



**CUY-90-14.90**

**PID 77332/85531**

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**APPENDIX EX-29**

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**CUY-090-1624 PID 07090**

**(Reference Document)**

State of Ohio  
Department of Transportation  
Jolene M. Molitoris, Director

**Innerbelt Bridge  
Construction Contract Group 1 (CCG1)**

# STATE OF OHIO DEPARTMENT OF TRANSPORTATION CUY-90-16.24

CUYAHOGA COUNTY CUY-90-16.24 IM-90-1(170)	OHIO FHWA REGION 5 FEDERAL PROJECT
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**21-0**

## DESIGN DESIGNATION

Current A.D.T. (1993) = 144,800  
 Design Year A.D.T. (2013) = 173,800  
 D.H.V. = 17,400  
 D = 55%  
 T = 6%  
 V = 55 MPH  
 Posted Speed = 50 MPH

Functional Classification = URBAN INTERSTATE  
 Design exception for shoulder width  
 horizontal and vertical alignment and  
 stopping sight distance approved 8-3-90

### CONVENTIONAL SIGNS

Corporation Line	Limited Access (only)	L/A
Fence Line (existing)  (proposed)	Right of Way (only)	R/W
Center Line	Limited Access & Right of Way	L/A & R/W
Trees , Stumps  (to be removed)	Existing Right of Way	R/W
Utility Poles: Telephone , Power , Light	Railroad	
	Guardrail (existing)  (proposed)	

### INDEX OF SHEETS

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TRAFFIC CONTROL	139-216
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### LINE DATA

DELETED SHEETS 63,64

PROJECT LIMITS	LINE DATA	
STA. 55+97.03 TO STA. 57+79.00 (SUSPEND)	= 181.97 L.F.	
STA. 62+20.00 (RESUME) TO STA. 64+06.43 (SUSPEND)	= 186.43	
STA. 69+22.37 (RESUME) TO STA. 69+75.25 (SUSPEND)	= 52.88	
STA. 75+00.25 (RESUME) TO STA. 83+09.31 (BACK)	= 809.06	
STA. 98+00.00 (AHEAD) TO STA. 127+09.87 (BACK)	= 2909.87	
STA. 126+61.13 (AHEAD) TO STA. 160+95.00	= 3433.87	
<b>TOTAL</b>	<b>= 7574.08 L.F. = 1.434 MILES</b>	

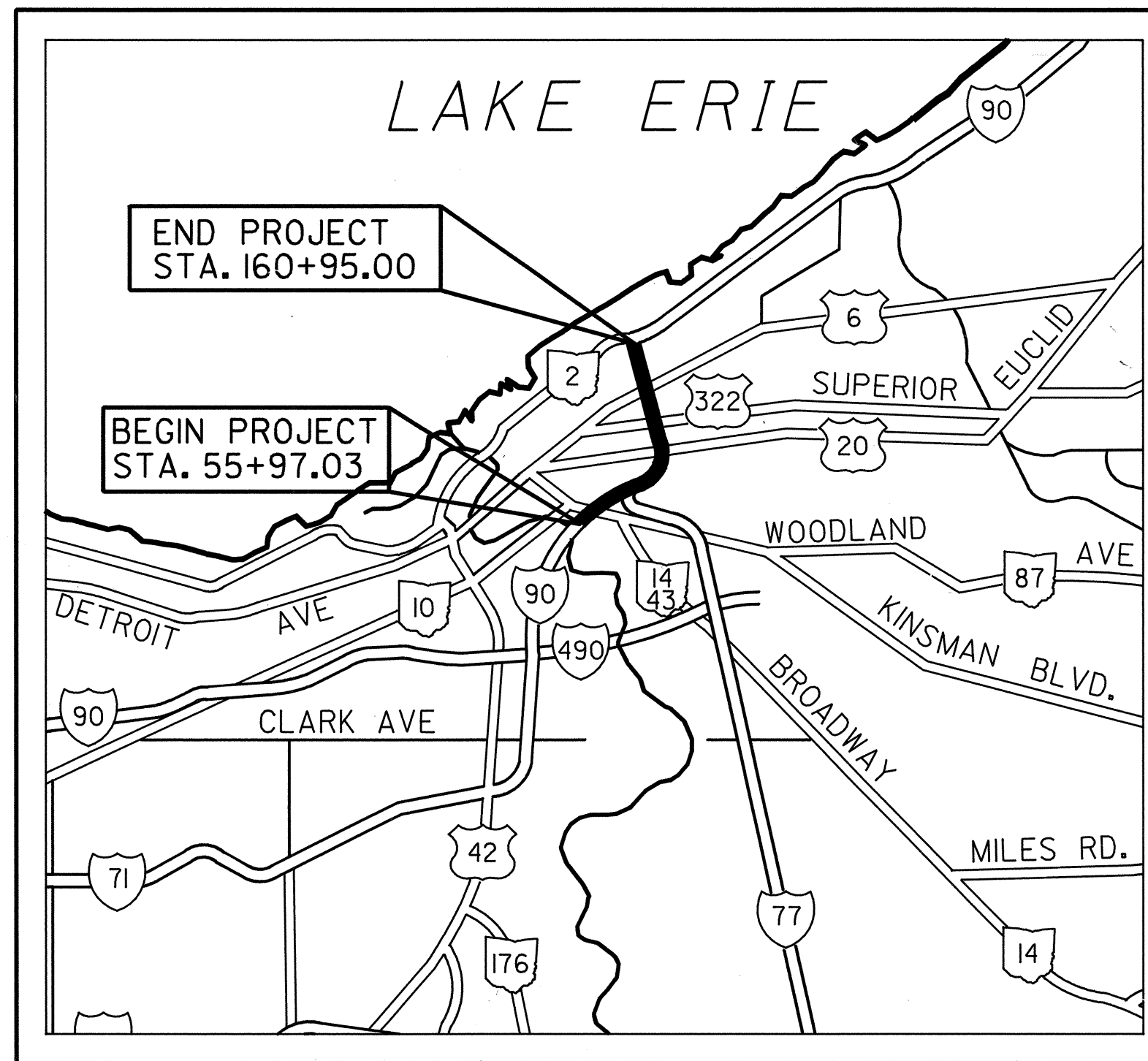
### ADDITIONAL WORK

STA. 41+70.00 TO STA. 55+97.03	= 1427.03 L.F.
STA. 57+79.00 TO STA. 62+20.00	= 441.00 L.F.
STA. 64+06.43 TO STA. 69+22.37	= 515.94 L.F.
STA. 69+75.25 TO STA. 75+00.25	= 525.00 L.F.
STA. 160+95 TO STA. 173+15.03 (BACK)	= 1220.03 L.F.
STA. 73+15.03 (AHEAD) TO STA. 80+85	= 769.97 L.F.
STA. 51+55 TO STA. 60+29.56 (S.I.C.)	= 874.56 L.F.
STA. 4+20 TO STA. 9+20 (HAMILTON AVE.)	= 500.00 L.F.
STA. 4+85 TO STA. 10+40 (LAKESIDE AVE.)	= 555.00 L.F.
STA. 0+20 TO STA. 7+99 (LANE A)	= 779.00 L.F.
STA. 1+97 TO STA. 6+77 (RAMP W1)	= 480.00 L.F.
STA. 0+20 TO 8+45 (LANE B)	= 825.00 L.F.
STA. 5+47 TO STA. 8+97 (RAMP W2)	= 350.00 L.F.
STA. 2+12.83 TO STA. 5+72 (RAMP W3)	= 359.17 L.F.
<b>TOTAL</b>	<b>= 9621.70 L.F. = 1.822 MILES</b>

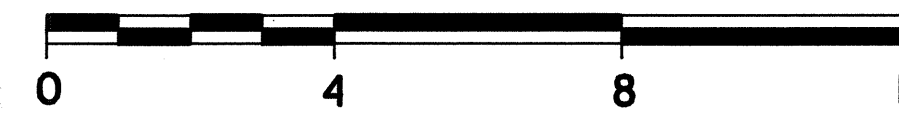
Plan Prepared By:  
OHIO DEPARTMENT OF  
TRANSPORTATION  
DISTRICT 12  
Location & Design

Project: CUY-90-16.24 CUYAHOGA COUNTY  
Date of Letting: 19, Contract No.

## CITY OF CLEVELAND CUYAHOGA COUNTY

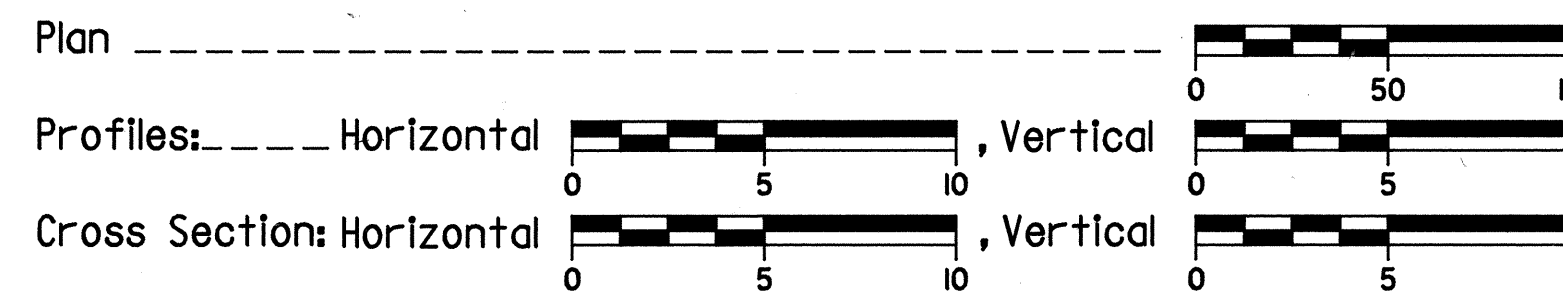


LOCATION MAP  
SCALE IN MILES



Portion to be improved   
 State & Federal Routes   
 Other Roads

### SCALES



**UNDERGROUND UTILITIES**  
 TWO WORKING DAYS  
**BEFORE YOU DIG**  
 call... 800-362-2764  
 (Toll free)  
 OHIO UTILITIES PROTECTION SERVICE  
 NON-MEMBERS  
 MUST BE CALLED DIRECTLY

SUPPLEMENTAL SPECIFICATIONS			
802	4-13-90	921	12-4-72
826	1-22-90	931	3-18-92
852	6-10-87	944	3-18-92
862	12-16-88	952	12-14-88
820	3-18-92	933	2-10-87
		962	1-23-90
		902	8-31-79
		923	1-10-69

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS											
BP-1.1	2-21-92	F-3	5-1-76	11-2A	12-18-84	MT-99.10	11-14-86	TC-22.20	9-1-92	TC-65.10	2-1-90
BP-1.2	2-21-92	F-4	11-10-83	MC-4	7-26-76	MT-99.20	4-29-88	TC-31.21	9-1-92	TC-65.11	2-1-90
BP-2.1	2-21-92	F-7	11-1-77	MC-5	6-12-75	MT-102.20	8-25-89	TC-32.10	9-1-92	TC-65.12	2-1-90
BP-2.2	2-21-92	GR-1.1	5-6-91	MC-6	1-30-84	HL-30.11	5-1-87	TC-32.11	9-1-92	TC-72.20	2-26-82
BP-2.3	2-21-92	GR-1.2	10-30-92	MC-7	10-15-76	TC-7.65	3-1-79	TC-35.10	8-29-84	LA-1	6-1-79
BP-2.4	2-21-92	GR-2.1	5-6-91	MC-9.3	10-30-92	TC-12.30	1-20-84	TC-41.10	8-29-84	CB-3A	5-1-79
BP-2.5	2-21-92	GR-2.2	10-30-92	MC-9.2	5-6-91	TC-15.115	3-1-79	TC-41.20	3-26-79	1-3C+D	4-1-80
BP-3.1	2-21-92	GR-3.2	5-6-91	MC-11	8-1-78	TC-18.24	4-25-79	TC-41.50	3-26-79	TBR-91	4-24-92
BP-4.1	2-21-92	GR-3.3	5-6-91	MH-1	12-18-84	TC-18.26	5-31-79	TC-42.10	8-19-77	BR-1	5-29-79
BP-5.1	2-21-92	GR-3.4	5-6-91	MH-3	12-18-84	TC-21.10	9-1-92	TC-42.20	3-26-79	SD-1-69	6-12-69
BP-6.1	2-21-92	GR-4.2	5-6-91	MH-5	6-12-75	TC-21.20	9-1-92	TC-51.10	1-20-84	GR-5.3	10-30-92
BP-7.1	10-30-92	GR-5.1	10-30-92	MT-95.30	10-10-88	MC-9.4	10-30-92	TC-51.11	1-20-84	VPF-1-90	2-1-92
BP-8.1	2-21-92	GR-6	2-5-82	MT-97.10	4-29-88	TC-21.40	9-1-92	TC-52.10	4-3-79	MC-9A	1-11-85
F-1	11-10-83	CB-5	11-10-83	MT-98.15	8-25-89	TC-22.10	9-1-92	TC-52.20	4-3-79	GR-4.1	5-6-91

### LIMITED ACCESS

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

### 1991 SPECIFICATIONS

The standard specifications of the State of Ohio, Department of Transportation, including changes and supplemental specifications listed in the proposal shall govern this improvement.

I hereby approve these plans and declare that the making of this improvement will not require the closing to traffic of the highway, except as noted on sheet 135, and that provisions for the maintenance and safety of traffic will be as set forth on the plans and estimates.

Approved: Raymond J. Aarden  
 Date: 6/25/92 District Deputy Director of Transportation

Approved: B. D. Hand  
 Date: 7-18-92 Engineer, Bureau of Bridges and Structural Design

Approved: George L. Rutz  
 Date: 9/4/92 Deputy Director, Planning and Design

UNDER AUTHORITY OF SECTION 4511.21, DIVISION (1) OF THE REVISED CODE OF OHIO, THE REVISED PRIMA FACIE SPEED LIMITS AS INDICATED HEREIN ARE DETERMINED TO BE REASONABLE AND SAFE, AND ARE HEREBY ESTABLISHED FOR THE DURATION OF THIS PROJECT. THE PRIMA FACIE SPEED LIMIT OR LIMITS HEREBY ESTABLISHED SHALL BECOME EFFECTIVE WHEN APPROPRIATE SIGNS GIVING NOTICE THERE OF ARE ERECTED.

Approved: James W. Gray  
 Date: 9-4-92 Director, Department of Transportation

REVISOR 1-26-93  
REVISOR 1-5-93

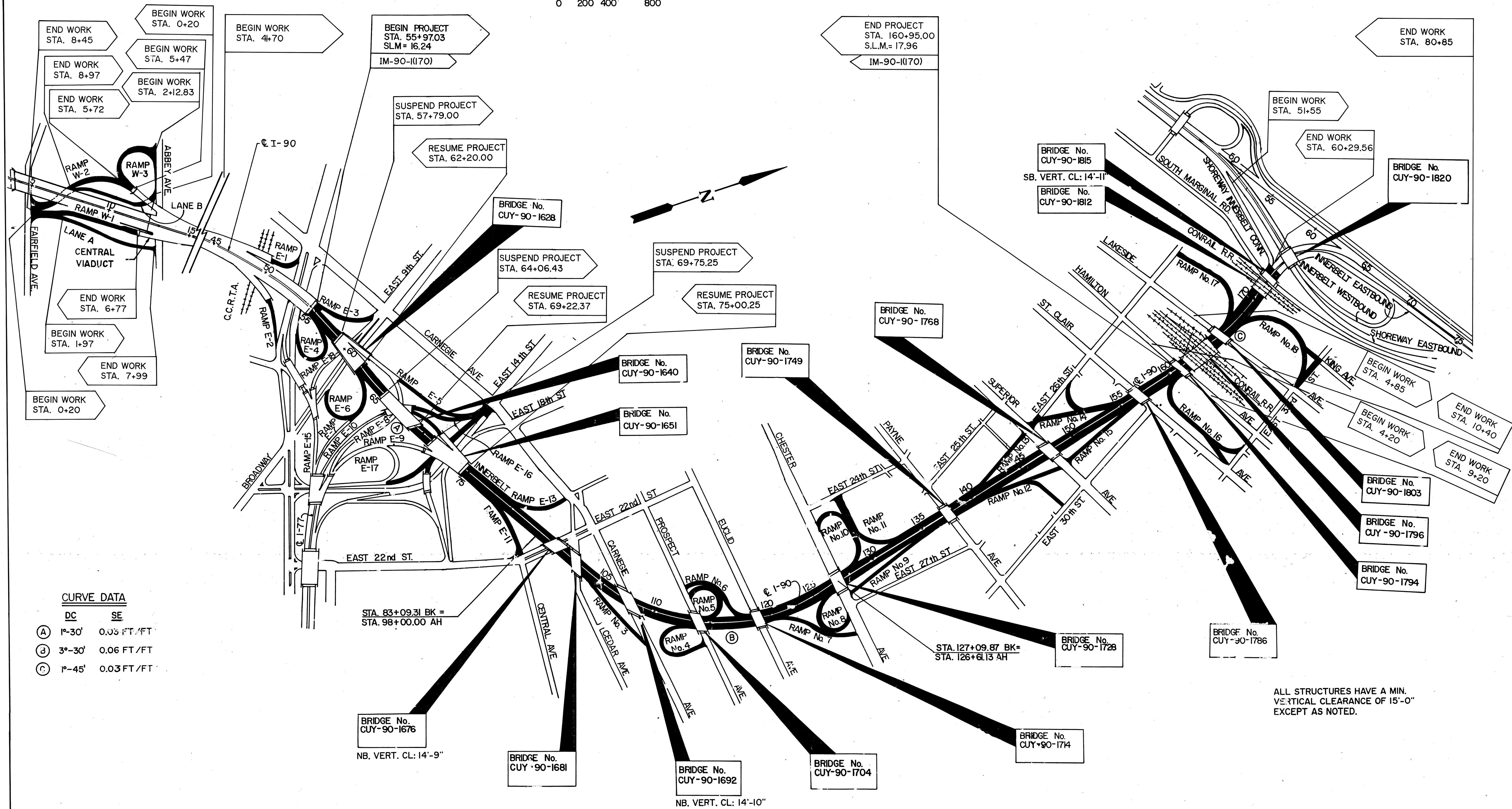
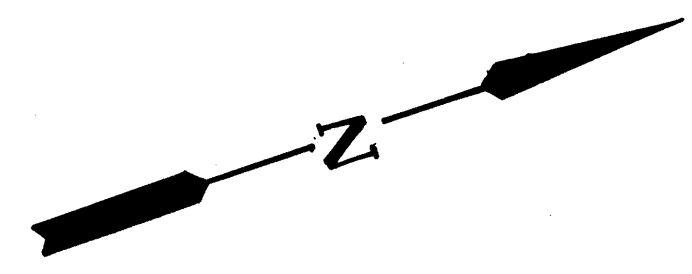
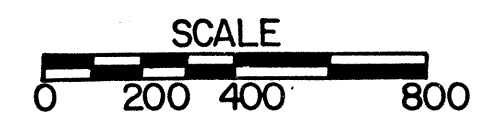
DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION

APPROVED \_\_\_\_\_  
 DIVISION ADMINISTRATOR DATE

PLOT SUBMITTED BY: uliman  
 PLOT SUBMITTED: 24-JUN-1992 08:30  
 c:\dgn\pid07090\07090gta.dgn



# SCHEMATIC PLAN



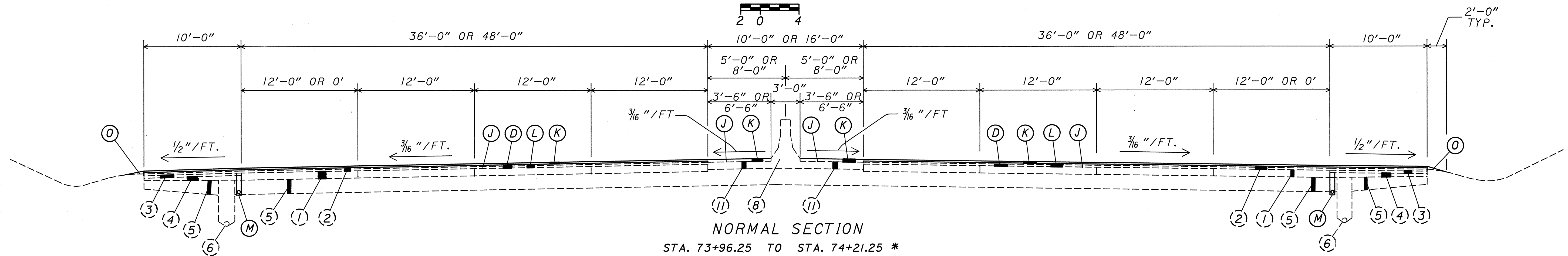
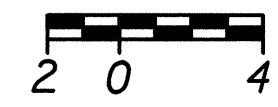
**CURVE DATA**

DC	SE
(A) 1°-30'	0.03 FT/FT
(d) 3°-30'	0.06 FT/FT
(C) 1°-45'	0.03 FT/FT

ALL STRUCTURES HAVE A MIN. VERTICAL CLEARANCE OF 15'-0" EXCEPT AS NOTED.

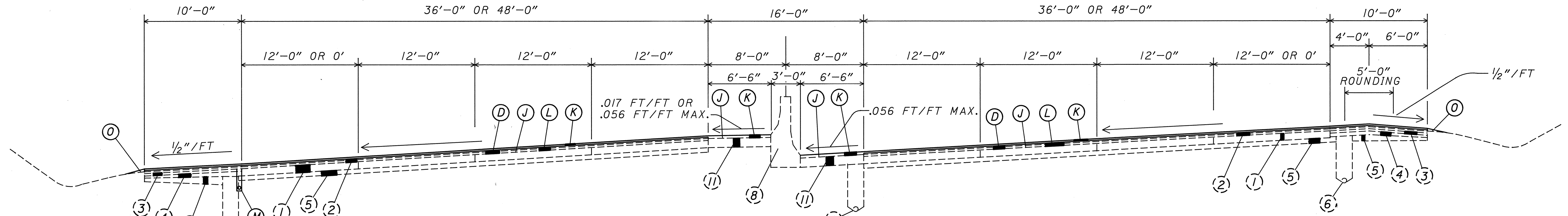
# TYPICAL SECTIONS

TYPE 446 ON 301



**NORMAL SECTION**

STA. 73+96.25 TO STA. 74+21.25 \*  
STA. 74+21.25 TO STA. 83+09.31 BACK  
STA. 98+00 AHEAD TO STA. 101+25  
STA. 127+75 TO STA. 151+00



**SUPERELEVATED SECTION**

STA. 55+97.03 TO STA. 58+54.98  
STA. 58+54.98 TO STA. 58+79.98 \*  
STA. 61+16.05 TO STA. 61+41.05 \*  
STA. 61+41.05 TO STA. 64+85.18  
STA. 64+85.18 TO STA. 65+10.18 \*  
STA. 68+19.03 TO STA. 68+44.03 \*  
STA. 68+44.03 TO STA. 70+64.23  
STA. 70+64.23 TO STA. 70+89.23 \*  
STA. 101+25 TO STA. 127+09.89 BACK  
STA. 126+61.13 AHEAD TO STA. 127+75

**EXISTING**

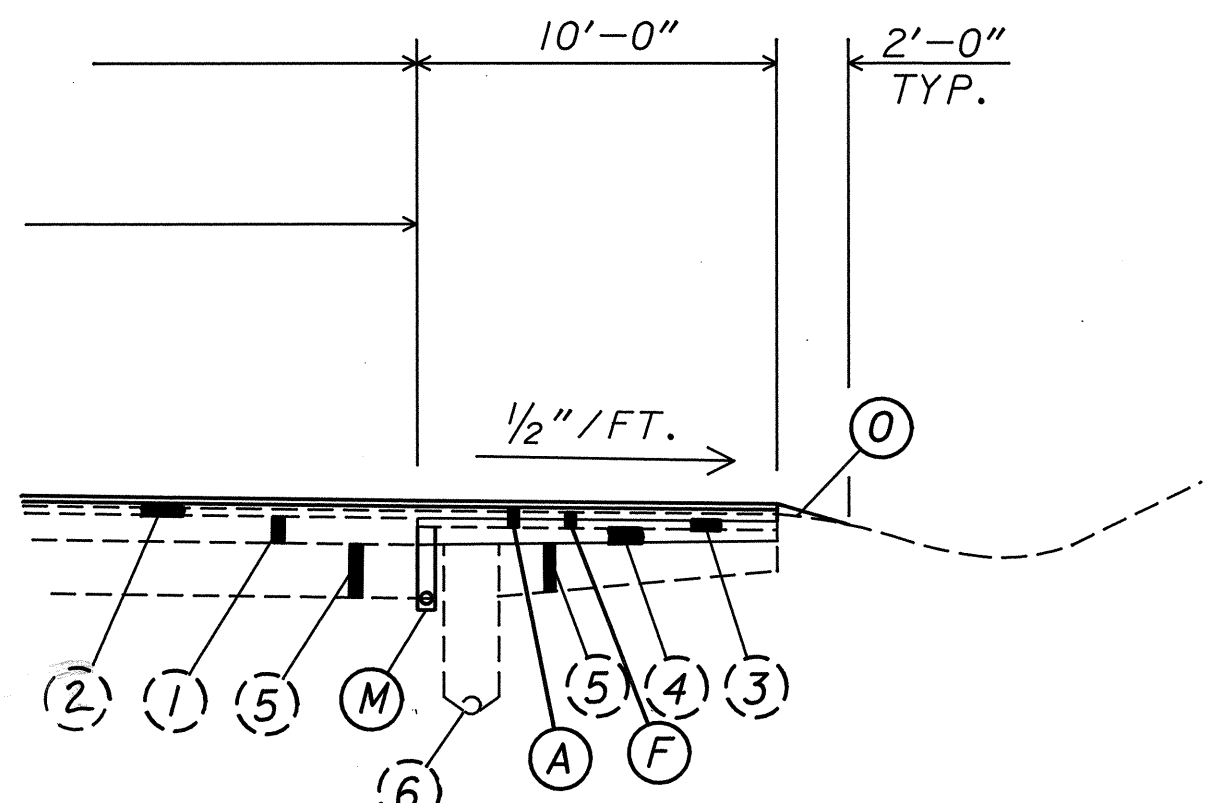
- ① 9" REINFORCED CONCRETE PAVEMENT
- ② 2 1/2" ± EXISTING ASPHALT
- ③ BITUMINOUS AGGREGATE BASE
- ④ AGGREGATE BASE
- ⑤ SUBBASE, 6" OR 18"
- ⑥ UNDERDRAIN
- ⑧ CONCRETE BARRIER MEDIAN
- ⑨ CURB
- ⑩ GUARDRAIL
- ⑪ 9" PLAIN CONCRETE PAVEMENT
- ⑫ 1 1/4" ± EXISTING ASPHALT

**PROPOSED**

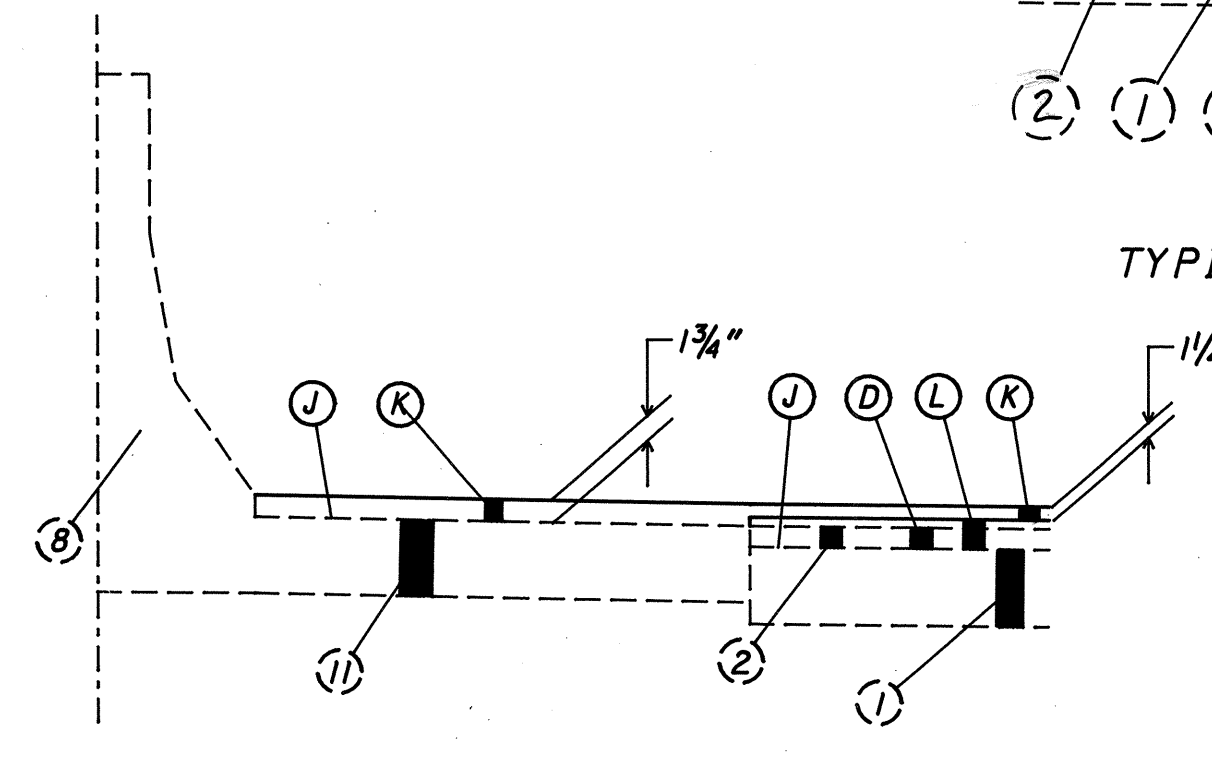
- Ⓐ ITEM - 203 EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
- Ⓑ ITEM - 203 EMBANKMENT, AS PER PLAN
- Ⓒ ITEM - 203 LINEAR GRADING
- Ⓓ ITEM - 254 PAVEMENT PLANING, BITUMINOUS, AS PER PLAN, ±2 1/2" OR Ⓣ\*\* 1/4" ±
- Ⓕ ITEM - 305 9" CONCRETE BASE, AS PER PLAN
- Ⓖ ITEM - 304 AGGREGATE BASE, AS PER PLAN
- Ⓗ ITEM - 448 ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 1, (UNDER GUARDRAIL), AS PER PLAN
- Ⓙ ITEM - 407 TACK COAT
- Ⓚ ITEM - 446 1-1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AC-20, AS PER PLAN (1 3/4" @ MEDIAN SHOULDERS)
- Ⓛ ITEM - 446 3" ASPHALT CONCRETE INTERMEDIATE COURSE, AC-20, TYPE 2
- Ⓜ ITEM - 605 6" SHALLOW PIPE UNDERDRAIN, 707.15, AS PER PLAN (SEE SHEET 25.)
- Ⓝ ITEM - 606 GUARDRAIL, TYPE 5
- Ⓞ ITEM - 617 COMPACTED AGGREGATE, TYPE A
- Ⓟ ITEM - 659 SEEDING AND MULCHING, AS PER PLAN
- Ⓢ ITEM - 826 1-1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE B, AS PER PLAN
- Ⓣ ITEM - 826 1-3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE B
- Ⓤ ITEM - 202 CURB REMOVED
- Ⓥ ITEM - 202 PAVEMENT REMOVED
- Ⓦ ITEM - 203 SUBGRADE COMPACTION
- Ⓧ ITEM - 252 FULL DEPTH PAVEMENT SAWING

NOTE: PAVEMENT PLANING, BITUMINOUS AT OUTSIDE SHOULDERS SHOULD BE SET TO ACHIEVE A 1/2" FT. SLOPE ALTHOUGH THE SLOPE MAY NOT BE THAT EXISTING.

SEE SHEET 23 FOR SHOULDER REPLACEMENT LOCATIONS.



TYPICAL CONCRETE SHOULDER REPLACEMENT DETAIL



TYPICAL DETAIL AT MEDIAN SHOULDER

- Ⓣ ITEM - 609 CURB, TYPE 6, AS PER PLAN
- \* APPROACH SLAB, TYPICAL SIMILAR EXCEPT ① IS 13"

PLOT SUBMITTED: 01-JUN-1992 12:17

PLOT SUBMITTED BY: BANASZAK

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# TYPICAL SECTIONS

CUYAHOGA COUNTY  
CUY-90-16.24

OHIO

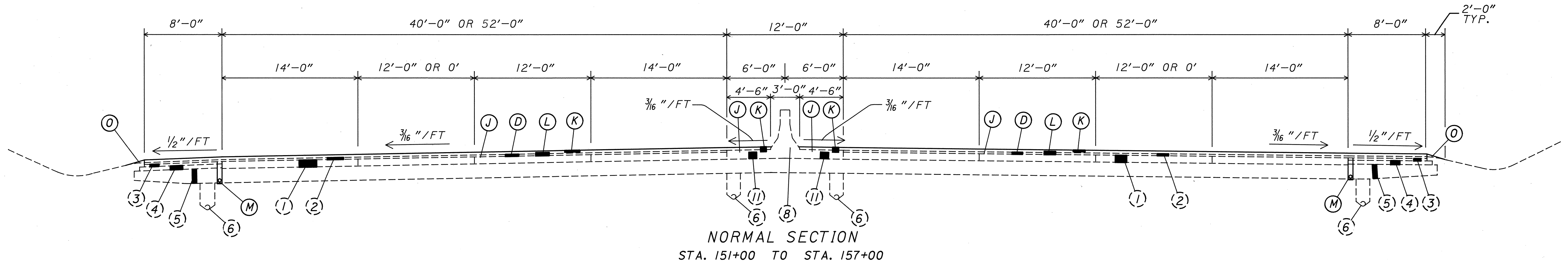
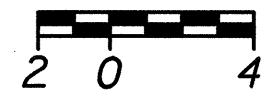
FHWA  
REGION 5

FEDERAL  
PROJECT

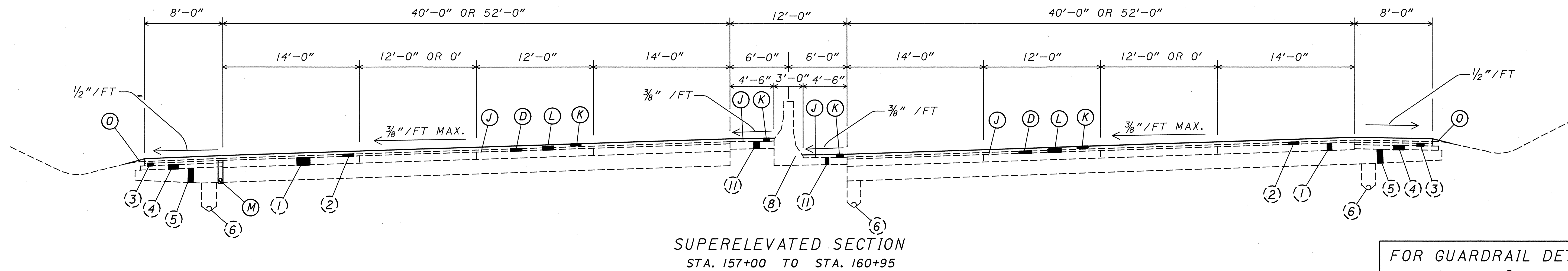
4  
245

TYPE 446 ON 301

SEE SHEET 3 FOR LEGEND.

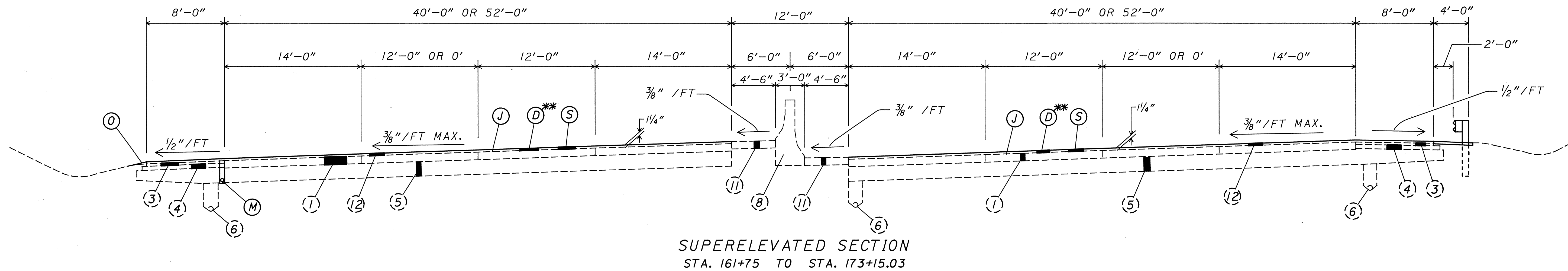


NORMAL SECTION  
STA. 151+00 TO STA. 157+00



SUPERELEVATED SECTION  
STA. 157+00 TO STA. 160+95

FOR GUARDRAIL DETAILS,  
SEE SHEET 6



SUPERELEVATED SECTION  
STA. 161+75 TO STA. 173+15.03

PLOT SUBMITTED: 01-JUN-1992 12:46

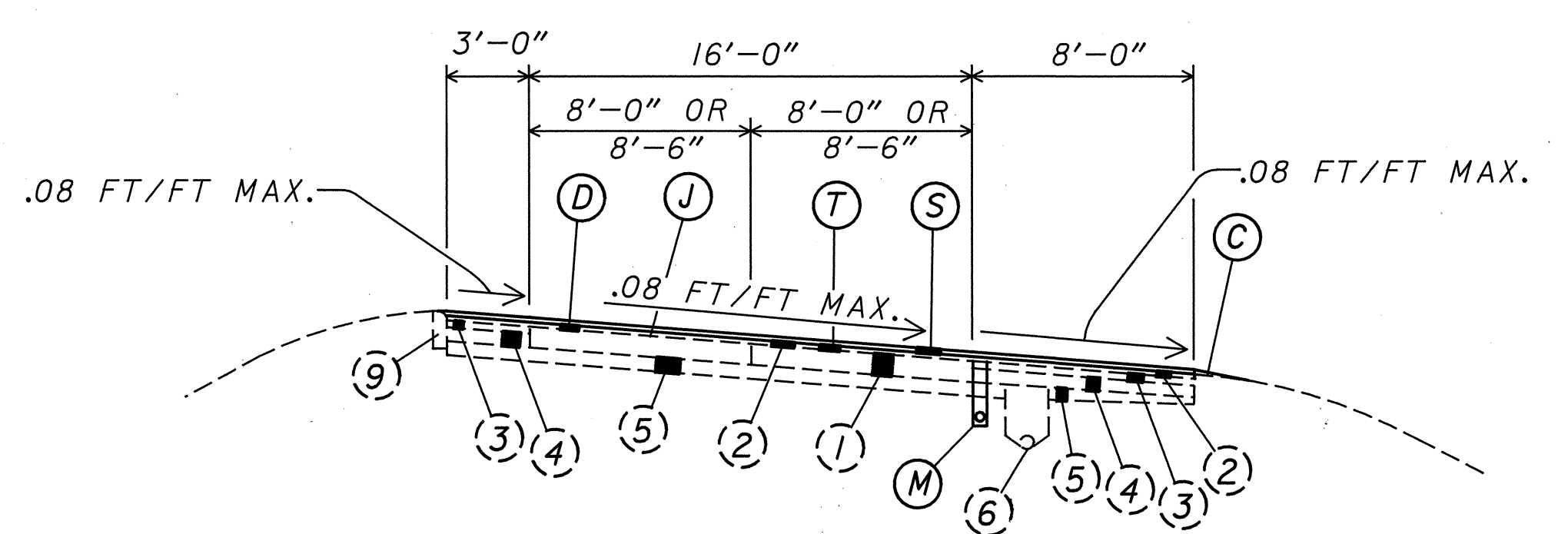
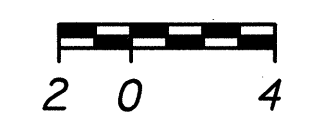
PLOT SUBMITTED BY: BANASZAK

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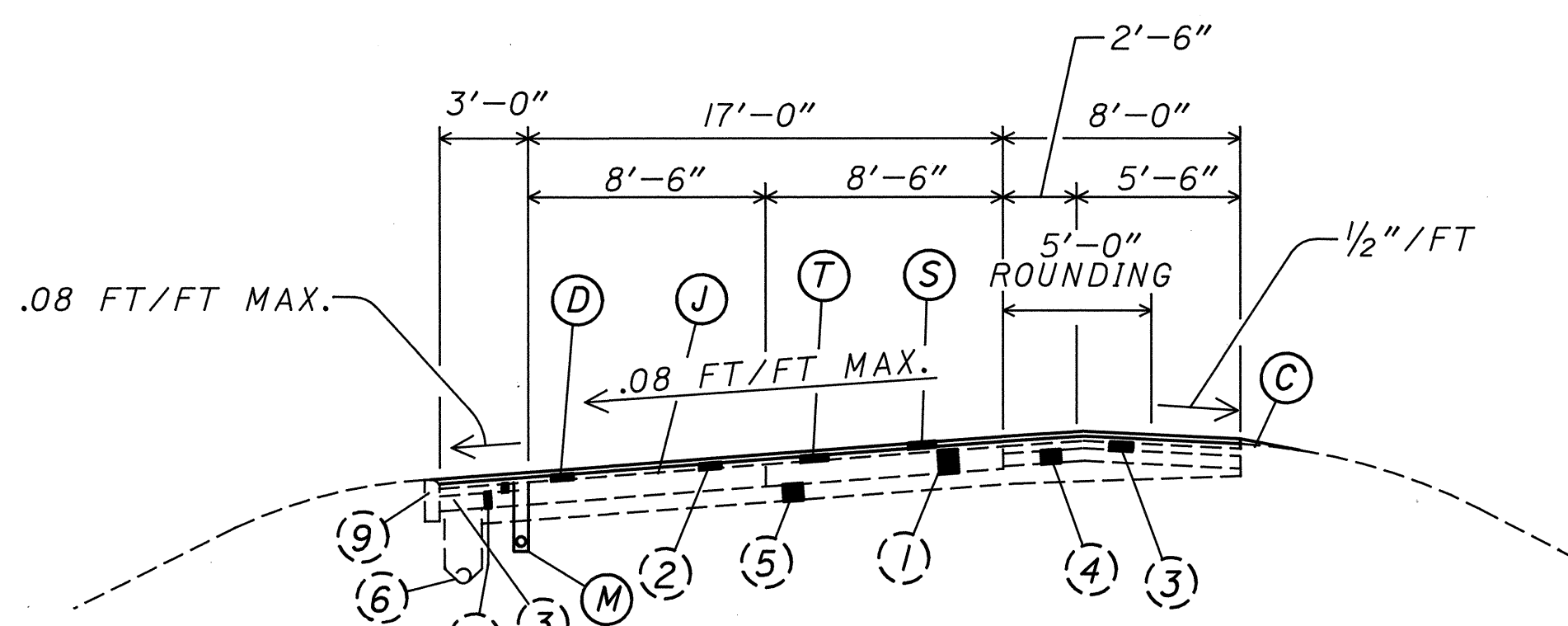
# TYPICAL SECTIONS

SEE SHEET 3 FOR LEGEND.

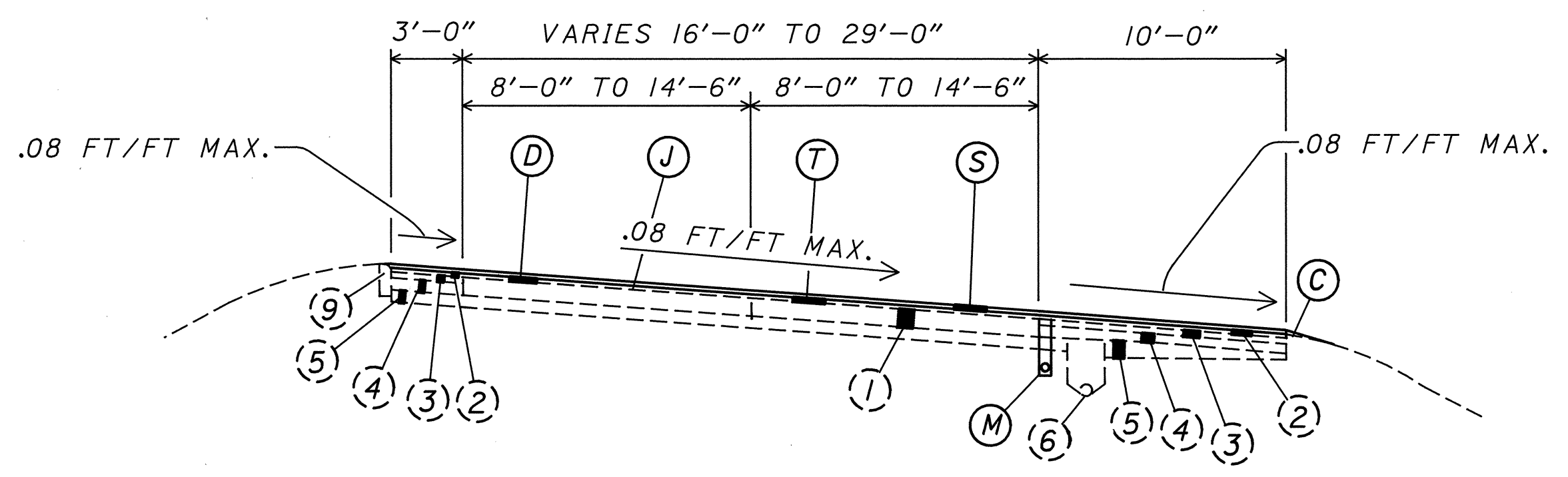
TYPE 826



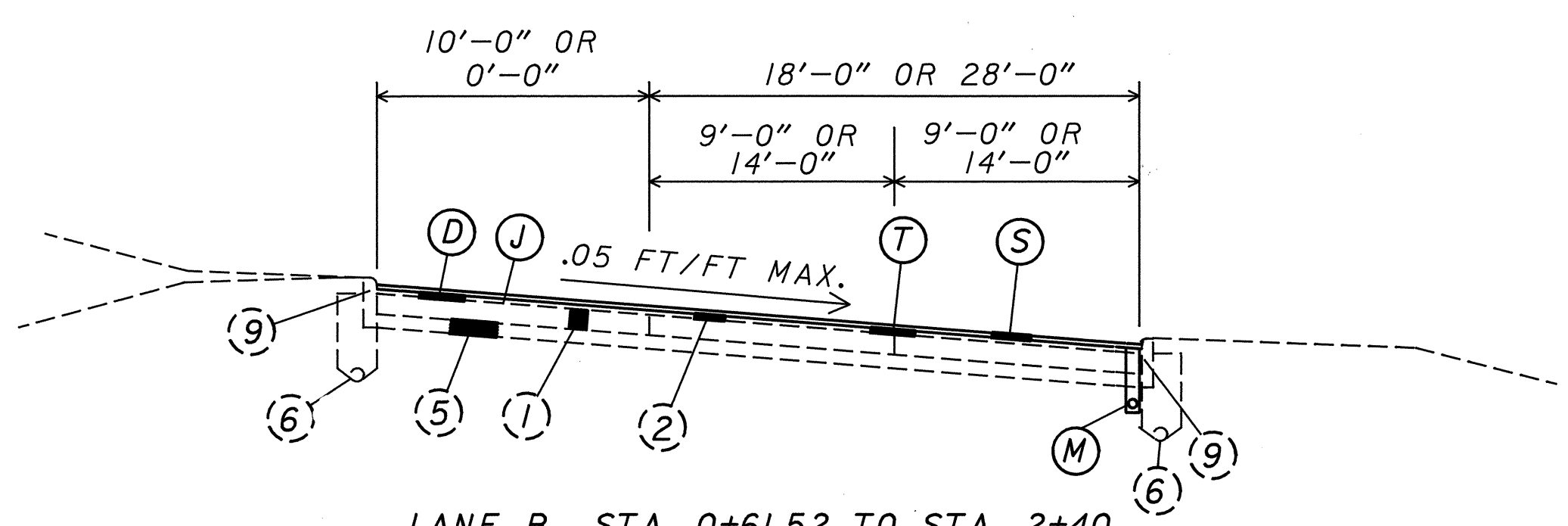
RAMP E2  
RAMP E5  
RAMP E6 STA. 9+03.24 TO STA. 10+38.11  
RAMP E16 STA. 1+82.29 TO STA. 4+98.38



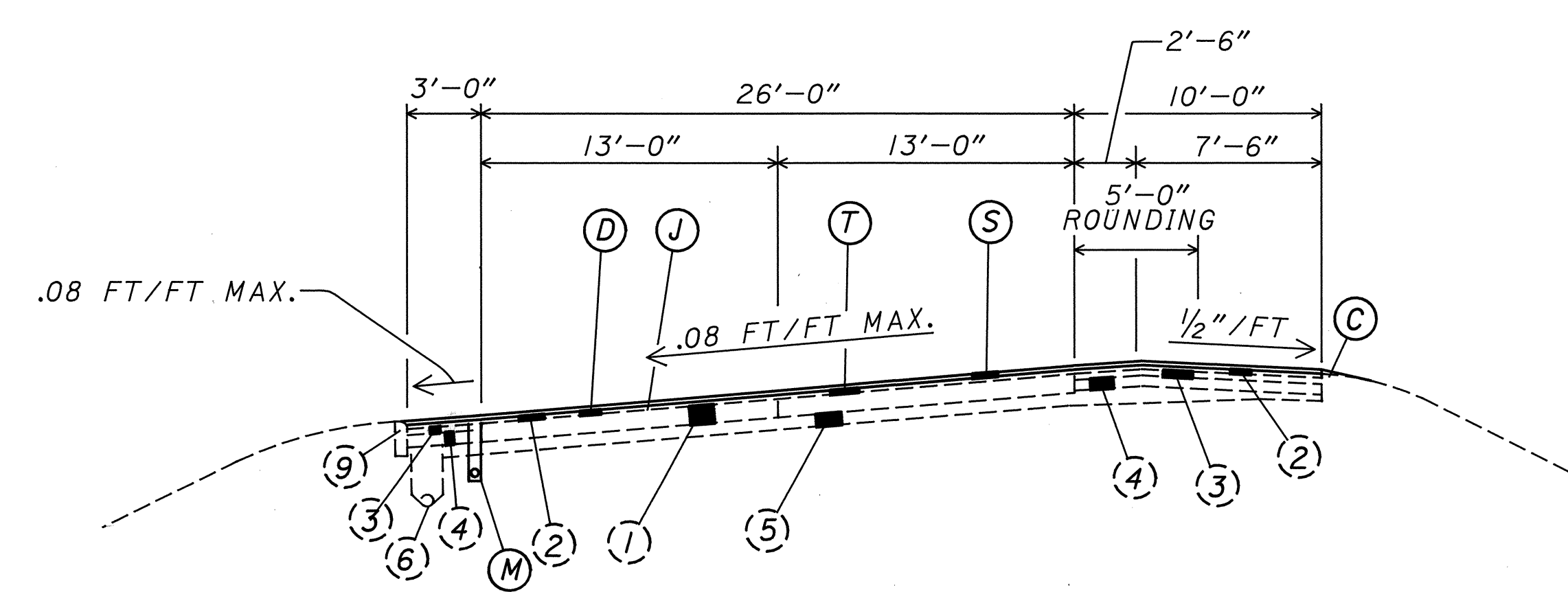
RAMP E16 STA. 4+98.88 TO STA. 6+50.46



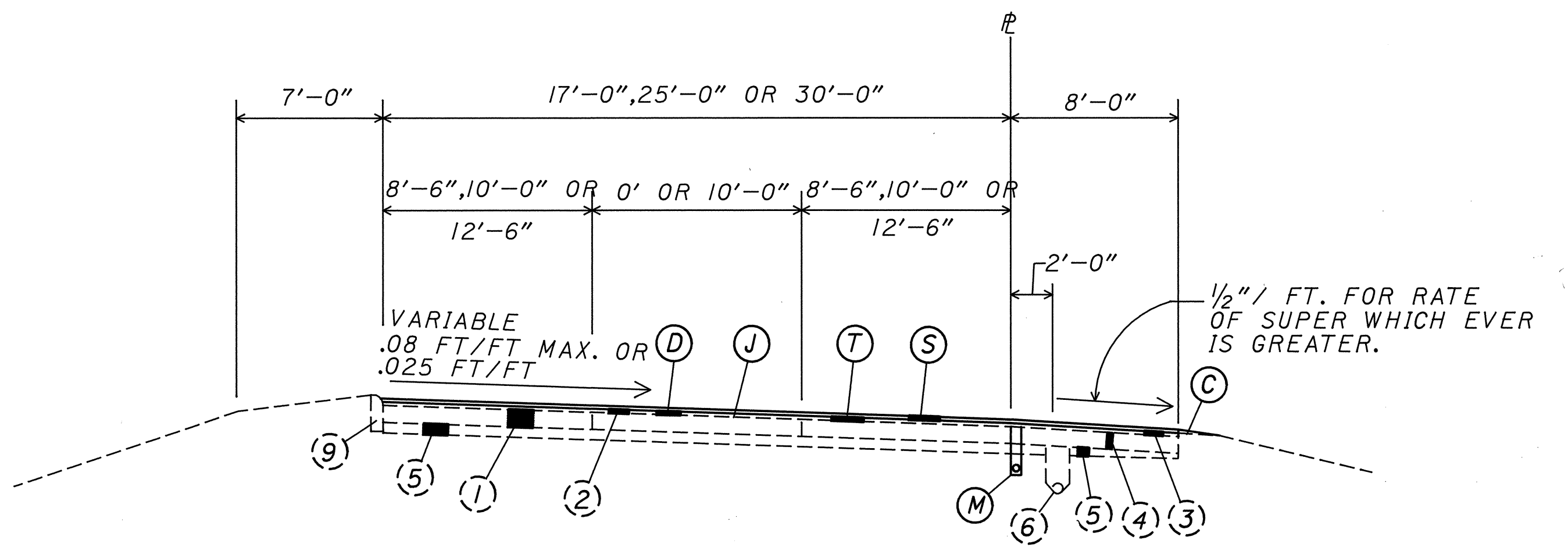
RAMP E6 STA. 1+98.47 TO STA. 9+03.24  
RAMP E10 STA. 4+11.38 TO STA. 5+06.54  
RAMP E11  
RAMP E13



LANE B STA. 0+61.52 TO STA. 2+40  
RAMP W2 STA. 8+96.92 TO STA. 10+96.47



RAMP E10 STA. 5+06.54 TO STA. 8+09.78



RAMP E1  
RAMP E3  
RAMP E4

1/2" / FT. FOR RATE OF SUPER WHICH EVER IS GREATER.

PLOT SUBMITTED: 02-JUN-1992 06:40

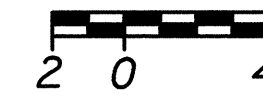
PLOT SUBMITTED BY: BANASZAK

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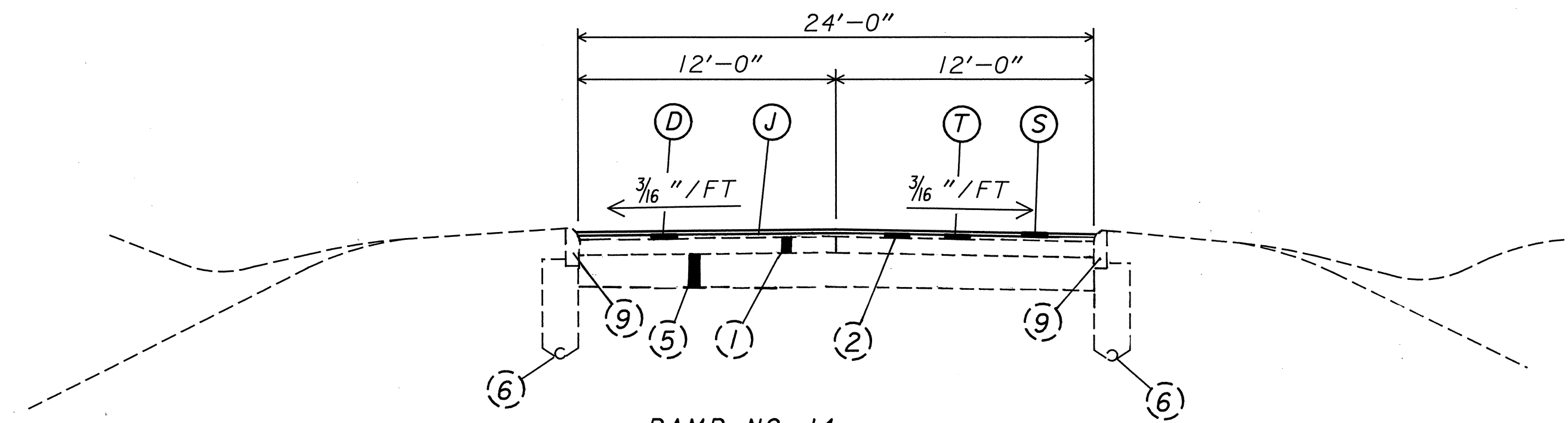


# TYPICAL SECTIONS

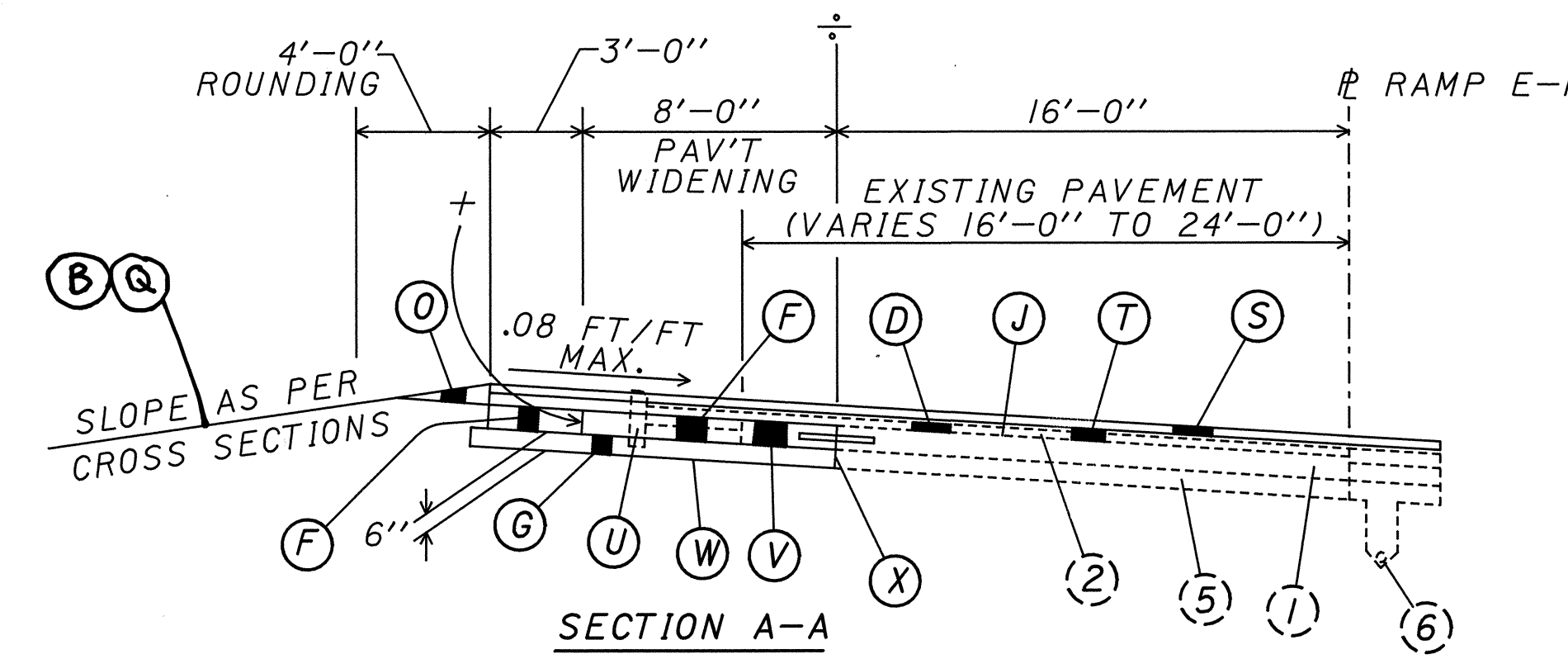
TYPE 826



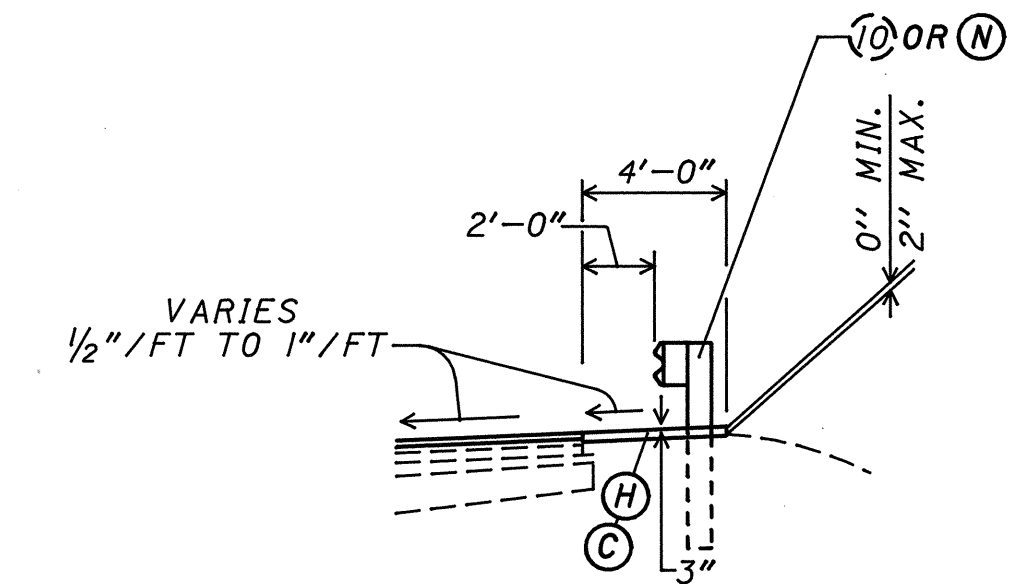
SEE SHEET 3 FOR LEGEND.



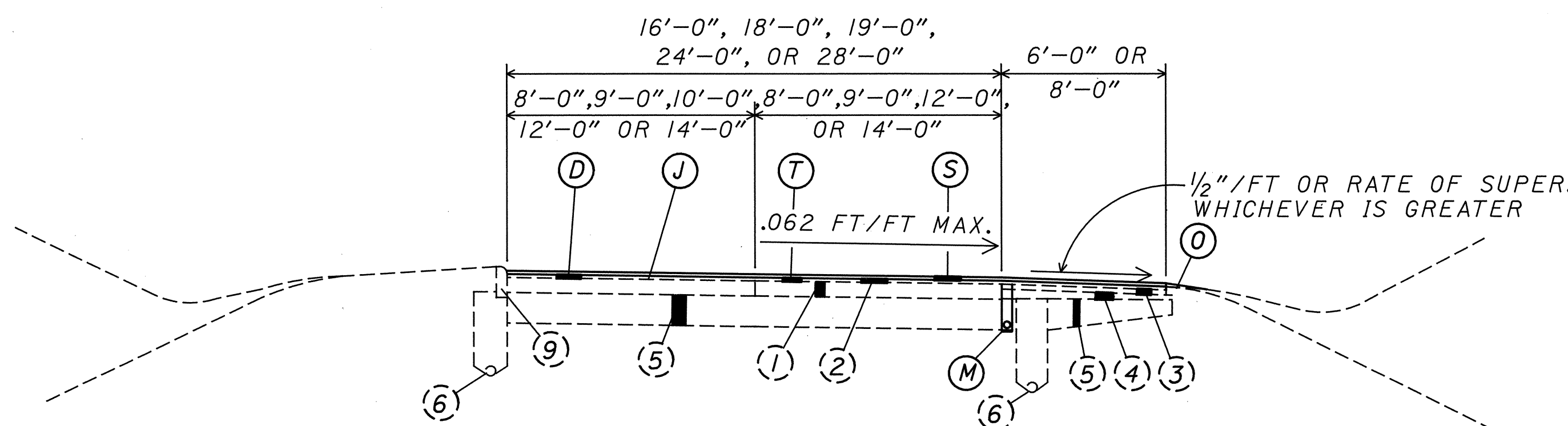
RAMP NO. 14  
RAMP NO. 15  
RAMP NO. 16  
RAMP NO. 17  
RAMP NO. 18  
E. 30TH CONN. STA. 7+79 TO STA. 8+29.07  
E. 33RD ST. CONN.  
E. 33RD ST. KING AVE. CONN.



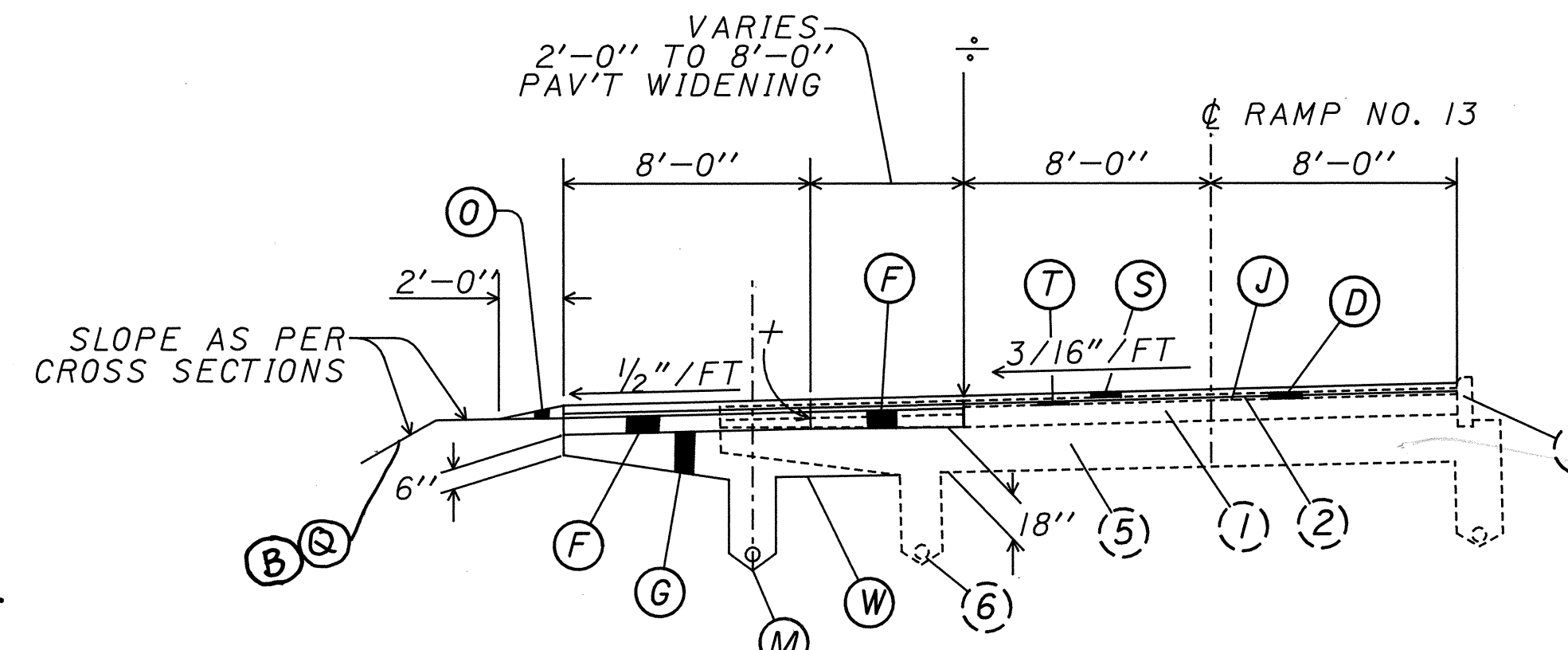
SECTION A-A  
SEE SHEET 53 FOR LOCATION



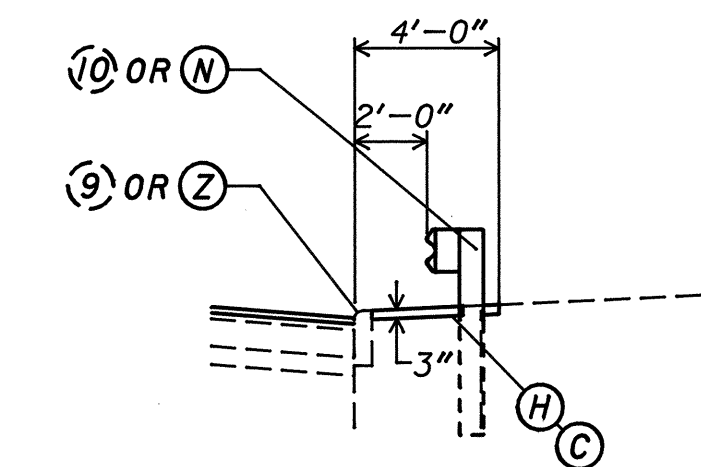
TYPICAL SHOULDER TREATMENT  
GUARDRAIL AND NO CURB



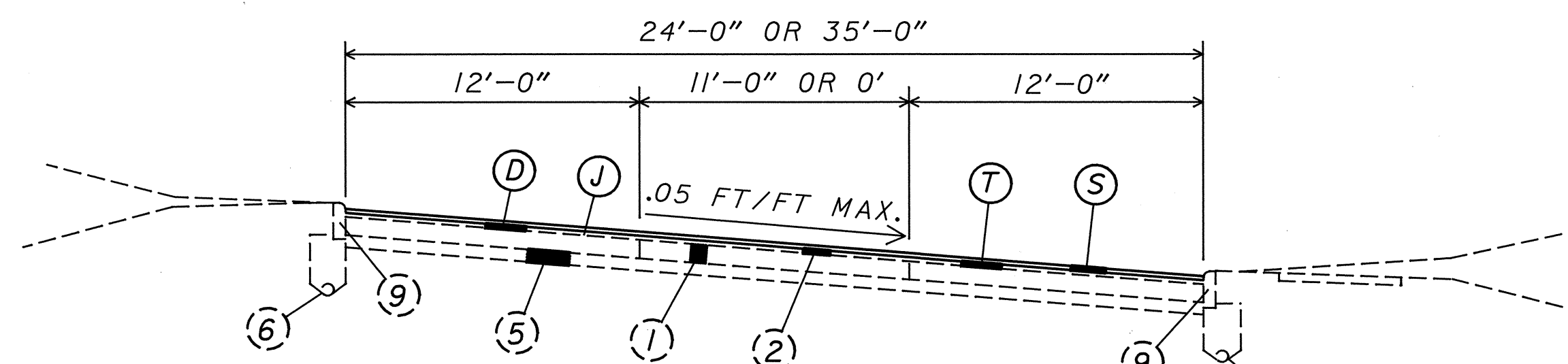
RAMP NO. 3\* RAMP NO. 4  
RAMP NO. 5 RAMP NO. 6\*  
RAMP NO. 7\* RAMP NO. 8  
RAMP NO. 9 RAMP NO. 10  
RAMP NO. 11 RAMP NO. 12  
RAMP NO. 13 CHESTER AVE. CONNECTION  
E. 30TH CONNECTION STA. 5+24.24 TO STA. 7+79  
LANE A \* ≠ LANE B STA. 2+40 TO STA. 5+44.90 \*  
RAMP W1 RAMP W3  
RAMP W2 STA. 6+11.02 TO STA 8+96.92 \*



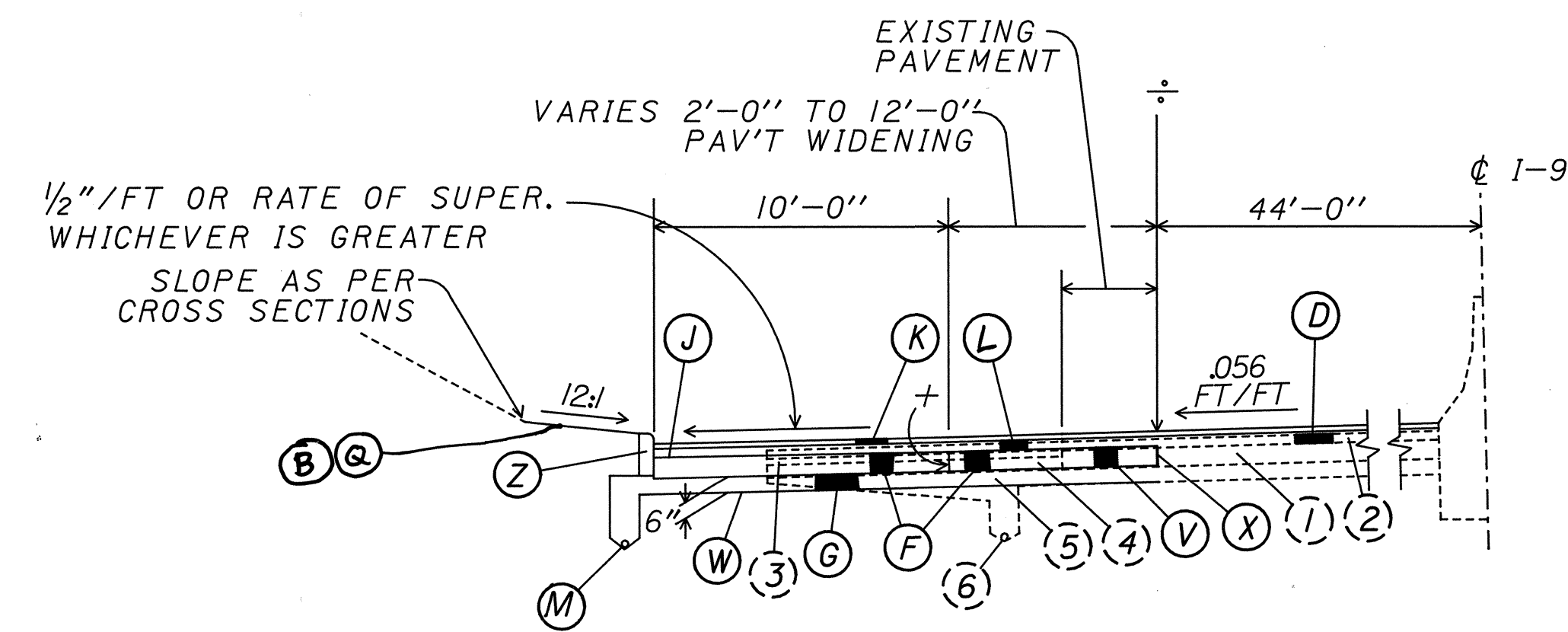
SECTION D-D  
SEE SHEET 56 FOR LOCATION



TYPICAL SHOULDER TREATMENT  
CURB W/LESS THAN 4" REVEAL  
GUARDRAIL NEW OR EXISTING



SOUTHBOUND EAST 14TH STREET



SECTION B-B SEE SHEET 54 FOR LOCATION  
SECTION C-C SEE SHEET 55 FOR LOCATION  
FOR EARTHWORK QUANTITIES,  
SEE CROSS SECTIONS SHEETS 96-107

- + 24" LONG, #5 DEFORMED BARS (709.00) SHALL BE PLACED ACCORDING TO THE DIMENSIONS SHOWN ON BP-3. THE BARS SHALL BE GROUTED INTO 3/4" DRILLED HOLES USING GROUT MEETING THE REQUIREMENTS OF SUPP. SPEC 952. THE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 305-CONCRETE BASE, AS PER PLAN.
- + PROVIDE STANDARD LONGITUDINAL JOINT AS PER BP-3 WHEN TOTAL CONCRETE PAVING WIDTH EXCEEDS 16'-0".

\* - SUPERELEVATED IN TWO DIRECTIONS

≠ - INTEGRAL CURB FROM STA. 6+05 TO STA. 7+68.59

PLOT SUBMITTED: 02-JUN-1992 06:57

PLOT SUBMITTED BY: BANASZAK



## ROADWAY

### ROUNDING OF CORNERS SHOWN ON CROSS SECTIONS

ALL CORNERS SHALL BE ROUNDED (4' MINIMUM) EVEN THOUGH SHOWN OTHERWISE ON THESE PLANS.

### REMOVAL OF TREES STUMPS AND VEGETATION

ALL TREES AND STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE CONSTRUCTION LIMITS OF THIS PROJECT SHALL BE REMOVED UNDER THE LUMP SUM BID PRICE BID FOR ITEM 201, CLEARING AND GRUBBING. VEGETATION OBSTRUCTING THE SIGNING WITHIN THE WORK LIMITS SHALL BE TRIMMED AS PART OF THIS ITEM.

THE FOLLOWING IS AN APPROXIMATE ESTIMATE OF THE NUMBER OF TREES AND STUMPS TO BE REMOVED:

SIZES	NO. TREES	NO. STUMPS	TOTAL
18"	9		9
30"	1		1

THE ABOVE ESTIMATE IS APPROXIMATE AND THE STATE OF OHIO RESERVES THE RIGHT TO ORDER THE REMOVAL OF ADDITIONAL TREES OR STUMPS OUTSIDE OF THE LIMITS OF CONSTRUCTION BUT WITHIN THE RIGHT-OF-WAY AND/OR EASEMENT LINES. PAYMENT FOR THE REMOVAL OF THESE TREE STUMPS OR TRIMMING VEGETATION SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201 - CLEARING AND GRUBBING.

### ITEM 202- RAISED PAVEMENT MARKERS REMOVED FOR STORAGE

RAISED PAVEMENT MARKERS SHALL BE REMOVED FROM THE ROADWAY IN A MANNER THAT PREVENTS DAMAGE TO THE CASTINGS. REMOVED MARKERS ARE TO BE STORED ON THE RIGHT-OF-WAY WITHIN THE PROJECT LIMITS BY THE CONTRACTOR AS DIRECTED. ALL COSTS TO BE INCLUDED IN THE CONTRACTOR'S PRICE BID FOR ITEM 202- RAISED PAVEMENT MARKERS REMOVED FOR STORAGE.

ITEM 202-RAISED PAVEMENT MARKERS                      1040 EACH  
REMOVED FOR STORAGE

### ITEM 254 - PAVEMENT PLANING, BITUMINOUS, AS PER PLAN

THIS ITEM SHALL BE USED TO REMOVE THE EXISTING ASPHALT OVERLAYS FULL WIDTH. THE TYPICAL REMOVAL SHALL BE TO THE TOP OF THE CONCRETE BASE. IN AREAS WHERE THERE IS FLEXIBLE PAVEMENT OR SHOULDERS THE REMOVAL SHALL BE TO A DEPTH EQUAL TO THAT OF THE REMOVAL OVER THE CONCRETE BASE. SHOULDER SLOPE PROTECTION SHALL BE ADJUSTED WITH THE PLANING MACHINE AS SHOWN IN THE TYPICALS.

PRIOR TO REMOVING ANY AREA OF ASPHALT THE CONTRACTOR SHALL REFERENCE ALL BADLY DISTRESSED JOINTS OR CRACKS. BADLY DISTRESSED JOINTS OR CRACKS ARE THOSE WHICH INDICATE REPEATED PATCHING AND/OR SIGNIFICANT SEPARATION. THESE JOINTS TYPICALLY INDICATE SURFACE FAILURE DUE TO SIGNIFICANT VERTICAL JOINT MOVEMENT. THE CRITERIA FOR DETERMINING THE JOINTS WHICH ARE TO BE REFERENCED SHALL BE AS APPROVED BY THE ENGINEER.

THE JOINT REFERENCING SHALL INCLUDE THE APPROPRIATE LANE NUMBER AND SHALL BE MARKED BEYOND THE SHOULDER LIMITS DIRECTLY IN LINE WITH THE FAILED JOINT.

ALL ADDITIONAL COSTS FOR THIS FIELD SURVEY AND JOINT REFERENCING SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 254 - PAVEMENT PLANING, BITUMINOUS, AS PER PLAN.

THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:  
ITEM 254 - PAVEMENT PLANING,                      194,996 S.Y.  
BITUMINOUS, AS PER PLAN

### ITEM 203 - EMBANKMENT, AS PER PLAN

THE METHOD OF MEASUREMENT FOR THIS ITEM SHALL BE BY THE METHOD OF AVERAGE END AREAS WHERE CROSS SECTIONS ARE INCLUDED IN THE PLANS. WHERE CROSS SECTIONS ARE NOT INCLUDED IN THE PLANS THE METHOD OF MEASUREMENT SHALL BE BY CALCULATIONS BASED UPON TYPICAL SECTIONS.

THE TOP 3 INCHES OF EMBANKMENT SHALL CONSIST OF LOOSE, FRIABLE, LOAMY SOIL WITHOUT THE ADMIXTURE OF REFUSE OR STONE GREATER THAN 1 INCH. THE SOIL SHALL BE CAPABLE OF SUPPORTING VEGETATION.

### GRADING FOR ET 2000 END TERMINAL

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THE GRADING REQUIREMENTS OF A 10:1 SLOPE OR FLATTER IS IN PLACE PRIOR TO INSTALLATION OF THE ET 2000 END TERMINAL AS SHOWN ON SHEET 65.

THE FOLLOWING CONTINGENCY QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR WORK ABOVE WHICH CAN NOT BE INDICATED ON THE CROSSSECTIONS.

ITEM 203 - EMBANKMENT, AS PER PLAN                      50 C.Y.

### ITEM 203 - LINEAR GRADING

THIS ITEM SHALL CONSIST OF EXCAVATING TOPSOIL, PLACING GRANULAR MATERIAL AND APPLYING HERBICIDE AS SPECIFIED IN THE PLANS AND IN ACCORDANCE WITH THE FOLLOWING:

ALL COLLECTED DEBRIS AND TOPSOIL, INCLUDING RHIZOMES, ROOTS AND OTHER VEGETATIVE PLANT MATERIAL SHALL BE REMOVED AND DISPOSED OF AS SPECIFIED IN SECTION 203.05 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS.

ANY REMOVAL OF THE ABOVE ITEMS WHICH EXTEND BELOW THE PROPOSED SUBGRADE SHALL BE REPLACED WITH COMPACTABLE GRANULAR MATERIAL CONFORMING TO 203.02 AND SHALL BE PLACED TO GRADE AS DETAILED ON THE TYPICAL SECTION OR AS APPROVED BY THE ENGINEER.

HERBICIDE SHALL BE TREFLAN E.C., SPIKE OR AN APPROVED EQUAL AND SHALL BE APPLIED TO THE PREPARED AREA AFTER FINAL LEVELING AND GRADING HAS BEEN COMPLETED. THE APPLICATION SHALL BE JUST PRIOR TO PAVING AND SHALL STRICTLY ADHERE TO THE MANUFACTURER'S LABEL INSTRUCTIONS.

ONLY PROPERLY LICENSED PERSONNEL SHALL APPLY HERBICIDES AS REQUIRED BY THE OHIO REVISED CODE.

ALL EQUIPMENT, MATERIALS AND LABOR REQUIRED TO PERFORM THE WORK OUTLINED ABOVE SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 203-LINEAR GRADING. QUANTITIES FOR THIS ITEM SHALL BE FOUND IN THE GUARDRAIL SUB-SUMMARY.

### 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 OF THE OHIO REVISED CODE.

### UTILITY OWNERSHIP

THE FOLLOWING UTILITIES AND OWNERS ARE LOCATED WITHIN THE WORK LIMITS OF THIS PROJECT:

CLEVE. ELECTRIC ILLUM. CO. 55 PUBLIC SQ. P.O. BOX 5000 CLEVE., OHIO 44101 216-479-3452	OHIO BELL TELEPHONE CO. 1020 BOLIVAR RD. ROOM 352 CLEVE., OHIO 44115 216-822-7132	CUYAHOGA COUNTY SANITARY ENGINEER 6100 WEST CANAL RD. VALLEY VIEW, OHIO 44125 216-443-8204
EAST OHIO GAS CO. 1201 EAST 55th St. CLEVE., OHIO 44101 216-432-6803	CITY OF CLEVE. WATER DEPT. 1201 LAKESIDE AVENUE CLEVE., OHIO 44114 216-664-3351	CLEVE. PUBLIC POWER (MELP) 1201 LAKESIDE AVENUE CLEVE., OHIO 44114 216-664-3922

CALL OHIO UTILITIES PROTECTION SERVICE TWO (2) WORKING DAYS BEFORE YOU DIG. TOLL FREE  
TELEPHONE: 1-800-362-2764

ANY AND ALL WORK REQUIRED FOR REMOVING, RELOCATING AND CONSTRUCTING OF NEW FACILITIES FOR PRIVATE OR PUBLIC UTILITIES WILL BE DONE BY AND AT THE EXPENSE OF THE RESPECTIVE OWNERS UNLESS OTHERWISE NOTED ON THE PLANS. THE CONTRACTOR SHALL COORDINATE THE OPERATIONS WITH THE WORK OF THE UTILITY OWNERS OR OTHERS WHO MAY BE MAKING THE RELOCATIONS.

### ITEM 448 - ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1 (UNDER GUARDRAIL), AS PER PLAN

THIS ITEM SHALL CONSIST OF PAVING UNDER GUARDRAIL AS SPECIFIED IN THE PLANS AND IN ACCORDANCE WITH THE FOLLOWING:

PAVING SHALL CONSIST OF PLACING ITEM 448 TO THE DEPTH SPECIFIED USING ONE OF THE FOLLOWING METHODS:

- METHOD A:    1) SET GUARDRAIL POSTS  
                      2) PLACE ITEM 448
- METHOD B:    1) PLACE ITEM 448  
                      2) BORE ASPHALT AT POST LOCATIONS (SEE NOTE 1)  
                      3) SET GUARDRAIL POSTS  
                      4) PATCH AROUND POSTS (SEE NOTE 2)

NOTE 1: BORING OF ASPHALT MAY BE EXCLUDED IF STEEL POSTS ARE TO BE USED.

NOTE 2: THE MATERIAL USED FOR PATCHING SHALL BE A BITUMINOUS CONCRETE APPROVED BY THE ENGINEER. PATCHING AREAS SHALL BE COMPACTED USING EITHER HAND OR MECHANICAL METHODS. FINISHED SURFACES SHALL BE SMOOTH AND SLOPED TO DRAIN AWAY FROM THE POSTS.

ALTERNATE METHODS MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER.

ALL EQUIPMENT, MATERIALS AND LABOR REQUIRED TO PERFORM THE WORK OUTLINED ABOVE, WITH THE EXCEPTION OF SETTING GUARDRAIL POSTS, SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 448-ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1 (UNDER GUARDRAIL), AS PER PLAN.

### DITCH CLEANOUT

THIS ITEM SHALL BE USED TO RE-ESTABLISH THE GRADE OF AN EXISTING DITCH AND SHALL BE LIMITED TO MINOR GRADING FOR DITCH CLEANOUT, DEFINED AS ONE FOOT OR LESS OF EXCAVATION. SURPLUS OR UNSUITABLE MATERIAL AS DETERMINED BY THE ENGINEER SHALL BE DISPOSED OF AS PER 203.05. EMBANKMENT REQUIRED FOR ERODED CONDITIONS SHALL BE PAID FOR UNDER 203 EMBANKMENT AND COMPACTION REQUIREMENTS ARE WAIVED. WORK DETERMINED TO BE GREATER THAN THE MINOR GRADING REQUIREMENTS SHALL BE MEASURED AND PAID FOR AS ITEM 203 EXCAVATION.

MEASUREMENT OF DITCH CLEANOUT SHALL BE THE ACTUAL LINEAR FEET MEASURED ALONG THE CENTERLINE OF THE DITCH.

PAYMENT FOR ACCEPTED QUANTITIES WILL BE MADE AT CONTRACT PRICE FOR:  
ITEM 203 - DITCH CLEANOUT                      2000 LIN.-FT.

### ITEM 254 - PAVEMENT PLANING, BITUMINOUS, TYPE 1

A QUANTITY OF PAVEMENT PLANING, BITUMINOUS HAS BEEN INCLUDED TO BE USED WHERE FULL DEPTH FLEXIBLE REPAIRS ARE MADE AND WHERE THOSE REPAIRS ARE OPEN TO TRAFFIC. THIS ITEM SHALL BE USED AS DIRECTED BY THE ENGINEER TO PROVIDE A SMOOTH RIDING SURFACE IN THE FLEXIBLE REPAIR AREAS. THIS ITEM IS NOT INTENDED TO BE USED TO REPAIR BAD WORKMANSHIP BUT RATHER TO SMOOTH AREAS WHICH BECOME BUMPY OR ROLLING DUE TO TRAFFIC. THIS ITEM MAY ALSO BE USED TO PROVIDE SMOOTH TRANSITIONS INTO EXISTING TIRE RUTS.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS OUTLINED ABOVE:

ITEM 254 - PAVEMENT PLANING, BITUMINOUS, TYPE 1                      500 S.Y.

### ITEM 203-LINEAR GRADING, AS PER PLAN

THIS ITEM SHALL CONSIST OF EXCAVATING TOPSOIL AND DEBRIS, OR PLACING EMBANKMENT AS SPECIFIED IN THE PLANS AND AS SHOWN ON THE TYPICAL SECTIONS ALONG RAMPS.

THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 203-LINEAR GRADING, AS PER PLAN                      37 STA.







FHWA REGION	STATE	PROJECT	
5	OHIO		

## PAVEMENT

### SPREADING EQUIPMENT

AN AUTOMATIC SCREED CONTROL HAVING A 40 FOOT SKI ARM SHALL BE USED FOR PLACING THE INTERMEDIATE COURSE (SEE PROPOSAL NOTE). FOR FULL WIDTH PAVING, THE WIDTH LAID SHALL NOT EXCEED THE PAVER'S RATED WIDTH AS RECOMMENDED BY THE PAVER MANUFACTURER.

### ALIGNMENT AND PROFILE:

THE WORK PROPOSED BY THIS PROJECT IS FOR THE RESURFACING OF THE EXISTING PAVEMENT. THE PROFILE OF THE PROPOSED SURFACE WILL BE APPROXIMATELY 4 1/4 INCHES ABOVE THAT OF THE EXISTING CONCRETE FOR THE MAINLINE WHICH IS APPROXIMATELY 1 3/4 INCHES ABOVE EXISTING MAINLINE ASPHALT AND 3 INCHES FOR RAMPS, WHICH IS APPROXIMATELY 1/2 INCH ABOVE THE EXISTING RAMP ASPHALT.

### GUTTER FINISH

THE GUTTER FINISH DETAIL ON STANDARD DRAWING BP-3.1 SHALL BE USED FOR TWO SITUATIONS; AT THE EXISTING IMPACT ATTENUATOR PADS SO THAT THE PADS ARE FLUSH WITH THE PROPOSED OVERLAY, (WHEN APPLICABLE) AND AT THE PROPOSED CURB FOR DRAINAGE (THE CURB REVEAL SHALL BE 4"). ALL OTHER TIMES, GUTTER FINISH SHALL NOT BE USED.

### ITEM 301 - BITUMINOUS AGGREGATE BASE, AS PER PLAN

THIS ITEM SHALL BE USED ON ALL MAINLINE AND RAMP BERMS NOT SCHEDULED FOR CONCRETE REPLACEMENT, TO REPAIR BADLY DAMAGED BERM AREAS. THIS SHALL BE DONE AFTER PAVEMENT PLANING OPERATIONS ARE COMPLETE. THIS WORK SHALL INCLUDE THE REMOVAL OF 3" OR 6" OF THE EXISTING SHOULDER MATERIAL AND THE CONSTRUCTION OF A 3" OR 6" COURSE OF ITEM 301 ON THE EXISTING SUBBASE OR A NEW BASE AT THE CROSS SLOPES AS SHOWN ON THE TYPICAL SECTIONS. ALL COST OF EXCAVATION AND INSTALLATION SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 301 - BITUMINOUS AGGREGATE BASE, AS PER PLAN. THE CONTRACTOR SHALL PERFORM THE ABOVE DURING PHASE 1.

THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS OUTLINED ABOVE

ITEM 301 - BITUMINOUS AGGREGATE BASE, AS PER PLAN                      400 C.Y.

### ITEM 304 - AGGREGATE BASE, AS PER PLAN

NEW MATERIALS FURNISHED FOR THIS ITEM SHALL EXCLUDE ALL SLAG EXCEPT GRANULATED SLAG OR CRUSHED AIR-COOLED BLAST FURNACE SLAG.

THIS ITEM SHALL BE USED TO REPLACE EXISTING UNSUITABLE BASE PRIOR TO THE PLACING OF ITEM 301. ALL COST OF EXCAVATION AND INSTALLATION SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 304 - AGGREGATE BASE AS PER PLAN. THE FOLLOWING ESTIMATED QUANTITY IS INCLUDED IN THE GENERAL SUMMARY TO BE USED AS OUTLINED ABOVE:

ITEM 304 - AGGREGATE BASE,                      AS PER PLAN..... 250 C.Y.

### ITEM 305 - PORTLAND CEMENT CONCRETE, BASE, AS PER PLAN

THIS ITEM SHALL BE USED FOR SHOULDER REPLACEMENT AND RAMP WIDENINGS AS SHOWN ON SHEET 23 AND SHALL BE CONSTRUCTED IN PHASE 1.

THE SECOND SENTENCE IN 305.01(A) SHALL READ "LOAD TRANSFER DEVICES ARE REQUIRED AT ALL TRANSVERSE CONTRACTION, CONSTRUCTION, AND EXPANSION JOINTS. THE MAXIMUM JOINT SPACING SHALL BE 17'."

### PORTLAND CEMENT CONCRETE BASE FOR 305 ITEM

ALL CEMENT USED FOR ITEMS 305 SHALL MEET THE REQUIREMENTS OF 701.05 HIGH EARLY STRENGTH PORTLAND CEMENT.

### ITEM 251- PARTIAL DEPTH PAVEMENT REPAIR, AS PER PLAN

THE PAVEMENT SHALL BE REMOVED TO THE SPECIFIED DEPTH WITHIN THE DESIGNATED LIMITS BY A GRINDING METHOD THAT WILL CUT NEAT VERTICAL EDGES.

IF AFTER THE REMOVAL OPERATION THE ENGINEER DETERMINES THAT A FULL DEPTH REPAIR WILL BE NECESSARY, NO FURTHER WORK WILL BE REQUIRED. PAYMENT FOR THE GRINDING OPERATION WILL BE MADE BY PAYING FOR 50 PERCENT OF THE MEASURED AREA AT THE UNIT PRICE BID FOR ITEM 251-PARTIAL DEPTH PAVEMENT REPAIR, AS PER PLAN.

FOR ADDITIONAL DETAILS, NOTES AND QUANTITIES SEE SHEET NO. 71

### 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.

### ITEM 407-TACK COAT

THE RATE OF APPLICATION OF 407 TACK COAT SHALL BE SUBJECT TO ADJUSTMENTS AS DIRECTED BY THE ENGINEER. PLAN QUANTITIES INDICATE AN AVERAGE APPLICATION RATE OF 0.10 GALLONS PER SQUARE YARD OF TACK COAT FOR ESTIMATING PURPOSES ONLY.

### ITEM 446

ON THIS PROJECT, ITEM 446 PROPERTIES OF MIXTURES SHALL BE FOR HEAVY TRAFFIC VOLUMES.

### ITEM 446 - ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AS PER PLAN

THE AGGREGATE IN THE 446 SURFACE COURSE TYPE 1 IS RESTRICTED TO SLAG.

### ITEM 826 - ASPHALT CONCRETE SURFACE COURSE, TYPE B, AS PER PLAN

THE AGGREGATE IN THE 826 SURFACE COURSE, TYPE B IS RESTRICTED TO SLAG.

### ASPHALT APPROACHES AT BRIDGES

THE ASPHALT APPROACHES TO STRUCTURES SHALL BE PLACED AS SHOWN ON THE DETAILS ON SHEET NO 72.

ALL COSTS OF SAID SURVEY SHALL BE INCLUDED UNDER ITEM 623 - CONSTRUCTION LAYOUT STAKES, AS PER PLAN.

STRAIGHT GRADE - THE ASPHALT TRANSITIONS SHALL BE CONSIDERED UNACCEPTABLE IF THE FINAL GRADE VARIES FROM THE DESIRED STRAIGHT GRADE BY GREATER THAN 3/8 INCHES ANYWHERE THROUGHOUT THE LENGTH OF THE TRANSITION. THIS TOLERANCE IS REDUCED TO 1/4 INCH FOR THE FIRST 5 FEET ADJACENT TO AN EXPANSION JOINT.

PAYMENT WILL BE HELD FOR 2 C.Y. OF ASPHALT PER FOOT OF PAVING WIDTH AT EACH TRANSITION LOCATION UNTIL THE TRANSITION IS SHOWN TO BE ACCEPTABLE. THE CONTRACTOR IS TO PROVIDE THE NECESSARY SURVEY WORK TO SHOW THAT THESE STRAIGHT GRADES ARE MET ALONG EACH EDGE LINE AND LANE LINE.

ALL UNACCEPTABLE ASPHALT TRANSITIONS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. THE REPAIR METHOD SHALL BE AS FOLLOWS:

- A. DETERMINE FINAL GRADE LINE BY EXTENDING A STRAIGHT LINE FROM THE TOP OF THE BRIDGE END DAM JOINT TO A POINT ON THE TOP OF RESURFACING. (SEE DETAILS AT LEFT FOR DISTANCE).
- B. REMOVE ASPHALT CONCRETE EXACTLY 1" BELOW THE FINAL GRADE.
- C. PLACE ITEM 407 - TACK COAT AND ITEM 446 - ASPHALT CONCRETE, TO DESIRED GRADE.
- D. SURVEY TRANSITION TO VERIFY THAT THE REPAIR IS WITHIN THE ALLOWABLE TOLERANCE.

### ITEM 617 - COMPACTED AGGREGATE

THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS SHOWN IN THE TYPICAL SECTIONS:

ITEM 617 - COMPACTED AGGREGATE    200 C.Y.

### CONCRETE BARRIER WORK

THE EXISTING CONCRETE BARRIER IS TO BE REMOVED ALONG RAMP E-13 FROM STA. 74+21 TO STA. 79+86 TO ALLOW RAMP E-13 TO REMAIN OPEN DURING CONSTRUCTION. WHEN THE PAVEMENT WORK IS COMPLETE, THE CONTRACTOR SHALL PLACE TYPE BRD ANCHORED PORTABLE BARRIER ALONG THE SAME LINE (AS THE EXISTING BARRIER) FROM STA. 74+21 TO STA. 79+86 AFTER RESURFACING. SEE SHEET 68 FOR FURTHER INFORMATION.

THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 202 - CONCRETE BARRIER REMOVED    565 L.F.  
ITEM 622 - CONCRETE BARRIER, AS PER PLAN    565 L.F.

### ITEM 623 - CONSTRUCTION LAYOUT STAKES, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ITEM 623 THE CONTRACTOR SHALL PROVIDE FIELD SURVEY FOR ALL ASPHALT TRANSITIONS. (SEE SHEET NO.67) SAID SURVEY SHALL CONSIST OF ELEVATIONS TAKEN AT THE BRIDGE EXPANSION JOINT (WHERE APPLICABLE) AND EXTENDING AS SHOWN ON THE DETAILS. ELEVATIONS AFTER RESURFACING SHALL BE TAKEN ALONG EACH EDGE LINE AND LANE LINE AND SHALL BE TAKEN AT THE FOLLOWING DISTANCES: 0 FEET, 5 FEET, 10 FEET, 25 FEET, 50 FEET, 65 FEET, 70 FEET, 75 FEET, THEN EVERY 25 FEET. THE CONTRACTOR SHALL PLOT THESE AT EACH LOCATION AT A SCALE OF 1 INCH EQUALS 10' HORIZONTALLY AND 1 INCH EQUALS 2' VERTICALLY. THIS SURVEY SHALL BE DONE AND THE PLOTTED RESULTS GIVEN TO THE ENGINEER AS SOON AS POSSIBLE AFTER THE PLACEMENT OF THE SURFACE COURSE.



ITEM SPECIAL-SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS, 705.04

SEE NOTE IN PROPOSAL FOR THIS ITEM OF WORK.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED TO PERFORM THIS ITEM OF WORK:

ITEM	DESCRIPTION	QUANTITY	UNIT
SPECIAL	SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS, 705.04	4100	LIN.FT.

ITEM 252 - FULL DEPTH RIGID PAVEMENT REMOVAL AND FLEXIBLE REPLACEMENT

THIS WORK SHALL BE PERFORMED ON THE MIDDLE TWO LANES OF FOUR LANE SECTIONS AND WHERE RIGID REPLACEMENT IS NOT REASONABLE AS DETERMINED BY THE ENGINEER. (TYPICALLY THE RAMPS AND RAMP TERMINI AT INTERSECTING ROADWAYS)

WHEN TWO OF FOUR LANES HAVE ABUTTING FULL DEPTH FLEXIBLE REPAIRS AN ADJACENT AREA IN EACH OUTER LANE SHALL BE REPLACED WITH FULL DEPTH FLEXIBLE PAVEMENT FOR A MINIMUM OF 6 FEET IN LENGTH AND SHALL INCLUDE THE ENTIRE LANE WIDTH.

THE FOLLOWING ESTIMATED QUANTITIES ARE INCLUDED TO PERFORM THIS WORK AS DIRECTED BY THE ENGINEER:

- ITEM 252 - FULL DEPTH RIGID PAVEMENT REMOVAL AND FLEXIBLE REPLACEMENT.....10760 SQ. YD.
- ITEM 252 - FULL DEPTH PAVEMENT SAWING.....25590 LIN.FT.

CONCRETE BASE REPAIR

AFTER THE REMOVAL OF THE WEARING COURSE IT IS ANTICIPATED THAT THE EXISTING CONCRETE BASE WILL SHOW NUMEROUS CRACKS. IT IS NOT THE INTENT OF THESE PLANS TO REPAIR ALL CRACKS AND JOINTS. TYPICALLY, THOSE JOINTS AND CRACKS WHICH WERE REFERENCED PRIOR TO THE WEARING COURSE REMOVAL SHALL BE CONSIDERED FOR TOTAL REPLACEMENT. THE ENGINEER SHALL DETERMINE THE REPAIR LOCATIONS AND APPROPRIATE REPAIR METHODS. THE REPAIR METHODS FOR THIS PROJECT ARE:

- 1) PARTIAL DEPTH PAVEMENT REPAIR, AS PER PLAN
- 2) FULL DEPTH RIGID PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS C, AS PER PLAN A
- 3) FULL DEPTH RIGID PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS C, AS PER PLAN B
- 4) FULL DEPTH RIGID PAVEMENT REMOVAL AND FLEXIBLE REPLACEMENT

ITEM 255-FULL DEPTH RIGID PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS C, AS PER PLAN, A

ITEM 255-FULL DEPTH RIGID PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS C, AS PER PLAN, B

THIS ITEM SHALL CONSIST OF REPLACING EXISTING PAVEMENT IN ACCORDANCE WITH ITEM 255 AND THE NOTES BELOW. PAYMENT SHALL BE MADE FOR "CLASS C" ALTHOUGH THE CONTRACTOR MAY USE EITHER "CLASS FS", "CLASS MS", "CLASS S" OR "CLASS C".

EXISTING CONCRETE PAVEMENT THICKNESS MAY VARY FROM THAT SHOWN ON THE TYPICAL SECTIONS BY PLUS TWO INCHES OR MINUS ONE INCH. NO ADJUSTMENT IN PAYMENT FOR THIS ITEM SHALL BE MADE PROVIDING THAT THE AVERAGE PAVEMENT THICKNESS IS WITHIN THE LIMITS INDICATED ABOVE.

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. QUANTITIES OF ITEM 203-EXCAVATION AND ITEM 304-AGGREGATE BASE HAVE BEEN PROVIDED TO REPAIR SAID FAILED SUBBASE OR SUBGRADE AREAS.

PAVEMENT REPAIR LESS THAN OR EQUAL TO TEN (10) FEET IN LENGTH SHALL BE PAID FOR UNDER "FULL DEPTH RIGID PAVEMENT REMOVAL AND REPLACEMENT, CLASS C, AS PER PLAN, A". PAVEMENT REPAIRS GREATER THAN TEN (10) FEET IN LENGTH SHALL BE PAID FOR UNDER "FULL DEPTH RIGID PAVEMENT REMOVAL AND REPLACEMENT, CLASS C, AS PER PLAN, B".

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

ITEM	UNIT	DESCRIPTION
203	CU. YDS.	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
304	CU. YDS.	AGGREGATE BASE, AS PER PLAN
255	SQ. YDS.	FULL DEPTH RIGID PAVEMENT REMOVAL AND RIGID REPLACEMENT CLASS C, AS PER PLAN A
255	SQ. YDS.	FULL DEPTH RIGID PAVEMENT REMOVAL AND RIGID REPLACEMENT CLASS C, AS PER PLAN B
255	LIN. FT.	FULL DEPTH PAVEMENT SAWING

FOR ESTIMATED QUANTITIES, SEE SHEET NO. 71.

ITEM SPECIAL - PRESSURE RELIEF JOINTS, TYPE A

THIS ITEM OF WORK SHALL BE USED TO CONSTRUCT PRESSURE RELIEF JOINTS, TYPE A, AS SHOWN ON STANDARD CONSTRUCTION DRAWINGS BP-11(1-30-84). JOINTS SHALL BE CARRIED THROUGH THE CONCRETE SHOULDERS BY BULKHEADING OR SAWING.

SEE THE PERTINENT SUB-SUMMARY ON SHEET NO. 24 FOR QUANTITIES AND LOCATIONS.

ITEM SPECIAL - CRACK AND JOINT CLEANING AND SEALING, 705.04

THIS ITEM SHALL BE AS PER (MAINTENANCE) PROPOSAL NOTE REV. 10-31-86 WHEN IN THE OPINION OF THE ENGINEER, CRACKS AND JOINTS ARE STRUCTURALLY SOUND.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM SPECIAL - CRACK CLEANING AND SEALING, CLASS I, 705.04	2500 L.F.
ITEM SPECIAL - CRACK CLEANING AND SEALING, CLASS II, 705.04	2500 L.F.
ITEM SPECIAL- TRANSVERSE JOINT CLEANING AND SEALING CLASS III, 705.04	2500 L.F.
ITEM SPECIAL- TRANSVERSE JOINT CLEANING AND SEALING CLASS IV, 705.04	2500 L.F.
ITEM SPECIAL-LONGITUDINAL JOINT CLEANING AND SEALING CLASS V, 705.04	2500 L.F.
ITEM SPECIAL-LONGITUDINAL JOINT CLEANING AND SEALING CLASS VI, 705.04	2500 L.F.

**EROSION CONTROL/DRAINAGE**

REVIEW OF DRAINAGE FACILITIES

BEFORE WORK IS STARTED ON THE PROJECT, AND AGAIN BEFORE FINAL ACCEPTANCE BY THE STATE, REPRESENTATIVES OF THE STATE AND THE CONTRACTOR, SHALL MAKE AN INSPECTION OF THE EXISTING SEWERS WITHIN THE WORK LIMITS WHICH ARE TO REMAIN IN SERVICE AND WHICH MAY BE AFFECTED BY THE WORK. THE CONDITION OF THE EXISTING CONDUITS AND THEIR APPURTENANCES SHALL BE DETERMINED FROM FIELD OBSERVATIONS. RECORDS OF THE INSPECTIONS SHALL BE KEPT IN WRITING BY THE STATE.

ALL EXISTING SEWERS INSPECTED INITIALLY BY THE ABOVE MENTIONED PARTIES SHALL BE MAINTAINED AND LEFT IN A CONDITION REASONABLY COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION. ANY CHANGE IN THE CONDITION RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER.

PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE PERTINENT 604 ADJUSTMENT ITEMS OF THE CONTRACT.

ITEM 601 - CONCRETE SLOPE PROTECTION, AS PER PLAN

THIS WORK SHALL BE FOR THE SLOPE PROTECTION.

THIS WORK SHALL INCLUDE THE FOLLOWING:

- 1) EXCAVATION AND EMBANKMENT: THE EXCAVATION OF MATERIAL (APPROXIMATELY 25 C.Y.) FOR THE PROPOSED CONCRETE SLOPE PROTECTION, THE REMOVAL OF THE EXISTING CONCRETE SLOPE PROTECTION, AND THE PLACING OF EMBANKMENT MATERIAL (APPROXIMATELY 50 C.Y.) TO FILL ERODED AREAS UNDER AND ADJACENT TO THE PROPOSED CONCRETE SLOPE PROTECTION.
- 2) PROPOSED SLOPE PROTECTION: THE INSTALLATION OF THE NEW WELDED STEEL WIRE FABRIC REINFORCED SLOPE PROTECTION AS SHOWN ON SHEET 77-78 INCLUDING WELDED STEEL WIRE FABRIC, 709.10 AND FILTER FABRIC (SEE GENERAL NOTE), AND REMOVAL AND REPLACEMENT OR REFURBISHMENT OF EXISTING TYPE CL FENCE (AS PER ITEM 607).

FILTER FABRIC IS INCLUDED UNDER THIS ITEM OF WORK AND SHALL BE PLACED AS SHOWN ON SHEET NO. 77-78.

THE FABRIC SHALL MEET THE REQUIREMENTS OF SPECIFICATION 712.09 TYPE B (NONWOVEN). FIELD SPLICES SHALL CONSIST OF 12" OVERLAP SECURED IN ANY MANNER SUITABLE TO THE ENGINEER THAT WILL ASSURE THE OVERLAP IS MAINTAINED. OVERLAP CLOSURE AT THE TOP OF THE TRENCH SHALL BE 18", SECURED AS ABOVE. IF THE TRENCH WIDTH IS LESS THAN 18", THE OVERLAP SHALL EQUAL THE TRENCH WIDTH.

ALL COSTS OF REMOVING THE EXISTING CONCRETE SLOPE PROTECTION ( 6") AND EXCAVATING MATERIAL SHALL BE INCLUDED UNDER ITEM 202 - CONCRETE SLOPE PROTECTION REMOVED. ALL COSTS OF CONSTRUCTING THE NEW SLOPE PROTECTION, INCLUDING ALL NECESSARY EMBANKMENT, WELDED STEEL WIRE FABRIC, FILTER FABRIC, TYPE 4-A CURB, AND TYPE 2 PAVED GUTTER (APPROX. 85 L.F.) SHALL BE INCLUDED UNDER ITEM 601 - CONCRETE SLOPE PROTECTION AS PER PLAN. THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

- ITEM 202 - REMOVAL MISCELLANEOUS: CONCRETE SLOPE PROTECTION, AS PER PLAN.....1380 S.Y.
- ITEM 601 - CONCRETE SLOPE PROTECTION, AS PER PLAN....1380 S.Y.

ITEM 604-CATCH BASINS, ADJUSTED TO GRADE, AS PER PLAN  
ITEM 604-INLETS, ADJUSTED TO GRADE, AS PER PLAN  
ITEM 604-MANHOLES, ADJUSTED TO GRADE, AS PER PLAN

ALL CASTINGS, EXCEPT THOSE OWNED BY PRIVATE COMPANIES SHALL BE ADJUSTED BY THE CONTRACTOR. THE TIME BETWEEN ADJUSTING THE CASTINGS AND RESURFACING SHALL BE TO AN ABSOLUTE MINIMUM. ADJUSTING RINGS SHALL NOT BE USED.

MEDIAN INLET ADJUSTMENT SHALL BE COMPLETED AS SHOWN ON SHEET NO.74.

THE ESTIMATED QUANTITIES FOR THE ABOVE MENTIONED WORK ARE FOUND ON THE SUB-SUMMARY SHEETS.

SUPPLEMENTAL UNDERDRAIN CRITERIA

THE EXISTING MAINLINE UNDERDRAIN SYSTEM (UNDERDRAINS AND OUTLETS) SHALL BE SUPPLEMENTED WITH AN UNDERDRAIN SYSTEM AS SHOWN ON SHEET 25. THE CONTRACTOR WILL BE FURNISHED FULL SIZE CONSTRUCTION PLANS SHOWING THE PROPOSED DRAIN WORK TO ESTABLISH THE UNDERDRAIN AND OUTLET LOCATIONS.

SEE DETAILS AND NOTES ON SHEET NO. 73.

FOR ESTIMATED QUANTITIES, SEE SHEET 25.

ITEM	DESCRIPTION
603	6" CONDUIT, TYPE F, 707.17 NON-PERFORATED, ASTM 3034 OR SDR 35, SS 931 OR SS944
605	6" SHALLOW PIPE UNDERDRAIN, 707.15, AS PER PLAN

UNDERDRAIN OUTLETS IN EARTHWORK AREAS

EXISTING UNDERDRAIN OUTLETS WHICH ARE ENCOUNTERED IN THE EARTHWORK OR CULVERT EXTENSION AREAS SHALL BE EXTENDED AS DIRECTED BY THE ENGINEER USING 6 INCH CONDUIT, TYPE F. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS OUTLINED ABOVE:

- ITEM 603 - 6" CONDUIT, TYPE F, 707.17 ..... 100 L.F.  
NON-PERFORATED, ASTM 3034 OR SDR 35 ; SS 931 OR SS944

ITEM 605-AGGREGATE DRAIN

THE ESTIMATED QUANTITY OF AGGREGATE DRAIN SHALL BE USED WHERE AND AS DIRECTED BY THE ENGINEER TO DRAIN SUBBASE MATERIAL THAT HAS BECOME SATURATED.

- ITEM 605 - AGGREGATE DRAINS ..... 500 L.F

WATERING 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

- ITEM 659 - WATER..... 11M.GAL

SEEDING AND MULCHING AS PER PLAN

AREAS SHALL BE SEEDED WITH PENNGIFT CROWN VETCH (CORONILLA VARIA). THE CROWN VETCH SEED MIXTURE SHALL CONSIST OF ONE (1) POUND OF PENNGIFT CROWN VETCH WHICH SHALL BE THOROUGHLY MIXED WITH EACH THREE (3) POUNDS OF THE SEED MIXTURE PER 659.09. THIS MIXTURE SHALL BE SPREAD OVER THE PROPOSED AREA AT THE RATE OF FOUR (4) POUNDS PER 1000 SQUARE FEET IN LIEU OF THE CROWN VETCH APPLICATION RATE LISTED IN 659.09.

PAYMENT SHALL BE MADE AT THE CONTRACT UNIT PRICE PER SQUARE YARD FOR ITEM 659 - SEEDING & MULCHING, AS PER PLAN.

CONNECTIONS TO EXISTING PIPES

WHERE THE PLANS PROVIDE FOR A PROPOSED CONDUIT TO BE CONNECTED TO OR TO CROSS EITHER OVER OR UNDER AN EXISTING SEWER, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE THE EXISTING PIPE BOTH AS TO LINE AND GRADE BEFORE HE STARTS TO LAY THE PROPOSED CONDUIT.

PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE PERTINENT 603 CONDUIT ITEMS.

TEMPORARY SOIL EROSION AND SEDIMENT CONTROL

THE FOLLOWING ESTIMATED QUANTITIES ARE TO BE USED AS DIRECTED BY THE ENGINEER. FOR TEMPORARY EROSION AND SEDIMENT CONTROLL MEASURES:

- ITEM 207 - FILTER FABRIC FENCE.....2100 LIN.FT.
- ITEM 207 - TEMPORARY SEEDING AND MULCHING.....1200 SQ.YD.
- ITEM 207 - STRAW OR HAY BALES.....840 EACH
- ITEM 659 - WATER.....3.0 M.GAL.

ITEM 207 FILTER FABRIC FENCE

MATERIALS

FILTER FABRIC SHALL MEET THE REQUIREMENT OF ITEM 207.02.

CONSTRUCTION

THE BOTTOM OF THE FENCE SHALL BE BURIED 6" BELOW THE GROUND. THE FENCE SHALL BE HIGH ENOUGH TO RETAIN SEDIMENT LADEN WATER AND ADEQUATELY SUPPORTED TO PREVENT COLLAPSE OR BURSTING.

MAINTENANCE

THE FILTER FABRIC FENCE SHALL, AT THE DIRECTION OF THE ENGINEER, BE MAINTAINED TO BE FUNCTIONAL. THIS SHALL INCLUDE REMOVAL OF TRAPPED SEDIMENT AND REQUIRED CLEANING, REPAIR, AND/OR REPLACEMENT OF THE FILTER FABRIC.

PAYMENT

THE COST OF ALL MATERIALS, CONSTRUCTION, MAINTENANCE AND REMOVAL REQUIRED SHALL BE PAID FOR UNDER ITEM 207 LIN. FT. FILTER FABRIC FENCE.

ITEM 604-INLET, BY TYPE, AS PER PLAN

ALL REINFORCING STEEL LISTED IN THE STEEL LIST ON STANDARD CONSTRUCTION DRAWING I-2A SHALL BE EPOXY COATED IN ACCORDANCE WITH 509.10.

ADDITIONAL REQUIRED REINFORCEMENT FOR PRE-CAST "BASE" SECTIONS ARE NOT SUBJECT TO THIS REQUIREMENT.

ALL COSTS OF THIS TREATMENT SHALL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 604, INLET, BY TYPE, AS PER PLAN.



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ITEM SPECIAL - MISCELLANEOUS METAL

EXISTING CASTINGS MAY PROVE TO BE UNSUITABLE, AS DETERMINED BY THE ENGINEER, DURING CONSTRUCTION OF THE PROJECT. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO PROVIDE THE CASTING OF THE REQUIRED TYPE, SIZE AND STRENGTH FOR THE PARTICULAR STRUCTURE IN QUESTION, AS DIRECTED BY THE ENGINEER.

ALL CASTINGS SHALL CONFORM TO THE REQUIREMENTS OF ITEM 604. THE CONTRACTOR IS CAUTIONED TO USE EXTREME CARE IN THE REMOVAL STORAGE AND REPLACEMENT OF ALL CASTINGS. ANY CASTINGS DAMAGED BY THE NEGLIGENCE OF THE CONTRACTOR, AS DETERMINED BY THE ENGINEER, SHALL BE REPLACED WITH THE PROPER NEW CASTING BY THE CONTRACTOR AT NO EXPENSE TO THE STATE.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY, FOR USE AS DIRECTED BY THE ENGINEER.

ITEM SPECIAL - MISCELLANEOUS METAL..... 10000 LBS.

THE CONTRACTOR SHALL NOT ORDER MATERIALS UNTIL AUTHORIZED BY THE ENGINEER AND IF NONE ARE NEEDED THE ITEM SHALL BE NON-PERFORMED.

ITEM SPECIAL-SEALING OF CONCRETE SURFACE(EPOXY)

EXISTING AND NEW BARRIER MEDIAN INLETS AND PAVED SHOULDER INLETS LOCATED WITHIN THE LIMITS OF THIS PROJECT SHALL BE EPOXY COATED. SEE THE PROPOSAL FOR SEALER MATERIAL AND SURFACE PREPARATION REQUIREMENTS AND APPLICATION RATES AND PROCEDURES. THE EPOXY SHALL BE TINTED TO MATCH THE EXISTING CONCRETE. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM SPECIAL-SEALING OF CONCRETE SURFACE(EPOXY).....1000 SQ.YD.

ITEM SPECIAL - PIPE CLEAN-OUT, BY SIZE

SEWERS TO BE CLEANED-OUT SHALL BE DETERMINED BY THE ENGINEER. THE CONTRACTOR SHALL COOPERATE AND PROVIDE NECESSARY EQUIPMENT AND FORCES REQUIRED FOR SAID DETERMINATION.

CLEAN-OUT OF THE SEWER SYSTEMS SHALL BE PAID FOR AT THE UNIT PRICE BID PER LINEAL FOOT FOR ITEM SPECIAL - PIPE CLEAN-OUT, BY SIZE. THIS PRICE SHALL BE PAYMENT IN FULL FOR ALL MATERIAL, EQUIPMENT AND LABOR REQUIRED TO COMPLETE THE WORK TO THE SATISFACTION OF THE ENGINEER. CONTRACTOR SHALL DISPOSE OF CLEAN-OUT DEBRIS IN A MANNER SATISFACTORY TO THE ENGINEER.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR THE WORK NOTED ABOVE.

ITEM SPECIAL - 12" PIPE CLEANOUT ..... 11500 L.F.  
 ITEM SPECIAL - 15" PIPE CLEANOUT ..... 3800 L.F.  
 ITEM SPECIAL - 18" PIPE CLEANOUT ..... 800 L.F.  
 ITEM SPECIAL - 21" PIPE CLEANOUT ..... 300 L.F.  
 ITEM SPECIAL - 24" PIPE CLEANOUT ..... 100 L.F.  
 ITEM SPECIAL - 27" PIPE CLEANOUT ..... 300 L.F.  
 ITEM SPECIAL - 36" PIPE CLEANOUT ..... 1200 L.F.  
 ITEM SPECIAL - 42" PIPE CLEANOUT ..... 2500 L.F.  
 ITEM SPECIAL - 48" PIPE CLEANOUT ..... 1100 L.F.  
 ITEM SPECIAL - 54" PIPE CLEANOUT ..... 400 L.F.

ITEM 601 - PAVED GUTTER, TYPE 1-2, AS PER PLAN

THIS ITEM SHALL CONSIST OF THE CONSTRUCTION OF CONCRETE PAVED GUTTERS, TYPE 1-2, AS PER PLAN. CONSTRUCTION OF THESE PAVED GUTTERS SHALL BE AS PER STANDARD DRAWINGS MC-5, WITH EXCEPTION GIVEN ON SHEET NO. 75.

THE PROPOSED PAVED GUTTER SHALL MATCH THE EXISTING PAVED GUTTER AND TAPER TO MATCH THE APRON OF A CATCH BASIN NO. 5, AS PER PLAN B AS SHOWN OF SHEET NO. 75.

PAYMENT FOR THE ABOVE WORK SHALL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 601 PAVED GUTTER, TYPE 1-2, AS PER PLAN, AND SHALL CONSTITUTE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR AND EQUIPMENT NECESSARY TO COMPLETE THIS ITEM OF WORK.

ITEM 604 - CATCH BASIN NO. 5, AS PER PLAN A

THIS WORK SHALL INCLUDE THE REMOVAL AND DISPOSAL OF THE EXISTING CATCH BASIN AND ITS SUBSEQUENT REPLACEMENT. CONSTRUCTION OF CATCH BASIN NO. 5 SHALL BE AS PER STANDARD DRAWING CB-5, WITH EXCEPTION TO THE CONCRETE APRON, APRON DETAILS ARE FOUND ON SHEET NO. 74.

THE CONCRETE APRON SHALL INCLUDE A 2 FOOT CUTOFF WALL. BACKFILL MATERIAL SHALL BE GRANULAR. THE UPSTREAM SIDE OF THE CONCRETE APRON SHALL BE DOWELED TO THE CATCH BASIN WITH 4 EPOXY COATED NO. 5 REINFORCING STEEL BARS EQUALLY SPACED (FOR A CATCH BASIN IN A SAG, 8 EPOXY COATED NO. 5 REINFORCING BARS SHALL BE USED). SEE SHEET NO. 74 FOR BAR LOCATION DETAIL.

PAYMENT FOR THE ABOVE WORK SHALL BE INCLUDED IN THE UNIT BID PRICE ITEM 604 CATCH BASIN NO. 5, AS PER PLAN A, AND SHALL CONSTITUTE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR, AND EQUIPMENT INCIDENTAL TO COMPLETE THIS ITEM OF WORK.

ITEM 604 - CATCH BASIN NO. 5, AS PER PLAN B

THIS WORK SHALL INCLUDE THE REMOVAL AND DISPOSAL OF THE EXISTING CATCH BASIN AND ITS SUBSEQUENT REPLACEMENT. CONSTRUCTION OF CATCH BASIN NO. 5 SHALL BE AS PER STANDARD DRAWING CB-5, WITH EXCEPTION TO THE CONCRETE APRON, APRON DETAILS ARE FOUND ON SHEET NO. 74 & 75.

THE CONCRETE APRON SHALL HAVE DIMENSIONS AS SHOWN ON SHEET NO. 75. THE APRON SHALL INCLUDE A TWO (2) FOOT CUTOFF WALL. BACKFILL MATERIAL SHALL BE GRANULAR. THE UPSTREAM SIDE OF THE CONCRETE APRON SHALL BE DOWELED TO THE CATCH BASIN WITH 4 EPOXY COATED NO. 5 REINFORCING STEEL BARS EQUALLY SPACED (FOR A CATCH BASIN IN A SAG, 8 EPOXY COATED NO. 5 REINFORCING BARS SHALL BE USED). SEE SHEET NO. 74 FOR BAR LOCATION DETAIL.

PAYMENT FOR THE ABOVE WORK SHALL BE INCLUDED IN THE UNIT BID PRICE ITEM 604 CATCH BASIN NO. 5, AS PER PLAN B, AND SHALL CONSTITUTE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR, AND EQUIPMENT INCIDENTAL TO COMPLETE THIS ITEM OF WORK.

ITEM 604 - CATCH BASIN NO. 3A WITH "V" GRATE, AS PER PLAN

THIS CATCH BASIN SHALL BE OF A SUMP AND TRAP TYPE AS SHOWN ON THE DETAIL ON SHEET NO. 75. THE TRAP SHALL BE EAST JORDAN NO. 5934; NEENAH NO. R-3701; OR AN APPROVED EQUAL.

PAYMENT FOR WORK SHALL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 604 CATCH BASIN NO. 3A WITH "V" GRATE, AS PER PLAN AND SHALL INCLUDE FULL COMPENSATION FOR FURNISHING MATERIAL, LABOR AND EQUIPMENT INCIDENTAL TO COMPLETE THIS WORK.

ITEM 604- MANHOLE RECONSTRUCTED TO GRADE AS PER PLAN, BOLTED DOWN

WHEN SPECIFIED, BOLTED-DOWN MANHOLE COVERS SHALL BE PROVIDED AND THEIR CASTS SHALL BE INCLUDED IN THE PERTINENT 604 ITEM DESIGNATED, "BOLTED DOWN".

MATERIALS FURNISHED SHALL BE:  
 FOUR (4) EQUALLY-SPACED HALF-INCH (1/2") STAINLESS STEEL HEX CAP SCREWS CONFORMING TO ASTM F-593, ALLOY GROUP I

COUNTERSINKS, HOLES, THREADING AND PLACEMENT SHALL BE DONE IN ACCORDANCE WITH THE CASTING MANUFACTURERS RECOMMENDATIONS AND METHODS.



## MAINTAINING TRAFFIC

### PUBLIC SAFETY

THE PERIOD OF TIME THAT A HAZARD IS LEFT UNPROTECTED BY THE REMOVAL OF GUARDRAIL SHALL BE HELD TO AN ABSOLUTE MINIMUM AND IN NO CASE SHALL SUCH A PERIOD BE LONGER THAN ONE WORKING DAY. IF, AFTER ONE DAY, THE ENTIRE RUN OF GUARDRAIL CONSTRUCTION IS NOT COMPLETE THE FOLLOWING SHALL APPLY:

- IN AREAS WHERE EXISTING GUARDRAIL HAS BEEN REMOVED OR THE GUARDRAIL IS IN A PARTIAL STAGE OF COMPLETION, THE CONTRACTOR SHALL PROVIDE AND MAINTAIN TYPE II BARRICADES WITH TYPE C (STEADY BURNING) WARNING LIGHTS WITHIN THE LIMITS OF THE UNPROTECTED AREA. THE BARRICADES SHALL BE PLACED AT 50' INTERVALS AND OFFSET AT LEAST TWO FEET FROM THE EDGE OF THE TRAVELED ROADWAY AND IN CLOSE PROXIMITY TO THE CONSTRUCTION. THE APPROACH END OF A PARTIALLY COMPLETED RUN OF GUARDRAIL SHALL BE FASTENED AT GROUND LEVEL TO A STEEL DRUM.
- IF THE EXISTING GUARDRAIL IS FOR THE PROTECTION OF AN OBSTACLE (I.E. SIGN SUPPORT, BRIDGE PARAPET, ETC.) THE CONTRACTOR SHALL ERECT PORTABLE CONCRETE BARRIER AS DETAILED ON SHEET NO. IN THE DIRECTION OF TRAFFIC. THE REQUIREMENTS OF PARAGRAPH "A" SHALL APPLY TO THE REMAINING GUARDRAIL WITHIN THE RUN. PORTABLE BARRIERS SHALL BE FLARED AT A 15:1 TAPER RATE AND SHALL INCLUDE A PORTABLE END TERMINAL AS PER MC-9.2.
- THE REQUIREMENTS STATED IN "A" SHALL APPLY FOR A PERIOD NOT TO EXCEED ONE WEEK. WHERE THE REBUILDING OR CONSTRUCTION OF ANY RUN OF GUARDRAIL CANNOT BE ACCOMPLISHED WITHIN ONE WEEK, THE CONTRACTOR SHALL PROVIDE AND MAINTAIN PORTABLE CONCRETE BARRIER IN THE INTERIM TIME IT TAKES TO COMPLETE THE WORK. THE APPROACH END OF THE PORTABLE CONCRETE BARRIER SHALL BE FLARED 10 FT (150' AT 15:1 TAPER) AND SHALL INCLUDE A PORTABLE END TERMINAL AS PER MC-9.2 IN ADDITION, A TYPE II BARRICADE WITH TYPE B (HIGH INTENSITY FLASHER) WARNING LIGHT SHALL BE PLACED, IN FRONT OF THIS INITIAL SECTION OF PORTABLE BARRIERS PROVIDE FOREWARNING TO THE APPROACHING TRAFFIC.

WHEN THE LANE ADJACENT TO THE GUARDRAIL IS CLOSED TO TRAFFIC, THE PROVISIONS OF PARAGRAPH "A" ABOVE SHALL APPLY AFTER 1 DAY, THE PROVISIONS OF PARAGRAPH "B" SHALL APPLY AFTER 5 DAYS, AND THE PROVISIONS OF PARAGRAPH "C" SHALL APPLY AFTER 15 DAYS.

THE TERM "GUARDRAIL" AS USED HEREIN SHALL BE UNDERSTOOD TO COVER ALL TYPES OF GUARDRAIL, EXISTING OR PROPOSED FOR THE PROJECT, INCLUDING BARRIER DESIGN GUARDRAIL.

THE COST OF COMPLYING WITH THESE SAFETY PROCEDURES SHALL BE INCLUDED IN THE LUMP SUM BID PRICE FOR ITEM 614-MAINTAINING TRAFFIC.

### GENERAL CONSTRUCTION SEQUENCE

THE CONTRACTOR IS REMINDED THAT, IN THE CONDUCT OF THIS PROJECT, HIS SEQUENCE OF OPERATIONS SHALL BE PLANNED AND EXECUTED IN SUCH A WAY AS TO MINIMIZE THE NUMBER OF LANE REDUCTIONS AND/OR LANE WIDTH REDUCTIONS REQUIRED TO MAINTAIN TRAFFIC THROUGH THE PROJECT. IN THIS REGARD, WHEN A TRAFFIC LANE IS CLOSED, ALL OPERATIONS TO THAT LANE SHALL BE PERFORMED IN AN ORDERLY SEQUENCE SUCH THAT IT WILL NOT BE NECESSARY TO AGAIN CLOSE THAT LANE UNTIL THE SURFACE COURSE PAVEMENT MARKING OPERATIONS BEGIN, IF UNABLE TO COMPLETE IN PHASE I OR PHASE II.

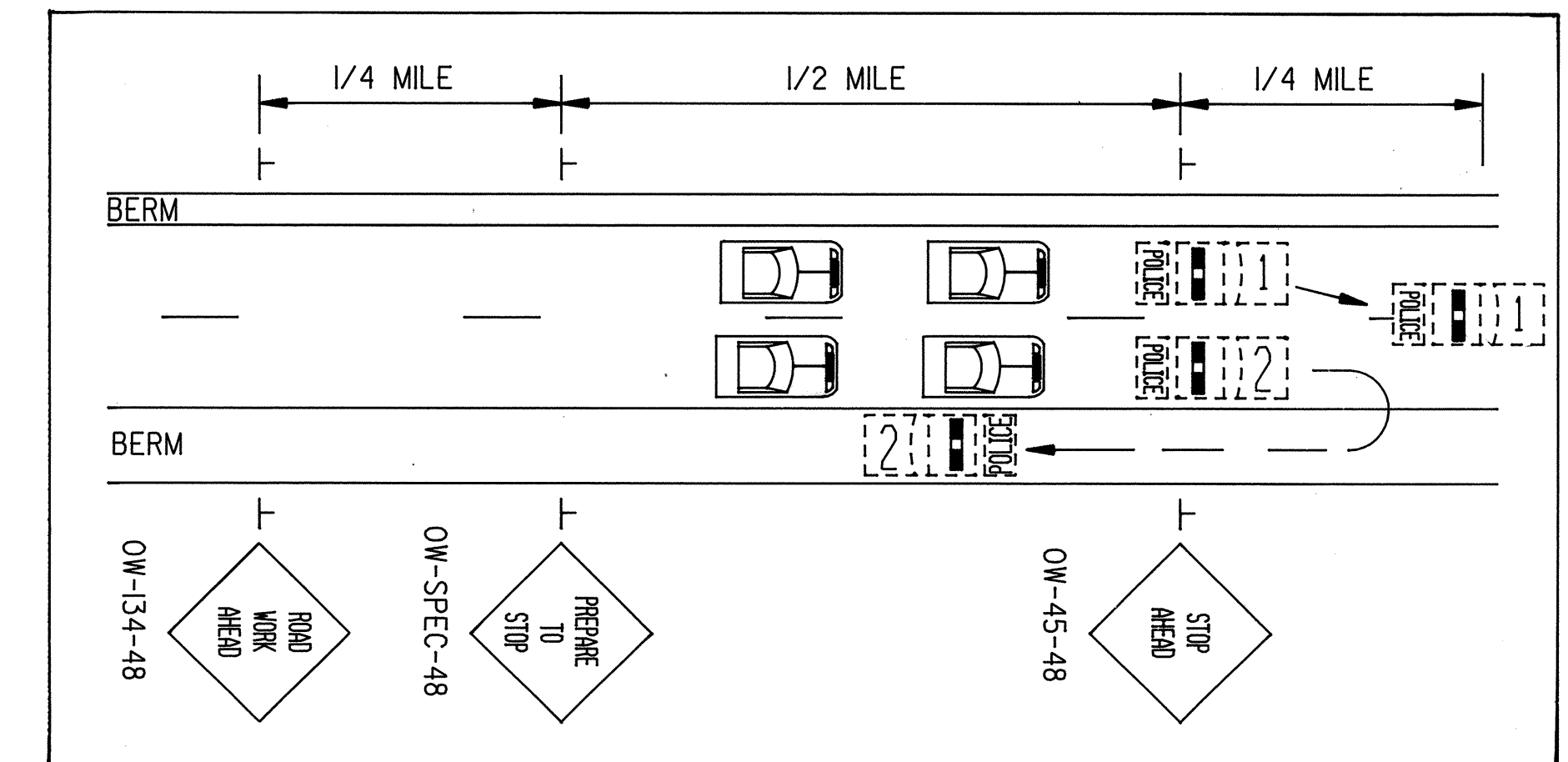
IT IS ALSO REQUIRED OF THE CONTRACTOR TO HAVE ALL NORMAL LANES OF TRAFFIC OPENED THROUGHOUT THE WINTER SEASON. NO LANE RESTRICTIONS, INCLUDING RAMP, WILL BE ALLOWED DURING THIS TIME. THE CONTRACTOR IS CAUTIONED TO SCHEDULE HIS WORK, ESPECIALLY ASPHALT OVERLAYS, TO MEET THIS REQUIREMENT.

OVERHEAD SIGNS AND SUPPORTS THAT ARE BEING INSTALLED TO REPLACE EXISTING SIGNS AND SUPPORTS SHALL BE IN PLACE PRIOR TO THE REMOVAL OF THE EXISTING SIGNS AND SUPPORTS.

### MAINTAINING VEHICULAR TRAFFIC

#### GENERAL PROVISIONS

- TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE WITH THE SCHEDULE AND SEQUENCE OF THRU LANES TO BE MAINTAINED DESCRIBED ON SHEET NO. AND IN THE MAINTENANCE OF TRAFFIC PLANS. THE CONTRACTOR SHALL SET UP AND OPERATE HIS EQUIPMENT IN SUCH A MANNER AS TO MINIMIZE ENCROACHMENT UPON THE TRAVELLED WIDTH OF PAVEMENT.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND THE RESPONSIBLE LAW ENFORCEMENT AGENCIES NOT LESS THAN SEVENTY-TWO (72) HOURS PRIOR TO A SCHEDULED DISRUPTION OF TRAFFIC. THE CONTRACTOR SHALL ALSO NOTIFY MR. TONY URANKAR, DISTRICT PUBLIC INFORMATION OFFICER (581-2100, X-244), SEVENTY-TWO (72) HOURS PRIOR TO A SCHEDULED DISRUPTION OR CHANGE IN TRAFFIC PATTERNS. THE CONTRACTOR SHALL ALSO ERECT ADVANCE NOTIFICATION SIGNS A MINIMUM OF FOURTEEN (14) DAYS PRIOR TO ANY TEMPORARY OR PERMANENT LANE CLOSURES, AS SHOWN ON SHEET NO. 110.
- NO STOPPAGE OF TRAFFIC OR ESTABLISHMENT OF LANE RESTRICTIONS SHALL OCCUR WITHOUT LAW ENFORCEMENT PERSONNEL AT EACH LOCATION TO DIRECT TRAFFIC.
- DURING OVERHEAD CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE, IF DEEMED NECESSARY BY THE ENGINEER, SAFETY NETS AND OR OTHER SAFETY DEVICES UNDER THE STRUCTURES TO PROTECT TRAFFIC IN THE AREA OF CONSTRUCTION.
- DURING NON-WORKING PERIODS, OPEN EXCAVATIONS SHALL BE DELINEATED WITH WARNING FLASHERS AND/OR OTHER APPROVED DEVICES AS DEEMED APPROPRIATE BY THE ENGINEER.
- EXISTING SIGNS LOCATED WITHIN THE ROAD WORK AREAS WHICH ARE NECESSARY FOR INTERIM OR PERMANENT TRAFFIC CONTROL SHALL BE REMOVED AND REERECTED IN LOCATIONS AS APPROVED BY THE ENGINEER.
- THE CONTRACTOR SHALL FURNISH, ERECT AND MAINTAIN ALL NEW WARNING AND INFORMATION SIGNS NECESSARY IN MAINTAINING TRAFFIC. THE CONTRACTOR SHALL DETERMINE WHAT SIGNS ARE NEEDED AND ADVISE THE ENGINEER TWO (2) WEEKS IN ADVANCE OF HIS DETAILED PLANS.
- TRAFFIC CONTROL DEVICES SHALL BE SET UP PRIOR TO THE START OF CONSTRUCTION, AND SHALL BE PROPERLY MAINTAINED DURING THE TIME SUCH SPECIAL CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS THEY ARE NEEDED AND SHALL BE IMMEDIATELY REMOVED THEREAFTER. WHERE OPERATIONS ARE PERFORMED IN STAGES, THERE SHALL BE IN PLACE ONLY THOSE DEVICES THAT APPLY TO THE CONDITION PRESENT DURING THE STAGE IN PROGRESS. ALL SIGNS WITH MESSAGES WHICH DO NOT APPLY DURING A CERTAIN PERIOD SHALL BE COMPLETELY COVERED OR SET ASIDE VIEW OF TRAFFIC.
- ERECTION OF SPAN TYPE AND BRIDGE MOUNTED OVERHEAD SUPPORTS SHALL BE ACCOMPLISHED IN SUCH A MANNER THAT COMPLETE TRAFFIC STOPPAGE ON ALL LANES OF ANY DIRECTIONAL ROADWAY IS NO MORE THAN 10 IN ANY ONE CONSECUTIVE 30 MINUTE PERIOD. A MINIMUM OF TWO (2) LAW ENFORCEMENT PATROL VEHICLES SHALL BE USED TO PACE MOTORISTS TO A STOP. AFTER TRAFFIC HAS BEEN SLOWED, ONE (1) PATROL VEHICLE SHALL TRAVEL ALONG THE ROADWAY SHOULDER 500 FEET BEHIND THE BACK UP OF STOPPED VEHICLES. WHERE STOPPAGE OCCURS IN THE VICINITY OF FREEWAY ENTRANCES, THE CONTRACTOR SHALL PLACE FLAGGERS ON THE RAMP TO STOP TRAFFIC. PATROL VEHICLES SHALL HAVE HIGH RISE FLASHING BEACONS TO PROVIDE ADEQUATE VISIBILITY TO APPROACHING MOTORISTS. WHEN THE ENGINEER DEEMS APPROPRIATE, THE CONTRACTOR SHALL ERECT AND MAINTAIN "ROADWORK AHEAD", "PREPARE TO STOP", AND "STOP AHEAD" SIGNS WITH FLASHING TWELVE INCH (12) TRAFFIC SIGNAL HEADS IN ACCORDANCE WITH 632.05. THESE SIGNS SHALL BE ILLUMINATED DURING NIGHT OPERATIONS. PATROL VEHICLES AND SIGNS SHALL BE LOCATED IN ACCORDANCE WITH THE FOLLOWING SKETCH. ERECTION OF SIGNS AND AND SIGN SPANS BE DONE AT NIGHT BETWEEN THE HOURS OF 10 P.M. AND 6 A.M.



- PLACEMENT OF FINAL ROADWAY PAVEMENT MARKINGS SHALL BE ACCOMPLISHED WITHIN THE PHASING IN THE MAINTENANCE OF TRAFFIC PLANS WHERE POSSIBLE. THE ENGINEER SHALL DETERMINE IF EXCEPTIONS NEED TO BE MADE. THEN FINAL ROADWAY PAVEMENT MARKINGS SHALL BE ACCOMPLISHED BETWEEN 10:00 P.M. AND 6:00 A.M. AS FOLLOWS: THE CONTRACTOR SHALL PROVIDE TWO (2) TRAILING VEHICLES PLUS A POLICE CRUISER WITH FLASHING BEACON FOLLOWING THE PAVEMENT MARKING EQUIPMENT WHEN MARKINGS ARE PLACED IN ORDER TO PROVIDE ADVANCE WARNING TO THE MOTORISTS OF THE TEMPORARY LANE CLOSURE AND CONSTRUCTION. THE TWO (2) TRAILING VEHICLES SHALL TRAVEL 500 FEET APART WITH THE REMOTE VEHICLE TRAVELING ON THE SHOULDER (LEFT OR RIGHT AS APPLICABLE) WHERE USABLE SHOULDER IS AVAILABLE. THE INTERMEDIATE TRAILING VEHICLE SHALL TRAVEL IN THE CLOSED LANE 500 FEET BEHIND THE PAVEMENT MARKING EQUIPMENT. THE POLICE CRUISER SHALL TRAVEL 500 TO 1000 FEET BEHIND THE REMOTE TRAILING VEHICLE.
- EACH TRAILING VEHICLE SHALL HAVE A YELLOW FLASHING BEACON PLUS ORANGE AND BLACK CONSTRUCTION WARNING SIGNS MOUNTED ON THE BACK FACING TRAFFIC WITH STANDARD TYPE MESSAGES ADVISING MOTORISTS OF THE WORK AHEAD, ADVISORY WARNING SPEED, AND WHICH LANE IS CLOSED.
- A 45 MPH REGULATORY SPEED LIMIT ZONE WILL BE ESTABLISHED FOR THIS PROJECT AS INDICATED ON THE MAINTENANCE OF TRAFFIC SHEETS. THIS WILL REQUIRE NEW TEMPORARY R-10-48 SPEED LIMIT SIGNS TO BE FURNISHED, ERECTED, AND MAINTAINED BY THE CONTRACTOR, PER THE MAINTENANCE OF TRAFFIC PLANS. IN ADDITION, THE EXISTING SPEED LIMIT SIGNS ARE TO BE MODIFIED BY THE CONTRACTOR TO INCLUDE ALUMINUM SIGN OVERLAYS, AND RELOCATION ON TEMPORARY SIGN SUPPORTS. SEE NOTE "614 WORK ZONE SPEED LIMIT SIGN".
  - CONTRACTOR SHALL BE REQUIRED TO PROVIDE SUFFICIENT CREWS TO IMPLEMENT ALL OR A SUB-PHASE OF THE TRAFFIC CONTROL IN THE MAINTENANCE OF TRAFFIC PLANS WITHIN THE SAME WORK SHIFT, WITHIN THE TIME LIMITS ALLOWED. THIS WILL PREVENT ANY CONFUSION BETWEEN THE CONSTRUCTION PHASE TRAFFIC PATTERN AND THE EXISTING TRAFFIC PATTERN. THE MAINTENANCE OF TRAFFIC PLANS CAN BE SUB-PHASED BY CONCENTRATING ON ONE DIRECTION OR A LENGTH WITHIN THAT DIRECTION. HOWEVER, IN EACH SUB-PHASE THE MAINTENANCE OF TRAFFIC PLAN SHALL BE COMPLETELY IMPLEMENTED WITHIN THE SAME WORK SHIFT.



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13. ADDITIONAL LANE CLOSURE FOR NIGHTTIME OPERATIONS SHALL ONLY BE IMPLEMENTED FROM 10:00 P.M. TO 6:00 A.M. THE CONTRACTOR SHALL SCHEDULE HIS OPERATIONS SO THAT THERE ARE SUFFICIENT CREWS TO DO THE WORK SCHEDULED WITHIN THIS EIGHT HOUR PERIOD. THE ONLY TIME THE HOURS MAY BE EXTENDED IS ON SATURDAY OR SUNDAY MORNING WHEN NO SPECIAL EVENT OR HOLIDAY IS OCCURRING. THE CONTRACTOR NEED NOT OPEN THE LANE UNTIL TRAFFIC IS BACKED UP ONE HALF MILE AS DETERMINED BY THE ENGINEER. AT THAT TIME, THE CONTRACTOR WILL HAVE FIFTEEN (15) MINUTES TO RE-OPEN THE LANE. IF THE LANE IS NOT OPENED IN FIFTEEN (15) MINUTES, LIQUIDATED DAMAGES SHALL APPLY.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO BE AWARE OF THE BACKUP SO THAT WHEN THE ENGINEER NOTIFIES THE CONTRACTOR TO OPEN THE LANE, THE CONTRACTOR CAN DO SO. IN NO OTHER CASE MAY THESE HOURS BE EXTENDED. SEE SHEET 112 FOR DETAILS.

THE CONTRACTOR SHALL CONTACT THE CITY OF CLEVELAND FOR LISTINGS OF ALL SPECIAL EVENTS WHICH TAKE PLACE IN THE CITY OF CLEVELAND THROUGHOUT THE DURATION OF THIS PROJECT. THE CONTRACTOR SHALL NOT IMPLEMENT THE ADDITIONAL LANE CLOSURE OR SHORT TERM LANE CLOSURE BEGINNING 12:00 NOON ON THE DAY AFTER A HOLIDAY OR SPECIAL EVENT OR WHEN THE ENGINEER DEEMS CLIMATOLOGICAL CONDITIONS TOO HAZARDOUS.

14. FOR ANY OPERATION NOT SPECIFICALLY MENTIONED IN THESE PLANS, THE TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE WITH THE "OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES".

15. ALL LABOR, MATERIALS, EQUIPMENT AND ANY INCIDENTALS REQUIRED TO COMPLETE THE WORK AS DESCRIBED ABOVE SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614-MAINTAINING TRAFFIC, UNLESS MENTIONED OTHERWISE IN THE PLANS.

## MAJOR WORK ITEMS

THE FOLLOWING MAJOR WORK ITEMS WILL REQUIRE TRAFFIC MAINTENANCE PROCEDURES WHICH SHALL BE INCORPORATED INTO THE CONTRACTORS SEQUENCE OF OPERATIONS.

- A. INSTALLATION OF OVERHEAD SIGN SUPPORTS, INCLUDING SIGNS
- B. WEARING COURSE REMOVAL
- C. SHOULDER REPLACEMENT
- D. REPAIR OF PAVEMENT JOINTS
- E. REPAIR OF PAVEMENT PANELS
- F. ASPHALT CONCRETE OVERLAY
- G. PAVEMENT MARKING
- H. BRIDGE REPAIR

## TRAFFIC CONTROL OF OPERATION FOR ASPHALT CONCRETE

WORK (ITEM 446 COURSES AND 826 COURSES)

ALL ASPHALT CONCRETE OPERATIONS SHALL BE CONDUCTED IN A MANNER THAT WILL ASSURE MINIMUM DANGER AND INCONVENIENCE TO THE HIGHWAY USERS. ALL 446 MAINLINE ASPHALT CONCRETE WORK SHALL BE PERFORMED AT NIGHT BETWEEN THE HOURS OF 10:00 P.M. AND 6:00 A.M.. ALL 826 DIRECTIONAL LANE AND ASPHALT CONCRETE WORK SHALL BE PERFORMED DURING THE NIGHT BETWEEN THE HOURS OF 10:00 P.M. AND 6:00 A.M.. ALL CITY STREET RAMPS MAY BE CLOSED FROM 10:00 A.M. TO 2:00 P.M. FOR ASPHALT CONCRETE WORK.

IN EITHER TRAVELED DIRECTION, ALL OF THE INTERMEDIATE LEVELING COURSE SHALL BE PLACED DURING THE RESPECTIVE PHASE AS SHOWN IN THE CONSTRUCTION SEQUENCE AND SCHEDULE OF THRU-LANES TO BE MAINTAINED ON SHEETS 15 AND 108.

ALL INTERMEDIATE COURSE WORK SHALL BE PLACED IN THE RESPECTIVE PHASE. THE SURFACE COURSE SHALL BE PLACED ONLY IN THE PERMANENT CLOSED LANE OF THE THREE LANE SECTION IN PHASE I, AND SHALL BE PLACED DURING THE NIGHTTIME CLOSURE IN THE THREE LANE SECTION OF THE REMAINING TWO LANES IN PHASE II. IN THE FOUR LANE SECTION, THE SURFACE COURSE SHALL BE PLACED IN A SEPARATE PHASE III ALONG WITH PERMANENT MARKINGS BETWEEN 10 P.M. AND 6 A.M.

WHEN THE ASPHALT IS PLACED AND A DISCONTINUITY EXISTS IN THE TRAVELED LANES, THE CONTRACTOR SHALL ERECT OW-171-48 AND OW-P-171-24 SIGNS (DIAGRAMATIC UNEVEN LANES AND DESCRIPTION BELOW) EVERY 1000' IN PHASE I AND II. WHEN THE DISCONTINUITY DOES NOT EXIST, THE SIGNS MUST BE REMOVED OR COMPLETELY COVERED. THE COST FOR THESE SIGNS SHALL BE INCLUDED IN THE LUMP SUM ITEM 614 - MAINTAINING TRAFFIC.

A MINIMUM OF ONE (1) TWELVE (12) FOOT LANE IN EACH DIRECTION MUST BE MAINTAINED AT ALL TIMES DURING NIGHTTIME RESURFACING OPERATIONS.

WHENEVER ANY PART OF THE TRAVELED SURFACE IS CLOSED, THE MOTORISTS SHALL BE WARNED AND DIVERTED BY THE CONTRACTOR THROUGH THE USE OF A FLASHING ARROW, IN ADDITION TO THOSE PROVISIONS SET FORTH IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS.

PRIOR TO OPENING THE ROADWAY TO NORMAL TRAFFIC DURING WINTER MONTHS, ALL ASPHALT WORK INCLUDING THE SURFACE COURSE MUST BE COMPLETED AN EQUAL FULL WIDTH DISTANCE. NO INTERMEDIATE LEVELING COURSE IS TO BE TRAVELED ON DURING WINTER MONTHS NOR SHALL ANY PART WIDTH RESURFACING REMAIN DURING THE WINTER. THE CONTRACTOR IS CAUTIONED TO SCHEDULE HIS OPERATIONS TO MEET THIS REQUIREMENT. IF THE CONTRACTOR DOES NOT MEET THIS REQUIREMENT, THE CONTRACTOR SHALL INCREASE THE THICKNESS OF THE SURFACE COURSE BY 1/2" ENTIRELY AT HIS EXPENSE FOR LABOR, MATERIALS AND EQUIPMENT.

## TRAFFIC CONTROL MATERIALS

### A. SIGNS

SIGN DIMENSIONS AND SPECIFICATIONS, INCLUDING LETTER SIZES, SHALL BE AS PROVIDED IN THE "MANUAL", OR IN SIGN DESIGN DRAWINGS PROVIDED BY THE DEPARTMENT OF TRANSPORTATION. THE SIGNS SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER PRIOR TO THE START OF THE PROJECT.

ALL SIGNS SHALL HAVE A REFLECTORIZED BACKGROUND OF REFLECTIVE MATERIALS AS DESCRIBED IN THE "MANUAL".

ALL SIZES OF SIGNS IN THE MAINTENANCE OF TRAFFIC PLANS SHALL CORRESPOND TO THE SIGN LEVEL IN THE TRAFFIC CONTROL PLANS.

### B. SIGN SUPPORTS

SUPPORTS SHALL BE ADEQUATE IN MASS AND STABILITY TO PREVENT THE SIGNS BEING BLOWN OVER BY WIND OR VEHICULAR GENERATED AIR TURBULENCE.

### C. DRUMS

DRUMS SHALL BE IN ACCORDANCE WITH PERTINENT SECTIONS OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. ALL COSTS FOR INSTALLING, MAINTAINING AND SUBSEQUENT REMOVAL OF SAID DRUMS SHALL BE INCLUDED IN THE LUMP SUM BID PRICE FOR ITEM 614 - MAINTAINING TRAFFIC.

### D. SMALL BARRICADES

TYPE II BARRICADES SHALL BE USED TO CLOSE LANES WHERE REQUIRED FOR RESURFACING. THESE SHALL BE AT LEAST 36" HIGH AND 12" WIDE.

NEAR THE TOP OF THE BARRICADE THERE SHALL BE A PANEL WITH ALTERNATE ORANGE AND REFLECTORIZED WHITE 6" WIDE STRIPS. THIS PANEL SHALL BE AT LEAST 12" WIDE AND 24" HIGH. A SINGLE FACED FLASHER SHALL BE LOCATED AT THE TOP OF THE BARRICADE AT THE END NEAREST TO TRAFFIC. THE FLASH SHALL FACE ONCOMING TRAFFIC. THE BARRICADES SHALL BE OF SUFFICIENT STABILITY SO THAT WIND OR TRAFFIC AIR TURBULENCE WILL NOT UPSET THEM. BARRICADES SHALL BE IN ACCORDANCE WITH PERTINENT SECTIONS OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

### E. FLASHERS

FLASHERS SHALL BE 12 VOLT BATTERY-OPERATED MODELS WITH 7 INCH DIAMETER YELLOW LENSES ILLUMINATED BY RAPID INTERMITTENT FLASHES OF SHORT DURATION AND SHALL BE PLACED ON ALL SIGNS AT ALL TIMES.

### F. FLASHING ARROW BARRICADE

WHENEVER ANY PART OF THE TRAVELED SURFACE IS CLOSED, THE MOTORIST SHALL BE WARNED AND DIVERTED BY THE CONTRACTOR THROUGH THE USE OF ONE FLASHING ARROW BARRICADE FOR EACH LANE CLOSED. THE CONTRACTOR SHALL REFER TO STD. DRWG. TC-35.10 AND THE PROVISION SET FORTH IN OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS FOR ALL INFORMATION REGARDING FURNISHING, MAINTAINING, AND USE OF FLASHING ARROW BARRICADES. PAYMENT FOR THE ABOVE SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614-MAINTAINING TRAFFIC.

## ITEM SPECIAL-REPLACEMENT SIGNS

FLAT SHEET SIGNS FURNISHED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENT OF THE PLANS, SPECIFICATIONS AND PROPOSAL WHICH BECOME DAMAGED BY TRAFFIC FOR REASONS BEYOND THE CONTROL OF THE CONTRACTOR SHALL BE REPLACED IN KIND WHEN ORDERED BY THE ENGINEER. REPLACEMENT SIGNS SHALL BE NEW. OTHER MATERIALS MAY BE IN USED BUT GOOD CONDITION SUBJECT TO APPROVAL BY THE ENGINEER.

PAYMENT FOR THE NEW SIGNS SHALL BE MADE AT THE BID PRICE PER SQUARE FOOT FOR ITEM SPECIAL REPLACEMENT SIGNS AND SHALL INCLUDE THE COST OF REMOVING AND DISPOSING OF THE DAMAGED SIGNS, HARDWARE AND SUPPORTS AND PROVIDING NECESSARY REPLACEMENT HARDWARE, SUPPORTS, ETC.

AS ESTIMATED QUANTITY OF ITEM SPECIAL, REPLACEMENT SIGNS HAS BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM SPECIAL - REPLACEMENT SIGNS..... 500 S.F.

## ITEM 404 - BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC

THIS ITEM SHALL BE USED TO REPAIR HOLES IN BRIDGE DECKS, ROADWAY SURFACE AND BERMS WHICH ARE DAMAGED DURING THE CLOSURE. THE CONTRACTOR SHALL USE THIS ITEM TO MAINTAIN THE HIGHWAY ACCORDING TO SEC. 614.02. THE CONTRACTOR SHALL PERFORM THE ABOVE WORK BETWEEN THE HOURS 10 P.M. AND 6 A.M. THE FOLLOWING ESTIMATED QUANTITY IS INCLUDED IN THE GENERAL SUMMARY FOR THE MAINTENANCE OF TRAFFIC AS OUTLINED ABOVE, TO BE USED AS DIRECTED BY THE ENGINEER ON ALL PARTS OF THIS PROJECT.

ITEM 404 - BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC.... 200 C.Y.

## ITEM SPECIAL-REPLACEMENT DRUMS

DRUMS FURNISHED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENT OF THE PLANS, SPECIFICATION AND PROPOSAL WHICH BECOME DAMAGED BY TRAFFIC FOR REASONS BEYOND THE CONTROL OF THE CONTRACTOR SHALL BE REPLACED IN KIND WHEN ORDERED BY THE ENGINEER. REPLACEMENT DRUMS SHALL BE NEW. PAYMENT FOR EACH NEW DRUM SHALL BE MADE AT THE BID PRICE PER EACH NEW DRUM AND INCLUDE THE COST OF REMOVING AND DISPOSING OF THE DAMAGED DRUM AND PROVIDING, MAINTAINING THE REPLACEMENT DRUM IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS FOR THE ORIGINAL DRUMS.

AN ESTIMATED QUANTITY OF ITEM SPECIAL-REPLACEMENT DRUMS HAS BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM SPECIAL - REPLACEMENT DRUMS..... 1000 EACH



# GENERAL NOTES

**ITEM 614 - TEMPORARY PAVEMENT MARKINGS (LANE SHIFTS)**

LANE SHIFTS OR LANE CLOSURES SHALL BE IMPLEMENTED USING 55:1 MAXIMUM TAPER RATES ON MAINLINE PAVEMENT AND 40:1 MAXIMUM TAPER RATES ON RAMPS. A SUB-SUMMARY ON SHEET 31-39 HAS BEEN PROVIDED FOR ALL PAVEMENT MARKINGS SHOWN ON THE MAINTENANCE OF TRAFFIC SHEETS.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS NEEDED BY THE CONTRACTOR AFTER PAVEMENT PLANING OPERATIONS PRIOR TO IMPLEMENTING MAINTENANCE OF TRAFFIC PHASE I AND WHEN PERMANENT PAVEMENT MARKINGS CAN NOT BE ACCOMPLISHED IN THE CONSTRUCTION PHASE.

ITEM 614 - TEMPORARY LANE LINE, CLASS II, 642 PAINT	10.85 MILE
ITEM 614 - TEMPORARY CENTER LINE, CLASS I, 642 PAINT	0.08 MILE
ITEM 614 - TEMPORARY EDGE LINE, CLASS I, 642 PAINT	18.0 L.F.
ITEM 614 - TEMPORARY CHANNELIZING LINE, CLASS II	9990 L.F.
ITEM 614 - TEMPORARY TRANSVERSE LINE, CLASS I, 642 PAINT	4350 L.F.
ITEM 614 - TEMPORARY STOP LINE, CLASS I, 642 PAINT	510 L.F.

THESE QUANTITIES ARE BASED ON PERMANENT PAVEMENT MARKINGS FOUND IN THE TRAFFIC CONTROL SECTION OF THE PLANS AND ARE NOT TABULATED HERE.

**CONSTRUCTION SEQUENCE**

**PRE-PHASE**

REMOVE BARRIER  
PAVEMENT PLANING (AND RELATED TEMPORARY PAVEMENT MARKINGS)

**PHASE I MAJOR WORK REQUIRED**

DETOUR IMPLEMENTATION (ALL DETOUR SIGNS MUST BE POSTED AS PER DETOUR PLANS BEFORE CLOSING RAMPS)  
SHOULDER RECONSTRUCTION  
EARTHWORK  
DRAINAGE REPAIR  
UNDERDRAINS  
PAVEMENT WIDENING  
PAVEMENT AND JOINT REPAIR (AREA OF NIGHTTIME CLOSURE MIDDLE LANE(S) & SHALL BE REPAIRED WITH FLEXIBLE PAVEMENT ONLY)  
GUARDRAIL  
IMPACT ATTENUATORS  
BRIDGE REPAIR  
ASPHALT OVERLAY  
SIGNING  
PAVEMENT MARKINGS (THESE SHALL NOT BE DONE AS A SEPERATE OPERATION BUT WITHIN THE MAINTENANCE OF TRAFFIC PHASE WHERE POSSIBLE)

**PHASE II MAJOR WORK REQUIRED**

PAVEMENT AND JOINT REPAIR (AREA OF NIGHTTIME CLOSURE MIDDLE LANE(S) & SHALL BE REPAIRED WITH FLEXIBLE PAVEMENT ONLY)  
BRIDGE REPAIR  
ASPHALT OVERLAY  
SIGNING  
PAVEMENT MARKINGS

**PHASE III**

SURFACE COURSE ASPHALT OVERLAY IN 4 LANE SECTION.  
PAVEMENT MARKINGS IN 4 LANE SECTION.

**ITEM SPECIAL-LAW ENFORCEMENT OFFICER WITH PATROL CAR**

THE CONTRACTOR SHALL PROVIDE AND PAY ALL COST FOR THE SERVICES OF LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR THE EXCLUSIVE PURPOSE OF CONTROLLING TRAFFIC WHENEVER A CHANGE IN THE TRAFFIC PATTERN TAKES PLACE. THE NUMBER OF OFFICERS AND CARS REQUIRED FOR THIS PURPOSE SHALL BE DETERMINED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER. THE OFFICERS SHALL MOVE THEIR PATROL CARS AS NECESSARY TO INSURE THEIR CONSTANT PRESENCE AT THE POINT (S) OF SLOWDOWN, STOPPAGE OR BACK-UP. PAYMENT FOR THE ABOVE WILL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM SPECIAL- LAW ENFORCEMENT OFFICER WITH PATROL CAR.

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE ARRANGEMENTS REGARDING SCHEDULING AND PAYMENT OF LAW ENFORCEMENT OFFICER WITH PATROL CAR.

ITEM SPECIAL - LAW ENFORCEMENT OFFICER WITH PATROL CAR ..... 500 HRS.

**PORTABLE CONCRETE BARRIER (PUBLIC SAFETY)**

PORTABLE CONCRETE BARRIER SECTIONS (10 FT. LONG) AS REQUIRED BY THE PUBLIC SAFETY NOTE SHALL BE SUPPLIED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LOADING, UNLOADING AND TRANSPORTATION OF THE BARRIER.

THE BARRIER SECTIONS SHALL BE BOLTED TOGETHER WITH STEEL CONNECTIONS AS PER STANDARD CONSTRUCTION DRAWING MC-9.2.

ALL COSTS FOR FURNISHING, INSTALLING AND SUBSEQUENT REMOVING TEMPORARY CONCRETE BARRIER AS DESCRIBED UNDER PUBLIC SAFETY SHALL BE INCLUDED IN THE LUMP SUM BID PRICE FOR ITEM 614 - MAINTAINING TRAFFIC.

**PORTABLE CONCRETE BARRIER (BRIDGE CONSTRUCTION)**

THE FOLLOWING GUIDELINES APPLY TO THE USE OF PORTABLE PRECAST CONCRETE BARRIERS TO SEPARATE BRIDGE WORK AREAS FROM THRU TRAFFIC:

ROADWAY (APPROACHES TO BRIDGE WORK AREAS)- THE STANDARD BARRIER AS SHOWN ON STD. DWG. MC-9.2 APPLIES TO ALL ROADWAY BARRIERS. THE BARRIER SECTIONS SHALL BE PINNED TOGETHER. PAYMENT SHALL BE INCLUDED UNDER ITEM 622 - PORTABLE CONCRETE BARRIER.

THE FOLLOWING "STRUCTURE" BARRIERS APPLY TO THE BARRIERS PLACED ON THE APPROACH SLABS AND BRIDGES.

STRUCTURE (BRIDGE OVERLAY OR RAILING FACING)- THE STANDARD BARRIER AS SHOWN ON STD. DWG. MC-9.2 APPLIES. SEE NOTES AND DETAILS ON SHEET 68 REGARDING SPECIAL DECK SURFACE PREPARATION, BOLTED END CONNECTIONS AND JOINT BLOCKING. PAYMENT SHALL BE INCLUDED UNDER ITEM 622 - PORTABLE CONCRETE BARRIER, BRIDGE MOUNTED.

STRUCTURE (PARAPET REPLACEMENT WITH PORTABLE BARRIER SET AT LEAST SIX FEET FROM DECK EDGE). IN ADDITION TO THE REQUIREMENTS OF THE STRUCTURE BARRIER ABOVE, THE BARRIER SECTIONS SHALL BE REINFORCED TO MEET THE BRIDGE RAILING DESIGNS. SEE NOTES AND DETAILS ON SHEET 68 REGARDING THIS ADDITIONAL REINFORCING AND MODIFIED CONNECTIONS. PAYMENT INCLUDED UNDER ITEM 622- PORTABLE CONCRETE BARRIER, AS PER PLAN, TYPE BRD.

STRUCTURE (DECK REPLACEMENT OR PARAPET REPLACEMENT WITH BARRIER NEAR THE EDGE OF DECK AND WHERE WARRANTED BY IMPACT SEVERITY). IN ADDITION TO THE REQUIREMENT OF THE TYPE BRD BARRIER ABOVE THE BARRIER SECTIONS SHALL BE ANCHORED TO THE BRIDGE DECK AS SHOWN ON SHEET . PAYMENT SHALL BE INCLUDED UNDER ITEM 622-PORTABLE CONCRETE BARRIER TYPE BRD, ANCHORED. PAYMENT SHALL INCLUDE REMOVAL OF THE ANCHORS AND REPAIR OF THE DECK SURFACE AS APPROVED BY THE ENGINEER.

THE FOLLOWING ESTIMATED QUANTITIES ARE INCLUDED IN THE GENERAL SUMMARY TO BE USED AS DESCRIBED ABOVE:

ITEM 622-PORTABLE CONCRETE BARRIER .....	1525 L.F.
ITEM 622-PORTABLE CONCRETE BARRIER, BRIDGE MOUNTED.....	5000 L.F.

**ITEM 614-BARRIER REFLECTORS, TYPE A OR B**

BARRIER REFLECTORS AND THEIR MOUNTINGS SHALL CONFORM TO SUPPLEMENTAL SPECIFICATION 802 EXCEPT THAT SPACING OF THE REFLECTORS SHALL BE HALF THE DISTANCE SPECIFIED IN S.S.802. THEY SHALL BE PLACED ON EXISTING GUARDRAIL AND BRIDGE PARAPETS ADJACENT TO TRAFFIC LANES WHICH HAVE BEEN SHIFTED FROM THE NORMAL DRIVING LANE PRIOR TO SHIFTING TRAFFIC. THEY SHALL ALSO BE PLACED ON ALL TEMPORARY CONCRETE BARRIERS. REFLECTOR COLOR SHALL MATCH THE COLOR OF THE EDGELINE. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS OUTLINED ABOVE:

ITEM 614-BARRIER REFLECTORS, TYPE A.....	270 EACH
ITEM 614-BARRIER REFLECTORS, TYPE B.....	330 EACH

**DUST CONTROL**

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER FOR DUST CONTROL:

ITEM 616 - WATER.....	1000 M GAL
ITEM 616 - CALICUM CHLORIDE.....	50 TON

**ITEM SPECIAL- ROADWAY, MISC.: TOW TRUCK SERVICE**

THE CONTRACTOR SHALL PROVIDE A TOW SERVICE FOR ANY DISABLED VEHICLE WITHIN THE ROADWAY THAT AFFECTS THE FLOW OF TRAFFIC DURING ANY TEMPORARY OR PERMANENT LANE(S) CLOSURE. THE INTENT IS TO REMOVE THE DISABLED VEHICLE TO A LOCATION OFF THE TRAVELED WAY.

THE TOW TRUCKS SHALL BE CAPABLE OF HANDLING A GROSS WEIGHT OF 18,000 POUNDS. EACH TRUCK SHALL BE EQUIPPED WITH AN AMBER CAB MOUNTED FLASHING LIGHT, TWO-WAY RADIO, TOW RIG, CUSHIONED BUMPER, AND REAR PINTLE HOOKS. FOR LARGE DISABLED TRUCKS, THE CONTRACTOR SHALL PROVIDE MORE THAN ONE TOW TRUCK, AS NEEDED. TOWING SHALL BE PROVIDED TO REMOVE DISABLED VEHICLES FROM WITHIN THE ROADWAY TO ANOTHER LOCATION OFF THE TRAVELED WAY. THIS SERVICE SHALL BE PROVIDED AT NO CHARGE TO THE OPERATORS OF THE DISABLED VEHICLES. ANY ADDITIONAL TOWING TO AN OFF SITE LOCATION SHALL BE ARRANGED BY THE POLICE OR MOTORIST, BUT SHALL NOT BE PART OF THE WORK REQUIRED UNDER THIS CONTRACT.

THE TOW TRUCK MAY BE CALLED TO THE SCENE BY THE POLICE, CONTRACTOR, ENGINEER OR DESIGNATED ENGINEER'S OR CONTRACTOR'S REPRESENTATIVES. THE TOW TRUCK MUST RESPOND AND ARRIVE AT THE SCENE OF THE DISABLED VEHICLE NO LATER THAN TEN MINUTES AFTER THE RECEIPT OF THE CALL. IF THE TOW TRUCK CANNOT ARRIVE IN TEN MINUTES AS DEEMED BY THE PROJECT ENGINEER, THIS REQUIREMENT MAY BE WAIVED. THE CONTRACTOR MUST PROVIDE TEN MINUTES RESPONSE SERVICE EVEN THOUGH THERE MAY BE MULTIPLE DISABLED VEHICLES AT DIFFERENT LOCATIONS WITHIN THE LIMITS OF WORK. IN THE CASE OF SERIOUS VEHICULAR ACCIDENTS, THE TOW TRUCK MUST NOT REMOVE THE DISABLED VEHICLES(S) UNTIL AUTHORIZED BY THE POLICE OR THE ENGINEER.



# GENERAL NOTES

CUY-90-16.24

FHWA REGION	STATE	PROJECT	
5	OHIO		

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245

THE CONTRACTOR SHALL NOT LET ANY VEHICLE REMAIN IN THE TRAVELED WAY FOR 30 MINUTES WITHOUT NOTIFYING THE TOWING SERVICE. IF THE TOWING SERVICE IS NOT NOTIFIED IN 30 MINUTES, THE CONTRACTOR SHALL ONLY BE PAID FOR ONE HALF OF THE TOW TRUCK SERVICE UNIT PRICE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE REPRESENTATIVES TO ENSURE THE TOWING SERVICE RESPONDS WITHIN THESE GUIDELINES. THE TOWING SERVICE SHALL RESPOND TO ANY VEHICLE WITHIN THE WORK LIMITS OF THIS PROJECT.

THE CONTRACTOR SHALL PROVIDE THE PHONE NUMBERS OF THE TOW TRUCK SERVICE TO THE POLICE AND ENGINEER AS SOON AS THEY BECOME AVAILABLE.

TOW TRUCK SERVICE SHALL BE MEASURED BY THE NUMBER OF TOWS THAT THE TOW TRUCK SERVICE ACTUALLY PERFORMS. THE RELOCATION OF EACH VEHICLE OFF THE TRAVELED WAY, WHETHER BY TOWING OR PUSHING SHALL BE COUNTED AS A TOW. IF TOWING IS PERFORMED BY MORE THAN ONE TOW TRUCK (AS NEEDED TO REMOVE HEAVY VEHICLES) MEASUREMENT WILL BE MADE PER EACH TOW TRUCK.

PAYMENT FOR TOW TRUCK SERVICE WILL BE MADE AT THE CONTRACT UNIT PRICE PER TOW. THIS PRICE SHALL BE FULL COMPENSATION FOR FURNISHING THE TOW TRUCK, OPERATOR, TOOLS, EQUIPMENT, INSURANCE AND ALL OTHER MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM SPECIAL- ROADWAY, MISC.: TOW TRUCK SERVICE ..... 375 EACH

## DETOUR ROUTES

SIGNS NOTIFYING MOTORISTS OF UPCOMING RAMP CLOSURES SHALL BE IN PLACE 2 WEEKS PRIOR TO IMPLEMENTATION.

