

# STATE OF OHIO DEPARTMENT OF TRANSPORTATION MOT - 70 - 3.10 CLAY TOWNSHIP MONTGOMERY COUNTY

RED 716

F.H.W.A REGION	STATE	PROJECT
5	OHIO	IR 70-1(44)21

MOT.-70-3.10



## IR-70-1(44)21

### DESIGN DESIGNATION

Current ADT (1988)	=	19240
Design Year ADT (2008)	=	25000
DHV	=	2500
D	=	55 %
T	=	20 %
Design Speed	=	70 m.p.h.
Legal Speed	=	65 m.p.h.
Functional Classification	=	Interstate

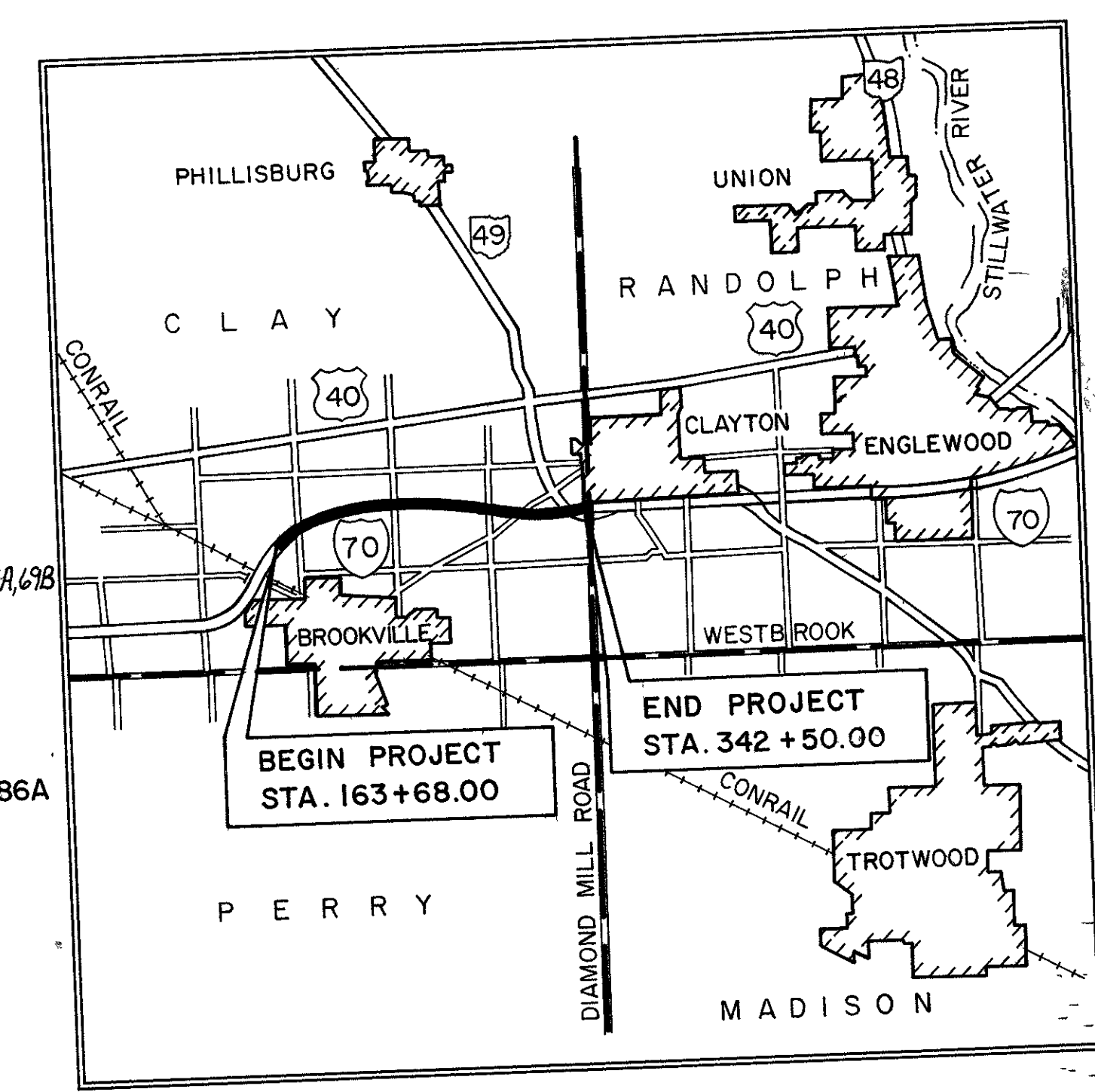
### CONVENTIONAL SIGNS

County Line	-----	Limited Access (only)	-----
Township Line	-----	Right of Way (only)	-----
Section Line	-----	Limited Access & Right of Way	-----
Corporation Line	-----	Existing Right of Way	-----
Fence Line (existing)	-----	Property Line	----- (in existing fence) -----
Center Line	-----	Railroad	-----
Utility Poles: Telephone ♂ Power ♂ Light ♂		Guardrail (existing)	----- (proposed) -----
		Underdrains (existing)	----- (proposed) -----

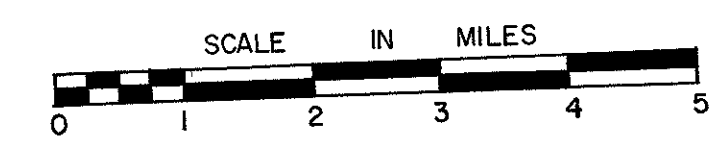
### INDEX OF SHEETS

Title Sheet	1	Plan and Profile, Brookville Salem Road and Ramps	59-61
Schematic Plan	2	Plan and Profile, Southbound S.R. 49	62-63
Typical Sections	3-10	Plan and Profile, Northbound S.R. 49	64
General Notes	11-18, 12A	Sub Summaries	66-69, 69A, 69B
Calculations	19-22	Curb Removal Detail and Table	70
General Summary	23-24	U-Turn Median Opening Details	71
Transition Details	25-26	Approach Slab Details and Table	72
Plan and Profile	27-40	Signing and Pavement Marking Plans	73-81
Cross Sections	41-51	Sign Details	82
Plan and Profile, Arlington Road and Ramps	52-56	Signing and Pavement Marking Sub Summaries	83-86, 86A
Plan and Profile, Brookville-Phillipsburg Road	57	Structures over 20'	87-106
Plan and Profile, Wellbaum Road	58	Traffic Control	107-120

OMITTED SHEET NO. 65  
SHEETS NOS 104, 105 and 106  
ARE NOT USED



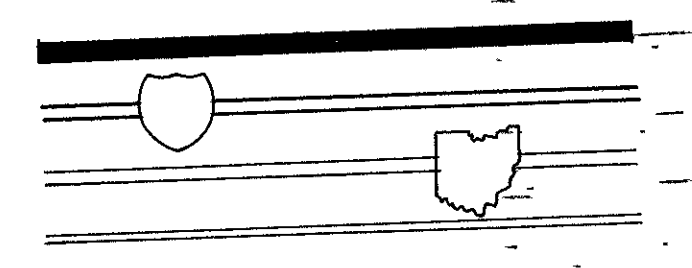
LOCATION MAP



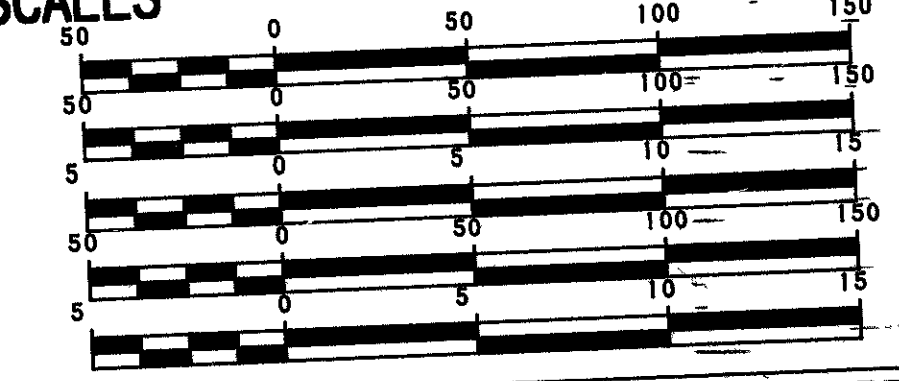
### LINE DATA

Begin Project	Sta 163+6800	Add For Work:	
End Project	Sta. 342+50.00	I.R. 70	Sta. 156+93.00 to Sta. 163+68.00 675.00 L.F.
	17882.00 L.F.	I.R. 70	Sta. 342+50.00 to Sta. 347+26.00 476.00 L.F.
Station Equation		Arlington Road	Sta. 24+85.00 to Sta. 43+40.00 1855.00 L.F.
Sta. 311+61.63 Back =		Brookville-Phillipsburg Road	Sta. 14+70.00 to Sta. 25+80.00 1110.00 L.F.
Sta. 306+10.10 Ahead		Wellbaum Road	Sta. 19+35.00 to Sta. 29+82.00 10470.00 L.F.
	(+) 551.53 L.F.	Brookville-Salem Road	Sta. 56+10.00 to Sta. 72+75.00 1665.00 L.F.
Station Equation		Southbound S.R. 49	Sta. 262+54.00 to Sta. 293+95.00 3141.00 L.F.
Sta. 330+43.55 Back =		Northbound S.R. 49	Sta. 280+00.00 to Sta. 293+68.00 1368.00 L.F.
Sta. 334+00.00 Ahead			
	(-) 356.45 L.F.		
TOTAL LENGTH PROJECT	18077.08 L.F.		1133700 L.F. or 2.147 Mi.
	or 3.424 Mi		
TOTAL LENGTH WORK	29,414 L.F.		
	OR 5.571 MI		

Portion to be Improved  
Federal Roads  
State Roads  
Other Roads



### SCALES



Plan  
Profile: Horizontal  
Profile: Vertical  
Cross Sections: Horizontal  
Cross Sections: Vertical

### SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS

AS-1-81	11-27-81	GR-3	1-21-85	SD-1-69	6-12-69	TC-42.10	8-19-77
BP-3	12-6-76	GR-3A	2-5-82	HL-50.11	5-1-87	TC-42.20	3-26-79
BP-5	10-1-87	GR-3B	1-21-85	MC-9A	1-11-85	TC-51.10	1-20-84
DBR-2-73	4-10-73	GR-4	2-5-82	MC-11	8-1-78	TC-51.11	1-20-84
F-1	11-10-83	GR-4A	1-30-84	MT-30.22	5-1-87	TC-52.10	4-3-79
F-3 & F2	5-1-76	GR-5	2-5-82	TC-22.20	3-1-79	TC-52.20	4-3-79
F-5	5-1-76	GR-6	2-5-82	TC-41.10	8-29-84	TC-61.10	4-5-82
F-6	5-1-76	GR-6A	2-5-82	TC-41.20	3-26-79	TC-72.20	2-26-82
GR-1	1-11-85	MC-4	7-26-76	MT-99.10		MT-99.10	11-4-86
GR-2B	2-5-82	RB-1-55	2-2-59	TC-41.50	3-26-79	BP-13	5-8-87

### SUPPLEMENTAL SPECIFICATIONS

824	10-08-82	802	5-4-88
845	2-25-86		
846	11-24-86		
847	10-17-83		
852	6-10-87		
947	10-17-83		
952	6-10-87		
953	8-21-80		
853	6-26-78		
956	6-26-78		

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

Approved *A. Kenneth Gpalla, PE*  
Date 1/14/88 District Deputy Director of Transportation

Approved *Richard H. Hamlin*  
Date 2-9-88 Engineer, Bureau of Bridges and Structural Design

Approved *George E. Downing*  
Date 3-17-88 Chief Engineer, Planning and Design

Approved *Richard B. Hunt*  
Date 3-17-88 Director, Department of Transportation

DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION

Division Administrator \_\_\_\_\_ Date \_\_\_\_\_

REVISED 6-9-88

PREPARED BY  
**WOOLPERT CONSULTANTS**  
409 E. MONUMENT AVE.  
DAYTON, OHIO 45404

Project MOT-70-3.10  
Date of Letting Contract No. \_\_\_\_\_

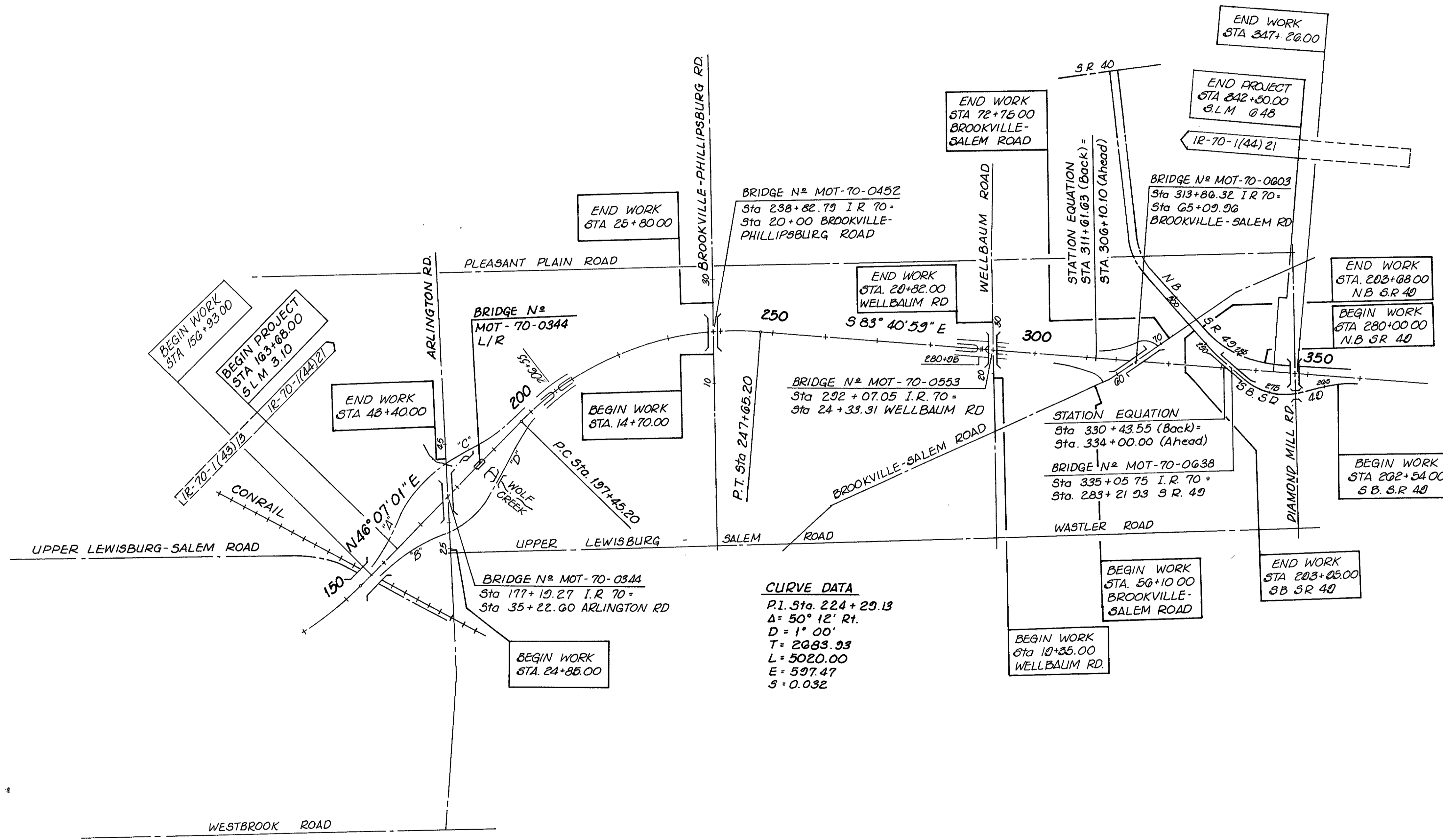
REVISIONS  
JUL 16 1972

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

2  
120

MOT-70-3.10

# SCHEMATIC PLAN

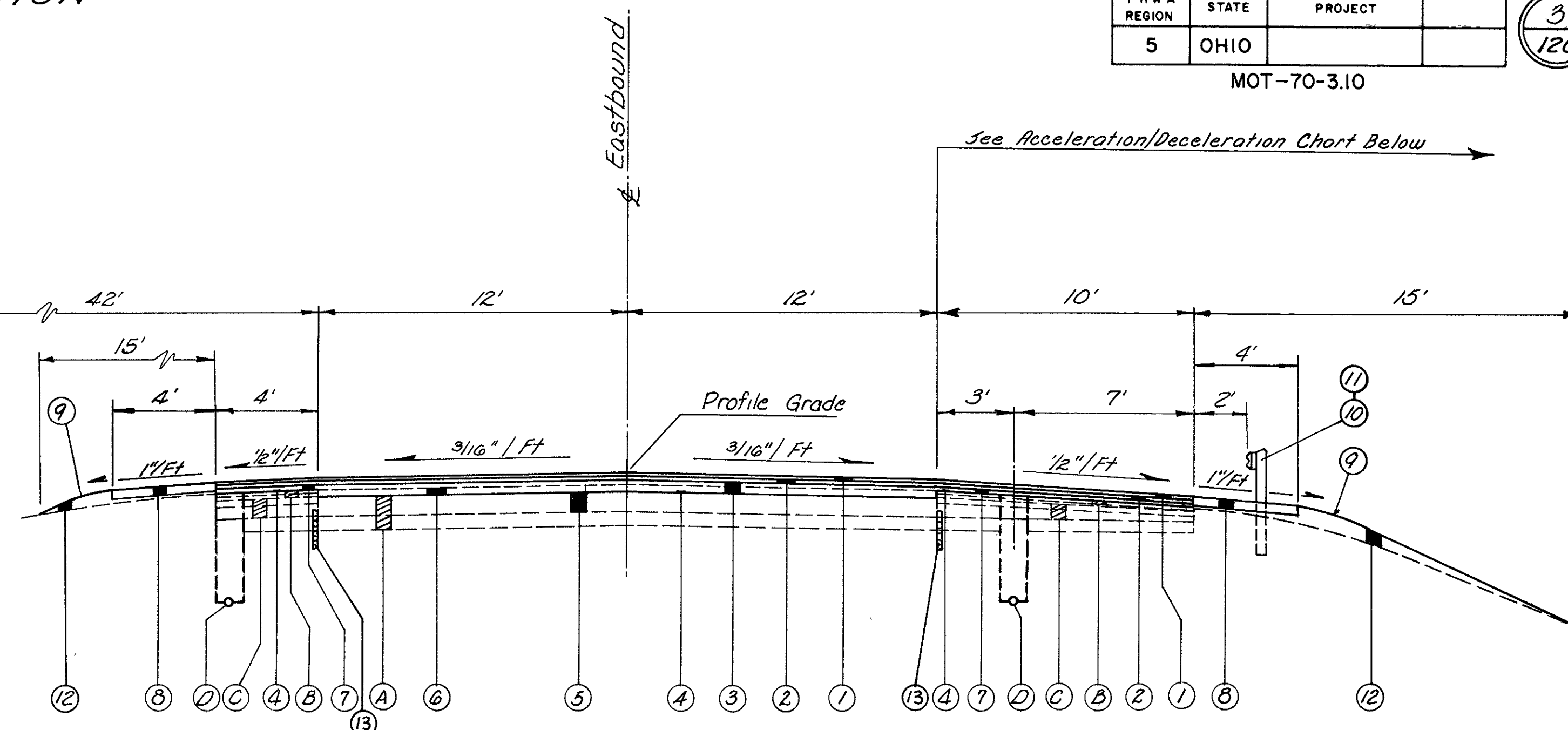
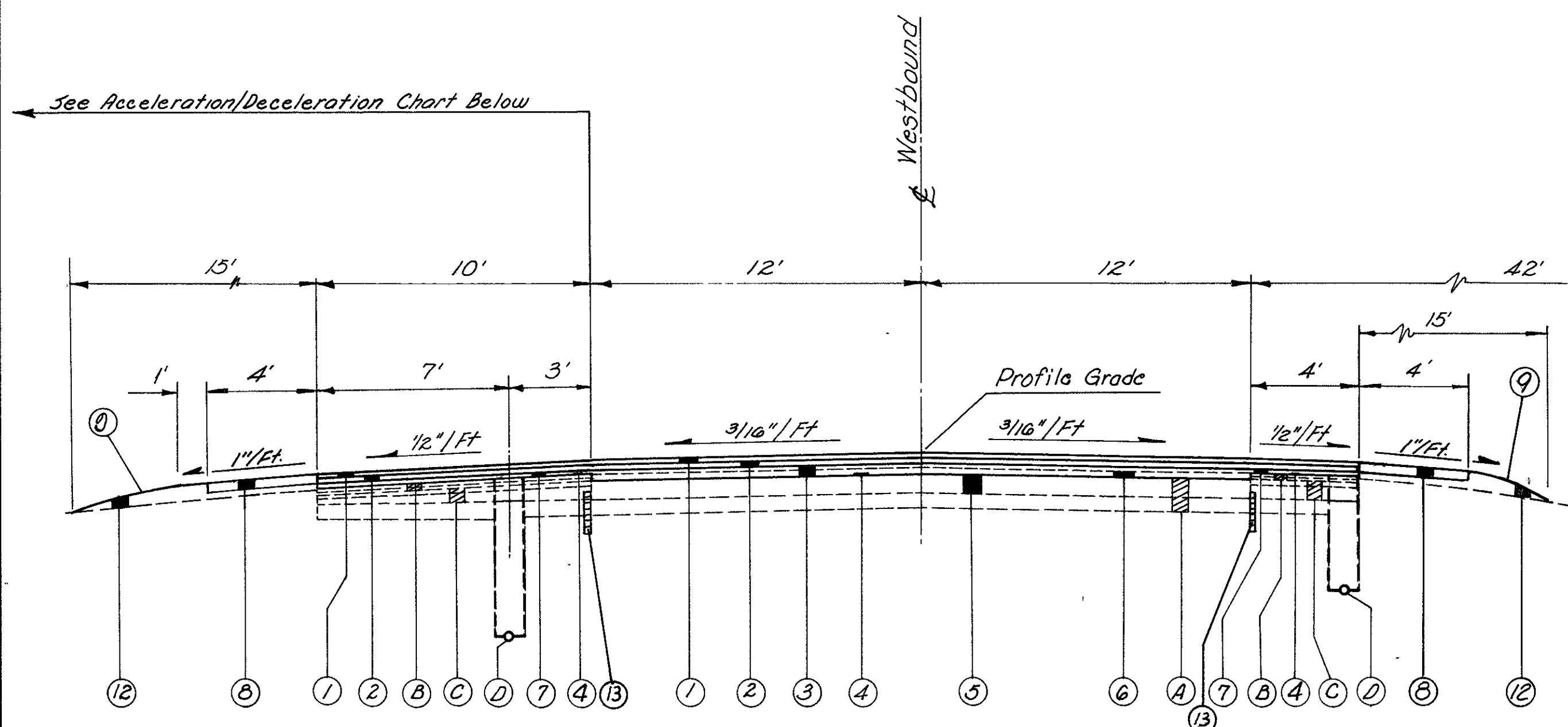


TYPICAL SECTION  
TYPE 846

F H W A REGION	STATE	PROJECT
5	OHIO	

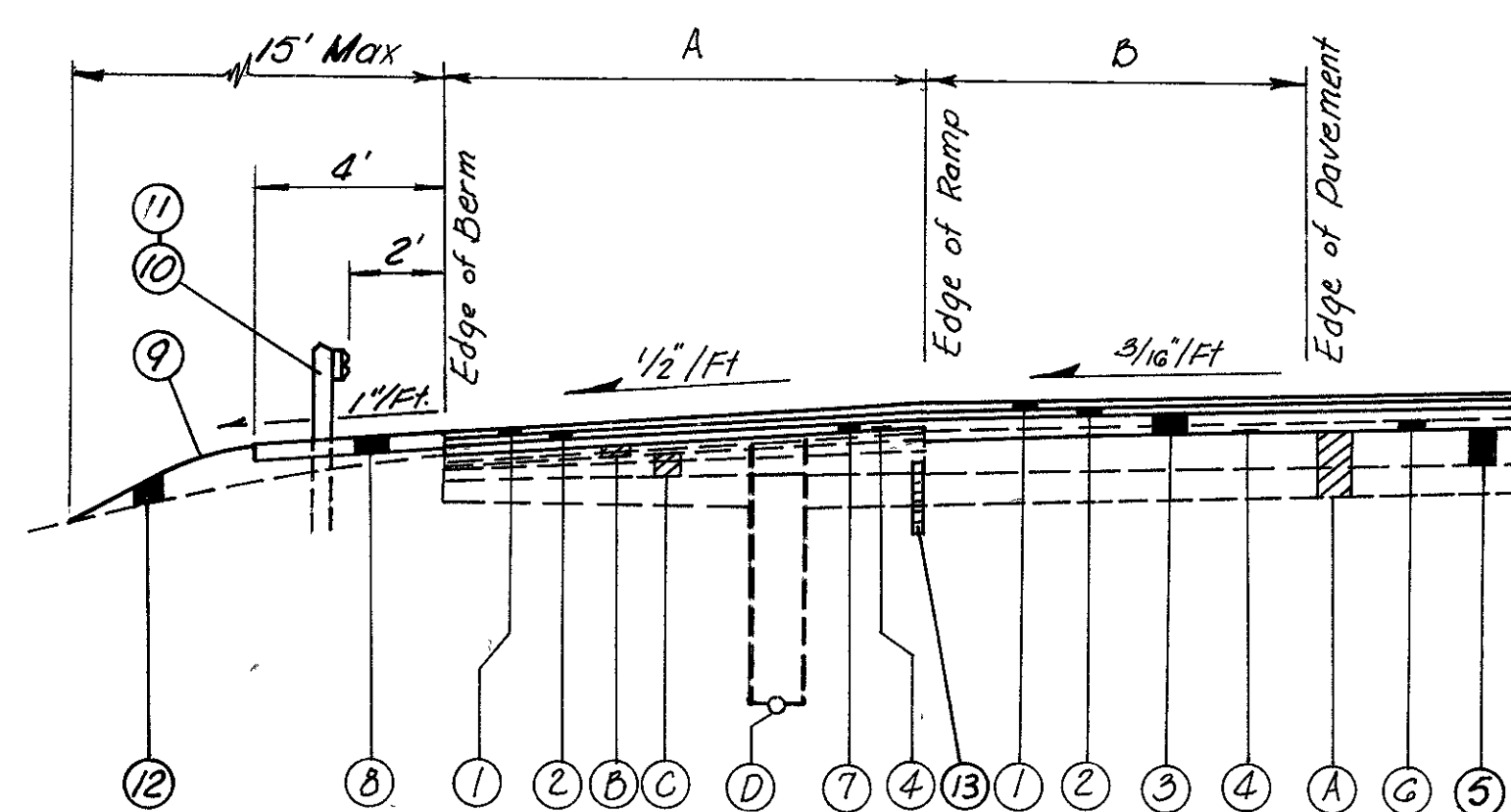
3  
120

MOT-70-3.10



Sta. 160+93.00 to Sta. 163+68.00 See Transition Detail "A" Sht N# 25  
 Sta. 163+68.00 to Sta. 177+64.00 = 1396.00'  
 Sta. 185+36.00 to Sta. 195+93.60 = 1057.60'  
 Sta. 249+16.80 to Sta. 311+61.63 = 6244.83'  
 Station Equation  
 Sta. 311+61.63 (Back) - Sta. 306+10.10 (Ahead)  
 Sta. 306+10.10 to Sta. 327+01.55 = 2091.45'  
 Total = 10,780.88'

Sta. 160+93.00 to Sta. 163+68.00 See Transition Detail "A" Sheet N# 25  
 Sta. 163+68.00 to Sta. 173+79.00 = 1011.00'  
 Sta. 185+36.00 to Sta. 195+93.60 = 1057.50'  
 Sta. 249+16.80 to Sta. 311+61.63 = 6244.83'  
 Station Equation  
 Sta. 311+61.63 Back - Sta. 306+10.10 Ahead  
 Sta. 306+10.10 to Sta. 311+26.00 = 515.90  
 Sta. 315+74.00 to Sta. 328+20.55 = 1316.55  
 Total = 10,145.78'



TYPICAL ACCELERATION/DECELERATION

Arlington Road, Ramps "A" & "C"  
 Arlington Road, Ramps "B" & "D" (Opposite Hand)  
 Brookville-Salem Road, Ramp "A"  
 Brookville-Salem Road, Ramp "B" (Opposite Hand)

See Chart Right for Station Limits

ACCELERATION/DECELERATION CHART				
LOCATION	STATION TO STATION	LENGTH	A	B
<b>ARLINGTON ROAD</b>				
Ramp "A"	160+93.00 - 167+47.42	654.42'	8'	
Ramp "B"	160+93.00 - 161+27.29	34.29'	8'	
Ramp "B"	161+27.29 - 165+78.58	451.29'	8' to 390'	
Ramp "C"	188+63.00 - 193+16.07	453.07'	390' to 8'	
Ramp "C"	193+16.07 - 195+61.34	245.27'	8'	
Ramp "C"	195+61.34 - 196+61.34	100'	8' to 10'	
Ramp "A"	160+93.00 - 163+68.00	275.00'		1135 to 1707
Ramp "A"	163+68.00 - 167+47.42	379.42'		1707 to 2500
Ramp "B"	160+93.00 - 161+27.29	34.29'		12'
Ramp "B"	161+27.29 - 163+68.00	240.71'		12' to 1891'
Ramp "B"	163+68.00 - 165+78.58	210.58'		1891' to 37'
Ramp "C"	188+63.00 - 193+16.07	453.07'		37' to 12'
Ramp "C"	193+16.07 - 195+61.34	245.27'		12'
Ramp "C"	195+61.34 - 196+61.34	100.00'		12' to 0'
Ramp "D"	188+00.00 - 200+02.97	1202.97'		25' to 0'
Ramp "D"	190+32.97 - 200+02.97	70.00'	8' to 10'	
<b>BROOKVILLE-SALEM ROAD</b>				
Ramp "A"	296+69.37 - 297+69.37	100.00'	10' to 8'	
Ramp "A"	297+69.37 - 308+69.37	1100.00'	8'	
Ramp "B"	298+67.23 - 299+67.95	100.72'	10' to 8'	
Ramp "B"	299+67.95 - 302+13.19	245.24'	8'	
Ramp "B"	302+13.19 - 306+67.23	454.04'	8' to 390'	
Ramp "A"	296+69.37 - 308+69.37	1200.00'		0' to 25'
Ramp "B"	298+67.23 - 299+67.95	100.72'		0' to 12'
Ramp "B"	299+67.95 - 302+13.19	245.24'		12'
Ramp "B"	302+13.19 - 306+67.23	454.04'		12' to 37'

LEGEND

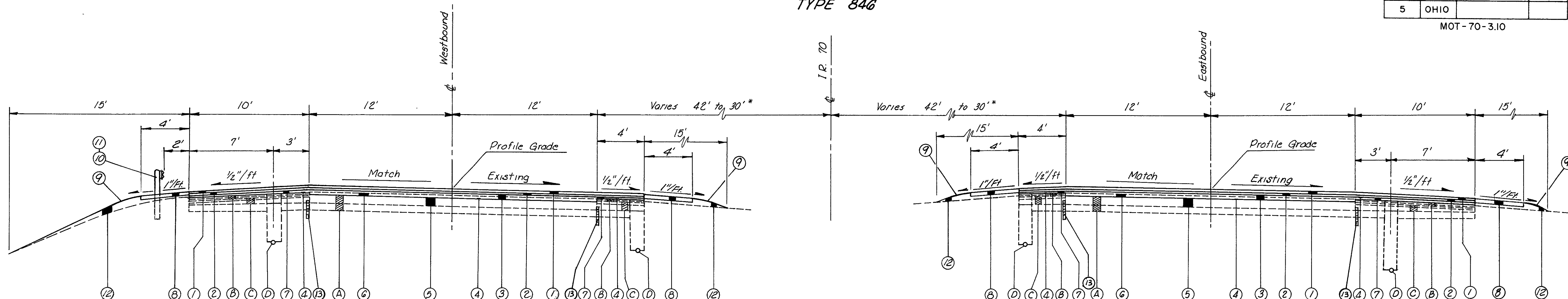
- ① Item 846 1 1/2" Asphalt Concrete Surface Course, Type 1, AC 20
  - ② Item 846 2" Asphalt Concrete Intermediate Course, Type 2, AC 20
  - ③ Item 301 5" Bituminous Aggregate Base, AC-20
  - ④ Item 407 Tack Coat, As Per Plan
  - ⑤ Item Special, Cracking and Seating Rigid Pavement, See Proposal Note
  - ⑥ Item Special Pavement Planing Bituminous without heat, See Proposal Note
  - ⑦ Item 301 2" Bituminous Aggregate Base, AC-20
  - ⑧ Item 617 4" Compacted Aggregate, Type A
  - ⑨ Item 629 Seeding and Mulching
  - ⑩ Item 202 Guardrail Removed
  - ⑪ Item 606 Guardrail, Type 5
  - ⑫ Item 203 Borrow
  - ⑬ Item 605 Shallow Underdrain, as Per Plan
- 
- Ⓐ Existing Pavement, 9" Reinforced Concrete on 6" Subbase, To Remain
  - Ⓑ Existing Berm, 3" Asphalt Concrete, To Remain
  - Ⓒ Existing 3" Waterproofed Aggregate Base on Porous Base Course, To Remain
  - Ⓓ Existing 6" Pipe Underdrain

TYPICAL SECTION  
TYPE 846

F H W A REGION	STATE	PROJECT
5	OHIO	

4  
120

MOT-70-3.10

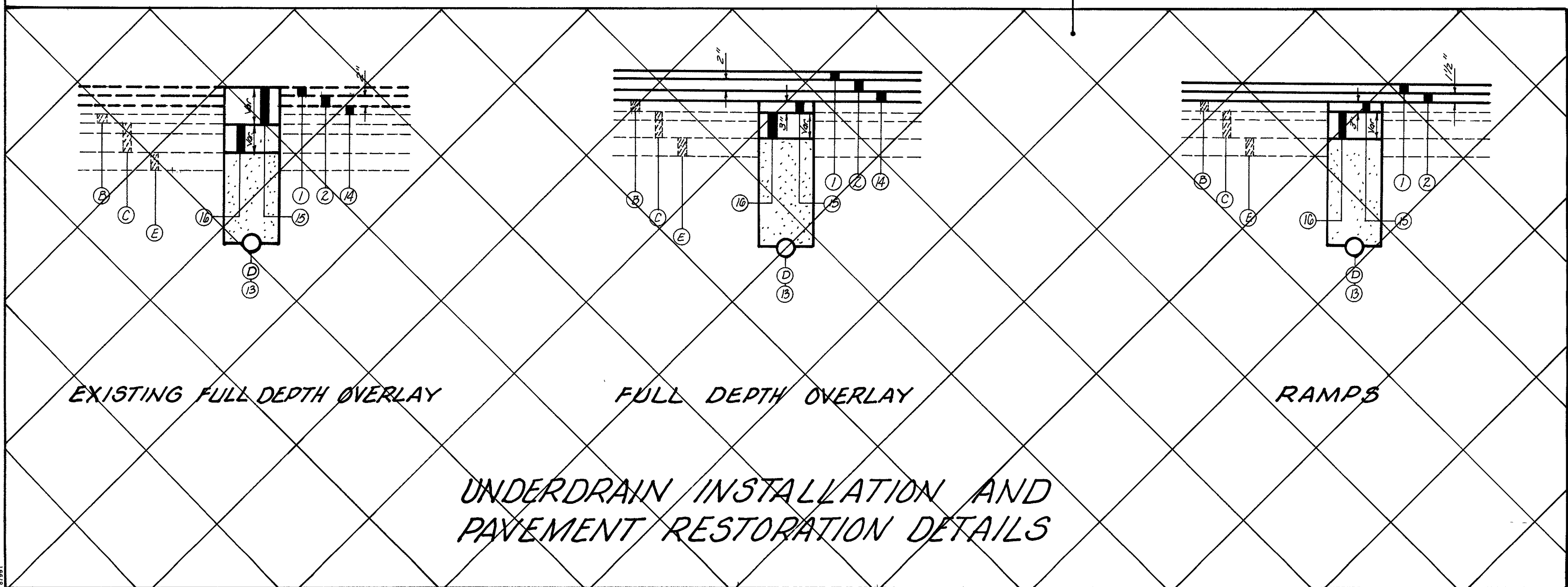


\* Median Width Transitions 84' to 60'  
Sta. 235+50.00 to Sta. 247+50.00

Sta. 195+93.60 to Sta. 235+37.00 = 3943.40'  
Sta. 242+13.00 to Sta. 249+10.80 = 703.80'  
Total = 4647.20'

Sta. 195+93.60 to Sta. 249+10.80 = 5323.20'

Void this Crossed Out Area



LEGEND

- ① Item 846 1 1/2" Asphalt Concrete Surface Course, Type 1, AC-20
- \*② Item 846 2" Asphalt Concrete Intermediate Course, Type 2, AC-20
- ③ Item 301 5" Bituminous Aggregate Base, AC-20
- ④ Item 407 Tack Coat, As Per Plan
- ⑤ Item Special, Cracking and Seating Rigid Pavement, See Proposal Note
- ⑥ Item Special Pavement Planing, Bituminous without heat, See Proposal Note
- ⑦ Item 301 2" Bituminous Aggregate Base, AC-20
- ⑧ Item 017 4" Compacted Aggregate, Type A
- ⑨ Item 059 Seeding and Mulching
- ⑩ Item 202 Guardrail Removed
- ⑪ Item 606 Guardrail, Type 5
- ⑫ Item 203 Borrow
- ⑬ Item 005 Shallow Underdrain, as Per Plan
- ⑭ Item 301 2" Bituminous Aggregate Base, AC-20
- ⑮ Item 301 Bituminous Aggregate Base, AC-20, Depth As Shown
- ⑯ Item 304 Variable Depth Aggregate Base
- ⑰ Existing Pavement, 9" Reinforced Concrete on 6" Subbase, To Remain
- ⑱ Existing Berm, 3" Asphalt Concrete, To Remain
- ⓐ Existing 3" Waterproofed Aggregate Base on Porous Base Course
- ⓑ Existing 6" Pipe Underdrain
- ⓒ Existing 6" Subbase
- \*② = 2" Depth Unless Otherwise shown, See Detail Left for Ramps

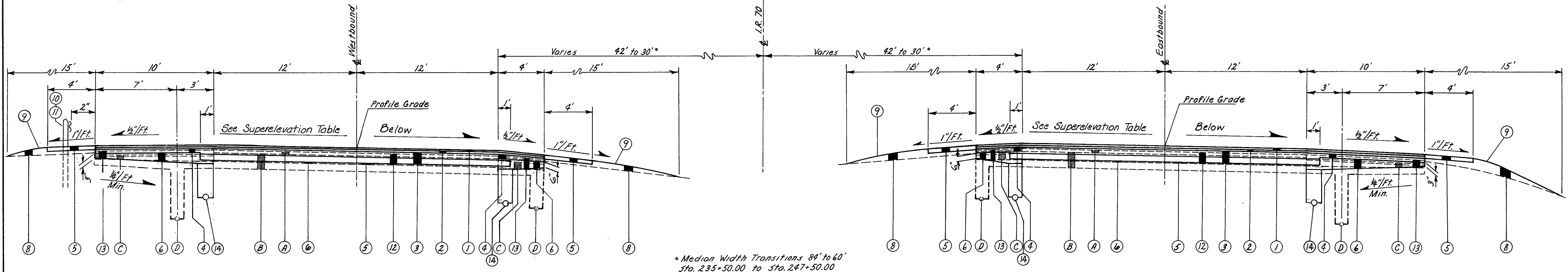
REVISED 6-9-88



TYPICAL SECTION  
TYPE 846

F H W A REGION	STATE	PROJECT	
5	OHIO		

MOT -70-3.10



Sta. 235+37.00 to Sta. 242+13.00 = 676.00'

NOTE: Full Depth Typical Eastbound not applicable. See Eastbound Overlay Typical, Sheet N° 4.

# SUPERELEVATION TABLES

NOTE: Original Slope Full Superelevation = 3.2% (From Mot-40-2.73, Sheet 5, Superelevated Section "C")

I.R. 70 STATION	WESTBOUND			EASTBOUND			I.R. 70 STATION	WESTBOUND			EASTBOUND		
	LEFT EDGE	PROFILE GRADE	RIGHT EDGE	LEFT EDGE	PROFILE GRADE	RIGHT EDGE		LEFT EDGE	PROFILE GRADE	RIGHT EDGE	LEFT EDGE	PROFILE GRADE	RIGHT EDGE
							239+00	1047.71	1047.35	1046.99			
235+37	1048.06	1048.70	1048.34				+25	1047.65	1047.29	1046.93			
235+50	1048.01	1048.65	1048.29				+50	1047.63	1047.27	1046.91			
+75	1048.01	1048.65	1048.19				+75	1047.61	1047.25	1046.89			
236+00	1048.81	1048.45	1048.09				240+00	1047.59	1047.23	1046.87			
+25	1048.71	1048.35	1047.99				+25	1047.57	1047.21	1046.85			
+50	1048.61	1048.25	1047.80				+50	1047.55	1047.19	1046.83			
+75	1048.51	1048.15	1047.79				+75	1047.53	1047.17	1046.81			
237+00	1048.41	1048.05	1047.60				241+00	1047.51	1047.15	1046.79			
+25	1048.31	1047.95	1047.50				+25	1047.49	1047.13	1046.77			
+50	1048.21	1047.85	1047.40				+50	1047.47	1047.11	1046.75			
+75	1048.11	1047.75	1047.30				+75	1047.45	1047.09	1046.73			
238+00	1048.00	1047.64	1047.28				242+00	1047.44	1047.08	1046.72			
+25	1047.80	1047.53	1047.17				+13	1047.44	1047.08	1046.72			
+50	1047.83	1047.47	1047.11										
+75	1047.77	1047.41	1047.05										

## LEGEND

- ① Item 846 1 1/2" Asphalt Concrete Surface Course; Type 1, AC-20
- ② Item 846 2" Asphalt Concrete Intermediate Course; Type 2, AC-20
- ③ Item 301 12" Bituminous Aggregate Base, AC-20
- ④ Item 301 6" Bituminous Aggregate Base, AC-20
- ⑤ Item 617 4" Compacted Aggregate, TYPE A
- ⑥ Item 304 Variable Depth Aggregate Base, As per Plan
- ⑦ Not Used
- ⑧ Item 203 BORROW
- ⑨ Item 659 Seeding & Mulching
- ⑩ Item 202 Guardrail Removed
- ⑪ Item 606 Guardrail, Type 5
- ⑫ Item 202 Pavement Removed
- ⑬ Item 203 Excavation
- ⑭ Item 605 6" Pipe Underdrains, As per Plan
- Ⓐ Existing 3" Bituminous Wearing Course
- Ⓑ Existing Pavement 9" Reinforced Portland Cement Concrete on 6" Subbase
- Ⓒ Existing 3" Waterproofed Aggregate Base on Porous Base Course.
- Ⓓ Existing Underdrains

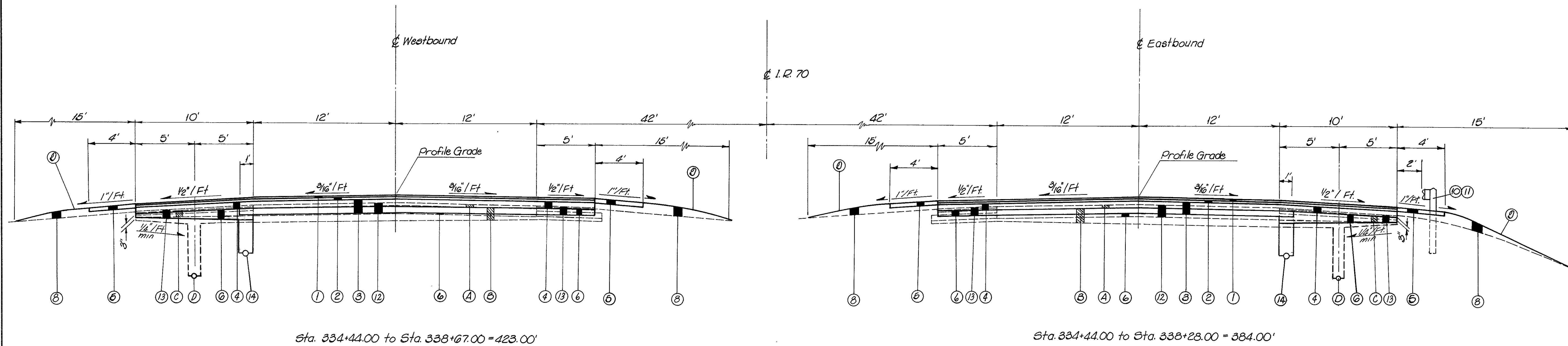
REVISED 6-9-88

TYPICAL SECTION  
TYPE 846

F H W A REGION	STATE	PROJECT
5	OHIO	

7  
120

MOT-70-3.10



LEGEND

- ① Item 846 1/2" Asphalt Concrete Surface Course; Type 1, AC-20
- ② Item 846 2" Asphalt Concrete Intermediate Course; Type 2, AC-20
- ③ Item 301 12" Bituminous Aggregate Base, AC-20
- ④ Item 301 6" Bituminous Aggregate Base, AC-20
- ⑤ Item 617 4" Compacted Aggregate, Type A
- ⑥ Item 304 Variable Depth Aggregate Base
- ⑦ Not Used
- ⑧ Item 203 Borrow
- ⑨ Item 659 Seeding and Mulching
- ⑩ Item 202 Guardrail Removed
- ⑪ Item 606 Guardrail, Type 5
- ⑫ Item 202 Pavement Removed
- ⑬ Item 203 Excavation
- ⑭ Item 605 6" Pipe Underdrains, As Per Plan

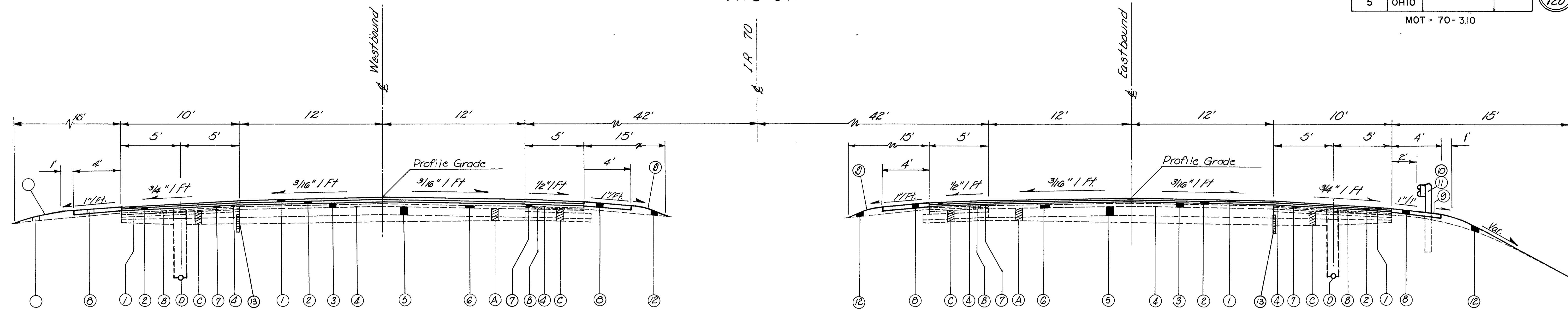
- Ⓐ Existing 3" Bituminous Wearing Course
- Ⓑ Existing Pavement, 8" Reinforced Portland Cement Concrete on Variable Depth Subbase
- Ⓒ Existing 3" Waterproofed Aggregate Base on Porous Base Course
- Ⓓ Existing Underdrains

REVISED 6-9-88

TYPICAL SECTION  
TYPE 846

F H W A REGION	STATE	PROJECT	8 120
5	OHIO		

MOT - 70 - 3.10



Sta 338+67.00 to Sta. 344+78.40 = 611.40'  
Sta. 344+78.40 to Sta. 347+53.40 See Pavement Transition Detail "A", Sheet N<sup>o</sup> 25

Sta. 338+28.00 to Sta. 344+78.40 = 650.40'  
Sta. 344+78.40 to Sta. 347+53.40 See Pavement Transition Detail "A", Sheet N<sup>o</sup> 25

LEGEND

- ① Item 846 1/2" Asphalt Concrete Surface Course, Type 1, AC-20
  - ② Item 846 2" Asphalt Concrete Intermediate Course, Type 2, AC-20
  - ③ Item 301 5" Bituminous Aggregate Base, AC-20
  - ④ Item 407 Tack Coat, As Per Plan
  - ⑤ Item Special, Cracking and Seating Rigid Pavement, See Proposal Note
  - ⑥ Item Special Pavement Planing Bituminous without Heat, See Proposal Note
  - ⑦ Item 301 2" Bituminous Aggregate Base
  - ⑧ Item 017 4" Compacted Aggregate
  - ⑨ Item 059 Seeding and Mulching
  - ⑩ Item 202 Guardrail Removed
  - ⑪ Item 606 Guardrail, Type 5
  - ⑫ Item 203 Borrow
  - ⑬ Item 605 Shallow Underdrain, as per plan
- 
- Ⓐ Existing Pavement, 9" Reinforced Concrete on 3" to 6" Subbase, To Remain
  - Ⓑ Existing Berm, 3" Asphalt Concrete, To Remain
  - Ⓒ Existing Asphalt Concrete Leveling Course on Existing Base, To Remain
  - Ⓓ Existing 6" Pipe Underdrain



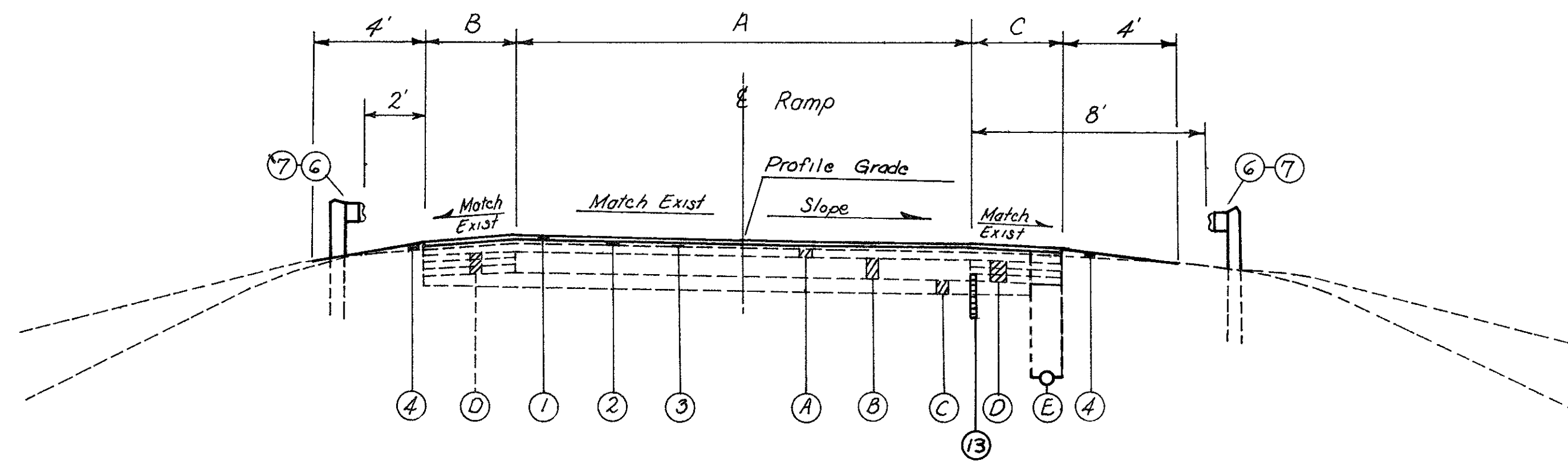
TYPICAL SECTION  
TYPE 846

F H W A REGION	STATE	PROJECT	
5	OHIO		

9  
120

MOT - 70 - 3.10

LEGEND



- ① Item 846 1½" Asphalt Concrete Surface Course, Type 1, AC-20
- ② Item 846 1½" Asphalt Concrete Intermediate Course, Type 1, AC-20
- ③ Item 407 Tack Coat As Per Plan
- ④ Item 617 Compacted Aggregate, 0" Minimum, as per plan
- ⑤ Not Used
- ⑥ Item 202 Guardrail Removed
- ⑦ Item 606 Guardrail, Type 5
- Ⓐ Existing Asphalt Concrete Overlay
- Ⓑ Existing Concrete Pavement
- Ⓒ Existing Subbase
- Ⓓ Existing Asphalt Concrete and Base
- Ⓔ Existing Underdrain
- ⓐ Shallow underdrain, as per plan

RAMP CHART

LOCATION	STATION TO	STATION	LENGTH	A	B	C	LOCATION	STATION TO	STATION	LENGTH	A	B	C
Arlington Road, Ramp "A"	1+62.00	9+65.00	803.00'	16'	3'	3'	Arlington Road, Ramp "D"	9+85.67	10+06.90	(Bridge Over Wolf Creek)			
Arlington Road, Ramp "A"	9+65.00	10+41.27	76.27'	16'	*	3'	Arlington Road, Ramp "D"	10+06.90	10+31.90	■ 25.00'	16'	*	3'
Arlington Road, Ramp "A"	10+41.27	12+41.27	200.00'	16'	*	3' to 8'	Arlington Road, Ramp "D"	10+31.90	11+03.36	■ 71.46'	16'	*	3'
Arlington Road, Ramp "A"	12+41.27	14+16.27	175.00'	16' to 14.83'	*	8'	Arlington Road, Ramp "D"	11+03.36	12+56.90	■ 153.54'	16'	*	3' to 6.10'
Arlington Road, Ramp "B"	9+24.06	14+64.00	539.94'	16'	3'	3'	Arlington Road, Ramp "D"	12+56.90	13+51.36	■ 94.46'	16'	*	6.10' to 8'
Arlington Road, Ramp "C"	7+99.06	8+99.06	100.00'	16'	3'	3.90'	Arlington Road, Ramp "D"	13+51.36	16+51.36	300.00'	16' to 14'	*	8'
Arlington Road, Ramp "C"	9+24.06	14+71.50	547.44'	16'	3'	3'	Brookville-Salem Road, Ramp "A"	1+62.00	9+17.00	755.00'	16'	3'	3'
Arlington Road, Ramp "D"	1+62.00	7+35.67	573.67'	16'	3'	3'	Brookville-Salem Road, Ramp "A"	9+17.00	9+75.05	58.05'	16'	*	3'
Arlington Road, Ramp "D"	7+35.67	9+25.00	■ 189.33'	16'	3'	3'	Brookville-Salem Road, Ramp "A"	9+75.05	12+25.05	250.00'	16'	*	3' to 8'
Arlington Road, Ramp "D"	9+25.00	9+60.67	■ 35.67'	16'	*	3'	Brookville-Salem Road, Ramp "A"	12+25.05	14+00.05	175.00'	14.84' to 16'	*	8'
Arlington Road, Ramp "D"	9+60.67	9+85.67	■ 25.00'	16'	*	3'	Brookville-Salem Road, Ramp "B"	9+24.06	14+18.48	494.42'	16'	3'	3'

\* Included in Curb Removal Detail, Sheet N<sup>o</sup> 70  
 ■ See Profile of Overlay Transition, Sheet N<sup>o</sup> 5G  
 ■ See Detail "G", Sheet N<sup>o</sup> 2G

TYPICAL SECTION  
TYPE 846

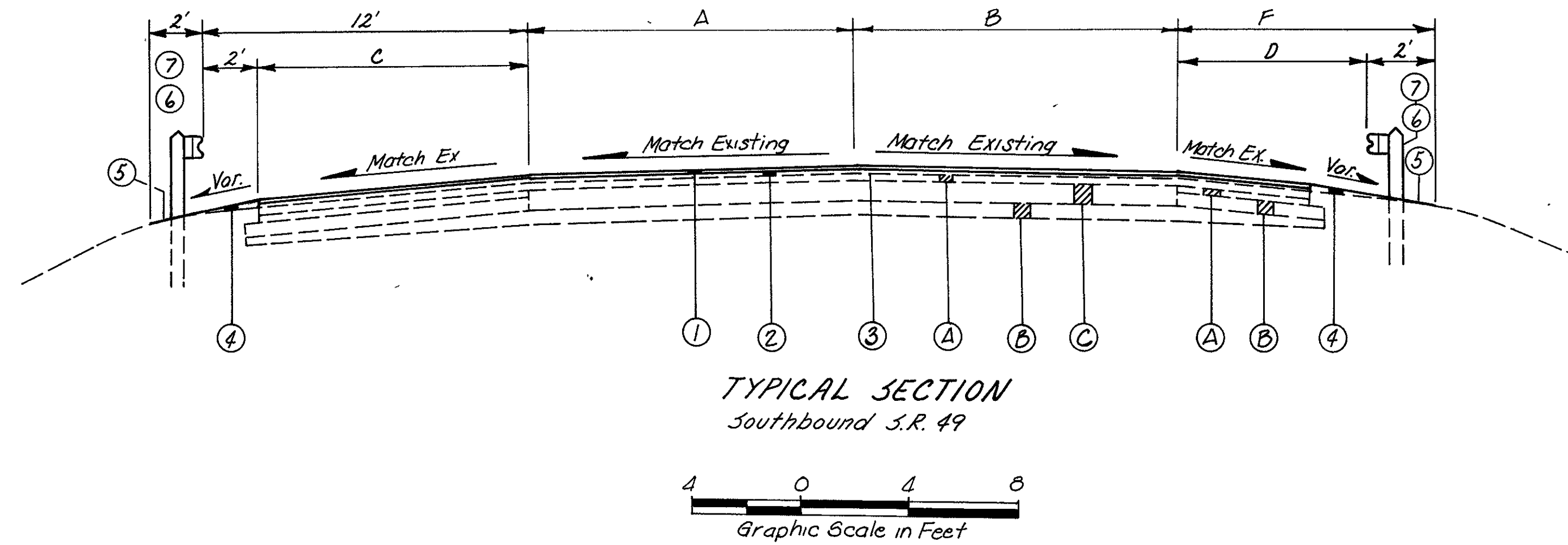
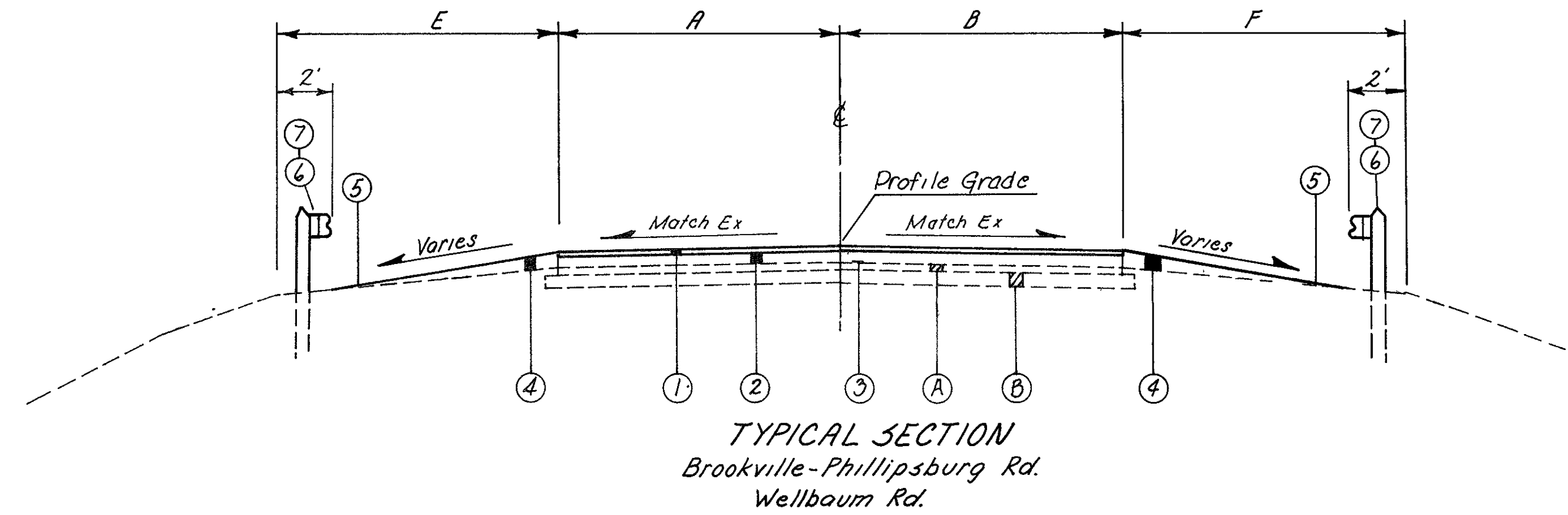
F H W A REGION	STATE	PROJECT	
5	OHIO		

10  
120

MOT - 70 - 3.10

LEGEND

- ① Item 846 1 1/2" Asphalt Concrete Surface Course, Type 1, AC-20
- ② Item 846 Variable Depth Asphalt Concrete Intermediate Course, Type 1, AC-20
- ③ Item 407 Tack Coat, As per plan
- ④ Item 203 Borrow
- ⑤ Item 659 Seeding and Mulching
- ⑥ Item 202 Guardrail Removed
- ⑦ Item 606 Guardrail Type 5
- Ⓐ Existing Asphalt Concrete Pavement
- Ⓑ Existing Base
- Ⓒ Existing Reinforced Concrete Pavement



CROSS ROAD CHART

LOCATION	STATION TO STATION	LENGTH	A	B	C	D	E	F
Brookville-Phillipsburg Rd.	17 + 64.25	18 + 39.25	75.00' *	10'	10'	N/A	N/A	8' 10'
Brookville-Phillipsburg Rd.	21 + 60.75	22 + 35.75	75.00' *	10'	10'	N/A	N/A	8' 10'
Wellbaum Road	21 + 68.05	22 + 87.05	119.00' **	10'	10'	N/A	N/A	10' 10'
Wellbaum Road	25 + 79.57	26 + 98.57	119.00' **	10'	10'	N/A	N/A	10' 10'
Southbound S.R. 40	280 + 57.02	281 + 32.02	75.00' *	12'	12'	10'	5'	12' 7'
Southbound S.R. 40	285 + 11.84	285 + 80.84	75.00' *	12'	12'	10'	5'	12' 7'

\* See Pavement Transition Detail "B", Sheet N<sup>o</sup> 25  
 \*\* See Pavement Transition Detail "C" & "D", Sheet N<sup>o</sup> 25

# GENERAL NOTES

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

11  
120

MOT - 70 - 3.10

## 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.

## CONSTRUCTION PLANS

Reference is hereby made to the following designated plans for former construction project included in this proposed improvement. Copies of these plans are on file at the District 7 office of the Department of Transportation, Sidney, Ohio.

MOT-40-2.73  
MOT-40-5.98, MOT-49-12.45  
MOT-70-6.53

## FIELD OFFICE

The Contractor shall provide a suitable field office having a minimum of 800 square feet of floor space.

Payment shall be at the lump sum price bid for Item 619, FIELD OFFICE

## 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:

Dayton Power and Light Company (Electric)  
136 W. Lexington Road  
Eaton, Ohio 45320  
Contact Person : Gene Lindsay  
Phone : 1-513-456-2611

Centel Cable  
1601 N. Barron  
Eaton, Ohio 45320  
Contact Person : Mike Ooten  
Phone : 1-513-456-1183

Dayton Power and Light Company (Gas)  
136 W. Lexington Road  
Eaton, Ohio 45320  
Contact Person : Lou Huddleston  
Phone : 1-513-456-2611

General Telephone and Electronics  
6464 Westbrook Road  
Clayton, Ohio 45315  
Contact Person : Roger Fornay  
Phone : 1-513-833-0463

## PROFILE AND ALIGNMENT

The proposed pavement resurfacing course shall follow the alignment and profile of the existing pavement, except as designated in proposed full depth pavement areas. Previous construction plans showing the original alignment and profile grade are on file for inspection if necessary at the ODOT District 7 office. See Construction Plans Note above for listing. The proposed asphalt concrete overlay shall have a uniform thickness of approximately 8 1/2 inches with tapers as shown on these plans.

## LOCATION OF GUARDRAIL

The locations 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.

## PART-WIDTH CONSTRUCTION

Because of the necessity of building (portions of) this project under traffic and constructing the full pavement width in stages, extreme care shall be taken to prevent the construction of a butt joint on centerline in the base courses. Longitudinal joints shall be lapped as shown on Standard Construction Drawing BP-5.

## MILE MARKER LOCATION

The location of mile markers on the plans are approximate and a more precise location will be provided by the department. The Contractor shall notify the Engineer at least 30 days in advance of the planned date of marker installation. The Engineer will contact the bureau of technical services which will locate the longitudinal position of mile markers by means of a paint mark on the pavement edge. Alternate marks will not be provided on divided highways and the contractor shall set markers for the opposite roadway across from the provided mark. Delineators whose normal position falls within 50 feet of a mile marker shall be omitted.

## TEMPORARY SOIL EROSION AND SEDIMENT CONTROL

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

207 Temporary Seeding and Mulching	25084	Sq. Yd.
207 Straw or Hay Bales	360	Each
659 Commercial Fertilizer	1.13	Ton
659 Repair Seeding and Mulching	6271	Sq. Yd.
659 Water	55	M. GAL.

## ~~Item 605 Unclassified Pipe Underdrains, As Per Plan~~

~~The existing 6" pipe underdrain and filter/backfill material shall be removed from the trench. New 6" pipe underdrains shall be installed in the same location and elevation as the existing pipe underdrain. New filter/backfill material shall be placed in the trench. Sand and/or slag will not be permitted for filter/backfill material. Pavement restoration details shall be in accordance with the details on sheet 4. Payment for removal of the existing pipe under is included in Item 605 Unclassified Pipe Under drain, as per plan.~~

## PIER PROTECTION

Guardrail shall be stiffened at certain locations by installation of additional guard posts for the purpose of protecting the concrete bridge piers. This shall be accomplished by installing guard posts spaced 3'-1/2" apart with spacing to begin 12'-6" in advance of the end pier. Refer to Design "B" Standard Drawing GR-6A 2/5/82. All costs are included in the Type 5 price. See guardrail sub-summary for locations.

## ITEM 605 UNDERDRAINS

IN THE AREAS OF NEW PAVEMENT THE EXISTING 6" PIPE UNDERDRAIN SHALL BE ABANDONED AND NEW 6" PIPE UNDERDRAINS SHALL BE INSTALLED USING #8 AGGREGATE BACKFILL MATERIAL. IN THE AREAS OF EXISTING PAVEMENT SHALLOW UNDERDRAINS SHALL BE INSTALLED AS PER DETAILS ON SHEET 27B.

IN ALL AREAS OF EXISTING UNDERDRAINS THE EXISTING OUTLET PIPES SHALL BE REMOVED AND REPLACED. IN THE AREAS OF PROPOSED SHALLOW UNDERDRAINS THE OUTLET PIPE SHALL BE CONNECTED TO THE EXISTING PIPE UNDERDRAIN AS PER DETAILS ON SHEET 29A.

## ITEM 201 CLEARING AND GRUBBING

THIS ITEM OF WORK SHALL BE REQUIRED IN THE AREAS OF FENCE REMOVAL AND REPLACEMENT AS DIRECTED BY THE ENGINEER.

## ITEM 802 BARRIER REFLECTORS

AN ESTIMATED QUANTITY OF 150 BARRIER REFLECTORS, TYPE A ARE PROVIDED FOR ALL REQUIRED APPLICATIONS WITHIN THE WORK LIMITS OF THIS PROJECT.

# GENERAL NOTES

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

12  
120

MOT - 70 - 3.10

## ITEM 202 - CURB REMOVED, AS PER PLAN,

The unit bid price for Item 202 - Curb Removed, as per plan, shall include the removal and disposal of the existing barrier curb, backfilling the void with bituminous material, Item 301, regrading and restoration of the adjacent turf berm where applicable to assure good drainage. Drainage ditches should be maintained as much as possible. This item shall include all labor equipment and material necessary to complete the work to the satisfaction of the Engineer.

## ITEM 301 - BITUMINOUS AGGREGATE BASE

A quantity of 500 Cu. Yds. is carried to the General Summary for Item 301 - Bituminous Aggregate Base. This is to be used in those locations designated under Item 203 - Excavation Not Including Embankment Construction and for repair of any seated areas that may have been "punched through" by the cracking and seating operations.

## ITEM 407 TACK COAT, As Per Plan

The rate of application of 407 Tack Coat shall be subject to adjustment, as directed by the engineer. When cover aggregate is needed on this project, it shall be used as directed by the engineer, and it shall become incidental to and included for payment in, Item 407 Tack Coat, as per plan. Plan quantities indicate average application rates of .075 gallons per square yard of tack coat for estimating purposes only.

## ITEM 846 - ASPHALT CONCRETE

On this project, supplemental specification 846, table 2-2, properties of mixture for heavy traffic volumes shall apply.

## SEEDING

Quantities for seeding are calculated for the soil areas to four (4) feet outside the embankment limits, as shown on the cross sections and typical sections.

## JOINT REPAIR

Deteriorated transverse joints and other deteriorated areas shall be removed and replaced as determined by the engineer. The contractor shall remove the deteriorated pavement and correct any subbase/subgrade deficiencies. The replacement shall be Portland Cement Concrete. The reinforcing steel shall be as per Standard Drawing BP-13 and the General Notes for Full Depth Rigid Pavement Removal and Rigid Replacement

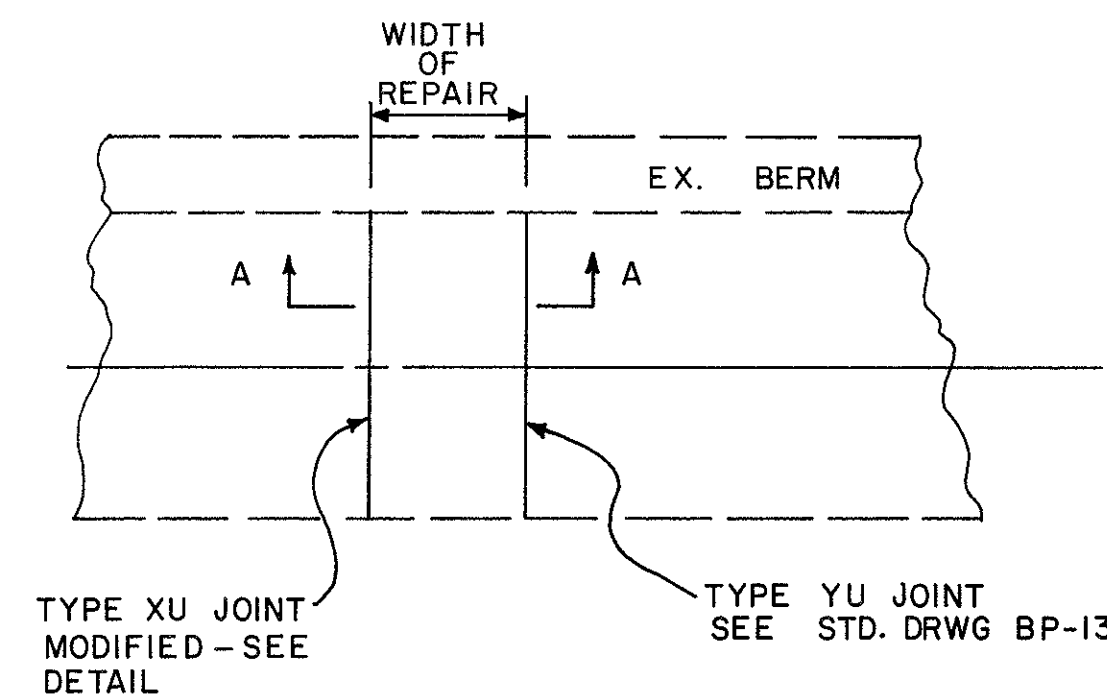
## JOINT SEALERS

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

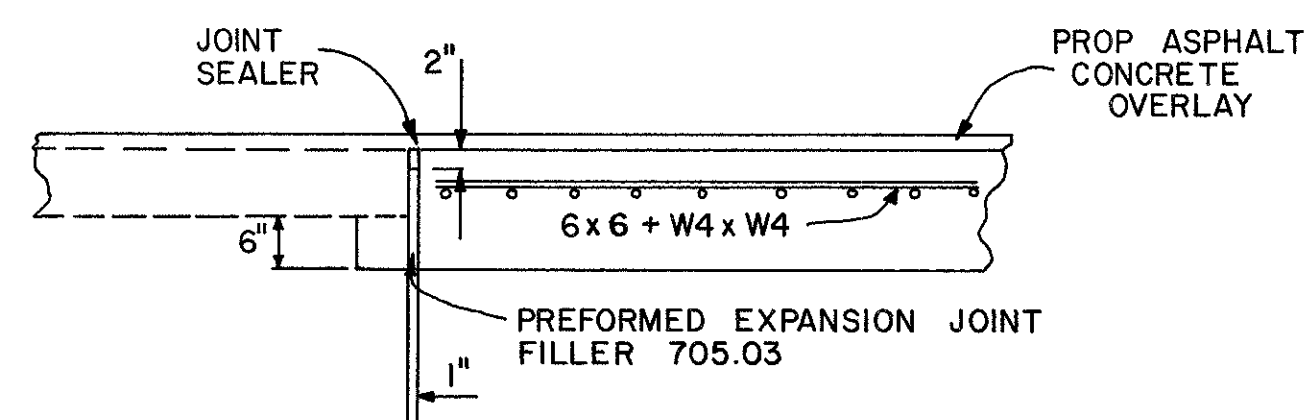
## WATERING AND MOWING PERMANENT SEEDED AREAS

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	140 M. Gal.
659 Mowing	280 M. Sq. Ft.



JOINT REPLACEMENT DETAIL



SECTION A-A  
TYPE XU JOINT MODIFIED

# GENERAL NOTES

FHWA REGION	STATE	PROJECT	
5	OHIO		

12-A  
120

MOT-70-3.10

## ITEM SPECIAL - FULL DEPTH RIGID PAVEMENT REMOVAL AND RIGID REPLACEMENT

DESCRIPTION. THIS WORK SHALL CONSIST OF PAVEMENT REMOVAL, SUBBASE/SUBGRADE CORRECTION, RIGID PAVEMENT REPLACEMENT, AND SHOULDER RESTORATION IN ACCORDANCE WITH DETAILS SHOWN IN THE PLANS. UNLESS OTHERWISE PROVIDED HEREIN, THE MATERIALS AND WORK SHALL BE IN ACCORDANCE WITH THE PROVISIONS OF 202, 301, 305, 310, 402, 404, 448, 451, 452, 453, 499 AND 846 AS APPLICABLE. THE REQUIREMENTS OF ITEM 451.16 SHALL BE WAIVED FOR THIS WORK.

MATERIALS. CONCRETE SHALL BE CLASS C, ITEM 499 UNLESS OTHERWISE SPECIFIED IN THE PLANS.

JOINT SEALER SHALL MEET THE REQUIREMENTS OF 705.04 AND SHALL BE PRETESTED BEFORE SHIPMENT TO THE PROJECT.

BOND-BREAKER MATERIAL SHALL BE ON THE APPROVED LIST ISSUED BY THE LABORATORY.

NONSHRINK NONMETALLIC GROUT SHALL MEET THE REQUIREMENTS OF ASTM C-881, TYPE I, GRADE 3, CLASS A, B OR C WITH THE EXCEPTION OF GEL TIME. THE GROUT SHALL CONSIST OF A TWO COMPONENT EPOXY OR POLYESTER RESIN BONDING COMPOUND THAT WILL FIRMLY ANCHOR THE DOWEL/TIE BAR WITHIN 15 MINUTES.

THE GROUT SHALL BE ACCEPTED BY CERTIFICATION IN ACCORDANCE WITH ITEM 101.061.

FULL DEPTH PAVEMENT SAWING. THE LIMITS OF ALL REPAIRS WILL BE LOCATED AND MARKED BY THE ENGINEER. AEROSOL SPRAY FOR MARKING THE LIMITS OF DETERIORATED PAVEMENT REMOVAL SHALL BE PROVIDED BY THE CONTRACTOR. RIGID PAVEMENT AREAS EXHIBITING DETERIORATION AT THE SURFACE SHALL BE MARKED ONE (1) FOOT MINIMUM BEYOND THE LIMITS OF DETERIORATION BUT IN NO CASE SHALL THE MINIMUM DIMENSION OF THE RIGID REPLACEMENT BE LESS THAN SHOWN IN THE PLANS. PAVEMENT DESIGNATED TO BE REMOVED SHALL BE SAWED FULL DEPTH TRANSVERSELY AND ALONG THE LONGITUDINAL JOINT WITH A DIAMOND SAW BLADE.

IN AREAS WITH AN EXISTING BITUMINOUS OVERLAY, AN OFF-SET CUT MAY BE MADE THROUGH THE OVERLAY AT THE OPTION OF THE CONTRACTOR, AND THE OVERLAY REMOVED TO PROVIDE CLEARANCE FOR THE FULL DEPTH SAW CUT THROUGH THE RIGID PAVEMENT. IF SUCH A SAW CUT IS MADE AT THE OPTION OF THE CONTRACTOR, IT SHALL BE AT NO ADDITIONAL COST TO THE STATE.

RIGID PAVEMENT REMOVAL. PAVEMENT SHALL BE REMOVED USING THE LIFT OUT METHOD AND SHALL NOT CAUSE SPALLING OR CRACKING OF THE ADJACENT PAVEMENT AND SHALL RESULT IN NO DISTURBANCE TO THE UNDERLYING SUBBASE/SUBGRADE OR SURFACED SHOULDER. THE CONTRACTOR MAY ELECT TO MAKE ADDITIONAL SAW CUTS TO FACILITATE THE REMOVAL OF THE PAVEMENT, HOWEVER, ONLY THE CUTS DESIGNATED BY THE ENGINEER WILL BE MEASURED FOR PAYMENT.

BREAKING THE PAVEMENT AND CLEANING THE MATERIAL OUT WITH A BACKHOE WILL NOT BE PERMITTED UNLESS THE ENGINEER DETERMINES THE LIFT OUT METHOD IS NOT FEASIBLE DUE TO PAVEMENT DETERIORATION.

IF THE ADJACENT PAVEMENT IS DAMAGED DURING THE PAVEMENT SAWING OR RIGID PAVEMENT REMOVAL, AN ADDITIONAL FULL DEPTH DIAMOND BLADE SAW CUT SHALL BE MADE THE FULL WIDTH OF THE LANE AT A LENGTH THAT WILL ENCOMPASS THE DAMAGED PAVEMENT. THIS ADDITIONAL WORK WILL BE PERFORMED AT NO ADDITIONAL COST TO THE STATE.

SUBBASE/SUBGRADE CORRECTION. PRIOR TO PLACING THE CONCRETE FOR THE RIGID REPLACEMENT, ANY SUBBASE/SUBGRADE MATERIAL THAT IS DISTURBED BELOW THE DESIRED LEVEL OF CLEANOUT SHALL BE REMOVED AND THE PATCH AREA COMPACTED TO THE SATISFACTION OF THE ENGINEER. THE CONTRACTOR SHALL REPLACE THE SUBBASE/SUBGRADE MATERIAL REMOVED WITH CONCRETE AS PART OF THE RIGID REPLACEMENT AT NO ADDITIONAL COST TO THE STATE.

FURNISHING AND PLACING NEW STEEL. ALL REINFORCEMENT, DOWELS AND TIE BARS SHALL BE OF THE SIZE INDICATED IN THE PLAN. DOWEL BARS SHALL BE SMOOTH AND EPOXY COATED AS PER 709.13. THE TIE BARS SHALL BE ROUND, DEFORMED BARS AND EPOXY COATED AS PER 709.13. DOWEL/TIE BAR HOLES SHALL BE DRILLED WITH HYDRAULIC OR ELECTRIC DRILLS. ALL DRILL HOLES SHALL BE

BLOWN CLEAN WITH COMPRESSED AIR PRIOR TO GROUTING THE DOWEL/TIE BARS. THE DOWEL/TIE BARS SHALL BE PERMANENTLY ANCHORED INTO THE EXISTING PAVEMENT WITH GROUT. THE GROUT SHALL BE MECHANICALLY INJECTED INTO THE REAR PORTION OF THE HOLE. ENOUGH MATERIAL SHALL BE INJECTED TO PROVIDE COMPLETE COVERAGE AROUND THE DOWEL/TIE BAR TO ENSURE THEY ARE PERMANENTLY ANCHORED INTO THE EXISTING PAVEMENT. A SATISFACTORY METHOD SHALL BE USED TO HOLD THE DOWEL/TIE BAR IN PROPER ALIGNMENT UNTIL THE GROUT HAS HARDENED.

RIGID REPLACEMENT. THE RIGID REPLACEMENT SHALL NOT BE PLACED UNTIL THE GROUT AROUND THE DOWEL/TIE BAR HAS HARDENED. FORMS SHALL BE USED TO PROVIDE A STRAIGHT AND NEAT EDGE AT THE SHOULDER. EACH PATCH SHALL BE CAST IN ONE CONTINUOUS FULL-DEPTH OPERATION. THE CONCRETE SHALL BE CONSOLIDATED IN PLACE BY USE OF AN INTERNAL TYPE VIBRATOR. THE CONCRETE SHALL BE CONSOLIDATED AROUND THE EDGES OF THE PATCH AND INTERNALLY. INTERNAL VIBRATORS FOR CONSOLIDATING THE CONCRETE SHALL BE AN APPROVED MECHANICAL SPUD TYPE. THE VIBRATORS SHALL BE CAPABLE OF VISIBLY AFFECTING THE CONCRETE FOR A DISTANCE OF 12 INCHES FROM THE VIBRATOR HEAD.

FINISHING AND TEXTURING. PATCHES THAT ARE LESS THAN 12 FEET IN LENGTH SHALL BE SCREDED EITHER TRANSVERSELY OR LONGITUDINALLY AS DIRECTED BY THE ENGINEER. FOR PATCHES OVER 12 FEET IN LENGTH, THE SCREED SHALL BE PLACED PERPENDICULAR TO THE CENTERLINE.

IF TRAFFIC IS PERMITTED ON THE EXPOSED REPAIR, THE CONTRACTOR SHALL TEST THE SURFACE OF THE PLASTIC CONCRETE FOR TRUENESS AND FOR BEING FLUSH WITH THE EDGES OF THE ADJACENT SLABS BY USE OF A 10 FOOT STRAIGHTEDGE. FOR PATCHES 10 FEET OR LESS IN LENGTH, THE STRAIGHTEDGING SHALL BE DONE BY PLACING THE STRAIGHTEDGE PARALLEL TO THE PAVEMENT CENTERLINE WITH THE ENDS RESTING ON THE EXISTING PAVEMENT AND DRAWING THE STRAIGHTEDGE ACROSS THE PATCH. THE STRAIGHTEDGE SHOULD BE IN CONTACT WITH THE EXISTING PAVEMENT WHILE DRAWING IT ACROSS THE PATCH. ANY HIGH OR LOW AREAS EXCEEDING 1/8 INCH IN 10 FEET SHALL BE CORRECTED. IF ANY CORRECTIONS ARE MADE, THE SURFACE SHALL BE RECHECKED.

THE SURFACE OF THE CONCRETE SHALL BE TEXTURED TO MATCH THE SURROUNDING PAVEMENT.

CURING. CONCRETE CURING COMPOUND SHALL BE APPLIED TO THE RIGID REPLACEMENT SURFACE IN ACCORDANCE WITH 451.10.

JOINTS. TRANSVERSE JOINTS BETWEEN THE RIGID REPLACEMENT AND THE EXISTING RIGID PAVEMENT SHALL BE SAWED OR FORMED BEFORE THE REPAIR IS OPENED TO TRAFFIC. ANY CONCRETE OR LAITANCE ABOVE THE PREFORMED EXPANSION JOINT FILLER SHALL BE REMOVED. BOTH FACES OF THE JOINT SHALL BE THOROUGHLY CLEANED BY SANDBLASTING TO THE DEPTH OF THE BOTTOM OF THE PROPOSED SEALER. THE SANDBLASTING OPERATION SHALL BE SUCH THAT WHEN COMPLETED THE CONCRETE JOINT WHICH IS TO RECEIVE THE NEW JOINT SEALANT SHALL BE COMPLETELY FREE OF ALL DIRT, DUST, TAR AND BITUMINOUS MATERIAL; CURING COMPOUND; DISCOLORATION AND STAIN; AS WELL AS ANY AND ALL OTHER FORMS OF CONTAMINATION, LEAVING A CLEAN, NEWLY EXPOSED CONCRETE SURFACE. THE TOP OF THE FRESHLY PLACED SEALANT SHALL BE 1/4 INCH (+/- 1/16 INCH) BELOW THE PAVEMENT SURFACE. THE SHAPE FACTOR (DEPTH TO WIDTH RATIO) OF THE SEALANT SHALL BE BETWEEN ONE (1) AND TWO (2).

WEARING COURSE REPLACEMENT. EXISTING BITUMINOUS OVERLAY REMOVED SHALL BE REPLACED IN ACCORDANCE WITH DETAILS SHOWN IN THE PLANS AND THE COST SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 301, BITUMINOUS AGGREGATE BASE.

SHOULDER RESTORATION. PRIOR TO OPENING THE RIGID REPLACEMENT TO TRAFFIC, THE SHOULDER SHALL BE RESTORED TO THE ORIGINAL LINE AND GRADE USING AN AGGREGATE OR BITUMINOUS CONCRETE IN ACCORDANCE WITH THE PLANS OR AS APPROVED BY THE ENGINEER. THE LOW AREAS SHALL BE FILLED AND COMPACTED FLUSH WITH THE SURROUNDING SHOULDER. MATERIALS REMOVED FROM THE SHOULDER SHALL BE DISPOSED OF BY THE CONTRACTOR.

OPENING TO TRAFFIC. THE RIGID REPLACEMENT MAY BE OPENED TO TRAFFIC WHEN NEW CONCRETE HAS ATTAINED A MODULUS OF RUPTURE OF 400 P.S.I. BEAMS SHALL BE CAST BY THE ENGINEER TO DETERMINE THE MODULUS OF RUPTURE.

