10"	1 9/16"	1 1/4"	7/8"	7/16"	-	7/16"	1 1/4"	1 1/16"	1 5/16"	1/2"	-	9/16"	1 3/8"	1 1/16"	1 5/16"	1/2"	-	1 1/16"	1 5/8"	1 3/4"	1 5/8"	3/4"	-	1/2"	1 3/16"	1 1/4"	1 3/16"	3/8"	-	9/16"	1"	1 1/16"	1 5/8"	1 3/4"	1 1/4"	
ADJUSTMENT REQUIRED FOR VERTICAL CURVE	1 3/16"	1 13/16"	1 7/8"	1 13/16"	1 9/16"	1 3/16"	-	1 7/8"	2 3/4"	2 13/16"	2 3/4"	1 7/8"	-	1 15/16"	2 7/8"	3"	2 7/8"	1 15/16"	-	1 15/16"	2 15/16"	3 1/4"	2 15/16"	1 15/16"	-	1 15/16"	2 15/16"	3"	2 7/8"	1 7/8"	-	1 1/16"	1 3/8"	1 9/16"	1 11/16"	1 9/16"	1 1/16"	
ADJUSTMENT REQUIRED FOR HORIZONTAL CURVE																																						
REQUIRED SHOP CAMBER																																						
DEFLECTION DUE TO WEIGHT OF STEEL	1/4"	5/16"	5/16"	1/4"	3/16"	1/8"	-	1/8"	5/16"	3/8"	5/16"	1/8"	-	1/8"	5/16"	3/8"	5/16"	1/8"	-	1/8"	5/16"	3/8"	5/16"	1/8"	-	0	1/8"	3/16"	1/8"	0	-	1/16"	1/8"	3/16"	1/4"	1/4"	3/16"	
DEFLECTION DUE TO REMAINING DEAD LOAD	1 7/16"	2 1/16"	1 7/8"	1 1/2"	1 1/16"	9/16"	-	5/8"	1 9/16"	1 1/16"	1 9/16"	5/8"	-	1 1/16"	1 1/16"	3/4"	1 5/8"	5/8"	-	3/4"	1 15/16"	2 1/8"	1 15/16"	1 15/16"	-	-	3/8"	1 5/16"	1"	1"	3/8"	-	9/16"	1 5/16"	1 1/16"	1 5/8"	1 3/4"	1 1/4"
ADJUSTMENT REQUIRED FOR VERTICAL CURVE	1 3/16"	1 13/16"	1 7/8"	1 13/16"	1 9/16"	1 3/16"	-	2 1/16"	3 1/8"	3 1/4"	3 1/16"	2 1/16"	-	1 7/8"	2 13/16"	2 13/16"	2 13/16"	1 15/16"	-	1 7/8"	2 13/16"	2 7/8"	2 13/16"	1 7/8"	-	-	1 3/8"	2 1/8"	2 5/16"	2 1/4"	1 5/8"	-	1 1/4"	1 5/8"	1 7/8"	1 15/16"	1 7/8"	1 1/4"
ADJUSTMENT REQUIRED FOR HORIZONTAL CURVE																																						
REQUIRED SHOP CAMBER																																						
DEFLECTION DUE TO WEIGHT OF STEEL	1/4"	5/16"	5/16"	1/4"	3/16"	1/8"	-	1/8"	5/16"	3/8"	5/16"	1/8"	-	1/8"	5/16"	3/8"	5/16"	1/8"	-	1/8"	5/16"	3/8"	5/16"	1/8"	-	0	1/8"	3/16"	1/8"	0	-	1/16"	1/8"	3/16"	1/4"	1/4"	3/16"	
DEFLECTION DUE TO REMAINING DEAD LOAD	1 9/16"	2 1/8"	2"	1 5/8"	1"	5/8"	-	9/16"	1 5/8"	1 11/16"	1 9/8"	5/8"	-	3/4"	1 13/16"	1 7/8"	1 13/16"	1 11/16"	-	1 3/16"	1 15/16"	2 1/8"	2 1/16"	1"	-	-	1/8"	9/16"	5/8"	5/8"	3/16"	-	1/2"	1 3/16"	1 1/4"	1 1/2"	1 9/16"	1 1/8"
ADJUSTMENT REQUIRED FOR VERTICAL CURVE	1 3/16"	1 13/16"	1 7/8"	1 13/16"	1 9/16"	1 3/16"	-	2 1/2"	3 1/16"	3 1/8"	3 5/8"	2 5/16"	-	1 15/16"	2 7/8"	3 1/16"	2 15/16"	2"	-	1 7/8"	2 13/16"	2 9/16"	2 7/8"	1 15/16"	-	-	1 5/16"	1 7/8"	2 1/16"	2 1/4"	1 1/2"	-	1 3/16"	1 9/16"	1 3/4"	1 7/8"	1 13/16"	1 3/16"
ADJUSTMENT REQUIRED FOR HORIZONTAL CURVE																																						
REQUIRED SHOP CAMBER																																						
DEFLECTION DUE TO WEIGHT OF STEEL	1/4"	5/16"	5/16"	1/4"	3/16"	1/8"	-	1/8"	5/16"	3/8"	5/16"	1/8"	-	1/8"	5/16"	3/8"	5/16"	1/8"	-	1/8"	5/16"	3/8"	5/16"	1/8"	-	0	1/8"	3/16"	1/8"	0	-	1/16"	1/8"	3/16"	1/4"	1/4"	3/16"	
DEFLECTION DUE TO REMAINING DEAD LOAD	1 3/16"	1 11/16"	1 9/16"	1 1/4"	7/8"	7/16"	-	7/16"	1 1/4"	1 3/8"	1 5/16"	1/2"	-	1 1/16"	1 9/16"	1 11/16"	1 1/16"	5/8"	-	5/8"	1 9/16"	1 13/16"	1 11/16"	7/8"	-	-	0	1/4"	1/4"	1/4"	1/16"	-	1/8"	5/8"	7/8"	1"	1 1/16"	1 1/16"
ADJUSTMENT REQUIRED FOR VERTICAL CURVE	1 3/16"	1 13/16"	1 7/8"	1 13/16"	1 9/16"	1 3/16"	-	3 1/16"	4 5/16"	4 1/16"	3 3/8"	2 7/16"	-	2"	3 1/16"	3 3/16"	3 3/8"	2 7/8"	-	1 7/8"	2 7/8"	3"	2 7/8"	1 15/16"	-	-	1 1/4"	2"	2 3/16"	2 3/16"	1 1/2"	-	1 1/8"	1 7/16"	1 11/16"	1 3/4"	1 1/4"	1 1/8"
ADJUSTMENT REQUIRED FOR HORIZONTAL CURVE																																						
REQUIRED SHOP CAMBER																																						

NOTES

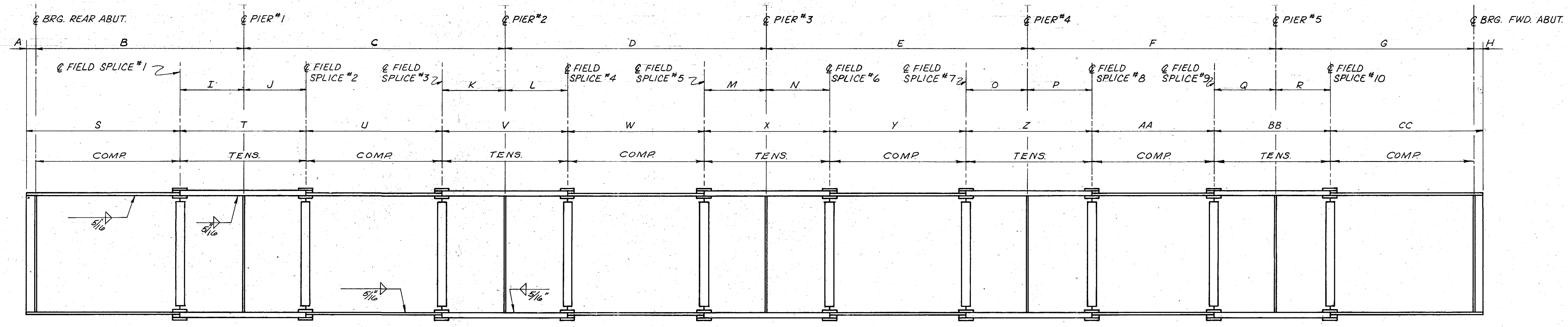
1. FOR ADDITIONAL NOTES AND DIMENSIONS SEE SHEETS 13/24 AND 15/24.

JOHN E. FOSTER AND ASSOCIATES, INC. 1/4/24  
555 Buttles Ave., Columbus, Ohio 43215

FRAMING PLAN & DETAILS-2

BRIDGE NO. FRA-315-0205  
ROAD OD OVER OLENTANGY RIVER  
AND RELOCATED S.R. 315

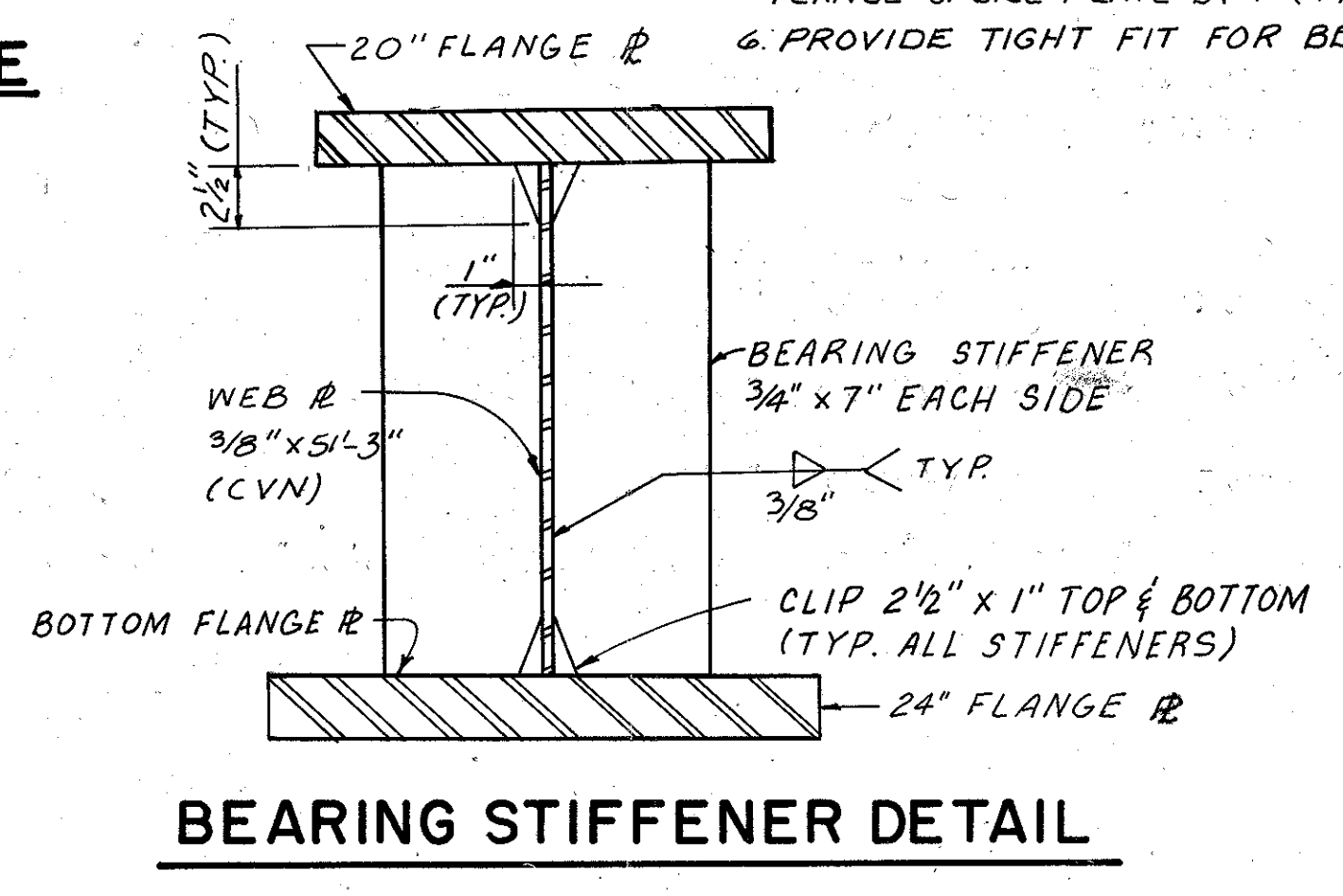
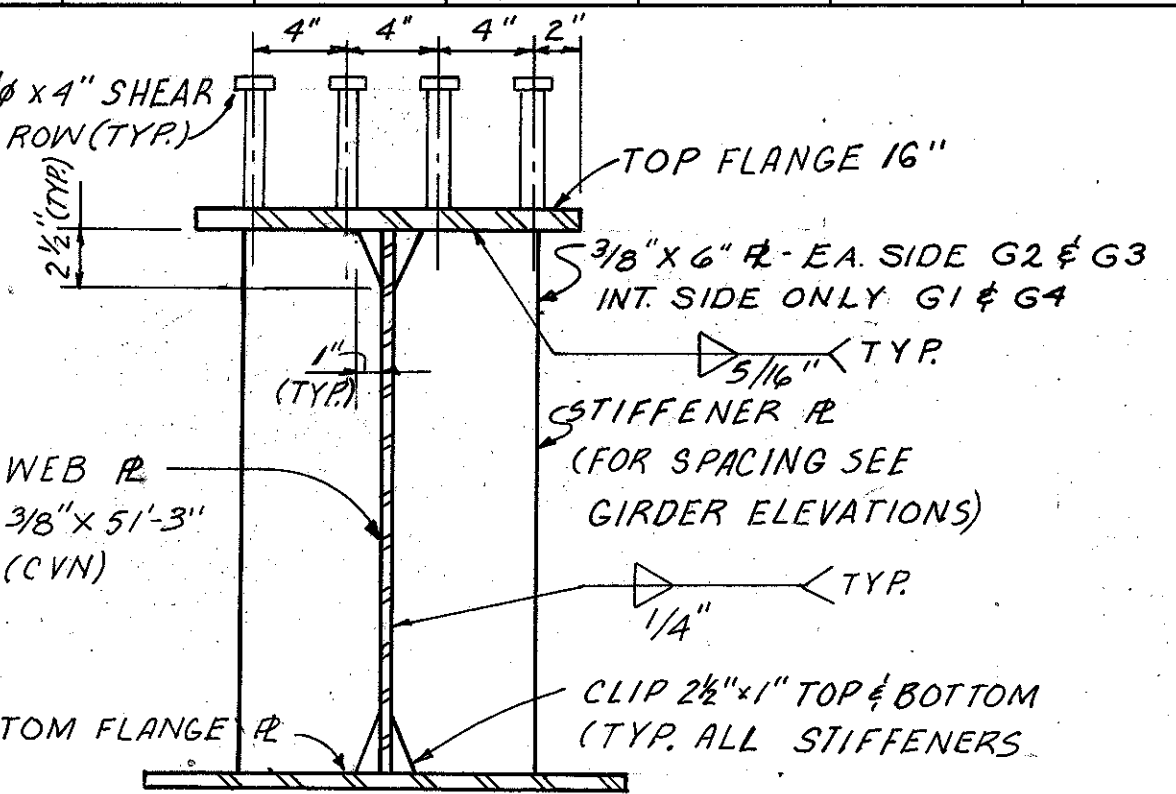
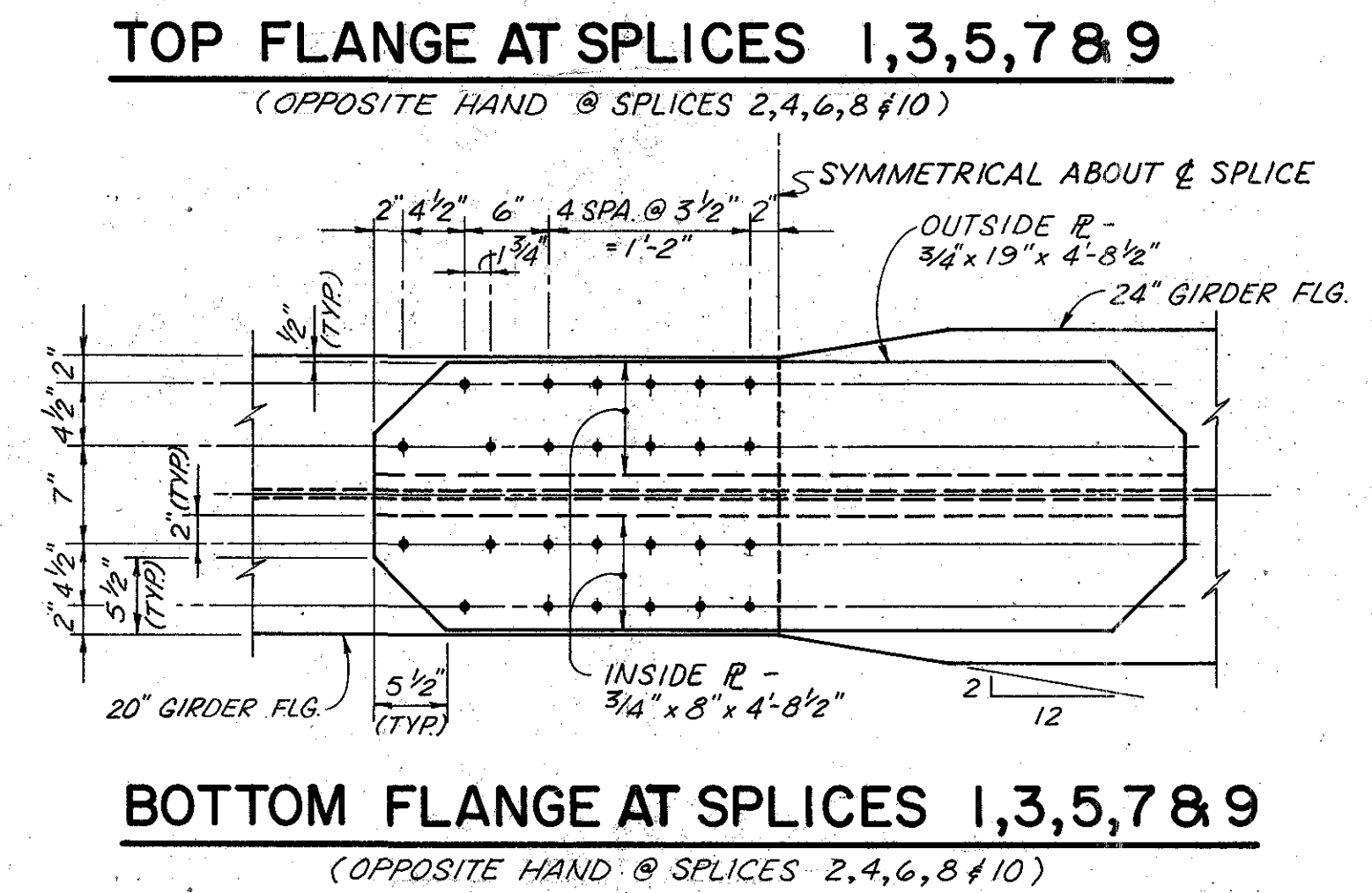
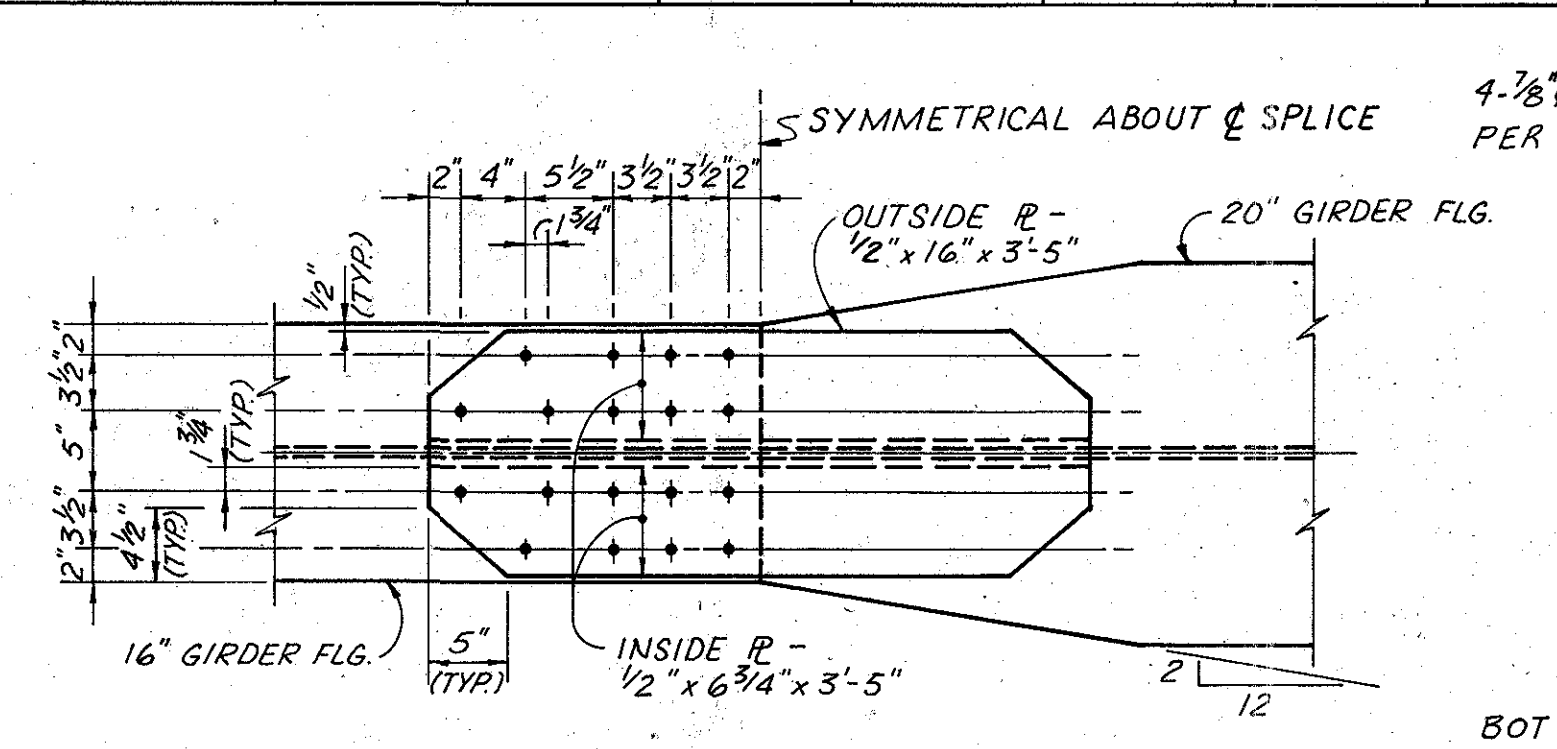
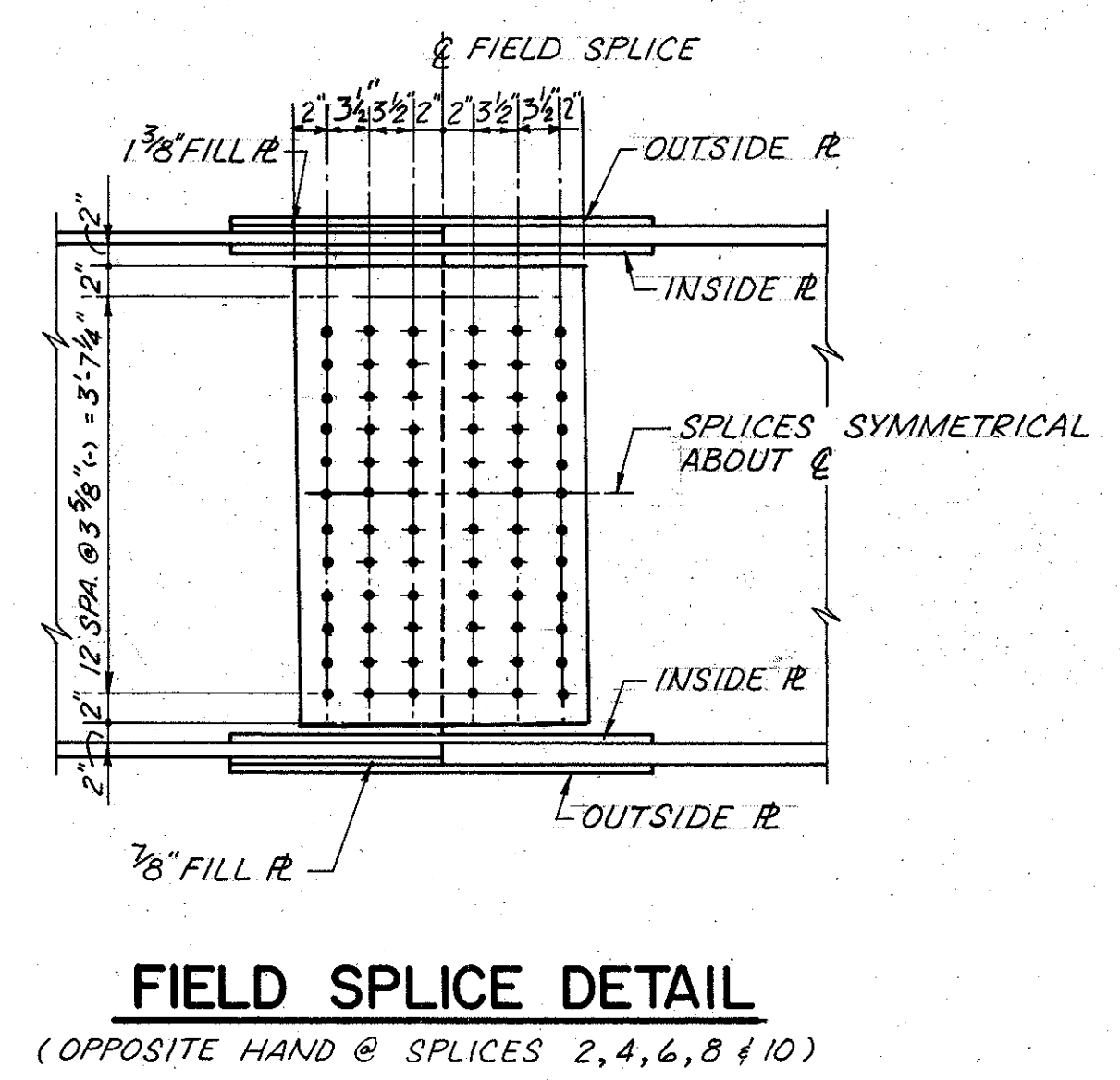
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.F.S.	E.S.	J.M.R.	H.S.S.			



GIRDER ELEVATIONS - GIRDERS G-1 THRU G-4

GIRDERS	DIMENSION																												
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	BB	CC
G-1	1'-1"	114'-0"	142'-11 1/2"	142'-6"	144'-2 3/8"	139'-6 8/16"	112'-5 1/16"	1'-0"	32'-0"	33'-0"	33'-2"	34'-3 7/16"	34'-4 7/16"	34'-7 7/8"	33'-4 7/16"	34'-0"	34'-0"	33'-8"	83'-1"	65'-0"	76'-9 1/2"	67'-5 13/16"	73'-10"	65'-0 1/16"	76'-2 1/16"	67'-4 7/16"	71'-6 7/8"	67'-8"	79'-9 1/16"
G-2	1'-1"	114'-0"	143'-1 7/16"	143'-5 1/8"	143'-0 3/16"	133'-1 3/16"	107'-9"	1'-0"	32'-0"	33'-0"	33'-3 1/2"	34'-5 7/16"	34'-9 7/16"	35'-1 7/8"	32'-11 7/16"	33'-7 7/8"	31'-8 15/16"	31'-2 3/8"	83'-1"	65'-0"	76'-9 9/16"	67'-8 3/8"	74'-2 1/4"	69'-11 7/16"	74'-11 1/8"	66'-7 7/8"	67'-8 1/16"	62'-11 3/16"	77'-6 3/8"
G-3	1'-1"	114'-0"	143'-3 1/16"	144'-6"	141'-11 1/4"	126'-6 3/16"	103'-0"	1'-0"	32'-0"	33'-0"	33'-5"	34'-7 1/16"	35'-3 1/16"	35'-8 1/4"	32'-6"	33'-3 7/8"	29'-5"	28'-8 1/2"	83'-1"	65'-0"	76'-10 1/16"	68'-0 1/16"	74'-7 7/8"	70'-11 7/8"	73'-9"	65'-9 7/8"	63'-9 1/4"	58'-1 1/2"	74'-3 1/2"
G-4	1'-1"	114'-0"	143'-6 5/8"	145'-8 1/16"	140'-11 7/8"	119'-8 7/16"	98'-1 15/16"	1'-0"	32'-0"	33'-0"	33'-6 1/2"	34'-8 3/4"	35'-9 1/8"	36'-3 3/4"	32'-0 1/16"	33'-0"	27'-0"	26'-1 9/16"	83'-1"	65'-0"	77'-0 1/16"	68'-3 1/4"	75'-2 7/16"	72'-0 7/8"	72'-7 7/8"	65'-0 9/16"	59'-8 7/16"	53'-1 3/16"	73'-0 5/16"

TABLE OF GIRDER DIMENSIONS



NOTES

1. A588 STEEL IS TO BE LEFT UNPAINTED. SEE CMS 513.221 FOR CLEANING REQUIREMENTS.
2. ERECTION BOLTS: HOLE DIAMETER IN THE CROSSFRAMES AND GIRDER STIFFENERS SHALL BE RESPECTIVELY 1/16" AND 1/4" LARGER THAN THE DIAMETER OF THE ERECTION BOLTS. UNLESS REPLACED BY PERMANENT HIGH STRENGTH BOLTS, ERECTION BOLTS SHALL REMAIN IN PLACE. LOCK WASHERS SHALL BE FURNISHED FOR OTHER THAN FULLY TORQUED HIGH STRENGTH ERECTION BOLTS. BOLTS SHALL BE FURNISHED AS PART OF 513. IN LIEU OF ERECTION BOLTS AND AT THE OPTION OF THE CONTRACTOR, ALTERNATIVE MEANS OF TEMPORARY BRACING MAY BE USED SUBJECT TO THE APPROVAL OF THE DIRECTOR (501.06).
3. WELDED ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE MAY BE MADE TO AREAS OF THE FASCIA STRINGER FLANGES DESIGNATED "COMPRESSION". ATTACHMENTS SHALL NOT BE MADE TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE NOT CLOSER THAN 1" FROM EDGE OF FLANGE, BE NOT MORE THAN 2" LONG, AND BE NOT SMALLER THAN THE MINIMUM SIZE REQUIRED BY AASHTO.
4. FOR INTERMEDIATE CROSSFRAME DETAILS, SEE SHEET 13/24.
5. SPACING OF INTERMEDIATE STIFFENERS SHALL VARY TO ALLOW STIFFENERS TO CLEAR BOTTOM FLANGE SPLICE PLATE BY 1" (TYPICAL EITHER SIDE).
6. PROVIDE TIGHT FIT FOR BEARING STIFFENERS AT COMPRESSION FLANGE.

JOHN E. FOSTER AND ASSOCIATES, INC. 15/24  
555 Buttles Ave., Columbus, Ohio 43215

**GIRDER ELEVATION & DETAILS**  
BRIDGE NO. FRA-315-0205  
ROAD OD OVER OLENTANGY RIVER  
AND RELOCATED S.R. 315

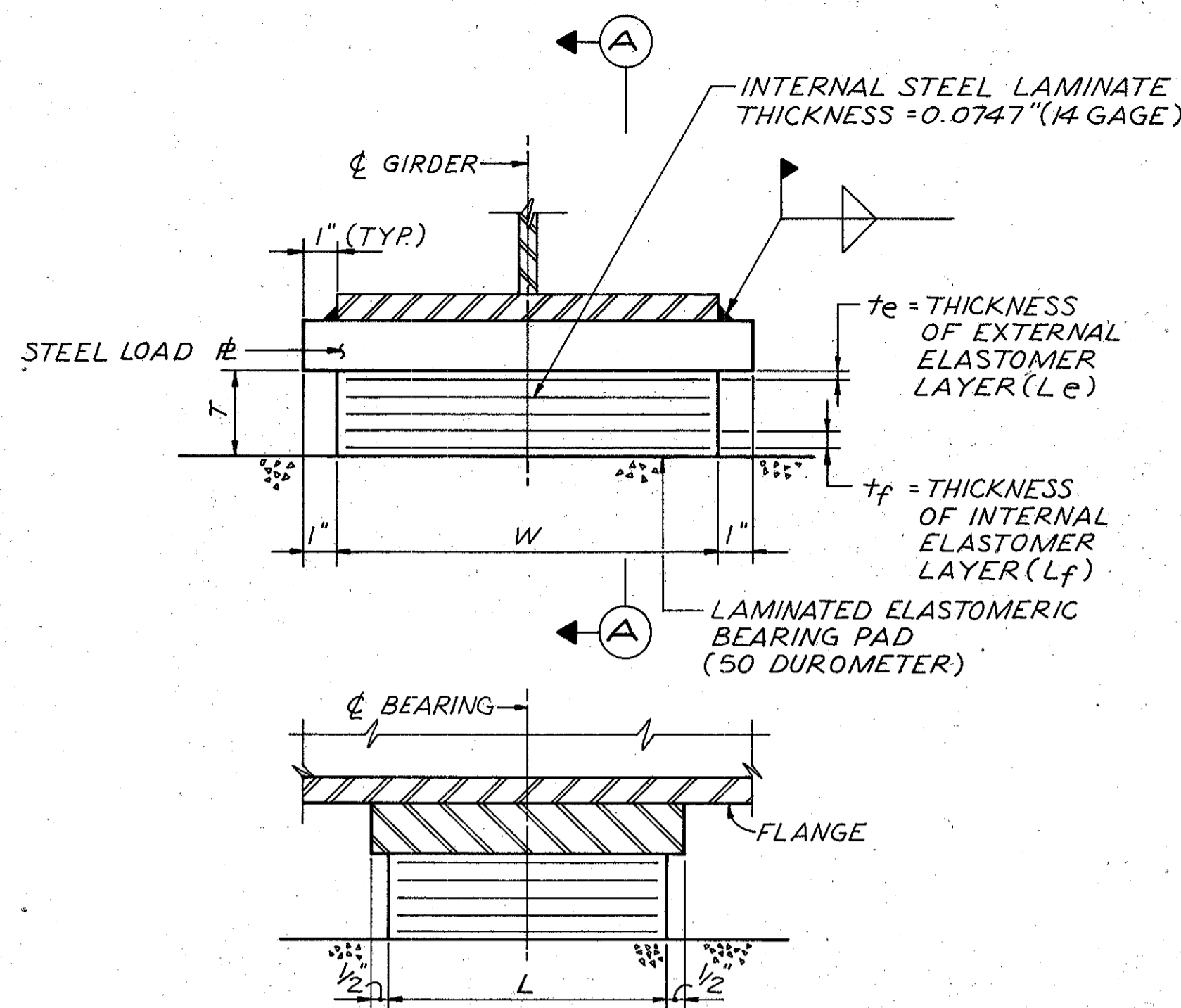
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
HSS	MJR	MJR	DFS			

FRANKLIN COUNTY  
FRA-670-1.25-C-2

**NOTES**

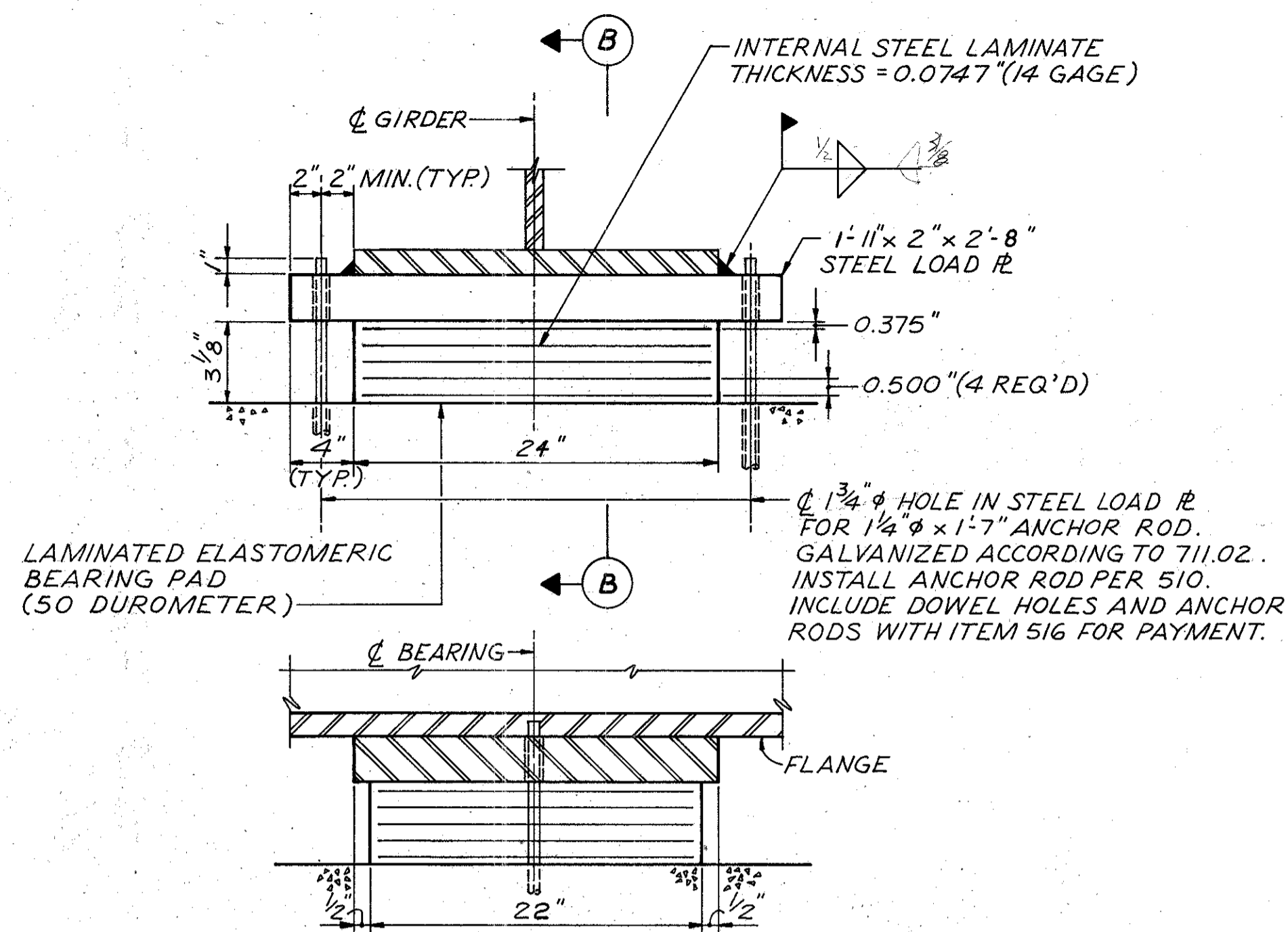
1. WELDING SHALL BE CONTROLLED SO THAT THE PLATE TEMPERATURE AT THE ELASTOMER BONDED SURFACE DOES NOT EXCEED 300°F AS DETERMINED BY USE OF PYROMETRIC STICKS OR OTHER TEMPERATURE MONITORING DEVICES.
2. THE STEEL LOAD PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS.
3. AT THE OPTION OF THE CONTRACTOR, THE BEARING ANCHOR RODS (OR FORMED HOLES), LOCATED AND SUPPORTED BY TEMPLATES, MAY BE CAST-IN-PLACE.
4. TOLERANCES: INDIVIDUAL LAYER THICKNESS: ± 20% OF DESIGN VALUE (NOT TO EXCEED ± 1/8").  

PLAN DIMENSIONS:	-0, +1/2"
DESIGN THICKNESS ≤ 1/4"	-0, +1/8"
DESIGN THICKNESS > 1/4"	-0, +1/4"
EDGE COVER OF EMBEDDED LAMINATES	-0, +1/8"
5. BEARING REPOSITIONING: IF DECK CONCRETE PLACED AT AN AMBIENT TEMPERATURE HIGHER THAN 80° OR LOWER THAN 40°F AND/OR ABUTMENT TILTING RESULTS IN THE BEARING SHEAR DEFLECTION EXCEEDING ONE-SIXTH OF THE BEARING HEIGHT AT 60°F ± 10°F, THE GIRDERS SHALL BE RAISED TO ALLOW THE BEARINGS TO RETURN TO THEIR UNDEFORMED SHAPE AT 60°F ± 10°F.



**SECTION A-A**

**LAMINATED ELASTOMERIC EXPANSION BEARING**



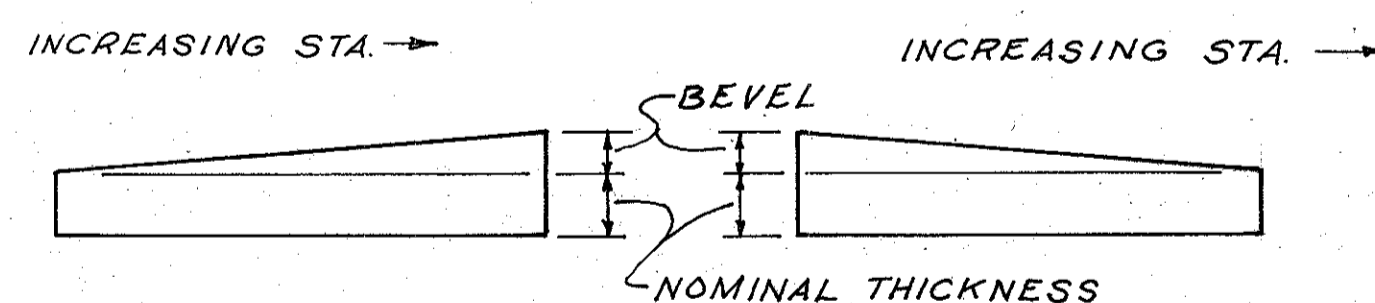
**SECTION B-B**

**LAMINATED ELASTOMERIC FIXED BEARING**

(PIER NO. 3)

EXPANSION BEARINGS									
LOCATION NO.	TOTAL LOAD KIPS	SIZE		T IN.	t <sub>f</sub> IN.	t <sub>e</sub> IN.	NO. OF INTERNAL LAYERS	NO. OF STEEL LAMINATES	*STEEL LOAD PLATE SIZE
		L	W						
ABUTS	16#	1'-4 1/2"	1'-6"	0'-5 3/8"	0'-0 3/8"	0'-0 1/4"	7	8	1'-5 1/2" x 1'-8" x 0'-2"
PIERS 1, 5	190	1'-10"	2'-0"	0'-3 1/2"	0'-0 1/2"	0'-0 3/8"	5	6	1'-11" x 2'-2" x 0'-2"
PIERS 2, 4	190	1'-10"	2'-0"	0'-3 1/2"	0'-0 1/2"	0'-0 3/8"	4	5	1'-11" x 2'-2" x 0'-2"

\* THIS IS THE NOMINAL R SIZE AS REQUIRED BY DESIGN LOADING. LOAD R'S SHALL BE BEVELED TO ACCOMMODATE GIRDER SLOPE AND ROTATION. SEE DETAIL THIS SHEET.



LOCATION	BEVEL	LOCATION	BEVEL
REAR ABUT.	7/8"	PIER NO. 4	3/16"
PIER NO. 1	5/16"	PIER NO. 5	1/16"
PIER NO. 2	3/8"	FWD ABUT.	3/8"
PIER NO. 3	5/16"		

**BEVELED LOAD PLATE DETAIL**

NTS

JOHN E. FOSTER AND ASSOCIATES, INC. 1/6/24  
555 Buttles Ave., Columbus, Ohio 43215

**BEARING DETAILS**

BRIDGE NO. FRA-315-0205  
ROAD OD OVER OLENTANGY RIVER  
AND RELOCATED S.R. 315

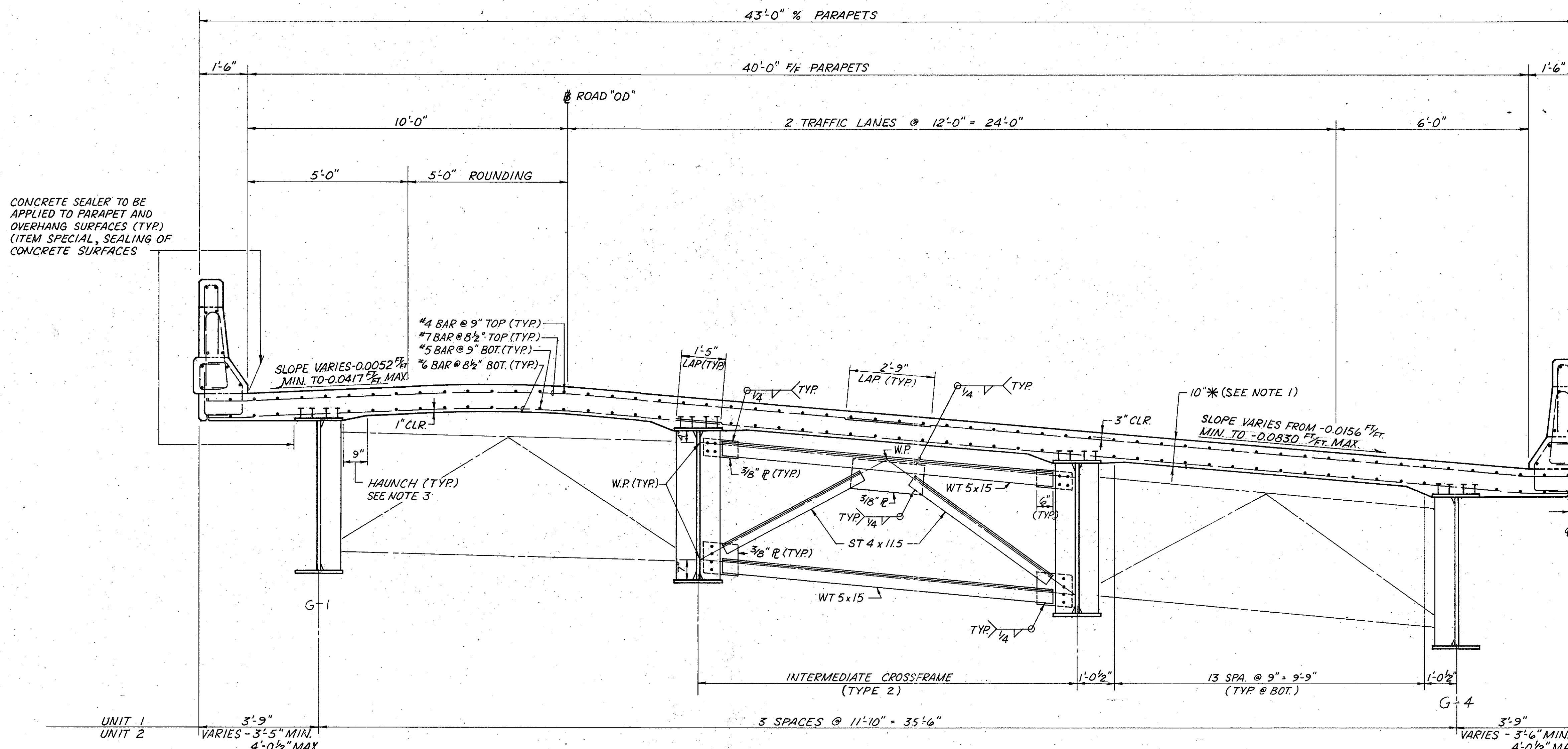
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
C.E.M.	D.M.T.	J.M.R.	H.S.S.			



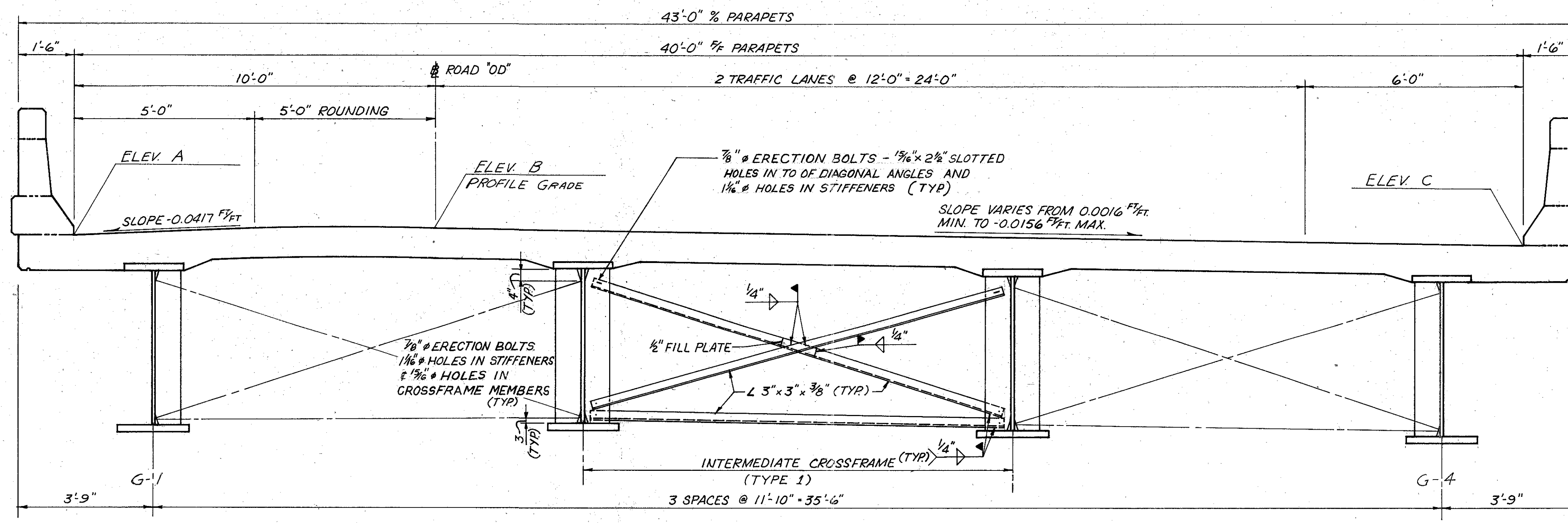
FRANKLIN COUNTY  
FRA-670-1.25-C-2

**NOTES**

1. DECK SLAB DEPTH: \* THIS IS THE DESIGN DIMENSION. THE QUANTITY OF DECK CONCRETE TO BE PAID FOR SHALL BE BASED UPON THIS DIMENSION, EVEN THOUGH DEVIATION FROM IT MAY BE NECESSARY BECAUSE THE TOP FLANGE OF THE GIRDER MAY NOT HAVE THE EXACT CAMBER OR CONFORMATION REQUIRED TO PLACE IT PARALLEL TO THE FINISHED GRADE. DEDUCTION SHALL BE MADE FOR VOLUME OF ENCASED STEEL PLATES AS PER S11.18.
2. CONCRETE PARAPETS ABOVE UPPER CONSTRUCTION JOINT SHALL BE PLACED IN ALTERNATING SECTIONS BY THE USE OF BULKHEADS. CLOSING SECTIONS SHALL BE PLACED AFTER REMOVAL OF BULKHEADS AND AFTER PLACEMENT OF EXPANSION JOINT FILLER. EXPOSED EDGES OF THE FILLER SHALL BE FLUSH WITH THE SURFACE OF CONCRETE AND SHALL BE FREE OF MORTAR.
3. A TYPICAL HAUNCH WIDTH OF 9" SHALL BE USED FOR COMPUTING THE QUANTITY OF CONCRETE. HOWEVER, THE HAUNCH WIDTH MAY VARY BETWEEN 6" AND 12" PROVIDED THAT THE SLOPE SHALL NOT BE MORE THAN 1/4 FOR A HAUNCH LESS THAN 9" IN WIDTH.
4. FOR ALL INTERMEDIATE CROSSFRAMES, BOLTS SHALL BE DRAWN UP AS TIGHT AS POSSIBLE WITHOUT BEING TIGHT ENOUGH TO PREVENT RELATIVE VERTICAL MOVEMENT OF GIRDERS DURING PLACEMENT OF THE CONCRETE FOR THE SUPERSTRUCTURE SLAB. THESE CONNECTIONS SHALL NOT BE WELDED UNTIL AFTER THE CONCRETE SLAB HAS BEEN PLACED.
5. CONCRETE FOR PARAPETS SHALL NOT BE PLACED UNTIL ALL CROSSFRAME AND BRACING MEMBERS HAVE BEEN PERMANENTLY FASTENED BY WELDING AND BOLTING AS SHOWN.
6. AT HIS OPTION, THE CONTRACTOR MAY PROPOSE A DIFFERENT MANNER OR SEQUENCE OF ERECTION, SUBJECT TO THE WRITTEN APPROVAL OF THE DIRECTOR.
7. THE PREFORMED EXPANSION JOINT FILLER IN THE RAILING PARAPET DEFLECTION JOINTS MAY BE EITHER 1/4" GRAY SPONGE RUBBER OR 1/4" GRAY CELLULAR POLYVINYL CHLORIDE (P.V.C.) SPONGE. IF RUBBER IS USED, IT SHALL MEET THE REQUIREMENTS OF AASHTO M-153, TYPE I. IF P.V.C. IS USED, THE DENSITY OF P.V.C. SPONGE SHALL NOT BE LESS THAN 20 LBS. PER CUBIC FEET. THE DEFLECTION JOINT SHALL EXTEND FROM TOP OF PARAPET TO FIRST CONSTRUCTION JOINT AND SHALL BE INCLUDED FOR PAYMENT WITH SUPERSTRUCTURE CONCRETE.
8. ALL SLAB AND PARAPET STEEL REINFORCING BARS SHALL BE EPOXY COATED. THESE BARS ARE PREFIXED E.
9. DRIP GROOVES SHALL TERMINATE 2'-0" FROM FACES OF ABUTMENTS.
10. FIELD BEND TRANSVERSE BARS TO FIT CROWN. BENDING TO BE INCLUDED IN ITEM 509 FOR PAYMENT. EPOXY COATED BARS DAMAGED BY FIELD BENDING SHALL BE REPAIRED AS PER APPROVED MANUFACTURER'S RECOMMENDATION'S.
11. "S" BARS = SUPERSTRUCTURE REINFORCING.



**TYPICAL CROSS SECTION - STA. 156+72.93 TO STA. 162+78.17**



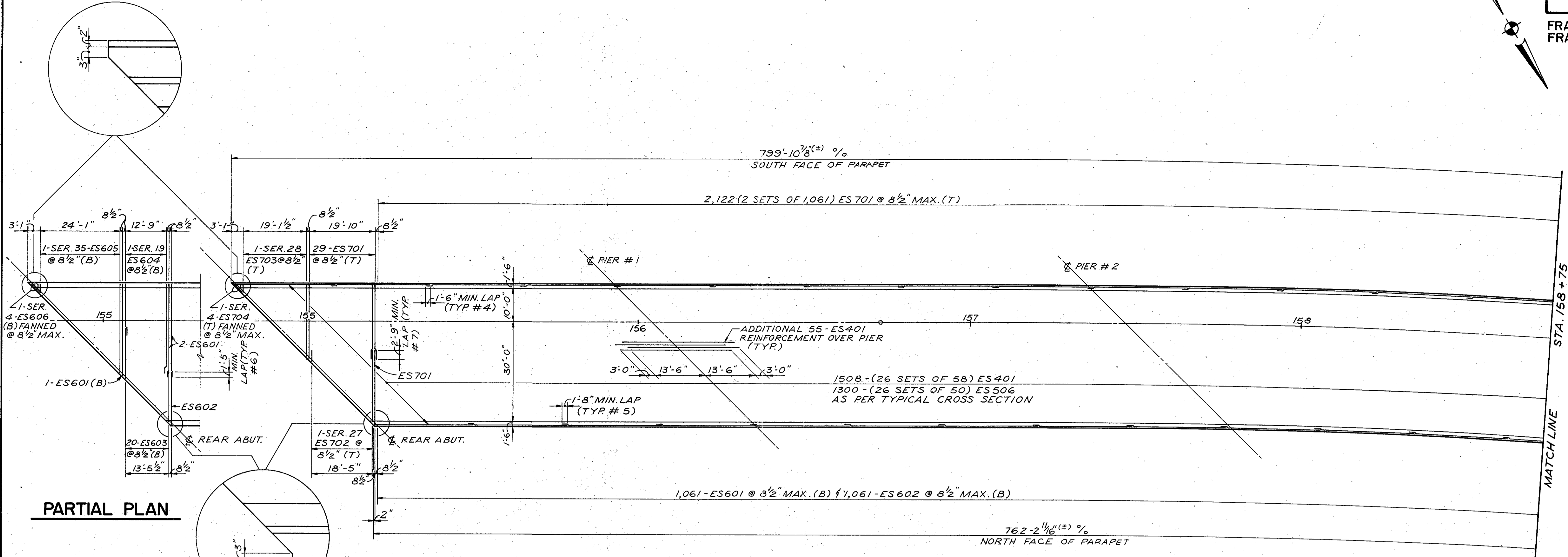
**TYPICAL CROSS SECTION - STA. 154+90 TO STA. 156+72.93**

JOHN E. FOSTER AND ASSOCIATES, INC. 17/24  
555 Buttles Ave., Columbus, Ohio 43215

**TYPICAL DECK SECTIONS**

BRIDGE NO. FRA-315-0205  
ROAD OD OVER OLENTANGY RIVER  
AND RELOCATED S.R. 315

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
HSS	MJR	MJR	DFS			

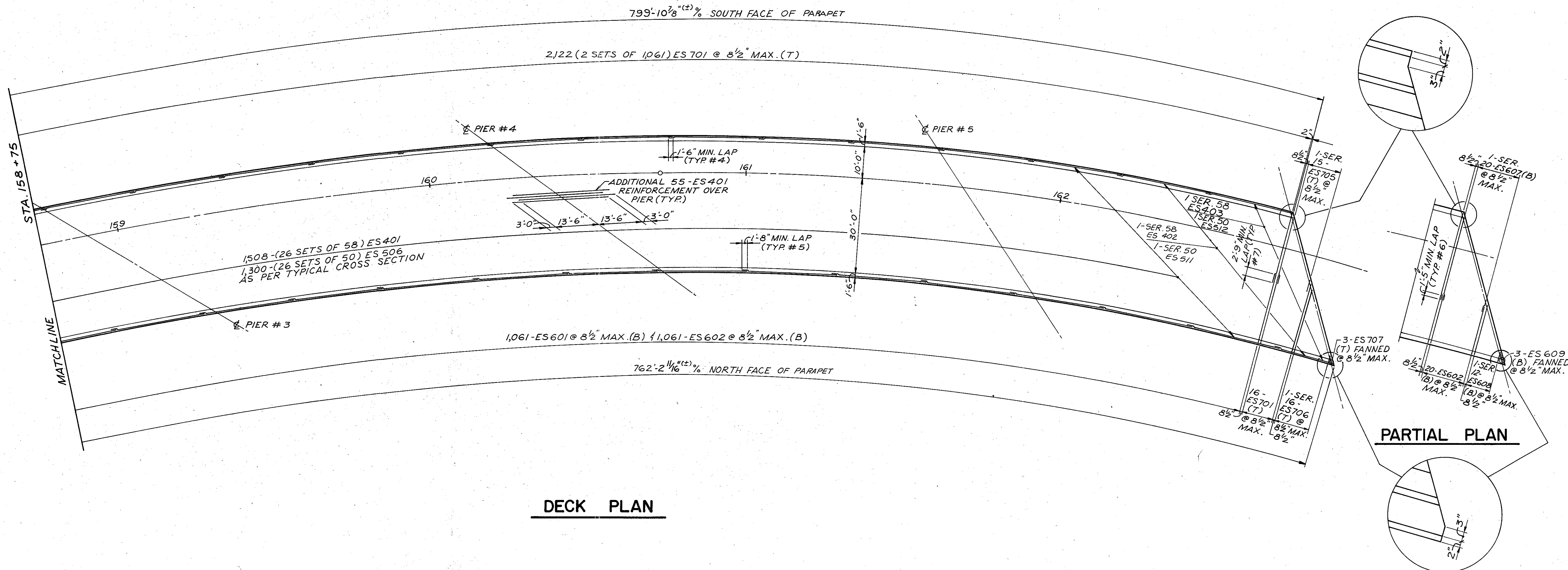
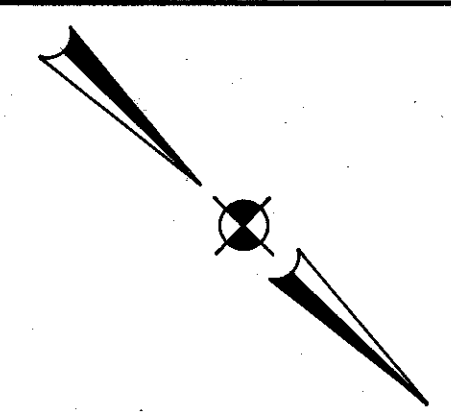


**DECK PLAN**

JOHN E. FOSTER AND ASSOCIATES, INC. 1/8/24  
555 Buttles Ave., Columbus, Ohio 43215

**DECK PLAN-I**  
BRIDGE NO. FRA-315-0205  
ROAD OD OVER OLENTANGY RIVER  
AND RELOCATED S.R. 315

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
HSS	DMT	DMT	DFS			



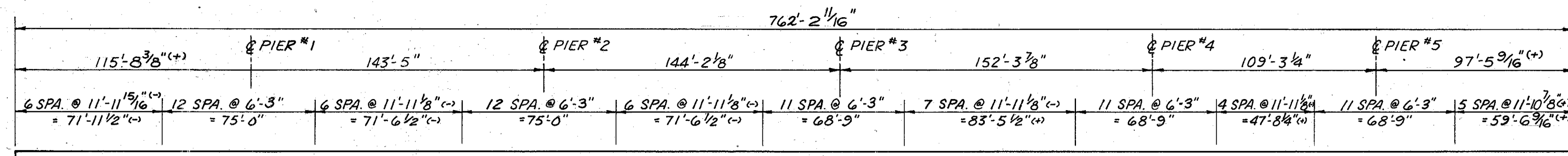
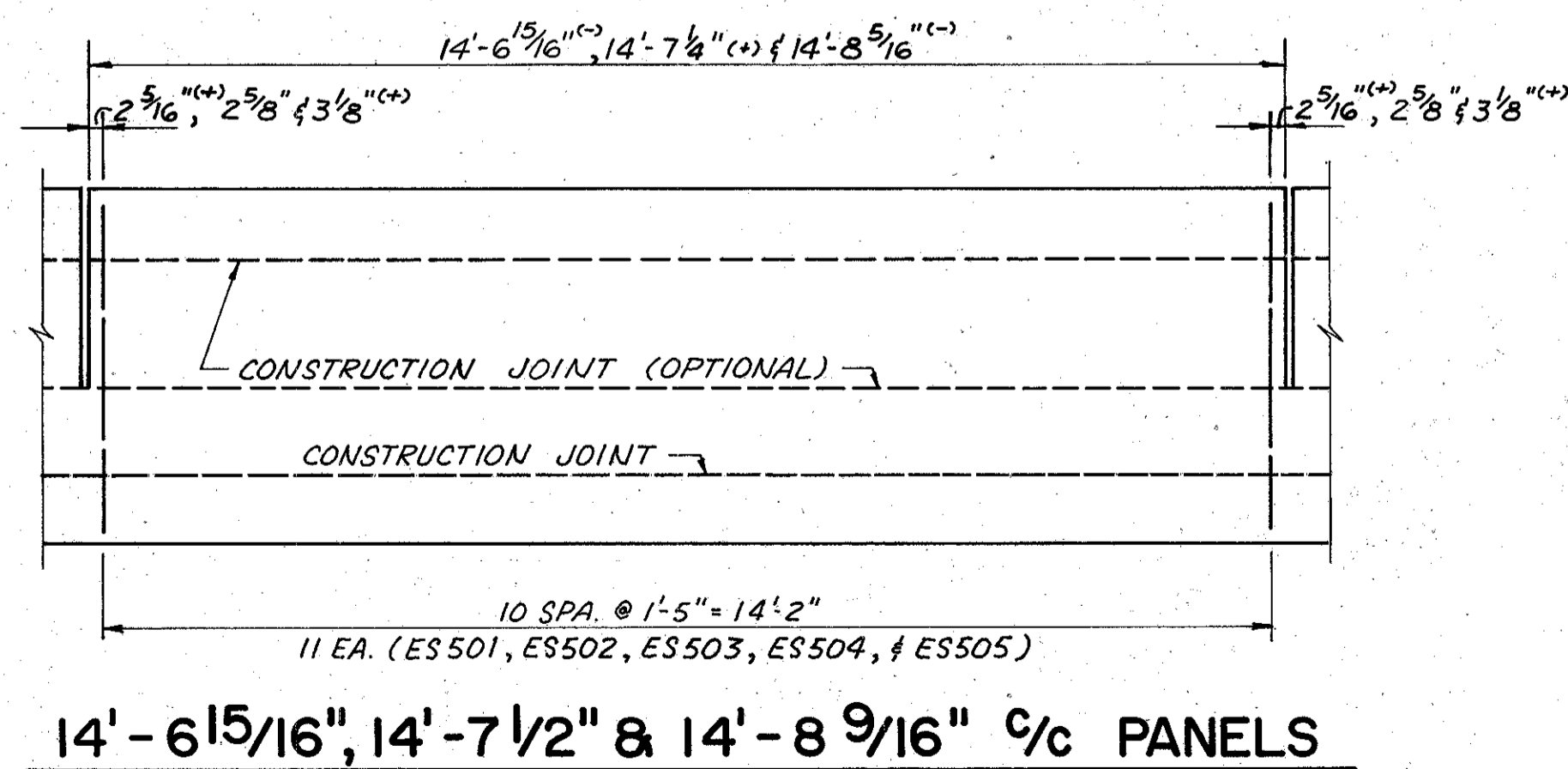
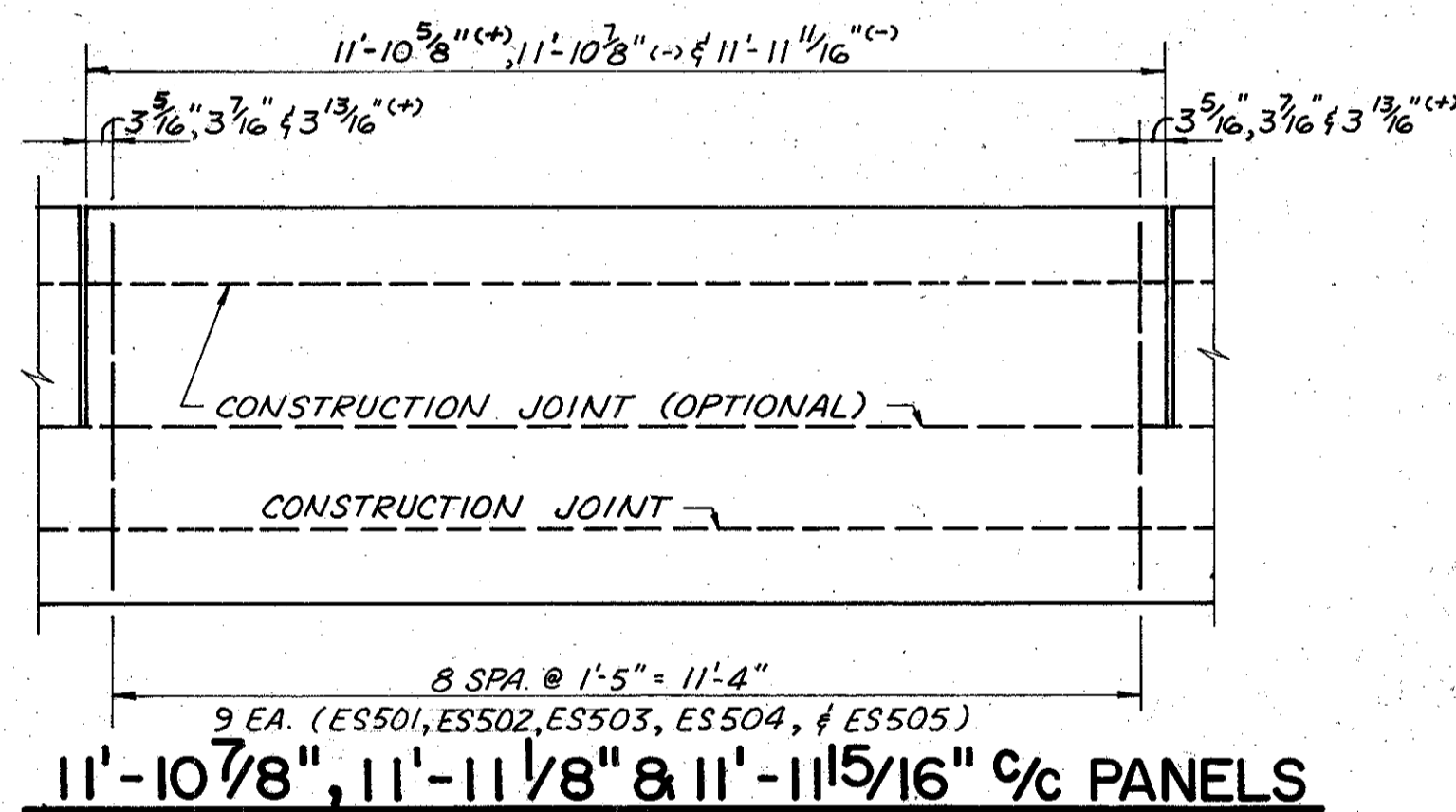
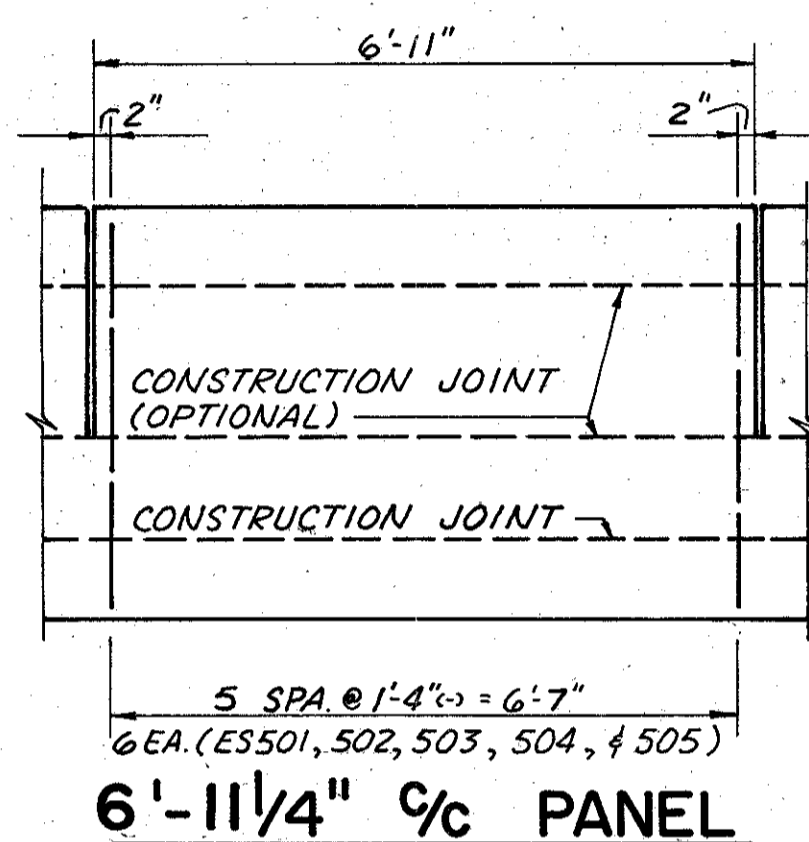
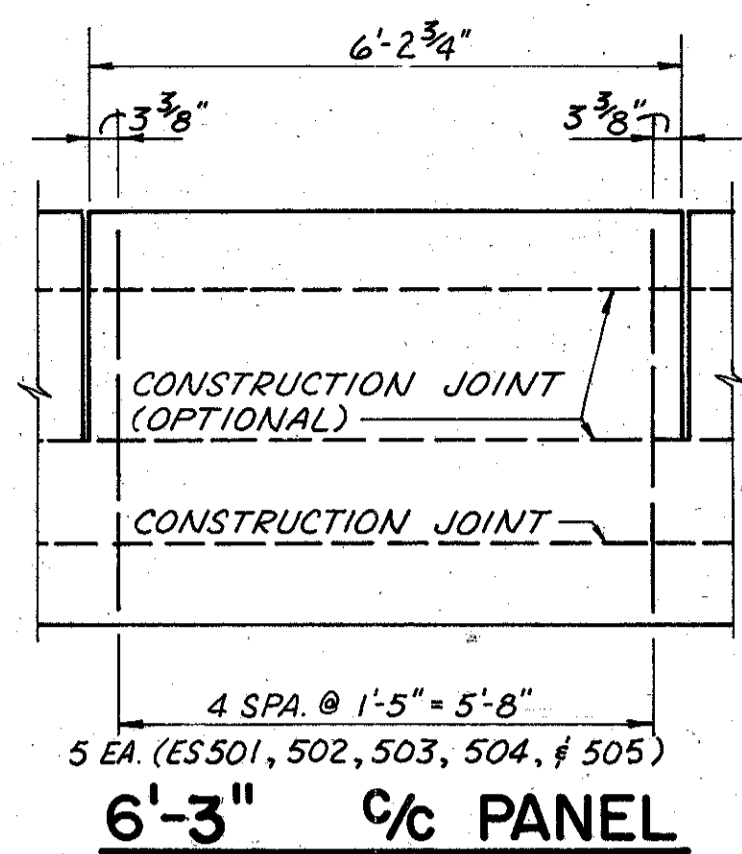
**DECK PLAN**

JOHN E. FOSTER AND ASSOCIATES, INC. 10/24  
 555 Buttles Ave., Columbus, Ohio 43215

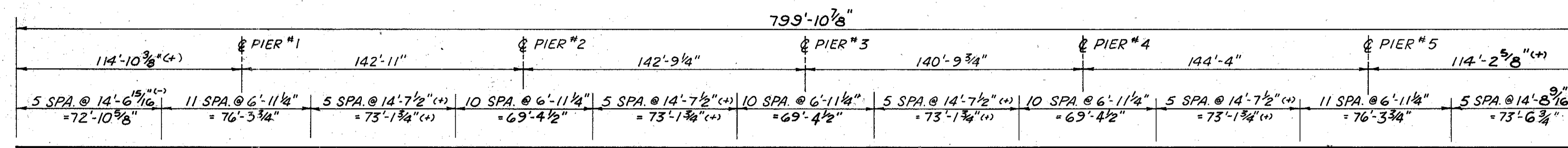
**DECK PLAN-2**

BRIDGE NO. FRA-315-0205  
 ROAD OD OVER OLENTANGY RIVER  
 AND RELOCATED S.R. 315

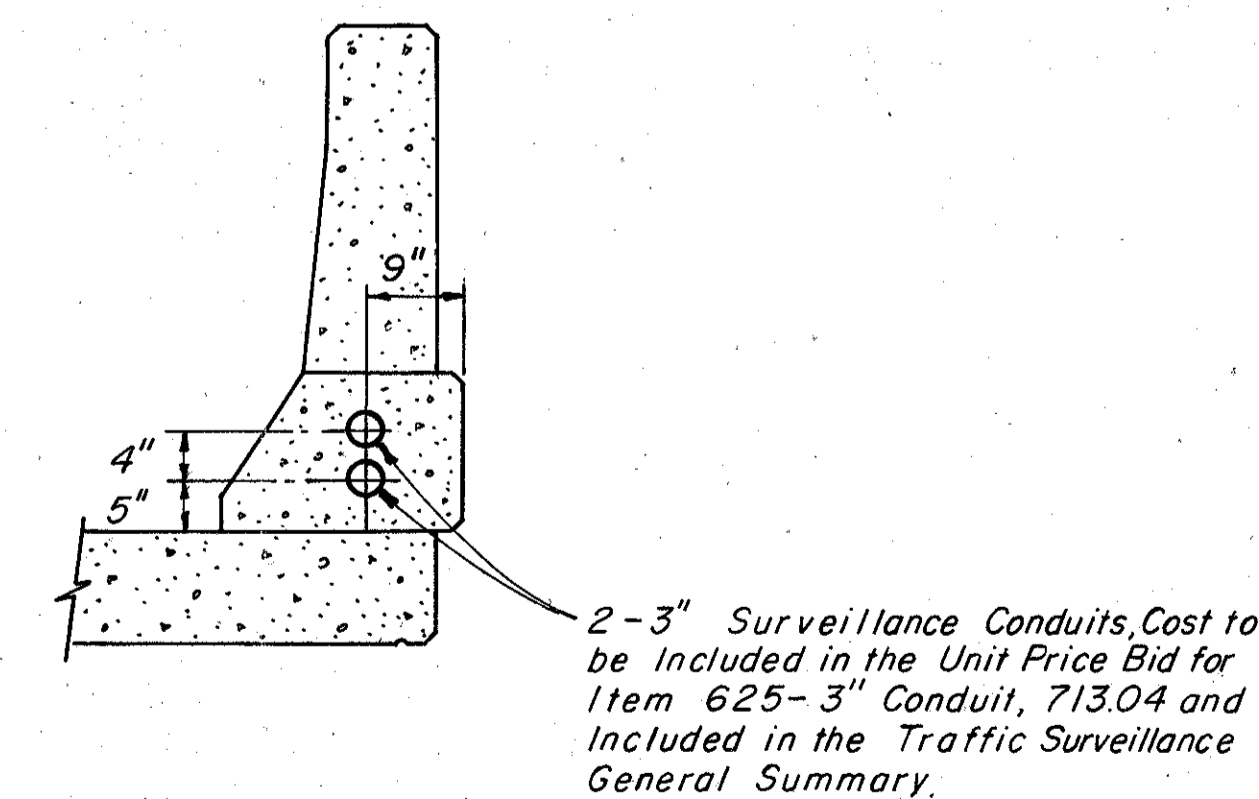
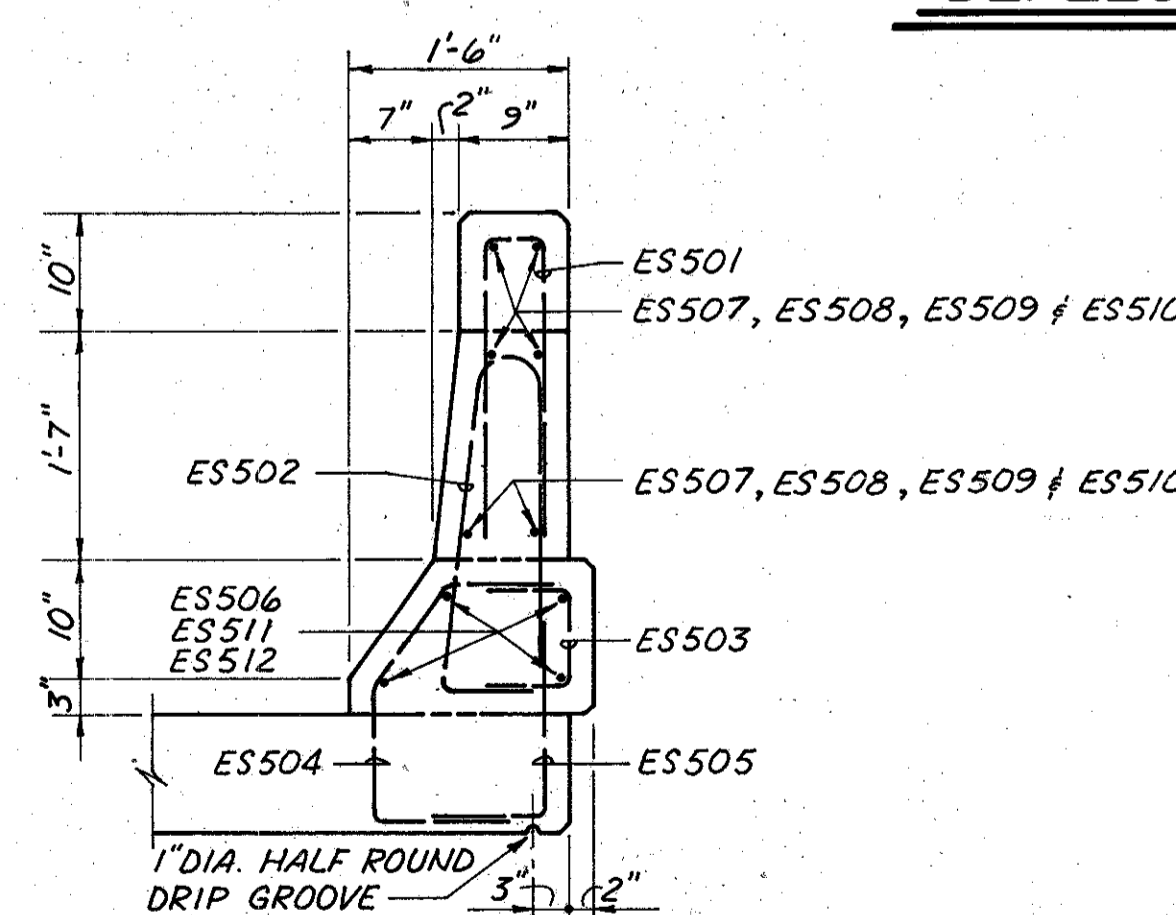
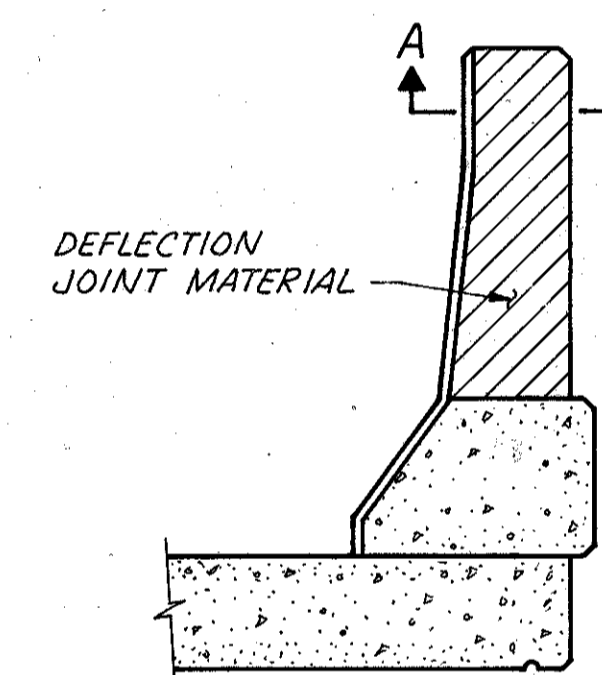
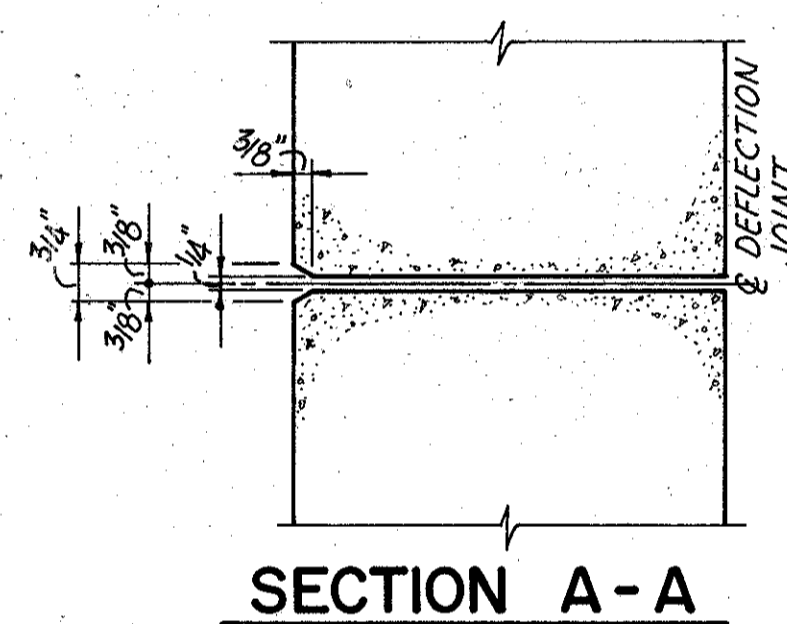
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
HSS	DMT	DMT	DFS			



**DEVELOPED NORTH PARAPET ELEVATION**



**DEVELOPED SOUTH PARAPET ELEVATION**



FOR DIMENSIONS NOT SHOWN, SEE DETAIL AT LEFT

JOHN E. FOSTER AND ASSOCIATES, INC. 20/24  
555 Buttles Ave., Columbus, Ohio 43215

**PARAPET DETAILS**

BRIDGE NO. FRA-315-0205  
ROAD OD OVER OLENTANGY RIVER  
AND RELOCATED S.R. 315

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.M.T.	D.M.T.	M.J.R.	H.S.S.			

FRANKLIN COUNTY  
FRA-670-1.25-C-2

ELEVATIONS AT TOP OF FINAL PAVEMENT ALONG CENTERLINE OF GIRDERS																																
		SPAN 1									SPAN 2									SPAN 3												
POINT ON SPAN	CL BRG. R. ABUT.	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	CL BRG. PIER 1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	CL BRG. PIER 2	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	CL BRG. PIER 3	
GIRDER	G-1	738.86	739.48	740.02	740.58	741.13	741.67	742.20	742.71	743.21	743.69	744.17	744.74	745.30	745.84	746.35	746.85	747.33	747.79	748.24	748.66	749.06	749.44	749.81	750.16	750.48	750.79	751.07	751.34	751.59	751.81	752.02
GIRDER	G-2	739.59	740.16	740.72	741.27	741.81	742.33	742.84	743.34	743.83	744.30	744.76	745.32	745.86	746.38	746.89	747.36	747.81	748.25	748.66	749.05	749.42	749.77	750.11	750.42	750.71	750.98	751.24	751.47	751.69	751.88	752.06
GIRDER	G-3	740.00	740.56	741.11	741.64	742.17	742.68	743.17	743.66	744.13	744.59	745.04	745.59	746.11	746.62	747.09	747.52	747.93	748.32	748.68	749.03	749.36	749.67	749.95	750.22	750.47	750.70	750.92	751.11	751.28	751.42	751.55
GIRDER	G-4	740.39	740.94	741.48	742.00	742.51	743.01	743.49	743.97	744.43	744.87	745.31	745.84	746.35	746.83	747.23	747.62	747.98	748.32	748.64	748.95	749.23	749.49	749.74	749.97	750.17	750.36	750.53	750.67	750.79	750.89	750.96
DECK SCREED AND BASE LINE ELEVATIONS																																
ELEVATION	A	738.77	739.42	740.05	740.65	741.21	741.73	742.23	742.70	743.16	743.62	744.07	744.66	745.26	745.84	746.39	746.91	747.37	747.80	748.20	748.58	748.97	749.37	749.78	750.16	750.53	750.84	751.11	751.34	751.54	751.73	751.92
ELEVATION	B	739.44	740.09	740.72	741.31	741.87	742.38	742.87	743.32	743.77	744.21	744.66	745.24	745.83	746.41	746.96	747.46	747.91	748.32	748.70	749.06	749.43	749.82	750.21	750.59	750.94	750.24	751.49	751.70	751.88	752.05	752.22
ELEVATION	C	740.36	740.97	741.56	742.12	742.64	743.13	743.59	744.02	744.44	744.85	745.27	745.82	746.36	746.89	747.32	747.72	748.06	748.36	748.64	748.90	749.16	749.45	749.73	750.01	750.25	750.44	750.58	750.67	750.74	750.79	750.85

ELEVATIONS AT TOP OF FINAL PAVEMENT ALONG CENTERLINE OF GIRDERS																																
		SPAN 4									SPAN 5									SPAN 6												
POINT ON SPAN	CL BRG. PIER 3	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	CL BRG. PIER 4	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	CL BRG. PIER 5	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	CL BRG. F. ABUT.	
GIRDER	G-1	752.02	752.21	752.38	752.53	752.66	752.77	752.86	752.93	752.98	753.01	753.02	753.01	752.98	752.93	752.86	752.77	752.66	752.53	752.38	752.21	752.02	751.86	751.67	751.50	751.31	751.10	750.88	750.66	750.42	750.17	749.90
GIRDER	G-2	752.06	752.21	752.34	752.45	752.53	752.61	752.66	752.69	752.71	752.70	752.67	752.63	752.57	752.50	752.42	752.32	752.21	752.09	751.94	751.78	751.60	751.43	751.25	751.06	750.86	750.64	750.42	750.17	749.92	749.65	749.37
GIRDER	G-3	751.55	751.65	751.73	751.79	751.83	751.86	751.86	751.85	751.81	751.75	751.68	751.59	751.51	751.43	751.34	751.23	751.11	750.98	750.82	750.65	750.45	750.28	750.10	749.90	749.70	749.48	749.24	749.00	748.74	748.47	748.19
GIRDER	G-4	750.96	751.01	751.05	751.06	751.05	751.03	750.98	750.92	750.83	750.72	750.59	750.51	750.43	750.34	750.24	750.13	749.99	749.84	749.68	749.49	749.29	749.12	748.93	748.73	748.51	748.29	748.05	747.81	747.55	747.28	746.99
DECK SCREED AND BASE LINE ELEVATIONS																																
ELEVATION	A	751.92	752.13	752.34	752.55	752.72	752.84	752.92	752.95	752.94	752.92	752.91	752.91	752.91	752.90	752.86	752.79	752.67	752.51	752.33	752.13	751.94	751.80	751.66	751.51	751.36	751.18	750.97	750.72	750.44	750.13	749.80
ELEVATION	B	752.22	752.41	752.61	752.80	752.94	753.07	753.12	753.13	753.11	753.06	753.03	753.01	752.99	752.96	752.91	752.82	752.69	752.53	752.34	752.15	751.95	751.81	751.66	751.52	751.36	751.18	750.96	750.72	750.44	750.13	749.80
ELEVATION	C	750.85	750.92	750.99	751.05	751.09	751.08	751.02	750.91	750.76	750.60	750.43	750.34	750.27	750.19	750.09	749.97	749.82	749.65	749.47	749.27	749.07	748.91	748.75	748.58	748.39	748.19	747.97	747.72	747.46	747.16	746.86

JOHN E. FOSTER AND ASSOCIATES, INC. 2/24  
555 Buttles Ave., Columbus, Ohio 43215

**DECK CONTROL ELEVATIONS**

BRIDGE NO. FRA-315-0205  
ROAD OD OVER OLENTANGY RIVER  
AND RELOCATED S.R. 315

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
C.E.M.	D.M.T.	J.M.R.	H.S.S.			



FRANKLIN COUNTY  
FRA-670-1.25-C-2

REINFORCING STEEL SCHEDULE										
FORWARD ABUTMENT										
MARK	NO.	LENGTH	TYPE	A	B	C	D	INCR.	WEIGHT	
A501	31	9'-0"	1	1'-8"	5'-11"				291	
A502	29	10'-11"	13	3'-0"	2'-3"				330	
A503	2	8'-11"	13	2'-0"	2'-3"				19	
A504	NOT USED								-	
A505	5	11'-1"	2	1'-6 1/2"	9'-8"				58	
A506	9	10'-7"	2	1'-6 1/2"	9'-2"				99	
A507	10	9'-5"	2	1'-6 1/2"	8'-0"				98	
A508	9	8'-3"	2	1'-6 1/2"	6'-10"				77	
A509	14	4'-9"	STR.						361	
A510	12	7'-7"	STR.						95	
A511	2	11'-7"	STR.						24	
A512	10	8'-8"	STR.						90	
A513	THRU A516	NOT USED							-	
A517	6	9'-9"	4	1'-8"	2'-2"	1'-10 1/2"			61	
A518	NOT USED								-	
A519	8	7'-5"	STR.						62	
A520	7	5'-5"	STR.						40	
A521	NOT USED								-	
A522	2	10'-3"	4	2'-5"	7'-10"	7'-4 1/8"			21	
A523	14	5'-9"	STR.						84	
A524	4	6'-9"	1	3'-0"	1'-0"				28	
A525	2	9'-4"	STR.						19	
A526	10	6'-5"	STR.						67	
A527	2	10'-3"	4	2'-3"	8'-0"	7'-4"			21	
A528	6	16'-8"	STR.						104	
AG01	2	17'-9"	3	9'-8"	5'-11"	2'-6"			55	
AG02	9	17'-3"	3	9'-2"	5'-11"	2'-6"			213	
AG03	10	16'-1"	3	8'-0"	5'-11"	2'-6"			222	
AG04	9	14'-11"	3	6'-10"	5'-11"	2'-6"			203	
AG05	THRU								-	
AG10	NOT USED								-	
AG11	7	5'-5"	STR.						57	
AG12	ISER OF 3	7'-6"	1	7'-3"-5"	1'-0"			A = 6 1/2"	26	LENGTH = 1'-1"
AG13	4	5'-9"	STR.						35	
AG14	ISER OF 3	7'-8"	1	7'-3"-6"	1'-0"			A = 9/2"	42	LENGTH = 1'-7"
AG15	3	19'-10"	1	9'-6"	1'-2"				89	
AG16	8	24'-2"	1	11'-8"	1'-2"				290	
AG17	11	18'-6"	1	8'-10"	1'-2"				306	
AG18	4	14'-4"	1	6'-9"	1'-2"				86	
A801	2	30'-2"	STR.						161	
A802	2	32'-7"	STR.						174	
A803	2	25'-4"	STR.						135	
A804	2	27'-9"	STR.						148	
A805	4	24'-6"	STR.						261	
A806	4	20'-10"	STR.						222	
A807	6	19'-5"	STR.						311	
A808	4	18'-4"	STR.						196	
A809	2	17'-7"	STR.						94	
TOTAL									5,375	

REINFORCING STEEL SCHEDULE										
FORWARD ABUTMENT (CONT.)										
MARK	NO.	LENGTH	TYPE	A	B	C	D	INCR.	WEIGHT	
EA501	8	16'-9"	STR.	*					140	
EA502	2	12'-5"	STR.	*					26	
EA503	24	4'-4"	STR.						108	
EA504	11	2'-9"	STR.						32	
EA505	11	4'-4"	1	2'-1"	0'-5"				50	
EA506	27	3'-7"	10	0'-8"	0'-6"	0'-8 1/2"	2'-1"		101	
EA507	16	3'-0"	11	2'-5"					50	
EA508	11	5'-3"	6	0'-7 1/2"	2'-5"	2'-2"			60	
EA509	20	4'-8"	STR.						97	
EA510	2	12'-2"	STR.	*					25	
EA511	14	24'-9"	STR.						361	
EA512	2	16'-0"	STR.						33	
EA513	2	29'-11"	STR.						62	
EA514	5	36'-2"	STR.						189	
EA515	8	15'-2"	STR.						47	
EA516	7	3'-11"	STR.						29	
EA517	2	31'-7"	STR.						66	
EA518	3	16'-8"	STR.						52	
EA519	5	17'-9"	STR.						93	
EA520	32	6'-8"	1	1'-6"	3'-11"				223	
EA521	10	4'-0"	STR.						42	
EA522	1	9'-9"	4	1'-8"	2'-2"	1'-10 1/2"			10	
EA523	14	15'-6"	STR.						226	
EA524	10	5'-0"	STR.						52	
EA601	THRU EA606	NOT USED							-	
EA607	4	13'-9"	1	6'-4"	1'-5"				83	
EA608	48	6'-7"	1	3'-0"	0'-11"				475	
EA609	48	4'-3"	1	1'-7"	1'-5"				306	
EA610	ISER OF 14	13'-5"	1	10'-2"	1'-5"			A = 0 1/2" (+)	298	LENGTH = 0'-1 1/8" (+)
EA611	ISER OF 14	13'-5"	1	10'-2"	1'-5"			A = 1"	305	LENGTH = 0'-2"
EA612	ISER OF 16	13'-1"	1	10'-0"	1'-5"			A = 1"	344	LENGTH = 0'-2"
EA801	31	4'-11"	5	2'-7"	1'-5"				407	
TOTAL									4,392	

SUPERSTRUCTURE REINFORCING STEEL SCHEDULE										
EPOXY COATED REINFORCING STEEL										
MARK	NO.	LENGTH	TYPE	A	B	C	D	INCR.	WEIGHT	
ES401	1,783	30'-0"	STR.						35,731	
ES402	ISER OF 58	70'-9"	STR.						983	
ES403	ISER OF 58	70'-6"	STR.						633	
ES501	1,284	4'-5"	1	0'-5"	2'-1"				5,915	
ES502	1,284	5'-3"	6	0'-7 1/2"	2'-5"	2'-2"			7,031	
ES503	1,284	1'-9"	1	0'-9"	0'-7"				2,344	
ES504	1,284	3'-9"	9	1'-2"	1'-0"	0'-8"	0'-5"	0'-7"	5,022	
ES505	1,284	1'-11"	2	0'-6"	1'-6"				2,567	
ES506	1,300	30'-2"	STR.						40,903	
ES507	342	5'-11"	STR.						2,111	
ES508	312	6'-7"	STR.						2,142	
ES509	204	11'-6"	STR.						2,446	
ES510	180	14'-3"	STR.						2,675	
ES511	ISER OF 50	70'-9"	STR.					0'-2 1/4" (+)	1,323	
ES512	ISER OF 50	70'-6"	STR.					0'-6 3/4" (+)	947	
ES601	1,061	27'-11"	STR.						42,683	
ES602	1,061	16'-1"	STR.						24,590	
ES603	20	15'-7"	STR.						468	
ES604	ISER OF 19	70'-14'-10"	STR.					0'-8 1/4" (+)	600	
ES605	ISER OF 35	70'-3'-2"	STR.					0'-8 1/2"	800	
ES606	ISER OF 4	70'-3'-2"	STR.					0'-4"	22	
ES607	ISER OF 20	70'-3'-7"	STR.					1'-2 3/4" (+)	305	
ES608	ISER OF 12	70'-3'-7"	STR.					1'-2 5/8" (+)	124	
ES609	ISER OF 3	70'-3'-7"	STR.					0'-3 1/2"	17	
ES701	2,167	22'-9"	STR.						100,768	
ES702	ISER OF 27	70'-3'-9"	STR.					0'-8 1/2"	715	
ES703	ISER OF 28	70'-3'-2"	STR.					0'-8 3/8" (+)	720	
ES704	ISER OF 4	70'-3'-2"	STR.					0'-4 5/8" (+)	30	
ES705	ISER OF 15	70'-4'-2"	STR.					1'-3 1/8" (+)	397	
ES706	ISER OF 16	70'-3'-6"	STR.					1'-2 13/16" (+)	417	
ES707	3	4'-2"	STR.						26	
TOTAL									285,455	

\* = BEND IN FIELD WHERE NECESSARY

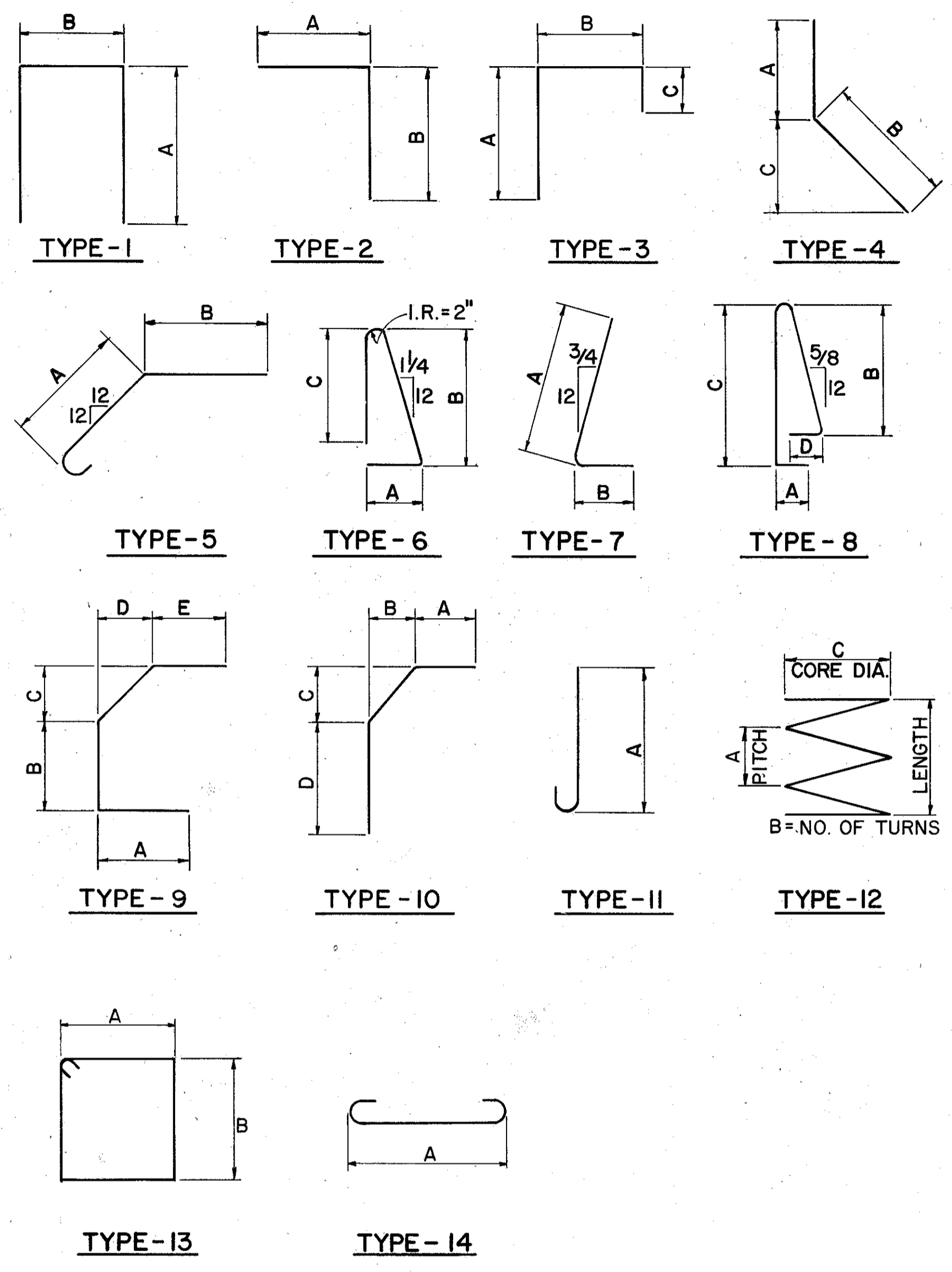
1. REINFORCING STEEL SAMPLES:  
REFER TO CMS SECTIONS 106.03, 700, 709.01 THROUGH 709.05 AND 709.08.  
SUFFICIENT ADDITIONAL REINFORCING STEEL SHALL BE PROVIDED FOR SAMPLING.  
RANDOM SAMPLES SHALL BE REPLACED IN THE STRUCTURES BY THE ADDITIONAL STEEL, SPLICED IN ACCORDANCE WITH 509.08.

2. ALL BAR DIMENSIONS ARE MEASURED OUT-TO-OUT.

3. ALL BARS OF A GIVEN SERIES VARY BY A CONSTANT INCREMENT.

4. ESTIMATED WEIGHT IS BASED ON STEEL BARS WITHOUT THE WEIGHT OF EPOXY COATINGS.

5. ALL BARS ARE TO BE EPOXY COATED.



JOHN E. FOSTER AND ASSOCIATES, INC. 2/24  
555 Buttlers Ave., Columbus, Ohio 43215

**REINFORCING STEEL SCHEDULE**

BRIDGE NO. FRA-315-0205  
ROAD "OD" OVER OLENTANGY RIVER  
AND RELOCATED S.R. 315

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H.S.S.	JMR	JMR	D.F.S.			

FRANKLIN COUNTY  
FRA-670-1.25-C-2

REINFORCING STEEL SCHEDULE

REAR ABUTMENT

MARK	NO.	LENGTH	TYPE	A	B	C	D	INCR.	WEIGHT
A501	47	11'-0"	1	1'-8"	7'-11"				539
A502	14	8'-2"	STR.						119
A503	NOT USED								-
A504	30	30'-2"	STR.						944
A505	14	7'-4"	STR.						107
A506	4	6'-9"	1	3'-0"	1'-0"				28
A507	14	11'-5"	STR.						167
A508	2	8'-8"	4	1'-8"	7'-0"	6'-8 1/4"			18
A509	4	5'-3"	STR.						22
A510	ISER OF 13	TO 4'-6" 5'-3"	STR.					0'-0 3/4"	
A511	5	15'-1"	2	1'-6 1/2"	13'-8"				79
A512	14	14'-8"	2	1'-6 1/2"	13'-3"				214
A513	14	14'-3"	2	1'-6 1/2"	12'-10"				208
A514	17	13'-7"	2	1'-6 1/2"	12'-2"				241
A515	4	5'-11"	STR.						25
A516	ISER OF 9	TO 5'-3" 5'-11"	STR.					0'-1"	52
A517	2	9'-3"	4	1'-8"	7'-7"	7'-5 7/8"			19
A518	THRU A520	NOT USED							-
A521	14	16'-11"	STR.						247
A522	NOT USED								-
A523	47	11'-4"	13	3'-0"	2'-3"				556
A524	NOT USED								-
A525	3	5'-7"	1	1'-8"	2'-6"				17
A526	4	6'-2"	1	1'-8"	3'-1"				26
A601	47	12'-7"	1	2'-6"	7'-11"				888
A602	THRU A607	NOT USED							-
A608	3	15'-3"	2	1'-6"	13'-9"				69
A609	4	7'-9"	1	2'-6"	3'-1"				47
A610	14	14'-8"	2	1'-6"	13'-4"				308
A611	14	14'-3"	2	1'-6"	12'-11"				300
A612	21	13'-7"	2	1'-6"	12'-3"				428
A613	4	5'-3"	STR.						32
A614	ISER OF 13	TO 4'-6" 5'-3"	STR.					0'-0 3/4"	95
A615	2	24'-8"	1	11'-11"	1'-2"				74
A616	ISER OF 3	TO 7'-4" 8'-8"	1	TO 3'-4" 4'-0"	1'-0"		A = 4" LENGTH = 0'-8"		36
A617	19	29'-2"	1	14'-2"	1'-2"				832
A618	1	20'-6"	1	9'-9"	1'-2"				31
A619	4	5'-11"	STR.						36
A620	ISER OF 3	TO 7'-6" 9'-8"	1	TO 3'-5" 4'-6"	1'-0"		A = 6 1/2" LENGTH = 1'-1"		39
A621	14	32'-2"	1	15'-8"	1'-2"				676
A622	3	28'-0"	1	13'-7"	1'-2"				126
A623	ISER OF 9	TO 5'-3" 5'-11"	STR.					0'-1"	75
A624	NOT USED								-
A625	3	7'-2"	1	2'-6"	2'-6"				32
A801	4	31'-6"	STR.						336
A802	2	28'-6"	STR.						152
A803	NOT USED								-
A804	NOT USED								-
A805	6	29'-3"	STR.						469
A806	6	22'-0"	STR.						352
A807	2	32'-11"	STR.						176
A808	3	35'-6"	STR.						284
A809	3	32'-5"	STR.						260
A810	3	27'-9"	STR.						222
A811	3	29'-6"	STR.						236
TOTAL									10,239

REINFORCING STEEL SCHEDULE

REAR ABUTMENT (CONT.)

MARK	NO.	LENGTH	TYPE	A	B	C	D	INCR.	WEIGHT
EA501	2	21'-9"	STR.	*					45
EA502	18	24'-11"	STR.	*					468
EA503	34	4'-4"	STR.						154
EA504	20	2'-9"	STR.						57
EA505	20	4'-4"	1	2'-1"	0'-5"				90
EA506	36	3'-7"	10	0'-8"	0'-6"	0'-8 1/2"	2'-1"		135
EA507	16	3'-0"	11	2'-5"					50
EA508	20	5'-3"	6	0'-7 1/2"	2'-5"	2'-2"			110
EA509	20	4'-8"	STR.						97
EA510	5	5'-0"	STR.						26
EA511	24	30'-2"	STR.						755
EA512	4	9'-11"	STR.						41
EA513	5	5'-9"	STR.						30
EA514	10	18'-1"	STR.						189
EA515	3	20'-9"	STR.						65
EA516	NOT USED								-
EA517	ISER OF 5	TO 1'-5" 5'-10"	STR.					1'-1/4" <sup>(c)</sup>	19
EA518	51	6'-10"	1	1'-6"	4'-11"				363
EA519	NOT USED								-
EA520	2	16'-3"	STR.	*					34
EA521	16	19'-6"	STR.						325
EA522	10	3'-5"	STR.						36
EA601	THRU EA606	NOT USED							-
EA607	4	13'-11"	1	6'-5"	1'-5"				84
EA608	59	6'-7"	1	3'-0"	0'-11"				583
EA609	59	4'-3"	1	1'-7"	1'-5"				377
EA610	ISER OF 22	TO 12'-9" 14'-11"	1	TO 5'-10" 6'-11"	1'-5"			A = 0 5/8" <sup>(c)</sup> LENGTH = 0'-1 1/4" <sup>(c)</sup>	457
EA611	ISER OF 16	TO 13'-7" 14'-9"	1	TO 6'-3" 6'-10"	1'-5"			A = 0 1/2" <sup>(c)</sup> LENGTH = 0'-0 15/16" <sup>(c)</sup>	340
EA612	ISER OF 17	TO 13'-11" 14'-9"	1	TO 6'-5" 6'-10"	1'-5"			A = 0 5/8" <sup>(c)</sup> LENGTH = 0'-0 3/8"	366
EA801	39	4'-11"	5	2'-7"	1'-5"				512
TOTAL									5,808

JOHN E. FOSTER AND ASSOCIATES, INC. 24/24  
555 Buttles Ave., Columbus, Ohio 43215

REINFORCING STEEL SCHEDULE

BRIDGE NO. FRA-315-0205  
ROAD "OD" OVER OLENTANGY RIVER  
AND RELOCATED S.R. 315

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H.S.S.	J.M.R.	J.M.R.	D.F.S.			

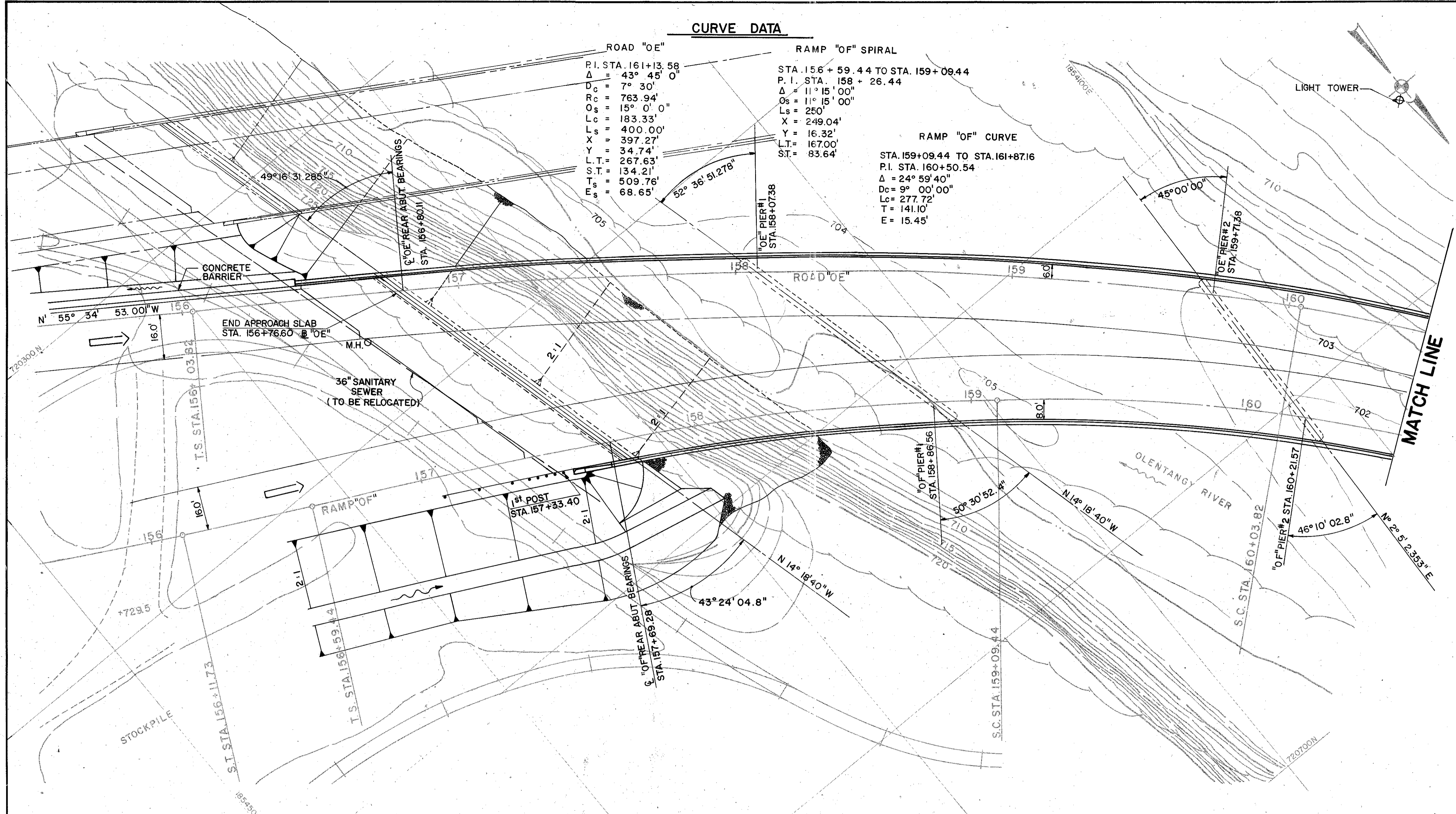


**CURVE DATA**

ROAD "OE"  
 P.I. STA. 161+13.58  
 $\Delta = 43^\circ 45' 0''$   
 $D_c = 7^\circ 30'$   
 $R_c = 763.94'$   
 $O_s = 15^\circ 0' 0''$   
 $L_c = 183.33'$   
 $L_s = 400.00'$   
 $X = 397.27'$   
 $Y = 34.74'$   
 $L.T. = 267.63'$   
 $S.T. = 134.21'$   
 $T_s = 509.76'$   
 $E_s = 68.65'$

RAMP "OF" SPIRAL  
 STA. 156+59.44 TO STA. 159+09.44  
 P.I. STA. 158+26.44  
 $\Delta = 11^\circ 15' 00''$   
 $O_s = 11^\circ 15' 00''$   
 $L_s = 250'$   
 $X = 249.04'$   
 $Y = 16.32'$   
 $L.T. = 167.00'$   
 $S.T. = 83.64'$

RAMP "OF" CURVE  
 STA. 159+09.44 TO STA. 161+87.16  
 P.I. STA. 160+50.54  
 $\Delta = 24^\circ 59' 40''$   
 $D_c = 9^\circ 00' 00''$   
 $L_c = 277.72'$   
 $T = 141.10'$   
 $E = 15.45'$



ESTIMATED PILE LENGTHS		
SUBSTRUCTURE UNIT	PILE TYP.	ESTIMATED LENGTH
REAR ABUTMENT	14" Ø C.I.P.	35'
PIER NO 1	14" Ø C.T.R.	25'
PIER NO 2	14" Ø C.I.P.	30'
PIER NO 3	14" Ø C.I.P.	30'
PIER NO 4	14" Ø C.I.P.	35'
FORWARD ABUTMENT	14" Ø C.I.P.	40'

**HYDRAULIC DATA**  
 DRAINAGE AREA = 543 SQUARE MILES  
 $Q_{50} = 14000$  CFS,  $V_{50} = 4.3$  FPS HW<sub>50</sub> = EL. 720.0  
 $Q_{100} = 17400$  CFS,  $V_{100} = 4.5$  FPS HW<sub>100</sub> = EL. 722.8

**TRAFFIC DATA**  
 DESIGN ADT (2004) = 26549    ADTT = 2655

EARTHWORK LIMITS SHOWN ARE APPROXIMATE  
 ACTUAL SLOPES SHALL CONFORM TO PLAN  
 CROSS-SECTIONS.  
 BRIDGE CLEARS 50 YEAR DESIGN HIGH WATER BY 2.0'

**PROPOSED STRUCTURE**

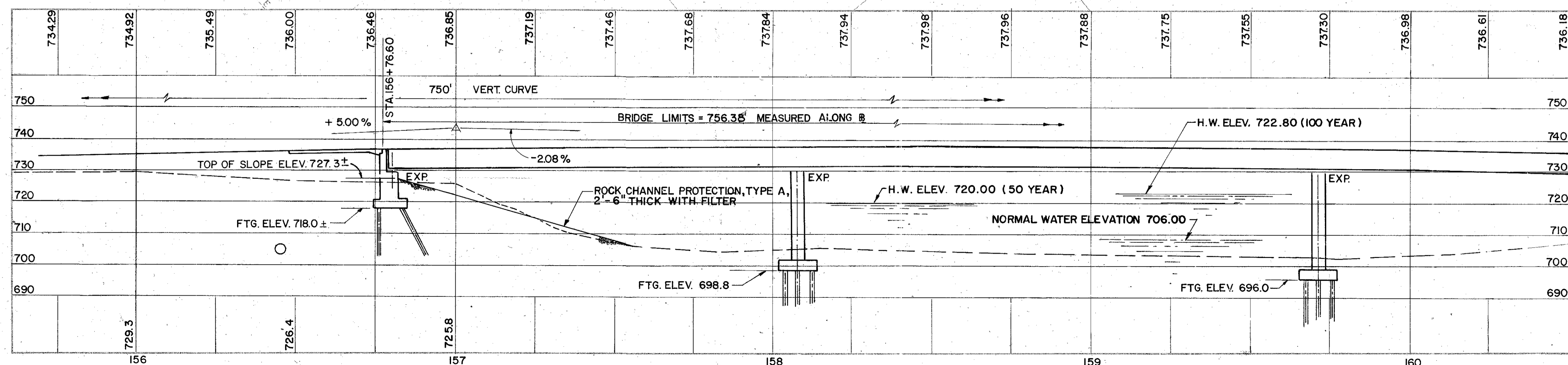
TYPE: CONTINUOUS WELDED STEEL CURVED GIRDER (ASTM A588, UNPAINTED) WITH COMPOSITE REINFORCED CONCRETE DECK AND REINFORCED CONCRETE SUBSTRUCTURE.  
 SPANS: 127'-3/4"; 164'-0"; 164'-0"; 164'-0"; 131'-0" ALONG & OE  
 WEARING SURFACE: 1" MONOLITHIC CONCRETE  
 APPROACH SLAB: 25'-0" AS-1-81  
 ROADWAY: VARIES  
 LOADING: H.S. 20-44 AND ALTERNATIVE MILITARY LOADING CASE I \*  
 SKEW: VARIES-SEE PLAN  
 ALIGNMENT: SPIRAL, CURVE, SPIRAL  
 SUPERELEVATION: 0.077 F<sub>T</sub> MAX.  
 CROSSING: OLENTANGY RIVER

JOHN E. FOSTER AND ASSOCIATES, INC. 1/37  
 555 Buttles Ave., Columbus, Ohio 43215

**SITE PLAN - I**

BRIDGE NO. FRA-315-0210  
 ROAD "OE" AND RAMP "OF"  
 OVER OLENTANGY RIVER  
 STA. 156+76.66    STA. 154+32.98

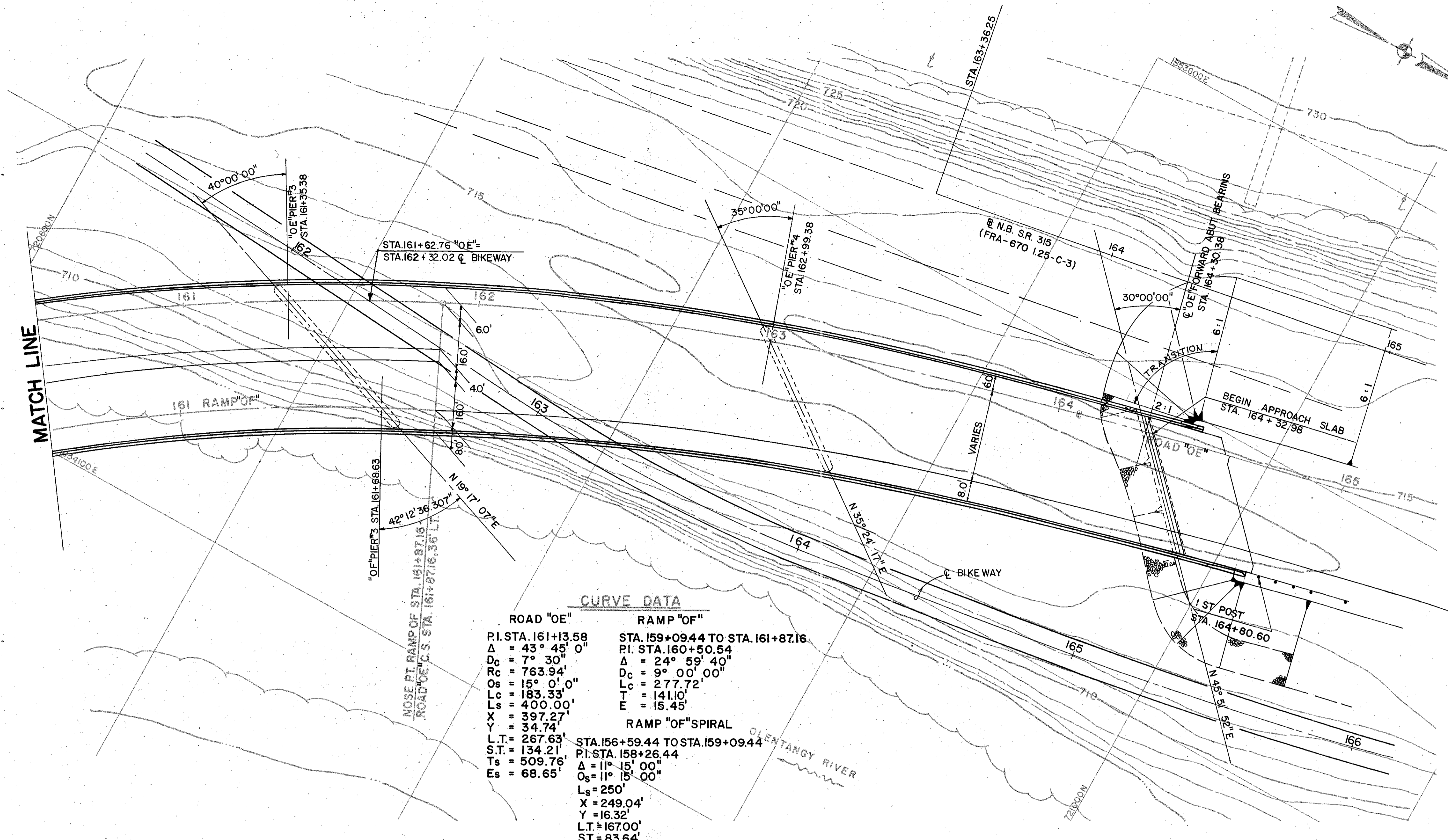
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DHS	DHS	JMR	HWR			



**VERTICAL CURVE DATA ALONG & "OE"**  
 PVI STA. 157+00.00  
 ELEV. 743.49  
 $G_1 = +5.00\%$   
 $G_2 = -2.08\%$   
 $L = 750'$

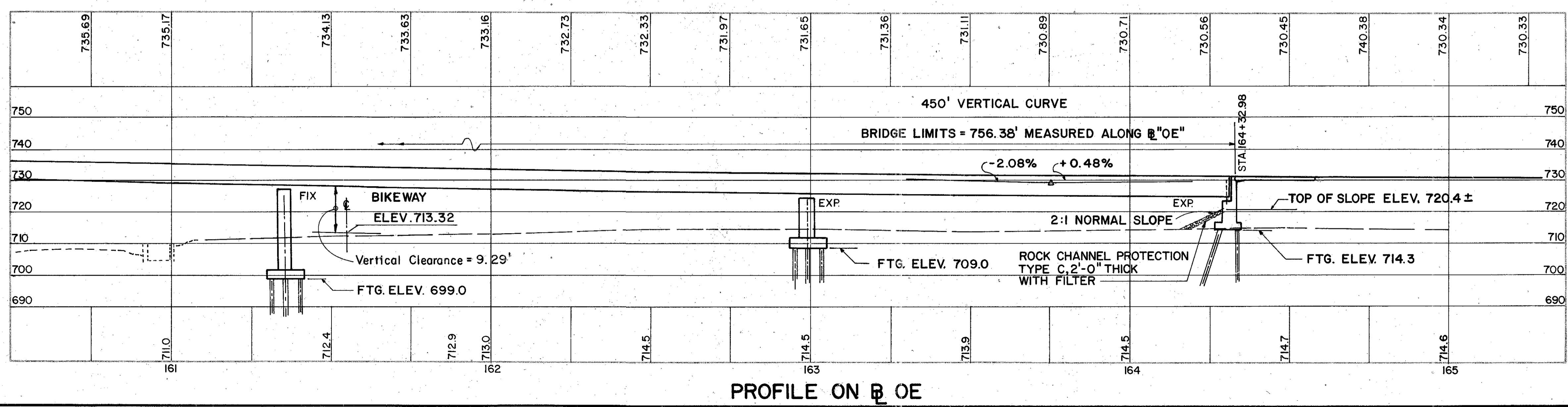
\* PER AASHTO  
 SPECS FOR HIGHWAY BRIDGE,  
 PAGE 117 TABLE 10.3.2A  
 W/DIRECTIONAL ADTT  
 2500 OR MORE

**PROFILE ON & OE**



**CURVE DATA**

ROAD "OE"		RAMP "OF"	
PI. STA. 161+13.58	STA. 159+09.44 TO STA. 161+87.16	PI. STA. 160+50.54	STA. 156+59.44 TO STA. 159+09.44
$\Delta = 43^\circ 45' 0''$	$\Delta = 24^\circ 59' 40''$	$\Delta = 11^\circ 15' 00''$	$\Delta = 11^\circ 15' 00''$
$D_c = 7^\circ 30' 0''$	$D_c = 9^\circ 00' 00''$	$D_s = 11^\circ 15' 00''$	$D_s = 11^\circ 15' 00''$
$R_c = 763.94'$	$L_c = 277.72'$	$L_s = 250'$	$L_s = 250'$
$O_s = 15^\circ 01' 0''$	$T = 141.10'$	$X = 249.04'$	$X = 249.04'$
$L_s = 183.33'$	$E = 15.45'$	$Y = 16.32'$	$Y = 16.32'$
$L_s = 400.00'$		$L.T. = 167.00'$	$L.T. = 167.00'$
$X = 397.27'$		$S.T. = 83.64'$	$S.T. = 83.64'$
$Y = 34.74'$			



**VERTICAL CURVE DATA ALONG "OE"**  
PVI STA. 163+75.00  
ELEV. 729.45  
 $G_1 = -2.08\%$   
 $G_2 = +0.48\%$   
 $L = 450'$

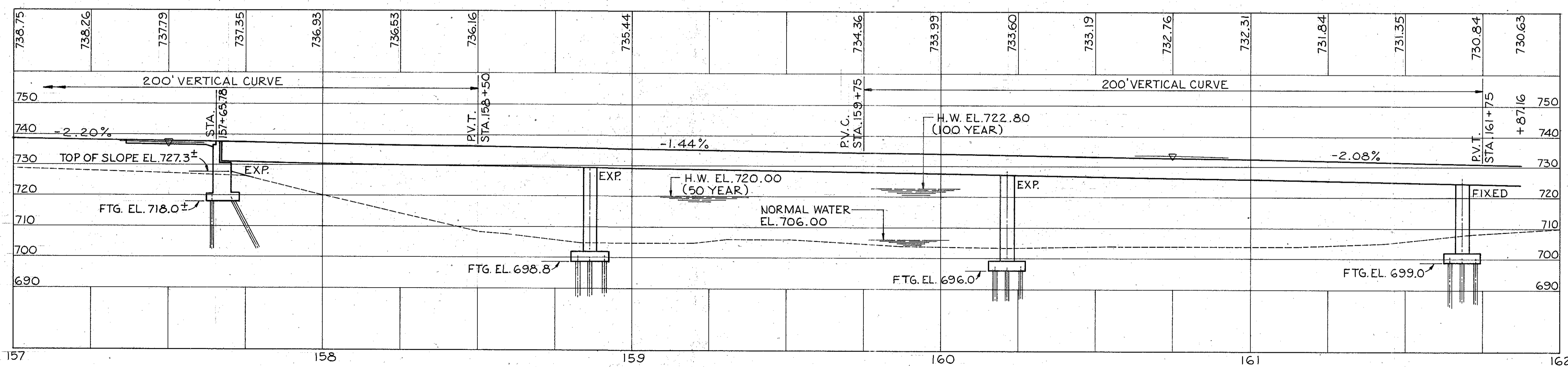
**PROPOSED STRUCTURE**  
SEE SHEET 1/37

JOHN E. FOSTER AND ASSOCIATES, INC. 2/37  
555 Buttles Ave., Columbus, Ohio 43215

**SITE PLAN - 2**  
BRIDGE NO. FRA-315-0210  
ROAD "OE" AND RAMP "OF"  
OVER OLENTANGY RIVER  
STA. 156+76.66 STA. 164+32.98

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DHS	DHS	JMR	HWR			

FRANKLIN COUNTY  
FRA-670-1.25-C-2



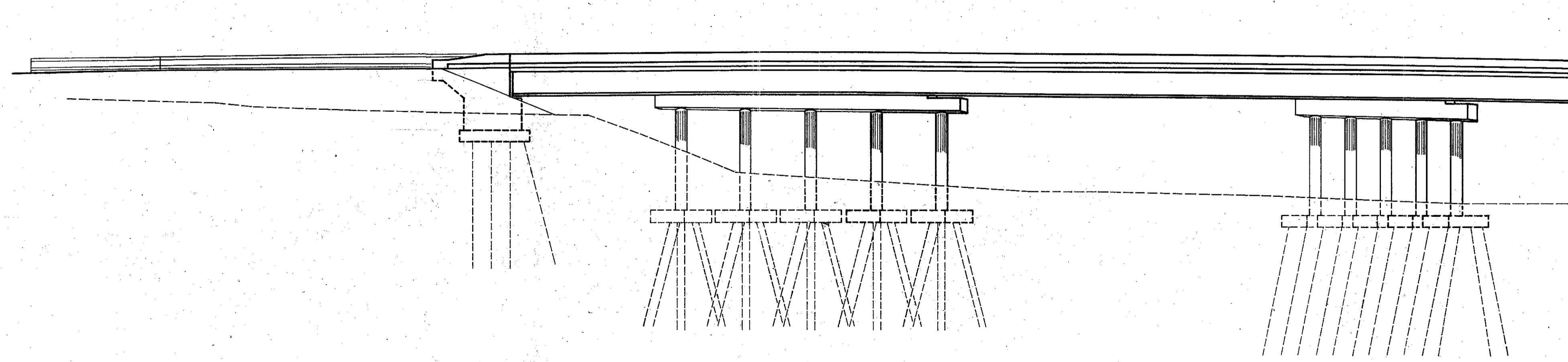
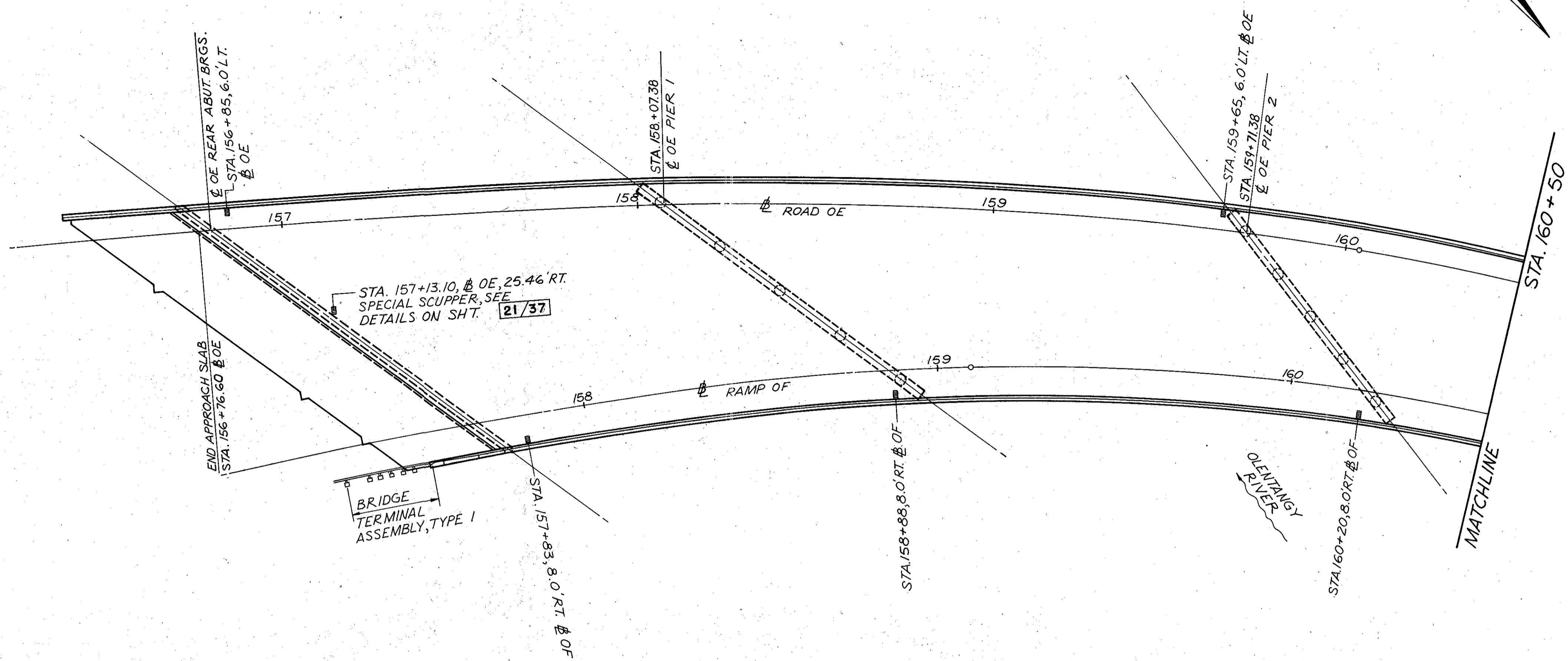
PROFILE ON B OF

JOHN E. FOSTER AND ASSOCIATES, INC. 3/37  
555 Buttles Ave., Columbus, Ohio 43215

**RAMP "OF" PROFILE**

BRIDGE NO. FRA-315-0210  
ROAD "OE" AND RAMP "OF"  
OVER OLENTANGY RIVER  
STA. 156+76.66 STA. 164+32.98

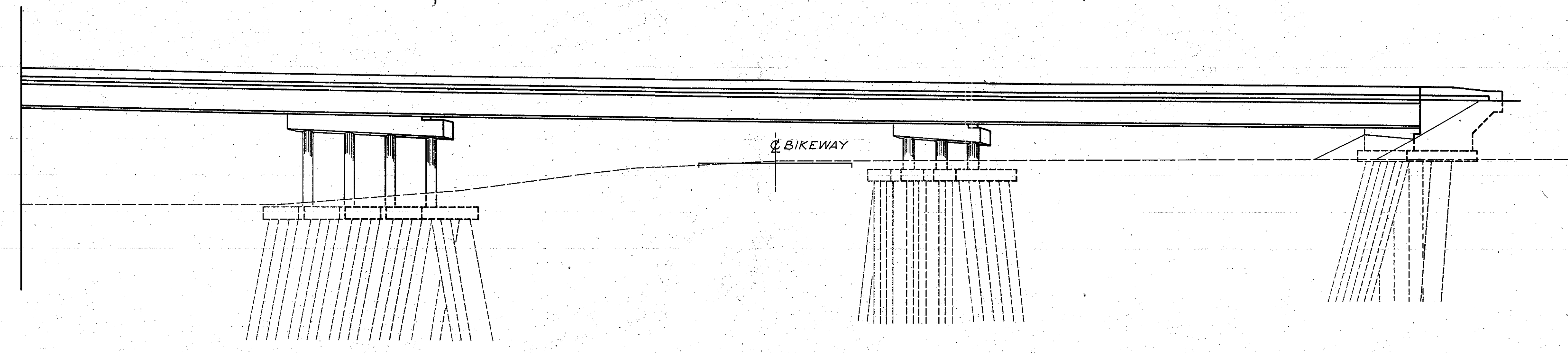
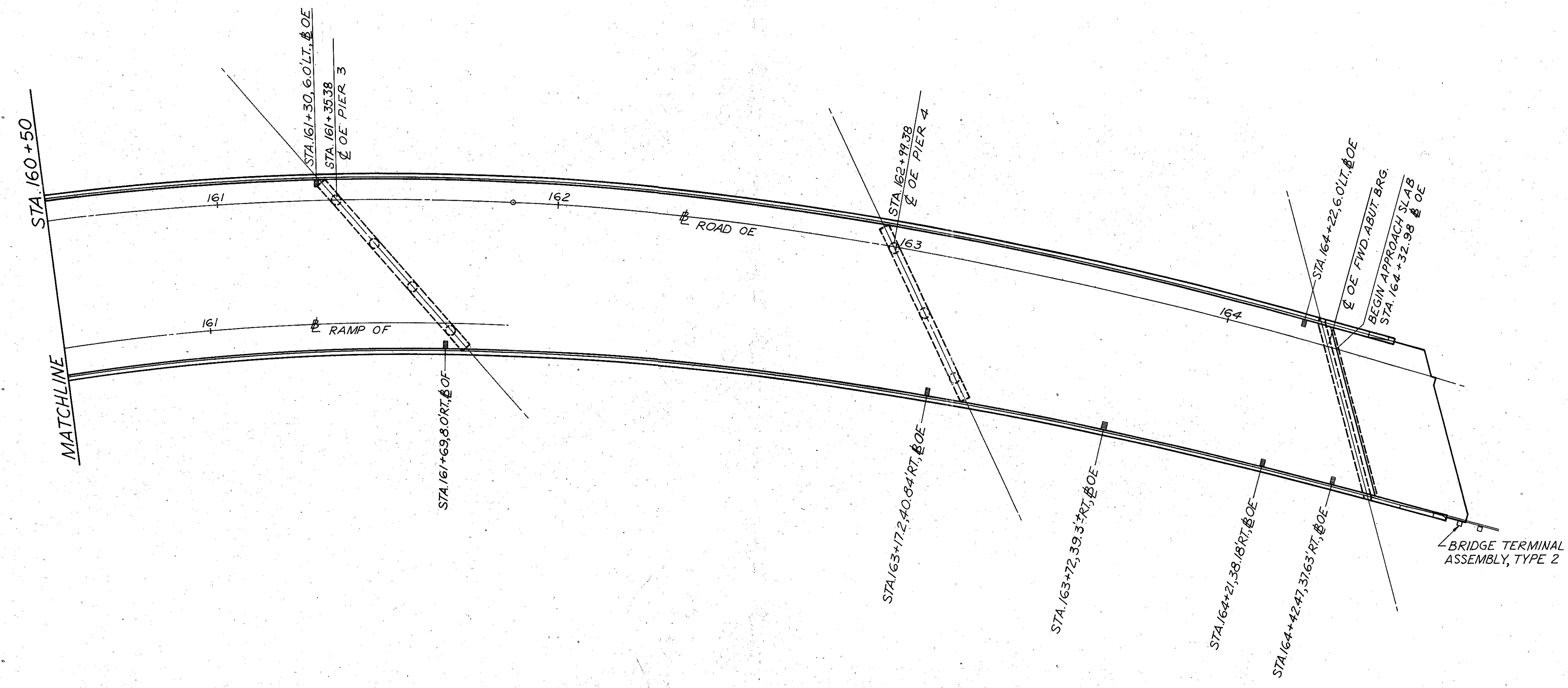
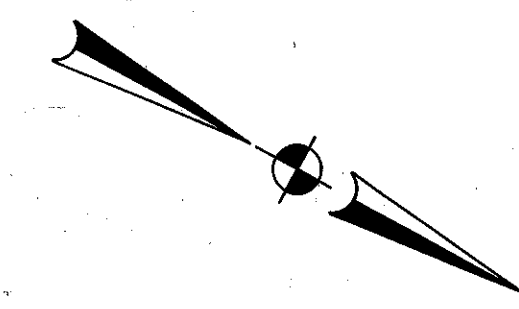
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DHS	DMT	-	HSS			



JOHN E. FOSTER AND ASSOCIATES, INC. 4/37  
555 Buttles Ave., Columbus, Ohio 43215

**GENERAL PLAN  
& ELEVATION - I**  
BRIDGE NO. FRA-315-0210  
ROAD "OE" AND RAMP "OF"  
OVER OLENTANGY RIVER

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.H.S.	DMT	-	HWR			



JOHN E. FOSTER AND ASSOCIATES, INC. 5/37  
555 Buttles Ave., Columbus, Ohio 43215

**GENERAL PLAN  
& ELEVATION-2**  
BRIDGE NO. FRA-315-0210  
ROAD "OE" AND RAMP "OF"  
OVER OLENTANGY RIVER

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DHS	DMT	-	HWR			

THIS WORK IS FUNDED TOTALLY BY NH FUNDING.

**ESTIMATED QUANTITIES**

ITEM	ITEM EXTEN.	TOTAL	UNIT	DESCRIPTION	FORWARD ABUTMENT	REAR ABUTMENT	PIER NO.1	PIER NO.2	PIER NO.3	PIERNO.4	SUPER-STRUCTURE	GENERAL
503	11100	L.S.		COFFERDAMS, CRIBS AND SHEETING								LUMP
503	21100	2553	CU. YD.	UNCLASSIFIED EXCAVATION	370	766	280	219	691	227		
505	11100	L.S.		PILE DRIVING EQUIPMENT MOBILIZATION								LUMP
506	11101	L.S.		STATIC LOAD TEST, AS PER PLAN								LUMP
507	42201	10890	LIN. FT.	14" CAST-IN-PLACE REINFORCED CONCRETE PILES, AS PER PLAN	1470	720	1500	1800	2880	2520		
509	15840	587,919	LB.	EPOXY-COATED REINFORCING STEEL, GRADE 60	11,409	26,710	47,353	40,456	47,051	27,453	387,487	
* 511	33404	1,365	CU. YD.	CLASS S CONCRETE, SUPERSTRUCTURE (USING SHRINKAGE COMPENSATING CEMENT) ▲							1,365	
* 511	33410	L.S.		CLASS S CONCRETE, USING SHRINKAGE COMPENSATING CEMENT, FOR PRECAST TESTING ▲								LUMP
511	31502	1365	CU. YD.	CLASS S CONCRETE, SUPERSTRUCTURE PLACEMENT							1365	
511	41000	302	CU. YD.	CLASS C CONCRETE, PIERS ABOVE FOOTINGS			100	86	78	38		
511	44100	271	CU. YD.	CLASS C CONCRETE, ABUTMENT NOT INCLUDING FOOTING	67	204						
511	46000	104	CU. YD.	CLASS C CONCRETE, RETAINING WALL OR WINGWALL	30	74						
511	46500	602	CU. YD.	CLASS C CONCRETE, FOOTING	56	121	89	75	156	105		
513	12300	1,679,125	LB.	STRUCTURAL STEEL, A588 AISC CATEGORY III (SEE PROPOSAL NOTE)							1,679,125	
513	20000	6849	EACH	WELDED STUD SHEAR CONNECTOR							6849	
514	00601	L.S.		PAINTING OF NEW STEEL, SYSTEM 1ZEU, AS PER PLAN (See Proposal Note) (see also plan note on this sheet)								LUMP
516	30500	9	LIN. FT.	PVC WATERSTOP		9						
516	11210	54	LIN. FT.	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL ▲							54	
516	12201	115	LIN. FT.	STRUCTURAL STEEL EXPANSION JOINT, AS PER PLAN ▲							115	
516	44200	6	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (2'-0" x 1'-10" x 0'-3/8" ELASTOMERIC PADS 2'-6" x 2'-1" x 0'-2" STEEL LOAD PLATES) ▲				6				
516	44200	12	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (2'-0" x 1'-10" x 0'-2 7/8" ELASTOMERIC PADS 2'-1" x 2'-0" x 0'-2" STEEL LOAD PLATES) ▲				6		6		
516	44200	7	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (1'-10" x 1'-11" x 0'-5 7/8" ELASTOMERIC PADS 1'-11" x 2'-0" x 0'-1 1/2" STEEL LOAD PLATES) ▲			7					
516	44300	5	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (1'-4" x 1'-4" x 0'-5 5/16" ELASTOMERIC PADS 1'-5" x 1'-7" x 0'-1 1/2" STEEL LOAD PLATES) ▲	5							
516	44400	8	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (1'-11" x 1'-11" x 0'-7 1/2" ELASTOMERIC PADS 2'-0" x 2'-0" x 0'-1 1/2" STEEL LOAD PLATES) ▲		8						
518	12300	12	EACH	SCUPPER, INCLUDING SUPPORTS ▲							12	
518	21200	229	CU. YD.	POROUS BACKFILL WITH FILTER FABRIC	52	177						
518	41100	181	LIN. FT.	6" PERFORATED HELICAL CORRUGATED STEEL PIPE, 707.01 ▲	59	122						
518	41200	113	LIN. FT.	6" NON-PERFORATED HELICAL CORRUGATED STEEL PIPE, INCLUDING SPECIALS, 707.01 ▲	42	60					11	
523	11100	6	HOUR	DYNAMIC LOAD TESTS								6
SPC.	51267504	2010	SQ. YD.	SEALING OF CONCRETE SURFACES (NON EPOXY) ▲							2010	
SPC.	51267502	340	SQ. YD.	SEALING OF CONCRETE SURFACES (EPOXY)	150	190						

\* THESE TWO ITEMS SHALL CONSTITUTE ONE ALTERNATE BID TO CLASS S CONCRETE, SUPERSTRUCTURE.

▲ See Proposal Note

DESIGNED: HSS DATE: 3/91

CHECKED: HWR DATE: 3/91

OHIO	235
FHWA REGION 5	275
FEDERAL PROJECT	

FRANKLIN COUNTY  
FRA-670-125-C-2

**GENERAL NOTES**

**DESIGN SPECIFICATIONS:**

This structure conforms to "Standard Specifications for Highway Bridges" adopted by the American Association of State Highway and Transportation Officials, 1989 including the Ohio "Supplement" to these specifications.

**DESIGN DATA:**

Design Loading - HS20-44 Case I and the Alternate Military Loading.  
Concrete Class S - Unit Stress 1,500 PS.I. for superstructure.  
Concrete Class C - Unit Stress 1,333 PS.I. for substructure.  
Reinforcing Steel - ASTM A615, A616, A617 - Grade 60 Unit Stress 24,000 PS.I.  
Structural Steel - ASTM A588 - Unit Stress 27,000 PS.I.  
Deck Protection Method - Epoxy coated reinforcing steel, both mats.  
Monolithic wearing surface is assumed for design purposes to be 1" thick.

**STANDARD DRAWINGS:**

Reference shall be made to standard drawings.  
AS-1-81, Dated 11/27/81 BR-1, Dated 5/29/79  
EXJ-4-87 Dated 1/5/89  
SD-1-69, Dated 6/12/69

**DIMENSIONS:**

Dimensions given are measured horizontally and at 60° F, unless otherwise noted.

**EMBANKMENT CONSTRUCTION:**

The embankments shall be constructed to the level of the sub-grade for a minimum distance of 200 feet back of the abutments. Excavation may then be made for the abutments and piles driven.

**ITEM 507-14 INCH CAST-IN-PLACE REINFORCED CONCRETE PILES, AS PER PLAN:**

**Pile Wall Thickness:** The responsibility of choosing and providing a satisfactory pile wall thickness for this project shall be borne by the Contractor except that the pile wall thickness shall not be less than 0.31 inches. If a pile wall thickness greater than 0.31 inches is necessary to resist the pile installation driving stress, the Contractor shall make this determination and shall furnish a pile with an acceptable wall thickness. If monotube piles are used, monotube piles shall have a minimum wall thickness of 0.22 inches.

**Pile Hammer:** The pile driving equipment to be furnished by the Contractor shall be subject to the approval of the Director. Prerequisite to such approval, the Contractor shall submit a completed equipment data form (WEAP87-Data Request Form) for each hammer proposed for use on this project. A copy of this form can be requested and obtained from the Director. A wave equation analysis will be performed by Bureau of Bridges. Contractor notification of acceptance or rejection of the driving system will be made within 21 days after submittal of the WEAP87-Data Request Form. The piling shall not be installed prior to receiving approval of the Contractor's driving system by the Director. The Director will furnish the pile driving criteria.

**ITEM 506-STATIC LOAD TEST, AS PER PLAN:**

The Contractor shall perform a static load test on one of the initially installed piles or on a pile installed near an abutment or pier location. The installed lengths of the piles to be load tested shall not be more than the plan estimated pay lengths. The Contractor shall furnish the Director (Attention: Bureau of Bridges) a copy of a typed report describing the procedures and results of the static load test. Payment for this report is considered incidental to the cost of the static load test.

**PILE DESIGN LOADS:**

The design load for the rear abutment piles is 50 tons per pile. The design load for the forward abutment piles is 60 tons per pile. The design load for the pier piles is 50 tons per pile.

**ITEM 514 - PAINTING OF NEW STEEL, SYSTEM 1ZEU, AS PER PLAN:**

A 8-foot length of the ends of the girders at the abutments, and all crossframes and other A588 steel within these limits, shall be painted. Paint shall be system 1ZEU, and the top coat color shall closely approach federal standard No. 595a-20045 or 20059 (the color of weathering steel)

**DECK PROTECTION METHOD:** Epoxy

coated reinforcing steel, top and bottom mats.

**MONOLITHIC WEARING SURFACE** is assumed, for design purposes, to be 1" thick.

**ITEM SPECIAL - SEALING OF CONCRETE SURFACES (EPOXY):**

A concrete sealer shall be applied to the following concrete surfaces. See proposal note for surface preparation requirements application rates, material requirements and application procedures.

**EPOXY SEALER SHALL BE USED ON THE FOLLOWING SURFACES:**

1. Abutment backwalls
2. Abutment seats
3. Abutment breast walls and wing walls from ground line up.

**NON-EPOXY SEALER SHALL BE USED ON THE FOLLOWING SURFACES:**

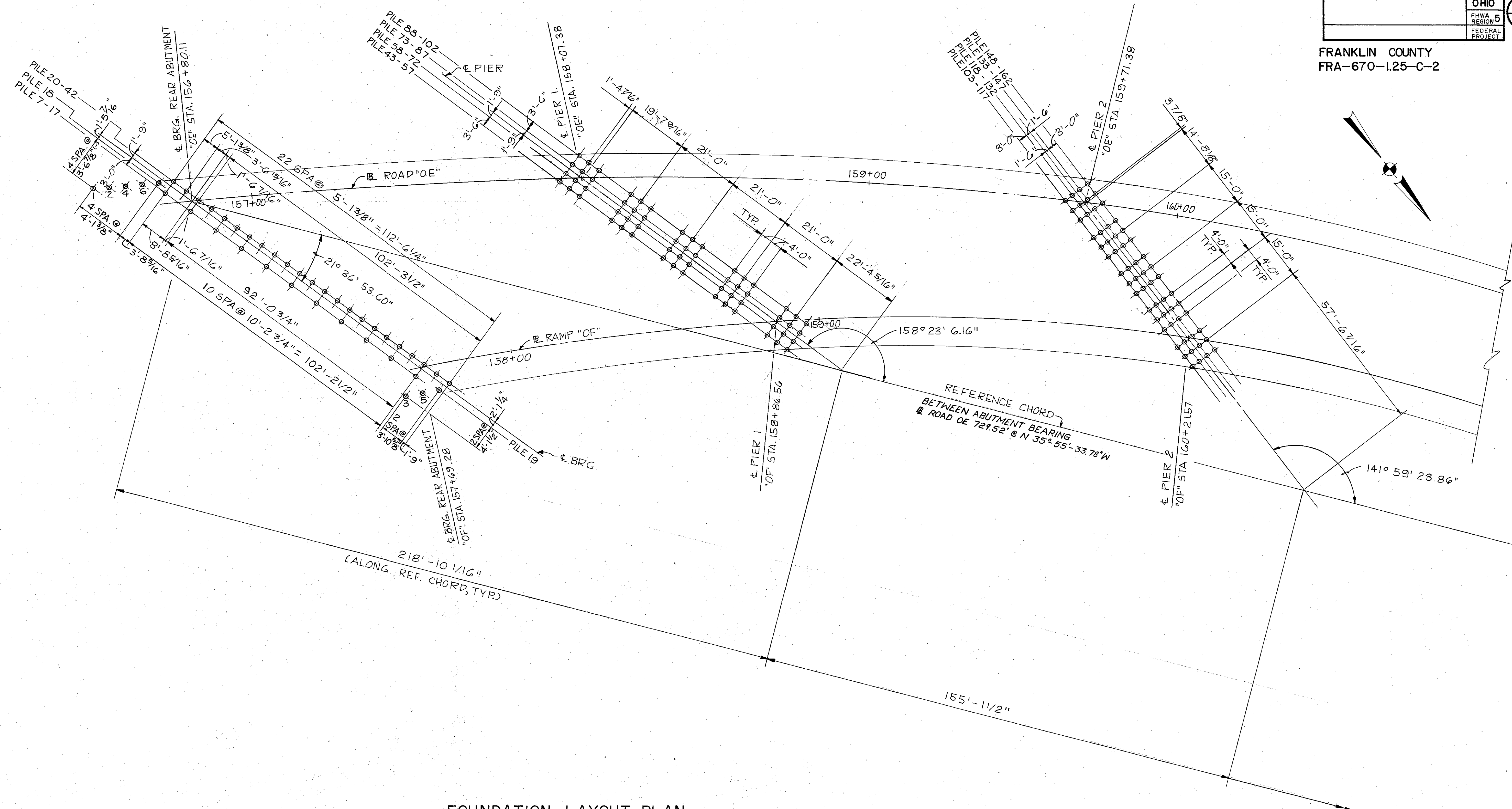
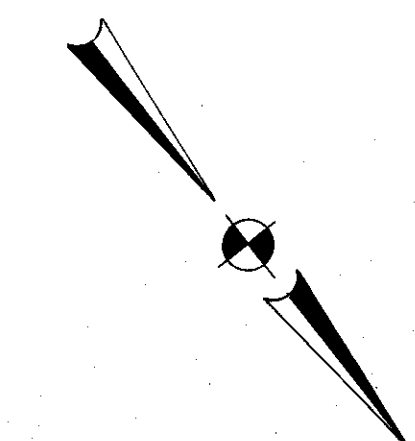
1. Superstructure - As shown on sheet 29/37

JOHN E. FOSTER AND ASSOCIATES, INC. 6/37  
555 Buttles Ave., Columbus, Ohio 43215

**ESTIMATED QUANTITIES AND GENERAL NOTES**

BRIDGE NO. FRA-315-0210  
ROAD "OE" AND RAMP "OF"  
OVER OLENTANGY RIVER

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H.R.		D.L.W.	H.S.S.			



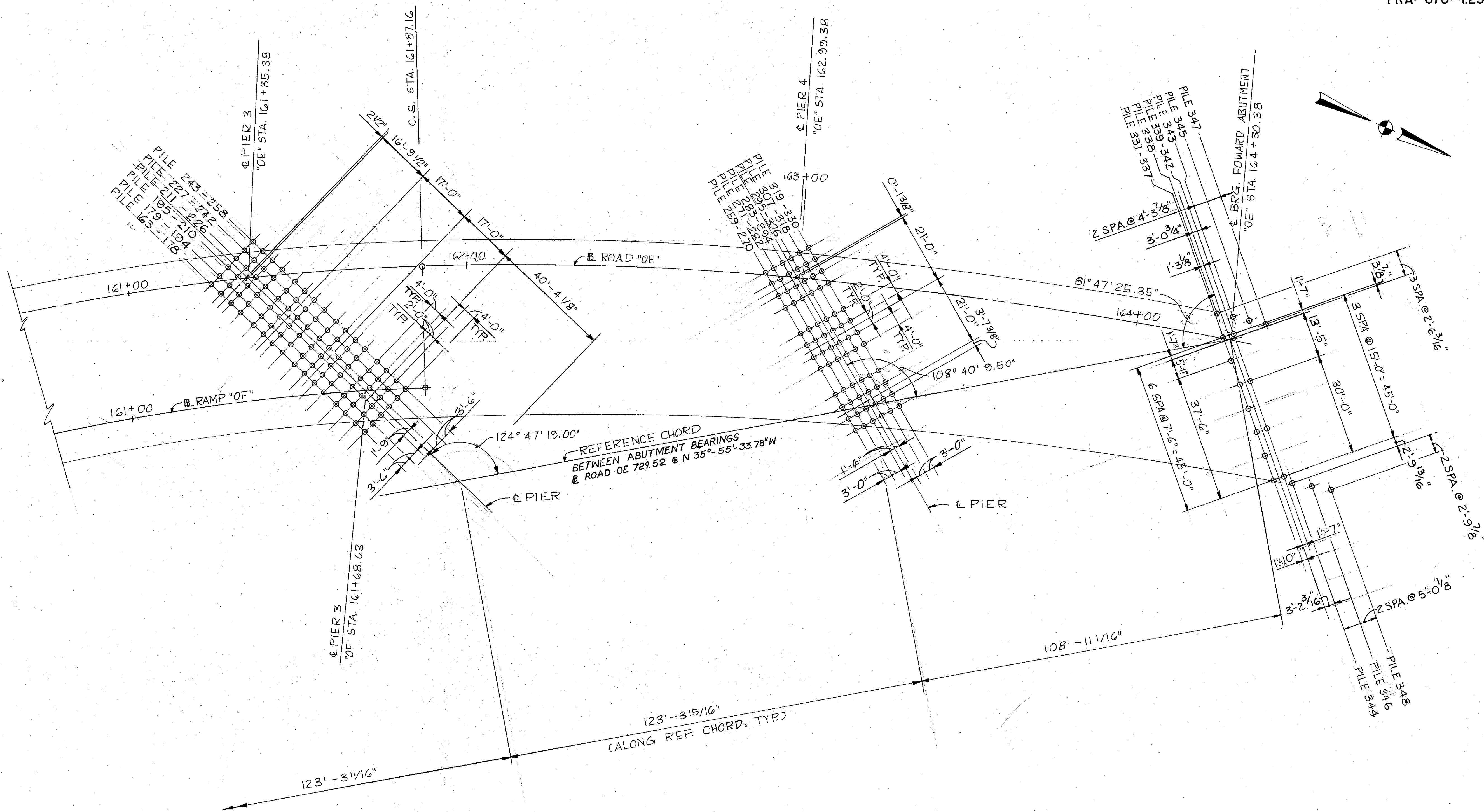
**FOUNDATION LAYOUT PLAN**

NOTE : FOR PILE SIZES AND BATTERS  
REFER TO SHEETS 9,12,13

JOHN E. FOSTER AND ASSOCIATES, INC. 7/37  
555 Buttles Ave., Columbus, Ohio 43215

**FOUNDATION LAYOUT PLAN - I**  
BRIDGE NO. FRA.-315-0210  
ROAD "OE" AND RAMP "OF"  
OVER OLENTANGY RIVER

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CEM	TH	-	DFS			



**FOUNDATION LAYOUT PLAN**

NOTE: FOR PILE SIZES AND BATTERS  
REFER TO SHEETS 9,12,13.