SEE MAINTENANCE OF TRAFFIC PLANS AND DETOUR ROUTES FOR FURTHER INFORMATION.

## 614 WORK ZONE SPEED LIMIT SIGN

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

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

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

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

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

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

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

ITEM	QUANTITY	UNIT	DESCRIPTION
614	14	EACH	WORK ZONE SPEED LIMIT SIGN

## TEMPORARY IMPACT ATTENUATOR

A TEMPORARY TRUCK MOUNTED ATTENUATOR (TMA) SHALL BE IN PLACE FOR THE DURATION OF THE REMOVAL AND REPLACEMENT OF THE NEW IMPACT ATTENUATOR AT RAMP E-10. THE TMA SHALL BE AN ALPHA 2001 MD AS MANUFACTURED BY ENERGY ABSORPTION SYSTEMS, INC. OR AN APPROVED EQUAL. PLACEMENT SHALL BE AS PER THE MANUFACTURER'S RECOMMENDATION. ALTHOUGH ONLY ONE LOCATION FOR THE TMA HAS BEEN SPECIFIED, THE PROJECT ENGINEER MAY AT HIS/HER DISCRETION, PROVIDE TMA PROTECTION AT OTHER LOCATIONS. ALL WORK SHALL BE AS DIRECTED BY THE ENGINEER AND INCLUDED IN PAYMENT UNDER THE LUMP SUM BID FOR ITEM 614 - MAINTAINING TRAFFIC.

## TRAFFIC CONTROL FOR PAVEMENT PLANING OPERATIONS

ALL PAVEMENT PLANING SHALL BE DONE DURING THE HOURS OF 10:00 PM AND 6:00 AM AND SHALL FOLLOW THE EXAMPLE OF NIGHT TIME LANE CLOSURES. FROM 6:00 AM TO 10:00 PM, ALL LANES SHALL BE OPEN. ANY DISCONTINUITY THAT EXISTS BETWEEN LANES OF A PLANED AND NON-PANED SURFACE SHALL BE TAPERED TWO FEET LONGITUDINALLY AND 50' AT BEGINNING AND END OF A FEATHER WITH THAT TAPER OCCURRING PAST THE PLANED LANE(S) TO ACCOMMODATE TEMPORARY PAVEMENT MARKINGS WHICH MUST BE IN PLACE PRIOR TO 6:00 AM.

## COVERING OF SIGNS

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

## LIQUIDATED DAMAGES, NIGHT TIME LANE CLOSURES, SHORT TERM LANE CLOSURES

THIS PROJECT IS BASED UPON 3-8 HOUR SHIFTS TOTALING 24 HOURS PER DAY OF WORK.

MUCH OF THE WORK SHALL BE DONE DURING NIGHTTIME OPERATIONS FROM 10:00 P.M. TO 6:00 A.M. SEE GENERAL PROVISION 12 IN THE MAINTENANCE OF TRAFFIC NOTES AND DETAILS ON SHEET 13.

THESE TIME LIMITATIONS SHALL NOT BE REVISED WITHOUT PRIOR WRITTEN APPROVAL FROM BOTH THE DISTRICT CONSTRUCTION ENGINEER AND THE DISTRICT PLANNING AND DESIGN ENGINEER.

ANY DELAY IN EFFECTING THE ADDITIONAL LANE CLOSURE FOR NIGHTTIME OPERATIONS SHALL NOT BE SUFFICIENT CAUSE FOR ANY VIOLATION OF THE PERMITTED LANE CLOSURE TIMES.

LIQUIDATED DAMAGES AS DETERMINED FROM THE TABLE IN SECTION 108.07 OF THE SPECIFICATIONS SHALL BE ASSESSED FOR ANY VIOLATION OF THE PERMITTED LANE CLOSURES.

THESE DAMAGES SHALL BE ASSESSED INDIVIDUALLY AND WILL BE CUMULATIVE FOR EACH LOCATION WHICH DOES NOT RE-OPEN TO TRAFFIC ON TIME. (THIS COULD RESULT IN SEVERAL ASSESSMENTS IN THE SAME DAY). THE FULL AMOUNT OF THE LIQUIDATED DAMAGES SHALL BE ASSESSED FOR EACH VIOLATION.

## LIQUIDATED DAMAGES/INTERIM COMPLETION REQUIREMENTS

THE CONTRACTOR SHALL SCHEDULE HIS OPERATIONS AND INCREASE HIS WORK FORCE AS NECESSARY SO AS TO COMPLETE ALL WORK ITEMS REQUIRING PERMANENT LANE CLOSURES FOR THE FOLLOWING WORK ZONES, WITHIN THE TIME LIMITS ALLOCATED.

STRUCTURE	TIME LIMIT
CUY-90-1794	28 DAYS
CUY-90-1803	28 DAYS

WORK MAY NOT TAKE PLACE ON BOTH BRIDGES AT THE SAME TIME.

RAMPS	TIME LIMIT
PHASE I - E16	IF CLOSED DUE TO ANOTHER PROJECT (CUY-77-13.81)
PHASE II - E7, E15, E18	

NON-RUSH HOUR CLOSURES AS PERMITTED BY THE "SCHEDULE OF THRU LANES TO BE MAINTAINED" TABLE ON SHEET 108 ARE NOT CONSIDERED WITHIN THE TIME LIMITS ABOVE. (THOSE CLOSURES ARE DISCUSSED IN THE "LIQUIDATED DAMAGES/SHORT TERM LANE CLOSURES" NOTE)

THE COMPLETION OF A PHASE REQUIRES THAT ALL LANES BE RE-OPENED TO TRAFFIC OR THE SUBSEQUENT TRAFFIC CONTROL PHASE BE IMPLEMENTED.

THE TIME LIMIT AS SHOWN SHALL BEGIN ON THE FIRST DAY THAT PERMANENT CLOSURES (CLOSURES EXTENDING THROUGH RUSH HOURS) ARE IMPLEMENTED AND SHALL CONTINUE COUNTING BASED UPON CALENDAR DAYS UNTIL COMPLETION AS DEFINED ABOVE.

LIQUIDATED DAMAGES AS DETERMINED FROM THE TABLE IN SECTION 108.07 OF THE SPECIFICATIONS SHALL BE ASSESSED FOR EACH DAY (OR PORTION THEREOF) FOR WHICH THESE TIME LIMITS ARE NOT MET. IF MORE THAN ONE PHASE OF THIS WORK IS IN VIOLATION OF THE STATED TIME LIMITS THEN LIQUIDATED DAMAGES IN THE AMOUNT NOTED ABOVE SHALL BE ASSESSED FOR EACH PHASE AND WILL BE CUMULATIVE. LIQUIDATED DAMAGES SHALL ALSO BE ASSESSED WHEN A CITY STREET RAMP CLOSURE DUE TO PAVING OPERATIONS 10:00 A.M. TO 2:00 P.M. IS VIOLATED.

## MAINTENANCE OF TRAFFIC FOR OVERHEAD BRIDGES

ALL WORK ON STRUCTURES CUY-90-1794 (HAMILTON AVE.) AND CUY-90-1803 (LAKESIDE AVE.) SHALL BE LIMITED TO 28 DAYS EACH. WORK MAY NOT TAKE PLACE ON BOTH BRIDGES AT THE SAME TIME. ONE BRIDGE MUST BE COMPLETE BEFORE THE OTHER IS STARTED. LIQUIDATED DAMAGES DETERMINED FROM THE TABLE IN SECTION 108.07 SHALL APPLY.

WORK ON STRUCTURES CUY-90-1681/1692/1796/1812/1815 MAY TAKE PLACE ANY TIME DURING THE PROJECT WITH THE EXCEPTION THAT NO LANES (OVERHEAD OR MAINLINE) SHALL BE CLOSED TO TRAFFIC DURING DAYTIME OR SPECIAL EVENTS. A LANE(S) MAY BE CLOSED DURING NIGHTTIME OPERATIONS OR WEEKENDS AS MENTIONED PREVIOUSLY, BUT NOT DURING THE TIMES FOR SPECIAL EVENTS AND HOLIDAYS. LIQUIDATED DAMAGES AS STATED ABOVE SHALL APPLY.

## WORK ALONG CLOSED RAMPS

WHEN A RAMP IS CLOSED EITHER ON THIS PROJECT OR ADJOINING PROJECTS (CUY-77-13.81, CUY-90-15.24) IT SHALL BE REQUIRED THAT THE CONTRACTOR DO ALL WORK ON THAT RAMP DURING THE CLOSURE INCLUDING ASPHALT AND PAVEMENT MARKINGS SO THAT WHEN THE RAMP IS OPENED TO TRAFFIC, ALL WORK ON THE RAMP IS COMPLETE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO SCHEDULE HIS WORK WITH THE OTHER CONTRACTORS.



# RESURFACING QUANTITIES

PLOT SUBMITTED BY: BANASZAK PLOT SUBMITTED: 15-MAY-1992 09:10

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RESURFACING QUANTITIES											
LOCATION		LENGTH	END WIDTHS	INSIDE SHOULDER WIDTH	ROADWAY & OUTSIDE SHOULDER WIDTH	SURFACE AREA INSIDE SHOULDER	SURFACE AREA ROADWAY & OUTSIDE SHOULDER	446	446		
FROM	TO							CU YD	CU YD		
E.B. MAINLINE											
F	54+90.78	55+97.03	106.3	64.0	3.0	61.0	35.4	720.5	30.0	26.5	
	55+97.03	57+30	133	85.5	3.0	82.5	44.3	1219.2	101.6	44.5	
	57+30	57+79	49	62.0	3.0	59.0	16.3	321.2	26.7	11.9	
F	57+79	58+82.5	103.5	62.0	3.0	59.0	34.5	678.5	28.3	25.1	
F	61+13.75	62+20	106.3	70.5	3.5	67.0	41.3	791.0	33.0	29.3	
	62+20	62+48.58	28.6	79.0	3.5	75.5	11.1	239.8	20.0	8.8	
	62+48.58	63+48	99.5	50.0	3.5	46.5	38.7	514.1	42.8	19.6	
	63+48	64+06.43	58.4	49.5	3.5	46.0	22.7	298.5	24.9	11.4	
F	64+06.43	65+12.68	106.3	48.5	3.5	45.0	41.3	531.3	22.1	20.3	
F	68+16.12	69+22.37	106.3	49.5	3.5	46.0	41.3	543.1	22.6	20.7	
	69+22.37	69+75.25	52.9	49.5	3.5	46.0	20.6	270.2	22.5	10.3	
F	69+75.25	70+81.50	106.3	49.5	3.5	46.0	41.3	543.1	22.6	20.7	
F	73+94	75+00.25	106.3	61.0	3.5	57.5	41.3	678.8	28.3	25.4	
	75+00.25	76+85.5	185.3	61.0	3.5	57.5	72.0	1183.5	98.6	44.3	
	76+85.5	78+86.88	201.4	71.0	3.5	67.5	78.3	1510.4	125.9	56.2	
	78+86.88	80+09.31	122.4	49.0	3.5	45.5	47.6	619.0	51.6	23.6	
	80+09.31	83+09.31	300.0	50.5	5.0	45.5	166.7	1516.7	126.4	60.3	
	98+00	98+53.75	53.8	52.5	6.5	46.0	38.8	274.7	22.9	11.4	
*	98+53.75	99+10	56.3	52.5	6.5	46.0	40.6	287.5	12.0	18.4	
O	99+10	100+26	116.0	52.5	6.5	46.0	83.8	592.9		41.2	
*	100+26	100+87.25	56.3	52.5	6.5	46.0	40.6	287.5	12.0	18.4	
	100+87.25	102+00	117.3	52.5	6.5	46.0	84.7	599.3	49.9	24.8	
	102+00	104+45	245.0	76.0	6.5	69.5	176.9	1891.9	157.7	74.8	
	104+45	105+30	85.0	87.0	6.5	80.5	61.4	760.3	63.4	29.2	
	105+30	106+53.75	123.8	52.5	6.5	46.0	89.4	632.5	52.7	26.1	
*	106+53.75	107+10	56.3	52.5	6.5	46.0	40.6	287.5	12.0	16.0	
O	107+10	109+02	192.0	52.5	6.5	46.0	138.7	981.3		68.2	
TOTALS							1590.2	18774.3	1210.5	787.4	

RESURFACING QUANTITIES											
LOCATION		LENGTH	END WIDTHS	INSIDE SHOULDER WIDTH	ROADWAY & OUTSIDE SHOULDER WIDTH	SURFACE AREA INSIDE SHOULDER	SURFACE AREA ROADWAY & OUTSIDE SHOULDER	446	446		
FROM	TO							CU YD	CU YD		
*	109+02	109+58.25	56.3	52.0	6.5	46.0	40.6	287.5	12.0	16.4	
	109+58.25	112+33	274.8	52.0	6.5	46.0	198.4	1404.3	117.0	58.4	
	112+33	113+90	157.0	73.0	6.5	66.5	113.4	1160.1	96.7	45.8	
	113+90	120+10	620.0	64.5	6.5	58.0	447.8	3995.6	333.0	160.5	
	120+10	122+10	200.0	82.0	6.5	75.5	144.4	1677.8	139.8	65.2	
	122+10	125+40	330.0	52.5	6.5	46.0	238.3	1686.7	140.6	70.1	
	125+40	126+75	135.0	71	6.5	64.5	97.5	967.5	80.6	38.1	
	126+75	127+40	65.0	64.5	5.75	58.8	41.5	424.7	35.4	16.7	
	127+40	130+00	260.0	62.0	6.5	55.5	187.8	1603.3	133.6	64.8	
	130+00	132+21	221.0	57.0	6.5	50.5	159.6	1240.1	103.3	50.5	
	132+21	132+75	54.0	54.0	6.5	47.5	39.0	285.0	23.8	11.7	
	132+75	133+65	90.0	52.5	6.5	46.0	65.0	460.0	38.3	19.0	
	133+65	136+00	235.0	71.0	6.5	64.5	169.7	1684.2	140.4	66.7	
	136+00	139+94.14	394.1	64.5	6.5	58.0	284.7	2540.0	211.7	102.0	
	139+94.14	142+65	270.9	80.0	6.5	73.5	195.6	2212.0	184.3	86.3	
	142+65	151+00	835.0	54.5	6.5	48.0	603.1	4453.3	371.1	183.9	
	151+00	154+60	360.0	52.5	4.5	48.0	180.0	1920.0	160.0	75.4	
	154+60	156+48	188.0	58.5	4.5	54.0	94.0	1128.0	94.0	43.4	
	156+48	159+75	327.0	64.5	4.5	60.0	163.5	2180.0	181.7	83.6	
	159+75	161+00	125.0	74.0	4.5	69.5	62.5	965.3	80.4	36.3	
*	161+00	161+75	75.0	64.5	3.0	61.5	25.0	512.5	22.0	18.0	
	161+75	162+75	78.0	64.5	3.0	61.5	26.0	533.0		18.4	
	162+75	163+75	78.0	64.5	3.0	61.5	26.0	533.0		18.4	
	163+75	165+60	163.0	64.5	3.0	61.5	54.3	1113.8		38.4	
	165+60	166+43	61.0	64.5	3.75	60.75	25.4	411.8		14.2	
	166+43	167+18	53.0	64.5	4.5	60.0	26.5	353.3		12.2	
	167+18	167+68	28.0	64.5	4.5	60.0	14.0	186.7		6.4	
TOTALS							3723.6	35919.5	2699.7	1420.8	

RESURFACING QUANTITIES										
LOCATION		LENGTH	END WIDTHS	INSIDE SHOULDER WIDTH	ROADWAY & OUTSIDE SHOULDER WIDTH	SURFACE AREA INSIDE SHOULDER	SURFACE AREA ROADWAY & OUTSIDE SHOULDER	446	446	
FROM	TO							CU YD	CU YD	
	167+90	168+60	70.0	92.0	4.5	87.5	35.0	680.6	-	23.4
	168+60	169+18	58.0	64.5	4.5	60.0	29.0	386.7	-	13.3
	169+18	169+93	53.0	64.5	4.5	60.0	26.5	353.3	-	12.2
	170+15	170+93	78.0	64.5	3.75	60.75	32.5	526.5	-	18.2
	170+93	172+83.78	218.78	64.5	3.75	60.75	91.2	1476.8	-	51.2
F	172+83.78	173+15.08	31.3	64.5	3.75	60.75	13.0	210.9	-	7.3
TOTALS							465.7	3634.8		125.6
TOTALS THIS SHEET							5779.5	58328.6	3910	2334

F = FEATHER  
 \* = FEATHER 4 1/4" TO 2 1/2"  
 O = 2 1/2" 446 SURFACE COURSE  
 # = FEATHER 4 1/4" TO 1 1/4"

ITEM 407 - TACK COAT (FROM SURFACE AREAS)  
 (5779.5 + 58328.6) SY x 0.10 SY = 6411 GAL.



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PLOT SUBMITTED: 15-MAY-1992 10:02

PLOT SUBMITTED BY: BANASZAK

# RESURFACING QUANTITIES

CUYAHOGA COUNTY  
CUY-90-16.24

OHIO  
FHWA  
REGION 5  
FEDERAL  
PROJECT

18  
245

RESURFACING QUANTITIES										
LOCATION		LENGTH	END WIDTHS	INSIDE SHOULDER WIDTH	ROADWAY & OUTSIDE SHOULDER WIDTH	SURFACE AREA INSIDE SHOULDER	SURFACE AREA ROADWAY & OUTSIDE SHOULDER	446	446	
FROM	TO							CU YD	CU YD	
W.B. MAINLINE										
F	54+90.78	55+97.03	106.3	42.5	3.0	39.5	35.4	466.5	19.4	17.8
	55+97.03	57+79	182.0	50.0	3.0	47.0	60.7	950.4	79.2	35.7
F	57+79	58+82.25	103.3	62.0	3.0	59.0	34.4	676.9	28.2	25.0
F	61+13.75	62+48.58	134.8	49.5	3.5	46.0	52.4	689.1	28.7	26.3
	62+48.58	64+06.43	157.9	49.5	3.5	46.0	61.4	806.8	67.2	30.8
F	64+06.43	65+12.68	106.3	49.5	3.5	46.0	41.3	543.1	22.6	20.7
F	68+16.12	69+22.39	106.3	49.5	3.5	46.0	41.3	543.2	22.6	20.7
	69+22.39	69+75.25	52.9	49.5	3.5	46.0	20.6	270.3	22.5	10.3
F	69+75.25	70+81.5	106.3	49.5	3.5	46.0	41.3	543.1	22.6	20.7
F	73+94	75+00.25	106.3	76.0	3.5	72.5	41.3	855.9	35.7	31.5
	75+00.25	78+66.88	366.6	68.0	3.5	64.5	142.6	2627.5	219.0	98.2
	78+66.88	79+85.88	119.0	73.0	3.5	69.5	46.3	918.9	76.5	33.9
	79+85.88	108+20	2834.1	52.5	5.0	47.5	1574.5	14957.8	1246.5	595.9
	108+20	113+00	480.0	59.0	5.75	53.3	306.7	2842.7	236.9	112.8
	113+00	115+00	200.0	74.0	5.75	68.3	127.8	1517.8	126.5	58.5
	115+00	117+40	240.0	52.5	5.75	46.8	153.3	1248.0	104.0	50.4
	117+40	119+00	160.0	84.0	5.75	78.3	102.2	1392.0	116.0	53.3
	119+00	127+30	830.0	64.5	5.75	58.8	530.3	5422.7	451.9	214.0
	127+30	128+80	150.0	72.0	5.75	66.25	95.8	1104.2	92.0	42.7
	128+80	132+25	345.0	64.5	6.5	58.0	249.2	2223.3	185.3	89.3
	132+25	134+50	225.0	79.5	6.5	73.0	162.5	1825.0	152.1	71.2
	134+50	139+00	450.0	64.5	5.75	58.8	287.5	2940.0	245.0	116.0
	139+00	140+70	170.0	72.0	6.5	65.5	122.8	1237.2	103.1	48.6
	140+70	151+07.08	1037.0	54.5	5.3	49.2	610.7	5669.5	472.5	226.5
	151+07.08	153+65	258.0	59.5	4.5	55.0	129.0	1576.7	131.4	61.0
	153+65	154+91	126.0	84.0	4.5	79.5	63.0	1113.0	92.8	41.7
	154+91	160+95	604.0	64.5	3.75	60.8	251.7	4080.4	340.0	153.9
<b>TOTALS</b>							5386.0	59042.0	4740.2	2307.4

RESURFACING QUANTITIES										
LOCATION		LENGTH	END WIDTHS	INSIDE SHOULDER WIDTH	ROADWAY & OUTSIDE SHOULDER WIDTH	SURFACE AREA INSIDE SHOULDER	SURFACE AREA ROADWAY & OUTSIDE SHOULDER	446	446	
FROM	TO							CU YD	CU YD	
#	160+95	161+70	75.0	64.9	3.0	61.6	25.0	513.3	21.4	17.7
	161+70	166+90	520.0	64.5	3.75	60.8	216.7	3512.9	-	121.9
	166+90	167+40	50.0	72.0	4.5	67.5	25.0	375.0	-	12.9
	167+40	172+83.78	543.8	64.5	3.75	60.8	226.6	3673.7	-	127.5
	172+83.78	173+15.03	31.25	64.5	3.75	60.8	13.0	211.1	-	7.3
<b>TOTALS</b>							506.3	8286.0	21.4	287.3
<b>TOTALS THIS SHEET</b>							5892.3	67328.0	4762	2595

F = FEATHER  
 \* = FEATHER 4 1/4" TO 2 1/2"  
 O = 2 1/2" 446 SURFACE COURSE  
 # = FEATHER 4 1/4" TO 1 1/4"  
 ITEM 407 - TACK COAT(FROM SURFACE AREAS)  
 (5892.3 + 67328.0)SY x 0.10 <sup>GAL</sup>SY = 7322 GAL.



# RESURFACING QUANTITIES

CUYAHOGA COUNTY  
CUY-90-16.24

OHIO  
FHWA REGION 5  
FEDERAL PROJECT

18A  
245

## RESURFACING QUANTITIES

LOCATION		LENGTH	END WIDTHS	SURFACE AREA	826				
FROM	TO				ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE B	ASPHALT CONCRETE SURFACE COURSE, TYPE B			
LIN FT	SQ YDS	CU YD	CU YD						
RAMP E-1									
1+25	2+77	152.0	38.0	641.8	31.2	22.1			
RAMP E-2									
7+20	10+23	303.0	25.0	841.7	40.9	29.2			
RAMP E-3									
6+49	5+74	75.0	33.0	275.0	6.7	9.5			
5+74	2+56	318.0	33.0	1166.0	56.7	40.2			
2+56	2+03	53.0	37.0	217.9	10.6	7.6			
2+03	1+15	88.0	24.0	234.7	11.4	8.5			
1+15	0+40	75.0	17.0	141.7	3.4	4.9			
RAMP E-3 CONNECTION									
2+07	1+25	82.0	17.0	154.9	7.5	5.4			
1+25	0+50	75.0	19.0	158.3	3.8	5.5			
RAMP E-4									
2+62	2+93	31.0	25.0	86.1	2.1	3.0			
2+93	8+45	552.0	25.0	1533.3	74.5	53.3			
8+45	9+20	75.0	20.0	166.7	4.1	5.8			
RAMP E-5									
12+25	11+50	75.0	28.0	233.3	5.7	8.1			
11+50	9+61	189.0	38.0	798.0	38.8	27.7			
9+61	2+50	711.0	27.0	2133.0	103.7	74.1			
2+50	2+10	40.0	43.5	193.3	9.4	6.7			
RAMPE-6									
1+98	2+30	32.0	32.5	115.6	5.6	4.0			
2+30	4+48	218.0	32.5	787.2	38.3	27.3			
4+48	5+68	120.0	50.0	666.7	32.4	23.1			
5+68	8+22	254.0	30.0	846.7	41.2	29.4			
8+22	9+63	141.0	26.0	407.3	19.8	14.1			
9+63	10+38	75.0	18.0	150.0	3.6	5.2			
RAMP E-7									
1+37	2+12	75.0	27.0	225.0	5.5	7.8			
RAMPE-8									
11+00	11+75	75.0	20.0	166.7	4.1	5.8			
TOTALS					561.0	428.3			

## RESURFACING QUANTITIES

LOCATION		LENGTH	END WIDTHS	SURFACE AREA	826				
FROM	TO				ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE B	ASPHALT CONCRETE SURFACE COURSE, TYPE B			
LIN FT	SQ YDS	CU YD	CU YD						
RAMP E-10									
3+92	4+67	75.0	37.0	308.3	8.0	10.7			
4+67	7+45	278.0	37.0	1142.9	55.6	39.7			
7+45	8+19	74.0	37.0	304.2	7.4	10.6			
RAMP E-11									
1+98	2+31	33.0	27.0	99.0	24.0	3.4			
2+31	4+66	235.0	27.0	705.0	34.3	24.5			
4+66	5+55	89.0	27.0	267.0	13.0	9.3			
5+55	6+65	110.0	27.0	330.0	8.0	11.5			
RAMP E-11 CONNECTION									
6+00	6+75	75.0	20.0	166.7	4.1	5.8			
RAMP E-13									
0+26	1+01	75.0	63.0	525.0	12.8	18.2			
1+01	1+21	20.0	31.0	68.9	3.3	2.4			
1+21	4+64	343.0	25.5	971.8	47.2	33.7			
4+64	4+96	32.0	25.0	88.9	4.3	3.1			
RAMPE-16									
1+82	4+87	305.0	27.0	915.0	44.5	31.8			
4+87	5+11	24.0	27.5	73.3	3.6	2.5			
5+11	5+85	74.0	28.0	230.2	11.2	8.0			
5+85	6+51	66.0	28.0	205.3	5.0	7.1			
SB E. 14TH ST.									
0+30	1+05	75.0	104.0	866.7	21.1	30.1			
1+05	2+10	105.0	61.0	711.7	34.5	24.7			
2+10	2+93	83.0	37.5	345.8	16.8	12.0			
2+93	6+72	379.0	35.0	1473.9	71.6	51.2			
6+72	7+85	113.0	44.0	552.4	26.9	19.2			
7+85	11+27	342	24.0	912.0	44.3	31.7			
11+27	12+03	76.0	24.0	202.7	4.9	7.0			
SB SCOVILLE									
1+05	1+81	76.0	26.0	219.6	5.3	7.6			
TOTALS					511.7	405.8			

## RESURFACING QUANTITIES

LOCATION		LENGTH	END WIDTHS	SURFACE AREA	826				
FROM	TO				ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE B	ASPHALT CONCRETE SURFACE COURSE, TYPE B			
LIN FT	SQ YDS	CU YD	CU YD						
RAMP NO.3									
3+30	3+61	31.0	32.0	110.2	2.7	3.8			
3+61	8+30	469.0	32.0	1667.6	81.1	57.9			
8+30	8+80	50.0	28.0	155.6	3.8	5.4			
RAMP NO.4									
1+57	1+88	31.0	26.0	89.6	2.2	3.1			
1+88	7+72	584.0	26.0	1687.1	82.0	58.6			
7+72	8+47	75.0	37.0	308.3	7.5	10.7			
RAMP NO.5									
0+89	1+20	31.0	27.0	93.0	2.3	3.2			
1+20	5+79	459.0	27.0	1377.0	66.9	47.8			
5+79	6+54	75.0	25.0	208.3	5.1	7.2			
RAMP NO.6									
1+55	1+80	25.0	32.0	88.9	2.2	3.1			
1+80	6+50	470.0	32.0	1671.1	81.2	58.0			
6+50	6+65	15.0	30.0	50.0	2.4	1.7			
6+65	7+40	75.0	30.0	250.0	6.1	8.7			
TOTALS					345.5	269.2			
TOTALS THIS SHEET					1418.2	1103.3			

F = FEATHER

\* = FEATHER 4 1/4" TO 2 1/2"

O = 2 1/2" 446 SURFACE COURSE

# = FEATHER 4 1/4" TO 1 1/4"

ITEM - 407 TACK COAT (FROM SURFACE COURSE)

1103.3 C.Y. x  $\frac{1.25 \text{ IN}}{\text{FT}}$  x  $\frac{3 \text{ FT}}{1 \text{ YD}}$  x 0.10  $\frac{\text{GAL}}{\text{SY}}$  = 414 GAL.



# RESURFACING QUANTITIES

CUYAHOGA COUNTY  
 CUY-90-16.24

OHIO  
 FHWA REGION 5  
 FEDERAL PROJECT



PLOT SUBMITTED: 15-MAY-1992 12:37

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PLOT SUBMITTED BY: BANASZAK

RESURFACING QUANTITIES								
LOCATION		LENGTH	END WIDTHS	SURFACE AREA	826	826		
FROM	TO				ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE B	ASPHALT CONCRETE SURFACE COURSE, TYPE B		
		LIN FT	SQ YDS	CU YD	CU YD			
RAMP NO. 7								
F	2+08	2+39	31.0	32.0	110.2	2.7	3.8	
	2+39	7+27	488.0	32.0	1735.1	84.3	60.2	
	7+27	7+35	8.0	30.0	26.7	1.3	0.9	
F	7+35	8+10	75.0	34.0	283.3	6.9	9.8	
RAMP NO. 8								
F	1+35	1+67	32.0	26.0	92.4	2.2	3.2	
	1+67	6+30	463.0	26.0	1337.6	65.0	46.4	
F	6+30	7+05	75.0	26.0	216.7	5.3	7.5	
RAMP NO. 9								
F	2+35	2+66	31.0	24.0	82.7	2.0	2.9	
	2+66	8+35	569.0	24.0	1517.3	73.8	52.7	
F	8+35	9+10	75.0	32.0	266.7	13.0	9.3	
RAMP NO. 10								
F	1+55	1+86	31.0	26.0	89.6	2.2	3.1	
	1+86	5+09	323.0	26.0	933.1	45.4	32.4	
	5+09	6+67	158.0	18.0	316.0	15.4	11.0	
F	6+67	7+42	75.0	31.0	258.3	6.3	9.0	
RAMP NO. 10 CHESTER CONN.								
	5+09	6+37	128.0	17.0	241.8	11.8	8.4	
	6+37	7+80	143.0	26.0	413.1	20.1	14.3	
F	7+80	8+55	75.0	26.0	216.7	5.3	7.5	
RAMP NO. 11								
F	2+25	2+56	31.0	32.0	110.2	2.7	3.8	
	2+56	8+17	561.0	32.0	1994.7	97.0	69.3	
F	8+17	8+92	75.0	30.0	250.0	6.1	8.7	
TOTALS					468.8	364.2		

RESURFACING QUANTITIES								
LOCATION		LENGTH	END WIDTHS	SURFACE AREA	826	826		
FROM	TO				ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE B	ASPHALT CONCRETE SURFACE COURSE, TYPE B		
		LIN FT	SQ YDS	CU YD	CU YD			
RAMP NO. 12								
F	2+71	3+02	31.0	32.0	110.2	2.7	3.8	
	3+02	4+06	104.0	32.0	369.8	18.0	12.8	
	4+06	5+25	119.0	46.0	608.2	29.5	21.1	
	5+25	7+15	190.0	32.0	675.6	32.8	23.5	
F	7+15	7+90	75.0	32.0	266.7	6.5	9.3	
E. 30TH ST.								
	5+25	6+22	97.0	33.0	355.7	17.3	12.4	
	6+22	7+74	152.0	32.0	540.4	26.3	18.8	
F	7+74	8+49	75.0	38.0	316.7	7.7	11.0	
RAMP NO. 13								
F	1+70	2+01	31.0	24.0	82.7	2.0	2.9	
	2+01	7+25	524.0	24.0	1397.3	67.9	48.5	
	7+25	8+00	75.0	32.0	266.7	13.0	9.3	
F	ALABAMA CT. LT. 0+00	0+50	50.0	16.0	88.9	2.2	3.1	
F	ALABAMA CT. RT. 0+00	0+50	50.0	16.0	88.9	2.2	3.1	
RAMP NO. 14								
F	2+26	2+52	26.0	24.0	69.3	1.7	2.4	
	2+52	3+75	123.0	24.0	328.0	15.9	11.4	
	3+75	4+66	91.0	41.0	414.6	20.2	14.4	
	4+66	7+10	244.0	24.0	650.7	31.6	22.6	
F	7+10	7+85	75.0	24.0	200.0	4.9	6.9	
E. 26TH ST.								
	4+66	6+20	154.0	24.0	410.7	20.0	14.3	
F	6+20	6+95	75.0	17.0	141.7	3.4	4.9	
RAMP NO. 15								
	1+88	2+19	31.0	22.5	77.5	3.8	2.7	
	2+19	3+26	107.0	22.5	267.5	13.0	9.3	
	3+26	7+31	405.0	24.0	1080.0	52.5	37.5	
F	7+31	8+06	75.0	45.0	375.0	9.1	13.0	
TOTALS					404.2	319.0		

RESURFACING QUANTITIES								
LOCATION		LENGTH	END WIDTHS	SURFACE AREA	826	826		
FROM	TO				ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE B	ASPHALT CONCRETE SURFACE COURSE, TYPE B		
		LIN FT	SQ YDS	CU YD	CU YD			
RAMP NO. 16								
F	1+36	1+67	31.0	20.5	70.6	1.7	2.6	
	1+67	2+32	65.0	20.5	148.1	7.2	5.1	
	2+32	5+99	367.0	24.0	978.7	47.6	34.0	
	5+99	7+48	149.0	29.5	488.4	23.7	17.0	
	7+48	9+00	152.0	16.0	270.2	13.1	9.4	
F	9+00	9+75	75.0	16.0	133.3	3.2	4.6	
E. 33RD ST.								
	7+49	9+55	206.0	16.0	366.2	17.8	12.7	
F	9+55	10+30	75.0	16.0	133.3	3.2	4.6	
RAMP NO. 17								
F	1+14	1+58	44.0	19.5	95.3	2.3	3.3	
	1+58	3+37	179.0	19.5	387.8	18.9	13.4	
	3+37	8+21	484.0	24.0	1290.7	62.7	44.8	
F	8+21	8+96	75.0	36.0	300.0	7.3	10.4	
TOTALS					208.7	161.8		
TOTALS THIS SHEET					1082	845		

F = FEATHER

ITEM - 407 TACK COAT (FROM SURFACE COURSE)  
 $845 \text{ C.Y.} \times \frac{1.25 \text{ IN}}{\text{FT}} \times \frac{3 \text{ FT}}{\text{YD}} \times 0.10 \frac{\text{GAL}}{\text{SY}} = 317 \text{ GAL.}$



# RESURFACING QUANTITIES

CUYAHOGA COUNTY  
 CUY-90-16.24

OHIO  
 FHWA REGION 5  
 FEDERAL PROJECT

19  
 245

## RESURFACING QUANTITIES

LOCATION	LENGTH	END WIDTHS	SURFACE AREA	826	826			
				ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE B	ASPHALT CONCRETE SURFACE COURSE, TYPE B			
FROM	TO	LIN FT	SQ YDS	CU YD	CU YD			
RAMP NO. 18								
F 1+62	2+06	44.0	24.0	117.3	2.9	4.1		
	2+06	6+50	444.0	24.0	1184.0	57.6	41.1	
	6+50	7+48	98.0	37.0	402.9	19.6	14.0	
	7+48	7+90	42.0	25.0	116.7	5.7	4.1	
	7+90	9+38	148.0	24.0	394.7	19.2	13.7	
	9+38	10+05	67.0	62.0	461.6	22.4	16.0	
F 10+05	10+80	75.0	65.0	541.7	13.2	18.8		
E. 33RD ST.-KING ST. CONN.								
F 7+48	7+88	40.0	17.0	75.6	3.7	2.6		
F 7+88	8+63	75.0	17.0	141.7	3.4	4.9		
E. 33RD ST.								
F 1+40	2+75	135.0	24.0	360.0	17.5	12.5		
F 2+75	3+50	75.0	24.0	200.0	4.9	6.9		
LANE A								
F 0+20	0+95	75.0	51.0	425.0	10.3	14.8		
	0+95	1+97	102.0	43.0	487.3	23.7	16.8	
	1+97	2+17	20.0	22.0	48.9	2.4	1.7	
	2+17	6+05	388.0	24.0	1034.7	50.3	35.9	
	6+05	7+24	119.0	25.0	330.6	16.1	11.5	
F 7+24	7+99	75.0	30.0	250.0	6.1	8.7		
RAMP W2								
F 8+45	7+70	75	20.0	166.7	4.1	5.8		
F 8+45	7+70	75	24.0	200.0	4.9	6.9		
	7+70	9+35	165.0	38.0	696.7	33.9	24.2	
	9+35	8+97	38.0	41.0	173.1	8.4	6.0	
	8+97	8+77	20.0	31.0	68.9	3.3	2.4	
	8+77	7+13	164.0	34.0	619.6	30.1	21.5	
	7+13	6+93	20.0	31.0	68.9	3.3	2.4	
	6+93	6+11	82.0	29.0	264.2	12.8	9.2	
TOTALS					379.8	306.5		

## RESURFACING QUANTITIES

LOCATION	LENGTH	END WIDTHS	SURFACE AREA	826	826			
				ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE B	ASPHALT CONCRETE SURFACE COURSE, TYPE B			
FROM	TO	LIN FT	SQ YDS	CU YD	CU YD			
RAMP W2 (CONT.)								
F 6+11	5+47	64.0	46.0	327.1	7.9	11.4		
RAMP W1								
F 1+97	3+21	124.0	25.0	344.4	16.7	12.0		
	3+21	3+41	20.0	27.0	60.0	2.9	2.1	
	3+41	5+77	236.0	30.0	786.7	38.2	27.3	
F 5+77	6+52	75.0	32.0	266.7	6.5	9.3		
LANE B								
F 5+45	4+42	103.0	16.0	183.1	8.9	6.4		
	4+42	4+22	20.0	21.0	46.7	2.3	1.6	
	4+22	2+60	162.0	24.0	432.0	21.0	15.0	
	2+60	2+40	20.0	21.0	46.7	2.3	1.6	
	2+40	0+95	145.0	18.0	290.0	14.1	10.1	
F 0+95	0+20	75.0	18.0	150.0	3.6	5.2		
RAMP W3								
F 2+13	2+95	82.0	26.0	236.9	11.5	8.2		
	2+95	4+40	145.0	25.0	402.8	19.6	14.0	
	4+40	4+97	57.0	36.0	228.0	11.1	7.9	
F 4+97	5+72	75.0	19.0	158.3	3.8	5.5		
F 4+97	5+30	33.0	19.0	69.7	1.7	2.4		
TOTALS					172.1	140.0		
TOTALS THIS SHEET					552	447		

F = FEATHER

ITEM - 407 TACK COAT (FROM SURFACE COURSE)

$447 \text{ C.Y.} \times \frac{1.25 \text{ IN}}{\text{FT}} \times \frac{3 \text{ FT}}{\text{YD}} \times 0.10 \frac{\text{GAL}}{\text{SY}} = 168 \text{ GAL.}$

PLOT SUBMITTED: 15-MAY-1992 13:57

PLOT SUBMITTED BY: BANASZAK

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# GUARDRAIL QUANTITIES

CUYAHOGA COUNTY  
CUY-90-16.24

OHIO	21
FHWA REGION 5	245
FEDERAL PROJECT	

## GUARDRAIL QUANTITIES

REFERENCE NO.	SHEET NO.	STREET OR RAMP	LOCATION				DIRECTION	SIDE	202		606						622		203	448	
			EXISTING		PROPOSED				GUARDRAIL REMOVED	GUARDRAIL, TYPE 5	THREE BEAM	ANCHOR ASSEMBLY, TYPE A	TAPER LENGTH	ANCHOR ASSEMBLY, TYPE T	BTA, TYPE 2	BTA, TYPE 4, AS PER PLAN	CONCRETE BARRIER, TYPE D, APP	LINEAR GRADING	ASPHALT CONCRETE AS PER PLAN	INFORMATIONAL PURPOSES SOIL STERILANT	
			FROM	TO	FROM	TO			LIN. FT.	LIN. FT.	EACH	EACH	FEET	EACH	EACH	EACH	LIN. FT.	LIN. FT.	CU. YD.	SQ. YD.	
G-59	58		165+80	167+11.25	165+80	167+30	WB	LT	131.25	125								175	6.5	77.8	
G-60	58		166+03	2+37	166+03	168+35	EB	RT	343.75	169.5	50							235	8.7	104.4	
G-61	58-59		169+31.75	170+63	169+13	170+63	EB	RT	131.25	125								175	6.5	77.8	
G-62	59		171+73	75+29.25	171+73	172+13	EB	RT	206.25	40								40	1.5	17.8	
G-62	59		171+73	75+29.25	172+60	74+34	EB	RT		174								174	6.4	77.3	
G-63	59		171+80	172+89.25	171+80	172+32	WB	RT	109.25	77								77	2.9	34.2	
G-63	59				172+64	172+89	WB	RT	25	25								25	0.9	11.1	
G-64	50	LANE A	1+42.50	3+42.50			WB	RT	200												
G-65	50	W-1	3+27.95	6+77.95	3+27.95	6+77.95	WB	RT	350	325								350	13.0	155.6	
G-66	50	W-1	0+92.50	5+80.00	0+92.50	5+80	WB	LT	487.50	462.50								487.5	18.1	216.7	
G-67	50	W-2	5+19.50	7+94.50	5+19.50	7+94.50	EB	LT	275	212.50	50							275	10.2	122.2	
G-68	50	W-2	6+11.02	8+86.02	6+11.02	7+98.50	EB	RT	275	150								187.5	6.9	83.3	
G-69	50	W-3	2+11.02	3+73.52	2+11.02	3+48.52	EB	LT	162.50	100								137.5	5.1	61.1	
G-70	50	W-3	1+19.50	3+00.75	1+19.50	1+82.0	EB	RT	181.25	31.25	50							62.5	2.3	27.8	
<b>TOTALS</b>									<b>2878</b>	<b>2016.75</b>	<b>150</b>	<b>4/2*</b>		<b>5</b>		<b>6</b>	<b>8</b>		<b>2401</b>	<b>89</b>	<b>1067</b>

\* AS PER PLAN  
SEE SHEET 66 FOR DETAILS.

24 STA.

PLOTTED FROM: c:\dgn\pi07090\07090gbj.dgn

PLOT SUBMITTED: 28-MAY-1992 08:18

07090GBJ.dgn

PLOT SUBMITTED BY: Lennon

# CURB QUANTITIES

LOCATION		SIDE	202		609	
			CURB REMOVED	INTEGRAL CURB REMOVED	CURB TYPE 6, AS PER PLAN, TYPE 1	CURB TYPE 6, AS PER PLAN, TYPE 2
FROM	TO		LIN FT	LIN FT	LIN FT	LIN FT
RAMP W-1						
1+97	3+32	RT	135		135	
RAMP W-2						
8+97	12+32	RT	335		335	
5+20	8+97	LT	377		377	
LANE A						
0+00	1+97	RT	214			214
3+25	6+05	LT	280			280
6+05	7+69	LT		164		164
7+69	7+99	LT	35			35
7+69	7+99	RT	30			30
LANE B						
0+10	2+40	RT	230			230
2+50	6+48	LT	398			398
RAMP E-1						
1+42	1+82	RT	40		40	
RAMP E-2						
9+93	10+35	RT	42		42	
RAMP E-3						
1+00	2+04	RT	104		104	
0+20	1+00	RT	80		80	
RAMP E-16						
4+65	6+50	LT	185		185	
1+85	2+85	RT	100		100	
RAMP E-11						
2+47	6+26	LT	379			
S.B. E14th						
2+10	12+03	RT	993			993
<b>TOTALS</b>			<b>3957</b>	<b>164</b>	<b>1398</b>	<b>2344</b>

LOCATION		SIDE	202		609	
			CURB REMOVED	INTEGRAL CURB REMOVED	CURB TYPE 6, AS PER PLAN, TYPE 1	CURB TYPE 6, AS PER PLAN, TYPE 2
FROM	TO		LIN FT	LIN FT	LIN FT	LIN FT
7+85	12+03	LT	418			418
0+60	7+85	LT	725			725
RAMP NO.3						
4+25	8+80	LT	455		455	
RAMP NO.5						
107+63	113+20	RT	557		557	
RAMP NO.6						
3+65	7+11	LT	346		346	
RAMP NO.7						
4+80	8+06	LT	326		326	
RAMP NO.8						
127+14	133+09	RT	595		595	
RAMP NO.13						
* 6+00	8+07	RT	215		215	
RAMP NO.14						
4+69	7+65	RT	296		296	
2+90	8+00	LT	510		510	
RAMP NO.14A						
0+91	7+00	RT	609		609	
RAMP NO.15						
1+28	8+07	LT	679		679	
2+90	8+07	RT	517		517	
RAMP NO.16						
1+55	10+26	LT	871		871	
4+15	9+50	RT	535		535	
RAMP NO.17						
2+00	8+83	LT	683		683	
5+65	8+83	RT	318		318	
RAMP NO.18						
1+75	10+20	RT	845		845	
E.B. SCOVILL						
1+05	1+75	RT	70			70
1+05	1+56	LT	51			51
<b>TOTALS</b>			<b>9621</b>	<b>164</b>	<b>8357</b>	<b>1264</b>
<b>GRAND TOTAL</b>			<b>13,578</b>	<b>164</b>	<b>9755</b>	<b>3608</b>

\* CURB REPLACED TO DETER PARKING ALONG RAMP NO. 13, SHALL HAVE 6" REVEAL.

CURB TO BE REPLACED IS FOR DRAINAGE ONLY. CURB MARKED ≠ IS FOR DRAINAGE IN PROPOSED WIDENED AREAS. NO WORK SHALL BE DONE ON ANY OTHER CURB UNLESS DIRECTED BY THE ENGINEER. CURB REVEAL SHALL BE 4" ON ALL NEW CURB.



# SUB-SUMMARIES

WIDENEING QUANTITIES						
LOCATION		305	304	202	252	
		9" CONCRETE BASE, AS PER PLAN	AGGREGATE BASE, AS PER PLAN		PAYEMENT REMOVED	FULL DEPTH PAYEMENT SAWING
FROM	TO	SQ YD	CU YD	SQ YD	LIN FT	
RAMP E-11						
2+98	3+18			2	22	
3+90.04	6+23			134	244	
2+98	6+26.30	366	64			
RAMP NO. 5						
111+00	113+00			133	212	
108+20	113+00	853	147			
RAMP NO. 8						
127+40.91	128+80.91			93	152	
127+40.91	132+80.91	853	147			
RAMP NO. 13						
5+31.43	6+07.76			21	90	
2+82	6+07.76	440	186			
TOTALS						
		2512	544	383	720	

CONCRETE SHOULDER REPLACEMENT						
STATION		SHOULDER WIDTH	305	203		
			9" CONCRETE BASE, AS PER PLAN	EXCAVATION N/EMBANKMENT CONSTRUCTION		
FROM	TO	F.T.	SQ.YD.	CU.YD.		
E.B.						
57+10	62+00	10	222.2	55.6		
62+80	64+85	10	227.7	56.9		
68+25	70+60	10	261.1	65.3		
W.B.						
55+00	58+55	10	422	105.5		
61+40	62+00	10	66.7	16.7		
62+00	64+85	10	316.6	79.2		
68+50	70+50	10	222.2	55.6		
RAMP E-13						
1+00	5+00	10	444.4	111.1		
1+00	4+00	3	100	25		
RAMP E-9						
1+00	4+50	8	311.1	77.8		
1+00	4+50	3	116.6	29.2		
WB						
74+00	80+00	10	666.6	166.7		
TOTALS						
			3377	845		

PLOT SUBMITTED: 08-JUN-1992 15:21

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PLOT SUBMITTED BY: ulman

# SUB - SUMMARIES

SHEET NO.	EARTHWORK RECAP		
	ITEM 203- EXCAVATION NOT INCLUDING EMBANK. CONST.	ITEM 203- EMBANKMENT, A.P.P.	ITEM 659 SEEDING AND MULCHING, A.P.P.
	CU. YD.	CU. YD.	SQ. YD.
96	105	316	995
97	25	1	98
98	142	60	413
99	135	106	325
100	127	107	245
101	108	128	303
102	94	134	375
103	0	4	66
104	25	103	863
105	28	17	287
106	287	70	802
107	83	24	516
<b>TOTALS</b>	<b>1159</b>	<b>1070</b>	<b>5288</b>

PRESSURE RELIEF JOINTS	
STATION	ITEM SPECIAL- PRESSURE RELIEF JOINT, TYPE A
	LIN. FT.
57+50	120*
64+00	100*
69+50	105*
75+00	140*
82+00	105*
106+00	85
116+00	95
125+00	100
143+00	90
153+00	90
163+00	105
74+00	85
<b>TOTALS</b>	<b>1220</b>

PRESSURE RELIEF JOINTS	
STATION	ITEM SPECIAL- PRESSURE RELIEF JOINT, TYPE C
	LIN. FT.
HAMILTON	
5+60	34
7+85	34
LAKESIDE	
6+07	40
9+24	40
<b>TOTALS</b>	<b>148</b>

INTERSECTION LOCATION	QUANTITY	CURB RAMPS				
		ITEM 202- CURB REMOVED	ITEM 202- WALK REMOVED	ITEM 608- CURB RAMP TYPE 1	ITEM 608- CURB RAMP TYPE 2	ITEM 608- CURB RAMP TYPE 2
		LIN. FT.	SQ. FT.	SQ. FT.	EACH	SQ. FT.
ABBEY AVE.	8	52	240	120	2	120
FAIRFIELD AVE.	6	36	180			180
LANE A	2	12	60			60
LANE B	2	12	60			60
RAMP E1	2	12	60			60
RAMP E2	2	6	60			60
RAMP E6	2	6	60			60
RAMP E11	3	12	90			90
RAMP NO.4	2	6	60			60
RAMP NO.5	2	6	60			60
RAMP NO.6	2	6	60			60
RAMP NO.10	1	6	30			30
RAMP NO.11	1	6	30			30
RAMP NO.12A	2		120	120		
RAMP NO.14A	2	12	60			60
RAMP NO.16	2	12	60			60
<b>TOTALS</b>	<b>41</b>	<b>202</b>	<b>1290</b>	<b>240</b>	<b>2</b>	<b>1050</b>

\* INCLUDES WIDTH OF SHOULDER

ITEM 653-TOP SOIL FURNISHED AND PLACED FROM ITEM 659-SEEDING AND MULCHING 5288 S.Y. x 3" / 12 / 3 = <span style="float: right;">441 C.Y.</span>
ITEM 659-AGRICULTURAL LIMING FROM ITEM 659-SEEDING AND MULCHING 5288 S.Y. x 100 LB. x 9 / (1000 S.F. x 2000 LB. / TON) = <span style="float: right;">2.38 TON</span>
ITEM 659-FERTILIZER FROM ITEM 659-SEEDING AND MULCHING 5288 S.Y. x 20 LB. x 9 / (1000 S.F. x 2000 LB. / TON) = <span style="float: right;">0.48 TON</span>
ITEM 659-WATER FROM ITEM 659-SEEDING AND MULCHING 5288 S.Y. x 240 GAL. / S.F. x (9 S.F. / S.Y.) / (1000 x 1000) = <span style="float: right;">11 M.GAL.</span> <small>QUANTITY CARRIED TO SHT. 11</small>

PIER PROTECTION				
SHEET No.	BRIDGE N <sup>o</sup>	ITEM 203 - EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	ITEM 202- CONCRETE REMOVED	ITEM 511 - CLASS C CONCRETE
		CU. YD.	CU. YD.	CU. YD.
56	CUY-90-1749	16.6		42.1
57	CUY-90-1786	13.1	0.4	45.9
59	CUY-90-1815	6.2		15.7
<b>TOTALS</b>		<b>36</b>	<b>1</b>	<b>104</b>

MEDIANS						
SHEET No.	LOCATION	ITEM 202- MEDIAN REMOVED	ITEM 612- CONCRETE MEDIAN	ITEM 301- BITUMINOUS AGGREGATE BASE, AC-20	ITEM 304- AGGREGATE BASE, AS PER PLAN	ITEM 305- 9" CONCRETE BASE, AS PER PLAN
		SQ. YD.	SQ. YD.	CU. YD.	CU. YD.	SQ. YD.
50	A	56	56	14		
50	B	10			2	3
50	C *	13			3	4
50	D *	27	27	7		
50	E	50	50	13		
52	F	13	13			
<b>TOTALS</b>		<b>169</b>	<b>146</b>	<b>34</b>	<b>5</b>	<b>7</b>

\* NOTE: EXISTING MEDIAN "C" & "D" IS ONE MEDIAN  
PROPOSED MEDIAN IS ONLY "D"













































# TRAFFIC CONTROL QUANTITIES

CUYAHOGA COUNTY  
CUY-90-16.24

OHIO

FHWA  
REGION 5

FEDERAL  
PROJECT

39  
245

PHASE 1- 2 RAMPS				PAVEMENT MARKINGS																														
	RAMP	LENGTH	WHITE EDGE LINE, CLASS I		YELLOW EDGE LINE, CLASS I		WHITE EDGE LINE, CLASS I, 740.05, TYPE C		YELLOW EDGE LINE, CLASS I, 740.05, TYPE C		LANE LINE, CLASS I		LANE LINE, CLASS I, 740.05, TYPE C		CHANNELIZING LINE, CLASS I		CHANNELIZING LINE, CLASS I, 740.05, TYPE C		TRANSVERSE LINE, CLASS I		TRANSVERSE LINE, CLASS I, 740.05, TYPE C		DOTTED LINE, CLASS I		DOTTED LINE, CLASS I, 740.05, TYPE C		STOP LINE, CLASS I		STOP LINE, CLASS I, 740.05, TYPE C					
			LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT				
	LANE A	779	1558	1558											200				120															
	W1	455	910	910																														
	W2	703	1406	1406											200				120															
	W3	392	784	784																														
	LANE B	525	1050	1050																														
PHASE 1-2																																		
	RAMP E-9						1280	1170																										
	RAMP E-10						1705	1375																										
	RAMP E-13						1300	1100							100																			
PHASE 1- 2 HAMILTON & LAKESIDE AVE.																																		
	HAMILTON PHASE 1	34																																
	HAMILTON PHASE 2	34																																
	LAKESIDE PHASE 1	40																																
	LAKESIDE PHASE 2	40																																
TOTALS THIS SHEET			5708	5708	4285	3645									500				240															
			11416=2.16mi		7930=1.50mi																													

PLOTTED BY: BANASZAK  
 PLOTTED FROM: c:\dgn\p1d07090\07090tsr.dgn  
 FILENAME: dgn  
 PLOT SUBMITTED: 01-JUN-1992 07:57







# GENERAL SUMMARY

CUYAHOGA COUNTY  
CUY-90-16.24

OHIO

FHWA  
REGION 5

FEDERAL  
PROJECT

42  
245

I-FEDERAL AND STATE II-100% STATE

PLOT SUBMITTED: 11-JUN-1992 11:15  
PLOT BY: lennon  
PLOT FROM: c:\dgn\p\d07090\p\d07090gd.dgn

ITEM	SHEET NUMBER										PARTICIPATION		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN SHEET REF.			
	11	12	24	25	26	27	28	29	30	70	I	II									
- DRAINAGE -																					
SPECIAL		11,500													11,500		SPECIAL 20270100	11,500	LIN. FT.	PIPE CLEANOUT, 12"	
SPECIAL		3,800													3,800		SPECIAL 20270100	3,800	LIN. FT.	PIPE CLEANOUT, 15"	
SPECIAL		800													800		SPECIAL 20270100	800	LIN. FT.	PIPE CLEANOUT, 18"	
SPECIAL		300													300		SPECIAL 20270100	300	LIN. FT.	PIPE CLEANOUT, 21"	
SPECIAL		100													100		SPECIAL 20270100	100	LIN. FT.	PIPE CLEANOUT, 24"	
SPECIAL		300													300		SPECIAL 20270100	300	LIN. FT.	PIPE CLEANOUT, 27"	
SPECIAL		1,200													1,200		SPECIAL 20270100	1,200	LIN. FT.	PIPE CLEANOUT, 36"	
SPECIAL		2,500													2,500		SPECIAL 20270100	2,500	LIN. FT.	PIPE CLEANOUT, 42"	
SPECIAL		1,100													1,100		SPECIAL 20270100	1,100	LIN. FT.	PIPE CLEANOUT, 48"	
SPECIAL		400													400		SPECIAL 20270100	400	LIN. FT.	PIPE CLEANOUT, 54"	
SPECIAL		1,000													1,000		SPECIAL 51267502	1,000	SQ.YD.	SEALING OF CONCRETE SURFACE (EPOXY)	
603					40	90	40	80	90						340		603 01400	340	LIN.FT.	6" CONDUIT, TYPE E	
603	100			1,600											1,700		603 01500	1,700	LIN.FT.	6" CONDUIT, TYPE F, 707.17 NON-PERFORATED, ASTM D3034, SDR 35, SS 931 OR SS 944	
603					52	80	104	88	32		8				364		603 04400	364	LIN.FT.	12" CONDUIT, TYPE B, 706.01, 706.02, OR 706.08	
603					152	64	52	68	160						496		603 04600	496	LIN.FT.	12" CONDUIT, TYPE C, 706.01, 706.02, OR 706.08	
603					24	8	147	4							183		603 05900	183	LIN.FT.	15" CONDUIT, TYPE B, 706.01, 706.02, OR 706.08	
603					12	24	8		12						56		603 06100	56	LIN.FT.	15" CONDUIT, TYPE C, 706.01, 706.02, OR 706.08	
603								4	4						8		603 07400	8	LIN.FT.	18" CONDUIT, TYPE B, 706.01, 706.02, OR 706.08	
603						4									4		603 07600	4	LIN.FT.	18" CONDUIT, TYPE C, 706.01, 706.02, OR 706.08	
604											1				1		604 00701	1	EACH.	CATCH BASIN NO.3A WITH V-GRATE, AS PER PLAN	12
604					15	7	7	6	5						40		604 01601	40	EACH.	CATCH BASIN, NO.5, AS PER PLAN, A	12
604					1	14	20	16	14						65		604 01601	65	EACH.	CATCH BASIN, NO.5, AS PER PLAN, B	12
604					7	1									8		604 09001	8	EACH.	CATCH BASIN ADJUSTED TO GRADE, AS PER PLAN	11
604						2									2		604 15150	2	EACH.	INLET, NO. 3D	
604					7	4			1						12		604 17501	12	EACH.	INLET, NO. 2-A-6, AS PER PLAN	11
604					1	1	5	10	7						24		604 17901	24	EACH.	INLET, NO. 2-A-8, AS PER PLAN	11
604					6	1									7		604 18301	7	EACH.	INLET, NO. 2-A-10, AS PER PLAN	11
604							2								2		604 19101	2	EACH.	INLET, NO. 2-A-14, AS PER PLAN	11
604						1									1		604 20301	1	EACH.	INLET, NO. 2-A-20, AS PER PLAN	11
604									5						5		604 20600	5	EACH.	INLET ADJUSTED TO GRADE	
604					6	5	3	1	5						20		604 20601	20	EACH.	INLET ADJUSTED TO GRADE, AS PER PLAN, MEDIAN	74
604									1						1		604 31500	1	EACH.	MANHOLE, NO. 3	
604															1		604 31501	1	EACH.	MANHOLE, NO. 3, AS PER PLAN	
604					2	3	4	6	2						17		604 34501	17	EACH.	MANHOLE ADJUSTED TO GRADE, AS PER PLAN	11
604					1						1				2		604 35500	2	EACH.	MANHOLE RECONSTRUCTED TO GRADE	
604						8	9	9	6						32		604 35501	32	EACH.	MANHOLE RECONSTRUCTED TO GRADE, AS PER PLAN, BOLTED DOWN	12
SPECIAL							3								3		SPECIAL 60436600	3	EACH.	PRECAST REINFORCED CONCRETE OUTLET	(See Detail on Sh.73)
SPECIAL		10,000													10,000		SPECIAL 60450000	10,000	LB.	MISCELLANEOUS METAL	
605					926										926		605 11100	926	LIN.FT.	6" SHALLOW PIPE UNDERDRAIN	
605					22966										22966		605 11101	22966	LIN.FT.	6" SHALLOW PIPE UNDERDRAIN, 707.15, AS PER PLAN	73
605		500													500		605 31100	500	LIN.FT.	AGGREGATE DRAIN	
- EROSION CONTROL -																					
653					441										441		653 10000	441	CU.YD.	TOPSOIL FURNISHED AND PLACED	
659					5288										5288		659 10001	5288	SQ.YD.	SEEDING AND MULCHING, AS PER PLAN	11
659					0.48										0.48		659 20000	0.48	TON	COMMERCIAL FERTILIZER	
659					2.38										2.38		659 30000	2.38	TON	AGRICULTURAL LIMING	
659		14.0													14.0		659 35000	14	M.GAL.	WATER	
207		1200													1200		207 10000	1200	SQ.YD.	TEMPORARY SEEDING AND MULCHING	
207		2100													2100		207 30000	2100	LIN.FT.	FILTER FABRIC FENCE	
207		840													840		207 70000	840	EACH	STRAW OR HAY BALES	
601		1380													1380		601 21001	1380	SQ.YD.	CONCRETE SLOPE PROTECTION, AS PER PLAN	11, 7B
601						15	135	70	165						385		601 37501	385	LIN.FT.	PAVED GUTTER, TYPE 1-2, AS PER PLAN	12













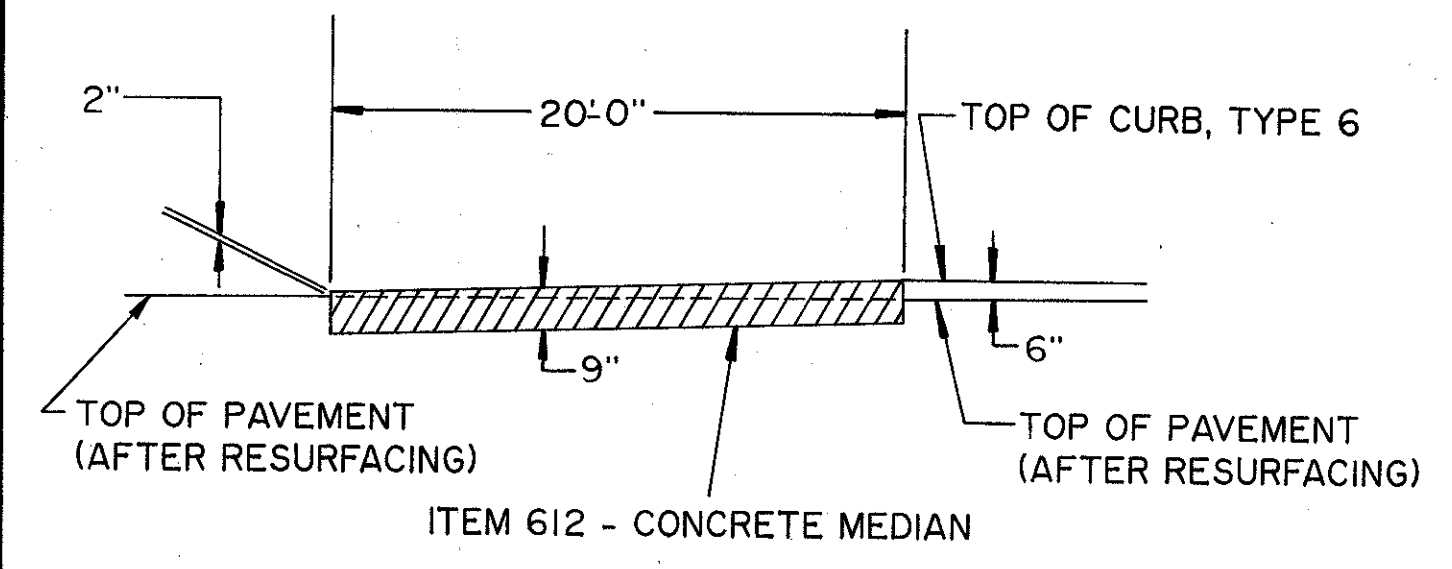




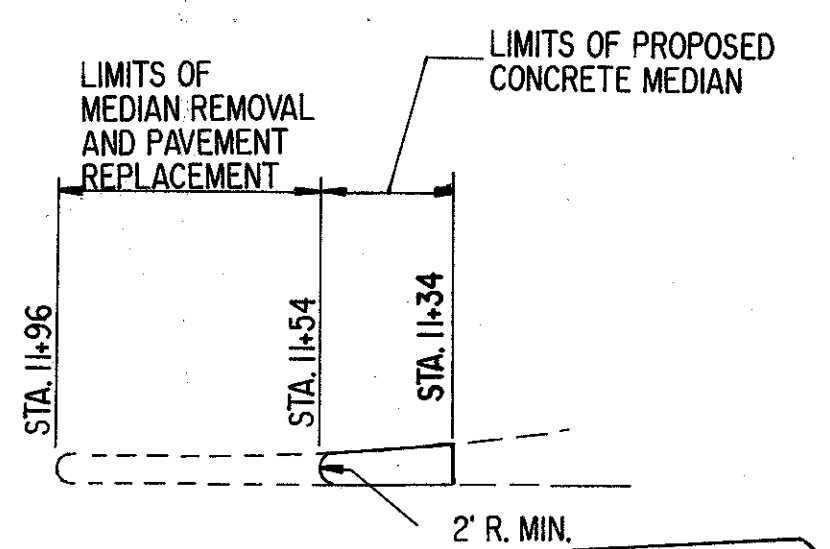




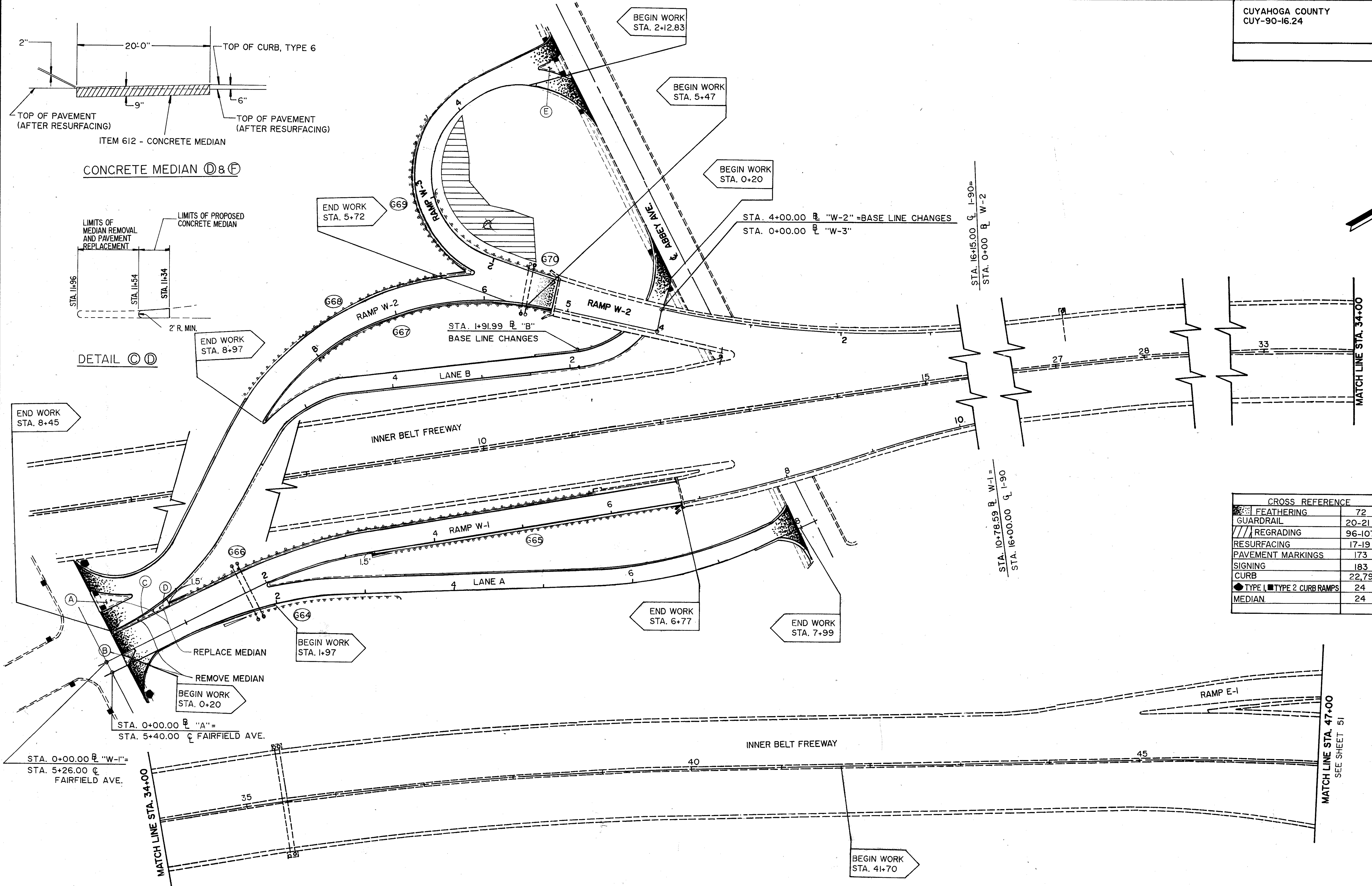




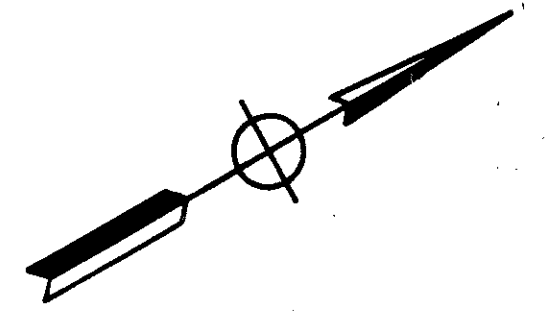
CONCRETE MEDIAN (D & F)



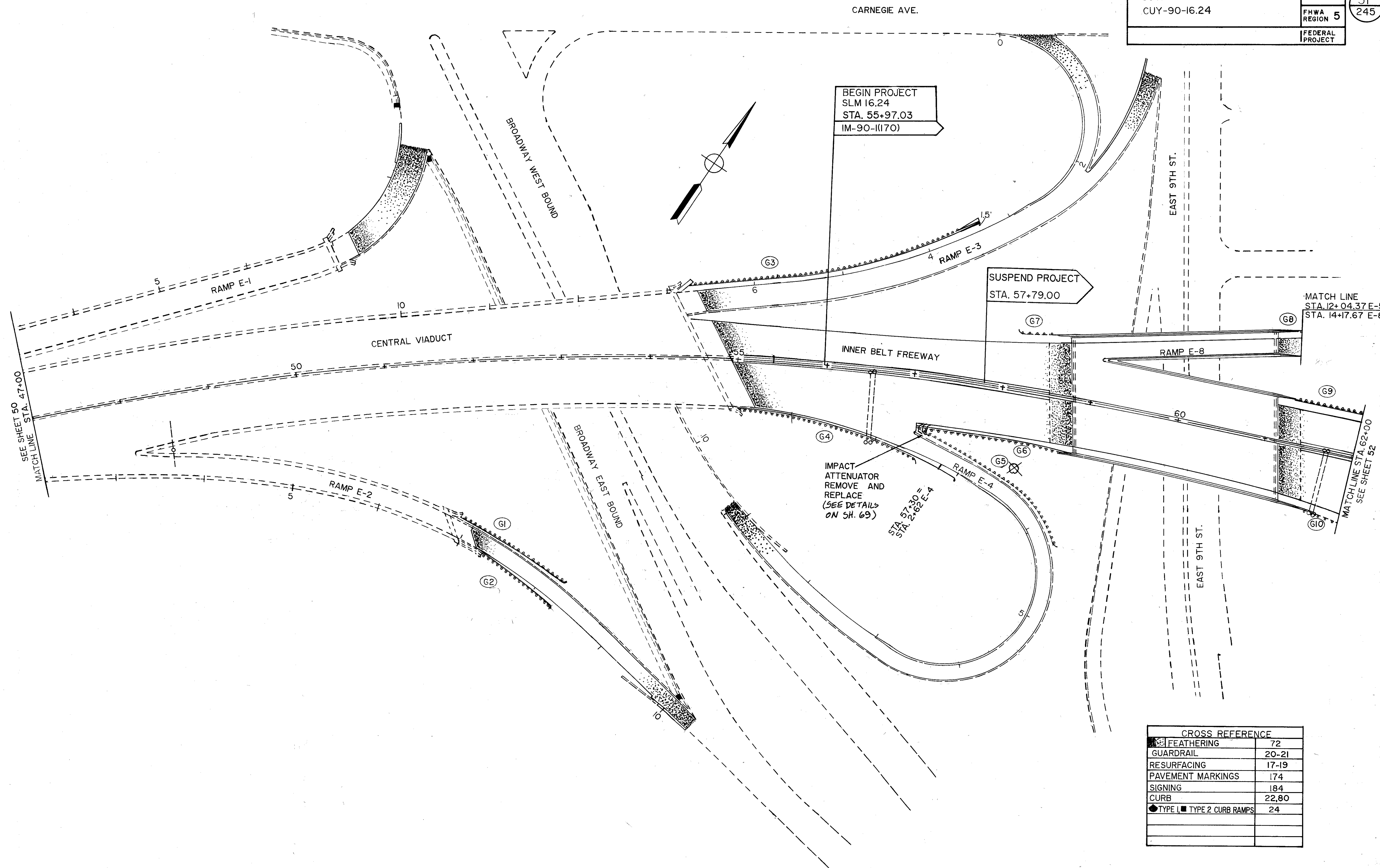
DETAIL (C & D)



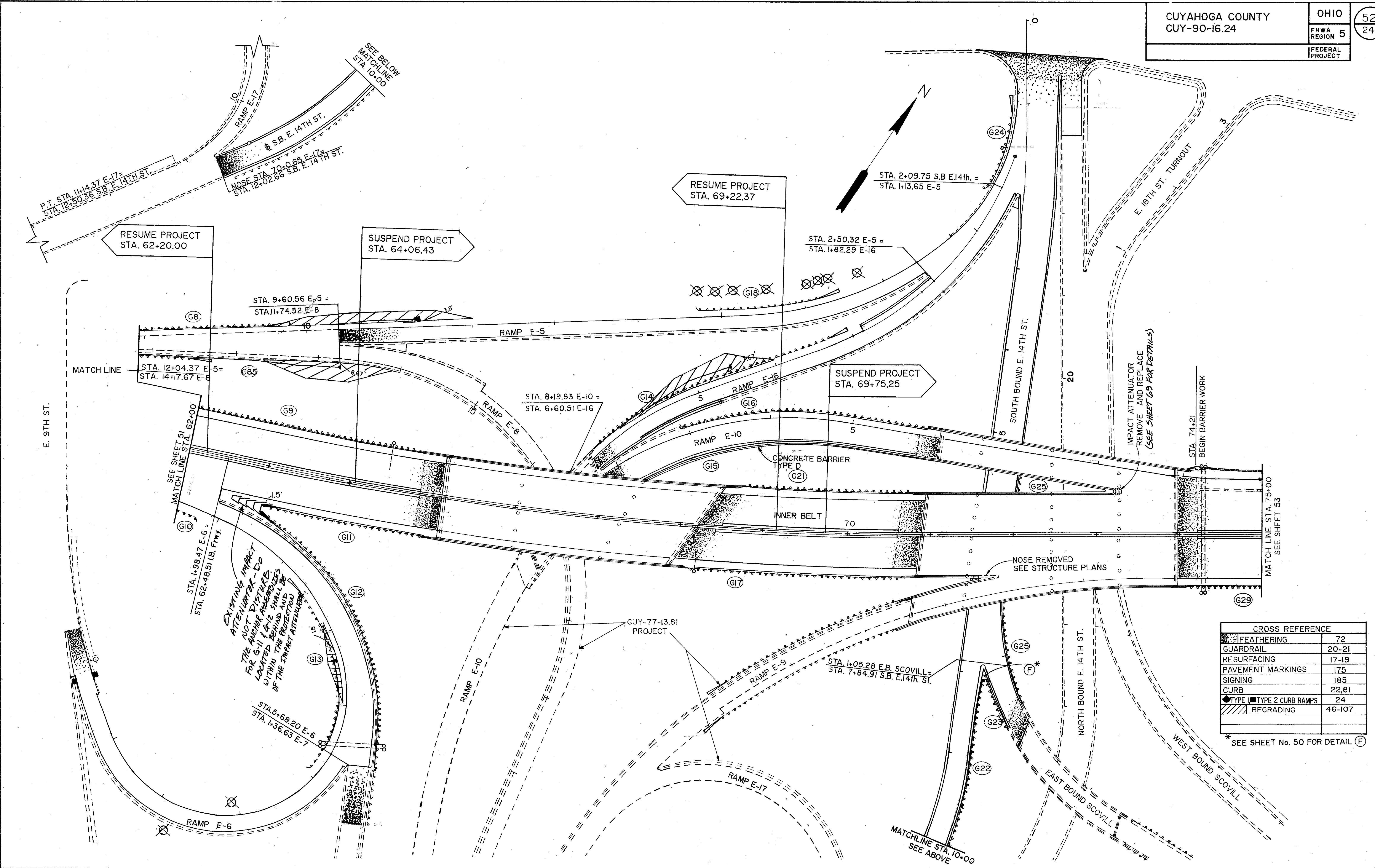
CROSS REFERENCE	
FEATHERING	72
GUARDRAIL	20-21
REGRAVING	96-107
RESURFACING	17-19
PAVEMENT MARKINGS	173
SIGNING	183
CURB	22,79
TYPE 1, TYPE 2 CURB RAMPS	24
MEDIAN	24







CROSS REFERENCE	
FEATHERING	72
GUARDRAIL	20-21
RESURFACING	17-19
PAVEMENT MARKINGS	174
SIGNING	184
CURB	22,80
● TYPE 1, ■ TYPE 2 CURB RAMP	24

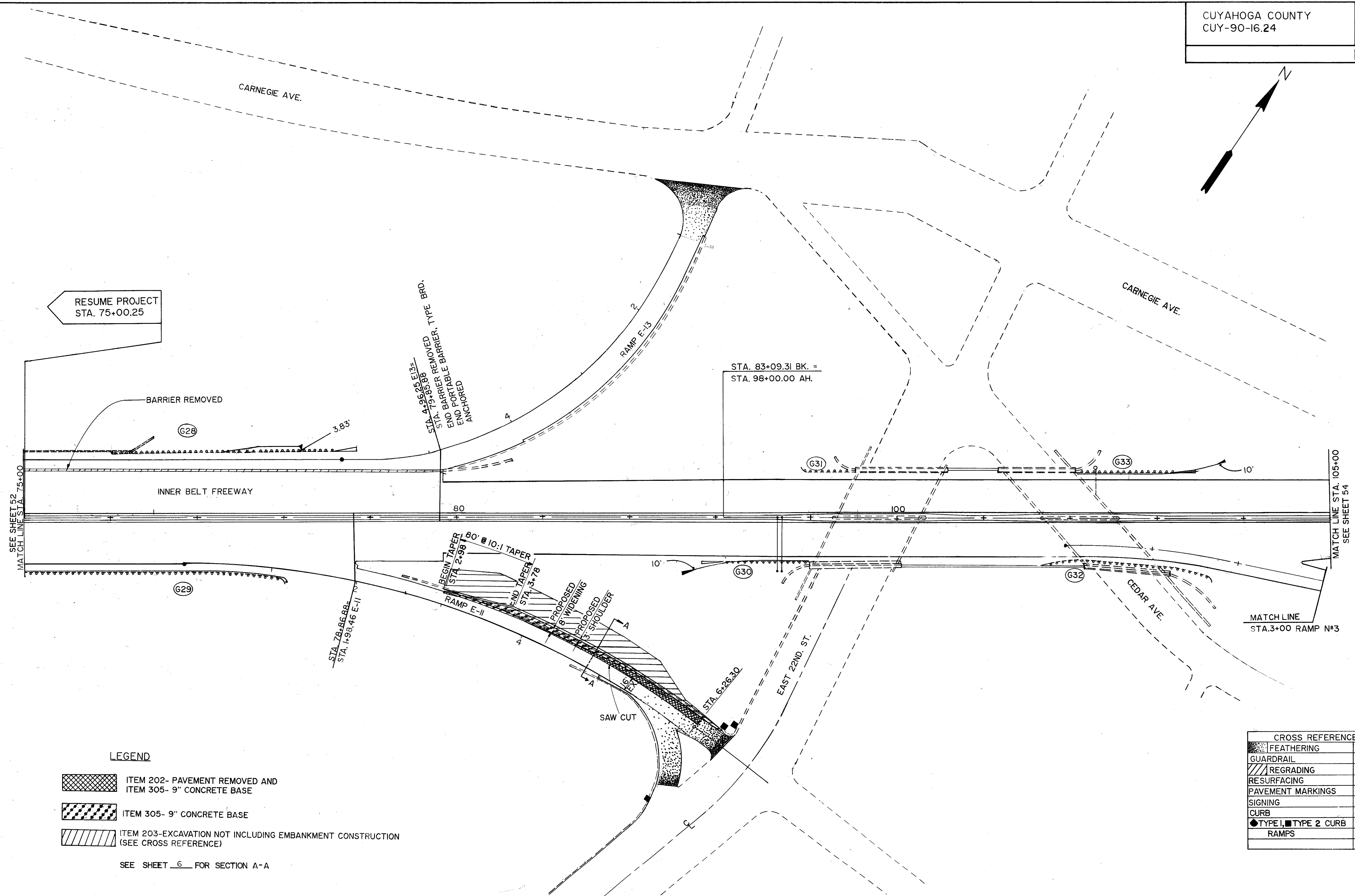
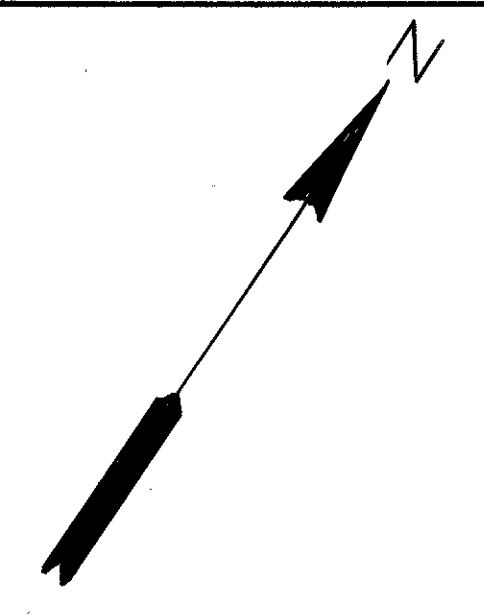


CROSS REFERENCE


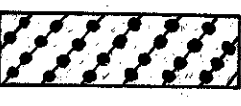

FEATHERING	72
GUARDRAIL	20-21
RESURFACING	17-19
PAVEMENT MARKINGS	175
SIGNING	185
CURB	22,81
TYPE 1 CURB RAMP	24
REGRAVING	46-107

\* SEE SHEET No. 50 FOR DETAIL (F)




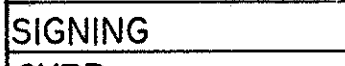

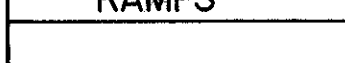







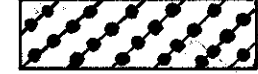

LEGEND

-  ITEM 202- PAVEMENT REMOVED AND ITEM 305- 9" CONCRETE BASE
-  ITEM 305- 9" CONCRETE BASE
-  ITEM 203- EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION (SEE CROSS REFERENCE)

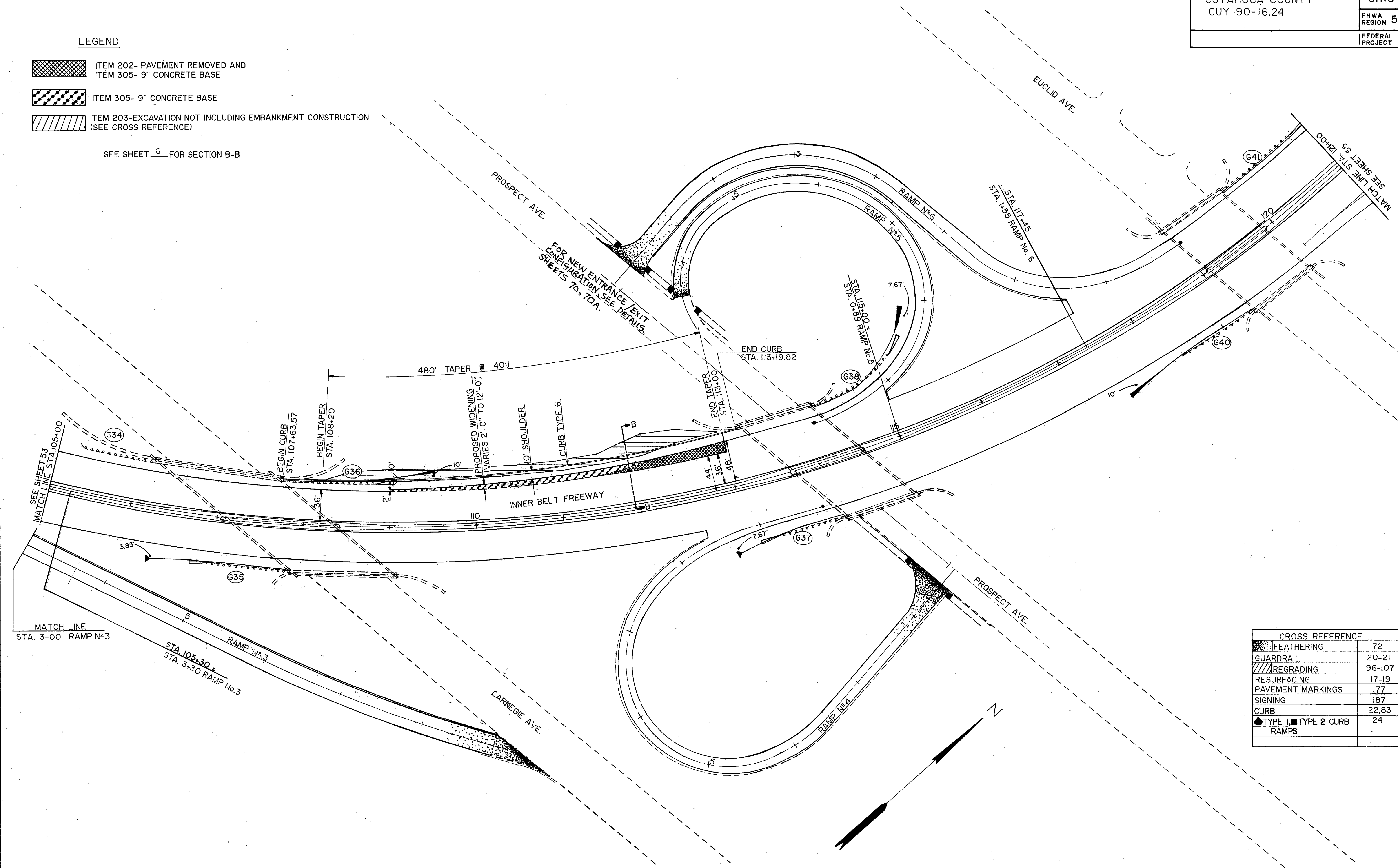
SEE SHEET 6 FOR SECTION A-A







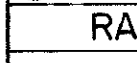
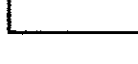

CROSS REFERENCE	
	FEATHERING 72
	GUARDRAIL 20-21
	REGRAVING 96-107
	RESURFACING 17-19
	PAVEMENT MARKINGS 176
	SIGNING 186
	CURB 22,82
	TYPE 1, TYPE 2 CURB RAMP 24

LEGEND

-  ITEM 202- PAVEMENT REMOVED AND  
 ITEM 305- 9" CONCRETE BASE
-  ITEM 305- 9" CONCRETE BASE
-  ITEM 203- EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION  
 (SEE CROSS REFERENCE)

SEE SHEET 6 FOR SECTION B-B

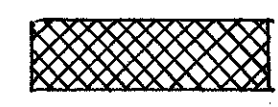
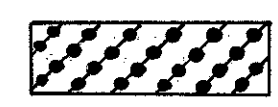
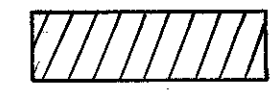


CROSS REFERENCE	
	FEATHERING 72
	GUARDRAIL 20-21
	REGRAVING 96-107
	RESURFACING 17-19
	PAVEMENT MARKINGS 177
	SIGNING 187
	CURB 22,83
	TYPE 1, TYPE 2 CURB 24
	RAMPS

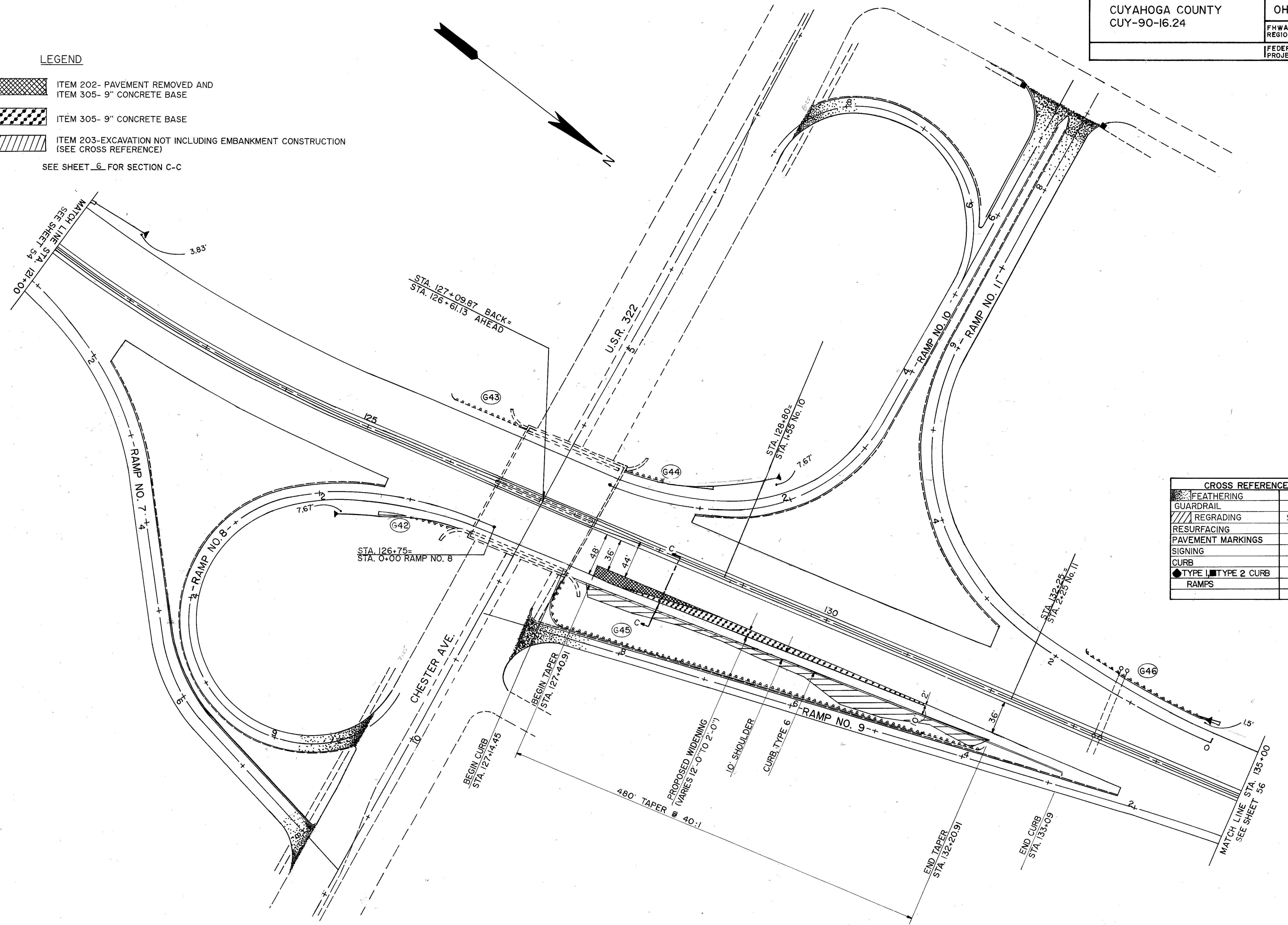






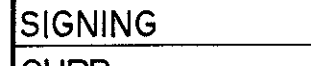


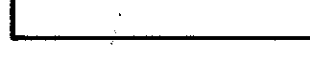



LEGEND

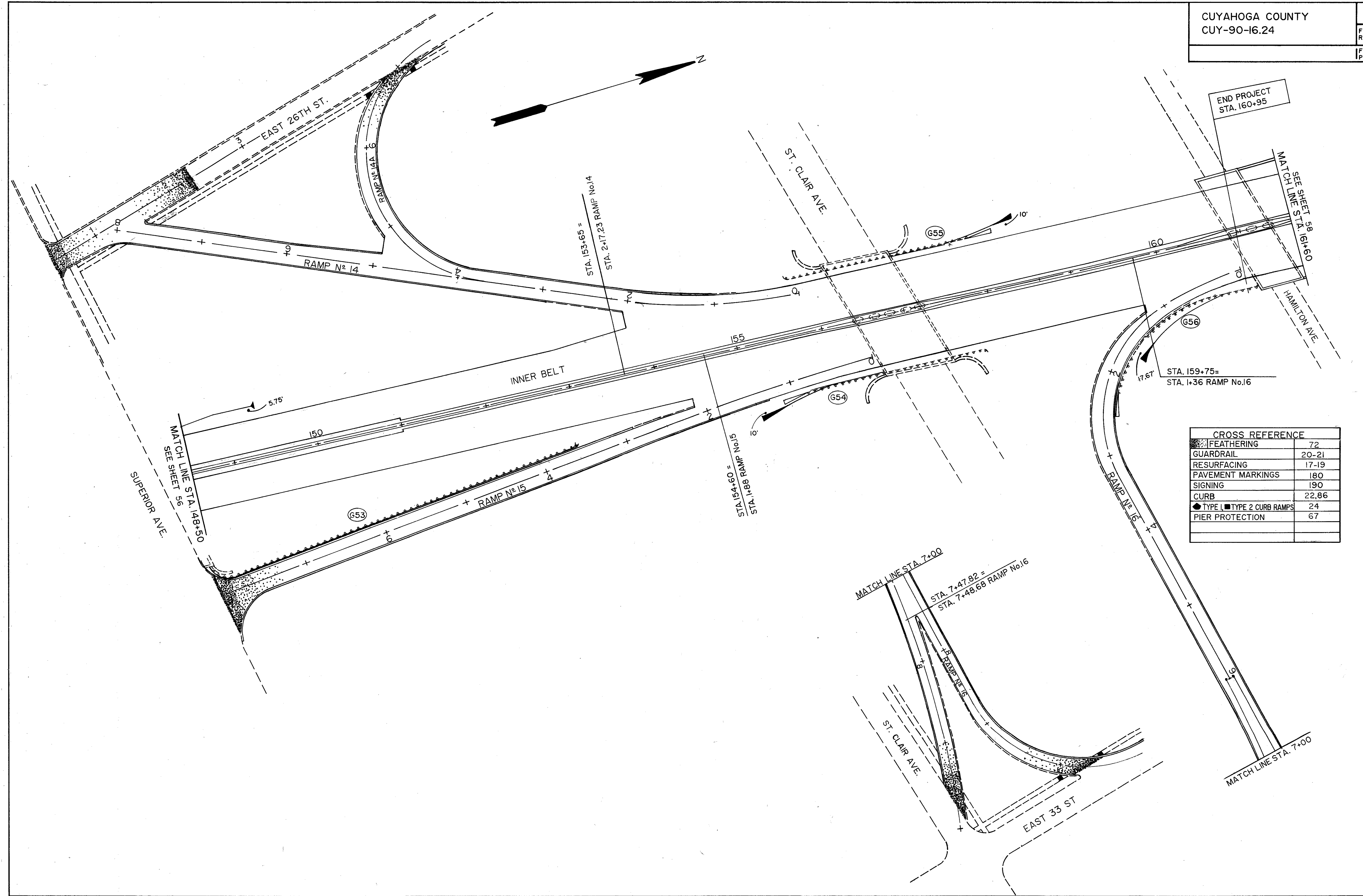
-  ITEM 202- PAVEMENT REMOVED AND  
 ITEM 305- 9" CONCRETE BASE
-  ITEM 305- 9" CONCRETE BASE
-  ITEM 203- EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION  
 (SEE CROSS REFERENCE)

SEE SHEET 6 FOR SECTION C-C

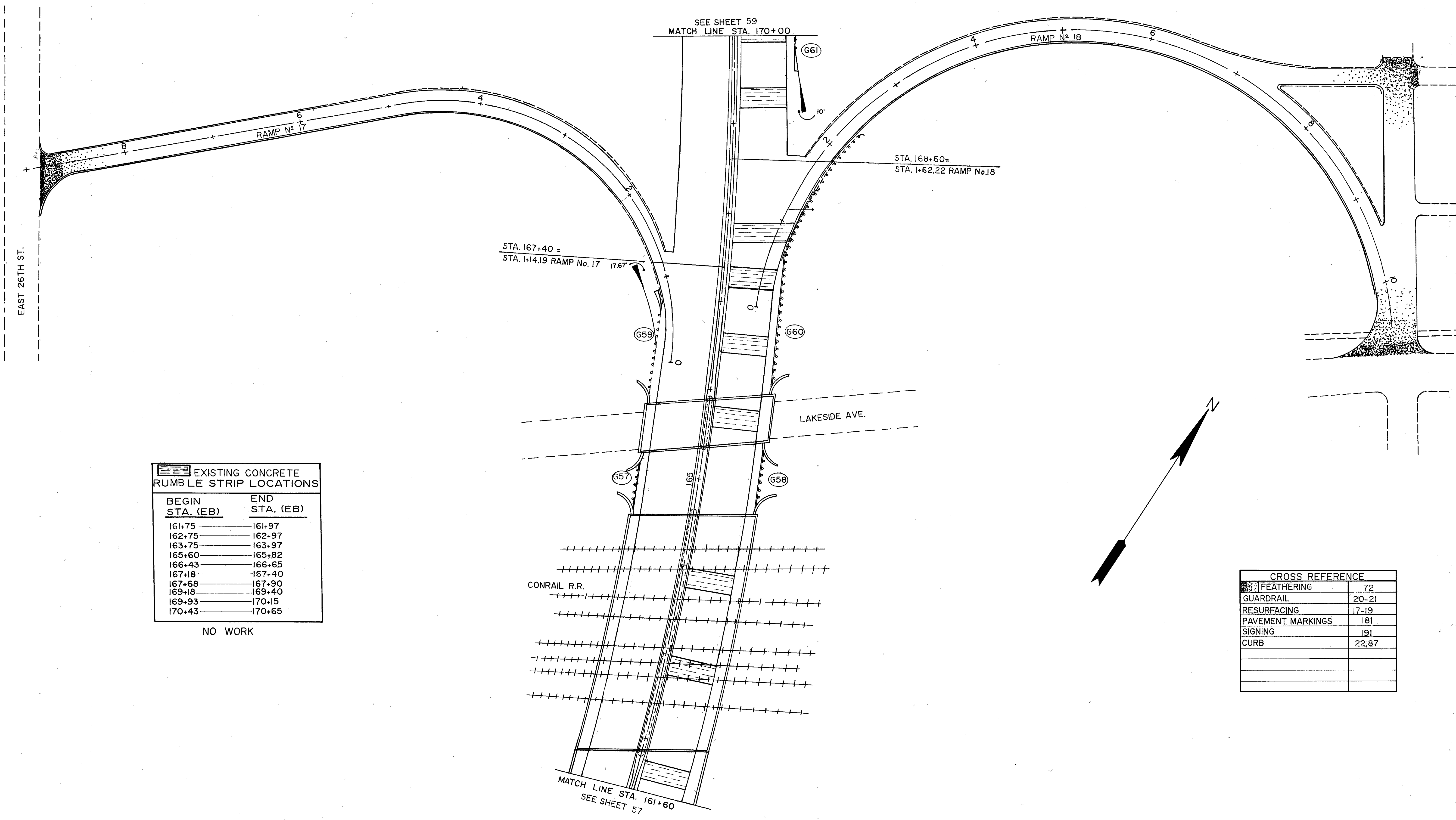


CROSS REFERENCE	
	FEATHERING 72
	GUARDRAIL 20-21
	REGRAVING 96-107
	RESURFACING 17-19
	PAVEMENT MARKINGS 178
	SIGNING 188
	CURB 22,84
	TYPE 1, TYPE 2 CURB 24
	RAMPS





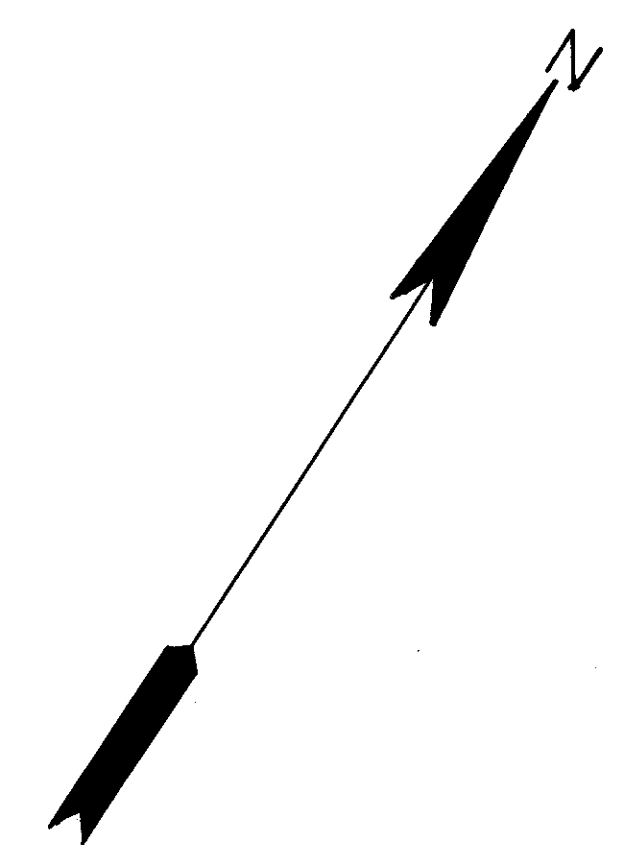
CROSS REFERENCE	
FEATHERING	72
GUARDRAIL	20-21
RESURFACING	17-19
PAVEMENT MARKINGS	180
SIGNING	190
CURB	22,86
TYPE 1, TYPE 2 CURB RAMPS	24
PIER PROTECTION	67



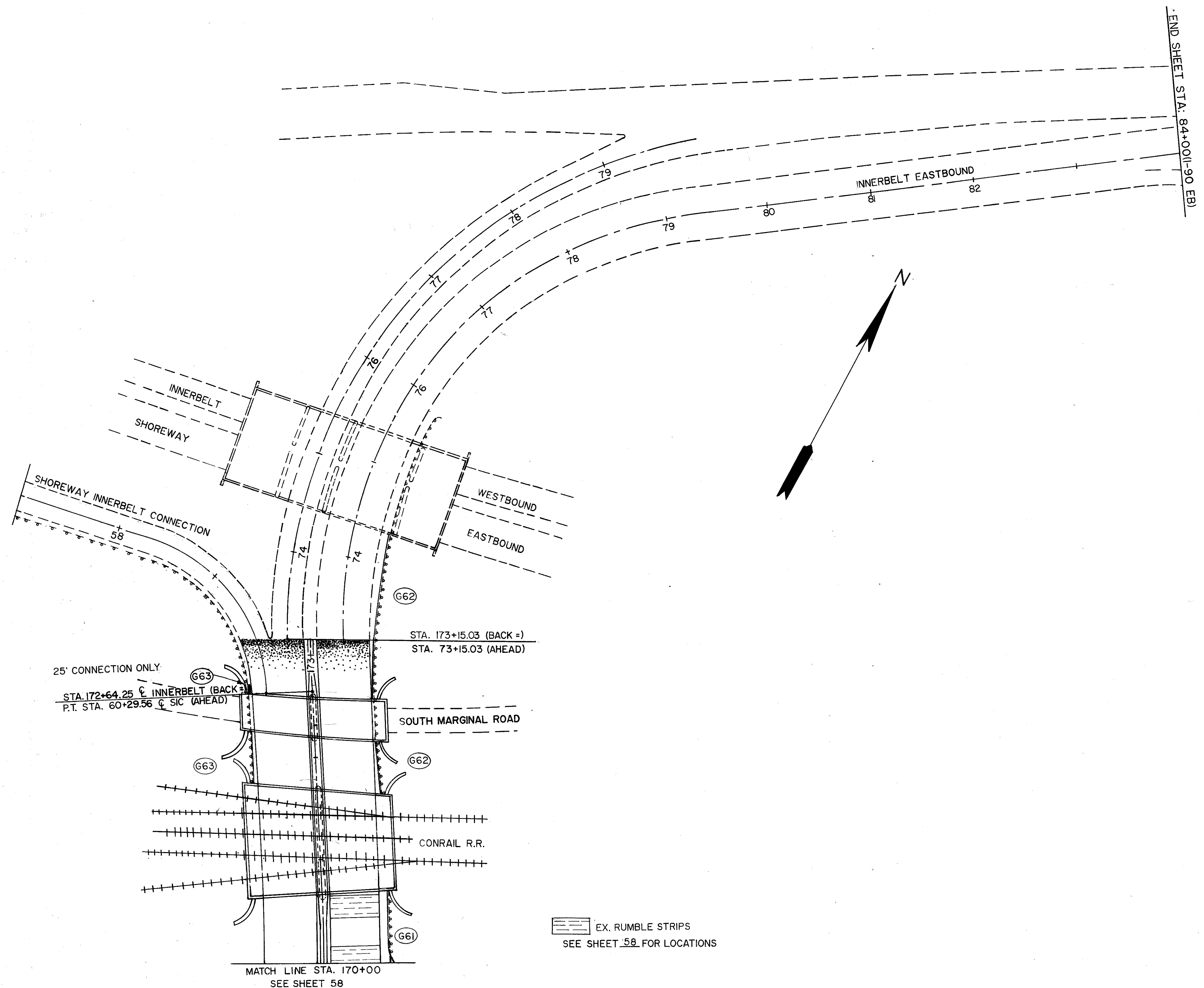
EXISTING CONCRETE RUMBLE STRIP LOCATIONS	
BEGIN STA. (EB)	END STA. (EB)
161+75	161+97
162+75	162+97
163+75	163+97
165+60	165+82
166+43	166+65
167+18	167+40
167+68	167+90
169+18	169+40
169+93	170+15
170+43	170+65

NO WORK

CROSS REFERENCE	
FEATHERING	72
GUARDRAIL	20-21
RESURFACING	17-19
PAVEMENT MARKINGS	181
SIGNING	191
CURB	22,87







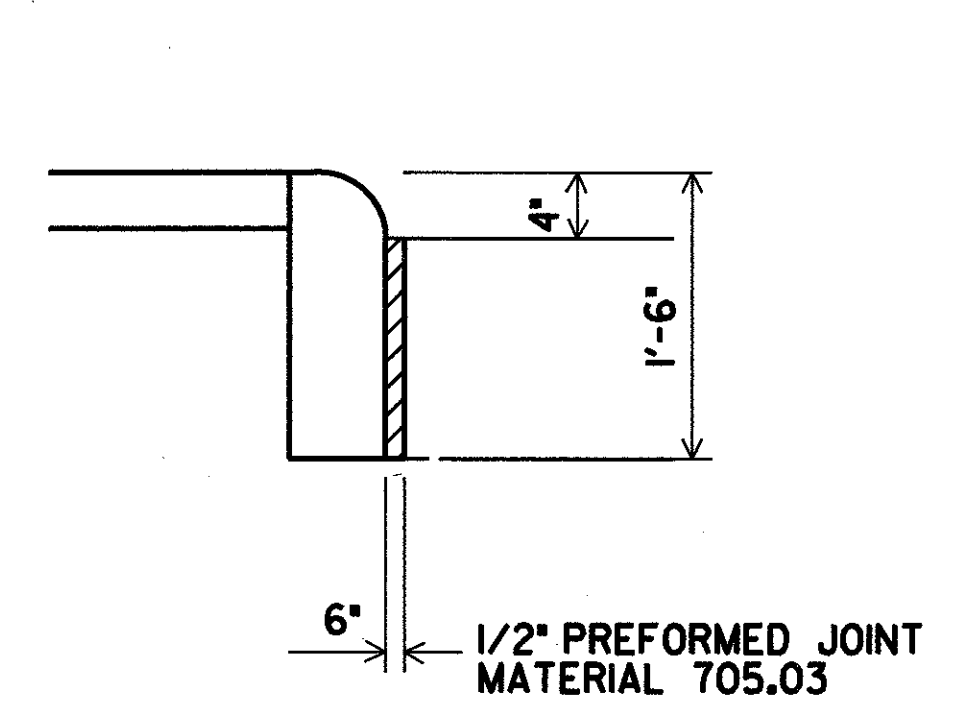
CROSS REFERENCE	
FEATHERING	72
GUARDRAIL	20-21
RESURFACING	17-19
PAVEMENT MARKINGS	182
SIGNING	192
PIER PROTECTION	67

PLOT SUBMITTED BY: ul lman

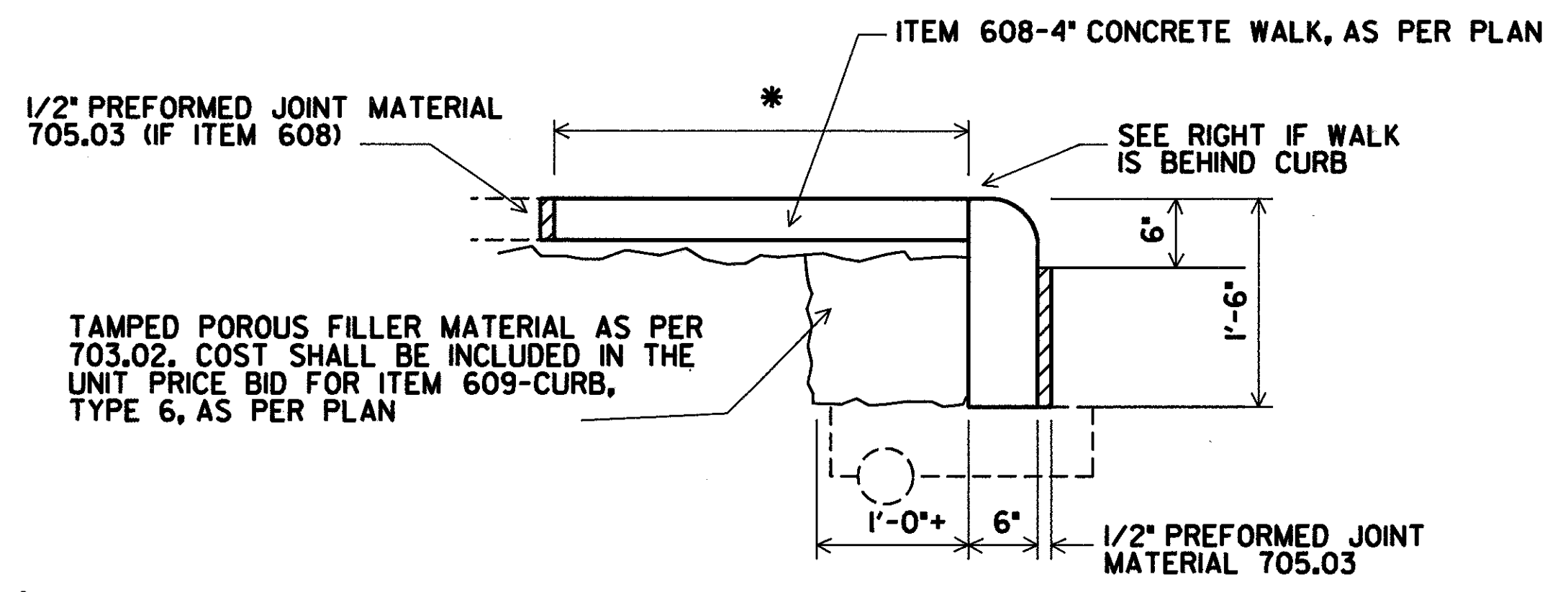
11-0

# MISCELLANEOUS DETAILS

CUYAHOGA COUNTY CUY-90-16.24	OHIO	60 245
	FHWA REGION 5	
FEDERAL PROJECT		

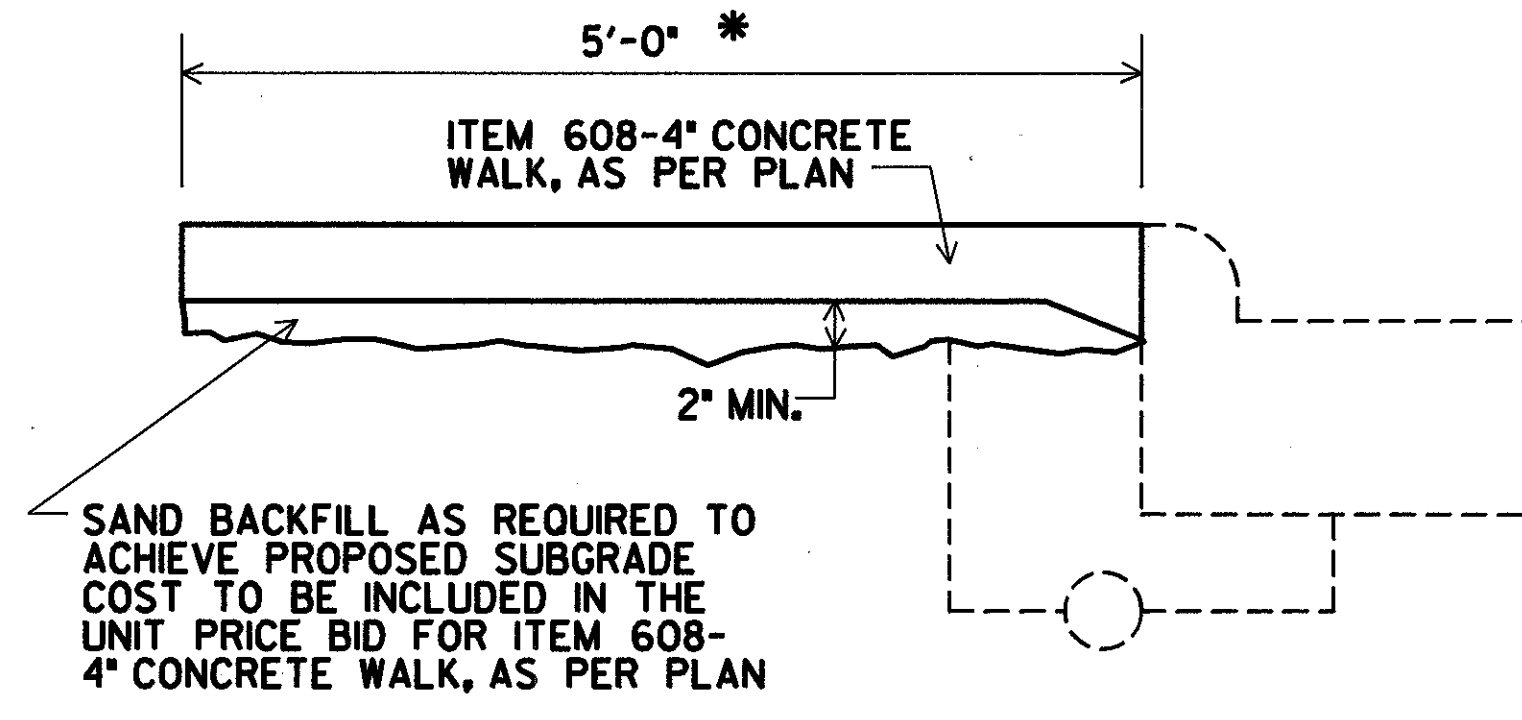


ITEM 609-CURB, TYPE 6, AS PER PLAN, TYPE 1



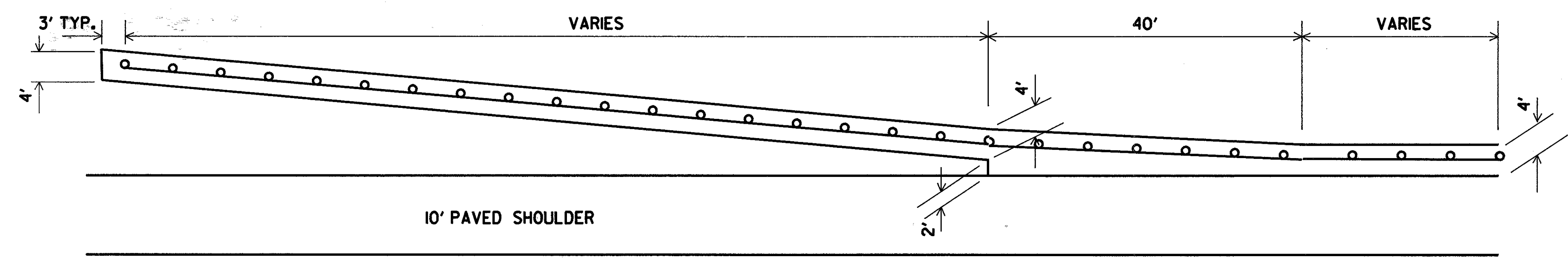
\* LENGTH SHALL BE 4'-0" OR TO THE FIRST JOINT OR AS DIRECTED BY THE ENGINEER FOR ITEM 608-4' CONCRETE WALK, AS PER PLAN

ITEM 609-CURB, TYPE 6, AS PER PLAN, TYPE 2



\* OR AS DIRECTED BY THE ENGINEER

ITEM 608-4' CONCRETE WALK, AS PER PLAN

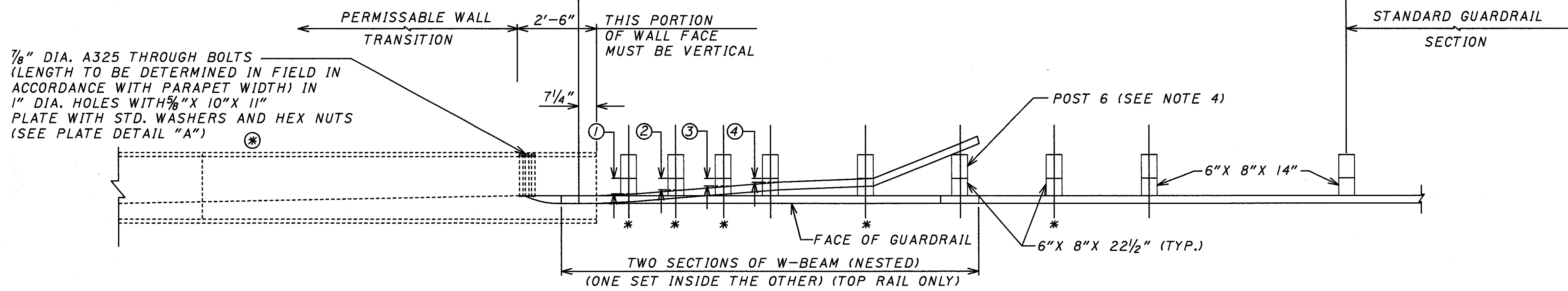


ITEM 448 FOR EROSION CONTROL WITH GUARDRAIL FLARE

NOTE: A 4' WIDE STRIP OF ITEM 446 SHALL BE CONSTRUCTED UNDER ALL PROPOSED GUARDRAIL. SEE TYPICAL SECTIONS FOR DETAILS WHEN GUARDRAIL OFFSET EXCEEDS 2 FEET FROM EDGE OF PAVED BERM.



BRIDGE TERMINAL ASSEMBLY, TYPE 4, AS PER PLAN



7/8" DIA. A325 THROUGH BOLTS  
(LENGTH TO BE DETERMINED IN FIELD IN  
ACCORDANCE WITH PARAPET WIDTH) IN  
1" DIA. HOLES WITH 5/8" X 10" X 11"  
PLATE WITH STD. WASHERS AND HEX NUTS  
(SEE PLATE DETAIL "A")

\* FOR ATTACHMENT TO ABUTMENT WALLS, THIS  
ITEM REQUIRES THE USE OF POLYESTER RESIN  
ANCHORS WITH FEMALE THREADED INSERTS (10" LONG)  
TO ACCEPT 7/8" DIAMETER BOLTS. SEE REQUIREMENTS ON GR-1.2.  
(PLATE DETAIL NOT REQUIRED)

\* GUARDRAIL NOT ATTACHED TO POSTS.  
BLOCKOUT FASTENED TO POST WITH STD. POST BOLT.

PLAN

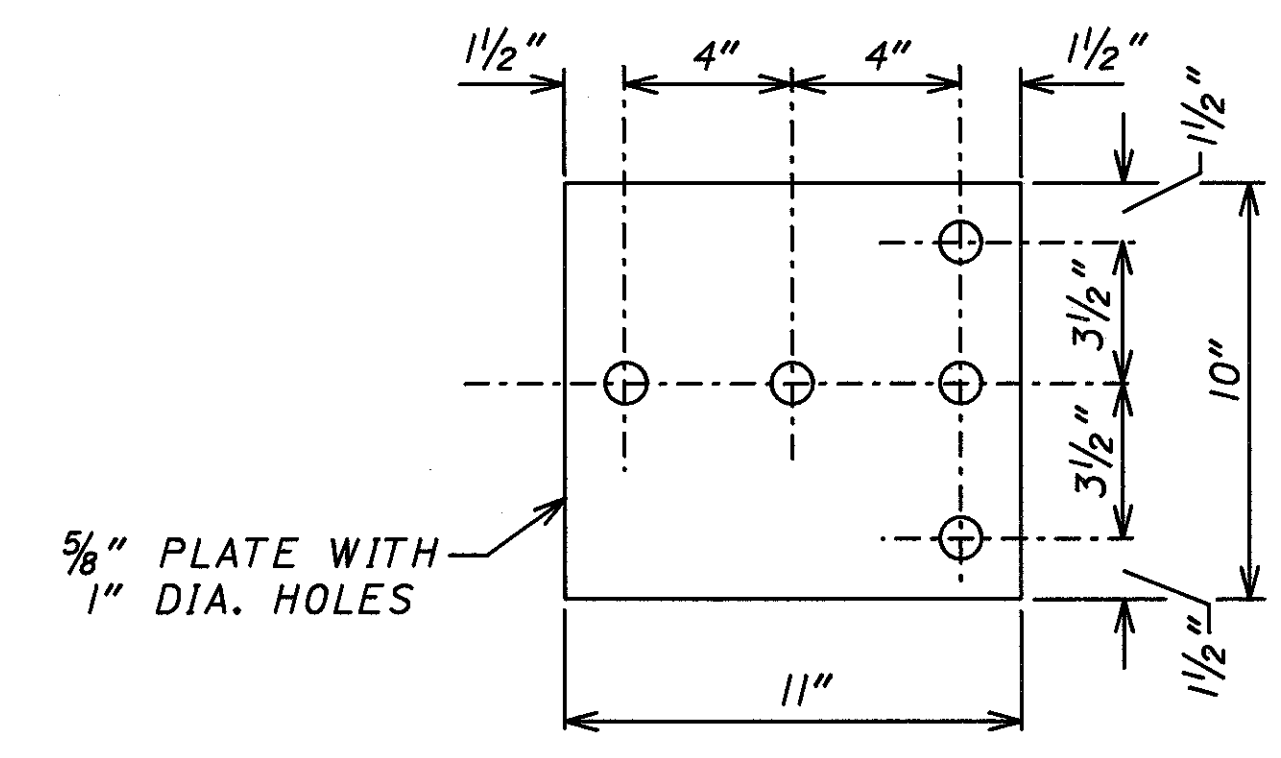
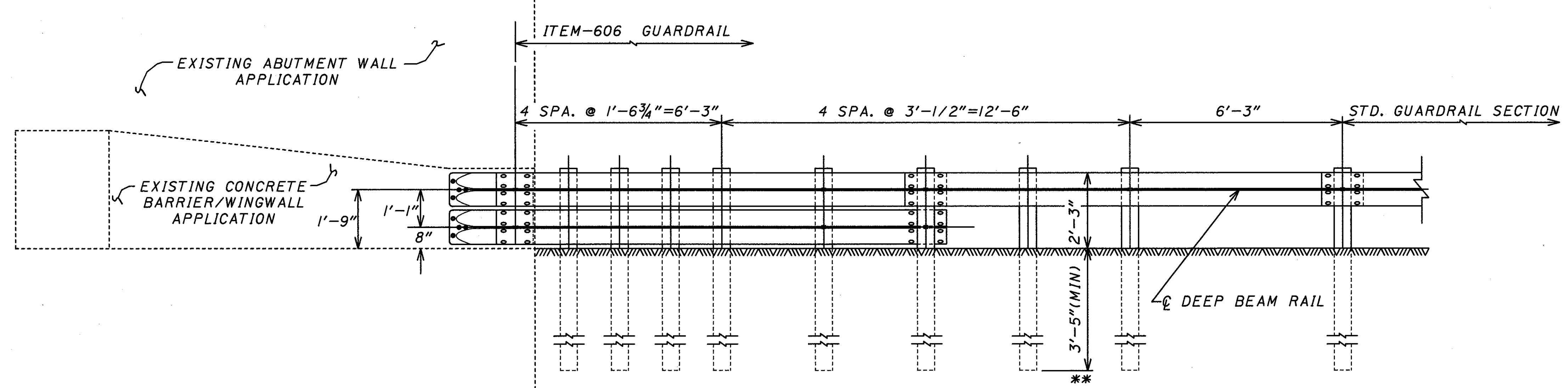


PLATE DETAIL "A"



\*\* SEE STD. CONSTRUCTION DRAWING GR-1.2  
FOR ADDITIONAL POST EMBEDMENT DETAILS.

GENERAL NOTES

1. THIS GUARDRAIL TRANSITION IS APPROPRIATE FOR CONNECTION TO A VERTICAL CONCRETE SHAPE AND SHOULD NOT BE CONNECTED DIRECTLY TO A CONCRETE SAFETY SHAPE. CONCRETE SAFETY SHAPE BARRIERS SHOULD BE TRANSITIONED TO A VERTICAL SHAPE AT THE GUARDRAIL CONNECTION.
2. THE RUBRAIL MAY BE SHOP BENT IN THE LAST 3 FEET TO FACILITATE INSTALLATION.
3. BOTTOM WOOD BLOCKS, LOCATED ON POSTS 1,2,3, AND 4 ARE CENTER DRILLED AND SECURED WITH 5/8" CARRIAGE BOLTS.
4. POSTS 1,2,3,4, AND 6 REQUIRE AN ADDITIONAL HOLE TO ATTACH LOWER BLOCKS AND/OR LOWER BEAM.
5. SEE STANDARD CONSTRUCTION DRAWINGS GR-1.2 AND GR-3.4 FOR ADDITIONAL DETAILS.

ELEVATION

THIS DETAIL MODIFIES A BRIDGE TERMINAL ASSEMBLY, TYPE 4 FOR CONNECTION TO A VERTICAL WALL. ALL DIMENSIONS AND DETAILS SHOWN ARE IN AGREEMENT WITH THE APPROVED CRASHWORTHY GUARDRAIL TRANSITION FOUND IN "FHWA TECHNICAL ADVISORY T 5040.26" AND THE "ROADSIDE DESIGN GUIDE"

BLOCKOUT CHART  
BOTTOM BEAM WOOD BLOCKS  
1'-2" X 6"

POST	THICKNESS
①	7"
②	6"
③	4.5"
④	3"

MAY 26, 1992

STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION  
DISTRICT 12 LOCATION & DESIGN

BRIDGE TERMINAL ASSEMBLY,  
TYPE 4,  
AS PER PLAN

DESIGNED LDH DATE	DRAWN JAG DATE	CHECKED ENF DATE	REVIEWED DATE	REVISED SHEET /
-------------------------	----------------------	------------------------	------------------	--------------------

PLOT SUBMITTED: 27-MAY-1992 07:08

filename.dgn

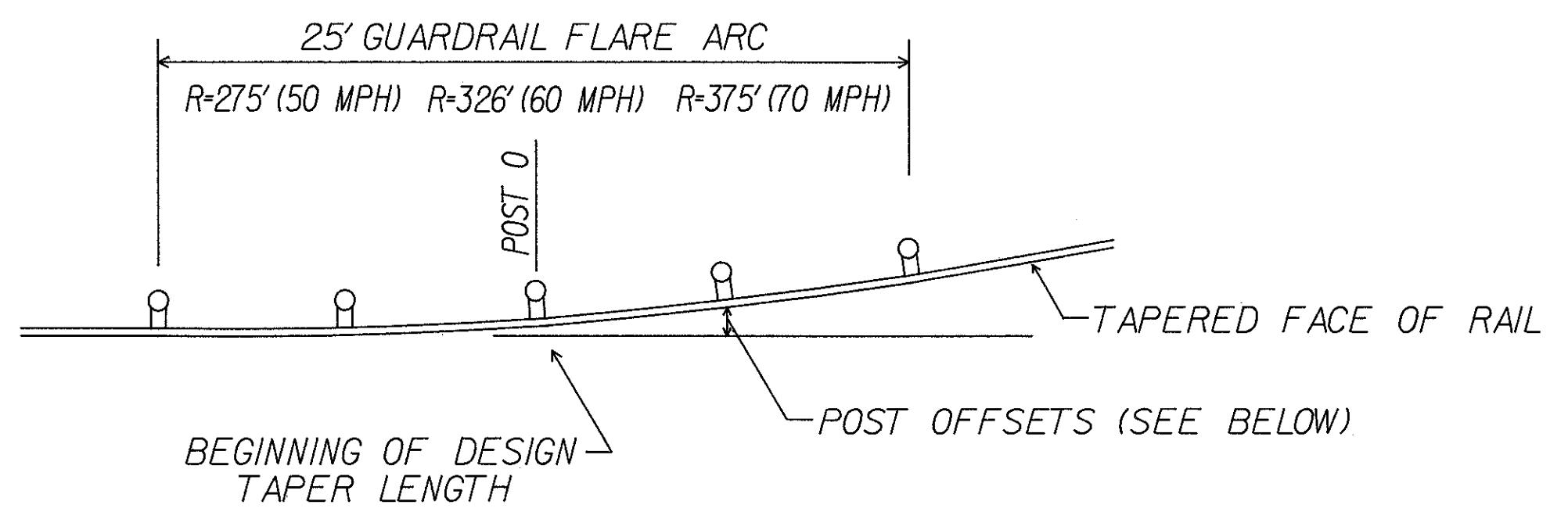
PLOTTED BY: BANASZAK  
PLOTTED FROM: c:\dgn\pld07090\7090grcc.dgn





PLOT SUBMITTED BY: uliman

TAPERED GUARDRAIL OFFSETS						
	50 MPH		60 MPH		70 MPH	
	11:1 TAPER 320' RUNOUT		13:1 TAPER 400' RUNOUT		15:1 TAPER 480' RUNOUT	
POST	*X*	*Y*	*X*	*Y*	*X*	*Y*
0	0.00	0.28	0.00	0.24	0.00	0.21
2	12.45	1.13	12.46	0.96	12.47	0.83
4	24.90	2.26	24.93	1.92	24.94	1.66
6	37.35	3.40	37.39	2.88	37.42	2.49
8	49.79	4.53	49.85	3.83	49.89	3.33
10	62.24	5.66	62.32	4.79	62.36	4.16
12	74.69	6.79	74.78	5.75	74.83	4.99
14	87.14	7.92	87.24	6.71	87.31	5.82
16	99.59	9.05	99.71	7.67	99.78	6.65
18	112.04	10.19	112.17	8.63	112.25	7.48
20	124.49	11.32	124.63	9.59	124.72	8.31
22	136.94	12.45	137.09	10.55	137.20	9.15
24	149.38	13.58	149.56	11.50	149.67	9.98
26	161.83	14.71	162.02	12.46	162.14	10.81
28	174.28	15.84	174.48	13.42	174.61	11.64

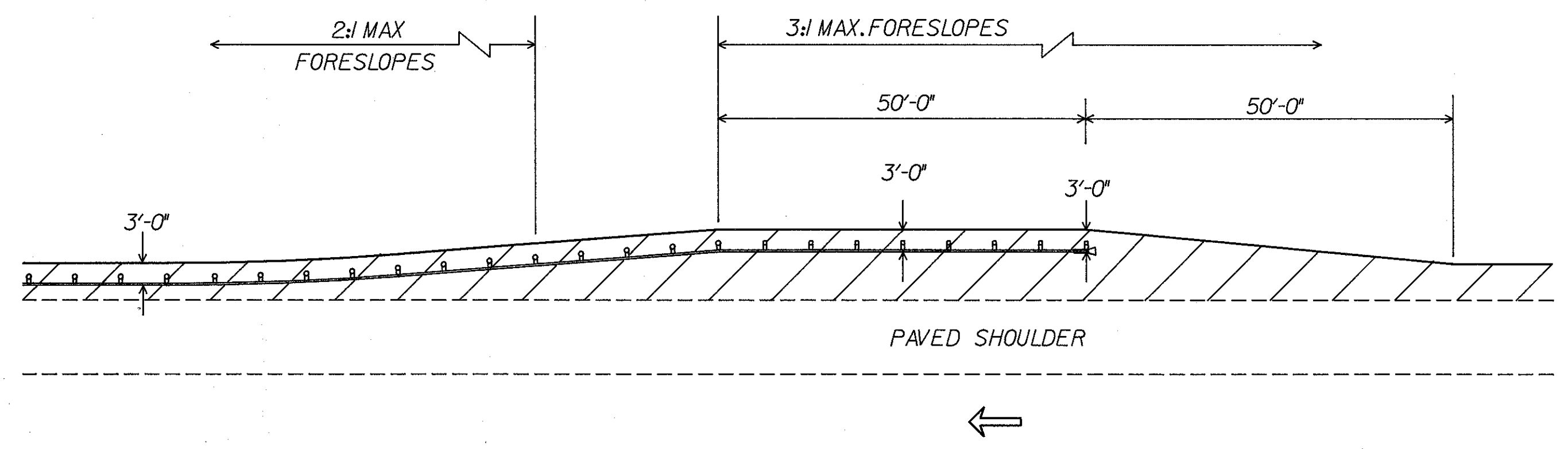


0.00	0.07	0.28	0.63	1.13	50 MPH	POST OFFSETS
0.00	0.06	0.24	0.54	0.96	60 MPH	
0.00	0.05	0.21	0.47	0.83	70 MPH	

GUARDRAIL FLARE ARC DETAIL

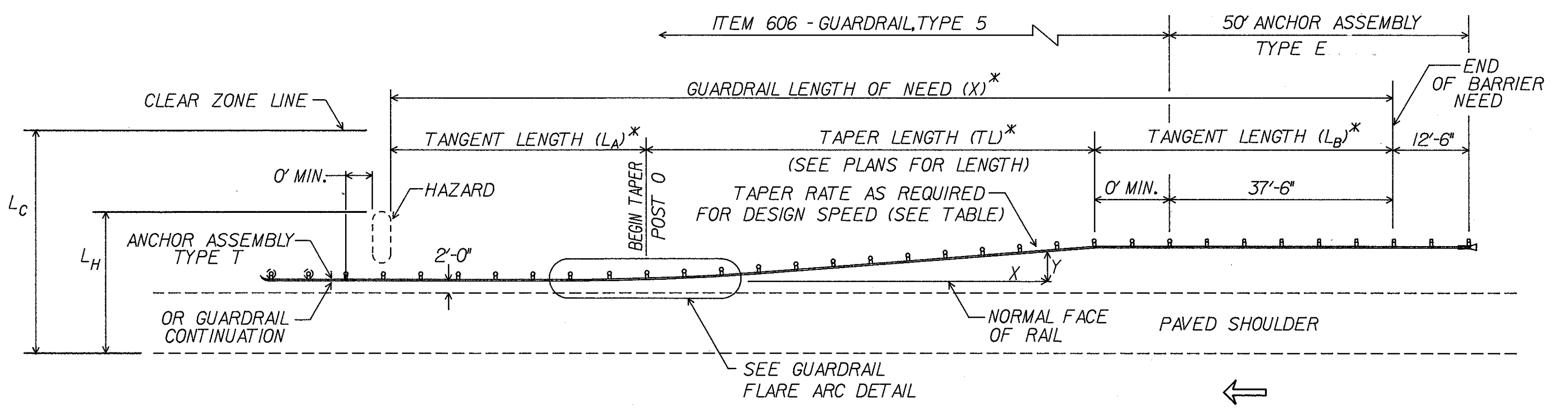
\* - THESE DISTANCES ARE DETERMINED FROM DESIGN CHARTS AND MUST BE TABULATED IN THE PLANS

TANGENT LENGTH  $L_A = L_B$   
GUARDRAIL LENGTH OF NEED  $X = L_A + L_B + TL$



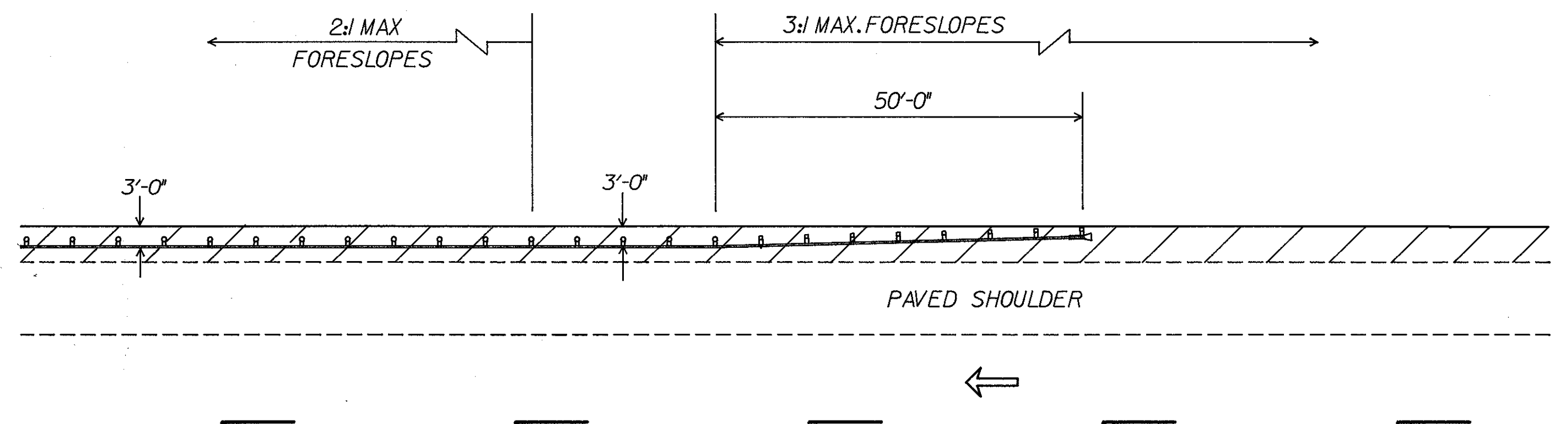
GRADING ALONG TAPERED GUARDRAIL

- 10:1 SLOPE OR FLATTER, 12:1 SLOPE DESIREABLE



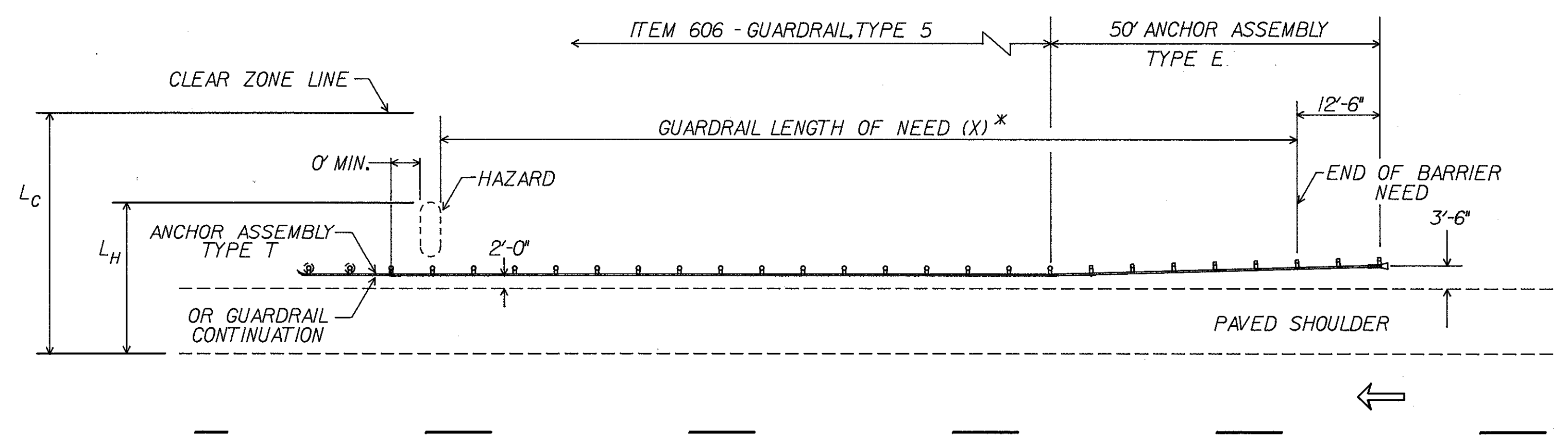
TAPERED GUARDRAIL PROTECTION OF HAZARDS

THE USE OF TAPERED GUARDRAIL IS OPTIONAL WHEN SPECIFYING A TYPE E ANCHOR ASSEMBLY. TAPERED GUARDRAIL WILL TYPICALLY RESULT IN OVERALL SHORTER GUARDRAIL RUNS. SPECIFY TAPERS WHENEVER REGRADING WORK IS MINIMAL.



GRADING ALONG UNTAPERED GUARDRAIL

- 10:1 SLOPE OR FLATTER, 12:1 SLOPE DESIREABLE



UNTAPERED GUARDRAIL PROTECTION OF HAZARDS

# MISCELLANEOUS DETAILS

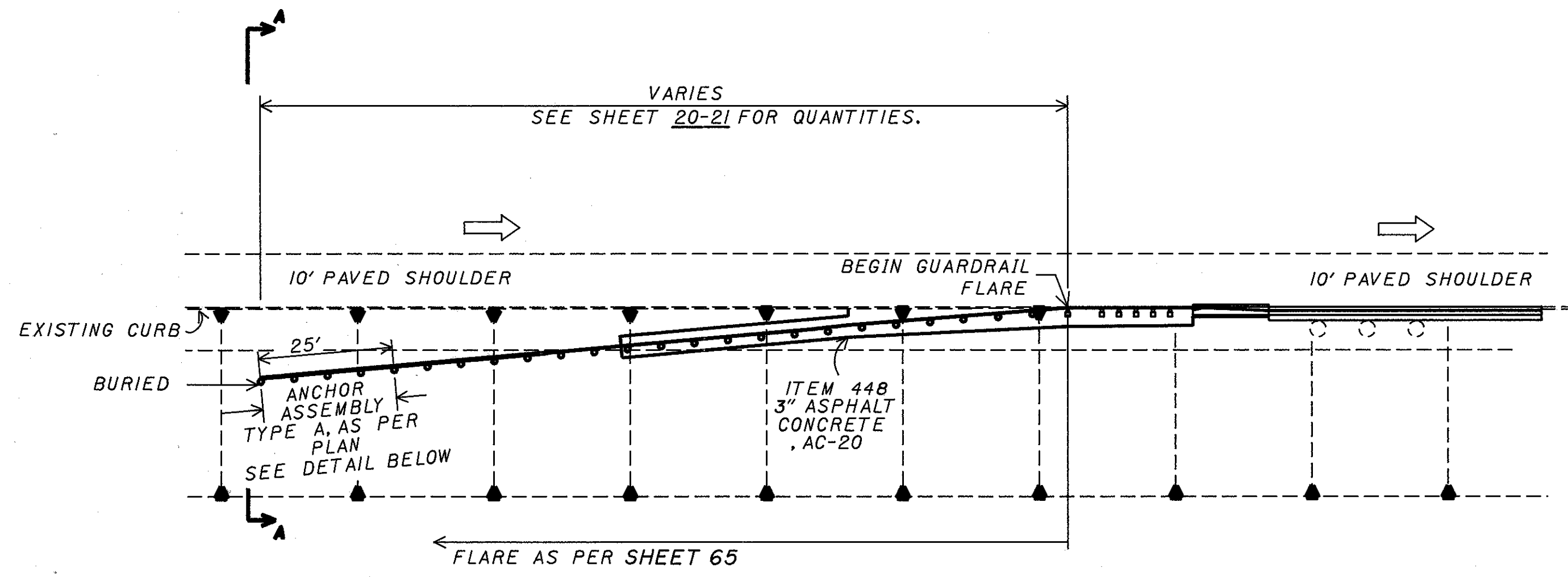
CUYAHOGA COUNTY  
 CUY-90-16.24

OHIO

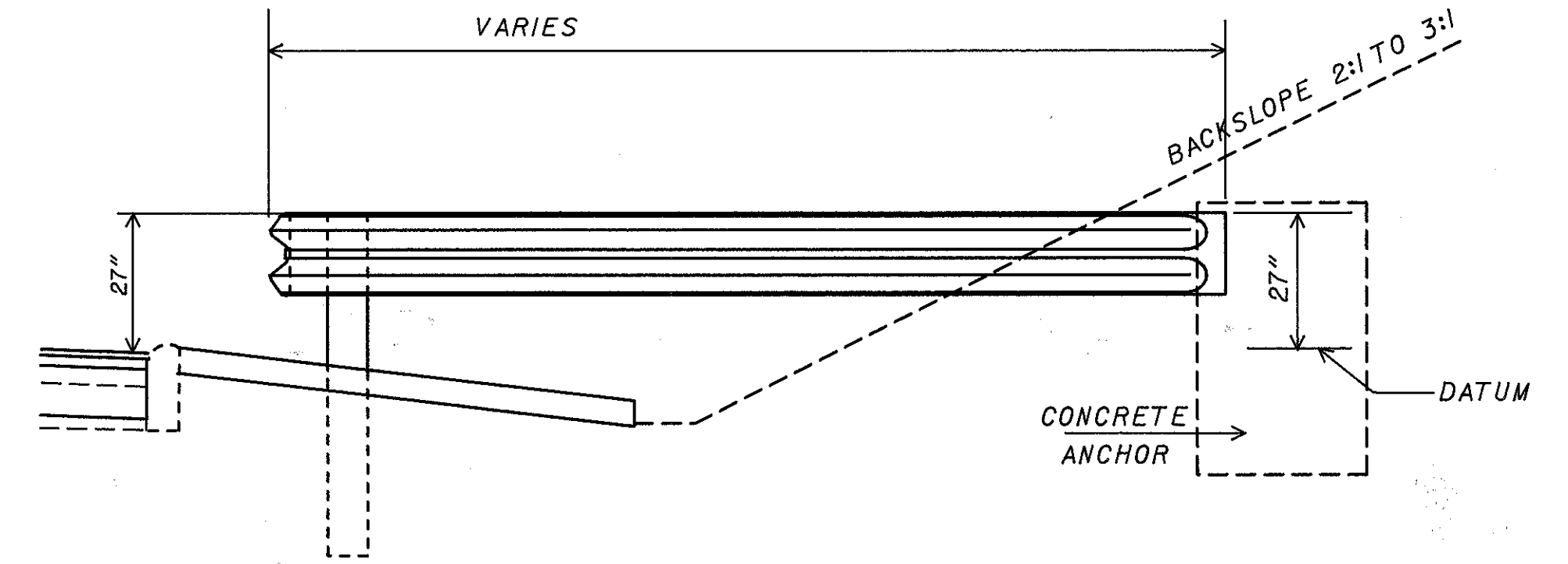
FHWA  
 REGION 5

FEDERAL  
 PROJECT

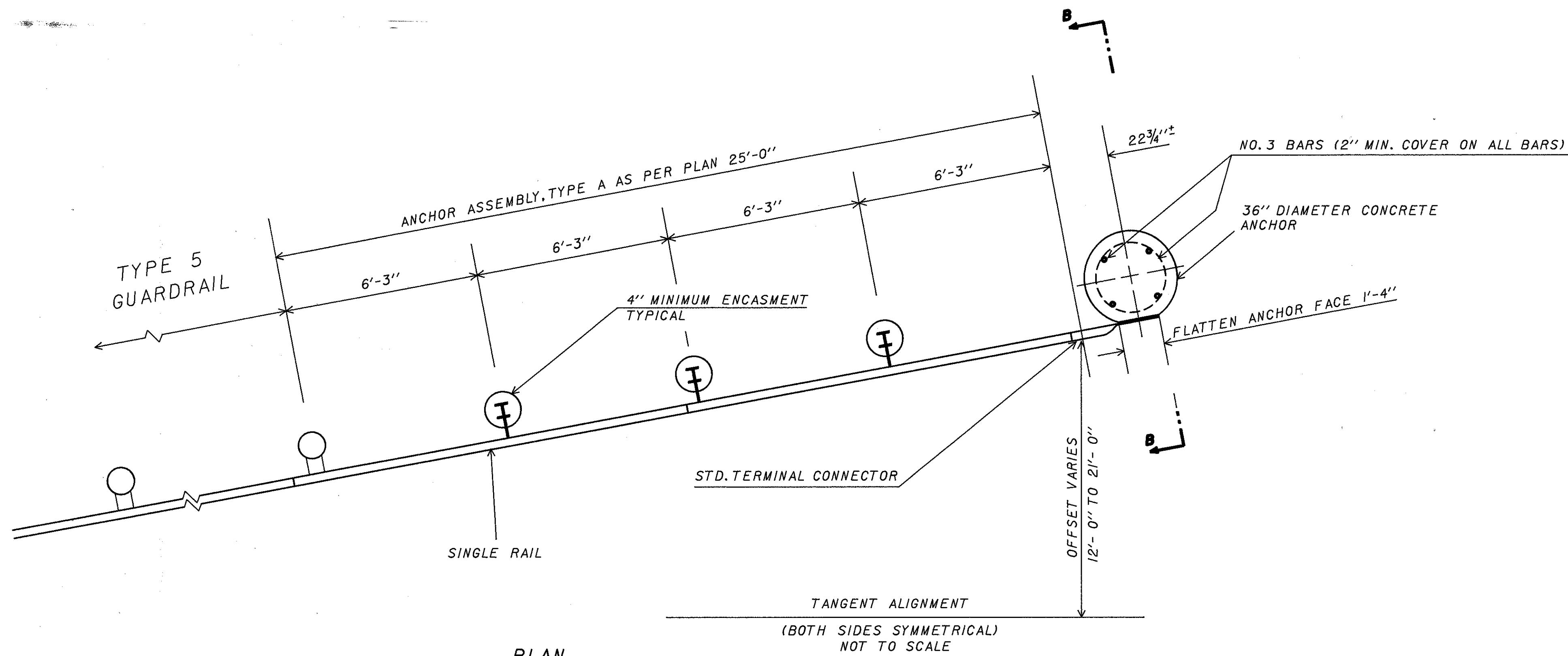
66  
 245



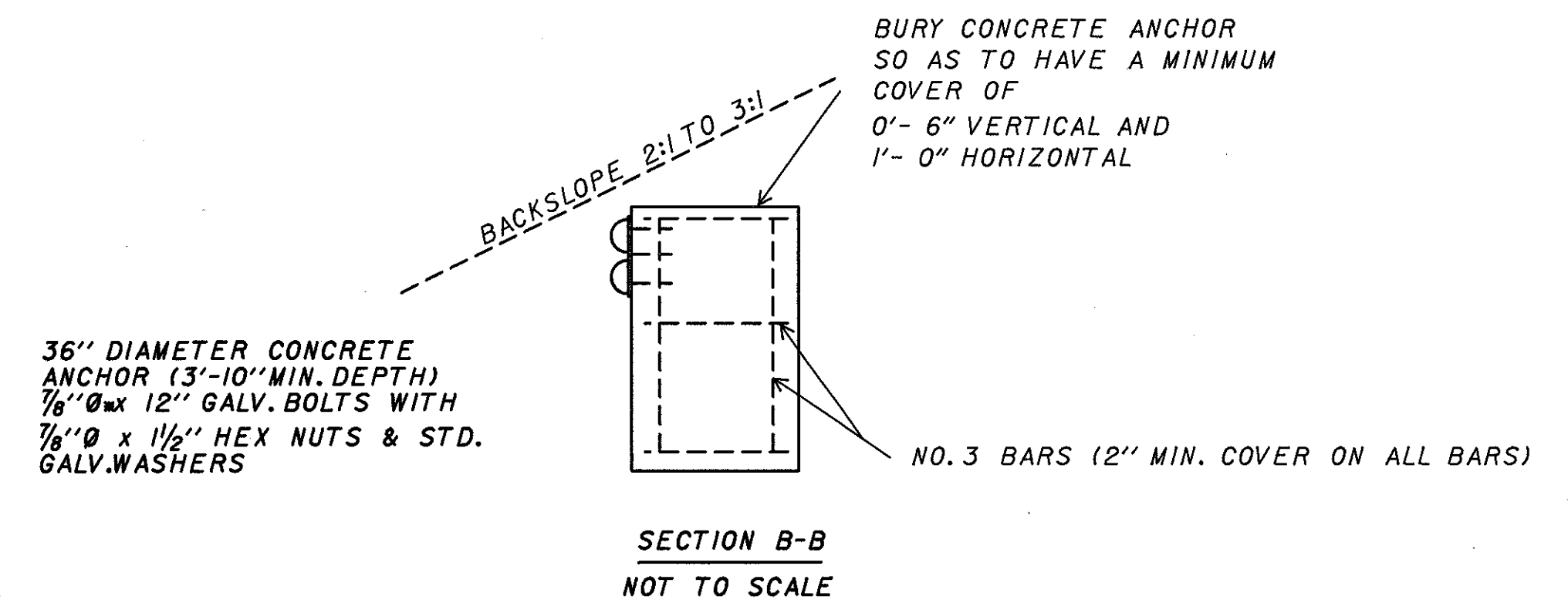
**BURIED ANCHOR ASSEMBLY DETAIL**  
 SCALE: 1" = 20'



**SECTION A-A**  
 NOT TO SCALE



**PLAN**  
**ANCHOR ASSEMBLY, TYPE A AS PER PLAN**  
 FOR FURTHER DETAILS SEE STD. DRAWING GR-4 (2-5-82)  
 NOT TO SCALE



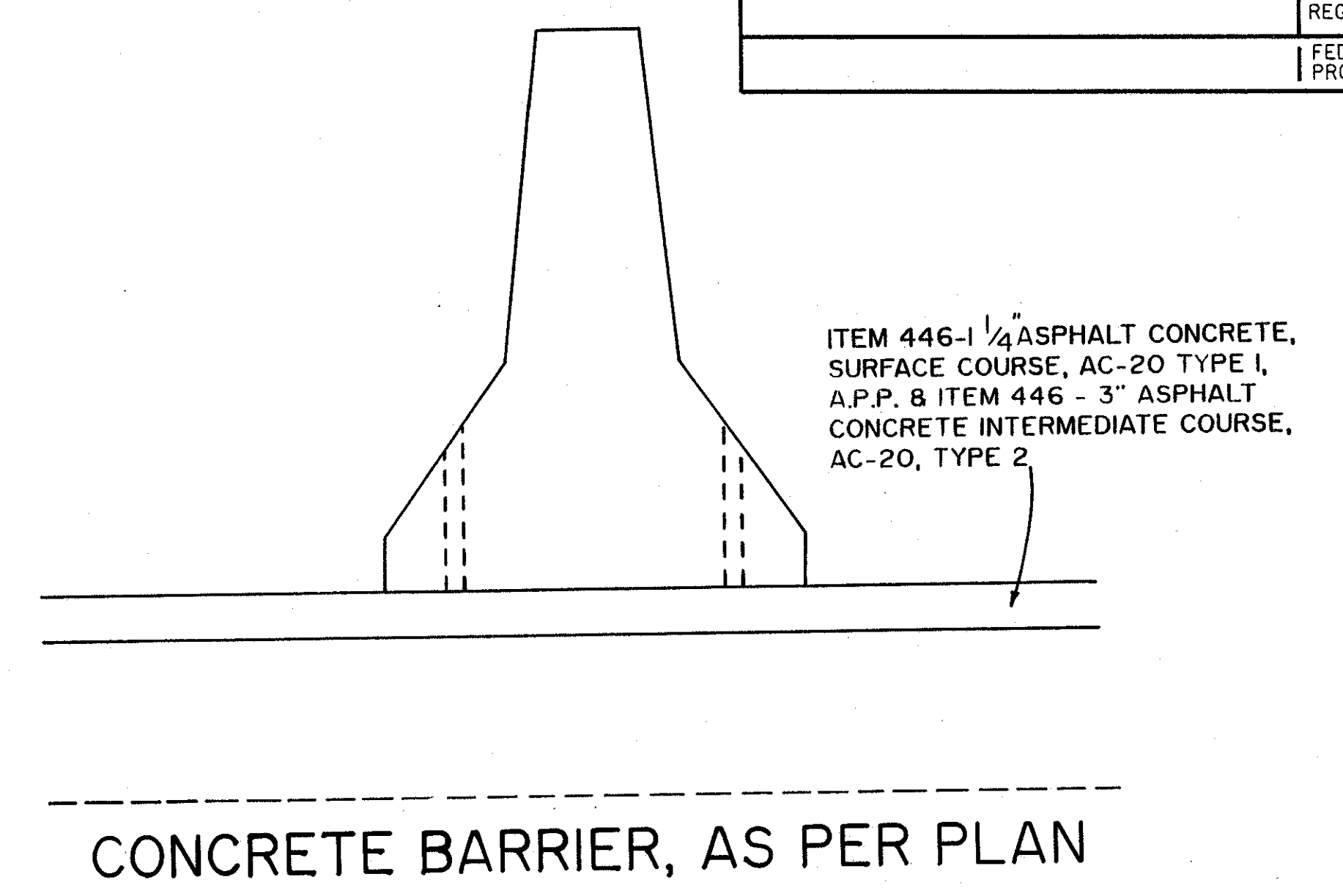
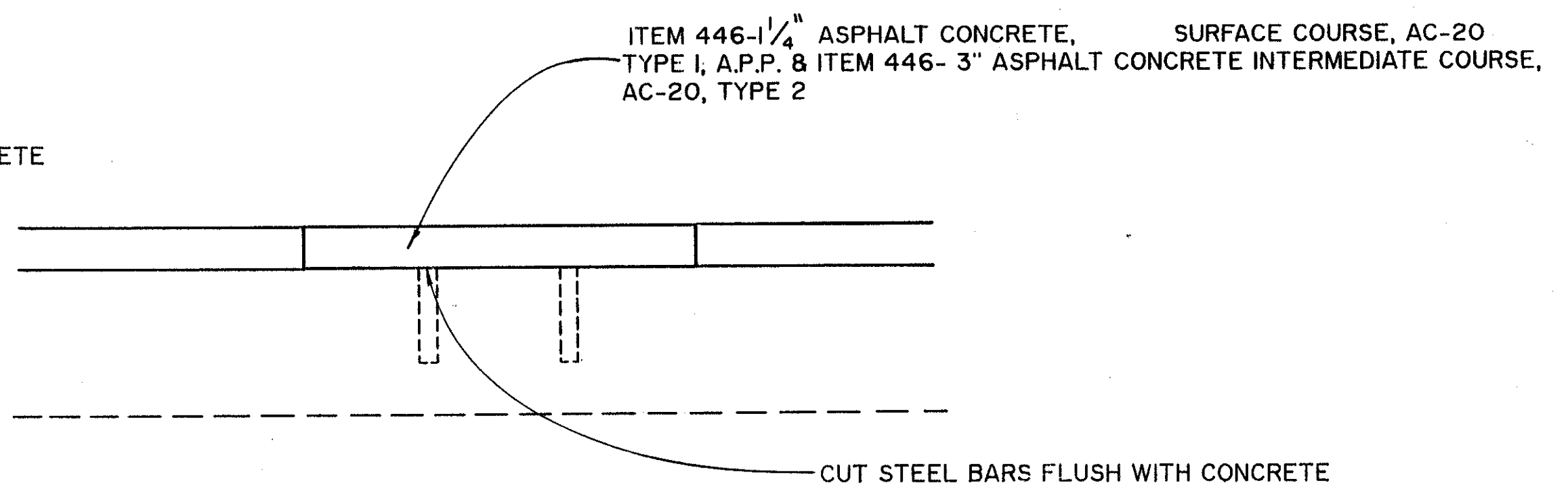
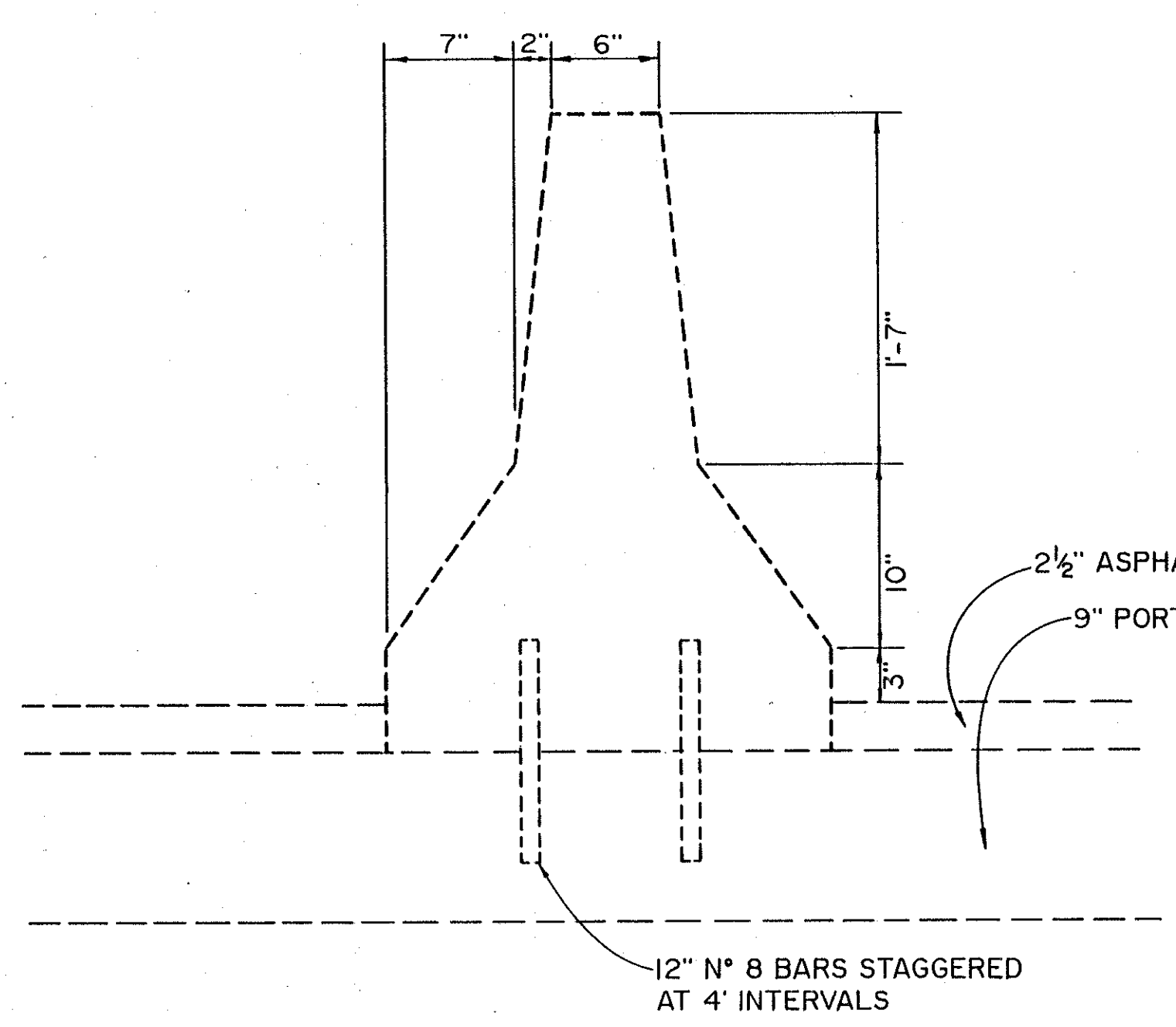
**SECTION B-B**  
 NOT TO SCALE

PLOT SUBMITTED: 18-MAY-1992 11:36

PLOT SUBMITTED BY: BANASZAK

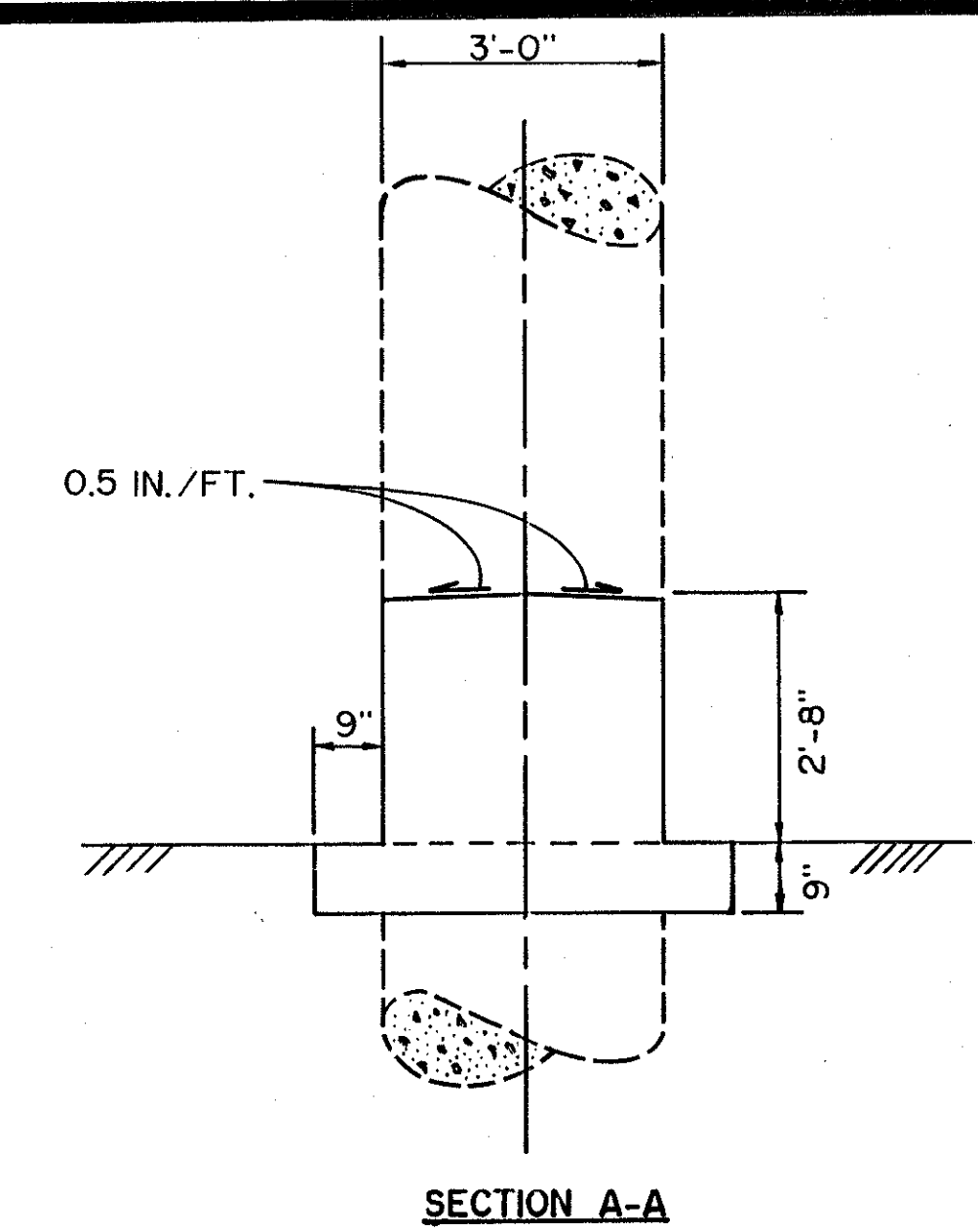
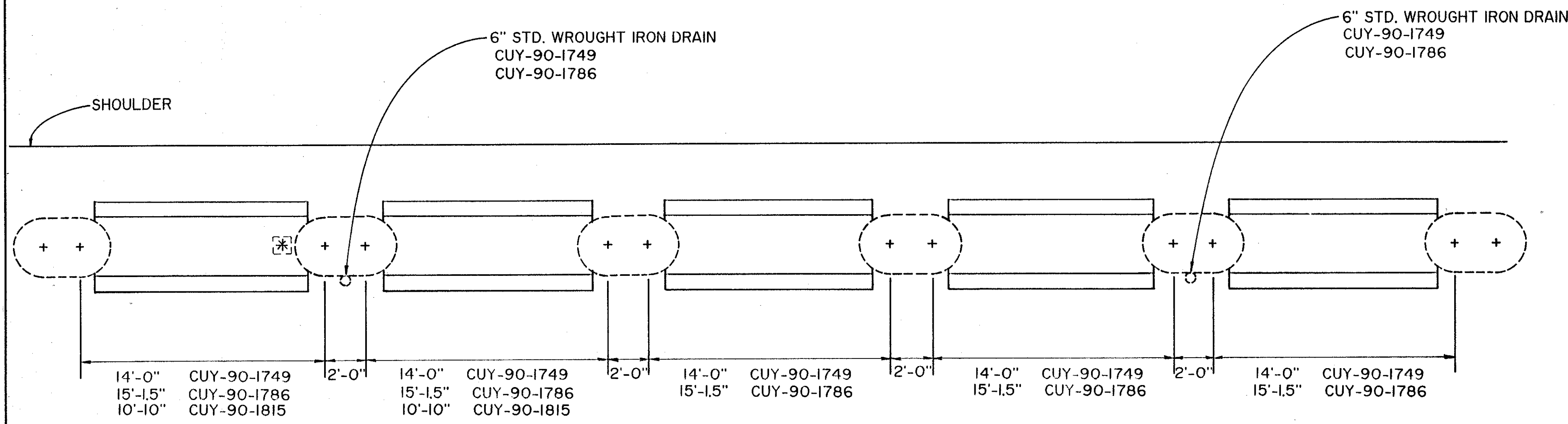
c:\dgn\pid07090\07090gma.dgn





**CONCRETE BARRIER DETAILS**  
 SEE SHEET 52-53 FOR LOCATION

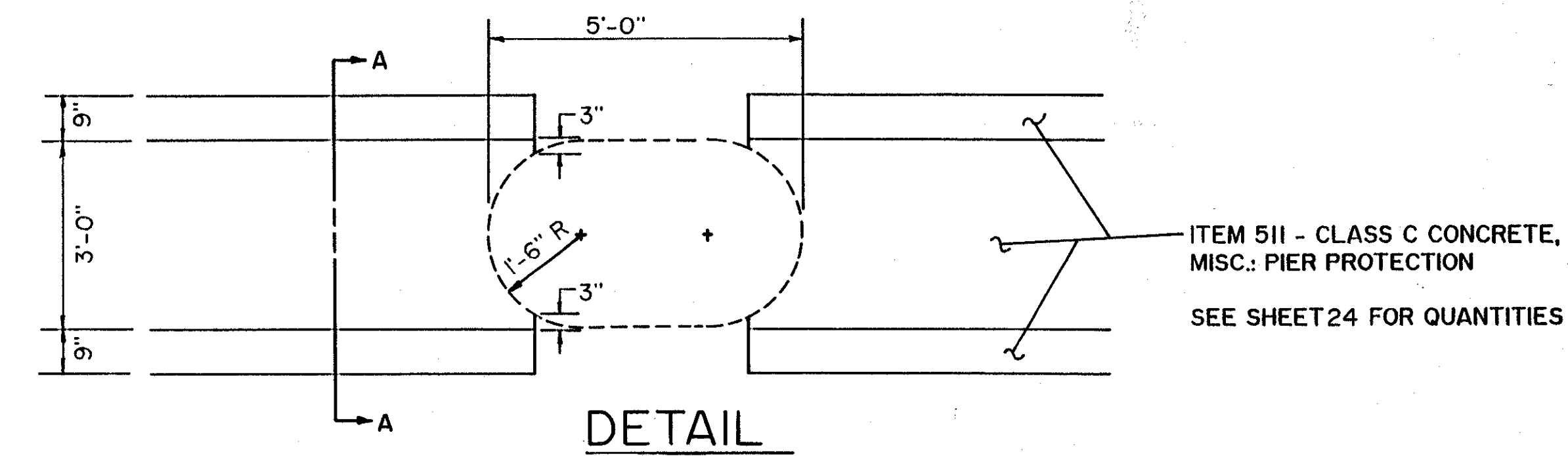
CONCRETE BARRIER, AS PER PLAN



PLAN VIEW

SECTION A-A

\* ACCESS SHALL BE PROVIDED AT LOCATION OF PULLBOX ON CUY-90-1786 AS DIRECTED BY THE ENGINEER.