TRAFFIC SAFETY. WHEN TRAFFIC IS MAINTAINED IN ADJACENT LANES, THE CONTRACTOR SHALL SCHEDULE HIS WORK SUCH THAT ALL REPAIRS 60 FEET OR LESS IN LENGTH ARE COMPLETED WITHIN 48 HOURS OF THE PAVEMENT REMOVAL. REPAIRS 10 FEET OR LESS IN LENGTH SHALL BE COVERED WITH A STEEL PLATE IF THEY ARE LEFT UNFILLED OVERNIGHT. NO REPAIRS SHALL BE LEFT UNFILLED FROM 4:00 PM ON FRIDAY TO 8:00AM ON MONDAY OR 8:00AM ON TUESDAY IF MONDAY IS A HOLIDAY. WHEN THE PAVEMENT HAS BEEN REMOVED AND THE CONTRACTOR IS UNABLE TO COMPLETE THE REQUIRED RIGID REPLACEMENT WITHIN THE TIME SPECIFIED ABOVE, THE EXCAVATION SHALL BE FILLED WITH A COMMERCIALY AVAILABLE BITUMINOUS MIXTURE OR OTHER SUITABLE TEMPORARY PATCH MATERIAL WITH A DURABLE SURFACE AS DIRECTED BY THE ENGINEER. OPENINGS 10 FEET OR LESS MAY BE COVERED WITH A STEEL PLATE. THE CONTRACTOR WILL BE REQUIRED TO MAINTAIN THE PATCHES WHILE THEY ARE IN SERVICE. THE COST OF PLACING, MAINTAINING, REMOVING AND DISPOSING OF THE TEMPORARY PATCHES WILL BE AT THE CONTRACTOR'S EXPENSE.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT. THE QUANTITY OF FULL DEPTH RIGID PAVEMENT REMOVAL AND RIGID REPLACEMENT TO BE PAID FOR SHALL BE THE NUMBER OF SQUARE YARDS OF RIGID PAVEMENT REMOVED TO THE LIMITS ESTABLISHED BY THE ENGINEER. ACCEPTED QUANTITIES WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE YARD WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL PAVEMENT REMOVAL, SUBBASE/SUBGRADE CORRECTION, RIGID REPLACEMENT, FURNISHING AND PLACING NEW STEEL, JOINTS AND MATERIAL, SHOULDER RESTORATION AND ALL INCIDENTALS NECESSARY TO COMPLETE THIS ITEM. THE QUANTITY OF WEARING COURSE REPLACEMENT SHALL BE THE NUMBER OF CUBIC YARDS OF ITEM 301, BITUMINOUS AGGREGATE BASE.

THE QUANTITY OF FULL DEPTH PAVEMENT SAWING TO BE PAID FOR SHALL BE THE NUMBER OF LINEAR FEET OF TRANSVERSE AND LONGITUDINAL FULL DEPTH SAW CUTS COMPLETED AT THE DESIGNATED LIMITS OF THE REPAIR. PAYMENT SHALL BE MADE UNDER:

ITEM	UNIT	DESCRIPTION
SPECIAL	SQ. YDS.	FULL DEPTH RIGID PAVEMENT REMOVAL AND RIGID REPLACEMENT
SPECIAL	LIN. FT.	FULL DEPTH PAVEMENT SAWING
301	CU. YDS.	BITUMINOUS AGGREGATE BASE

## SUBBASE/SUBGRADE FAILURES

IF, AFTER REMOVAL OF THE RIGID PAVEMENT, THE ENGINEER DETERMINES THAT THE SUBBASE OR SUBGRADE HAS FAILED OR IS PUMPING, HE SHALL DIRECT THE CONTRACTOR TO EXCAVATE THE UNSUITABLE MATERIAL AND REPLACE IT WITH COMPACTED 304 AGGREGATE AND PLACE AGGREGATE DRAINS AS NECESSARY. QUANTITIES OF ITEM 301 BITUMINOUS AGGREGATE BASE AND ITEM 304 AGGREGATE BASE HAVE BEEN PROVIDED TO RECONSTRUCT THE PORTION OF THE EXISTING PAVED BERM DISTURBED BY THE TRENCHING OPERATIONS FOR PLACING THE ITEM 605 AGGREGATE DRAINS.

PAYMENT FOR THIS WORK SHALL BE MADE AT THE CONTRACT BID PRICE FOR:

ITEM	UNIT	DESCRIPTION
203	200 CU. YDS.	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
301	40 CU. YDS.	BITUMINOUS AGGREGATE BASE
304	270 CU. YDS.	AGGREGATE BASE
605	525 LIN. FT.	AGGREGATE DRAINS

# MAINTENANCE OF TRAFFIC

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

13  
120

MOT-70-3.10

## GENERAL REQUIREMENTS

It is the intention to perform the required work with the least inconvenience to and the maximum safety of the Contractor and the traveling public. The requirements for maintaining traffic as indicated in the Ohio Manual of Uniform Traffic Control Devices for Streets and Highways (referred to as "Ohio Manual"), current edition, and pertinent items of the Ohio Department of Transportation (ODOT) specifications and proposal shall apply in addition to the following notes.

The work limits shown on the plans are for physical construction only. The installation and operation of all traffic control and traffic control devices required by the "Ohio Manual" shall be provided by the Contractor whether inside or outside the work limits.

Should any paved areas not designated for maintaining traffic become damaged or destroyed due to the Contractor's negligence or failure to provide adequate signs, barricades, cones, flaggers or other traffic control devices, the restoration of the paved areas shall be at the Contractor's expense to the satisfaction of the Engineer.

Should the Contractor desire to, an alternate Maintenance of Traffic Plan may be submitted for approval. No alternate plan shall be placed in effect until approval has been granted in writing by the Director.

## ITEM 614 - MAINTAINING TRAFFIC

The Contractor shall maintain traffic at all times in accordance with the requirements of Specification 614 and as specified herein.

Traffic is to be maintained in a uniform pattern throughout the entire length of the project. Work can be performed simultaneously in the eastbound and westbound lanes, provided the operations do not interfere with each other. The Contractor shall arrange his operations so as to prevent any interference to the flow of traffic. All vehicles, equipment, men and their activities are restricted at all times to one side of the directional pavement unless otherwise approved by the Engineer.

Vehicles and equipment shall always move with, and not across or against the flow of traffic, except as noted below. Vehicles and other equipment shall not park or stop except within designated work areas, and shall not enter and leave work areas in a manner which will be hazardous to, or interfere with the normal traffic flow. Personal vehicles will not be permitted to park within the right-of-way except in specific areas designated by the Engineer.

The use of berms to control traffic is prohibited unless otherwise approved by the Engineer. Should any existing or new berm areas become damaged or destroyed due to the Contractor's negligence or failure to provide adequate signs, barricades, flaggers, or other traffic control devices, the restoration of the berms will be at the Contractor's expense, unless otherwise approved by the Engineer.

The Contractor shall arrange traffic control devices so traffic to and from I-70 is maintained at all times and at all interchanges, unless otherwise approved by the Engineer. A "ROAD CONSTRUCTION AHEAD" sign (OW-128) shall be placed on all ramps leading onto I-70 and at work limits.

The Contractor will be required to provide, erect, maintain (proper position, kept clean and legible, and in good working condition), and remove lights, signs, barricades, cones and all other traffic control devices necessary for the maintenance of traffic. All signs shall be reflectorized or illuminated. Placement of all traffic control devices shall start and proceed in the direction of the flow of traffic. Removal of traffic control devices shall start at the end of the construction area and proceed toward oncoming traffic. The Contractor shall provide for the installation of all necessary traffic control devices before beginning work and immediately remove these devices when work is suspended or completed.

A minimum traveled lane width of eleven (11) ft. is to be maintained at all times, or as directed by the Engineer. In any areas where a lane would be less than eleven (11) ft. for construction purposes, the adjacent shoulder shall be marked to allow the minimum eleven (11) ft. width for the traveled lane.

Lane closures for pavement cracking and seating, joint repairs, pavement resurfacing, or bridge deck work shall be in only one lane of pavement direction at any given time.

## MAINTAINING TRAFFIC -CONTINUED

No lane or shoulder closures will be permitted from 2:00 PM on the day preceding a holiday to 6:00 AM on the day following the holiday. Whenever a Saturday or Sunday falls within this period the holiday shall be considered to be a three day holiday including both Saturday and Sunday.

On this project the above shall be placed into effect on the following holidays:

New Year's Day  
Memorial Day  
Independence Day  
Labor Day  
Thanksgiving Day  
Christmas Day

## TRAFFIC CONTROL

The installation, maintenance and operation of traffic control devices shall conform to the requirements of the "Ohio Manual" and as specified per Item 614.03.

Before the work begins, the Contractor will provide the Engineer with the names and telephone number(s) for two persons who can be contacted 24 hours a day by the Engineer and affected public agencies to repair and/or replace the traffic control devices as needed to maintain the safety of the traveled pavement.

The Contractor shall notify the Engineer of any proposed revisions to existing traffic control devices. The contractor shall obtain the Engineer's approval prior to making any of these revisions.

The standard device for closing any lane(s) to traffic shall be properly weighted and reflectorized steel or plastic drums. Optional 28 inch traffic cones may be used for daytime operations in lieu of drums or barricades, if approved by the Engineer. To increase stability, cones must be weighted by double stacking, sandbagging, or as approved by the Engineer. Steel rings or chains of any type placed over the cones will not be permitted.

Channelizing devices such as barricades, vertical panels and drums shall be constructed, reflectorized, and used in accordance with Item 614.03 and the "Ohio Manual". Channelizing devices shall be spaced at a maximum interval of 50 feet center to center unless otherwise directed by the Engineer. Steel drums placed on newly paved asphalt surface courses shall be placed on 1/2" plywood pads or their equivalent. Channelizing devices along the edge of the work area shall be equipped with Type C barricade warning lights. The Contractor shall adjust the spacing on all channelizing devices as directed by the Engineer to allow access as required while maintaining safety during construction.

The Contractor shall furnish and install two (2) "WATCH FOR STOPPED TRAFFIC" signs (OW-166) 1300 feet downstream from the "ROAD WORK AHEAD" sign (OW-134). If traffic backups reach the "WATCH FOR STOPPED TRAFFIC" signs, the Contractor shall install two (2) additional "WATCH FOR STOPPED TRAFFIC" signs every 2000 feet upstream from the "ROAD WORK AHEAD" sign. The necessity for these signs shall be constantly monitored by the Contractor.

The Contractor shall be responsible for maintaining safe and adequate traffic control at all times.

## TEMPORARY PAVEMENT MARKING

Temporary pavement markings shall be installed as shown on the plan sheets and at locations as directed by the Engineer. All existing or temporary pavement markings that will conflict with traffic flow shall be removed by the Contractor in accordance with Item 621.134. Painting (black) over the pavement markings is not an acceptable method of removing pavement markings. All markings shall be according to Item 621 and the "Ohio Manual".

## QUANTITIES

The following estimated quantities have been include in the General Summary to be used as directed by the Engineer for the Maintenance of Traffic.

ITEM 404 Bituminous Concrete for Maintaining Traffic	35 C.Y.
ITEM 410 Traffic Compacted Surface, Type A or B	350 C.Y.
ITEM 616 Calcium Chloride	10 TON
ITEM 616 Water	50 M. GAL

## ITEM 622 - TEMPORARY CONCRETE BARRIER

Temporary concrete barriers shall be used at the edge of the traveled lane prior to the full depth pavement removal in the adjacent lane. They shall be placed such that the traveled lane has a minimum width of eleven (11) feet. These barriers shall remain in place until the work in the area is completed, as directed by the engineer.

## ITEM SPECIAL - LAW ENFORCEMENT OFFICER WITH PATROL CAR

During the erection or take down of the temporary traffic control devices needed to reduce traffic to a single lane, the Contractor shall provide for the services of a law enforcement officer with a patrol car for controlling traffic and to protect these workers placing the traffic control devices. The Contractor shall procure the services of the law enforcement officer. Should the contractor desire the use of a law enforcement officer with a patrol car at other times, the cost shall not be paid for separately, but included in the cost of ITEM 614-MAINTAINING TRAFFIC.

Payment for the above will be made under "ITEM SPECIAL-LAW ENFORCEMENT OFFICER WITH PATROL CAR". An estimated quantity of 300 hours is provided in the GENERAL SUMMARY.

## ITEM SPECIAL - REPLACEMENT DRUMS

Drums furnished by the contractor in accordance with the requirements of the plans, specifications and proposals which become damaged by traffic for reasons beyond the control of the Contractor shall be replaced in kind when ordered by the Engineer, and shall be paid for under ITEM SPECIAL-REPLACEMENT DRUMS. Payment for each new drum shall include: (1) The cost of removing and disposing of the damaged drums and (2) providing, maintaining and removing the replacement drums in accordance with the contract requirements of the original drums. An estimated quantity of 200 each replacement drums has been provided in the GENERAL SUMMARY.

## ITEM SPECIAL - REPLACEMENT SIGNS

Flat sheet signs furnished by the Contractor in accordance with the requirements of the plans, specifications, and proposals which become damaged by traffic for reasons beyond the control of the Contractor shall be replaced in kind when ordered by the Engineer. Payment shall include the cost of removing and disposing of the damaged signs, hardware and supports, etc. Replacement signs shall be new but other material may be used subject to approval of the Engineer. Payment for the new sign shall be made at the bid price per square foot for ITEM SPECIAL-REPLACEMENT SIGNS, for which an estimated quantity of 100 sq. ft. has been provided in the GENERAL SUMMARY.

## TRENCH FOR WIDENING

Trench excavation for base widening shall be only on one side of the pavement at a time. The open trench shall be adequately maintained and protected with drums or barricades at all times. Placement of proposed subbase and base material shall follow as closely as possible behind the excavation operations. The length of widening trench which is open at any one time shall be held to minimum and shall at all times be subject to approval of the Engineer.

## EXTENSION OVER MORE THAN ONE CONSTRUCTION SEASON

If this project extends over more than one construction season, no cracked and seated pavement, no binder course, leveling course, or intermediate course will be permitted to be exposed over the winter months between construction seasons. The Contractor shall be responsible for scheduling the asphalt construction to meet the above conditions.

## PAYMENT

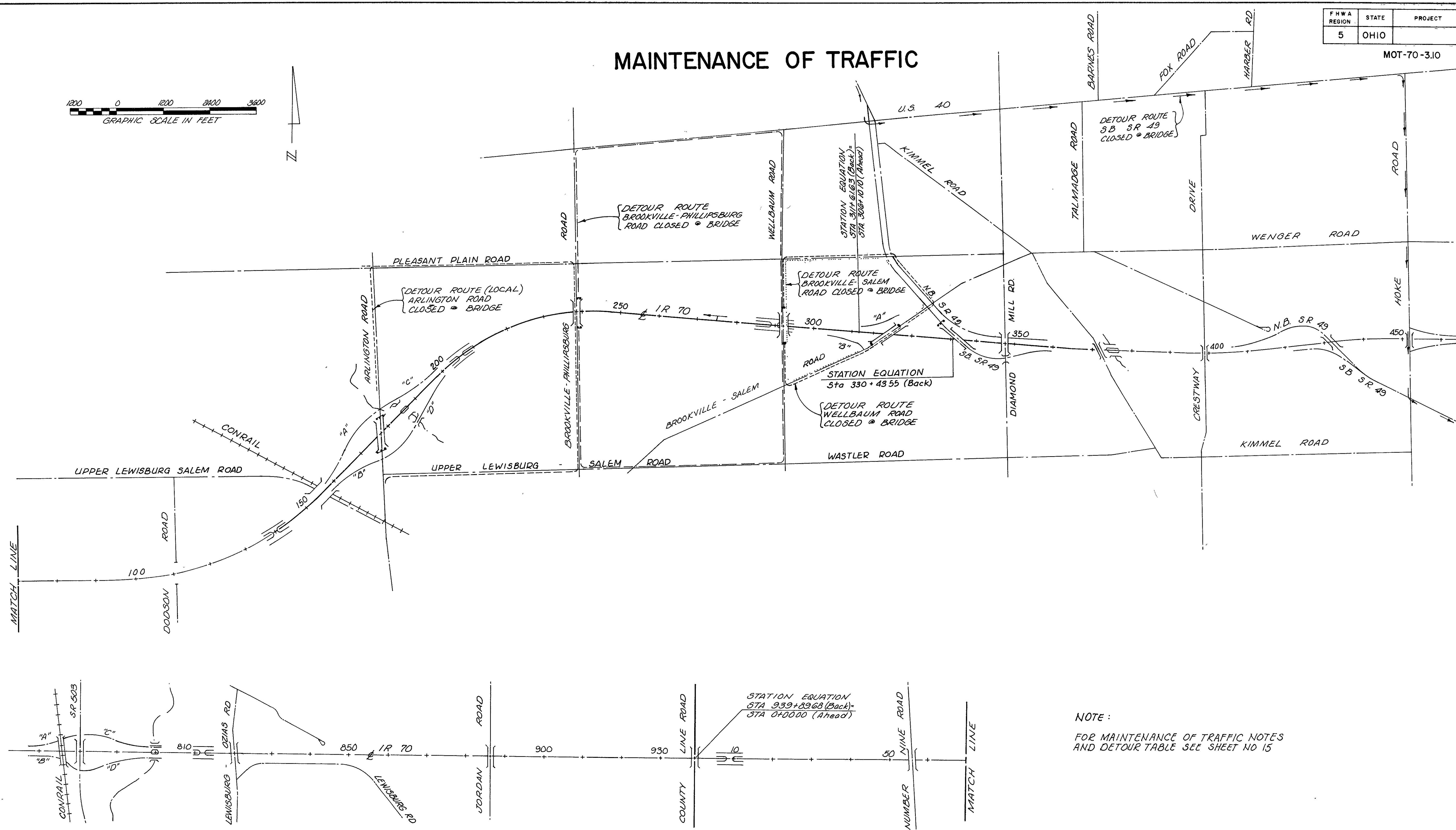
Payment for all the Maintenance of Traffic except for items designated as "ITEM 404, Bituminous Concrete for Maintaining Traffic", "ITEM 410, Traffic Compacted Surface, Type A or B", "ITEM 614, Temporary Pavement Markings", "ITEM 616, Calcium Chloride", "ITEM 616, Water", "ITEM 622, Temporary Concrete Barrier", "ITEM SPECIAL, Law Enforcement Officer with Patrol Car", "ITEM SPECIAL, Replacement Signs", and "ITEM SPECIAL, Replacement Drums" shall be included in the Lump Sum "ITEM 614, Maintaining Traffic". Estimated quantities have been carried to the General Summary.

F H W A REGION	STATE	PROJECT
5	OHIO	

14  
120

MOT-70-3.10

# MAINTENANCE OF TRAFFIC



# MAINTENANCE OF TRAFFIC

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



MOT-70-3.10

DETOUR TABLE	
ROAD CLOSED	DETOUR ROUTE
Arlington Road (Local)	Pleasant Plain Road, Brookville-Phillipsburg Road, Upper Lewisburg-Salem Road
Arlington Road, Northbound	I-70, Brookville-Salem Road
Arlington Road, Southbound	I-70, State Route 503
Brookville-Phillipsburg Road	U.S. Route 40, Wellbaum Road, Upper Lewisburg-Salem Road
Wellbaum Road	Pleasant Plain Road, State Route 49, Brookville-Salem Road
Brookville-Salem Road	Wellbaum Road, Pleasant Plain Road, State Route 49
State Route 49, Southbound	U.S. Route 40, Hoke Road
RAMP CLOSURES	
Arlington Road, Ramp A	I-70 Eastbound to Brookville-Salem Road, Exit to Brookville-Salem Road Northbound, Re-enter I-70 Westbound
Arlington Road, Ramp B	I-70 Eastbound to Brookville-Salem Road, Exit to Brookville-Salem Road, Re-enter I-70 Westbound, Exit Arlington Road Ramp C
Arlington Road, Ramp C	I-70 Westbound to State Route 503, Exit State Route 503, Re-enter I-70 Eastbound, Exit Arlington Road Ramp B
Arlington Road, Ramp D	I-70 Westbound to State Route 503, Exit State Route 503, Re-enter I-70 Eastbound
Brookville-Salem Road, Ramp A	Brookville-Salem Road to Upper Lewisburg-Salem Road to Arlington Road to I-70
Brookville-Salem Road, Ramp B	Exit Arlington Road, Arlington Road to Upper Lewisburg-Salem Road to Brookville-Salem Road

## MAINTENANCE OF TRAFFIC (STRUCTURES)

- Each crossroad bridge shall be closed to traffic prior to any work on that bridge. All work shall be completed before the bridge is re-opened to traffic. Detours for County and Township Roads, if established, will be established, maintained, and subsequently removed by others.
- A thirty calendar day time limit will be in effect for all bridge closures.
- Closures of adjacent bridges over I-70 (mainline) will not be permitted.
- Signs, barricades, and gates, placed in accordance with the Ohio Manual, and as directed by the Engineer, shall be furnished, installed, and removed by the Contractor.
- During ramp closures, others shall provide for the detours, according to this sheet, including signing within the project limits.
- Ramps at interchanges must remain open at all times during the time the bridges within the interchange are closed to traffic.
- The Contractor is to provide a preliminary notification of detour set-up in writing at least two weeks before any closure. A final notification is to be provided 48 hours prior to the closure.



# MAINTENANCE OF TRAFFIC

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

16  
120

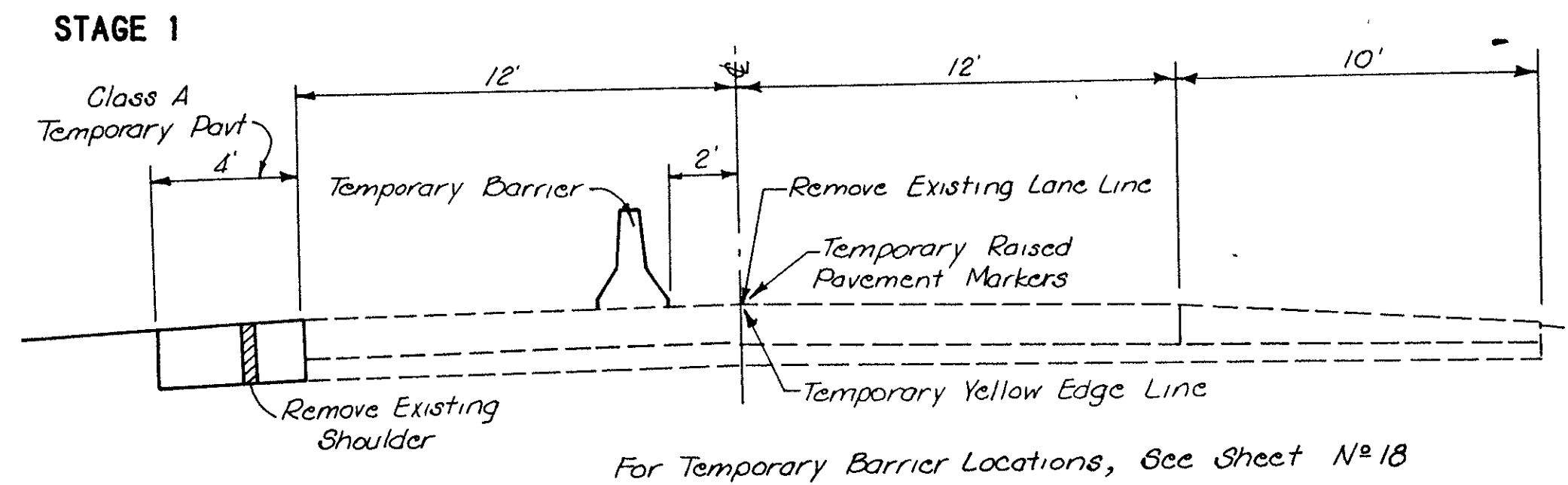
MOT-70-3.10

## MAINTENANCE OF TRAFFIC DETAILS

Construction on I-70 shall be staged as follows:

### STAGE 1

During Stage 1, traffic will be maintained on the right-hand lane of the directional pavement. The Contractor will strengthen the left shoulder by removing the existing shoulder and replacing with Class A Temporary Pavement. Strengthening is required in areas adjacent to new full depth pavement. Channelizing devices will be placed accordingly.



### STAGE 2

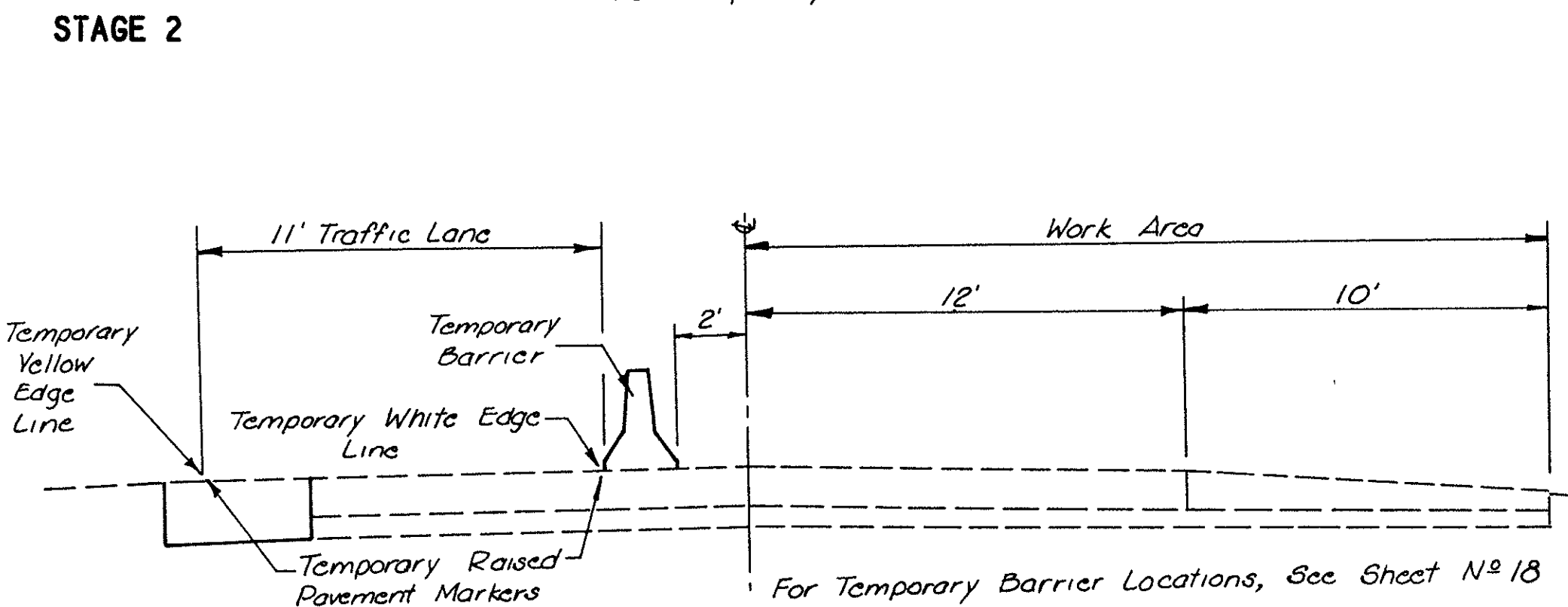
Upon completion of the work in Stage 1 for the length of the project, the Contractor shall direct traffic to the left-hand lane and strengthened shoulder utilizing temporary markings to maintain the 11 ft. width of the traveled lane. During this stage, the contractor will work in the right lane(s) and shoulder, completing cracking and seating, improvement of the right shoulder, and placement of the Type 301 Bituminous Aggregate Base.

#### RAMP DETAILS:

During Stage 2, construction in the area of the interchange ramps shall be performed in the following sequence: (See RAMP CLOSURE DETAILS)

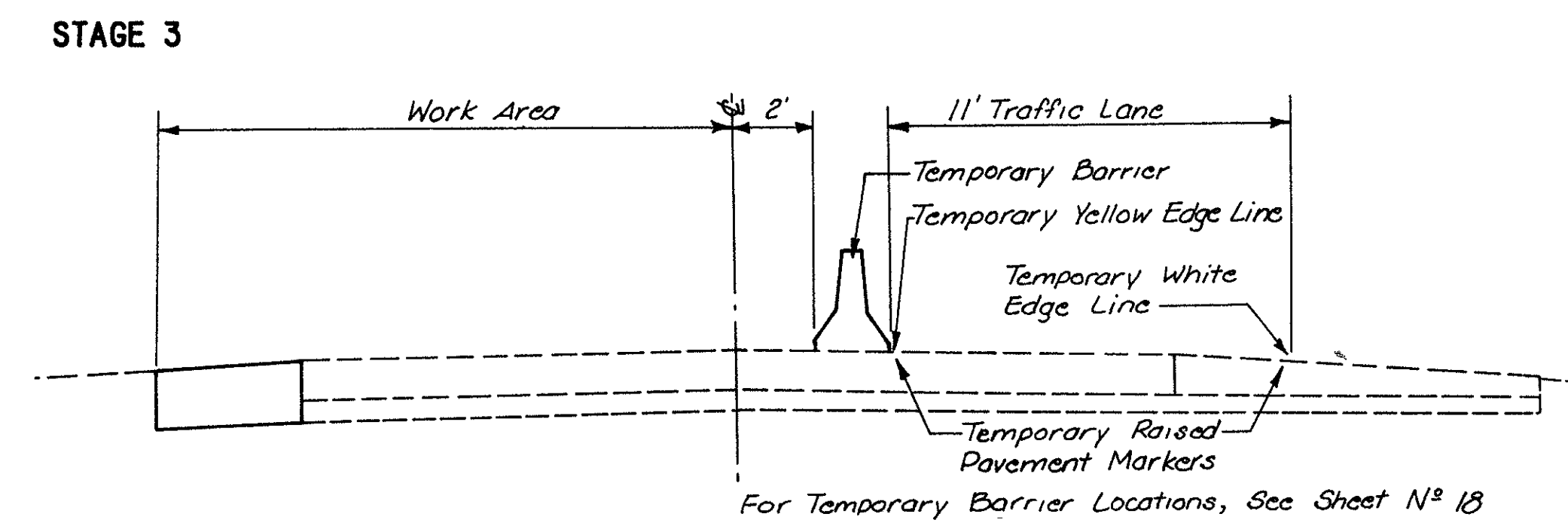
Phase 1: Traffic will be maintained to and from the ramps through the use of gaps in the right-hand lane(s) as shown on the detail sheet.

Phase 2: When all work has been completed on the right-hand lane(s) and shoulder, the contractor shall be permitted to close the ramps to complete the work in the gap areas. Closing of a ramp will not be permitted while the crossover bridge at the same interchange is closed. Ramps providing an alternate route for other ramps closed to traffic at adjacent interchanges cannot be closed concurrently.



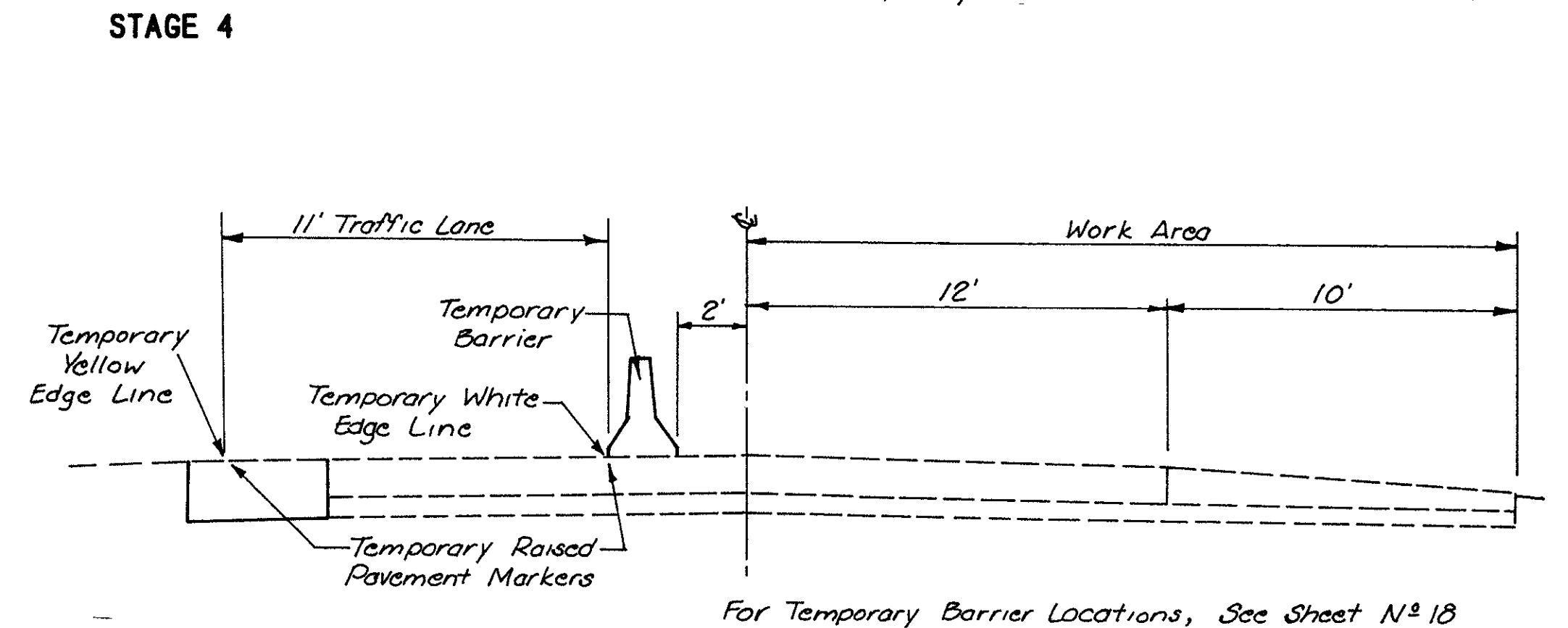
### STAGE 3

When Stage 2 is completed, the Contractor will direct traffic to the right-hand lane and shoulder, maintaining the 11 ft. width of the traveled lane by the use of pavement markings. The contractor will then complete the cracking and seating, and paving operations in the left-hand lane.



### STAGE 4

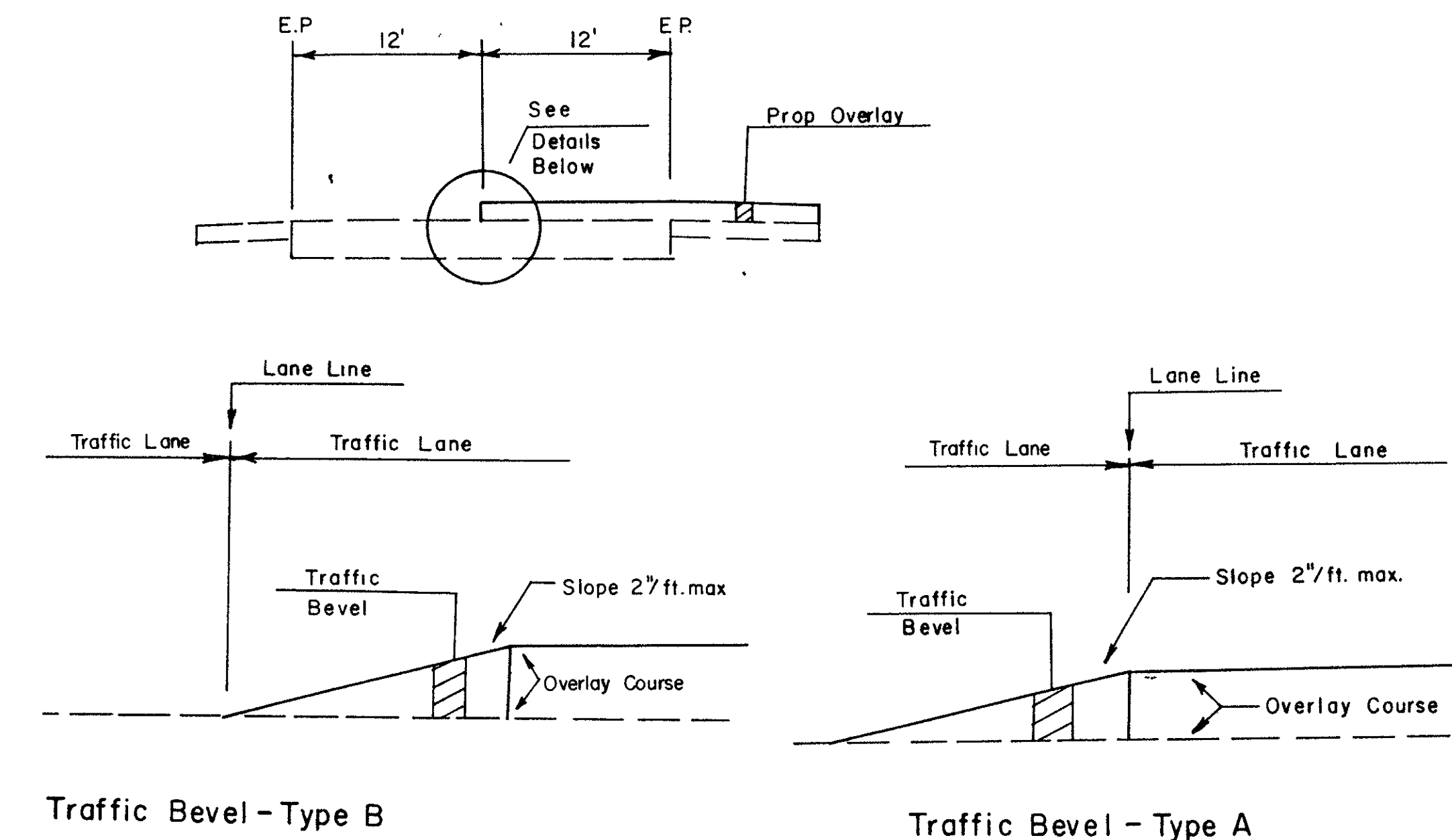
When Stage 3 is completed, the Contractor will direct traffic to the left-hand lane and shoulder, maintaining the 11 ft. width of the traveled lane by the use of pavement markings. The contractor will then complete paving operations in the right-hand lane, following the Ramp Details as in STAGE 2 (above).



## LONGITUDINAL JOINTS

In any area where traffic is exposed to a longitudinal joint greater than 1 1/2" in depth, the contractor shall provide a bevel as detailed in these notes (TRAFFIC BEVEL DETAIL) to provide a smooth transition. The material used for the bevel shall be the same as used in the newly-placed surface course. The bevel may be constructed by planing, raking, separate placement, or any other method as approved by the Engineer. The traffic bevel shall be installed similar to either TRAFFIC BEVEL- Detail A or Detail B. In either case, the traffic bevel shall be removed prior to placement of the adjacent surface course. Payment for this work shall be included in ITEM 846 - Asphalt Concrete Surface Course, Type 1.

## TRAFFIC BEVEL DETAILS



## ITEM 615 - CLASS A TEMPORARY PAVEMENT

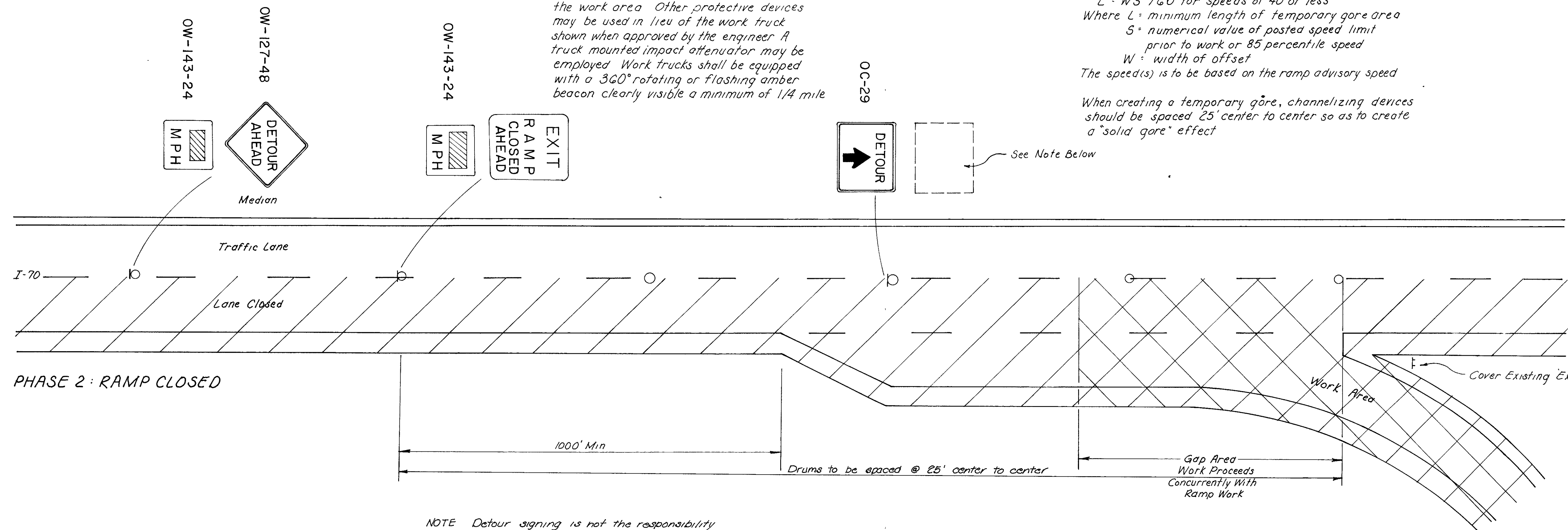
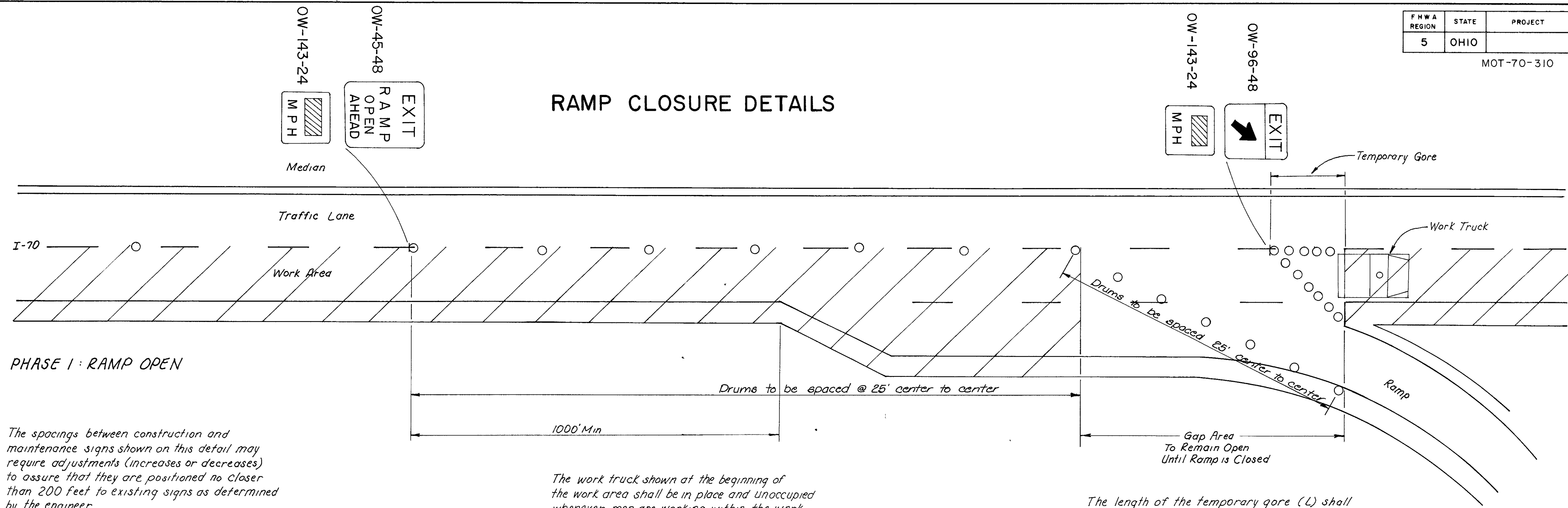
CLASS A TEMPORARY PAVEMENT will be used to strengthen the left shoulder for traffic use during STAGE 1 of construction on I-70.

The temporary pavement locations and quantity calculations are as follows:

SHEET	DIRECTION	STATION TO STATION	LENGTH	AREA
5	Westbound	171+34 181+39	1005.0'	446.7 S.Y.
5	Westbound	181+61 185+36	375.0'	166.7 S.Y.
5	Westbound	229+07 242+13	1306.0'	580.4 S.Y.
5,7	Westbound	320+71.55 338+67	1795.45'	798.0 S.Y.
5	Eastbound	167+49 181+39	1390.0'	617.8 S.Y.
5	Eastbound	181+61 185+36	375.0'	166.7 S.Y.
5	Eastbound	304+96 316+74	1078.0'	479.1 S.Y.
5,7	Eastbound	322+60.55 338+28	1567.45'	696.6 S.Y.
				Total 3952 S.Y.

A total quantity of 3952 Sq. Yards has been carried to the General Summary.

# RAMP CLOSURE DETAILS

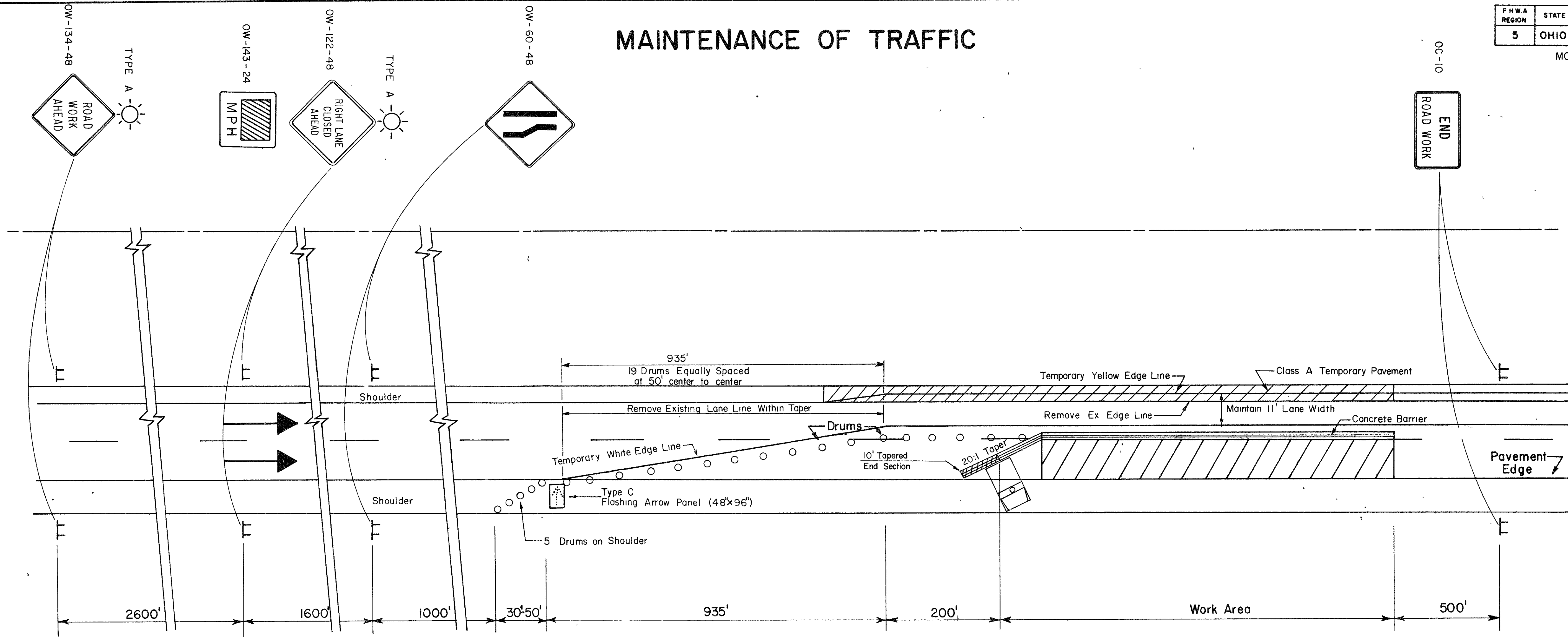


# MAINTENANCE OF TRAFFIC

F H W A REGION	STATE	PROJECT	
5	OHIO		

18  
120

MOT - 70 - 310



## GENERAL NOTES

- NINETEEN (19) DRUMS OR BARRICADES SHALL BE USED TO FORM THE LANE TRANSITION TAPER IN ADVANCE OF THE WORK AREA. FIVE (5) CHANNELIZING DEVICES SHALL BE USED TO FORM THE TAPER ON THE SHOULDER. TEMPORARY CONCRETE BARRIER SHALL BE PLACED AT THE WORK AREA. CONES MAY BE SUBSTITUTED FOR THE BARRICADES OR STEEL DRUMS FOR THE LANE CLOSURES DURING DAYLIGHT HOURS ONLY.
- WHEN WORK IS BEING PERFORMED IN THE LANE ADJACENT TO THE MEDIAN ON A DIVIDED HIGHWAY, "OW-123-48" SIGNS SHALL BE SUBSTITUTED FOR "OW-122-48" SIGNS AND THE OW-60D SIGNS SHALL BE SUBSTITUTED FOR THE OW-60C SIGNS.
- THE WORK TRUCK SHOWN AT THE BEGINNING OF THE WORK AREA SHALL BE IN PLACE AND UNOCCUPIED WHENEVER MEN ARE WORKING WITHIN THE WORK AREA. THIS TRUCK SHALL BE MOVED FROM THE PAVEMENT WHENEVER WORKMEN ARE NOT IN THE WORK AREA. OTHER PROTECTIVE DEVICES MAY BE USED IN LIEU OF THE WORK TRUCK SHOWN WHEN APPROVED BY THE ENGINEER.
- TYPE C STEADY BURNING BARRICADE WARNING LIGHTS SHALL BE ERECTED ON DRUMS, TEMP CONC. BARRIERS OR BARRICADES FOR NIGHT LANE CLOSURES. MAXIMUM SPACING SHALL BE 50' CENTER TO CENTER IN ADVANCE OF THE WORK AREA AND 200' CENTER TO CENTER WITHIN THE LIMITS OF THE WORK AREA.
- TEMPORARY CONCRETE BARRIERS ALONG THE EDGE OF THE WORK AREA SHALL BE EQUIPPED WITH DELINEATORS IN ACCORDANCE WITH O.M.U.T.C.D. THESE BARRIER DELINEATORS SHALL BE INSTALLED ON THE TRAFFIC SIDE OF THE BARRIER EVERY 50 FEET AT A HEIGHT OF 26 INCHES ABOVE THE NEAR EDGE OF PAVEMENT, BUT NOT LESS THAN 3 INCHES BELOW THE TOP EDGE OF THE TEMPORARY CONCRETE BARRIER.
- WORK VEHICLES SHALL BE EQUIPPED WITH A 360° ROTATING OR FLASHING AMBER BEACON CLEARLY VISIBLE A MINIMUM OF 1/4 MILE.

TEMPORARY CONCRETE BARRIER CHART

SHEET NO	DIRECTION	STATION		LENGTH	TAPER LENGTH	TOTAL LENGTH
		FROM	TO			
5	W	177+64	185+36	772	280	1052
6	W	235+37	242+13	676	280	956
5,7	W	327+01.55	338+67	1165.45	280	1446
5	E	173+79	185+36	1157	280	1437
5	E	311+26	315+74	448	280	728
5,7	E	328+90.55	338+28	937.45	280	1218
Subtotal						
ITEM 622 TEMPORARY CONCRETE BARRIER						± 2
TOTAL CARRIED TO GENERAL SUMMARY						13,674 LF

6837







# CALCULATIONS EXTRA AREAS AND DEDUCTIONS

COMPUTED BY MLE DATE 1-88  
 CHECKED BY G.A.S DATE 1-88

FHWA REGION	STATE	PROJECT
5	OHIO	

22  
120

MOT-70-310

SHEET NO.	PAVEMENT DATA						PAVEMENT ITEMS														
	LOCATION	DIRECTION	STATION		LENGTH	WIDTH	407			846			202			301					
			FROM	TO	TOTAL	'A'+ 'B'+ 'C' FROM DIAGRAM ABOVE	PAVEMENT AREA	Tack Coat, As per plan	Surface Course Type 1 AC-20	Intermediate Course Type 2 AC-20				2" Bituminous Aggregate Base AC-20							
Lineal Feet	Ft.	Sq. Yds.	Gal	Cu. Yds	Cu. Yds																
3	Arlington Road, Ramp 'A'		160+93 167+47.42	654.42	10	7271	-54	-30	-34												
3	Arlington Road, Ramp 'B'		160+93 165+78.50	485.50	10	5395	-40	-22	-24												
3	Arlington Road, Ramp 'C'		155+63 196+61.34	798.34	10	8870	-66	-37	-49												
3	Arlington Road, Ramp 'D'		155+00 202+02.97	1402.97	10	15580	-117	-05	-87												
3	Brookville-Salem, Ramp 'A'		296+69.37 308+69.37	1200.00	10	1333.3	-100	-56	-74												
3	Brookville-Salem, Ramp 'B'		293+67.23 306+67.23	800.00	10	8889	-67	-37	-49												
	<i>Subtotals - Deductions for outside berm areas through Ramp Accel. and Decel. areas, carried over to Sheet 21.</i>							-444	-247	-317											

# GENERAL SUMMARY

COMPUTED BY GAS DATE 1-88  
 CHECKED BY M.L.E. DATE 1-88

FHWA REGION	STATE	PROJECT			
5	OHIO				

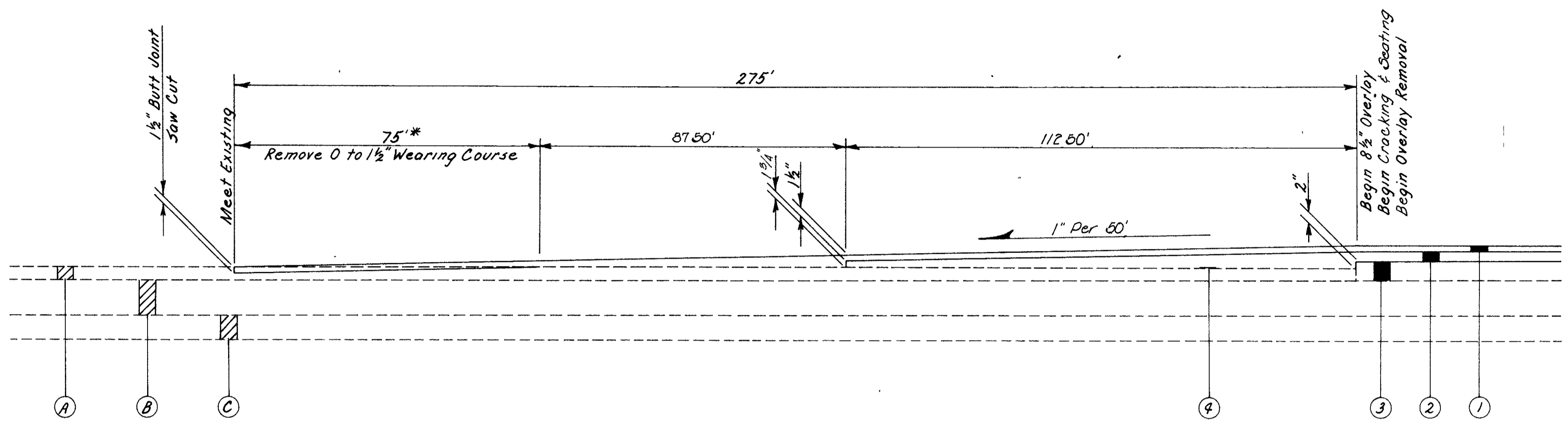
23  
120

MOT-70-310

ITEM	FROM SHEET NUMBER														ITEM	TOTAL	UNIT	DESCRIPTION		
	GENERAL NOTES	19	20	21	29	33	38	39	66	67	69	70	71	72					108	109
201	Lump																201	Lump		ROADWAY
																	201	Lump		Clearing and Grubbing
202			11463														202	11463	Sq Yd.	Pavement Removed
202	85847		9490								1895						Special	95337	Sq Yd.	Pavement Planing Bituminous without heating (see Proposal Note).
202										10031.25							202	1895	Lin Ft.	Curb Removed, As per Plan
202											32743						202	10031.25	Lin Ft.	Guardrail Removed
																	202	32743	Lin Ft.	Fence Removed
														156			202	156	Sq. Yd.	Existing Approach Slab Removed
203	200				2385	804	548	1922									203	5850	Cu. Yd.	Excavation not including Embankment construction
203		8730		30													203	8760	Cu. Yd.	Borrow
404	35																404	35	Cu Yd.	Bituminous Concrete for Maintaining Traffic
410	350																410	350	Cu Yd.	Traffic Compacted Surface, Type A or B
615	3952																615	3952	Sq. Yd.	Temporary Pavement, Class A
606										9425.00							606	9425.00	Lin. Ft.	Guardrail, Type 5
606										33							606	33	Each	Anchor Assembly, Standard Type A
606										14							606	14	Each	Anchor Assembly, Standard Type T
606										1							606	1	Each	Bridge Terminal Assembly, Standard Type B
606										1							606	1	Each	Bridge Terminal Assembly, Standard Type C
606										2							606	2	Each	Bridge Terminal Assembly, Standard Type D
606										10							606	10	Each	Bridge Terminal Assembly, Standard Type F
606										1							606	1	Each	Bridge Terminal Assembly, Standard Type J
607											39324						607	39324	Lin Ft.	Fence, Type 47
607											1563						607	1563	Lin. Ft.	Fence, Type CLT
616	50																616	50	M. Gal.	Water
616	10																616	10	Ton	Calcium Chloride
625											10						625	10	Each	Ground Rods
207	25084																207	25084	Sq. Yd.	Temporary Seeding and Mulching
207	360																207	360	Each	Straw or Hay Bales
601																	601	50	Cu. Yd.	Rock Channel Protection, Type "C" With Filter
659	6271										59						659	6271	Sq. Yd.	Repair Seeding and Mulching
659		125418															659	125418	Sq. Yd.	Seeding and Mulching
659	113		11.29														659	12.42	Ton	Commercial Fertilizer
659	195																659	195	M. Gal.	Water
659	280																659	280	M. Sq. Ft.	Mowing
603											144						603	144	Lin. Ft.	4" Conduit, Type B
603											781						603	781	Lin. Ft.	4" Conduit, Type E
603											174						603	174	Lin. Ft.	4" Conduit, Type E 707.15
603											1384						603	1384	Lin. Ft.	6" Conduit, Type E
605											1210						605	1210	Lin. Ft.	6" Conduit, Type F
605	525										75,426						605	75,426	Lin. Ft.	6" Shallow Underdrains, As Per Plan
605																	605	525	Lin. Ft.	Aggregate Drains
605											4223						605	4223	Lin. Ft.	6" Shallow Pipe Underdrains
605											72						605	72	Lin. Ft.	6" Deep Pipe Underdrains
301	540	4491	5267	1099													301	21509	Cu Yd	Bituminous Aggregate Base AC-20,
304	270		1602								71	41					304	1960	Cu Yd	Aggregate Base
407		10170	32	1697											88		407	11953	Gal	Tack Coat, As per Plan
Sp1				1265									54				Sp1	1265	Sq. Yd.	Full Depth Rigid Pavement Removal and Rigid Replacement
Sp1				2848													Sp1	2848	Lin. Ft.	Full Depth Pavement Sawing
611																	611	536	Sq. Yd.	Reinforced Concrete Approach Slab (T-15"), As per Plan
617	3674			181													617	3855	Cu Yd	Compacted Aggregate, Type A
846	5806		766	958								30					846	7560	Cu. Yd.	Asphalt Concrete Surface Course, Type 1, AC-20
846				627													846	627	Cu. Yd.	Asphalt Concrete Intermediate Course, Type 1, AC-20
846	7605		1006	342								41					846	8994	Cu. Yd.	Asphalt Concrete, Intermediate Course, Type 2, AC-20
Sp1	84563																Sp1	84563	Sq. Yd.	Cracking and Sealing Existing 4.5" Rigid Pavement (See Proposal Note)
614																	614	13449	Each	TRAFFIC CONTROL
614																	614	13449	Each	Temporary Raised Pavement Markers, Type A
802	150																802	150	EACH	Barrier Reflectors, Type B
																				BARRIER REFLECTORS, TYPE A



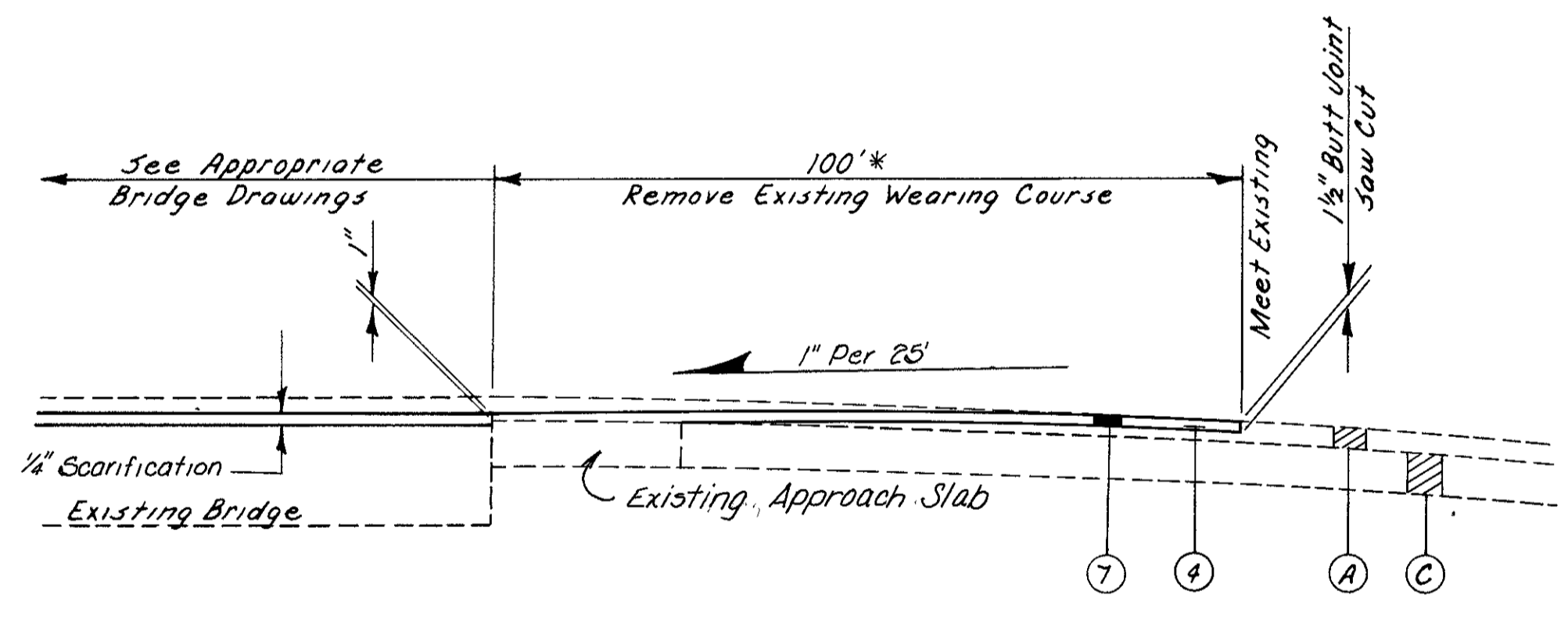




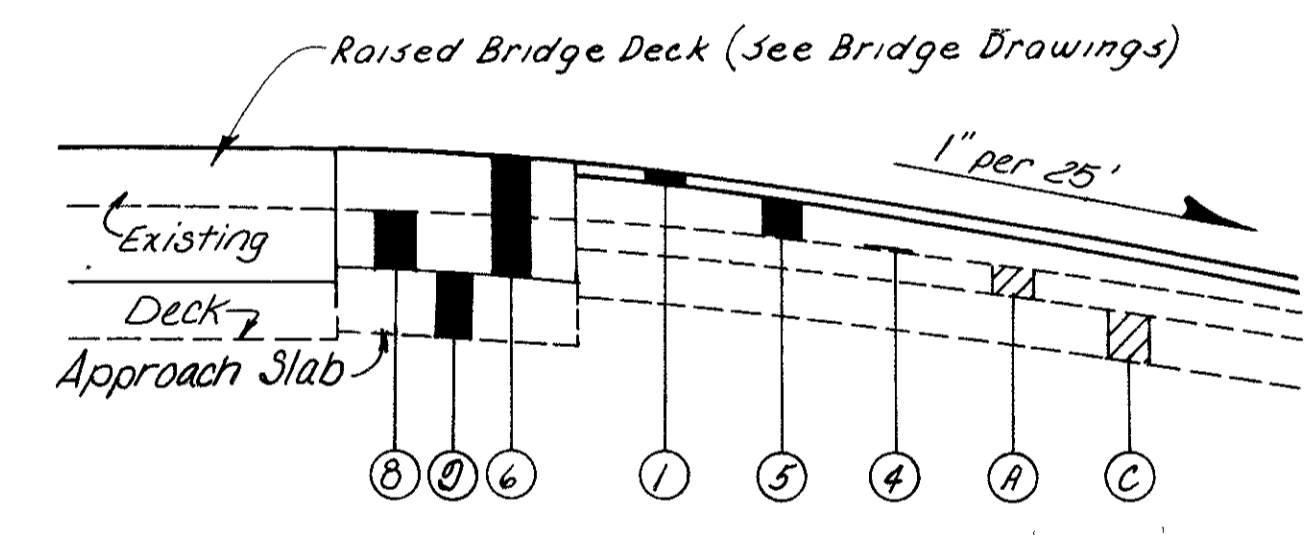
DETAIL "A"  
TRANSITION AT BEGIN AND END PROJECT

**LEGEND**

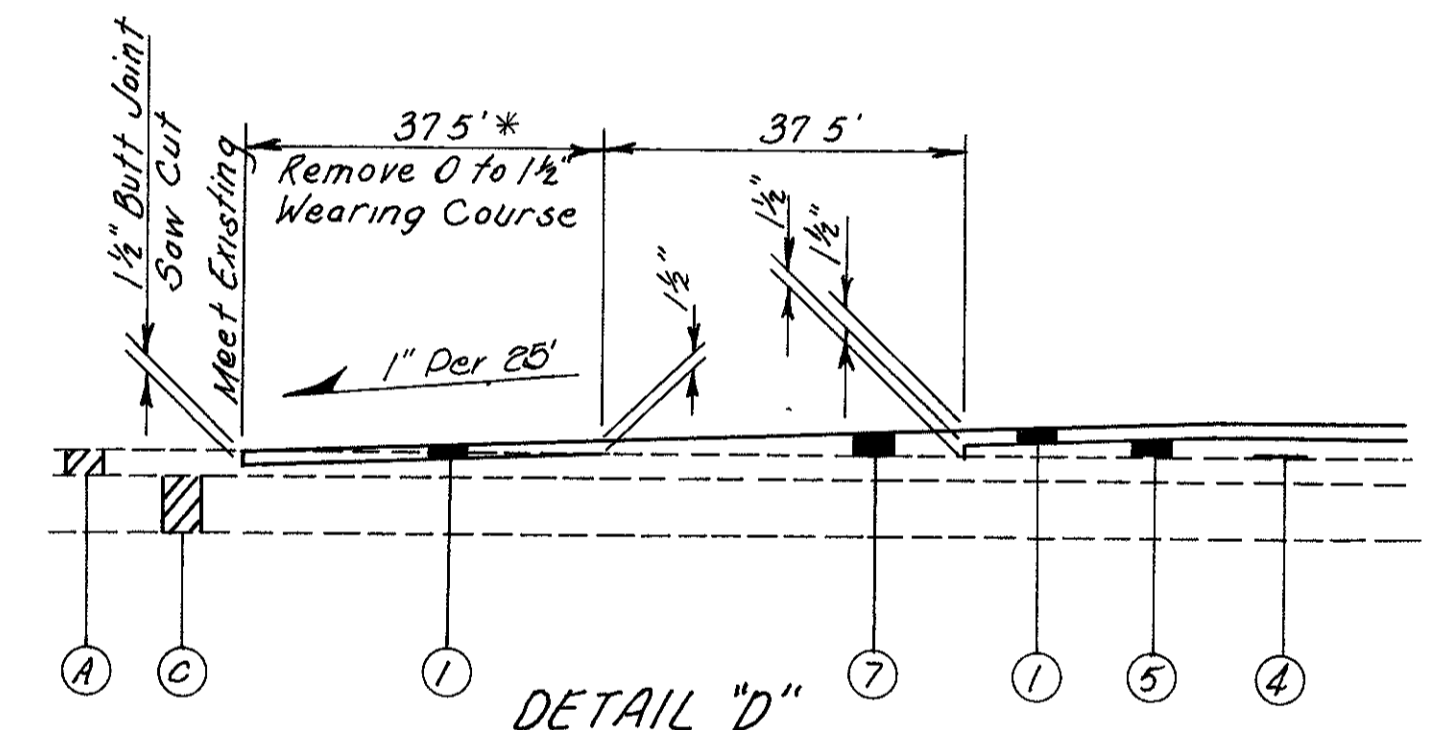
- ① Item 846 1 1/2" Asphalt Concrete Surface Course, Type 1 AC-20
  - ② Item 846 2" Asphalt Concrete Intermediate Course, Type 2 AC-20
  - ③ Item 301 5" Bituminous Aggregate Base, AC-20
  - ④ Item 407 Tack Coat
  - ⑤ Item 846 Variable Depth Asphalt Concrete Intermediate Course, Type 1, AC-20
  - ⑥ Item 611 Reinforced Concrete Approach Slab (T-15")
  - ⑦ Item 846 Variable Depth as Shown Asphalt Concrete Surface Course, Type 1 AC-20
  - ⑧ Item 202 Pavement Removed
  - ⑨ Item 304 Aggregate Base, Variable Depth
- Ⓐ Existing Asphalt Concrete Pavement, See Details
  - Ⓑ Existing Reinforced Concrete Pavement, To Remain
  - Ⓒ Existing Subbase, To Remain
  - Ⓓ Existing Approach Slab, To Remain
- \* Item SPECIAL, Pavement Planing Bituminous Without Heat, See Proposal Note



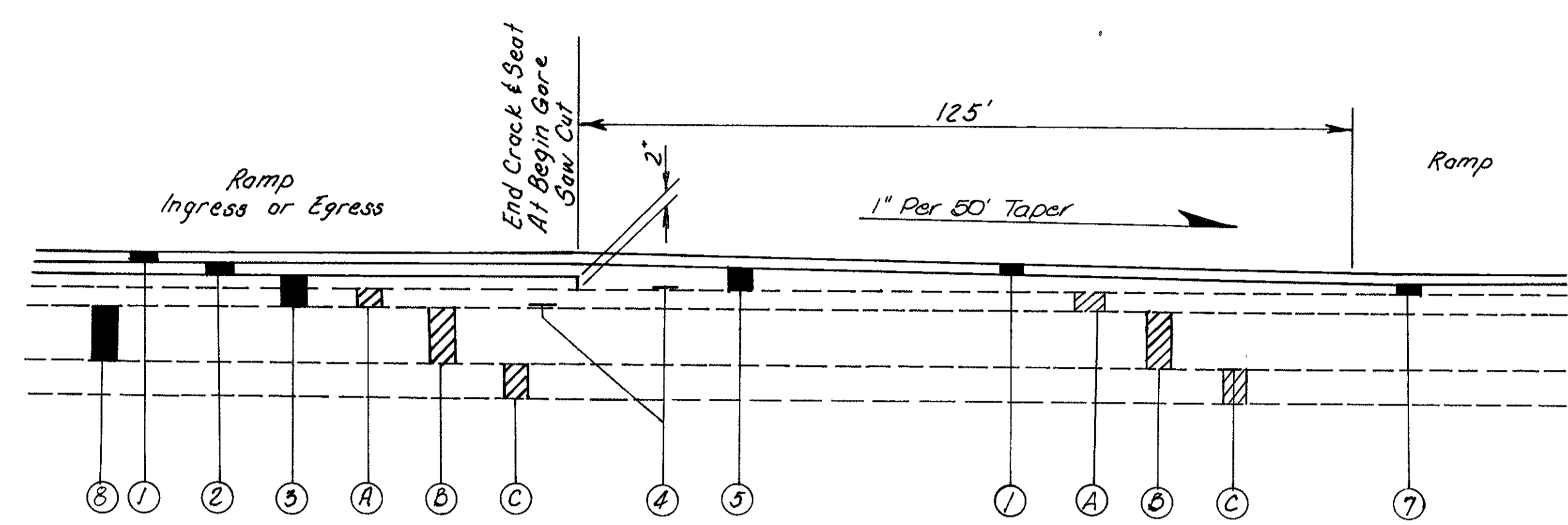
DETAIL "B"  
TRANSITION AT CROSSROADS  
(BRIDGE HEIGHT NOT ADJUSTED)



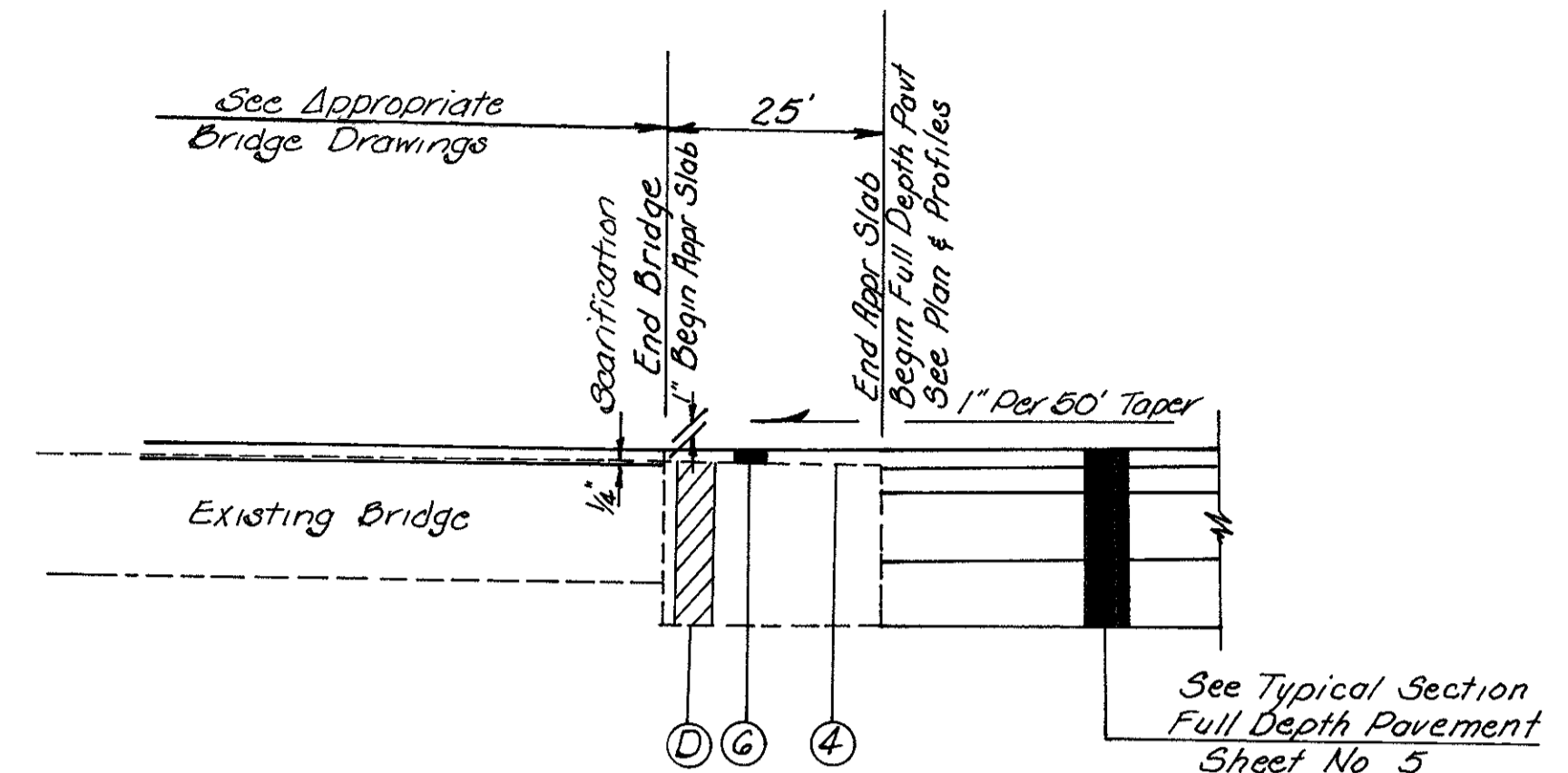
DETAIL "C"  
TRANSITION AT CROSSROADS  
(BRIDGE HEIGHT ADJUSTED)



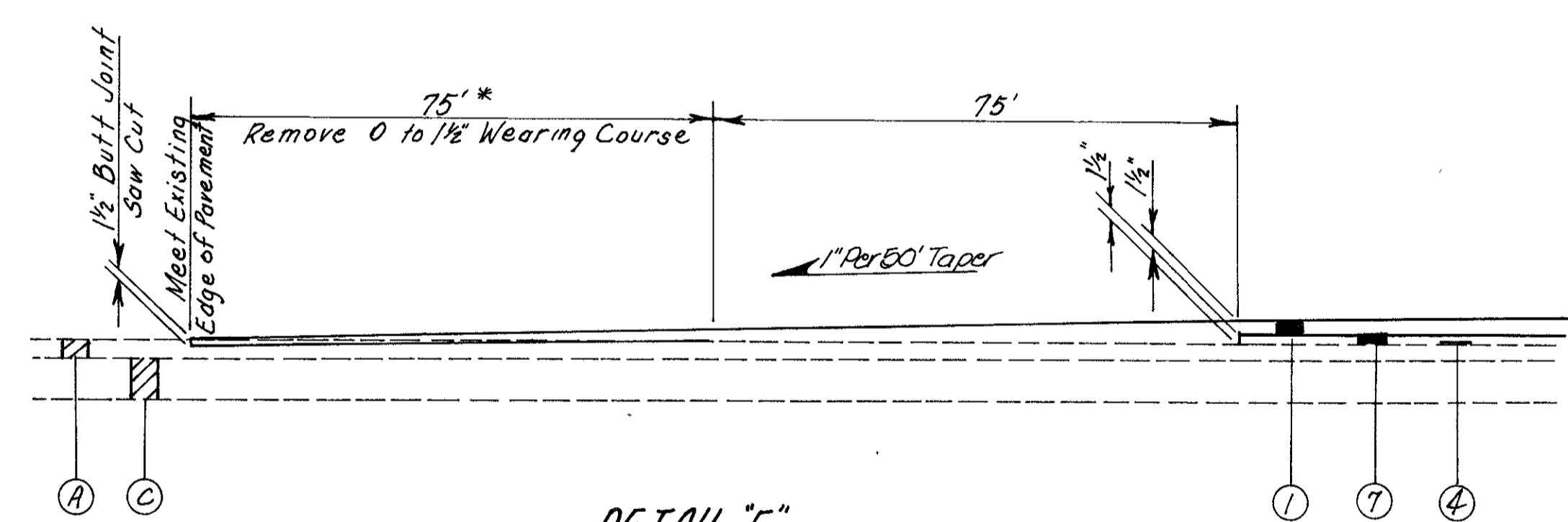
DETAIL "D"  
TRANSITION AT CROSSROADS  
(MEET EXISTING PAVEMENT)



DETAIL "E"  
BEGIN RAMP TRANSITION



DETAIL "G"  
TRANSITION AT BRIDGES  
(FULL DEPTH PAVEMENT)

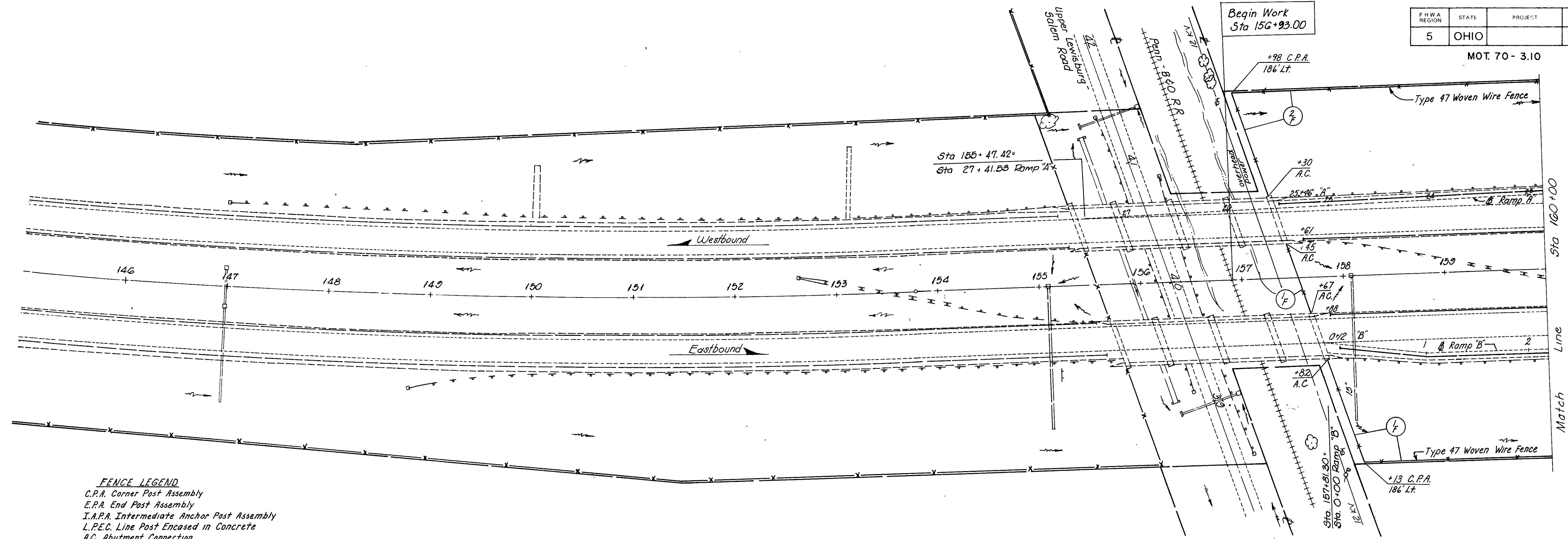


DETAIL "F"  
END RAMP TRANSITION

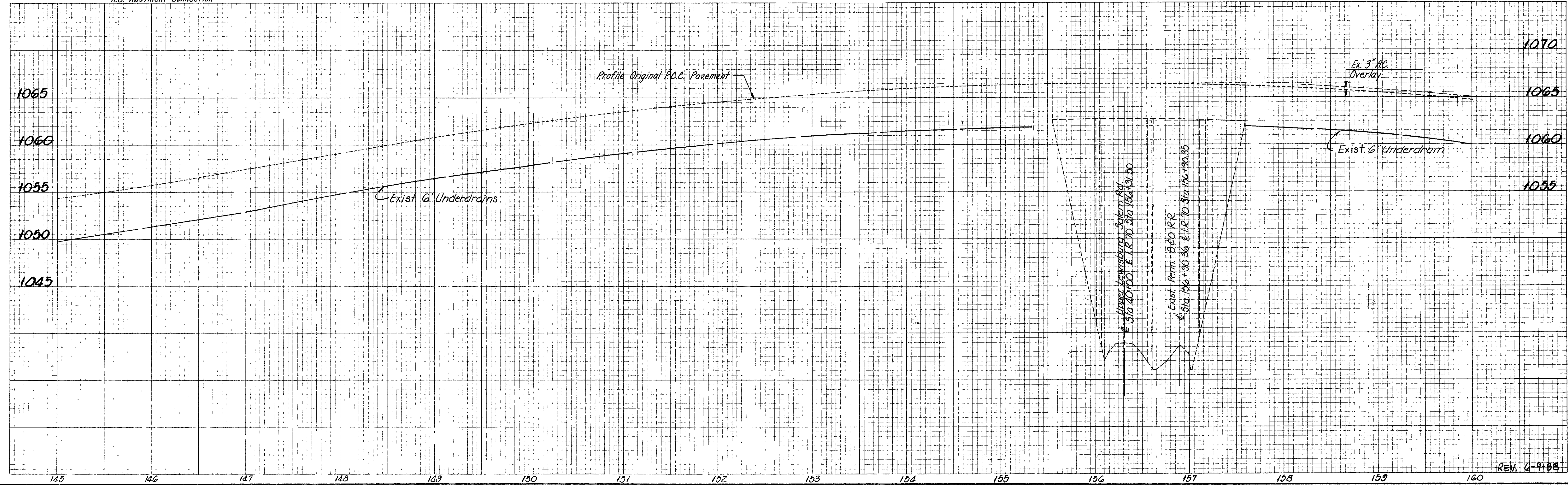
**LEGEND**

- ① Item 846 1 1/2" Asphalt Concrete Surface Course, Type 1 AC-20
- ② Item 846 2" Asphalt Concrete Intermediate Course, Type 2 AC-20
- ③ Item 301 5" Bituminous Aggregate Base AC-20
- ④ Item 407 Tack Coat, As per plan
- ⑤ Item 846 Variable Depth Asphalt Concrete Intermediate Course, Type 1 AC-20
- ⑥ Item 846 1" to 1 1/4" Asphalt Concrete Surface Course, Type 1 AC-20
- ⑦ Item 846 1 1/2" Asphalt Concrete Intermediate Course, Type 2 AC-20
- ⑧ Item Special, Cracking and Sealing Existing Rigid Pavement, See Proposal Note
- \* Item Special Pavement Planing, Bituminous without heat. (See proposal note)
- Ⓐ Existing Asphalt Concrete Pavement, See Details
- Ⓑ Existing Reinforced Concrete Pavement, To Remain
- Ⓒ Existing Subbase, To Remain
- Ⓓ Existing Approach Slab, To Remain

MOT. 70 - 3.10

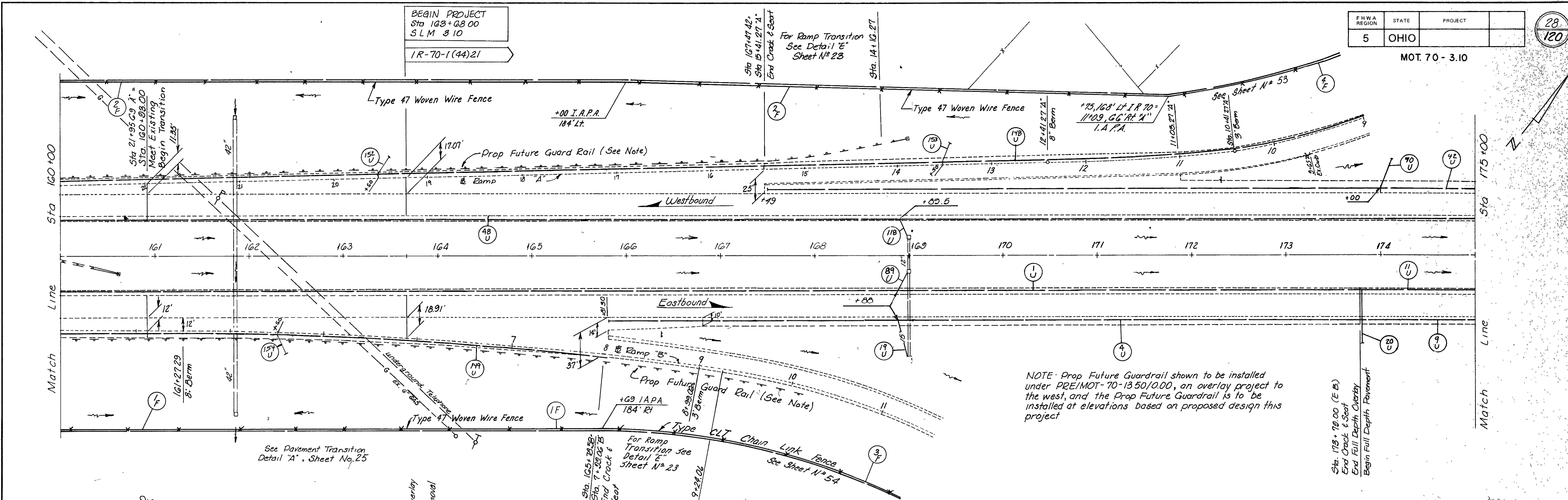


**FENCE LEGEND**  
 C.P.A. Corner Post Assembly  
 E.P.A. End Post Assembly  
 I.A.P.A. Intermediate Anchor Post Assembly  
 L.P.E.C. Line Post Encased in Concrete  
 A.C. Abutment Connection



STA. 145+00 TO STA. 160+00

REV. 6-9-88

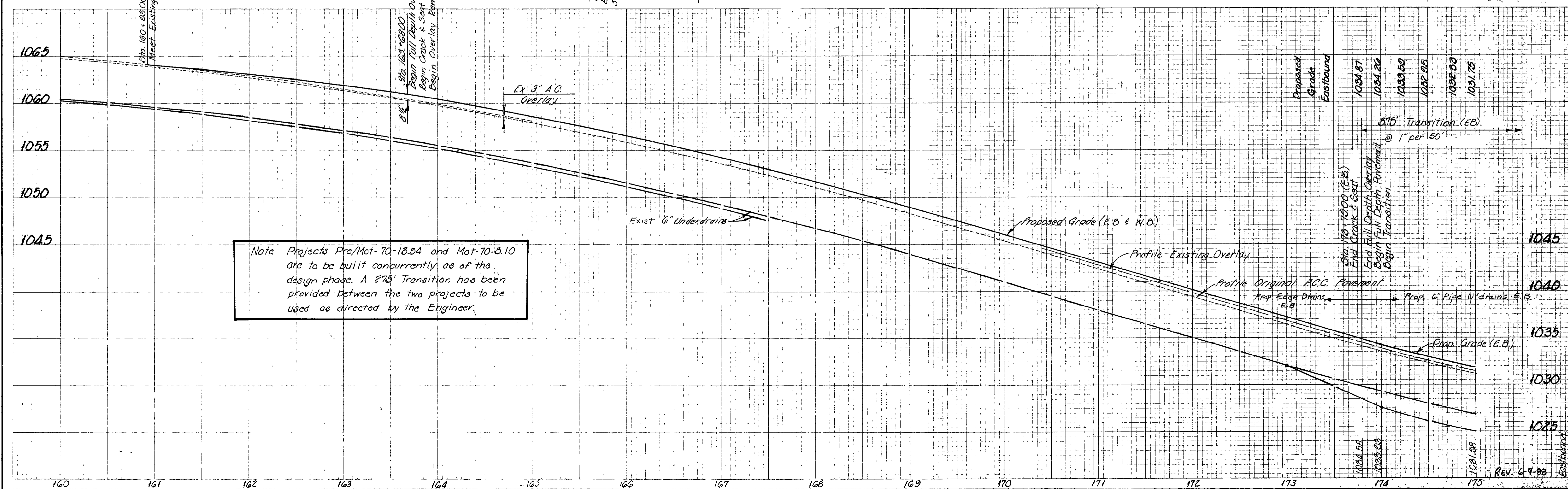


NOTE: Prop Future Guardrail shown to be installed under PRE/MOT-70-1350/0.00, an overlay project to the west, and the Prop Future Guardrail is to be installed at elevations based on proposed design this project

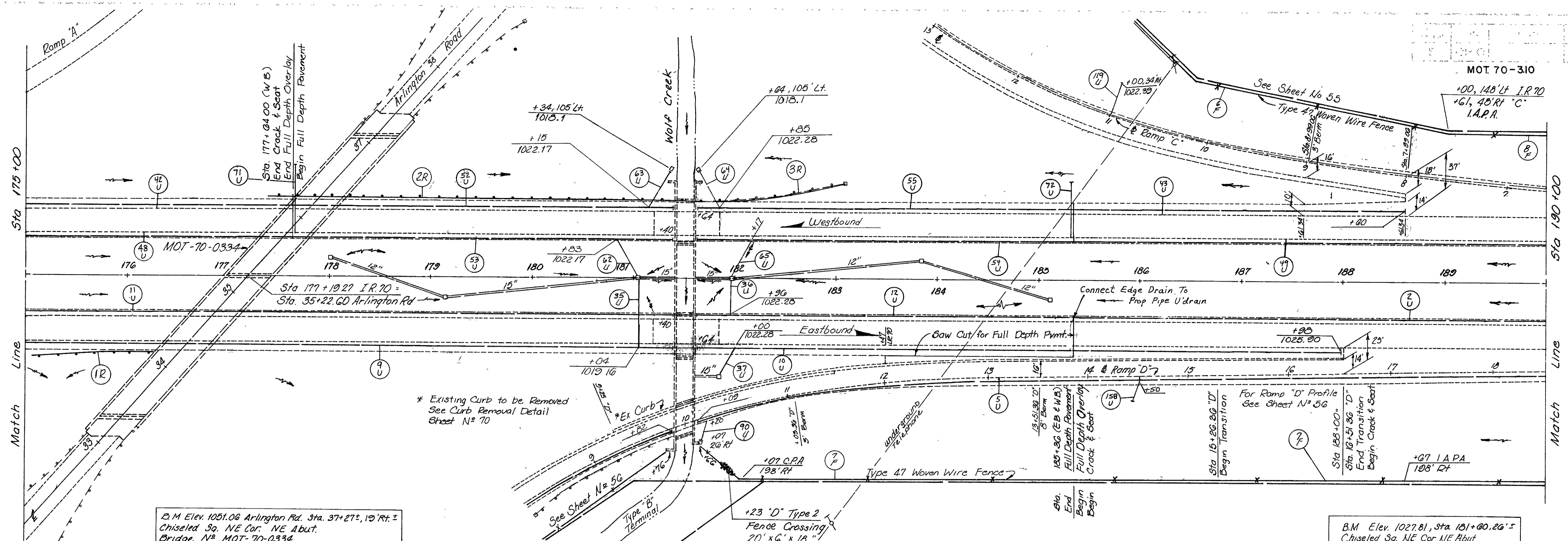
See Pavement Transition Detail 'A', Sheet No. 25

For Ramp Transition See Detail 'E' Sheet N° 23

Sta. 173+70.00 (E.B.)  
End Crack & Seat  
End Full Depth Overlay  
Begin Full Depth Pavement



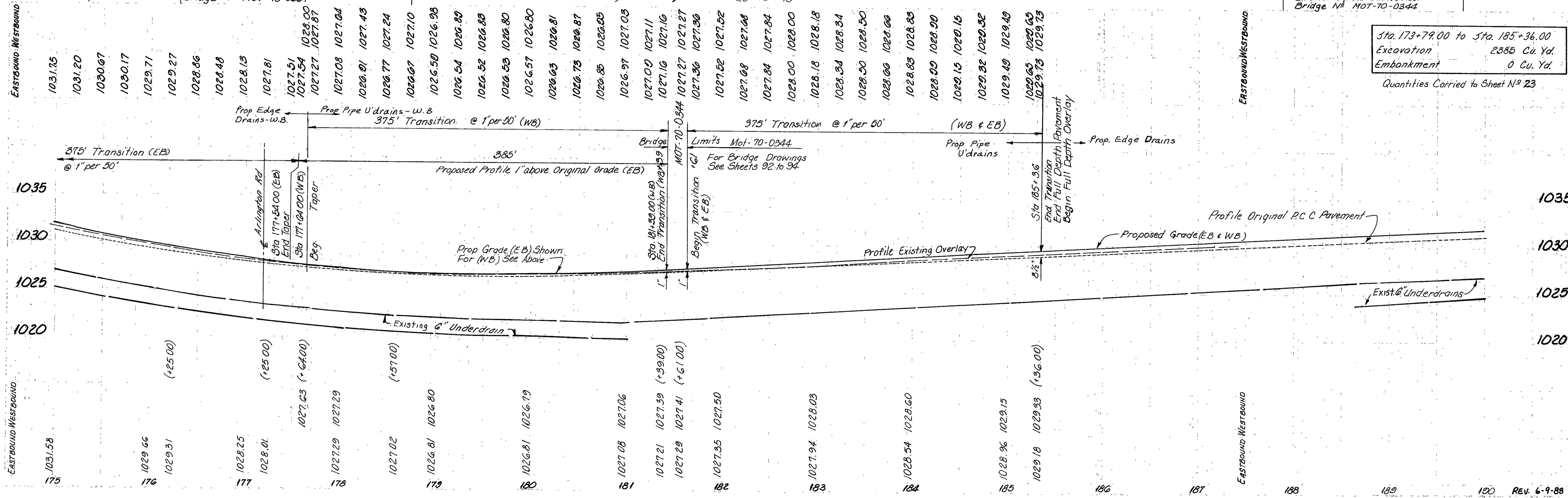
Note Projects Pre/Mot-70-1354 and Mot-70-3.10 are to be built concurrently as of the design phase. A 275' Transition has been provided between the two projects to be used as directed by the Engineer.