JOHN E. FOSTER AND ASSOCIATES, INC. 18/37  
555 Buttles Ave., Columbus, Ohio 43215

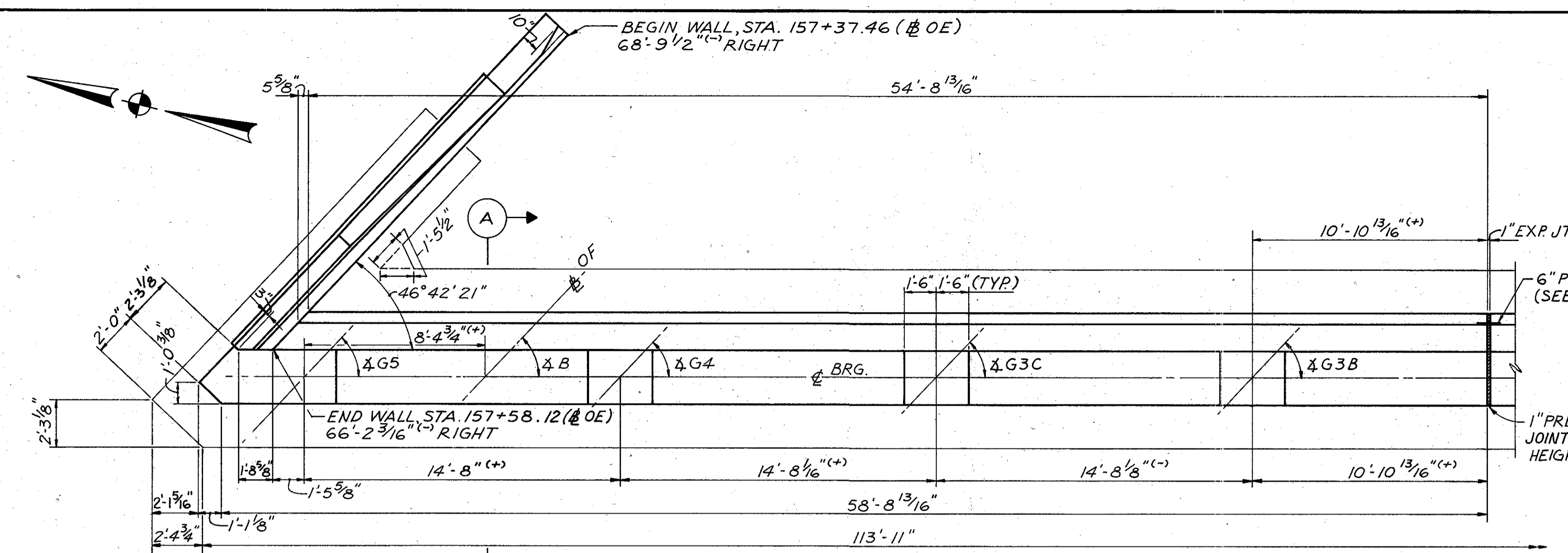
**FOUNDATION LAYOUT PLAN-2**

BRIDGE NO. FRA.-315-0210  
ROAD "OE" AND RAMP "OF"  
OVER OLENTANGY RIVER

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CEM	TH	-	DFS			

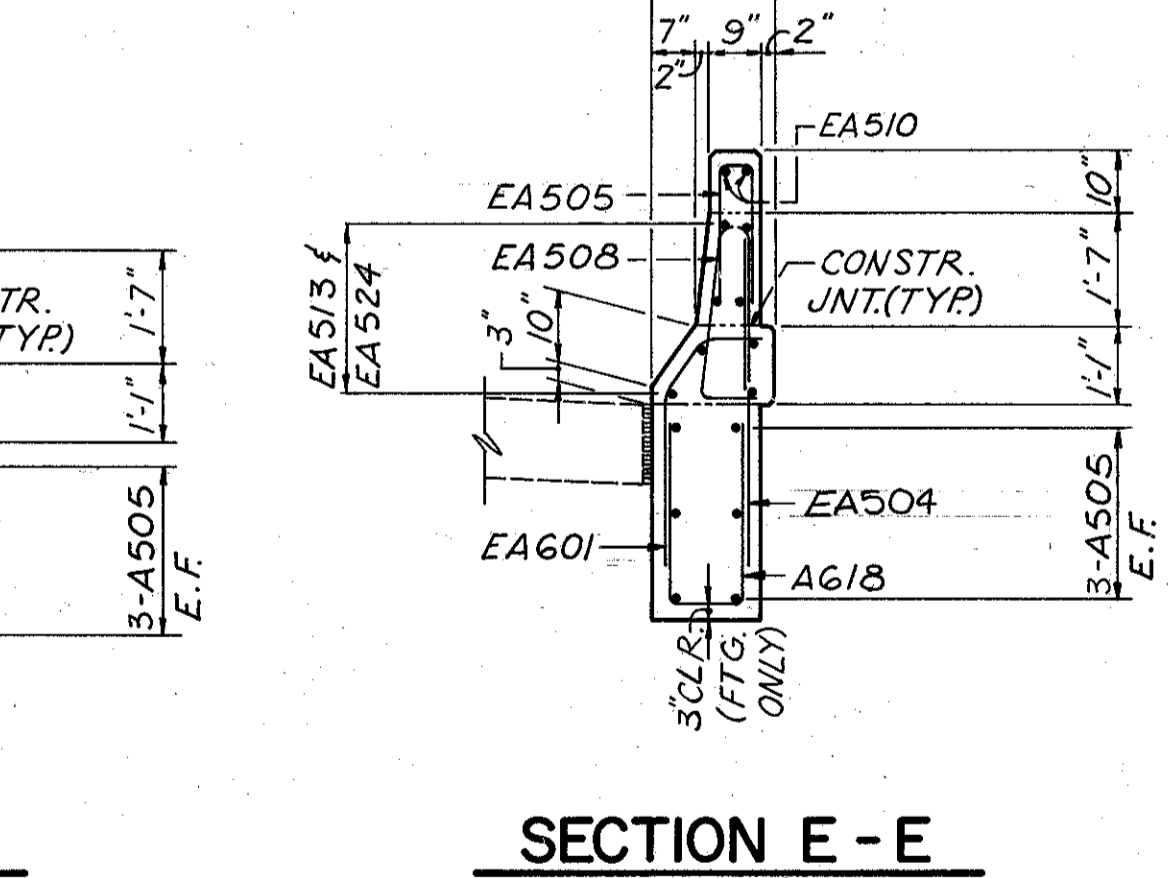
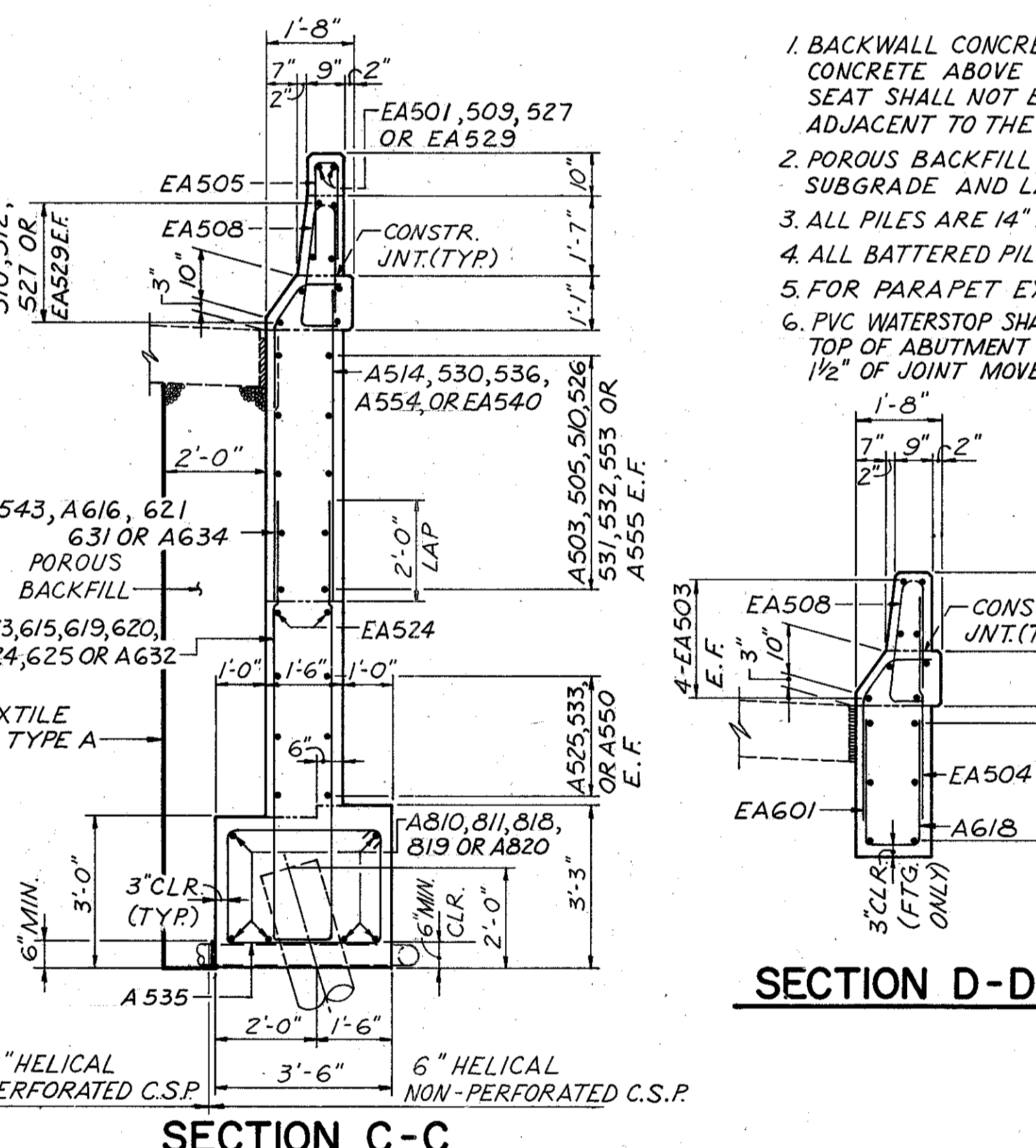
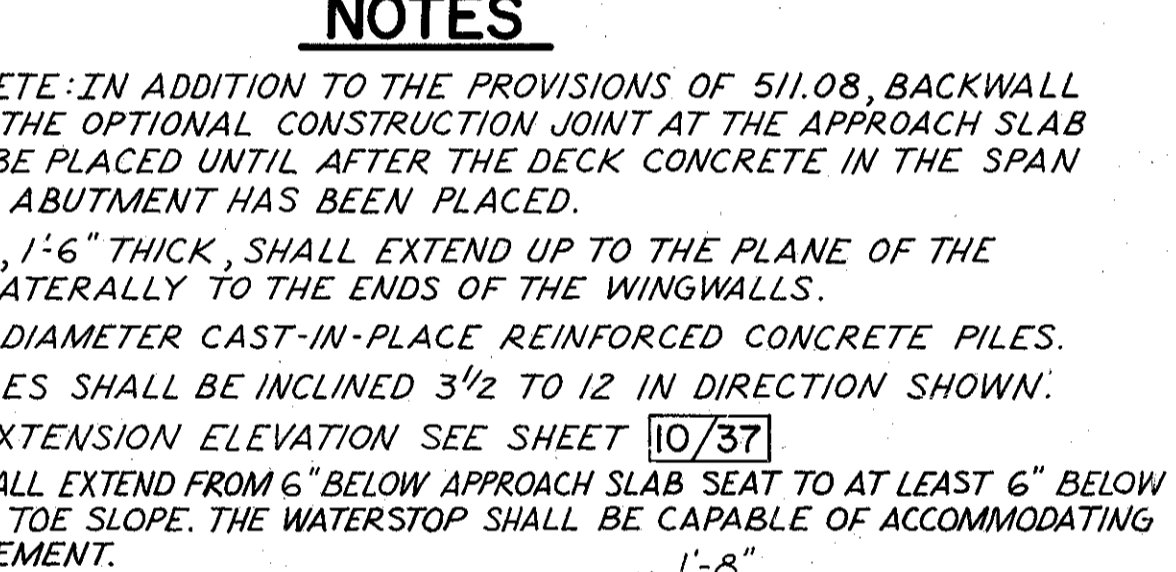
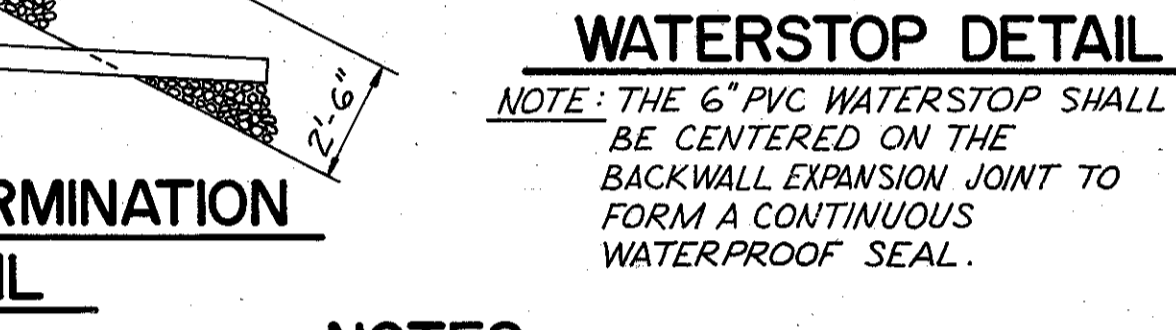
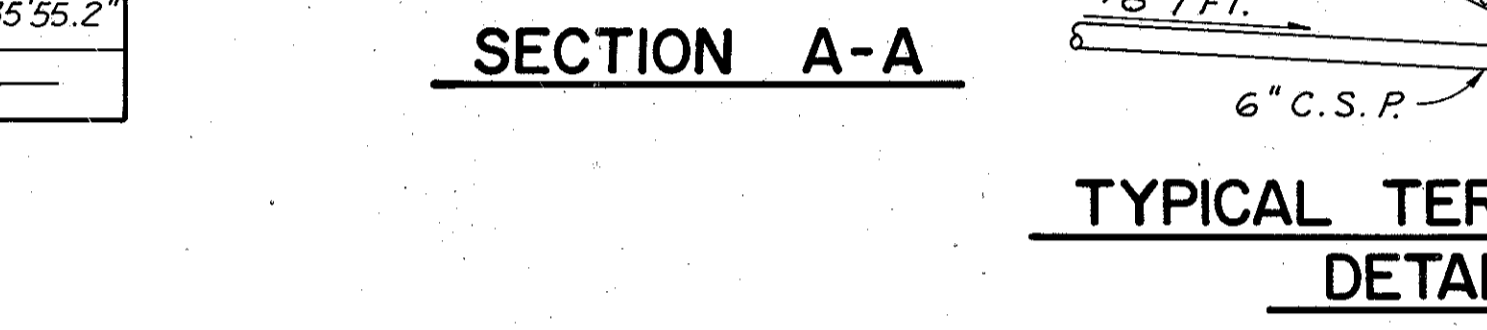
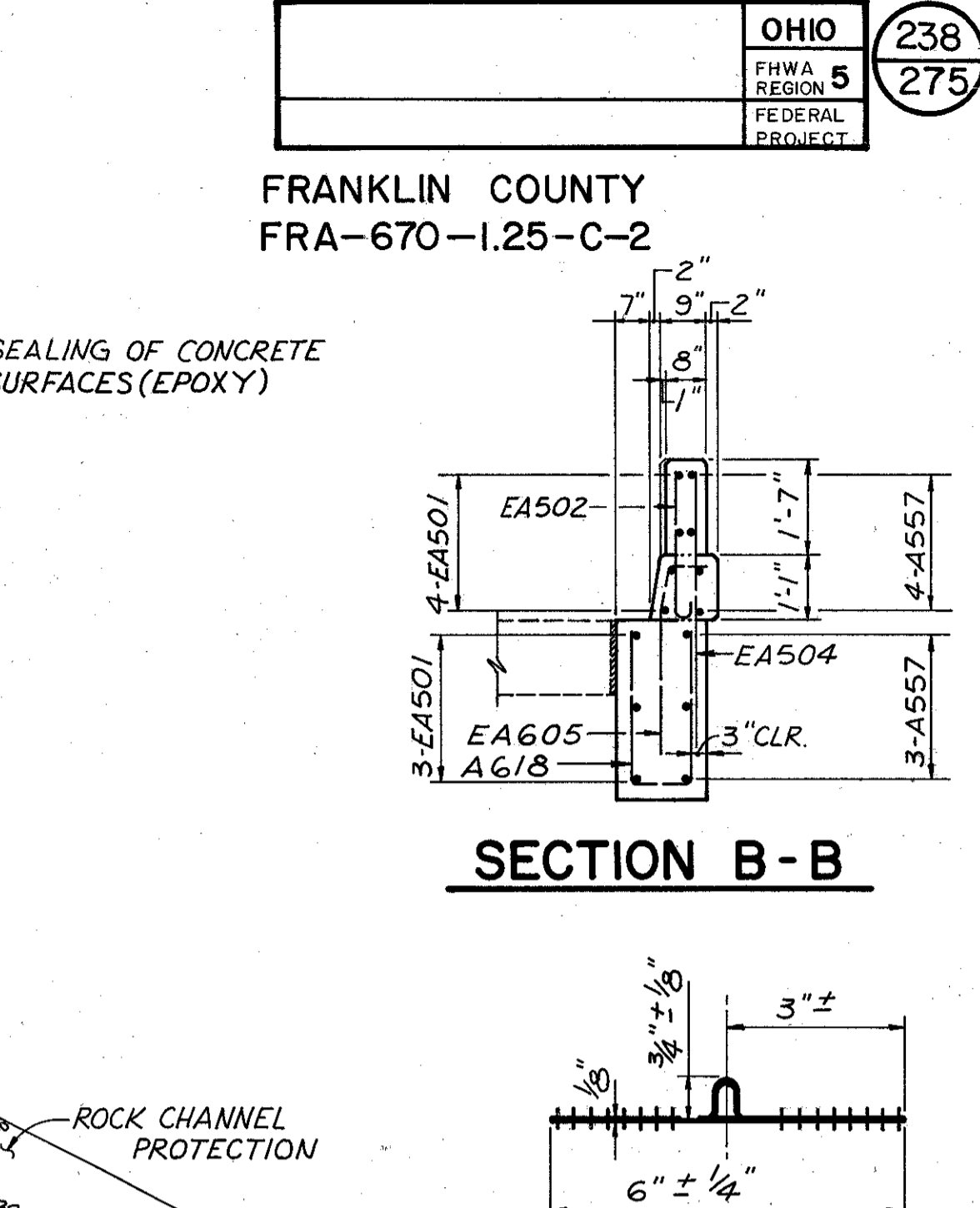
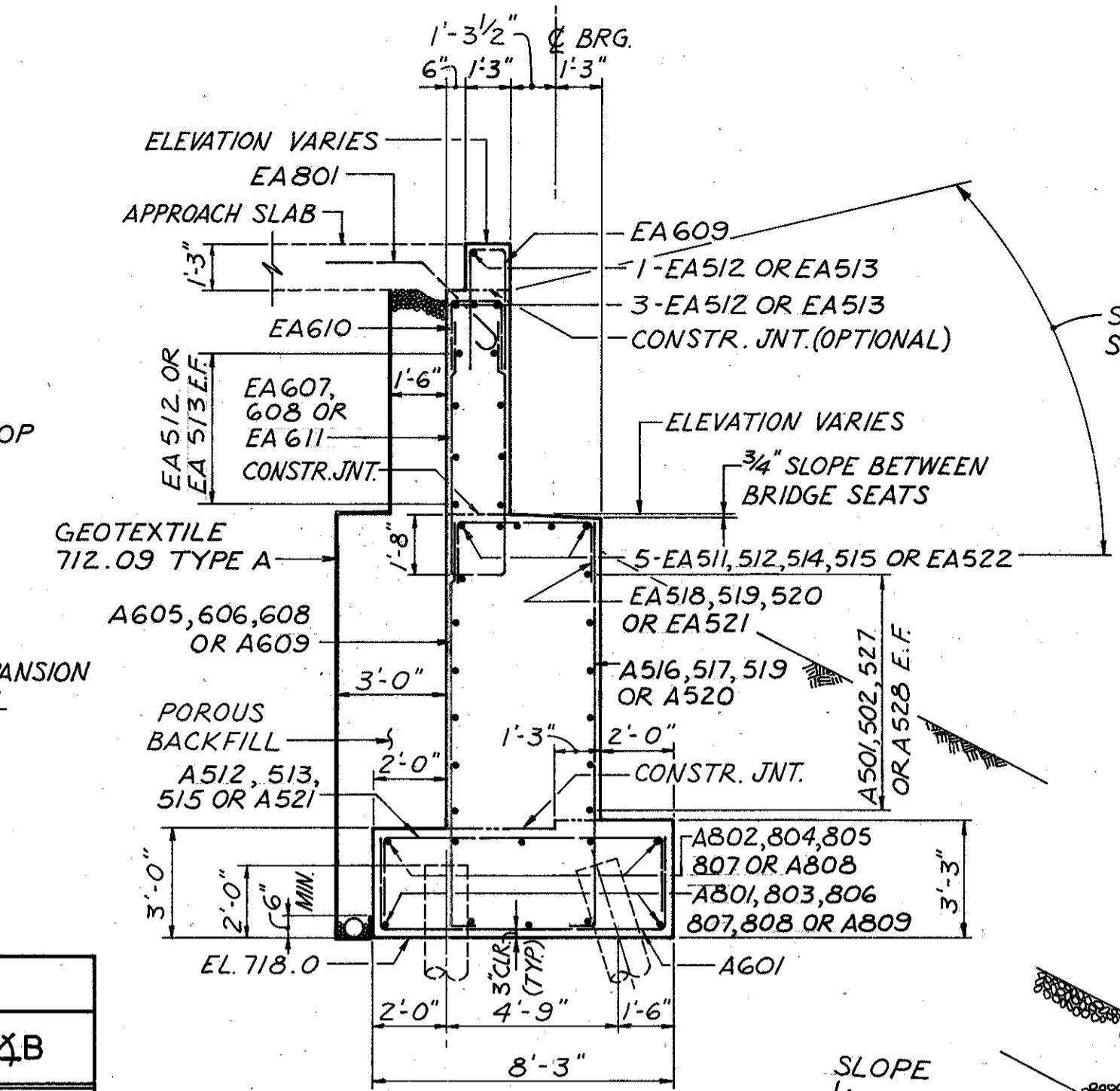
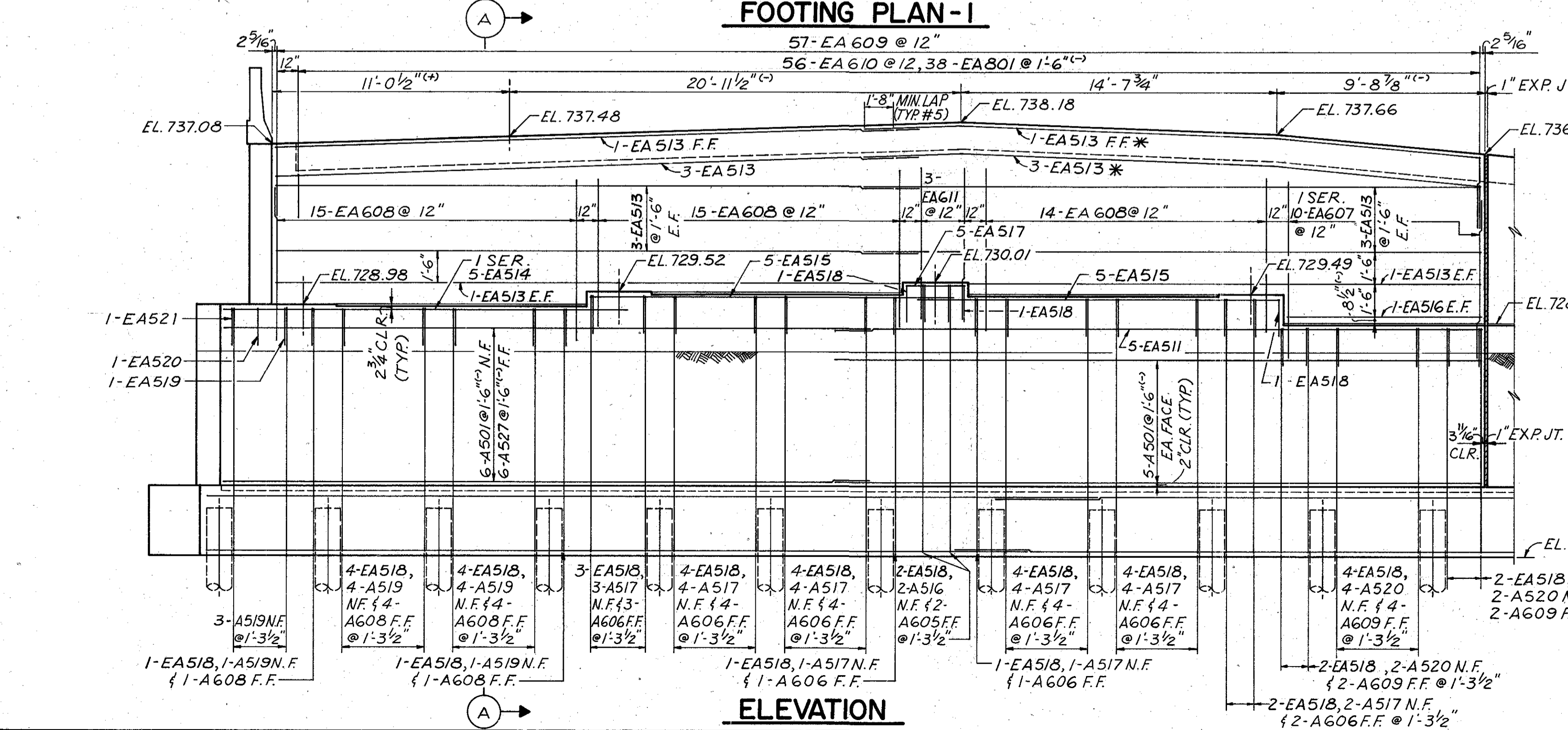
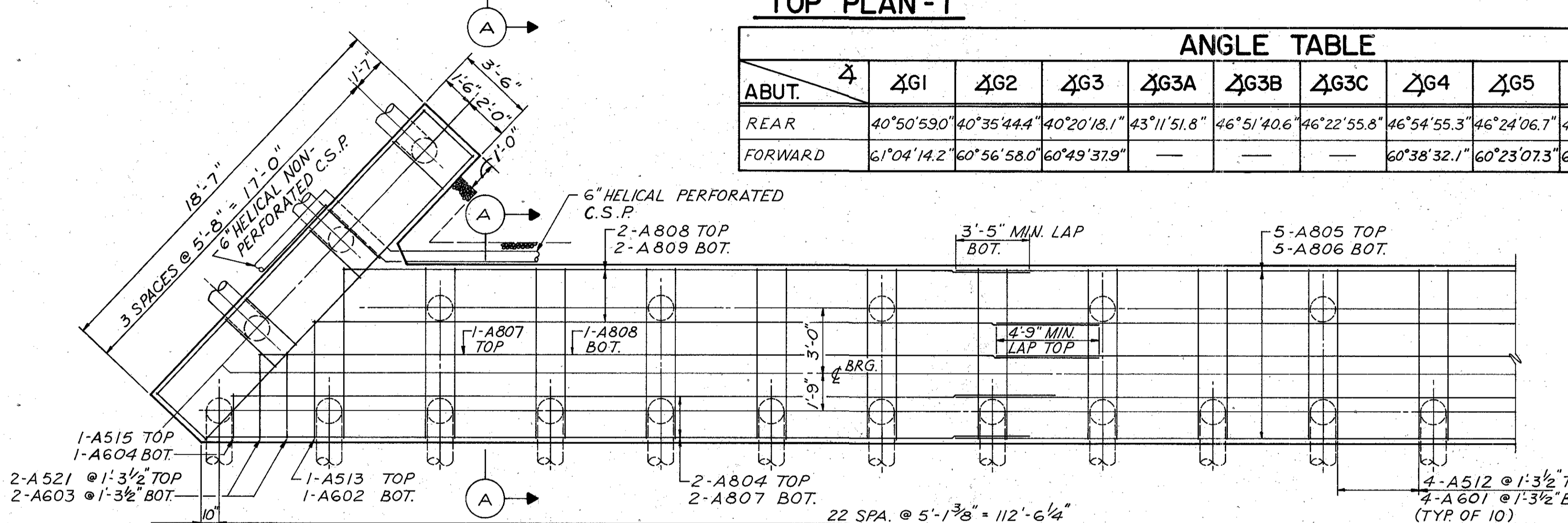


FRANKLIN COUNTY  
FRA-670-1.25-C-2



**ANGLE TABLE**

ABUT.	ΔG1	ΔG2	ΔG3	ΔG3A	ΔG3B	ΔG3C	ΔG4	ΔG5	ΔA	ΔB
REAR	40°50'59.0"	40°35'44.4"	40°20'18.1"	43°11'51.8"	46°51'40.6"	46°22'55.8"	46°54'55.3"	46°24'06.7"	40°43'28.7"	46°35'55.2"
FORWARD	61°04'14.2"	60°56'58.0"	60°49'37.9"	—	—	—	60°38'32.1"	60°23'07.3"	60°	—



**NOTES**

- BACKWALL CONCRETE: IN ADDITION TO THE PROVISIONS OF 511.08, BACKWALL CONCRETE ABOVE THE OPTIONAL CONSTRUCTION JOINT AT THE APPROACH SLAB SEAT SHALL NOT BE PLACED UNTIL AFTER THE DECK CONCRETE IN THE SPAN ADJACENT TO THE ABUTMENT HAS BEEN PLACED.
- POROUS BACKFILL, 1'-6" THICK, SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE AND LATERALLY TO THE ENDS OF THE WINGWALLS.
- ALL PILES ARE 14" DIAMETER CAST-IN-PLACE REINFORCED CONCRETE PILES.
- ALL BATTERED PILES SHALL BE INCLINED 3/2 TO 12 IN DIRECTION SHOWN.
- FOR PARAPET EXTENSION ELEVATION SEE SHEET 10/37
- PVC WATERSTOP SHALL EXTEND FROM 6" BELOW APPROACH SLAB SEAT TO AT LEAST 6" BELOW TOP OF ABUTMENT TOE SLOPE. THE WATERSTOP SHALL BE CAPABLE OF ACCOMMODATING 1/2" OF JOINT MOVEMENT.

**BACKWALL EXPANSION JOINT DETAIL**

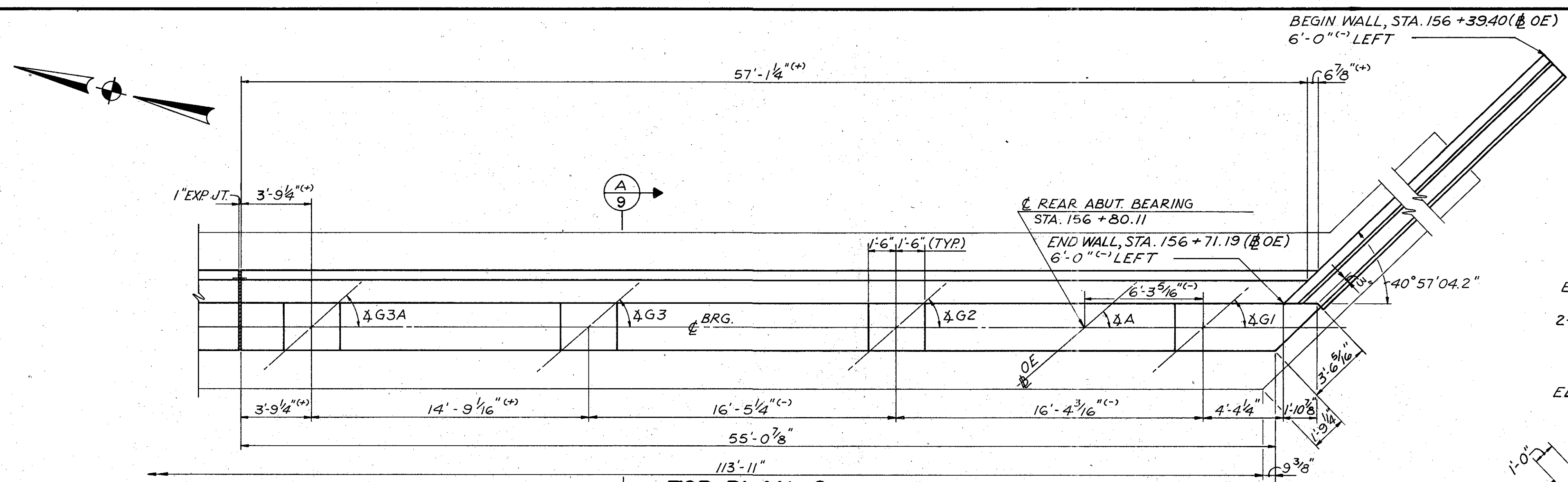
FOR THE FIRST POUR, THE WATERSTOP SHOULD BE HELD SECURELY IN PLACE BY THE USE OF SPLIT FORMS AND TIE WIRES. FOR THE SECOND POUR, SECURE THE FREE END OF WATERSTOP IN PROPER POSITION WITH TIE WIRES. ALTERNATE METHODS, AS APPROVED BY THE ENGINEER, MAY BE USED TO INSURE THE CORRECT POSITIONING OF THE WATERSTOP.

DESIGNED: H.W.R. DRAWN: D.M.T. TRACED: D.M.T. CHECKED: H.S.S. REVIEWED: DATE: REVISED:

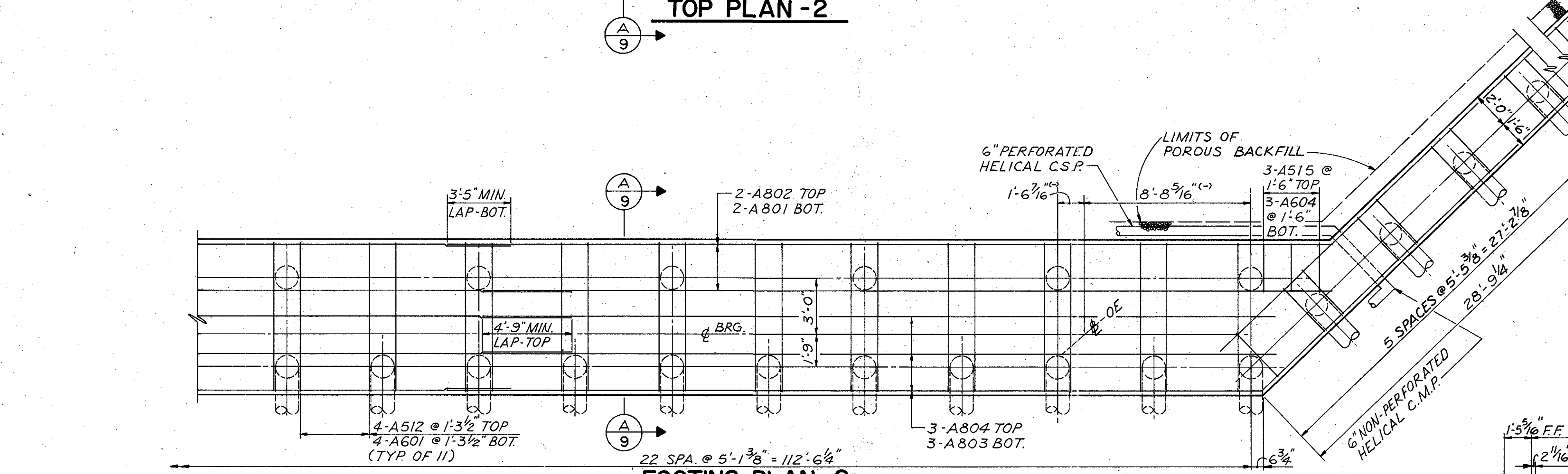
FRANKLIN COUNTY  
FRA-670-1.25-C-2

**NOTES**

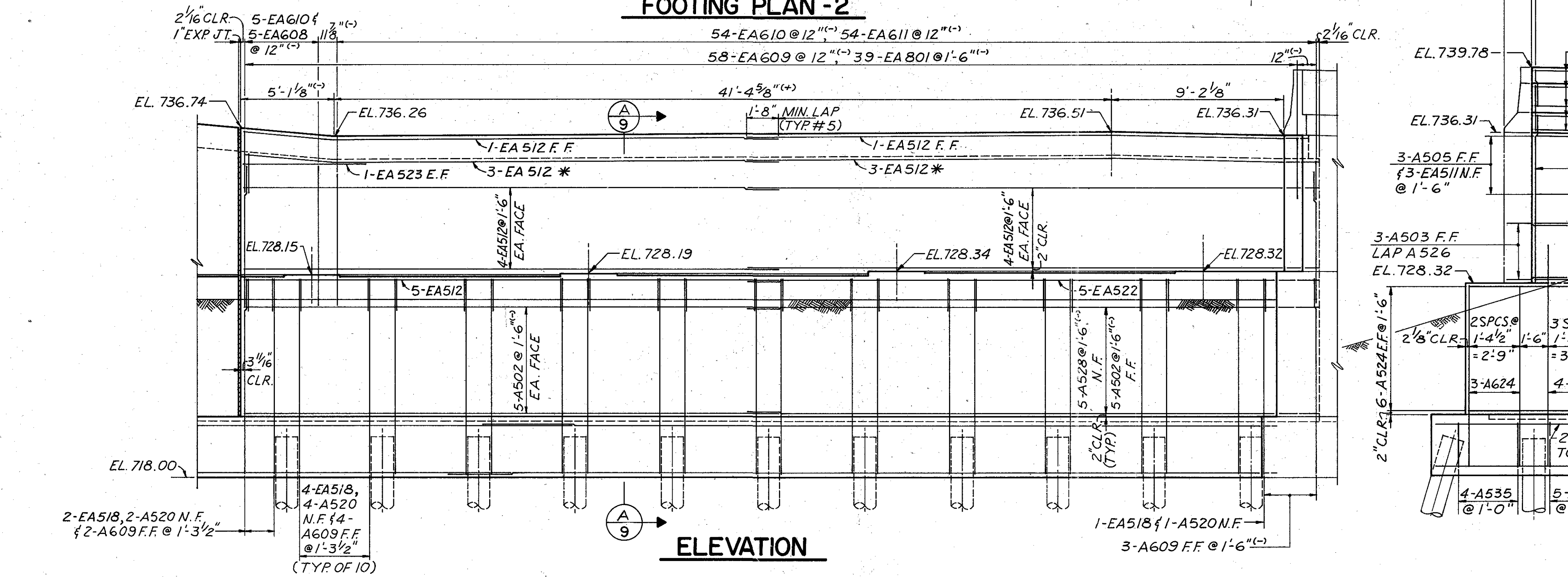
1. FOR ADDITIONAL NOTES SEE SHEET 10/37.



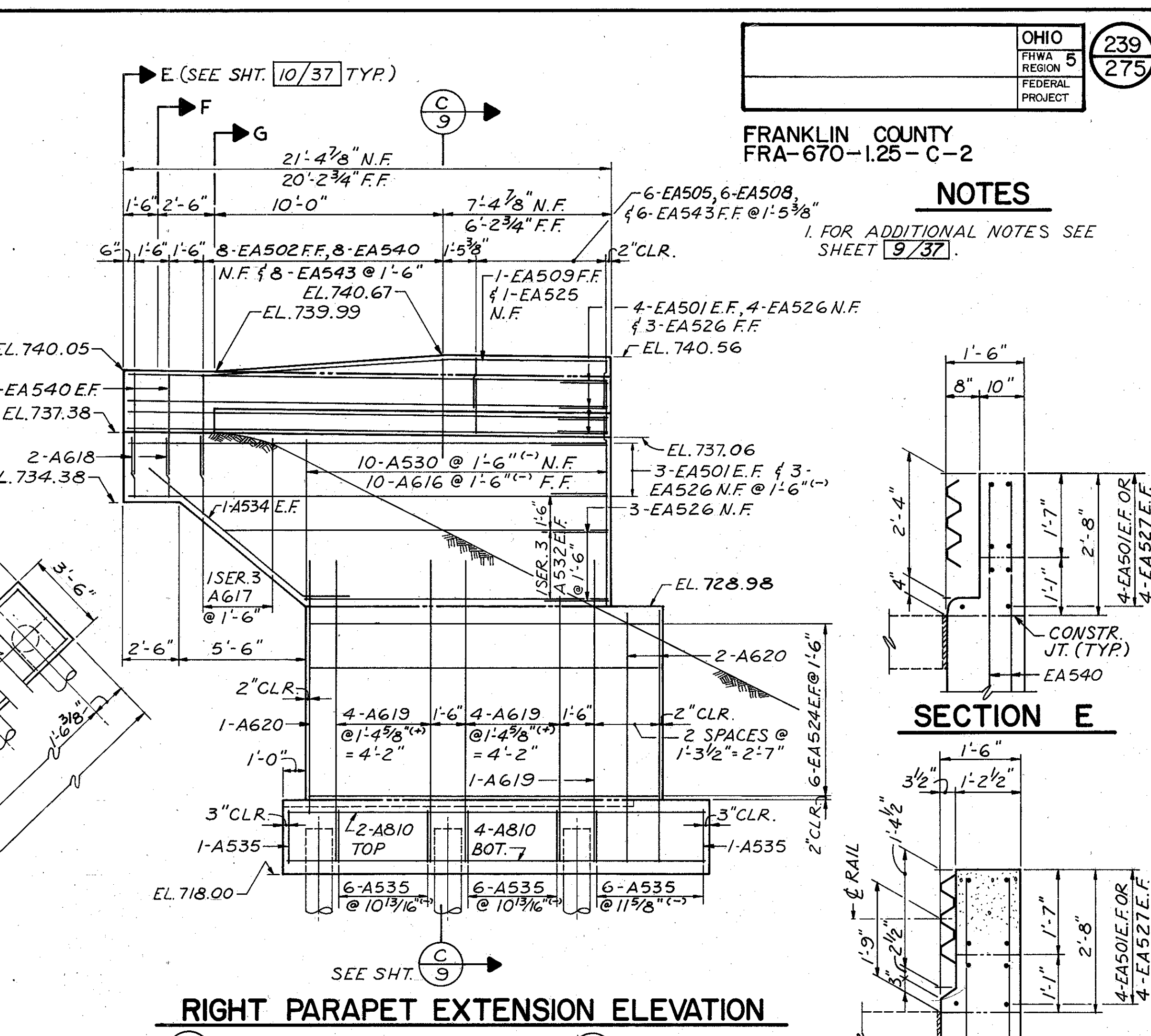
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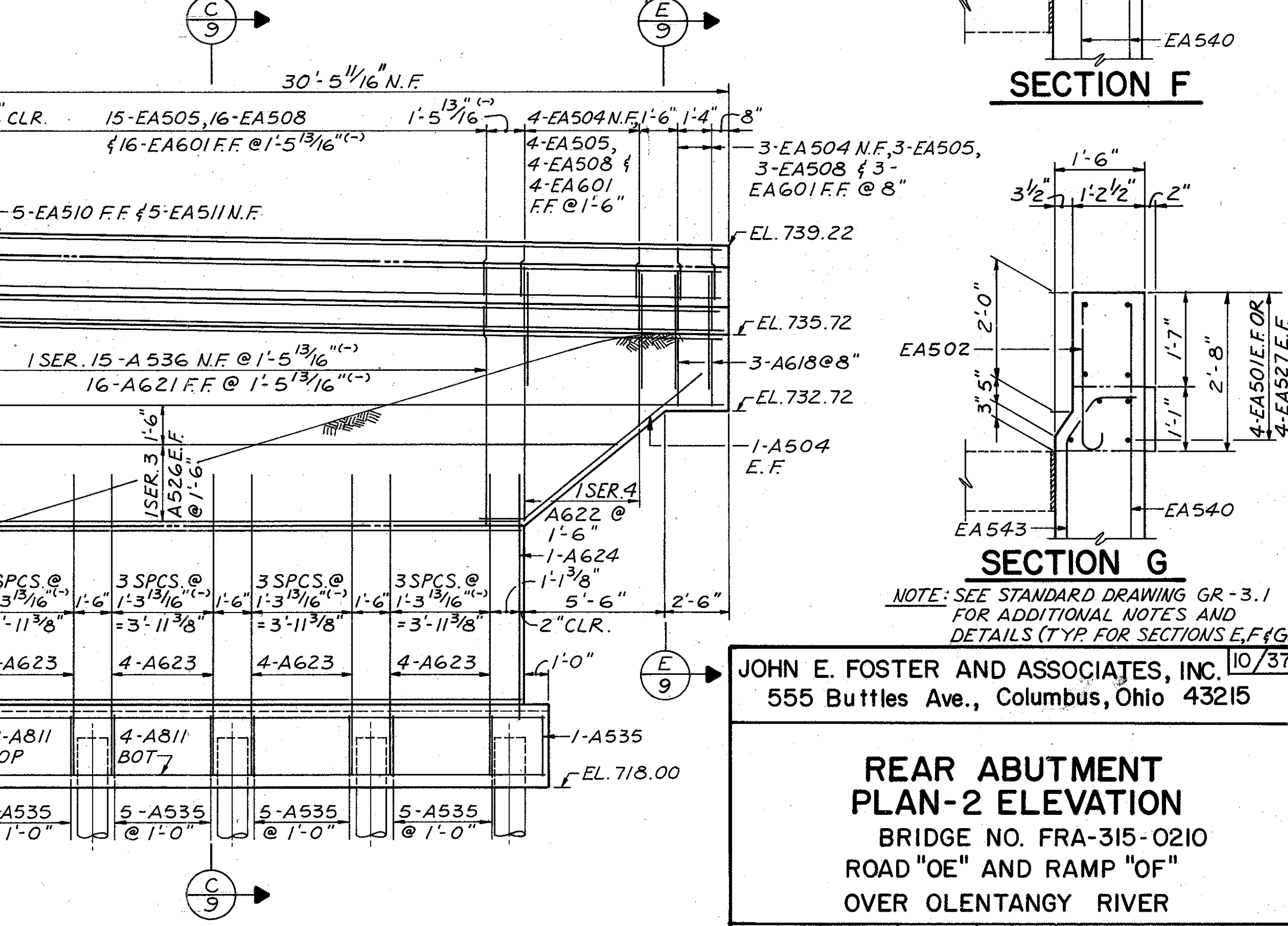
**FOOTING PLAN - 2**



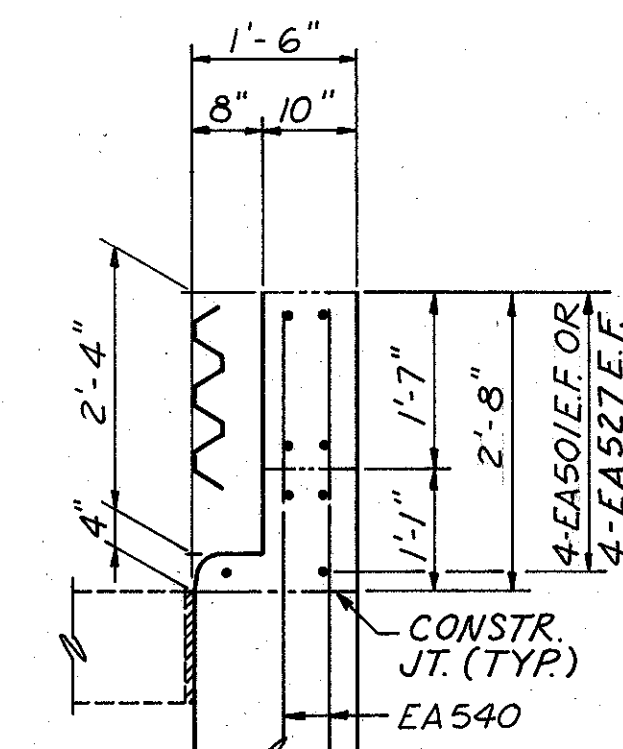
**ELEVATION**



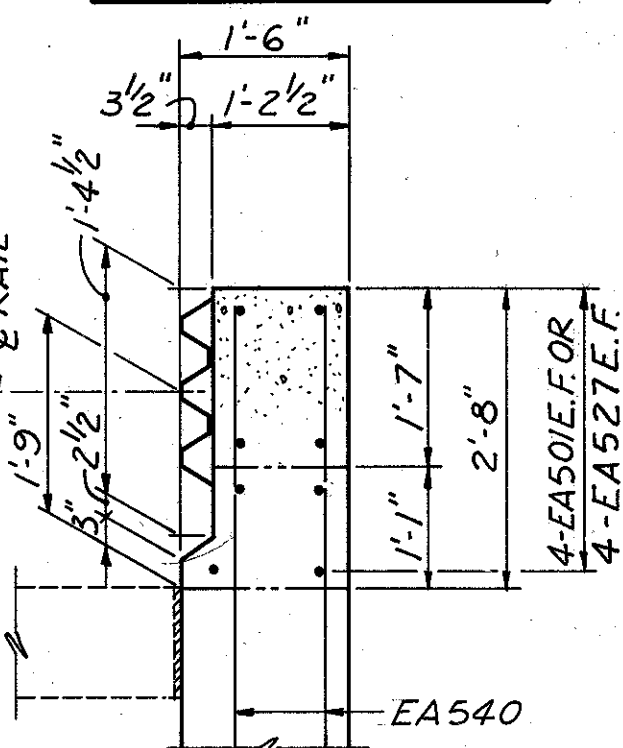
**RIGHT PARAPET EXTENSION ELEVATION**



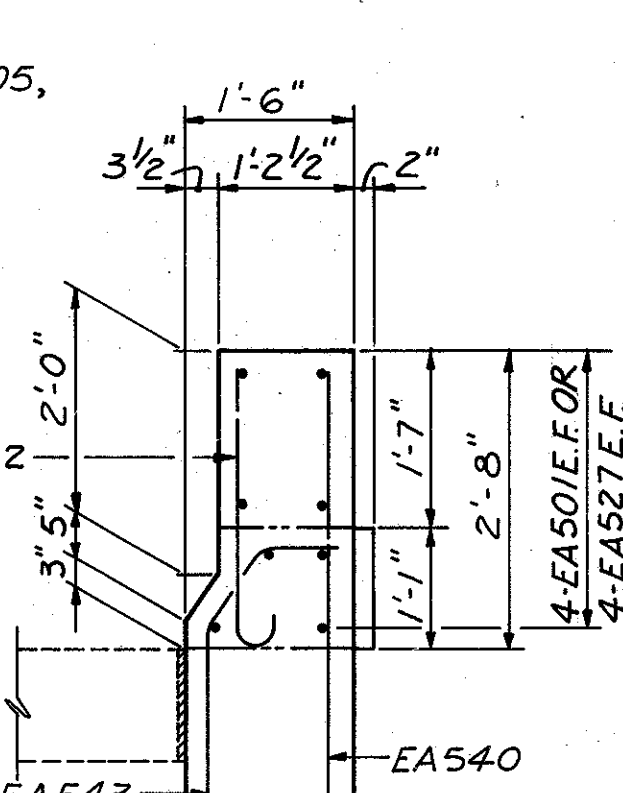
**LEFT PARAPET EXTENSION ELEVATION**



**SECTION E**



**SECTION F**



**SECTION G**

NOTE: SEE STANDARD DRAWING GR-3.1 FOR ADDITIONAL NOTES AND DETAILS (TYP FOR SECTIONS E, F, G).

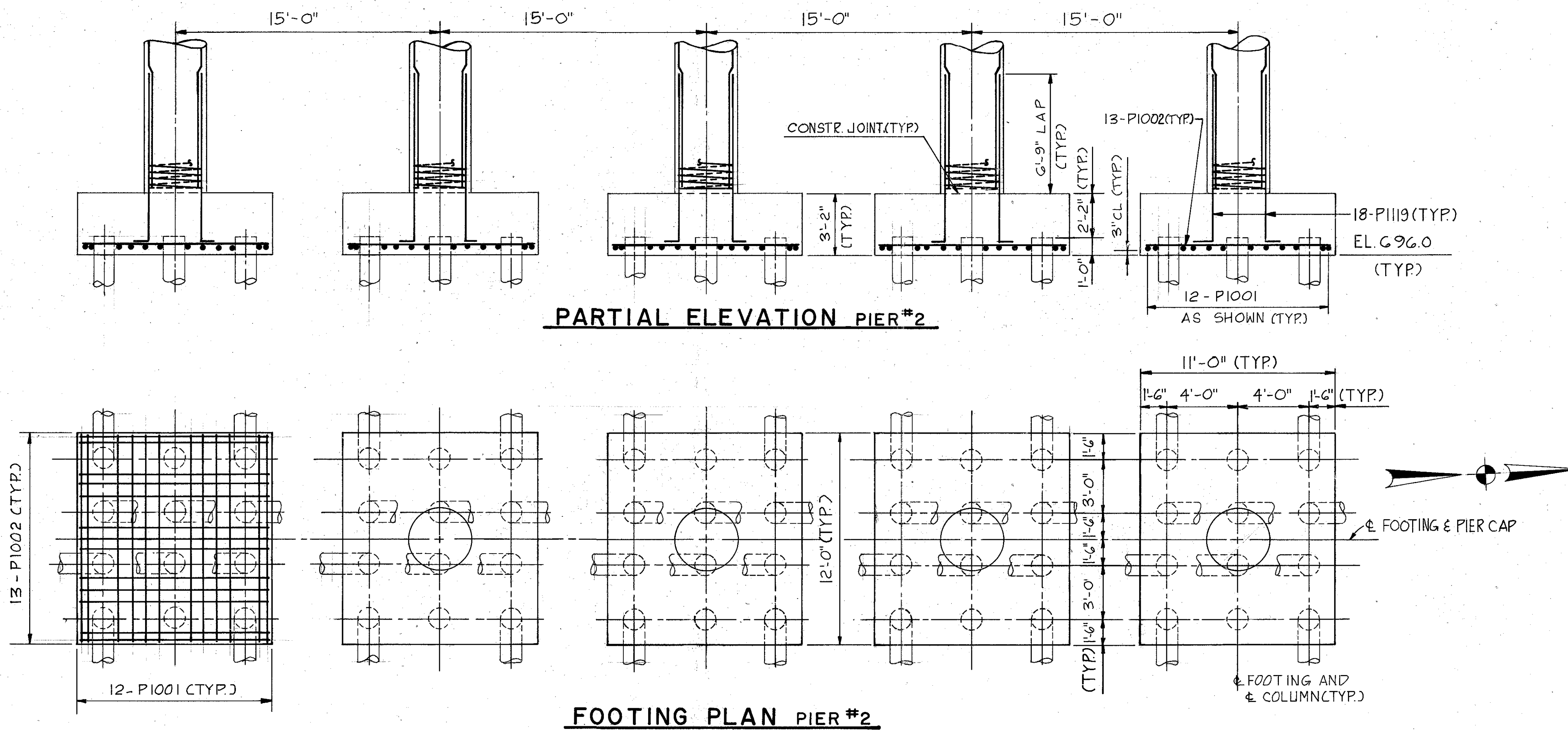
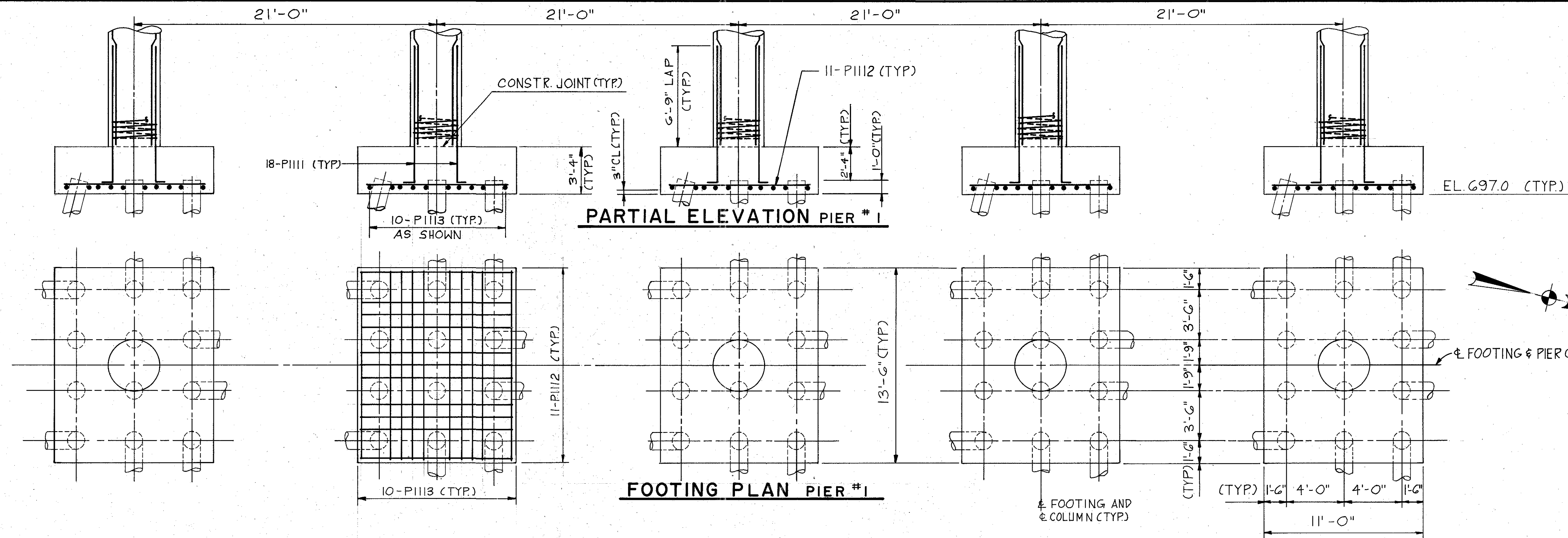
JOHN E. FOSTER AND ASSOCIATES, INC. 10/37  
555 Buttles Ave., Columbus, Ohio 43215

**REAR ABUTMENT  
PLAN-2 ELEVATION**  
BRIDGE NO. FRA-315-0210  
ROAD "OE" AND RAMP "OF"  
OVER OELTANGY RIVER

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H.W.R.	D.M.T.	D.M.T.	H.S.S.			



FRANKLIN COUNTY  
FRA-670-1.25-C-2



**NOTES**

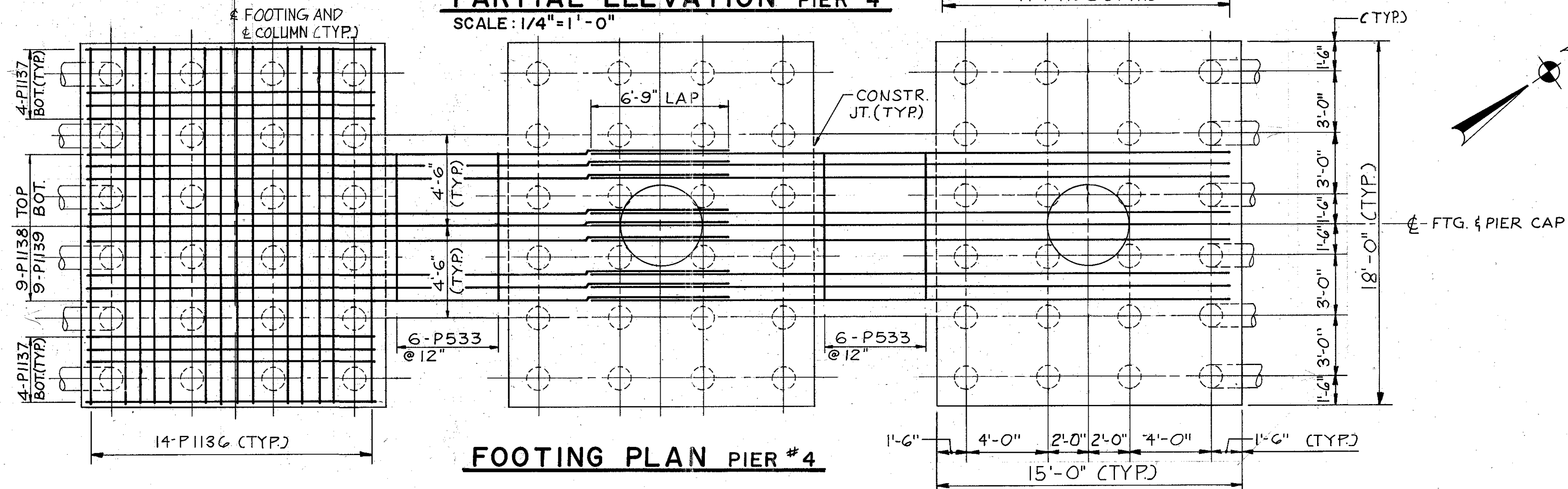
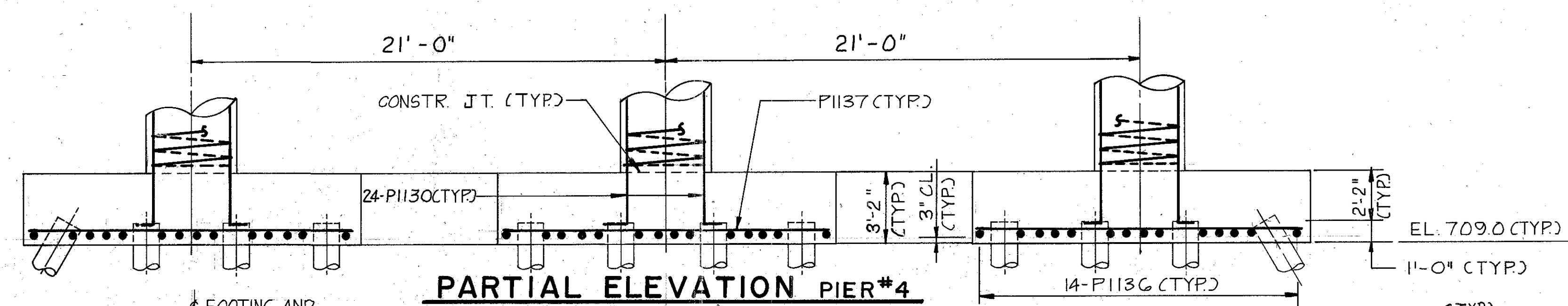
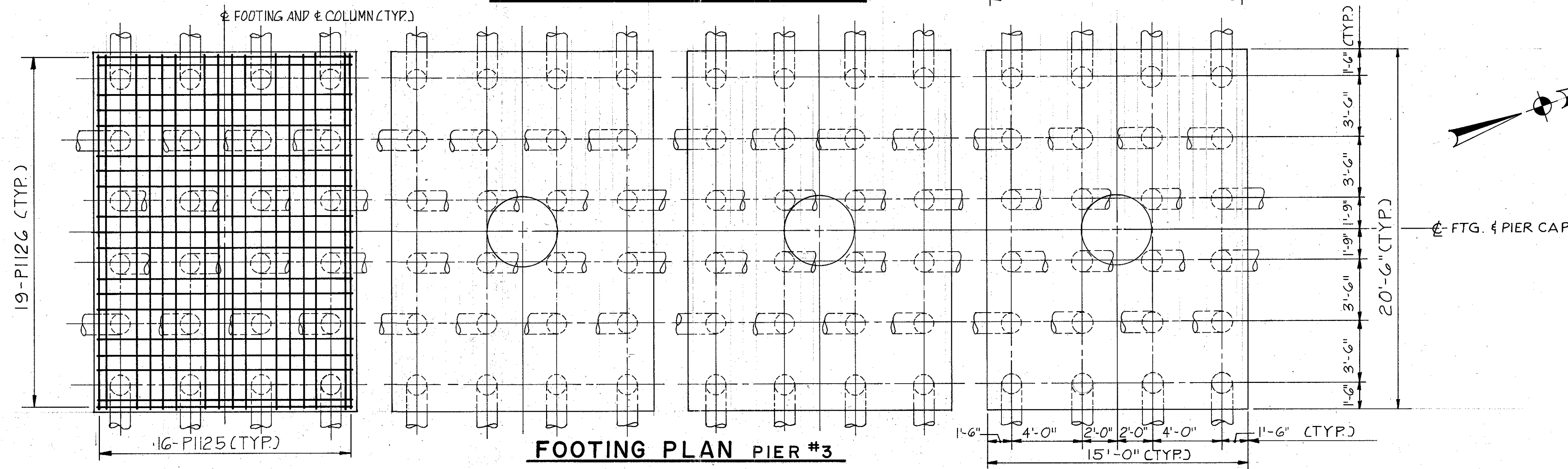
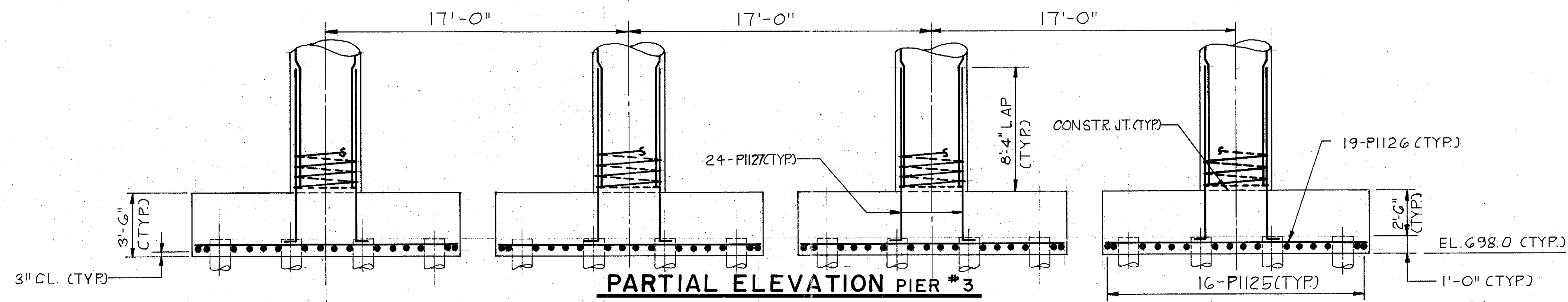
1. ALL PILES ARE 14" DIAMETER CAST-IN-PLACE REINFORCED CONCRETE PILES.
2. ALL BATTERED PILES SHALL BE INCLINED 3 TO 12 IN DIRECTION SHOWN.

JOHN E. FOSTER AND ASSOCIATES, INC. 12/37  
555 Buttles Ave., Columbus, Ohio 43215

**PIER FOOTING**  
BRIDGE NO. FRA.-315-0210  
ROAD "OE" AND RAMP "OF"  
OVER OLENTANGY RIVER

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DFS	TH	TH	CEM			

FRANKLIN COUNTY  
FRA-670-1.25-C-2



**NOTES:**

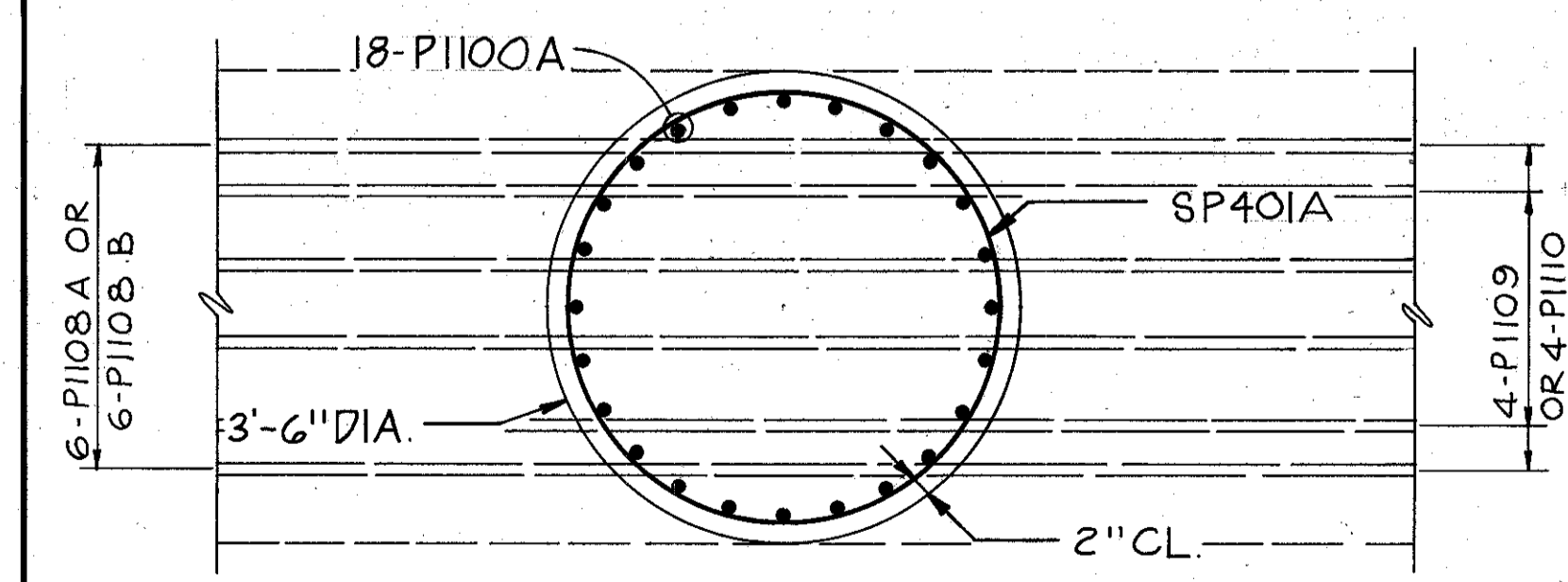
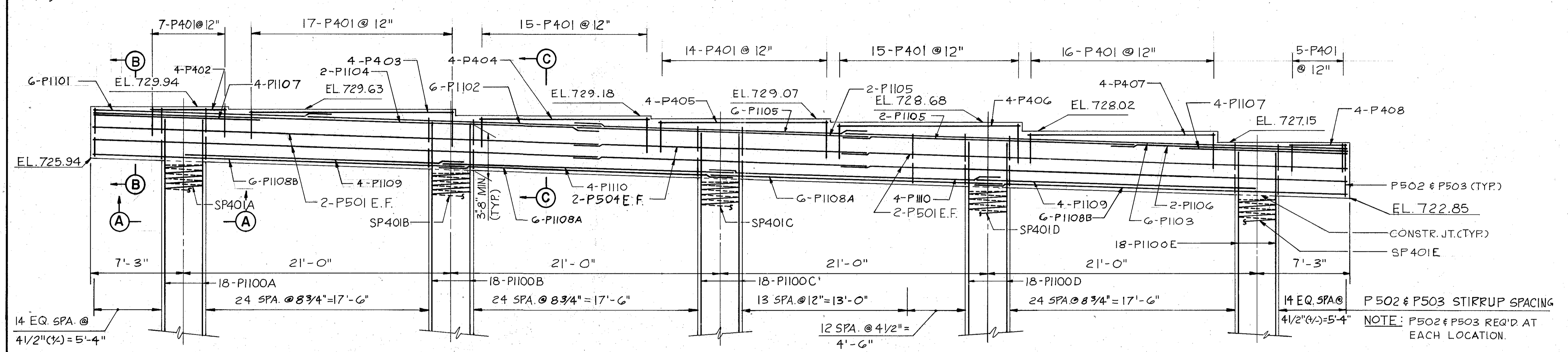
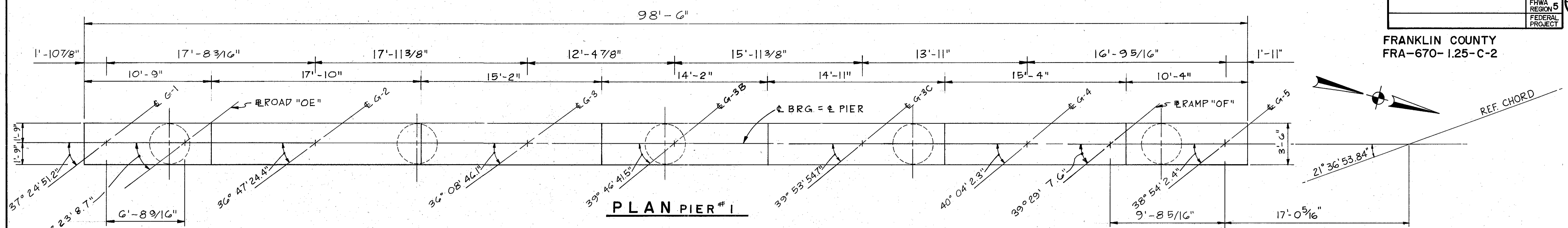
1. ALL PILES ARE 14" DIAMETER CAST-IN-PLACE REINFORCED CONCRETE PILES.
2. ALL BATTERED PILES SHALL BE INCLINED 3 TO 12 IN DIRECTION SHOWN.

JOHN E. FOSTER AND ASSOCIATES, INC. 13/37  
555 Buttles Ave., Columbus, Ohio 43215

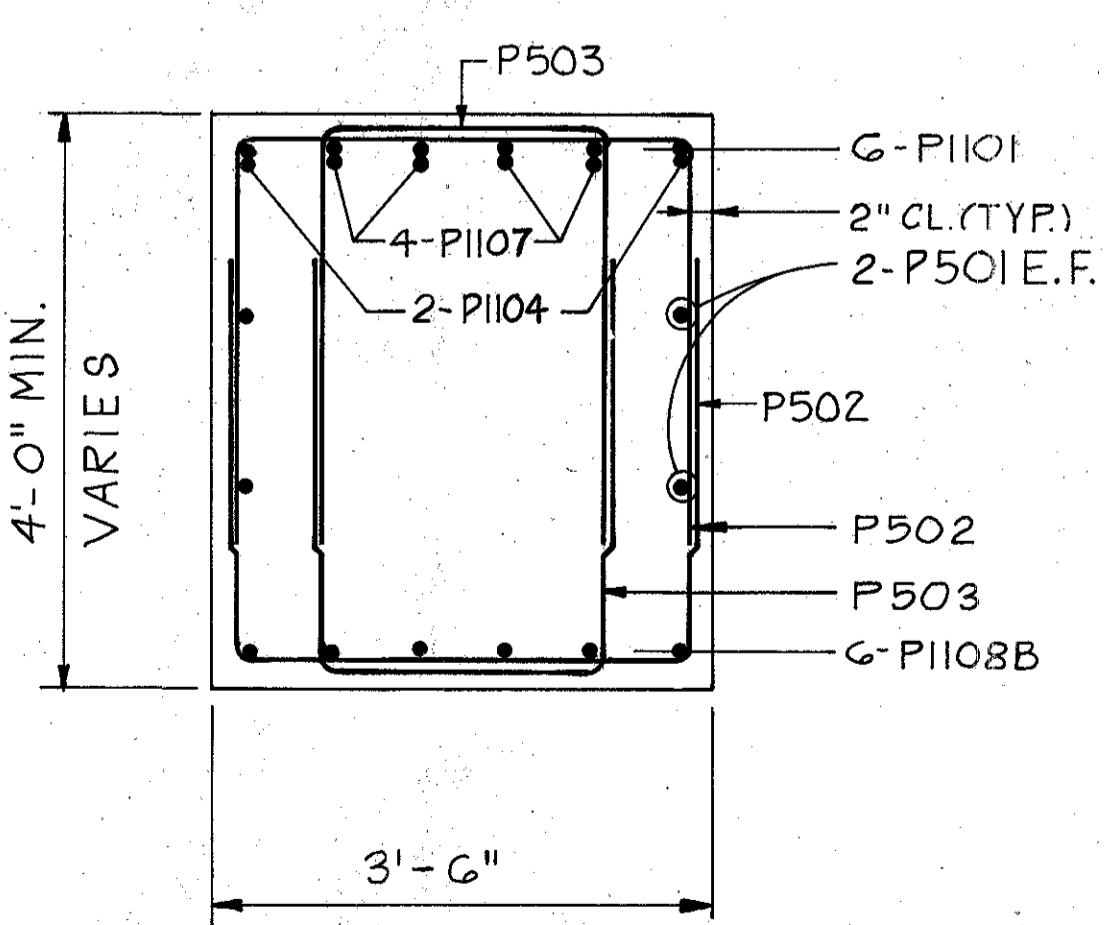
**PIER FOOTING**

BRIDGE NO. FRA.-315-0210  
ROAD "OE" AND RAMP "OF"  
OVER OLENTANGY RIVER

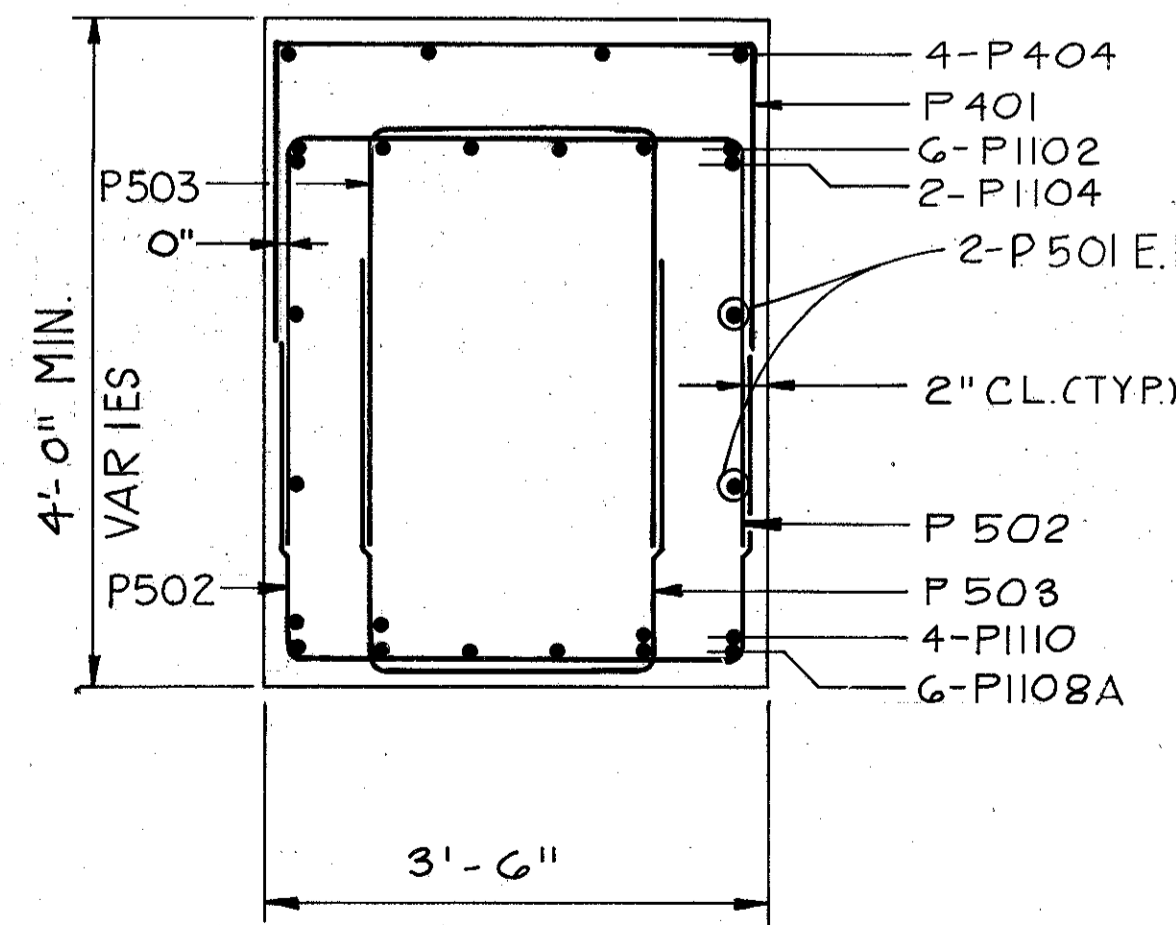
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DFS	TH	TH	CEM			



SECTION A-A



SECTION B-B

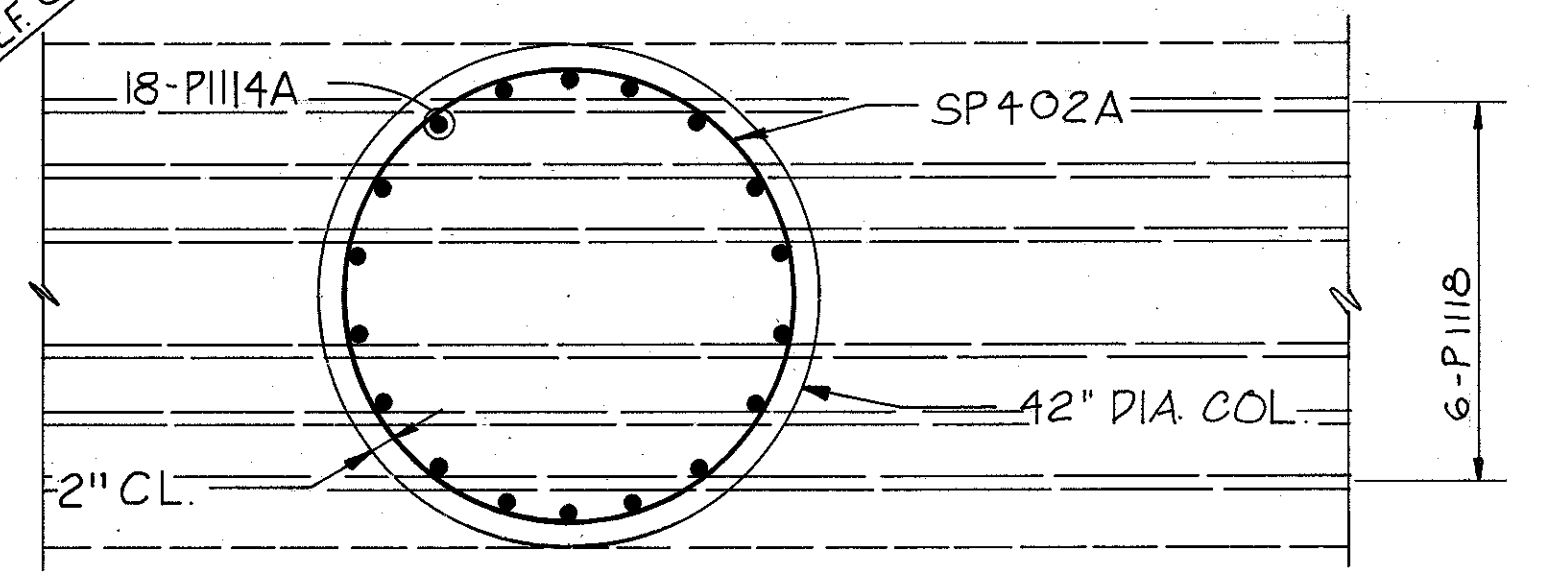
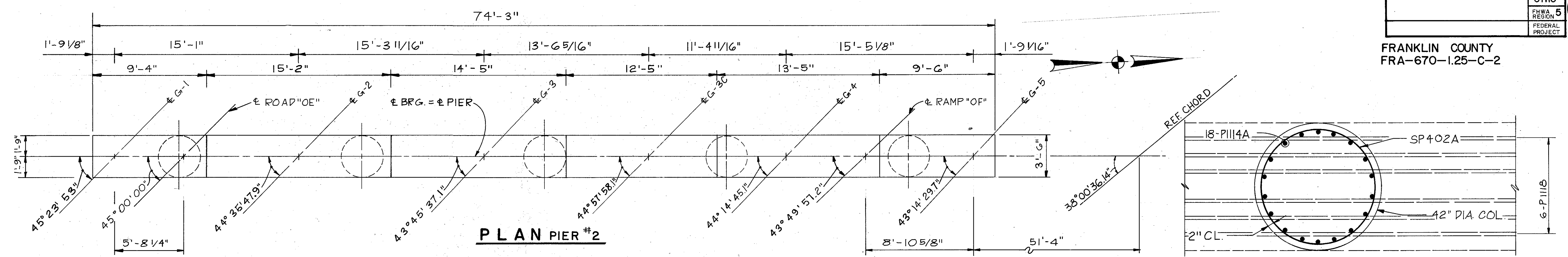


SECTION C-C

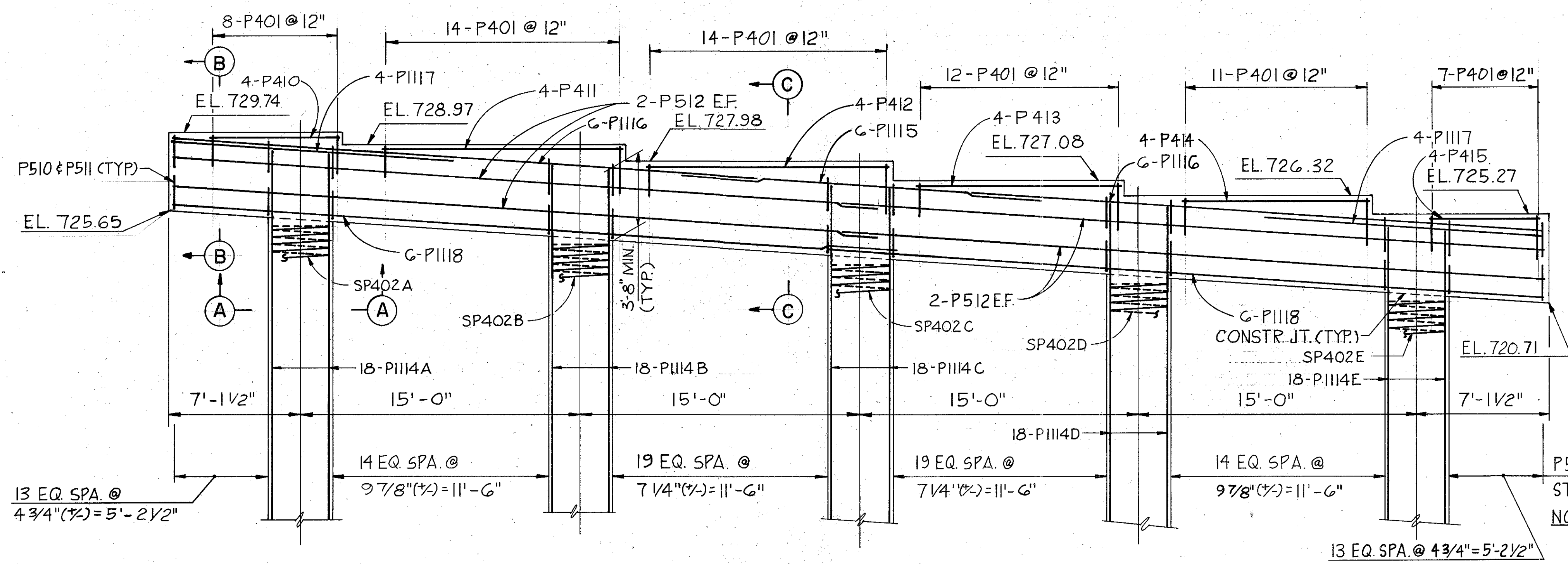
- NOTES**
1. ANGLES SHOWN ARE BETWEEN  $\epsilon$  PIER AND TANGENT TO CURVE AT  $\epsilon$  BRG.
  2. LAP SPLICES FOR #11 BARS IN CAP SHALL BE 7'-3" TOP AND 5'-2" BOTTOM.
  3. LAP SPLICES FOR #5 BARS IN CAP SHALL BE 2'-0".

JOHN E. FOSTER AND ASSOCIATES, INC. 14/37 555 Buttles Ave., Columbus, Ohio 43215						
<b>PIER NO. 1 PLAN ELEVATION AND DETAILS</b>						
BRIDGE NO. FRA-315-0210 ROAD "OE" AND RAMP "OF" OVER OLENTANGY RIVER						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DFS	TH	TH	CEM			

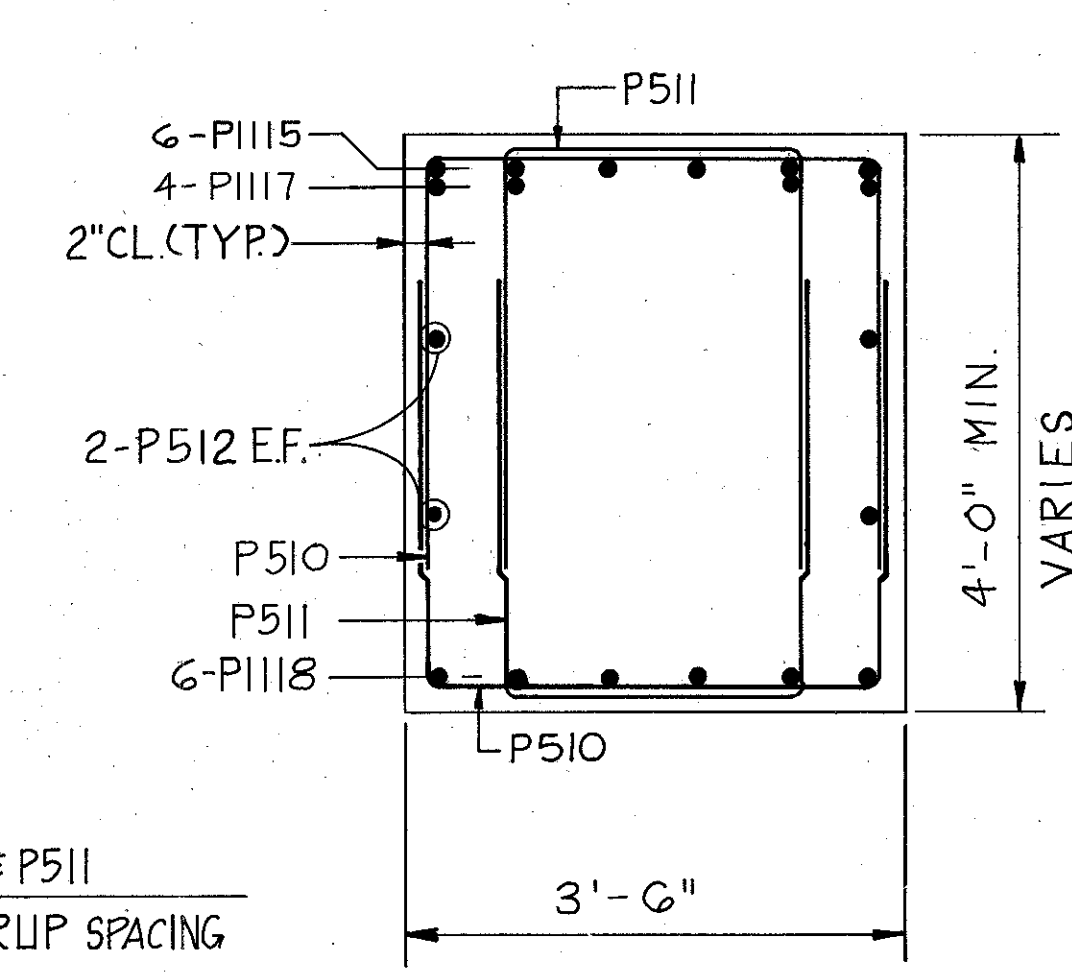
FRANKLIN COUNTY  
 FRA-670-1.25-C-2



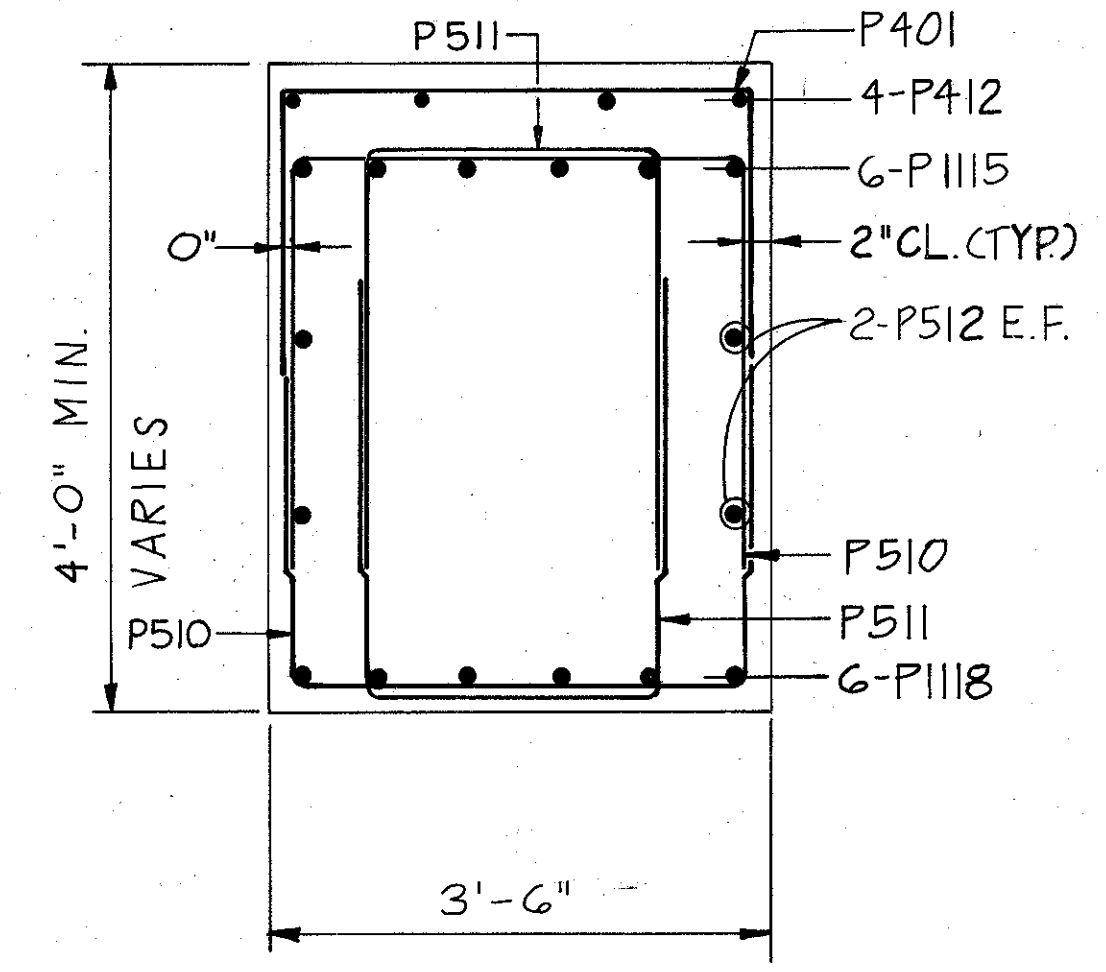
SECTION A-A



ELEVATION PIER #2



SECTION B-B



SECTION C-C

P510 & P511  
 STIRRUP SPACING  
 NOTE: P510 & P511  
 REQ. AT EACH  
 LOCATION.

NOTES

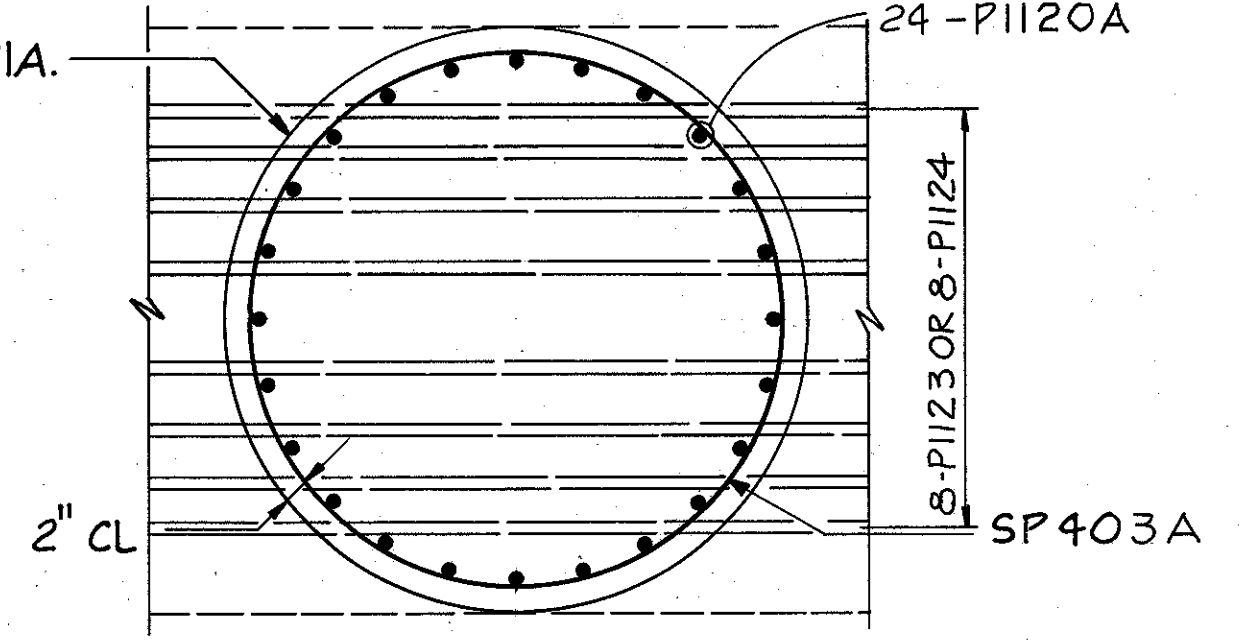
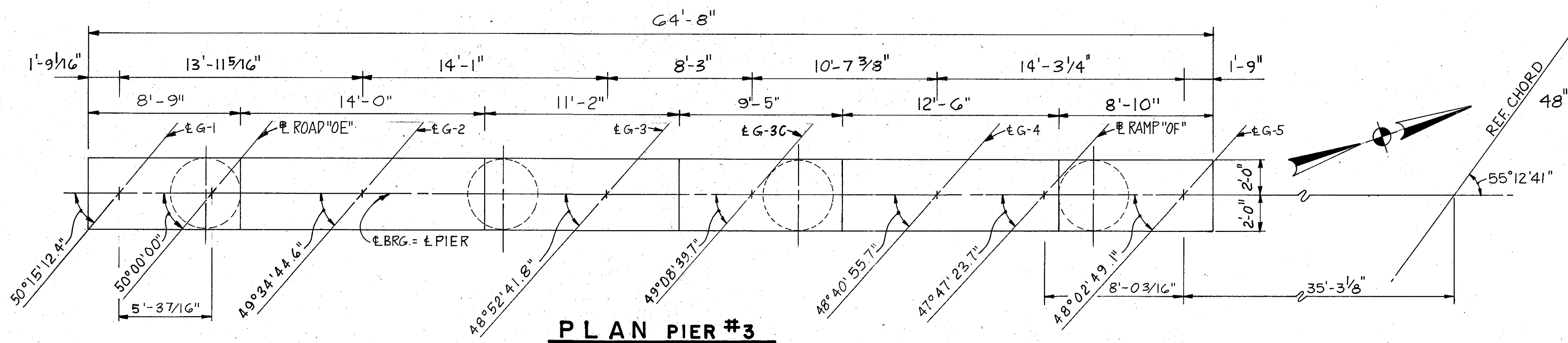
1. ANGLES SHOWN ARE BETWEEN  $\pm$  PIER AND TANGENT TO CURVE AT  $\pm$  BRG.
2. LAP SPLICES FOR #11 BARS IN CAP SHALL BE 7'-3" TOP AND 5'-2" BOTTOM.
3. LAP SPLICES FOR #5 BARS IN CAP SHALL BE 2'-0".

JOHN E. FOSTER AND ASSOCIATES, INC. 15/37  
 555 Buttlers Ave., Columbus, Ohio 43215

PIER NO. 2  
 PLAN ELEVATION AND DETAILS  
 BRIDGE NO. FRA-315-0210  
 ROAD "OE" AND RAMP "OF"  
 OVER OLENTANGY RIVER

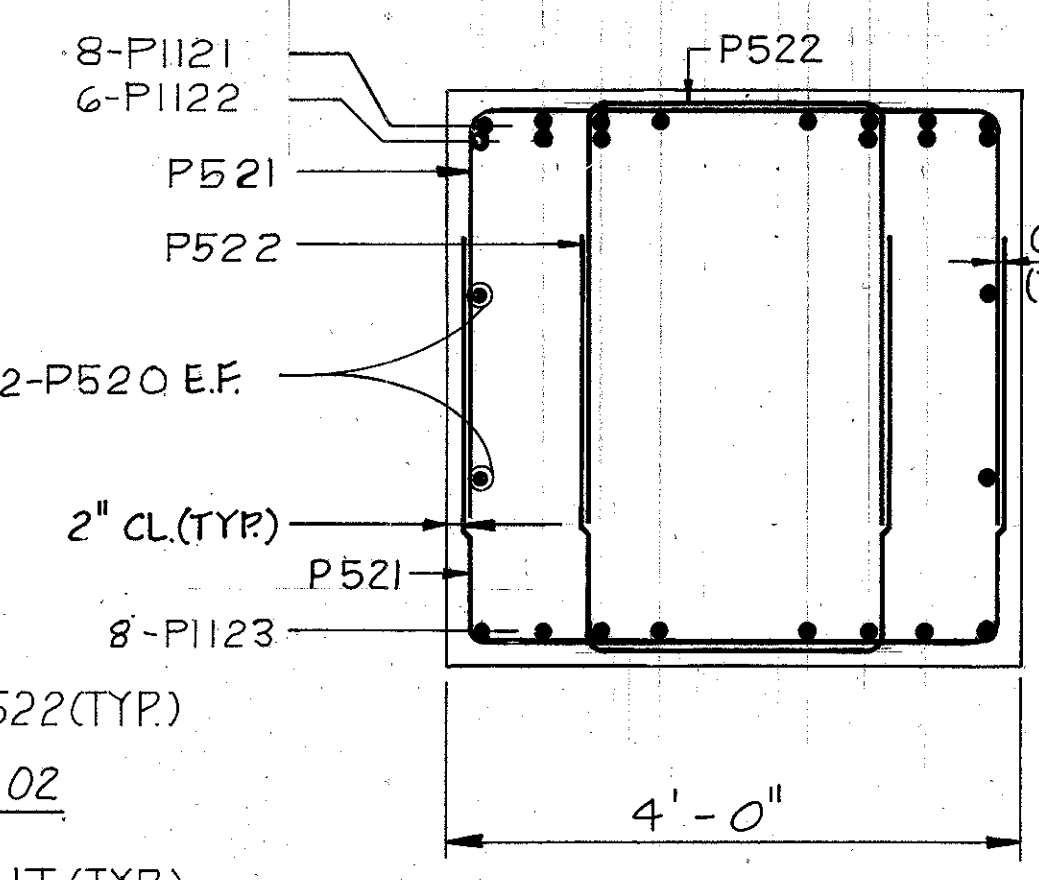
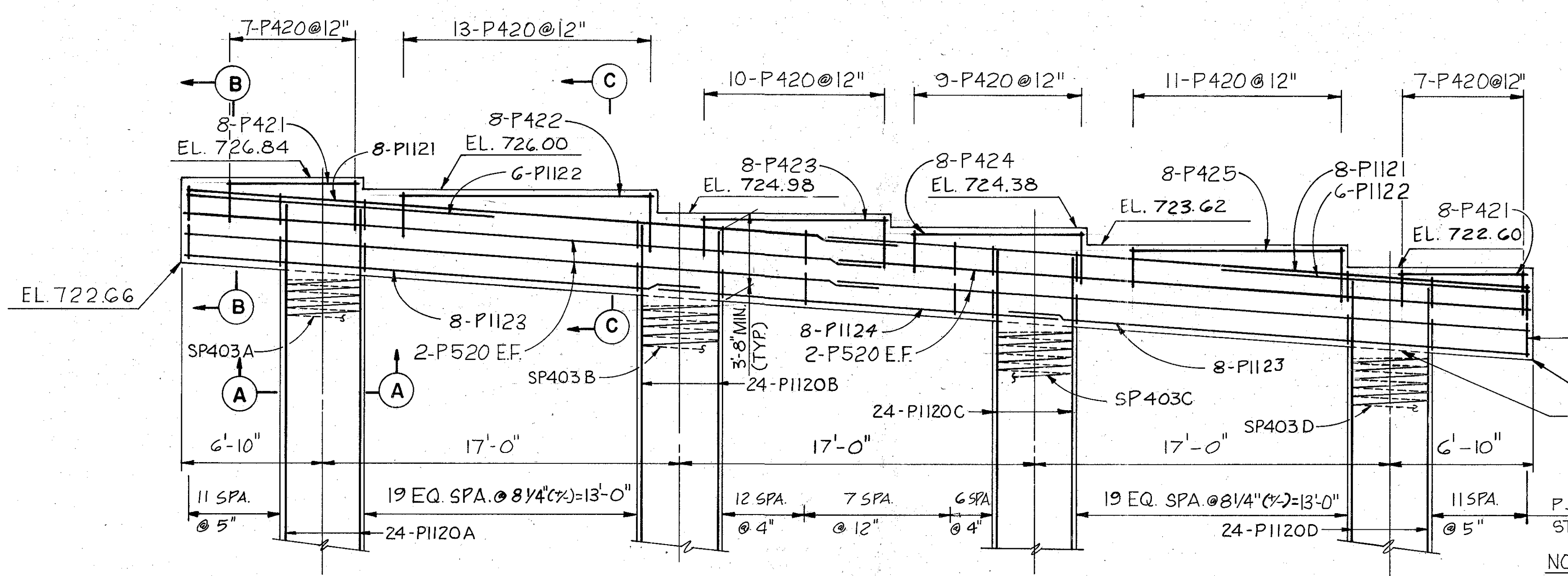
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DFS	TH	TH	CEM			

FRANKLIN COUNTY  
FRA-670-1.25-C-2

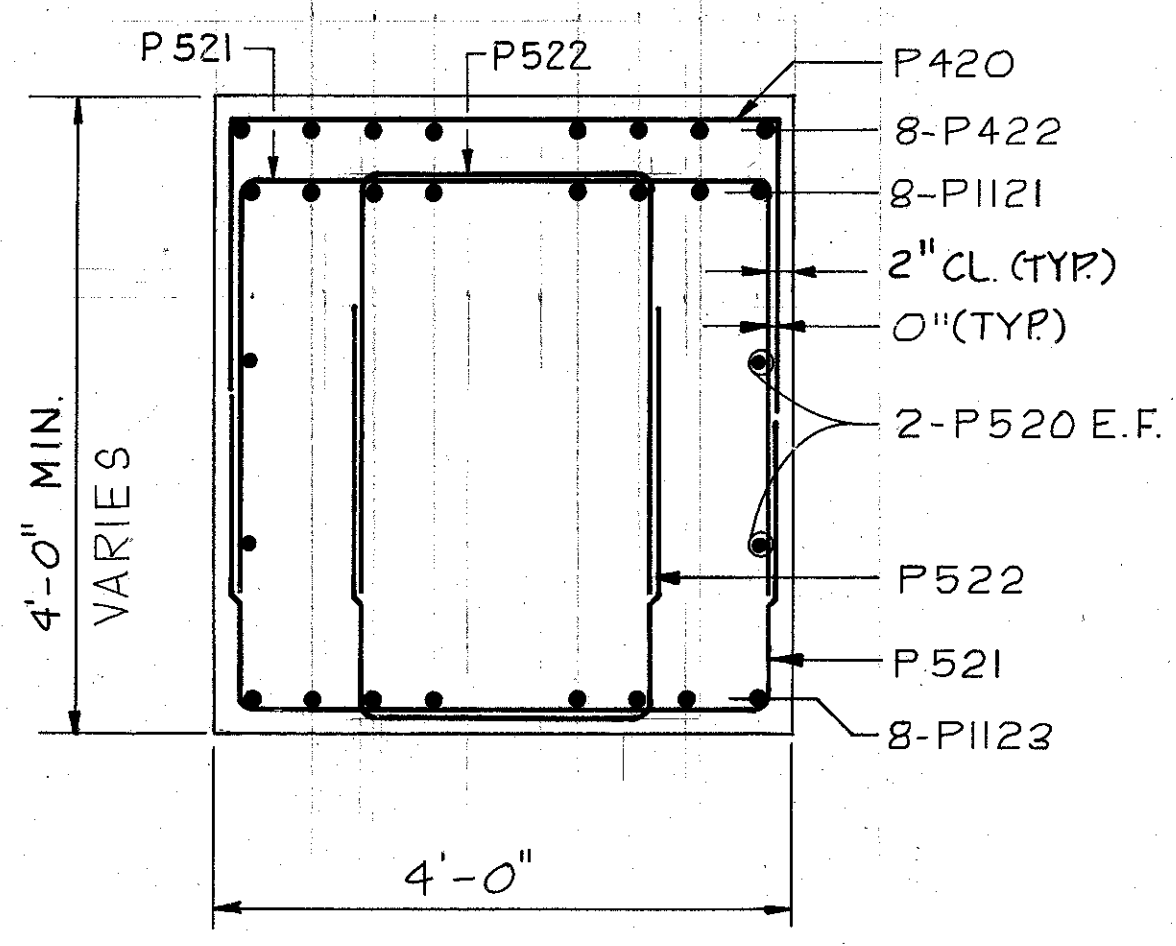


PLAN PIER #3

SECTION A-A

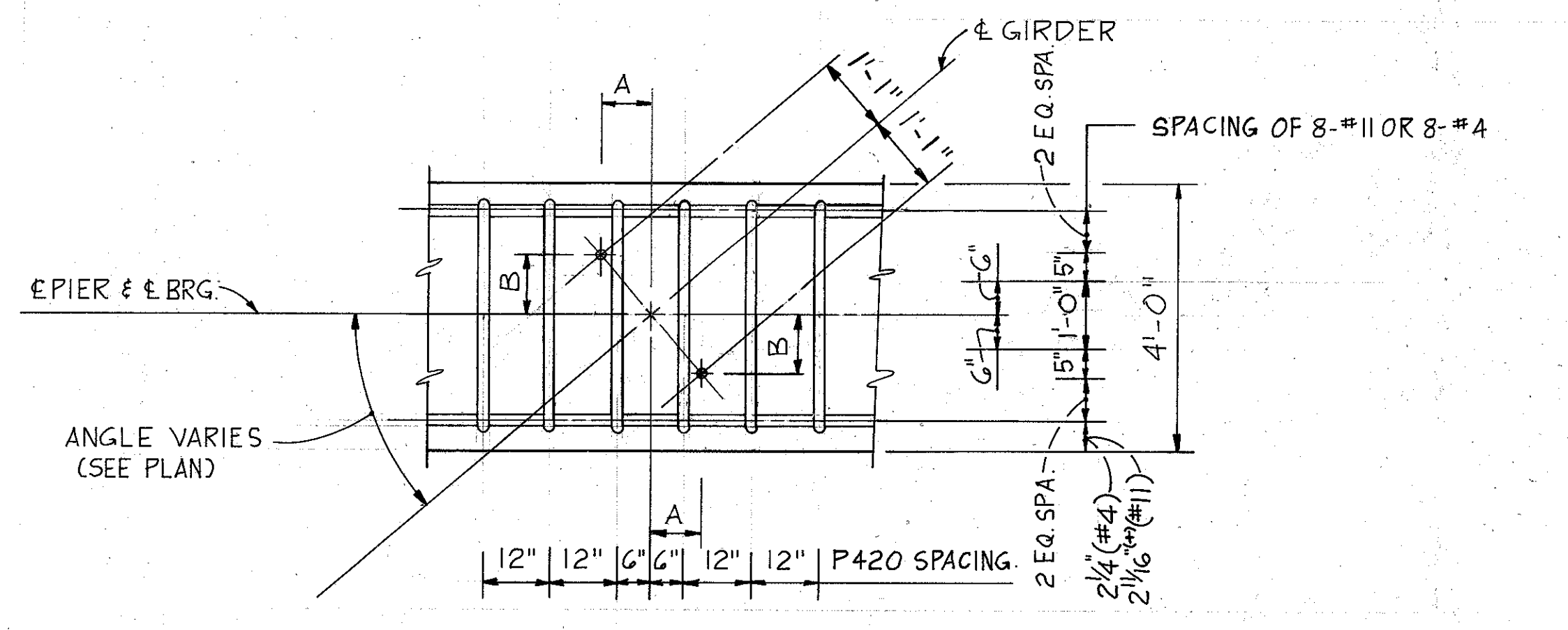


SECTION B-B



SECTION C-C

ELEVATION PIER #3



FIXED BEARING ANCHOR BOLT PLAN  
(N. T. S.)

DIMENSION TABLE		
GIRDER	DIM. A	DIM. B
G-1	0'-10"	0'-8 5/16"
G-2	0'-9 7/8"	0'-8 7/16"
G-3	0'-9 13/16"	0'-8 9/16"
G-3C	0'-9 3/16"	0'-8 1/2"
G-4	0'-9 3/4"	0'-8 9/16"
G-5	0'-9 1/16"	0'-8 1/16"

NOTES:

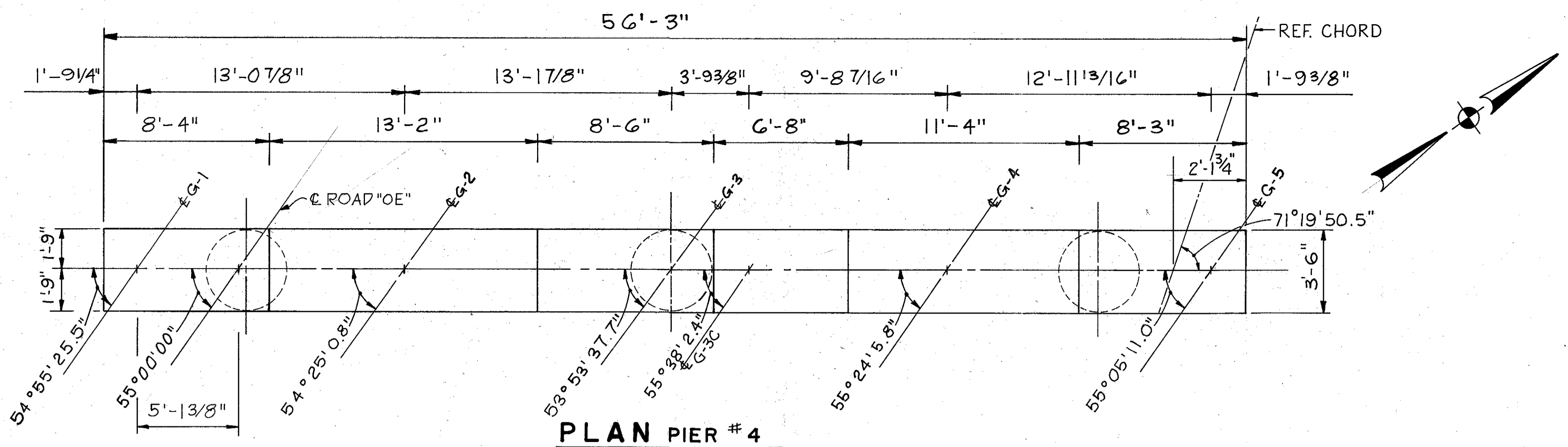
- BRIDGE SEAT REINFORCING STEEL IN THE VICINITY OF THE BRIDGE SEAT SHALL BE ACCURATELY PLACED TO AVOID INTERFERENCE WITH THE PRILLING OF BEARING ANCHOR HOLES OR THE PRE-SETTING OF BEARING ANCHORS.
- BEARING ANCHORS: AT THE OPTION OF THE CONTRACTOR, BEARING ANCHORS (OR FORMED HOLES), LOCATED AND SUPPORTED BY TEMPLATES, MAY BE CAST-IN-PLACE.
- ANGLES SHOWN ARE BETWEEN  $\epsilon$ PIER AND TANGENT TO CURVE AT  $\epsilon$ BRG.
- LAP SPLICES FOR #11 BARS IN CAP SHALL BE 7'-3" TOP AND 5'-2" BOTTOM.
- LAP SPLICES FOR #5 BARS IN CAP SHALL BE 2'-0".

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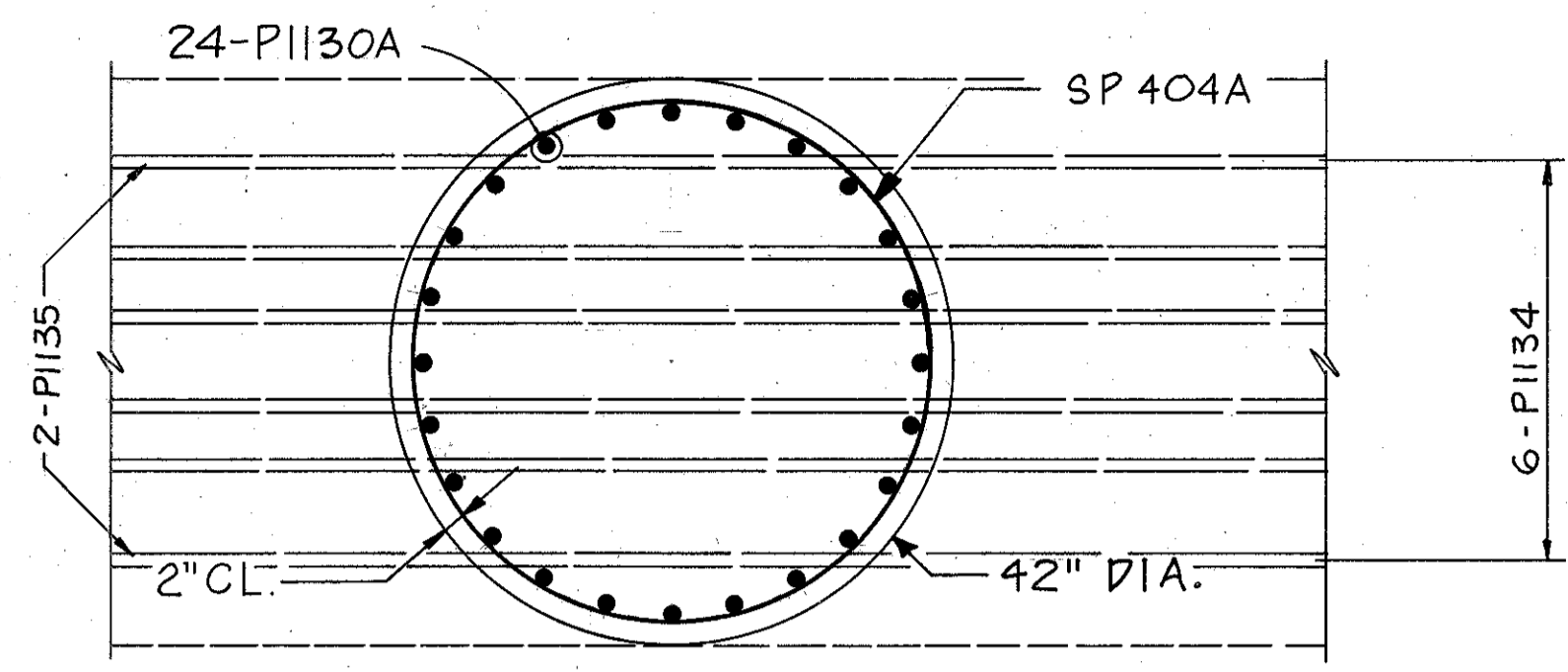
**PIER NO. 3**  
**PLAN ELEVATION AND DETAILS**  
BRIDGE NO. FRA-315-0210  
ROAD "OE" AND RAMP "OF"  
OVER OLENTANGY RIVER

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DFS	TH	TH	CEM			

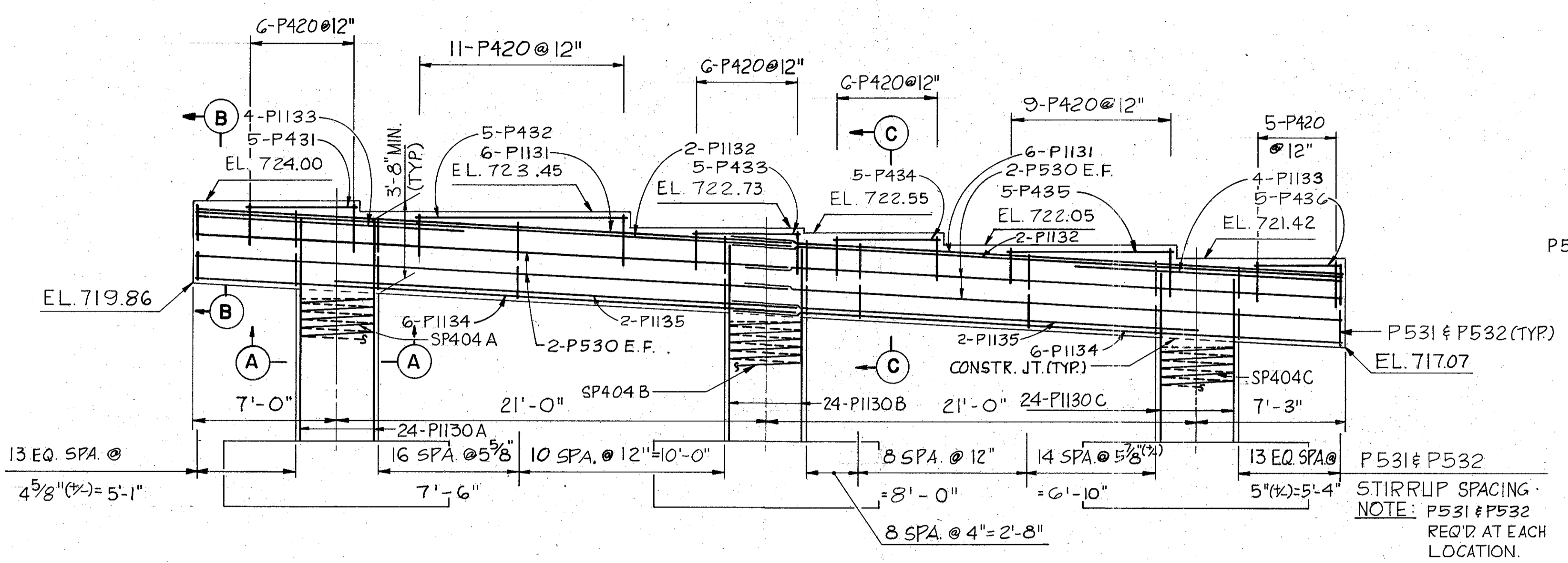




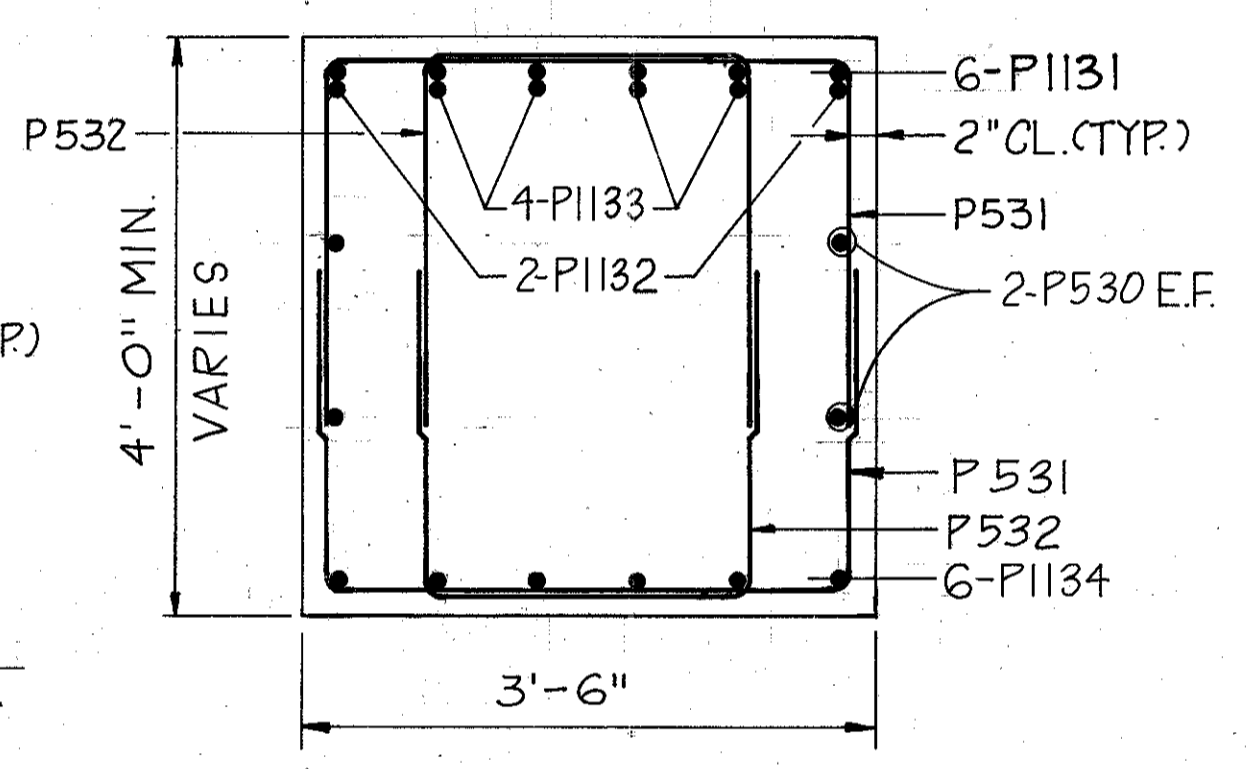
**PLAN PIER #4**



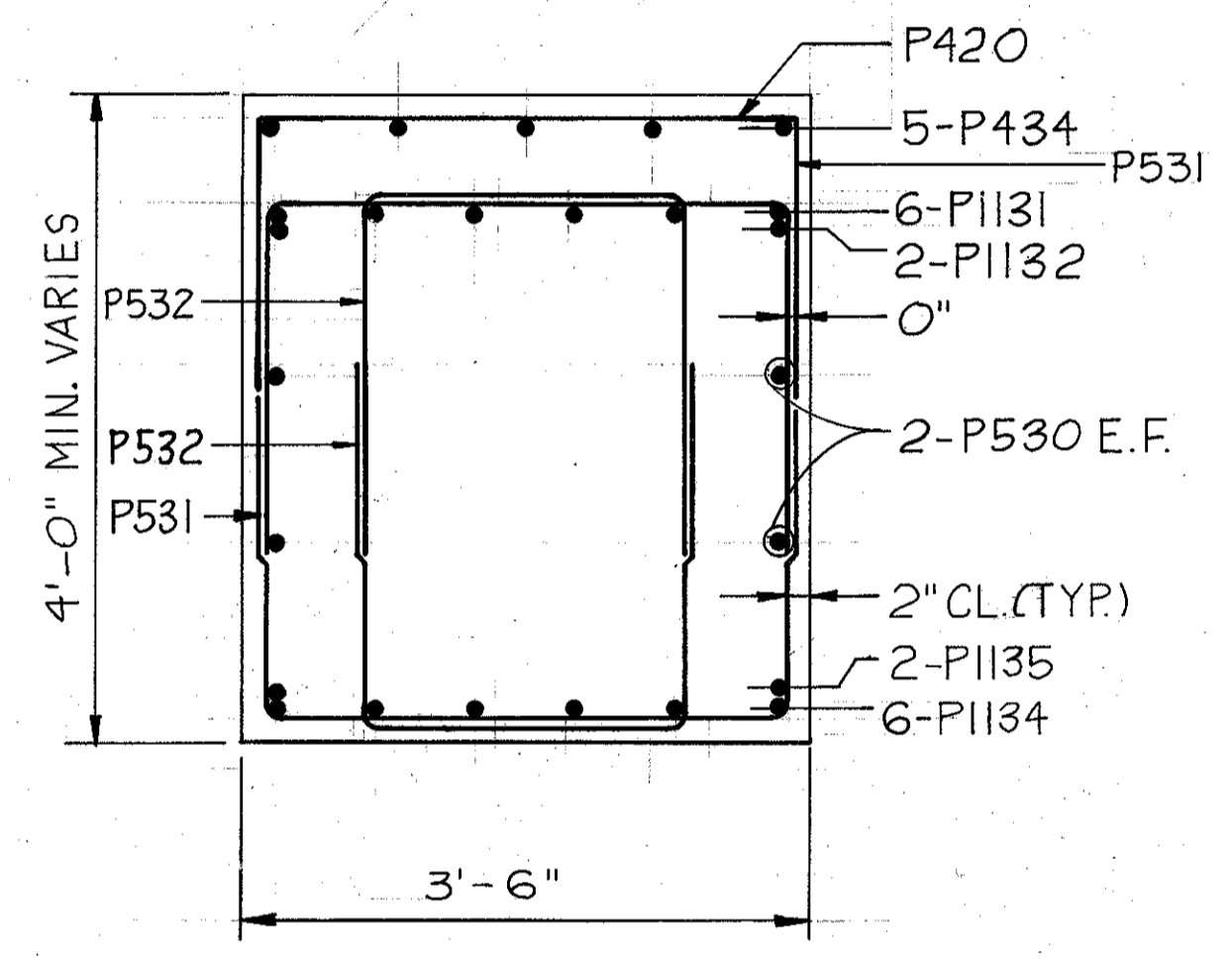
**SECTION A-A**



**ELEVATION PIER #4**



**SECTION B-B**



**SECTION C-C**

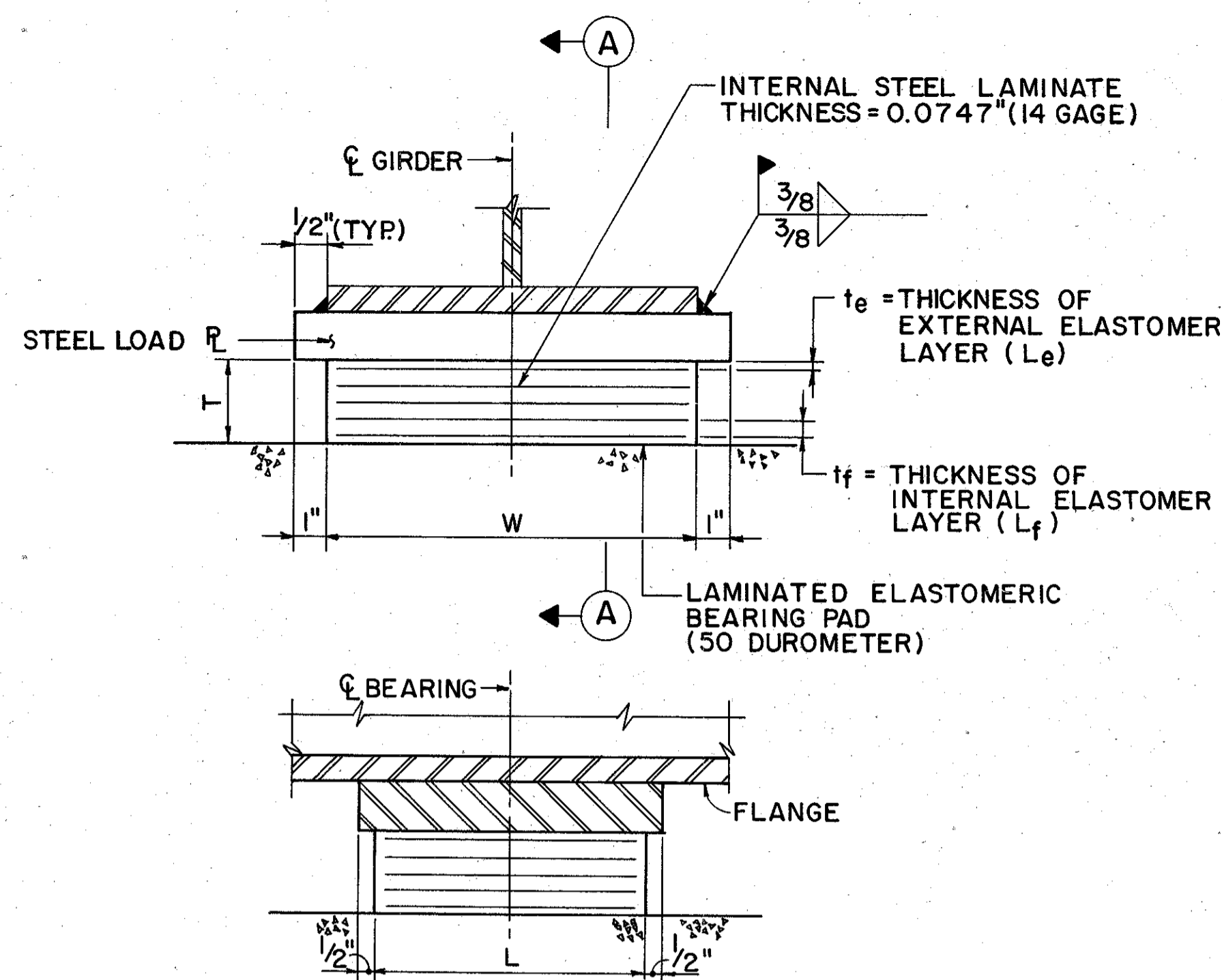
**NOTES:**

1. ANGLES SHOWN ARE BETWEEN  $\pm$  PIER AND TANGENT TO CURVE AT  $\pm$  BRG.
2. LAP SPLICES FOR #11 BARS IN CAP SHALL BE 7'-3" TOP AND 5'-2" BOTTOM.
3. LAP SPLICES FOR #5 BARS IN CAP SHALL BE 2'-0".

JOHN E. FOSTER AND ASSOCIATES, INC. 17/37  
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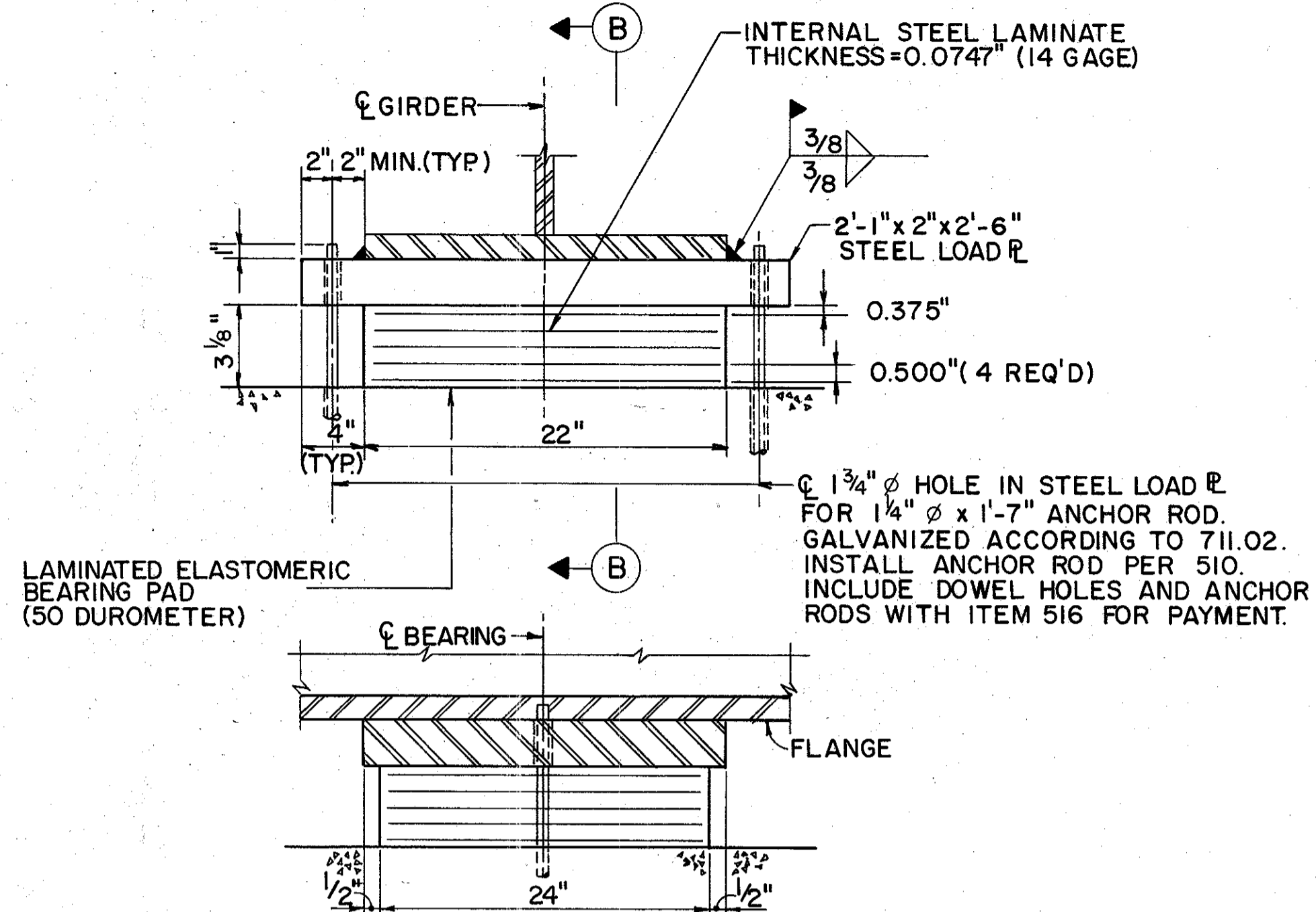
**PIER NO. 4**  
**PLAN ELEVATION AND DETAILS**  
BRIDGE NO. FRA-315-0210  
ROAD "OE" AND RAMP "OF"  
OVER OLENTANGY RIVER

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DFS	TH	TH	CEM			



SECTION A-A

**LAMINATED ELASTOMERIC EXPANSION BEARING**

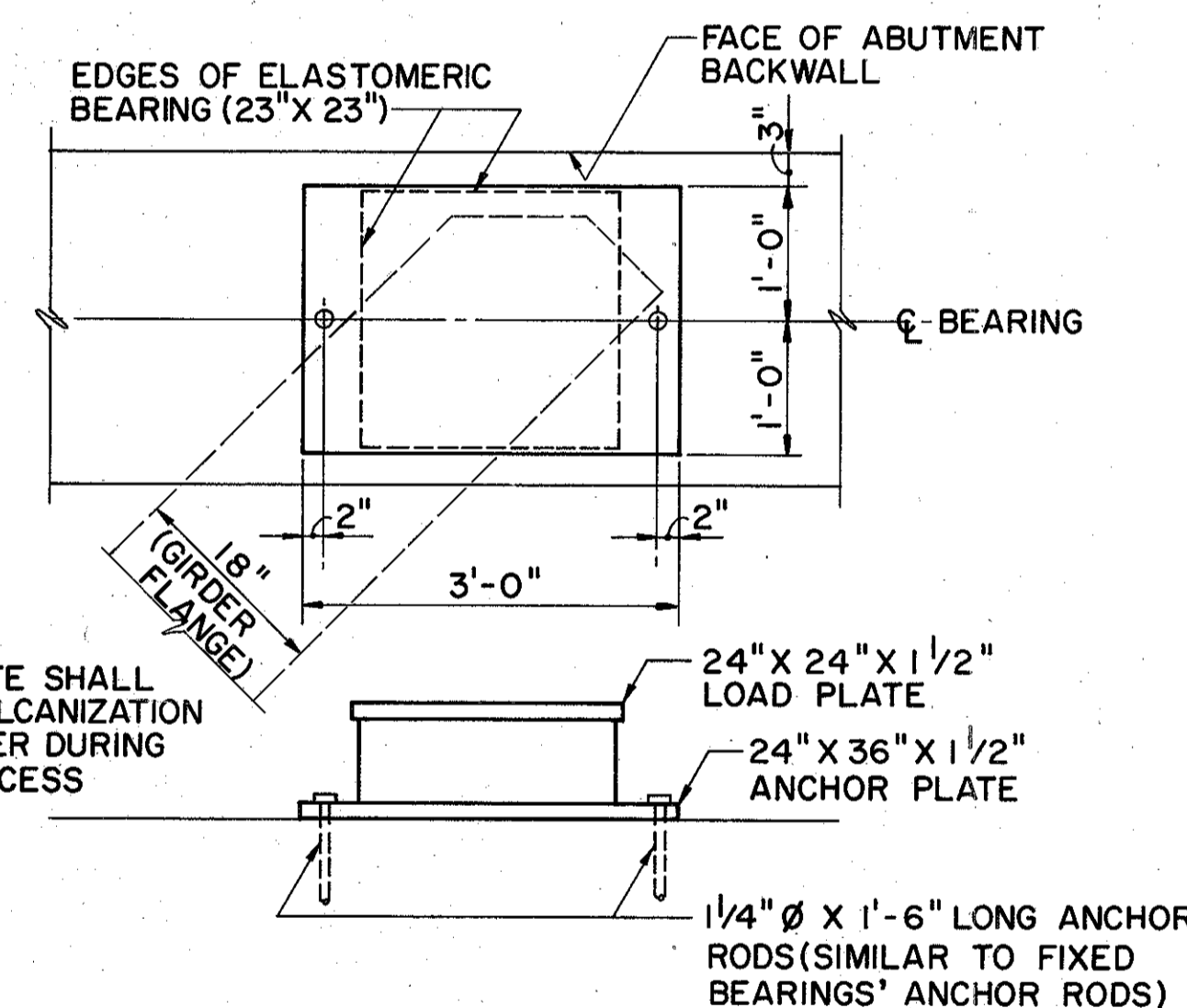


SECTION B-B

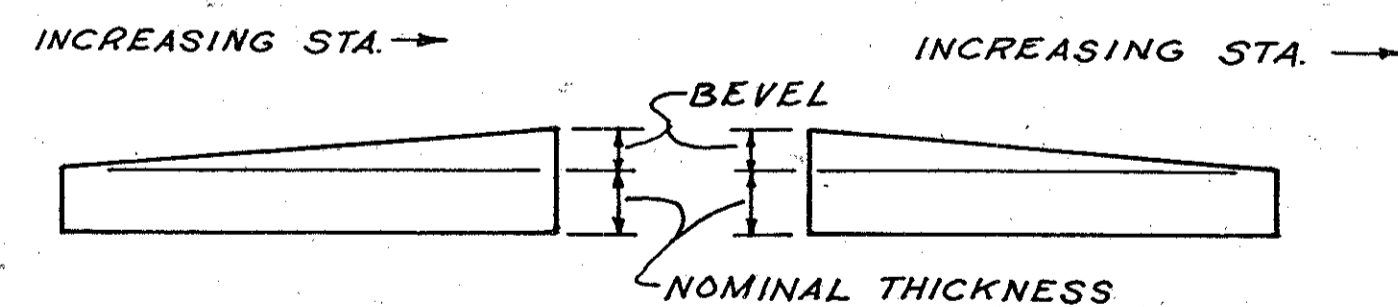
**LAMINATED ELASTOMERIC FIXED BEARING**

BEARING LOCATION	TOTAL KIPS D.L.	TOTAL KIPS L.L.	SIZE		T in.	t <sub>f</sub> in.	t <sub>e</sub> in.	NO. OF INTERNAL LAYERS	NO. OF STEEL LAMINATES	STEEL LOAD PLATE SIZE
			L	W						
REAR ABUTMENT	98	66	23"	23"	7.5435	1.321	0.943	4	5	24" X 24" X 1 1/2"
FORWARD ABUTMENT	105	66	16"	16"	5.2923	0.490	0.350	8	9	17" X 19" X 1 1/2"
PIER 1	354	138	22"	23"	5.857	0.490	0.350	9	10	23" X 24" X 1 1/2"
PIERS 2&4	356	144	24"	22"	2.8735	0.500	0.250	4	5	24" X 25" X 2"

(PIER NO. 3)  
D.L. (TOTAL KIPS) = 354  
L.L. (TOTAL KIPS) = 145



**BEARING DETAIL AT REAR ABUTMENT**



**BEVELED LOAD PLATE DETAIL**  
NTS

GIRDER NO.	REAR ABUTMENT			PIER No.1			PIER No.2			PIER No.3			PIER No.4			FORWARD ABUTMENT		
	NOM. THK.	BEVEL	THICK	NOM. THK.	BEVEL	THICK	NOM. THK.	BEVEL	THICK	NOM. THK.	BEVEL	THICK	NOM. THK.	BEVEL	THICK	NOM. THK.	BEVEL	THICK
G-1	1 1/2"	△	3/32"	1 1/2"	△	3/32"	2"	△	1/4"	2"	△	7/16"	2"	△	5/16"	1 1/2"	△	1/32"
G-2	1 1/2"	△	1/16"	1 1/2"	△	1/32"	2"	△	7/16"	2"	△	7/16"	2"	△	5/16"	1 1/2"	△	1/32"
G-3	1 1/2"	-	-	1 1/2"	△	1/32"	2"	△	3/8"	2"	△	7/16"	2"	△	1/4"	1 1/2"	△	1/16"
G-4	1 1/2"	△	3/8"	1 1/2"	△	3/8"	2"	△	7/16"	2"	△	3/8"	2"	△	1/8"	1 1/2"	△	1/32"
G-5	1 1/2"	△	3/8"	1 1/2"	△	7/16"	2"	△	7/16"	2"	△	7/16"	2"	△	1/8"	1 1/2"	△	1/32"
G-3c	1 1/2"	△	5/16"	1 1/2"	△	1/32"	2"	△	3/8"	2"	△	7/16"	2"	△	3/16"	-	-	-
G-3b	1 1/2"	△	3/16"	1 1/2"	△	3/16"	-	-	-	-	-	-	-	-	-	-	-	-
G-3a	1 1/2"	△	1/8"	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

**NOTES**

- Welding shall be controlled so that the plate temperature at the elastomer bonded surface does not exceed 300° F as determined by use of pyrometric sticks or other temperature monitoring devices.
- The steel load plate shall be bonded by vulcanization to the elastomer during the molding process.
- At the option of the contractor, the bearing anchor rods (or formed holes), located and supported by templates, may be cast-in-place.
- TOLERANCES: Individual layer thickness: ± 20% of design value (not to exceed ± 1/8").  
Plan Dimensions: -0, + 1/4"  
Design Thickness ≤ 1/4": -0, + 1/8"  
Design Thickness > 1/4": -0, + 1/4"  
Edge Cover of Embedded Laminates: -0, + 1/8"
- BEARING REPOSITIONING: If deck concrete placed at an ambient temperature higher than 80° and/or abutment filling results in the bearing shear deflection exceeding one-sixth of the bearing height at 45° F ± 20° F, the girders shall be raised to allow the bearings to return to their undeformed shape at 45° F ± 20° F.
- LOAD PLATE: The load plate shall be bonded by vulcanization to the elastomer during the molding process. Steel load plates shall be 1-1/2" inches thick min. For bearings rated up to and including 200 kips, and shall be 2" thick min for bearings rated over 200 kips. Welding of the load plate to the superstructure shall be controlled so that the plate temperature at the elastomer bonded surface shall not exceed 400° F. As determined by the use of pyrometric sticks or other temperature monitoring devices.
- BEARING ANCHOR RODS: at the option of the contractor the bearing anchor rods (or formed holes), located and supported by templates, may be cast in place.
- BASIS OF PAYMENT: The unit bid price shall include all material labor and incidentals necessary to furnish and install laminated elastomeric bearings either fixed or expansion payment will be made at the contract price for item 516 each. laminated elastomeric bearing (---x---x--- steel plate).

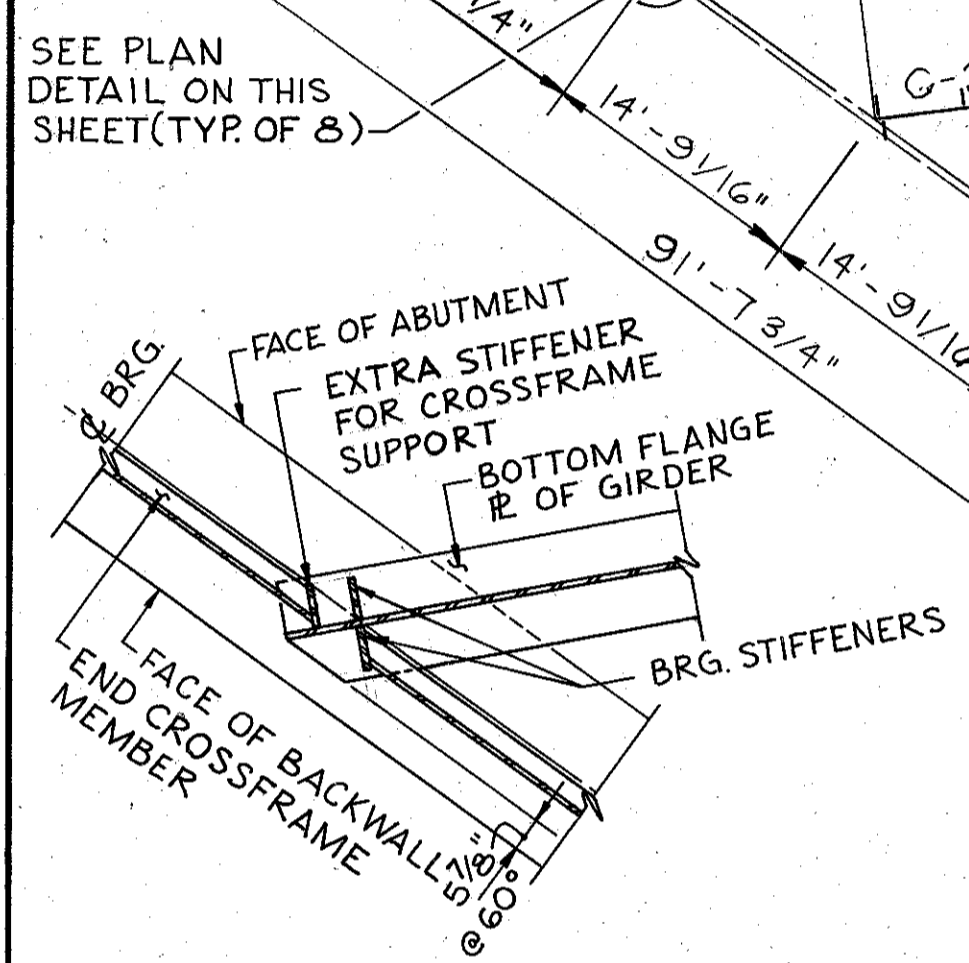
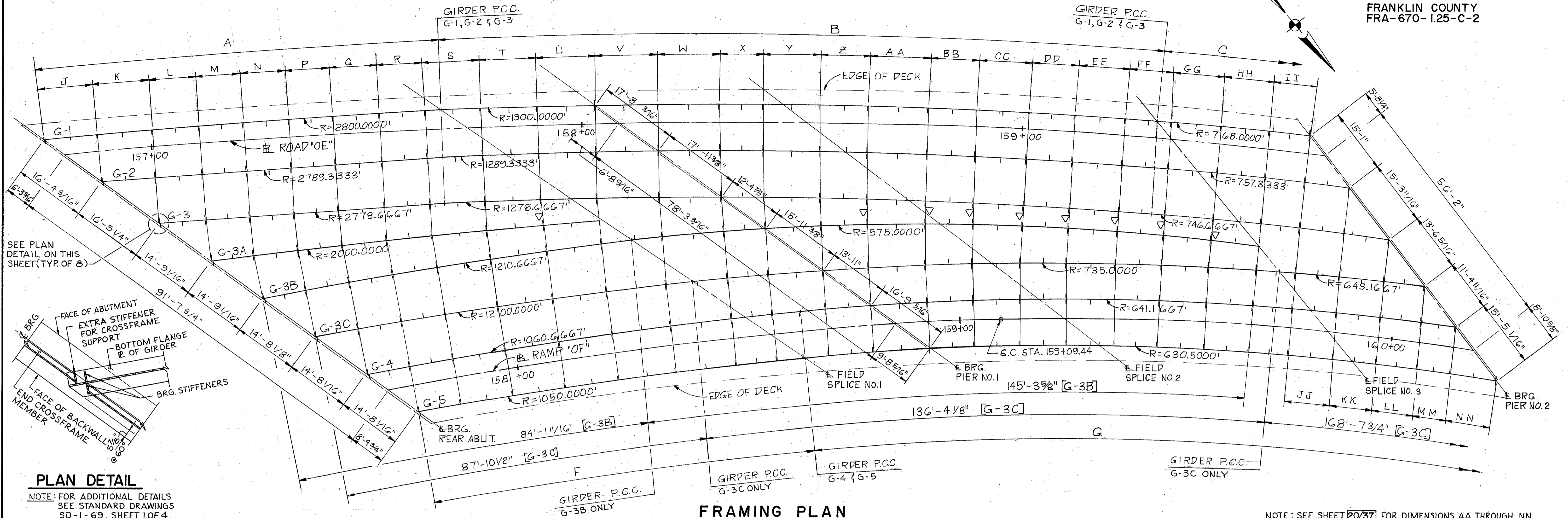
\* For size of each bearing see sheet 6/37.

JOHN E. FOSTER AND ASSOCIATES, INC. 18/37  
555 Buttles Ave., Columbus, Ohio 43215

**BEARING DETAILS**

BRIDGE NO. FRA-315-0210  
ROAD "OE" AND RAMP "OF"  
OVER OLENTANGY RIVER

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
HSS	-	D.L.W.	CEM			



NOTE: SEE SHEET 20/37 FOR DIMENSIONS AA THROUGH NN.

TABLE OF GIRDER DIMENSIONS

GIRDERS	DIMENSION																									
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	Q	R	S	T	U	V	W	X	Y	Z	
G-1	91'-5 1/8"	165'-4 7/8"	256'-5 3/16"	145'-3 3/16"	96'-9 3/16"					12'-5"	12'-6 7/8"	10'-10 1/4"	10'-3"	10'-4 3/8"	10'-4 1/8"	10'-6 1/2"	10'-7"	13'-0"	13'-0"	13'-0"	14'-1 15/16"	14'-7 5/16"	9'-8 9/16"	12'-10 3/8"	11'-11 3/16"	
G-2	78'-8 9/16"	164'-0 5/8"	252'-10 1/2"	143'-6 3/16"	102'-4 3/16"						12'-6 9/16"	10'-9 3/4"	10'-2 9/16"	10'-3 15/16"	10'-3 5/8"	10'-6"	10'-6 1/2"	12'-10 7/8"	12'-10 3/4"	12'-10 3/4"	14'-0 9/16"	14'-5 7/8"	9'-7 5/8"	12'-9 1/16"	11'-0 5/8"	
G-3	65'-11 3/16"	162'-8 5/16"	249'-3 3/4"	141'-8 9/16"	107'-10 5/8"							10'-9 1/4"	10'-2 1/16"	10'-3 7/16"	10'-3 3/16"	10'-5 1/2"	10'-6 1/16"	12'-9 13/16"	12'-9 7/16"	12'-9 7/16"	13'-11 1/8"	14'-4 7/16"	9'-6 5/8"	12'-7 13/16"	10'-11 5/8"	
G-3A													10'-1 3/8"	10'-2 3/4"	10'-2 1/2"	10'-4 7/8"	10'-5 7/16"	12'-9 1/8"	12'-8 13/16"	12'-8 13/16"						
G-3B														10'-1 1/2"	10'-1 3/8"	10'-3 13/16"	10'-4 7/16"	12'-8"	12'-7 3/4"	12'-4 15/16"	14'-11 3/16"	13'-5 5/8"	10'-0 1/2"	12'-5 11/16"	10'-10"	
G-3C								147'-7 1/4"	22'-3 13/16"						10'-0 5/16"	10'-2 11/16"	10'-3 5/16"	12'-6 11/16"	12'-6 7/16"	12'-3 5/8"	13'-11 9/16"	13'-2 5/8"	9'-10 3/8"	12'-3 1/16"	10'-7 13/16"	
G-4						101'-3 3/16"	278'-1"	146'-2 15/16"	150'-8 3/8"							10'-1 1/2"	10'-2 1/8"	12'-5 1/4"	12'-5"	12'-2 5/16"	13'-10 1/16"	13'-1 3/16"	9'-9 5/16"	12'-11 1/2"	10'-6 1/16"	
G-5						90'-2 3/4"	273'-5 1/2"	144'-5 3/16"	155'-6 3/16"								10'-0 15/16"	12'-3 3/4"	12'-3 1/2"	12'-0 13/16"	13'-8 3/8"	12'-11 5/8"	9'-8 1/8"	11'-11 5/8"	10'-3 15/16"	

SLAB OFFSETS

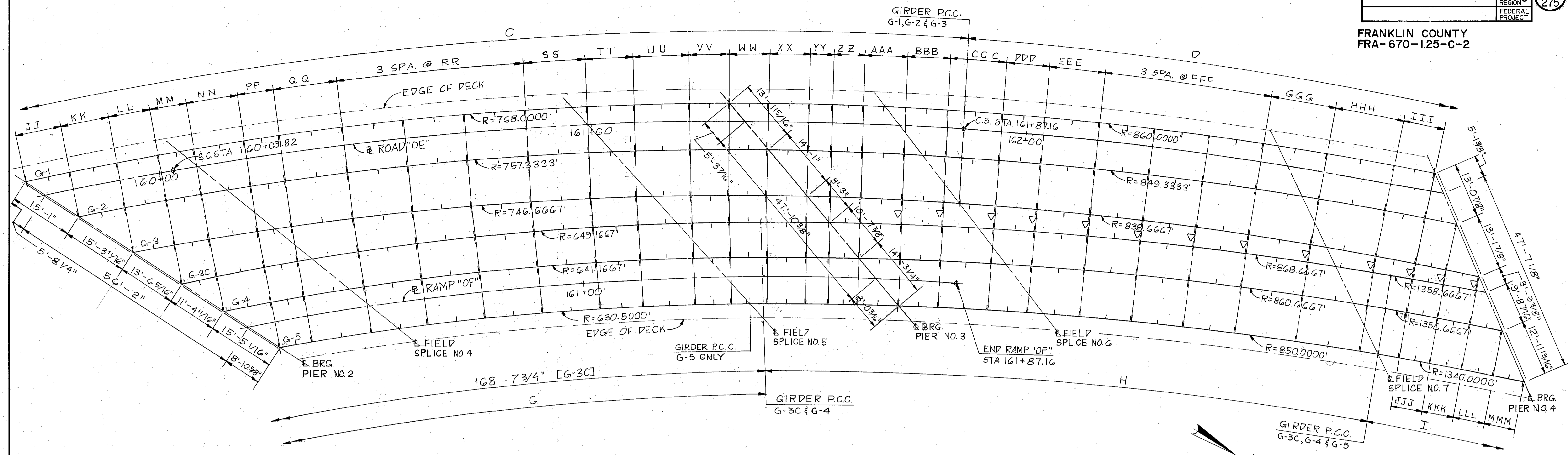
GIRDERS	REAR ABUT.	PIER 1																	PIER 2		
		1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8		2.9	
G-1	3'-4 13/16"	3'-4 13/16"	3'-4 7/8"	3'-5 1/16"	3'-5 1/4"	3'-5 3/8"	3'-5 5/16"	3'-5"	3'-4 5/8"	3'-4 5/8"	3'-5"	3'-5 3/4"	3'-6 3/4"	3'-7 3/4"	3'-8 11/16"	3'-9 5/16"	3'-9 7/16"	3'-8 7/8"	3'-7 1/2"	3'-6 5/16"	3'-5 5/8"
G-5	3'-4 15/16"	3'-4 3/4"	3'-4 3/8"	3'-3 7/8"	3'-3 5/16"	3'-2 5/16"	3'-2 13/16"	3'-3 1/2"	3'-3 13/16"	3'-4 5/16"	3'-4 1/2"	3'-4 9/16"	3'-4 9/16"	3'-4 9/16"	3'-4 9/16"	3'-4 9/16"	3'-4 9/16"	3'-4 9/16"	3'-4 9/16"	3'-4 9/16"	3'-4 9/16"

NOTE: SLAB OFFSETS ARE MEASURED AT TENTH POINTS OF EXTERIOR GIRDERS. DIMENSIONS AT G-1 ARE RADIAL TO ROAD "OE" AND DIMENSIONS AT G-5 ARE RADIAL TO RAMP "OF".

JOHN E. FOSTER AND ASSOCIATES, INC. 19/37  
555 Buttles Ave., Columbus, Ohio 43215

**FRAMING PLAN & DETAILS-1**  
BRIDGE NO. FRA-315-0210  
ROAD "OE" AND RAMP "OF"  
OVER OLENTANGY RIVER

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CEM	TH	TH	HSS			



**FRAMING PLAN**

NOTE: ▽ INDICATES TYPE II INTERMEDIATE CROSSFRAME. SEE SHEET 23/37 FOR DETAIL.

NOTE: FOR DIMENSIONS AAA THROUGH MMM, SEE SHEET 21/37.

**TABLE OF GIRDER DIMENSIONS**

GIRDERS	DIMENSION																								
	AA	BB	CC	DD	EE	FF	GG	HH	II	JJ	KK	LL	MM	NN	PP	QQ	RR	SS	TT	UU	VV	WW	XX	YY	ZZ
G-1	13'-9 7/8"	11'-9 5/16"	11'-9 5/16"	11'-9 5/16"	11'-9 5/16"	10'-6 1/16"	11'-6 5/16"	11'-6 5/16"	8'-11"	10'-8 7/8"	11'-2 1/2"	9'-10 3/16"	8'-6 3/16"	11'-10 7/16"	8'-3 5/16"	14'-11 1/16"	14'-3 5/16"	14'-3 5/16"	10'-11 3/16"	12'-11 3/16"	9'-1 1/16"	9'-0 1/2"	9'-4 3/4"	5'-6 5/8"	7'-3 1/8"
G-2	13'-8 1/2"	11'-8 3/16"	11'-8 3/16"	11'-8 3/16"	11'-8 3/16"	10'-4 3/4"	11'-4 3/8"	11'-4 3/8"	8'-9 1/2"	10'-7 1/8"	11'-0 5/8"	9'-8 1/2"	8'-4 13/16"	11'-8 7/16"	8'-1 15/16"	14'-8 9/16"	14'-0 15/16"	14'-0 15/16"	10'-9 15/16"	12'-9"	8'-11 1/2"	8'-11"	9'-3 1/8"	5'-5 1/16"	7'-1 7/8"
G-3	13'-7 1/8"	11'-7"	11'-7"	11'-7"	11'-7"	10'-3 1/2"	11'-2 7/16"	11'-2 7/16"	8'-8"	10'-5 5/16"	10'-10 13/16"	9'-6 7/8"	8'-3 3/8"	11'-6 7/16"	8'-0 9/16"	14'-6 1/16"	13'-10 9/16"	13'-10 9/16"	10'-8 1/8"	12'-6 7/8"	8'-10"	8'-9 7/16"	9'-1 9/16"	5'-4 3/4"	7'-0 11/16"
G-3B	13'-5 7/16"	11'-5 3/4"	11'-5 13/16"	11'-5 7/8"	11'-5 15/16"	10'-2 7/16"	11'-1 5/16"	11'-1 1/4"																	
G-3C	13'-2 13/16"	11'-3 5/8"	11'-3 7/8"	11'-4 1/16"	11'-4 1/4"	10'-1 1/8"	11'-0"	11'-0 1/8"	9'-2 5/8"	10'-3 5/16"	10'-8 3/4"	9'-5 3/16"	8'-1 15/16"	11'-4 9/16"	7'-11 1/4"	14'-3 7/8"	13'-8 5/8"	13'-8 5/8"	10'-6 13/16"	12'-5 5/16"	8'-8 15/16"	8'-8 1/2"	9'-0 13/16"	5'-4 5/16"	7'-0 1/16"
G-4	13'-0 1/16"	11'-1 13/16"	11'-2 1/16"	11'-2 5/16"	11'-2 1/2"	9'-11 9/16"	10'-10 3/8"	10'-10 1/2"	9'-1 1/4"	10'-1 3/4"	10'-7 3/16"	9'-3 3/4"	8'-0 3/4"	11'-2 7/8"	7'-10 1/16"	14'-1 3/4"	13'-6 5/8"	13'-6 5/8"	10'-5 1/4"	12'-3 1/2"	8'-7 1/16"	8'-7 1/4"	8'-11 13/16"	5'-3 11/16"	6'-11 5/16"
G-5	12'-10 1/16"	10'-11 9/16"	10'-11 7/8"	11'-0 1/16"	11'-0 1/4"	9'-9 5/8"	10'-8 3/16"	10'-8 5/16"	8'-11 7/16"	9'-11 3/4"	10'-5 1/16"	9'-1 15/16"	7'-11 1/8"	11'-0 5/8"	7'-8 1/2"	13'-10 15/16"	13'-3 7/8"	13'-3 7/8"	10'-3 1/8"	12'-1"	8'-5 15/16"	8'-5 5/8"	8'-10 7/16"	5'-2 15/16"	6'-10 5/16"

**SLAB OFFSETS**

GIRDERS	PIER 2	DIMENSION																	PIER 4						
		3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8		4.9					
G-1	3'-5 5/8"	3'-5 3/8"	3'-5 5/16"	3'-5 5/16"	3'-5 5/16"	3'-5 5/16"	3'-5 5/16"	3'-5 5/16"	3'-5 5/16"	3'-5 5/16"	3'-5 5/16"	3'-5 5/16"	3'-5 1/4"	3'-4 13/16"	3'-4 1/4"	3'-3 5/8"	3'-3 1/4"	3'-3 3/16"	3'-3 1/16"						
G-5	3'-4 9/16"	3'-4 9/16"	3'-4 9/16"	3'-4 9/16"	3'-4 9/16"	3'-4 9/16"	3'-4 9/16"	3'-4 9/16"	3'-4 9/16"	3'-5 5/16"	3'-7 1/16"	3'-9 9/16"	3'-8 7/16"	3'-7 3/4"	3'-7 1/4"	3'-6 13/16"	3'-6 3/8"	3'-5 3/4"	3'-4 13/16"	3'-4 5/16"					

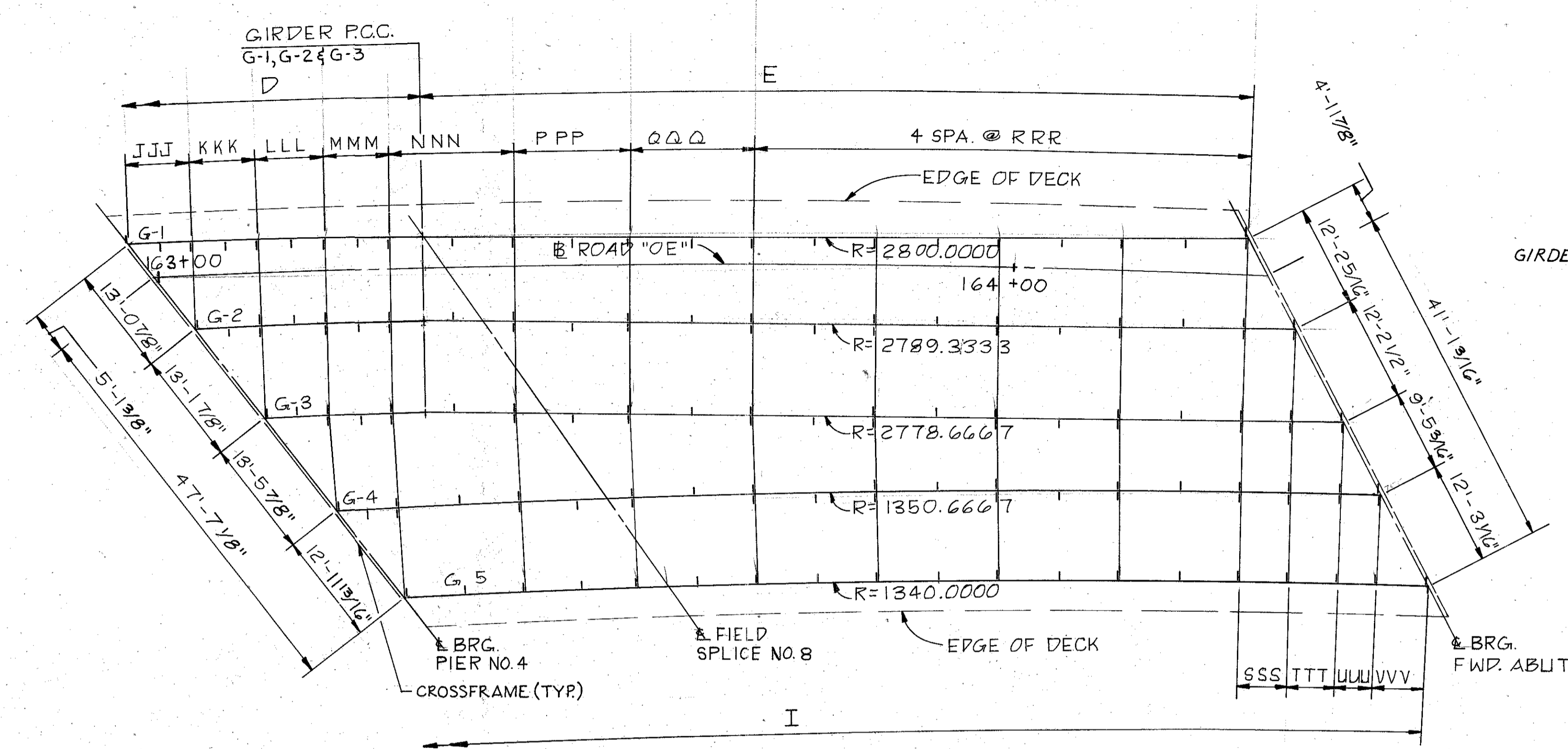
NOTE: SLAB OFFSETS ARE MEASURED AT TENTH POINTS OF EXTERIOR GIRDERS. DIMENSIONS AT G-1 ARE RADIAL TO ROAD "OE" AND DIMENSIONS AT G-5 ARE RADIAL TO RAMP "OF".