PIER PROTECTION DETAIL

ITEM 511 - CLASS C CONCRETE, MISC.: PIER PROTECTION  
 SEE SHEET 24 FOR QUANTITIES





# IMPACT ATTENUATOR DETAILS

FOR FURTHER INFORMATION, SEE GENERAL NOTE SHT. 8

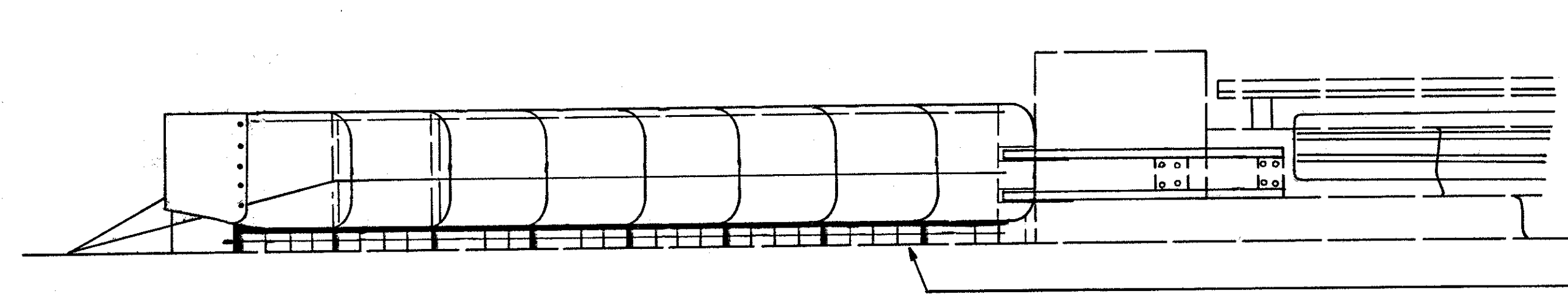
CUYAHOGA COUNTY  
CUY - 90 - 16.24

OHIO

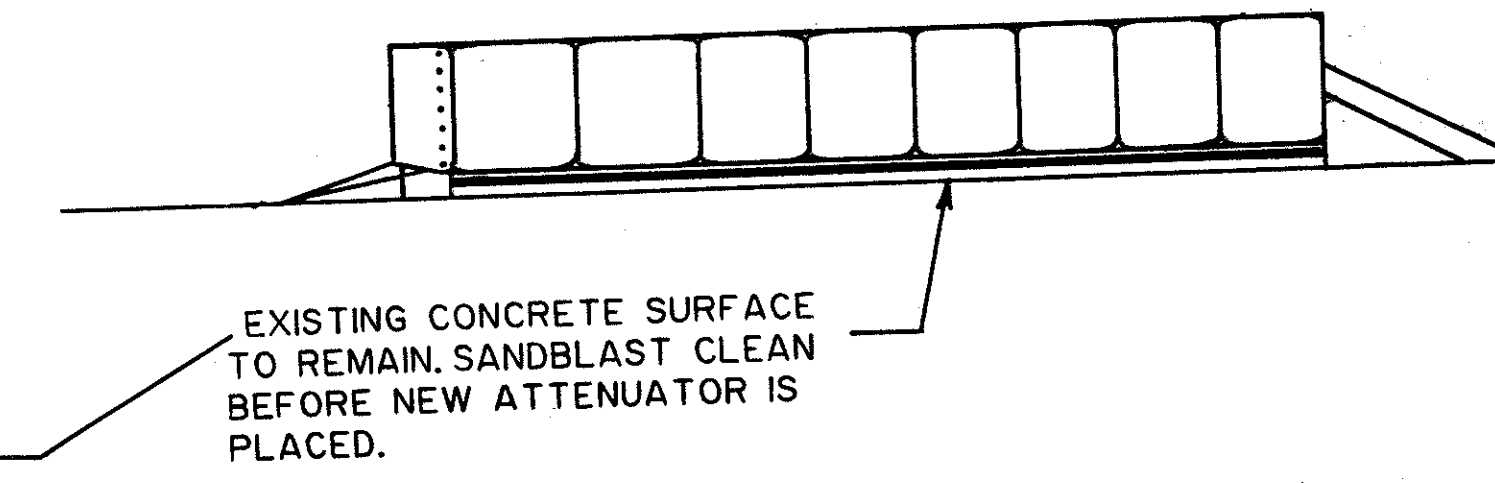
FHWA  
REGION 5

FEDERAL  
PROJECT

69  
245

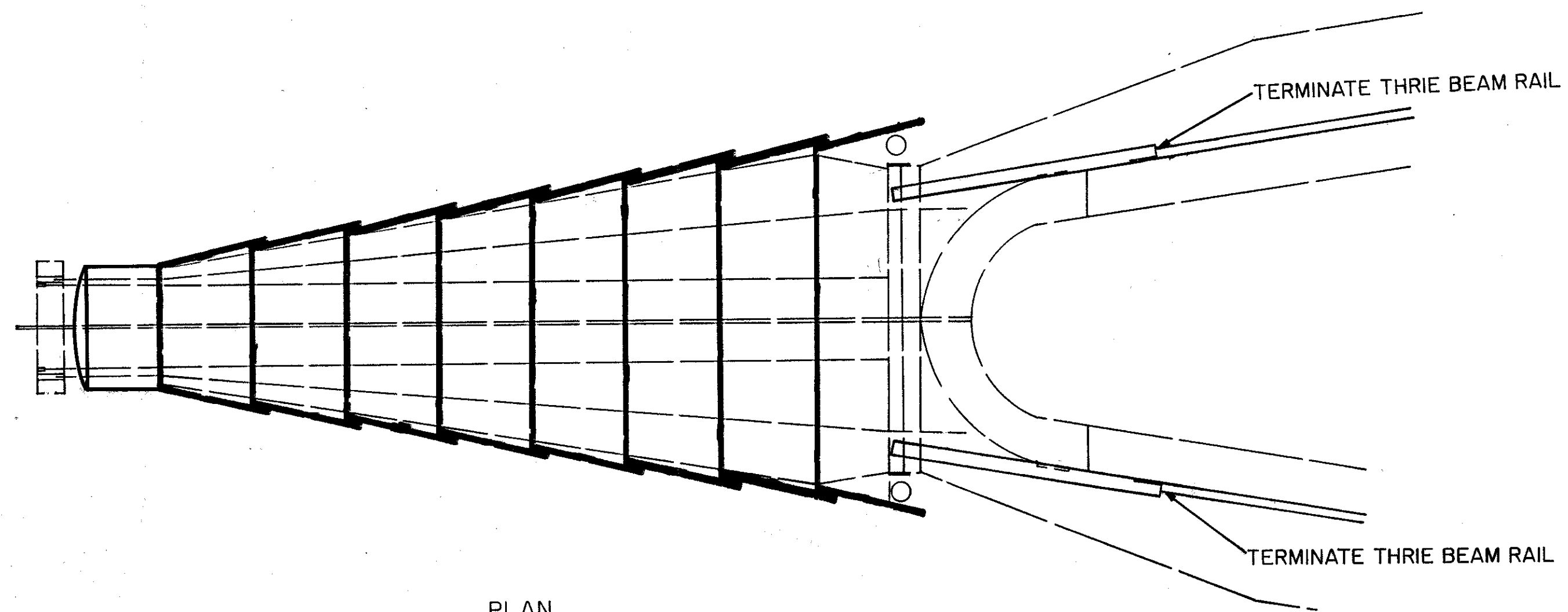


ELEVATION

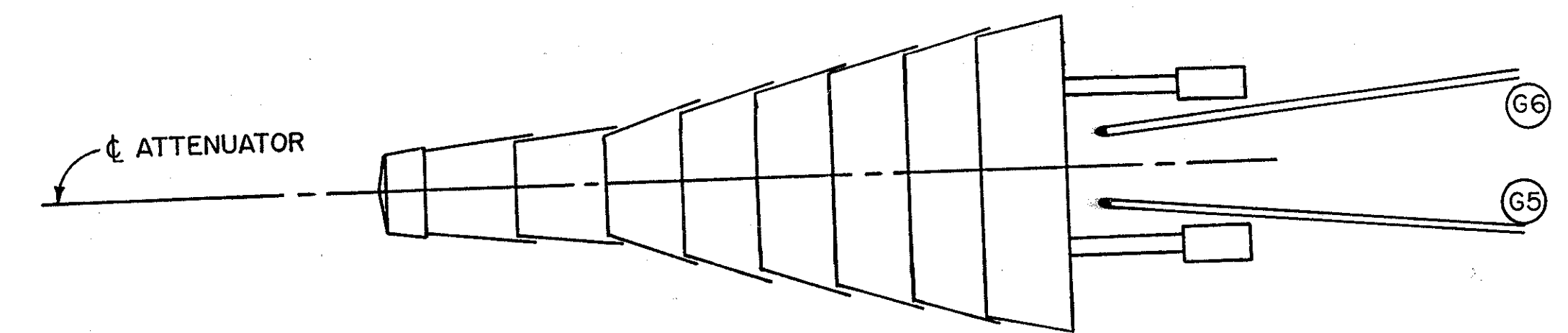


EXISTING CONCRETE SURFACE  
TO REMAIN. SANDBLAST CLEAN  
BEFORE NEW ATTENUATOR IS  
PLACED.

ELEVATION  
(NO SCALE)

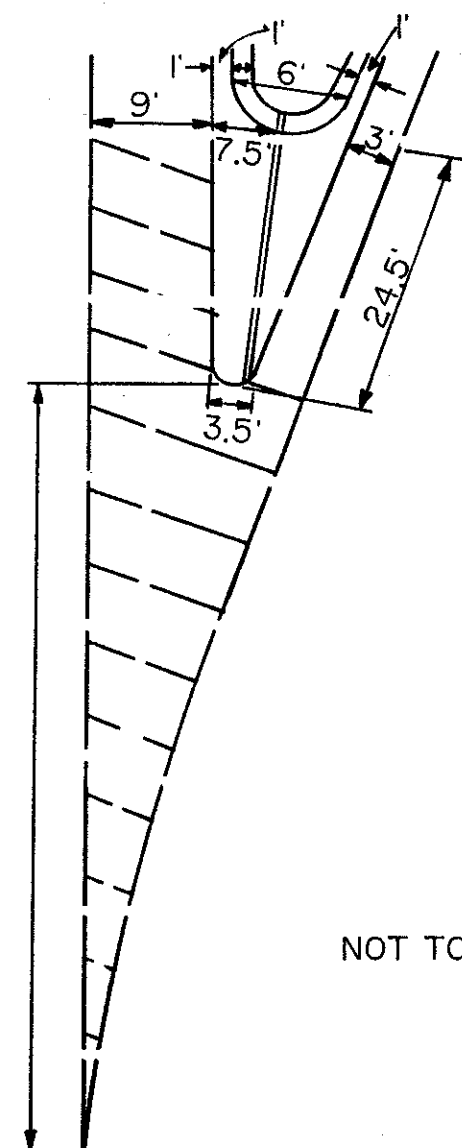


PLAN  
AT STA. 73+25± WB



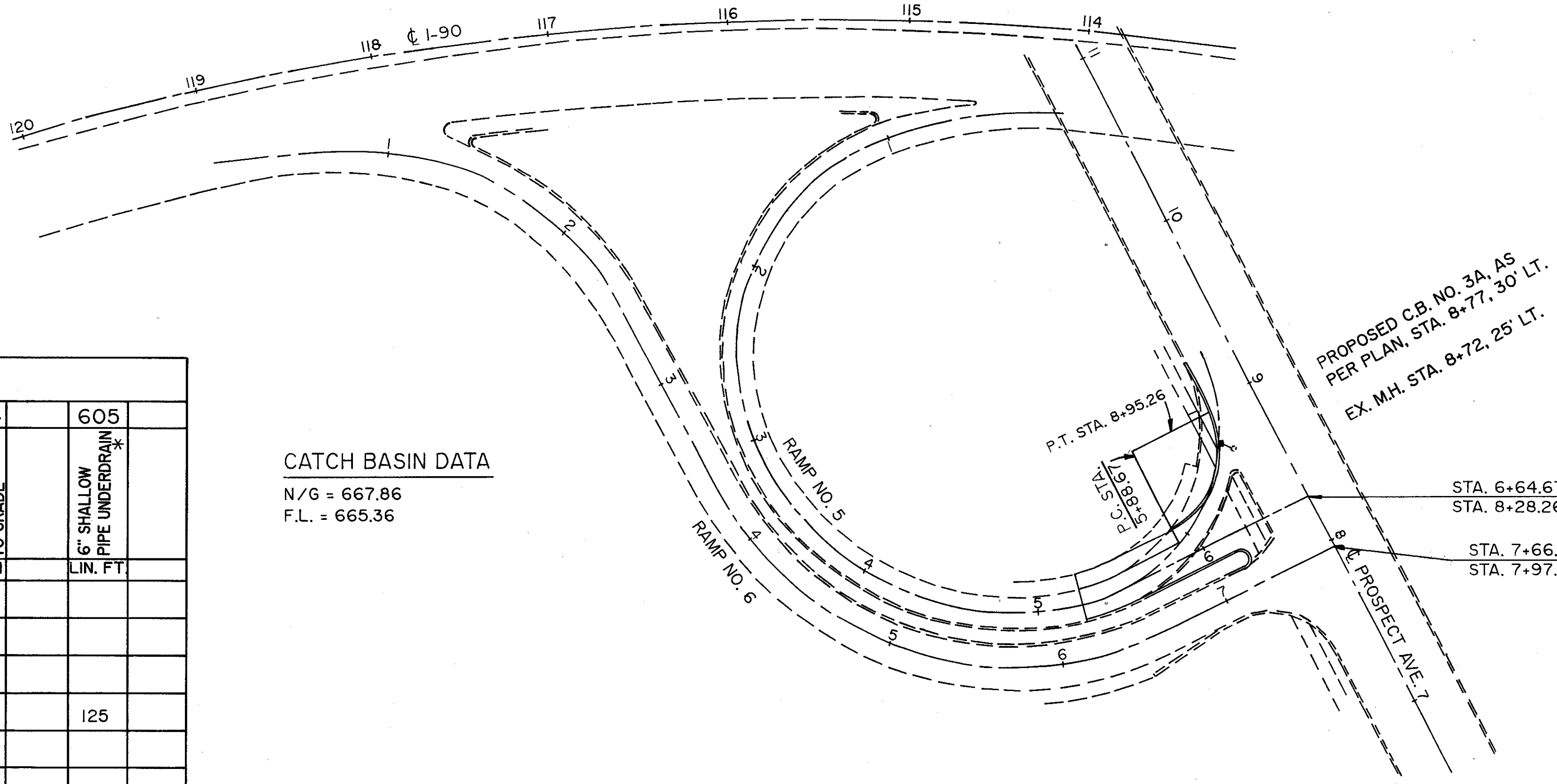
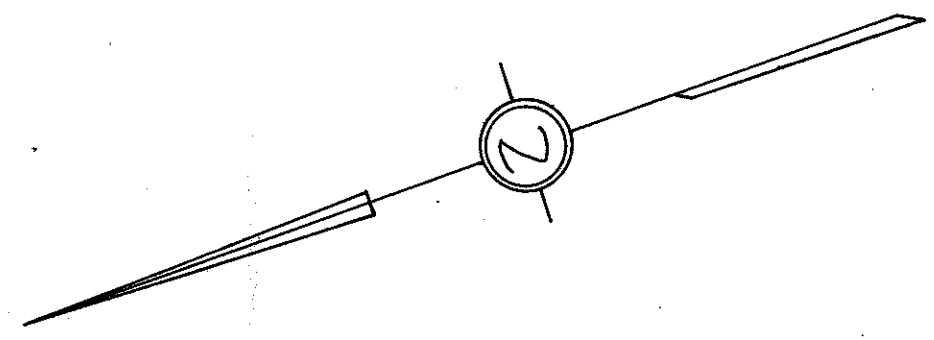
PLAN  
AT STA. 57+00± EB

SKETCH OF  
LOCATION SHOWING EXISTING  
CONDITIONS  
CUY. I-90 W.B. TO I-77 S.B.



NOT TO SCALE

THE NOSE COVER OF THE ATTENUATOR SHALL BE  
MARKED WITH THREE EVENLY SPACED FOUR (4)  
INCH WIDE HORIZONTAL STRIPES OF WHITE  
REFLECTIVE MATERIAL MEETING THE REQUIREMENT  
OF THE CMS 730.19.

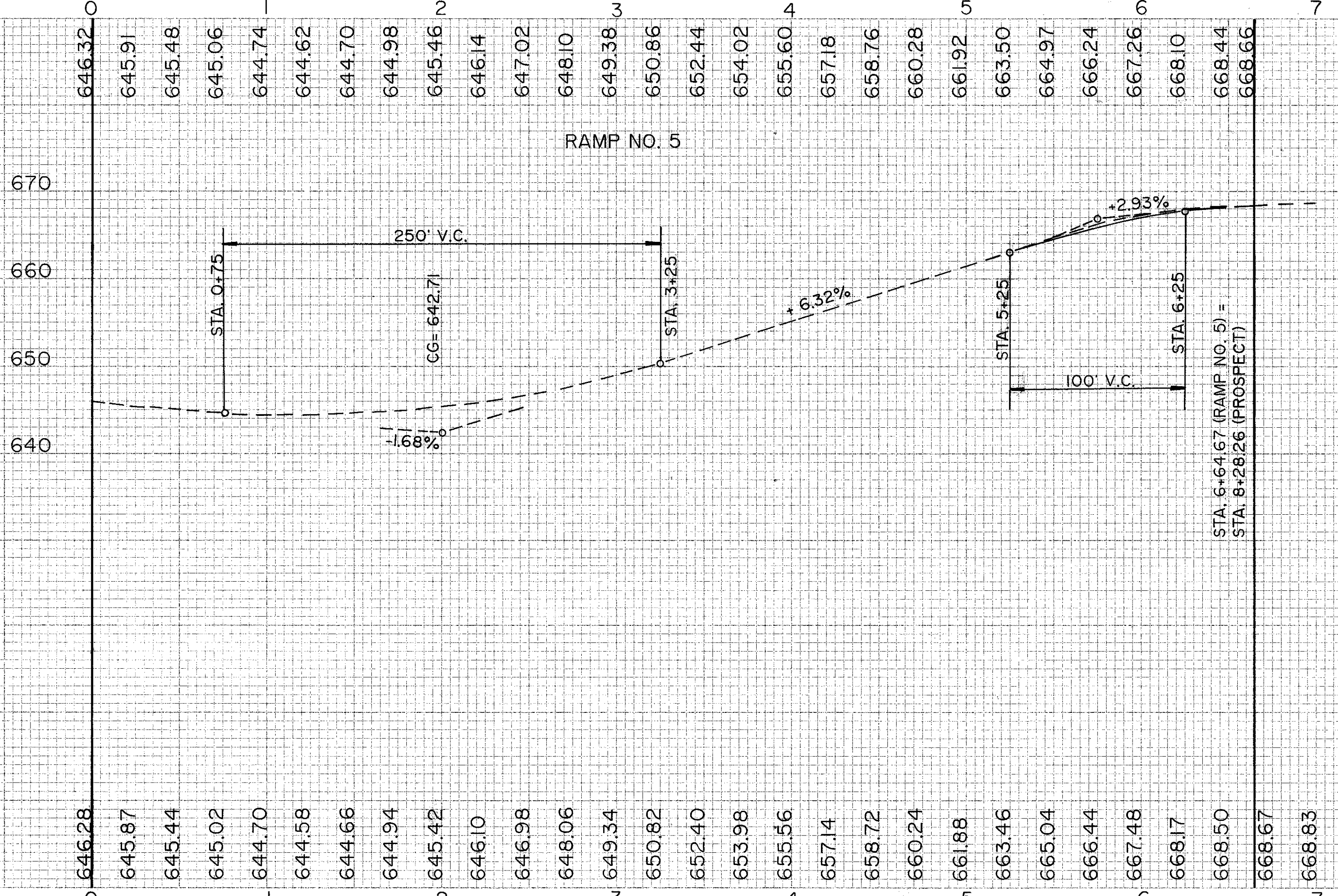


REFERENCE NO.		STATION		202	202	603	604	604	605
FROM	TO	PIPE REMOVED 24" AND UNDER LIN. FT.	CATCH BASIN REMOVED EACH			12" CONDUIT TYPE B, 706.02 LIN. FT.	CATCH BASIN NO. 3A WITH "V" GRATE, AS PER PLAN EACH	RECONSTRUCTED MANHOLE TO GRADE EACH	6" SHALLOW PIPE UNDERDRAIN* LIN. FT.
8+72 (PROSPECT)	9+05 (PROSPECT)	30	1						
8+72 (PROSPECT)	8+76 (PROSPECT)					8	1	1	
5+25	6+36								125
<b>TOTAL</b>		<b>30</b>	<b>1</b>			<b>8</b>	<b>1</b>	<b>1</b>	

CATCH BASIN DATA  
N/G = 667.86  
F.L. = 665.36

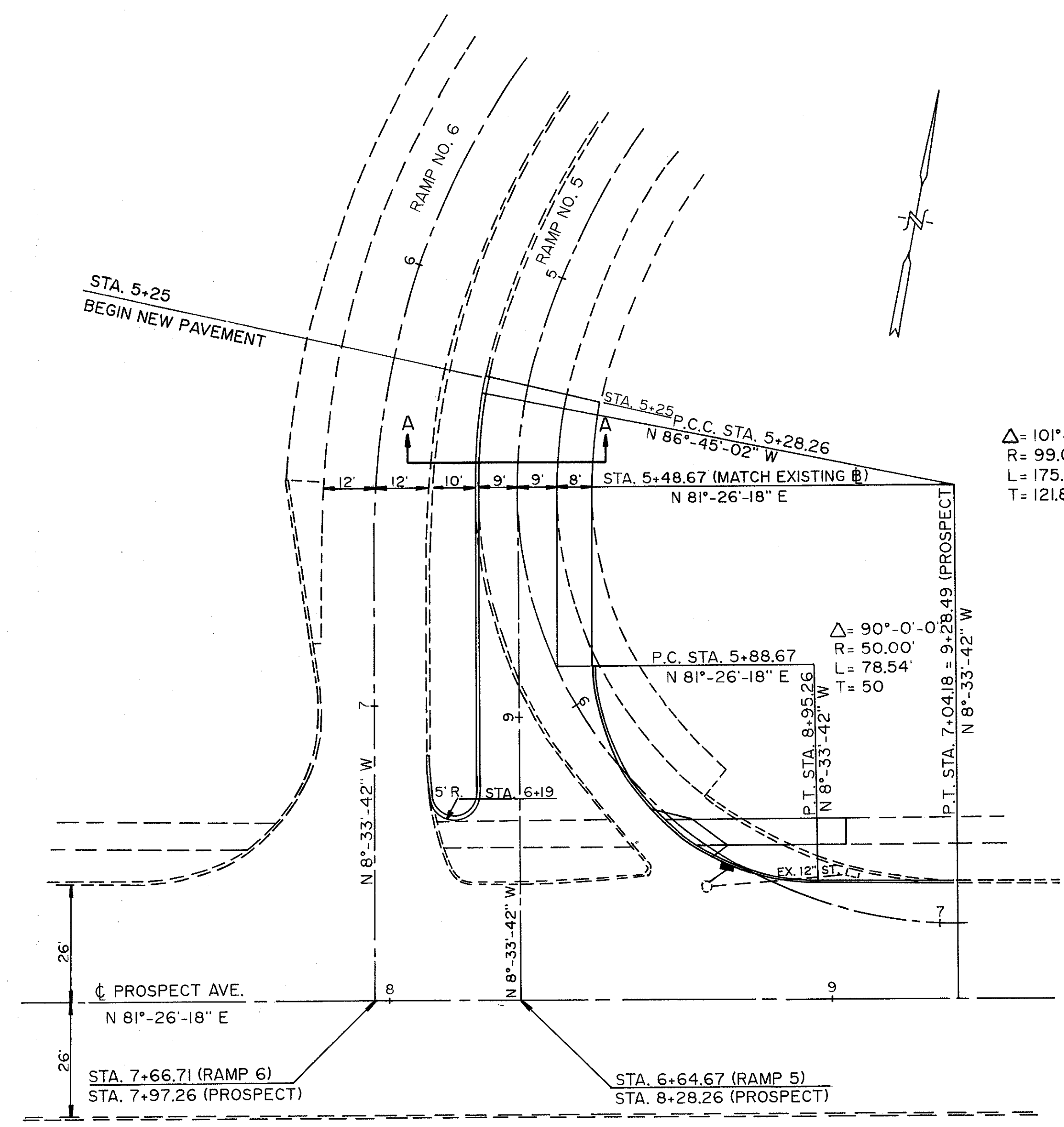
STATION		304	305	609	609	609
FROM	TO	AGGREGATE BASE AS PER PLAN CU.YD.	CONCRETE BASE AS PER PLAN SQ.YD.	CURB, TYPE 6, AS PER PLAN, TYPE 1 LIN. FT.	CURB, TYPE 6, AS PER PLAN, TYPE 2 LIN. FT.	CURB, TYPE 6, AS PER PLAN, TYPE 2 LIN. FT.
5+25	6+40.67	73	439			
5+25 (RAMP 5) (PROSPECT)	6+40.67 (PROSPECT)					112
5+25 (RAMP 5) (PROSPECT)	7+11 (RAMP 6) (PROSPECT)					120
<b>TOTAL</b>		<b>73</b>	<b>439</b>			<b>112</b>

\* QUANTITY INCLUDED IN DRAINAGE QUANTITIES, SHEET No. 25.



REFERENCE NO.		STATION		202	202	202	203	203	203	203	608	608	608
FROM	TO	PAVEMENT REMOVED SQ.YD.	CURB REMOVED LIN. FT.	WALK REMOVED SQ.FT.	EMBANKMENT AS PER PLAN CU.YD.	EXCAVATION NOT INCLUDING EMBANKMENT CU.YD.	SUBGRADE CONSTRUCTION SQ.YD.	CONCRETE WALK, A.P.P. SQ.FT.	CURB RAMP, TYPE 2 EACH				
5+25	6+36.58	226	112	72			439						
6+36.58 (PROSPECT)	7+04.18 (PROSPECT)												
8+02 (PROSPECT)	8+56 (PROSPECT)												
8+13 (PROSPECT)	8+56 (PROSPECT)			258									
8+92 (PROSPECT)	9+04 (PROSPECT)			72									
<b>TOTAL</b>		<b>351</b>	<b>254</b>	<b>330</b>	<b>25</b>	<b>100</b>	<b>439</b>			<b>200</b>	<b>1</b>		<b>1</b>



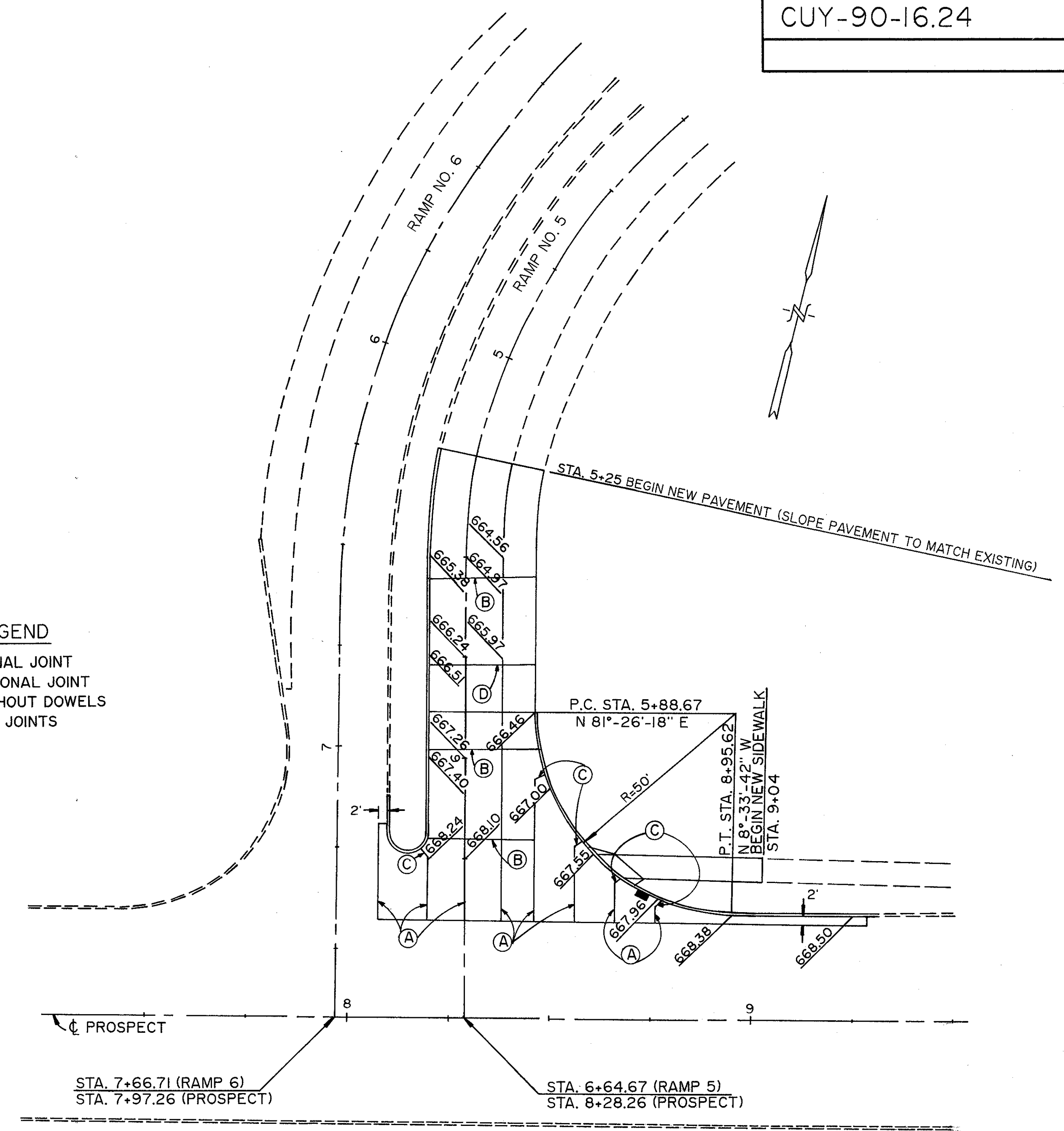


PAVEMENT JOINT LEGEND

- (A) STANDARD LONGITUDINAL JOINT
- (B) STANDARD CONTRACTIONAL JOINT
- (C) EXPANSION JOINT WITHOUT DOWELS
- (D) STANDARD EXPANSION JOINTS

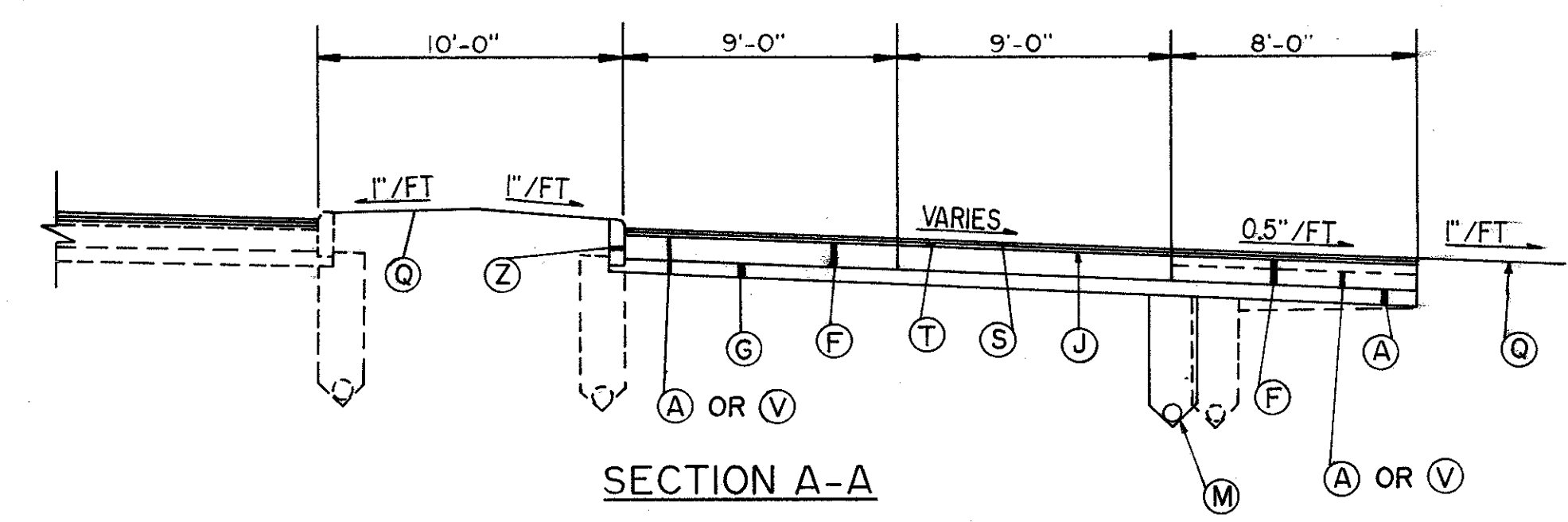
CATCH BASIN DATA

N/G = 667.86  
F.L. = 665.36



SECTION AA LEGEND

- (A) ITEM 203 - EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
- (F) ITEM 305 - CONCRETE BASE, AS PER PLAN
- (G) ITEM 304 - AGGREGATE BASE, AS PER PLAN
- (J) ITEM 407 - TACK COAT
- (M) ITEM 605 - 6" SHALLOW PIPE UNDERDRAIN, 707.15, AS PER PLAN
- (Q) ITEM 659 - SEEDING AND MULCHING
- (S) ITEM 826 - 1-1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE B
- (T) ITEM 826 - 1-3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE B
- (V) ITEM 202 - PAVEMENT REMOVED
- (Z) ITEM 609 - CURB, TYPE 6, AS PER PLAN, TYPE I

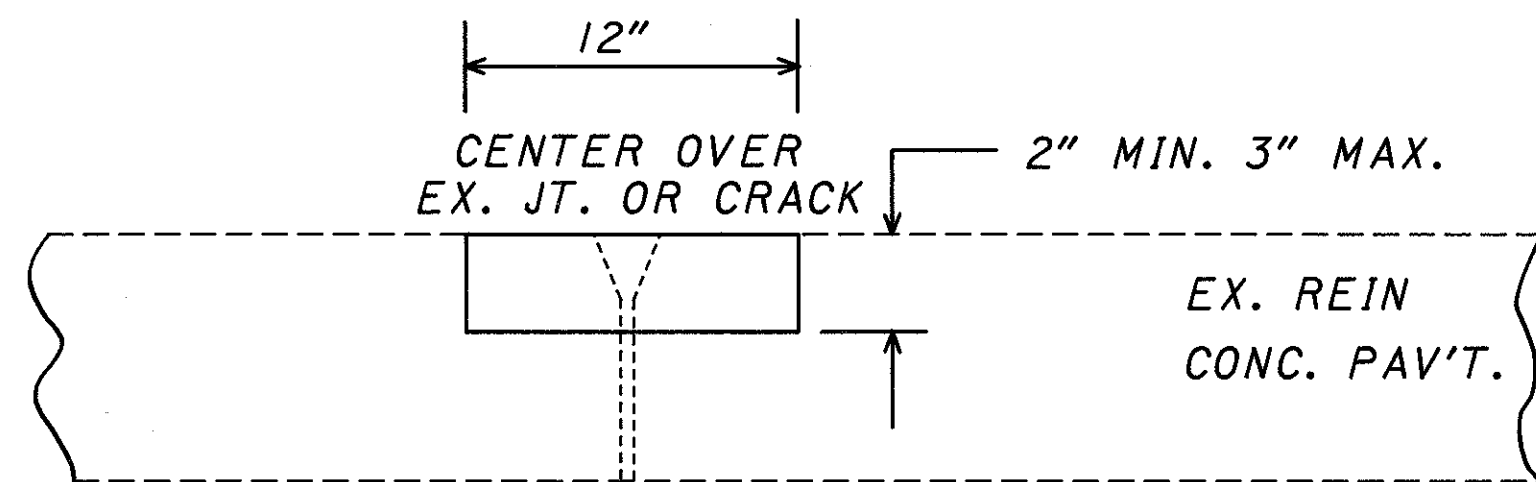
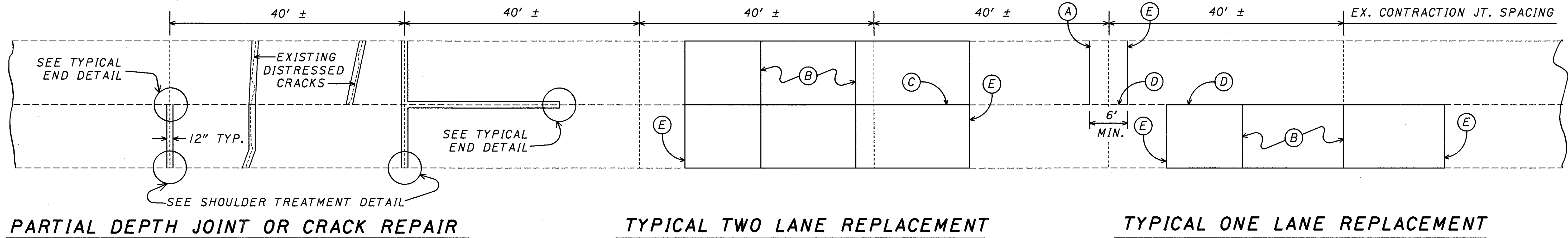


# PAVEMENT REPAIR DETAILS

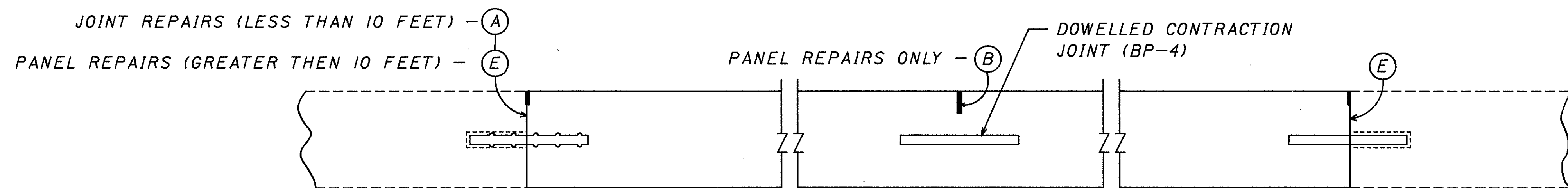
CUYAHOGA COUNTY  
 CUY-90-16.24

OHIO  
 FHWA  
 REGION 5  
 FEDERAL  
 PROJECT

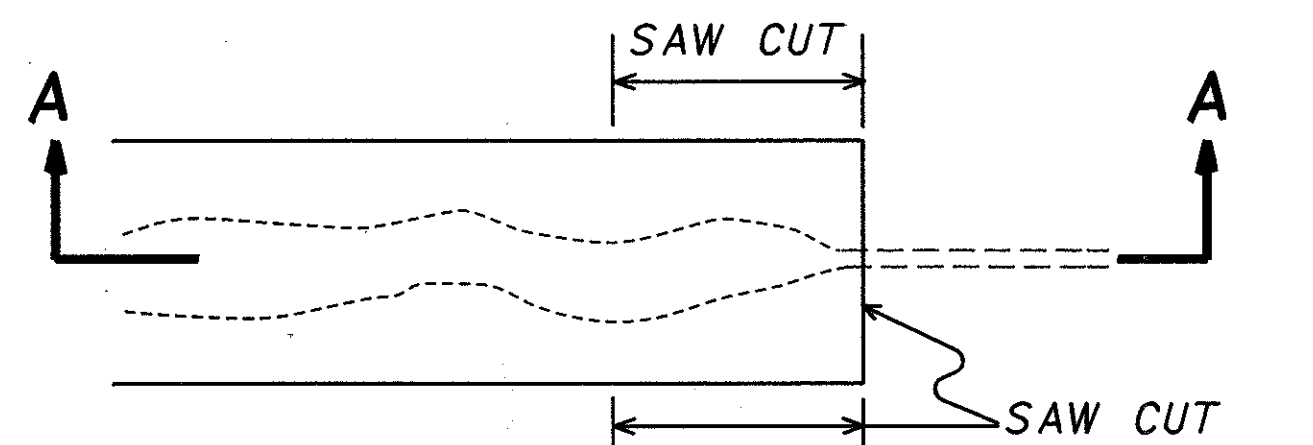
71  
 245



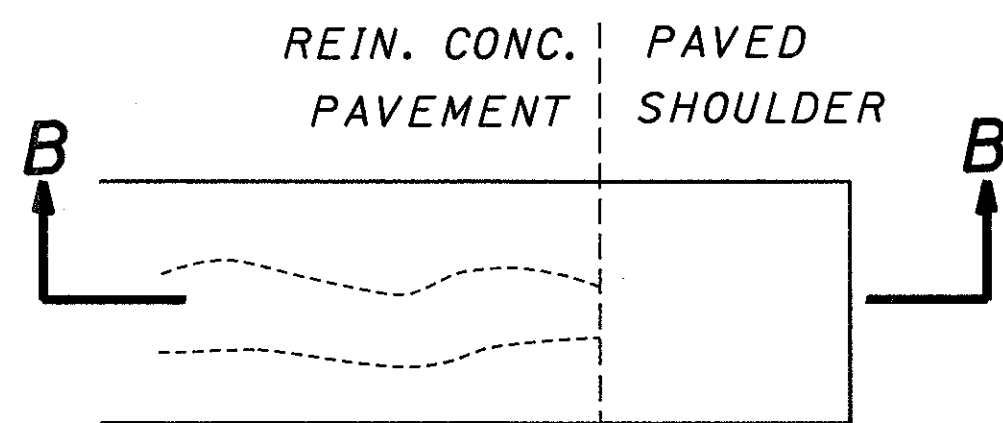
**ITEM 251 - PARTIAL DEPTH PAV'T REPAIR**



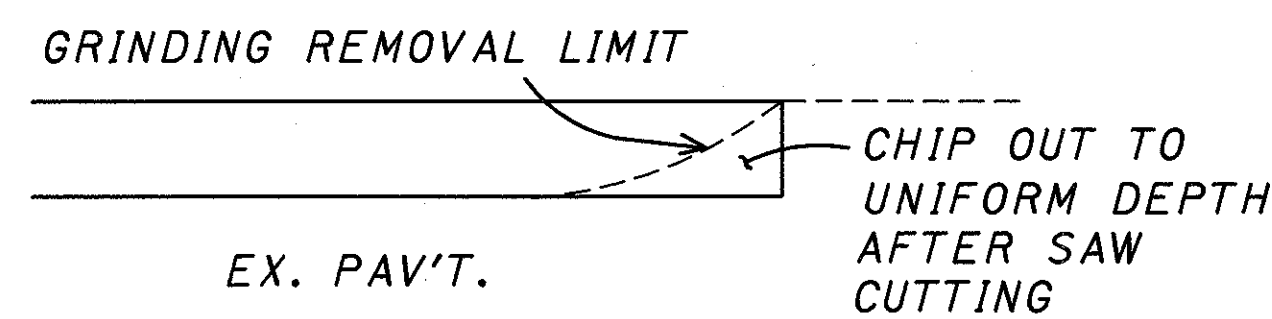
**ITEM 255 - FULL DEPTH RIGID PAVEMENT REMOVAL AND RIGID REPLACEMENT**



**DISTRESSED JOINT-PLAN VIEW**

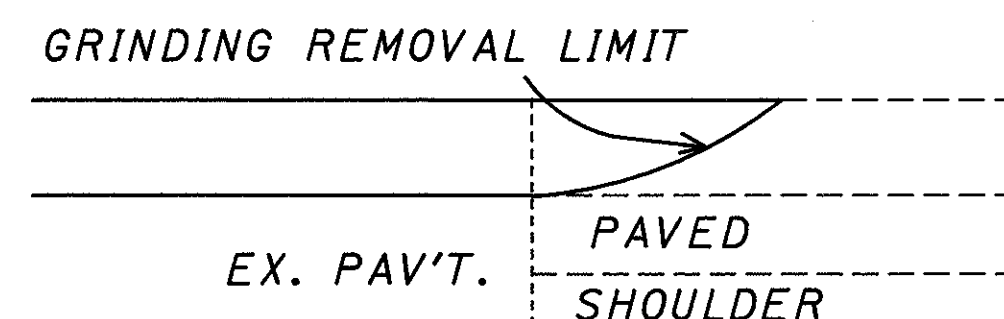


**DISTRESSED JOINT-PLAN VIEW**



**TYPICAL END DETAIL**

NO SEPARATE PAYMENT WILL BE MADE FOR THESE SAW CUTS



**SHOULDER TREATMENT DETAIL**

MEASURED QUANTITY SHALL NOT INCLUDE THE PAVED SHOULDER AREA

SEE GENERAL NOTES ON SHEET NO. 10 / 245 FOR ADDITIONAL INFORMATION.

**ESTIMATED QUANTITY \***

ITEM 251 - PARTIAL DEPTH PAVEMENT REPAIR, AS PER PLAN 10,000 SQ. YDS.

**LEGEND**

- (A) TYPE T TIED REPAIR JOINT, AS PER BP-13
- (B) SAWED CONTRACTION JOINT AS PER BP-4 MAX. SPACING 20' C/C
- (C) LONGITUDINAL BUTT JOINT AS PER BP-3 (USING HOOK BOLTS)
- (D) LONGITUDINAL JOINTS AS PER BP-13
- (E) TYPE Y DOWELLED REPAIR JOINTS, AS PER BP-13

SEE GENERAL NOTES ON SHEET 10 / 245 FOR ADDITIONAL INFORMATION.

**ESTIMATED QUANTITIES \***

ITEM 255	FULL DEPTH RIGID PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS C AS PER PLAN A	12200 SQ. YDS.
ITEM 255	FULL DEPTH RIGID PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS C AS PER PLAN B	17500 SQ. YDS.
ITEM 255	FULL DEPTH PAVEMENT SAWING	74300 LIN. FT.
ITEM 203	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	1950 CU. YDS.
ITEM 304	AGGREGATE BASE, AS PER PLAN	1950 CU. YDS.

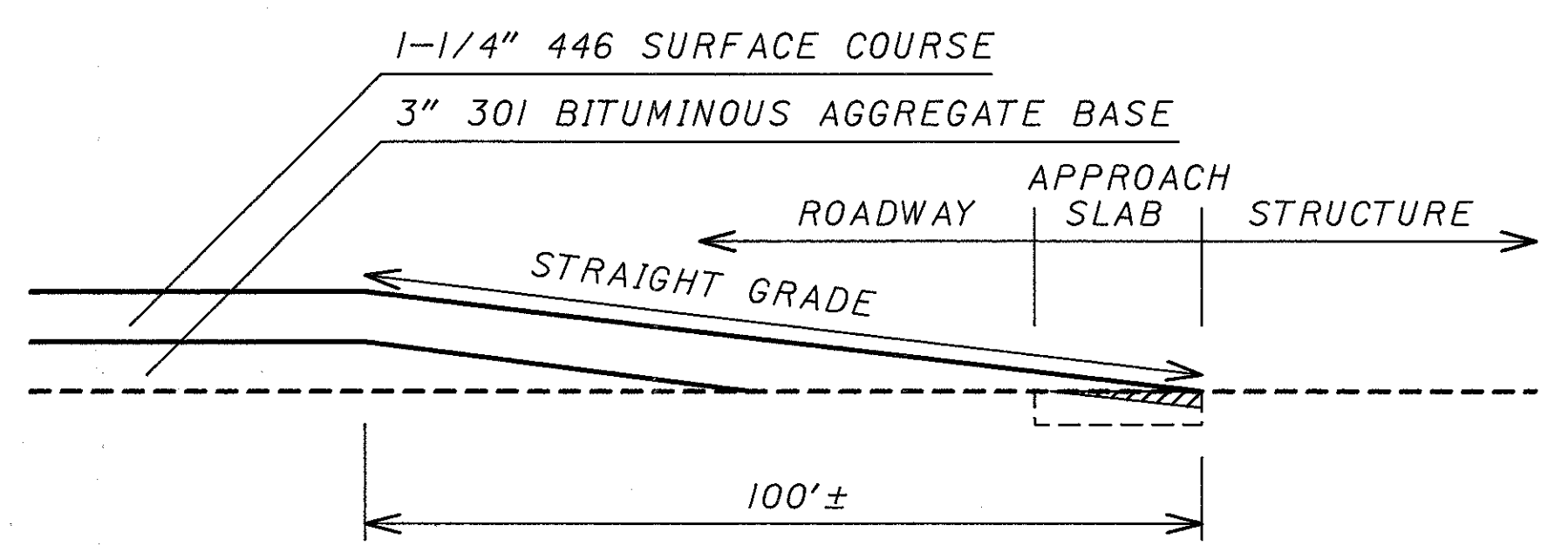
\* QUANTITY ESTIMATES ARE BASED ON DYNAFLECT READINGS AND VISUAL INSPECTION. AN ADDITIONAL 25% WAS ADDED TO THE REPAIR AREA TO COMPENSATE FOR ANY ROADWAY DETERIORATION THAT MAY OCCUR BETWEEN THE TIME OF PLAN PREPARATION AND ACTUAL CONSTRUCTION.

VISUAL SURVEY DATE - 6-17-91

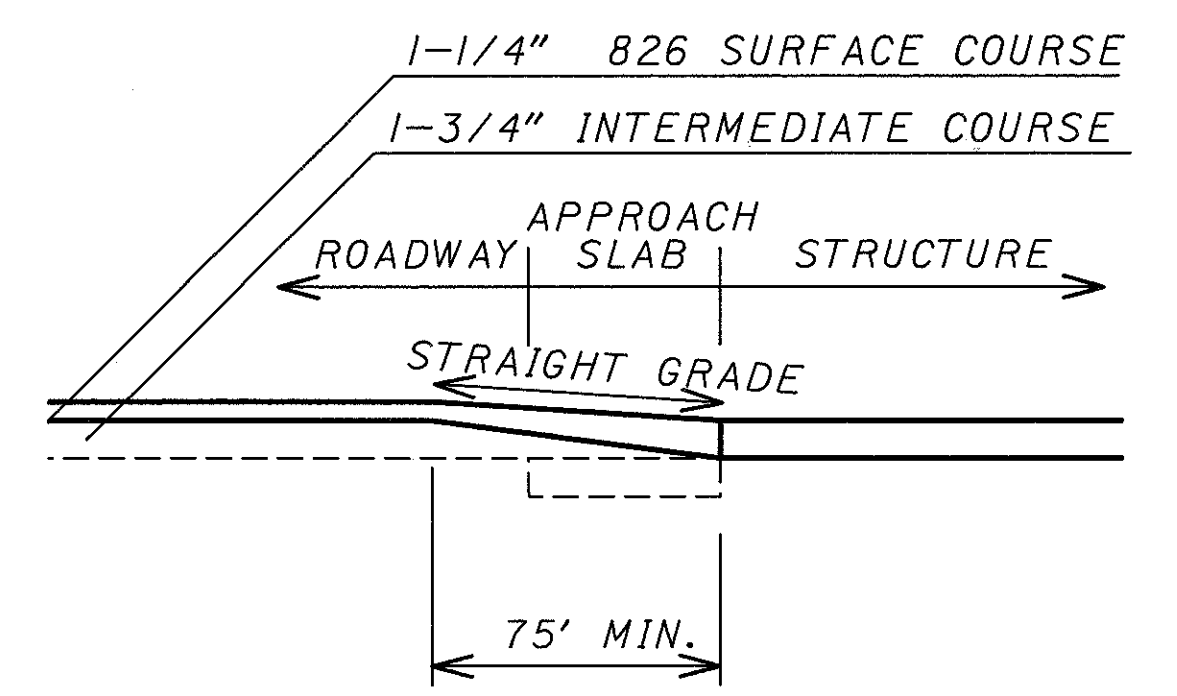
EXISTING PORTLAND CEMENT CONCRETE SURFACE AREA = 194,966 SQ. YDS.

PLOTTED FROM: c:\dgn\pi\d07090\07090gab.dgn  
 PLOT SUBMITTED: 04-JUN-1992 06:57  
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 PLOT SUBMITTED BY: uliman

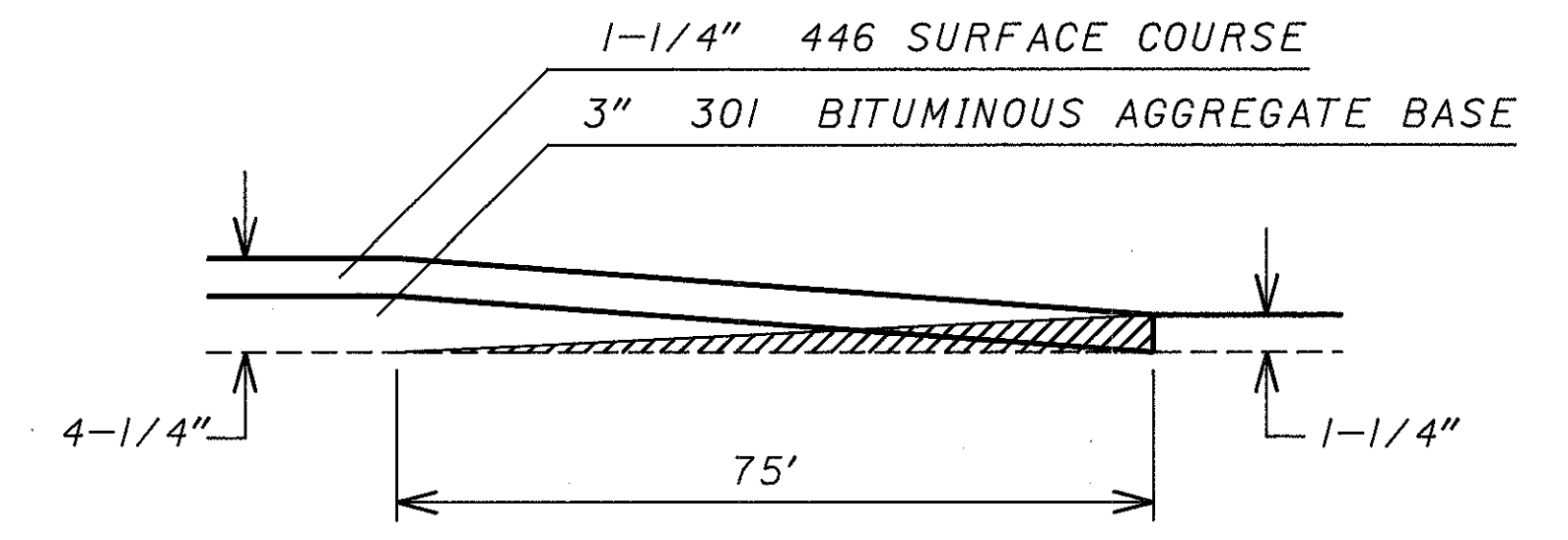




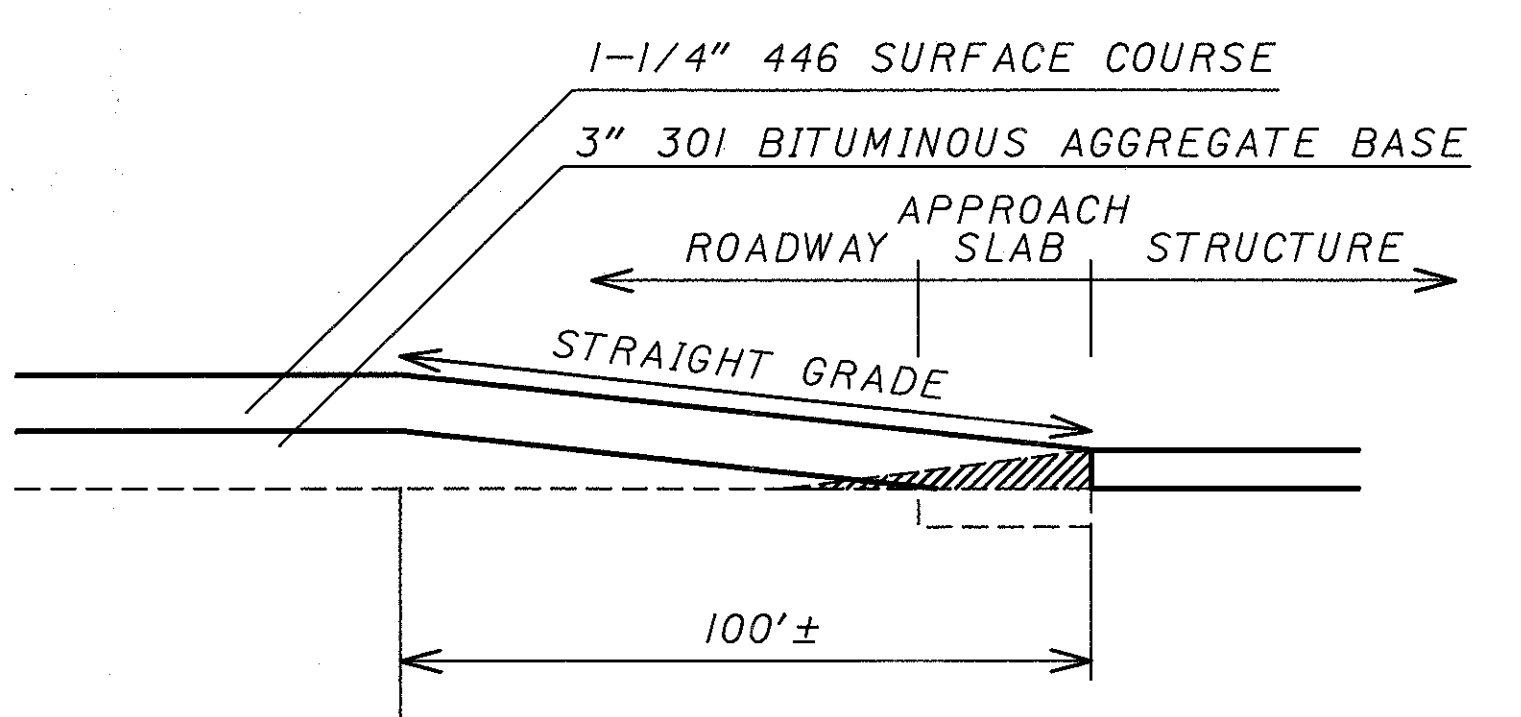
TYPICAL OVERLAY DETAIL AT BRIDGE  
(ROADWAY WITH 4-1/4" OVERLAY) BRIDGE WITH NO OVERLAY



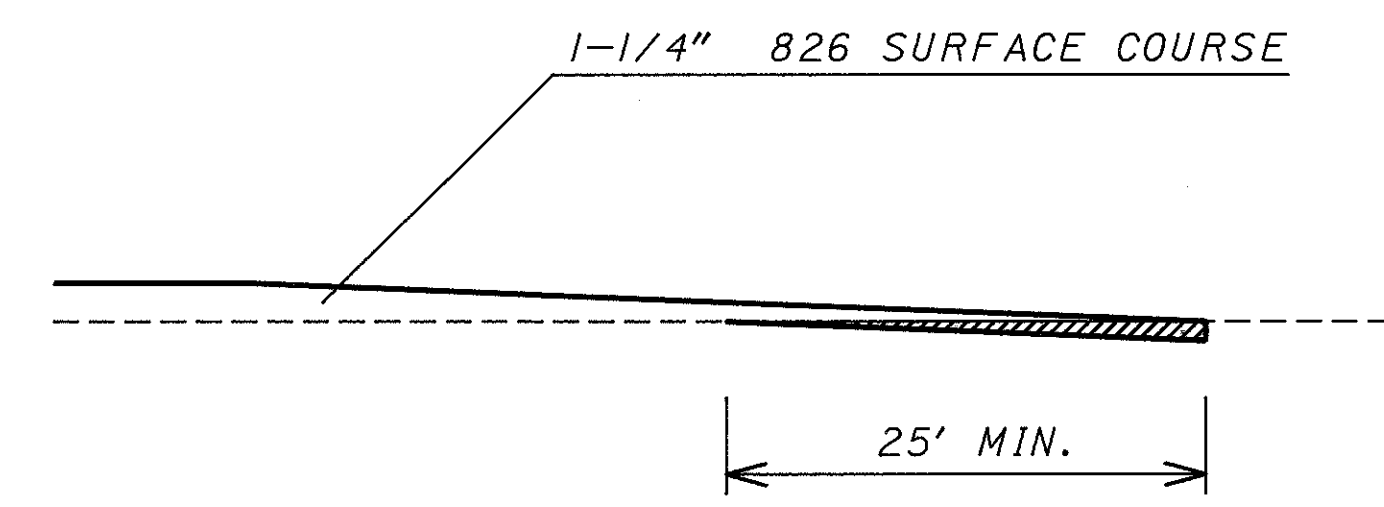
TYPICAL OVERLAY DETAIL AT BRIDGE  
(ROADWAY WITH 3" OVERLAY) BRIDGE WITH OVERLAY



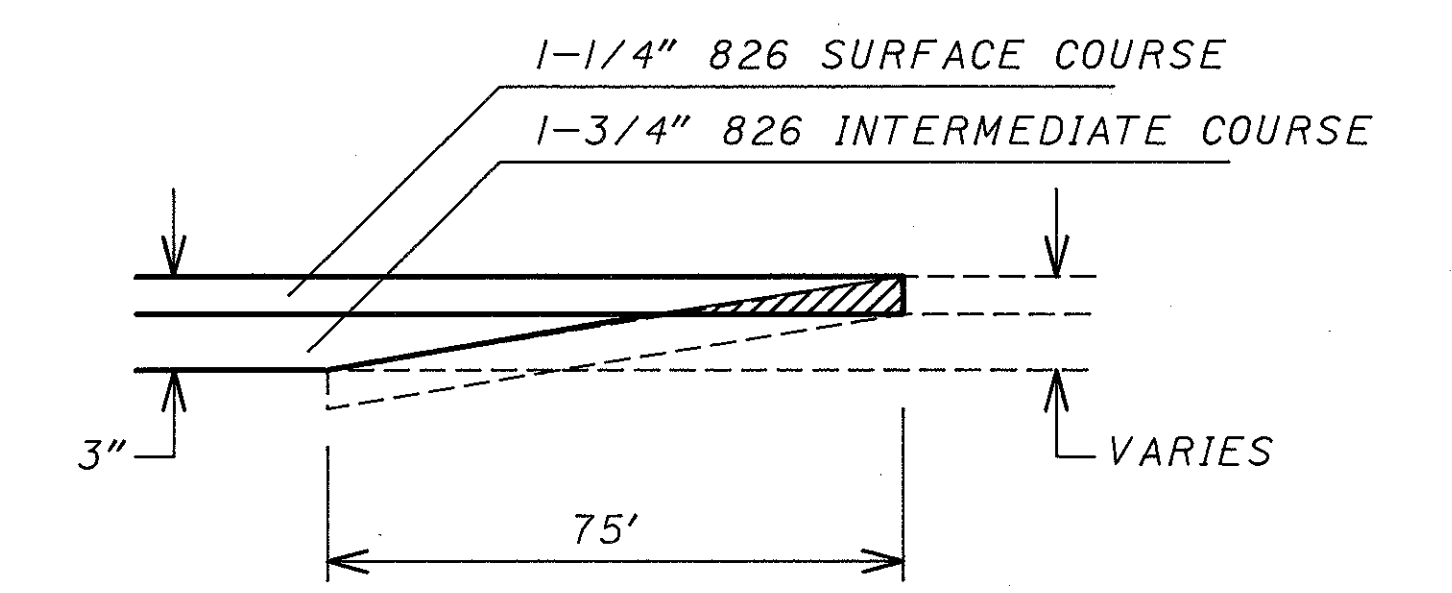
4-1/4" OVERLAY BUTTJOINT MEETING  
PAVEMENT WITH EXISTING 1/4" OVERLAY



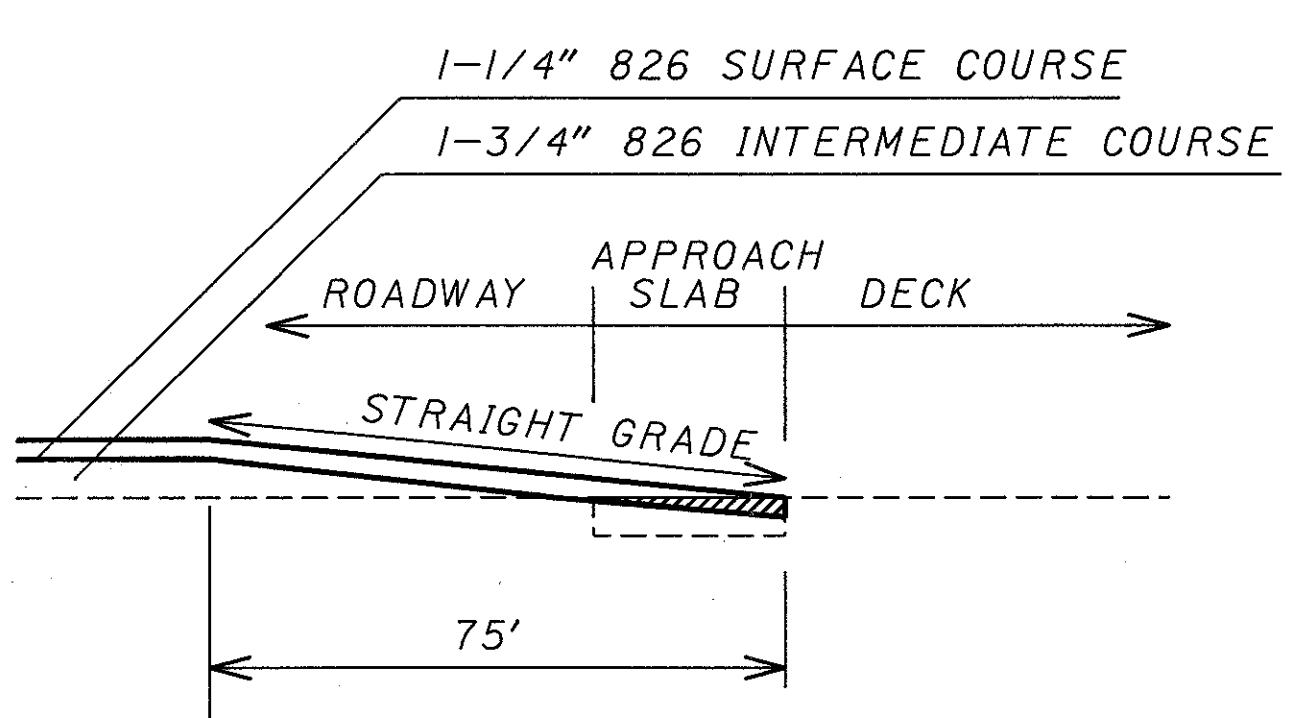
TYPICAL OVERLAY DETAIL AT BRIDGE  
(ROADWAY WITH 4-1/4" OVERLAY) BRIDGE WITH OVERLAY



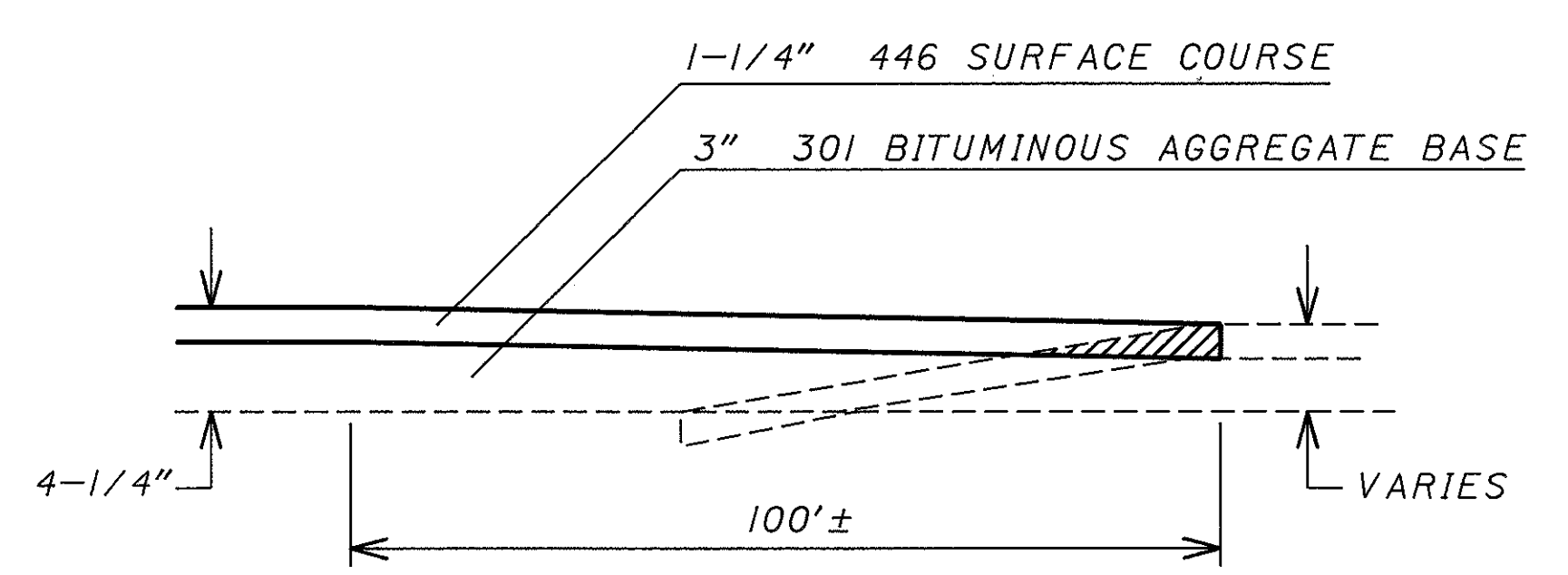
1-1/4" OVERLAY BUTT JOINT MEETING PAVEMENT WITH NO OVERLAY



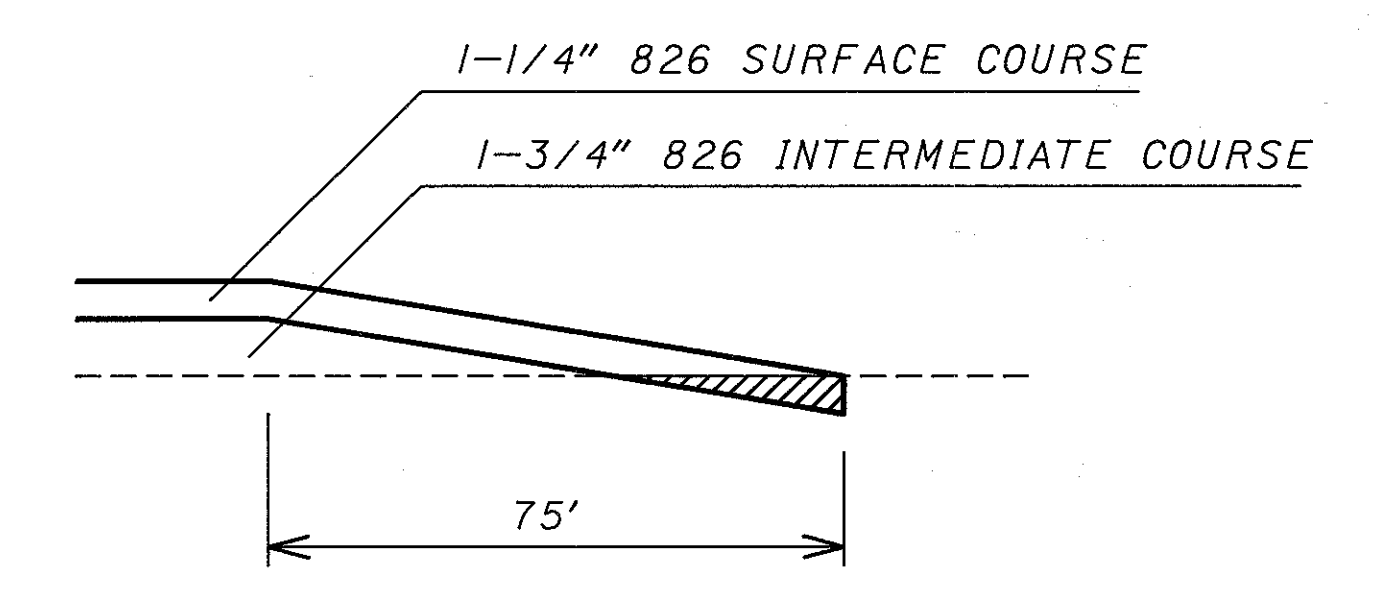
3" OVERLAY BUTT JOINT MEETING EXISTING  
PAVEMENT WITH OVERLAY



TYPICAL OVERLAY DETAIL AT BRIDGE  
ROADWAY WITH 3" OVERLAY BRIDGE WITH NO OVERLAY



4-1/4" OVERLAY BUTT JOINT MEETING  
EXISTING PAVEMENT WITH OVERLAY



3" OVERLAY BUTT JOINT MEETING PAVEMENT WITH NO OVERLAY

ITEM 254-PAVEMENT PLANING, BITUMINOUS OR  
ITEM 254-PAVEMENT PLANING, PCC  
PAYMENT SHALL BE MADE UNDER THE  
PERTINENT 254 ITEM

2/12=0

PLOT SUBMITTED BY: ulilman

c:\dgn\pid07090\07090gaa.dgn

PLOT SUBMITTED BY: ulilman

PLOT SUBMITTED: 04-JUN-1992 06:54

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

MATERIALS: The underdrain shall be a pipe underdrain system per Item 605.

The outlets for the underdrain system shall be constructed as soon as possible after placement of the underdrain to drain the subbase & subgrade. All pipe bends & branches needed to connect the proposed underdrain to the proposed outlet or to an existing underdrain shall be manufactured fittings.

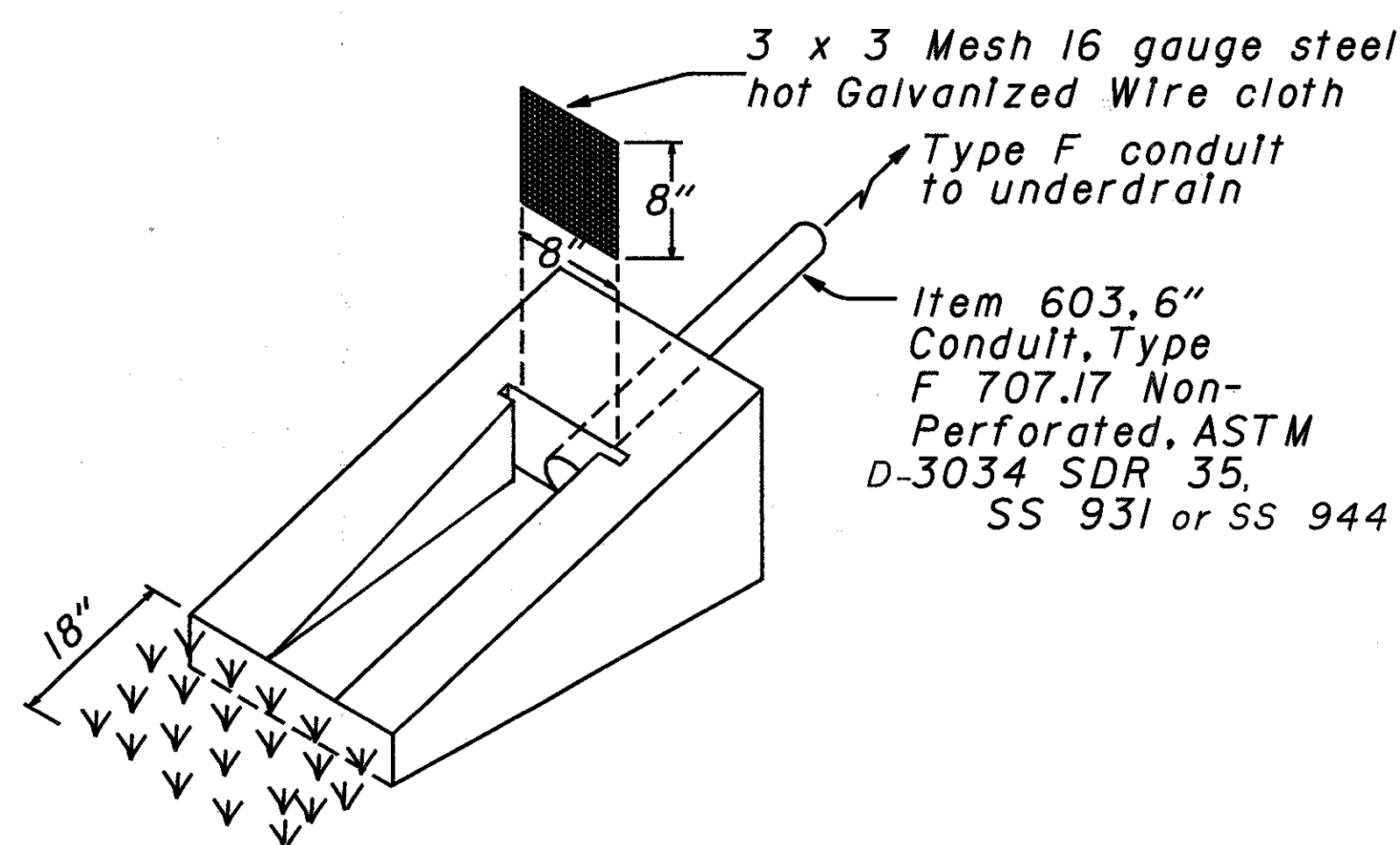
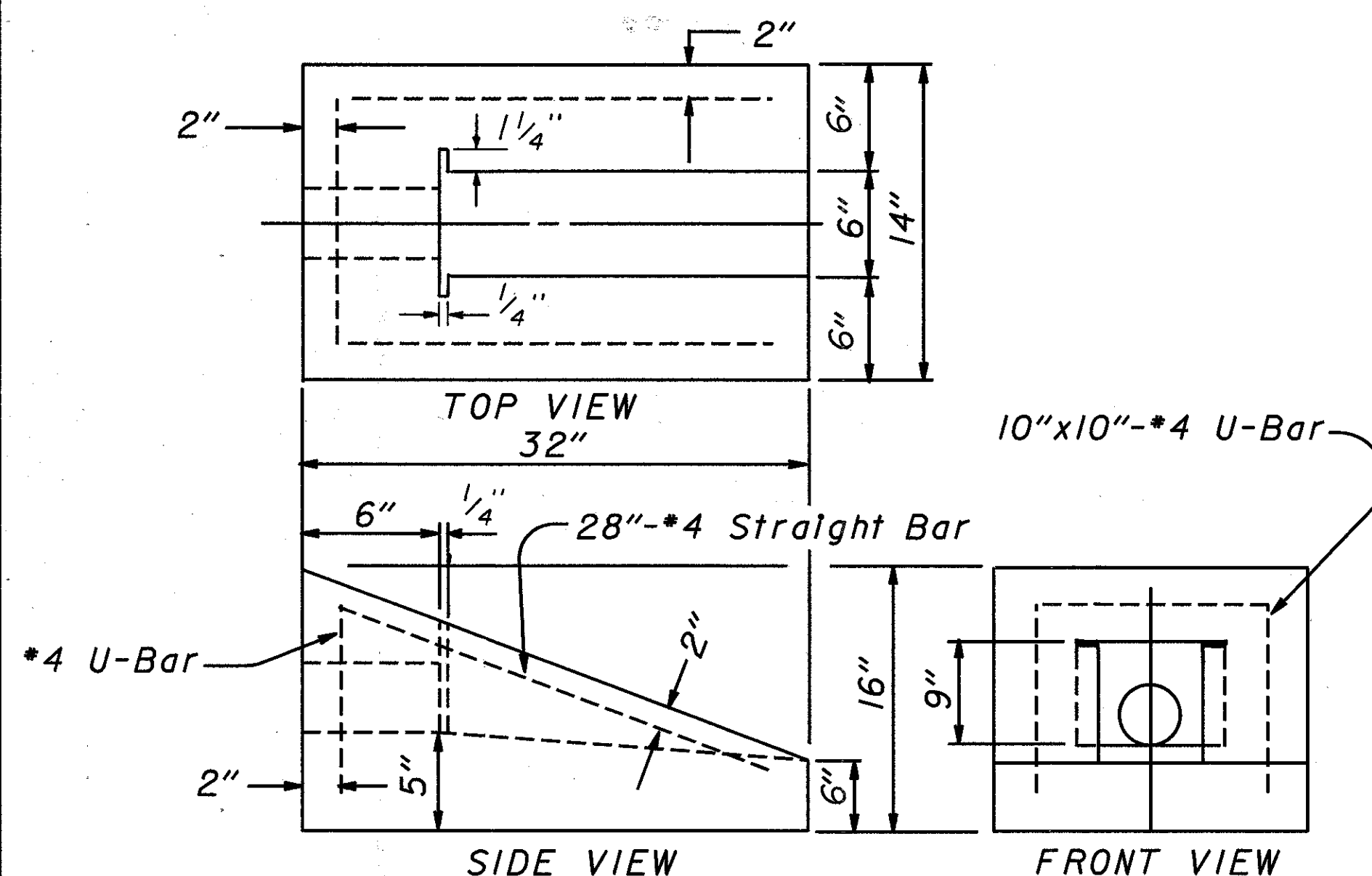
METHOD OF MEASUREMENT: Completed and accepted underdrains will be measured by the linear foot in place.

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 6" Shallow Pipe Underdrain 707.15, as per plan.

The price shall be full compensation for excavation and backfill; for furnishing materials, including material for outlet fittings for all labor, tools equipment, and incidentals necessary to complete the work.

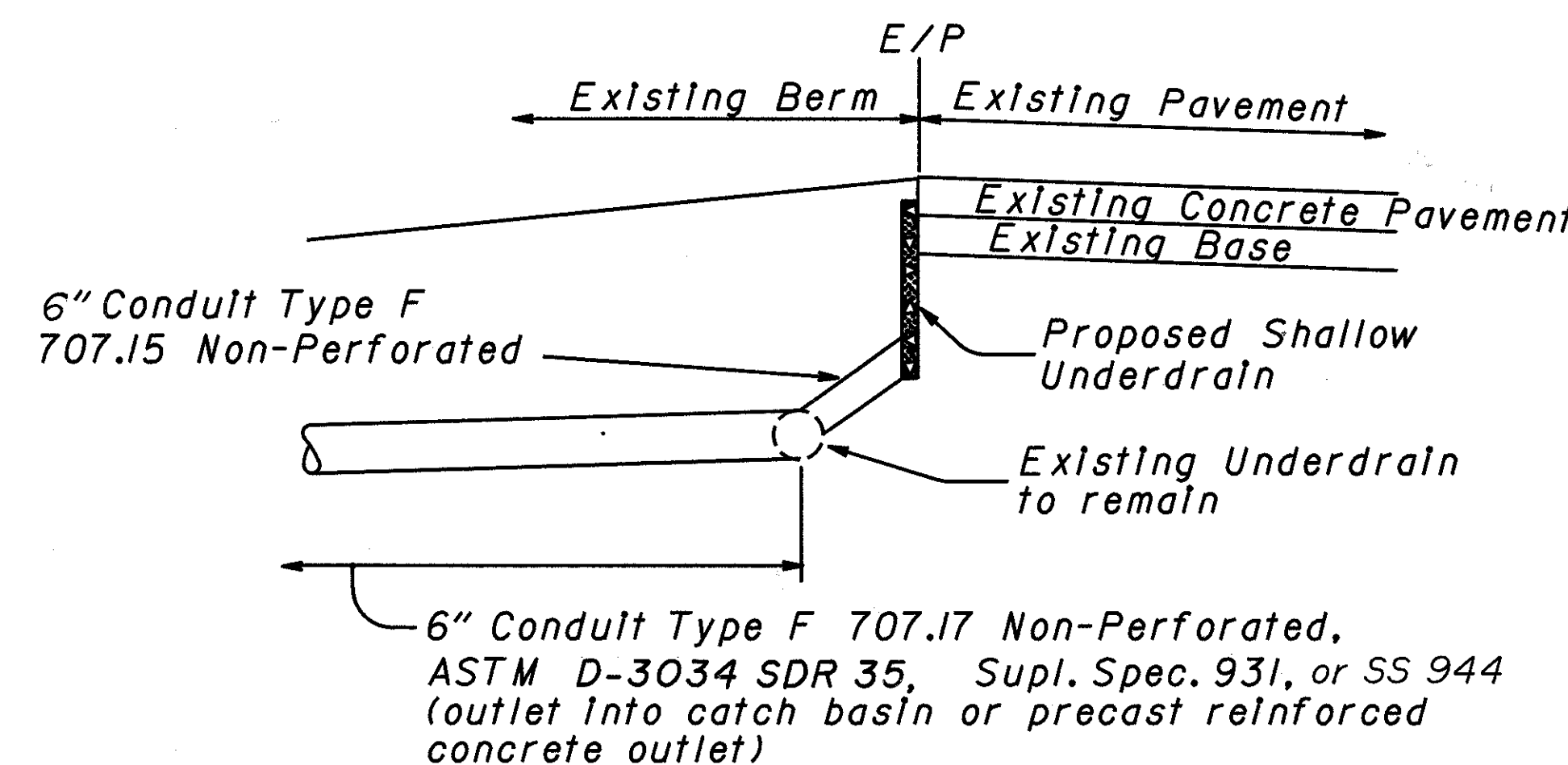
### ITEM SPECIAL - PRECAST REINFORCED CONCRETE OUTLET

The Concrete outlet shall meet the requirements of Item 604 in the Construction & Materials Specifications. Payment shall be made on an Each basis. Payment shall include the cost of the Sod & Wire Cloth.



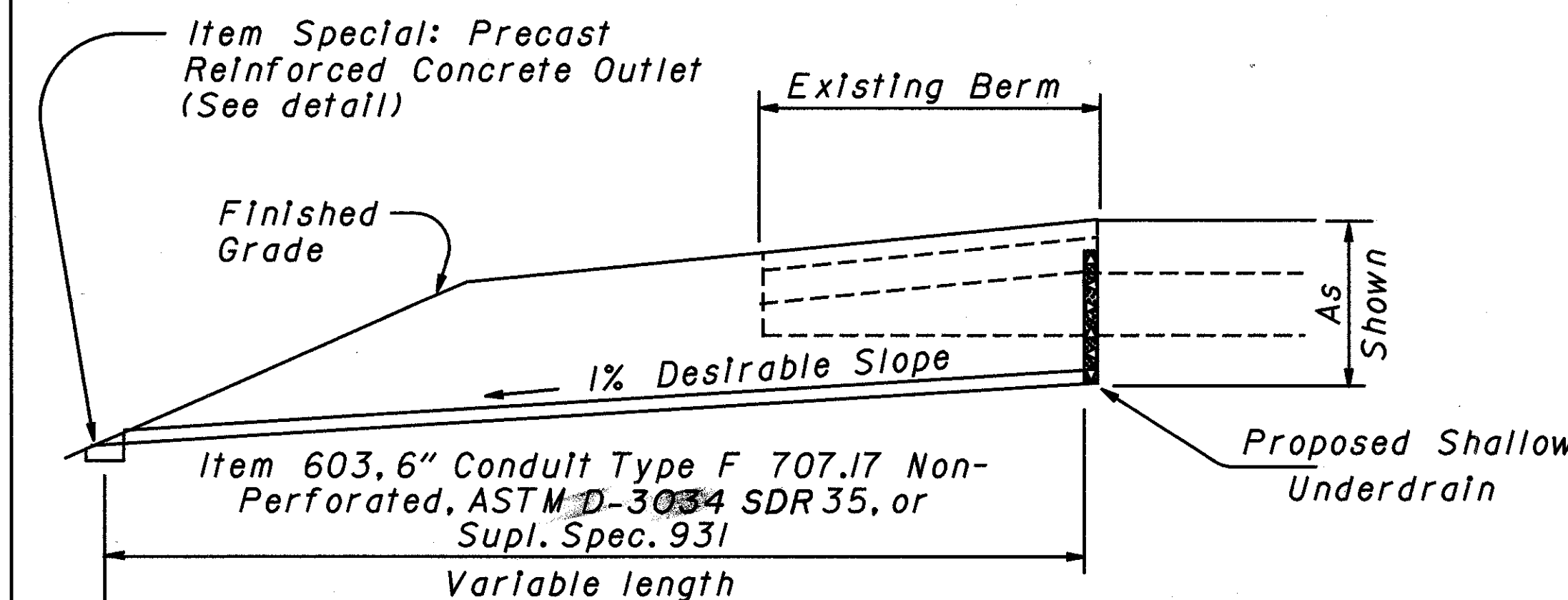
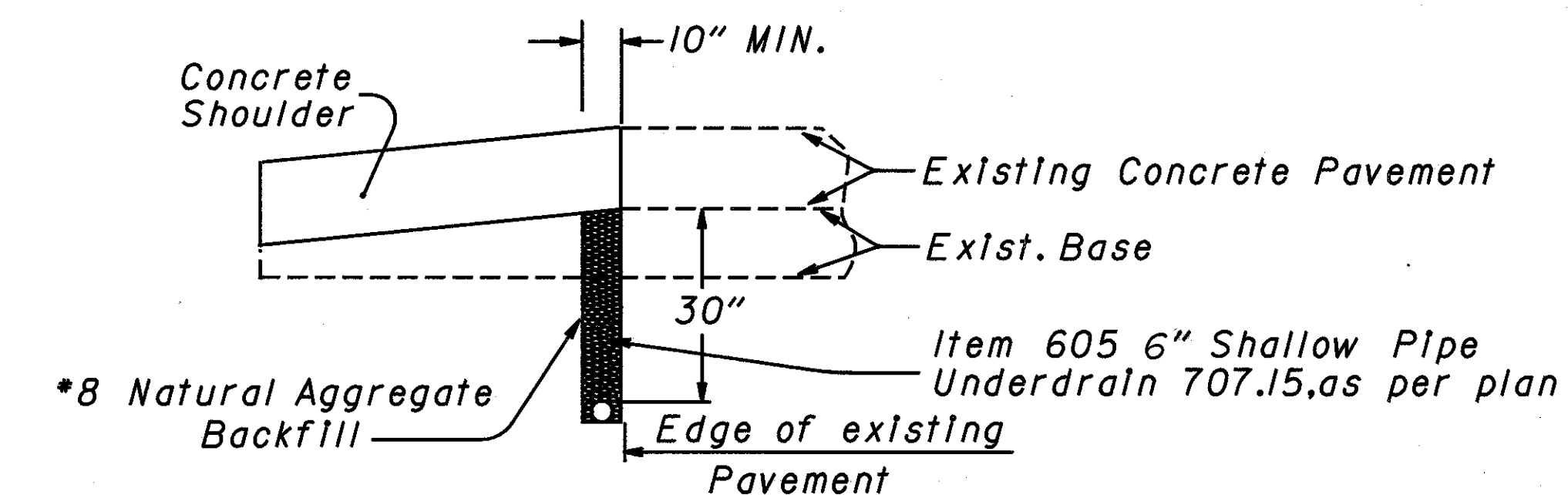
NOTE: The Sod shall be in accordance with Item 660 and staked at each corner approximately 3 inches in from the edge.

### OUTLET DETAIL



NOTE: The cost of the 6" conduit Type F 707.15 Non-perforated, and necessary pipe bends and branches needed to connect the existing and proposed underdrains shall be included with the cost of the 6" conduit Type F beyond the existing underdrain.

### PIPE UNDERDRAIN DETAIL FOR CONCRETE SHOULDERS

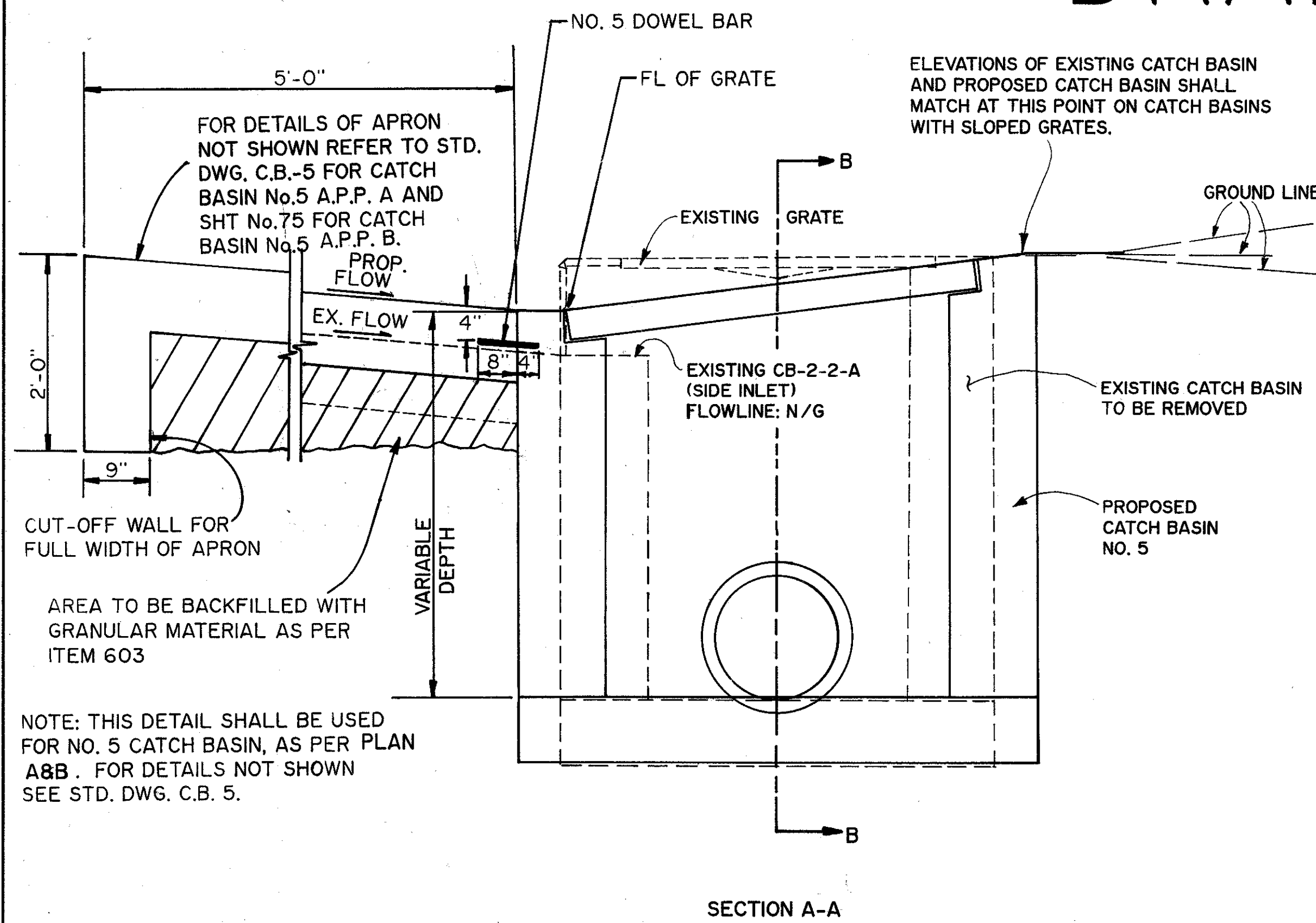


NOTE: For underdrain outlets into catch basins the above Type F Conduit shall be used entirely between the underdrain & catch basin.

ITEM 605 6" SHALLOW PIPE UNDERDRAIN 707.15, AS PER PLAN



# DRAINAGE DETAILS



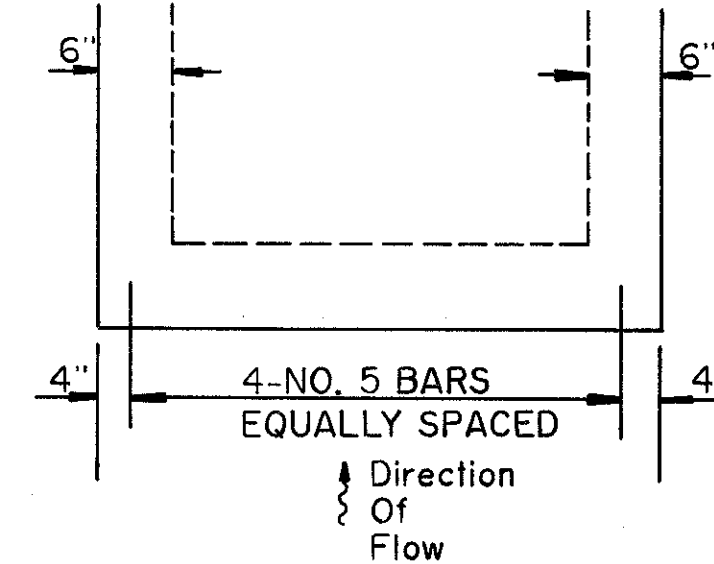
SECTION A-A

NOTE: THIS DETAIL SHALL BE USED FOR NO. 5 CATCH BASIN, AS PER PLAN A&B. FOR DETAILS NOT SHOWN SEE STD. DWG. C.B. 5.

THE REQUIREMENTS OF ITEM 604 SHALL GOVERN THE REPLACEMENT OF THE EXISTING CATCH BASIN. THE WORK SHALL INCLUDE THE REMOVAL AND DISPOSAL OF THE EXISTING CATCH BASIN AND ITS SUBSEQUENT REPLACEMENT. THE CONCRETE APRON SHALL BE REPLACED AND BACKFILLED AS SHOWN HERE AND IN THE STANDARD DRAWING FOR THE CATCH BASIN, NO. 5 AND ON SHEET No.75.

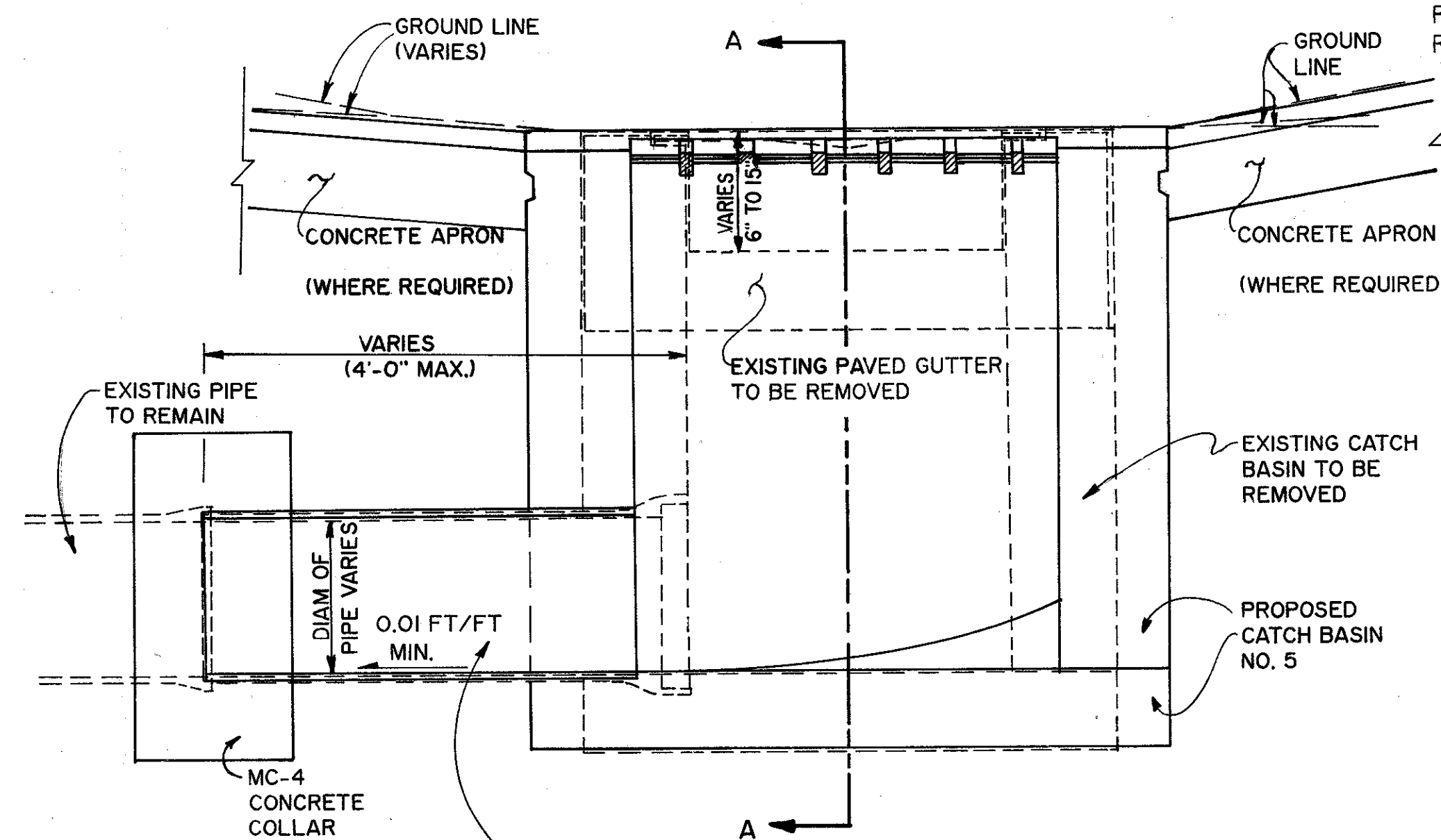
PAYMENT FOR THE ABOVE WORK SHALL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 604 CATCH BASIN, NO. 5, AS PER PLAN A&B, AND SHALL CONSTITUTE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR, TOOLS, AND EQUIPMENT INCIDENTAL TO COMPLETE THIS ITEM OF WORK.

BAR LOCATION DETAIL FOR NO. 5 C.B.



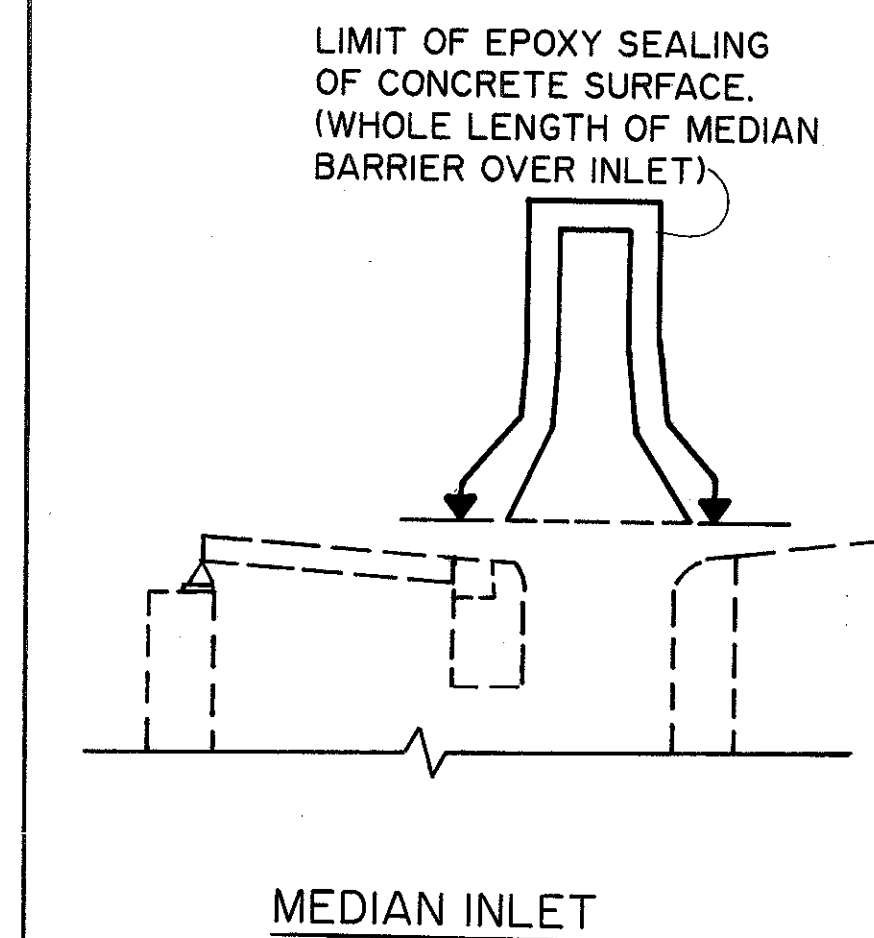
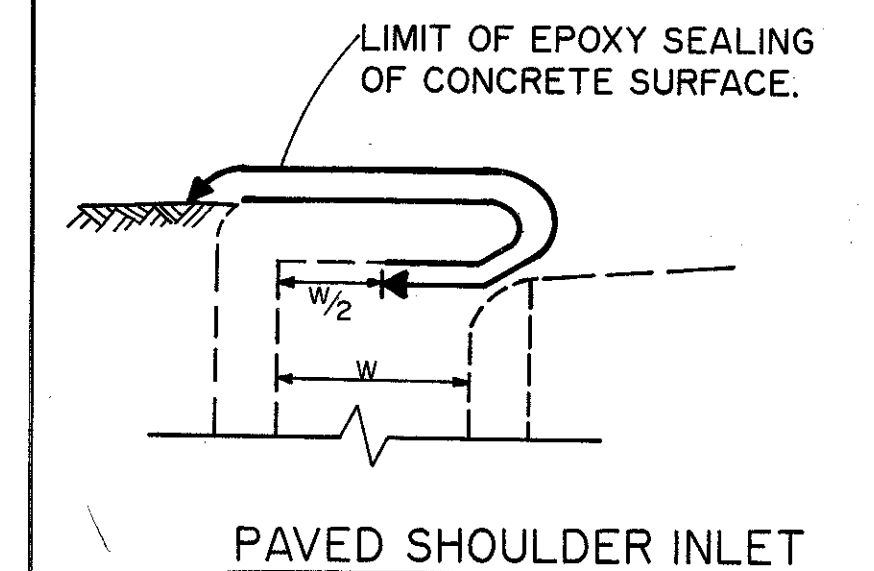
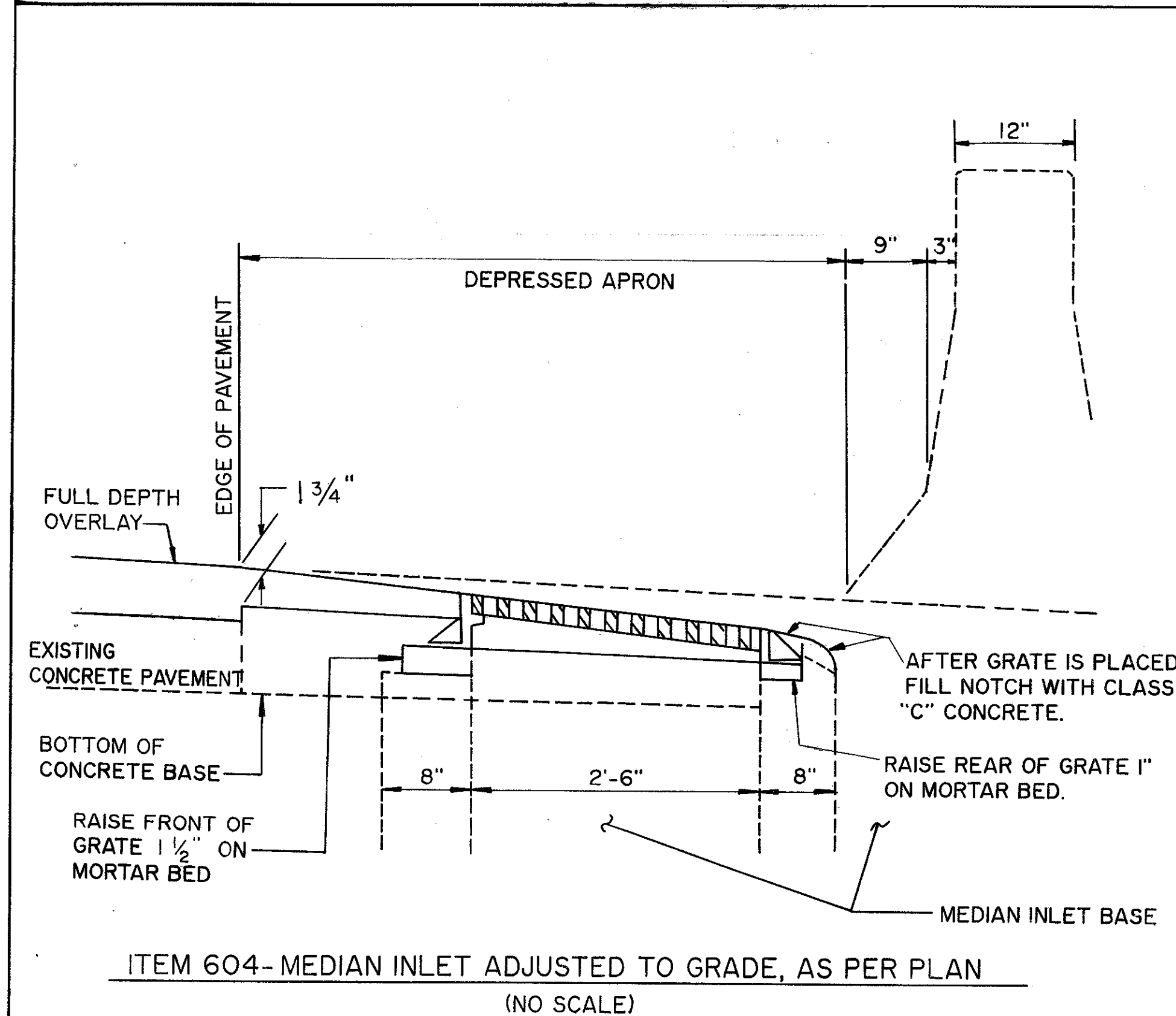
THE NUMBER OF BARS NEEDED ALONG THE UPSTREAM SIDE OF A NO. 5 CATCH BASIN WITH A CONCRETE APRON IS 4. FOR A NO. 5 CATCH BASIN IN SAG, THE NUMBER OF BARS SHALL BE 8.

THE FURNISHING AND PLACING OF STEEL FOR THE 5/8" x 12" DOWEL BARS SHALL BE PER 509 REINFORCING STEEL. THE DOWEL BARS SHALL BE EPOXY COATED PER 509.10. THE DOWEL BARS SHALL BE INSTALLED PER 510 OR CAST INTO THE BASIN. BOLT IN INSERTS MAY BE USED. THE CATCH BASIN SHALL BE PRECAST OR CAST-IN-PLACE CONCRETE. BRICK OR CONCRETE BLOCK WILL NOT BE PERMITTED. THE 6" CONCRETE APRON SHALL BE REINFORCED PER 601.04(3).



SECTION B-B

ITEM 604-CATCH BASIN No.5, AS PER PLAN A  
ITEM 604-CATCH BASIN No.5, AS PER PLAN B



ITEM SPECIAL - SEALING OF CONCRETE SURFACES (EPOXY)

# DRAINAGE DETAILS

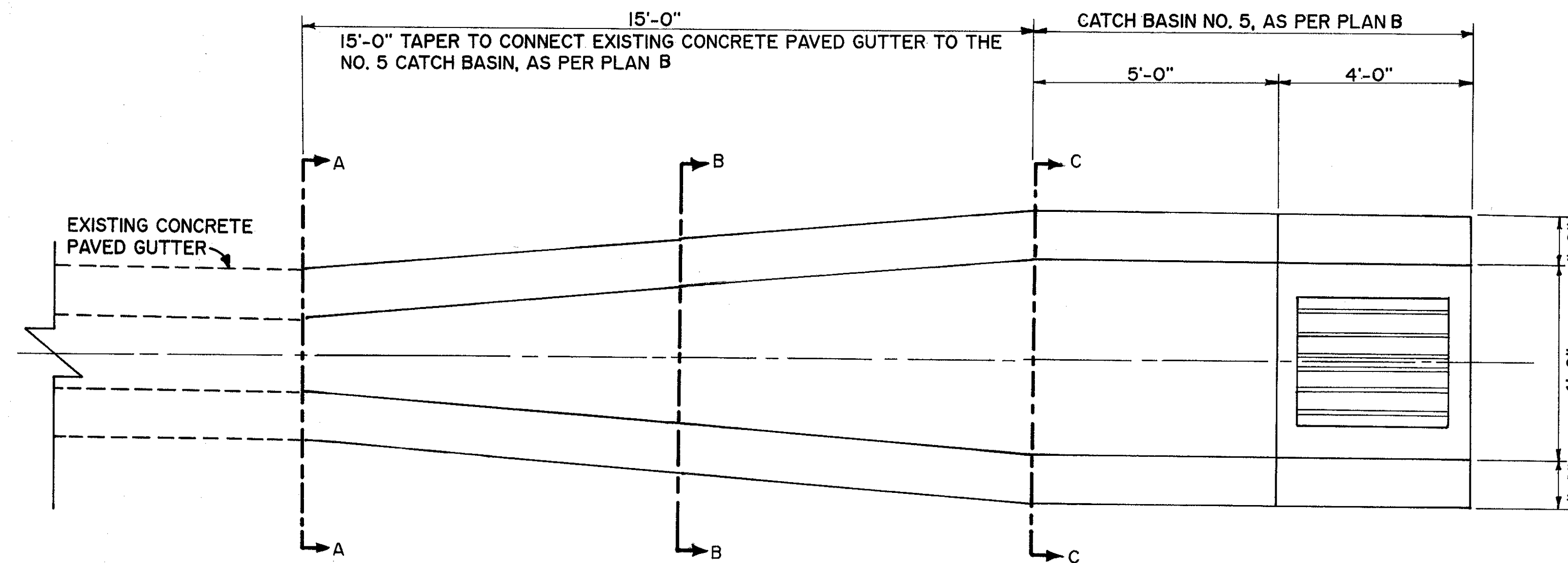
CUYAHOGA COUNTY  
CUY-90-16.24

OHIO

FHWA  
REGION 5

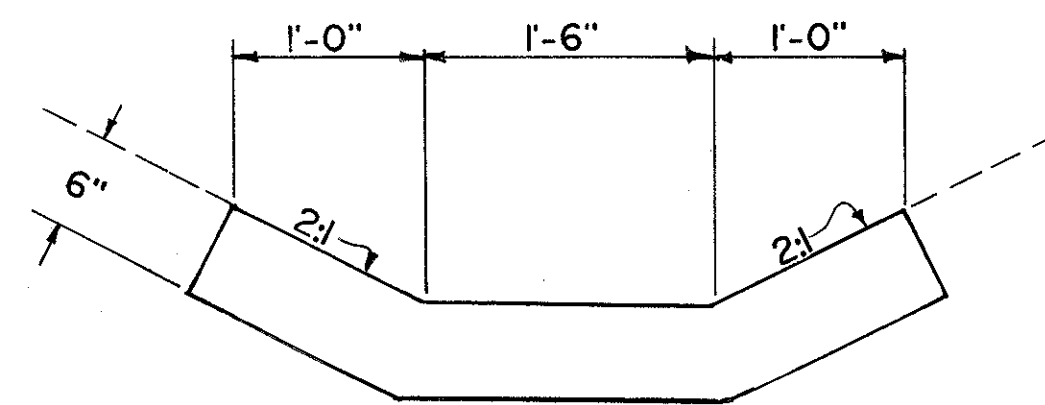
FEDERAL  
PROJECT

75  
245



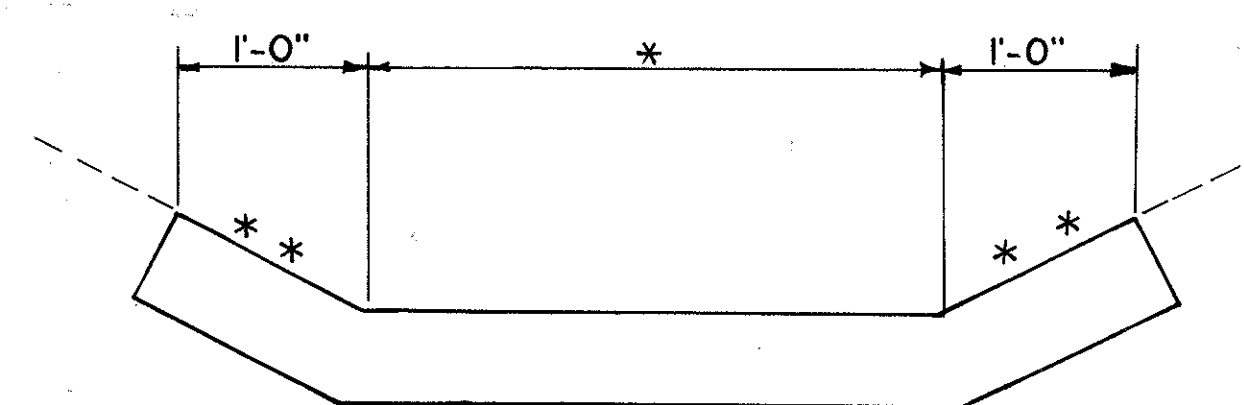
**NOTE**

CATCH BASIN NO. 5, AS PER PLAN B IS MODIFIED IN THE APRON WIDTH DIMENSION AS SHOWN ABOVE. USE 6'-0" INSTEAD OF 10'-0" AS DEPICTED IN THE STANDARD CONSTRUCTION DWG. CB-5



SECTION A-A

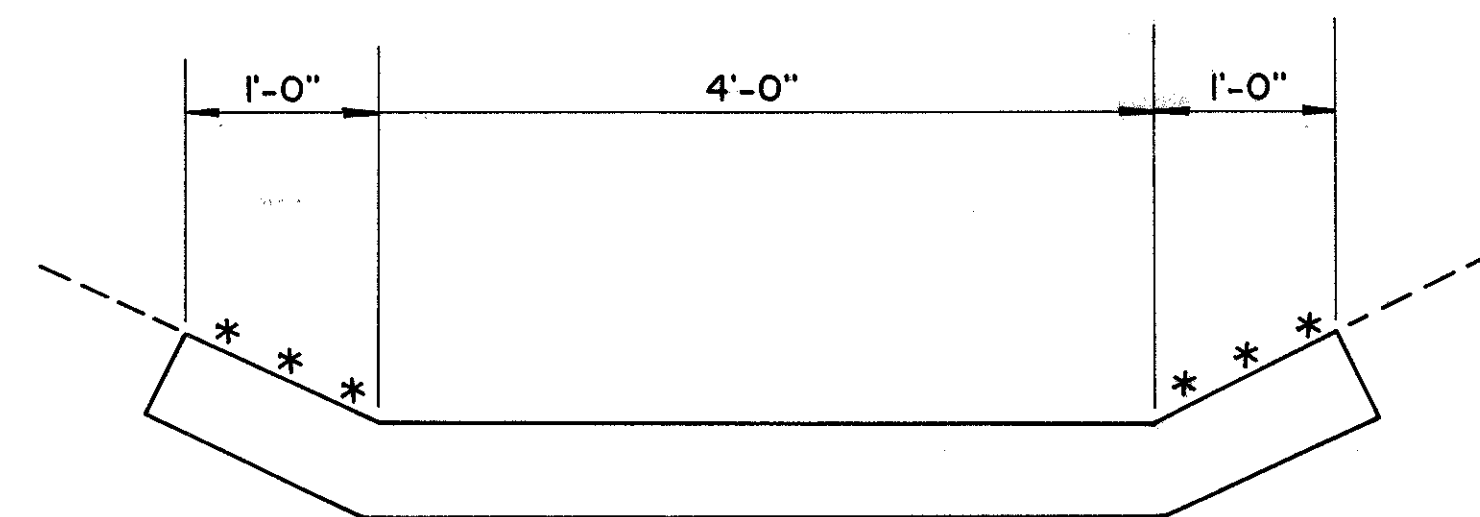
NOTE: MATCH 15' TAPER TO EXISTING CONCRETE PAVED GUTTER AT SECTION



SECTION B-B

\* VARIES FROM 1'-6" TO 4'-0"

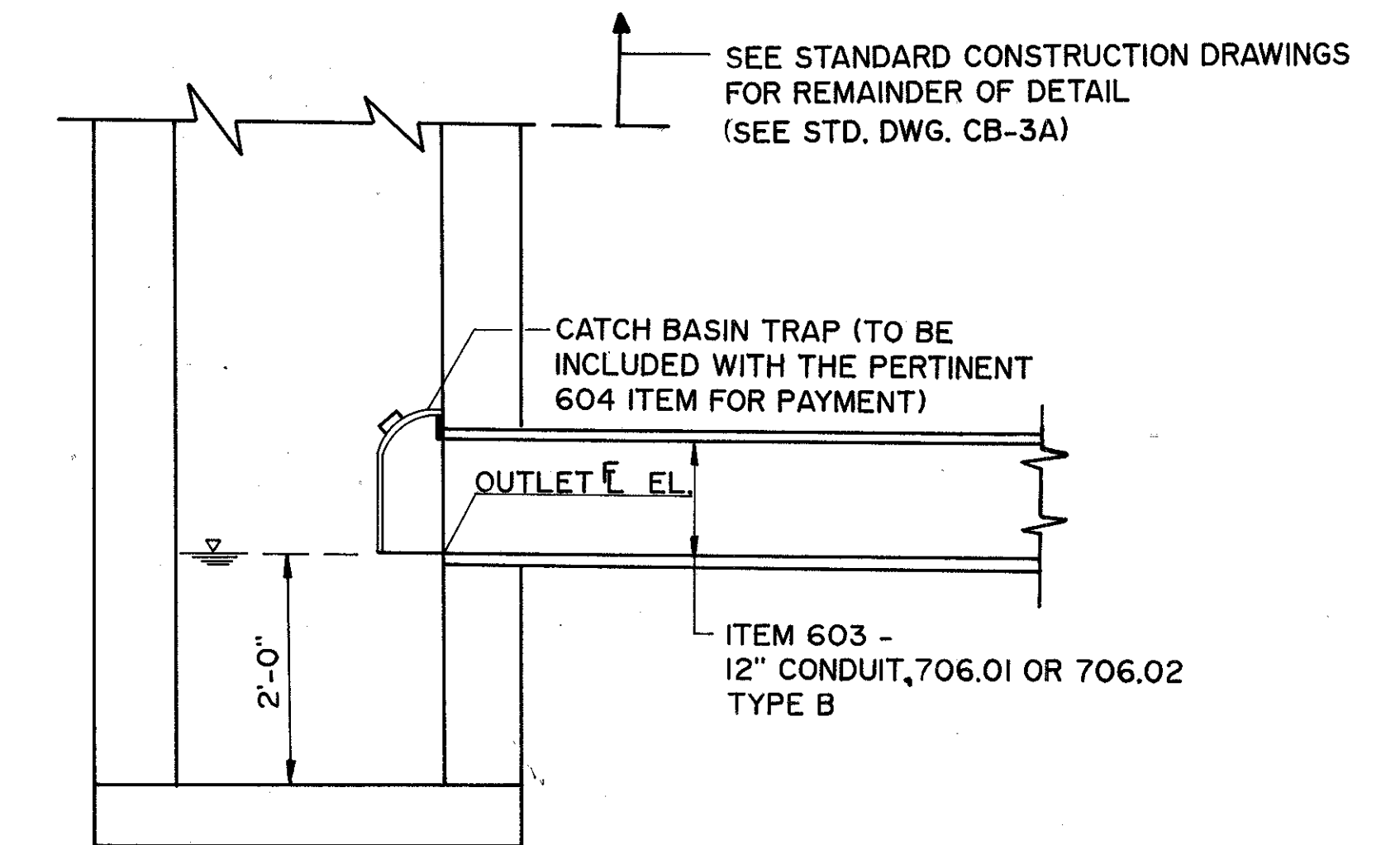
\*\* VARIES FROM 2:1 SIDE SLOPE TO FLUSH WITH CONCRETE APRON



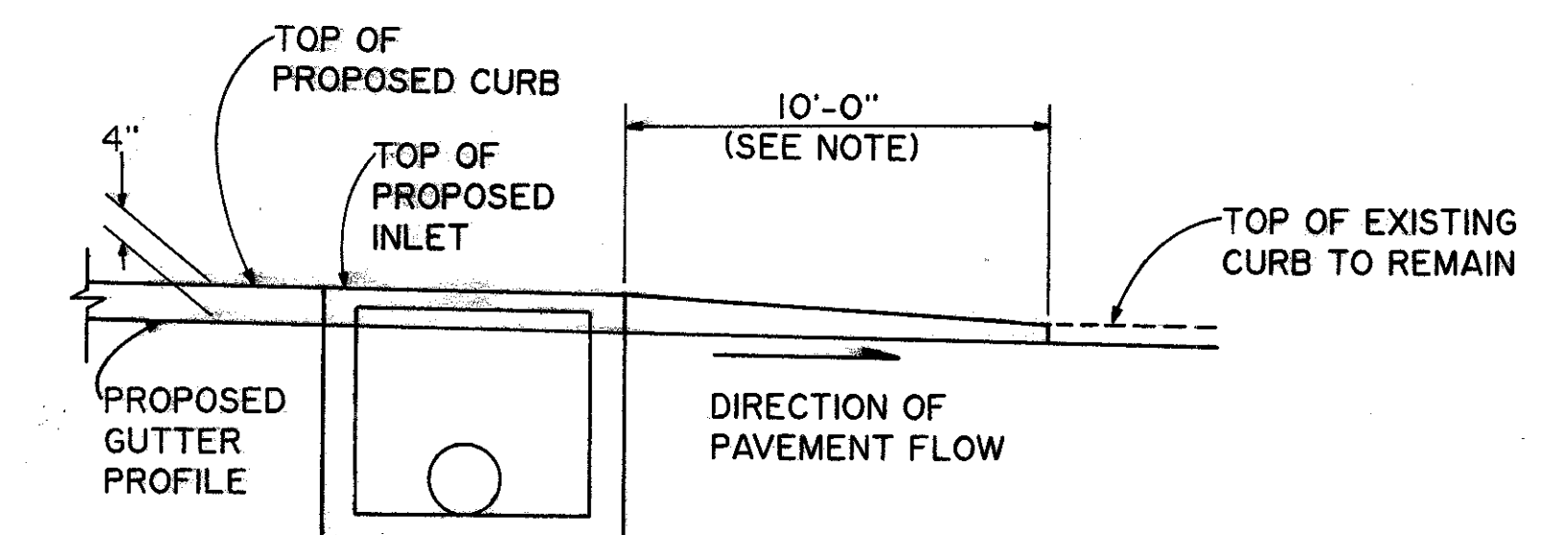
SECTION C-C

CATCH BASIN NO. 5, AS PER PLAN B CONCRETE APRON

\*\*\* MATCH APRON TO EXISTING SLOPES



ITEM 604 - CATCH BASIN NO. 3A, AS PER PLAN



NOTE: THE PROPOSED CURB SHALL EXTEND TEN (10) FEET BEYOND THE PROPOSED INLET. THE CURB SHALL BE TAPERED TO MEET TOP OF EXISTING CURB. IF NO CURB EXISTS BEYOND INLET, THE PROPOSED CURB SHALL BE TAPERED TO MEET PAVEMENT ELEVATION.

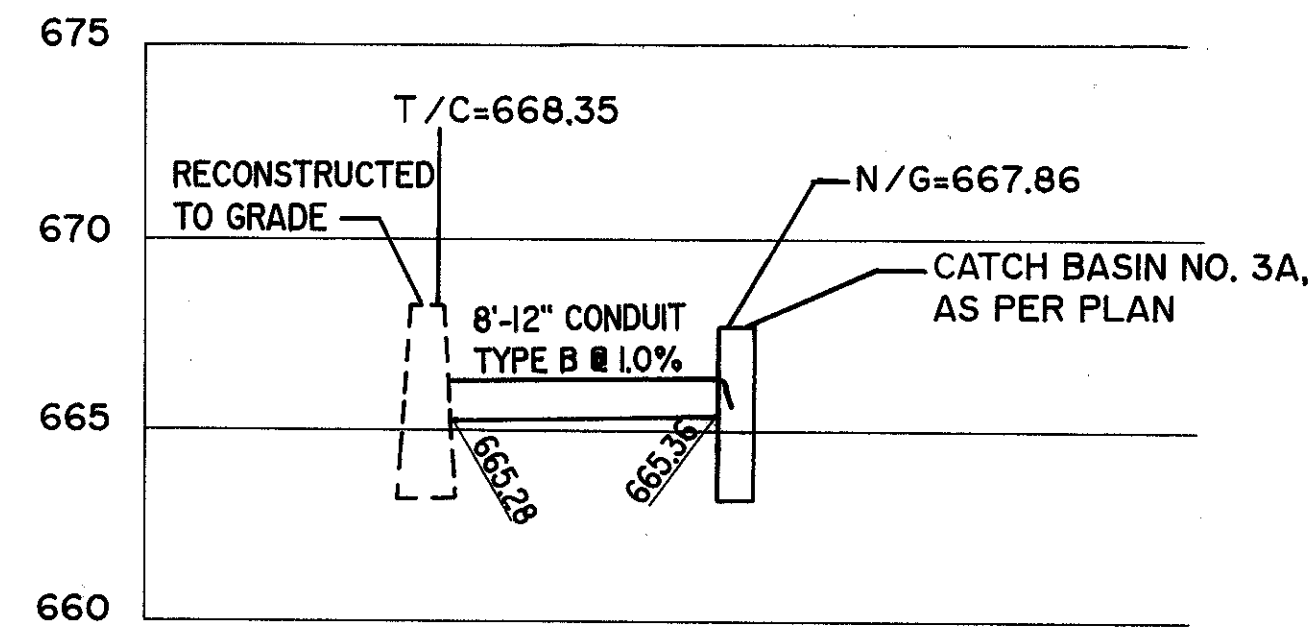
NOTE: SEE SHEET 22 FOR CURB REPLACEMENT LOCATIONS TO IDENTIFY THOSE INLETS FOR WHICH THIS DETAIL IS APPLICABLE.

CURB DETAIL AT PAVED SHOULDER INLETS

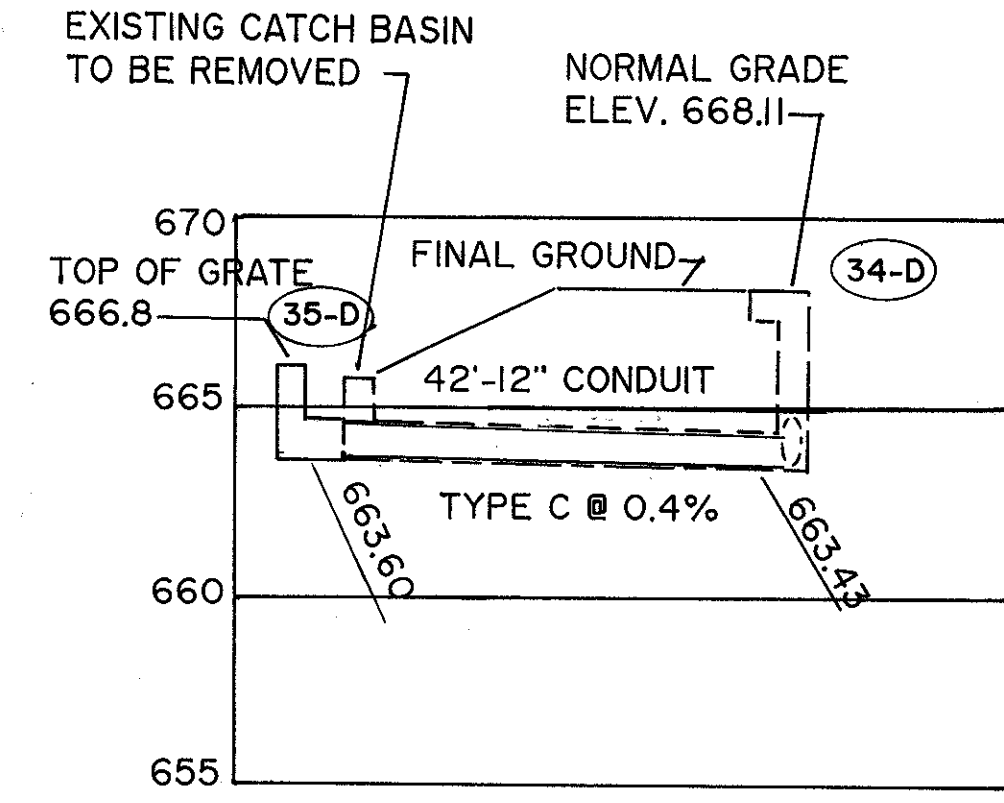


# DRAINAGE PROFILES

STA. 8+77, LT (PROSPECT)

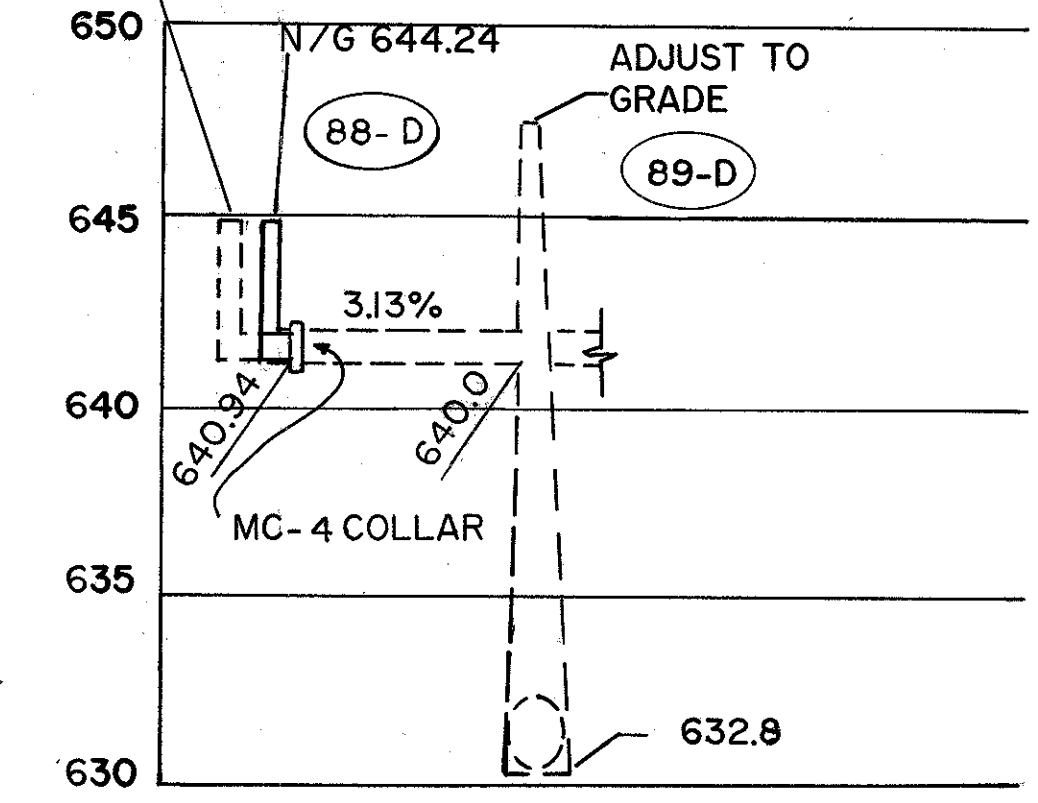


RAMP E-1  
STA. 1+90, RT

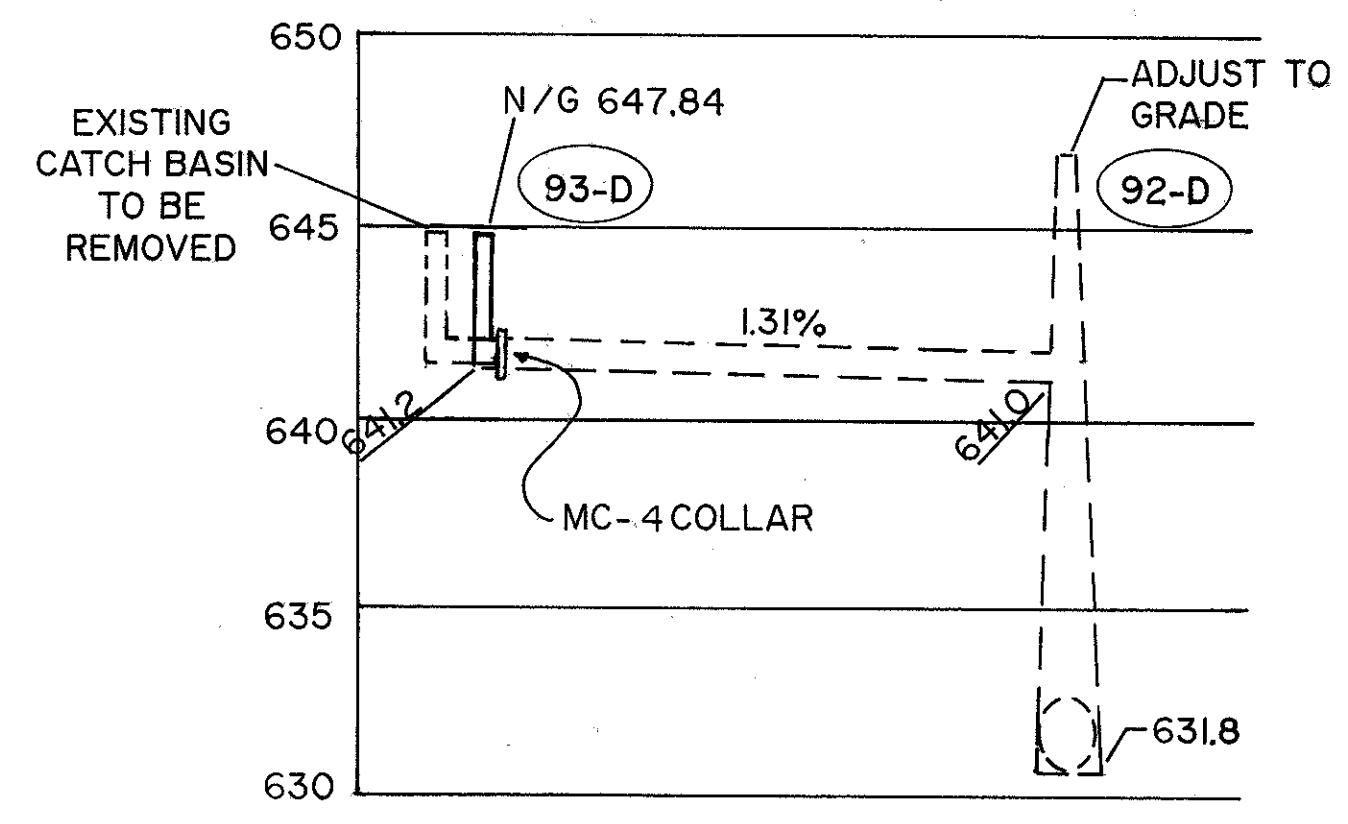


EXISTING CATCH BASIN  
TO BE REMOVED

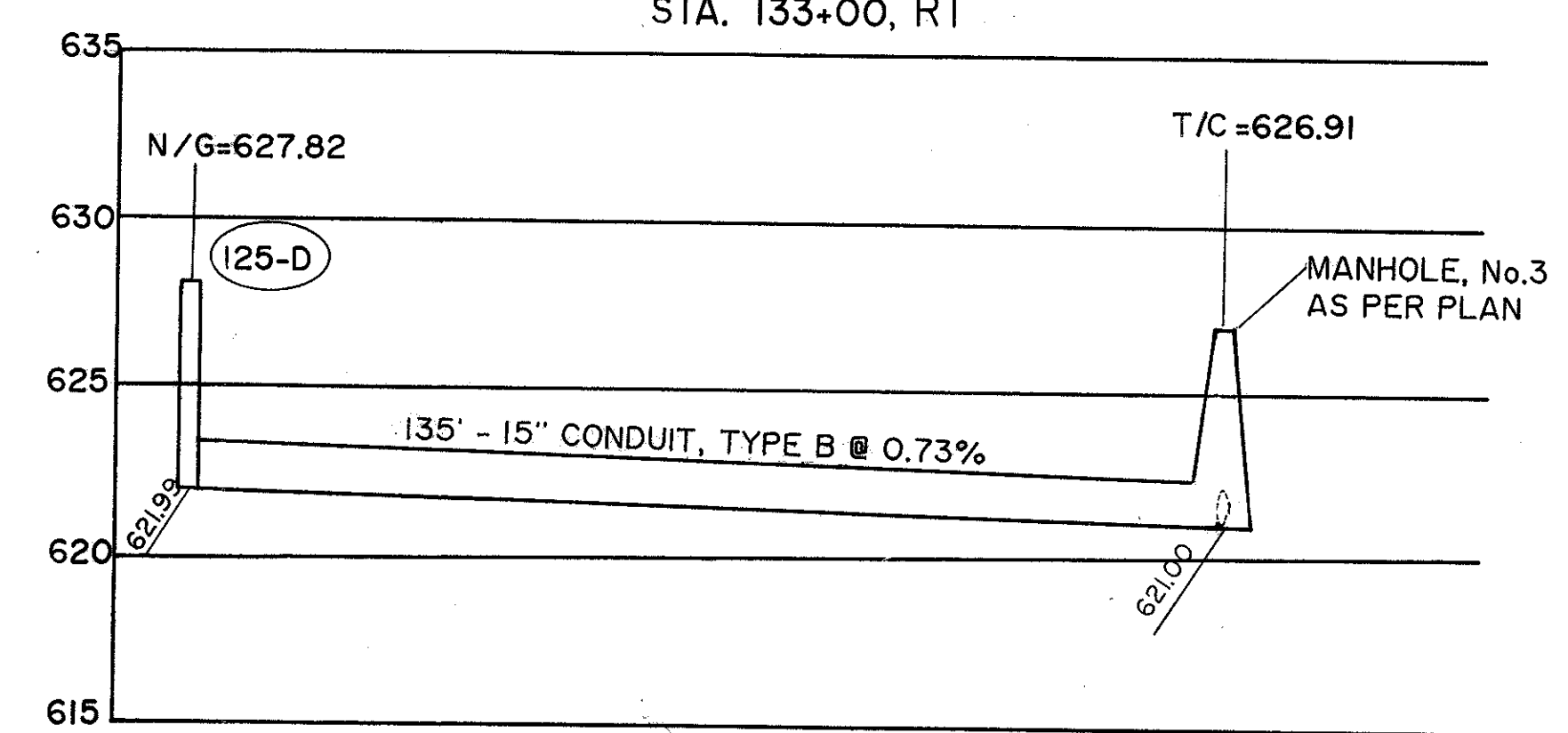
STA. 108+73, LT



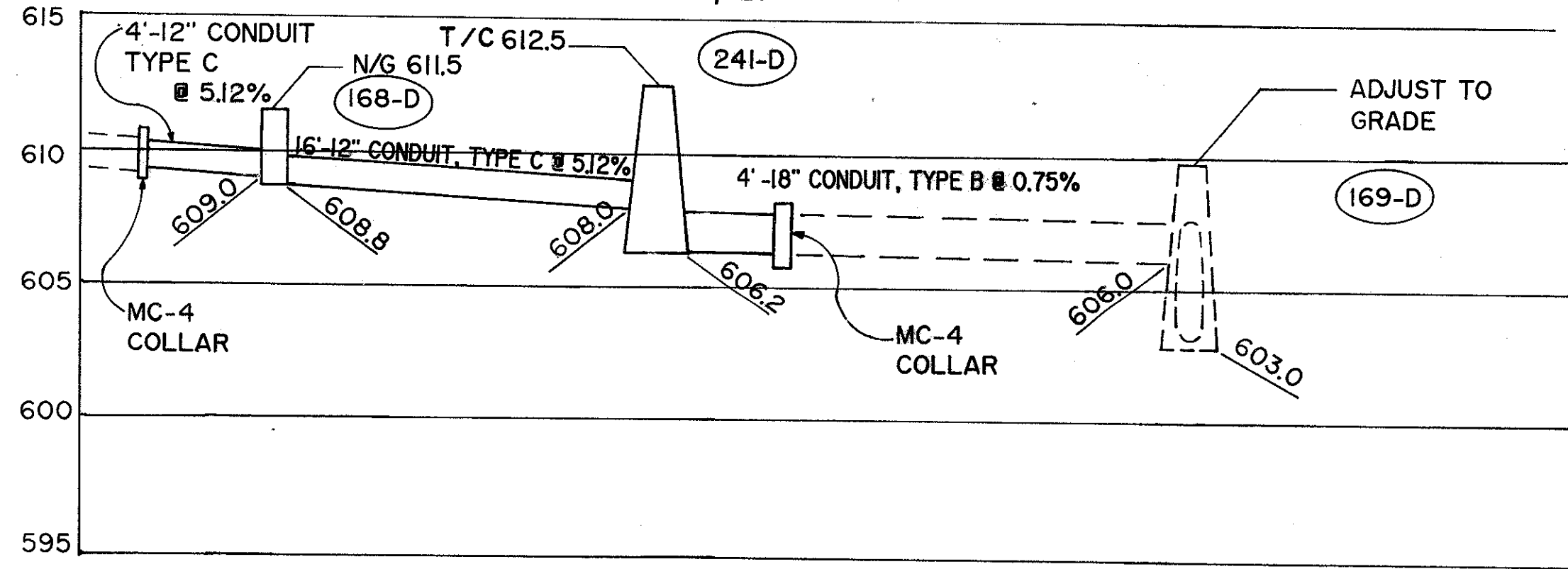
STA. 112+40, LT



STA. 133+00, RT



STA. 152+85, LT

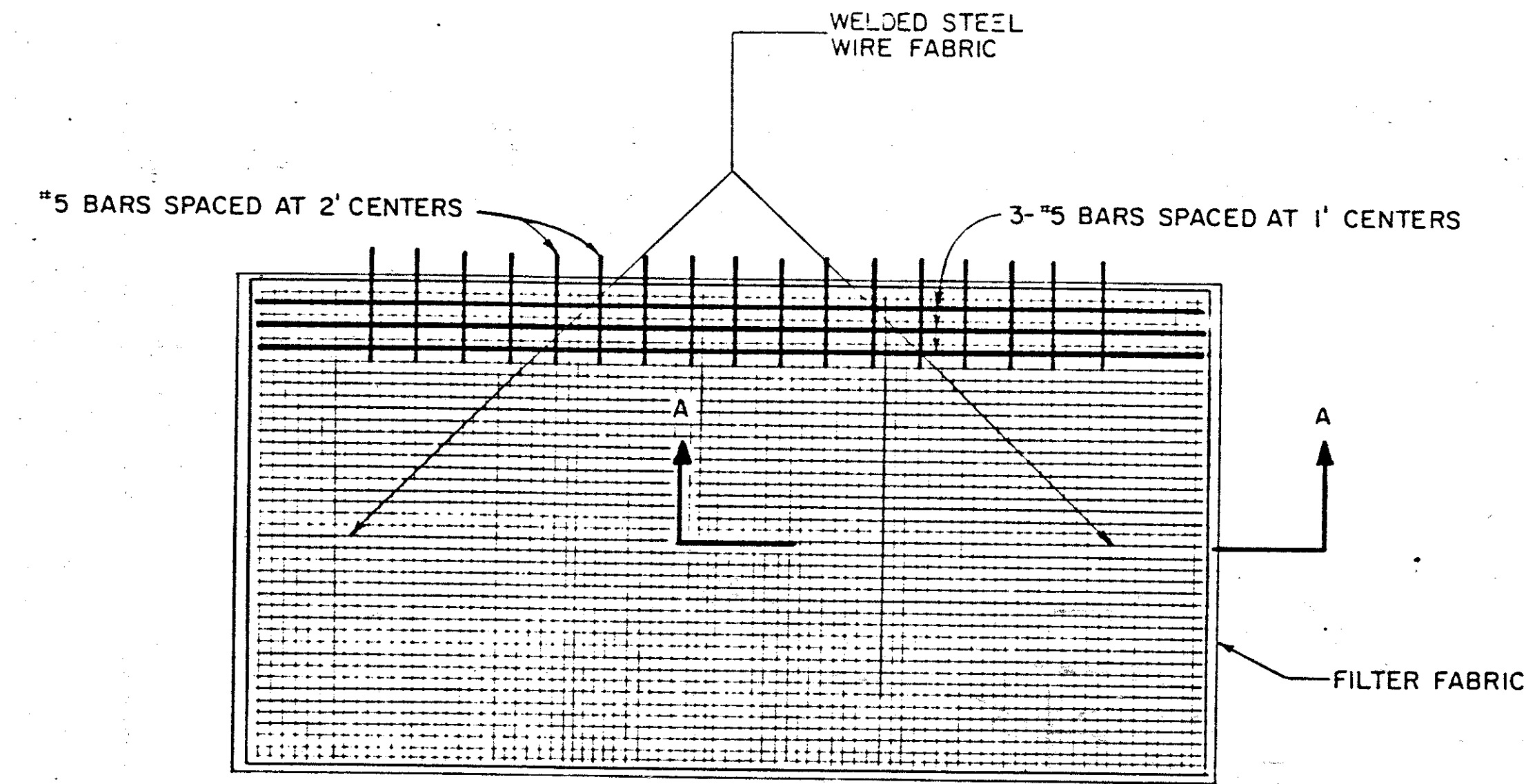


FHWA REGION	STATE	PROJECT
5	OHIO	

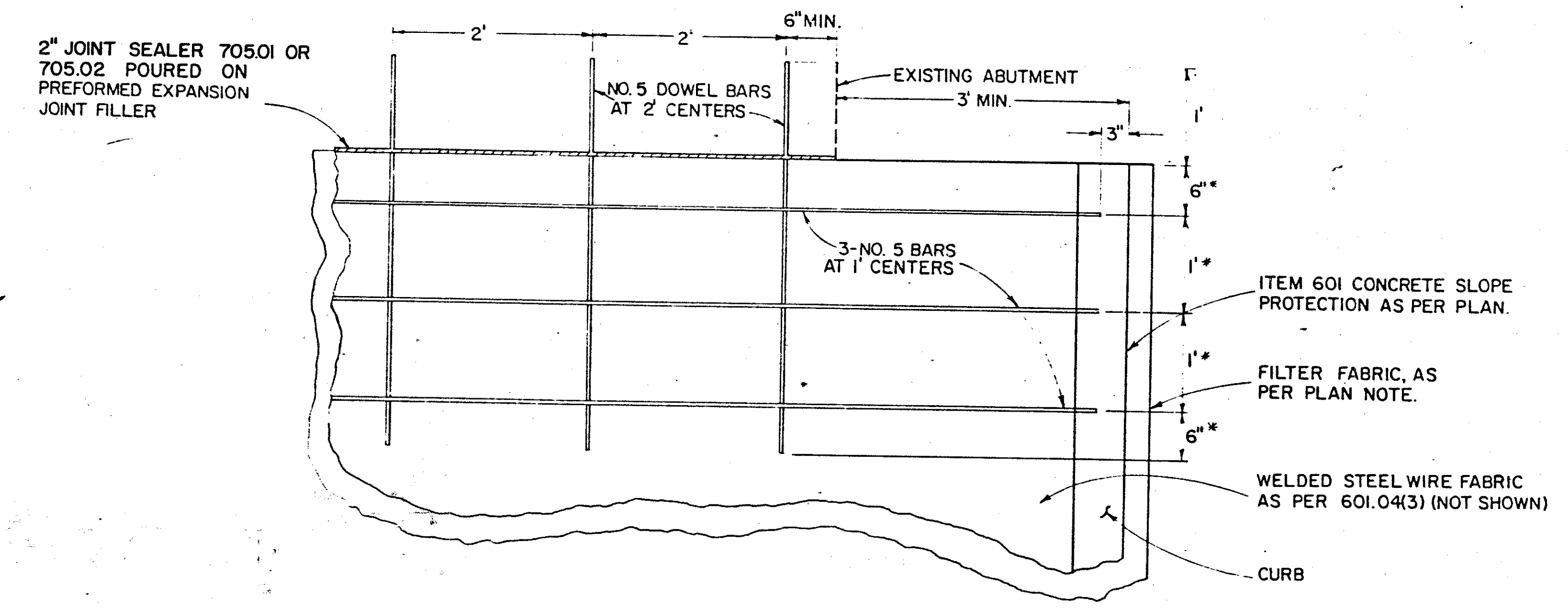
77  
245

CUYAHOGA COUNTY  
CUY-90-16.24

# EROSION REPAIR PLAN

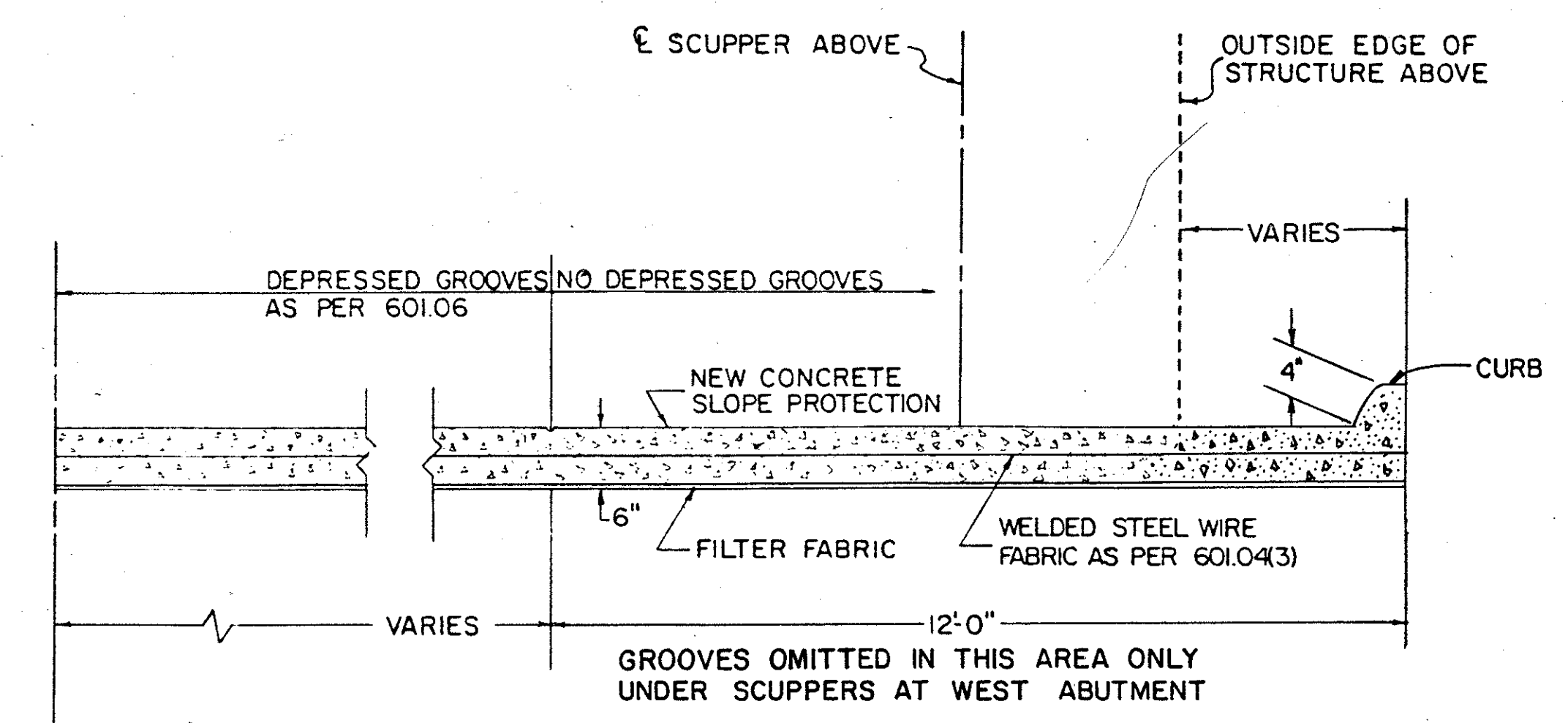


CONCRETE SLOPE PROTECTION  
AS PER PLAN



SLOPE PROTECTION REINFORCING DETAIL

\* LENGTH AS MEASURED ALONG SLOPE.



CONCRETE SLOPE PROTECTION  
AS PER PLAN

SECTION A-A

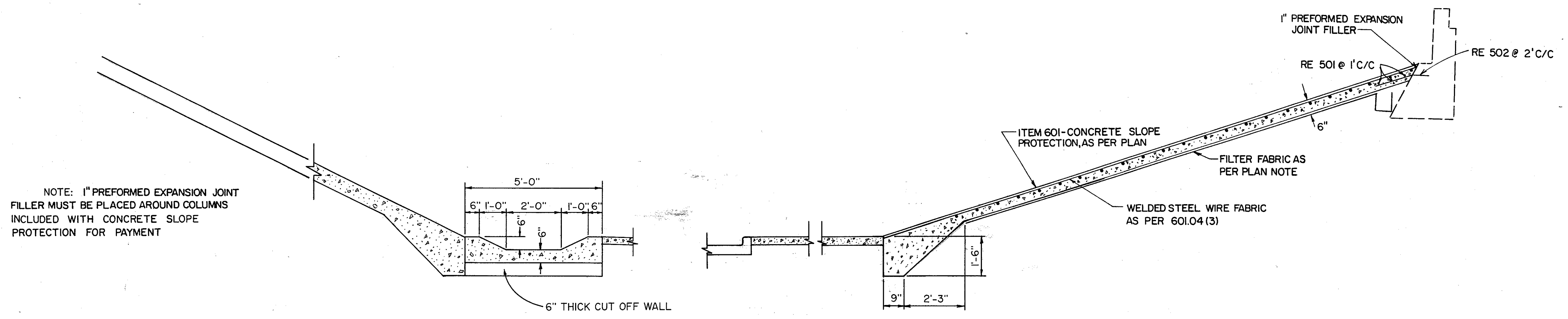
STATE OF OHIO DEPARTMENT OF HIGHWAYS DIVISION OF DESIGN AND CONSTRUCTION BUREAU OF BRIDGES		
EROSION REPAIR PLAN		
REVIEWED	DATE	REVISED



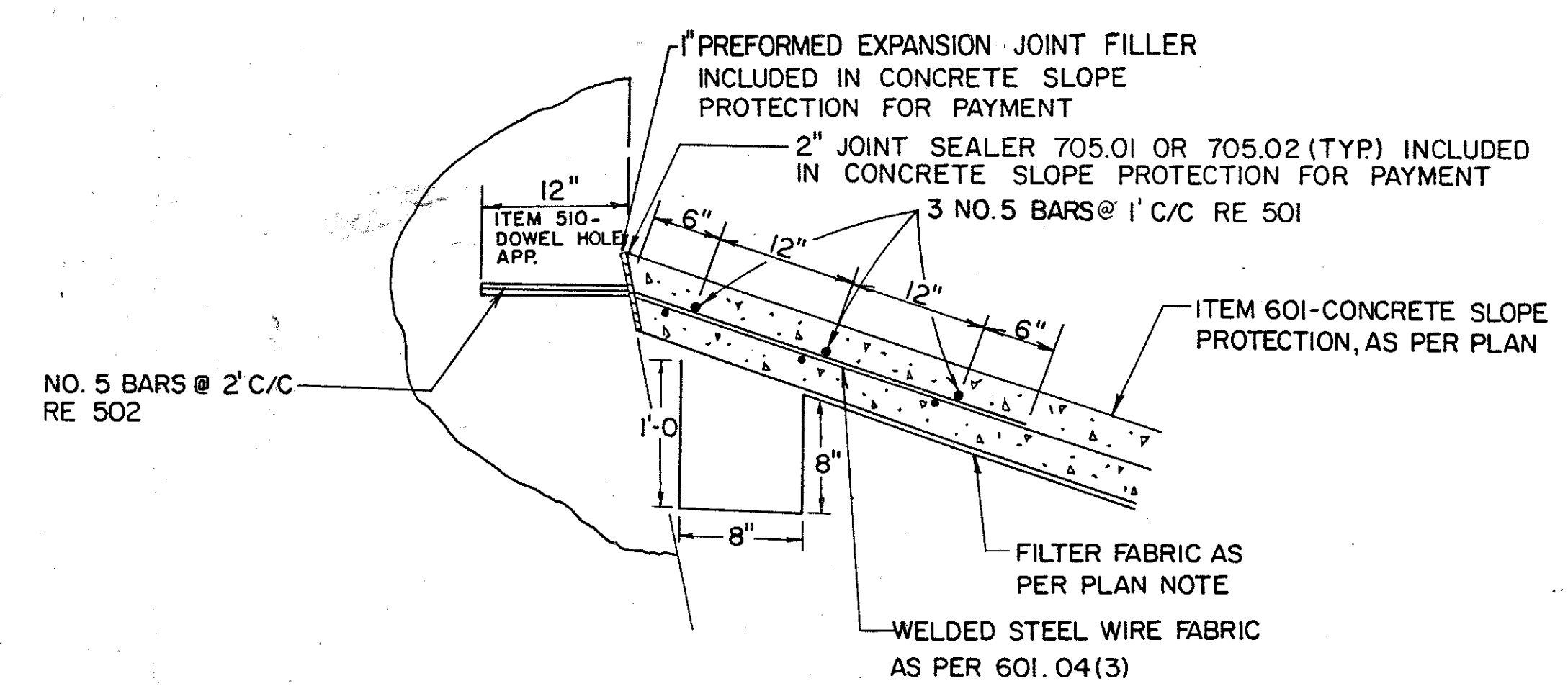
FHWA REGION	STATE	PROJECT	
5	OHIO		

78  
245

CUYAHOGA COUNTY  
CUY-90-16.24



SLOPE PROTECTION DETAILS

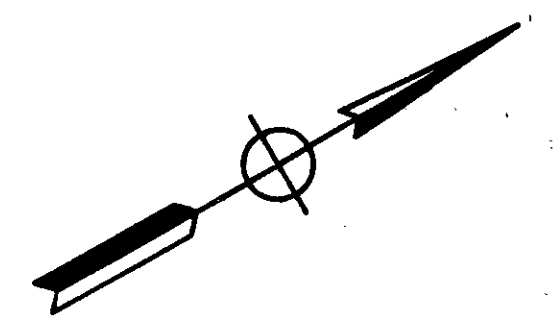
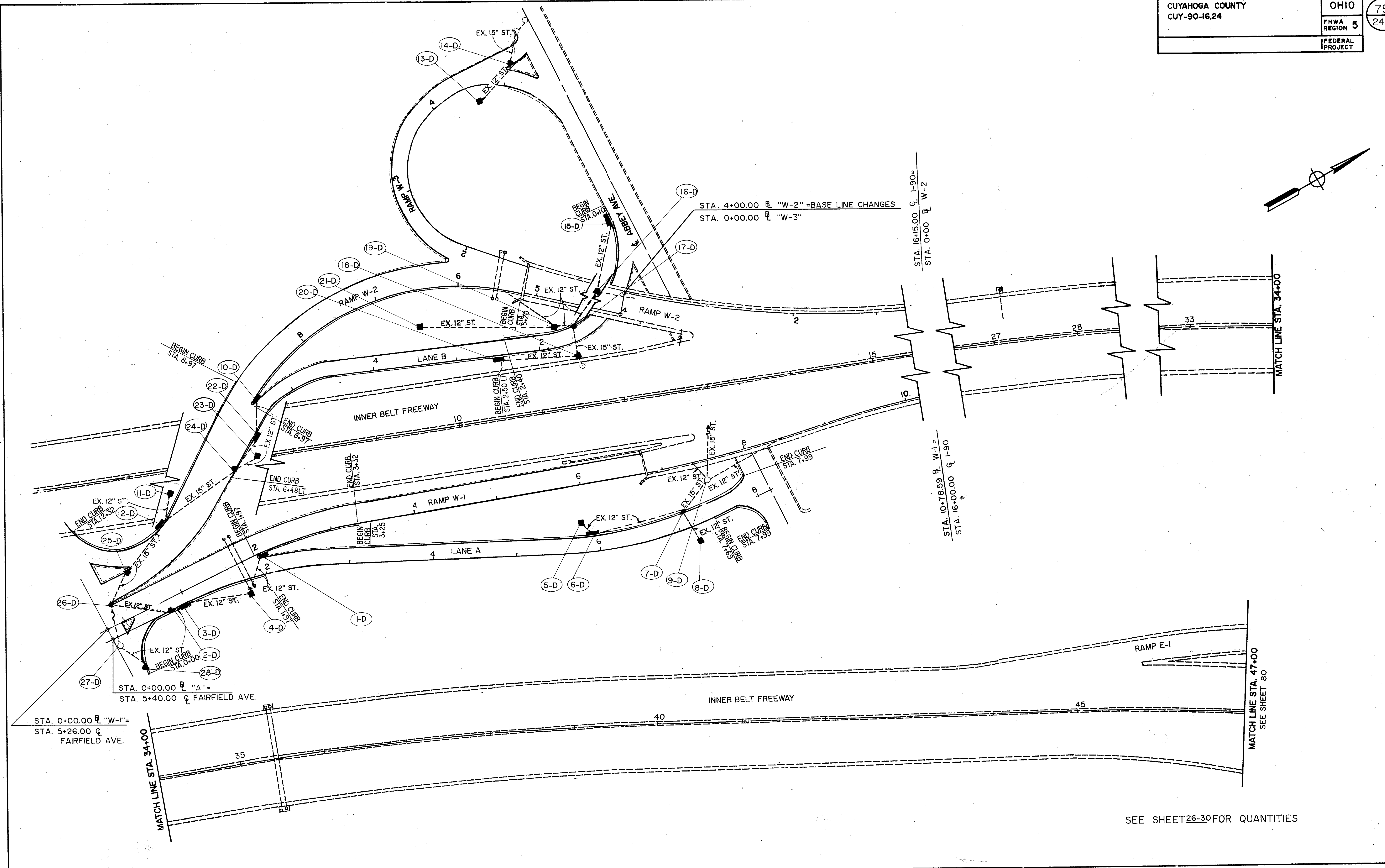


ANCHORING DETAIL

CONTRACTOR IS RESPONSIBLE FOR PLACING NEW PAVED GUTTER IN SAME LOCATIONS AS EXISTING

SEE SHEET II FOR NOTES

STATE OF OHIO DEPARTMENT OF HIGHWAYS DIVISION OF DESIGN AND CONSTRUCTION BUREAU OF BRIDGES.			
EROSION CONTROL DETAILS CUY-90-16.28			
		REVIEWED	DATE



STA. 0+00.00 R "W-1"  
STA. 5+26.00 C  
FAIRFIELD AVE.

STA. 0+00.00 R "A"  
STA. 5+40.00 C  
FAIRFIELD AVE.

STA. 4+00.00 R "W-2" =BASE LINE CHANGES  
STA. 0+00.00 R "W-3"

STA. 16+15.00 C I-90  
STA. 0+00.00 R W-2

STA. 10+78.59 R W-1 =  
STA. 16+00.00 C I-90

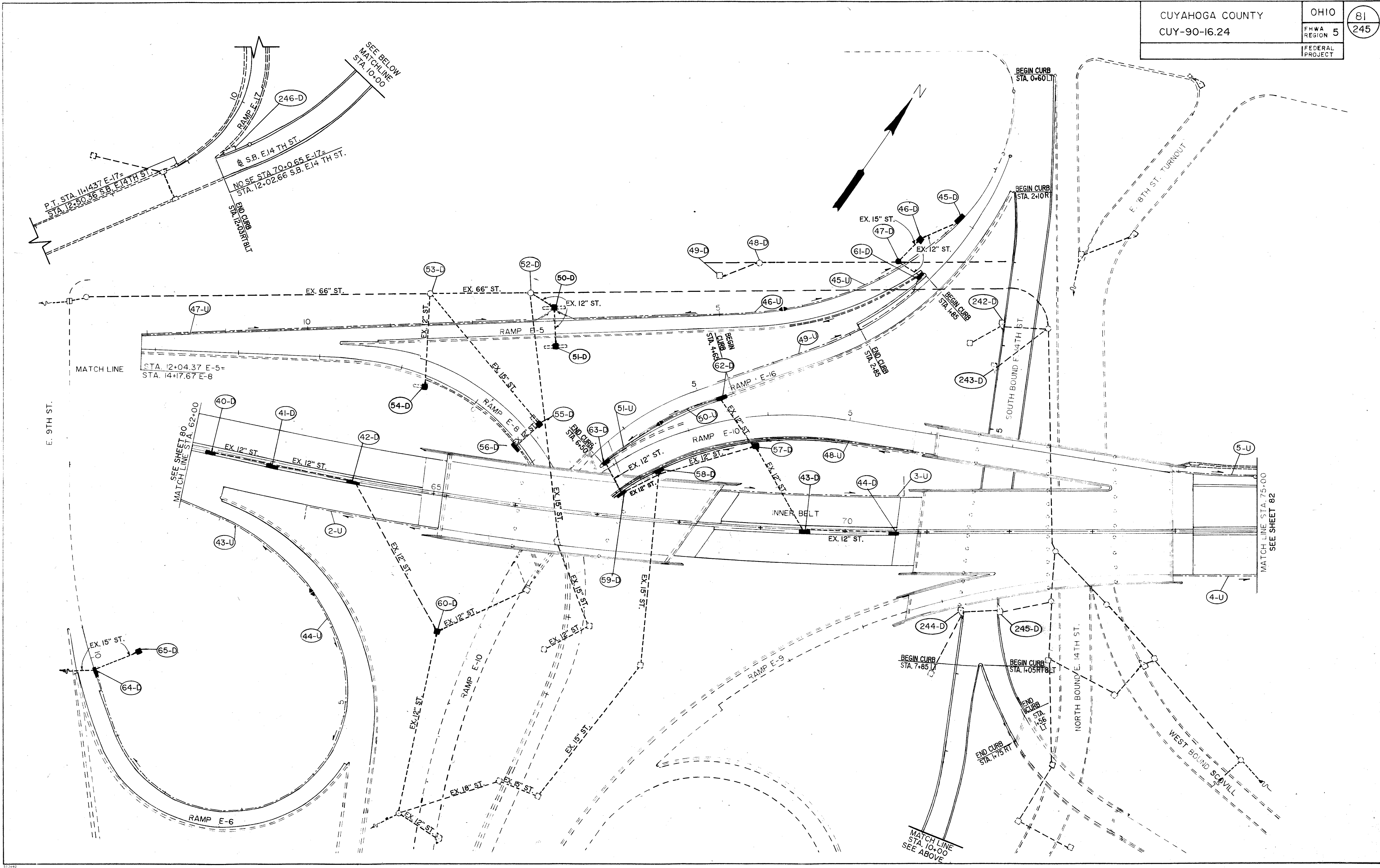
MATCH LINE STA. 34+00

MATCH LINE STA. 47+00  
SEE SHEET 80

SEE SHEET 26-30 FOR QUANTITIES

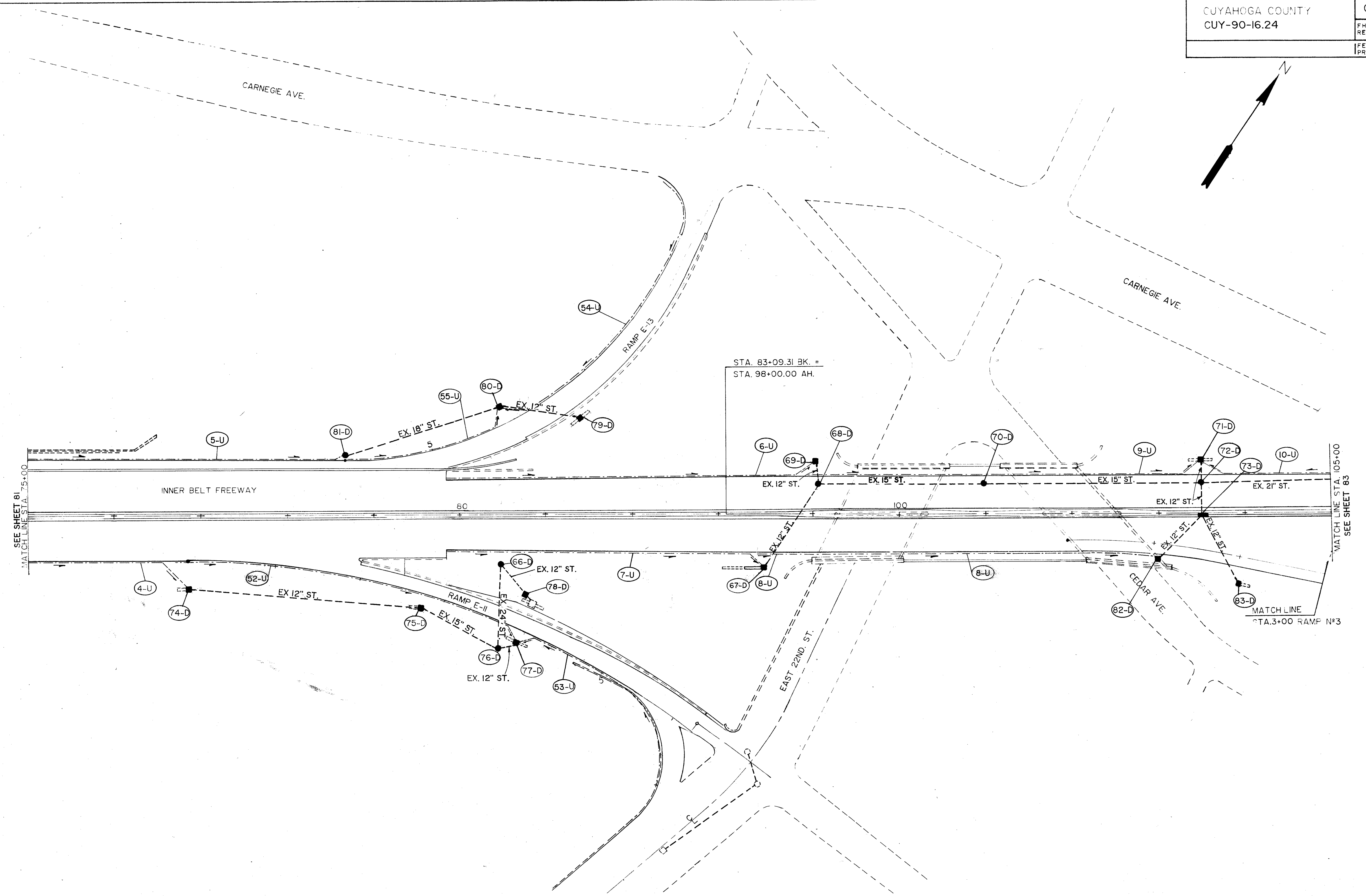
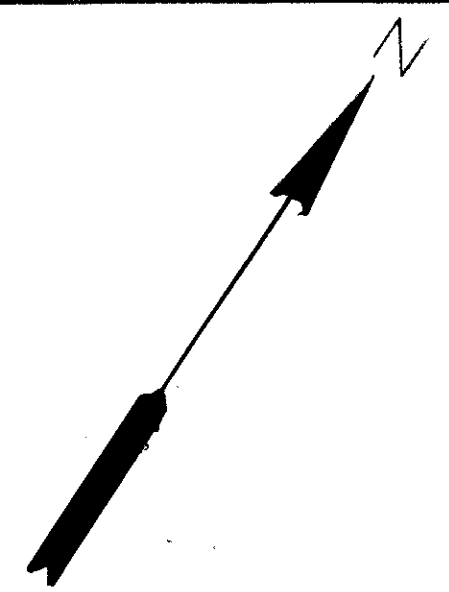






DRAINAGE PLAN SHEET STA. 62+00 TO STA. 75+00



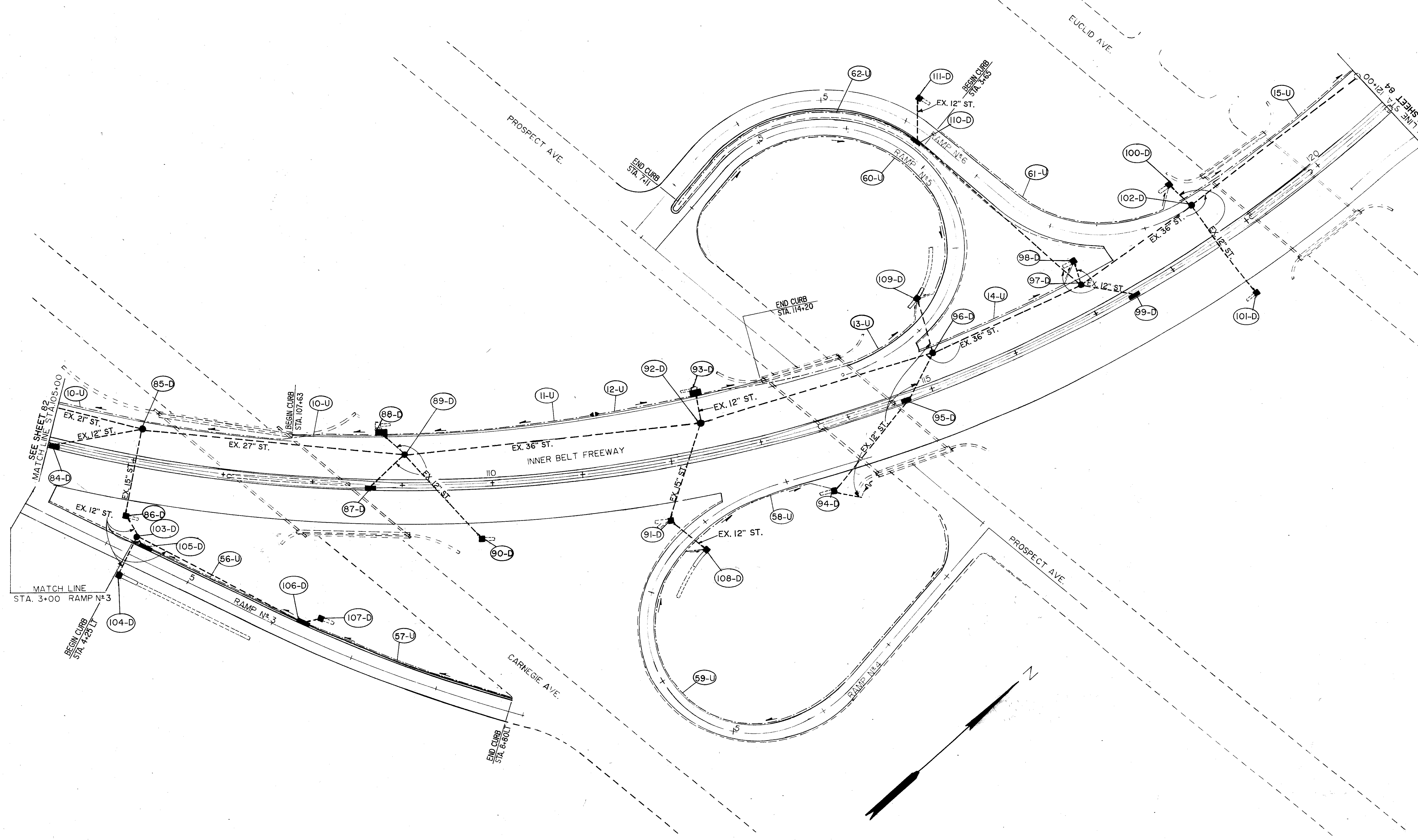


STA. 83+09.31 BK. =  
STA. 98+00.00 AH.