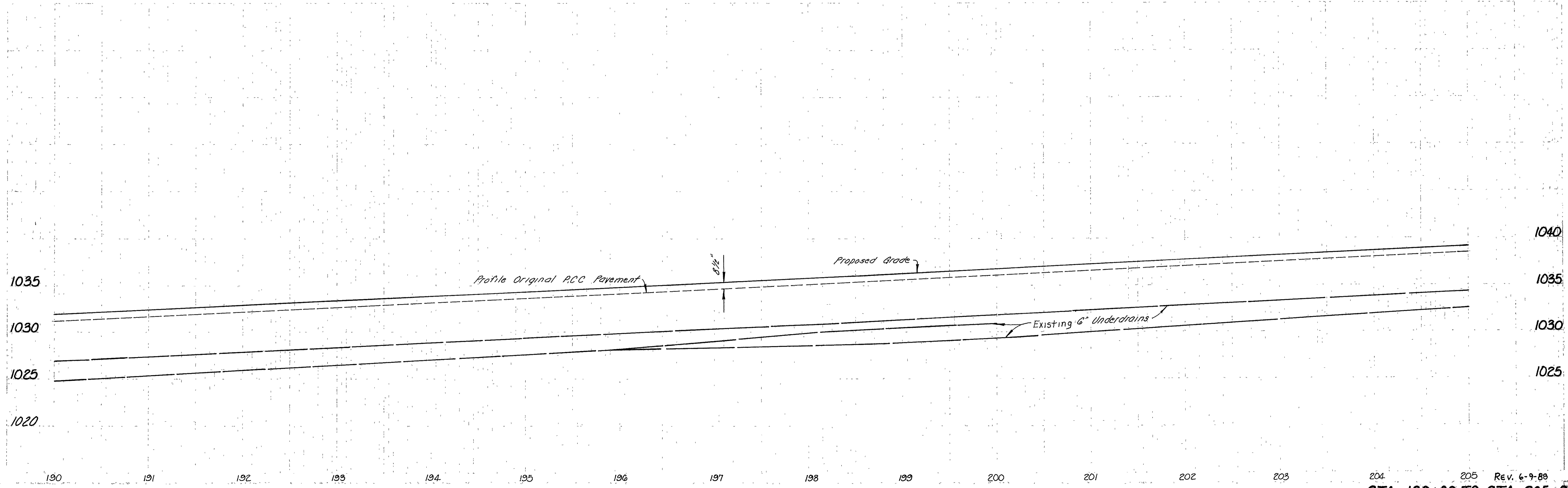
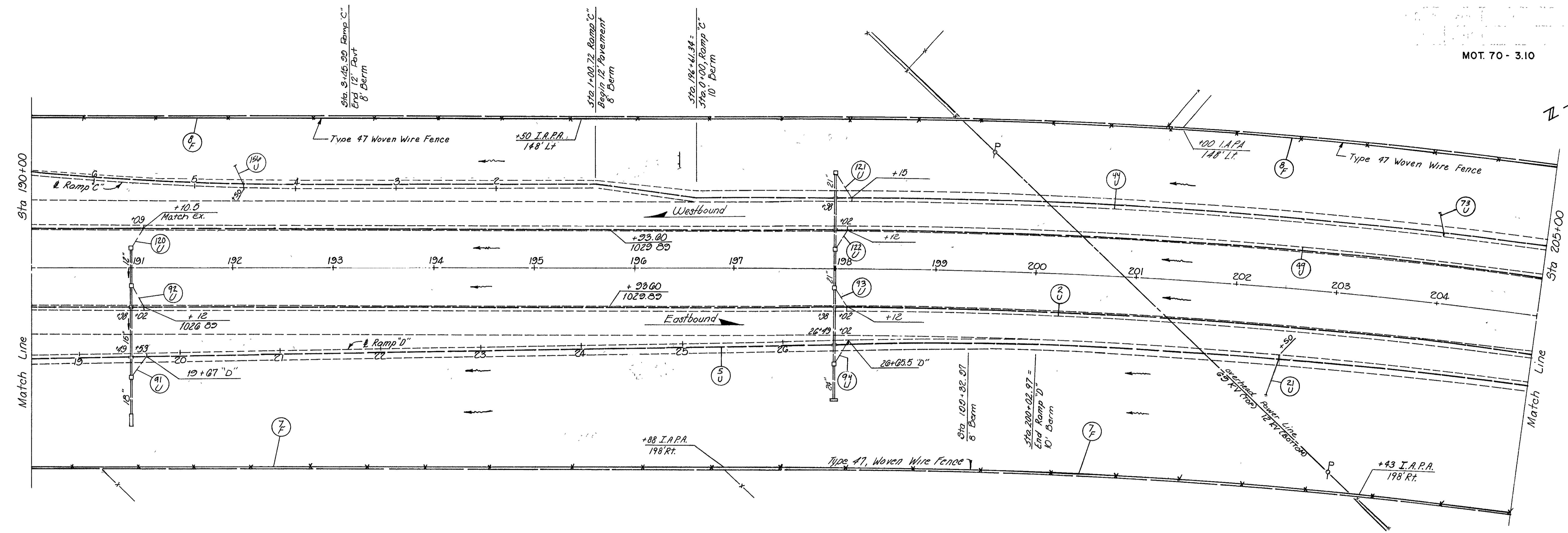


B.M. Elev. 1051.06 Arlington Rd. Sta. 37+27±, 19' Rt. ±  
Chiseled Sq. NE Cor. NE Abut.  
Bridge No. MOT-70-0334

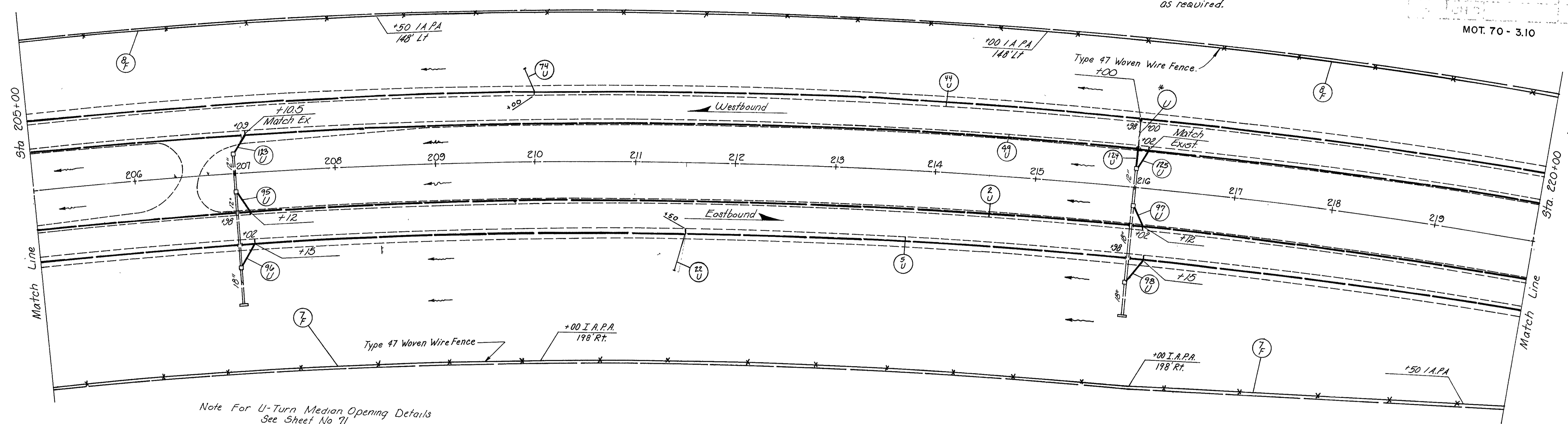
B.M. Elev. 1027.81, Sta. 181+60.26 ±  
Chiseled Sq. NE Cor. NE Abut.  
Bridge No. MOT-70-0344

Sta. 173+79.00 to Sta. 185+36.00  
Excavation 2385 Cu. Yd.  
Embankment 0 Cu. Yd.  
Quantities Carried to Sheet No. 23

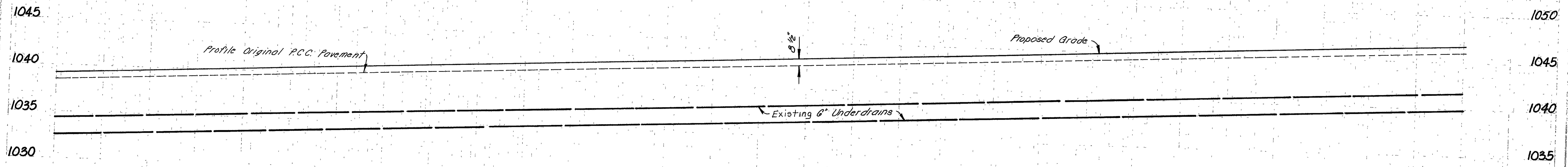




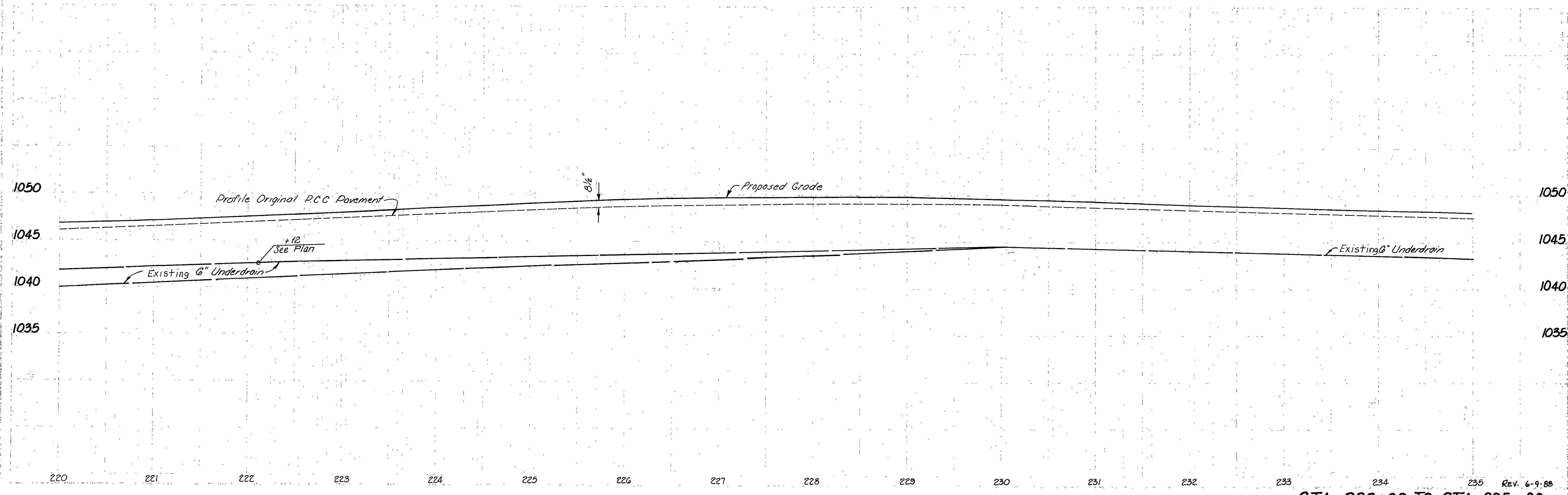
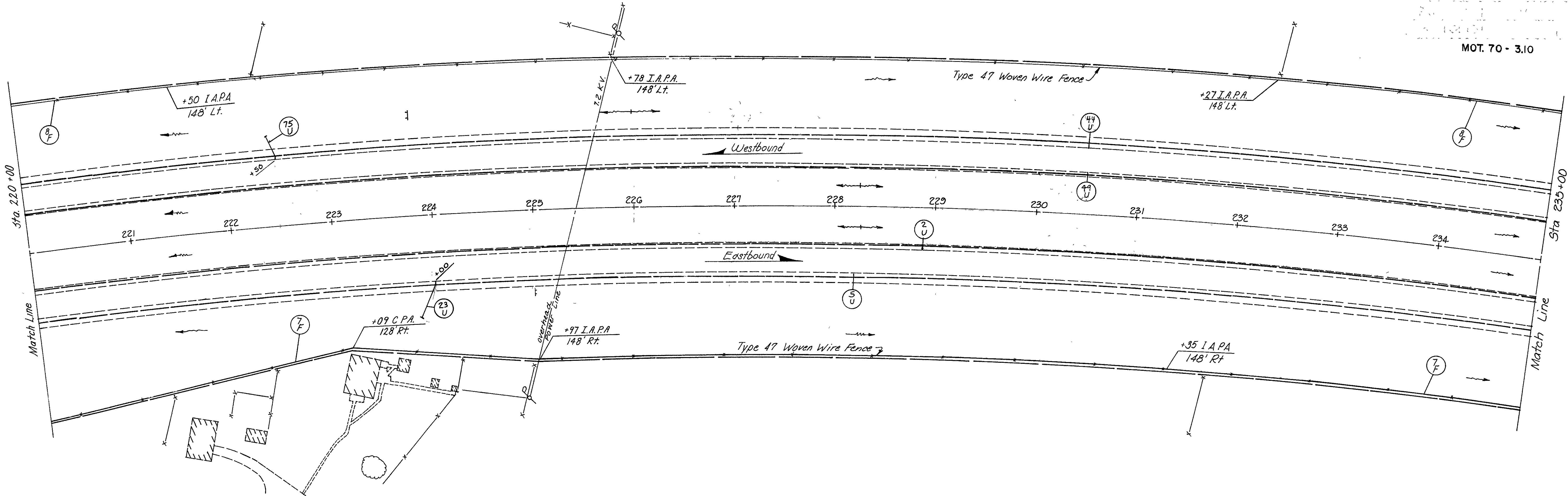
\* Contractor shall leave in place 30' of Existing Underdrain, 15' Each Side of WB Lane, Make connections as required.

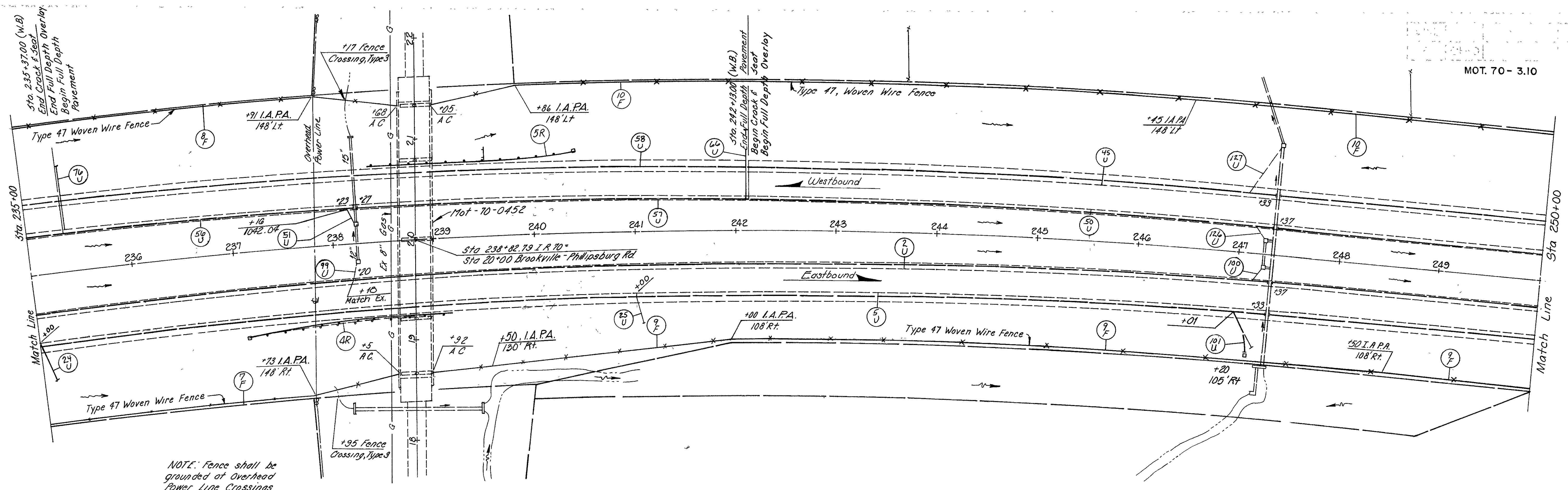


Note For U-Turn Median Opening Details See Sheet No 71



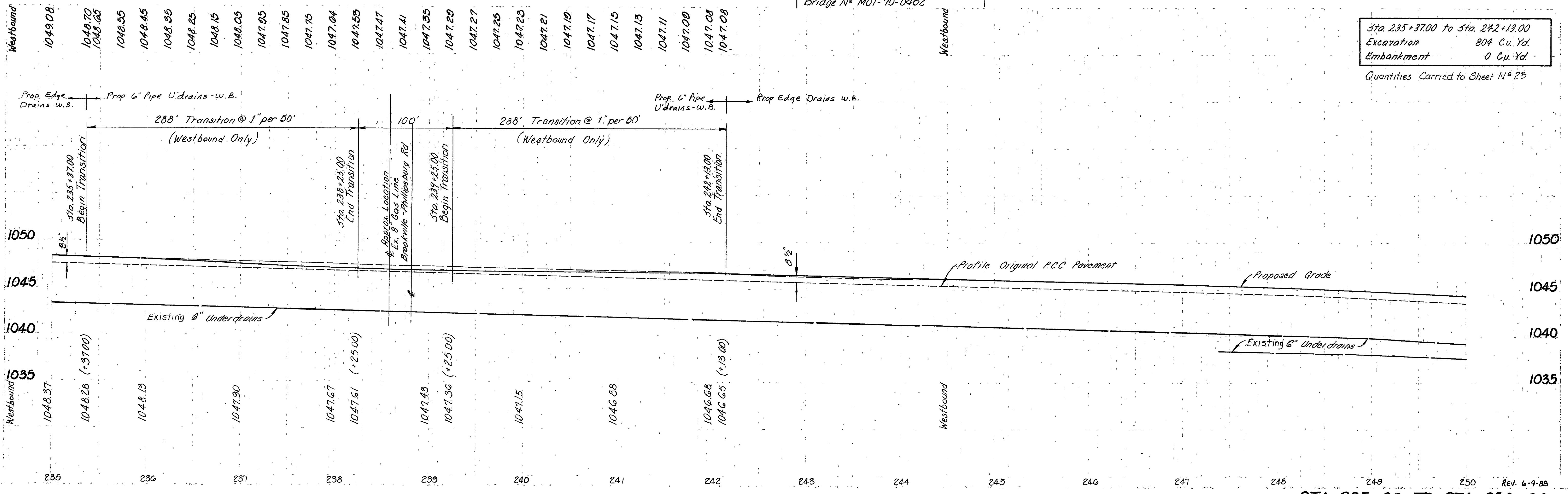


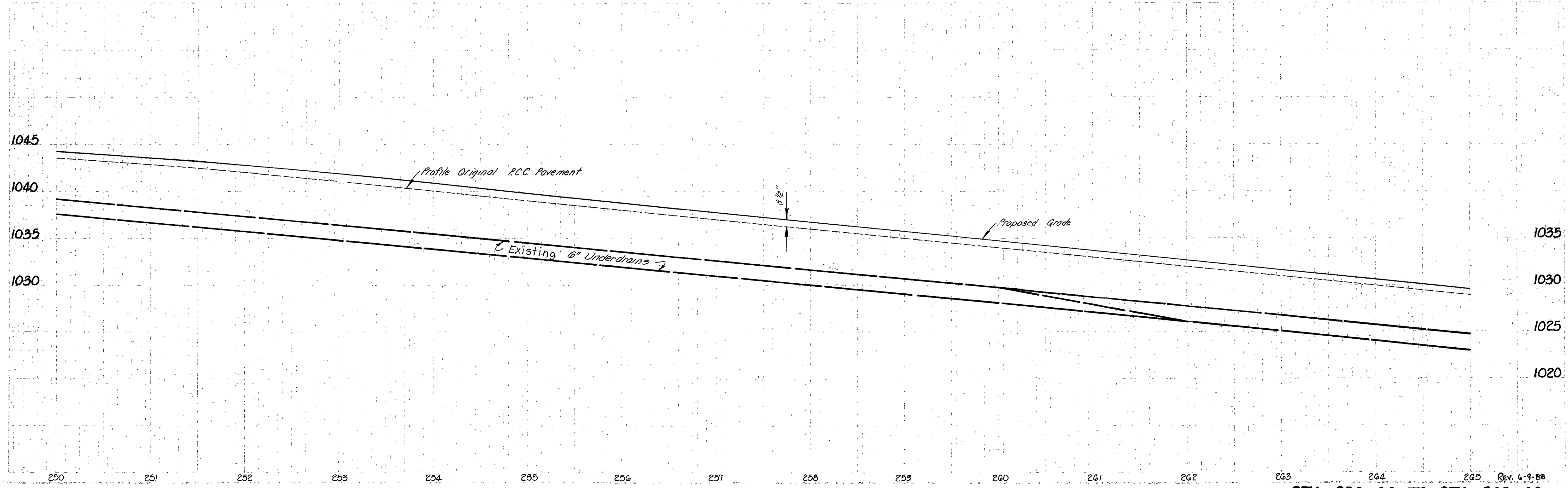
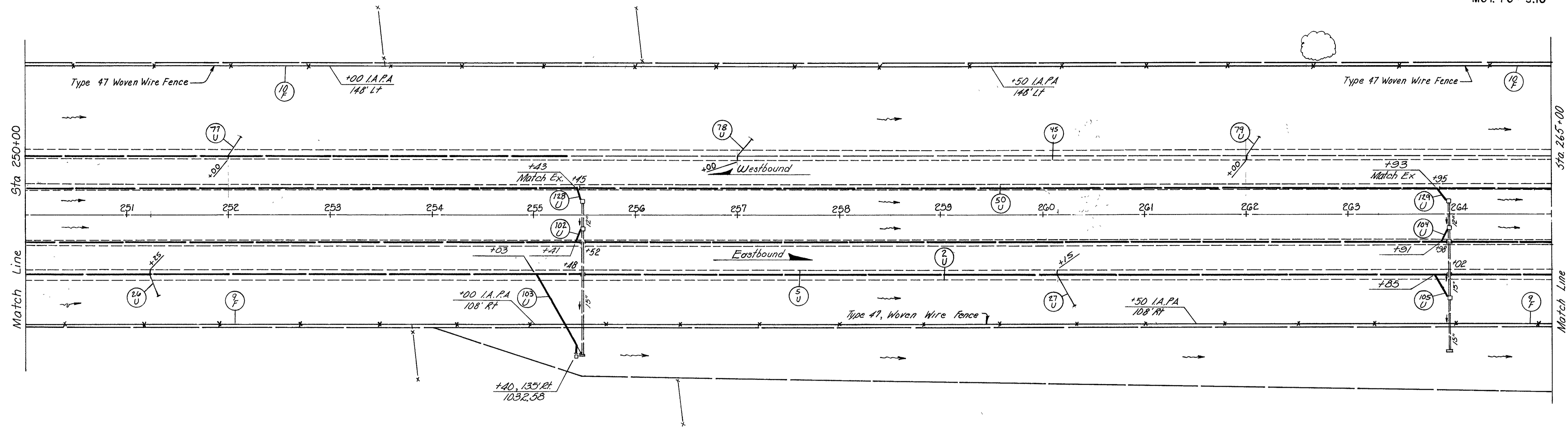


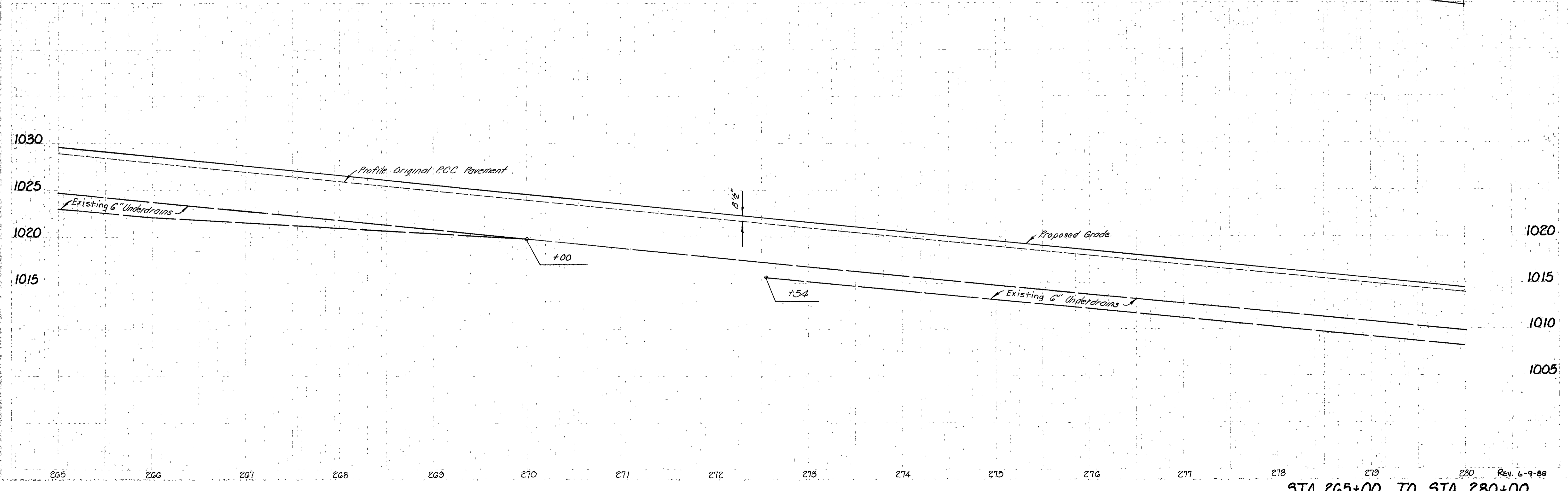
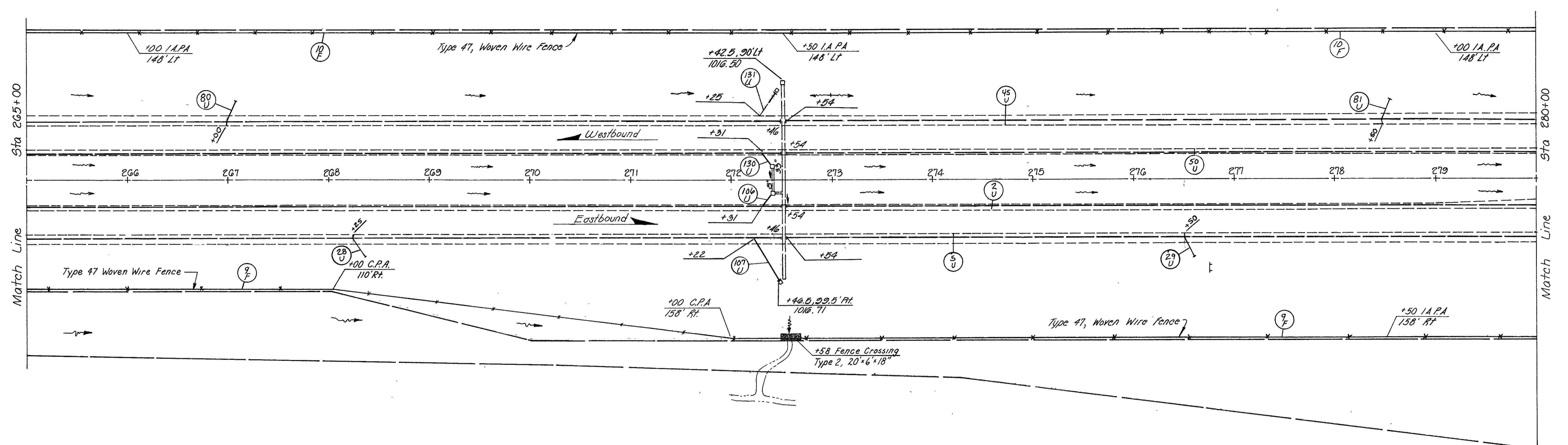


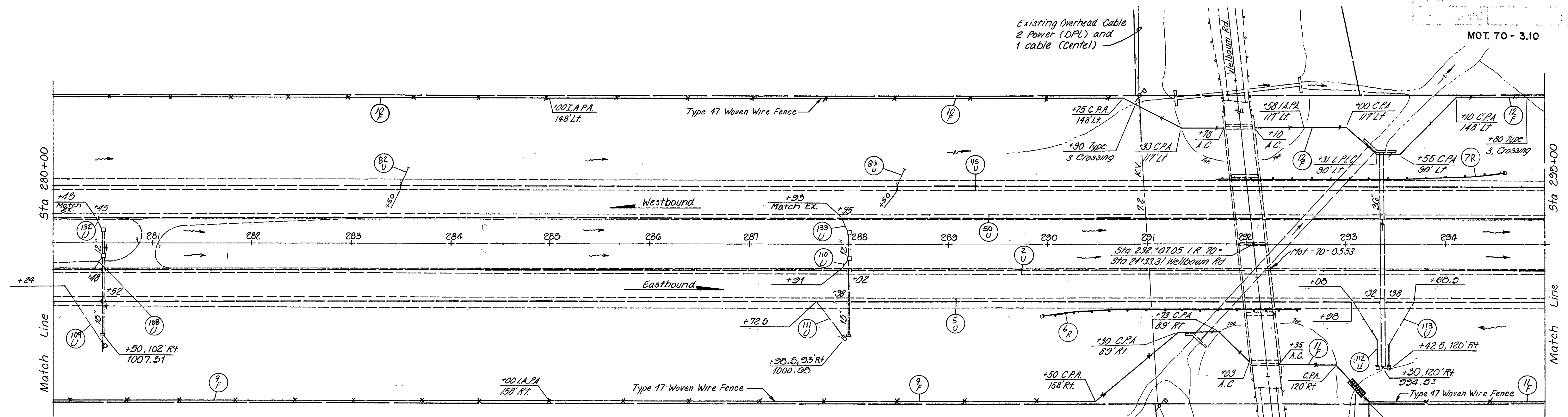
B.M. Elev. 1062.40 Sta 21+30±, 10' Rt.  
Chiseled Sq NE Cor Abutment  
Bridge N<sup>o</sup> MOT-70-0452

Sta. 235+37.00 to Sta. 242+13.00  
Excavation 804 Cu. Yd.  
Embankment 0 Cu. Yd.  
Quantities Carried to Sheet N<sup>o</sup> 23



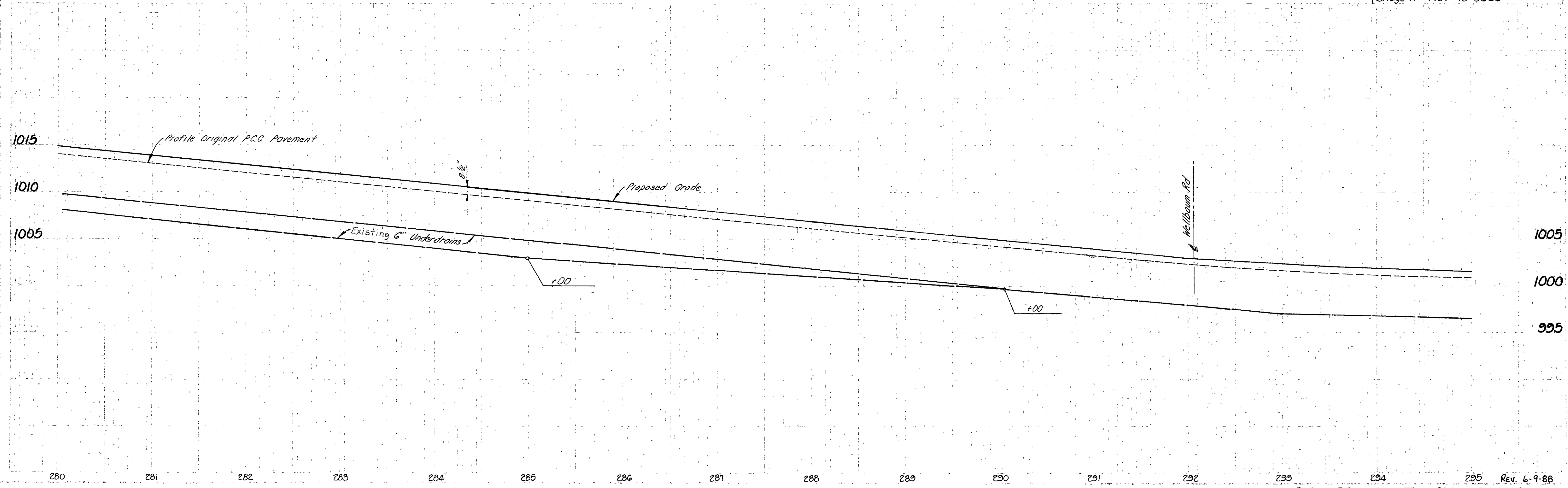




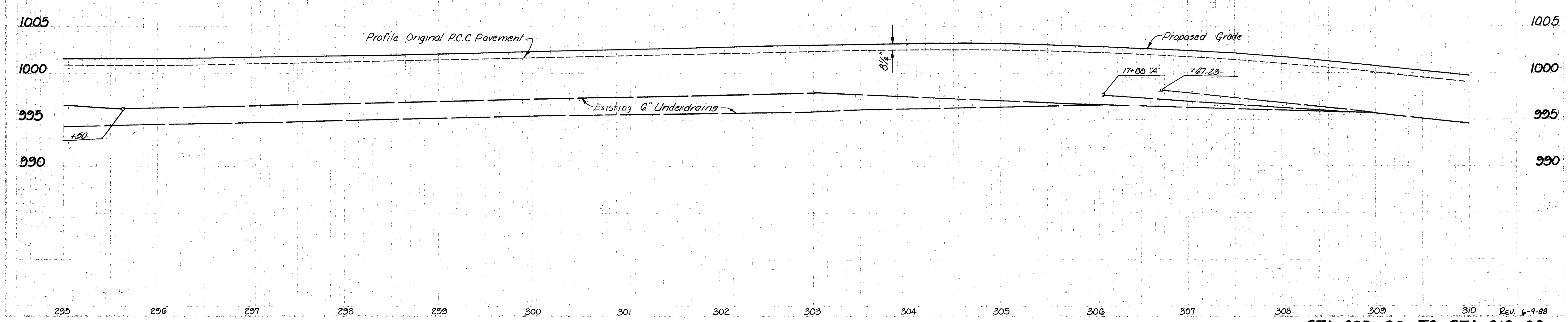
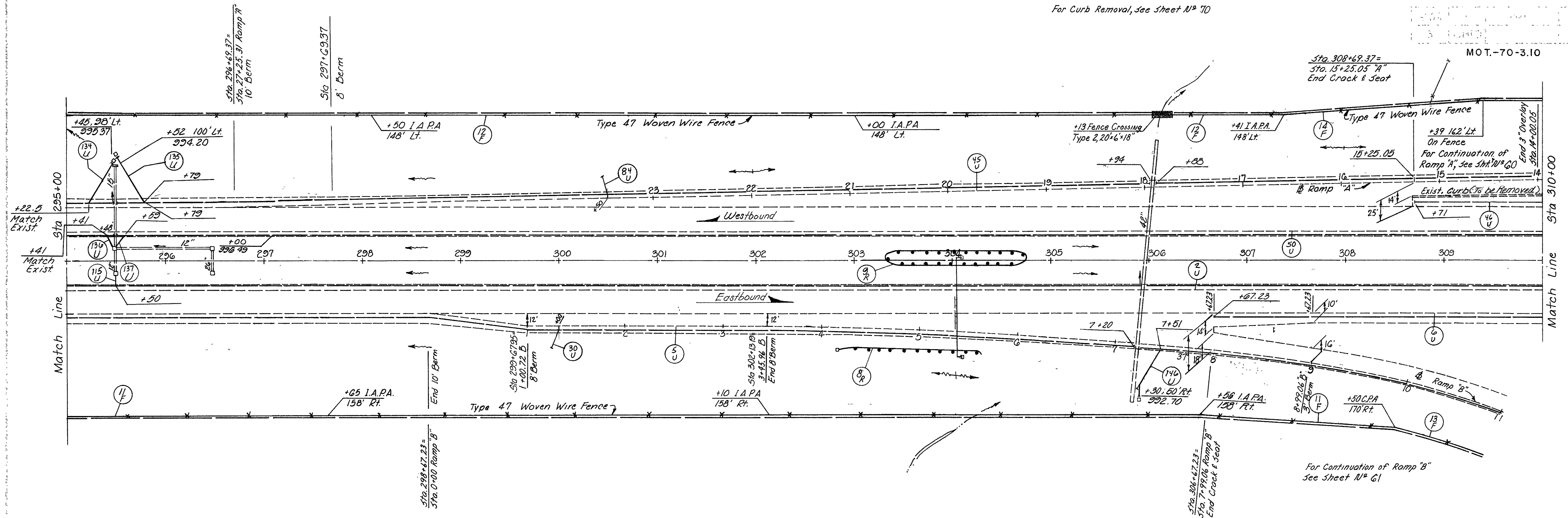


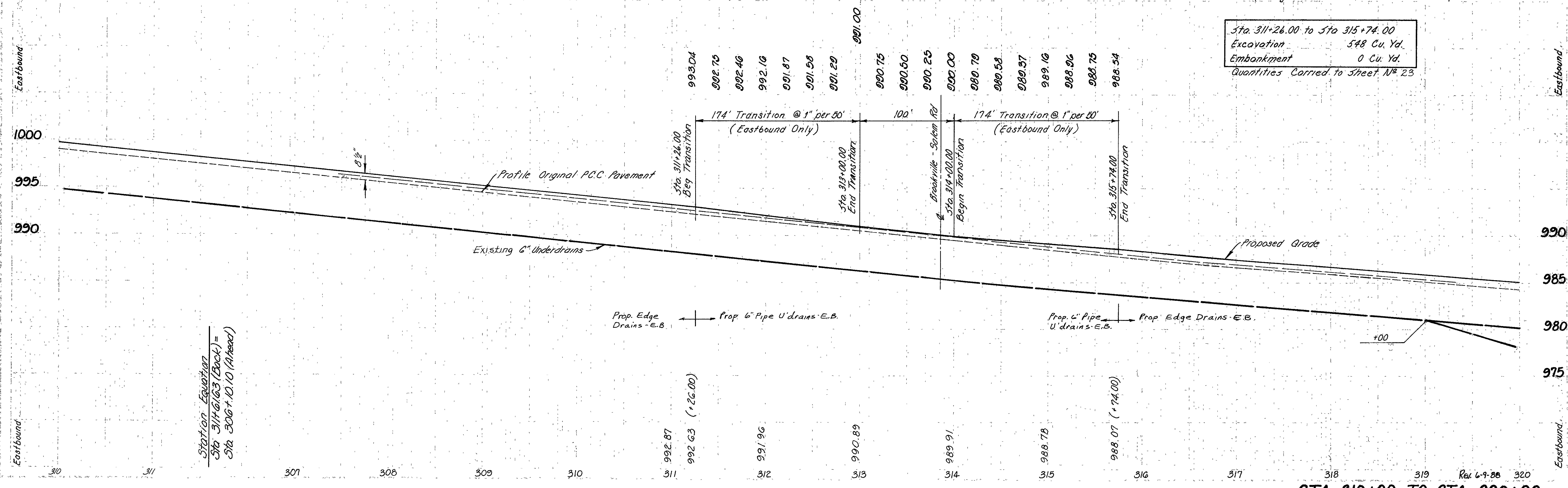
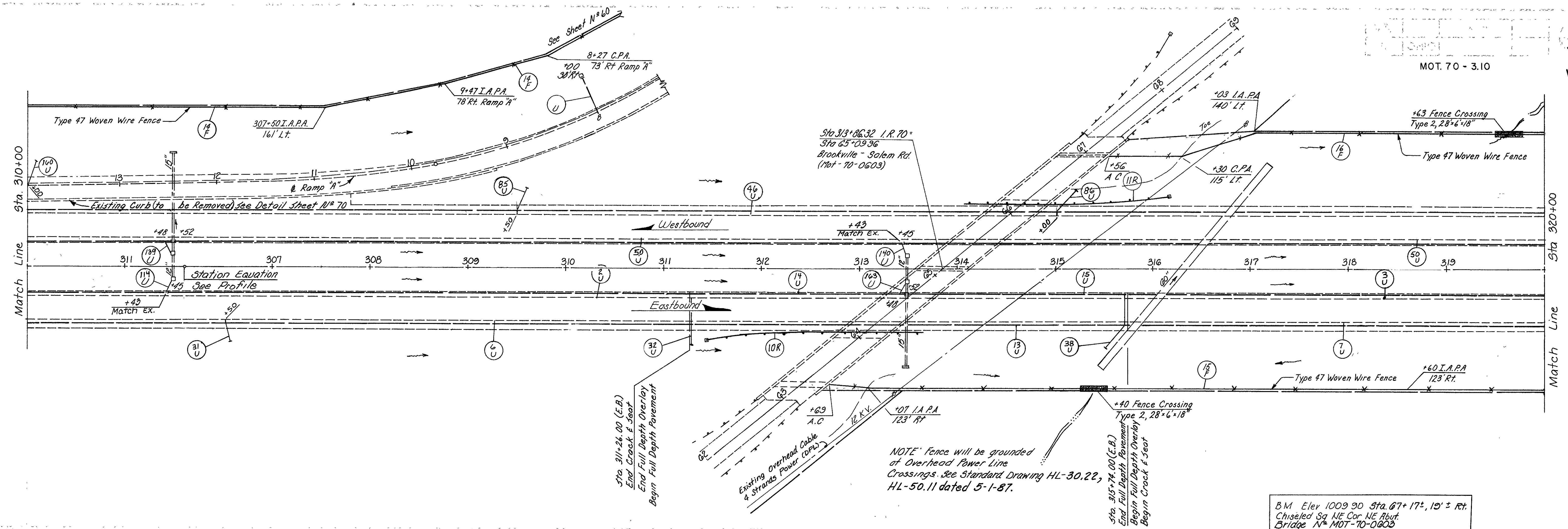
NOTE: For U-Turn Median Opening Details  
See Sheet 10\* 71

B.M. Elev 1022.53 Sta. 25 +54.2, 10' ± Rt.  
Chiseled Sq NE Cor NE Abut  
Bridge No. MOT-70-0553



For Curb Removal, See Sheet N<sup>o</sup> 70

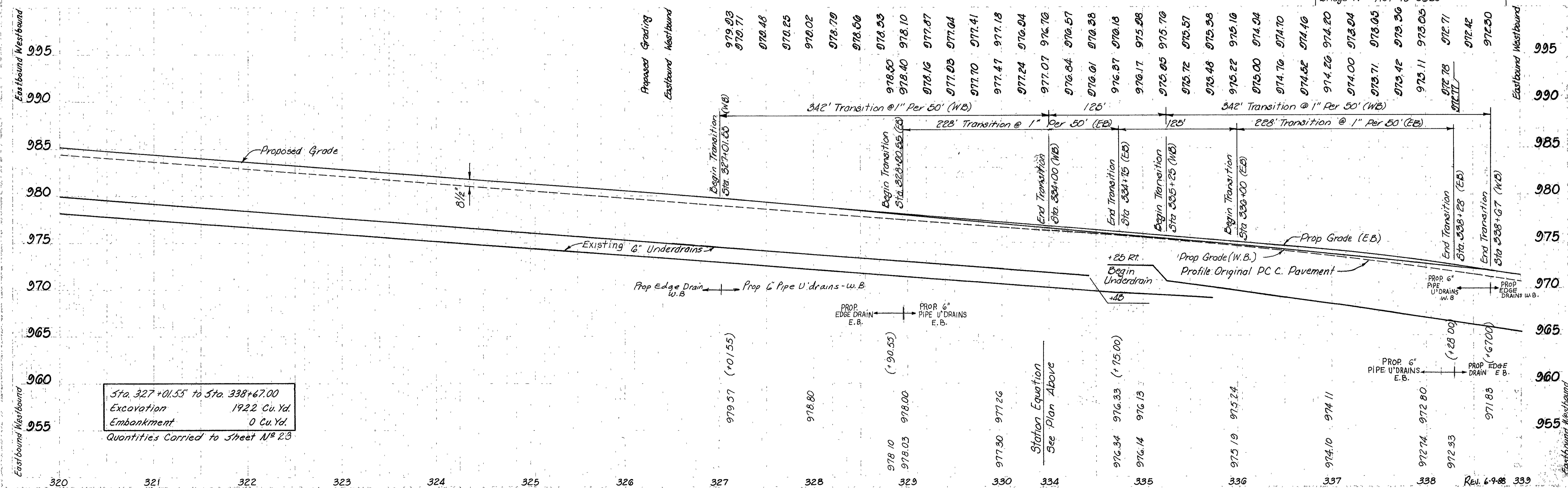
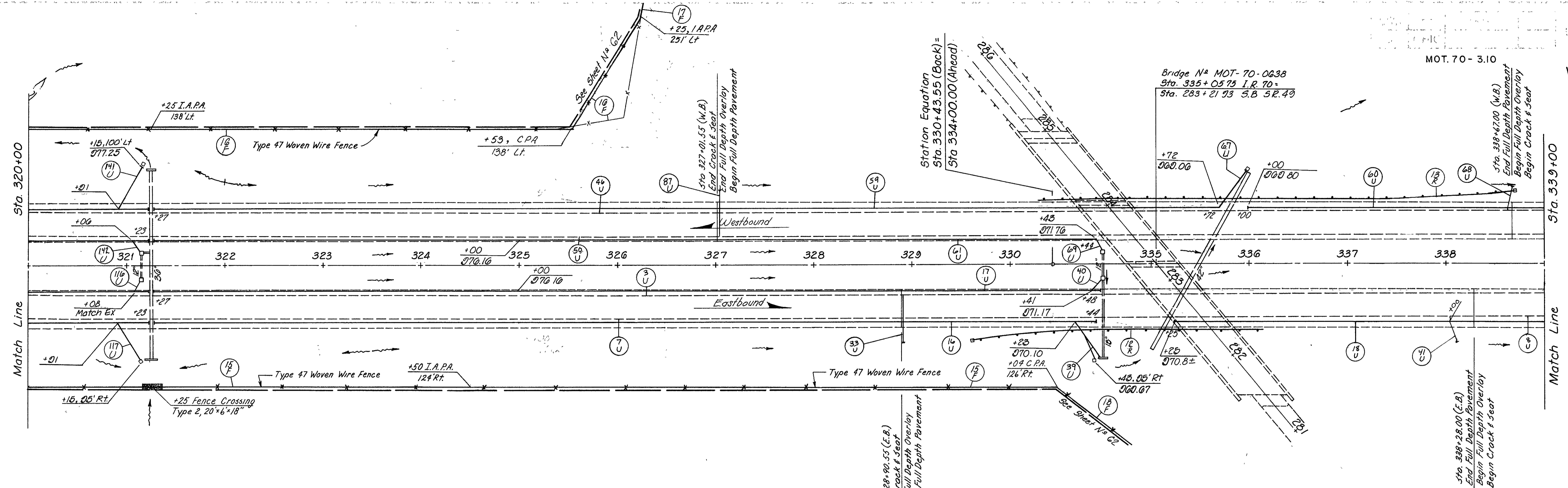




B.M. Elev 1009.90 Sta. 67+17.2, 12' ± Rt.  
Chiseled Sq NE Cor NE Abut.  
Bridge N° MOT-70-0803

Sta. 311+26.00 to Sta. 315+74.00  
Excavation 548 Cu. Yd.  
Embankment 0 Cu. Yd.  
Quantities Carried to Sheet N° 23

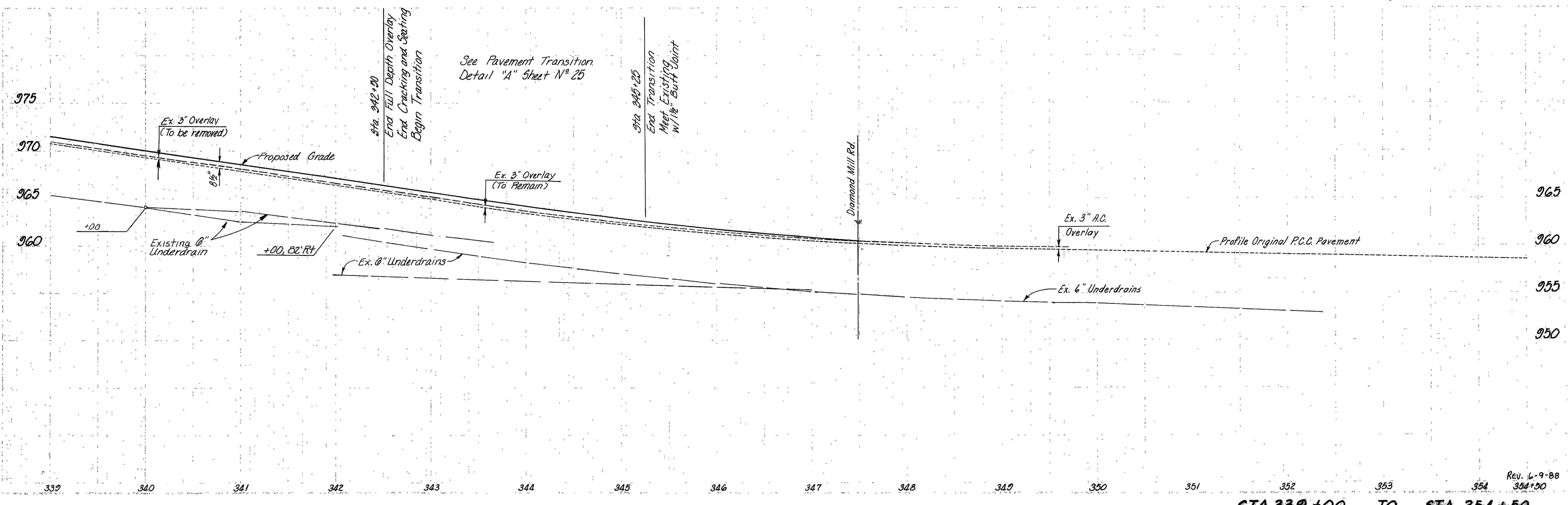
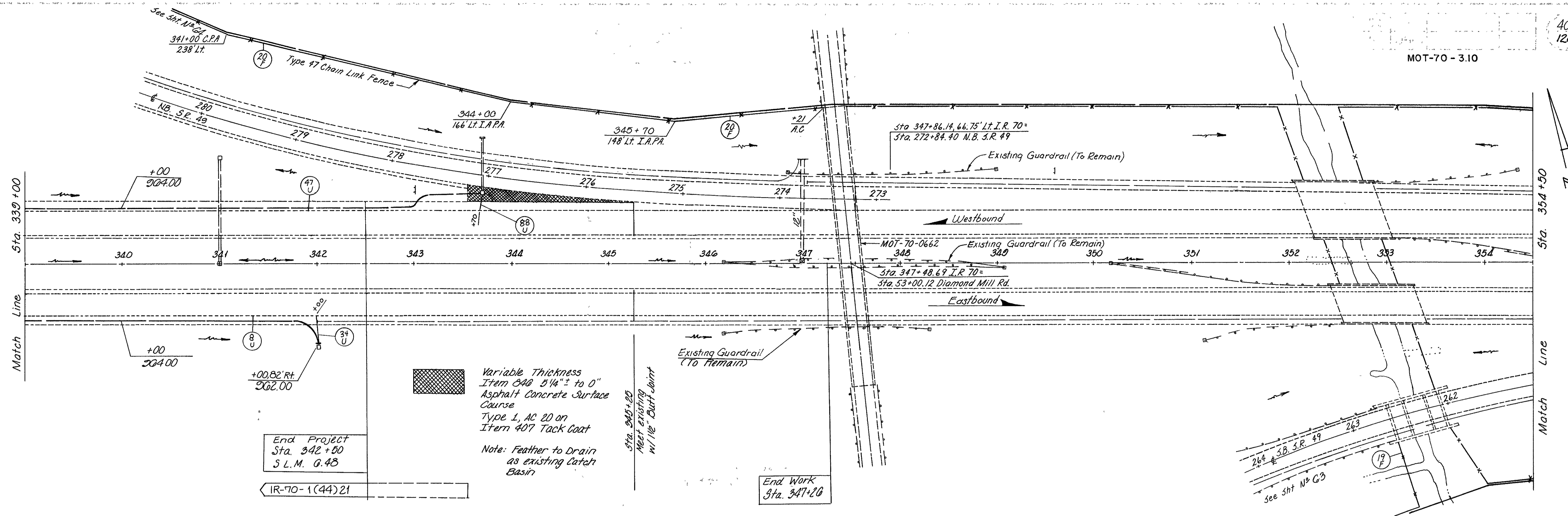
Station Elevation  
Sta. 311+6.63 (Back) =  
Sta. 306+10.10 (Ahead)



Sta. 327+01.55 to Sta. 338+67.00  
Excavation 1922 Cu. Yd.  
Embankment 0 Cu. Yd.  
Quantities Carried to Sheet N° 28

BM Elev 997.08 Sta. 284+70±, 24± Rt  
Chiseled by N.E. Cor. N.E. Abut.  
Bridge N° MOT-70-0638





SECTION

Earthwork Quantities  
Calc. By C.E.S. Date 9-21-87  
Checked By U.S.M. Date 9-25-87

5  
MOT-70-310

91  
120

1030

1020

1030

1020

1040

1030

1040

1030

WB

EB

1029.71  
1029.66

176+00  
1031.38

1031.75  
1031.58

175+00  
1033.3

1034.87  
1034.55

174+00  
1035.8

Sta. 173+79.00  
Ahead Only

Back included in calculations

Sta. 173+79.00 (EB)  
Ahead Only

173+00  
1038.4

X-hatched areas of existing pavement  
to be removed under Item 202

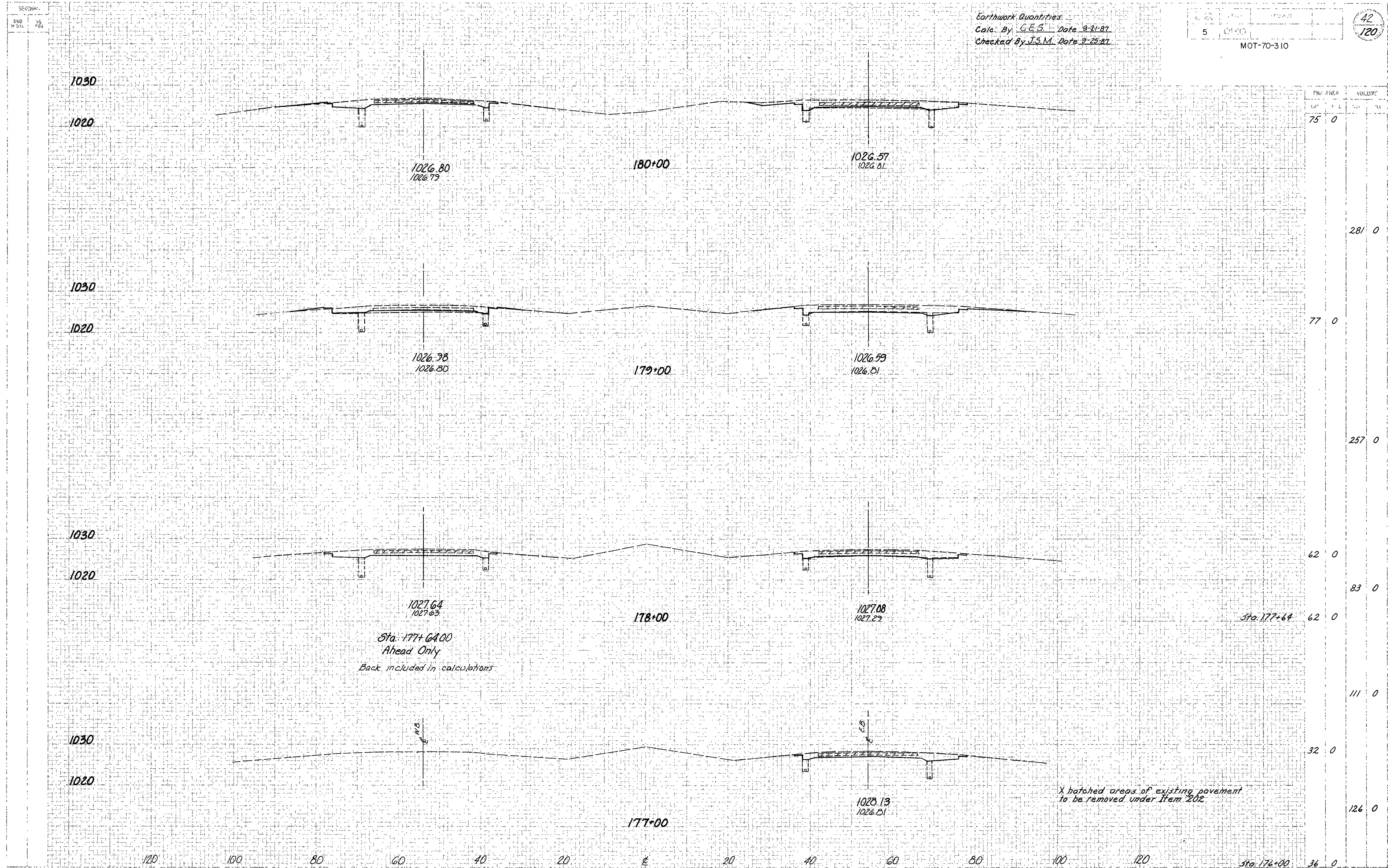
STATION	AREA	VOLUME
176+00	36 0	133 0
175+00	36 0	119 0
174+00	28 0	22 0
173+00	28 0	

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

X-SECTIONS STA. 173+00 to STA. 176+00

Earthwork Quantities  
 Calc. By G.E.S. Date 9-21-87  
 Checked By J.S.M. Date 9-25-87

MOT-70-310



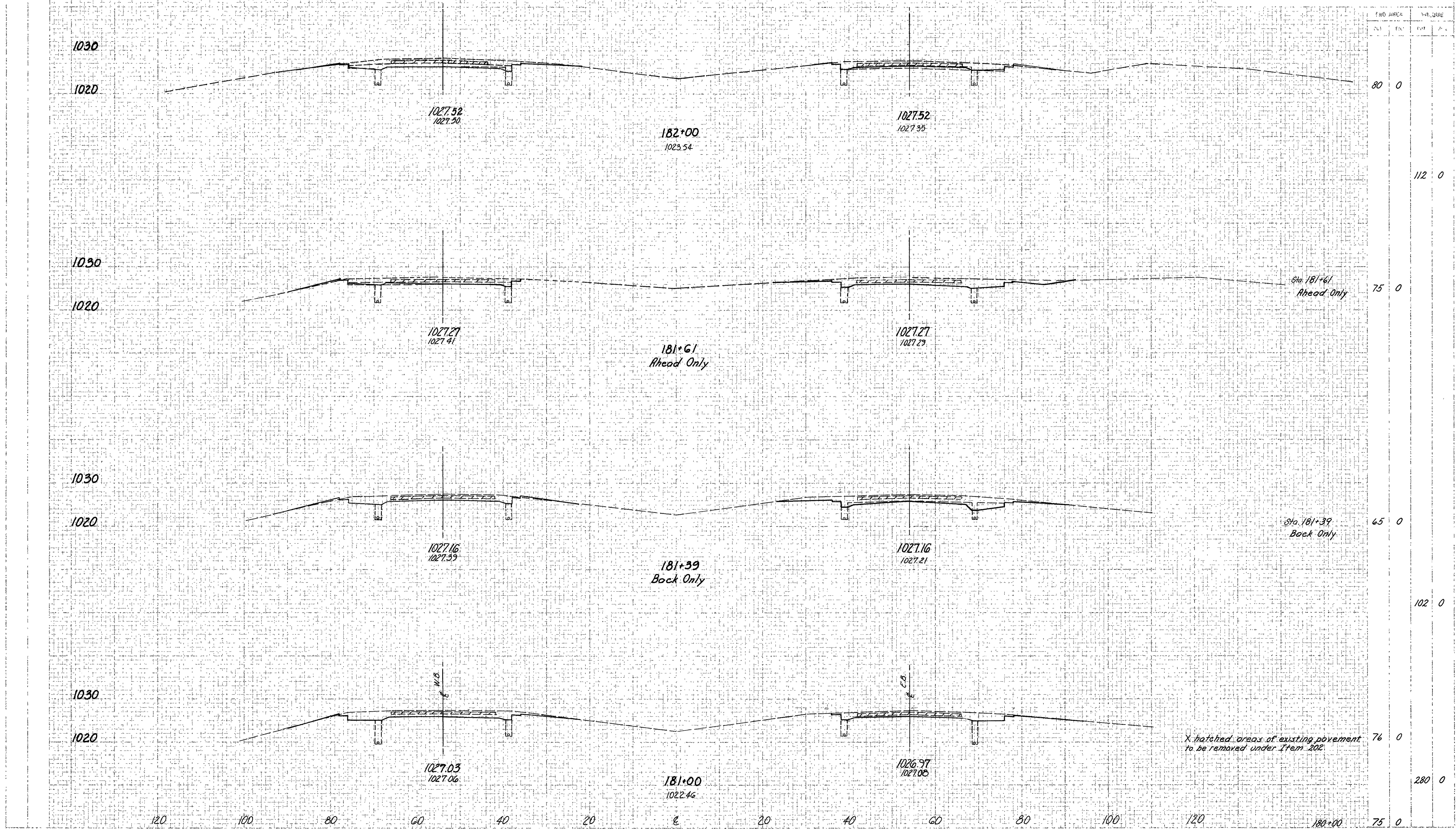
X-SECTIONS STA 177+00 to STA 180+00

SECTION  
 50 50  
 100 100

Earthwork Quantities  
 Calc. By C.E.S. Date 9-21-87  
 Checked By J.S.M. Date 9-25-87

5 OHIO  
 43  
 120

MOT-70-310



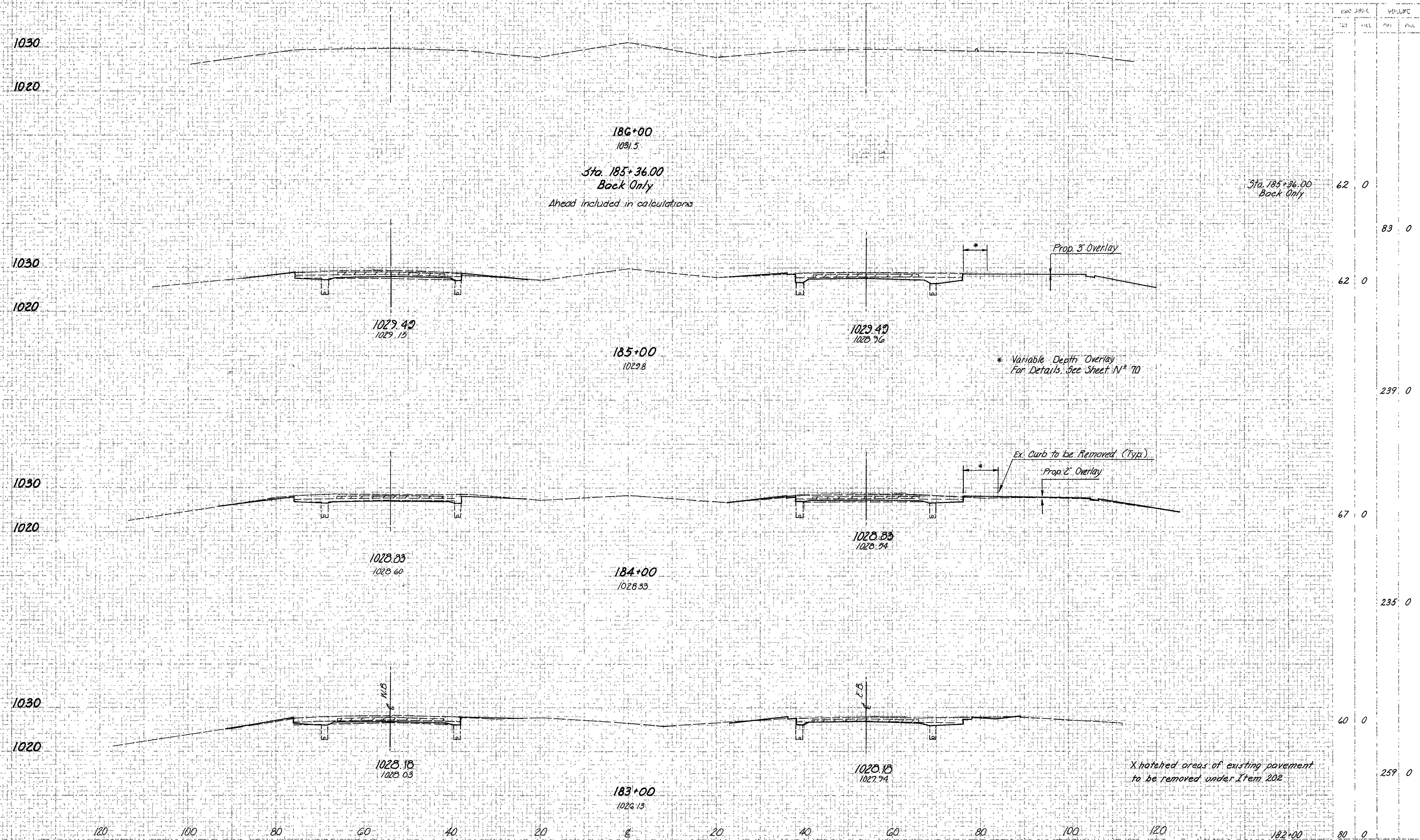
X hatched areas of existing pavement to be removed under Item 302

X-SECTIONS STA. 181+00 to 182+00

Scale  
 HORIZ. 1" = 40'  
 VERT. 1" = 10'

Earthwork Quantities  
 Calc. By C.E.S. Date 9-21-87  
 Checked By J.S.M. Date 9-25-87

MOT-70-310



X-SECTIONS STA 183+00 TO 186+00

X-hatched areas of existing pavement to be removed under Item 202

\* Variable Depth Overlay For Details See Sheet N<sup>o</sup> 70

Ex. Curb to be Removed (Typ)

Sta. 185+36.00  
 Back Only  
 Ahead included in calculations

Sta. 185+36.00  
 Back Only

1029.49  
 1029.15

1029.49  
 1028.76

185+00  
 1029.8

1028.83  
 1028.60

1028.83  
 1028.74

184+00  
 1028.33

1028.18  
 1028.03

1028.18  
 1027.94

183+00  
 1028.13

Earthwork Quantities  
 Calc. By C.E.S. Date 9-21-87  
 Checked By J.M. Date 9-25-87

5	OHIO
---	------

45  
120

MOT-70-3 10

1050

1040

1047.35  
1047.43

239+00  
1049.0

END AREA		VOLUME	
WT	FILL	WT	FILL
38	0		

1050

1040

1047.64  
1047.67

238+00  
1049.2

35	0		
----	---	--	--

1050

1040

1047.05  
1047.90

237+00  
1049.4

35	0		
----	---	--	--

1050

1040

1045.10  
1045.25

Sta. 235+37.00 (W.B.)  
Ahead Only  
Back included in calculations

236+00  
1049.8

Sta. 235+37.00 (W.B.)  
Ahead Only

28	0		
----	---	--	--

28	0		
----	---	--	--

1050

1040

1049.08  
1049.37

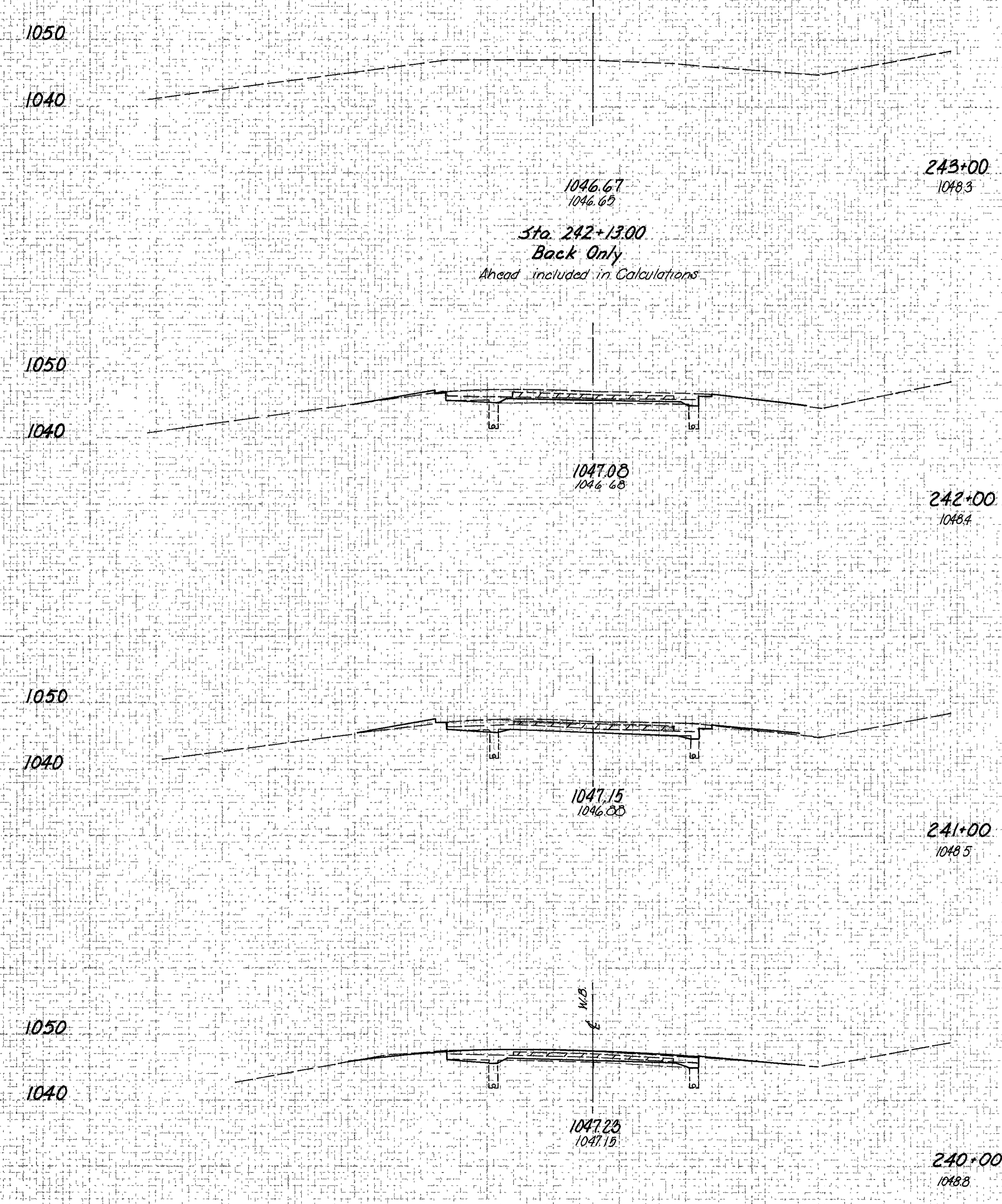
235+00  
1050.3

X-hatched areas of existing pavement  
to be removed under Item 202

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

X-SECTIONS STA. 235+00 to Sta. 239+00

Earthwork Quantities  
 Calc. By G.E.S. Date 9-21-87  
 Checked By U.S.M. Date 9-25-87



Sta. 242+13.00  
 Back Only  
 Ahead included in Calculations

242+13  
 Back Only

STATION	CUT		FILL		TOTAL
	AREA	VOL.	AREA	VOL.	
243+00					
242+13					
242+00					
241+00					
240+00					
239+00					
TOTAL					

X hatched areas of existing pavement  
 to be removed under Item 202

X-SECTIONS STA 240+00 to STA 243+00

SECTION 5  
 120' 60' 30'

Earthwork Quantities  
 Calc. By C.E.S. Date 9-21-87  
 Checked By U.S.M. Date 9-25-87

5	0.00	0.00
---	------	------

47  
120

MOT-70-310

990  
980  
990  
980  
990  
980  
990  
980

313+00  
992.5

312+00  
993.7

311+00  
994.6

310+00  
995.6

991.00  
990.87

992.16  
991.96

992.87

993.9

Sta. 311+26.00 (EB)  
 Ahead Only  
 Back included in Calculations

Sta. 311+86  
 Ahead Only

X hatched areas of existing pavement  
 to be removed under Item 202

END RECK	CUT		FILL	
	CU.	FE.	CU.	FE.
38	0			
133	0			
34	0			
93	0			
34	0			

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

X-SECTIONS STA. 310+00 to STA. 313+00



SECTION

Earthwork Quantities  
Calc. By C.E.S. Date 9-21-87  
Checked By J.S.M. Date 9-25-87

5 0+00

48  
120

MOT-70-310

END AREA		VOLUME	
sq. ft.	sq. ft.	cu. yd.	cu. yd.
		29	0
		79	0
		29	0
		113	0
		32	0
		130	0
		38	0

990

980

317+00  
988.7

990

980

316+00  
989.6

Sta 315+74.00  
Back Only  
Ahead included in Calculations

Sta 315+74  
Back Only

990

980

315+00  
990.5

989.16  
989.78

990

980

314+00  
991.3

990.00  
989.91

X-hatched areas of existing pavement  
to be removed under Item 202

120

100

80

60

40

20

±

20

40

60

80

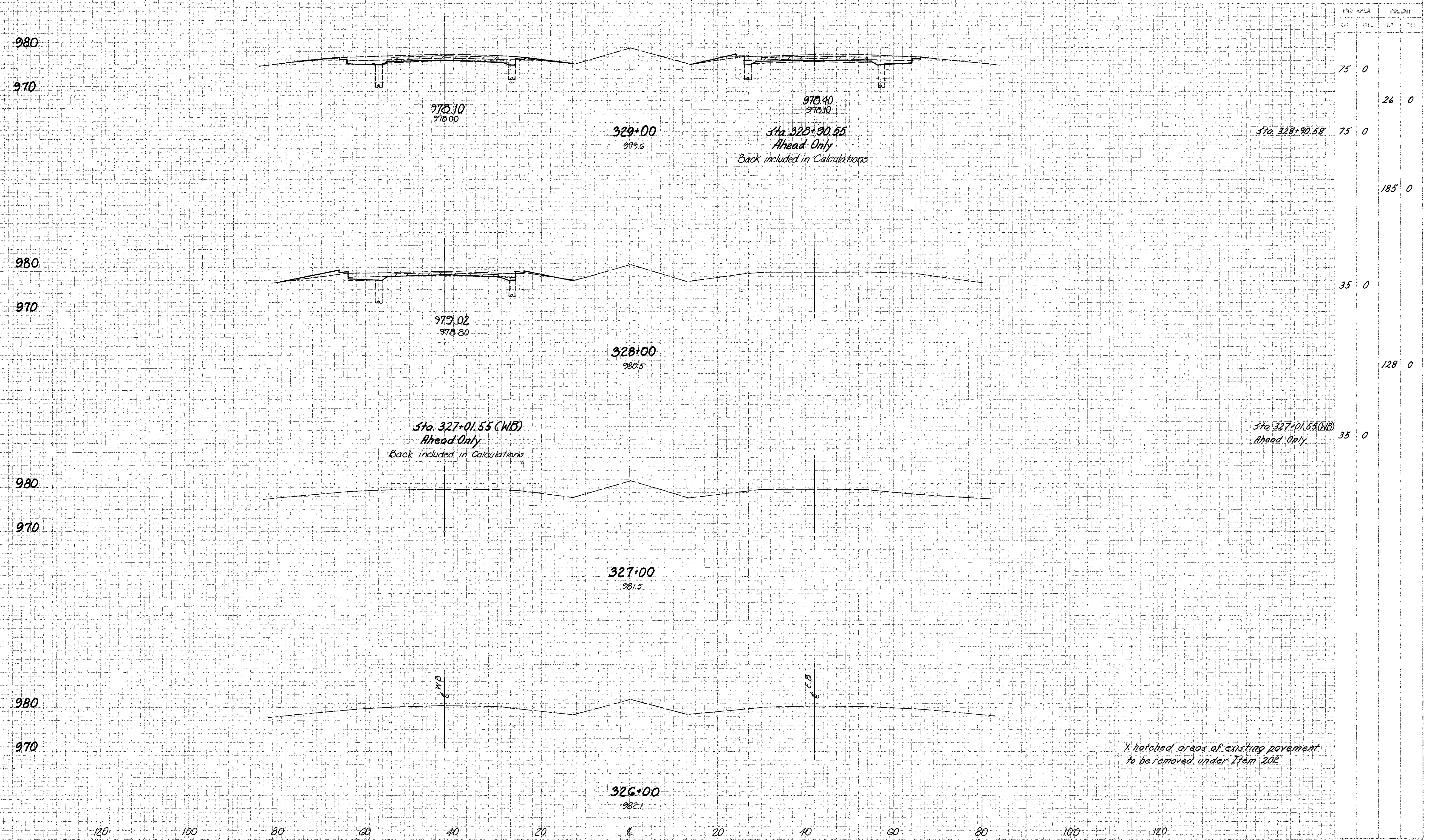
100

120

Sta 318+00

X-SECTIONS STA 314+00 to STA 317+00

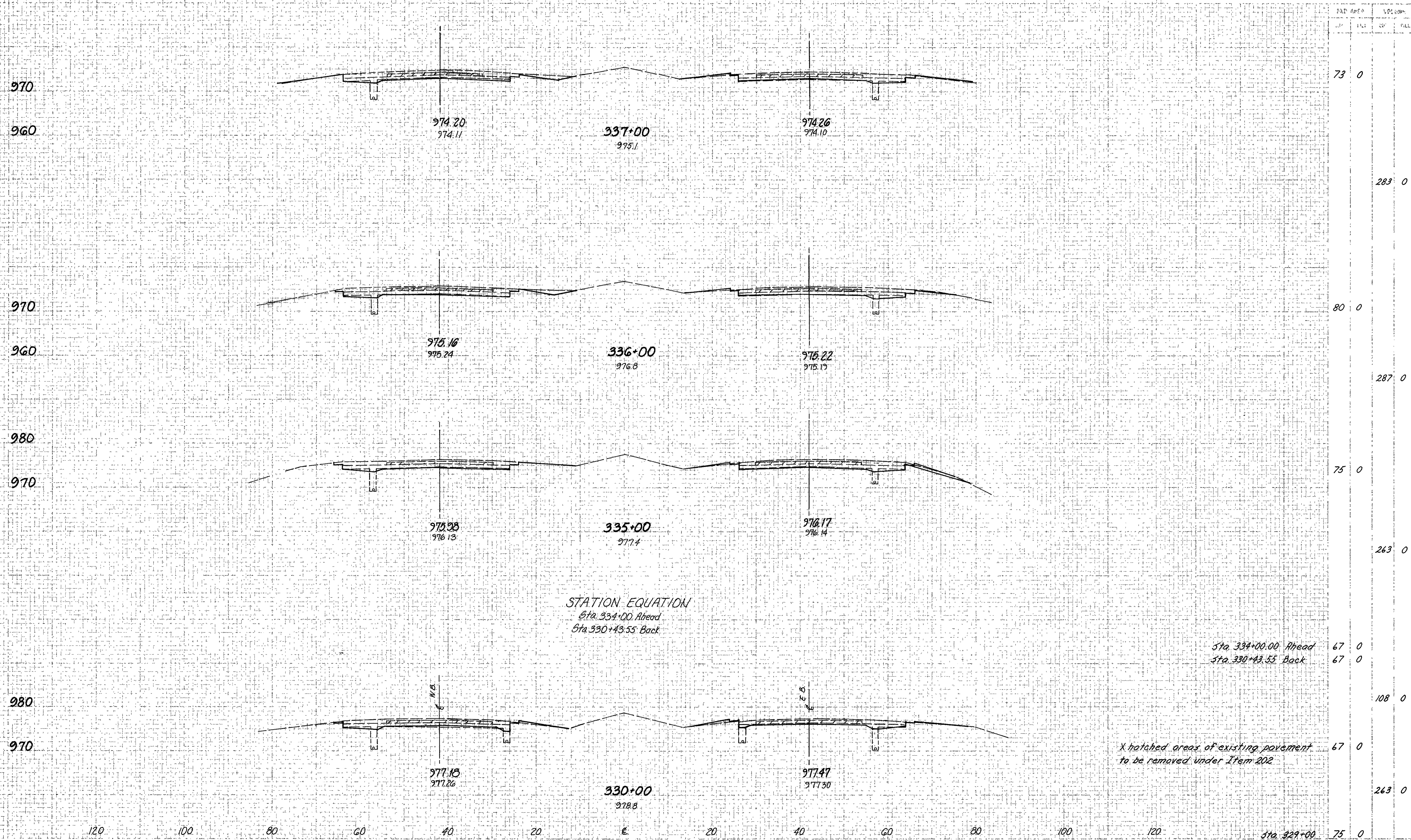
Earthwork Quantities  
 Calc. By C.E.S. Date 9-21-87  
 Checked By J.S.M. Date 9-23-87