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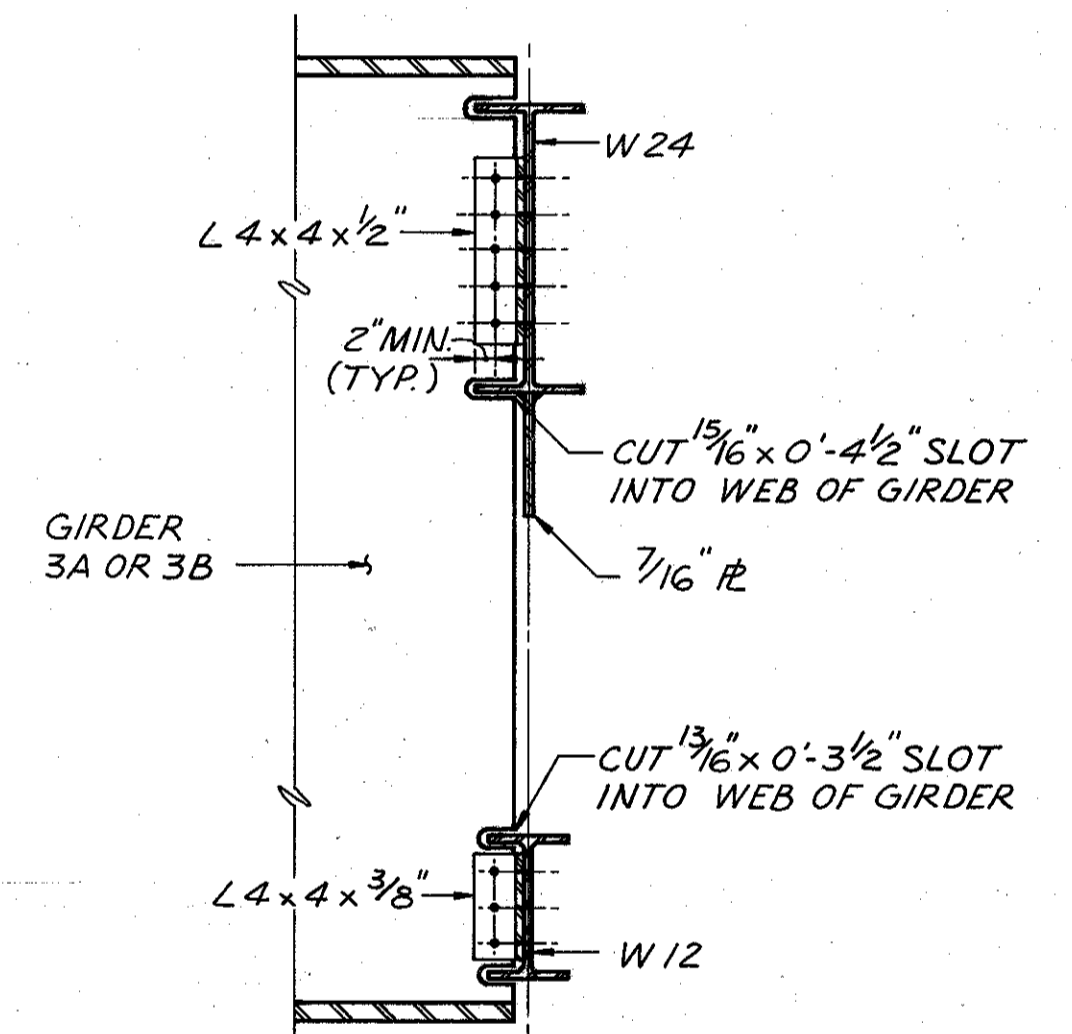
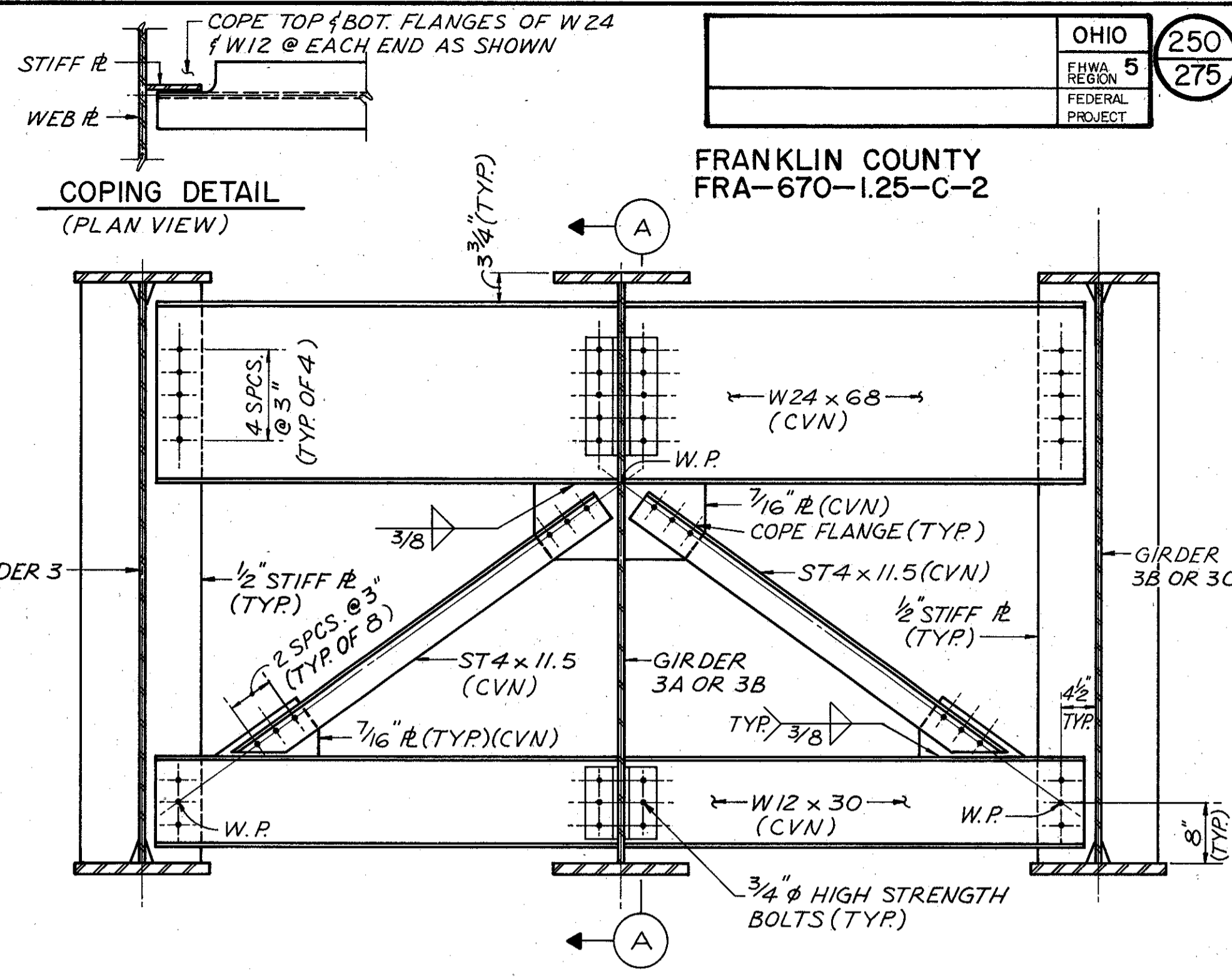
**FRAMING PLAN & DETAILS-2**  
BRIDGE NO. FRA-315-0210  
ROAD "OE" AND RAMP "OF"  
OVER OLENTANGY RIVER

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CEM	TH	TH	HSS			

FRANKLIN COUNTY  
 FRA-670-1.25-C-2



**FRAMING PLAN**

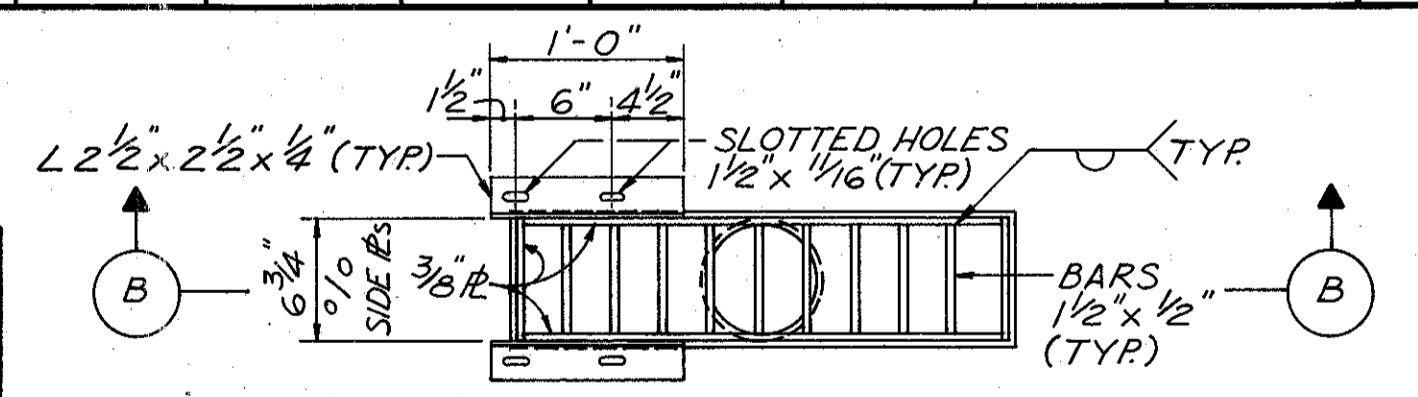


**SECTION A-A  
 GIRDERS 3A & 3B  
 CONNECTION DETAILS**

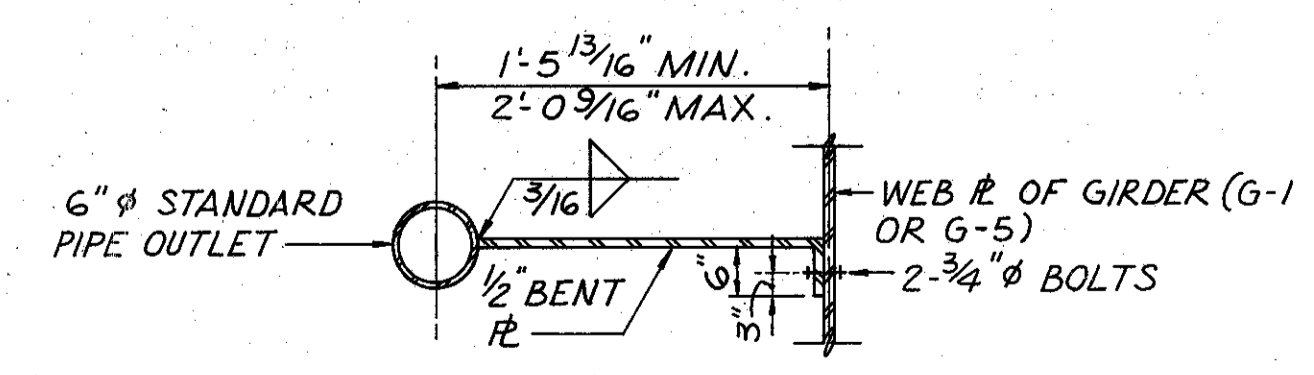
GIRDERS	TABLE OF GIRDER DIMENSIONS																				
	AAA	BBB	CCC	DDD	EEE	FFF	GGG	HHH	III	JJJ	KKK	LLL	MMM	NNN	PPP	QQQ	RRR	SSS	TTT	UUU	VVV
G-1	9'-11 1/16"	9'-11 1/16"	12'-5 5/16"	9'-10 9/16"	12'-9 3/4"	12'-9 3/4"	15'-1 9/16"	15'-10"	9'-6 1/2"	7'-7 5/16"	7'-10 1/4"	7'-10 5/16"	7'-8 1/4"	14'-8 3/4"	13'-7"	14'-6"	14'-6"				
G-2	9'-10 1/16"	9'-10 1/16"	12'-3 3/8"	9'-9 1/16"	12'-7 7/8"	12'-7 7/8"	14'-11 5/16"	15'-7 5/8"	9'-5 1/16"	7'-6 3/16"	7'-9 1/16"	7'-9 1/8"	7'-7 1/16"	14'-7 1/16"	13'-6 3/8"	14'-5 5/16"	14'-5 5/16"	5'-10 13/16"			
G-3	9'-8 3/8"	9'-8 3/8"	12'-1 7/16"	9'-7 5/8"	12'-5 1/16"	12'-5 1/16"	14'-9 1/16"	15'-5 1/4"	9'-3 5/8"	7'-5"	7'-7 7/8"	7'-15 1/16"	7'-5 1/16"	14'-6 9/16"	13'-5 3/4"	14'-4 1/16"	14'-4 1/16"	5'-10 1/2"	5'-11 1/8"		
G-3C	9'-7 9/16"	9'-7 9/16"	12'-0 1/2"	9'-6 7/8"	12'-5 1/16"	12'-5 1/16"	14'-8 1/8"	15'-4 3/8"	9'-3 1/4"	7'-4 3/4"	7'-7 5/8"	2'-19 1/4"									
G-4	9'-6 1/2"	9'-6 1/2"	11'-11 3/16"	9'-5 13/16"	12'-3 1/16"	12'-3 1/16"	14'-6 1/2"	15'-2 1/16"	9'-2 3/8"	7'-4 1/4"	7'-7 1/16"	7'-7 1/8"	7'-5 3/16"	14'-5 1/8"	13'-4 1/2"	14'-3 9/16"	14'-3 9/16"	5'-10 1/16"	5'-10 1/16"	4'-7 1/8"	
G-5	9'-5 1/16"	9'-5 1/16"	11'-9 3/8"	9'-4 3/8"	12'-1 7/8"	12'-1 7/8"	14'-4 3/8"	15'-0 7/16"	9'-1 5/16"	7'-3 9/16"	7'-6 3/8"	7'-6 7/16"	7'-4 7/16"	14'-3 3/4"	13'-3 1/4"	14'-2 3/16"	14'-2 3/16"	5'-9 9/16"	5'-10 1/8"	4'-6 1/16"	6'-0 1/16"

GIRDERS	SLAB OFFSETS										FWD. ABUT.
	PIER 4	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	
G-1	3'-3 1/16"	3'-4 9/16"	3'-6"	3'-7 15/16"	3'-9 5/16"	3'-9 13/16"	3'-9 7/16"	3'-8 7/16"	3'-6 13/16"	3'-4 1/16"	3'-2 1/8"
G-5	3'-4 1/4"	3'-4 1/2"	3'-4 15/16"	3'-5 7/16"	3'-5 15/16"	3'-6 3/8"	3'-6 5/8"	3'-6 11/16"	3'-6 1/2"	3'-5 15/16"	3'-4 15/16"

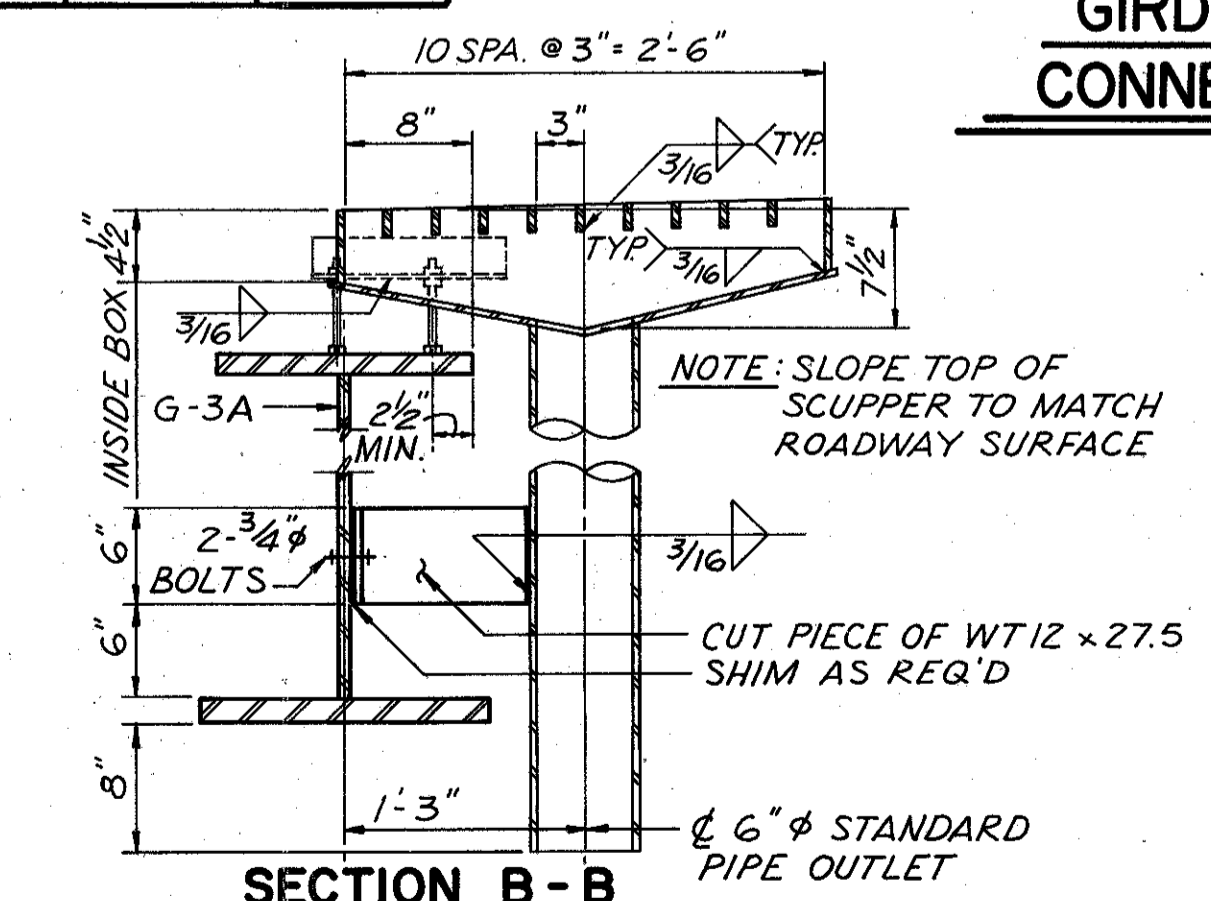
NOTE: SLAB OFFSETS ARE MEASURED AT TENTH POINTS OF EXTERIOR GIRDERS RADIAL TO ROAD 'OE'.



**PLAN**



**SECTION C-C**



**SECTION B-B**

**SCUPPER DETAILS**

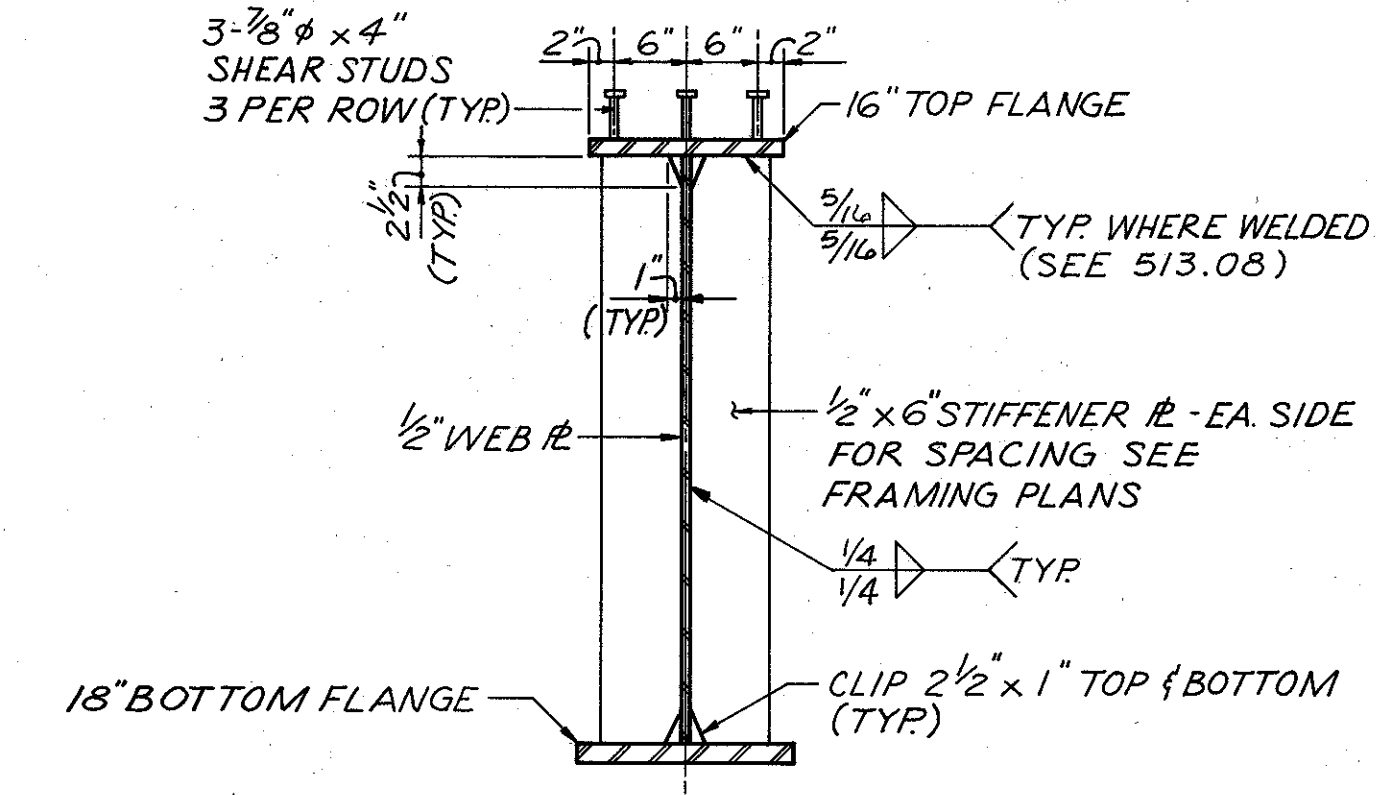
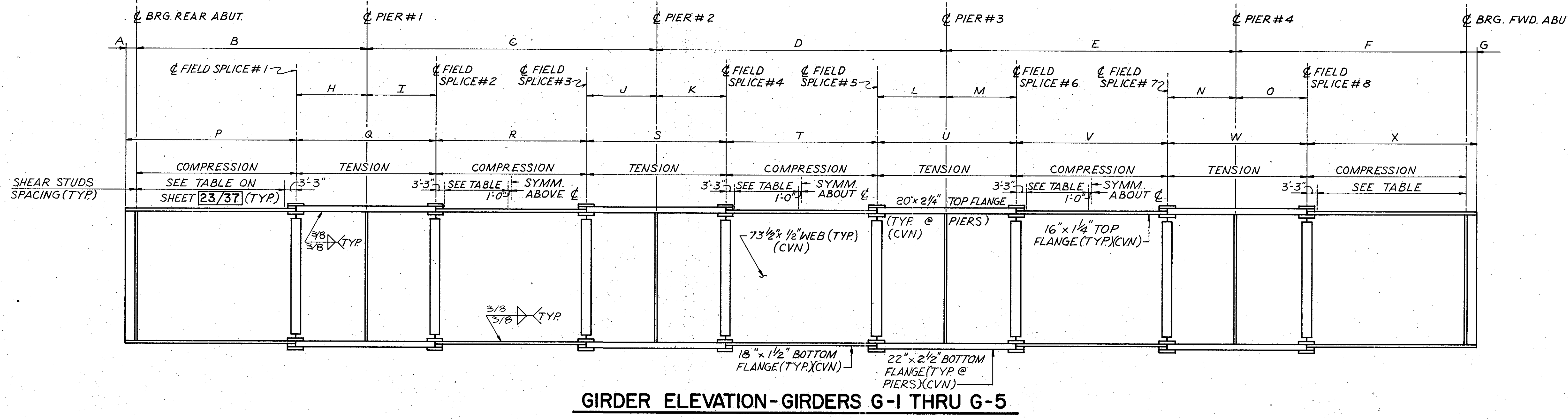
NOTE: FOR ADDITIONAL DETAILS SEE STANDARD DRAWING SD-1-69, SHEET 3 OF 4.

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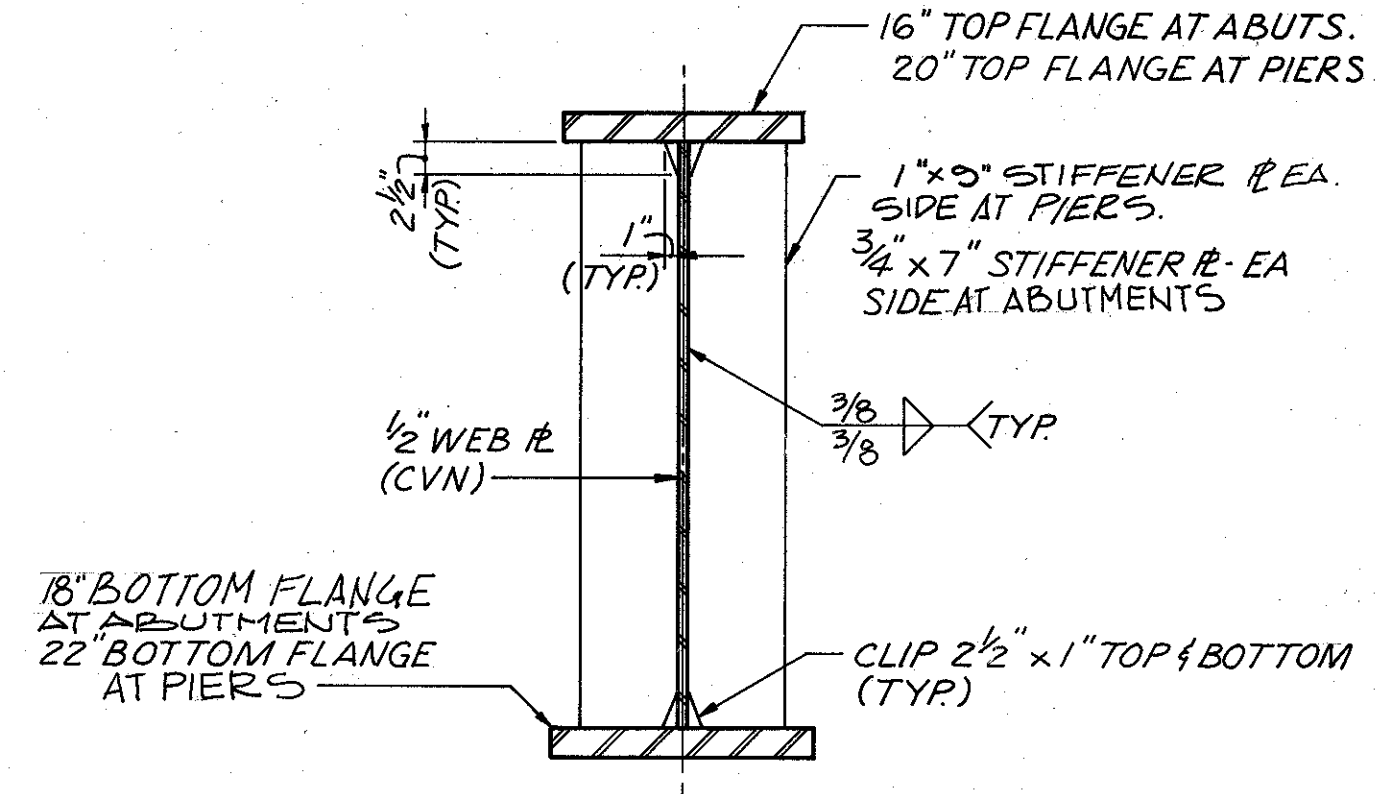
**FRAMING PLAN & DETAILS-3**  
 BRIDGE NO. FRA-315-0210  
 ROAD 'OE' AND RAMP 'OF'  
 OVER OLENTANGY RIVER

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CEM	TH	TH	HSS			

FRANKLIN COUNTY  
FRA-670-1.25-C-2



INTERMEDIATE STIFFENER DETAIL



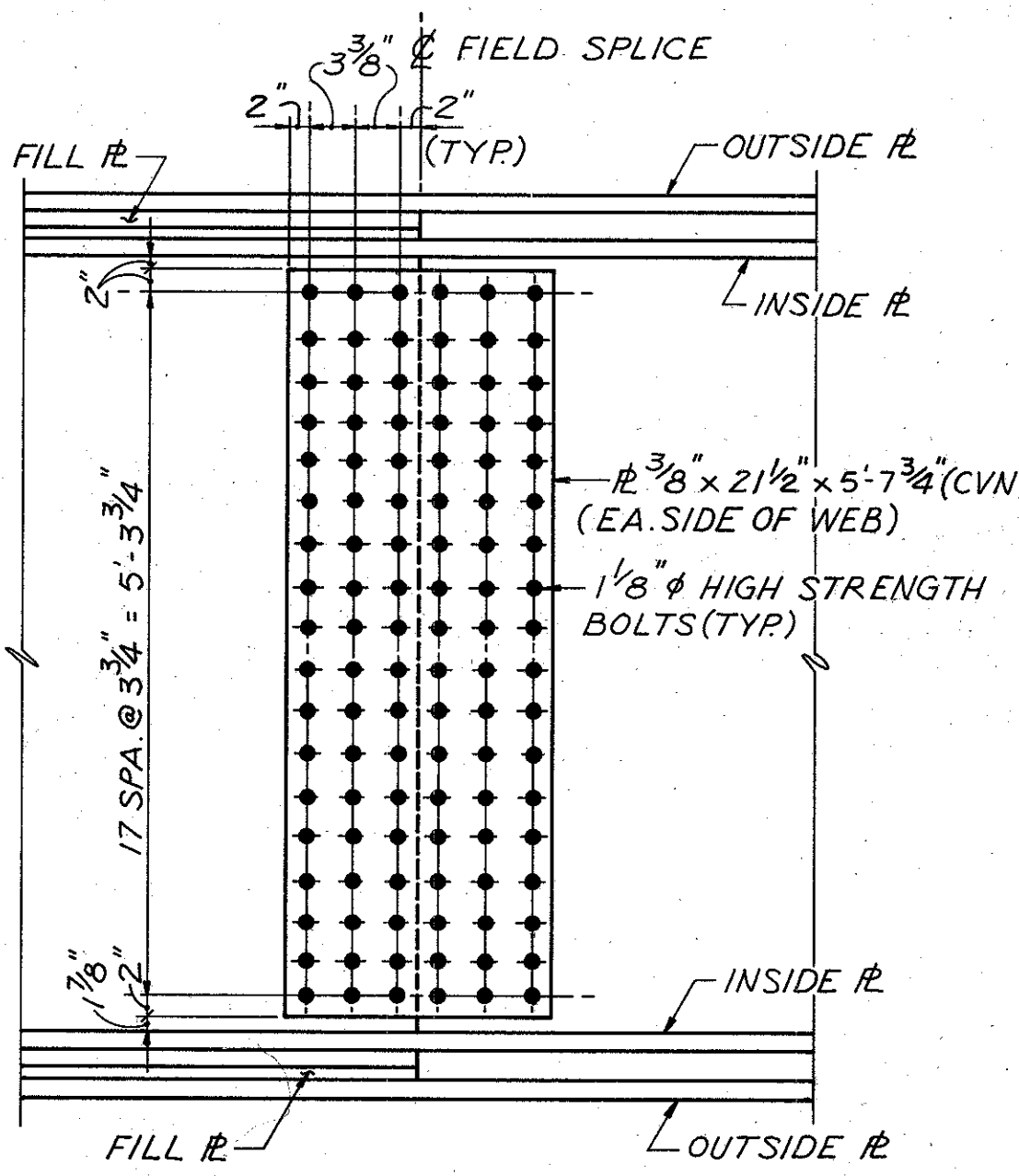
BEARING STIFFENER DETAIL

TABLE OF GIRDER DIMENSIONS

GIRDERS	DIMENSIONS																							
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
G-1	1'-2 1/16"	126'-11 1/8"	165'-10 7/8"	165'-5 1/4"	165'-3 3/8"	131'-9 3/4"	0'-11 1/16"	35'-6"	41'-11 1/8"	36'-0"	36'-9"	36'-6"	36'-2 7/8"	37'-0"	35'-0"	92'-7 13/16"	77'-5 13/16"	87'-11 1/8"	72'-9"	92'-2 1/8"	72'-8 7/8"	92'-0 9/16"	72'-0"	97'-9 7/16"
G-2	1'-2 13/16"	127'-11 9/8"	160'-10 1/8"	161'-6 1/8"	161'-8 3/8"	129'-4 3/8"	0'-11 3/4"	34'-10 1/2"	42'-5 1/8"	35'-8 5/8"	35'-1 1/8"	36'-1 1/8"	35'-10 7/8"	36'-7 7/8"	34'-2 1/8"	94'-3 15/16"	77'-3 7/8"	82'-8 5/8"	70'-10 1/8"	90'-3 1/8"	72'-0 3/8"	89'-2 1/2"	70'-10 7/8"	96'-1 5/8"
G-3	1'-2 7/8"	129'-3 1/2"	155'-9 3/8"	157'-5 7/8"	158'-1 7/8"	126'-11 1/4"	0'-11 3/4"	34'-4 1/2"	42'-10 7/8"	35'-5 3/8"	33'-4 1/8"	35'-9 1/2"	35'-6"	36'-3 1/8"	33'-5 3/8"	96'-1 1/8"	77'-3 9/16"	77'-5"	68'-10 9/8"	88'-3"	71'-3 1/8"	86'-4 1/8"	69'-9 3/8"	94'-5 5/8"
G-4	1'-1 3/16"	116'-8 1/4"	136'-8 1/2"	148'-7 1/2"	151'-2 1/8"	123'-0 7/8"	0'-11 3/4"	28'-4 3/8"	39'-5 1/8"	33'-9 3/4"	29'-8 1/8"	35'-0 9/16"	34'-6"	35'-2 7/8"	31'-9 1/8"	89'-4 1/8"	67'-10 1/4"	63'-5 1/8"	63'-6 7/8"	83'-10 1/4"	69'-6 1/8"	81'-5 1/8"	67'-0 1/8"	92'-2 3/8"
G-5	1'-1 5/16"	118'-2 3/4"	132'-7 3/4"	144'-7 1/2"	147'-5 1/4"	120'-8 3/8"	0'-11 13/16"	28'-0"	40'-4 3/4"	33'-7 1/8"	28'-0"	34'-8 1/4"	34'-0 7/8"	34'-9 3/8"	31'-0"	91'-4 1/16"	68'-4 3/4"	58'-7 7/8"	61'-7 1/8"	81'-11 1/4"	68'-9 1/8"	78'-6 7/8"	65'-9 7/8"	90'-8 3/16"

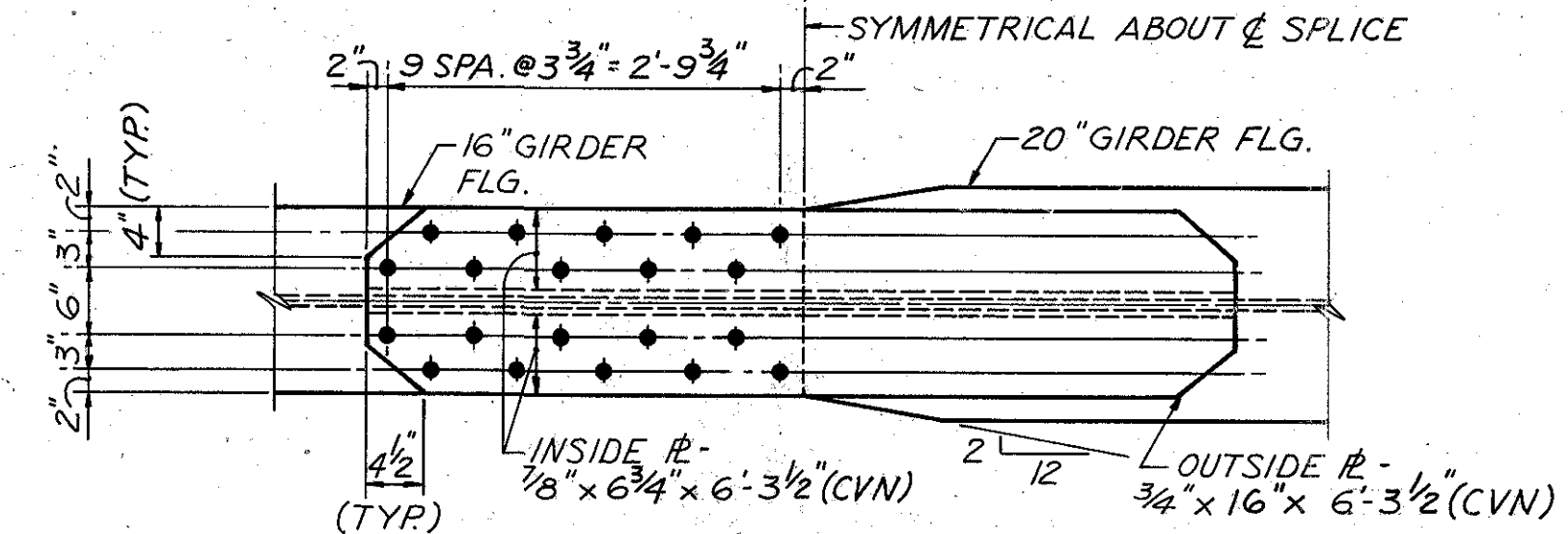
NOTES

1. A588 STEEL IS TO BE LEFT UNPAINTED EXCEPT AS NOTED ON SHEET 6/37. SEE CMS 513.221 FOR CLEANING REQUIREMENTS.
2. ERECTION BOLTS: HOLE DIAMETER IN THE CROSSFRAMES AND GIRDER STIFFENERS SHALL BE RESPECTIVELY 1/16" AND 1/4" LARGER THAN THE DIAMETER OF THE ERECTION BOLTS. UNLESS REPLACED BY PERMANENT HIGH STRENGTH BOLTS, ERECTION BOLTS SHALL REMAIN IN PLACE. LOCK WASHERS SHALL BE FURNISHED FOR OTHER THAN FULLY TORQUED HIGH STRENGTH ERECTION BOLTS. BOLTS SHALL BE FURNISHED AS PART OF 513. IN LIEU OF ERECTION BOLTS AND AT THE OPTION OF THE CONTRACTOR, ALTERNATIVE MEANS OF TEMPORARY BRACING MAY BE USED SUBJECT TO THE APPROVAL OF THE DIRECTOR (501.06).
3. WELDED ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE MAY BE MADE TO AREAS OF THE FASCIA STRINGER FLANGES DESIGNATED "COMPRESSION." ATTACHMENTS SHALL NOT BE MADE TO AREAS DESIGNATED "TENSION." FILLET WELDS TO COMPRESSION FLANGES SHALL BE NOT CLOSER THAN 1" FROM EDGE OF FLANGE, BE NOT MORE THAN 2" LONG, AND BE NOT SMALLER THAN THE MINIMUM SIZE REQUIRED BY AASHTO.
4. FOR INTERMEDIATE CROSSFRAME DETAILS, SEE SHEETS 23/37 AND 29/37.
5. SPACING OF INTERMEDIATE STIFFENERS SHALL VARY TO ALLOW STIFFENERS TO CLEAR BOTTOM FLANGE SPLICE PLATE BY 1" (TYPICAL EITHER SIDE).
6. WHERE A SHAPE OR PLATE IS DESIGNATED (CVN) THE MATERIAL SHALL MEET SPECIFIED MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01 OF CMS.



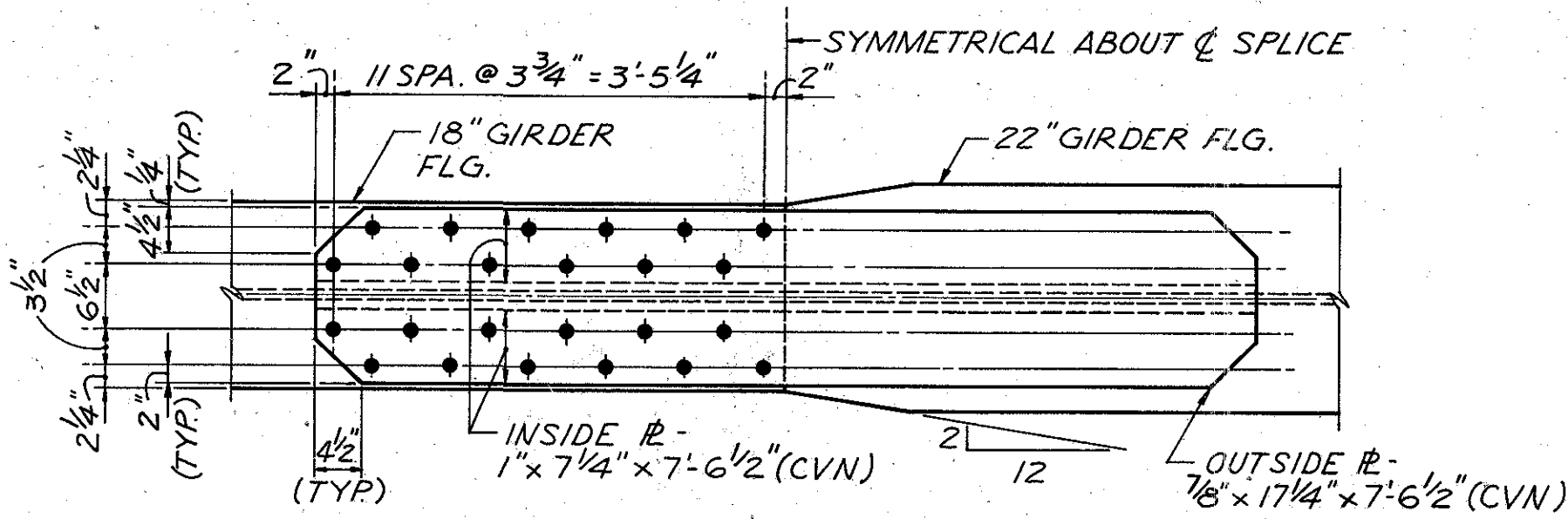
FIELD SPLICE DETAIL

(OPPOSITE HAND @ SPLICES 2, 4, 6 & 8)



TOP FLANGE AT SPLICES 1, 3, 5 & 7

(OPPOSITE HAND @ SPLICES 2, 4, 6 & 8)



BOTTOM FLANGE AT SPLICES 1, 3, 5 & 7

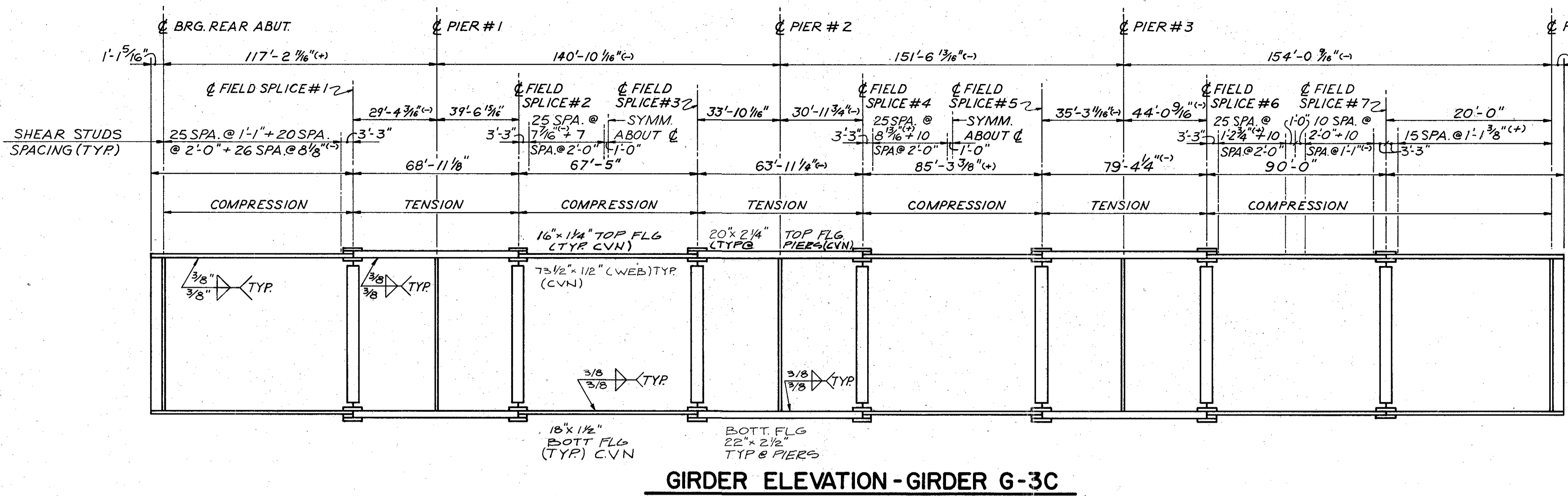
(OPPOSITE HAND @ SPLICES 2, 4, 6 & 8)

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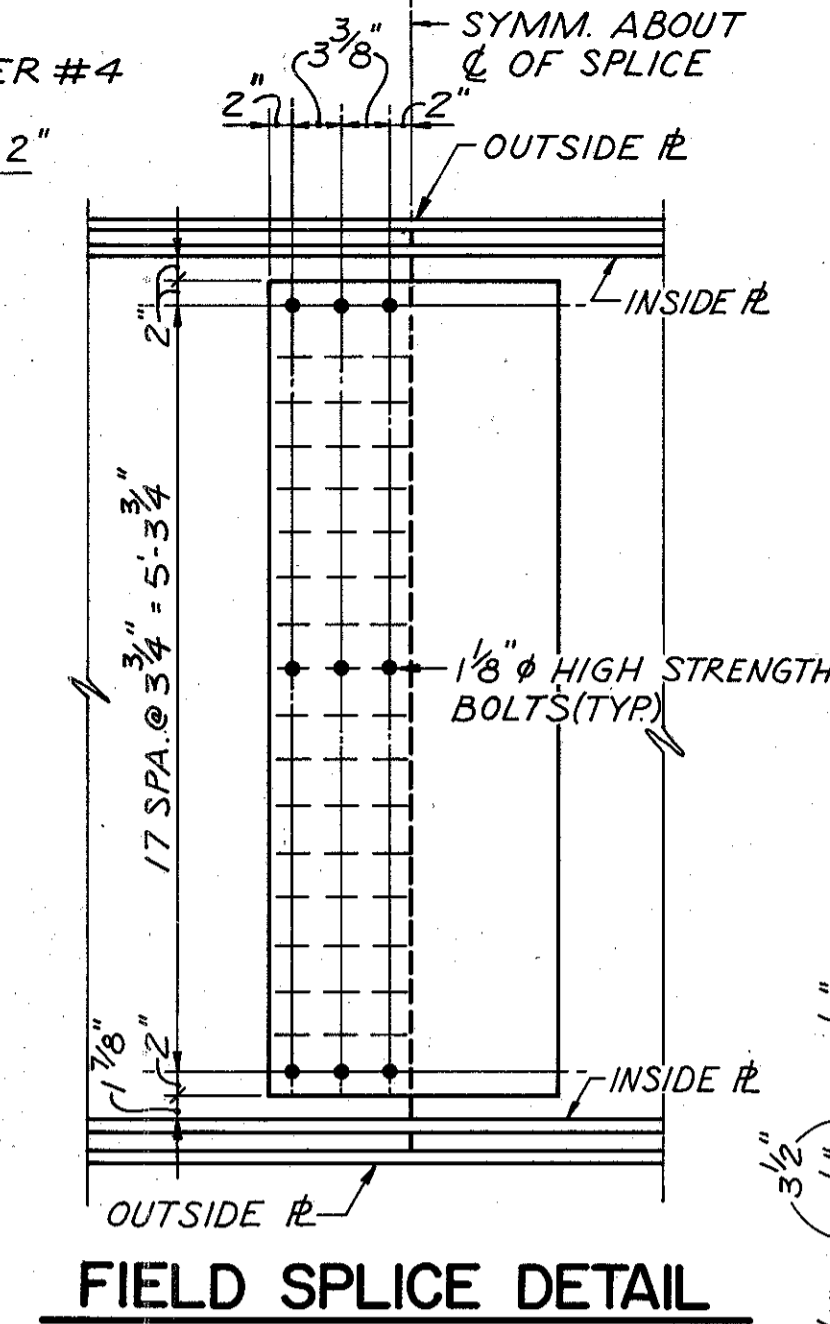
GIRDER ELEVATION  
AND DETAILS I  
BRIDGE NO. FRA-315-0210  
ROAD "OE" AND RAMP "OF"  
OVER OLENTANGY RIVER

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CEM	DMT	-	HSS			

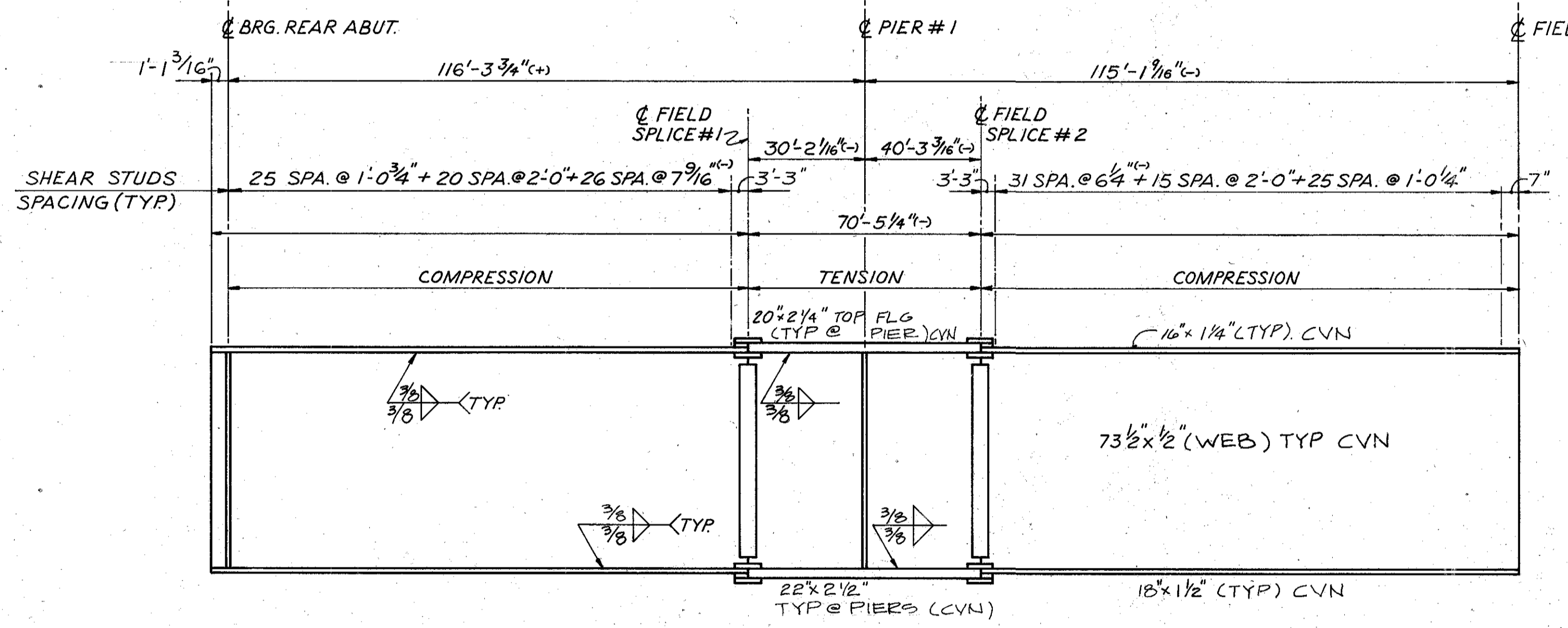
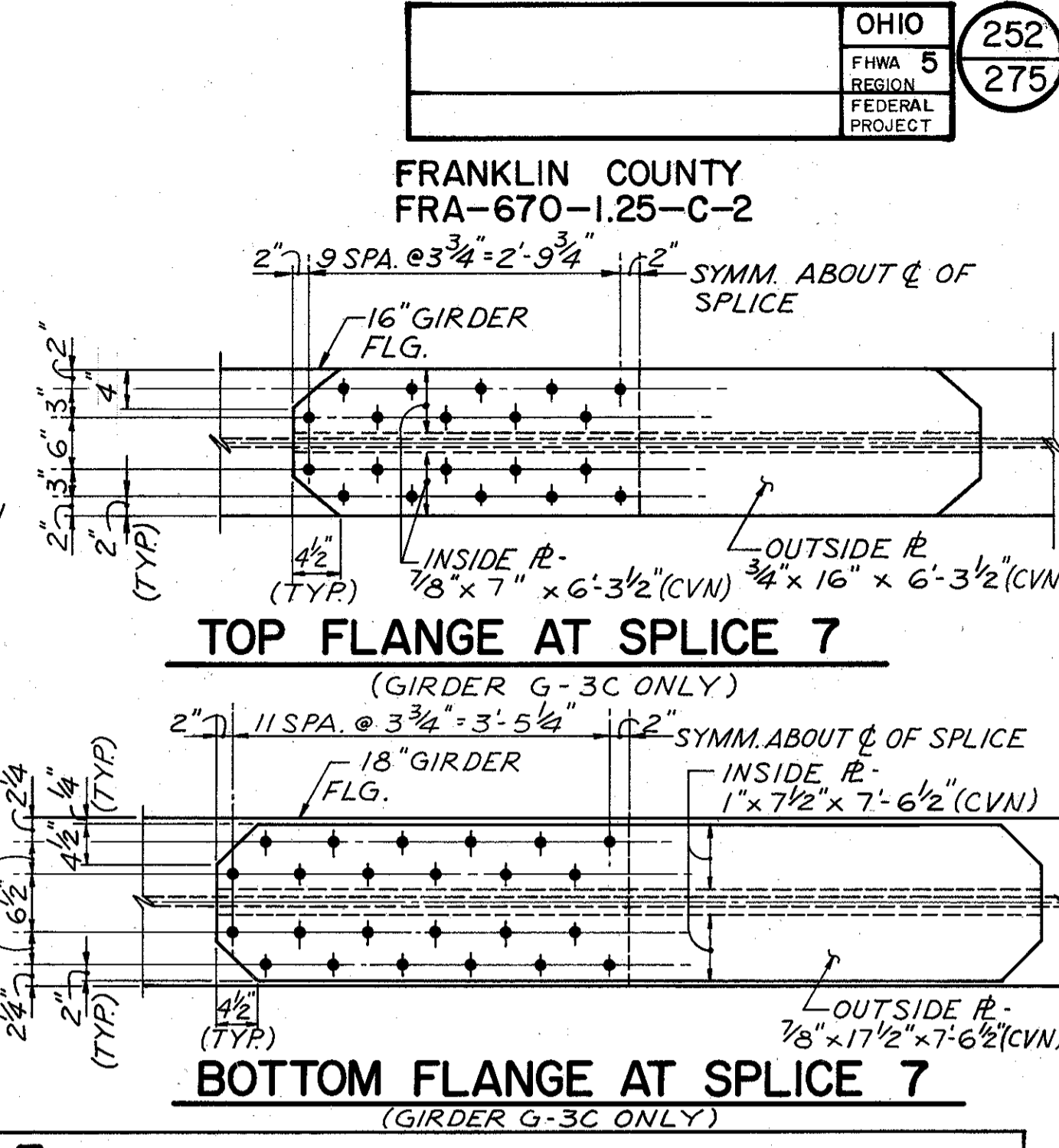
FRANKLIN COUNTY  
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**GIRDER ELEVATION - GIRDER G-3C**



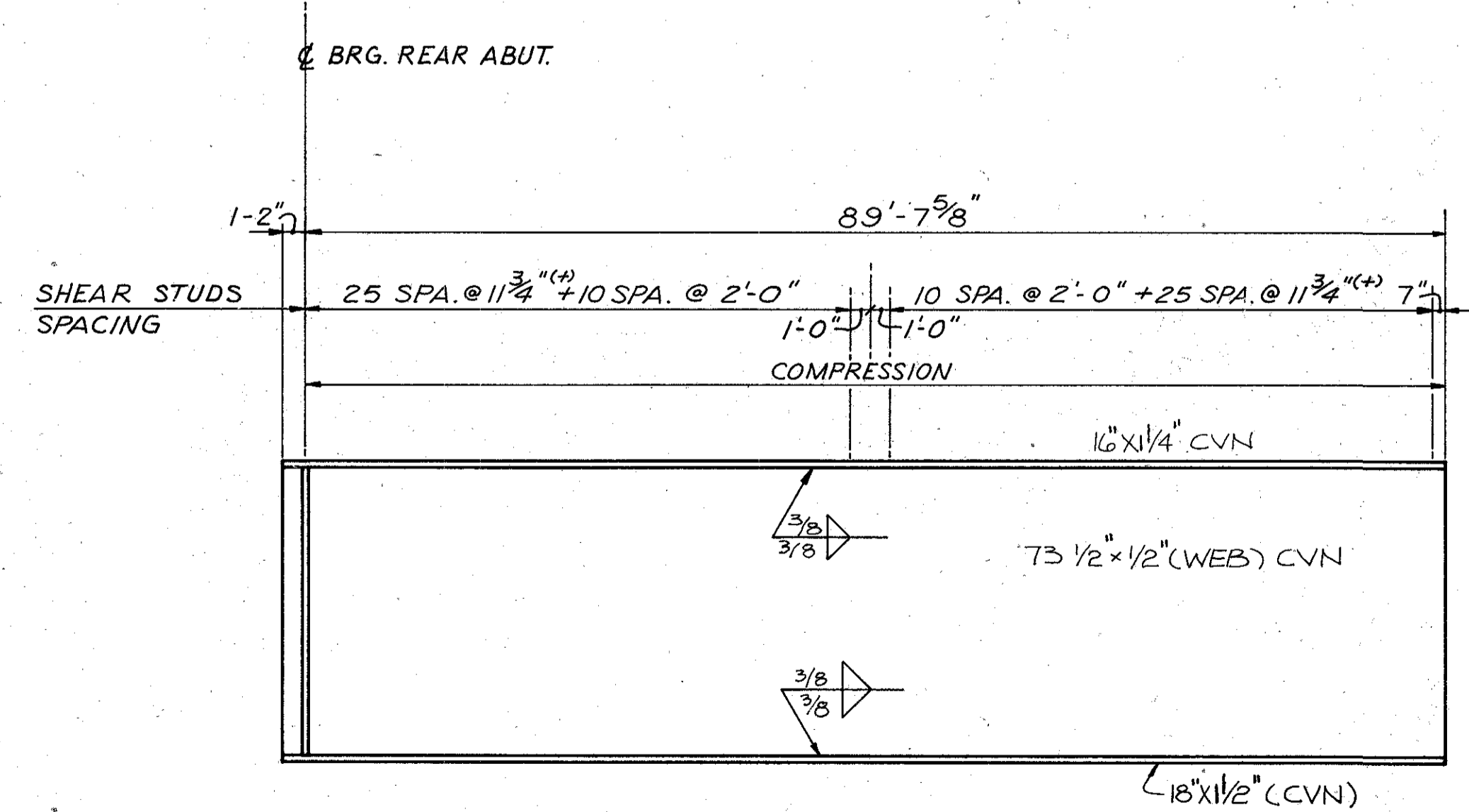
**FIELD SPLICE DETAIL**  
(FIELD SPLICE #7 @ GIRDER G-3C ONLY)



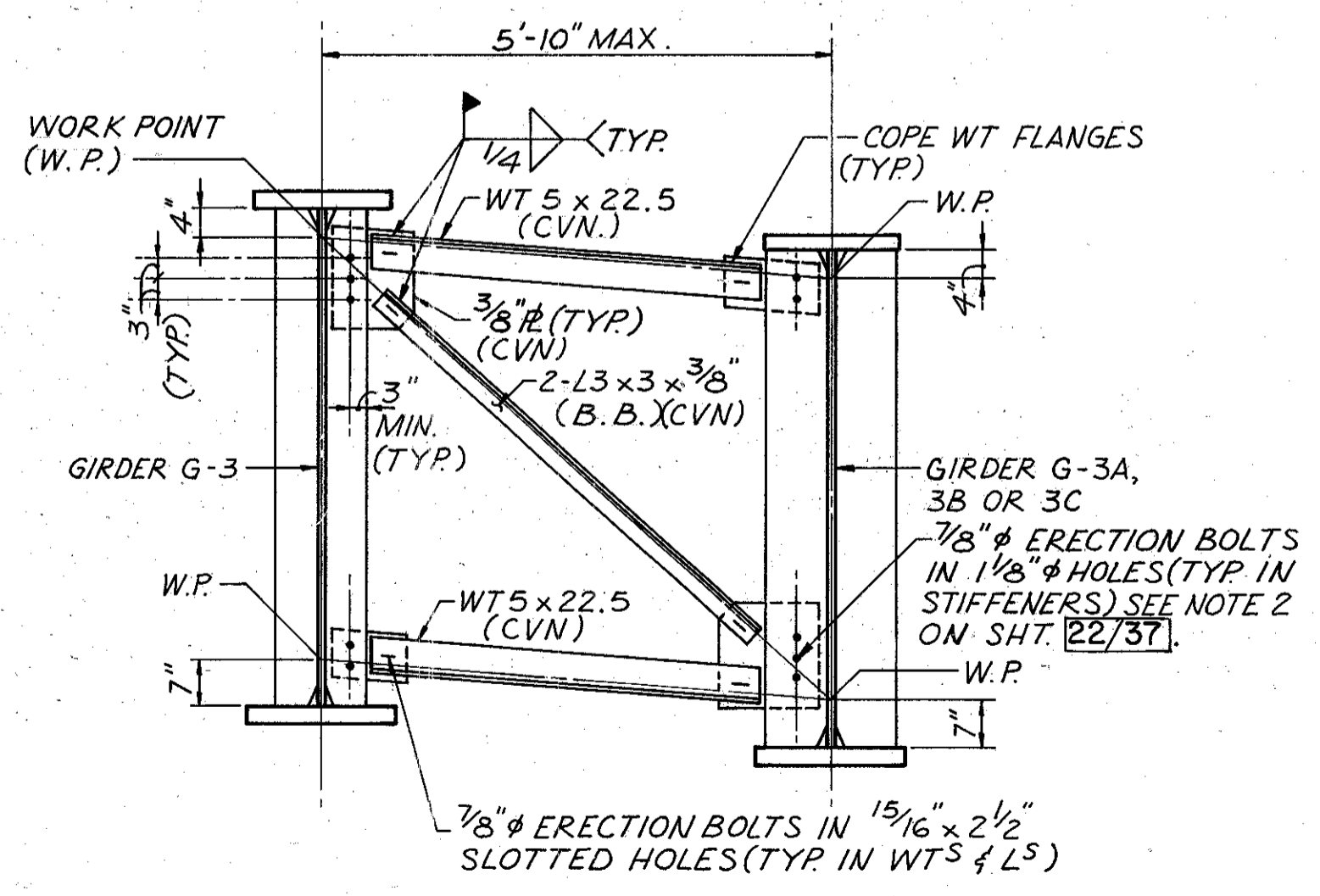
**GIRDER ELEVATION - GIRDER G-3B**

SHEAR STUD TABLE					
SPAN	R	T	V	F MINUS O (START AT ABUT.)	B MINUS H
G-1	25 SPA @ 9 7/16" = 19'-8 1/2" + 10 SPA @ 2'-0"	25 SPA @ 10 1/2" = 21'-10 1/2" + 10 SPA @ 2'-0"	25 SPA @ 10 1/2" = 21'-9 1/8" + 10 SPA @ 2'-0"	25 SPA @ 10" + 25 SPA @ 2'-0" + 21 SPA @ 1'-1"	26 SPA @ 8 1/2" + 25 SPA @ 2'-0" + 20 SPA @ 1'-9"
G-2	25 SPA @ 8 3/16" = 17'-1 3/16" + 10 SPA @ 2'-0"	25 SPA @ 10" = 20'-10 1/2" + 10 SPA @ 2'-0"	25 SPA @ 9 3/4" = 20'-4 1/4" + 10 SPA @ 2'-0"	25 SPA @ 9 1/16" + 25 SPA @ 2'-0" + 21 SPA @ 1'-0 1/8"	26 SPA @ 8 3/8" + 25 SPA @ 2'-0" + 20 SPA @ 1'-0 3/8"
G-3	25 SPA @ 6 7/16" = 14'-5 1/2" + 10 SPA @ 2'-0"	25 SPA @ 9 1/16" = 19'-10 1/2" + 10 SPA @ 2'-0"	25 SPA @ 9 1/16" = 18'-11" + 10 SPA @ 2'-0"	25 SPA @ 9 3/8" + 25 SPA @ 2'-0" + 21 SPA @ 11 3/8"	26 SPA @ 9 1/16" + 25 SPA @ 2'-0" + 20 SPA @ 1'-0 3/4"
G-4	25 SPA @ 6 7/16" = 13'-5 1/2" + 7 SPA @ 2'-0"	25 SPA @ 8 1/2" = 17'-8 1/8" + 10 SPA @ 2'-0"	25 SPA @ 7 1/8" = 16'-6" + 10 SPA @ 2'-0"	25 SPA @ 9" + 25 SPA @ 2'-0" + 21 SPA @ 11"	26 SPA @ 8 1/8" + 25 SPA @ 2'-0" + 20 SPA @ 9 3/4"
G-5	25 SPA @ 6 1/4" = 13'-0 1/4" + 6 SPA @ 2'-0"	25 SPA @ 8" = 16'-8 3/8" + 10 SPA @ 2'-0"	25 SPA @ 7 1/4" = 15'-0 1/4" + 10 SPA @ 2'-0"	25 SPA @ 8 3/4" + 25 SPA @ 2'-0" + 21 SPA @ 10 1/2"	26 SPA @ 9 3/8" + 25 SPA @ 2'-0" + 20 SPA @ 10"

NOTE: ADD ONE ROW OF ADDITIONAL STUDS ON EA. SIDE OF FIELD SPLICE AS CLOSE AS POSSIBLE TO SPLICE PLATES. ALL GIRDERS (TYP.)



**GIRDER ELEVATION - GIRDER G-3A**



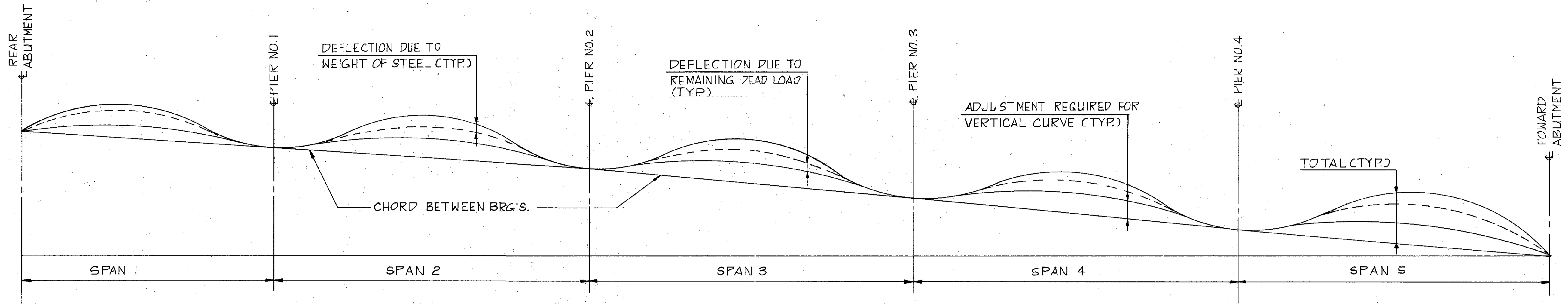
**INTERMEDIATE CROSSFRAME  
DETAIL - TYPE II**

JOHN E. FOSTER AND ASSOCIATES, INC. 23/37  
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**GIRDER ELEVATION  
AND DETAILS 2**  
BRIDGE NO. FRA-315-0210  
ROAD "OE" AND RAMP "OF"  
OVER OLENTANGY RIVER

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CEM	DMT		HSS			

FRANKLIN COUNTY  
FRA-670-1.25-C-2



GIRDER DEAD LOAD DEFLECTION AND CAMBER

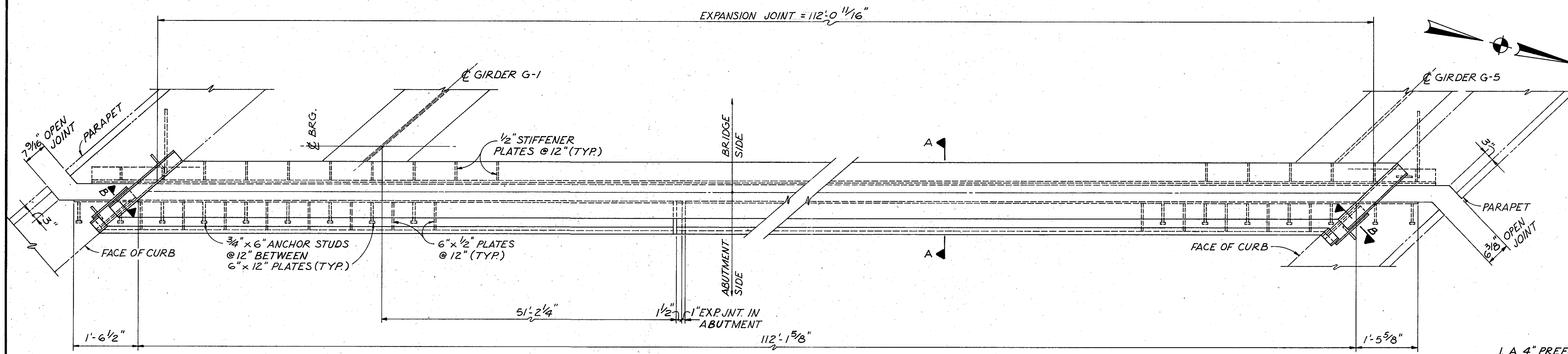
SPAN	1								2								3								4								5									
	2	3	4	5	6	SPL	8	9	1	SPL	3	4	5	6	7	SPL	9	1	SPL	3	4	5	6	7	SPL	9	1	SPL	3	4	5	6	7	SPL	9	1	2	SPL	4	5	6	7
G-1	DEFLECTION DUE TO WEIGHT OF STEEL																																									
	DEFLECTION DUE TO REMAINING DEAD LOAD																																									
	ADJUSTMENT REQUIRED FOR VERTICAL CURVE																																									
	DEFLECTION DUE TO HEAT LOSS																																									
	TOTAL																																									
G-2	DEFLECTION DUE TO WEIGHT OF STEEL																																									
	DEFLECTION DUE TO REMAINING DEAD LOAD																																									
	ADJUSTMENT REQUIRED FOR VERTICAL CURVE																																									
	DEFLECTION DUE TO HEAT LOSS																																									
	TOTAL																																									
G-3	DEFLECTION DUE TO WEIGHT OF STEEL																																									
	DEFLECTION DUE TO REMAINING DEAD LOAD																																									
	ADJUSTMENT REQUIRED FOR VERTICAL CURVE																																									
	DEFLECTION DUE TO HEAT LOSS																																									
	TOTAL																																									
G-4	DEFLECTION DUE TO WEIGHT OF STEEL																																									
	DEFLECTION DUE TO REMAINING DEAD LOAD																																									
	ADJUSTMENT REQUIRED FOR VERTICAL CURVE																																									
	DEFLECTION DUE TO HEAT LOSS																																									
	TOTAL																																									
G-5	DEFLECTION DUE TO WEIGHT OF STEEL																																									
	DEFLECTION DUE TO REMAINING DEAD LOAD																																									
	ADJUSTMENT REQUIRED FOR VERTICAL CURVE																																									
	DEFLECTION DUE TO HEAT LOSS																																									
	TOTAL																																									

JOHN E. FOSTER AND ASSOCIATES, INC. 25/37  
555 Buttles Ave., Columbus, Ohio 43215

GIRDER DEAD LOAD DEFLECTION AND CAMBER  
BRIDGE NO. FRA.-315-0210  
ROAD "OE" AND RAMP "OF"  
OVER OLENTANGY RIVER

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CEM	TH		DFS			





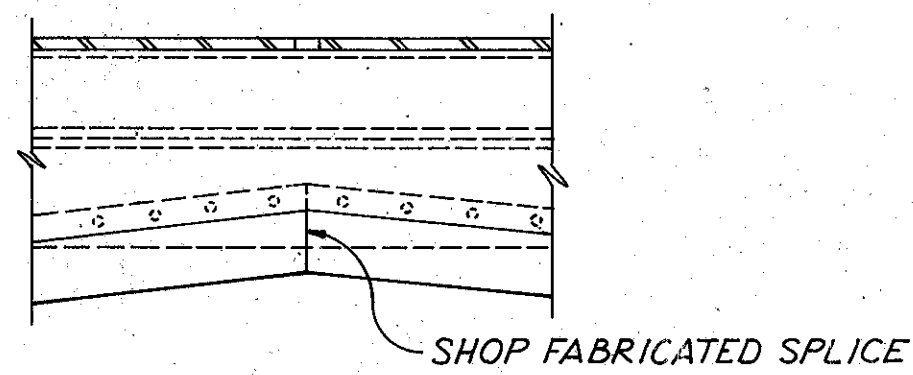
**EXPANSION JOINT PLAN - REAR ABUTMENT**

NOTES: 1. CONCRETE NOT SHOWN.  
2. SEE SHEET 27/37 FOR SECTIONS "A-A" AND "B-B."

**NOTES**

1. A 4" PREFORMED STRIP SEAL GLAND SHALL BE USED AT THE FORWARD ABUTMENT.
2. INSTALLATION OF THE STRIP SEAL GLAND SHALL BE LIMITED TO TIMES WHEN THE AMBIENT TEMPERATURE IS BELOW 60°F.
3. SEE STANDARD DRAWING EXJ-4-87 FOR DETAILS, NOTES AND SECTION DEFINING JOINT OPENING ("DIMENSION A").

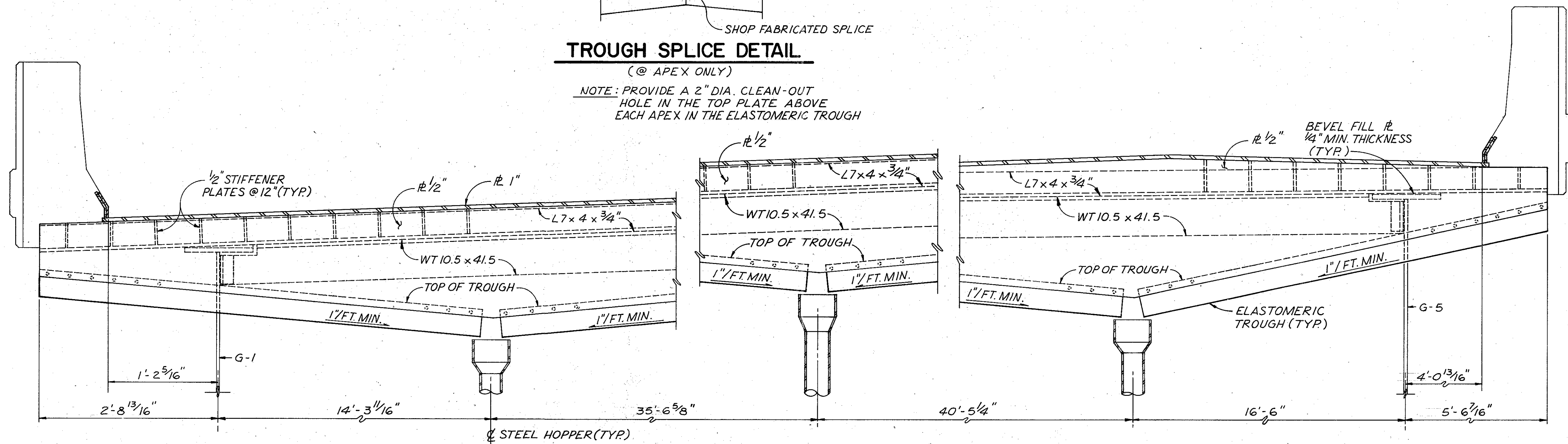
TEMPERATURE ADJUSTMENT TABLE	
TEMPERATURE	JOINT OPENING ("DIM. A")
30°F	2 1/2"
40°F	2 1/4"
50°F	2 1/16"
60°F	1 13/16"
70°F	1 5/8"
80°F	1 1/16"
90°F	1 3/16"



**TROUGH SPLICE DETAIL**

(@ APEX ONLY)

NOTE: PROVIDE A 2" DIA. CLEAN-OUT HOLE IN THE TOP PLATE ABOVE EACH APEX IN THE ELASTOMERIC TROUGH



**TRANSVERSE SECTION**

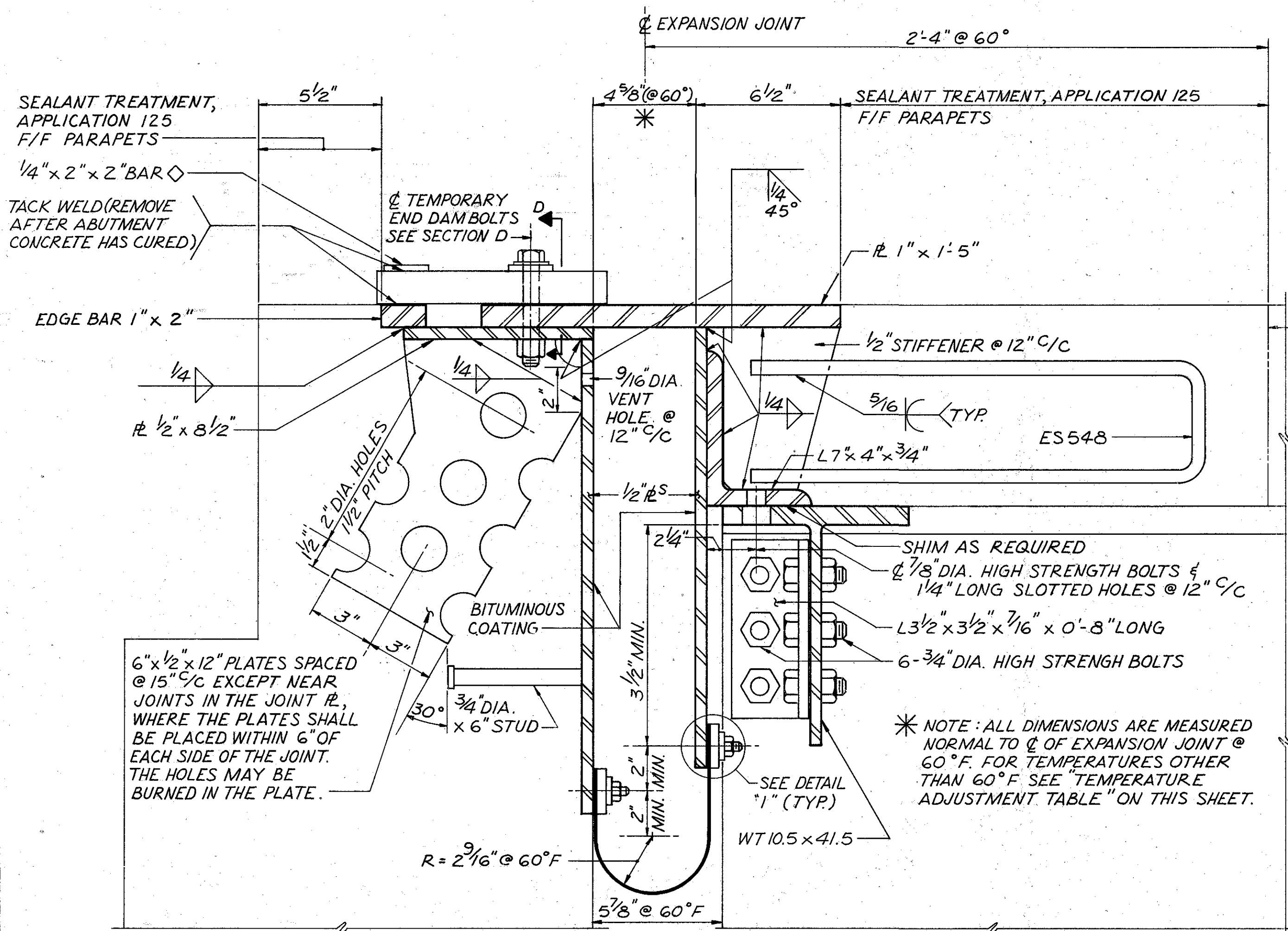
(DIMENSIONS MEASURED ALONG  $\bar{C}$  OF EXPANSION JOINT)

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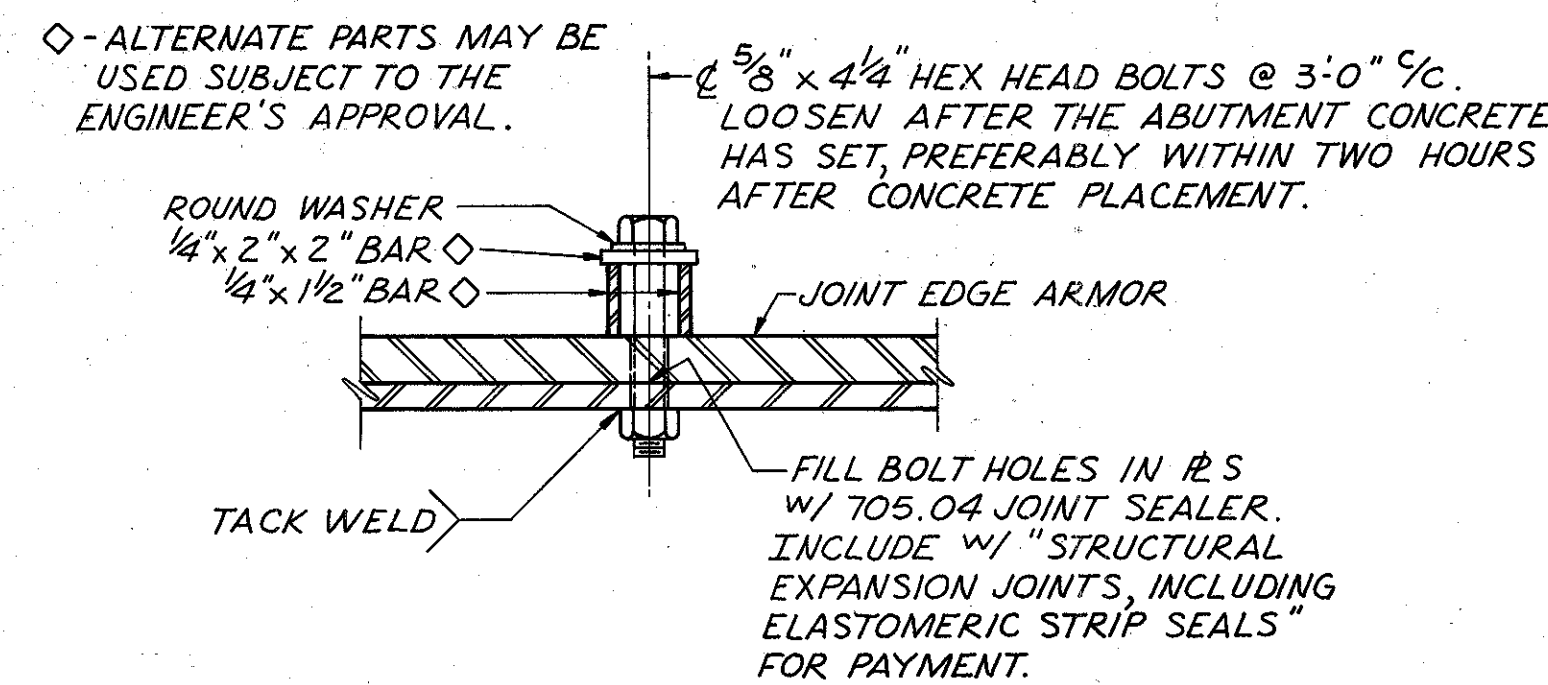
MISCELLANEOUS SUPERSTRUCTURE  
DETAILS

BRIDGE NO. FRA - 315-0210  
ROAD "OE AND RAMP" OF  
OVER OLENTANGY RIVER

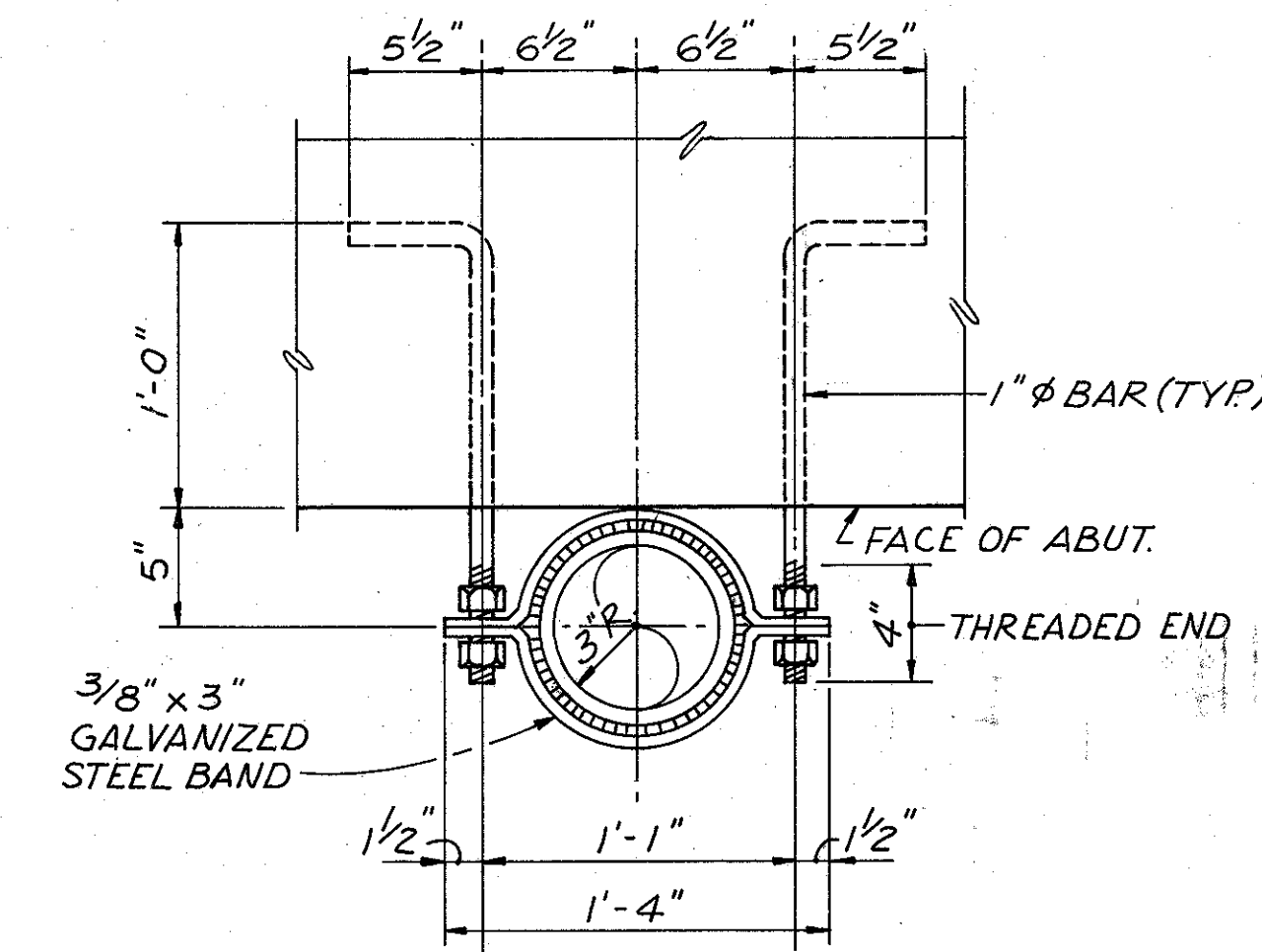
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H.W.R./D.M.T.	D.M.T.	D.M.T.	H.S.S.			



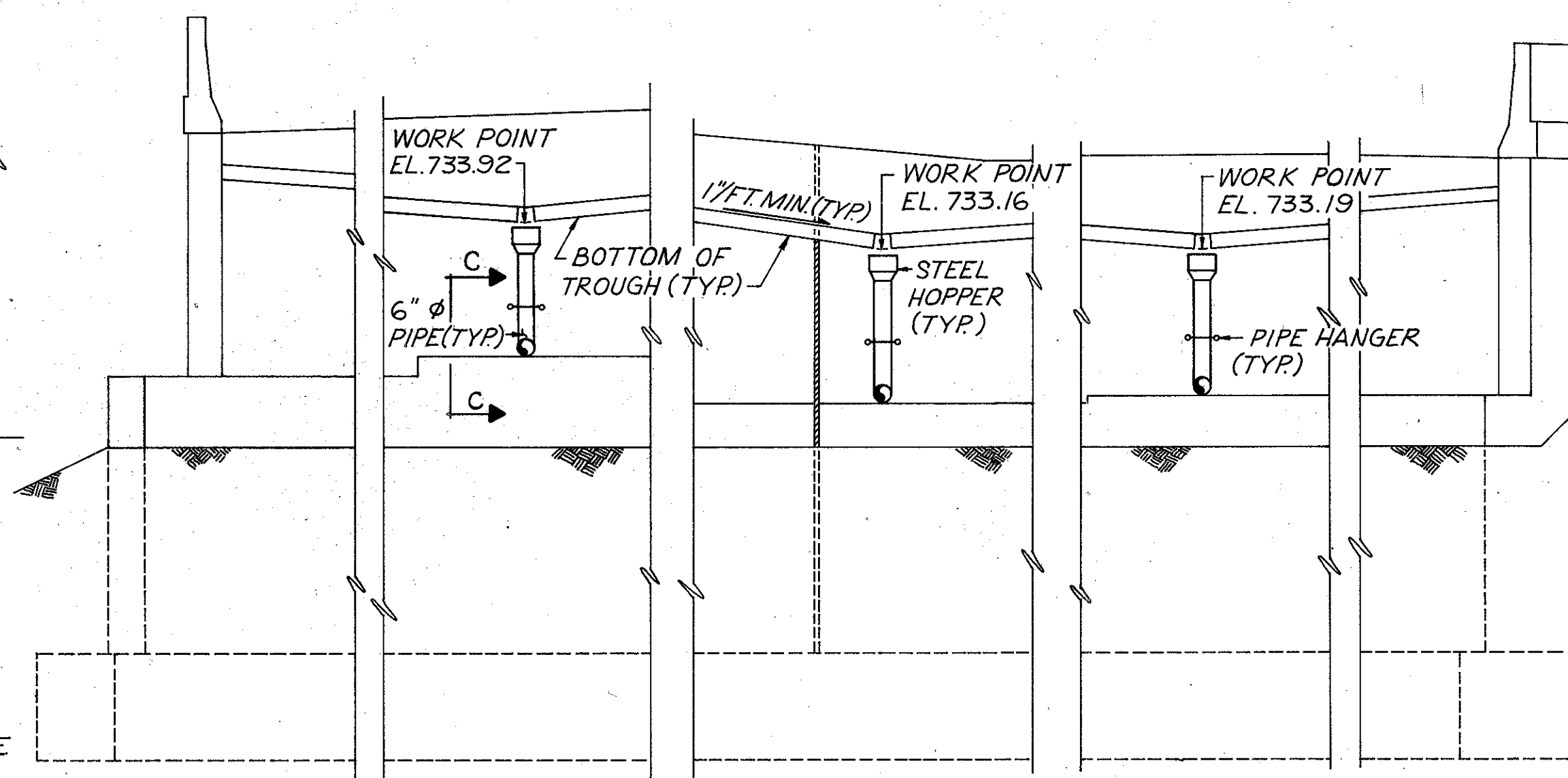
**SECTION A-A**



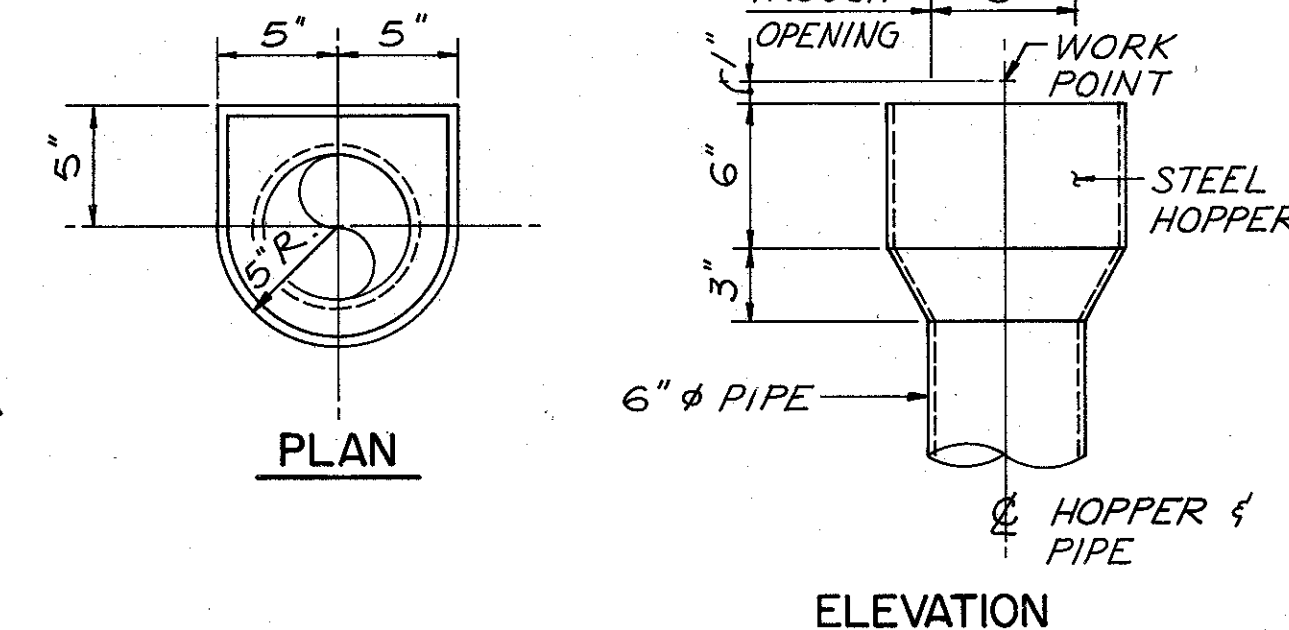
**SECTION D**



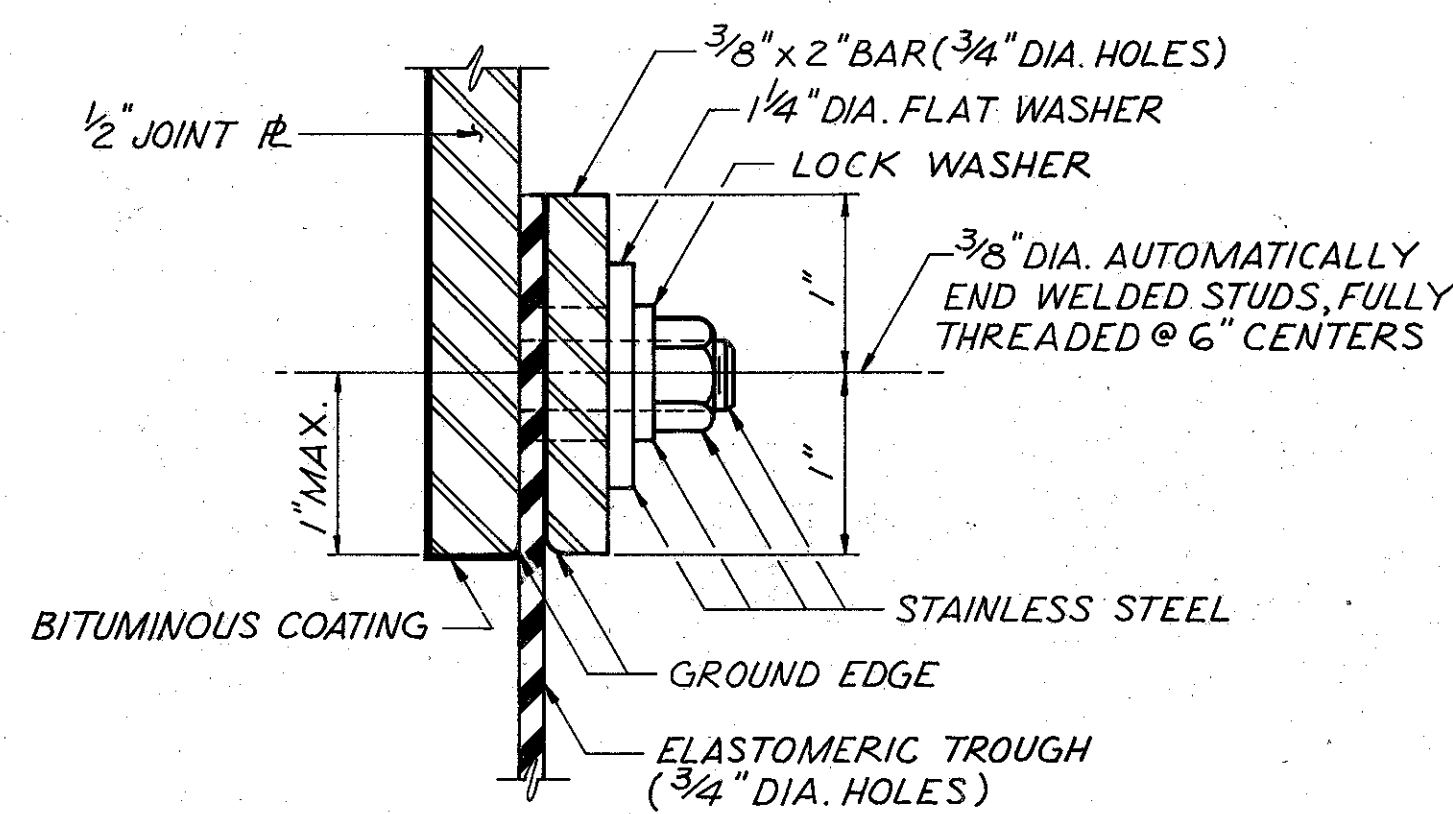
**TYPICAL PIPE HANGER DETAIL**



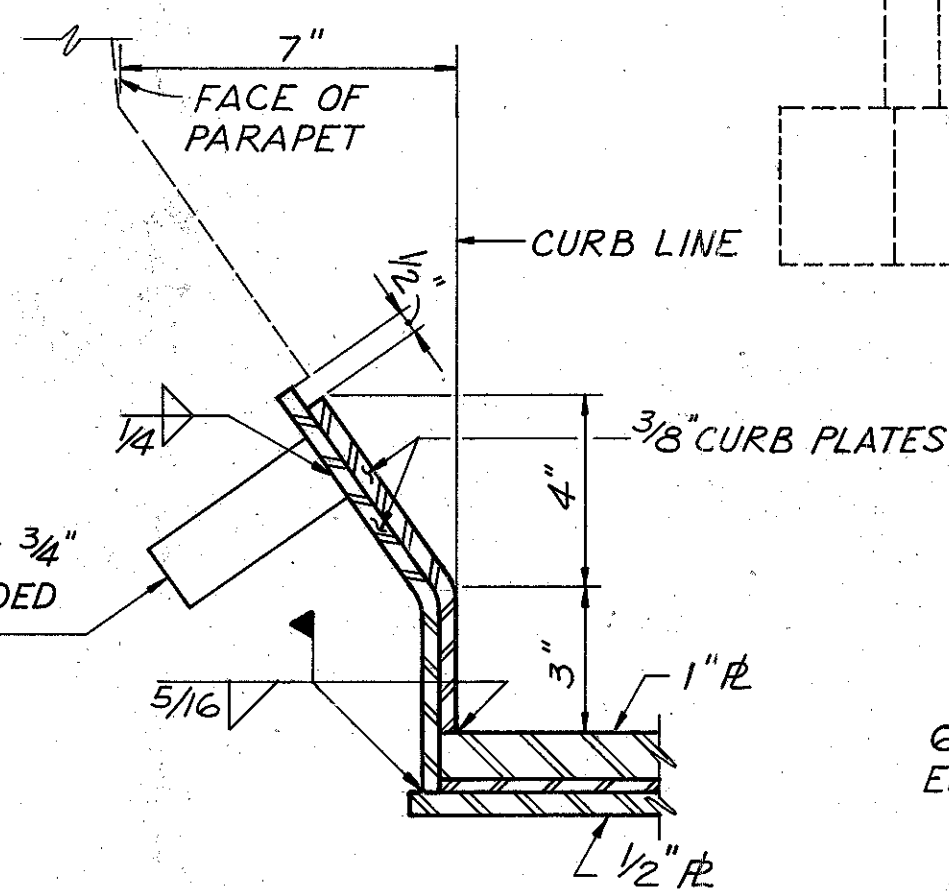
**ELEVATION - REAR ABUTMENT**



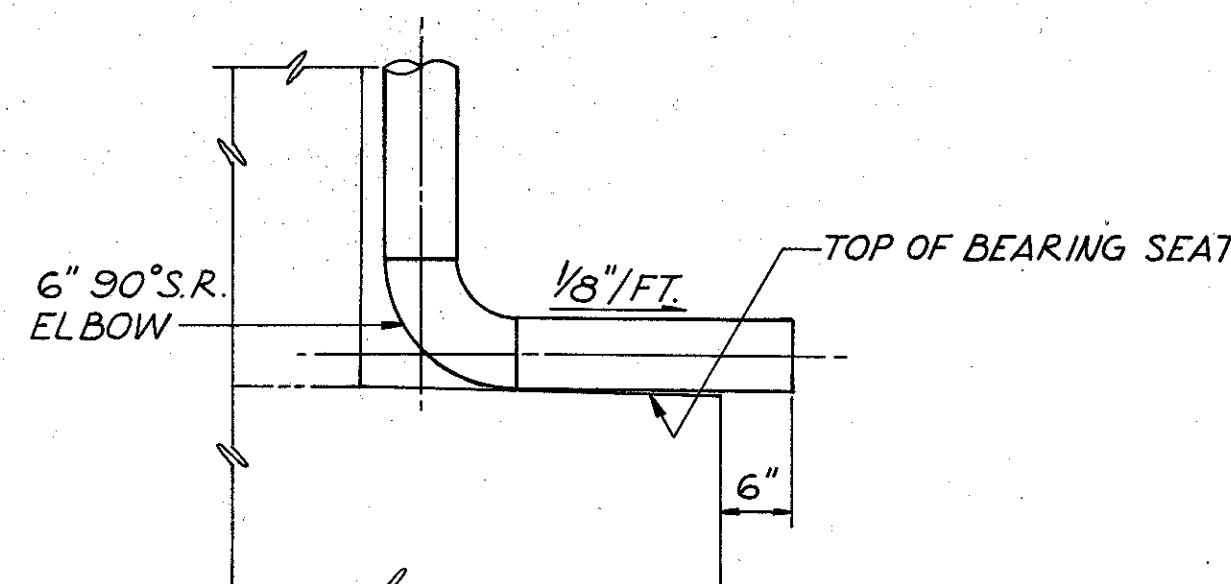
**TYPICAL HOPPER DETAILS**



**DETAIL "I"**



**SECTION B**



**SECTION C-C**

**TEMPERATURE ADJUSTMENT TABLE**  
FOR JOINT OPENING BASED ON A TEMPERATURE RANGE OF -30°F TO 120°F

JOINT OPENING	30°F	40°F	50°F	60°F	70°F	80°F	90°F	100°F
MIN.	5 3/8"	5 1/8"	4 7/8"	4 5/8"	4 3/8"	4 1/8"	3 7/8"	3 5/8"
MAX.	3 1/16"	6 15/16"						

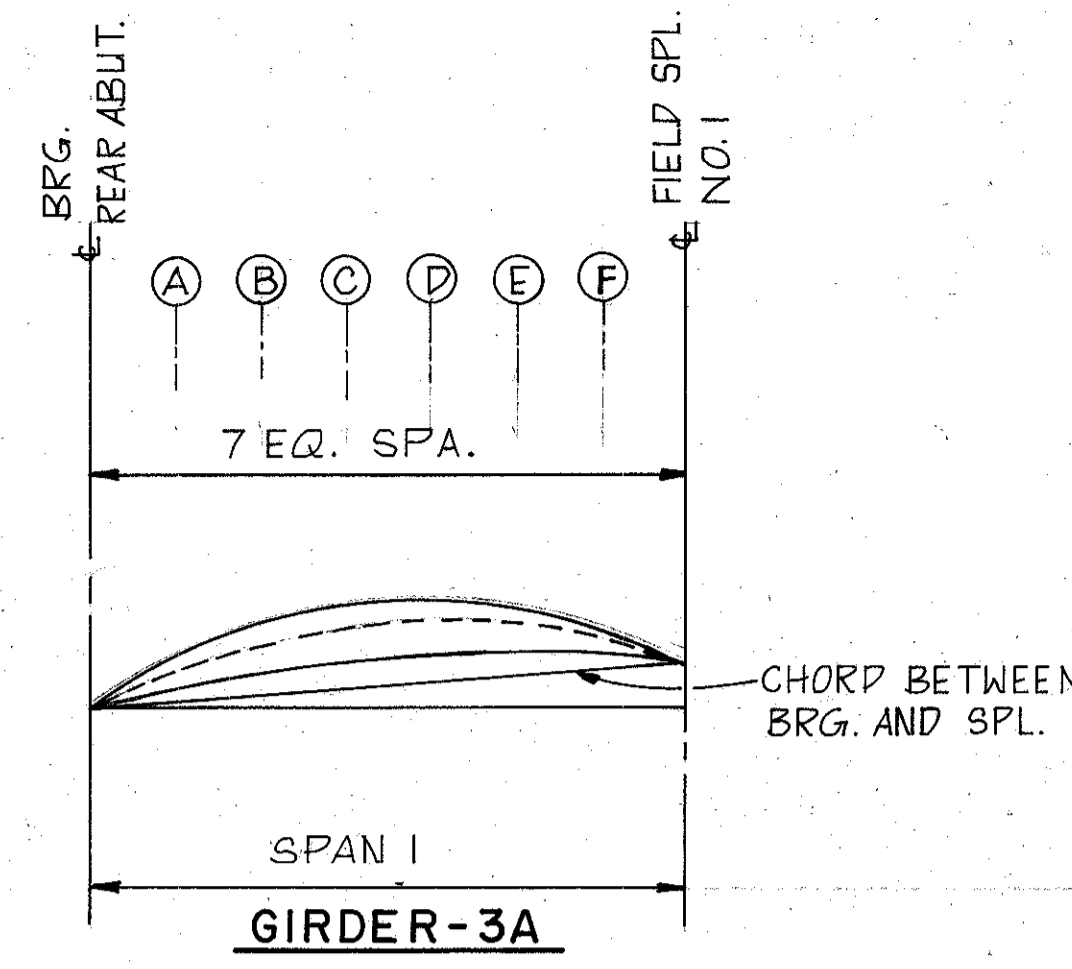
JOHN E. FOSTER AND ASSOCIATES, INC. 27/37  
555 Buttles Ave., Columbus, Ohio 43215

MISCELLANEOUS SUPERSTRUCTURE  
DETAILS

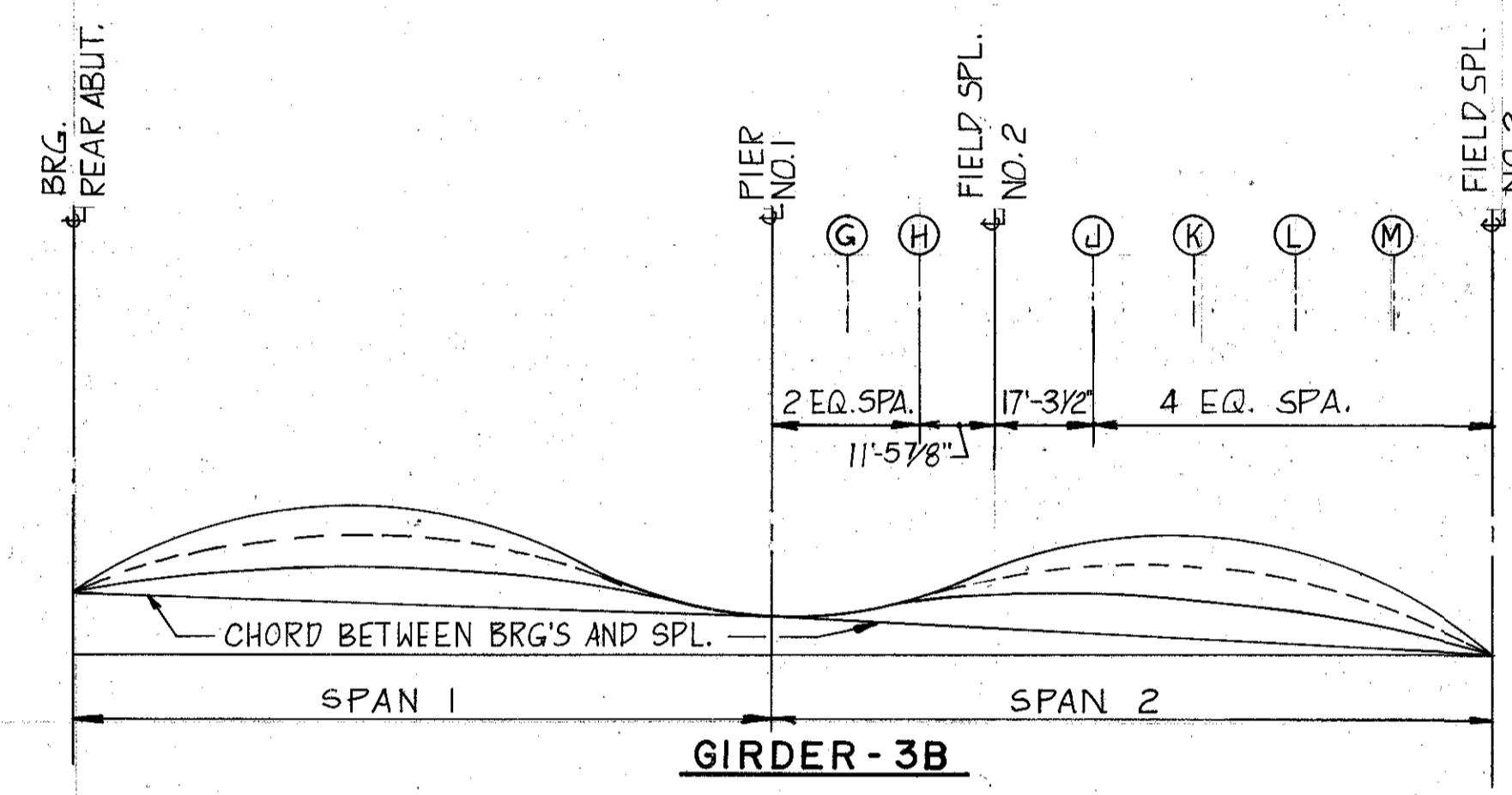
BRIDGE NO. FRA-315-0210  
ROAD "OE AND RAMP "OF"  
OVER OLENTANGY RIVER

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
HWR	DMT	DMT	H.S.S.			
DMT						

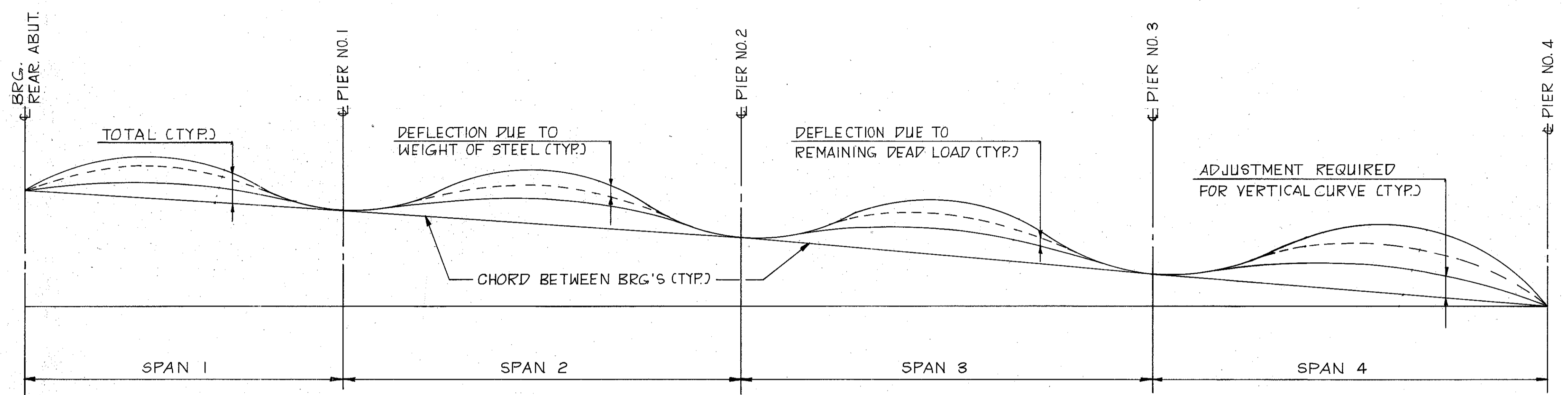
FRANKLIN COUNTY  
FRA-670-1.25-C-2



**GIRDER-3A**



**GIRDER-3B**



**GIRDER-3C**

**GIRDER DEAD LOAD DEFLECTION AND CAMBER**

SPAN	1					
	A	B	C	D	E	F
DEFLECTION DUE TO WEIGHT OF STEEL	1/16"	1/8"	3/16"	3/16"	1/8"	1/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1/4"	7/16"	9/16"	9/16"	7/16"	1/4"
ADJUSTMENT REQUIRED FOR VERTICAL CURVE	5/8"	15/16"	1 1/16"	1 1/16"	1 1/16"	5/8"
TOTAL	15/16"	1 1/2"	1 5/16"	1 5/16"	1 5/8"	1 5/16"

SPAN	1									2						
	2	3	4	5	6	SPL	8	9		G	H	SPL	J	K	L	M
DEFLECTION DUE TO WEIGHT OF STEEL	1/8"	1/8"	3/16"	1/8"	1/8"	1/16"	1/16"	-	-	1/16"	1/8"	3/16"	3/16"	1/8"	1/16"	
DEFLECTION DUE TO REMAINING DEAD LOAD	1 1/16"	1 5/16"	1"	1"	7/8"	9/16"	3/8"	3/16"	-1/16"	-1/16"	1/16"	3/16"	1/4"	1/4"	1/8"	
ADJUSTMENT REQUIRED FOR VERTICAL CURVE	-7/16"	-3/16"	-1/16"	-1/16"	1/16"	5/8"	7/16"	0"	3/4"	1 9/16"	1 5/8"	2 1/4"	1 7/8"	1 5/16"	3/4"	
DEFLECTION DUE TO HEAT LOSS	-	-	-	-	-	-	-	-	1/16"	-	1/8"	5/16"	3/16"	3/16"	1/8"	
TOTAL	3/8"	7/8"	1 1/8"	1 1/16"	1 1/16"	1 1/4"	7/8"	3/16"	5/8"	1 9/16"	2 1/4"	2 5/8"	2 5/8"	1 5/8"	1 1/16"	

SPAN	1								2								3								4									
	2	3	4	5	6	SPL	8	9	1	2	SPL	4	5	6	7	SPL	9	1	SPL	3	4	5	6	7	8	9								
DEFLECTION DUE TO WEIGHT OF STEEL	1/8"	3/16"	3/16"	3/16"	1/8"	1/16"	1/16"	-	-	1/16"	1/8"	3/16"	3/16"	1/8"	1/8"	-	-	1/16"	1/16"	1/16"	1/16"	1/16"	-	-	-	1/8"	5/16"	7/16"	9/16"	5/8"	1/16"	5/8"	7/16"	1/4"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/16"	3/4"	3/16"	3/4"	5/8"	5/16"	1/4"	1/16"	1/16"	1/4"	3/16"	1/16"	3/4"	3/4"	5/8"	1/2"	3/16"	-	1/16"	3/16"	5/16"	5/16"	1/4"	1/8"	-	5/16"	7/8"	3/16"	5/8"	1/8"	1 5/16"	1 3/4"	1 5/16"	1 1/16"
ADJUSTMENT REQUIRED FOR VERTICAL CURVE	-5/16"	-3/16"	-3/16"	-3/4"	-1/2"	-3/8"	-1/4"	-1/8"	1/4"	5/16"	3/16"	1/16"	-3/16"	-1/16"	1/8"	1/4"	1/4"	1/16"	1 3/16"	1 3/8"	1 1/16"	1 1/16"	1 5/16"	1 1/16"	7/8"	-	-1 7/8"	-2 1/16"	-2 1/16"	-2 1/16"	-2 1/16"	-2 1/16"	-2 1/16"	
DEFLECTION DUE TO HEAT LOSS	-	-	-	-	-	-	-	-	-	1/16"	1/8"	3/16"	3/16"	3/16"	1/8"	1/8"	1/16"	-	1/16"	1/8"	1/8"	1/8"	1/8"	1/8"	1/8"	1/8"	1/16"	1/8"	1/8"	1/8"	1/8"	1/8"	1/16"	
TOTAL	3/8"	1/2"	3/16"	3/16"	1/4"	0"	1/16"	-1/16"	5/16"	1 1/16"	1 1/8"	1 1/8"	1 5/16"	1 1/16"	1	1 1/2"	1 1/16"	1 1/16"	1 7/16"	1 7/8"	2 1/16"	2 1/16"	1 5/16"	1 1/16"	7/8"	-	-1 5/16"	-1 3/16"	-1 3/16"	0"	5/16"	1/2"	5/16"	1 1/16"

JOHN E. FOSTER AND ASSOCIATES, INC. 24/37  
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**GIRDER DEAD LOAD DEFLECTION AND CAMBER**  
BRIDGE NO. FRA.-315-0210  
ROAD "OE" AND RAMP "OF"  
OVER OLENTANGY RIVER

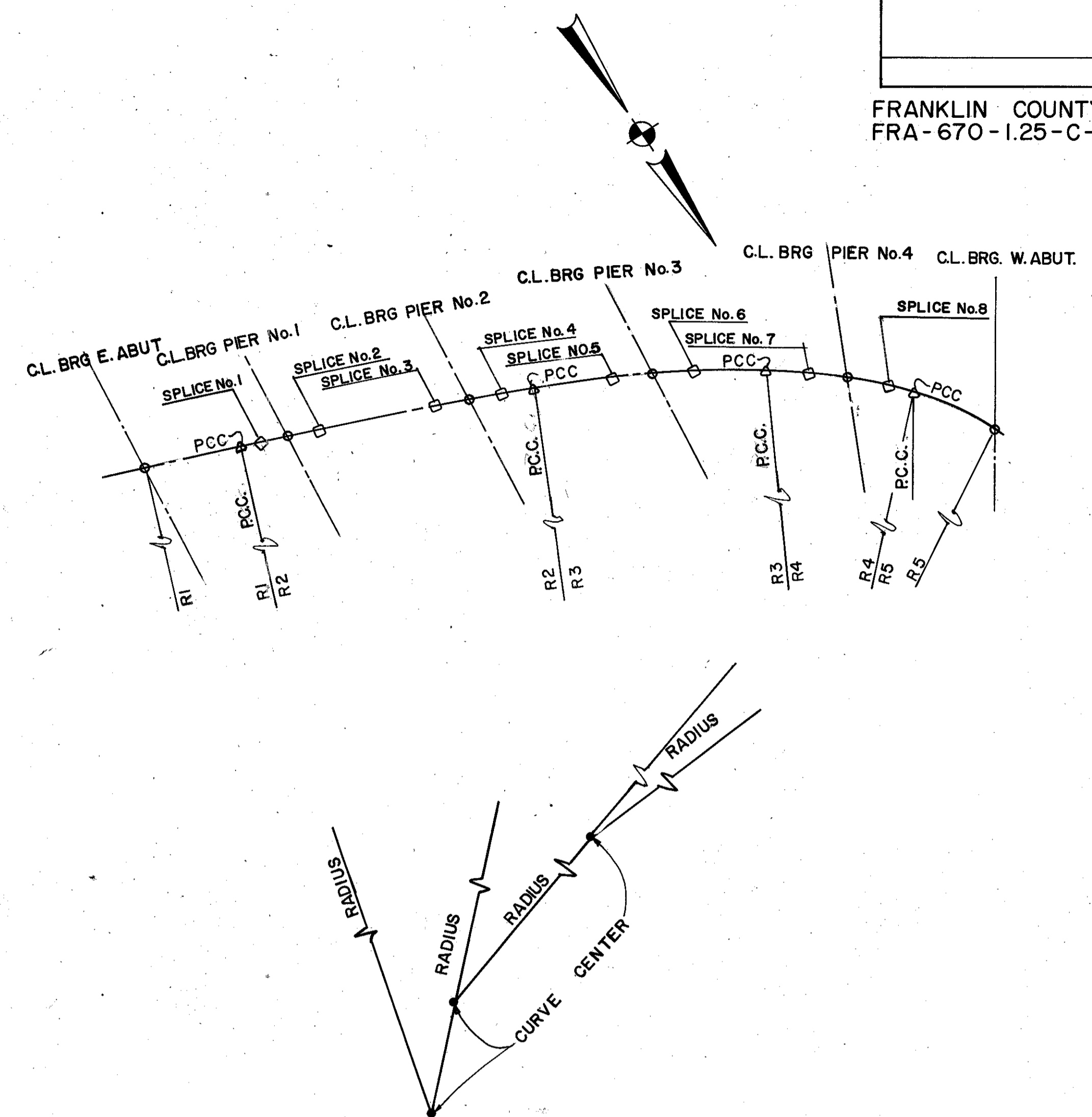
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DFS	TH		CEM			

FRANKLIN COUNTY  
FRA-670-1.25-C-2

### GIRDER HORIZONTAL CONTROL POINTS

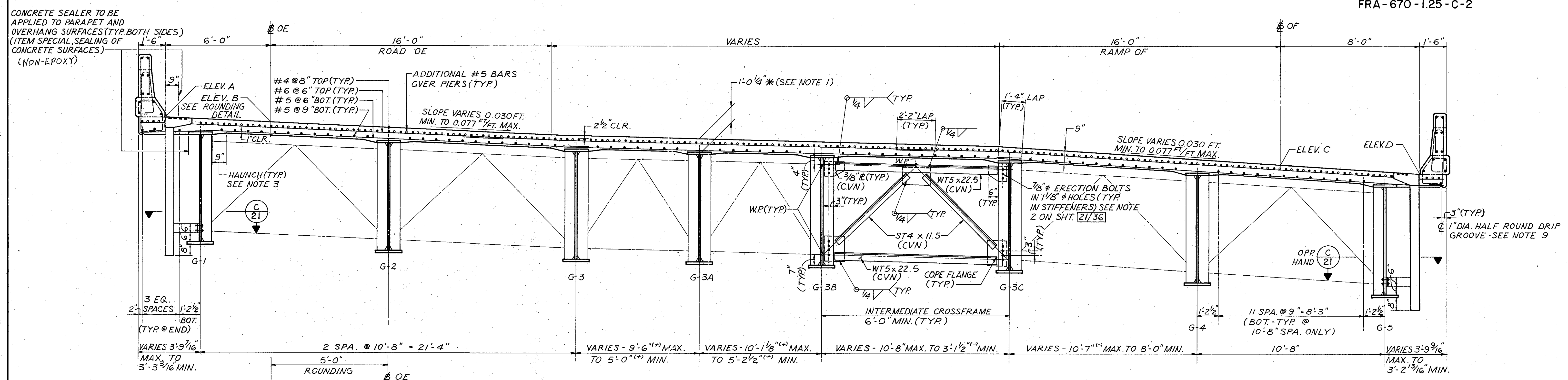
GIRDER	C.L. GIRDER	COORDINATES		RADIUS	CURVE CENTER	COORDINATES	
		NORTH	EAST			NORTH	EAST
GIRDER G1							
C.L. BRG E. ABUT.	720360.832	1854339.440		2800.000	722658.957	1855939.029	
SPLICE NO. 1 (PCC)	720414.277	1854265.285				1855939.029	
C.L. BRG PIER 1	720435.886	1854237.119	1300.000		721456.451	1855042.380	
SPLICE NO. 2	720462.421	1854204.583	1300.000		721456.451	1855042.380	
SPLICE NO. 3 (PCC)	720521.312	1854139.321					
C.L. BRG PIER 2	720546.918	1854114.021	768.000		721073.763	1854672.821	
SPLICE NO. 4	720574.250	1854089.459					
SPLICE NO. 5	720647.742	1854033.814					
C.L. BRG PIER 3	720678.581	1854014.296					
SPLICE NO. 6	720710.084	1853996.388	768.000		721073.763	1854672.821	
PCC							
SPLICE NO. 7	720793.402	1853975.422	860.000		721115.343	1854754.889	
C.L. BRG PIER 4	720827.998	1853944.313	860.000		721115.343	1854754.889	
SPLICE NO. 8 (PCC)	720861.216	1853933.293					
C.L. BRG W. ABUT.	720954.185	1853906.289	2800.000		721688.606	1856608.256	
GIRDER G2							
C.L. BRG E. ABUT.	720376.675	1854335.418		2789.333	722658.957	1855939.029	
PCC	720422.830	1854271.661					
SPLICE NO. 1	720431.489	1854260.183	1289.333		721456.451	1855042.380	
C.L. BRG PIER 1	720453.019	1854232.748					
SPLICE NO. 2	720480.198	1854200.174	1289.333		721456.451	1855042.380	
PCC	720528.985	1854146.731					
SPLICE NO. 3	720536.225	1854139.336	757.333		721073.763	1854672.821	
C.L. BRG PIER 2	720561.993	1854114.569					
SPLICE NO. 4	720588.401	1854091.463					
SPLICE NO. 5	720660.764	1854037.880					
C.L. BRG PIER 3	720691.740	1854018.901					
SPLICE NO. 6	720723.127	1854001.547	757.333		721073.763	1854672.821	
PCC	720731.487	1853997.246					
SPLICE NO. 7	720804.266	1853964.574	849.333		721115.343	1854754.889	
C.L. BRG PIER 4	720838.655	1853951.888	849.333		721115.343	1854754.889	
PCC	720864.368	1853943.483					
SPLICE NO. 8	720871.240	1853941.367	2789.333		721688.606	1856608.256	
C.L. BRG W. ABUT.	720962.677	1853915.041	2789.333		721688.606	1856608.256	
GIRDER G3							
C.L. BRG E. ABUT.	720392.600	1854331.356		2778.667	722658.957	1855939.029	
PCC	720431.381	1854278.037					
SPLICE NO. 1	720448.968	1854255.001	1278.667		721456.451	1855042.380	
C.L. BRG PIER 1	720470.408	1854228.312					
SPLICE NO. 2	720498.271	1854195.672	1278.667		721456.451	1855042.380	
PCC	720536.658	1854154.140					
SPLICE NO. 3	720551.345	1854139.351	746.667		721073.763	1854672.821	
C.L. BRG PIER 2	720577.288	1854115.126					
SPLICE NO. 4	720602.715	1854093.489					
SPLICE NO. 5	720676.317	1854041.985					
C.L. BRG PIER 3	720705.034	1854023.552	746.667		721073.763	1854672.821	
SPLICE NO. 6 (PCC)	720736.308	1854006.762					
SPLICE NO. 7	720815.198	1853971.770	838.667		721115.343	1854754.889	
C.L. BRG PIER 4	720849.380	1853959.511	838.667		721115.343	1854754.889	
PCC	720867.520	1853953.674					
SPLICE NO. 8	720881.282	1853949.456	2778.667		721688.606	1856608.256	
C.L. BRG W. ABUT.	720971.179	1853923.803	2778.667		721688.606	1856608.256	
GIRDER G3A							
C.L. BRG E. ABUT.	720406.898	1854327.708		2000.000	722093.846	1855402.047	
END GIRDER	720456.726	1854253.205	2000.000		722093.846	1855402.047	

GIRDER	C.L. GIRDER	COORDINATES		RADIUS	CURVE CENTER	COORDINATES	
		NORTH	EAST			NORTH	EAST
GIRDER G3B							
C.L. BRG E. ABUT.	720421.196	1854324.061		1210.667	721481.830	1854907.815	
SPLICE NO. 1 (PCC)	720465.380	1854250.135					
C.L. BRG PIER 1	720482.427	1854225.246	575.000		720948.138	1854562.497	
SPLICE NO. 2	720507.166	1854193.487					
END GIRDER	720558.807	1854139.358	575.000		720948.138	1854562.497	
GIRDER G3C							
C.L. BRG E. ABUT.	720435.416	1854320.433		1200.000	721481.830	1854907.815	
SPLICE NO. 1 (PCC)	720481.196	1854245.446					
C.L. BRG PIER 1	720497.880	1854221.304	735.000		721094.085	1854651.147	
SPLICE NO. 2	720521.880	1854189.838					
SPLICE NO. 3	720566.539	1854139.366	735.000		721094.085	1854651.147	
PCC	720567.236	1854138.648					
C.L. BRG PIER 2	720590.806	1854115.618	649.167		721032.560	1854591.298	
SPLICE NO. 4	720613.999	1854095.087					
SPLICE NO. 5	720682.607	1854044.534	649.167		721032.560	1854591.298	
PCC	720699.126	1854034.306					
C.L. BRG PIER 3	720712.820	1854026.277	868.667		721145.301	1854779.631	
SPLICE NO. 6	720743.358	1854009.551					
SPLICE NO. 7	720819.287	1853974.462	868.667		721145.301	1854779.631	
PCC	720831.588	1853969.590					
END GIRDER	720852.463	1853961.702	1358.667		721322.262	1855236.561	
GIRDER G4							
C.L. BRG E. ABUT.	720449.634	1854316.806		1060.667	721379.339	1854827.357	
SPLICE NO. 1	720495.310	1854241.262	1060.667		721379.339	1854827.357	
PCC	720502.538	1854230.503					
C.L. BRG PIER 1	720511.367	1854217.863	641.167		721032.559	1854591.298	
SPLICE NO. 2	720535.332	1854186.502					
SPLICE NO. 3	720577.738	1854139.377					
C.L. BRG PIER 2	720602.191	1854116.032					
SPLICE NO. 4	720624.677	1854096.599					
SPLICE NO. 5	720692.677	1854047.630	641.167		721032.559	1854591.298	
PCC	720703.236	1854041.170					
C.L. BRG PIER 3	720722.839	1854029.782	860.667		721145.301	1854779.631	
SPLICE NO. 6	720753.228	1854013.455					
SPLICE NO. 7	720827.423	1853979.818	860.667		721145.301	1854779.631	
PCC	720834.477	1853977.050					
C.L. BRG PIER 4	720860.374	1853967.325	1350.667		721322.262	1855236.561	
SPLICE NO. 8	720890.397	1853956.798					
C.L. BRG W. ABUT.	720977.746	1853930.571	1350.667		721322.262	1855236.561	
GIRDER G5							
C.L. BRG E. ABUT.	720463.849	1854313.180		1050.000	721379.339	1854827.357	
SPLICE NO. 1 (PCC)	720511.356	1854236.506					
C.L. BRG PIER 1	720527.621	1854213.717	630.500		721032.559	1854591.298	
SPLICE NO. 2	720552.832	1854182.162					
SPLICE NO. 3	720592.888	1854139.391					
C.L. BRG PIER 2	720617.607	1854116.593					
SPLICE NO. 4	720639.090	1854098.639					
SPLICE NO. 5	720706.252	1854051.804	630.500		721032.559	1854591.298	
PCC	720708.714	1854050.322					
C.L. BRG PIER 3	720736.310	1854034.496	850.000		721145.301	1854779.631	
SPLICE NO. 6	720766.499	1854018.705	850.000		721145.301	1854779.631	
SPLICE NO. 7 (PCC)	720838.329	1853986.997					
C.L. BRG PIER 4	720870.956	1853974.846	1340.000		721322.262	1855236.561	
SPLICE NO. 8	720900.263	1853964.744					
C.L. BRG W. ABUT.	720986.279	1853939.366	1340.000		721322.262	1855236.561	

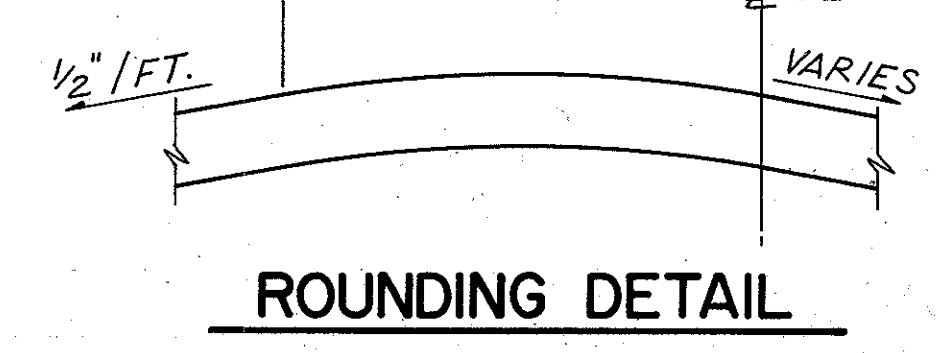


**SCHEMATIC GIRDER LAYOUT**

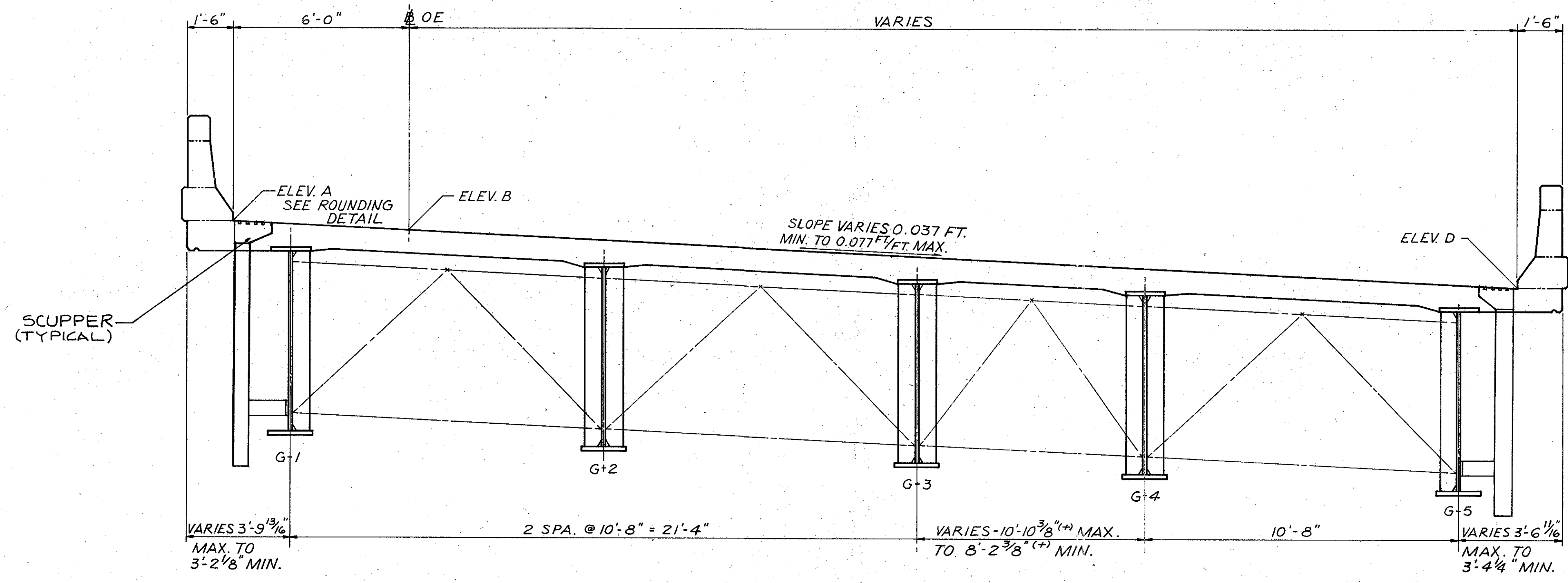
JOHN E. FOSTER AND ASSOC., INC.		COLUMBUS, OHIO		CLEVELAND, OHIO	
GIRDER LAYOUT HORIZONTAL CONTROL					
BRIDGE NO. FRA - 315 - 0210 ROAD "OE" AND RAMP "OF" OVER OLENTANGY RIVER					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
HWR	TLD	-	CEM		



CROSS SECTION - STA. 156+69± TO STA. 163+20± (OE)



ROUNDING DETAIL



CROSS SECTION - STA. 163+20± TO STA. 164+30± (OE)

NOTES

1. DECK SLAB DEPTH: \* THIS IS THE DESIGN DIMENSION. THE QUANTITY OF DECK CONCRETE TO BE PAID FOR SHALL BE BASED UPON THIS DIMENSION, EVEN THOUGH DEVIATION FROM IT MAY BE NECESSARY BECAUSE THE TOP FLANGE OF THE GIRDER MAY NOT HAVE THE EXACT CAMBER OR CONFORMATION REQUIRED TO PLACE IT PARALLEL TO THE FINISHED GRADE. DEDUCTION SHALL BE MADE FOR VOLUME OF ENCASED STEEL PLATES AS PER 511.18.
2. CONCRETE PARAPETS ABOVE UPPER CONSTRUCTION JOINT SHALL BE PLACED IN ALTERNATING SECTIONS BY THE USE OF BULKHEADS. CLOSING SECTIONS SHALL BE PLACED AFTER REMOVAL OF BULKHEADS AND AFTER PLACEMENT OF EXPANSION JOINT FILLER. EXPOSED EDGES OF THE FILLER SHALL BE FLUSH WITH THE SURFACE OF CONCRETE AND SHALL BE FREE OF MORTAR.
3. A TYPICAL HAUNCH WIDTH OF 9" SHALL BE USED FOR COMPUTING THE QUANTITY OF CONCRETE. HOWEVER, THE HAUNCH WIDTH MAY VARY BETWEEN 6" AND 12" PROVIDED THAT THE SLOPE SHALL NOT BE MORE THAN 1:4 FOR A HAUNCH LESS THAN 9" IN WIDTH.
4. FOR ALL INTERMEDIATE CROSSFRAMES, ERECTION BOLTS SHALL BE DRAWN UP AS TIGHT AS POSSIBLE WITHOUT BEING TIGHT ENOUGH TO PREVENT RELATIVE VERTICAL MOVEMENT OF GIRDERS DURING PLACEMENT OF THE CONCRETE FOR THE SUPERSTRUCTURE SLAB. THESE CONNECTIONS SHALL NOT BE FULLY TIGHTENED UNTIL AFTER THE CONCRETE SLAB HAS BEEN PLACED. SEE SHEET 22/37 FOR ERECTION BOLT NOTE.
5. CONCRETE FOR PARAPETS SHALL NOT BE PLACED UNTIL ALL CROSSFRAME AND BRACING MEMBERS HAVE BEEN PERMANENTLY FASTENED AS SHOWN.
6. AT HIS OPTION, THE CONTRACTOR MAY PROPOSE A DIFFERENT MANNER OR SEQUENCE OF ERECTION, SUBJECT TO THE WRITTEN APPROVAL OF THE DIRECTOR.
7. THE PREFORMED EXPANSION JOINT FILLER IN THE RAILING PARAPET DEFLECTION JOINTS MAY BE EITHER 1/4" GRAY SPONGE RUBBER OR 1/4" GRAY CELLULAR POLYVINYL CHLORIDE (PVC) SPONGE. IF RUBBER IS USED, IT SHALL MEET THE REQUIREMENTS OF AASHTO M-153, TYPE I. IF PVC IS USED, THE DENSITY OF PVC SPONGE SHALL NOT BE LESS THAN 20 LBS PER CUBIC FEET. THE DEFLECTION JOINT SHALL EXTEND FROM TOP OF PARAPET TO FIRST CONSTRUCTION JOINT AND SHALL BE INCLUDED FOR PAYMENT WITH SUPERSTRUCTURE CONCRETE.
8. ALL SLAB AND PARAPET STEEL REINFORCING BARS SHALL BE EPOXY COATED. THESE BARS ARE PREFIXED E.
9. DRIP GROOVES SHALL TERMINATE 2'-0" FROM FACES OF ABUTMENTS.
10. FIELD BEND TRANSVERSE BARS TO FIT CROWN. BENDING TO BE INCLUDED IN ITEM 509 FOR PAYMENT. EPOXY COATED BARS DAMAGED BY FIELD BENDING SHALL BE REPAIRED AS PER APPROVED MANUFACTURER'S RECOMMENDATION'S.
11. "S" BARS = SUPERSTRUCTURE REINFORCING.
12. SEE FRAMING PLANS FOR LIMITS OF GIRDERS 3A, 3B AND 3C.
13. SEE SHEET 30/37 FOR ELEVATIONS A, B, C & D.
14. DECK SECTIONS SHOWN DEPICT CONDITIONS AT MAXIMUM AND MINIMUM NUMBER OF STRINGER LINES. SEE SHEET 33/37 FOR GRAPHIC PRESENTATION OF DECK SHAPES AND SLOPES.