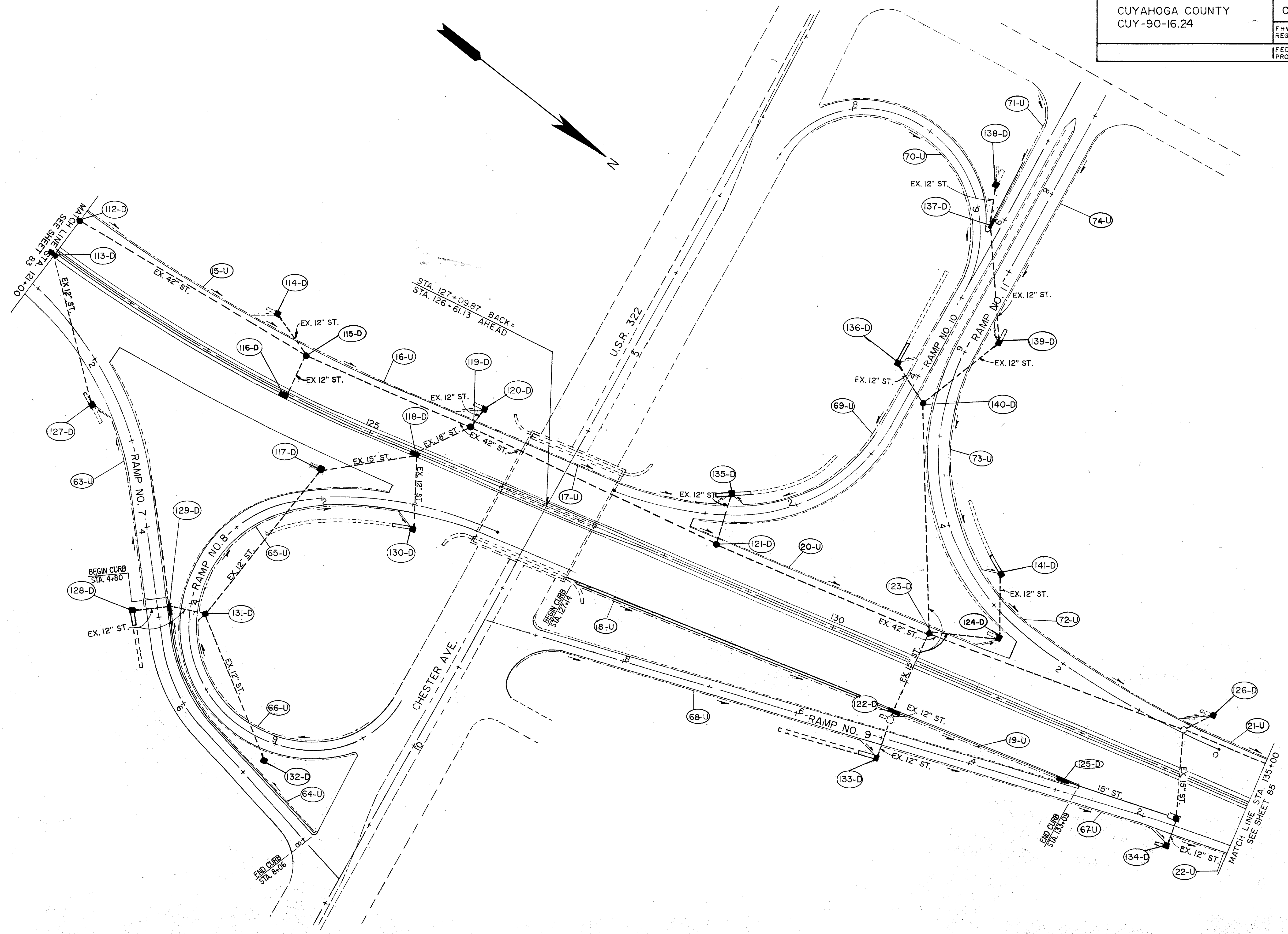
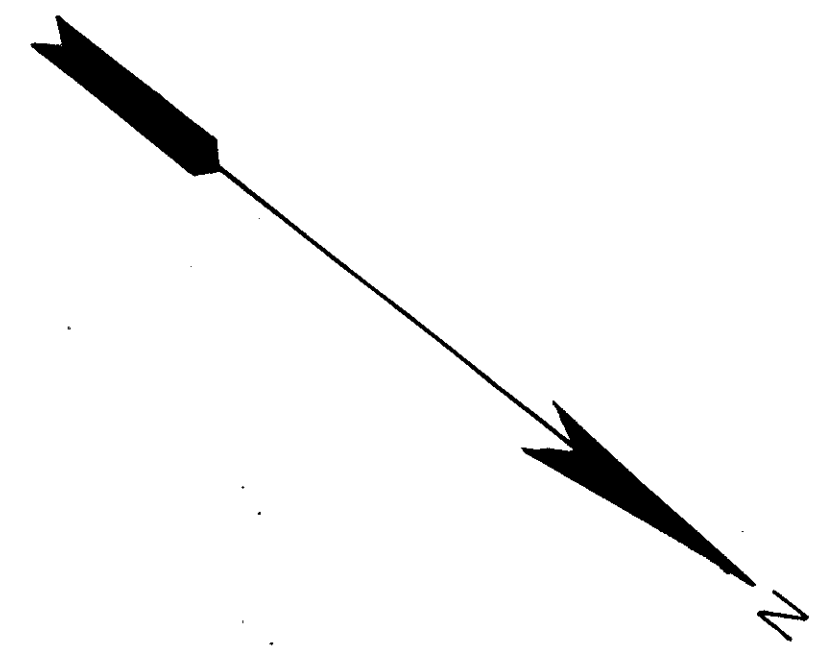
SEE SHEET 81  
MATCH LINE STA. 75+00

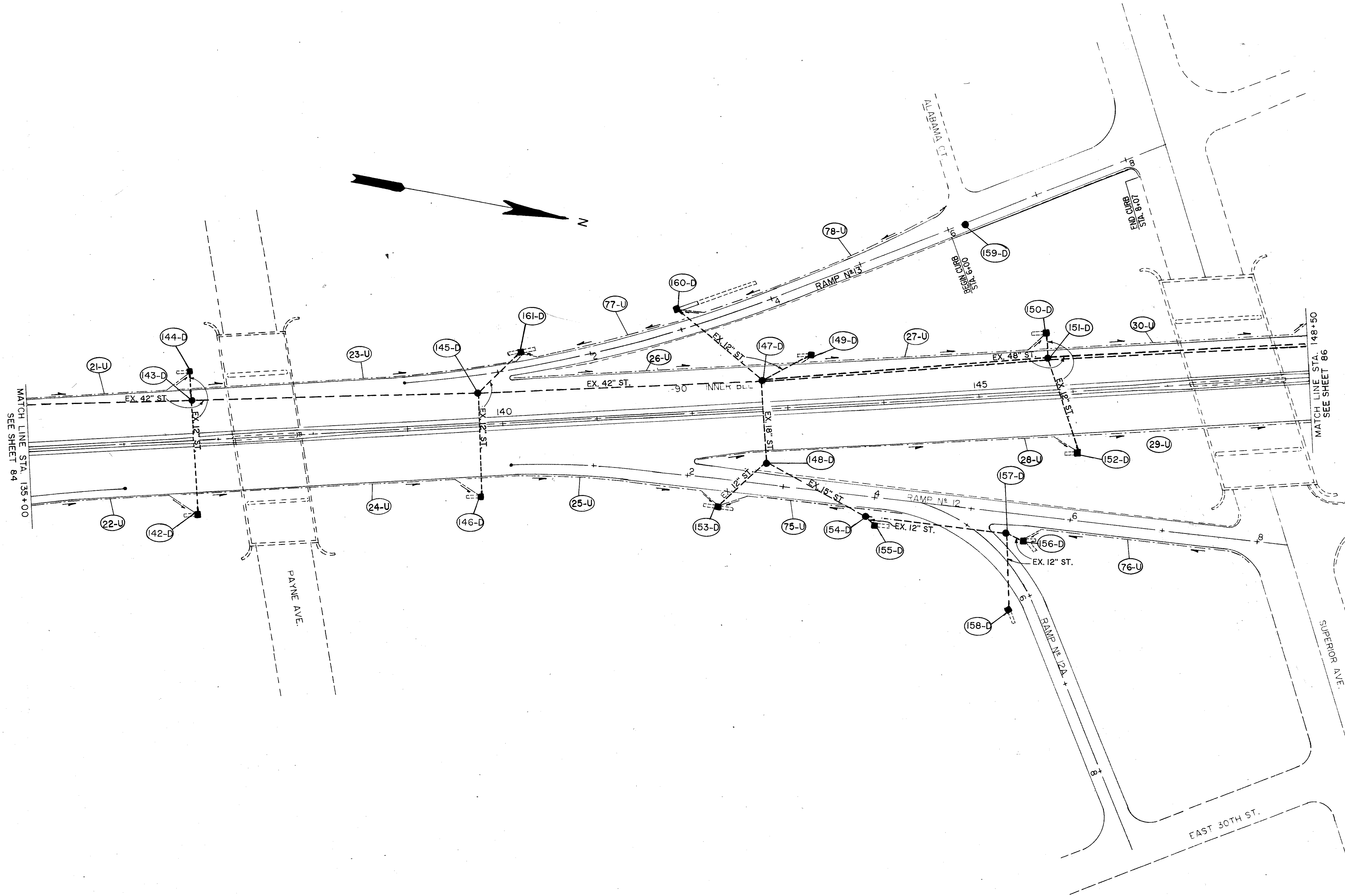
MATCH LINE STA. 105+00  
SEE SHEET 83

MATCH LINE  
STA. 3+00 RAMP N#3

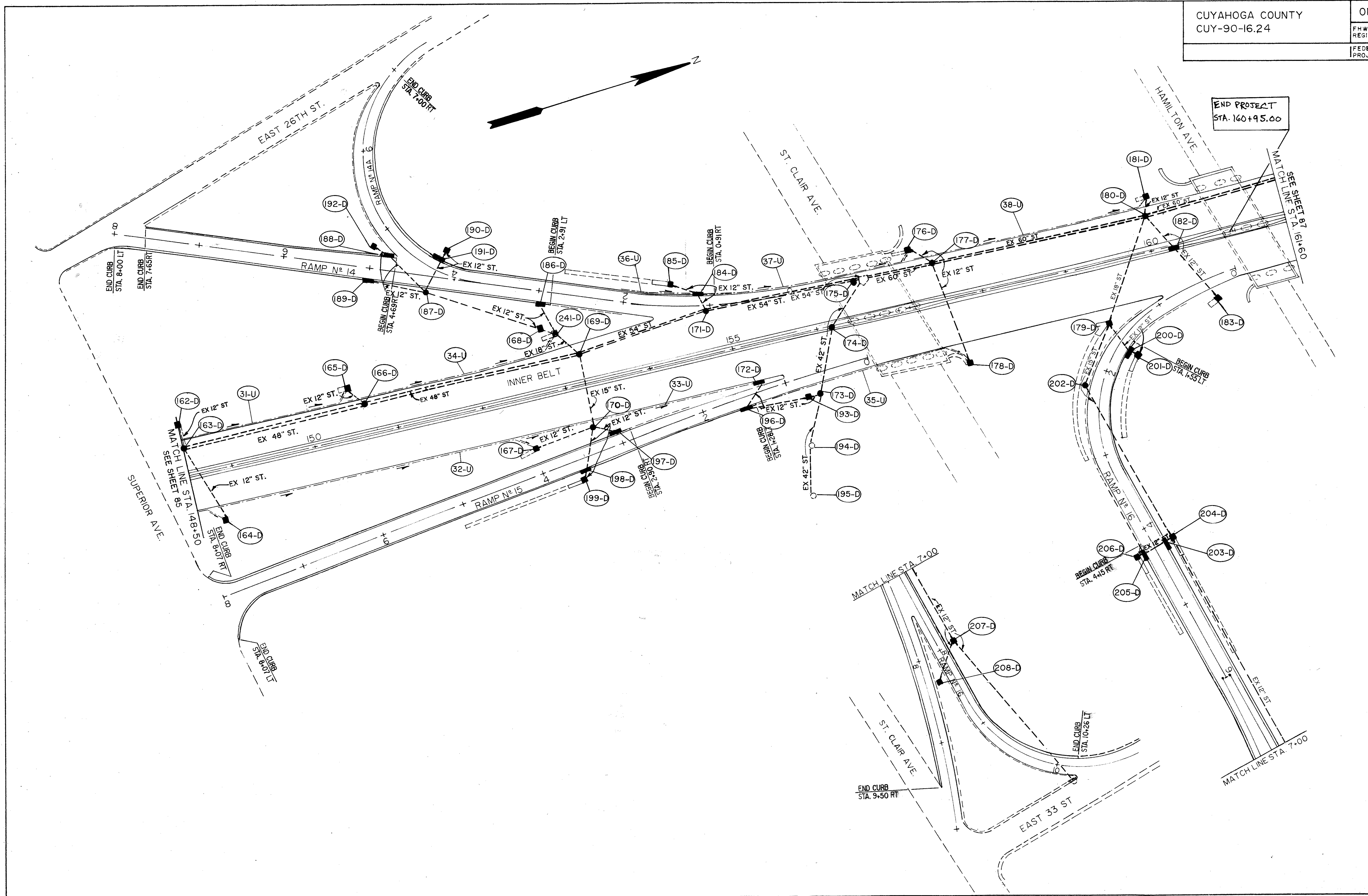




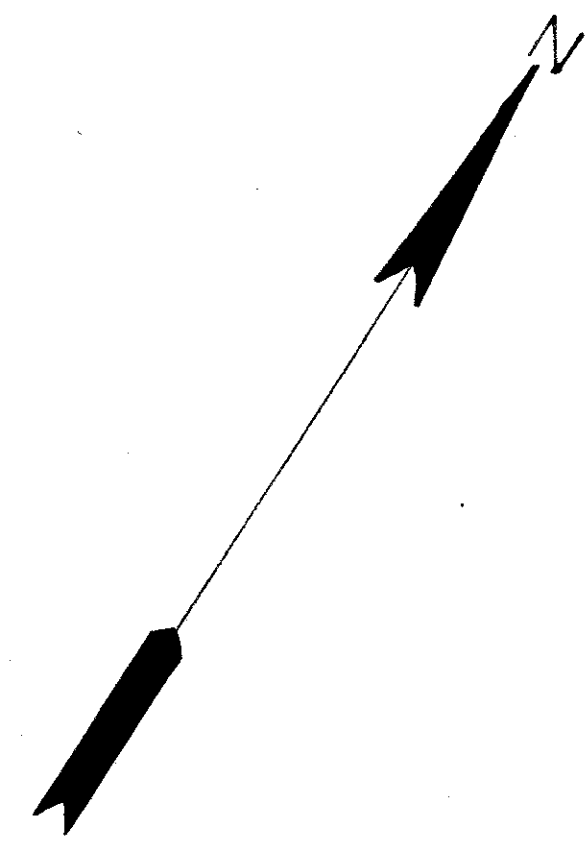
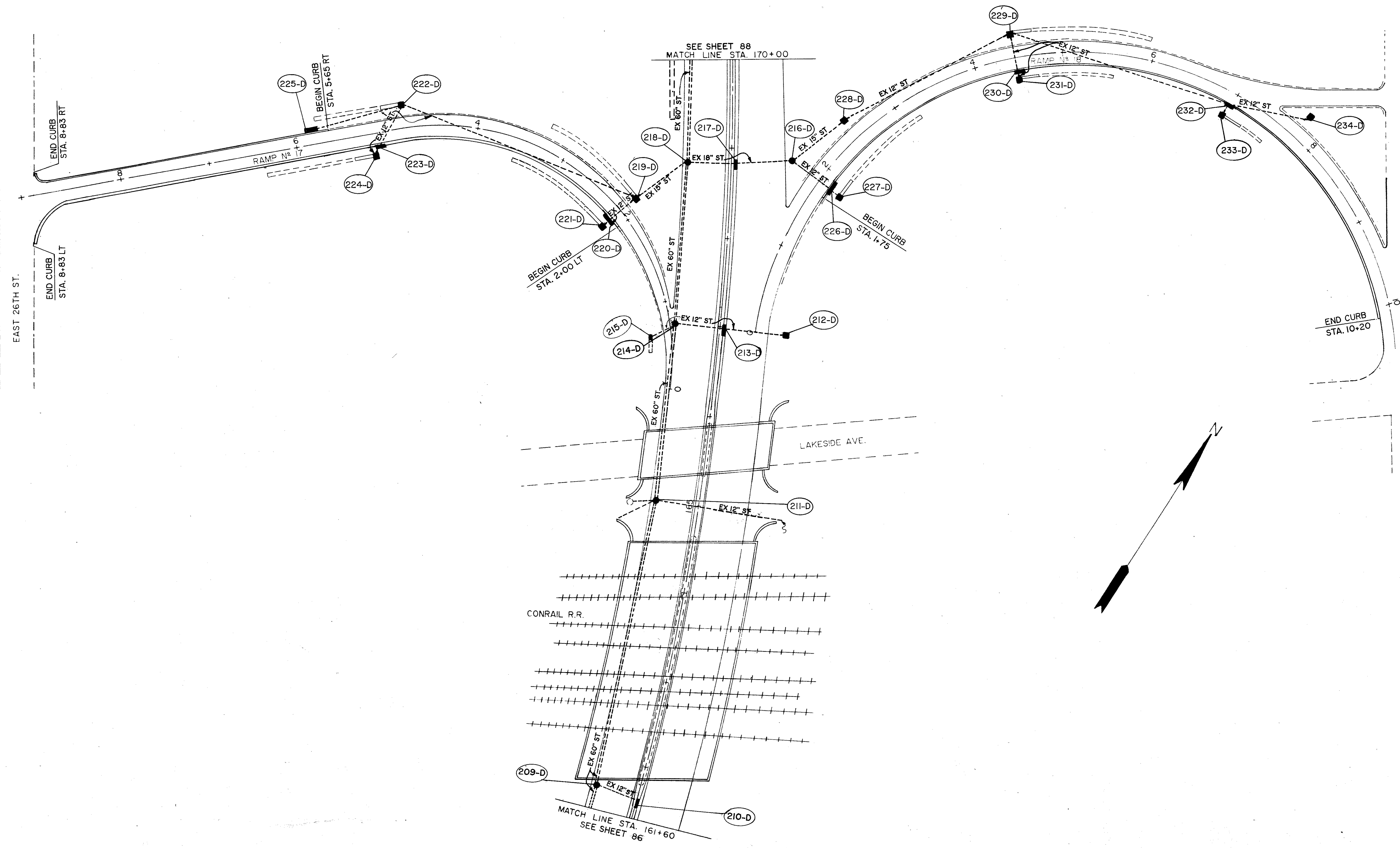




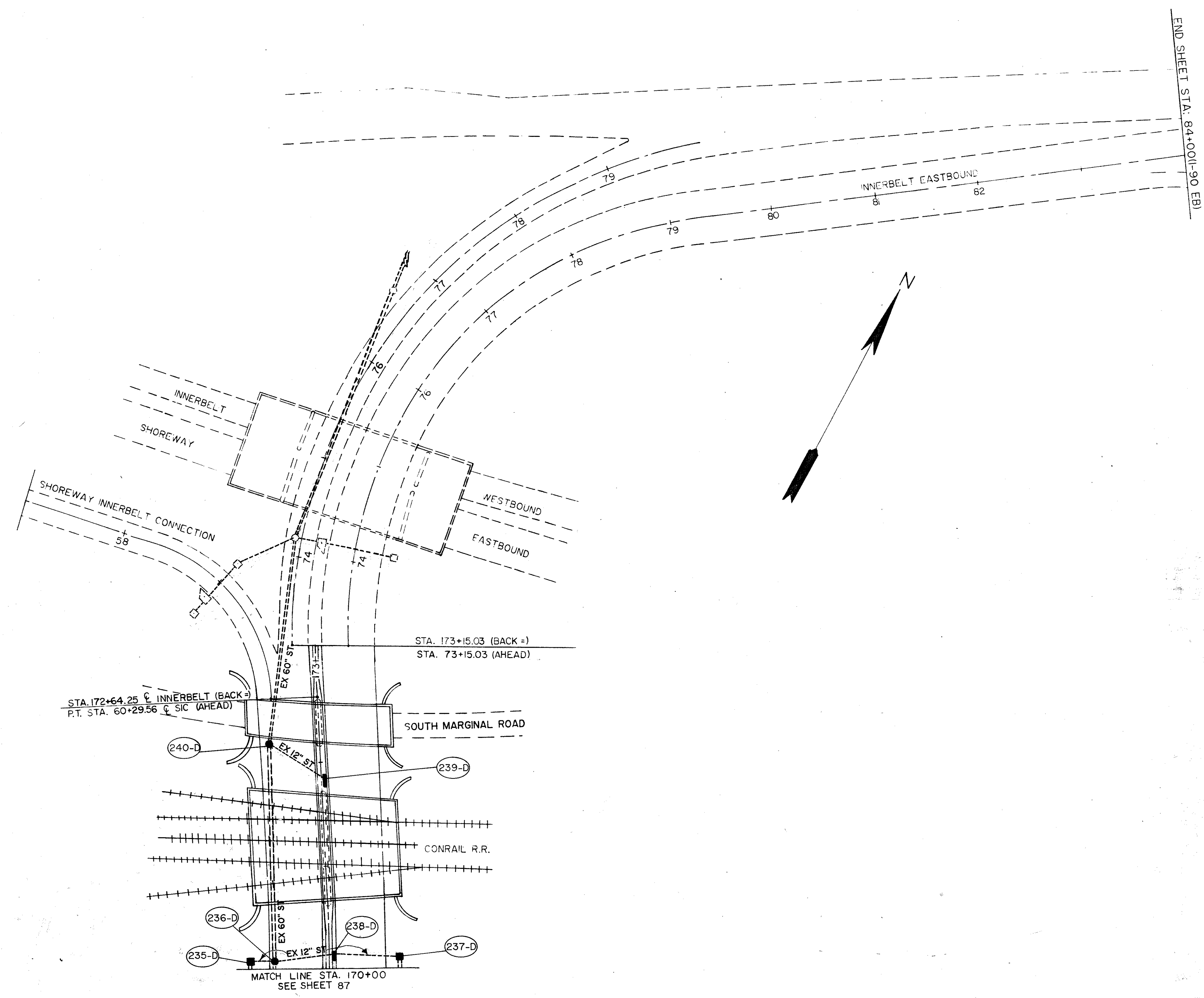


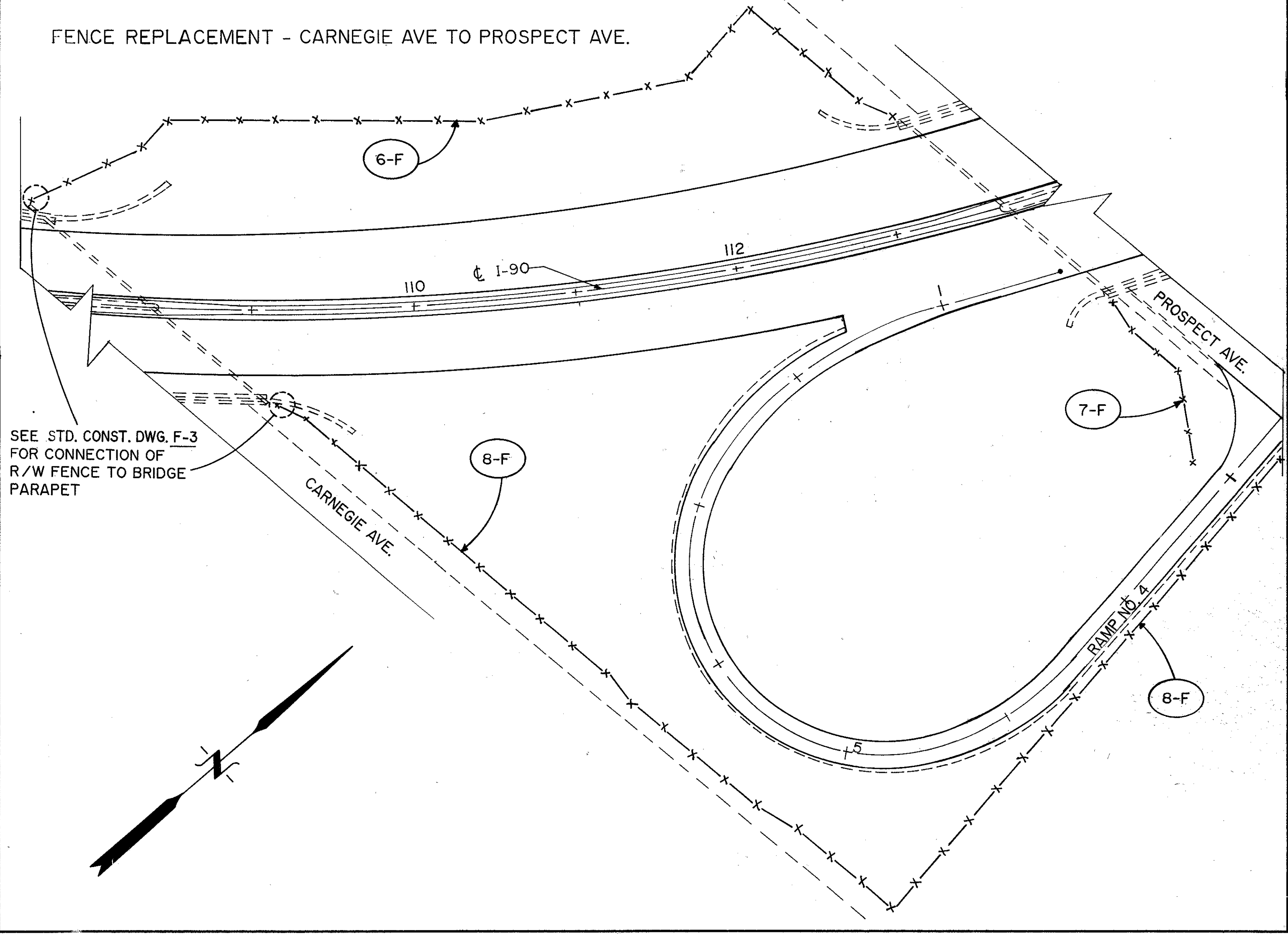
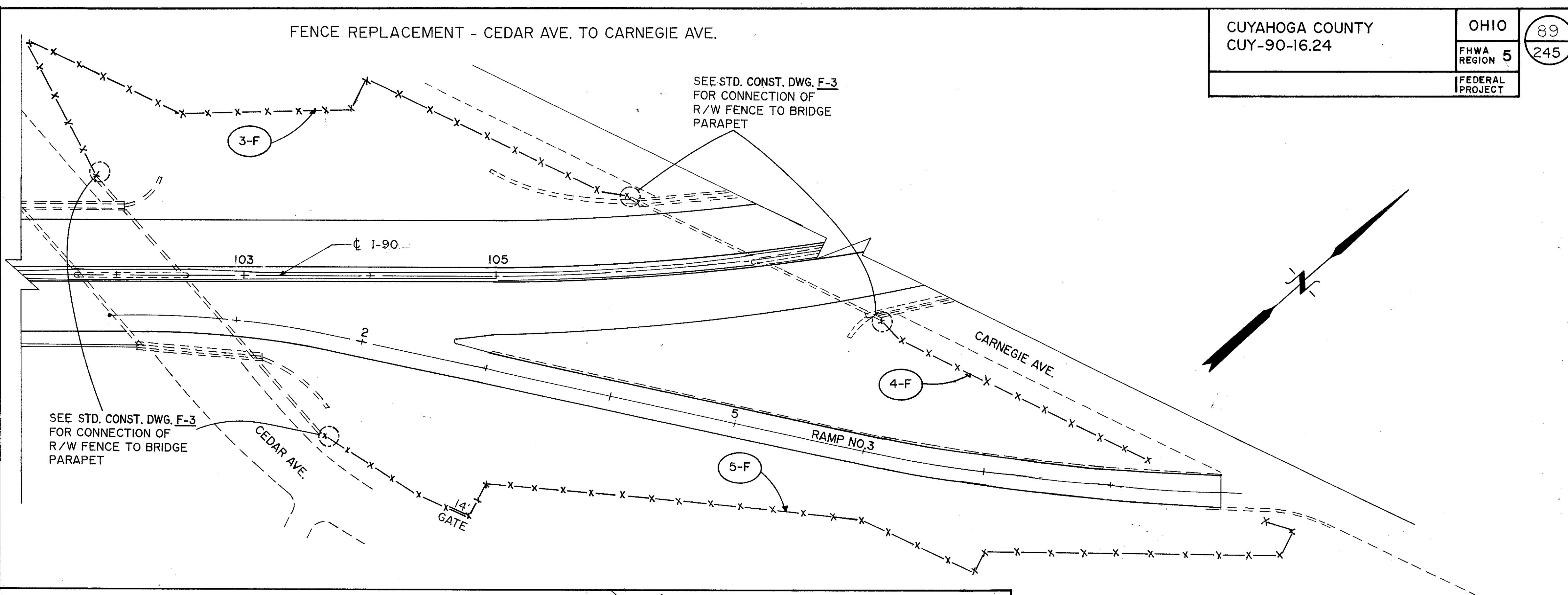
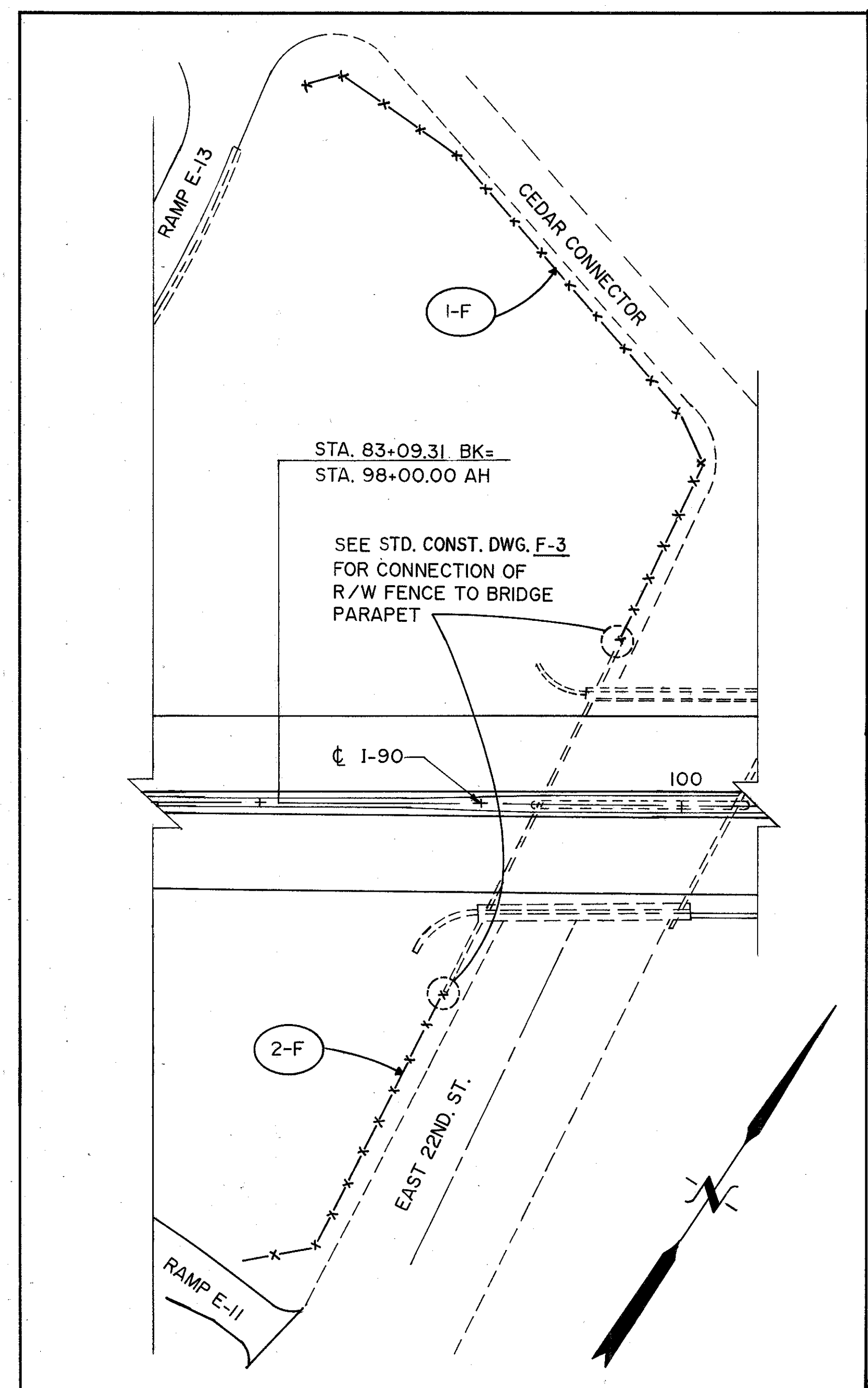


DRAINAGE PLAN SHEET STA. 148+50 TO STA. 161+60









**LEGEND**

- - - - - EXISTING FENCE
- x - x - PROPOSED FENCE, TO BE INSTALLED ON AN IDENTICAL ALIGNMENT AS THE EXISTING FENCE.
- x - x - PROPOSED FENCE, NEW ALIGNMENT (STATION AND OFFSET PROVIDED)
- 14' GATE PROPOSED GATE AND LENGTH

NOTE - WHERE A PROPOSED GATE IS SHOWN IN THE PLANS, THE CONTRACTOR SHALL FIELD LOCATE AND MARK THE EXISTING GATE'S LOCATION PRIOR TO THE REMOVAL OF THE FENCE. THE PROPOSED GATE SHALL BE INSTALLED AT THE SAME STATION AND OFFSET AS THE EXISTING GATE. SEE THIS SHEET FOR GATE LOCATIONS AND QUANTITIES.

NOT SHOWN IN THE PLANS ARE THE LOCATION OF EXISTING GATES WHICH ARE TO BE REMOVED BUT NOT REPLACED; HOWEVER, ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE SUBSUMMARY FOR ITEM 202- FENCE REMOVED AND ITEM 607- FENCE, TYPE CLT.

REFERENCE NUMBER	SHEET	SIDE	LOCATION	202	607		
				FENCE REMOVED LIN. FT.	FENCE, TYPE CLT LIN. FT.	GATE, TYPE CLT, 14' EACH	GATE, TYPE CLT, 4' EACH
1-F	89	LT.	Cedar Connector	389	389		
2-F	89	RT.	E. 22nd St.	183	183		
3-F	89	LT.	Cedar Ave.	641	641		
4-F	89	RT.	to	243	243		
5-F	89	RT.	Carnegie Ave.	873	859		
6-F	89	LT.	Carnegie Ave.	575	575		
7-F	89	RT.	to	125	125		
8-F	89	RT.	Prospect Ave.	843	843		
9-F	90	LT.	Prospect Ave.	170	170		
10-F	90	LT.	to	740	740		
11-F	90	RT.	Euclid Ave.	514	514		
12-F	90	LT.	Euclid Ave.	631	627		
13-F	90	RT.	to	884	880		
14-F	90	RT.	Chester Ave.	235	235		
15-F	91	LT.	Chester Ave.	543	817		
16-F	91	LT.	to	1,058	1,058		
17-F	91	RT.	Payne Ave.	1,142	1,107		
18-F	92	LT.	Payne Ave.	784	784		
19-F	92	LT.	to	319	319		
20-F	92	RT.	Superior Ave.	1,031	1,031		
21-F	92	RT.	to	394	394		
22-F	93	LT.	Superior Ave.	192	192		
23-F	93	LT.	to	234	234		
24-F	93	LT.	St. Clair Ave.	654	640		
25-F	93	RT.	to	830	816		
26-F	93	RT.	St. Clair Ave.	434	434		
27-F	93	RT.	to	196	196		
28-F	93	RT.	Hamilton Ave.	700	700		
29-F	94	LT.	Hamilton Ave. to	110	110		
30-F	94	RT.	Lakeside Ave.	138	138		
31-F	94	LT.	Lakeside Ave.	672	672		
32-F	94	LT.	to	780	780		
33-F	94	RT.	Conrail R.R.	762	762		
34-F	94	RT.	to	915	915		
35-F	93	RT.	HAMILTON AVE.		46		
<b>TOTALS</b>				18,934	19,169	3	2

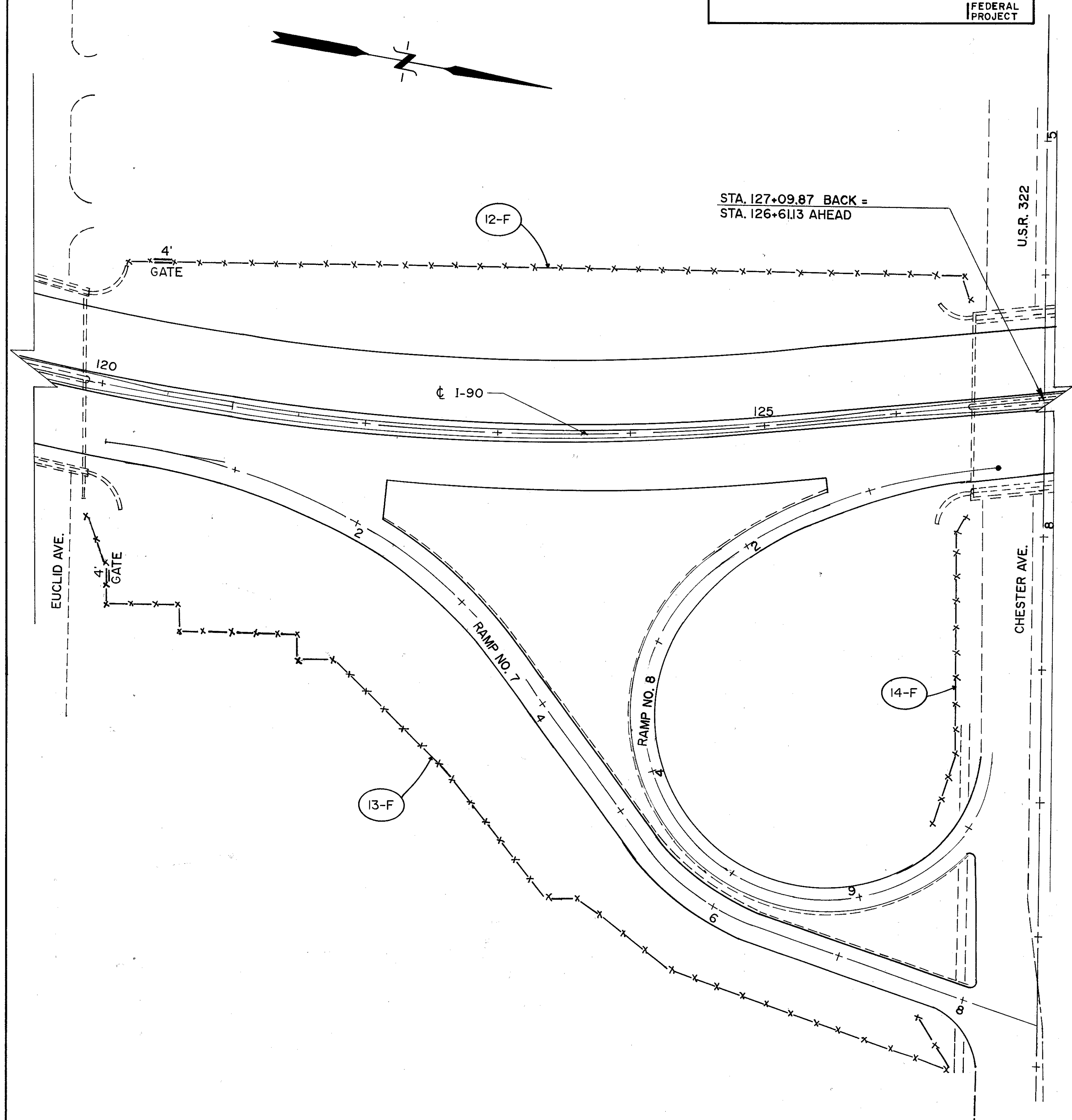
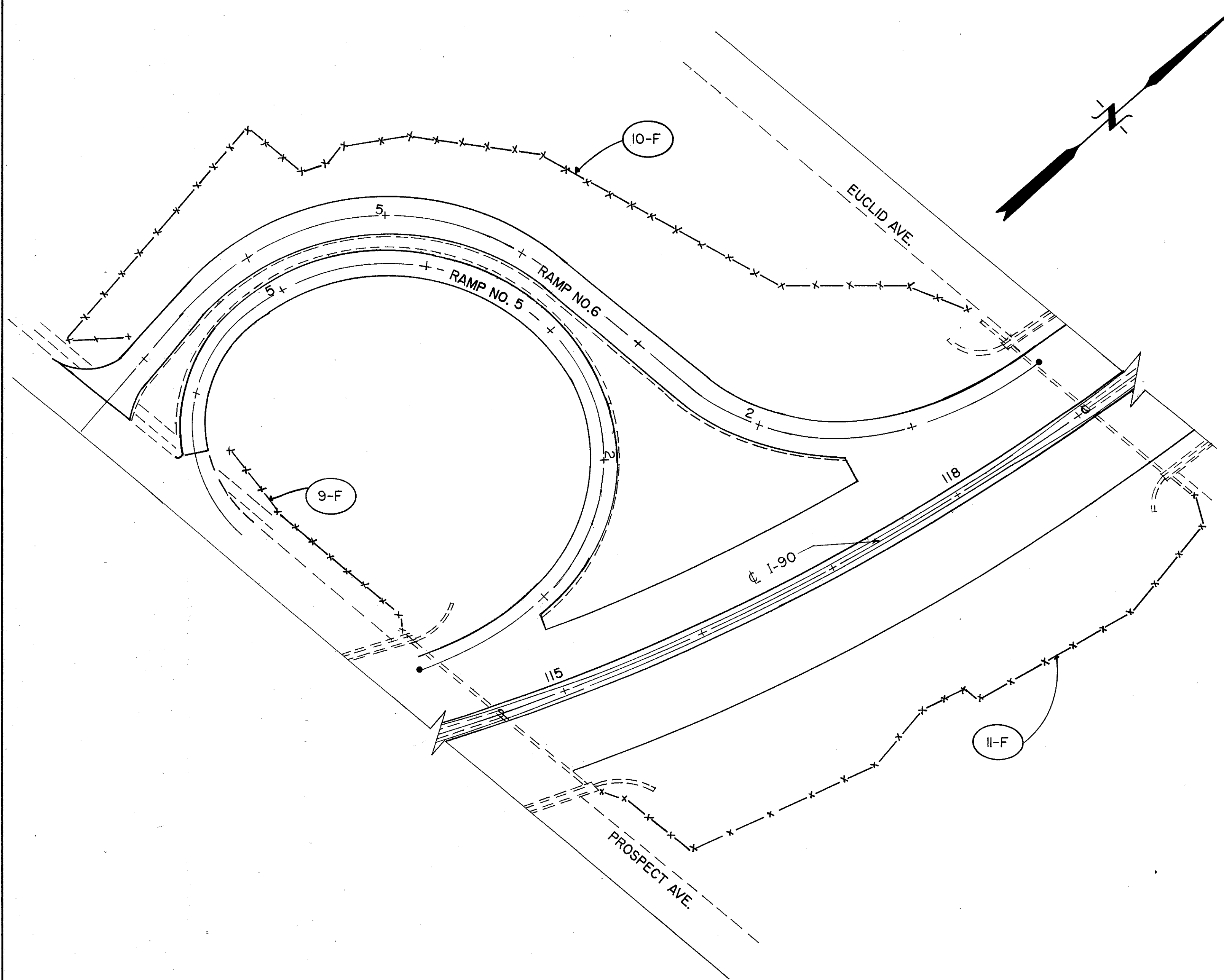


FENCE REPLACEMENT - PROSPECT AVE. TO EUCLID AVE.

FENCE REPLACEMENT - EUCLID AVE. TO CHESTER AVE.

CUYAHOGA COUNTY  
 CUY-90-16.24

OHIO	90
FHWA REGION 5	245
FEDERAL PROJECT	



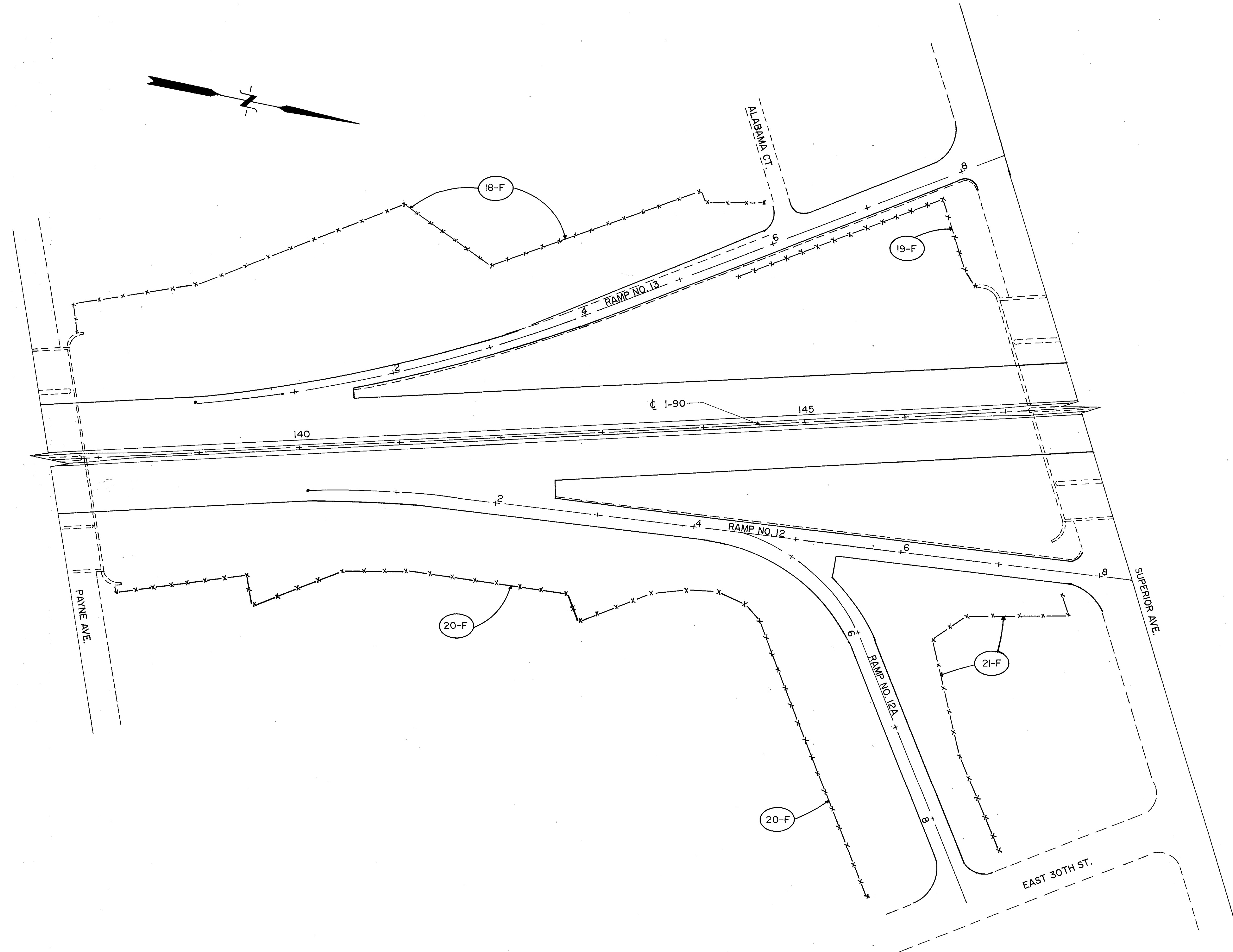




FENCE REPLACEMENT - PAYNE AVE. TO SUPERIOR AVE.

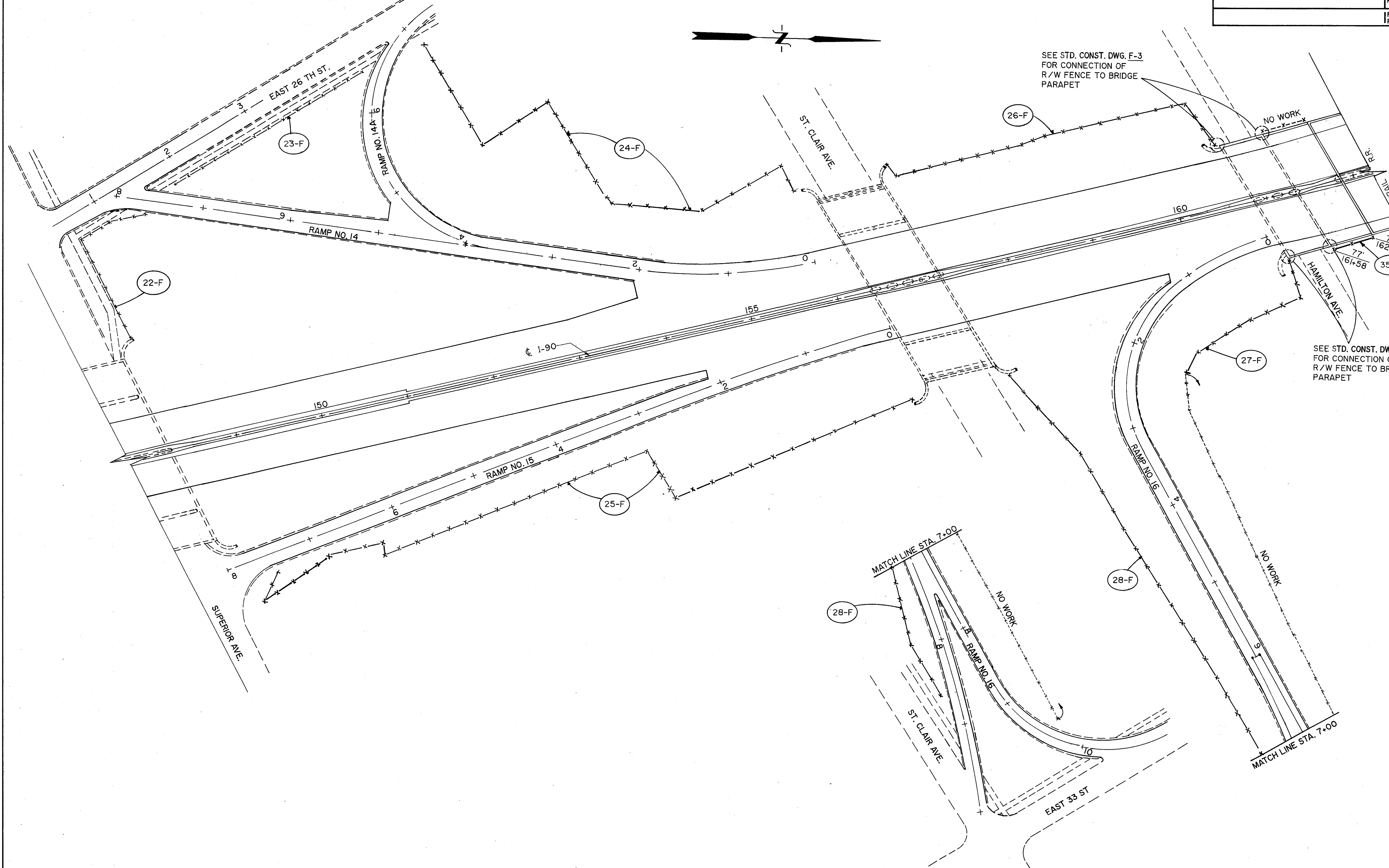
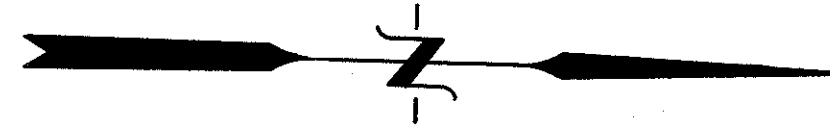
CUYAHOGA COUNTY  
CUY-90-16.24

OHIO	92
FHWA REGION 5	245
FEDERAL PROJECT	



FENCE REPLACEMENT - SUPERIOR AVE. TO HAMILTON AVE.

CUYAHOGA COUNTY CUY-90-16.24	OHIO	93
	FHWA REGION 5	245
FEDERAL PROJECT		

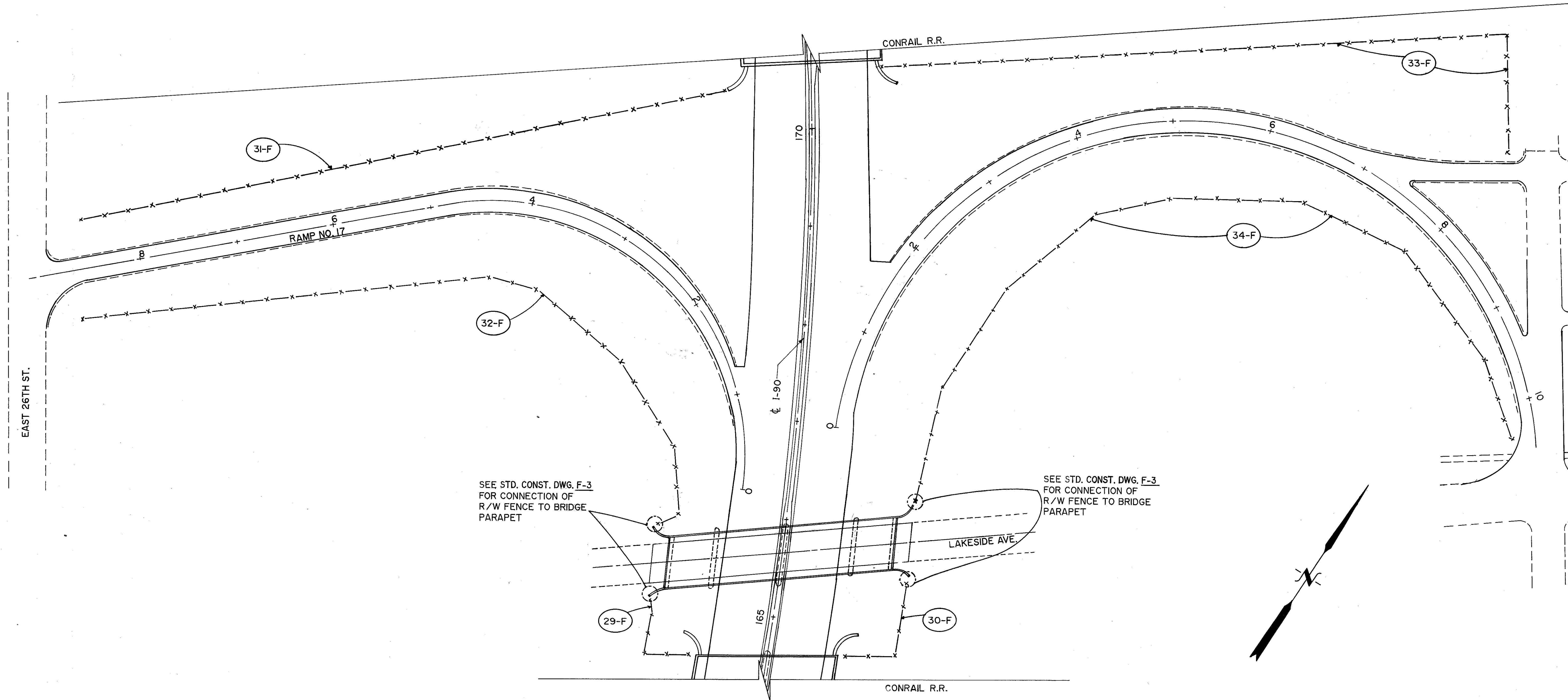


513846

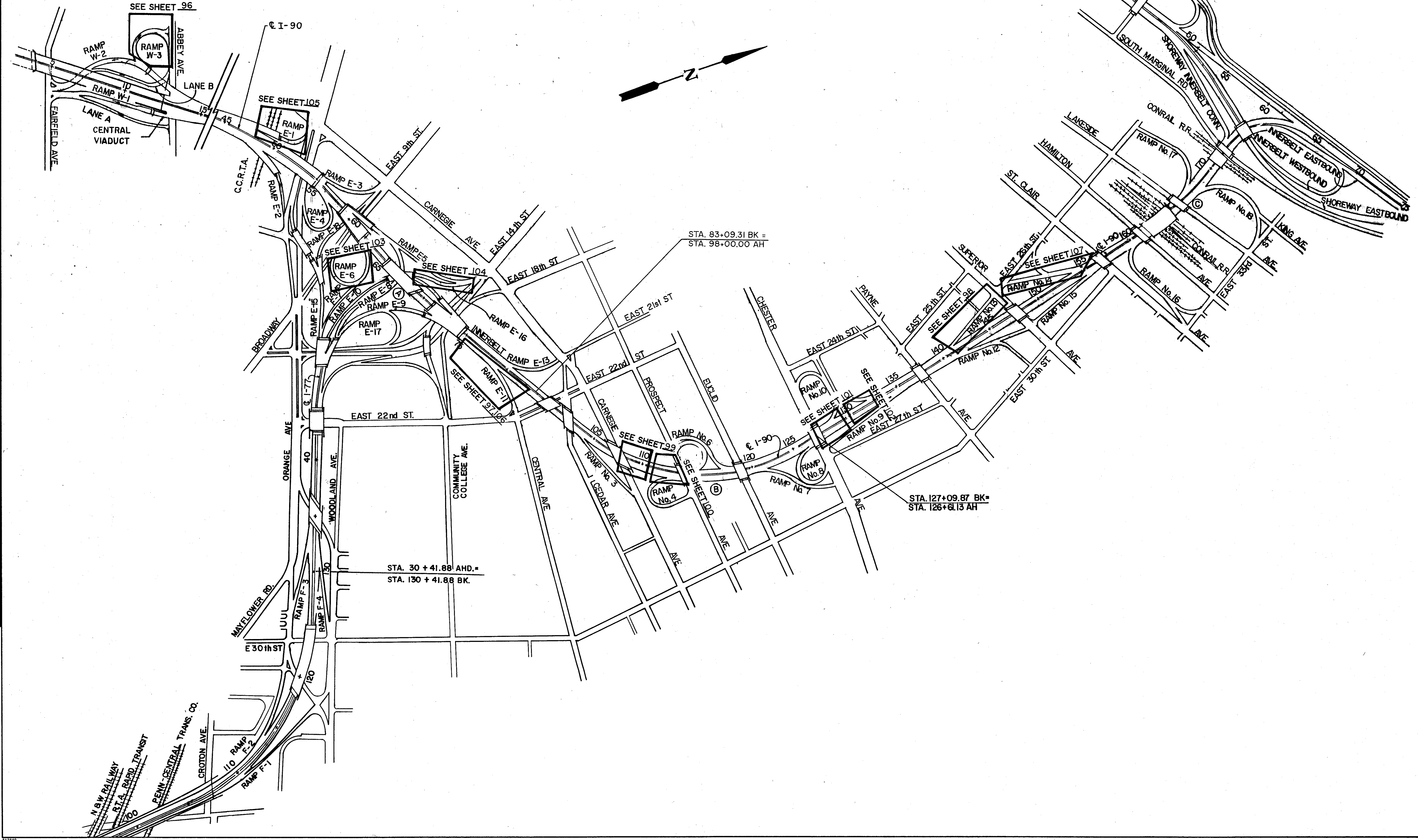


FENCE REPLACEMENT - HAMILTON AVE. TO CONRAIL R.R.

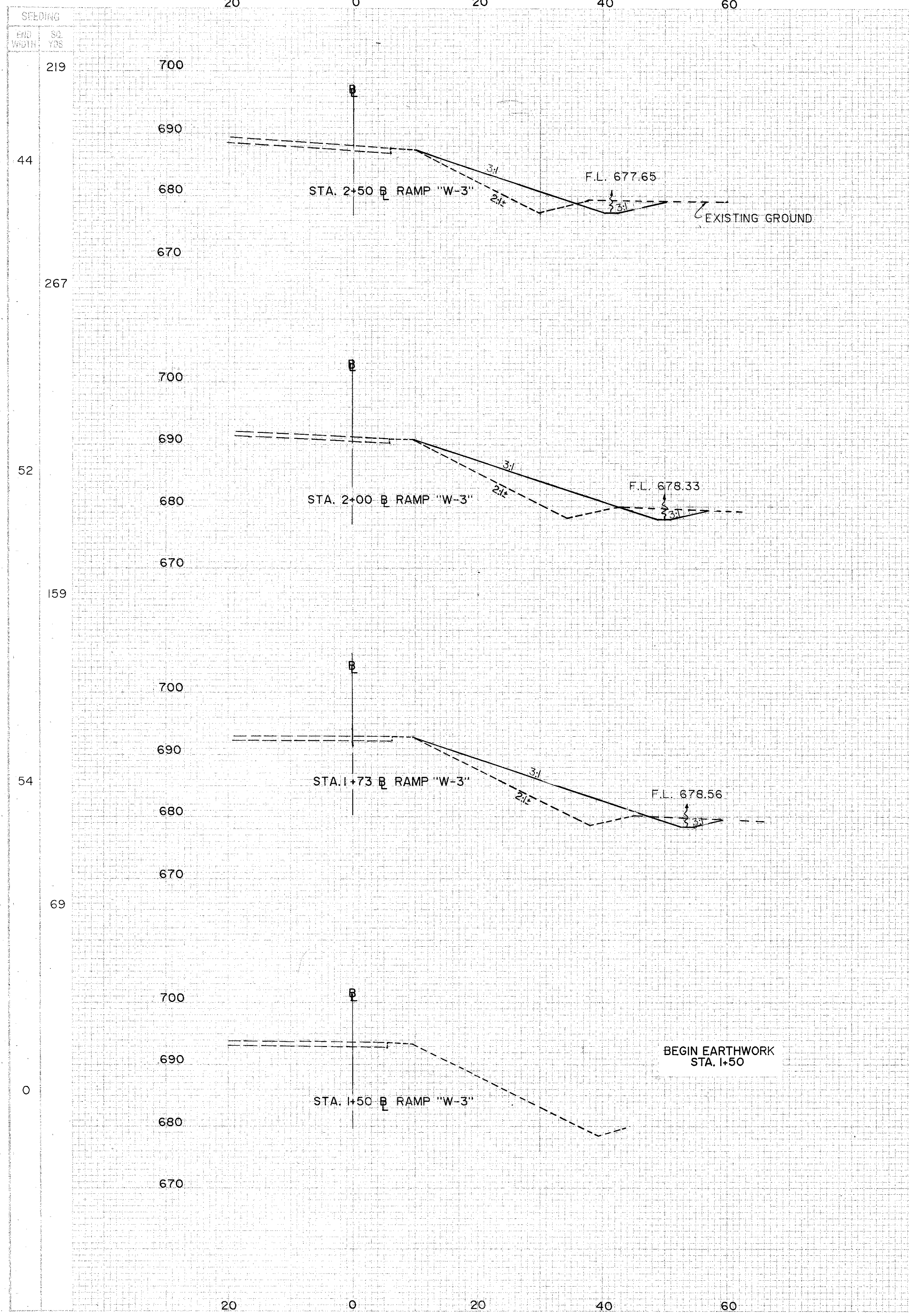
CUYAHOGA COUNTY CUY-90-16.24	OHIO	94
	FHWA REGION 5	245
FEDERAL PROJECT		



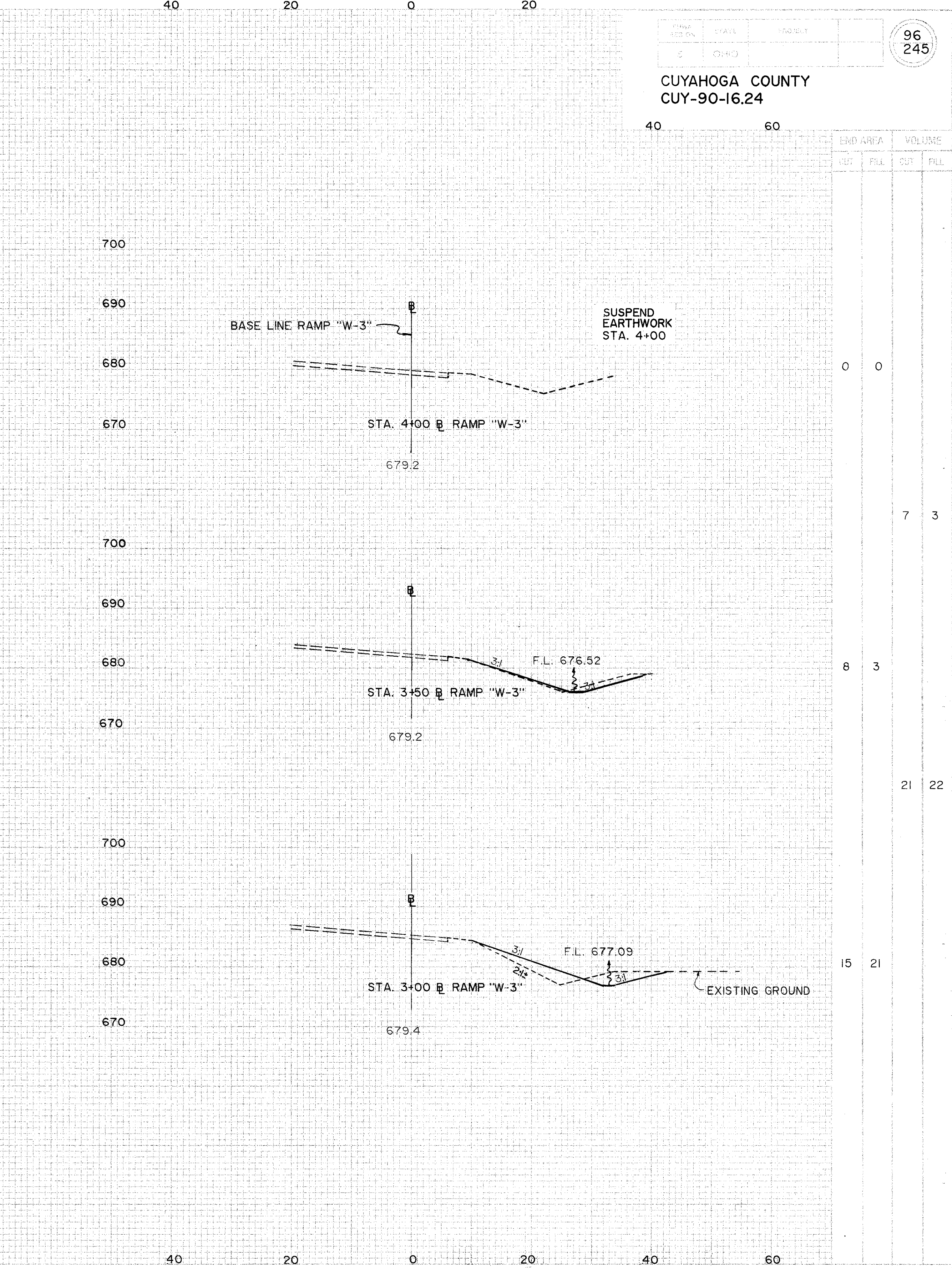
# CROSS SECTION REFERENCE LOCATION







END AREA		VOLUME		SEEDING	
CUT	FILL	CUT	FILL	END WIDTH	S.S. YDS.
		31	55		
18	38				
		29	112		
				0	
		13	83		92
		12	86		
				33	
		11	89		189
		5	38		
				35	
		0	0		

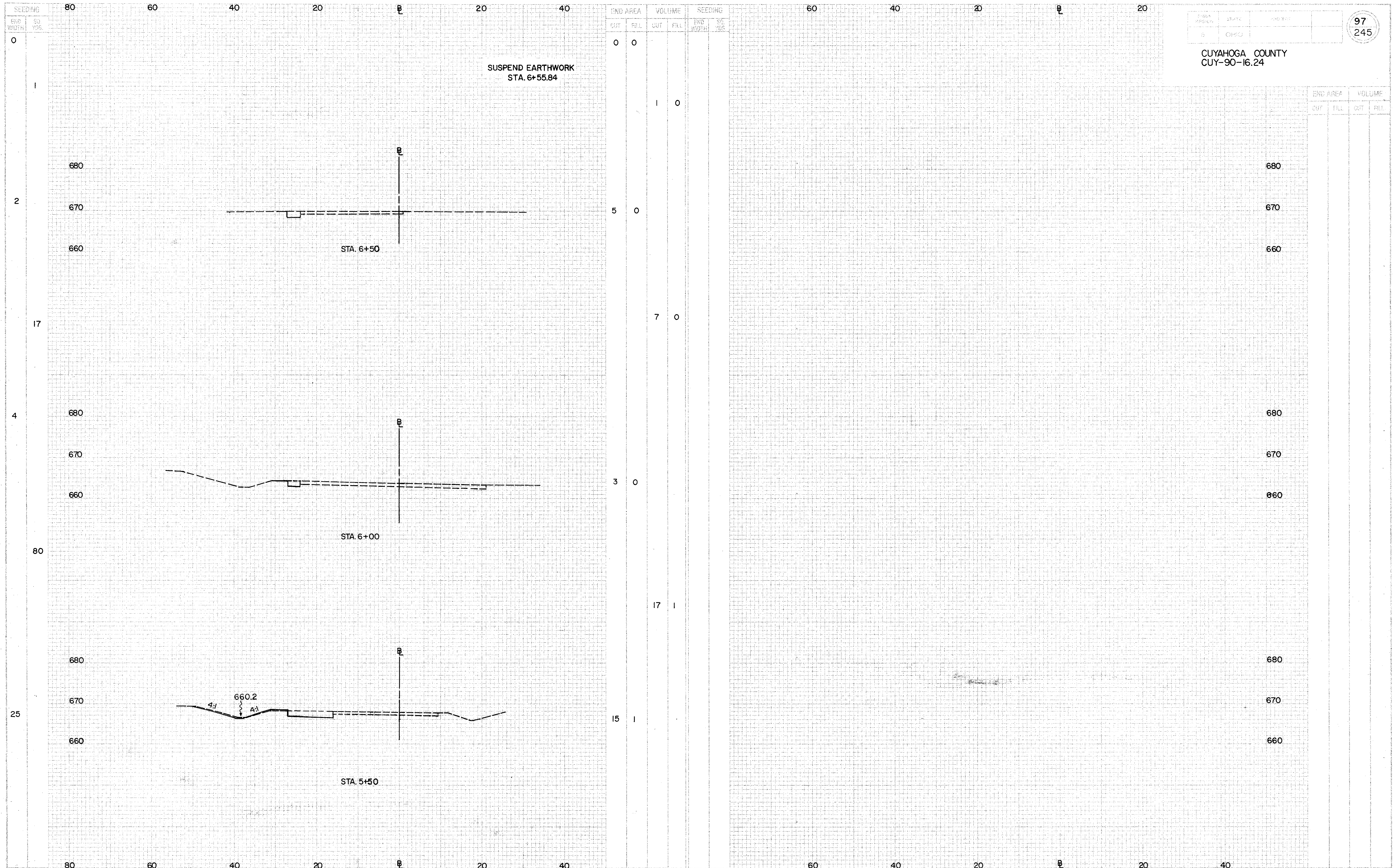


END AREA		VOLUME	
CUT	FILL	CUT	FILL
0	0		
		7	3
		8	3
		21	22
		15	21

RAMP "W-3" CROSS SECTIONS STA. 1+50 TO STA. 4+00



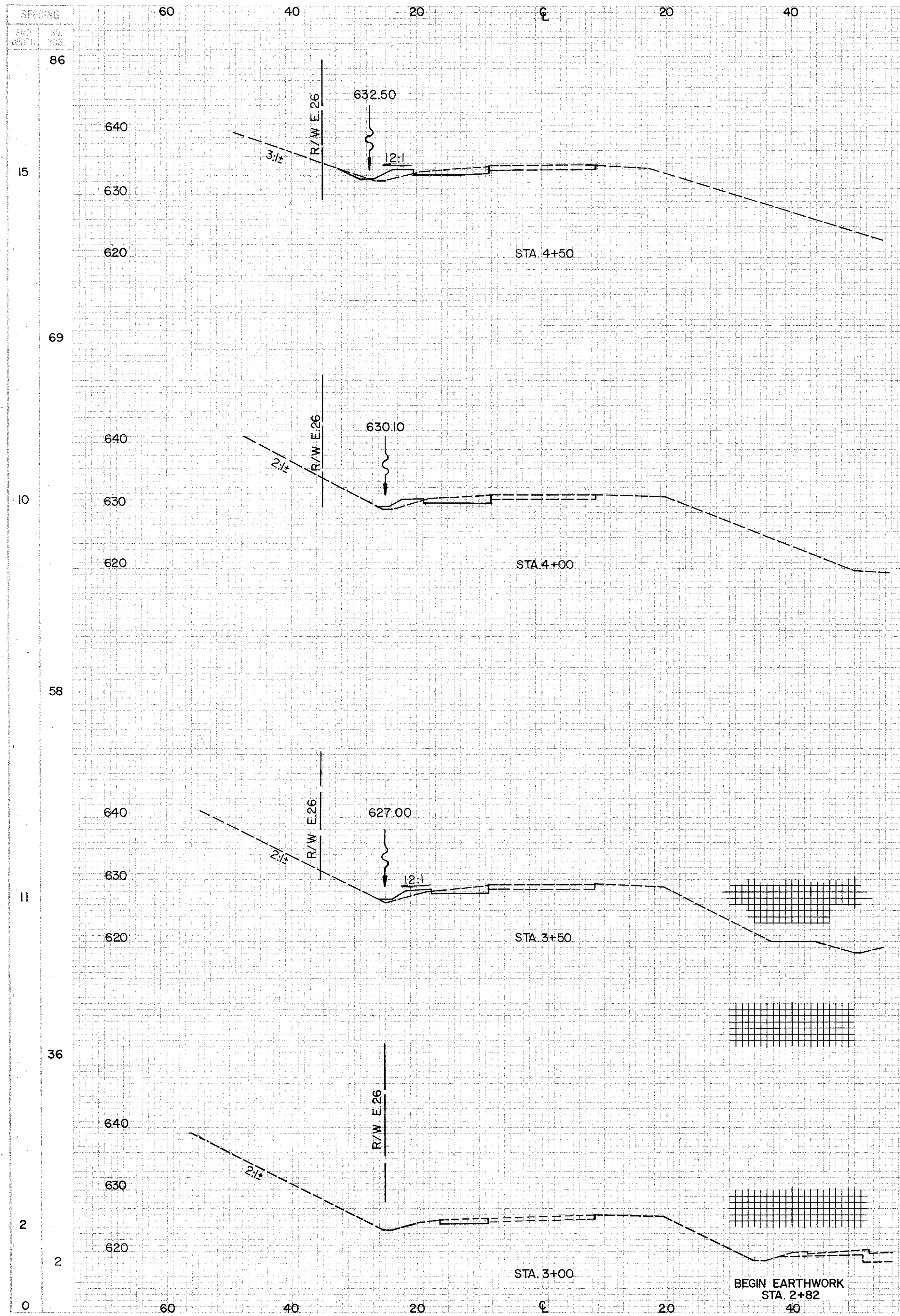
CUYAHOGA COUNTY  
CUY-90-16.24



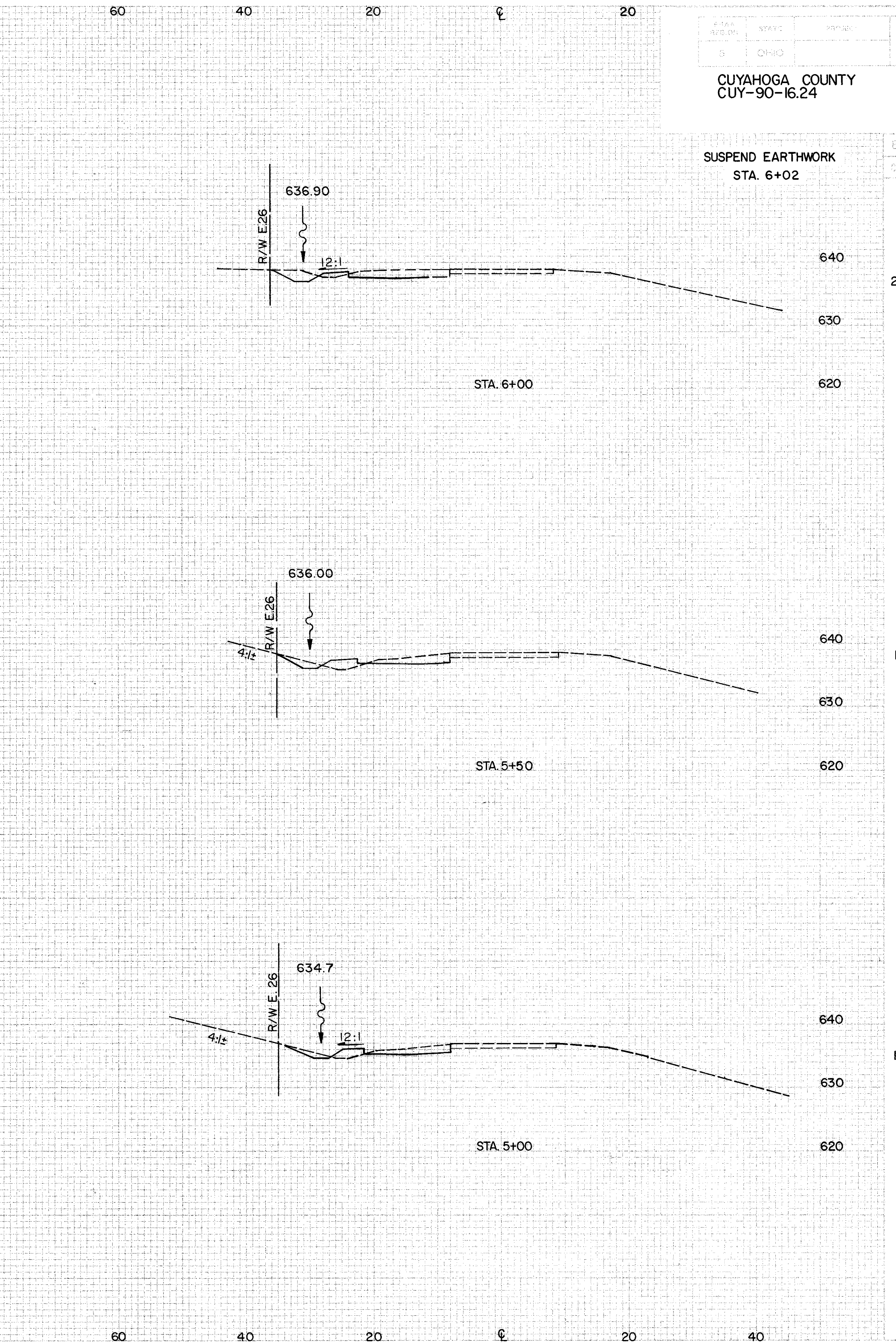
RAMP E-11 STA. 5+50 TO STA. 6+50



CUYAHOGA COUNTY  
CUY-90-16.24

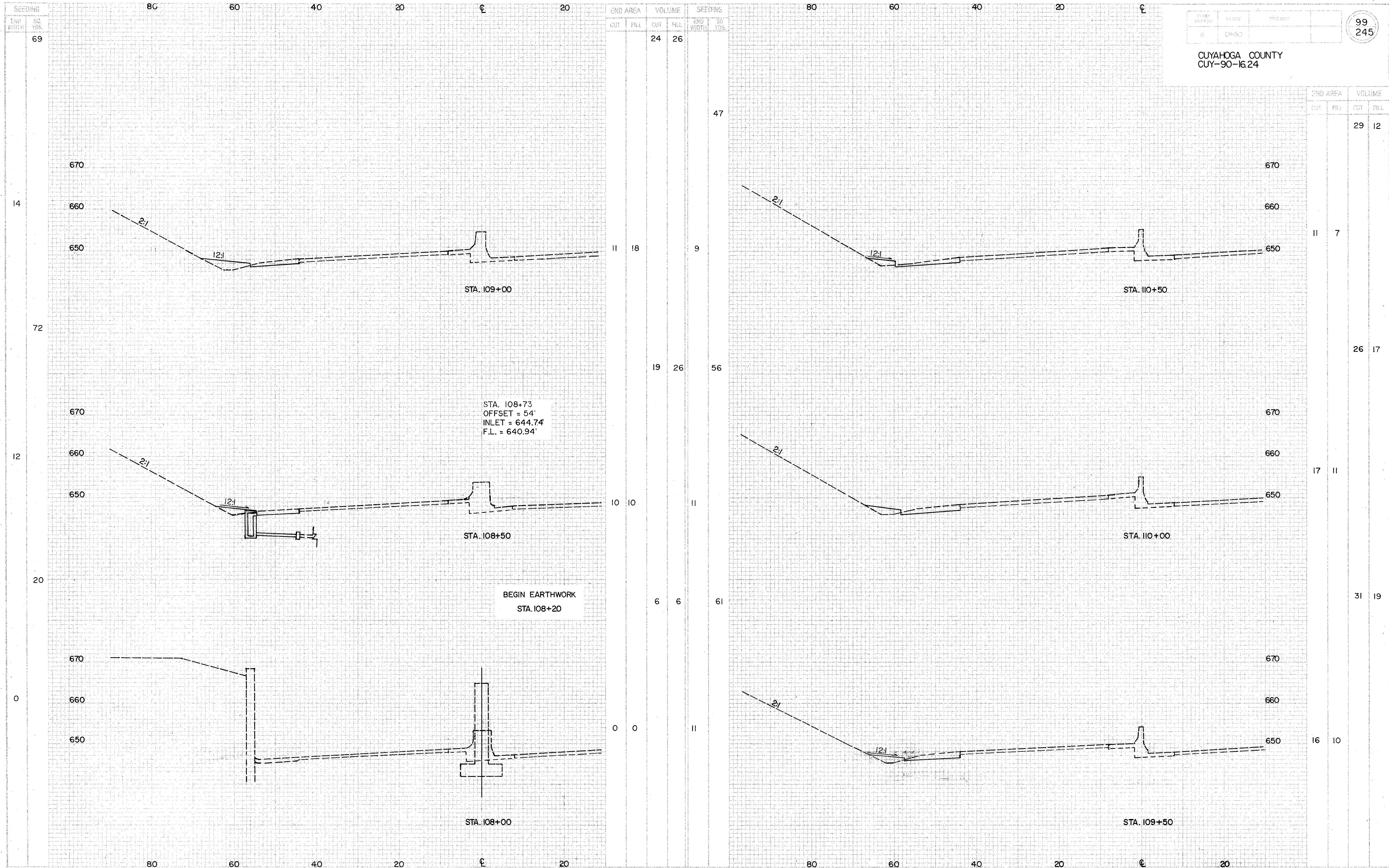


STATION	END AREA		VOLUME		SEEDING
	CUT	FILL	CUT	FILL	
STA. 3+00	0	0	2	0	
STA. 3+50	7	5	12	5	
STA. 4+00	11	6	17	10	
STA. 4+50	11	7	20	12	
STA. 5+00	12	5	24	12	



STATION	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
STA. 5+00	15	6	16	5
STA. 5+50	14	7	17	10
STA. 6+00	29	3	29	3



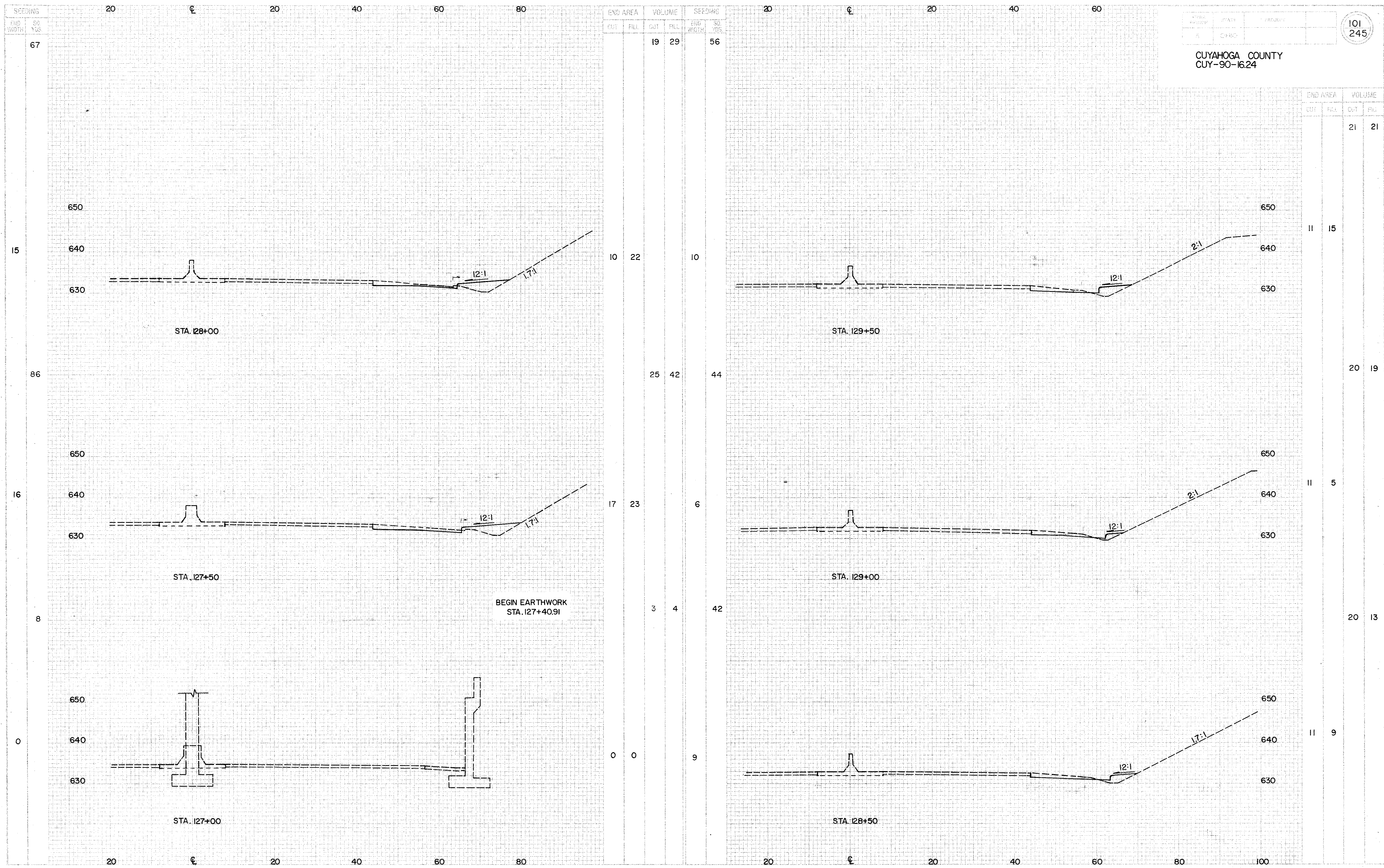


STATION	END AREA		VOLUME		SEEDING
	CUT	FILL	CUT	FILL	
108+00	0	0	11	0	47
108+20	6	6	6	6	56
108+50	10	10	19	26	56
109+00	11	18	9	18	47
109+50	16	10	16	10	47
110+00	17	11	17	11	47
110+50	11	7	11	7	47
110+50	29	12	29	12	47





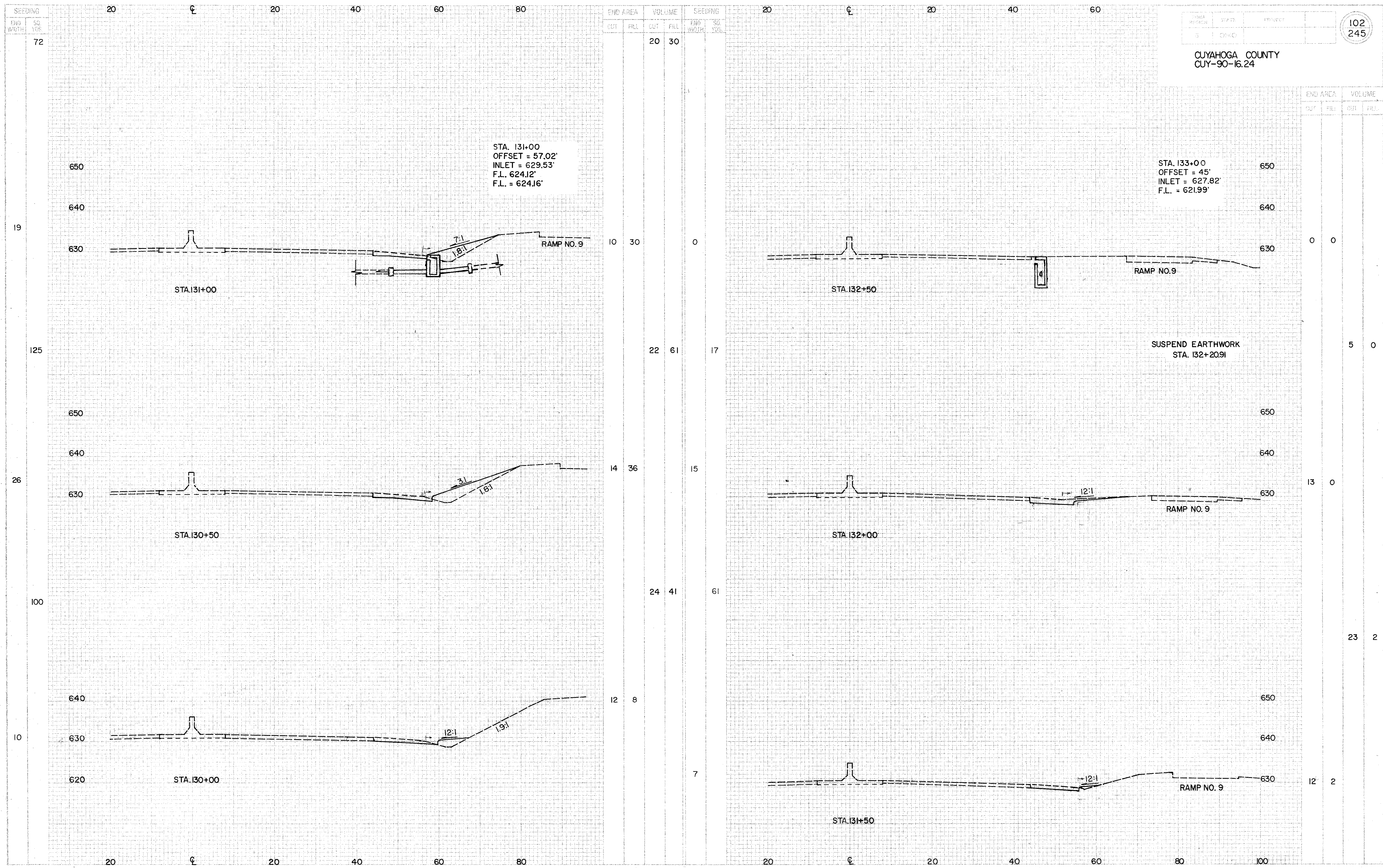




CUYAHOGA COUNTY  
CUY-90-16.24

STATION	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
127+00	0	0	0	0
127+50	17	23	6	42
128+00	10	22	10	56
128+50	11	15	11	21
129+00	25	42	44	20
129+50	11	5	11	19
129+50	11	9	11	13





CUYAHOGA COUNTY  
CUY-90-16.24

END AREA		VOLUME		SEEDING	
CUT	FILL	CUT	FILL	END WIDTH	SO. YDS.
		20	30		
10	30	0			
22	61	17			
14	36	15			
24	41	61			
12	8				
		7			

END AREA		VOLUME	
CUT	FILL	CUT	FILL
0	0		
		5	0
13	0		
		23	2
12	2		



SEEDING  
END WIDTH SO  
YDS YDS

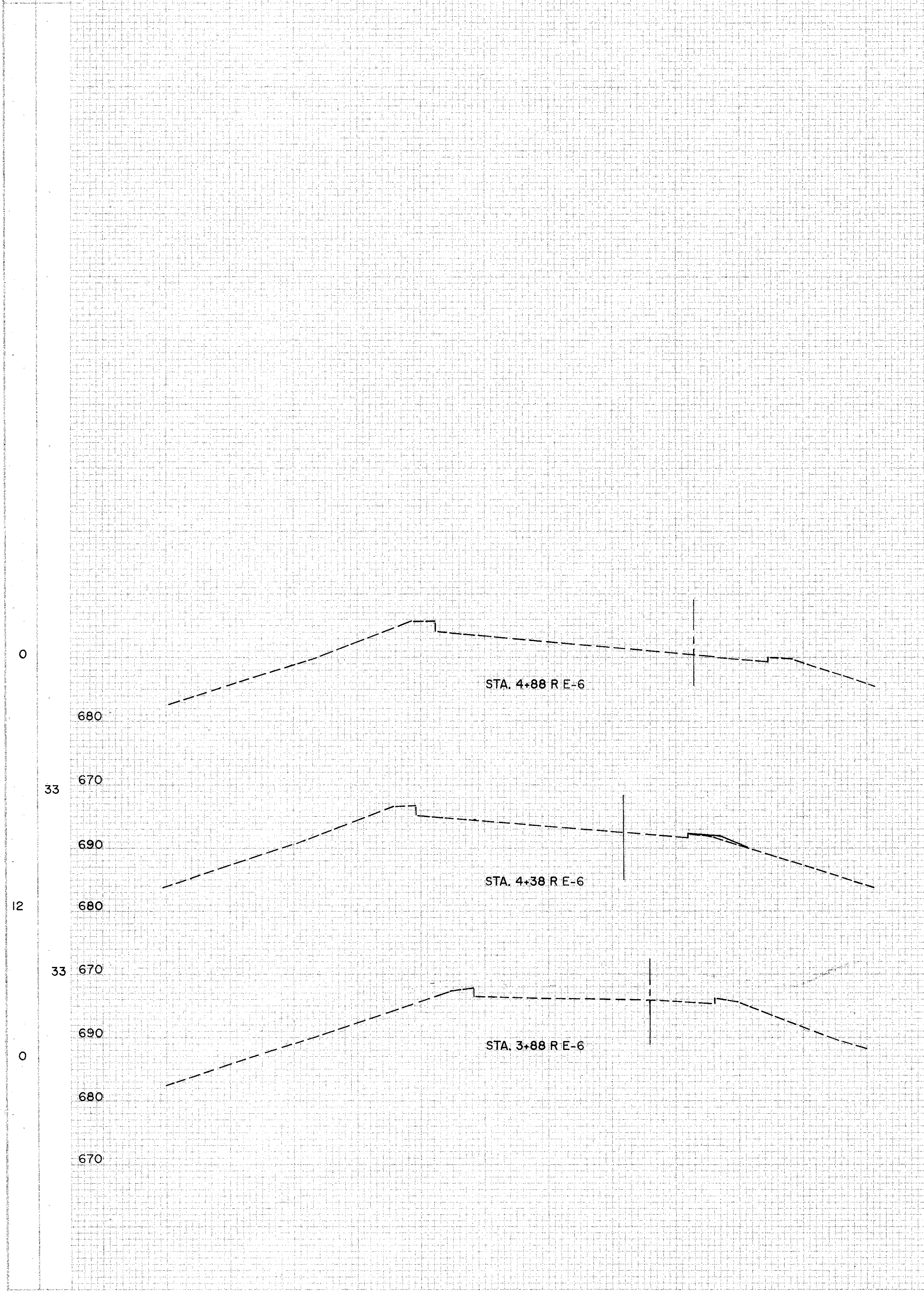
END AREA VOLUME SEEDING  
CUT FILL CUT FILL END WIDTH SO  
YDS YDS

AREA	STATE	PROJECT
8	OHIO	

103  
245

CUYAHOGA COUNTY  
CUY-90-16.24

END AREA VOLUME  
CUT FILL CUT FILL



END AREA		VOLUME		SEEDING	
CUT	FILL	CUT	FILL	END WIDTH	SO YDS
0	0	0	0		
0	2	0	2		
0	2	0	2		
0	0	0	0		

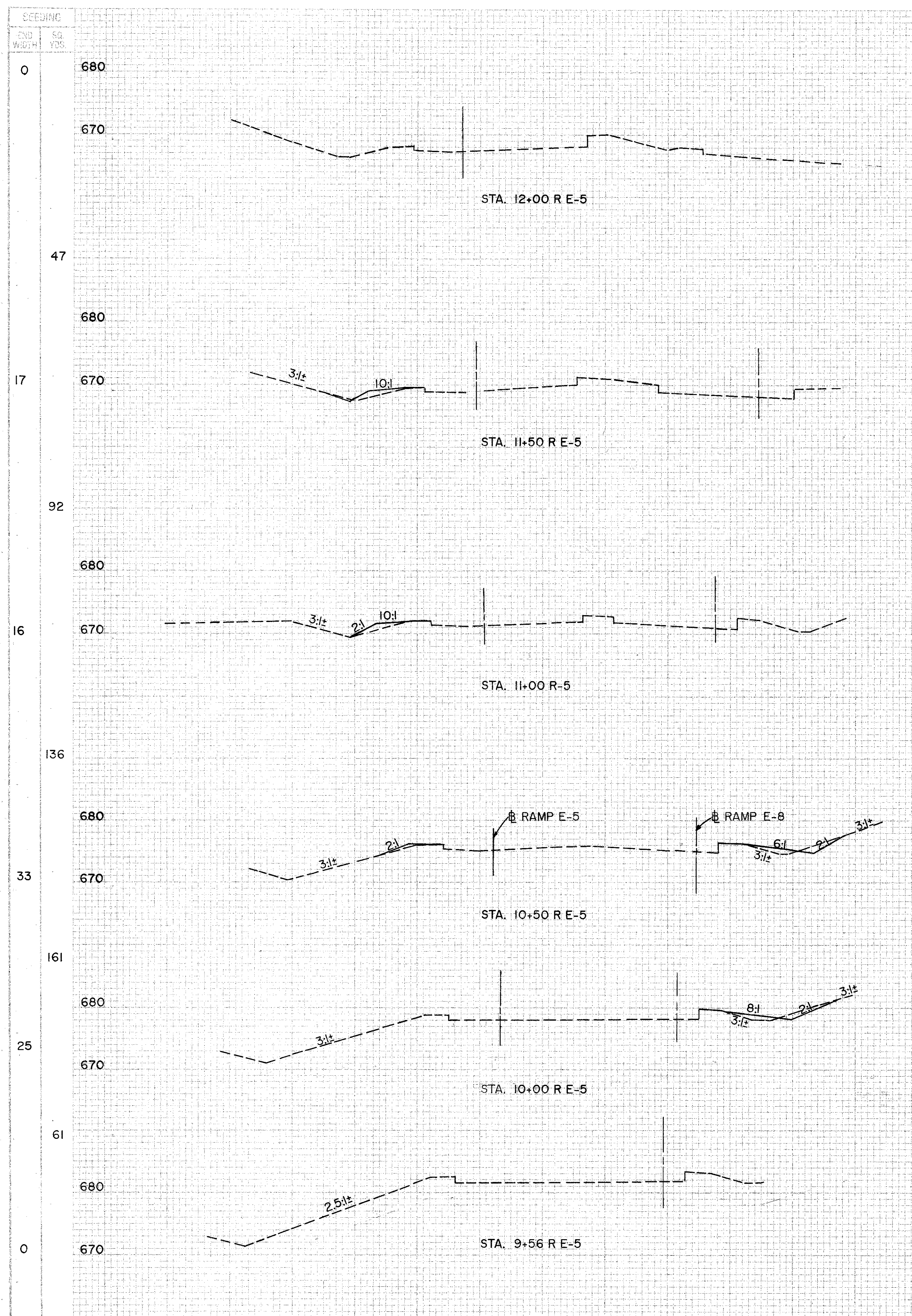
150

200

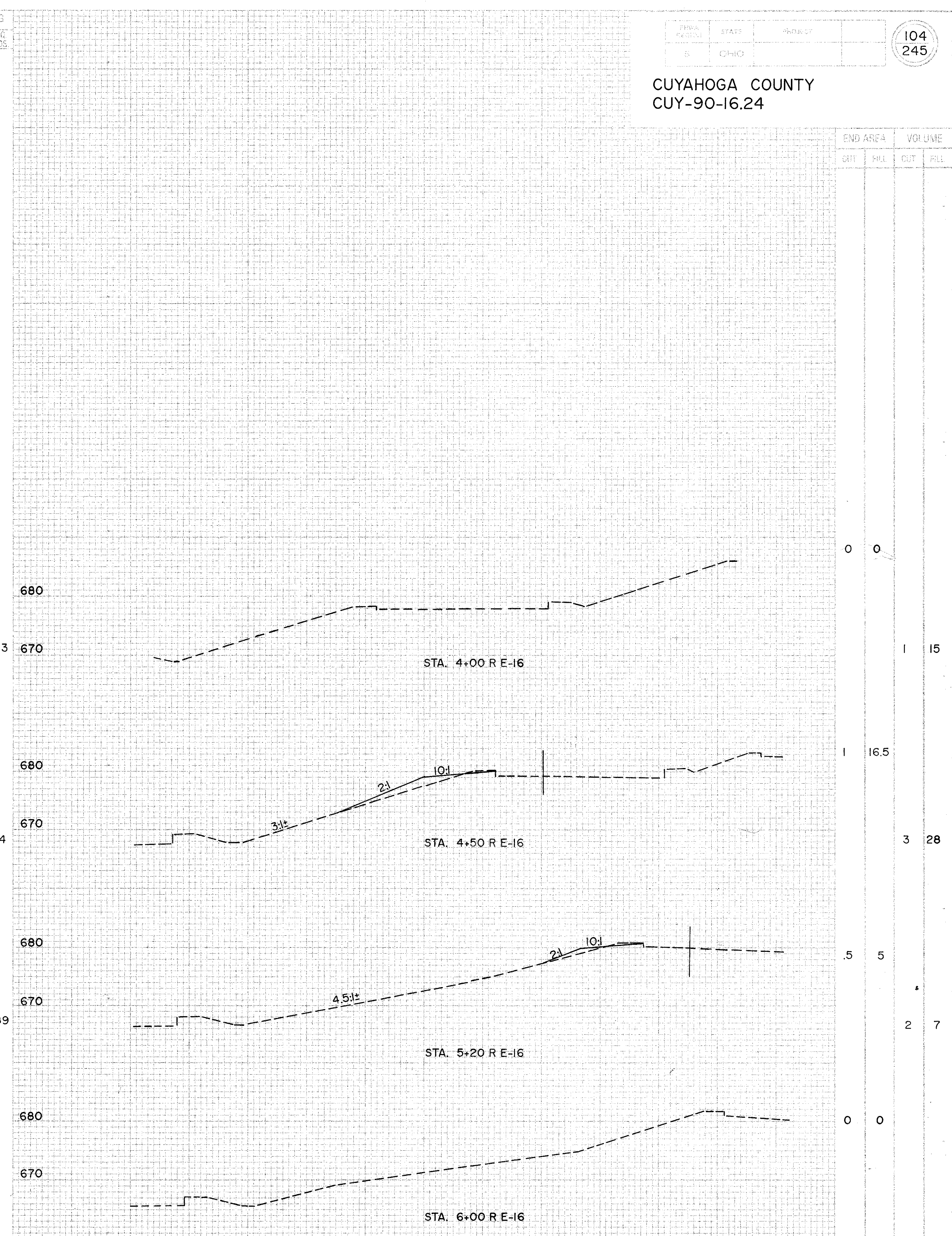
RAMP E 6 STA. 4+88 TO 3+88



CUYAHOGA COUNTY  
CUY-90-16.24



END AREA		VOLUME		SEEDING	
OUT	FILL	OUT	FILL	SQ. YDS.	CU YDS.
0	0	0	0	0	0
1	5	1	5	1	5
1	5	1	5	1	5
1	10	1	10	1	10
0	6	0	6	0	6
4	14	4	14	4	14
5	9	5	9	5	9
9	17	9	17	9	17
5	9	5	9	5	9
4	7	4	7	4	7
0	0	0	0	0	0

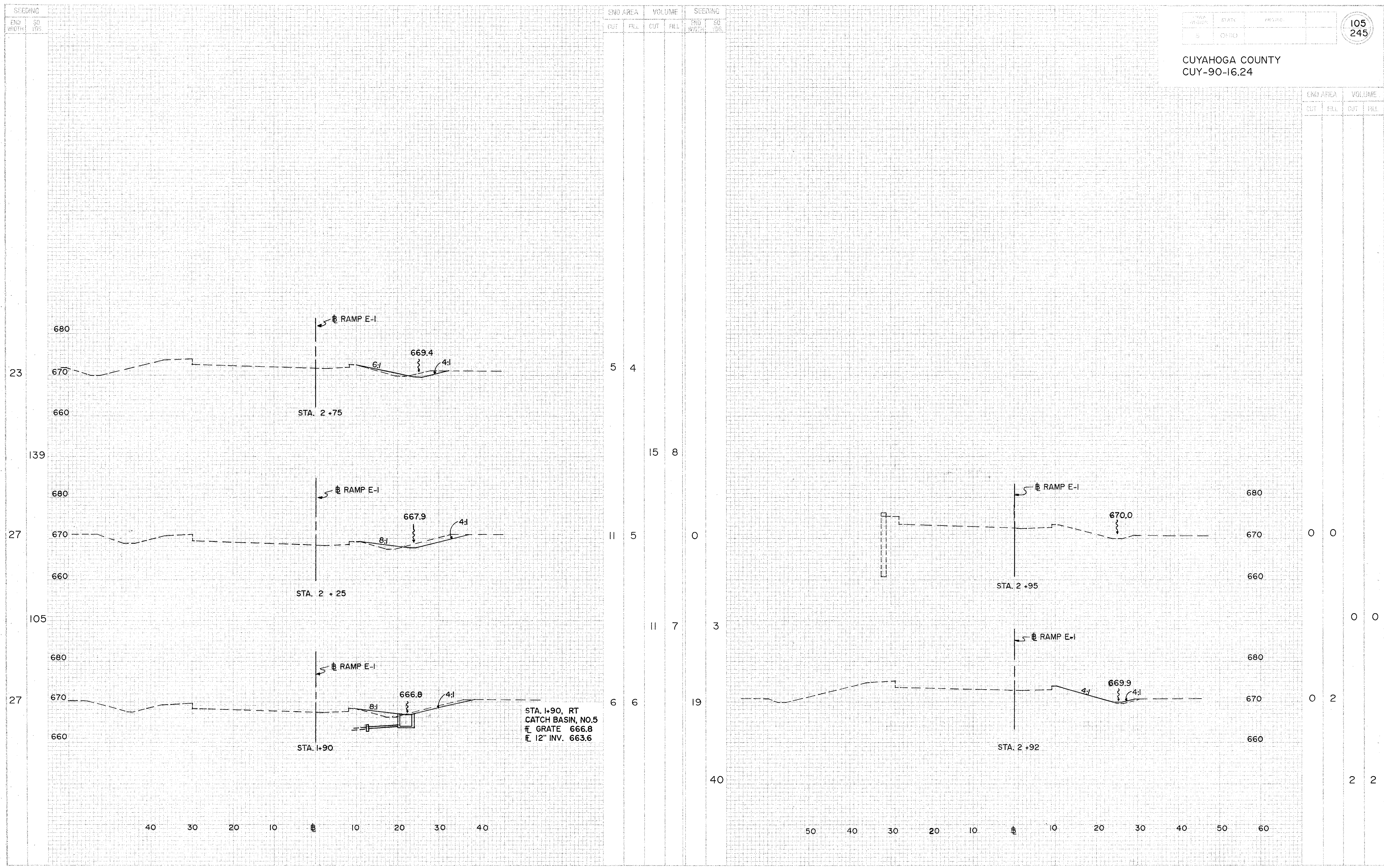


END AREA		VOLUME		SEEDING	
OUT	FILL	OUT	FILL	SQ. YDS.	CU YDS.
0	0	0	0	0	0
1	15	1	15	1	15
1	16.5	1	16.5	1	16.5
3	28	3	28	3	28
5	5	5	5	5	5
2	7	2	7	2	7
0	0	0	0	0	0

RAMP E 5 STA. 9+56 TO 12+00 RAMP E 16 STA. 4+00 TO 6+00



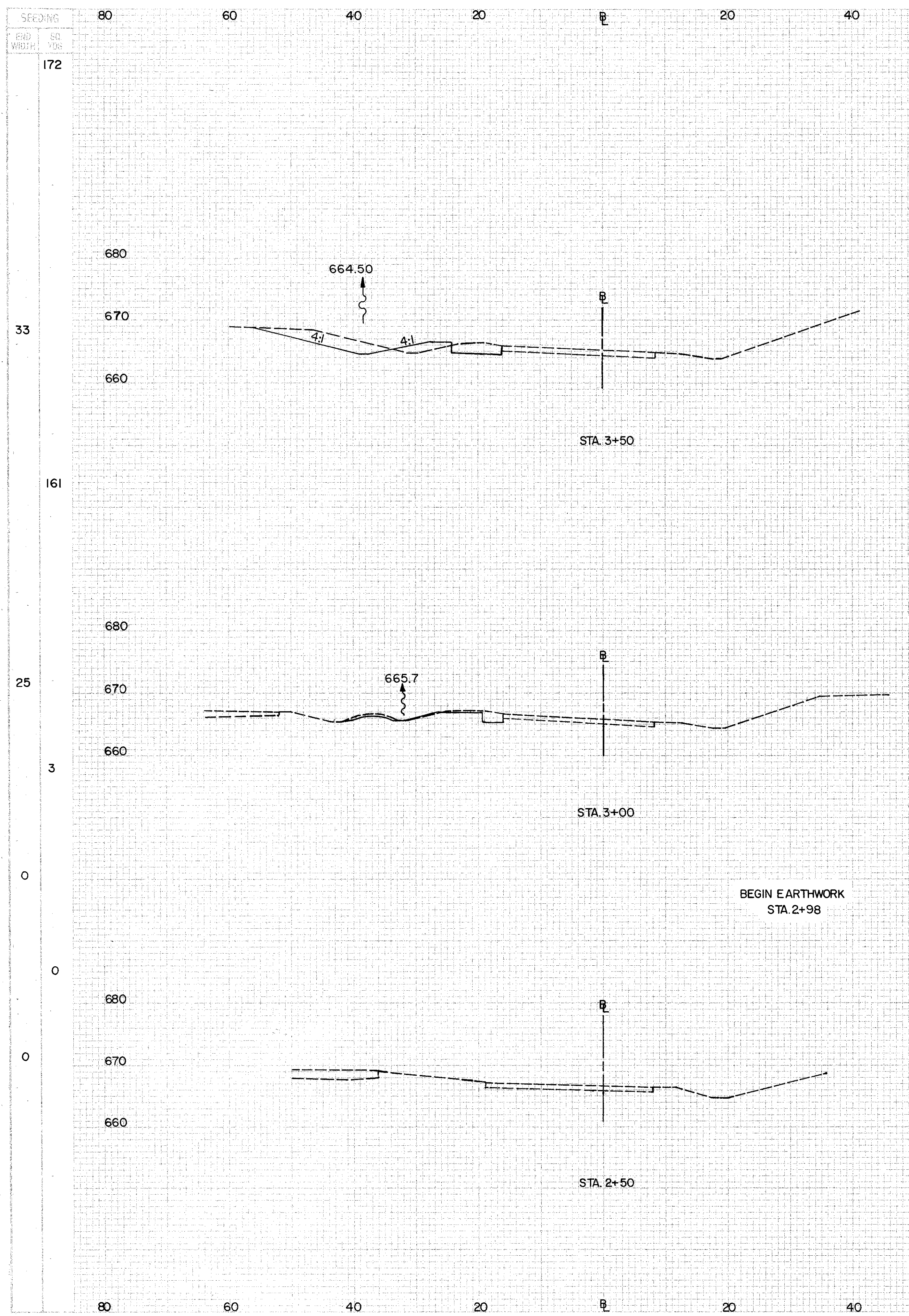
CUYAHOGA COUNTY  
CUY-90-16.24



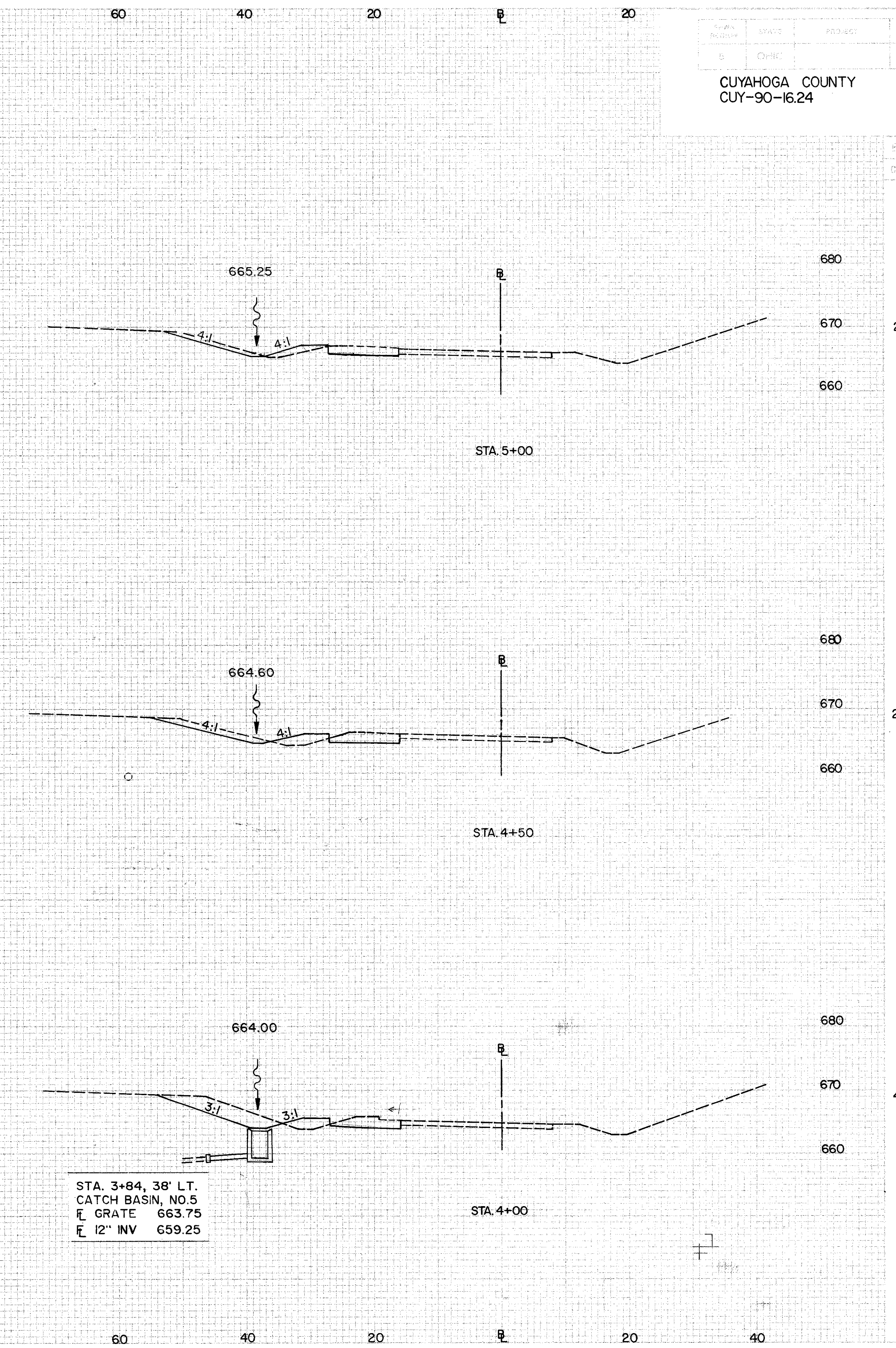
CROSS SECTIONS STA. 1+90 TO STA. 2+95 RAMP E-1



CUYAHOGA COUNTY  
CUY-90-16.24



END AREA		VOLUME		SEEDING	
CUT	FILL	CUT	FILL	END WIDTH	SR. YDS.
44	9	84	19	144	
50	8			158	
10	1			30	
9	1				
0	0			164	
0	0				
0	0			29	



END AREA		VOLUME	
CUT	FILL	CUT	FILL
23	7	28	7
47	16		
28	10		
69	19		
47	11		

STA. 3+84, 38' LT.  
CATCH BASIN, NO.5  
E GRATE 663.75  
E 12" INV 659.25



SEEDING  
END WIDTH SQ. YDS.

END AREA VOLUME SEEDING  
CUT FILL CUT FILL END WIDTH SQ. YDS.

147

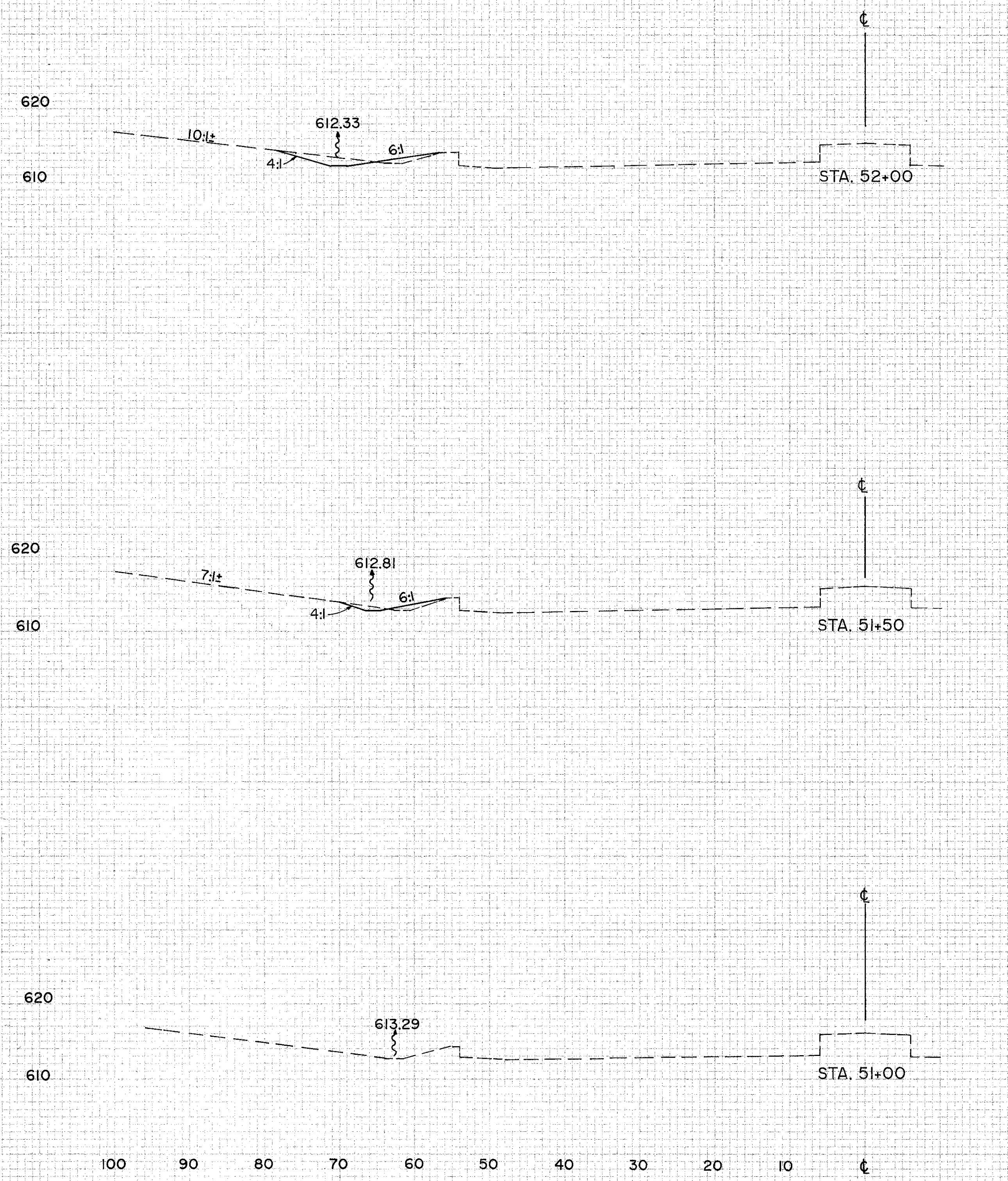
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100

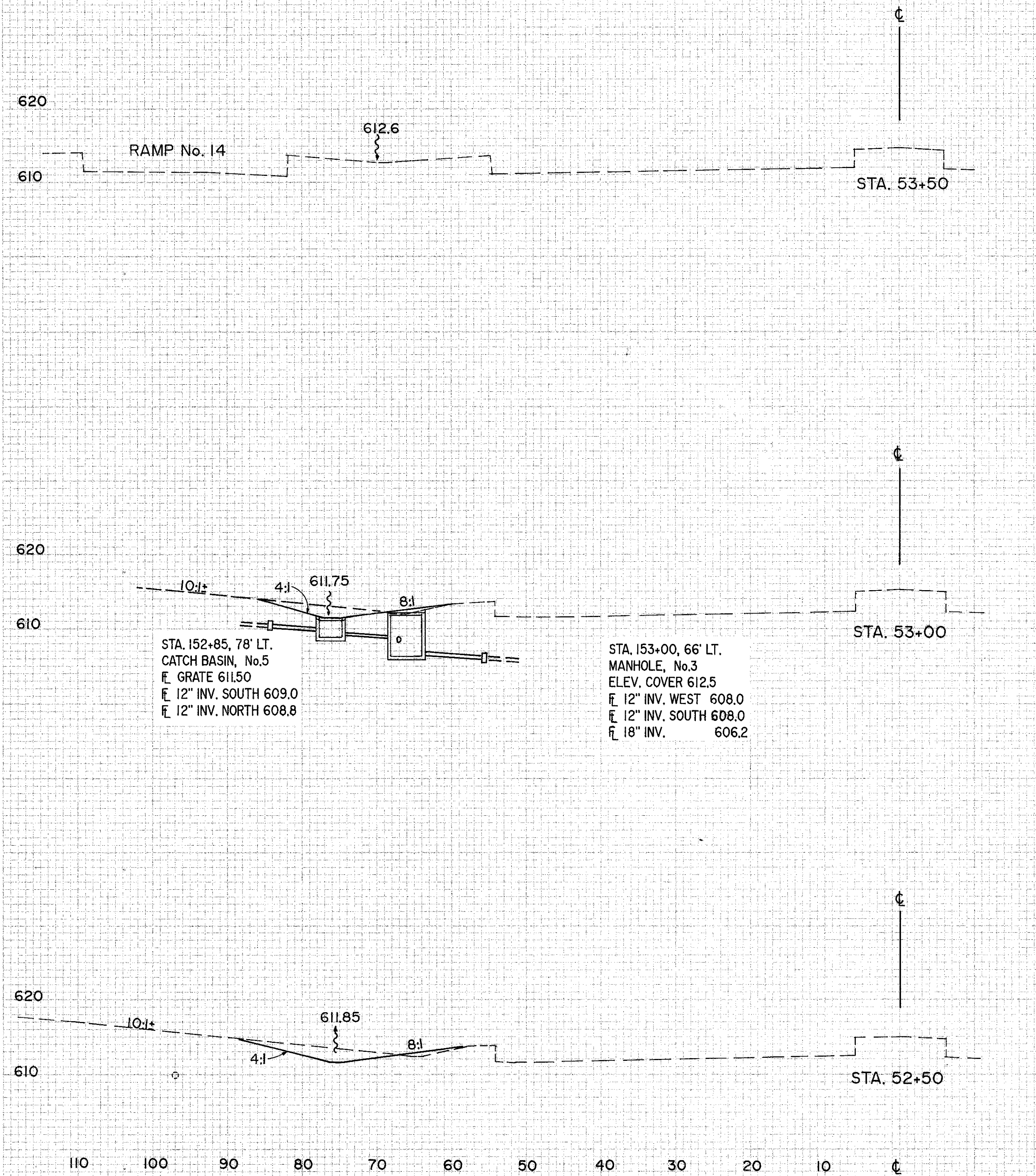
14

39

0



END AREA		VOLUME		SEEDING	
CUT	FILL	CUT	FILL	END WIDTH	SQ. YDS.
8	3	26	6	0	0
9	6	9	6	72	72
2	3	2	3	26	26
2	3	2	3	158	158
0	0	0	0	31	31



END AREA		VOLUME	
CUT	FILL	CUT	FILL
0	0	0	0
14	3	14	3
15	3	15	3
32	6	32	6
20	3	20	3

CROSS SECTIONS STA. 51+00 TO STA. 53+50 RAMP No. 14



# TRAFFIC MAINTENANCE

CUYAHOGA COUNTY  
CUY-90-16.24

OHIO

FHWA  
REGION 5

FEDERAL  
PROJECT

108  
245

## SCHEDULE OF THRU LANES TO BE MAINTAINED\*

BASIC ROADWAY TYPICAL SECTION	NUMBER OF THRU LANES TO BE MAINTAINED DURING THE REPAIRS	NUMBER OF THRU LANES TO BE MAINTAINED DURING RESURFACING **
<u>IR-77 N.B. &amp; S.B.</u>		
STA. 45+76.05 TO STA. 65+43 3 LANE	2	1
STA. 65+43 TO STA. 90+00 4 LANE	2	1
STA. 90+00 TO STA. 51+00 3 LANE	2	1
<u>RAMPS</u>		
ALL	1	1 EXCEPT AS NOTED BELOW

\* ADDITIONAL LANE CLOSED DURING NIGHTTIME OPERATIONS FROM 10:00 PM TO 6:00 AM

\*\* ALLOWABLE RESURFACING TIMES ARE AS FOLLOWS:

MAINLINE : 10:00 PM TO 6:00 AM

INTERSTATE RAMPS : 10:00 PM TO 6:00 AM

### ITEM 614-TEMPORARY PAVEMENT MARKINGS LEGEND

- |   |                                 |
|---|---------------------------------|
| (1T) WHITE EDGE LINE, CLASS I, 740.05, TYPE C   | (1P) WHITE EDGE LINE, CLASS I   |
| (2T) YELLOW EDGE LINE, CLASS I, 740.05, TYPE C  | (2P) YELLOW EDGE LINE, CLASS I  |
| (3T) LANE LINE, CLASS I, 740.05, TYPE C         | (3P) LANE LINE, CLASS I         |
| (4T) CHANNELIZING LINE, CLASS I, 740.05, TYPE C | (4P) CHANNELIZING LINE, CLASS I |
| (5T) TRANSVERSE LINE, CLASS I, 740.05, TYPE C   | (5P) TRANSVERSE LINE, CLASS I   |
| (6T) DOTTED LINE, CLASS I, 740.05, TYPE C       | (6P) DOTTED LINE, CLASS I       |
| (7T) STOP LINE, CLASS I, 740.05, TYPE C         | (7P) STOP LINE, CLASS I         |

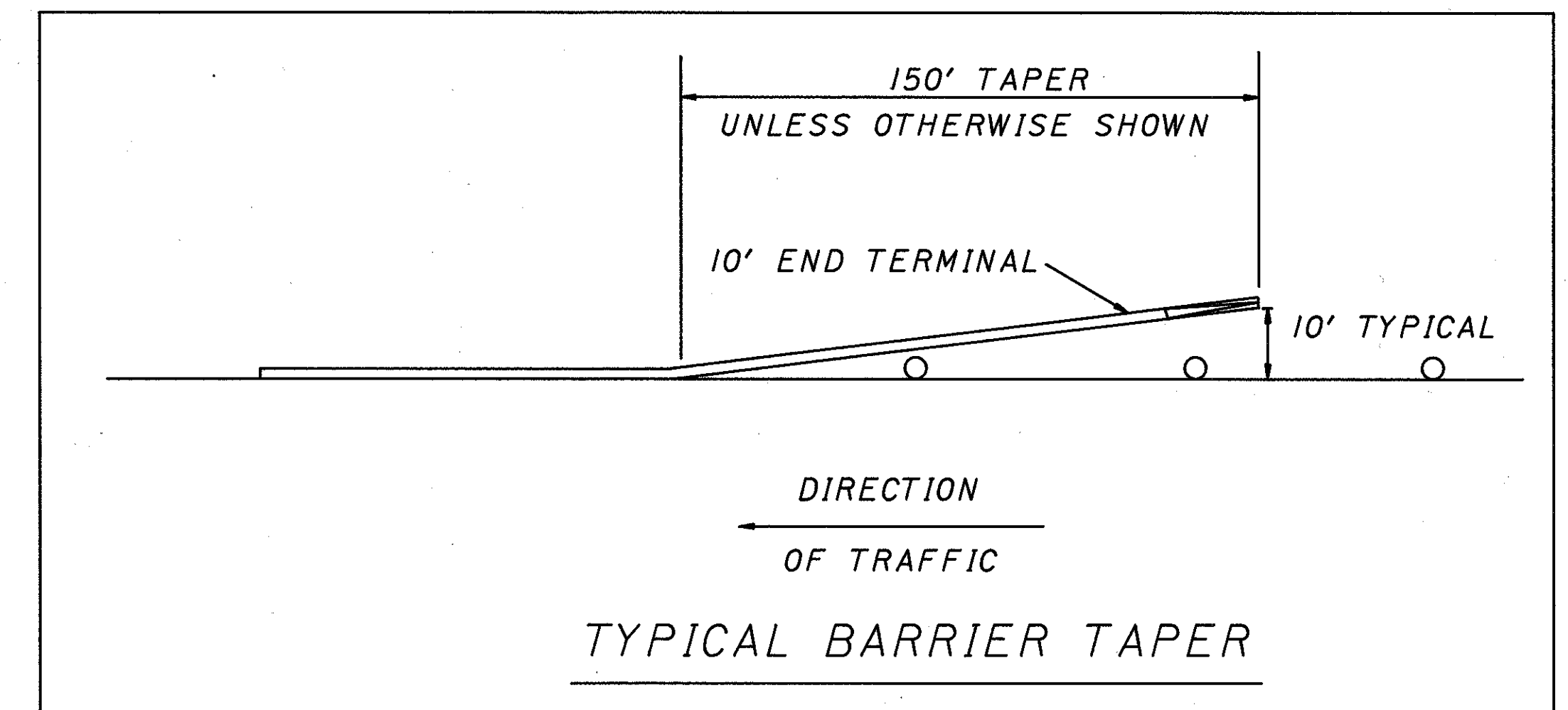
### NOTES:

#### SPEED LIMIT REDUCTION

A 45 MPH REGULATORY SPEED LIMIT ZONE WILL BE ESTABLISHED FOR THIS PROJECT. SEE "WORK ZONE SPEED LIMIT" NOTE ON SHEET 16.

EXTRA ADVANCE WARNING SIGN GROUPS (AS PER STANDARD DRAWING MT-95.30) SHALL BE ERECTED AS DIRECTED BY THE ENGINEER.

ADVANCE WARNING SIGNS FOR ANY CONDITION WHICH RESTRICTS OR REDIRECTS TRAFFIC SHALL BE ERECTED BEFORE ANY SUCH RESTRICTION IS PUT INTO EFFECT. ALL SUCH SIGNS SHALL BE COVERED OR REMOVED FROM THE VIEW OF TRAFFIC WHENEVER THEY ARE NOT APPLICABLE. THE SIGNS SHALL BE REQUIRED ON BOTH SIDES OF THE ROADWAY AND MOUNTED AT THE HEIGHT INDICATED ON THE PLATE C-1 OF THE "O.M.T.C.D.". THE SIGN LEGENDS AND LOCATIONS SHALL BE AS INDICATED IN THE FOLLOWING TABLE. DISTANCES ARE MEASURED FROM THE POINT OF RESTRICTION. SIGN SUPPORT POSTS SHALL BE MAXIMUM 4 LB. STEEL POST OR 4" X 4" NOMINAL WOOD POSTS. (SEE ADVANCE WARNING SIGNS CHART)



TYPICAL BARRIER TAPER



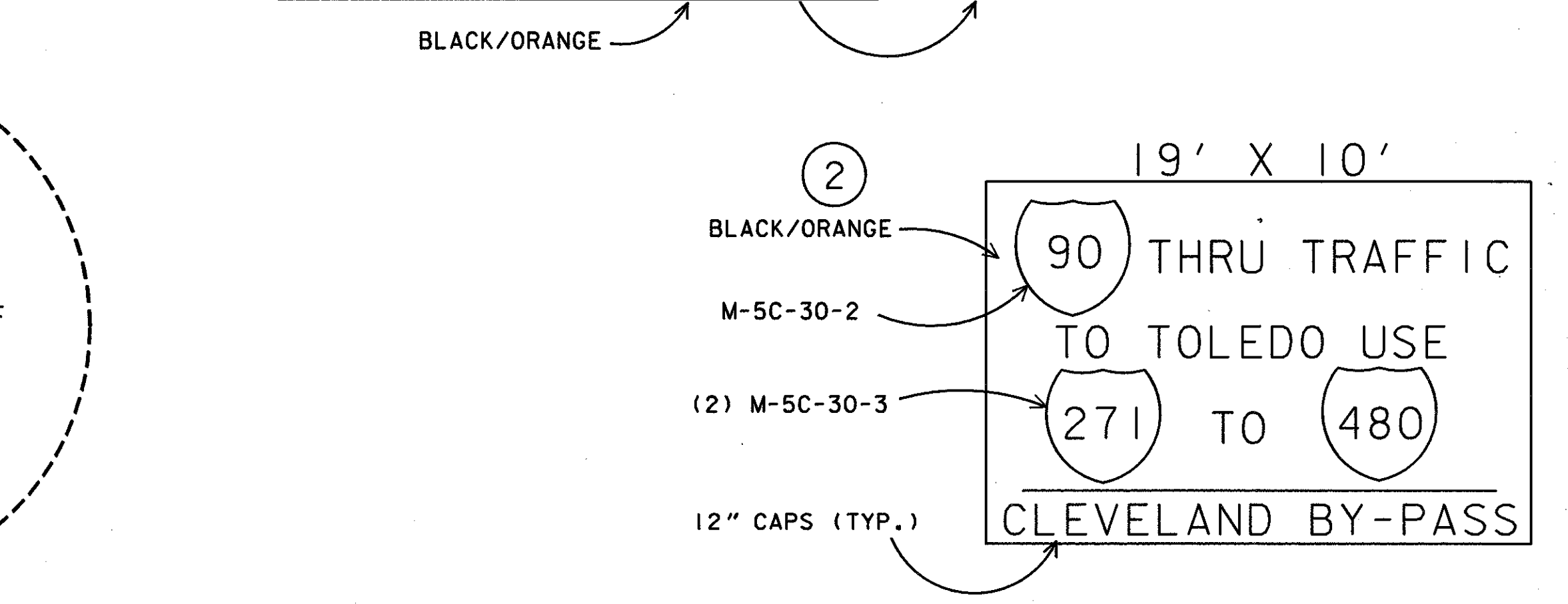
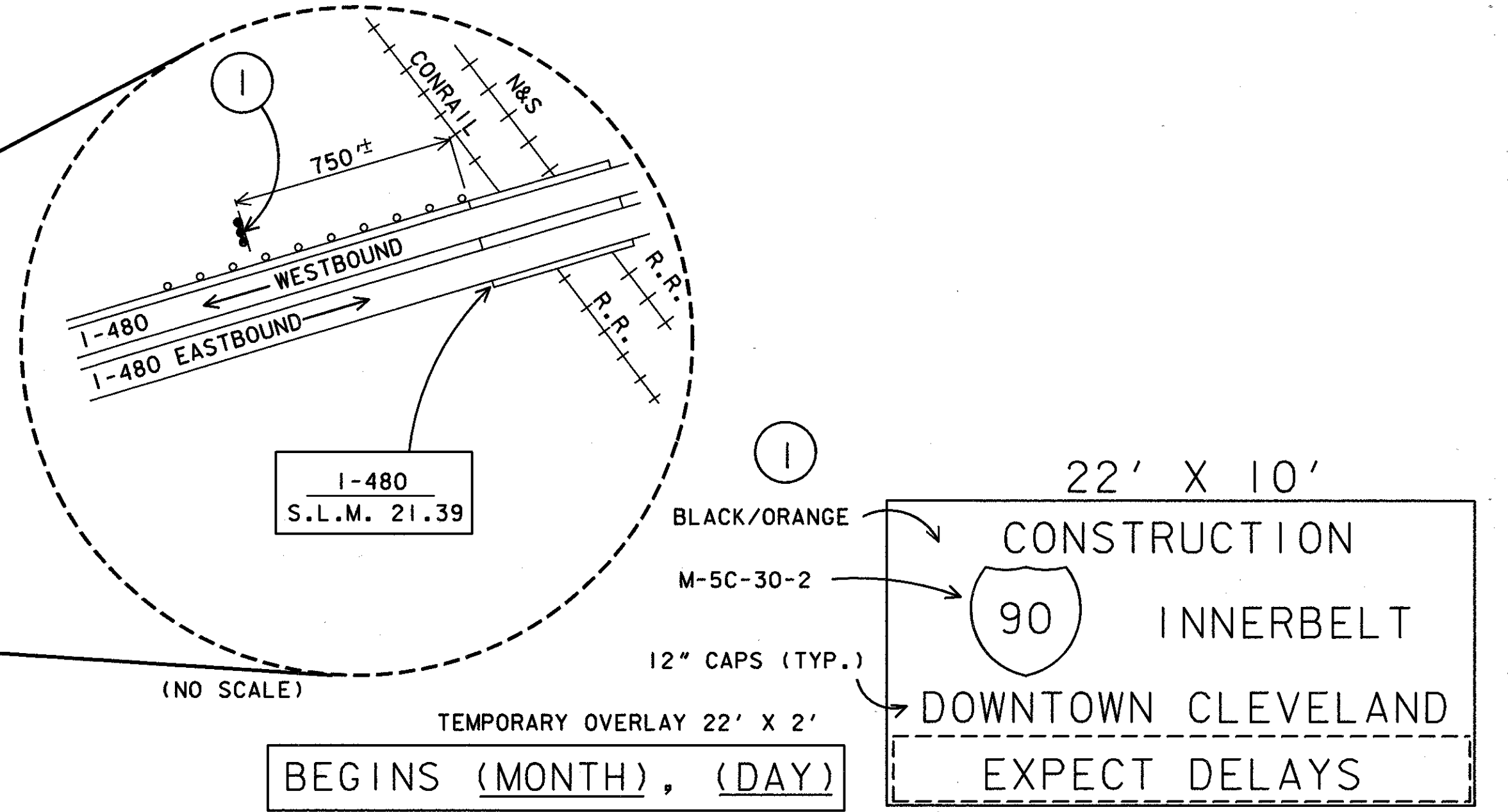
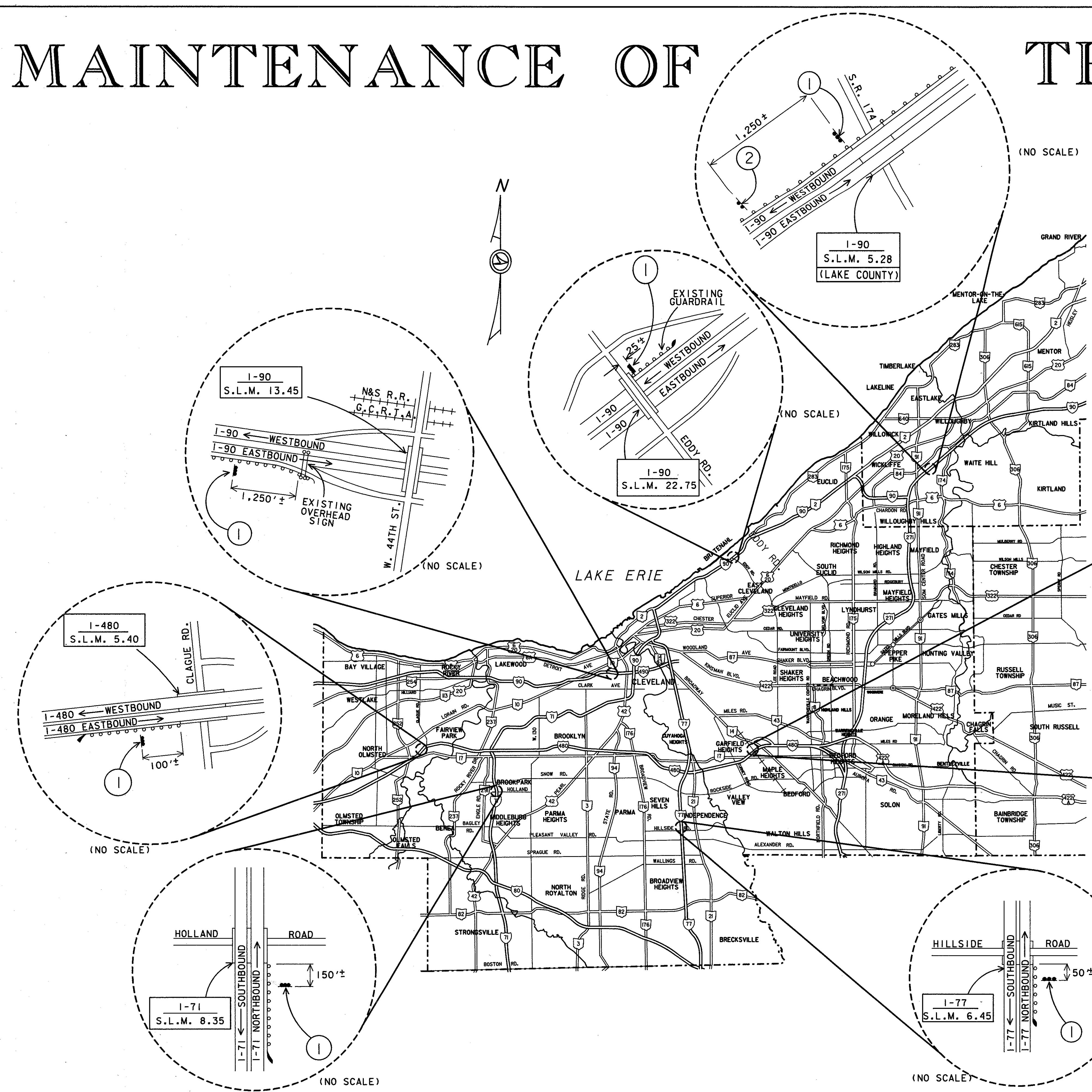


# MAINTENANCE OF TRAFFIC

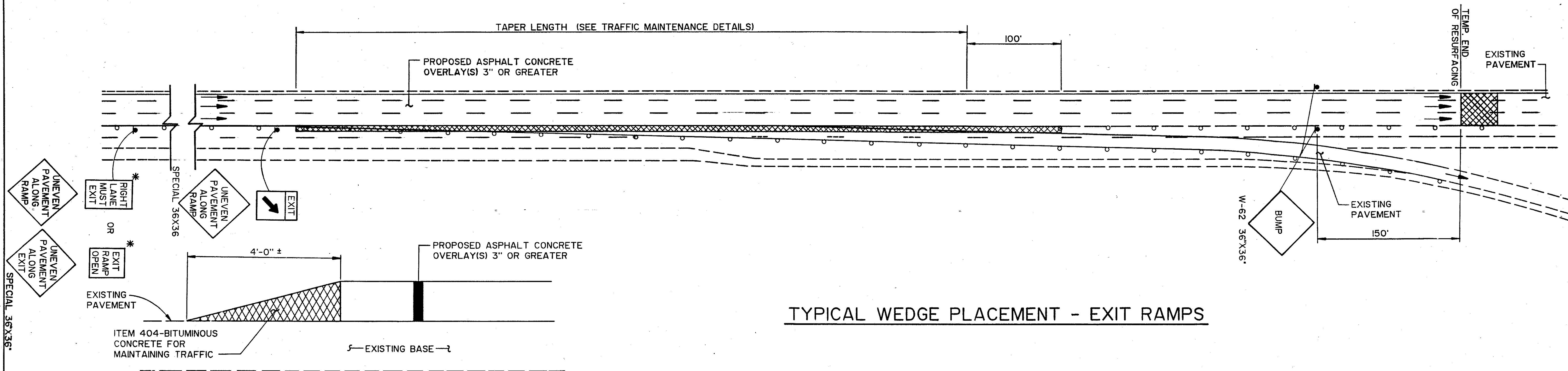
### NOTICE OF CONSTRUCTION SIGNS

- THE SIGNS SHOWN ON THIS SHEET SHALL BE ERECTED A MINIMUM 14 DAYS IN ADVANCE OF ANY LANE CLOSURES WHICH ARE IMPLEMENTED AS PART OF THIS PROJECT.
- SIGN LOCATIONS ARE APPROXIMATE. THE ENGINEER WILL FIELD CHECK ALL LOCATIONS PRIOR TO THE CONTRACTOR ERECTING ANY SIGN. THE ENGINEER SHALL BE SATISFIED THAT ALL SIGN INSTALLATIONS ARE LOCATED SAFELY BEHIND EXISTING GUARDRAIL SO AS TO PROVIDE MAXIMUM PROTECTION FOR TRAFFIC. SHOULD THE ENGINEER DETERMINE IT NECESSARY, A SIGN (OR SIGNS) SHALL BE MOUNTED ON BREAKAWAY BEAM SUPPORTS, AS DIRECTED BY THE ENGINEER.
- SEE STD. DRAWING TC-42.10 FOR SIGN PLACEMENT DETAILS.
- ALL SIGNS SHALL BE EXTRUSHEET, TYPE G.
- TEMPORARY OVERLAYS SHALL BE REMOVED ON THE DATE WHICH IS SHOWN ON THE OVERLAY.
- ALL SUPPORTS SHALL BE GROUND MOUNTED SUPPORTS, W12x30 BEAM. SEE STD. DRAWING TC-41.10 FOR FOUNDATION DETAILS.
- UPON COMPLETION OF THE PROJECT (ALL LANES OPEN TO TRAFFIC), SIGNS AND SIGN SUPPORTS SHALL BE REMOVED IN ACCORDANCE WITH SPECIFICATION 630.12.
- THE COST OF LABOR, EQUIPMENT AND MATERIALS (INCLUDING SIGNS, SIGN SUPPORTS, CONCRETE FOR FOUNDATIONS, TEMPORARY OVERLAYS, BREAKAWAY BEAM CONNECTIONS) NECESSARY TO COMPLETE THE WORK AS MENTIONED SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614-MAINTAINING TRAFFIC.

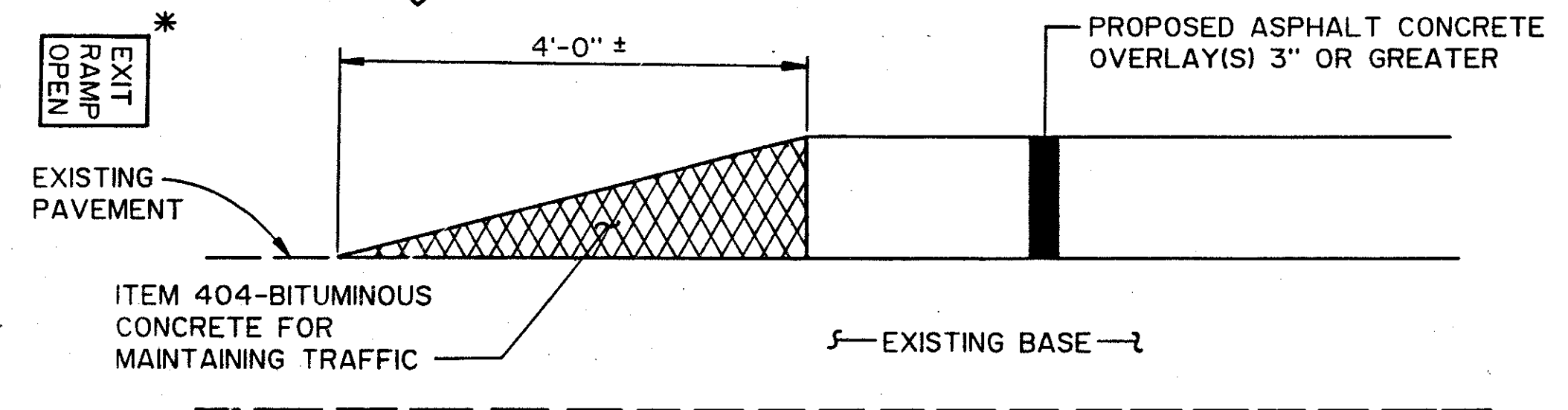
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 PLOTTED FROM: c:\dgn\p1d07090\07090mdc.dgn  
 FILENAME: dgn  
 PLOT SUBMITTED: 18-MAY-1992 07:07



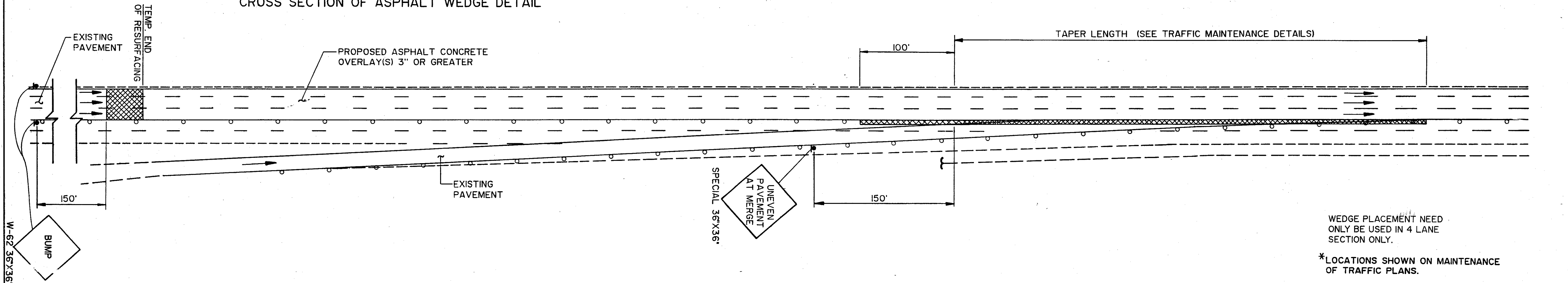




**TYPICAL WEDGE PLACEMENT - EXIT RAMP**



**CROSS SECTION OF ASPHALT WEDGE DETAIL**



**TYPICAL WEDGE PLACEMENT - ENTRANCE RAMP**

WEDGE PLACEMENT NEED ONLY BE USED IN 4 LANE SECTION ONLY.

\*LOCATIONS SHOWN ON MAINTENANCE OF TRAFFIC PLANS.

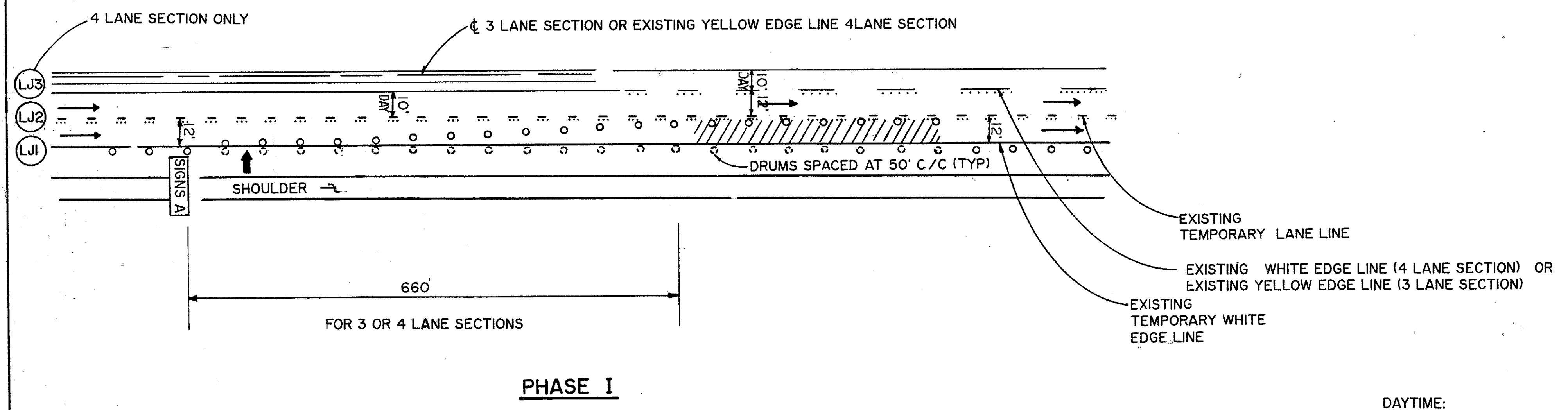
TEMPORARY ASPHALT WEDGES MUST BE IN PLACE PRIOR TO ALLOWING TRAFFIC TO CROSS LONGITUDINAL RESURFACING JOINT.

ITEM 404-BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC

NOTE: RIGHT CLOSURES SHOWN DETAILS ALSO APPLY TO LEFT CLOSURES ALSO

WEDGE REMOVAL SHALL BE PAID FOR UNDER ITEM 254-PAVEMENT PLANING, BITUMINOUS


# TRAFFIC MAINTENANCE

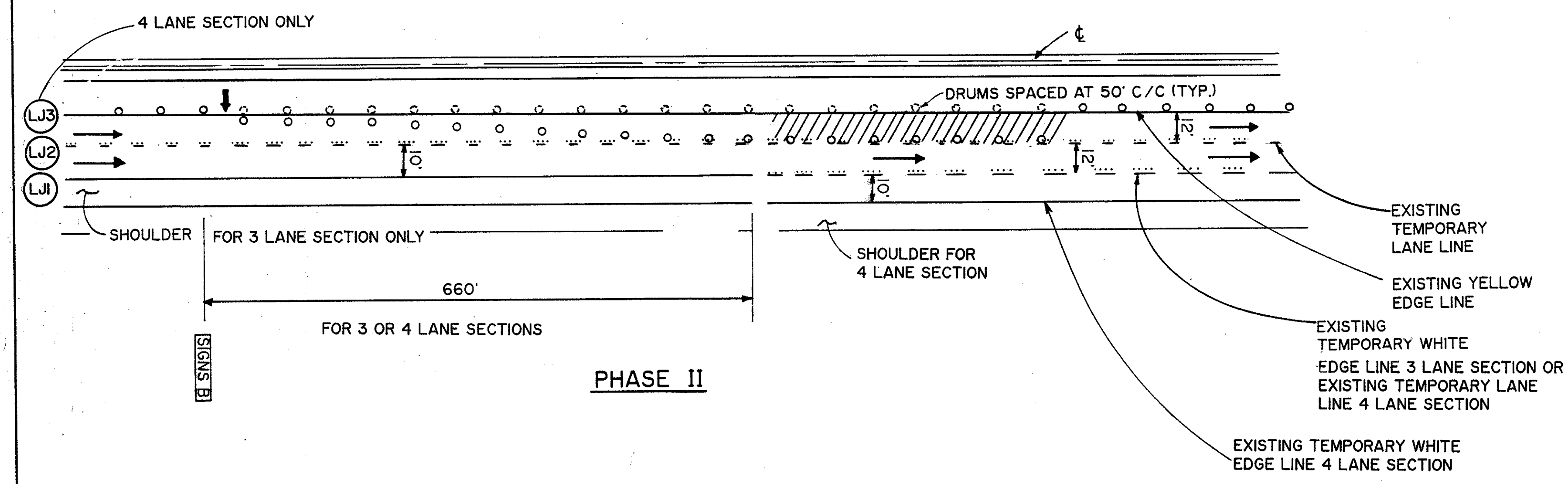


**DAYTIME:**  
 1-10' LANE ± 1 OR 2-12' LANES

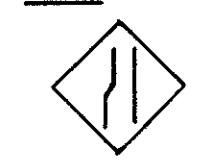
**AT NIGHT:** NO 10' LANES  
 STRIPING NEED NOT CHANGE  
 BUT BARRELS SHALL BE  
 PLACED FOR A 12' LANE(S).

**SIGNS A** ADVANCED WARNING SIGNS  
 (FOR ADDITIONAL LANE CLOSURE FOR  
 NIGHTTIME OPERATIONS) MEASURED  
 FROM THIS POINT.

DISTANCE	CODE	SIGN
250'	OW-60C-48	
500'	OW-122-48MOD	



**SIGNS B** ADVANCED WARNING SIGNS  
 (FOR ADDITIONAL LANE CLOSURE FOR  
 NIGHTTIME OPERATIONS) MEASURED  
 FROM THIS POINT.

DISTANCE	CODE	SIGN
250'	OW-60D-48	
500'	OW-123-48MOD	

**NOTES**

THESE SIGNS SHALL REMAIN COVERED, EXCEPT DURING AN ADDITIONAL CLOSURE FOR NIGHTTIME OPERATIONS.

THE ADDITIONAL LANE CLOSURE FOR NIGHTTIME OPERATIONS SHALL ONLY BE IMPLEMENTED WHEN PERMITTED BY THE SCHEDULE OF THRU LANES TO BE MAINTAINED. LENGTH OF ADDITIONAL WORK SHALL NOT BE LONGER THAN WORK TO BE COMPLETED DURING THE NIGHTTIME CLOSURE. SEE MAINTENANCE OF TRAFFIC FOR ADDITIONAL NOTES AND RESTRICTIONS.

FOR LANE WIDTHS, SEE MAINTENANCE OF TRAFFIC

IF THE ADDITIONAL LANE CLOSURE OCCURS AT THE BEGINNING OF A PROJECT, PLEASE REFER TO THE TABLE OF ADVANCED WARNING SIGNS, SHEET 109.

PAVEMENT MARKINGS ARE AS REQUIRED FOR THE APPROPRIATE PHASE. NO ADDITIONAL PAVEMENT MARKINGS ARE REQUIRED FOR THIS OPERATION.

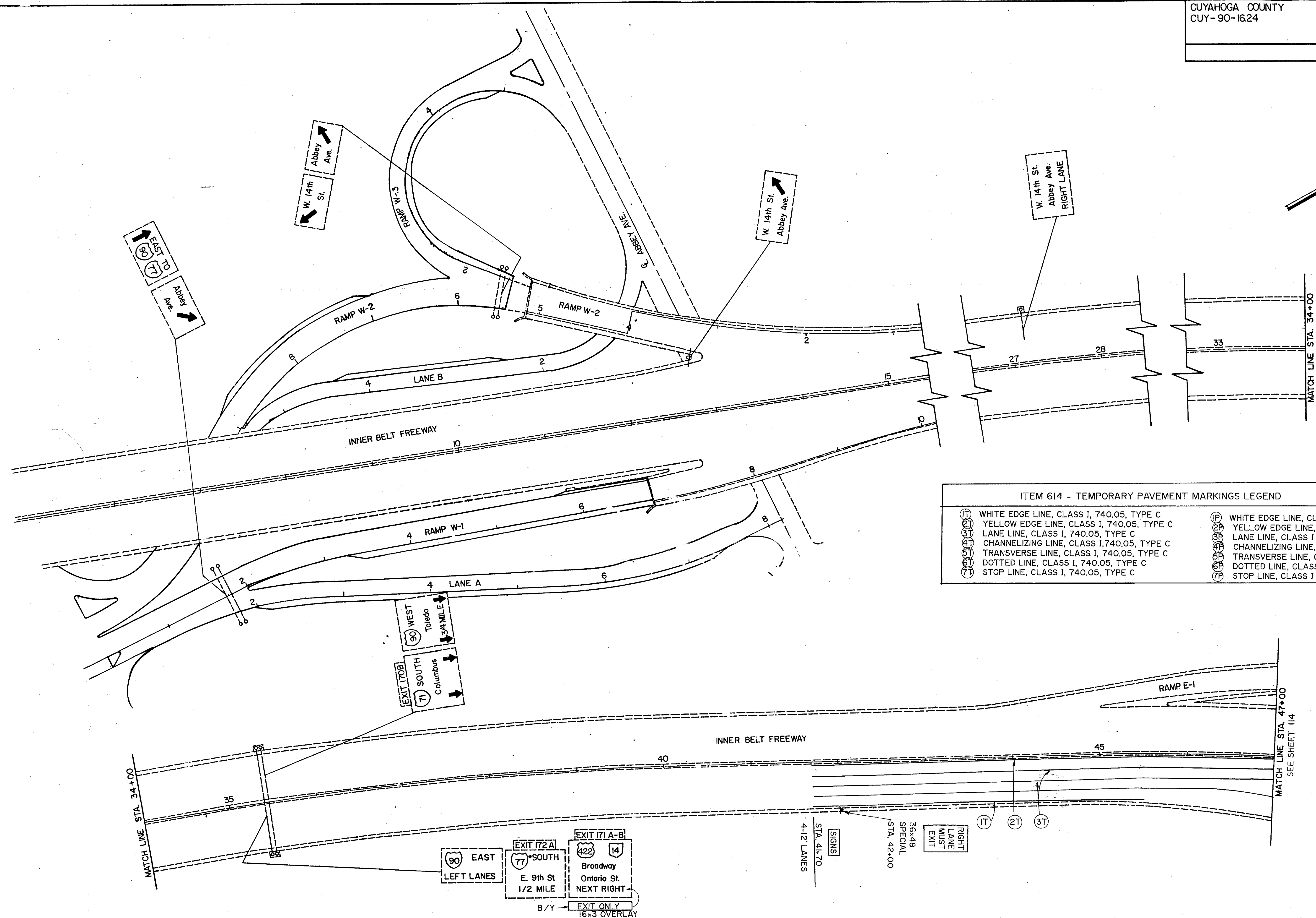
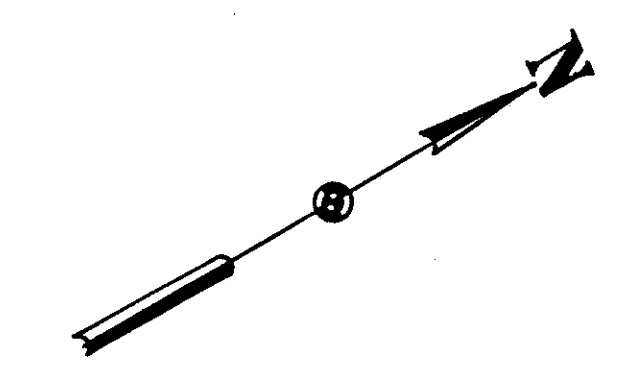
- /// ADDITIONAL WORK AREA
- ➔ FLASHING ARROW

**WORK AREA**

- PHASE I - REPAIRS TO LONGITUDINAL JOINT 2 (LJ1), PARTIAL DEPTH AND FULL DEPTH
- PHASE II - SLAB AND TRANSVERSE JOINT REPAIRS, LONGITUDINAL JOINT 1 (LJ1) REPAIRS PARTIAL DEPTH AND FULL DEPTH

**ADDITIONAL LANE CLOSURE FOR NIGHTTIME OPERATIONS**





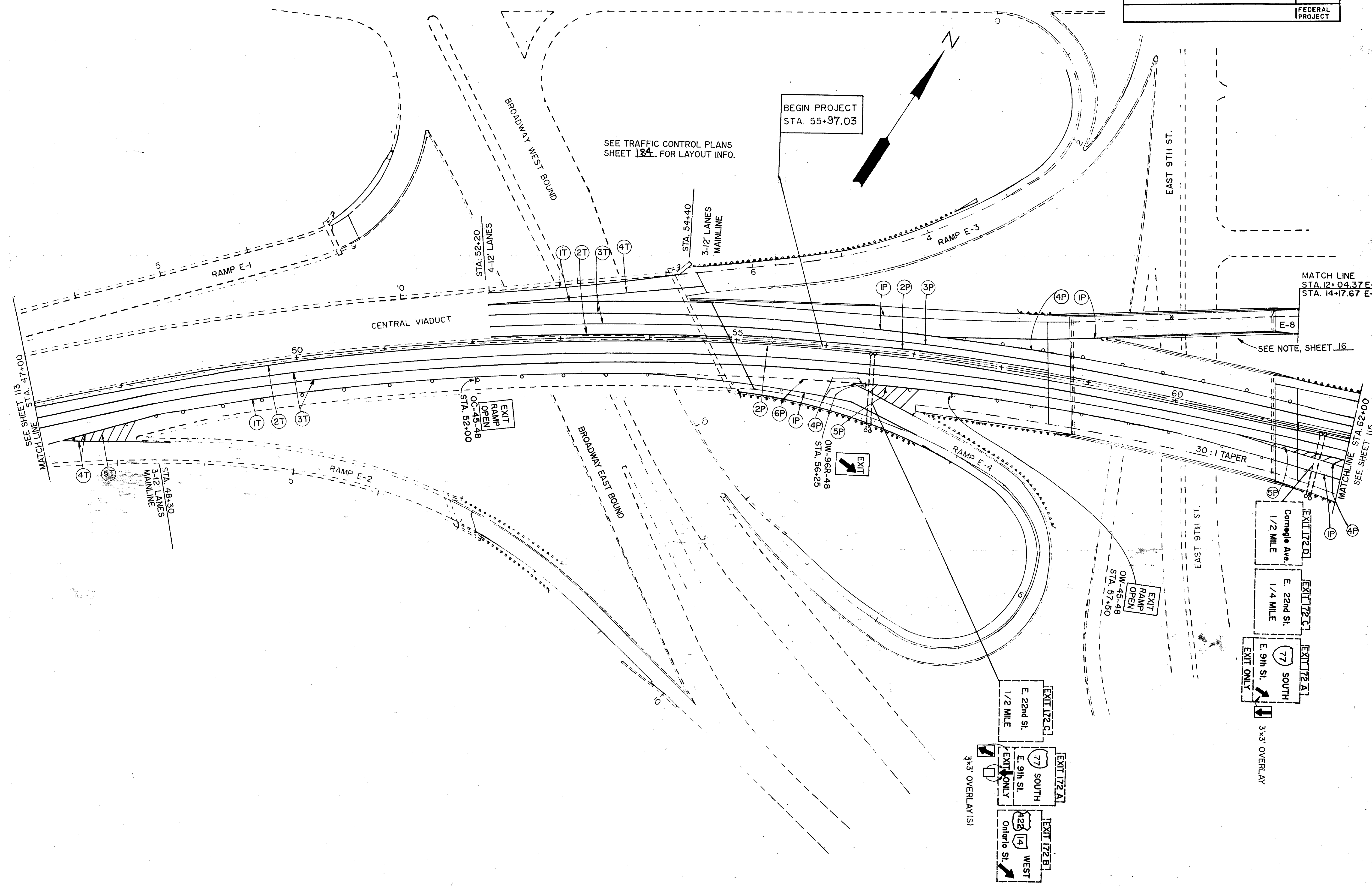
ITEM 614 - TEMPORARY PAVEMENT MARKINGS LEGEND

①	WHITE EDGE LINE, CLASS I, 740.05, TYPE C	⑩	WHITE EDGE LINE, CLASS I
②	YELLOW EDGE LINE, CLASS I, 740.05, TYPE C	⑪	YELLOW EDGE LINE, CLASS I
③	LANE LINE, CLASS I, 740.05, TYPE C	⑫	LANE LINE, CLASS I
④	CHANNELIZING LINE, CLASS I, 740.05, TYPE C	⑬	CHANNELIZING LINE, CLASS I
⑤	TRANSVERSE LINE, CLASS I, 740.05, TYPE C	⑭	TRANSVERSE LINE, CLASS I
⑥	DOTTED LINE, CLASS I, 740.05, TYPE C	⑮	DOTTED LINE, CLASS I
⑦	STOP LINE, CLASS I, 740.05, TYPE C	⑯	STOP LINE, CLASS I

CARNEGIE AVE.