X hatched areas of existing pavement to be removed under Item 202

X-SECTIONS STA 326+00 to STA 329+00

Earthwork Quantities  
 Calc. By C.E.S. Date 9-21-87  
 Checked By J.S.M. Date 9-25-87



STATION EQUATION  
 Sta. 334+00 Ahead  
 Sta. 330+43.55 Back

Sta. 334+00.00 Ahead  
 Sta. 330+43.55 Back

X-hatched areas of existing pavement  
 to be removed under Item 202

X-SECTIONS STA. 330+00 to STA. 337+00

Earthwork Quantities  
 Calc. By C.E.S. Date 9-21-87  
 Checked By J.S.M. Date 9-23-87

970

960

340+00  
 966.9

970

960

Sta. 338+67.00  
 Back Only

Ahead included in Calculations

339+00  
 968.6

Sta. 338+67 (WB)  
 Back Only

28 0

41 0

Sta. 338+28.00  
 Back Only

(WB) Sta. 338+28  
 (EB) (WB) Sta. 338+28

28 0

62 0

64 0

970

960

972.71  
 972.80

973.11  
 972.74

338+00  
 970.3

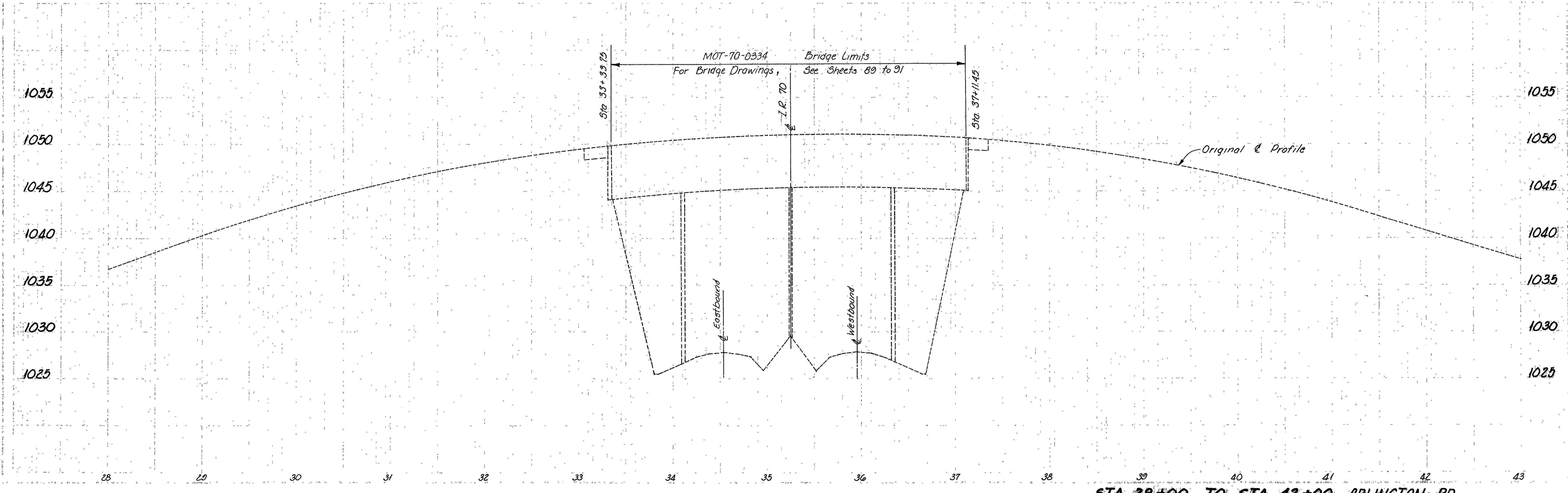
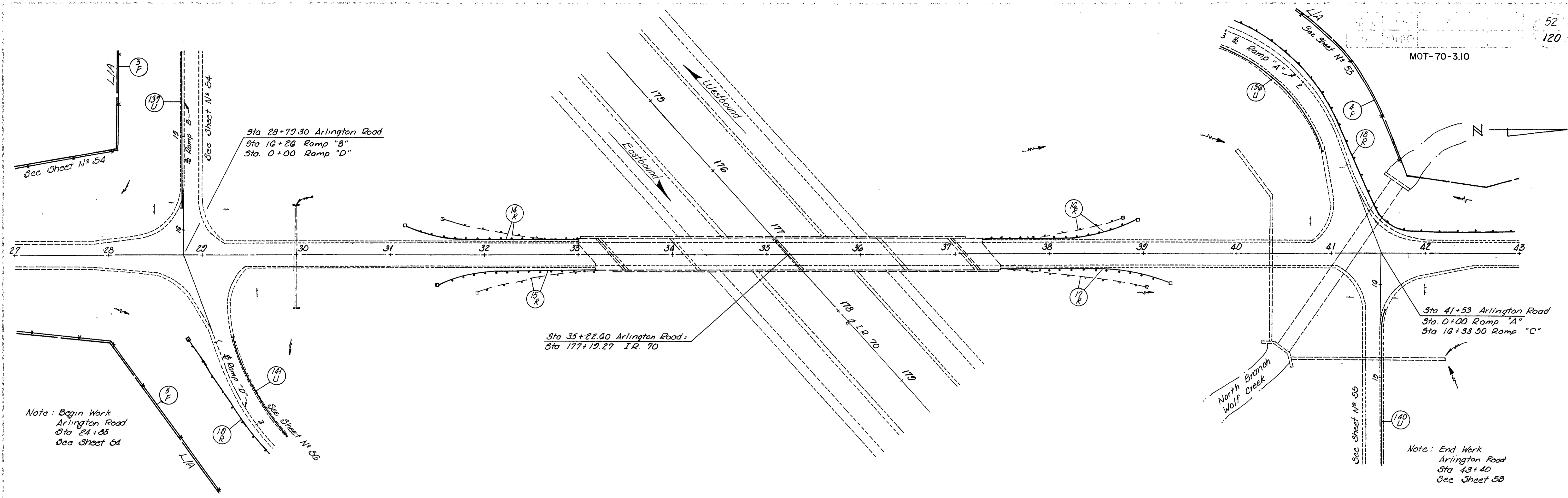
X hatched areas of existing pavement  
 to be removed under Item 202

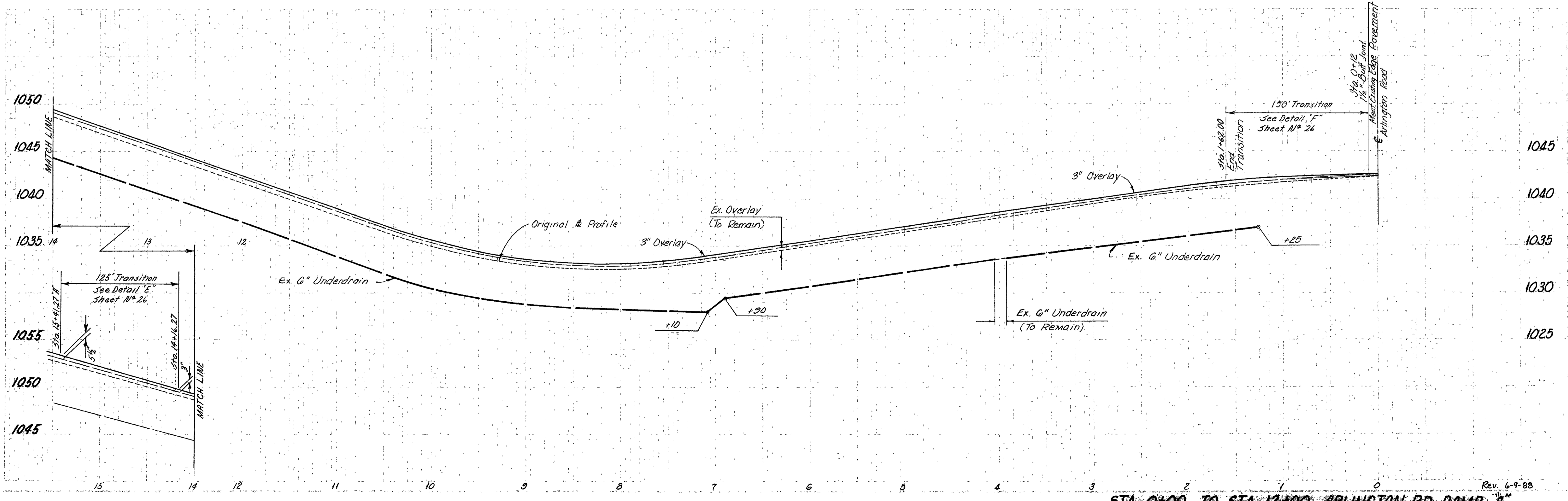
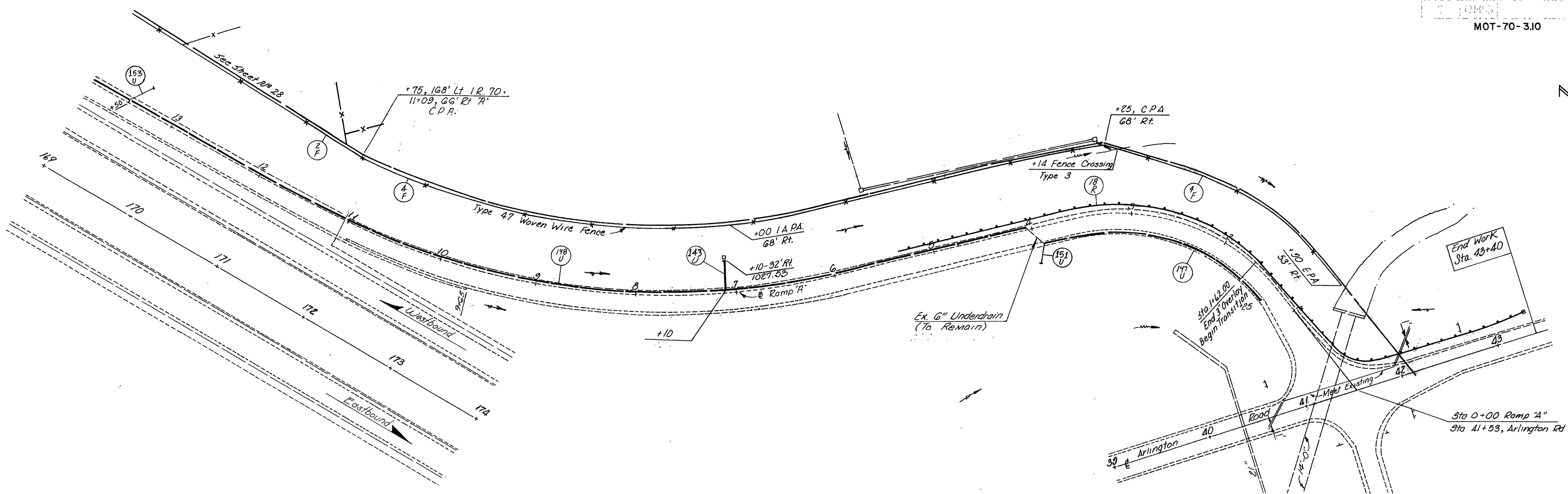
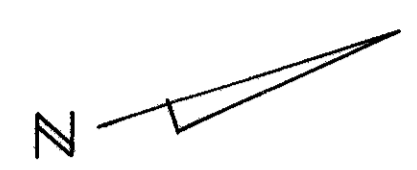
250 0

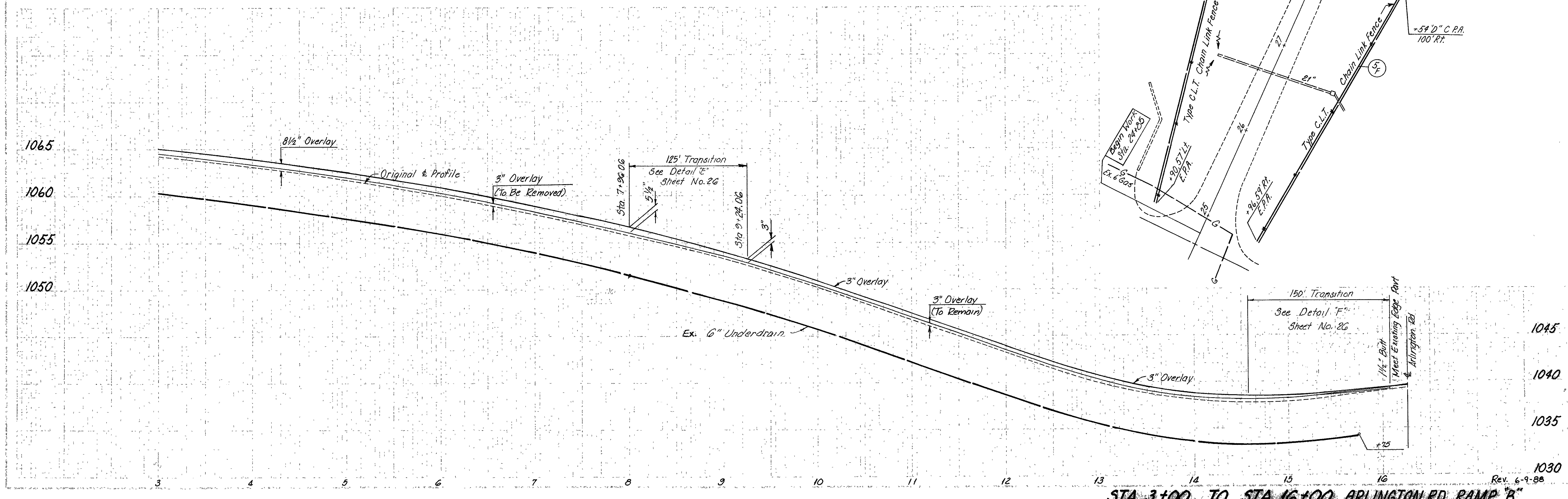
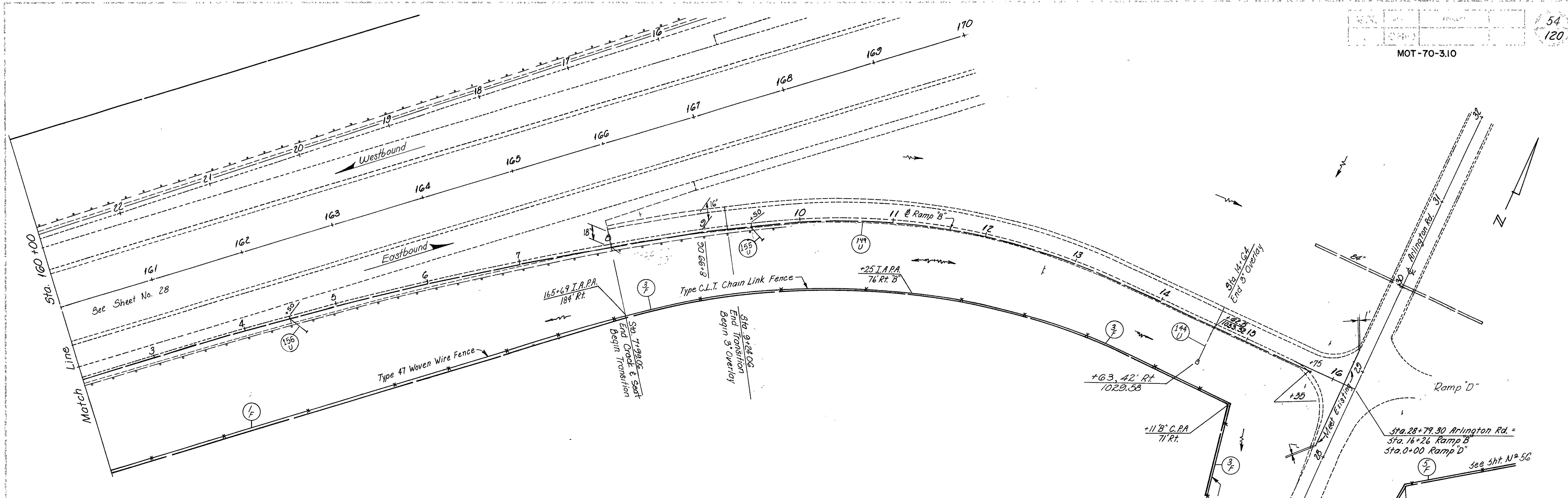
120 100 80 60 40 20 0 20 40 60 80 100 120 Sta. 337+00 73 0

X-SECTIONS STA 338+00 to STA 340+00

MOT-70-3.10

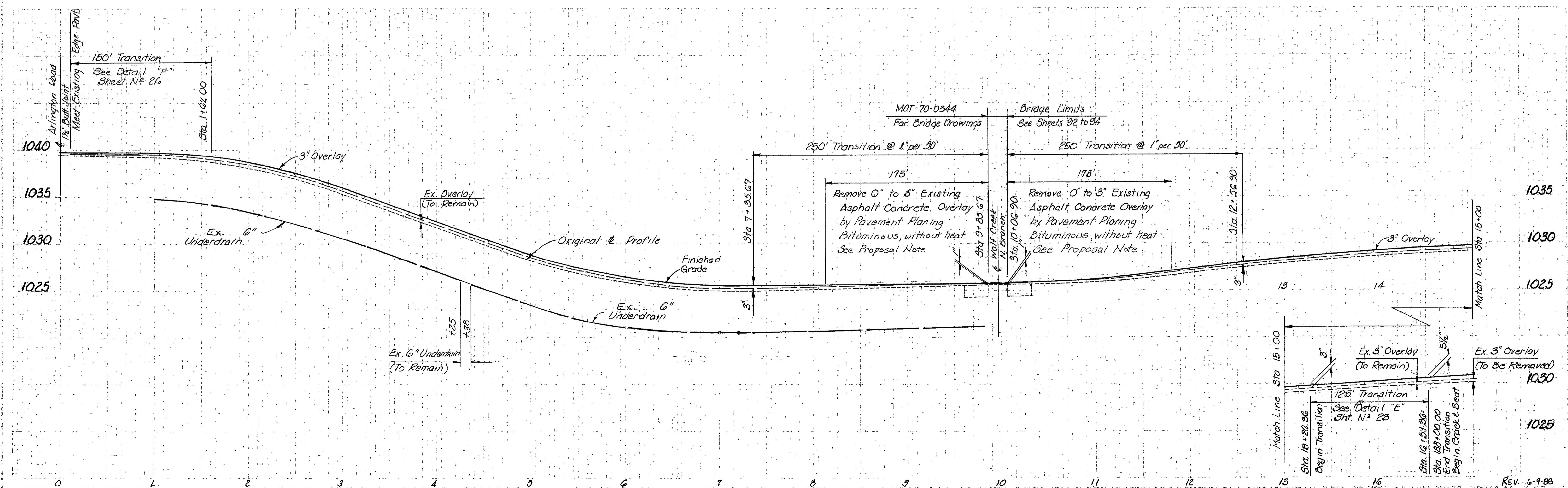
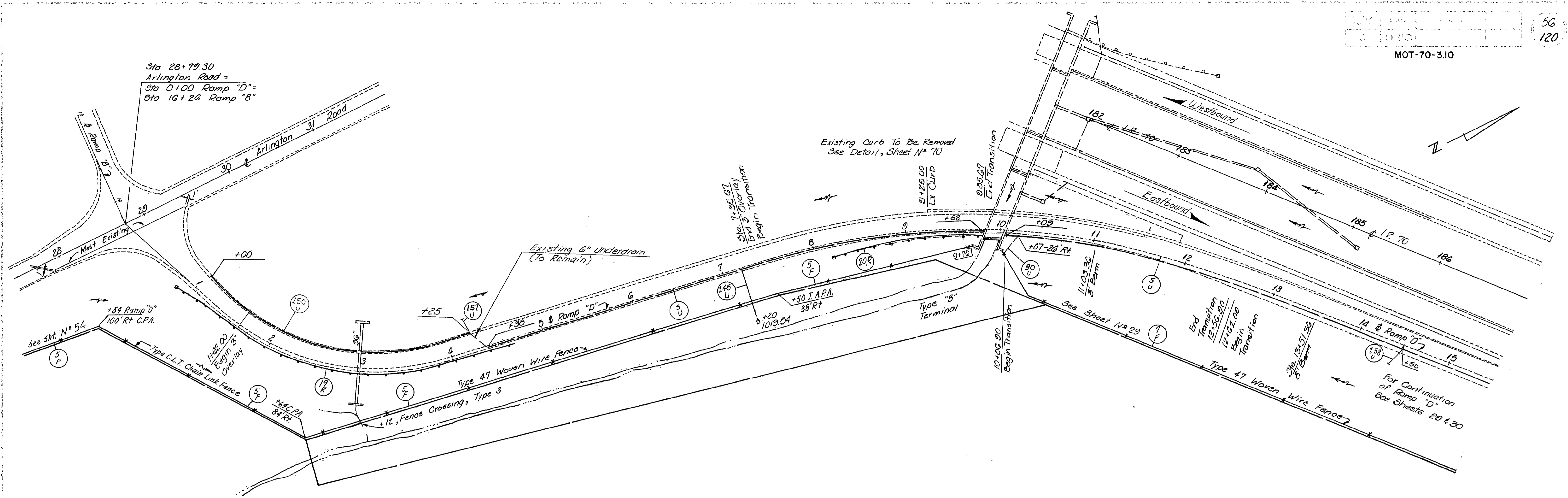


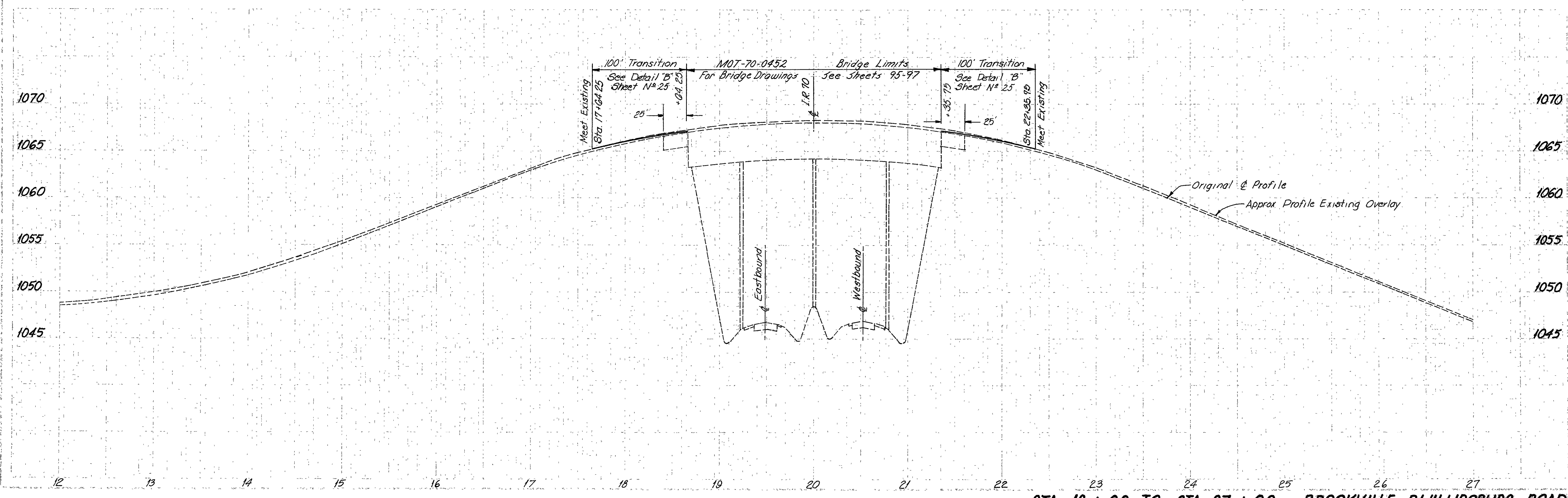
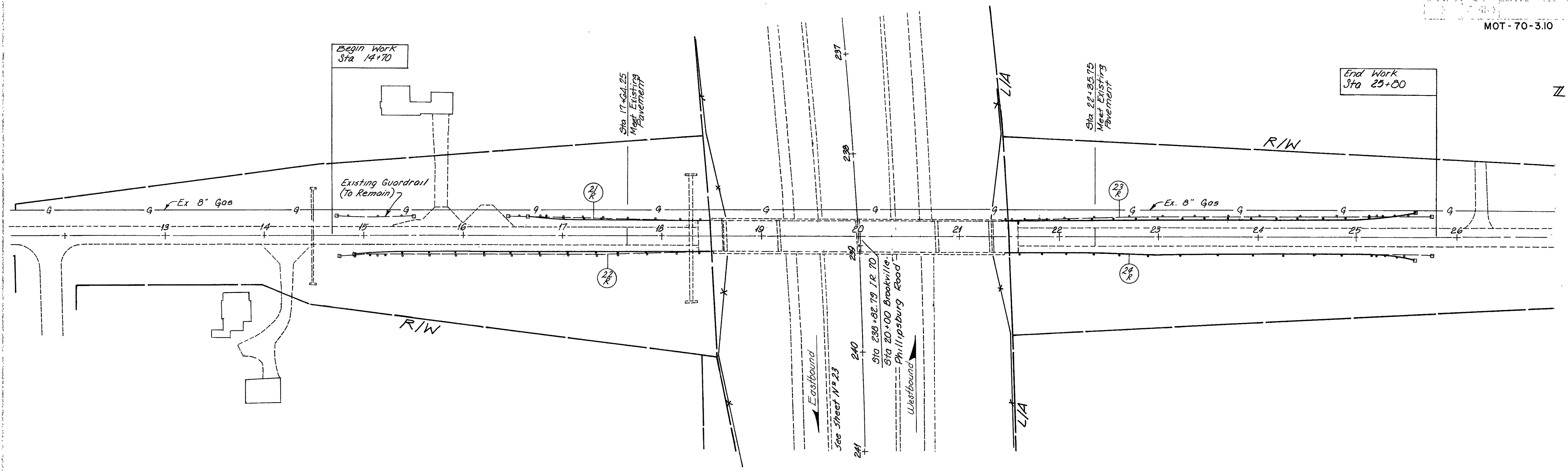


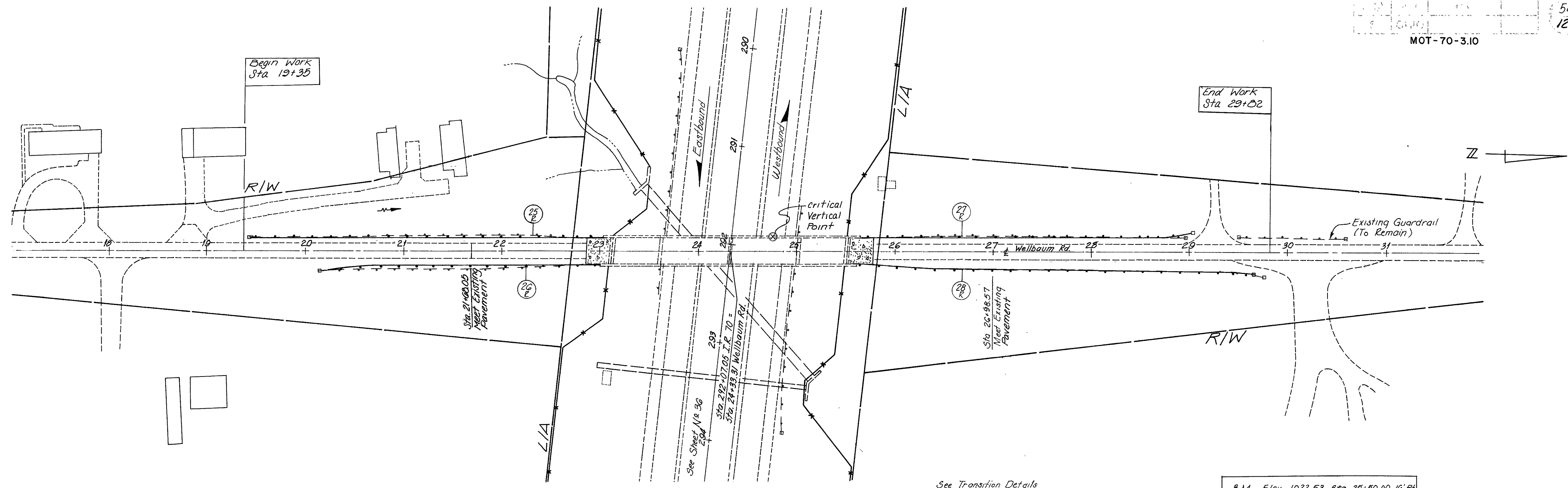






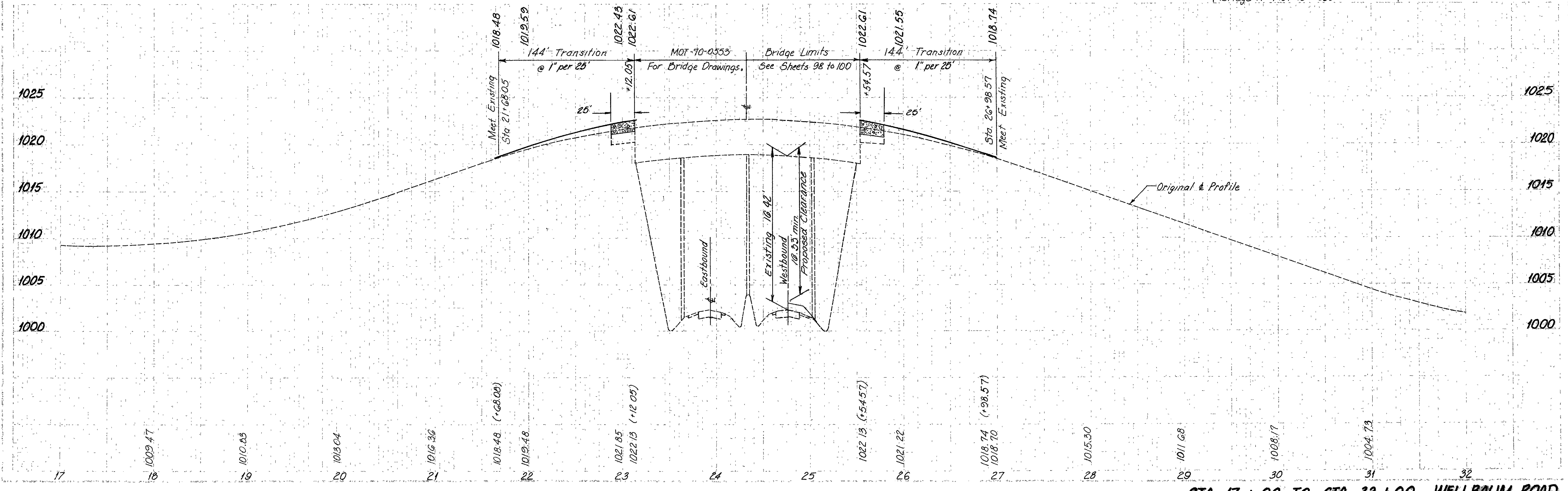


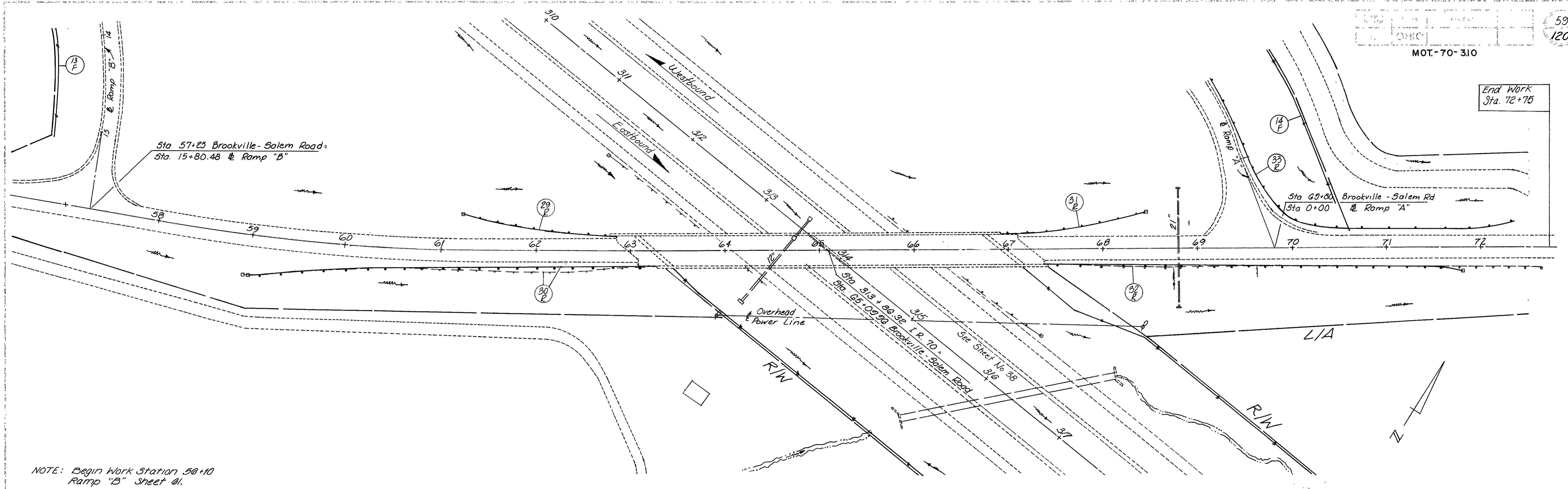




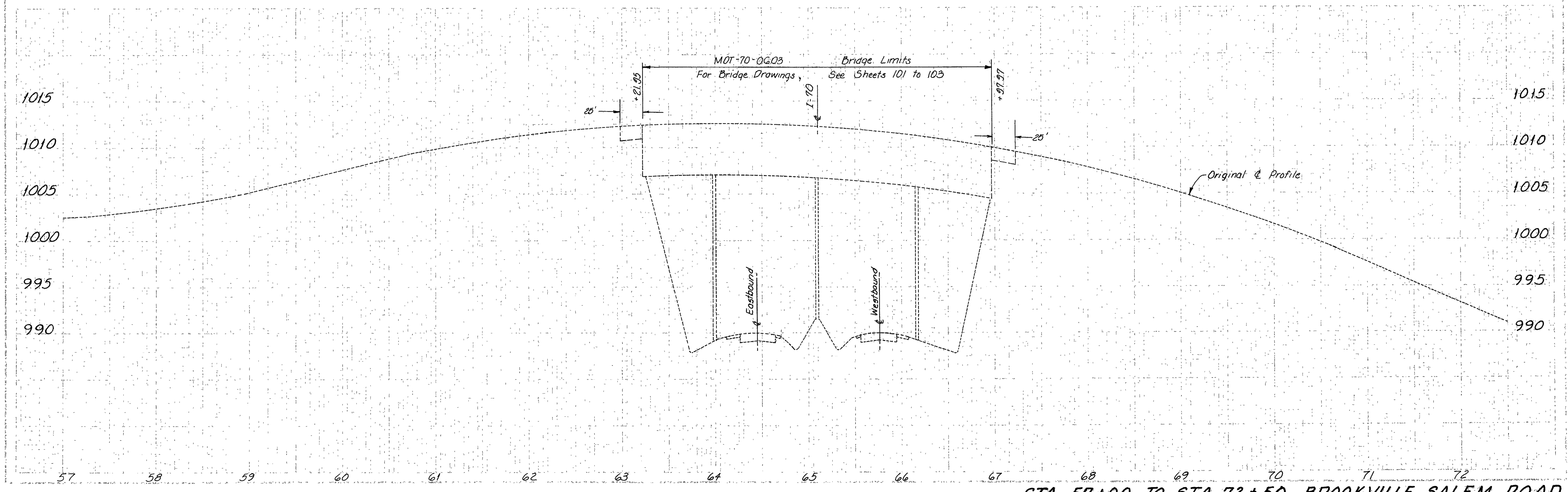
See Transition Details C & D, Sheet No. 25

B.M. Elev. 1022.53 Sta. 25+50.00, 16' RT  
Chiseled Sq NE Cor NE Abut.  
Bridge No. MOT-70-0033

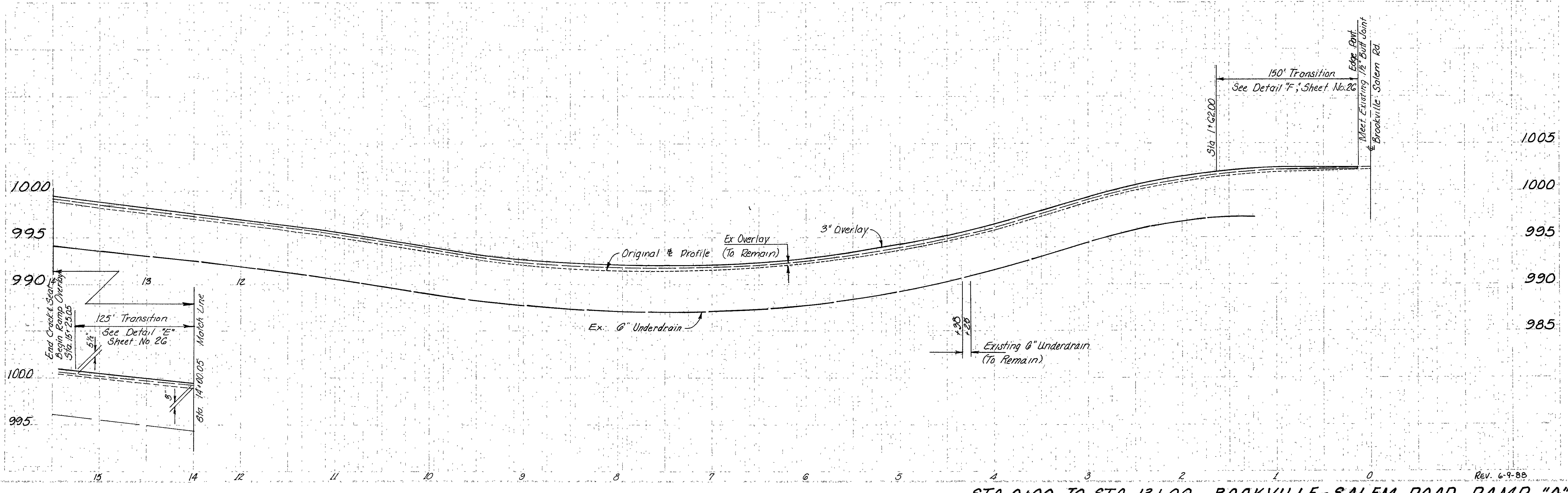
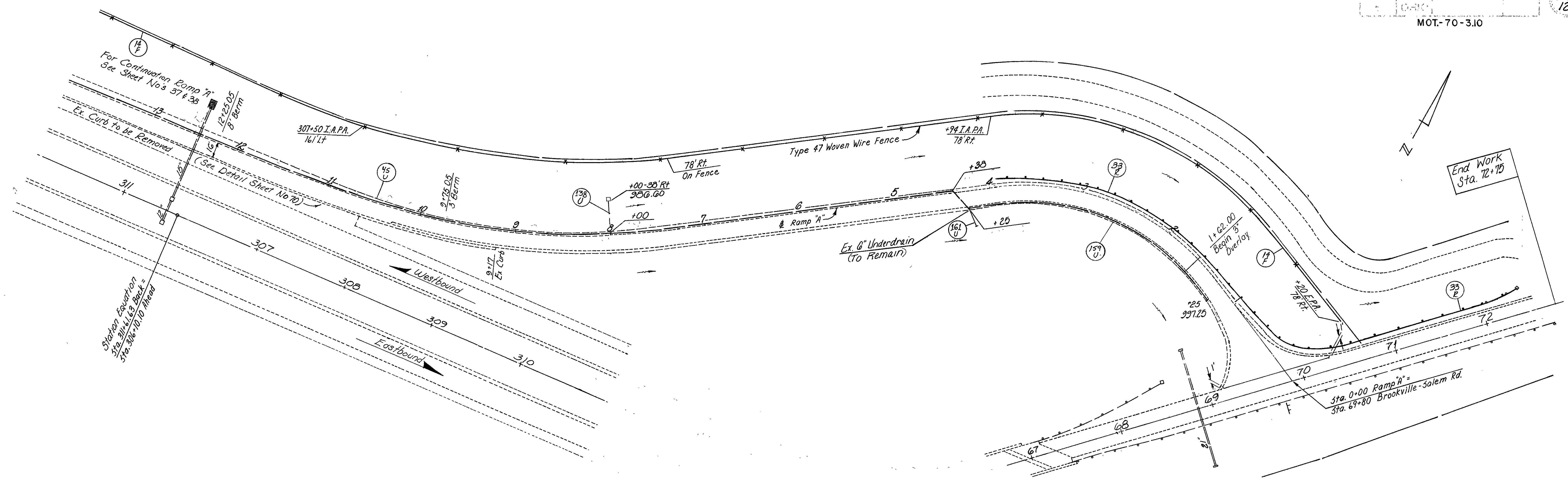


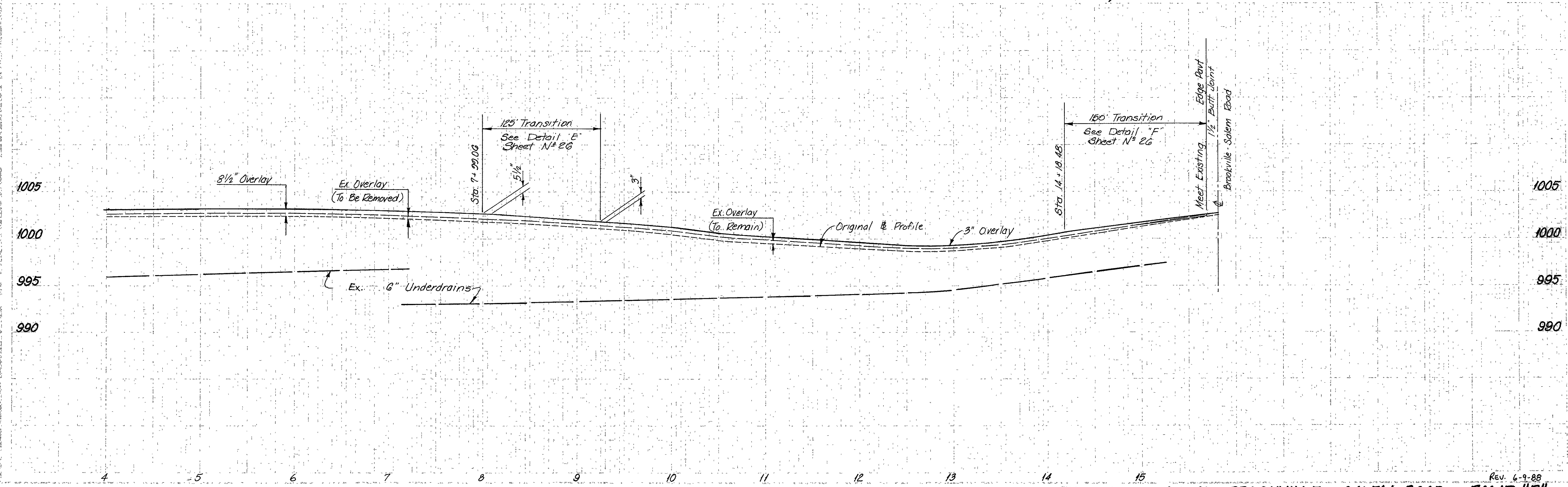
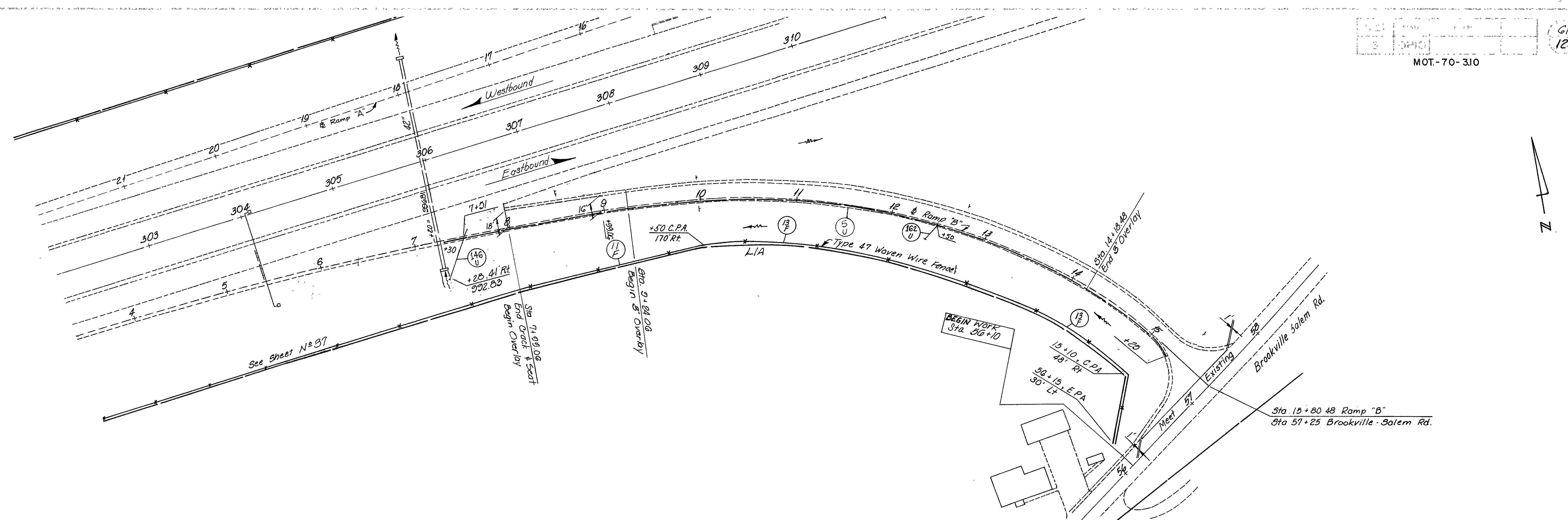


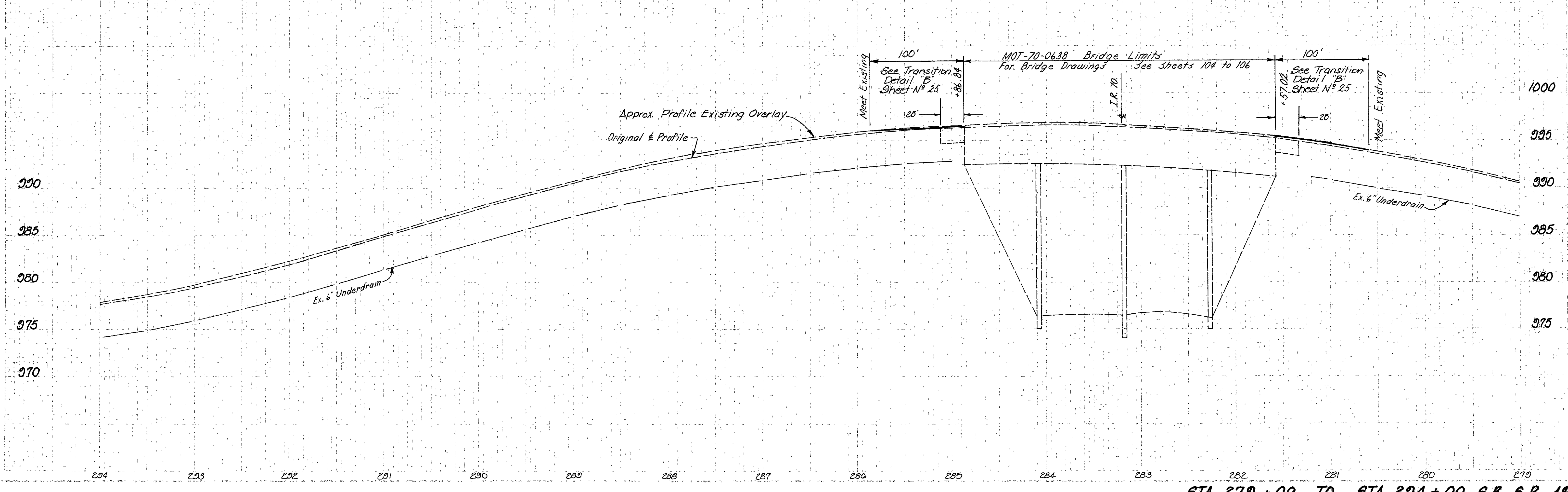
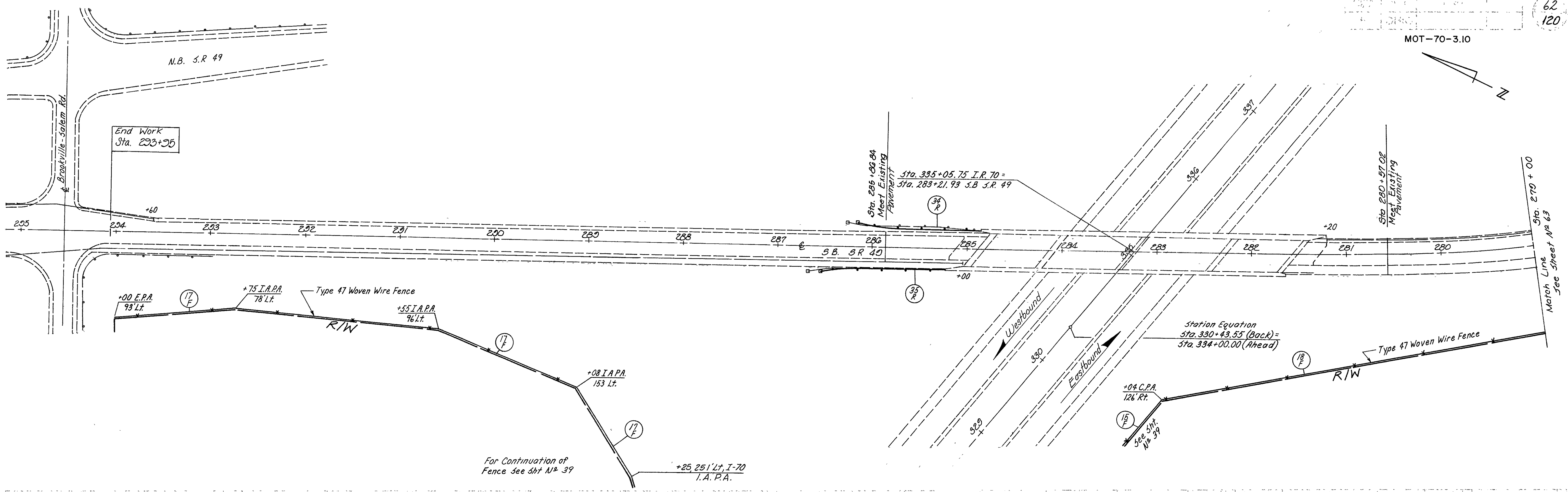
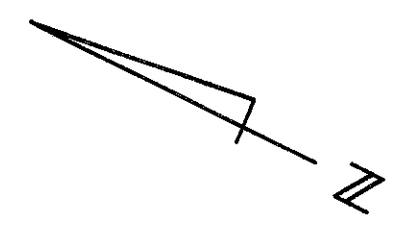
NOTE: Begin Work Station 58+10 Ramp "B" Sheet 01.



STA 57+00 TO STA 72+50 BROOKVILLE SALEM ROAD







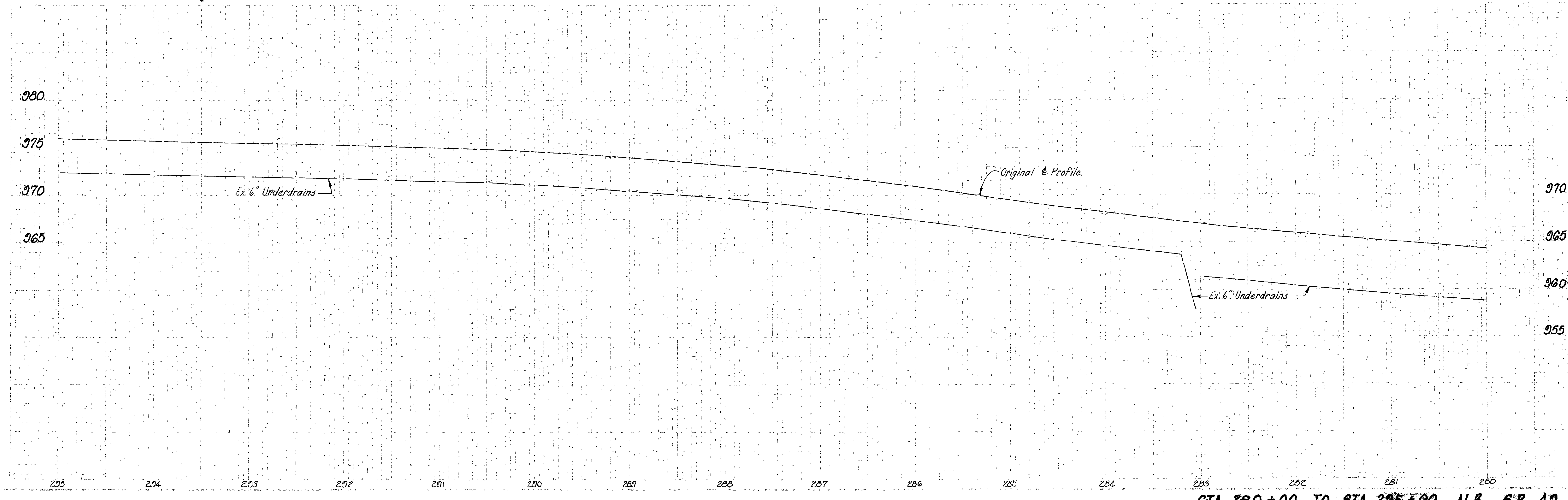
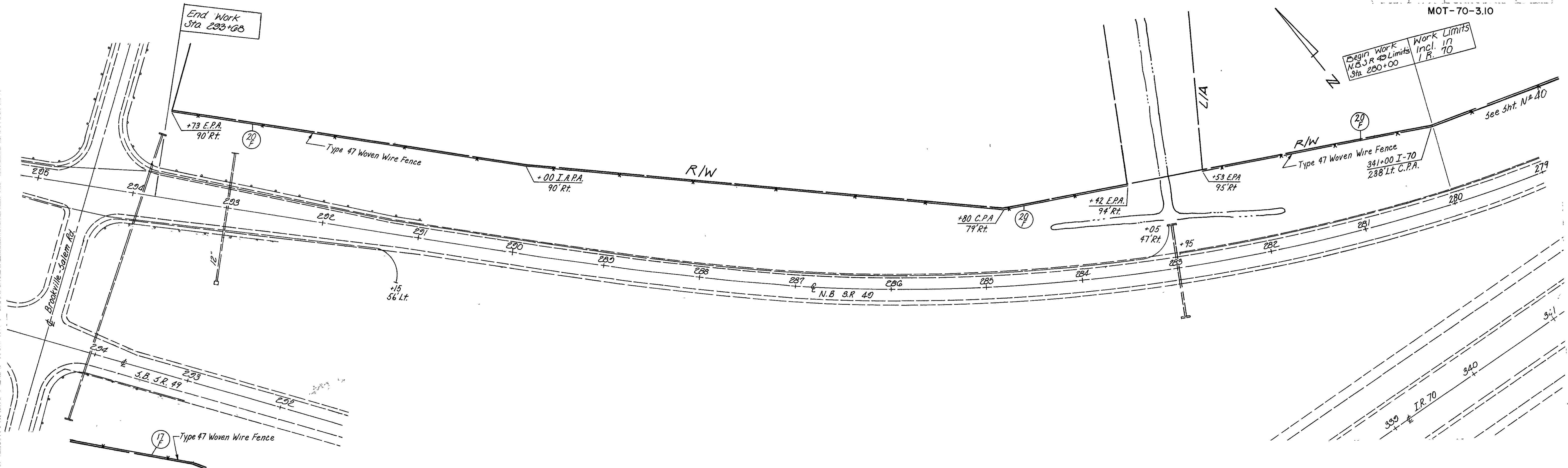




MOT-70-3.10

Begin Work  
N.B. S.R. 49 Limits  
Sta 280+00  
Incl. 17  
R. 70

see Sht. N<sup>o</sup> 40



STA 280+00 TO STA 295+00 N.B. S.R. 49



# FENCE SUB-SUMMARY

LOCATION	SIDE	STATION TO STATION		607 TYPE 47 WOVEN WIRE FENCE											625	202	601
				TYPE		TERMINAL				CROSSING				GROUND ROD	FENCE REMOVED	ROCK CHAIN PROTECTION TYPE "C" W/FILTER	
		PAY QUANTITY	END POST ASSEMBLY	CORNER POST ASSEMBLY	LINE POST ENCASED IN CONCRETE	INTER-ANCHOR POST ASSEMBLY	ABUTMENT CONNECTION	TYPE "A"	TYPE "B"	TYPE "2"	TYPE "3"	EA.	LIN FT				C.Y.
		LIN.FT.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	LIN FT	C.Y.		
1F	Rt.	157+45	165+69	934		1		1	3					1	934		
2F	Lt.	156+30	171+75	1587		1		2	1					1	1587		
Arlington Road Ramp "A"																	
4F	Rt.	0+79	11+09	1028	1	1		1							1028		
Arlington Road Ramp "D"																	
5F	Rt.	2+64 "D"	9+76 "D"	758				1		1					758		
Arlington Road Ramp "C"																	
6F	Rt.	7+61 "C"	15+55 "C"	746	1			1									
7F	Rt.	181+66	238+55	5703		2		9	1		1	1	1	2	5703	6.67	
8F	Lt.	180+00	238+68	4972		1		8	1			1	2	4972			
9F	Rt.	238+92	292+03	5343		5		7	2		1		1	5343	6.67		
10F	Lt.	239+05	291+78	5279		2		8	2			1	1	5279			
11F	Rt.	292+35	308+50	1635		3		3	1		1			1635	6.67		
12F	Lt.	292+10	307+41	1565		3	1	4	1		1	1		1565	6.67		
Brookville Salem Rd. Ramp "B"																	
13F	Rt.	308+50 I.R 70	56+15 Brookville-Salem Rd	550	1	1											
Brookville Salem Rd. Ramp "A"																	
14F	Rt.	0+20 "A"	307+41 I.R 70	1656	1			2									
15F	Rt.	312+63	334+04	1777		1		3	1		2		1	1777	16.00		
16F	Lt.	315+56	326+25	1132		2		3	1		1		1	1162	9.33		
17F	Lt.	326+25 I.R 70	204+00 5B 5R 49	615	1			3									
18F	Rt.	334+04	5B 49 268+60	1544		1		4	1								
19F	Rt.	334+04	5B 49 268+60	630		2		1	2		1				6.67		
20F	Lt.	347+21 I.R 70	NR 49 293+73	1870	3	2		3	1								
Totals				39,324	8	28	1	64	13		2	8	4	10		58.68	
Totals (To General Summary)				39,324										10	3,743	59	

LOCATION	SIDE	STATION TO STATION		607 TYPE CLT CHAIN LINK FENCE											625	202	601	
				TYPE		TERMINAL				CROSSING				GROUND ROD	FENCE REMOVED	ROCK CHAIN PROTECTION TYPE "C" W/FILTER		
		PAY QUANTITY	END POST ASSEMBLY	CORNER POST ASSEMBLY	LINE POST ENCASED IN CONCRETE	INTER-ANCHOR POST ASSEMBLY	ABUTMENT CONNECTION	TYPE "A"	TYPE "B"	TYPE "2"	TYPE "3"	EA.	LIN FT.				C.Y.	
		LIN.FT.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	LIN.FT.	C.Y.				
Arlington Road "Ramp" "B"																		
3F	Rt.	165+69 I.R 70	24+70 Arlington Rd	1000	1	1		2								1000		
Arlington Road Ramp "D"																		
5F	Rt.	24+70 Arlington Rd	2+64 "D"	563	1	2												
Totals				1563	2	3		2								1000		
Totals (To General Summary)				1563													1000	

Computed By: R.L.P.  
 Date: 1-88  
 Checked By: S.E.D.  
 Date: 1-88

Checked By - PRN 6-8-88  
 Calculated By - MSM 6-8-88

# UNDERDRAIN SUB-SUMMARY

FHWA REGION	STATE	PROJECT
5	OHIO	

68  
120

MONTGOMERY COUNTY  
 MOT - 70 - 3.10

PROPOSED UNDERDRAIN TABLE										
STATION TO STATION	LOCATION	SIDE	603	603	603	605	605	605	605	620
			4" CONDUIT TYPE E	6" CONDUIT TYPE E	6" CONDUIT TYPE F	SHALLOW UNDERDRAIN AS PER PLAN	SHALLOW PIPE UNDERDRAINS	DEEP PIPE UDRAINS	4" CONDUIT TYPE B	DELINEATOR TYPE C FLEXIBLE POST
			LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	EACH
<b>WESTBOUND I.R. - 70</b>										
167+49 TO 177+64	42U	LT.				1015				
185+36 TO 188+60	43U	LT.				324				
ARLINGTON RD. RAMP C 15+75 (C) to 0+00 (C)	44U	LT.								
196+61 TO 235+37	"	LT.				5451				
BROOKVILLE-SALEM RD. RAMP A 15+25 (A) to 4+38 (A)	45U	LT.								
242+13 TO 308+69	"	LT.				7743				
308+71 TO 327+02	46U	LT.				2383				
338+67 TO 343+70	47U	LT.				503				
157+61 TO 177+64	48U	RT.				2003				
185+36 TO 235+37	49U	RT.				5001				
242+13 TO 327+02	50U	RT.				9041				
238+23 TO Ex. C.B.	51U	RT.		8	10					
177+64 TO 181+40	52U	LT.				376				
177+64 TO 181+40	53U	RT.				376				
181+64 TO 185+36	54U	RT.				372				
181+64 TO 185+36	55U	LT.				372				
235+37 TO 238+23	56U	RT.				286				
238+27 TO 242+13	57U	RT.				386				
235+37 TO 242+13	58U	LT.				676				
327+02 TO 335+72	59U	LT.				514				
336+00 TO 338+67	60U	LT.				267				
327+02 TO 334+43	61U	RT.				385				
180+83 TO EX. CATCH BASIN	62U	RT.		32	10					
181+15 TO OUTLET	63U	LT.		30	10					1
181+85 TO OUTLET	64U	LT.		34	10					1
182+17 TO EX. CATCH BASIN	65U	RT.		31	10					
242+13 TO OUTLET	66U	LT.		12	10					
335+72 TO OUTLET	67U	LT.		18	10					
338+67 TO OUTLET	68U	LT.		18	10			24'		
334+43 TO EX. CATCH BASIN	69U	RT.		3	10					1
174+00 TO OUTLET	70U	LT.	25		10					1
177+64 TO OUTLET	71U	LT.	25		10			24'		1
185+36 TO OUTLET	72U	LT.	10		10			24'		1
204+00 TO OUTLET	73U	LT.	10		10					1
210+00 TO OUTLET	74U	LT.	10		10					1
222+50 TO OUTLET	75U	LT.	10		10					1
235+37 TO OUTLET	76U	LT.	12		10			24'		1
252+00 TO OUTLET	77U	LT.	12		10					1
257+00 TO OUTLET	78U	LT.	12		10					1
262+00 TO OUTLET	79U	LT.	12		10					1
267+00 TO OUTLET	80U	LT.	12		10					1
278+50 TO OUTLET	81U	LT.	12		10					1
283+50 TO OUTLET	82U	LT.	12		10					1
288+50 TO OUTLET	83U	LT.	12		10					1
300+50 TO OUTLET	84U	LT.	12		10					1
309+50 TO OUTLET	85U	LT.	12		10					1
315+00 TO OUTLET	86U	LT.	12		10					1
327+02 TO OUTLET	87U	LT.	12		10					1
343+70 TO EX. C.B.	88U	LT.	12		10					1

PROPOSED UNDERDRAIN TABLE										
STATION TO STATION	LOCATION	SIDE	603	603	603	605	605	605	605	620
			4" CONDUIT TYPE E	6" CONDUIT TYPE E	6" CONDUIT TYPE F	SHALLOW UNDERDRAIN AS PER PLAN	SHALLOW PIPE UNDERDRAINS	DEEP PIPE UDRAINS	4" CONDUIT TYPE B	DELINEATOR TYPE C FLEXIBLE POST
			LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	EACH
<b>EASTBOUND I.R. - 70</b>										
157+88 TO 173+79	1U	LT.				1591				
185+36 TO 311+26	2U	LT.				13,142				
315+74 TO 328+90	3U	LT.				1316				
165+81 TO 173+79	4U	RT.				798				
ARLINGTON RD. RAMP D 4+38 (D) TO 16+51 (D)	5U	RT.								
188+00 TO 299+68	"	RT.				13,805				
BROOKVILLE-SALEM RD. RAMP B 1401 (B) TO 15+25 (B)	"	RT.								
306+66 TO 311+26	6U	RT.				1012				
315+74 TO 328+90	7U	RT.				1316				
338+28 TO 342+01	8U	RT.				373				
173+79 TO 181+40	9U	RT.							761	
181+64 TO 187+98	10U	RT.							634	
173+79 TO 181+40	11U	LT.							761	
181+64 TO 185+36	12U	LT.							372	
311+26 TO 315+74	13U	RT.							448	
311+26 TO 313+48	14U	LT.							222	
313+52 TO 315+74	15U	LT.							222	
328+90 TO 334+44	16U	RT.							198	
328+90 TO 334+48	17U	LT.							202	
334+25 TO 338+28	18U	RT.							403	
168+88 TO OUTLET	19U	RT.	30		10					
173+79 TO OUTLET	20U	RT.	20		10				24'	1
202+50 TO OUTLET	21U	RT.	30		10					1
211+50 TO OUTLET	22U	RT.	30		10					1
224+00 TO OUTLET	23U	RT.	30		10					1
235+00 TO OUTLET	24U	RT.	30		10					1
241+00 TO OUTLET	25U	RT.	30		10					1
251+25 TO OUTLET	26U	RT.	30		10					1
260+15 TO OUTLET	27U	RT.	30		10					1
268+25 TO OUTLET	28U	RT.	30		10					1
276+50 TO OUTLET	29U	RT.	30		10					1
300+00 TO OUTLET	30U	RT.	30		10					1
306+50 TO OUTLET	31U	RT.	30		10					1
311+26 TO OUTLET	32U	RT.	20		10				24'	1
328+90 TO OUTLET	33U	RT.	15		10				24'	1
342+00 TO OUTLET	34U	RT.	10		10					1
181+04 TO EX. CATCH BASIN	35U	LT.		30	10				24'	
181+96 TO EX. CATCH BASIN	36U	LT.		30	10					
182+00 TO EX. CATCH BASIN	37U	RT.		22	10					
315+70 TO OUTLET	38U	RT.	20		10				24'	1
334+23 TO OUTLET	39U	RT.	35		10					1
334+41 TO EX. CATCH BASIN	40U	LT.	4		10					
338+00 TO OUTLET	41U	RT.	10		10					1
313+48 TO EX. C.B.	163U	LT.	5		10					
<b>Totals - This Sheet</b>			<b>671</b>	<b>342</b>	<b>520</b>	<b>70,827</b>	<b>4223</b>	<b>72</b>	<b>144</b>	<b>39</b>

# UNDERDRAIN SUB-SUMMARY

FHWA REGION	STATE	PROJECT	69 120
5	OHIO		

MONTGOMERY COUNTY  
MOT - 70 - 3.10

EXISTING UNDERDRAIN OUTLET REPLACEMENT TABLE						
STATION	LOCATION	SIDE	603	603	603	620
			4" CONDUIT TYPE E 707.15	6" CONDUIT TYPE E	6" CONDUIT TYPE F	DELINEATOR TYPE C FLEXIBLE POST
			LIN.FT.	LIN.FT.	LIN.FT.	EACH
<b>WESTBOUND I.R. - 70</b>						
168+89.5	1180	RT.	3	10	10	
ARLINGTON RD. 11+00 (C)	1190	LT.	3	21	10	1
191+11	1200	RT.	3	7	10	
198+15	1210	LT.	3	11	10	
198+12	1220	RT.	3	10	10	
207+11	1230	RT.	3	8	10	
216+00	1240	RT.	3	10	10	
216+11	1250	RT.	3	9	10	
247+16	1260	RT.	3	4	10	
247+05	1270	LT.	3	47	10	
255+43	1280	RT.	3	2	10	
263+93	1290	RT.	3	2	10	
272+31	1300	RT.	3	3	10	
272+25	1310	LT.	3	25	10	1
280+43	1320	RT.	3	2	10	
287+93	1330	RT.	3	4	10	
295+23	1340	LT.	3	35	10	1
295+79	1350	LT.	3	38	10	1
295+41	1360	RT.	3	2	10	
295+59	1370	RT.	3	9	10	
BROOKVILLE-SALEM RD. 8+00 (A)	1380	LT.	3	28	10	1
311+41	1390	RT.	3	2	10	
313+43	1400	RT.	3	2	10	
320+91	1410	LT.	3	40	10	1
321+06	1420	RT.	3	2	10	
<b>ARLINGTON RD. RAMP A</b>						
7+10	1430	RT.	3	9	10	1
<b>ARLINGTON RD. RAMP B</b>						
14+63	1440	RT.	3	29	10	1
<b>ARLINGTON RD. RAMP D</b>						
7+20	1450	RT.	3	46	10	1
<b>BROOKVILLE - SALEM RD. RAMP B</b>						
7+51	1460	RT.	3	45	10	1
<b>TOTALS</b>			87	462	290	10

Calculated By - MSM 6-8-88  
Checked By - PRN 6-8-88

EXISTING UNDERDRAIN OUTLET REPLACEMENT TABLE							
STATION	LOCATION	SIDE	603	603	603	603	620
			4" CONDUIT TYPE E 707.15	6" CONDUIT TYPE F	6" CONDUIT TYPE E	4" Conduit Type E	DELINEATOR TYPE C FLEXIBLE POST
			LIN.FT.	LIN.FT.	LIN.FT.	Lin. Ft.	EACH
<b>EASTBOUND I.R. - 70</b>							
168+88	890	LT.	3'	10'	10'		
ARLINGTON RD. 10+19 (D)	900	RT.	3'	10'	14'		1
ARLINGTON RD. 19+69 (D)	910	RT.	3'	10'	14'		
191+12	920	LT.	3'	10'	12'		
198+12	930	LT.	3'	10'	10'		
ARLINGTON RD. 26+65 (D)	940	RT.	3'	10'	10'		
207+12	950	LT.	3'	10'	10'		
207+15	960	RT.	3'	10'	17'		
216+12	970	LT.	3'	10'	10'		
216+15	980	RT.	3'	10'	7'		
238+18	990	LT.	3'	10'	16'		
247+16	1000	LT.	3'	10'	15'		
247+01	1010	RT.	3'	10'	45'		1
255+41	1020	LT.	3'	10'	3'		
255+03	1030	RT.	3'	10'	78'		1
263+91	1040	LT.	3'	10'	3'		
263+85	1050	RT.	3'	10'	17'		
272+31	1060	LT.	3'	10'	3'		
272+22	1070	RT.	3'	10'	38'		1
280+41	1080	LT.	3'	10'	3'		
280+24	1090	RT.	3'	10'	40'		1
287+91	1100	LT.	3'	10'	3'		
287+72.5	1110	RT.	3'	10'	30'		
293+08	1120	RT.	3'	10'	60'		1
293+68	1130	RT.	3'	10'	62'		1
311+43	1140	LT.	3'	10'	6'		
295+50	1150	LT.	3'	10'	4'		
321+08	1160	LT.	3'	10'			
320+91	1170	RT.	3'	10'	40'		1
<b>TOTALS</b>			87	290	580		8

Totals from First Table	87	290	462	10			
Totals from Sheet 68		520	342	671	39	70,827	4223
Totals from Sheet 69A		110		110	11	4599	
<b>GRAND TOTAL</b>	<b>174</b>	<b>1210</b>	<b>1384</b>	<b>781</b>	<b>68</b>	<b>75,426</b>	<b>4223</b>

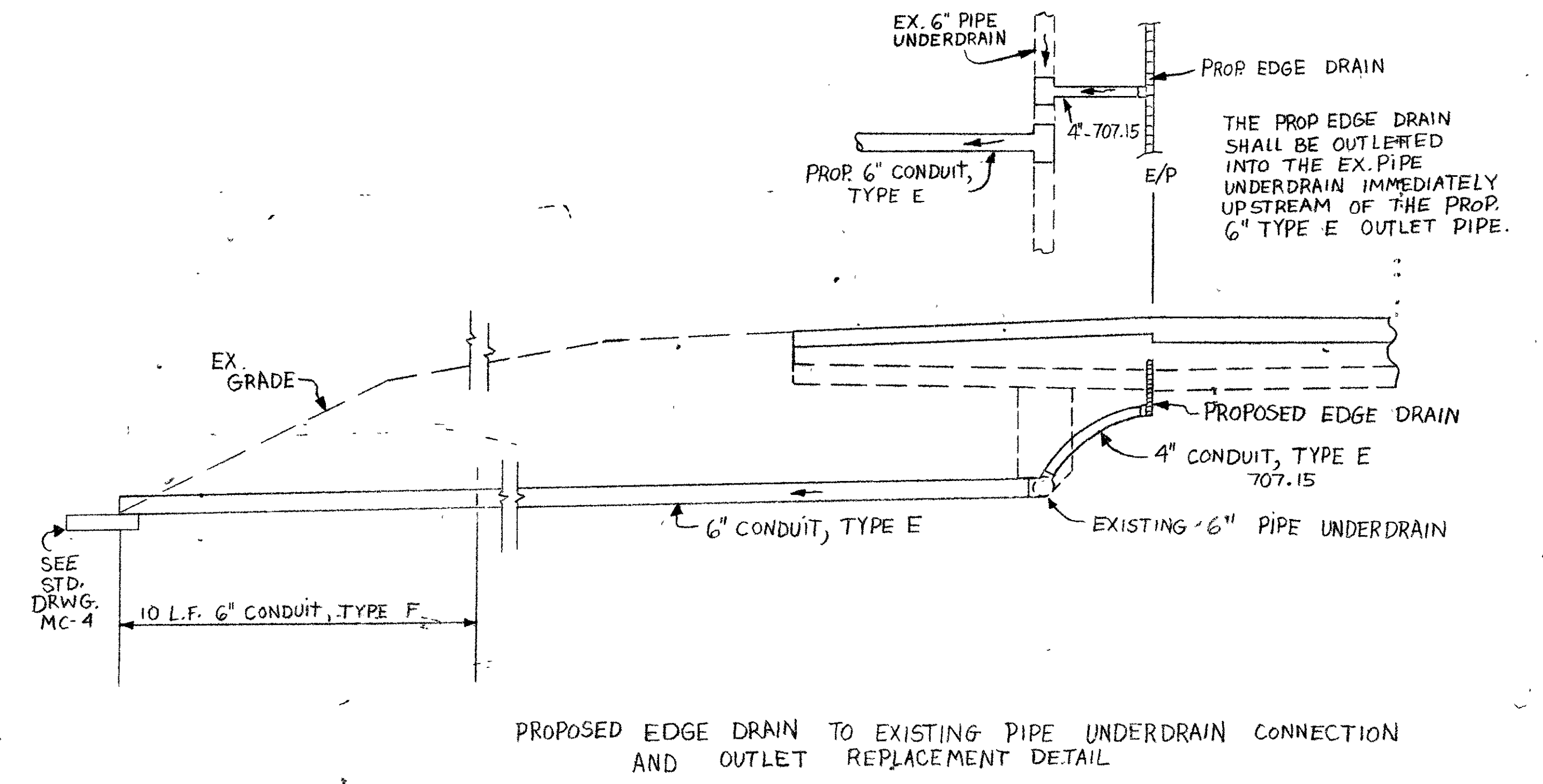
605	605	605	605
SHALLOW UNDERDRAIN AS PER PLAN	SHALLOW PIPE UNDERDRAINS	DEEP PIPE UNDERDRAINS	4" CONDUIT TYPE B
LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.

# UNDERDRAIN SUB-SUMMARY

MONTGOMERY COUNTY  
MOT - 70 - 3.10

PROPOSED UNDERDRAIN TABLE									
STATION TO STATION	LOCATION	SIDE	603	603	603	605	605	605	620
			4" CONDUIT TYPE E	6" CONDUIT TYPE E	6" CONDUIT TYPE F	SHALLOW UNDERDRAIN AS PER PLAN	SHALLOW PIPE UNDERDRAINS	DEEP PIPE UNDERDRAINS	DELINEATOR TYPE C FLEXIBLE POST
			LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	EACH
<b>ARLINGTON RD.</b>									
1+25 (A) TO 3+95 (A)	1470	LT.				270			
RAMP A: 4+05 (A) TO 25+46 (A)	1480	RT.				2141			
RAMP B: 0+12 (B) TO 15+75 (B)	1490	RT.				1563			
RAMP D: 1+00 (D) TO 4+25 (D)	1500	LT.				325			
3+95 (A) TO OUTLET	1510	LT.	10		10				1
19+50 (A) TO OUTLET	1520	LT.	10		10				1
13+50 (A) TO OUTLET	1530	LT.	10		10				1
4+50 (B) TO OUTLET	1540	RT.	10		10				1
9+50 (B) TO OUTLET	1550	RT.	10		10				1
4+50 (C) TO OUTLET	1560	LT.	10		10				1
4+25 (D) TO OUTLET	1570	LT.	10		10				1
14+50 (D) TO OUTLET	1580	RT.	10		10				1
<b>BROOKVILLE - SALEM RD.</b>									
RAMP A: 1+25 (A) TO 4+25 (A)	1590	LT.				300			
14+00 (A) TO OUTLET	1600	LT.	10		10				1
4+25 (A) TO OUTLET	1610	LT.	10		10				1
12+50 (B) TO OUTLET	1620	RT.	10		10				1
<b>TOTALS</b>			<b>110</b>		<b>110</b>	<b>4599</b>			<b>11</b>

Quantities Carried To Sheet 69

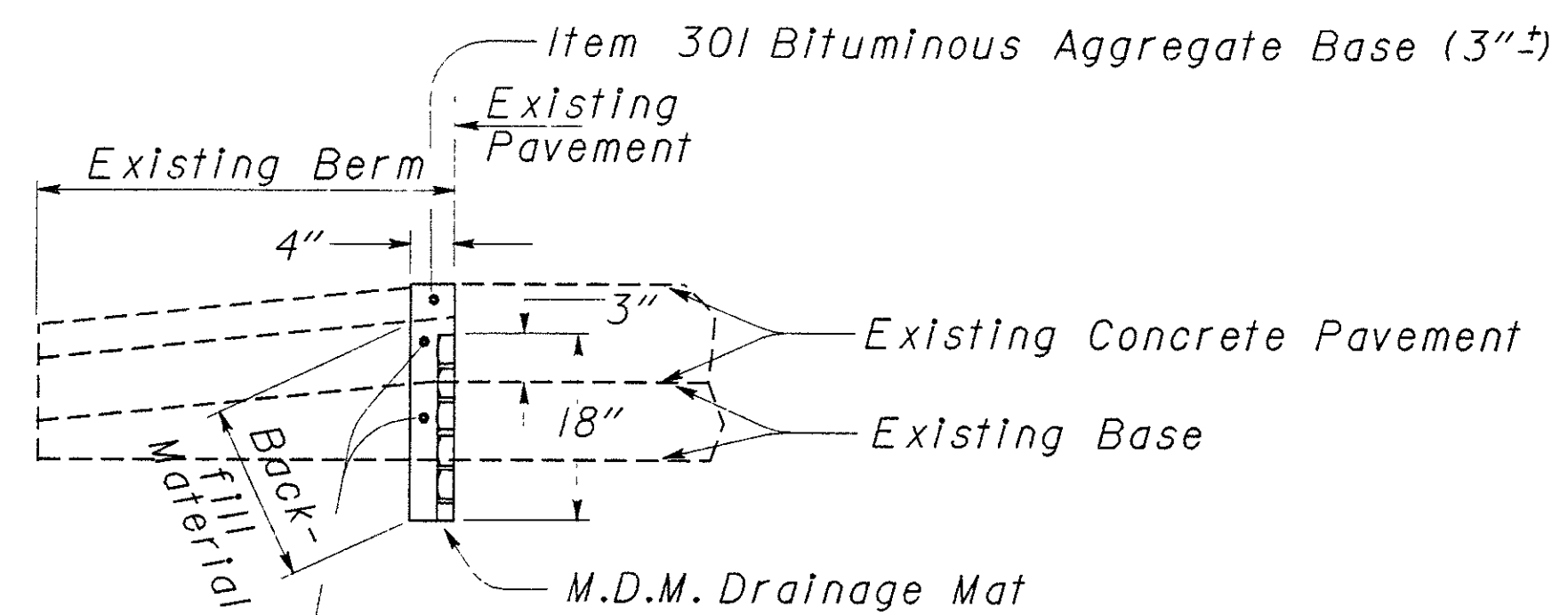


Calculated By - MSM 6-8-88  
Checked By - PRN 6-8-88

--	--	--	--

69B  
120

MOT-70-3.10



Recompacted excavated material. No material over 2" in size will be permitted.

NOTE: The cost of the excavation, embankment and Item 301 to be included in the unit price bid per Lin. Ft. of Item 605 Shallow Underdrain, as per plan.

DESCRIPTION: This item shall consist of furnishing and installing the pipe underdrain system in accordance with these specifications, as shown on the plans, and as directed by the Engineer.

MATERIALS: The underdrain shall be the Monsanto Drainage Mat (MDM) as produced by the Monsanto Company of St. Louis, Missouri. The tradename for the MDM system is Hydraway.

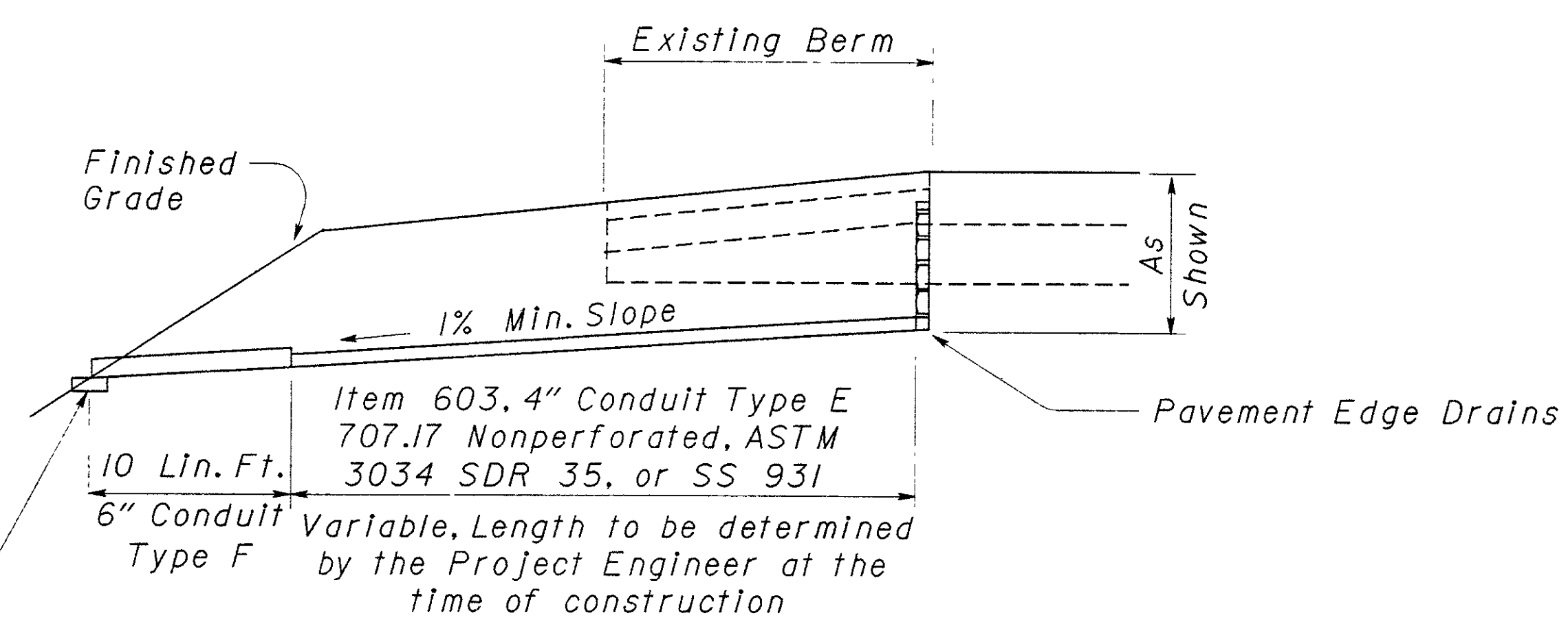
CONSTRUCTION: The MDM shall be installed in a trench as shown on the plans and in accordance with the manufacturer's recommendations. Backfill the trench with the excavated trench material placed in two (2) layers and each layer compacted to a density of not less than 90% of the maximum dry weight density. Place the first layer of the backfill material simultaneously with the trenching operation to hold the mat flush against the trench wall.