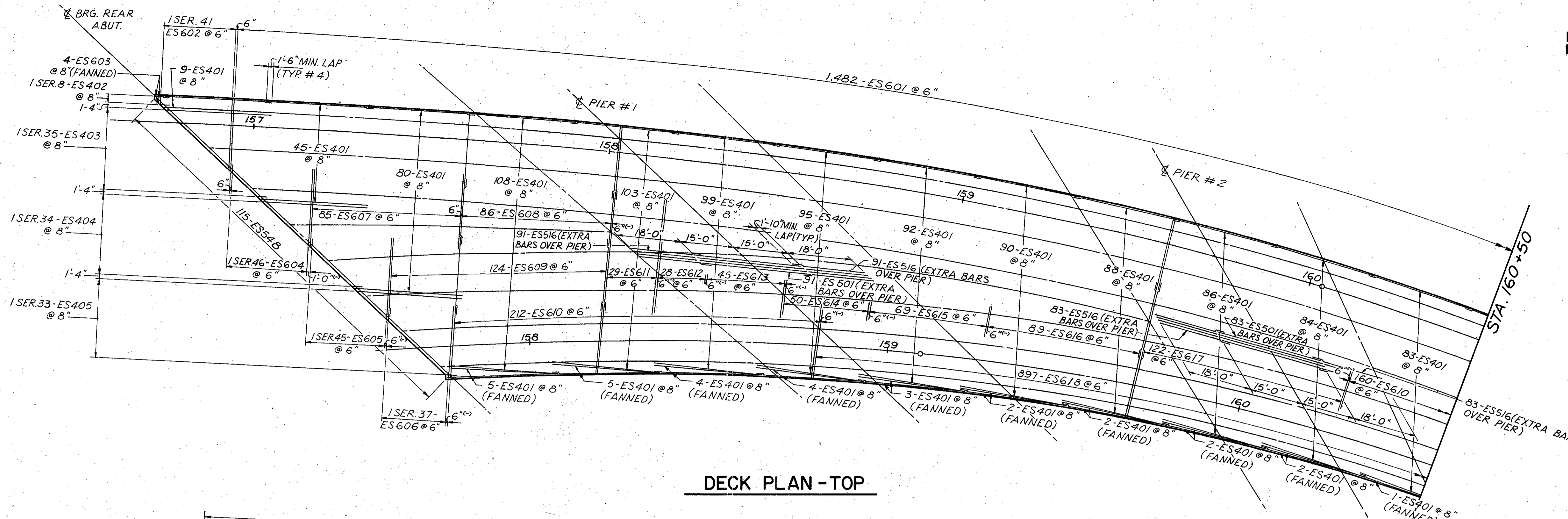
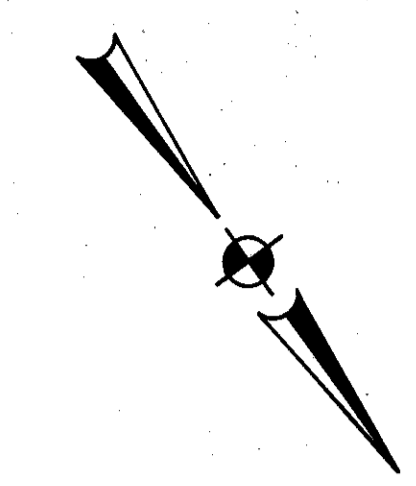
JOHN E. FOSTER AND ASSOCIATES, INC. 29/37  
555 Buttles Ave., Columbus, Ohio 43215

DECK SECTION

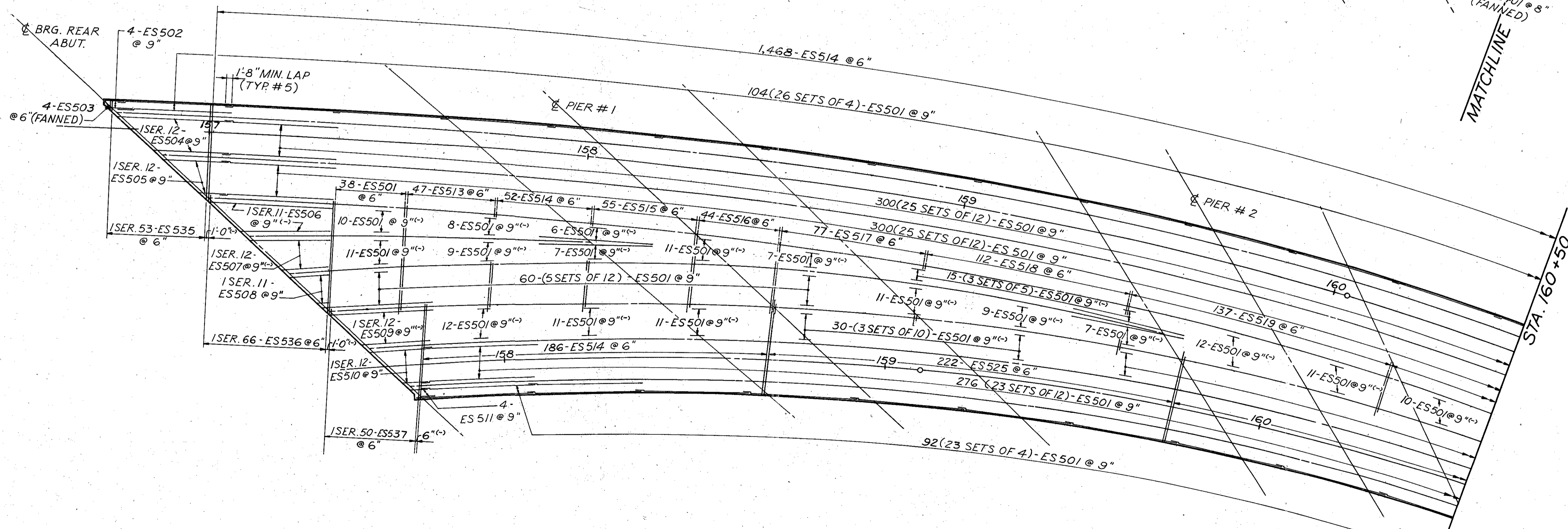
BRIDGE NO. FRA-315-0210  
ROAD "OE" AND RAMP "OF"  
OVER OLENTANGY RIVER

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
HSS	DMT	-	HWR			

FRANKLIN COUNTY  
FRA-670-125-C-2



**DECK PLAN - TOP**



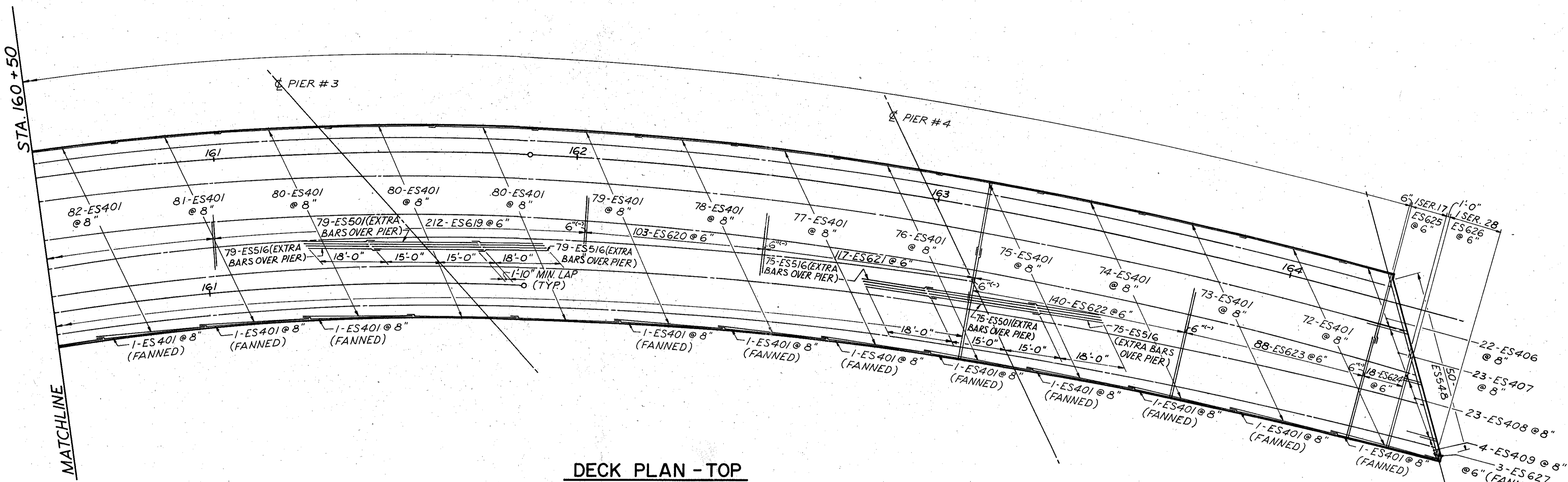
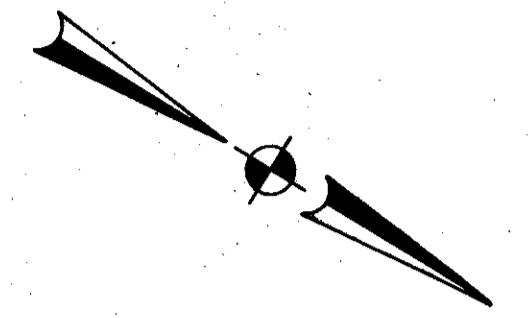
**DECK PLAN - BOTTOM**

JOHN E. FOSTER AND ASSOCIATES, INC. 30/37  
555 Buttles Ave., Columbus, Ohio 43215

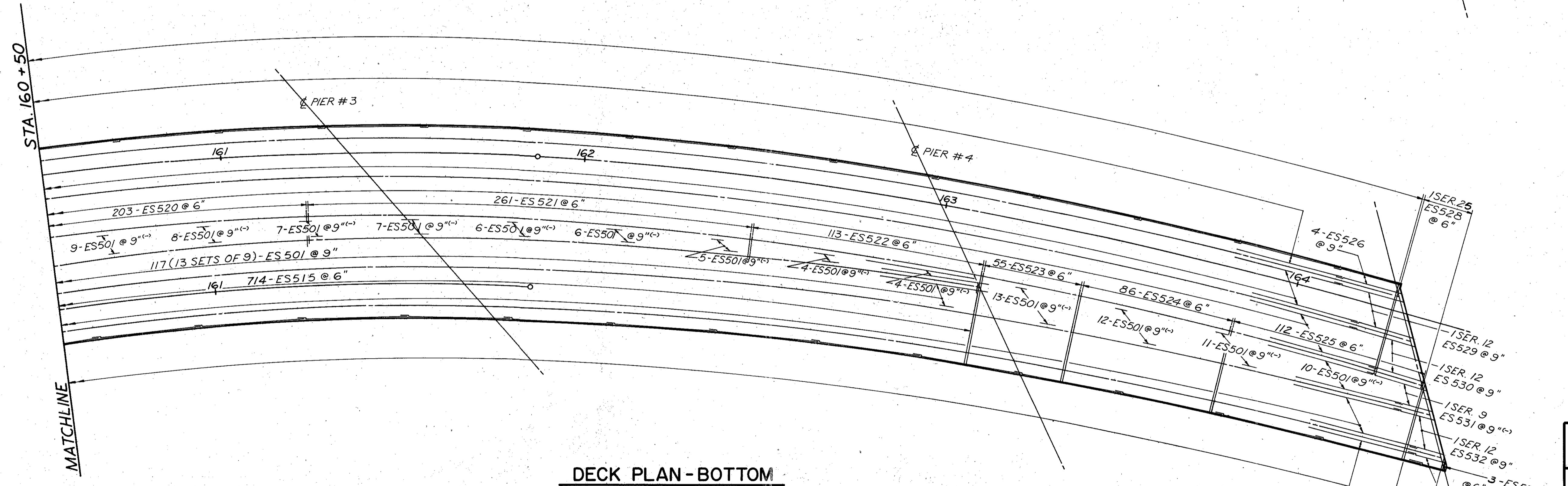
**DECK SLAB  
PLAN I**  
BRIDGE NO. FRA-315-0210  
ROAD "OE" AND RAMP "OF"  
OVER OLENTANGY RIVER

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
HSS	DMT	-	HWR			

FRANKLIN COUNTY  
FRA-670-1.25-C-2



**DECK PLAN - TOP**



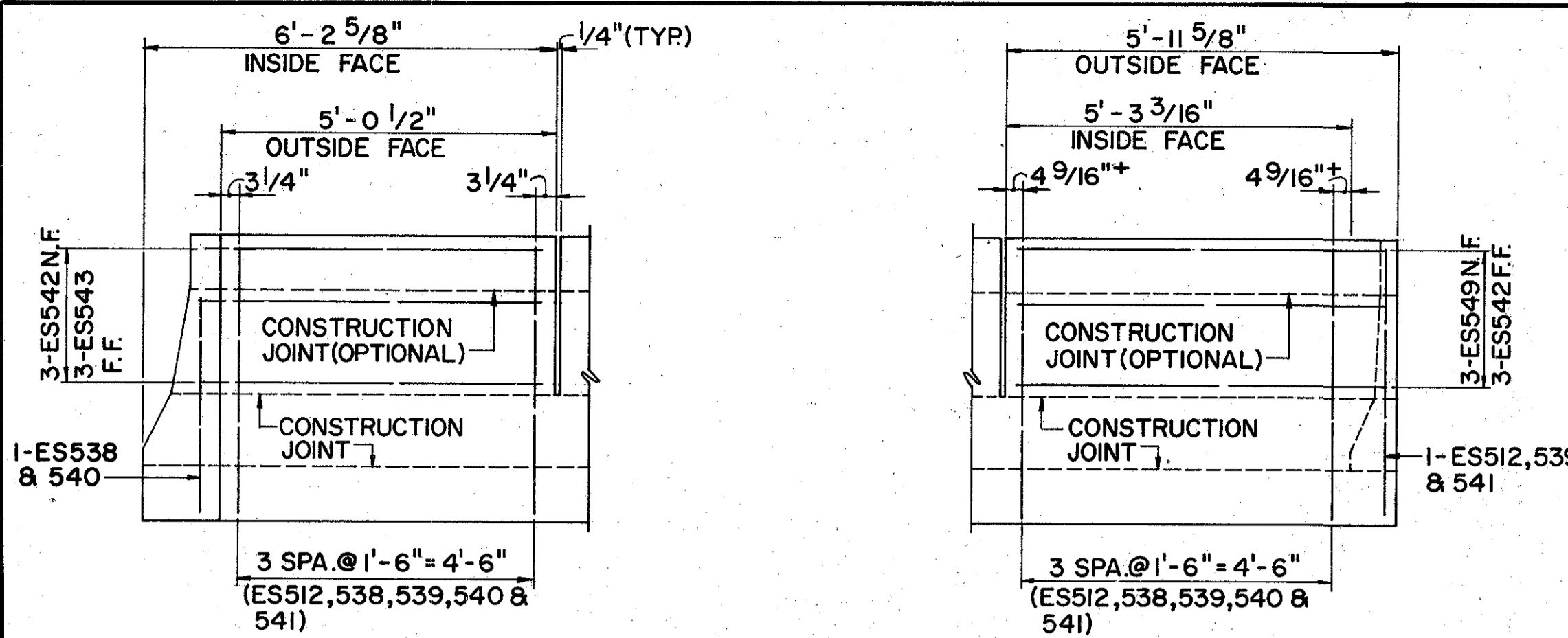
**DECK PLAN - BOTTOM**

JOHN E. FOSTER AND ASSOCIATES, INC. 31/37  
555 Buttles Ave., Columbus, Ohio 43215

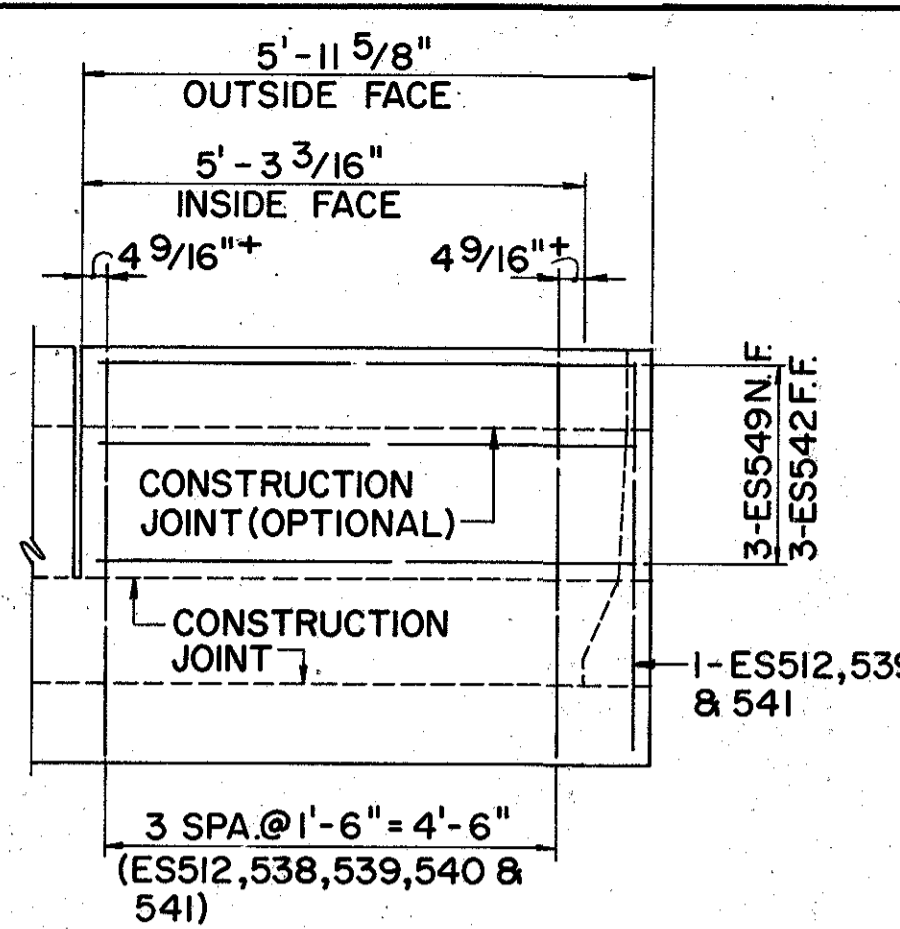
**DECK SLAB  
PLAN 2**  
BRIDGE NO. FRA-315-0210  
ROAD "OE" AND RAMP "OF"  
OVER OLENTANGY RIVER

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
HSS	DMT	-	HWR			

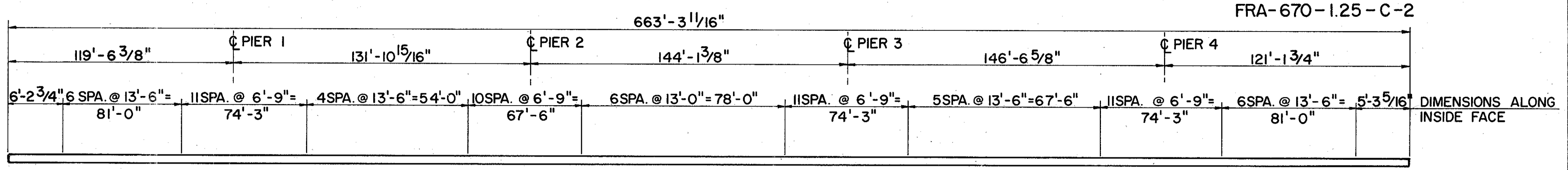
FRANKLIN COUNTY  
FRA-670-1.25-C-2



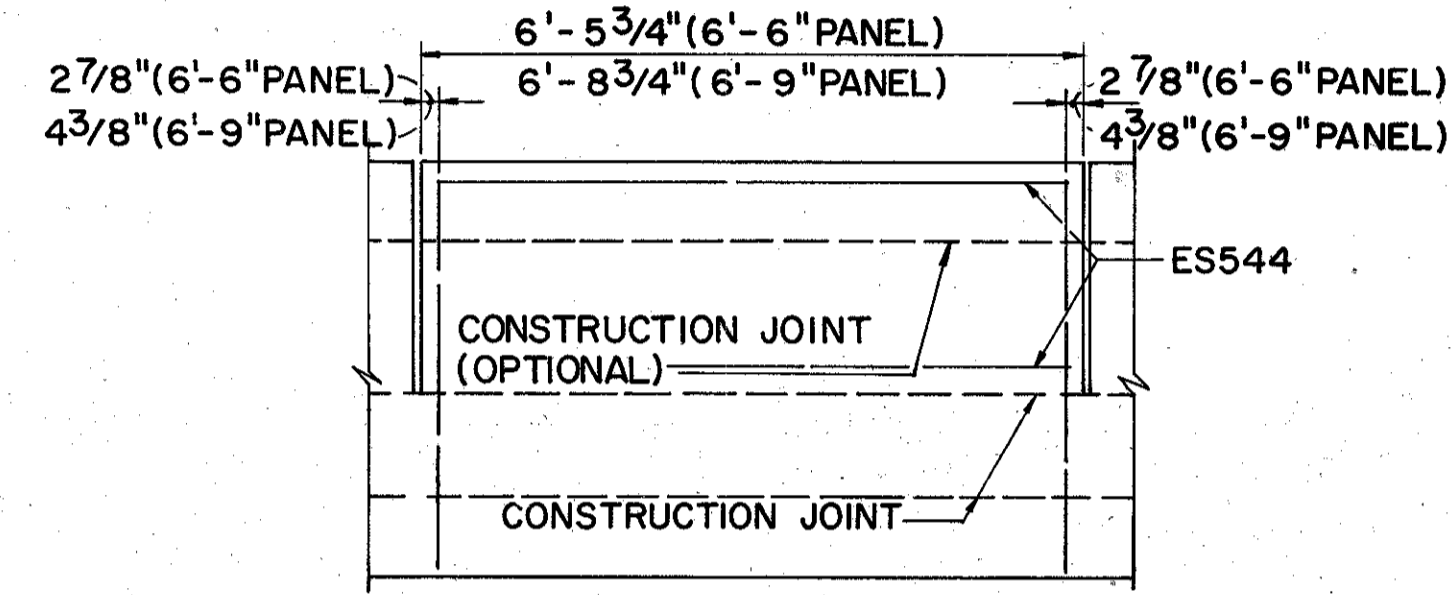
**6'-2 3/4" PANEL**



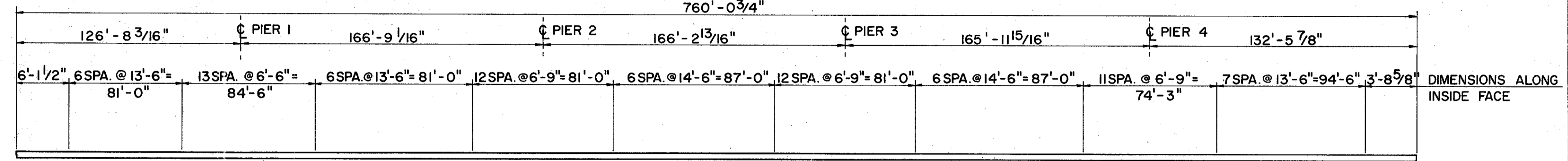
**5'-3 5/16" PANEL**



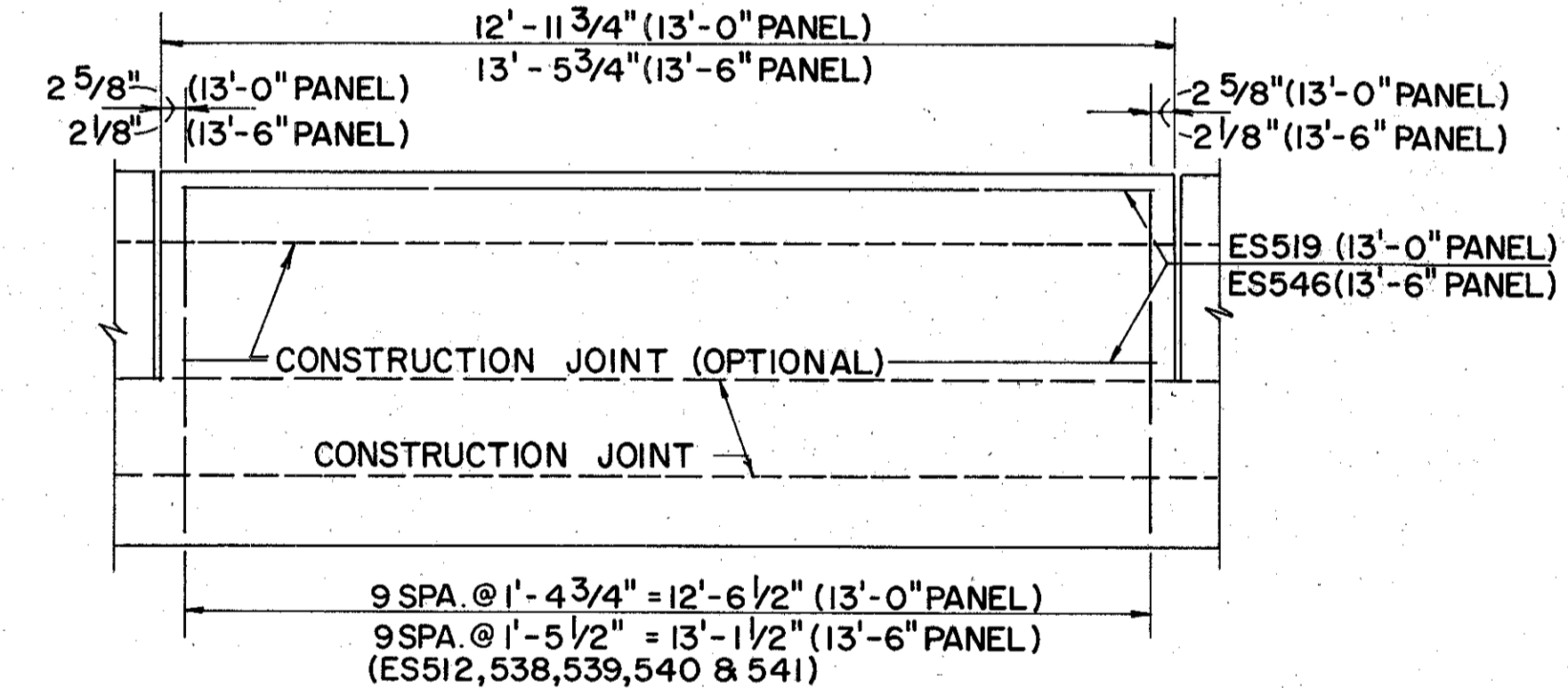
**DEVELOPED RIGHT PARAPET ELEVATION**



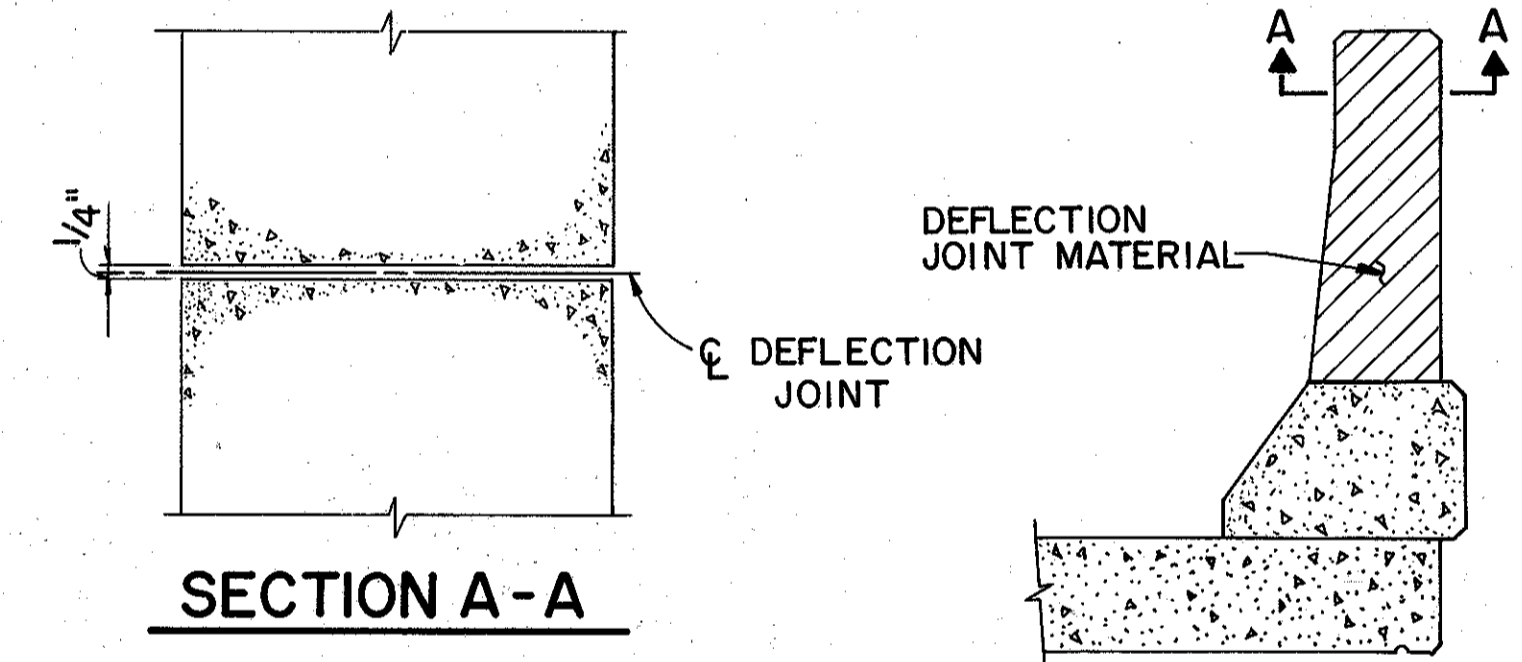
**6'-6" & 6'-9" c PANELS**



**DEVELOPED LEFT PARAPET ELEVATION**

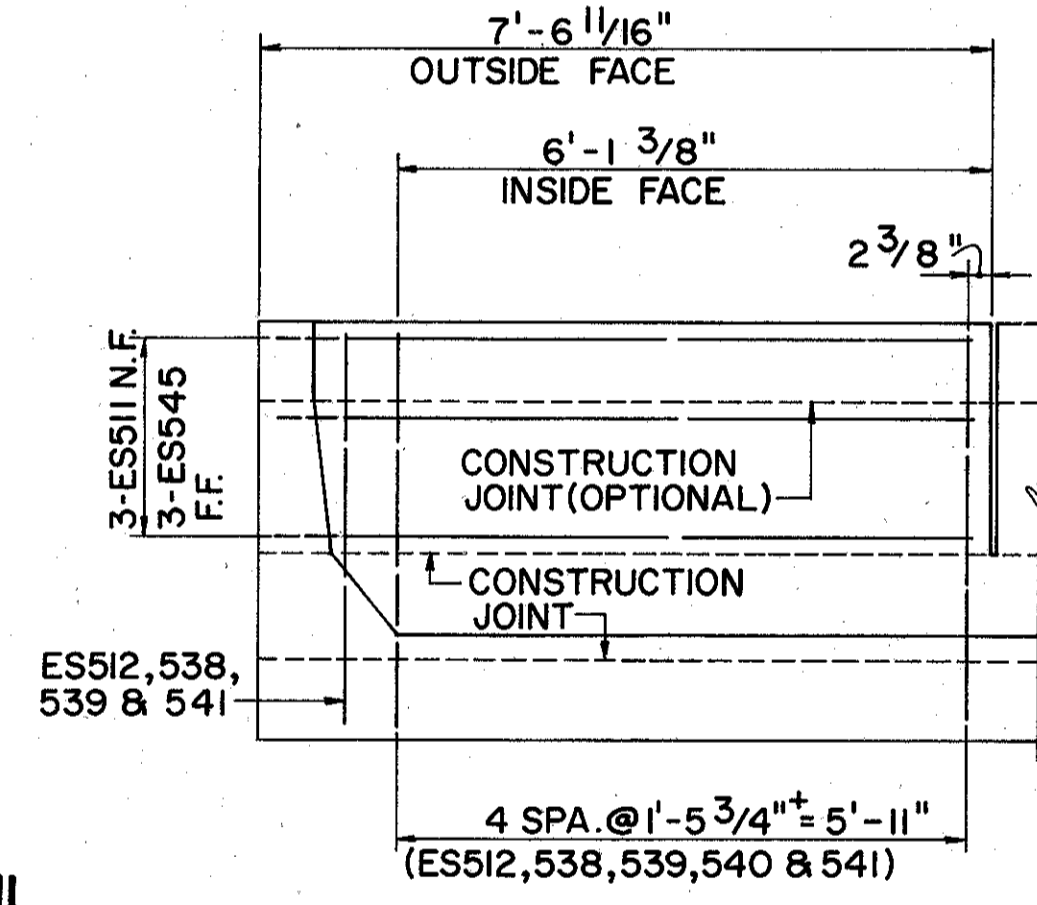


**13'-0" & 13'-6" c PANELS**

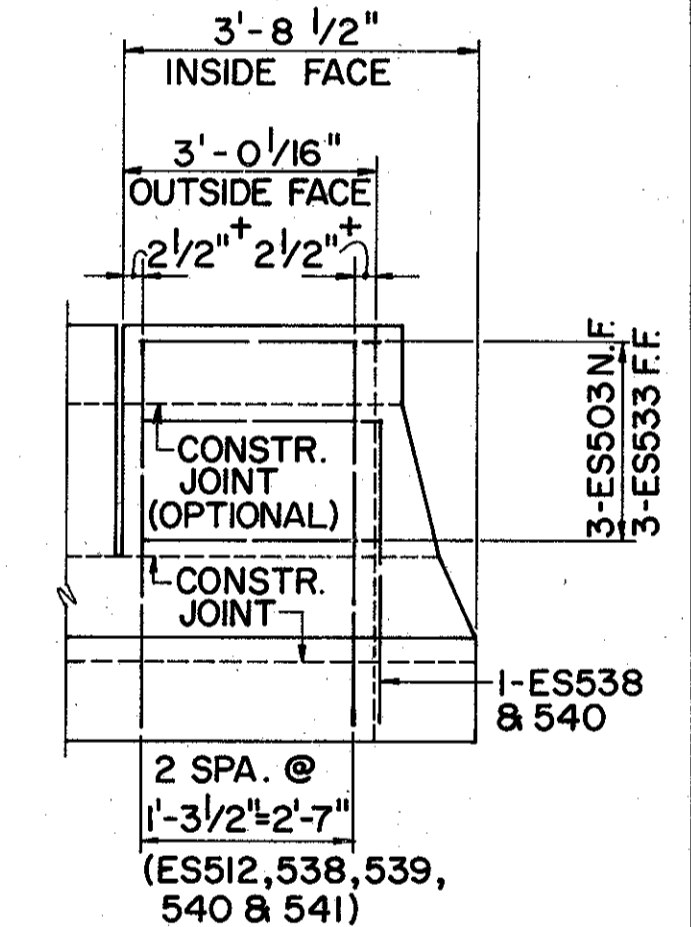


**SECTION A-A**

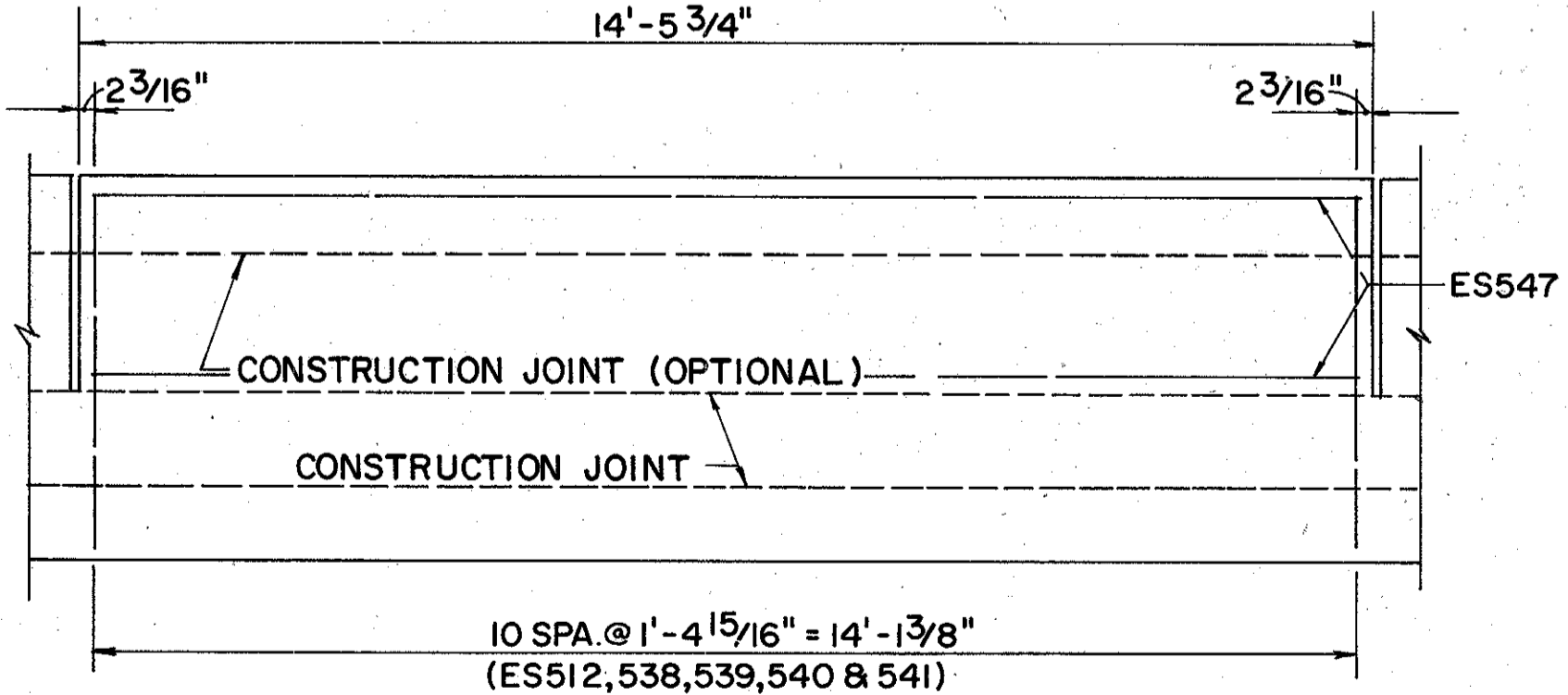
**TYPICAL PARAPET DEFLECTION JOINT DETAIL**



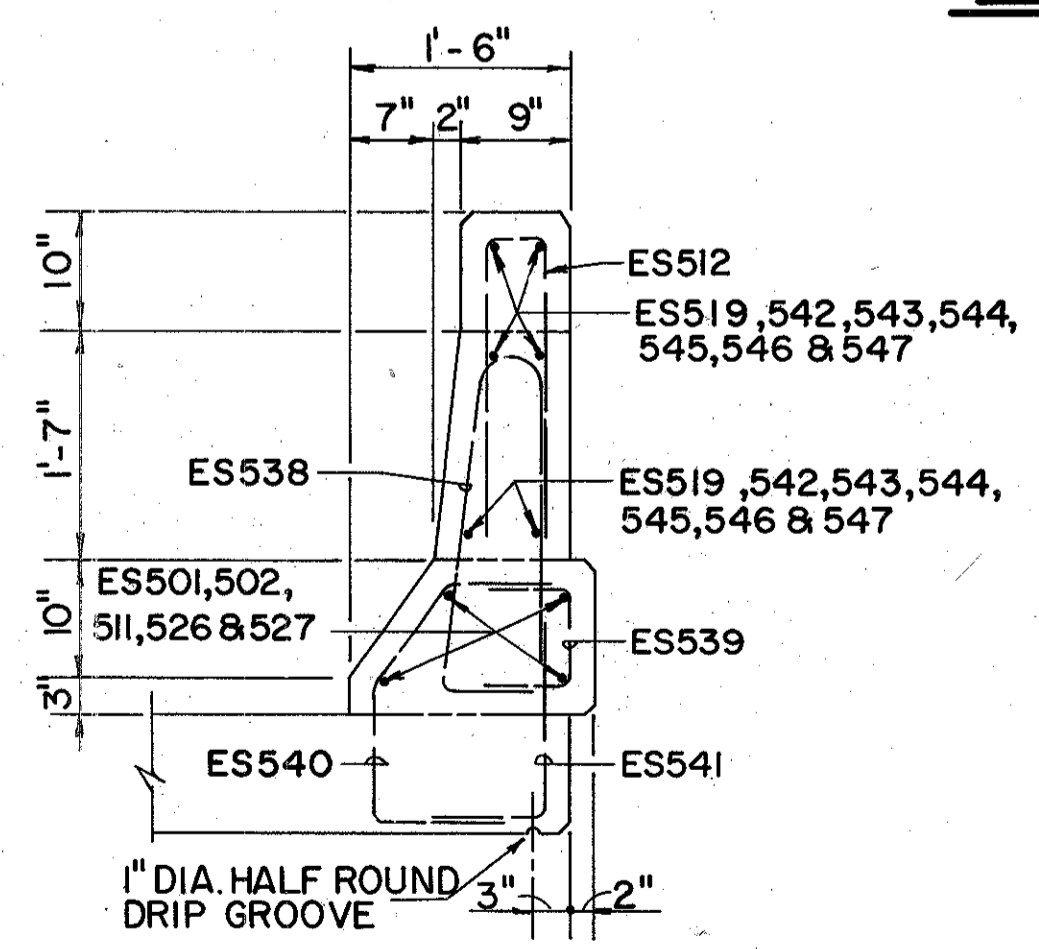
**6'-1 1/2" PANEL**



**3'-8 5/8" PANEL**



**14'-6" c PANEL**



**PARAPET DETAIL**

JOHN E. FOSTER AND ASSOCIATES, INC. 32/37  
555 Buttles Ave., Columbus, Ohio 43215

**PARAPET DETAILS**

BRIDGE NO. FRA-315-0210  
ROAD "OE" AND RAMP "OF"  
OVER OLENTANGY RIVER

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.F.S.	D.M.T.	D.L.W.	H.V.R.			



FRANKLIN COUNTY  
FRA-670-1.25-C-2

**NOTES**

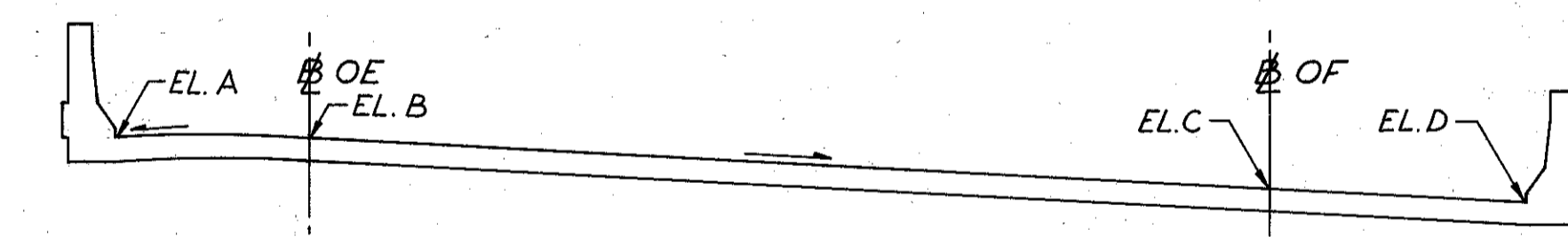
1. DECK SCREED AND BASELINE ELEVATIONS SHOWN ARE ELEVATIONS PRIOR TO PLACEMENT OF ANY CONCRETE.
2. FOR ELEVATIONS ALONG CENTERLINE OF GIRDERS G-3A, G-3B AND G-3C SEE SHEET [31/37].
3. FOR LOCATION OF ELEVATIONS A THRU D SEE SHEET [26/37].

ELEVATIONS AT TOP OF FINAL PAVEMENT ALONG CENTERLINE OF GIRDERS																															
		SPAN - 1									SPAN - 2									SPAN - 3											
POINT ON SPAN	€ BRG. RABUT.	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	€ BRG. PIER 1	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	€ BRG. PIER 2	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	
GIRDER	G-1	736.46	736.68	736.87	737.06	737.22	737.37	737.50	737.63	737.73	737.82	737.90	737.98	738.03	738.06	738.06	738.03	737.98	737.90	737.80	737.67	737.51	737.33	737.12	736.98	736.62	736.83	736.01	735.67	735.32	734.98
GIRDER	G-2	736.48	736.66	736.83	736.98	737.11	737.23	737.33	737.42	737.50	737.55	737.59	737.62	737.62	737.59	737.55	737.48	737.37	737.25	737.11	736.94	736.75	736.53	736.30	736.04	735.76	735.46	735.13	734.80	734.47	734.13
GIRDER	G-3	736.33	736.48	736.61	736.72	736.82	736.91	736.98	737.03	737.06	737.09	737.14	737.11	737.05	736.98	736.87	736.73	736.56	736.39	736.19	735.99	735.76	735.52	735.26	734.98	734.69	734.38	734.07	733.75	733.42	733.10
GIRDER	G-4	737.67	737.48	737.30	737.12	736.94	736.77	736.61	736.45	736.29	736.14	735.99	735.81	735.63	735.44	735.24	735.06	734.88	734.69	734.50	734.30	734.10	733.87	733.63	733.38	733.12	732.85	732.58	732.29	732.01	731.71
GIRDER	G-5	737.13	736.91	736.69	736.48	736.27	736.07	735.88	735.69	735.50	735.32	735.13	734.92	734.72	734.53	734.32	734.11	733.90	733.69	733.48	733.27	733.05	732.81	732.56	732.31	732.06	731.80	731.53	731.25	730.97	730.69
DECK SCREED AND BASE LINE ELEVATION																															
ELEVATION A		736.35	736.60	736.83	737.03	737.20	737.35	737.47	737.57	737.66	737.74	737.81	737.90	737.99	738.05	738.08	738.07	738.00	737.90	737.77	737.61	737.45	737.28	737.11	736.91	736.68	736.40	736.07	735.71	735.33	735.95
ELEVATION B		736.54	736.79	737.01	737.20	737.36	737.49	737.61	737.69	737.76	737.82	737.88	737.95	738.02	738.06	738.07	738.04	737.97	737.85	737.69	737.52	737.34	737.16	736.98	736.77	736.53	736.24	736.91	735.54	735.16	734.79
ELEVATION C		737.45	737.28	737.11	736.94	736.76	736.58	736.39	736.20	736.01	735.82	735.63	735.44	735.25	735.07	734.88	734.69	734.49	734.29	734.08	733.87	733.65	733.43	733.21	732.99	732.75	732.49	732.21	731.91	731.60	731.28
ELEVATION D		737.04	736.85	736.66	736.46	736.26	736.06	735.84	735.63	735.41	735.19	734.98	734.76	734.57	734.39	734.17	733.96	733.74	733.53	733.30	733.08	732.86	732.63	732.41	732.19	731.95	731.70	731.42	731.13	730.82	730.51

ELEVATIONS AT TOP OF FINAL PAVEMENT ALONG CENTERLINE OF GIRDERS																						
		SPAN - 4									SPAN - 5											
POINT ON SPAN	€ BRG. PIER 3	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	€ BRG. PIER 4	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	6.0	
GIRDER	G-1	734.64	734.29	733.96	733.63	733.32	733.03	732.74	732.48	732.23	731.99	731.77	731.61	731.46	731.33	731.20	731.07	730.96	730.85	730.75	730.66	730.57
GIRDER	G-2	733.80	733.47	733.14	732.84	732.56	732.20	732.06	731.83	731.61	731.41	731.22	731.07	730.94	730.81	730.70	730.60	730.51	730.43	730.37	730.32	730.27
GIRDER	G-3	732.78	732.45	732.15	731.88	731.64	731.42	731.21	731.02	730.84	730.67	730.51	730.40	730.29	730.19	730.11	730.04	729.98	729.93	729.89	729.87	729.85
GIRDER	G-4	731.42	731.14	730.93	730.73	730.56	730.41	730.27	730.14	730.02	729.91	729.82	729.76	729.70	729.66	729.62	729.59	729.56	729.55	729.54	729.53	729.54
GIRDER	G-5	730.40	730.17	730.01	729.86	729.73	729.61	729.50	729.41	729.32	729.25	729.19	729.15	729.12	729.10	729.09	729.08	729.08	729.09	729.10	729.12	729.15
DECK SCREED AND BASE LINE ELEVATION																						
ELEVATION A		734.59	734.26	733.95	733.66	733.37	733.08	732.79	732.50	732.21	731.95	731.71	731.56	731.43	731.31	731.21	731.10	730.99	730.88	730.76	730.63	730.51
ELEVATION B		734.43	734.11	733.80	733.52	733.25	732.97	732.69	732.41	732.13	731.88	731.66	731.51	731.39	731.29	731.19	731.09	730.98	730.88	730.77	730.65	730.53
ELEVATION C		730.97																				
ELEVATION D		730.20	729.98	729.84	729.73	729.62	729.51	729.41	729.31	729.21	729.13	729.08	729.06	729.05	729.05	729.06	729.07	729.08	729.09	729.09	729.08	729.08



DECK SHAPE - STA. 156+69± TO STA. 158+29± (B OE)

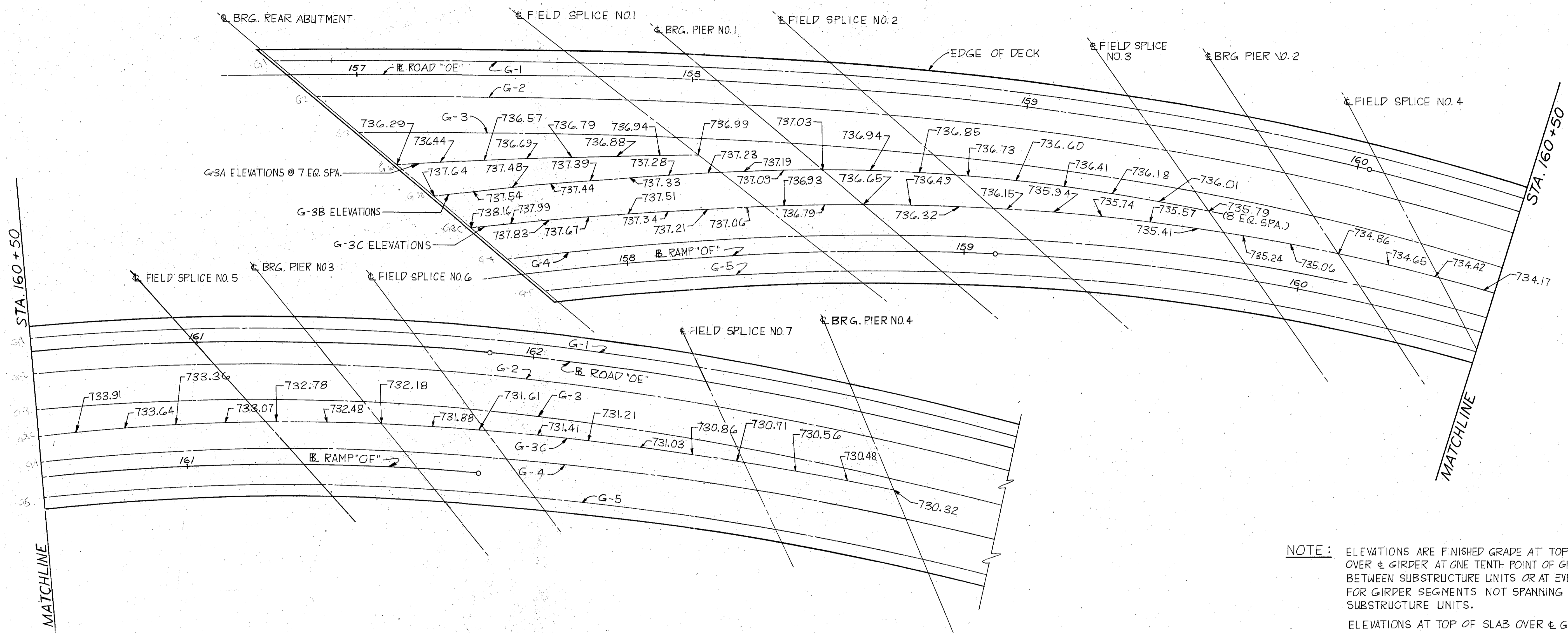
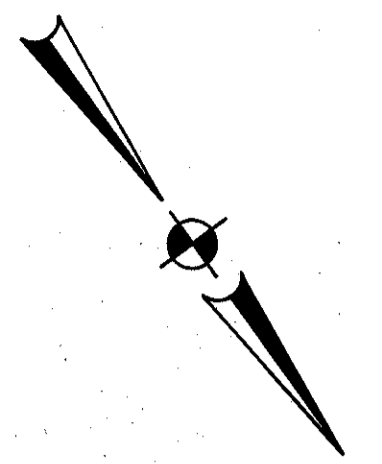


DECK SHAPE - STA. 158+29± TO STA. 164+30± (B OE)

JOHN E. FOSTER AND ASSOCIATES, INC. [33/37]  
555 Buttles Ave., Columbus, Ohio 43215

**DECK CONTROL ELEVATIONS**  
BRIDGE NO. FRA.-315-0210  
ROAD "OE" AND RAMP "OF"  
OVER OLENTANGY RIVER

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CEM	T.H.	-	DFS			



**NOTE:** ELEVATIONS ARE FINISHED GRADE AT TOP OF SLAB OVER & GIRDER AT ONE TENTH POINT OF GIRDER LENGTH BETWEEN SUBSTRUCTURE UNITS OR AT EVEN SPACES FOR GIRDER SEGMENTS NOT SPANNING BETWEEN SUBSTRUCTURE UNITS.  
ELEVATIONS AT TOP OF SLAB OVER & GIRDERS G-1, G-2, G-3, G-4, AND G-5 ARE GIVEN ON SHEET 30/37.

JOHN E. FOSTER AND ASSOCIATES, INC. 34/37  
555 Buttles Ave., Columbus, Ohio 43215

**DECK CONTROL ELEVATIONS**  
BRIDGE NO. FRA-315-0210  
ROAD "OE" AND RAMP "OF"  
OVER OLENTANGY RIVER

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
CEM	TLH	JMR	HSS			

FRANKLIN COUNTY  
FRA-670-1.25-C-2

REINFORCING STEEL SCHEDULE									
REAR ABUTMENT									
MARK	NO.	LENGTH	TYPE	A	B	C	D	INCR.	WEIGHT
A501	16	30'-0"	STR.						501
A502	15	29'-7"	STR.*						463
A503	3	3'-2"	STR.						10
A504	2	10'-8"	4	1'-8"	9'-0"	7'-0 <sup>3/4</sup> "			22
A505	3	31'-7"	STR.						99
A506	-								-
A507	THRU								-
A511	NOT	USED							-
A512	84	10'-10"	1	1'-8"	7'-9"				949
A513	1	8'-11"	1	1'-8"	5'-10"				9
A514	-								-
A515	4	5'-2"	1	1'-8"	2'-1"				22
A516	2	12'-1"	2	0'-8 <sup>1/2</sup> "	11'-6"				26
A517	23	11'-7"	2	0'-8 <sup>1/2</sup> "	11'-0"				290
A518	-								-
A519	13	11'-1"	2	0'-8 <sup>1/2</sup> "	10'-6"				157
A520	51	10'-3"	2	0'-8 <sup>1/2</sup> "	9'-8"				567
A521	THRU	A523	-						-
A524	12	25'-8"	STR.						321
A525	-								-
A526	2SER OF 3	22'-1" TO 26'-0"	STR.					1'-11 <sup>1/2</sup> "	150
A527	6	26'-3"	STR.						164
A528	5	25'-3"	STR.						132
A529	-								-
A530	10	9'-1"	STR.						95
A531	-								-
A532	2SER OF 3	12'-0" TO 16'-0"	STR.					2'-0"	88
A533	-								-
A534	2	9'-3"	4	1'-8"	7'-7"	5'-5 <sup>1/4</sup> "			19
A535	45	10'-10"	13	3'-0"	2'-3"				508
A536	ISER OF 15	8'-6" TO 8'-10"	STR.					0'-0 <sup>5/16</sup> "	136
A601	84	12'-5"	1	2'-6"	7'-9"				1,567
A602	1	10'-6"	1	2'-6"	5'-10"				16
A603	2	8'-7"	1	2'-6"	3'-11"				26
A604	4	6'-9"	1	2'-6"	2'-1"				41
A605	2	12'-2"	2	0'-10"	11'-6"				38
A606	23	11'-7"	2	0'-10"	11'-0"				420
A607	-								-
A608	13	11'-2"	2	0'-10"	10'-6"				228
A609	54	10'-4"	2	0'-10"	9'-8"				872
A610	THRU								-
A613	-								-
A614	57	15'-11"	1	7'-5"	1'-5"				1,363
A615	-								-
A616	10	8'-0"	STR.						120
A617	ISER OF 3	7'-8" TO 13'-4"	1	3'-6" TO 6'-4"	1'-0"			A = 1'-5" LENGTH = 2'-10"	47
A618	5	5'-8"	1	2'-6"	1'-0"				43
A619	9	26'-10"	1	13'-0"	1'-2"				363
A620	3	21'-4"	1	10'-3"	1'-2"				96
A621	16	7'-6"	STR.						180
A622	ISER OF 4	7'-8" TO 15'-0"	1	3'-6" TO 7'-2"	1'-0"			A = 1'-2 <sup>1/2</sup> " TO 2'-5 <sup>1/6</sup> "	68
A623	16	24'-6"	1	11'-10"	1'-2"				589
A624	4	20'-0"	1	9'-7"	1'-2"				120
A625	-								-
A626	1	26'-1"	1	12'-4"	1'-9"				39
A801	2	47'-5"	STR.						253
A802	2	45'-6"	STR.						243
A803	3	43'-3"	STR.						346
A804	5	41'-7"	STR.						555
A805	5	40'-7"	STR.						542
A806	5	39'-3"	STR.						524

REINFORCING STEEL SCHEDULE									
REAR ABUTMENT (CONT.)									
MARK	NO.	LENGTH	TYPE	A	B	C	D	INCR.	WEIGHT
A807	3	38'-5"	STR.						308
A808	3	36'-3"	STR.						290
A809	2	33'-1"	STR.						177
A810	6	18'-1"	STR.						290
A811	6	28'-5"	STR.						455
A812	77	5'-9"	5	2'-6"	3'-3"				1,182
EA501	14	19'-10"	STR.*						290
EA502	8	3'-0"	11	2'-5"					25
EA503	-								-
EA504	7	4'-7"	STR.						33
EA505	28	4'-4"	1	2'-1"	0'-5"				127
EA506	-								-
EA507	-								-
EA508	29	5'-3"	6	0'-7 <sup>1/2</sup> "	2'-5"	2'-2"			159
EA509	1	16'-7"	STR.*						17
EA510	5	30'-8"	STR.						153
EA511	8	30'-0"	STR.						250
EA512	29	29'-7"	STR.*						895
EA513	24	28'-11"	STR.*						724
EA514	ISER OF 5	13'-2" TO 17'-2"	STR.					1'-0"	79
EA515	10	16'-10"	STR.						176
EA516	2	9'-2"	STR.						19
EA517	5	2'-8"	STR.						14
EA518	91	7'-0"	1	1'-8"	3'-11"				664
EA519	1	7'-3"	1	1'-8"	4'-2"				8
EA520	1	7'-9"	1	1'-8"	4'-8"				8
EA521	1	8'-7"	1	1'-8"	5'-6"				9
EA522	5	25'-3"	STR.						132
EA523	2	6'-7"	STR.						14
EA524	12	23'-4"	STR.						316
EA525	1	17'-9"	STR.*						19
EA526	13	2'-10"	STR.						38
EA540	12	5'-2"	STR.						65
EA543	14	3'-7"	10	0'-8"	0'-6"	0'-8 <sup>1/2</sup> "	2'-1"		52
EA601	23	3'-9"	10	0'-9"	0'-6"	0'-8 <sup>1/2</sup> "	2'-5"		130
EA602	1	3'-8"	10	0'-8"	0'-5"	0'-8 <sup>1/2</sup> "	2'-5"		6
EA603	1	3'-8"	10	0'-8"	0'-4"	0'-8 <sup>1/2</sup> "	2'-5"		6
EA604	1	3'-7"	10	0'-7"	0'-3"	0'-8 <sup>1/2</sup> "	2'-5"		5
EA605	1	3'-7"	10	0'-7"	0'-2"	0'-8 <sup>1/2</sup> "	2'-5"		5
EA606	-								-
EA607	ISER OF 10	16'-9" TO 18'-5"	1	7'-10" TO 8'-8"	1'-5"			A = 1 <sup>1/8</sup> " TO 1 <sup>1/2</sup> " LENGTH = 0'-2 <sup>1/4</sup> "	264
EA608	49	16'-9"	1	7'-10"	1'-5"				1,233
EA609	115	7'-1"	1	3'-3"	0'-11"				1,223
EA610	115	5'-1"	1	2'-0"	1'-5"				878
EA611	57	15'-11"	1	7'-5"	1'-5"				1,363
EA801	77	5'-9"	5	2'-6"	3'-3"				1,182
TOTAL REAR ABUTMENT									26,710
FORWARD ABUTMENT									
A501	THRU								-
A505	-								-
A506	2	10'-4"	4	1'-8"	8'-8"	7'-1 <sup>5/16</sup> "			22
A507	THRU								-
A509	-								-
A510	2SER OF 3	10'-9" TO 16'-5"	STR.					2'-10"	85
A511	ISER OF 9	8'-0" TO 8'-6"	STR.					0'-0 <sup>3/4</sup> "	77

REINFORCING STEEL SCHEDULE									
FORWARD ABUTMENT (CONT.)									
MARK	NO.	LENGTH	TYPE	A	B	C	D	INCR.	WEIGHT
A512	THRU	A514	-						-
A515	1	5'-2"	1	1'-8"	2'-1"				5
A516	-								-
A517	-								-
A518	5	8'-9"	13	1'-11"	2'-3"				46
A519	-								-
A520	-								-
A521	20	2'-5"	STR.						50
A522	2	10'-11"	4	1'-8"	9'-3"	6'-11 <sup>3/4</sup> "			23
A523	4	A524	-						-
A525	NOT	USED							-
A526	THRU								-
A534	-								-
A535	31	10'-10"	13	3'-0"	2'-3"				350
A536	-								-
A537	4	26'-7"	STR.						111
A538	10	25'-11"	STR.*						270
A539	THRU								-
A541	NOT	USED							-
A542	ISER OF 5	1'-7" TO 4'-0"	STR.					0'-7 <sup>1/4</sup> "	15
A543	4	8'-10"	2	0'-8 <sup>1/2</sup> "	8'-3"				37
A544	8	8'-6"	2	0'-8 <sup>1/2</sup> "	7'-11"				71
A545	8	8'-1"	2	0'-8 <sup>1/2</sup> "	7'-6"				67
A546	6	7'-9"	2	0'-8 <sup>1/2</sup> "	7'-2"				48
A547	10	7'-4"	2	0'-8 <sup>1/2</sup> "	6'-9"				76
A548	NOT	USED							-
A549	NOT	USED							-
A550	NOT	USED							-
A551	34	9'-1"	1	1'-8"	6'-0"				322
A552	1	7'-1"	1	1'-8"	4'-0"				7
A553	NOT	USED							-
A554	10	8'-7"	STR.						90
A555	2SER OF 3	13'-9" TO 18'-1"	STR.					2'-2"	100
A556	NOT	USED							-
A557	4	20'-4"	STR.						85
A601	THRU								-
A603	-								-
A604	1	6'-9"	1	2'-6"	2'-1"				10
A605	-								-
A606	-								-
A607	NOT	USED							-
A608	THRU								-
A611	-								-
A612	NOT	USED							-
A613	3	16'-0"	1	7'-8"	1'-0"				72
A614	-								-
A615	10	21'-2"	1	10'-3"	1'-0"				318
A616	-								-
A617	ISER OF 4	7'-8" TO 15'-6"	1	3'-6" TO 7'-5"	1'-0"			A = 1'-3 <sup>1/4</sup> " TO 1 <sup>1/2</sup> " LENGTH = 2'-7 <sup>1/6</sup> "	70
A618	7	5'-8"	1	2'-6"	1'-0"				60
A619	THRU								-
A624	-								-
A625	2	16'-5"	3	8'-3"	6'-0"	2'-6"			49
A626	8	16'-1"	3	7'-11"	6'-0"	2'-6"			193
A627	8	15'-8"	3	7'-6"	6'-0"	2'-6"			188
A628	6	15'-4"	3	7'-2"	6'-0"	2'-6"			138
A629	10	14'-11"	3	6'-9"	6'-0"	2'-6"			224
A630	1	7'-5"	2	0'-10"	6'-9"				11
A631	11	7'-7"	STR.						125
A632	9	17'-8"	1	8'-6"	1'-0"				239



FRANKLIN COUNTY  
FRA-670-1.25-C-2

REINFORCING STEEL SCHEDULE										
PIER 1										
MARK	NO.	LENGTH	TYPE	A	B	C	D	E	WEIGHT	
P401	89	6'-0"	1	1'-6"	3'-2"					357
P402	4	6'-2"	STR.							16
P403	4	16'-2"	STR.							43
P404	4	14'-2"	STR.							38
P405	4	13'-2"	STR.							35
P406	4	14'-2"	STR.							38
P407	4	15'-2"	STR.							41
P408	4	4'-2"	STR.							11
SP401A	1	25'-7 1/2"	14	0'-3 1/8"	105	3'-2"				782
SP401B	1	24'-11 1/2"	14	0'-3 1/8"	103	3'-2"				761
SP401C	1	24'-5 3/8"	14	0'-3 1/8"	100	3'-2"				743
SP401D	1	23'-7 3/8"	14	0'-3 1/8"	98	3'-2"				722
SP401E	1	22'-11 5/8"	14	0'-3 1/8"	95	3'-2"				702
P501	8	38'-7"	STR.							322
P502	262	8'-7"	1	2'-10"	3'-2"					2,346
P503	262	7'-5"	1	2'-10"	2'-0"					2,027
P504	4	26'-2"	STR.							109
P1100A	18	33'-11"	2	2'-0"	32'-3"					3,244
P1100B	18	33'-3"	2	2'-0"	31'-7"					3,180
P1100C	18	32'-7"	2	2'-0"	30'-11"					3,116
P1100D	18	31'-11"	2	2'-0"	30'-3"					3,052
P1100E	18	31'-3"	2	2'-0"	29'-7"					2,989
P1101	6	21'-3"	STR.							677
P1102	6	28'-3"	STR.							901
P1103	6	41'-11"	STR.							1,336
P1104	2	41'-11"	STR.							445
P1105	4	28'-3"	STR.							600
P1106	2	21'-3"	STR.							226
P1107	8	14'-4"	STR.							609
P1108A	12	28'-3"	STR.							1,801
P1108B	12	31'-9"	STR.							2,024
P1109	8	24'-8"	STR.							1,048
P1110	8	26'-2"	STR.							1,112
P1111	90	11'-3"	2	2'-0"	9'-7"					5,379
P1112	55	10'-6"	STR.							3,068
P1113	50	13'-0"	STR.							3,453
SUB-TOTAL - PIER 1										47,353
PIER 2										
P401	66	6'-0"	1	1'-6"	3'-2"					265
P410	4	7'-2"	STR.							19
P411	4	13'-2"	STR.							35
P412	4	13'-2"	STR.							35
P413	4	11'-2"	STR.							30
P414	4	10'-2"	STR.							27
P415	4	6'-2"	STR.							16
SP402A	1	26'-0 3/8"	14	0'-3 1/8"	108	3'-2"				890
SP402B	1	25'-0 3/8"	14	0'-3 1/8"	103	3'-2"				765
SP402C	1	24'-0 3/8"	14	0'-3 1/8"	99	3'-2"				735
SP402D	1	23'-0 1/2"	14	0'-3 1/8"	95	3'-2"				704
SP402E	1	22'-0 1/2"	14	0'-3 1/8"	91	3'-2"				675
P510	196	8'-7"	1	2'-10"	3'-2"					1,755
P511	196	7'-5"	1	2'-10"	2'-0"					1,516
P512	8	38'-2"	STR.							318
P1001	60	11'-6"	STR.							2,969
P1002	65	10'-6"	STR.							2,937
P1114A	18	34'-3"	2	2'-0"	32'-7"					3,275
P1114B	18	33'-3"	2	2'-0"	31'-7"					3,180
P1114C	18	32'-3"	2	2'-0"	30'-7"					3,084
P1114D	18	31'-3"	2	2'-0"	29'-7"					2,989

REINFORCING STEEL SCHEDULE										
PIER 2 (CONT.)										
MARK	NO.	LENGTH	TYPE	A	B	C	D	E	WEIGHT	
P1114E	18	30'-3"	2	2'-0"	28'-7"					2,893
P1115	6	22'-3"	STR.							709
P1116	12	33'-1"	STR.							2,109
P1117	8	14'-5"	STR.							613
P1118	12	39'-9"	STR.							2,534
P1119	90	11'-3"	2	2'-0"	9'-7"					5,379
SUB-TOTAL - PIER 2										40,456
PIER 3										
P420	57	6'-6"	1	1'-6"	3'-8"					248
P421	16	6'-2"	STR.							66
P422	8	12'-2"	STR.							65
P423	8	9'-2"	STR.							49
P424	8	8'-2"	STR.							44
P425	8	10'-2"	STR.							54
SP403A	1	20'-8 1/4"	14	0'-3 1/8"	86	3'-8"				718
SP403B	1	19'-5 1/2"	14	0'-3 1/8"	80	3'-8"				677
SP403C	1	18'-2 7/8"	14	0'-3 1/8"	75	3'-8"				636
SP403D	1	17'-0 1/4"	14	0'-3 1/8"	71	3'-8"				595
P520	8	33'-2"	STR.							277
P521	180	9'-1"	1	2'-10"	3'-8"					1,705
P522	180	7'-10"	1	2'-10"	2'-2"					1,471
P1120A	24	29'-3"	2	2'-0"	27'-7"					3,730
P1120B	24	28'-1"	2	2'-0"	26'-5"					3,580
P1120C	24	26'-10"	2	2'-0"	25'-2"					3,422
P1120D	24	25'-8"	2	2'-0"	24'-0"					3,273
P1121	16	35'-10"	STR.							3,046
P1122	12	14'-8"	STR.							935
P1123	16	26'-3"	STR.							2,231
P1124	8	22'-2"	STR.							942
P1125	64	20'-0"	STR.							6,801
P1126	76	14'-6"	STR.							5,855
P1127	96	13'-0"	2	2'-0"	11'-4"					6,631
SUB-TOTAL - PIER 3										47,051
PIER 4										
P420	43	6'-0"	1	1'-6"	3'-2"					172
P431	5	5'-2"	STR.							17
P432	5	10'-2"	STR.							34
P433	5	5'-2"	STR.							17
P434	5	5'-2"	STR.							17
P435	5	8'-2"	STR.							27
P436	5	4'-2"	STR.							14
SP404A	1	7'-5 3/8"	14	0'-3 1/8"	34	3'-2"				242
SP404B	1	6'-4 3/8"	14	0'-3 1/8"	29	3'-2"				211
SP404C	1	5'-4 3/8"	14	0'-3 1/8"	25	3'-2"				179
P530	8	29'-1"	STR.							243
P531	172	8'-7"	1	2'-10"	3'-2"					1,540
P532	172	7'-5"	1	2'-10"	2'-0"					1,331
P533	12	21'-4"	13	7'-8 3/4"	2'-8"					267
P1130A	24	15'-7"	2	2'-0"	13'-11"					1,987
P1130B	24	14'-6"	2	2'-0"	12'-10"					1,849
P1130C	24	13'-6"	2	2'-0"	11'-10"					1,721
P1131	12	31'-9"	STR.							2,024
P1132	4	31'-9"	STR.							675
P1133	8	14'-7"	STR.							620
P1134	12	30'-8"	STR.							1,955
P1135	4	23'-7"	STR.							501

REINFORCING STEEL SCHEDULE										
PIER 4 (CONT.)										
MARK	NO.	LENGTH	TYPE	A	B	C	D	E	WEIGHT	
P1136	42	17'-6"	STR.							3,905
P1137	24	14'-6"	STR.							1,849
P1138	18	31'-8"	STR.							3,028
P1139	18	31'-8"	STR.							3,028
SUB-TOTAL - PIER 4										27,453
TOTAL - ALL PIERS										162,313

JOHN E. FOSTER AND ASSOCIATES, INC. 37/37  
555 Buttles Ave., Columbus, Ohio 43215

**REINFORCING STEEL SCHEDULE**

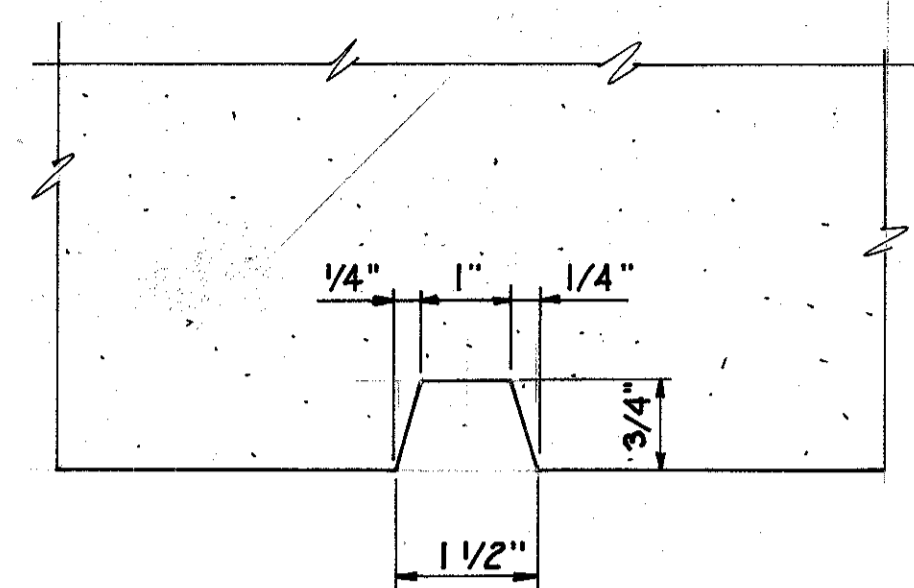
BRIDGE NO. FRA-315-0210  
ROAD "OE" AND RAMP "OF"  
OVER OLENTANGY RIVER

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H.S.S.	D.M.T.	-	H.W.R.			

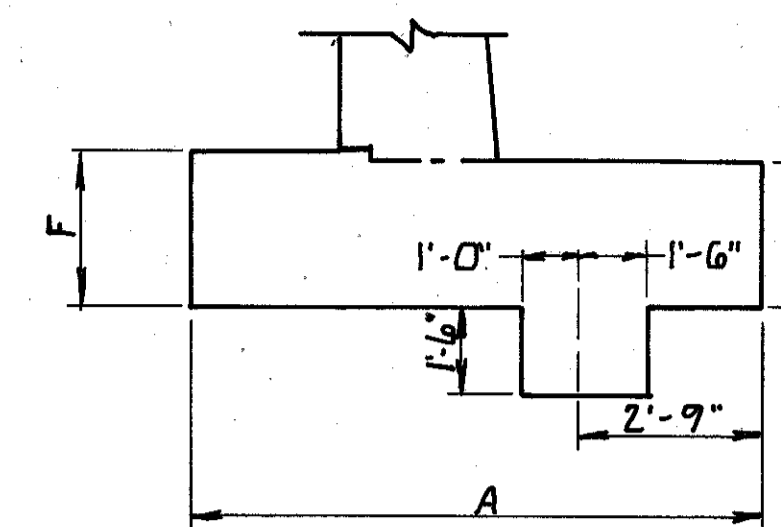
THIS WORK IS FUNDED TOTALLY BY STP FUNDING.

**ESTIMATED QUANTITIES**

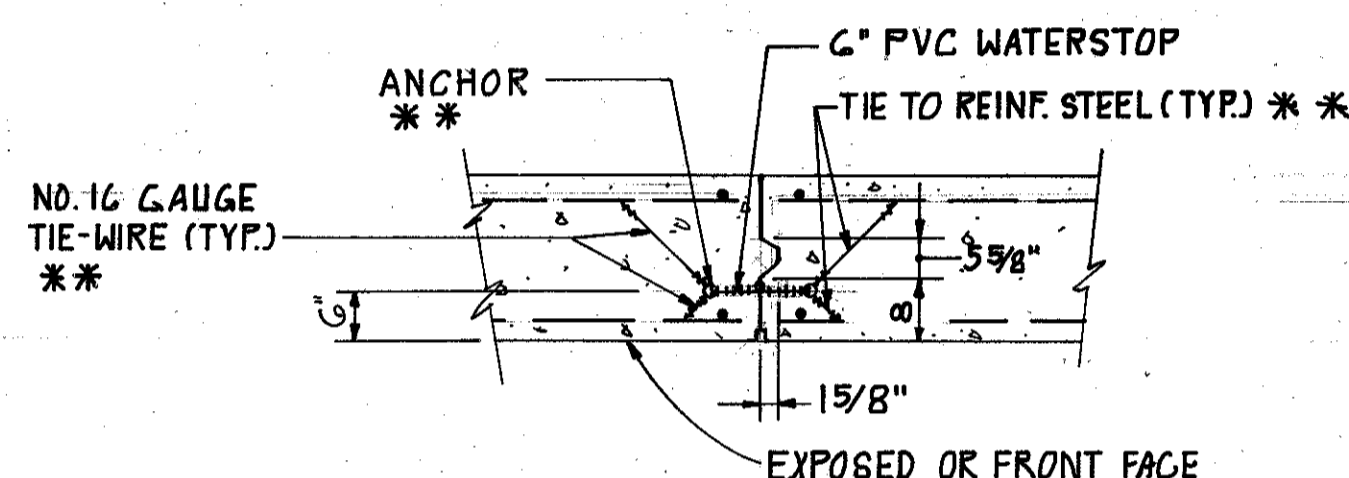
ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION
503	21100	791	CU.YD.	UNCLASSIFIED EXCAVATION
505	11100	LS		PILE DRIVING EQUIPMENT MOBILIZATION
506	11101	LS		STATIC LOAD TEST, AS PER PLAN
507	22200	735	LIN. FT.	12" CAST-IN-PLACE REINFORCED CONCRETE PILES,
509	12400	25,250	L.B.	REINFORCING STEEL, GRADE 60 (15,000 TO 40,000 TOTAL LBS)
511	46000	170	CU.YD.	CLASS C CONCRETE, RETAINING WALL OR WINGWALL (ABOVE FOOTING)
511	46500	723	CU.YD.	CLASS C CONCRETE, FOOTING
516	13600	70	SQ.FT.	1" PREFORMED EXPANSION JOINT FILLER
516	30501	145	LIN. FT.	PVC WATERSTOP, AS PER PLAN
518	21100	147	CU. YD.	POROUS BACKFILL WITH FILTER FABRIC
518	41100	194	LIN. FT.	6" PERFORATED HELICAL CORRUGATED STEEL PIPE, 707.01
523	11100	6	HDUR	DYNAMIC LOAD TEST



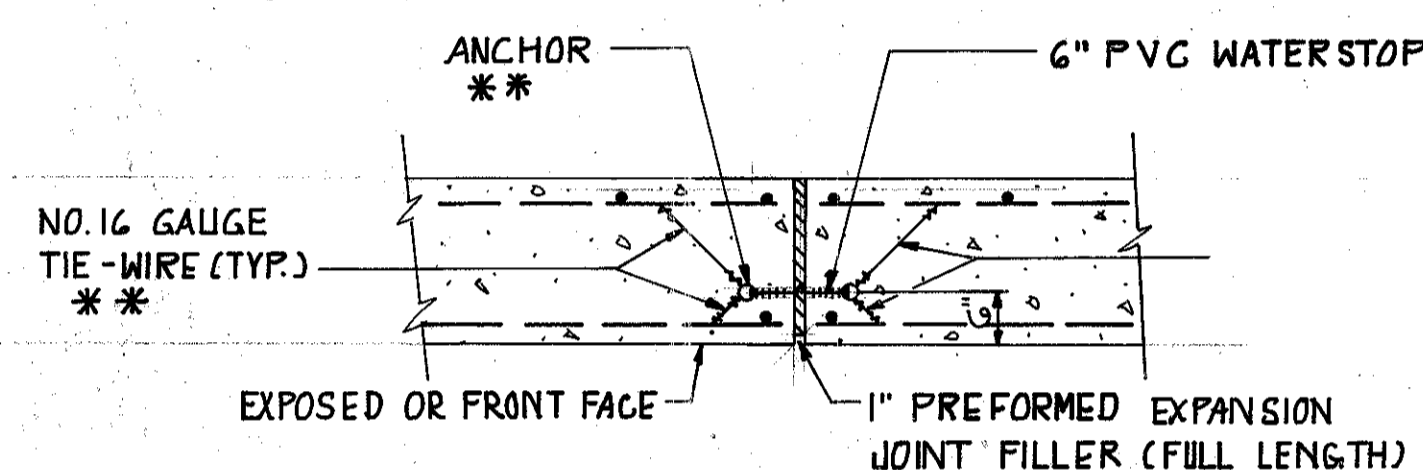
**VERTICAL RUSTICATION GROOVE**



**KEY DETAIL WALL V**

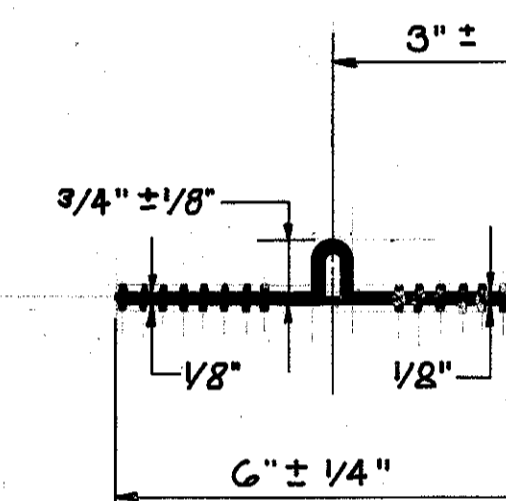


**CONTRACTION JOINT DETAIL**

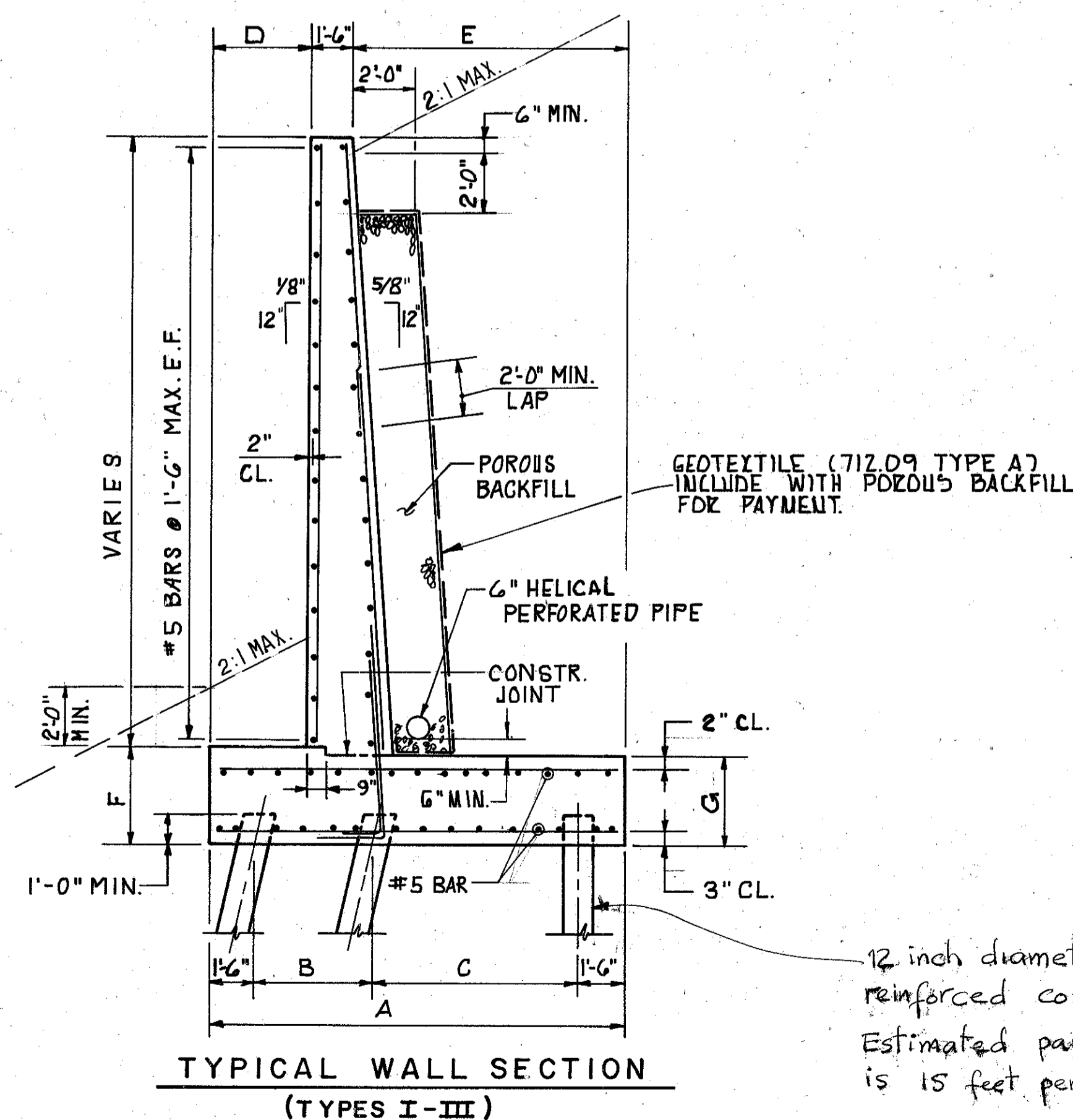


**EXPANSION JOINT DETAIL**

\*\* FOR THE FIRST POUR, THE WATERSTOP SHOULD BE HELD SECURELY IN PLACE BY THE USE OF SPLIT FORMS AND TIE-WIRES. FOR THE SECOND POUR, SECURE THE FREE END OF WATERSTOP IN PROPER POSITION WITH TIE-WIRES. ALTERNATE METHODS, AS APPROVED BY THE ENGINEER, MAY BE USED TO INSURE THE CORRECT POSITIONING OF THE WATERSTOP.

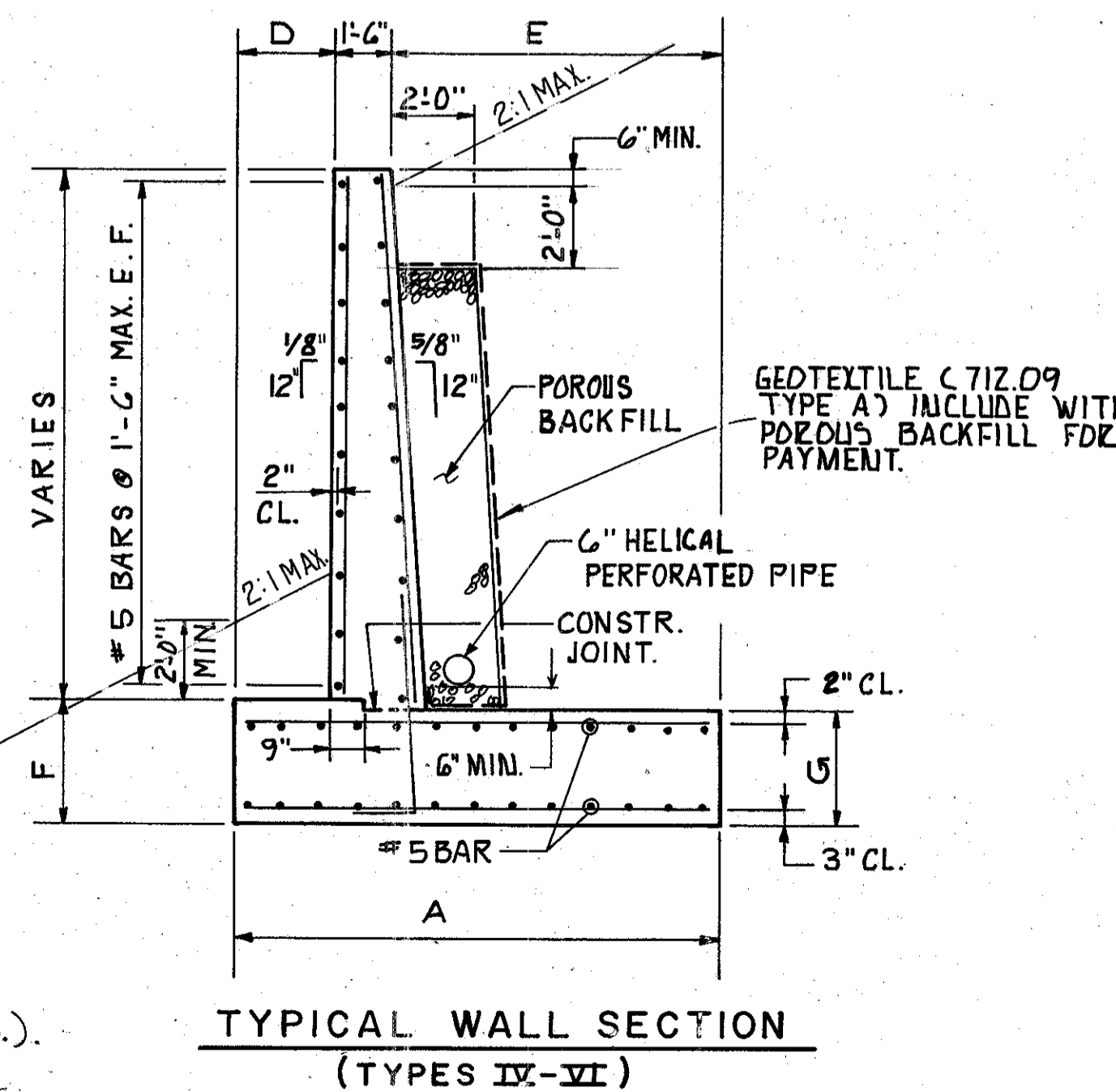


**WATERSTOP DETAIL**



**TYPICAL WALL SECTION (TYPES I-III)**

12 inch diameter cast-in-place reinforced concrete piles (typ). Estimated pay length for piles is 15 feet per pile.



**TYPICAL WALL SECTION (TYPES IV-VI)**

WALL TABLE							
TYPE	A	B	C	D	E	F	G
I	15'-0"	4'-0"	8'-0"	4'-0"	9'-6"	3'-3"	3'-0"
II	14'-0"	4'-0"	7'-0"	3'-6"	9'-0"	3'-3"	3'-0"
III	12'-6"	4'-6"	5'-0"	2'-6"	8'-6"	3'-3"	3'-0"
IV	9'-3"	—	—	2'-6"	5'-3"	3'-3"	3'-0"
V	7'-3"	—	—	2'-6"	3'-3"	3'-3"	3'-0"
VI	6'-6"	—	—	2'-6"	2'-6"	2'-9"	2'-6"

JOHN E. FOSTER AND ASSOCIATES, INC. 1/1/5  
555 Buttles Ave., Columbus, Ohio 43215

RETAINING WALL  
ESTIMATED QUANTITIES & DETAILS  
BRIDGE NO. FRA-315-0197  
RAMP "OF" OVER ROAD "OD" & "OE"

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DFS	TH	ES	CEM	HWR	6/90	

DESIGN SPECIFICATIONS:

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1989 AND THE OHIO "SUPPLEMENT" TO THESE SPECIFICATIONS.

DESIGN DATA:

CONCRETE CLASS C - COMPRESSIVE STRENGTH 4,000 PSI. REINFORCING STEEL - ASTM A615, A616, A617 - GRADE 60 MINIMUM YIELD STRENGTH 60,000 PSI.

~~ITEM 507-14 INCH CAST-IN-PLACE REINFORCED CONCRETE PILES, AS PER PLAN:~~  
~~PILE WALL THICKNESS: THE RESPONSIBILITY OF CHOOSING AND PROVIDING A SATISFACTORY PILE WALL THICKNESS FOR THIS PROJECT SHALL BE BORNE BY THE CONTRACTOR EXCEPT THAT THE PILE WALL THICKNESS SHALL NOT BE LESS THAN 0.31 INCHES. IF A PILE WALL THICKNESS GREATER THAN 0.31 INCHES IS NECESSARY TO RESIST THE PILE INSTALLATION DRIVING STRESS, THE CONTRACTOR SHALL MAKE THIS DETERMINATION AND SHALL FURNISH A PILE WITH AN ACCEPTABLE WALL THICKNESS. IF MONOTUBE PILES ARE USED, MONOTUBE PILES SHALL HAVE A MINIMUM WALL THICKNESS OF 0.22 INCHES.~~  
~~PILE HAMMER: THE PILE DRIVING EQUIPMENT TO BE FURNISHED BY THE CONTRACTOR SHALL BE SUBJECT TO THE APPROVAL OF THE DIRECTOR. PREREQUISITE TO SUCH APPROVAL, THE CONTRACTOR SHALL SUBMIT A COMPLETED EQUIPMENT DATA FORM (WEAP87-DATA REQUEST FORM) FOR EACH HAMMER PROPOSED FOR USE ON THIS PROJECT. A COPY OF THIS FORM CAN BE REQUESTED AND OBTAINED FROM THE DIRECTOR. A WAVE EQUATION ANALYSIS WILL BE PERFORMED BY BUREAU OF BRIDGES. CONTRACTOR NOTIFICATION OF ACCEPTANCE OR REJECTION OF THE DRIVING SYSTEM WILL BE MADE WITHIN 21 DAYS AFTER SUBMITTAL OF THE WEAP87-DATA REQUEST FORM. THE PILING SHALL NOT BE INSTALLED PRIOR TO RECEIVING APPROVAL OF THE CONTRACTOR'S DRIVING SYSTEM BY THE DIRECTOR. THE DIRECTOR WILL FURNISH THE PILE DRIVING CRITERIA~~

~~ITEM 506-STATIC LOAD TEST, AS PER PLAN:~~  
~~THE CONTRACTOR SHALL PERFORM A STATIC LOAD TEST ON ONE OF THE INITIALLY INSTALLED PILES. THE INSTALLED LENGTHS OF THE PILES TO BE LOAD TESTED SHALL NOT BE MORE THAN THE PLAN ESTIMATED PAY LENGTHS. THE CONTRACTOR SHALL FURNISH THE DIRECTOR (ATTENTION BUREAU OF BRIDGES) A COPY OF A TYPED REPORT DESCRIBING THE PROCEDURES AND RESULTS OF THE STATIC LOAD TEST. PAYMENT FOR THIS REPORT IS CONSIDERED INCIDENTAL TO THE COST OF THE STATIC LOAD TEST.~~

PILE DESIGN LOADS:

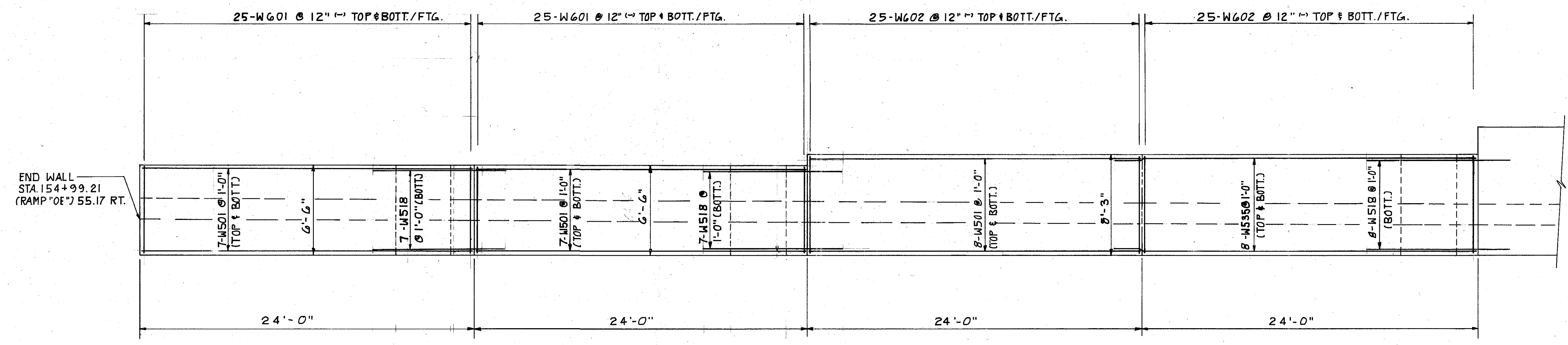
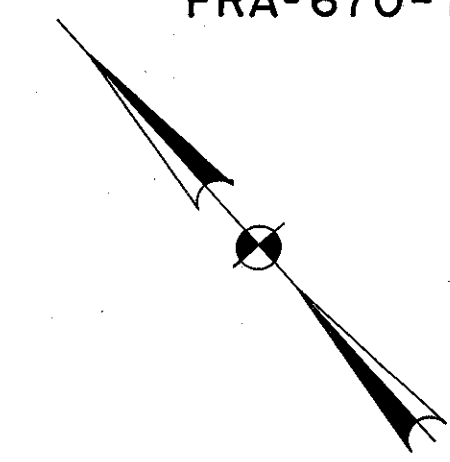
THE DESIGN LOAD FOR THE PILES IS 36 TONS PER PILE.

FOUNDATION BEARING PRESSURE:

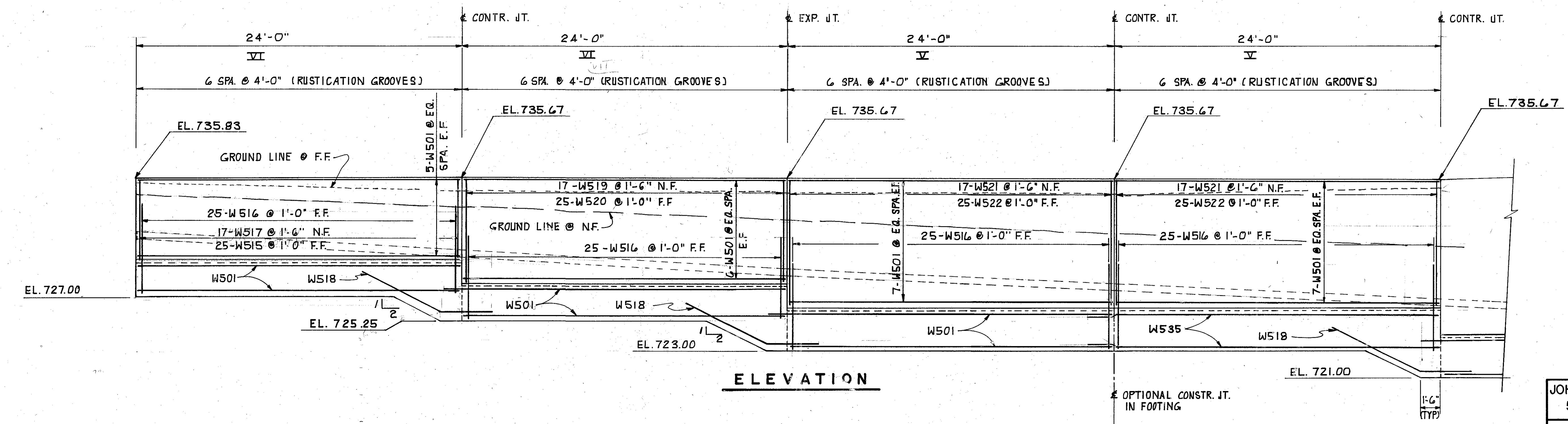
THE SPREAD FOOTINGS, AS DESIGNED, PRODUCE A MAXIMUM BEARING PRESSURE OF 1.5 TONS PER SQ. FT.

JOHN E. FOSTER AND ASSOCIATES, INC. 2 / 5						
555 Buttles Ave., Columbus, Ohio 43215						
RETAINING WALL						
BRIDGE NO. FRA.- 315--0197						
RAMP "OF" OVER ROAD "OD" & "OE"						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED

FRANKLIN COUNTY  
 FRA-670-1.25-C-2



**FOOTING PLAN**



**ELEVATION**

JOHN E. FOSTER AND ASSOCIATES, INC. 3/5  
 555 Buttles Ave., Columbus, Ohio 43215

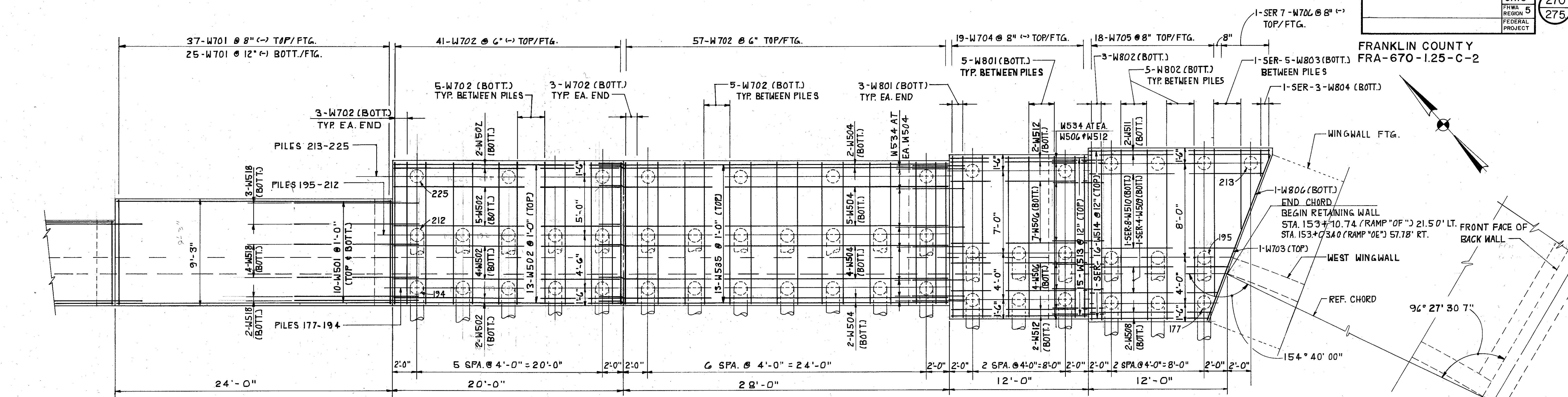
**RETAINING WALL  
 PLAN AND ELEVATION**

BRIDGE NO. FRA. - 315-0197  
 RAMP "OF" OVER ROAD "OD" & "OE"

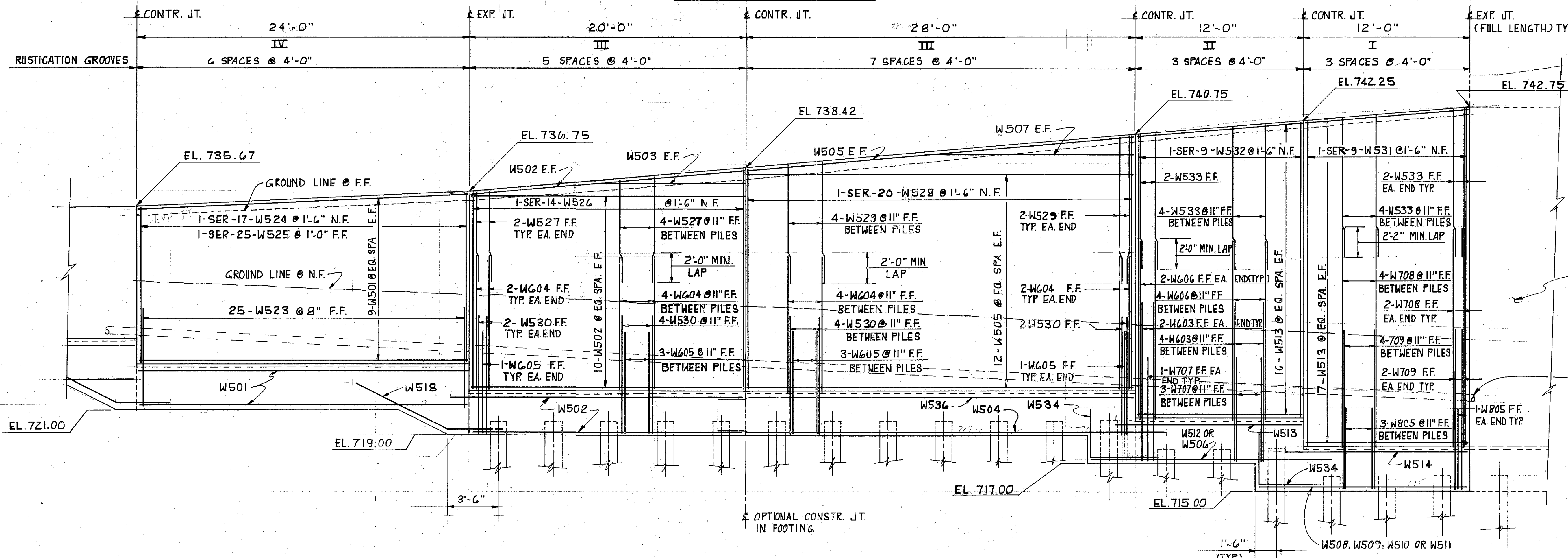
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DFS	TH	ES	CEM	HWR	6/90	



FRANKLIN COUNTY  
FRA-670-1.25-C-2



**FOOTING PLAN**



**ELEVATION**

**NOTES**

1. ALL PILES ARE 12" DIAMETER CAST-IN-PLACE REINFORCED CONCRETE PILES.
2. ALL BATTERED PILES SHALL BE INCLINED 4 TO 12 IN DIRECTION SHOWN.
3. STEEL LOCATION ABBREVIATIONS:  
N.F. INDICATES NEAR FACE  
F.F. INDICATES FAR FACE  
E.F. INDICATES EACH FACE

WEST WINGWALL  
CONNECT TO STD. A.D. 8  
C.B.  
STA. 152+05.48' RT. ROAD OF

JOHN E. FOSTER AND ASSOCIATES, INC. 4/5  
555 Buttles Ave., Columbus, Ohio 43215

RETAINING WALL  
PLAN AND ELEVATION  
BRIDGE NO. FRA. - 315 - 0197  
RAMP "OF" OVER ROAD "OD" & "OE"

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DFS	TH	ES	CEM	HWR	6/90	



CURVE DATA - ROAD OF	CURVE DATA - ROAD OD	CURVE DATA - ROAD OD	CURVE DATA - S.B.	CURVE DATA - ROAD OE	CURVE DATA - ROAD OE	CURVE DATA - N.B.
P.I. = STA. 153+07.93 Δ = 66°13'0.76" Dc = 18°00'00" Rc = 318.31 Θs = 27°00'00" Lc = 67.87 Ls = 300.00 X = 293.41 Y = 46.38 L.T. = 202.38 S.T. = 102.16 Ts = 364.09 Es = 75.65	P.I. = STA. 150+31.02 Δ = 8°00'00" Θs = 8°00'00" Ls = 200.00' X = 199.61' Y = 9.30' L.T. = 133.47' S.T. = 66.79'	P.I. = STA. 162+43.14 Δ = 50°03'16.36" Dc = 7°30'00" Rc = 763.94' Θs = 15°00'00" Lc = 267.39' Ls = 400.00' X = 397.27' Y = 34.74' L.T. = 267.63' S.T. = 134.21' Ts = 560.28' Es = 88.77'	P.I. = STA. 176+09.46 Δ = 30°07'56.12" Dc = 4°30'00" Rc = 1273.24' Θs = 9°00'00" Lc = 269.61' Ls = 400.00' X = 399.01' Y = 20.91' L.T. = 267.01' S.T. = 133.65' Ts = 543.98' Es = 50.74'	P.I. = STA. 152+13.43 Δ = 10°30'00" Θs = 10°30'00" Ls = 300.00' X = 298.99' Y = 18.28' L.T. = 200.35' S.T. = 100.32'	P.I. = STA. 161+13.58 Δ = 43°45'00" Dc = 7°30'00" Rc = 763.94' Θs = 15°00'00" Lc = 183.33' Ls = 400.00' X = 397.27' Y = 34.74' L.T. = 267.63' S.T. = 134.21' Ts = 509.76' Es = 68.65'	P.I. = STA. 176+73.25 Δ = 15°21'23.05" Dc = 3°00'00" Rc = 1909.86' Θs = 5°15'00" Lc = 161.88' Ls = 350.00' X = 349.71' Y = 10.68' L.T. = 233.44' S.T. = 116.76' Ts = 432.79' Es = 19.97'

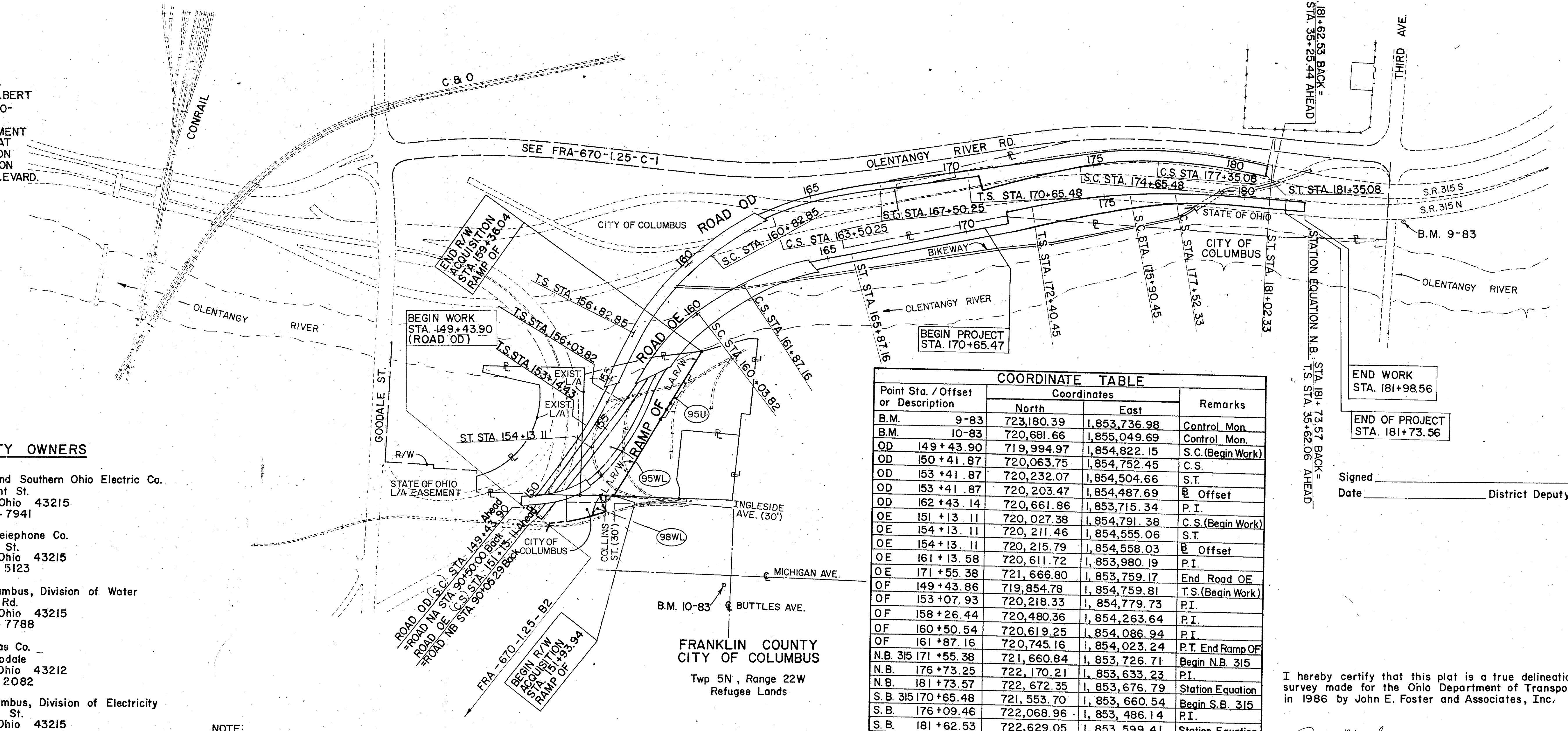
**CONTROL SURVEY NOTE**

THE CITY OF COLUMBUS CONTROL MONUMENTS AS REFERENCED ON THESE PLANS ARE AS SET BY COMPTON, TOLBERT SURVEYING AS PART OF FRA-670-1.25 (CONTRACT E). COPIES OF THE SURVEY MONUMENT DESCRIPTIONS ARE AVAILABLE AT THE CITY OF COLUMBUS, DIVISION OF ENGINEERING & CONSTRUCTION LOCATED AT 140 MARCONI BOULEVARD.

**UTILITY OWNERS**

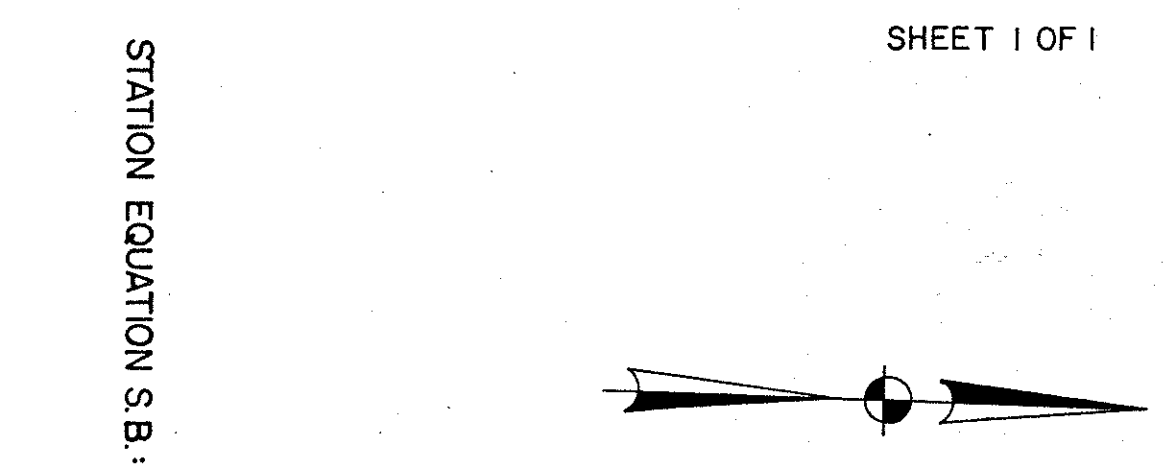
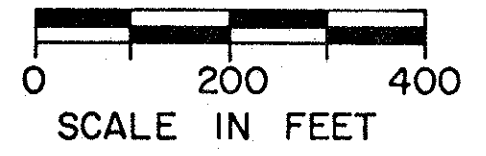
- Electric** Columbus and Southern Ohio Electric Co.  
215 N. Front St.  
Columbus, Ohio 43215  
(614) 464 - 7941
- Telephone** Ohio Bell Telephone Co.  
150 E. Gay St.  
Columbus, Ohio 43215  
(614) 223 - 5123
- Water** City of Columbus, Division of Water  
910 Dublin Rd.  
Columbus, Ohio 43215  
(614) 222 - 7788
- Gas** Columbia Gas Co.  
920 W. Goodale  
Columbus, Ohio 43212  
(614) 460 - 2082
- Electric** City of Columbus, Division of Electricity  
50 W. Gay St.  
Columbus, Ohio 43215  
(614) 222 - 8371
- Sanitary Sewers** City of Columbus, Division of Sewerage and Drainage  
90 W. Broad St.  
Columbus, Ohio 43215  
(614) 222 - 7175

NOTE:  
THE LOCATIONS OF THE UNDERGROUND UTILITIES SHOWN ON THESE PLANS ARE AS OBTAINED FROM THE OWNERS OF THE UTILITIES, AS REQUIRED BY SECTION 153.64, OHIO REVISED CODE.



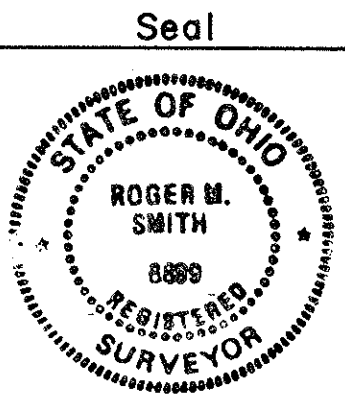
Point Sta. / Offset or Description	Coordinates		Remarks
	North	East	
B.M. 9-83	723,180.39	1,853,736.98	Control Mon.
B.M. 10-83	720,681.66	1,855,049.69	Control Mon.
OD 149+43.90	719,994.97	1,854,822.15	S.C. (Begin Work)
OD 150+41.87	720,063.75	1,854,752.45	C.S.
OD 153+41.87	720,232.07	1,854,504.66	S.T.
OD 153+41.87	720,203.47	1,854,487.69	E Offset
OD 162+43.14	720,661.86	1,853,715.34	P.I.
OE 151+13.11	720,027.38	1,854,791.38	C.S. (Begin Work)
OE 154+13.11	720,211.46	1,854,555.06	S.T.
OE 154+13.11	720,215.79	1,854,558.03	E Offset
OE 161+13.58	720,611.72	1,853,980.19	P.I.
OE 171+55.38	721,666.80	1,853,759.17	End Road OE
OF 149+43.86	719,854.78	1,854,759.81	T.S. (Begin Work)
OF 153+07.93	720,218.33	1,854,779.73	P.I.
OF 158+26.44	720,480.36	1,854,263.64	P.I.
OF 160+50.54	720,619.25	1,854,086.94	P.I.
OF 161+87.16	720,745.16	1,854,023.24	P.T. End Ramp OF
N.B. 315 171+55.38	721,660.84	1,853,726.71	Begin N.B. 315
N.B. 176+73.25	722,170.21	1,853,633.23	P.I.
N.B. 181+73.57	722,672.35	1,853,676.79	Station Equation
S.B. 315 170+65.48	721,553.70	1,853,660.54	Begin S.B. 315
S.B. 176+09.46	722,068.96	1,853,486.14	P.I.
S.B. 181+62.53	722,629.05	1,853,599.41	Station Equation

**CENTERLINE PLAT & PROPERTY MAP**



I hereby certify that this plat is a true delineation of a survey made for the Ohio Department of Transportation in 1986 by John E. Foster and Associates, Inc.

Signed: *Roger M. Smith* Date: 7/22/08  
ROGER M. SMITH, P.S. 6899



REV.	DATE	DESCRIPTION

**CENTERLINE PLAT & PROPERTY MAP**

TOTAL NUMBER OF -----  
2 OWNERSHIPS  
1 TOTAL TAKES  
1 OWNERSHIPS WITH STRUCTURES INVOLVED  
 ----- OWNERSHIPS WITH "P" ITEMS

# SUMMARY OF ADDITIONAL RIGHT OF WAY

CALC. BY _____	FRA-670-1.25-C-2	OHIO	(274)
DATE _____			(275)
CHKD. BY _____		FHWA REGION 5	
DATE _____			(2)
FEDERAL PROJECT IR-670-6(54)98	STATE PROJECT 06012 (0)		(3)

FRANKLIN COUNTY

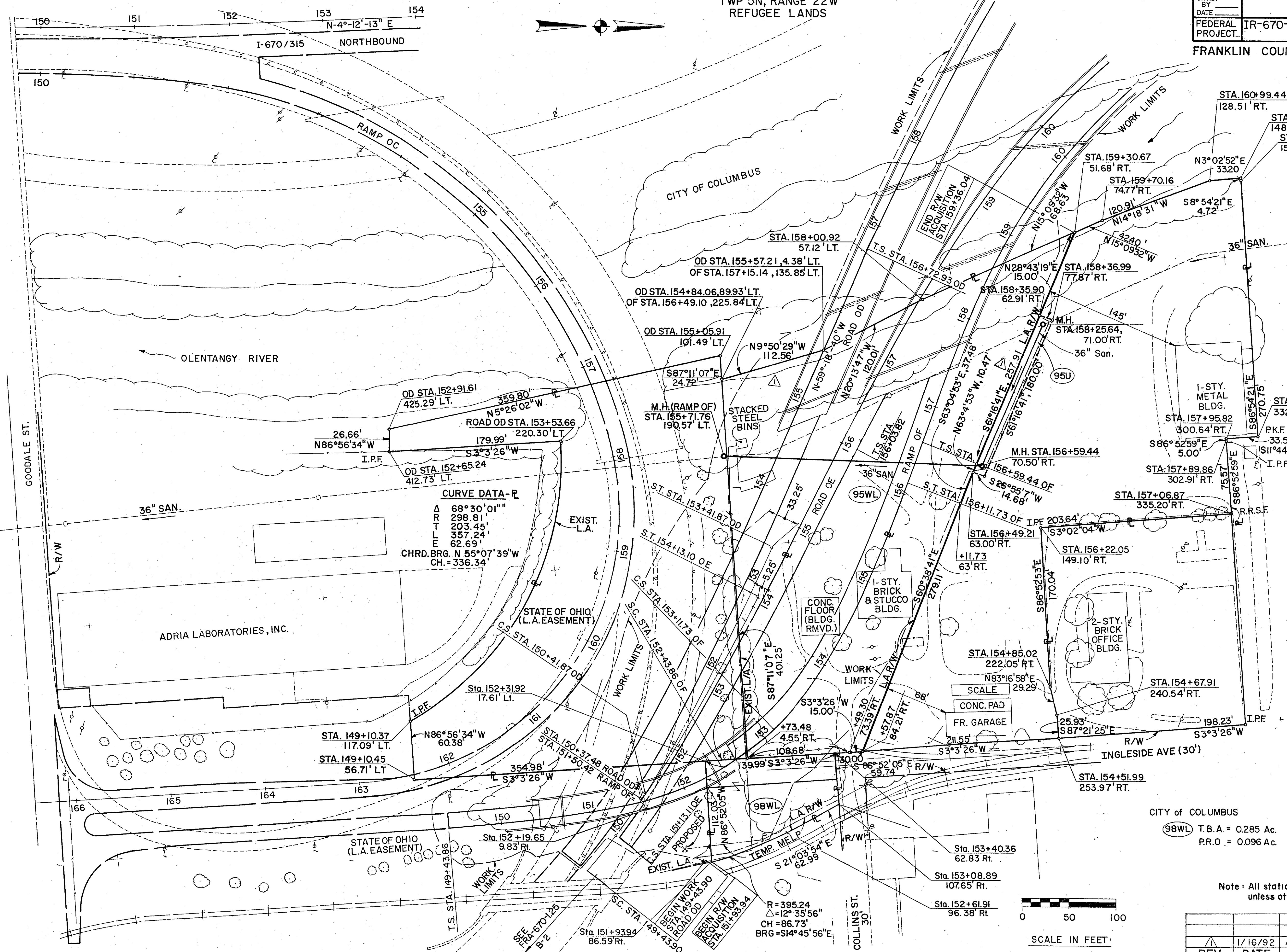
ALL AREAS IN ACRES

PARCEL	OWNER	SHEET NO.	OWNERS RECORD		RECORD AREA	TOTAL P.R.O.	GROSS TAKE	P.R.O. IN TAKE	NET TAKE	STRUCTURE	NET RESIDUE		TYPE FUND	AUDITOR'S PARCEL NO.	REMARKS AND PERSONALTY	AS ACQUIRED	
			BOOK	PAGE							LEFT	RIGHT				BOOK	PAGE
95WL	OK Investment Company	3	9381	G9	7.548	2.397	4.881	2.397	2.484	*YES		2.667		0108451 01044699 01052210	* 1-Story Brick and Stucco - Abandoned  Sanitary Sewer Easement Purchased for City of Columbus		
95U	" " "	3			0.062												
98WL	City of Columbus	3	2033	452	0.285	0.096	0.285	0.096	0.189			0					

REV.	DATE	1/15/92	ACERAGE ADJUSTMENTS	DESCRIPTION
------	------	---------	---------------------	-------------

FRANKLIN COUNTY  
CITY OF COLUMBUS  
TWP 5N, RANGE 22W  
REFUGEE LANDS

CALC. BY	FRA - 670 - 1.25 - C - 2	OHIO	275
CHKD. BY		FHWA REGION	5
DATE			
FEDERAL PROJECT	IR-670-6(54)98	STATE PROJECT	06012 (0)
FRANKLIN COUNTY			3
			3



ROAD "OD" CURVE DATA

PI. STA. 149+92.94	PI. STA. 151+42.20
$\Delta$ 6° 51' 31"	$\theta_s$ 10° 30' 0"
$D_c$ 7° 0' 0"	$L_s$ 300'
$R_c$ 818.51'	$X$ 298.99'
$L_c$ 97.98'	$Y$ 18.28'
$T$ 49.05'	$LT$ 200.35'
$E$ 1.47'	$ST$ 100.32'

ROAD "OE" CURVE DATA

PI. STA. 152+13.43
$\Delta$ 10° 30' 00"
$(D_c)$ 7° 0' 0"
$\theta_s$ 10° 30' 0"
$L_s$ 300.00'
$X$ 298.99'
$Y$ 18.28'
$LT$ 200.35'
$ST$ 100.32'

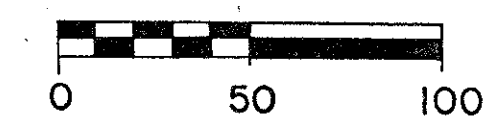
RAMP "OF" CURVE DATA

PI. STA. 153+07.95
$\Delta$ 66° 13' 07"
$D_c$ 18° 00' 00"
$R_c$ 318.31
$L_c$ 27° 00' 00"
$L_s$ 67.87
$X$ 300.00
$Y$ 293.41
$LT$ 202.38
$ST$ 102.16
$T_s$ 364.09
$E_s$ 75.65

OK Investment Company

95WL T.B.A. = 4.881 Ac.
98WL T.B.A. = 0.285 Ac.
P.R.O. = 2.397 Ac.
Rt. Residue = 2.667 Ac. - Total
95U T.B.A. = 0.062 Ac.

Note: All stations and offsets are given from  $\square$  ramp OF, unless otherwise indicated.



SCALE IN FEET

REV.	DATE	DESCRIPTION
1	1/16/92	ACERAGE ADJUSTMENT

RIGHT OF WAY STA. 149+43.86 TO STA. 160+00

**INTRODUCTION**

THE PROJECT CONSISTS OF CONSTRUCTING PORTIONS OF A BIKEWAY, ROAD OD, ROAD OE, RAMP OF AND SR 315 N.B. THE PROJECT IS PART OF THE OVERALL CONSTRUCTION CONTRACT DESIGNATED AS FRA-670-1.25, CONTRACT C-2;

**GEOLOGY**

THE ORIGINAL SITE SOIL HAS BEEN DEPOSITED BY ILLINOIAN AND WISCONSIN GLACIERS. SOILS ENCOUNTERED CONSIST OF CLAYEY SILT GLACIAL TILLS, AND SAND AND GRAVEL OUTWASH.

**EXPLORATION**

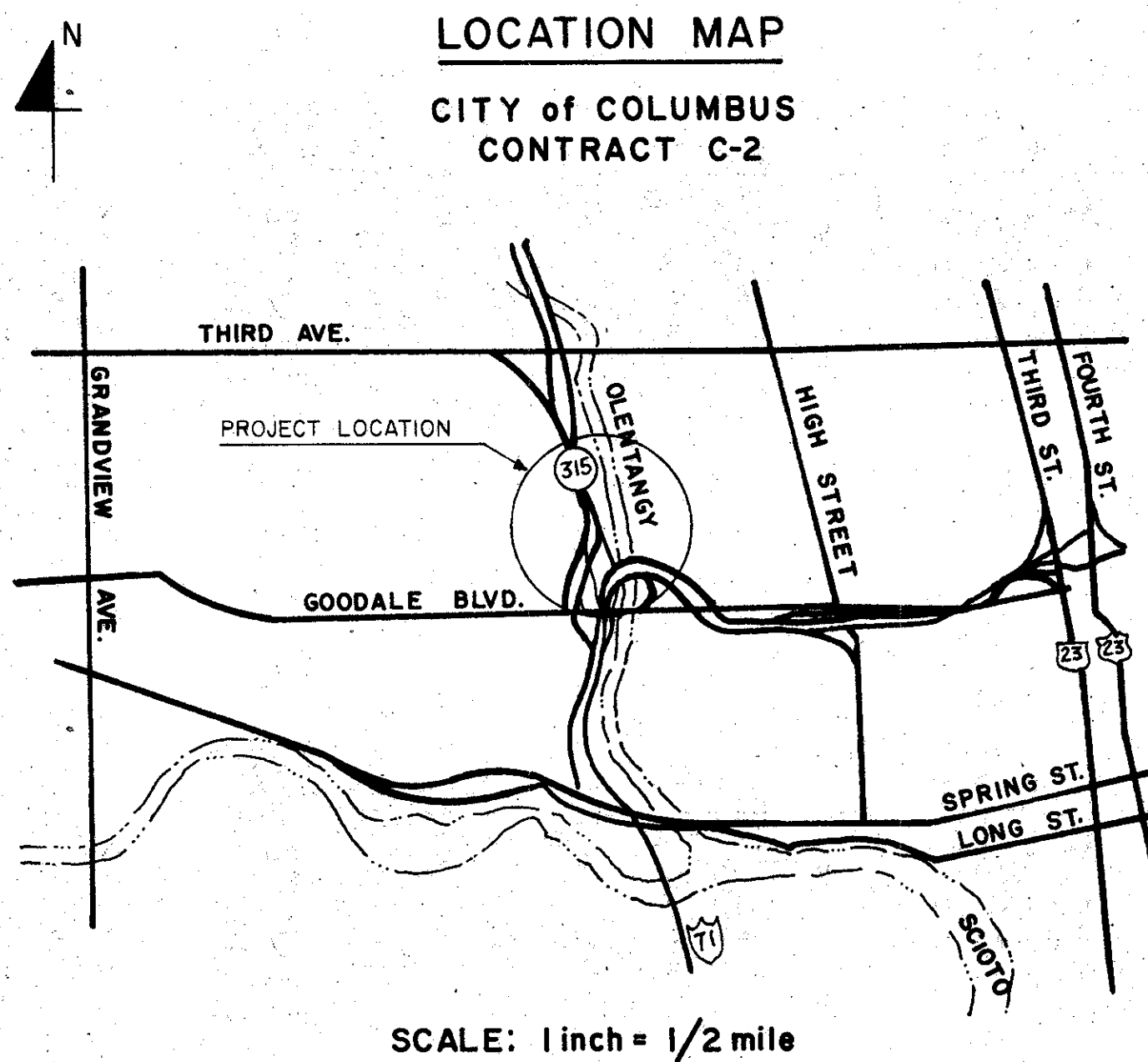
TWELVE ENGINEERING TEST BORINGS, DESIGNATED AS BW-3 THROUGH BW-6, OD-1 AND OD-2, OE-1 THROUGH OE-4, OF-1 AND S-11 WERE DRILLED AT THE STATION AND OFFSET SHOWN ON THE BORING LOGS. THE TEST BORINGS WERE DRILLED WITH A TRUCK MOUNTED ROTARY DRILLING MACHINE UTILIZING CONTINUOUS FLIGHT AND/OR HOLLOW STEM AUGERS TO ADVANCE THE HOLE. STANDARD PENETRATION TESTS WERE PERFORMED AT 2.5 AND 5-FOOT INTERVALS TO OBTAIN REPRESENTATIVE SOIL SAMPLES FOR VISUAL EXAMINATION AND LABORATORY TESTING. ALL SAMPLES WERE VISUALLY CLASSIFIED AND TESTED FOR NATURAL MOISTURE CONTENT. SAMPLES SELECTED AS BEING REPRESENTATIVE OF THE SITE SOILS WERE TESTED FOR GRADATION AND ATTERBERG LIMITS.

**INVESTIGATIONAL FINDINGS**

THE TEST DATA INDICATES THAT THE ORIGINAL SOILS ARE PRIMARILY COHESIVE OF THE A-4a CATEGORY WITH ZONES OF GRANULAR SOILS IN THE A-1-a TO A-3a CATEGORY. RANDOM FILL SOILS WERE ENCOUNTERED IN ALL BORINGS EXCEPT BW-3, BW-6 AND OE-2. CLASSIFICATION IS ACCORDING TO THE OHIO DEPARTMENT OF TRANSPORTATION SYSTEM.

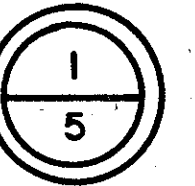
NOTE--ALL AVAILABLE SOIL AND BEDROCK INFORMATION WHICH CAN BE CONVENIENTLY SHOWN ON THE STRUCTURE FOUNDATION INVESTIGATION SHEETS HAS BEEN SO REPORTED. ADDITIONAL SUBSURFACE INVESTIGATIONS MAY HAVE BEEN MADE TO STUDY SOME SPECIAL ASPECT OF THE PROJECT. COPIES OF THIS DATA, IF ANY, MAY BE INSPECTED IN THE DISTRICT DEPUTY DIRECTOR'S OFFICE, THE PAVEMENT AND SOILS SECTION OF THE BUREAU OF LOCATION AND DESIGN OR IN THE BRIDGE BUREAU AT 25 SOUTH FRONT STREET.

THE PURPOSE OF THIS SUBSURFACE INVESTIGATION IS TO DEVELOP SOILS INFORMATION FOR FOUNDATION DESIGN WHICH WILL LIMIT UNCERTAINTY AND ESTABLISH RISK POTENTIAL. THIS INVESTIGATION HAS BEEN PERFORMED SPECIFICALLY FOR FOUNDATION DESIGN PURPOSES AND IS NOT INTENDED TO BE USED FOR CONSTRUCTION ESTIMATING OR BIDDING. INFORMATION SHOWN WAS OBTAINED FOR USE IN ESTABLISHING DESIGN CRITERIA FOR THE PROJECT. THE ACCURACY OF THE DATA PRESENTED IS NOT GUARANTEED BY THE STATE OF OHIO OR CONSULTANT AND IS NOT TO BE CONSTRUED AS PART OF THE PLANS GOVERNING CONSTRUCTION OF THE PROJECT.



NH 670 - 6(54)98  
STP - 1K78(6)

CITY of COLUMBUS	OHIO
	FHWA REGION 5
	FEDERAL PROJECT
FRA-670-1.25-C 2	



**LEGEND FOR PROJECT - AVERAGE RESULTS OF TESTS - 18 SAMPLES TESTED**

- ROTARY BORING - PLAN
- ROTARY BORING - PROFILE - PLOTTED TO VERTICAL SCALE ONLY
- # - INDICATES MOISTURE CONTENT IN PERCENT
- X - INDICATES NUMBER OF BLOWS FOR FIRST SIX INCHES
- Y - INDICATES NUMBER OF BLOWS FOR SECOND SIX INCHES
- Z - INDICATES NUMBER OF BLOWS FOR THIRD SIX INCHES
- w INDICATES FREE WATER
- MOISTURE CONTENT ≥ LL-3
- MOISTURE CONTENT OF A NON-PLASTIC SOIL > 25

SOIL SYMBOL and DESCRIPTION	HRB CLASS	OHIO CLASS	% AGG	% C. SAND	% F. SAND	% SILT	% CLAY	LIQUID LIMIT	PLASTICITY INDEX	MOISTURE CONTENT	SAMPLES TESTED
GRAVEL and/or STONE FRAGMENTS	A-1-a	A-1-a	61	14	14	11	—	—	—	9	2
GRAVEL and/or STONE FRAGMENTS with SAND	A-1-b	A-1-b	51	14	10	25	—	20	1	11	2
COARSE and FINE SAND	—	A-3a	0	0	67	20	13	24	6	19	1
GRAVEL and/or STONE FRAGMENTS with SAND and SILT	A-2-4	A-2-4	29	22	20	21	8	21	1	12	1
SANDY SILT	A-4	A-4a	13	14	22	31	20	29	10	17	6
SILT	A-4	A-4b	0	0	15	55	30	35	8	21	2
SILT and CLAY	A-6	A-6a	6	8	22	39	25	32	11	21	3
CLAY	A-7-6	A-7-6	—	—	—	—	—	47	21	34	1
TOPSOIL			VISUAL CLASSIFICATION								
RANDOM FILL			VISUAL CLASSIFICATION (may include one or more of the following soil, brick, wood, cinders, concrete, glass, etc)								
CINDERS with or without SOIL			VISUAL CLASSIFICATION								

**GENERAL INFORMATION**

BORINGS ARE MADE BY MEANS OF A ROTARY TYPE DRILL RIG, EMPLOYING A 2-INCH O.D., 1-3/8-INCH I.D. SAMPLER, AT 2-1/2 AND/OR 5-FOOT DEPTH INTERVALS, DRIVEN BY MEANS OF A 140 POUND DROP HAMMER WITH A FREE FALL OF 30 INCHES. THE NUMBER OF BLOWS REQUIRED TO DRIVE THE SAMPLER THE LAST 12 INCHES IS CONSIDERED THE STANDARD PENETRATION TEST.

THE BORING LOG SHEET SHOWS A GRAPHIC PLOT OF THE INFORMATION OBTAINED, INCLUDING DEPTH AND ELEVATION OF THE SAMPLE, NUMBER OF BLOWS FOR THE STANDARD PENETRATION TESTS IN THREE 6-INCH INCREMENTS, FIELD SAMPLE NUMBER, AND SAMPLE DESCRIPTION BASED ON LABORATORY TESTS AND THE OHIO DEPARTMENT OF TRANSPORTATION CLASSIFICATION SYSTEM. RESULTS OF STRENGTH AND CONSOLIDATION TESTING, IF PERFORMED, APPEAR ON SEPARATE ENCLOSURES.

AT DEPTHS WHERE MATERIALS ARE BOULDERY OR GRAVELLY TO THE EXTENT THAT THE SAMPLER CANNOT BE DRIVEN, A WASH SAMPLE IS PROCURED FOR VISUAL CLASSIFICATION, TO DETERMINE THE GENERAL CHARACTER OF THE MATERIAL. THESE SAMPLES ARE NOT CONSIDERED SUFFICIENTLY REPRESENTATIVE TO WARRANT LABORATORY TESTING.

PROJECT	STATION FROM TO	PLAN SHEET	PROFILE SHEET	CUT MAX	FILL MAX
Bikeway	160+00 to 183+92.73	2	2	1.5	9.1
Road OD	149+43.89 to 170+94.55	4	4	7.0	38.0
Road OE	151+13.11 to 171+55.38	3	3	4.3	24.2
Ramp OF	149+43.86 to 161+87.16	4	4	0.0	24.5
SR 315 N.B.	171+55.38 to 181+73.57	4	4	0.0	4.8

**PARTICLE SIZE DEFINITION**

BOULDERS | COBBLES | GRAVEL | COARSE SAND | FINE SAND | SILT | CLAY  
 6" | 3" | 2mm | .42mm | .075mm | .005mm  
 NO. 10 | NO. 40 | NO. 200

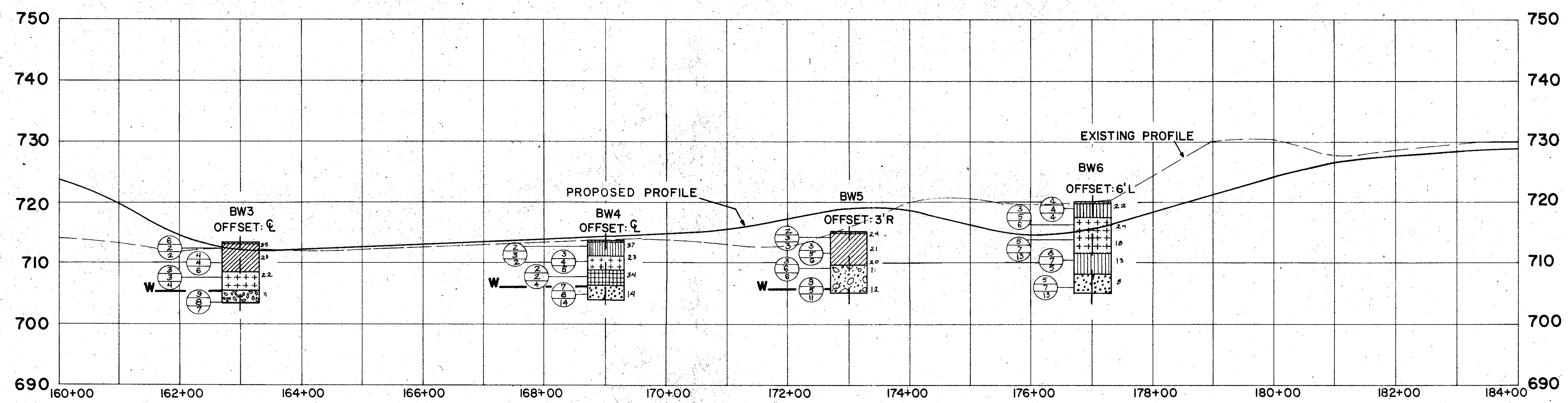
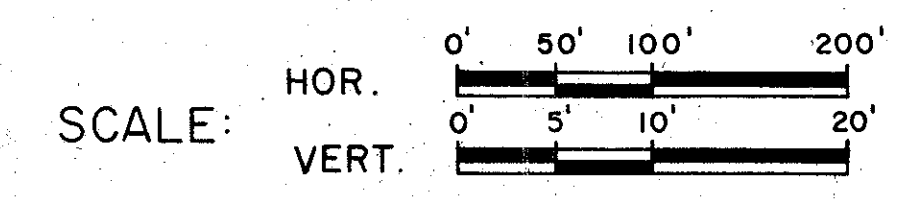
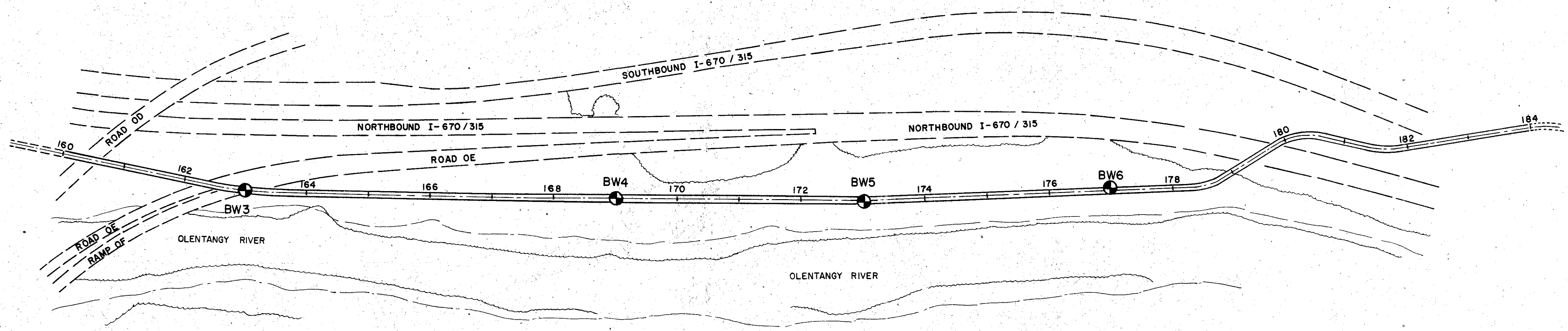
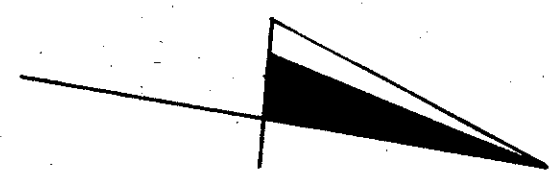
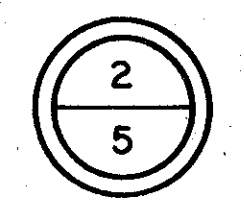
**RESOURCE INTERNATIONAL INC.**  
 281 ENTERPRISE DR.  
 COLUMBUS, OHIO 43081  
 (614) 885-1959

CITY OF COLUMBUS  
 I-670  
 FRA 670-1.25-C 2  
 SOIL PROFILE

DATE: 11-86 / 2-87 | DRAWN BY: J.K.H. | CHECKED BY: [Signature]

277

FRANKLIN COUNTY	OHIO
FRA-670-1.25-C-2	FHWA REGION FEDERAL PROJECT

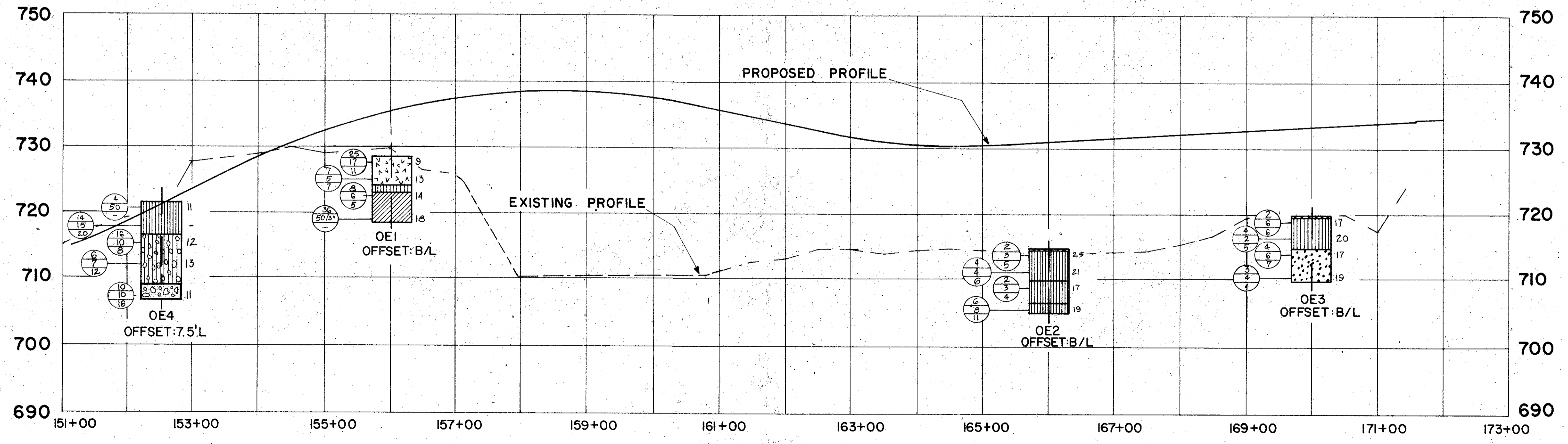
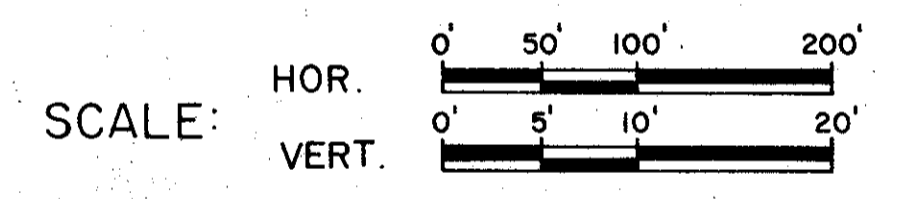
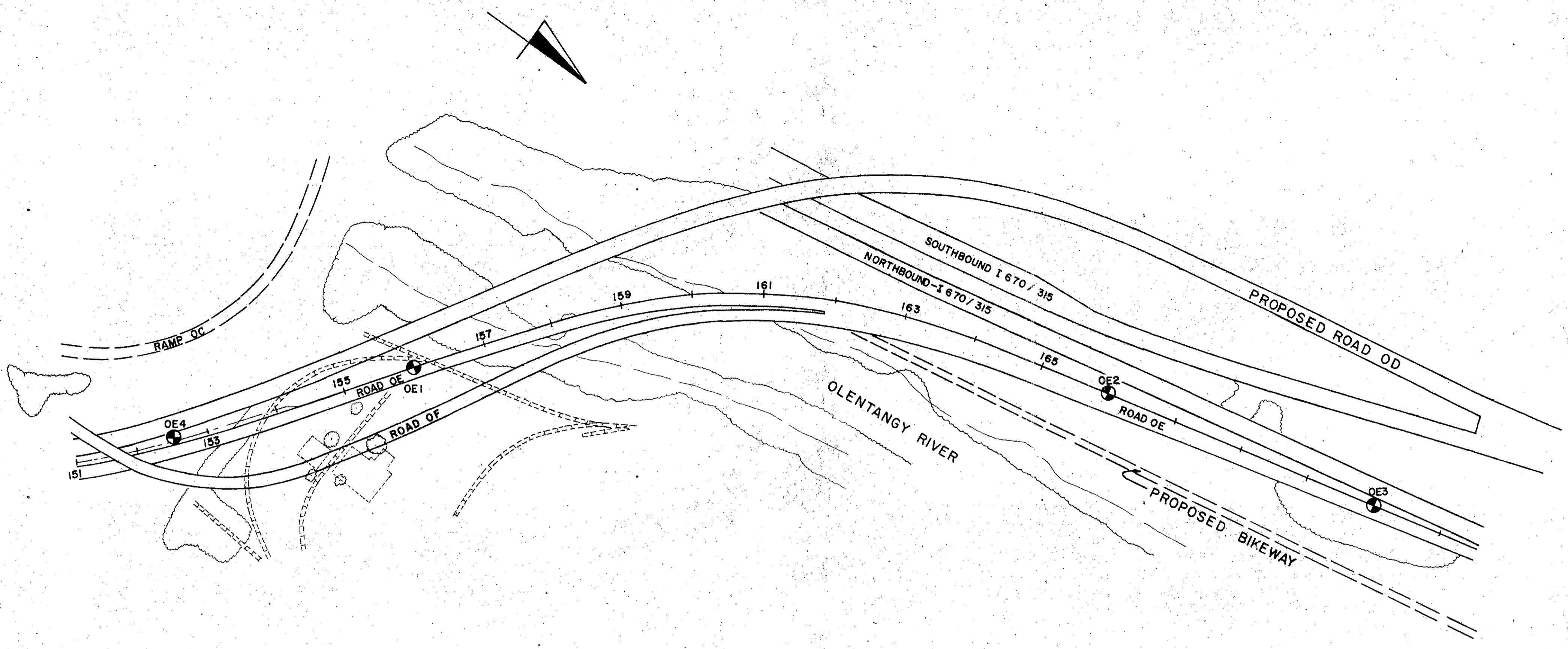
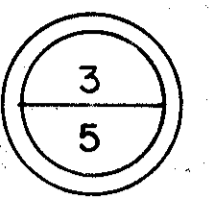


RESOURCE INTERNATIONAL INC.  
281 ENTERPRISE DR.  
COLUMBUS, OHIO 43081  
(614) 885-1959

FRANKLIN COUNTY  
FRA-670-1.25-C-2  
SOIL PROFILE

DATE 4-14-86	DRAWN BY: G.K.E.	CHECKED BY: <i>AK</i>
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FRANKLIN COUNTY	OHIO
FRA-670-1.25-C-2	FHWA REGION
	FEDERAL PROJECT

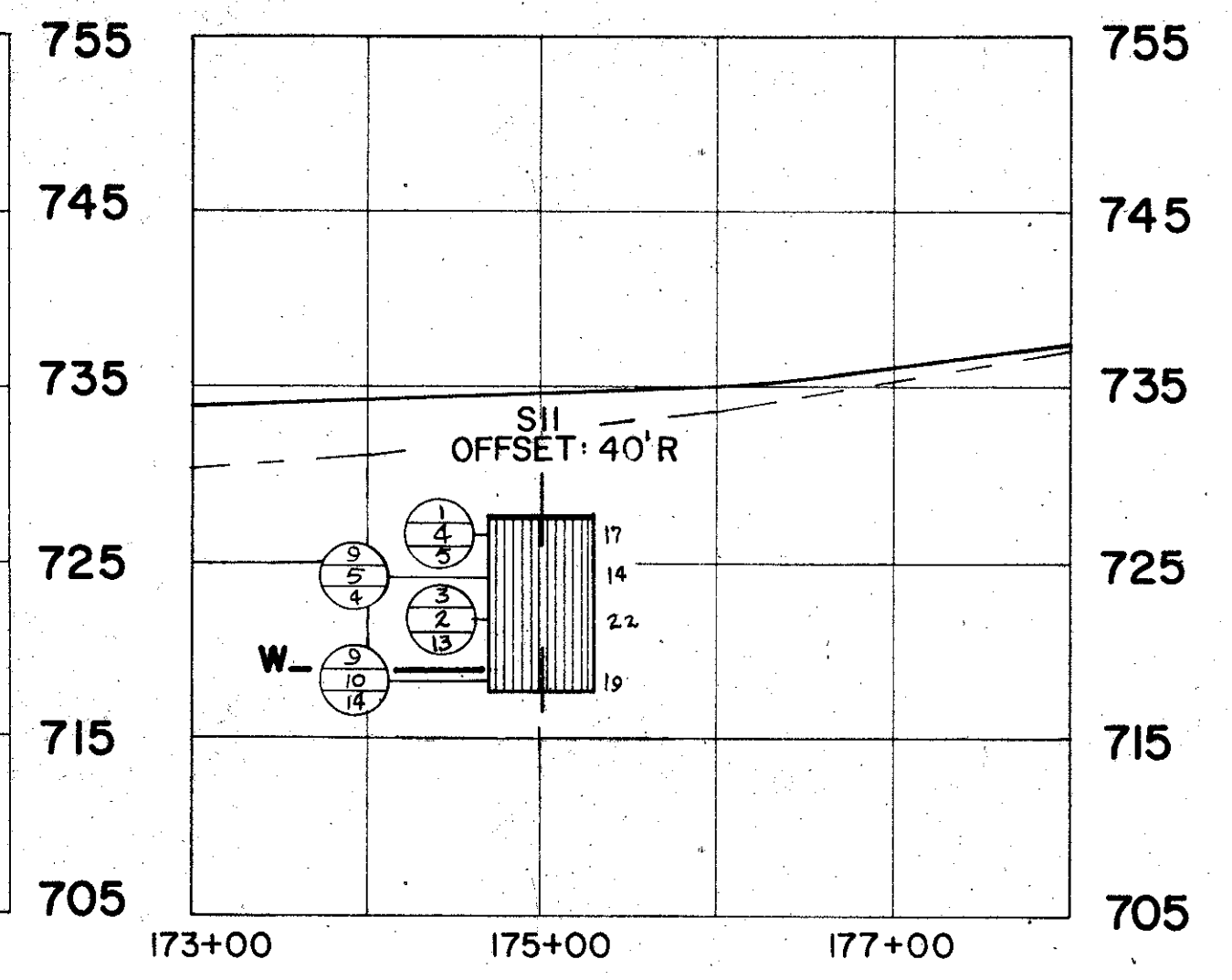
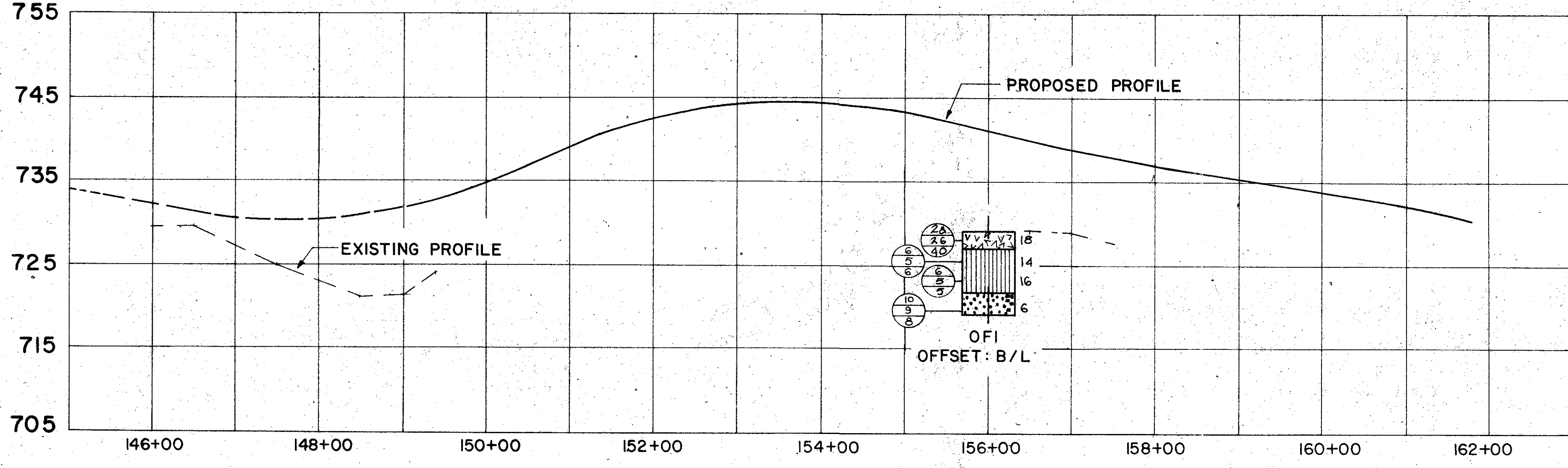
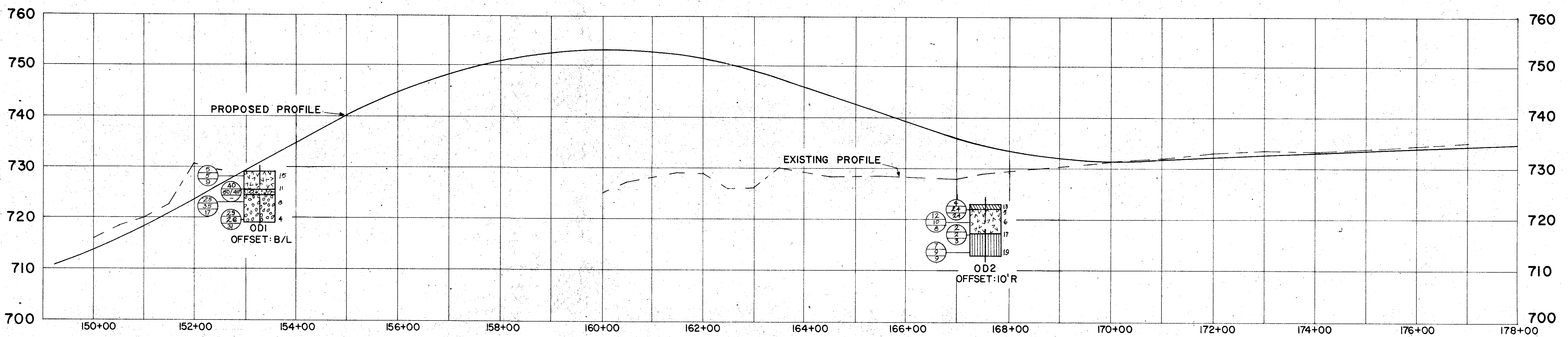
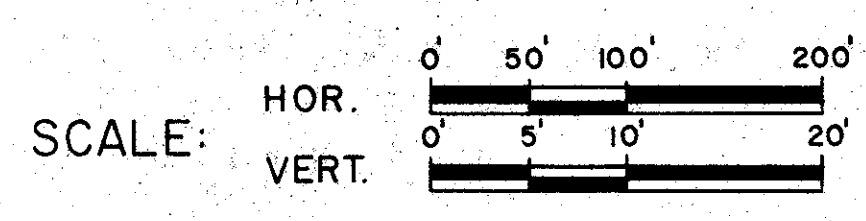
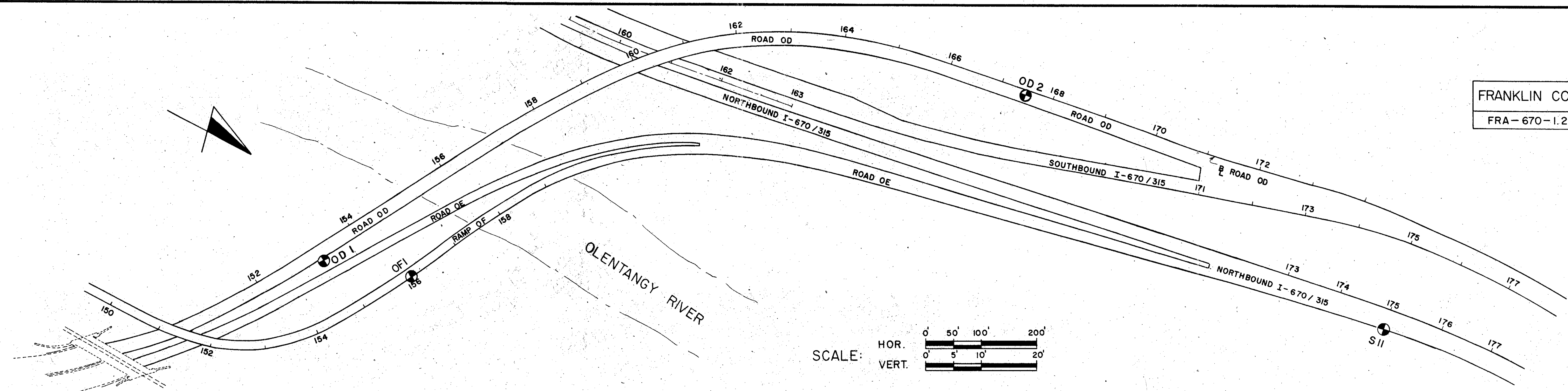
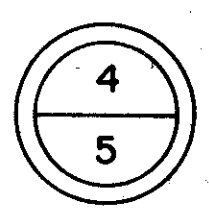


	RESOURCE INTERNATIONAL INC. 281 ENTERPRISE DR. COLUMBUS, OHIO 43081 (614) 885-1959	
	FRANKLIN COUNTY FRA-670-1.25-C-2 SOIL PROFILE	
DATE: 4-18-86	DRAWN BY: G.K.E.	CHECKED BY: <i>[Signature]</i>



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FRANKLIN COUNTY	OHIO
FRA-670-1.25-C-2	FHWA REGION
	FEDERAL PROJECT



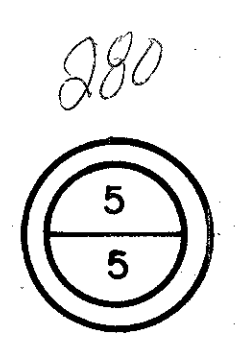
	RESOURCE INTERNATIONAL INC. 281 ENTERPRISE DR. COLUMBUS, OHIO 43081 (614) 885-1959	
	FRANKLIN COUNTY FRA-670-1.25-C-2 SOIL PROFILE	
DATE: 01-5-86	DRAWN BY: G.K.E.	CHECKED BY: <i>AK</i>


BORING NUMBER	STATION & OFFSET	DEPTH FROM TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	ODOT CLASS.			
BW-3	163+00 CL	0.0 - 0.1	TOPSOIL									VISUAL		
		0.1 - 0.4	BROWN CLAYEY SILT, SOME FINE TO COARSE SAND, TRACE FINE GRAVEL								35	VISUAL		
		2.5 - 3.3	5	4	27	37	27	32	11	23		A-6A		
		5.0 - 5.8	BROWN CLAYEY SILT, SOME TO LITTLE FINE SAND								22	VISUAL		
		8.5 - 9.2	63	11	12	24		NP	NP	11	A-1-A			
BW-4	169+00 CL	0.0 - 0.1	TOPSOIL									VISUAL		
		0.1 - 0.4	BROWN CLAYEY SILT, LITTLE FINE TO COARSE SAND								37	VISUAL		
		2.5 - 4.0	0	0	20	51	29	40	6	18		A-4B		
		5.0 - 6.5									47	21	34	A-7-6
		8.5 - 9.5	BROWN AND GRAY FINE TO COARSE SAND, SOME SILT, LITTLE FINE GRAVEL								14	VISUAL		
BW-5	173+00 3.0 FT RT.	0.0 - 0.2	TOPSOIL									VISUAL		
		0.2 - 0.7	BROWN CLAYEY SILT, SOME FINE SAND								24	VISUAL		
		2.5 - 3.5	0	0	22	45	33	30	11	21		A-6A		
		5.0 - 5.5	BROWN CLAYEY SILT, SOME FINE SAND								20	VISUAL		
		5.5 - 6.0	BROWN FINE TO COARSE GRAVEL, SOME FINE TO COARSE SAND, SOME SILT								11	VISUAL		
		8.5 - 9.3	50	13	13	24				12	A-1-B			
BW-6	176+96.5 6 FT LT.	0.0 - 0.2	TOPSOIL									VISUAL		
		0.2 - 0.8	BROWN CLAYEY SILT, SOME FINE SAND								22	VISUAL		
		2.5 - 3.5	BROWN CLAYEY SILT, LITTLE TO TRACE FINE SAND								24	VISUAL		
		5.0 - 6.2	0	0	10	58	32	40	6	18		A-4B		
		8.5 - 9.5	BROWN CLAYEY SILT, SOME FINE TO COARSE SAND								13	VISUAL		
		13.5 - 13.8	BROWN FINE TO COARSE SAND, LITTLE FINE TO COARSE GRAVEL, TRACE CLAY								8	VISUAL		
OD-1	153+25 B/L	0.0 - 0.7	BRICK AND CINDERS, TRACE TOPSOIL AND SILT								15	VISUAL		
		2.5 - 3.3	BRICK AND CINDERS, TRACE TOPSOIL AND SILT								11	VISUAL		
		5.0 - 6.5	59	16	16	9				8		A-1-A		
		8.5 - 10.0	BROWN FINE TO COARSE GRAVEL AND FINE TO COARSE SAND, LITTLE COBBLES								4	VISUAL		
OD-2	167+50 10' RT.	0.0 - 0.7	TOPSOIL (FILL)								13	VISUAL		
		0.7 - 1.3	GRAY FINE TO COARSE SAND, SOME SILT, SOME FINE TO COARSE GRAVEL AND ROCK FRAGMENTS, TRACE CINDERS (FILL)								5	VISUAL		
		2.5 - 3.5	GRAY FINE TO COARSE SAND, SOME SILT, SOME FINE TO COARSE GRAVEL AND ROCK FRAGMENTS									VISUAL		
		5.0 - 6.2	TRACE CINDERS								NP	NP	6	
		8.5 - 9.5	GREENISH BROWN CLAYEY SILT, LITTLE FINE TO COARSE SAND, LITTLE FINE GRAVEL								19	VISUAL		
OE-1	156+00 B/L	0.0 - 1.0	DARK BROWN SILTY TOPSOIL AND FINE TO COARSE SAND AND GRAVEL, TRACE BRICK								9	VISUAL		
		2.5 - 3.6	DARK BROWN FINE TO COARSE SAND AND GRAVEL, TRACE BRICK								13	VISUAL		
		5.0 - 5.5	5	8	20	48	19			14		A-4A		
		8.5 - 9.1	12	21	16	34	17	33	12	8		A-6A		
OE-2	166+00 B/L	0.0 - 0.1	TOPSOIL									VISUAL		
		0.1 - 0.4	BROWN CLAYEY SILT, LITTLE FINE SAND								25	VISUAL		
		2.5 - 3.3									30	10	21	A-4A
		5.0 - 5.5	BROWN CLAYEY SILT, SOME FINE TO COARSE SAND								17	VISUAL		
		8.5 - 9.5	6	23	24	29	18			19	A-4A			
OE-3	170+00 B/L	0.0 - 0.1	TOPSOIL									VISUAL		
		0.1 - 0.5	BROWN AND GRAY CLAYEY SILT, SOME FINE TO COARSE SAND, LITTLE ROCK FRAGMENTS AND CINDERS								17	VISUAL		
		2.5 - 3.8	BROWN AND GRAY CLAYEY SILT, SOME FINE TO COARSE SAND, LITTLE ROCK FRAGMENTS AND CINDERS								20	VISUAL		
		5.0 - 6.2	BROWN FINE SAND, LITTLE CLAYEY SILT								17	VISUAL		
		8.5 - 10.0	0	0	67	20	13	24	6	19	A-3A			

BORING NUMBER	STATION & OFFSET	DEPTH FROM TO	% AGG.	% C.S.	% F.S.	% SILT	% CLAY	L.L.	P.I.	% W.C.	ODOT CLASS.	
OE-4	152+52.5 7.5' LT	0.0 - 0.3	BROWN CLAYEY SILT, SOME FINE TO COARSE SAND, LITTLE FINE GRAVEL, ORGANICS (FILL)								11	VISUAL
		2.5 - 2.7	BROWN CLAYEY SILT, SOME FINE TO COARSE SAND, LITTLE FINE GRAVEL, ORGANICS (FILL)									VISUAL
		5.0 - 5.8	29	22	20	21	8	21	1	12		A-2-4
		8.5 - 9.3	BROWN AND GRAY FINE TO COARSE SAND, SOME CLAYEY SILT, LITTLE FINE TO COARSE GRAVEL								13	VISUAL
		13.5 - 14.5	52	15	8	25		20	1	11	A-1-B	
OF-1	156+00 B/L	0.0 - 1.5	BRICK AND FINE TO COARSE GRAVEL, SOME FINE TO COARSE SAND, LITTLE CLAYEY SILT								18	VISUAL
		2.5 - 4.0	BROWN CLAYEY SILT, SOME FINE TO COARSE SAND, SOME FINE GRAVEL								14	VISUAL
		5.0 - 6.5	21	15	17	47				16		A-4A
		8.5 - 9.8	BROWN FINE TO COARSE SAND, SOME FINE TO COARSE								6	VISUAL
S-11	175+00 NB 40' RT	0.0 - 0.1	TOPSOIL									VISUAL
		0.1 - 0.7	BROWN CLAYEY SILT, SOME FINE TO COARSE SAND, LITTLE FINE GRAVEL, TRACE CINDERS AND BRICK, (FILL)								17	VISUAL
		2.5 - 3.2	BROWN CLAYEY SILT, SOME FINE TO COARSE SAND, LITTLE FINE GRAVEL, TRACE CINDERS AND BRICK, (FILL)								14	VISUAL
		5.0 - 5.8	BROWN CLAYEY SILT, SOME FINE TO COARSE SAND, LITTLE FINE GRAVEL, TRACE CINDERS AND BRICK, (FILL)								22	VISUAL
		8.5 - 9.6	15	13	32	40		28	10	19	A-4A	

CITY of COLUMBUS  
FRA-670-1.25-C2

OHIO  
FHWA REGION 5  
FEDERAL PROJECT



CITY of COLUMBUS I-670 FRA-670-1.25-C2 SOIL PROFILE		 <b>RESOURCE INTERNATIONAL INC.</b> 281 ENTERPRISE DR. COLUMBUS, OHIO 43081 (614) 885-1959
DATE 11-21-85 2-3-87	DRAWN BY: JKH CHECKED BY: #/	

GENERAL INFORMATION

BORINGS ARE MADE BY MEANS OF A ROTARY TYPE DRILL RIG, EMPLOYING A 2-INCH O.D., 1-3/8 INCH I.D. SAMPLER, AT 2-1/2 AND/OR 5-FOOT DEPTH INTERVALS, DRIVEN BY MEANS OF A 140 POUND DROP HAMMER WITH A FREE FALL OF 30 INCHES. THE NUMBER OF BLOWS REQUIRED TO DRIVE THE SAMPLER THE LAST 12 INCHES IS CONSIDERED THE STANDARD PENETRATION TEST.

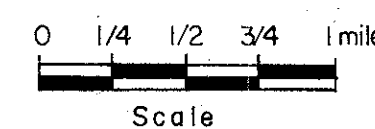
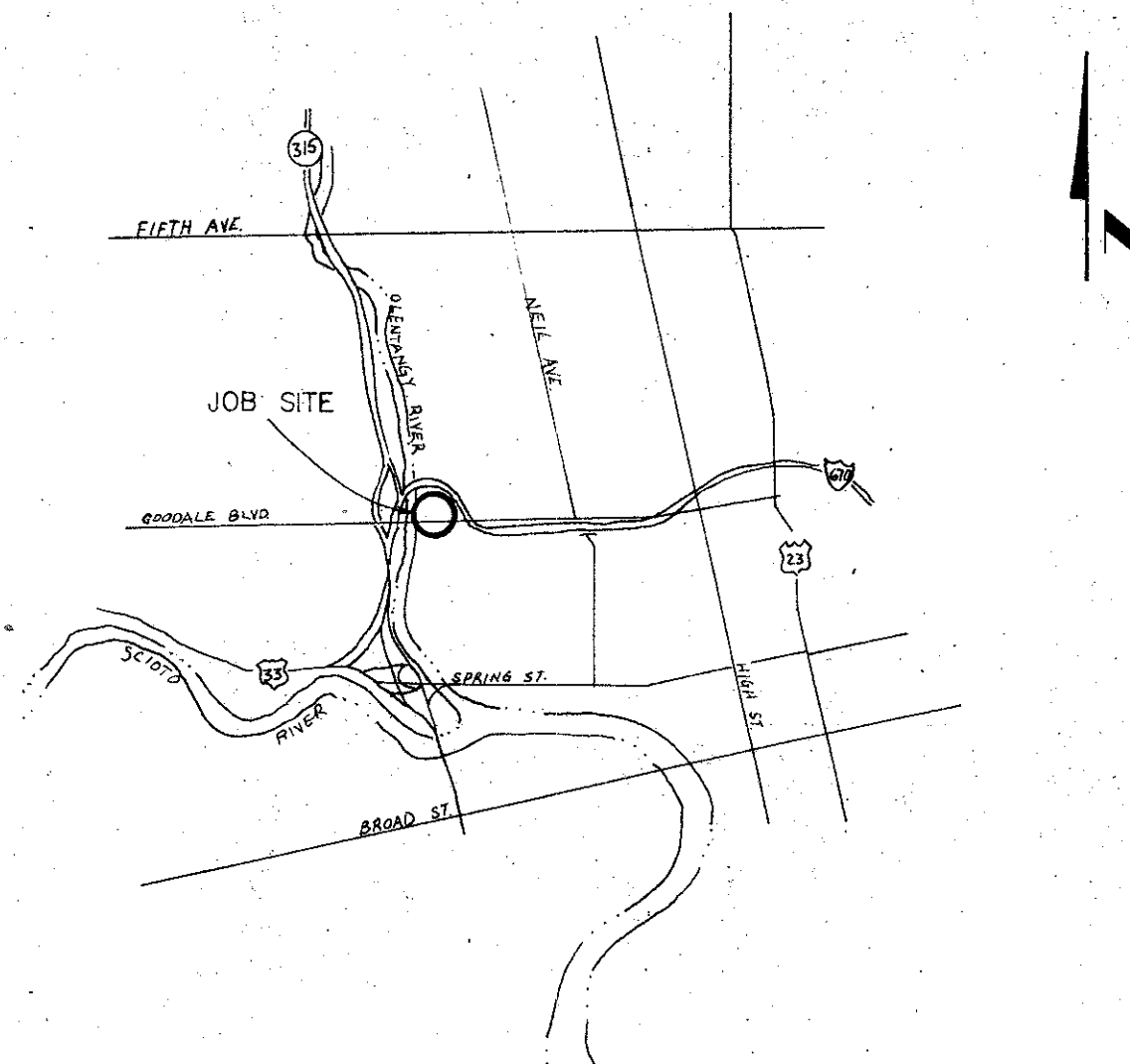
THE BORING LOG SHEET SHOWS GRAPHIC PLOT OF THE INFORMATION OBTAINED, INCLUDING DEPTH AND ELEVATION OF THE SAMPLE, NUMBER OF BLOWS FOR THE STANDARD PENETRATION TESTS IN THREE 6-INCH INCREMENTS, FIELD SAMPLE NUMBER, AND SAMPLE DESCRIPTION BASED ON LABORATORY TESTS AND THE OHIO DEPARTMENT OF TRANSPORTATION CLASSIFICATION SYSTEM. RESULTS OF STRENGTH AND CONSOLIDATION TESTING, IF PERFORMED, APPEAR ON SEPARATE ENCLOSURES.

AT DEPTH WHERE MATERIALS ARE BOULDERY OR GRAVELLY TO THE EXTENT THAT THE SAMPLE CANNOT BE DRIVEN, A WASH SAMPLE IS PROCURED FOR VISUAL CLASSIFICATION TO DETERMINE THE GENERAL CHARACTER OF THE MATERIAL. THESE SAMPLES ARE NOT CONSIDERED SUFFICIENTLY REPRESENTATIVE TO WARRANT LABORATORY TESTING.

NOTE--ALL AVAILABLE SOIL AND BEDROCK INFORMATION WHICH CAN BE CONVENIENTLY SHOWN ON THE STRUCTURE FOUNDATION INVESTIGATION SHEETS HAS BEEN SO REPORTED. ADDITIONAL SUBSURFACE INVESTIGATIONS MAY HAVE BEEN MADE TO STUDY SOME SPECIAL ASPECT OF THE PROJECT. COPIES OF THE DATA, IF ANY, MAY BE INSPECTED IN THE DISTRICT DEPUTY DIRECTOR'S OFFICE, THE PAVEMENT AND SOILS SECTION OF THE BUREAU OF LOCATION AND DESIGN OR IN THE BRIDGE BUREAU AT 25 SOUTH FRONT STREET.

THE PURPOSE OF THIS SUBSURFACE INVESTIGATION IS TO DEVELOP SOILS INFORMATION FOR FOUNDATION DESIGN WHICH WILL LIMIT UNCERTAINTY AND ESTABLISH RISK POTENTIAL. THIS INVESTIGATION HAS BEEN PERFORMED SPECIFICALLY FOR FOUNDATION DESIGN PURPOSES AND IS NOT INTENDED TO BE USED FOR CONSTRUCTION ESTIMATING OR BIDDING. INFORMATION SHOWN WAS OBTAINED FOR USE IN ESTABLISHING DESIGN CRITERIA FOR THE PROJECT. THE ACCURACY OF THE DATA PRESENTED IS NOT GUARANTEED BY THE STATE OF OHIO OR CONSULTANT AND IS NOT TO BE CONSTRUED AS PART OF THE PLANS GOVERNING CONSTRUCTION OF THE PROJECT.

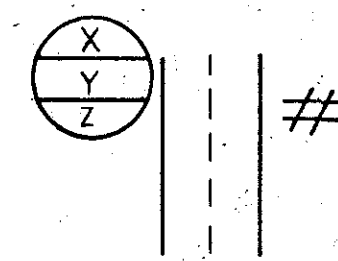
SITE LOCATION



LEGEND



ROTARY BORING — PLAN



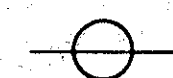
ROTARY BORING — PROFILE — PLOTTED TO VERTICAL SCALE ONLY  
 # — INDICATES MOISTURE CONTENT IN PERCENT,  
 X — INDICATES NUMBER OF BLOWS FOR THE FIRST SIX INCHES  
 Y — INDICATES NUMBER OF BLOWS FOR THE SECOND SIX INCHES  
 Z — INDICATES NUMBER OF BLOWS FOR THE THIRD SIX INCHES



INDICATES FREE WATER



MOISTURE CONTENT  $\geq$  LL-3

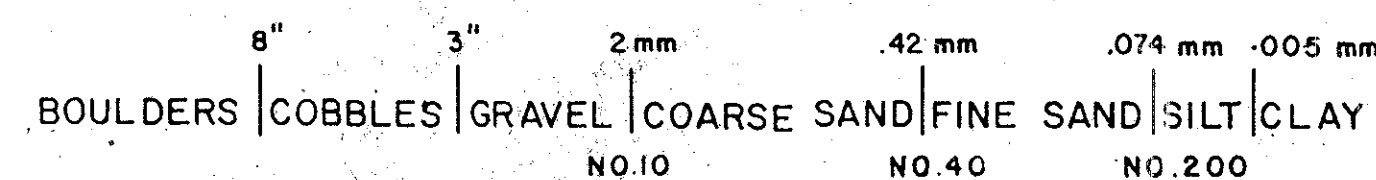


MOISTURE CONTENT OF A NON-PLASTIC SOIL  $>$  25

SOIL TYPES

OHIO CLASS		OHIO CLASS	
	GRAVEL AND/OR STONE FRAGMENTS		SILT AND CLAY
A-1-a		A-6a	
	GRAVEL AND/OR STONE FRAGMENTS WITH SAND		SILTY CLAY
A-1-b		A-6b	
	FINE SAND		ELASTIC CLAY
A-3		A-7-5	
	COARSE AND FINE SAND		CLAY
A-3a		A-7-6	
	GRAVEL AND/OR STONE FRAGMENTS WITH SAND, SILT, CLAY		RANDOM FILL
A-2-6		VISUAL	
	GRAVEL AND/OR STONE FRAGMENTS WITH SAND AND SILT		WEATHERED SHALE
A-2-4		VISUAL	
	SANDY SILT		SHALE
A-4a		VISUAL	
	SILT		SANDSTONE
A-4b		VISUAL	
	ELASTIC SILT AND CLAY		LIMESTONE
A-5		VISUAL	
	SOD AND/OR TOPSOIL		VARIOUS OTHER MATERIALS
VISUAL		VISUAL	
	BERM MATERIAL		SILTSTONE
VISUAL		VISUAL	
	CINDERS		
VISUAL			

PARTICLE SIZE DEFINITION



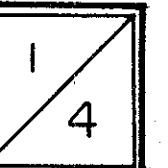
RESOURCE INTERNATIONAL  
 281 ENTERPRISE DR.  
 COLUMBUS, OHIO 43081  
 (614) 885-1959

FRANKLIN COUNTY  
 FRA-670-1.25, C-2  
 BRIDGE OF OVER ROADS OD & OE  
 STRUCTURE FOUNDATION INVESTIGATION

DATE: 9-15-87 DRAWN BY: J.K.H. CHECKED BY: H.K. REVISED:

FRANKLIN COUNTY	OHIO FWA REGION FEDERAL PROJECT
FRA-670-1.25, C-2	

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INTRODUCTION

THE PROJECT CONSISTS OF CONSTRUCTING A NEW BRIDGE FOR RAMP OF OVER ROADS OD AND OE. THE SITE IS LOCATED BETWEEN STATION 149+81 AND 152+93 OF 1-670/315. THE PROPOSED BRIDGE IS TO BE TWO SPAN CONTINUOUS WELDED STEEL GIRDERS WITH COMPOSITE REINFORCED CONCRETE DECK, HIGHWALL ABUTMENTS AND STEEL CAP PIER WITH REINFORCED CONCRETE COLUMN. THE PROJECT IS PART OF THE FRA-670-1.25 (C-2) CONSTRUCTION CONTRACT.

GEOLOGY

SOILS FOUND AT THE SITE EXHIBIT THE CHARACTERISTICS OF SAND AND GRAVEL OUTWASH DEPOSITED AND PRECOMPRESSED TO SOME DEGREE BY THE ILLINOIAN AND WISCONSIN GLACIERS. THE UPPER 10 TO 20 FEET OF THE ORIGINAL SOIL HAS LIKELY BEEN REDEPOSITED IN RECENT GEOLOGIC TIMES BY THE ADJACENT OLENTANGY RIVER. BEDROCK, ALTHOUGH NOT FOUND DURING THE EXPLORATION PROGRAM, IS LIKELY TO BE DEVONIAN AGE SHALES AND LIMESTONES.