BEGIN PROJECT  
STA. 55+97.03

SEE TRAFFIC CONTROL PLANS  
SHEET 184 FOR LAYOUT INFO.



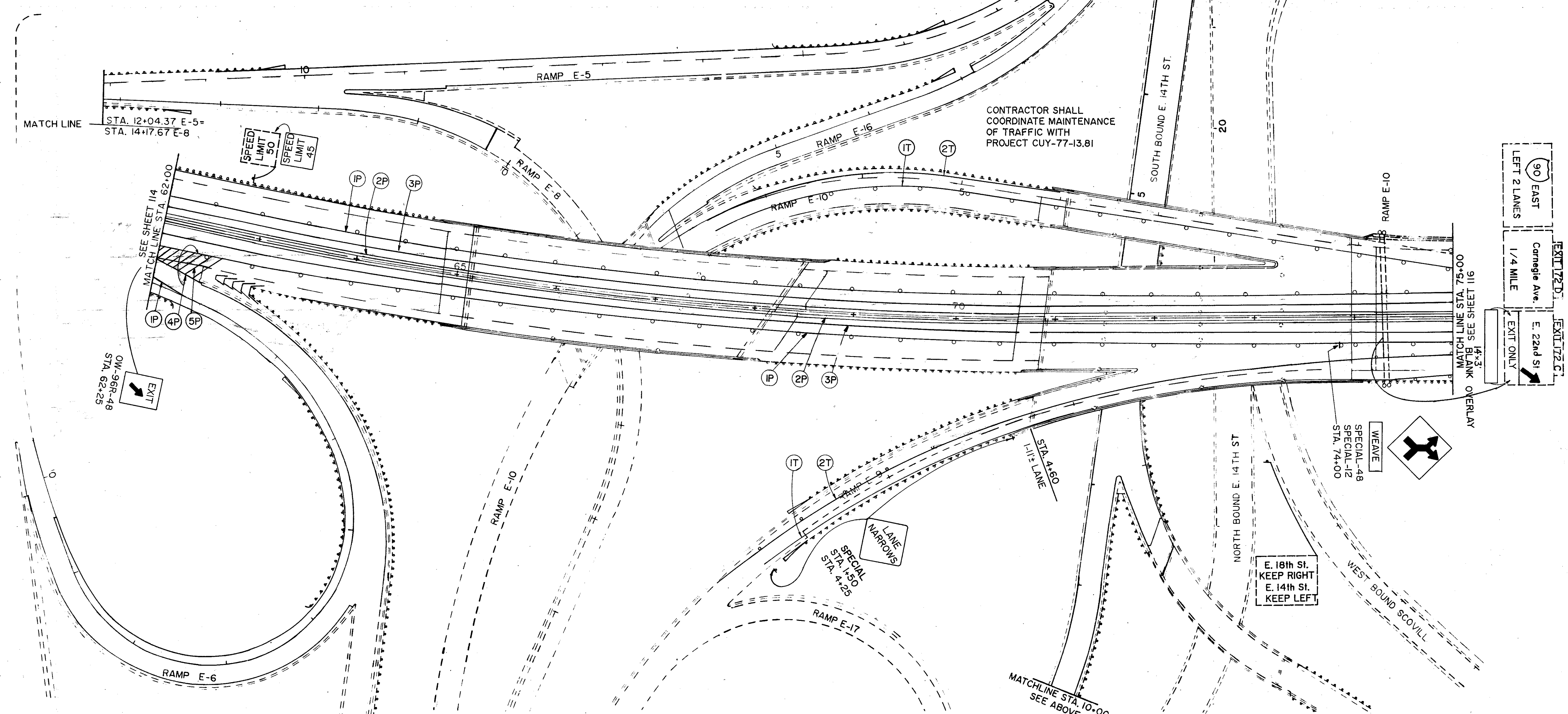
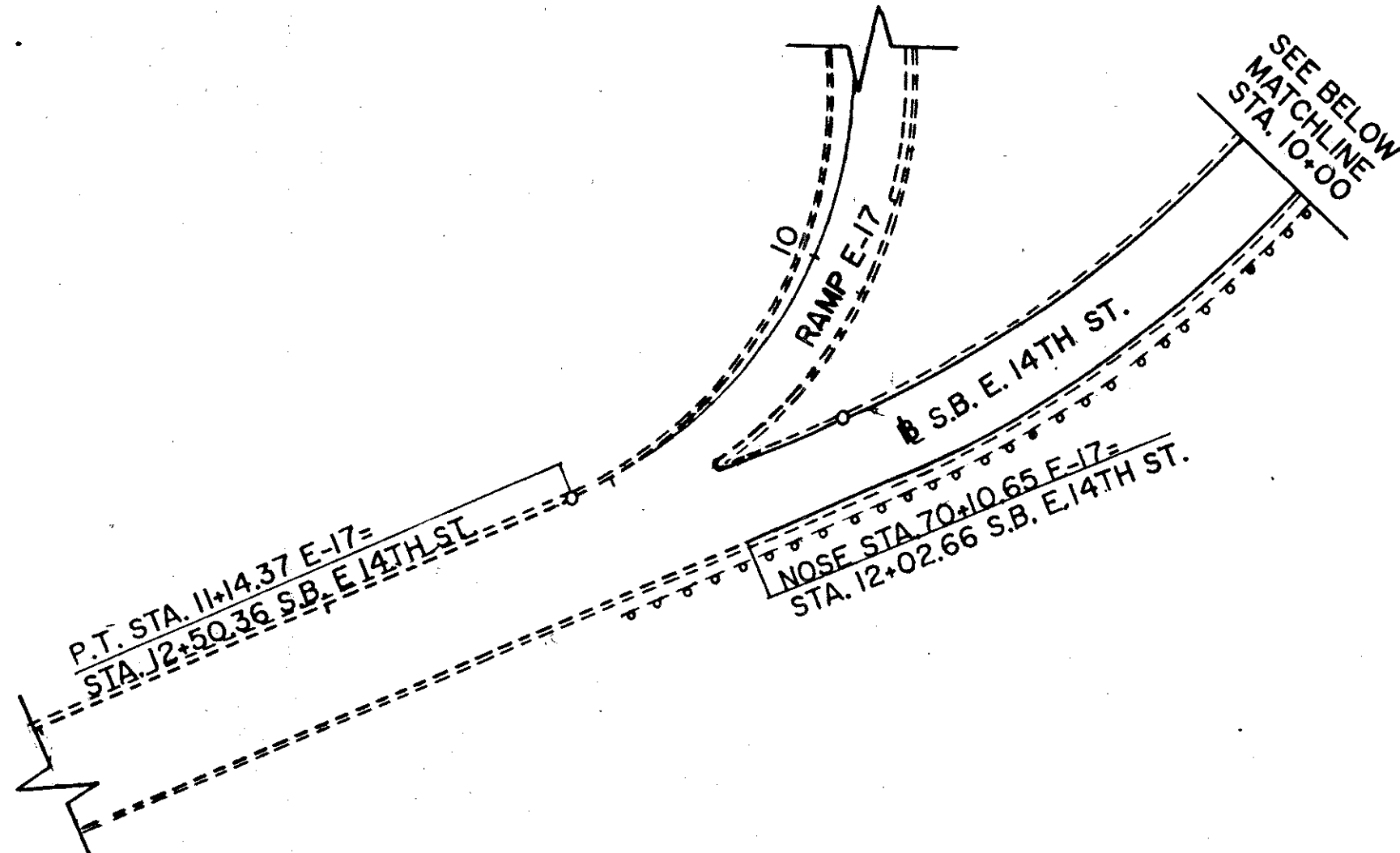
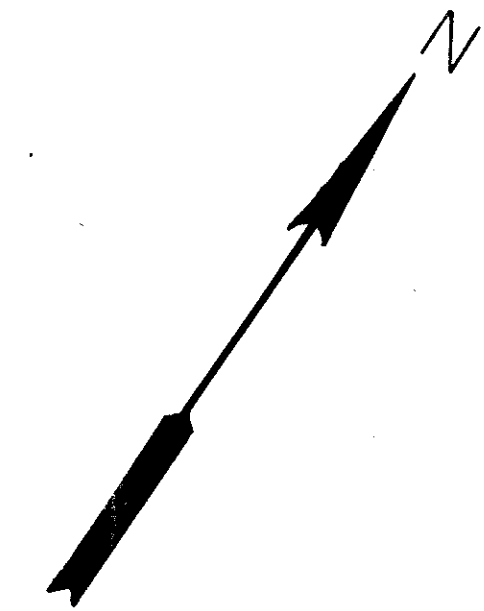
SEE SHEET 113  
MATCH LINE STA. 47+00

MATCH LINE  
STA. 12+04.37 E-5  
STA. 14+17.67 E-3

SEE NOTE, SHEET 16

MATCH LINE STA. 62+00  
SEE SHEET 115

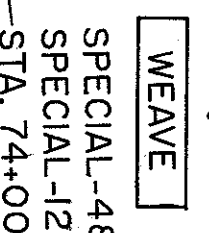




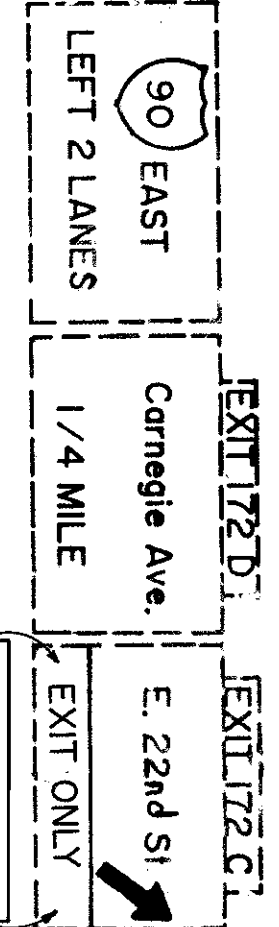
E. 9TH ST.

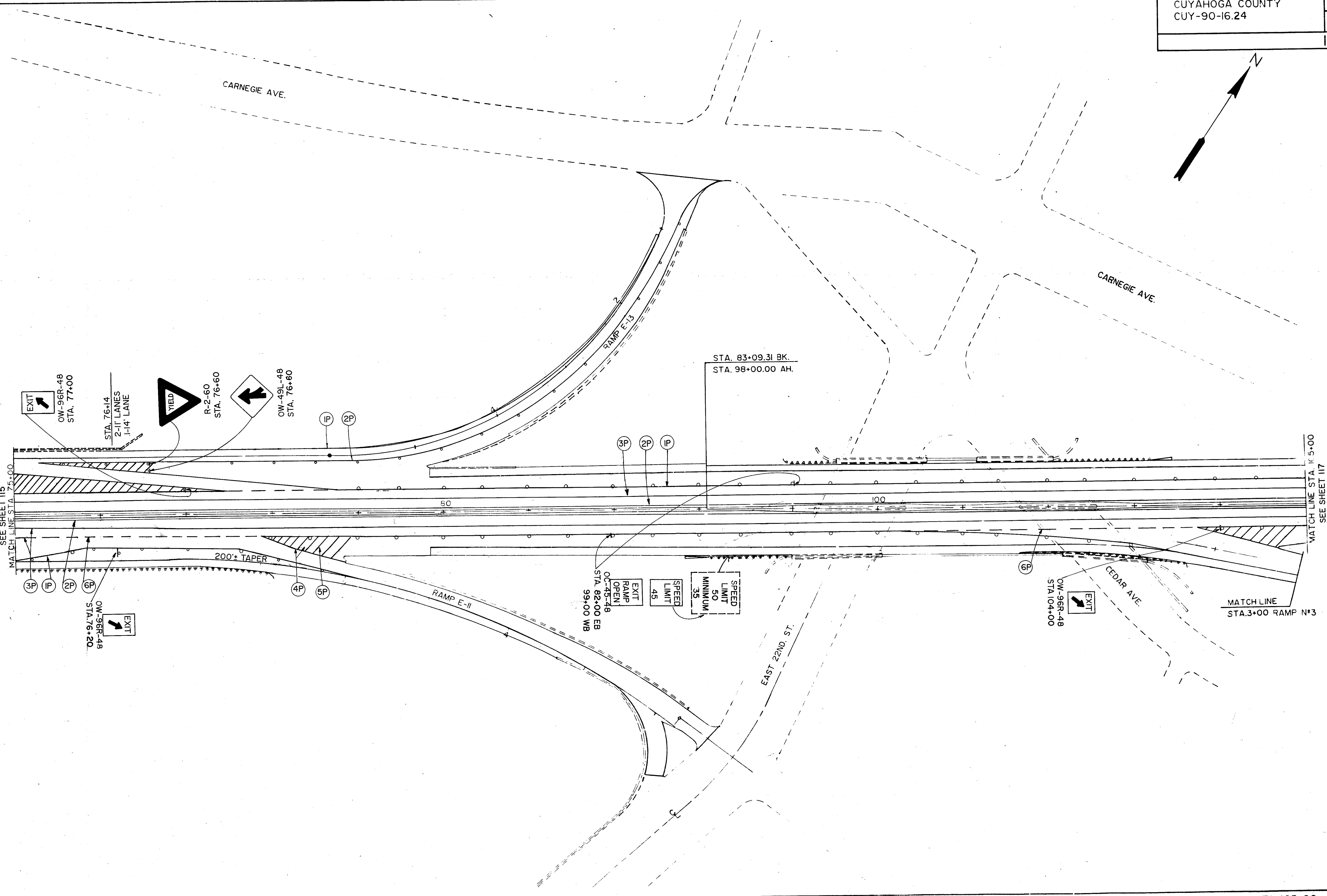
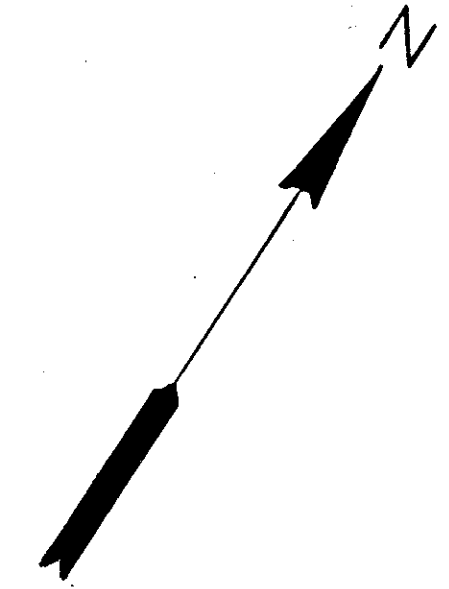
SOUTH BOUND E. 14TH ST.

NORTH BOUND E. 14TH ST.



E. 18th St.  
KEEP RIGHT  
E. 14th St.  
KEEP LEFT



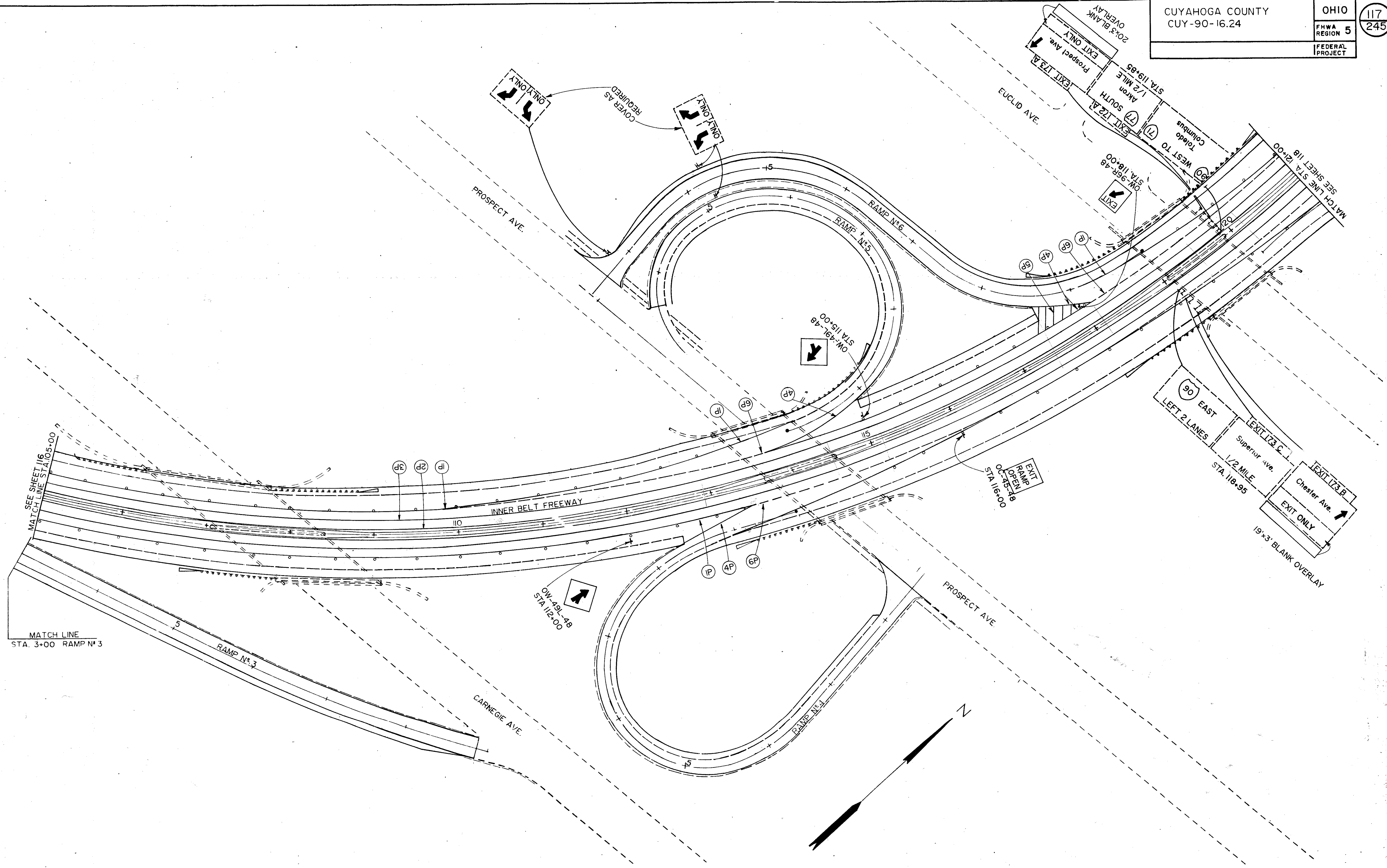


SEE SHEET 115  
MATCH LINE STA. 75+00

MATCH LINE STA. 105+00  
SEE SHEET 117

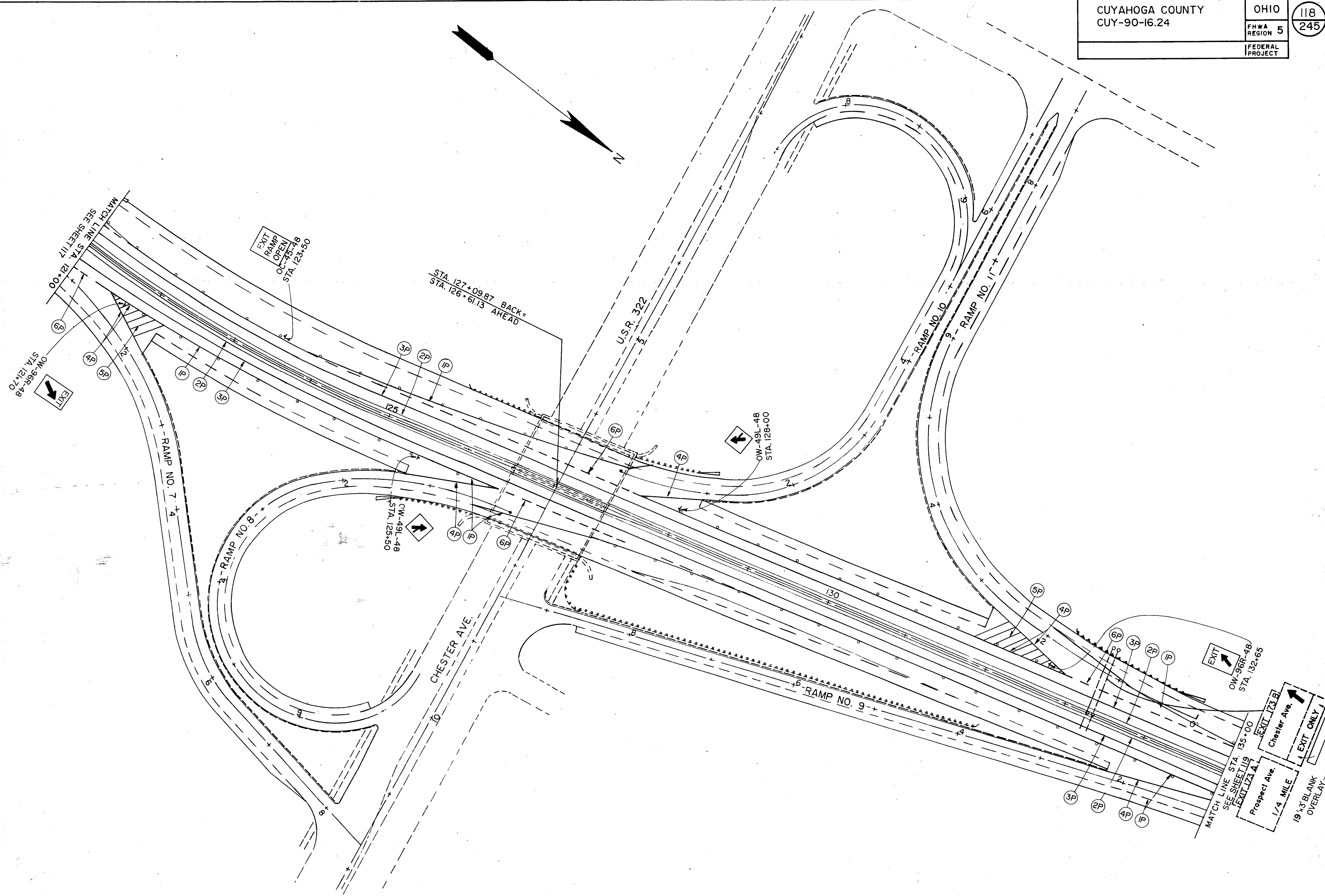
MATCH LINE  
STA. 3+00 RAMP N#3



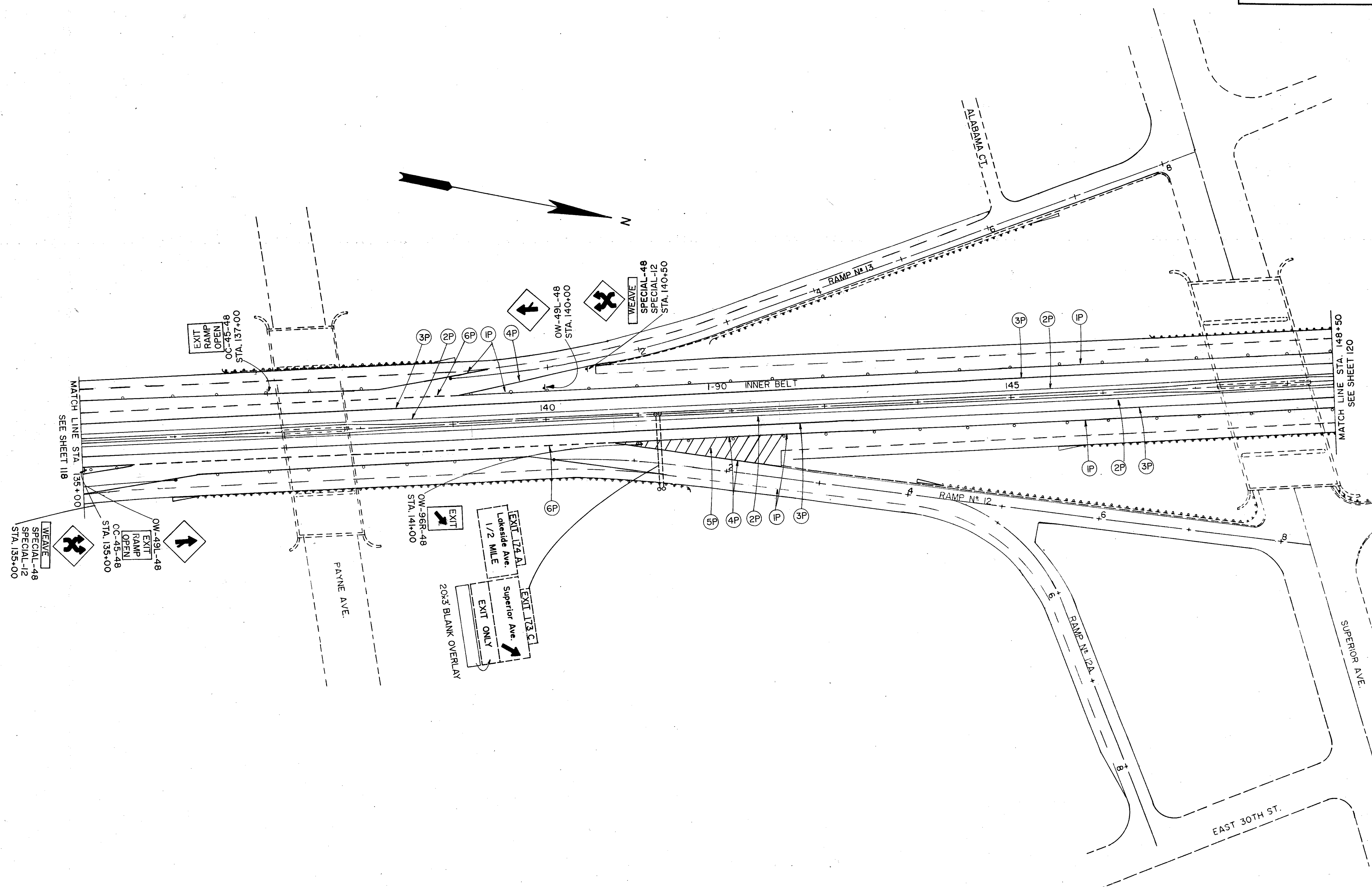


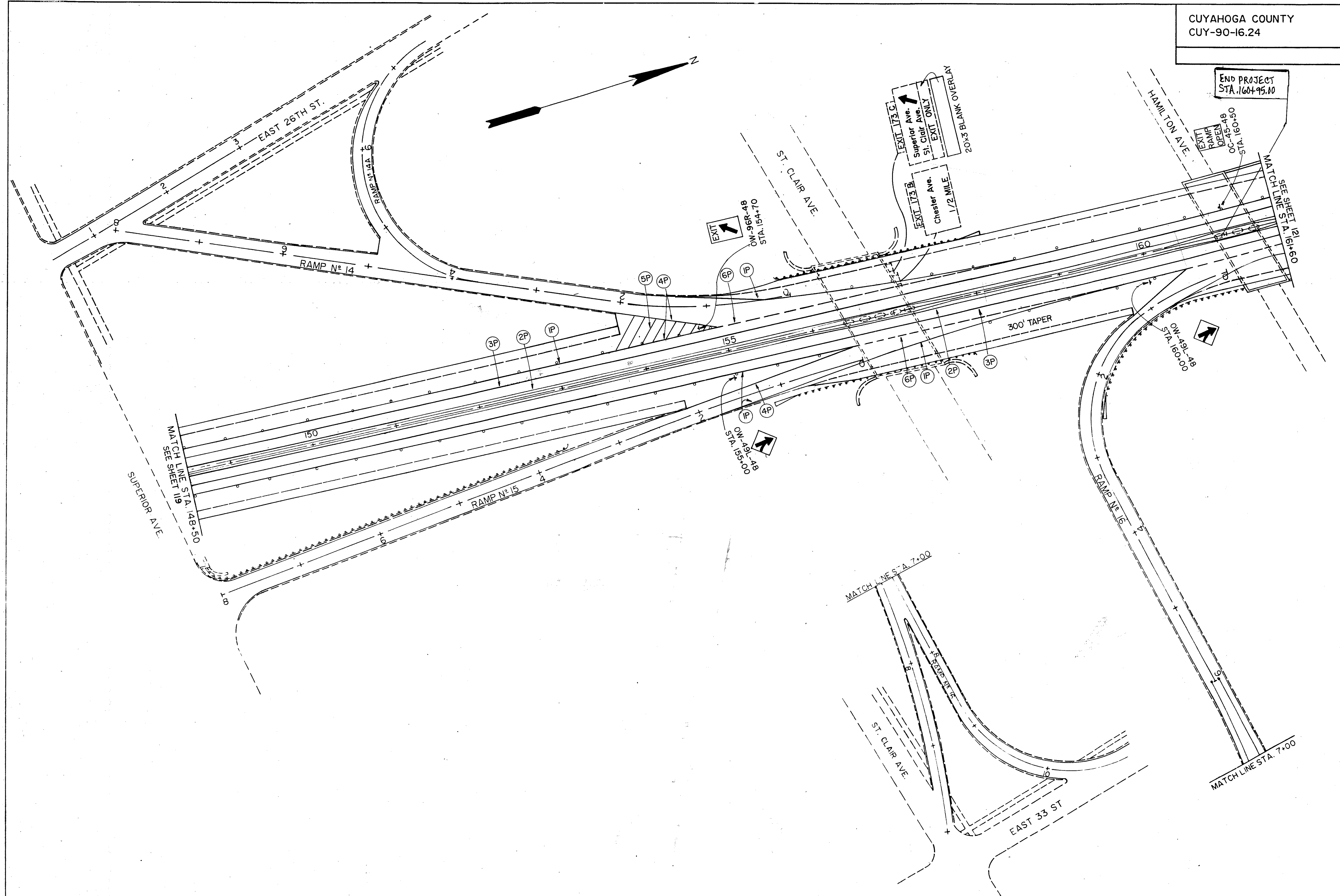
SEE SHEET 116  
MATCH LINE STA. 105+00

MATCH LINE  
STA. 3+00 RAMP N#3



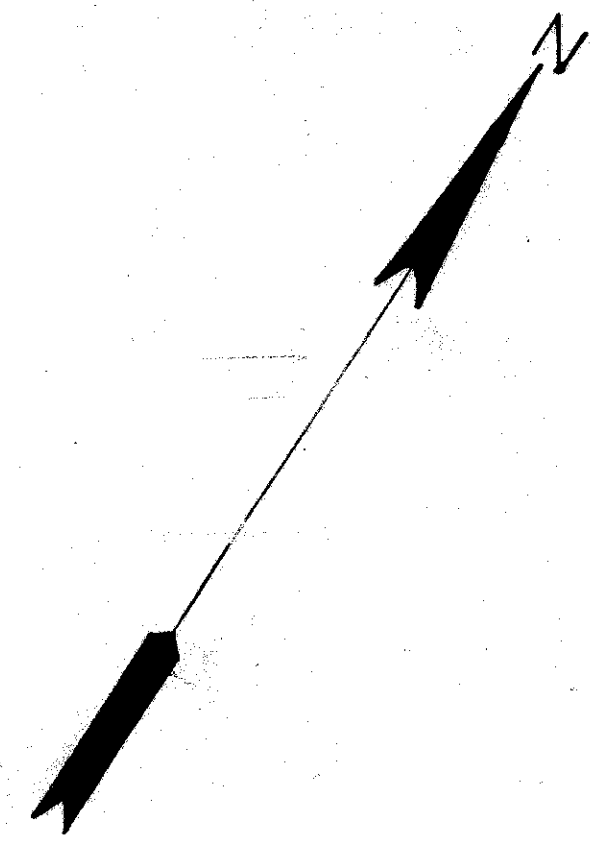
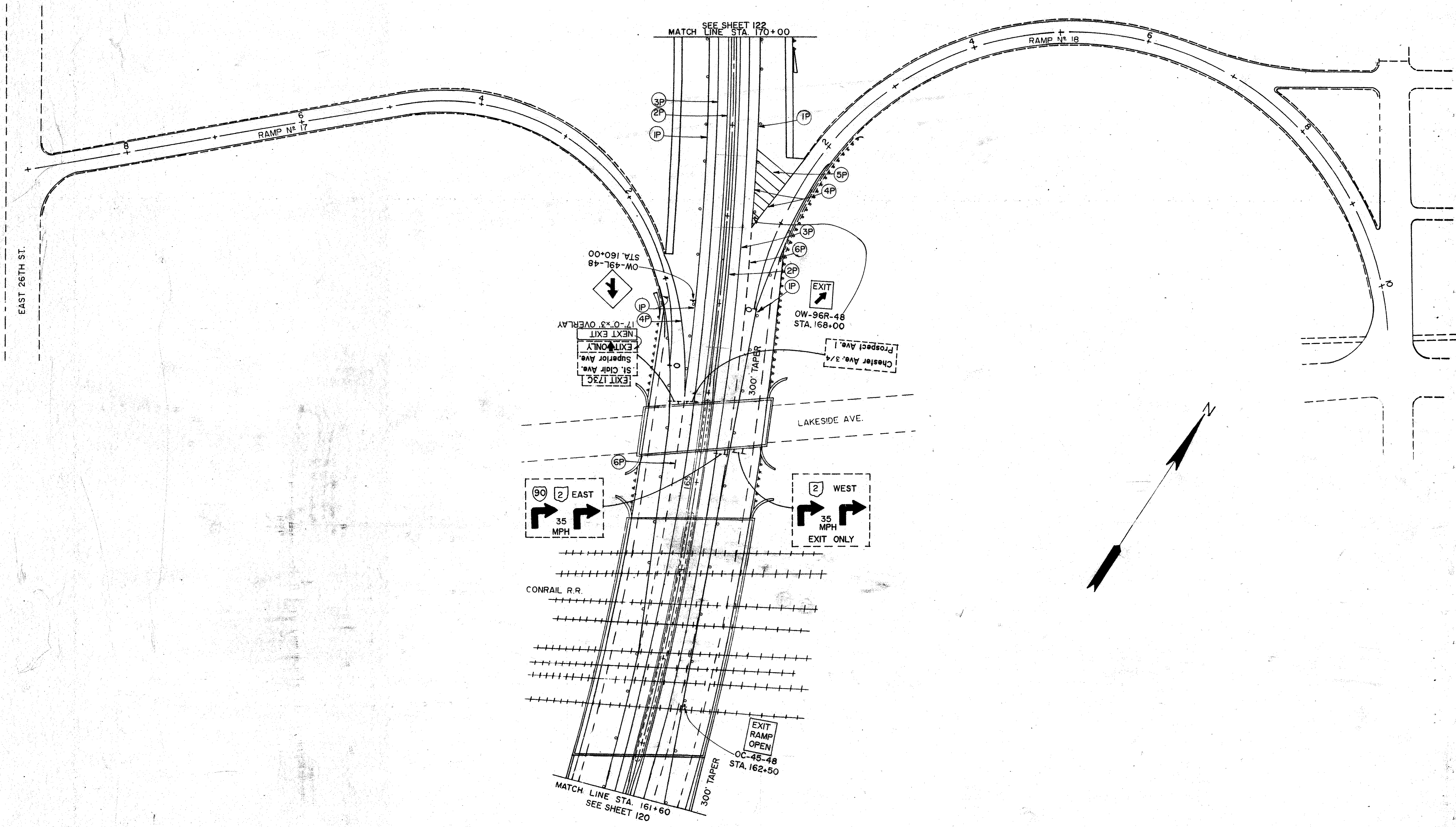




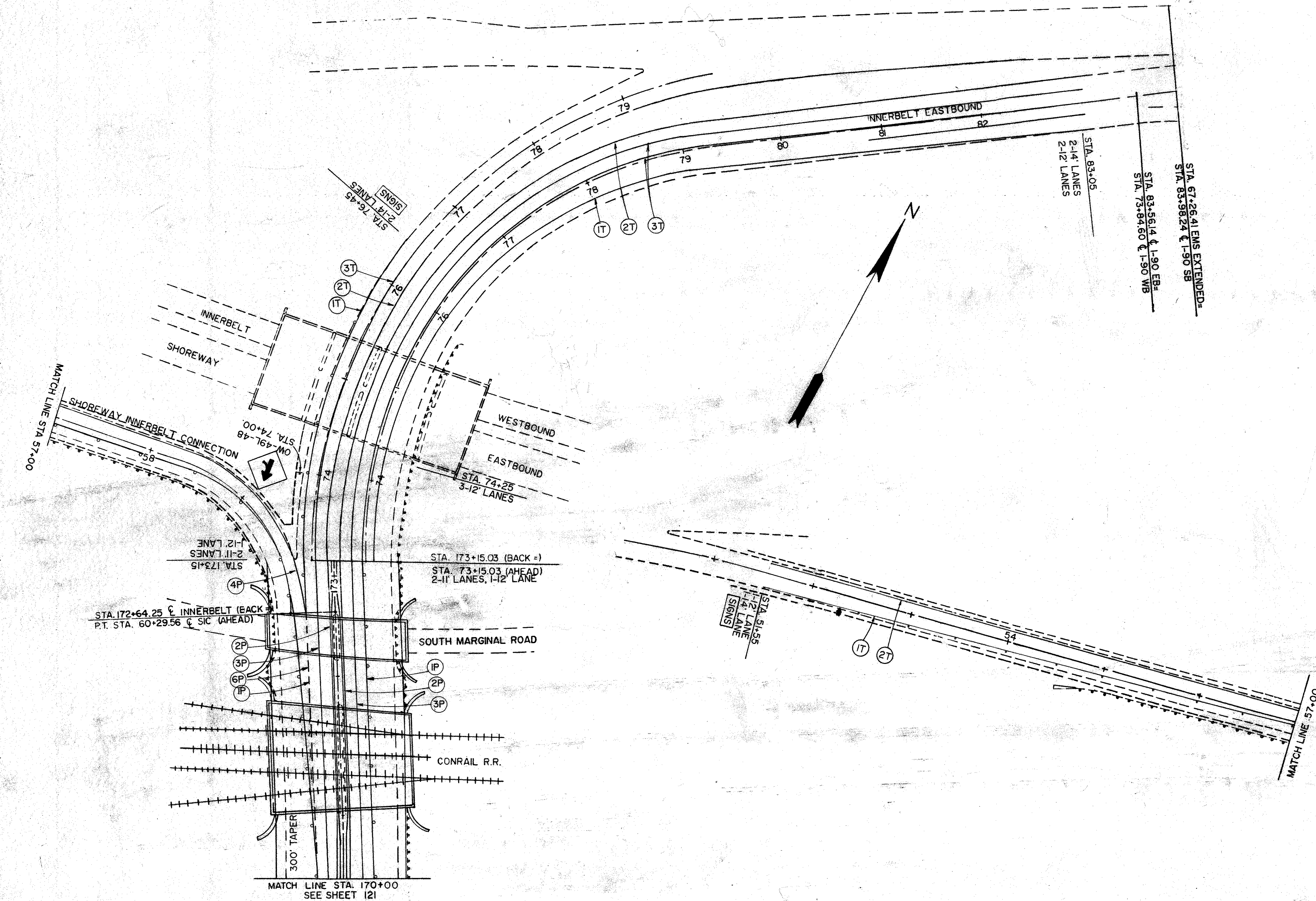




11-0

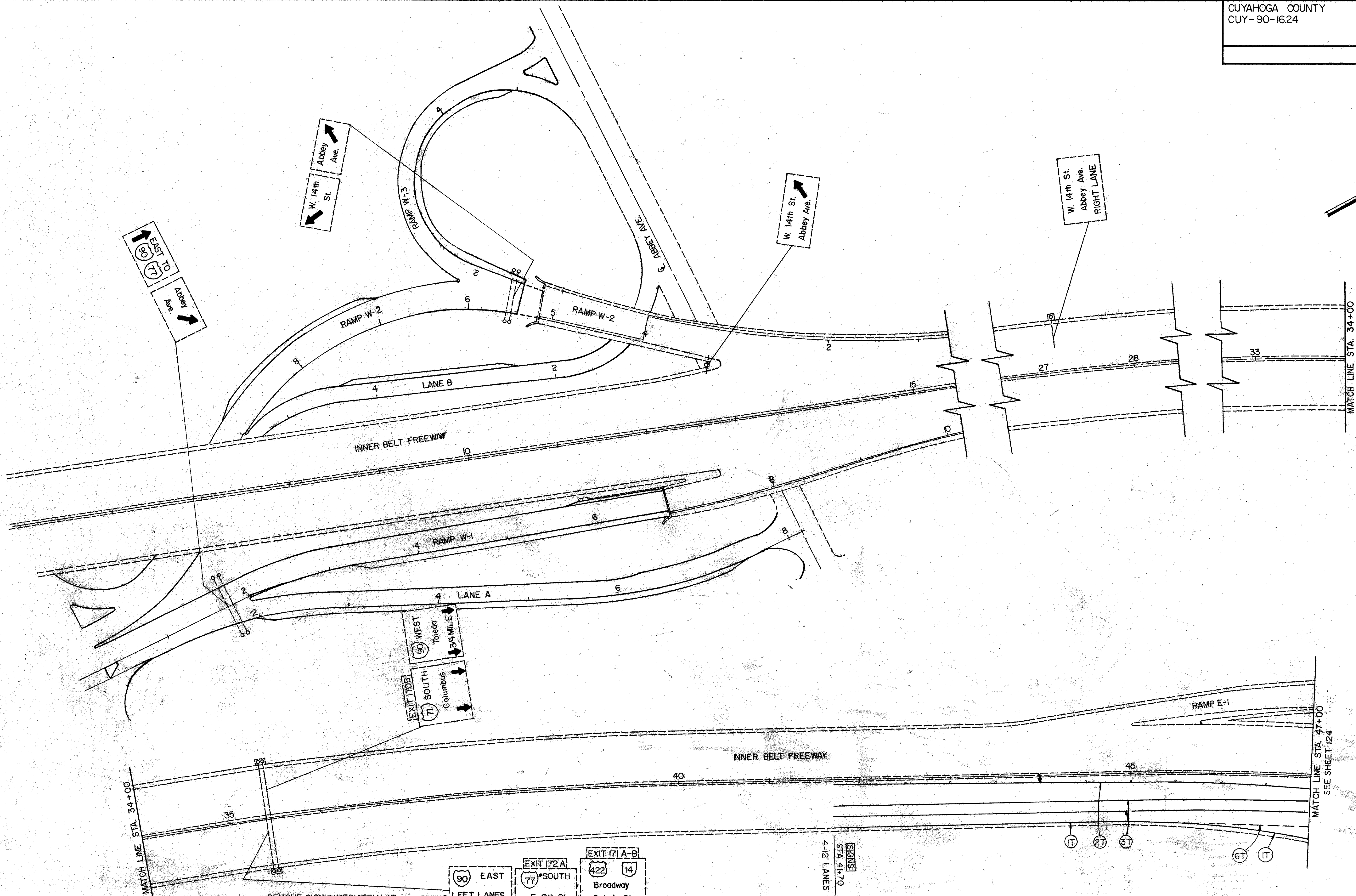




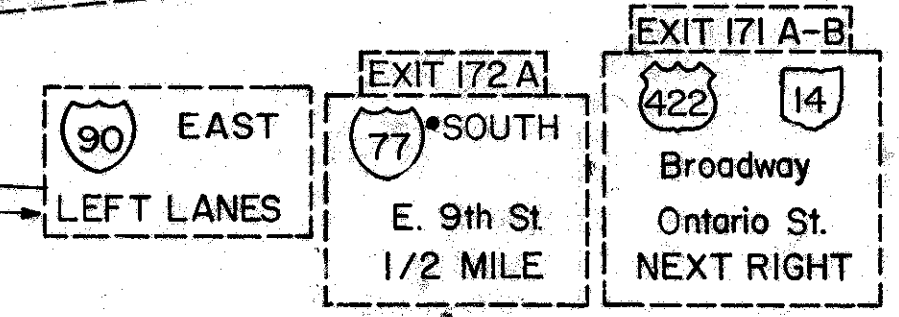


SIC SHOREWAY INNERBELT CONNECTION  
 EMS EAST MEMORIAL SHOREWAY



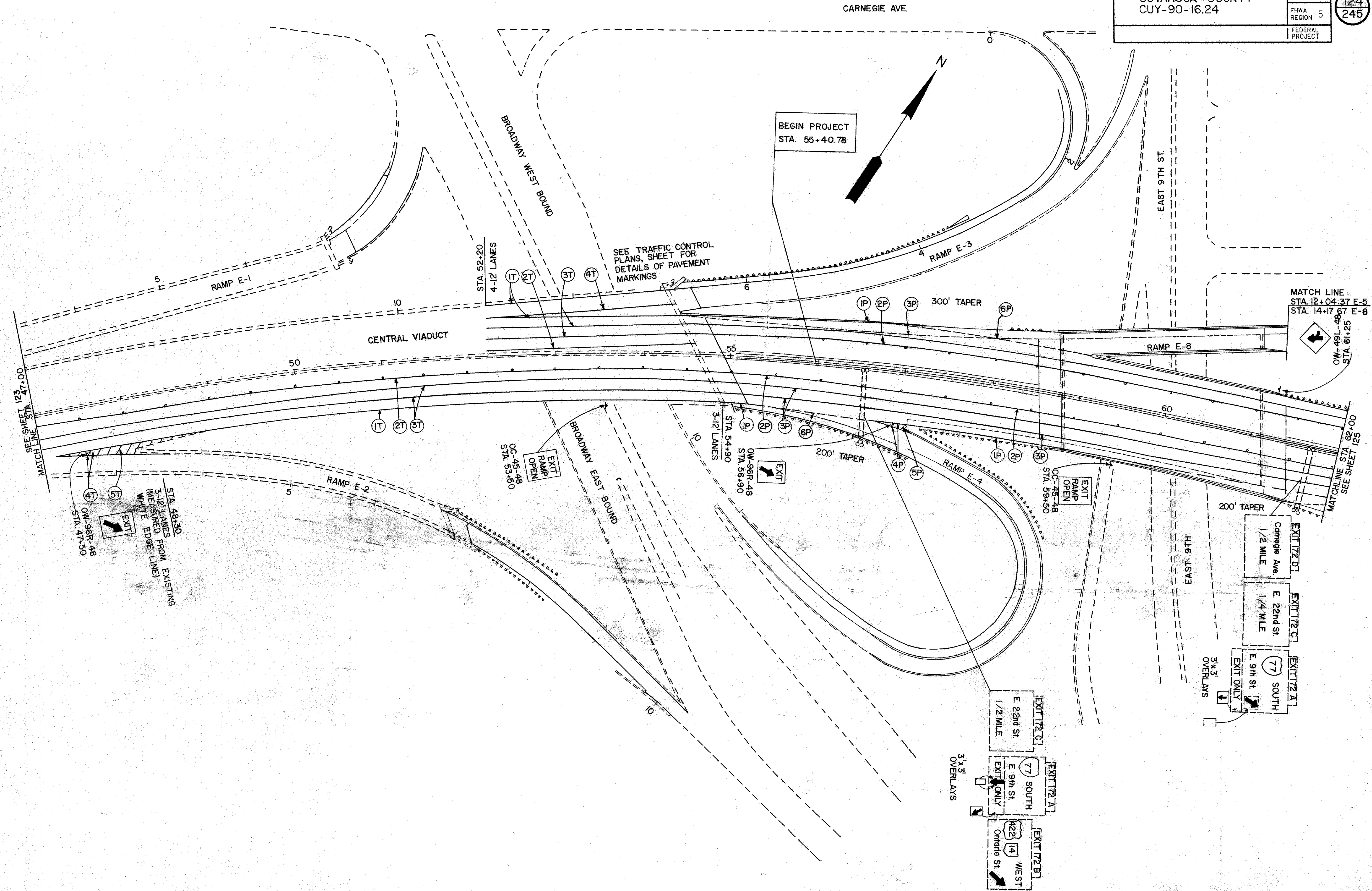


REMOVE SIGN IMMEDIATELY AT BEGINNING OF THIS PHASE. SEE TRAFFIC CONTROL SHEETS (TO BE PAID FOR UNDER PERTINENT 630 AND 631 ITEMS.)



SIGNS  
STA. 41+70  
4-12' LANES

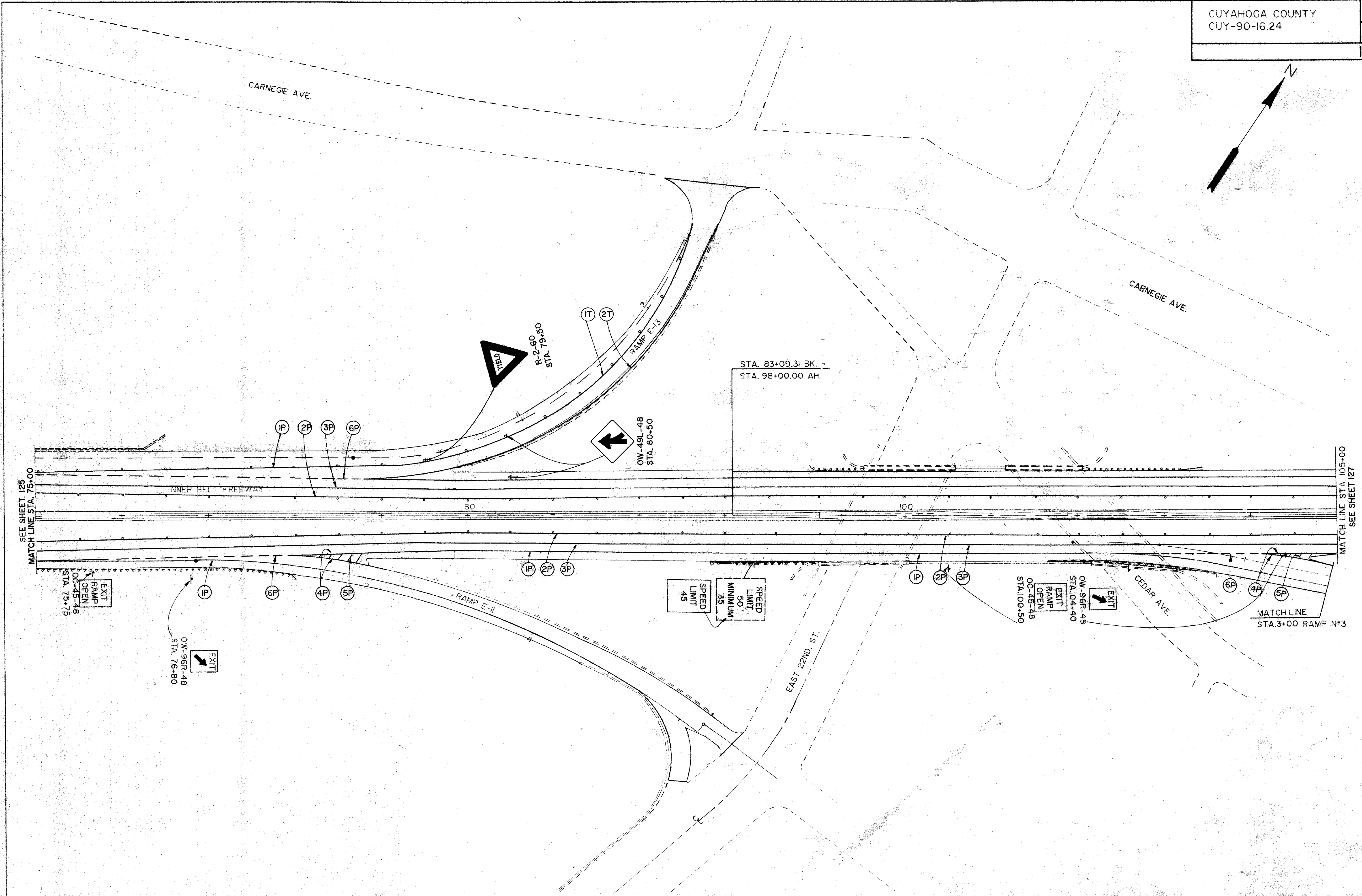
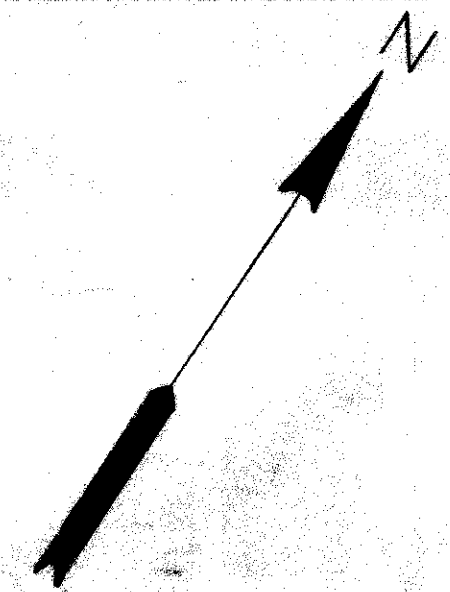




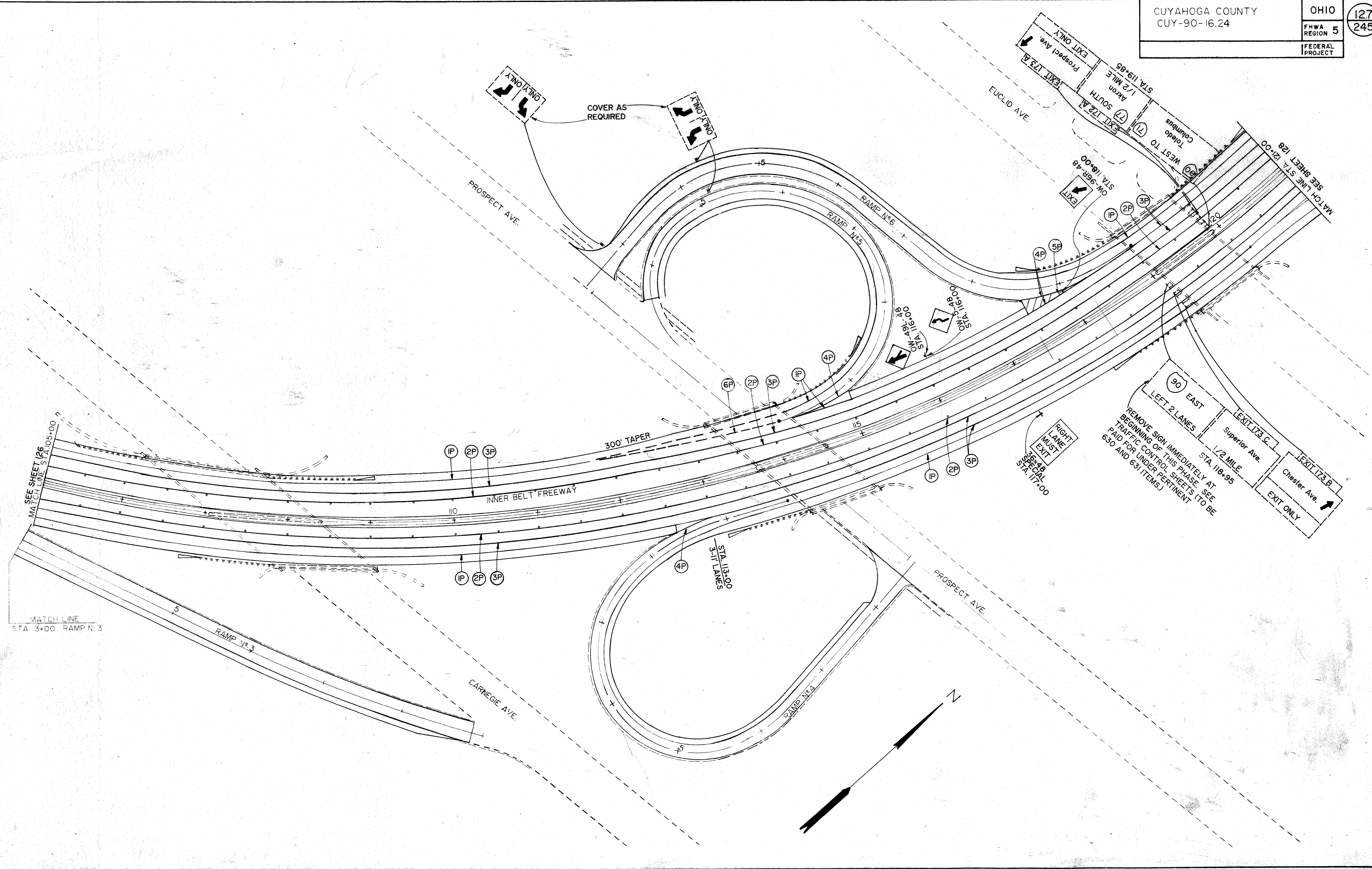










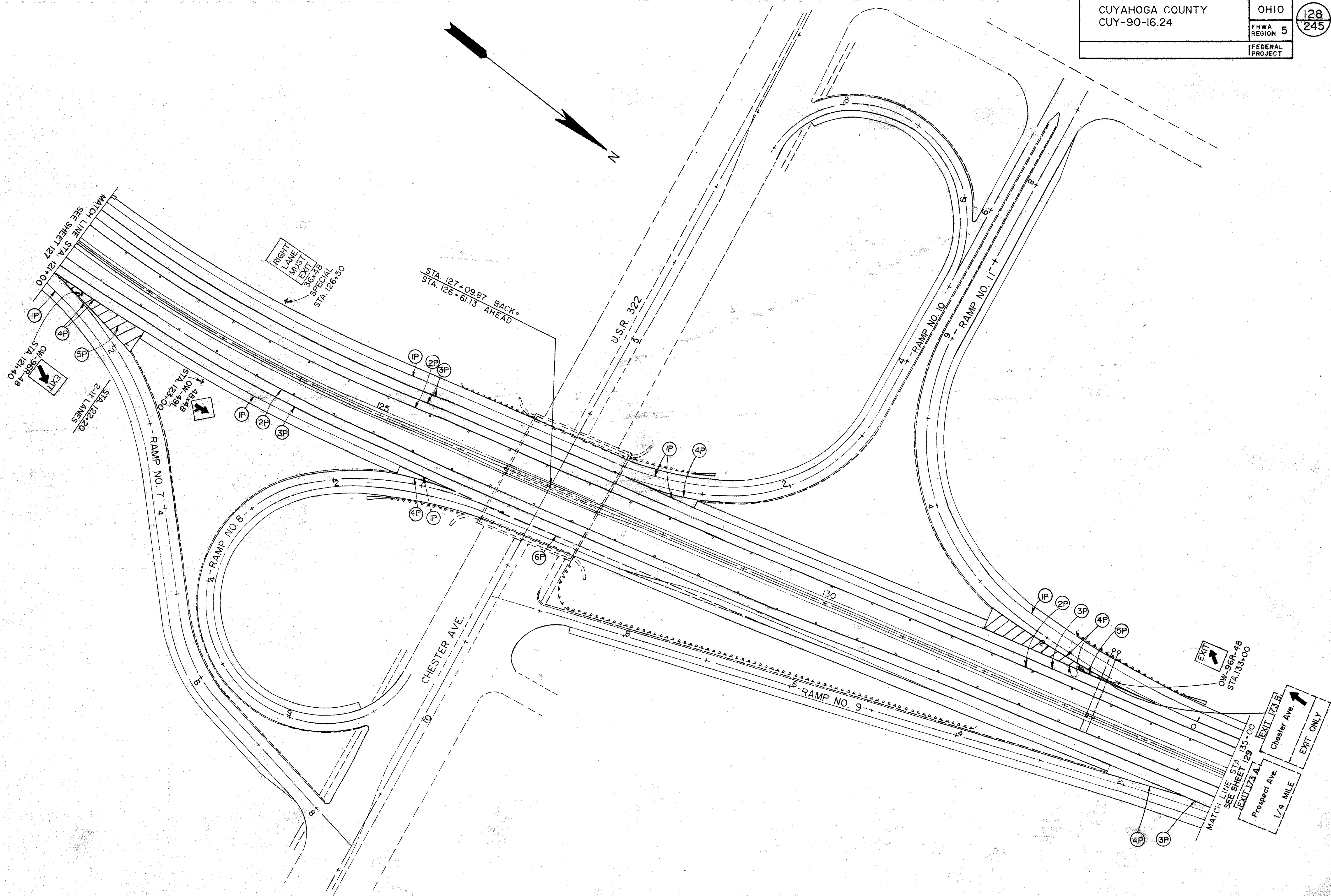


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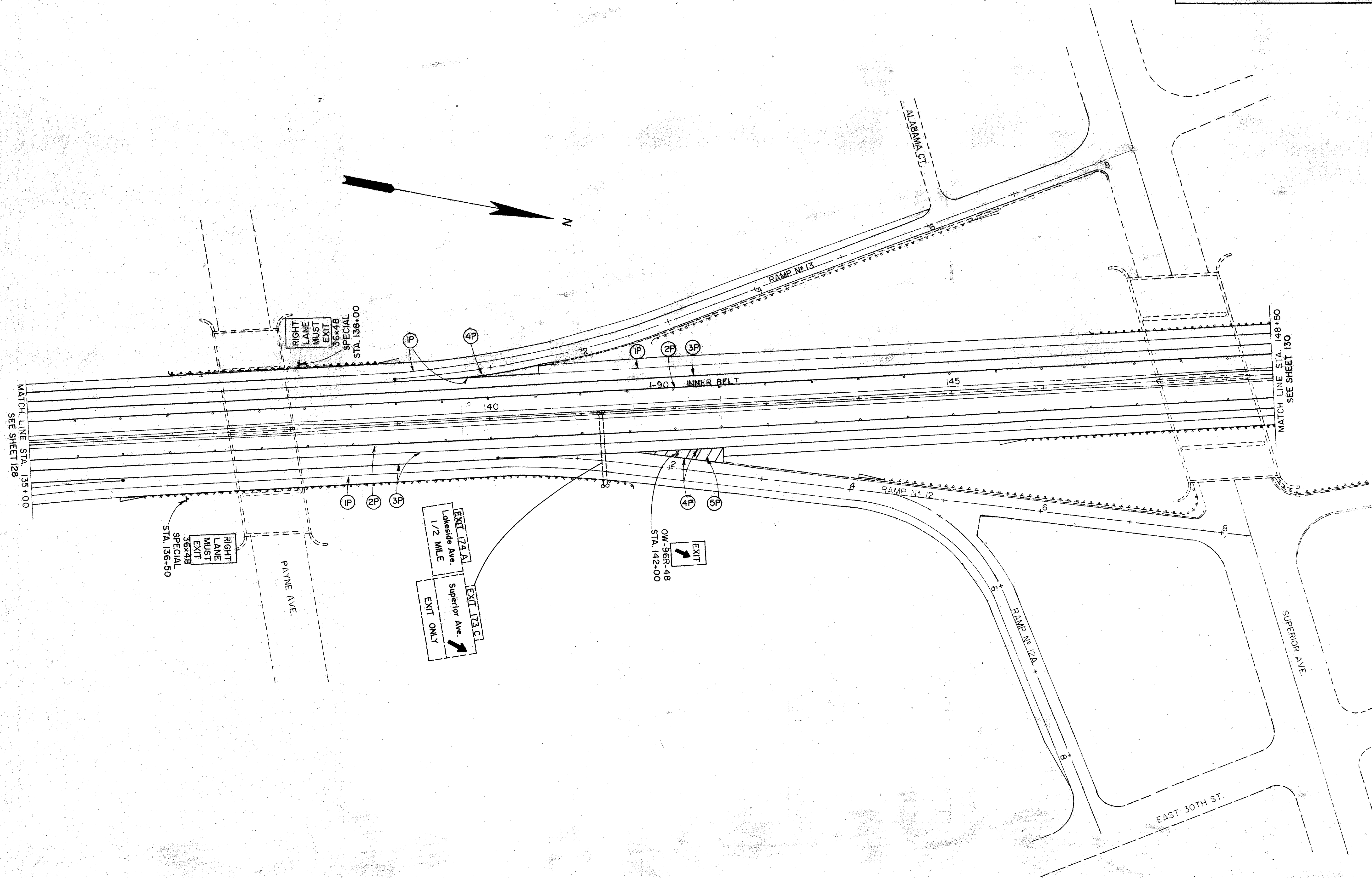
MATCH LINE  
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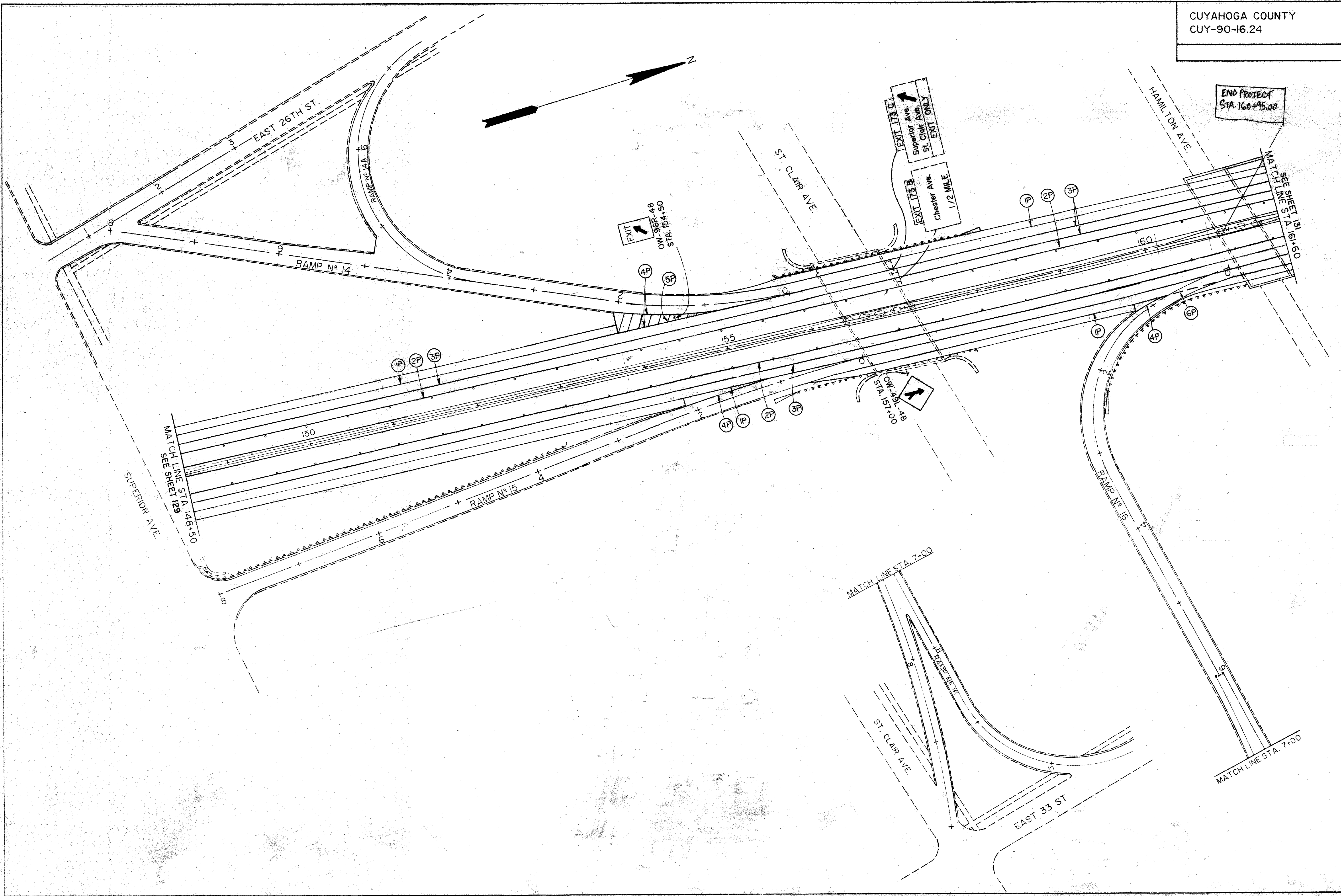
REMOVE SIGN IMMEDIATELY AT  
BEGINNING OF THIS PHASE. SEE  
PAID FOR UNDER PERTINENT  
630 AND 631 ITEMS.)



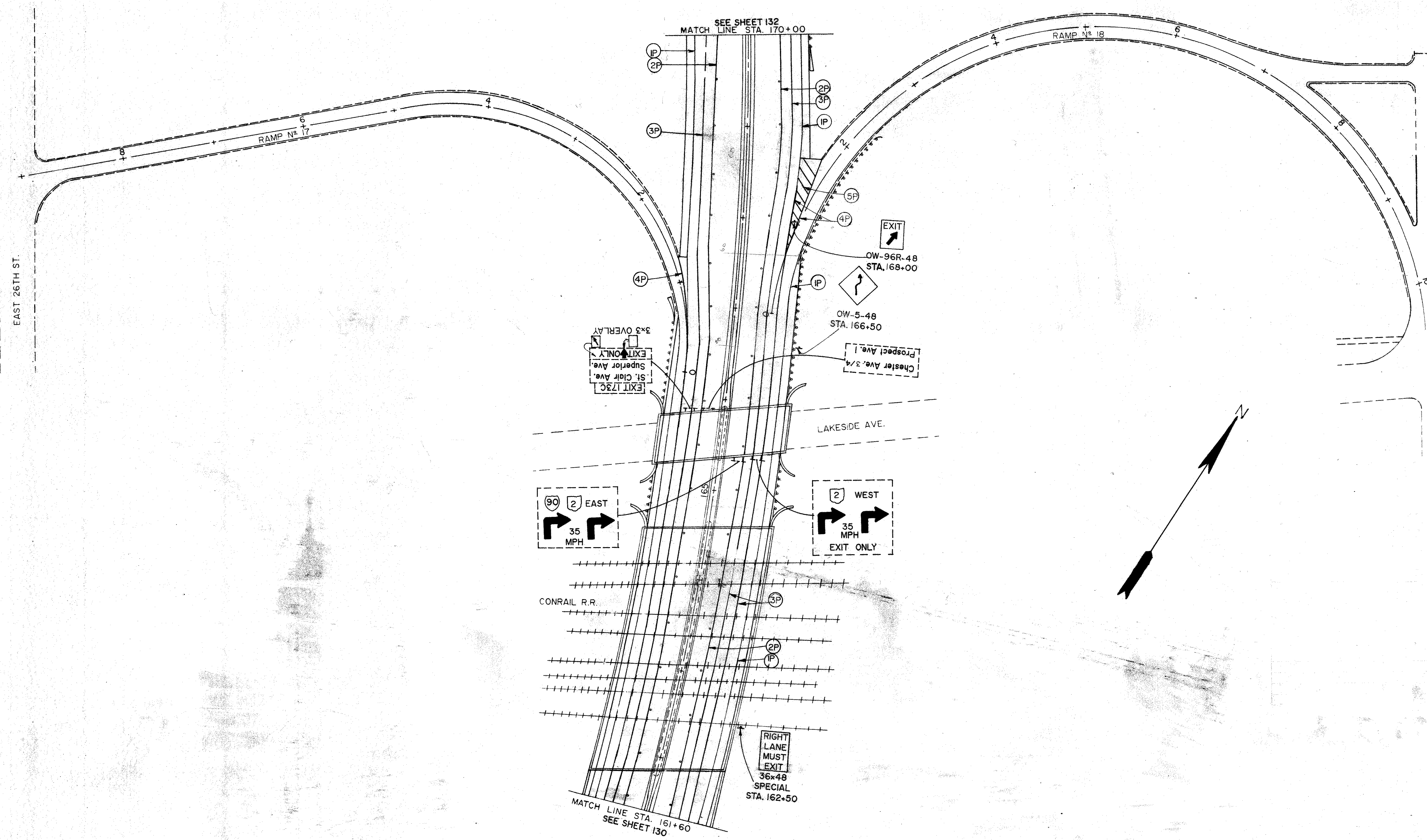




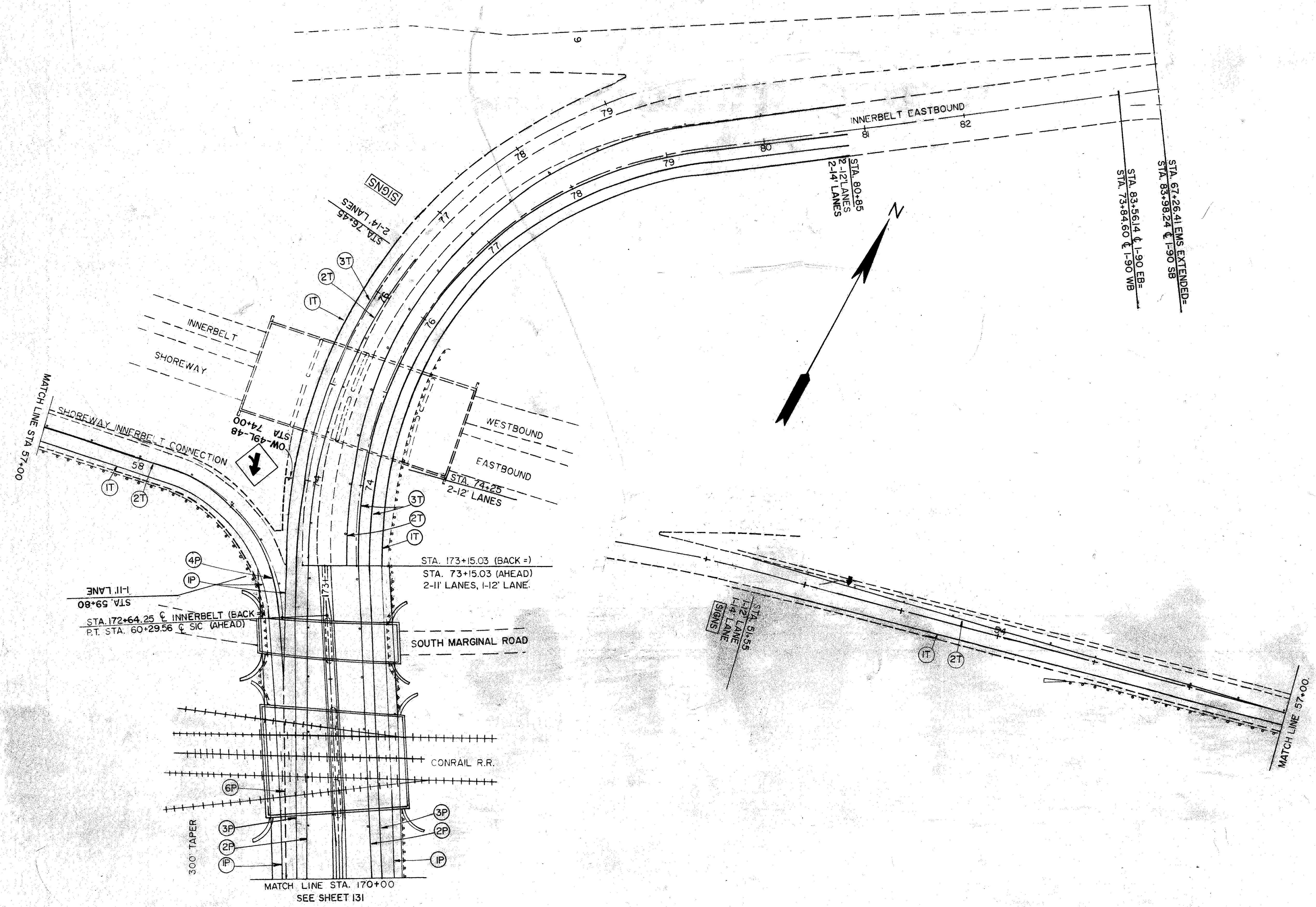






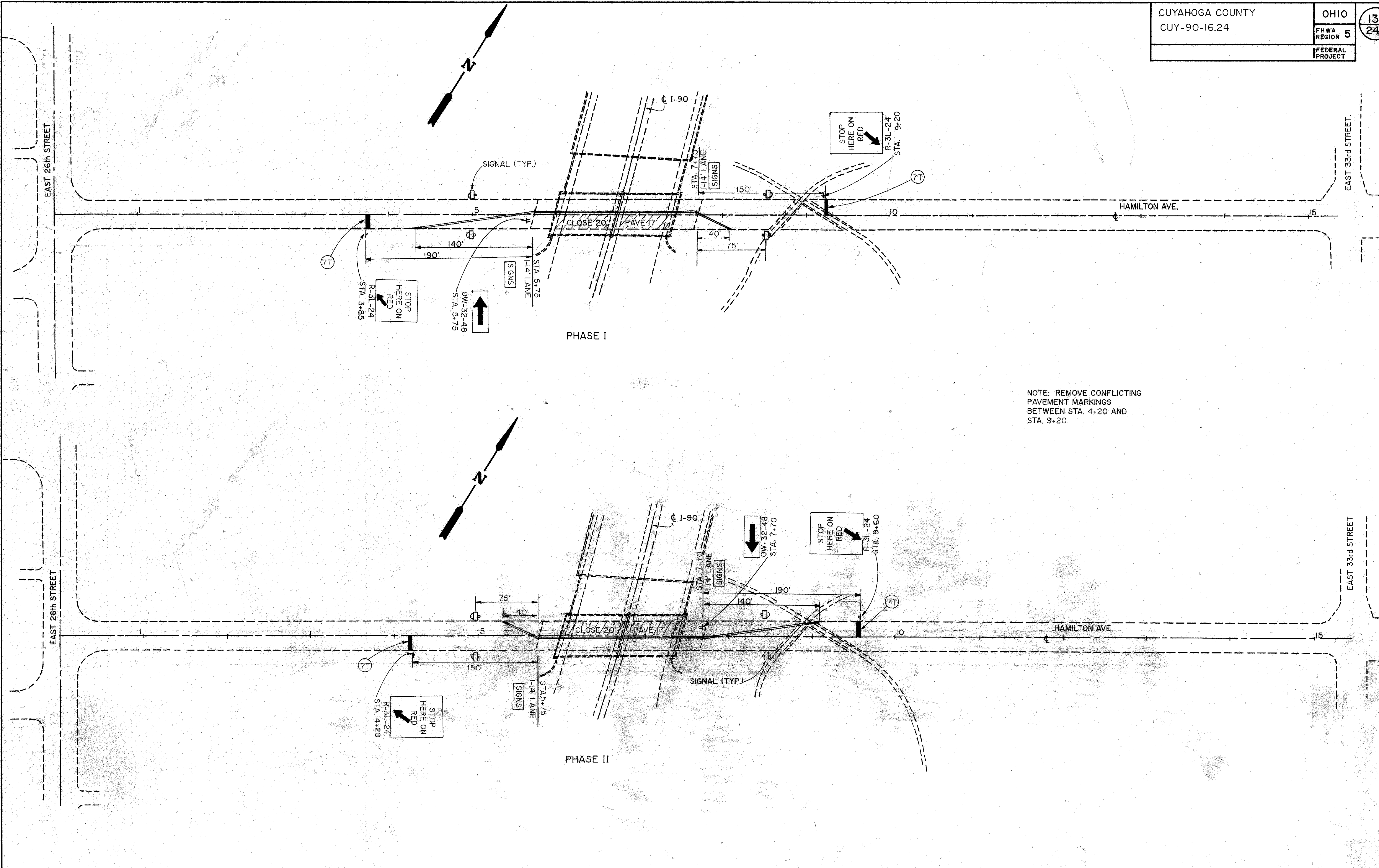




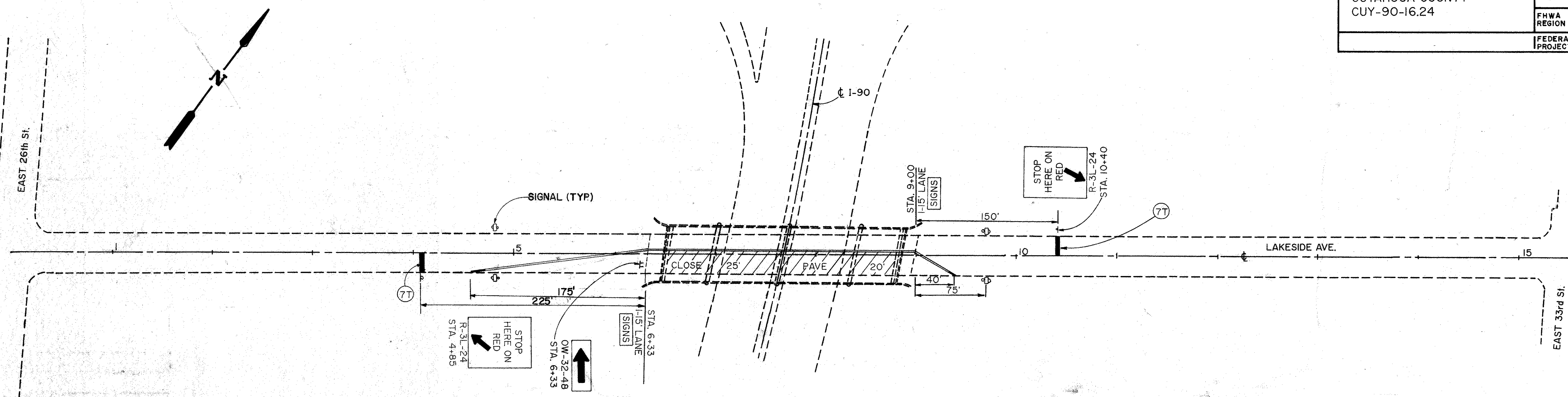


SIC SHOREWAY INNERBELT CONNECTION  
 EMS EAST MEMORIAL SHOREWAY



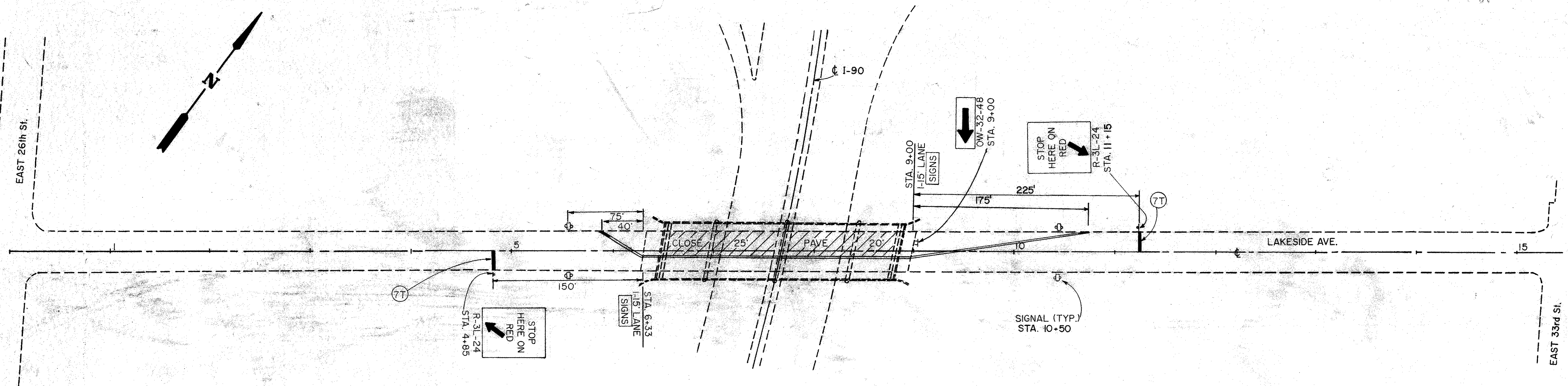






PHASE I

NOTE: REMOVE CONFLICTING PAVEMENT MARKINGS BETWEEN STA. 4+85 AND STA. 10+40

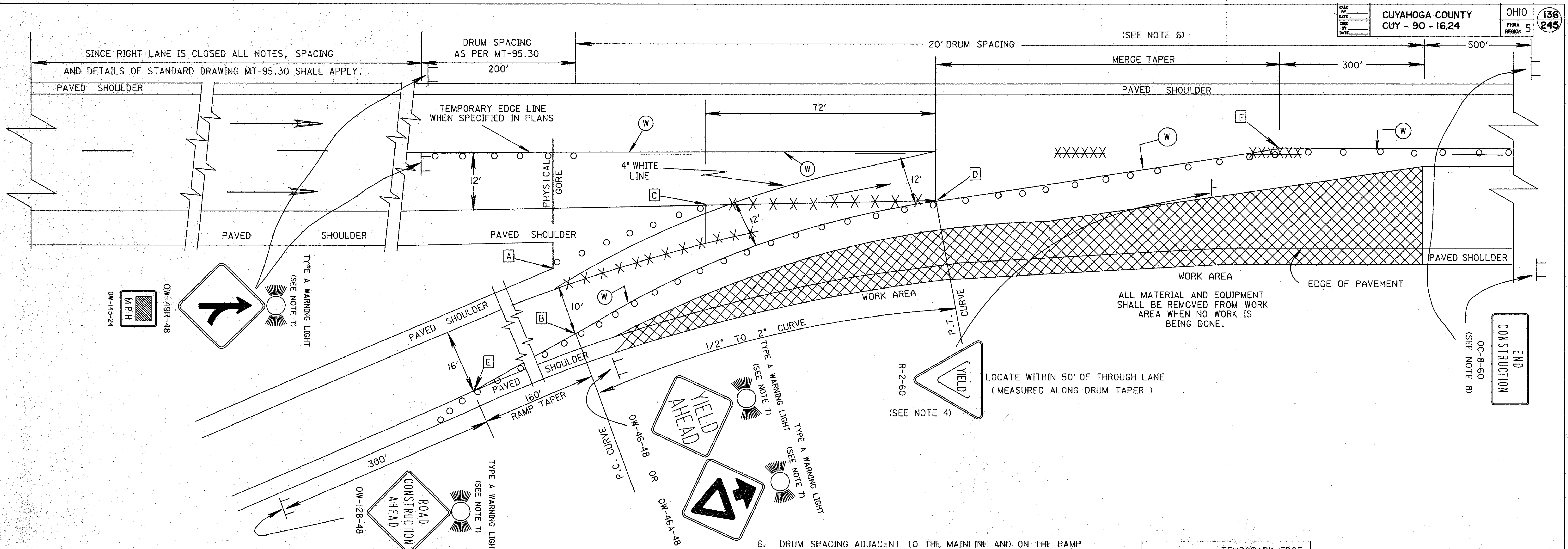


PHASE II









GENERAL NOTES

- THIS WORK AREA TRAFFIC CONTROL APPLICATION SHALL BE EMPLOYED WHEN: (1) THE LATERAL CLEARANCE BETWEEN CHANNELIZING DEVICES AT THE RIGHT EDGE OF THE WORK AREA AND THE EDGE OF PAVEMENT IS LESS THAN 10 FT. (12 FT. IF THE SHOULDER PAVEMENT IS USED) AS SHOWN ON DRAWING MT-98.15, AND (2) THE REQUIRED RAMP TAPERS AND CURVES CAN BE PROVIDED AS SHOWN. IN THE EVENT THE WORK ZONE CONDITION WOULD PERMIT THE USE OF EITHER MT-98.15 OR MT-98.16, MT-98.16 SHALL BE USED. THIS TRAFFIC CONTROL MEASURE SHALL NOT BE PLACED IN EFFECT UNTIL IMMEDIATELY BEFORE THE CONTRACTOR IS FULLY PREPARED TO PERFORM THE WORK ON THE RAMP OR LANE ADJACENT TO IT. ONCE THIS MEASURE IS PLACED INTO EFFECT THE CONTRACTOR SHALL EXPEDITIOUSLY PURSUE THE WORK (WORKING CONTINUOUSLY WITH FULL CREW IN THE RAMP AREA ON ALL NORMAL WORKING DAYS) UNTIL IT IS COMPLETED AND SHALL IMMEDIATELY OPEN THE AREA TO NORMAL TRAFFIC OR, AS A MINIMUM, REVERT TO THE METHODS SHOWN ON MT-98.15. IT IS THE INTENT THAT THE LONGEST MERGING TAPER LENGTH POSSIBLE SHALL BE CHOSEN, COMMENSURATE WITH THE REQUIREMENTS OF CONSTRUCTION.
- THE RAMP TAPER SHALL DESIRABLY BE LOCATED TO PROVIDE A 10' MINIMUM PATH BETWEEN DRUMS AND THE PAVED SHOULDER IN THE GORE. THE RAMP TRAFFIC MAY BE PLACED ON THE PAVED GORE AS SHOWN ABOVE ONLY IF (1) THE TRAFFIC WILL USE THE PAVED SHOULDER PAVEMENT LESS THAN ONE DAY AND THE SHOULDER PAVEMENT IS IN GOOD CONDITION AND IS LEVEL AND SMOOTH OR (2) IF THE SHOULDER PAVEMENT IS ADEQUATELY STRENGTHENED, LEVELED AND SMOOTHED TO CARRY THE ANTICIPATED LOAD. A MINIMUM OF 3 DRUMS SHALL BE USED IN THE RAMP SHOULDER TAPER.
- RAMP SIGNS SHALL BE DUAL MOUNTED ON MULTI-LANE RAMP. WHEN THE RAMP IS NOT LONG ENOUGH TO ALLOW PLACEMENT AS SPECIFIED ABOVE, THE SIGNS MAY BE SPACED PROPORTIONATELY WITHIN THE SPACE AVAILABLE AS DETERMINED BY THE ENGINEER (A 200 FOOT MINIMUM SPACING MUST BE MAINTAINED).
- IT WILL BE NECESSARY TO MOVE THE LOCATION OF ANY EXISTING YIELD CONDITION. IN THESE CASES, THE PERMANENT R-2 SIGN INSTALLATION SHALL BE COVERED AND THE TEMPORARY INSTALLATION SHALL BE MOUNTED APPROPRIATELY. IF THE REQUIRED DISTANCES (RAMP TAPER, CURVE AND MERGE TAPER) CANNOT BE OBTAINED, THE ENGINEER MAY APPROVE SLIGHTLY LOWER VALUES FOR A SHORT TIME, IN WHICH CASE THE YIELD SIGN SHALL BE REMOVED AND A 36" STOP SIGN PLACED APPROPRIATELY TO BE VISIBLE TO RAMP TRAFFIC BUT NOT BE OBTRUSIVE TO MAINLINE TRAFFIC.
- IF THE CONSTRUCTION OPERATION REQUIRES THE LANE CLOSURE FOR MORE THAN ONE DAY THEN THE EXISTING CONFLICTING PAVEMENT MARKINGS AND REFLECTORS FROM THE RAISED PAVEMENT MARKERS (RPM'S) SHALL BE REMOVED AND THE APPROPRIATE COLOR TEMPORARY EDGE LINES SHALL BE APPLIED ALONG THE TAPER. TEMPORARY EDGE LINES WHICH WOULD CONFLICT WITH FINAL TRAFFIC LANES SHALL BE REMOVABLE (947.03 TYPE-C) TAPE UNLESS THE AREA WILL BE RESURFACED IN THE NEXT WORK PHASE. AFTER COMPLETION OF THE WORK, TEMPORARY MARKINGS SHALL BE REMOVED IN ACCORDANCE WITH 621.134 AND THE ORIGINAL MARKINGS AND RAISED PAVEMENT MARKERS REFLECTORS SHALL BE RESTORED.
- DRUM SPACING ADJACENT TO THE MAINLINE AND ON THE RAMP SHALL BE NOT MORE THAN 20 FT. C - C IN THE AREA FROM THE PHYSICAL GORE TO 300 FT. BEYOND THE MERGE TAPER. CONES HAVING A MINIMUM HEIGHT OF 28 INCHES MAY BE SUBSTITUTED FOR DRUMS FOR DAYTIME LANE CLOSURES. PROVISIONS SHALL BE MADE TO SAFELY STABILIZE THE CONES TO PREVENT THEM FROM BLOWING OVER. IF THIS CANNOT BE ACHIEVED, DRUMS SHALL BE USED. TYPE C STEADY BURNING WARNING LIGHTS SHALL BE ERECTED ON EACH DRUM FOR NIGHT LANE CLOSURE.
- TYPE A FLASHING WARNING LIGHTS ARE REQUIRED ON THE ROAD CONSTRUCTION AHEAD (OW-128-48), MERGE (OW-49R-48), AND THE YIELD AHEAD (OW-46-48) SIGNS WHEN NIGHT LANE CLOSURE IS NECESSARY.
- THE OC-8 SIGNS ARE ONLY REQUIRED FOR LANE CLOSURES OF MORE THAN ONE DAY AND MAY BE OMITTED IF THEY FALL WITHIN THE LIMITS OF A CONSTRUCTION PROJECT.
- FROM THE END OF THE GORE AREA GRADED SHOULDER (POINT A), LOCATE THE PC OF THE CURVE BY MEASURING PERPENDICULAR TO THE RAMP CENTERLINE 10' OF RAMP PAVEMENT, NOT INCLUDING PAVED SHOULDER WIDTH (POINT B). FROM THE END OF THE GORE AREA PAVED SHOULDER (POINT C), LOCATE THE PT OF THE CURVE BY MEASURING 72' FROM POINT C ALONG THE EDGE OF PAVEMENT EXTENDED (POINT D).
- PLACEMENT OF DRUMS SHALL BEGIN AT (POINT E) 160' UP THE RAMP FROM THE PREVIOUSLY LOCATED PC (POINT B) AND AT THE RIGHT EDGE OF RAMP PAVEMENT. FROM THIS POINT A DRUM TAPER SHALL BE PLACED TO THE PC (POINT B) AND THEN ALONG A CURVE AS SHOWN TO THE PT (POINT D) WHERE A 48:1 (MIN.) MERGE TAPER SHALL MEET MAINLINE TRAFFIC CONTROL (POINT F).

(W)	TEMPORARY EDGE LINES WHITE
(A)	LAYOUT POINTS
XXXXXXXXXX	MARKINGS REMOVED

PRELIMINARY  
 PREPARED BY  
 TECHNICAL SUPPORT SECTION  
 ALF H. HANSEN P.E.  
 WALTER C. CHADWICK D.S.

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH 614 AND OTHER APPLICABLE PORTIONS OF THE C & M SPECIFICATIONS AS WELL AS IN ACCORDANCE WITH PART 7 OF ODOTCD. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS TO PROVIDE THIS METHOD OF TRAFFIC CONTROL SHALL BE INCLUDED IN THE LUMP SUM BID FOR 614 MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

REVISED BY:	DATE:
209816	DATE 04/03/90
LANE CLOSURE AT ENTRANCE RAMP PLAN B	
PLAN INSERT SHEET	



# TEMPORARY SIGN SUPPORT REQUIREMENTS

CALC  
BY \_\_\_\_\_  
DATE \_\_\_\_\_

CUYAHOGA COUNTY  
CUY - 90 - 16.24

OHIO  
FHWA REGION 5

137  
245

## CLASS A SUPPORTS FIXED SUPPORTS

- 1) ALL #2, #3, AND #4 POST WHEN INSTALLED SINGLY OR IN PAIRS ACCORDING TO THE DETAILS OF TC-41.20. THE NUMBER OF SUPPORTS SHALL BE AS SHOWN ON TC-52.10 AND TC-52.20.
- 2) THE FOLLOWING POST TYPES, WHEN INSTALLED SINGLY, BY IMBEDMENT OR DRIVING INTO EARTH TO A DEPTH OF ABOUT 42 INCHES:
  - d) - UP TO 4' X 4' WOOD
  - b) - UP TO 2 INCH DIAMETER SCHEDULE 40 STEEL PIPE
  - c) - UP TO 3 INCH DIAMETER SCHEDULE 40 ALUMINUM PIPE
  - d) - UP TO 2 1/4 INCH SQUARE, 12 GAUGE WALL, PUNCHED STEEL POST
  - e) - UP TO 6' X 8' WOOD WITH BREAKAWAY HOLES SHOWN BELOW
- 3) THE FOLLOWING POST TYPES WHEN INSTALLED IN PAIRS WITH LESS THAN 7 FT. BETWEEN POSTS, BY IMBEDMENT OR DRIVING INTO EARTH TO A DEPTH OF ABOUT 42 INCHES:
  - d) - UP TO 4' X 4' WOOD
  - b) - UP TO 2 INCH DIAMETER SCHEDULE 40 STEEL PIPE
  - c) - UP TO 3 INCH DIAMETER SCHEDULE 40 ALUMINUM PIPE
  - d) - UP TO 2 INCH SQUARE, 14 GAUGE WALL, PUNCHED STEEL POST
- 4) FIXED TYPE III BARRICADES:
- 5) ALL BREAKAWAY CONNECTION BEAM SUPPORTS, WHEN INSTALLED ACCORDING TO THE PROPER DETAILS SHOWN ON TC-41.10 WITH A MINIMUM CLEAR DISTANCE BETWEEN SUPPORTS OF 7 FT. FOR SUPPORTS LARGER THAN W6 X 9.
- 6) ANY BREAKAWAY POST OR POST AND CONNECTION WHICH HAS BEEN CRASH TESTED AND APPROVED BY THE FHWA AS SATISFYING THE BREAKAWAY CRITERIA DESCRIBED IN 630.06.

( CONTINUED ON SHEET NO. 138 )

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH 614 AND OTHER APPLICABLE PORTIONS OF THE C & M SPECIFICATIONS AS WELL AS IN ACCORDANCE WITH PART 7 OF THE OMTCD. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS TO PROVIDE THIS METHOD OF TRAFFIC CONTROL SHALL BE INCLUDED IN THE LUMP SUM BID FOR 614 MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

REVISED BY:	DATE:
210510	DATE 05/07/90
TEMPORARY SIGN SUPPORT	
PLAN INSERT SHEET	

WCC

### A. PLACEMENT OF SIGNS WHICH WILL REMAIN MORE THAN ONE DAY:

- 1) LATERAL PLACEMENT TO NEAREST EDGE OF SIGNS SHALL BE AS FOLLOWS:
  - a) ON THE RIGHT SIDE OF THE ROAD FOR APPROACHING TRAFFIC (EXCEPT FOR DUAL MOUNTED SIGNS AND SIGNS DESIGNATED IN THE PLANS FOR LEFT SIDE MOUNTING).
  - b) CURBED ROADWAY - PREFERABLY 2 FT. (MINIMUM 1 FT.) BEHIND FACE OF CURB.
  - c) UNCURBED ROADWAY - 12 FT. FROM EDGE OF TRAFFIC LANE OR 6 FT. FROM EDGE OF PAVED OR USEABLE SHOULDER, WHICHEVER IS GREATER.
  - d) BEHIND GUARDRAIL OR BARRIER - PREFERABLY 2 FT. BEHIND FACE OF GUARDRAIL (MINIMUM 1 FT.) FOR SIGNS ON CLASS A SUPPORTS; 4 FT. FOR CLASS B OR C SUPPORTS 1 FT. BEHIND FACE OF CONCRETE BARRIER UNLESS BARRIER TOP MOUNTING IS REQUIRED BY THE PLAN.
- 2) VERTICAL CLEARANCE OF SIGNS, MEASURED ABOVE ROADWAY ELEVATION; SHALL BE AS FOLLOWS:
  - a) RURAL - 5 FT. WHEN PARKED CARS, CONSTRUCTION EQUIPMENT, ETC WILL NOT OBSCURE SIGN VISIBILITY.
  - b) RURAL AREAS WITH PARKED CARS OR CONSTRUCTION EQUIPMENT - 7 FT.
  - c) URBAN - 7 FT.
  - d) CARE SHALL BE TAKEN TO ASSURE THAT SIGNS WILL NOT BE OBSCURED BY CONSTRUCTION EQUIPMENT, TREES, WEEDS OR OTHER OBSTACLES. BRUSH, WEEDS OR GRASS WITHIN THE RIGHT OF WAY SHALL BE TRIMMED AS NECESSARY. SIGNS SHALL NORMALLY BE VISIBLE TO TRAFFIC 400 TO 600 FT. IN ADVANCE OF THE SIGN.
- 3) SUPPORTS FOR SIGNS WHICH WILL REMAIN IN PLACE MORE THAN ONE DAY SHALL BE FIXED RATHER THAN PORTABLE EXCEPT IN SITUATIONS WHERE THE SIGN MUST REST ON PERMANENT PAVEMENT OR OTHER SURFACE WHICH WOULD BE DAMAGED BY INSERTION OF POST TYPE SUPPORTS.

### B. PLACEMENT OF SIGNS WHICH WILL REMAIN FOR ONE DAY OR LESS:

- 1) SAME AS A-1 ABOVE EXCEPT THAT SIGNS MAY BE PLACED ON THE ROADWAY ONLY IF THEY DO NOT INTRUDE INTO A TRAFFIC LANE IN USE.
- 2) MINIMUM OF 1 FT. ABOVE ROADWAY

### C. CLASSES OF SUPPORTS:

ALL TEMPORARY SIGN SUPPORTS SHALL BE OF THE FOLLOWING TYPES:

#### 1) CLASS A:

SUPPORTS SHALL BE USED FOR EXPOSED LOCATIONS ON HIGHWAYS WHERE TRAFFIC APPROACH SPEEDS OF 40 MPH AND HIGHER ARE ENCOUNTERED. THEY ARE ALSO SUITABLE FOR USE IN ALL OTHER LOCATIONS.

#### 2) CLASS B:

SUPPORTS SHALL BE USED FOR EXPOSED LOCATIONS ON HIGHWAYS WHERE TRAFFIC APPROACH SPEEDS OF LESS THAN 40 MPH ARE ENCOUNTERED. THEY ARE ALSO SUITABLE FOR USE IN ALL APPLICATIONS DEFINED FOR CLASS C SUPPORTS.

#### 3) CLASS C:

SUPPORTS MAY ONLY BE USED WHERE FULLY PROTECTED BY GUARDRAIL, CONCRETE BARRIER AND IN LOCATIONS POSITIVELY PROTECTED FROM TRAFFIC SUCH AS ON RETAINING WALLS OR WHERE TRAFFIC APPROACH SPEEDS ARE LESS THAN 25 MPH.

### D. TRAFFIC APPROACH SPEEDS:

TRAFFIC APPROACH SPEEDS SHALL BE THE LOCALLY POSTED SPEED (NOT ADVISORY SPEED SIGNS) OR THE MEASURED ACTUAL (85TH PERCENTILE) SPEED (IF AVAILABLE) OF APPROACHING TRAFFIC, WHICHEVER IS HIGHER, ADJACENT TO THE SIGN LOCATION.

TABLE

APPROACH SPEED (MPH)	COMPLETELY PROTECTED BY GUARDRAIL OR BARRIER	PARTLY PROTECTED BY GUARDRAIL OR BARRIER *	GREATER THAN 30' FROM EDGE OF PAVEMENT	WITHIN 30' FROM EDGE OF PAVEMENT
40 AND HIGHER	A, B OR C	A OR B	A OR B **	A ONLY
26 TO 39	A, B OR C	A OR B	A OR B	A OR B
0 TO 25	A, B OR C	A, B OR C	A, B OR C	A, B OR C

\* IF SUPPORTS ARE BEHIND GUARDRAIL BUT NOT FULLY 5.5' BEHIND FACE OF RAIL OR IF SIGN IS NOT 1' BEHIND FACE OF CONCRETE BARRIER.

\*\* 30' CRITERION IS BASED UPON STRAIGHT ROADWAY AND A SLOPE OF 6:1 OR FLATTER. SUPPORTS ON THE OUTSIDE OF CURVES OR LOCATED DOWN A SLOPE (STEEPER THAN 6:1) WILL REQUIRE USE OF CLASS A SUPPORTS.

### E. BALLASTING

BALLASTING OF PORTABLE SUPPORTS SHALL BE WITH SANDBAGS PLACED WITHIN 1 FT. OF THE GROUND. IN NO CASE SHALL HARD OBJECTS BE USED FOR BALLAST.

### F. STRENGTH OF SIGN SUPPORTS

THE CONTRACTOR SHALL CHOOSE SIGN SUPPORTS OF ADEQUATE STRENGTH AND WITH ADEQUATE FOUNDATIONS AND ANCHORAGE TO SUPPORT THE SIGN SIZES ERECTED. PROPRIETARY DEVICES SHALL NOT BE LOADED BEYOND THE LIMITS RECOMMENDED BY THE MANUFACTURER. SLIP BASE TYPE BREAKAWAY BEAM CONNECTIONS SHALL BE AT LEAST PARTIALLY EMBEDDED IN CONCRETE CONSISTING OF A 1 FT. DEEP BY 12" DIAMETER COLLAR. SIGN SUPPORTS WHICH FAIL UNDER TYPICAL WIND LOAD CONDITIONS SHALL BE IMMEDIATELY MODIFIED OR REPLACED WITH A SUPPORT OF ADEQUATE STRENGTH.

### G. PROHIBITED SUPPORTS

THE FOLLOWING SUPPORT TYPES SHALL NOT BE PERMITTED ON PROJECTS:

- 1) SUPPORTS FABRICATED FROM AUTOMOTIVE AXLE DIFFERENTIAL ASSEMBLIES AND SIMILARLY HEAVY ASSEMBLIES WHICH CANNOT BE CONSIDERED BREAKAWAY TYPE.
- 2) SUPPORTS CONSISTING OF VERTICAL POSTS WITH ANGLED BRACES MADE FROM DRIVEPOST OR OTHER RIGID ELEMENTS.



CALC BY \_\_\_\_\_  
 DATE \_\_\_\_\_  
 CHKD BY \_\_\_\_\_  
 DATE \_\_\_\_\_

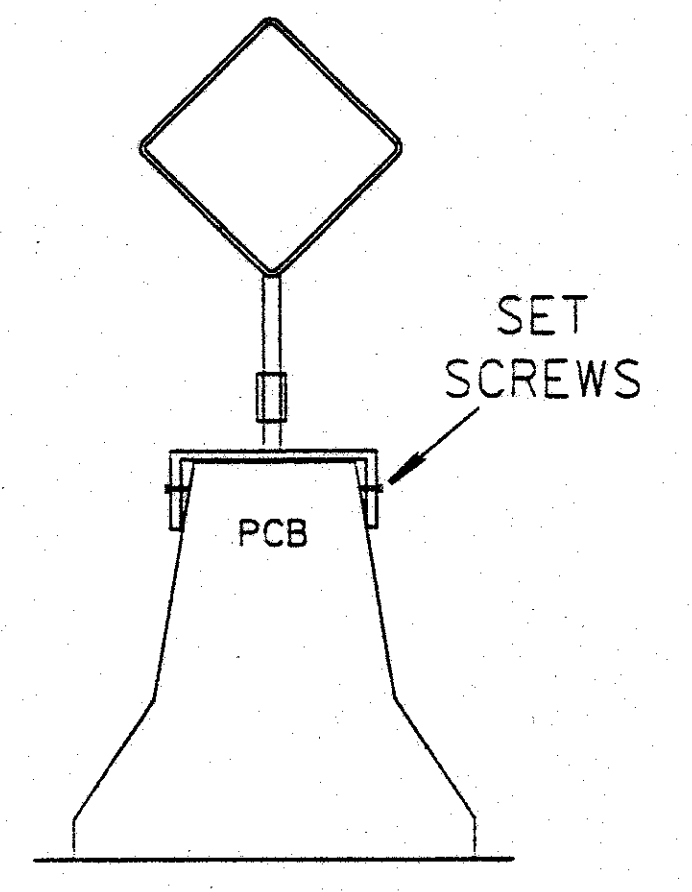
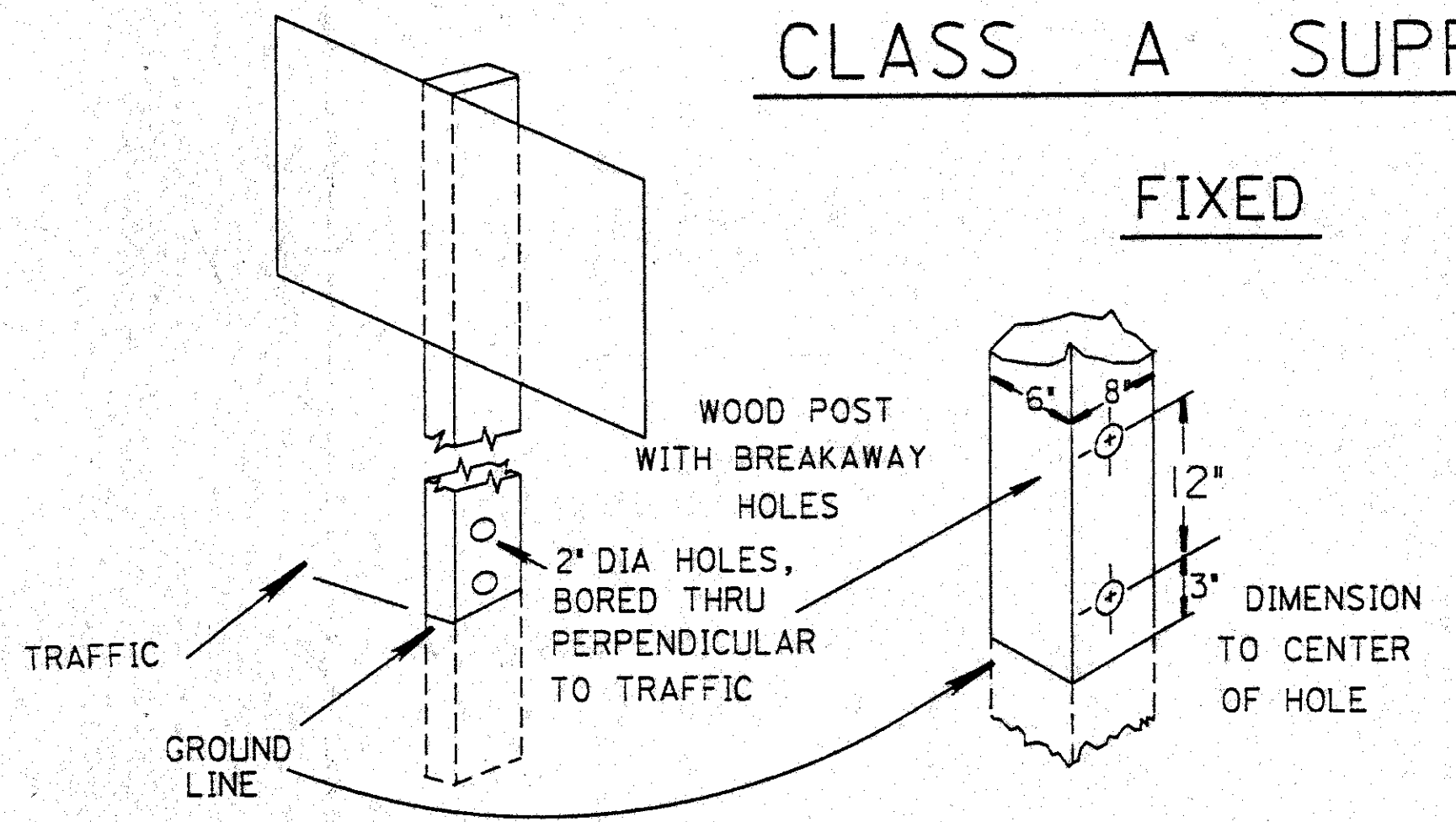
CUYAHOGA COUNTY  
 CUY - 90 - 16.24

OHIO  
 FHWA REGION 5

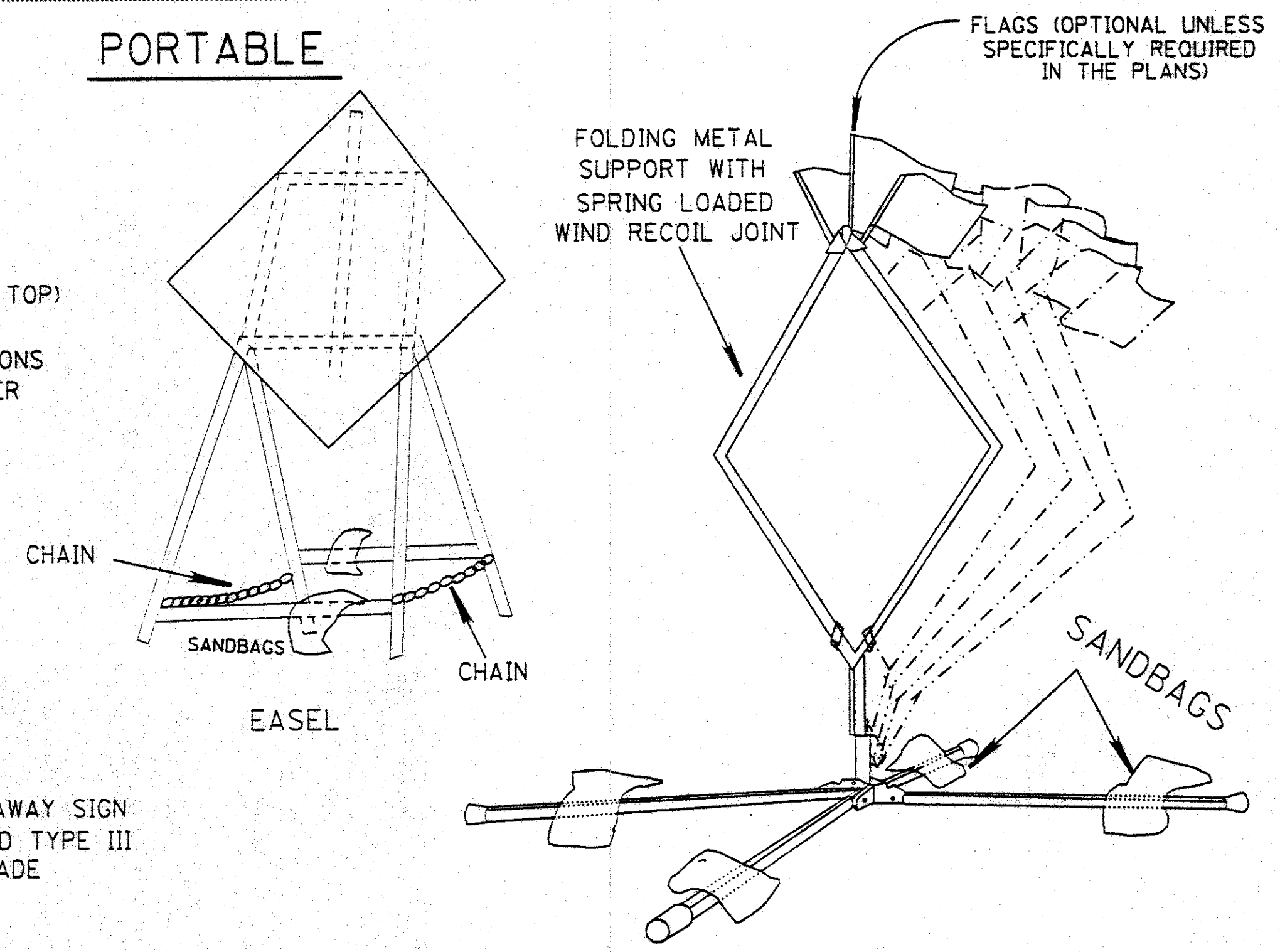
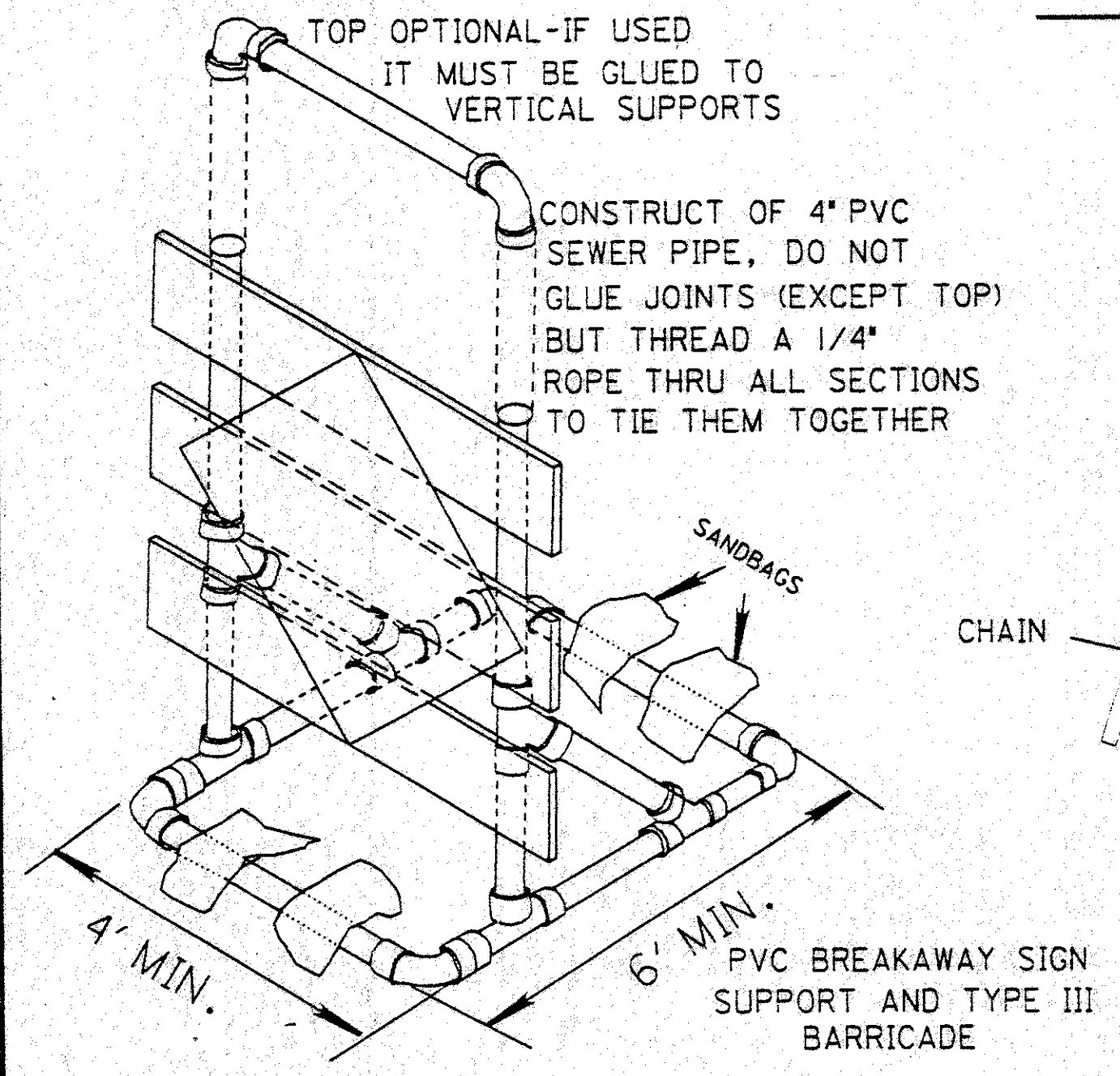
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 245

### CLASS A SUPPORTS

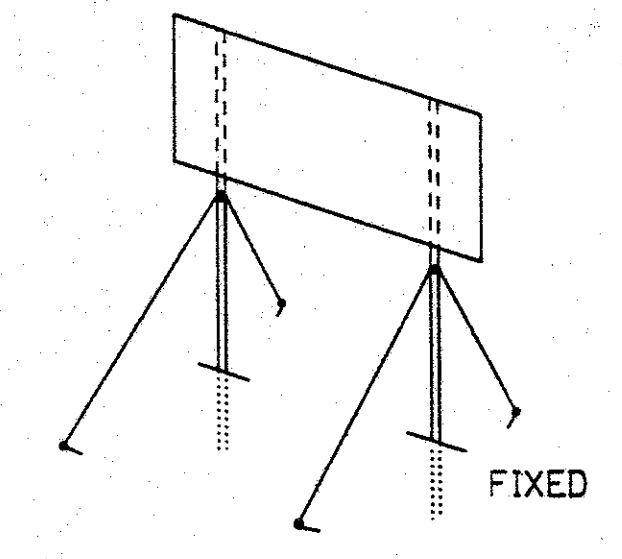
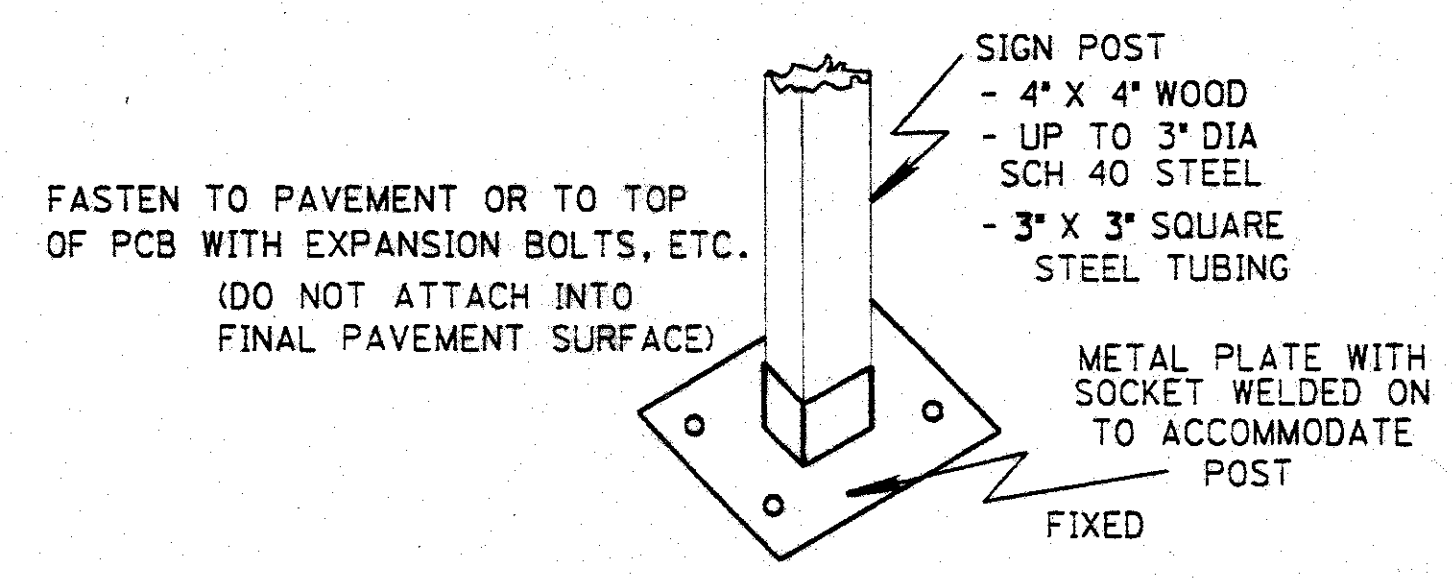
#### FIXED



#### PORTABLE



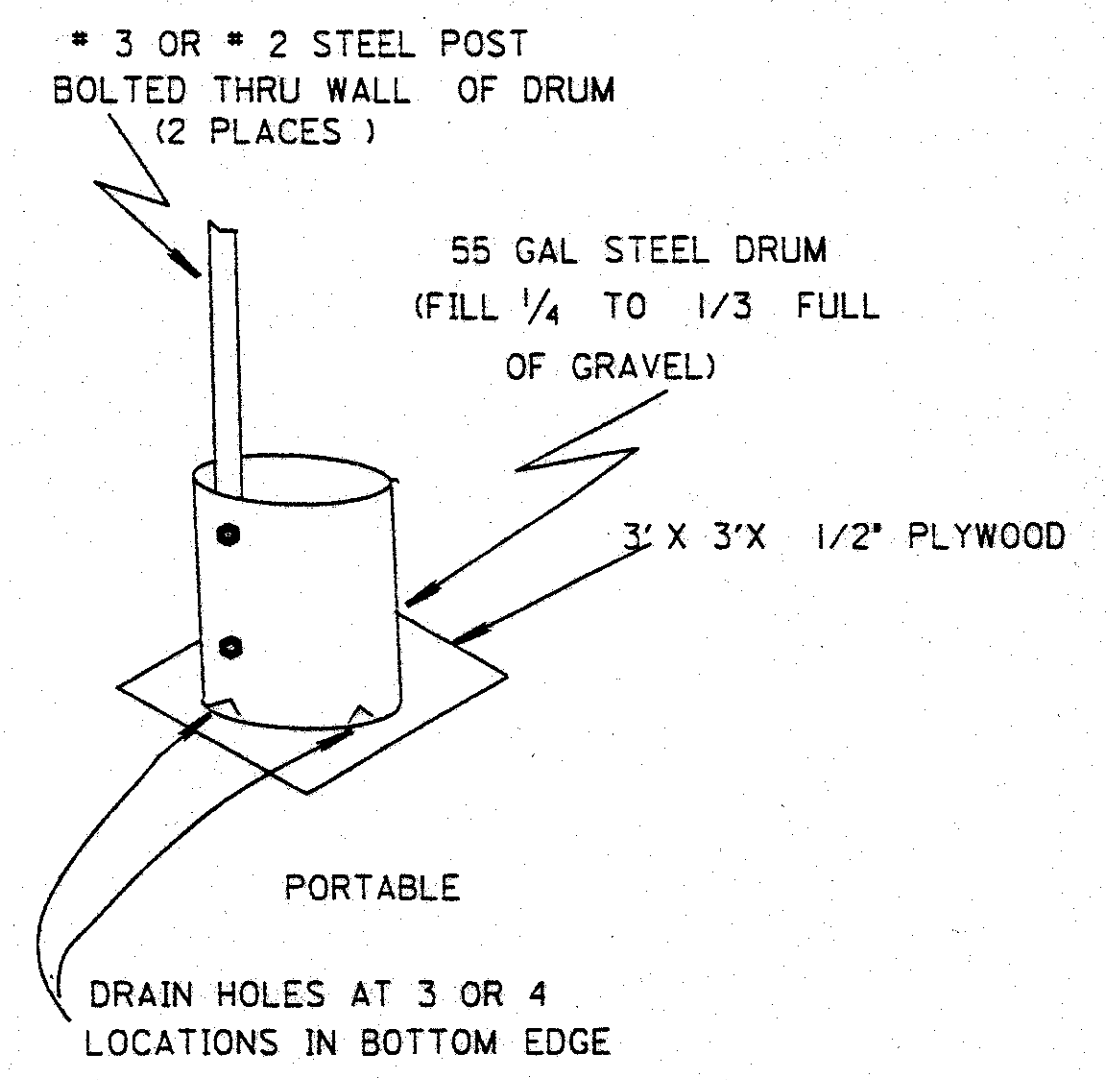
### CLASS B SUPPORTS



ANY CLASS A SIGN POST WITH GUY WIRES ADDED TO INCREASE SIGN CARRYING ABILITY. (GUY WIRES SHALL NOT BE HEAVIER THAN 1/8" DIA. BRAIDED CABLE. GUY ANCHORS SHALL NOT EXTEND MORE THAN 6' ABOVE GROUND SURFACE).

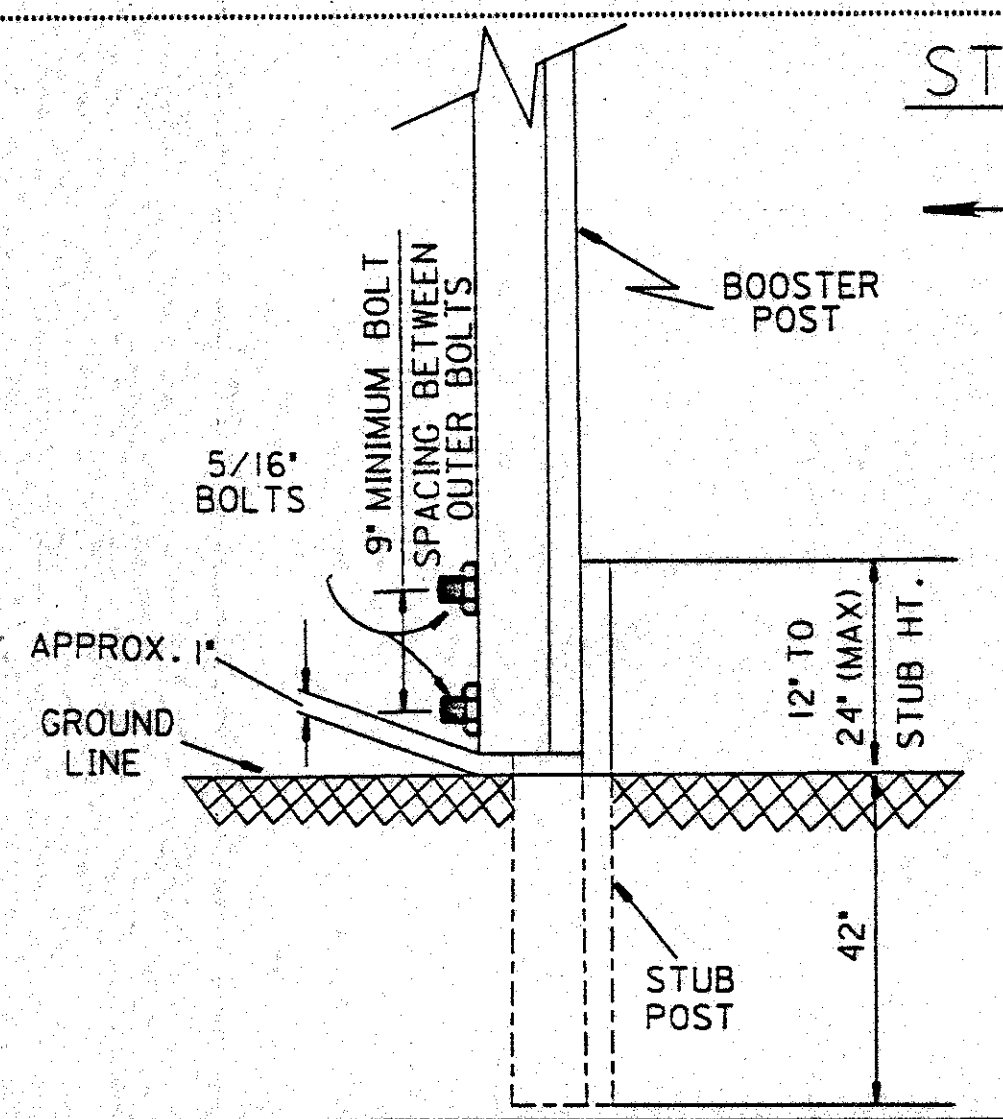
### CLASS C SUPPORTS

1. ALL BEAM TYPE SUPPORTS WITHOUT BREAKAWAY CONNECTIONS.
2. SUPPORTS SIMILAR TO BUT LARGER THAN PERMITTED FOR CLASS A OR B.
3. THE STEEL DRUM(S) SHOWN BELOW MAY BE USED ONLY WHEN LOCATED BEHIND GUARDRAIL OR BARRIER.



ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH 614 AND OTHER APPLICABLE PORTIONS OF THE C & M SPECIFICATIONS AS WELL AS IN ACCORDANCE WITH PART 7 OF THE OMTCD. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS TO PROVIDE THIS METHOD OF TRAFFIC CONTROL SHALL BE INCLUDED IN THE LUMP SUM BID FOR 614 MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

### STUBBING STANDARD



#### NOTES

1. FOR USE WITH #3 POST OR SMALLER ONLY
2. BOLTS SHALL BE STEEL OR ALUMINUM
3. A MINIMUM OF TWO FASTENERS SHALL BE USED PER ASSEMBLY
4. BOOSTER POST SHALL BE MOUNTED BEHIND STUB POST
5. BOOSTER POST SHALL BE THE SAME OR 1 LB./FT. LESS THAN STUB POST

REVISED BY:	DATE:
210511	DATE
TEMPORARY SIGN SUPPORT	
PLAN INSERT SHEET	
05/07/90	



## TRAFFIC CONTROL

REMOVAL OF EXISTING ITEMS

ALL 630 REMOVAL ITEMS NOT SPECIFICALLY INCLUDING STORAGE OR REERECTION SHALL BECOME THE PROPERTY OF THE CONTRACTOR. REMOVAL AND DISPOSAL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

ITEM 630 - SIGN LOCATIONS

SIGN LOCATIONS OF EXISTING AND PROPOSED SIGNS ON THE PLANS ARE APPROXIMATE. THE CONTRACTOR PRIOR TO ERECTION OF ALL SIGN SUPPORTS (POSTS, BEAMS, AND OVERHEADS) SHALL STAKE THE PROPOSED LOCATION, INCLUDING OFFSET. OVERHEAD SUPPORT LOCATIONS SHALL ALSO INCLUDE FOUNDATION ELEVATIONS. THE ENGINEER SHALL APPROVE ALL SUPPORT LOCATIONS AND MAY ADJUST THE LOCATION TO CORRECT SLOPE AND SUBSURFACE DIFFICULTIES, SIGN SIGHT DISTANCE OBSTRUCTIONS, IMPROVE SAFETY AND ELIMINATE OVERHEAD OBSTACLES.

PAYMENT FOR STAKING SHALL BE INCIDENTAL TO THE VARIOUS SIGN SUPPORT ITEMS.

630 REMOVAL OF SIGN SERVICE

INCIDENTAL TO THE REMOVAL, RELOCATION OR MODIFICATION OF A SIGN SUPPORT IN ACCORDANCE WITH SPECIFICATION 630.12, SIGN SERVICE TO THE SUPPORT SHALL ALSO BE REMOVED. SIGN SERVICE CABLES SHALL BE DISCONNECTED AT THE SERVICE PULLBOX AND REMOVED. CONNECTION OF THE REMAINING CABLES SHALL CONFORM TO 625.17 TO INSURE CIRCUIT CONTINUITY.

TYPICAL PLACEMENT OF GF SERIES SIGNS

FOR DETAILS ON THE PLACEMENT OF THE GF SERIES SIGNS MOUNTED IN THE GORE, SEE SHEET 212.

ITEM - 630 REMOVAL OF OVERHEAD SIGN SUPPORT AND STORAGE

THE CONTRACTOR SHALL REMOVE AND DISPOSE OF THE EXISTING SPAN WIRE AND ACCOMPANYING HARDWARE ATTACHED TO THE EXISTING UTILITY AND STRAIN POLES. THE EXISTING STRAIN POLE LOCATED AT STA. 5+00 (E.14TH ST) SHALL BE CAREFULLY REMOVED AND STORED ON THE PROJECT SITE TO BE PICKED UP BY THE CITY OF CLEVELAND FORCES. THE FOUNDATION SHALL BE REMOVED IN ACCORDANCE WITH 630.12. SEE SHEET 185 FOR LOCATION.

ITEM 630 - SIGN SUPPORT ASSEMBLY, POLE MOUNTED, AS PER PLAN "A"

THIS ITEM SHALL INCLUDE ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO PROVIDE AND INSTALL THE MEDIAN MOUNTED SIGN POST AS DETAILED ON SHEET 213. SIGNS SHALL BE PAID FOR SEPARATELY.

ITEM 630 - SIGN SUPPORT ASSEMBLY, POLE MOUNTED, AS PER PLAN "B"

THIS ITEM SHALL INCLUDE ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO PROVIDE AND INSTALL POLE MOUNTED SIGN SUPPORTS AS DETAILED ON SHEET 214. SIGNS SHALL BE PAID FOR SEPARATELY.

ITEM 625 - PULL BOX, 713.08, 18", AS PER PLAN

THIS ITEM SHALL INCLUDE ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO PROVIDE A PULL BOX WITH THE DIMENSIONS AS DETAILED ON SHEET 215 OF THE PLANS. ALL OTHER REQUIREMENTS OF HL-30.11 SHALL APPLY.

ITEM 630 - REMOVAL OF OVERHEAD SIGN SUPPORT AND RE-ERECTION, TYPE TC-18.26, AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF ALL LABOR, EQUIPMENT AND MATERIALS NECESSARY TO REMOVE AND REMOUNT AN EXISTING OVERPASS STRUCTURE MOUNTED SIGN SUPPORT ON TO NEW STAINLESS STEEL ANCHORS.

SEQUENCE OF WORK SHALL BE AS FOLLOWS:

- 1) DISCONNECT ANY EXISTING LIGHTING CIRCUITS IF NECESSARY.
- 2) PROVIDE TEMPORARY CRANE SUPPORT OF THE SIGN AND SUPPORT.
- 3) REMOVE ALL EXISTING EXPANSION ANCHORS AND DISCONNECT ANY BEAM CONNECTIONS.
- 4) RELOCATE ALL SUPPORTS Laterally 6" TO 12" FROM THEIR EXISTING LOCATIONS. (EXACT LOCATION AS APPROVED BY THE ENGINEER)
- 5) INSTALL NEW 6 1/2" X 1/2" STAINLESS STEEL THREADED ANCHOR RODS WITH A MINIMUM EMBEDMENT OF 4 1/4". THE GROUT AND HOLES SHALL BE AS PER SUPPLEMENTAL SPECIFICATIONS 852 AND 952. GROUT MATERIAL SHALL BE LIMITED TO SUPPLEMENTAL SPECIFICATION 952 EPOXY RESIN ONLY.
- 6) RE-ERECT THE SIGN SUPPORT USING NEW STAINLESS STEEL NUTS AND WASHERS.
- 7) GROUT THE EXPANSION ANCHOR HOLES FLUSH WITH A PORTLAND CEMENT MORTAR GROUT.
- 8) RECONNECT ANY BEAM CONNECTIONS (THESE MAY BE SHIMMED OR BENT OR REPLACED IF NECESSARY TO AVOID REPLACEMENT OF THE BEAM WEB CONNECTION)
- 9) RECONNECT LIGHTING CIRCUIT IF NECESSARY.

SEE SHEETS 164-168 FOR ESTIMATED QUANTITIES.

TRAFFIC CONTROL STANDARD CONSTRUCTION DRAWINGS

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

ITEM 630 - OVERHEAD SIGN SUPPORT, TYPE TC-15.115, 149' SPAN, AS PER PLAN

THIS ITEM OF WORK SHALL INCLUDE ALL MATERIALS, LABOR AND EQUIPMENT NECESSARY TO INSTALL A PROPOSED OVERHEAD SIGN SUPPORT, TYPE 15.115, 149' SPAN, AS PER PLAN AS NOTED BELOW AND IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWING TC-15.115.

THE LOCATION OF THE PROPOSED SIGN SUPPORT (STA. 74+25) REQUIRES MOUNTING THE LEFT END FRAME ON TOP OF AN EXISTING RETAINING WALL. SEE SHEET 210 FOR DETAILS AND DESCRIPTION OF THE INSTALLATION OF THE ANCHOR BOLTS. THE CONTRACTOR SHALL TAKE EXTREME CARE NOT TO DAMAGE AN EXISTING 2" CONDUIT LOCATED IN THE RETAINING WALL WHICH SUPPLIES POWER FOR NEARBY TOWER LIGHTING.

TRUSS CHORDS SHALL EXTEND THE FULL 18 INCHES BEYOND THE HORIZONTAL DIAGONAL AT EACH END FRAME AS CALLED FOR IN STANDARD CONSTRUCTION DRAWING TC-15.115.

PAYMENT FOR THIS WORK SHALL INCLUDE THE NEW BOX TRUSS, END FRAMES, ANCHOR BOLTS FOR THE RETAINING WALL, CORE DRILLING THE HOLES AND GROUTING OF ANCHOR BOLTS, MISCELLANEOUS HARDWARE, AND REMOVAL OF EXISTING ANCHOR BOLTS AS SHOWN IN THE PLANS.

SEE SHEET 165 FOR QUANTITIES.

ITEM 631 - REMOVAL OF DISCONNECT SWITCH ENCLOSURE AND DISPOSAL

INCIDENTAL TO THE REMOVAL OF DISCONNECT SWITCH ENCLOSURE, THE DISCONNECT SWITCH SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR.

ITEM 631 - REMOVAL OF LUMINAIRE AND DISPOSAL

INCIDENTAL TO THE REMOVAL OF THE LUMINAIRE, THE WIRING, BALLAST, AND THE MOUNTING BRACKET ASSEMBLY SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR.

ITEM 631 - BALLAST, BY TYPE, INTEGRAL

BALLAST FOR MERCURY VAPOR LUMINAIRES SHALL BE MOUNTED WITHIN THE LUMINAIRE HOUSING (INTEGRAL) OR MOUNTED IN A WEATHERPROOF HOUSING ATTACHED TO OR BESIDE THE LUMINAIRE (CONTIGUOUS). BALLAST HOUSINGS SHALL BE OF CORROSION RESISTANT MATERIALS.

INTEGRAL BALLASTS SHALL BE USED TO LIGHT ALL NON-STRUCTURALLY MOUNTED OVERHEAD SIGNS AS SHOWN IN THE PLANS.

FORMER CONSTRUCTION PLANS

FOR EXISTING SIGNING DETAILS REFER TO APPLICABLE PLANS LISTED BELOW:

COUNTY, ROUTE & SECTION

PROJECT NO.

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121-79

COPIES OF THESE PLANS ARE AVAILABLE FOR REFERENCE THROUGH DISTRICT 12 OF THE OHIO DEPARTMENT OF TRANSPORTATION.

631 ENCLOSURE PADLOCKS

DISCONNECT SWITCH ENCLOSURES FURNISHED IN ACCORDANCE WITH SPECIFICATION 631.08 SHALL INCLUDE A PADLOCK EQUAL TO MASTER NO. 4BKA OR WILSON BOHANNON 660, WITH LOCK BODY OF BRONZE OR BRASS, AND KEYING IN ACCORDANCE WITH THE FOREGOING SPECIFICATION.

631 BALLAST ENCLOSURE MOUNTING BRACKET ASSEMBLY, REMOTE BALLAST

BALLAST ENCLOSURE MOUNTING BRACKET ASSEMBLIES SHALL BE FURNISHED FOR INSTALLATION ON CONCRETE STRUCTURES BY EXPANSION BOLTS. BRACKETS SHALL BE IN ACCORDANCE WITH PLAN DETAILS AND GALVANIZED IN ACCORDANCE WITH 711.02. BRACKETS SHALL BE TYPE B FOR OVERPASS STRUCTURES AS DETAILED IN THE PLANS AND ON TC-32.11.

PAYMENT WILL BE AT THE CONTRACT UNIT PRICE FOR EACH ASSEMBLY WHICH SHALL INCLUDE ALL NECESSARY BRACKETS, FIELD DRILLING AND HARDWARE FURNISHED AND IN PLACE.

ITEM 630 - OVERPASS STRUCTURE MOUNTED SIGN SUPPORT, TYPE TC-18.26, DESIGN 4 AS PER PLAN

IN LIEU OF THE ANCHOR BOLTS SPECIFIED IN STANDARD CONSTRUCTION DRAWING TC-18.26, THE CONTRACTOR SHALL USE 6 1/2" X 1/2" STAINLESS STEEL THREADED ANCHOR RODS WITH A MINIMUM EMBEDMENT OF 4 1/4". THE GROUT AND HOLES SHALL BE AS PER SUPPLEMENTAL SPECIFICATIONS 852 AND 952. GROUT MATERIAL SHALL BE LIMITED TO SUPPLEMENTAL SPECIFICATION 952 EPOXY RESIN ONLY.

SEE SHEET 166 FOR ESTIMATED QUANTITY.



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## 631 BALLAST ENCLOSURE, REMOTE BALLAST

BALLAST ENCLOSURES SHALL BE FURNISHED AND INSTALLED AS DETAILED IN THE PLANS. THE ENCLOSURE SHALL BE MOUNTED ON BRACKETS WHICH ARE SEPARATELY FURNISHED FOR OVERPASS STRUCTURES.

ENCLOSURES SHALL BE WEATHERPROOF NEMA TYPE 4 IN ACCORDANCE WITH THE PLAN DETAILS, FABRICATED OF 0.06 INCH STEEL GALVANIZED IN ACCORDANCE WITH 711.02. THE FRONT COVER SHALL BE REMOVABLE AND BEAR A WARNING SIGN CONFORMING TO 713.19, PARAGRAPH 16D. CONDUIT FITTINGS AND ATTACHMENT HARDWARE SHALL BE FURNISHED WITH THE ENCLOSURE. ENCLOSURES SHALL CONTAIN A STEEL PANEL COMPLYING WITH 713.19, PARAGRAPH 16E FOR INSTALLING TERMINAL BLOCKS AND BUSBARS, RATED AT 600 VOLTS AND PROVIDED WITH MARKER STRIPS AND CAPABLE OF TERMINATING THE WIRE GAGE USED. BALLASTS SHALL BE ARRANGED IN THE ENCLOSURE IN THE SAME RELATIVE POSITION AS THEIR ASSOCIATED LUMINAIRE ON THE SIGN SUPPORT STRUCTURE.

ENCLOSURES SHALL BE OF SIZE TYPE B FOR OVERPASS STRUCTURES AS DETAILED IN THE PLANS.

PAYMENT WILL BE AT THE CONTRACT UNIT PRICE FOR EACH ENCLOSURE, FURNISHED, IN PLACE, COMPLETE AND READY FOR SERVICE.

## ITEM 802-BARRIER REFLECTORS, TYPE A OR B

THIS ITEM SHALL BE USED TO PLACE THE FINAL BARRIER REFLECTORS. THE EXISTING TEMPORARY BARRIER REFLECTORS SHALL REMAIN AND THE PROPOSED REFLECTORS SHALL BE USED IN ALL OTHER AREAS. FINAL SPACINGS FOR ALL BARRIER REFLECTORS SHALL MATCH S.S. 802.

THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM	DESCRIPTION	QTY.	UNIT
802	BARRIER REFLECTORS, TYPE A	135	EACH
802	BARRIER REFLECTORS, TYPE B	165	EACH

## ITEM 862 - RAISED PAVEMENT MARKER

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY TO REPLACE RAISED PAVEMENT MARKERS WHICH WERE REMOVED AS PART OF THIS PROJECT. THE CONTRACTOR SHALL NOT BE PERMITTED TO CLOSE ADDITIONAL LANES AS A SEPARATE OPERATION TO INSTALL RAISED PAVEMENT MARKERS. INSTALLATION SHALL COINCIDE WITH FINAL PAVEMENT MARKING APPLICATIONS. LOCATIONS OF RAISED PAVEMENT MARKERS SHALL BE AS PER STANDARD CONSTRUCTION DRAWINGS TC-65.10 AND TC-65.11.

ITEM	DESCRIPTION	QUANTITY	UNIT
862	RAISED PAVEMENT MARKER	1,144	EACH

## ITEM 603 - UNDERDRAIN FOR PULL BOXES

REFERENCE IS MADE TO STANDARD DRAWING HL-30.11 FOR DETAILS OF DRAINING PULL BOXES. UNDERDRAINS FOR PULL BOXES SHALL BE USED AS DIRECTED BY THE ENGINEER AND SHALL BE PROVIDED WHEREVER POSSIBLE. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS OUTLINED ABOVE TO DRAIN BOTH EXISTING AND PROPOSED PULL BOXES:

ITEM 603 - 4" CONDUIT, TYPE E	100 L.F.
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## PROTECTIVE COATING OF OVERHEAD SIGN SUPPORT SECTIONS, GENERAL

OVERHEAD SIGN SUPPORTS CAN BE SEPARATED INTO MAJOR SECTIONS SUCH AS END FRAMES, TRUSSES, VERTICAL POLES, AND CANILEVER ARMS. FOR THE IMPLEMENTATION OF THIS WORK ITEM IT WILL BE BENEFICIAL TO REFER TO THE MAJOR SECTIONS OF THE OVERHEAD SIGN SUPPORTS RATHER THAN THE WHOLE SUPPORT. MORE SPECIFIC INSTRUCTIONS AND FLEXIBILITY CAN BE GIVEN BASED UPON THE UNIT OF MEASURE AND PAYMENT PER MAJOR SUPPORT SECTION.

THE PROTECTIVE COATING OF OVERHEAD SIGN SUPPORT SECTIONS SHALL BE A FOUR PART PROCESS TO INCLUDE SURFACE PREPARATION FOLLOWED BY A THREE STEP COATING SYSTEM. THIS THREE STEP COATING SYSTEM SHALL CONSIST OF AN EPOXY-PRIME COAT, AN EPOXY INTERMEDIATE COAT, AND AN URETHANE TOP COAT, WITH EACH COAT A DIFFERENT COLOR. FOR AN EXPLANATION OF THE MATERIALS TO BE USED SEE NOTE ENTITLED "COATING SYSTEM." THE PURPOSE OF THIS COATING IS TO PROVIDE PROTECTION FOR NEW (UNWEATHERED) AND OLDER WEATHERED GALVANIZED STEEL SUPPORT SECTIONS FROM CORROSIVE ELEMENTS IN THE ATMOSPHERE. COATING AND SURFACE PREPARATION OF NEW GALVANIZED SUPPORT SECTIONS SHOULD BE DONE BY THE MANUFACTURER.

THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO COMPLY WITH POLLUTION LAWS, RULES OR REGULATIONS OF FEDERAL, STATE, OR LOCAL AGENCIES. THE COATING MATERIALS SPECIFIED FOR THE WORK CAN BE HAZARDOUS TO THE HEALTH OF THE APPLICATOR IF NOT APPLIED AS PER THE MANUFACTURERS INSTRUCTIONS. THE CONTRACTOR SHALL FOLLOW THE DATA SHEET AND THE LABEL ON THE PAINT CONTAINERS. THESE PRECAUTIONS SHALL INCLUDE THE USE OF RESPIRATORS AND EYE AND SKIN PROTECTION AS SPECIFIED. THE CONTRACTOR SHALL ALSO INSURE THAT HIS PAINTING OPERATIONS AND LOCATIONS WILL NOT ENDANGER OR ADVERSELY AFFECT THE PUBLIC IN GENERAL.

THE PROPOSED CLEANING AND COATING OPERATIONS SHALL BE PERFORMED ONLY WHEN THE AMBIENT TEMPERATURE IS 50 DEGREES F OR ABOVE. ALL STEEL SURFACES OF TRUSS AND END FRAMES INCLUDING THE WELDED AREAS, BALLAST ENCLOSURE MOUNTING BRACKET AND THE BASE PLATES ARE TO BE CLEANED AND COATED. BEFORE EACH COATING IS APPLIED, IT SHALL BE MIXED WITH AN APPROVED POWER, MECHANICAL MIXER TO A UNIFORM CONSISTANCY WHICH SHALL BE MAINTAINED DURING ITS APPLICATION. EACH COAT SHALL BE APPLIED IN A WORKMANLIKE MANNER AS A CONTINUOUS FILM OF UNIFORM THICKNESS WHICH IS FREE OF HOLIDAYS, PORES, RUNS OR SAGS. ALL COATS SHALL BE APPLIED BY BRUSH. THINNING OF PAINT IS STRICTLY PROHIBITED. PAINT NOT CAPABLE OF BEING APPLIED AS SPECIFIED SHALL NOT BE USED. THE COATING SHALL PENETRATE ALL JOINTS AND CONNECTIONS. THE ENGINEER SHALL BE NOTIFIED 24 HOURS PRIOR TO ANY CLEANING OR COATING OPERATIONS SO THAT INSPECTION SERVICES CAN BE PROVIDED.

## COATING SYSTEM

THE COATING SYSTEM SHALL CONSIST OF A POLYAMIDE-CURED EPOXY PRIME COAT, A POLYAMIDE-CURED EPOXY INTERMEDIATE COAT AND AN ALIPHATIC POLYURETHANE TOP COAT. THE COATING MATERIALS USED SHALL BE THOSE AS LISTED FROM ONE OF THE FOLLOWING MANUFACTURERS OR AN APPROVED EQUAL.

- AMERON  
210 NORTH BERRY STREET  
BREA, CALIFORNIA 92621  
LOCAL TELEPHONE CONTACT: (216) 896-3602  
PRIME COAT: AMERCOAT 71  
INTERMEDIATE COAT: AMERLOCK 400 (LIGHT GREY)  
TOP COAT: AMERCOAT 450 HS (MEDIUM GREY)
- GLIDDEN COATINGS AND RESINS  
801 CANTERBURY RD.  
WESTLAKE, OHIO 44145  
LOCAL TELEPHONE CONTACT: (216) 835-7167  
PRIME COAT: GLID-GUARD EPOXY CHROMATE METAL PRIMER NO. 5251/5252 (OLIVE GREEN)  
INTERMEDIATE COAT: GLID-GUARD EPOXY CHEMICAL (LIGHT GREY) RESISTANT FINISH NO. 5240 SERIES  
TOP COAT: GLID-THANE ONE ALIPHATIC POLYURETHANE (MED. GREY) COATINGS NO. 6100 SERIES
- PORTER PAINT CO.  
400 SOUTH 13TH STREET  
LOUISVILLE, KY 40201  
LOCAL TELEPHONE CONTACT: (216) 562-6709  
PRIME COAT: PORTER PAINTS MCR 4300  
INTERMEDIATE COAT: PORTER PAINTS MCR 4300  
TOP COAT: PORTER PAINTS HYTHANE
- POLY-CARB  
33095 BAINBRIDGE ROAD  
P.O. BOX 39278  
SOLON, OHIO 44139  
LOCAL TELEPHONE CONTACT: (216) 248-1223  
PRIME COAT: MARK-60 (ULTRAPOX)  
INTERMEDIATE COAT: MARK-60 (ULTRAPOX) (LIGHT GREY)  
TOP COAT: MARK-73 (ULTRA-KOTE) (MEDIUM GREY)
- SHERWIN WILLIAMS COMPANY  
761 BETA DRIVE  
MAYFIELD VILLAGE, OHIO 44143  
LOCAL TELEPHONE CONTACT: (216) 461-8287  
PRIME COAT: TILE-CLAD II HI-BILD PRIMER  
INTERMEDIATE COAT: HI-SOLIDS CATALYZED EPOXY (PURE WHITE) (SLATE GREY)  
TOP COAT: HI-BILD ALIPHATIC POLYURETHANE ENAMEL

ALL THREE COATS OF THE SYSTEM SHALL BE MANUFACTURED BY THE SAME COMPANY TO INSURE COMPATIBILITY AMONG COATS.



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## SURFACE PREPARATION, NEW SUPPORT SECTIONS

NEW UNWEATHERED GALVANIZED SUPPORT SECTIONS SHOULD HAVE THEIR SURFACE PREPARATION AS WELL AS THEIR PROTECTIVE COATING DONE AT THE MANUFACTURER OF THE SUPPORT SECTIONS.

THE SUPPORT SECTIONS SHALL BE PREPARED FOR COATING BY SSPC-SP1 FOLLOWED BY SSPC-SP7 (SOLVENT CLEANING FOLLOWED BY A BRUSH BLAST). BEFORE THE PREPARED SURFACE DEGRADES FROM THE PRESCRIBED STANDARDS, THE PRIME COAT SHALL BE APPLIED. IN EVERY CASE, THE SURFACE SHALL BE COATED WITH THE EPOXY PRIME COAT ON THE SAME DAY OF SURFACE PREPARATION. CAREFUL HANDLING AND STORAGE WILL BE REQUIRED TO PREVENT ANY SCRAPING, MARRING OR OTHER DAMAGE TO THE PREPARED SURFACE.

PAYMENT SHALL INCLUDE ALL LABOR, EQUIPMENT, HANDLING, TRANSPORTATION COSTS AND MATERIALS NECESSARY TO ACCOMPLISH THIS ITEM OF WORK PER MAJOR SUPPORT SECTION.

BASIS OF PAYMENT WILL BE AS FOLLOWS:

ITEM SPECIAL - SURFACE PREPARATION, NEW SUPPORT SECTIONS AT CONTRACT BID PRICE PER EACH MAJOR SUPPORT SECTION.

## SURFACE PREPARATION, EXISTING SUPPORT SECTIONS

EXISTING, WEATHERED GALVANIZED SUPPORT SECTIONS SHOULD HAVE THEIR SURFACE PREPARATION AS WELL AS THEIR PROTECTIVE COATING DONE UNDER CONDITIONS OF TEMPERATURE AND HUMIDITY WITHIN THE SAME RANGE AS SPECIFIED BY THE MANUFACTURER OF THE EPOXY-PRIME COAT MATERIAL TO BE USED IMMEDIATELY AFTER THIS CLEANING OPERATION. THE SUPPORT SECTIONS SHALL BE PREPARED FOR COATING BY SSPC-SP1 FOLLOWED BY SSPC-SP10 (SOLVENT CLEANING FOLLOWED BY A COMMERCIAL BLAST CLEANING.) BEFORE THE PREPARED SURFACE DEGRADES FROM THE PRESCRIBED STANDARDS, THE PRIME COAT SHALL BE APPLIED. IN EVERY CASE, THE SURFACE SHALL BE COATED WITH THE EPOXY PRIME COAT ON THE SAME DAY AS THE SURFACE PREPARATION. CAREFUL HANDLING AND STORAGE WILL BE REQUIRED TO PREVENT ANY SCRAPING MARRING, OR OTHER SURFACE DAMAGE TO THE PREPARED SURFACE.

PAYMENT SHALL INCLUDE ALL LABOR, EQUIPMENT, HANDLING, TRANSPORTATION COSTS AND MATERIALS NECESSARY TO ACCOMPLISH THIS ITEM OF WORK PER MAJOR SUPPORT SECTION.

BASIS OF PAYMENT WILL BE AS FOLLOWS:

SPECIAL: SURFACE PREPARATION, EXISTING SUPPORT SECTIONS AT CONTRACT BID PRICE PER EACH MAJOR SUPPORT SECTIONS.

## COATING, EPOXY-PRIME COAT, SUPPORT SECTIONS

THIS ITEM SHALL CONSIST OF THE APPLICATION OF ONE (1) COAT OF AN EPOXY PRIMER TO SUPPORT SECTIONS. THE TOTAL DRY FILM THICKNESS OF THIS COAT SHALL BE BETWEEN 1.5 TO 2.0 MILS. IF MORE THAN ONE PASS IS NECESSARY TO OBTAIN THE REQUIRED MIL THICKNESS THAT COST SHALL BE BORNE BY THE CONTRACTOR. THE COLOR OF THIS COAT SHALL BE NOTICEABLY DIFFERENT FROM THE BASE MATERIAL AND OTHER PROPOSED COATS. THIS COAT SHALL IN ALL CASES BE APPLIED OVER SURFACES THAT WERE PREPARED EARLIER THAT SAME DAY. THE THINNING OF THE EPOXY MATERIAL IS STRICTLY PROHIBITED. MATERIAL NOT CAPABLE OF BEING APPLIED AS SPECIFIED SHALL NOT BE USED.

WHEN THE AVERAGE DRY FILM THICKNESS OF THIS COAT OVER THE ENTIRE SUPPORT SECTION IS LESS THAN THE SPECIFIED 1.5 TO 2.0 MILS BUT IS AT LEAST 1.25 MILS, THE CONTRACT BID PRICE FOR THIS ITEM SHALL BE REDUCED IN DIRECT PROPORTION TO THE PERCENT DEFICIENCY OF COATING UP TO 16-2/3%. IF THE DEFICIENCY OF COATING IS MORE THAN 16-2/3% (I.E., THE AVERAGE DRY FILM THICKNESS IS LESS THAN 1.25 MILS) THE WORK FOR THIS ITEM SHALL BE CONSIDERED UNSATISFACTORY AND SHALL BE RECOATED AT THE FULL EXPENSE OF THE CONTRACTOR, INCLUDING ALL LABOR, EQUIPMENT, AND MATERIAL.

THE EPOXY PRIME COAT CHOSEN BY THE CONTRACTOR SHALL BE ONE OF THE FOLLOWING TWO-COMPONENT COMPOSITIONS CONFORMING TO ITS LISTED PROPERTIES:

AMERCOAT 71  
% SOLIDS BY VOLUME: 47% +/- 3%  
POT LIFE: 8 HRS. • 77 DEGREES F (25 DEGREES C)  
DRYING TIME: 4 HRS. • 77 DEGREES F

EPOXY CHROMATE METAL PRIMER NO. 5251/5252:  
% SOLIDS BY VOLUME: 35.1% +/- 2%  
POT LIFE: 24 HRS. • 80 DEGREES F, 5 HRS. • 100 DEG. F  
DRYING TIME: 1 HR. TO TOUCH, 3-4 HRS. RECOAT  
VISCOSITY: BASE 67-72 KU (STORMER)  
CURING AGENT 53-57 KU (STORMER)  
% SOLIDS BY WEIGHT: 47.9% +/- 2%

MCR-4301 EPOXY PRIMER  
% SOLIDS BY VOLUME: 48.0% +/- 2%  
POT LIFE: 30 HRS. • 50-60 DEG. F.  
16 HRS. • 80-100 DEG. F.  
DRYING TIME: 4-6 HRS. • 50-60 DEG. F.

MARK-60 (ULTRAPOX):  
% SOLIDS BY WEIGHT: 50% +/- 5%  
POT LIFE: 6 HRS. • 75 DEGREES F  
DRYING TIME: 2-3 HRS. INITIAL SET • 75 DEGREES F  
VISCOSITY: 300-500 CPS • 75 DEGREES F

TILE-CLAD II HI-BILD PRIMER  
% SOLIDS BY VOLUME: 48% +/- 2%  
% SOLIDS BY WEIGHT: 63% +/- 2%  
POT LIFE: 8 HRS. • 77 DEGREES F  
DRYING TIME: 1 HR. TO TOUCH, 6 HRS. TO RECOAT • 77 F

FOR NEW SUPPORT SECTIONS THIS PRIME COAT SHOULD BE DONE AT THE MANUFACTURER OF THE SUPPORT SECTIONS. VERIFICATION BY THE MANUFACTURER OF THE COATING MATERIAL FOR THE PRIME COAT PROCEDURES WILL BE REQUIRED. CAREFUL HANDLING AND STORAGE WILL BE REQUIRED TO PREVENT ANY SCRAPING, MARRING, OR OTHER SURFACE DAMAGE TO THE PRIME COAT.

THE PAYMENT SHALL INCLUDE ALL LABOR, EQUIPMENT, HANDLING COSTS, AND MATERIALS NECESSARY TO ACCOMPLISH THIS ITEM OF WORK. THIS PRIME COAT SHALL BE MANUFACTURED BY THE THE SAME COMPANY SUPPLYING THE INTERMEDIATE AND TOP COATS. A PROPERLY CALIBRATED DRY FILM THICKNESS INSTRUMENT WILL BE USED TO CHECK THE COATING.

BASIS OF PAYMENT WILL BE AS FOLLOWS:

ITEM SPECIAL - COATING, EPOXY PRIME COAT, SUPPORT SECTIONS AT CONTRACT BID PRICE PER EACH MAJOR SUPPORT SECTION.

## COATING, EPOXY INTERMEDIATE COAT, SUPPORT SECTIONS

THIS ITEM SHALL CONSIST OF THE APPLICATION OF ONE (1) COAT OF EPOXY TO SUPPORT SECTIONS. THE TOTAL DRY FILM THICKNESS OF THIS COAT SHALL NOT BE LESS THAN SIX (6.0) MILS. IF MORE THAN ONE PASS IS NECESSARY TO OBTAIN THE REQUIRED THICKNESS, THAT COST SHALL BE BORNE BY THE CONTRACTOR. THINNING OF THE EPOXY MATERIAL IS STRICTLY PROHIBITED. MATERIAL NOT CAPABLE OF BEING APPLIED AS SPECIFIED SHALL NOT BE USED. THE COLOR OF THIS COAT SHALL BE LIGHT GREY.

WHEN THE AVERAGE DRY FILM THICKNESS OF THIS COAT OVER THE ENTIRE SUPPORT SECTION IS LESS THAN THE SPECIFIED SIX (6.0) MILS BUT IS AT LEAST (5.0) MILS, THE CONTRACT PRICE FOR THIS ITEM SHALL BE REDUCED IN DIRECT PROPORTION TO THE PERCENT DEFICIENCY OF COATING UP TO 16-2/3%. IF THE DEFICIENCY OF COATING IS MORE THAN 16-2/3% (I.E. THE AVERAGE DRY FILM THICKNESS IS LESS THAN 5.0 MILS) THE WORK FOR THIS ITEM SHALL BE CONSIDERED UNSATISFACTORY AND SHALL BE RECOATED AT THE FULL EXPENSE OF THE CONTRACTOR, INCLUDING ALL LABOR, EQUIPMENT, AND MATERIAL.

THE EPOXY INTERMEDIATE COAT CHOSEN BY THE CONTRACTOR SHALL BE ONE OF THE FOLLOWING TWO-COMPONENT COMPOSITIONS CONFORMING TO ITS LISTED PROPERTIES.

AMERLOCK 400:  
% SOLIDS BY VOLUME: 83% +/- 2%  
POT LIFE: 2-1/2 HRS. • 70 DEGREES F  
DRYING TIME: 20 HRS. • 70 DEGREES F

GLID-GUARD EPOXY CHEMICAL RESISTANT FINISH NO. 5240 SERIES:  
% SOLIDS BY VOLUME: 44.7% +/- 2%  
POT LIFE: 10 HRS. • 80 DEGREES F TO HANDLE  
DRYING TIME: 4 HRS. • 77 DEGREES F TO HANDLE  
VISCOSITY: 68-72 KU  
% SOLIDS BY WEIGHT: 60% +/- 2%

MCR 4361 HIGH BUILD EPOXY (OFF-WHITE)  
% SOLIDS BY VOLUME: 49.4% +/- 2%  
POT LIFE: 30 HRS. • 50-60 DEG. F.,  
16 HRS. • 80-100 DEG. F.  
DRYING TIME: 1-2 HRS. • 60-80 DEG. F.

MARK-60 ULTRAPOX:  
% SOLIDS BY WEIGHT: 52% +/- 5%  
POT LIFE: 6 HRS. • 75 DEGREES F  
DRYING TIME: 2-3 HRS. INITIAL SET • 75 DEGREES F  
VISCOSITY: 300-500 CPS • 75 DEGREES F

HI-SOLIDS CATALYZED EPOXY:  
% SOLIDS BY VOLUME: 61% +/- 2% (PURE WHITE)  
% SOLIDS BY WEIGHT: 77% +/- 2% (PURE WHITE)  
POT LIFE: 5 HRS. • 77 DEGREES F  
DRYING TIME: 1 HR. TO TOUCH, 4 HRS. TACK FREE, 6 HRS. TO RECOAT • 77 DEGREES F & 50% R.H.

AT LEAST 24 HOURS BUT NO MORE THAN THREE (3) DAYS SHALL ELAPSE AFTER THE APPLICATION OF THE EPOXY PRIME COAT AND BEFORE THE APPLICATION OF THE EPOXY INTERMEDIATE COAT. SURFACES SHALL IN ALL CASES BE CLEAN BEFORE THE INTERMEDIATE COAT IS APPLIED.

FOR NEW SUPPORT SECTIONS, THIS INTERMEDIATE COAT SHOULD BE DONE AT THE MANUFACTURER OF THE SUPPORT SECTIONS. VERIFICATION BY THE MANUFACTURER FOR THE INTERMEDIATE COAT PROCEDURE WILL BE REQUIRED. CAREFUL HANDLING AND STORAGE WILL BE REQUIRED TO PREVENT ANY SCRAPING, MARRING OR OTHER SURFACE DAMAGE TO THE INTERMEDIATE COAT.

THE PAYMENT SHALL INCLUDE ALL LABOR, EQUIPMENT, HANDLING COSTS, AND MATERIAL NECESSARY TO ACCOMPLISH THIS ITEM OF WORK. THIS INTERMEDIATE COAT SHALL BE MANUFACTURED BY THE SAME COMPANY SUPPLYING THE PRIME AND TOP COATS. A PROPERLY CALIBRATED DRY FILM THICKNESS INSTRUMENT WILL BE USED TO CHECK THE COATING.

BASIS OF PAYMENT WILL BE AS FOLLOWS:

ITEM SPECIAL - COATING, EPOXY INTERMEDIATE COAT, SUPPORT SECTIONS AT CONTRACT BID PRICE PER EACH MAJOR SUPPORT SECTION.



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5	OHIO		142 245

## COATING, URETHANE TOP COAT, SUPPORT SECTIONS

THIS ITEM SHALL CONSIST OF THE APPLICATION OF ONE (1) COAT OF URETHANE TO SUPPORT SECTIONS. THE TOTAL DRY FILM THICKNESS OF THIS COAT SHALL NOT BE LESS THAN ONE AND ONE-HALF (1.5) MILS. IF MORE THAN ONE PASS IS NECESSARY TO OBTAIN THE REQUIRED MIL THICKNESS THAT COST SHALL BE BORNE BY THE CONTRACTOR. THINNING OF THE URETHANE MATERIAL IS STRICTLY PROHIBITED. MATERIAL NOT CAPABLE OF BEING APPLIED AS SPECIFIED SHALL NOT BE USED. THE COLOR OF THIS COAT SHALL BE MEDIUM GRAY.

WHEN THE AVERAGE DRY FILM THICKNESS OF THIS COAT OVER THE ENTIRE SUPPORT SECTION IS LESS THAN THE SPECIFIED ONE AND ONE-HALF (1.5) MILS BUT IS AT LEAST ONE (1.0) MIL, THE CONTRACT PRICE FOR THIS ITEM SHALL BE REDUCED IN DIRECT PROPORTION TO THE PERCENT DEFICIENCY OF COATING UP TO 33 1/3%. IF THE DEFICIENCY OF COATING IS MORE THAN 33-1/3% (I.E., THE AVERAGE DRY FILM THICKNESS IS LESS THAN 1.0 MIL) THE WORK FOR THIS ITEM SHALL BE CONSIDERED UNSATISFACTORY AND SHALL BE RECOATED AT THE FULL EXPENSE OF THE CONTRACTOR, INCLUDING ALL LABOR, EQUIPMENT, AND MATERIAL.

THE URETHANE TOP COAT CHOSEN BY THE CONTRACTOR SHALL BE ONE OF THE FOLLOWING MATERIALS CONFORMING TO ITS LISTED PROPERTIES:

AMERCOAT 450 HS:  
 % SOLIDS BY VOLUME: 66% +/- 3%  
 POT LIFE: 4 HRS. • 70 DEGREES F  
 DRYING TIME: 8 HRS. • 70 DEGREES F DRY-THROUGH

GLID-THANE ONE POLYURETHANE COATINGS NO. 6100 SERIES:  
 % SOLIDS BY VOLUME: 39% +/- 2%  
 DRYING TIME: 8-12 HRS. • 77 DEGREES F TO HANDLE  
 VISCOSITY: 100-250 CPS  
 % SOLIDS BY WEIGHT: 52-56%

HYTHANE 4610 ALIPHATIC POLYURETHANE  
 % SOLIDS BY VOLUME: 43.4% +/- 2%  
 POT LIFE: 12 HRS. • 75 DEG. F.  
 DRYING TIME: 3/4 HRS. TO TOUCH AT 75 DEGREES F

MARK-73 (ULTRA-KOTE):  
 % SOLIDS BY VOLUME: 52.5% +/- 2%  
 POT LIFE: 8 HRS. • 75 DEGREES F  
 DRYING TIME: 4-5 HRS. • 75 DEGREES F TACK FREE  
 VISCOSITY: 70-75 KU • 75 DEGREES F  
 % SOLIDS BY WEIGHT: 55% +/- 2%

HI-BILD ALIPHATIC POLYURETHANE ENAMEL  
 % SOLIDS BY VOLUME: 40% +/- 2% (CATALYZED)  
 % SOLIDS BY WEIGHT: 48% +/- 2%  
 POT LIFE: 6 HRS. • 77 DEGREES F  
 DRYING TIME: 30 MIN. TO TOUCH, 4 HRS. TACK FREE,  
 18 HRS. MIN., 72 HRS. MAX TO RECOAT.

AT LEAST 24 HOURS BUT NO MORE THAN THREE (3) DAYS SHALL ELAPSE AFTER THE APPLICATION OF THE EPOXY INTERMEDIATE COAT AND BEFORE THE APPLICATION OF THE URETHANE TOP COAT. SURFACES SHALL IN ALL CASES BE CLEAN BEFORE THE TOP COAT IS APPLIED.

FOR NEW SUPPORT SECTIONS, THIS TOP COAT SHOULD BE DONE AT THE MANUFACTURER OF THE SUPPORT SECTIONS. VERIFICATION BY THE MANUFACTURER FOR THE TOP COAT PROCEDURE WILL BE REQUIRED. CAREFUL HANDLING AND STORAGE WILL BE REQUIRED TO PREVENT ANY SCRAPING, MARRING OR OTHER SURFACE DAMAGE TO THE TOP COAT.

THE PAYMENT SHALL INCLUDE ALL LABOR, EQUIPMENT, HANDLING COST, AND MATERIALS NECESSARY TO ACCOMPLISH THIS ITEM OF WORK. THIS TOP COAT SHALL BE MANUFACTURED BY THE SAME COMPANY SUPPLYING THE PRIME AND INTERMEDIATE COATS. A PROPERLY CALIBRATED, DRY FILM THICKNESS INSTRUMENT WILL BE USED TO CHECK THE COATING.

BASIS OF PAYMENT WILL BE AS FOLLOWS:

ITEM SPECIAL - COATING, URETHANE TOP COAT, SUPPORT SECTIONS AT CONTRACT BID PRICE PER EACH MAJOR SUPPORT SECTION.