Splice the MDM, as required prior to placing it in the trench, using the kit furnished by the manufacturer and in accordance with the manufacturer's directions. All material required for the splice will be supplied in the kit but any equipment required shall be furnished by the Contractor.

Place the underdrain outlets in accordance with Item 603 as directed by the Engineer, using outlet fittings. Monsanto will supply outlet fittings which will make the transition between the MDM system and a standard 4" diameter pipe. Install fittings as recommended by the manufacturer.

METHOD OF MEASUREMENT: Completed and accepted underdrains (MDM System) will be measured by the linear foot in place.

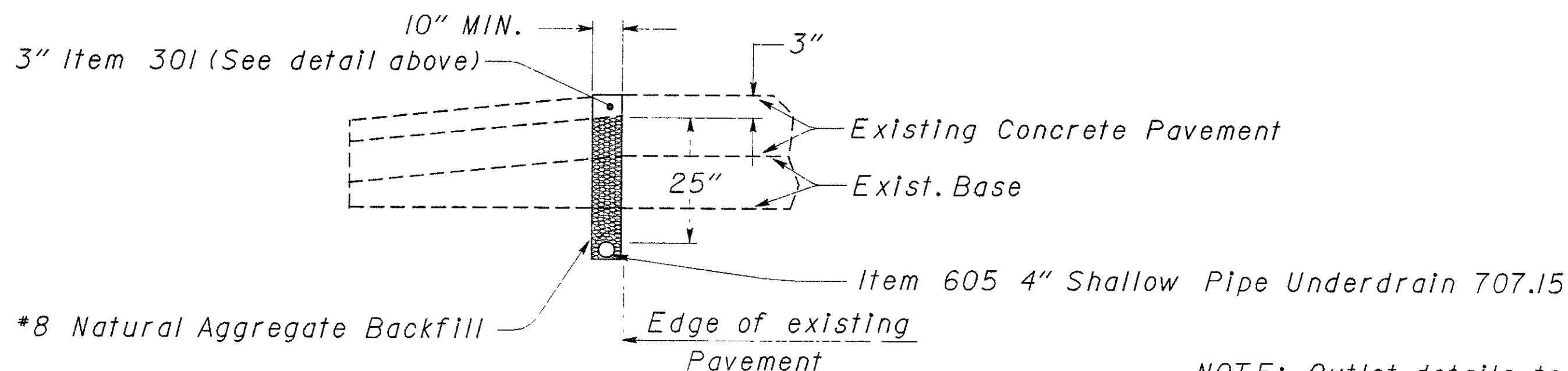
BASIS OF PAYMENT: Work completed and accepted under this item and measured will be paid for at the contract unit price bid per linear foot for Item 605 - Shallow Underdrain, as per plan. Which price shall be full compensation for excavation and backfill; for furnishing materials, including material for splices and outlet fittings; for all labor, tools, equipment, and incidentals necessary to complete the work.



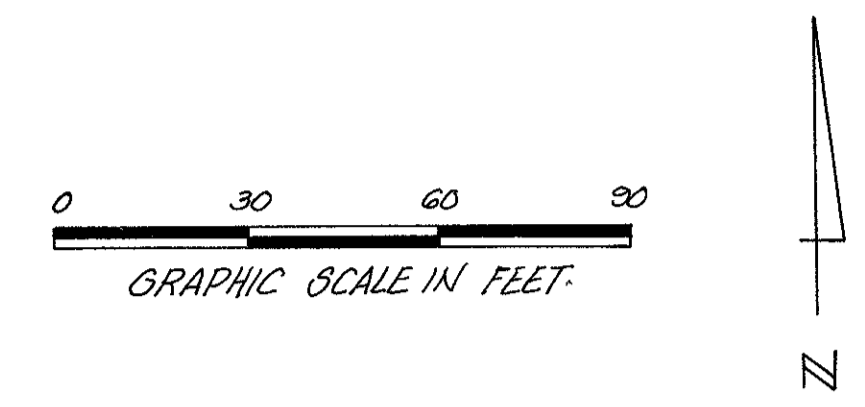
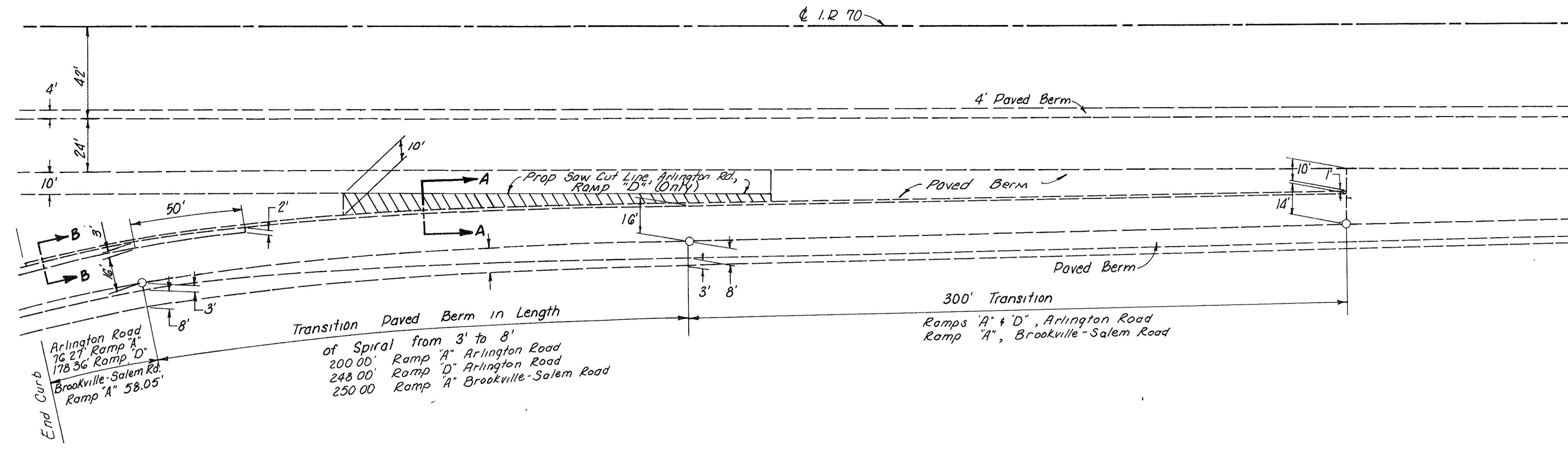
NOTE: For erosion control pad and animal guard see Std. Drwg. MC-4.

ALTERNATE SYSTEM

In lieu of the M.D.M. Underdrain System, Item 605 4" Shallow Pipe Underdrain in accordance with details shown in the plans may be used. Basis of payment will be the same.

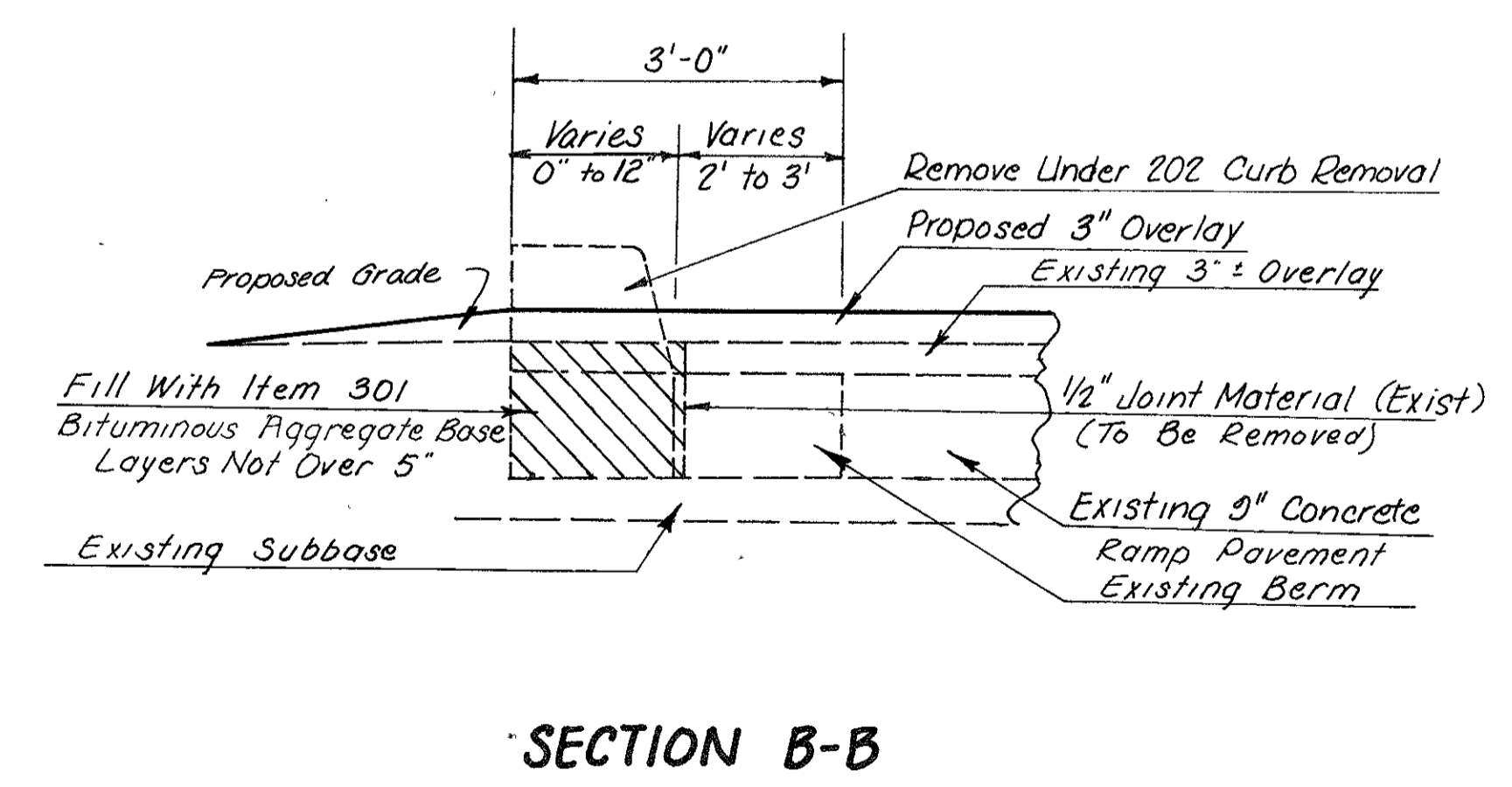
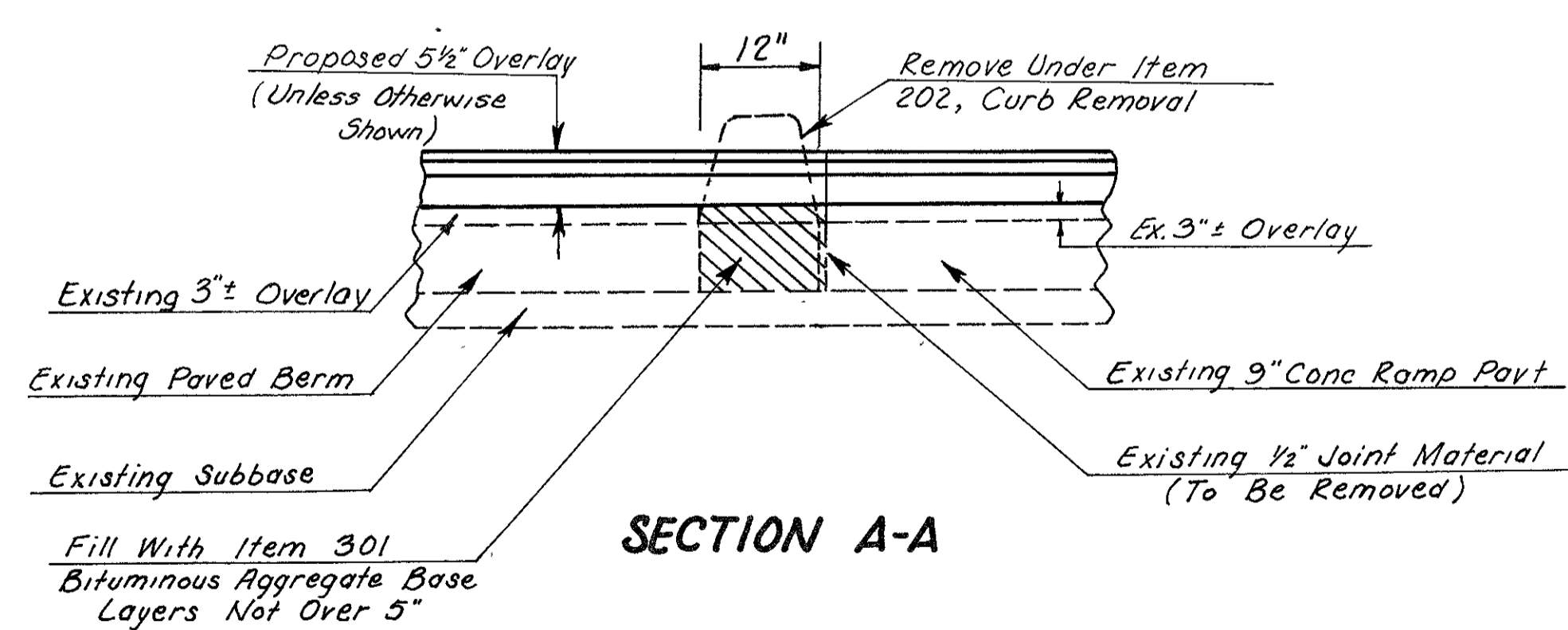


NOTE: Outlet details to be the same as shown above.



LEGEND

Variable Depth Overlay (Min. 3", Max 5 1/2")  
 Ramp "D" Arlington Road (Only)  
 Sta 183+47 to Sta 185+36 = 18900'  
 Quantities included in calculations



From Sheet	LOCATION	SIDE	STATION		202	301
			FROM	TO	Curb Removed	Bituminous Aggregate Base
№					Lin. Ft.	Cu. Yds.
	Arlington Road					
53	Ramp "A"	Lt.	9+65.00	15+41.27	576.27	21.40
56	Ramp "D"	Lt.	9+25.00	9+85.67	60.67	2.25
56	Ramp "D"	Lt.	10+06.90	10+51.36	644.46	23.90
56	Ramp "D"	Rt.	9+79.67	9+85.67	6.00	0.23
59	Brookville-Salem Rd.					
60	Ramp "A"	Lt.	9+17.00	15+25.05	608.05	22.52
Totals To General Summarys					1895	71

CALCULATION ITEM 301

Arlington Road  
 Ramp "A" 200.00' (-) 50.00' + 300.00' \* 1.04 (12 1/2%) \* 1.00 (12') = 27 = 17.33 C.Y.  
 Ramp "D" 248.00' (-) 50.00' + 300.00' \* 1.04 (12 1/2%) \* 1.00 (12') = 27 = 19.18 C.Y.  
 Ramp "D", Rt. 6' \* 1.04 \* 1.00 = 27 = 0.23 C.Y.  
 Brookville-Salem Road  
 Ramp "A" 250.00' (-) 50.00' + 300.00' \* 1.04 (12 1/2%) \* 1.00 (12') = 27 = 19.25 C.Y.

CALCULATION ITEM 301

Arlington Road  
 Ramp "A" 50.00' \* 76.27' \* 0.87 (10 1/2%) \* 1.00 (12') = 27 = 4.07 C.Y.  
 Ramp "D" 50.00' \* 178.36' \* 0.87 (10 1/2%) \* 1.00 (12') = 27 = 6.67 C.Y.  
 (21.23 = Bridge Limits, Ramp "D")  
 Brookville-Salem Road  
 Ramp "A" 50.00' \* 58.05' \* 0.87 (10 1/2%) \* 1.00 (12') = 27 = 3.48 C.Y.

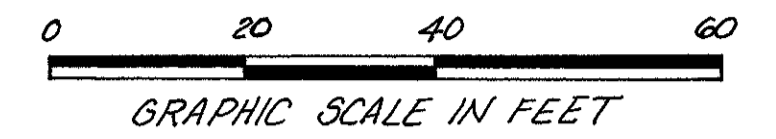
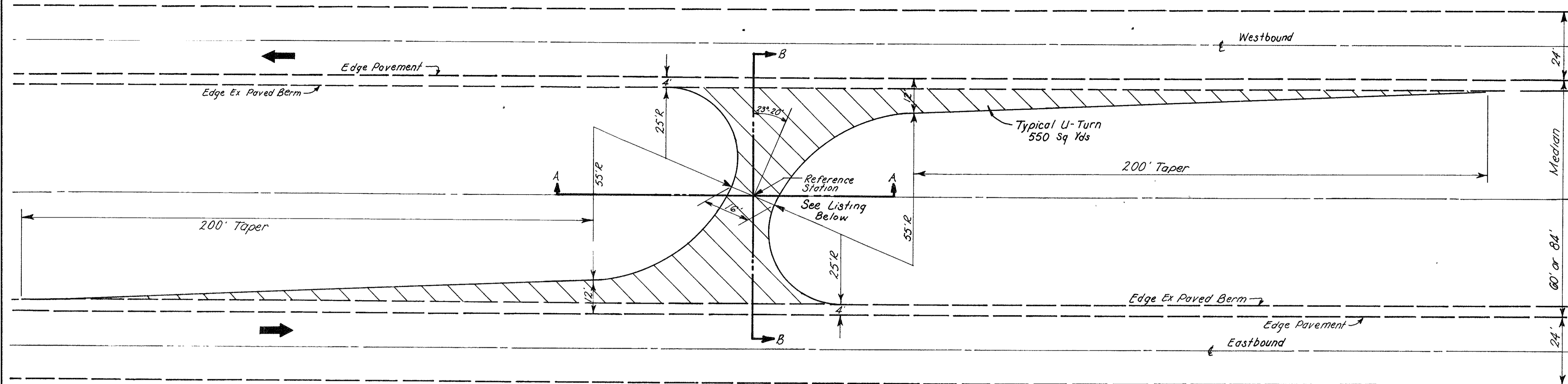


COMPUTED BY S.E.D. DATE 7-9-87  
 CHECKED BY S.L.K. DATE 10-09-87

F H W A REGION	STATE	PROJECT	
5	OHIO		

71  
120

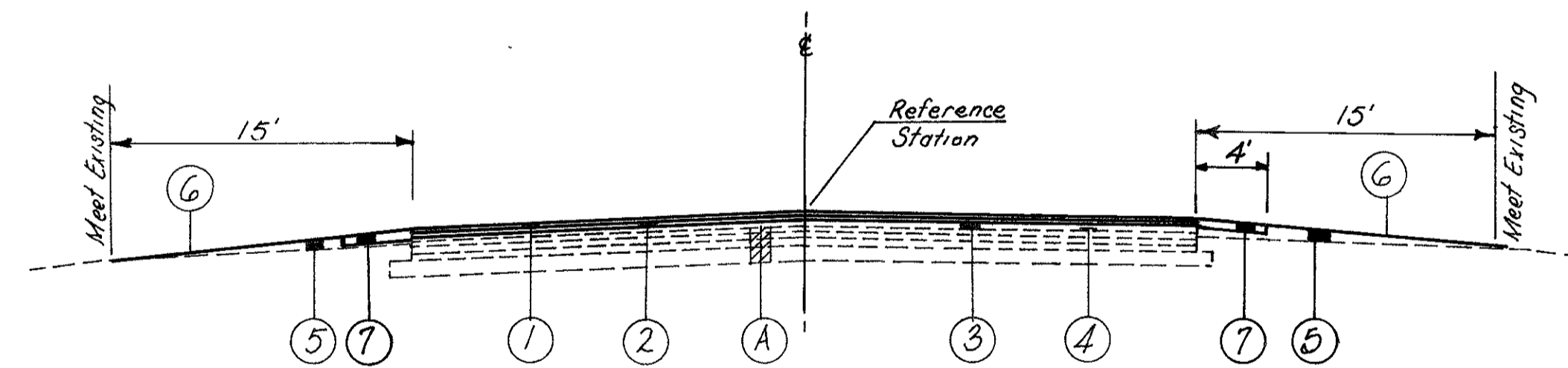
MOT - 70 - 310



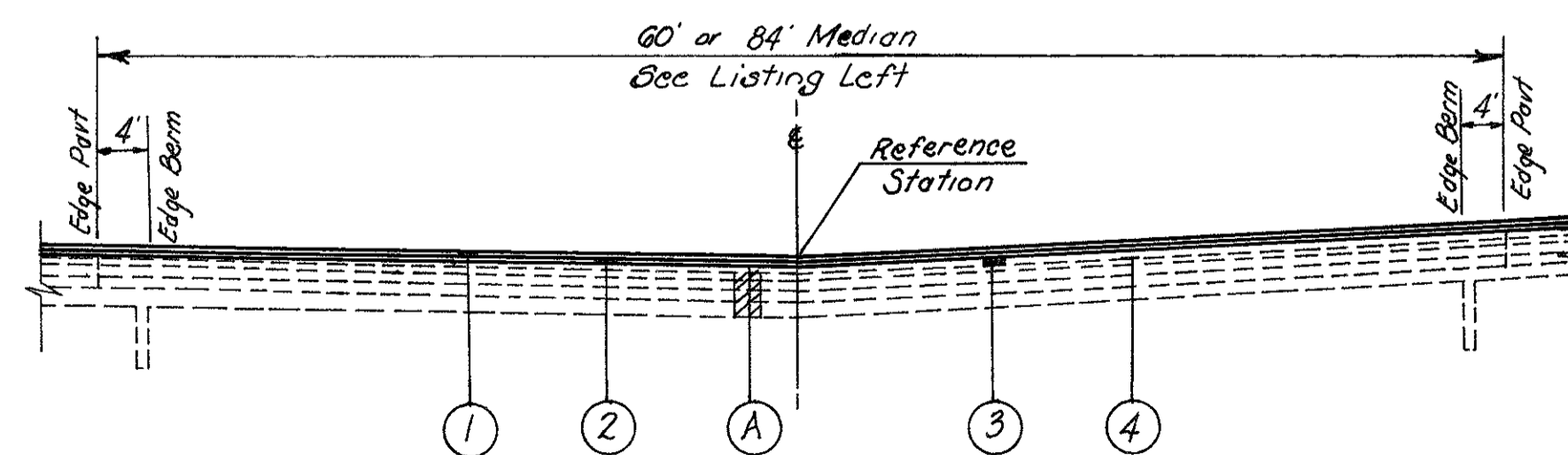
PLAN  
Scale

REFERENCE STATIONS

- STA. 206 + 53 ~ 84' Median
- STA. 280 + 05 ~ 60' Median



SECTION A-A  
No Scale



SECTION B-B  
No Scale

PAVEMENT LEGEND

- ① ITEM 846 1 1/2" Asphalt Concrete Surface Course, Type 1, AC 20
- ② ITEM 846 2" Asphalt Concrete Intermediate Course, Type 2, AC 20
- ③ ITEM 301 2" Bituminous Aggregate Base, AC 20
- ④ ITEM 407 Tack Coat, as per plan
- ⑤ ITEM 203 Embankment
- ⑥ ITEM 659 Seeding & Mulching
- ⑦ ITEM 617 4" Compacted Aggregate
- Ⓐ Existing Pavement (To Remain)

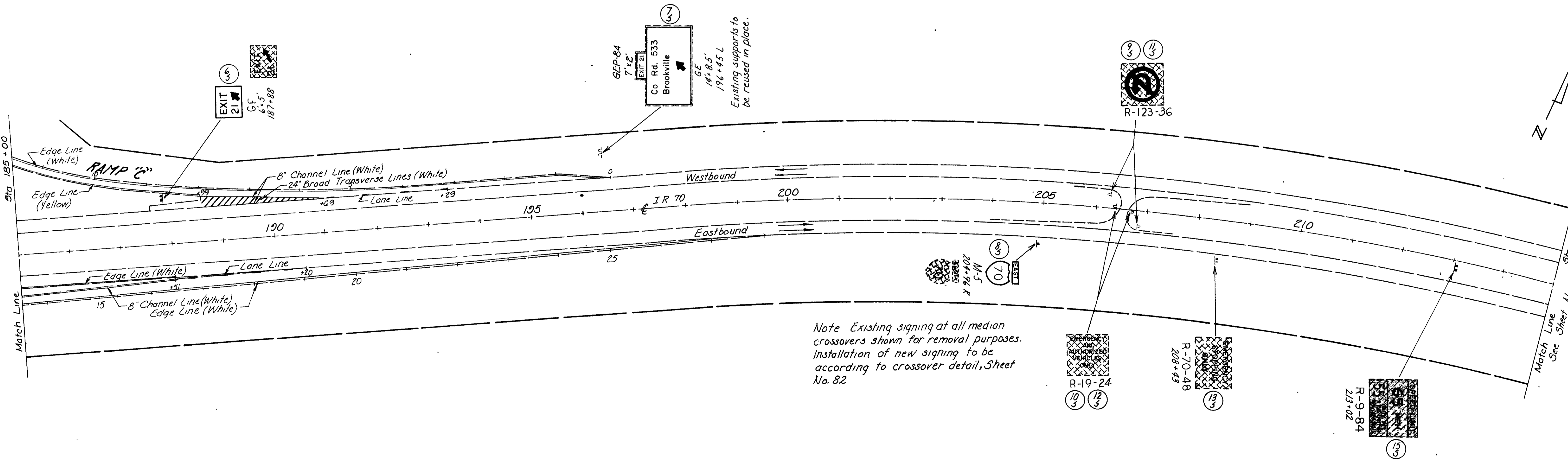
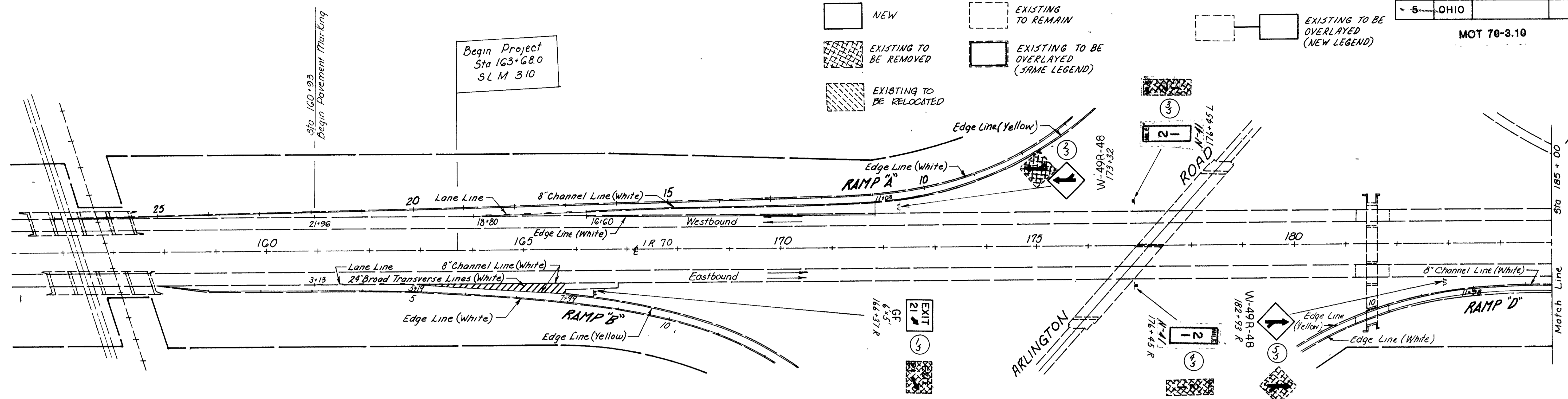
PAVEMENT CALCULATIONS

ITEM	Qty. Ea.	No.	Total to General Summary
846, Type 1			
550 x 1.5 = 36	= 22.9 C.Y. (84' Median)	2	46 C.Y.
(-) 24 x 16 x 1.5 = 36	= (-) 16 C.Y. (deduct for 1-60' Median)		(-) 16 C.Y.
			30 C.Y. (Total)
846, Type 2			
550 x 2.0 = 36	= 30.6 C.Y. (84' Median)	2	62 C.Y.
(-) 24 x 16 x 2.0 = 36	= (-) 21.3 C.Y. (deduct for 1-60' Median)		(-) 21 C.Y.
			41 C.Y. (Total)
407, Tack Coat			
550 x 0.075	= 41.3 Gal. (84' Median)	2	83 Gal.
(-) 24 x 16 x 0.075	= (-) 28.8 Gal. (deduct for 1-60' Median)		(-) 29 Gal.
			54 Gal. (Total)
203 Embankment (Included in Mainline)			41 C.Y. (Total)
301 Bituminous Aggregate Base (Same Calc. as 846, Type 2)			
659 Seeding & Mulching (Included in Mainline)			
617 Compacted Aggregate (Included in Mainline)			



**Sign Legend**

- NEW
- EXISTING TO REMAIN
- EXISTING TO BE REMOVED
- EXISTING TO BE OVERLAYED (SAME LEGEND)
- EXISTING TO BE RELOCATED
- EXISTING TO BE OVERLAYED (NEW LEGEND)

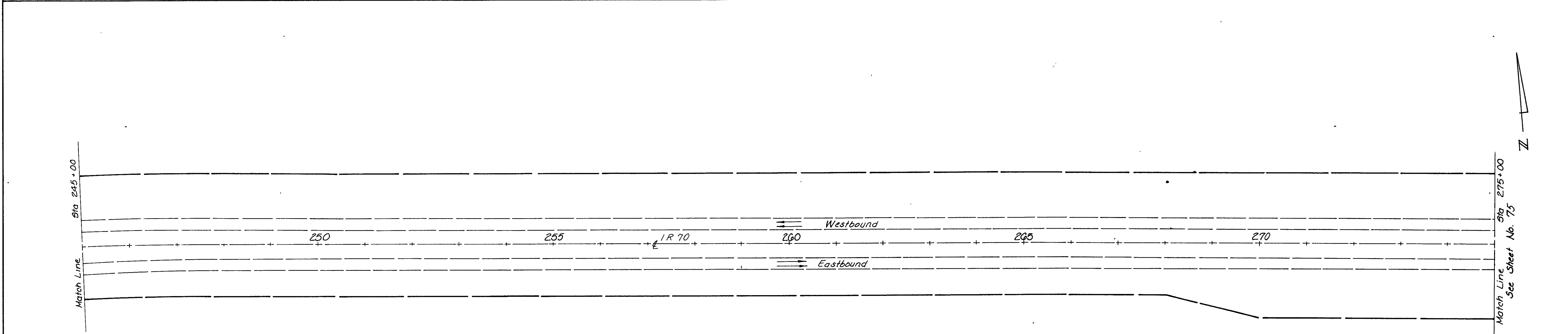
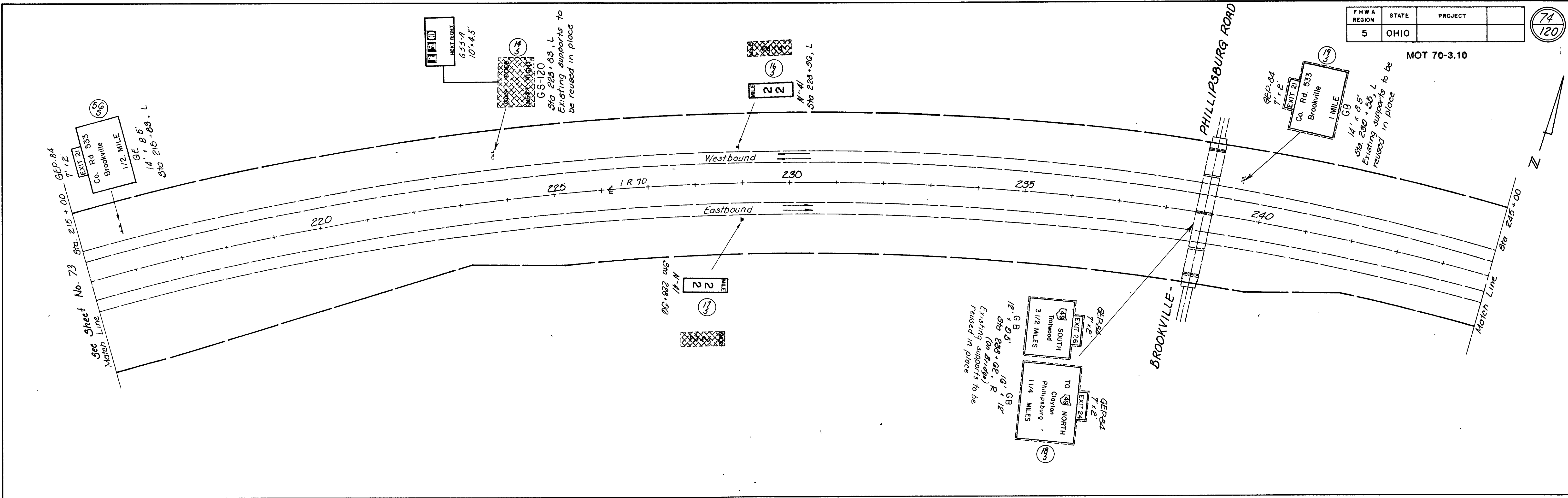


Note Existing signing at all median crossovers shown for removal purposes. Installation of new signing to be according to crossover detail, Sheet No. 82

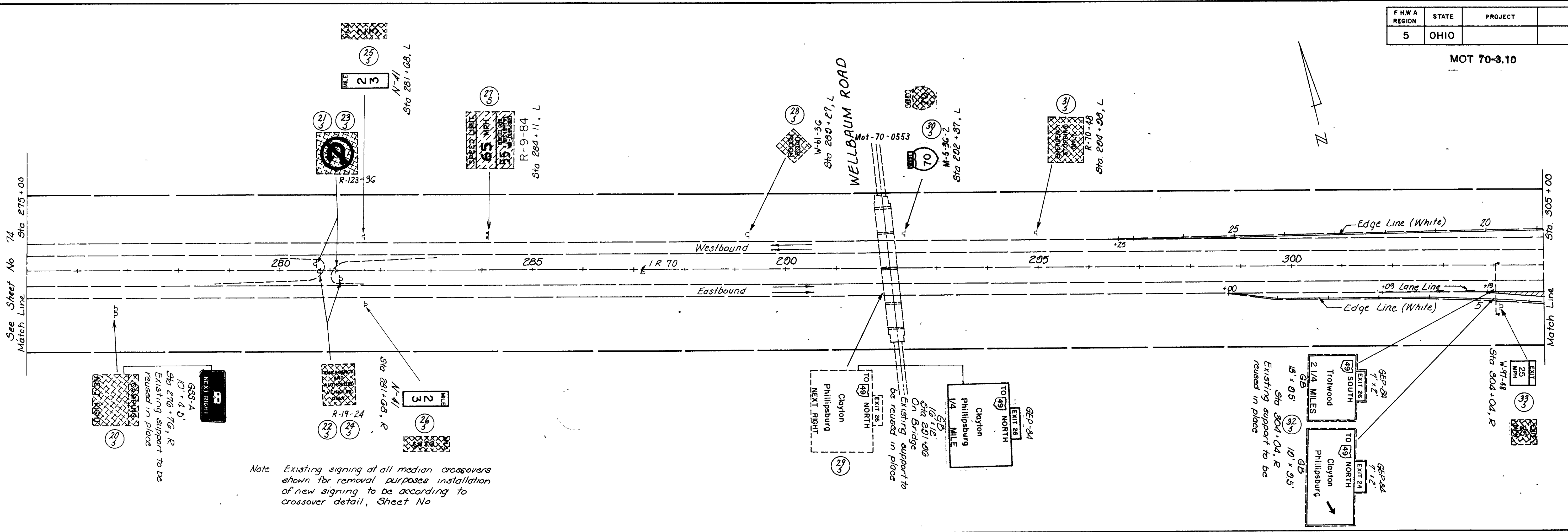
F H W A REGION	STATE	PROJECT
5	OHIO	

74  
120

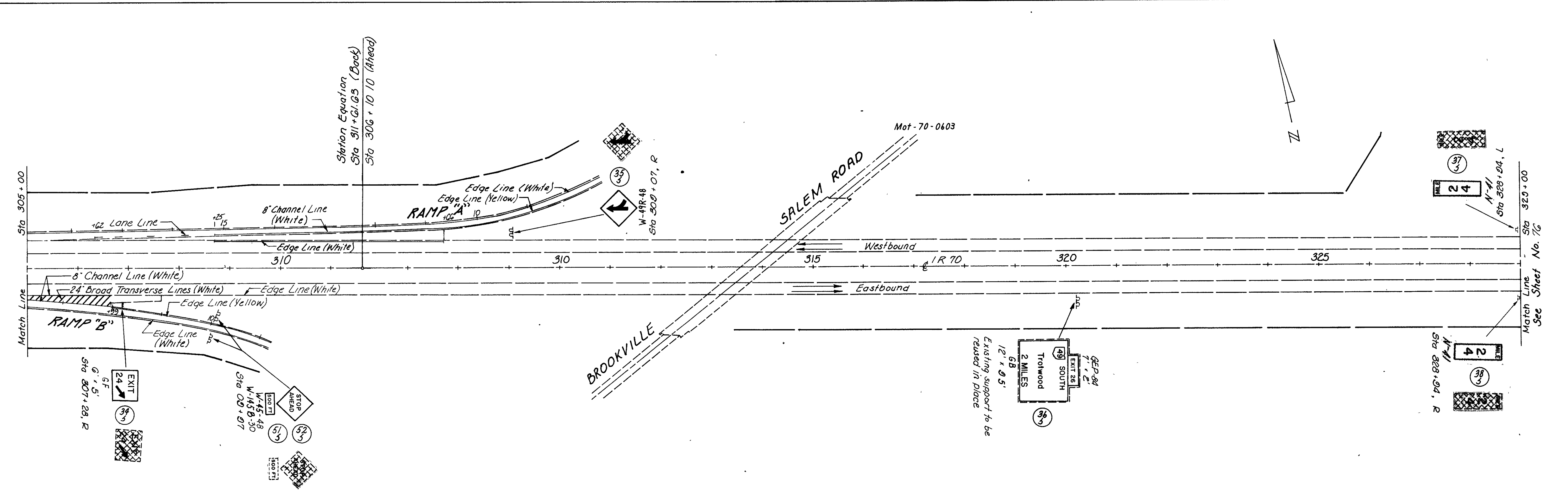
MOT 70-3.10

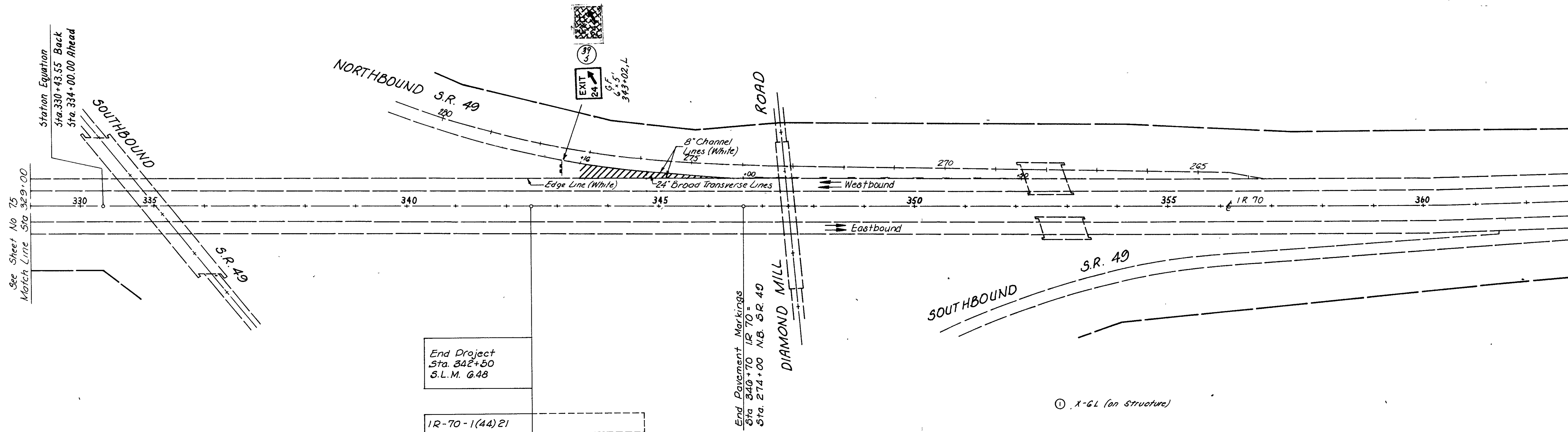


STA. 215+00 TO STA. 275+00



Note Existing signing at all median crossovers shown for removal purposes installation of new signing to be according to crossover detail, Sheet No





NOTES

Pavement Markings on Crossroad

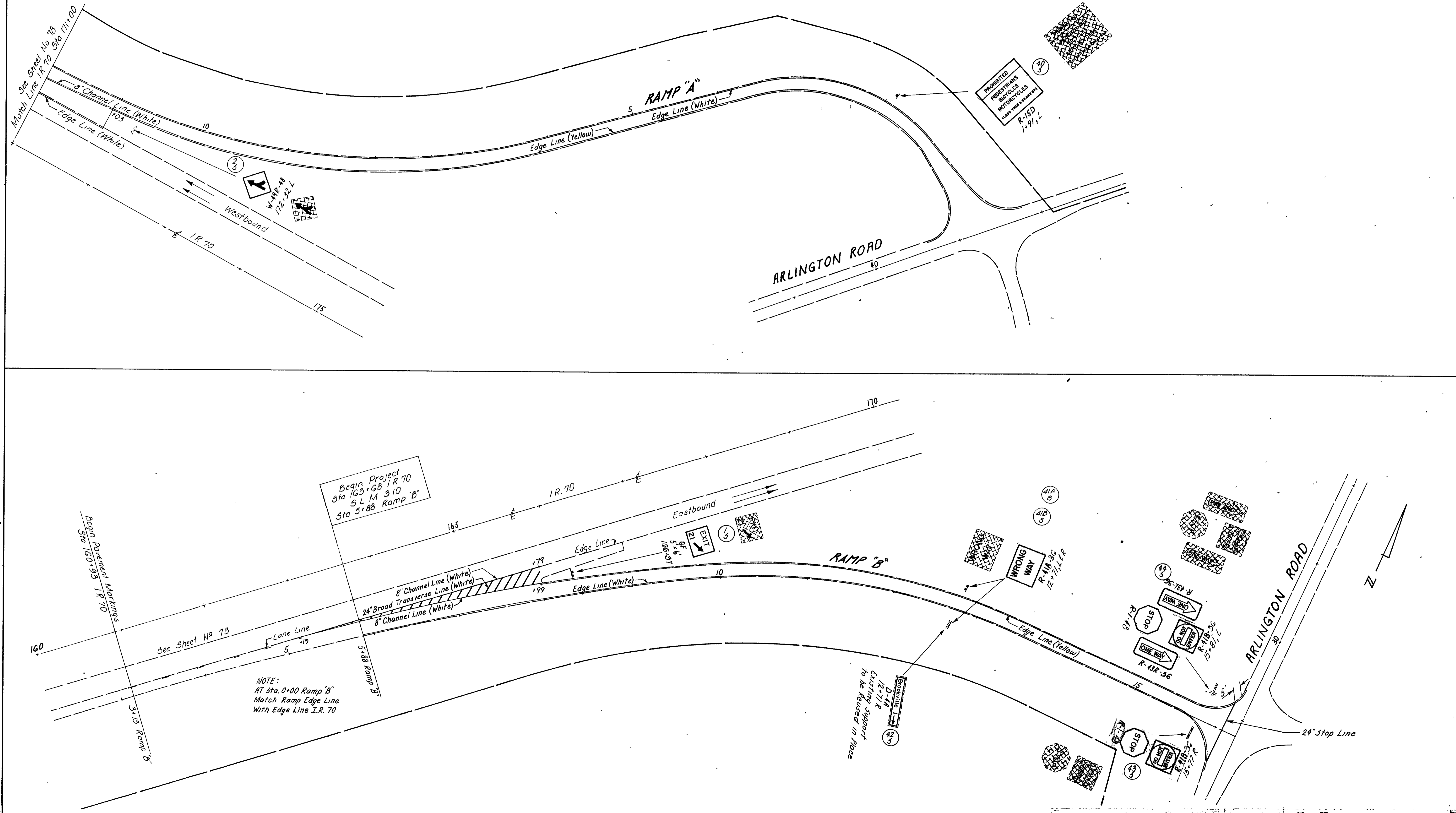
The following quantities for pavement markings on the crossroad bridge portions of the project have been included in the sub-summary for ITEM 621 PAVEMENT MARKINGS

Road	Station to Station	Edgeline (White)	Centerline Solid, Double	Lane Line	Edgeline (Yellow)
Arlington Road	31+18 39+27	1618	800		
Brookville - Phillipsburg Road	14+01 25+50	2136	1068		
Wellbaum Road	19+40 29+77	2074	1037		
Brookville - Salem Road	58+05 71+81	2572	1286		
State Route 49, Southbound	281+57 286+53	496		400	400

F H W A REGION	STATE	PROJECT
5	OHIO	

77  
120

MOT 70-3.10



**ARLINGTON RD. RAMP "A" & RAMP "B"**

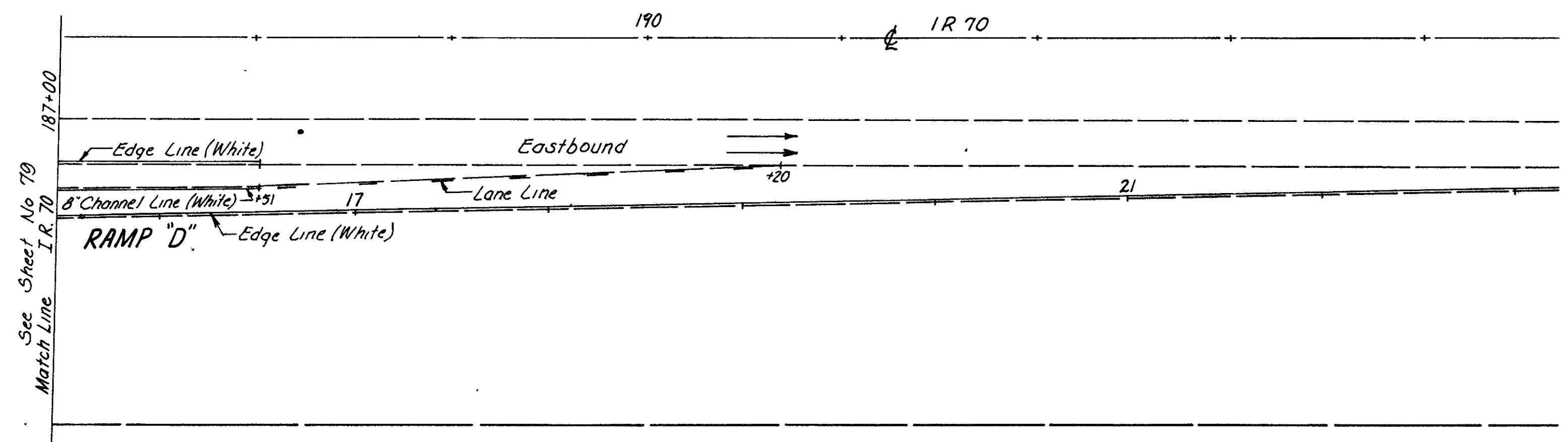
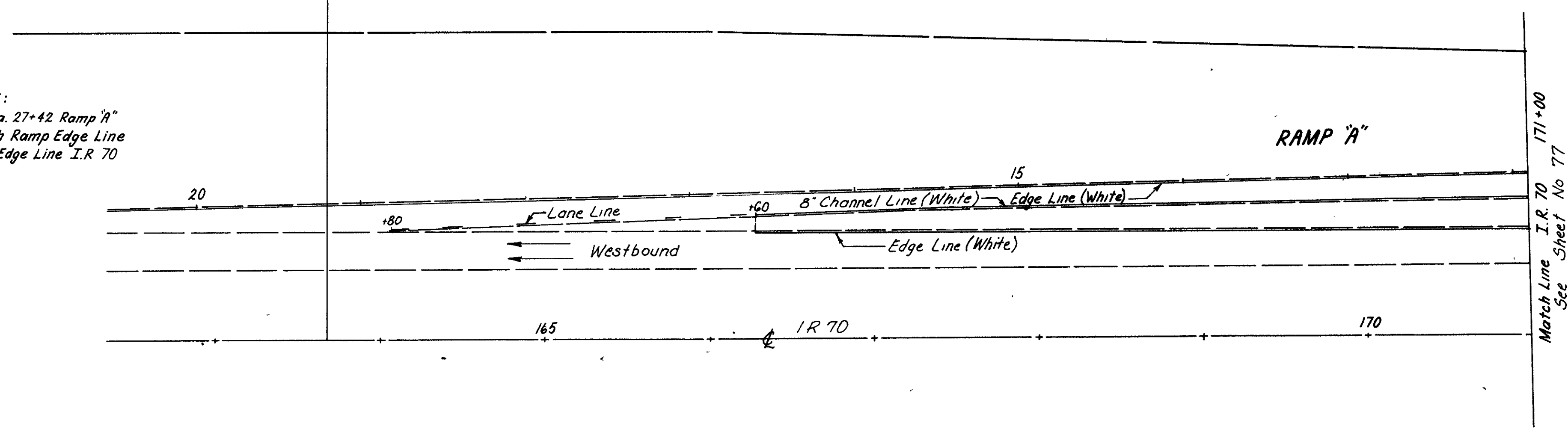
F.H.W.A REGION	STATE	PROJECT	
5	OHIO		

78  
120

MOT 70-3.10

Begin Project  
Sta 163+68.0  
S.L.M. 3.10  
Sta 19+20.63 "A"

NOTE:  
At Sta. 27+42 Ramp "A"  
Match Ramp Edge Line  
With Edge Line I.R. 70



NOTE:  
At Sta. 28+54 Ramp "D"  
Match Ramp Edge Line  
With Edge Line I.R. 70

**ARLINGTON RD. RAMP "A" & "D"**

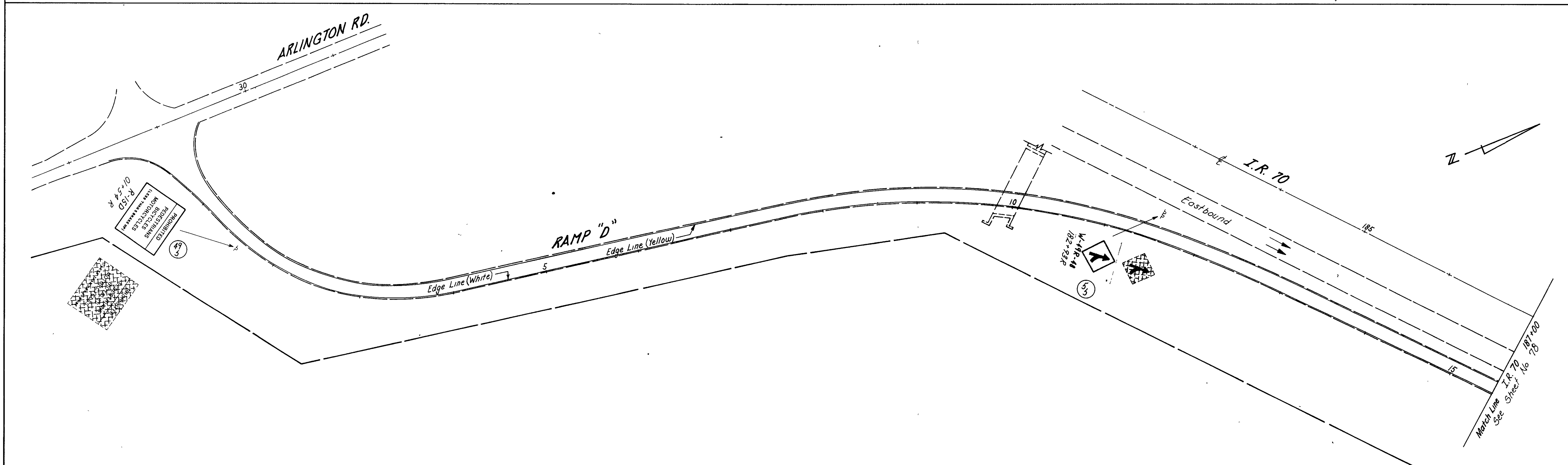
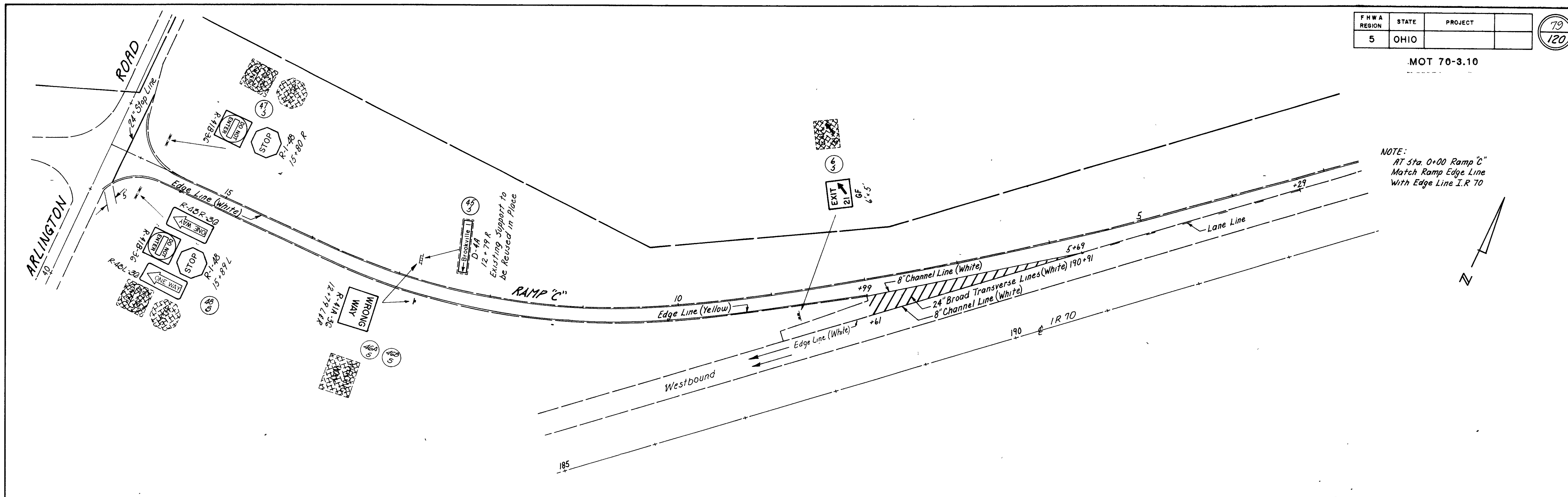


F H W A REGION	STATE	PROJECT	
5	OHIO		

79  
120

MOT 70-3.10

NOTE:  
AT Sta. 0+00 Ramp "C"  
Match Ramp Edge Line  
With Edge Line I.R. 70

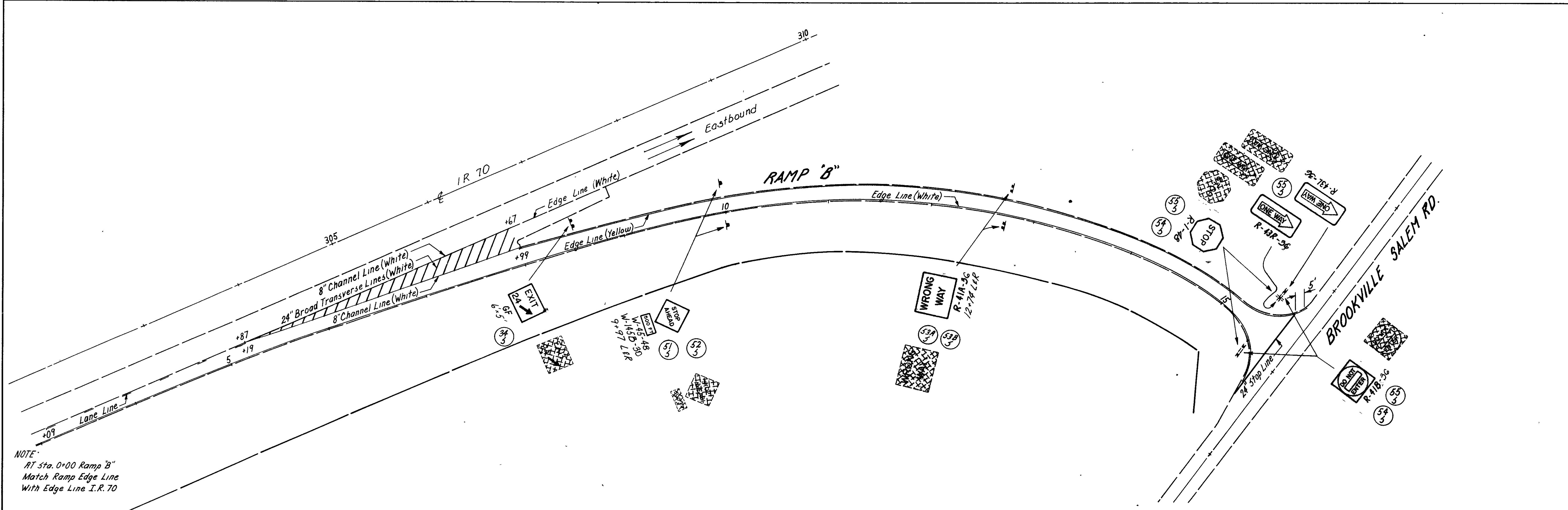
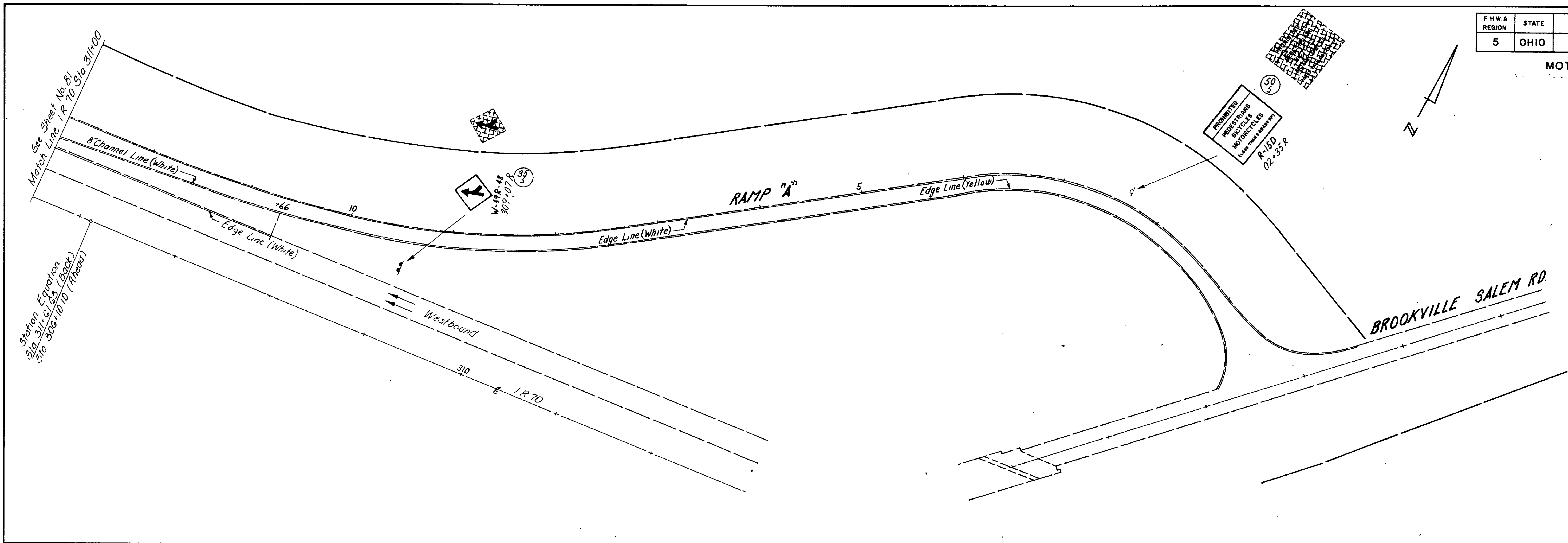


ARLINGTON RD.; RAMP "C" & RAMP "D"

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

80  
120

MOT 70-3.10



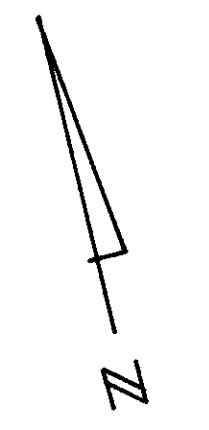
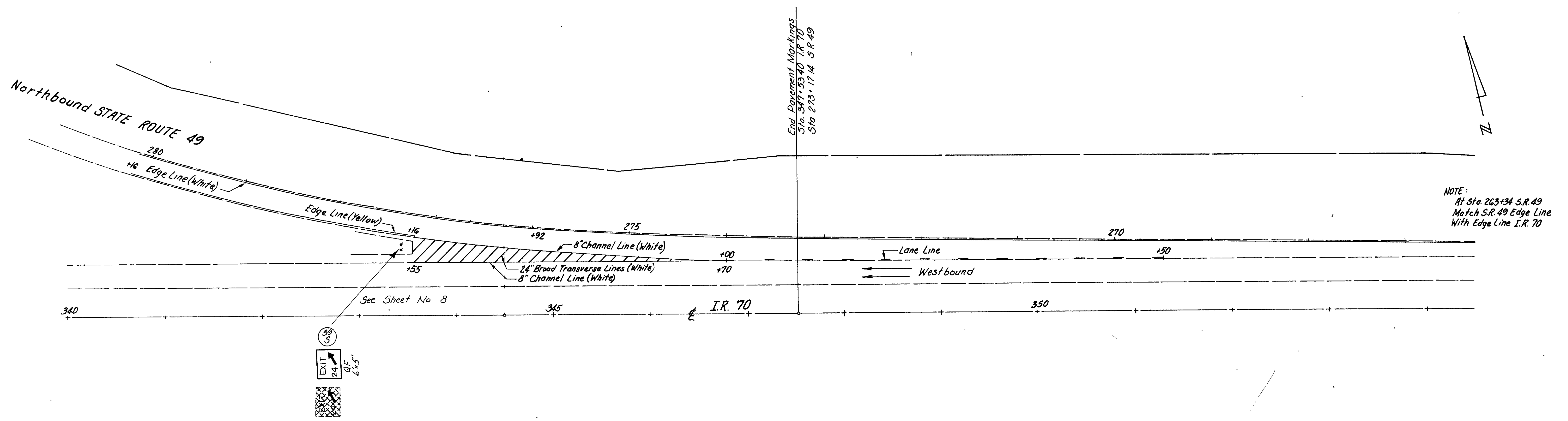
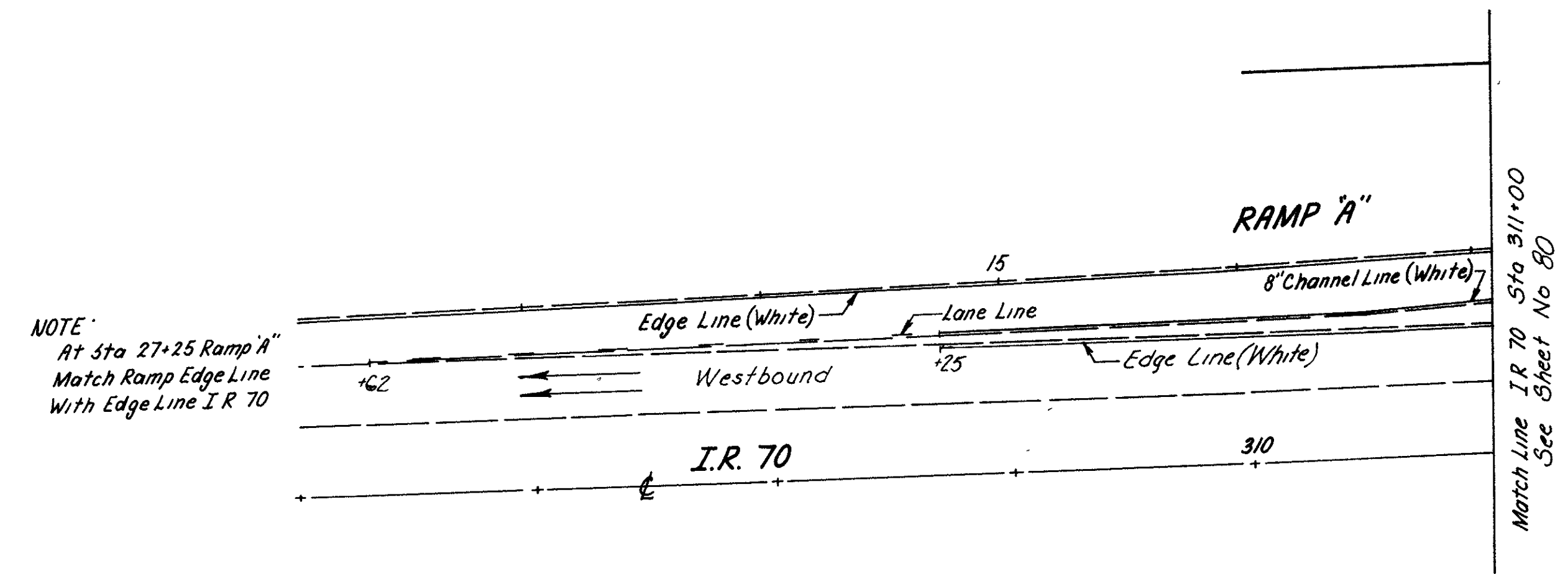
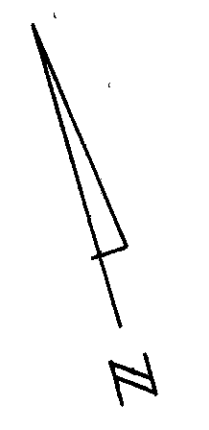
NOTE:  
AT Sta. 0+00 Ramp "B"  
Match Ramp Edge Line  
With Edge Line I.R. 70

**BROOKVILLE SALEM RD. RAMP "A" & RAMP "B"**

F H W A REGION	STATE	PROJECT	
5	OHIO		

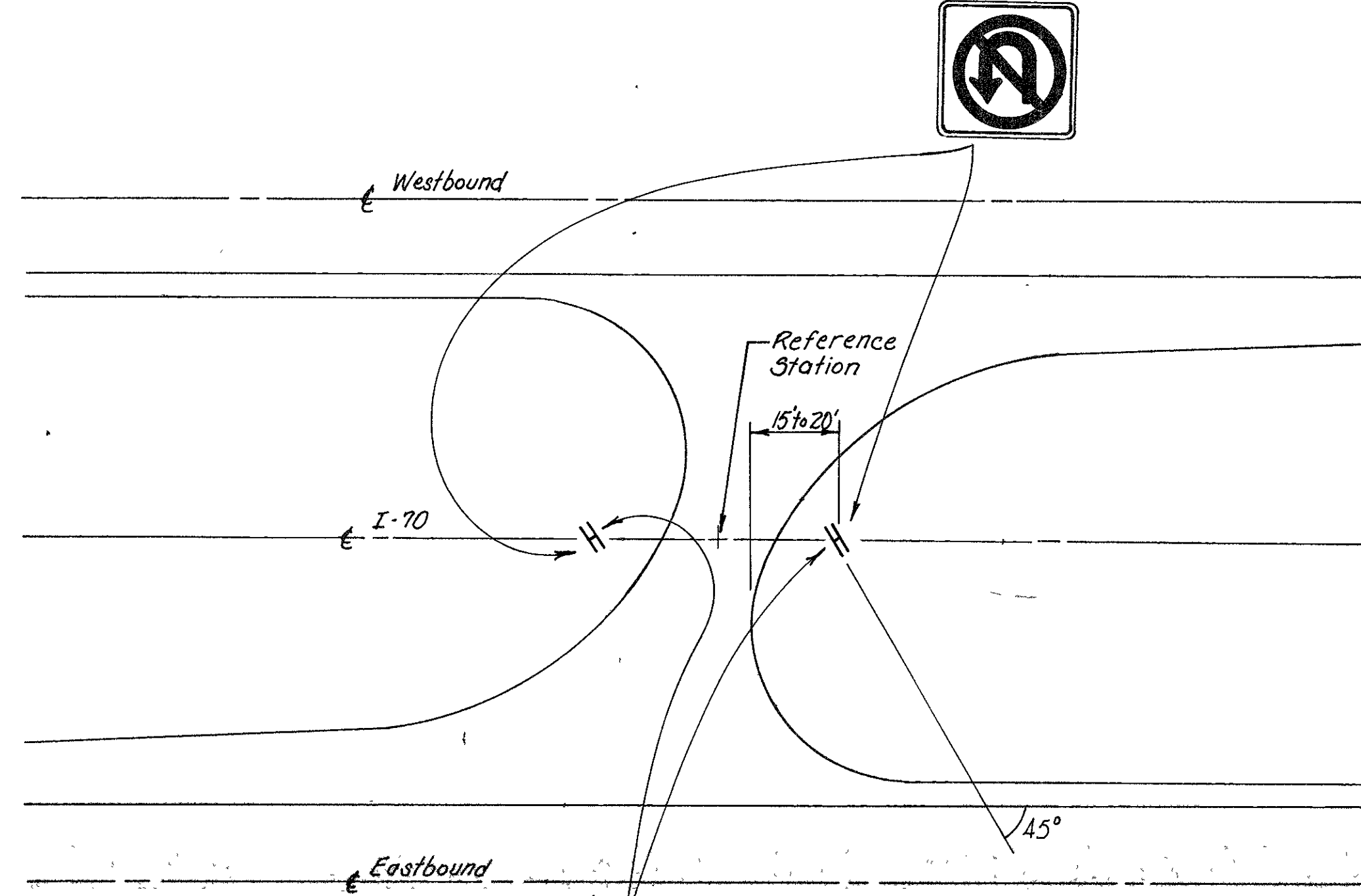
81  
120

MOT 70-3.10



Typical Median Crossover Signing

R-123-36



R-19  
EMERGENCY  
AND  
AUTHORIZED  
VEHICLES  
ONLY

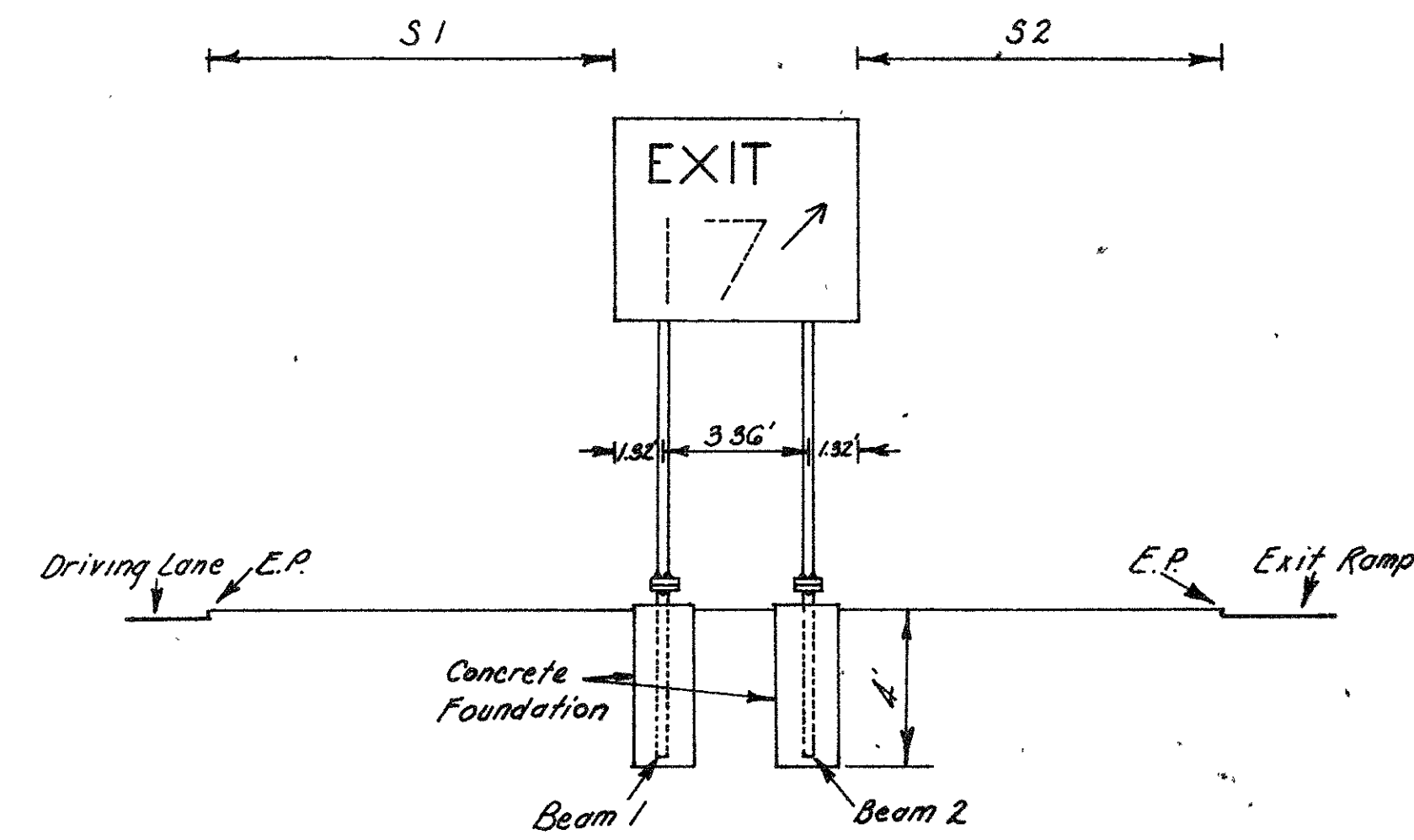
□ Type B or  
□ Type D Delineator

Installation  
Type GF Sign

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

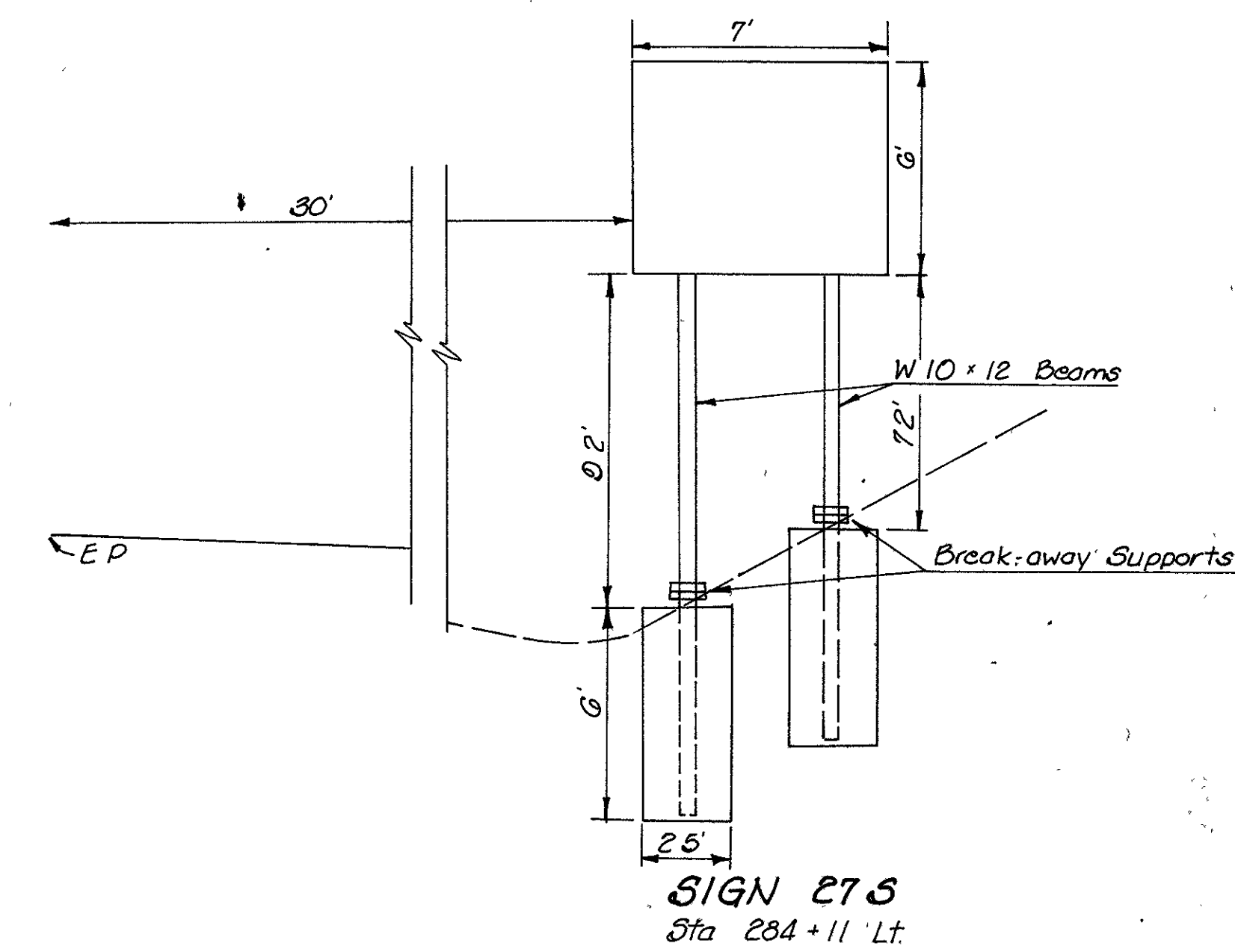
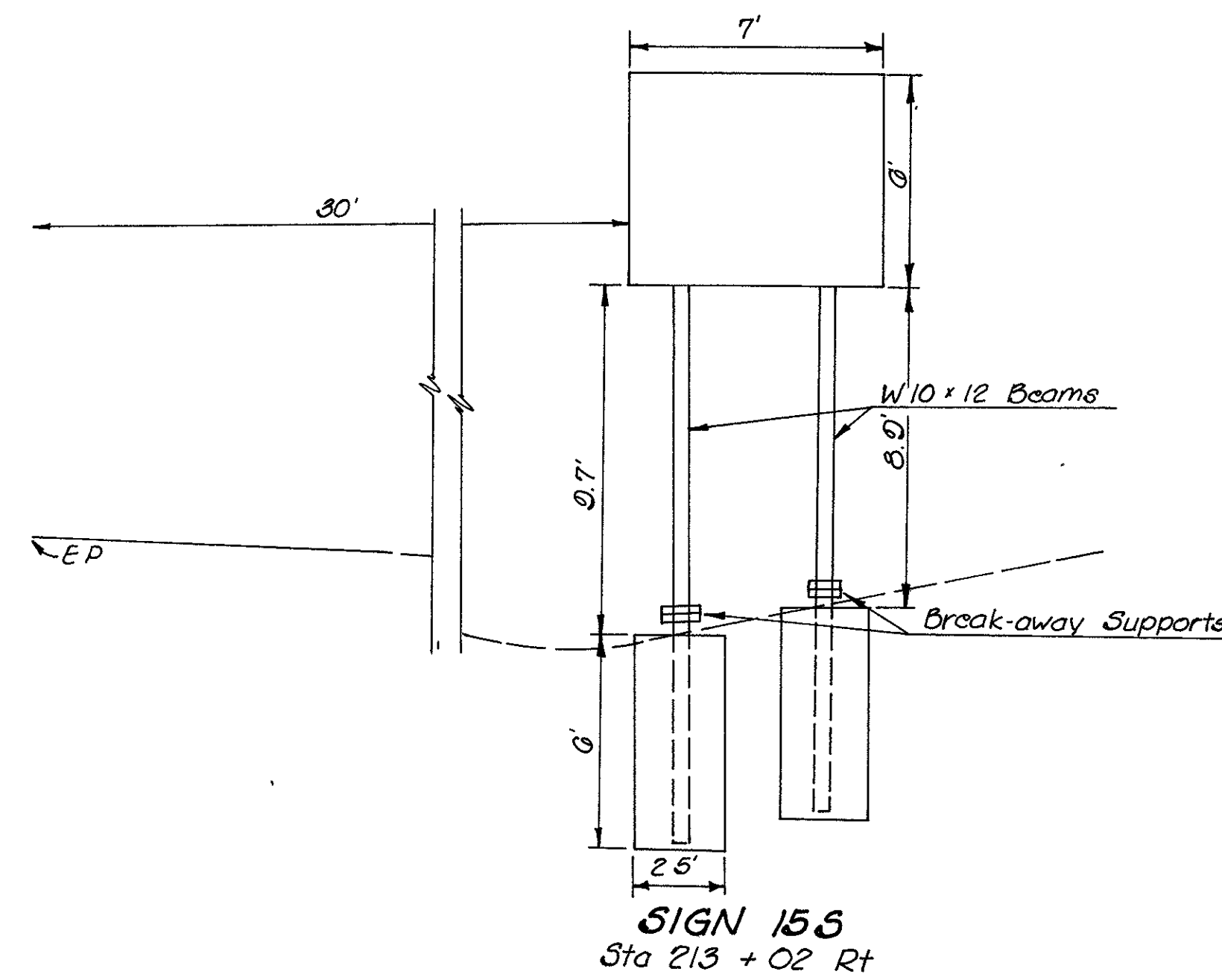
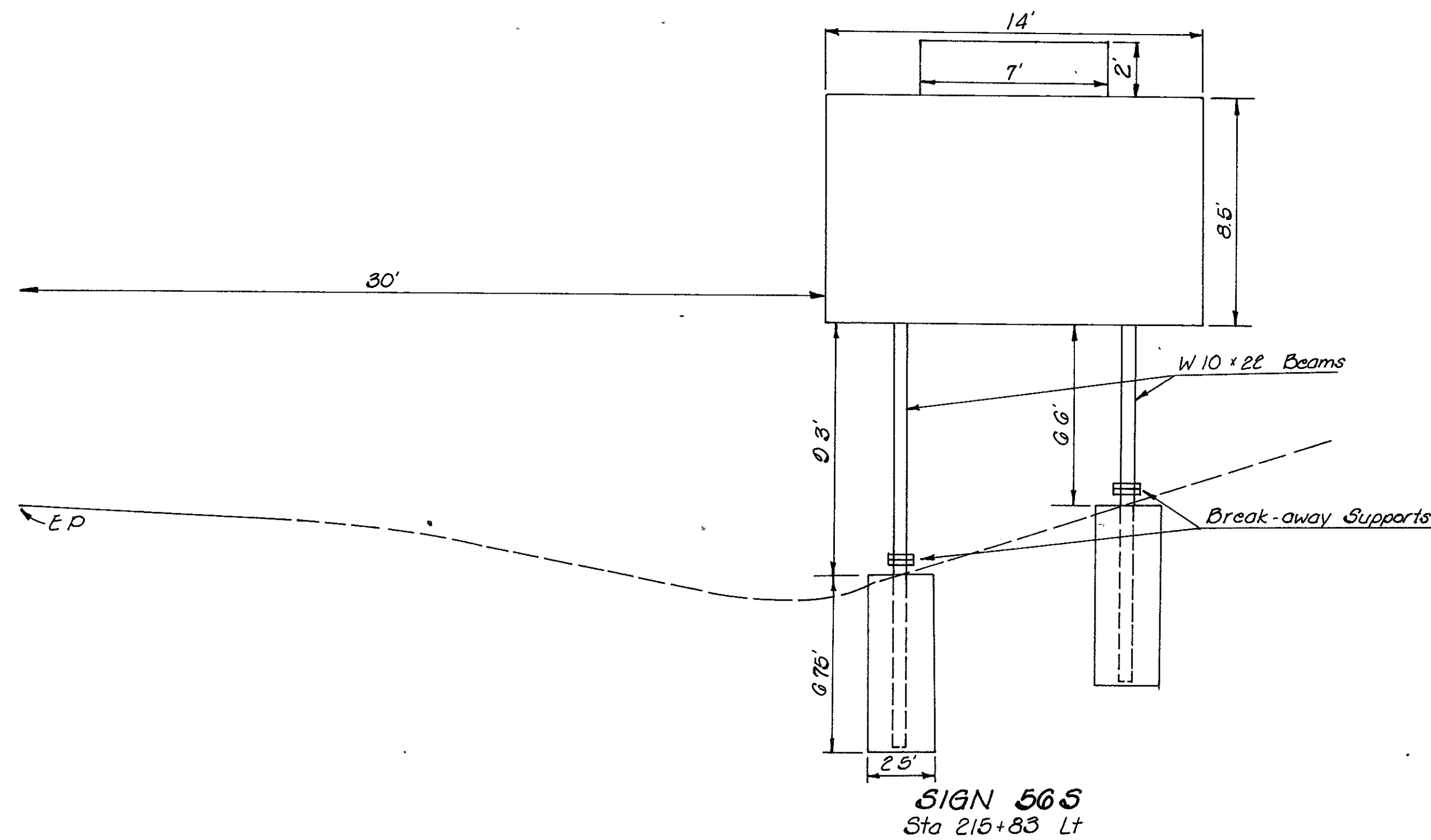
82  
120

MOT-70-310



Scale 1/4"=1'