EXPLORATION

FIVE TEST BORINGS, DESIGNATED SB-9 THROUGH SB-13 WERE DRILLED AT THE STATION AND OFFSET SHOWN ON THE BORING LOGS. THE TEST BORINGS WERE DRILLED WITH A TRUCK MOUNTED ROTARY DRILLING MACHINE UTILIZING HOLLOW STEM OR CONTINUOUS AUGERS AND TRICONE ROLLER BIT WITH DRILLING FLUID TO ADVANCE THE HOLE. STANDARD PENETRATION TESTS WERE PERFORMED AT 2-1/2 AND 5 FOOT INTERVALS TO OBTAIN REPRESENTATIVE SOIL SAMPLES FOR VISUAL EXAMINATION AND LABORATORY TESTING. ALL SAMPLES WERE VISUALLY CLASSIFIED AND TESTED FOR NATURAL MOISTURE CONTENT. SAMPLES SELECTED AS BEING REPRESENTATIVE OF THE SITE SOILS WERE TESTED FOR GRADATION AND ATTERBERG LIMITS.

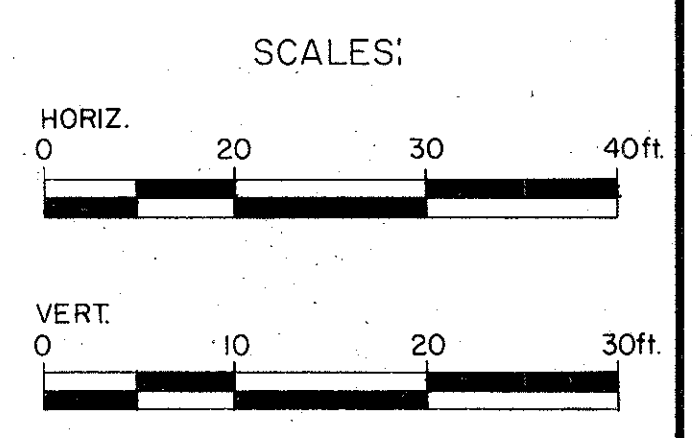
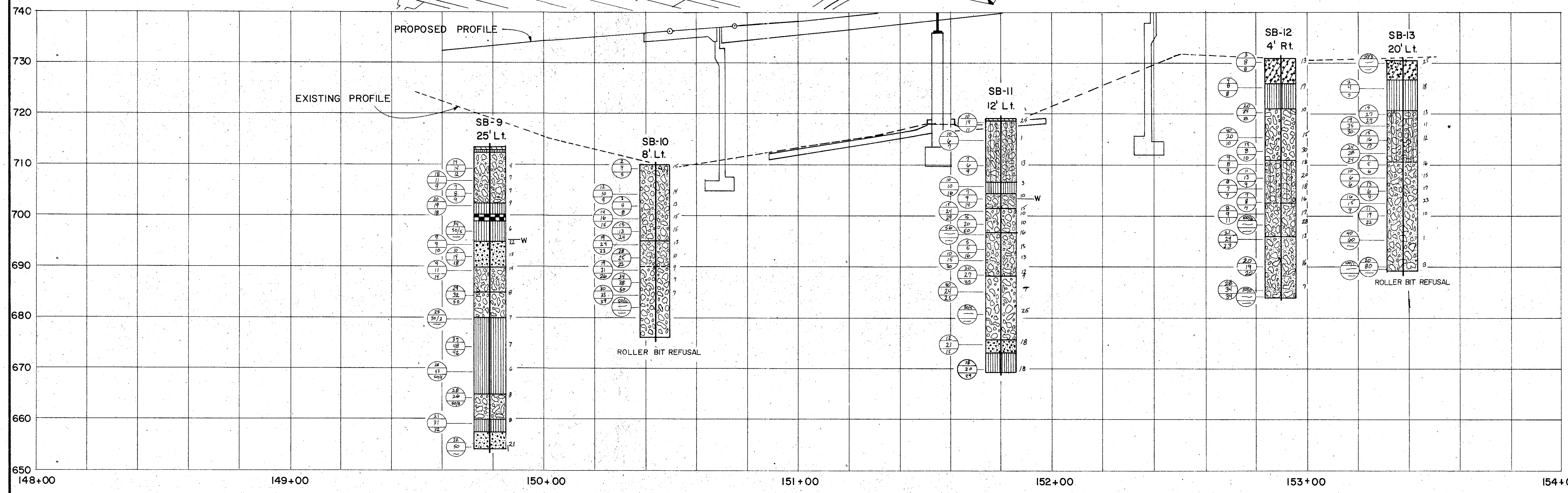
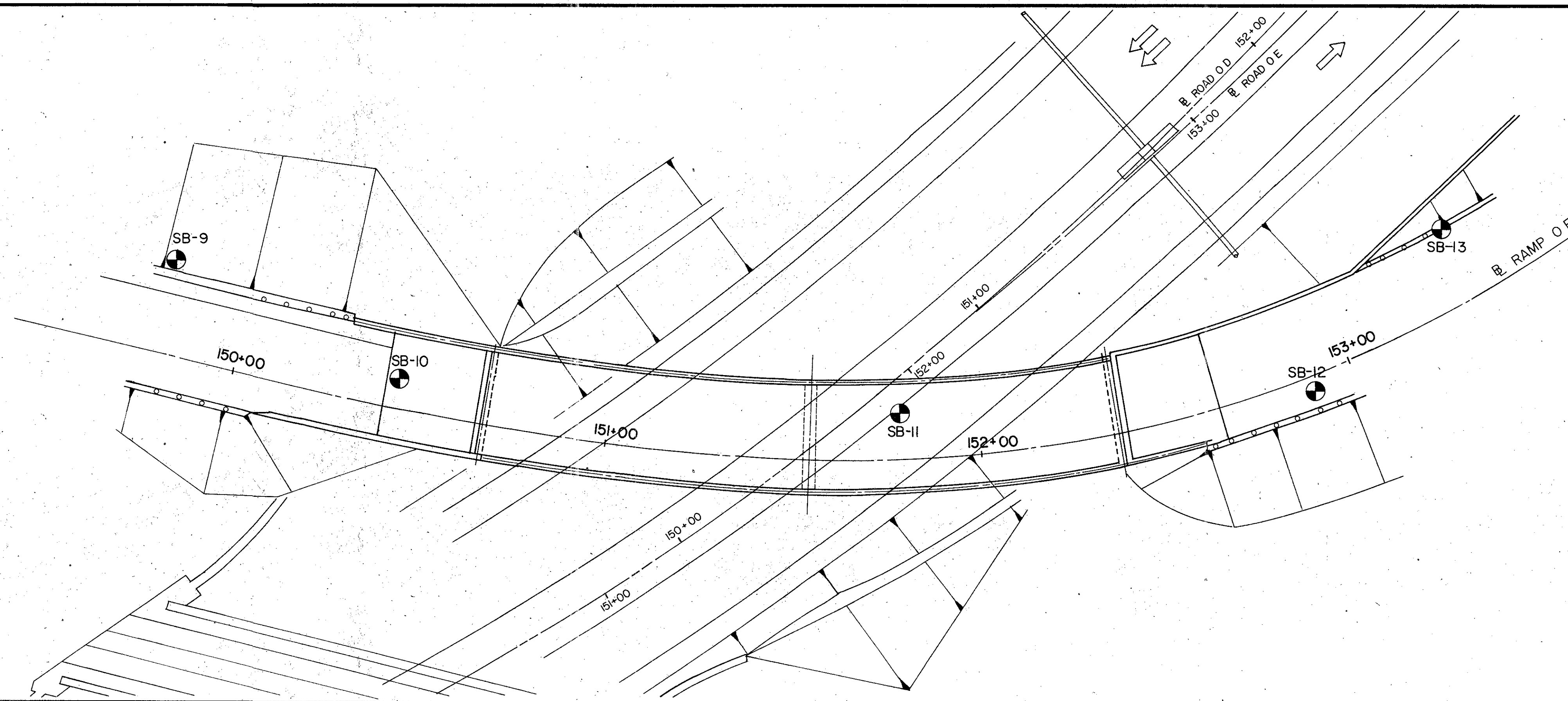
INVESTIGATIONAL FINDINGS

THE TEST DATA INDICATES THAT THE ORIGINAL SOILS ARE PREDOMINANTLY GRANULAR SOILS IN THE A-1-A TO A-1-B CATEGORY WITH ZONES OF A-4a, A-2-4 AND A-3a SOILS ALSO NOTED. COBBLES AND BOULDERS ARE NOTED AT APPARENTLY RANDOM DEPTHS IN SOME OF THE BORINGS. CLASSIFICATION IS ACCORDING TO THE OHIO DEPARTMENT OF TRANSPORTATION SYSTEM.

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FRANKLIN COUNTY	OHIO
FRA-670-1.25,C-2	FHWA REGION
	FEDERAL PROJECT

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4



RESOURCE INTERNATIONAL  
 281 ENTERPRISE DR.  
 COLUMBUS, OHIO 43081  
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FRANKLIN COUNTY  
 FRA-670-1.25,C-2  
 BRIDGE OF OVER ROADS O D & O E  
 STRUCTURE FOUNDATION INVESTIGATION

DATE: 9-15-87 DRAWN BY: J.K.H. CHECKED BY: [Signature] REVISED:

BORING LOG : SR-9  
STATION AND OFFSET : 149479 25 Ft. Lt.  
SURFACE ELEVATION : 713.2 Feet  
WATER ENCOUNTERED : 18.5 Feet

DATE STARTED : 4-16-86  
DATE FINISHED : 4-17-86  
SAMPLER TYPE : 28

BORING LOG : SB-10  
STATION AND OFFSET : 150444 8 Ft. Lt.  
SURFACE ELEVATION : 709.9 Feet  
WATER ENCOUNTERED :

DATE STARTED : 3-4-86  
DATE FINISHED : 3-10-86  
SAMPLER TYPE : 28

BORING LOG : SB-11  
STATION AND OFFSET : 151+80 12 Ft. Lt.  
SURFACE ELEVATION : 719 Feet  
WATER ENCOUNTERED : 15.5 Feet

DATE STARTED : 4-26-86  
DATE FINISHED : 4-26-86  
SAMPLER TYPE : 28

ELEV.	SAMPLE NUMBER	BLOWS PER 6"	REC	DEPTH	SOIL DESCRIPTION	WC	ATT LIMITS		PHYSICAL CHARACTERISTIC					ODOT CLASS			
							LL	PL	% AGG	% CS	% FS	% SI	% CL				
712.7					Topsail 0.5												
712.2					Brown clayey silt, some fine to coarse sand and gravel. 1.0												
	S-1	14 14 12		5	Gray fine to coarse gravel, some fine to coarse sand, little clayey silt.												
	S-2	18 11 9		7													
	S-3	7 8 9		10													
702.2	S-4	20 19 18		11	Gray clayey silt, some fine to coarse sand, little fine gravel. 11.0												
700.1					Boulder 13.1												
698.7				15	Gray clayey silt, some fine to coarse sand, little fine gravel, few cobbles. 14.5												
	S-5	34 50 5		6													
694.7	S-6	9 9 10		20	Brown fine to coarse sand, little fine gravel, little silt, trace clay. 18.5												
	S-7	10 14 18		13													
689.7	S-8	9 11 14		25	Gray fine to coarse sand, some fine to coarse gravel, little silt. 23.5												
	S-9	29 32 50		8													
684.7				30	Gray fine to coarse gravel, little to some fine to coarse sand, trace silt. 28.5												
679.7	S-10	25 50 3		7													
	S-11	37 48 42		7													
	S-12	38 43 50 4		6													
664.7	S-13	28 26 50 3		8	Gray fine to coarse gravel, some fine to coarse sand, little silt. 48.5												
659.7	S-14	21 31 32		8	Gray clayey silt, some fine to coarse sand, little fine gravel. 53.5												
657.2				56.0													
653.7	S-15	32 50 6		21	Gray fine to coarse sand, some fine gravel, some clayey silt. 59.5												
				26	Bottom of boring at 59.5 feet.												

ELEV.	SAMPLE NUMBER	BLOWS PER 6"	REC	DEPTH	SOIL DESCRIPTION	WC	ATT LIMITS		PHYSICAL CHARACTERISTIC					ODOT CLASS			
							LL	PL	% AGG	% CS	% FS	% SI	% CL				
	S-1	2 4 5		15													
	S-2	12 10 9		14													
	S-3	3 5 8		13	Brown fine to coarse sand, some fine gravel, some silt.												
	S-4	14 16 15		15													
	S-5	15 13 24		15													
694.9	S-6	19 24 23		13	Gray fine to coarse sand and fine to coarse gravel, little silt, cobbles and boulders. 15.0												
	S-7	28 25 22		10													
	S-8	19 31 26		9													
	S-9	34 38 50		7	Gray fine to coarse gravel, some fine to coarse sand, trace silt. More cobbles. 68												
	S-10	30 33 39		7													
681.9	NR			28.0													
675.9				34.0													
				35	Bottom of boring at 34.0 feet. Roller bit refusal at 28.0 feet. Moved boring												
				40	Roller bit refusal at 34.0 feet.												

ELEV.	SAMPLE NUMBER	BLOWS PER 6"	REC	DEPTH	SOIL DESCRIPTION	WC	ATT LIMITS		PHYSICAL CHARACTERISTIC					ODOT CLASS			
							LL	PL	% AGG	% CS	% FS	% SI	% CL				
718.6	S-1	10 14 11			Organic clayey silt and cobbles. 0.4												
	S-2	10 6 7		5	Brown fine gravel, some clayey silt, some fine to coarse sand.												
	S-3	7 6 9		13													
	S-4	10 10 16		12.5													
706.5	S-5	7 9 14		10	Brown fine to coarse sand and clayey silt, little fine to coarse gravel. 15.0												
704.0	S-6	15 24 29		15	Brown fine to coarse sand, some fine gravel, trace silt. 17.7												
701.3	S-7	15 20 50		15													
	S-8	56 - -		10	Brown fine gravel, some fine to coarse sand, little silt. 22.5												
696.5	S-9	5 5 16		13													
	S-10	10 15 30		13													
688.0	S-11	30 27 40		12													
	S-12	40 24 25		7													
	S-13	50 - - 5		25	Gray fine to coarse gravel, some fine to coarse sand, little silt.												
675.5	S-14	12 21 15		43.5													
673.0				46.0													
669.0	S-15	18 20 29		13	Brown clayey silt, some fine to coarse sand, some fine to coarse gravel. 50.0												
					Bottom of boring at 50.0 feet.												



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FRA-670-1.25,C-2  
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STRUCTURE FOUNDATION INVESTIGATION

DATE: 9-15-87 DRAWN BY: J.K.H. CHECKED BY: [Signature] REVISED

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BORING LOG : SB-12  
 STATION AND OFFSET : 152+90 4 Ft. Rt.  
 SURFACE ELEVATION : 730.7 Feet  
 WATER ENCOUNTERED :

DATE STARTED : 2-28-86  
 DATE FINISHED : 2-28-86  
 SAMPLER TYPE : 2S

BORING LOG : SB-13  
 STATION AND OFFSET : 153+38 20 Ft. Lt.  
 SURFACE ELEVATION : 730.2 Feet  
 WATER ENCOUNTERED :

DATE STARTED : 2-3-86  
 DATE FINISHED : 2-3-86  
 SAMPLER TYPE : 2S

BORING LOG :  
 STATION AND OFFSET :  
 SURFACE ELEVATION :  
 WATER ENCOUNTERED :

DATE STARTED :  
 DATE FINISHED :  
 SAMPLER TYPE :

ELEV.	SAMPLE NUMBER	BLOWS PER 6"	REC	DEPTH	SOIL DESCRIPTION	WC	ATT LIMITS		PHYSICAL CHARACTERISTIC					ODOT CLASS		
							LL	PI	% AGG	% CS	% FS	% SI	% CL			
725.7	S-1	3 8 8		5	Cinders, some fine to coarse sand, some bricks, trace clayey silt.	13										
					5.0											
720.7	S-2	4 8 8		10	Brown silty clay and fine to coarse sand, trace fine gravel.	17	28	10	5	13	25	28	29		A-4a (4)	
720.7	S-3	20 34 33		15		10			61	17	8		-14		A-1-a (0)	
					10.0											
	S-4	40 20 10		20		15										
	S-5	14 8 10		25		30										
710.7	S-6	9 8 9		30		18										
	S-7	11 13 9		35	Brown fine gravel and fine to coarse sand, some clayey silt.	20										
	S-8	8 7 7		40		18			38	26	10		-26		A-2-4	
	S-9	7 8 7		45		16										
	S-10	8 9 11		50	Brown fine to coarse gravel, and fine to coarse sand, some clayey silt, few cobbles.	17			43	25	10		-22		A-1-b (0)	
	S-11	100		55		28										
695.7	S-12	21 24 23		60		13										
					35.0											
	S-13	20 19 20		65	Gray fine to coarse sand and fine gravel, trace silt, cobbles.	16			40	29	22		-9		A-1-b (0)	
						7										
683.7	S-14	28 34 34		70												
	NR	50 0		75	Roller bit refusal at 47.0 feet.											

ELEV.	SAMPLE NUMBER	BLOWS PER 6"	REC	DEPTH	SOIL DESCRIPTION	WC	ATT LIMITS		PHYSICAL CHARACTERISTIC					ODOT CLASS		
							LL	PI	% AGG	% CS	% FS	% SI	% CL			
726.2	S-1	50 3		5	Cinders and fine to coarse gravel, some fine to coarse sand.	25										
					4.0											
720.2	S-2	3 4 5		10	Brown clayey silt, some fine to coarse sand, little fine gravel.	18	27	9	13	10	22	30	25		A-4-a (4)	
720.2	S-3	15 27 27		15		13			22	2	43	16	13	22	6	A-2-4 (0)
	S-4	19 35 30		20	Brown fine to coarse gravel, some fine to coarse sand, some clayey silt.	11										
	S-5	15 16 17		25		12										
	NR	24 28 24		30		11										
710.2	S-6	7 5 6		35		16			48	19	9	21	3		A-1-b (0)	
	S-7	10 6 6		40		15										
	S-8	13 6 4		45		17										
	S-9	16 15 9		50		23			20	45	14		-21		A-1-b (0)	
	S-10	11 19 22		55	Brown fine gravel, some fine to coarse sand, some silt, trace clay.	10										
	S-11	40 60		60		1										
688.9	S-12	20 80 100 1		65		13										
	NR	41.3		70	Roller bit refusal at 41.3 feet.											

ELEV.	SAMPLE NUMBER	BLOWS PER 6"	REC	DEPTH	SOIL DESCRIPTION	WC	ATT LIMITS		PHYSICAL CHARACTERISTIC					ODOT CLASS		
							LL	PI	% AGG	% CS	% FS	% SI	% CL			
				5												
				10												
				15												
				20												
				25												
				30												
				35												
				40												
				45												
				50												
				55												
				60												
				65												
				70												
				75												



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FRANKLIN COUNTY  
 FRA 670 I.25, C-2  
 BRIDGE OVER ROADS O D & O E  
 STRUCTURE FOUNDATION INVESTIGATION  
 DATE: 9-15-87 DRAWN BY: J.K.H. CHECKED BY: [Signature] REVISED

GENERAL INFORMATION

BORINGS ARE MADE BY MEANS OF A ROTARY TYPE DRILL RIG, EMPLOYING A 2-INCH O.D., 1-3/8 INCH I.D. SAMPLER, AT 2-1/2 AND/OR 5-FOOT DEPTH INTERVALS, DRIVEN BY MEANS OF A 140 POUND DROP HAMMER WITH A FREE FALL OF 30 INCHES. THE NUMBER OF BLOWS REQUIRED TO DRIVE THE SAMPLER THE LAST 12 INCHES IS CONSIDERED THE STANDARD PENETRATION TEST.

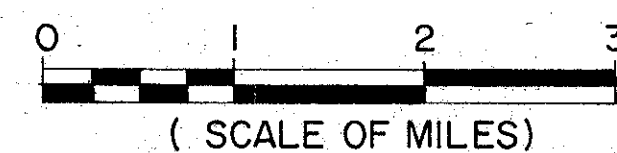
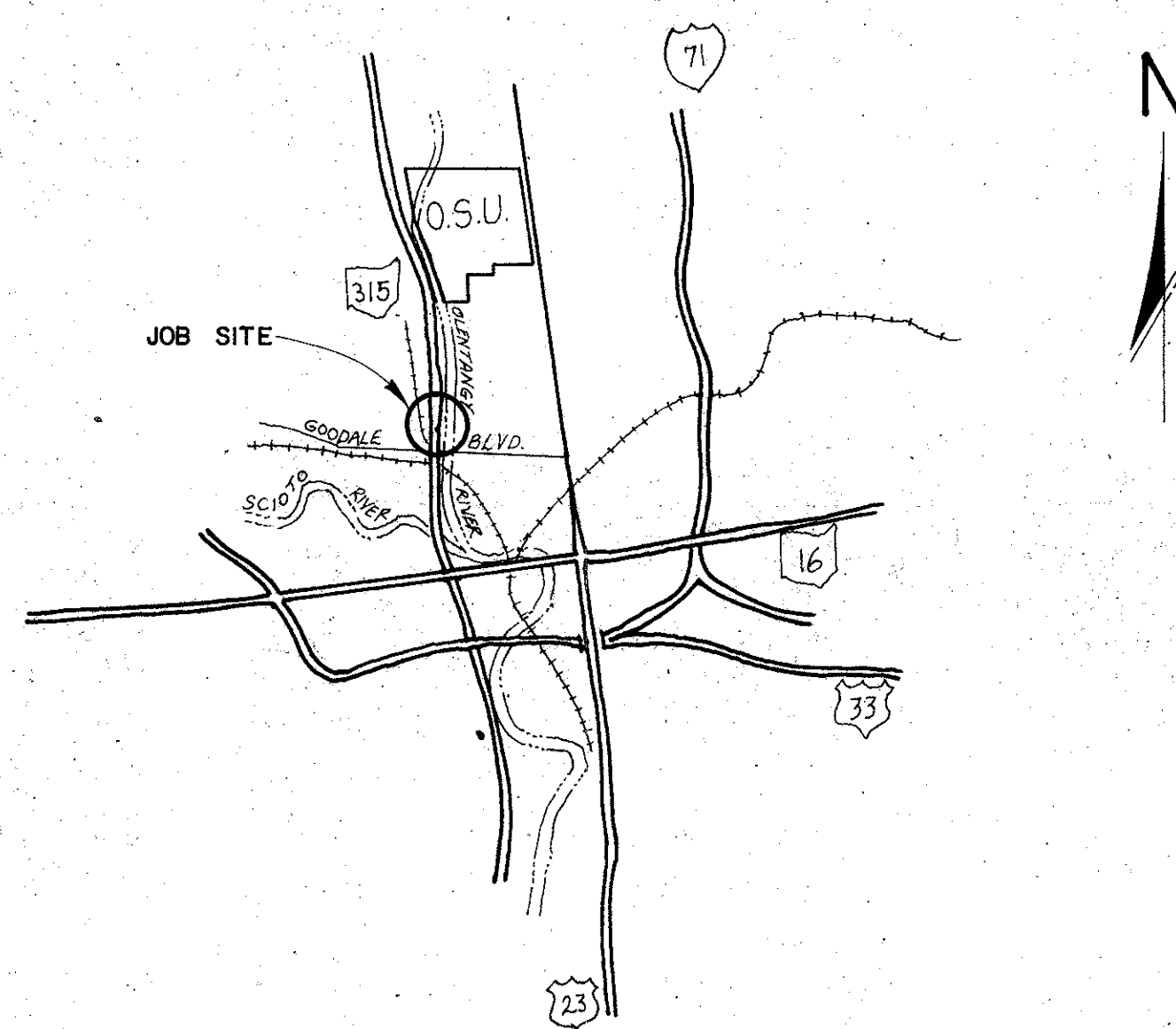
THE BORING LOG SHEET SHOWS GRAPHIC PLOT OF THE INFORMATION OBTAINED, INCLUDING DEPTH AND ELEVATION OF THE SAMPLE, NUMBER OF BLOWS FOR THE STANDARD PENETRATION TESTS IN THREE 6-INCH INCREMENTS, FIELD SAMPLE NUMBER, AND SAMPLE DESCRIPTION BASED ON LABORATORY TESTS AND THE OHIO DEPARTMENT OF TRANSPORTATION CLASSIFICATION SYSTEM. RESULTS OF STRENGTH AND CONSOLIDATION TESTING, IF PERFORMED, APPEAR ON SEPARATE ENCLOSURES.

AT DEPTH WHERE MATERIALS ARE BOULDERY OR GRAVELLY TO THE EXTENT THAT THE SAMPLE CANNOT BE DRIVEN, A WASH SAMPLE IS PROCURED FOR VISUAL CLASSIFICATION TO DETERMINE THE GENERAL CHARACTER OF THE MATERIAL. THESE SAMPLES ARE NOT CONSIDERED SUFFICIENTLY REPRESENTATIVE TO WARRANT LABORATORY TESTING.

NOTE--ALL AVAILABLE SOIL AND BEDROCK INFORMATION WHICH CAN BE CONVENIENTLY SHOWN ON THE STRUCTURE FOUNDATION INVESTIGATION SHEETS HAS BEEN SO REPORTED. ADDITIONAL SUBSURFACE INVESTIGATIONS MAY HAVE BEEN MADE TO STUDY SOME SPECIAL ASPECT OF THE PROJECT. COPIES OF THE DATA, IF ANY, MAY BE INSPECTED IN THE DISTRICT DEPUTY DIRECTOR'S OFFICE, THE PAVEMENT AND SOILS SECTION OF THE BUREAU OF LOCATION AND DESIGN OR IN THE BRIDGE BUREAU AT 25 SOUTH FRONT STREET.

THE PURPOSE OF THIS SUBSURFACE INVESTIGATION IS TO DEVELOP SOILS INFORMATION FOR FOUNDATION DESIGN WHICH WILL LIMIT UNCERTAINTY AND ESTABLISH RISK POTENTIAL. THIS INVESTIGATION HAS BEEN PERFORMED SPECIFICALLY FOR FOUNDATION DESIGN PURPOSES AND IS NOT INTENDED TO BE USED FOR CONSTRUCTION ESTIMATING OR BIDDING. INFORMATION SHOWN WAS OBTAINED FOR USE IN ESTABLISHING DESIGN CRITERIA FOR THE PROJECT. THE ACCURACY OF THE DATA PRESENTED IS NOT GUARANTEED BY THE STATE OF OHIO OR CONSULTANT AND IS NOT TO BE CONSTRUED AS PART OF THE PLANS GOVERNING CONSTRUCTION OF THE PROJECT.

SITE LOCATION



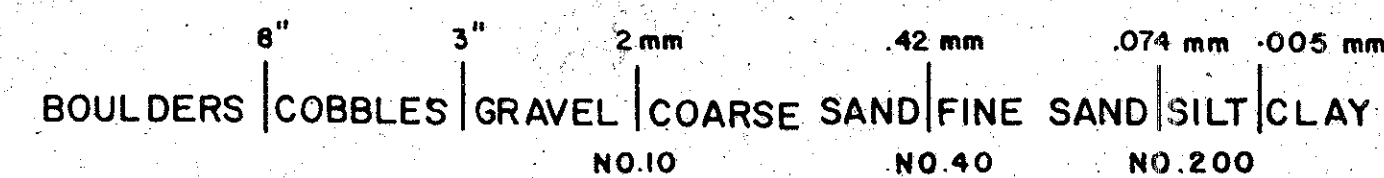
LEGEND

- ROTARY BORING — PLAN
- ROTARY BORING — PROFILE — PLOTTED TO VERTICAL SCALE ONLY
- # — INDICATES MOISTURE CONTENT IN PERCENT
- X — INDICATES NUMBER OF BLOWS FOR THE FIRST SIX INCHES
- Y — INDICATES NUMBER OF BLOWS FOR THE SECOND SIX INCHES
- Z — INDICATES NUMBER OF BLOWS FOR THE THIRD SIX INCHES
- w — INDICATES FREE WATER
- — MOISTURE CONTENT ≥ LL-3
- — MOISTURE CONTENT OF A NON-PLASTIC SOIL > 25

SOIL TYPES

OHIO CLASS		OHIO CLASS	
GRAVEL AND/OR STONE FRAGMENTS	A-1-a	SILT AND CLAY	A-6a
GRAVEL AND/OR STONE FRAGMENTS WITH SAND	A-1-b	SILTY CLAY	A-6b
FINE SAND	A-3	ELASTIC CLAY	A-7-5
COARSE AND FINE SAND	A-3a	CLAY	A-7-6
GRAVEL AND/OR STONE FRAGMENTS WITH SAND, SILT, CLAY	A-2-6	RANDOM FILL	VISUAL
GRAVEL AND/OR STONE FRAGMENTS WITH SAND AND SILT	A-2-4	WEATHERED SHALE	VISUAL
SANDY SILT	A-4a	SHALE	VISUAL
SILT	A-4b	SANDSTONE	VISUAL
ELASTIC SILT AND CLAY	A-5	LIMESTONE	VISUAL
SOD AND/OR TOPSOIL	VISUAL	VARIOUS OTHER MATERIALS.	VISUAL
BERM MATERIAL	VISUAL	SILTSTONE	VISUAL
CINDERS	VISUAL		

PARTICLE SIZE DEFINITION



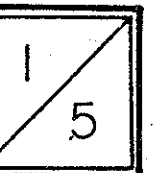
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COLUMBUS, OHIO 43081  
(614) 885-1959

FRANKLIN COUNTY  
FRA-670-1.25-C-2  
ROAD "OE" AND RAMP "OF" OVER OLENTANGY RIVER  
STRUCTURE FOUNDATION INVESTIGATION

DATE: 2-88 DRAWN BY: J.K.H. CHECKED BY: REVISED:

FRANKLIN COUNTY	OHIO FHWA REGION
FRA-670-1.25-C-2	FEDERAL PROJECT

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INTRODUCTION

THE PROJECT CONSISTS OF CONSTRUCTING A NEW BRIDGE FOR ROAD "OE" AND RAMP "OF" OVER THE OLENTANGY RIVER IN COLUMBUS, OHIO. THE PROPOSED BRIDGE IS TO BE FIVE SPAN CONTINUOUS WELDED STEEL GIRDERS WITH COMPOSITE REINFORCED CONCRETE DECK AND REINFORCED CONCRETE SUBSTRUCTURES. THE PROJECT IS PART OF THE FRA-670-1.25 (C-2) CONSTRUCTION CONTRACT.

GEOLOGY

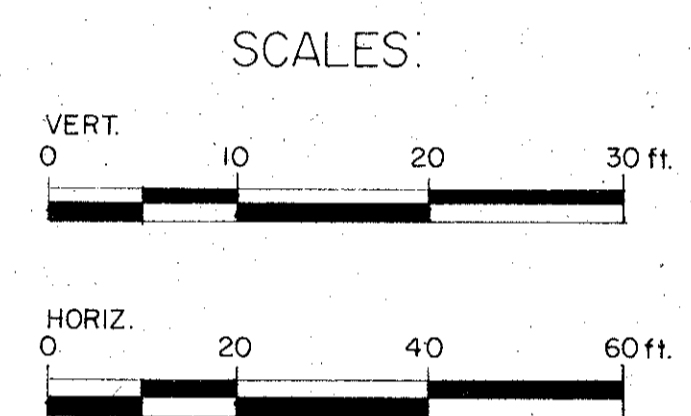
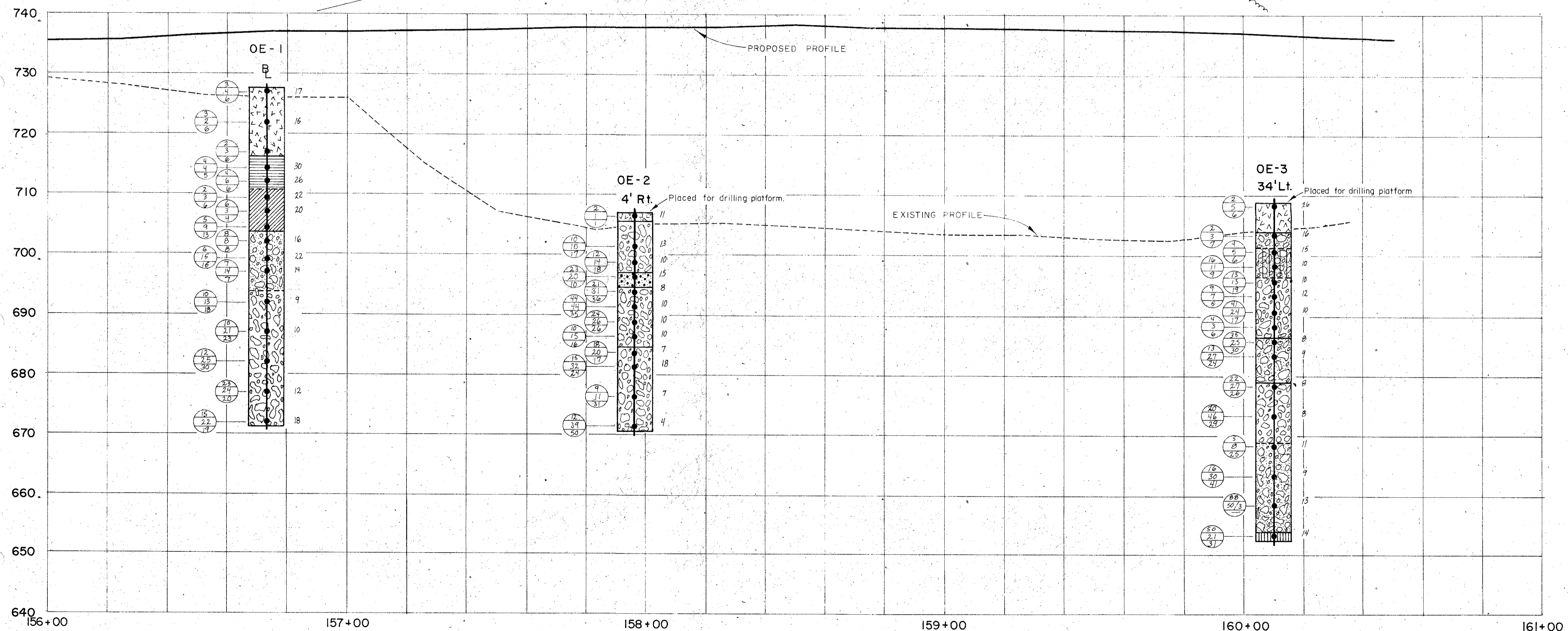
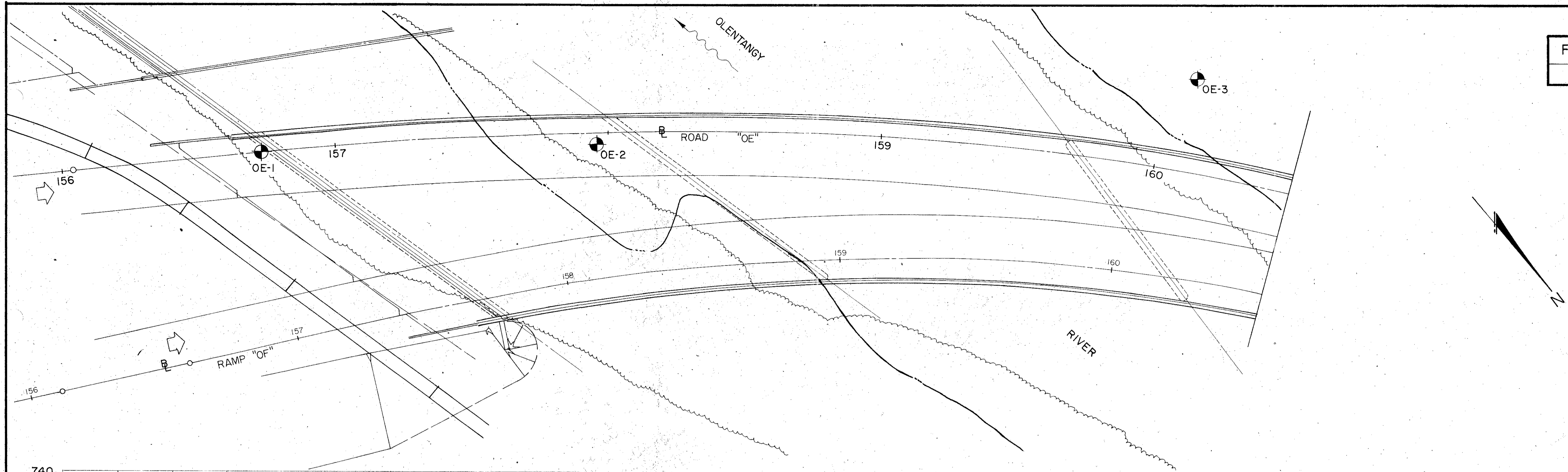
SOILS FOUND AT THE SITE ARE PREDOMINATELY SAND AND GRAVEL OUTWASH DEPOSITED AND PRECOMPRESSED TO SOME DEGREE BY THE ILLINOIAN AND WISCONSIN GLACIERS. THE UPPER 10 TO 20 FEET OF THE ORIGINAL SOIL HAS LIKELY BEEN REDEPOSITED IN RECENT GEOLOGIC TIMES BY THE ADJACENT OLENTANGY RIVER. BEDROCK, ALTHOUGH NOT FOUND DURING THE EXPLORATION PROGRAM, IS LIKELY TO BE DEVONIAN AGE SHALES AND LIMESTONES.

EXPLORATION

SIX BORINGS, DESIGNATED OE-1 THROUGH OE-6 WERE DRILLED AT THE STATION AND OFFSET SHOWN ON THE BORING LOGS. THE TEST BORINGS WERE DRILLED WITH A TRUCK MOUNTED ROTARY DRILLING MACHINE UTILIZING CONTINUOUS AUGERS AND TRICONE ROLLER BIT WITH DRILLING FLUID TO ADVANCE THE HOLE. STANDARD PENETRATION TESTS WERE PERFORMED AT 2-1/2 AND 5 FOOT INTERVALS TO OBTAIN REPRESENTATIVE SOIL SAMPLES FOR VISUAL EXAMINATION AND LABORATORY TESTING. ALL SAMPLES WERE VISUALLY CLASSIFIED AND TESTED FOR NATURAL MOISTURE CONTENT. SAMPLES SELECTED AS BEING REPRESENTATIVE OF THE SITE SOILS WERE TESTED FOR GRADATION AND ATTERBERG LIMITS.

INVESTIGATIONAL FINDINGS

COHESIVE SOILS OF THE A-4a, A-6a AND A-6b CATEGORIES WERE ENCOUNTERED NEAR THE SURFACE OF BORINGS OE-4 THROUGH OE-6 AND OE-1. THE TEST DATA INDICATES THAT THE ORIGINAL SOILS ARE PREDOMINANTLY GRANULAR SOILS IN THE A-1-a TO A-1-b CATEGORY WITH ZONES OF A-2-4 AND A-3a SOILS ALSO NOTED. COBBLES AND BOULDERS WERE ENCOUNTERED AT VARIOUS DEPTHS AND LOCATIONS DURING DRILLING. CLASSIFICATION IS ACCORDING TO THE OHIO DEPARTMENT OF TRANSPORTATION SYSTEM.



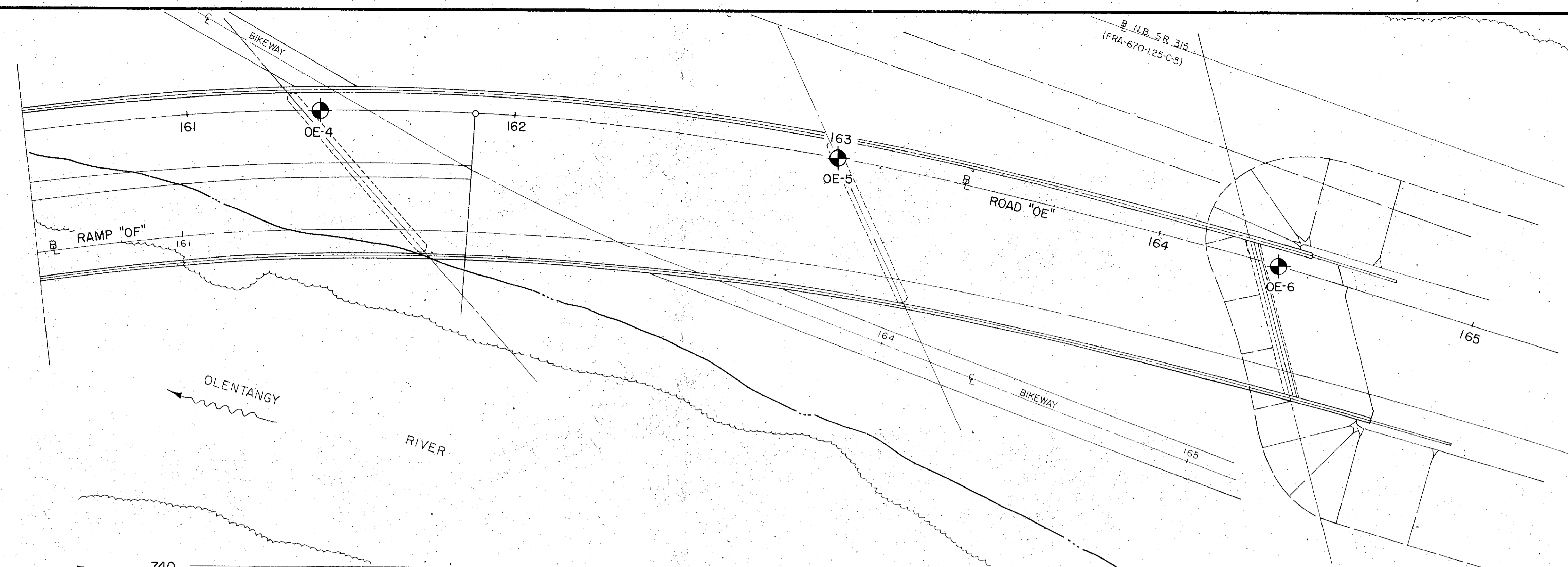
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 FRA-670-1.25-C-2  
 ROAD "OE" AND RAMP "OF" OVER OLENTANGY RIVER  
 STRUCTURE FOUNDATION INVESTIGATION

DATE: 2-88    DRAWN BY: J.K.H.    CHECKED BY:    REVISED:



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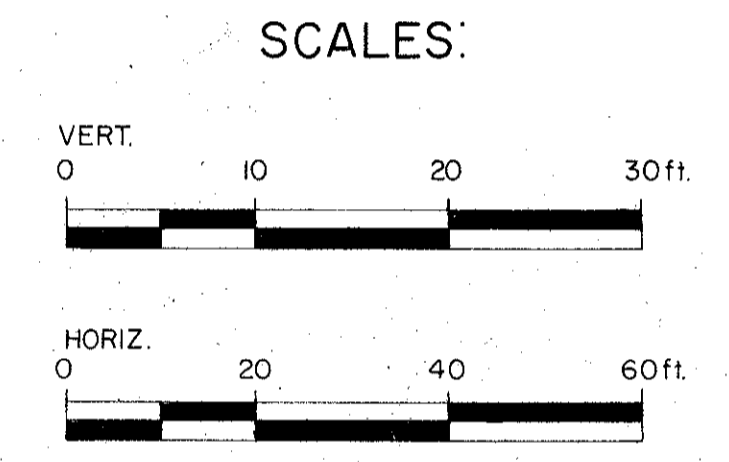
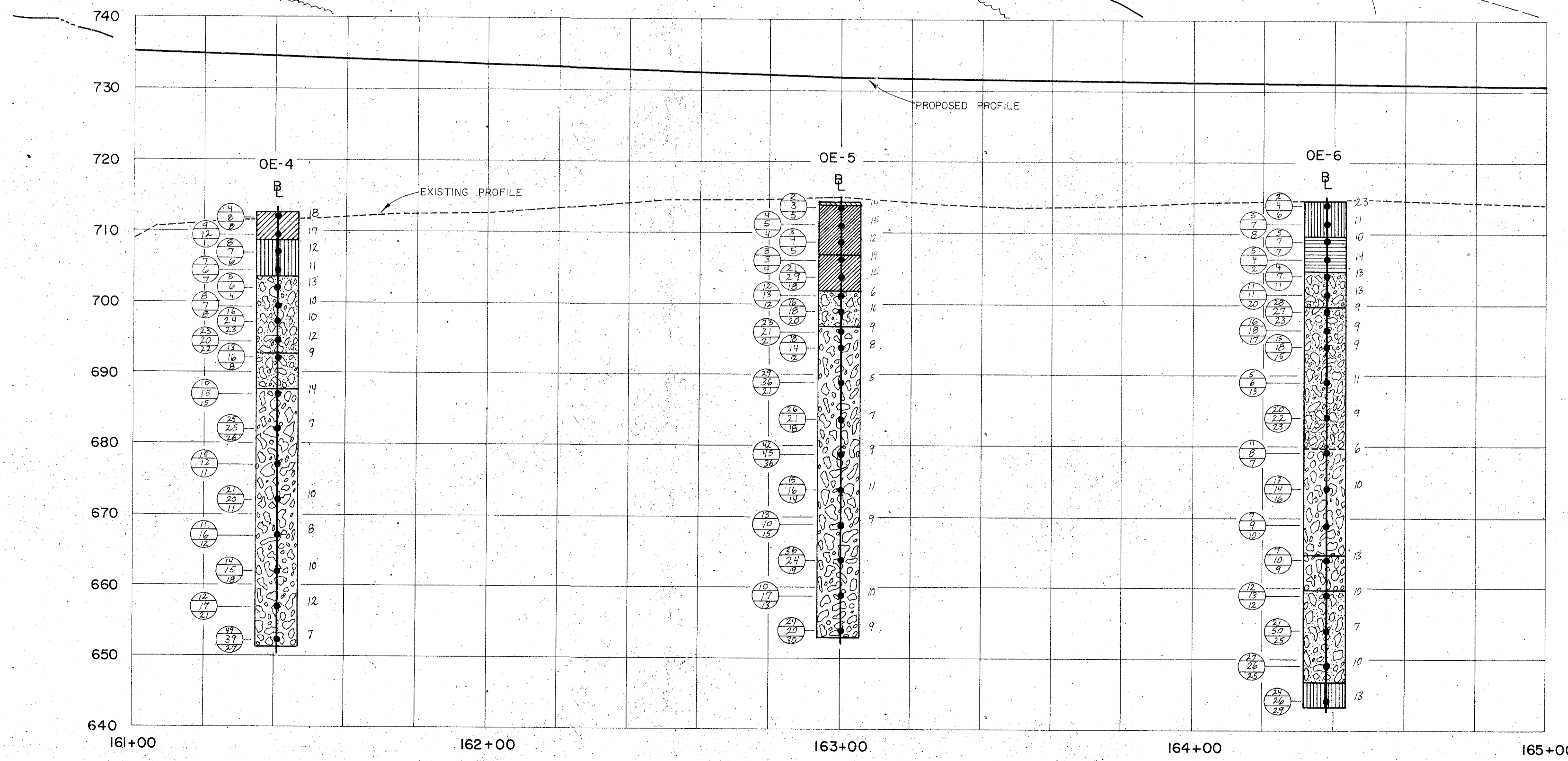




FRANKLIN COUNTY  
FRA-670-1.25-C-2

OHIO  
FHWA  
REGION  
FEDERAL  
PROJECT

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3  
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FRANKLIN COUNTY  
FRA-670-1.25-C-2  
ROAD "OE" AND RAMP "OF" OVER OLENTANGY RIVER  
STRUCTURE FOUNDATION INVESTIGATION

DATE: 2 - 88    DRAWN BY: J.K.H.    CHECKED BY:    REVISED:

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BORING LOG: OE-1  
STATION AND OFFSET: 156+73 B/L  
SURFACE ELEVATION: 727.5 Feet  
WATER ENCOUNTERED:

DATE STARTED: 10-30-87  
DATE FINISHED: 10-30-87  
SAMPLER TYPE: 2S

ELEV.	SAMPLE NUMBER	BLOWS PER 6"	REC	DEPTH	SOIL DESCRIPTION	WC	ATT LIMITS		PHYSICAL CHARACTERISTIC					ODOT CLASS				
							LL	PI	% AGG	% CS	% FS	% SI	% CL					
716.0	S-1	3 4 6		5														
	S-2	3 2 6		5	Cinders, brick fragments, stone fragments, some fine to coarse sand.													
	NR	2 3 6		10														
	S-3	4 4 5		15	Brown clayey silt, some fine to coarse sand, little fine to coarse gravel.	30	37	16	17	21	10	29	22	A-6b (5)				
710.5	S-4	4 6 6		15														
	S-5	2 3 6		20		22	31	12	11	7	19	44	19	A-6a (6)				
	S-6	6 3 4		20														
703.5	NR	5 9 13		25														
	S-7	8 8 8		25		16			27	36	16			A-1-b				
	S-8	6 15 16		30														
	S-9	7 14 7		30	Gray fine to coarse sand, some fine to coarse gravel, some clayey silt, few cobbles.													
691.5	S-10	10 13 18		35		9			71	10	9			A-1-a				
	S-11	10 21 23		40														
	NR	12 25 30		45	Gray fine to coarse gravel, little fine to coarse sand, little silt, few cobbles.													
	S-12	23 24 20		50														
671.0	S-13	15 22 19		55														
				60	Bottom of boring at 56.5 feet.													

BORING LOG OE-2  
STATION AND OFFSET: 157+96 4 Ft. Rr.  
SURFACE ELEVATION: 706.8 Feet  
WATER ENCOUNTERED:

DATE STARTED: 12-10-87  
DATE FINISHED: 12-10-87  
SAMPLER TYPE: 2S

ELEV.	SAMPLE NUMBER	BLOWS PER 6"	REC	DEPTH	SOIL DESCRIPTION	WC	ATT LIMITS		PHYSICAL CHARACTERISTIC					ODOT CLASS				
							LL	PI	% AGG	% CS	% FS	% SI	% CL					
705.3	S-1	2 1 1		5	Fill Material													
	S-2	10 15 17		5	Brown fine to coarse gravel, some coarse to fine sand, little clayey silt.													
	S-3	12 14 18		10		10			65	13	11			A-1-a				
696.8	S-4	23 20 10		10	Gray fine to coarse sand, some fine gravel, some clayey silt.				26	11	41			A-3a				
694.3	S-5	21 31 36		15		8			64	12	13			A-1-a				
	S-6	44 44 35		15														
	S-7	24 26 26		20	Gray coarse to fine gravel, some fine to coarse sand, little clayey silt.													
	S-8	10 15 16		20														
684.3	S-9	18 20 17		25		7			71	10	8			A-1-a				
	S-10	15 32 24		25														
	S-11	9 11 31		30	Gray coarse to fine gravel, little coarse to fine sand, little clayey silt.													
	S-12	12 39 50		35														
670.3				40	Bottom of boring at 36.5 feet.													

BORING LOG OE-3  
STATION AND OFFSET: 160+10 34 Ft. Lt.  
SURFACE ELEVATION: 708.7 Feet  
WATER ENCOUNTERED:

DATE STARTED: 12-16-87  
DATE FINISHED: 12-16-87  
SAMPLER TYPE: 2S

ELEV.	SAMPLE NUMBER	BLOWS PER 6"	REC	DEPTH	SOIL DESCRIPTION	WC	ATT LIMITS		PHYSICAL CHARACTERISTIC					ODOT CLASS				
							LL	PI	% AGG	% CS	% FS	% SI	% CL					
	S-1	2 5 6		5	Silty clay fill, Organics													
703.7	S-2	2 3 7		5		16												
701.2	S-3	4 5 6		10	Brown fine to coarse gravel, some coarse to fine sand, some clayey silt.													
	S-4	16 11 9		10		15												
696.2	S-5	13 13 19		15	Brown fine to coarse gravel, some coarse to fine sand, little clayey silt.													
	S-6	9 7 5		15		10												
	S-7	41 24 17		20														
	NR	4 3 6		20														
686.2	S-8	35 25 30		25	Gray fine to coarse gravel, some fine to coarse sand, little clayey silt.													
	S-9	13 27 24		25		8												
678.7	S-10	22 27 26		30		8												
	S-11	20 46 29		35	Gray fine gravel, some coarse to fine sand, little clayey silt.													
	S-12	5 8 25		40		11												
668.7	S-13	16 30 41		45	Gray coarse to fine sand, and fine to coarse gravel, trace clayey silt.													
	S-14	88 50 3		50														
653.7	S-15	50 21 31		55	Gray clayey silt and fine to coarse gravel.													
652.2				60	Bottom of boring at 56.5 feet.													



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STRUCTURE FOUNDATION INVESTIGATION  
DATE: 2-88 DRAWN BY: J.K.H. CHECKED BY: REVISED:

BORING LOG: OE-4  
 STATION AND OFFSET: 161+41 B/L  
 SURFACE ELEVATION: 712.5 Feet  
 WATER ENCOUNTERED: 12 Feet

DATE STARTED: 11-2-87  
 DATE FINISHED: 11-2-87  
 SAMPLER TYPE: 2S

ELEV.	SAMPLE NUMBER	BLOWS PER 6"	REC	DEPTH	SOIL DESCRIPTION	WC	ATT LIMITS		PHYSICAL CHARACTERISTIC					ODOT CLASS
							LL	PI	% AGG	% CS	% FS	% SI	% CL	
708.5	S-1	4 8 8			Dark brown clayey silt, some fine sand, trace clayey silt, trace organics.	17	36	11	1	1	27	52	21	A-6a (8)
	S-2	9 12 11		5										
	S-3	8 7 6			Brown clayey silt and fine to coarse sand, trace fine gravel.	12	-	-	4	7	36	31	22	A-4a (3)
703.5	S-4	7 6 7		10										
	S-5	5 6 4												
	S-6	8 7 8		15	Brown fine to coarse gravel, some fine to coarse sand, little clayey silt.	10	-	-	52	18	10	-20	-	A-1-b
	S-7	16 24 23												
692.5	S-8	23 20 22		20										
	S-9	13 16 8			Brown and gray fine to coarse gravel, some fine to coarse sand, little clayey silt.									
687.5	S-10	10 15 15		25										
	S-11	25 25 26		30		7	-	-	70	15	7	-9	-	A-1-a
	NR	15 12 11		35										
	S-12	21 20 11		40	Gray fine to coarse gravel, some fine to coarse sand, trace silt, few cobbles.									
	S-13	11 16 12		45										
	S-14	14 15 18		50										
	S-15	12 17 21		55										
651.0	S-16	49 39 27		60										
					Bottom of boring at 61.5 feet.									

BORING LOG: OE-5  
 STATION AND OFFSET: 163+00 B/L  
 SURFACE ELEVATION: 714.5 Feet  
 WATER ENCOUNTERED: 11.0 Feet

DATE STARTED: 10-9-87  
 DATE FINISHED: 10-9-87  
 SAMPLER TYPE: 2S

ELEV.	SAMPLE NUMBER	BLOWS PER 6"	REC	DEPTH	SOIL DESCRIPTION	WC	ATT LIMITS		PHYSICAL CHARACTERISTIC					ODOT CLASS
							LL	PI	% AGG	% CS	% FS	% SI	% CL	
714.2	S-1	2 3 5			Topsoil									
	S-2	4 5 4		5	Brown clayey silt, some fine sand, trace fine gravel, trace organics.									
	S-3	3 4 5												
707.0	S-4	3 3 4		10		19	30	12	1	5	39	30	26	A-6a (5)
	S-5	21 29 18			Brown clayey silt, and fine sand, trace coarse sand, trace fine gravel.									
702.0	S-6	12 13 12		15										
	S-7	16 18 20			Brown fine to coarse sand and fine to coarse gravel, trace silt.									
697.0	S-8	23 21 21		20										
	S-9	18 14 12				8	-	-	77	11	5	-6	-	A-1-a
	S-10	29 36 21		25										
	S-11	26 21 18		30										
	S-12	42 45 36		35										
	S-13	15 16 14		40	Gray fine to coarse gravel, little to some fine to coarse sand, trace silt, few cobbles.	11	-	-	64	28	5	-3	-	A-1-a
	S-14	13 10 15		45										
	NR	36 24 19		50										
	S-15	10 17 13		55										
653.0	S-16	24 20 30		60										
					Bottom of boring at 61.5 feet.									

BORING LOG: OE-6  
 STATION AND OFFSET: 164+38 B/L  
 SURFACE ELEVATION: 714.7 Feet  
 WATER ENCOUNTERED: 10.0 Feet

DATE STARTED: 11-4-87  
 DATE FINISHED: 11-4-87  
 SAMPLER TYPE: 2S

ELEV.	SAMPLE NUMBER	BLOWS PER 6"	REC	DEPTH	SOIL DESCRIPTION	WC	ATT LIMITS		PHYSICAL CHARACTERISTIC					ODOT CLASS
							LL	PI	% AGG	% CS	% FS	% SI	% CL	
	S-1	2 4 6			Dark brown clayey silt, little fine to coarse sand, trace organics.									
709.7	S-2	5 7 8		5		10	32	18	10	17	14	36	23	A-6b (8)
	S-3	5 7 7												
	S-4	5 4 2		10	Light brown clayey silt, some fine to coarse sand, trace fine gravel.									
704.7	S-5	4 7 11												
	S-6	11 11 20		15	Brown fine to coarse gravel, some to and fine to coarse sand, little clayey silt.	13	-	-	60	12	12	-16	-	A-1-b
699.7	S-7	28 27 23												
	S-8	16 18 17		20		9	-	-	46	20	19	-15	-	A-1-b
	S-9	15 18 15												
	S-10	5 6 13		25	Gray fine gravel and fine to coarse sand, little clayey silt, few cobbles.									
	S-11	20 22 23		30										
679.7	S-12	11 8 7		35		6	-	-	87	8	3	-2	-	A-1-a
	S-13	13 14 16		40	Gray fine to coarse gravel, little fine to coarse sand, trace silt, few cobbles, hit boulder at 38.8'.									
	NR	7 9 10		45										
664.7	S-14	7 10 9		50		13	-	-	87	9	3	-2	-	A-1-a
	S-15	12 13 12		55										
659.7	S-16	21 50 25		60	Gray fine to coarse gravel and fine to coarse sand, little silt, few cobbles.									
	S-17	27 26 25		65		10	-	-	49	27	12	-12	-	A-1-b
646.7	S-18	24 26 29		70	Gray clayey silt, some fine to coarse sand, some fine to coarse gravel.									
643.2					Bottom of boring at 71.5 feet.									



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FRANKLIN COUNTY  
 FRA-670-1.25-C-2  
 ROAD "OE" AND RAMP "OF" OVER OLENTANGY RIVER  
 STRUCTURE FOUNDATION INVESTIGATION  
 DATE: 2-88 DRAWN BY: J.K.H. CHECKED BY: REVISED:

GENERAL INFORMATION

BORINGS ARE MADE BY MEANS OF A ROTARY TYPE DRILL RIG, EMPLOYING A 2-INCH O.D., 1-3/8 INCH I.D. SAMPLER, AT 2-1/2 AND/OR 5-FOOT DEPTH INTERVALS. DRIVEN BY MEANS OF A 140 POUND DROP HAMMER WITH A FREE FALL OF 30 INCHES. THE NUMBER OF BLOWS REQUIRED TO DRIVE THE SAMPLER THE LAST 12 INCHES IS CONSIDERED THE STANDARD PENETRATION TEST.

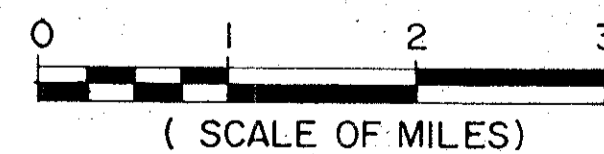
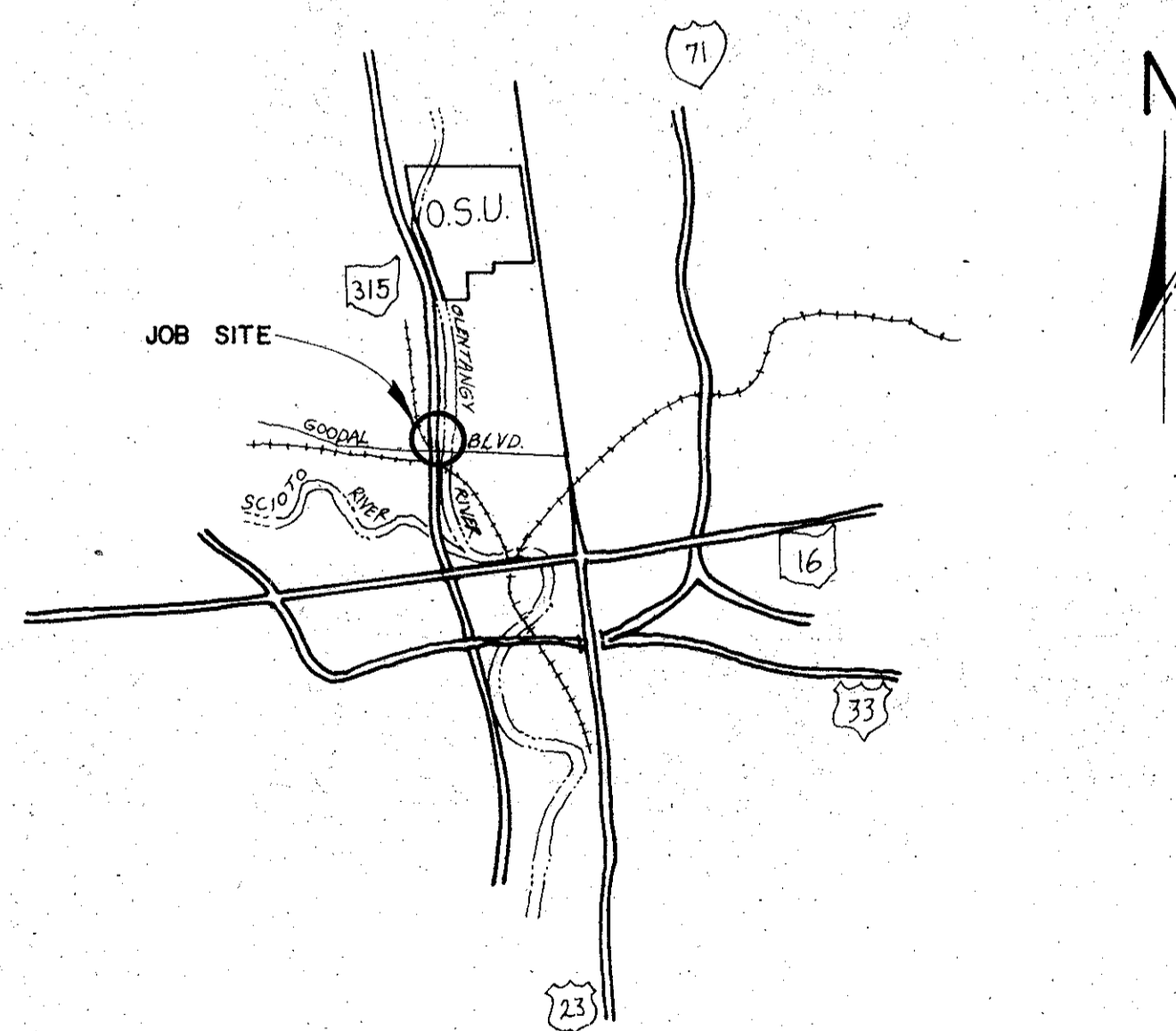
THE BORING LOG SHEET SHOWS GRAPHIC PLOT OF THE INFORMATION OBTAINED, INCLUDING DEPTH AND ELEVATION OF THE SAMPLE, NUMBER OF BLOWS FOR THE STANDARD PENETRATION TESTS IN THREE 6-INCH INCREMENTS, FIELD SAMPLE NUMBER, AND SAMPLE DESCRIPTION BASED ON LABORATORY TESTS AND THE OHIO DEPARTMENT OF TRANSPORTATION CLASSIFICATION SYSTEM. RESULTS OF STRENGTH AND CONSOLIDATION TESTING, IF PERFORMED, APPEAR ON SEPARATE ENCLOSURES.

AT DEPTH WHERE MATERIALS ARE BOULDERY OR GRAVELLY TO THE EXTENT THAT THE SAMPLE CANNOT BE DRIVEN, A WASH SAMPLE IS PROCURED FOR VISUAL CLASSIFICATION TO DETERMINE THE GENERAL CHARACTER OF THE MATERIAL. THESE SAMPLES ARE NOT CONSIDERED SUFFICIENTLY REPRESENTATIVE TO WARRANT LABORATORY TESTING.

NOTE--ALL AVAILABLE SOIL AND BEDROCK INFORMATION WHICH CAN BE CONVENIENTLY SHOWN ON THE STRUCTURE FOUNDATION INVESTIGATION SHEETS HAS BEEN SO REPORTED. ADDITIONAL SUBSURFACE INVESTIGATIONS MAY HAVE BEEN MADE TO STUDY SOME SPECIAL ASPECT OF THE PROJECT. COPIES OF THE DATA, IF ANY, MAY BE INSPECTED IN THE DISTRICT DEPUTY DIRECTOR'S OFFICE, THE PAVEMENT AND SOILS SECTION OF THE BUREAU OF LOCATION AND DESIGN OR IN THE BRIDGE BUREAU AT 25 SOUTH FRONT STREET.

THE PURPOSE OF THIS SUBSURFACE INVESTIGATION IS TO DEVELOP SOILS INFORMATION FOR FOUNDATION DESIGN WHICH WILL LIMIT UNCERTAINTY AND ESTABLISH RISK POTENTIAL. THIS INVESTIGATION HAS BEEN PERFORMED SPECIFICALLY FOR FOUNDATION DESIGN PURPOSES AND IS NOT INTENDED TO BE USED FOR CONSTRUCTION ESTIMATING OR BIDDING. INFORMATION SHOWN WAS OBTAINED FOR USE IN ESTABLISHING DESIGN CRITERIA FOR THE PROJECT. THE ACCURACY OF THE DATA PRESENTED IS NOT GUARANTEED BY THE STATE OF OHIO OR CONSULTANT AND IS NOT TO BE CONSTRUED AS PART OF THE PLANS GOVERNING CONSTRUCTION OF THE PROJECT.

SITE LOCATION



LEGEND

- ROTARY BORING — PLAN
- ROTARY BORING — PROFILE — PLOTTED TO VERTICAL SCALE ONLY
- # — INDICATES MOISTURE CONTENT IN PERCENT
- X — INDICATES NUMBER OF BLOWS FOR THE FIRST SIX INCHES
- Y — INDICATES NUMBER OF BLOWS FOR THE SECOND SIX INCHES
- Z — INDICATES NUMBER OF BLOWS FOR THE THIRD SIX INCHES
- w — INDICATES FREE WATER
- MOISTURE CONTENT ≥ LL-3
- MOISTURE CONTENT OF A NON-PLASTIC SOIL > 25

SOIL TYPES

OHIO CLASS	OHIO CLASS
GRAVEL AND/OR STONE FRAGMENTS A-1-a	SILT AND CLAY A-6a
GRAVEL AND/OR STONE FRAGMENTS WITH SAND A-1-b	SILTY CLAY A-6b
FINE SAND A-3	ELASTIC CLAY A-7-5
COARSE AND FINE SAND A-3a	CLAY A-7-6
GRAVEL AND/OR STONE FRAGMENTS WITH SAND, SILT, CLAY A-2-6	RANDOM FILL VISUAL
GRAVEL AND/OR STONE FRAGMENTS WITH SAND AND SILT A-2-4	WEATHERED SHALE VISUAL
SANDY SILT A-4a	SHALE VISUAL
SILT A-4b	SANDSTONE VISUAL
ELASTIC SILT AND CLAY A-5	LIMESTONE VISUAL
SOD AND/OR TOPSOIL VISUAL	VARIOUS OTHER MATERIALS VISUAL
BERM MATERIAL VISUAL	SILTSTONE VISUAL
CINDERS VISUAL	

PARTICLE SIZE DEFINITION

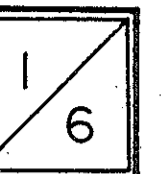
BOULDERS	COBBLES	GRAVEL	COARSE SAND	FINE SAND	SILT	CLAY
8"	3"	2mm	.42mm	.075mm	.005mm	
		NO.10	NO.40	NO.200		



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281 ENTERPRISE DR.  
COLUMBUS, OHIO 43081  
(614) 885-1959

FRANKLIN COUNTY	OHIO
FRA-670-1.25-C-2	FHWA REGION
	FEDERAL PROJECT

290



INTRODUCTION

THE PROJECT CONSISTS OF CONSTRUCTING A NEW BRIDGE FOR ROAD "OD" OVER THE OLENTANGY RIVER AND RELOCATED SR 315 IN COLUMBUS, OHIO. THE PROPOSED BRIDGE IS TO BE SIX SPAN CONTINUOUS WELDED STEEL PLATE GIRDERS WITH COMPOSITE REINFORCED CONCRETE DECK AND REINFORCED CONCRETE SUBSTRUCTURES. THE PROJECT IS PART OF THE FRA-670-1.25 (C-2) CONSTRUCTION CONTRACT.

GEOLOGY

SOILS FOUND AT THE SITE ARE PREDOMINANTLY SAND AND GRAVEL OUTWASH DEPOSITED AND PRECOMPRESSED TO SOME DEGREE BY THE ILLINOIAN AND WISCONSIN GLACIERS. THE UPPER 10 TO 20 FEET OF THE ORIGINAL SOIL HAS LIKELY BEEN REDEPOSITED IN RECENT GEOLOGIC TIMES BY THE ADJACENT OLENTANGY RIVER. BEDROCK, ALTHOUGH NOT FOUND DURING THE EXPLORATION PROGRAM, IS LIKELY TO BE DEVONIAN AGE SHALES AND LIMESTONES.

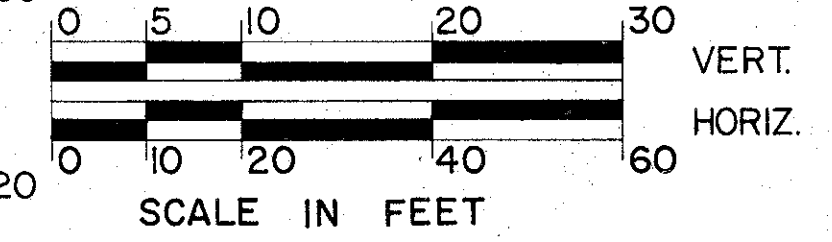
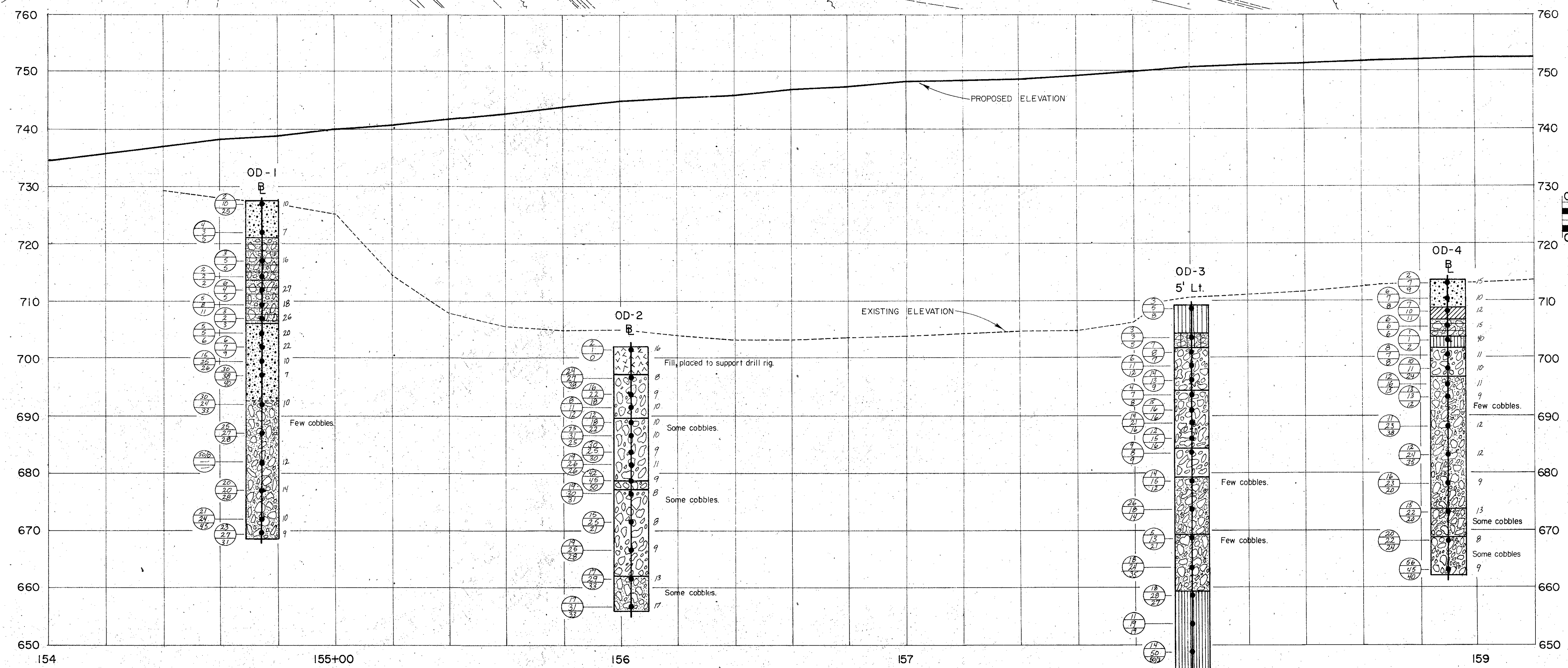
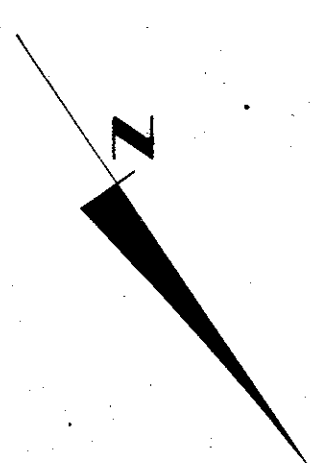
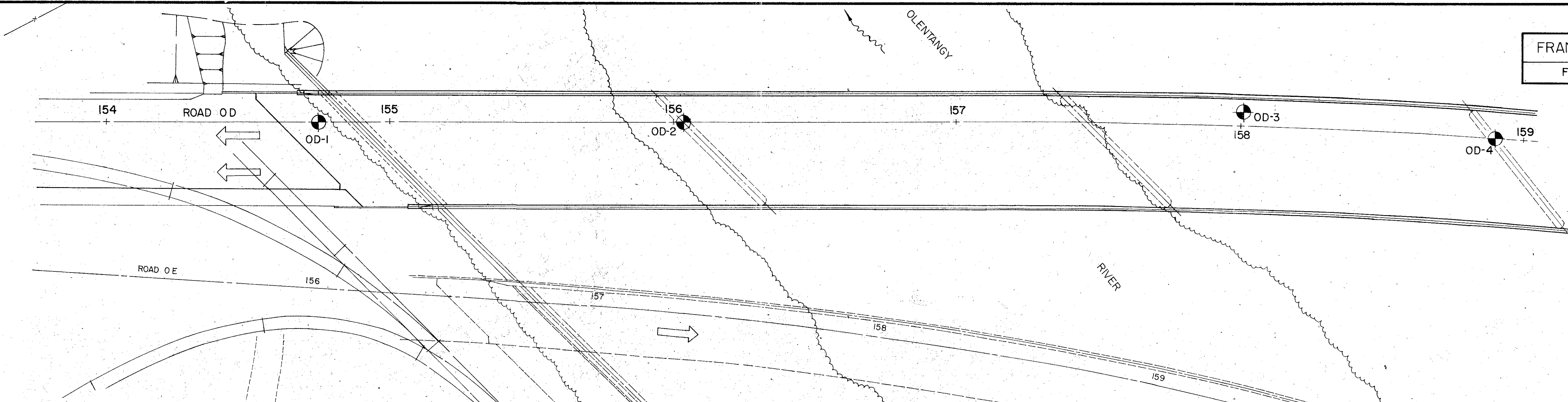
EXPLORATION

SEVEN BORINGS, DESIGNATED OD-1 THROUGH OD-7 WERE DRILLED AT THE STATION AND OFFSET SHOWN ON THE BORING LOGS. THE TEST BORINGS WERE DRILLED WITH A TRUCK MOUNTED ROTARY DRILLING MACHINE UTILIZING CONTINUOUS FLIGHT AUGERS AND TRICONE ROLLER BIT WITH DRILLING FLUID TO ADVANCE THE HOLE. STANDARD PENETRATION TESTS WERE PERFORMED AT 2-1/2 AND 5 FOOT INTERVALS TO OBTAIN REPRESENTATIVE SOIL SAMPLES FOR VISUAL EXAMINATION AND LABORATORY TESTING. ALL SAMPLES WERE VISUALLY CLASSIFIED AND TESTED FOR NATURAL MOISTURE CONTENT. SAMPLES SELECTED AS BEING REPRESENTATIVE OF THE SITE SOILS WERE TESTED FOR GRADATION AND ATTERBERG LIMITS.

INVESTIGATIONAL FINDINGS

BORING OD 7 EXHIBITED 21.5 FEET OF CINDER/SOIL FILL OVERLYING GRANULAR DEPOSITS. COHESIVE SOILS OF THE A-4a, A-6a AND A-6b CATEGORIES WERE ENCOUNTERED NEAR THE SURFACE OF BORINGS OD-4 THROUGH OD-7. THE TEST DATA INDICATES THAT THE ORIGINAL SOILS ARE PREDOMINANTLY GRANULAR SOILS IN THE A-1-a TO A-1-b CATEGORY. A ZONE OF A-3 SOIL WAS ALSO NOTED IN BORING OD-5. COBBLES AND BOULDERS WERE ENCOUNTERED AT VARIOUS DEPTHS AND LOCATIONS DURING DRILLING. CLASSIFICATION IS ACCORDING TO THE OHIO DEPARTMENT OF TRANSPORTATION SYSTEM.

DATE: DRAWN BY: J.K.H. CHECKED BY: REVISED:

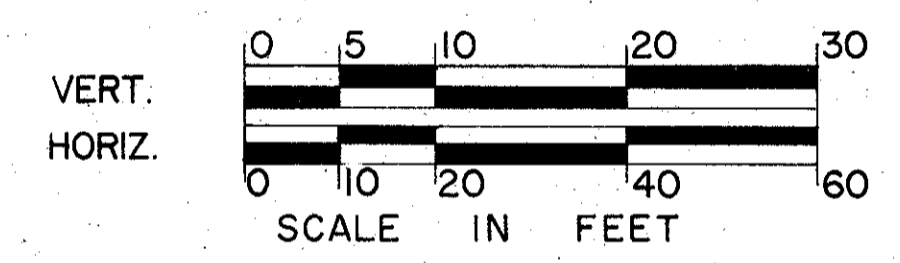
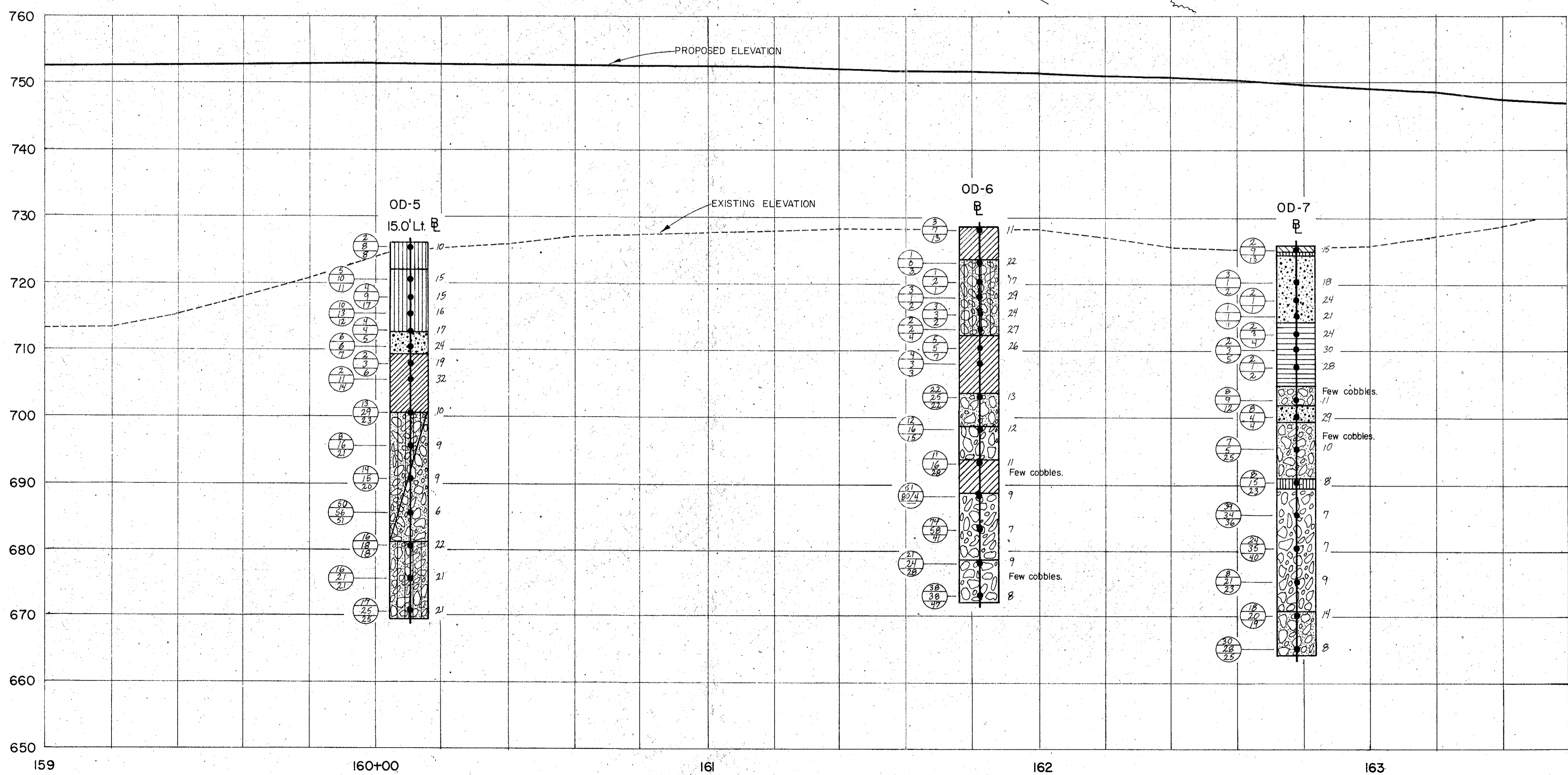
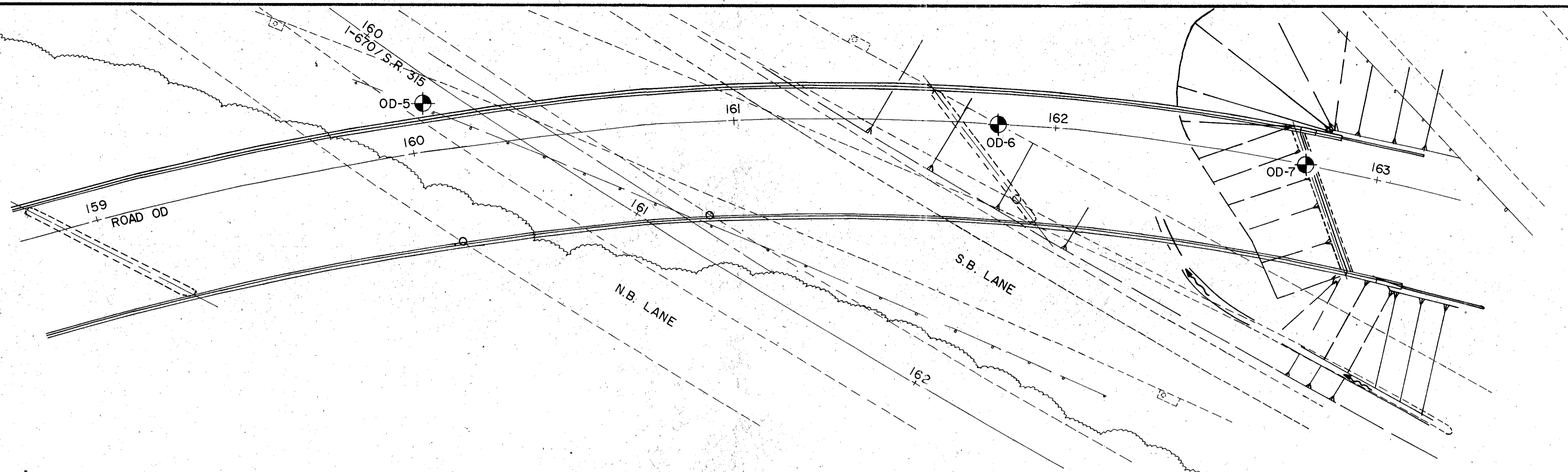


FRANKLIN COUNTY  
 FRA-670-1.25-C-2  
 ROAD "OD" OVER OLENTANGY RIVER AND RELOCATED S.R. 315  
 STRUCTURE FOUNDATION INVESTIGATION

DATE:      DRAWN BY: G.S.M.      CHECKED BY:      REVISED:



RESOURCE INTERNATIONAL  
 281 ENTERPRISE DR.  
 COLUMBUS, OHIO 43081  
 (614) 885-1959



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FRANKLIN COUNTY  
 FRA-670-1.25 - C-2  
 ROAD "OD" OVER OLENTANGY RIVER AND RELOCATED S.R. 315  
 STRUCTURE FOUNDATION INVESTIGATION

DATE:      DRAWN BY: G.S.M.      CHECKED BY:      REVISED:

BORING LOG: OD-1  
STATION AND OFFSET: 154+75 B/L  
SURFACE ELEVATION: 727.5 Feet  
WATER ENCOUNTERED:

DATE STARTED: 10-26-87  
DATE FINISHED: 10-28-87  
SAMPLER TYPE: 2S

Table with columns: ELEV, SAMPLE NUMBER, BLOWS PER 6", REC, DEPTH, SOIL DESCRIPTION, WC, ATT LIMITS, PHYSICAL CHARACTERISTIC, ODOT CLASS. Includes soil descriptions like 'Brown and gray fine to coarse sand, some clayey silt, little fine gravel...' and 'Black and brown fine to coarse sand and gravel, some clayey silt...'.

BORING LOG: OD-2  
STATION AND OFFSET: 156+04 B/L  
SURFACE ELEVATION: 707.2 Feet  
WATER ENCOUNTERED: 3.0 Feet

DATE STARTED: 12-9-87  
DATE FINISHED: 12-9-87  
SAMPLER TYPE: 2S

Table with columns: ELEV, SAMPLE NUMBER, BLOWS PER 6", REC, DEPTH, SOIL DESCRIPTION, WC, ATT LIMITS, PHYSICAL CHARACTERISTIC, ODOT CLASS. Includes soil descriptions like 'Miscellaneous fill placed to support drill.' and 'Brown and gray fine to coarse gravel and coarse to fine sand...'.

BORING LOG: OD-3  
STATION AND OFFSET: 158+01 5 Ft. Lt.  
SURFACE ELEVATION: 709.0 Feet  
WATER ENCOUNTERED: 6.0 Feet

DATE STARTED: 12-14-87  
DATE FINISHED: 12-15-87  
SAMPLER TYPE: 2S

Table with columns: ELEV, SAMPLE NUMBER, BLOWS PER 6", REC, DEPTH, SOIL DESCRIPTION, WC, ATT LIMITS, PHYSICAL CHARACTERISTIC, ODOT CLASS. Includes soil descriptions like 'Brown clayey silt, some fine to coarse sand, trace fine gravel. (fill)' and 'Gray fine to coarse gravel, some coarse to fine sand...'.

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FRANKLIN COUNTY  
FRA-670-125-C-2  
ROAD "OD" OVER OLENTANGY RIVER AND RELOCATED S.R. 315  
STRUCTURE FOUNDATION INVESTIGATION  
DATE: DRAWN BY: J.K.H. CHECKED BY: REVISED:

BORING LOG: OD-4  
 STATION AND OFFSET: 158+90 B/L  
 SURFACE ELEVATION: 713.4 Feet  
 WATER ENCOUNTERED: 10.0 Feet  
 DATE STARTED: 11-13-87  
 DATE FINISHED: 11-13-87  
 SAMPLER TYPE: 2S


BORING LOG: OD-5  
 STATION AND OFFSET: 160+10 15 Ft.Lt. B/L  
 SURFACE ELEVATION: 726.0 Feet  
 WATER ENCOUNTERED:  
 DATE STARTED: 11-16-87  
 DATE FINISHED: 11-16-87  
 SAMPLER TYPE: 2S

BORING LOG: OD-6  
 STATION AND OFFSET: 161+82 B/L  
 SURFACE ELEVATION: 728.5 Feet  
 WATER ENCOUNTERED:  
 DATE STARTED: 11-19-87  
 DATE FINISHED: 11-19-87  
 SAMPLER TYPE: 2S

ELEV.	SAMPLE NUMBER	BLOWS PER 6"	REC	DEPTH	SOIL DESCRIPTION	WC	ATT LIMITS		PHYSICAL CHARACTERISTIC					ODOT CLASS		
							LL	PI	AGG	CS	FS	SI	CL			
	S-1	2 7 9			Brown fine sand. Organics.											
	S-2	6 7 8														
708.4				5		5.0										
706.4	S-3	7 10 11			Brown clayey silt, some fine to coarse sand, trace fine gravel.	12	35	14	2	2	33	36	28		A-6a (7)	
	S-4	6 6 6			Gray fine to coarse sand, some clayey silt, little coarse gravel.	15	32	12	13	6	51		-29		A-2-6	
703.4				10		10.0										
701.4	S-5	1 1 2			Gray fine to coarse sand, and clayey silt, trace fine gravel.	40			3	8	47	25	17		A-4a	
	S-6	8 7 8			Brown fine to coarse sand and fine to coarse gravel, trace clayey silt.											
	S-7	10 11 24		15		17.0										
696.4				20			11			62	13	9	-16		A-1-b	
	S-8	12 16 15														
	S-9	13 13 12														
	S-10	11 23 38		25												
	S-11	12 24 35		30	Gray fine to coarse gravel, some coarse to fine sand, little clayey silt. Few cobbles.											
	S-12	16 23 20		35												
673.4				40		40.0										
	S-13	15 22 20			Gray coarse to fine sand, and fine to coarse gravel, trace clayey silt. Some cobbles.	13			42	36	14	-8			A-1-b	
668.4				45		45.0										
	S-14	20 22 24			Gray fine to coarse sand and fine to coarse gravel, trace clayey silt. Some cobbles.											
661.9				50		51.5										
	S-15	56 45 40			Bottom of boring at 51.5 feet.											

ELEV.	SAMPLE NUMBER	BLOWS PER 6"	REC	DEPTH	SOIL DESCRIPTION	WC	ATT LIMITS		PHYSICAL CHARACTERISTIC					ODOT CLASS		
							LL	PI	AGG	CS	FS	SI	CL			
	S-1	2 8 8			Brown clayey silt and fine to coarse sand.											
722.0				5		4.0										
	S-2	5 10 11														
	S-3	4 9 17														
	S-4	10 13 12		10	Dark brown clayey silt, some fine to coarse sand, some fine to coarse gravel.	15			24	7	19	28	22		A-4a	
712.7				15		13.3			14	27	50	-9			A-3	
709.2				15	Brown to dark brown fine to coarse sand, little fine gravel, trace clayey silt.	17			14	27	50	-9			A-3	
	S-5	4 4 5				16.8										
	S-6	6 6 7														
	S-7	2 3 6														
	S-8	2 11 14		20	Brown clayey silt and fine to coarse sand, little fine gravel.	19	32	12	12	8	29	29	21		A-6a (4)	
700.5				25		25.5										
	S-9	13 29 23			Gray fine to coarse gravel, some fine to coarse sand, little clayey silt.	10			51	13	16	-20			A-1-b A-2-4	
696.0				30		30.0										
	S-10	8 16 21														
	S-11	14 15 20		35					65	14	10	-10			A-1-b	
	S-12	50 56 51		40	Gray fine to coarse gravel, some coarse to fine sand, trace clayey silt.	9										
681.0				45		45.0										
	S-13	16 18 18														
	S-14	16 21 21		50	Gray coarse to fine sand, some clayey silt.	22										
669.5				55		56.5										
	S-15	17 25 25			Bottom of boring at 56.5 feet.											

ELEV.	SAMPLE NUMBER	BLOWS PER 6"	REC	DEPTH	SOIL DESCRIPTION	WC	ATT LIMITS		PHYSICAL CHARACTERISTIC					ODOT CLASS		
							LL	PI	AGG	CS	FS	SI	CL			
	S-1	3 7 13			Dark brown clayey silt, some fine to coarse gravel. Organics.											
723.5				5		5.0										
	S-2	1 0 3					22			33	12	25	26	5		A-2-4
	S-3	1 2 1														
	S-4	3 1 2		10	Brown and gray fine to coarse sand, some fine gravel, some clayey silt.											
	S-5	3 3 2														
712.2				15		16.3										
	S-6	2 2 4														
	S-7	5 5 7														
	NR	4 3 3		20	Gray clayey silt, some fine to coarse sand, trace fine gravel.	26	34	12	1	5	26	46	23		A-6a (7)	
703.5				25		25.0										
	S-8	22 25 22			Brown fine to coarse gravel, some fine to coarse sand, some clayey silt.	13				48	12	19	-22		A-1-b	
698.5				30		30.0										
	S-9	12 16 15			Gray fine to coarse gravel, some coarse to fine sand, trace clayey silt.	12	NP	NP		70	13	12	-5		A-1-a	
693.5				35		35.0										
	S-10	11 16 28														
688.5				40	Gray clayey silt, some fine to coarse gravel, trace fine to coarse sand. Few cobbles.	9				72	15	6	-7		A-1-a	
	S-11	51 80 4				40.0										
	S-12	74 98 41		45	Gray fine to coarse gravel, some coarse to fine sand, trace clayey silt.											
678.5				50		50.0										
	S-13	21 24 28					9			53	32	8	-6		A-1-a	
672.0				55		56.5										
	S-14	38 38 47			Bottom of boring at 56.5 feet.											

 <b>RESOURCE INTERNATIONAL</b> 281 ENTERPRISE DR. COLUMBUS, OHIO 43081 (614) 885-1959	<b>FRANKLIN COUNTY</b> FRA-670-1.25-C-2 ROAD "OD" OVER OLENTANGY RIVER AND RELOCATED S.R. 315 STRUCTURE FOUNDATION INVESTIGATION			
	DATE:	DRAWN BY: J.K.H.	CHECKED BY:	REVISED:



295  
6/6

FRANKLIN COUNTY  
FRA-670-1.25-C-2  
OHIO  
FHWA  
REGION  
FEDERAL  
PROJECT

BORING LOG: OD-7  
STATION AND OFFSET: 162+76 B/L  
SURFACE ELEVATION: 725.5 Feet  
WATER ENCOUNTERED:

DATE STARTED: 11-2-87  
DATE FINISHED: 11-2-87  
SAMPLER TYPE: 2S & ST

BORING LOG  
STATION AND OFFSET:  
SURFACE ELEVATION:  
WATER ENCOUNTERED:

DATE STARTED:  
DATE FINISHED:  
SAMPLER TYPE:

BORING LOG:  
STATION AND OFFSET:  
SURFACE ELEVATION:  
WATER ENCOUNTERED:

DATE STARTED:  
DATE FINISHED:  
SAMPLER TYPE:

ELEV	SAMPLE NUMBER	BLOWS PER 6"	REC	DEPTH	SOIL DESCRIPTION	WC	ATT LIMITS		PHYSICAL CHARACTERISTIC					ODOT CLASS		
							LL	PI	% AGG	% CS	% FS	% SI	% CL			
724.5	S-1	2 9 13		5	Grass, roots, topsoil. 1.0 Brown clayey silt, some fine to coarse sand and gravel. 1.5											
724.0	S-2	3 1 2		5	Brown to black fine to coarse sand, some fine gravel, little clayey silt.	24			25	20	40	-15	A-3a With Glass Fragments			
	S-3	2 1 1		10												
714.0	S-4	1 1 1		10												
	S-5	2 3 4		15	Brown to black clayey silt, little fine sand.	30	40	17		13	52	35	A-6b (11)			
	S-6	2 3 5		15												
	S-7	2 1 2		20												
704.5	ST-1			20	21.0											
701.5	S-8	8 9 12		25	Brown fine to coarse sand and gravel, some clayey silt. Few cobbles. 24.0											
699.0	S-9	8 4 4		25	Brown fine to coarse sand, some clayey silt, trace fine gravel. 26.5	29	NP	NP	1	10	65	17	7	A-3a		
	S-10	7 5 25		30	Gray coarse to fine sand and fine to coarse gravel, trace clayey silt.											
690.5	S-11	8 15 23		35	Few cobbles. 35.0 Gray clayey silt, some fine to coarse sand and gravel. 36.5											
689.0	S-12	39 34 36		40	Gray fine to coarse gravel, some coarse to fine sand, little clayey silt.	7			63	15	9	-12	A-1-a			
	S-13	24 35 40		45												
	S-14	8 21 23		50												
670.5	S-15	18 20 19		55	55.0	14				30	48	12	-10	A-1-b		
664.0	S-16	30 28 25		60	61.5											
				65	Bottom of boring at 61.5 feet.											

ELEV	SAMPLE NUMBER	BLOWS PER 6"	REC	DEPTH	SOIL DESCRIPTION	WC	ATT LIMITS	PHYSICAL CHARACTERISTIC	ODOT CLASS
							LL PI	% AGG % CS % FS % SI % CL	
				5					
				10					
				15					
				20					
				25					
				30					
				35					
				40					
				45					
				50					
				55					
				60					
				65					
				70					
				75					
				80					
				85					

ELEV	SAMPLE NUMBER	BLOWS PER 6"	REC	DEPTH	SOIL DESCRIPTION	WC	ATT LIMITS	PHYSICAL CHARACTERISTIC	ODOT CLASS
							LL PI	% AGG % CS % FS % SI % CL	
				5					
				10					
				15					
				20					
				25					
				30					
				35					
				40					
				45					
				50					
				55					
				60					
				65					
				70					
				75					
				80					
				85					



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FRANKLIN COUNTY  
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ROAD OD OVER OLENTANGY RIVER AND RELOCATED S.R. 315  
STRUCTURE FOUNDATION INVESTIGATION

DATE: DRAWN BY: J.K.H. CHECKED BY: REVISED:

KRY BLUEPRINT CO. 107888



**GENERAL NOTES**

**ROUNDING**

THE ROUNDING AT SLOPE BREAKPOINTS SHOWN ON THE TYPICAL SECTIONS APPLY TO ALL CROSS-SECTIONS EVEN THOUGH OTHERWISE SHOWN.

**CONTINGENCY QUANTITIES**

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK FOR ITEMS DESIGNATED BY PLAN NOTE TO BE USED "AS DIRECTED BY THE ENGINEER" UNLESS AUTHORIZED BY THE ENGINEER. THE ACTUAL WORK LOCATIONS AND QUANTITIES USED FOR SUCH ITEMS SHALL BE INCORPORATED INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT.

**ELEVATION DATUM**

ALL ELEVATIONS ARE BASED ON U.S.G.S. DATUM.

**TEMPORARY SOIL EROSION AND SEDIMENT CONTROL**

THE FOLLOWING ESTIMATED QUANTITIES ARE TO BE USED AS DIRECTED BY THE ENGINEER FOR TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES:

207, STRAW OR HAY BALES	20 EACH
659, COMMERCIAL FERTILIZER	0.09 TON
659, WATER	4 M.GAL

**WORK LIMITS**

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. THE INSTALLATION AND OPERATION OF ALL TEMPORARY TRAFFIC CONTROL AND TEMPORARY TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS SHALL BE PROVIDED BY THE CONTRACTOR WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

**CALCULATION- TEMPORARY SOIL EROSION AND SEDIMENT CONTROL**

659, COMMERCIAL FERTILIZER -  $10,000 \text{ SY} \times 9 \frac{\text{SF}}{\text{SY}} \times 0.20 \div 1000 \times 10 \div 2000 = 0.09 \text{ TONS}$   
 659, WATER -  $10,000 \text{ SY} \times 9 \frac{\text{SF}}{\text{SY}} \times 0.20 \div 1000 \times 240 \div 1000 = 4.32 \text{ M.GAL}$

**ITEM 606, ANCHOR ASSEMBLY, TYPE E**

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING AN ET-2000, OPTION "B" GUARDRAIL END TERMINAL AS MANUFACTURED BY SYRO STEEL COMPANY, 1170 N. STATE STREET, GIRARD, OHIO 44420 (TELEPHONE: 216-545-4373).

THE LENGTH OF THE ET-2000 SYSTEM IS CONSIDERED TO BE 50', INCLUSIVE OF TWO 25' LONG RAIL ELEMENTS. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND THE LOCATIONS SHOWN IN THE PLANS.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT BID PRICE FOR 606, EACH, ANCHOR ASSEMBLY, TYPE E. PAYMENT SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING ALL RELATED HARDWARE, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

**BRIDGE TERMINAL ASSEMBLY, TYPE 1, BARRIER DESIGN, AS PER PLAN**

THIS ITEM SHALL CONSIST OF A BRIDGE TERMINAL ASSEMBLY, TYPE 1, BARRIER DESIGN AS SHOWN IN STANDARD CONSTRUCTION DRAWING GR-3.5 AND MODIFIED AS FOLLOWS:

1. THE ASSEMBLY SHALL TIE INTO A CONCRETE BARRIER, TYPE C.
2. THE POSTS SHALL BE DESIGNED SO THAT THE RAILS ON EITHER SIDE ARE AT DIFFERENT ELEVATIONS.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE CONTRACT PRICE FOR 606, EACH, BRIDGE TERMINAL ASSEMBLY, TYPE 1, BARRIER DESIGN. PAYMENT SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT THE ITEM AS DESCRIBED ABOVE.

**SUPERELEVATION TABLES**

ROAD OD						REMARKS
LEFT			RIGHT			
EDGE OF PAVEMENT	STATION	WIDTH	RATE	DIFF.	EDGE OF PAVEMENT	
708.12	145+63.29	24	0.0142	0.34	708.46	
707.97	145+75.00		0.0157	0.38	708.35	
707.69	146+00.00		0.0188	0.45	708.14	
707.45	146+25.00		0.0220	0.53	707.98	
707.29	146+50.00		0.0263	0.63	707.92	
707.20	146+75.00		0.0288	0.69	707.89	L.P.
707.17	146+88.00		0.0304	0.73	707.90	
707.18	147+00.00		0.0317	0.76	707.94	
707.23	147+25.00		0.0348	0.84	708.07	
707.31	147+50.00		0.0380	0.91	708.22	
707.46	147+75.00		0.0411	0.99	708.45	
707.69	148+00.00		0.0442	1.06	708.75	
708.04	148+25.00		0.0488	1.17	709.21	
708.53	148+50.00		0.0533	1.28	709.81	
709.15	148+75.00		0.0548	1.32	710.47	
709.88	149+00.00		0.0563	1.35	711.23	
710.72	149+25.00		0.0582	1.40	712.12	
711.37	149+43.90	24	0.0600	1.44	712.81	F.S.

ROAD OE						REMARKS
LEFT			RIGHT			
EDGE OF PAVEMENT	DIFF.	RATE	WIDTH	STATION	EDGE OF PAVEMENT	
708.53	-0.14	-0.0058	24	146+71.90	708.67	
708.21	-0.34	-0.0142		147+00.00	708.55	L.P.
708.09	-0.48	-0.0200		147+22.00	708.57	
708.13	-0.54	-0.0225		147+50.00	708.67	
708.21	-0.57	-0.0241		147+75.00	708.78	
708.28	-0.62	-0.0258		148+00.00	708.90	
708.34	-0.74	-0.0308		148+25.00	709.08	
708.41	-0.86	-0.0358		148+50.00	709.27	
708.60	-0.98	-0.0408		148+75.00	709.58	
708.85	-1.05	-0.0438		149+00.00	709.90	
709.24	-1.12	-0.0465		149+25.00	710.36	
709.69	-1.13	-0.0472		149+50.00	710.82	
710.22	-1.15	-0.0479		149+75.00	711.37	
710.80	-1.17	-0.0486		150+00.00	711.97	
711.44	-1.18	-0.0493		150+25.00	712.62	
712.20	-1.20	-0.0500		150+50.00	713.40	
713.02	-1.26	-0.0524		150+75.00	714.28	
713.89	-1.32	-0.0550		151+00.00	715.21	
714.30	-1.44	-0.0600	24	151+13.11	715.74	F.S.

CALC. BY: USB  
DATE:   
CHKD. BY: BRT  
DATE: 3/7/95

GENERAL NOTES & SUPERELEVATION TABLES

FRA-315-2.39

R2  
11

GR. CIVIL-11 FN. DURAVINCIN6212396\06212396A SD. 1-20 0955 02/20/95

# CALCULATIONS

## ITEM 202 BASE REMOVED

145+63.29~149+43.90 (OD)  
 AREA= 380.61 x 24 / 9 = 1015 S.Y.  
 146+71.90~151+13.11 (OE)  
 AREA= 441.20 x 24 / 9 = 1177 S.Y.

TOTAL=2192 S.Y.

## ITEM 203 SUBGRADE COMPACTION

146+71.90~148+50.00 (OE)  
 AREA=(78+79)/2 x 178.1/9=1553 S.Y.  
 148+50.00~150+00.00 (OE)  
 AREA=(79+74)/2 x 150/9=1275 S.Y.  
 150+00.00~150+67.89 (OE)  
 AREA=(75+68.5)/2 x 67.89/9=541 S.Y.  
 150+67.89~151+13.11 (OE)  
 AREA=(29+27.5)/2 x 45.22/9=142 S.Y.

TOTAL=3511 S.Y.

## ITEM 304 7" AGGREGATE BASE

3511 x 9 x 7/12 / 27=683 C.Y.

TOTAL=683 C.Y.

## ITEM 408 BITUMINOUS PRIME COAT

3511 x 0.40 = 1405 GAL.

TOTAL=1405 GAL.

## ITEM 301 9" BITUMINOUS AGGREGATE BASE

3511 x 9 x 9/12 / 27=878 C.Y.

TOTAL=878 C.Y.

## ITEM 402 1-3/4" ASPHALT CONCRETE, AC-20

3403 x 9 x 1.75/12 / 27=165 C.Y.

TOTAL=165 C.Y.

## ITEM 404 1-1/4" ASPHALT CONCRETE, AC-20

3403 x 9 x 1.25/12 / 27=118 C.Y.

TOTAL=118 C.Y.

## RESURFACING ITEMS

STA. 117+50.64 ~ STA. 147+85.00 = 3035 L.F.

### ITEM 407 TACK COAT

3035 x 37 / 9 x 0.075 = 936 GAL.

TOTAL=936 GAL.

### ITEM 402 1-3/4" ASPHALT CONCRETE, AC-20

3035 x 37 x 1.75/12 / 27=607 C.Y.

TOTAL=772 C.Y.

### ITEM 404 1-1/4" ASPHALT CONCRETE, AC-20

3035 x 37 x 1.25/12 / 27=433 C.Y.

TOTAL=551 C.Y.

### SUMMARY OF EARTHWORK

ITEM 203 EXCAVATION	ITEM 203 EMBANKMENT	ITEM 659 SEED. & MULCH.
750 C.Y.	176 C.Y.	1071 S.Y.

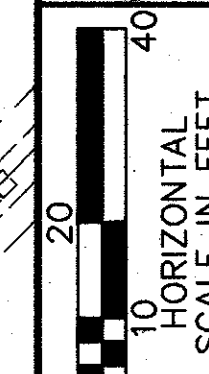
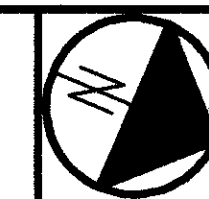
ITEM	TOTAL FROM SHEET NO.				ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION
		2	3	4					
<b>ROADWAY</b>									
201					201	11000	LUMP	LUMP	CLEARING AND GRUBBING
202				2192	202	23800	2192	S.Y.	BASE REMOVED
202				380	202	30500	380	L.F.	CONCRETE MEDIAN REMOVED
202				316	202	38000	316	L.F.	GUARDRAIL REMOVED
202				380	202	38300	380	L.F.	GUARDRAIL REMOVED, BARRIER DESIGN
203				750	203	12000	750	C.Y.	EXCAVATION NOT INCLUDING EMBANKMENT
203				176	203	20000	176	C.Y.	EMBANKMENT
203				3511	203	50000	3511	S.Y.	SUBGRADE COMPACTION
606				212.5	606	13000	212.5	L.F.	GUARDRAIL, TYPE 5
606				369	606	15500	369	L.F.	GUARDRAIL, BARRIER DESIGN, TYPE 5
606				1	606	26100	1	EA.	ANCHOR ASSEMBLY, TYPE E
606				1	606	26500	1	EA.	ANCHOR ASSEMBLY, TYPE T
606				1	606	35000	1	EA.	BRIDGE TERMINAL ASSEMBLY, TYPE 1
606				1	606	35005	1	EA.	BRIDGE TERMINAL ASSEMBLY, TYPE 1, BARRIER DESIGN, A.P.P.(SEE SHEET 2)
612				108	612	42000	108	S.Y.	CONCRETE MEDIAN (SEE STANDARD DRAWING MC-6)
622				14	622	23500	14	L.F.	CONCRETE BARRIER, TYPE C
622				113	622	24000	113	L.F.	CONCRETE BARRIER, TYPE D
<b>EROSION CONTROL</b>									
207				20	207	70000	20	EA.	STRAW OR HAY BALES
659				1071	659	10000	1071	S.Y.	SEEDING AND MULCHING
659				0.09	659	20000	0.09	TON	COMMERCIAL FERTILIZER
659				4	659	35000	4	M GAL.	WATER
<b>DRAINAGE</b>									
604				5	604	20800	5	EA.	INLET RECONST. TO GRADE
604				1	604	34500	1	EA.	MANHOLE ADJUSTED TO GRADE
<b>PAVEMENT</b>									
301				878	301	10002	878	C.Y.	BITUMINOUS AGGREGATE BASE, AC-20
304				683	304	20000	683	C.Y.	AGGREGATE BASE
402				772	402	20000	772	C.Y.	ASPHALT CONCRETE, AC-20
404				551	404	20000	551	C.Y.	ASPHALT CONCRETE, AC-20
407				936	407	10000	936	GAL.	TACK COAT
408				1405	408	10000	1405	GAL.	BITUMINOUS PRIME COAT (APPLIED AT 0.40 GAL./S.Y.)
(FOR TRAFFIC CONTROL ITEMS SEE SHEET NO. T1)									
614									
619									
623									
624									

GENERAL SUMMARY & CALCULATIONS

FRA-315-2.39

278

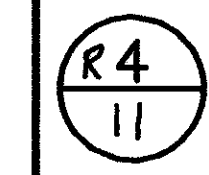
R3  
11



CALC. BY: GRT  
 DATE: 05/20/95  
 CHKD. BY: GRT  
 DATE: 3/95

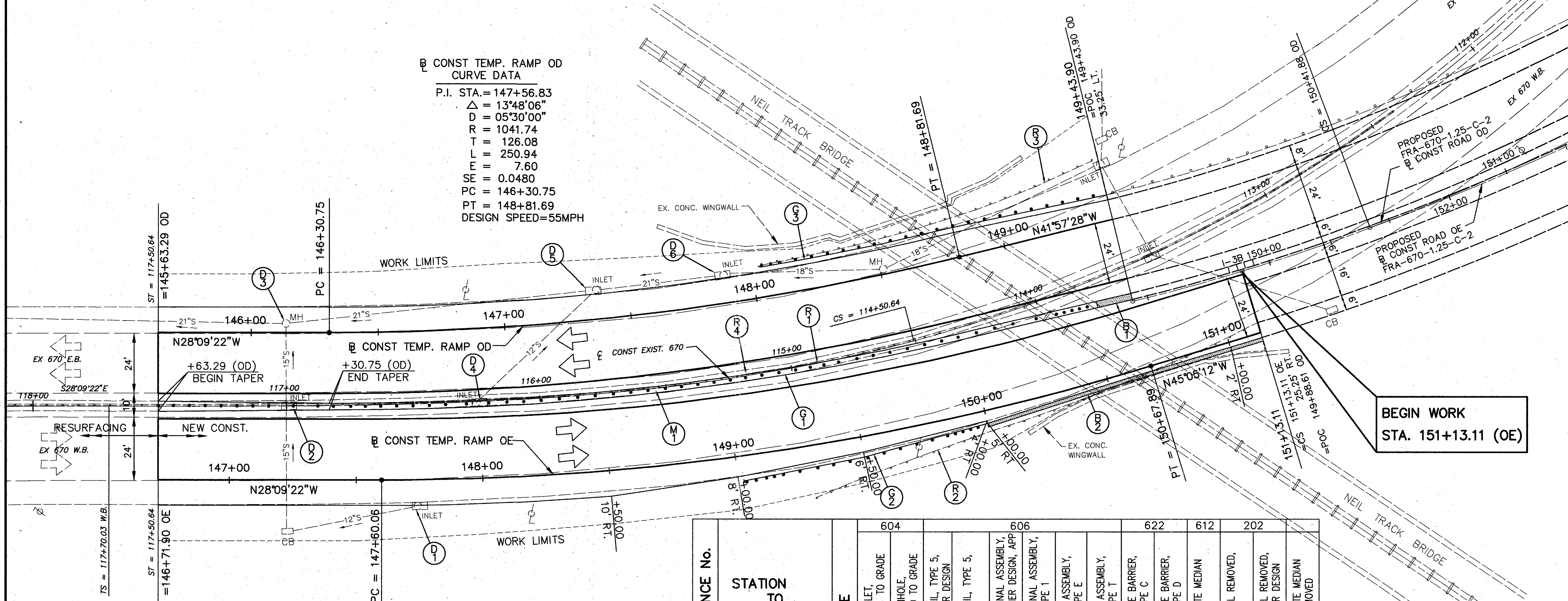
PLAN

FRA-315-2.39



CONST TEMP. RAMP OD  
 CURVE DATA  
 P.I. STA. = 147+56.83  
 Δ = 13°48'06"  
 D = 05°30'00"  
 R = 1041.74  
 T = 126.08  
 L = 250.94  
 E = 7.60  
 SE = 0.0480  
 PC = 146+30.75  
 PT = 148+81.69  
 DESIGN SPEED = 55MPH

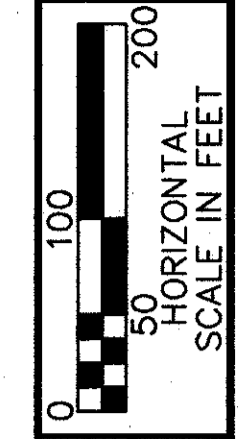
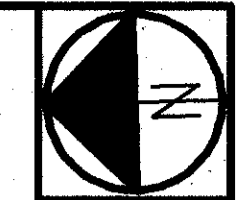
CONST TEMP. RAMP OE  
 CURVE DATA  
 P.I. STA. = 149+15.10  
 Δ = 16°55'50"  
 D = 05°30'00"  
 R = 1041.74  
 T = 155.04  
 L = 307.83  
 E = 11.47  
 SE = 0.0480  
 PC = 147+60.06  
 PT = 150+67.89  
 DESIGN SPEED = 55MPH



REFERENCE No.	STATION TO STATION	SIDE	604				606				622		612		202	
			INLET, RECONST. TO GRADE	MANHOLE, ADJUSTED TO GRADE	GUARDRAIL, TYPE 5, BARRIER DESIGN	GUARDRAIL, TYPE 5,	BRIDGE TERMINAL ASSEMBLY, TYPE 1, BARRIER DESIGN, APP	BRIDGE TERMINAL ASSEMBLY, TYPE 1	ANCHOR ASSEMBLY, TYPE E	ANCHOR ASSEMBLY, TYPE T	CONCRETE BARRIER, TYPE C	CONCRETE BARRIER, TYPE D	CONCRETE MEDIAN	GUARDRAIL REMOVED,	GUARDRAIL REMOVED, BARRIER DESIGN	CONCRETE MEDIAN REMOVED
			EA.	EA.	L.F.	L.F.	EA.	EA.	EA.	EA.	L.F.	L.F.	S.Y.	L.F.	L.F.	L.F.
D1	147+22 (OE)	RT.	1													
D2	146+14 (OD)	RT.	1													
D3	146+14 (OD)	LT.		1												
D4	146+88 (OD)	RT.	1													
D5	147+35 (OD)	LT.	1													
D6	148+52 (OD)	LT.	1													
G1	145+63.25~149+32 (OD)	RT.			369		1									
G2	149+02.1~150+02.1 (OE)	RT				87.5	1	1								
G3	148+01.5~149+39 (OD)	LT.				125			1							
M1	145+63.29~149+29.9 (OD)	RT.										108				
R1	145+63.29~149+43.9 (OD)	RT.											380			
R2	149+29~151+09 (OE)	RT.										181				
R3	148+05~149+41 (OD)	LT.										135				
B1	149+29.9~149+43.9 (OD)	RT.								14						
B2	150+00~151+13.11 (OE)	RT.									113.11					
R4	145+63.29~149+43.9 (OD)	RT.														380
<b>SHEET TOTALS</b>			5	1	369	212.5	1	1	1	1	14	113	108	316	380	380

GRT CIVIL, J. FN. CURVING/UBI/2025/PLAN. SD. 1461. 1024. 05/20/95

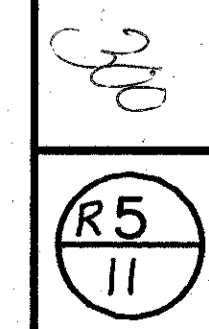
ERT CIVIL.L1 FN CURVING\022305\PLANE SC 1:100 10/23 05/20/95



CALC. BY: \_\_\_\_\_  
DATE: \_\_\_\_\_  
CHKD. BY: CRT  
DATE: 3/95

RESURFACING PLAN

FRA-315-2.39



BEGIN RESURFACING  
ST = 117+50.64  
TS = 117+70.03

EX 670 W.B. 120+00  
CS = 120+70.03

125+00  
CS = 125+35.56

ST = 128+35.54 (BK.)  
ST = 128+52.78 (AH.)

130+00  
S89°23'53"E  
GOODALE STREET

PC = 131+19.06

RAMP "J"

EX 670 W.B. 135+00

⊙ CURVE DATA  
P.I. STA. = 135+09.98  
Δ = 3°54'38"  
D = 0°00'30"  
R = 11459.16  
T = 391.22  
L = 782.13  
E = 6.68  
SE = NC FT/FT

PT = 139+01.20

140+00

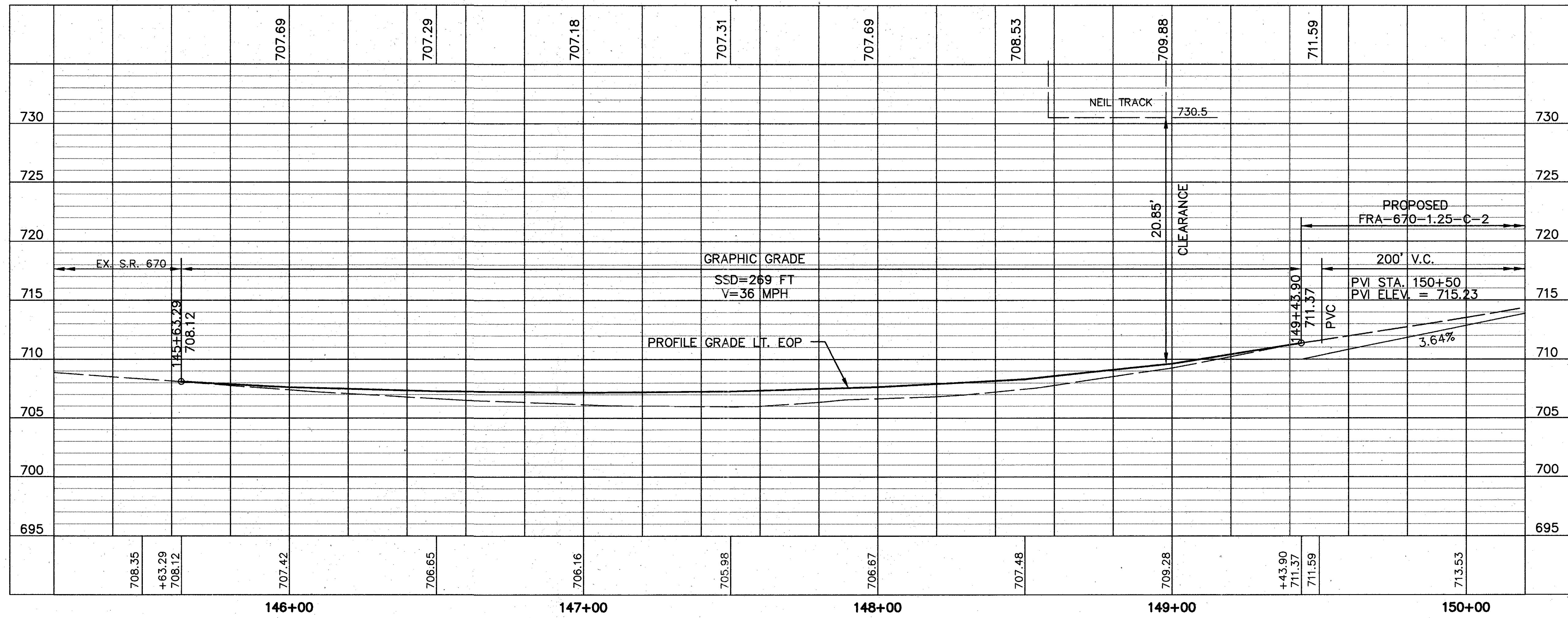
S85°29'15"E

145+00

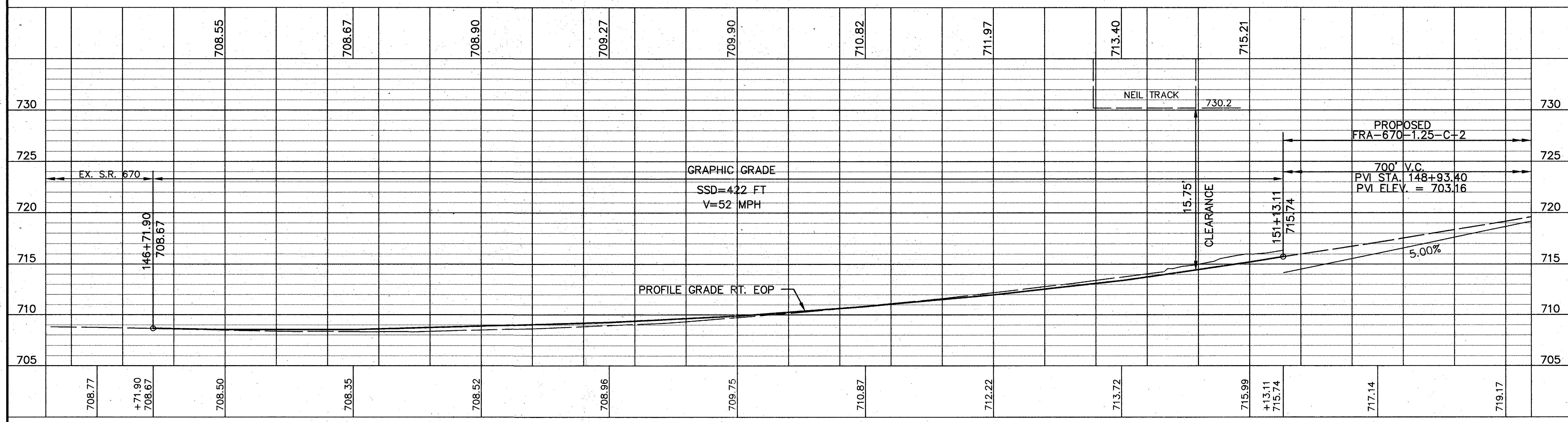
RAMP "G"  
TS = 147+15.26

END RESURFACING  
STA. 147+85.00

END WORK  
STA. 147+85.00



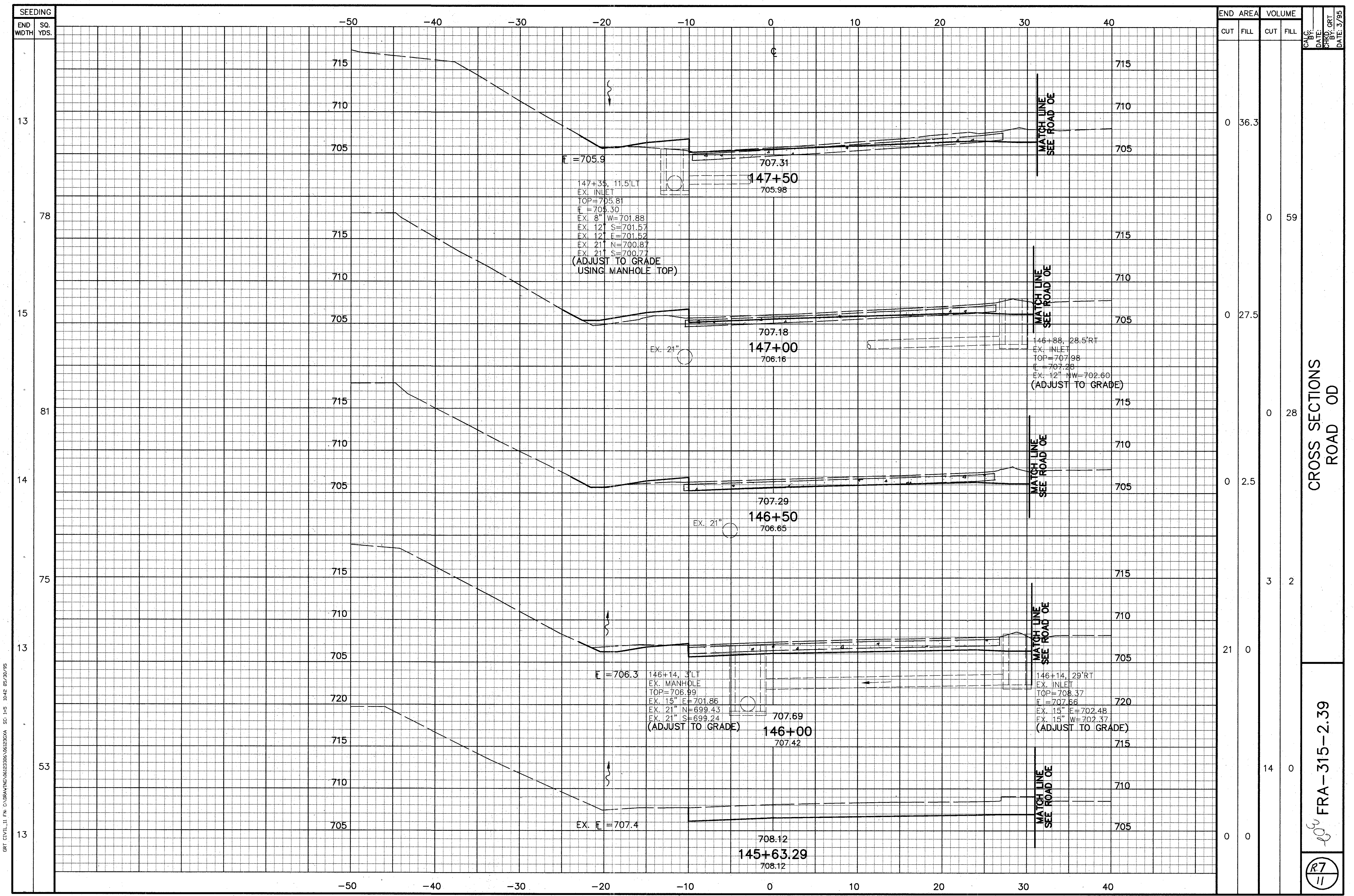
TEMPORARY RAMP OD



TEMPORARY RAMP OE

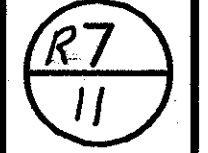
CALC: DATE: CHK: BY: CRT DATE: 3/95  
 PROFILE  
 FRA-315-2.39  
 R6

GRT CIVIL.II FN CURB/MAN/US/23/36/PROFILE SD 14-00 10/24 05/20/95



CROSS SECTIONS  
ROAD OD

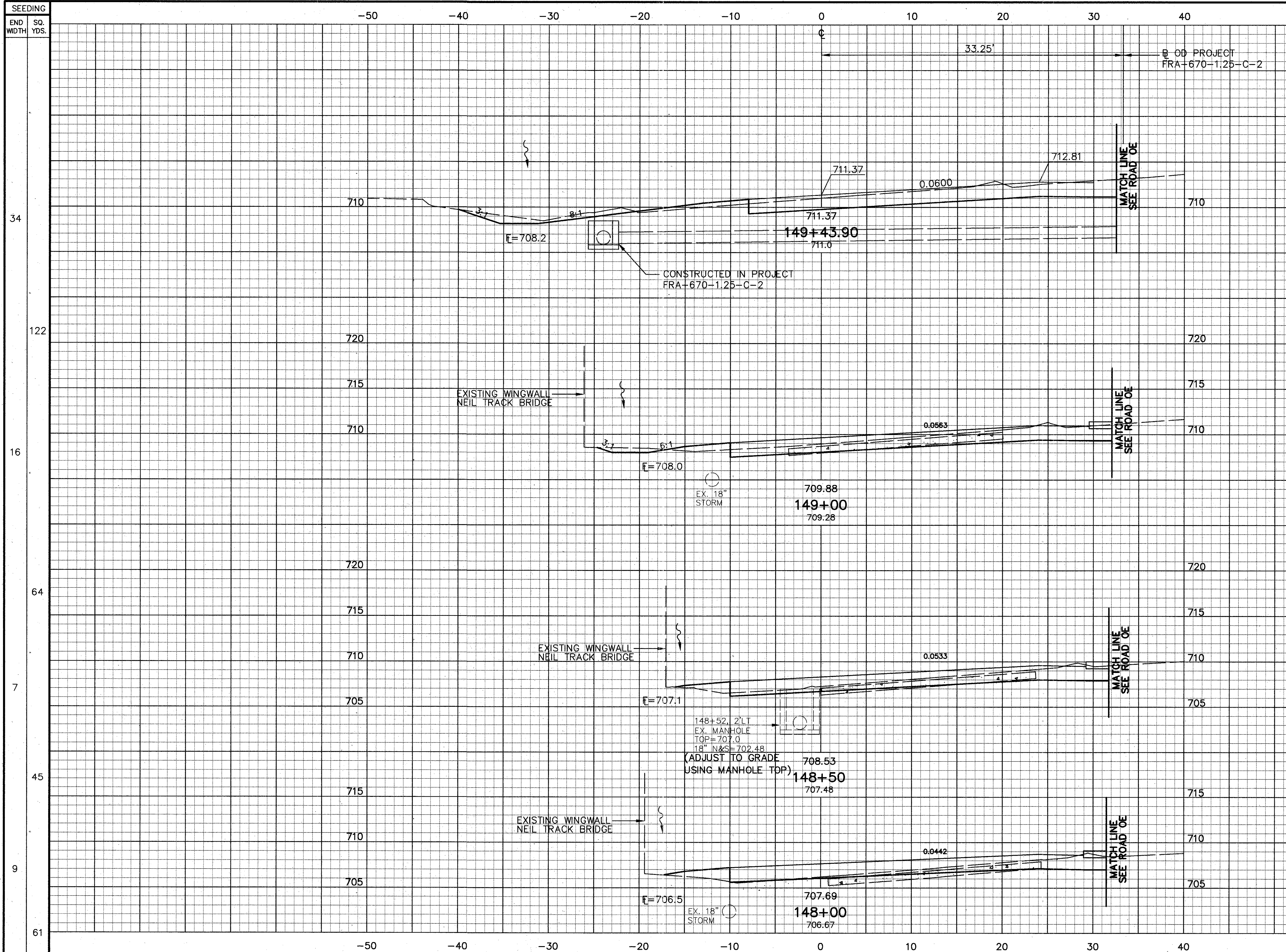
FRA-315-2.39



DATE: 5/95  
BY: GRT  
CHKD: GRT

GRT CIVIL, 11 FN COURAVING, 282306, 06/23/04, SC 1-5 10-02 05/30/95

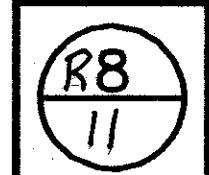




END WIDTH	SQ. YDS.	END AREA		VOLUME	
		CUT	FILL	CUT	FILL
34			4.6	27	10
122			8	6	8
16			19	4	12.1
64			38	4	38
7			28.9	0	28.9
45			60	0	60
9					
61					

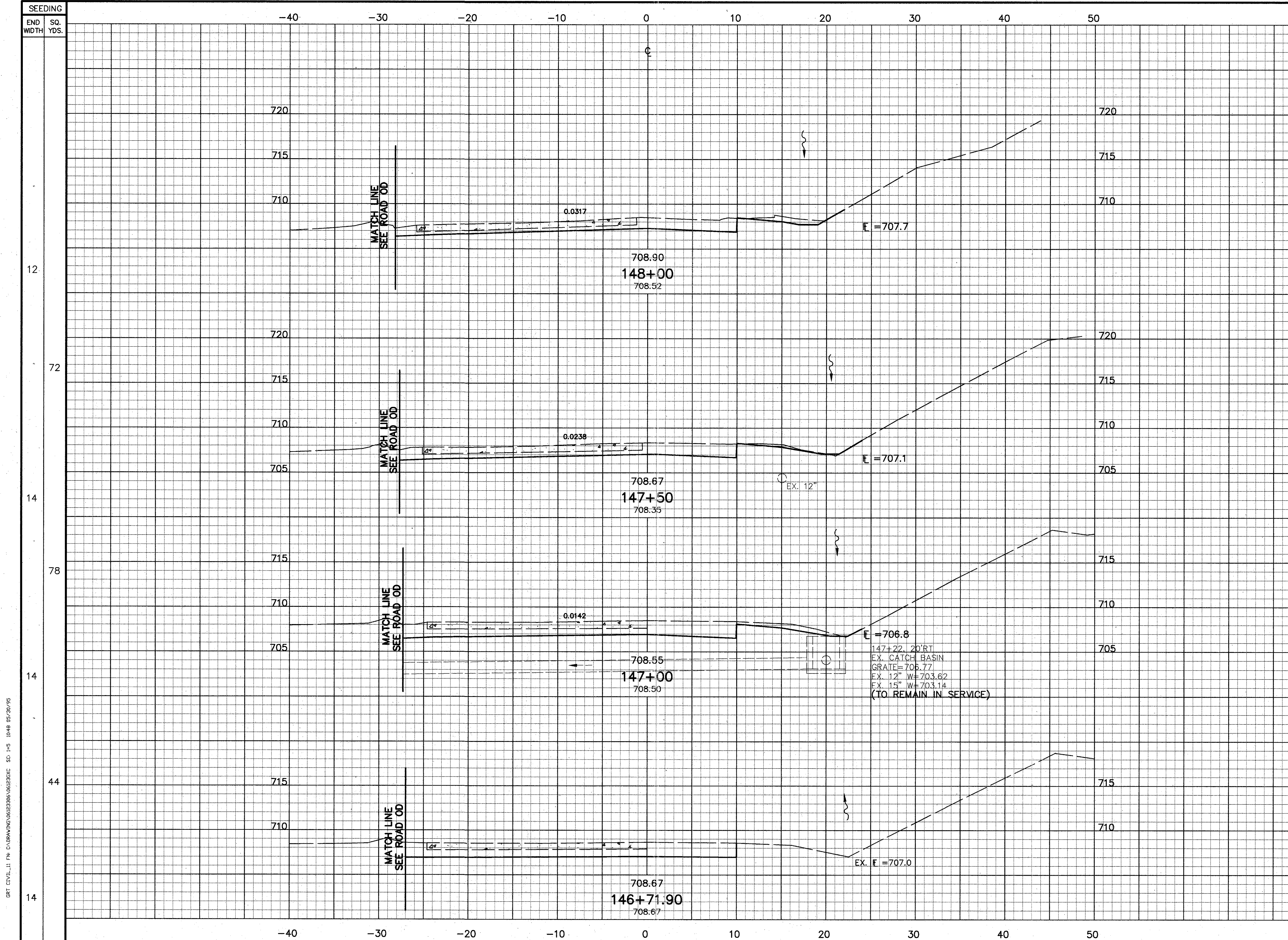
CROSS SECTIONS  
ROAD OD

FRA-315-2.39



GRT CIVIL 11 FN C:\URAVING\0622306\0622308 SC 1-5 10-4 05/30/95

CAS: DATE: GRT: DATE: 3/95



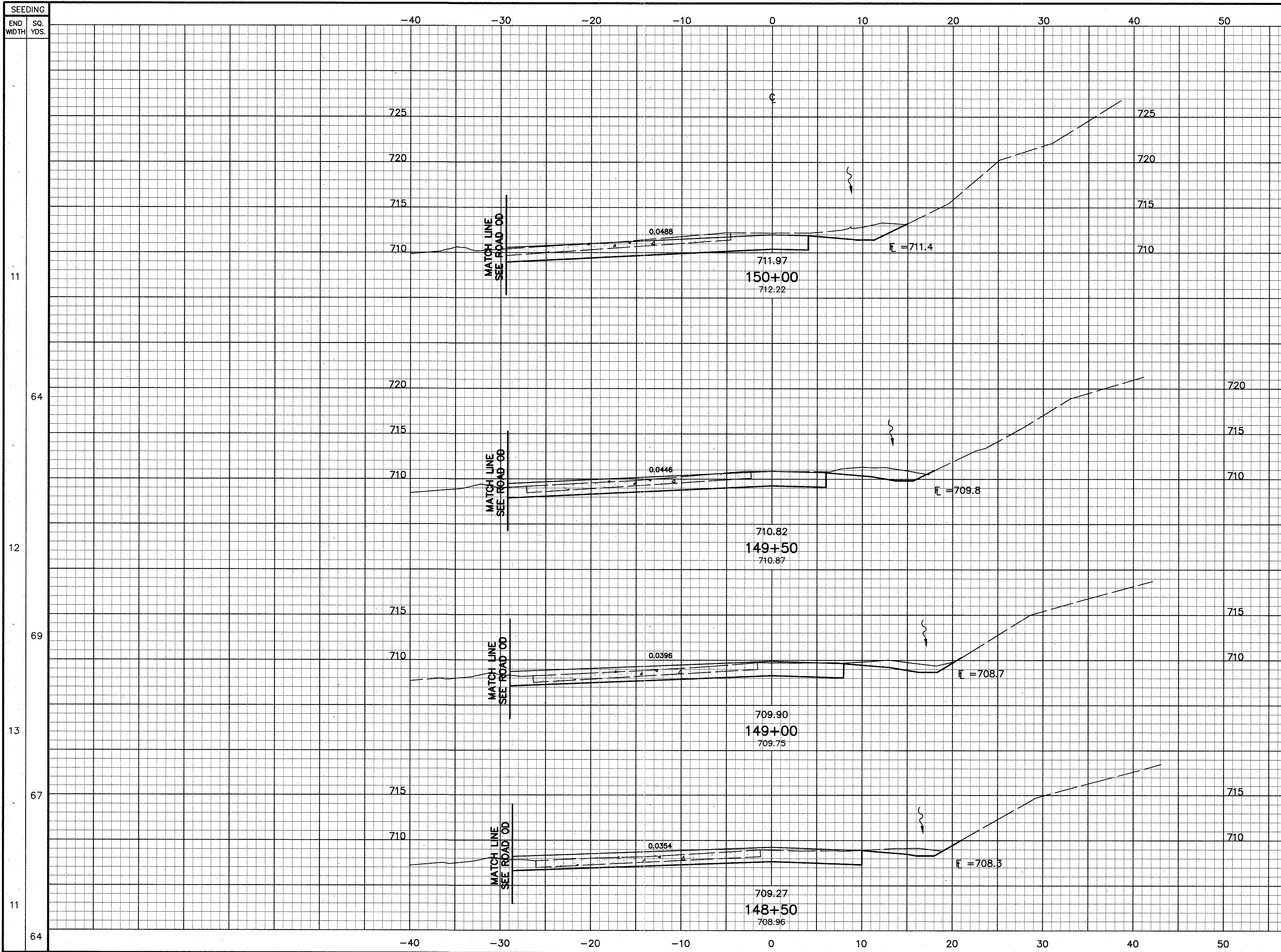
SEEDING	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
12			27	4
72			49	6
14			26	2
78			65	7
14			44	5
44			42	3
14			38	0

CROSS SECTIONS ROAD OE  
 FRA-315-2.39  
 DATE: 05/30/95  
 BY: GRT  
 CHECKED: [Signature]  
 DATE: 3/95

GRT CIVIL: J. F. CURRAN/0612306/0612306 SC: 1-5 10:48 05/30/95



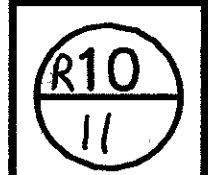
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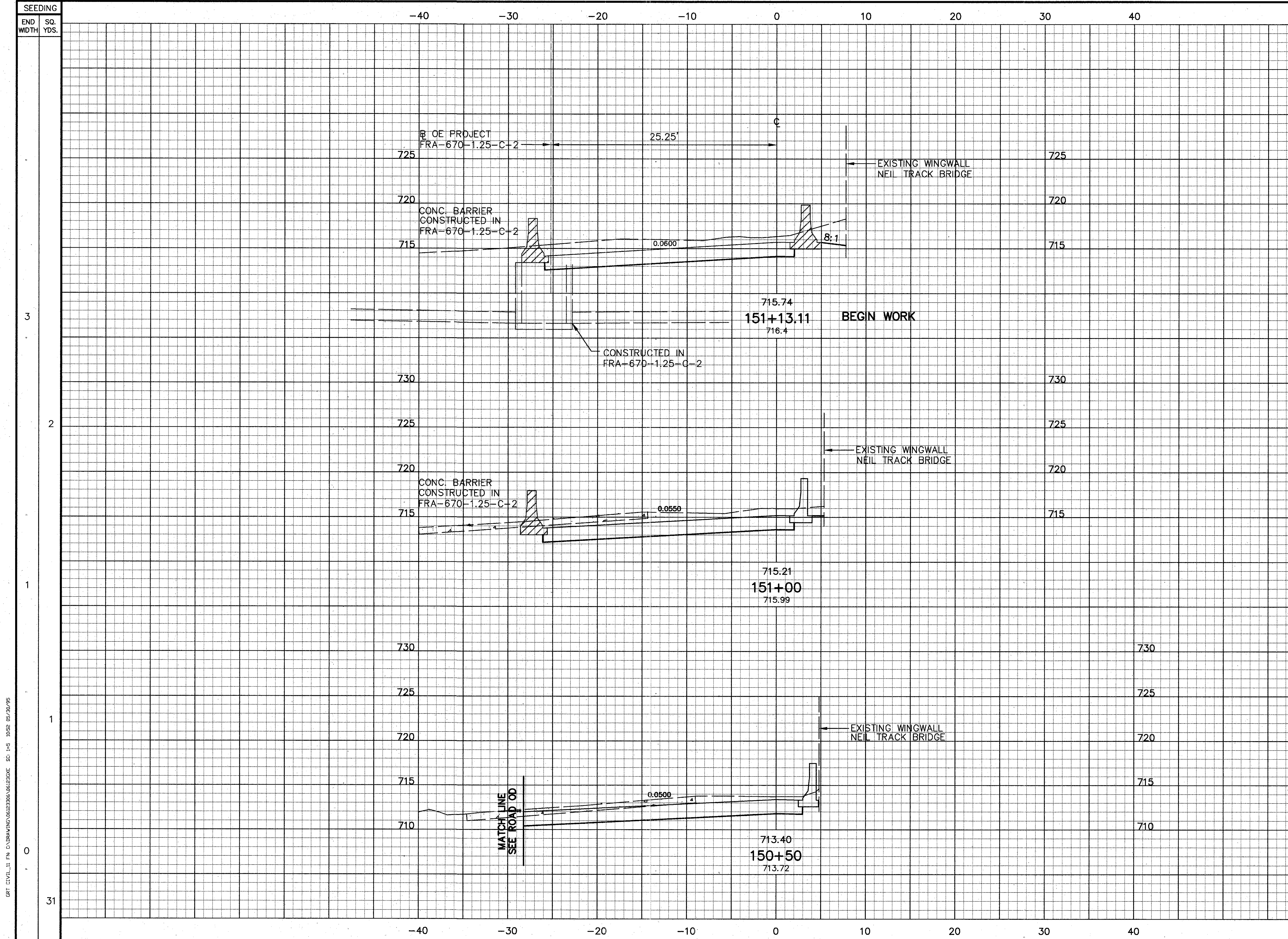


SEEDING		END AREA		VOLUME		DATE	CHK BY	GRT	DATE: 3/95
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL				
11		53	0						
64				89	0				
12				43	0				
69				74	0				
13				37	0				
67				64	0				
11				32	0				
64		55	4						

CROSS SECTIONS  
ROAD OE

FRA-315-2.39





SEEDING	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
3	90	0		
2			38	0
1	69	0		
1			116	0
0	56	0		
31			101	0

CROSS SECTIONS  
ROAD OE

FRA-315-2.39

R11

GRT CIVIL-11 FN C:\DRAWING\06123906\06123906.DWG 1052 05/20/95

CAS: DATE: CMT: BY: GRT DATE: 3/95

# TRAFFIC CONTROL GENERAL SUMMARY

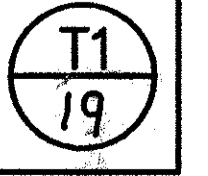
CALC. BY: AM  
 DATE: 3/95  
 DRAWN BY: RB  
 DATE: 3/95  
 TRAFFIC CONTROL GENERAL SUMMARY  
 PAVEMENT MARKING SUB-SUMMARY  
 FRA-315-2.39

LOCATION		SHT. NO.	SIDE	644 WE	644 YE	644 LL	644 WD	644 CH	644 WT	644 A	644 W
FROM	TO			L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	EA	EA
I-670 WESTBOUND											
154+00	TO 117+50	T7	L		3650	3650					
153+70	TO 149+61		L				409				
149+61	TO 148+25		L					136	51		
148+25	TO 131+94		L	1631							
131+94	TO 127+00	T9	L				494				
127+00	TO 117+50	T10	L	950							
ROAD OE											
146+72	TO 175+82	T10	L-R	2910	2910	2910					
159+05	TO 164+85	T12	R	580							
ROAD OD											
145+63	TO 149+44	T14	R	381	381	381					
GOODALE STREET											
116+10		T17	R						1		
117+40			R						1		
118+05			R							1	
118+75			R						1		
119+70	TO 126+20		R					216			
NEIL OFF RAMP											
149+61	TO 148+25	T7	L				136				
NEIL ON RAMP											
G-129+48	TO ML-134+11	T19	R-L	277							
G-129+54	TO ML-132+76		R-L		428						
G-126+40	TO ML-127+00		R-L	795							
G-127+03	TO ML-134+11		R-L		55						
ML-134+11	TO ML-133+27	T9	L				88				
ML-132+76	TO ML-131+94		L					82			
TOTAL				7524	7424	6941	991	354	267	3	1
TOTAL (FT.)				14,948							
TOTAL (MI.)				2.83	1.31						

ROADWAY	SHEET	STATION TO STATION	SIDE	INTERVAL	1-WAY WHITE	1-WAY YELLOW
I-670 WB	T7	154+00 117+50	L	80		45
I-670 WB		154+00 117+50	L	80	45	
I-670 WB		148+85 133+60	L	80	20	
I-670 WB	T9	133+20 132+00	L	40	4	
ON RAMP		133+60 132+80	L	40		3
ON RAMP		132+40 132+00	L	40	2	
I-670 WB		127+00 117+50	L	80	12	
ROAD OE	T10	146+70 175+82	L-R	80		37
ROAD OE		146+70 175+82	L-R	80	37	
ROAD OE		146+70 175+82	L-R	80	37	
ROAD OD	T14	145+65 149+50	R	80	5	
ROAD OD		145+65 149+50	R	80	5	
ROAD OD		145+65 149+50	R	80		5
TOTALS					167	90
TOTAL					257	

TOTAL FROM SHEET NO.				ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHT. NO.
T1	T2								
257				621	00100	257	EA	RAISED PAVEMENT MARKER	
	1			625	01500	1	EA	CABLE SPLICING KIT	
	70			625	23200	70	L.F.	NO. 4 AWG 5000 VOLT DISTRIBUTION CABLE	
	25			625	25400	25	L.F.	CONDUIT, 2", 713.04	
	25			625	29600	25	L.F.	TRENCH IN PAVED AREA, TYPE B	
	1			625	30700	1	EA	PULL BOX, 713.08, 18"	
	0.54			630	00100	0.54	C.Y.	CONCRETE FOR EMBEDDED FOUNDATION	
	139			630	03100	139	L.F.	GROUND MOUNTED SUPPORT, NO. 3 POST	
	92			630	04100	92	L.F.	GROUND MOUNTED SUPPORT, NO. 4 POST	
	30			630	06400	30	L.F.	GROUND MOUNTED SUPPORT, S4 x 7.7 BEAM	
	2			630	77000	2	EA	OVERPASS STRUCTURE MOUNTED SIGN SUPPORT, TYPE TC-18.24	
	176			630	80100	176	S.F.	SIGN, FLAT SHEET	
	24			630	80102	24	S.F.	SIGN, FLAT SHEET, TYPE G	
	557			630	80204	557	S.F.	SIGN, EXTRUSHEET, TYPE G	
	616			630	80306	616	S.F.	SIGN, TEMPORARY OVERLAY, TYPE G	
	7			630	82000	7	EA	SIGN BACKING ASSEMBLY	
	16			630	83000	16	S.F.	COVERING OF SIGN	
	6			630	84900	6	EA	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
	3			630	85500	3	EA	REMOVAL OF GROUND MOUNTED MAJOR SIGN AND STORAGE	
	1			630	86002	1	EA	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
	5			630	86102	5	EA	REMOVAL OF GROUND MOUNTED BEAM SUPPORT AND DISPOSAL	
	1			630	87000	1	EA	REMOVAL OF OVERHEAD MOUNTED SIGN AND STORAGE	
	2			630	88600	2	EA	REMOVAL OF OVERHEAD SIGN SUPPORT AND STORAGE, TYPE TC-18.24	
	5			630	89894	5	EA	REMOVAL OF TEMPORARY OVERLAY SIGN	
	1			631	84000	1	EA	SIGN SERVICE	
	2			631	84300	2	EA	SIGN WIRED	
	4			631	87200	4	EA	BALLAST, TYPE CMRI-175-480, REMOTE	
	4			631	89200	4	EA	MERCURY VAPOR LUMINAIRE, TYPE TC-31.21 WITH 175 WATT LAMP	
2.83				644	00100	2.83	MI	EDGE LINE, 5"	
1.31				644	00200	1.31	MI	LANE LINE, 5"	
354				644	00400	354	L.F.	CHANNELIZING LINE, 5"	
267				644	00700	267	L.F.	TRANSVERSE LINE, 20"	
3				644	01300	3	EA	LANE ARROW	
1				644	01400	1	EA	WORD ON PAVEMENT, 72"	
991				644	01502	991	L.F.	DOTTED LINE, 5"	

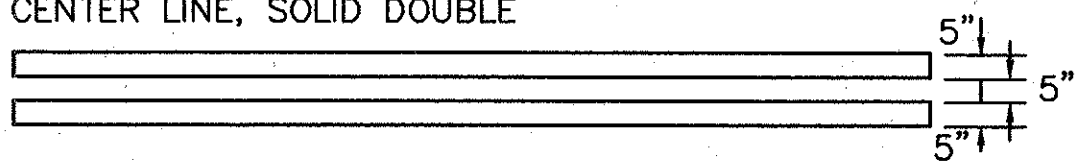
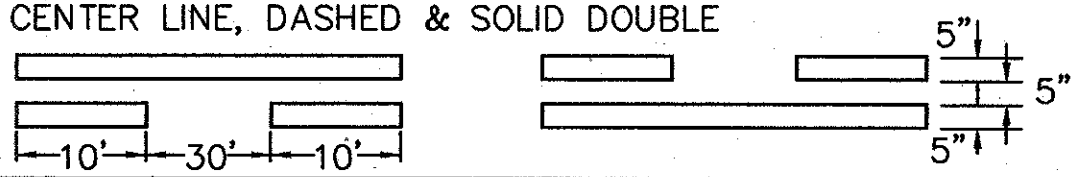
PLOT SCALE: 1"=40'  
 C:\DRAWINGS\0612310\MT\06123102.DWG  
 JUNE-05-1995



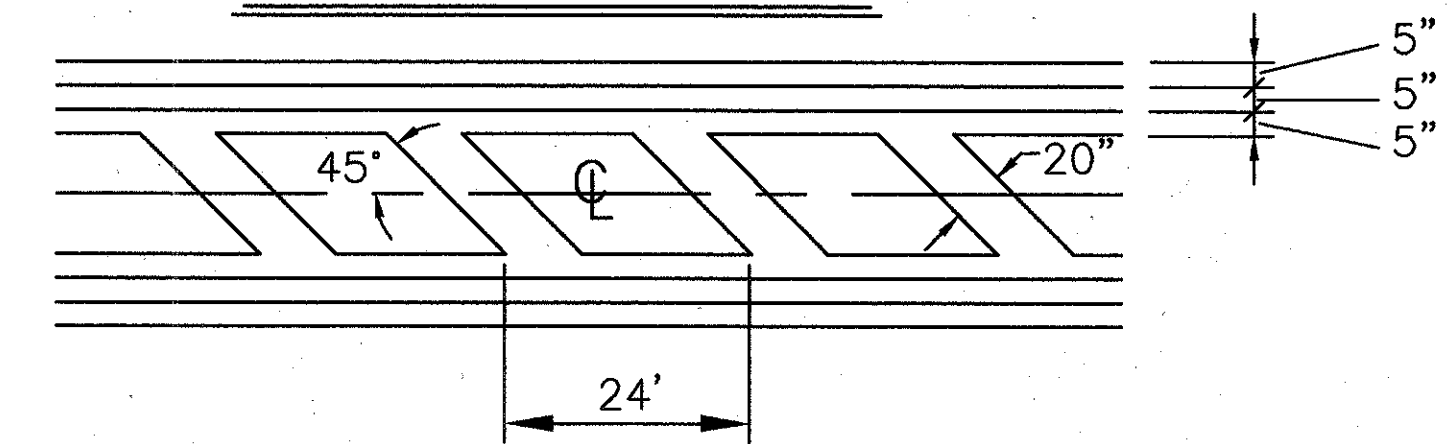


**NOTE:**





THE WORD "ONLY" ON PAVEMENT SHALL BE THE URBAN SIZE, 72" AS SHOWN ON STANDARD DRAWING TC-71.10.

EXISTING MARKINGS TO REMAIN		644 PAVEMENT MARKING		CITY OF COLUMBUS LINE SPECIFICATIONS	
	(WE)	EDGE LINE, WHITE, 5"			
(YE)	(YE)	EDGE LINE, YELLOW, 5"			
(LL)	(LL)	LANE LINE, 5"			
	(WD)	DOTTED LINE, 5" WHITE			
		DOTTED LINE, 5" YELLOW			
(DY)		CENTER LINE, SOLID DOUBLE			
		CENTER LINE, DASHED SINGLE			
		CENTER LINE, DASHED & SOLID DOUBLE			
		BROKEN CENTER LINE, 4" YELLOW, BIKEWAY (SINGLE 5' DASH, 20' SPACE)			
(CH)	(CH)	CHANNELIZING LINE, 10"			
(SL)		STOP LINE, 20"			
		CROSSWALK LINE, 10"			
	(WT)	TRANSVERSE LINE, WHITE, 20"			
		TRANSVERSE LINE, YELLOW, 20"			
		ISLAND MARKING, WHITE			
		ISLAND MARKING, YELLOW			
	(A)	ARROW			
	(W)	WORD, 72" ONLY			
		WORD, 96" MERGE			



**ISLAND DETAIL**



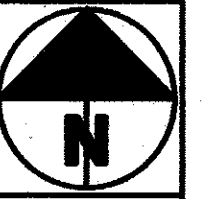
**SIGN LEGEND**

-  EXISTING SIGN
-  EXISTING SIGN TO BE REMOVED
-  PROPOSED SIGN OR OVERLAY
-  OVERLAY AREA

**RAISED PAVEMENT MARKER (RPM) LEGEND**

-  RPM, WHITE, (ONE WAY)
-  RPM, YELLOW, (ONE WAY)

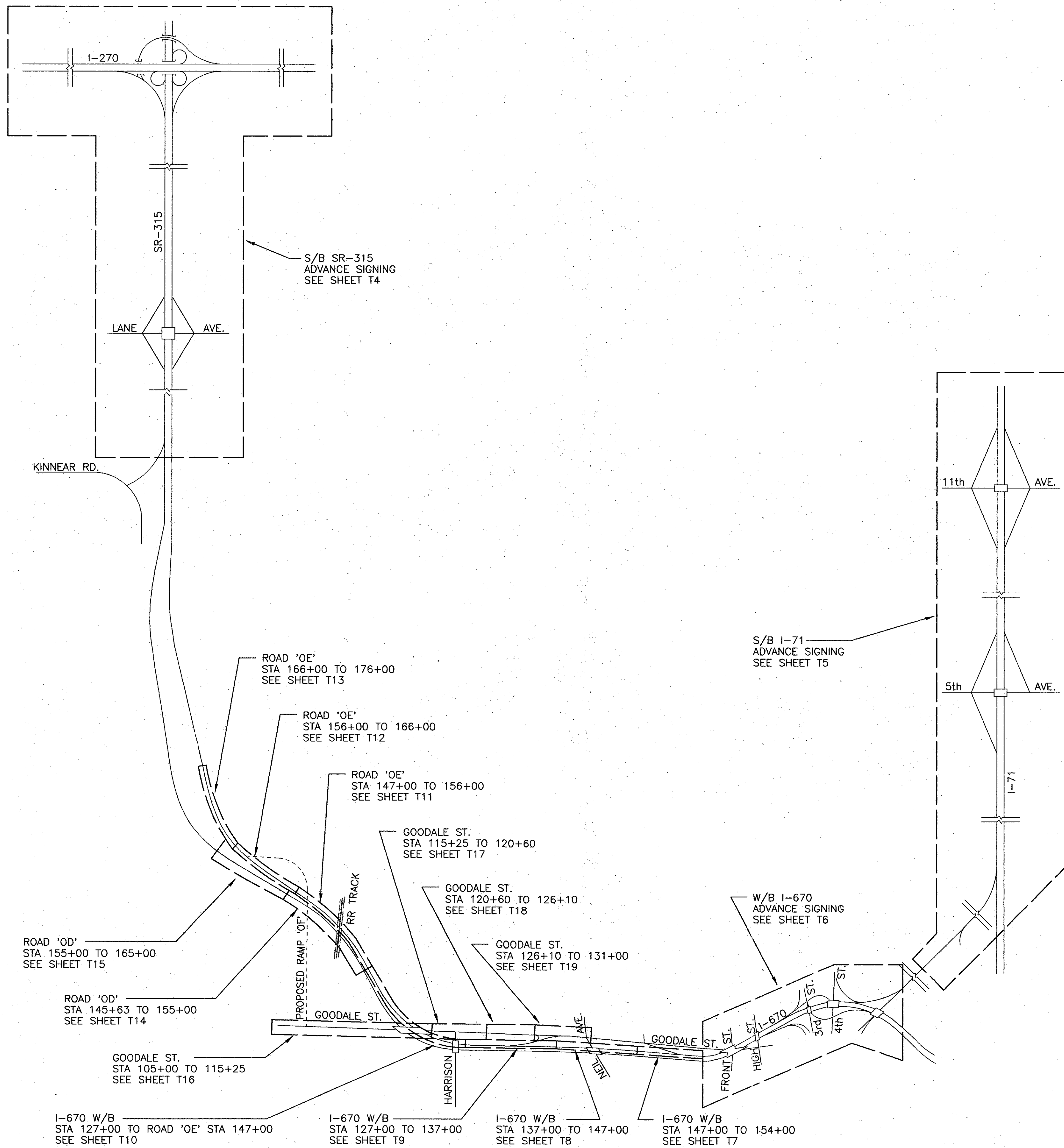
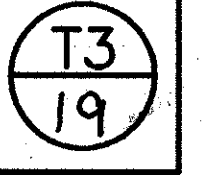
PLOT SCALE: COL #23 C:\DRAWINGS\06123310\MT\06123103.DWG MARCH-31-1995

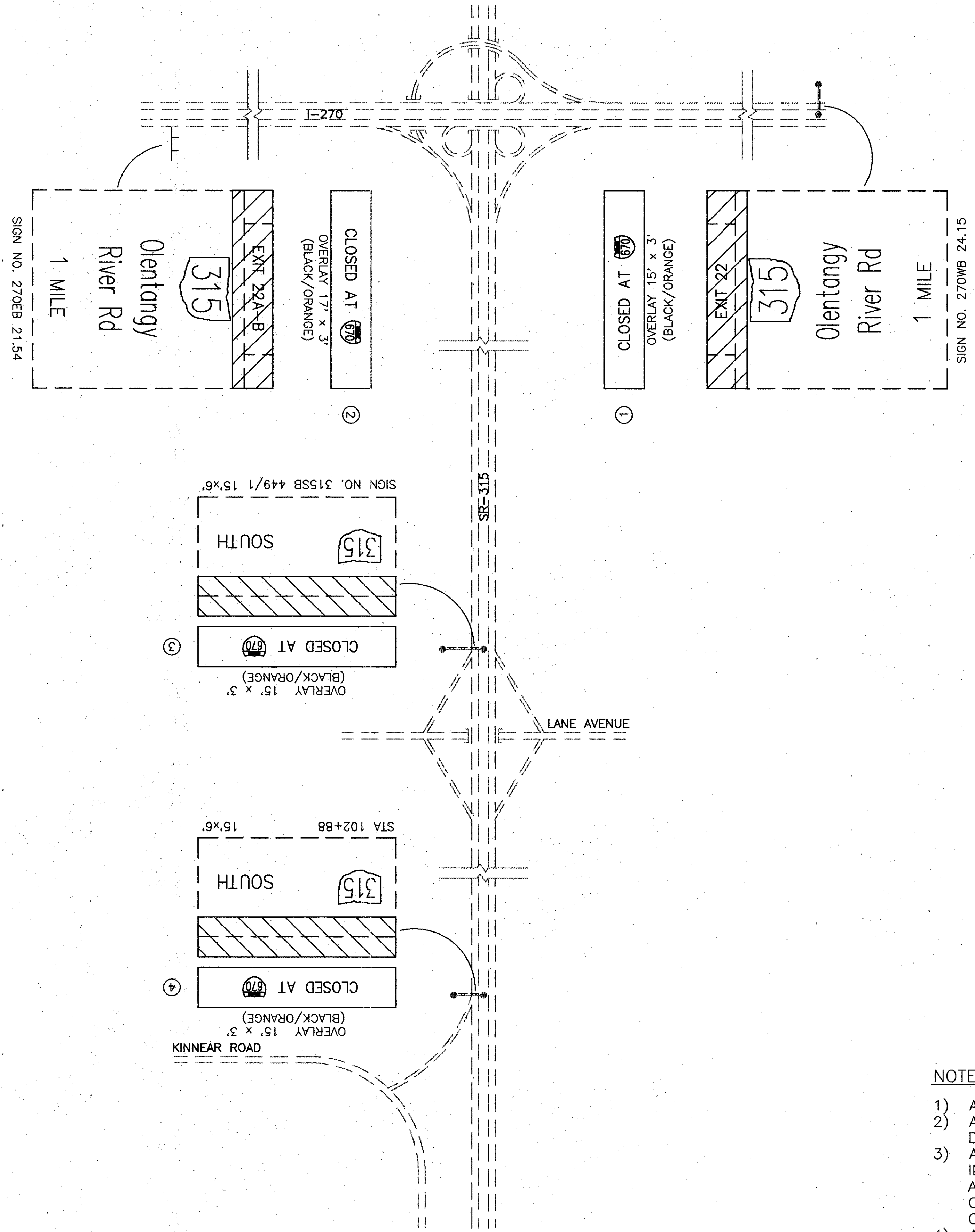


NO SCALE

MAINTAINING TRAFFIC SCHEMATIC

FRA-315-2.39

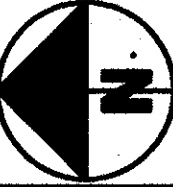




NOTES:

- 1) ALL OVERLAY PANEL SHEETING SHALL BE TYPE G (RSO-6).
- 2) ALL OVERLAY COPY SHALL BE 12" E UPPER CASE, DIRECT APPLIED NONREFLECTIVE SHEETING, BLACK (DAB).
- 3) A SMALL SECTION OF SCRAP 24" EXTRA PANEL SHALL BE INSTALLED ON THE CORNERS OF SIGNS 270 WB 24.15 AND 270 EB 21.54 TO SUPPORT THE OUTER ENDS OF THE OVERLAYS. THE OVERLAY SHALL EXTEND 6" ON TO THE TOP OF THE MAIN SIGN.
- 4) ALL SHIELDS ARE M-5C-24-3.
- 5) SEE SHEET T3 FOR SIGNING LEGEND.
- 6) SEE SHEET T2 FOR QUANTITIES.