### PREQUALIFICATION

PRIOR TO USE, THE CONTRACTOR SHALL SUBMIT TO THE DIRECTOR COPIES OF THE MANUFACTURER'S CERTIFIED TEST DATA SHOWING THAT THE MATERIAL COMPLIES WITH THE REQUIREMENTS OF THIS SPECIFICATION. THE TEST DATA SHALL INCLUDE THE BRAND NAME OF THE PAINT, NAME OF MANUFACTURER, NUMBER OF THE LOT TESTED AND DATE OF MANUFACTURE. WHEN THE PAINT HAS BEEN APPROVED BY THE DIRECTOR, FURTHER PERFORMANCE TESTING BY THE MANUFACTURER WILL NOT BE REQUIRED UNLESS THE FORMULATION OR MANUFACTURING PROCESS HAS BEEN CHANGED, IN WHICH CASE NEW CERTIFIED TEST RESULTS WILL BE REQUIRED.

### ACCEPTANCE

THE MANUFACTURER SHALL SUBMIT CERIFIED TEST DATA IN ACCORDANCE WITH REQUIREMENTS OF THIS SPECIFICATION.

THE STATE RESERVES THE RIGHT TO SAMPLE AND TEST DELIVERED LOTS FOR COMPLIANCE.

## LOCATIONS

THE FOLLOWING SUMMARY OF MAJOR SUPPORT SECTIONS TO HAVE A PROTECTIVE COATING APPLIED IS NOTED BELOW:

SIGN NO.	VERTICAL POLE	CANTILEVER ARM	BOX SPAN	END FRAMES
600	1	1		
601	1	1		
602				2
604				2
605				2
606	1	1		
607				2
608				2
609	1	1		
610	1	1		
611	1	1		
612*				2
614*				2
615	1	1		
616	1	1		
617	1	1		
618*			1	2
619				2
620*	1	1		
621*				2
622*				2
623	1	1		
624	1	1		
625	1	1		
628	1	1		
629*	1	1		
630	1	1		
631	1	1		
632	1	1		
634				2
635	1	1		
636	1	1		
637	1	1		
638	1	1		
639	1	1		
640*	1	1		
641	1	1		
642	1	1		
643				2
645	1	1		
646	1	1		
647	1	1		
648	1	1		
649	1	1		
650	1	1		
654	1	1		
656*	1	1		
659*				2
TOTALS	34	34	1	28

\* NEW SUPPORT

THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY TO PERFORM THIS WORK:

ITEM SPECIAL - SURFACE PREPARATION, EXISTING SUPPORT SECTIONS.....	76 EACH
ITEM SPECIAL - COATING, EPOXY PRIME COAT, SUPPORT SECTIONS.....	97 EACH
ITEM SPECIAL - COATING, EPOXY INTERMEDIATE COAT, SUPPORT SECTIONS.....	97 EACH
ITEM SPECIAL - COATING, URETHANE TOP COAT, SUPPORT SECTIONS.....	97 EACH
ITEM SPECIAL - SURFACE PREPARATION, NEW SUPPORT SECTIONS.....	21 EACH



# GENERAL NOTES

CUY-90-16.24

FHWA REGION	STATE	PROJECT
5	OHIO	

143  
245

## EXIT NUMBER PANELS (GEP SERIES) ON OVERHEAD SIGNS

EXIT NUMBER PANELS (GEP SERIES) ON OVERHEAD SIGNS SHALL BE PLACED TO THE TOP RIGHT OR LEFT OF THE MAJOR OVERHEAD MOUNTED SIGN AS SHOWN ON THE ELEVATION VIEWS, SHEETS 200-209. LOCATION OF THE EXIT NUMBER PANEL IS BASED ON THE LOCATION OF THE EXIT RAMP IN RELATION TO THE THRU TRAFFIC MOVEMENT (RIGHT SIDE FOR RIGHT-HAND EXITS, LEFT SIDE FOR LEFT-HAND EXITS, ORIENTED WITH THE DIRECTION OF TRAFFIC). ALL SIGNS WHICH HAVE EXIT NUMBER PANELS SHALL BE OFFSET AS STATED ABOVE.

## APPLICATION OF PAVEMENT MARKINGS ON CONCRETE BRIDGE DECKS (STRUCTURE NUMBERS: CUY-90-1547, CUY-90-1599)

THE CONTRACTOR SHALL PLACE THE PROPOSED THERMOPLASTIC LANE LINE PAVEMENT MARKINGS IN THE EXISTING GROOVED (DEPRESSED) SECTIONS OF THE BRIDGE DECK. THE GROOVES WERE ORIGINALLY PLACED AT APPROPRIATE LENGTHS AND LOCATIONS SO THAT THERMOPLASTIC LANE LINES WOULD BE RECESSED INTO THE DECK AFTER PLACEMENT.

# TRAFFIC CONTROL QUANTITIES

CUYAHOGA COUNTY  
CUY-90-16.24

OHIO  
FHWA REGION 5  
FEDERAL PROJECT

144  
245

## PAVEMENT MARKINGS

REFERENCE NO.	PLAN SHEET NO.	LOCATION		644		644		644		644		644		644		644		644		644		644		644		644		644		
		ROADWAY	FROM STATION	TO STATION	EDGE LINE (WHITE)	EDGE LINE (YELLOW)			4" LANE LINE	CENTER LINE (DOUBLE YELLOW)			8" CHANNELIZING LINE (WHITE)	8" EDGE LINE (YELLOW)	12" TRANSVERSE LINE (WHITE)	12" TRANSVERSE LINE (YELLOW)	24" TRANSVERSE LINE (WHITE)	24" TRANSVERSE LINE (YELLOW)	24" STOP LINE	4" DOTTED LINES	6" DOTTED LINES	CROSSWALK LINES	LANE ARROWS	WORD "ONLY" ON PAVEMENT						
					LIN. FT.	LIN. FT.		LIN. FT.	LIN. FT.			LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH							
173		RAMP W-1	0+50	0+28				250														24								
			3+30	3+00	415	415																								
		RAMP W-2	0+00	2+31	231																									
			2+31	3+18	87							174					145													
			3+18	5+56	238	238																								
			5+56	6+11	55	55						110					79													
			6+11	8+97	286	286																								
			8+97	9+37	40			40				40																		
			9+37	10+17				160																						
			10+48	11+80		39			23			262		14									6	3						
				11+82														24												
				11+89																		100								
		RAMP W-3	2+15	4+90	275	275																								
			4+90	5+00	10	10						20																		
			5+00	5+35	47	32																								
				5+37														49												
				5+44																		112								
		LANE A	0+19	0+28																										
			1+50	0+46								81		56																
			1+97	1+97								94		35																
			2+77	2+77	80	80																								
				7+84																										
				7+91														25												
		LANE B	0+37	0+37																										
			2+40	5+45	305																									
174		I-90 E.B.	41+70	47+12	542	542		1,626																						
			47+12	48+05	93	93		279				186					112													
			48+05	56+44	839	839		2,517																						
			56+44	57+07	63	63		189				126					74													
			57+07	58+82	175	175		525																						
			58+82	61+20	238	238		476				238																		
			61+20	62+50	130	130		260				260					172													
175			62+50	71+82	932	932		1,864																						
			71+82	72+77	190	95		190				95																		
			72+77	73+57	80	80		160				80																		
			73+57	74+37	80	80		240																						
			74+37	76+55	218	218		436												218										
176			76+55	77+35	80	80		240																						
			77+35	78+83	148	148		296				296					184													
			78+83	103+63	989	989		1,978																						
			103+63	104+67	104	104		208				208					171													
			104+67	112+55	788	788		1,576																						
<b>TOTALS</b>					8,225	7,024		13,510	23			2,270		105		937		98	218		432	6	3							
					15,249 = 2.89 MI.			2.56 MI.		.01 MI.																				

STATION EQUATION  
STA. 83+09.31BK = STA. 98+00 AH

PLOT SUBMITTED: 21-FEB-1991 08:13

ZF2:[100,335]07090TSA.DGN

PLOT SUBMITTED BY: GRMOVSEK



















# TRAFFIC CONTROL QUANTITIES

CUYAHOGA COUNTY  
CUY-90-16.24

OHIO  
FHWA REGION 5  
FEDERAL PROJECT

150  
245

## PAVEMENT MARKINGS

REFERENCE NO.	PLAN SHEET NO.	LOCATION				644		644		644		644		644		644		644		644		644		644		642	
		ROADWAY	FROM STATION	TO STATION		EDGE LINE (WHITE)	EDGE LINE (YELLOW)			4" LANE LINE	CENTER LINE (DOUBLE YELLOW)			8" CHANNELIZING LINE (WHITE)	8" EDGE LINE (YELLOW)	12" TRANSVERSE LINE (WHITE)	12" TRANSVERSE LINE (YELLOW)	24" TRANSVERSE LINE (WHITE)	24" TRANSVERSE LINE (YELLOW)	24" STOP LINE	4" DOTTED LINES	6" DOTTED LINES	CROSSWALK LINES	LANE ARROWS	WORD "ONLY" ON PAVEMENT	ISLAND MARKING (YELLOW)	
					LIN. FT.	LIN. FT.			LIN. FT.	LIN. FT.			LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH	SO. FT.		LIN. FT.	
181	RAMP NO.17		I+12																15								
			I+25	8+94	769	769																					
181	RAMP NO.18		I+73	7+20	547	547							54		29												
			7+47	9+39	192	192																					
			9+39	9+50	11								11														
			9+50	10+26	76																						
181	RAMP NO.18A		7+47	8+51	104	104													16								
				8+53																							
181	EAST 33rd. St.		0+43																34			112					
			0+52	0+78					26				26										2				
			0+78	1+06					28																		
			1+06	1+51					45												45						
			1+51	1+62					11				11														
			1+62	3+11					149																		
182	SHOREWAY-INNERBELT CONNECTION		51+55	59+78	823	823		823																			
180	HAMILTON AVE.		3+85	9+60																							575
181	LAKESIDE AVE.		4+08	11+25																							717
<b>TOTALS</b>					2,549	2,462		823	259				102	29					65	45		112	2				1,292
					5,011 = .95 MI.			.16 MI.	.05 MI.																		= .24 MI.

PLOT SUBMITTED: 20-FEB-1991 15:42

ZF2:[100,335]07090TSG.DGN;

PLOT SUBMITTED BY: GRMOVSEK



# TRAFFIC CONTROL QUANTITIES

CUYAHOGA COUNTY  
CUY-90-16.24

OHIO	(151)
FHWA REGION 5	245
FEDERAL PROJECT	

PLOT SUBMITTED: 05-SEP-1991 15:00  
 ZF2: L100335107090TGD.DGN:1  
 PLOT SUBMITTED BY: KONOPKA

GROUND MOUNTED SIGNS											
REFERENCE NO.	PLAN SHEET NO.	ELEVATION VIEW SHEET NO.	SPECIAL DETAIL SHEET NO.	LOCATION	SIGN CODE NO.	SIGN SIZE	630	630	630	630	630
							REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	REMOVAL OF GROUND MOUNTED MAJOR SIGN AND DISPOSAL	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	REMOVAL OF GROUND MOUNTED BEAM SUPPORT AND DISPOSAL
				RAMP W-1			EACH	EACH	EACH	EACH	EACH
1	183			0+30 LT							
2				1+77 LT							
3				3+10 RT							
4				6+15 RT							
5				7+70 RT							
				LANE A							
6				7+70 RT							
7				7+90 RT				3		2	
				RAMP W-2							
8				3+90 RT			1				
9				7+00 RT						2	
10				7+75 RT							
11				7+75 LT							
12				11+00 LT				3			
14				11+85 LT							
				RAMP W-2 SPUR							
15				11+85 RT				2		1	
				LANE B							
16				4+45 LT							
17				5+20 LT							
				RAMP W-3							
18				2+90 LT							
19				3+40 LT							
20				3+40 RT							
21				RMP W-3 SPUR 1+10 RT				4		2	
22				5+55 RT							
				RAMP E-1							
23	184			(I-90) 47+17 LT							
30				4+39 LT							
29				3+50 LT							
28				1+00 RT							
				RAMP E-2							
31				3+05 RT							
32				7+50 RT							
33				7+50 LT							
34				10+00 LT							
35				10+40 RT							
				INNERBELT (I-90)							
24				51+47 LT							
TOTALS							9	30		25	

GROUND MOUNTED SIGNS											
REFERENCE NO.	PLAN SHEET NO.	ELEVATION VIEW SHEET NO.	SPECIAL DETAIL SHEET NO.	LOCATION	SIGN CODE NO.	SIGN SIZE	630	630	630	630	630
							REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	REMOVAL OF GROUND MOUNTED MAJOR SIGN AND DISPOSAL	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	REMOVAL OF GROUND MOUNTED BEAM SUPPORT AND DISPOSAL
				RAMP E-3							
36	184			0+55 RT							
37				1+87 RT							
38				1+87 LT							
39				3+65 RT						2	
				RAMP E-4							
26				(I-90) 56+55 RT				2			
40				3+60 LT							
41				4+15 LT							
42				4+90 LT							
43				6+52 LT							
44				6+52 RT							
45				8+70 RT							
46				(W.B. BROADWAY) 46+50							
				INNERBELT							
25				56+50 LT							
27				58+50 LT							
				RAMP E-5							
48	185			0+61 RT							
49				1+50 RT							
50				3+30 LT							
51A				5+00 LT					2		4
51B				8+68 LT							
51C				8+68 RT							
				RAMP E-6							
53				3+75 LT						2	
54				5+60 RT				2			
55				8+20 LT							
56				8+20 RT							
57				9+50 RT							
				INNERBELT (I-90)							
63				74+30 LT				1			
				RAMP E-10							
64				4+62 RT					2		2
65				4+62 LT					2		2
66				6+21 RT					1		2
TOTALS							5	27	2	30	4



# TRAFFIC CONTROL QUANTITIES

CUYAHOGA COUNTY  
CUY-90-16.24

OHIO  
FHWA  
REGION 5  
FEDERAL  
PROJECT

152  
245

## GROUND MOUNTED SIGNS

REFERENCE NO.	PLAN SHEET NO.	ELEVATION VIEW SHEET NO.	SPECIAL DETAIL SHEET NO.	LOCATION	SIGN CODE NO.	SIGN SIZE	630	630	630	630	630		
							REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	REMOVAL OF GROUND MOUNTED MAJOR SIGN AND DISPOSAL	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	REMOVAL OF GROUND MOUNTED BEAM SUPPORT AND DISPOSAL		
							EACH	EACH	EACH	EACH	EACH		
				RAMP E-16									
67	185			3+48 RT									
68				3+90 LT									
69				6+27 RT					2				
				E. 14TH S.B.									
70				8+10 LT					2		2		
				E. 14TH N.B.									
72				19+60 LT			1						
73A				22+07 RT				2	2				
73B				21+70 RT				1					
				INNERBELT (I-90)									
74				62+75 LT					2				
75				69+40 RT					2				
				RAMP E-11									
76	186			4+88 LT									
77				4+88 RT									
78				6+43 RT				3					
79				6+60 LT				3					
80				6+61 LT									
81				6+73 RT									
				RAMP E-13									
82				1+14 RT									
83				0+75 RT				1	2				
				INNERBELT (I-90)									
84				98+38 RT				1			2		
				RAMP NO. 3									
85	187			3+47 LT					1		2		
86				8+30 LT				2					
87				9+40 RT				2					
				RAMP NO. 4									
88				5+00 RT						2			
89				6+40 LT				2					
90				7+50 RT									
				RAMP NO. 5									
91A				0+38 LT						2			
93				4+00 LT									
94				6+27 LT									
95A				6+40 LT									
				E. 18TH TURNOUT									
95B	185			3+00 LT				3	3				
95C				3+20 RT									
<b>TOTALS</b>								4	34	5	32	6	

## GROUND MOUNTED SIGNS

REFERENCE NO.	PLAN SHEET NO.	ELEVATION VIEW SHEET NO.	SPECIAL DETAIL SHEET NO.	LOCATION	SIGN CODE NO.	SIGN SIZE	630	630	630	630	630		
							REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	REMOVAL OF GROUND MOUNTED MAJOR SIGN AND DISPOSAL	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	REMOVAL OF GROUND MOUNTED BEAM SUPPORT AND DISPOSAL		
							EACH	EACH	EACH	EACH	EACH		
				RAMP NO. 6									
96	187			1+65 LT							2		
97				2+00 LT							2		
98				4+80 RT							2		
99				5+78 LT						2			
100				5+83 RT						2			
101				7+00 LT						1			
102				7+17 LT						4			
103				7+17 RT						6			
				INNERBELT (I-90)									
104				107+44 RT						2		2	
105				115+87 LT						1		2	
106				116+16 RT						1		1	
107				117+15 RT						2		2	
108A				120+10 LT						2		2	
108B				120+90 LT						1		1	
				RAMP NO. 7									
109	188			1+08 RT						2		2	
110A				6+75 LT						1		1	
110B				7+90 LT						3		1	
110C				7+90 RT						3		1	
				RAMP NO. 8									
111				0+56 LT						1		2	
112				4+09 LT						1		2	
113				5+47 RT						1		2	
114				6+66 RT						1		1	
115				7+60 LT						2		1	
				RAMP NO. 9									
116				8+65 LT						1		1	
117				5+00 RT						1		2	
				RAMP NO. 10									
118				0+36 LT						1		2	
119				2+84 RT						1		2	
120				5+89 RT						1		1	
121				8+18 LT						1		1	
				RAMP NO. 10A									
122				7+25 RT						2		1	
				RAMP NO. 11									
123				3+20 LT						1		1	
124				4+53 LT						1		1	
125				7+00 RT							3		2
126				7+30 RT						1		1	
127				8+85 RT						2		1	
<b>TOTALS</b>									55	3	51	2	

PLOT SUBMITTED BY: KONOPKA  
 ZF2: L100335107090TGC.DGN; 1  
 PLOT SUBMITTED: 06-SEP-1991 08:08:00



# TRAFFIC CONTROL QUANTITIES

CUYAHOGA COUNTY  
CUY-90-16.24

OHIO  
FHWA  
REGION 5  
FEDERAL  
PROJECT

153  
245

PLOT SUBMITTED BY: KONOPKA  
ZP2: L100335107090TGE.DGN: 1  
PLOT SUBMITTED: 05-SEP-1991 15:22

GROUND MOUNTED SIGNS												
REFERENCE NO.	PLAN SHEET NO.	ELEVATION VIEW SHEET NO.	SPECIAL DETAIL SHEET NO.	LOCATION	SIGN CODE NO.	SIGN SIZE	630	630	630	630	630	
							REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL EACH	REMOVAL OF GROUND MOUNTED MAJOR SIGN AND DISPOSAL EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL EACH	REMOVAL OF GROUND MOUNTED BEAM MOUNTED SUPPORT AND DISPOSAL EACH	
INNERBELT (I-90)												
130	188			122+41 RT				1			2	
131				122+87 RT						2		
132				129+50 LT					1	2		
133				131+17 LT						2		
134				133+25 LT			2					
RAMP NO. 12												
135	189			1+35 RT			1					
136				6+00 RT								
137				6+43 LT								
138				7+66 RT				4		2		
139				7+66 LT				4		2		
140A				5+40 RT					1	2		
140B				7+70 LT			2					
RAMP NO. 12A												
142				7+85 LT			1					
143				7+85 RT								
144				8+52 RT				4		1		
145				8+54 LT			2					
RAMP NO. 13												
146				0+90 LT						2		
147				5+50 LT						1		
148				7+39 RT						2		
149				8+00 LT				2		1		
INNER BELT (I-90)												
150				137+95 LT						2		
151				143+48 LT						2		
152				143+84 RT				2			2	
153				146+02 LT				1			2	
RAMP NO. 14												
155	190			7+80 LT				3	3		1	
156				7+62 RT								
157				6+02 LT						1		
158				6+02 RT				2		1		
159				5+05 RT				2	1	2		
RAMP NO. 14A												
160				5+47 RT								
161				5+47 LT								
162				6+54 LT								
163				6+70 LT								
164				6+70 RT			2					
INNER BELT (I-90)												
165				149+00 LT					1	2		
180				51+60 LT					1	2		
181				52+50 RT						1		
182				153+63 LT					1		2	
TOTALS							13	41	6	40	8	

GROUND MOUNTED SIGNS												
REFERENCE NO.	PLAN SHEET NO.	ELEVATION VIEW SHEET NO.	SPECIAL DETAIL SHEET NO.	LOCATION	SIGN CODE NO.	SIGN SIZE	630	630	630	630	630	
							REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL EACH	REMOVAL OF GROUND MOUNTED MAJOR SIGN AND DISPOSAL EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL EACH	REMOVAL OF GROUND MOUNTED BEAM MOUNTED SUPPORT AND DISPOSAL EACH	
RAMP NO. 16												
166	190			1+46 RT							2	
167				1+46 LT							2	
168				5+66 RT							2	
169				5+67 LT							2	
170				9+00 LT							1	
171				(RAMP 16A) 9+60 LT			1					
172				9+90 RT						1	2	
E. 26TH												
173				0+50 LT						3	1	
174				0+50 RT						3	1	
175				1+57 LT								
176			NO WORK	1+67 LT								
177			NO WORK	3+65 RT								
178			NO WORK	4+22 LT								
ST. CLAIR												
179				16+50 LT						1	2	
RAMP NO. 17												
183	191			1+00 LT							2	
184				1+17 RT							2	
185				3+47 RT							2	
186				6+43 RT			1					
187				6+44 LT							2	
188				8+80 RT							2	
RAMP NO. 18												
189				1+09 RT						2		
190				6+36 LT						1		
191				6+36 RT						1		
192				SPUR 7+50 LT						1		
193				SPUR 8+52 LT						4	2	
194				SPUR 8+52 RT						4	2	
195				7+70 LT						1	2	
196				9+20 LT			4					
197				9+35 RT						4	2	
198				10+67 RT						1		
E. 26TH												
200				6+54 LT						2	2	
INNERBELT (I-90)												
201				168+40 LT						1	2	
TOTALS							6	38	2	36	6	































































# SIGN LIGHTING SUB-SUMMARY

CUYAHOGA COUNTY  
CUY-90-16.24

OHIO	5	169 245
FHWA REGION		
FEDERAL PROJECT		

SIGN NO.	LOCATION (STATION)		202	625	625	625	625	625
			PULL BOX REMOVED	CABLE SPLICING KIT	1-1/2" DUCT CABLE WITH TWO NO. 4 AWG 5000 VOLT CABLES	TRENCH, 24" DEEP	PULL BOX, 713.08, 18"	PULL BOX, 713.08, 18" AS PER PLAN
	FROM	TO	EACH	EACH	LIN. FT.	LIN. FT.	EACH	EACH
629	PROSPECT 9+30	8+70	1	2	70	60	2	
612	BROADWAY, 46+60						1	
614	RAMP E-3, 2+10	E. 9TH ST., 7+55	1	4	75	65	2	
621	S.B. E. 14TH ST., 4+80		1	2			1	
622	I-90, 99+00	I-90, 98+72	1	4	38	28	2	
653	I-90, 161+90			2				
---	I-90, 102+10, RT.		1	2				1
TOTALS			5	16	183	153	8	1

PLOTTED FROM: c:\dgn\pid07090\07090tss.dgn  
 PLOT SUBMITTED BY: Lennon  
 PLOT SUBMITTED: 01-APR-1992 10:56





# GENERAL SUMMARY

CUYAHOGA COUNTY  
CUY-90-16.24

OHIO  
FHWA  
REGION 5  
FEDERAL  
PROJECT

171  
245

NOTE: ALL FEDERAL AND STATE FUNDING

ITEM	SHEET NUMBER								ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN SHEET REF.
	151	152	153	164	165	166	167	168						
<b>TRAFFIC CONTROL</b>														
630	57	89	79						630	84900	225	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
630	2	8	8						630	85400	18	EACH	REMOVAL OF GROUND MOUNTED MAJOR SIGN AND DISPOSAL	
630	55	83	76						630	86002	214	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
630	4	8	14						630	86102	26	EACH	REMOVAL OF GROUND MOUNTED BEAM SUPPORT AND DISPOSAL	
630									630	87100	2	EACH	REMOVAL OF OVERHEAD MOUNTED SIGN AND REERECTION	
630	14	4	19						630	87500	37	EACH	REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL	
630				18	16	19	14	17	630	87400	84	EACH	REMOVAL OF OVERHEAD MOUNTED SIGN AND DISPOSAL	
630								1	630	88800	1	EACH	REMOVAL OF OVERHEAD SIGN SUPPORT AND STORAGE	
630						3		7	630	89701	10	EACH	REMOVAL OF OVERHEAD SIGN SUPPORT AND REERECTION, TYPE TC-18.26, AS PER PLAN	139
630					1				630	89702	1	EACH	REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL	
630					1	1	1	1	630	89706	4	EACH	REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL, TYPE TC-12.30	
630					2	2			630	89806	4	EACH	REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL, TYPE TC-18.24	
630						5			630	89808	5	EACH	REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL, TYPE TC-18.26	
631				1		2		1	631	70000	4	EACH	BALLAST WIRING ENCLOSURE, TYPE A	
631				2				3	631	70100	5	EACH	BALLAST WIRING ENCLOSURE, TYPE B	
631				3		2		4	631	71000	9	EACH	BALLAST WIRING ENCLOSURE MOUNTING BRACKET	
631					4	3		1	631	84000	8	EACH	SIGN SERVICE	
631				17	20	14	15	9	631	84300	75	EACH	SIGN WIRED	
631						4		7	631	84400	11	EACH	SIGN WIRED, OVERPASS STRUCTURE MOUNTED	
631				8	10	12	11	11	631	85100	52	EACH	DISCONNECT SWITCH WITH ENCLOSURE, TYPE X	
631				8	6	8	10	10	631	85500	42	EACH	SWITCH ENCLOSURE MOUNTING BRACKET ASSEMBLY	
631								2	631	87100	2	EACH	BALLAST, TYPE CMRI-100-480, REMOTE	
631				4	6	4		1	631	87102	15	EACH	BALLAST, TYPE CMRI-100-480, INTEGRAL	
631				10		10		13	631	87200	33	EACH	BALLAST, TYPE CMRI-175-480, REMOTE	
631				14	25	16	20	9	631	87202	84	EACH	BALLAST, TYPE CMRI-175-480, INTEGRAL	
631				2					631	87300	2	EACH	BALLAST, TYPE CMRI-250-480, REMOTE	
631						3	2		631	88000	5	EACH	PHOTOELECTRIC CONTROL	
631				4	6	4		3	631	89100	17	EACH	MERCURY VAPOR LUMINAIRE, TYPE TC-31.21 WITH 100 WATT LAMP	
631				24	25	26	20	22	631	89200	117	EACH	MERCURY VAPOR LUMINAIRE, TYPE TC-31.21 WITH 175 WATT LAMP	
631				2					631	89300	2	EACH	MERCURY VAPOR LUMINAIRE, TYPE TC-31.21 WITH 250 WATT LAMP	
631				34	25	30	19	20	631	94200	128	EACH	REMOVAL OF LUMINAIRE AND DISPOSAL	
631				8	10	12	11	10	631	94304	51	EACH	REMOVAL OF DISCONNECT SWITCH ENCLOSURE AND DISPOSAL	

PLOTTED BY: lennon  
 PLOTTED FROM: c:\dgn\p\d07090\07090fgg.dgn  
 07090TGA.dgn  
 07090TGA.dgn  
 PLOT SUBMITTED: 03-APR-1992 15:48



# GENERAL SUMMARY

CUYAHOGA COUNTY  
CUY-90-16.24

OHIO

FHWA  
REGION 5

FEDERAL  
PROJECT

172  
245

NOTE: ALL FEDERAL AND STATE FUNDING

PLOTTED BY: lennon  
 PLOTTED FROM: c:\dgn\pic07090\pic07090+go.dgn  
 07090TGO.dgn  
 008  
 5  
 2  
 PLOT SUBMITTED: 03-APR-1992 15:24

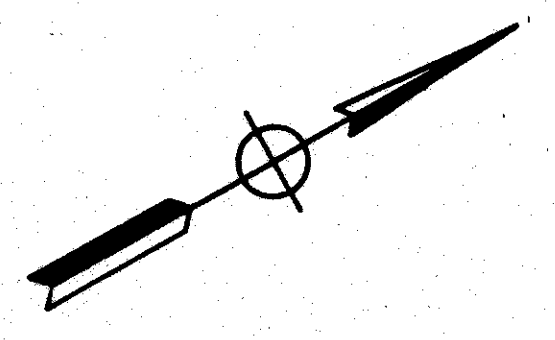
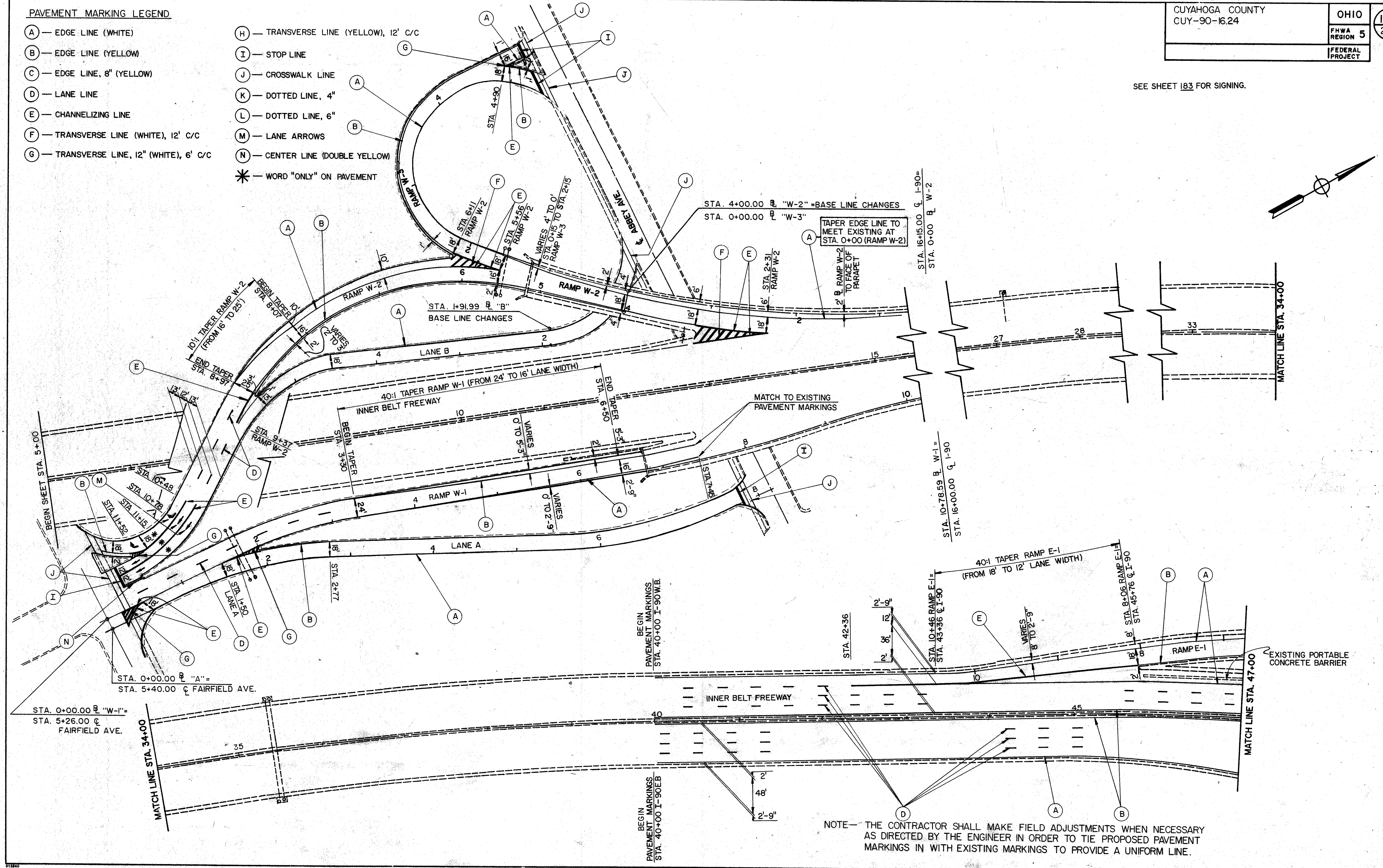
ITEM	SHEET NUMBER								ITEM	ITEM EXT.	GRAND TOTAL	UNIT	TRAFFIC CONTROL	DESCRIPTION	AS PER PLAN SHEET REF.
	140	144	145	146	147	148	149	150							
642								0.24	642	00302	0.24	MILE	CENTER LINE, TYPE 2		
644		2.89	5.32	4.28	1.22	2.17	1.33	0.95	644	00100	18.16	MILE	EDGE LINE		
644					0.15		0.12		644	00100	0.27	MILE	EDGE LINE, 8"		
644		2.56	5.80	2.59	0.53	0.05	0.08	0.16	644	00200	11.77	MILE	LANE LINE		
644		0.01					0.03	0.05	644	00300	0.09	MILE	CENTER LINE		
644		2,270	2,679	2,141	885	1,117	776	102	644	00400	9,970	LIN. FT.	CHANNELIZING LINE		
644		98			48	144	149	65	644	00500	504	LIN. FT.	STOP LINE		
644		432		64	474	870	692	112	644	00600	2,644	LIN. FT.	CROSSWALK LINE		
644		937	1,120	828	405		442		644	00700	3,732	LIN. FT.	TRANSVERSE LINE		
644		105		191	237	42		29	644	00700	604	LIN. FT.	TRANSVERSE LINE, 12"		
644							80		644	00900	80	SQ. FT.	ISLAND MARKING		
644		6			9	18	15	2	644	01300	50	EACH	LANE ARROW		
644		3			2	9	6		644	01400	20	EACH	WORD ON PAVEMENT, 72", "ONLY"		
644		218	1,639	609	440			45	644	01500	2,951	LIN. FT.	DOTTED LINE, 4"		
644							52		644	01510	52	LIN. FT.	DOTTED LINE, 6"		
802	135								802	00100	135	EACH	BARRIER REFLECTOR, TYPE A		
802	165								802	00200	165	EACH	BARRIER REFLECTOR, TYPE B		
862	1,144								862	00100	1,144	EACH	RAISED PAVEMENT MARKER		



SEE SHEET 183 FOR SIGNING.

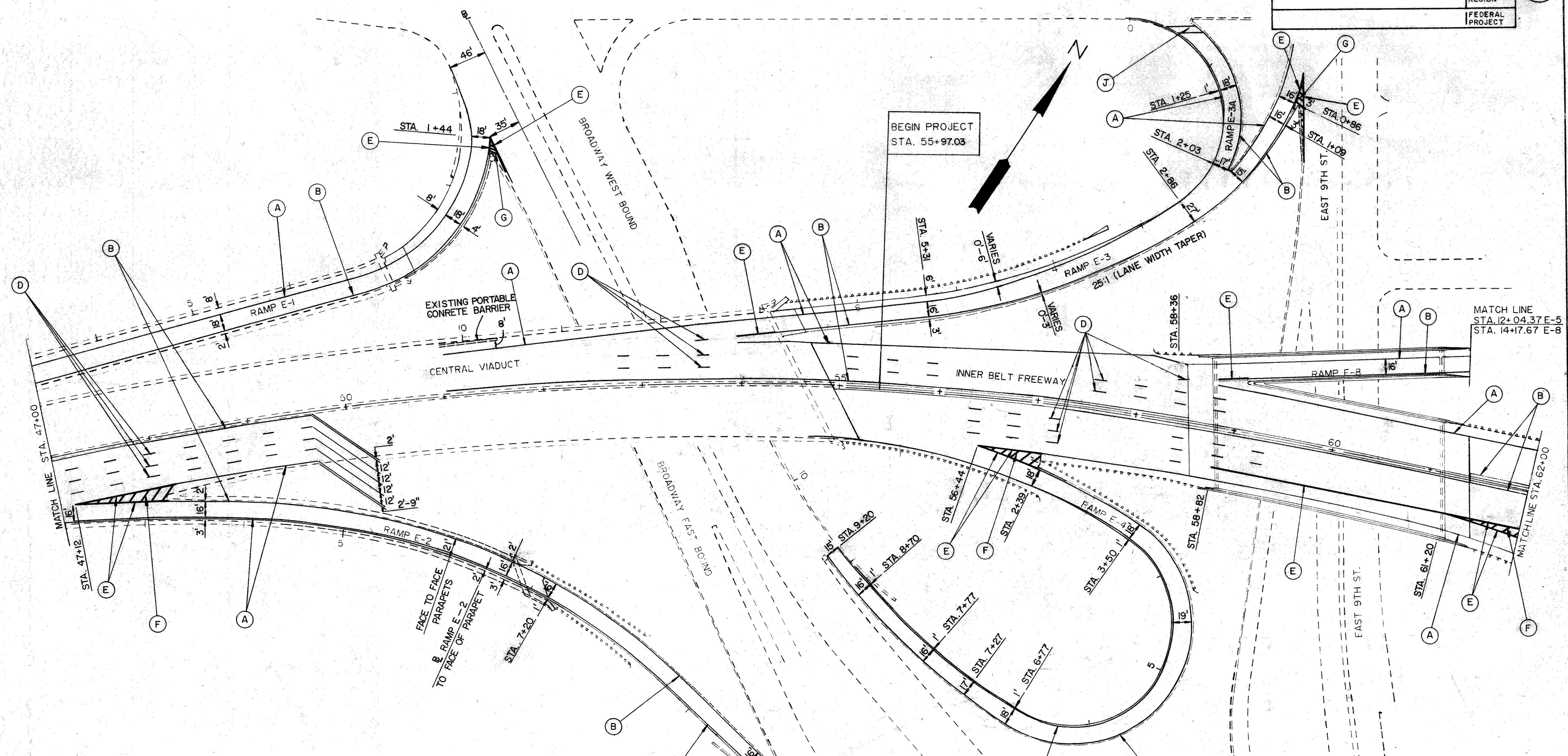
PAVEMENT MARKING LEGEND

- (A) — EDGE LINE (WHITE)
- (B) — EDGE LINE (YELLOW)
- (C) — EDGE LINE, 8" (YELLOW)
- (D) — LANE LINE
- (E) — CHANNELIZING LINE
- (F) — TRANSVERSE LINE (WHITE), 12' C/C
- (G) — TRANSVERSE LINE, 12" (WHITE), 6' C/C
- (H) — TRANSVERSE LINE (YELLOW), 12' C/C
- (I) — STOP LINE
- (J) — CROSSWALK LINE
- (K) — DOTTED LINE, 4"
- (L) — DOTTED LINE, 6"
- (M) — LANE ARROWS
- (N) — CENTER LINE (DOUBLE YELLOW)
- \* — WORD "ONLY" ON PAVEMENT



NOTE— THE CONTRACTOR SHALL MAKE FIELD ADJUSTMENTS WHEN NECESSARY AS DIRECTED BY THE ENGINEER IN ORDER TO TIE PROPOSED PAVEMENT MARKINGS IN WITH EXISTING MARKINGS TO PROVIDE A UNIFORM LINE.





**PAVEMENT MARKING LEGEND**

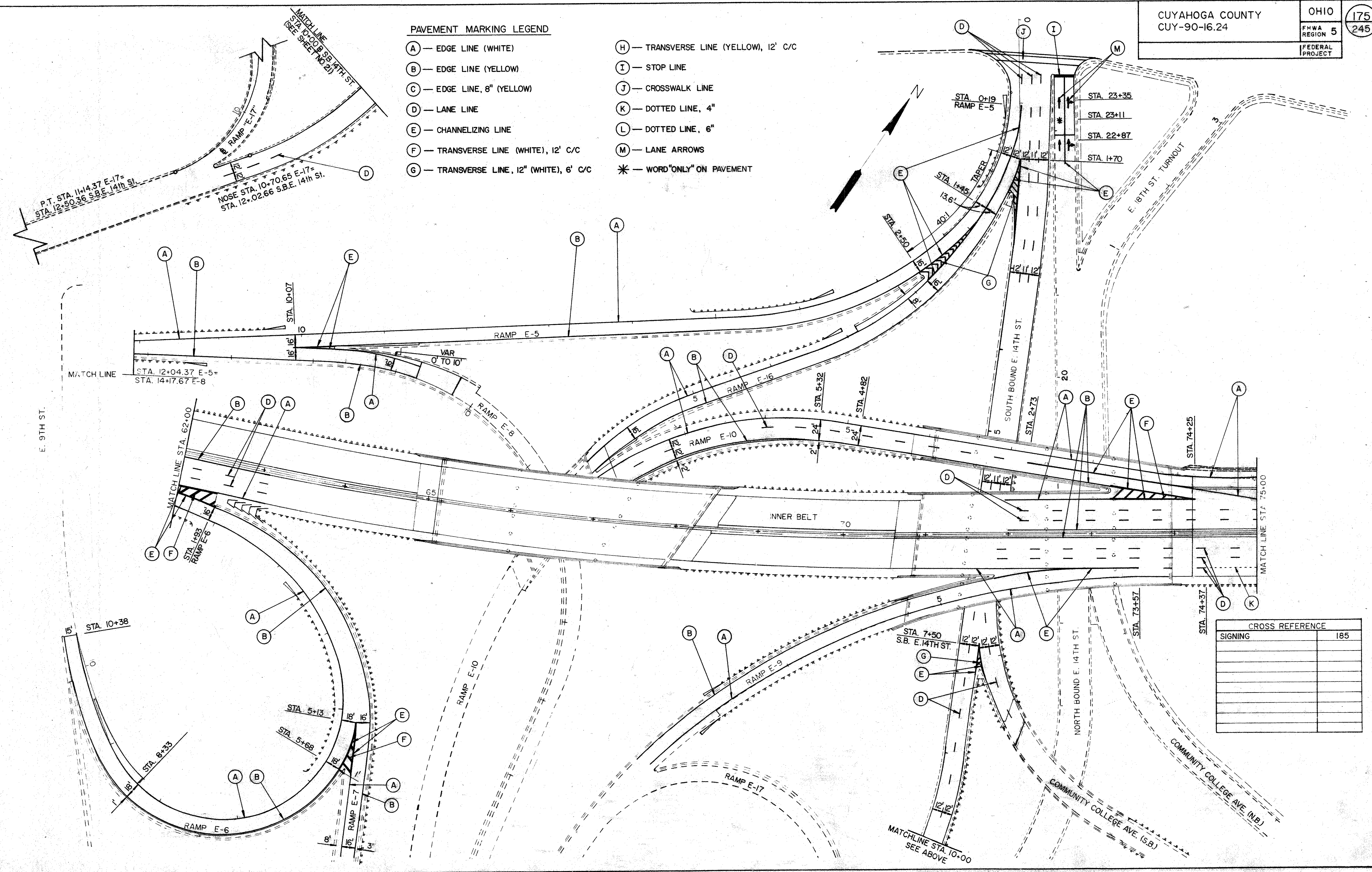
- (A) — EDGE LINE (WHITE)
- (B) — EDGE LINE (YELLOW)
- (C) — EDGE LINE, 8" (YELLOW)
- (D) — LANE LINE
- (E) — CHANNELIZING LINE
- (F) — TRANSVERSE LINE (WHITE), 12' C/C
- (G) — TRANSVERSE LINE, 12" (WHITE), 6' C/C
- (H) — TRANSVERSE LINE (YELLOW), 12' C/C
- (I) — STOP LINE
- (J) — CROSSWALK LINE
- (K) — DOTTED LINE, 4"
- (L) — DOTTED LINE, 6"
- (M) — LANE ARROWS
- \* — WORD "ONLY" ON PAVEMENT

CROSS REFERENCE	
SIGNING	184



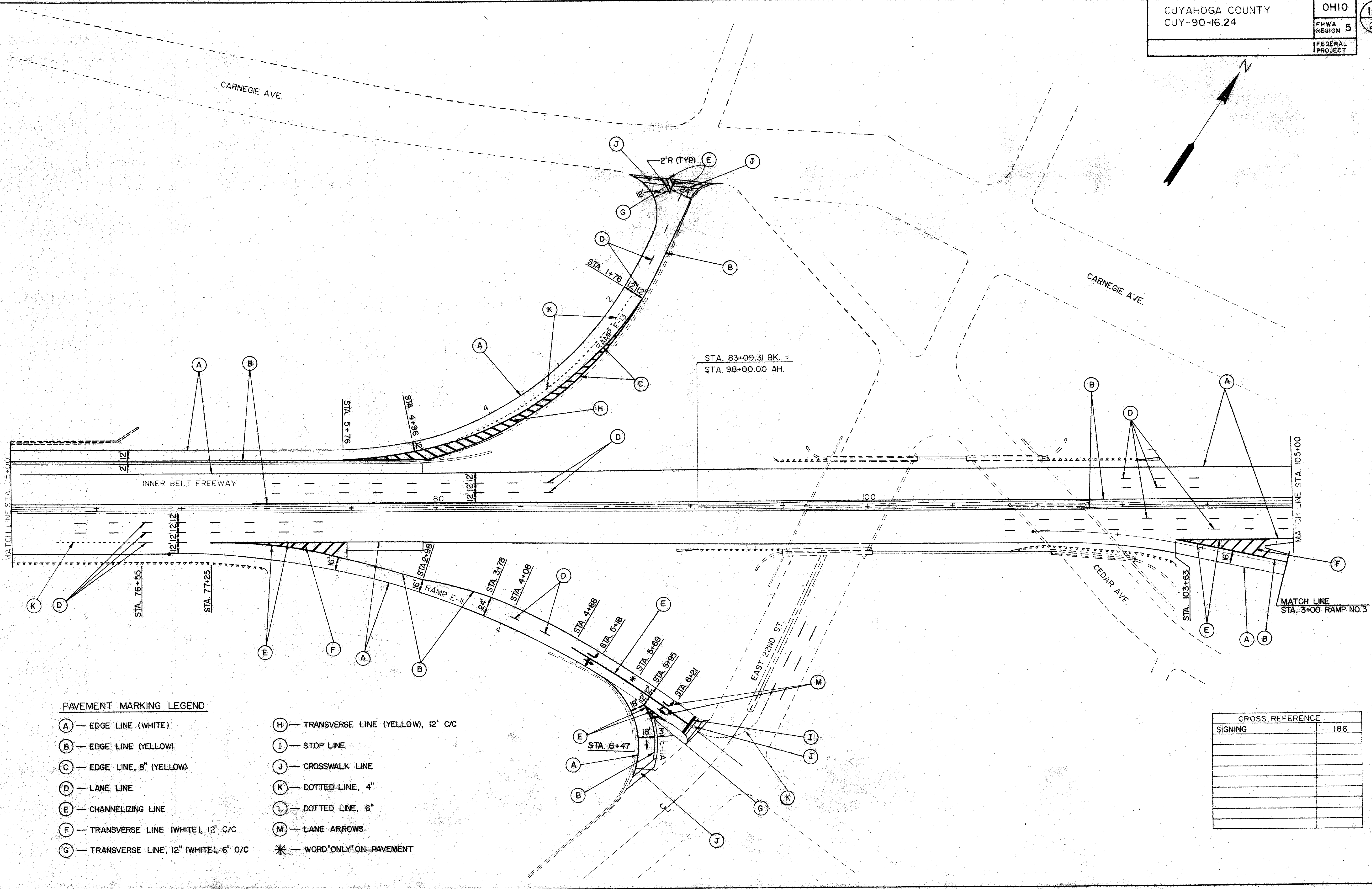
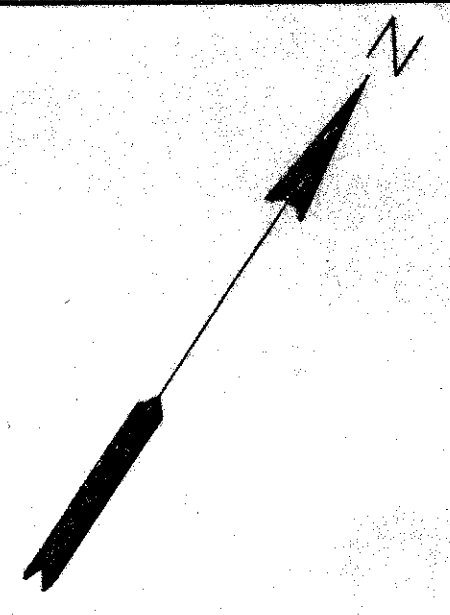
PAVEMENT MARKING LEGEND

- (A) — EDGE LINE (WHITE)
- (B) — EDGE LINE (YELLOW)
- (C) — EDGE LINE, 8" (YELLOW)
- (D) — LANE LINE
- (E) — CHANNELIZING LINE
- (F) — TRANSVERSE LINE (WHITE), 12' C/C
- (G) — TRANSVERSE LINE, 12" (WHITE), 6' C/C
- (H) — TRANSVERSE LINE (YELLOW), 12' C/C
- (I) — STOP LINE
- (J) — CROSSWALK LINE
- (K) — DOTTED LINE, 4"
- (L) — DOTTED LINE, 6"
- (M) — LANE ARROWS
- \* — WORD "ONLY" ON PAVEMENT



CROSS REFERENCE	
SIGNING	185





**PAVEMENT MARKING LEGEND**

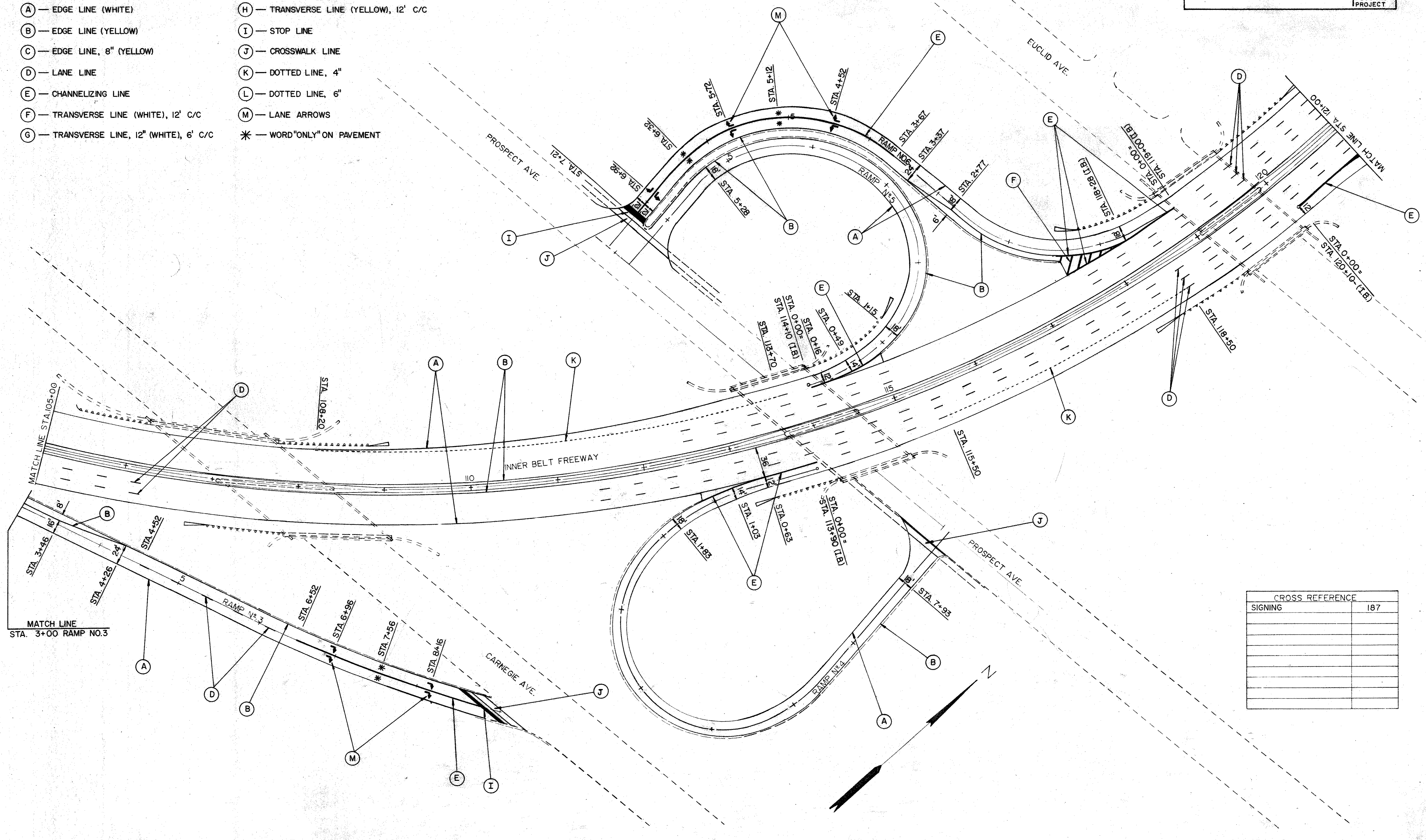
- |  |   |
|--|---|
| (A) — EDGE LINE (WHITE)                    | (H) — TRANSVERSE LINE (YELLOW), 12' C/C |
| (B) — EDGE LINE (YELLOW)                   | (I) — STOP LINE                         |
| (C) — EDGE LINE, 8" (YELLOW)               | (J) — CROSSWALK LINE                    |
| (D) — LANE LINE                            | (K) — DOTTED LINE, 4"                   |
| (E) — CHANNELIZING LINE                    | (L) — DOTTED LINE, 6"                   |
| (F) — TRANSVERSE LINE (WHITE), 12' C/C     | (M) — LANE ARROWS                       |
| (G) — TRANSVERSE LINE, 12" (WHITE), 6' C/C | * — WORD "ONLY" ON PAVEMENT             |

CROSS REFERENCE	
SIGNING	186



PAVEMENT MARKING LEGEND

- |  |   |
|--|---|
| (A) — EDGE LINE (WHITE)                    | (H) — TRANSVERSE LINE (YELLOW), 12' C/C |
| (B) — EDGE LINE (YELLOW)                   | (I) — STOP LINE                         |
| (C) — EDGE LINE, 8" (YELLOW)               | (J) — CROSSWALK LINE                    |
| (D) — LANE LINE                            | (K) — DOTTED LINE, 4"                   |
| (E) — CHANNELIZING LINE                    | (L) — DOTTED LINE, 6"                   |
| (F) — TRANSVERSE LINE (WHITE), 12' C/C     | (M) — LANE ARROWS                       |
| (G) — TRANSVERSE LINE, 12" (WHITE), 6' C/C | * — WORD "ONLY" ON PAVEMENT             |

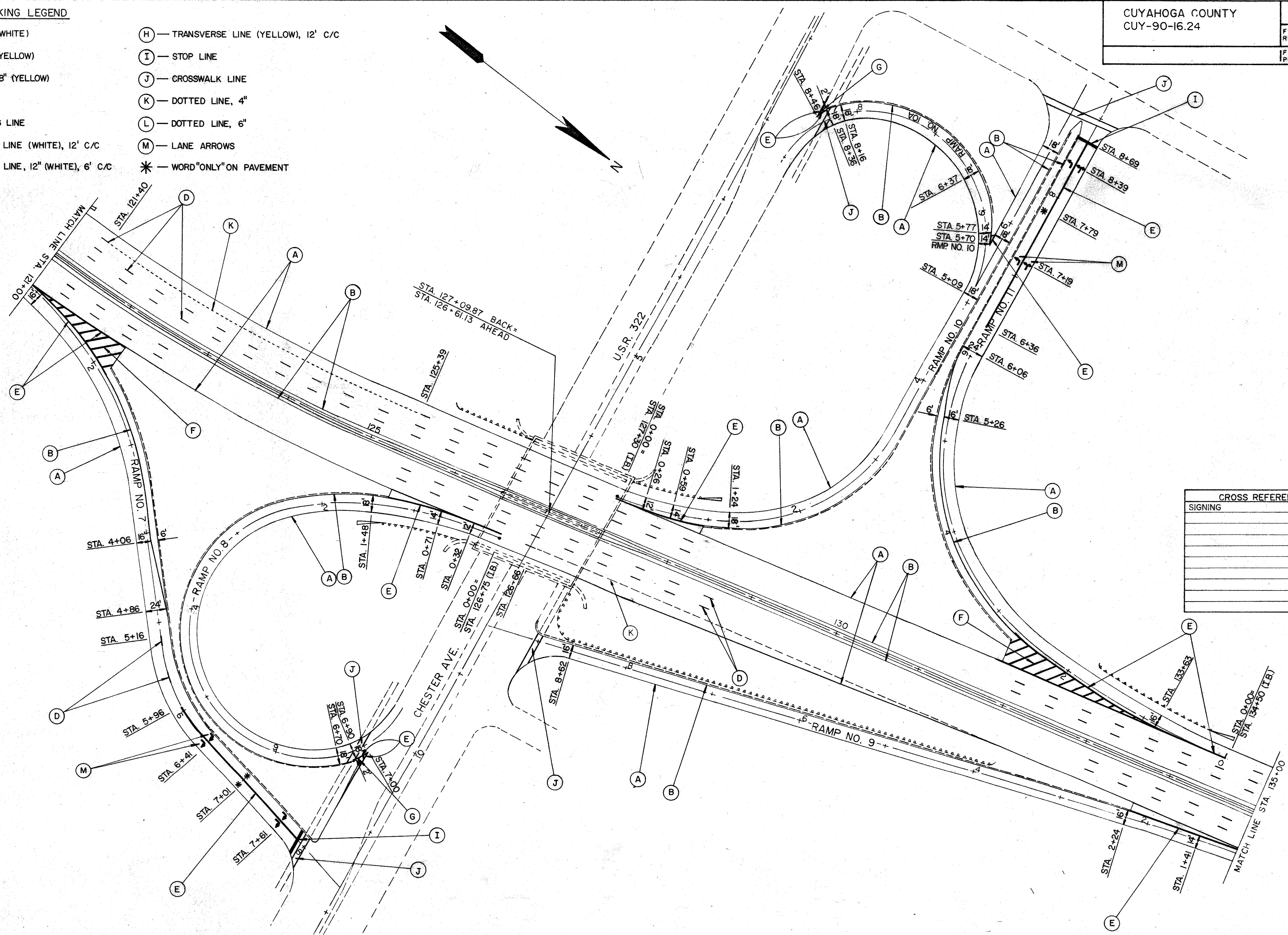


CROSS REFERENCE	
SIGNING	187



PAVEMENT MARKING LEGEND

- (A) — EDGE LINE (WHITE)
- (B) — EDGE LINE (YELLOW)
- (C) — EDGE LINE, 8" (YELLOW)
- (D) — LANE LINE
- (E) — CHANNELIZING LINE
- (F) — TRANSVERSE LINE (WHITE), 12' C/C
- (G) — TRANSVERSE LINE, 12" (WHITE), 6' C/C
- (H) — TRANSVERSE LINE (YELLOW), 12' C/C
- (I) — STOP LINE
- (J) — CROSSWALK LINE
- (K) — DOTTED LINE, 4"
- (L) — DOTTED LINE, 6"
- (M) — LANE ARROWS
- \* — WORD "ONLY" ON PAVEMENT

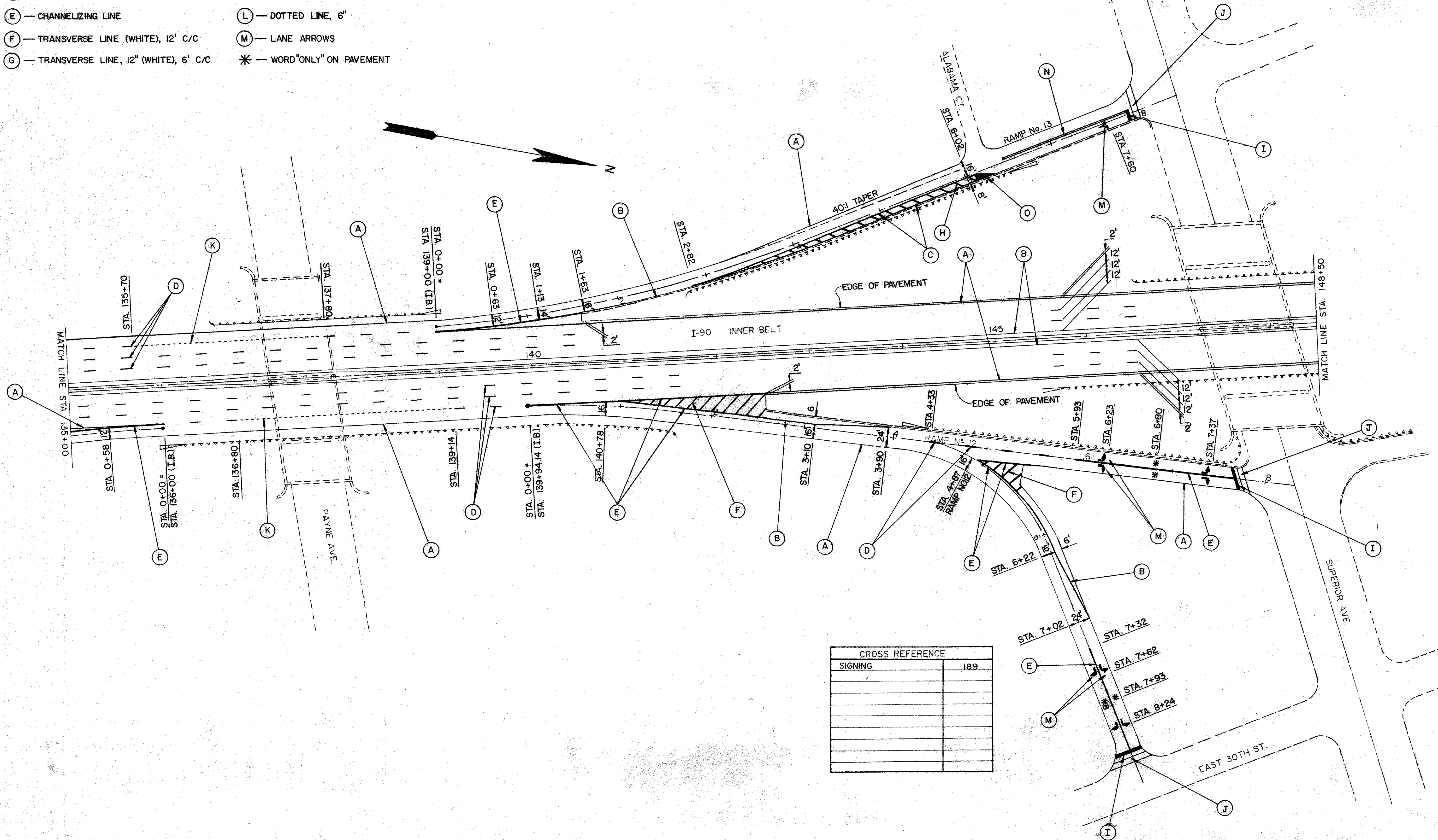


CROSS REFERENCE	
SIGNING	188



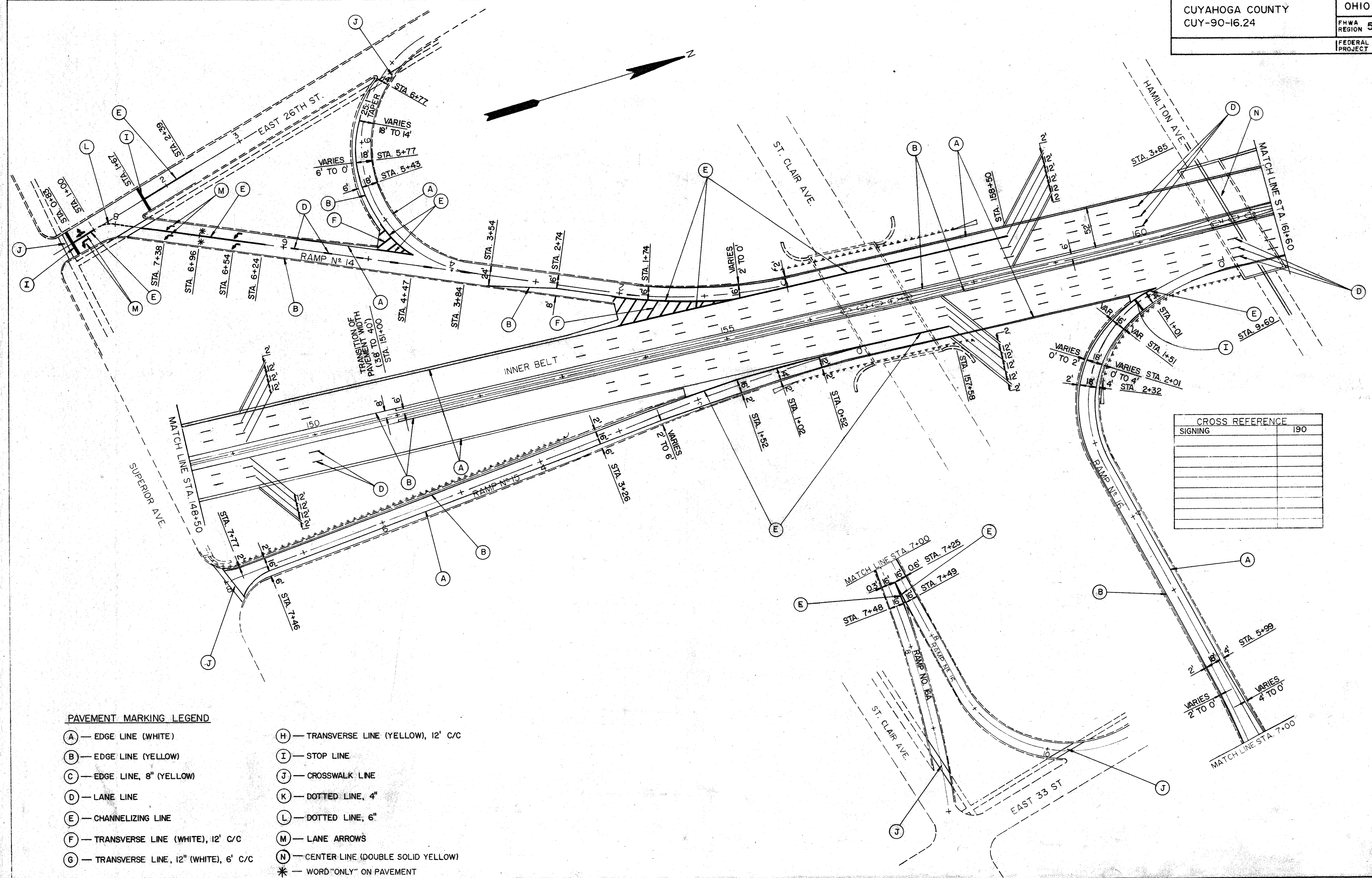
PAVEMENT MARKING LEGEND

- (A) — EDGE LINE (WHITE)
- (B) — EDGE LINE (YELLOW)
- (C) — EDGE LINE, 8" (YELLOW)
- (D) — LANE LINE
- (E) — CHANNELIZING LINE
- (F) — TRANSVERSE LINE (WHITE), 12' C/C
- (G) — TRANSVERSE LINE, 12" (WHITE), 6' C/C
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- (I) — STOP LINE
- (J) — CROSSWALK LINE
- (K) — DOTTED LINE, 4"
- (L) — DOTTED LINE, 6"
- (M) — LANE ARROWS
- \* — WORD "ONLY" ON PAVEMENT
- (N) — CENTER LINE (DOUBLE SOLID YELLOW)
- (O) — ISLAND MARKING (YELLOW)



CROSS REFERENCE	
SIGNING	189

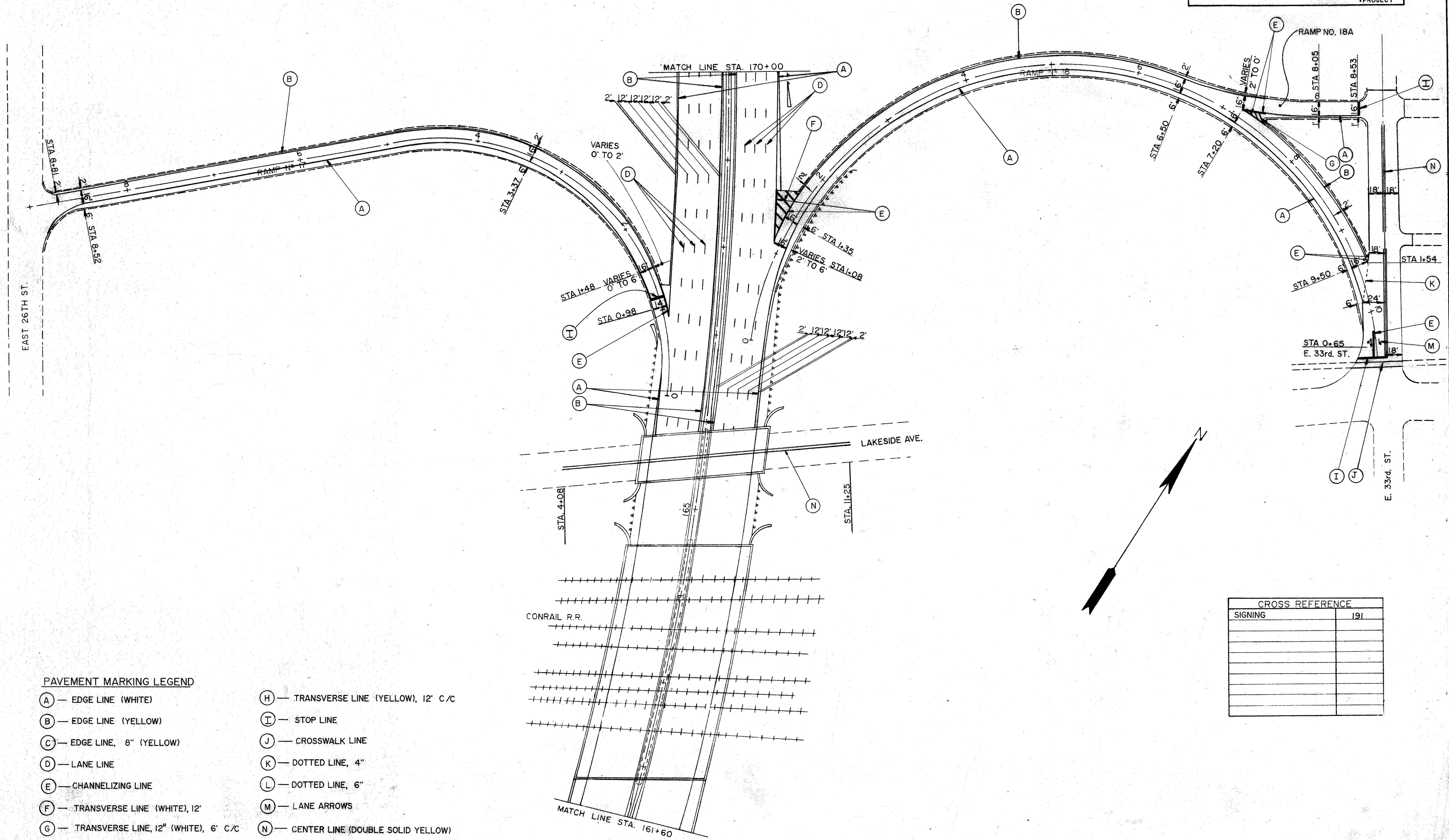




CROSS REFERENCE	
SIGNING	190

- PAVEMENT MARKING LEGEND**
- (A) — EDGE LINE (WHITE)
  - (B) — EDGE LINE (YELLOW)
  - (C) — EDGE LINE, 8" (YELLOW)
  - (D) — LANE LINE
  - (E) — CHANNELIZING LINE
  - (F) — TRANSVERSE LINE (WHITE), 12' C/C
  - (G) — TRANSVERSE LINE, 12" (WHITE), 6' C/C
  - (H) — TRANSVERSE LINE (YELLOW), 12' C/C
  - (I) — STOP LINE
  - (J) — CROSSWALK LINE
  - (K) — DOTTED LINE, 4"
  - (L) — DOTTED LINE, 6"
  - (M) — LANE ARROWS
  - (N) — CENTER LINE (DOUBLE SOLID YELLOW)
  - \* — WORD "ONLY" ON PAVEMENT

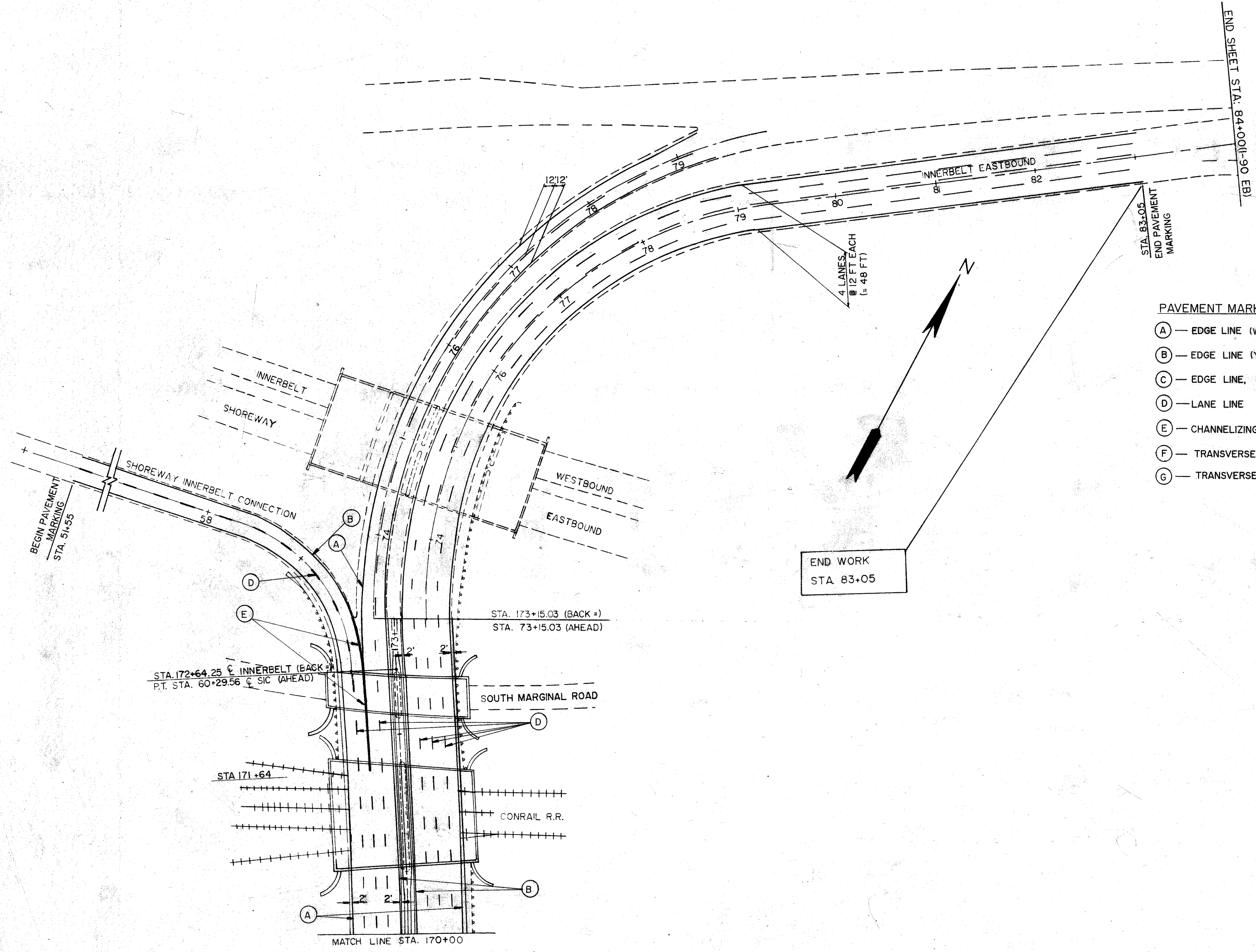




PAVEMENT MARKING LEGEND

- (A) — EDGE LINE (WHITE)
- (B) — EDGE LINE (YELLOW)
- (C) — EDGE LINE, 8" (YELLOW)
- (D) — LANE LINE
- (E) — CHANNELIZING LINE
- (F) — TRANSVERSE LINE (WHITE), 12'
- (G) — TRANSVERSE LINE, 12" (WHITE), 6' C/C
- (H) — TRANSVERSE LINE (YELLOW), 12' C/C
- (I) — STOP LINE
- (J) — CROSSWALK LINE
- (K) — DOTTED LINE, 4"
- (L) — DOTTED LINE, 6"
- (M) — LANE ARROWS
- (N) — CENTER LINE (DOUBLE SOLID YELLOW)
- \* — WORD "ONLY" ON PAVEMENT

CROSS REFERENCE	
SIGNING	191



PAVEMENT MARKING LEGEND

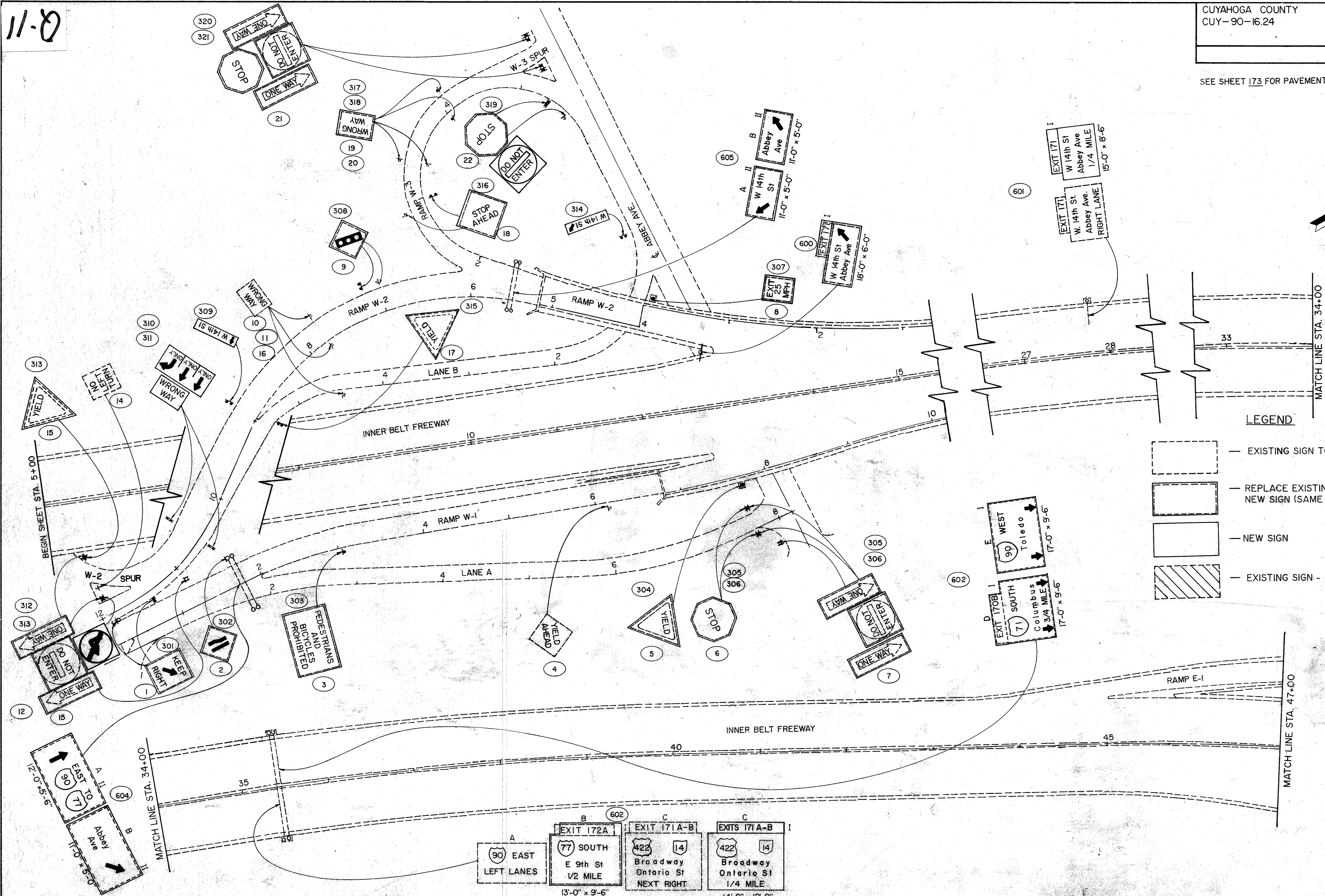
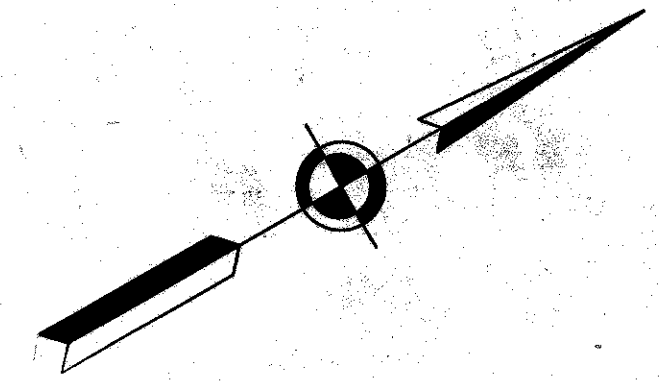
- (A) — EDGE LINE (WHITE)
- (B) — EDGE LINE (YELLOW)
- (C) — EDGE LINE, 8" (YELLOW)
- (D) — LANE LINE
- (E) — CHANNELIZING LINE
- (F) — TRANSVERSE LINE (WHITE), 12' C/C
- (G) — TRANSVERSE LINE, 12" (WHITE), 6' C/C
- (H) — TRANSVERSE LINE, (YELLOW), 12' C/C
- (I) — STOP LINE
- (J) — CROSSWALK LINE
- (K) — DOTTED LINE, 4"
- (L) — DOTTED LINE, 6"
- (M) — LANE ARROWS
- (N) — CENTER LINE (DOUBLE SOLID YELLOW)
- \* — WORD "ONLY" ON PAVEMENT.

CROSS REFERENCE	
SIGNING	192

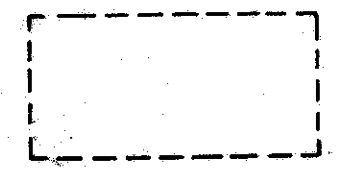
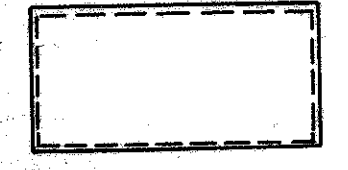
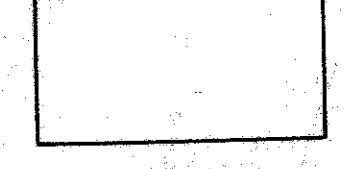



11-0

SEE SHEET 173 FOR PAVEMENT MARKINGS



LEGEND

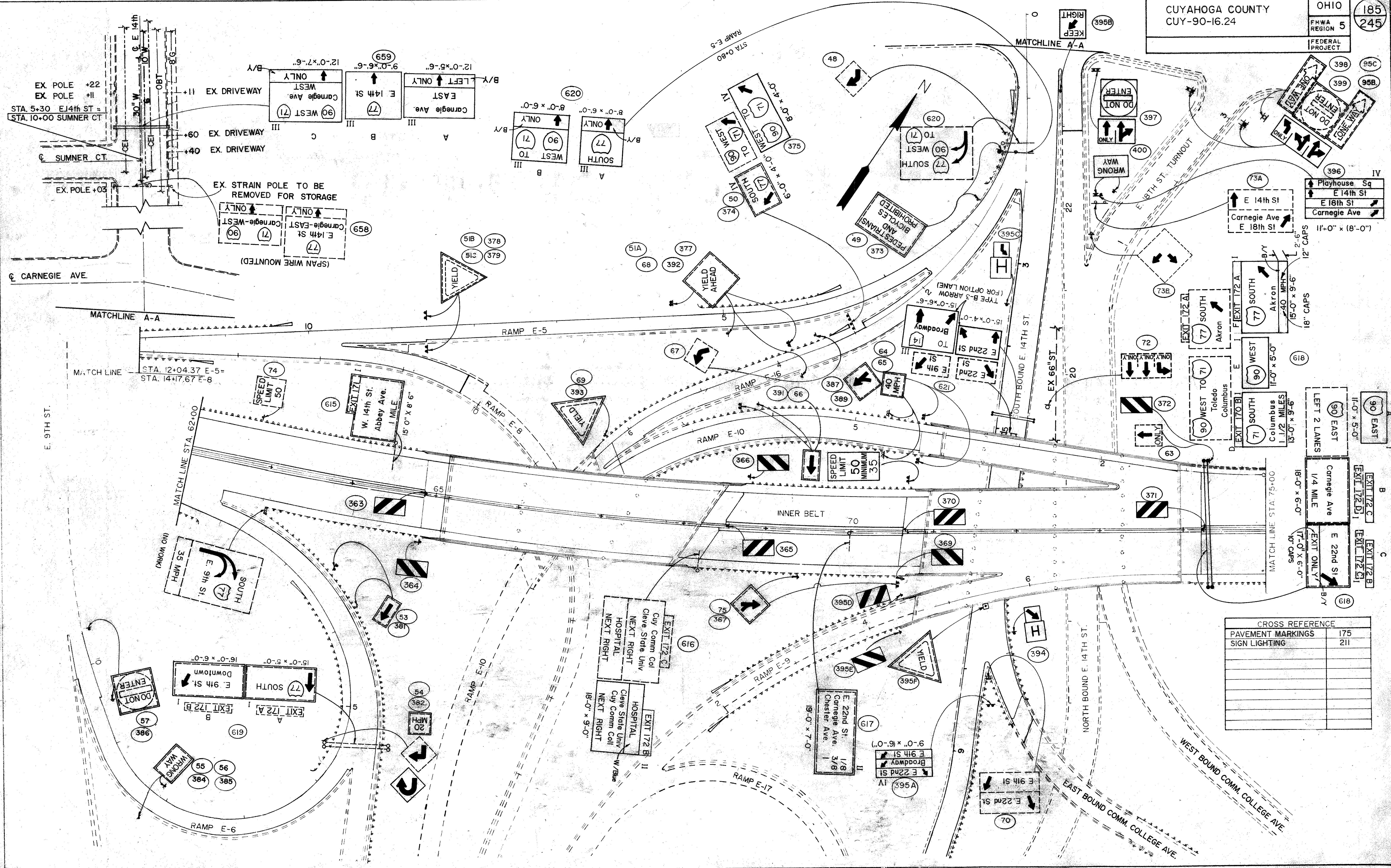
-  — EXISTING SIGN TO BE REMOVED
-  — REPLACE EXISTING SIGN WITH NEW SIGN (SAME LEGEND)
-  — NEW SIGN
-  — EXISTING SIGN - NO WORK

A 90 EAST LEFT LANES 13'-0" x 9'-6"	B EXIT 172A 77 SOUTH E 9th St 1/2 MILE 13'-0" x 9'-6"	C EXIT 171A-B 422 14 Broadway Ontario St NEXT RIGHT 14'-0" x 12'-0"	D EXIT 170B 71 SOUTH Columbus 3/4 MILE 17'-0" x 9'-6"	E WEST 90 Toledo 17'-0" x 9'-6"
--	--	---	--	--





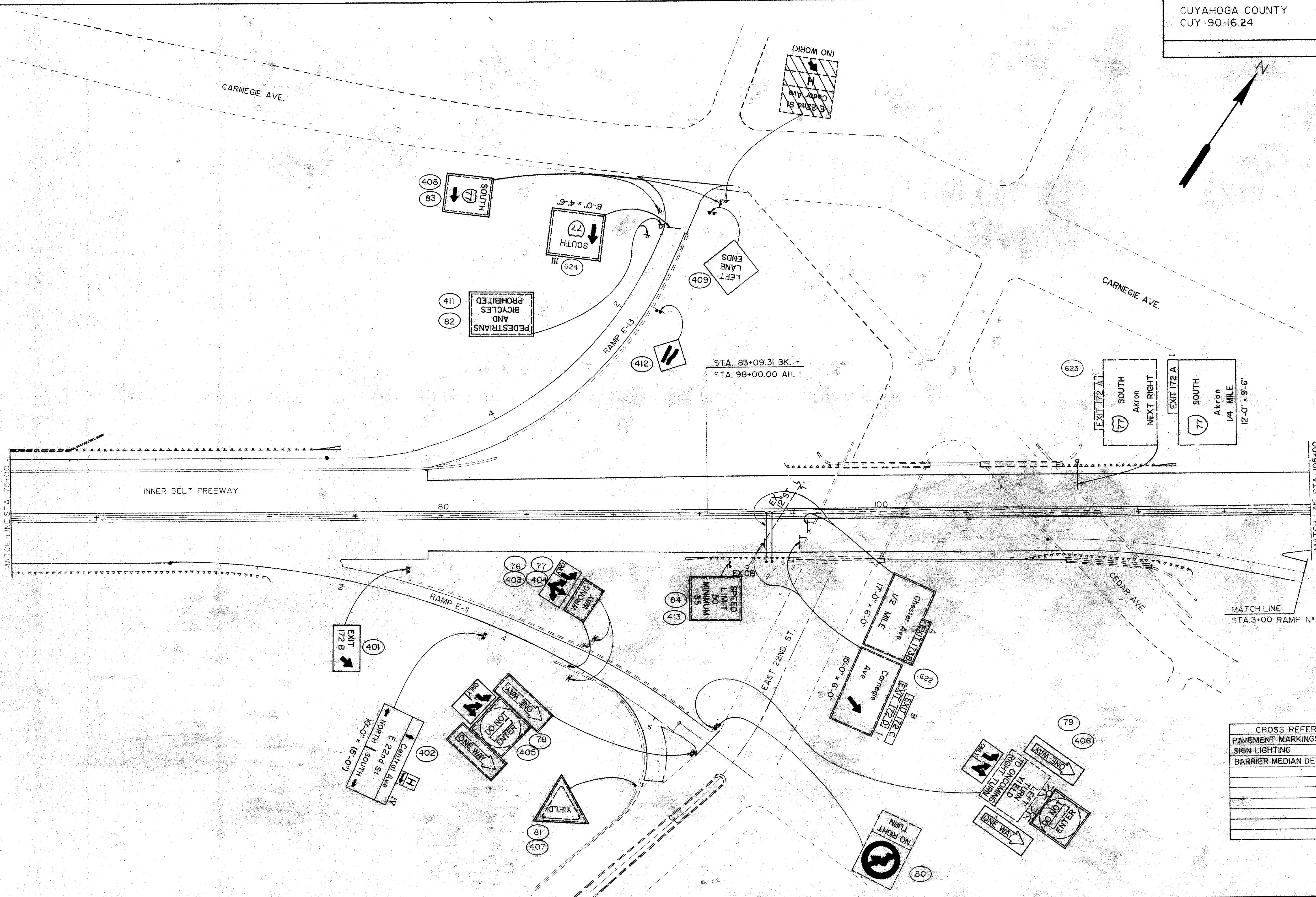
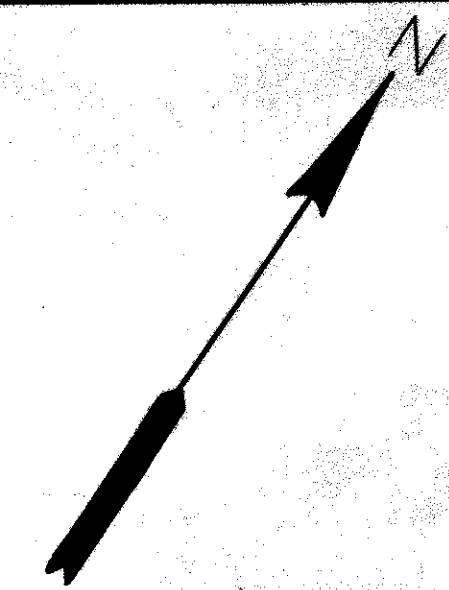




CROSS REFERENCE

PAVEMENT MARKINGS	175
SIGN LIGHTING	211





CROSS REFERENCE	
PAVEMENT MARKINGS	175
SIGN LIGHTING	211
BARRIER MEDIAN DETAIL	215

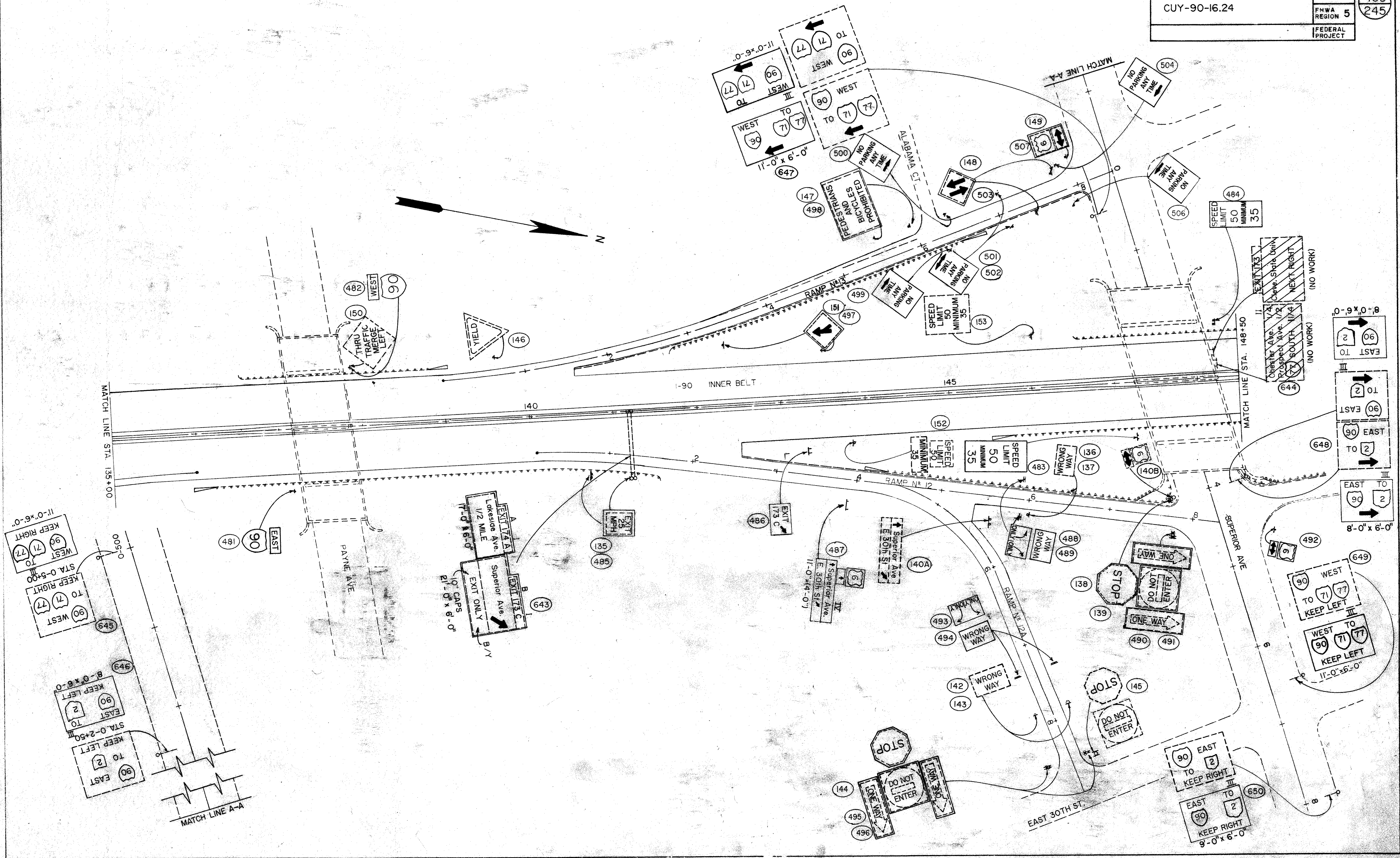






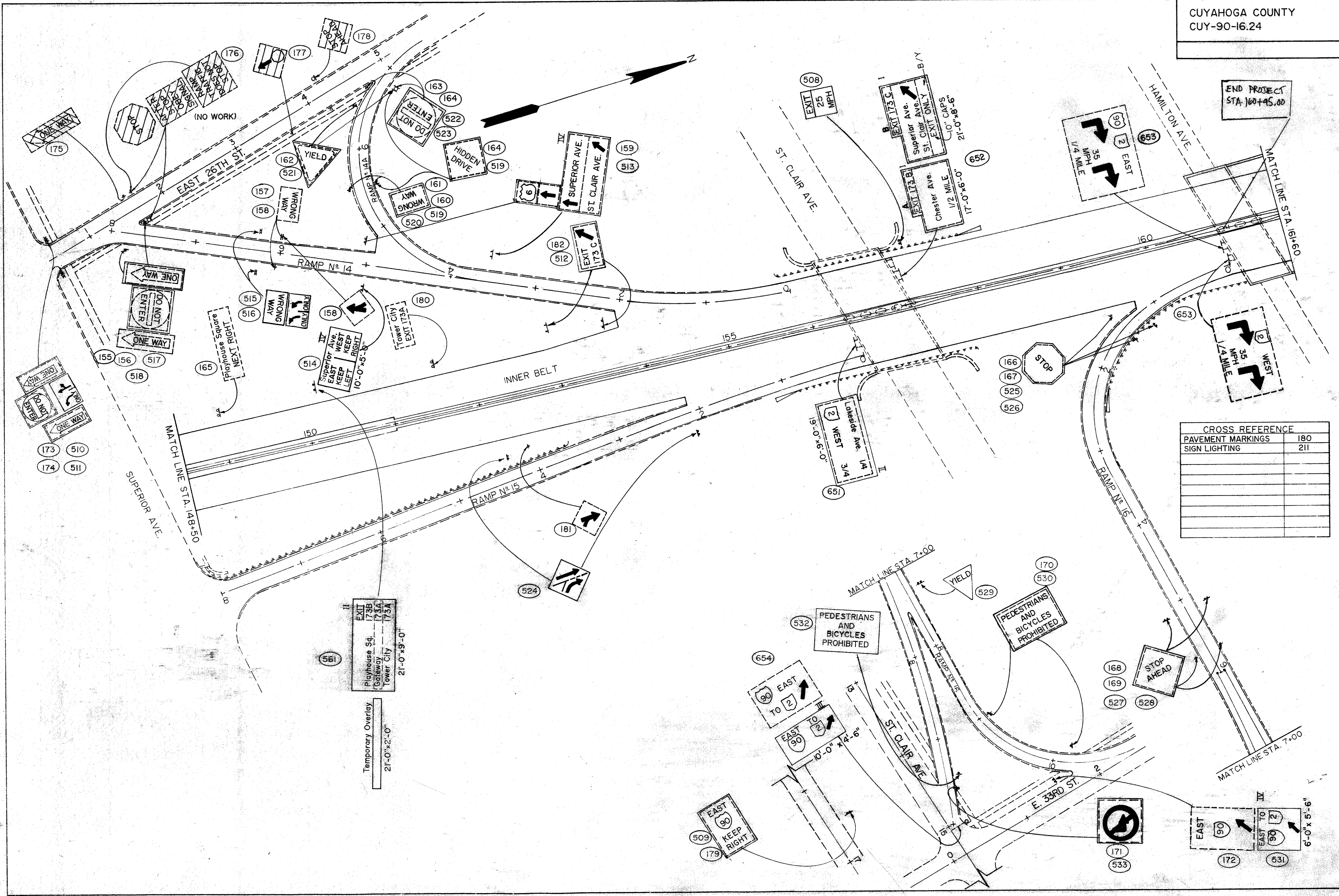






TRAFFIC CONTROL PLAN SHEET STA. 135+00 TO STA 148+50





END PROJECT  
 STA 160+95.00

CROSS REFERENCE	
PAVEMENT MARKINGS	180
SIGN LIGHTING	211

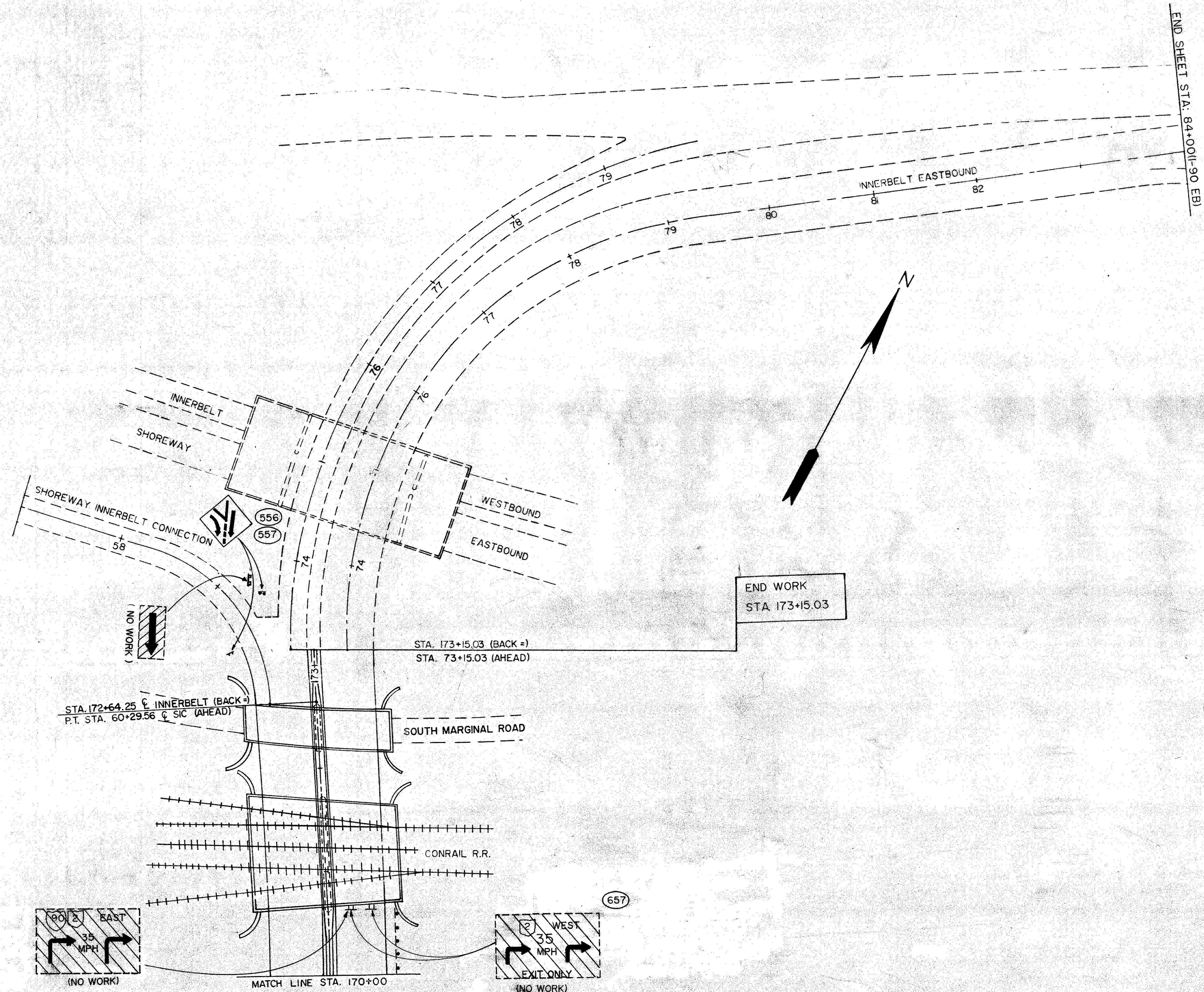
EXIT  
 173B  
 Playhouse Sq.  
 Gateway  
 Tower City  
 21'-0" x 9'-0"

Temporary Overlay  
 21'-0" x 2'-0"



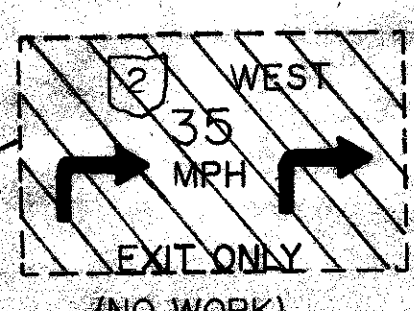
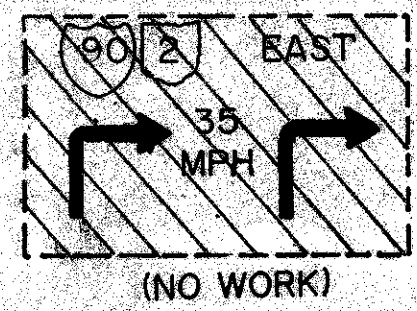




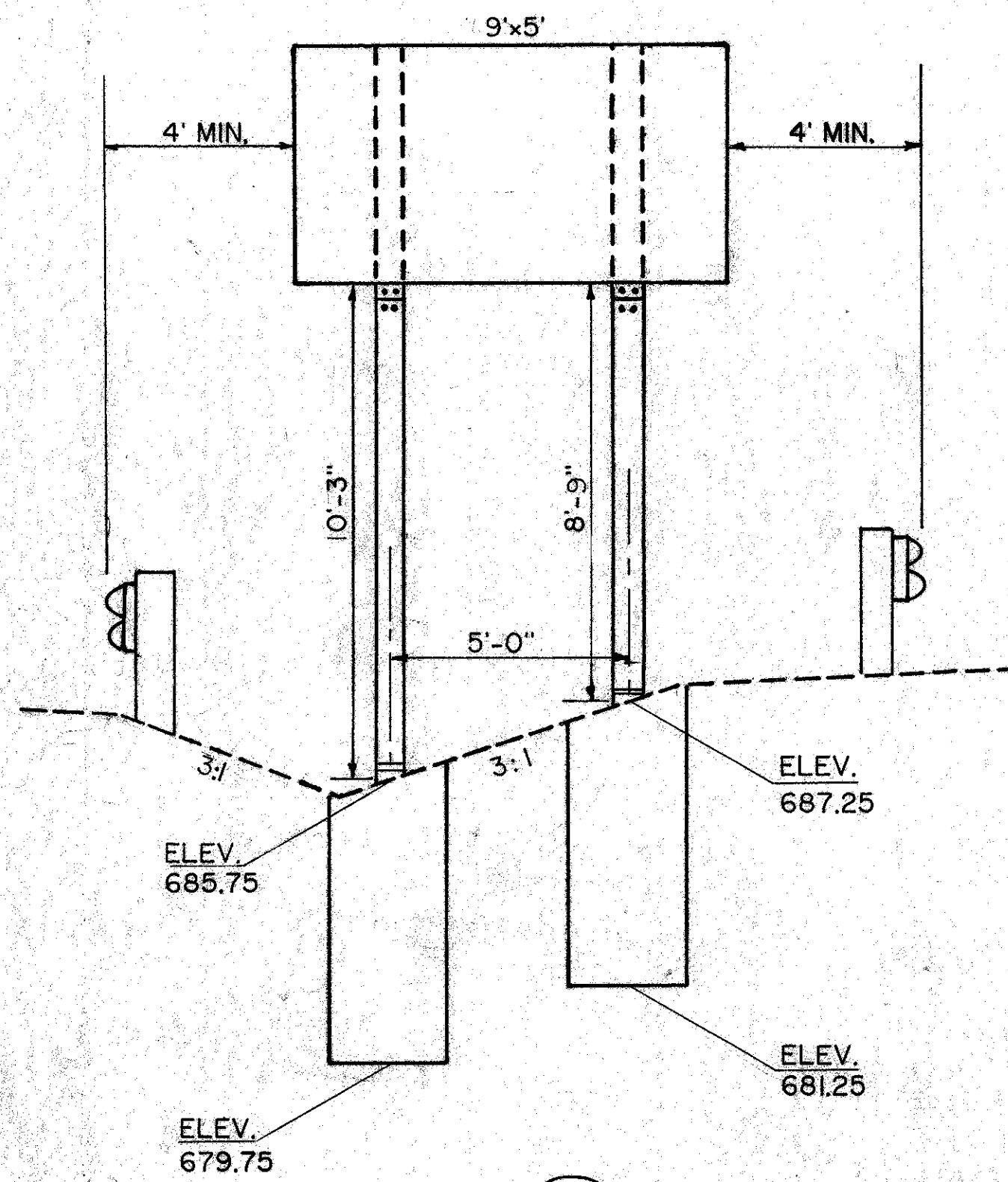


END WORK  
 STA 173+15.03

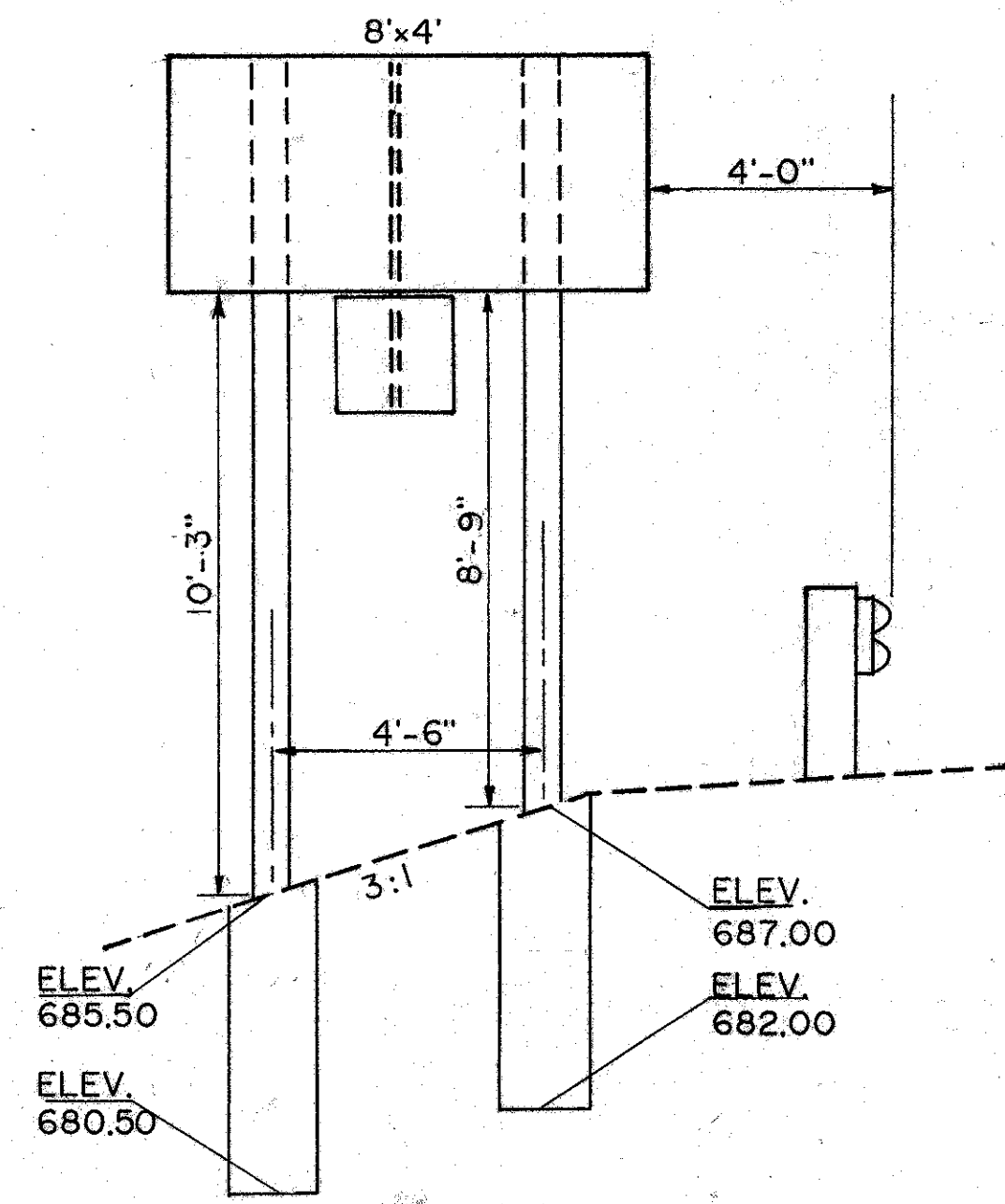
CROSS REFERENCE	
PAVEMENT MARKINGS	182



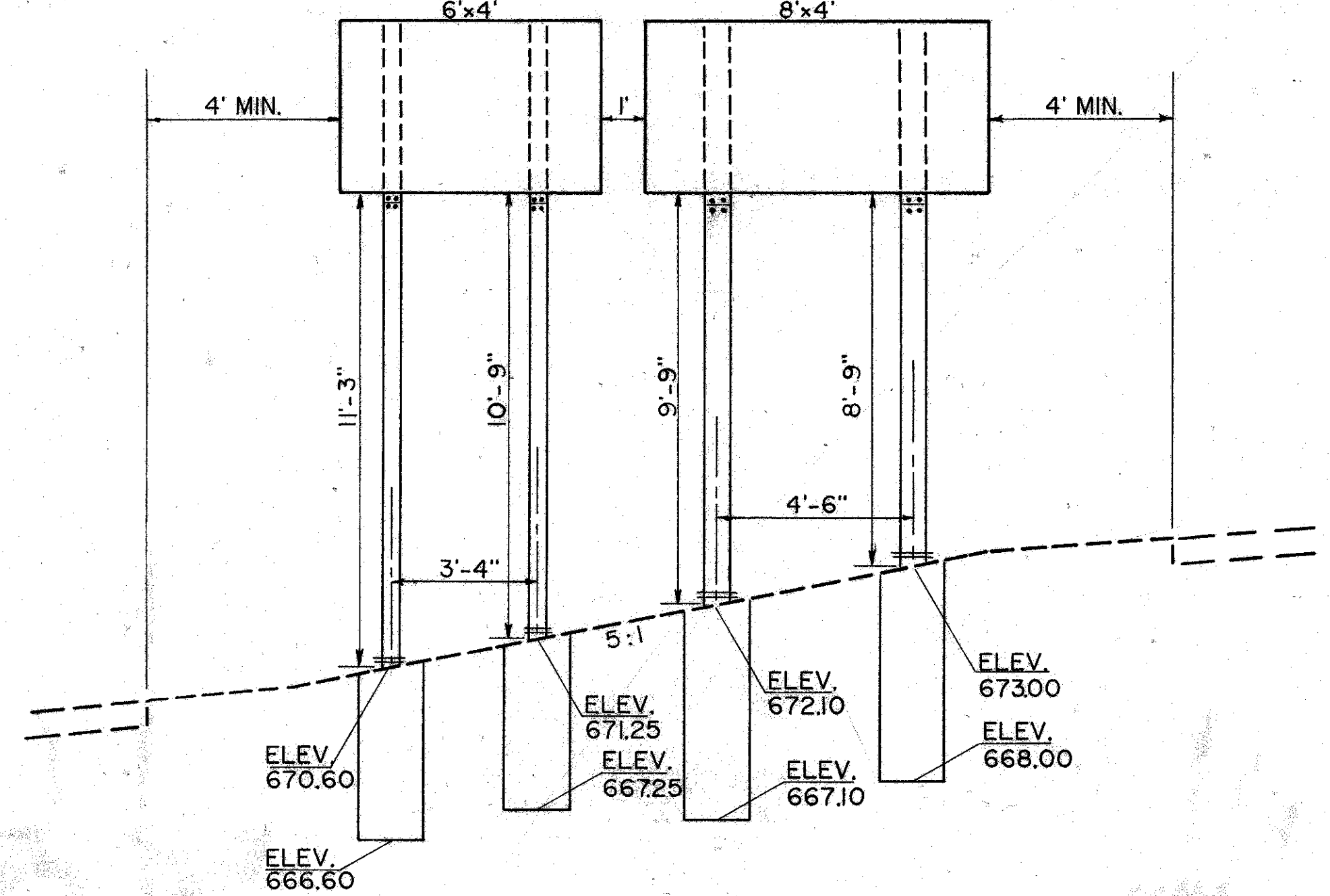




SIGN NO. (344B)  
STA. 57+68 RT. (I-90)  
TWO BEAMS (W10x12) (Breakaway)

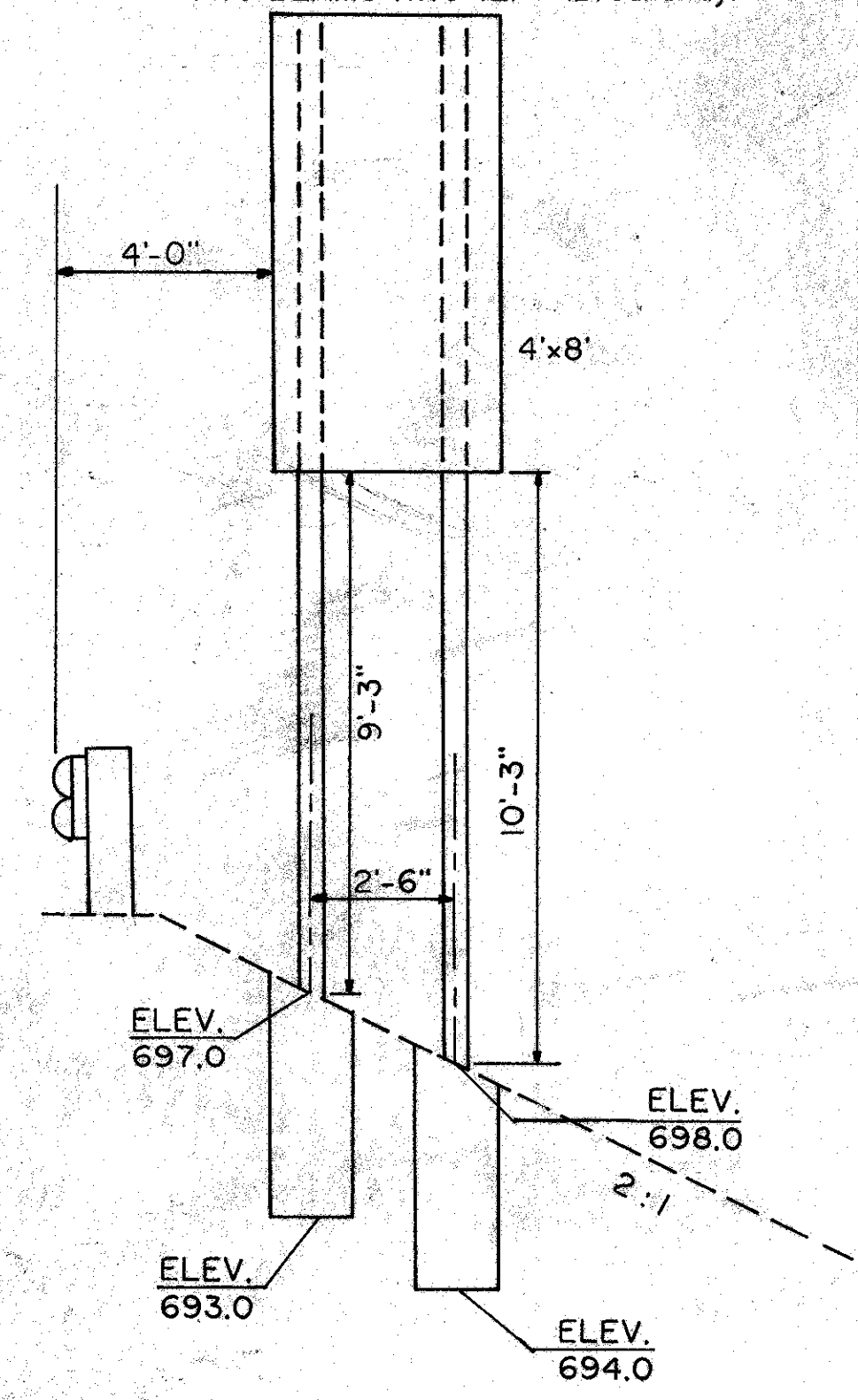


SIGN NO. (344A)  
RAMP E-4  
STA. 3+70 LT.  
TWO BEAMS (W6x9)

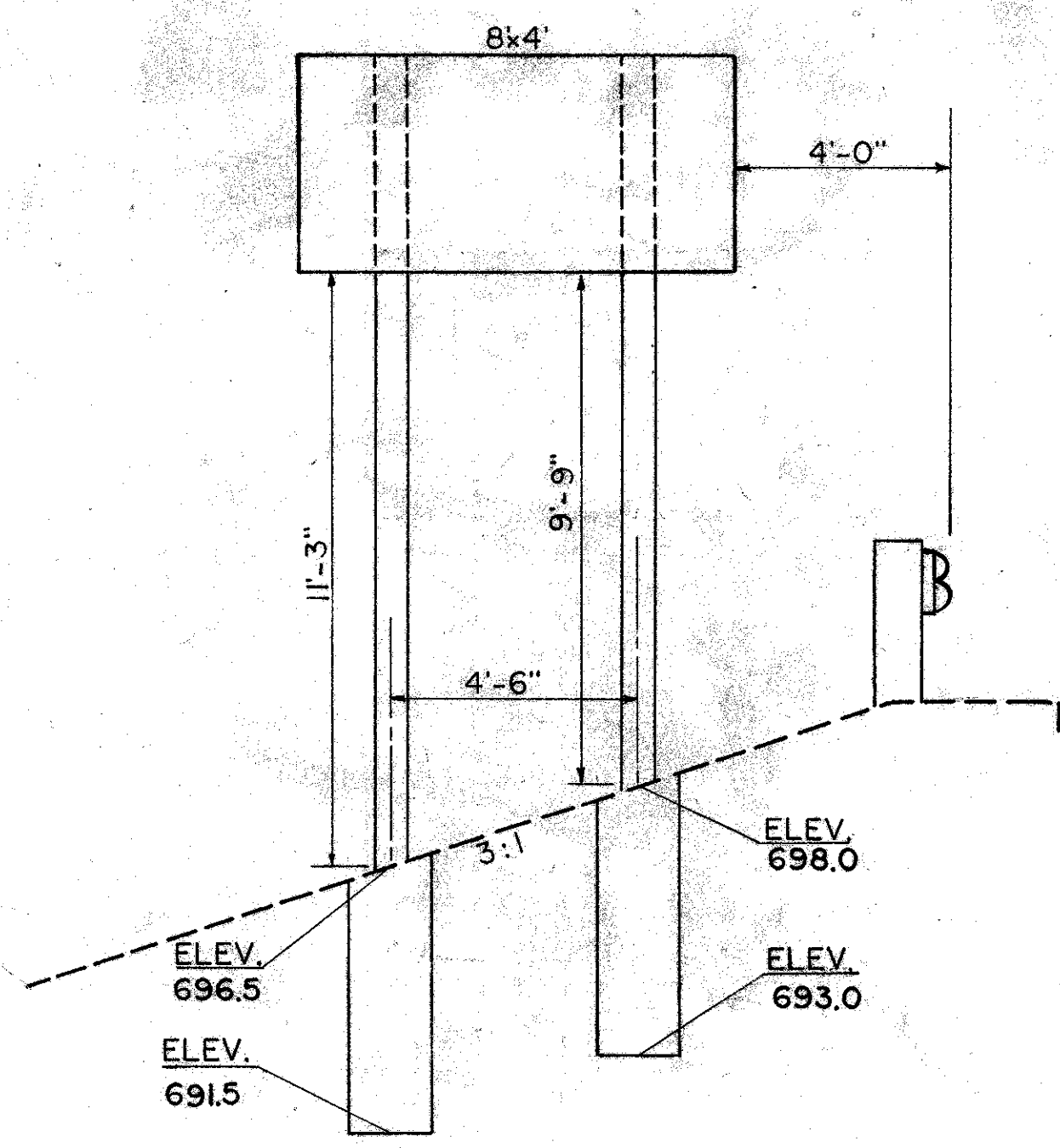


SIGN NO. (374)  
RAMP E-5  
STA. 3+65 LT.  
TWO BEAMS (S4x7.7)  
(Breakaway)

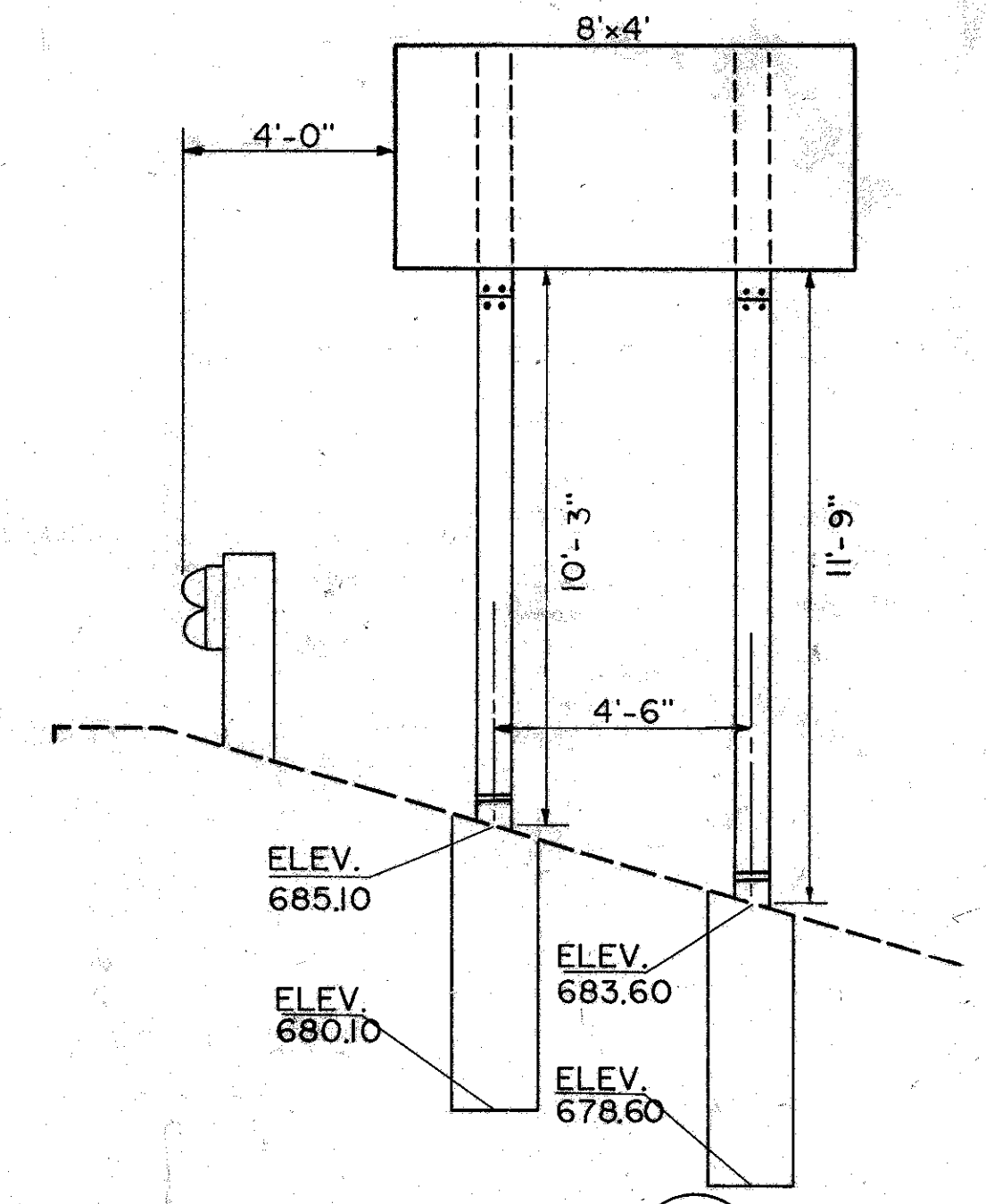
SIGN NO. (375)  
RAMP E-5  
STA. 3+65 LT.  
TWO BEAMS (W6x9)  
(Breakaway)



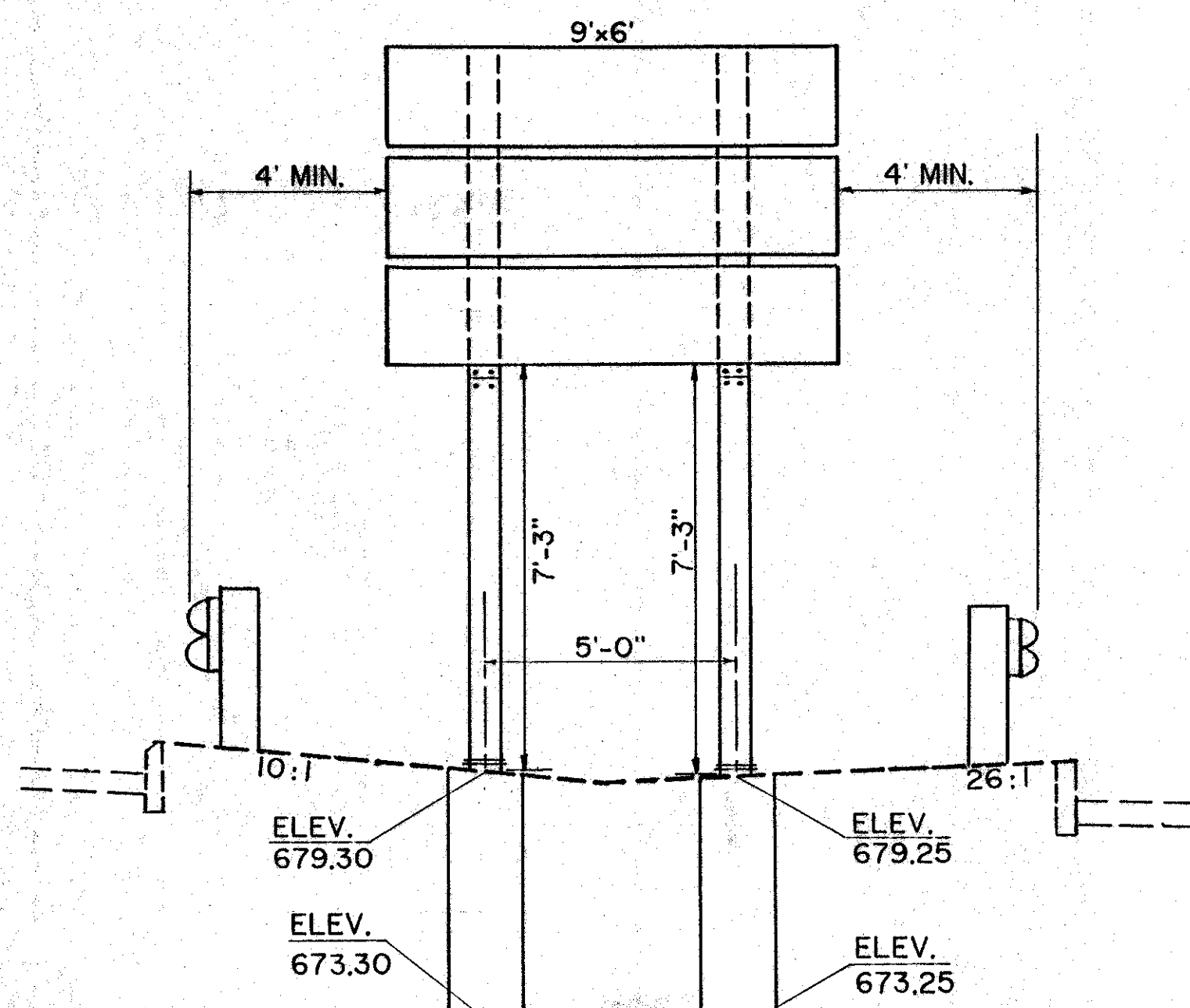
SIGN NO. (368)  
STA. 70+55 LT. (I-90)  
TWO BEAMS (S4x7.7)



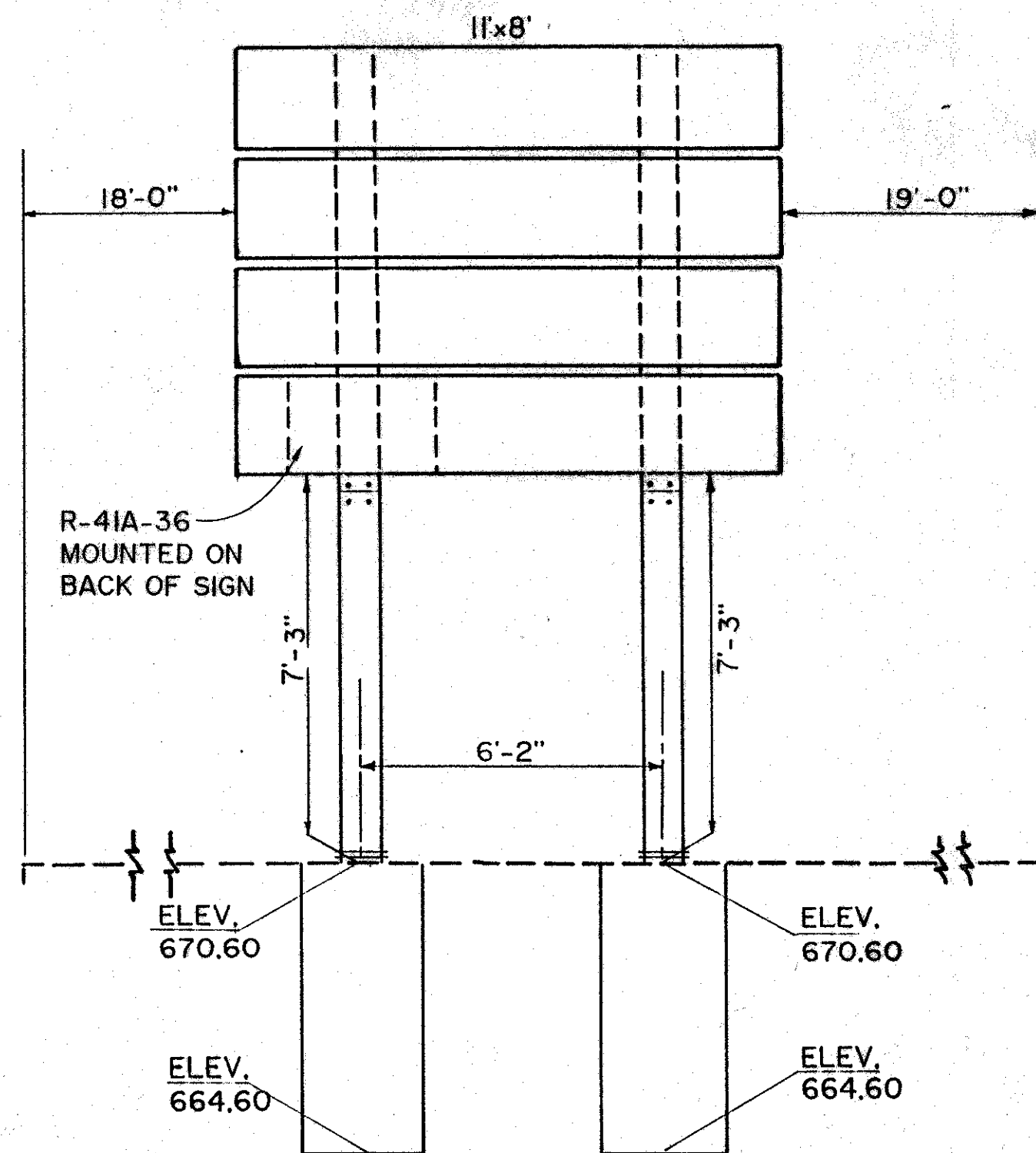
SIGN NO. (381)  
RAMP E-6  
STA. 3+40 LT.  
TWO BEAMS (W6x9)



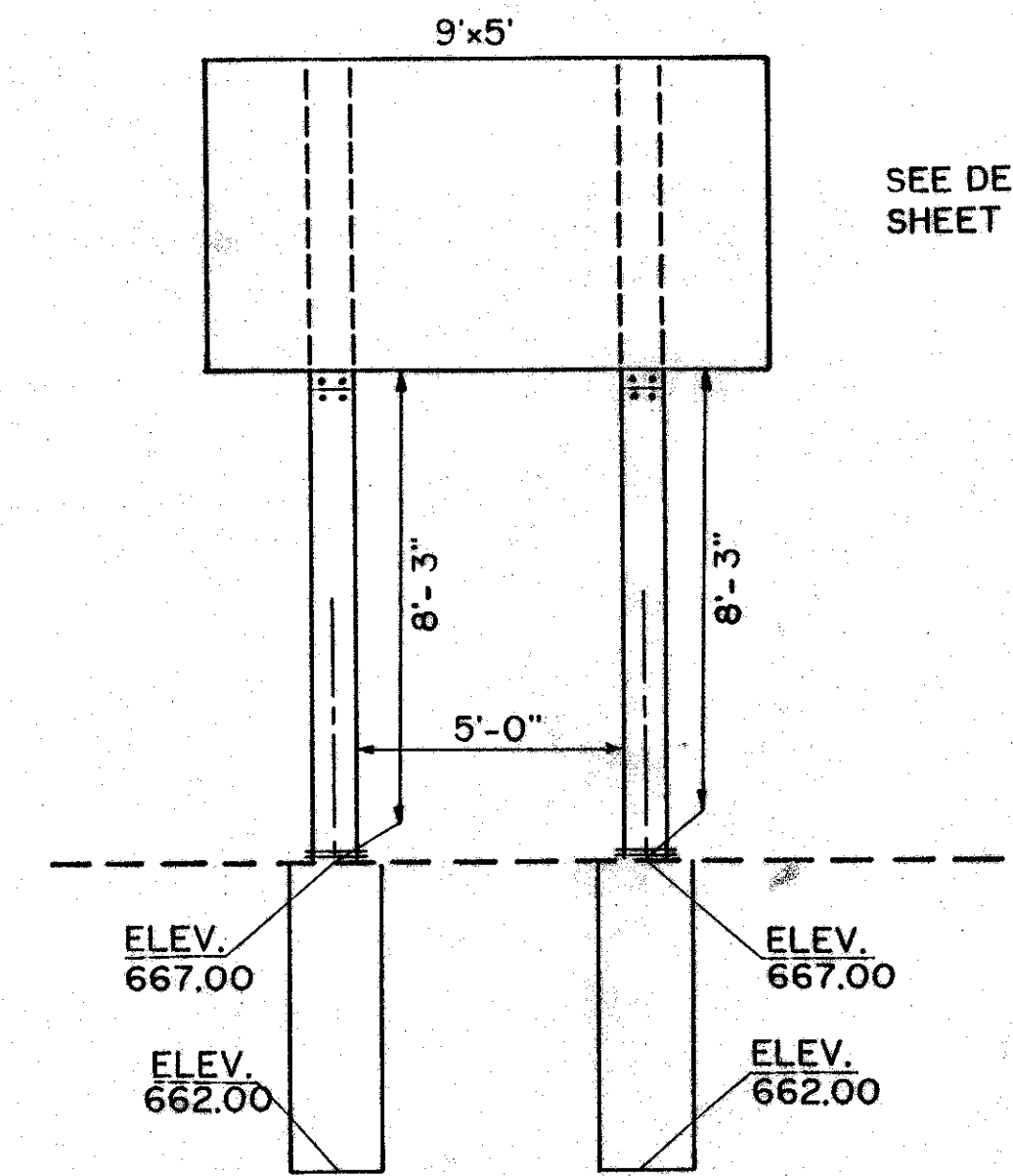
SIGN NO. (391)  
RAMP E-10  
STA. 6+35 RT.  
TWO BEAMS (W6x9)  
(Breakaway)



SIGN NO. (395A)  
 E. 14th St. SOUTH BOUND  
 STA. 8+40 LT.  
 TWO BEAMS (W10x12)  
 (Breakaway)

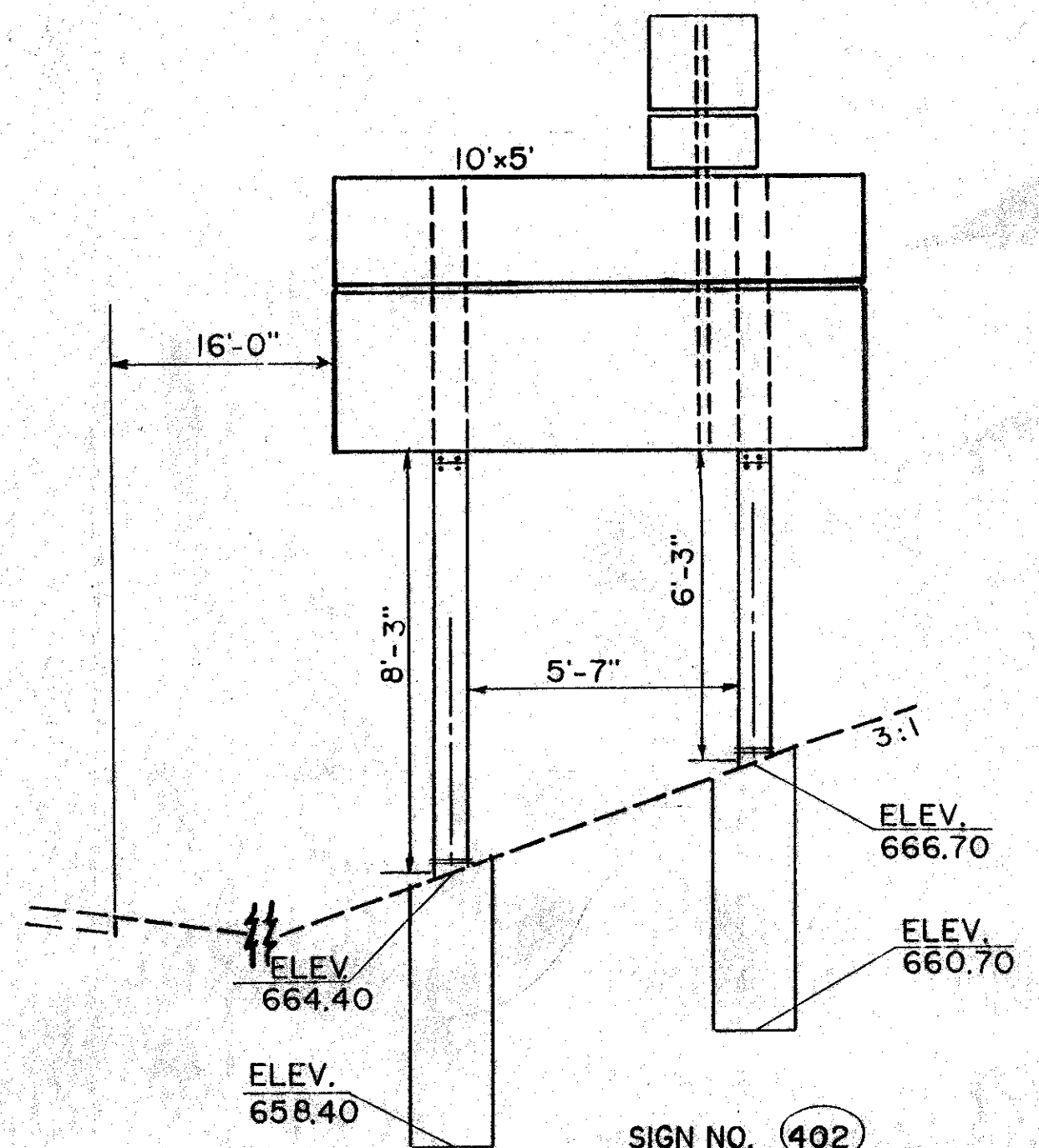


SIGN NO. (396)  
 E. 14th St. NORTH BOUND  
 STA. 22+15 RT.  
 TWO BEAMS (W10x12)  
 (Breakaway)

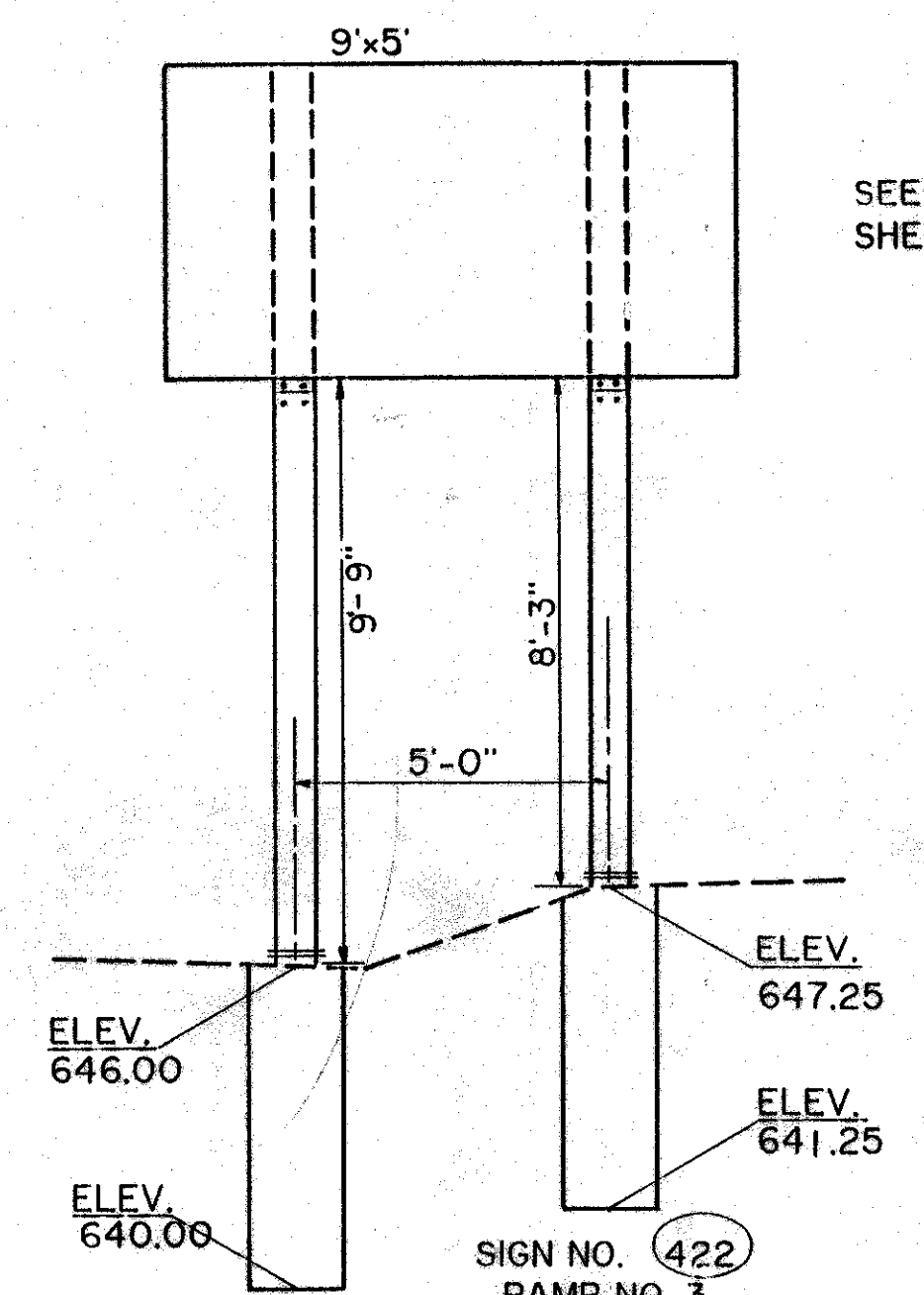


SEE DETAIL,  
 SHEET 212.

SIGN NO. (401)  
 RAMP E-II  
 STA 79+60 RT. (I-90)  
 TWO BEAMS (W6x9)  
 (Breakaway)

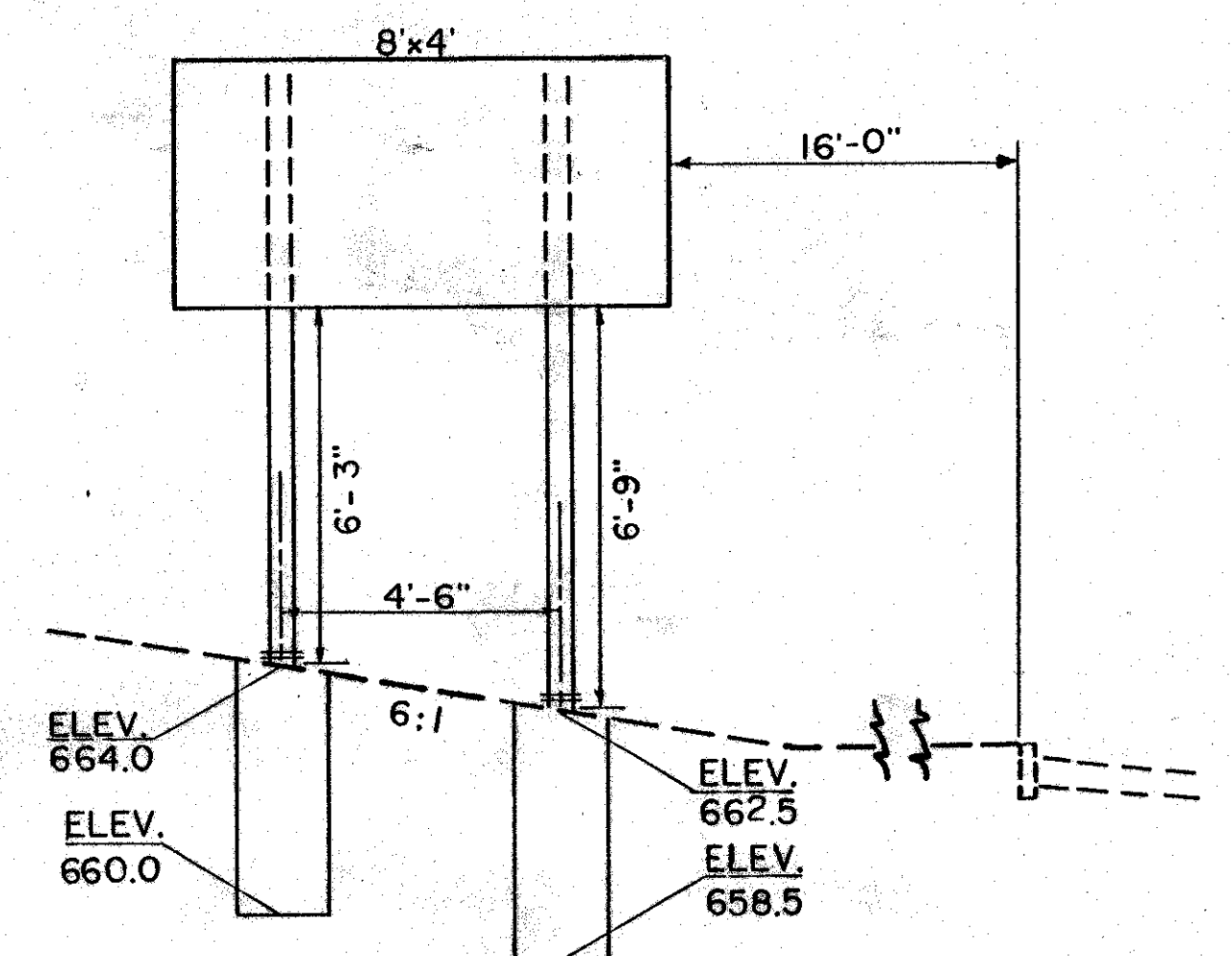


SIGN NO. (402)  
 RAMP E-II  
 STA. 3+78 RT.  
 TWO BEAMS (W10x12)  
 (Breakaway)



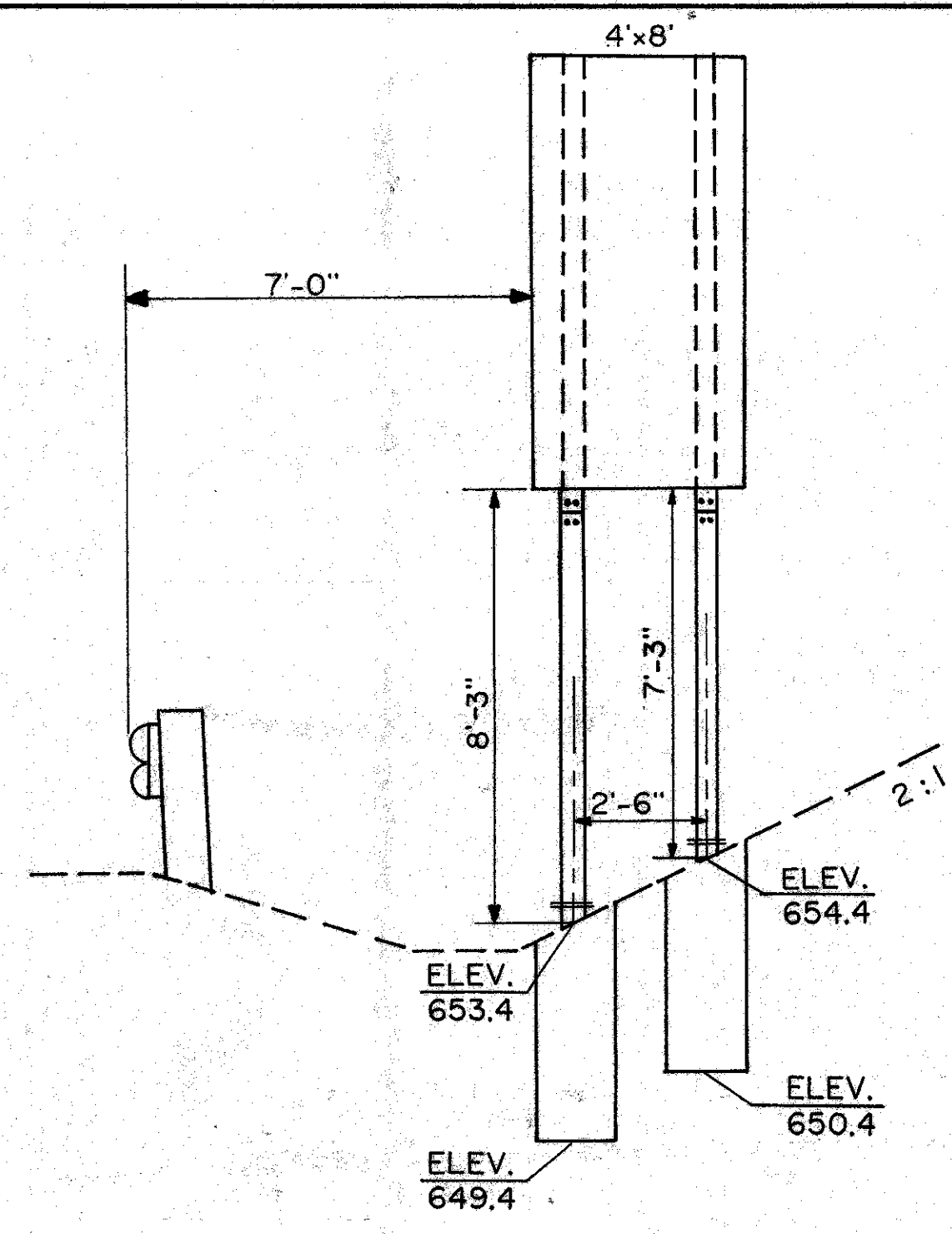
SEE DETAIL,  
 SHEET 212.