Ref	Location	S1	S2	Beam 1 Length	Beam 2 Length
15	160+37	15.0	8.5	17.5	17.0
66	187+88	16.0	12.0	17.0	17.0
345	307+28	16.2	11.0	17.5	17.5
306	343+02	20.0	12.5	17.0	17.0



# 620 DELINEATORS

CALCULATIONS  
 MADE BY MLS DATE 1-88  
 CHECKED GAS DATE 1-88

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

85  
120

MOT-70-3.10

ROADWAY	STATION TO STATION		SIDE	INTERVAL	TYPE 'A'		TYPE 'C'		TYPE 'D'	
					POST	BRACK	POST	BRACK	POST	BRACK
<b>I-70 MAINLINE</b>										
I-70	165+79	188+00	R	400				6		
	200+03	298+67	*	*				25		
	306+67	311+62	*	*				1		
	306+10	330+44	*	*				6		
	334+00	346+70	*	*				3		
I-70	167+47	188+61	L	400				5		
	196+61	296+69	*	*				25		
	308+69	311+62	*	*				1		
	306+10	330+44	*	*				6		
	334+00	343+55	*	*				3		
<b>I-70 CROSSOVERS</b>										
	206+54									2
	280+96									2
<b>INTERCHANGE ARLINGTON RD.</b>										
RAMP A	0+00	0+40	R	40				2		
	1+10		R					1		
	1+45	3+90	R	35				8		
	4+60		R					1		
	6+20		L&R					1		1
	7+00	11+00	L	80						6
	11+80		L&R					1		1
	13+40		R					1		
	15+40	17+40	R	200				2		
RAMP B	6+00	8+00	R	200				2		
	9+60		L&R					1		1
	10+40	12+80	L	80						4
	13+60		L&R					1		1
	15+20		R					1		
RAMP C	0+00	6+00	R	200				4		
	8+00		L&R					1		1
	9+60	12+80	L	80						5
	13+60		L&R					1		1
	15+20		R					1		
RAMP D	0+00		R					1		
	0+50		R					1		
	1+30	4+50	R	40				9		
	5+30		R					1		
	6+90		L&R					1		1
	7+70	10+10	L	80				4		
	10+90		L&R					1		1
	12+50	28+50	R	200				9		
<b>INTERCHANGE BROOKVILLE-SALEM RD.</b>										
RAMP A	0+00		R					1		
	0+45		R					1		
	1+25	4+45	R	40				9		
	5+25		R					1		
	6+85		L&R					1		1
	7+65	9+25	L	80						3
	10+05		L&R					1		1
	10+85	11+65	R	80				2		
	13+25	27+25	R	200				8		
RAMP B	0+00	8+00	R	200				5		
	9+60		L&R					1		1
	10+40	13+60	L	80						5
	14+20	15+40	L	60						3
<b>SUB-TOTALS</b>								167		41

ROADWAY	STATION TO STATION		SIDE	INTERVAL	TYPE 'A'		TYPE 'C'		TYPE 'D'	
					POST	BRACK	POST	BRACK	POST	BRACK
<b>SUB-TOTALS</b>										

ROADWAY	STATION TO STATION		SIDE	INTERVAL	TYPE 'A'		TYPE 'C'		TYPE 'D'	
					POST	BRACK	POST	BRACK	POST	BRACK
<b>SUB-TOTALS</b>										

<b>SUB-TOTALS</b>		TYPE 'A'	TYPE 'C'	TYPE 'D'	REMOVED
Column 1		POST BRACK	POST BRACK	POST BRACK	
		167	41		
<b>SHEET TOTALS</b>		167	41		208

# TRAFFIC CONTROL QUANTITIES

CALCULATIONS  
MADE BY M.L.S. DATE 1-88  
CHECKED G.A.S. DATE 1-88

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



MOT-70- 3.10

## ITEM 847: PAVEMENT MARKINGS (EXCEPT AS NOTED)

ROADWAY	SIDE	STATION		EDGE LINE (WHITE)	EDGE LINE (YELLOW)	LANE LINE	621 EDGE LINE (WHITE)	CENTER LINE SOLID DOUBLE	CENTER LINE BROKEN SINGLE	CENTER LINE BROKEN AND SOLID DOUBLE	621 CENTER LINE SOLID DOUBLE	8" CHANNEL LINE (WHITE)	8" CHANNEL LINE (YELLOW)	24" STOP LINE	24" BROAD TRANSVERSE LINE (WHITE)	24" BROAD TRANSVERSE LINE (YELLOW)	LANE ARROWS	WORD ONLY ON PAVEMENT					
		FROM	TO																				
		LIN.FT.	LIN.FT.																				
I-70	R	160+93	162+84		191	191																	
		162+84	165+79		295	295							295										
		165+79	188+00	2221	2221	2221																	
		188+00	200+03		1203	1203																	
		200+03	298+67	9864	9864	9864																	
		298+67	303+87		520	520																	
		303+87	306+67		280	280							280										
		306+67	311+62		495	495																	
		306+10	330+44	2434	2434	2434																	
	334+00	346+70	1270	1270	1270																		
	L	160+93	166+29		536	536																	
		166+29	188+61	2232	2232	2232																	
		188+61	190+91		230	230							230										
		190+91	196+61		570	570																	
		196+61	296+69	10008	10008	10008																	
		296+69	307+73		1104	1104																	
		307+73	311+62		389	389																	
		306+10	330+44	2434	2434	2434																	
334+00		343+55	955	955	955																		
343+55	346+70											315											
ARLINGTON ROAD RAMP 'A'		31+18	39+27				1618				809												
		0+00	11+03	1103	1103																		
		11+03	16+60	557								557											
		16+60	18+80	220		220																	
		18+80	21+96	316																			
RAMP 'B'		03+13	05+19	206		206																	
		05+19	07+99	280								280				353							
		07+99	16+26	827	827									25									
RAMP 'C'		0+00	03+29	329																			
		03+29	05+69	240		240																	
		05+69	07+99	230								230											
		07+99	16+34	835	835									28									
RAMP 'D'		0+00	11+98	1198	1198	1198																	
		11+98	16+51	453								453											
		16+51	19+20	269		269																	
		19+20	28+54	934																			
BROOKVILLE-PHILLIPSBURG ROAD		14+91	25+59				2136				1068												
WELLBAUM ROAD		19+40	29+77				2074				1037												
BROOKVILLE-SALEM ROAD RAMP 'A'		58+95	71+81				2572				1286												
		0+00	10+66	1066	1066																		
		10+66	15+25	459								459			386								
		15+25	17+62	237		237																	
		17+62	27+25	963										30									
RAMP 'B'		0+00	03+09	309																			
		03+09	05+19	210		210																	
		05+19	07+99	280																			
		07+99	15+80	781	781																		
SR 49 NORTHBOUND		274+00	277+16									316			274								
SR 49 SOUTHBOUND		281+57	286+53	496	496	496																	
<b>TOTALS TO GENERAL SUMMARY</b>				44711	43537	40307	8400				4200	3415		83	1013								
				8.47 MI	8.25 MI	7.63 MI	1.59 MI				0.80 MI												

# MAINTENANCE OF TRAFFIC

CALCULATIONS  
MADE BY M.L.S. DATE 1-88  
CHECKED G.A.S. DATE 1-88

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



MOT-70-3.10

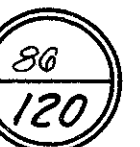
## ITEM 614 TEMPORARY WORK ZONE PAVEMENT MARKINGS AND SIGNS

	ROADWAY	SIDE	STATION		CLASS I	CLASS I	CLASS I	CLASS II	WORK ZONE MARKING SIGNS															
			FROM	TO	EDGE LINE (WHITE)	EDGE LINE (YELLOW)	LANE LINE	GORE MARKINGS		EACH														
					LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.																
<b>STAGE 1</b>																								
	I-70	EB	160+93	311+62		15069	15069																	
		EB	306+10	330+44		2434	2434																	
		EB	334+00	346+70		1270	1270		6 (I-70 Eastbound)															
		WB	160+93	311+62		15069	15069																	
		WB	306+10	330+44		2434	2434																	
		WB	334+00	346+70		1270	1270		6 (I-70 Westbound)															
<b>STAGE 2</b>																								
	I-70	EB	160+93	311+62	15069	15069	15069																	
		EB	306+10	330+44	2434	2434	2434																	
		EB	334+00	346+70	1270	1270	1270																	
		WB	160+93	311+62	15069	15069	15069																	
		WB	306+10	330+44	2434	2434	2434																	
		WB	334+00	346+70	1270	1270	1270																	
	Arlington Road Ramp	'B'						200																
	Arlington Road Ramp	'C'						200																
	Brookville-Salem Road Ramp	'B'						200																
	State Route 49 Northbound							200																
<b>STAGE 3</b>																								
	I-70	EB	160+93	311+62	15069	15069	15069																	
		EB	306+10	330+44	2434	2434	2434																	
		EB	334+00	346+70	1270	1270	1270																	
		WB	160+93	311+62	15069	15069	15069																	
		WB	306+10	330+44	2434	2434	2434																	
		WB	334+00	346+70	1270	1270	1270																	
	Arlington Road Ramp	'A'						220	2															
	Arlington Road Ramp	'B'						206	200															
	Arlington Road Ramp	'C'						240	200															
	Arlington Road Ramp	'D'						269																
	Brookville-Salem Road Ramp	'A'						237	2															
	Brookville-Salem Road Ramp	'B'						210	200															
	State Route 49 Northbound							200																
<b>STAGE 4</b>																								
	I-70	EB	160+93	311+62	15069	15069	15069																	
		EB	306+10	330+44	2434	2434	2434																	
		EB	334+00	346+70	1270	1270	1270																	
		WB	160+93	311+62	15069	15069	15069																	
		WB	306+10	330+44	2434	2434	2434																	
		WB	334+00	346+70	1270	1270	1270																	
	Arlington Road Ramp	'B'						200																
	Arlington Road Ramp	'C'						200																
	Brookville-Salem Road Ramp	'B'						200																
	State Route 49 Northbound							200																
<b>TOTALS TO GENERAL SUMMARY</b>					112438	150184	151566	2400	18															
					21.33 MI	28.40 MI	28.70 MI																	

# TRAFFIC CONTROL QUANTITIES

CALCULATIONS  
MADE BY M.L.S. DATE 12/87  
CHECKED G.A.S. DATE 12/87

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



MOT-70-3.10

## ITEM 630 TRAFFIC SIGNS AND SIGN SUPPORTS

REF. NO.	STATION	SIDE	CODE	SIZE	SIGNS			GROUND MOUNTED SIGN SUPPORTS													
					SIGNS FLAT SHEET TYPE 'G'	SIGNS EXTRU SHEET TYPE 'G'	SIGNS PERMANENT OVERLAY TYPE 'G'	NO. 2 POST	NO. 3 POST	NO. 4 POST	S4 X 7.7 BEAM	W10 X 12 BEAM	W10 X 22 BEAM	*ONE-WAY* SUPPORT NO. 4 POST	CONCRETE FOR EMBEDDED FOUNDATION	BREAKAWAY BEAM CONNECTION	REMOVAL OF GRD.MTD. SIGN AND DISPOSAL	REMOVAL OF GRD.MTD. MAJOR SIGN AND DISPOSAL	REMOVAL OF GRD.MTD. BEAM AND DISPOSAL	REMOVAL OF GRD.MTD. POST AND DISPOSAL	REMOVAL OF GRD.MTD. MAJOR SIGN AND REERECTION
					SQ.FT.	SQ.FT.	SQ.FT.	LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	LIN.FT.	CU.YD.	EACH	EACH	EACH	EACH	EACH
<b>I-70 MAINLINE</b>																					
S-1	166+37	R	GF	6'x5'		30						17.5-17.0			0.54	2		1	2		
S-2	172+32	L	W-49R-48	48"x48"	16.0					16.0-16.0								1	2		
S-3	176+45	L	N-41	12"x36"	3.0			11.0										1	1		
S-4		R	N-41	12"x36"	3.0			11.0										1	1		
S-5	182+93	R	W-49R-48	48"x48"	16.0					16.0-16.0								1	2		
S-6	187+88	L	GF	6'x5'		30						17.0-17.0			0.54	2		1	2		
S-7	196+45	L	GE	14'x8.5'																	
			GEP-84	7'x2'																	
S-8	204+96	R	M-5-36-2	36"x36"	9.0													1	1		
		L	IM-39-36	36"x18"	4.5																
S-9	206+54	L	R-123-36	36"x36"	9.0				13.0									1	1		
S-10	MEDIAN	R	R-19-24	24"x36"	5.0													1	1		
S-11	CROSSOVER	L	R-123-36	36"x36"	9.0				13.0									1	1		
S-12		R	R-19-24	24"x30"	5.0													1	1		
S-13	208+43	R	R-70-48	48"x36"														1	2		
S-56	215+83	L	GE	14'x8.5'		119							25.0-22.0		2.46	2					
			GEP-84	7'x2'		14															
S-14	223+83	L	GSS-A	10'x4.5'		45												1			
S-15	213+02	R	R-9-84	7'x6'							21.5-21.0				2.46	2			2		
S-16	228+96	L	N-41	12"x36"	3.0			11.0										1	1		
S-17		R	N-41	12"x36"	3.0			11.0										1	1		
S-18	238+62	R	GB	12'x9.5'																	
			GEP-84	7'x2'																	
		R	GB	16'x12'																	
			GEP-84	7'x2'																	
S-19	239+55	L	GB	14'x8.5'																	
			GEP-84	7'x2'																	
S-20	276+76	R	GSS-A	10'x4.5'		45															
		R	GS	10'x7'																	
		R	GSC	10'x2'														1	1		
S-21	280+96	L	R-123-36	36"x36"	9.0				13.0									1	1		
S-22	MEDIAN	R	R-19-24	24"x30"	5.0													1	1		
S-23	CROSSOVER	L	R-123-36	36"x36"	9.0				13.0									1	1		
S-24		R	R-19-24	24"x30"	5.0													1	1		
S-25	281+68	L	N-41	12"x36"	3.0			11.0										1	1		
S-26		R	N-41	12"x36"	3.0			11.0										1	1		
S-27	284+11	L	R-9-84	7'x6'							21.0-19.0				2.46	2			2		
S-28	289+27	L	W-61-36	36"x36"														1	1		
S-29	291+96	R	GB	16'x12'																	
			GEP-84	7'x2'																	
S-30	292+37	L	M-5-36-2	36"x36"	9.0					14.0								1	1		
		L	IM-40-36	36"x18"	4.5																
S-31	294+98	L	R-70-48	48"x36"														1	2		
S-32	304+04	R	GB	13'x9.5'																	
			GEP-84	7'x2'																	
		R	GE	19'x9.5'																	
			GEP-84	7'x2'																	
S-33		R	W-97-48	48"x60"	20.0					15.0-15.0								1	2		
S-34	307+28	R	GF	6'x5'		30									0.54	2		1	2		
S-35	309+07	R	W-49R-48	48"x48"	16.0					16.0-16.0								1	2		
S-36	320+11	R	GB	12'x9.5'																	
			GEP-84	7'x2'																	
S-37	328+94	L	N-41	12"x36"	3.0			11.0										1	1		
S-38		R	N-41	12"x36"	3.0			11.0										1	1		
S-39	343+02	L	GF	6'x5'		30						17.0-17.0			0.54	2		1	2		
<b>ARLINGTON ROAD</b>																					
<b>RAMP A</b>																					
S-40	01+91	R	R-15D	30"x30"	6.25				12.0									1	1		
<b>RAMP B</b>																					
S-41A	12+71	L	R-41A-36	36"x24"	6.0			12.0-12.0										1	2		
S-41B	12+71	R	R-41A-36	36"x24"	6.0																
S-42	12+71	R	D-4A	9'x3'																	
S-43	15+77	R	R-1-48	48"x48"	16.0					14.0-14.0								1	2		
		L	R-41B-36	36"x36"	9.0													1	1		
S-44	15+81	L	R-1-48	48"x48"	16.0					14.0								1	2		
		L	R-41B-36	36"x36"	9.0													1	1		
		L	R-43L-36	36"x12"	3.0													1	1		
		L	R-43R-36	36"x12"	3.0													1	1		





# GENERAL NOTES

F H W A REGION	STATE	PROJECT	
5	OHIO		87 120

MOT-70-3.10

REFERENCE shall be made to Standard Drawings

AS-1-81	dated	11-27-81	GR1	dated	1-11-85
DBR-2-73	dated	4-10-73	GR3	dated	1-21-85
SD-1-69	dated	6-12-69	BP5	dated	1-11-85
RB-1-55	dated	2-2-59			

and to Supplemental Specifications:

824	dated	10-08-82	852	dated	6-10-87
845	dated	2-25-86	952	dated	6-10-87
853	dated	6-26-78	953	dated	8-21-80
956	dated	6-26-78			

DESIGN SPECIFICATIONS: The repairs to the structures shall conform to "Standard Specifications for Highways Bridges" adopted by the American Association of State Highway and Transportation Officials, 1983 including the 1984 and 1985, interim specifications and the Ohio "supplement" to these Specifications.

**DESIGN DATA**

Concrete Class S - compressive strength 4500 p.s.i.

Reinforcing Steel - ASTM A615, A616 or A617 - Grade 60 minimum yield strength 60,000 p.s.i.

Structural Steel - ASTM A36 - unit stress 20,000 p.s.i.

EXISTING STRUCTURE VERIFICATION: Details and dimensions shown on these plans pertaining to the existing structure have been obtained from plans of the existing structure and/or from field observations and measurements. Consequently, they are indicative of the existing structure and the proposed work but they shall be considered tentative and approximate. The Contractor is referred to CMS Sections 102.05, 105.02 and 513.02.

Contract bid prices shall be based upon a recognition of the uncertainties described above and upon a prebid examination of the existing structure by the Contractor. However, all project work shall be based upon actual details and dimensions which have been verified by the Contractor in the field.

EXISTING REINFORCING STEEL: Where concrete is being removed and replaced, the existing reinforcing steel shall remain and be trimmed to provide the required clearance. Any existing reinforcing bars which are to be incorporated into the new work and which are made unusable by the Contractor's concrete removal operations shall be replaced with new steel at his cost. Any existing reinforcing bars deemed by the Engineer to be unusable because of corrosion shall be replaced with new steel. An allowance of 300lbs. of reinforcing steel has been included with the quantities for the pertinent structure and is to be used for the replacement of corroded steel.

UTILITY LINES: All expense involved in relocating the affected utility lines shall be borne by the Owner(s). The Contractor and Owner(s) are requested to cooperate by arranging their work in such a manner that inconvenience to either will be held to a minimum.

ITEM SPECIAL, SEALING OF CONCRETE SURFACES (SEE PROPOSAL NOTE): Specified concrete surfaces shall be sealed using either a silane or an epoxy sealer. See the proposal for surface preparation requirements, application rates, material requirements and application procedures. The surfaces to be sealed are shown on the plans.

ITEM SPECIAL, ABANDON SCUPPER: This item shall consist of plugging the pipe outlet at the Scupper and filling the Scupper with Class "C" Concrete. The price bid for this item shall be per each, and shall include all material, equipment, and labor necessary to complete the work.

ITEM SPECIAL, SCUPPER MODIFICATION: This item shall consist of modifying existing scuppers by adding steel bars to adjust the scuppers vertically to match the latex modified concrete overlay. This work shall be in accordance with Detail "B" as shown on Sheet 88/120. Adequate measurements shall be made in the field to determine dimensions of the Scuppers and the number and spacing of Scupper bars. Price bid for this item shall be per each, and shall include all labor, materials and equipment necessary to complete this work.

ITEM SPECIAL, STEEL DRIP STRIP: After the deck is scarified and before the concrete is placed, a steel drip strip, as detailed, shall be installed along the full length of each side of the bridge. An additional strip 12" long shall be placed at each guardrail post. The strips shall be fastened at 3' c/c maximum (2' minimum for 12" long strips) with power driven pins or No. 10 galvanized screws and expansion anchors. Where splices are required, the individual pieces shall be butted tightly together, not lapped. Steel for galvanized strips shall be 0.105" thick and shall meet the requirements of ASTM A568 with galvanizing in accordance with 711.02. Stainless steel shall be 20 gauge ASTM A167, Type 304, mill finish.

Payment shall be at the contract price bid for Item Special, Sq. Ft., Steel Drip Strip, as per plan and shall include all materials, labor, tools, and incidentals necessary to complete the item.

ITEM 517, RAILING FACED, AS PER PLAN: The contractor shall carefully remove the existing aluminum railing and stack neatly along the right-of-way for subsequent pick-up by State forces. The concrete safety curb and the remaining vertical leg of the bulb angle which protrudes above the scarified deck shall be removed. 1" dia. holes, 6" deep (min.), shall be drilled at spacing as shown on the drawing. The holes shall be thoroughly cleaned of all dust and other deleterious material.

The grout shall consist of cement and water using Type I, Type III, or shrinkage compensating cement. Clean holes shall be saturated thoroughly with water for a minimum of 5 minutes prior to placing grout. Immediately prior to grouting, all free standing water shall be removed from holes. After initial mixing, thinning or retempering of grout with extra water shall not be allowed. Hardened or set grout which has become too stiff or dry to provide a good bond shall be discarded. Dowels shall not be installed if the mean air or grout temperatures are less than 45°F. Furthermore, after placing, the fresh grout shall be maintained at a temperature of not less than 45°F for 72 hours and at not less than 40°F for an additional 4 days. The temperature of the mixed grout, immediately before placing, shall not be less than 50°F nor more than 90°F. The cement grout shall be cured continuously with either wet rags or a satisfactory curing compound (which must be subsequently removed) for a minimum period of 3 days without disturbing the dowels.

Grout anchoring using epoxy as per SS853 and 956 may be used in lieu of the above requirements with the exception that the hole size will remain at 1" dia.

All loose and unsound concrete in the area of the parapet to be faced, shall be removed. All remaining sound concrete shall then be mechanically scarified 1/4" deep. The minimum thickness for the proposed facing shall be 4". All resteel shall be epoxy coated as per SS824. Epoxy coated resteel which is damaged due to cutting, bending, etc. shall be repaired as per SS824. Concrete cover over all resteel shall be 2". The concrete surfaces to be faced shall be thoroughly drenched with clean water and allowed to dry to a damp condition just before placing the concrete.

The existing deflection joints shall be extended completely through the proposed facing and shall be made by forming or sawcutting the hardened concrete within 3 days after pouring. The 1/4" joints shall be sealed 3/4" deep (min.) with an impregnated precompressed expanding foam sealant tape known as Wll-Seal, manufactured by Illbruck/USA Inc., Minneapolis or a low density, closed cell, crosslinked ethylene vinyl acetate foam known as Evasote 50, manufactured by Epoxy Industries, Inc., Ravenna, New York.

Additional Materials shall be: Concrete as per 511, Class S  
Reinforcing Steel as per 509 and SS824

(All of the above work and relevant plan notes shall be included in the price bid for Item 517 - LF- Railing Faced, as per plan; except curb removal shall be included in the price bid for Item 202-Portions of structures removed, and reinforcing steel shall be paid for under Item 824.)

(All abutment parapet work shall be included under Item Special, Abutment Modification.)

ITEM SPECIAL-ABUTMENT MODIFICATION: This work shall include the cost of all materials, labor and equipment necessary to: Remove and rebuild the backwall where shown; extend the end dam with new steel shapes or plates vertically and/or horizontally where shown; Remove portions of deck where shown; Remove existing curb plates and install parapet curb plates where shown; Remove existing vertical steel plates (that retain asphalt) from end dam where applicable; seal the expansion joint; Rebuild the abutment parapets as detailed (where curb or parapet is shown to be removed, its removal shall be included under item 202- portions of structure removed); Remove aluminum railing for subsequent pick up by state forces; drill dowel holes as per item 510 using grout as specified in item 517- Railing faced as per plans; Remove & replace item 404 as detailed in the plans; Place concrete- class S, as per item 511; Other work as specified on plans. Payment shall be per each - Item Special- Abutment Modification. Reinforcing steel shall be paid for under item 509.

At the option of the contractor, and at no additional cost to the state, new abutment steel end dam components L 6"x4"x1/2" and edge bar, (verify thickness) may be used in lieu of relocating existing.

EXISTING BRIDGE PLANS: Existing bridge plans may be inspected at the Bureau of Bridges and Structural Design in Columbus, Ohio or in the District 7 office in Sidney, Ohio.

ITEM 516- JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE AS PER PLAN:

This work shall include all labor and materials necessary to raise the superstructures to gain the specified additional clearances over I-70 or to meet the revised profile of I-70 as shown on the plans. Included with this work are jacks, temporary supports, longitudinal blocking, steel shim plates, welding and painting steel shim plates, cleaning and painting of existing abutment rocker assemblies including base plates, and painting of all new structural steel in accordance with item 514, system A. The 1/8" preformed bearing pads are also included with this pay item. Payment shall be made by Lump Sum for Item 516-Jacking and Temporary support of Superstructure as per plan.

GENERAL JACKING REQUIREMENTS: The following are the jacking requirements which apply to Item 516-Jacking and Temporary Support of Superstructure as per plan and to Item 516-Realign bearing devices as per plan.

JACK CAPACITY: Jacks are required to have a capacity to safely support each abutment and pier support. Minimum Jack capacity is listed on the General Plan sheet for each bridge.

JACKING PLANS: Detailed plans of the jacking procedures, including methods of preventing horizontal movement, shall be prepared by a registered professional engineer and shall bear his signature and seal.

The contractor shall submit 3 copies of the plans and 2 copies of design calculations to the director 15 days prior to jacking operations and receive approval before starting jacking operations.

Attachments made by welding to any main structural member shall be approved by the director before such attachments are made. Details of the attachments shall be submitted for approval as part of the jacking procedure plans or independently by a similar submission.

Approval of the above plans shall not relieve the contractor of responsibility for the behavior of the jacking procedures proposed.


It shall be understood that all jacking operations are to be directed by a registered professional engineer.

All jacking operations of a particular bridge must be completed before the latex concrete overlay is placed on said bridge.

ITEM 516 - REALIGN BEARING DEVICES, AS PER PLAN:

This item should include all work necessary to properly align bridge bearings as well as their cleaning and painting. Included shall be the required jacking and temporary support, disassembly of the bearings, hand cleaning (grinding if necessary), sandblasting and painting (system A) as required by 514, replacement of any damaged sheet lead (711.19), installation of any necessary 1/8" thick steel shims of the same size as the bearings to provide a snug fit, realignment of the upper bearing plate by removing existing welds and rewelding so that the bearings are aligned at 60°F, reassembly of the bearings, and removal of the jacks. At the option of the contractor and at no additional cost to the state, new bearings of the same type as the existing may be installed in place of the realigned bearings. All work shall be to the satisfaction of the Project Engineer. The contractor shall submit his method of jacking the bearings for prior approval. Payment for all the above described labor and materials will be made at the contract price bid for Item 516 - Each - Realign bearing devices, as per plan.

ITEM 202- EXISTING ASPHALT WEARING COURSE REMOVED, AS PER PLAN: This work shall include the cost for removing any waterproofing material between the concrete and the asphalt. Removal of the waterproofing shall be a separate operation from deck scarification as required under item 845.

 WOOLPERT  
CONSULTANTS  
409 East Monument Avenue  
Dayton Ohio 45402 1226

## GENERAL NOTES

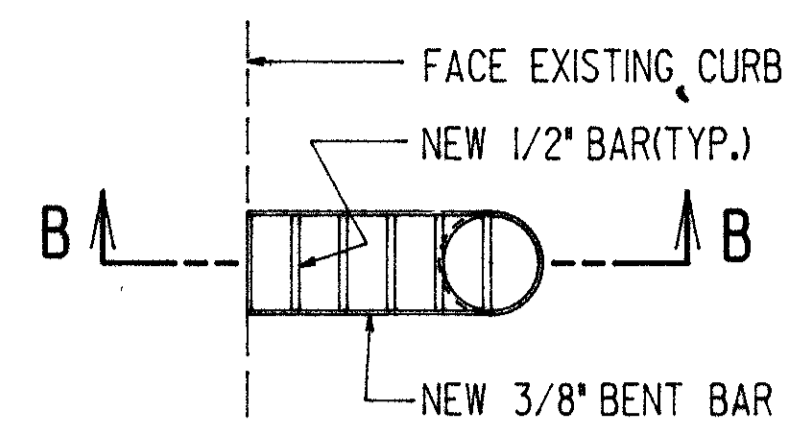
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.E.M.	R.M.J.		D.E.M.	S.B.L.	10/28/07	

MICROFILMED  
JUL 16 1982

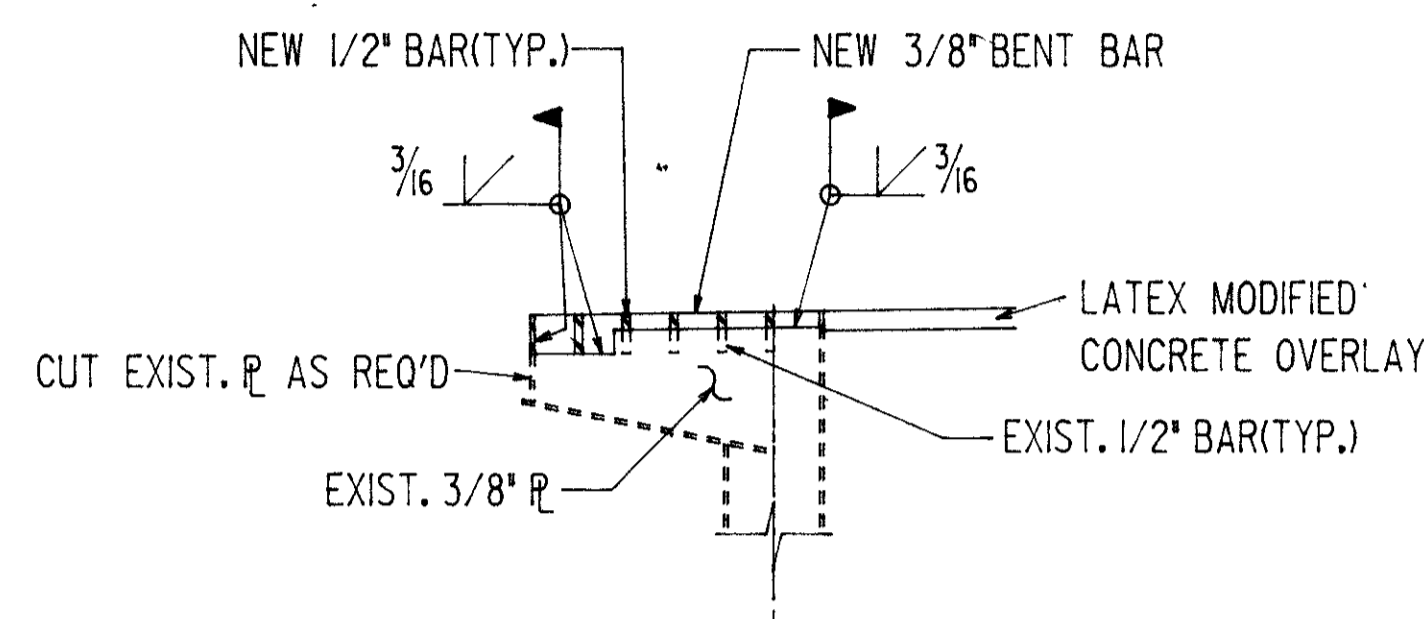
F.H.W.A. REGION	STATE	PROJECT
5	OHIO	

88  
120

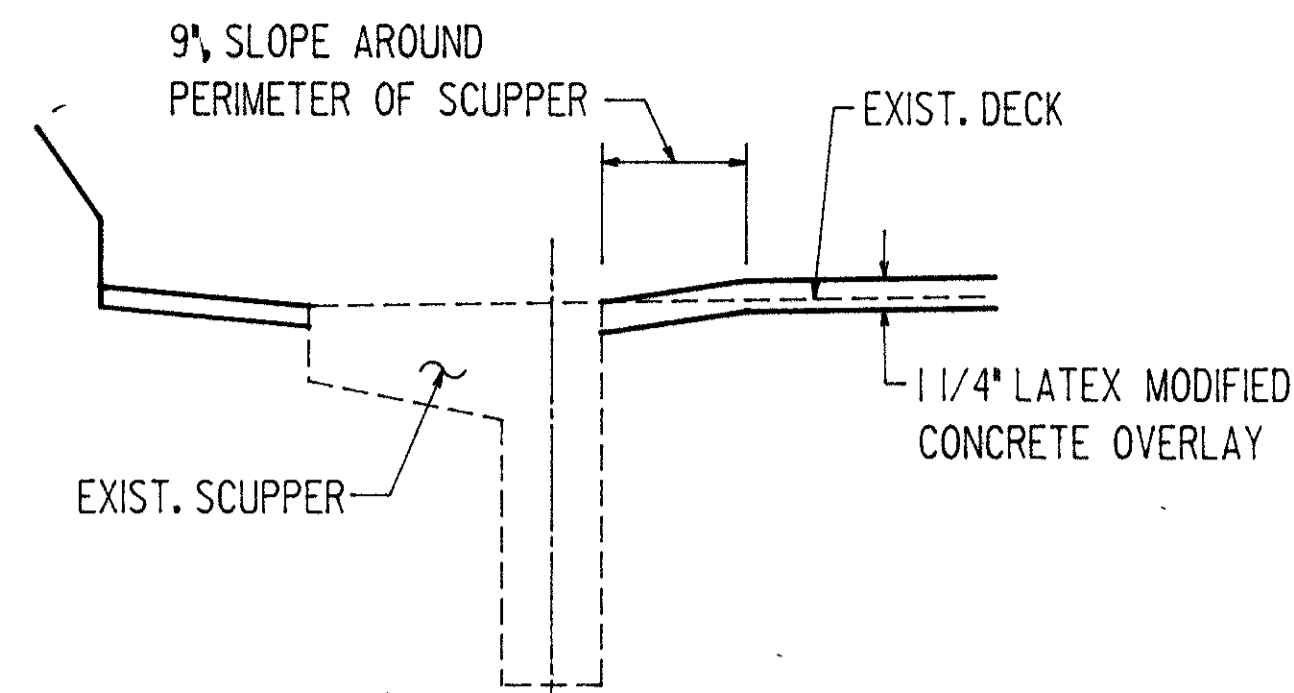
MOT-70-3.10



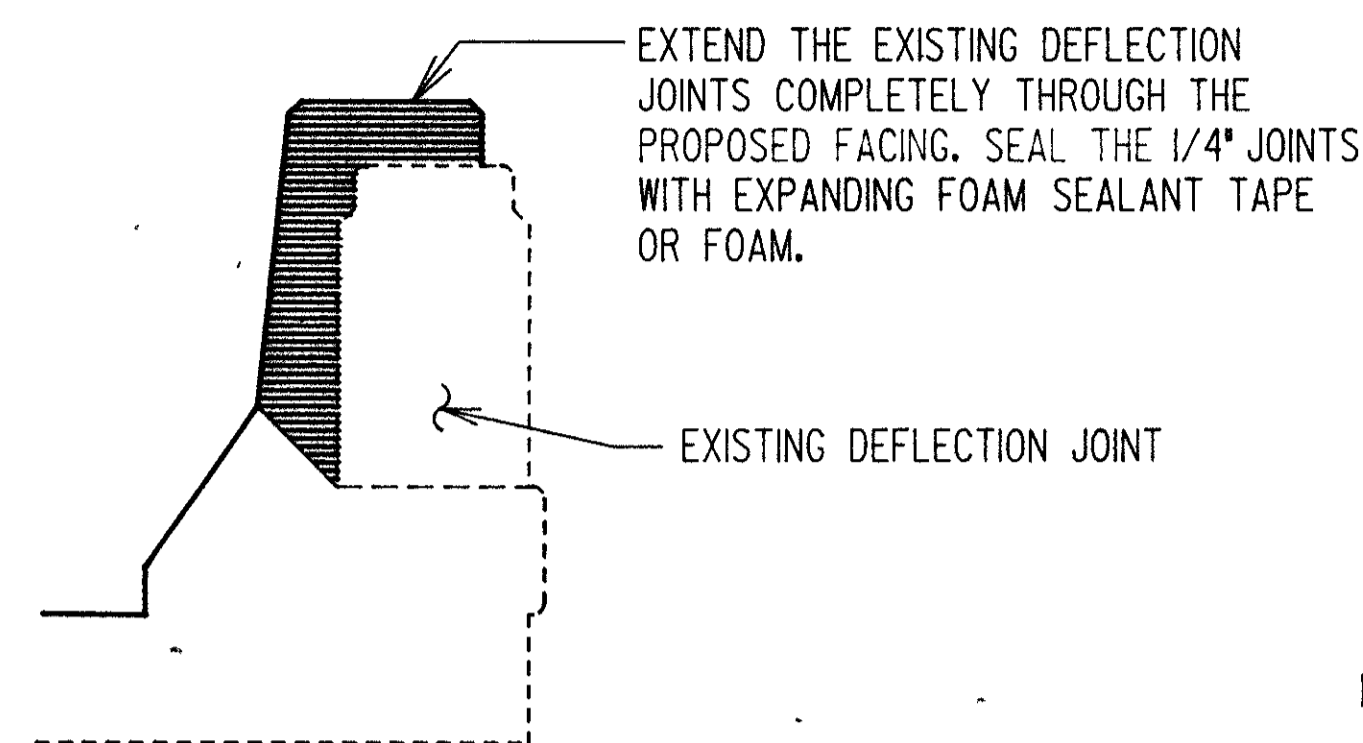
PLAN



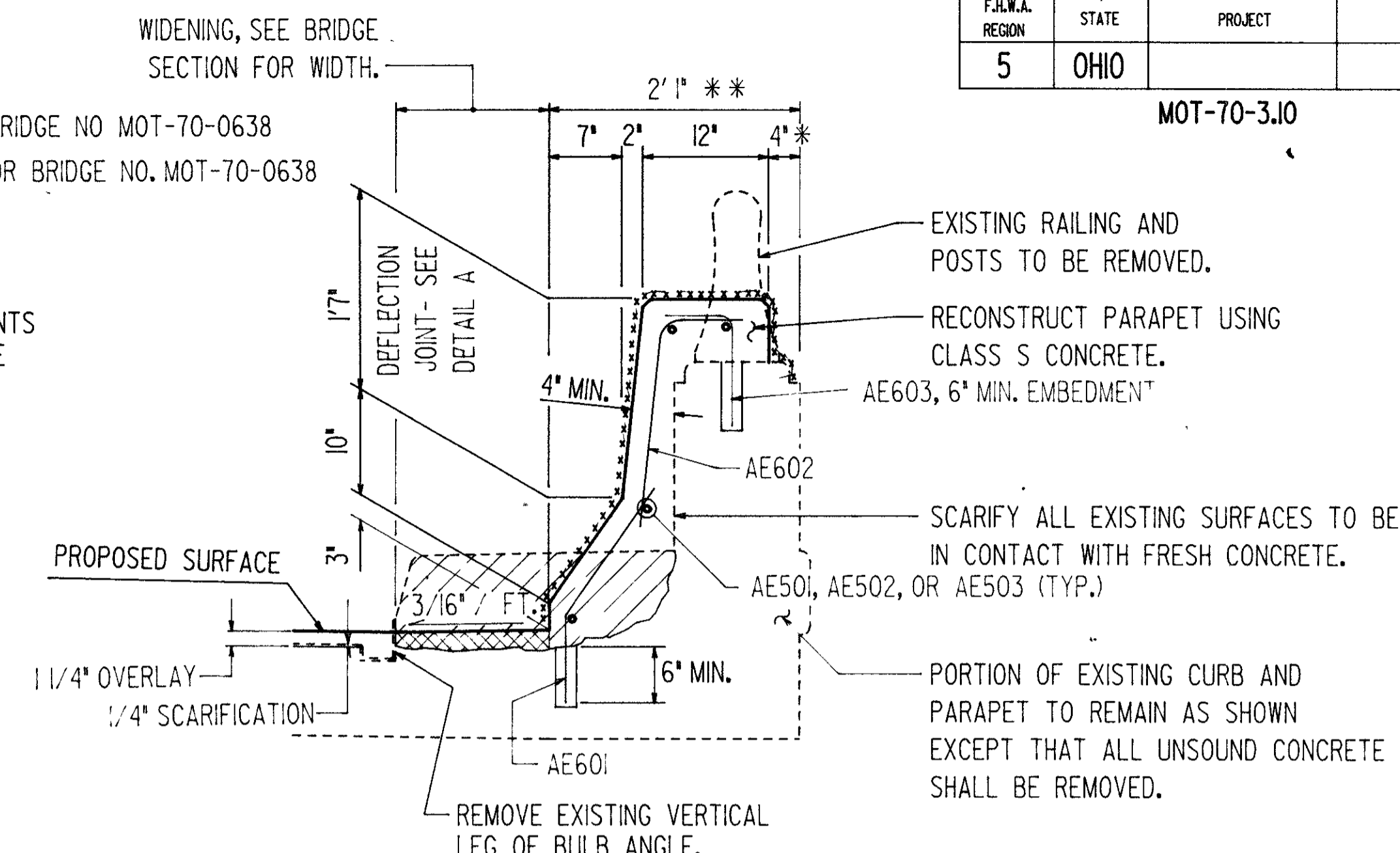
SECTION B-B  
DETAIL B



DETAIL C



DETAIL A



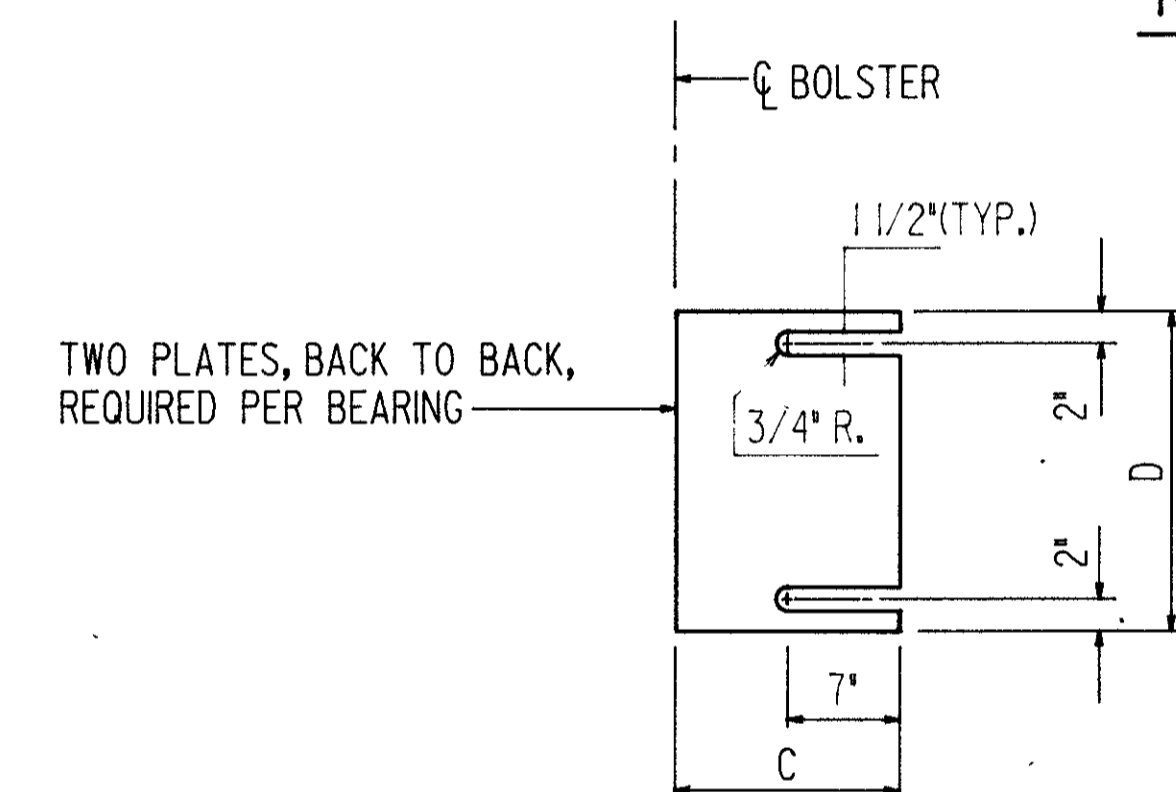
SECTION A-A  
RAILING FACED AS PER PLAN (ITEM 517)

**TYPICAL SCUPPER TREATMENT FOR BRIDGE DECK OVERLAYS**

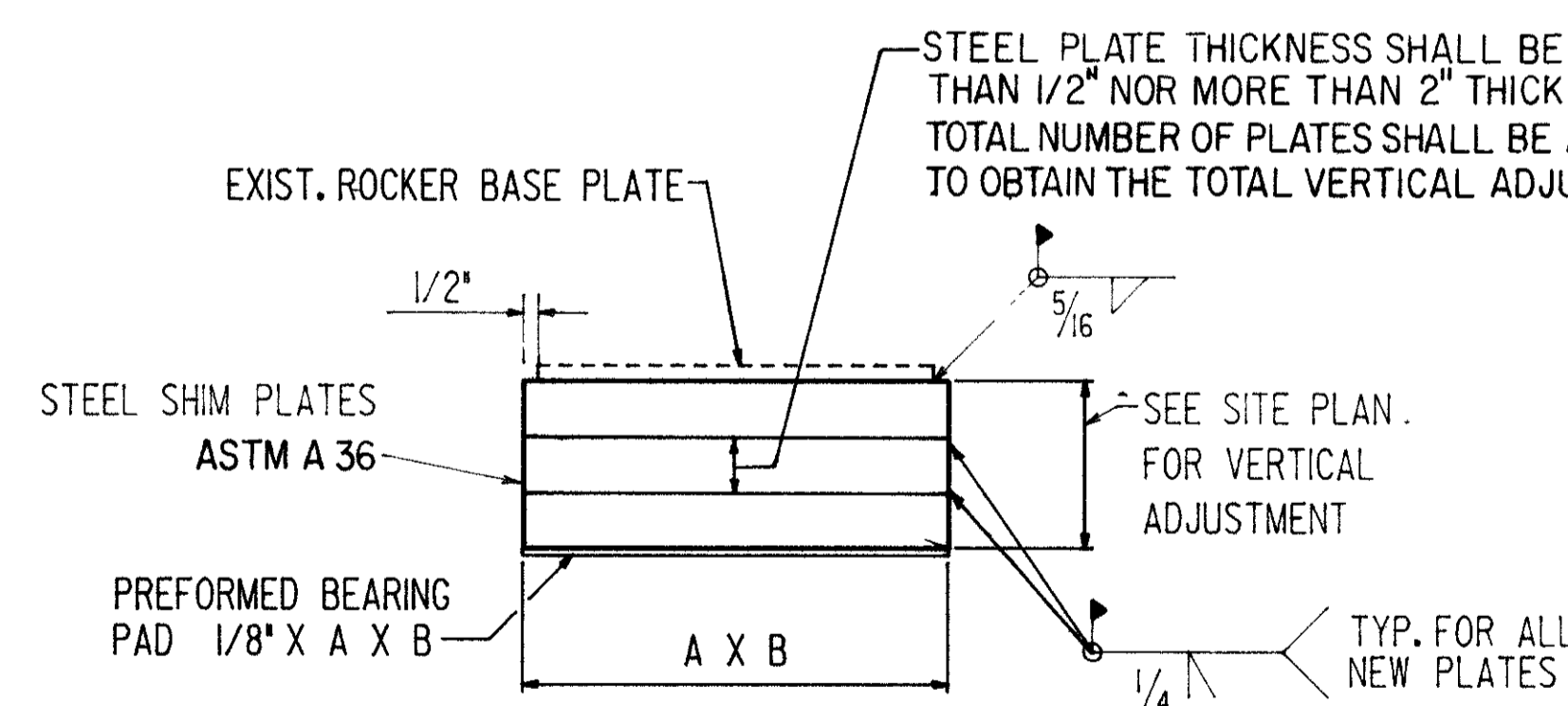
**NOTES:**

1. WHEN THE SCUPPER IS LOCATED MORE THAN TWO(2) FEET FROM THE PROPOSED EDGE OF PAVEMENT DETAIL C IS TO BE USED.
2. WHEN ANY PHYSICAL PART OF THE SCUPPER IS LOCATED WITHIN TWO(2) FEET OF THE PAVEMENT EDGE, DETAIL B IS TO BE USED.
3. ALL NEW STEEL AND EXISTING DISTURBED STEEL SURFACES THAT ARE EXPOSED SHALL BE PAINTED, AS PER ITEM 514 - SYSTEM A.
4. ALL LABOR, MATERIALS, EQUIPMENT AND ANY INCIDENTAL ITEMS NEEDED FOR DETAIL B TYPE SCUPPER TREATMENT SHALL BE PAID FOR UNDER ITEM SPECIAL-SCUPPER MODIFICATION. COSTS FOR DETAIL TYPE C TREATMENT SHALL BE INCLUDED IN THE PRICE FOR ITEM 845 LATEX MODIFIED CONCRETE OVERLAY 1 1/4\".

- NOTES**
1. INSTALL DEFLECTION JOINTS AS PER DETAIL A THIS SHEET AND GENERAL NOTE FOR ITEM 517. SPACING SHALL COINCIDE WITH EXISTING DEFLECTION JOINT LOCATIONS.
  2. ALL REINFORCING STEEL SHALL BE EPOXY COATED AND PAID FOR UNDER ITEM 517-RAILING FACED AS PER PLAN. ALL REBARS SHALL HAVE A MINIMUM OF 2\" CLEARANCE.
  3. REMOVE EXISTING VERTICAL LEG OF BULB ANGLE UNDER ITEM 202- PORTIONS OF STRUCTURE REMOVED. IF THE REMAINING BULB ANGLE COMES LOOSE OR IF UNSOUND CONCRETE EXISTS UNDERNEATH THE BULB ANGLE, THE CONTRACTOR SHALL REMOVE THE ENTIRE BULB ANGLE AT NO ADDITIONAL COST TO THE STATE.

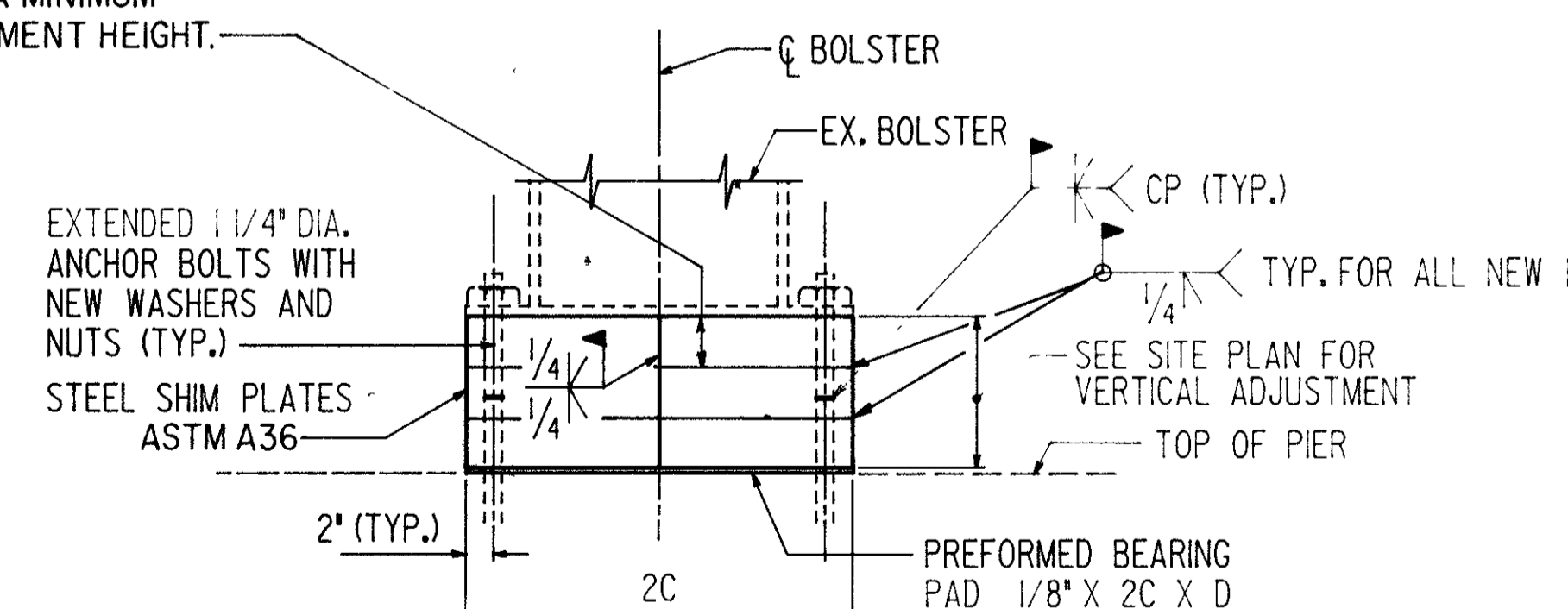


TOP VIEW BOLSTER SHIM PLATE



ROCKER SHIM PLATES

DIMENSIONS							
EXISTING ROCKER	R 75	R 100	R 150	R 175	R 200	R 225	R 250
A	9"	11"	13"	15"	17"	18"	19"
B	19"	20"	23"	24"	25"	26"	27"



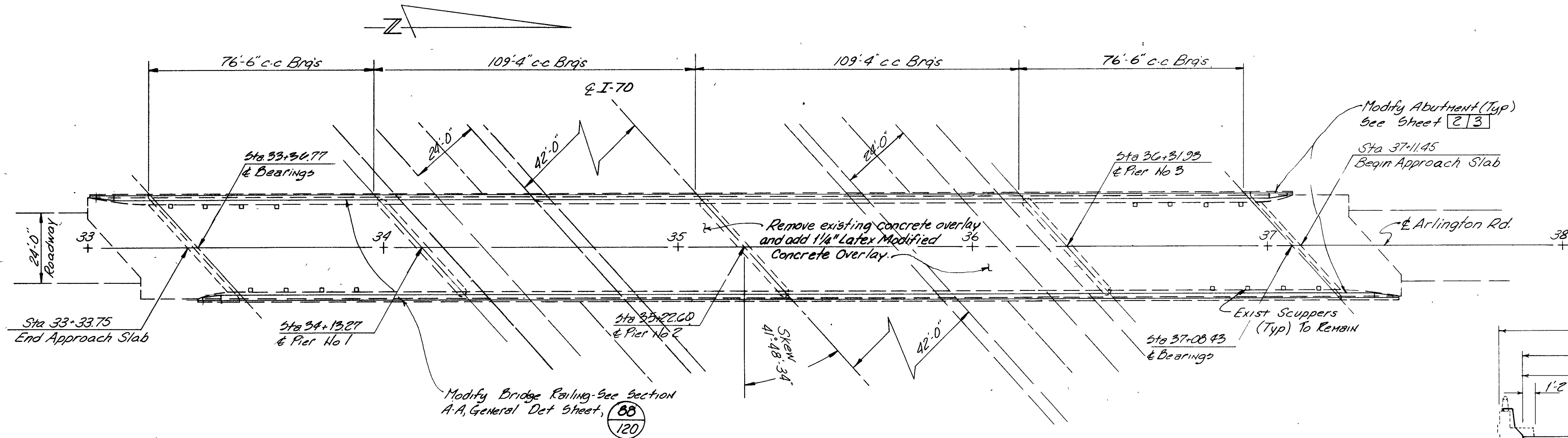
SIDE VIEW BOLSTER SHIM PLATES

DIMENSIONS				
EXISTING BOLSTER	B 150	B 200	B 225	B 250
C	11"	12"	12 1/2"	13"
D	12"	16"	17"	18"

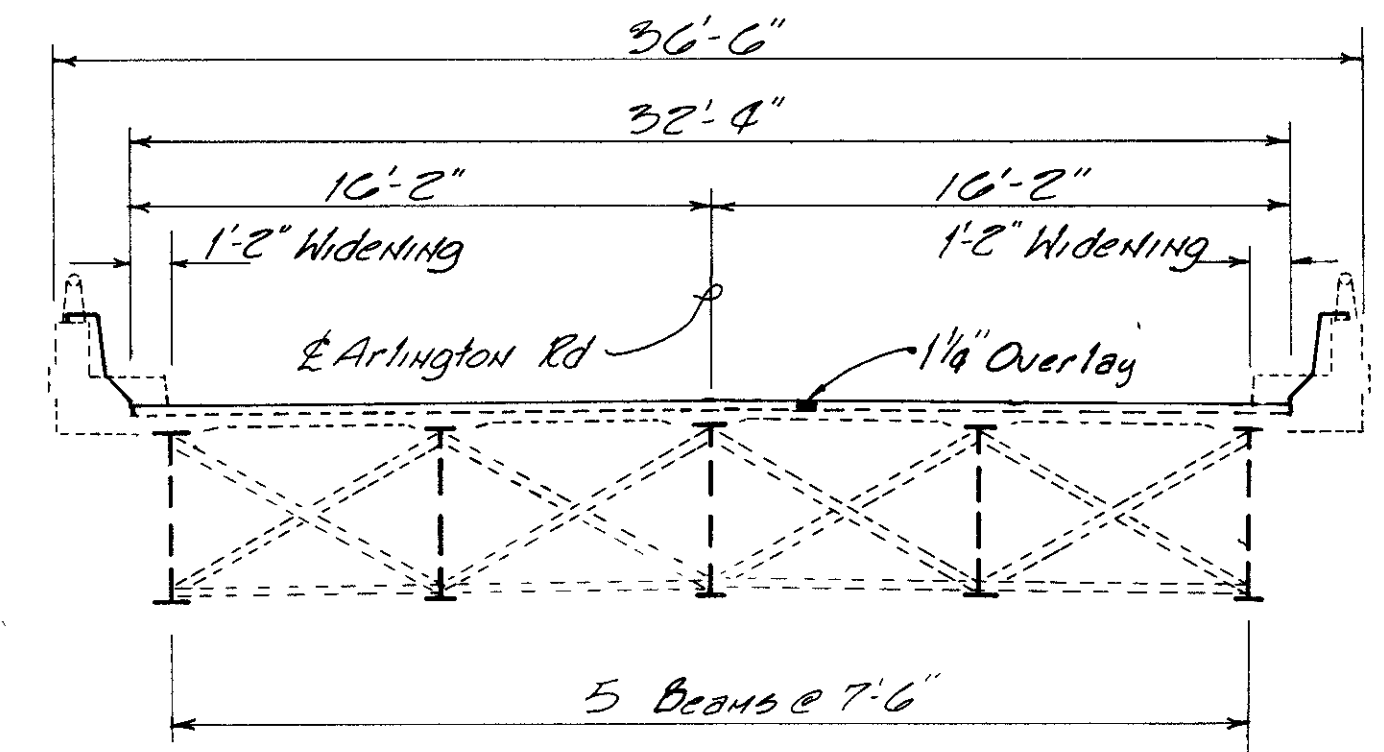
**WOOLPERT CONSULTANTS**  
409 E. MONUMENT AVE.  
DAYTON, OHIO 45402

**GENERAL DETAILS**

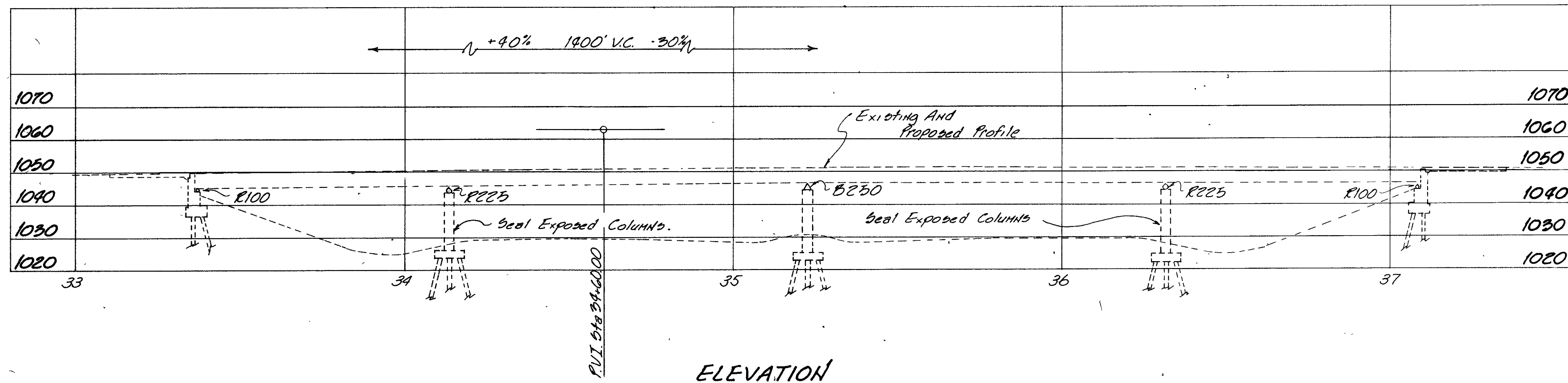
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.E.M.	RACH		D.E.M.	JAC	12/17	



PLAN



BRIDGE SECTION



ELEVATION

EXISTING	STRUCTURE
Type: 4 span Continuous Steel Girders With Reinforced Concrete Deck And Reinforced Concrete Substructure.	
Spans: 76'-6", 109'-4", 109'-4", 76'-6" c to c Bearings	
Roadway: 30'-0" With 2'-3" Safety Curbs	
Load Frequency CF=130 (57)	
Skew: 41'48'34" Rt Hand	
Approach Slabs: A.S.-1-54' (25' Long)	
Alignment: Tangent	
Wearing Surface: Concrete Overlay	

WOOLPERT CONSULTANTS  
409 E. Monument / Dayton, Ohio 45402

GENERAL PLAN, ELEVATION, AND BRIDGE SECTION

BRIDGE NO. MOT-70-0334  
(ARLINGTON RD. OVER I-70)

MONTGOMERY COUNTY

DESIGNED D.M.	DRAWN EACH	TRACED JOE	CHECKED J.E.M.	REVIEWED B.P.	DATE 10/20/82	REVISED
------------------	---------------	---------------	-------------------	------------------	------------------	---------





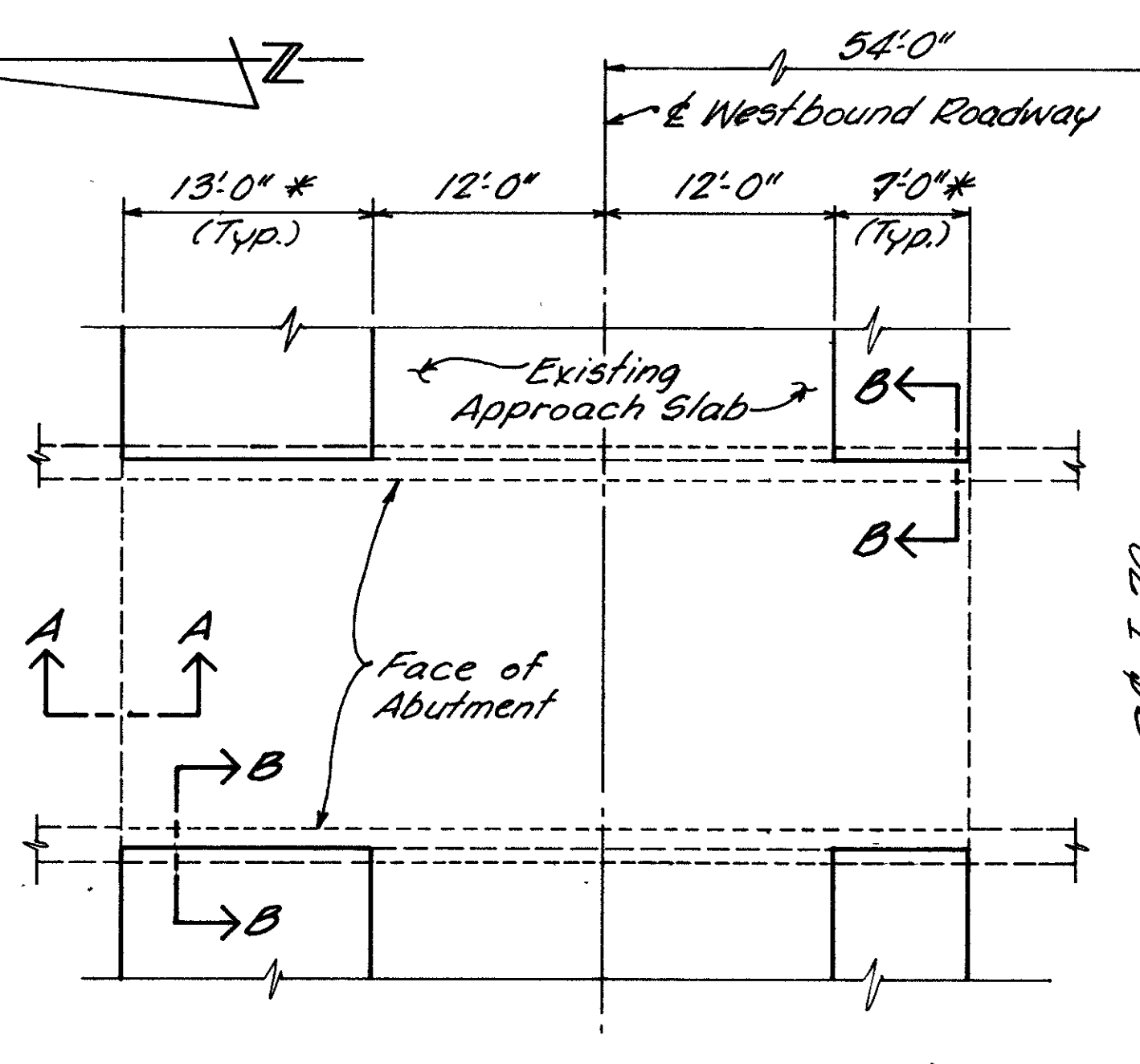


MICROFILMED  
JUL 17 1980

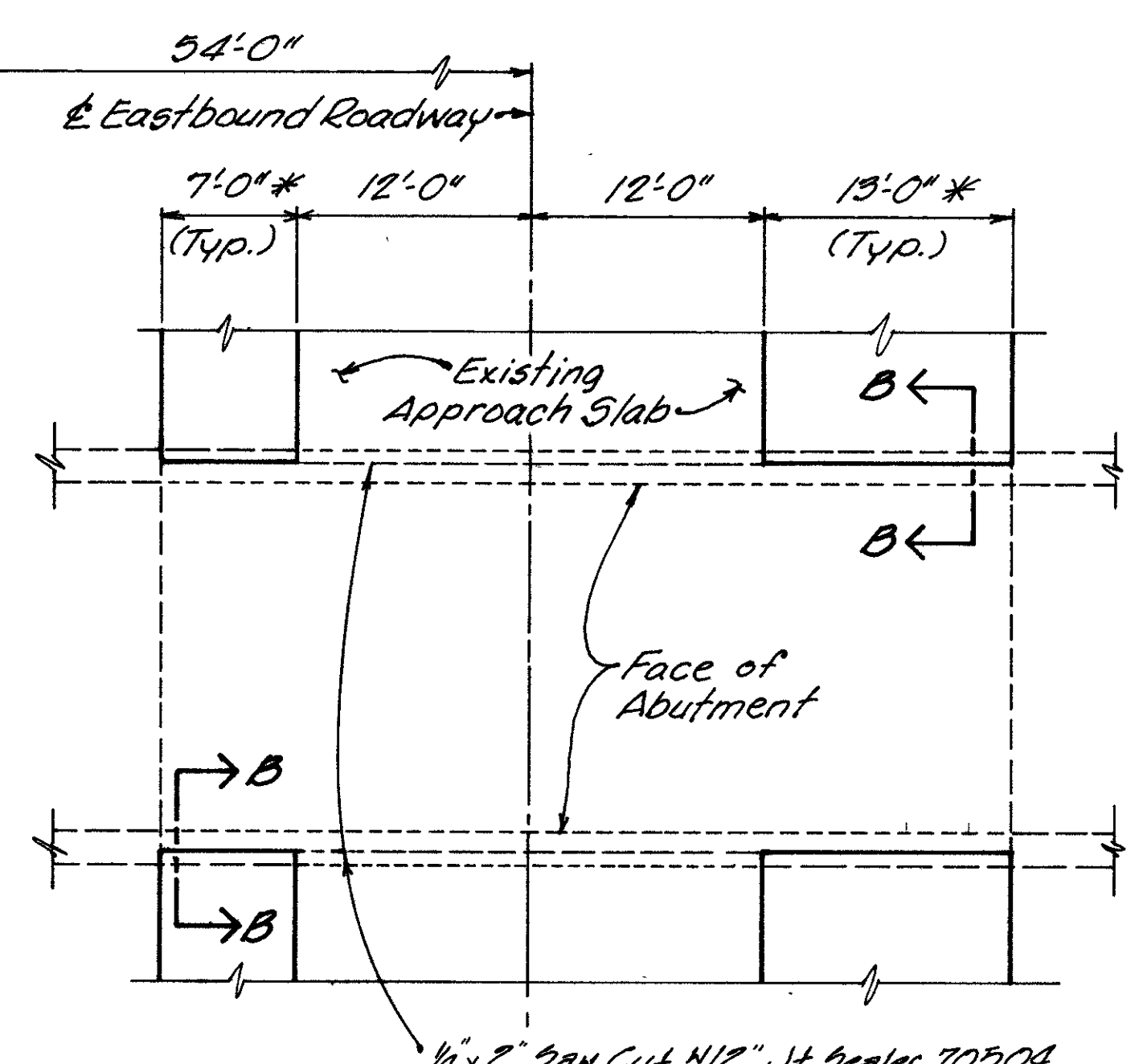
F H W A REGION	STATE	PROJECT	
5	OHIO		

MOT-70-3.10

93  
120

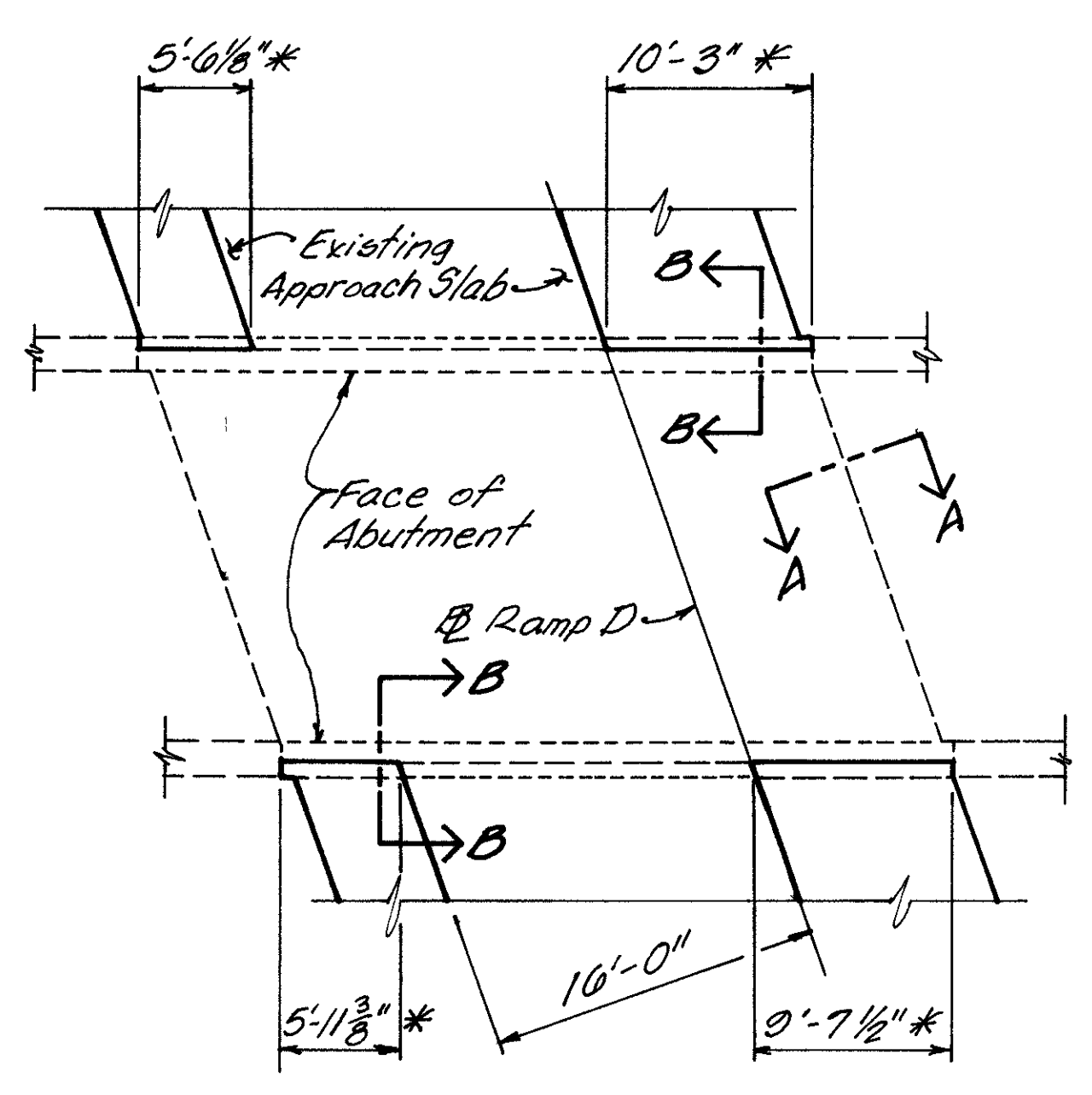


PLAN-MOT-70-03.44 L

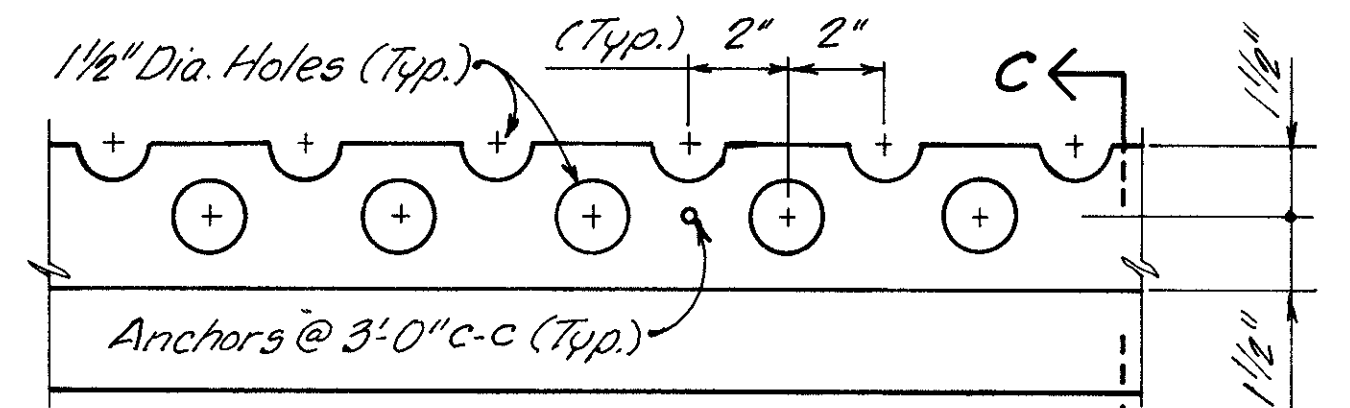


PLAN-MOT-70-03.44 R

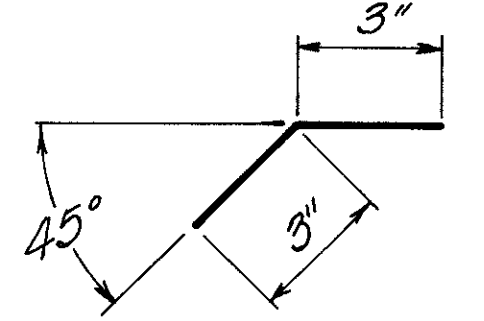
NOTE: \* Indicates Approach Slab Widening.



PLAN-RAMP D



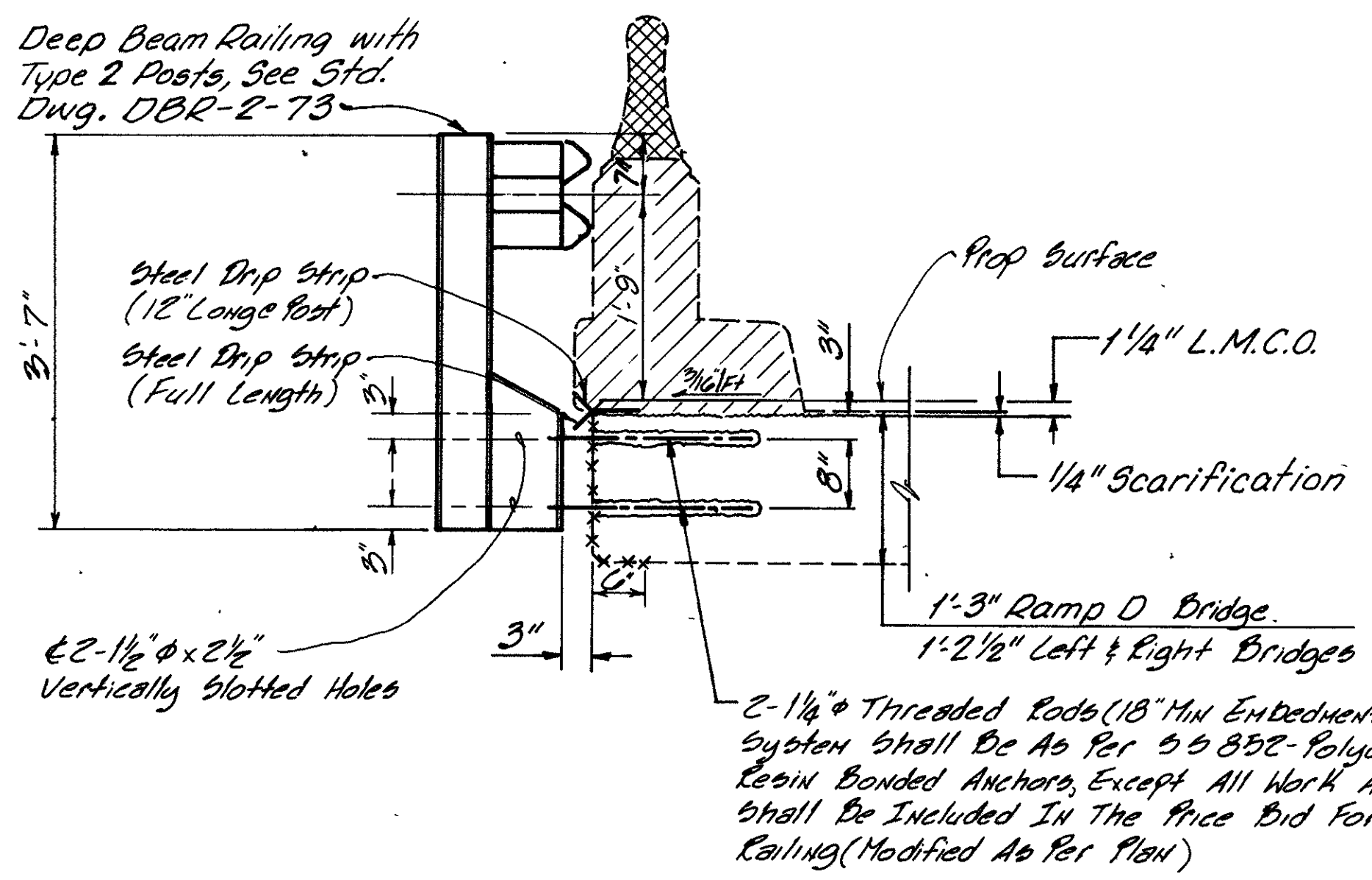
PLAN



SECTION C-C

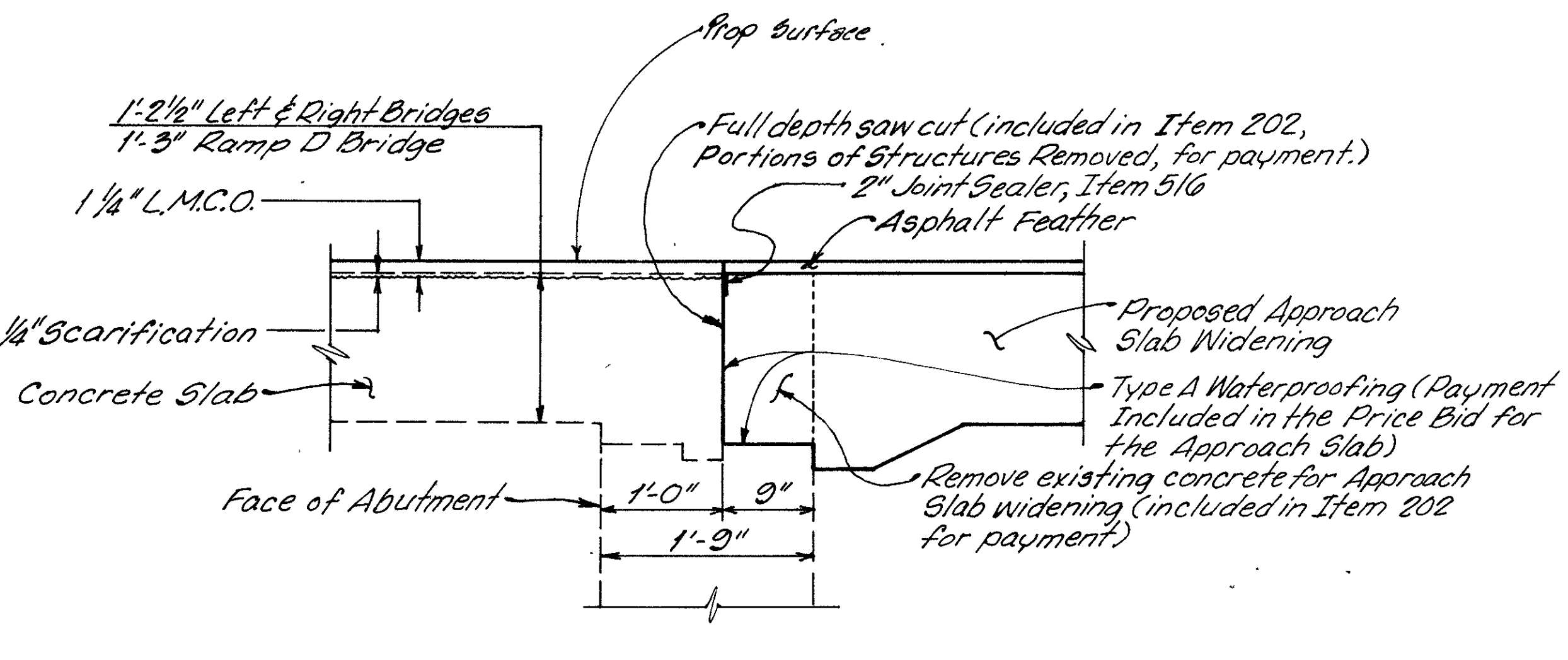
DRIP STRIP DETAILS

For notes regarding drip strip see Sheet 87/120



SECTION A-A

- Existing Curb And Parapet To Be Removed Under Item 202-Portions Of Structures Removed
- Surfaces To Be Sealed Under Item Special-Sealing Of Concrete Surfaces
- Existing Railing And Posts To Be Removed And Stacked Neatly Along The Right-Of-Way For Subsequent Pick Up By State Forces. All Work Shall Be Included In The Price Bid For Item 202-Portions Of Structures Removed.



SECTION B-B

WOOLPERT CONSULTANTS  
409 East Monument Avenue  
Dayton, Ohio 45402-1226

CONCRETE SLAB & RAILING MODIFICATIONS  
BRIDGE NO. MOT-70-0344 (L/R & RAMP D)  
OVER WOLF CREEK-NORTH BRANCH

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.E.M.	RACH		DEM	DBZ	10/20/97	



JUL 17 1982

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

94  
120


MOT-70-3.10

### PROPOSED WORK

1. REMOVE ASPHALT FROM THE SUPERSTRUCTURE .
2. REMOVE EXISTING SAFETY CURB AND RAILING.
3. MODIFY CONCRETE SLAB AS SHOWN.
4. SCARIFY EXISTING DECK 1/4", AND REMOVE DETERIORATED CONCRETE AS DIRECTED BY THE ENGINEER.
5. PERFORM PARTIAL DEPTH AND FULL DEPTH DECK REPAIR AND PLACE LATEX MODIFIED CONCRETE OVERLAY (1 1/4" THICK ). SEAL OUTSIDE EDGES OF SLAB.
6. PLACE NEW DEEP BEAM RAILING ON THE LEFT AND RAMP BRIDGE.
7. SEAL JOINTS, AS NOTED.
8. REPLACE GUARDRAIL AS SHOWN ON ROADWAY PLANS.
9. ONE LANE OF TRAFFIC SHALL BE MAINTAINED ON EACH BRIDGE AT ALL TIMES. FOR MAINTENANCE OF TRAFFIC DETAILS SEE SHEET 16  
120
10. OTHER WORK AS DESCRIBED IN THESE PLANS.