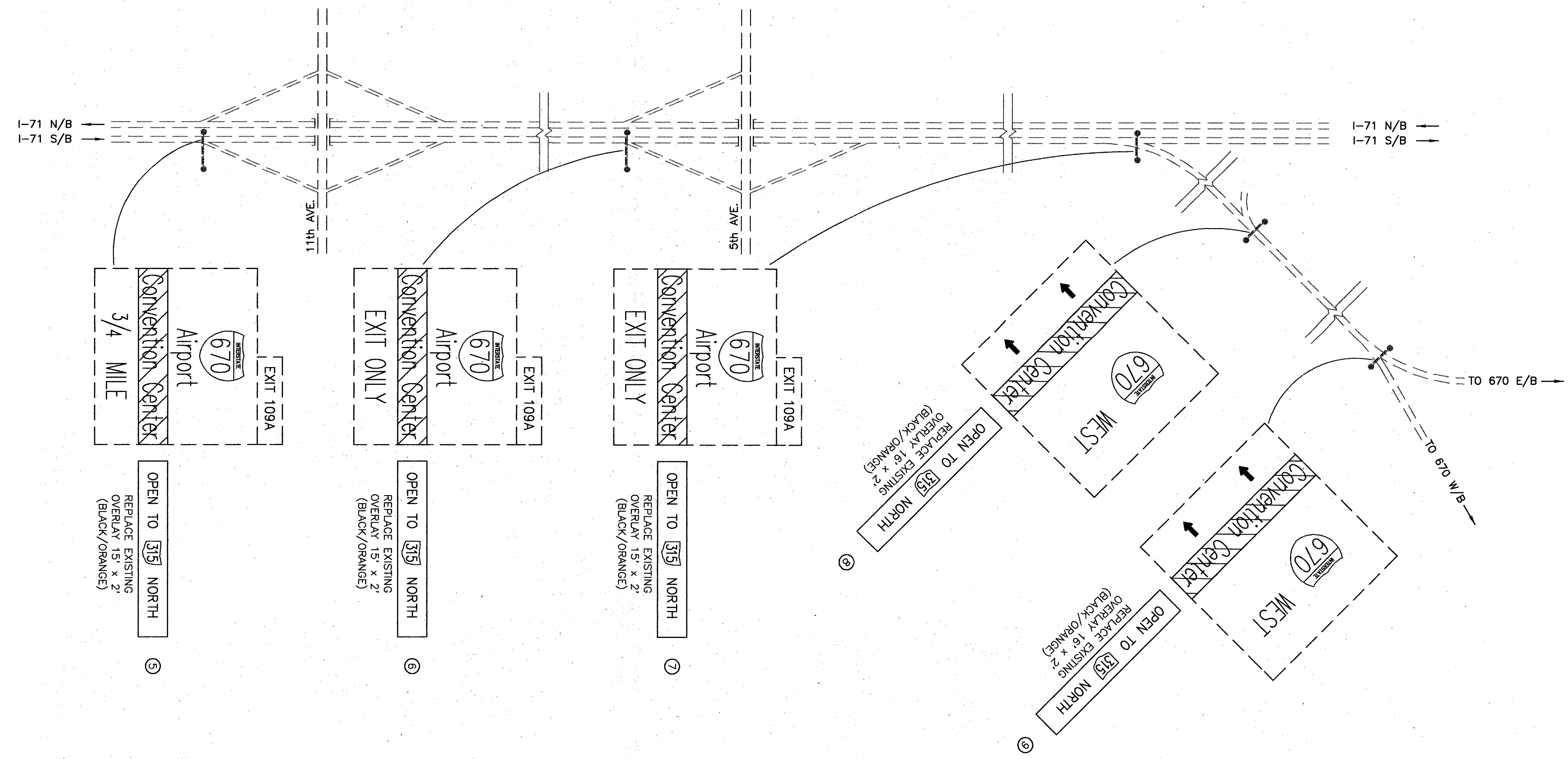
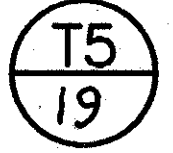


NO SCALE

ADVANCE SIGNING PLAN  
I-71 SOUTHBOUND

FRA-315-2.39

311

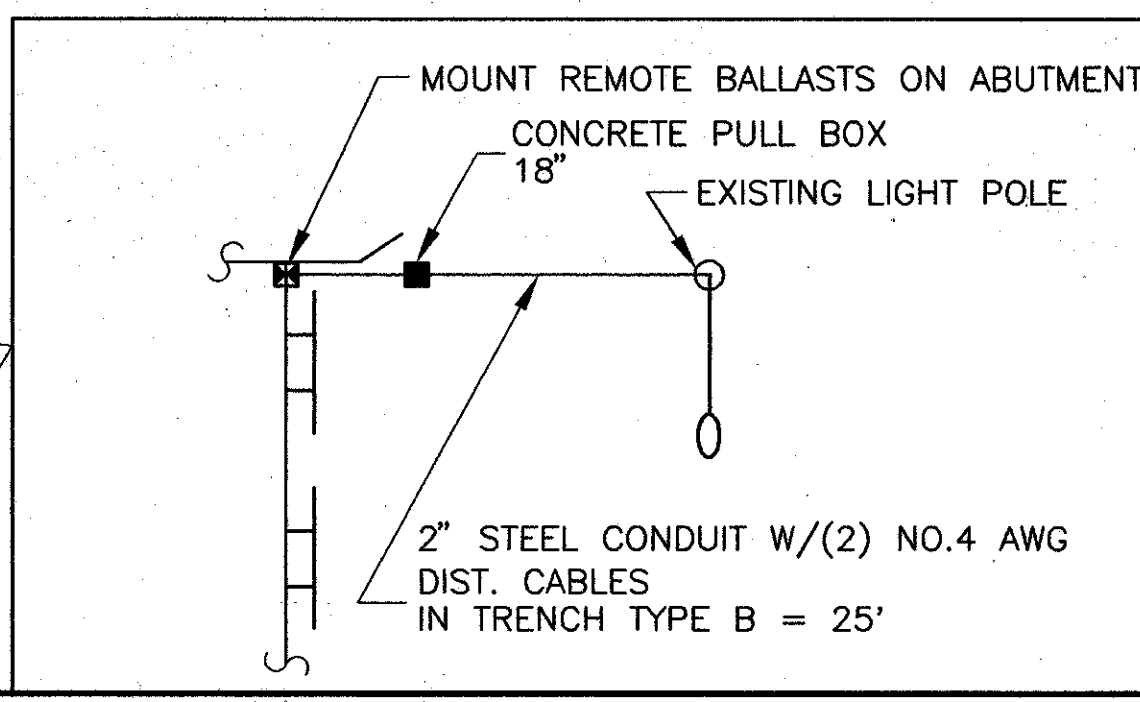
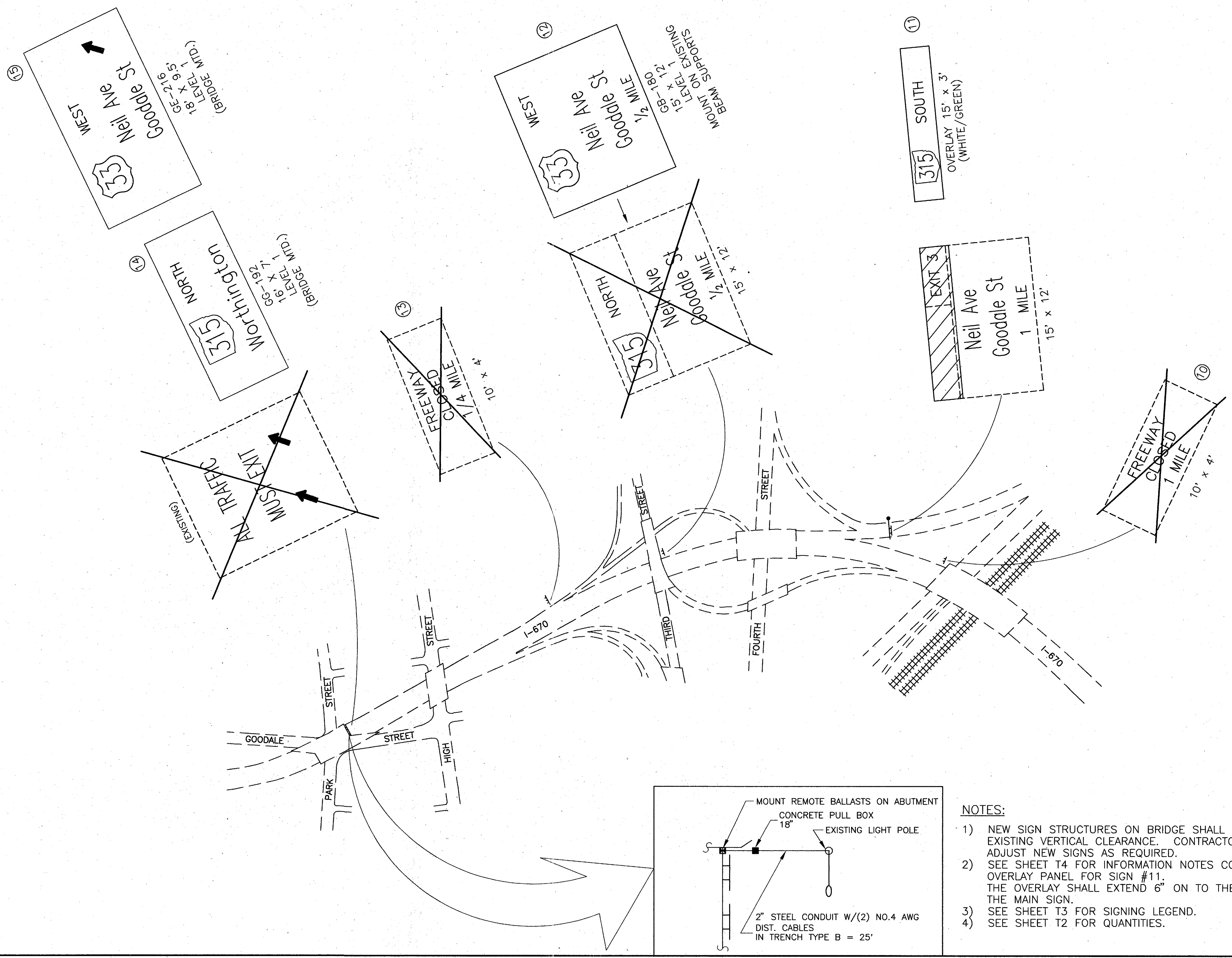


NOTES:

- 1) ALL OVERLAY PANEL SHEETING SHALL BE TYPE G (RSO-6).
- 2) ALL OVERLAY COPY SHALL BE 10" E UPPER CASE, DIRECT APPLIED NONREFLECTIVE SHEETING, BLACK (DAB).
- 3) OVERLAYS SHALL BE ATTACHED WITH WIDE HEAD RIVETS, SPACED NO MORE THAN 18" APART. SCREWS ARE NOT ACCEPTABLE.
- 4) ALL SHIELDS ARE M-2C-24-3.
- 5) SEE SHEET T3 FOR SIGNING LEGEND.
- 6) SEE SHEET T2 FOR QUANTITIES.

PLOT SCALE: COL 25 C:\DRAWING\0613310\VT\06123105.DWG JUNE-02-1995

PLOT SCALE: C:\DRAWINGS\0612310\MT\_06123106.DWG JUNE-02-1995



**NOTES:**

- 1) NEW SIGN STRUCTURES ON BRIDGE SHALL NOT REDUCE EXISTING VERTICAL CLEARANCE. CONTRACTOR SHALL ADJUST NEW SIGNS AS REQUIRED.
- 2) SEE SHEET T4 FOR INFORMATION NOTES CONCERNING OVERLAY PANEL FOR SIGN #11. THE OVERLAY SHALL EXTEND 6" ON TO THE TOP OF THE MAIN SIGN.
- 3) SEE SHEET T3 FOR SIGNING LEGEND.
- 4) SEE SHEET T2 FOR QUANTITIES.

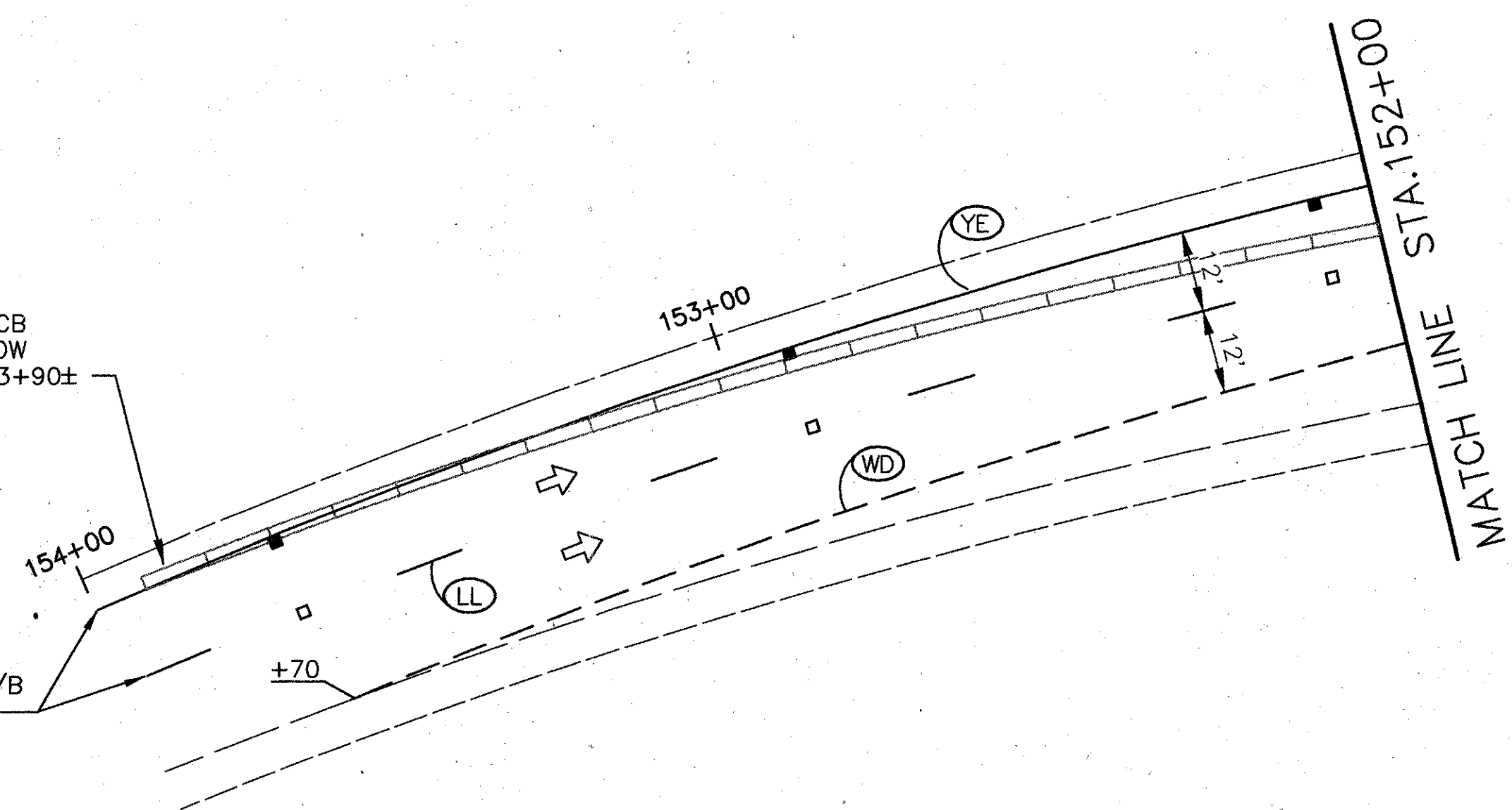
**I-670 TRAFFIC SHIFT**

THE CONTRACTOR SHALL PERFORM THE TRAFFIC SHIFT BETWEEN THE HOURS OF DAWN AND DUSK SATURDAY AND SUNDAY WITH PRIOR APPROVAL OF THE ENGINEER. THE TRAFFIC SHIFT SHALL NOT BE MADE ON OHIO STATE HOME FOOTBALL GAME WEEKENDS.

THE CONTRACTOR MAY STOP TRAFFIC FOR UP TO TEN (10) MINUTES IN ORDER TO PLACE AND REMOVE PAVEMENT MARKINGS NECESSARY TO MAKE THE TRAFFIC SHIFT AND REMOVE THE PCB. ALL MARKINGS AND OPENING OF ROADWAY TO BE COORDINATED WITH OVERHEAD SIGNS, ETC.

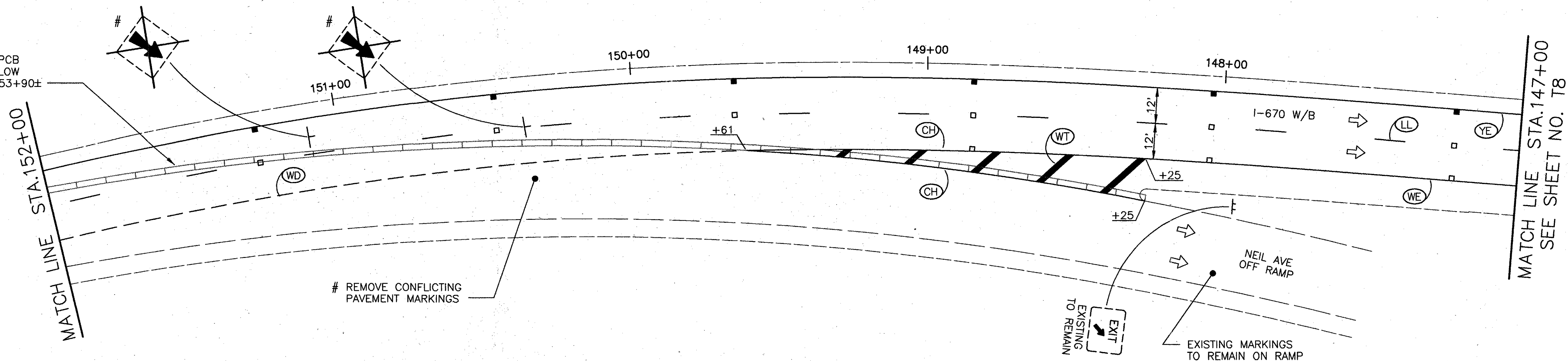
# REMOVE EXISTING PCB & EDGE LINE, YELLOW STA 148+25 TO 153+90±

MEET EXISTING MARKINGS I-670 W/B STA 154+00



# REMOVE EXISTING PCB & EDGE LINE, YELLOW STA 148+25 TO 153+90±

# REMOVE CONFLICTING PAVEMENT MARKINGS



**NOTES:**

- 1) # ITEMS INCLUDED IN LUMP SUM 614, MAINTAINING TRAFFIC.
- 2) SEE SHEET T3 FOR PAVEMENT MARKING AND SIGNING LEGENDS.
- 3) SEE SHEET T1 FOR QUANTITIES.

PLOT SCALE: C:\DRAWING\06123310\MT\06123107.DWG JUNE-02-1995

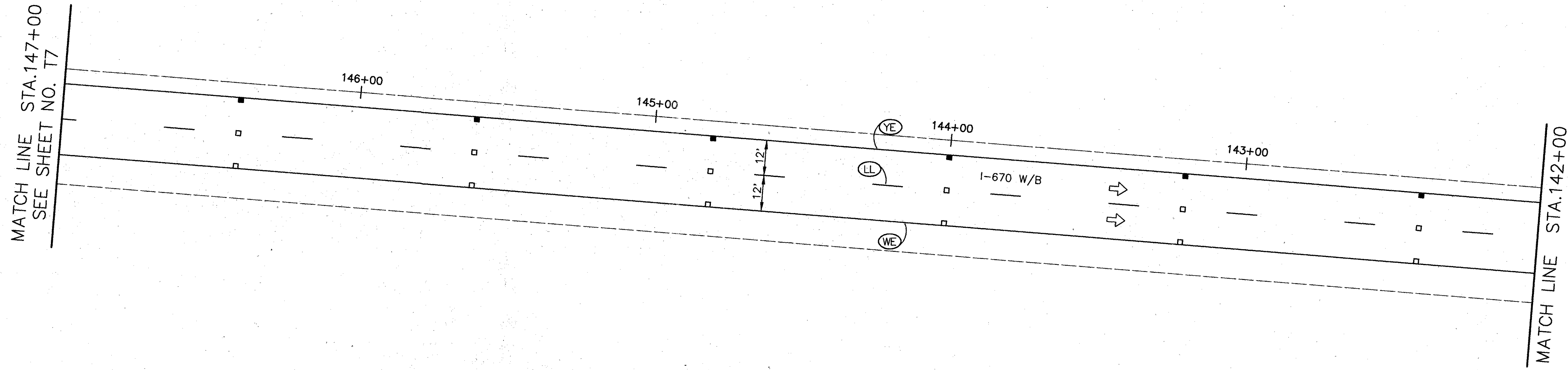
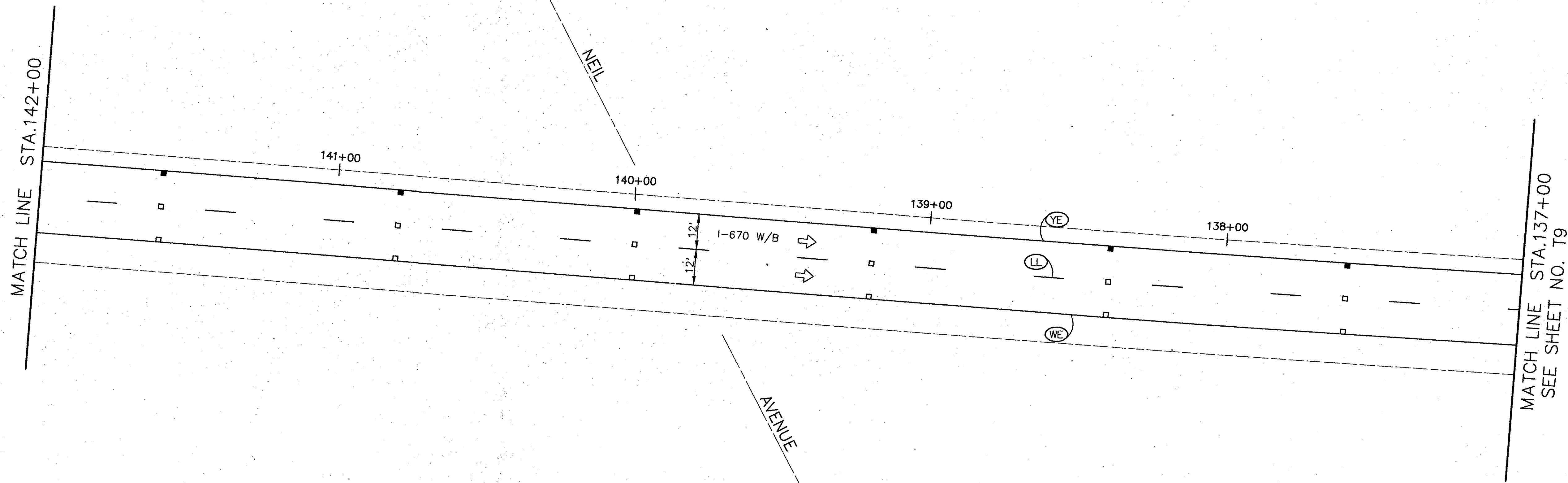


SIGNING & PAVEMENT MARKING PLAN  
I-670 W/B STA 147+00 TO STA 154+00

FRA-315-2.39

17/19

PLOT SCALE: C:\DRAWING\0613310\MT\06133108.DWG JUNE-02-1995  
SCALE #5



NOTES:

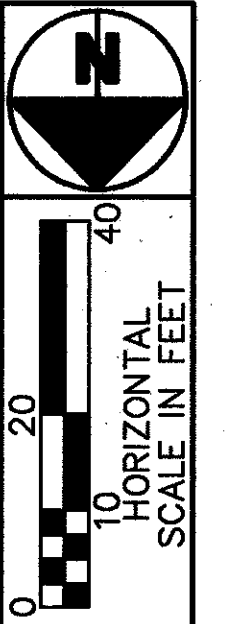
- 1) SEE SHEET T3 FOR PAVEMENT MARKING LEGEND
- 2) SEE SHEET T1 FOR QUANTITIES

FRA-315-2.39

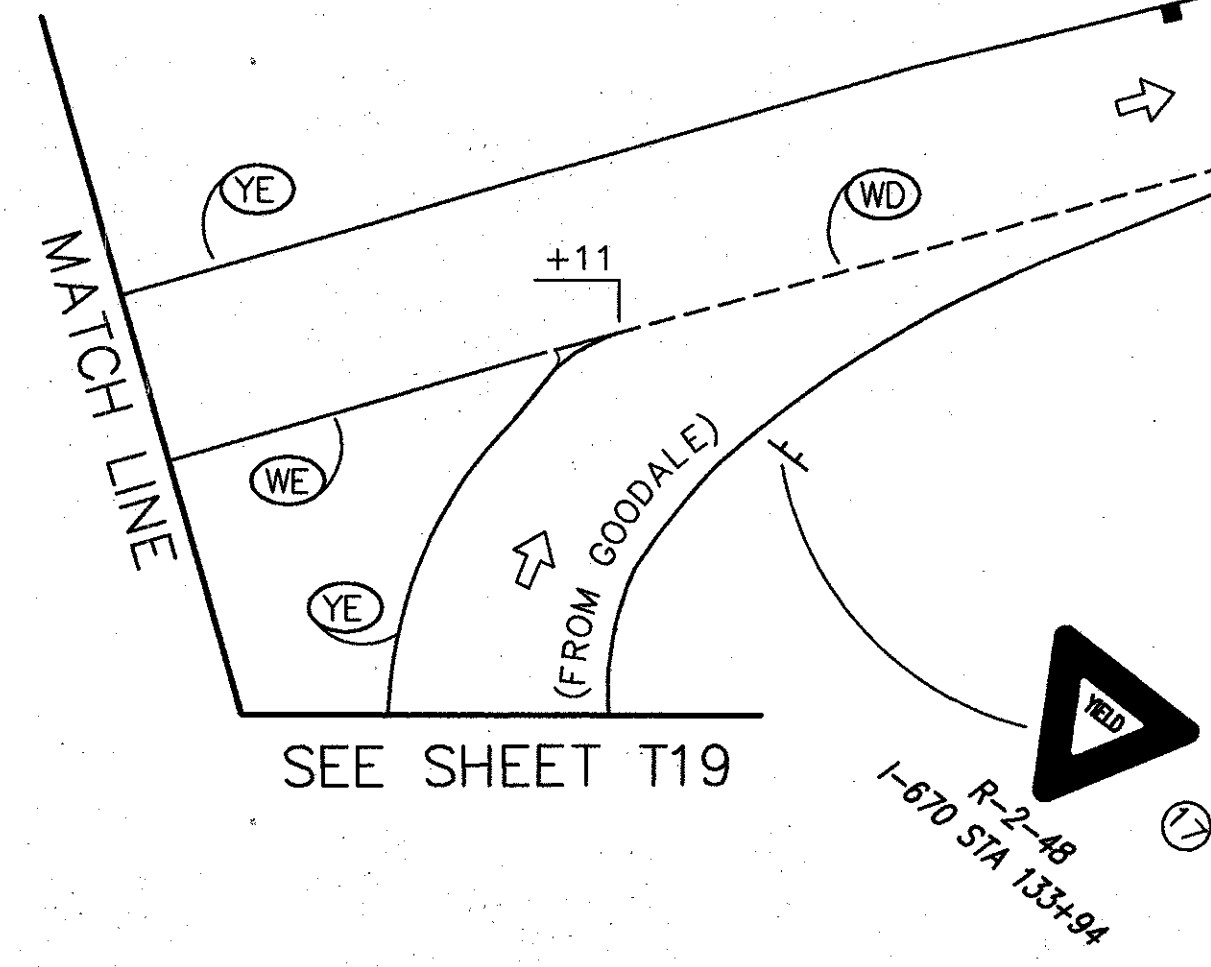
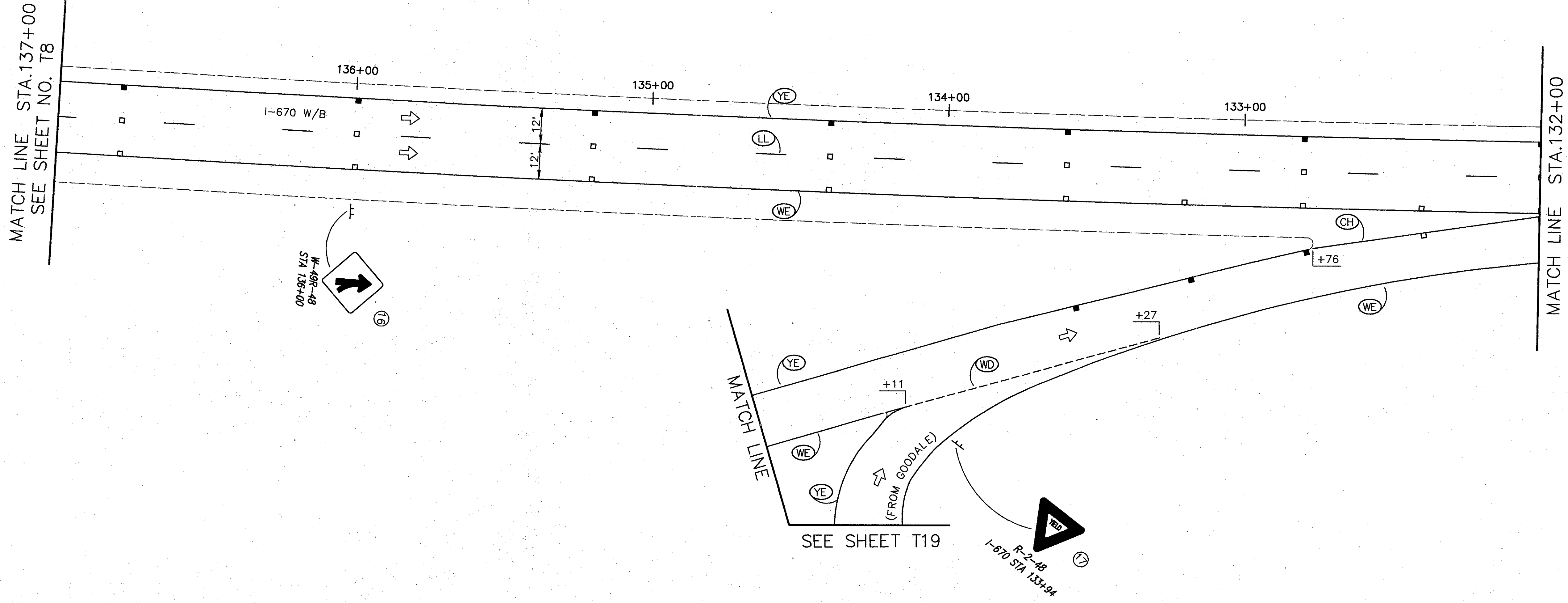
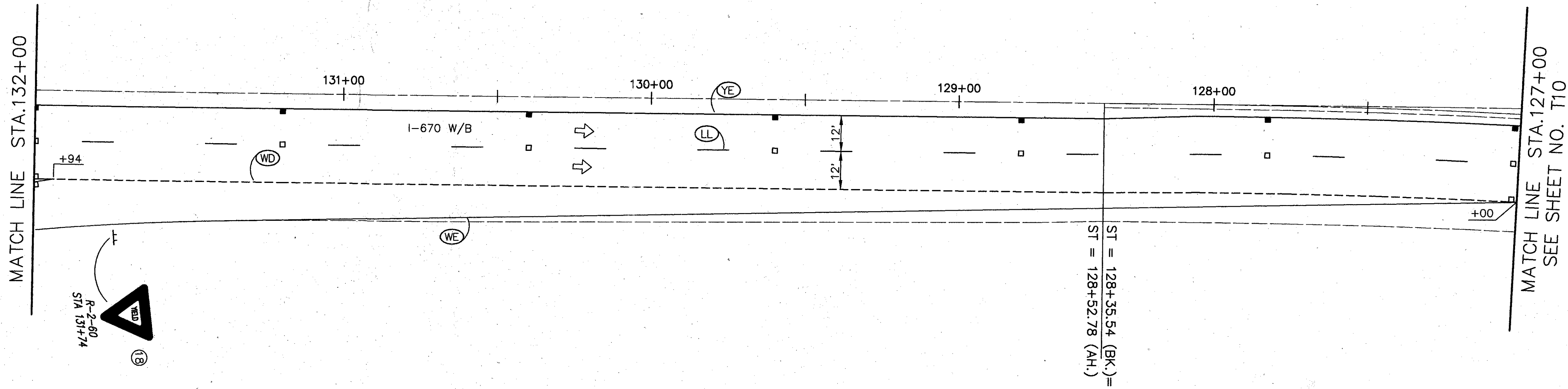
3/4

T8  
19

SIGNING & PAVEMENT MARKING PLAN  
I-670 W/B STA 137+00 TO STA 147+00



PLOT SCALE: COL #23 C:\DRAWING\0612310\MT\06123109.DWG MARCH-30-1995



ST = 128+52.78 (AH.)  
ST = 128+35.54 (BK.) =

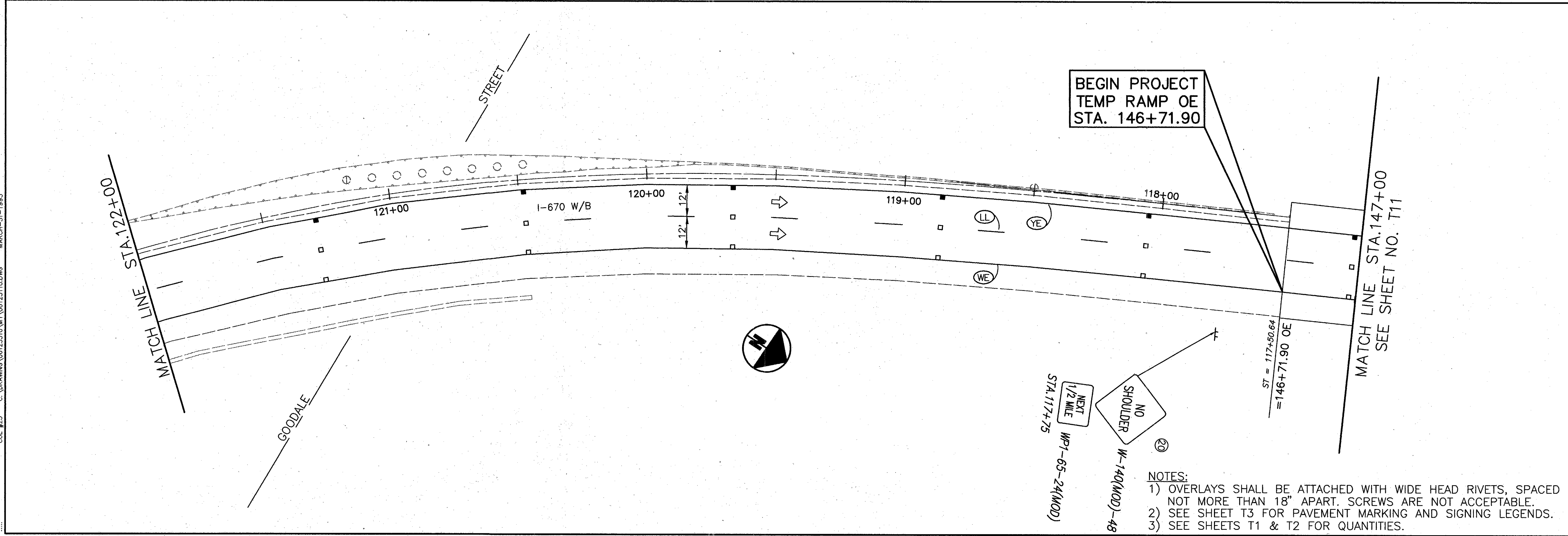
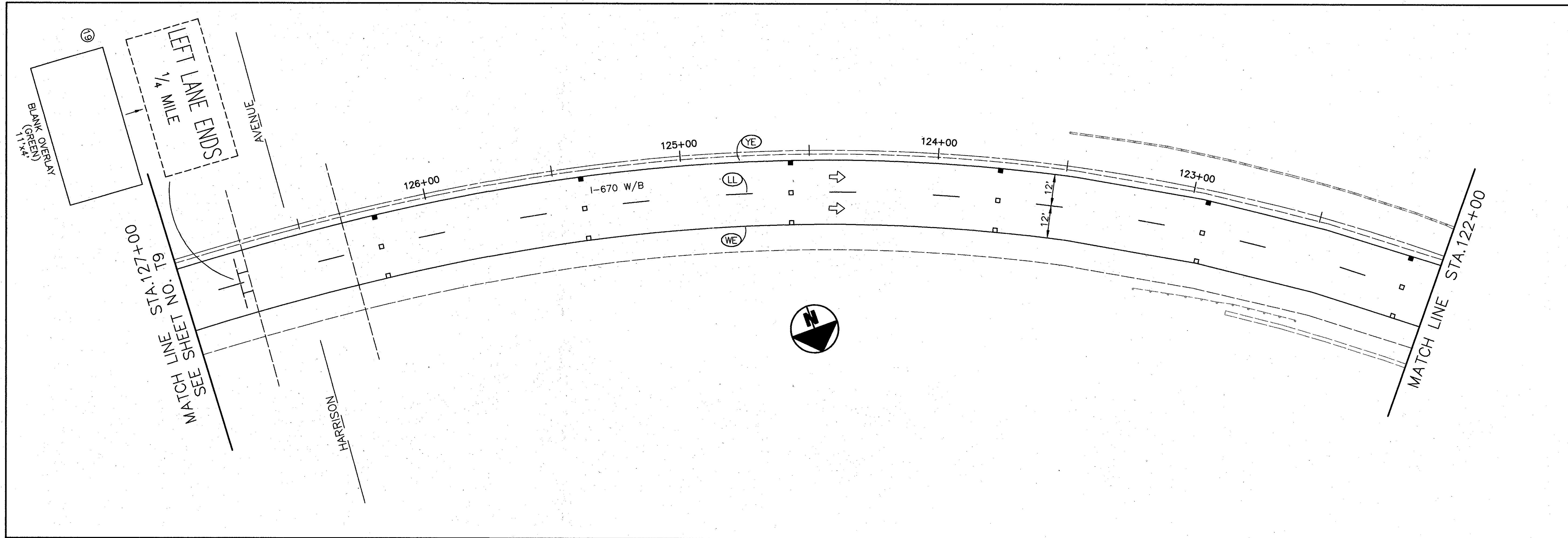
- NOTES:  
1) SEE SHEET T3 FOR PAVEMENT MARKING AND SIGNING LEGENDS  
2) SEE SHEETS T1 & T2 FOR QUANTITIES



SIGNING & PAVEMENT MARKING PLAN  
I-670 W/B STA 127+00 TO STA 137+00

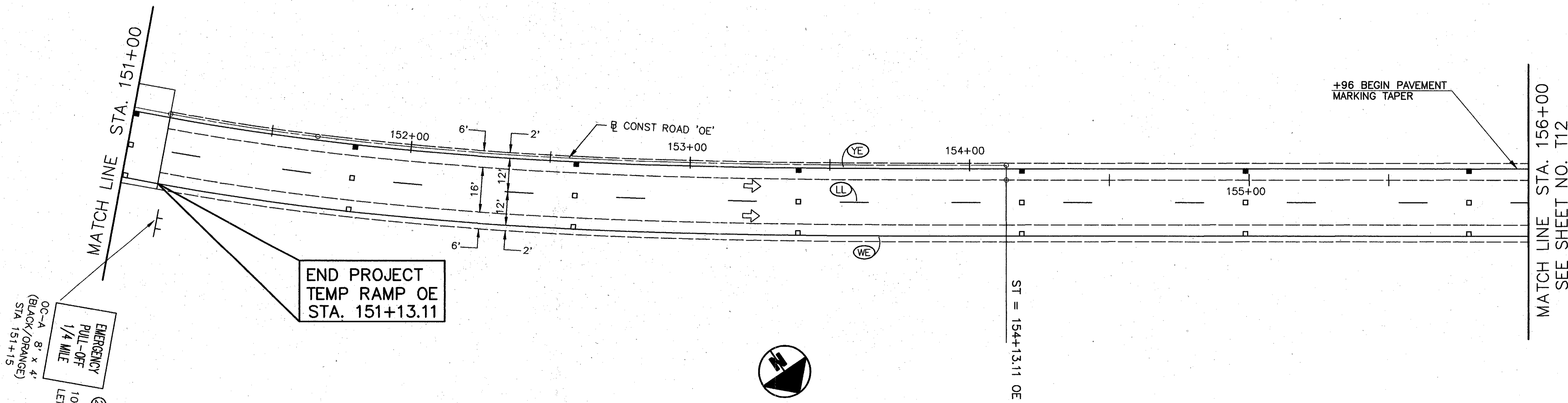
FRA-315-2.39

PLOT SCALE: C:\DRAWING\0612310\MT\_0612310.DWG MARCH-31-1985  
 CDR #23



- NOTES:  
 1) OVERLAYS SHALL BE ATTACHED WITH WIDE HEAD RIVETS, SPACED NOT MORE THAN 18" APART. SCREWS ARE NOT ACCEPTABLE.  
 2) SEE SHEET T3 FOR PAVEMENT MARKING AND SIGNING LEGENDS.  
 3) SEE SHEETS T1 & T2 FOR QUANTITIES.

PLOT SCALE: COL #23 C:\DRAWING\06123310\MT\06123T11.DWG MARCH-30-1995

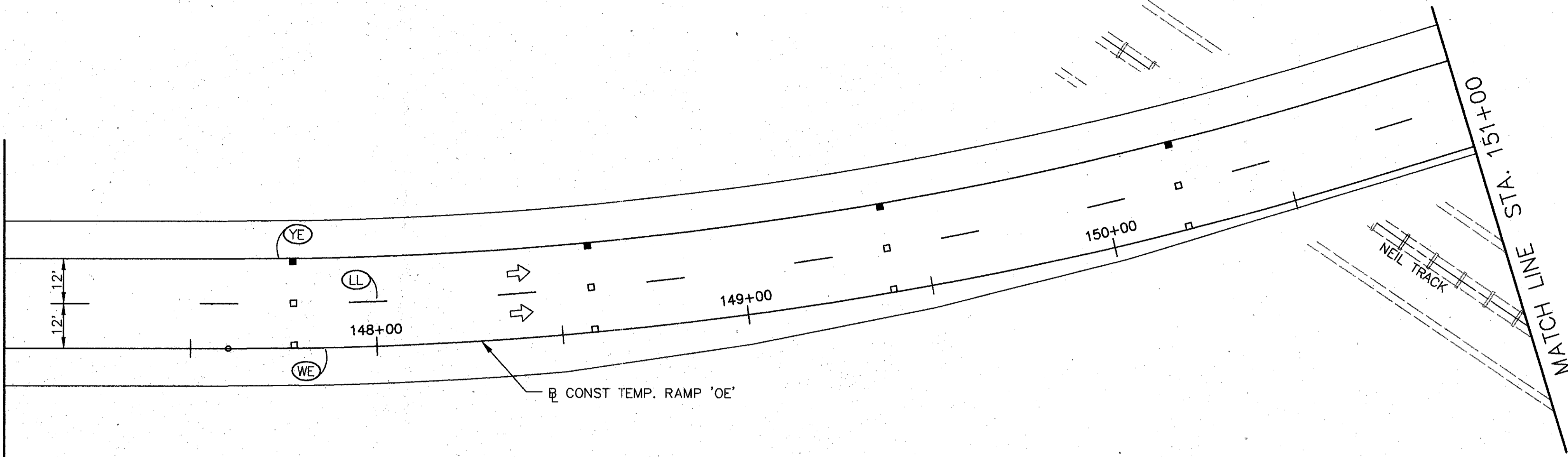


②  
 10" E  
 LETTERS  
 EMERGENCY  
 PULL-OFF  
 1/4 MILE  
 (BLACK/ORANGE)  
 STA 151+15

END PROJECT  
 TEMP RAMP OE  
 STA. 151+13.11

- NOTES:  
 1) SEE SHEET T3 FOR SIGNING AND PAVEMENT MARKING LEGEND  
 2) SEE SHEETS T1 & T2 FOR QUANTITIES

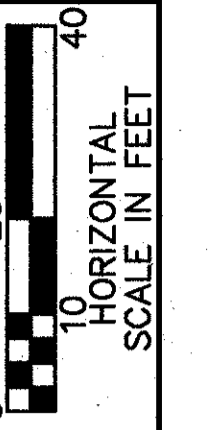
MATCH LINE STA. 147+00  
 SEE SHEET NO. T10



SIGNING & PAVEMENT MARKING PLAN  
 ROAD 'OE' STA 147+00 TO STA 156+00

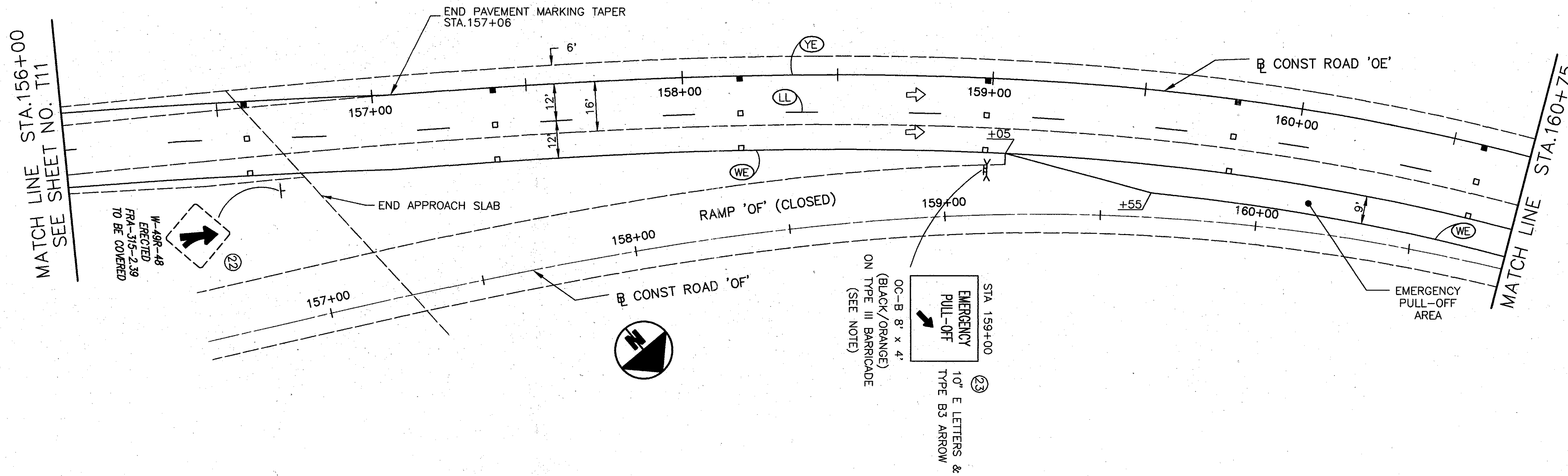
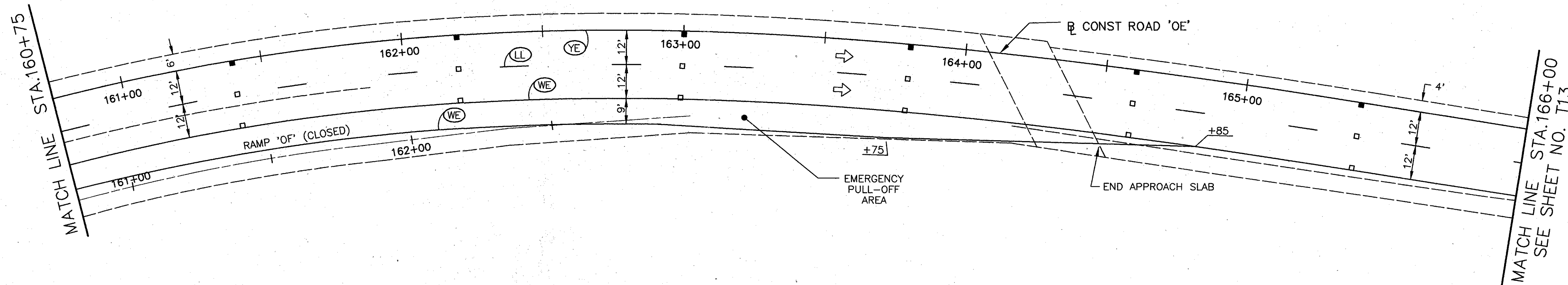
FRA-315-2.39

T11  
 19



3/7

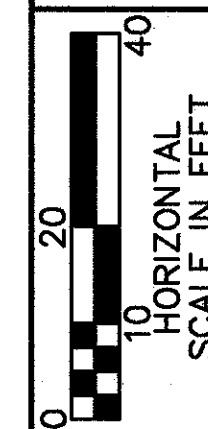
PLOT SCALE: COL #23 C:\DRAWING\061231\0\VT\_061231T2.DWG MARCH-30-1995



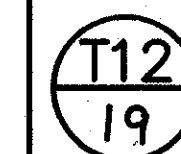
- NOTES:
- 1) BARRICADE COST INCLUDED IN LUMP SUM 614, MAINTAINING TRAFFIC.
  - 2) SEE SHEET T3 FOR PAVEMENT MARKING AND SIGNING LEGENDS.
  - 3) SEE SHEETS T1 & T2 FOR QUANTITIES.

FRA-315-2.39

SIGNING & PAVEMENT MARKING PLAN  
ROAD 'OE' STA 156+00 TO STA 166+00



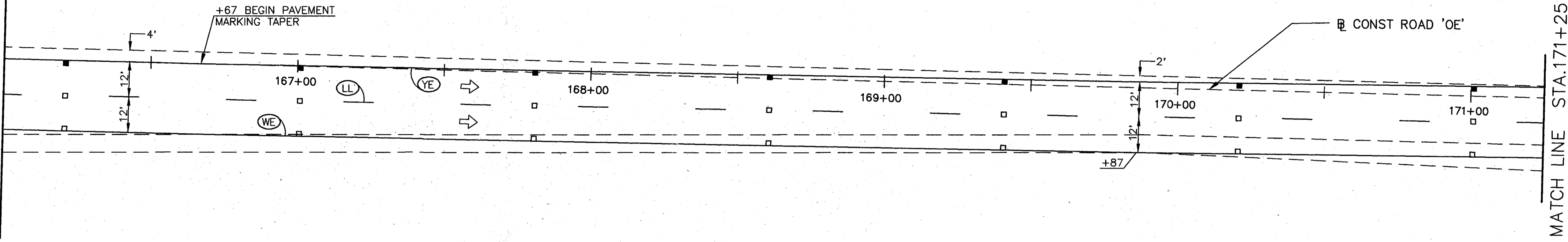
318



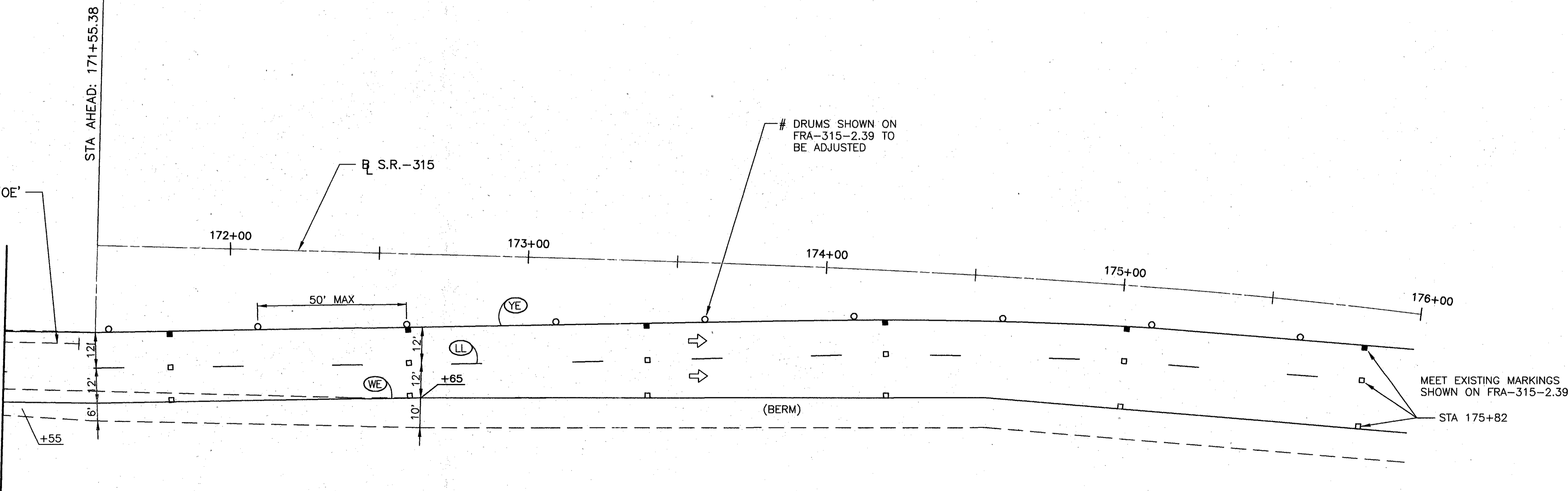


PLOT SCALE:  
COL #23 C:\DRAWING\0612310\VT\0612313.DWG MARCH-30-1995

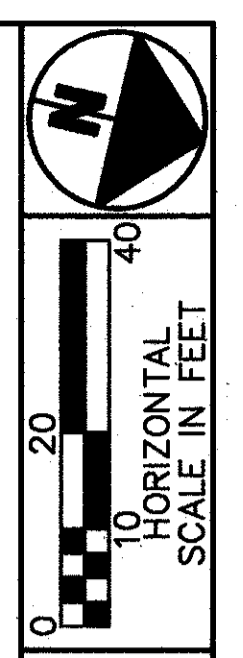
MATCH LINE STA.166+00  
SEE SHEET NO. T12



MATCH LINE STA.171+25



- NOTES:  
1) # ITEMS INCLUDED IN LUMP SUM 614, MAINTAINING TRAFFIC  
2) SEE SHEET T3 FOR PAVEMENT MARKING LEGEND  
3) SEE SHEETS T1 & T2 FOR QUANTITIES

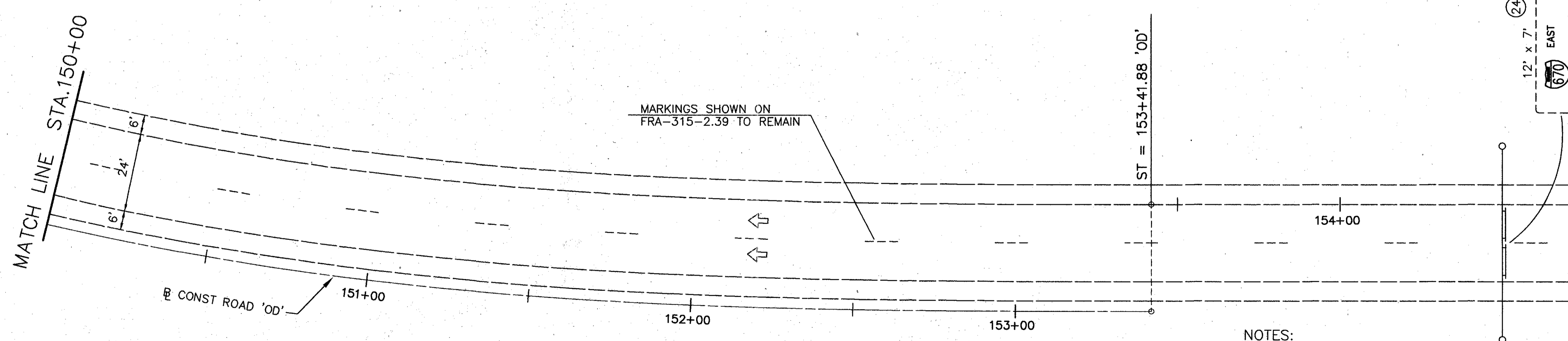


SIGNING & PAVEMENT MARKING PLAN  
ROAD 'OE' STA 166+00 TO STA 176+00

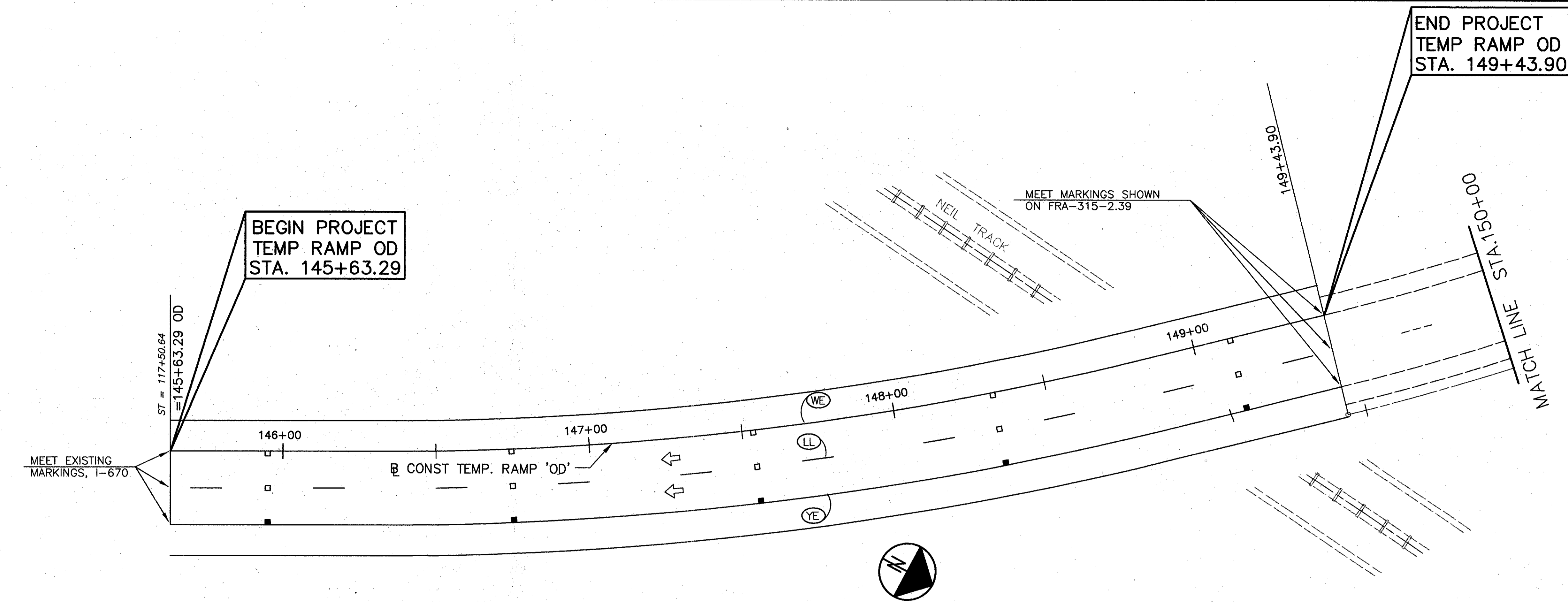
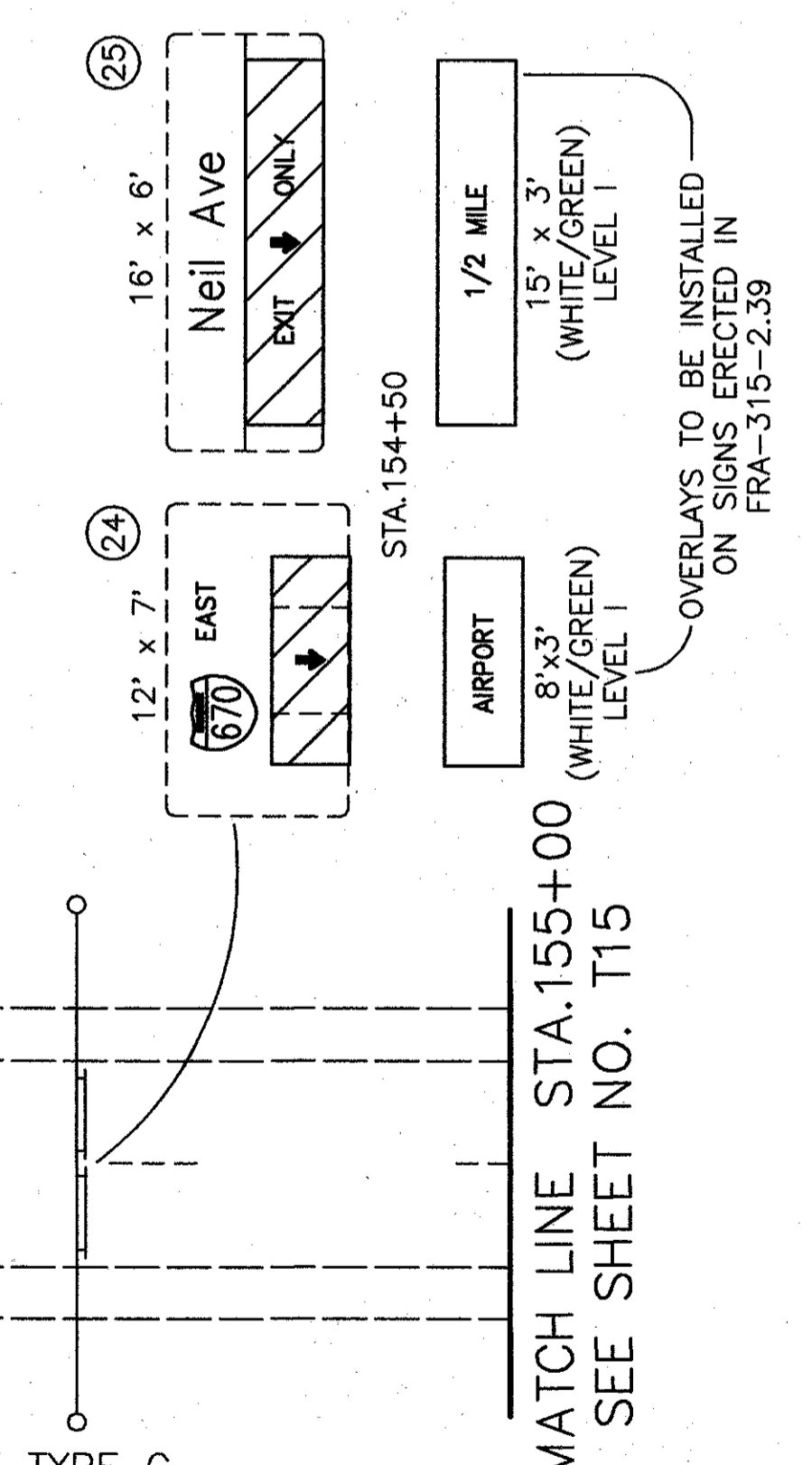
FRA-315-2.39

3/9  
T13  
19

PLOT SCALE: COL #23 C:\DRAWING\06123310\MT\06123114.DWG MARCH-30-1995

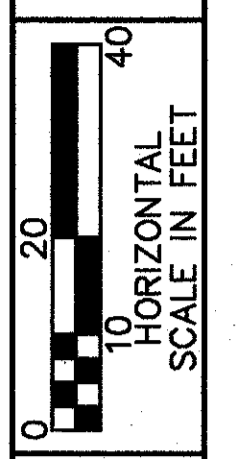


- NOTES:
- 1) OVERLAY SHEETING TO BE TYPE G.
  - 2) OVERLAY COPY SHALL BE DEMOUNTABLE EMBOSSED COPY, WHITE, WITH REFLECTORS (OCW).
  - 3) OVERLAYS SHALL BE ATTACHED WITH WIDE HEAD RIVETS SPACED NO MORE THAN 18" APART. SCREWS ARE NOT ACCEPTABLE.
  - 4) SEE SHEET T3 FOR PAVEMENT MARKING AND SIGNING LEGENDS.
  - 5) SEE SHEETS T1 & T2 FOR QUANTITIES.



FRA-315-2.39

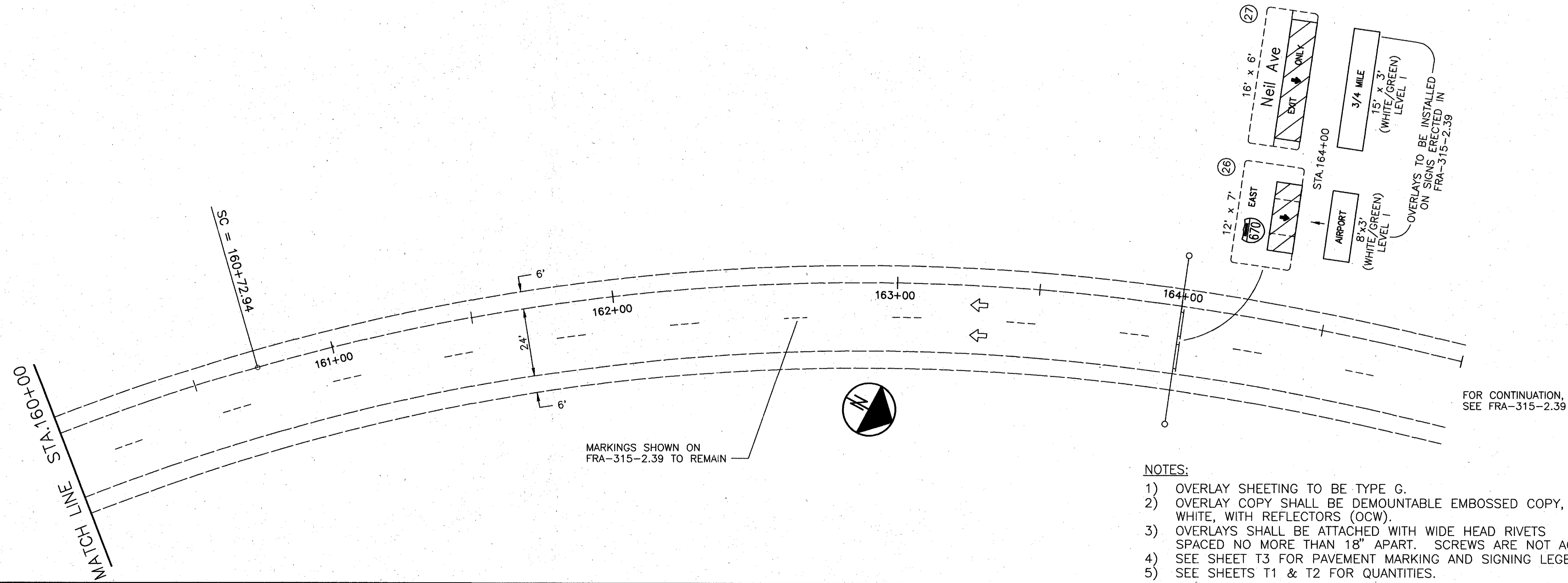
SIGNING & PAVEMENT MARKING PLAN  
ROAD 'OD' STA 145+63.29 TO STA 155+00



T14  
19

320

PLOT SCALE... C:\DRAWING\0612315\0612315.DWG MARCH-30-1995  
COL #23

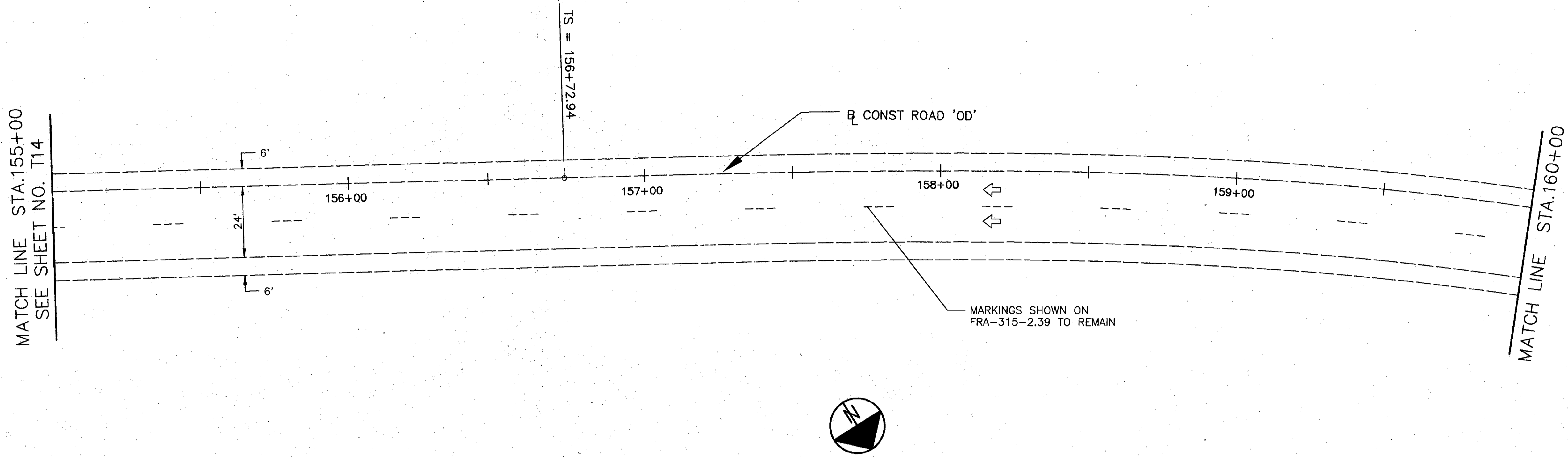


NOTES:

- 1) OVERLAY SHEETING TO BE TYPE G.
- 2) OVERLAY COPY SHALL BE DEMOUNTABLE EMBOSSED COPY, WHITE, WITH REFLECTORS (OCW).
- 3) OVERLAYS SHALL BE ATTACHED WITH WIDE HEAD RIVETS SPACED NO MORE THAN 18" APART. SCREWS ARE NOT ACCEPTABLE.
- 4) SEE SHEET T3 FOR PAVEMENT MARKING AND SIGNING LEGENDS.
- 5) SEE SHEETS T1 & T2 FOR QUANTITIES.

FOR CONTINUATION, SEE FRA-315-2.39

MATCH LINE STA.155+00  
SEE SHEET NO. T14

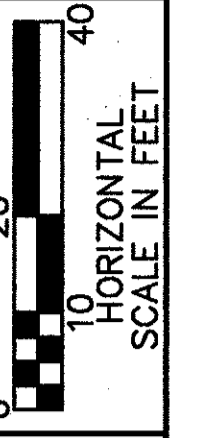


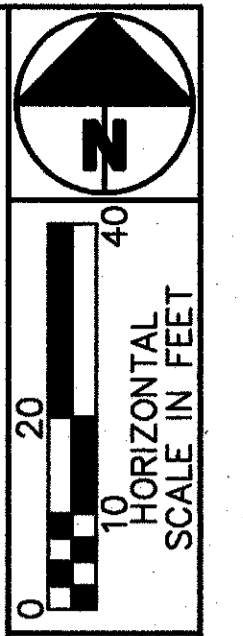
FRA-315-2.39

SIGNING & PAVEMENT MARKING PLAN  
ROAD 'OD' STA 155+00 TO STA 165+00

321

T15  
/9

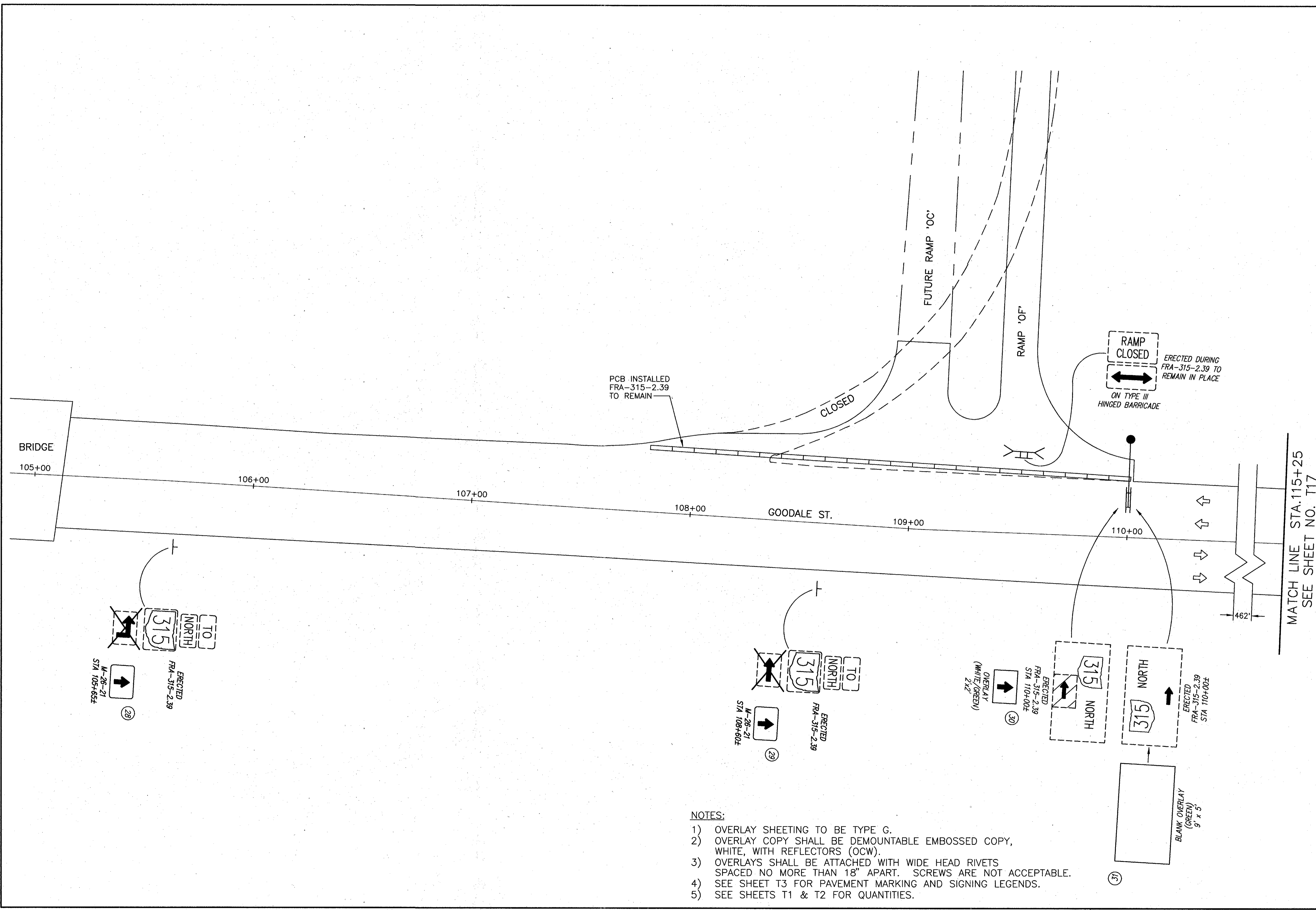




**SIGNING & PAVEMENT MARKING PLAN**  
**GOODALE STREET STA 105+00 TO 115+25**

**FRA-315-2.39**

322

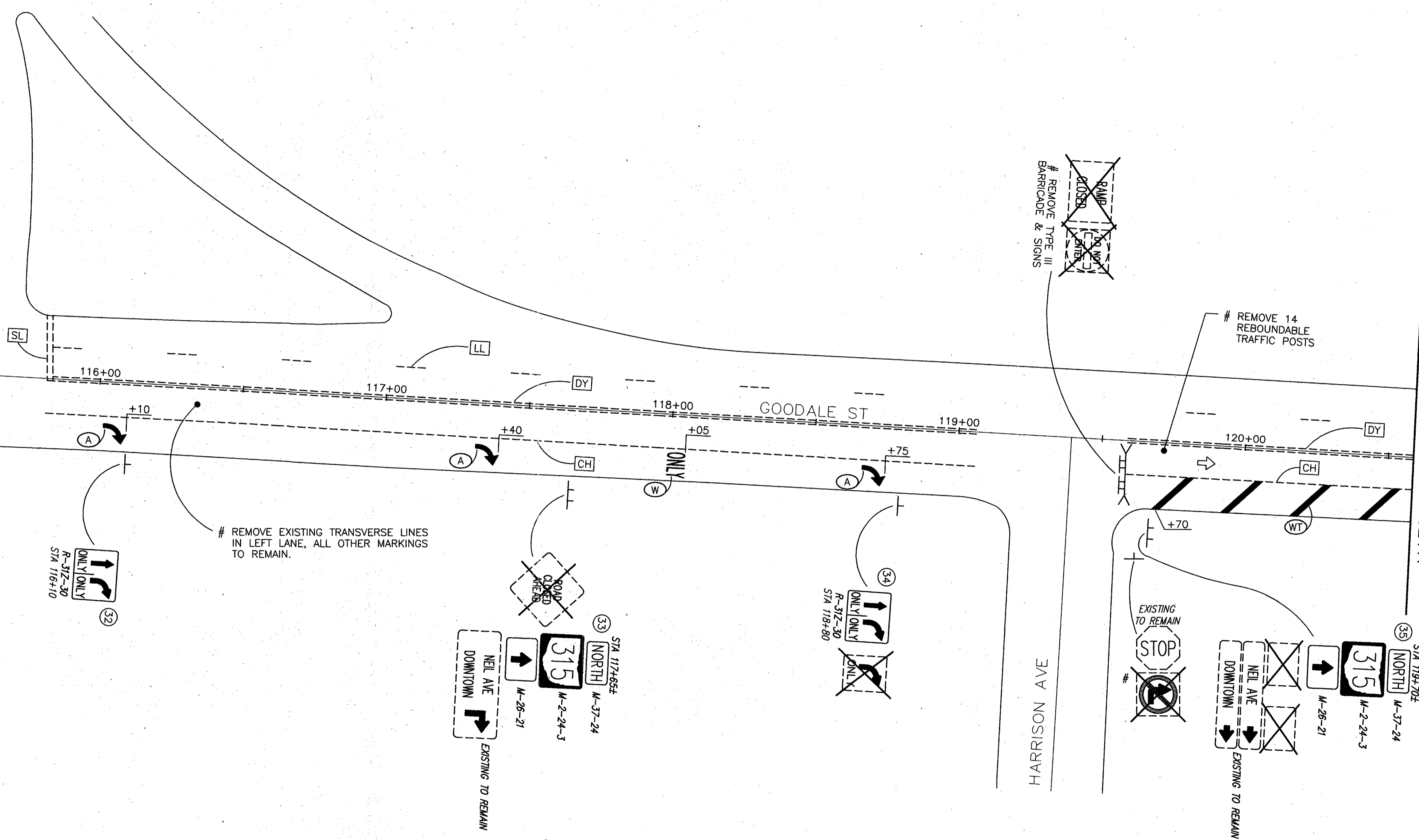


- NOTES:**
- 1) OVERLAY SHEETING TO BE TYPE G.
  - 2) OVERLAY COPY SHALL BE DEMOUNTABLE EMBOSSED COPY, WHITE, WITH REFLECTORS (OCW).
  - 3) OVERLAYS SHALL BE ATTACHED WITH WIDE HEAD RIVETS SPACED NO MORE THAN 18" APART. SCREWS ARE NOT ACCEPTABLE.
  - 4) SEE SHEET T3 FOR PAVEMENT MARKING AND SIGNING LEGENDS.
  - 5) SEE SHEETS T1 & T2 FOR QUANTITIES.

PLOT SCALE: C:\DRAWING\061235\0\MT\_061231T16.DWG MARCH-30-1995

MATCH LINE STA. 115+25  
SEE SHEET NO. T16

MICHIGAN AVE



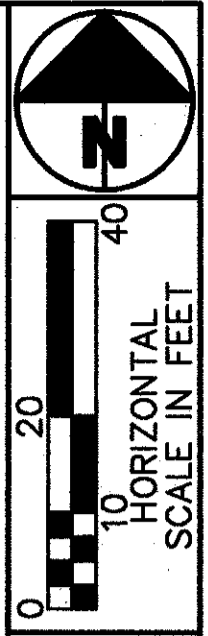
MATCH LINE STA. 120+60  
SEE SHEET NO. T18

SIGNING & PAVEMENT MARKING PLAN  
GOODALE STREET STA 115+25 TO 120+60

FRA-315-2.39

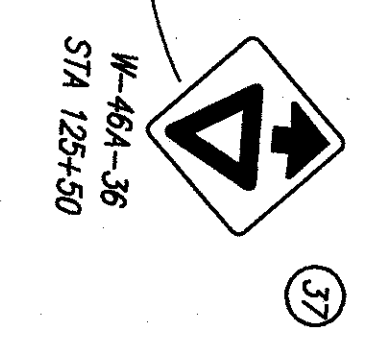
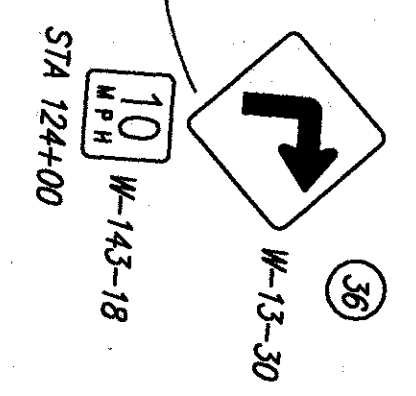
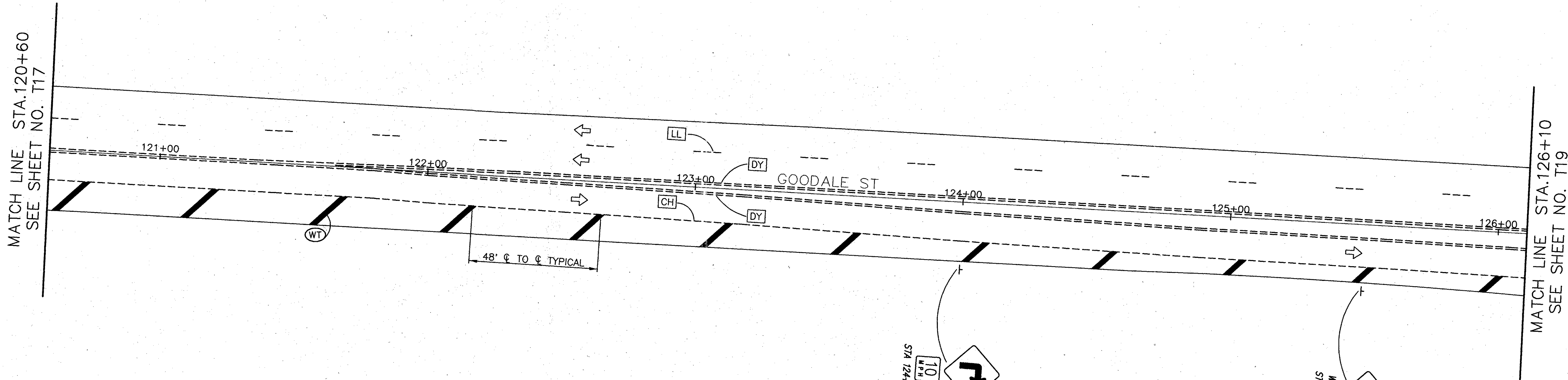
323

T17  
19

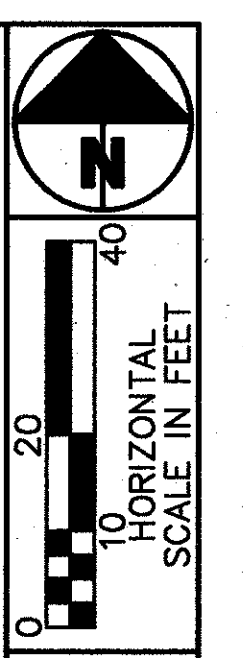


NOTES:

- 1) # ITEMS INCLUDED IN LUMP SUM 614, MAINTAINING TRAFFIC.
- 2) SEE SHEET T3 FOR PAVEMENT MARKING AND SIGNING LEGENDS.
- 3) SEE SHEETS T1 & T2 FOR QUANTITIES.



NOTES:  
 1) SEE SHEET T3 FOR PAVEMENT MARKING AND SIGNING LEGENDS.  
 2) SEE SHEET T1 & T2 FOR QUANTITIES.



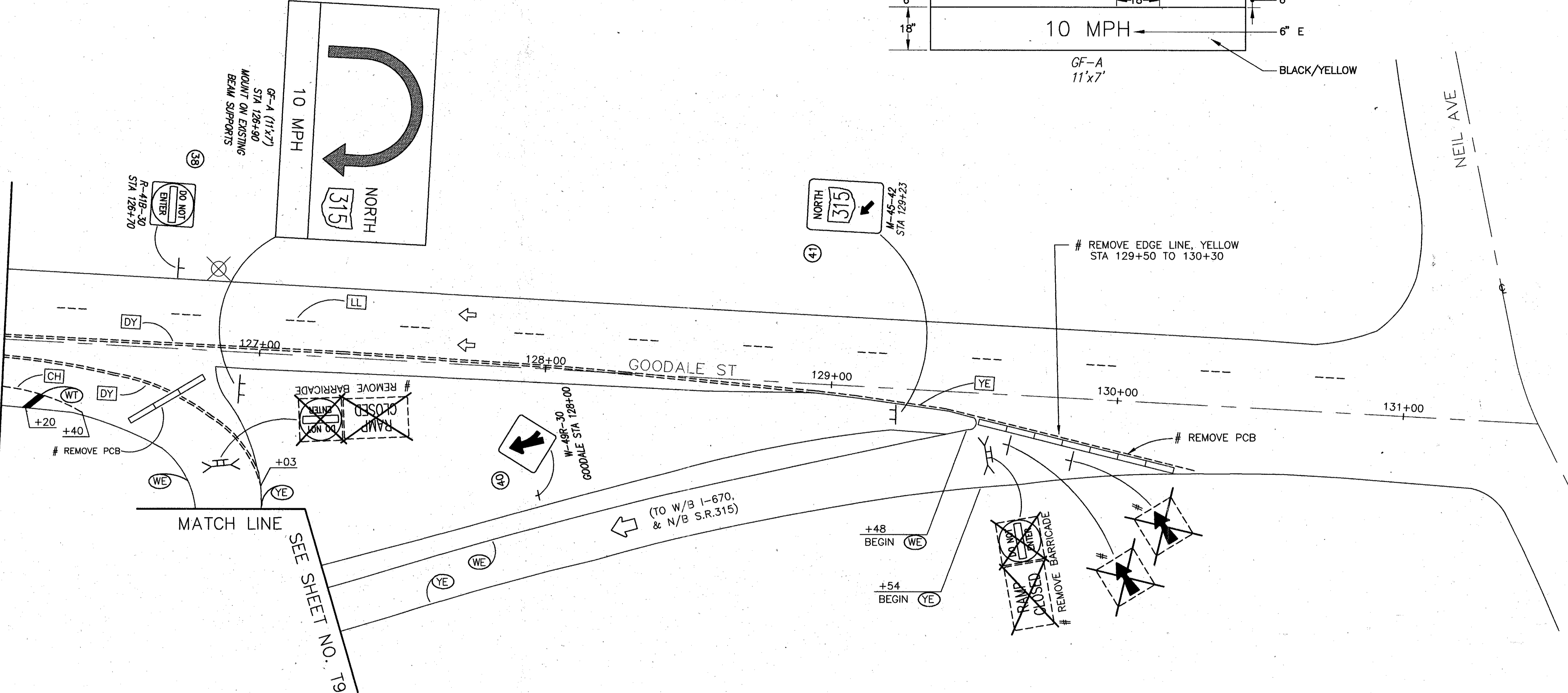
SIGNING & PAVEMENT MARKING PLAN  
 GOODALE STREET STA 120+60 TO 126+10

FRA-315-2.39

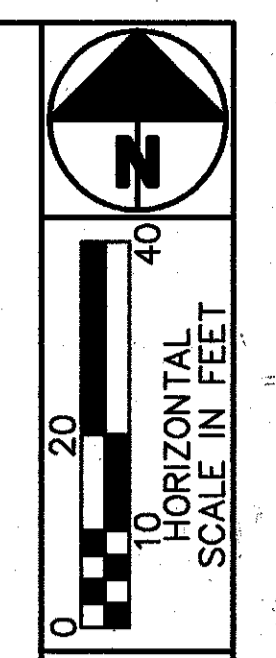
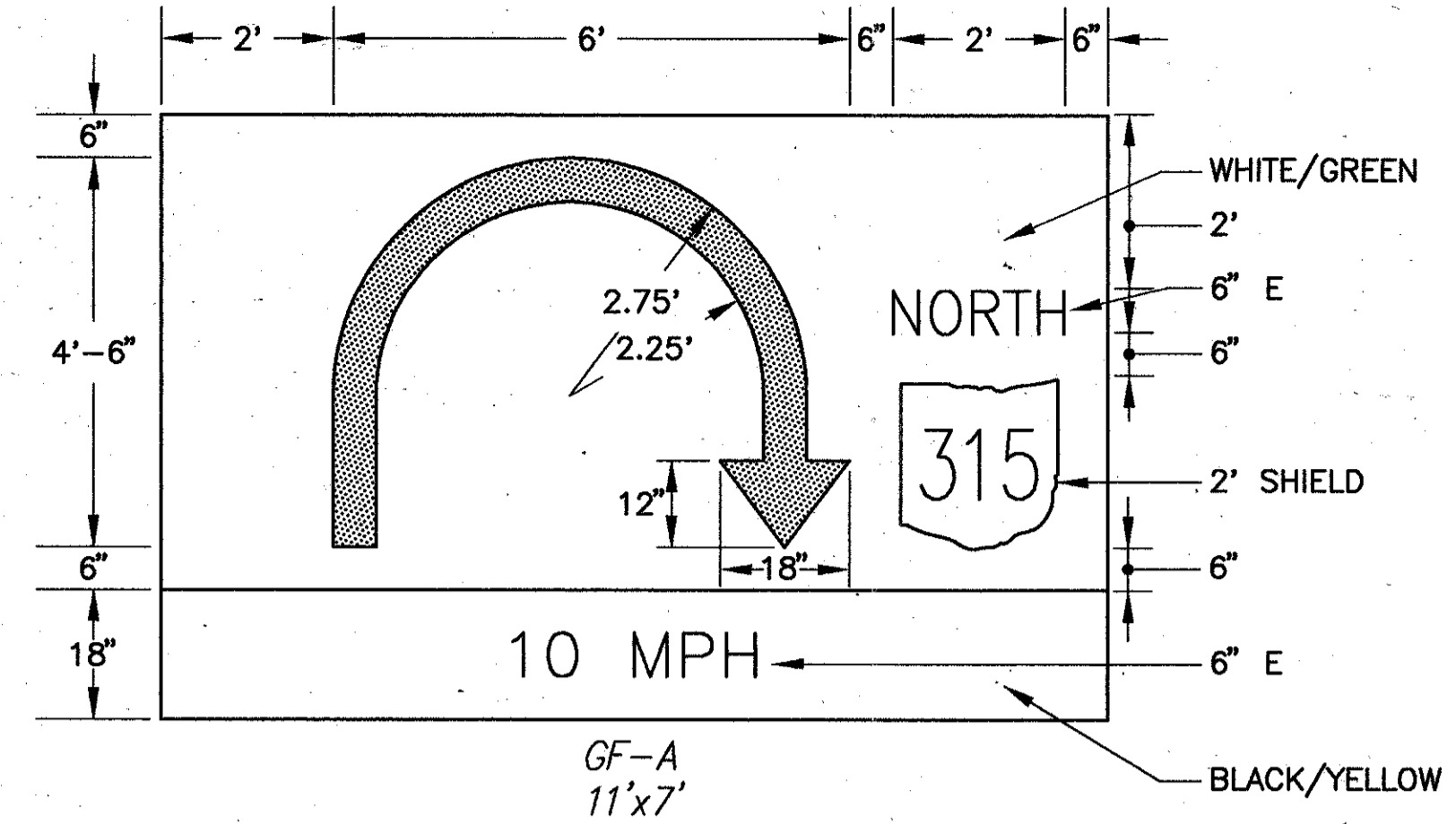
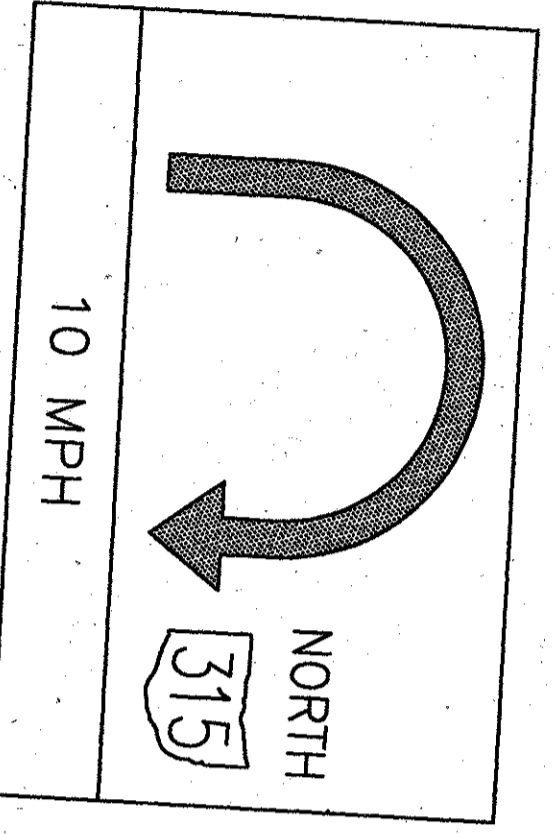
324

PLOT SCALE: COL #23 C:\DRAWING\0612310\MT\06123118.DWG MARCH-30-1995

MATCH LINE STA.126+10  
SEE SHEET NO. T18



GF-A (11'x7')  
STA 128+90  
MOUNT ON EXISTING  
BEAM SUPPORTS



SIGNING & PAVEMENT MARKING PLAN  
GOODALE STREET STA 126+10 TO 131+00

FRA-315-2.39

325  
T19  
19

- NOTES:
- 1) # ITEMS INCLUDED IN LUMP SUM 614, MAINTAINING TRAFFIC.
  - 2) SEE SHEET T3 FOR PAVEMENT MARKING AND SIGNING LEGENDS.
  - 3) SEE SHEETS T1 & T2 FOR QUANTITIES.

DESIGN DESIGNATION : 1992 ADT 4,000-33,000  
 MICROFILMED 2012 ADT 4,000-35,000  
 MAY 14 1996

STATE OF OHIO  
 DEPARTMENT OF TRANSPORTATION  
 FRA-315-2.39, PART 2

For Part 1 See FRA-315-2.39

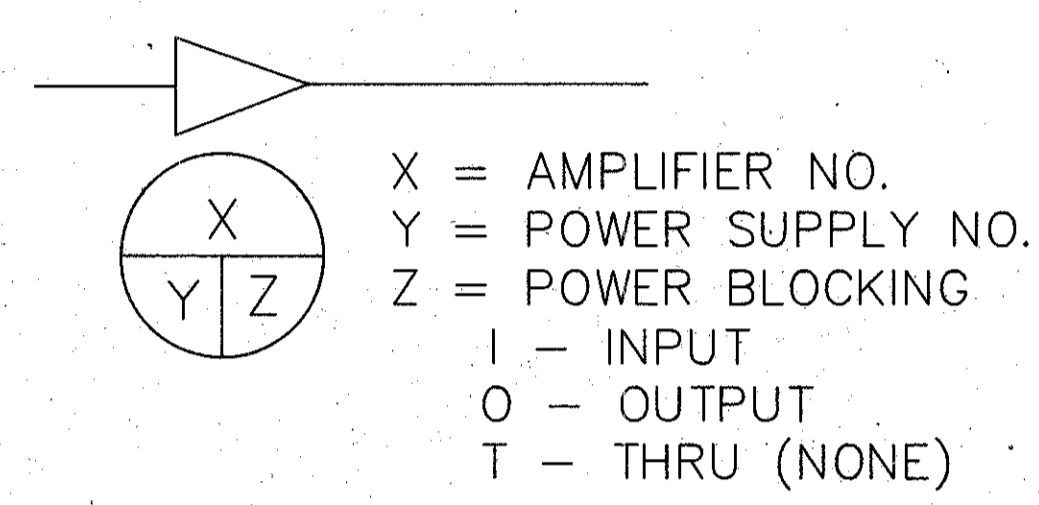
FRA-315-2.39, PART 2	OHIO FHWA REGION 5
STP-1K 78(6)	FEDERAL PROJECT
	STATE PROJECT

1  
27

326

CONVENTIONAL SYMBOLS :

- POLE ----- ☆
- WOOD POLE ----- ⊗
- STEEL POLE ----- ○
- CONTROL CABINET (POLE MOUNTED) --- □ CB
- DETECTOR STATION (SYSTEM) ----- ▽ ▽
- STRAND ----- ○ ○
- CONTROL CABINET (BASE MOUNTED) --- □ CB
- .750 INCH COAXIAL CABLE -----
- .500 INCH COAXIAL CABLE -----
- AMPLIFIER



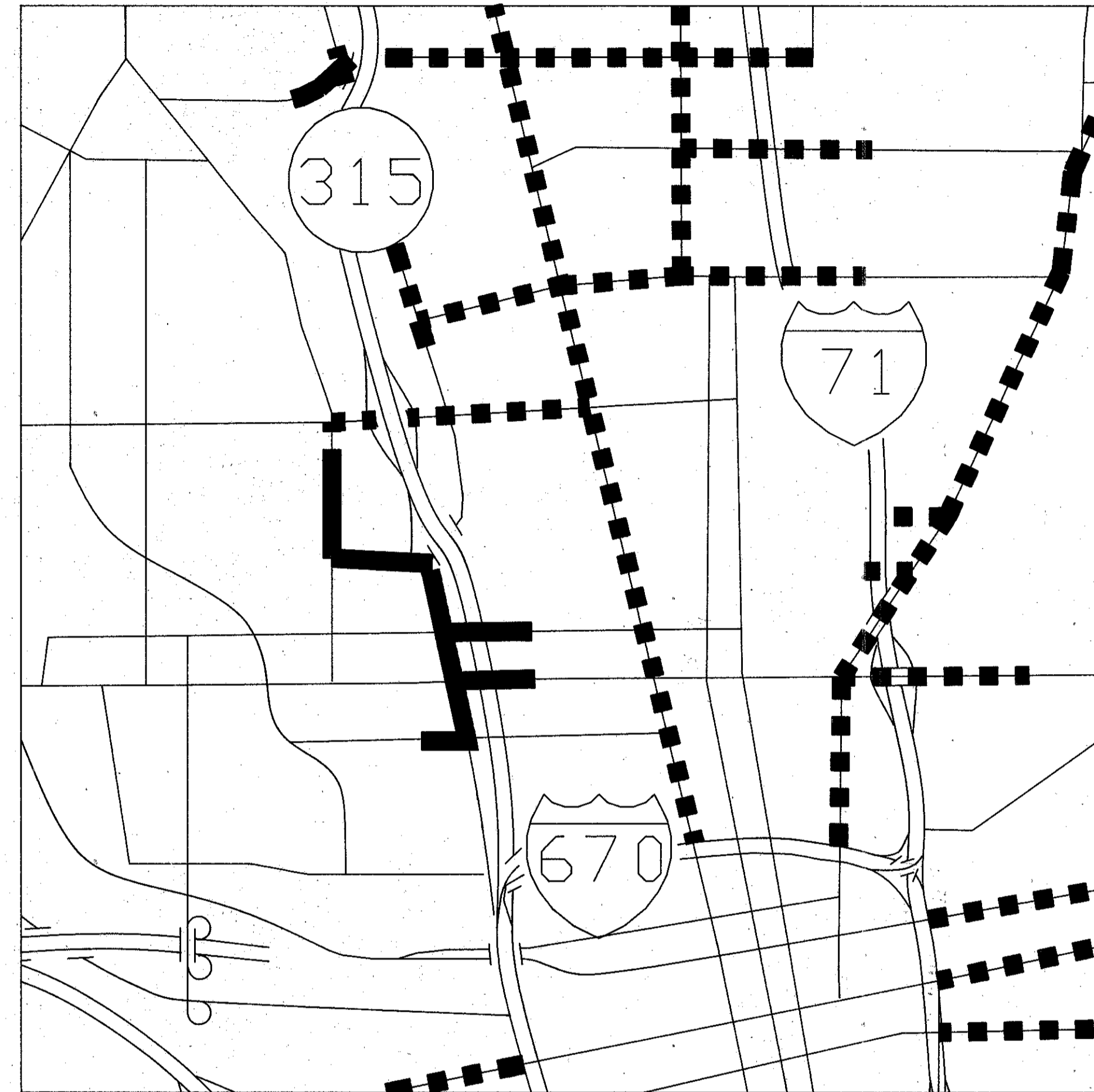
INDEX OF SHEETS :

TITLE SHEET	1
INTERCONNECT SUMMARY	2-3
DETAILS AND TYPICALS	
INTERCONNECT DETAILS & TYP	4-5
DET INST DETAILS, TYP & NOTES	6
MAINTAINING TRAFFIC TYPICALS	7-8
CABLE SCHEMATIC	9
INTERCONNECT	10-14
TIMING PLANS	14A-14B
INTERSECTION DETAILS	15-27

5-8-2

- AMPLIFIER CABINET ----- ▲
- POWER SUPPLY & INSERTER
- AC POWER BLOCK
- DIRECTIONAL COUPLER
- \* = VALUE 8, 12 OR 16
- SPLITTER, 2 WAY
- SPLITTER, 3 WAY (DOT INDICATES LOW LOSS OUTPUT)
- TERMINATOR

- NOTES:
- ITEMS INDICATED IN THESE PLANS "AS PER PLAN" ARE AS SPECIFIED IN THESE PLANS OR IN THE "SPECIAL PROVISIONS FRA-315-2.39, PART 2".
  - UTILITIES TO BE CONTACTED WITH REGARD TO POSSIBLE CONFLICT WITH WORK HEREIN ARE LISTED IN SECTION 2.5C OF THE "SPECIAL PROVISIONS FRA-315-2.39, PART 2".



LOCATION MAP

- EXISTING SYSTEM
- ARTERIAL STREETS TO BE COORDINATED

PLAN SCALES

- INTERCONNECT 0 100
- INTERSECTION DETAIL 0 30

**UNDERGROUND UTILITIES**  
 2 WORKING DAYS  
 BEFORE YOU DIG  
 CALL 800-362-2764 (TOLL FREE)  
 OHIO UTILITIES PROTECTION SERVICE  
 NON-MEMBERS  
 MUST BE CALLED DIRECTLY

LINE DATA :

PROJECT LENGTH	=	0.00 FT	=	0.00 MI.
WORK LENGTH	=	17,294.00	=	3.31 MI.

PLAN PREPARATION BY :

CITY OF COLUMBUS -  
 DIVISION OF TRAFFIC ENGINEERING  
 EAGAN L. FOSTER, P.E. (E-45399)  
 DAVID C. KRIER, P.E. (E-49770)  
 HOWARD B. BUMGARNER, P.E. (E-46688)  
 STEVEN G. JEWELL, P.E. (E-42096)

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS	
	SEE PART 1 - FRA-315-2.39

SUPPLEMENTAL SPECIFICATIONS	
	SEE PART 1 - FRA-315-2.39

1995 SPECIFICATIONS :

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, 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 THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THESE PLANS.

FOR THE CITY OF COLUMBUS  
 APPROVED \_\_\_\_\_  
 DATE 12-23-95 ADMINISTRATOR, DIVISION OF TRAFFIC ENGINEERING

APPROVED \_\_\_\_\_  
 DATE \_\_\_\_\_ CITY ENGINEER

APPROVED Thomas B. Merritt  
 DATE 1/3/96 DIRECTOR OF PUBLIC SERVICE

FOR THE STATE OF OHIO  
 APPROVED \_\_\_\_\_  
 DATE 1/27/96 DISTRICT DEPUTY DIRECTOR OF TRANSPORTATION

APPROVED Christopher J. Pung  
 DATE 3-27-95 DEPUTY DIRECTOR, DESIGN

APPROVED Jerry Wray  
 DATE 3-27-95 DIRECTOR, DEPARTMENT OF TRANSPORTATION

DEPARTMENT OF TRANSPORTATION  
 FEDERAL HIGHWAY ADMINISTRATION  
 APPROVED: \_\_\_\_\_  
 DIVISION ADMINISTRATOR DATE

PROJECT : FRA-315-2.39, PART 2  
 DATE OF LETTING : \_\_\_\_\_ CONTRACT NO. \_\_\_\_\_





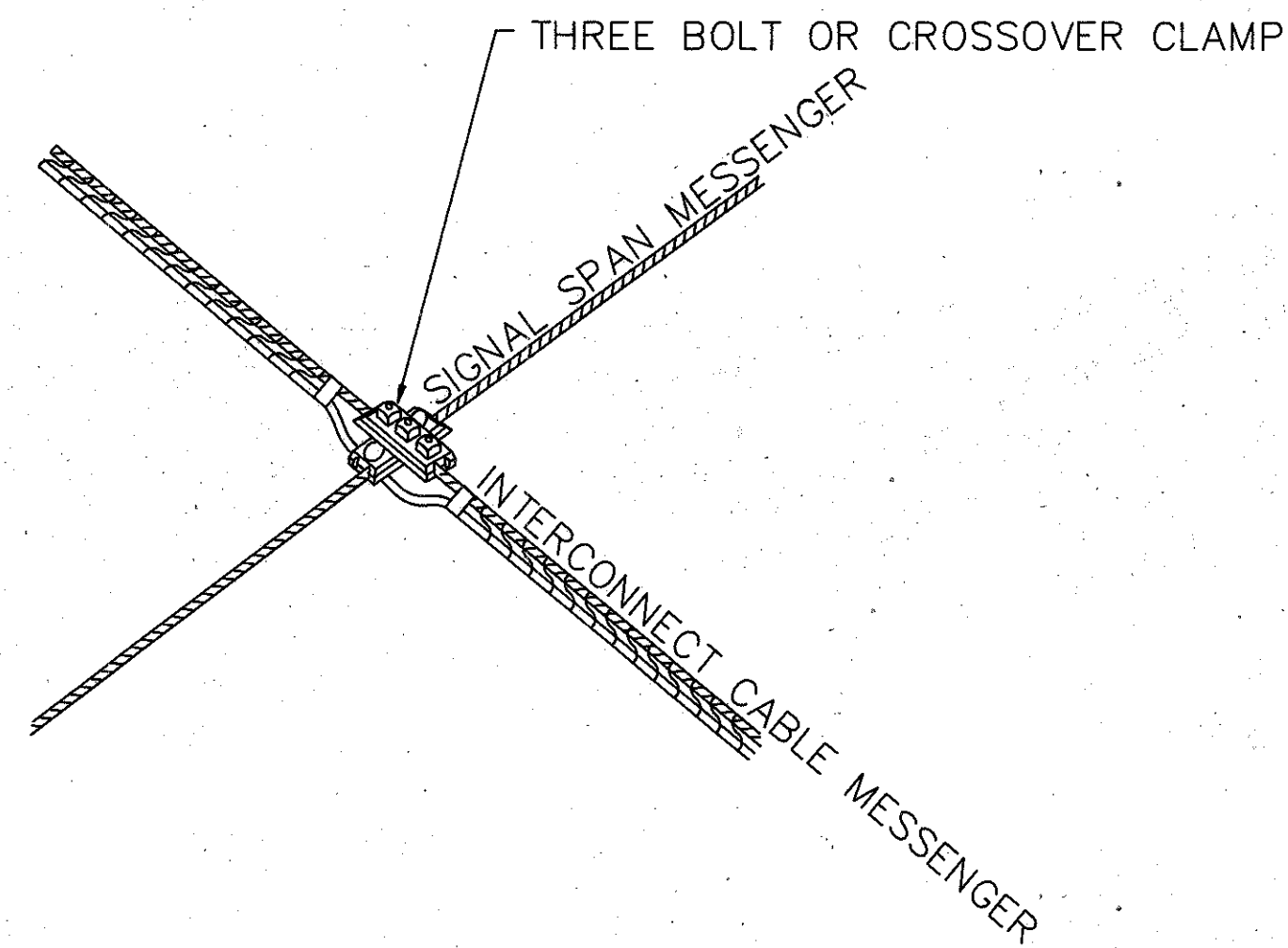
# GENERAL SUMMARY

CALC. BY _____	FRA-315-2.39, PART 2	OHIO	3
DATE _____		FHWA REGION 5	27
CHECK BY _____			
DATE _____			

SHEET 10	SHEET 11	SHEET 12	SHEET 13	SHEET 14	SHEET 15	SHEET 16	SHEET 17	SHEET 18	SHEET 19	SHEET 20	SHEET 21	SHEET 22	SHEET 23	SHEET 24	SHEET 25	SHEET 26	SHEET 27	SPEC	ITEM	ITEM EXT.	TOTAL	UNITS	DESCRIPTION
					INT. #	INT. #	INT. #	INT. #	INT. #	INT. #	INT. #	INT. #	INT. #	INT. #	INT. #	INT. #	INT. #						
					6905	4196	4195	4163	4194	4096	4095	4094	4086	4154	4065	4079	4073						
							50												632	67200	50	LF	POWER CABLE, 2 CONDUCTOR, NO. 8 AWG
							40												632	69500	40	LF	SERVICE CABLE, 2 CONDUCTOR, NO. 6 AWG
1	4	3	3	2															632	70200	13	EA	CONDUIT RISER, 1" DIAMETER, 713.04
					1														632	70400	1	EA	CONDUIT RISER, 2" DIAMETER, 713.04
	4																		632	70401	4	EA	CONDUIT RISER, 2" DIAMETER, AS PER PLAN
							1												632	70001	1	EA	POWER SERVICE, AS PER PLAN
							4												632	71000	4	EA	CABLE SUPPORT ASSEMBLY
							10												632	72000	10	CY	CONCRETE FOR ANCHOR BASE FOUNDATION
							4												632	82501	4	EA	STRAIN POLE, TYPE 81.10, DESIGN 5, AS PER PLAN, 28 FEET
1																			632	89301	1	EA	WOOD POLE, AS PER PLAN
	2																		632	89400	2	EA	DOWN GUY
		1	3	11															632	90400	15	EA	SIGNALIZATION, MISC., STANDOFF
	1																		632	90400	1	EA	SIGNALIZATION, MISC., AMPLIFIER CABINET, TYPE I, PEDESTAL MOUNT
		1																	632	90400	1	EA	SIGNALIZATION, MISC., CATV POWER SUPPLY
																		1	632	90400	1	EA	SIGNALIZATION, MISC., CATV POWER SUPPLY, FURNISH ONLY
2	1	2	2	1															632	90400	8	EA	SIGNALIZATION, MISC., BI-DIRECTIONAL AMPLIFIER, AERIAL-MOUNT
	1																		632	90400	1	EA	SIGNALIZATION, MISC., BI-DIRECTIONAL AMPLIFIER, CABINET-MOUNT
																		1	632	90400	1	EA	SIGNALIZATION, MISC., BI-DIRECTIONAL AMPLIFIER, FURNISH ONLY
2		2	1																632	90400	5	EA	SIGNALIZATION, MISC., DIRECTIONAL COUPLER, 16 DB
	2		1	1															632	90400	4	EA	SIGNALIZATION, MISC., DIRECTIONAL COUPLER, 12 DB
	1																		632	90400	1	EA	SIGNALIZATION, MISC., DIRECTIONAL COUPLER, 8 DB
1	1		2																632	90400	4	EA	SIGNALIZATION, MISC., SPLITTER, TWO WAY
		1																	632	90400	1	EA	SIGNALIZATION, MISC., SPLITTER, THREE WAY
								100											632	90500	100	LF	SIGNALIZATION, MISC., DELASHING AND RELASHING OF CABLE
					1							1		1	1				633	40100	4	EA	CONTROLLER, MISC., ACTUATED, WITH 2 PHASE POLE-MOUNT CABINET
						1	1		1								1		633	40100	1	EA	CONTROLLER, MISC., ACTUATED, WITH 4 PHASE POLE-MOUNT CABINET
								1	1										633	40100	3	EA	CONTROLLER, MISC., ACTUATED, WITH 4 PHASE BASE-MOUNT CABINET
									1	1			1						633	40100	5	EA	CONTROLLER, MISC., ACTUATED, WITH 8 PHASE BASE-MOUNT CABINET
																		1	633	40100	1	EA	CONTROLLER, MISC., ACTUATED, FURNISH ONLY
							2												633	70000	2	CY	CONCRETE FOR CABINET FOUNDATION
							10												633	70500	10	SF	CONTROLLER WORK PAD
					1	1	1	1	1	1	1	1	1	1	1	1	1		633	99000	13	EA	CONTROLLER ITEM, MISC.: TRANSCEIVER INTERFACE
																		1	633	99000	1	EA	CONTROLLER ITEM, MISC.: TRANSCEIVER INTERFACE, FURNISH ONLY
																			614	11000		LUMP	MAINTAINING TRAFFIC
																			624	10000		LUMP	MOBILIZATION
																			623	10000		LUMP	CONSTRUCTION LAYOUT STAKES
																			SPECIAL	619 25010		LUMP	COMPUTER EQUIPMENT FOR TYPE B OR C OFFICE (SEE PROPOSAL NOTE)
																			619	15020		LUMP	FIELD OFFICE, TYPE C

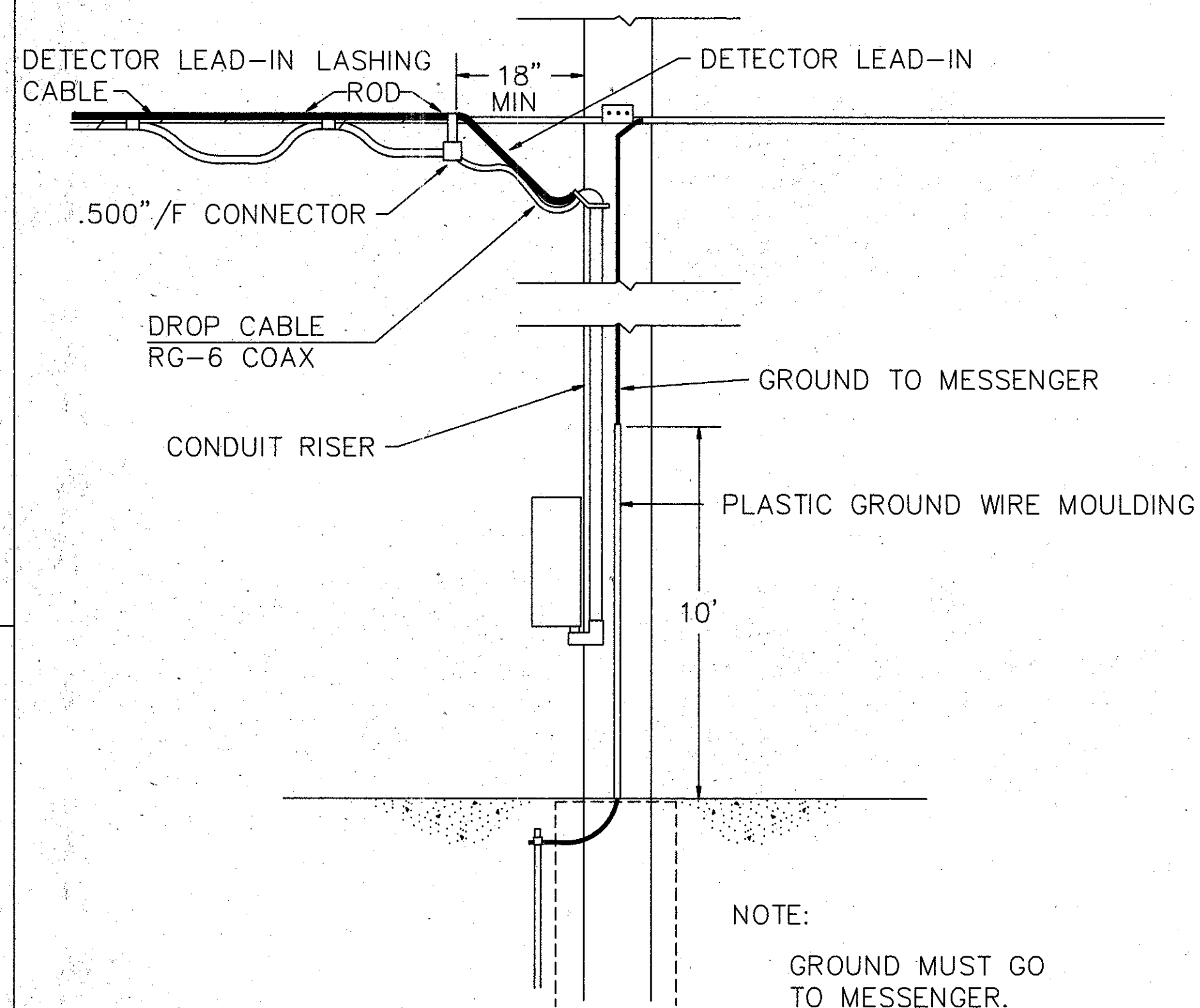
SPAN CONNECTION DETAIL

DETAIL A



RISER DETAIL

DETAIL B



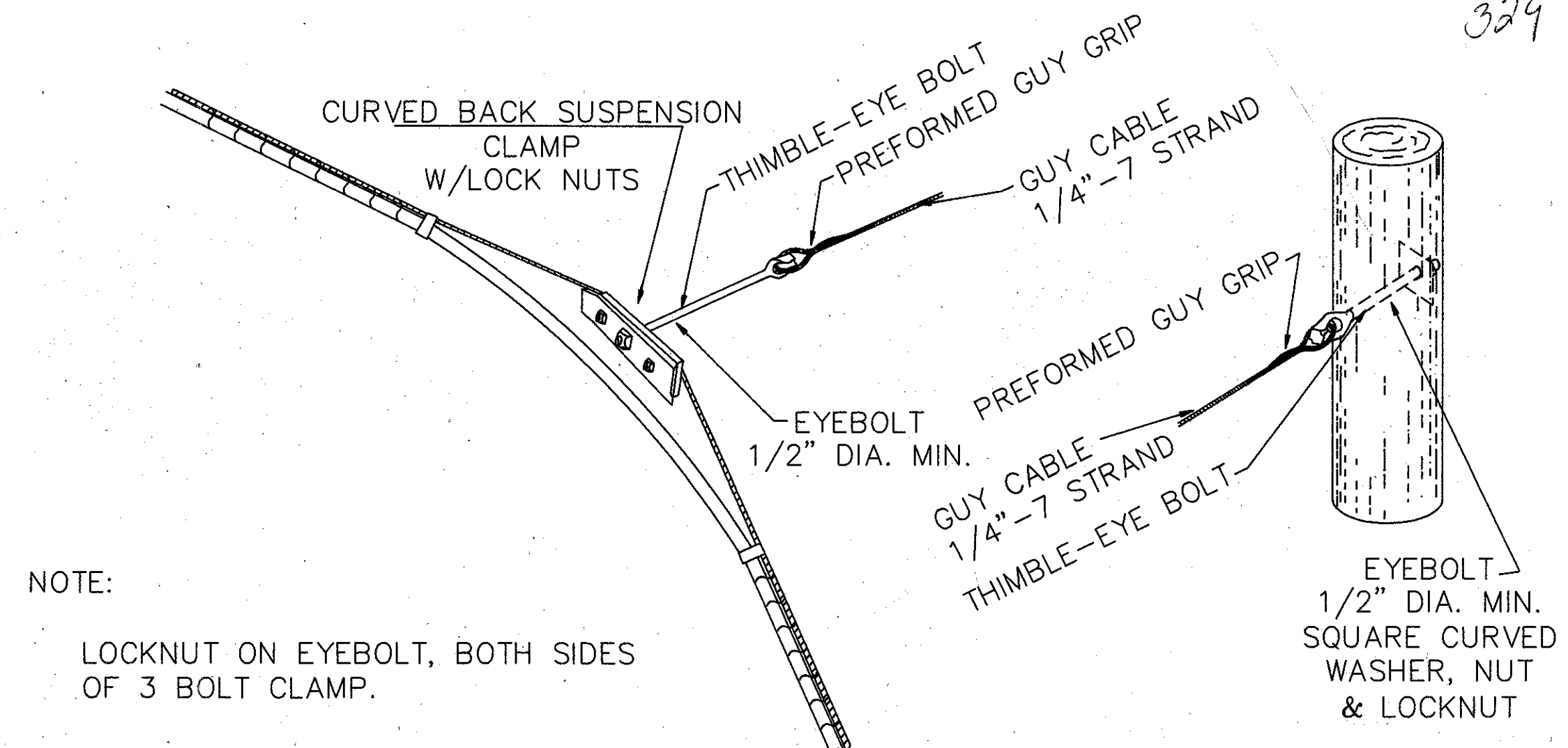
TIEOFF DETAIL

DETAIL C

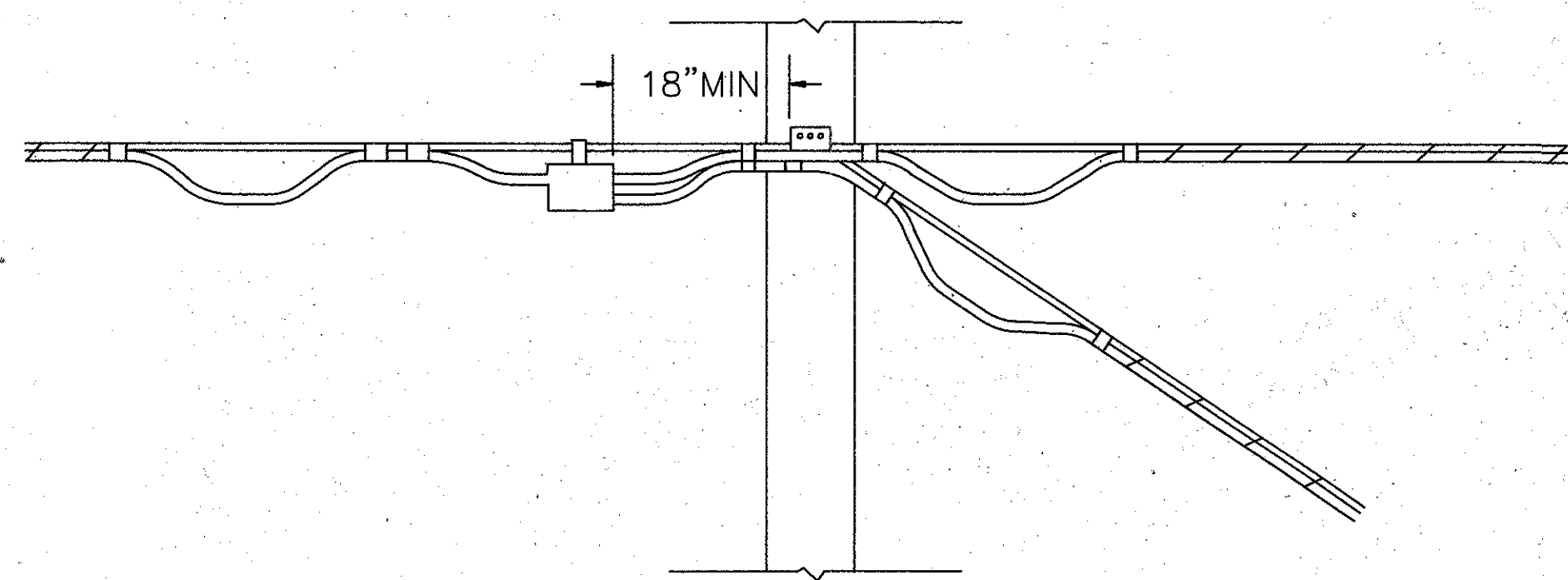
FRA-315-2.39, PART 2

OHIO	4
FHWA REGION 5	27

329



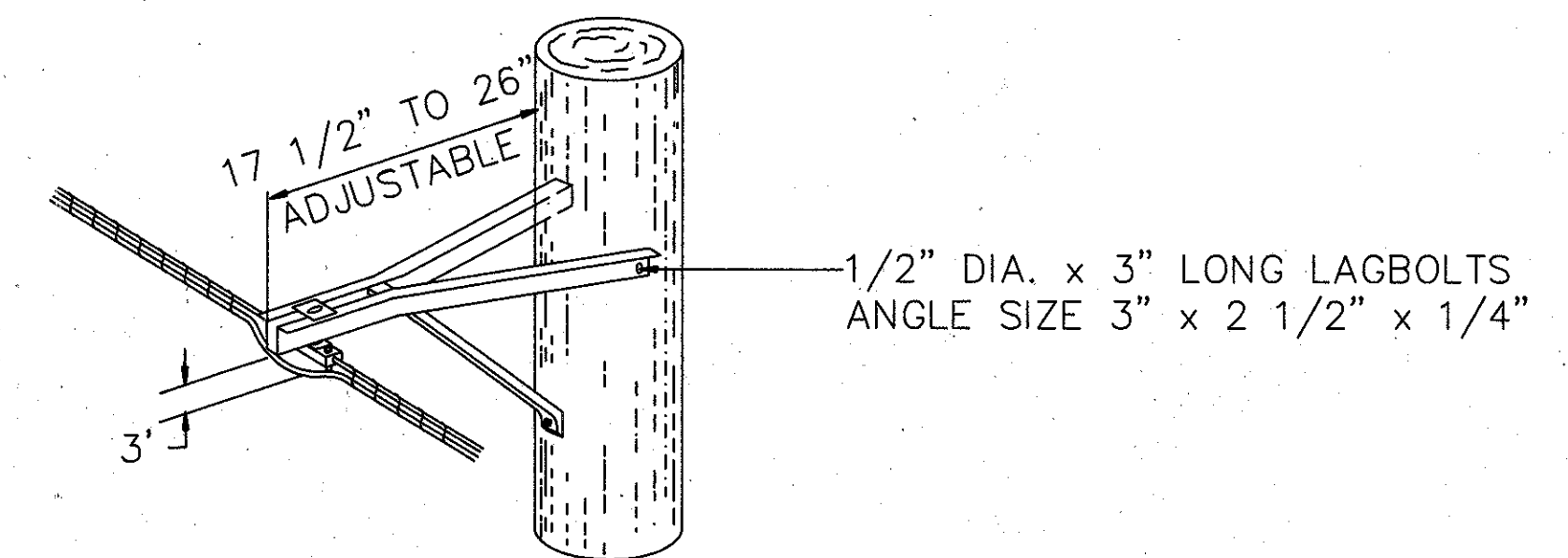
DIRECTIONAL COUPLER OR SPLITTER DETAIL



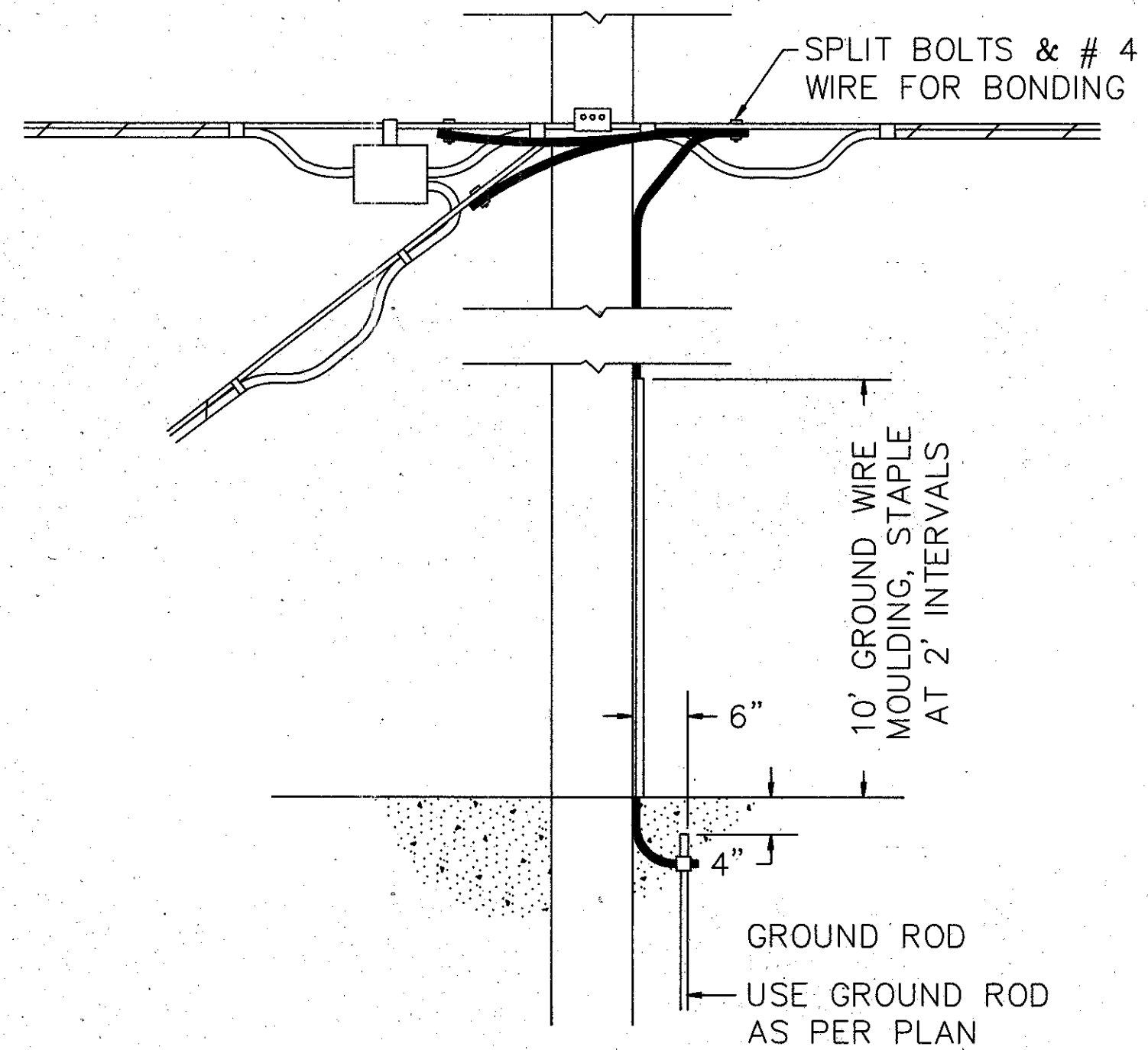
NOTE: LINE AMPLIFIER INSTALLATION SIMILAR

STANDOFF DETAIL

DETAIL D (EXTENSION BRACKET)

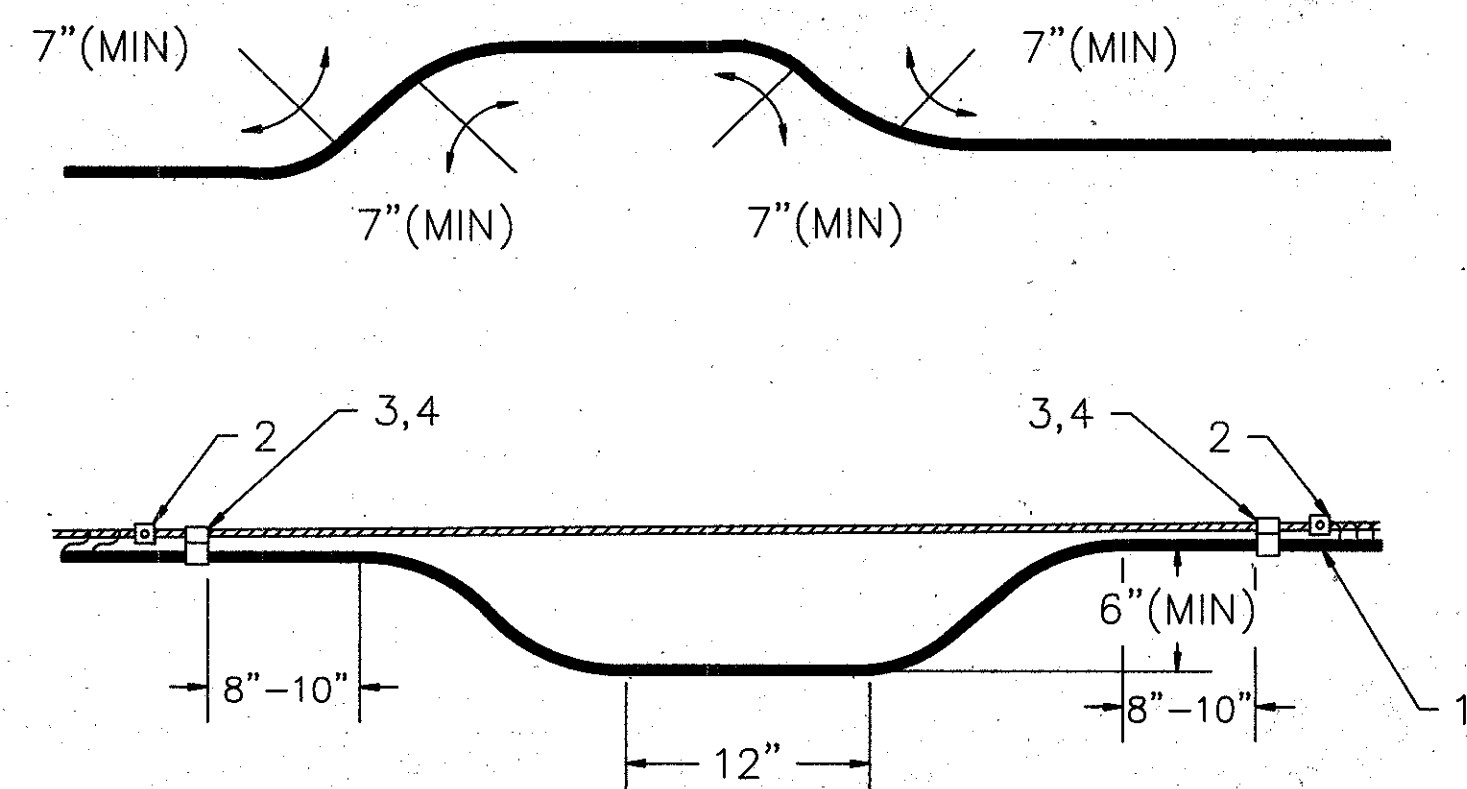


TYPICAL GROUND



NOTE:  
BOND ALL BREAKS IN MESSENGER

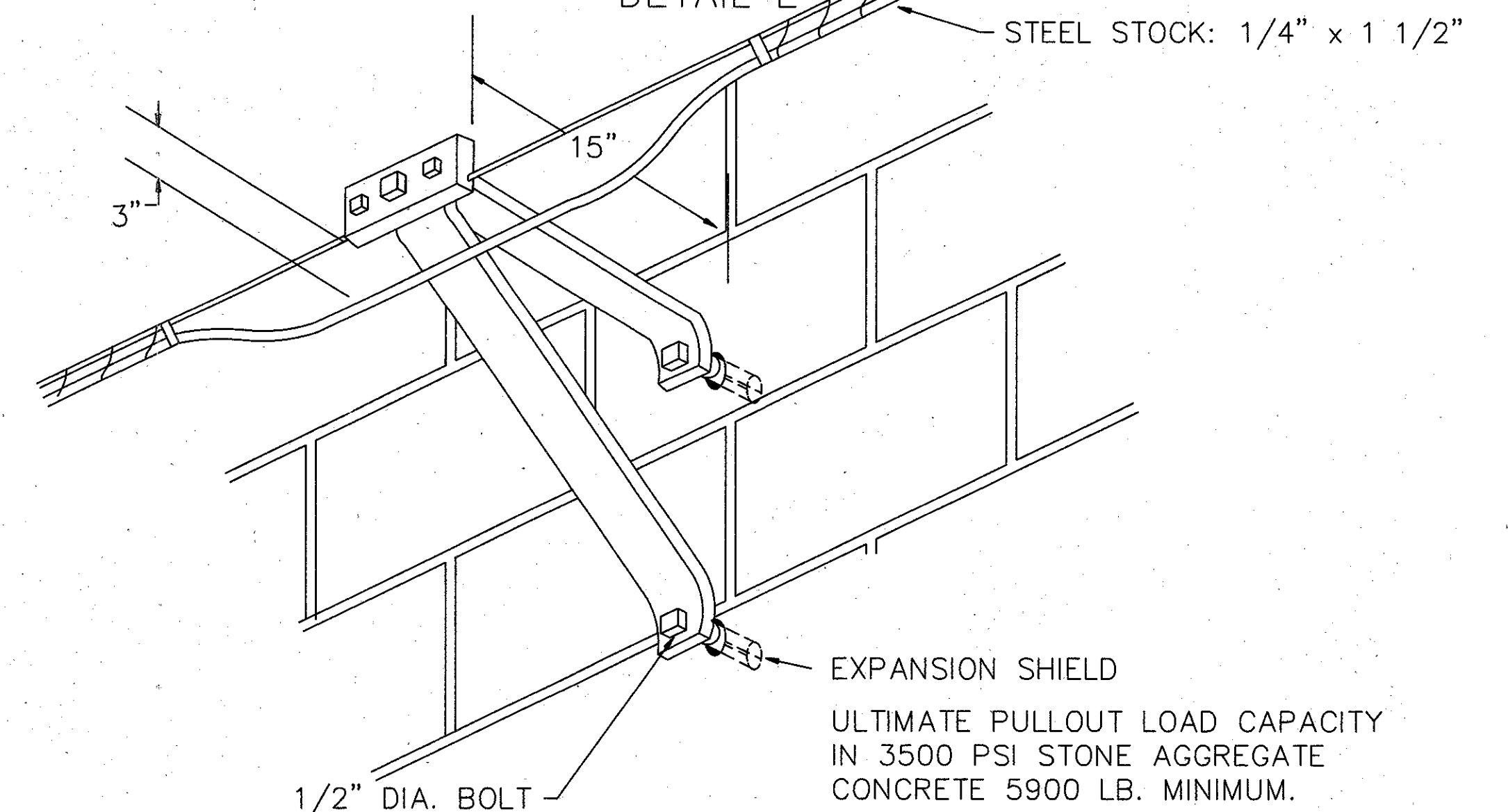
EXPANSION LOOP TYPICAL



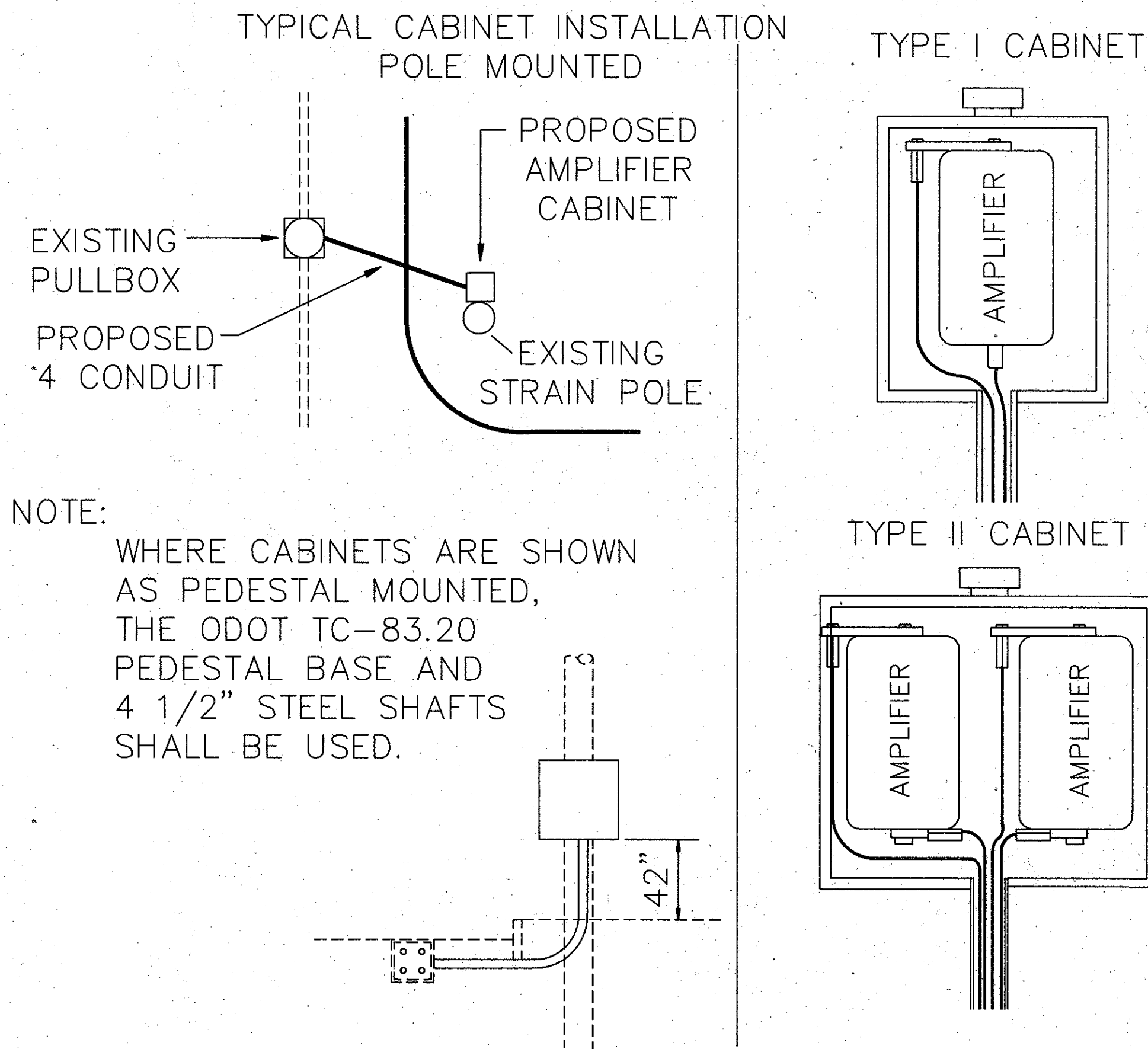
1. STAINLESS STEEL LASHING WIRE
2. LASHING WIRE CLAMPS
3. CABLE SPACER
4. CABLE SUPPORT STRAPS

BRIDGE STANDOFF

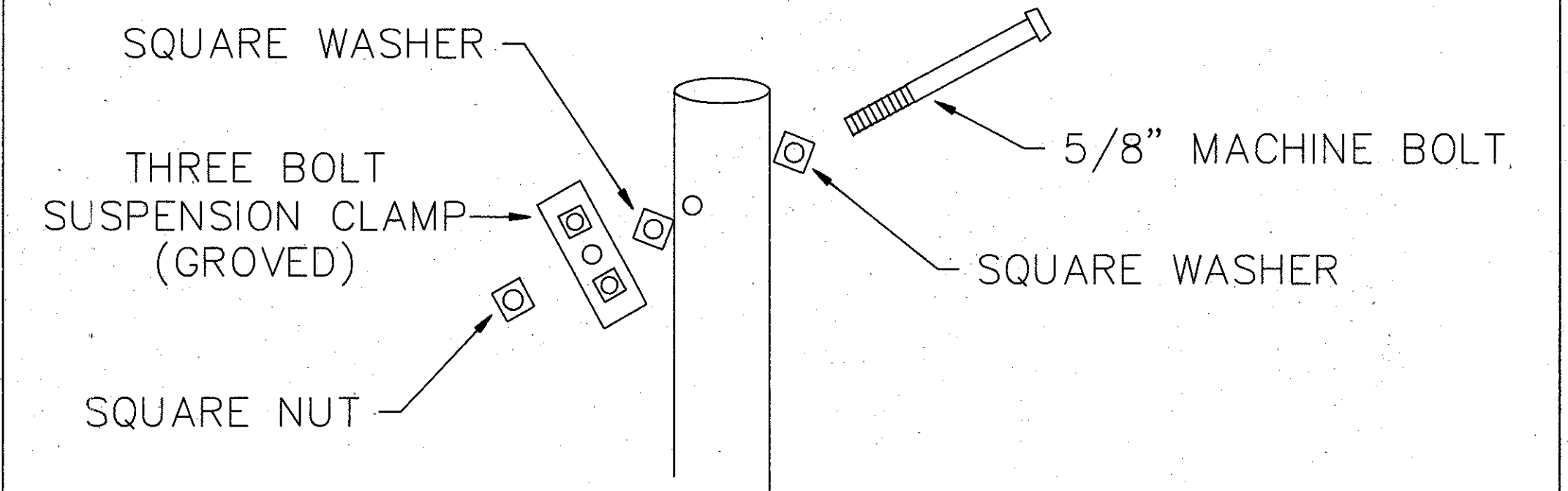
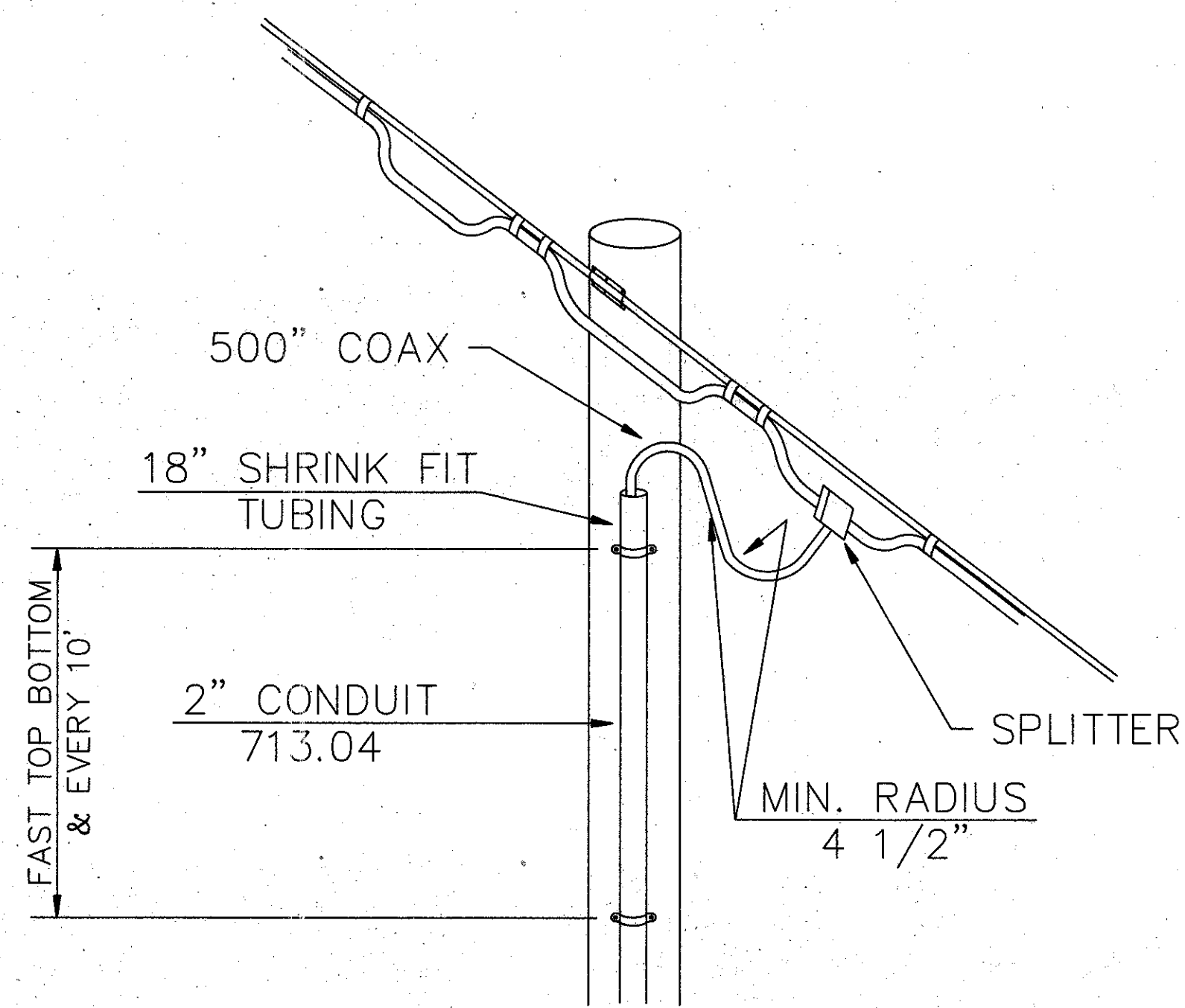
DETAIL E



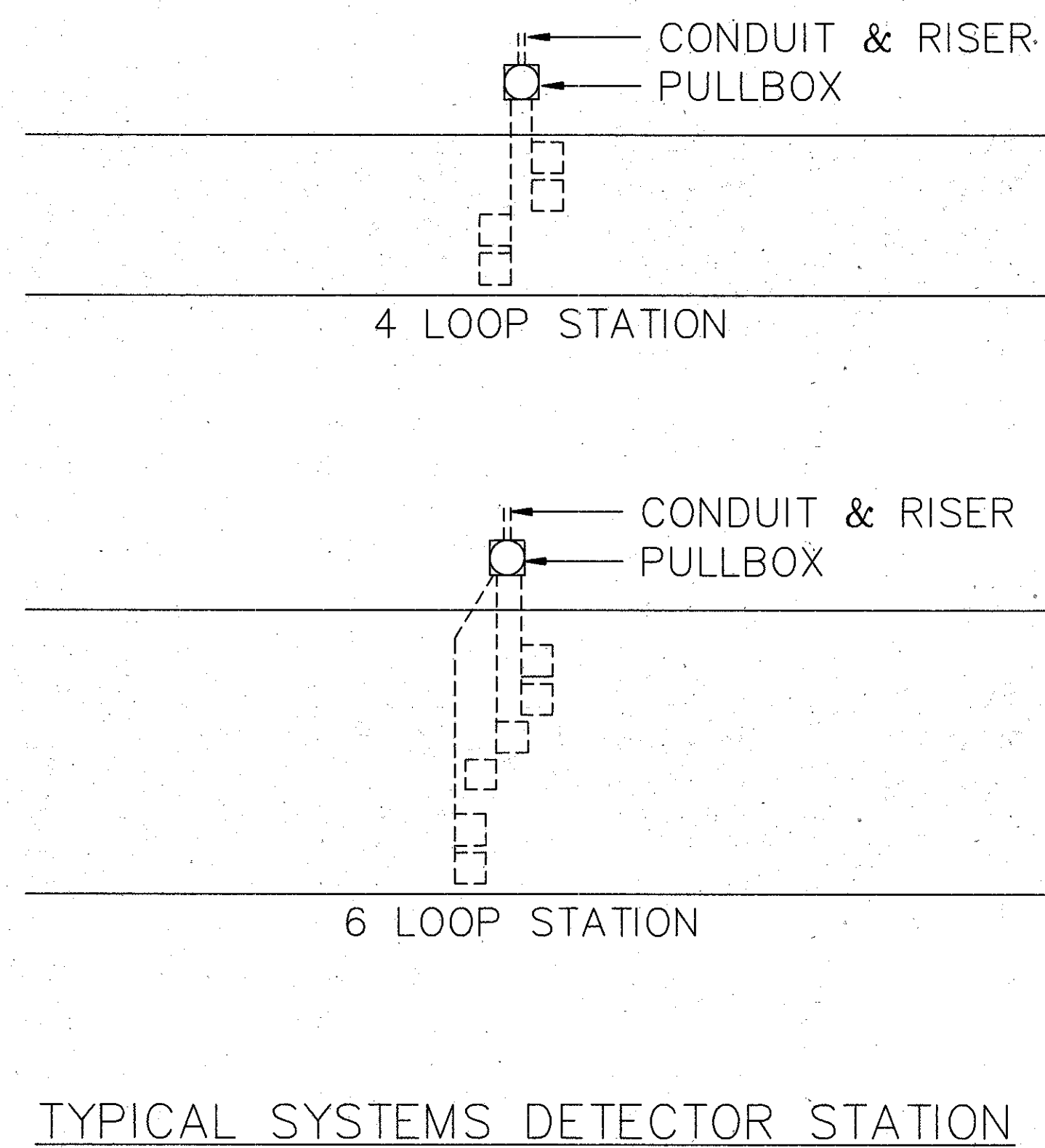
DETAIL H  
AMPLIFIER CABINETS



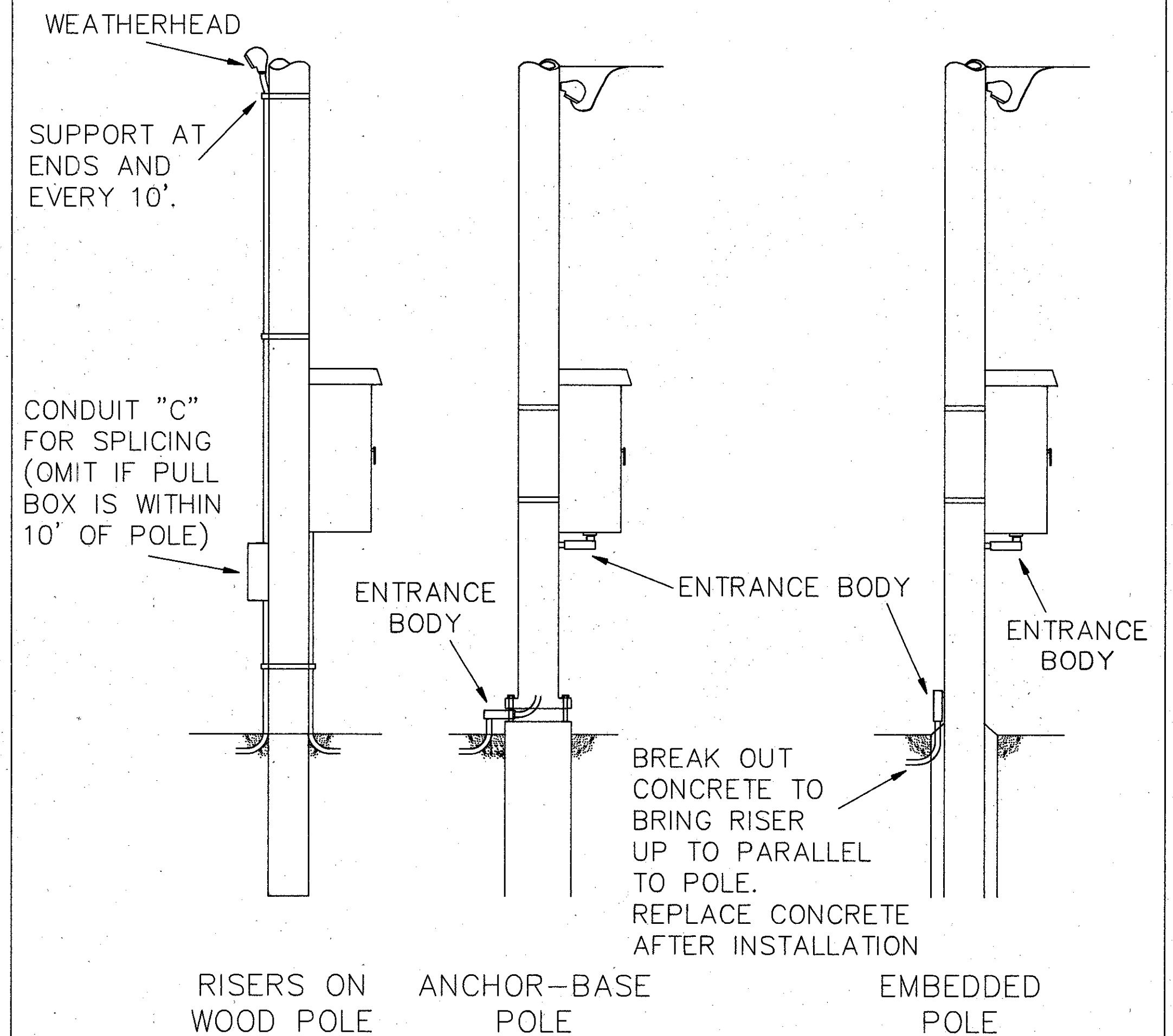
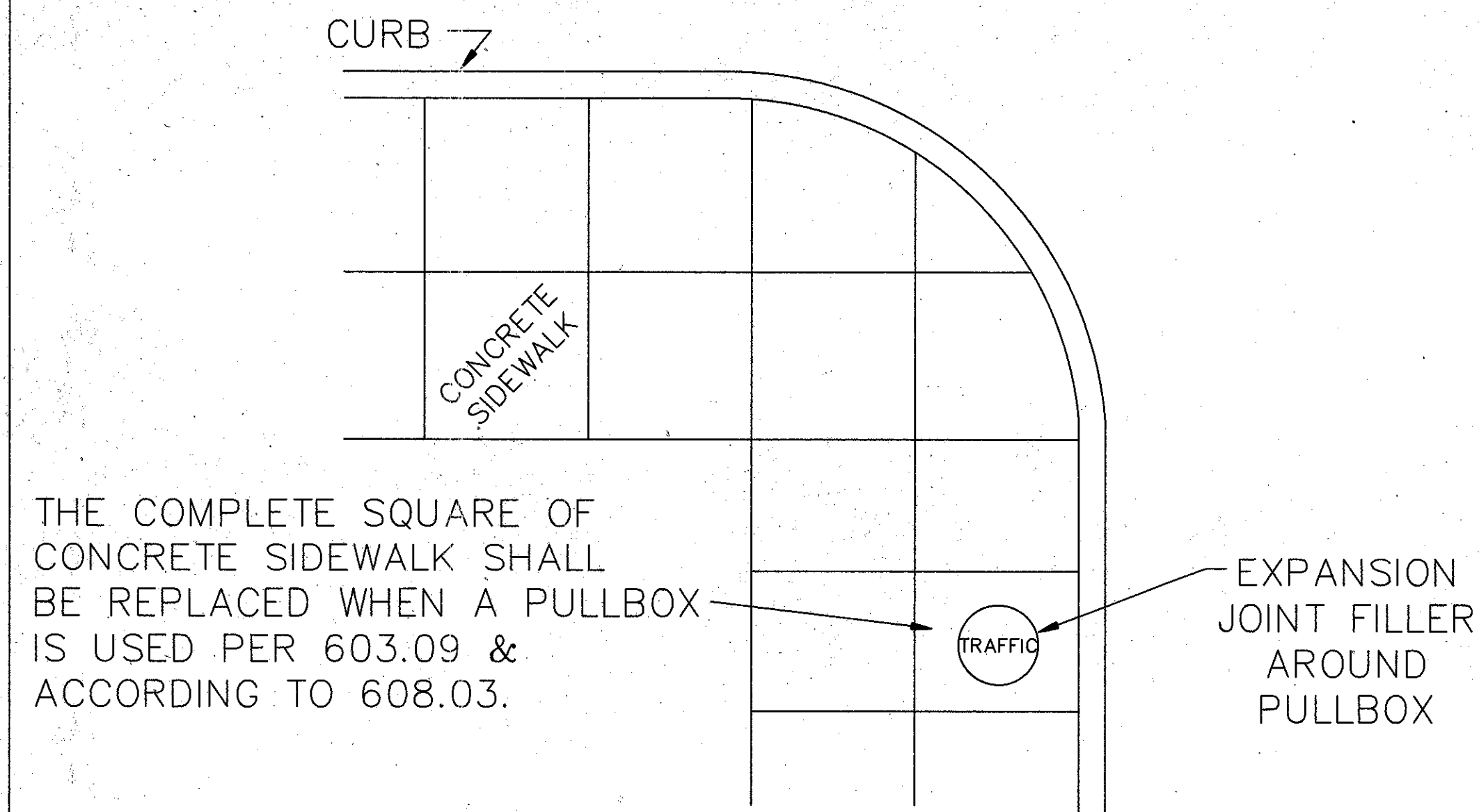
2" MODIFIED RISER DETAIL  
DETAIL F



POLE FRAMING DETAIL



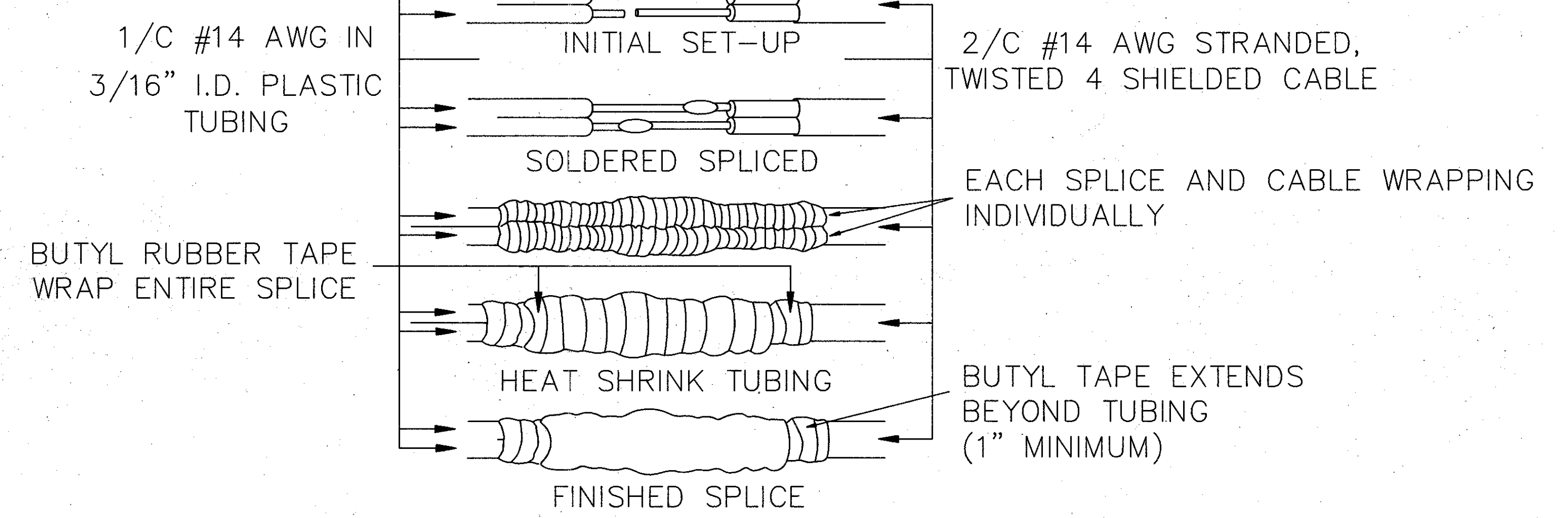
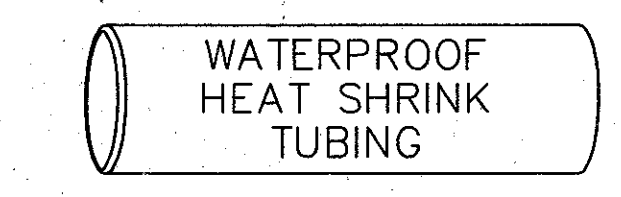
CURB TYPICALS



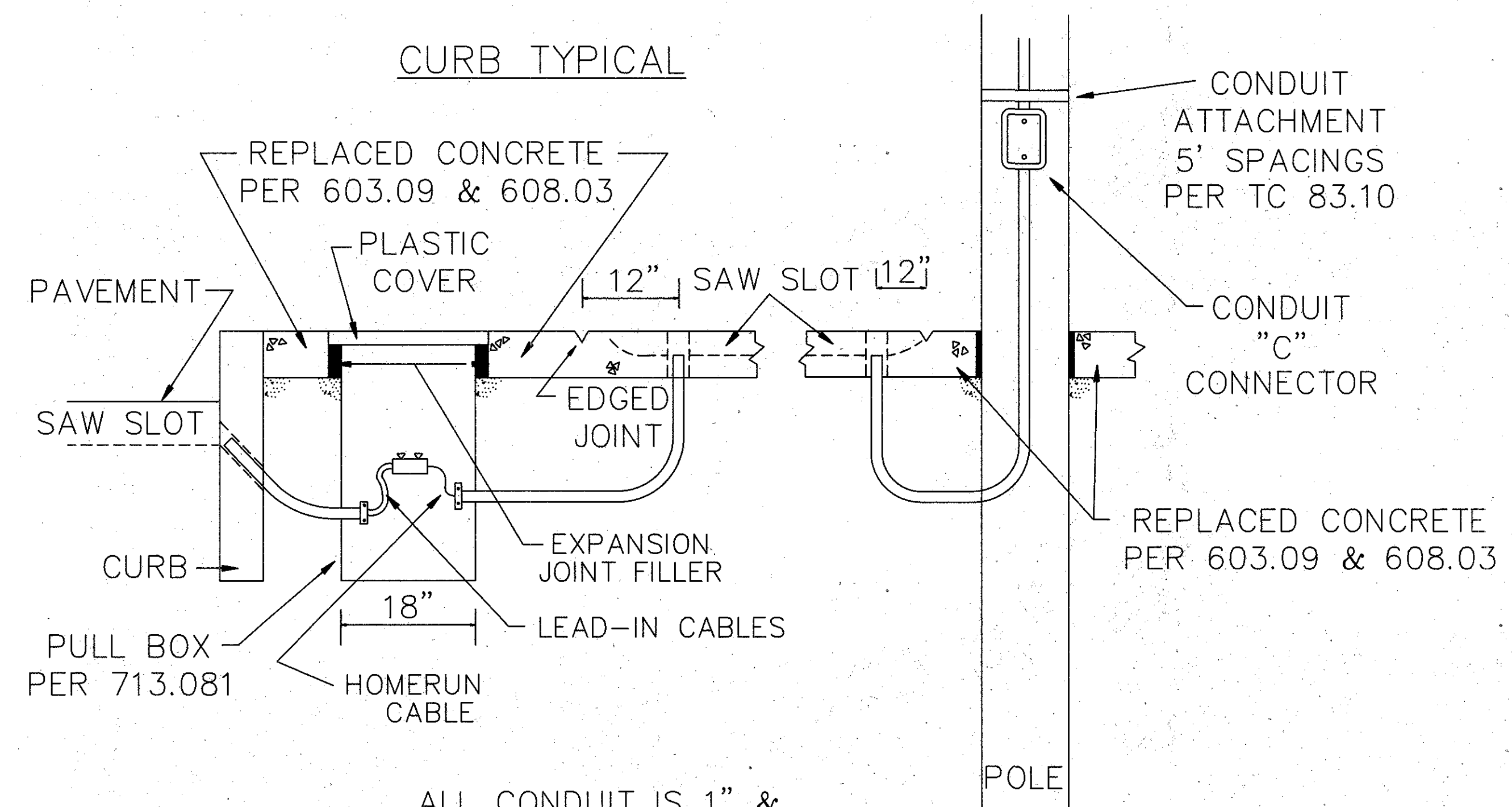
INTERCONNECT DETAILS & TYPICALS

CABLE SPLICE

SPLICE FOR 1" TYPE CONDULET  
OUTLET BODY



CURB TYPICAL



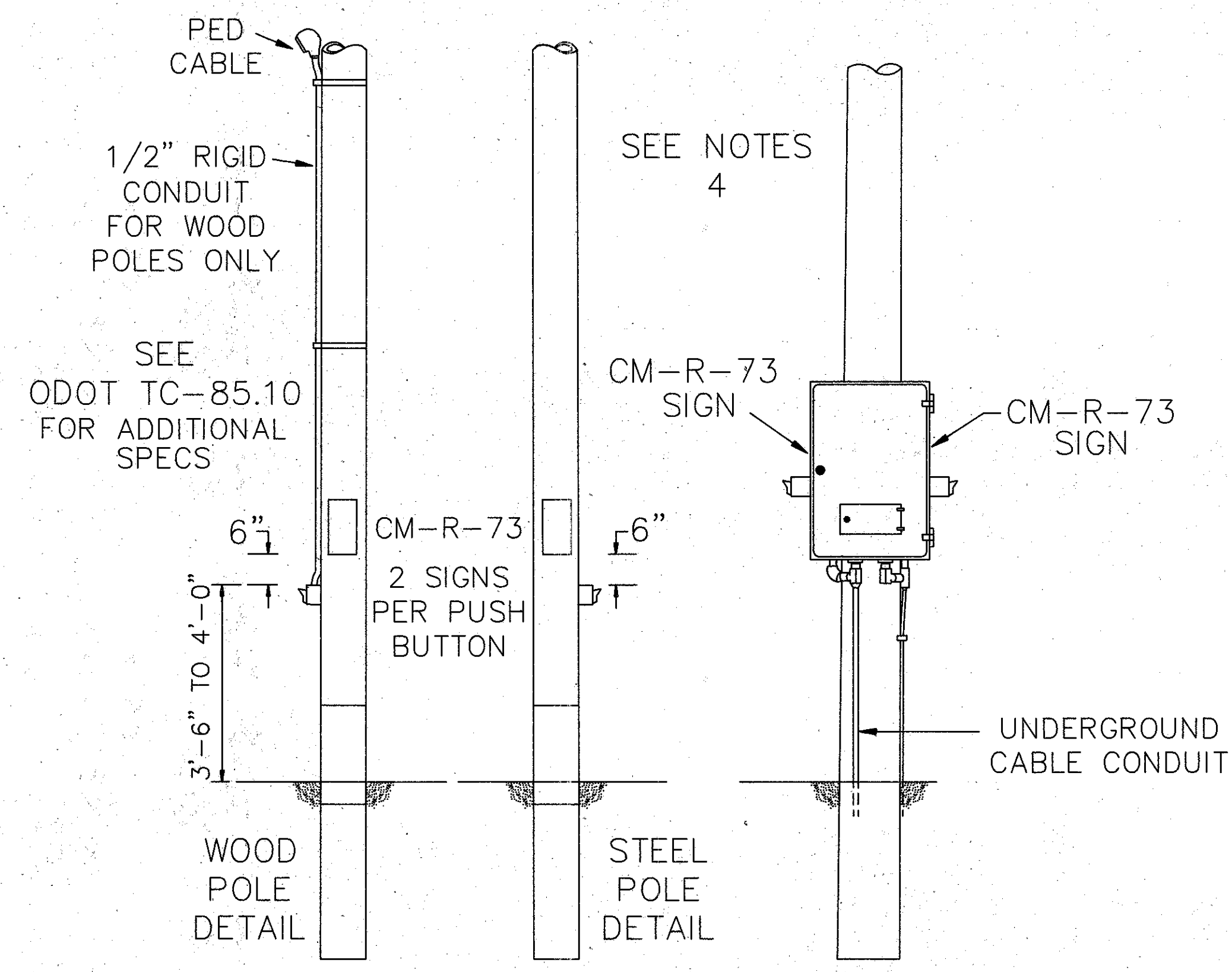
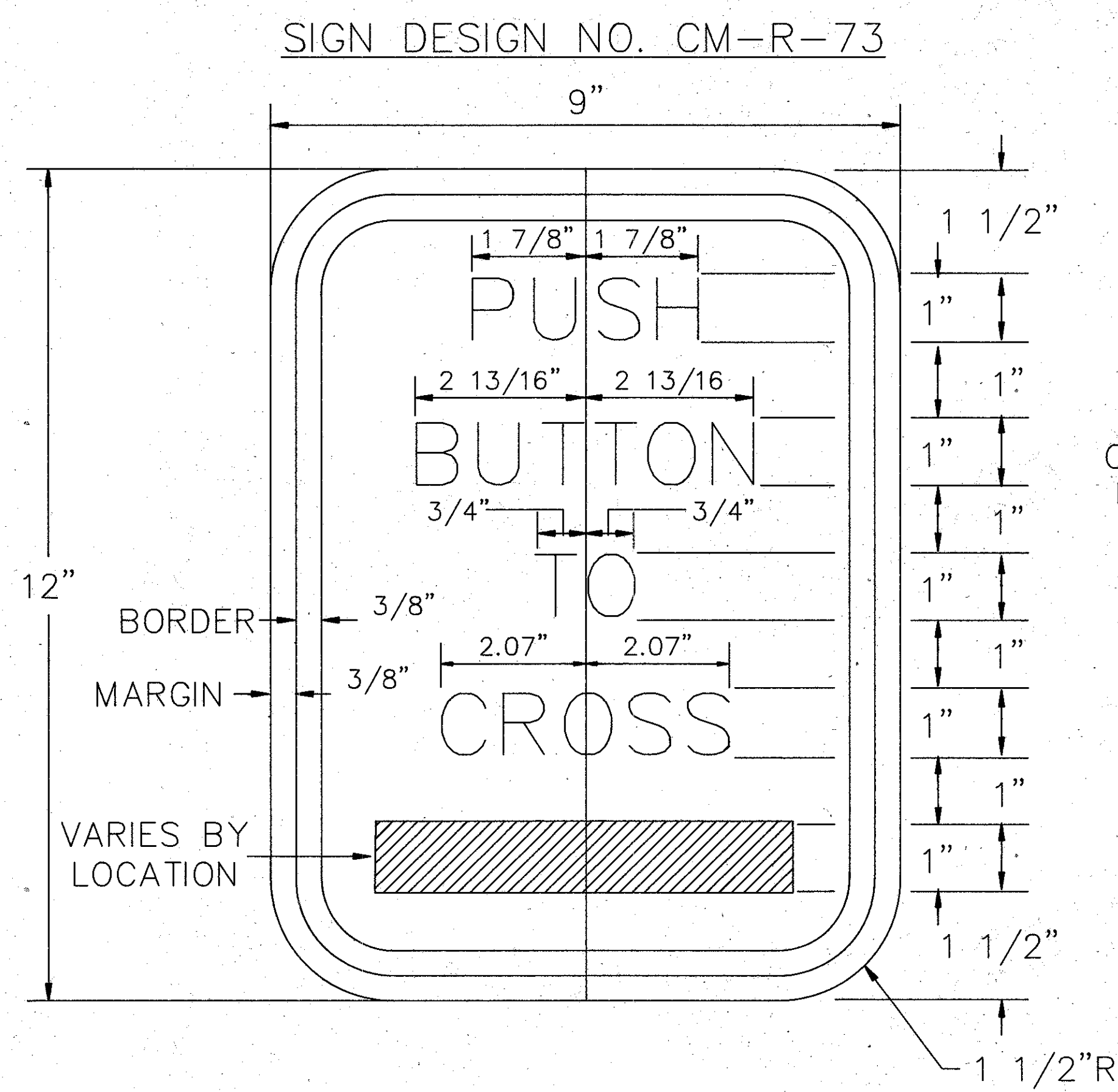
ALL CONDUIT IS 1" &  
FITTED IN A 1 1/4" DRILLED  
HOLE WITH INSULATING  
BUSHINGS OR DUCT SEAL  
AT THE OPEN END PER  
625.13 & 713.04

UNCURBED TYPICAL

SEE ODOT TC-82.10 SPECS.