SIGN NO. (422)  
 RAMP NO. 3  
 STA. 3+47 LT.  
 TWO BEAMS (W10x12)  
 (Breakaway)

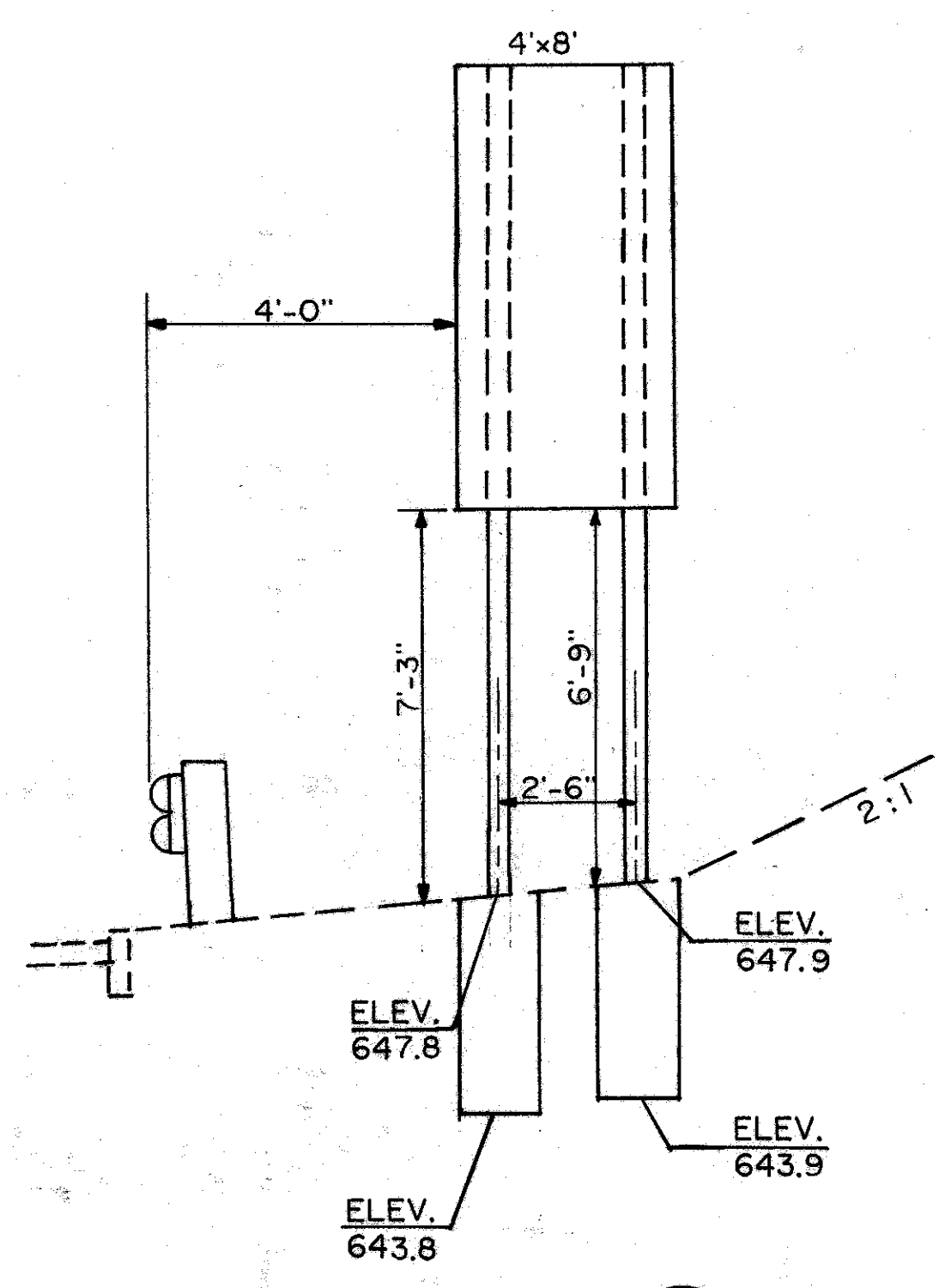


SIGN NO. (429)  
 RAMP NO. 4  
 STA. 5+45 RT.  
 TWO BEAMS (S4x7.7)  
 (Breakaway)

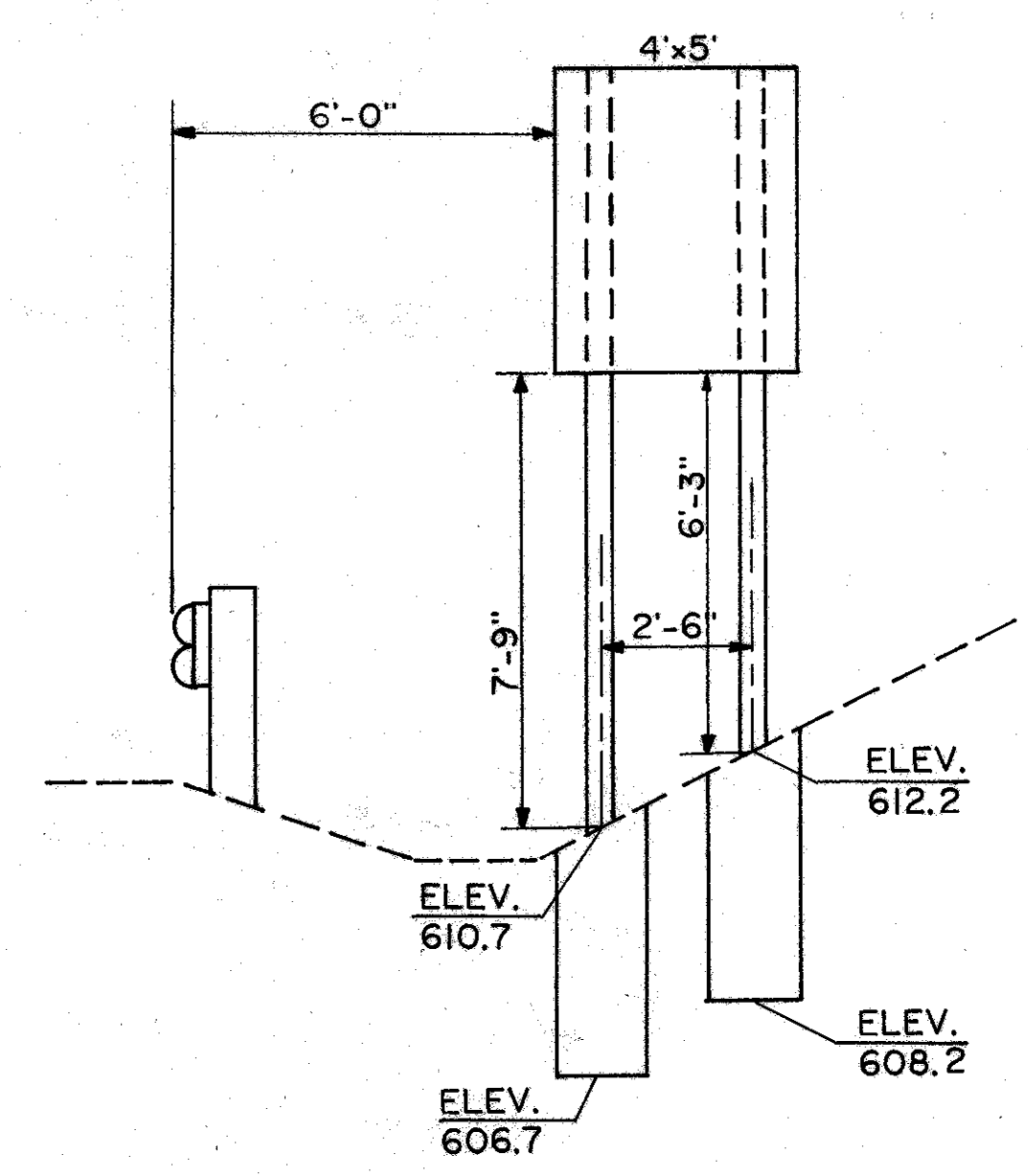




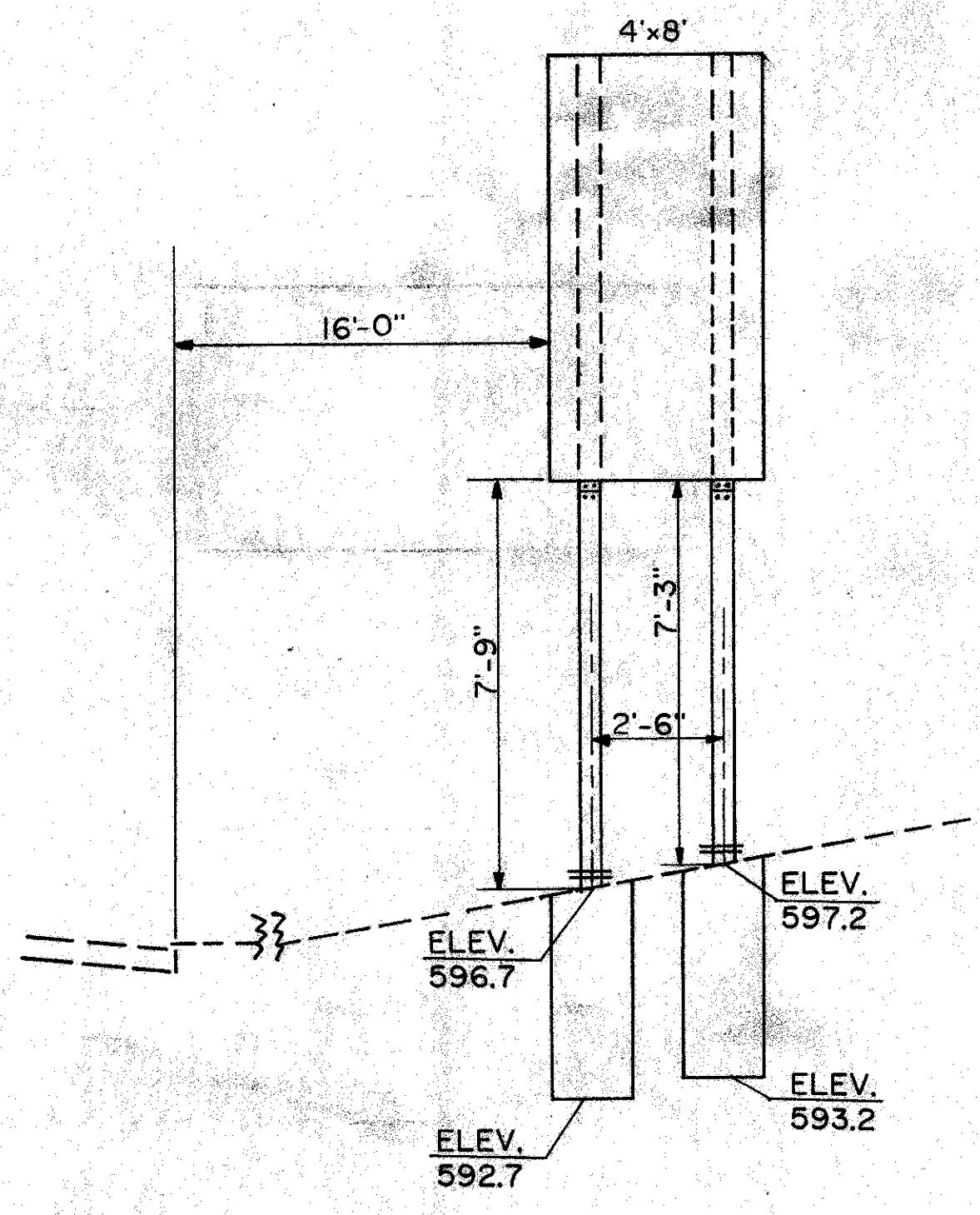
SIGN NO. (413)  
 STA. 98+38 RT. (I-90)  
 TWO BEAMS (S4x7.7)  
 (Breakaway)



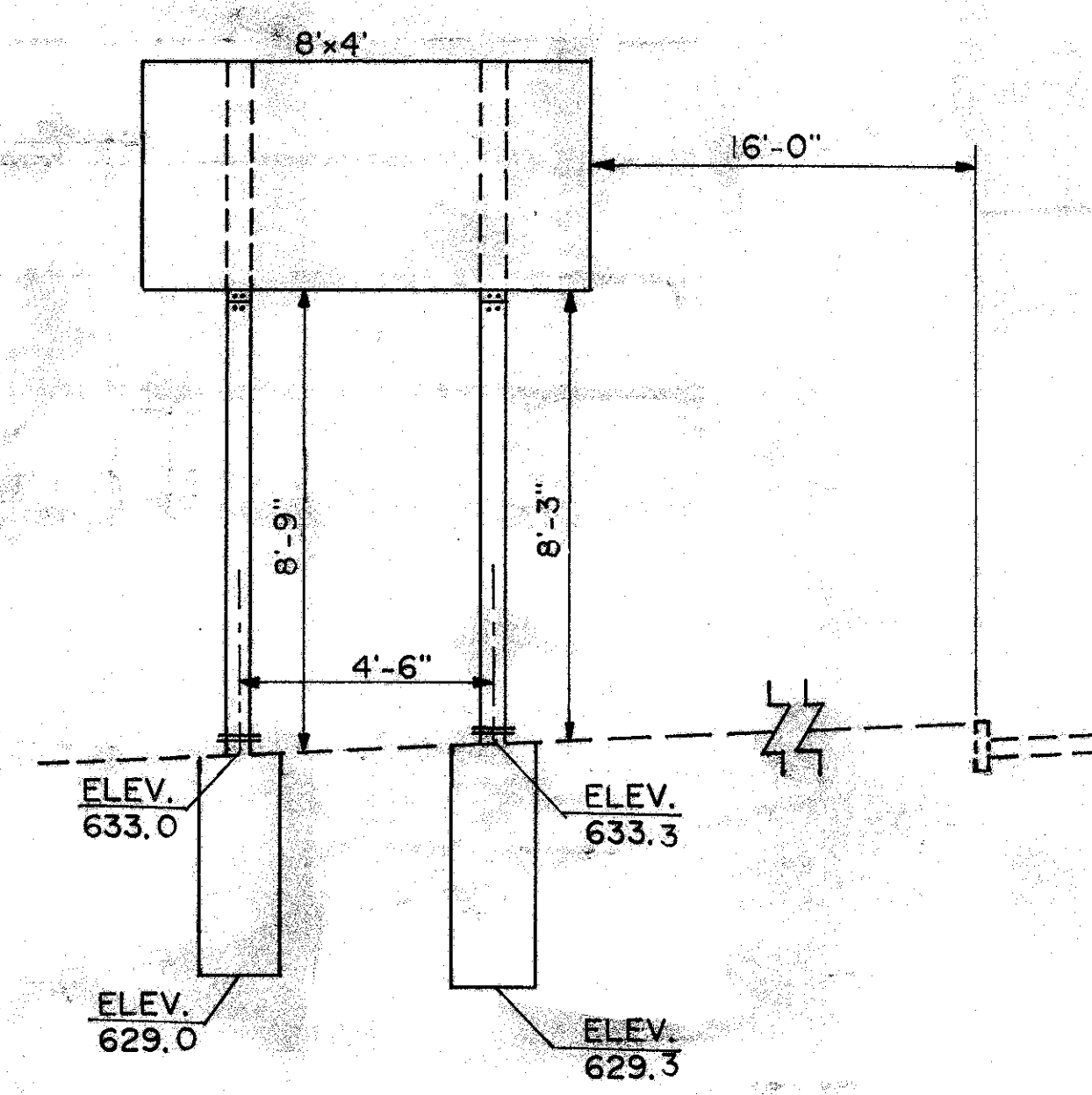
SIGN NO. (415)  
 STA. 108+50 LT. (I-90)  
 TWO BEAMS (S4x7.7)



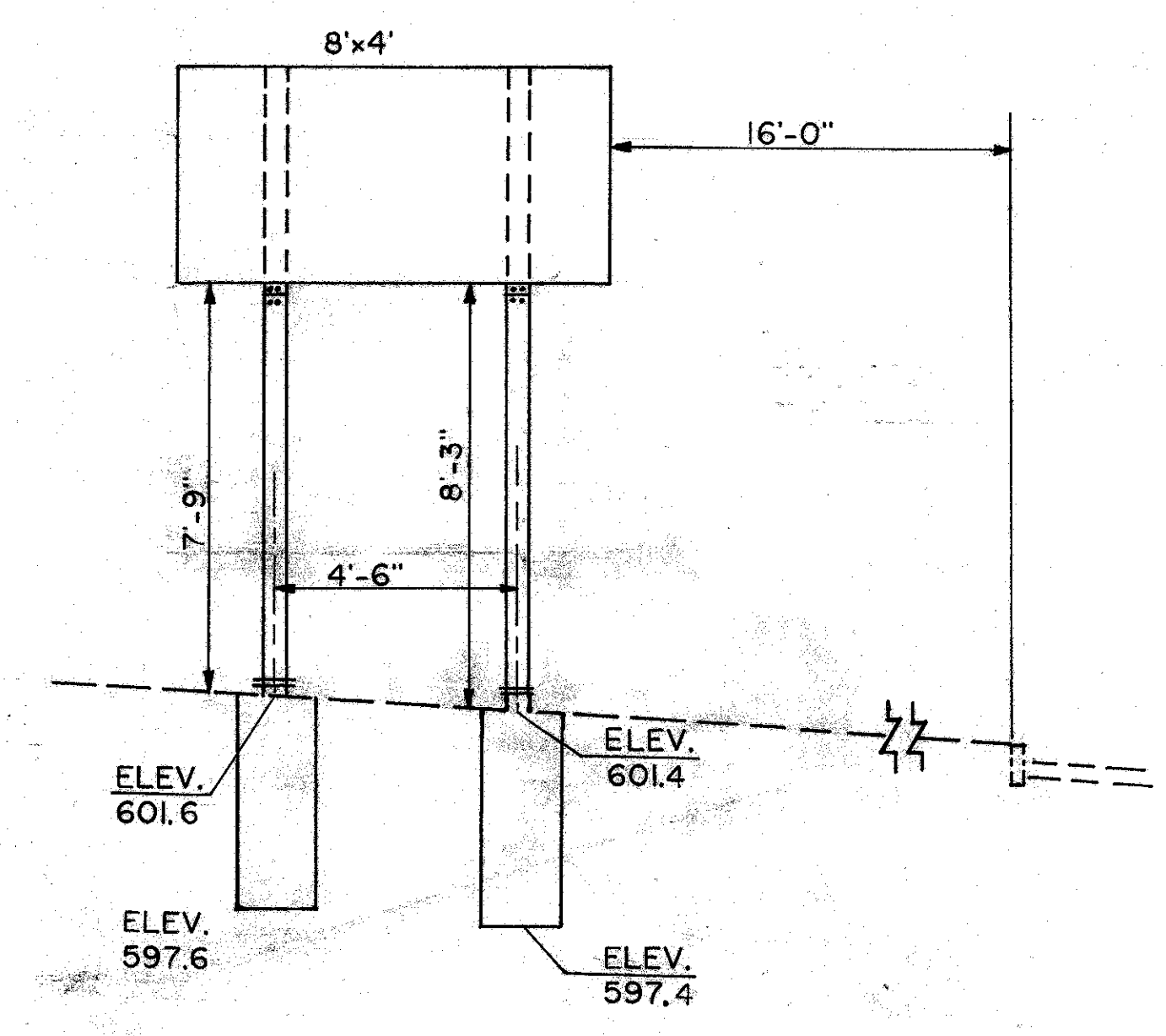
SIGN NO. (508)  
 STA. 157+27 LT. (I-90)  
 TWO BEAMS (S4x7.7)



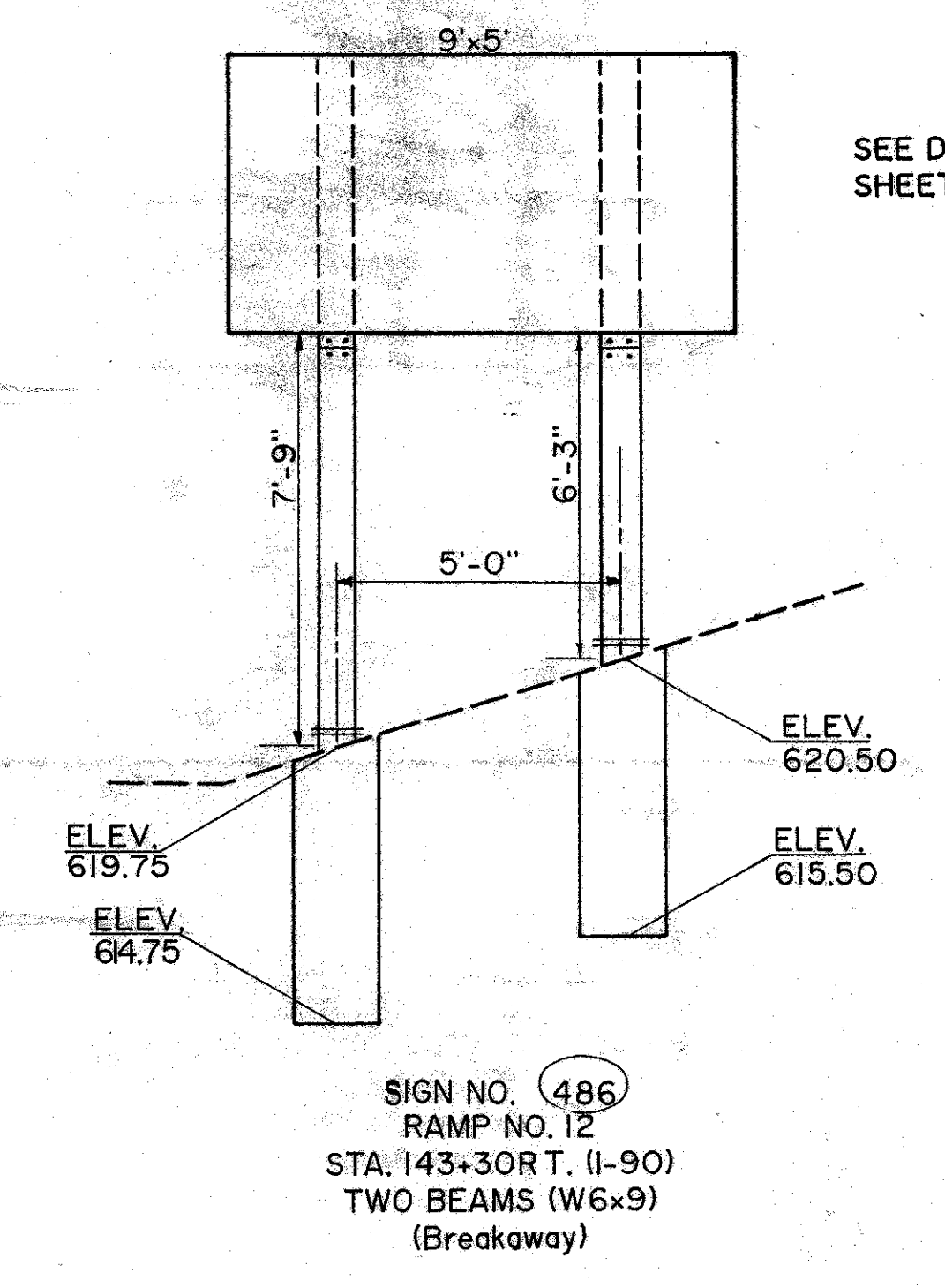
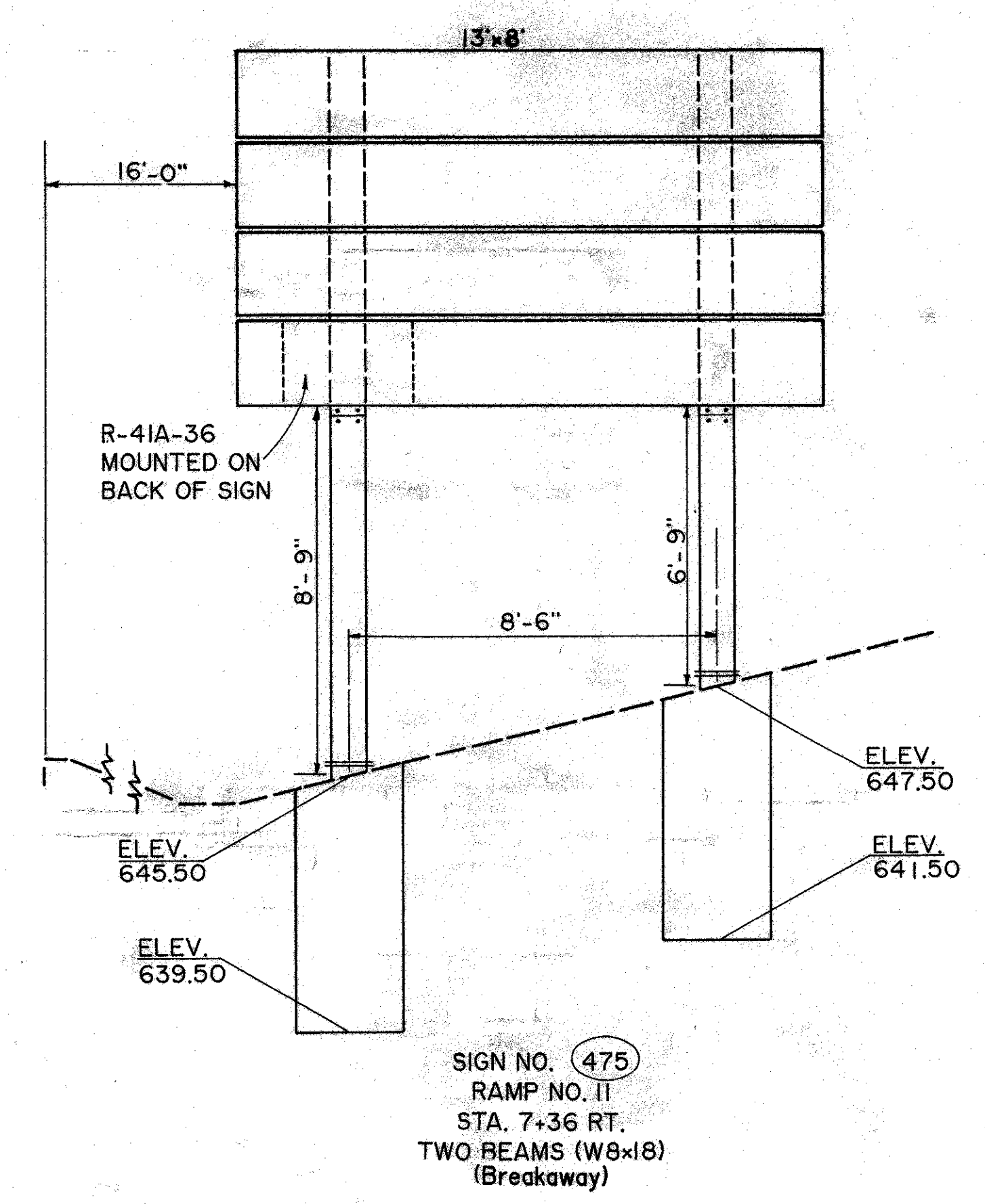
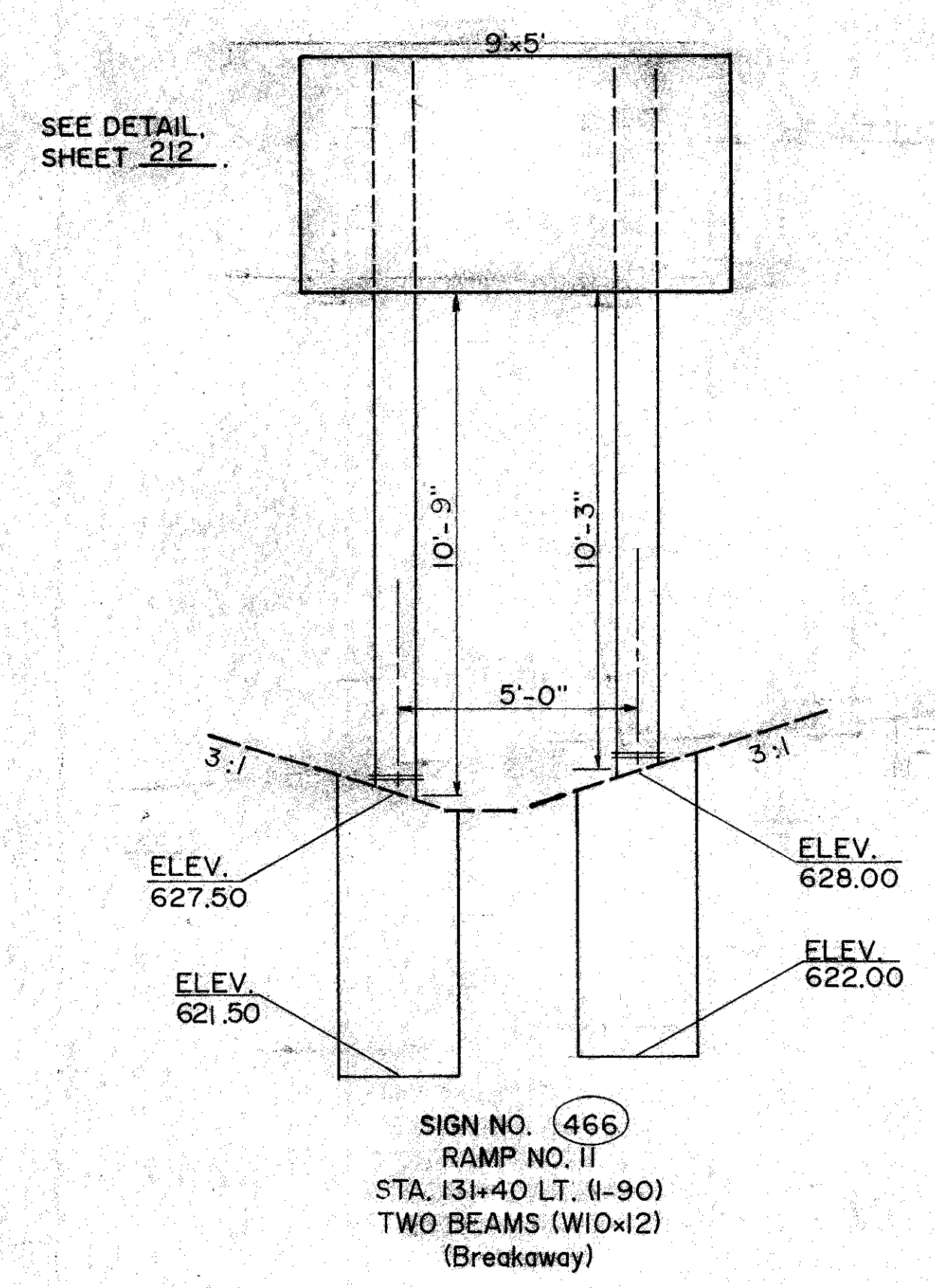
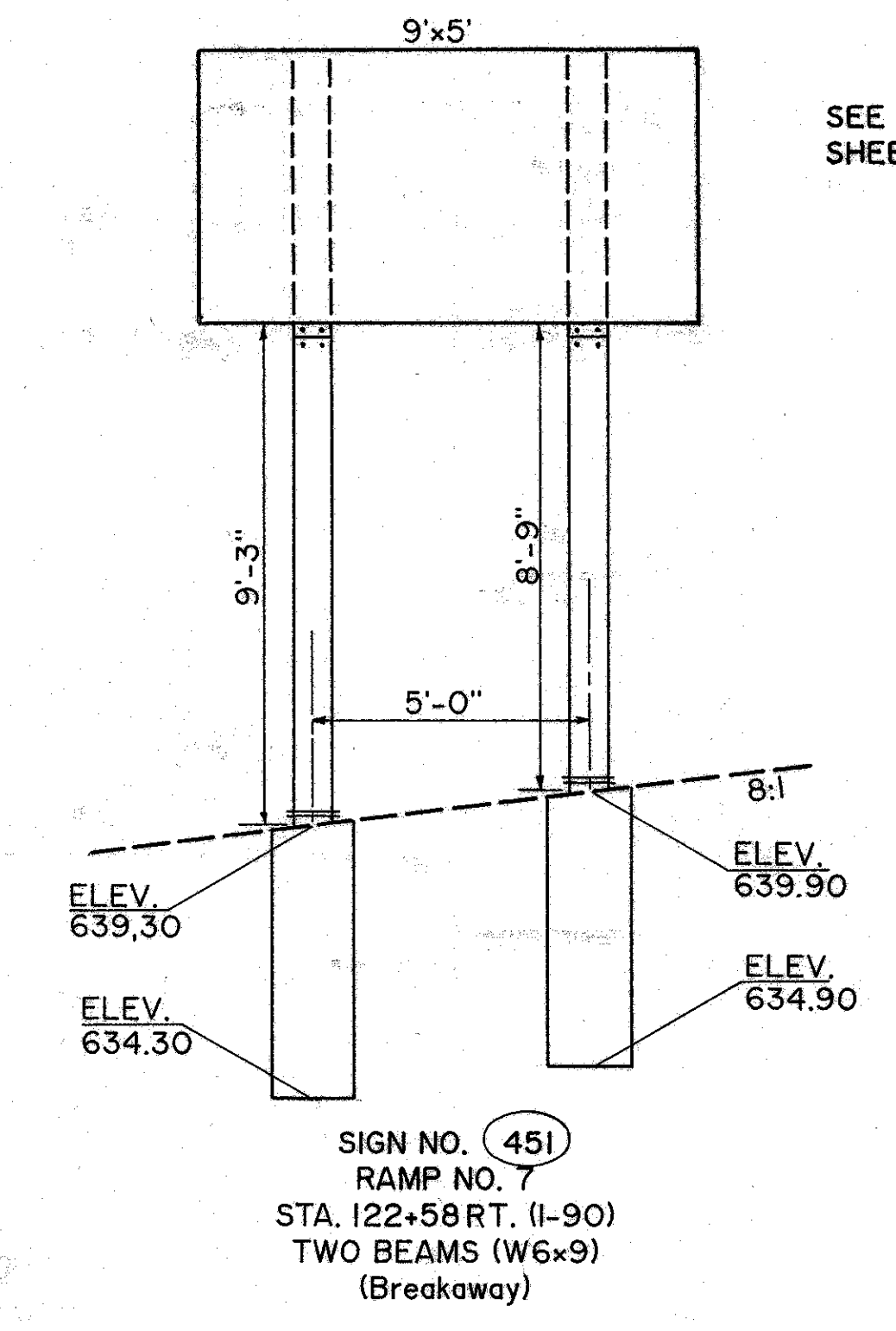
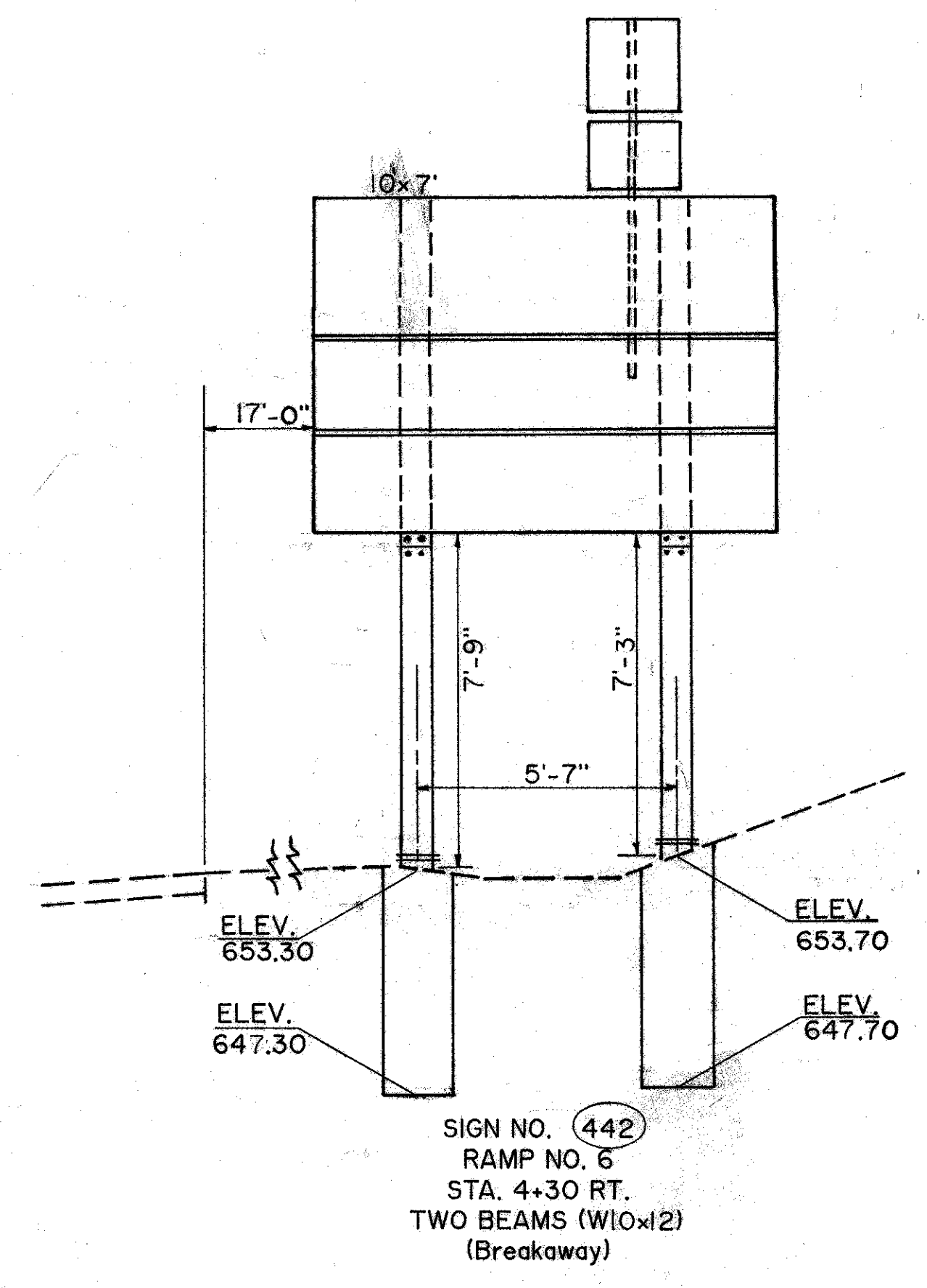
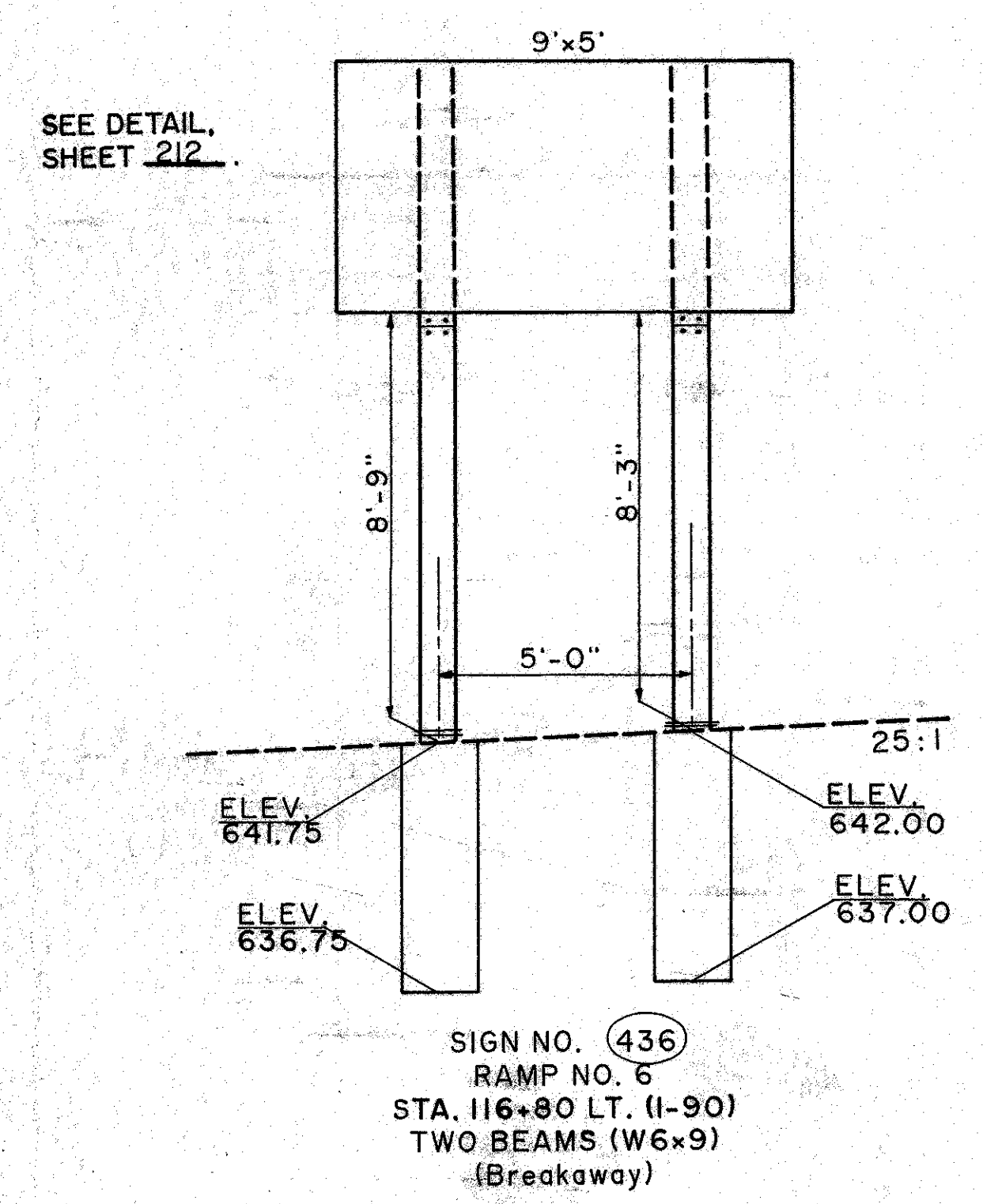
SIGN NO. (536)  
 STA. 168+40 LT. (I-90)  
 TWO BEAMS (S4x7.7)  
 (Breakaway)



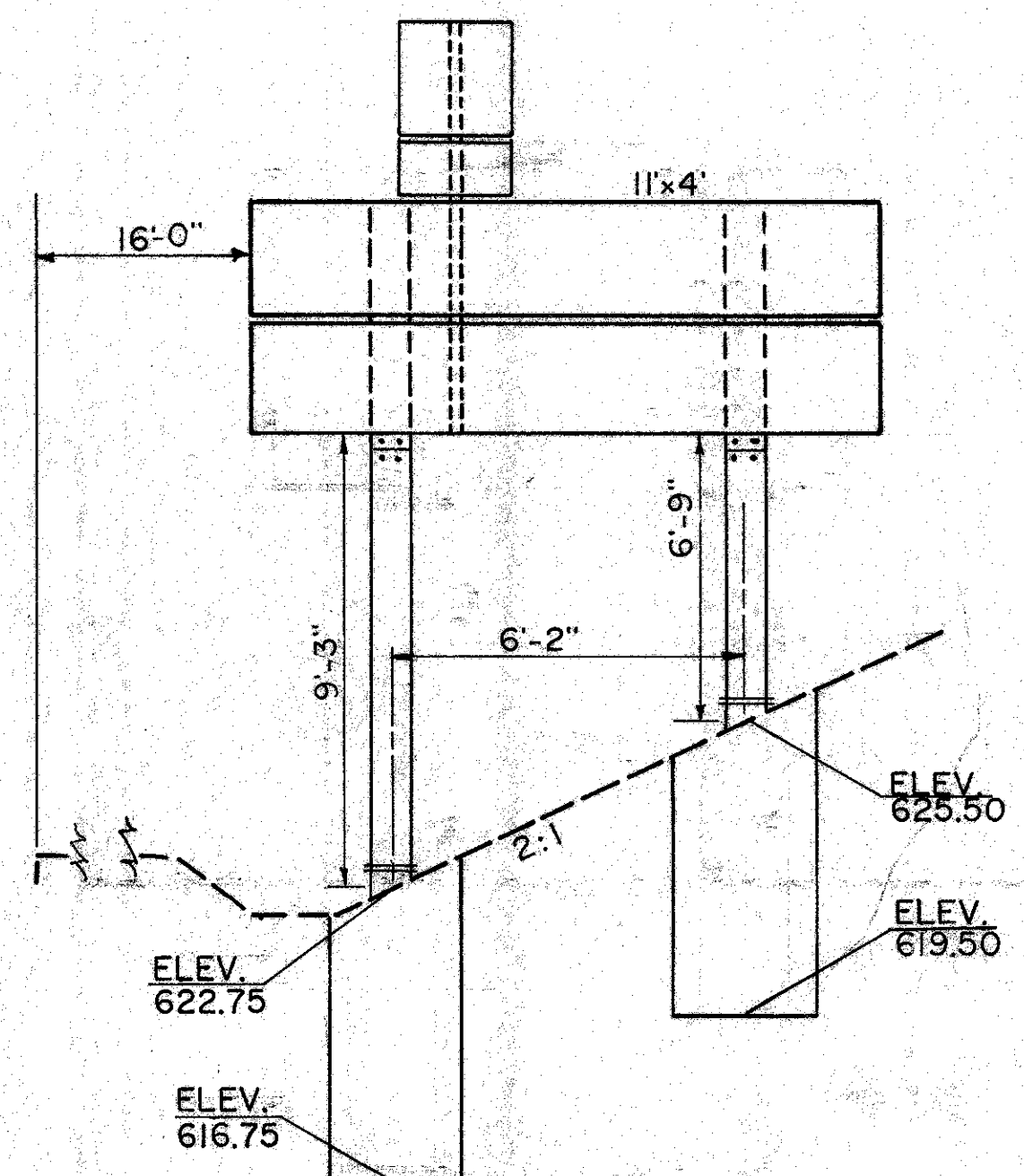
SIGN NO. (461)  
 STA. 2+45 RT. (RAMP NO. 10)  
 TWO BEAMS (S4x7.7)  
 (Breakaway)



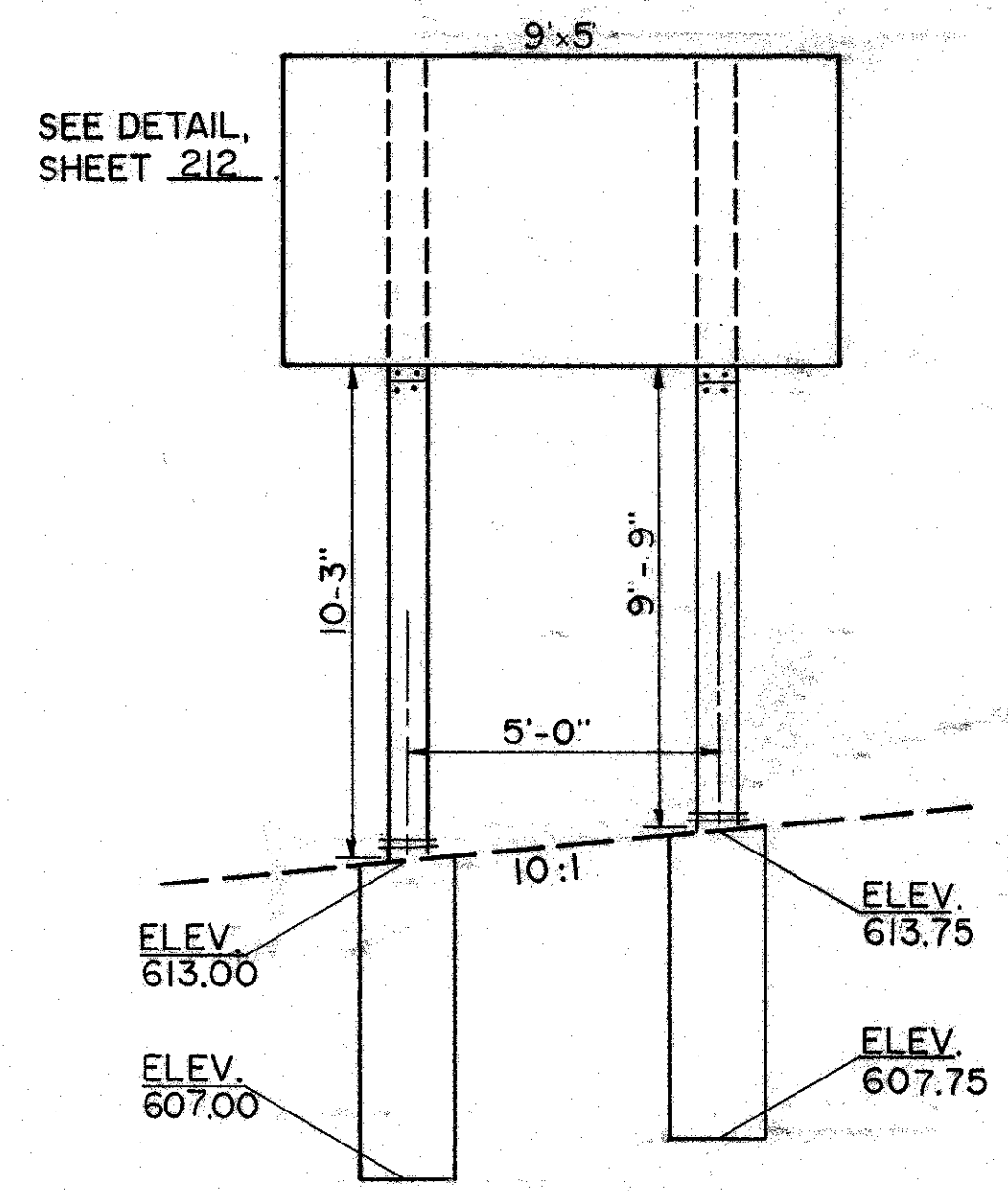
SIGN NO. (540)  
 STA. 3+68 RT. (RAMP NO. 17)  
 TWO BEAMS (S4x7.7)  
 (Breakaway)





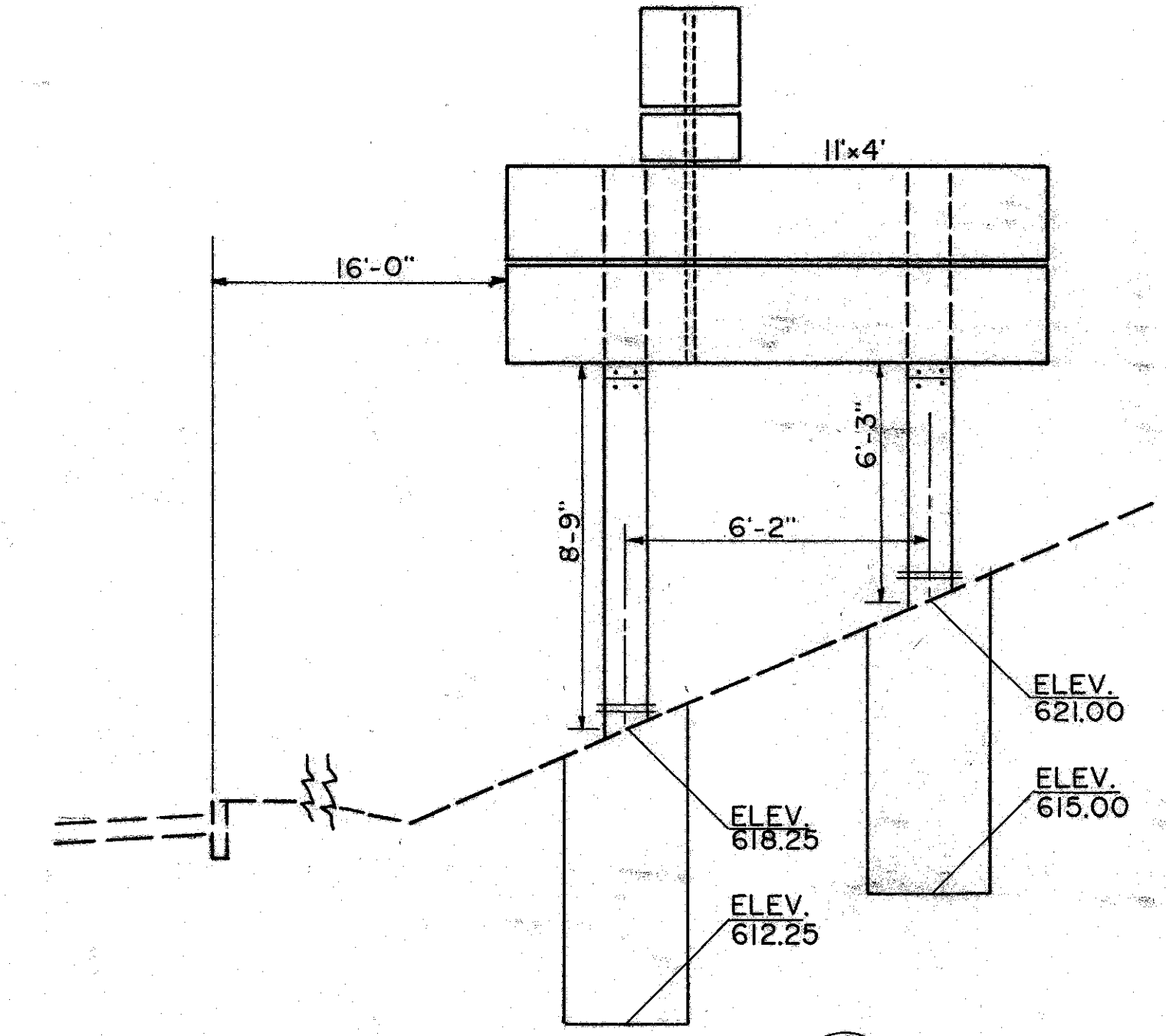


SIGN NO. 487  
RAMP NO. 12  
STA. 3+90 RT.  
TWO BEAMS (W10x12)  
(Breakaway)

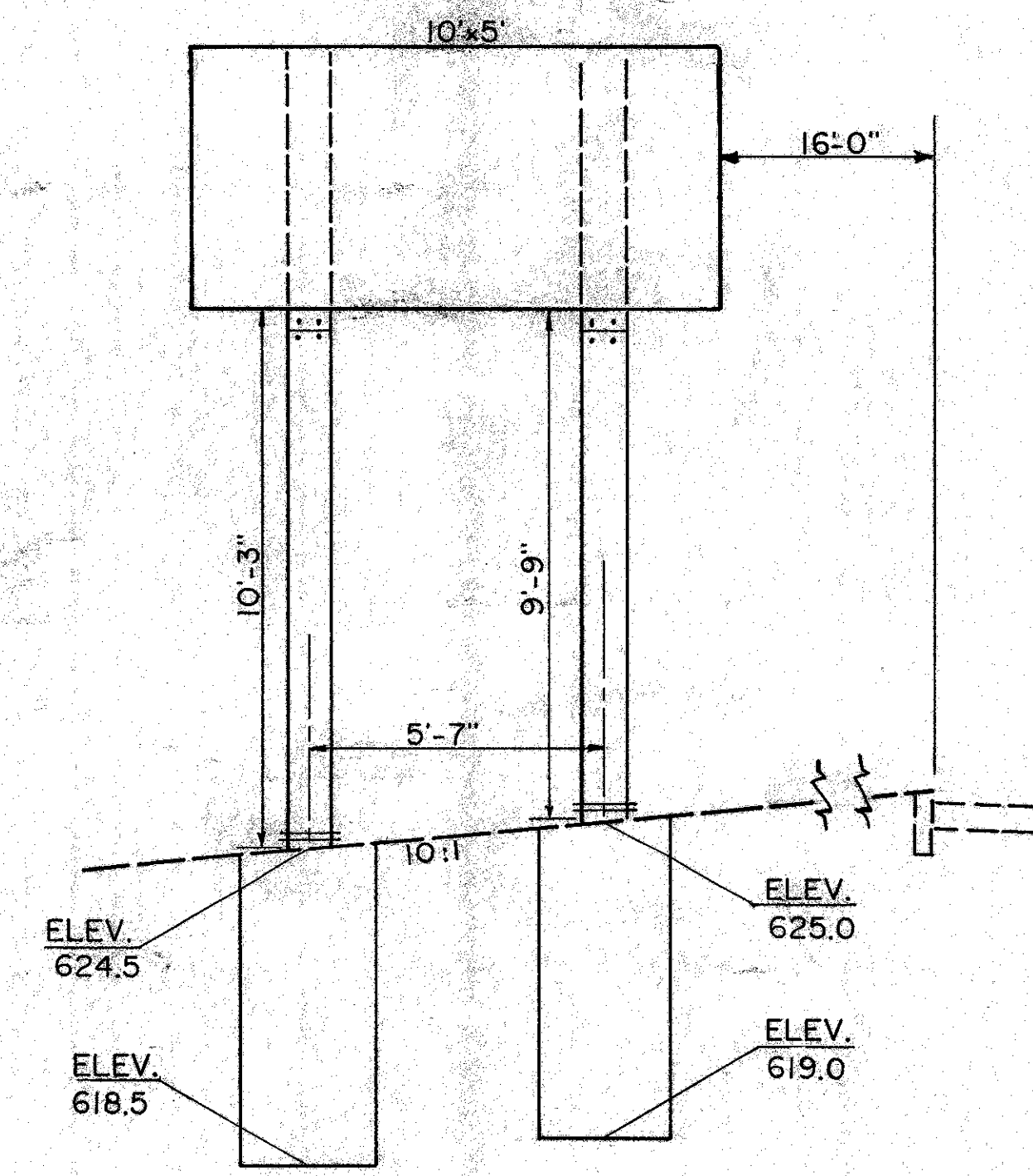


SEE DETAIL, SHEET 212

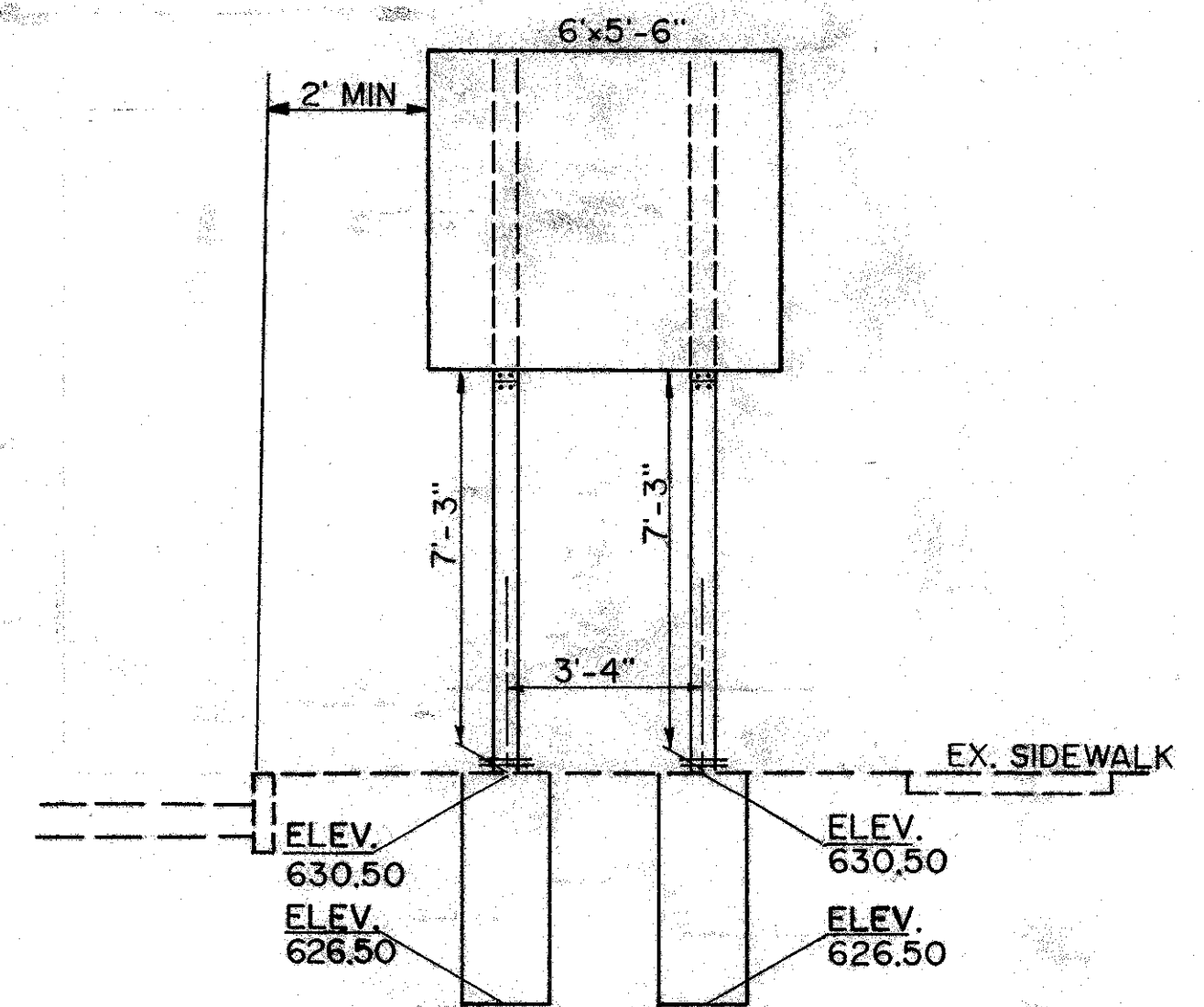
SIGN NO. 512  
RAMP NO. 14  
STA. 153+00 LT. (I-90)  
TWO BEAMS (W10x12)  
(Breakaway)



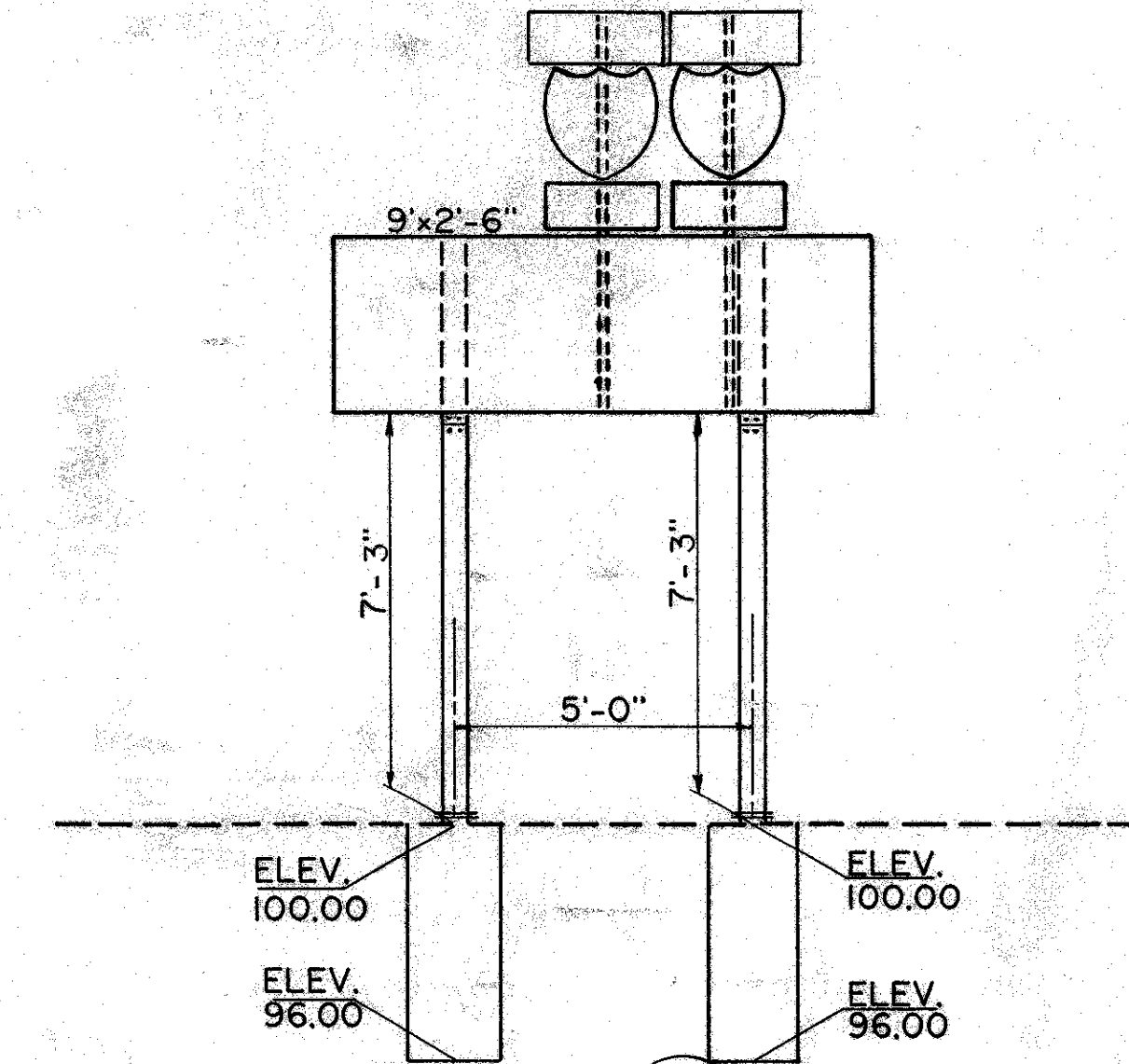
SIGN NO. 513  
RAMP NO. 14  
STA. 3+54 RT.  
TWO BEAMS (W10x12)  
(Breakaway)



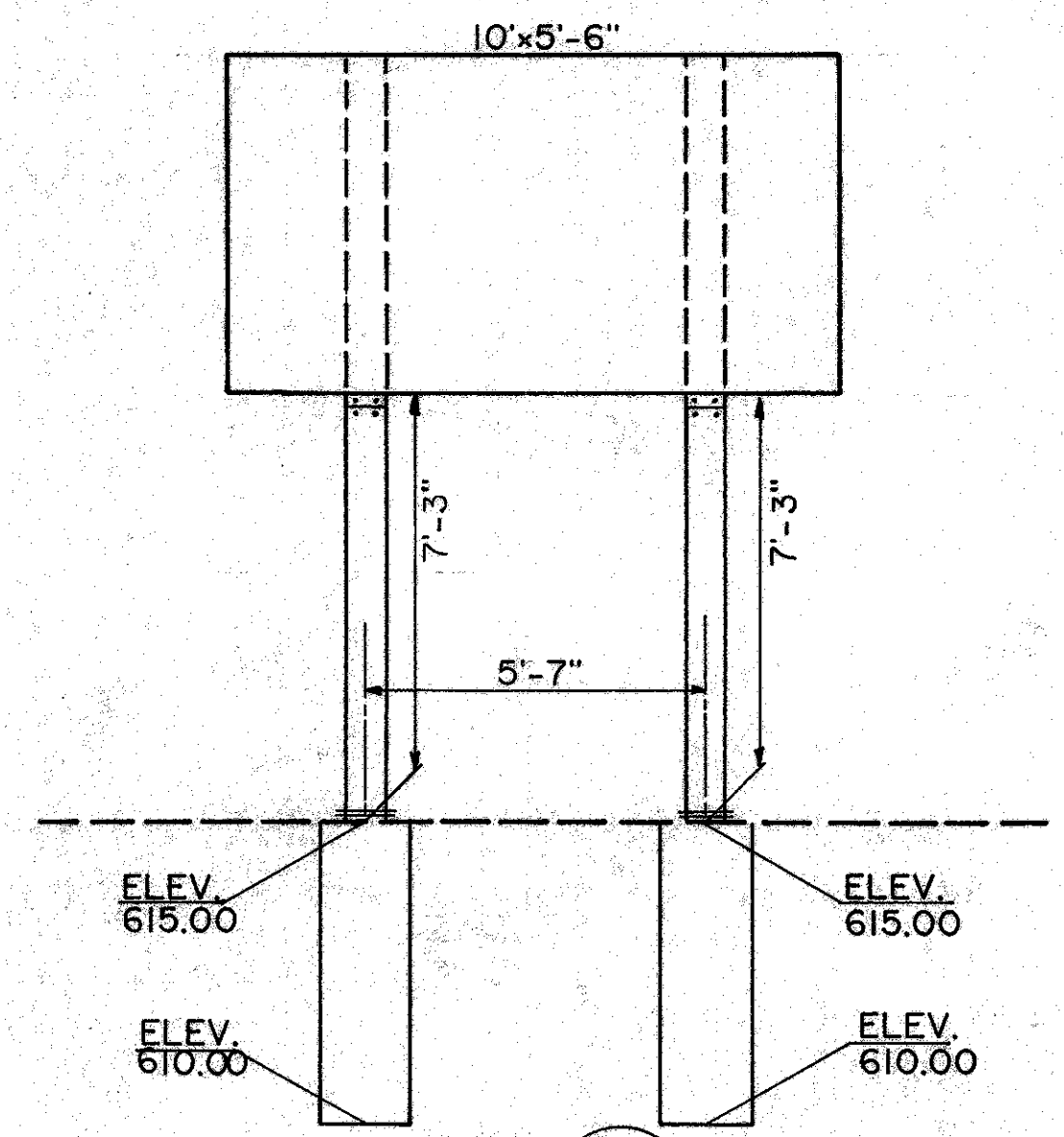
SIGN NO. 514  
RAMP NO. 14  
STA. 4+99 LT.  
TWO BEAMS (W10x12)  
(Breakaway)



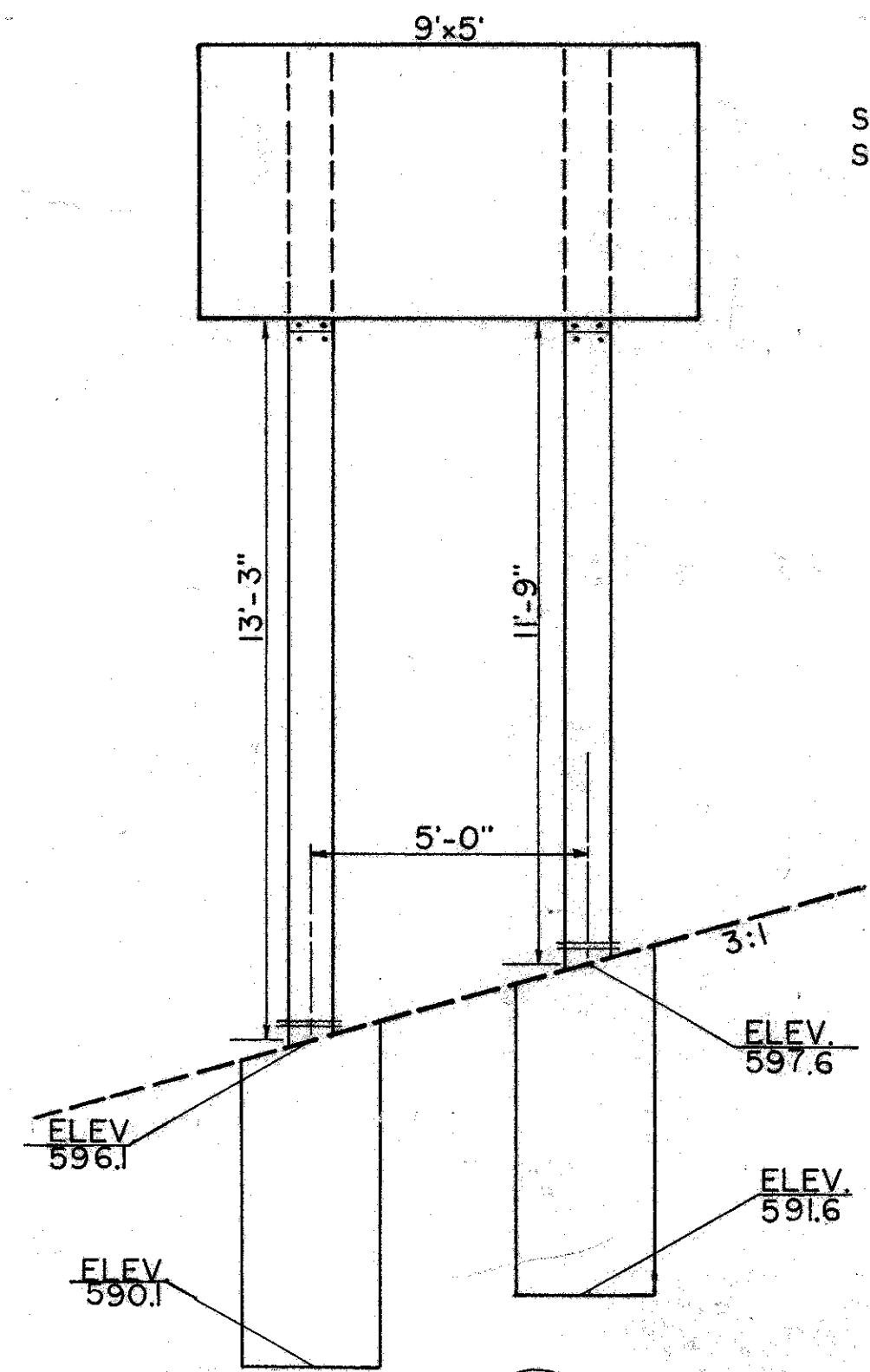
SIGN NO. 531  
RAMP NO. 16  
STA. 10+00 LT.  
TWO BEAMS (S4x7.7)  
(Breakaway)



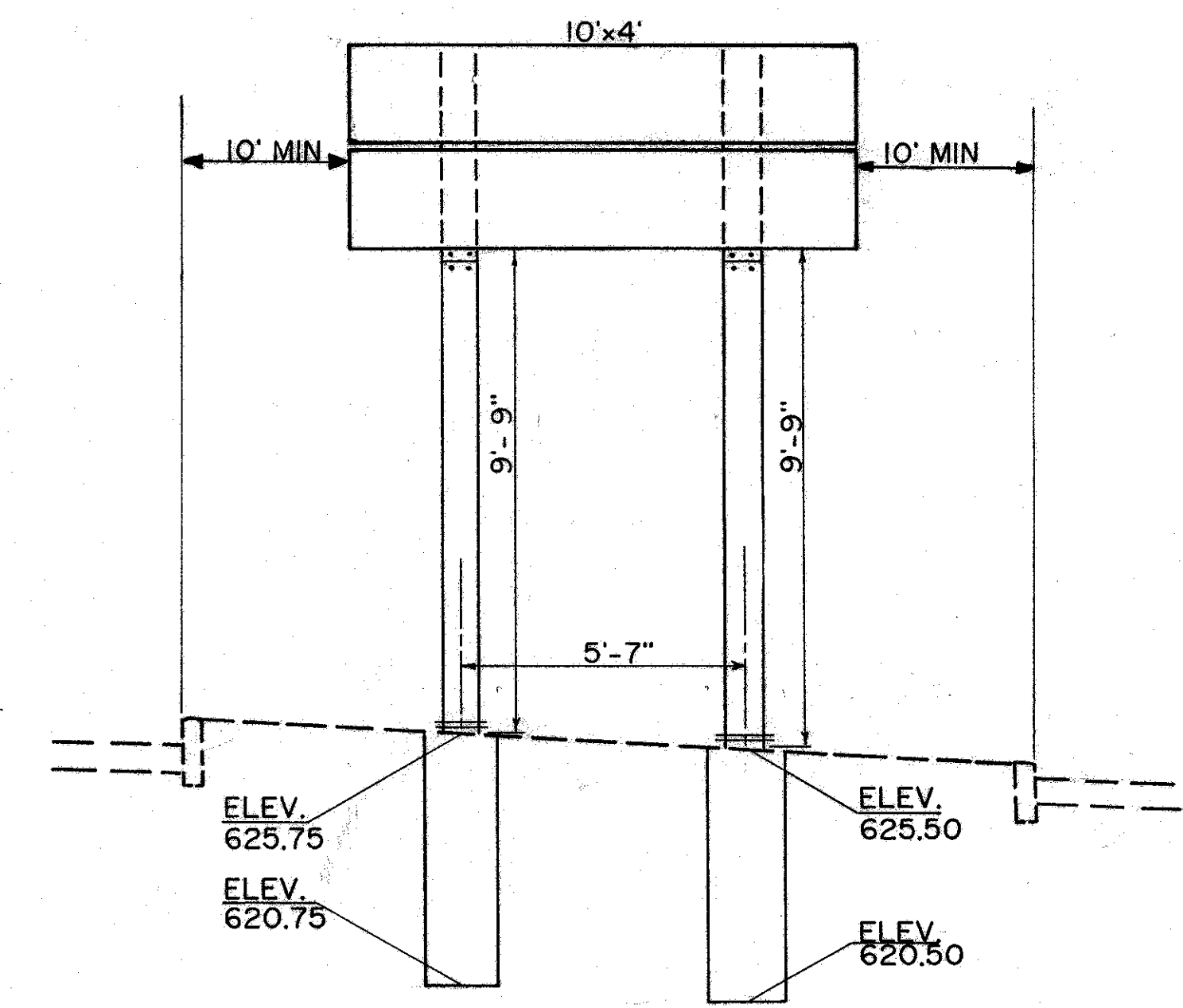
SIGN NO. 537  
E. 26th St. (FACING LAKESIDE TRAFFIC)  
STA. 6+60 LT.  
TWO BEAMS (S4x7.7)  
(Breakaway)



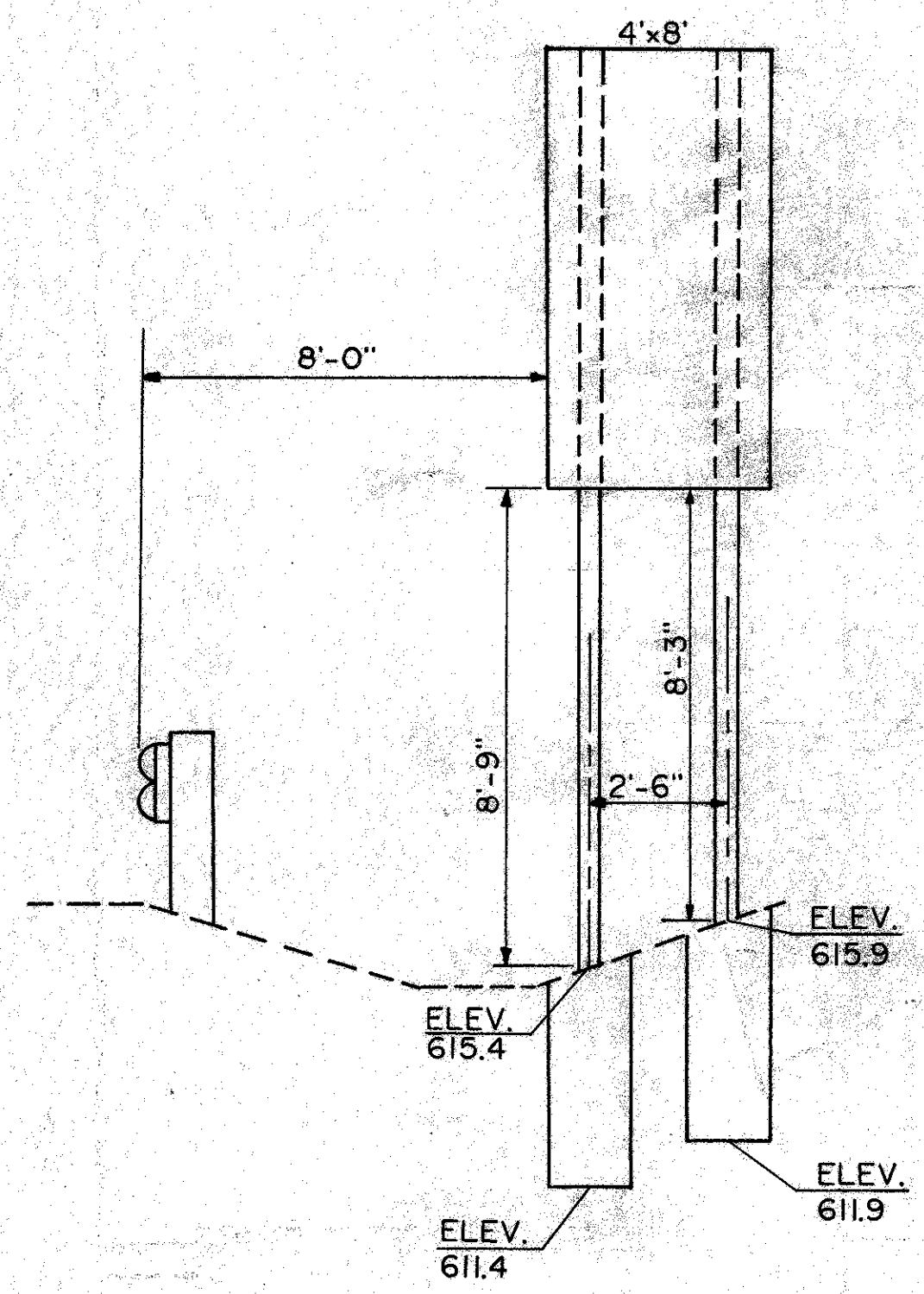
SIGN NO. (543)  
RAMP NO. 17 (FACING NORTHBOUND TRAFFIC ON E. 26th St.)  
STA. 8+75 RT.  
TWO BEAMS (W6x9)  
(Breakaway)



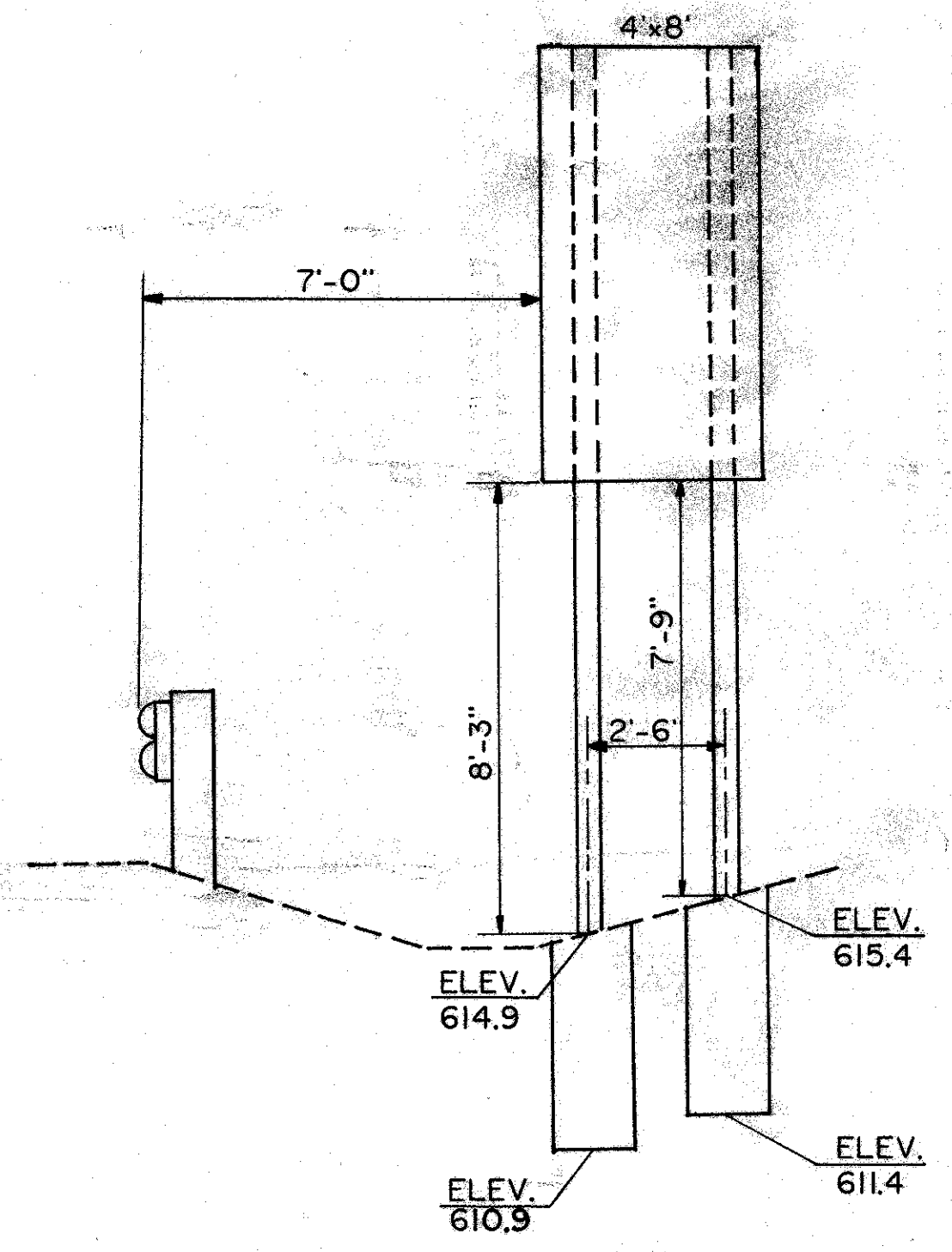
SIGN NO. (545)  
RAMP NO. 18  
STA. 169+45 RT. (I-90)  
TWO BEAMS (W10x12)  
(Breakaway)



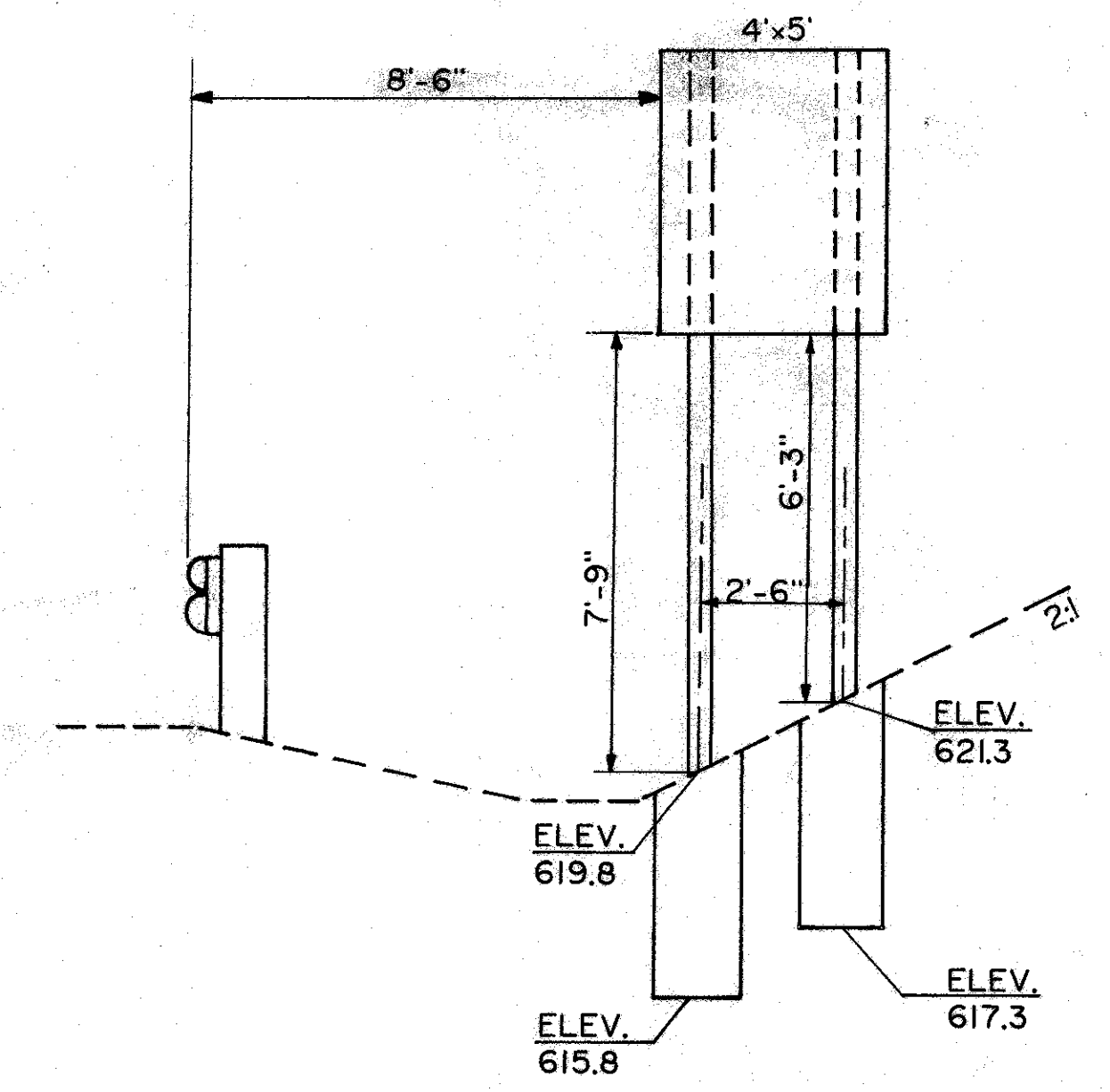
SIGN NO. (548)  
RAMP NO. 18  
STA. 7+95 LT.  
TWO BEAMS (W6x9)  
(Breakaway)



SIGN NO. (483)  
STA. 147+25 RT. (I-90)  
TWO BEAMS (S4x7.7)



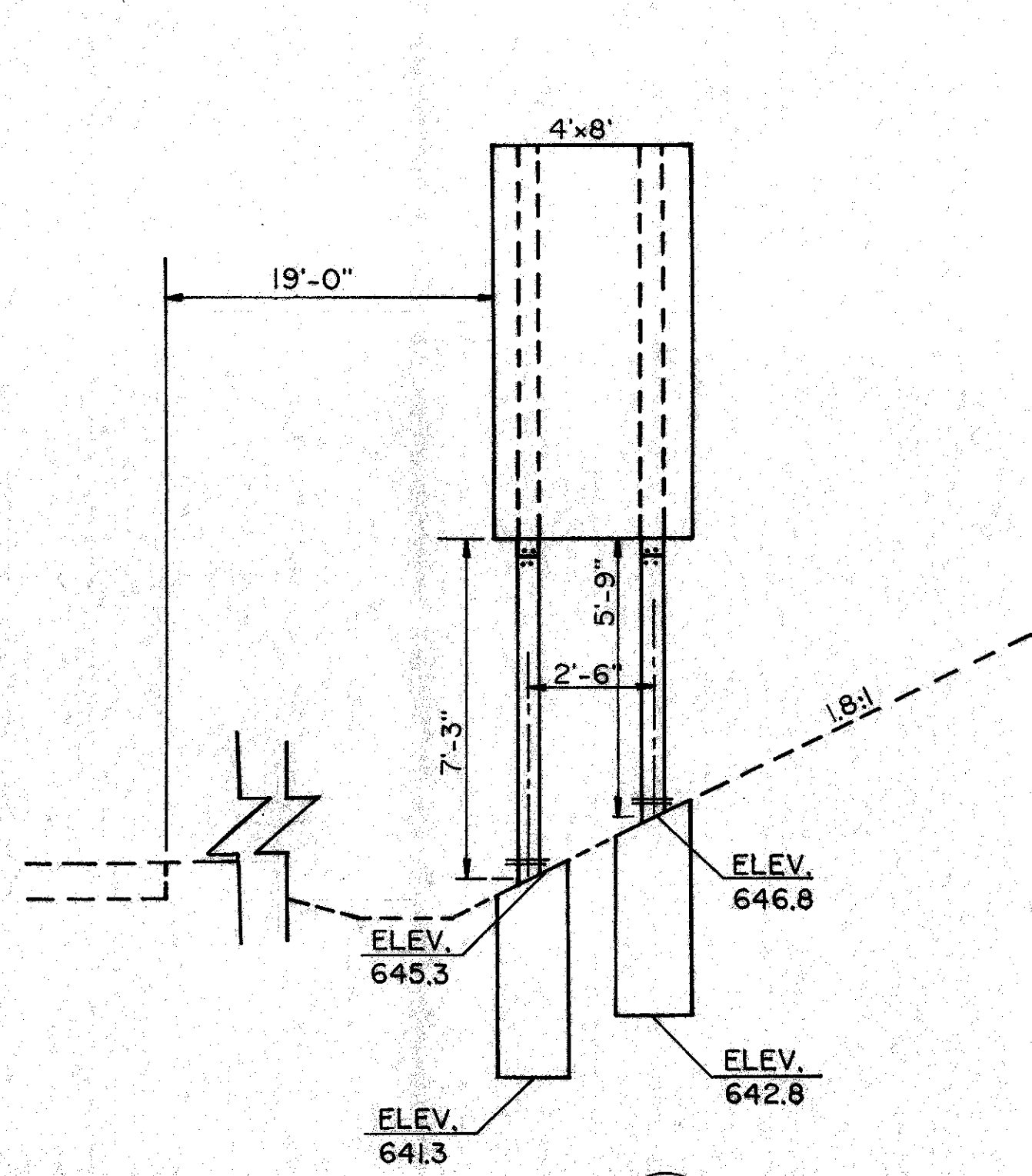
SIGN NO. (484)  
STA. 148+25 LT. (I-90)  
TWO BEAMS (S4x7.7)



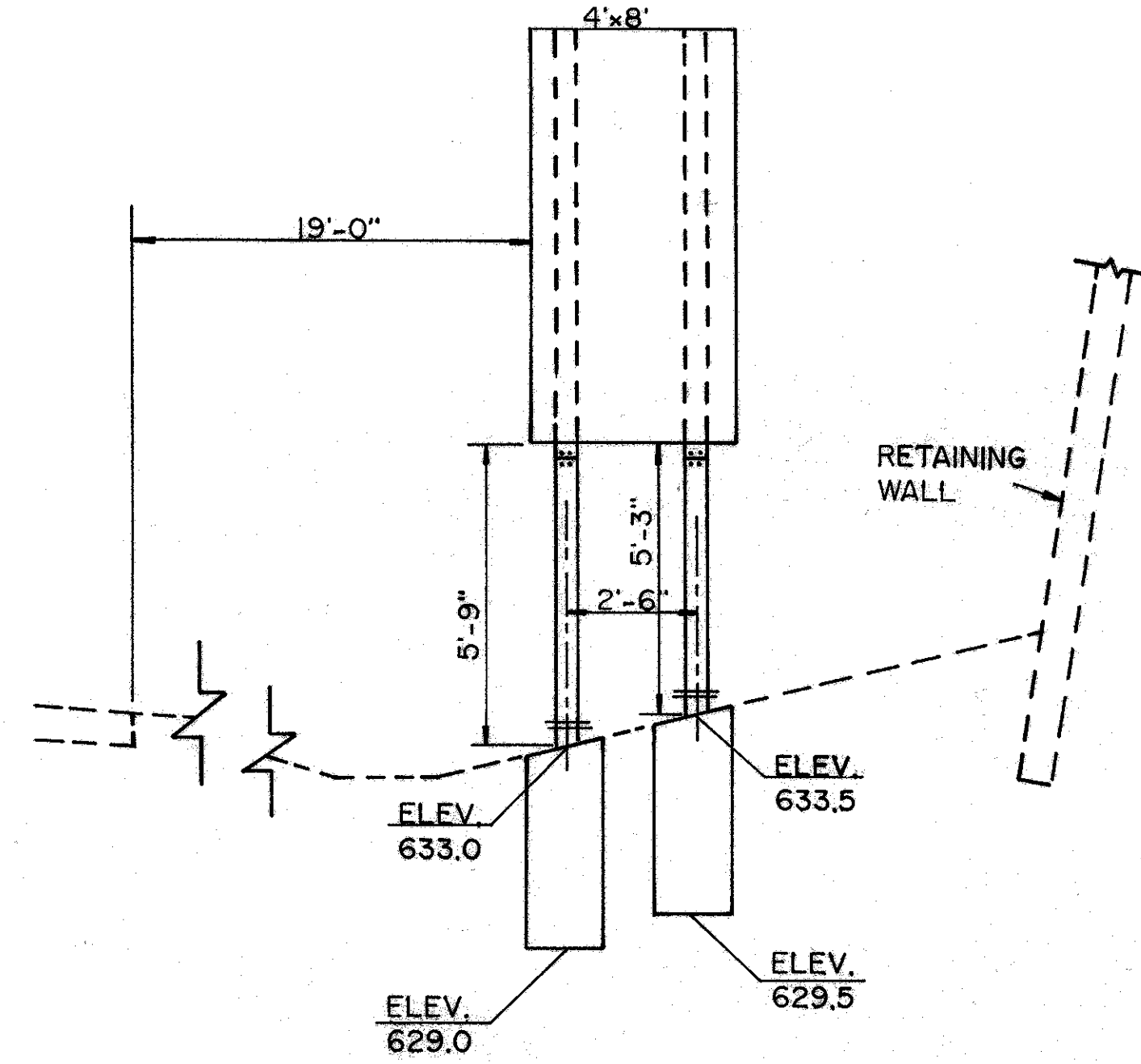
SIGN NO. (485)  
STA. 140+70 RT. (I-90)  
TWO BEAMS (S4x7.7)

SEE DETAIL,  
SHEET 212

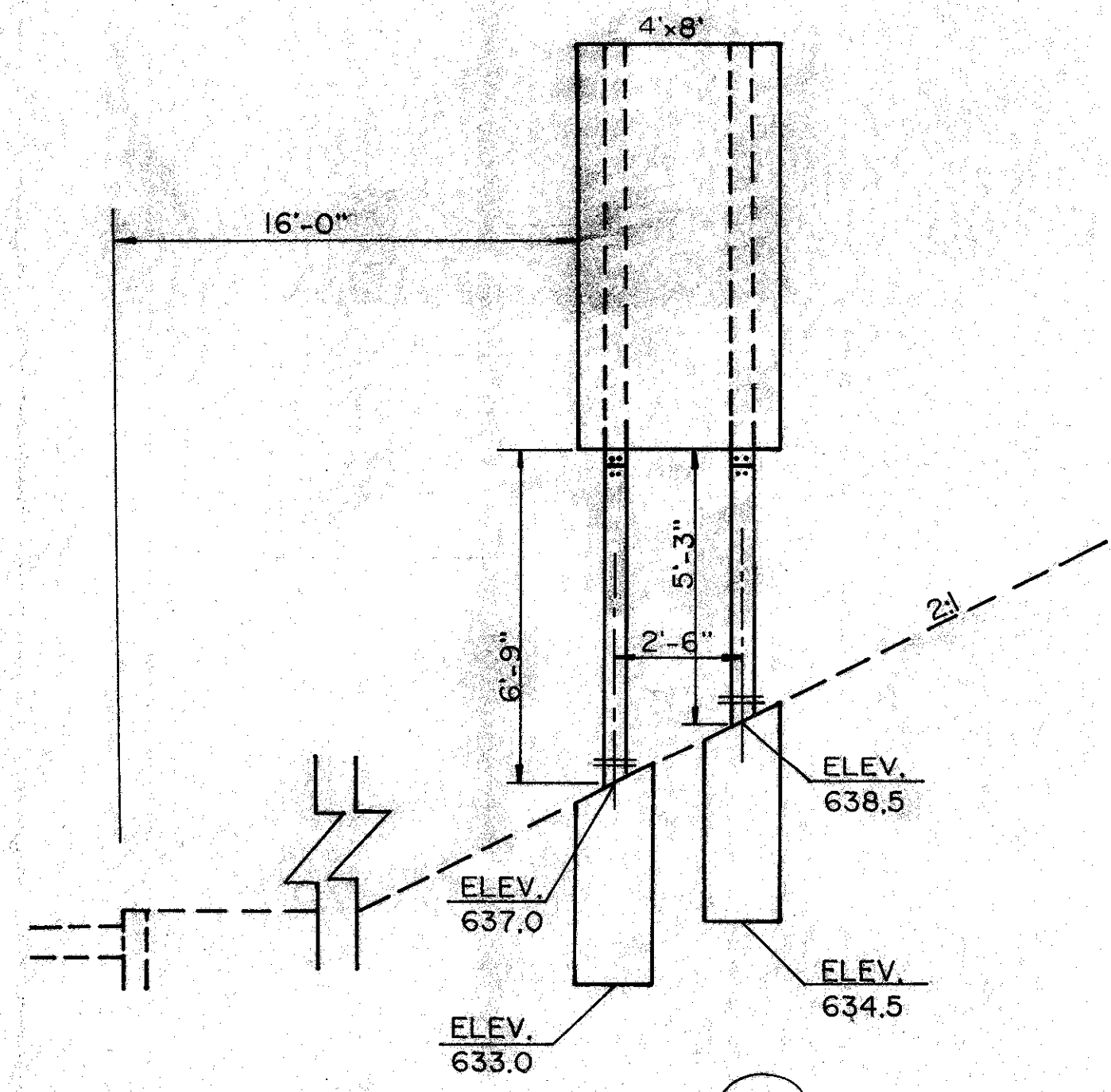




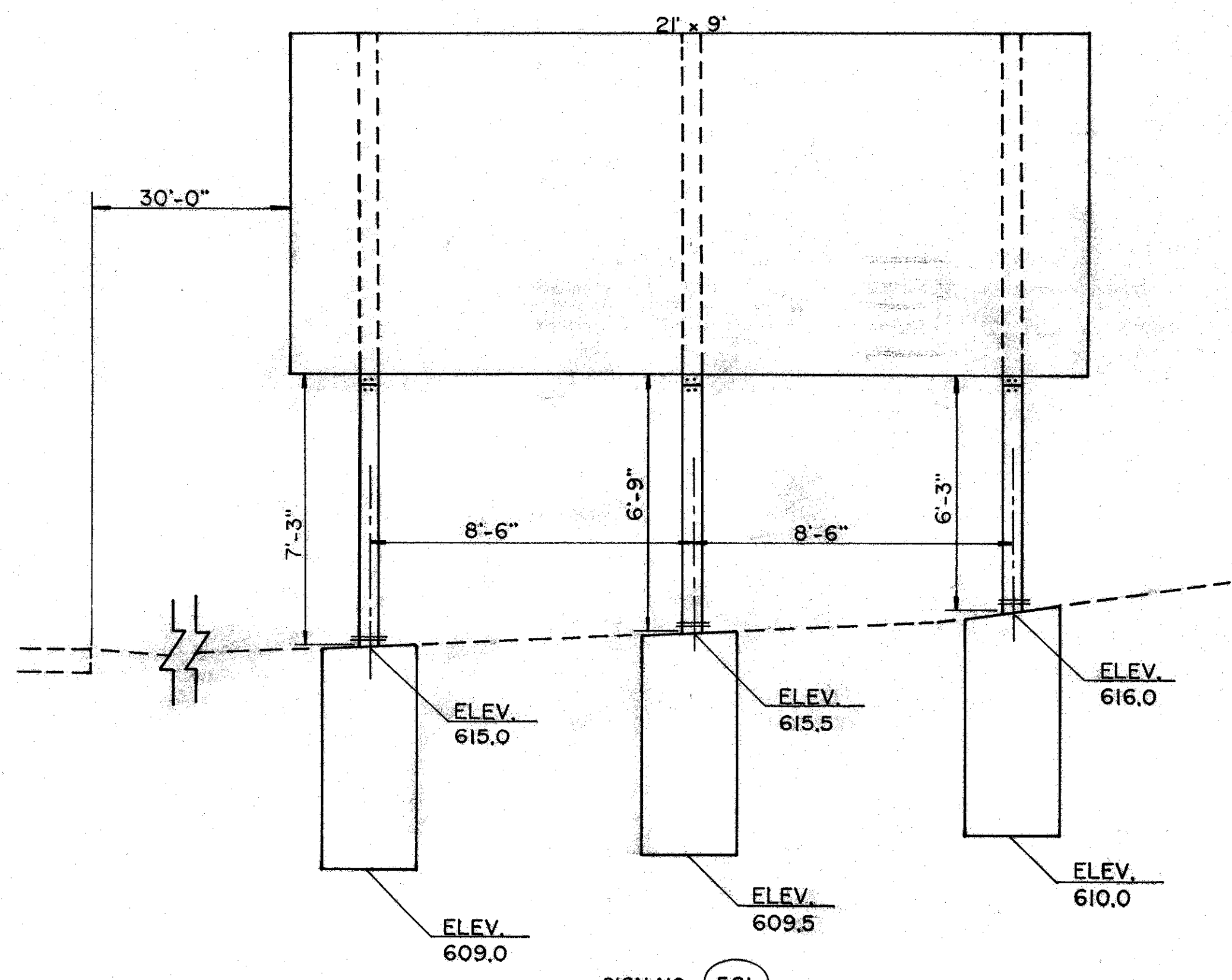
SIGN NO. (558)  
 STA. 116+85 RT. (I-90)  
 TWO BEAMS (S4 x 7.7)  
 (BREAKAWAY)



SIGN NO. (559)  
 STA. 124+00 LT. (I-90)  
 TWO BEAMS (S4 x 7.7)  
 (BREAKAWAY)

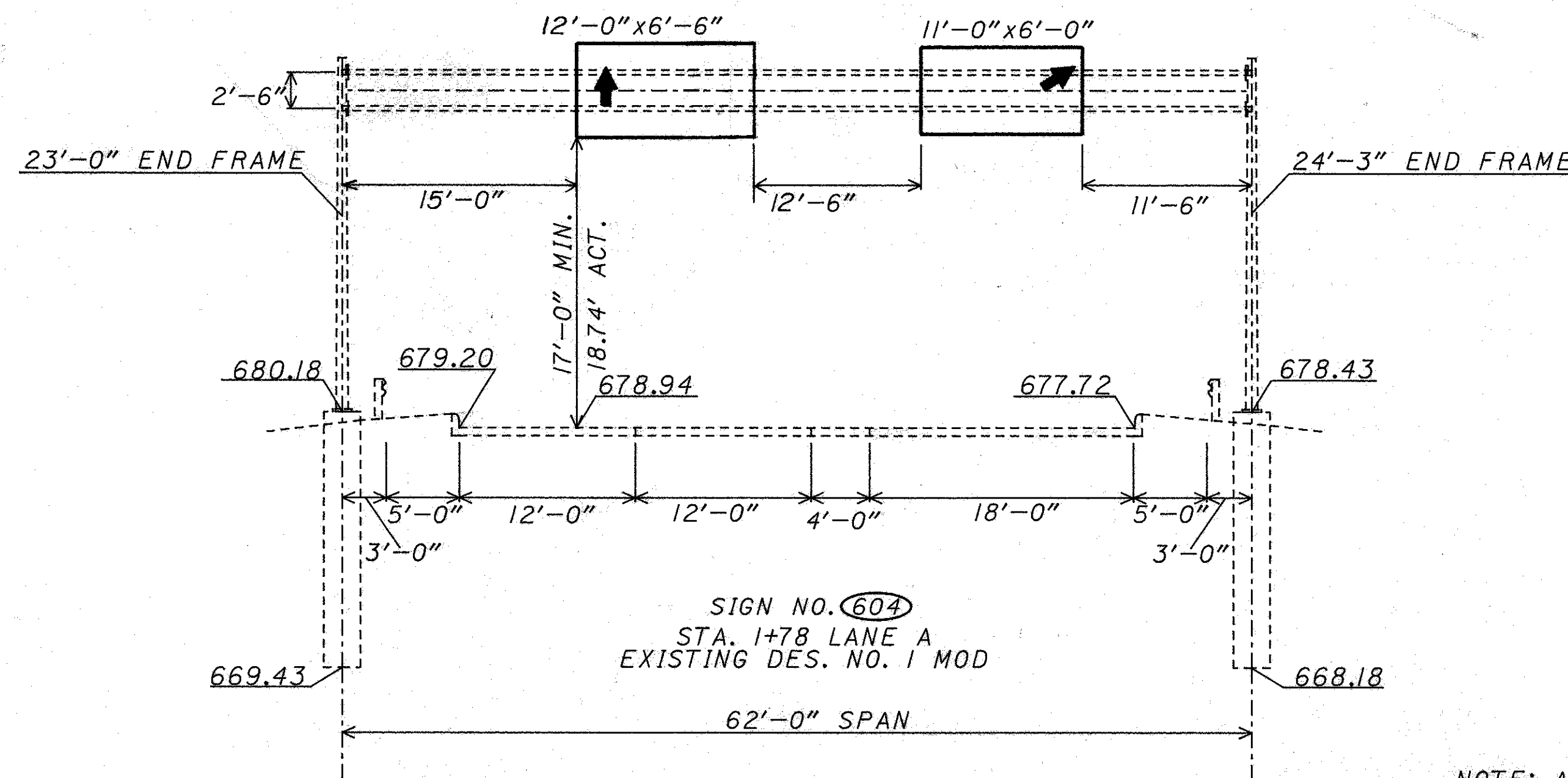
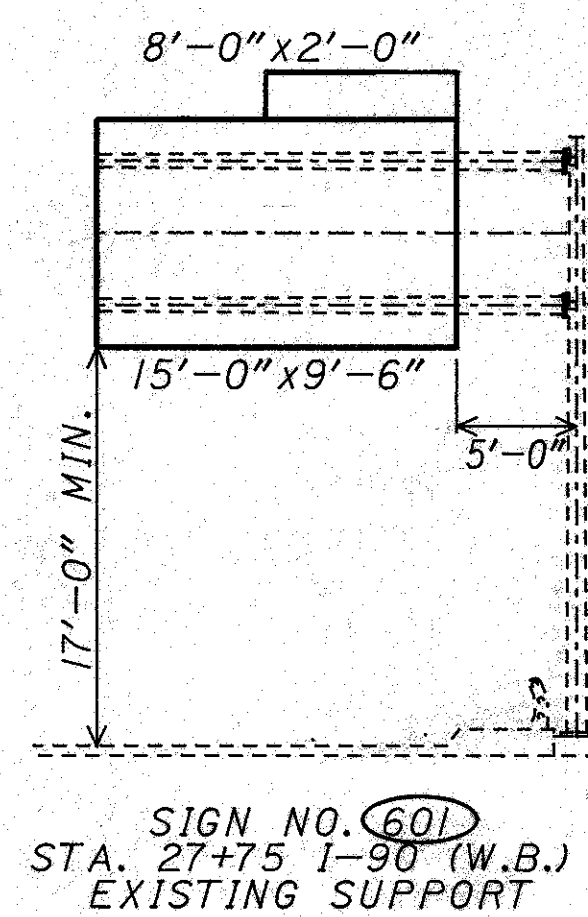
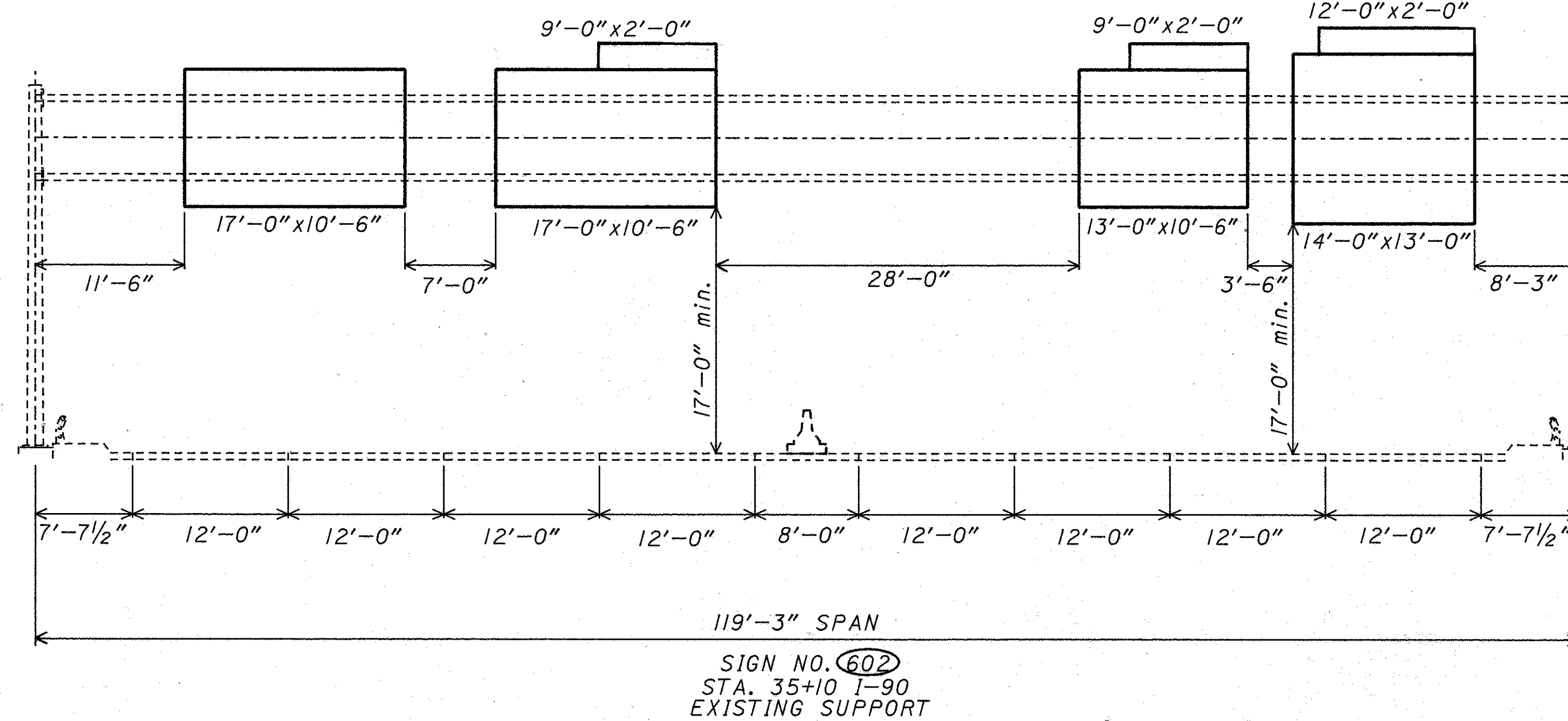
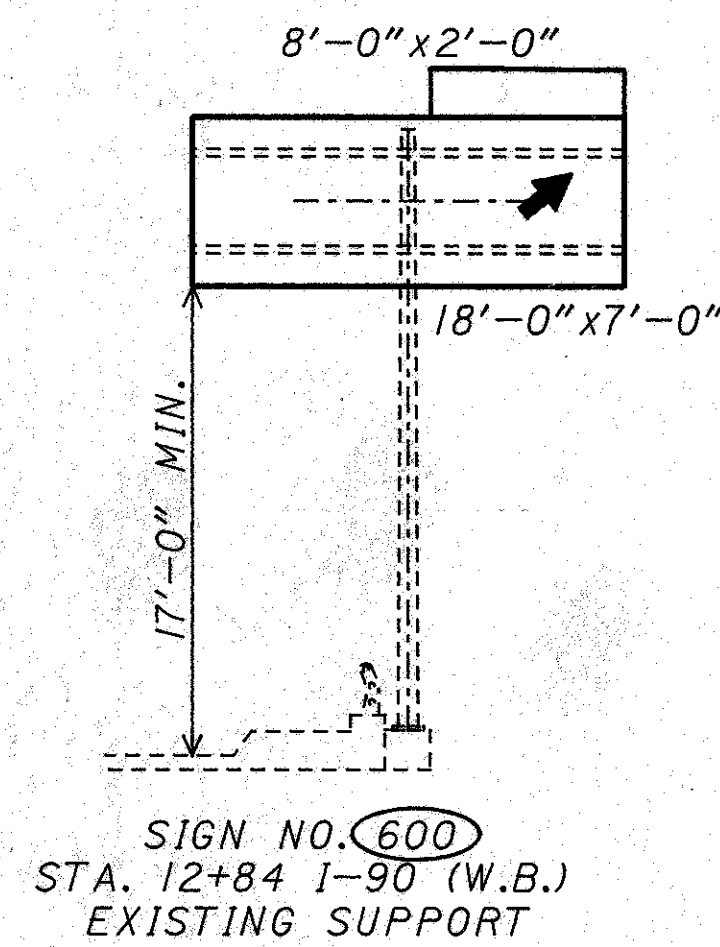


SIGN NO. (560)  
 STA. 129+20 RT. (I-90)  
 TWO BEAMS (S4 x 7.7)  
 (BREAKAWAY)



SIGN NO. (561)  
 STA. 150+25 LT. (I-90)  
 THREE BEAMS (W8 x 18)  
 (BREAKAWAY)

PLOT SUBMITTED: 23-MAR-1992 17:15



NOTE: ALL UTILITY LOCATIONS ARE APPROXIMATE,  
 THE CONTRACTOR SHALL HAVE LOCATIONS  
 FIELD VERIFIED BEFORE PLACING FOUNDATIONS.

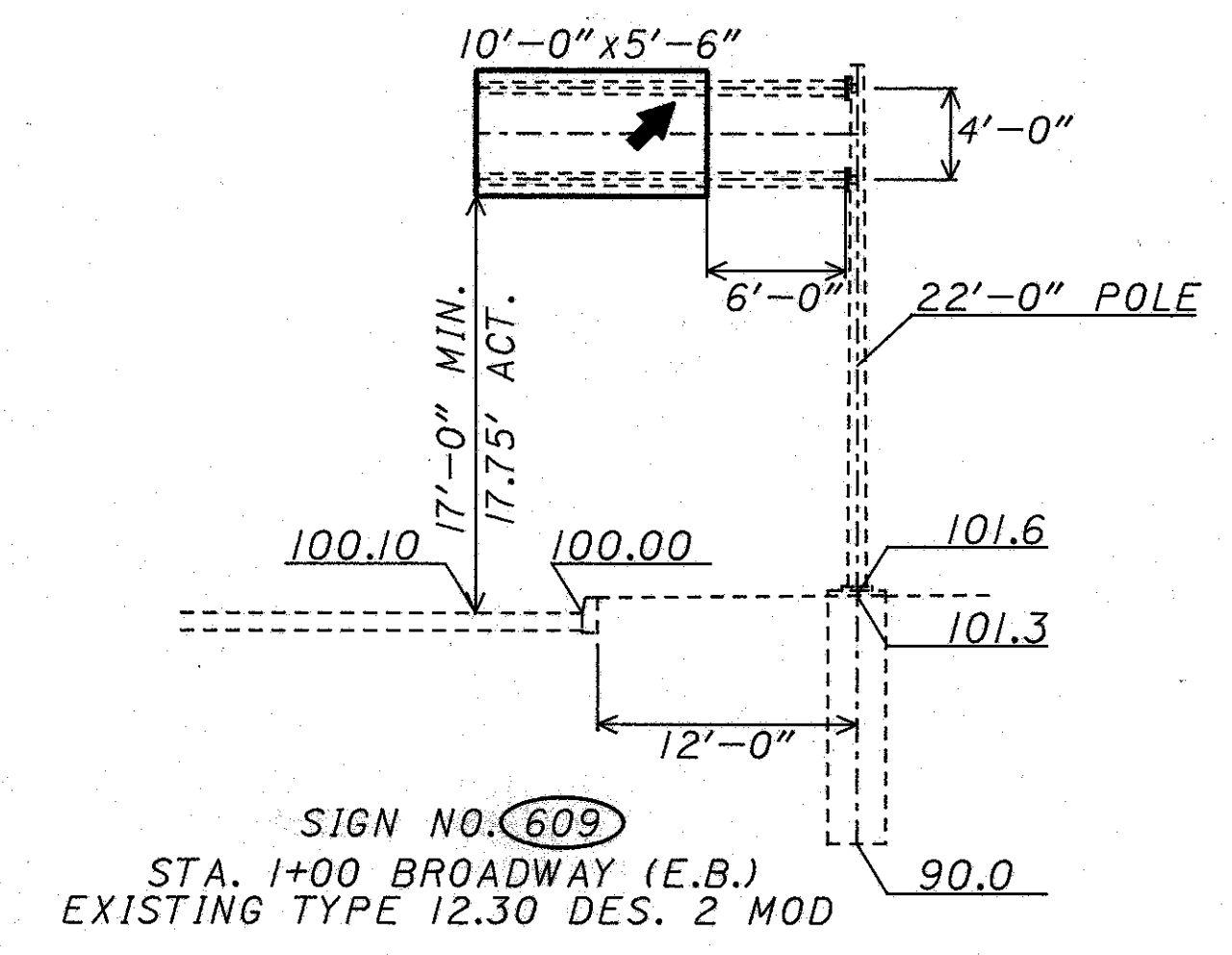
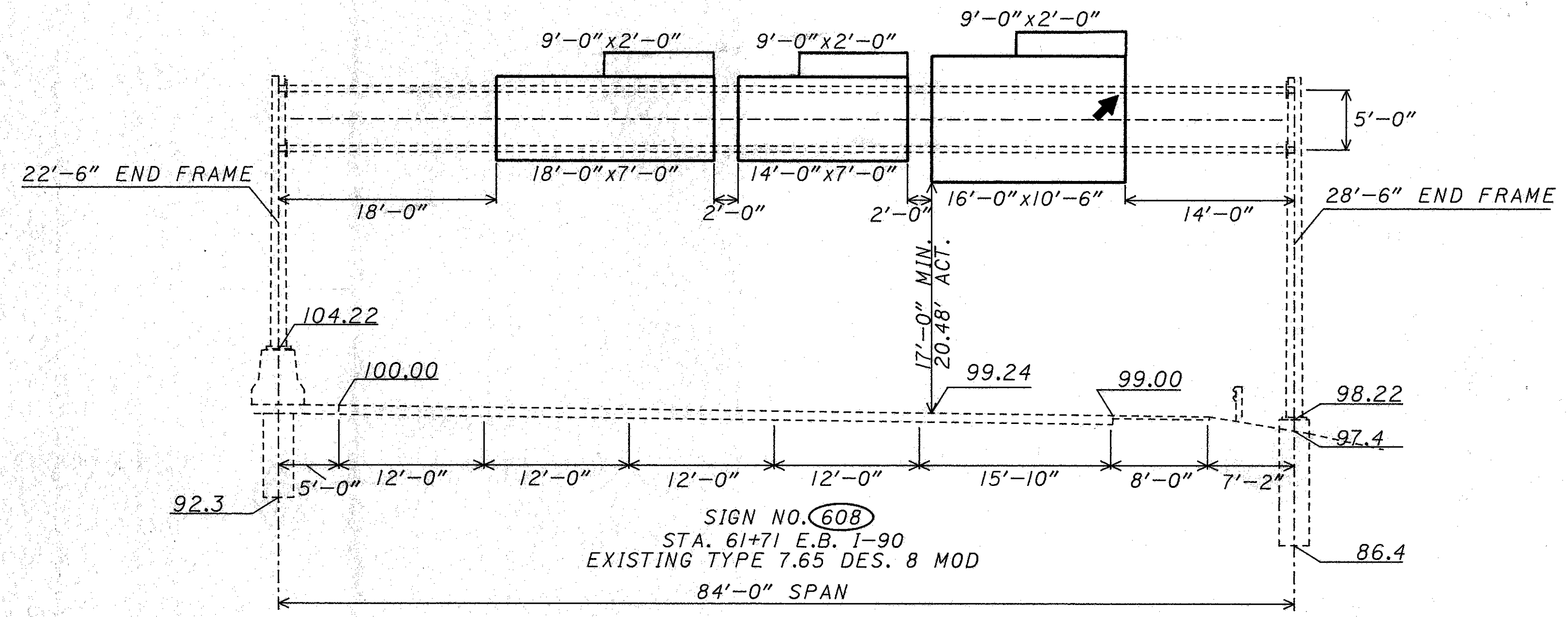
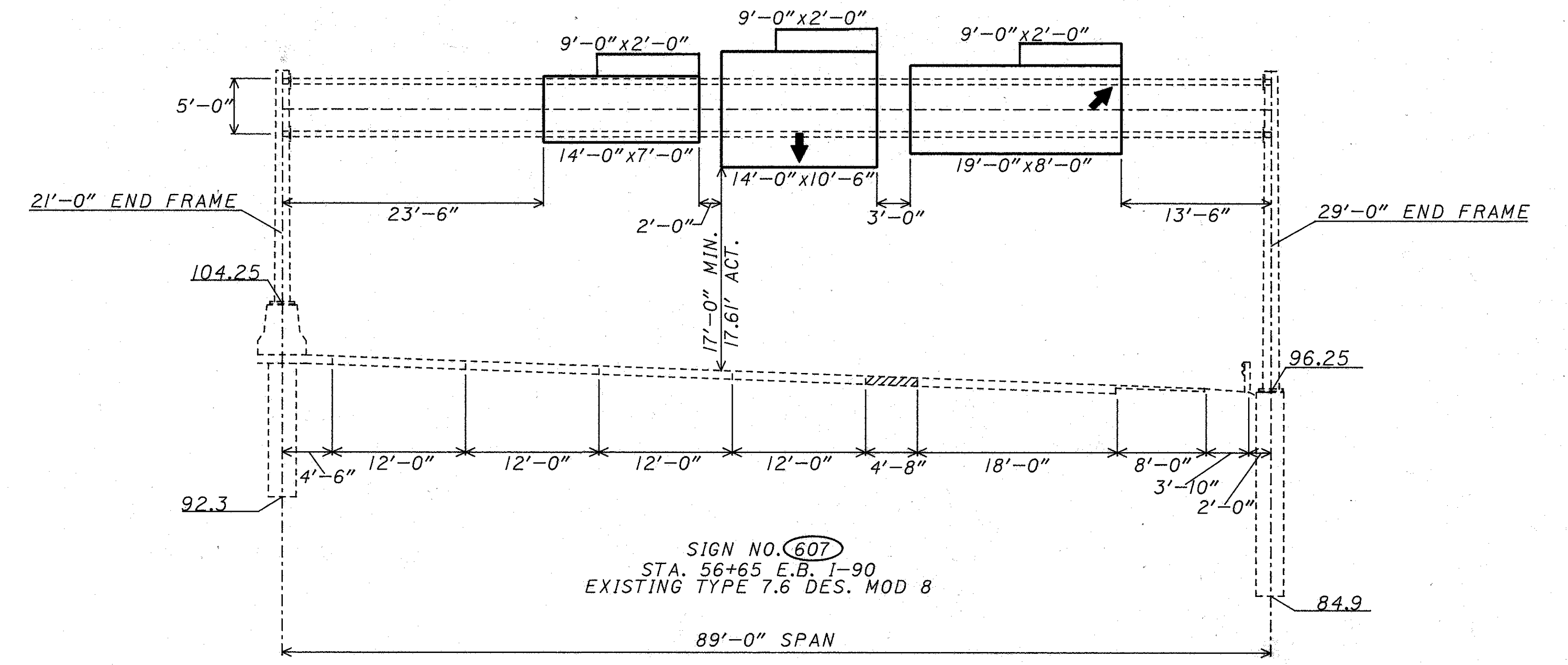
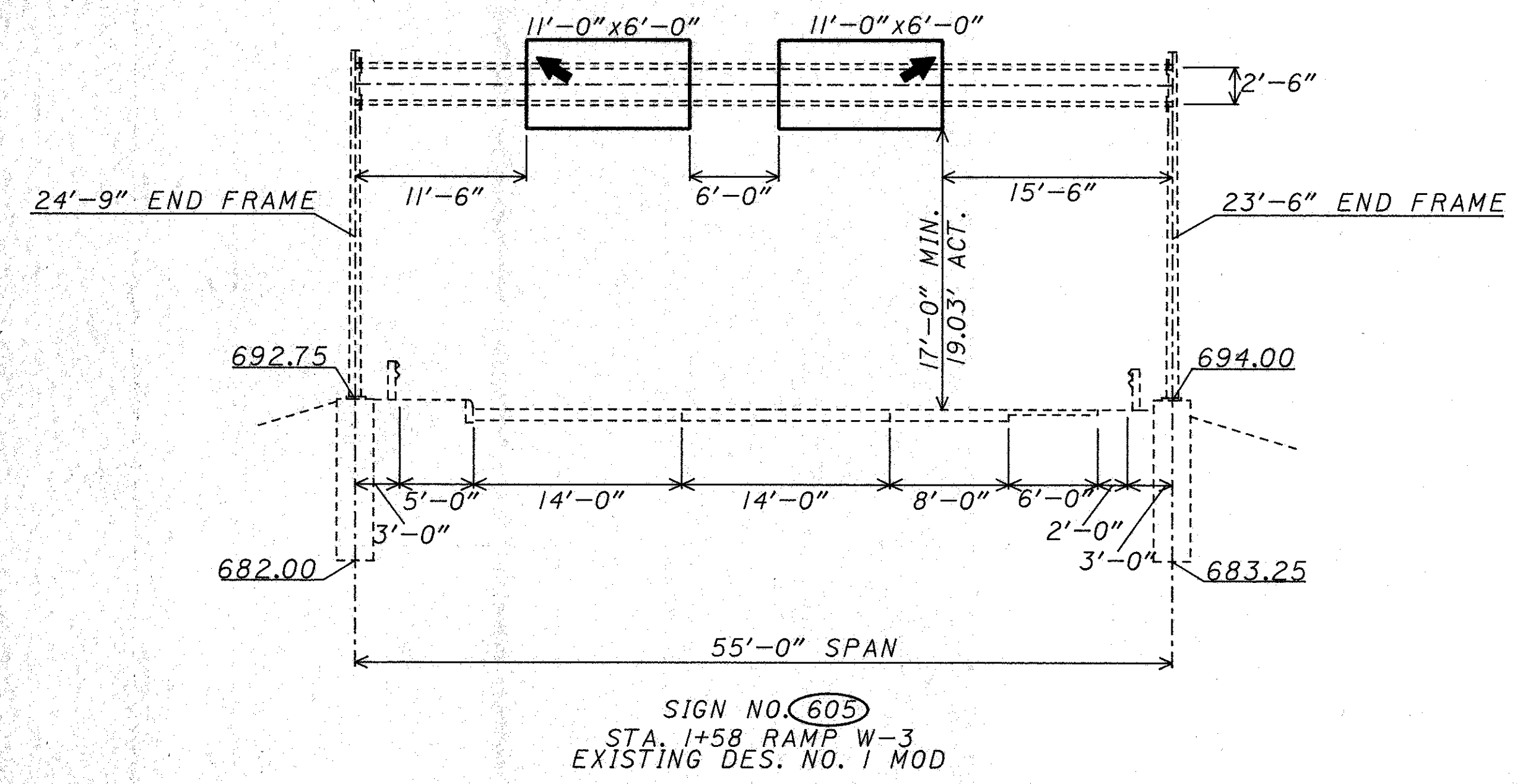
c:\dgn\pid07090\07090tea.dgn

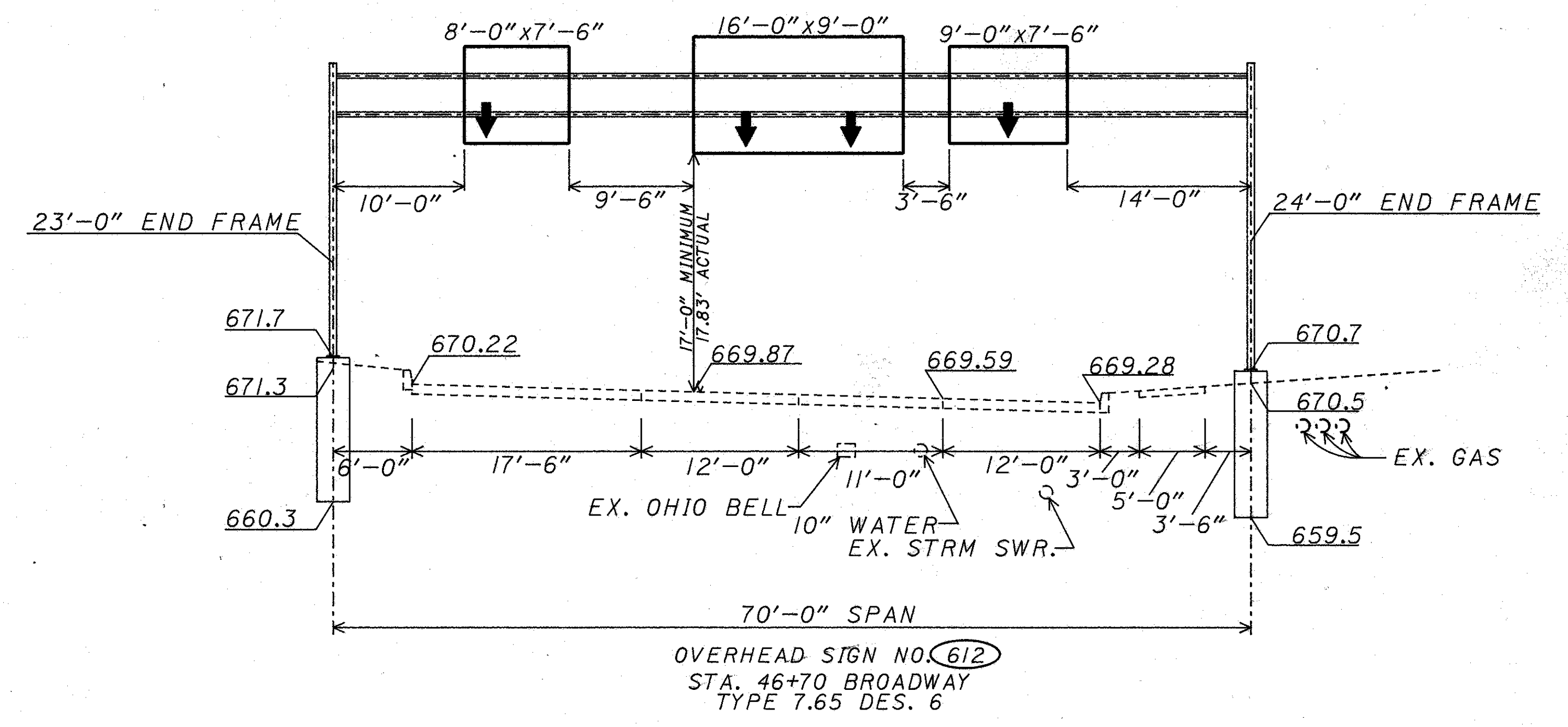
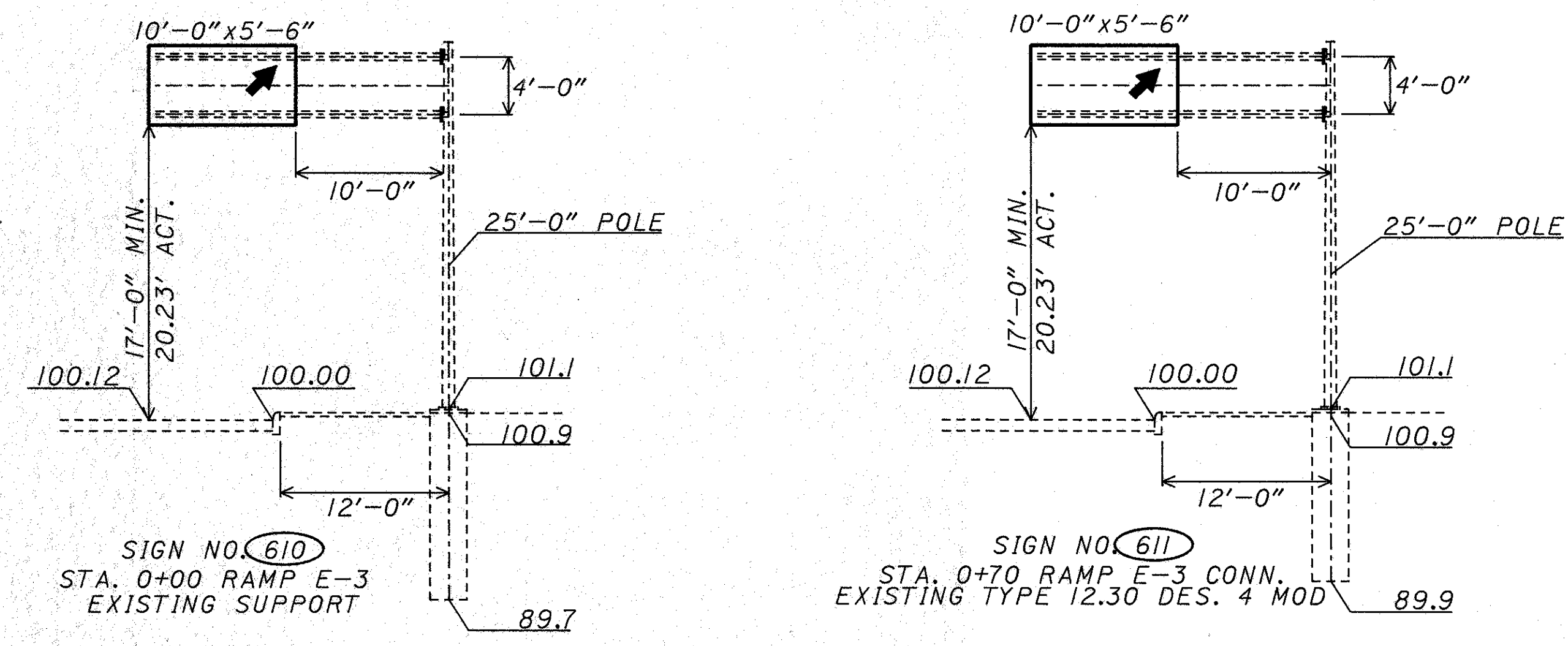
PLOT SUBMITTED BY: uliman



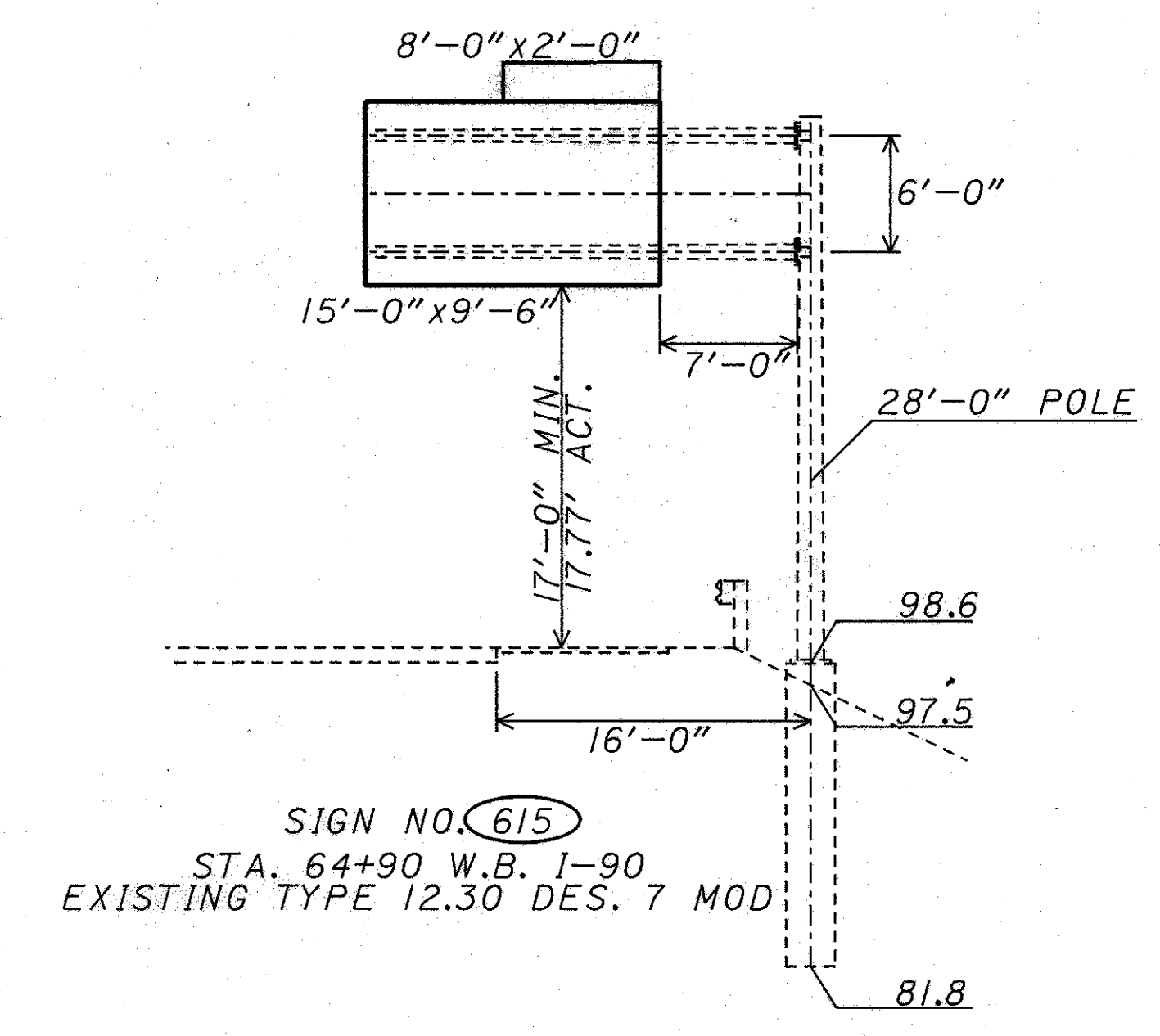
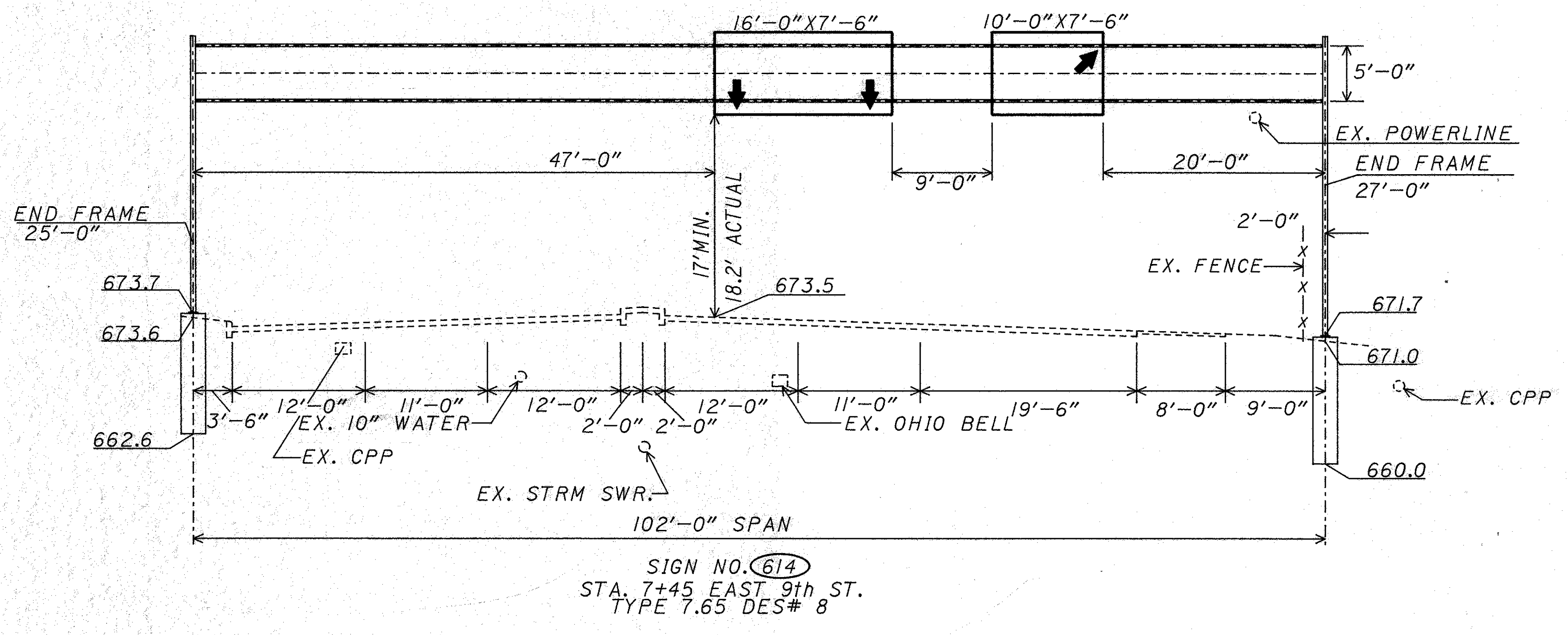
PLOT SUBMITTED BY: uljman

PLOT SUBMITTED BY: uljman





NOTE: ALL UTILITY LOCATIONS ARE APPROXIMATE,  
THE CONTRACTOR SHALL HAVE LOCATIONS  
FIELD VERIFIED BEFORE PLACING FOUNDATIONS.



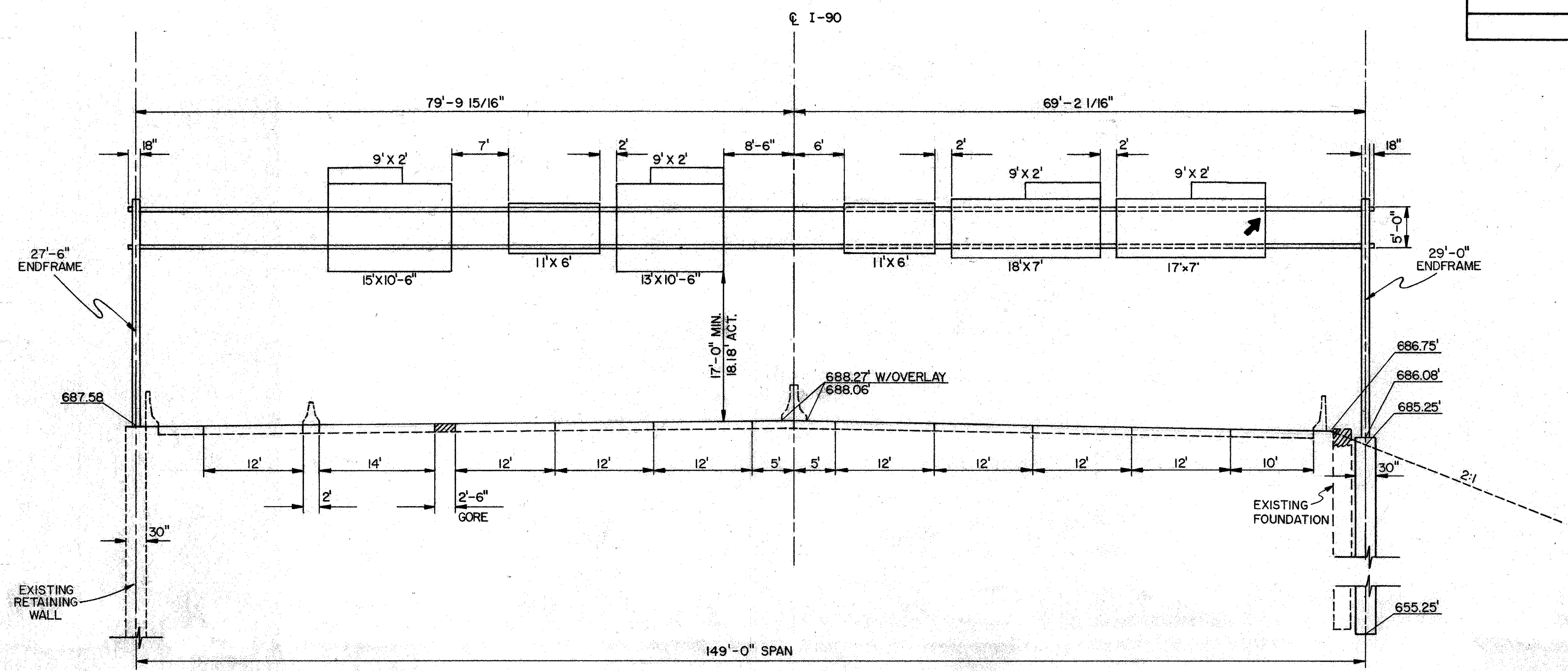
1  
4  
6

PLOT SUBMITTED BY: ullman  
PLOT SUBMITTED: 23-MAR-1992 17:18

c:\dgn\pid07090\07090fec.dgn



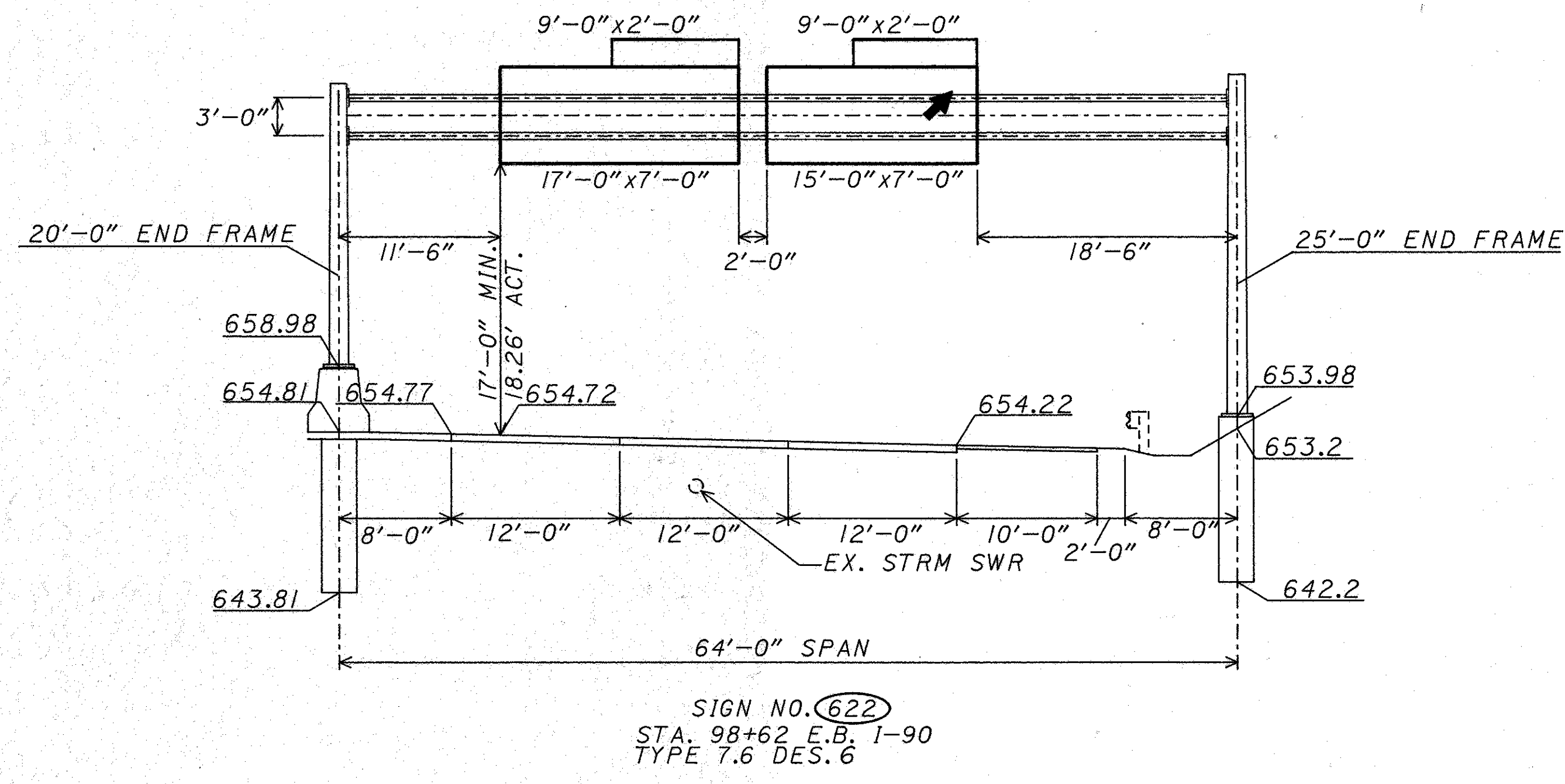




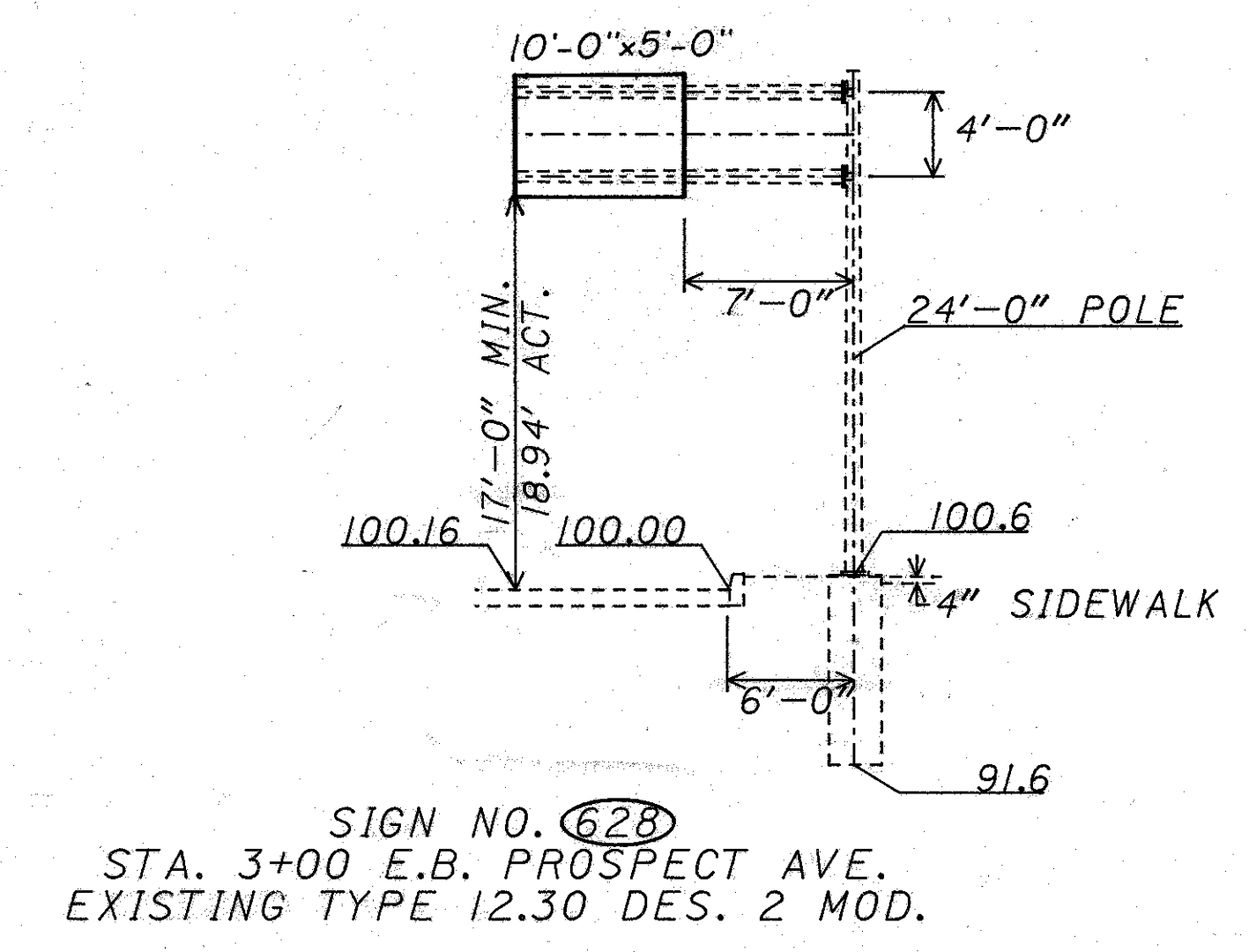
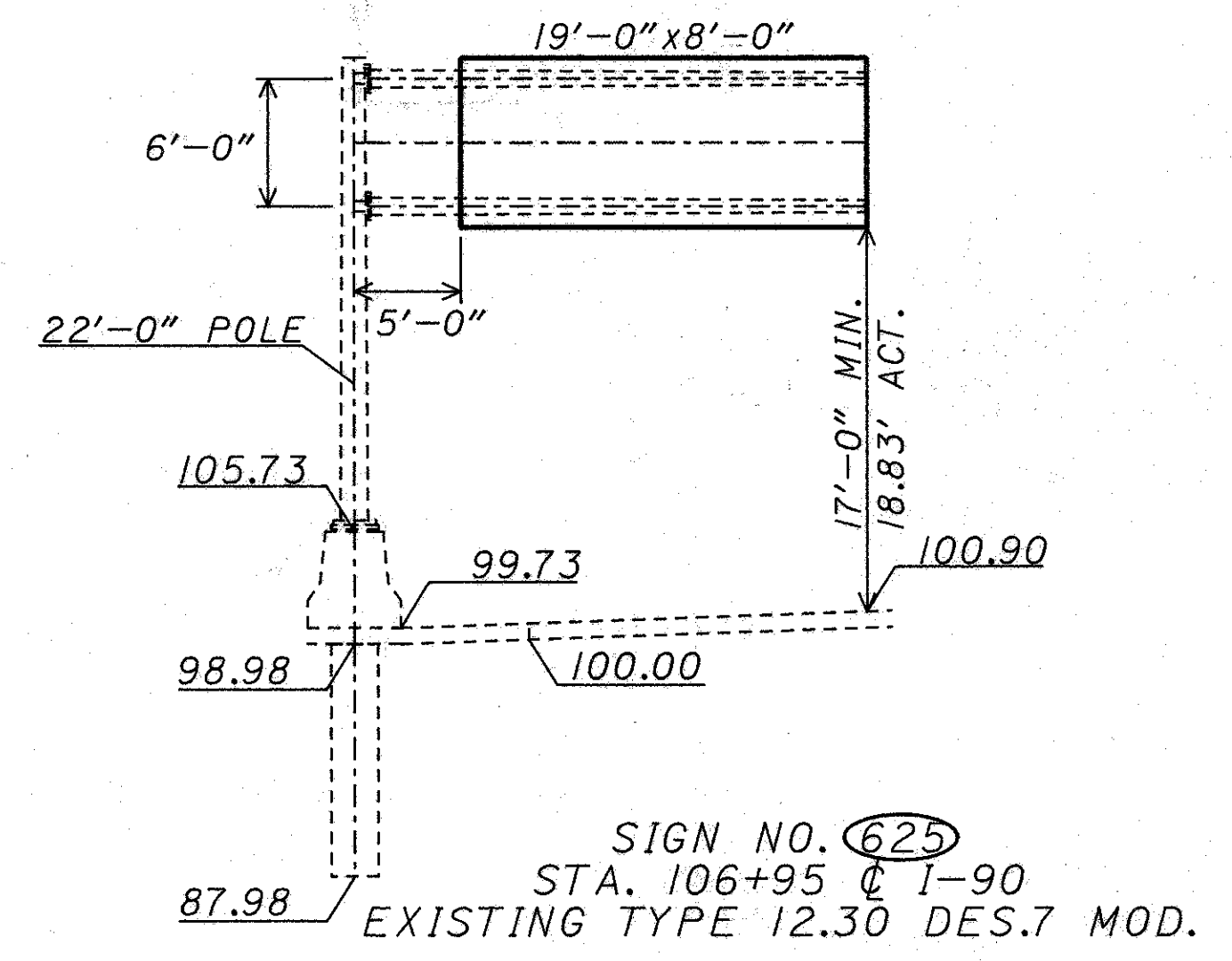
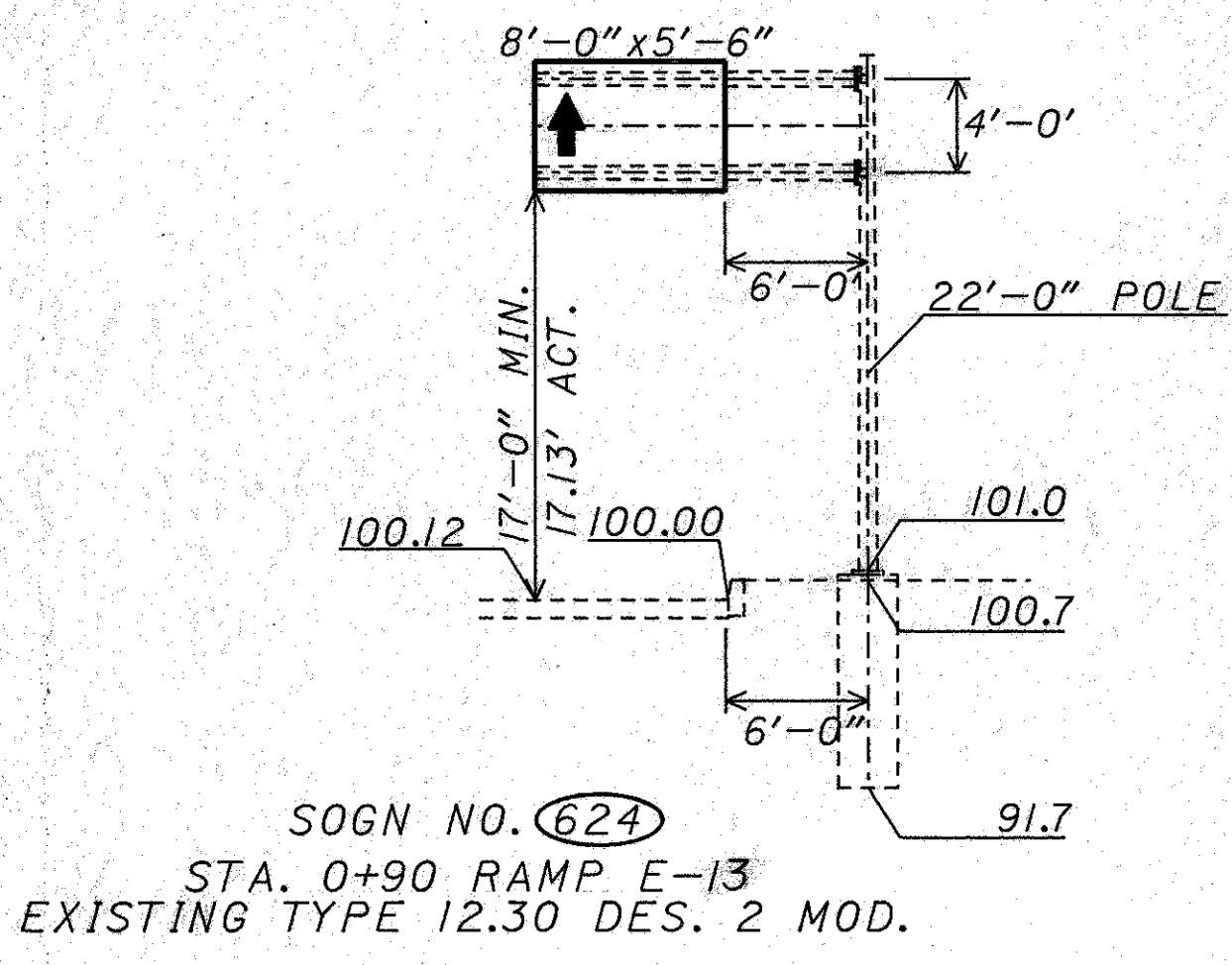
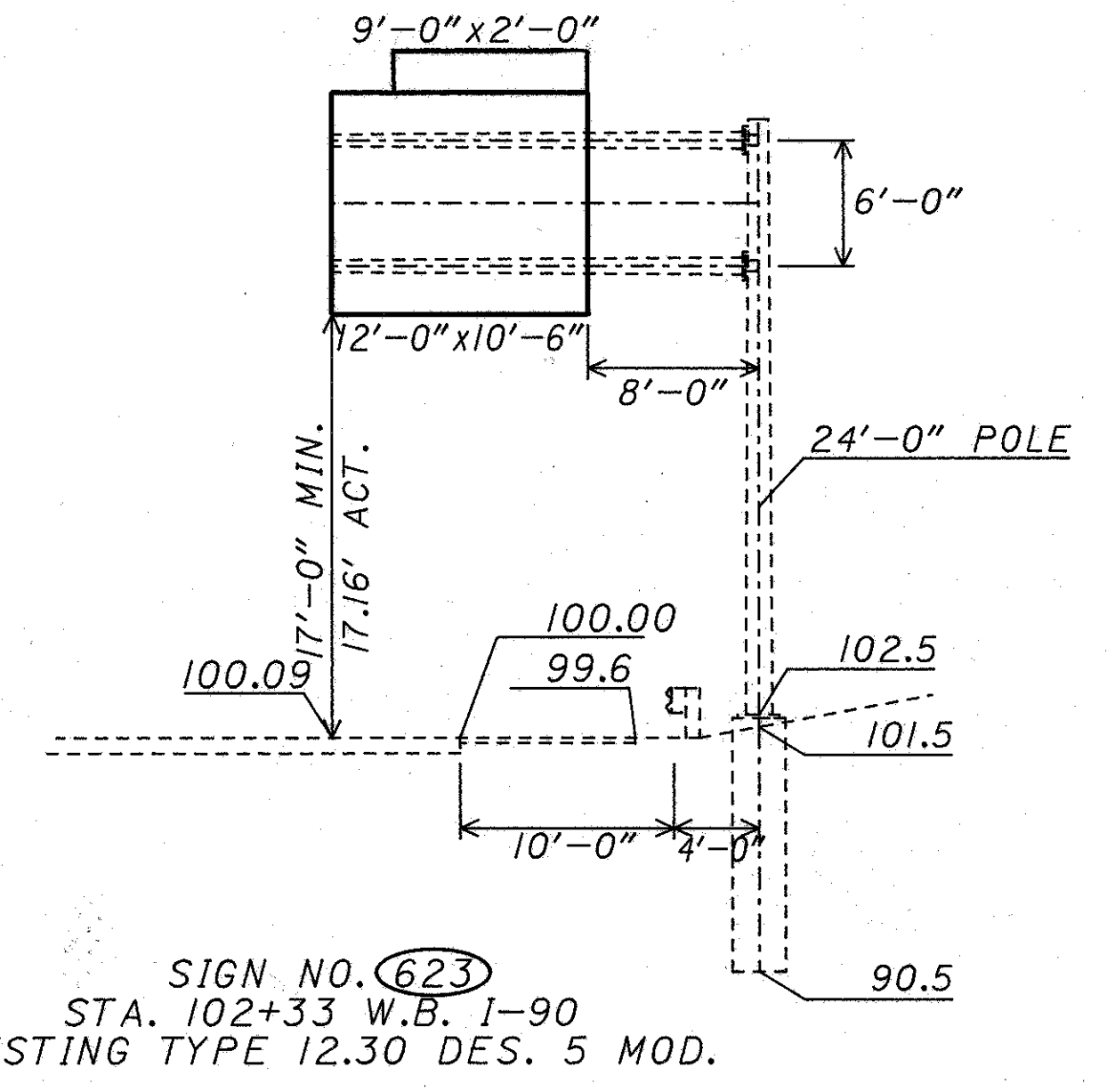
SEE SHEET 210  
FOR ANCHOR BOLT DETAIL INTO  
EXISTING RETAINING WALL.

OVERHEAD SIGN SUPPORT NO. (618)  
STA. 74+25 IR 90  
TYPE 15.115, AS PER PLAN





NOTE: ALL UTILITY LOCATIONS ARE APPROXIMATE,  
 THE CONTRACTOR SHALL HAVE LOCATIONS  
 FIELD VERIFIED BEFORE PLACING FOUNDATIONS.



1  
2  
4  
6  
14

PLOT SUBMITTED BY: ulilman

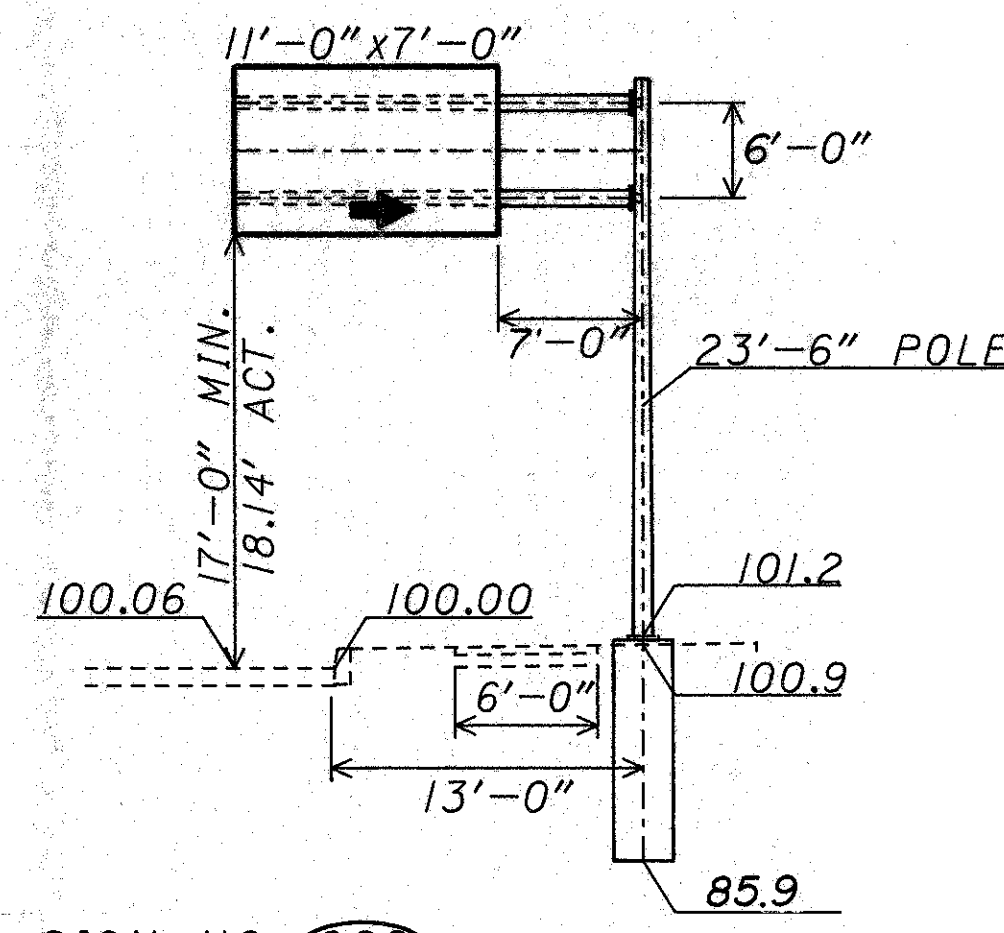
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PLOT SUBMITTED: 23-MAR-1992 17:20

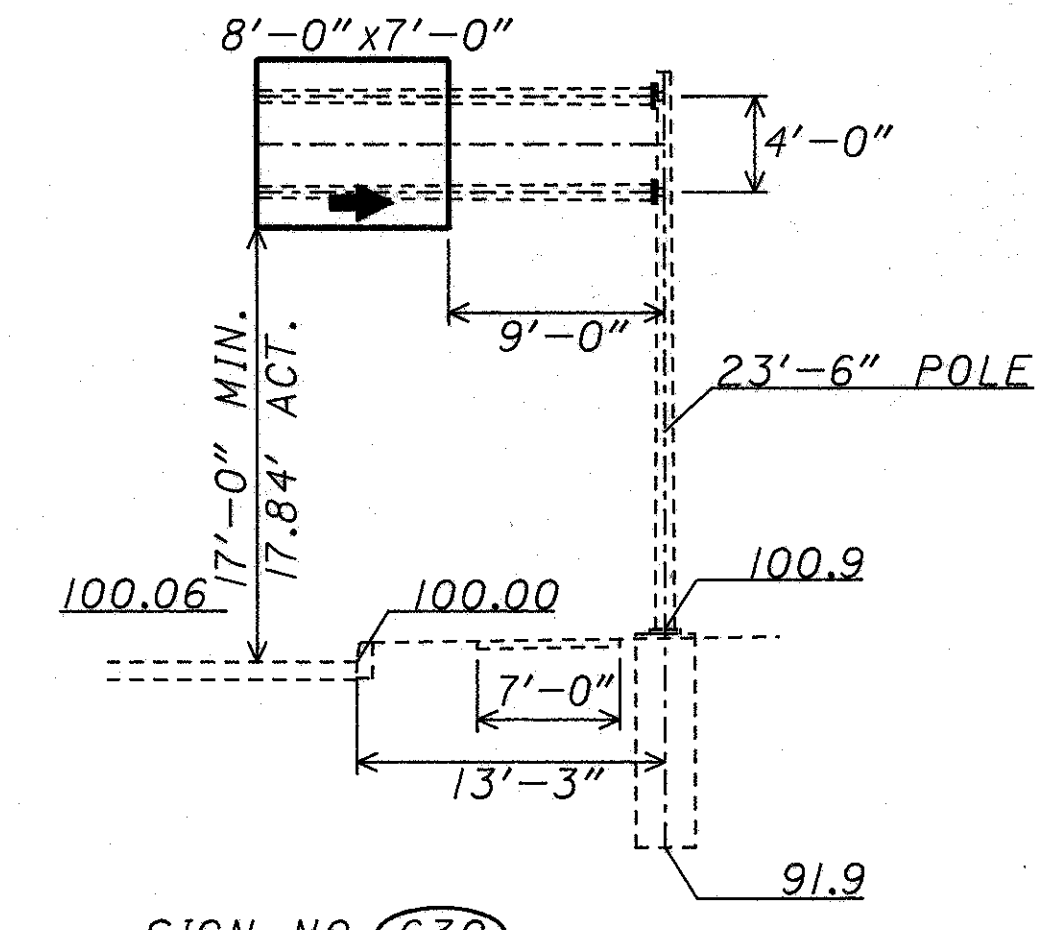
PLOT SUBMITTED: 23-MAR-1992 17:21

c:\dgn\pid07090\07090fef.dgn

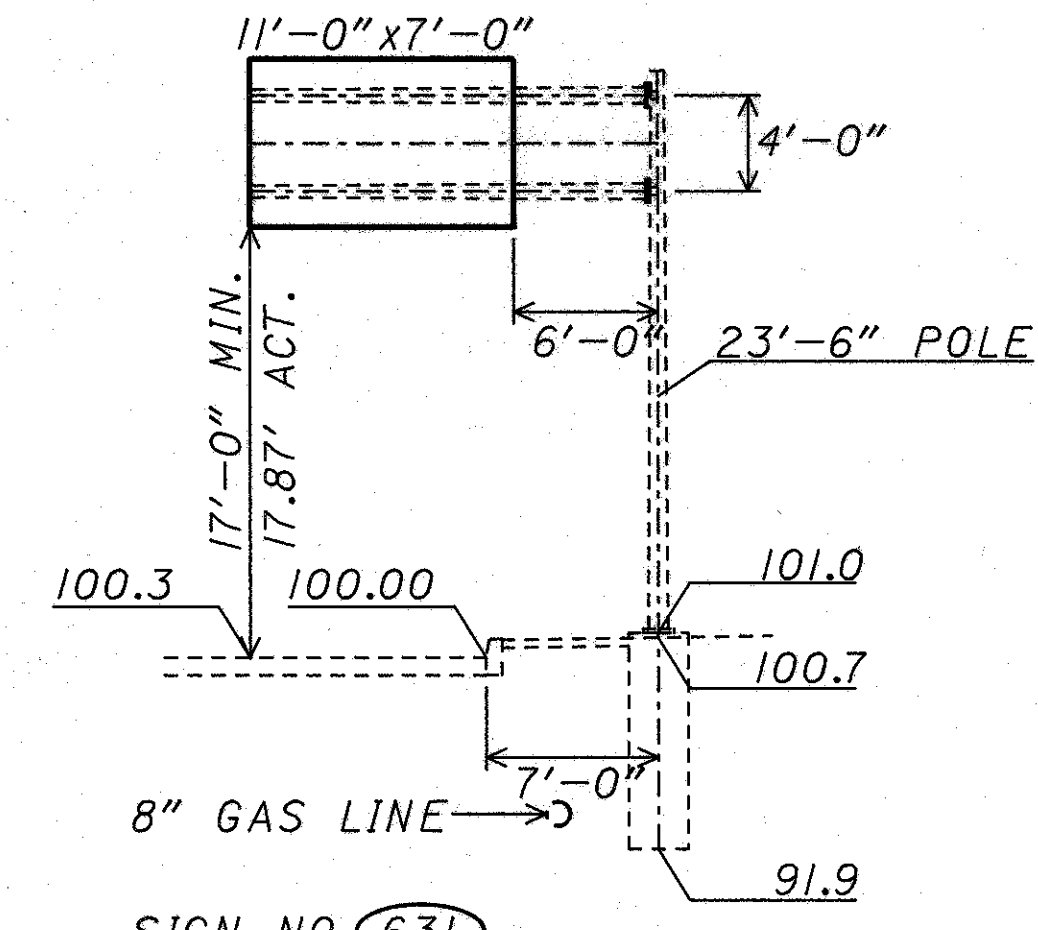
PLOT SUBMITTED BY: uliman



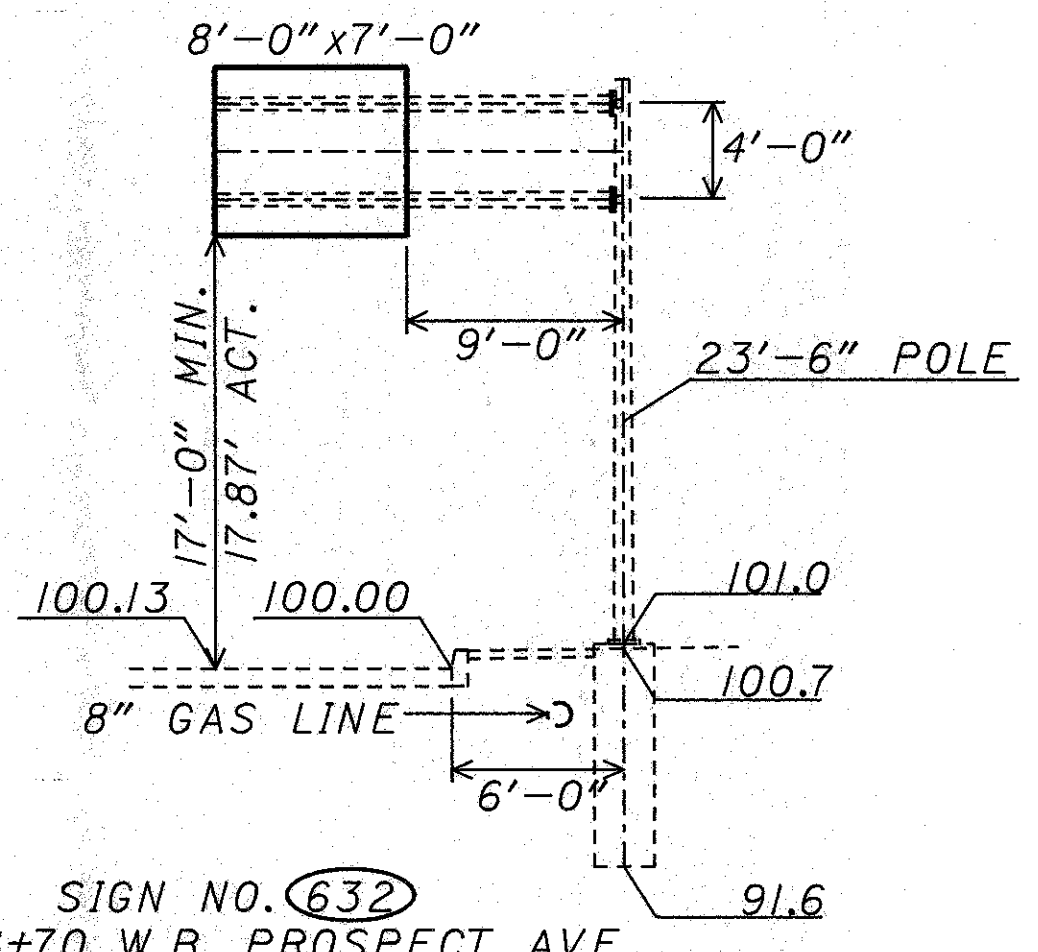
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 STA. 8+70 W.B. PROSPECT AVE.  
 TYPE 12.30 DES. 7  
 (NOT TO SCALE)



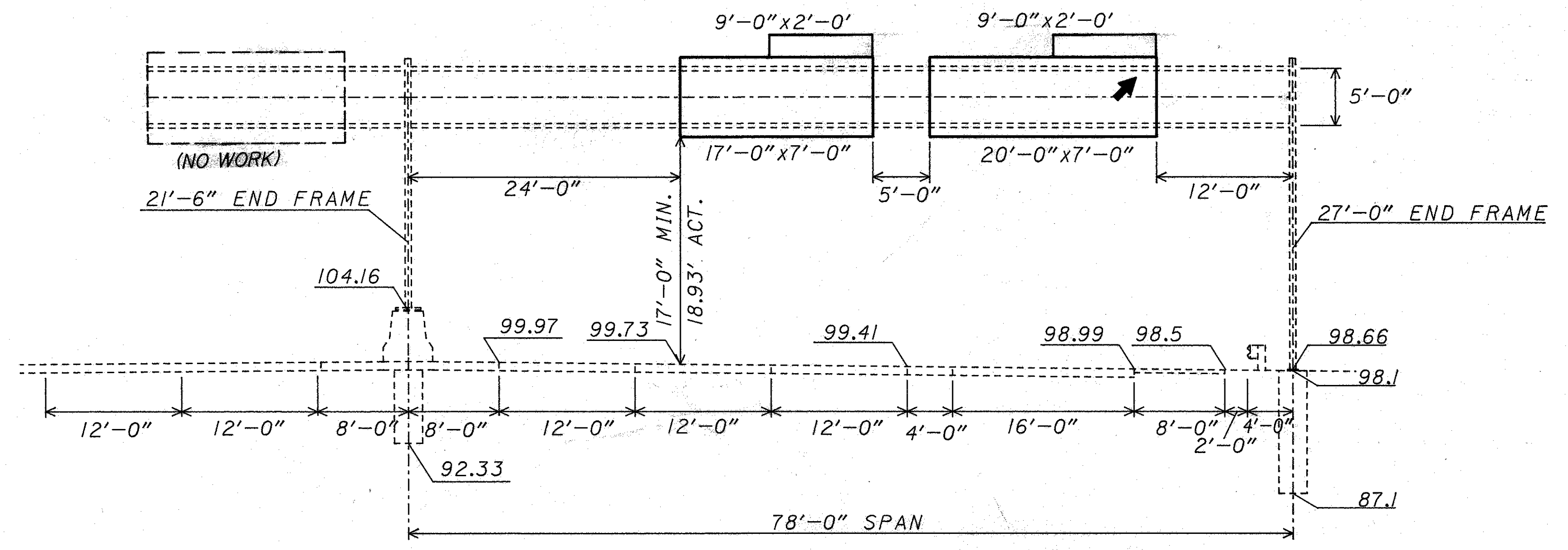
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 STA. 12+40 E.B. PROSPECT AVE.  
 EXISTING TYPE 12.30 DES. 2 MOD.



SIGN NO. 631  
 STA. 14+00 W.B. PROSPECT AVE.  
 EXISTING TYPE 12.30 DES. 2 MOD.



SIGN NO. 632  
 STA. 18+70 W.B. PROSPECT AVE.  
 EXISTING TYPE 12.30 DES. 2 MOD.



SIGN NO. 634  
 STA. 133+25 W.B. I-90  
 EXISTING TYPE 7.65 DES. 8 MOD.