### ESTIMATED QUANTITIES

ITEM	TOTAL	UNITS	DESCRIPTION	AS BUILT
202	LUMP SUM	L.S.	PORTIONS OF STRUCTURES REMOVED, AS PER PLAN	
202	280	S.Y.	ASPHALT WEARING COURSE REMOVED, AS PER PLAN	
509	300	LBS.	REINFORCING STEEL, GRADE 60	
516	240	L.F.	JOINT SEALER, 705.04	
517	50	L.F.	RAILING ( DEEP BEAM RAIL W/STEEL TUBULAR BACKUP AND TYPE 2 POSTS ), MODIFIED AS PER PLAN	
845	267	S.Y.	LATEX MODIFIED CONCRETE OVERLAY, 1 1/4", AS PER PLAN	
845	14	C.Y.	LATEX MODIFIED CONCRETE, VARIABLE DEPTH	
SPECIAL	9	S.Y.	SEALING OF CONCRETE SURFACES , SEE PROPOSAL NOTE	
SPECIAL	21	S.F.	STEEL DRIP STRIP	

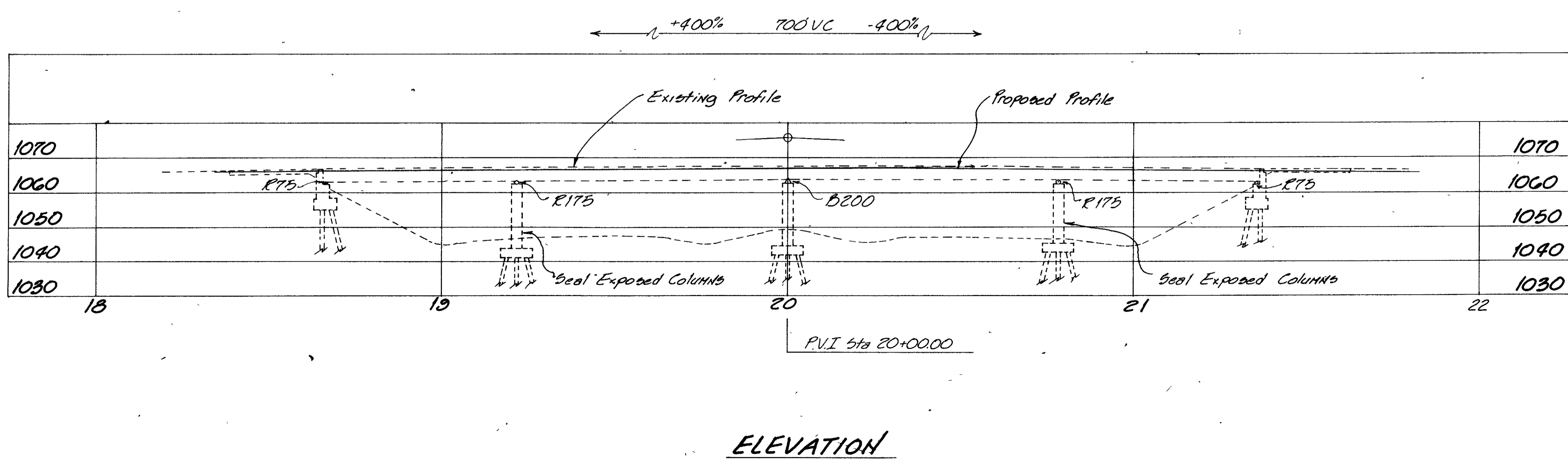
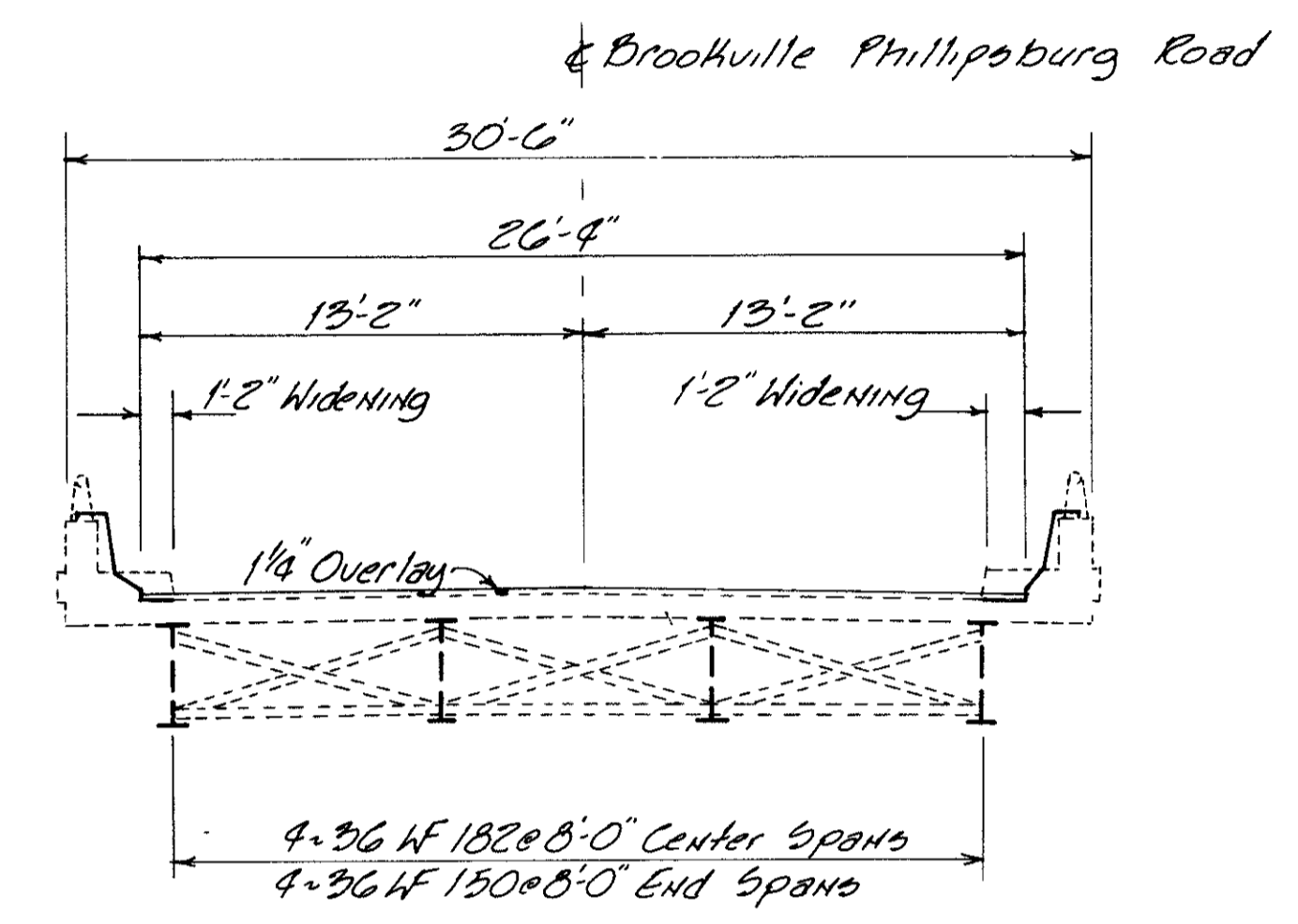
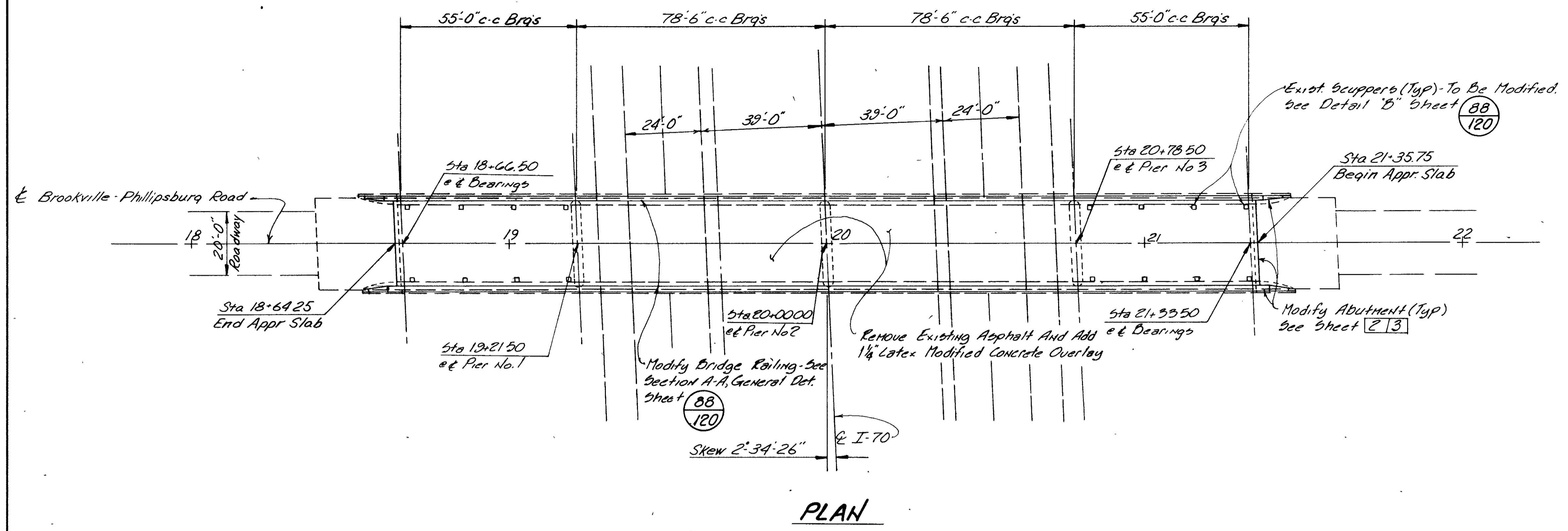
 **WOOLPERT CONSULTANTS** 3 / 3  
409 E. MONUMENT AVE.  
DAYTON, OHIO 45402

**REINFORCING STEEL LIST  
ESTIMATED QUANTITIES  
& PROPOSED WORK NOTES**  
BRIDGE NO. MOT - 70 - 0344 (L/R ) AND RAMP

MONTGOMERY COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.E.M.	RACH		DEM	SBK	10/20/87	

MICROFILMED  
MAY 17 1988



**EXISTING STRUCTURE**

Type 4-span Continuous Steel Beams With Reinforced Concrete Deck And Reinforced Concrete Sub-structure

Spans: 55'-0", 78'-6", 78'-6", 55'-0" c.c. Bearings.

Roadway 24'-0" with 2'-3" Safety Curbs

Load Frequency CF=130(57)

Skew: 2'-34'-26" Rt Fwd

Wearing Surface: Asphalt

Approach Slabs: A2-1-54(25' Long)

Alignment: Tangent

**WOOLPERT CONSULTANTS**

409 E. Monument / Dayton, Ohio 45402

1/3

**GENERAL PLAN, ELEVATION AND BRIDGE SECTION**

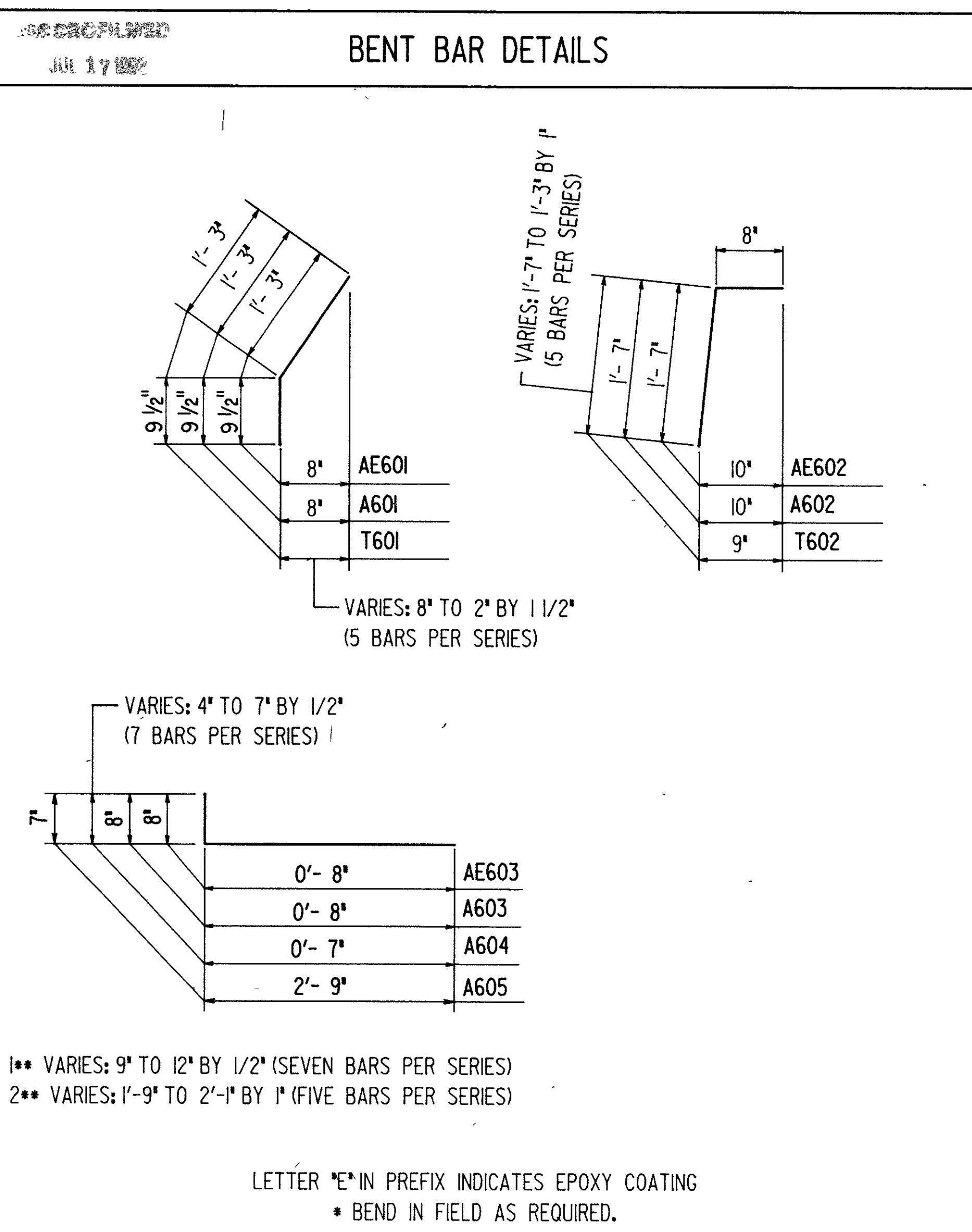
BRIDGE NO. MOT-70-0452  
(BROOKVILLE PHILLIPSBURG RD OVER I-70)

MONTGOMERY COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DEM.	RACH	J.H.	DEM	S.D.	10/2/67	



REINFORCING STEEL LIST				
MARK	SHAPE	NUMBER	LENGTH	WEIGHT
PARAPETS				
AE501	STR.	120	15'- 10"	1982
AE502	STR.	16	12'- 7"	210
AE601	BNT.	404	1'- 10"	1113
AE602	BNT.	404	2'- 1"	1264
AE603	BNT.	404	1'- 2"	708
A501	STR.*	16	9'- 8"	161
A502	STR.	16	4'- 4"	72
A601	BNT.	12	1'- 10"	33
A602	BNT.	12	2'- 1"	38
A603	BNT.	16	1'- 2"	28
A604	BNT.	28	1**	37
A605	BNT.	12	3'- 2"	57
T601	BNT.	20	1'- 10"	55
T602	BNT.	20	2**	58
TOTAL			5816	



ESTIMATED QUANTITIES				
ITEM	TOTAL	UNITS	DESCRIPTION	AS BUILT
202	LUMP SUM	L.S.	PORTIONS OF STRUCTURES REMOVED	
202	724	S.Y.	ASPHALT WEARING COURSE REMOVED, AS PER PLAN	
509	839	LBS.	REINFORCING STEEL, GRADE 60	
516	48	L.F.	JOINT SEALER, 705.04, AS PER PLAN	
517	538	L.F.	RAILING FACED, AS PER PLAN	
824	5277	LBS.	EPOXY COATED REINFORCING STEEL, GRADE 60	
845	795	S.Y.	LATEX MODIFIED CONCRETE OVERLAY, 1 1/4"	
SPECIAL	414	S.Y.	SEALING OF CONCRETE SURFACES, SEE PROPOSAL NOTE	
SPECIAL	16	EACH	SCUPPER MODIFICATION	
SPECIAL	2	EACH	ABUTMENT MODIFICATION	

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

MOT - 70 - 3.10

97  
120

PROPOSED WORK

- REMOVE ASPHALT FROM THE SUPERSTRUCTURE AND BACKWALL.
- REMOVE EXISTING STEEL PLATES (THAT RETAIN ASPHALT) FROM END DAMS AND ADD STEEL PLATES AS SHOWN ON PLANS. ADD EXTENSIONS TO END DAM WITH PARAPET CURB PLATES FOR ROADWAY WIDENING AT FOUR LOCATIONS AFTER EXISTING SAFETY CURB HAS BEEN REMOVED.
- MODIFY PARAPETS ON THE SUPERSTRUCTURE AND ABUTMENTS. SEAL PARAPETS AS SHOWN ON PLANS.
- SCARIFY EXISTING DECK 1/4", AND REMOVE DETERIORATED CONCRETE AS DIRECTED BY THE ENGINEER.
- PERFORM PARTIAL DEPTH AND FULL DEPTH DECK REPAIR AND PLACE LATEX MODIFIED CONCRETE OVERLAY (1 1/4" THICK).
- SEAL JOINTS, AS NOTED.
- REPLACE GUARDRAIL AS SHOWN ON ROADWAY PLANS.
- BROOKVILLE- PHILLIPSBURG ROAD SHALL BE CLOSED TO TRAFFIC FOR A LIMITED TIME PERIOD. FOR NOTES SEE SHEET 15/120
- OTHER WORK AS DESCRIBED IN THESE PLANS.

WOOLPERT CONSULTANTS  
409 E. MONUMENT AVE.  
DAYTON, OHIO 45402

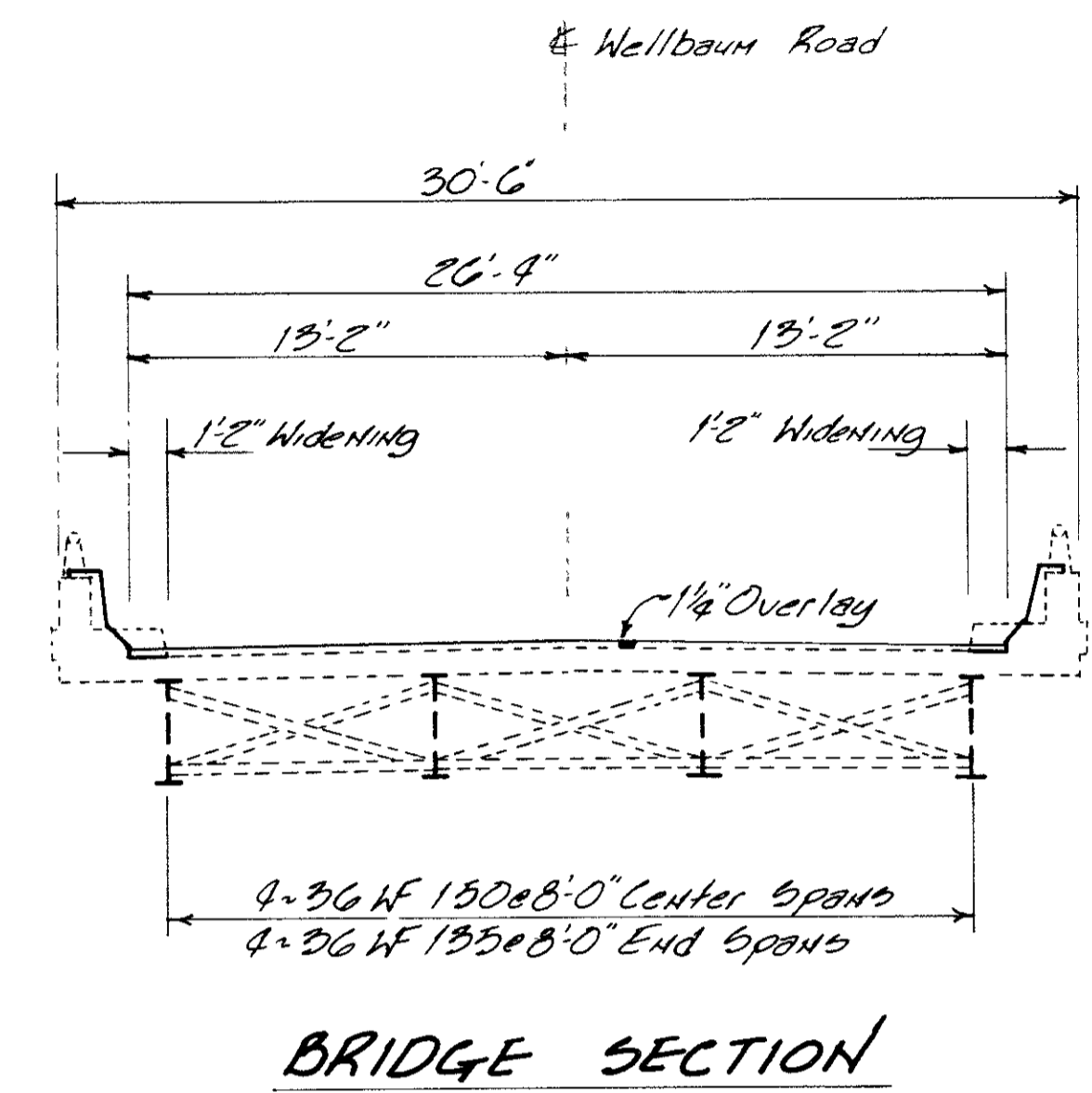
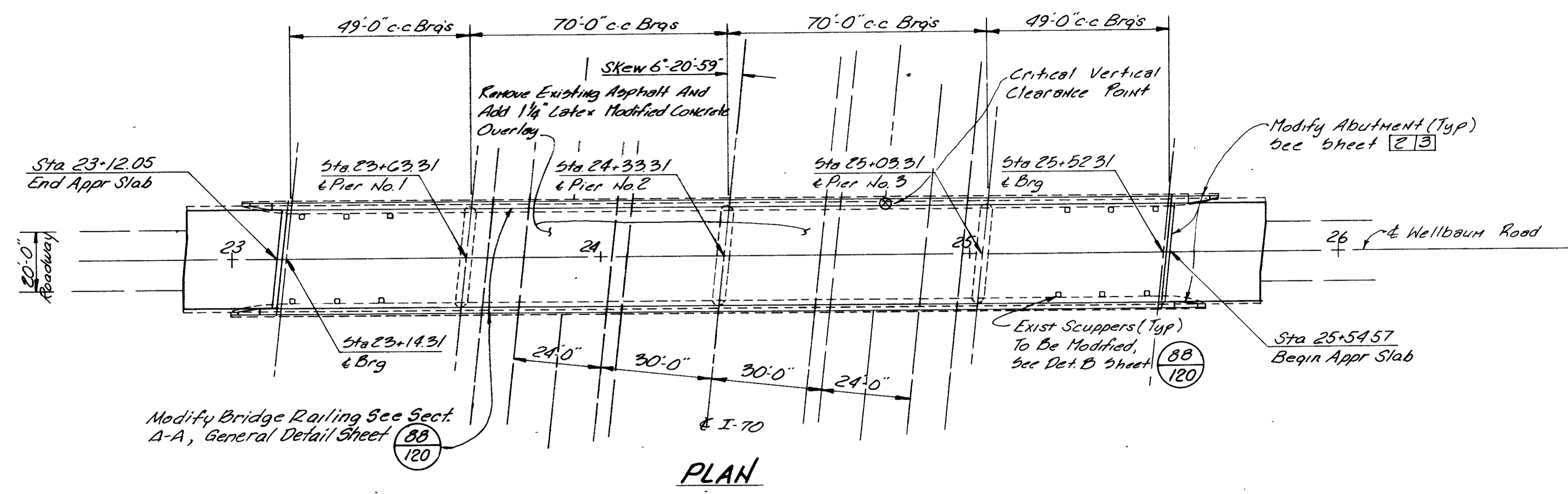
3 / 3

**REINFORCING STEEL LIST  
ESTIMATED QUANTITIES  
& PROPOSED WORK NOTES**

BRIDGE NO. MOT - 70 - 0452

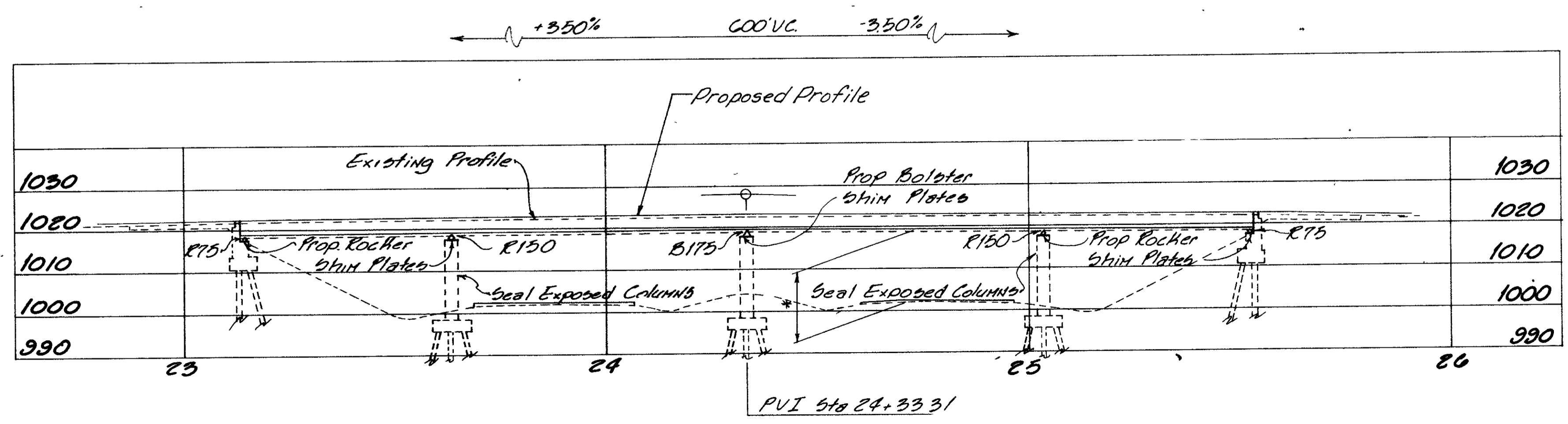
MONTGOMERY COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.E.M.	RACH		DEM	2/22	12/10/07	



Rocker or Bolster Size	Jack Capacity Required (Min.)
R75	25 TON
R150	100 TON
B175	100 TON

FOR ROCKER AND BOLSTER SHIM PLATE DETAILS SEE GENERAL DETAIL SHEET.



\* Raise Bridge 7 7/16" Min To Maintain 16'-5" Minimum Vertical Clearance (Typ. at all substructure units)

**EXISTING STRUCTURE**

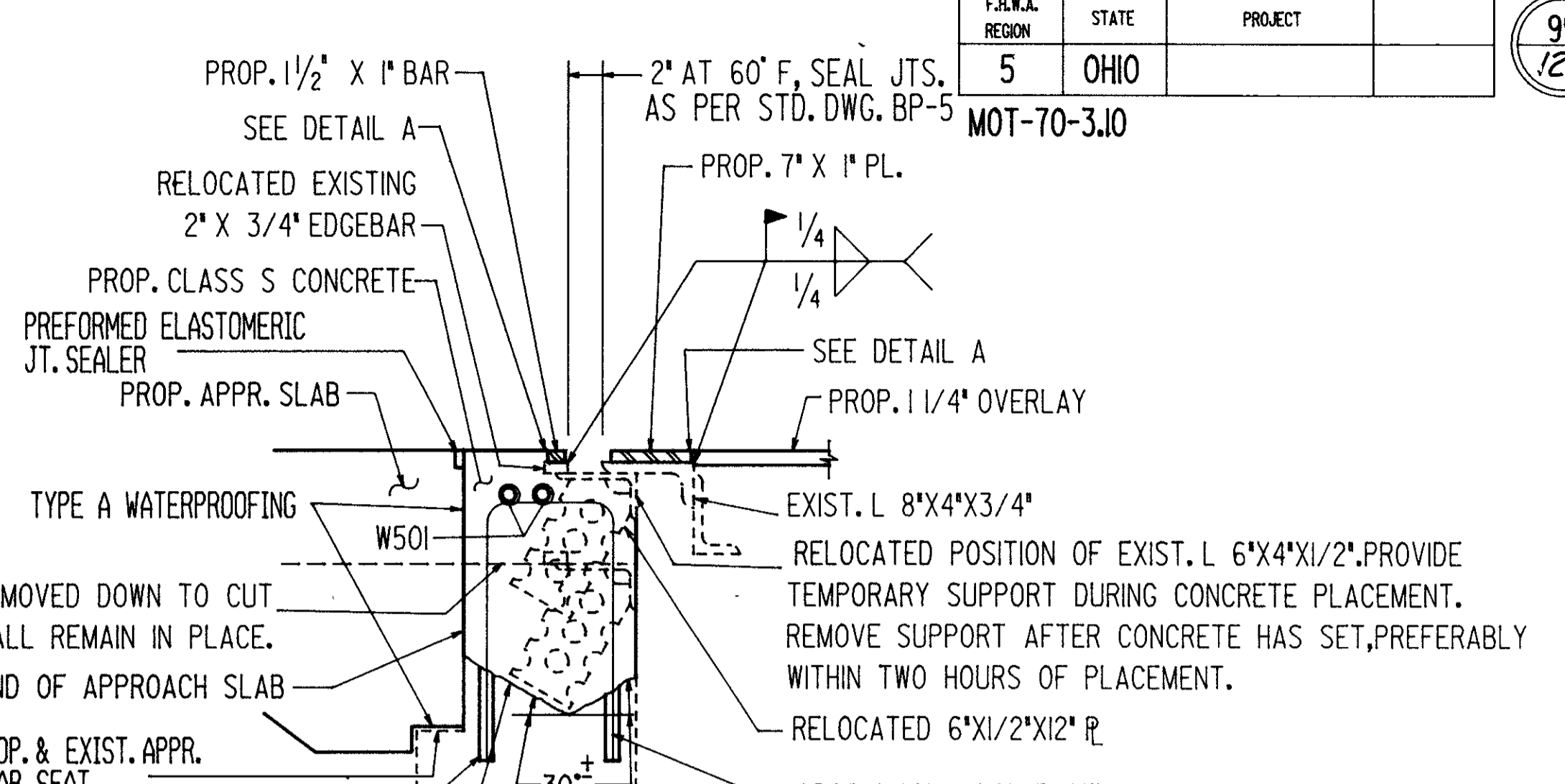
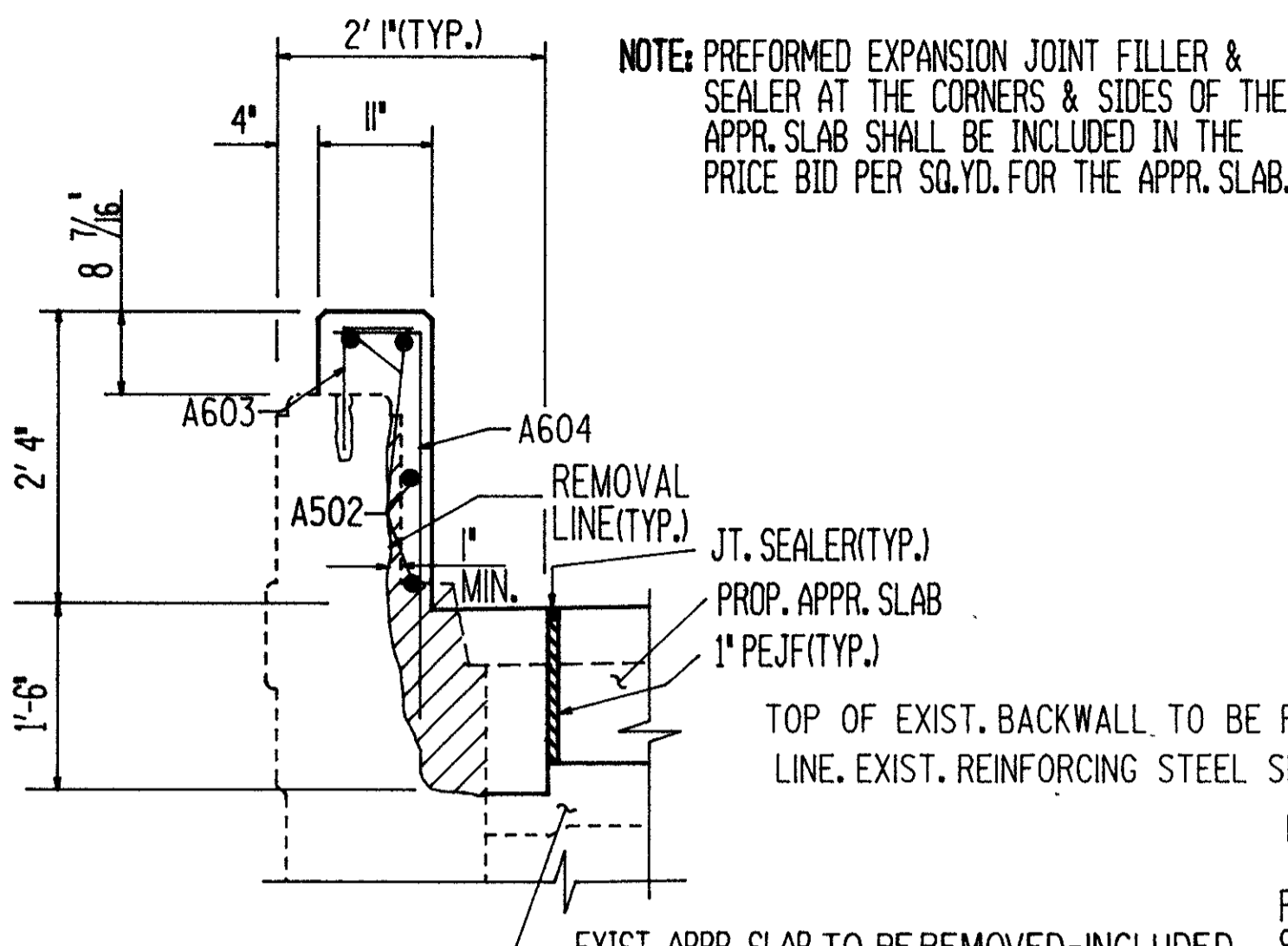
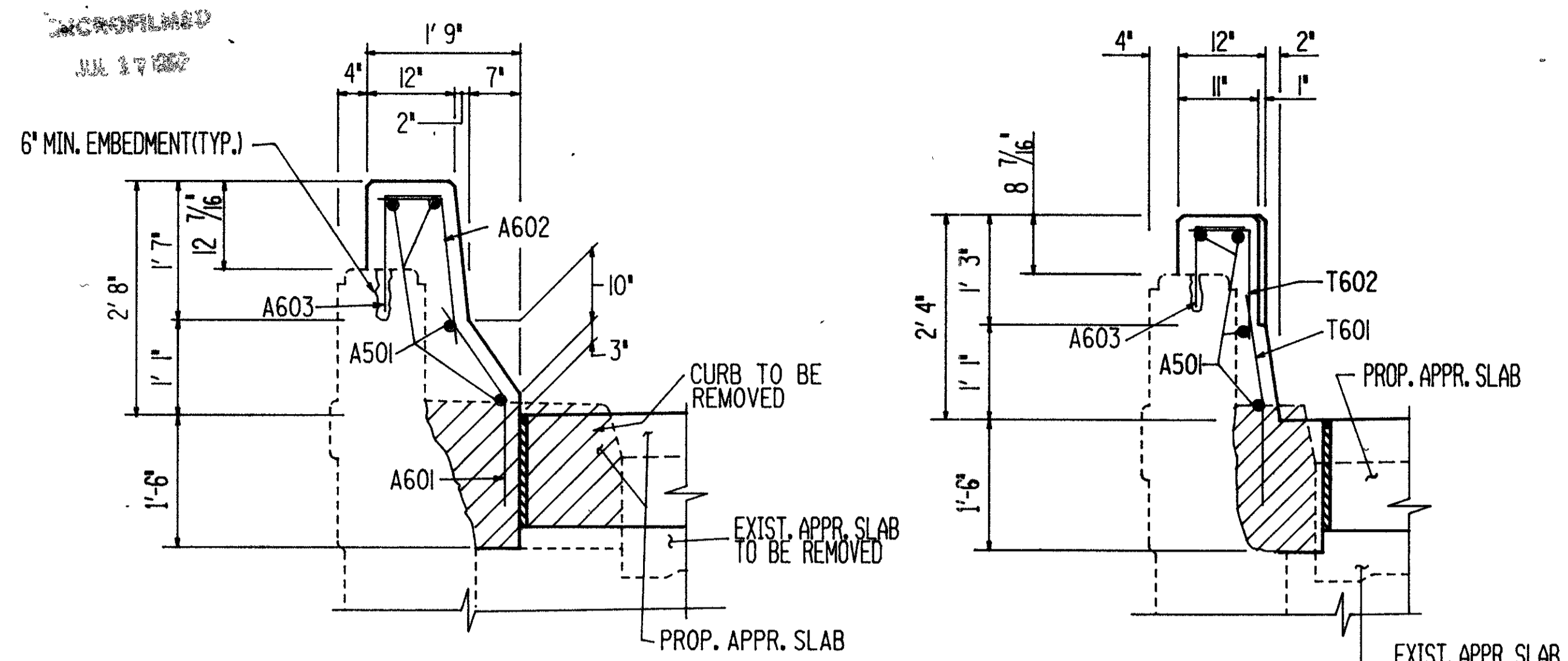
Type: 4-Span Continuous Steel Beams With Reinforced Concrete Deck And Reinforced Concrete Substructure  
 Spans: 49'-0", 70'-0", 70'-0", 49'-0" c.c. Bearings  
 Roadway 24'-0" with 2'-3" Safety Curbs  
 Load Frequency: C.F. = 130 (5T)  
 Skew: 6° 20' 59" Lt End  
 Wearing Surface: Asphalt  
 Approach Slabs: A5-1-54 (25' Long)  
 Alignment: Tangent

**WOOLPERT CONSULTANTS**  
 409 E. Monument / Dayton, Ohio 45402

**GENERAL PLAN, ELEVATION AND BRIDGE SECTION**

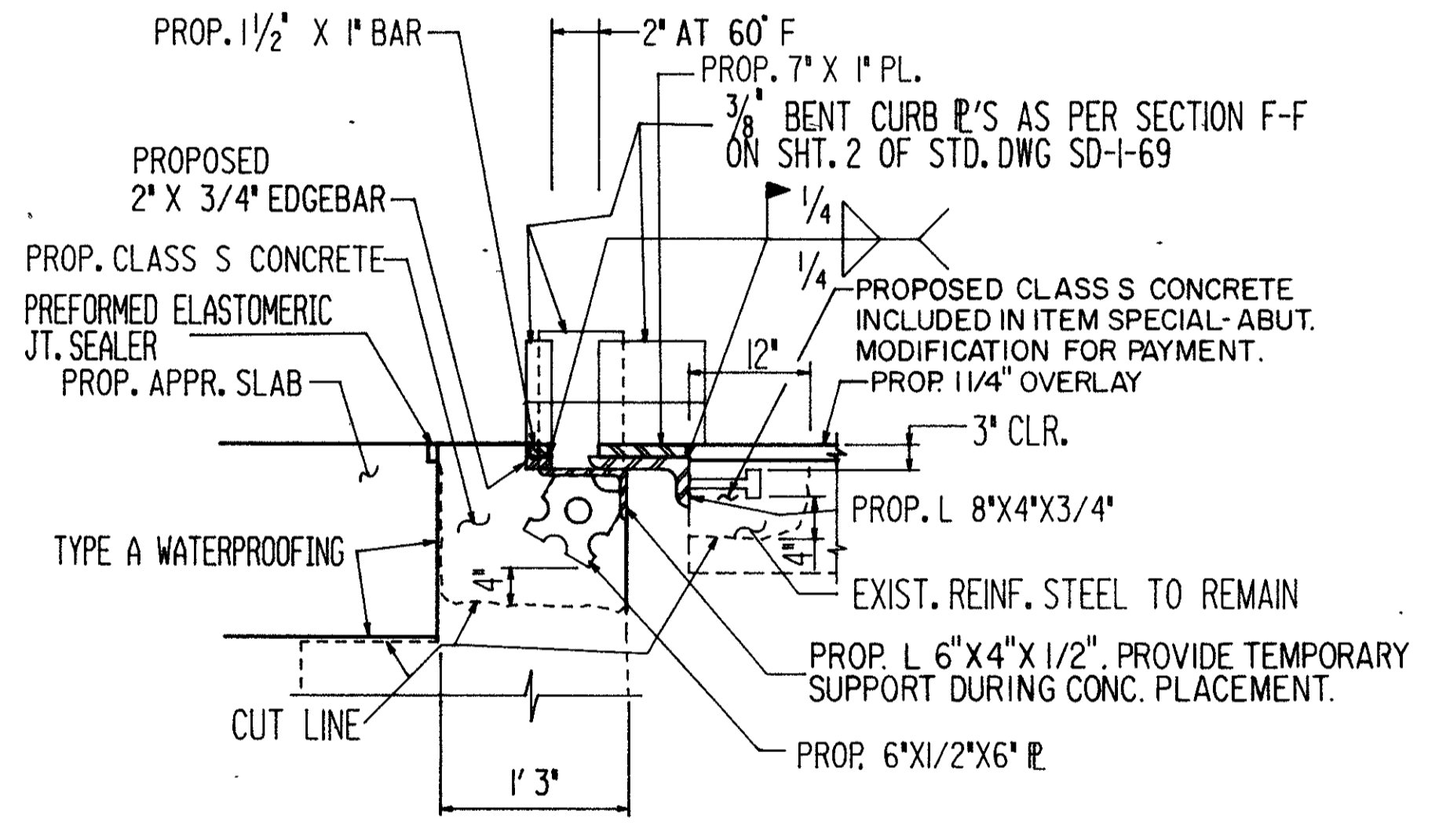
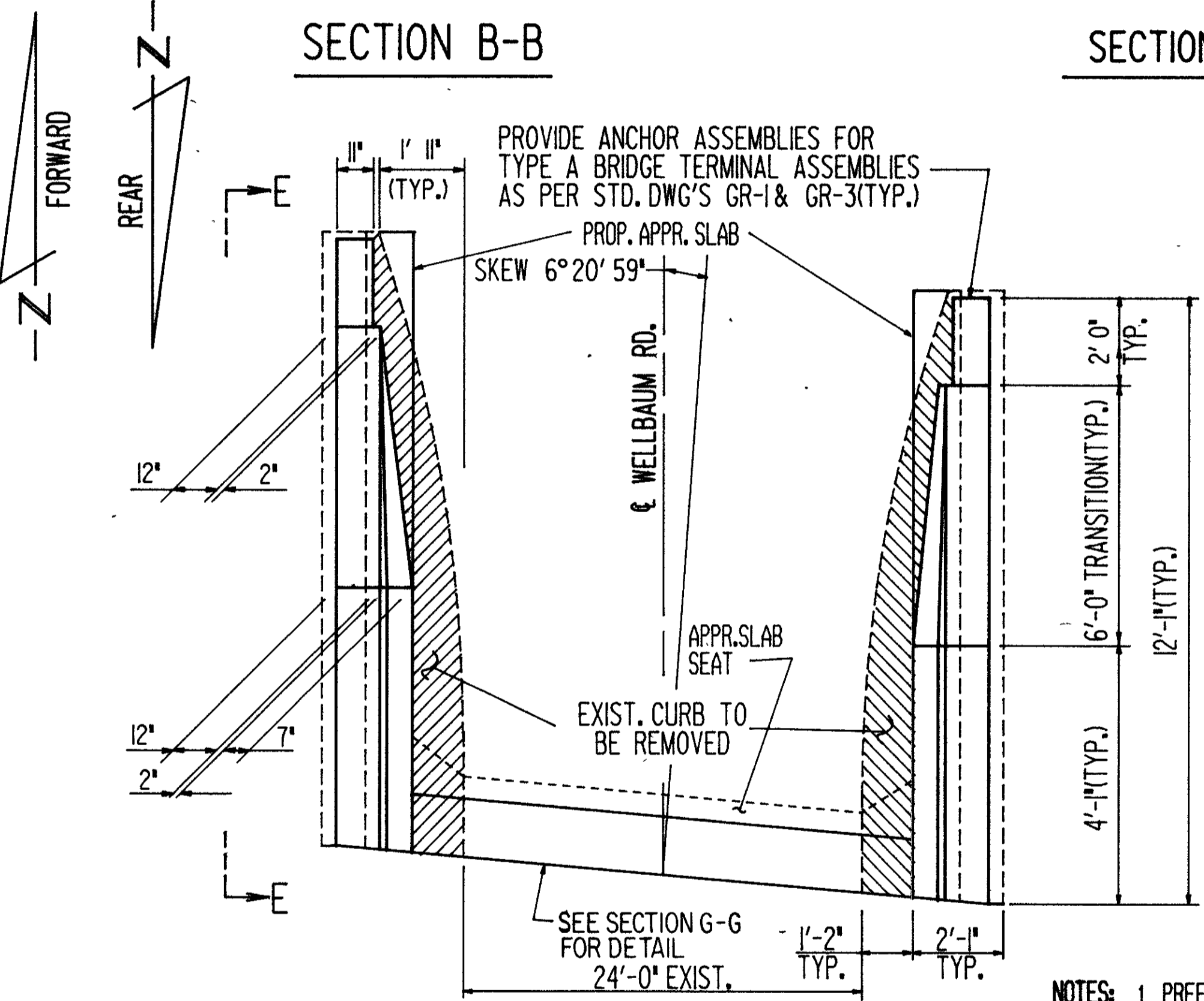
BRIDGE NO. MOT-70-0553  
 (WELLBAUM RD. OVER I-70)

MONTGOMERY COUNTY					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
P.E.M.	RACH	JOE	P.E.M.	S.B.Z.	10/20/87

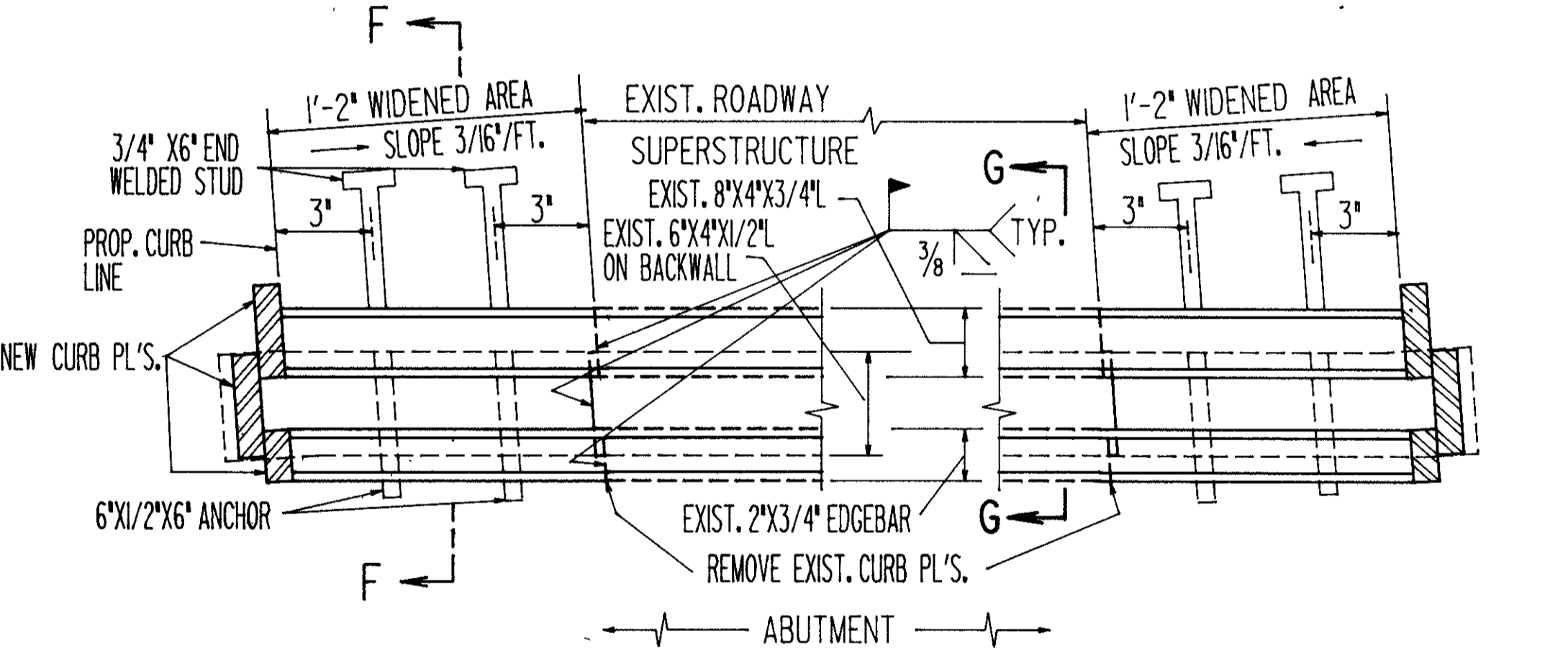


NOTE: PREFORMED EXPANSION JOINT FILLER & SEALER AT THE CORNERS & SIDES OF THE APPR. SLAB SHALL BE INCLUDED IN THE PRICE BID PER SQ.YD. FOR THE APPR. SLAB.

NOTE: EXTEND BRIDGE END DAM ON ALL FOUR CORNERS (1'-2" WHERE SAFETY CURB IS REMOVED) WITH STEEL SHAPES, AND REINFORCING STEEL SHOWN. THE PROPOSED EXTENSION PIECES SHALL BE WELDED TO THE EXIST. END DAM AND HAVE THE SAME ALIGNMENT. ALL MATERIALS, EQUIPMENT, LABOR, ETC. NECESSARY TO PERFORM THE EXTENSION SHALL BE INCLUDED UNDER ITEM SPECIAL-ABUTMENT MODIFICATION.

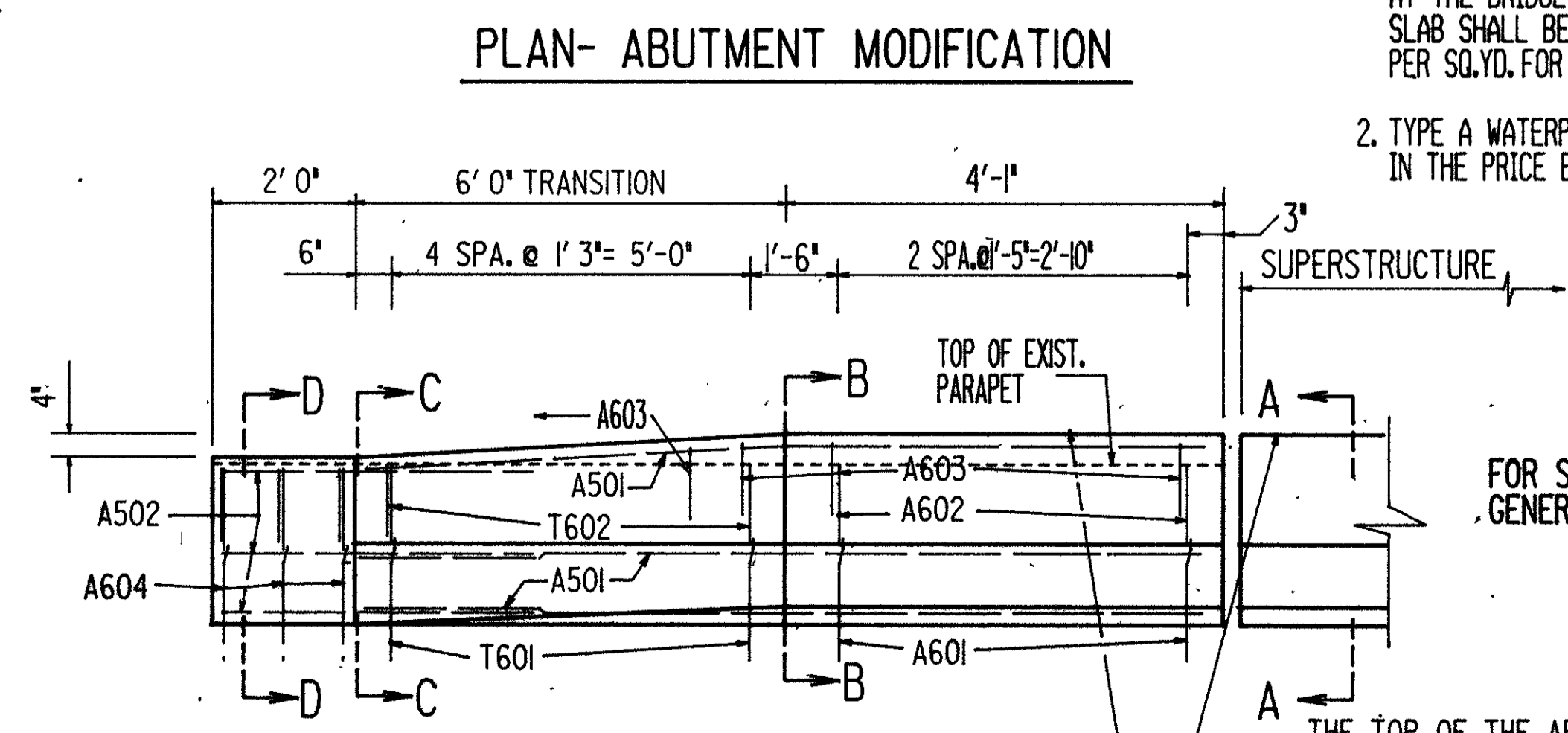


SECTION F-F •• \*\* FOR DETAILS NOT SHOWN SEE STD. DWG. SD-1-69.



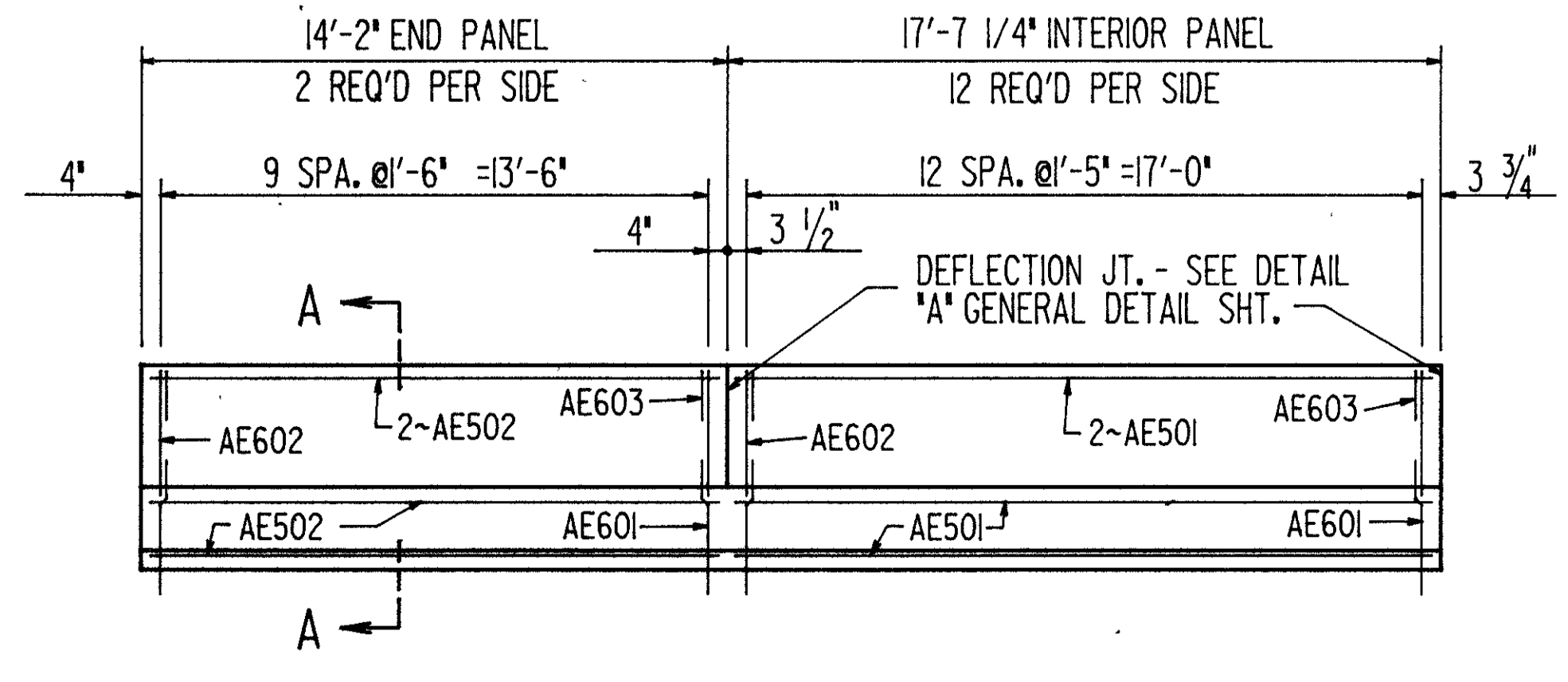
NOTE: DETAILS & DIM'S SHOWN ARE IDENTICAL; U.N.O.

- NOTES:
1. PREFORMED ELASTOMERIC JT. SEALER SHOWN AT THE BRIDGE LIMIT END OF THE APPR. SLAB SHALL BE INCLUDED IN THE PRICE BID PER SQ.YD. FOR THE APPR. SLAB.
  2. TYPE A WATERPROOFING SHALL BE INCLUDED IN THE PRICE BID FOR APPROACH SLAB.



ELEVATION E-E

THE TOP OF THE ABUTMENT PARAPET SHALL BE MADE EVEN WITH THE TOP OF THE SUPERSTRUCTURE PARAPET.



SUPERSTRUCTURE PARAPET DETAIL

\* CONCRETE SURFACES ADJACENT TO DECK JOINTS SHALL BE FINISHED FLUSH OR SLIGHTLY ABOVE THE STEEL JOINT SURFACE.

DETAIL A

WOOLPERT CONSULTANTS 2 / 3  
409 E. Monument/Dayton, Ohio 45402

MISCELLANEOUS DETAILS

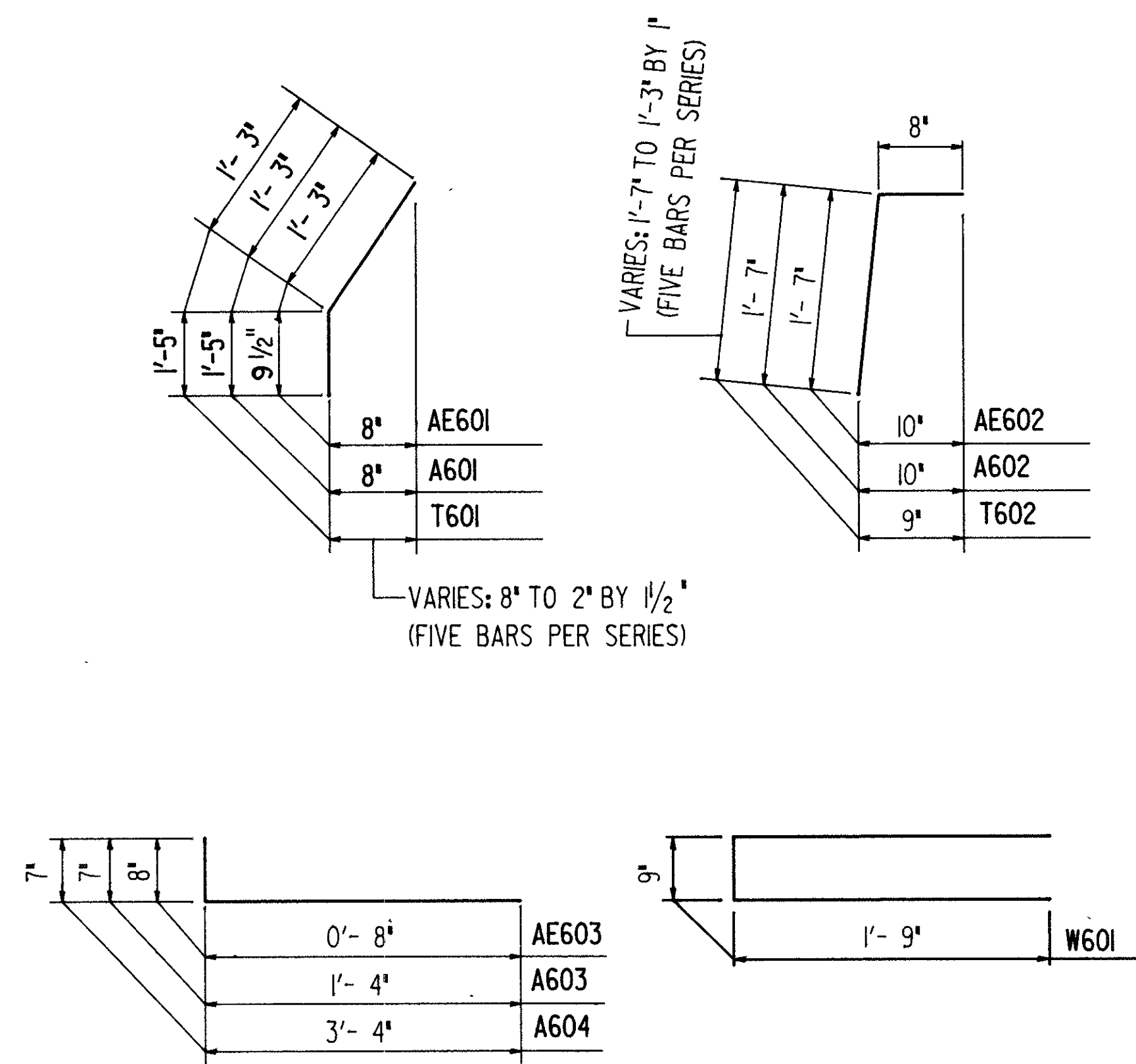
BRIDGE NO. MOT-70-0553

MONTGOMERY COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.E.M.	R.M.J.		DEM		5/22/71	

REINFORCING STEEL LIST				
MARK	SHAPE	NUMBER	LENGTH	WEIGHT
PARAPETS				
AE501	STR.	96	17'- 2"	1719
AE502	STR.	16	13'- 9"	230
AE601	BNT.	352	1'- 10"	969
AE602	BNT.	352	2'- 1"	1102
AE603	BNT.	352	1'- 2"	617
A501	STR. *	16	9'- 7"	160
A502	STR.	16	4'- 4"	72
A601	BNT.	12	2'- 6"	45
A602	BNT.	12	2'- 1"	38
A603	BNT.	44	1'- 9"	116
A604	BNT.	12	3'- 9"	68
T601	BNT.	20	2'- 7"	78
T602	BNT.	20	**	58
TOTAL				5272
BACKWALL				
W501	STR.	4	26'- 0"	108
W601	BNT.	54	3'- 11"	318
TOTAL				426

BENT BAR DETAILS



\*\* VARIES: 1'- 9" TO 2'- 1" BY 1"

LETTER \*E\* IN PREFIX INDICATES EPOXY COATING.  
\* BEND IN FIELD AS REQUIRED.

PROPOSED WORK

- REMOVE ASPHALT FROM THE SUPERSTRUCTURE AND BACKWALL.
- JACK SUPERSTRUCTURE AT PIERS AND ABUTMENTS 7/16" MIN. ( USING TEMPORARY SUPPORTS AND LONGITUDINAL BLOCKING AND INSTALLING STEEL SHIM PLATES ). CONTRACTOR SHALL PROVIDE FOR THE BRIDGE TO HAVE 16'-3" MIN. VERTICAL CLEARANCE WHEN THE OVERLAY IS PLACED ON I-70.
- REMOVE ABUTMENT PORTIONS OF END DAMS AND TOP OF ABUTMENT BACKWALL. CLEAN AND REPOSITION ABUTMENT PORTIONS OF END DAMS. ADD EXTENSIONS TO END DAM AND ADD PARAPET CURB PLATES AFTER EXISTING SAFETY CURB HAS BEEN REMOVED.
- MODIFY PARAPETS ON THE SUPERSTRUCTURE AND ABUTMENTS. SEAL PARAPETS AS SHOWN ON PLANS.
- SCARIFY EXISTING DECK 1/4", AND REMOVE DETERIORATED CONCRETE AS DIRECTED BY THE ENGINEER.
- PERFORM PARTIAL DEPTH AND FULL DEPTH DECK REPAIR AND PLACE LATEX MODIFIED CONCRETE OVERLAY ( 1 1/4" THICK ).
- SEAL JOINTS, AS NOTED.
- REPLACE GUARDRAIL AS SHOWN ON ROADWAY PLANS.
- WELLBAUM ROAD SHALL BE CLOSED TO TRAFFIC FOR A LIMITED TIME PERIOD. FOR NOTES SEE SHEET 15/120
- OTHER WORK AS DESCRIBED IN THESE PLANS.

ESTIMATED QUANTITIES

ITEM	TOTAL	UNITS	DESCRIPTION	AS BUILT
202	LUMP SUM	L.S.	PORTIONS OF STRUCTURES REMOVED.	
202	647	S.Y.	ASPHALT WEARING COURSE REMOVED, AS PER PLAN	
509	1361	LBS.	REINFORCING STEEL, GRADE 60	
517	480	L.F.	RAILING FACED, AS PER PLAN	
824	4637	LBS.	EPOXY COATED REINFORCING STEEL, GRADE 60	
845	701	S.Y.	LATEX MODIFIED CONCRETE OVERLAY, 1 1/4"	
845	43	C.Y.	LATEX MODIFIED CONCRETE, VARIABLE DEPTH	
845	7	C.Y.	FULL DEPTH REPAIR	
SPECIAL	382	S.Y.	SEALING OF CONCRETE SURFACES, SEE PROPOSAL NOTE	
SPECIAL	2	EACH	ABUTMENT MODIFICATIONS	
SPECIAL	12	EACH	SCUPPER MODIFICATIONS	
516	LUMP SUM	L.S.	JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN	

WOOLPERT CONSULTANTS  
409 E. MONUMENT AVE.  
DAYTON, OHIO 45402

REINFORCING STEEL LIST  
ESTIMATED QUANTITIES  
& PROPOSED WORK NOTES  
BRIDGE NO. MOT-70-05.53  
MONTGOMERY COUNTY

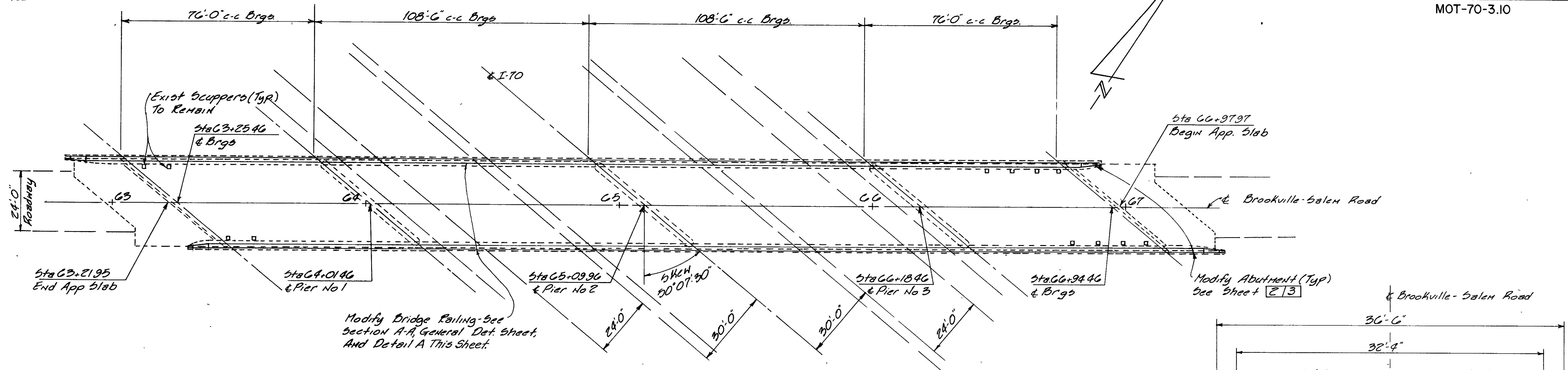
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.E.M.	RACH		DEM	3/22	3/20/02	

MACROPLAN  
JUL 17 1982

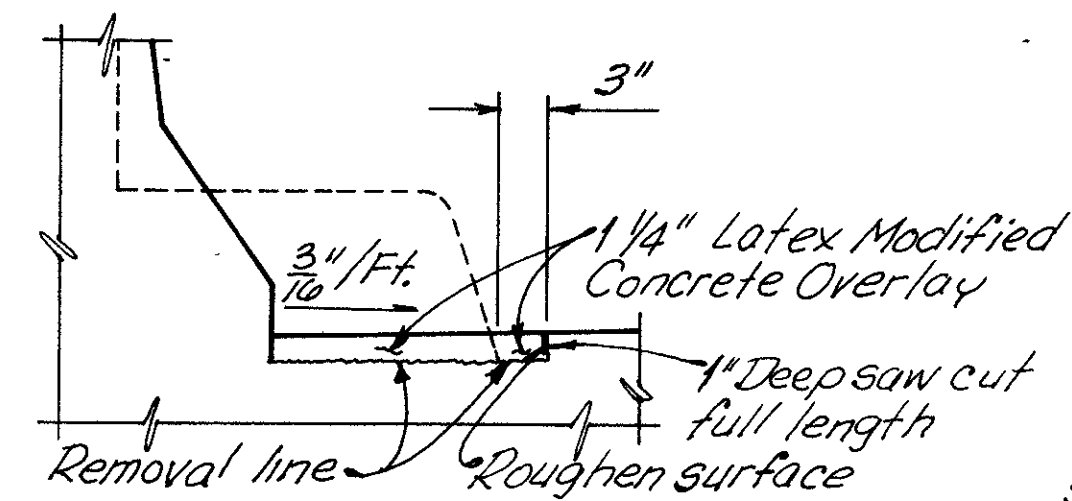
F H W A REGION	STATE	PROJECT	
5	OHIO		

101  
120

MOT-70-3.10



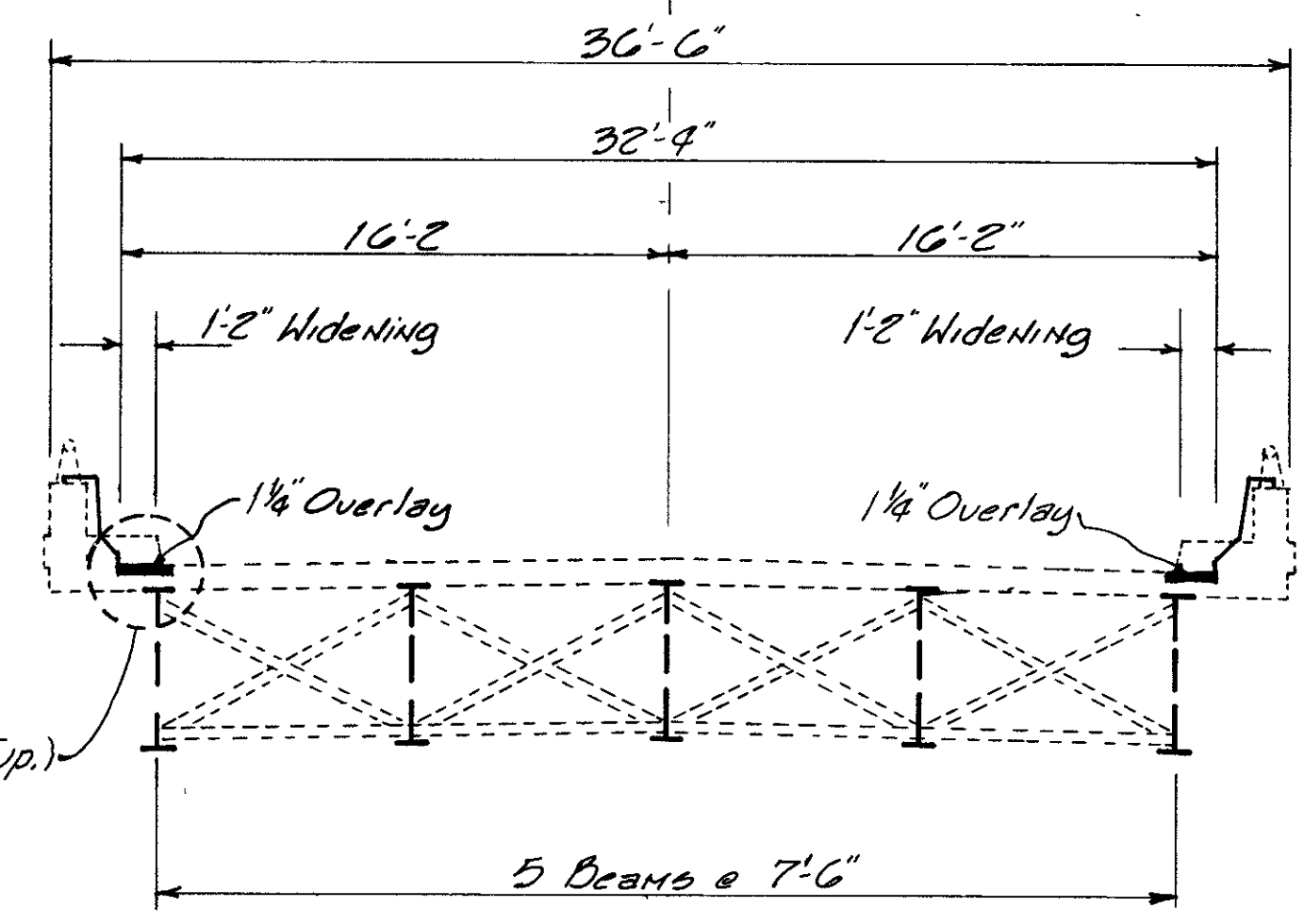
PLAN



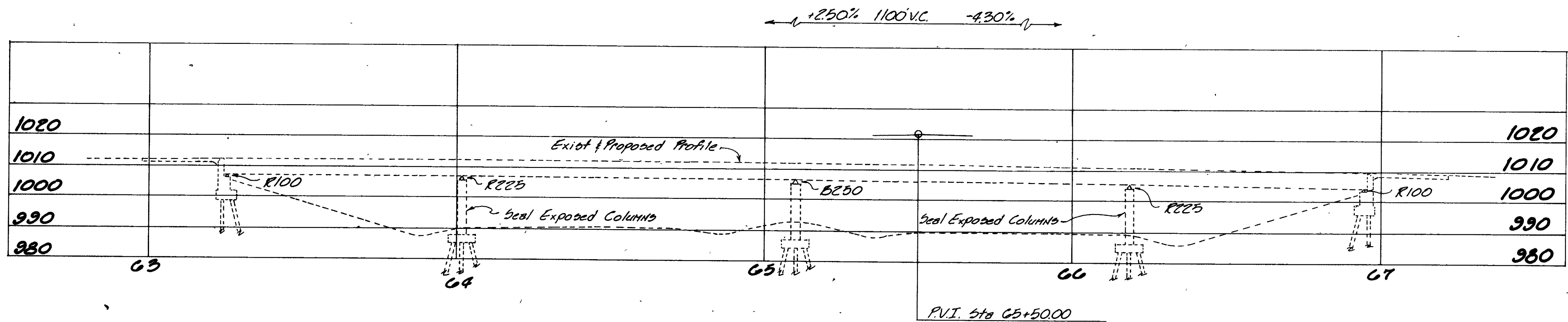
DETAIL A

NOTE: 1. Cast of saw cut and removal of existing concrete to be included in Item 202. Portions of Structures Removed.  
2. For details not shown see Section A-A on sht.

88  
120



BRIDGE SECTION



ELEVATION

**EXISTING STRUCTURE**

Type: 4-Span Continuous Steel Girders With Reinforced Concrete Deck And Reinforced Concrete Substructure.  
Spans: 76'-0", 108'-6", 108'-6", 76'-0" c to c Bearings.  
Roadway: 30'-0" with 2'-3" Safety Curbs  
Load Frequency: C.F.=130(57)  
Skew: 50° 07' 30" Rt Fwd  
Wearing Surface: Concrete Overlay  
Approach Slabs: A5-1-54 (25'-Long)  
Alignment: Tangent

WOLPERT CONSULTANTS  
308 E. MONUMENT ST. DAYTON, OHIO 45402

**GENERAL PLAN, ELEVATION AND BRIDGE SECTION**

BRIDGE NO. MOT-70-0603  
(BROOKVILLE-SALEM RD OVER I-70)

MONTGOMERY COUNTY					
DESIGNED D.E.M.	DRAWN RACH	TRACED JOE	CHECKED J.E.M.	REVIEWED S.P.Z.	DATE 11/22/87





JUL 27 1988

REINFORCING STEEL LIST

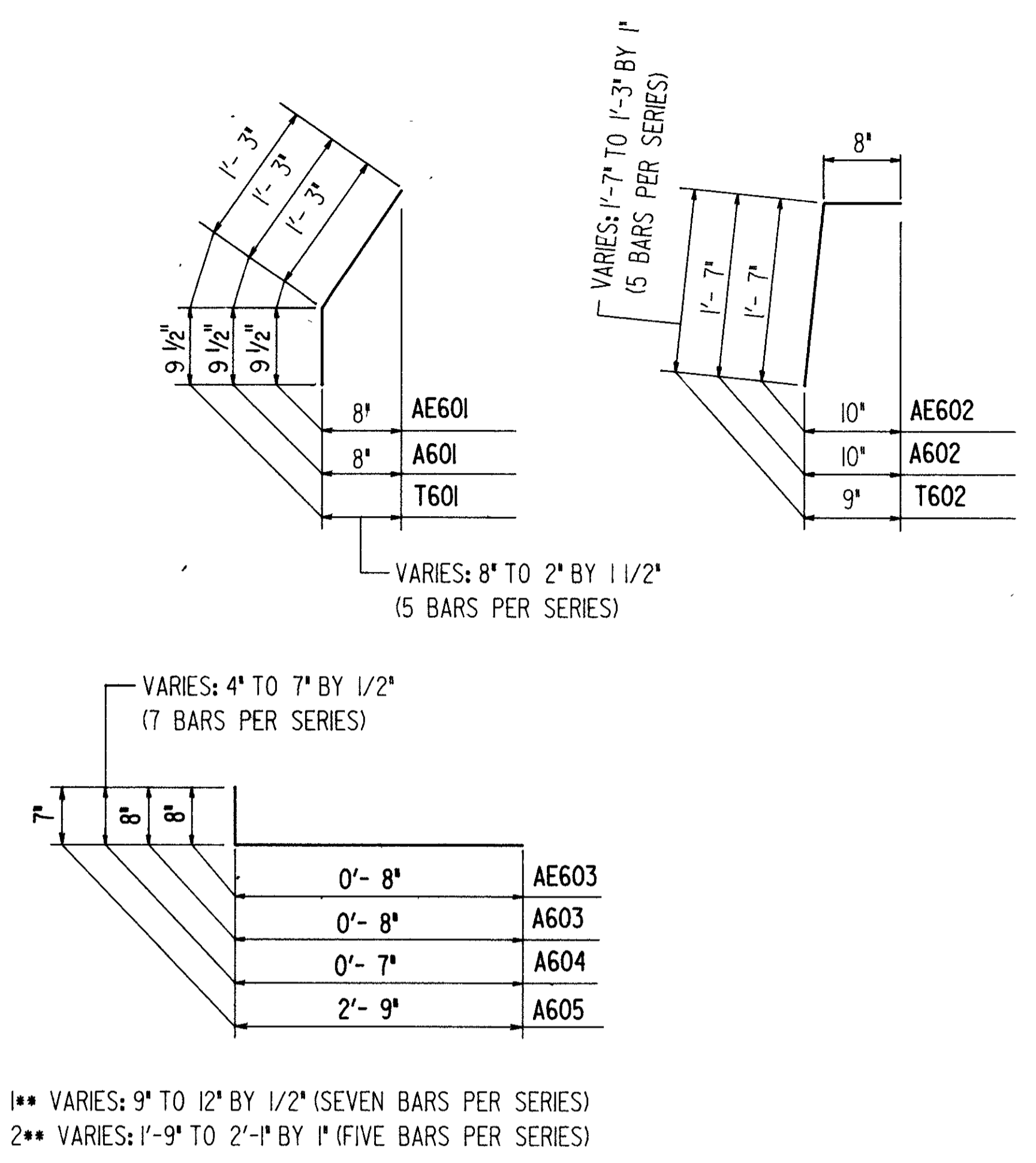
BENT BAR DETAILS

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

103  
120

MOT-70-3.10

MARK	SHAPE	NUMBER	LENGTH	WEIGHT
PARAPETS				
AE501	STR.	168	16'- 1"	2818
AE502	STR.	16	12'- 9"	213
AE601	BNT.	586	1'- 10"	1614
AE602	BNT.	586	2'- 1"	1834
AE603	BNT.	586	1'- 2"	1027
A501	STR. *	8	19'- 8"	164
A502	STR. *	8	10'- 8"	89
A503	STR.	16	4'- 4"	72
A601	BNT.	36	1'- 10"	99
A602	BNT.	36	2'- 1"	113
A603	BNT.	40	1'- 2"	70
A604	BNT.	28	1**	37
A605	BNT.	12	3'- 2"	57
T601	BNT.	20	1'- 10"	55
T602	BNT.	20	2**	58
TOTAL				8320



LETTER \*E\* IN PREFIX INDICATES EPOXY COATING  
 \* BEND IN FIELD AS REQUIRED.

ESTIMATED QUANTITIES

ITEM	TOTAL	UNITS	DESCRIPTION	AS BUILT
202	LUMP SUM	L.S.	PORTIONS OF STRUCTURES REMOVED, AS PER PLAN	
509	1114	LBS.	REINFORCING STEEL, GRADE 60	
517	744	L.F.	RAILING FACED, AS PER PLAN	
824	7506	LBS.	EPOXY COATED REINFORCING STEEL, GRADE 60	
845	1361	S.Y.	LATEX MODIFIED CONCRETE, 1 1/4"	
845	93	C.Y.	LATEX MODIFIED CONCRETE, VARIABLE DEPTH	
845	38	C.Y.	FULL DEPTH REPAIR	
SPECIAL	563	S.Y.	SEALING OF CONCRETE SURFACES, SEE PROPOSAL NOTE	
SPECIAL	2	EACH	ABUTMENT MODIFICATIONS	

PROPOSED WORK

1. MODIFY PARAPETS ON THE SUPERSTRUCTURE AND ABUTMENTS. SEAL PARAPETS AS SHOWN ON PLANS.
2. ADD EXTENSIONS TO END DAM WITH PARAPET CURB PLATES FOR ROADWAY WIDENING AT FOUR LOCATIONS AFTER EXISTING SAFETY CURB HAS BEEN REMOVED.
3. PLACE LATEX MODIFIED CONCRETE (1 1/4" THICK) IN WIDENED AREAS.
4. SEAL JOINTS, AS NOTED.
5. REPLACE GUARDRAIL AS SHOWN ON ROADWAY PLANS.
6. BROOKVILLE - SALEM ROAD SHALL BE CLOSED TO TRAFFIC FOR A LIMITED TIME PERIOD. FOR NOTES SEE SHEET 15/120
7. OTHER WORK AS DESCRIBED IN THESE PLANS.

WOOLPERT CONSULTANTS  
 409 E. MONUMENT AVE.  
 DAYTON, OHIO 45402

REINFORCING STEEL LIST  
 ESTIMATED QUANTITIES  
 & PROPOSED WORK NOTES

BRIDGE NO. MOT-70-0603

MONTGOMERY COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
D.E.M.	RACH		DEM	OBZ	7/27/87	

FED RD DIVISION	STATE	PROJECT
8	OHIO	

PLAN NO. MOT-70-3.10

107  
120

**DESCRIPTION**

The work shall consist of removing all copy from the extrusheet aluminum signs and furnishing and erecting permanent overlays (including new reflective background and copy). The overlays will be directly attached to the aluminum extrusheet on the sign proper, the exit number panel, and the glare shield when needed. The Contractor is responsible for furnishing all material, labor, and equipment necessary to perform the work.

**REMOVAL**

In addition to the requirements of Item 630.12, the Contractor shall remove and dispose of all existing copy, including legend, border, shields and existing overlays. The Contractor's removal technique shall not damage the extrusheet aluminum and shall leave the surface of the extrusheet aluminum smooth, with no indentations or protrusions from fasteners, no aluminum burrs, and no scaling from reflective sheeting, which will impair the appearance or function of the overlays when attached. The cost of removing all existing copy shall be included under Item 630, Signs, Permanent Overlay.

**MATERIAL**

- Flat Sheet Aluminum and Fiberglass Reinforced Plastics - Overlays, shields and service symbol signs shall be fabricated from .040 inch flat sheet aluminum, ASTM B209, 6061-T6 in accordance with Item 730.11 or .075 inch fiberglass reinforced plastics (FRP) meeting the "Recommended Traffic Control Sign Panel Specification" published by the Society of the Plastics Industry. Overlays for glare shields may also be .075 inch FRP "tinted" to match the color of the sign under daylight viewing conditions per Item 630.04(6).
- Reflective Sheeting - shall be Type P or G as required in the plan and meet the requirements of Item 630.02.
- Nonreflective Sheeting - Glare shield overlays fabricated from .040 inch flat sheet aluminum shall be covered with nonreflective sheeting per Item 630.02 and Item 630.04(6).
- Copy
  - Legends and Borders - shall be white, demountable embossed copy with reflector units meeting the requirements of Item 630.02, except that when black is required for shields it shall be direct applied copy meeting the requirements of Item 630.04(5g) and when black is required for EXIT ONLY panels and FREEWAY/LANE ENDS signs it shall be demountable embossed copy meeting the requirements of Item 630.04(5b).
  - Service Symbol Signs - shall be demountable and fabricated from .040 inch flat sheet aluminum or .075 inch Fiberglass reinforced plastic covered with Type G white reflective sheeting in accordance with Item 630.04(3) and the legend shall be formed from reverse screened blue paste conforming to Item 730.22.
  - Shields - Interstate, U.S. and Ohio shields shall be fabricated in accordance with Item 630.04(5e), with the exception that the reflective sheeting shall be Type G.
- Fasteners
  - Overlays and shields - shall be fastened to the extrusheet aluminum with AVEX #1601-0619 rivets having a .188 inch diameter, .339 inch head diameter, .602 inch maximum length ~~or 10-34 inch diameter screws, fabricated from stainless steel alloy #410 or CHOBERT No. 1162-0617 rivets having a 3/16" nominal diameter, .339 inch head diameter and a .5313 inch maximum length.~~
  - Copy - including legends and borders shall be fastened to the overlay with AVEX No.1661-0414 rivets having a .1265 inch diameter, .250 head diameter and a .452 inch maximum length or BRIV No.1801-0513 rivets having 5/32 inch nominal diameter, .310 head diameter and a .339 inch maximum length.

**OVERLAY FABRICATION**

1. The number of individual overlays per sign shall be kept to a minimum and approximately equal in size with no overlay having a length or width dimension less than 18 inches, except as noted in item 6 below. The size of individual overlays shall be designed for safety during erection based on the equipment and method of erection by the contractor. Where sign dimensions will permit, vertical joints shall be used in lieu of horizontal joints.

2. The legend (i.e. word or symbol) on overlays shall be laid out according to the FHWA Standard Highway Signs Booklet and the ODOT Design Manual for Directional Guide Signs. The sign design and layout of service symbol signs shall be in accordance with the Ohio Manual of Uniform Traffic Control Devices for Streets and Highways and the ODOT Standard Sign Design Manual.

The Contractor shall submit to the Director two sets of sign legend working drawings prior to fabrication. Sign legend working drawings submitted shall show all guide sign legend with copy type, character size and spacing; shall include reference and/or code numbers; and shall be in accordance with all other requirements of Item 630.03.

3. All copy including legends, borders, shields and service symbol signs, shall be shop mounted except for any copy which when attached would be common to two or more individual overlays.

4. A sign identification decal in accordance with Item 630.04(7) shall be applied by the sign fabricator to the front, bottom, lefthand corner of the left most overlay for each sign, in the area outside the border. Similarly, a sign identification decal in accordance with Item 630.04(7) shall be applied to the back, bottom, left-hand corner of the extrusheet aluminum by the Contractor.