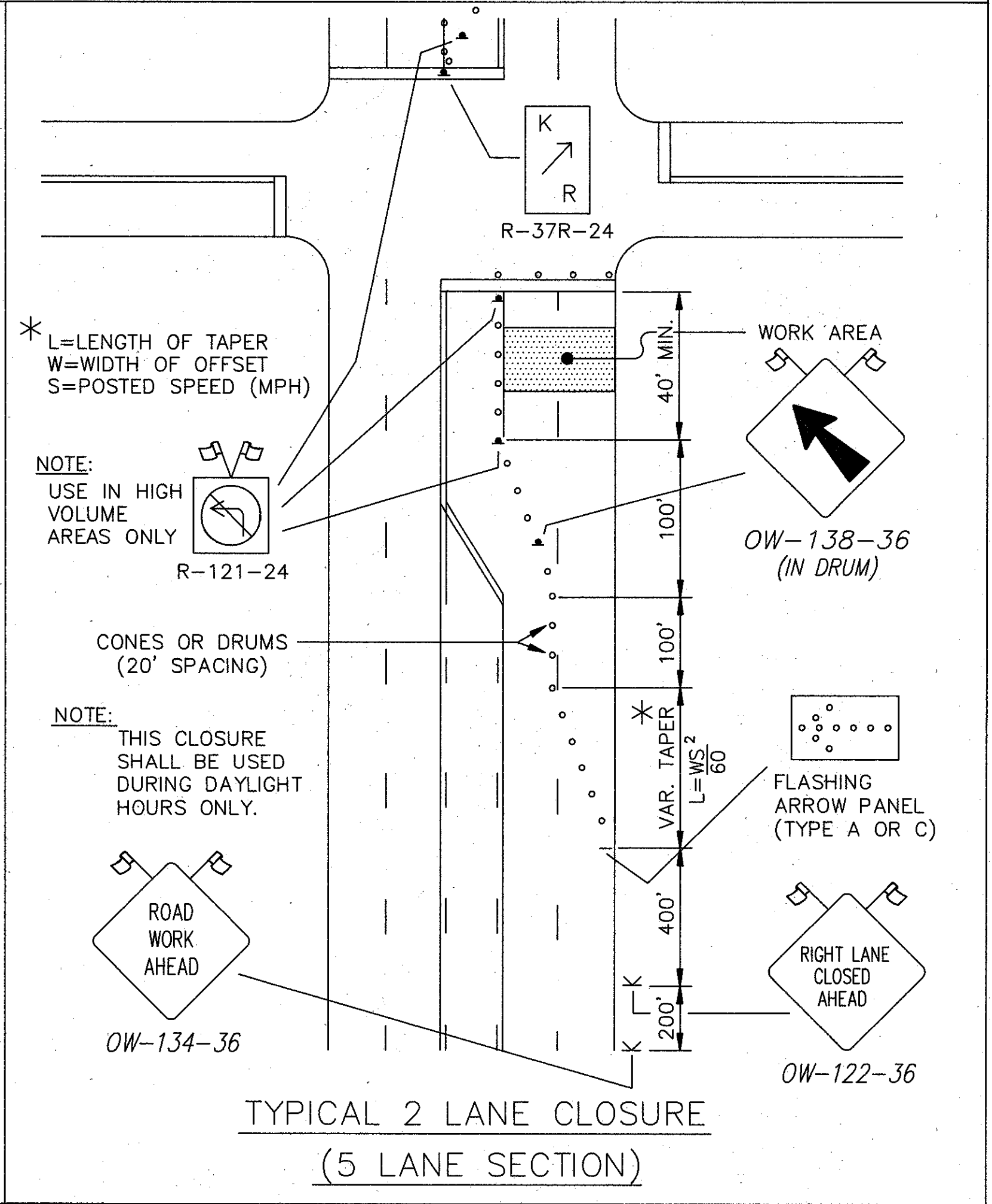
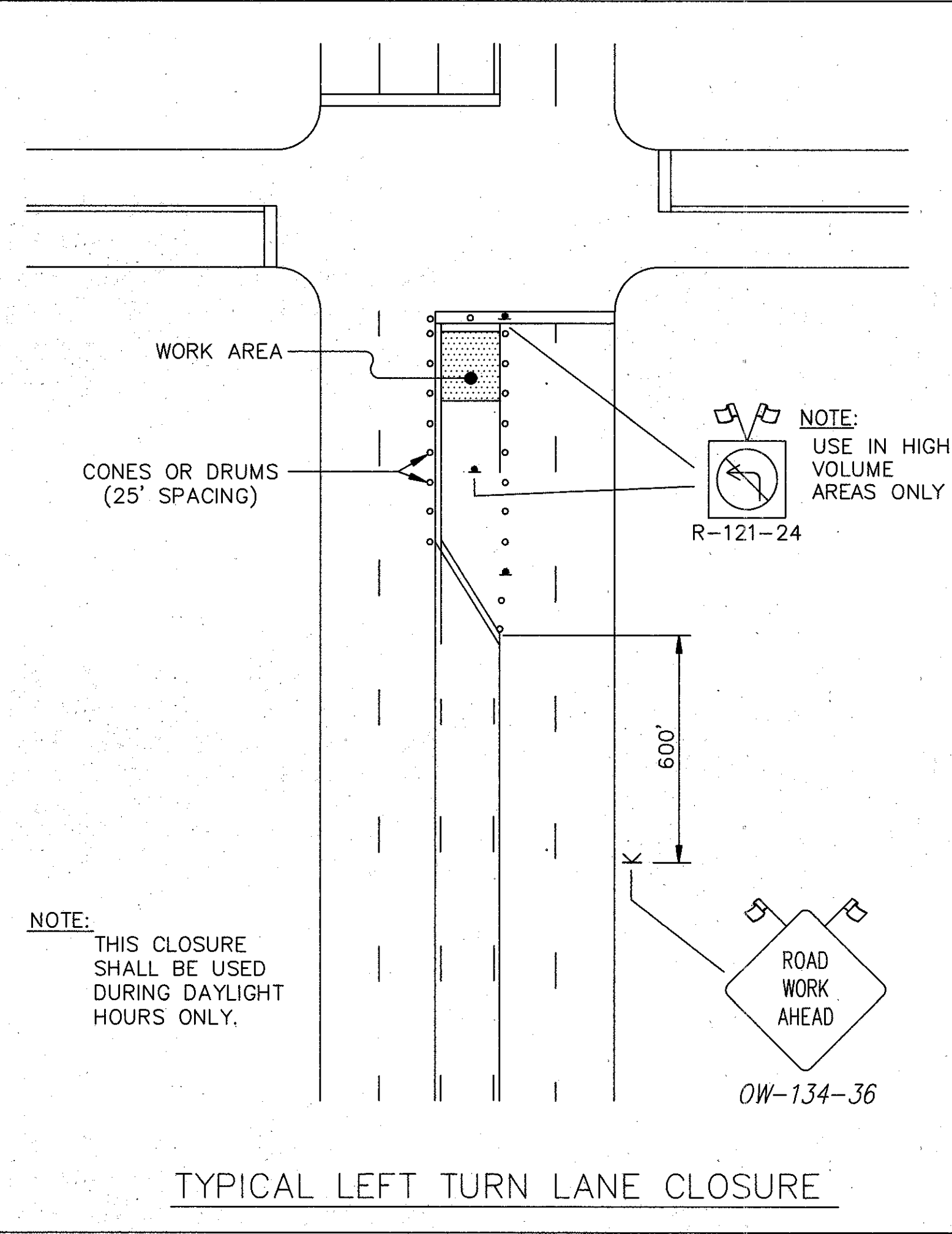
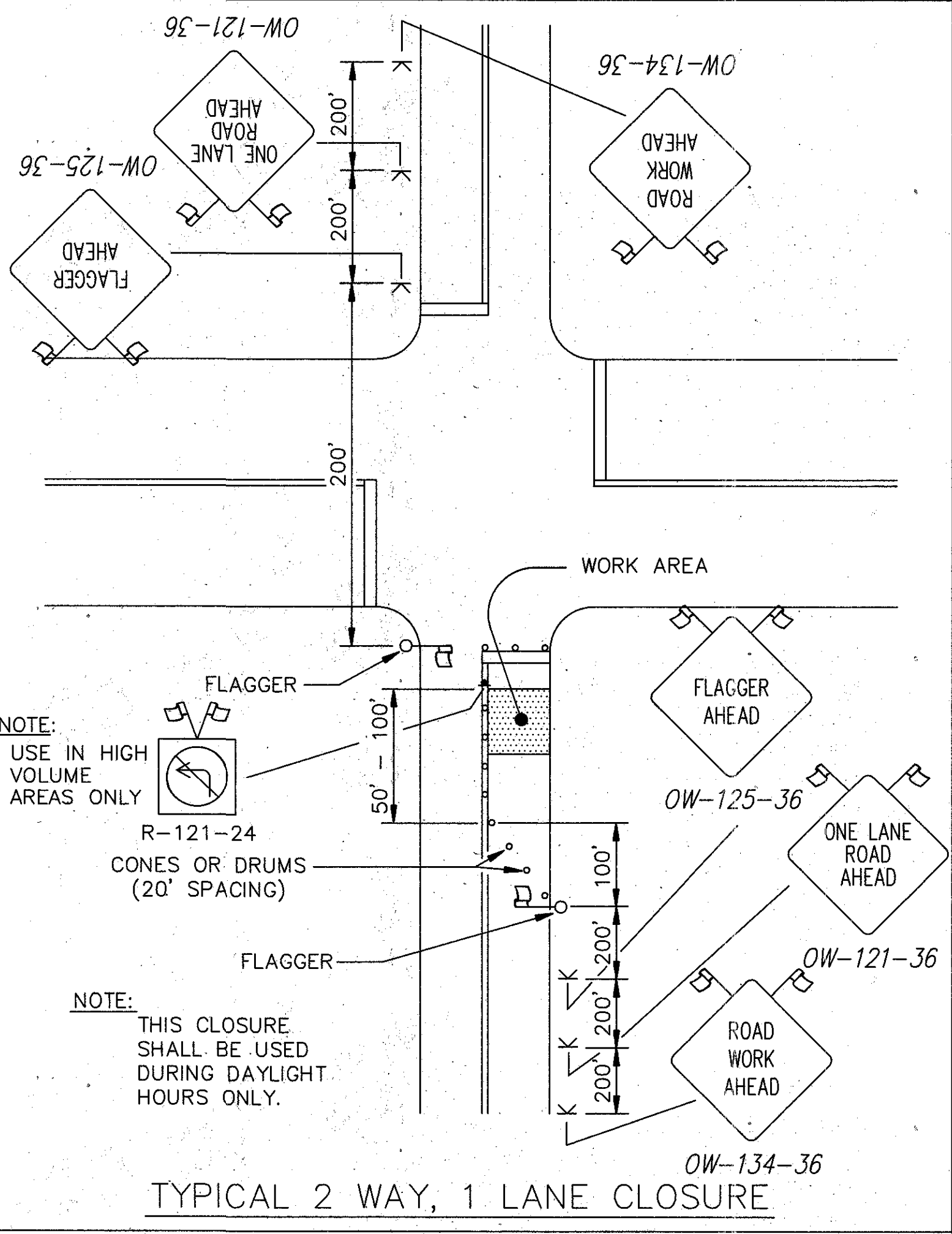
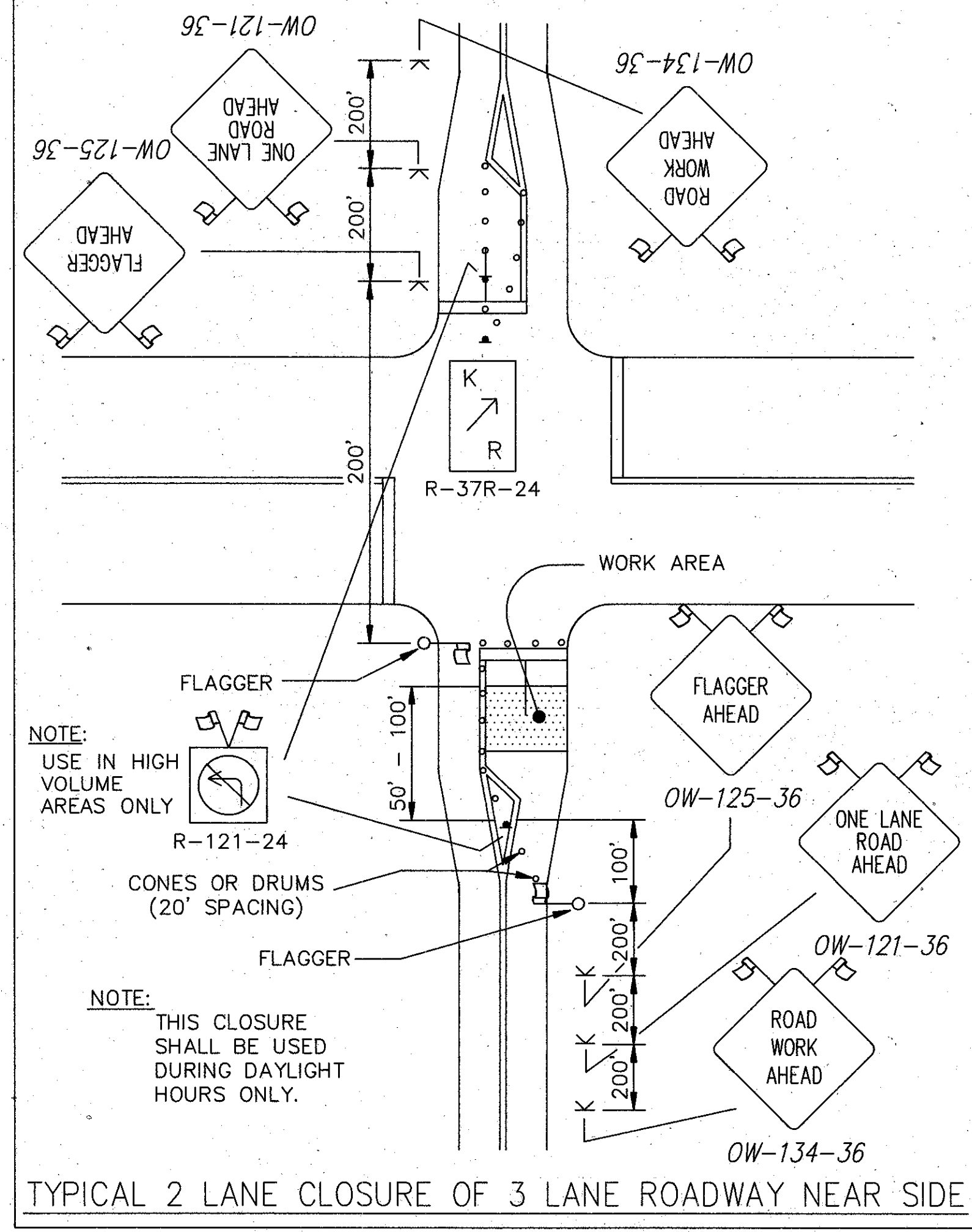
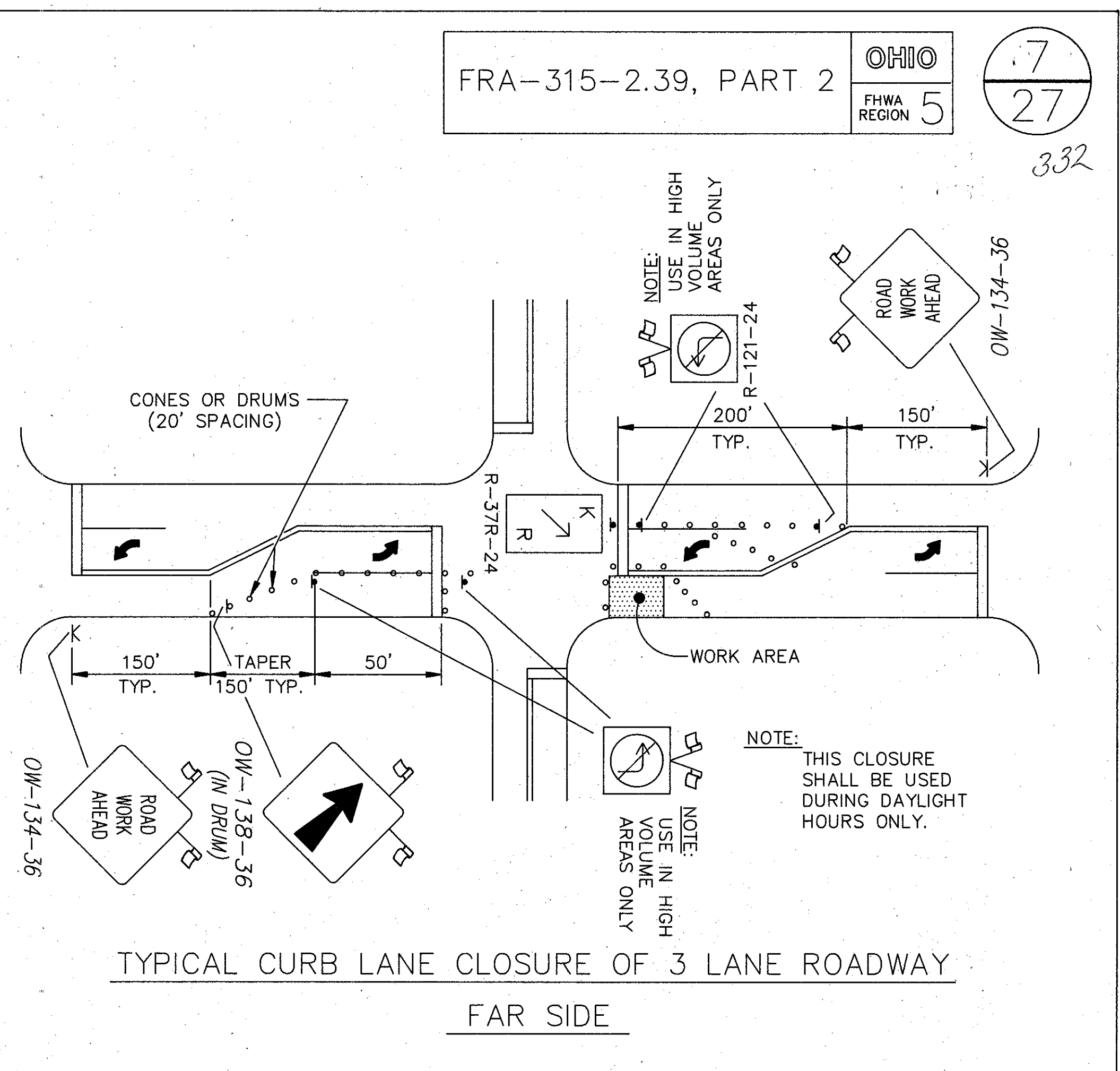
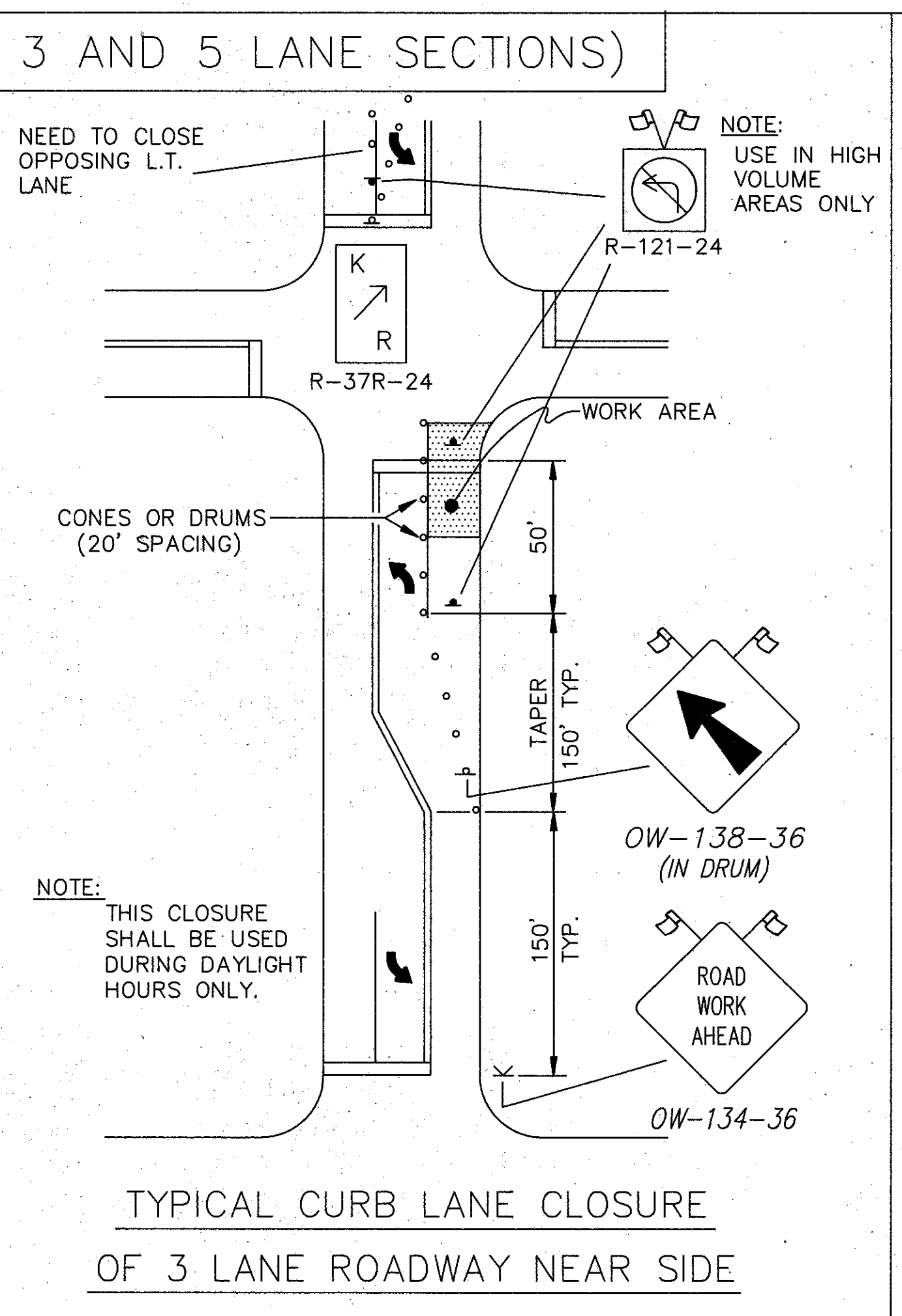
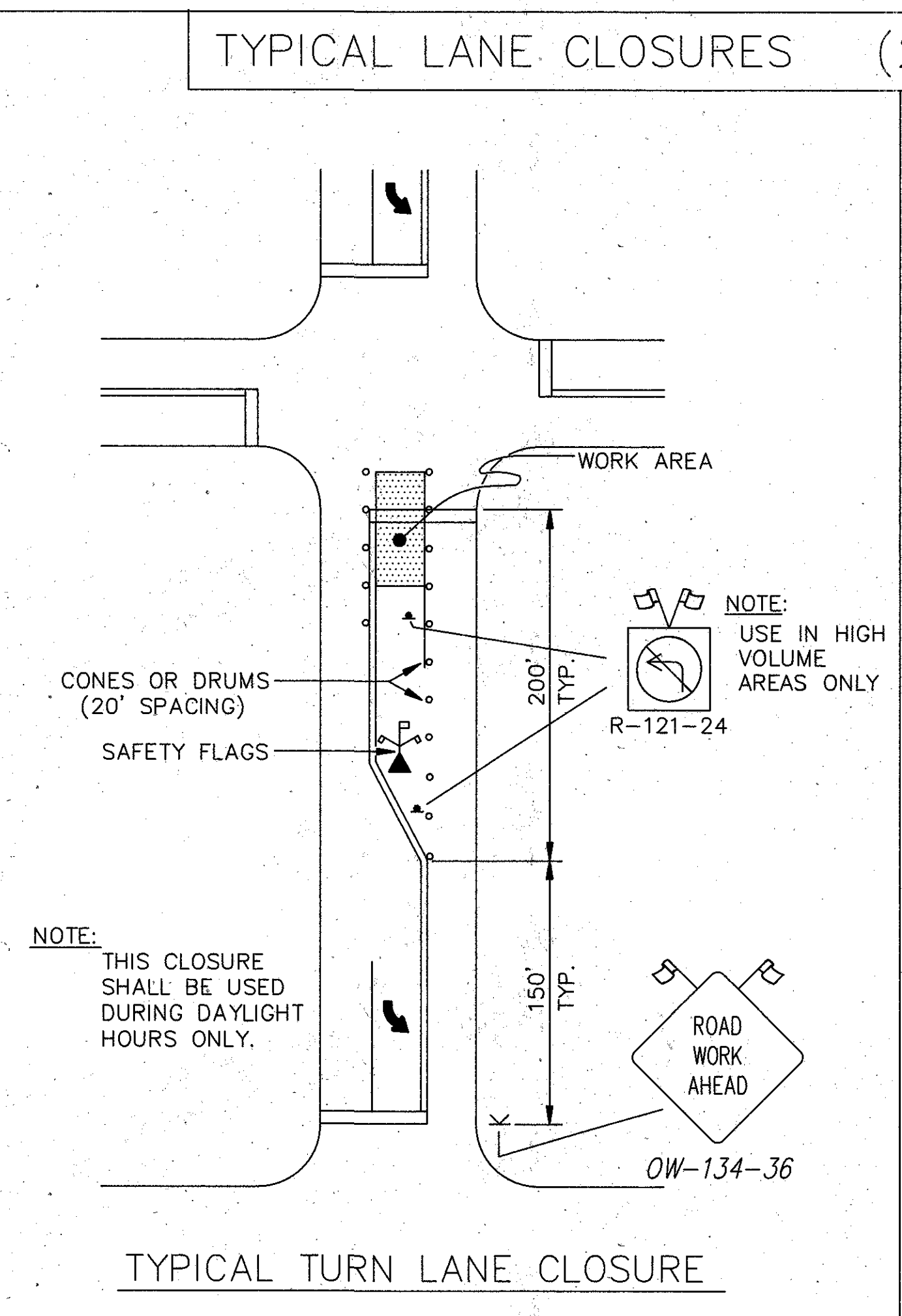
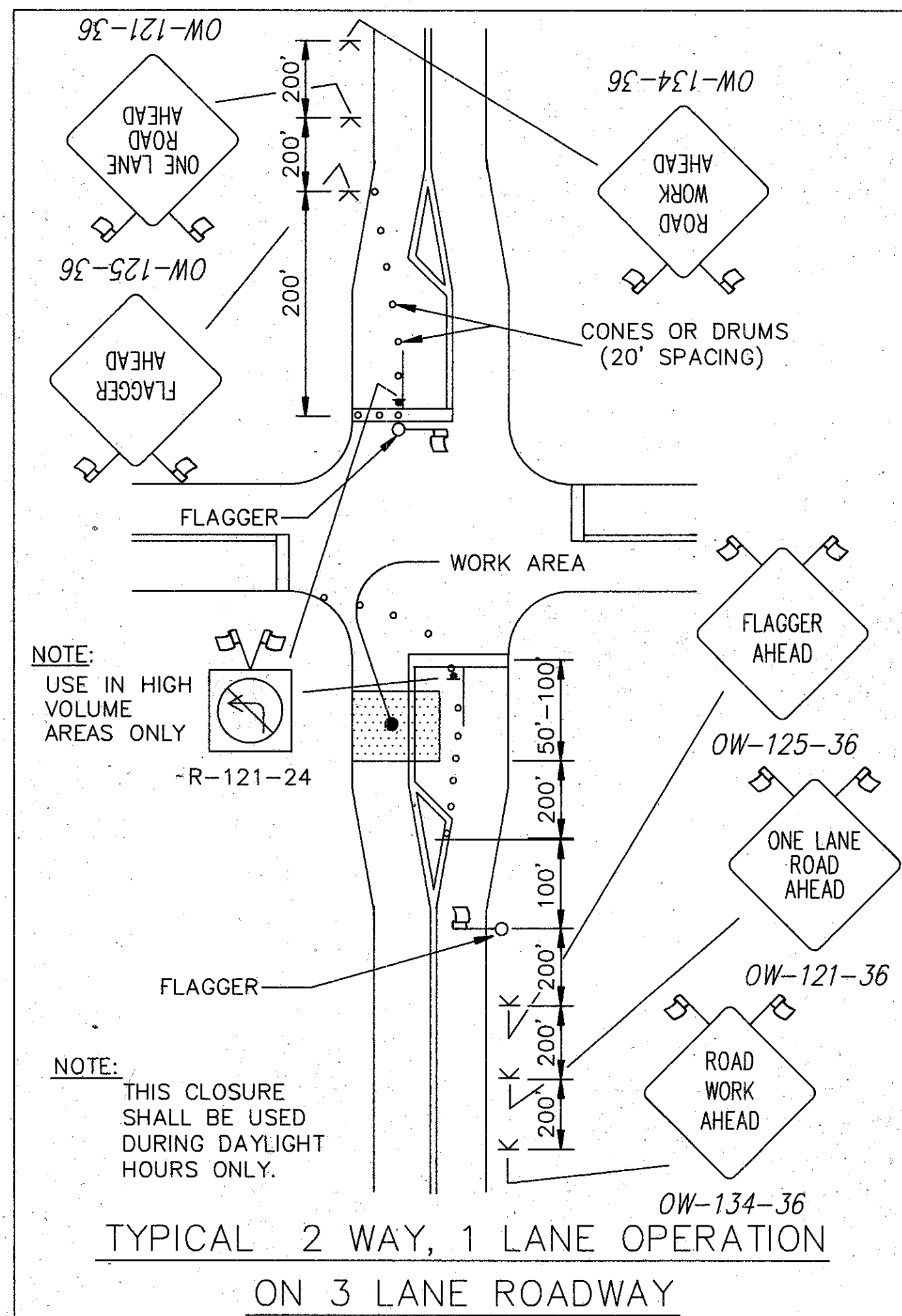
PUSH BUTTON & SIGNS

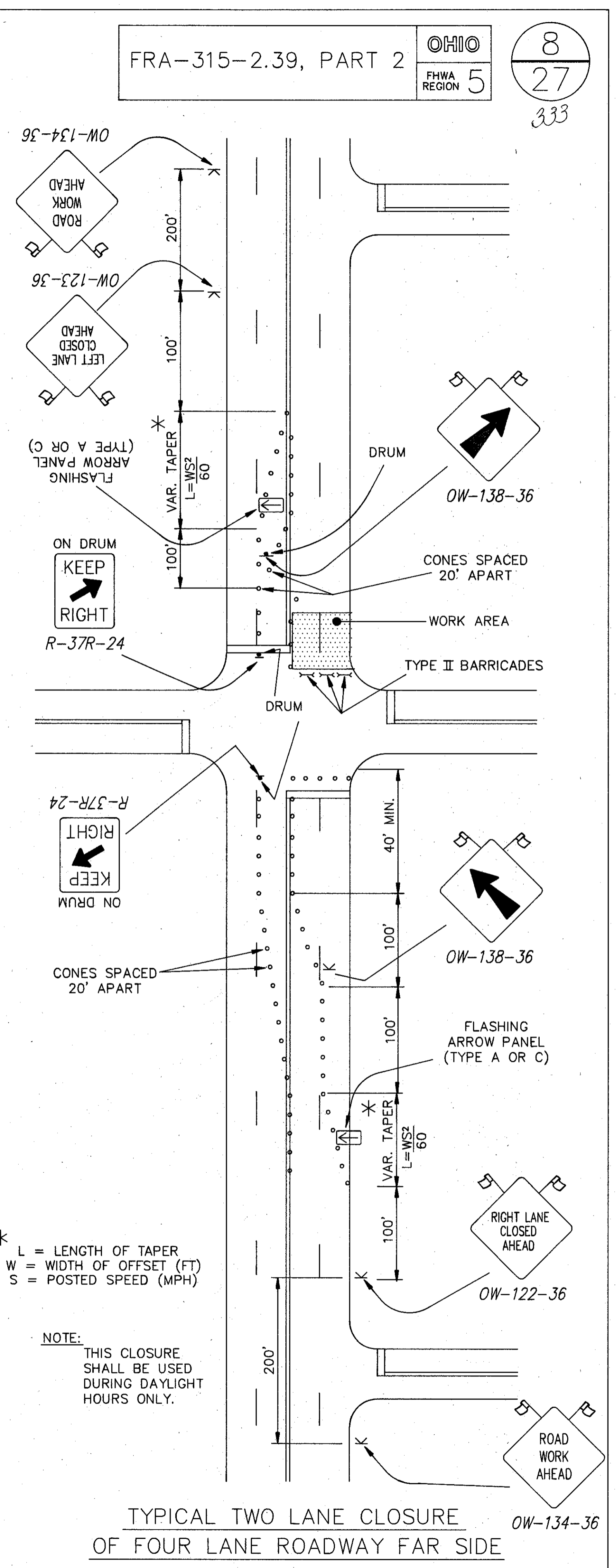
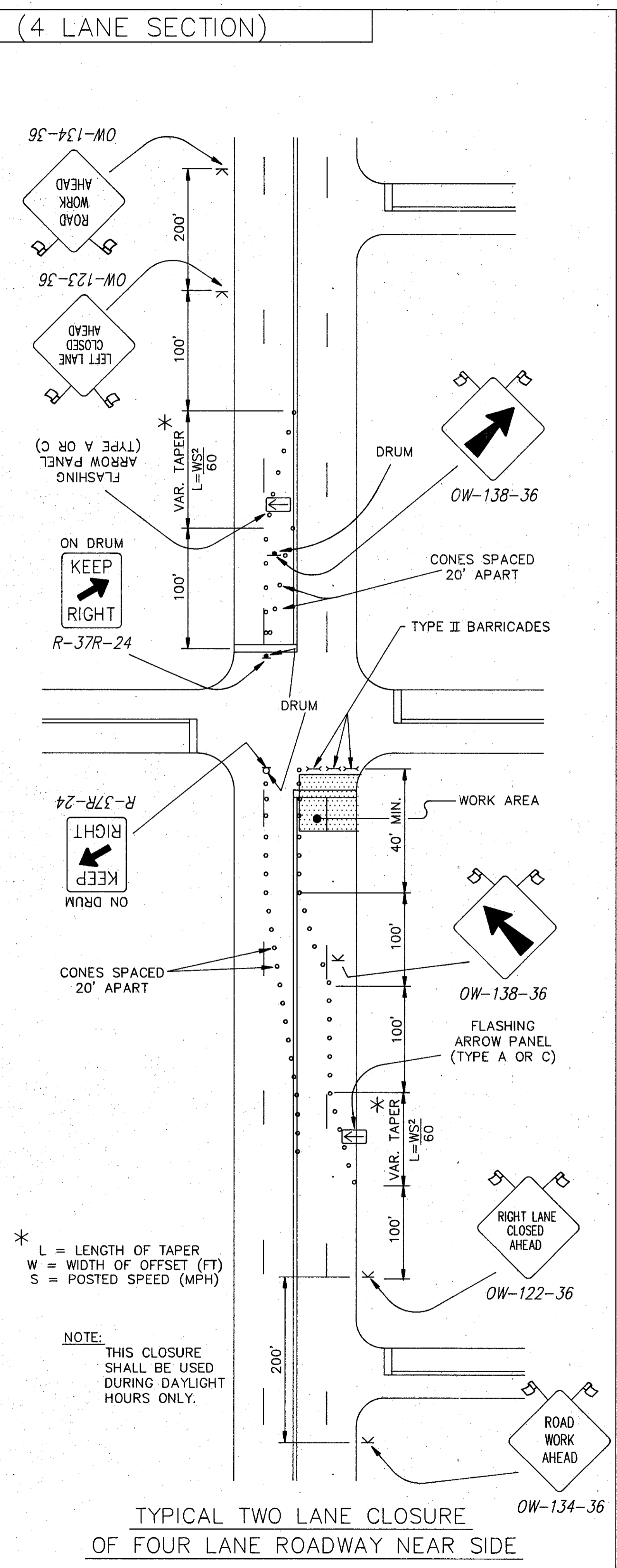
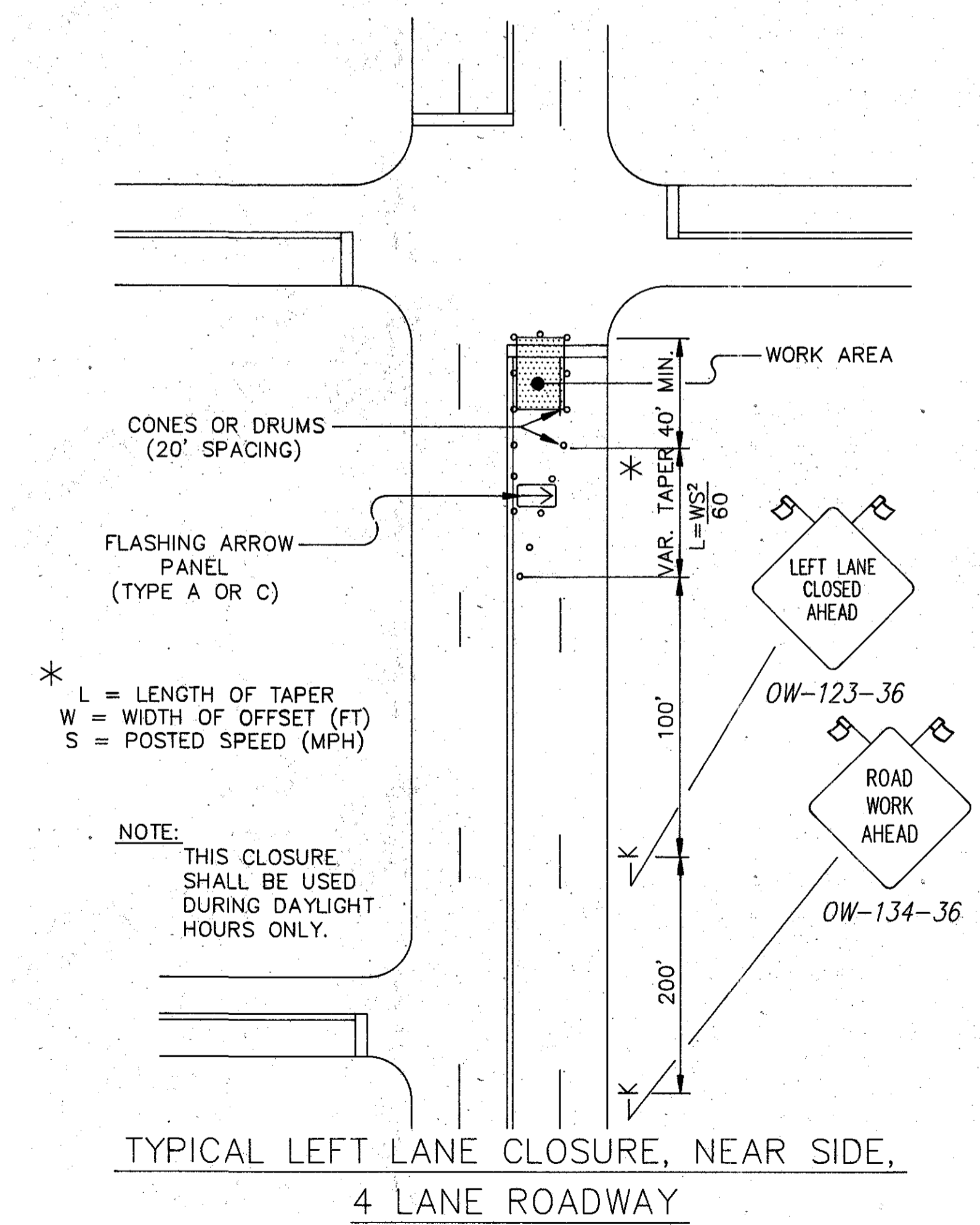
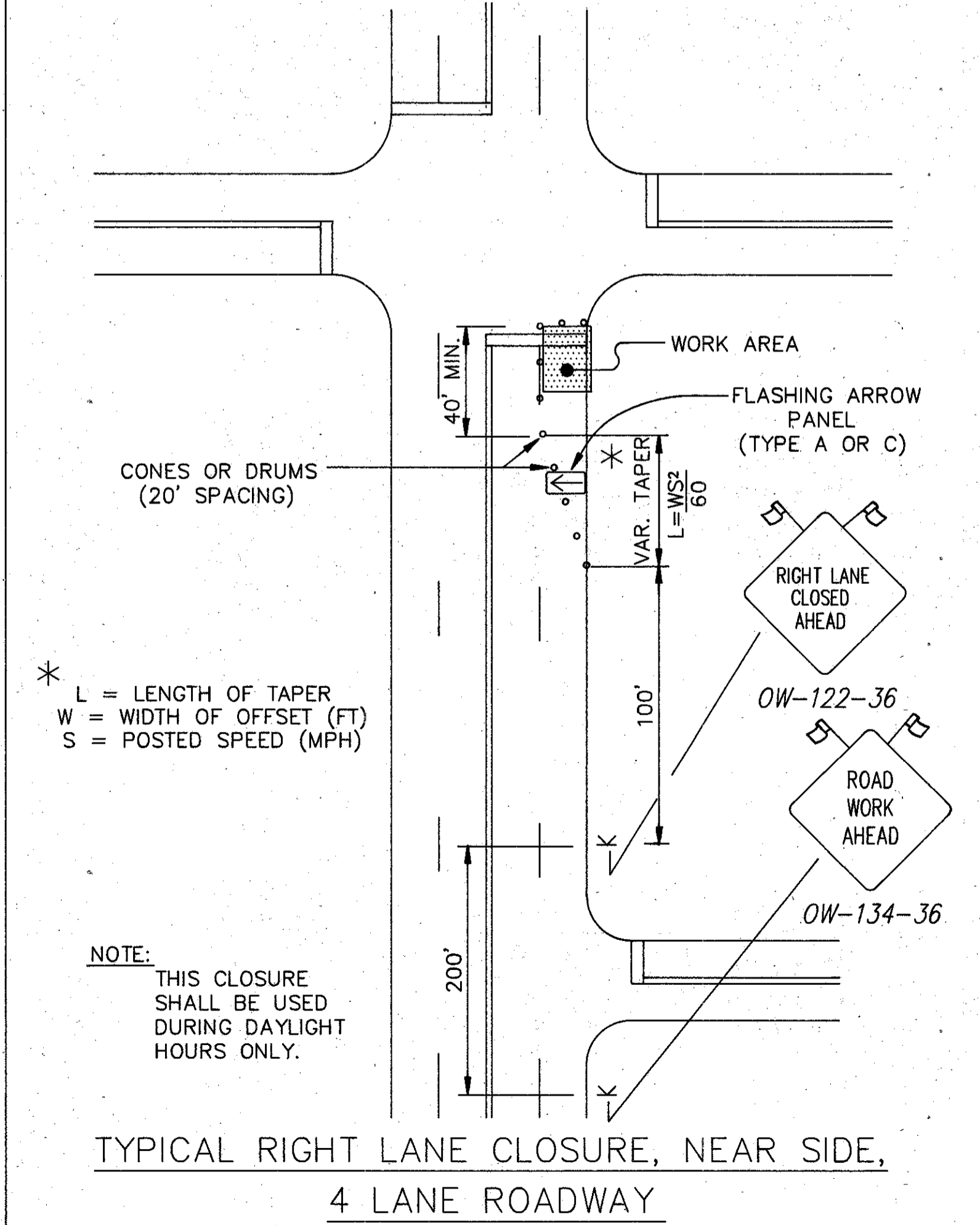
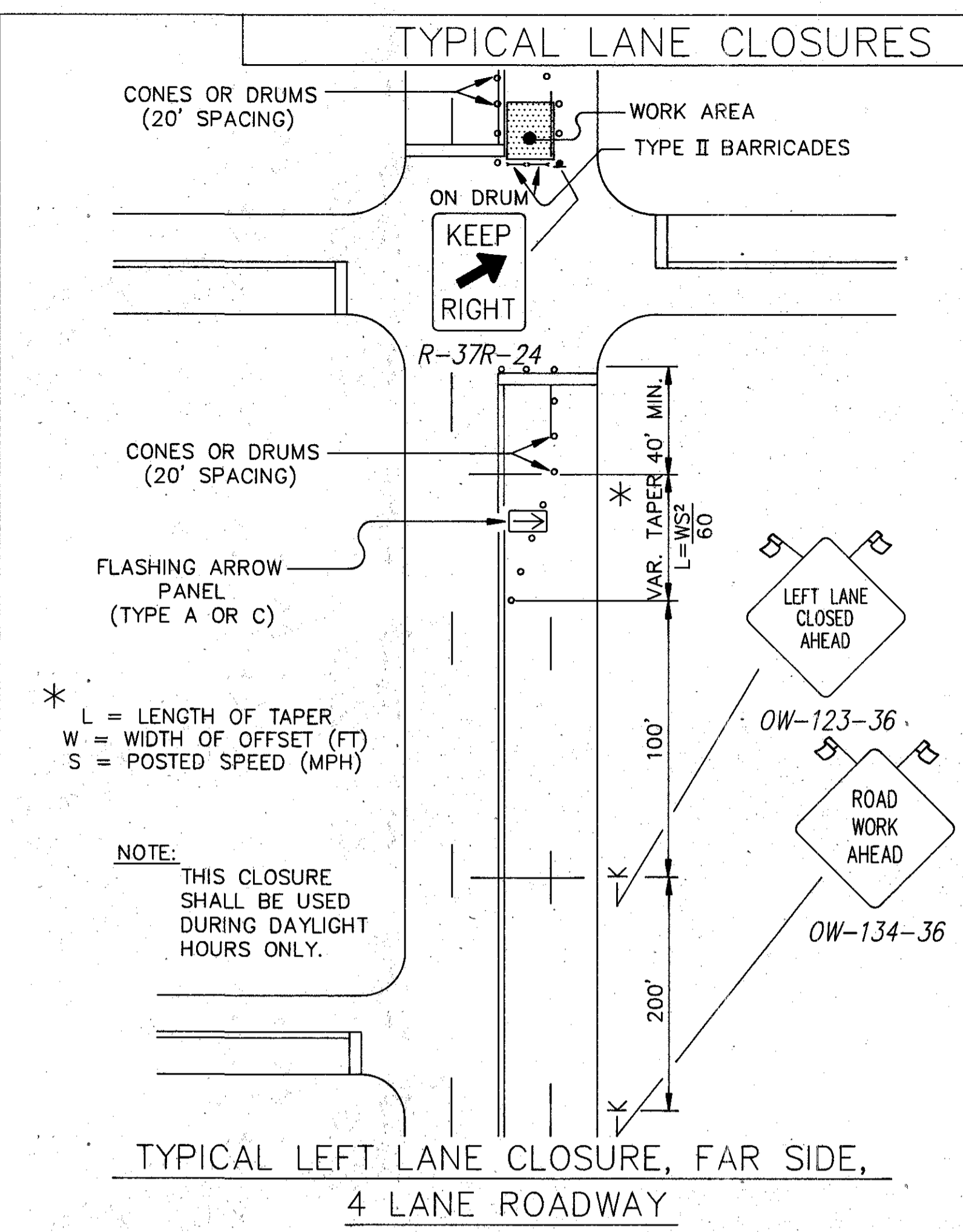
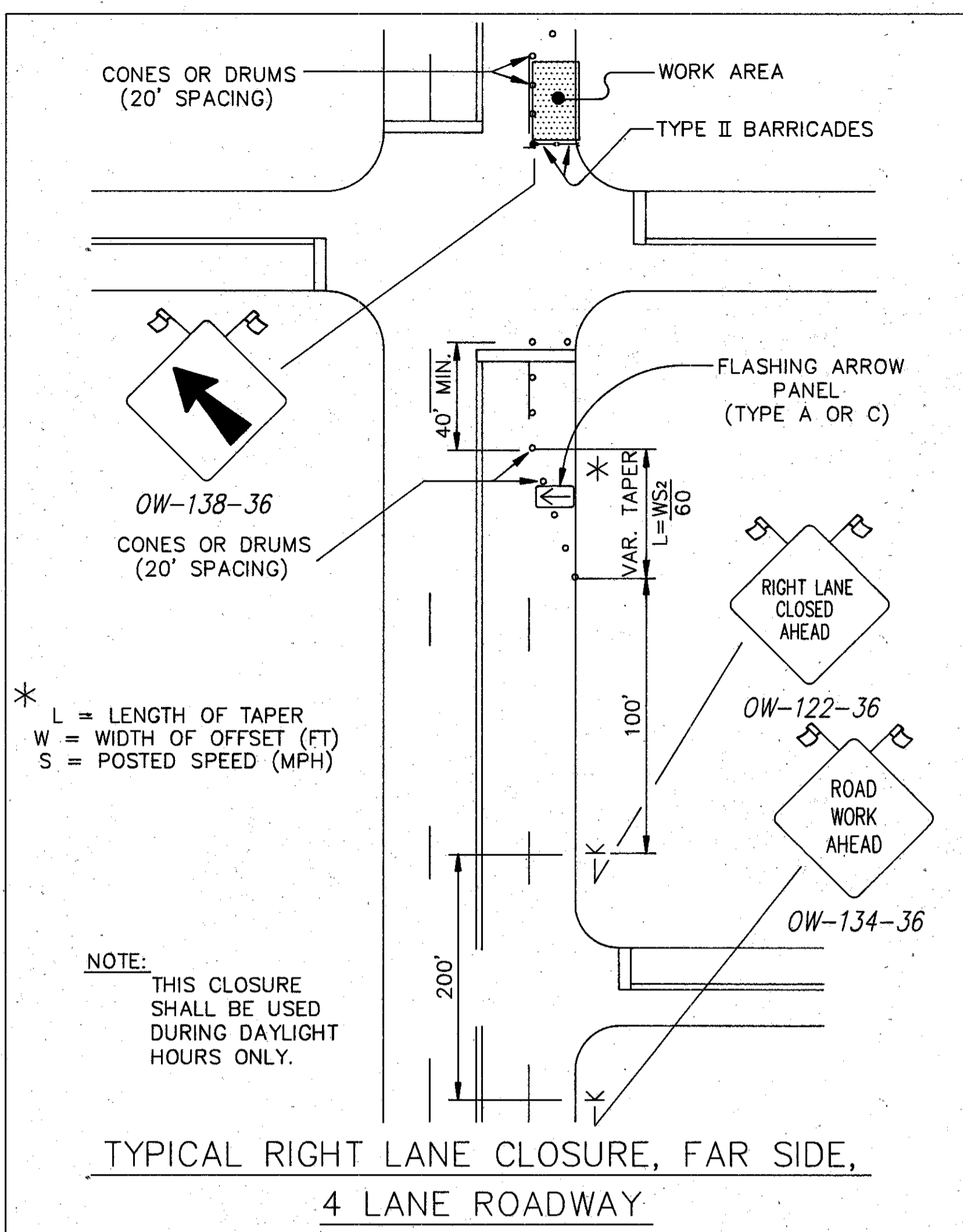
(ALSO SEE SECTION 5.2.3 OF SPECIAL SPECIFICATIONS)



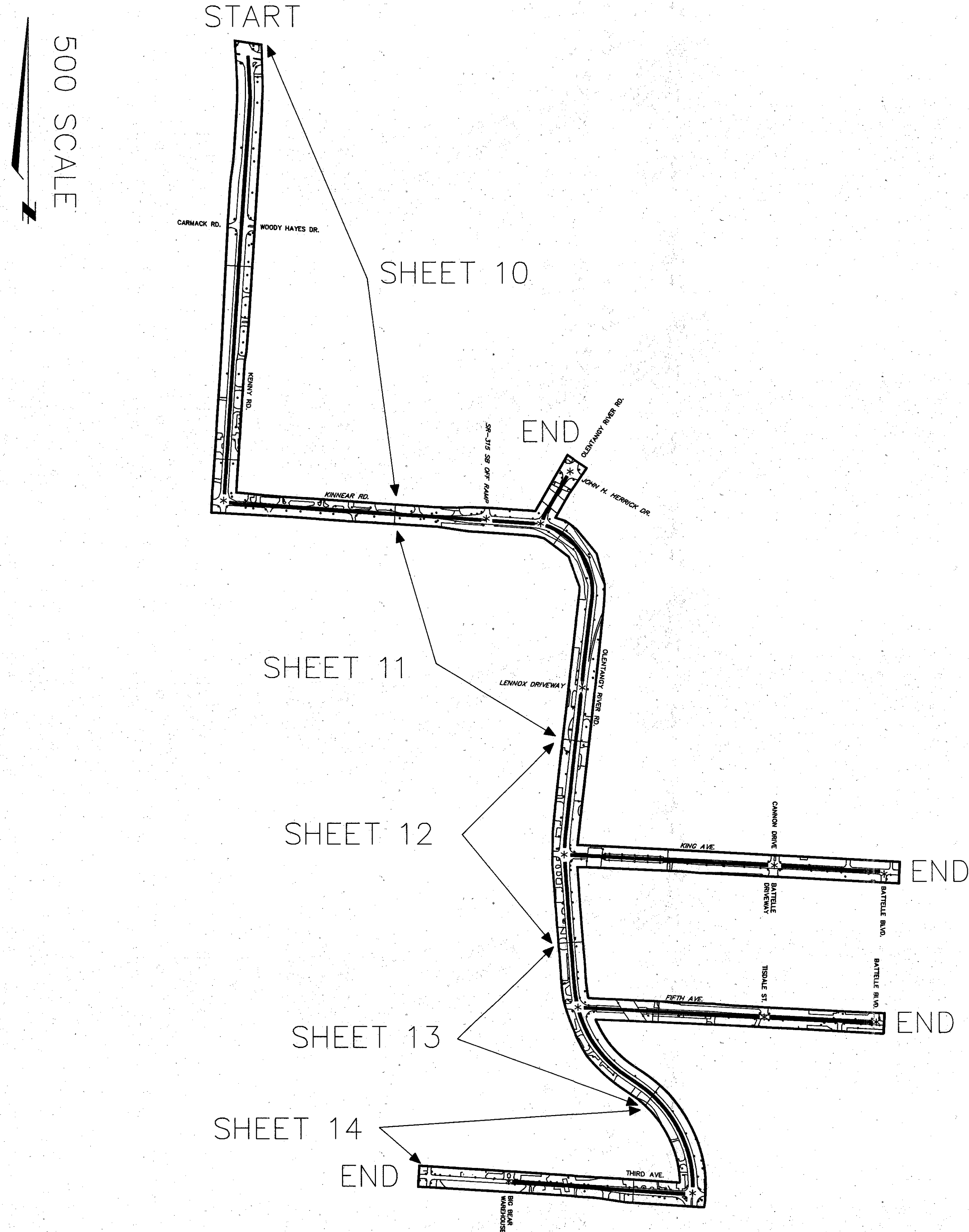
NOTES:

- 1) LOOP WIRES MAY EXIT AT ANY POINT ON THE LOOP AND SHALL BE UNIFORMLY TWISTED AT 3 TO 5 TURNS PER FOOT.
- 2) ANY DIRECTIONAL CHANGE FOR THE LEAD-IN OR HOMERUN CABLE MADE IN A SAW SLOT SHALL BE MADE THROUGH A 1 1/4" DRILLED HOLE. ALL SHARP EDGES AT TURNING POINTS OF THE LOOP, LOOP LEAD-IN OR MAGNETOMETER HOME RUN CABLE SHALL BE CHAMFERED OR CHISELED OUT.
- 3) THE LOOP POLARITY SHALL BE IDENTIFIED BY MEANS OF A PLASTIC OR BRASS TAG PLACED ON ONE OF THE LOOP WIRES AT THE SPLICE WHICH IS CONNECTED TO THE BLACK INSULATED CONDUCTOR IN THE LOOP DETECTOR LEAD-IN CABLE AND AGAIN AT THE CONTROL BOX. POLARITY WILL BE DESIGNATED AS SHOWN IN STANDARD CONSTRUCTION DRAWING TC-82.10. THE TAG SHALL IDENTIFY THE LOOP AS NBLT, EB, SBRT, ETC.
- 4) UPON A 10 DAY NOTIFICATION, CITY FORCES SHALL MARK THE LOCATION OF EACH LOOP AND MAGNETOMETER PROBE ON THE PAVEMENT. CITY FORCES SHALL ALSO MARK LOCATIONS FOR LEAD-INS, PULLBOXES, CONDUIT AND OTHER ITEMS NECESSARY TO CONNECT EACH SENSOR TO ITS LOCAL INTERSECTION CONTROLLER. THE SAW SLOT DEPTH SHALL BE INCREASED TO ENSURE ADEQUATE WIRE EMBEDMENT, IF NEEDED.



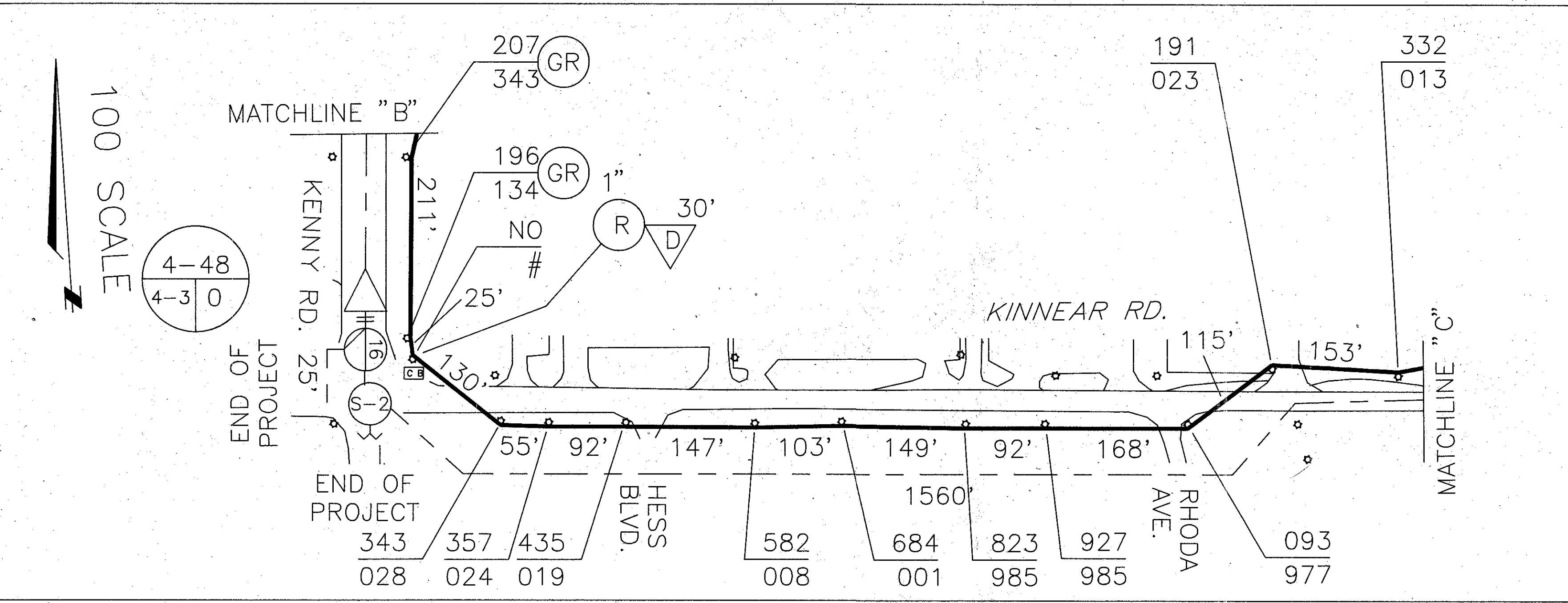
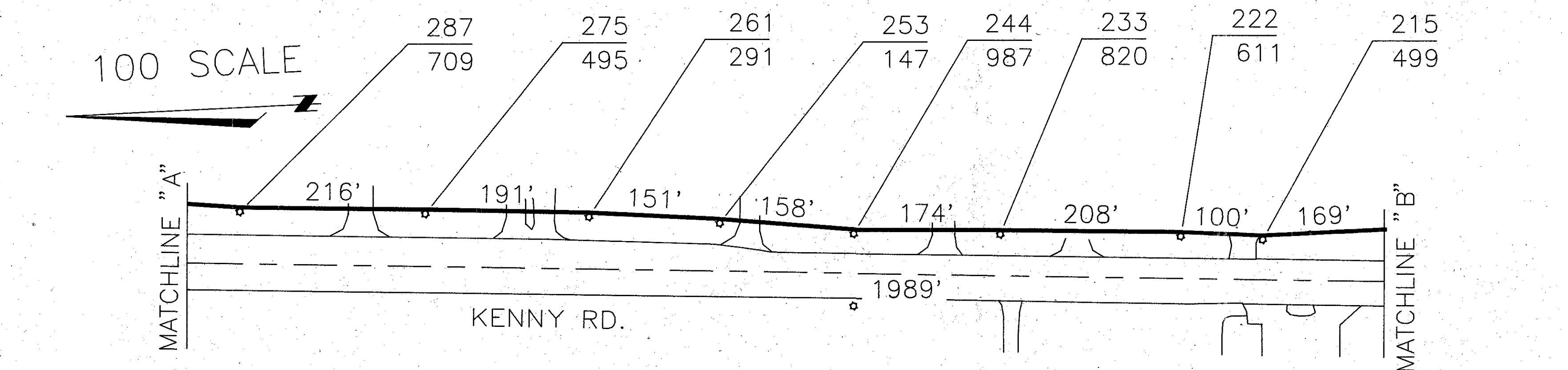
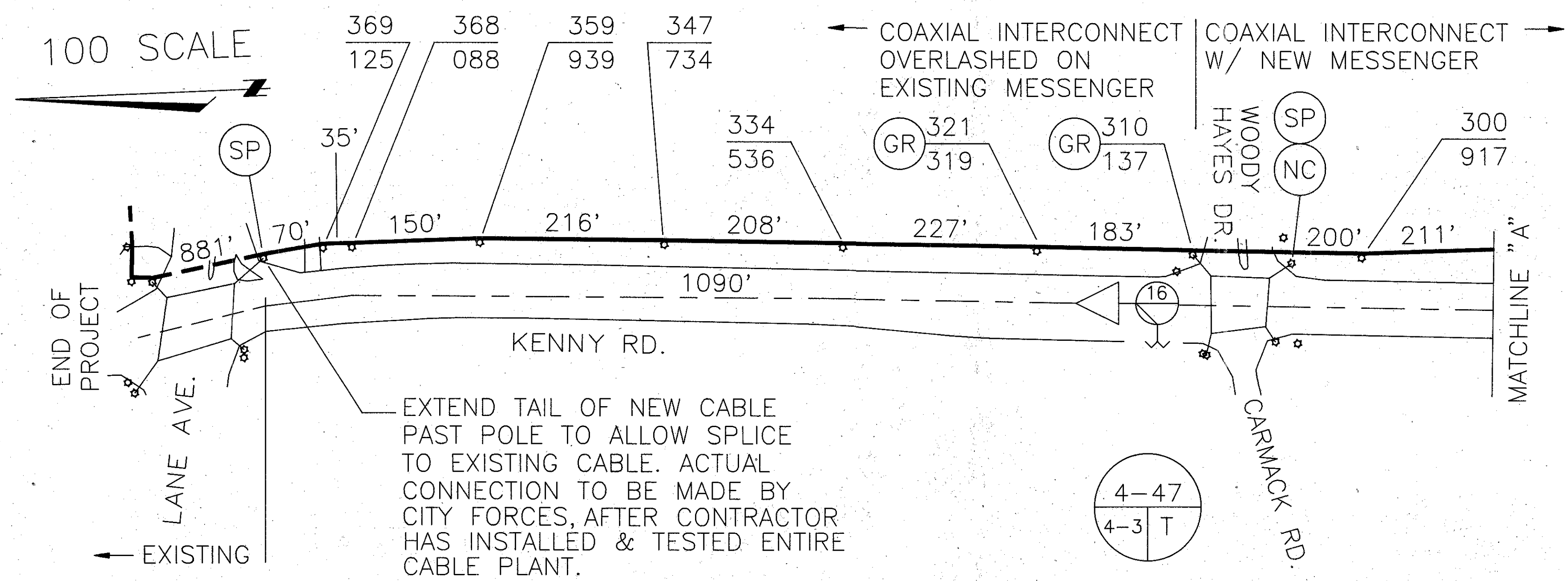


\* SIGNALIZED INTERSECTION  
 — INTERCONNECT CABLE ROUTE



LEGEND		
INTERSECTION DETAIL & INTERCONNECT SHEETS		
( ) = EXISTING ITEM	(CD) CONDUIT (STEEL, 713.04)	(TG) TREE GUARD
(BS) BRIDGE STANDOFF, SEE DETAIL "E", SHEET 4	(TO) TIEOFF, SEE DETAIL "C", SHEET 4	(PC) POLE CLAMP
(SC) SPAN CONNECTION, SEE DETAIL "A", SHEET 4	(PB) PULL BOX (PLASTIC OR CONCRETE)	(DG) DOWN GUY
(R) CONDUIT RISER, SEE DETAIL "B", SHEET 4	(SO) STANDOFF, SEE DETAIL "D", SHEET 4	(DL) DETECTOR LEAD-IN
(NC) NO CONTACT	(WH) WEATHERHEAD ON STEEL POLE	(D) DROP CABLE
(SW) WALK REMOVED & 4" CONCRETE SIDEWALK	(P) PEDESTRIAN PUSH BUTTON	(WP) WOOD POLE TO BE INSTALLED
(GR) GROUND ROD	(SP) SIGNAL POLE	### COLUMBUS SOUTHERN POLE COORDINATES LAST 3 DIGITS ONLY
(LP) STREET LIGHT POLE	--- 1/2" COAXIAL CABLE	--- 3/4" COAXIAL CABLE
(CB) CONDUIT BANK, TWO 3" PLASTIC, ENCASED		

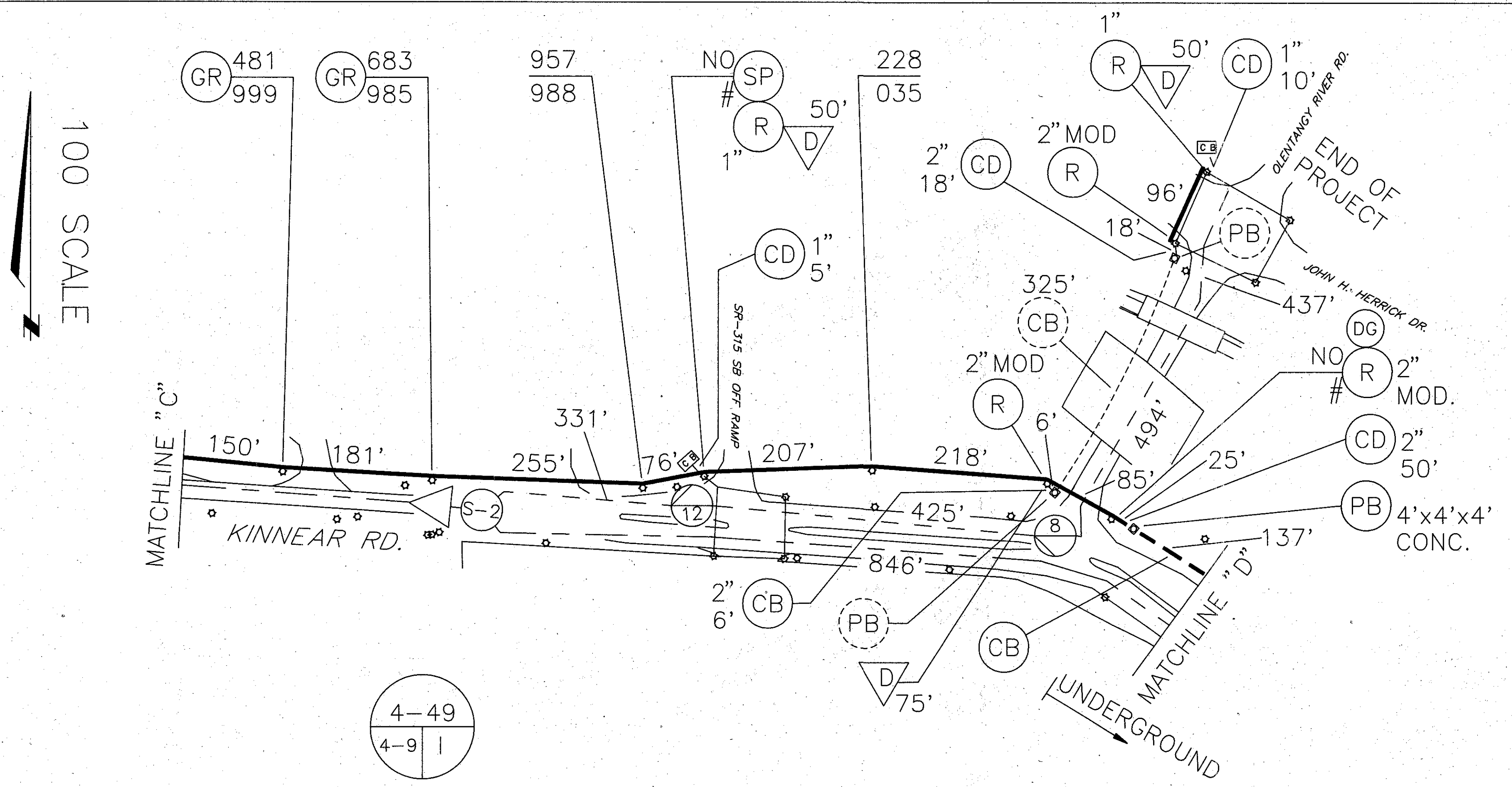




FOR LEGEND, SEE CABLE SCHEMATIC SHEET 9

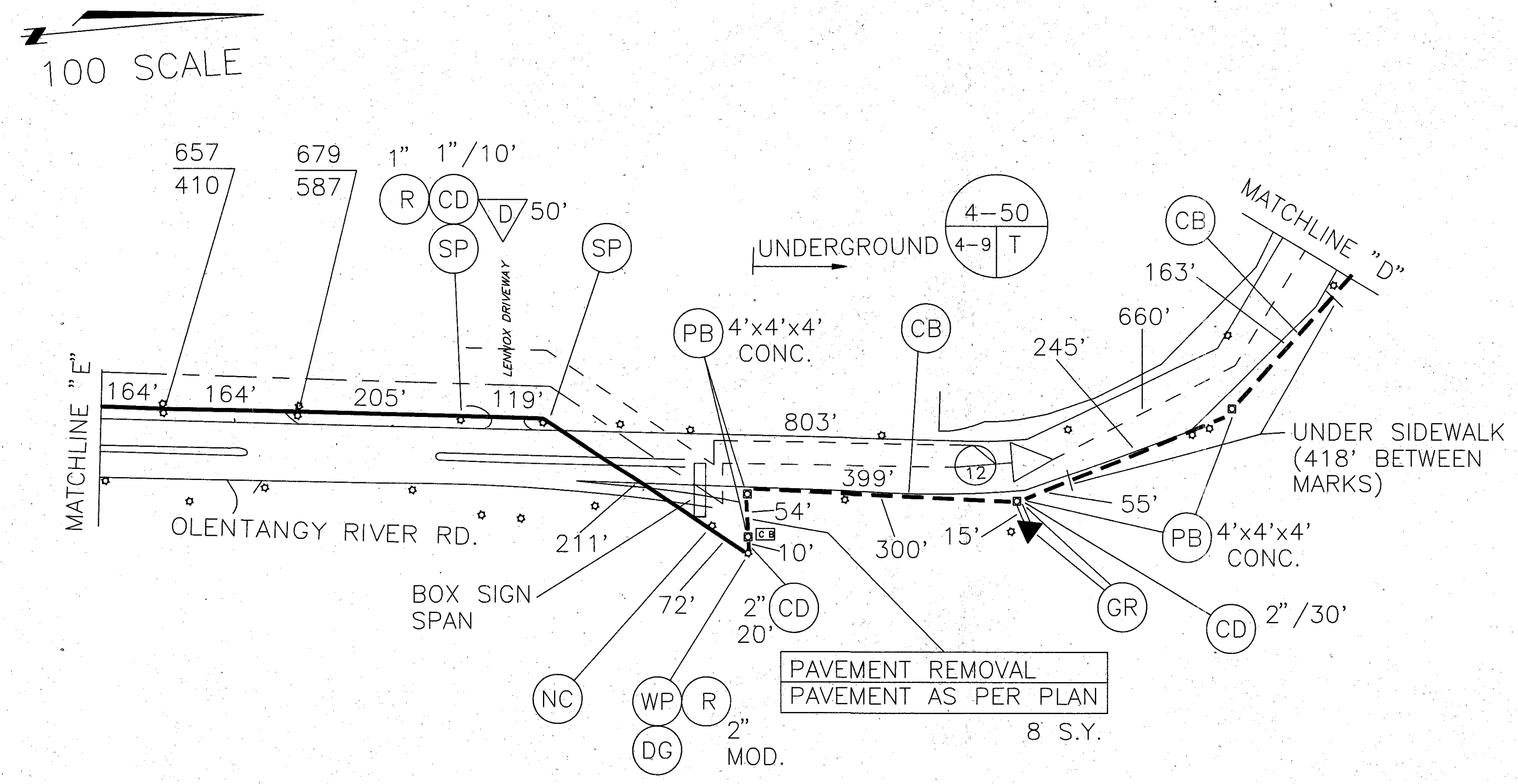
ITEM	QUANT	UNIT	DESCRIPTION
202		SY	PAVEMENT REMOVED
202		SF	WALK REMOVED
253		SY	PAVEMENT REPAIR, AS PER PLAN
253		SY	MISC. PAVEMENT REPAIR: DRIVEWAY, AS PER PLAN
608		SF	4" CONCRETE WALK
608		SF	4" CONCRETE WALK, BOMACRON STAMPED, AS PER PLAN
608		SF	4" CONCRETE WALK BASE, REPLACING BRICKS, AS PER PLAN
625		LF	CONDUIT, 1", 713.04
625		LF	CONDUIT, 2", 713.04
625		LF	CONDUIT, 3", 713.04
625		LF	CONDUIT MISC.: CONDUIT BANK, 713.07, ENCASED
625		LF	TRENCH
625		LF	PULL BOX, 713.081, 10"X14"
625		EA	PULL BOX, CONCRETE, 4'x4'x4', AS PER PLAN
625	4	EA	GROUND ROD
632		LF	LOOP DETECTOR PAVEMENT CUTTING
632		LF	MESSENGER WIRE, 7 STRAND, 0.25" DIAMETER WITH ACCESSORIES, AS PER PLAN
632	3500	LF	INTERCONNECT CABLE, MISC.: COAXIAL, .750" P3 TRUNK, W/MESSENGER AND ACCESSORIES
632	1200	LF	INTERCONNECT CABLE, MISC.: COAXIAL, .750" P3 TRUNK, OVERLASHED ON EXISTING INTERCONNECT
632		LF	INTERCONNECT CABLE, MISC.: COAXIAL, .500" P3 UNDERGROUND TRUNK
632	30	LF	INTERCONNECT CABLE, MISC.: COAXIAL, .500" P3 FEEDER
632		LF	INTERCONNECT CABLE, MISC.: COAXIAL, .500" P3 FEEDER, W/MESSENGER AND ACCESSORIES
632	35	LF	INTERCONNECT CABLE, MISC.: COAXIAL, RG-6 DROP
632		LF	LOOP DETECTOR WIRE, TYPE "E"
632		LF	LOOP DETECTOR LEAD-IN CABLE
632	1	EA	CONDUIT RISER, 1" DIAMETER, 713.04
632		EA	CONDUIT RISER, 2" DIAMETER, 713.04
632		EA	CONDUIT RISER, 2" DIAMETER, AS PER PLAN
632		EA	WOOD POLE, AS PER PLAN
632		EA	DOWN GUY
632		EA	SIGNALIZATION, MISC.: STANDOFF
632		EA	SIGNALIZATION, MISC.: BRIDGE STANDOFF
632		EA	SIGNALIZATION, MISC.: AMPLIFIER CABINET, TYPE I, PEDESTAL MOUNT
632		EA	SIGNALIZATION, MISC.: PILOT GENERATOR
632		EA	SIGNALIZATION, MISC.: CATV POWER SUPPLY
632	2	EA	SIGNALIZATION, MISC.: BI-DIRECTIONAL AMPLIFIER, AERIAL-MOUNT
632		EA	SIGNALIZATION, MISC.: BI-DIRECTIONAL AMPLIFIER, CABINET-MOUNT
632	2	EA	SIGNALIZATION, MISC.: DIRECTIONAL COUPLER, 16 DB
632		EA	SIGNALIZATION, MISC.: DIRECTIONAL COUPLER, 12 DB
632		EA	SIGNALIZATION, MISC.: DIRECTIONAL COUPLER, 8 DB
632	1	EA	SIGNALIZATION, MISC.: SPLITTER, TWO WAY
632		EA	SIGNALIZATION, MISC.: SPLITTER, THREE WAY
632		LF	SIGNALIZATION, MISC.: DELASHING AND RELASHING OF CABLE
632		LF	SIGNALIZATION, MISC.: TREE GUARD

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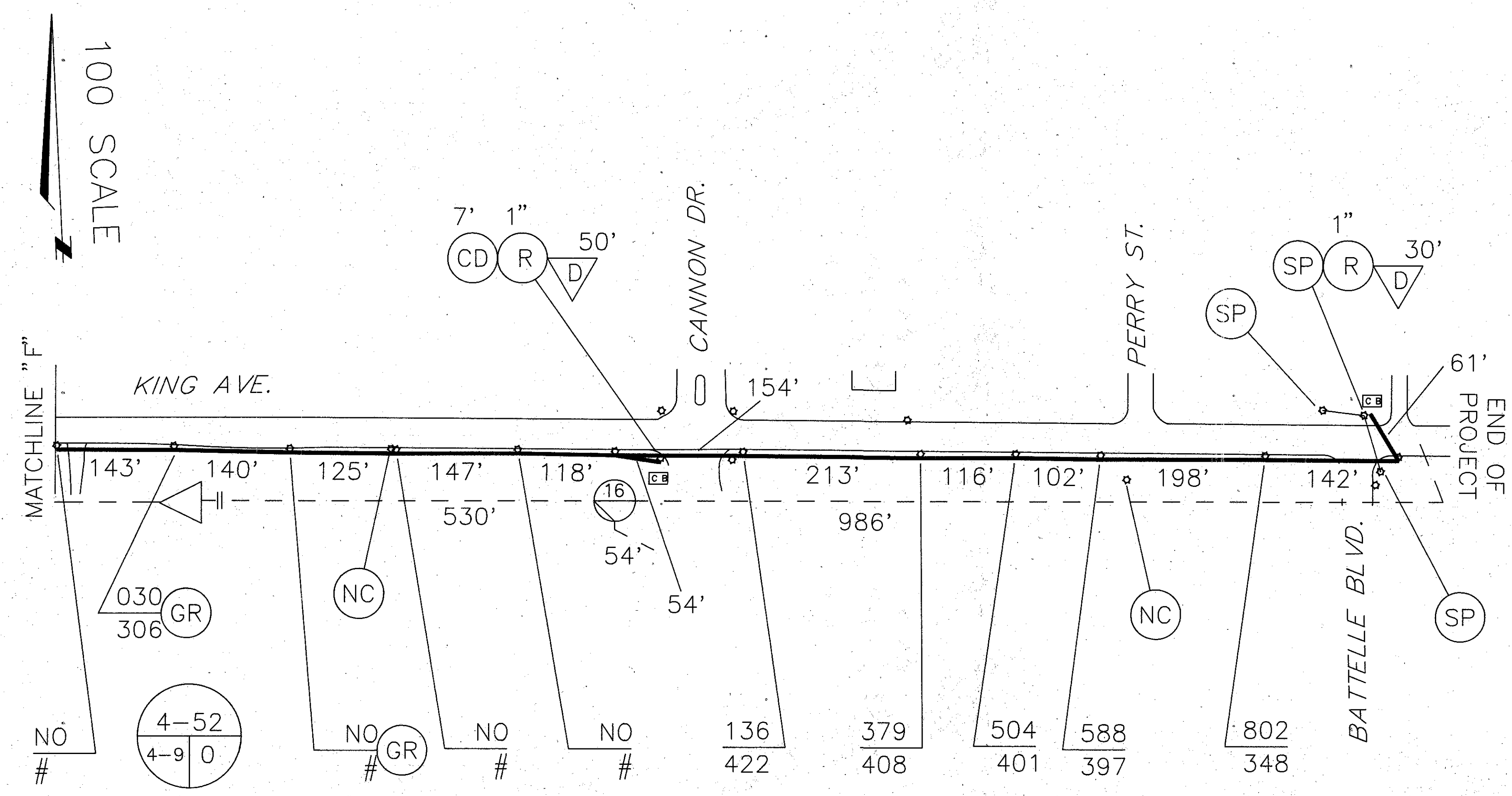


FOR LEGEND, SEE CABLE SCHEMATIC SHEET 9

ITEM	QUANT	UNIT	DESCRIPTION
202	8	SY	PAVEMENT REMOVED
202	2300	SF	WALK REMOVED
253	8	SY	PAVEMENT REPAIR, AS PER PLAN
253		SY	MISC. PAVEMENT REPAIR: DRIVEWAY, AS PER PLAN
608	2300	SF	4" CONCRETE WALK
608		SF	4" CONCRETE WALK, BOMACRON STAMPED, AS PER PLAN
608		SF	4" CONCRETE WALK BASE, REPLACING BRICKS, AS PER PLAN
625	25	LF	CONDUIT, 1", 713.04
625	124	LF	CONDUIT, 2", 713.04
625		LF	CONDUIT, 3", 713.04
625	1000	LF	CONDUIT MISC.: CONDUIT BANK, 713.07, ENCASED
625	105	LF	TRENCH
625		LF	PULL BOX, 713.081, 10"X14"
625	5	EA	PULL BOX, CONCRETE, 4'X4'X4'
625	3	EA	GROUND ROD
632		LF	LOOP DETECTOR PAVEMENT CUTTING
632		LF	MESSENGER WIRE, 7 STRAND, 0.25" DIAMETER WITH ACCESSORIES, AS PER PLAN
632	2300	LF	INTERCONNECT CABLE, MISC.: COAXIAL, .750" P3 TRUNK, W/MESSENGER AND ACCESSORIES
632		LF	INTERCONNECT CABLE, MISC.: COAXIAL, .750" P3 TRUNK, OVERLASHED ON EXISTING INTERCONNECT
632	1990	LF	INTERCONNECT CABLE, MISC.: COAXIAL, .500" P3 UNDERGROUND TRUNK
632	1275	LF	INTERCONNECT CABLE, MISC.: COAXIAL, .500" P3 FEEDER
632	110	LF	INTERCONNECT CABLE, MISC.: COAXIAL, .500" P3 FEEDER, W/MESSENGER AND ACCESSORIES
632	225	LF	INTERCONNECT CABLE, MISC.: COAXIAL, RG-6 DROP
632		LF	LOOP DETECTOR WIRE, TYPE "E"
632		LF	LOOP DETECTOR LEAD-IN CABLE
632		EA	CONDUIT RISER, 1" DIAMETER, 713.04
632		EA	CONDUIT RISER, 2" DIAMETER, 713.04
632		EA	CONDUIT RISER, 2" DIAMETER, AS PER PLAN
632	1	EA	WOOD POLE, AS PER PLAN
632	2	EA	DOWN GUY
632		EA	SIGNALIZATION, MISC.: STANDOFF
632		EA	SIGNALIZATION, MISC.: BRIDGE STANDOFF
632	1	EA	SIGNALIZATION, MISC.: AMPLIFIER CABINET, TYPE I, PEDESTAL MOUNT
632		EA	SIGNALIZATION, MISC.: PILOT GENERATOR
632		EA	SIGNALIZATION, MISC.: CATV POWER SUPPLY
632	1	EA	SIGNALIZATION, MISC.: BI-DIRECTIONAL AMPLIFIER, AERIAL-MOUNT
632	1	EA	SIGNALIZATION, MISC.: BI-DIRECTIONAL AMPLIFIER, CABINET-MOUNT
632		EA	SIGNALIZATION, MISC.: DIRECTIONAL COUPLER, 16 DB
632	2	EA	SIGNALIZATION, MISC.: DIRECTIONAL COUPLER, 12 DB
632	1	EA	SIGNALIZATION, MISC.: DIRECTIONAL COUPLER, 8 DB
632	1	EA	SIGNALIZATION, MISC.: SPLITTER, TWO WAY
632		EA	SIGNALIZATION, MISC.: SPLITTER, THREE WAY
632		LF	SIGNALIZATION, MISC.: DELASHING AND RELASHING OF CABLE
632		LF	SIGNALIZATION, MISC.: TREE GUARD

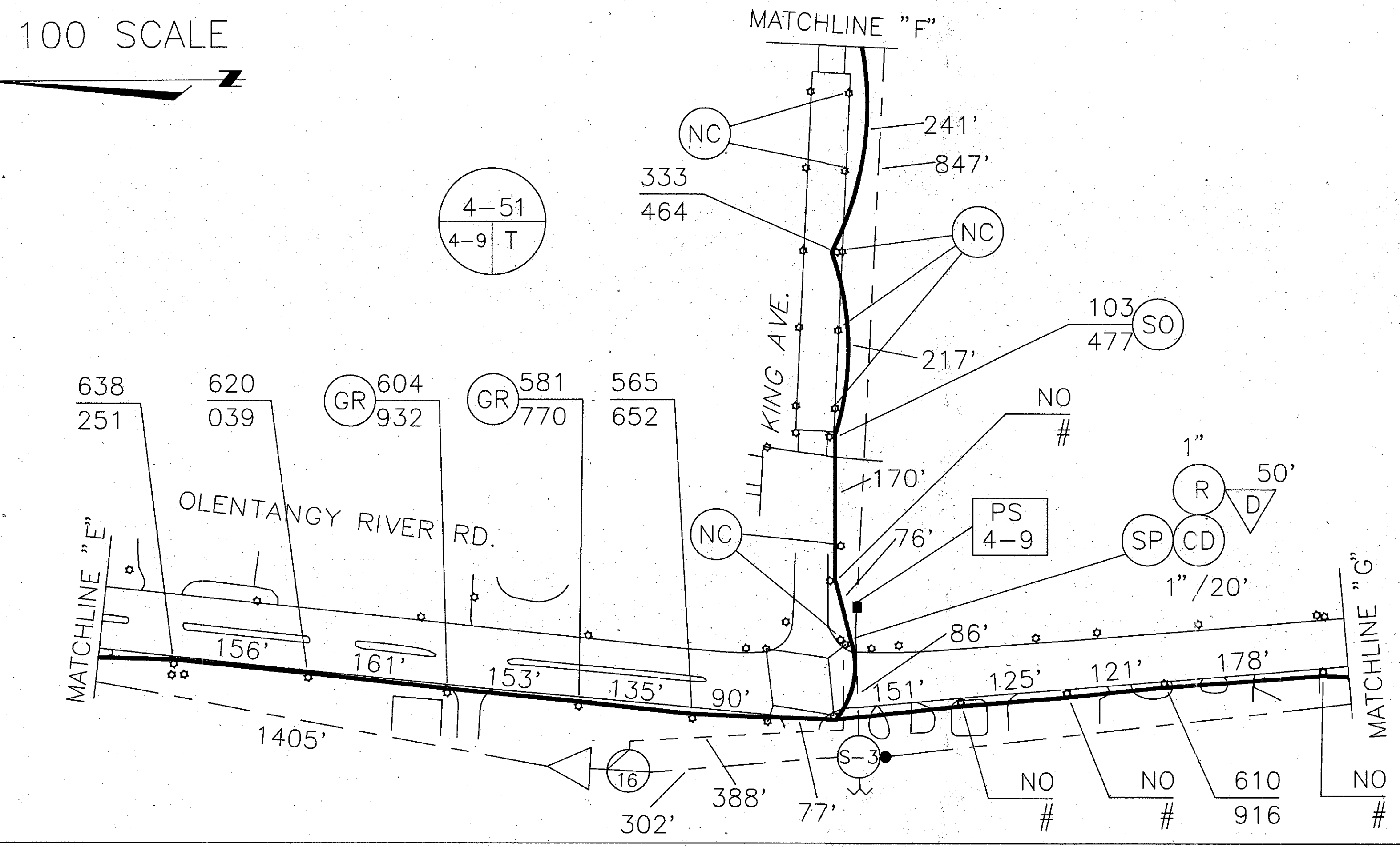


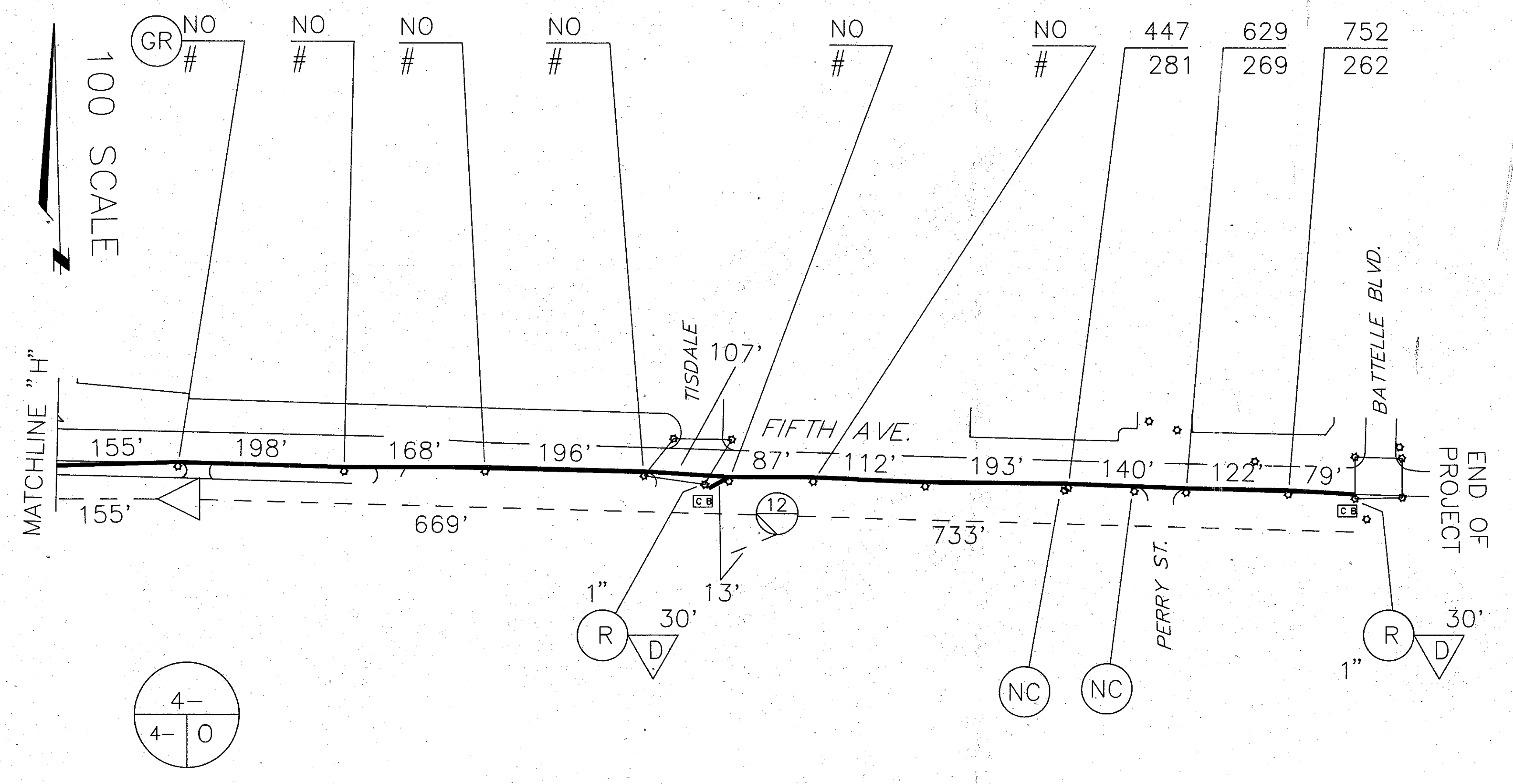
337



FOR LEGEND, SEE CABLE SCHEMATIC SHEET 9

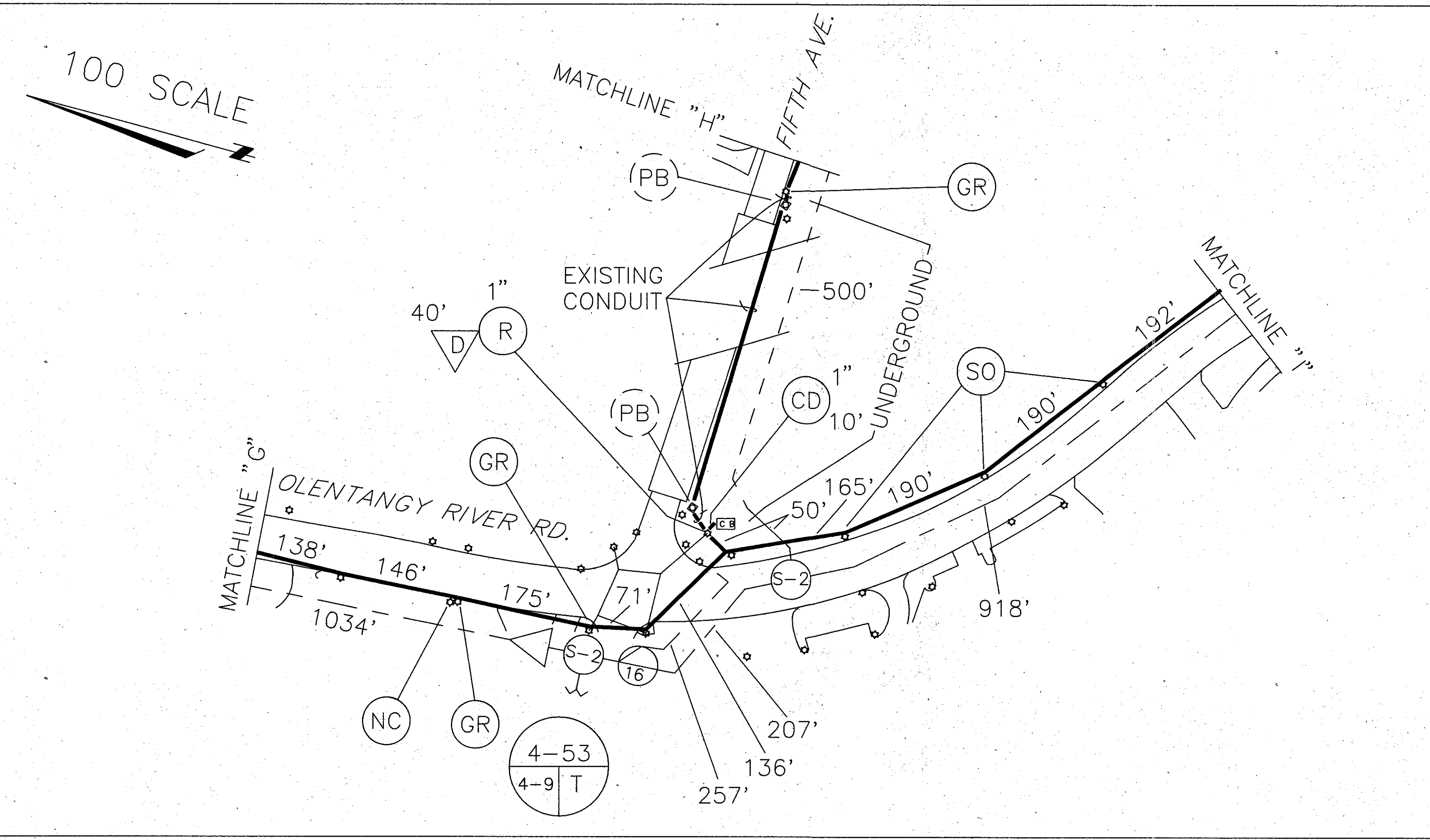
ITEM	QUANT	UNIT	DESCRIPTION
202		SY	PAVEMENT REMOVED
202		SF	WALK REMOVED
253		SY	PAVEMENT REPAIR, AS PER PLAN
253		SY	MISC. PAVEMENT REPAIR: DRIVEWAY, AS PER PLAN
608		SF	4" CONCRETE WALK
608		SF	4" CONCRETE WALK, BOMACRON STAMPED, AS PER PLAN
608		SF	4" CONCRETE WALK BASE, REPLACING BRICKS, AS PER PLAN
625	30	LF	CONDUIT, 1", 713.04
625		LF	CONDUIT, 2", 713.04
625		LF	CONDUIT, 3", 713.04
625		LF	CONDUIT MISC.: CONDUIT BANK, 713.07, ENCASED
625	30	LF	TRENCH
625		LF	PULL BOX, 713.081, 10"X14"
625		EA	PULL BOX, CONCRETE, 4'X4'X4'
625	4	EA	GROUND ROD
632		LF	LOOP DETECTOR PAVEMENT CUTTING
632		LF	MESSANGER WIRE, 7 STRAND, 0.25" DIAMETER WITH ACCESSORIES, AS PER PLAN
632	2500	LF	INTERCONNECT CABLE, MISC.: COAXIAL, .750" P3 TRUNK, W/MESSANGER AND ACCESSORIES
632		LF	INTERCONNECT CABLE, MISC.: COAXIAL, .750" P3 TRUNK, OVERLASHED ON EXISTING INTERCONNECT
632		LF	INTERCONNECT CABLE, MISC.: COAXIAL, .500" P3 UNDERGROUND TRUNK
632	425	LF	INTERCONNECT CABLE, MISC.: COAXIAL, .500" P3 FEEDER
632	1725	LF	INTERCONNECT CABLE, MISC.: COAXIAL, .500" P3 FEEDER, W/MESSANGER AND ACCESSORIES
632	150	LF	INTERCONNECT CABLE, MISC.: COAXIAL, RG-6 DROP
632		LF	LOOP DETECTOR WIRE, TYPE "E"
632		LF	LOOP DETECTOR LEAD-IN CABLE
632	3	EA	CONDUIT RISER, 1" DIAMETER, 713.04
632		EA	CONDUIT RISER, 2" DIAMETER, 713.04
632		EA	CONDUIT RISER, 2" DIAMETER, AS PER PLAN
632		EA	WOOD POLE, AS PER PLAN
632		EA	DOWN GUY
632	1	EA	SIGNALIZATION, MISC.: STANDOFF
632		EA	SIGNALIZATION, MISC.: BRIDGE STANDOFF
632		EA	SIGNALIZATION, MISC.: AMPLIFIER CABINET, TYPE I, PEDESTAL MOUNT
632		EA	SIGNALIZATION, MISC.: PILOT GENERATOR
632	1	EA	SIGNALIZATION, MISC.: CATV POWER SUPPLY
632	2	EA	SIGNALIZATION, MISC.: BI-DIRECTIONAL AMPLIFIER, AERIAL-MOUNT
632		EA	SIGNALIZATION, MISC.: BI-DIRECTIONAL AMPLIFIER, CABINET-MOUNT
632	2	EA	SIGNALIZATION, MISC.: DIRECTIONAL COUPLER, 16 DB
632		EA	SIGNALIZATION, MISC.: DIRECTIONAL COUPLER, 12 DB
632		EA	SIGNALIZATION, MISC.: DIRECTIONAL COUPLER, 8 DB
632		EA	SIGNALIZATION, MISC.: SPLITTER, TWO WAY
632	1	EA	SIGNALIZATION, MISC.: SPLITTER, THREE WAY
632		LF	SIGNALIZATION, MISC.: DELASHING AND RELASHING OF CABLE
632		LF	SIGNALIZATION, MISC.: TREE GUARD



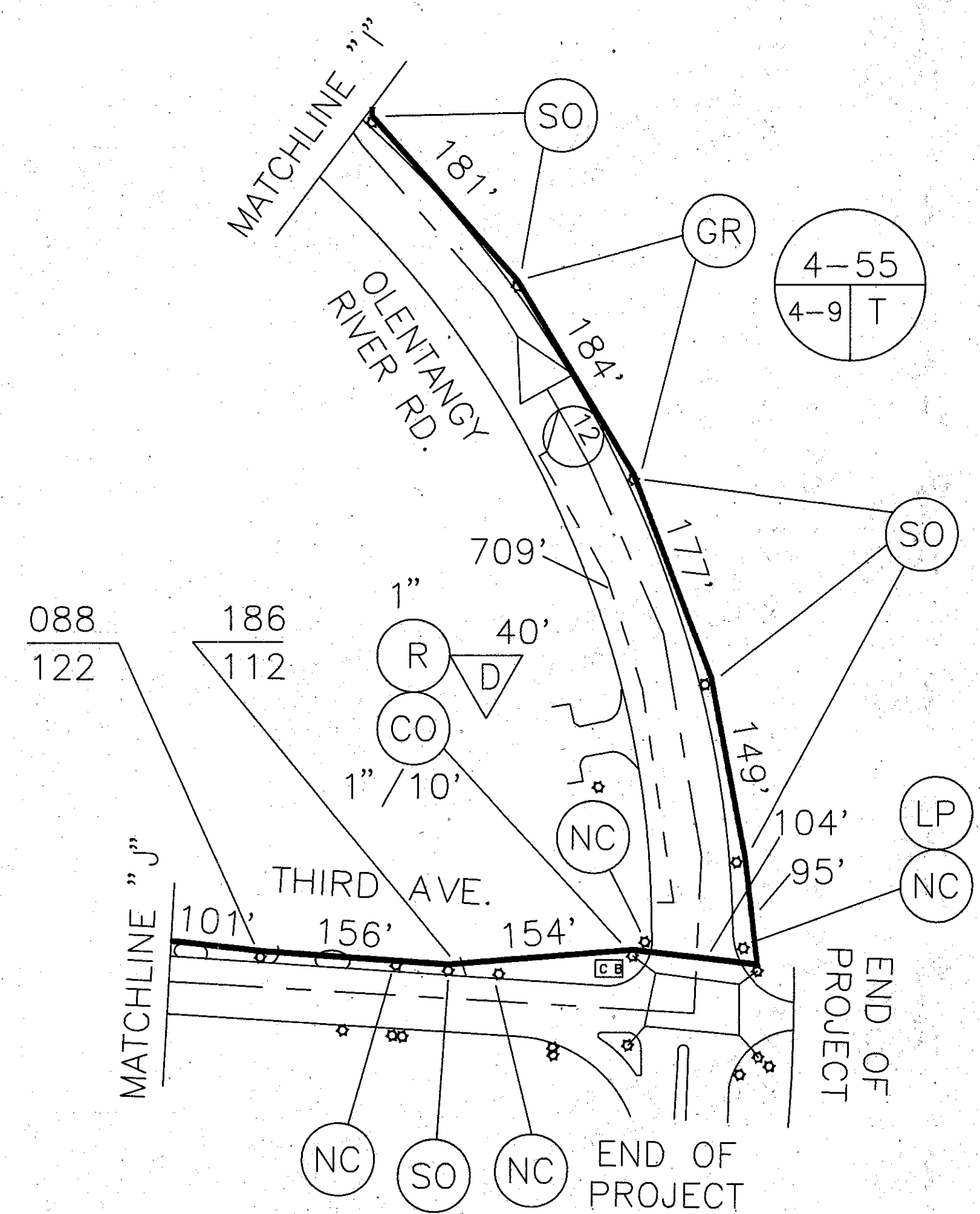


FOR LEGEND, SEE CABLE SCHEMATIC SHEET 9

ITEM	QUANT	UNIT	DESCRIPTION
202		SY	PAVEMENT REMOVED
202		SF	WALK REMOVED
253		SY	PAVEMENT REPAIR, AS PER PLAN
253		SY	MISC. PAVEMENT REPAIR: DRIVEWAY, AS PER PLAN
608		SF	4" CONCRETE WALK
608		SF	4" CONCRETE WALK, BOMACRON STAMPED, AS PER PLAN
608		SF	4" CONCRETE WALK BASE, REPLACING BRICKS, AS PER PLAN
625	15	LF	CONDUIT, 1", 713.04
625		LF	CONDUIT, 2", 713.04
625		LF	CONDUIT, 3", 713.04
625		LF	CONDUIT MISC.: CONDUIT BANK, 713.07, ENCASED
625	15	LF	TRENCH
625		LF	PULL BOX, 713.081, 10" X 14"
625		EA	PULL BOX, CONCRETE, 4' X 4' X 4', AS PER PLAN
625	4	EA	GROUND ROD
632		LF	LOOP DETECTOR PAVEMENT CUTTING
632		LF	MESSENGER WIRE, 7 STRAND, 0.25" DIAMETER WITH ACCESSORIES, AS PER PLAN
632	1600	LF	INTERCONNECT CABLE, MISC.: COAXIAL, .750" P3 TRUNK, W/MESSENGER AND ACCESSORIES
632		LF	INTERCONNECT CABLE, MISC.: COAXIAL, .750" P3 TRUNK, OVERLASHED ON EXISTING INTERCONNECT
632	550	LF	INTERCONNECT CABLE, MISC.: COAXIAL, .500" P3 UNDERGROUND TRUNK
632	285	LF	INTERCONNECT CABLE, MISC.: COAXIAL, .500" P3 FEEDER
632	1700	LF	INTERCONNECT CABLE, MISC.: COAXIAL, .500" P3 FEEDER, W/MESSENGER AND ACCESSORIES
632	110	LF	INTERCONNECT CABLE, MISC.: COAXIAL, RG-6 DROP
632		LF	LOOP DETECTOR WIRE, TYPE "E"
632		LF	LOOP DETECTOR LEAD-IN CABLE
632	3	EA	CONDUIT RISER, 1" DIAMETER, 713.04
632		EA	CONDUIT RISER, 2" DIAMETER, 713.04
632		EA	CONDUIT RISER, 2" DIAMETER, AS PER PLAN
632		EA	WOOD POLE, AS PER PLAN
632		EA	DOWN GUY
632	3	EA	SIGNALIZATION, MISC.: STANDOFF
632		EA	SIGNALIZATION, MISC.: BRIDGE STANDOFF
632		EA	SIGNALIZATION, MISC.: AMPLIFIER CABINET, TYPE I, PEDESTAL MOUNT
632		EA	SIGNALIZATION, MISC.: PILOT GENERATOR
632		EA	SIGNALIZATION, MISC.: CATV POWER SUPPLY
632	2	EA	SIGNALIZATION, MISC.: BI-DIRECTIONAL AMPLIFIER, AERIAL-MOUNT
632		EA	SIGNALIZATION, MISC.: BI-DIRECTIONAL AMPLIFIER, CABINET-MOUNT
632	1	EA	SIGNALIZATION, MISC.: DIRECTIONAL COUPLER, 16 DB
632	1	EA	SIGNALIZATION, MISC.: DIRECTIONAL COUPLER, 12 DB
632		EA	SIGNALIZATION, MISC.: DIRECTIONAL COUPLER, 8 DB
632	2	EA	SIGNALIZATION, MISC.: SPLITTER, TWO WAY
632		EA	SIGNALIZATION, MISC.: SPLITTER, THREE WAY
632		LF	SIGNALIZATION, MISC.: DELASHING AND RELASHING OF CABLE
632		LF	SIGNALIZATION, MISC.: TREE GUARD



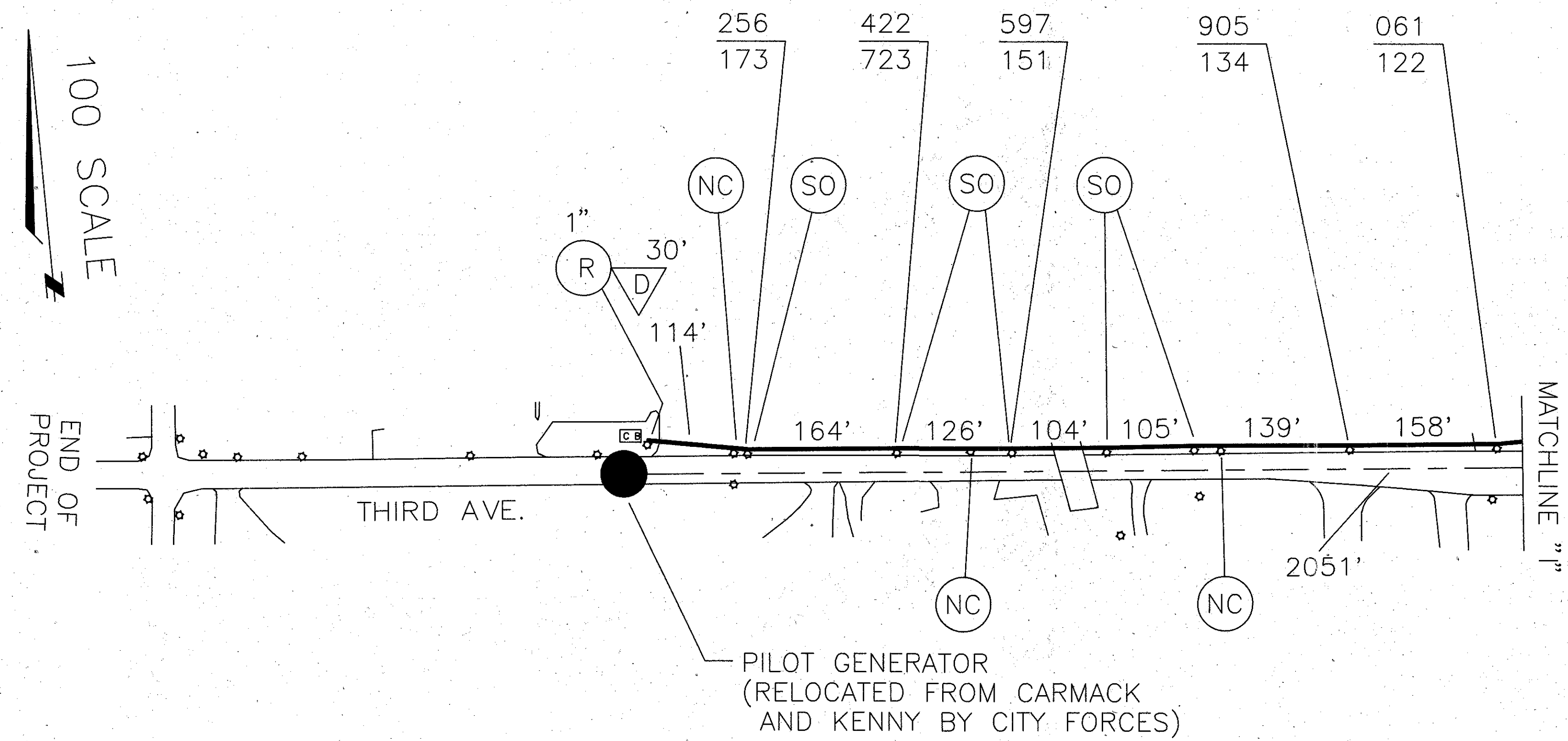
100 SCALE



FOR LEGEND, SEE CABLE SCHEMATIC SHEET 9

ITEM	QUANT	UNIT	DESCRIPTION
202		SY	PAVEMENT REMOVED
202		SF	WALK REMOVED
253		SY	PAVEMENT REPAIR, AS PER PLAN
253		SY	MISC. PAVEMENT REPAIR: DRIVEWAY, AS PER PLAN
608		SF	4" CONCRETE WALK
608		SF	4" CONCRETE WALK, BOMACRON STAMPED, AS PER PLAN
608		SF	4" CONCRETE WALK BASE, REPLACING BRICKS, AS PER PLAN
625	10	LF	CONDUIT, 1", 713.04
625		LF	CONDUIT, 2", 713.04
625		LF	CONDUIT, 3", 713.04
625		LF	CONDUIT MISC.: CONDUIT BANK, 713.07, ENCASED
625	10	LF	TRENCH
625		LF	PULL BOX, 713.081, 10"x14"
625		EA	PULL BOX, CONCRETE, .4'x4'x4', AS PER PLAN
625	2	EA	GROUND ROD
632		LF	LOOP DETECTOR PAVEMENT CUTTING
632		LF	MESSENGER WIRE, 7 STRAND, 0.25" DIAMETER WITH ACCESSORIES, AS PER PLAN
632	2650	LF	INTERCONNECT CABLE, MISC.: COAXIAL, .750" P3 TRUNK, W/MESSENGER AND ACCESSORIES
632		LF	INTERCONNECT CABLE, MISC.: COAXIAL, .750" P3 TRUNK, OVERLASHED ON EXISTING INTERCONNECT
632		LF	INTERCONNECT CABLE, MISC.: COAXIAL, .500" P3 UNDERGROUND TRUNK
632	780	LF	INTERCONNECT CABLE, MISC.: COAXIAL, .500" P3 FEEDER
632		LF	INTERCONNECT CABLE, MISC.: COAXIAL, .500" P3 FEEDER, W/MESSENGER AND ACCESSORIES
632	80	LF	INTERCONNECT CABLE, MISC.: COAXIAL, RG-6 DROP
632		LF	LOOP DETECTOR WIRE, TYPE "E"
632		LF	LOOP DETECTOR LEAD-IN CABLE
632	2	EA	CONDUIT RISER, 1" DIAMETER, 713.04
632		EA	CONDUIT RISER, 2" DIAMETER, 713.04
632		EA	CONDUIT RISER, 2" DIAMETER, AS PER PLAN
632		EA	WOOD POLE, AS PER PLAN
632		EA	DOWN GUY
632	11	EA	SIGNALIZATION, MISC.: STANDOFF
632		EA	SIGNALIZATION, MISC.: BRIDGE STANDOFF
632		EA	SIGNALIZATION, MISC.: AMPLIFIER CABINET, TYPE I, PEDESTAL MOUNT
632		EA	SIGNALIZATION, MISC.: PILOT GENERATOR
632		EA	SIGNALIZATION, MISC.: CATV POWER SUPPLY
632	1	EA	SIGNALIZATION, MISC.: BI-DIRECTIONAL AMPLIFIER, AERIAL-MOUNT
632		EA	SIGNALIZATION, MISC.: BI-DIRECTIONAL AMPLIFIER, CABINET-MOUNT
632		EA	SIGNALIZATION, MISC.: DIRECTIONAL COUPLER, 16 DB
632	1	EA	SIGNALIZATION, MISC.: DIRECTIONAL COUPLER, 12 DB
632		EA	SIGNALIZATION, MISC.: DIRECTIONAL COUPLER, 8 DB
632		EA	SIGNALIZATION, MISC.: SPLITTER, TWO WAY
632		EA	SIGNALIZATION, MISC.: SPLITTER, THREE WAY
632		LF	SIGNALIZATION, MISC.: DELASHING AND RELASHING OF CABLE
632		LF	SIGNALIZATION, MISC.: TREE GUARD

100 SCALE



357A

KENNY RD at KINNEAR RD  
Sheet #15 - Intersection #6905

INT \ PHASE	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
MINIMUM GREEN	30	10						
ADDED INITIAL	X	X						
MAXIMUM INITIAL	X	X						
PASSAGE	0.1	4.0						
TBR	X	X						
TTR	X	X						
MINIMUM GAP	0.1	4.0						
MAX I	60	40						
MAX II	60	99						
WALK	6	6						
PEESTRIAN CLEAR	12	12						
INITIALIZE	GRN	RED						
RECALL/MEMORY	PED	LOCK						
FLASHING WALK	OFF	OFF						
NEXT PHASE	2	1						
YELLOW CLEAR.	4.0	4.0						
RED CLEAR.	1.0	1.0						
DUAL ENTRY Ø	X	X						

KENNY RD at SR-315 SB OFF RAMP  
Sheet #16 - Intersection #4196

INT \ PHASE	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
MINIMUM GREEN	15	10	10					
ADDED INITIAL	X	X	X					
MAXIMUM INITIAL	X	X	X					
PASSAGE	2.2	4.0	3.0					
TBR	X	X	X					
TTR	X	X	X					
MINIMUM GAP	2.2	4.0	3.0					
MAX I	40	60	30					
MAX II	40	99	99					
WALK	6	X	X					
PEESTRIAN CLEAR	12	X	X					
INITIALIZE	GRN	RED	RED					
RECALL/MEMORY	PED	LOCK	OFF					
FLASHING WALK	OFF	OFF	OFF					
NEXT PHASE	2	3	1					
YELLOW CLEAR.	4.0	4.0	3.8					
RED CLEAR.	1.0	1.0	1.0					
DUAL ENTRY Ø	X	X	X					

JOHN H HERRICK at OLENTANGY RIVER RD  
Sheet #18 - Intersection #4163

INT \ PHASE	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
MINIMUM GREEN	7	10	30	10	30	10		
ADDED INITIAL	X	X	X	X	X	X		
MAXIMUM INITIAL	X	X	X	X	X	X		
PASSAGE	2.5	4.0	0.1	4.0	0.1	4.0		
TBR	X	X	X	X	X	X		
TTR	X	X	X	X	X	X		
MINIMUM GAP	2.5	4.0	0.1	4.0	0.1	4.0		
MAX I	15	60	30	30	15	60		
MAX II	99	60	99	99	99	60		
WALK	X	7	7	7	X	7		
PEESTRIAN CLEAR	X	20	19	19	X	13		
INITIALIZE	RED	GRN	RED	RED	RED	GRN		
RECALL/MEMORY	OFF	PED	LOCK	LOCK	OFF	PED		
FLASHING WALK	OFF	OFF	OFF	OFF	OFF	OFF		
NEXT PHASE	2	3	4	1	6	5		
YELLOW CLEAR.	3.6	3.6	3.6	3.6	3.6	3.6		
RED CLEAR.	1.3	1.4	1.7	1.7	1.3	1.4		
DUAL ENTRY Ø	6	6	X	X	2	2		

LENNOX FACTORY at OLENTANGY RIVER RD  
Sheet #19 - Intersection #4194

INT \ PHASE	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
MINIMUM GREEN	25	7	10					
ADDED INITIAL	X	X	X					
MAXIMUM INITIAL	X	X	X					
PASSAGE	0.1	3.0	3.0					
TBR	X	X	X					
TTR	X	X	X					
MINIMUM GAP	0.1	3.0	3.0					
MAX I	60	30	20					
MAX II	60	99	99					
WALK	7	X	X					
PEESTRIAN CLEAR	8	X	X					
INITIALIZE	GRN	RED	RED					
RECALL/MEMORY	PED	OFF	OFF					
FLASHING WALK	OFF	OFF	OFF					
NEXT PHASE	2	3	1					
YELLOW CLEAR.	3.8	3.8	3.8					
RED CLEAR.	2.0	1.0	0.0					
DUAL ENTRY Ø	X	X	X					

KING AVE at OLENTANGY RIVER RD  
Sheet #20 - Intersection #4096

INT \ PHASE	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
MINIMUM GREEN	8	20	8	10	8	20	8	10
ADDED INITIAL	X	X	X	X	X	X	X	X
MAXIMUM INITIAL	X	X	X	X	X	X	X	X
PASSAGE	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
TBR	X	X	X	X	X	X	X	X
TTR	X	X	X	X	X	X	X	X
MINIMUM GAP	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
MAX I	30	60	25	50	45	60	40	50
MAX II	99	60	99	99	99	60	99	99
WALK	X	7	X	7	X	7	X	7
PEESTRIAN CLEAR	X	13	X	19	X	13	X	19
INITIALIZE	RED	GRN	RED	RED	RED	GRN	RED	RED
RECALL/MEMORY	OFF	PED	OFF	LOCK	OFF	PED	OFF	LOCK
FLASHING WALK	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
NEXT PHASE	2	3	4	1	6	7	8	5
YELLOW CLEAR.	3.8	4.5	3.8	3.8	3.8	4.5	3.8	3.8
RED CLEAR.	1.7	1.0	1.3	1.6	1.7	1.0	1.3	1.6
DUAL ENTRY Ø	6	6	8	8	2	2	4	4

BATTELLE & CANNON DR at KING AVE  
Sheet #21 - Intersection #4095

INT \ PHASE	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
MINIMUM GREEN	8	20	8	10	8	20	8	10
ADDED INITIAL	X	X	X	X	X	X	X	X
MAXIMUM INITIAL	X	X	X	X	X	X	X	X
PASSAGE	2.5	3.7	2.5	2.5	2.5	3.7	2.5	2.5
TBR	X	X	X	X	X	X	X	X
TTR	X	X	X	X	X	X	X	X
MINIMUM GAP	2.5	3.7	2.5	2.5	2.5	3.7	2.5	2.5
MAX I	45	60	25	25	15	60	15	25
MAX II	99	60	99	99	99	60	99	99
WALK	X	7	X	7	X	7	X	7
PEESTRIAN CLEAR	X	13	X	10	X	13	X	10
INITIALIZE	RED	GRN	RED	RED	RED	GRN	RED	RED
RECALL/MEMORY	OFF	PED	OFF	OFF	OFF	PED	OFF	OFF
FLASHING WALK	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
NEXT PHASE	2	3	4	1	6	7	8	5
YELLOW CLEAR.	3.6	3.8	3.6	3.8	3.6	3.8	3.6	3.8
RED CLEAR.	1.2	1.5	1.2	1.0	1.2	1.5	1.2	1.0
DUAL ENTRY Ø	6	6	8	8	2	2	4	4

339B

BATTELLE BL at KING AVE  
Sheet #22 - Intersection #4094

INT \ PHASE	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
MINIMUM GREEN	20	10						
ADDED INITIAL	X	X						
MAXIMUM INITIAL	X	X						
PASSAGE	3.7	3.7						
TBR	X	X						
TTR	X	X						
MINIMUM GAP	3.7	3.7						
MAX I	60	35						
MAX II	60	99						
WALK	6	7						
PEESTRIAN CLEAR	12	6						
INITIALIZE	GRN	RED						
RECALL/MEMORY	PED	OFF						
FLASHING WALK	OFF	OFF						
NEXT PHASE	2	1						
YELLOW CLEAR.	3.8	3.5						
RED CLEAR.	2.1	0.7						
DUAL ENTRY Ø	X	X						

FIFTH AV at OLENTANGY RIVER RD  
Sheet #23 - Intersection #4086

INT \ PHASE	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
MINIMUM GREEN	8	20	8	10	8	20	8	10
ADDED INITIAL	X	X	X	X	X	X	X	X
MAXIMUM INITIAL	X	X	X	X	X	X	X	X
PASSAGE	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
TBR	X	X	X	X	X	X	X	X
TTR	X	X	X	X	X	X	X	X
MINIMUM GAP	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
MAX I	30	60	15	60	30	60	15	60
MAX II	99	60	99	60	99	60	99	99
WALK	X	7	X	7	X	7	X	7
PEESTRIAN CLEAR	X	13	X	15	X	13	X	15
INITIALIZE	RED	GRN	RED	RED	RED	GRN	RED	RED
RECALL/MEMORY	OFF	PED	OFF	LOCK	OFF	PED	OFF	LOCK
FLASHING WALK	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
NEXT PHASE	2	3	4	1	6	7	8	5
YELLOW CLEAR.	3.8	4.5	3.8	3.8	3.8	4.5	3.8	3.8
RED CLEAR.	1.8	1.0	1.1	1.7	1.8	1.0	1.1	1.8
DUAL ENTRY Ø	6	6	8	8	2	2	4	4

FIFTH AV at TISDALE ST  
Sheet #24 - Intersection #4154

INT \ PHASE	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
MINIMUM GREEN	20	10						
ADDED INITIAL	X	X						
MAXIMUM INITIAL	X	X						
PASSAGE	5.0	3.7						
TBR	X	X						
TTR	X	X						
MINIMUM GAP	5.0	3.7						
MAX I	60	25						
MAX II	60	99						
WALK	20	7						
PEESTRIAN CLEAR	6	6						
INITIALIZE	GRN	RED						
RECALL/MEMORY	PED	OFF						
FLASHING WALK	OFF	OFF						
NEXT PHASE	2	1						
YELLOW CLEAR.	3.8	3.8						
RED CLEAR.	2.0	0.5						
DUAL ENTRY Ø	X	X						

BATTELLE BL at FIFTH AV  
Sheet #25 - Intersection #4065

INT \ PHASE	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
MINIMUM GREEN	20	10						
ADDED INITIAL	X	X						
MAXIMUM INITIAL	X	X						
PASSAGE	3.7	3.7						
TBR	X	X						
TTR	X	X						
MINIMUM GAP	3.7	3.7						
MAX I	45	25						
MAX II	45	99						
WALK	7	7						
PEESTRIAN CLEAR	13	6						
INITIALIZE	GRN	RED						
RECALL/MEMORY	PED	OFF						
FLASHING WALK	OFF	OFF						
NEXT PHASE	2	1						
YELLOW CLEAR.	3.8	3.8						
RED CLEAR.	0.5	1.0						
DUAL ENTRY Ø	X	X						

OLENTANGY RIVER RD at THIRD AV  
Sheet #26 - Intersection #4079

INT \ PHASE	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
MINIMUM GREEN	8	20	8	10	8	20	8	10
ADDED INITIAL	X	X	X	X	X	X	X	X
MAXIMUM INITIAL	X	X	X	X	X	X	X	X
PASSAGE	3.0	3.7	3.0	3.7	3.0	3.7	3.0	3.7
TBR	X	X	X	X	X	X	X	X
TTR	X	X	X	X	X	X	X	X
MINIMUM GAP	3.0	3.7	3.0	3.7	3.0	3.7	3.0	3.7
MAX I	40	60	20	30	40	60	20	50
MAX II	99	60	99	99	99	60	99	99
WALK	X	7	X	7	X	7	X	7
PEESTRIAN CLEAR	X	13	X	15	X	13	X	15
INITIALIZE	RED	GRN	RED	RED	RED	GRN	RED	RED
RECALL/MEMORY	OFF	PED	OFF	OFF	LOCK	PED	OFF	OFF
FLASHING WALK	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
NEXT PHASE	2	3	4	1	6	7	8	5
YELLOW CLEAR.	3.8	4.5	3.8	3.8	3.8	4.5	3.8	3.8
RED CLEAR.	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
DUAL ENTRY Ø	6	6	8	8	2	2	4	4

BIG BEAR WAREHOUSE at THIRD AV  
Sheet #27 - Intersection #4073

INT \ PHASE	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
MINIMUM GREEN	20	10	10					
ADDED INITIAL	X	X	X					
MAXIMUM INITIAL	X	X	X					
PASSAGE	3.7	3.7	3.7					
TBR	X	X	X					
TTR	X	X	X					
MINIMUM GAP	3.7	3.7	3.7					
MAX I	60	20	15					
MAX II	60	99	99					
WALK	7	7	X					
PEESTRIAN CLEAR	14	9	X					
INITIALIZE	GRN	RED	RED					
RECALL/MEMORY	PED	OFF	OFF					
FLASHING WALK	OFF	OFF	OFF					
NEXT PHASE	2	3	1					
YELLOW CLEAR.	3.8	3.8	3.8					
RED CLEAR.	1.4	1.7	1.7					
DUAL ENTRY Ø	X	X	X					

# INTERSECTION DETAILS

## KENNY RD AT KINNEAR RD (# 6905)

BY	
DATE	
CHECK	
BY	
DATE	

FRA-315-2.39, PART 2	
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OHIO
FHWA REGION 5

15
27

340

CICU HARNESS WIRING  
TRUNK ID: 3      DROP NUMBER: 149

CICU INPUT CONNECTOR		
HARNESS		BOX FUNCTION
PIN	FUNCTION	
13	PHASE 1 GREEN	
8	PHASE 2 GREEN	SB THRU GREEN (PHASE 1)
7	PHASE 3 GREEN	
6	PHASE 4 GREEN	WB THRU GREEN (PHASE 2)
12	PHASE 5 GREEN	
11	PHASE 6 GREEN	NB THRU GREEN (PHASE 1)
18	PHASE 7 GREEN	
3	PHASE 8 GREEN	EB THRU GREEN (PHASE 2)
10	WALK 1 MONITOR	
16	WALK 2 MONITOR	
22	PED CALL 1 (SYS. DET. 7)	
36	PED CALL 2 (SYS. DET. 8)	
4	FLASH	SIGNAL POWER
15	PREEMPT	POLICE MANUAL SWITCH
2	SPEC FUNCTION 1 MONITOR	
1	SPEC FUNCTION 2 MONITOR	
5	SPEC FUNCTION 3 MONITOR	
24	ADDRESS-1	GROUND
25	ADDRESS-2	
30	ADDRESS-4	GROUND
31	ADDRESS-8	
32	ADDRESS-16	GROUND
26	ADDRESS-32	
27	ADDRESS-64	
21	ADDRESS-128	GROUND
29	SYSTEM DETECTOR 1	
34	SYSTEM DETECTOR 2	
35	SYSTEM DETECTOR 3	
37	SYSTEM DETECTOR 4	
33	SYSTEM DETECTOR 5	
28	SYSTEM DETECTOR 6	
20	RETURN FOR AC MONITOR	GROUND
23	RETURN FOR NEMA MONITOR	GROUND

CICU OUTPUT CONNECTOR		
HARNESS		BOX FUNCTION
PIN	FUNCTION	
25	HOL (C)	GROUND
21	HOL (N.O.)	RING 1: (MAX2 & PED RECY)+CNA1
28	HOLD (C)	GROUND
5	HOLD (N.O.)	PHASE 1 HOLD
8	FORCE OFF 1 (C)	GROUND
10	FORCE OFF 1 (N.O.)	FORCE OFF 1 (RING 1)
31	FORCE OFF 2 (C)	GROUND
20	FORCE OFF 2 (N.O.)	FORCE OFF 1 (RING 1)
24	CALL ALL (C)	GROUND
30	CALL ALL (N.O.)	PHASE 2 VEH CALL
12	FLASH (COMMON)	GROUND
4	FLASH (N.O.)	FLASH SYNCHRONIZER
32	SPECIAL FUNCTION 1 (C)	GROUND
26	SPECIAL FUNCTION 1 (N.O.)	
17	SPECIAL FUNCTION 2 (C)	GROUND
11	SPECIAL FUNCTION 2 (N.O.)	
22	SPECIAL FUNCTION 3 (C)	GROUND
9	SPECIAL FUNCTION 3 (N.O.)	
1	AC+	AC+
2	AC-	AC-
3	GROUND	GROUND

### SIGNAL INDICATIONS

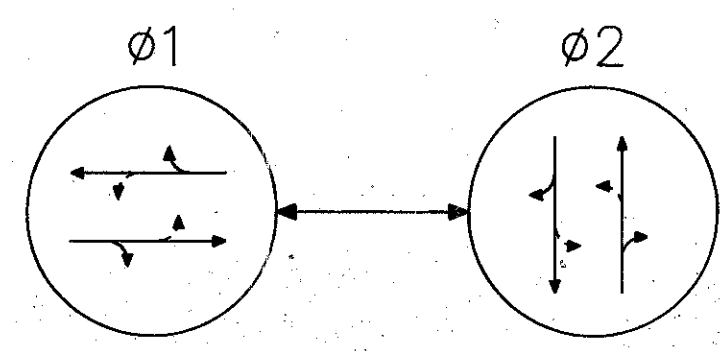
PHASE	PHASE 1				PHASE 2				FLASH
	MOVEMENT	R/W	CLR1	CLR2	CLR3	R/W	CLR1	CLR2	
SIGNAL 1	G	G	Y	R	R	R	R	R	Y
2	R	R	R	R	G	G	Y	R	R

SEE SHEET 14A FOR TIMING INFO

### DETECTOR WIRING

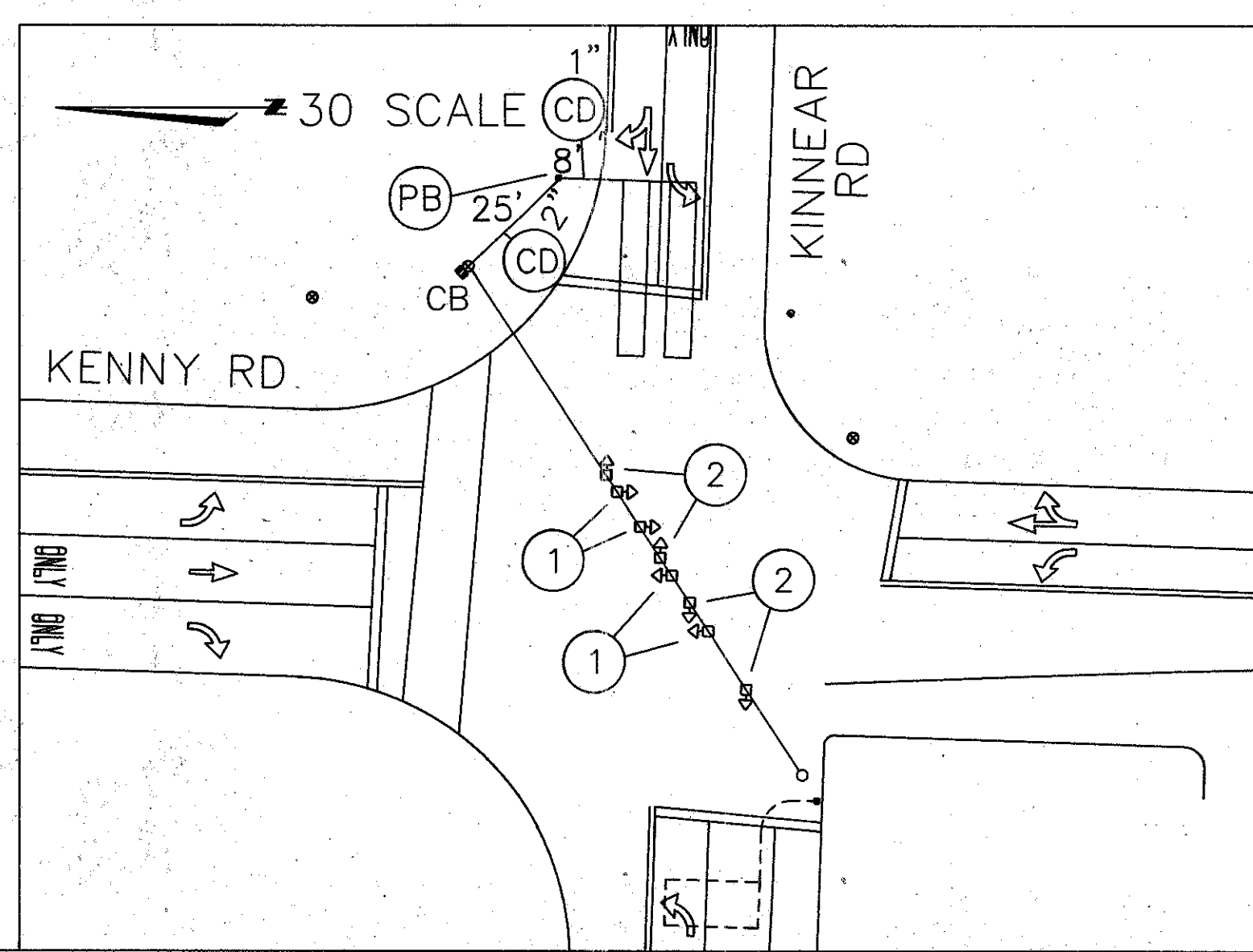
LOOP	HARNESS LABEL	SIZE	PHASE #	UNIT #	CHANNEL #	DELAY TIMING	EXTENSION TIMING
WB L	WBL Ø2	5'x34' @ +14'	2	1	1	-	-
WB R	WBR Ø2	5'x34' @ +14'	2	1	2	-	-
EB	EB Ø2	EXISTING	2	2	1	-	-

### SIGNAL PHASING



### INTERSECTION QUANTITIES

ITEM	QUANT	UNIT	DESCRIPTION
632		LF	MESSENGER WIRE, 7 STRAND, 0.25" DIAMETER WITH ACCESSORIES, AS PER PLAN
632		LF	SIGNALIZATION, MISC., DELASHING AND RELASHING OF CABLE
625		EA	GROUND ROD
632		EA	SIGNALIZATION, MISC., CONDUIT RISER, 0.5" DIAMETER, 713.04
632		EA	CONDUIT RISER, 1" DIAMETER, 713.04
632	1	EA	CONDUIT RISER, 2" DIAMETER, 713.04
632		EA	CONDUIT RISER, 2" DIAMETER, AS PER PLAN
625	1	EA	PULL BOX, 713.081, 10"x14"
625	8	LF	CONDUIT, 1", 713.04
625	25	LF	CONDUIT, 2", 713.04
625	33	LF	CONDUIT, 3", 713.04
625		LF	TRENCH
202		SF	WALK REMOVED
608		SF	4" CONCRETE WALK
608		SF	4" CONCRETE WALK, BOMACRON STAMPED, AS PER PLAN
608		SF	4" CONCRETE WALK BASE, REPLACING BRICKS, AS PER PLAN
253		SF	MISC. PAVEMENT REPAIR: DRIVEWAY, AS PER PLAN
202		SY	PAVEMENT REMOVED
253		SY	PAVEMENT REPAIR, AS PER PLAN
632	170	LF	LOOP DETECTOR PAVEMENT CUTTING
632	360	LF	LOOP DETECTOR WIRE, TYPE "E"
632	80	LF	LOOP DETECTOR LEAD-IN CABLE
632		EA	MAGNETOMETER SENSOR, 1 PROBE SET, 60' LEAD-IN
632		EA	MAGNETOMETER SENSOR, 2 PROBE SET, 6' SEPARATION, 60' LEAD-IN
632		LF	MAGNETOMETER LEAD-IN CABLE
632	1	EA	LOOP DETECTOR UNIT, DELAY AND EXTENSION TYPE, AS PER PLAN
632	1	EA	LOOP DETECTOR UNIT, 2 CHANNEL, DELAY AND EXTENSION TYPE, AS PER PLAN
632		EA	LOOP DETECTOR UNIT, 4 CHANNEL, AS PER PLAN
632		EA	MAGNETOMETER DETECTOR AMPLIFIER, 2 CHANNEL UNIT, AS PER PLAN
632		EA	PEDESTRIAN PUSHBUTTON, AS PER PLAN
633	1	EA	CONTROLLER ITEM, MISC.: TRANSCEIVER INTERFACE
633	1	EA	CONTROLLER, MISC.: ACTUATED, WITH 2 PHASE POLE-MOUNT CABINET





# INTERSECTION DETAILS

## KINNEAR RD AT SR 315 SBOR (# 4196)

CALC. BY		FRA-315-2.39, PART 2	OHIO
DATE			
CHECK BY			
DATE			
		FHWA REGION 5	5

16  
27

374

CICU HARNESS WIRING  
TRUNK ID: 3      DROP NUMBER: 155

CICU INPUT CONNECTOR		
HARNESS PIN	FUNCTION	BOX FUNCTION
13	PHASE 1 GREEN	
8	PHASE 2 GREEN	WB THRU GREEN (PHASE 1)
7	PHASE 3 GREEN	NB GREEN (PHASE 3)
6	PHASE 4 GREEN	SB GREEN (PHASE 2)
12	PHASE 5 GREEN	
11	PHASE 6 GREEN	EB THRU GREEN (PHASE 1)
18	PHASE 7 GREEN	SB GREEN (PHASE 2)
3	PHASE 8 GREEN	NB GREEN (PHASE 3)
10	WALK 1 MONITOR	
16	WALK 2 MONITOR	
22	PED CALL 1 (SYS. DET. 7)	
36	PED CALL 2 (SYS. DET. 8)	
4	FLASH	SIGNAL POWER
15	PREEMPT	POLICE MANUAL SWITCH
2	SPEC FUNCTION 1 MONITOR	
1	SPEC FUNCTION 2 MONITOR	
5	SPEC FUNCTION 3 MONITOR	
24	ADDRESS-1	GROUND
25	ADDRESS-2	GROUND
30	ADDRESS-4	
31	ADDRESS-8	GROUND
32	ADDRESS-16	GROUND
26	ADDRESS-32	
27	ADDRESS-64	
21	ADDRESS-128	GROUND
29	SYSTEM DETECTOR 1	
34	SYSTEM DETECTOR 2	
35	SYSTEM DETECTOR 3	
37	SYSTEM DETECTOR 4	
33	SYSTEM DETECTOR 5	
28	SYSTEM DETECTOR 6	
20	RETURN FOR AC MONITOR	GROUND
23	RETURN FOR NEMA MONITOR	GROUND

CICU OUTPUT CONNECTOR		
HARNESS PIN	FUNCTION	BOX FUNCTION
25	HOL (C)	GROUND
21	HOL (N.O.)	RING 1: (MAX2 & PED RECY)+CNA1
28	HOLD (C)	GROUND
5	HOLD (N.O.)	PHASE 1 HOLD
8	FORCE OFF 1 (C)	GROUND
10	FORCE OFF 1 (N.O.)	FORCE OFF 1 (RING 1)
31	FORCE OFF 2 (C)	GROUND
20	FORCE OFF 2 (N.O.)	FORCE OFF 1 (RING 1)
24	CALL ALL (C)	GROUND
30	CALL ALL (N.O.)	PHASE 2, 3 & 4 VEH CALL, DIODE SEPARATE
12	FLASH (COMMON)	GROUND
4	FLASH (N.O.)	FLASH SYNCHRONIZER
32	SPECIAL FUNCTION 1 (C)	GROUND
26	SPECIAL FUNCTION 1 (N.O.)	
17	SPECIAL FUNCTION 2 (C)	GROUND
11	SPECIAL FUNCTION 2 (N.O.)	
22	SPECIAL FUNCTION 3 (C)	GROUND
9	SPECIAL FUNCTION 3 (N.O.)	
1	AC+	AC+
2	AC-	AC-
3	GROUND	GROUND

### SIGNAL INDICATIONS

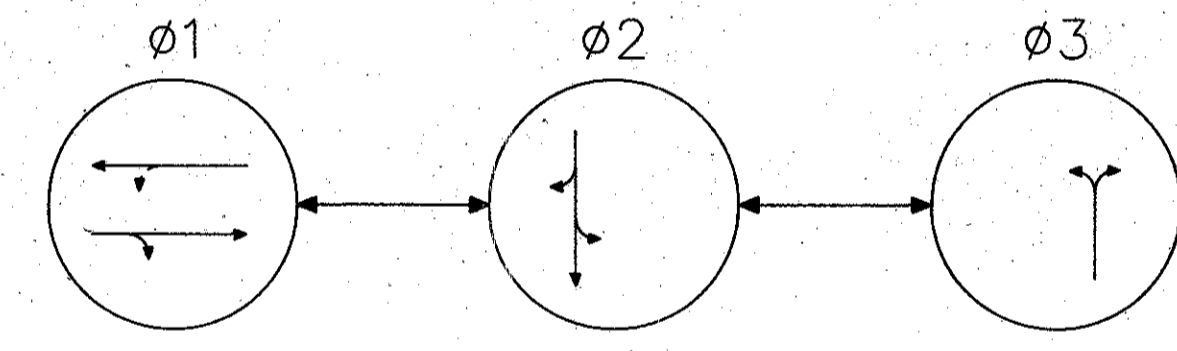
PHASE	PHASE 1				PHASE 2				PHASE 3				FLASH	
	MOVEMENT	R/W	CLR1	CLR2	CLR3	R/W	CLR1	CLR2	CLR3	R/W	CLR1	CLR2		CLR3
SIGNAL 1	G	G	Y	R	R	R	R	R	R	R	R	R	R	Y
2	R	R	R	R	G	G	Y	R	R	R	R	R	R	R
3	R	R	R	R	R	R	R	R	G	G	Y	R	R	R

SEE SHEET 14A FOR TIMING INFO

### DETECTOR WIRING

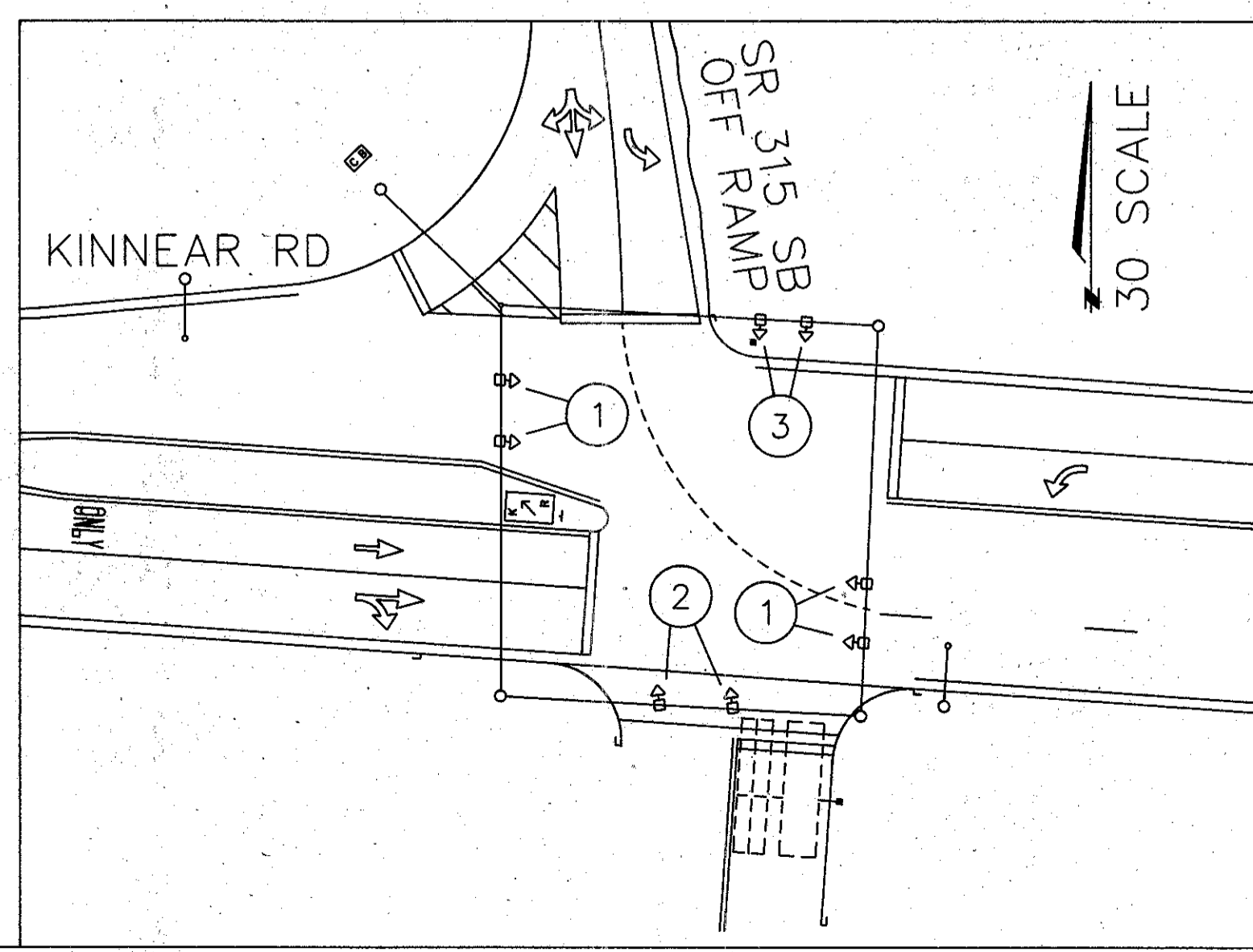
LOOP	HARNESS LABEL	SIZE	PHASE #	UNIT #	CHANNEL #	DELAY TIMING	EXTENSION TIMING
NB L	NB L Ø3	EXISTING	3	1	1	-	-
NB R	NB R Ø3	EXISTING	3	1	2	-	-
SB	SB Ø2	EXISTING	2	2	1	-	-
EB	EB Ø1	EXISTING	1	3	1	-	-
WB	WB Ø1	EXISTING	1	3	2	-	-

### SIGNAL PHASING



### INTERSECTION QUANTITIES

ITEM	QUANT	UNIT	DESCRIPTION
632		LF	MESSENGER WIRE, 7 STRAND, 0.25" DIAMETER WITH ACCESSORIES, AS PER PLAN
632		LF	SIGNALIZATION, MISC., DELASHING AND RELASHING OF CABLE
625		EA	GROUND ROD
632		EA	SIGNALIZATION, MISC., CONDUIT RISER, 0.5" DIAMETER, 713.04
632		EA	CONDUIT RISER, 1" DIAMETER, 713.04
632		EA	CONDUIT RISER, 2" DIAMETER, 713.04
632		EA	CONDUIT RISER, 2" DIAMETER, AS PER PLAN
625		EA	PULL BOX, 713.081, 10"X14"
625		LF	CONDUIT, 1", 713.04
625		LF	CONDUIT, 2", 713.04
625		LF	CONDUIT, 3", 713.04
625		LF	TRENCH
202		SF	WALK REMOVED
608		SF	4" CONCRETE WALK
608		SF	4" CONCRETE WALK, BOMACRON STAMPED, AS PER PLAN
608		SF	4" CONCRETE WALK BASE, REPLACING BRICKS, AS PER PLAN
253		SF	MISC. PAVEMENT REPAIR: DRIVEWAY, AS PER PLAN
202		SY	PAVEMENT REMOVED
253		SY	PAVEMENT REPAIR, AS PER PLAN
632		LF	LOOP DETECTOR PAVEMENT CUTTING
632		LF	LOOP DETECTOR WIRE, TYPE "E"
632		LF	LOOP DETECTOR LEAD-IN CABLE
632		EA	MAGNETOMETER SENSOR, 1 PROBE SET, 60' LEAD-IN
632		EA	MAGNETOMETER SENSOR, 2 PROBE SET, 6' SEPARATION, 60' LEAD-IN
632		LF	MAGNETOMETER LEAD-IN CABLE
632	1	EA	LOOP DETECTOR UNIT, DELAY AND EXTENSION TYPE, AS PER PLAN
632	2	EA	LOOP DETECTOR UNIT, 2 CHANNEL, DELAY AND EXTENSION TYPE, AS PER PLAN
632		EA	LOOP DETECTOR UNIT, 4 CHANNEL, AS PER PLAN
632		EA	MAGNETOMETER DETECTOR AMPLIFIER, 2 CHANNEL UNIT, AS PER PLAN
632		EA	PEDESTRIAN PUSHBUTTON, AS PER PLAN
633	1	EA	CONTROLLER ITEM, MISC.: TRANSCEIVER INTERFACE
633	1	EA	CONTROLLER, MISC.: ACTUATED, WITH 4 PHASE BASE-MOUNT CABINET



# INTERSECTION DETAILS

## KINNEAR RD AT OLENTANGY RIVER RD (# 4195)

CALC. BY		FRA-315-2.39, PART 2	OHIO
DATE			FHWA REGION 5
CHECK BY			17
DATE			27

17  
27

### CICU HARNESS WIRING

TRUNK ID: 3      DROP NUMBER: 153

#### CICU INPUT CONNECTOR

HARNESS		BOX FUNCTION
PIN	FUNCTION	
13	PHASE 1 GREEN	EBLT GREEN (PHASE 3)
8	PHASE 2 GREEN	WB THRU GREEN (PHASE 1)
7	PHASE 3 GREEN	
6	PHASE 4 GREEN	SB GREEN (PHASE 2)
12	PHASE 5 GREEN	
11	PHASE 6 GREEN	EB THRU GREEN (OVERLAP)
18	PHASE 7 GREEN	SB GREEN (PHASE 2)
3	PHASE 8 GREEN	
10	WALK 1 MONITOR	
16	WALK 2 MONITOR	
22	PED CALL 1 (SYS. DET. 7)	
36	PED CALL 2 (SYS. DET. 8)	
4	FLASH	SIGNAL POWER
15	PREEMPT	POLICE MANUAL SWITCH
2	SPEC FUNCTION 1 MONITOR	AC+ RELAY OUTPUT SENSING THAT PHASE 3 OMIT IS ACTIVE
1	SPEC FUNCTION 2 MONITOR	
5	SPEC FUNCTION 3 MONITOR	
24	ADDRESS-1	GROUND
25	ADDRESS-2	
30	ADDRESS-4	
31	ADDRESS-8	GROUND
32	ADDRESS-16	GROUND
26	ADDRESS-32	
27	ADDRESS-64	
21	ADDRESS-128	GROUND
29	SYSTEM DETECTOR 1	
34	SYSTEM DETECTOR 2	
35	SYSTEM DETECTOR 3	
37	SYSTEM DETECTOR 4	
33	SYSTEM DETECTOR 5	
28	SYSTEM DETECTOR 6	
20	RETURN FOR AC MONITOR	GROUND
23	RETURN FOR NEMA MONITOR	GROUND

#### CICU OUTPUT CONNECTOR

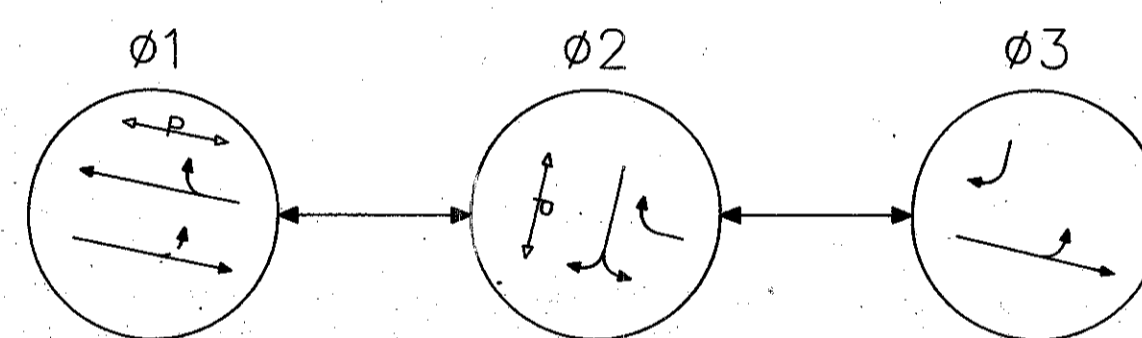
HARNESS		BOX FUNCTION
PIN	FUNCTION	
25	HOL (C)	GROUND
21	HOL (N.O.)	RING 1: (MAX2 & PED RECY)+CNA1
28	HOLD (C)	GROUND
5	HOLD (N.O.)	PHASE 1 HOLD
8	FORCE OFF 1 (C)	GROUND
10	FORCE OFF 1 (N.O.)	FORCE OFF 1 (RING 1)
31	FORCE OFF 2 (C)	GROUND
20	FORCE OFF 2 (N.O.)	FORCE OFF 1 (RING 1)
24	CALL ALL (C)	GROUND
30	CALL ALL (N.O.)	PHASE 2, 3 & 4 VEH CALL, DIODE SEPARATE
12	FLASH (COMMON)	GROUND
4	FLASH (N.O.)	FLASH SYNCHRONIZER
32	SPECIAL FUNCTION 1 (C)	GROUND
26	SPECIAL FUNCTION 1 (N.O.)	PHASE 3 OMIT
17	SPECIAL FUNCTION 2 (C)	GROUND
11	SPECIAL FUNCTION 2 (N.O.)	
22	SPECIAL FUNCTION 3 (C)	GROUND
9	SPECIAL FUNCTION 3 (N.O.)	
1	AC+	AC+
2	AC-	AC-
3	GROUND	GROUND

### FIELD WIRING HOOK-UP CHART

SIGNAL	INDICATION	DRIVEN BY	FLASH
1	G	Ø1+Ø3 G	Y
	Y	Ø1+Ø3 Y	
	R	Ø1+Ø3 R	
2	G	Ø1+Ø3 G	Y
	Y	Ø1+Ø3 Y	
	R	Ø1+Ø3 R	
	← G	Ø3 G	
3	← Y	Ø3 Y	Y
	G	Ø1 G	
	Y	Ø1 Y	
4	R	Ø1 R	Y

SIGNAL	INDICATION	DRIVEN BY	FLASH
4	G	Ø1 G	Y
	Y	Ø1 Y	
	R	Ø1 R	
	G →	Ø2 G	
5	Y →	Ø2 Y	R
	G	Ø2 G	
	Y	Ø2 Y	
6	R	Ø2 R	R
	G	Ø2 G	
	Y	Ø2 Y	
	R	Ø2 R	
A	G →	Ø3 G	OUT
	Y →	Ø3 Y	
	W	Ø1 W	
B	DW	Ø1 DW	OUT
	W	Ø2 W	
	DW	Ø2 DW	

### SIGNAL PHASING



SEE DETAIL ON SHEET 17A

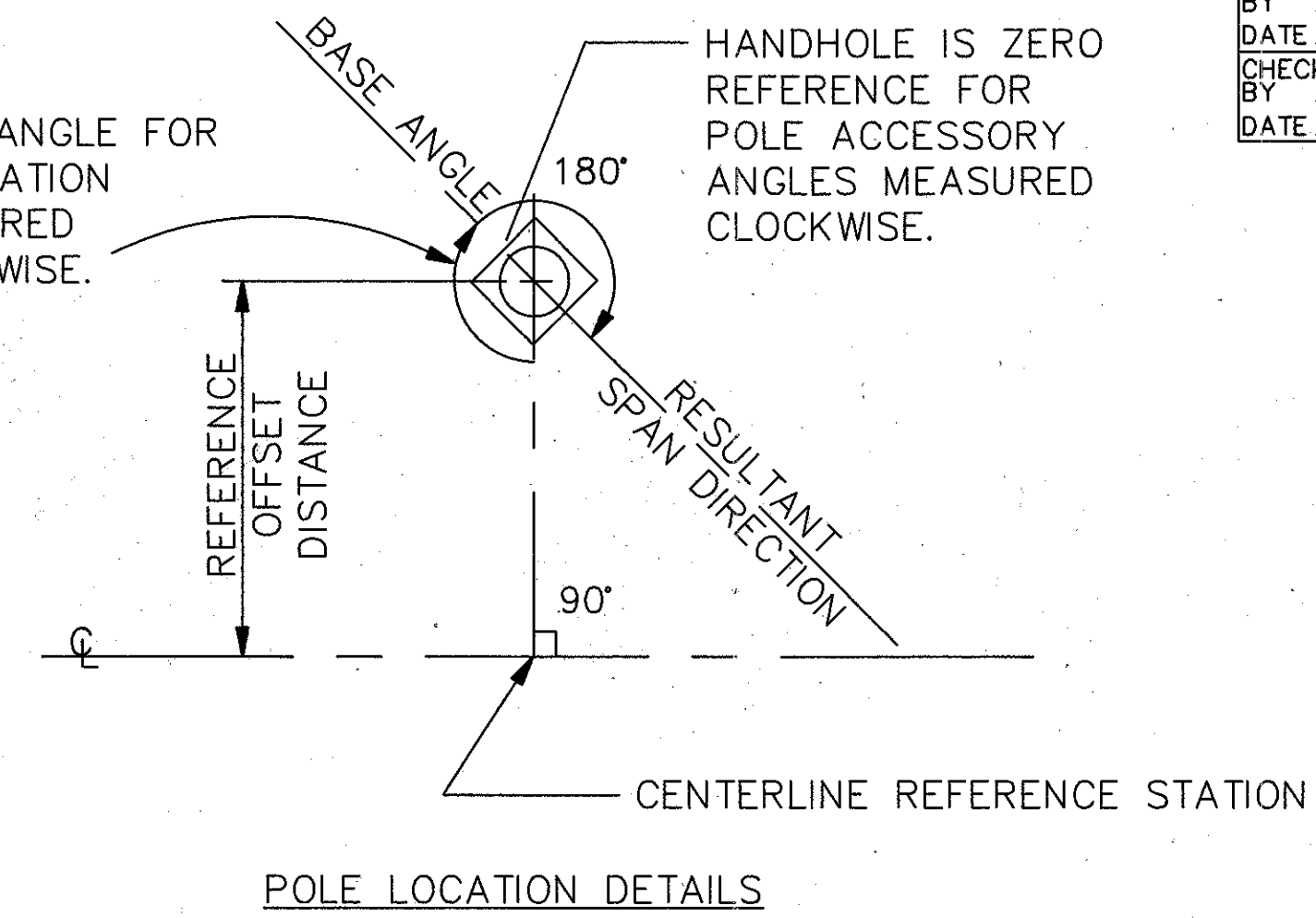
ITEM	QUANT	UNIT	DESCRIPTION
202	25	SF	WALK REMOVED
608	25	SF	4" CONCRETE WALK
623	LUMP		CONSTRUCTION LAYOUT STAKES
625	26	LF	CONDUIT, 1", 713.04
625	283	LF	CONDUIT, 2", 713.04
625	24	LF	CONDUIT, 3", 713.04
625	315	LF	TRENCH
625	1	EA	PULL BOX, 713.08, 24"
625	5	EA	PULL BOX, 713.081, 10"X14"
625	5	EA	GROUND ROD
632	3	EA	VEHICULAR SIGNAL HEAD, 3 SECTION, 12" LENS, 1WAY, AS PER PLAN
632	3	EA	VEHICULAR SIGNAL HEAD, 5 SECTION, 12" LENS, 1WAY, AS PER PLAN
632	4	EA	PEDESTRIAN SIGNAL HEAD, TYPE D2, AS PER PLAN
632	6	EA	COVERING OF VEHICULAR SIGNAL HEADS
632	2	EA	PEDESTRIAN PUSHBUTTON, AS PER PLAN
632	1	EA	LOOP DETECTOR UNIT, DELAY AND EXTENSION TYPE, AS PER PLAN
632	1	EA	LOOP DETECTOR UNIT, 2 CHANNEL, DELAY AND EXTENSION TYPE, AS PER PLAN
632	338	LF	LOOP DETECTOR PAVEMENT CUTTING
632	1	EA	MAGNETOMETER DETECTOR AMPLIFIER, 2 CHANNEL UNIT, AS PER PLAN
632	4	EA	MAGNETOMETER SENSOR, 2 PROBE SET, 6' SEPARATION, 60' LEAD-IN
632	377	LF	MESSENGER WIRE, 7 STRAND, 3/8" DIAMETER WITH ACCESSORIES
632	340	LF	SIGNAL CABLE, 5 CONDUCTOR, NO.14 AWG
632	454	LF	SIGNAL CABLE, 7 CONDUCTOR, NO.14 AWG
632	696	LF	LOOP DETECTOR WIRE, TYPE "E"
632	285	LF	LOOP DETECTOR LEAD-IN CABLE
632	1200	LF	MAGNETOMETER LEAD-IN CABLE
632	50	LF	POWER CABLE, 2 CONDUCTOR, NO.8 AWG
632	40	LF	SERVICE CABLE, 2 CONDUCTOR, NO.6 AWG
632	1	EA	POWER SERVICE, AS PER PLAN
632	4	EA	CABLE SUPPORT ASSEMBLY
632	10.4	CY	CONCRETE FOR ANCHOR BASE FOUNDATIONS
632	4	EA	STRAIN POLE, TYPE 81.10, DESIGN 5, 28 FEET, AS PER PLAN
633	1	EA	CONTROLLER, MISC.: ACTUATED, WITH 4 PHASE BASE-MOUNT CABINET
633	1.85	CY	CONCRETE FOR CABINET FOUNDATION
633	10.4	SF	CONTROLLER WORK PAD
633	1	EA	CONTROLLER ITEM, MISC.: TRANSCEIVER INTERFACE

B.M. E.E. #18 ELEV. 740.924  
 CHISELED SQUARE ON SOUTH CORNER  
 OF CONCRETE LIGHT POLE BASE ON  
 N.E. CORNER OF KINNEAR ROAD AND  
 OLENTANGY RIVER ROAD STA.20+85, 39'RT.