5. All overlays shall be packaged, shipped, stored and erected in such a manner that they are not scratched, dented, bent or damaged in any way which would reduce the effective life of the reflective sheeting or components of the copy. They shall be stored in such a manner that packaging paper or cardboard material does not become wet. If paper packaging material or slip sheeting becomes wet, the paper shall be removed from contact with sign faces before it dries to prevent damage to the reflective sheeting. Damage to the overlays will be cause for rejection.

6. Should it be found that a sign overlay does not evenly fit the existing extrusheet sign, the Contractor shall be paid under Item Special Signs Permanent Overlay Reworked, on a per square foot basis, for the additional work and material needed to reduce or enlarge the size of the overlay to conform to the following tolerances. A quantity of 100 square feet has been placed on the General Summary for this type of work, to be used as directed by the Engineer.

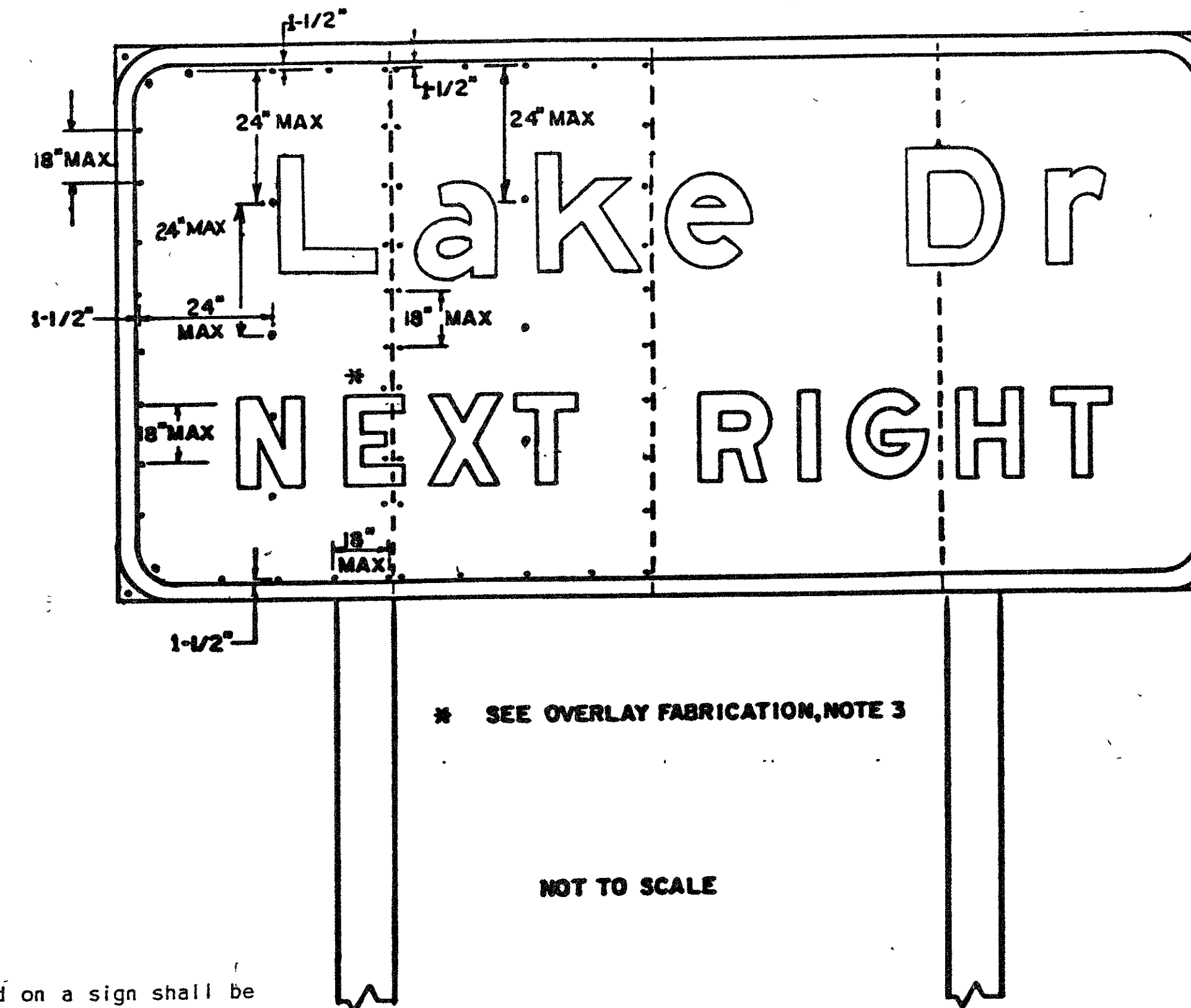
If the complete overlay is too small to cover the existing sign, it shall be centered on the existing extrusheet and additional overlay material of the same type shall be furnished and installed by the Contractor to cover the remaining portion of the sign. If the additional material measures more than 6 inches on a side the border shall be adjusted to the outside edge of the additional overlay material.

If the complete overlay when centered on the extrusheet overhangs the existing sign by more than 6 inches on a side, the Contractor shall rework the overlay using the incorrect overlay material to the greatest extent practicable so that it fits the existing sign within this tolerance.

Legend spacing shall comply with all overlay fabrication requirements stated above (Overlay Fabrication, paragraph 2) to the greatest extent practicable as determined by the Engineer.

**OVERLAY ERECTION**

- Only one directional guide sign per direction per interchange or intersection may be overlaid at one time. Additionally, where two or more signs are placed on the same support, only one sign may be overlaid at one time.
- Major dents and abrasions originating on the back of the extrusheet sign and protruding to the front shall be hammered flush with the remaining extrusheet surface prior to overlaying to avoid bulges, dimples, etc., in the overlay when erected.



3. The first overlay panel installed on a sign shall be located at the left (or right) edge of the sign. Subsequent panels shall be installed proceeding across the sign horizontally to the other side. If there is more than one row of overlay panels, the top row will be installed first with work proceeding by row to the bottom of the sign.

4. Overlay panels shall be butt jointed without overlays or gaps except where butt joints would cause warping or buckling. When necessary, overlaps (preferred) or gaps not to exceed 3/22 inch per foot on 3/8 inch overall will be permitted to achieve a flatter surface fit.

5. Fastener Spacing for Attaching Overlay Panels to Extrusheet Aluminum.

- The fastener spacing around the perimeter of each overlay shall be a maximum of 18 inches. Fasteners shall be set back one and one-half inches from each edge of the overlay panel except where borders exist. In this case, fasteners shall be set back one and one-half inches from the inside of the border. Each corner of each overlay panel shall have a fastener located one and one-half inch from each edge (or inside of border).
- When overlay panels have borders, an additional fastener will be placed in each corner of the overlay panel halfway between the corner and the outside of the border.
- The maximum fastener spacing within the interior of each overlay shall be 24 inches. Fasteners used in attaching overlays to the extrusheet aluminum shall not be fastened through any demountable embossed copy, shield or service symbol signs.

6. The first fastener to be started in an overlay panel shall be located approximately at the center of the panel. Fasteners shall not be drawn down excessively in dimpled or pocketed areas of the overlay.

\* SEE OVERLAY FABRICATION, NOTE 3

NOT TO SCALE

**METHOD OF MEASUREMENT**

Permanent overlays will be measured as the area, in square feet, of overlay furnished and erected in place, and includes the removal and disposal of all existing copy. Permanent overlays reworked will be measured as the difference in the area, in square feet, between the oversized or undersized overlay and the final reworked overlay in place; this will include additional labor, overlay material, border, copy and fasteners as needed.

**BASIS OF PAYMENT**

Quantities of permanent overlays and "overlays reworked" measured as provided above, in place, complete and accepted, will be paid for under:

Item	Unit	Description
630	Square Foot	Signs, Permanent Overlay
Special	Square Foot	Signs, Permanent Overlay Reworked

<b>BUREAU OF TRAFFIC DEPARTMENT OF TRANSPORTATION</b>	
<b>HIGHWAY SIGNING</b>	<b>DATE</b>
<b>PERMANENT OVERLAY PANEL INSTALLATION</b>	10/6/82 12/2/82 8/1/84 10/22/85 8/26/86 9/17/87 9/23/87
<b>PLAN DESIGN DRAWING</b>	<b>HS-1.00</b>

Rev. 6-9-88

# 614 TEMPORARY RAISED PAVEMENT MARKERS

PLAN NO. MOT-70-3.10

108  
120

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING, INSTALLING, MAINTAINING, AND SUBSEQUENTLY REMOVING TEMPORARY RAISED PAVEMENT MARKERS (TRPM'S). THE TRPM'S SHALL BE YELLOW OR WHITE, AS DESCRIBED IN THE PLAN.

### MATERIAL

ALL UNITS SHALL BE OF SUFFICIENT STRENGTH AND PROPERLY SHAPED SO AS NOT TO BE DISLODGED OR BROKEN, OR THE REFLECTOR DISLODGED OR BROKEN, OR THE REFLECTOR DISLODGED OR DAMAGED BY IMPACTS FROM VEHICLES TIRES, INCLUDING THOSE OF HIGH PRESSURE TRUCK TIRES LOADED TO 4500 POUNDS.

RETROREFLECTORS SHALL BE PROVIDED, IN ONE OR TWO DIRECTIONS ON EACH UNIT AS REQUIRED BY THE USAGE AND SHALL RETURN WHITE OR YELLOW LIGHT AS IS APPROPRIATED FOR THE APPLICATION.

THE REFLECTOR SHALL HAVE AN EFFECTIVE AREA OF 0.35 SQUARE INCH FOR TYPE A OR 3.0 SQUARE INCH FOR TYPE B. ITS BRIGHTNESS OR SPECIFIC INTENSITY (WHEN TESTED AT 0.2 DEGREE ANGLE OF OBSERVATION AND THE FOLLOWING ANGLES OF INCIDENCE) SHALL MEET OR EXCEED THE FOLLOWING:

INCIDENCE ANGLE (DEGREES)	SPECIFIC INTENSITY	
	TYPE A	
	WHITE	YELLOW
0	1.0	0.6
20	0.4	0.24
45	-	-
INCIDENCE ANGLE (DEGREES)	TYPE B	
	WHITE	YELLOW
	0	3.0
20	1.2	0.72
45	0.3	0.2

ANGLE OF INCIDENCE FORMED BY A RAY FROM LIGHT SOURCE TO THE MARKER AND THE NORMAL TO THE LEADING EDGE OF THE MARKER FACE (ALSO HORIZONTAL ENTRANCE ANGLE).

ANGLE OF OBSERVATION FORMED BY A RAY FROM LIGHT SOURCE TO THE MARKER AND THE RETURNED RAY FROM THE MARKER TO THE MEASURING RECEPTOR.

SPECIFIC INTENSITY IS THE MEAN CANDLEPOWER OF THE REFLECTED LIGHT (AT GIVEN INCIDENCE AND DIVERGENCE ANGLES) FOR EACH FOOT-CANDLE AT THE REFLECTOR (ON A PLANE PERPENDICULAR TO THE INCIDENT LIGHT).

TYPE A UNITS ARE INTENDED TO PROVIDE HIGH VISIBILITY BOTH AT NIGHT AND DURING DAYLIGHT. THEIR DAY TIME VISIBILITY SHALL BE ASSURED BY SIZE, SHAPE AND COLOR AS FOLLOWS:

- 1) THE UNITS SHALL BE A HIGH VISIBILITY YELLOW OR WHITE COLOR WHICH WILL NOT DEGRADE SUBSTANTIALLY DUE TO TRAFFIC WEAR AND WHICH WILL MATCH THE COLOR OF THE REFLECTOR.
- 2) WHEN VIEWED FROM ABOVE, THE UNITS SHALL HAVE A VISIBLE AREA OF NOT LESS THAN 14 SQUARE INCHES.
- 3) WHEN VIEWED FROM THE FRONT, PARALLEL TO THE PAVEMENT, AS FROM APPROACHING TRAFFIC, THE UNIT SHALL HAVE A WIDTH OF APPROXIMATELY 4 INCHES AND A VISIBLE AREA OF NOT LESS THAN 1.5 SQUARE INCHES.

TYPE B UNITS ARE INTENDED TO PROVIDE HIGH VISIBILITY AT NIGHT BY RETRO-REFLECTING AUTOMOTIVE HEADLIGHT BACK TO THE DRIVER.

INSTALLATION: THEY SHALL BE ATTACHED TO CLEAN, DRY PAVEMENT BY A BUTYL ADHESIVE PAD, A BITUMINOUS ADHESIVE OR OTHER CONSTRUCTION GRADE ADHESIVES (SUCH AS FRANKLIN PANEL AND METAL ADHESIVE) SUITABLE TO ANCHOR THE UNIT UNDER THE ABOVE CONDITIONS. WHEN IT IS NECESSARY TO ATTACH UNITS TO NEW CONCRETE WITH CURING COMPOUND REMAINING, THE CURING COMPOUND MEMBRANE SHALL BE REMOVED BY SANDBLASTING OR OTHER MECHANICAL CLEANING METHOD. THEY SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

THE CONTRACTOR SHALL IMMEDIATELY REPLACE, AT HIS COST, ANY UNITS WHICH FAIL (BROKEN HOUSING, HOUSING WORN TO THE EXTENT THAT DAYTIME VISIBILITY IS SIGNIFICANTLY DIMINISHED OR OF AN UNACCEPTABLE COLOR, DETACHED OR BROKEN REFLECTOR, HOUSING DETACHED FROM ADHESIVE).

TRPM'S ARE LIKELY TO BE REMOVED BY SNOW PLOWING OPERATIONS, THUS THEY ARE NOT CONSIDERED SUITABLE FOR USE DURING THE PERIOD FROM OCTOBER 15 UNTIL APRIL 30. THE CONTRACTOR IS ADVISED TO SCHEDULE HIS WORK AND/OR THE USE OF THESE DEVICES TO AVOID THIS PERIOD. SHOULD THE CONTRACTOR CHOOSE TO USE TRPM'S DURING THIS PERIOD AND THEY ARE SUBSEQUENTLY REMOVED OR DESTROYED BY SNOW AND ICE CONTROL ACTIVITIES, THE CONTRACTOR SHALL IMMEDIATELY, AT HIS COST, PROVIDE A SUBSTITUTE TRAFFIC GUIDANCE SYSTEM EFFECTIVE DURING LIGHT AND DARK AND WHICH IS ACCEPTABLE TO THE ENGINEER.

THE UNITS SHALL BE PLACED ACCURATELY TO DEPICT STRAIGHT OR UNIFORMLY CURVING LINES. WHEN USED TO SUPPLEMENT TEMPORARY PAVEMENT MARKINGS, THEY MAY BE PLACED ON OR IMMEDIATELY ADJACENT TO THE PAVEMENT MARKING. LOCATIONS SHALL BE ADJUSTED UP TO ONE FOOT LONGITUDINALLY OR SIX INCHES LATERALLY TO AVOID PLACEMENT ON JOINTS, CRACKED OR DETERIORATED PAVEMENT. THEY SHALL NOT BE PLACED DIRECTLY ON PAVEMENT MARKINGS IF THIS WILL DETRACT FROM THEIR ABILITY TO REMAIN ATTACHED TO THE PAVEMENT.

### APPLICATION

1) WHEN REQUIRED TO SUPPLEMENT PAVEMENT MARKING; THEY SHALL BE PLACED AS FOLLOWS:

LINE	TYPE	SPACING
EDGE LINE	A OR B	20' C/C
LANE LINE	A OR B	40' C/C*
CENTER LINE (SINGLE/BROKEN)	A OR B	40' C/C *
CENTER LINE (DOUBLE/SOLID)	A OR B	2 UNITS SIDE BY SIDE 4 INCHES APART 20' C/C
CHANNELIZING LINE (INCLUDES EXIT GORE NOSE)	A OR B	10' C/C

\* CENTERED IN GAP

2) WHEN USED TO SIMULATE (REPLACE) PAVEMENT MARKING THEY SHALL BE PLACED AS FOLLOWS:

LINE	TYPE	SPACING
EDGE LINE	A	5' C/C
LANE LINE	A	4@3.33' C/C 30' GAP (40' CYCLE)
CENTER LINE (DOUBLE SOLID)	A	2 UNITS SIDE BY SIDE 5' C/C
CENTER LINE (SINGLE BROKEN)	A	4@3.33' C/C 30' GAP (40' CYCLE)
CHANNELIZING LINE (INCLUDES EXIT GORE NOSE)	A	5' C/C
EDGE LINE (TWO COLOR) (WHITE/YELLOW)	A	BACK TO BACK 5' C/C

YELLOW TRPM'S USED TO SEPARATE OPPOSITE FLOWS OF TRAFFIC (CENTER LINES) SHALL INCLUDE REFLECTIONS FOR BOTH DIRECTIONS. ALL OTHER YELLOW TRPM'S AND WHITE TRPM'S SHALL PROVIDE RETROREFLECTIVITY FOR ONE DIRECTION.

### REMOVAL

REMOVAL SHALL BE ACCOMPLISHED IN A MANNER THAT LITTLE OR NONE OF THE ADHESIVE REMAINS ON THE PAVEMENT AND PERMANENT PAVEMENT SURFACES SHALL NOT BE SCARRED, BROKEN OR ROUGHENED SIGNIFICANTLY.

### PAYMENT

BASIS OF PAYMENT SHALL BE AT THE CONTRACT UNIT PRICE PER EACH TRPM AND SHALL INCLUDE ALL LABOR, EQUIPMENT, HARDWARE AND INCIDENTALS REQUIRED TO PERFORM THE WORK. IT SHALL ALSO INCLUDE REPLACEMENT AT NO ADDITIONAL COST OF ALL TRPM'S WHICH, IN THE JUDGEMENT OF THE ENGINEER, FAIL FOR ANY REASON, EXCEPT DUE TO FAILURE OF THE PAVEMENT TO WHICH THEY ARE ATTACHED.

ITEM 614 UNIT EACH DESCRIPTION TEMPORARY RAISED PAVEMENT MARKERS

STATIONING (FROM-TO) (SIDE)	SPACING	TYPE A			TYPE B			REMARKS (LINE TYPE)
		W	Y	Y/Y	W	Y	Y/Y	
<b>STAGE 1</b>								
1R TO 160+03 to 346+70 EB & WB	20'	1882						Left Edge Line
<b>STAGE 2</b>								
1R TO 160+03 to 346+70 EB & WB	20'	1882	1882					Yellow-Left Edge Line White-Right Edge Line
Arlington Road Ramp 'B'	10'	20						Gore Marking
Arlington Road Ramp 'C'	10'	20						Gore Marking
Brookville-Salem Road Ramp 'B'	10'	20						Gore Marking
SR 40 NB	10'	20						Gore Marking
<b>STAGE 3</b>								
1R TO 160+03 to 346+70 EB & WB	20'	1882	1882					Yellow-Left Edge Line White-Right Edge Line
Arlington Road Ramp 'A'	40'	6						Lane Line
Arlington Road Ramp 'B'	10'	20						Gore Marking
Arlington Road Ramp 'C'	10'	20						Gore Marking
Arlington Road Ramp 'D'	40'	7						Lane Line
Brookville-Salem Road Ramp 'A'	40'	6						Lane Line
Brookville-Salem Road Ramp 'B'	10'	20						Gore Marking
SR 40 NB	10'	20						Gore Marking
<b>STAGE 4</b>								
1R TO 160+06 to 346+70 EB & WB	20'	1882	1882					Yellow-Left Edge Line White-Right Edge Line
Arlington Road Ramp 'B'	10'	20						Gore Marking
Arlington Road Ramp 'C'	10'	20						Gore Marking
Brookville-Salem Road Ramp 'B'	10'	20						Gore Marking
SR 40 NB	10'	20						Gore Marking
<b>TOTALS</b>		5021	7528					18,440

Calculated By M.L.E. Date 10-26-87  
Checked By G.A.S. Date 10-27-87

STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION

## 614 TEMPORARY RAISED PAVEMENT MARKERS

STANDARD NO.

DESIGNED	DRAWN	CHECKED	DATE	REVISED
	<i>Amocad</i>		5-12-87	

# 614 BARRIER REFLECTORS

PLAN NO. MOT-70-3.10

109  
120

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING BARRIER REFLECTORS (TYPE A) ON GALVANIZED STEEL GUARDRAIL AND/OR BARRIER REFLECTORS (TYPE B) ON CONCRETE BARRIERS IN ACCORDANCE WITH PLANS AND SPECIFICATIONS.

MATERIAL

THE BARRIER REFLECTOR SHALL BE AS MANUFACTURED BY STIMSONITE, REFLEXITE OR AN APPROVED FUNCTIONAL EQUIVALENT AS DESCRIBED BELOW:

STIMSONITE- MODEL 965 (WHITE & YELLOW) OR  
REFLEXITE- MODEL 650 (WHITE & YELLOW)

THE ADHESIVE SHALL BE FRANKLIN PANEL AND METAL FRAMING ADHESIVE AS MANUFACTURED BY FRANKLIN CHEMICAL INDUSTRIES, PR-365 AS MANUFACTURED BY PRODUCTS RESEARCH AND CHEMICAL CORPORATION OR AN APPROVED EQUAL

ALL ADHESIVES SHALL HAVE A SHELF LIFE OF 6 MONTHS AT 75 DEGREES F STORAGE MINIMUM GUARANTEED.

LAYOUT

THE CONTRACTOR SHALL LAYOUT ALL LOCATIONS TO ASSURE PROPER PLACEMENT THE LAYOUT SHALL BE APPROVED BY THE ENGINEER BEFORE INSTALLATIONS ARE STARTED THE LAYOUT SHALL BE INCIDENTAL TO THE INSTALLATION OPERATION

INSTALLATION

- 1) ON CONCRETE BARRIERS THE HEIGHT OF THE TOP OF THE REFLECTOR SHALL BE 26 INCHES ABOVE THE NEAR EDGE OF PAVEMENT, BUT IN NO CASE SHALL THE TOP OF THE REFLECTOR BE LESS THAN 3 INCHES BELOW THE TOP OF THE CONCRETE BARRIER ATTACHMENT SHALL BE BY THE ABOVE REFERENCED ADHESIVE AND APPLIED PER MANUFACTURER'S RECOMMENDATION
- 2) GUARDRAIL REFLECTORS SHALL BE INSTALLED WITHIN THE CONCAVE SURFACE OF THE GUARDRAIL ATTACHMENT MAY BE BY BRACKET WHICH FITS UNDER THE HEAD OF THE CENTER GUARDRAIL BOLT OR BY THE ABOVE REFERENCED ADHESIVE AND APPLIED PER MANUFACTURER'S RECOMMENDATION.
- 3) THE ABOVE REFERENCED ADHESIVE SHALL BE FLASHED WHEN APPLIED TO ACHIEVE MAXIMUM BONDING STRENGTH.
- 4) WHEN MOUNTED ON A FLAT SURFACE, THE REFLECTOR SHOULD BE TILTED UPWARD FROM THE VERTICAL OR PLUMB POSITION 2-3 DEGREES TO FACILITATE "RAIN WASHING" OF THE REFLECTOR FACE.
- 5) TWO-LANE HIGHWAY - WHITE UNITS SHALL BE PLACED ON THE RIGHT SIDE OF APPROACHING TRAFFIC

FOUR-LANE DIVIDED HIGHWAY - WHITE UNITS SHALL BE PLACED ON THE RIGHT SIDE OF APPROACHING TRAFFIC AND YELLOW ON THE LEFT.

BASIS OF PAYMENT

BASIS OF PAYMENT SHALL BE AT THE UNIT PRICE BID FOR EACH REFLECTOR AND SHALL INCLUDE ALL LABOR, EQUIPMENT, HARDWARE AND INCIDENTALS REQUIRED TO PERFORM THE WORK.

ITEM	UNIT	DESCRIPTION
614	EACH	BARRIER REFLECTOR, TYPE A
614	EACH	BARRIER REFLECTOR, TYPE B

A BARR-REF

STATIONING (FROM-TO) (SIDE)	SPACING	TYPE A		TYPE B RURAL		TYPE B CITY		REMARKS	
		W	Y	W	Y	W	Y		
177+64 to 185+36 WB, Lt.	50			21					
235+37 to 242+13 WB, Lt.	50			10					
327+0155 to 338+67 WB, Lt.	50			20					
173+70 to 185+36 EB, Lt.	50			23					
311+26 to 315+74 EB, Lt.	50			15					
328+0055 to 338+28 EB, Lt.	50			25					
177+64 to 185+36 WB, Rt.	50			21					
235+37 to 242+13 WB, Rt.	50			10					
327+01.55 to 338+67 WB, Rt.	50			20					
173+70 to 185+36 EB, Rt.	50			23					
311+26 to 315+74 EB, Rt.	50			15					
327+01.55 to 338+67 EB, Rt.	50			25					
TOTALS						132	132		
						264			

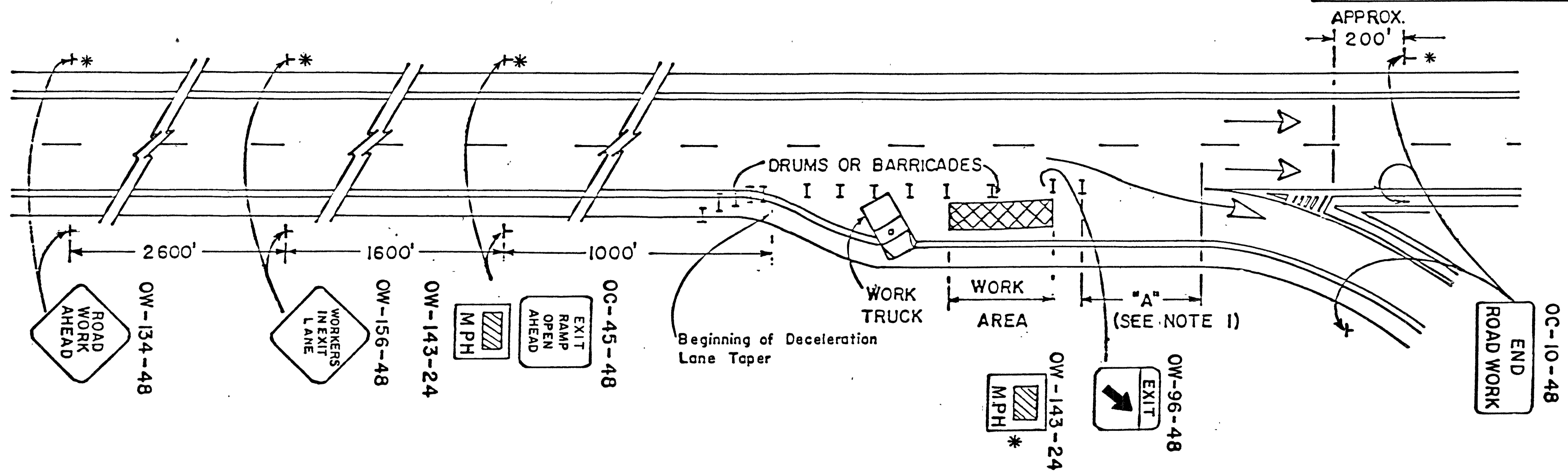
Calculated By M.L.E. Date 10-26-87  
Checked By G.A.S. Date 10-27-87

STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION

614 BARRIER  
REFLECTORS

STANDARD NO.

DESIGNED	DRAWN	CHECKED	DATE	REVISED
	Autocad		5-12-87	



\* OPTIONAL SIGN ERECTED WITH THE APPROVAL OF THE ENGINEER.

**GENERAL NOTES.**

1. THIS WORK AREA TRAFFIC CONTROL APPLICATION SHALL ONLY APPLY WHEN THE DISTANCE "A" IS GREATER THAN 100'. WHEN DISTANCE "A" IS LESS THAN 100', THE RAMP SHALL BE CLOSED. WHEN THE RAMP IS CLOSED, THE TRAFFIC CONTROL SHALL INCLUDE DETOUR SIGNING FOR EXIT RAMP CLOSURES IN ACCORDANCE WITH O MUTCD.
2. DRUMS OR BARRICADES SHALL BE SPACED AT 50 FOOT CENTERS. CONES MAY BE SUBSTITUTED FOR BARRICADES OR DRUMS FOR THE LANE CLOSURES DURING DAYLIGHT HOURS. (SEE NOTE 7)
3. TYPE C STEADY BURNING BARRICADE WARNING LIGHTS SHALL BE ERECTED ON DRUMS OR BARRICADES FOR NIGHT LANE CLOSURES. MAXIMUM SPACING SHALL BE 50' CENTER TO CENTER IN ADVANCE OF THE WORK AREA AND 200' CENTER TO CENTER WITHIN THE LIMITS OF THE WORK AREA.
4. THE WORK TRUCK SHOWN AT THE BEGINNING OF THE WORK AREA SHALL BE IN PLACE AND UNOCCUPIED WHENEVER MEN ARE WORKING WITHIN THE WORK AREA. THIS TRUCK SHALL BE MOVED FROM THE PAVEMENT WHENEVER WORKMEN ARE NOT IN THE WORK AREA. OTHER PROTECTIVE DEVICES MAY BE USED IN LIEU OF THE WORK TRUCK SHOWN WHEN APPROVED BY THE ENGINEER.
5. THE SPACINGS BETWEEN CONSTRUCTION AND MAINTENANCE SIGNS SHOWN ON THIS DETAIL MAY REQUIRE ADJUSTMENTS (INCREASES OR DECREASES) TO ASSURE THAT THEY ARE POSITIONED NO CLOSER THAN 200 FEET TO EXISTING SIGNS AS DETERMINED BY THE ENGINEER.
6. SEE SHEET \_\_\_\_\_ WHEN WORK CAN BE CONFINED TO 8 FEET FROM EDGE OF PAVEMENT.
7. FOR NIGHT CLOSURES, EACH OF THE FIRST TWO SIGNS IN THE SEQUENCE (ROAD WORK AHEAD AND WORKERS IN EXIT LANE) IS REQUIRED TO BE SUPPLEMENTED BY A TYPE A FLASHING BARRICADE WARNING LIGHT.
8. WORK VEHICLES SHALL BE EQUIPPED WITH A 360° ROTATING OR FLASHING AMBER BEACON CLEARLY VISIBLE A MINIMUM OF 1/4 MILE.

OHIO DEPARTMENT OF TRANSPORTATION	
LANE CLOSURE IN DECELERATION LANE	DATE 8-3-79

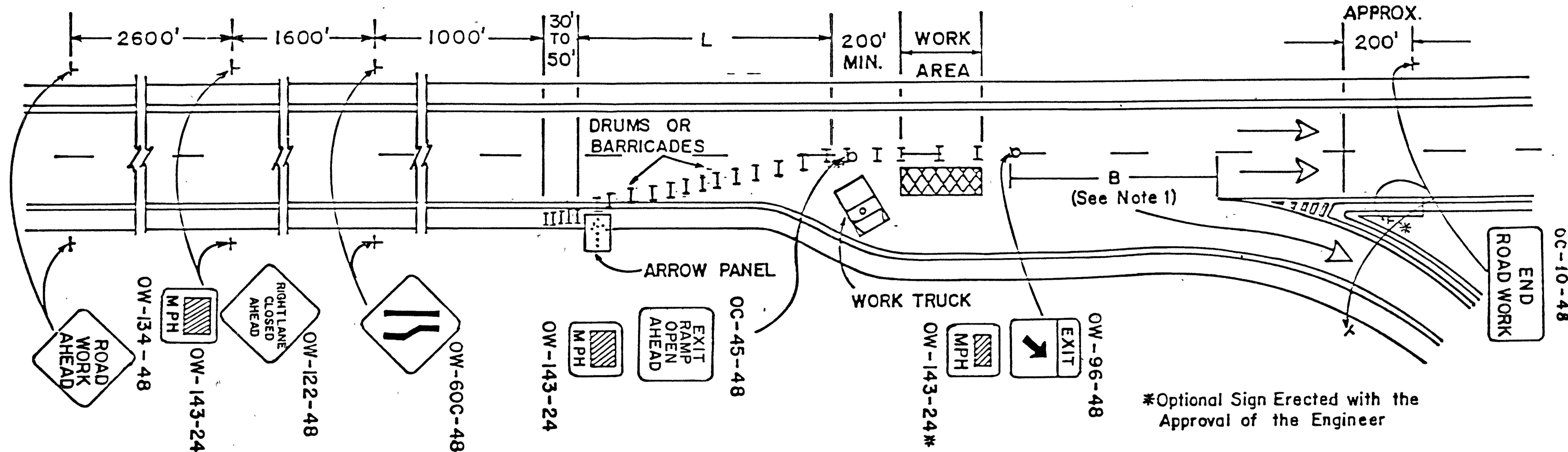
FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		

111  
120

PLAN NO. MOT-70-3.10

9. For night closures, each of the first two signs in the sequence (ROAD WORK AHEAD and RIGHT LANE CLOSED AHEAD) is required to be supplemented by a Type A flashing barricade warning light.

10. Work vehicles shall be equipped with a 360° rotating or flashing amber beacon clearly visible a minimum of 1/4 mile.



**GENERAL NOTES**

1. THIS WORK AREA TRAFFIC CONTROL APPLICATION SHALL ONLY BE USED WHEN THE DISTANCE "B" IS 100 FEET OR GREATER. WHEN "B" IS LESS THAN 100 FEET, THE TRAFFIC CONTROL SHOWN ON THE "LANE CLOSURE AT EXIT GORE" DETAIL SHOULD BE USED, OR THE EXIT SHOULD BE CLOSED, OR THE TRAFFIC CONTROL ON THIS DRAWING MAY BE USED WITH APPROVAL OF THE ENGINEER. WHEN THE EXIT IS CLOSED, APPROPRIATE DETOUR SIGNS SHALL BE PROVIDED.
2. WHEN WORK IS BEING PERFORMED IN THE LANE ADJACENT TO THE MEDIAN ON A DIVIDED HIGHWAY, REFER TO THE TYPICAL WORK AREA TRAFFIC CONTROL SHOWN IN FIGURE C-21 OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
3. THE WORK TRUCK SHOWN AT THE BEGINNING OF THE WORK AREA SHALL BE IN PLACE AND UNOCCUPIED WHENEVER MEN ARE WORKING WITHIN THE WORK AREA. THIS TRUCK SHALL BE MOVED FROM THE PAVEMENT WHENEVER WORKMEN ARE NOT IN THE WORK AREA. OTHER PROTECTIVE DEVICES MAY BE USED IN LIEU OF THE WORK TRUCK SHOWN WHEN APPROVED BY THE ENGINEER.

4. THE FLASHING ARROW PANEL SHALL BE IN ACCORDANCE WITH TC-35.10
5. THIRTEEN (13) DRUMS OR BARRICADES SHALL BE USED TO FORM THE LANE TRANSITION TAPER IN ADVANCE OF THE WORK AREA. FIVE (5) CHANNELIZING DEVICES SHALL BE USED TO FORM THE TAPER ON THE SHOULDER. CONES, DRUMS, OR BARRICADES SHALL BE SPACED AT 50 FOOT CENTERS. CONES MAY BE SUBSTITUTED FOR BARRICADES OR DRUMS FOR THE LANE CLOSURES DURING DAYLIGHT HOURS. (SEE NOTE 9)
6. TYPE C STEADY BURNING BARRICADE WARNING LIGHTS SHALL BE ERECTED ON DRUMS OR BARRICADES FOR NIGHT LANE CLOSURES. MAXIMUM SPACING SHALL BE 50' CENTER TO CENTER IN ADVANCE OF THE WORK AREA AND 200' CENTER TO CENTER WITHIN THE LIMITS OF THE WORK AREA.

7. TAPER FORMULAE:  
 $L = S \times W$  FOR SPEEDS OF 45 OR MORE  
 $L = WS^2/60$  FOR SPEEDS OF 40 OR LESS.

WHERE:  
 L = MINIMUM LENGTH OF TAPER.  
 S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85 PERCENTILE SPEED.  
 W = WIDTH OF OFFSET.

8. THE SPACINGS BETWEEN CONSTRUCTION AND MAINTENANCE SIGNS SHOWN ON THIS DETAIL MAY REQUIRE ADJUSTMENTS (INCREASES OR DECREASES) TO ASSURE THAT THEY ARE POSITIONED NO CLOSER THAN 200 FEET TO EXISTING SIGNS AS DETERMINED BY THE ENGINEER.

BUREAU OF TRAFFIC CONTROL OHIO DEPARTMENT OF TRANSPORTATION	
LANE CLOSURE BEFORE EXIT GORE	DATE 3-3-79
OR	CK -

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		

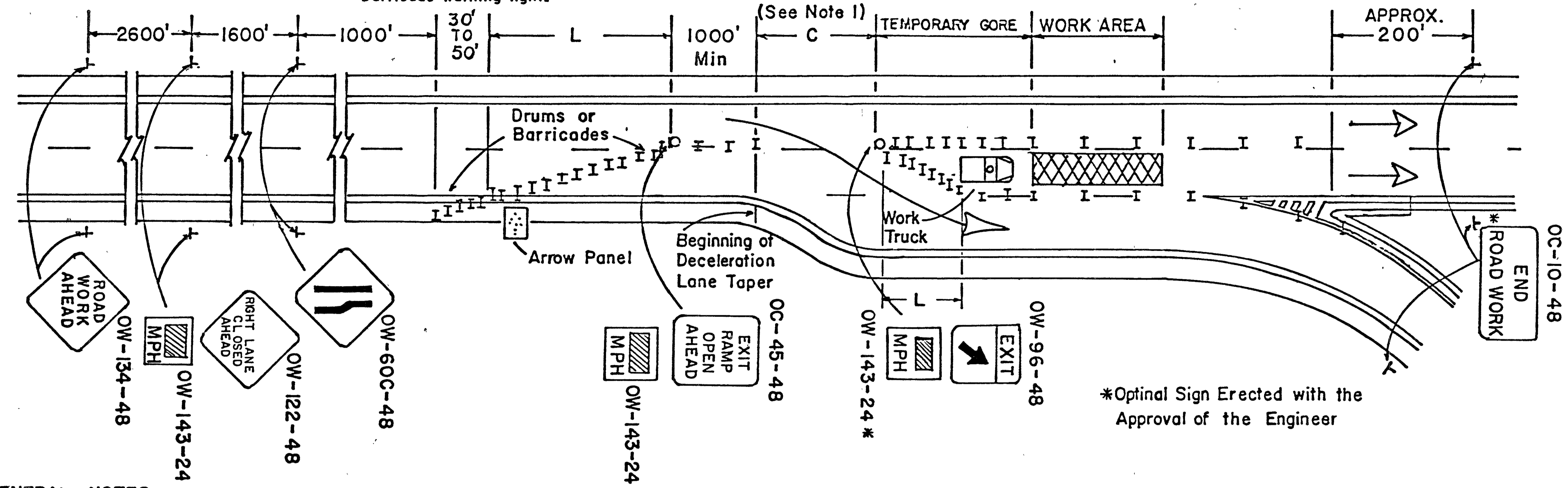
112  
120

PLAN NO. MOT-70-3.10

10. For night closures, each of the first two signs in the sequence (ROAD WORK AHEAD and RIGHT LANE CLOSED AHEAD) is required to be supplemented by a Type A flashing barricade warning light.

11. Work vehicles shall be equipped with a 360° rotating or flashing amber beacon clearly visible a minimum of 1/4 mile.

(See Note 8)



\*Optimal Sign Erected with the Approval of the Engineer

**GENERAL NOTES**

1. THIS WORK AREA TRAFFIC CONTROL APPLICATION SHALL ONLY BE USED WHEN THE DISTANCE "C" IS 100 FEET OR GREATER. WHEN "C" IS LESS THAN 100 FEET, THE TRAFFIC CONTROL SHOWN ON THE "LANE CLOSURE BEFORE EXIT GORE" DETAIL SHOULD BE USED, OR THE EXIT SHOULD BE CLOSED, OR THE TRAFFIC CONTROL ON THIS DRAWING MAY BE USED WITH APPROVAL OF THE ENGINEER. WHEN THE EXIT IS CLOSED, APPROPRIATE DETOUR SIGNS SHALL BE PROVIDED.
2. WHEN WORK IS BEING PERFORMED IN ONLY THE LANE ADJACENT TO THE MEDIAN ON A DIVIDED HIGHWAY, REFER TO THE TYPICAL WORK AREA TRAFFIC CONTROL SHOWN IN FIGURE C-21 OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
3. THE WORK TRUCK SHOWN AT THE BEGINNING OF THE WORK AREA SHALL BE IN PLACE AND UNOCCUPIED WHENEVER MEN ARE WORKING WITHIN THE WORK AREA. THIS TRUCK SHALL BE MOVED FROM THE PAVEMENT WHENEVER WORKMEN ARE NOT IN THE WORK AREA. OTHER PROTECTIVE DEVICES MAY BE USED IN LIEU OF THE WORK TRUCK SHOWN WHEN APPROVED BY THE ENGINEER. A TRUCK MOUNTED IMPACT ATTENUATOR MAY BE EMPLOYED.

4. THE FLASHING ARROW PANEL SHALL BE IN ACCORDANCE WITH TC-35.10
5. THIRTEEN (13) DRUMS OR BARRICADES SHALL BE USED TO FORM THE LANE TRANSITION TAPER IN ADVANCE OF THE WORK AREA. FIVE (5) CHANNELIZING DEVICES SHALL BE USED TO FORM THE TAPER ON THE SHOULDER. CONES, DRUMS, OR BARRICADES SHALL BE SPACED AT 50 FOOT CENTERS. CONES MAY BE SUBSTITUTED FOR BARRICADES OR DRUMS FOR THE LANE CLOSURES DURING DAYLIGHT HOURS. (SEE NOTE 10)
6. TYPE C STEADY BURNING BARRICADE WARNING LIGHTS SHALL BE ERECTED ON DRUMS OR BARRICADES FOR NIGHT LANE CLOSURES. MAXIMUM SPACING SHALL BE 50' CENTER TO CENTER IN ADVANCE OF THE WORK AREA AND 200' CENTER TO CENTER WITHIN THE LIMITS OF THE WORK AREA.

7. TAPER FORMULAE:  
 $L = S \times W$  FOR SPEEDS OF 45 OR MORE.  
 $L = WS^2/60$  FOR SPEEDS OF 40 OR LESS.  
 WHERE:  
 L = MINIMUM LENGTH OF TAPER.  
 S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85 PERCENTILE SPEED.  
 W = WIDTH OF OFFSET.
8. WHEN CREATING A TEMPORARY GORE, CHANNELIZING DEVICES SHOULD BE SPACED 25' CENTER TO CENTER SO AS TO CREATE A "SOLID GORE" EFFECT.

9. THE SPACINGS BETWEEN CONSTRUCTION AND MAINTENANCE SIGNS SHOWN ON THIS DETAIL MAY REQUIRE ADJUSTMENTS (INCREASES OR DECREASES) TO ASSURE THAT THEY ARE POSITIONED NO CLOSER THAN 200 FEET TO EXISTING SIGNS AS DETERMINED BY THE ENGINEER.

OHIO DEPARTMENT OF TRANSPORTATION	
LANE CLOSURE AT EXIT GORE	DATE 8-3-79



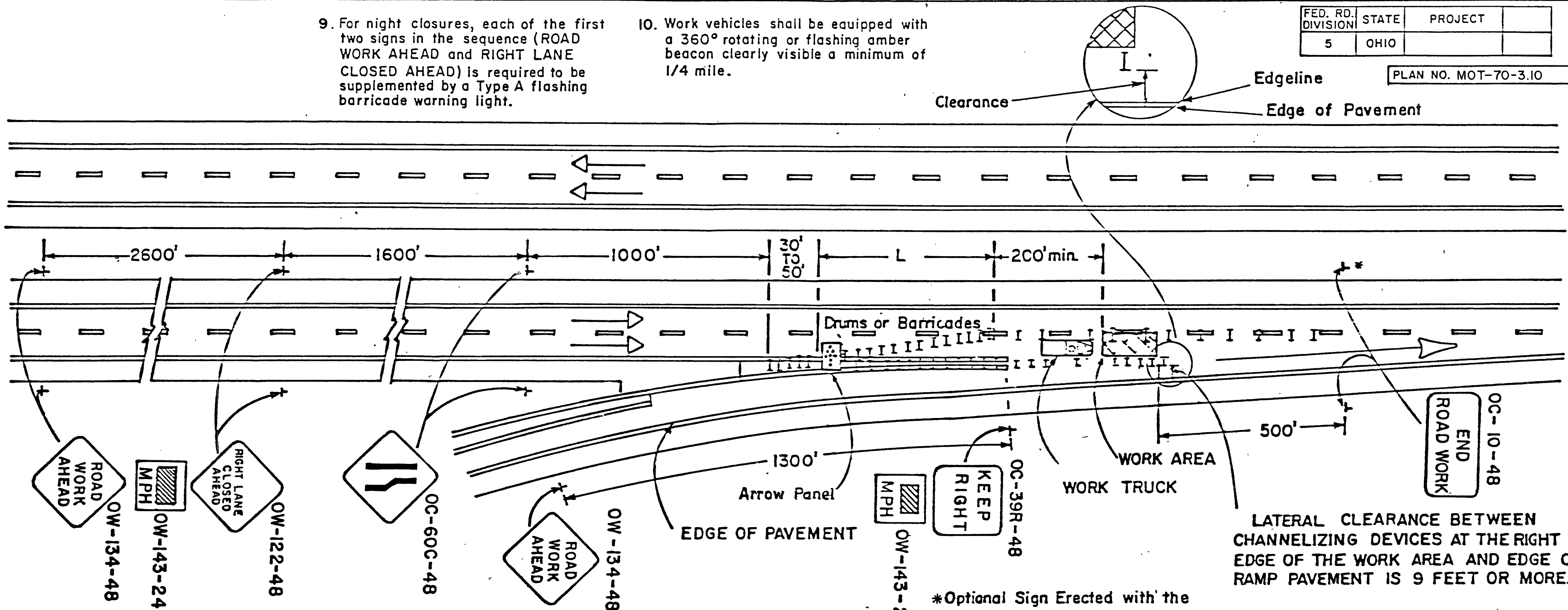
FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		

113  
120

PLAN NO. MOT-70-3.10

9. For night closures, each of the first two signs in the sequence (ROAD WORK AHEAD and RIGHT LANE CLOSED AHEAD) is required to be supplemented by a Type A flashing barricade warning light.

10. Work vehicles shall be equipped with a 360° rotating or flashing amber beacon clearly visible a minimum of 1/4 mile.



LATERAL CLEARANCE BETWEEN CHANNELIZING DEVICES AT THE RIGHT EDGE OF THE WORK AREA AND EDGE OF RAMP PAVEMENT IS 9 FEET OR MORE.

\*Optional Sign Erected with the Approval of the Engineer

**GENERAL NOTES**

- THIS WORK AREA TRAFFIC CONTROL APPLICATION SHALL BE EMPLOYED WHEN THE LATERAL CLEARANCE BETWEEN THE CHANNELIZING DEVICES AT THE RIGHT EDGE OF THE WORK AREA AND THE EDGE OF THE RAMP PAVEMENT IS 9 FEET OR MORE. WHEN THE CLEARANCE IS LESS THAN 9 FEET, THE TRAFFIC CONTROL ON "LANE CLOSURE AT ENTRANCE RAMP: PLAN B" SHOULD BE USED, OR THE RAMP SHOULD BE CLOSED, OR ALLOWING RAMP TRAFFIC TO USE THE BERM SHOULD BE CONSIDERED PROVIDED THE OPERATION IS "SHORT" IN DURATION. WHEN THE RAMP IS CLOSED, APPROPRIATE DETOUR SIGNS SHALL BE PROVIDED.
- THIRTEEN (13) DRUMS OR BARRICADES SHALL BE USED TO FORM THE LANE TRANSITION TAPER IN ADVANCE OF THE WORK AREA. FIVE (5) CHANNELIZING DEVICES SHALL BE USED TO FORM THE TAPER ON THE SHOULDER. CONES, DRUMS, OR BARRICADES SHALL BE SPACED AT 50 FOOT CENTERS. CONES MAY BE SUBSTITUTED FOR BARRICADES OR DRUMS FOR THE LANE CLOSURES DURING DAYLIGHT HOURS, (See note 9)
- RAMP SIGNS SHALL BE DUAL MOUNTED ON MULTILANE RAMPS.

- THE FLASHING ARROW PANEL SHALL BE IN ACCORDANCE WITH TC-35.10
- THE WORK TRUCK SHOWN AT THE BEGINNING OF THE WORK AREA SHALL BE IN PLACE AND UNOCCUPIED WHENEVER MEN ARE WORKING WITHIN THE WORK AREA. THIS TRUCK SHALL BE MOVED FROM THE PAVEMENT WHENEVER WORKMAN ARE NOT IN THE WORK AREA. OTHER PROTECTIVE DEVICES MAY BE USED IN LIEU OF WORK TRUCK SHOWN WHEN APPROVED BY THE ENGINEER. A TRUCK MOUNTED IMPACT ATTENUATOR MAY BE EMPLOYED.
- TYPE C STEADY BURNING BARRICADE WARNING LIGHTS SHALL BE ERECTED ON DRUMS OR BARRICADES FOR NIGHT LANE CLOSURES. MAXIMUM SPACING SHALL BE 50' CENTER TO CENTER IN ADVANCE OF THE WORK AREA AND 200' CENTER TO CENTER WITHIN THE LIMITS OF THE WORK AREA.

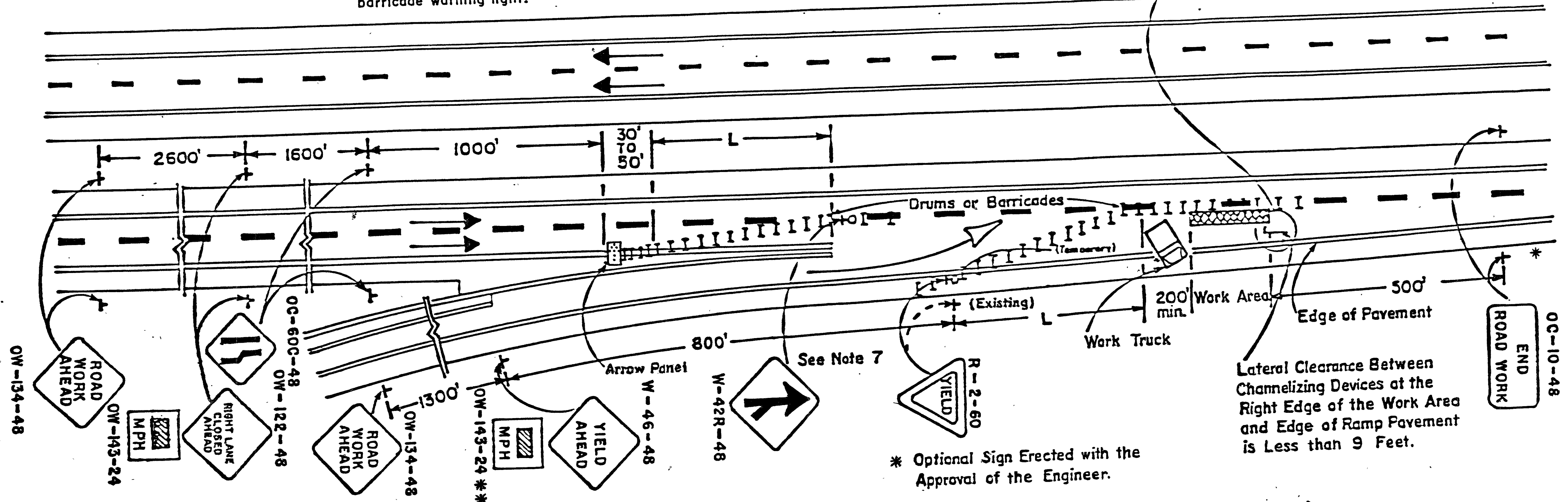
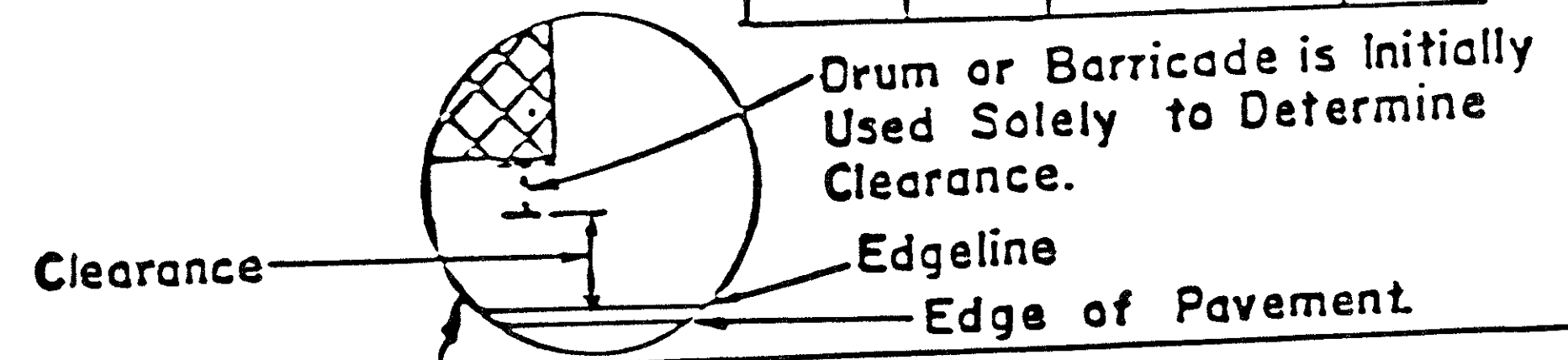
7. TAPER FORMULAE:  
 $L = S \times W$  FOR SPEEDS OF 45 OR MORE.  
 $L = WS^2/60$  FOR SPEEDS OF 40 OR LESS.  
 WHERE:  
 L = MINIMUM LENGTH OF TAPER.  
 S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85 PERCENTILE SPEED  
 W = WIDTH OF OFFSET.

- THE SPACINGS BETWEEN CONSTRUCTION AND MAINTENANCE SIGNS SHOWN ON THIS DETAIL MAY REQUIRE ADJUSTMENTS (INCREASES OR DECREASES) TO ASSURE THAT THEY ARE POSITIONED NO CLOSER THAN 200 FEET TO EXISTING SIGNS AS DETERMINED BY THE ENGINEER.

OHIO DEPARTMENT OF TRANSPORTATION	
LANE CLOSURE AT ENTRANCE RAMP: PLAN A	DATE 8-3-79

10. For night closures, each of the first two signs in the sequence (ROAD WORK AHEAD and RIGHT LANE CLOSED AHEAD) is required to be supplemented by a Type A flashing barricade warning light.

11. Work vehicles shall be equipped with a 360° rotating or flashing amber beacon clearly visible a minimum of 1/4 mile.



Lateral Clearance Between Channelizing Devices at the Right Edge of the Work Area and Edge of Ramp Pavement is Less than 9 Feet.

\* Optional Sign Erected with the Approval of the Engineer.

**General Notes**

1. This work area traffic control application shall be employed when the lateral clearance between channelizing devices at the right edge of the work area and the edge of the ramp pavement is less than 9 feet. When the clearance is more than 9 feet, the traffic control on "Lane Closure at Entrance Ramp: Plan A" should be used, or the ramp should be closed. When the ramp is closed, appropriate detour signs shall be provided.
2. Thirteen (13) drums or barricades shall be used to form the lane transition taper in advance of the work area. Five (5) channelizing devices shall be used to form the taper on the shoulder. Cones, drums, or barricades shall be spaced at 50 foot centers. Cones may be substituted for barricades or drums for the lane closures during daylight hours. (See note 10)
3. Ramp signs shall be dual mounted on multi-lane ramps. When the ramp is not long enough to allow placement as specified above, the signs may be spaced propor-

- tionately within the space available as determined by the Engineer (a 200' minimum spacing must be maintained).
4. The flashing arrow panel shall be in accordance with TC-35.10.
5. The work truck shown at the beginning of the work area shall be in place and unoccupied whenever men are working within the work area. This truck shall be moved from the pavement whenever workmen are not in the work area. Other protective devices may be used in lieu of work truck shown when approved by the Engineer.
6. Type C steady burning barricade warning lights shall be erected on drums or barricades for night lane closures. Maximum spacing shall be 50' center to center in advance of the work area and 200' center to center within the limits of the work area.

7. It may be necessary to move the location of an existing Yield condition. In these cases, the permanent R-2 sign installation shall be covered and the temporary installation shall be mounted upon a drive post which shall be banded to a drum with stainless steel strapping material or other techniques subject to the approval of the Engineer.

**8. Taper Formulae:**

$L = S \times w$  for Speeds of 45 or more.  
 $L = WS^2/60$  for Speeds 40 or less.

Where:

- L = Minimum length of taper.
- S = Numerical value of posted speed limit prior to work or 85 percentile speed.
- W = Width of offset.

9. THE SPACINGS BETWEEN CONSTRUCTION AND MAINTENANCE SIGNS SHOWN ON THIS DETAIL MAY REQUIRE ADJUSTMENTS (INCREASES OR DECREASES) TO ASSURE THAT THEY ARE POSITIONED NO CLOSER THAN 200 FEET TO EXISTING SIGNS AS DETERMINED BY THE ENGINEER.

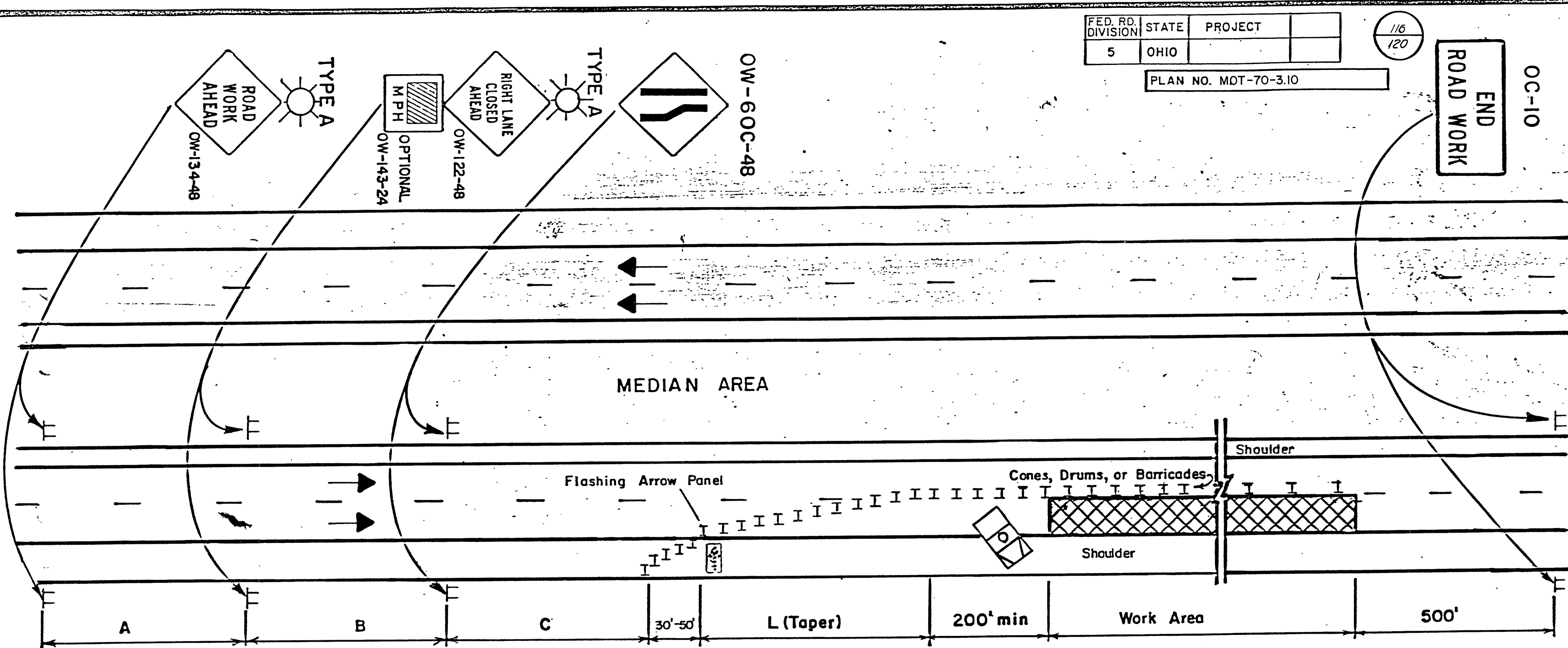
OHIO DEPARTMENT OF TRANSPORTATION	
LANE CLOSURE AT ENTRANCE RAMP PLAN B	DATE 3-3-79

FED. RD. DIVISION	STATE	PROJECT
5	OHIO	

116  
120

PLAN NO. MOT-70-3.10

OC-10  
END  
ROAD WORK



GENERAL NOTES:

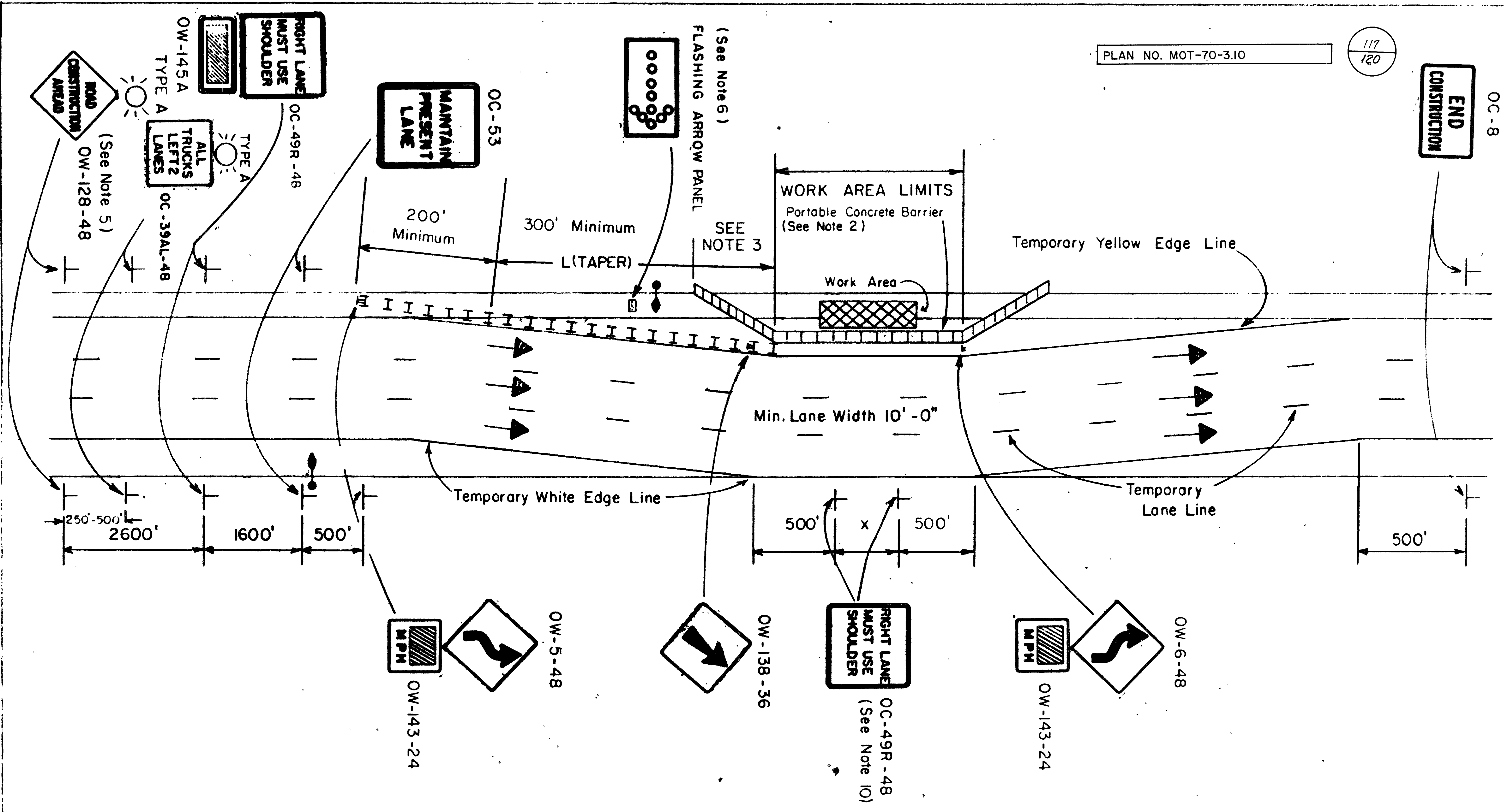
- The taper length (L) shall be in accordance with Section 7F-17 of the O MUTCD. The location of the transition taper and location of the advance warning signs should be adjusted to provide for adequate sight distance for the existing vertical and horizontal roadway alignment. In order to determine the minimum number of channelizing devices for the transition taper see Table 7-5 O MUTCD. For a 55 MPH prevailing speed and a 12 ft. lane, not less than thirteen (13) drums or barricades shall be used to form the lane transition taper in advance of the work area. Not less than five (5) drums or barricades shall be used to form the taper on the shoulder. Drums or barricades shall be spaced approximately 50' to 60' center to center for the first 1000 feet of the work area and at a maximum of 100 to 120 feet for the balance of the work area. Cones may be substituted for barricades or drums for short term lane closures during daylight hours only.
- The major standard level warning sign sizes may be used on divided streets or highways that are not classified as freeways or expressways.
- When work is being performed in the lane adjacent to the median on a divided highway an OW-123-48 sign(s) shall be substituted for the OW-122-48 sign(s) and an OW-60D-48 sign(s) shall be substituted for the OW-60C sign(s).
- The work vehicle shown at the beginning of the work area shall be in place and unoccupied whenever workers are in the work area. This work vehicle shall be removed from the pavement whenever workers are not in the work area. Other protective devices may be used in lieu of the work vehicle shown when approved by the Engineer. The vehicle shall be equipped with a 360° rotating or flashing amber beacon clearly visible in all directions a minimum of 1/4 mile.
- The flashing arrow panel shall meet requirements contained in TC-35.10.
- Type C steady burning barricade warning lights shall be erected on drums or barricades for night lane closures. The maximum spacing shall be identical to the channelizing device spacing requirements described in Note 1.
- Type A flashing barricade warning lights shown on the "Road Work Ahead" and the "Right Lane, Closed Ahead" signs are required whenever a night lane closure is necessary.
- Some work area locations may require more than just static or conventional signs to enhance communication with the driver. At these locations Portable Changeable Message Signs (PCMS) units are recommended. These devices should be located approximately 2000-4000 ft. in advance of a lane closure or other point of required action. See Section 7G-8.1, O MUTCD for further guidance on use of PCMS units.

MINIMUM DISTANCE	A	B	C
MAJOR STANDARD	500'	500'	500'
URBAN FREEWAY & EXPRESSWAY	500' TO 1000'	500' TO 1000'	500' TO 1000'
RURAL FREEWAY & EXPRESSWAY	2600'	1600'	1000'

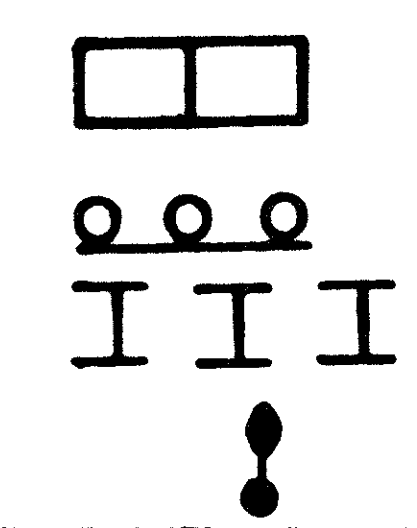
OHIO DEPARTMENT OF TRANSPORTATION

CLOSING ONE LANE OF A FOUR LANE DIVIDED HIGHWAY

DATE: 2/82



**LEGEND**  
 PORTABLE CONCRETE BARRIER  
 TEMPORARY BEAM RAIL  
 BARRICADES OR DRUMS  
 LUMINAIRE



NOTE: Sheet 120 for GENERAL NOTES.

OHIO DEPARTMENT OF TRANSPORTATION		
TRANSITION PLAN FOR USE OF SHOULDER: PLAN A.		DATE 12/82
DR.	CK.	

FED. RD. DIVISION	STATE	PROJECT	OHIO	5
116				120

PLAN NO. MOT-70-3.10

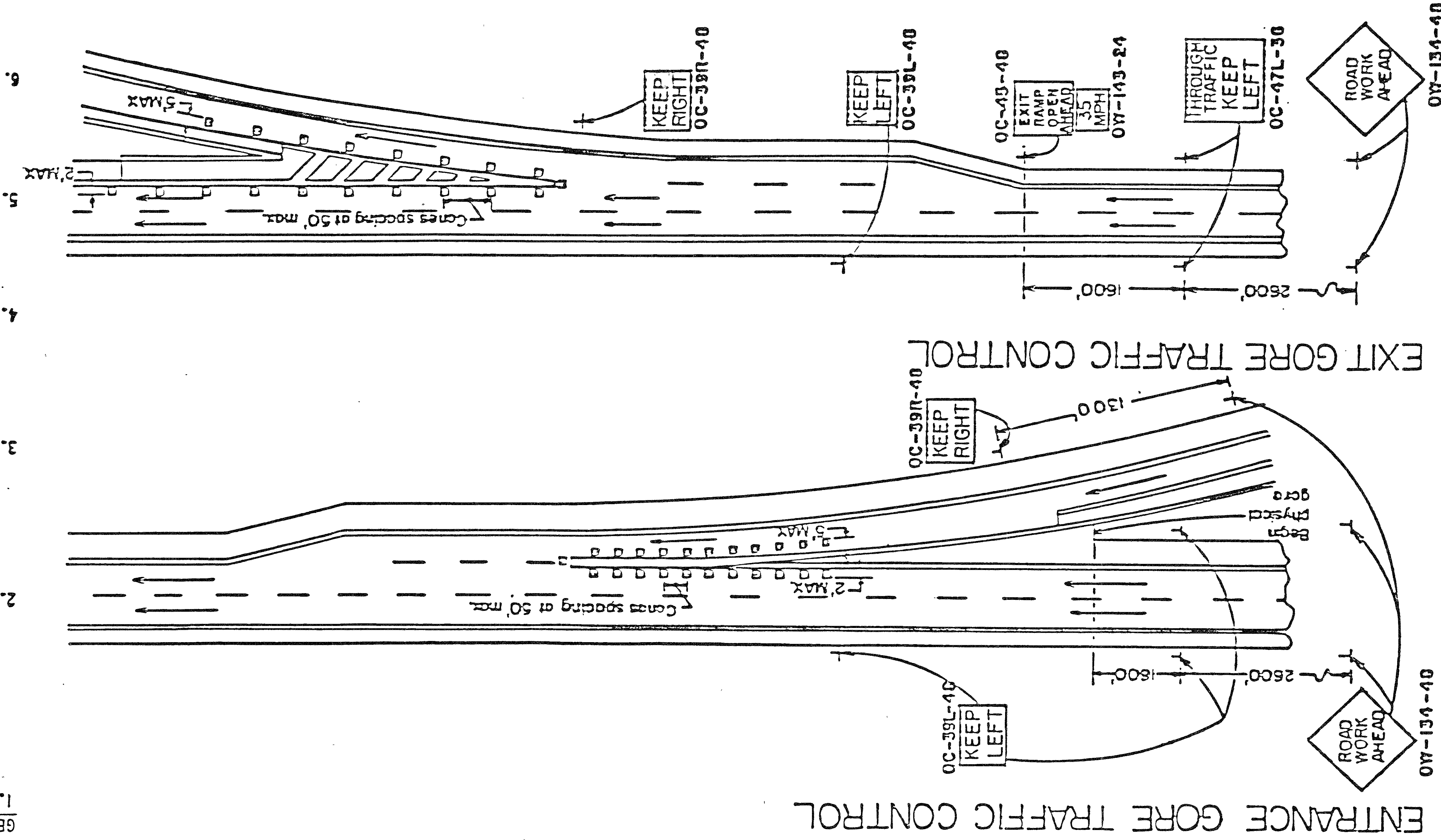
GENERAL NOTE

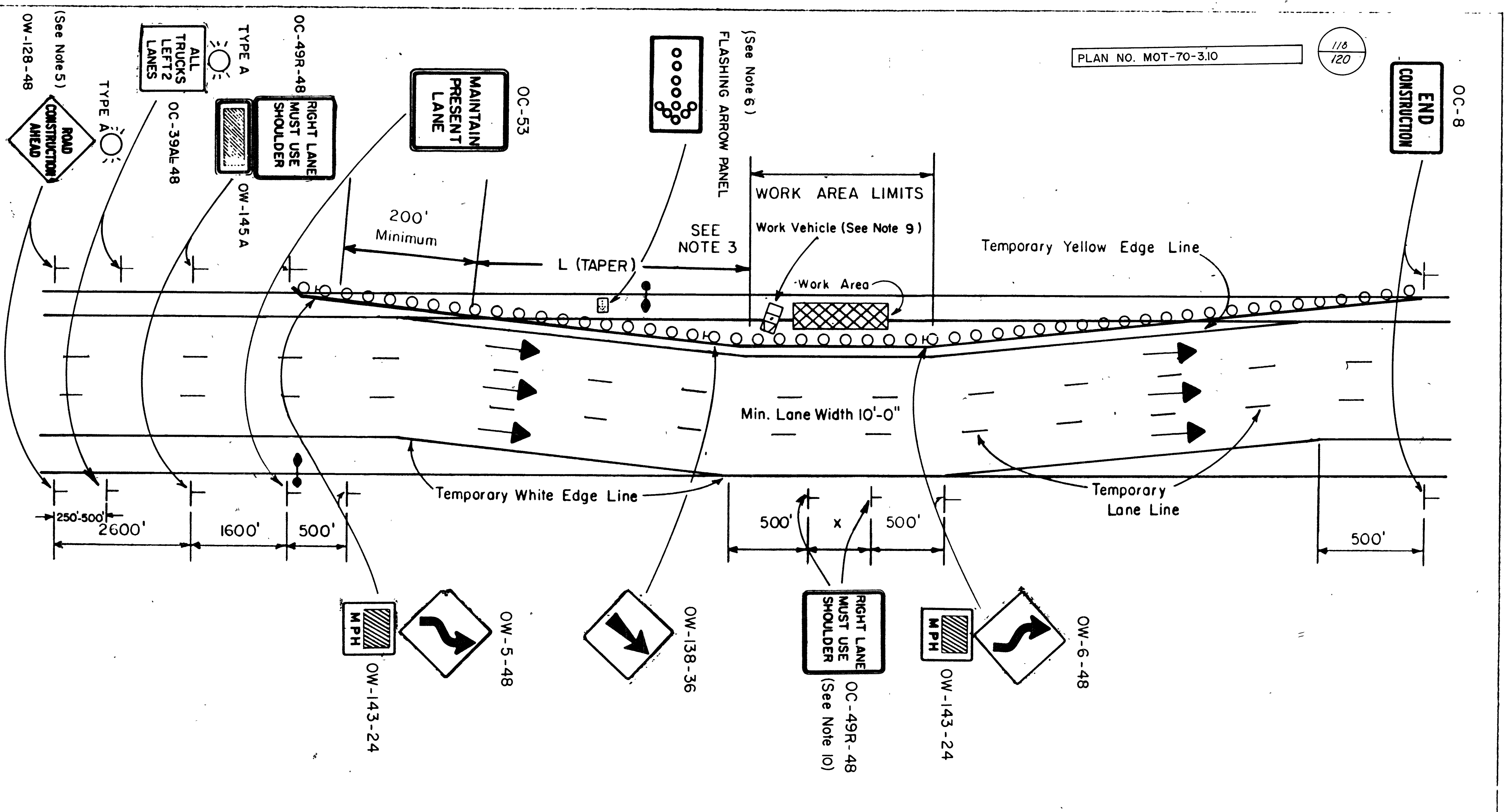
1. THE REQUIREMENTS OF THE "TRAFFIC CONTROL FOR LONG LINE PAVEMENT MARKING OPERATIONS" NOTE(SHEET SHALL APPLY IN LIEU OF THIS DETAIL WHERE EDGE LINES AND/OR CHANNELIZING LINES ARE SPRAYED IN MOVING OPERATIONS SEPARATE FROM ANY OTHER WORK.

2. WHERE THE WORK IN THE GORE AREA REQUIRES MORE POSITIVE TRAFFIC CONTROL OR OVERNIGHT WORK AREA PROTECTION, THE TRAFFIC CONTROL FOR "LANE CLOSURE AT THE ENTRANCE RAMP" OR "LANE CLOSURE AT EXIT GORE" SHOULD BE EMPLOYED. SEE SHEET 3. THE SPACING BETWEEN SIGNS SHOWN ON THIS DETAIL MAY BE ADJUSTED (INCREASED OR DECREASED) WITH THE APPROVAL OF THE ENGINEER TO POSITION THEM NO CLOSER THAN 200 FEET TO EXISTING SIGNS WHICH MUST REMAIN IN USE. AT AN ISOLATED ENTRANCE GORE AREA, A FLASHING ARROW PANEL CONFORMING TO REQUIREMENTS IN SECTION 7G-8 OF THE OHIOCD MAY BE SUBSTITUTED FOR THE ADVANCE OC-39-48 SIGNS. AT AN INTERCHANGE WHERE BOTH EXITS AND ENTRANCES ARE MARKED WITH TRAFFIC CONTROL IN PLACE AT THE SAME TIME, THE OW-134-48 SIGN ON THE ENTRANCE RAMP IS NOT REQUIRED.

6. FOR NIGHT CLOSURES, THE OW-134-48 AND THE OC-47L-36 SIGNS SHALL BE LIGHTED USING TYPE A FLASHING BARRICADE WARNING LIGHT.

OHIO DEPARTMENT OF TRANSPORTATION  
 DATE 1/81  
 WORK IN GORE AREAS  
 TRAFFIC CONTROL FOR  
 CRJDL/CX CDR I  
 Rev EEF PM10/85





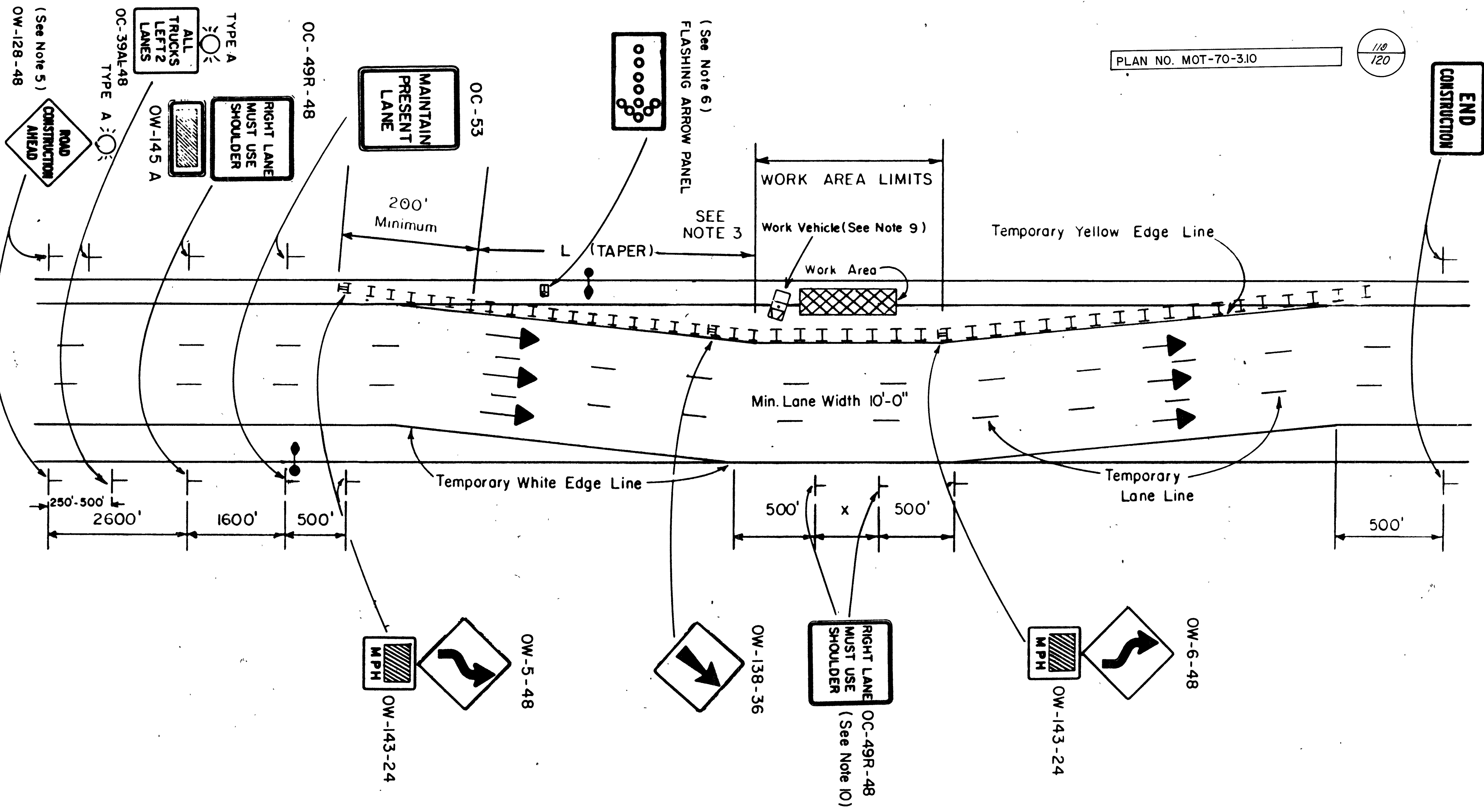
**LEGEND**

- PORTABLE CONCRETE BARRIER
- TEMPORARY BEAM RAIL
- BARRICADES OR DRUMS
- LUMINAIRE

NOTE: SEE Sheet 120 for GENERAL NOTES.

OHIO DEPARTMENT OF TRANSPORTATION	
TRANSITION PLAN FOR USE OF SHOULDER: PLAN B.	
DATE	12/82
DR	CK

OC-8  
END  
CONSTRUCTION



**LEGEND**

- PORTABLE CONCRETE BARRIER
- TEMPORARY BEAM RAIL
- BARRICADES OR DRUMS
- LUMINAIRE

NOTE: SEE Sheet 120 for GENERAL NOTES.

OHIO DEPARTMENT OF TRANSPORTATION	
TRANSITION PLAN FOR USE OF SHOULDER: PLAN C.	DATE 12/82
DR	CK

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		

120  
120

PLAN NO. MOT-70-3.10

**GENERAL NOTES: TRANSITION PLANS FOR USE OF SHOULDER**

- These traffic control plans should be used when the work area extends into either the right or left-hand lane of a multiple lane divided highway and it is not practicable, for capacity reasons, to reduce the number of available lanes. Plan A, B or C may be used depending on the designer's determination of the degree of protection needed. The minimum width of the shoulder lane is 10'0". The plan shown is for a left-lane closure. When there is a right-lane closure, make the following sign substitutions: an OC-49L-48 "Left Lane Must Use Shoulder", for the OC-49R-48; and OC-39AR-48 "All Trucks Use Right 2 Lanes", for the OC-39AL-48; and OW-6-48, for the OW-5-48; and an OW-5-48, for the OW-6-48.
- Plan A:** Portable Concrete Barrier (PCB), as described in Standard Construction Drawing MC-9A, should be used for this work area protection plan. The taper rate for the barrier approach taper should be 20 to 1.

The chances or consequences of impacting the ends of PCB should be lessened by such measures as flaring the ends of barriers away from the travelway or use of impact attenuators.

When used to protect work areas at lane closures on multilane roadways, temporary PCB should be preceded by channelizing devices to direct traffic from the closed lane at least 300 feet prior to the beginning of the PCB.

**Plan B:** This work area protection plan employs temporary guardrail as described in Construction and Material Specification 606.04.

**Plan C:** This work area protection plan employs barricades or drums which may be used for even shorter periods of closure, subject to the approval of the Engineer.
- The taper length (L) shall be in accordance with Section 7F-17 of the OMUTCD. In order to determine the minimum number of channelizing devices for the transition taper see Table 7-5, OMUTCD. A minimum of five (5) channelizing devices shall be used to form the taper on the shoulder. Barricades or drums in plan C shall be spaced at approximately 50 to 60 foot centers for the first 1000 feet of the work area and at a maximum of 100 to 120 feet for the balance of the work area.
- Type C steady burning barricade warning lights shall be erected on drums, barricades, or on PCB parallel to the edge of pavement for night lane closures. The maximum spacing shall be identical to the channelizing device spacing requirements described in Note 3.
- The Type A flashing barricade warning lights shown on the "Road Construction Ahead" sign, OW-128-48, and "All Trucks Left 2 Lanes" sign, OC-39AL-48 are required whenever a night lane closure is necessary.
- The flashing arrow panel shall be in accordance with Section 7G-8, OMUTCD.
- Existing conflicting pavement markings shall be removed and temporary markings shall be completed on all pavement before it is exposed to traffic. Removable pavement markings may be used. Where a lane closure is limited to daylight hours only, lanes may be delineated by cones in lieu of temporary markings. After completion of the work temporary markings shall be removed in accordance with 621.134.
- The "OW-138-36" sign shall be fastened to a drive post which shall be banded to a drum with stainless steel strapping or another suitable fastening system approved by the Engineer. The sign mounting height for these signs shall be in accordance with Section 2E-4, OMUTCD.
- The work vehicle shown at the beginning of the work area for Plans B (optional) and C (required) shall be in place and unoccupied whenever men are working within the work area. This vehicle shall be moved from the pavement whenever workers are not in the work area. Other protective devices may be used in lieu of the work vehicle shown when approved by the Engineer.
- The maximum spacing of the OC-49R-48, "Right Lane Must Use Shoulder", near the work area is 1500 feet. When the distance "X" is less than 1500 feet, the second OC-49R should be deleted.
- Some work area locations may require more than just conventional fixed message signs to enhance communication with the driver. At these locations Portable Changeable Message Signs (PCMS) units are recommended. The devices should be located approximately 3/4 mile in advance of a lane closure or other point of required action. See Section 7G-8.1, OMUTCD for further guidance on use of PCMS units.
- Adequate area illumination to clearly identify the beginning of the transition at night for long term operations shall be provided by using 150 watt minimum high pressure sodium luminaires or 250 watt minimum mercury luminaires. Luminaires shall be located adjacent to each end of the transition taper. The mounting height for temporary luminaires shall be a minimum of 27 feet above the pavement and the overhead conductor clearance shall be 20 feet above the pavement.

OHIO DEPARTMENT OF TRANSPORTATION	
TRANSITION PLAN FOR USE OF SHOULDER	DATE
GENERAL NOTES	2/82
APPROVED	
DR	CK