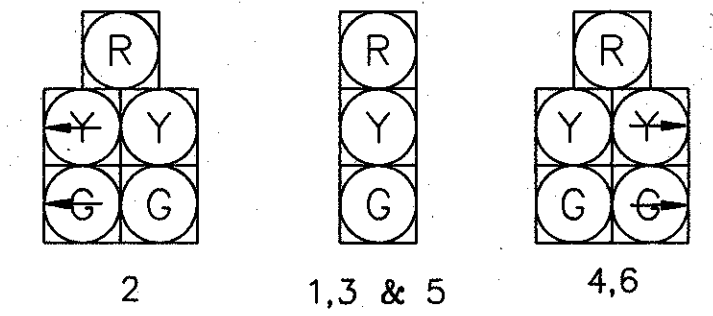
CONDUIT INSTALLED  
 ON THIS PROJECT  
 SEE SHEET 11.

BASE ANGLE FOR  
 FOUNDATION  
 MEASURED  
 CLOCKWISE.

HANDHOLE IS ZERO  
 REFERENCE FOR  
 POLE ACCESSORY  
 ANGLES MEASURED  
 CLOCKWISE.

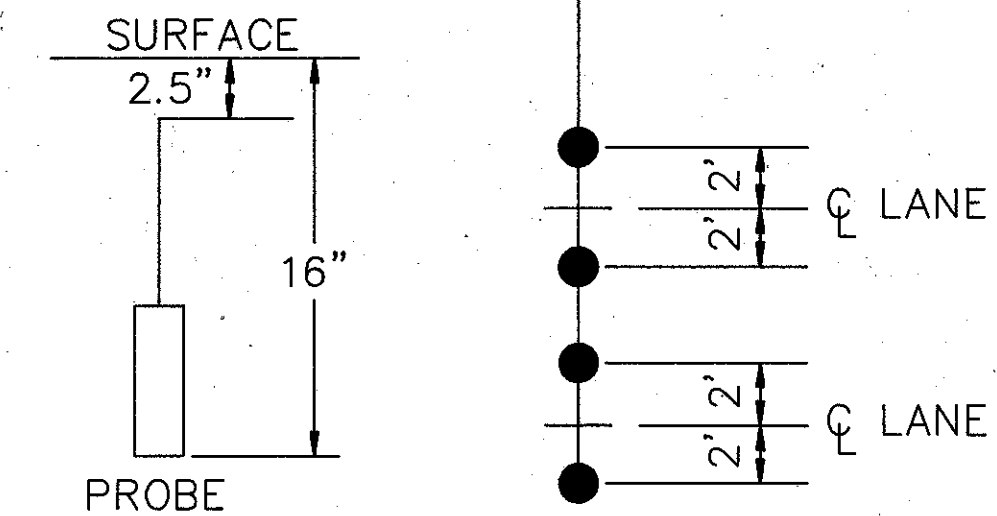


SIGNAL HEADS



ALL HEADS ARE 12"

TO PULL BOX



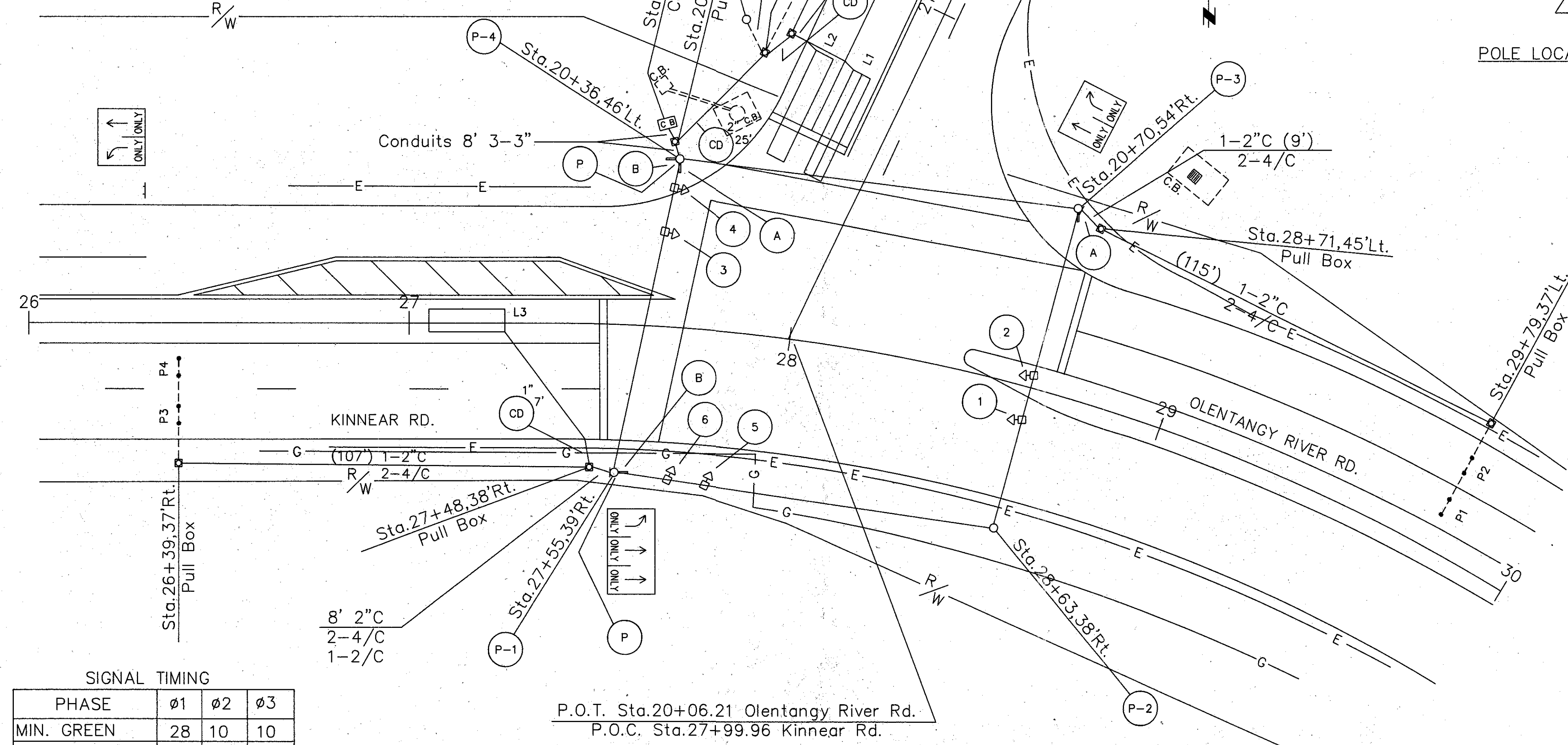
NOTE:  
 EACH PROBE SET SHALL  
 HAVE A SEPARATE LEAD  
 TO THE PULL BOX.

TYPICAL MAGNETOMETER  
 PROBE PLACEMENT

DETECTOR DATA

DET. NUM.	MAGS	LOOPS	PHASE	LOOP SIZE	LOOP DELAY	CABLE LABEL				
MAGS	LOOPS	UNIT#	CH #	UNIT#	CH #	MAGS	LOOPS	LOOP SIZE	LOOP DELAY	CABLE LABEL
P1	L1	1	1	1	1	1	2	2/2x2/2x30		WBL SBL
P2	L2	1	1	1	2	1	2	5'x30'	5	WBR SBR
P3	L3	1	2	2	1	1	3	6'x20'		EBR EBLT
P4		1	2			1				EBL

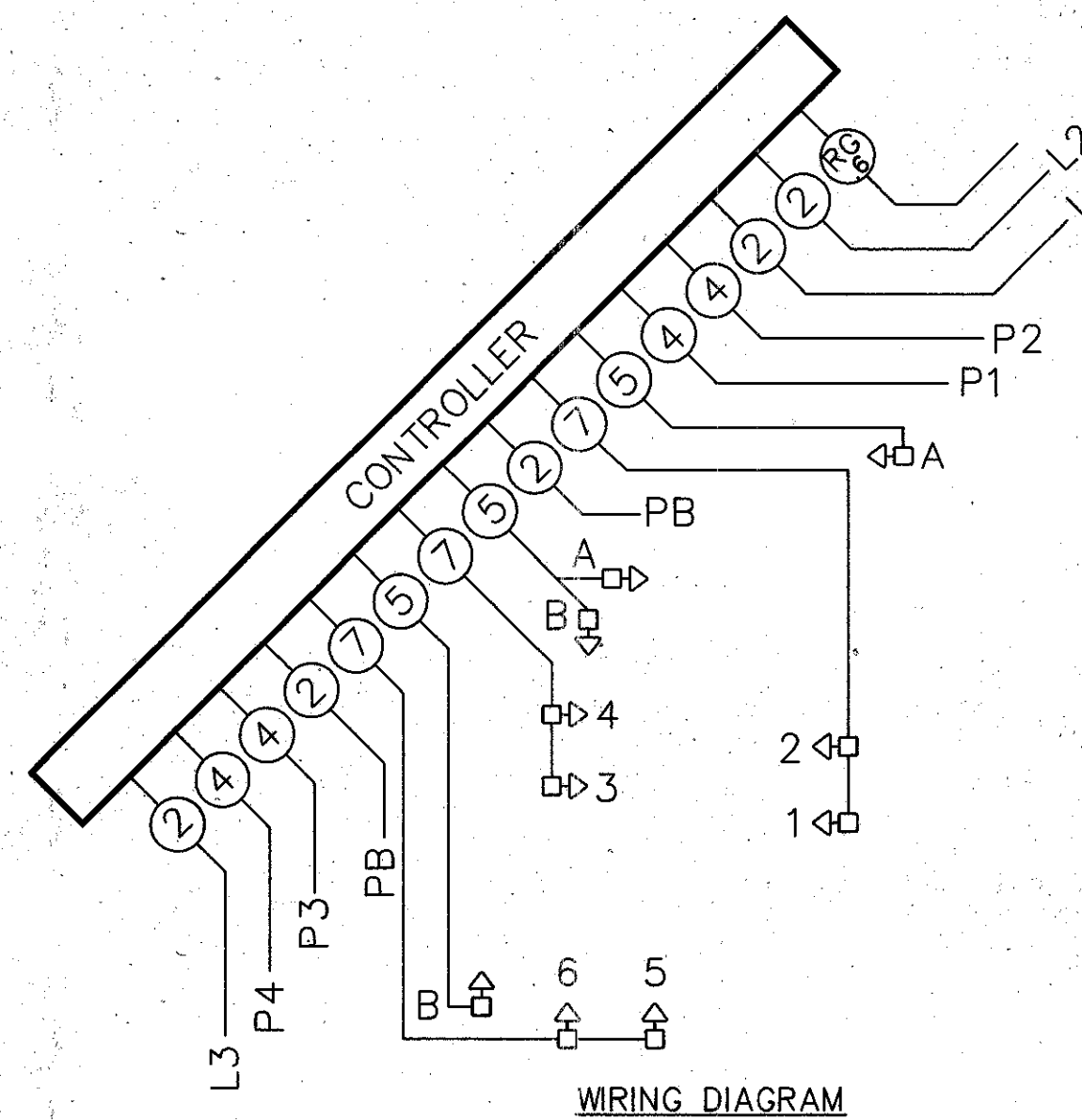
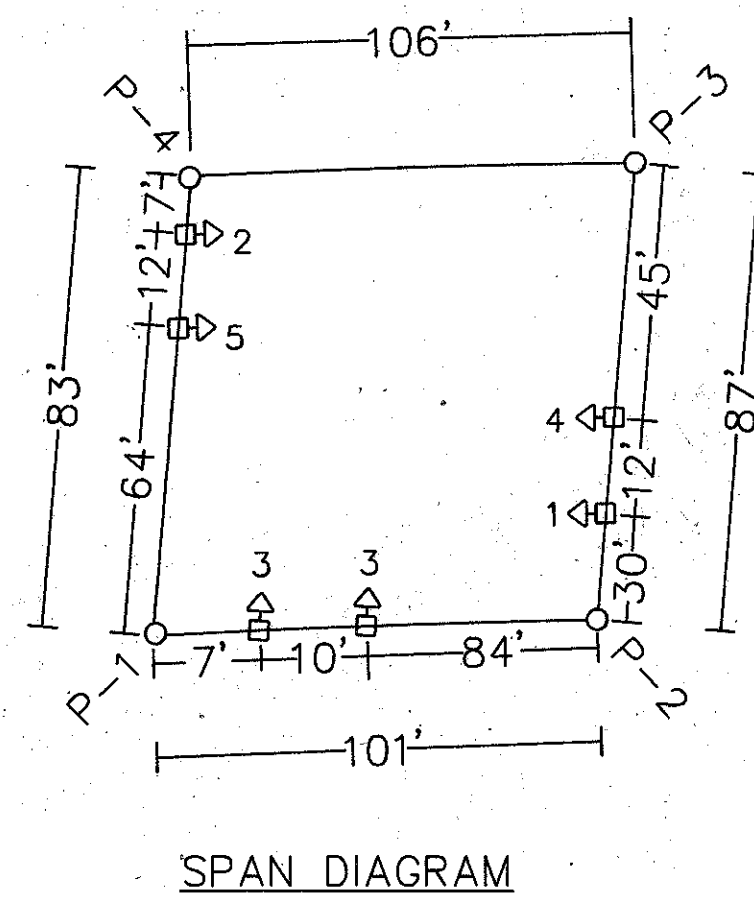
ALL QUANTITIES SHOWN ON SHEET 17.



P.O.T. Sta.20+06.21 Olentangy River Rd.  
 P.O.C. Sta.27+99.96 Kinnear Rd.

SIGNAL TIMING

PHASE	Ø1	Ø2	Ø3
MIN. GREEN	28	10	10
ADD INITIAL	0	0	0
MAX INITIAL	20	10	10
PASSAGE	4.0	3.5	3.0
TBR	0	0	0
TTR	0	0	0
MIN. GAP	4.0	3.5	3.0
MAX. 1	50	35	20
MAX. 2	50	35	20
WALK	7	7	0
PED. CLEAR	21	16	0
INITIALIZE	GRN	RED	RED
MEMORY	ON	OFF	OFF
VEH. RECALL	ON	OFF	OFF
PED. RECALL	ON	OFF	OFF
FLASHING WALK	OFF	OFF	OFF
NEXT PHASE	2	3	1
YELLOW	3.8	3.5	3.5
ALL RED	1.5	1.0	1.0



POLE	TC-81.10 DESIGN NO.	STATION & OFFSET	FOUNDATION ELEVATION	POLE HEIGHT	HAND HOLE	BLIND COUPLING SIZE	BLIND COUPLING ANGLE	BLIND COUPLING FROM TOP	PUSH BUTTONS	PED. SIG. ANGLE	P.B. SIGN. ANGLE(S)	SPAN ANGLE(S)
P1	5	27+55, 39'RT.	738.67	28'	234'	2"	180°	12"	180°	222°	45°/225°	136°/233°
P2	5	28+63, 38'RT.	738.67	28'	133'	2"	180°	12"				132°/228°
P3	5	20+70, 54'RT.	740.75	28'	125'	2"	180°	12"		132°		136°/217°
P4	5	20+36, 46'LT.	740.47	28'	202'	3"	180°	12"	180°	230°/315°	90°/270°	138°/233°

# INTERSECTION DETAIL

## JOHN H HERRICK DR at OLENTANGY RIVER RD (# 4163)

CICU HARNESS WIRING  
TRUNK ID: 3      DROP NUMBER: 150

### FIELD WIRING HOOK-UP CHART

HARNESS		BOX FUNCTION
PIN	FUNCTION	
13	PHASE 1 GREEN	EBLT GREEN (PHASE 1)
8	PHASE 2 GREEN	WB THRU GREEN (PHASE 2)
7	PHASE 3 GREEN	NBLT GREEN (PHASE 4)
6	PHASE 4 GREEN	SB THRU GREEN (PHASE 3)
12	PHASE 5 GREEN	WBLT GREEN (PHASE 5)
11	PHASE 6 GREEN	EB THRU GREEN (PHASE 6)
18	PHASE 7 GREEN	SBLT GREEN (PHASE 3)
3	PHASE 8 GREEN	NB THRU GREEN (PHASE 4)
10	WALK 1 MONITOR	PHASE 3 WALK
16	WALK 2 MONITOR	PHASE 4 WALK
22	PED CALL 1 (SYS. DET. 7)	PHASE 3 PED CALL
36	PED CALL 2 (SYS. DET. 8)	PHASE 4 PED CALL
4	FLASH	SIGNAL POWER
15	PREEMPT	POLICE MANUAL SWITCH
2	SPEC FUNCTION 1 MONITOR	AC+ RELAY OUTPUT SENSING THAT PHASE 1 OMIT IS ACTIVE
1	SPEC FUNCTION 2 MONITOR	AC+ RELAY OUTPUT SENSING THAT PHASE 5 OMIT IS ACTIVE
5	SPEC FUNCTION 3 MONITOR	
24	ADDRESS-1	GROUND
25	ADDRESS-2	GROUND
30	ADDRESS-4	
31	ADDRESS-8	
32	ADDRESS-16	
26	ADDRESS-32	GROUND
27	ADDRESS-64	
21	ADDRESS-128	GROUND
29	SYSTEM DETECTOR 1	
34	SYSTEM DETECTOR 2	
35	SYSTEM DETECTOR 3	
37	SYSTEM DETECTOR 4	
33	SYSTEM DETECTOR 5	
28	SYSTEM DETECTOR 6	
20	RETURN FOR AC MONITOR	GROUND
23	RETURN FOR NEMA MONITOR	GROUND

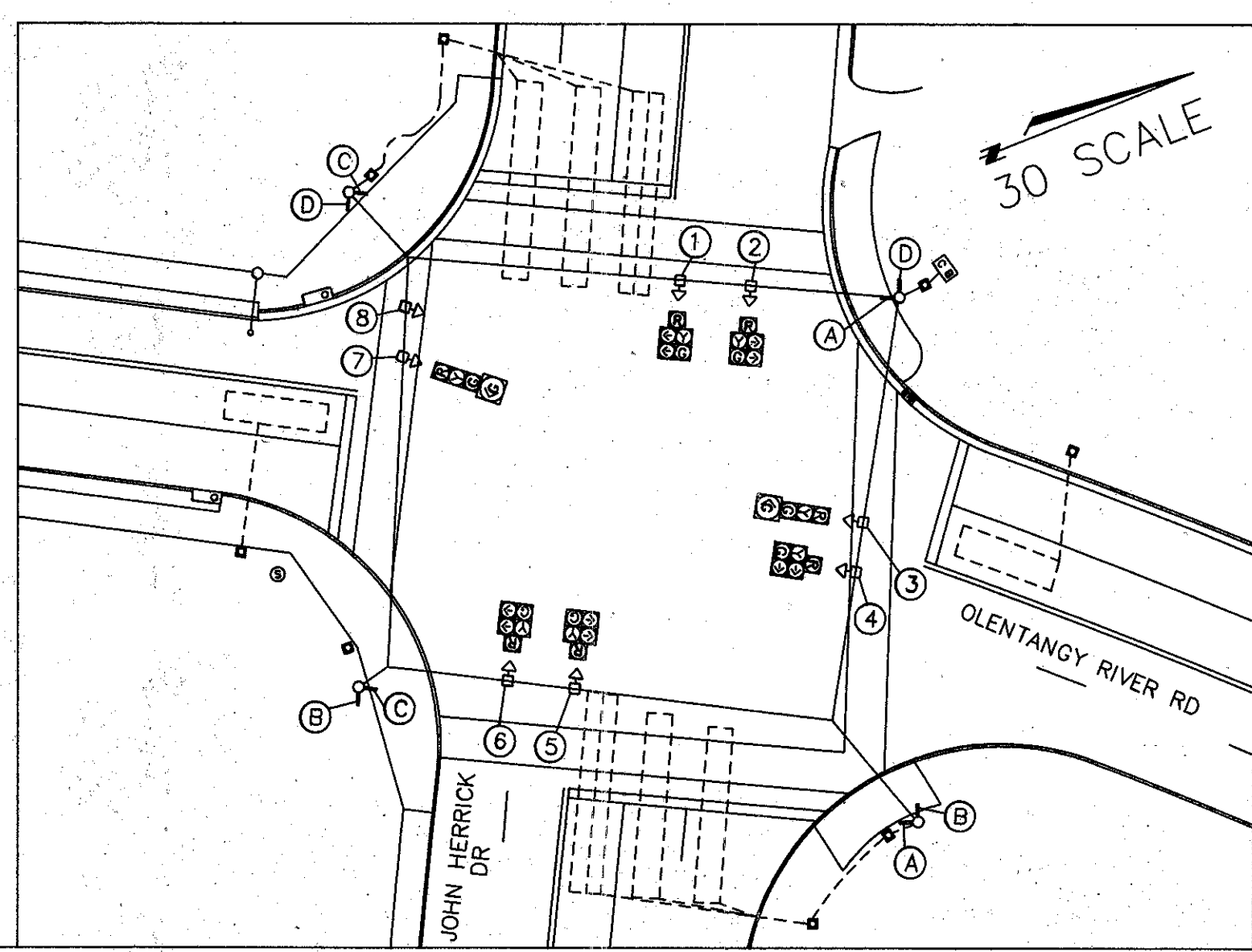
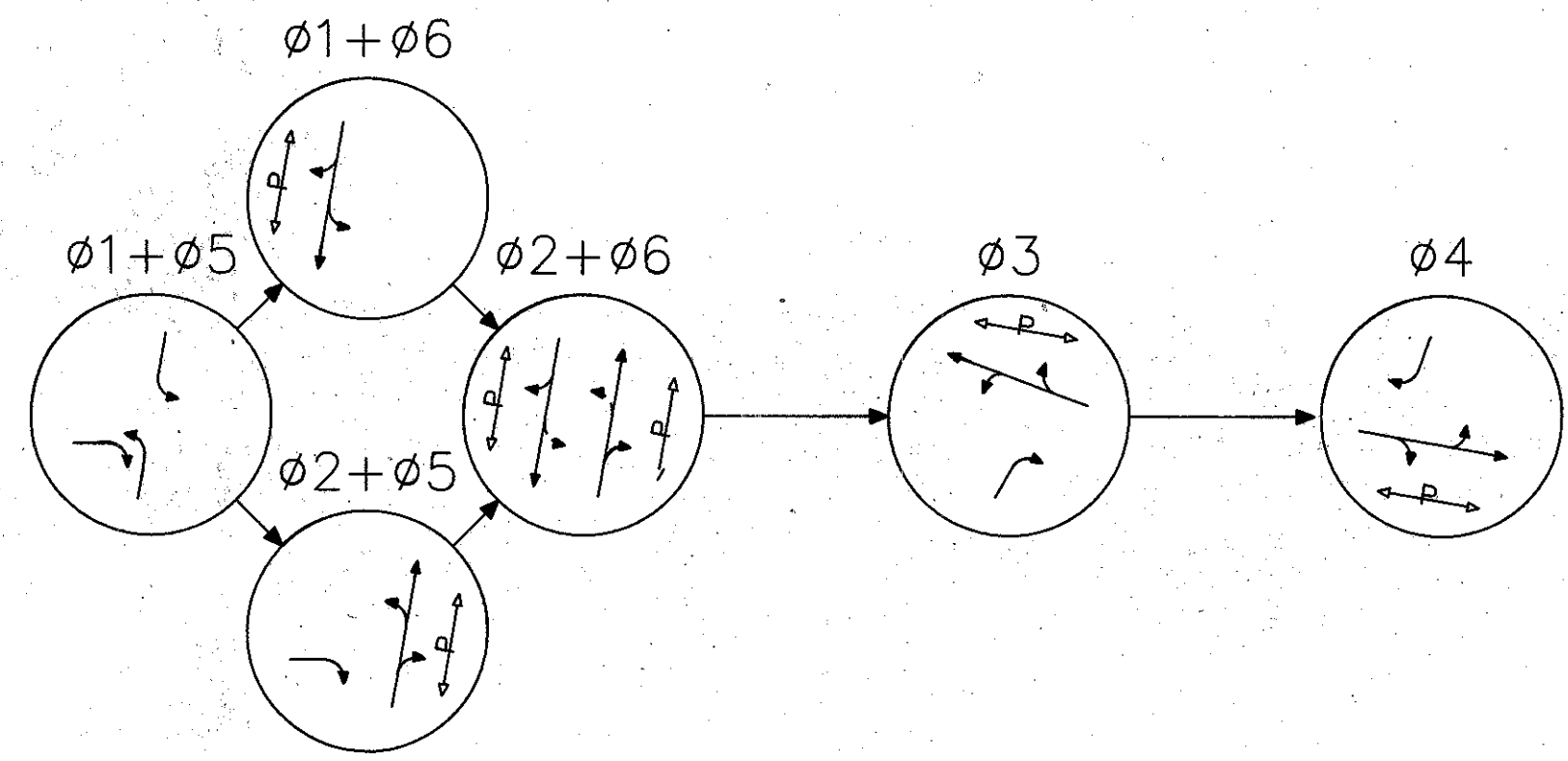
HARNESS		BOX FUNCTION
PIN	FUNCTION	
25	HOL (C)	GROUND
21	HOL (N.O.)	RING 1 & RING 2 (MAX2 & PED REC)+CNA1
28	HOLD (C)	GROUND
5	HOLD (N.O.)	PHASE 2 & 6 HOLD
8	FORCE OFF 1 (C)	GROUND
10	FORCE OFF 1 (N.O.)	FORCE OFF 1 (RING 1)
31	FORCE OFF 2 (C)	GROUND
20	FORCE OFF 2 (N.O.)	FORCE OFF 2 (RING 2)
24	CALL ALL (C)	GROUND
30	CALL ALL (N.O.)	PHASE 1, 3, 4, 5, 7 & 8 VEH CALL, DIODE SEPARATE
12	FLASH (COMMON)	GROUND
4	FLASH (N.O.)	FLASH SYNCHRONIZER
32	SPECIAL FUNCTION 1 (C)	GROUND
26	SPECIAL FUNCTION 1 (N.O.)	OMIT PHASE 1
17	SPECIAL FUNCTION 2 (C)	GROUND
11	SPECIAL FUNCTION 2 (N.O.)	OMIT PHASE 5
22	SPECIAL FUNCTION 3 (C)	GROUND
9	SPECIAL FUNCTION 3 (N.O.)	
1	AC+	AC+
2	AC-	AC-
3	GROUND	GROUND

SEE SHEET 14A FOR TIMING INFO

### DETECTOR WIRING

LOOP	HARNESS LABEL	SIZE	PHASE #	UNIT #	CHANNEL #	DELAY TIMING	EXTENSION TIMING
NBRT	NBRT 04	EXISTING PROBES	4	1	1	-	-
SB	SB 03	EXISTING PROBES	3	1	2	-	-
NBLT	NBLT 04	EXISTING	4	2	1	-	-
SBLT	SBLT 03	EXISTING	3	2	2	-	-
EBLT	EBLT 01	EXISTING	1	3	1	4	-
EBT	EBT 06	EXISTING	6	3	2	-	-
EBR	EBR 06	EXISTING	6	4	1	-	-
WBLT	WBLT 05	EXISTING	5	5	1	4	-
WBT	WBT 02	EXISTING	2	5	2	-	-
WBR	WBR 02	EXISTING	2	4	2	-	-

### SIGNAL PHASING



SIGNAL	INDICATION	DRIVEN BY	FLASH
1	R	02 R	R
	Y	02 Y	
	G	02 G	
	←Y	05 Y	
2	←G	05 G	R
	R	02 R	
	Y	02 Y	
	G	02 G	
3	Y →	03 Y	R
	G →	03 G	
	R	04 R	
	Y	04 Y	
4	←G	04 G	R
	R	04 R	
	Y	04 Y	
	G	04 G	
5	Y →	05 Y	R
	G →	05 G	
	R	06 R	
	Y	06 Y	
6	←Y	01 Y	R
	←G	01 G	

SIGNAL	INDICATION	DRIVEN BY	FLASH
6	R	06 R	R
	Y	06 Y	
	G	06 G	
	Y →	04 Y	
7	G →	04 G	R
	R	03 R	
	Y	03 Y	
	G	03 G	
8	←G	03 G	R
	R	03 R	
A	Y	03 Y	OUT
	G	03 G	
B	W	02 W	OUT
	DW	02 DW	
C	W	04 W	OUT
	DW	04 DW	
D	W	06 W	OUT
	DW	06 DW	

### INTERSECTION QUANTITIES

ITEM	QUANT	UNIT	DESCRIPTION
632		LF	MESSENGER WIRE, 7 STRAND, 0.25" DIAMETER WITH ACCESSORIES, AS PER PLAN
632		LF	SIGNALIZATION, MISC., DELASHING AND RELASHING OF CABLE
625		EA	GROUND ROD
632		EA	SIGNALIZATION, MISC., CONDUIT RISER, 0.5" DIAMETER, 713.04
632		EA	CONDUIT RISER, 1" DIAMETER, 713.04
632		EA	CONDUIT RISER, 2" DIAMETER, 713.04
632		EA	CONDUIT RISER, 2" DIAMETER, AS PER PLAN
625		EA	PULL BOX, 713.081, 10"X14"
625		LF	CONDUIT, 1", 713.04
625		LF	CONDUIT, 2", 713.04
625		LF	CONDUIT, 3", 713.04
625		LF	TRENCH
202		SF	WALK REMOVED
608		SF	4" CONCRETE WALK
608		SF	4" CONCRETE WALK, BOMACRON STAMPED, AS PER PLAN
608		SF	4" CONCRETE WALK BASE, REPLACING BRICKS, AS PER PLAN
253		SF	MISC. PAVEMENT REPAIR: DRIVEWAY, AS PER PLAN
202		SY	PAVEMENT REMOVED
253		SY	PAVEMENT REPAIR, AS PER PLAN
632		LF	LOOP DETECTOR PAVEMENT CUTTING
632		LF	LOOP DETECTOR WIRE, TYPE "E"
632		LF	LOOP DETECTOR LEAD-IN CABLE
632		EA	MAGNETOMETER SENSOR, 1 PROBE SET, 60' LEAD-IN
632		EA	MAGNETOMETER SENSOR, 2 PROBE SET, 6' SEPARATION, 60' LEAD-IN
632		LF	MAGNETOMETER LEAD-IN CABLE
632		EA	LOOP DETECTOR UNIT, DELAY AND EXTENSION TYPE, AS PER PLAN
632	4	EA	LOOP DETECTOR UNIT, 2 CHANNEL, DELAY AND EXTENSION TYPE, AS PER PLAN
632		EA	LOOP DETECTOR UNIT, 4 CHANNEL, AS PER PLAN
632	1	EA	MAGNETOMETER DETECTOR AMPLIFIER, 2 CHANNEL UNIT, AS PER PLAN
632		EA	PEDESTRIAN PUSHBUTTON, AS PER PLAN
633	1	EA	CONTROLLER ITEM, MISC.: TRANSCEIVER INTERFACE
633	1	EA	CONTROLLER, MISC.: ACTUATED, WITH 8 PHASE BASE-MOUNT CABINET

# INTERSECTION DETAILS

CALC. BY	FRA-315-2.39, PART 2	OHIO
DATE		
CHECK BY		
DATE		

19
27

19  
27

CICU HARNESS WIRING  
TRUNK ID: 3      DROP NUMBER: 152

## LENNOX DRIVE AT OLENTANGY RIVER RD (# 4194)

FIELD WIRING HOOK-UP CHART

CICU INPUT CONNECTOR		
HARNESS	FUNCTION	BOX FUNCTION
13	PHASE 1 GREEN	
8	PHASE 2 GREEN	SB THRU GREEN (OVERLAP)
7	PHASE 3 GREEN	
6	PHASE 4 GREEN	WB THRU GREEN (PHASE 2)
12	PHASE 5 GREEN	SBLT GREEN (PHASE 3)
11	PHASE 6 GREEN	NB THRU GREEN (PHASE 1)
18	PHASE 7 GREEN	
3	PHASE 8 GREEN	EB THRU GREEN (PHASE 2)
10	WALK 1 MONITOR	
16	WALK 2 MONITOR	
22	PED CALL 1 (SYS. DET. 7)	
36	PED CALL 2 (SYS. DET. 8)	
4	FLASH	SIGNAL POWER
15	PREEMPT	POLICE MANUAL SWITCH
2	SPEC FUNCTION 1 MONITOR	AC+ RELAY OUTPUT SENSING THAT PHASE 3 OMIT IS ACTIVE
1	SPEC FUNCTION 2 MONITOR	
5	SPEC FUNCTION 3 MONITOR	
24	ADDRESS-1	
25	ADDRESS-2	
30	ADDRESS-4	
31	ADDRESS-8	GROUND
32	ADDRESS-16	GROUND
26	ADDRESS-32	
27	ADDRESS-64	
21	ADDRESS-128	GROUND
29	SYSTEM DETECTOR 1	
34	SYSTEM DETECTOR 2	
35	SYSTEM DETECTOR 3	
37	SYSTEM DETECTOR 4	
33	SYSTEM DETECTOR 5	
28	SYSTEM DETECTOR 6	
20	RETURN FOR AC MONITOR	GROUND
23	RETURN FOR NEMA MONITOR	GROUND

SEE SHEET 14A FOR TIMING INFO

SIGNAL	INDICATION	DRIVEN BY	FLASH
1	G	Ø1 + Ø3 G	Y
	Y	Ø1 + Ø3 Y	
	R	Ø1 + Ø3 R	
	← G	Ø3 G	
2	← Y	Ø3 Y	Y
	G	Ø1 + Ø3 G	
	Y	Ø1 + Ø3 Y	
3	R	Ø1 + Ø3 R	Y
	G	Ø1 G	
	Y	Ø1 Y	
4	R	Ø1 R	R
	G	Ø2 G	
	Y	Ø2 Y	
		Ø2 R	

### DETECTOR WIRING

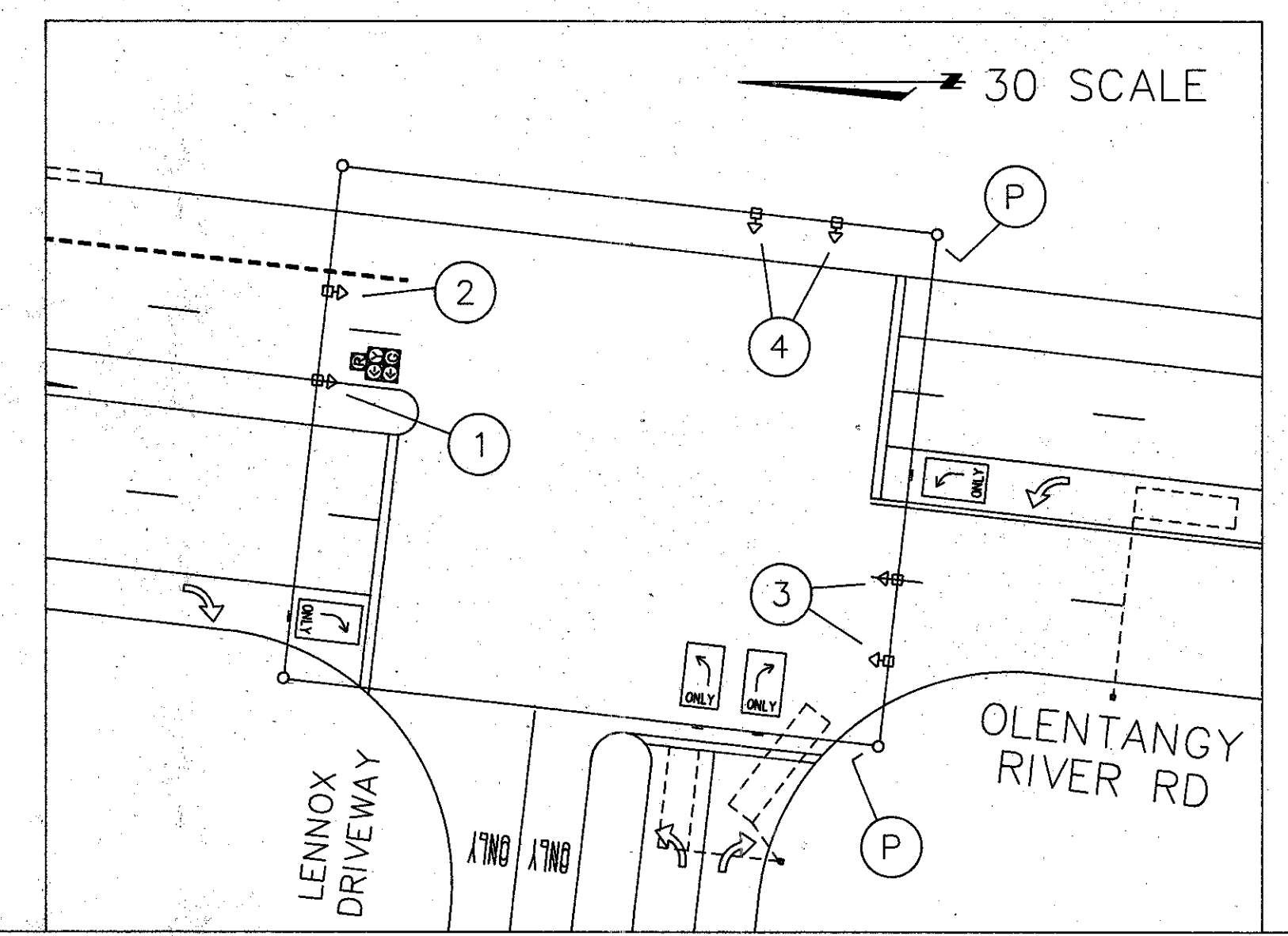
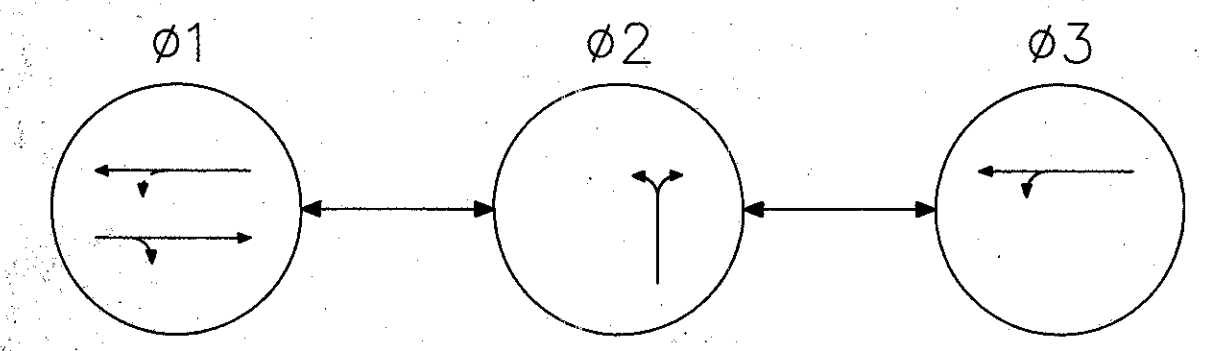
LOOP	HARNESS LABEL	SIZE	PHASE #	UNIT #	CHANNEL #	DELAY TIMING	EXTENSION TIMING
NB L	NBL Ø3	EXISTING	3	1	1	4	-
EB L	EBL Ø2	EXISTING	2	2	1	4	-
EB R	EBR Ø2	EXISTING	2	2	2	10	-

CICU OUTPUT CONNECTOR		
HARNESS	FUNCTION	BOX FUNCTION
25	HOL (C)	GROUND
21	HOL (N.O.)	RING 1: (MAX2 & PED RECY)+CNA1-
28	HOLD (C)	GROUND
5	HOLD (N.O.)	PHASE 1 HOLD
8	FORCE OFF 1 (C)	GROUND
10	FORCE OFF 1 (N.O.)	FORCE OFF 1 (RING 1)
31	FORCE OFF 2 (C)	GROUND
20	FORCE OFF 2 (N.O.)	FORCE OFF 1 (RING 1)
24	CALL ALL (C)	GROUND
30	CALL ALL (N.O.)	PHASE 2, 3 & 4 VEH CALL, DIODE SEPARATE
12	FLASH (COMMON)	GROUND
4	FLASH (N.O.)	FLASH SYNCHRONIZER
32	SPECIAL FUNCTION 1 (C)	GROUND
26	SPECIAL FUNCTION 1 (N.O.)	OMIT PHASE 3
17	SPECIAL FUNCTION 2 (C)	GROUND
11	SPECIAL FUNCTION 2 (N.O.)	
22	SPECIAL FUNCTION 3 (C)	GROUND
9	SPECIAL FUNCTION 3 (N.O.)	
1	AC+	AC+
2	AC-	AC-
3	GROUND	GROUND

### INTERSECTION QUANTITIES

ITEM	QUANT	UNIT	DESCRIPTION
632		LF	MESSENGER WIRE, 7 STRAND, 0.25" DIAMETER WITH ACCESSORIES, AS PER PLAN
632	100	LF	SIGNALIZATION, MISC., DELASHING AND RELASHING OF CABLE
625		EA	GROUND ROD
632		EA	SIGNALIZATION, MISC., CONDUIT RISER, 0.5" DIAMETER, 713.04
632		EA	CONDUIT RISER, 1" DIAMETER, 713.04
632		EA	CONDUIT RISER, 2" DIAMETER, 713.04
632		EA	CONDUIT RISER, 2" DIAMETER, AS PER PLAN
625		EA	PULL BOX, 713.081, 10"x14"
625		LF	CONDUIT, 1", 713.04
625		LF	CONDUIT, 2", 713.04
625		LF	CONDUIT, 3", 713.04
625		LF	TRENCH
202		SF	WALK REMOVED
608		SF	4" CONCRETE WALK
608		SF	4" CONCRETE WALK, BOMACRON STAMPED, AS PER PLAN
608		SF	4" CONCRETE WALK BASE, REPLACING BRICKS, AS PER PLAN
253		SF	MISC. PAVEMENT REPAIR: DRIVEWAY, AS PER PLAN
202		SY	PAVEMENT REMOVED
253		SY	PAVEMENT REPAIR, AS PER PLAN
632		LF	LOOP DETECTOR PAVEMENT CUTTING
632		LF	LOOP DETECTOR WIRE, TYPE "E"
632	230	LF	LOOP DETECTOR LEAD-IN CABLE
632		EA	MAGNETOMETER SENSOR, 1 PROBE SET, 60' LEAD-IN
632		EA	MAGNETOMETER SENSOR, 2 PROBE SET, 6' SEPARATION, 60' LEAD-IN
632		LF	MAGNETOMETER LEAD-IN CABLE
632	1	EA	LOOP DETECTOR UNIT, DELAY AND EXTENSION TYPE, AS PER PLAN
632	1	EA	LOOP DETECTOR UNIT, 2 CHANNEL, DELAY AND EXTENSION TYPE, AS PER PLAN
632		EA	LOOP DETECTOR UNIT, 4 CHANNEL, AS PER PLAN
632		EA	MAGNETOMETER DETECTOR AMPLIFIER, 2 CHANNEL UNIT, AS PER PLAN
632	2	EA	PEDESTRIAN PUSHBUTTON, AS PER PLAN
633	1	EA	CONTROLLER ITEM, MISC.: TRANSCEIVER INTERFACE
633	1	EA	CONTROLLER, MISC.: ACTUATED, WITH 4 PHASE BASE-MOUNT CABINET

### SIGNAL PHASING



# INTERSECTION DETAILS

## KING AV AT OLENTANGY RIVER RD (# 4096)

CICU HARNESS WIRING  
 TRUNK ID: 3      DROP NUMBER: 96

CICU INPUT CONNECTOR		
HARNESS	FUNCTION	BOX FUNCTION
13	PHASE 1 GREEN	NBLT GREEN (PHASE 1)
8	PHASE 2 GREEN	SB THRU GREEN (PHASE 2)
7	PHASE 3 GREEN	EBLT GREEN (PHASE 3)
6	PHASE 4 GREEN	WB THRU GREEN (PHASE 4)
12	PHASE 5 GREEN	SBLT GREEN (PHASE 5)
11	PHASE 6 GREEN	NB THRU GREEN (PHASE 6)
18	PHASE 7 GREEN	WBLT GREEN (PHASE 7)
3	PHASE 8 GREEN	EB THRU GREEN (PHASE 8)
10	WALK 1 MONITOR	PHASE 4 WALK
16	WALK 2 MONITOR	PHASE 8 WALK
22	PED CALL 1 (SYS. DET. 7)	PHASE 4 PED CALL
36	PED CALL 2 (SYS. DET. 8)	PHASE 8 PED CALL
4	FLASH	SIGNAL POWER
15	PREEMPT	POLICE MANUAL SWITCH
2	SPEC FUNCTION 1 MONITOR	AC+ RELAY OUTPUT SENSING THAT PH 1&5 OMIT IS ACTIVE
1	SPEC FUNCTION 2 MONITOR	AC+ RELAY OUTPUT SENSING THAT PH 3&7 OMIT IS ACTIVE
5	SPEC FUNCTION 3 MONITOR	
24	ADDRESS-1	
25	ADDRESS-2	
30	ADDRESS-4	
31	ADDRESS-8	
32	ADDRESS-16	
26	ADDRESS-32	GROUND
27	ADDRESS-64	GROUND
21	ADDRESS-128	
29	SYSTEM DETECTOR 1	
34	SYSTEM DETECTOR 2	
35	SYSTEM DETECTOR 3	
37	SYSTEM DETECTOR 4	
33	SYSTEM DETECTOR 5	
28	SYSTEM DETECTOR 6	
20	RETURN FOR AC MONITOR	GROUND
23	RETURN FOR NEMA MONITOR	GROUND

CICU OUTPUT CONNECTOR		
HARNESS	FUNCTION	BOX FUNCTION
25	HOL (C)	GROUND
21	HOL (N.O.)	RING 1 & RING 2 (MAX2 & PED REC'Y)+CNA1
28	HOLD (C)	GROUND
5	HOLD (N.O.)	PHASE 2 & 6 HOLD
8	FORCE OFF 1 (C)	GROUND
10	FORCE OFF 1 (N.O.)	FORCE OFF 1 (RING 1)
31	FORCE OFF 2 (C)	GROUND
20	FORCE OFF 2 (N.O.)	FORCE OFF 2 (RING 2)
24	CALL ALL (C)	GROUND
30	CALL ALL (N.O.)	PHASE 1, 3, 4, 5, 7 & 8 VEH CALL, DIODE SEPARATE
12	FLASH (COMMON)	GROUND
4	FLASH (N.O.)	FLASH SYNCHRONIZER
32	SPECIAL FUNCTION 1 (C)	GROUND
26	SPECIAL FUNCTION 1 (N.O.)	OMIT PHASES 1 & 5
17	SPECIAL FUNCTION 2 (C)	GROUND
11	SPECIAL FUNCTION 2 (N.O.)	OMIT PHASES 3 & 7
22	SPECIAL FUNCTION 3 (C)	GROUND
9	SPECIAL FUNCTION 3 (N.O.)	
1	AC+	AC+
2	AC-	AC-
3	GROUND	GROUND

### FIELD WIRING HOOK-UP CHART

SIGNAL	INDICATION	DRIVEN BY	FLASH
1	G	Ø2 G	R
	Y	Ø2 Y	
	R	Ø2 R	
2	G	Ø2 G	R
	Y	Ø2 Y	
	R	Ø2 R	
	←G	Ø5 G	
	←Y	Ø5 Y	

SIGNAL	INDICATION	DRIVEN BY	FLASH
3	G	Ø6 G	R
	Y	Ø6 Y	
	R	Ø6 R	
4	G	Ø6 G	R
	Y	Ø6 Y	
	R	Ø6 R	
	←G	Ø1 G	
	←Y	Ø1 Y	
5	G	Ø4 G	R
	Y	Ø4 Y	
	R	Ø4 R	
6	G	Ø4 G	R
	Y	Ø4 Y	
	R	Ø4 R	
	←G	Ø7 G	
	←Y	Ø7 Y	

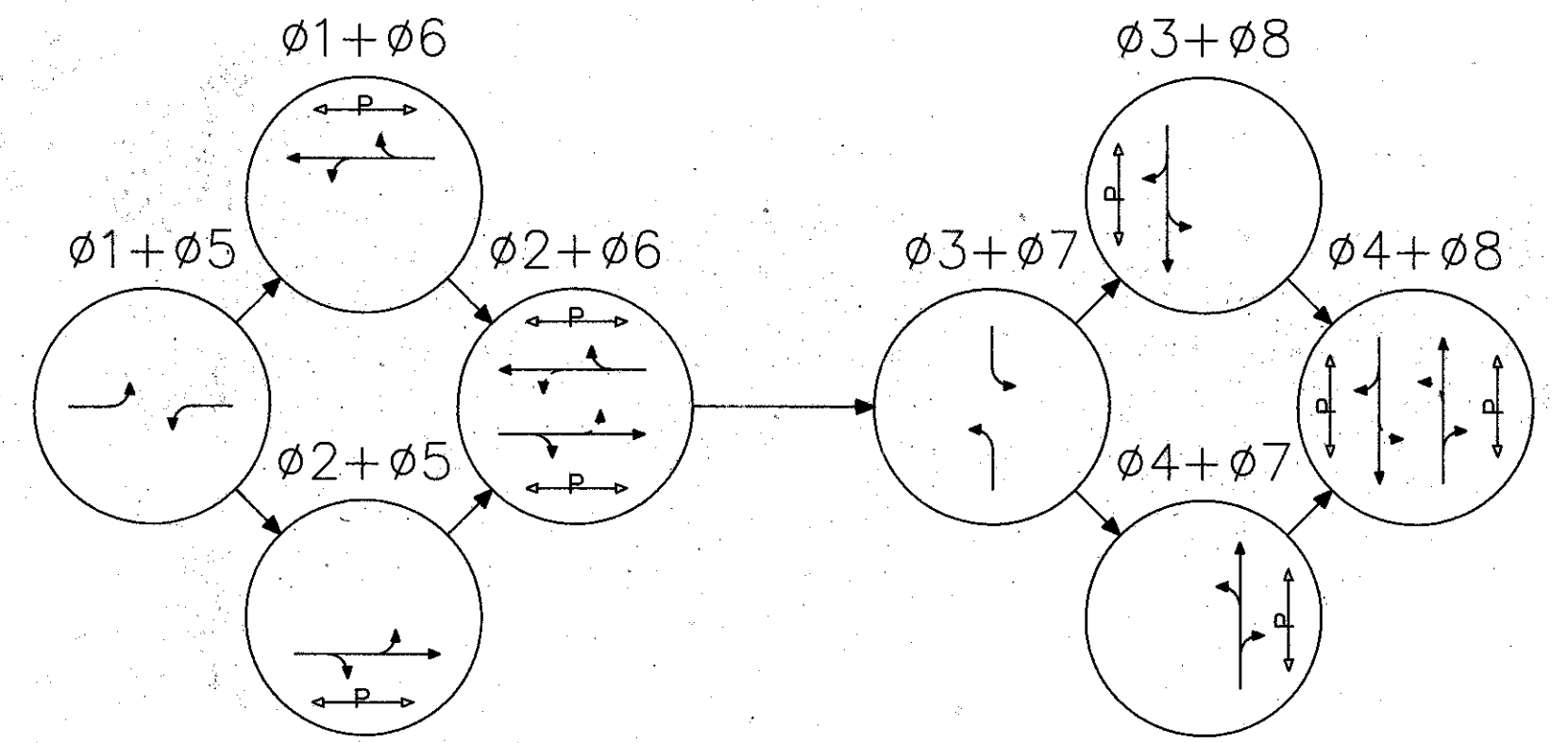
SIGNAL	INDICATION	DRIVEN BY	FLASH
7	G	Ø8 G	R
	Y	Ø8 Y	
	R	Ø8 R	
8	G	Ø8 G	R
	Y	Ø8 Y	
	R	Ø8 R	
	←G	Ø3 G	
	←Y	Ø3 Y	
A	W	Ø2 W	
	DW	Ø2 DW	
B	W	Ø6 W	
	DW	Ø6 DW	
C	W	Ø4 W	
	DW	Ø4 DW	
D	W	Ø8 W	
	DW	Ø8 DW	

### DETECTOR WIRING

LOOP	HARNESS LABEL	SIZE	PHASE #	UNIT #	CHANNEL #	DELAY TIMING	EXTENSION TIMING
NB L	NBL Ø1	EXISTING	1	1	1	-	-
SB L	SBL Ø5	EXISTING	5	1	2	-	-
EB L	EBL Ø7	EXISTING	7	2	1	-	-
WB L	WBL Ø3	EXISTING	3	2	2	-	-
EB	EB Ø4	EXISTING	4	3	1	-	-
WB	WB Ø8	EXISTING	8	3	2	-	-

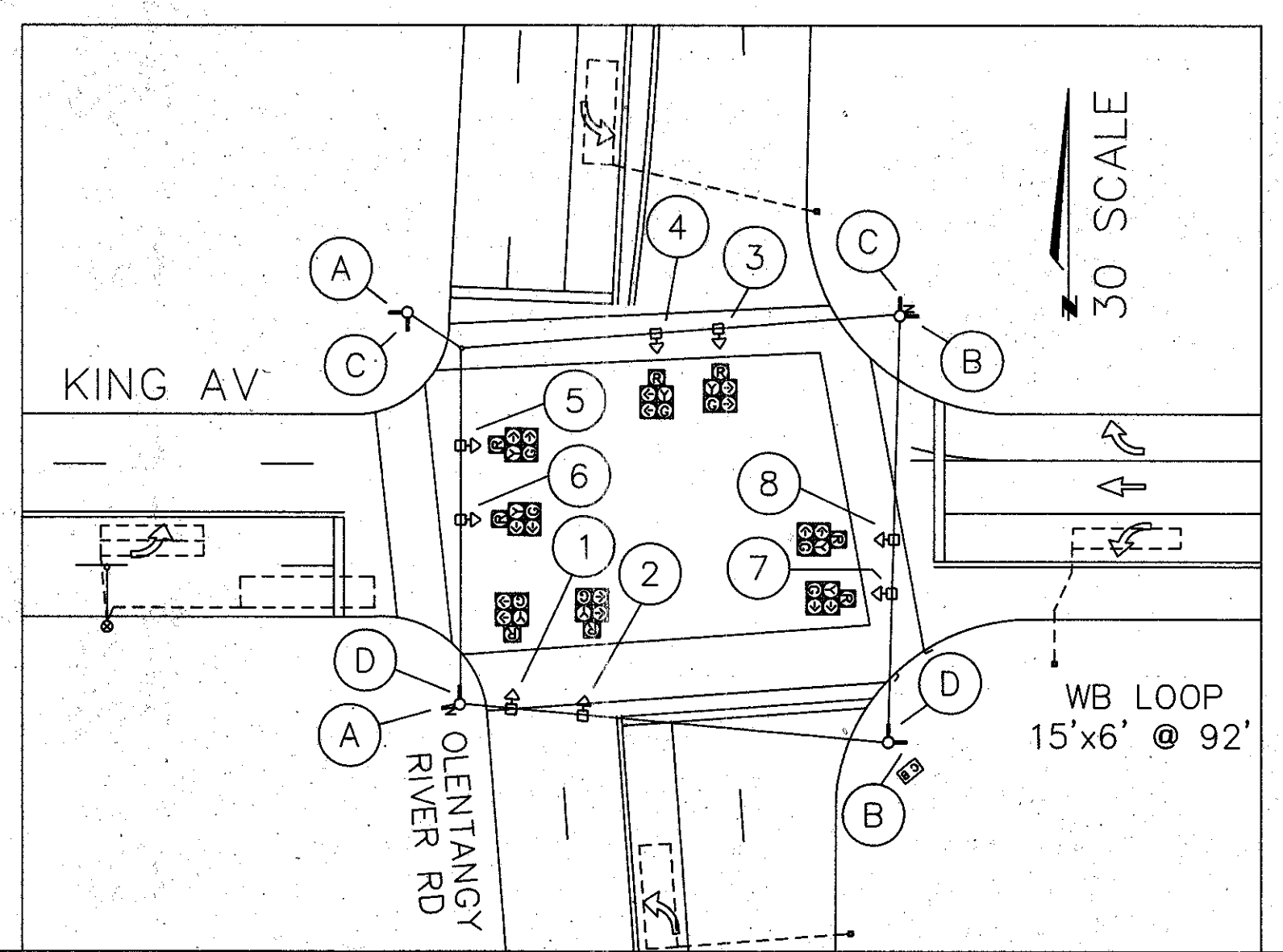
SEE SHEET 14A FOR TIMING INFO

### SIGNAL PHASING



### INTERSECTION QUANTITIES

ITEM	QUANT	UNIT	DESCRIPTION
632		LF	MESSENGER WIRE, 7 STRAND, 0.25" DIAMETER WITH ACCESSORIES, AS PER PLAN
632		LF	SIGNALIZATION, MISC.: DELASHING AND RELASHING OF CABLE
625		EA	GROUND ROD
632		EA	SIGNALIZATION, MISC.: CONDUIT RISER, 0.5" DIAMETER, 713.04
632		EA	CONDUIT RISER, 1" DIAMETER, 713.04
632		EA	CONDUIT RISER, 2" DIAMETER, 713.04
632		EA	CONDUIT RISER, 2" DIAMETER, AS PER PLAN
625		EA	PULL BOX, 713.081, 10"X14"
625		LF	CONDUIT, 1", 713.04
625		LF	CONDUIT, 2", 713.04
625		LF	CONDUIT, 3", 713.04
625		LF	TRENCH
202		SF	WALK REMOVED
608		SF	4" CONCRETE WALK
608		SF	4" CONCRETE WALK, BOMACRON STAMPED, AS PER PLAN
608		SF	4" CONCRETE WALK BASE, REPLACING BRICKS, AS PER PLAN
253		SF	MISC. PAVEMENT REPAIR: DRIVEWAY, AS PER PLAN
202		SY	PAVEMENT REMOVED
253		SY	PAVEMENT REPAIR, AS PER PLAN
632		LF	LOOP DETECTOR PAVEMENT CUTTING
632		LF	LOOP DETECTOR WIRE, TYPE "E"
632		LF	LOOP DETECTOR LEAD-IN CABLE
632		EA	MAGNETOMETER SENSOR, 1 PROBE SET, 60' LEAD-IN
632		EA	MAGNETOMETER SENSOR, 2 PROBE SET, 6' SEPARATION, 60' LEAD-IN
632		LF	MAGNETOMETER LEAD-IN CABLE
632		EA	LOOP DETECTOR UNIT, DELAY AND EXTENSION TYPE, AS PER PLAN
632	3	EA	LOOP DETECTOR UNIT, 2 CHANNEL, DELAY AND EXTENSION TYPE, AS PER PLAN
632		EA	LOOP DETECTOR UNIT, 4 CHANNEL, AS PER PLAN
632		EA	MAGNETOMETER DETECTOR AMPLIFIER, 2 CHANNEL UNIT, AS PER PLAN
632		EA	PEDESTRIAN PUSHBUTTON, AS PER PLAN
633	1	EA	CONTROLLER ITEM, MISC.: TRANSCEIVER INTERFACE
633	1	EA	CONTROLLER, MISC.: ACTUATED, WITH 8 PHASE BASE-MOUNT CABINET



# INTERSECTION DETAILS

## BATTELLE & CANNON AT KING AV (# 4095)

DATE	FRA-315-2.39, PART 2	OHIO FHWA REGION 5
CHECK BY		
DATE		

21  
27

### CICU HARNESS WIRING

TRUNK ID: 3      DROP NUMBER: 95

#### CICU INPUT CONNECTOR

HARNESS		BOX FUNCTION
PIN	FUNCTION	
13	PHASE 1 GREEN	EBLT GREEN (PHASE 1)
8	PHASE 2 GREEN	WB THRU GREEN (PHASE 2)
7	PHASE 3 GREEN	NBLT GREEN (PHASE 3)
6	PHASE 4 GREEN	SB THRU GREEN (PHASE 4)
12	PHASE 5 GREEN	WBLT GREEN (PHASE 5)
11	PHASE 6 GREEN	EB THRU GREEN (PHASE 6)
18	PHASE 7 GREEN	SBLT GREEN (PHASE 7)
3	PHASE 8 GREEN	NB THRU GREEN (PHASE 8)
10	WALK 1 MONITOR	PHASE 4 WALK
16	WALK 2 MONITOR	PHASE 8 WALK
22	PED CALL 1 (SYS. DET. 7)	PHASE 4 PED CALL
36	PED CALL 2 (SYS. DET. 8)	PHASE 8 PED CALL
4	FLASH	SIGNAL POWER
15	PREEMPT	POLICE MANUAL SWITCH
2	SPEC FUNCTION 1 MONITOR	AC+ RELAY OUTPUT SENSING THAT PHASE 1 OMIT IS ACTIVE
1	SPEC FUNCTION 2 MONITOR	AC+ RELAY OUTPUT SENSING THAT PHASE 5 OMIT IS ACTIVE
5	SPEC FUNCTION 3 MONITOR	
24	ADDRESS-1	GROUND
25	ADDRESS-2	GROUND
30	ADDRESS-4	GROUND
31	ADDRESS-8	GROUND
32	ADDRESS-16	GROUND
26	ADDRESS-32	
27	ADDRESS-64	GROUND
21	ADDRESS-128	
29	SYSTEM DETECTOR 1	
34	SYSTEM DETECTOR 2	
35	SYSTEM DETECTOR 3	
37	SYSTEM DETECTOR 4	
33	SYSTEM DETECTOR 5	
28	SYSTEM DETECTOR 6	
20	RETURN FOR AC MONITOR	GROUND
23	RETURN FOR NEMA MONITOR	GROUND

#### CICU OUTPUT CONNECTOR

HARNESS		BOX FUNCTION
PIN	FUNCTION	
25	HOL (C)	GROUND
21	HOL (N.O.)	RING 1 & RING 2 : (MAX2 & PED REC)+CNA1
28	HOLD (C)	GROUND
5	HOLD (N.O.)	PHASE 2 & 6 HOLD
8	FORCE OFF 1 (C)	GROUND
10	FORCE OFF 1 (N.O.)	FORCE OFF 1 (RING 1)
31	FORCE OFF 2 (C)	GROUND
20	FORCE OFF 2 (N.O.)	FORCE OFF 2 (RING 2)
24	CALL ALL (C)	GROUND
30	CALL ALL (N.O.)	PHASE 1, 3, 4, 5, 7 & 8 VEH CALL, DIODE SEPARATE
12	FLASH (COMMON)	GROUND
4	FLASH (N.O.)	FLASH SYNCHRONIZER
32	SPECIAL FUNCTION 1 (C)	GROUND
26	SPECIAL FUNCTION 1 (N.O.)	OMIT PHASE 1
17	SPECIAL FUNCTION 2 (C)	GROUND
11	SPECIAL FUNCTION 2 (N.O.)	OMIT PHASE 5
22	SPECIAL FUNCTION 3 (C)	GROUND
9	SPECIAL FUNCTION 3 (N.O.)	
1	AC+	AC+
2	AC-	AC-
3	GROUND	GROUND

### FIELD WIRING HOOK-UP CHART

SIGNAL	INDICATION	DRIVEN BY	FLASH
1	G	ø6 G	Y
	Y	ø6 Y	
	R	ø6 R	
	←G	ø1 G	
	←Y	ø1 Y	

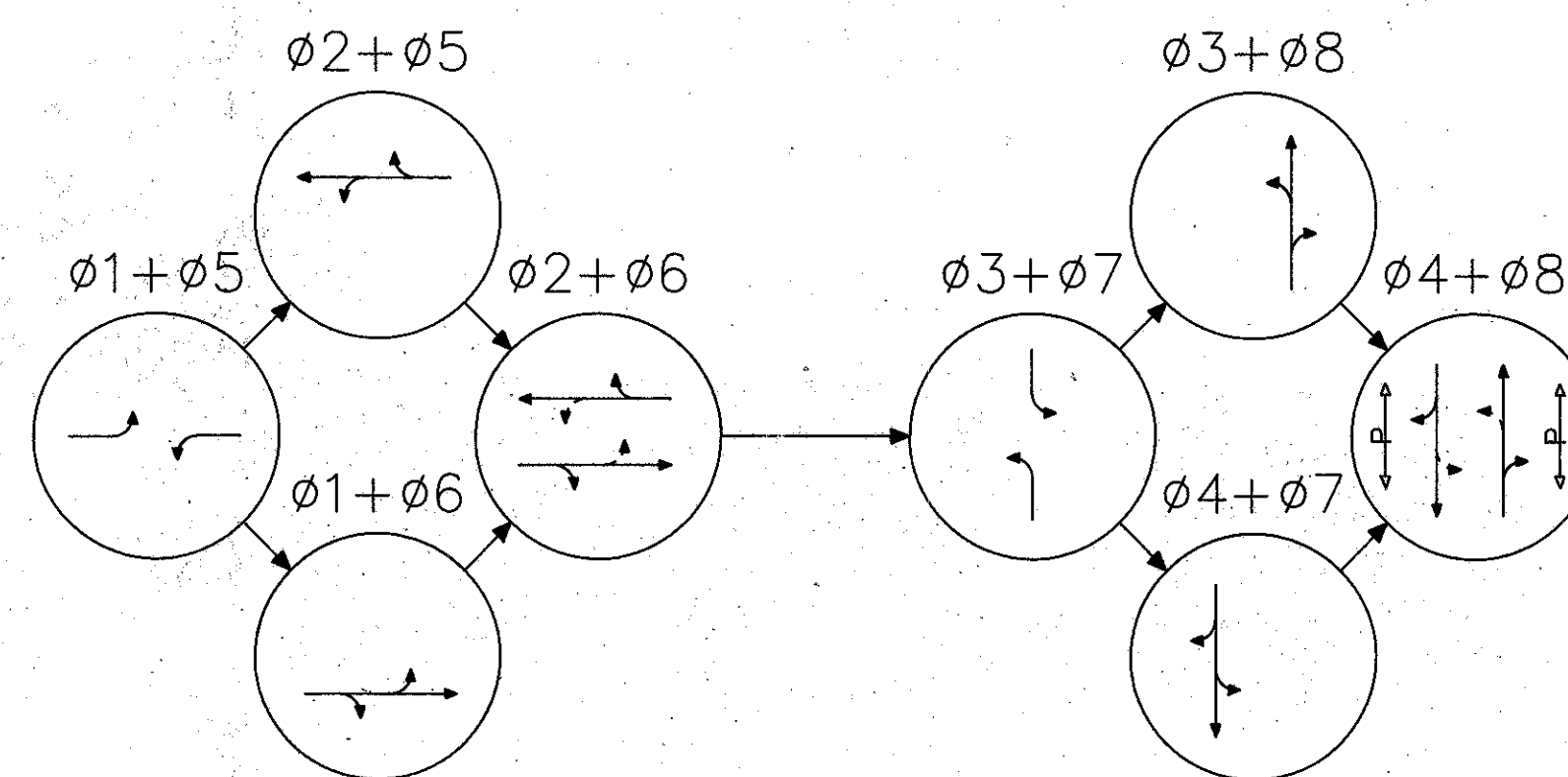
SIGNAL	INDICATION	DRIVEN BY	FLASH
2	G	ø2 G	Y
	Y	ø2 Y	
	R	ø2 R	
3	G	ø4 G	R
	Y	ø4 Y	
	R	ø4 R	
	←G	ø7 G	
	←Y	ø7 Y	
4	G	ø8 G	R
	Y	ø8 Y	
	R	ø8 R	
5	G	ø8 G	R
	Y	ø8 Y	
	R	ø8 R	
	←G	ø3 G	
←Y	ø3 Y		

SIGNAL	INDICATION	DRIVEN BY	FLASH
6	G	ø4 G	R
	Y	ø4 Y	
	R	ø4 R	
7	G	ø6 G	Y
	Y	ø6 Y	
	R	ø6 R	
	←G	ø2 G	
8	Y	ø2 Y	Y
	R	ø2 R	
	←G	ø5 G	
	←Y	ø5 Y	
A	W	ø8 W	OUT
B	DW	ø8 DW	OUT
B	W	ø4 W	OUT
B	DW	ø4 DW	OUT

### DETECTOR WIRING

LOOP	HARNESS LABEL	SIZE	PHASE #	UNIT #	CHANNEL #	DELAY TIMING	EXTENSION TIMING
NB L	NBL ø1	EXISTING	1	1	1	-	-
SB L	SBL ø5	EXISTING	5	1	2	-	-
EB L	EBL ø7	EXISTING	7	2	1	-	-
WB L	WBL ø3	EXISTING	3	2	2	-	-
EB	EB ø4	EXISTING	4	3	1	-	-
WB	WB ø8	EXISTING	8	3	2	-	-

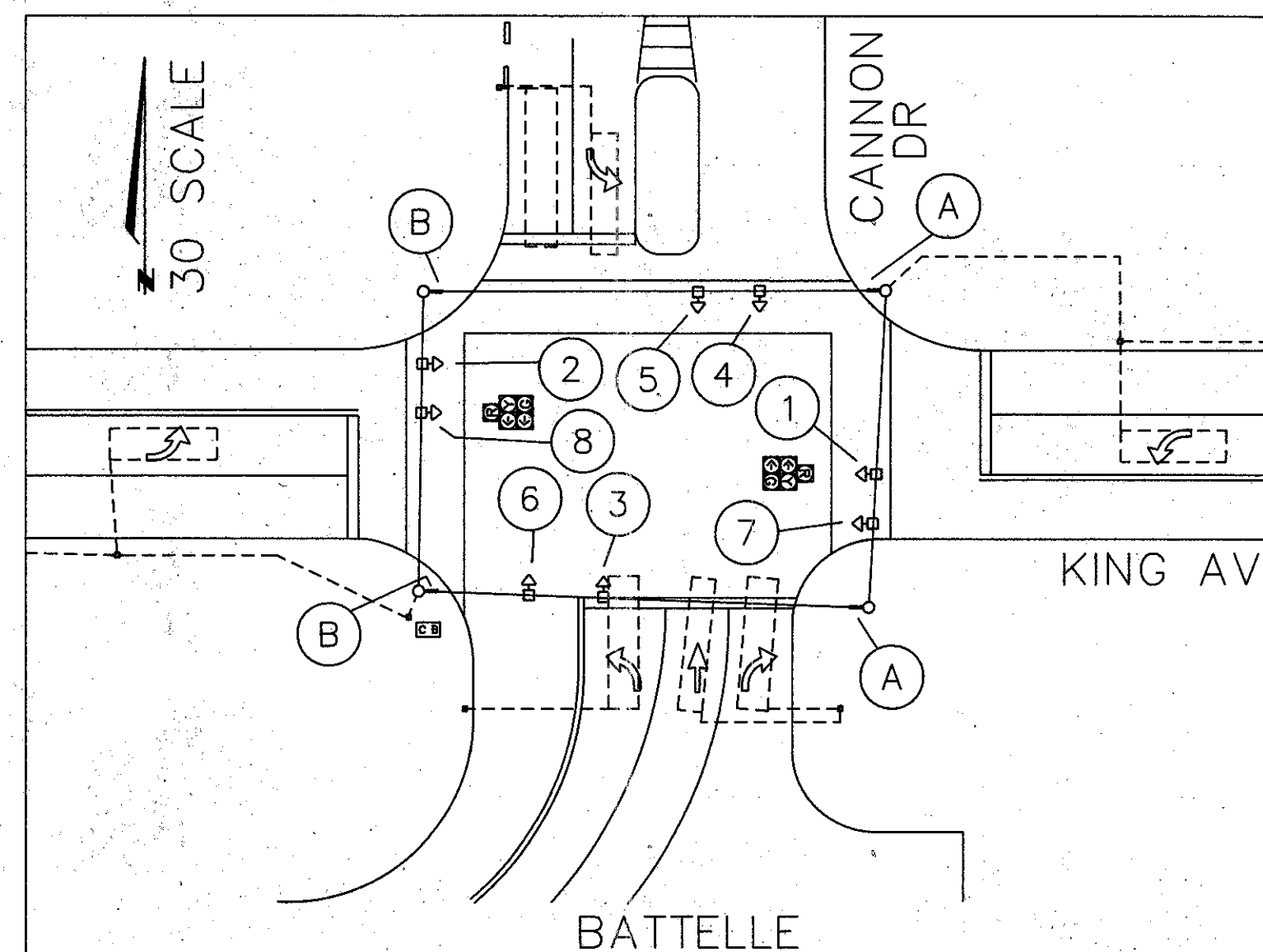
### SIGNAL PHASING



SEE SHEET 14A FOR TIMING INFO

### INTERSECTION QUANTITIES

ITEM	QUANT	UNIT	DESCRIPTION
632		LF	MESSENGER WIRE, 7 STRAND, 0.25" DIAMETER WITH ACCESSORIES, AS PER PLAN
632		LF	SIGNALIZATION, MISC., DELASHING AND RELASHING OF CABLE
625		EA	GROUND ROD
632		EA	SIGNALIZATION, MISC., CONDUIT RISER, 0.5" DIAMETER, 713.04
632		EA	CONDUIT RISER, 1" DIAMETER, 713.04
632		EA	CONDUIT RISER, 2" DIAMETER, 713.04
632		EA	CONDUIT RISER, 2" DIAMETER, AS PER PLAN
625		EA	PULL BOX, 713.081, 10"X14"
625		LF	CONDUIT, 1", 713.04
625		LF	CONDUIT, 2", 713.04
625		LF	CONDUIT, 3", 713.04
625		LF	TRENCH
202		SF	WALK REMOVED
608		SF	4" CONCRETE WALK
608		SF	4" CONCRETE WALK, BOMACRON STAMPED, AS PER PLAN
608		SF	4" CONCRETE WALK BASE, REPLACING BRICKS, AS PER PLAN
253		SF	MISC. PAVEMENT REPAIR: DRIVEWAY, AS PER PLAN
202		SY	PAVEMENT REMOVED
253		SY	PAVEMENT REPAIR, AS PER PLAN
632		LF	LOOP DETECTOR PAVEMENT CUTTING
632		LF	LOOP DETECTOR WIRE, TYPE "E"
632		LF	LOOP DETECTOR LEAD-IN CABLE
632		EA	MAGNETOMETER SENSOR, 1 PROBE SET, 60' LEAD-IN
632		EA	MAGNETOMETER SENSOR, 2 PROBE SET, 6' SEPARATION, 60' LEAD-IN
632		LF	MAGNETOMETER LEAD-IN CABLE
632	3	EA	LOOP DETECTOR UNIT, DELAY AND EXTENSION TYPE, AS PER PLAN
632		EA	LOOP DETECTOR UNIT, 2 CHANNEL, DELAY AND EXTENSION TYPE, AS PER PLAN
632		EA	LOOP DETECTOR UNIT, 4 CHANNEL, AS PER PLAN
632		EA	MAGNETOMETER DETECTOR AMPLIFIER, 2 CHANNEL UNIT, AS PER PLAN
632		EA	PEDESTRIAN PUSHBUTTON, AS PER PLAN
633	1	EA	CONTROLLER ITEM, MISC.: TRANSCEIVER INTERFACE
633	1	EA	CONTROLLER, MISC.: ACTUATED, WITH 8 PHASE BASE-MOUNT CABINET



# INTERSECTION DETAILS

## BATTELLE BLVD AT KING AV (# 4094)

CALC. BY: _____	FRA-315-2.39, PART 2	OHIO
DATE: _____		FHWA REGION 5
CHECK BY: _____		22
DATE: _____		27

22  
27

CICU HARNESS WIRING  
TRUNK ID: 3      DROP NUMBER: 94

CICU INPUT CONNECTOR		
HARNESS		BOX FUNCTION
PIN	FUNCTION	
13	PHASE 1 GREEN	
8	PHASE 2 GREEN	WB THRU GREEN (PHASE 1)
7	PHASE 3 GREEN	NB GREEN (PHASE 2)
6	PHASE 4 GREEN	
12	PHASE 5 GREEN	
11	PHASE 6 GREEN	EB THRU GREEN (PHASE 1)
18	PHASE 7 GREEN	
3	PHASE 8 GREEN	NB GREEN (PHASE 2)
10	WALK 1 MONITOR	PHASE 2 WALK
16	WALK 2 MONITOR	
22	PED CALL 1 (SYS. DET. 7)	PHASE 2 PED CALL
36	PED CALL 2 (SYS. DET. 8)	
4	FLASH	SIGNAL POWER
15	PREEMPT	POLICE MANUAL SWITCH
2	SPEC FUNCTION 1 MONITOR	
1	SPEC FUNCTION 2 MONITOR	
5	SPEC FUNCTION 3 MONITOR	
24	ADDRESS-1	
25	ADDRESS-2	GROUND
30	ADDRESS-4	GROUND
31	ADDRESS-8	GROUND
32	ADDRESS-16	GROUND
26	ADDRESS-32	
27	ADDRESS-64	GROUND
21	ADDRESS-128	
29	SYSTEM DETECTOR 1	
34	SYSTEM DETECTOR 2	
35	SYSTEM DETECTOR 3	
37	SYSTEM DETECTOR 4	
33	SYSTEM DETECTOR 5	
28	SYSTEM DETECTOR 6	
20	RETURN FOR AC MONITOR	GROUND
23	RETURN FOR NEMA MONITOR	GROUND

CICU OUTPUT CONNECTOR		
HARNESS		BOX FUNCTION
PIN	FUNCTION	
25	HOL (C)	GROUND
21	HOL (N.O.)	RING 1: (MAX2 & PED RECY)+CNA1
28	HOLD (C)	GROUND
5	HOLD (N.O.)	PHASE 1 HOLD
8	FORCE OFF 1 (C)	GROUND
10	FORCE OFF 1 (N.O.)	FORCE OFF 1 (RING 1)
31	FORCE OFF 2 (C)	GROUND
20	FORCE OFF 2 (N.O.)	FORCE OFF 1 (RING 1)
24	CALL ALL (C)	GROUND
30	CALL ALL (N.O.)	PHASE 2 VEH CALL
12	FLASH (COMMON)	GROUND
4	FLASH (N.O.)	FLASH SYNCHRONIZER
32	SPECIAL FUNCTION 1 (C)	GROUND
26	SPECIAL FUNCTION 1 (N.O.)	
17	SPECIAL FUNCTION 2 (C)	GROUND
11	SPECIAL FUNCTION 2 (N.O.)	
22	SPECIAL FUNCTION 3 (C)	GROUND
9	SPECIAL FUNCTION 3 (N.O.)	
1	AC+	AC+
2	AC-	AC-
3	GROUND	GROUND

SEE SHEET 14B FOR TIMING INFO

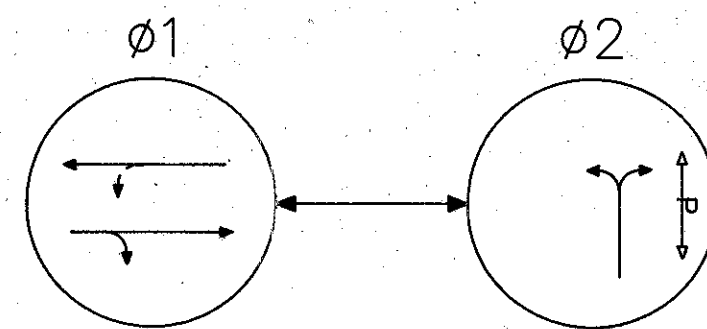
FIELD WIRING HOOK-UP CHART

SIGNAL	INDICATION	DRIVEN BY	FLASH
1	R	Ø1 R	Y
	Y	Ø1 Y	
	G	Ø1 G	
2	R	Ø2 R	R
	Y	Ø2 Y	
	G	Ø2 G	
A	DW	Ø2 DW	OUT
	W	Ø2 W	

DETECTOR WIRING

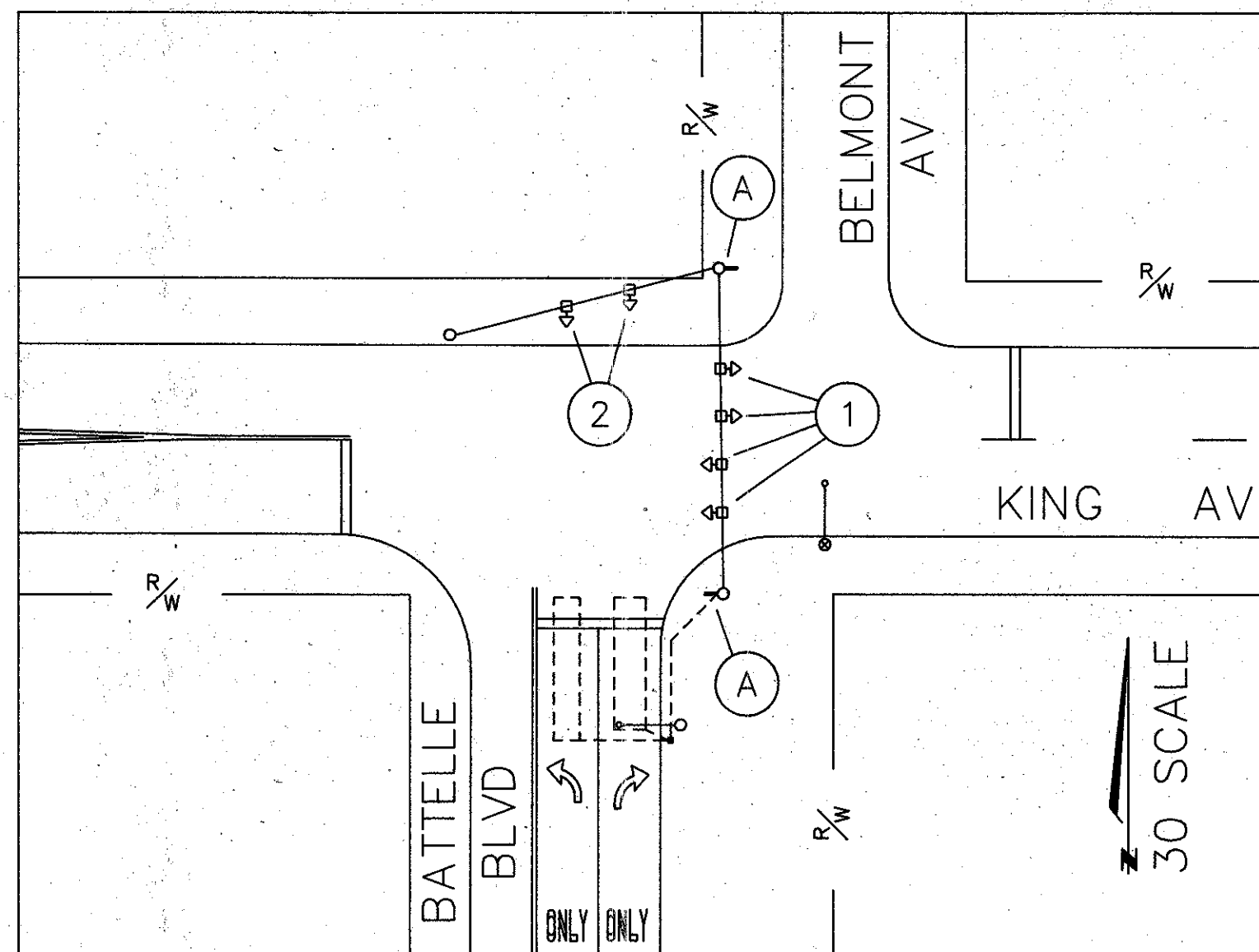
LOOP	HARNESS LABEL	SIZE	PHASE #	UNIT #	CHANNEL #	DELAY TIMING	EXTENSION TIMING
NBR	NBR Ø2	EXISTING	2	1	1	12	
NBL	NBL Ø2	EXISTING	2	1	2	3	
EB	EB Ø1	EXISTING	1	2	1		
WB	WB Ø1	EXISTING	1	2	2		

SIGNAL PHASING



INTERSECTION QUANTITIES

ITEM	QUANT	UNIT	DESCRIPTION
632		LF	MESSENGER WIRE, 7 STRAND, 0.25" DIAMETER WITH ACCESSORIES, AS PER PLAN
632		LF	SIGNALIZATION, MISC., DELASHING AND RELASHING OF CABLE
625		EA	GROUND ROD
632		EA	SIGNALIZATION, MISC., CONDUIT RISER, 0.5" DIAMETER, 713.04
632		EA	CONDUIT RISER, 1" DIAMETER, 713.04
632		EA	CONDUIT RISER, 2" DIAMETER, 713.04
632		EA	CONDUIT RISER, 2" DIAMETER, AS PER PLAN
625		EA	PULL BOX, 713.081, 10"x14"
625		LF	CONDUIT, 1", 713.04
625		LF	CONDUIT, 2", 713.04
625		LF	CONDUIT, 3", 713.04
625		LF	TRENCH
202		SF	WALK REMOVED
608		SF	4" CONCRETE WALK
608		SF	4" CONCRETE WALK, BOMACRON STAMPED, AS PER PLAN
608		SF	4" CONCRETE WALK BASE, REPLACING BRICKS, AS PER PLAN
253		SF	MISC. PAVEMENT REPAIR: DRIVEWAY, AS PER PLAN
202		SY	PAVEMENT REMOVED
253		SY	PAVEMENT REPAIR, AS PER PLAN
632		LF	LOOP DETECTOR PAVEMENT CUTTING
632		LF	LOOP DETECTOR WIRE, TYPE "E"
632		LF	LOOP DETECTOR LEAD-IN CABLE
632		EA	MAGNETOMETER SENSOR, 1 PROBE SET, 60' LEAD-IN
632		EA	MAGNETOMETER SENSOR, 2 PROBE SET, 6' SEPARATION, 60' LEAD-IN
632		LF	MAGNETOMETER LEAD-IN CABLE
632		EA	LOOP DETECTOR UNIT, DELAY AND EXTENSION TYPE, AS PER PLAN
632	2	EA	LOOP DETECTOR UNIT, 2 CHANNEL, DELAY AND EXTENSION TYPE, AS PER PLAN
632		EA	LOOP DETECTOR UNIT, 4 CHANNEL, AS PER PLAN
632		EA	MAGNETOMETER DETECTOR AMPLIFIER, 2 CHANNEL UNIT, AS PER PLAN
632		EA	PEDESTRIAN PUSHBUTTON, AS PER PLAN
633	1	EA	CONTROLLER ITEM, MISC.: TRANSCEIVER INTERFACE
633	1	EA	CONTROLLER, MISC.: ACTUATED, WITH 2 PHASE POLE-MOUNT CABINET





# INTERSECTION DETAILS

## FIFTH AV AT OLENTANGY RIVER RD (# 4086)

CALC. BY	FRA-315-2.39, PART 2	OHIO	23 27
DATE		FHWA REGION 5	
CHECK BY			
DATE			

CICU HARNESS WIRING  
TRUNK ID: 3      DROP NUMBER: 86

CICU INPUT CONNECTOR		
HARNESS	FUNCTION	BOX FUNCTION
13	PHASE 1 GREEN	NBLT GREEN (PHASE 1)
8	PHASE 2 GREEN	SB THRU GREEN (PHASE 2)
7	PHASE 3 GREEN	EBLT GREEN (PHASE 3)
6	PHASE 4 GREEN	WB THRU GREEN (PHASE 4)
12	PHASE 5 GREEN	SBLT GREEN (PHASE 5)
11	PHASE 6 GREEN	NB THRU GREEN (PHASE 6)
18	PHASE 7 GREEN	WBLT GREEN (PHASE 7)
3	PHASE 8 GREEN	EB THRU GREEN (PHASE 8)
10	WALK 1 MONITOR	PHASE 4 WALK
16	WALK 2 MONITOR	PHASE 8 WALK
22	PED CALL 1 (SYS. DET. 7)	PHASE 4 PED CALL
36	PED CALL 2 (SYS. DET. 8)	PHASE 8 PED CALL
4	FLASH	SIGNAL POWER
15	PREEMPT	POLICE MANUAL SWITCH
2	SPEC FUNCTION 1 MONITOR	AC+ RELAY OUTPUT SENSING THAT PH 1&5 OMIT IS ACTIVE
1	SPEC FUNCTION 2 MONITOR	AC+ RELAY OUTPUT SENSING THAT PH 3&7 OMIT IS ACTIVE
5	SPEC FUNCTION 3 MONITOR	
24	ADDRESS-1	
25	ADDRESS-2	GROUND
30	ADDRESS-4	GROUND
31	ADDRESS-8	
32	ADDRESS-16	GROUND
26	ADDRESS-32	
27	ADDRESS-64	GROUND
21	ADDRESS-128	
29	SYSTEM DETECTOR 1	
34	SYSTEM DETECTOR 2	
35	SYSTEM DETECTOR 3	
37	SYSTEM DETECTOR 4	
33	SYSTEM DETECTOR 5	
28	SYSTEM DETECTOR 6	
20	RETURN FOR AC MONITOR	GROUND
23	RETURN FOR NEMA MONITOR	GROUND

CICU OUTPUT CONNECTOR		
HARNESS	FUNCTION	BOX FUNCTION
25	HOL (C)	GROUND
21	HOL (N.O.)	RING 1 & RING 2 (MAX2 & PED REC'Y)+CNA1
28	HOLD (C)	GROUND
5	HOLD (N.O.)	PHASE 2 & 6 HOLD
8	FORCE OFF 1 (C)	GROUND
10	FORCE OFF 1 (N.O.)	FORCE OFF 1 (RING 1)
31	FORCE OFF 2 (C)	GROUND
20	FORCE OFF 2 (N.O.)	FORCE OFF 2 (RING 2)
24	CALL ALL (C)	GROUND
30	CALL ALL (N.O.)	PHASE 1, 3, 4, 5, 7 & 8 VEH CALL, DIODE SEPARATE
12	FLASH (COMMON)	GROUND
4	FLASH (N.O.)	FLASH SYNCHRONIZER
32	SPECIAL FUNCTION 1 (C)	GROUND
26	SPECIAL FUNCTION 1 (N.O.)	OMIT PHASES 1 & 5
17	SPECIAL FUNCTION 2 (C)	GROUND
11	SPECIAL FUNCTION 2 (N.O.)	OMIT PHASES 3 & 7
22	SPECIAL FUNCTION 3 (C)	GROUND
9	SPECIAL FUNCTION 3 (N.O.)	
1	AC+	AC+
2	AC-	AC-
3	GROUND	GROUND

### FIELD WIRING HOOK-UP CHART

SIGNAL	INDICATION	DRIVEN BY	FLASH
1	G	Ø2 G	R
	Y	Ø2 Y	
	R	Ø2 R	
2	G	Ø2 G	R
	Y	Ø2 Y	
	R	Ø2 R	
	←G	Ø5 G	
	←Y	Ø5 Y	

SIGNAL	INDICATION	DRIVEN BY	FLASH
3	G	Ø6 G	R
	Y	Ø6 Y	
	R	Ø6 R	
4	G	Ø6 G	R
	Y	Ø6 Y	
	R	Ø6 R	
	←G	Ø1 G	
	←Y	Ø1 Y	
5	G	Ø4 G	R
	Y	Ø4 Y	
	R	Ø4 R	
6	G	Ø4 G	R
	Y	Ø4 Y	
	R	Ø4 R	
	←G	Ø7 G	
	←Y	Ø7 Y	

SIGNAL	INDICATION	DRIVEN BY	FLASH
7	G	Ø8 G	R
	Y	Ø8 Y	
	R	Ø8 R	
8	G	Ø8 G	R
	Y	Ø8 Y	
	R	Ø8 R	
	←G	Ø3 G	
	←Y	Ø3 Y	
A	W	Ø2 W	OUT
	DW	Ø2 DW	
B	W	Ø6 W	OUT
	DW	Ø6 DW	
C	W	Ø4 W	OUT
	DW	Ø4 DW	
D	W	Ø8 W	OUT
	DW	Ø8 DW	

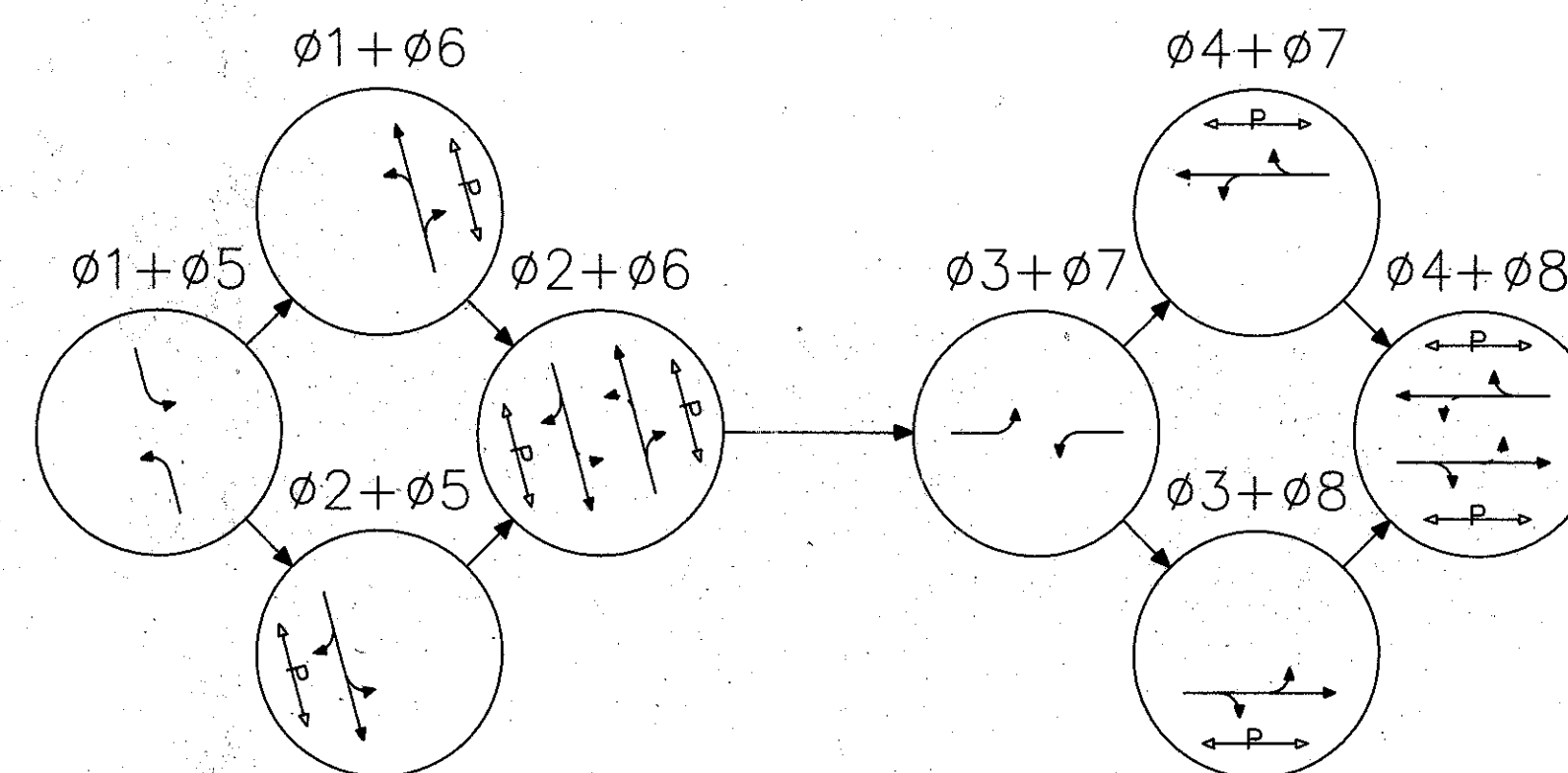
SEE SHEET 14B FOR TIMING INFO

### DETECTOR WIRING

LOOP	HARNESS LABEL	SIZE	PHASE #	UNIT #	CHANNEL #	DELAY TIMING	EXTENSION TIMING
NB L	NBL Ø1	EXISTING	1	1	1	-	-
SB L	SBL Ø5	EXISTING	5	1	2	-	-
EB L	EBL Ø7	EXISTING	7	2	1	-	-
WB L	WBL Ø3	EXISTING	3	2	2	-	-
EB	EB Ø4	EXISTING	4	3	1	-	-
WB	WB Ø8	EXISTING	8	3	2	-	-

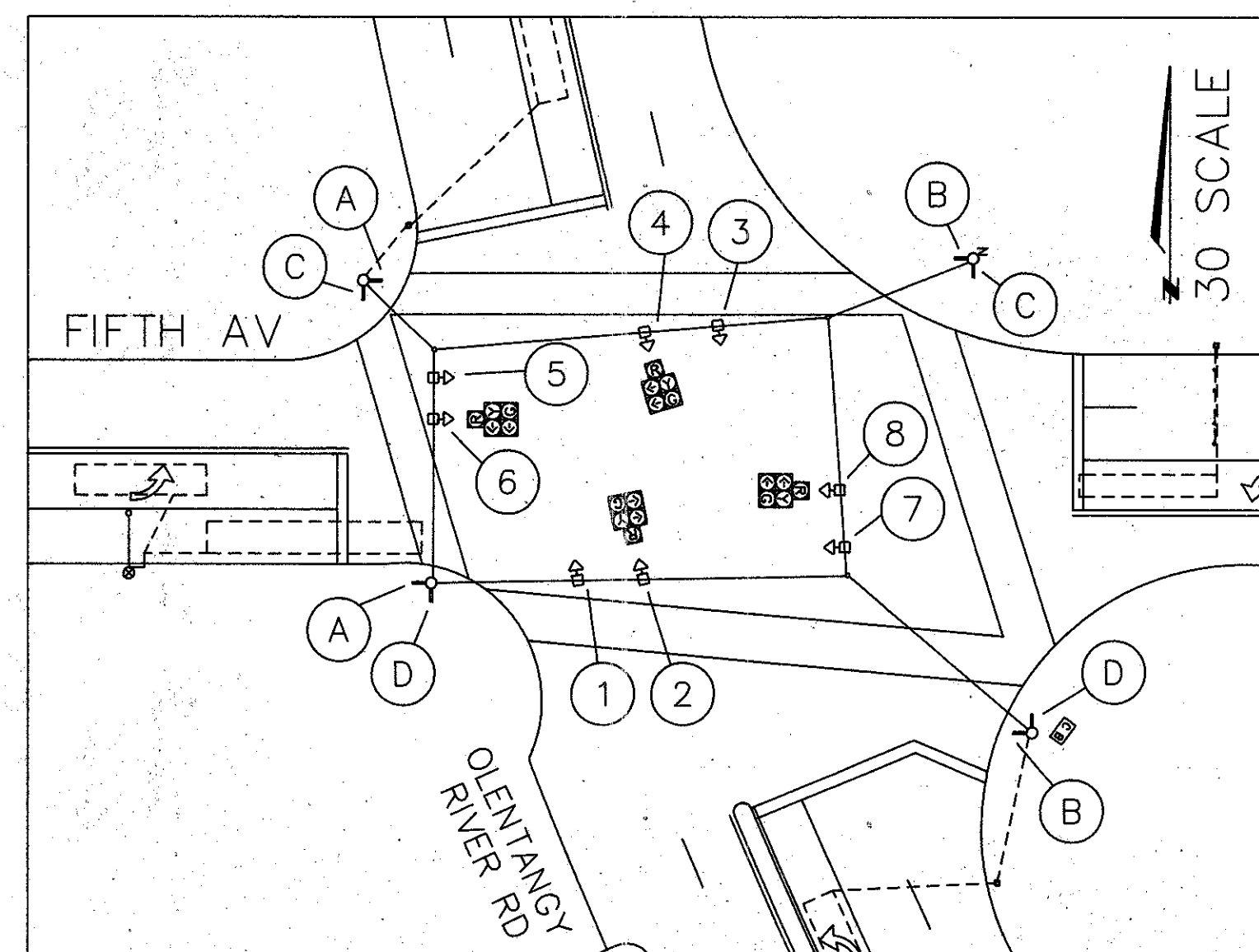
WIRING NOTES:  
WIRE Ø2 ON TO OMIT Ø5  
WIRE Ø6 ON TO OMIT Ø1

### SIGNAL PHASING



### INTERSECTION QUANTITIES

ITEM	QUANT	UNIT	DESCRIPTION
632		LF	MESSENGER WIRE, 7 STRAND, 0.25" DIAMETER WITH ACCESSORIES, AS PER PLAN
632		LF	SIGNALIZATION, MISC.: DELASHING AND RELASHING OF CABLE
625		EA	GROUND ROD
632		EA	SIGNALIZATION, MISC.: CONDUIT RISER, 0.5" DIAMETER, 713.04
632		EA	CONDUIT RISER, 1" DIAMETER, 713.04
632		EA	CONDUIT RISER, 2" DIAMETER, 713.04
632		EA	CONDUIT RISER, 2" DIAMETER, AS PER PLAN
625		EA	PULL BOX, 713.081, 10"X14"
625		LF	CONDUIT, 1", 713.04
625		LF	CONDUIT, 2", 713.04
625		LF	CONDUIT, 3", 713.04
625		LF	TRENCH
202		SF	WALK REMOVED
608		SF	4" CONCRETE WALK
608		SF	4" CONCRETE WALK, BOMACRON STAMPED, AS PER PLAN
608		SF	4" CONCRETE WALK BASE, REPLACING BRICKS, AS PER PLAN
253		SF	MISC. PAVEMENT REPAIR: DRIVEWAY, AS PER PLAN
202		SY	PAVEMENT REMOVED
253		SY	PAVEMENT REPAIR, AS PER PLAN
632		LF	LOOP DETECTOR PAVEMENT CUTTING
632		LF	LOOP DETECTOR WIRE, TYPE "E"
632		LF	LOOP DETECTOR LEAD-IN CABLE
632		EA	MAGNETOMETER SENSOR, 1 PROBE SET, 60' LEAD-IN
632		EA	MAGNETOMETER SENSOR, 2 PROBE SET, 6' SEPARATION, 60' LEAD-IN
632		LF	MAGNETOMETER LEAD-IN CABLE
632		EA	LOOP DETECTOR UNIT, DELAY AND EXTENSION TYPE, AS PER PLAN
632	3	EA	LOOP DETECTOR UNIT, 2 CHANNEL, DELAY AND EXTENSION TYPE, AS PER PLAN
632		EA	LOOP DETECTOR UNIT, 4 CHANNEL, AS PER PLAN
632		EA	MAGNETOMETER DETECTOR AMPLIFIER, 2 CHANNEL UNIT, AS PER PLAN
632		EA	PEDESTRIAN PUSHBUTTON, AS PER PLAN
633	1	EA	CONTROLLER ITEM, MISC.: TRANSCEIVER INTERFACE
633	1	EA	CONTROLLER, MISC.: ACTUATED, WITH 8 PHASE BASE-MOUNT CABINET



# INTERSECTION DETAILS

## FIFTH ST AT TISDALE ST (# 4154)

CALC. BY	FRA-315-2.39, PART 2	OHIO	24
DATE		FHWA REGION	5
CHECK BY			27
DATE			37

CICU HARNESS WIRING  
TRUNK ID: 3      DROP NUMBER: 154

CICU INPUT CONNECTOR		
HARNESS	FUNCTION	BOX FUNCTION
13	PHASE 1 GREEN	
8	PHASE 2 GREEN	WB THRU GREEN (PHASE 1)
7	PHASE 3 GREEN	
6	PHASE 4 GREEN	SB THRU GREEN (PHASE 2)
12	PHASE 5 GREEN	
11	PHASE 6 GREEN	EB THRU GREEN (PHASE 1)
18	PHASE 7 GREEN	
3	PHASE 8 GREEN	NB THRU GREEN (PHASE 2)
10	WALK 1 MONITOR	PHASE 2 WALK
16	WALK 2 MONITOR	PHASE 1 WALK
22	PED CALL 1 (SYS. DET. 7)	PHASE 2 PED CALL
36	PED CALL 2 (SYS. DET. 8)	
4	FLASH	SIGNAL POWER
15	PREEMPT	POLICE MANUAL SWITCH
2	SPEC FUNCTION 1 MONITOR	
1	SPEC FUNCTION 2 MONITOR	
5	SPEC FUNCTION 3 MONITOR	
24	ADDRESS-1	
25	ADDRESS-2	GROUND
30	ADDRESS-4	
31	ADDRESS-8	GROUND
32	ADDRESS-16	GROUND
26	ADDRESS-32	
27	ADDRESS-64	
21	ADDRESS-128	GROUND
29	SYSTEM DETECTOR 1	
34	SYSTEM DETECTOR 2	
35	SYSTEM DETECTOR 3	
37	SYSTEM DETECTOR 4	
33	SYSTEM DETECTOR 5	
28	SYSTEM DETECTOR 6	
20	RETURN FOR AC MONITOR	GROUND
23	RETURN FOR NEMA MONITOR	GROUND
CICU OUTPUT CONNECTOR		
HARNESS	FUNCTION	BOX FUNCTION
25	HOL (C)	GROUND
21	HOL (N.O.)	RING 1 (MAX2 & PED RECY)+CNA1
28	HOLD (C)	GROUND
5	HOLD (N.O.)	PHASE 1 HOLD
8	FORCE OFF 1 (C)	GROUND
10	FORCE OFF 1 (N.O.)	FORCE OFF 1 (RING 1)
31	FORCE OFF 2 (C)	GROUND
20	FORCE OFF 2 (N.O.)	FORCE OFF 1 (RING 1)
24	CALL ALL (C)	GROUND
30	CALL ALL (N.O.)	PHASE 2 VEH CALL
12	FLASH (COMMON)	GROUND
4	FLASH (N.O.)	FLASH SYNCHRONIZER
32	SPECIAL FUNCTION 1 (C)	GROUND
26	SPECIAL FUNCTION 1 (N.O.)	
17	SPECIAL FUNCTION 2 (C)	GROUND
11	SPECIAL FUNCTION 2 (N.O.)	
22	SPECIAL FUNCTION 3 (C)	GROUND
9	SPECIAL FUNCTION 3 (N.O.)	
1	AC+	AC+
2	AC-	AC-
3	GROUND	GROUND

SEE SHEET 14B FOR TIMING INFO

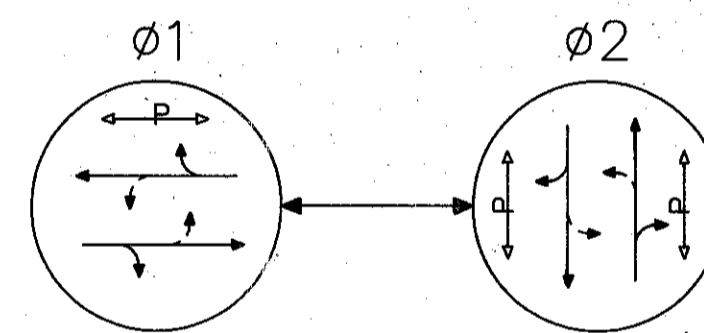
### DETECTOR WIRING

LOOP	HARNESS LABEL	SIZE	PHASE #	UNIT #	CHANNEL #	DELAY TIMING	EXTENSION TIMING
NB	NB Ø2	EXISTING	2	1	1	4	
SBLT	SBL Ø2	EXISTING	2	1	2	8	
SB R	SBR Ø2	EXISTING	2	2	1	20	
EBLT	EBLT Ø2	EXISTING	1	2	2		
EB	EB Ø2	EXISTING	1	3	1		0.5
WB	WB Ø2	EXISTING	1	3	2		0.5

### FIELD WIRING HOOK-UP CHART

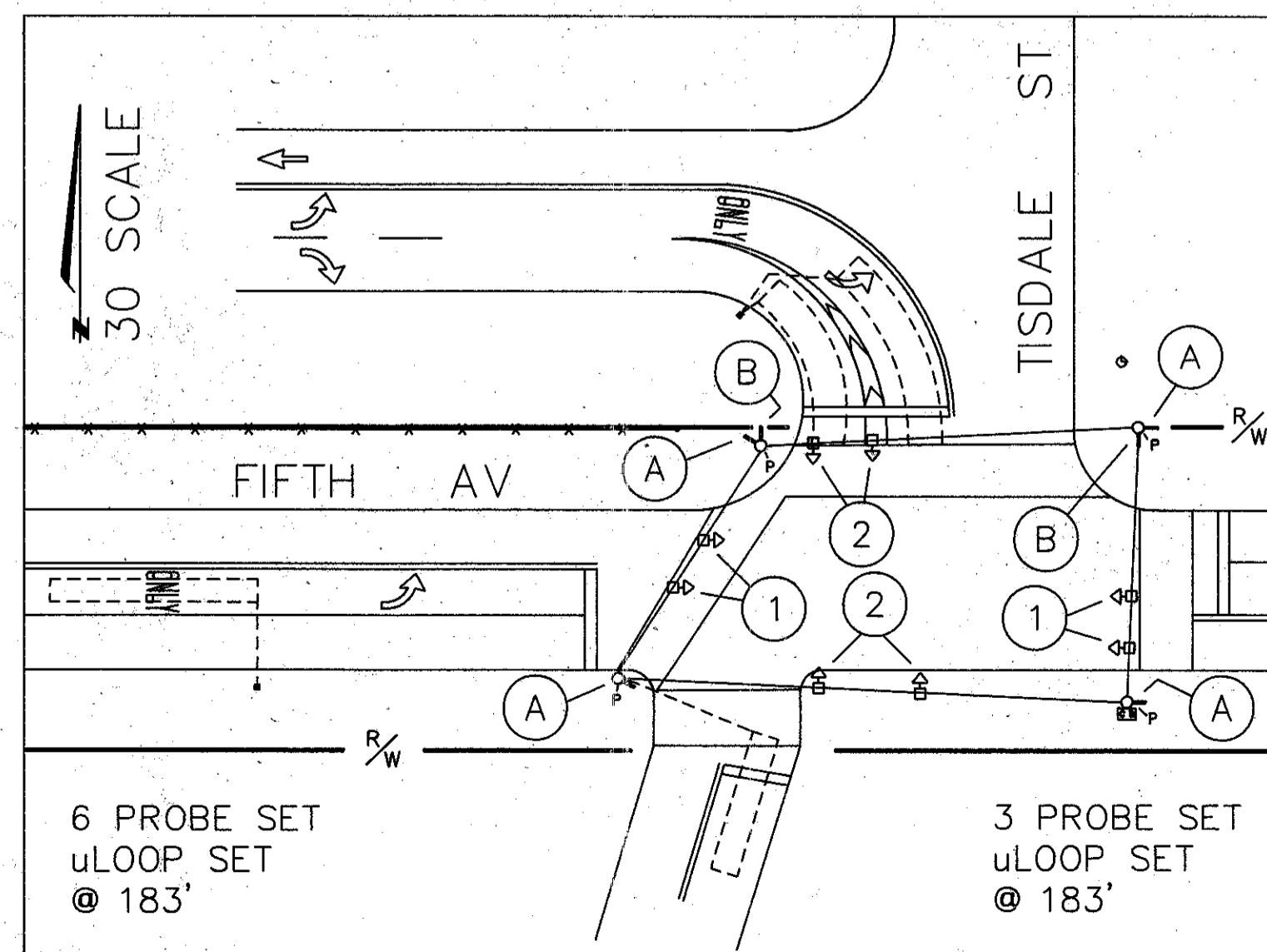
SIGNAL	INDICATION	DRIVEN BY	FLASH
1	R	Ø1 R	Y
	Y	Ø1 Y	
	G	Ø1 G	
2	R	Ø2 R	R
	Y	Ø2 Y	
	G	Ø2 G	
A	DW	Ø2 DW	OUT
	W	Ø2 W	
B	DW	Ø1 DW	OUT
	W	Ø1 W	

### SIGNAL PHASING



### INTERSECTION QUANTITIES

ITEM	QUANT	UNIT	DESCRIPTION
632		LF	MESSENGER WIRE, 7 STRAND, 0.25" DIAMETER WITH ACCESSORIES, AS PER PLAN
632		LF	SIGNALIZATION, MISC.: DELASHING AND RELASHING OF CABLE
625		EA	GROUND ROD
632		EA	SIGNALIZATION, MISC.: CONDUIT RISER, 0.5" DIAMETER, 713.04
632		EA	CONDUIT RISER, 1" DIAMETER, 713.04
632		EA	CONDUIT RISER, 2" DIAMETER, 713.04
632		EA	CONDUIT RISER, 2" DIAMETER, AS PER PLAN
625		EA	PULL BOX, 713.081, 10"X14"
625		LF	CONDUIT, 1", 713.04
625		LF	CONDUIT, 2", 713.04
625		LF	CONDUIT, 3", 713.04
625		LF	TRENCH
202		SF	WALK REMOVED
608		SF	4" CONCRETE WALK
608		SF	4" CONCRETE WALK, BOMACRON STAMPED, AS PER PLAN
608		SF	4" CONCRETE WALK BASE, REPLACING BRICKS, AS PER PLAN
253		SF	MISC. PAVEMENT REPAIR: DRIVEWAY, AS PER PLAN
202		SY	PAVEMENT REMOVED
253		SY	PAVEMENT REPAIR, AS PER PLAN
632		LF	LOOP DETECTOR PAVEMENT CUTTING
632		LF	LOOP DETECTOR WIRE, TYPE "E"
632		LF	LOOP DETECTOR LEAD-IN CABLE
632		EA	MAGNETOMETER SENSOR, 1 PROBE SET, 60' LEAD-IN
632		EA	MAGNETOMETER SENSOR, 2 PROBE SET, 6' SEPARATION, 60' LEAD-IN
632		LF	MAGNETOMETER LEAD-IN CABLE
632		EA	LOOP DETECTOR UNIT, DELAY AND EXTENSION TYPE, AS PER PLAN
632	3	EA	LOOP DETECTOR UNIT, 2 CHANNEL, DELAY AND EXTENSION TYPE, AS PER PLAN
632		EA	LOOP DETECTOR UNIT, 4 CHANNEL, AS PER PLAN
632		EA	MAGNETOMETER DETECTOR AMPLIFIER, 2 CHANNEL UNIT, AS PER PLAN
632		EA	PEDESTRIAN PUSHBUTTON, AS PER PLAN
633	1	EA	CONTROLLER ITEM, MISC.: TRANSCEIVER INTERFACE
633	1	EA	CONTROLLER, MISC.: ACTUATED, WITH 2 PHASE POLE-MOUNT CABINET



# INTERSECTION DETAILS

## BATTELLE BLVD AT FIFTH AV (# 4065)

CALC. BY	FRA-315-2.39, PART 2	OHIO
DATE		5
CHECK BY		FHWA REGION
DATE		

25  
27

362

CICU HARNESS WIRING

TRUNK ID: 3      DROP NUMBER: 65

CICU INPUT CONNECTOR		
HARNESS		BOX FUNCTION
PIN	FUNCTION	
13	PHASE 1 GREEN	
8	PHASE 2 GREEN	WB THRU GREEN (PHASE 1)
7	PHASE 3 GREEN	
6	PHASE 4 GREEN	SB GREEN (PHASE 2)
12	PHASE 5 GREEN	
11	PHASE 6 GREEN	EB THRU GREEN (PHASE 1)
18	PHASE 7 GREEN	
3	PHASE 8 GREEN	SB GREEN (PHASE 2)
10	WALK 1 MONITOR	PHASE 2 WALK
16	WALK 2 MONITOR	PHASE 1 WALK
22	PED CALL 1 (SYS. DET. 7)	PHASE 2 PED CALL
36	PED CALL 2 (SYS. DET. 8)	
4	FLASH	SIGNAL POWER
15	PREEMPT	POLICE MANUAL SWITCH
2	SPEC FUNCTION 1 MONITOR	
1	SPEC FUNCTION 2 MONITOR	
5	SPEC FUNCTION 3 MONITOR	
24	ADDRESS-1	GROUND
25	ADDRESS-2	
30	ADDRESS-4	
31	ADDRESS-8	
32	ADDRESS-16	
26	ADDRESS-32	
27	ADDRESS-64	GROUND
21	ADDRESS-128	
29	SYSTEM DETECTOR 1	
34	SYSTEM DETECTOR 2	
35	SYSTEM DETECTOR 3	
37	SYSTEM DETECTOR 4	
33	SYSTEM DETECTOR 5	
28	SYSTEM DETECTOR 6	
20	RETURN FOR AC MONITOR	GROUND
23	RETURN FOR NEMA MONITOR	GROUND
CICU OUTPUT CONNECTOR		
HARNESS		BOX FUNCTION
PIN	FUNCTION	
25	HOL (C)	GROUND
21	HOL (N.O.)	RING 1 (MAX2 & PED RECY)+CNA1
28	HOLD (C)	GROUND
5	HOLD (N.O.)	PHASE 1 HOLD
8	FORCE OFF 1 (C)	GROUND
10	FORCE OFF 1 (N.O.)	FORCE OFF 1 (RING 1)
31	FORCE OFF 2 (C)	GROUND
20	FORCE OFF 2 (N.O.)	FORCE OFF 1 (RING 1)
24	CALL ALL (C)	GROUND
30	CALL ALL (N.O.)	PHASE 2 VEH CALL
12	FLASH (COMMON)	GROUND
4	FLASH (N.O.)	FLASH SYNCHRONIZER
32	SPECIAL FUNCTION 1 (C)	GROUND
26	SPECIAL FUNCTION 1 (N.O.)	
17	SPECIAL FUNCTION 2 (C)	GROUND
11	SPECIAL FUNCTION 2 (N.O.)	
22	SPECIAL FUNCTION 3 (C)	GROUND
9	SPECIAL FUNCTION 3 (N.O.)	
1	AC+	AC+
2	AC-	AC-
3	GROUND	GROUND

SEE SHEET 14B FOR TIMING INFO

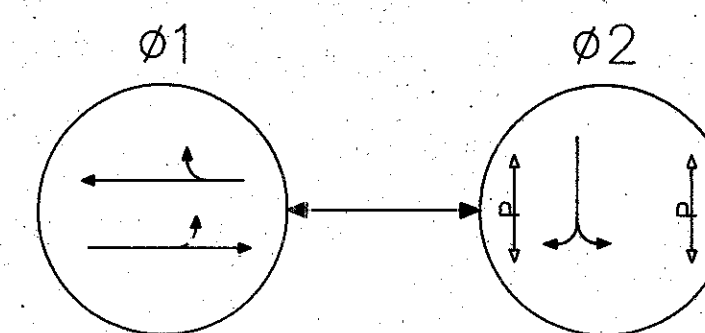
### DETECTOR WIRING

LOOP	HARNESS LABEL	SIZE	PHASE #	UNIT #	CHANNEL #	DELAY TIMING	EXTENSION TIMING
SBLT	SBL $\phi 2$	EXISTING	2	1	1	4	
SBRT	SBR $\phi 2$	EXISTING	2	1	2	12	
EB	EB $\phi 1$	EXISTING	1	2	1		2
WB	WB $\phi 1$	EXISTING	1	2	2		2

### FIELD WIRING HOOK-UP CHART

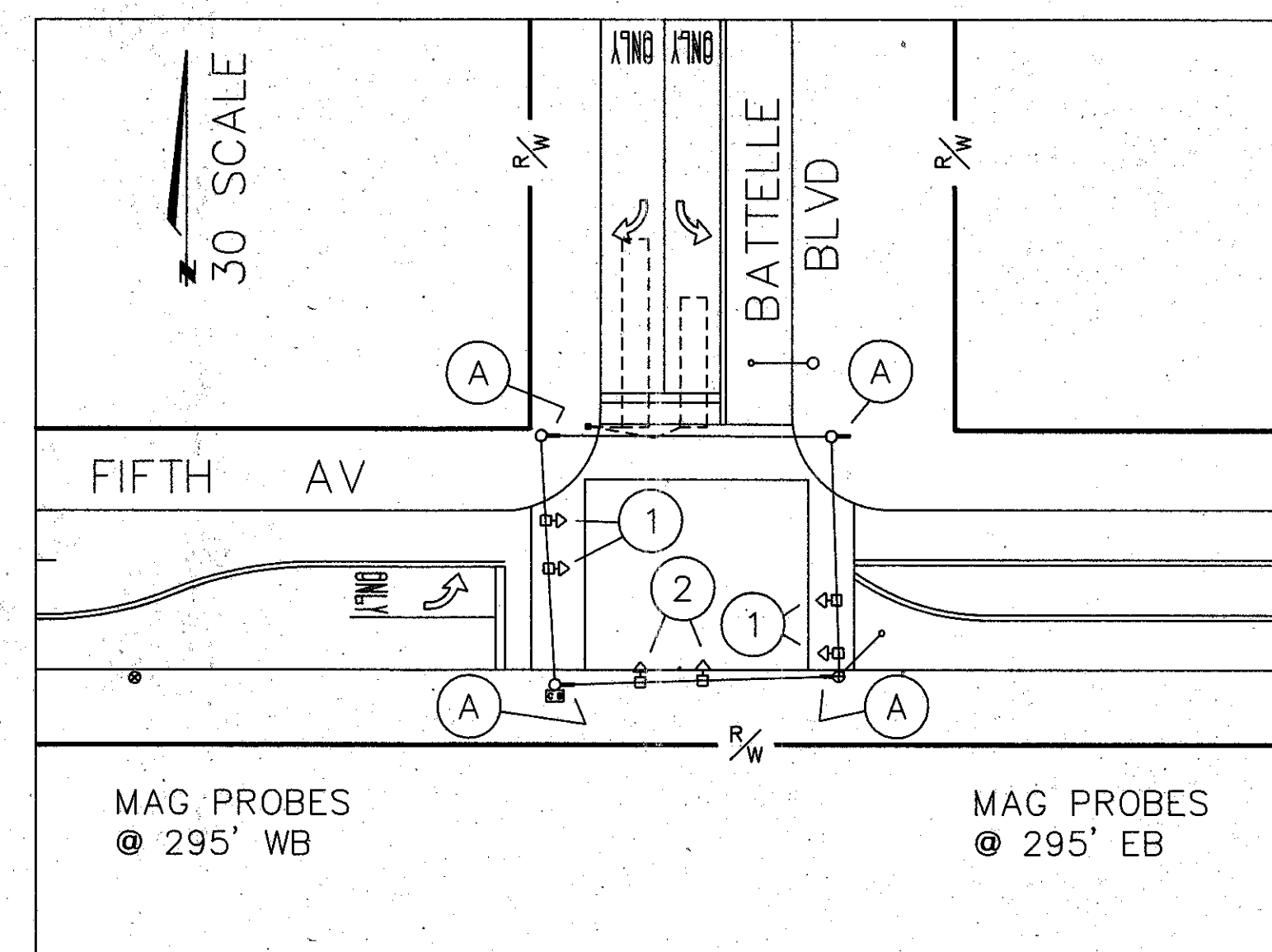
SIGNAL	INDICATION	DRIVEN BY	FLASH
1	R	$\phi 1$ R	Y
	Y	$\phi 1$ Y	
	G	$\phi 1$ G	
2	R	$\phi 2$ R	R
	Y	$\phi 2$ Y	
	G	$\phi 2$ G	
A	W	$\phi 2$ W	OUT
	DW	$\phi 2$ DW	

### SIGNAL PHASING



### INTERSECTION QUANTITIES

ITEM	QUANT	UNIT	DESCRIPTION
632		LF	MESSANGER WIRE, 7 STRAND, 0.25" DIAMETER WITH ACCESSORIES, AS PER PLAN
632		LF	SIGNALIZATION, MISC.: DELASHING AND RELASHING OF CABLE
625		EA	GROUND ROD
632		EA	SIGNALIZATION, MISC.: CONDUIT RISER, 0.5" DIAMETER, 713.04
632		EA	CONDUIT RISER, 1" DIAMETER, 713.04
632		EA	CONDUIT RISER, 2" DIAMETER, 713.04
632		EA	CONDUIT RISER, 2" DIAMETER, AS PER PLAN
625		EA	PULL BOX, 713.081, 10"X14"
625		LF	CONDUIT, 1", 713.04
625		LF	CONDUIT, 2", 713.04
625		LF	CONDUIT, 3", 713.04
625		LF	TRENCH
202		SF	WALK REMOVED
608		SF	4" CONCRETE WALK
608		SF	4" CONCRETE WALK, BOMACRON STAMPED, AS PER PLAN
608		SF	4" CONCRETE WALK BASE, REPLACING BRICKS, AS PER PLAN
253		SF	MISC. PAVEMENT REPAIR: DRIVEWAY, AS PER PLAN
202		SY	PAVEMENT REMOVED
253		SY	PAVEMENT REPAIR, AS PER PLAN
632		LF	LOOP DETECTOR PAVEMENT CUTTING
632		LF	LOOP DETECTOR WIRE, TYPE "E"
632		LF	LOOP DETECTOR LEAD-IN CABLE
632		EA	MAGNETOMETER SENSOR, 1 PROBE SET, 60' LEAD-IN
632		EA	MAGNETOMETER SENSOR, 2 PROBE SET, 6' SEPARATION, 60' LEAD-IN
632		LF	MAGNETOMETER LEAD-IN CABLE
632		EA	LOOP DETECTOR UNIT, DELAY AND EXTENSION TYPE, AS PER PLAN
632	1	EA	LOOP DETECTOR UNIT, 2 CHANNEL, DELAY AND EXTENSION TYPE, AS PER PLAN
632		EA	LOOP DETECTOR UNIT, 4 CHANNEL, AS PER PLAN
632	1	EA	MAGNETOMETER DETECTOR AMPLIFIER, 2 CHANNEL UNIT, AS PER PLAN
632		EA	PEDESTRIAN PUSHBUTTON, AS PER PLAN
633	1	EA	CONTROLLER ITEM, MISC.: TRANSCEIVER INTERFACE
633	1	EA	CONTROLLER, MISC.: ACTUATED, WITH 2 PHASE POLE-MOUNT CABINET



# INTERSECTION DETAILS

## OLENTANGY RIVER RD AT THIRD AV (# 4079)

CALC. BY	FRA-315-2.39, PART 2	OHIO
DATE		
CHECK BY		FHWA REGION 5
DATE		

26  
27

33

### CICU HARNESS WIRING

TRUNK ID: 3      DROP NUMBER: 79

#### CICU INPUT CONNECTOR

HARNESS		BOX FUNCTION
PIN	FUNCTION	
13	PHASE 1 GREEN	NBLT GREEN (PHASE 1)
8	PHASE 2 GREEN	SB THRU GREEN (PHASE 2)
7	PHASE 3 GREEN	EBLT GREEN (PHASE 3)
6	PHASE 4 GREEN	WB THRU GREEN (PHASE 4)
12	PHASE 5 GREEN	SBLT GREEN (PHASE 5)
11	PHASE 6 GREEN	NB THRU GREEN (PHASE 6)
18	PHASE 7 GREEN	WBLT GREEN (PHASE 7)
3	PHASE 8 GREEN	EB THRU GREEN (PHASE 8)
10	WALK 1 MONITOR	PHASE 4 WALK
16	WALK 2 MONITOR	PHASE 8 WALK
22	PED CALL 1 (SYS. DET. 7)	PHASE 4 PED CALL
36	PED CALL 2 (SYS. DET. 8)	PHASE 8 PED CALL
4	FLASH	SIGNAL POWER
15	PREEMPT	POLICE MANUAL SWITCH
2	SPEC FUNCTION 1 MONITOR	AC+ RELAY OUTPUT SENSING THAT PH 1&5 OMIT IS ACTIVE
1	SPEC FUNCTION 2 MONITOR	AC+ RELAY OUTPUT SENSING THAT PH 3&7 OMIT IS ACTIVE
5	SPEC FUNCTION 3 MONITOR	
24	ADDRESS-1	GROUND
25	ADDRESS-2	GROUND
30	ADDRESS-4	GROUND
31	ADDRESS-8	GROUND
32	ADDRESS-16	
26	ADDRESS-32	
27	ADDRESS-64	GROUND
21	ADDRESS-128	
29	SYSTEM DETECTOR 1	
34	SYSTEM DETECTOR 2	
35	SYSTEM DETECTOR 3	
37	SYSTEM DETECTOR 4	
33	SYSTEM DETECTOR 5	
28	SYSTEM DETECTOR 6	
20	RETURN FOR AC MONITOR	GROUND
23	RETURN FOR NEMA MONITOR	GROUND

#### CICU OUTPUT CONNECTOR

HARNESS		BOX FUNCTION
PIN	FUNCTION	
25	HOL (C)	GROUND
21	HOL (N.O.)	RING 1 & RING 2 (MAX2 & PED REC'Y)+CNA1
28	HOLD (C)	GROUND
5	HOLD (N.O.)	PHASE 2 & 6 HOLD
8	FORCE OFF 1 (C)	GROUND
10	FORCE OFF 1 (N.O.)	FORCE OFF 1 (RING 1)
31	FORCE OFF 2 (C)	GROUND
20	FORCE OFF 2 (N.O.)	FORCE OFF 2 (RING 2)
24	CALL ALL (C)	GROUND
30	CALL ALL (N.O.)	PHASE 1, 3, 4, 5, 7 & 8 VEH CALL, DIODE SEPARATE
12	FLASH (COMMON)	GROUND
4	FLASH (N.O.)	FLASH SYNCHRONIZER
32	SPECIAL FUNCTION 1 (C)	GROUND
26	SPECIAL FUNCTION 1 (N.O.)	OMIT PHASES 1 & 5
17	SPECIAL FUNCTION 2 (C)	GROUND
11	SPECIAL FUNCTION 2 (N.O.)	OMIT PHASES 3 & 7
22	SPECIAL FUNCTION 3 (C)	GROUND
9	SPECIAL FUNCTION 3 (N.O.)	
1	AC+	AC+
2	AC-	AC-
3	GROUND	GROUND

### FIELD WIRING HOOK-UP CHART

SIGNAL	INDICATION	DRIVEN BY	FLASH
1	R	Ø8 R	R
	Y	Ø8 Y	
	G	Ø8 G	
2	R	Ø8 R	R
	Y	Ø8 Y	
	G	Ø8 G	
	←Y	Ø3 Y	
	←G	Ø3 G	
3	R	Ø4 R	R
	Y	Ø4 Y	
	G	Ø4 G	
4	R	Ø2 R	Y
	Y	Ø2 Y	
	G	Ø2 G	

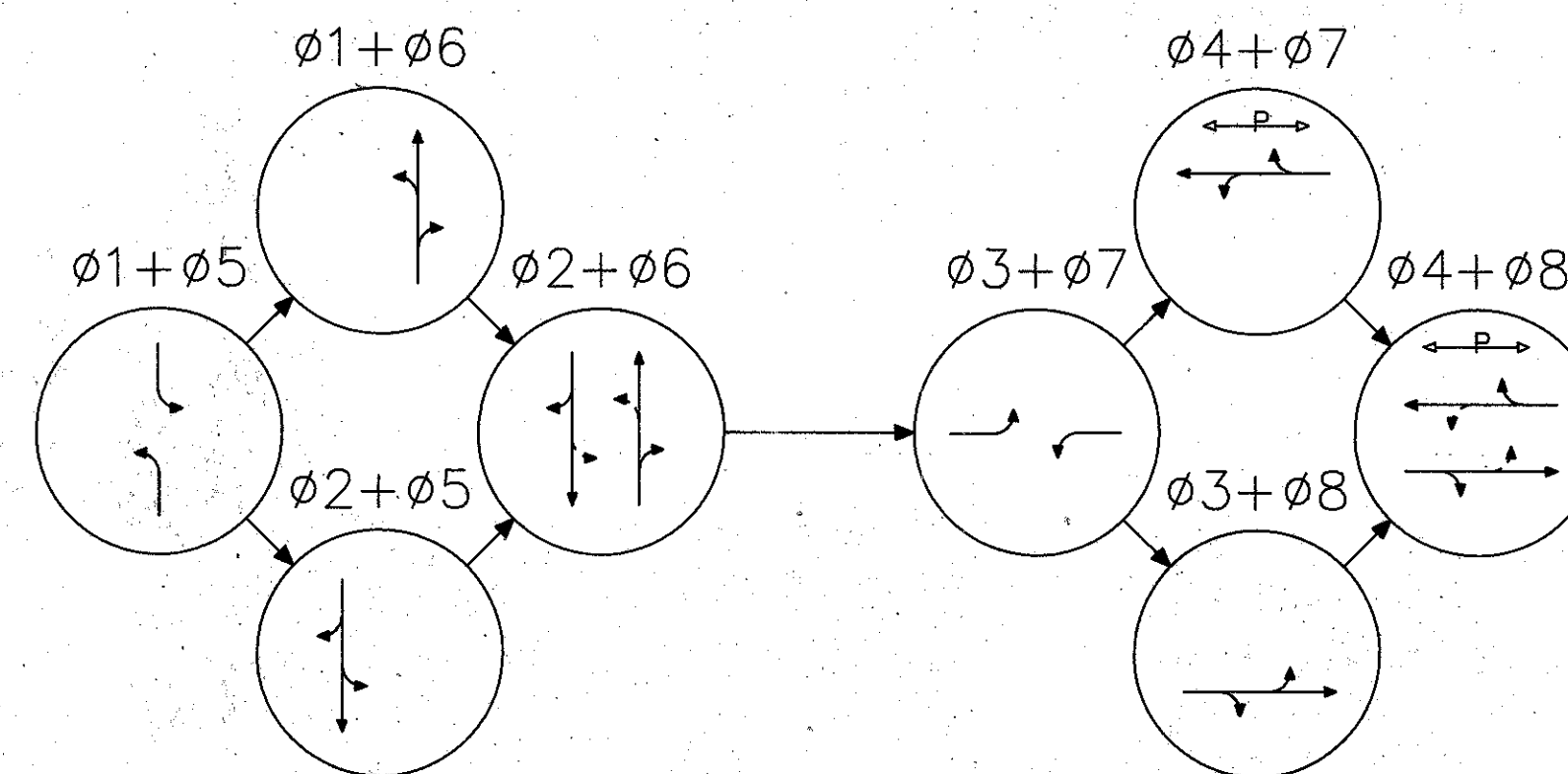
SIGNAL	INDICATION	DRIVEN BY	FLASH
5	R	Ø2 R	Y
	Y	Ø2 Y	
	G	Ø2 G	
6	←Y	Ø5 Y	Y
	←G	Ø5 G	
	R	Ø6 R	
7	Y	Ø6 Y	Y
	G	Ø6 G	
	R	Ø6 R	
8	←Y	Ø1 Y	R
	←G	Ø1 G	
	R	Ø4 R	
	Y	Ø4 Y	
A	G	Ø4 G	OUT
	←Y	Ø7 Y	
	←G	Ø7 G	
A	W	Ø4 W	OUT
	DW	Ø4 DW	

SEE SHEET 14B FOR TIMING INFO

### DETECTOR WIRING

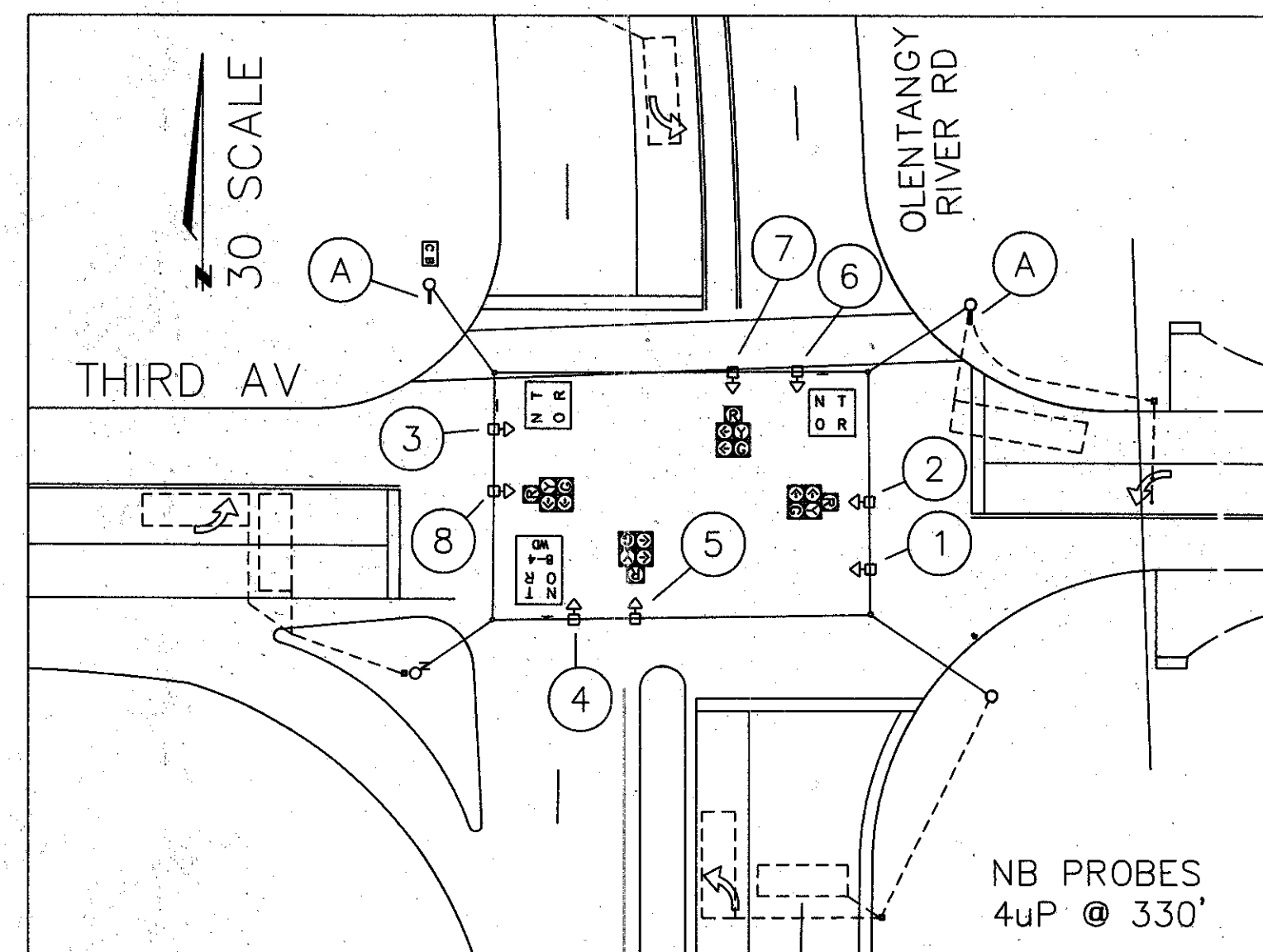
LOOP	HARNESS LABEL	SIZE	PHASE #	UNIT #	CHANNEL #	DELAY TIMING	EXTENSION TIMING
NB F	NBF Ø6	EXISTING	6	1	1	-	1.0
NB N	NBN Ø6	EXISTING	6	1	2	-	-
NB L	NBL Ø1	EXISTING	1	2	1	-	-
SB L	SBL Ø5	EXISTING	5	2	2	-	-
EB	EB Ø8	EXISTING	8	3	1	-	-
EB L	EBL Ø3	EXISTING	3	3	2	-	-
WB	WB Ø4	EXISTING	4	4	1	-	-
WB L	WBL Ø7	EXISTING	4 & 7	4	2	-	-

### SIGNAL PHASING



### INTERSECTION QUANTITIES

ITEM	QUANT	UNIT	DESCRIPTION
632		LF	MESSENGER WIRE, 7 STRAND, 0.25" DIAMETER WITH ACCESSORIES, AS PER PLAN
632		LF	SIGNALIZATION, MISC.: DELASHING AND RELASHING OF CABLE
625		EA	GROUND ROD
632		EA	SIGNALIZATION, MISC.: CONDUIT RISER, 0.5" DIAMETER, 713.04
632		EA	CONDUIT RISER, 1" DIAMETER, 713.04
632		EA	CONDUIT RISER, 2" DIAMETER, 713.04
632		EA	CONDUIT RISER, 2" DIAMETER, AS PER PLAN
625		EA	PULL BOX, 713.081, 10"X14"
625		LF	CONDUIT, 1", 713.04
625		LF	CONDUIT, 2", 713.04
625		LF	CONDUIT, 3", 713.04
625		LF	TRENCH
202		SF	WALK REMOVED
608		SF	4" CONCRETE WALK
608		SF	4" CONCRETE WALK, BOMACRON STAMPED, AS PER PLAN
608		SF	4" CONCRETE WALK BASE, REPLACING BRICKS, AS PER PLAN
253		SF	MISC. PAVEMENT REPAIR: DRIVEWAY, AS PER PLAN
202		SY	PAVEMENT REMOVED
253		SY	PAVEMENT REPAIR, AS PER PLAN
632		LF	LOOP DETECTOR PAVEMENT CUTTING
632		LF	LOOP DETECTOR WIRE, TYPE "E"
632		LF	LOOP DETECTOR LEAD-IN CABLE
632		EA	MAGNETOMETER SENSOR, 1 PROBE SET, 60' LEAD-IN
632		EA	MAGNETOMETER SENSOR, 2 PROBE SET, 6' SEPARATION, 60' LEAD-IN
632		LF	MAGNETOMETER LEAD-IN CABLE
632		EA	LOOP DETECTOR UNIT, DELAY AND EXTENSION TYPE, AS PER PLAN
632	4	EA	LOOP DETECTOR UNIT, 2 CHANNEL, DELAY AND EXTENSION TYPE, AS PER PLAN
632		EA	LOOP DETECTOR UNIT, 4 CHANNEL, AS PER PLAN
632		EA	MAGNETOMETER DETECTOR AMPLIFIER, 2 CHANNEL UNIT, AS PER PLAN
632		EA	PEDESTRIAN PUSHBUTTON, AS PER PLAN
633	1	EA	CONTROLLER ITEM, MISC.: TRANSCEIVER INTERFACE
633	1	EA	CONTROLLER, MISC.: ACTUATED, WITH 8 PHASE BASE-MOUNT CABINET



# INTERSECTION DETAILS

## BIG BEAR WAREHOUSE AT THIRD AV (# 4073)

CALC. BY	FRA-315-2.39, PART 2	OHIO FHWA REGION 5
DATE		
CHECK BY		
DATE		

27  
27

352

CICU HARNESS WIRING

TRUNK ID: 3      DROP NUMBER: 73

### CICU INPUT CONNECTOR

HARNESS		BOX FUNCTION
PIN	FUNCTION	
13	PHASE 1 GREEN	
8	PHASE 2 GREEN	WB THRU GREEN (OVERLAP)
7	PHASE 3 GREEN	
6	PHASE 4 GREEN	SB THRU GREEN (PHASE 3)
12	PHASE 5 GREEN	WBLT GREEN (PHASE 4)
11	PHASE 6 GREEN	EB THRU GREEN (PHASE 1)
18	PHASE 7 GREEN	
3	PHASE 8 GREEN	NB THRU GREEN (PHASE 3)
10	WALK 1 MONITOR	PHASE 3 WALK
16	WALK 2 MONITOR	PHASE 1 WALK
22	PED CALL 1 (SYS. DET. 7)	PHASE 3 PED CALL
36	PED CALL 2 (SYS. DET. 8)	
4	FLASH	SIGNAL POWER
15	PREEMPT	POLICE MANUAL SWITCH
2	SPEC FUNCTION 1 MONITOR	AC+ RELAY OUTPUT SENSING THAT PHASE 4 OMIT IS ACTIVE
1	SPEC FUNCTION 2 MONITOR	
5	SPEC FUNCTION 3 MONITOR	
24	ADDRESS-1	GROUND
25	ADDRESS-2	
30	ADDRESS-4	
31	ADDRESS-8	GROUND
32	ADDRESS-16	
26	ADDRESS-32	
27	ADDRESS-64	GROUND
21	ADDRESS-128	
29	SYSTEM DETECTOR 1	
34	SYSTEM DETECTOR 2	
35	SYSTEM DETECTOR 3	
37	SYSTEM DETECTOR 4	
33	SYSTEM DETECTOR 5	
28	SYSTEM DETECTOR 6	
20	RETURN FOR AC MONITOR	GROUND
23	RETURN FOR NEMA MONITOR	GROUND

### CICU OUTPUT CONNECTOR

HARNESS		BOX FUNCTION
PIN	FUNCTION	
25	HOL (C)	GROUND
21	HOL (N.O.)	RING 1 (MAX2 & PED RECY)+CNA1
28	HOLD (C)	GROUND
5	HOLD (N.O.)	PHASE 1 HOLD
8	FORCE OFF 1 (C)	GROUND
10	FORCE OFF 1 (N.O.)	FORCE OFF 1 (RING 1)
31	FORCE OFF 2 (C)	GROUND
20	FORCE OFF 2 (N.O.)	FORCE OFF 1 (RING 1)
24	CALL ALL (C)	GROUND
30	CALL ALL (N.O.)	PHASE 2, 3 & 4 VEH CALL, DIODE SEPARATE
12	FLASH (COMMON)	GROUND
4	FLASH (N.O.)	FLASH SYNCHRONIZER
32	SPECIAL FUNCTION 1 (C)	GROUND
26	SPECIAL FUNCTION 1 (N.O.)	OMIT PHASE 4
17	SPECIAL FUNCTION 2 (C)	GROUND
11	SPECIAL FUNCTION 2 (N.O.)	
22	SPECIAL FUNCTION 3 (C)	GROUND
9	SPECIAL FUNCTION 3 (N.O.)	
1	AC+	AC+
2	AC-	AC-
3	GROUND	GROUND

### FIELD WIRING HOOK-UP CHART

SIGNAL	INDICATION	DRIVEN BY	FLASH
1	R	OL 1+4 R	Y
	Y	OL 1+4 Y	
	G	OL 1+4 G	
2	R	ø3 R	R
	Y	ø3 Y	
	G	ø3 G	
3	R	ø1 R	Y
	Y	ø1 Y	
	G	ø1 G	

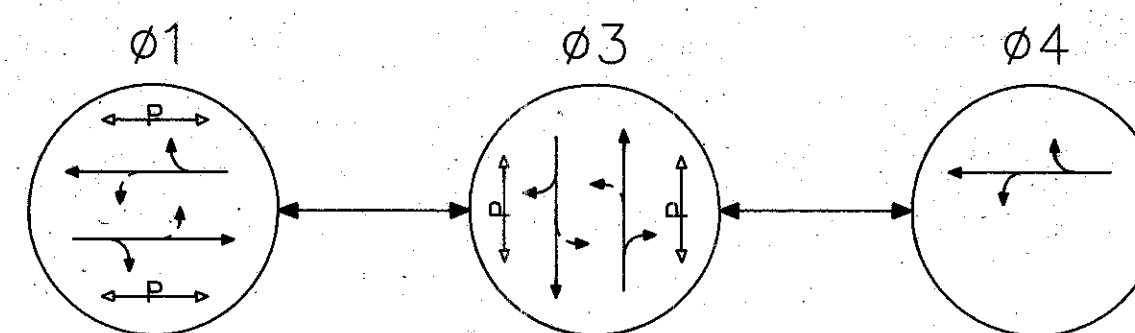
SEE SHEET 14B FOR TIMING INFO

### DETECTOR WIRING

LOOP	HARNESS LABEL	SIZE	PHASE #	UNIT #	CHANNEL #	DELAY TIMING	EXTENSION TIMING
EB	EB ø1	EXISTING	1	1	1		0.5
WB	WB ø1	EXISTING	1	1	2		0.5
WBLT	WBLT ø4	EXISTING	4	2	1	3	
NBLT	NBLT ø3	EXISTING	3	3	1	5	
SBLT	SBLT ø3	EXISTING	3	3	2		
NBR	NBR ø3	EXISTING	3	4	1	15	
SBR	SBR ø3	EXISTING	3	4	2	15	

NOTE: ø1 ON OUTPUT IS TO BE WIRED THROUGH A DIODE TO ø4 OMIT INPUT. (PREVENTS WB LAGGING LT)

### SIGNAL PHASING



### INTERSECTION QUANTITIES

ITEM	QUANT	UNIT	DESCRIPTION
632		LF	MESSENGER WIRE, 7 STRAND, 0.25" DIAMETER WITH ACCESSORIES, AS PER PLAN
632		LF	SIGNALIZATION, MISC., DELASHING AND RELASHING OF CABLE
625		EA	GROUND ROD
632		EA	SIGNALIZATION, MISC., CONDUIT RISER, 0.5" DIAMETER, 713.04
632		EA	CONDUIT RISER, 1" DIAMETER, 713.04
632		EA	CONDUIT RISER, 2" DIAMETER, 713.04
632		EA	CONDUIT RISER, 2" DIAMETER, AS PER PLAN
625		EA	PULL BOX, 713.081, 10"x14"
625		LF	CONDUIT, 1", 713.04
625		LF	CONDUIT, 2", 713.04
625		LF	CONDUIT, 3", 713.04
625		LF	TRENCH
202		SF	WALK REMOVED
608		SF	4" CONCRETE WALK
608		SF	4" CONCRETE WALK, BOMACRON STAMPED, AS PER PLAN
608		SF	4" CONCRETE WALK BASE, REPLACING BRICKS, AS PER PLAN
253		SF	MISC. PAVEMENT REPAIR: DRIVEWAY, AS PER PLAN
202		SY	PAVEMENT REMOVED
253		SY	PAVEMENT REPAIR, AS PER PLAN
632		LF	LOOP DETECTOR PAVEMENT CUTTING
632		LF	LOOP DETECTOR WIRE, TYPE "E"
632		LF	LOOP DETECTOR LEAD-IN CABLE
632		EA	MAGNETOMETER SENSOR, 1 PROBE SET, 60' LEAD-IN
632		EA	MAGNETOMETER SENSOR, 2 PROBE SET, 6' SEPARATION, 60' LEAD-IN
632		LF	MAGNETOMETER LEAD-IN CABLE
632	1	EA	LOOP DETECTOR UNIT, DELAY AND EXTENSION TYPE, AS PER PLAN
632	3	EA	LOOP DETECTOR UNIT, 2 CHANNEL, DELAY AND EXTENSION TYPE, AS PER PLAN
632		EA	LOOP DETECTOR UNIT, 4 CHANNEL, AS PER PLAN
632		EA	MAGNETOMETER DETECTOR AMPLIFIER, 2 CHANNEL UNIT, AS PER PLAN
632		EA	PEDESTRIAN PUSHBUTTON, AS PER PLAN
633	1	EA	CONTROLLER ITEM, MISC.: TRANSCEIVER INTERFACE
633	1	EA	CONTROLLER, MISC.: ACTUATED, WITH 4 PHASE POLE-MOUNT CABINET