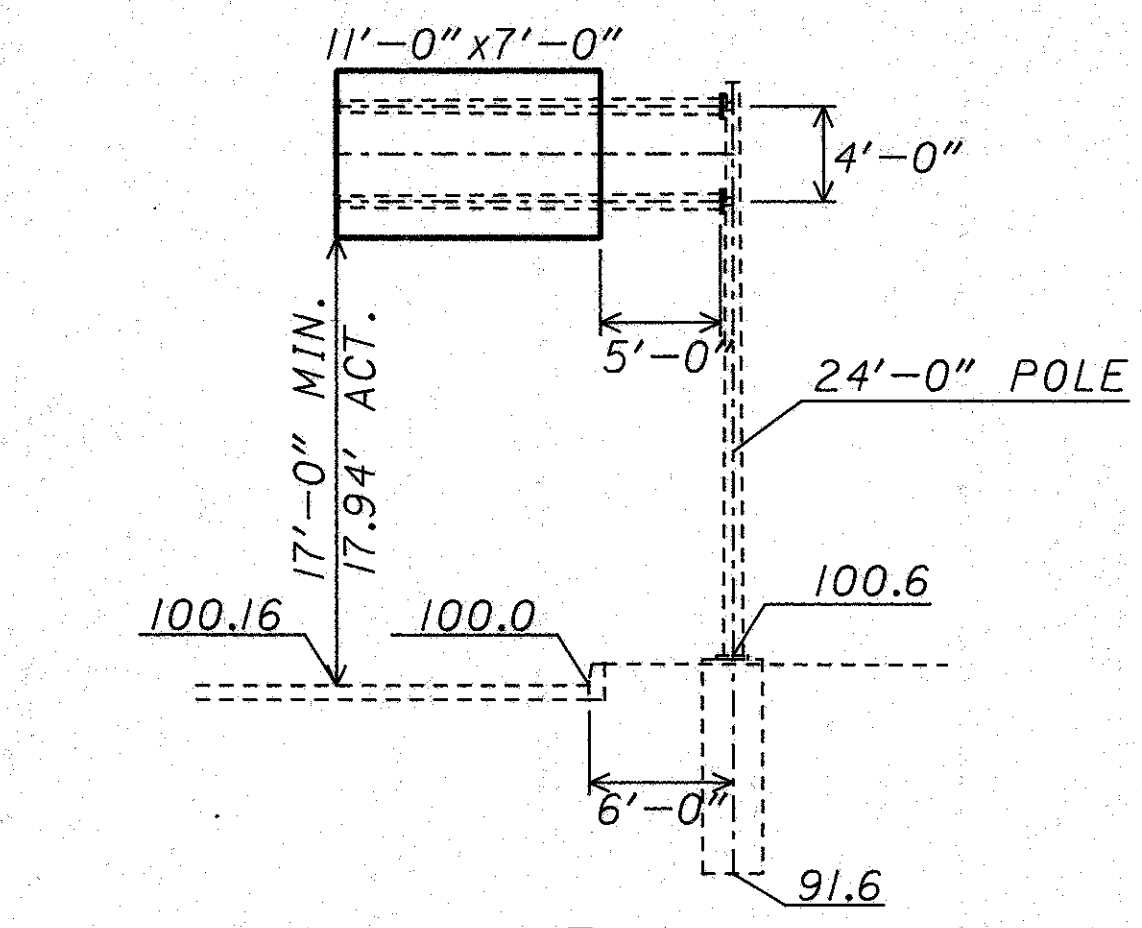


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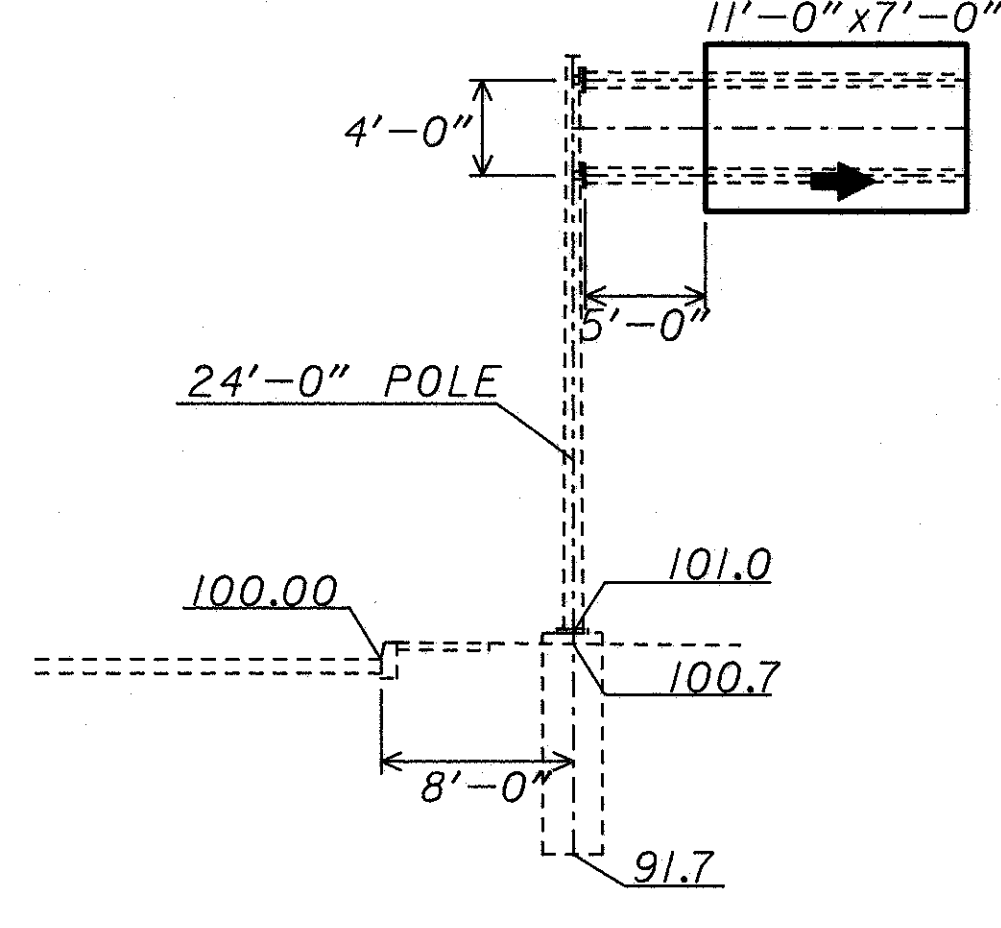
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PLOT SUBMITTED: 23-MAR-1992 17:23

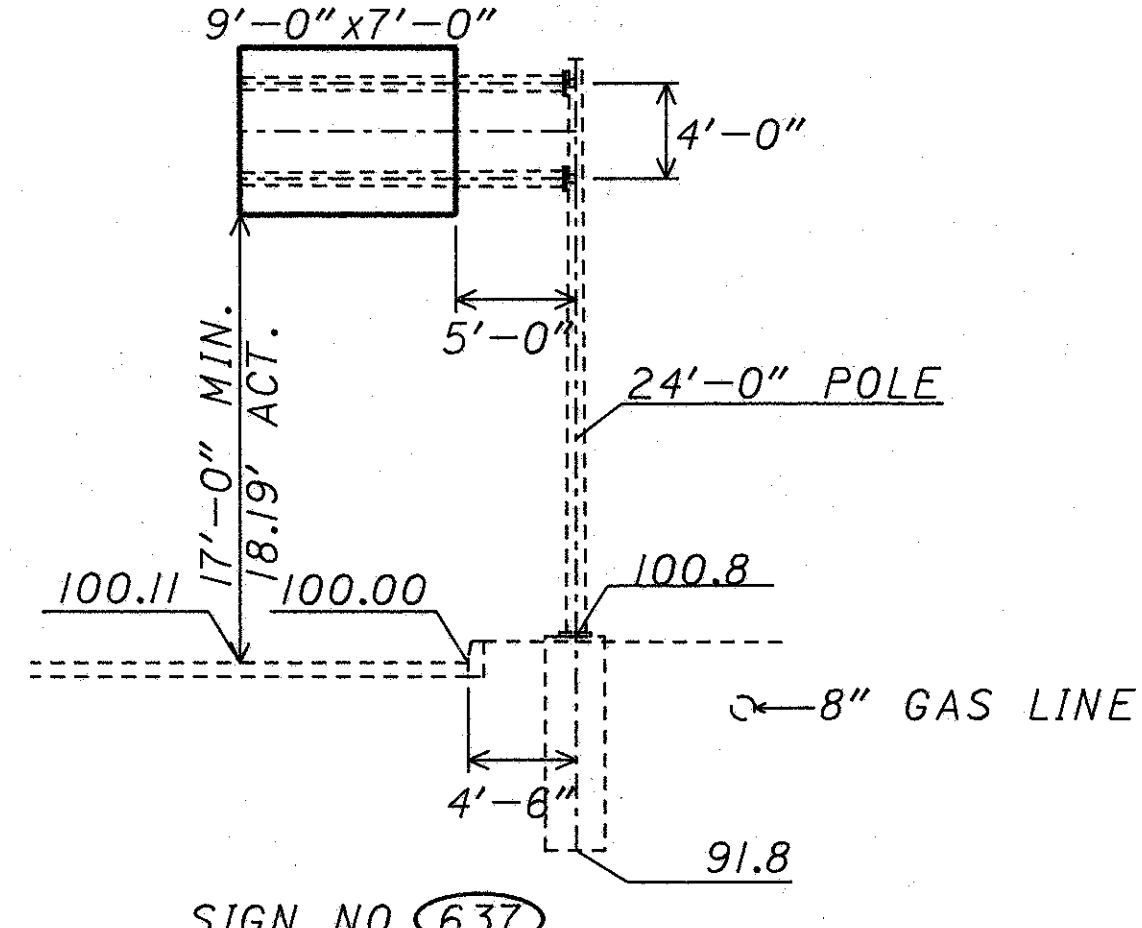
PLOT SUBMITTED BY: ulman



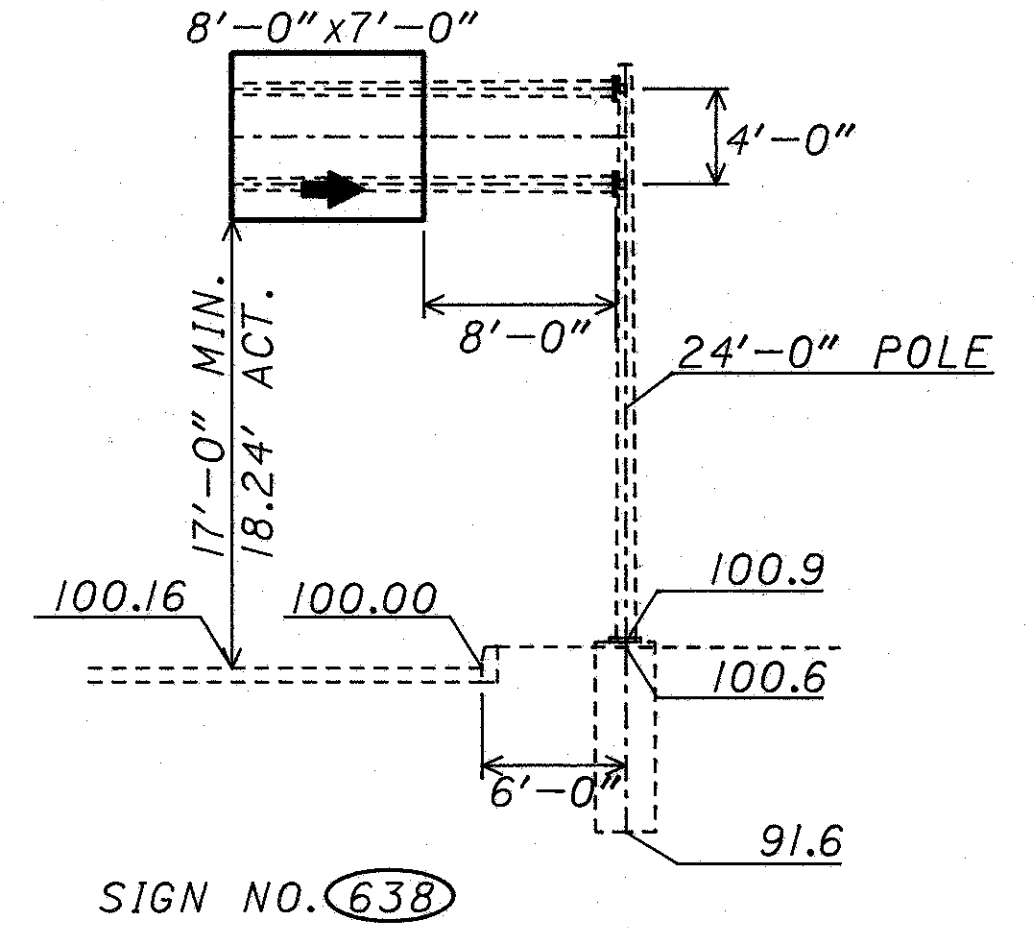
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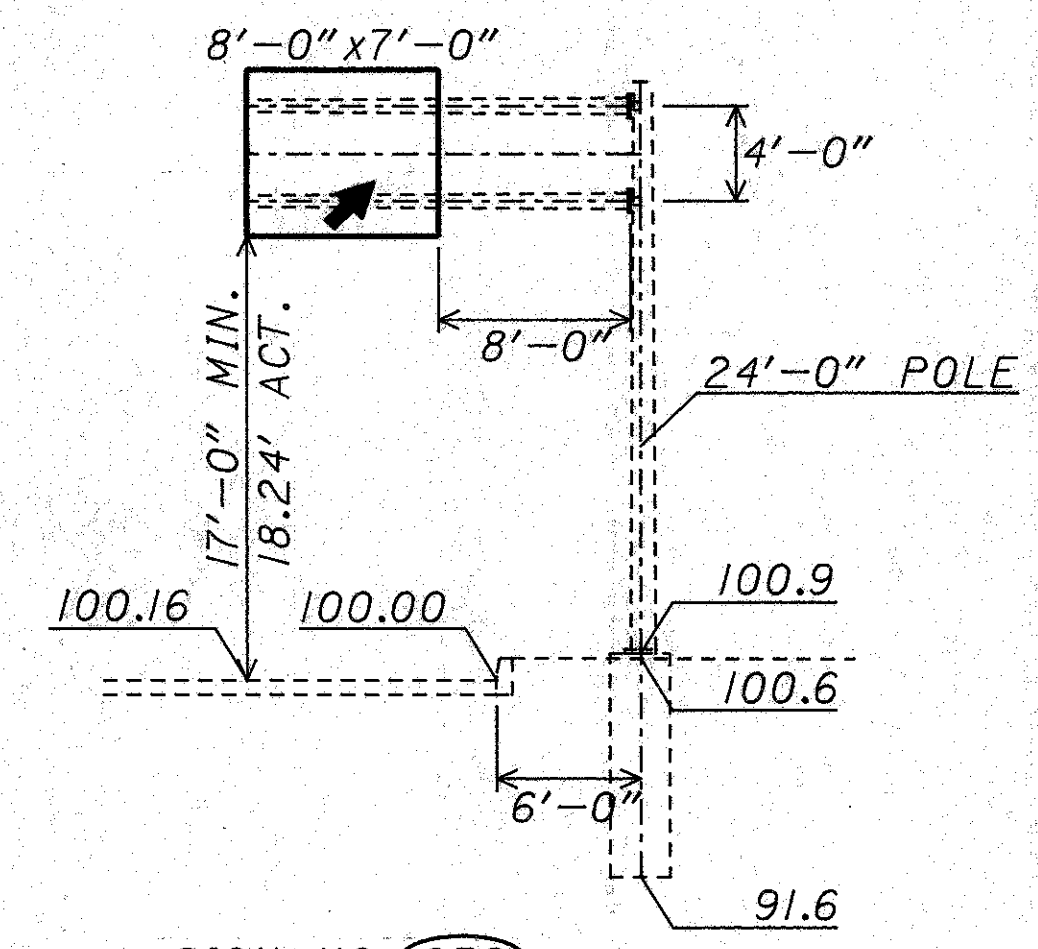
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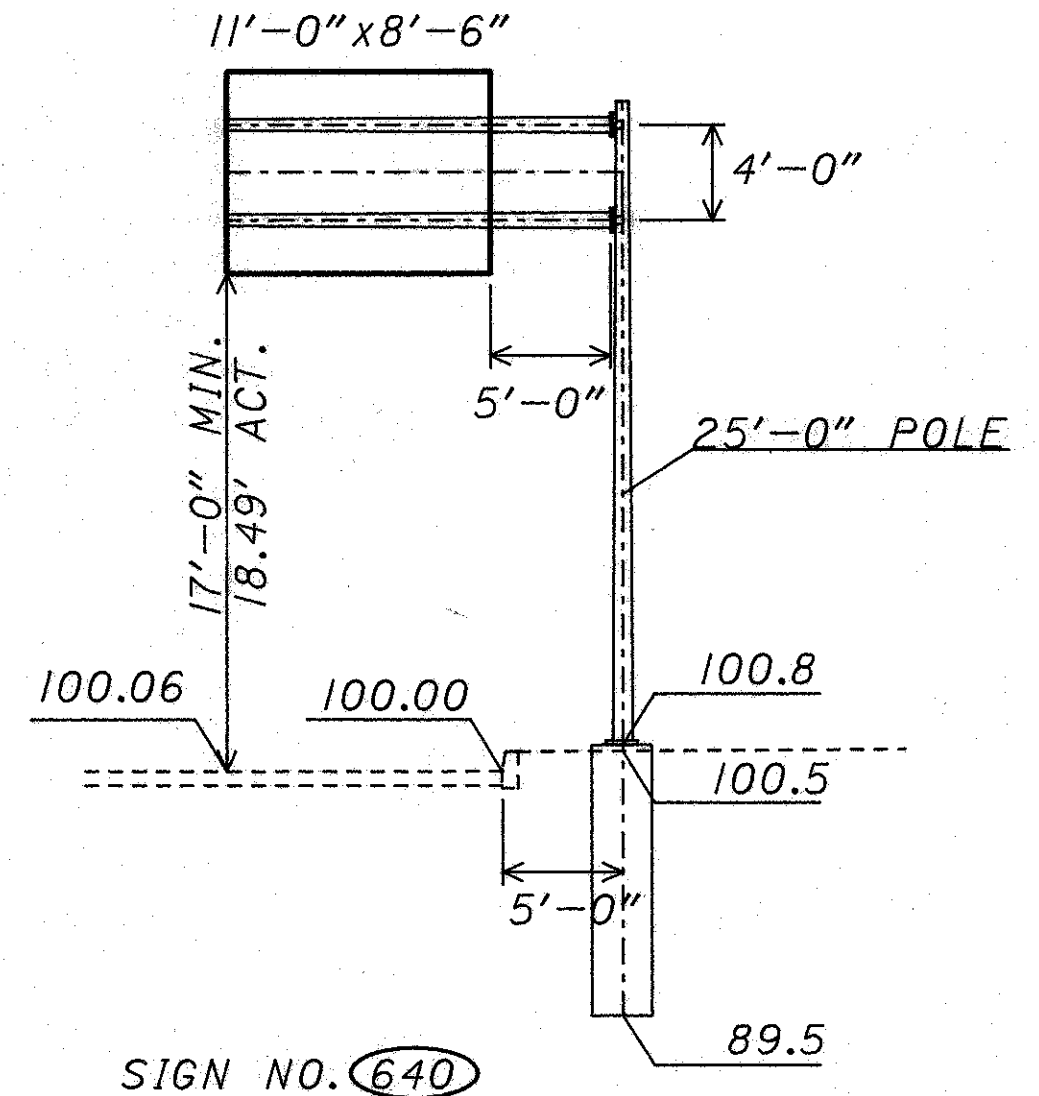
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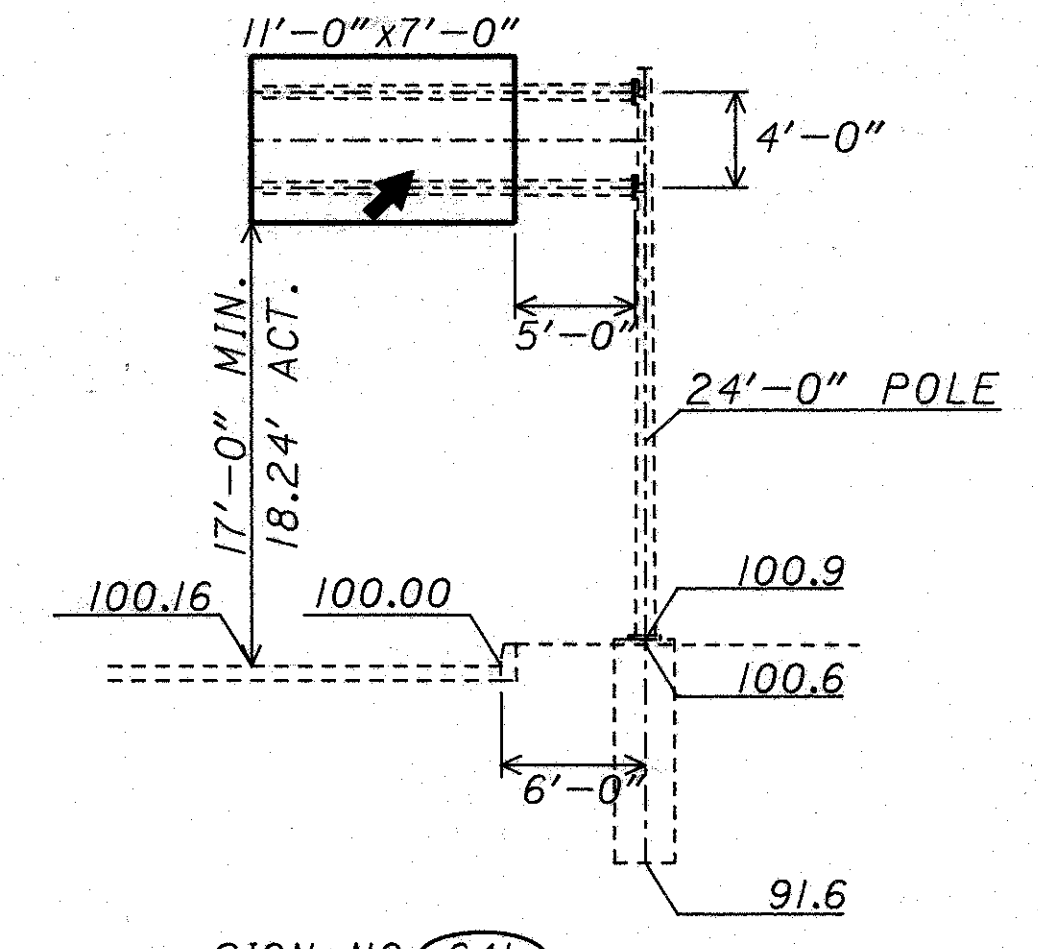
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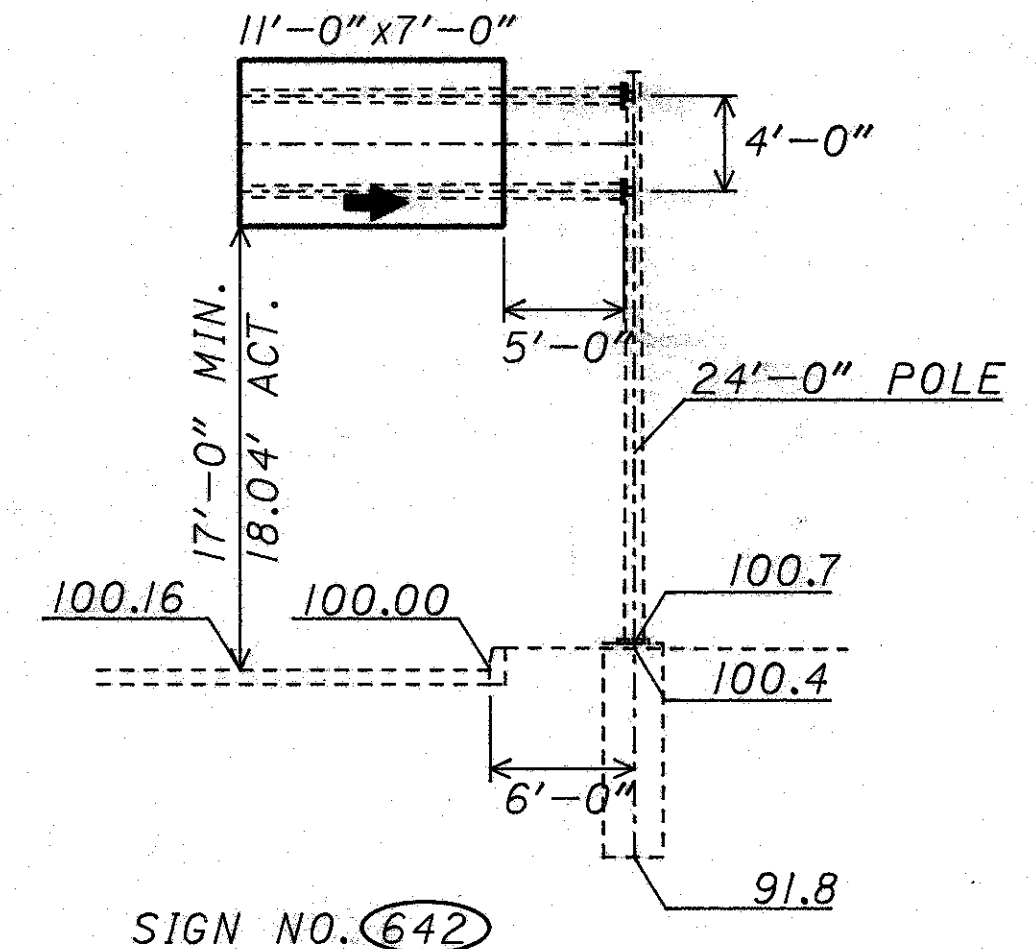
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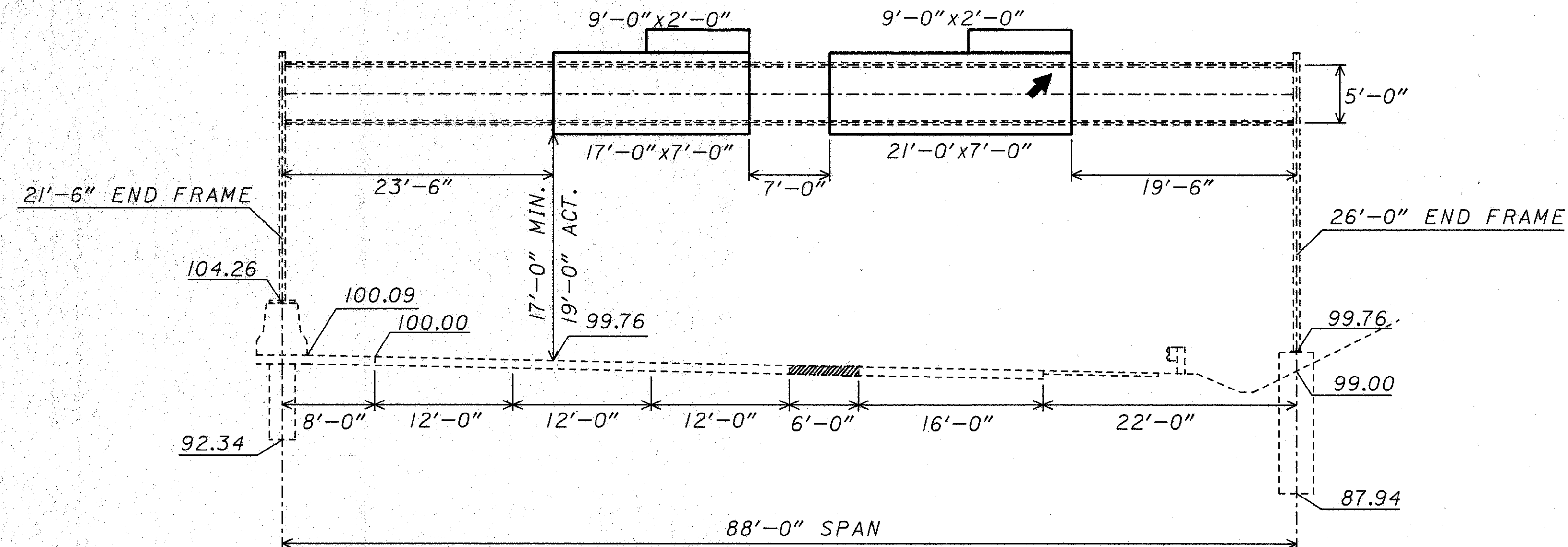
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TYPE 12.30 DES. 3



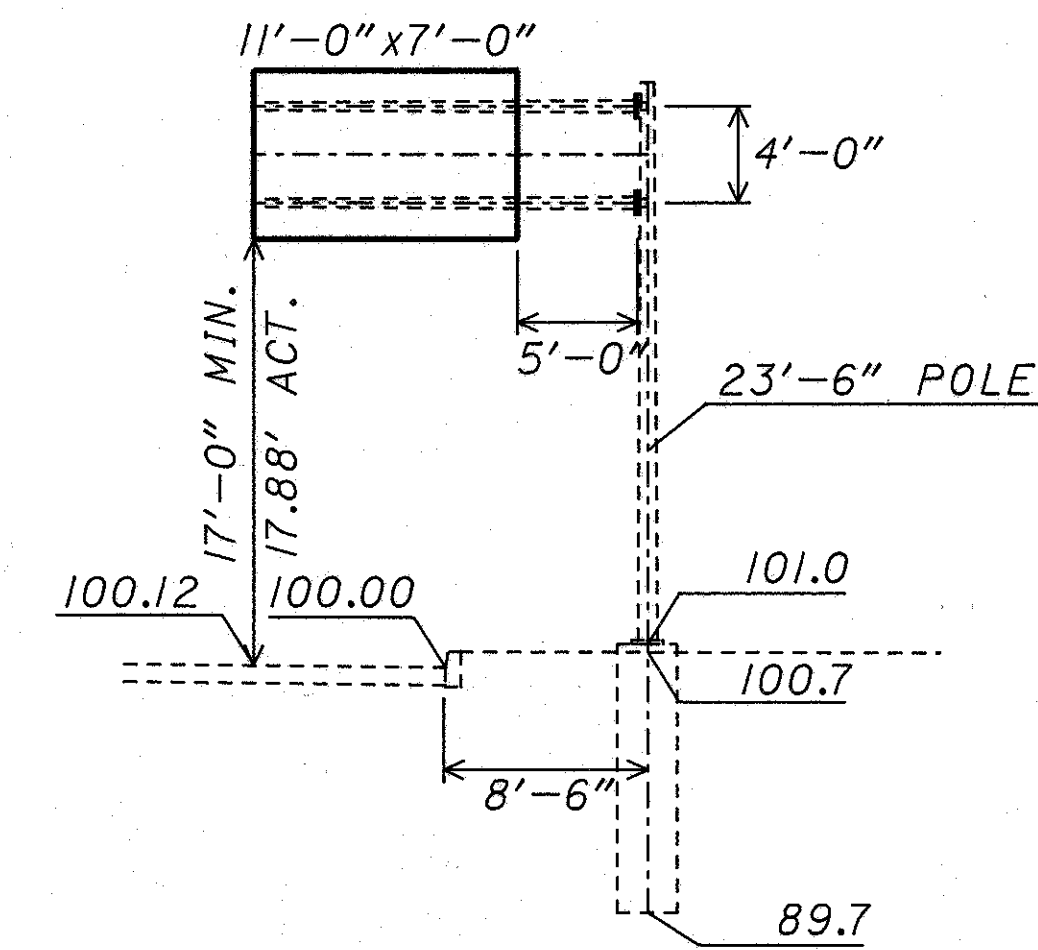
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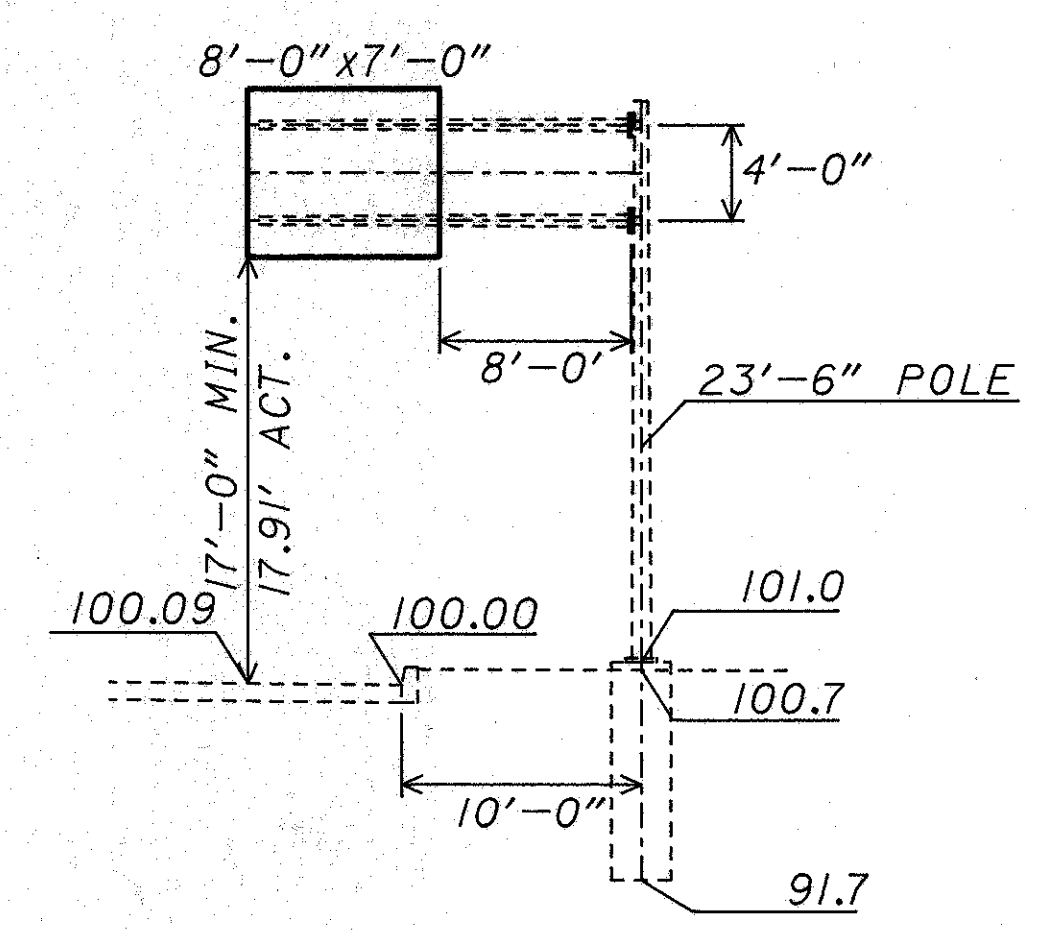
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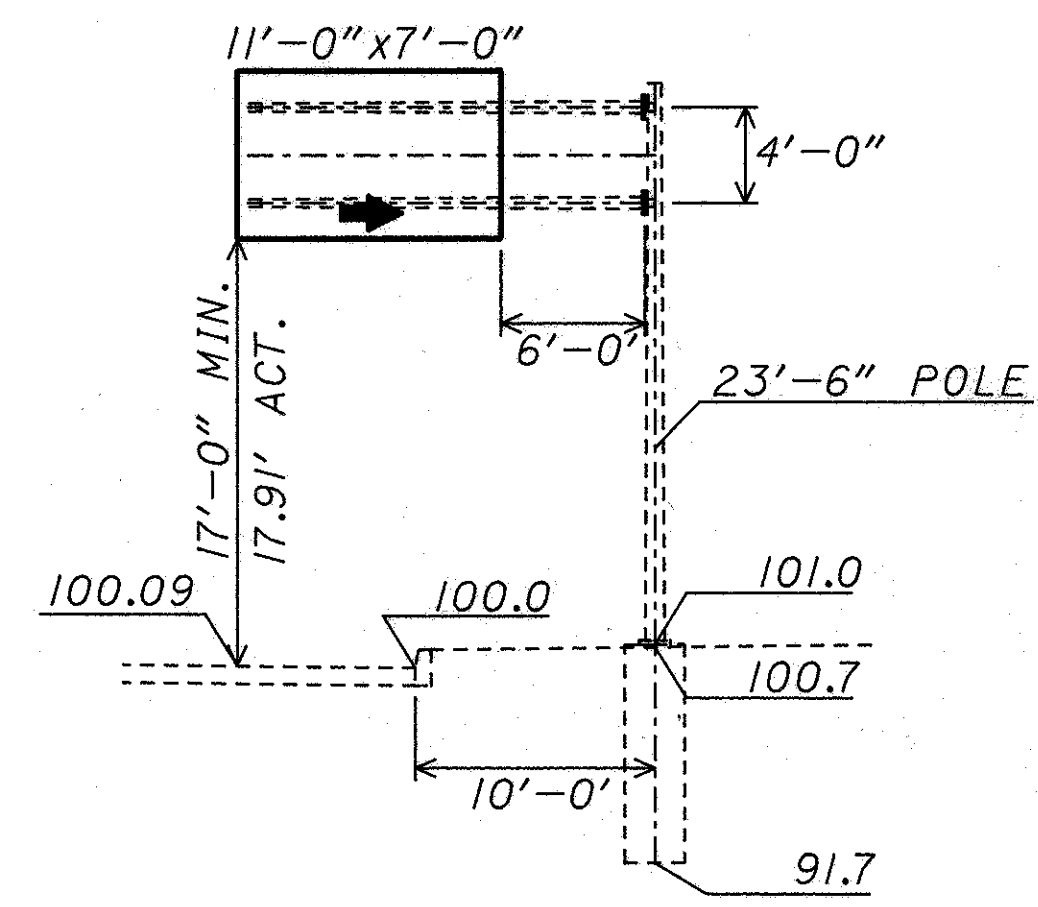
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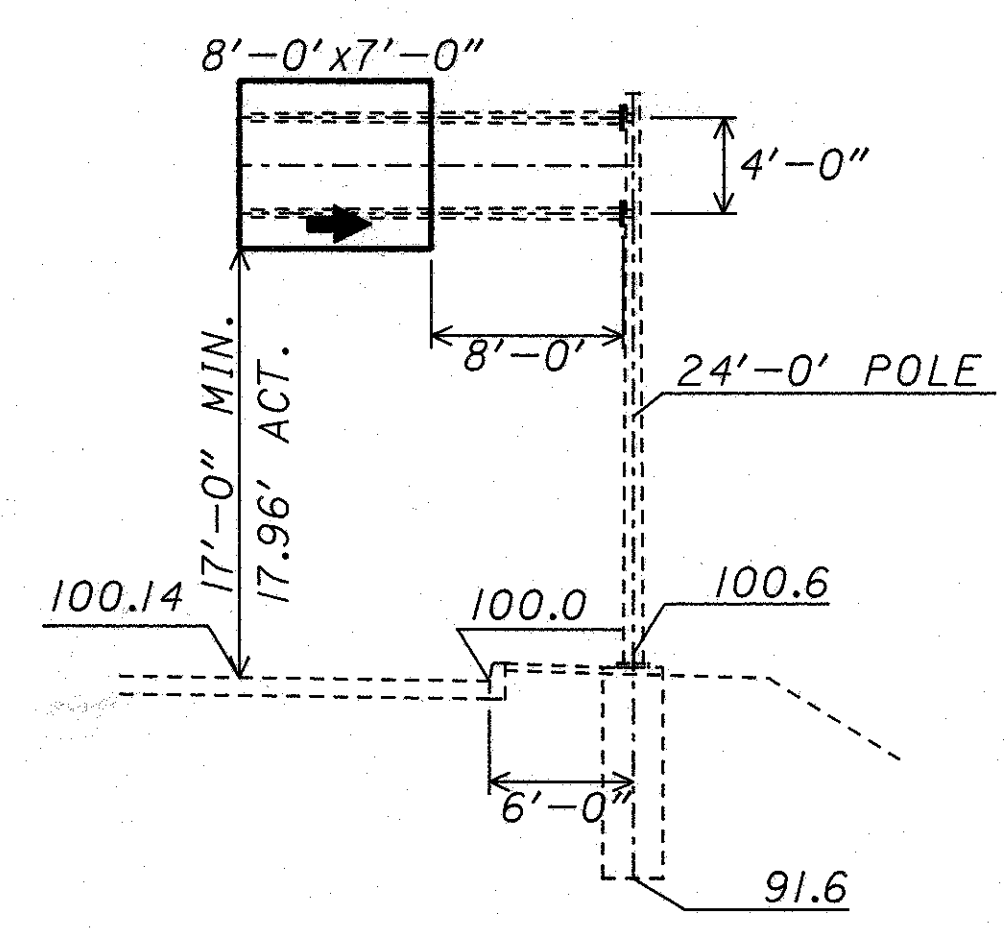
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EXISTING TYPE 12.30 DES. 3 MOD.



SIGN NO. 646  
STA. 0-2+50 E.B. SUPERIOR  
EXISTING TYPE 12.30 DES. 2 MOD.



SIGN NO. 647  
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EXISTING TYPE 12.30 DES. 2 MOD.



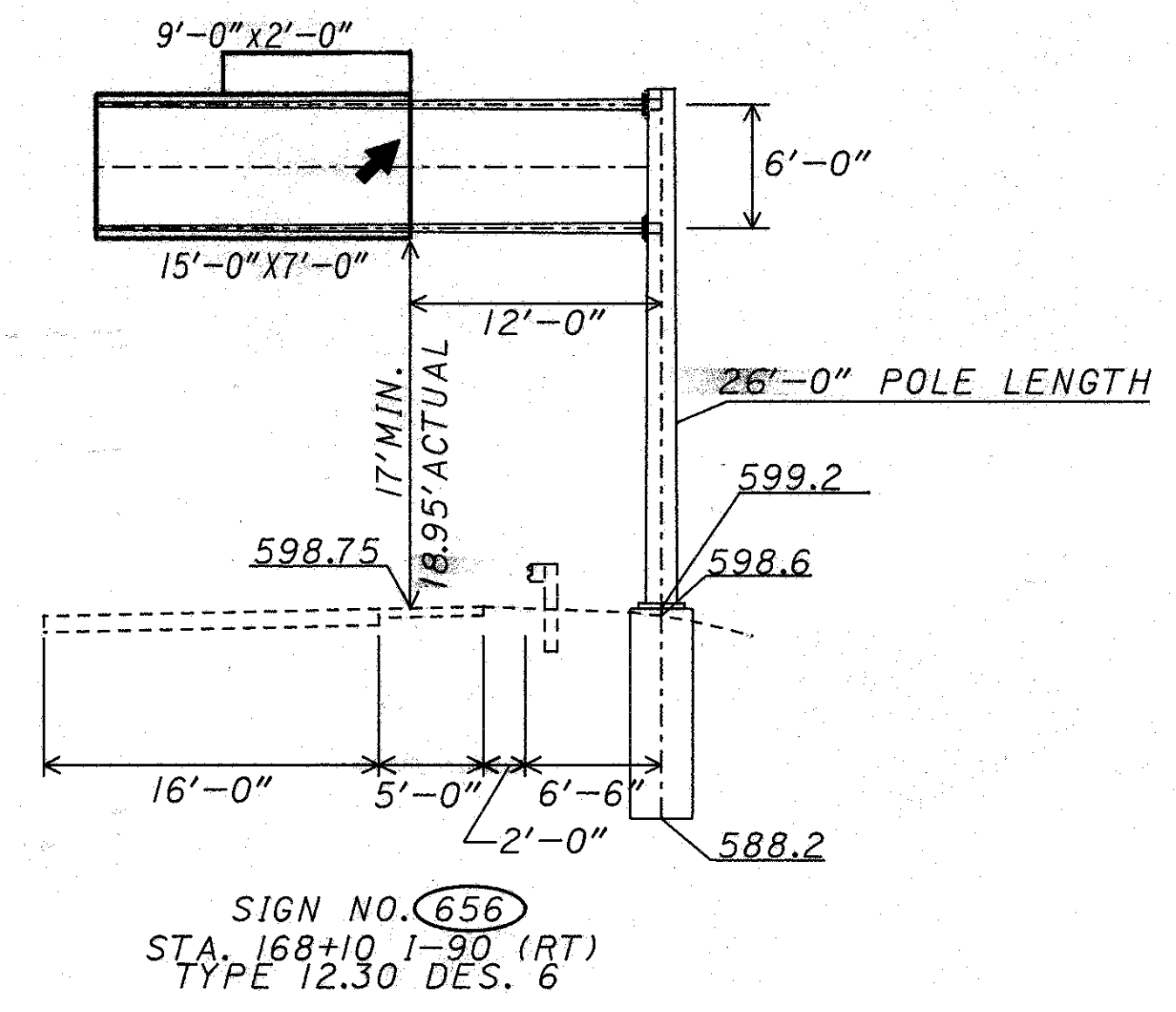
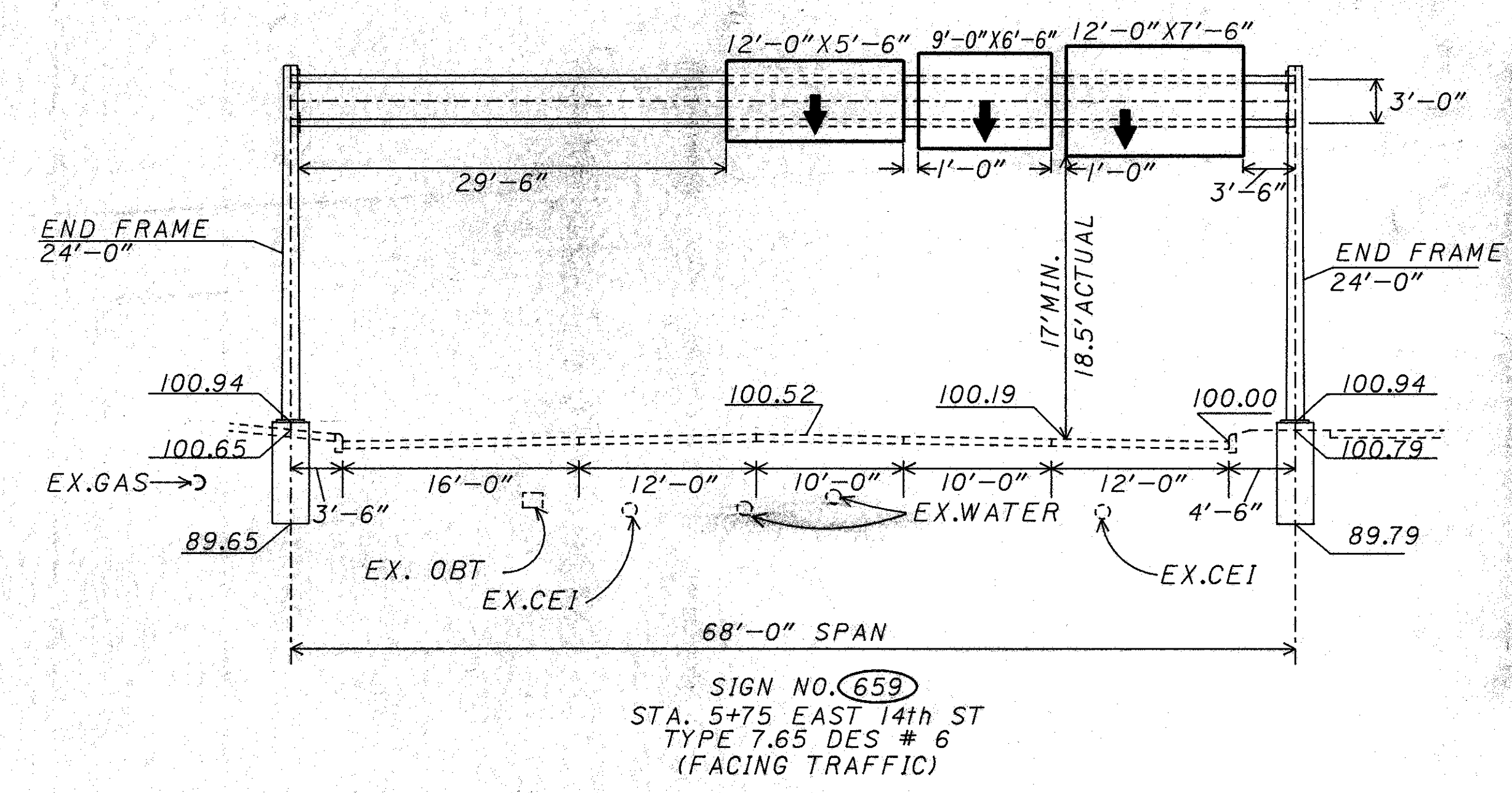
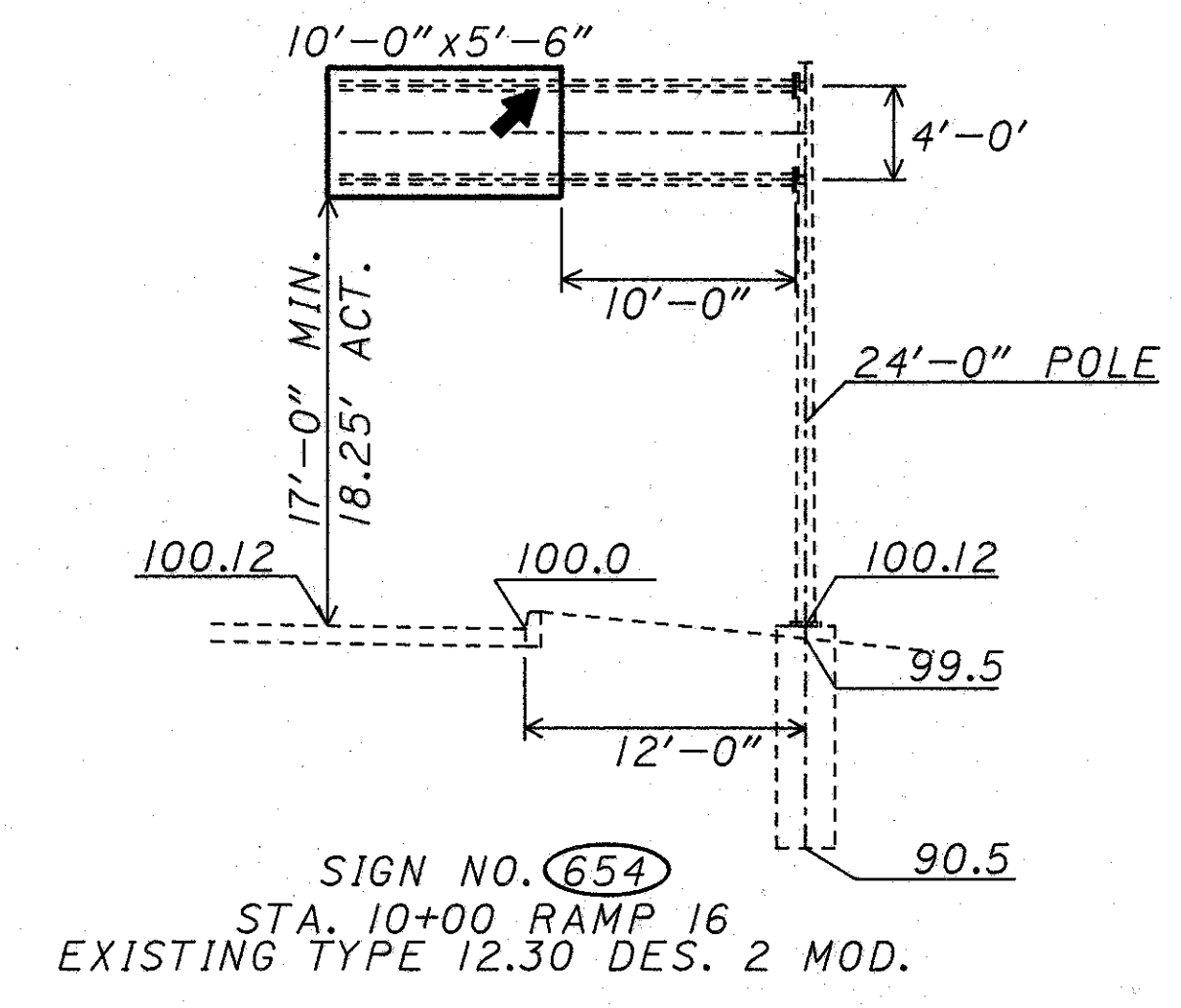
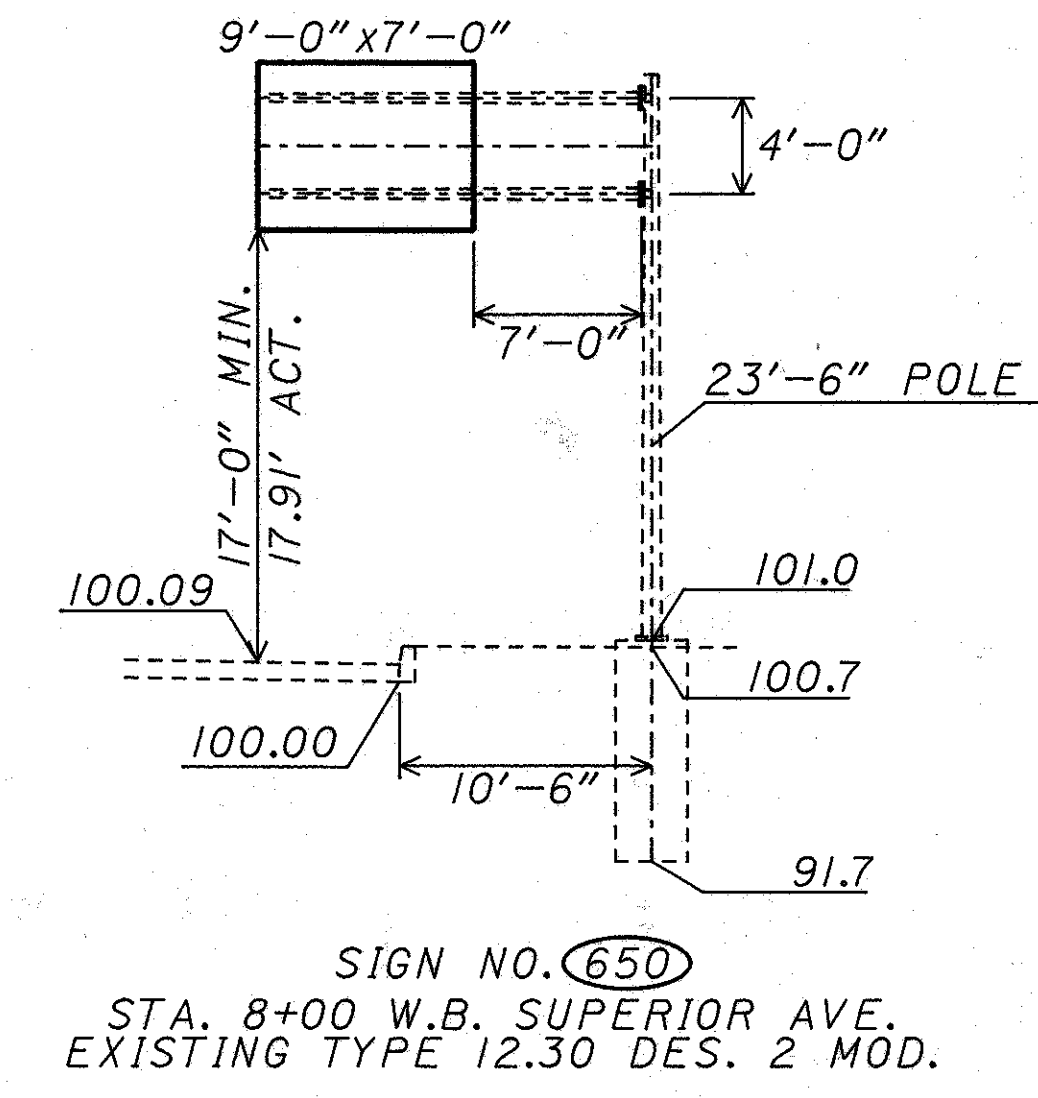
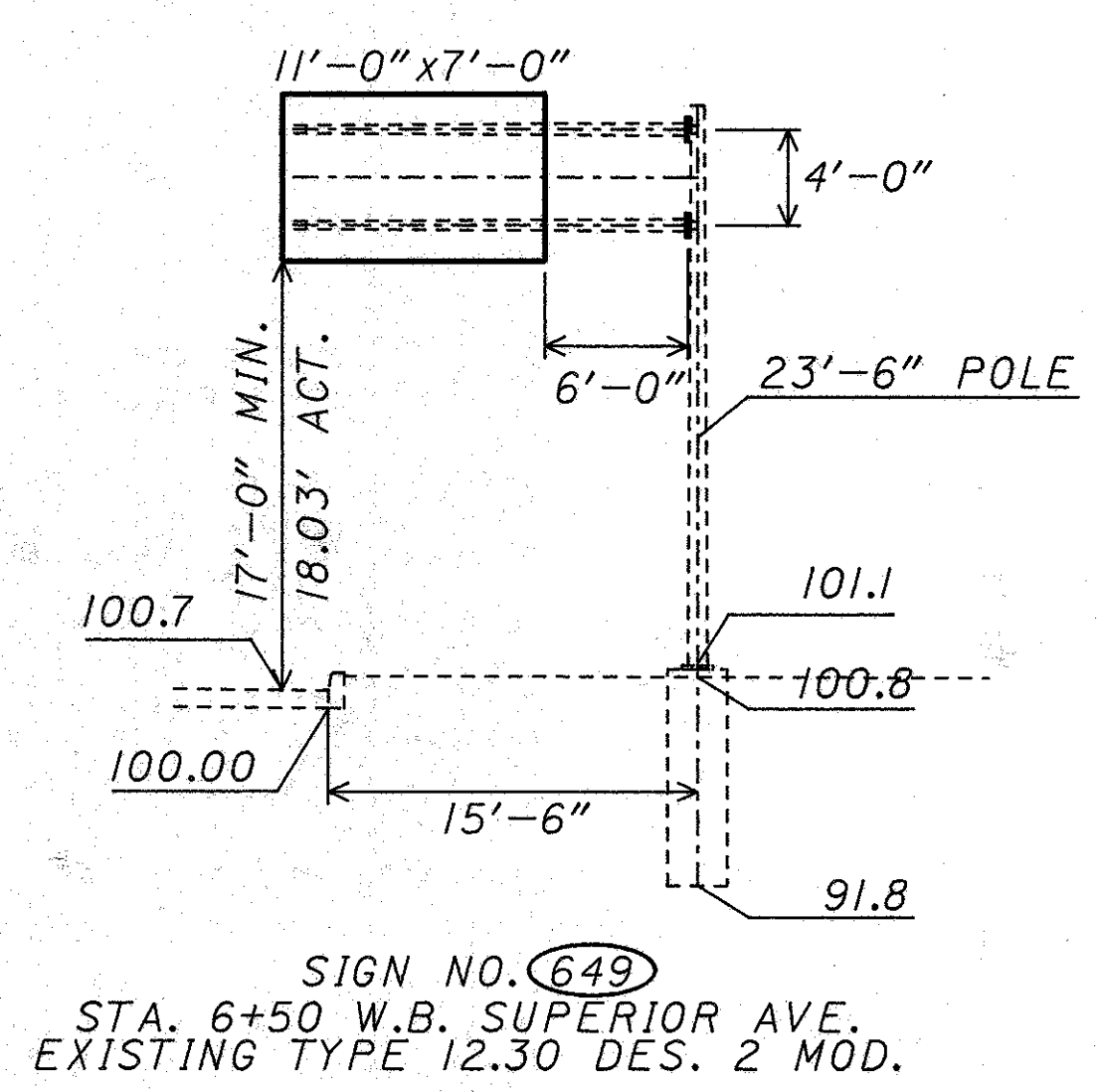
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STA. 4+05 W.B. SUPERIOR AVE.  
EXISTING TYPE 12.30 DES. 2 MOD.

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PLOT SUBMITTED BY: ulman  
PLOT SUBMITTED: 23-MAR-1992 17:25

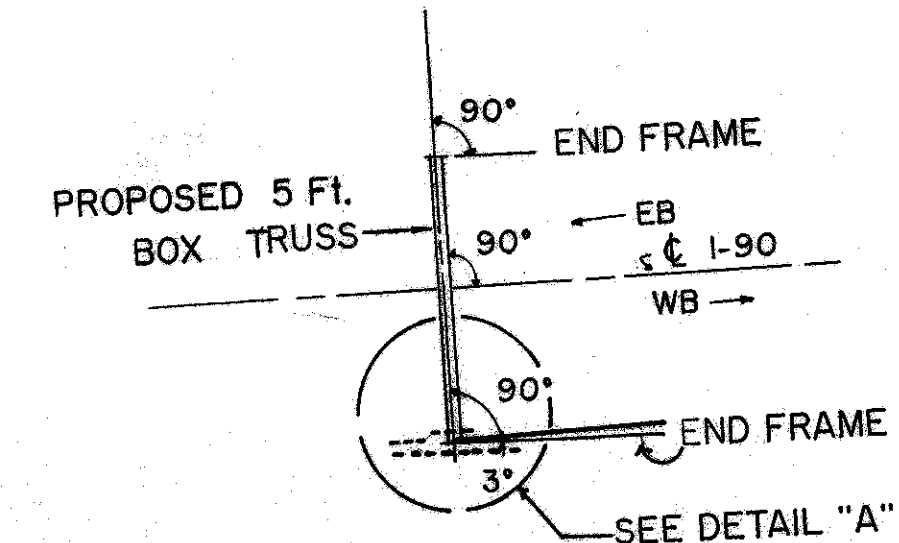
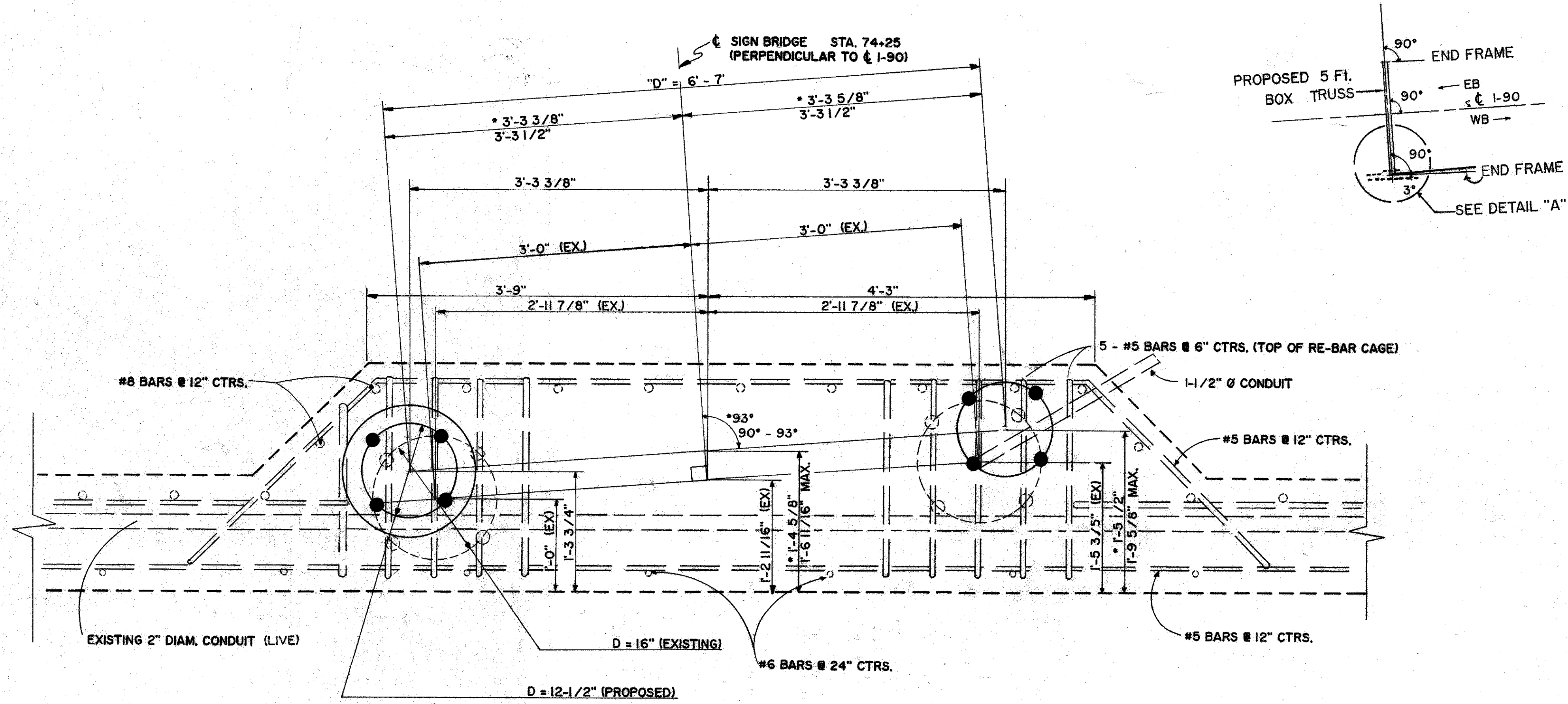
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NOTE: ALL UTILITY LOCATIONS ARE APPROXIMATE,  
THE CONTRACTOR SHALL HAVE LOCATIONS  
FIELD VERIFIED BEFORE PLACING FOUNDATIONS.

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 PLOT SUBMITTED BY: u1lman  
 PLOT SUBMITTED: 23-MAR-1992 17:29



DETAIL "A"

\* DESIRABLE

**PROPOSED WORK**

- 1) REPLACE EXISTING SUPPORT WITH A NEW 5 FT. BOX TRUSS (TC-15J15).
- 2) THE EXISTING RETAINING WALL FOUNDATION IS TO BE MODIFIED AS SHOWN TO ACCEPT THE NEW SIGN SUPPORT.
- 3) ALL COSTS OF LABOR EQUIPMENT AND MATERIALS TO CONSTRUCT THE FOUNDATION AS SHOWN ON THE ADJACENT DETAILS AND NOTES SHALL BE INCLUDED UNDER ITEM 630 - OVERHEAD SIGN SUPPORT, TYPE TC-15J15, 149' SPAN, AS PER PLAN.

**GENERAL REQUIREMENTS**

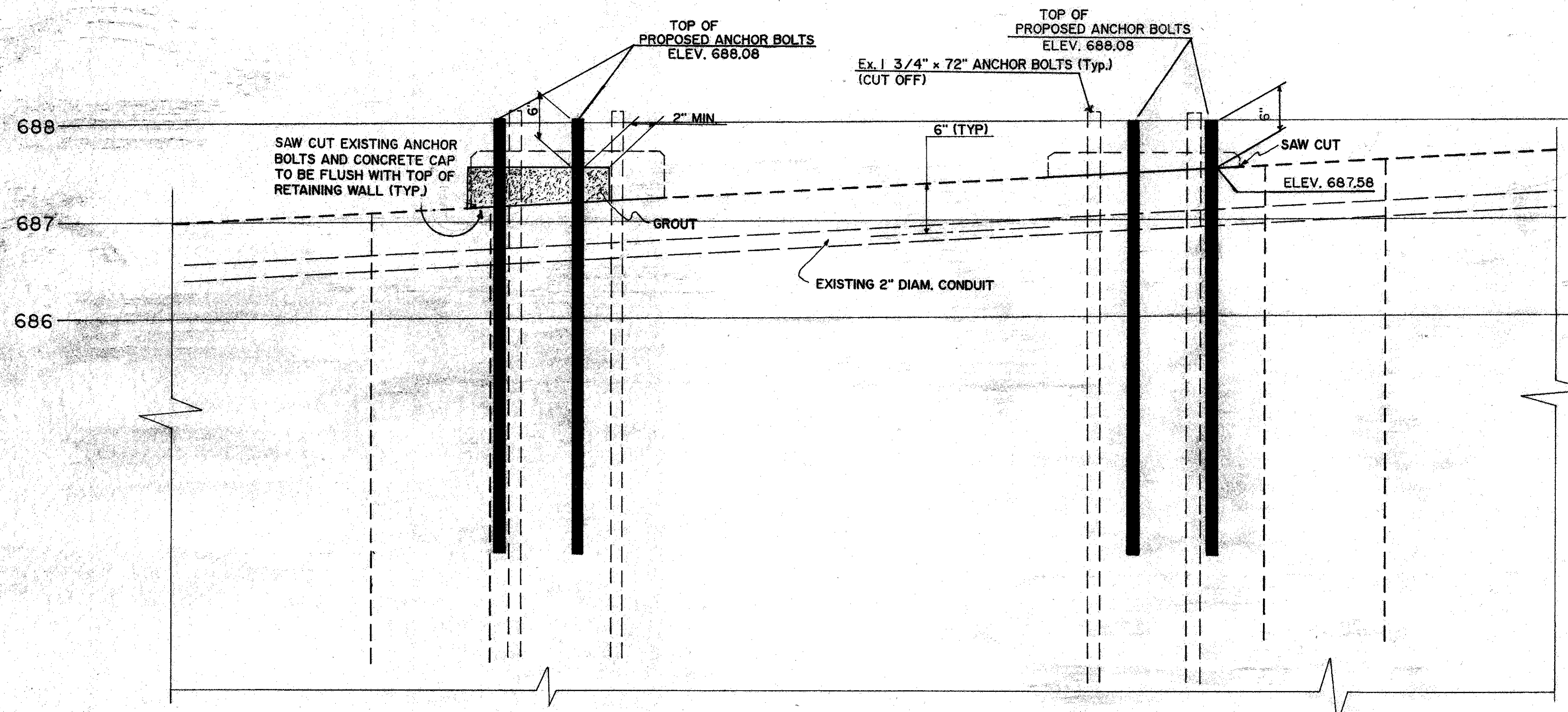
- 1) REMOVAL OF THE EXISTING SIGN BRIDGE SHALL NOT BE PERFORMED UNTIL THE NEW SIGN SUPPORT HAS BEEN DELIVERED TO THE PROJECT.
- 2) THE CONTRACTOR SHALL MINIMIZE THE TIME REQUIRED BETWEEN REMOVING THE EXISTING SPAN AND INSTALLING THE PROPOSED SPAN.

**SEQUENCE OF OPERATIONS**

- 1) ERECT TEMPORARY SIGNS AS SHOWN ON SHEET 215.
- 2) REMOVE EXISTING SIGN SUPPORT No. 618.
- 3) CONSTRUCT FOUNDATION ON RIGHT SIDE.
- 4) CUT OFF EXISTING ANCHOR BOLTS AND CONCRETE CAPS ON RETAINING WALL (SEE DETAIL, THIS SHEET).
- 5) DRILL HOLES FOR NEW ANCHOR BOLTS (8).
- 6) PLACE NEW ANCHOR BOLTS.
- 7) ERECT PROPOSED SIGN SUPPORT No. 618 (INCLUDING PROPOSED SIGNS).
- 8) REMOVE TEMPORARY SIGNS INSTALLED IN STEP 1.

**ANCHOR BOLT SPECIFICATIONS**

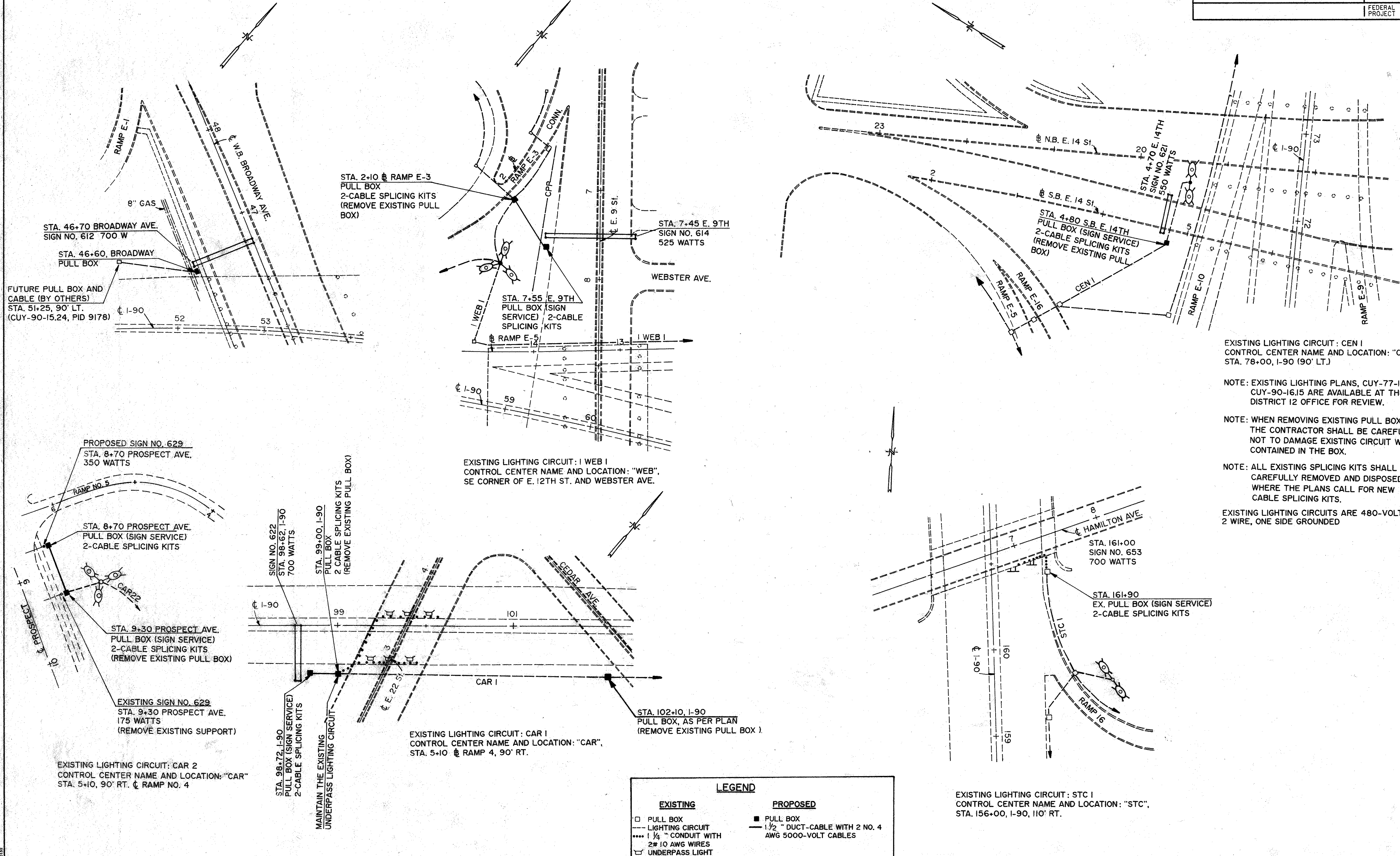
ANCHOR BOLTS SHALL BE AS PER 730.02 EXCEPT THAT BENT ENDS OR DRILLED PLATES SHALL NOT BE REQUIRED. 1 3/4" MIN. DIAMETER HOLES SHALL BE DRILLED TO ACCEPT THE 1 1/2" BY 54" ANCHOR BOLTS. THE TOP TWELVE INCHES OF THE HOLE SHALL BE CORE DRILLED TO INSURE THAT THE BOLTS WILL BE PLACED VERTICALLY. ALL DRILLING AND GROUTING PROCEDURES EXCEPT AS NOTED ABOVE SHALL BE AS PER SUPPLEMENTAL SPECIFICATION 852 AND 952. THE BOLTS AND ANCHORAGE SYSTEM SHALL BE CAPABLE OF DEVELOPING AN ULTIMATE STRENGTH OF 150 KIPS PER BOLT. PAYMENT FOR THESE ANCHOR BOLTS SHALL BE INCLUDED UNDER THE OVERHEAD SIGN SUPPORT ITEM. GROUT MATERIAL SHALL BE LIMITED TO SUPPLEMENTAL SPECIFICATION 952 EPOXY RESIN ONLY.



NOTE - LOCATIONS FOR THE EXISTING 2" DIAM. CONDUIT AND REINFORCING STEEL WERE TAKEN FROM THE ORIGINAL CONSTRUCTION PLANS, BUT THE STATE OF OHIO DOES NOT GUARANTEE THE ACCURACY OF THE SAME. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING THEIR LOCATIONS.



# SIGN LIGHTING



EXISTING LIGHTING CIRCUIT: CEN I  
 CONTROL CENTER NAME AND LOCATION: "CEN",  
 STA. 78+00, I-90 (90' LT.)

NOTE: EXISTING LIGHTING PLANS, CUY-77-14.05 /  
 CUY-90-16.15 ARE AVAILABLE AT THE  
 DISTRICT 12 OFFICE FOR REVIEW.

NOTE: WHEN REMOVING EXISTING PULL BOXES,  
 THE CONTRACTOR SHALL BE CAREFUL  
 NOT TO DAMAGE EXISTING CIRCUIT WIRES  
 CONTAINED IN THE BOX.

NOTE: ALL EXISTING SPLICING KITS SHALL BE  
 CAREFULLY REMOVED AND DISPOSED OF  
 WHERE THE PLANS CALL FOR NEW  
 CABLE SPLICING KITS.

EXISTING LIGHTING CIRCUITS ARE 480-VOLT,  
 2 WIRE, ONE SIDE GROUNDED

LEGEND	
<b>EXISTING</b>	<b>PROPOSED</b>
□ PULL BOX	■ PULL BOX
- - - LIGHTING CIRCUIT	— 1/2" DUCT-CABLE WITH 2 NO. 4 AWG 5000-VOLT CABLES
... 1 1/4" CONDUIT WITH 2# 10 AWG WIRES	
⊔ UNDERPASS LIGHT	

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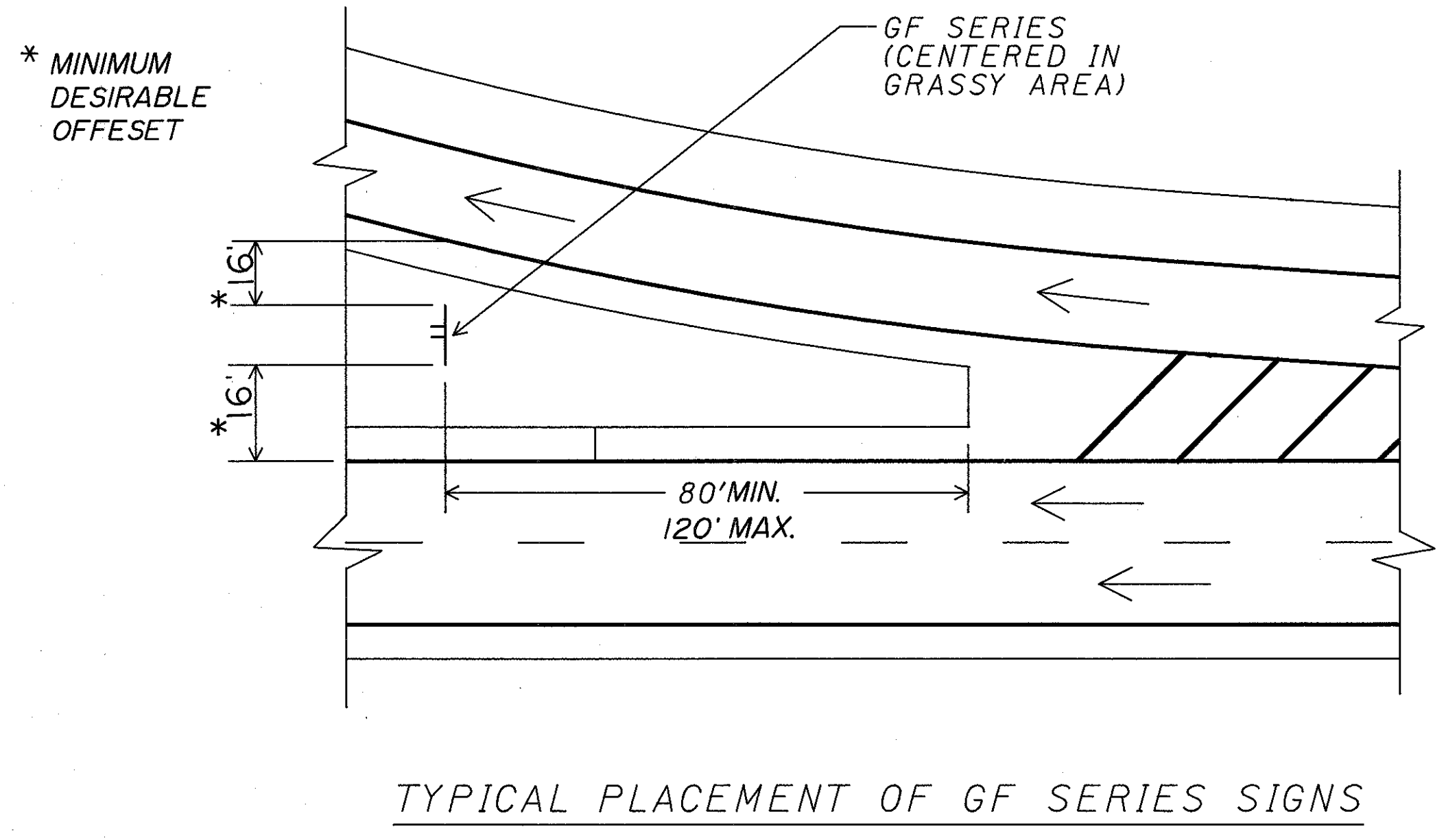
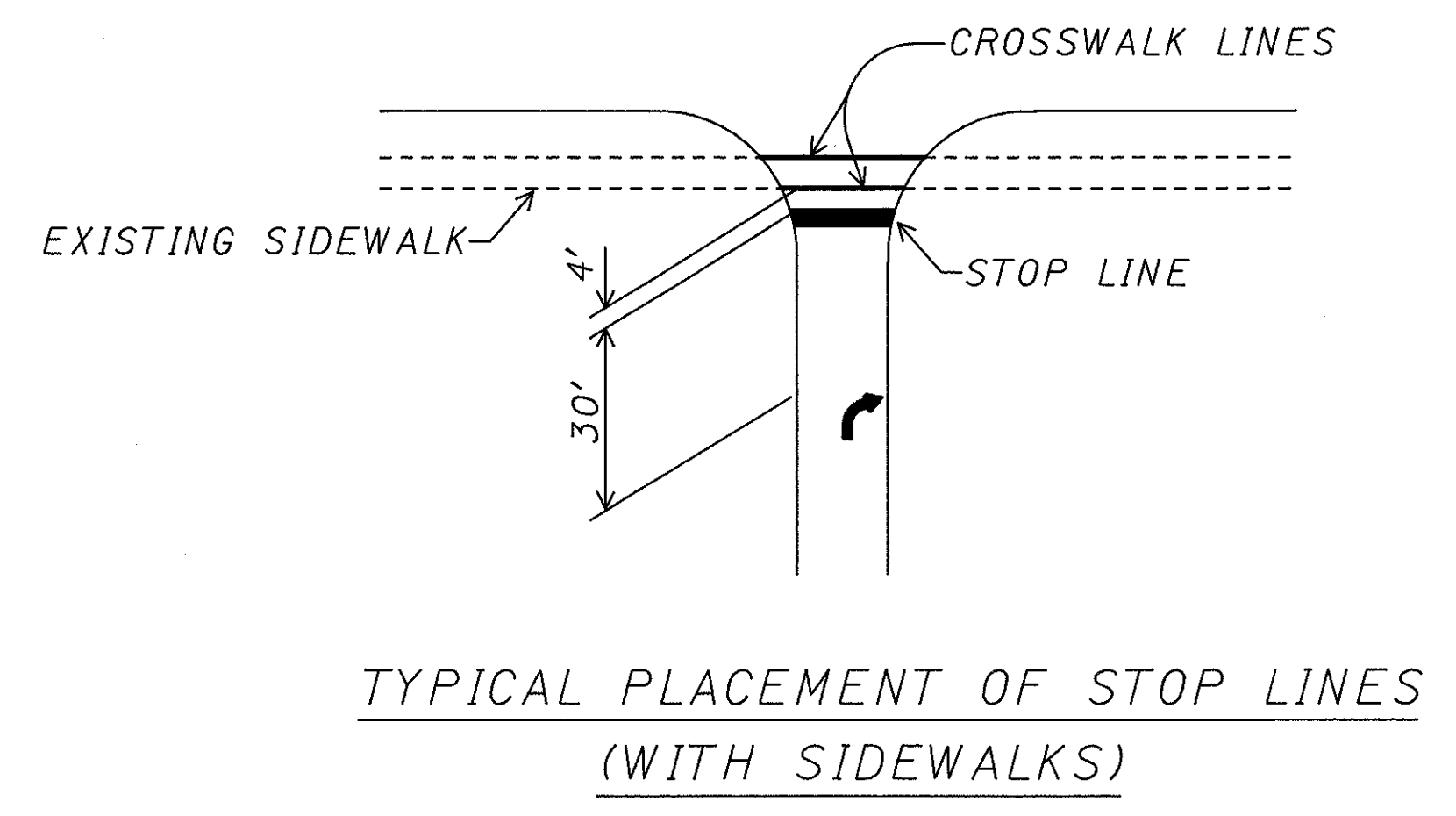
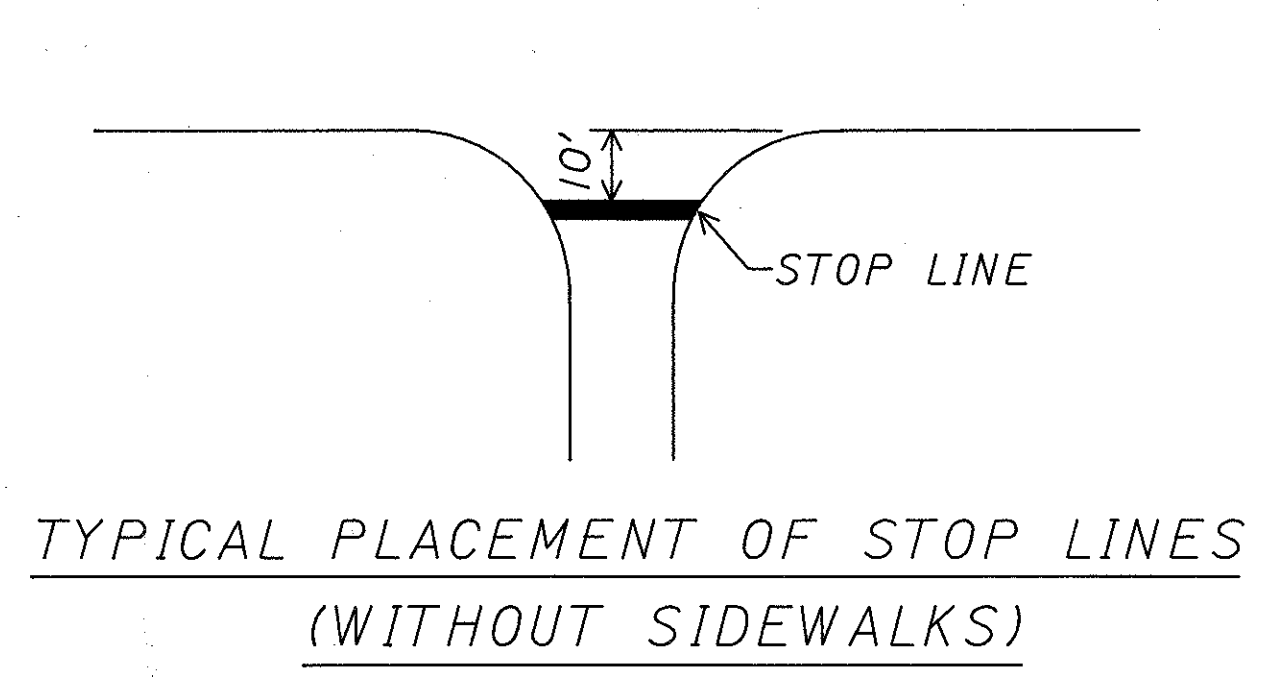
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PLOT SUBMITTED BY: uliman

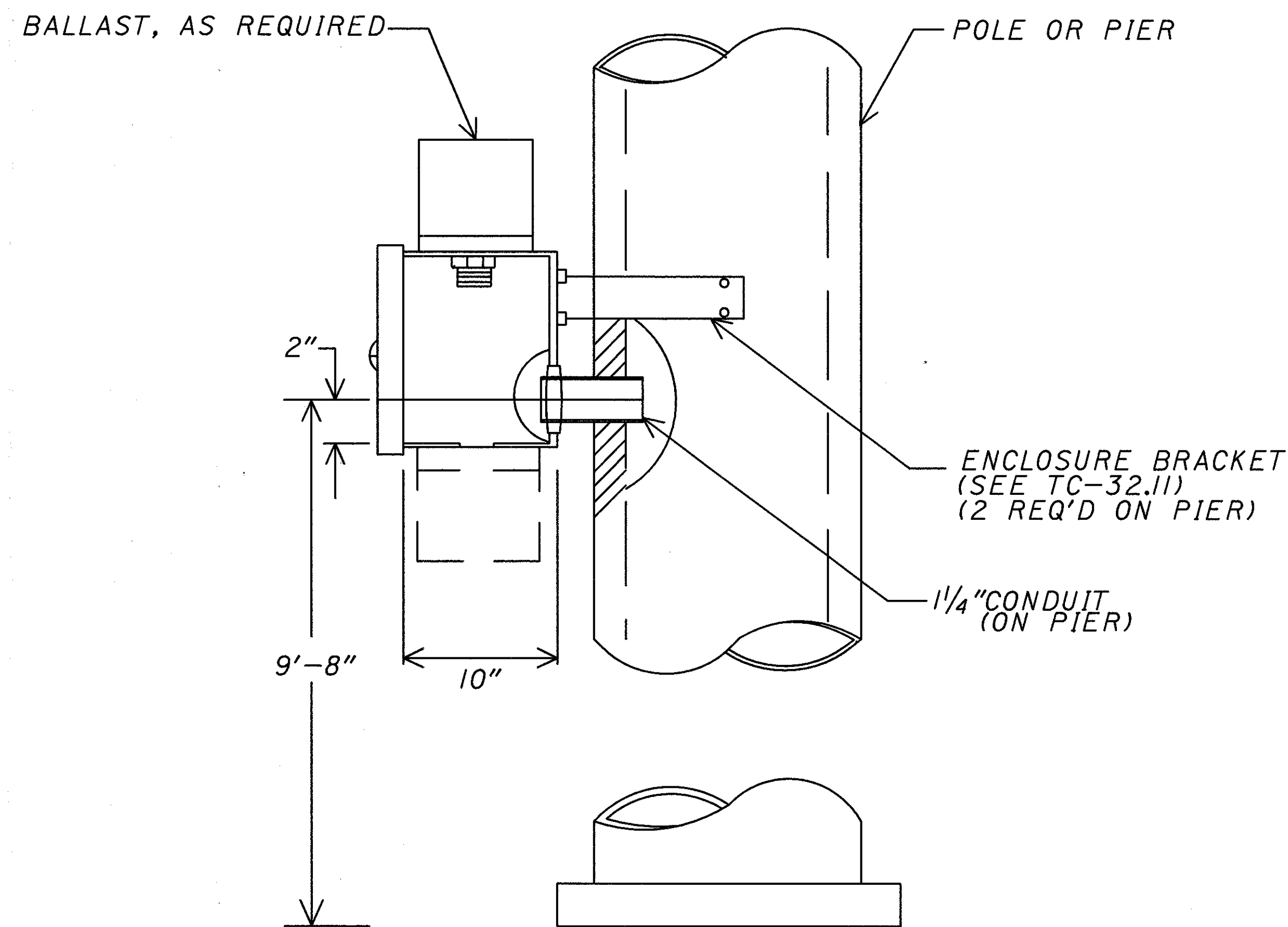
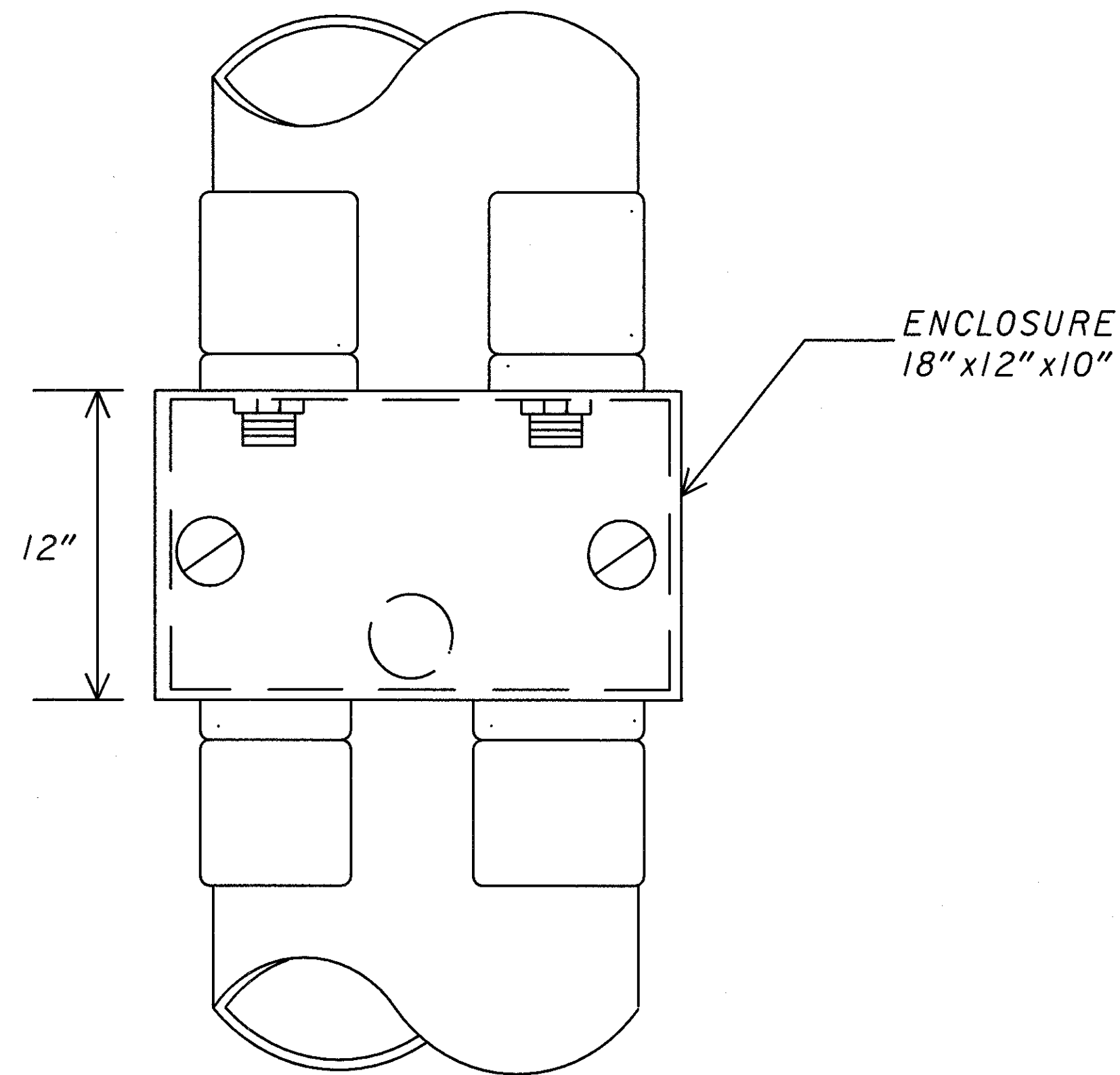
CUYAHOGA COUNTY CUY-90-16.24	OHIO FHWA REGION 5 FEDERAL PROJECT	212 245
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# TRAFFIC CONTROL MISCELLANEOUS DETAILS

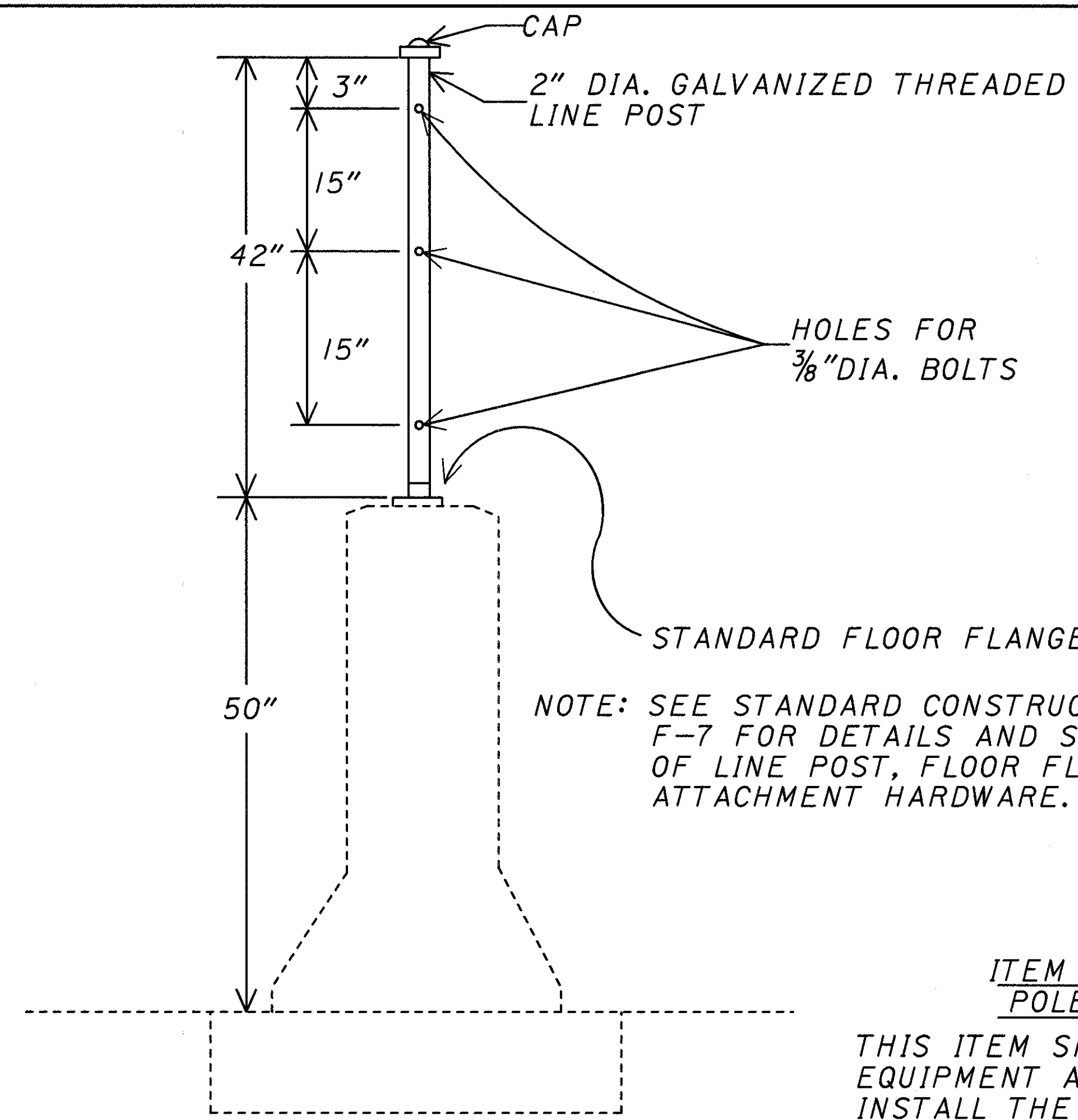




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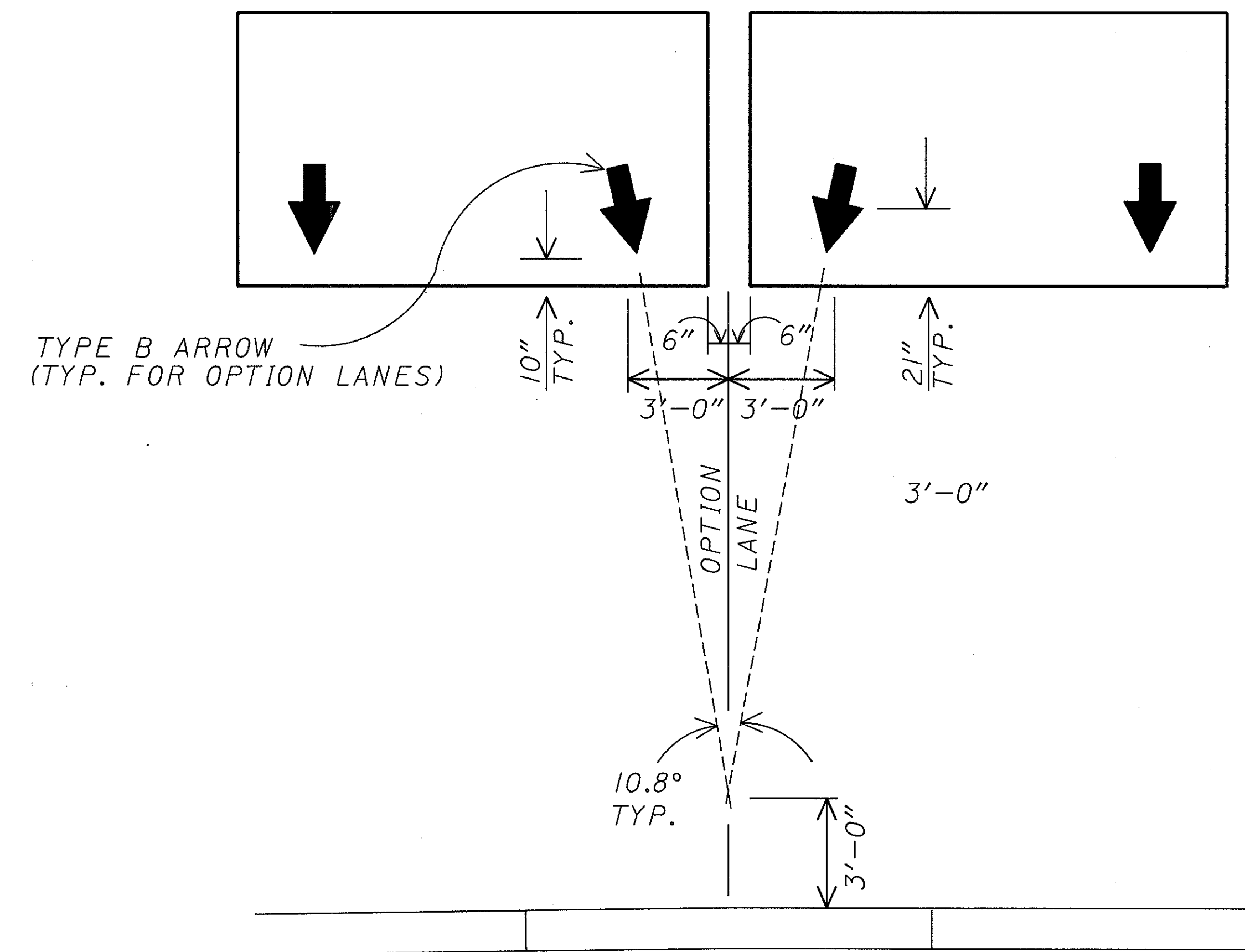


631-BALLAST ENCLOSURE, TYPE B



ITEM 630-SIGN SUPPORT ASSEMBLY,  
POLE MOUNTED, AS PER PLAN "A"

THIS ITEM SHALL INCLUDE ALL MATERIALS,  
EQUIPMENT AND LABOR NECESSARY TO PROVIDE AND  
INSTALL THE MEDIAN MOUNTED SIGN POST AS DETAILED  
ABOVE.

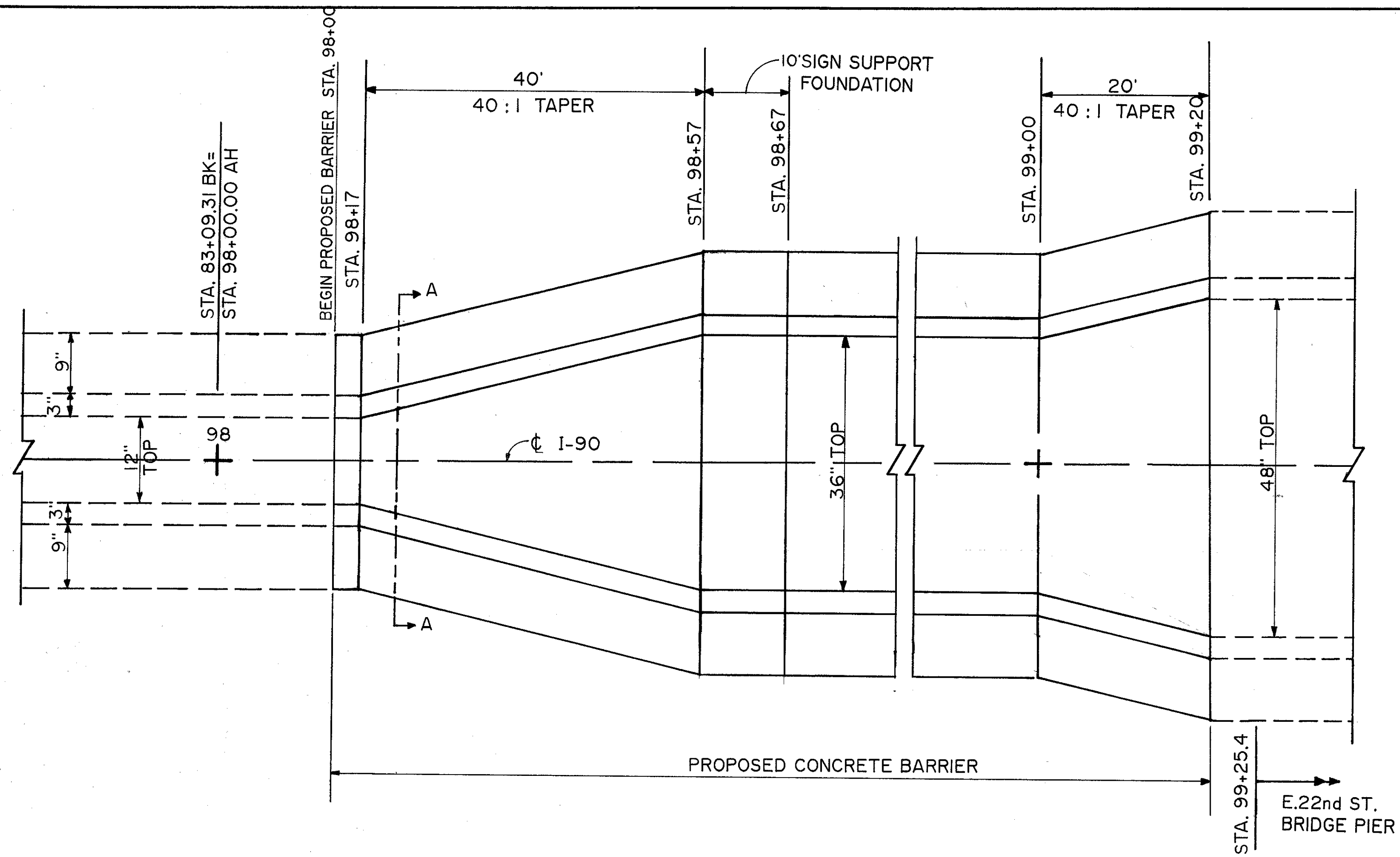


TYPICAL ARROW ORIENTATION AT OPTION LANE

CUYAHOGA COUNTY CUI-90-16.24	OHIO	213 245
	FHWA REGION 5	
FEDERAL PROJECT		

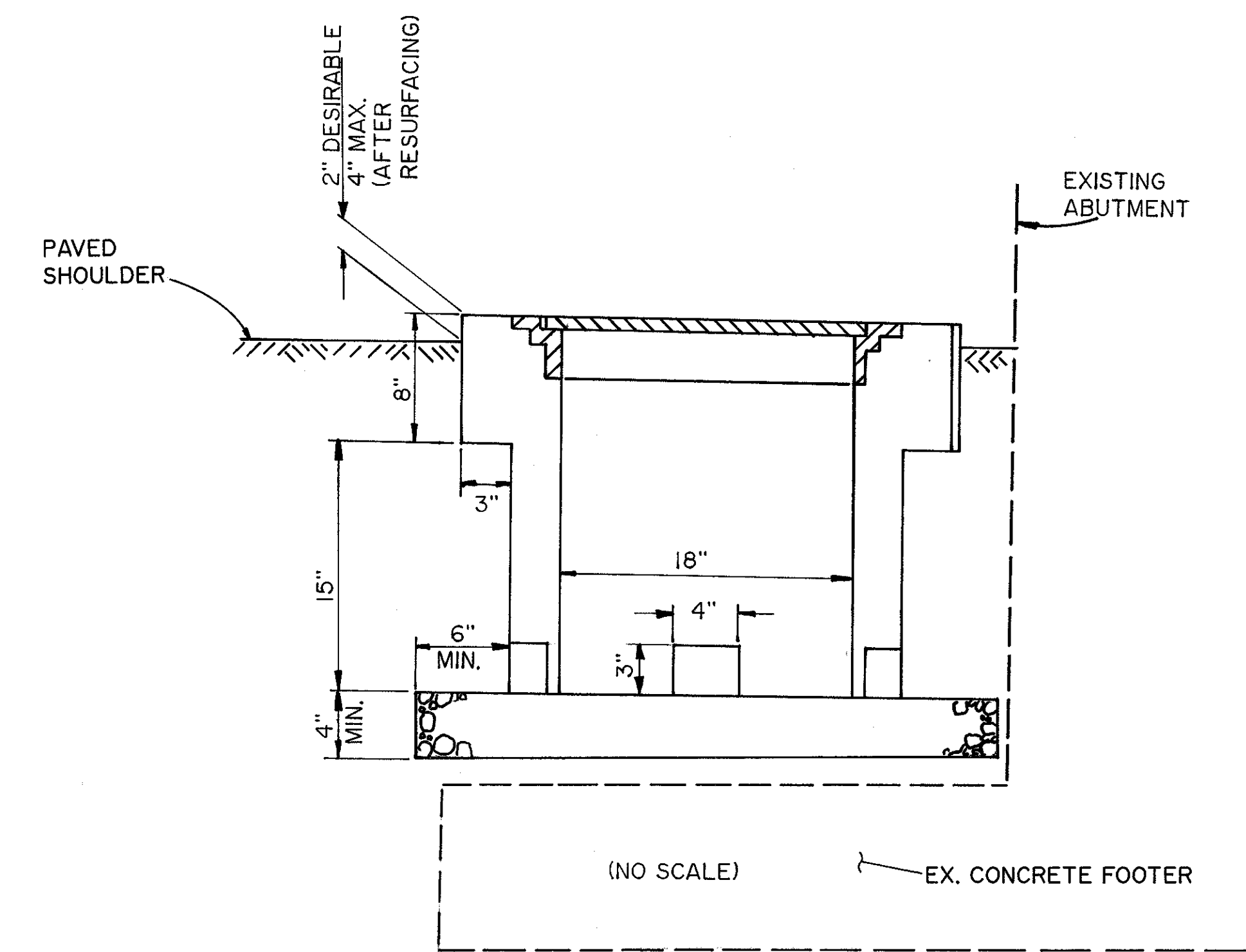
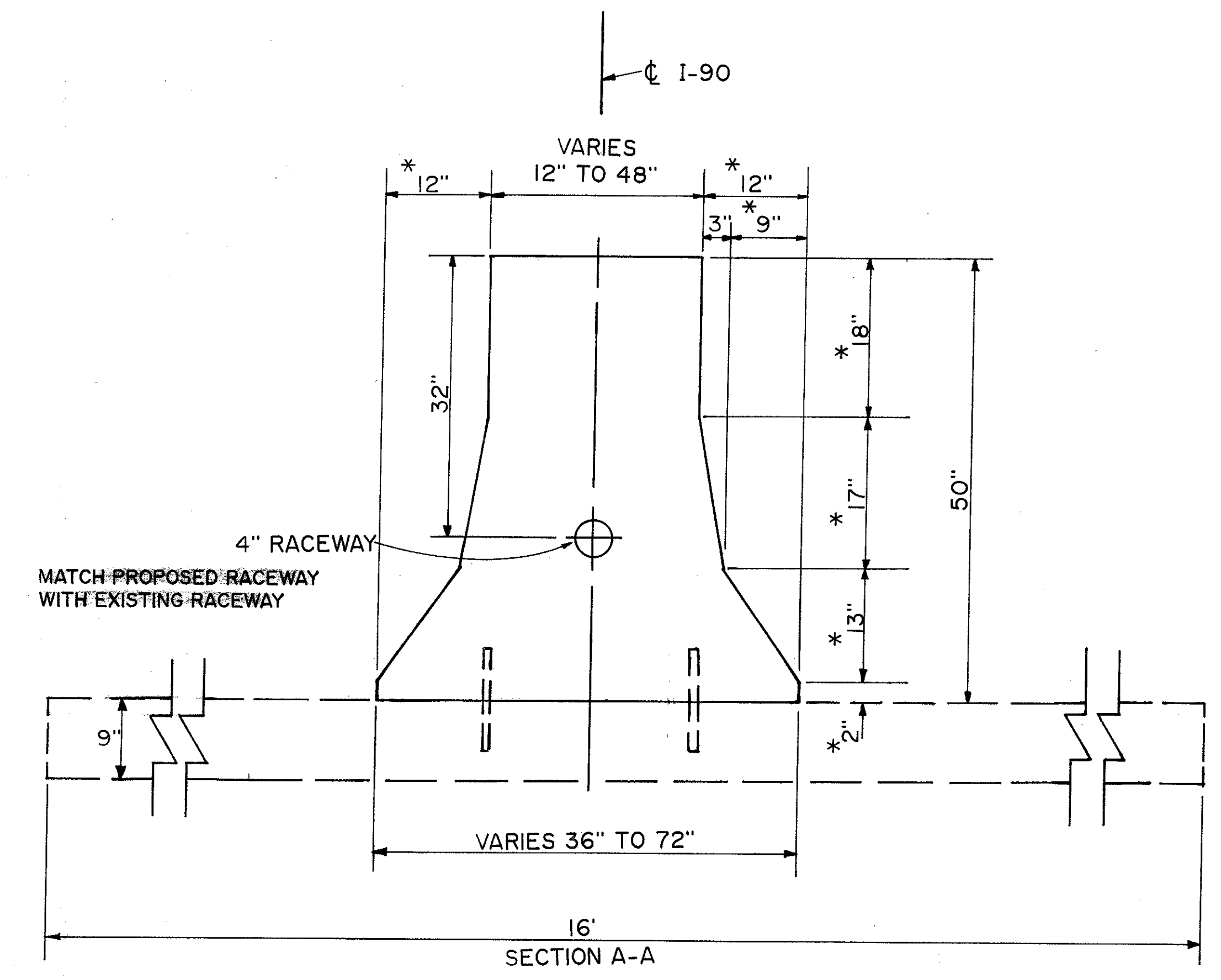






CONCRETE BARRIER MEDIAN DETAILS

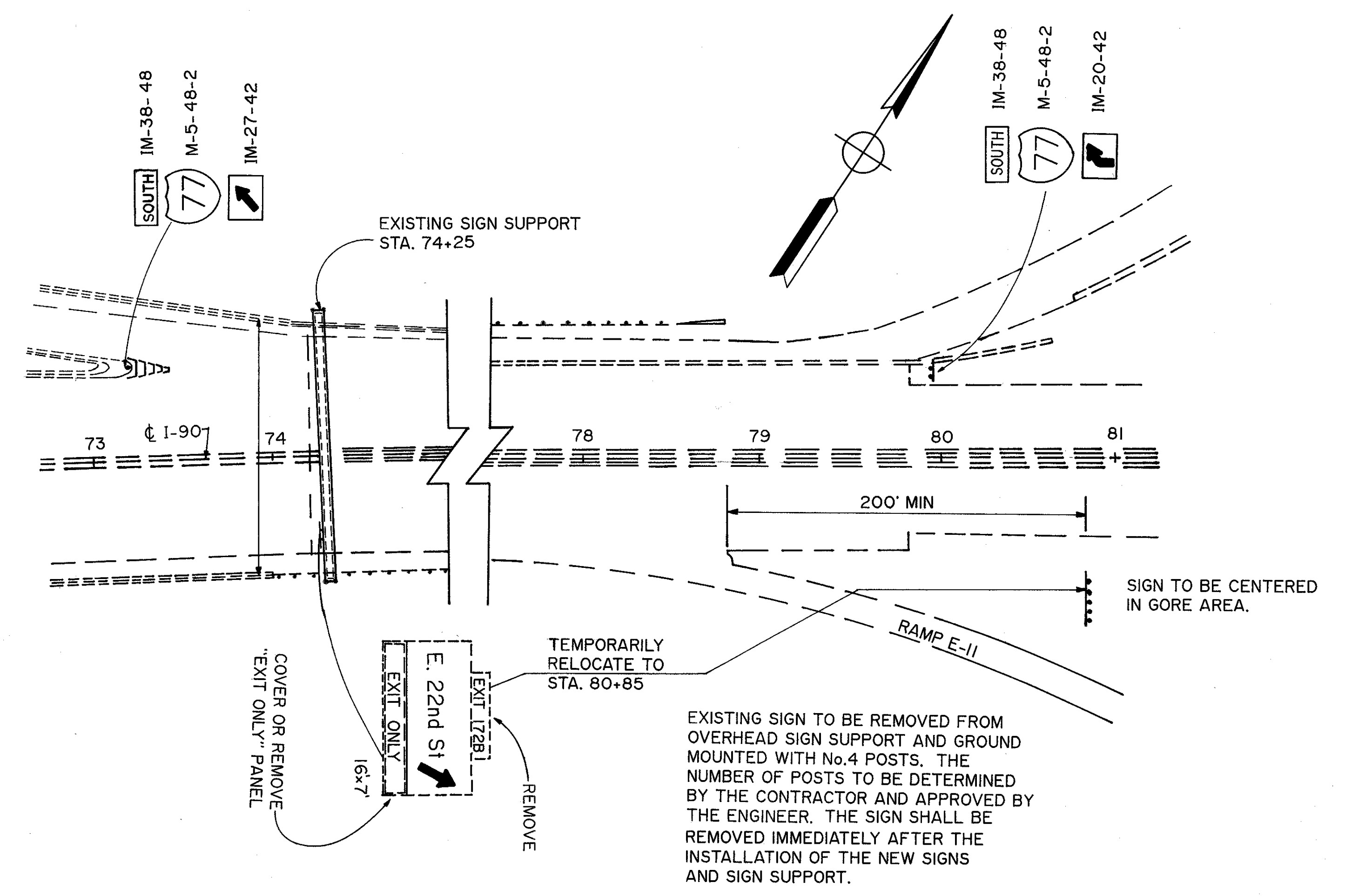
\* NOTE - DIMENSIONS SHALL MATCH THE EXISTING BARRIER



ITEM 625 - PULL BOX, 713.08, 18", AS PER PLAN  
I-90, STA. 102+10, RT

NOTE: ALL DETAILS AND NOTES OF STANDARD CONSTRUCTION DRAWING HL-30.11 SHALL APPLY EXCEPT AS NOTED HERE

TEMPORARY SIGN RELOCATION  
(DURING SIGN SUPPORT REPLACEMENT, STA. 74+25)



THE COST OF ALL WORK AS DETAILED ABOVE SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614 - MAINTAINING TRAFFIC, WITH EXCEPTION TO THE REMOVAL OF THE OVERHEAD MOUNTED SIGN (PAID FOR UNDER PERTINENT 630 ITEM).

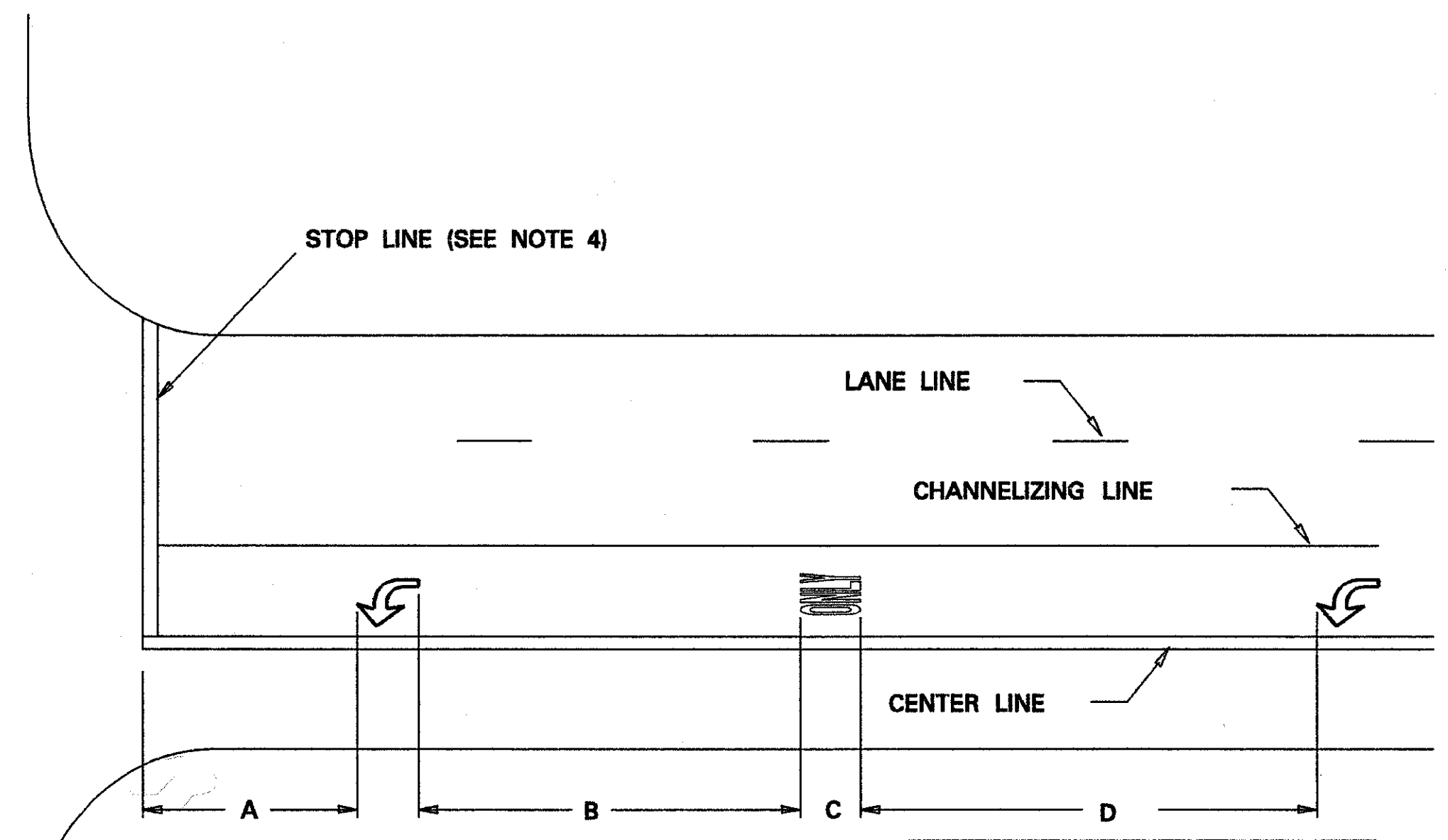
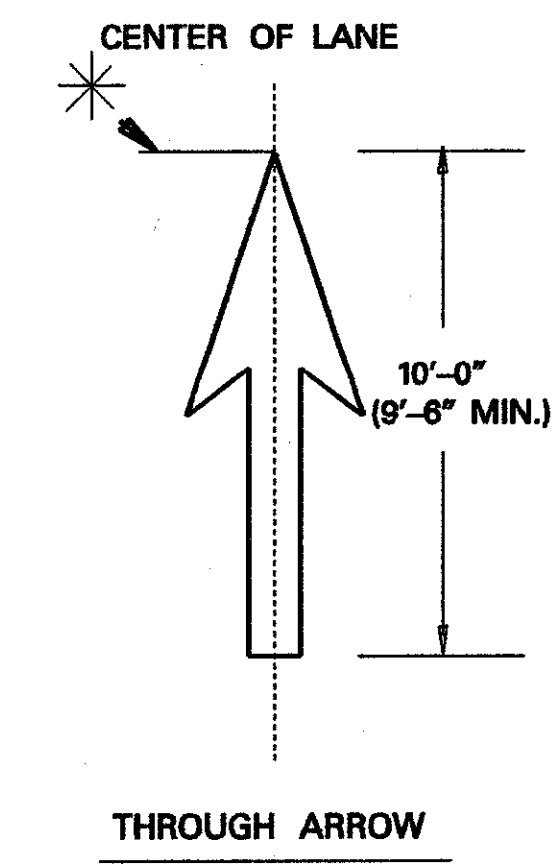
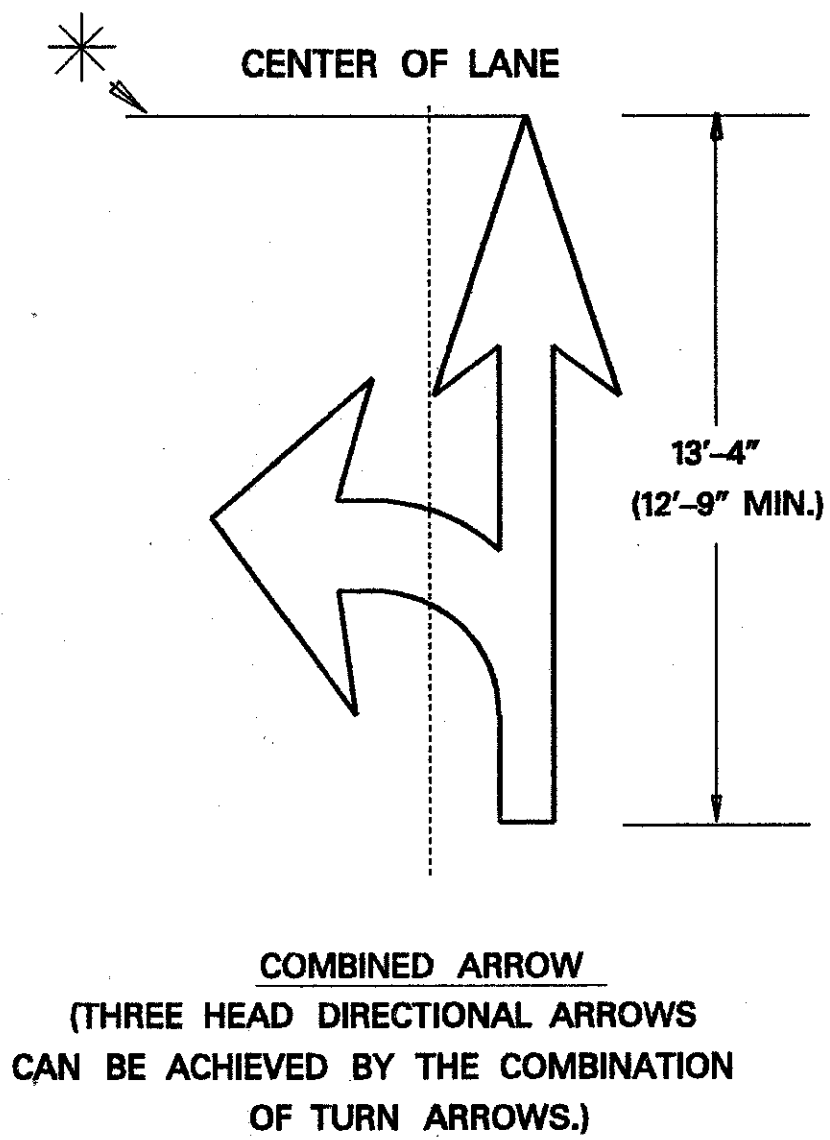
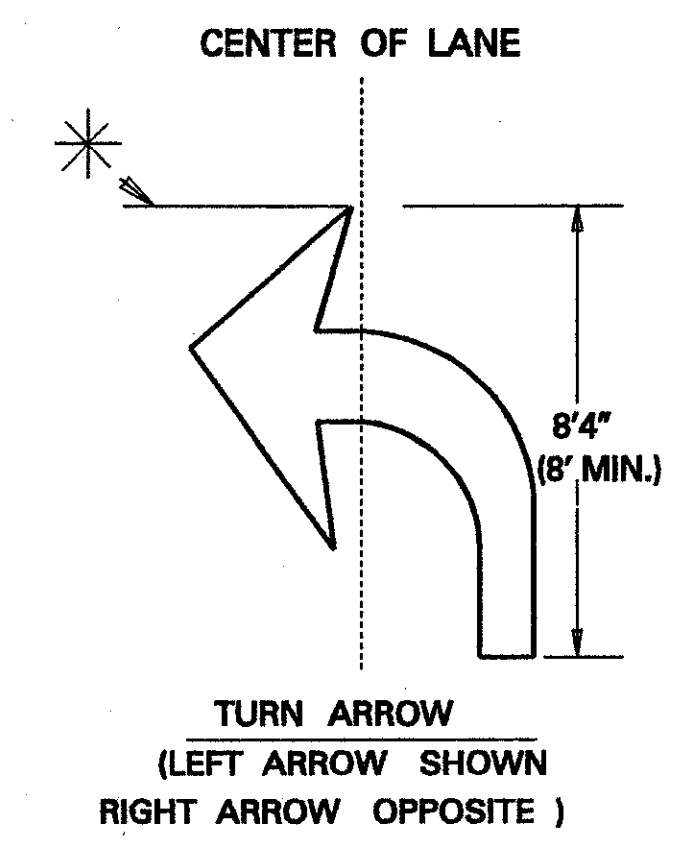
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 DATE \_\_\_\_\_  
 CHKD BY \_\_\_\_\_  
 DATE \_\_\_\_\_

CUYAHOGA COUNTY  
 CUY-90-16.24

OHIO 216  
 FHWA REGION 5 245

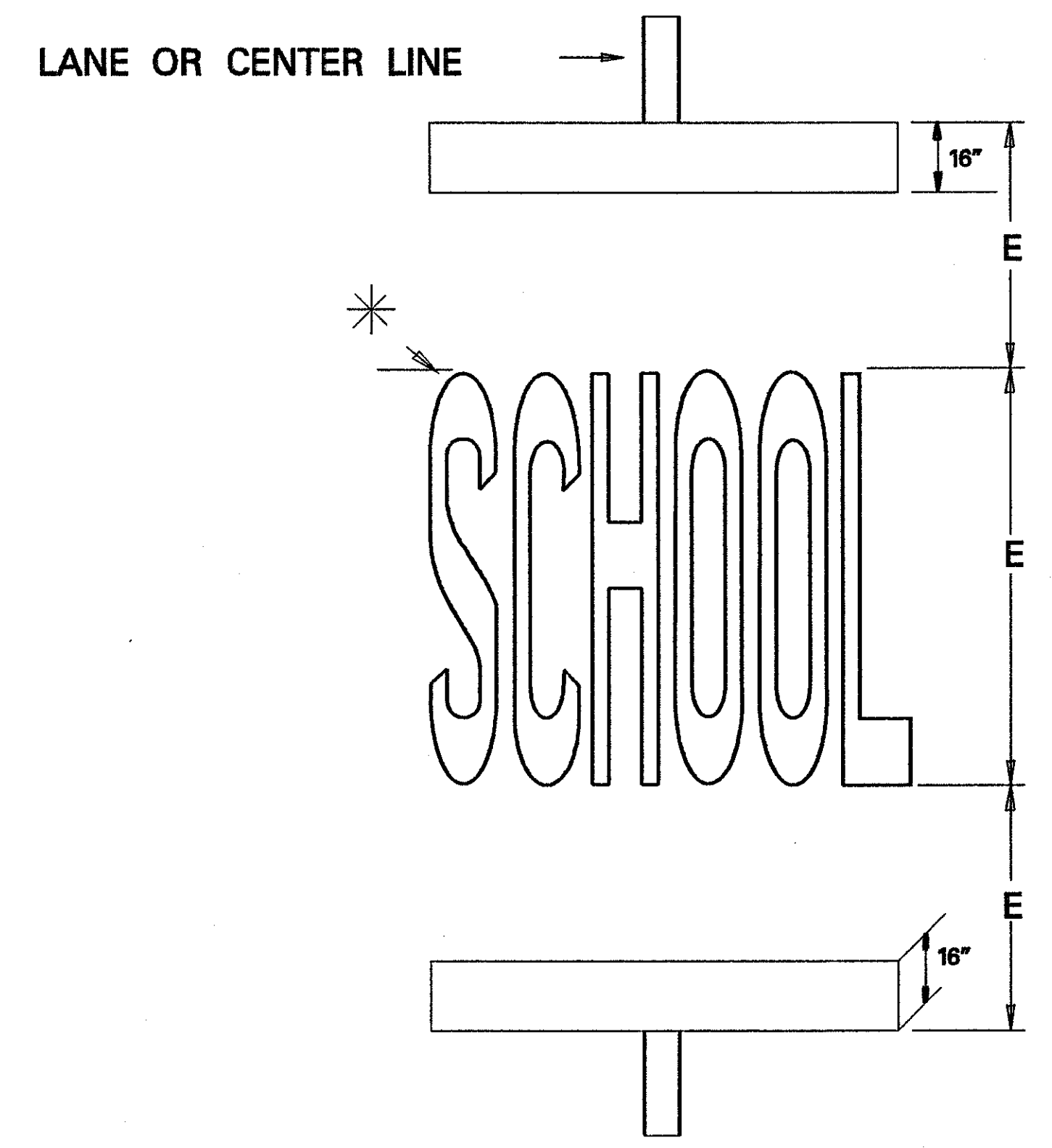
**NOTES:**

- ON MULTI-LANE APPROACHES, THE TRANSVERSE LINES USED WITH THE RAILROAD SYMBOLS SHALL EXTEND ACROSS ALL APPROACH LANES AND SYMBOLS SHALL BE PLACED IN EACH APPROACH LANE.
- THE RAILROAD SYMBOL SHALL BE LOCATED SO THAT THE W-94, "RAILROAD ADVANCE WARNING SIGN", IS WITHIN THE TWO TRANSVERSE BOUNDARY LINES OF THE RAILROAD SYMBOL. THE STOP LINE SHALL BE LOCATED FOR BEST SIGHT DISTANCE WITHIN 15 FEET TO 50 FEET OF THE NEAR EDGE OF THE TRACKS. STOP LINES SHALL BE PERPENDICULAR TO THE CENTER LINE OF THE ROADWAY. WIDTH OF "X" MAY VARY ACCORDING TO LANE WIDTH.
- PREFERABLY, THE WORD "SCHOOL" SHOULD BE CONTAINED IN A SINGLE LANE. ON ONE LANE APPLICATIONS, THE TRANSVERSE LINES SHALL EXTEND ACROSS THE LANE WHICH APPROACHES THE ZONE WITH THE WORD "SCHOOL" CENTERED ACROSS THAT LANE. FOR TWO APPROACH LANES, EACH LANE SHOULD HAVE A SEPARATE WORD "SCHOOL" CENTERED ACROSS IT. ON TWO LANE, TWO WAY ROADWAYS WITH INSUFFICIENT PAVEMENT WIDTH, THE WORD AND TRANSVERSE LINES SHALL EXTEND ACROSS BOTH LANES OF TRAFFIC. ON FOUR LANE, TWO WAY ROADWAYS WITH INSUFFICIENT PAVEMENT WIDTH, THE WORD AND TRANSVERSE LINES SHALL EXTEND ACROSS BOTH LANES ENTERING THE SCHOOL ZONE. CENTER OR LANE LINES SHALL NOT PASS THROUGH THE "SCHOOL" MARKING.
- THE STOP LINE SHOULD BE PLACED WHERE CROSS-CORNER VISION IS MAXIMUM, IN NO CASE MORE THAN 30 FEET OR LESS THAN 4 FEET FROM THE NEAREST EDGE OF THE INTERSECTING ROADWAY. FOR NORMAL INTERSECTIONS A MAXIMUM DISTANCE OF 10 FEET IS RECOMMENDED.  
  
IF A MARKED CROSSWALK IS PRESENT, THE STOP LINE SHOULD BE PLACED 4 FEET IN ADVANCE OF AND PARALLEL TO THE NEAREST CROSSWALK.
- FOR TRAFFIC PAINT AND POLYESTER APPLICATION, TEMPLATE GAPS SHALL BE FILLED WITH MARKING MATERIAL IN ACCORDANCE WITH 641.03. FOR EXTRUDED THERMOPLASTIC MATERIAL, THESE GAPS MAY REMAIN UNFILLED IN ACCORDANCE WITH 644.03.
- USE STANDARD DIMENSIONS CONFORMING TO REQUIREMENTS OF OMUTCD SECTIONS 3B-40, 3B-41 AND 3B-43 WHICH CONFORMS TO THE 1977 METRIC EDITION STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING WITH ERRATA.  
  
\* - INDICATES STATION REFERENCE POINT

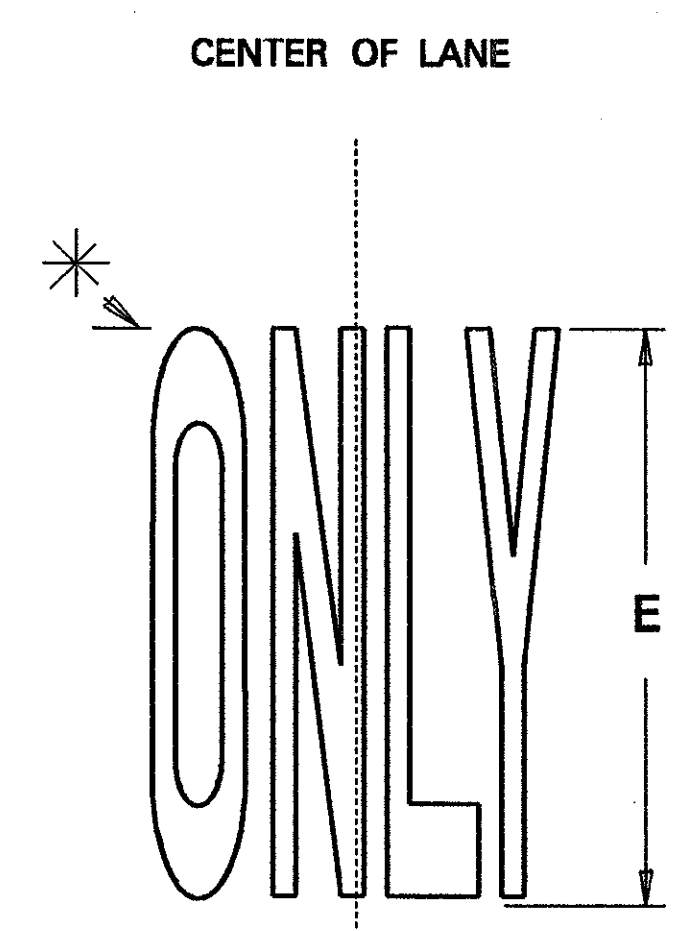
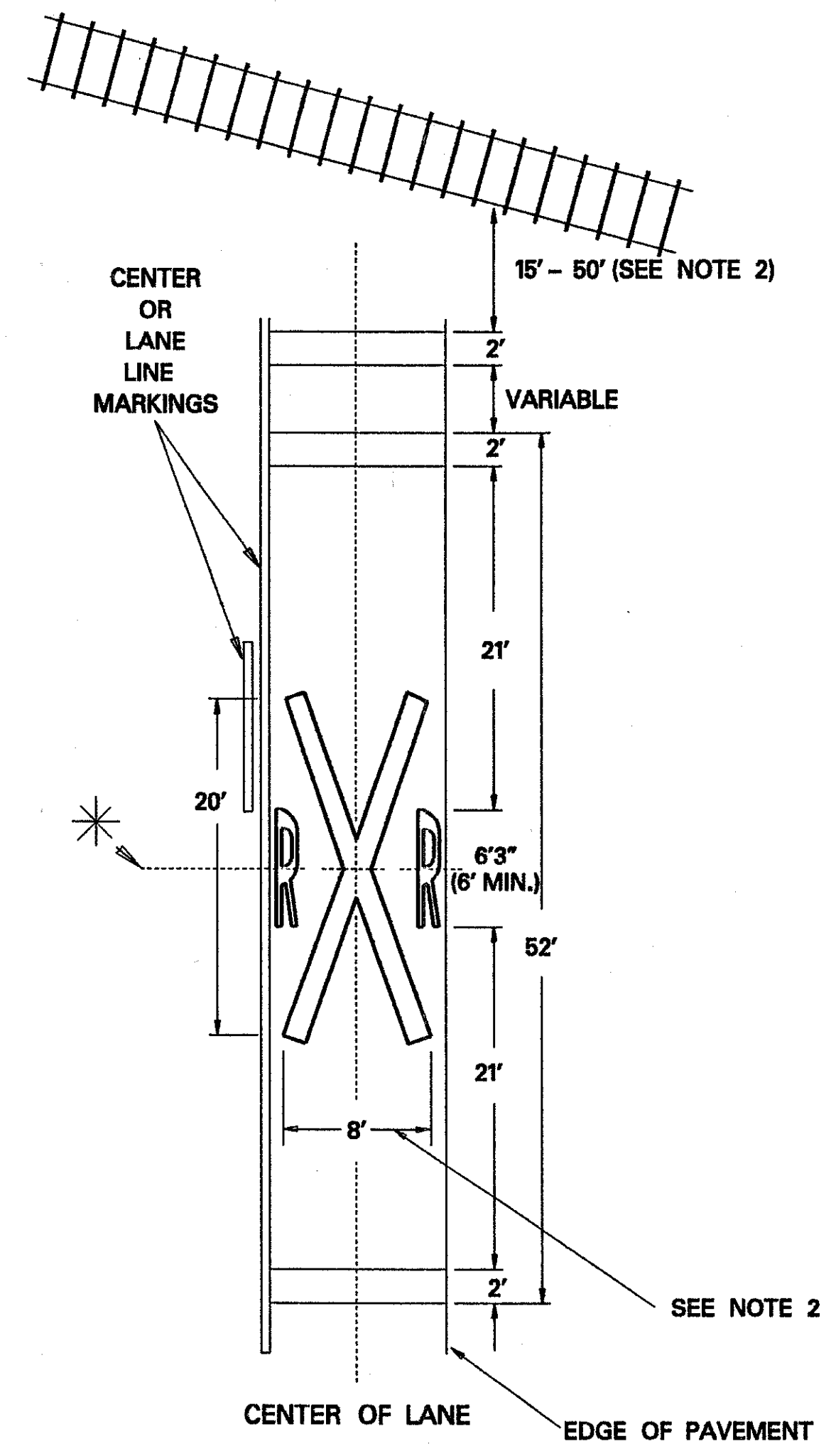


NOTE:  
 STOP LINE LOCATED MIN. 40' FROM  
 AT LEAST ONE SIGNAL HEAD WHICH APPLIES  
 TO THAT APPROACH

TYPE	DIMENSIONS (FEET)			
	A	B	C	D
RURAL	30 MIN.	32-80	8	32-80
URBAN	10 MIN.	24-60	6	24-60



TYPE	E (INCHES)	
	STANDARD	OPTIONAL
RURAL	96	100
URBAN	72	75



REVISED BY:	DATE:
207110	DATE
WORDS, SYMBOLS AND ARROWS	02/21/91
PLAN INSERT SHEET	08/02/91



# BRIDGE SUMMARY

CUYAHOGA COUNTY  
CUY-90-16.24

OHIO

FHWA  
REGION 5

FEDERAL  
PROJECT

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245

PARTICIPATION I-FEDERAL & STATE, PARTICIPATION II-100% STATE

PLOT SUBMITTED: 22-JUN-1992 12:54

2-5-98

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PLOTTED BY: BANASZAK  
PLOTTED FROM: c:\dgn\p1d07090\07090sga.dgn

ITEM	STRUCTURE NUMBER													PARTICIPATION		ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN SHEET REF.	
	CUY-90-													I	II						
	1628	1640	1651	1676	1681	1692	1794	1796	1803	1812	1815										
202	LUMP		LUMP				LUMP	LUMP			LUMP			LUMP	LUMP	202	11200	LUMP	PORTIONS OF STRUCTURES REMOVED		
202							550		1052					1602		202	23500	1602	SQ.YD.	WEARING COURSE REMOVED	
202				20	114				60		456			650		202	38500	650	LIN.FT.	BRIDGE RAILING REMOVED	
202				308	306	401	286		468					1769		202	75000	1769	LIN.FT.	FENCE REMOVED	
202				1												202	98100	1	EACH	REMOVAL MISCELLANEOUS; SCUPPERS PLUGGED	
202				30	44											202	98200	74	LIN.FT.	REMOVAL MISCELLANEOUS; PIPE OR TROUGH	
SPEC.	174	181	342				37	267	103	137	78			140	1179	SPEC.	51221100	1319	SQ.YD.	PROTECTION OF CONCRETE SURFACE; COAT, CONC. SURF. W/WATER-BASE PAINT	
SPEC.	2219	2129	3856	906			1037	2881	1624	1538	997			2661	14526	SPEC.	51271500	17187	SQ.YD.	URETHANE TOPCOAT SEALER	
SPEC.	2219	2129	3856	906			1037	2881	1624	1538	997			2661	14526	SPEC.	51267502	17187	SQ.YD.	SEALING CONCRETE SURFACES (EPOXY) (SEE PROPOSAL NOTE)	
SPEC.	3422	3255	4920												11597	SPEC.	51273000	11597	SQ.YD.	TREATING CONCRETE BRIDGE DECKS WITH HMWM RESIN (SEE PROPOSAL NOTE)	
513				500											500	513	00100	500	LBS.	STRUCTURAL STEEL (AISC CERTIFICATION NOT REQUIRED)	
514				500											500	514	01700	500	LBS.	FIELD PAINTING NEW STRUCTURAL STEEL, SYSTEM B	
SPEC.	278	209	308	185	117	149	137		109		61			246	1307	SPEC.	51614010	1553	LIN.FT.	POURED POLYURETHANE JOINT SEAL	
516				42											42	516	46701	42	EACH	RESET BEARING, AS PER PLAN	238
517				893	706	1269								2868		517	76300	2868	LIN.FT.	RAILING Misc. T&B-91	
517					308	420	413	298		528	468			2435		517	76201	2435	LIN.FT.	RAILING, FACED AS PER PLAN TYPE SW	236
518				12	13	15			4	4	6			8	46	518	12801	54	EACH	SCUPPER MODIFICATION, AS PER PLAN	240
518				26		46									72	518	62100	72	LIN.FT.	DRAINAGE STRUCTURE MISC.: 10" PIPE INCLUDING SPECIALS	
SPEC.								5941		10214		5069		21224		SPEC.	51910000	21224	SQ.FT.	SOUNDING CONCRETE DECKBOTTOM	
SPEC.				19971	19161	34707	8154		9333	25929	14616	13842	8973		154686	SPEC.	51910004	154686	SQ.FT.	SOUNDING CONCRETE BRIDGE COMPONENT	
519				152	289	430	816		65	74	74	66	214	139	2041	519	11101	2180	SQ.FT.	PATCHING CONCRETE STRUCTURES AS PER PLAN	221
SPEC.				50	50	100									200	SPEC.	51912510	200	SQ.YD.	PATCHING CONCRETE BRIDGE DECK OVERLAYS	
SPEC.									352						352	SPEC.	51912600	352	LIN.FT.	CONCRETE REPAIR BY EPOXY INJECTION (SEE PROPOSAL NOTE)	
SPEC.					932	688	1174	594		1532		760			5680	SPEC.	51912602	5680	SQ.FT.	LOW PRESSURE EPOXY INJECTING OF DELAMINATED CONCRETE	

REVISED 1-5-95

BRIDGE SUMMARY





# STRUCTURES

## SCOPE OF PROPOSED WORK

1. REMOVED VISUALLY DISENTEGRATED AND BROKEN UP CONCRETE AND PATCH EXISTING BRIDGE DECK OVERLAYS ON CUY-90-1628/1640/1651.
2. SEAL BRIDGE DECKS WITH HMWM RESIN THEN GROOVE CUY-90-1628/1640/1651.
3. INSTALL THRIE BEAM RAILING TO EXISTING CONCRETE PARAPETS CUY-90-1628/1640/1651.
4. PLUG SCUPPERS ON CUY-90-1628.
6. RESET BEARINGS CUY-90-1640.
7. MISCELLANEOUS STRUCTURAL REPAIRS ON CUY-90-1640.
8. REMOVE ASPHALT, AND PLACE NEW 2-3/4" MSC OVERLAY ON CUY-90-1794/1803.
9. EXTEND SIDEWALK PARAPETS ON CUY-90-1676/1681/1692/1794/1803/1815.
10. ADD VANDAL PROTECTION FENCE ON CUY-90-1676/1681/1692/1794/1803/1815.
11. PATCH UNSOUND CONCRETE ON PIERS, ABUTMENTS, WINGWALLS, PARAPETS, OR RETAINING WALLS ON ALL STRUCTURES EXCEPT CUY-90-1681/1692.
12. SEAL ALL EXPOSED CONCRETE SURFACES EXCEPT PIER CAP BOTTOMS AND 75% OF PIER CIRCUMFERENCE ON ALL STRUCTURES EXCEPT CUY-90-1676/1681/1692 COAT REMAINING 25% WITH WATER BASED PAINT.
13. SEAL EXPANSION JOINTS ALL STRUCTURES, EXCEPT CUY-90-1796/1812.
14. MODIFY SCUPPERS ON CUY-90-1628/1640/1651/1796/1803/1815.
15. CLEAN BRIDGE DRAINAGE SYSTEMS ALL BRIDGES.
16. SOUND AND LOW PRESSURE EPOXY INJECTION TO DECK BOTTOMS ON CUY-90-1676/1681/1692/1794/1803/1815.

## PLAN OF OPERATIONS AND PROTECTION

THE CONTRACTOR SHALL SUBMIT TO THE DIRECTOR A COMPLETE SCHEDULE OF CONSTRUCTION OPERATIONS ALONG WITH PLANS CONTAINING HIS PROPOSED METHODS OF PREVENTING DEBRIS FROM FALLING ON THE TRAFFIC BELOW. THESE PLANS MUST BE SUBMITTED AND APPROVED PRIOR TO COMMENCING THE WORK. LANE CLOSURES AND TIMES OF IMPLEMENTATION SHALL BE APPROVED BY THE ENGINEER. NO REMOVAL WORK SHALL BE STARTED WITHOUT PRIOR APPROVAL OF THE ENGINEER. COSTS FOR PROTECTION OF THE PUBLIC SHALL BE INCLUDED WITH THE REMOVAL ITEM FOR PAYMENT.

## 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 SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.5, 105.2, 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.

PLANS OF EXISTING STRUCTURES ARE AVAILABLE FOR EXAMINATION AT THE OHIO DEPARTMENT OF TRANSPORTATION; DISTRICT 12 OFFICE; 5500 TRANSPORTATION BLVD.; CARFIELD HEIGHTS, OHIO.

## COOPERATION WITH RAILROADS

THE CONTRACTOR SHALL COOPERATE AT ALL TIMES WITH LOCAL OFFICIALS OF THE RAILROADS. HE SHALL USE ALL REASONABLE CARE AND DILIGENCE IN THE WORK IN ORDER TO AVOID ACCIDENTS, DAMAGE OR UNNECESSARY DELAY TO, OR INTERFERENCE WITH THE TRAINS AND OTHER PROPERTY OF THE RAILROAD. THE CONTRACTOR SHALL NOTIFY THE LOCAL OFFICIALS OF THE RAILROAD PRIOR TO STARTING WORK THAT MAY AFFECT RAILROAD PROPERTY AND FACILITIES AND SHALL PAY THE RAILROAD COMPANY THE COST OF FLAGMEN FURNISHED BY THE RAILROAD COMPANY AND MADE NECESSARY BECAUSE OF ANY OF THE CONTRACTOR'S OPERATIONS OVER OR ADJACENT TO THE TRACKS.

NO SCAFFOLD, PLANKS OR OTHER EQUIPMENT SHALL BE SUSPENDED OR ERECTED ABOVE OR WITHIN 10 FEET OF A RAIL OVER WHICH TRAINS ARE OPERATING WITHOUT PRIOR WRITTEN APPROVAL OF THE CHIEF ENGINEER OF THE RAILROAD COMPANY, OR HIS AUTHORIZED REPRESENTATIVE.

FAILURE TO NOTIFY THE RAILROAD COMPANY AS NOTED ABOVE SHALL BE CAUSE FOR STOPPING WORK UNTIL ALL PROVISIONS FOR PROTECTING RAILROAD PROPERTY HAVE BEEN PROVIDED.

## RAILROAD PROTECTIVE LIABILITY INSURANCE

THE CONTRACTOR SHALL FURNISH EVIDENCE TO THE HIGHWAY DEPARTMENT THAT, WITH RESPECT TO THE OPERATIONS HE OR ANY OF HIS SUBCONTRACTORS PERFORM, HE HAS PROVIDED FOR AND IN BEHALF OF THE CONSOLIDATED RAIL CORPOATION, 12'TH FLOOR, 15 NORTH 32'ND STREET, PHILADELPHIA, PA 19104 A RAILROAD PROTECTIVE LIABILITY POLICY OF INSURANCE PROVIDING A COMBINED SINGLE LIMIT FOR DAMAGES ARISING OUT OF BODILY INJURY TO OR DEATH OF ONE OR MORE PERSONS AND OUT OF INJURY TO OR DESTRUCTION OF PROPERTY INCLUDING SUCH PROPERTY IN THE CARE, CUSTODY AND CONTROL OF THE RAILROAD COMPANY IN THE AMOUNT OF \$2,000,000.00 PER OCCURENCE AND SUBJECT TO THAT LIMIT PER OCCURENCE, AN AGGREGATE LIMIT IN THE AMOUNT OF \$6,000,000.00 FOR EACH ANNUAL PERIOD.

THE ABOVE RAILROAD PROTECTIVE POLICY OF INSURANCE SHALL CONFORM TO THE RAILROAD LIABILITY REQUIREMENTS PRESCRIBED BY THE FEDERAL HIGHWAY ADMINISTRATION IN FHPM: 6-6-2-2 AS AMENDED.

THE INSURANCE HEREINBEFORE SPECIFIED SHALL BE WITH AN ACCEPTABLE INSURANCE COMPANY AUTHORIZED TO DO BUSINESS IN THE STATE OF OHIO, AND SHALL BE TAKEN OUT BEFORE WORK IS COMMENCED AND KEPT IN EFFECT UNTIL ALL WORK REQUIRED TO BE PERFORMED UNDER THE TERMS OF THE CONTRACT IS SATISFACTORILY COMPLETED AS EVIDENCED BY THE FORMAL ACCEPTANCE OF THE STATE. SUCH POLICIES SHALL INCLUDE THIRTY (30) DAYS CANCELING NOTICE.

EVIDENCE AS ABOVE SET FORTH SHALL CONSIST OF FURNISHING THE DIRECTOR OF TRANSPORTATION WITH:

ONE (1) ORIGINAL AND TWO (2) CERTIFIED COPIES OF EACH RAILROAD POLICY.

PAYMENT WILL BE MADE AT THE CONTRACT PRICE BID UNDER:

ITEM	UNIT	DESCRIPTION
SPECIAL	LUMP SUM	PREMIUM ON RAILROAD'S PROTECTIVE PUBLIC LIABILITY AND PROPERTY DAMAGE LIABILITY INSURANCE

## DECK SLAB DEPTH

THE DISTANCE SHOWN FROM TOP OF DECK SLAB TO TOP OF STEEL BEAM IS THE DESIGN DIMENSION. THE QUANTITY OF DECK CONCRETE TO BE PAID FOR SHALL BE BASED ON THIS DIMENSION, EVEN THOUGH DEVIATION FROM IT MAY BE NECESSARY BECAUSE THE TOP FLANGE OF THE BEAM MAY NOT HAVE THE EXACT CAMBER OR CONFORMATION REQUIRED TO PLACE IT PARALLEL TO THE FINISHED GRADE.

## EXISTING DRAINAGE SYSTEMS

IF SCUPPERS, DOWNSPOUTS ETC. OTHER THAN THOSE DESIGNATED ARE BLOCKED WITH MSC OR OTHER FOREIGN MATTER DURING THIS PROJECT, THE CONTRACTOR SHALL CLEAN OUT THE SCUPPERS, ETC. (REPLACE THEM IF NECESSARY) SUCH THAT NO ASPHALT OR CONCRETE OR OTHER MATTER IS BLOCKING THEM, AT NO ADDITIONAL COST TO THE STATE.

## PUBLIC PROTECTION DURING REMOVAL OPERATIONS

THE CONTRACTOR SHALL FURNISH DETAILS, INCLUDING ILLUSTRATIONS, AND ANALYSIS REGARDING THE REMOVAL OF CONCRETE OR STEEL OVER TRAFFIC OR PEDESTRIAN AREAS. THREE (3) COPIES OF THE CONTRACTORS PLANS AND SCHEDULE OF OPERATIONS FOR THE PROPOSED REMOVALS AND PROTECTION OF TRAFFIC SHALL BE SUBMITTED TO THE ENGINEER AT LEAST SEVEN (7) DAYS BEFORE SCHEDULED REMOVAL. REMOVAL SHALL NOT BEGIN UNTIL APPROVAL HAS BEEN GIVEN.

## ITEM 202- PORTIONS OF STRUCTURES REMOVED

WORK TO BE PAID FOR UNDER THIS ITEM SHALL INCLUDE THE REMOVAL OF STRUCTURAL COMPONENTS AS DETAILED IN THE PLANS AND AS DIRECTED BY THE ENGINEER. THESE REMOVALS IN INCLUDED BUT NOT NECESSARILY LIMITED TO THE FOLLOWING LIST:

1. NOSE ON STRUCTURES CUY-90-1651 AS SHOWN ON SHEET 273.
2. LOOSE COVER CONCRETE OR SPALLS FOUND ON THE UNDERSIDES OF BRIDGE DECKS DURING DECK BOTTOM SOUNDINGS.
3. ANY LOOSE CONCRETE FOUND FROM DECK BOTTOM SOUNDING.
4. SUBDRAINAGE REMOVAL CUY-90-1794/1803/1815.
5. PORTIONS OF THE WINGWALL CUY-90-1692/1794 AS SHOWN ON SHEET 243.

ONLY PNEUMATIC OR HAND TOOLS THAT WILL GIVE RESULTS SATISFACTORY TO THE ENGINEER SHALL BE USED IN THE REMOVAL OF THE DISENTEGRATED CONCRETE. EXTREME CARE SHALL BE TAKEN TO AVOID DAMAGING THE EXISTING REINFORCING STEEL WHICH ARE TO REMAIN IN PLACE. NO BACKHOE RAMS SHALL BE USED. ANY STEEL WHICH IS MADE UNUSEABLE BY THE CONTRACTOR'S CONCRETE REMOVAL OPERATIONS SHALL BE REPLACED WITH NEW STEEL AT HIS COST.

## ITEM 510 - DOWEL HOLES, AS PER PLAN

THIS WORK SHALL CONFORM TO SUPPLEMENTAL SPECIFICATIONS 852 AND 952. QUANTITIES FOR DOWEL HOLES ARE CONTAINED WITHIN THE PERTINENT REPAIR ITEM.



# GENERAL NOTES

CUY-90-16.24

FHWA REGION	STATE	PROJECT	
5	OHIO		

220  
245

## ITEM 513- STRUCTURAL STEEL

THIS ITEM CONSISTS OF ALL MATERIAL, LABOR AND EQUIPMENT NECESSARY TO REPLACE EXISTING CROSSFRAMES AND INCIDENTAL STEEL THAT ARE SEVERELY RUSTED OR CORRODED ON A STRUCTURE. STEEL TO BE REPLACED SHALL BE OF THE SAME SIZE AS THAT OF THE EXISTING AND GRADE A-36.

## ITEM 517 - RAILING FACED WITH THRIE BEAM, TYPE A

THIS ITEM SHALL CONSIST OF FACING EXISTING CURB STYLE PARAPETS WITH THRIE BEAM RAIL. (SEE *STD CONST DWG TBR-91*)

ANCHOR BOLTS SHALL BE 3/8 INCH DIAMETER THREADED RODS WITH A MINIMUM EMBEDMENT OF 8 INCHES. MATERIALS AND INSTALLATION SHALL BE AS PER SS 852 AND SS 952 WITH THE GROUT MATERIAL LIMITED TO EPOXY RESIN ONLY AND THE MINIMUM YIELD STRENGTH OF THE THREADED RODS 55000 PSI.

EXTREME CARE SHALL BE TAKEN TO AVOID DAMAGING THE EXISTING REINFORCING STEEL WHEN INSTALLING THE ANCHOR BOLTS. TO PROVIDE LONGITUDINAL ADJUSTMENT THE GUARDRAIL TO THE POST HOLES ON THE FRONT FLANGE OF THE POST SHALL BE PRE-DRILLED ON BOTH SIDES OF THE FRONT FLANGE. TO PROVIDE VERTICAL ADJUSTMENT THE FLANGE HOLES FOR THE ANCHOR BOLTS SHALL BE SLOTTED VERTICALLY AND LOCATED ON BOTH SIDES OF THE FLANGE. POSTS SHALL BE SPACED AT 6' INTERVALS EXCEPT AS NOTED BELOW.

GUARDRAIL, HARDWARE AND POSTS SHALL CONFORM TO ITEM 606 AND STANDARD CONSTRUCTION DRAWING GR-1.1 AND GR-2.1 EXCEPT AS MODIFIED BY THESE NOTES AND DETAILS.

ALL ANCHOR BOLTS SHALL BE LOCATED A MINIMUM OF 3 INCHES FROM ANY DEFLECTION JOINTS. RAIL ELEMENTS SHALL BE LAPPED 1'-0" IN THE DIRECTION OF TRAFFIC ACROSS ALL EXPANSION JOINTS. THE POSTS ON EACH SIDE OF THE EXPANSION JOINTS SHALL BE SET AT 15 INCHES FROM THE CENTER OF THE JOINT. EACH RAIL ELEMENT SHALL EXTEND 6 INCHES ACROSS THE CENTER OF THE JOINT. THE RAIL ELEMENTS SHALL BE OFFSET FROM EACH OTHER BY 1/2 INCH BY EITHER REDUCING THE THICKNESS OF THE WOOD BLOCKOUT ON THE TRAILING END BY 1/2 INCH OR BY ADDING A 1/2 INCH SPACER TO THE LEADING POST ON THE APPROACH END.

IN LIEU OF THE ABOVE REQUIREMENTS, THE CONTRACTOR MAY (AT HIS OPTION) INSTALL A BRIDGE RETROFIT RAILING AS PER STANDARD CONSTRUCTION DRAWING TBR-91 FOR TYPE A OR B.

## ITEM SPECIAL - MSC VARIABLE THICKNESS

THIS ITEM SHALL BE USED TO PATCH SIDEWALK AND CURB. NO SAW CUTS SHALL BE USED. IN THE CURB AREA, THE CONTRACTOR SHALL REMOVE LOOSE OR UNSOUND CONCRETE TO A DEPTH THAT PROVIDES A 3/4 INCH MINIMUM CLEARANCE AROUND THE EXISTING REINFORCING STEEL. PAYMENT SHALL BE PER CUBIC YARD.

## ITEM SPECIAL- SOUNDING OF CONCRETE DECK BOTTOMS

THIS WORK SHALL CONSIST OF SUPPLYING THE MATERIALS, LABOR AND EQUIPMENT NECESSARY FOR SOUNDING DECK BOTTOMS IN ORDER THAT THE ENGINEER MAY OUTLINE THE DELAMINATED AREAS. AFTER ALL OVERLAY REMOVAL OPERATIONS ON A GIVEN BRIDGE ARE COMPLETED THE CONTRACTOR SHALL SOUND THE ENTIRE DECK BOTTOM WITH HAMMERS AND THE ENGINEER SHALL OUTLINE ALL UNSOUND AREAS FOR EPOXY INJECTION. THE FOOTAGE FOR THIS ITEM SHALL BE THE NUMBER OF SQUARE FEET OF DECK BOTTOM THAT ARE SATISFACTORILY SOUNDED AND ACCEPTED. THE ACCEPTED QUANTITIES OF DECK BOTTOM SOUNDING WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE FOOT, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR AND EQUIPMENT NECESSARY FOR SOUNDING CONCRETE DECK BOTTOMS. PAYMENT WILL BE MADE UNDER ITEM SPECIAL-SOUNDING CONCRETE DECK BOTTOMS (SQ. FT.).

## ITEM SPECIAL- LOW PRESSURE EPOXY INJECTING DELAMINATED CONCRETE

THIS WORK SHALL CONSIST OF LOW-PRESSURE EPOXY INJECTION OF DELAMINATED BOTTOM COVER CONCRETE OF BRIDGE DECKS IN ACCORDANCE WITH THESE SPECIFICATIONS, IN REASONABLY CLOSE CONFORMITY WITH THE PLANS AND MANUFACTURERS RECOMMENDATIONS AS DIRECTED BY THE ENGINEER.

THE INJECTION RESIN SHALL BE THERMAL-CHEM INJECTION RESIN PRODUCT NO. 2, POLY-CARB MARK-10 INJECTION RESIN, DURAL CRETE LV OR SIKADUR 52 INJECTION RESIN. THE BONDER SHALL BE THERMAL-CHEM BONDER PRODUCT NO. 4, DURALCRETE GEL, POLYCARB MARK 8 NON-SAG OR SIKADUR HI-MOD GEL (SIKASTIX 31). ALL MATERIALS SHALL BE STORED AND INCORPORATED IN THE WORK AS RECOMMENDED BY THE MANUFACTURER. A MANUFACTURER'S REPRESENTATIVE SHALL BE PRESENT AT THE JOB SITE UNTIL SUCH TIME AS HE AND THE ENGINEER ARE SURE THAT THE CONTRACTOR IS QUALIFIED IN ALL ASPECTS OF EPOXY PRESSURE GROUTING. PORTS SHALL BE INSTALLED IN CLEAN HOLES THAT ARE VACUUM-DRILLED (TO PREVENT FINES FROM BEING IMPACTED INTO THE CRACK) 3 INCHES DEEP IN THE DECK BOTTOM SO THAT THE EPOXY WILL PENETRATE THE HOLLOW PLANE. THE FIRST PORT SHALL BE LOCATED NEAR THE EDGE OF THE OUTLINED UNSOUND AREA. ADDITIONAL PORTS SHALL BE PLACED AT DISTANCES SLIGHTLY GREATER THAN THE DISTANCE FROM THE FIRST PORT TO THE VOID EDGE. PORT PLACEMENT MUST ENSURE THAT THE GROUT FACE REACHES THE EDGE OF THE VOID BEFORE REACHING THE NEXT PORT. PORTS AND VISIBLE CRACKS SHALL BE SEALED WITH BONDER TO PREVENT EMISSION OF INJECTION RESIN. THE BONDER SHALL CURE 24 HOURS PRIOR TO INJECTION OF EPOXY RESIN.

THE RESIN SHALL BE INJECTED ONLY WHEN THE DECK IS DRY AND ITS TEMPERATURE IS ABOVE 50 DEGREES F. THE INJECTION RESIN COMPONENTS SHALL BE AT 70 DEGREES PRIOR TO MIXING.

THE EPOXY INJECTION EQUIPMENT SHALL BE CAPABLE OF INJECTING THE MATERIAL INTO THE PORTS AT LOW PRESSURES OF 14 TO 20 PSI. THE INJECTION EQUIPMENT SHALL BE CAPABLE OF METERING, MIXING AND INJECTING THE EPOXY RESIN ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS.

THE INJECTION SHALL COMMENCE AT THE EDGE OF THE DELAMINATION AND CONTINUE UNTIL THE EPOXY RESIN APPEARS AT THE NEXT PORT. MOST INCOMPLETELY FILLED VOIDS ARE CAUSED BY THE OPERATOR STOPPING THE INJECTION PROCESS PREMATURELY; THEREFORE, A STEADY, LOW PRESSURE SHALL BE MAINTAINED ON THE EPOXY UNTIL A STEADY CLEAR FLOW APPEARS AT THE NEXT PORT. THEN THE INJECTION NOZZLE IS REMOVED, THE PORT CLOSED AND THE INJECTION CONTINUED FROM PORT TO PORT UNTIL THE VOID IS COMPLETELY FILLED. SINCE THE GROUT FACE IS MOVING UNDER VISCOUS FLOW CONDITIONS WHICH ARE GOVERNED BY FLUID SURFACE FRICTION, THE INJECTION PROCESS IS SLOW. REGARDLESS, INJECTION PRESSURE SHALL BE 20 PSI MAXIMUM SO THAT BOTTOM COVER CONCRETE IS NOT BLOWN OFF. PROGRESS OF THE EPOXY SHALL BE CHECKED WITH A TAPPING HAMMER.

THE OUTLINED INJECTED VOIDS SHALL BE SOUNDED WITH A HAMMER BY THE ENGINEER. ANY REMAINING UNSOUND AREAS SHALL BE PORTED AND REINJECTED AT NO ADDITIONAL COST TO THE STATE. ALL EQUIPMENT, LABOR AND MATERIALS REQUIRED BY THE ENGINEER TO ACCOMPLISH THIS WORK SHALL BE SUPPLIED BY THE CONTRACTOR.

THE FOOTAGE UNDER THIS ITEM SHALL BE THE NUMBER OF SQUARE FEET OF DELAMINATED DECK BOTTOM CONCRETE THAT ARE SATISFACTORILY LOW-PRESSURE EPOXY INJECTED AND ACCEPTED.

THE ACCEPTED QUANTITIES OF LOW-PRESSURE EPOXY INJECTED CONCRETE WILL BE PAID FOR AT THE CONTRACT UNIT BID PRICE PER SQUARE FOOT, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING AND PLACING ALL MATERIALS, SOUNDING THE INJECTED AREAS, SUPPLYING THE MANUFACTURER'S REPRESENTATIVE AND ALL OTHER MATERIAL, LABOR AND EQUIPMENT NECESSARY TO COMPLETE THIS WORK ACCORDING TO SPECIFICATIONS.

## ITEM SPECIAL- CLEANING BRIDGE DRAINAGE SYSTEM

THIS ITEM SHALL BE PERFORMED AFTER THE OVERLAY PLACEMENT IS COMPLETE AND CONSISTS OF REMOVING ALL DIRT AND DEBRIS FROM CURB AREAS, SCUPPERS, HOPPERS, DRAINAGE TROUGHS, PIPE COLLECTORS AND DOWNSPOUTS INCLUDING ANY AND ALL PORTIONS BEHIND THE ABUTMENTS INCLUDING PORTIONS OF THE UNDERGROUND STORM SEWERS TO THE FIRST MANHOLE OR CATCH BASIN. AFTER THE DIRT AND DEBRIS ARE REMOVED THE ENTIRE DRAINAGE SYSTEM SHALL BE FLUSHED WITH CLEAN WATER, MAKING CERTAIN THE WATER FLOWS SMOOTHLY TO THE ADJACENT MANHOLE OR CATCH BASIN.

THE CONTRACTOR SHALL PROVIDE ALL NECESSARY EQUIPMENT NEAR THE COMPLETION OF THE WORK FOR THE PURPOSE OF EXAMINING THE EXISTING BRIDGE DRAINAGE SYSTEM. THE CONTRACTOR'S SUPERINTENDENT SHALL ACCOMPANY THE ENGINEER DURING THIS DETAILED EXAMINATION OF THE BRIDGE DRAINAGE SYSTEM. ALL ITEMS REMOVED FOR THE PURPOSE OF CLEANING SUCH CAPS SHALL BE REPLACED.

ALL COSTS FOR LABOR, MATERIALS AND EQUIPMENT NECESSARY TO COMPLETE THE EXAMINATION AND CLEANING OF THE BRIDGE DRAINAGE SYSTEM SHALL BE INCLUDED IN THE LUMP SUM BID PRICE FOR ITEM SPECIAL- CLEANING BRIDGE DRAINAGE SYSTEM.

## ITEM 516 - RESET BEARINGS, AS PER PLAN

RESETTING BEARINGS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH SHEET OF THE PLANS AND SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE BID FOR ITEM 516 - RESET BEARINGS. THIS PRICE SHALL BE PAYMENT IN FULL FOR ALL MATERIAL, EQUIPMENT AND LABOR NECESSARY TO COMPLETE THIS WORK.

## ITEM SPECIAL- POURED POLYURETHANE JOINT SEAL

- 1) THE MATERIAL FOR THIS ITEM IS A TWO-PART, COLD APPLIED, CHEMICALLY CURING, SELF LEVELING, ELASTOMERIC, POLYURETHANE JOINT SEALANT. IT SHALL BE "FX-551" AS MANUFACTURED BY FOX INDUSTRIES INCORPORATED, "UREXPAN NR-200" AS MANUFACTURED BY PECORA CORPORATION OR AN APPROVED EQUAL.
- 2) IT SHALL BE USED TO SEAL THE STRUCTURAL EXPANSION JOINTS, AS SHOWN IN THE PLANS.
- 3) THE INSTALLED AND CURED MATERIAL SHALL BE 1/2 INCH DEEP AND SHALL BE BONDED TO THE SIDES OF THE JOINT. ANY UNBONDED SECTION SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.
- 4) DAMS AS REQUIRED TO CONTAIN THE POURED SEALER SHALL BE INCIDENTAL TO THIS ITEM OF WORK.

PAYMENT FOR ALL NECESSARY LABOR, MATERIALS AND EQUIPMENT SHALL BE INCLUDED IN THE UNIT COST PER LINEAL FOOT OF ITEM SPECIAL- POURED POLYURETHANE JOINT SEAL.

## ITEM SPECIAL - VANDAL PROTECTION FENCE

THIS ITEM OF WORK SHALL INCLUDE ALL MATERIAL, LABOR, AND EQUIPMENT NECESSARY TO INSTALL VANDAL PROTECTION FENCE. ALL WORK SHALL BE AS STATED IN STD. CONST. DWG. VPF-1-90 AND AS DETAILED IN THE PLANS.

PAYMENT SHALL BE MADE UNDER THE UNIT PRICE, L.F.; ITEM SPECIAL - VANDAL PROTECTION FENCE.



ITEM 518 - SCUPPER MODIFICATION, AS PER PLAN

THIS ITEM OF WORK SHALL INCLUDE ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO MODIFY THE EXISTING SCUPPERS AS SHOWN ON SHEET 240.

PAYMENT SHALL BE MADE UNDER THE UNIT PRICE, EACH, ITEM 518 - SCUPPER MODIFICATION, AS PER PLAN

ITEM SPECIAL - TREATING CONCRETE BRIDGE DECKS WITH HMWM RESIN (SEE PROPOSAL)

THIS ITEM OF WORK SHALL NOT BE PERFORMED UNTIL ALL REPAIRS TO THE DECK AND WALK ARE COMPLETE.

ITEM SPECIAL - SEALING OF CONCRETE SURFACES (EPOXY)

A SEALER SHALL BE APPLIED TO THE EXPOSED CONCRETE SURFACES OF THE BRIDGES AS LISTED BELOW. SEE THE PROPOSAL FOR SEALER MATERIAL AND SURFACE PREPARATION REQUIREMENTS AND APPLICATION RATES AND PROCEDURES.

- 1) CURBS, SIDEWALKS AND PARAPETS (ALL FACES).
- 2) CONCRETE BARRIER MEDIANS (ALL FACES).
- 3) DECK EDGES AND THE UNDERSIDE IN ANY BAY LOCATED BENEATH AN OPEN OR SEALED JOINT OR AN UNDERSIDE EXTENDING BEYOND THE EXTERIOR BEAMS.
- 4) PIERS INCLUDING CAPS AND COLUMNS (WITH THE EXCEPTION OF 1/4 OF THE CIRCUMFERENCE OF THE COLUMNS NOT FACING THE SPLASH ZONE)
- 5) ABUTMENTS INCLUDING BACKWALLS AND WINGWALLS.

ITEM SPECIAL - COATING CONCRETE SURFACES WITH WATER-BASE PAINT

THIS ITEM SHALL CONSIST OF PREPARING AND COATING WITH WATER-BASE PAINT THE QUADRANTS OF CONCRETE PIER COLUMNS LEFT BARE AFTER THE EPOXY SEALING OPERATION.

THE WATER-BASE PAINT SHALL BE GLIDDEN'S LIFEMASTER II. SURFACE PREPARATION SHALL BE AS PER PROPOSAL NOTE 110-SEALING OF CONCRETE SURFACES. APPLICATION RATE SHALL BE A MINIMUM OF 1.0 MILS DRY (574 S.F./GAL.). APPLICATION SHALL BE MADE BY BRUSH OR ROLLER. COLOR SHALL BE FEDERAL COLOR STANDARD NO. 595A-16187.

THE COST FOR FURNISHING ALL MATERIALS, LABOR AND EQUIPMENT NECESSARY TO COMPLETE THIS WORK SHALL BE INCLUDED IN THE LUMP SUM BID PRICE FOR:

ITEM	UNIT	DESCRIPTION
SPECIAL	SQ.YD.	COATING CONCRETE SURFACES WITH WATER-BASE PAINT

ITEM SPECIAL - URETHANE TOP COAT SEALER FOR CONCRETE SURFACES

THIS ITEM SHALL CONSIST OF THE APPLICATION OF A URETHANE TOP COAT SEALER OVER CONCRETE AREAS COATED WITH EPOXY SEALER. THE COLOR SHALL BE FEDERAL COLOR STANDARD NO. 595A-16187.

THE URETHANE TOPCOAT SHALL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS AT THE MINIMUM APPLICATION RATE OF 150 SQ. FT. PER GALLON AFTER THE EPOXY SEALER HAS BECOME DRY TACKY AND 1 1/2 TO 6 HOURS HAVE ELAPSED SINCE THE EPOXY WAS APPLIED. THE SURFACE SHALL BE CLEAN WHEN THE URETHANE IS APPLIED. APPLICATION SHALL BE AIRLESS SPRAY, BRUSH OR ROLLER AS DIRECTED BY THE ENGINEER.

THE URETHANE TOP COAT SHALL BE ONE OF THE FOLLOWING PRODUCTS:

- 1) AMERON AMERCOAT 450 H.S.
- 2) POLY-CARB MARK 73
- 3) TNEMEC SERIES 70 ENDURA SHIELD
- 4) DURAL AQUATHANE

THE COST OF ALL LABOR, EQUIPMENT AND MATERIAL NECESSARY TO ACCOMPLISH THIS ITEM OF WORK SHALL BE PAID FOR UNDER:

ITEM	UNIT	DESCRIPTION
SPECIAL	SQ. YD.	URETHANE TOPCOAT SEALER

GENERAL REPAIR OF CONCRETE STRUCTURES

REPAIRS TO CONCRETE STRUCTURES SHALL BE MADE USING THE FOLLOWING REPAIR MATERIALS AT THE GENERAL LOCATIONS DESCRIBED HEREIN. THE REPAIR LOCATIONS SHALL BE DETERMINED BY SOUNDING ALL CONCRETE COMPONENTS OF THE BRIDGES IN ACCORDANCE WITH THE FOLLOWING ITEM:

ITEM SPECIAL - SOUNDING CONCRETE BRIDGE COMPONENTS

THIS WORK SHALL CONSIST OF SUPPLYING THE MATERIALS, LABOR, AND EQUIPMENT NECESSARY FOR SOUNDING AND MARKING CONCRETE BRIDGE COMPONENTS IN ORDER THAT THE ENGINEER MAY OUTLINE THE SPALLED AND DELAMINATED AREAS TO BE REPAIRED. THE CONTRACTOR SHALL SOUND THE CONCRETE COMPONENTS LISTED WITH HAMMERS, AND THE ENGINEER SHALL OUTLINE ALL UNSOUND AREAS FOR CONCRETE RESTORATION. THE FOOTAGE UNDER THIS ITEM SHALL BE THE NUMBER OF SQUARE YARDS OF CONCRETE SURFACE THAT ARE SATISFACTORILY SOUNDED AND ACCEPTED. THE ACCEPTED QUANTITIES OF SOUNDING WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE YARDS, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR, AND EQUIPMENT NECESSARY FOR THE SQUARE FOOT ITEM SPECIAL - SOUNDING CONCRETE BRIDGE COMPONENTS.

THE ENGINEER SHALL MAKE THE FINAL DETERMINATION AS TO WHICH OF THE FOLLOWING REPAIR ITEMS WILL BE USED AT EACH LOCATION:

ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN

THE CONTRACTOR MAY USE EITHER OF THE FOLLOWING TWO REPAIR METHODS. EACH INDIVIDUAL PATCH LOCATION SHALL BE REPAIRED ENTIRELY BY THE SAME METHOD.

METHOD 1 - THIS ITEM CONSISTS OF PATCHING EXISTING STRUCTURAL CONCRETE IN ACCORDANCE WITH ITEM 519 AND THE FOLLOWING ADDITIONAL REQUIREMENTS:

- A. SURFACE PREPARATION SHALL INCLUDE THOROUGH ABRASIVE BLASTING FOLLOWED BY AN AIR BLAST FOR ALL SURFACES WHICH ARE TO BE IN CONTACT WITH THE PATCHING MATERIAL. BLASTING ABRASIVES CONTAINING MORE THAN 1 % FREE SILICA SHALL NOT BE ALLOWED. DETERGENT CLEANING SHALL PRECEDE BLAST CLEANING TO ENSURE THE REMOVAL OF CONTAMINANTS THAT ARE DETRIMENTAL TO ACHIEVING AN ADEQUATE BOND.
- B. ALL OF THE ACCESSIBLE PREPARED CONCRETE SURFACES SHALL BE COATED WITH TWO-COMPONENT EPOXY BONDING AGENT CONFORMING TO AASHTO M-235-731, CLASS III. THE BONDING MATERIAL SHALL BE MIXED AND PLACED AS PER THE MANUFACTURER'S RECOMMENDATIONS.
- C. NO STEEL WIRE FABRIC SHALL BE REQUIRED.

METHOD 2 - THIS ITEM CONSISTS OF PATCHING EXISTING STRUCTURAL CONCRETE USING A TROWELABLE MORTAR IN ACCORDANCE WITH THE PROPOSAL NOTE.

METHOD OF MEASUREMENT: THE QUANTITY SHALL BE THE ACTUAL AREA IN SQUARE FEET OF THE EXPOSED SURFACE OF ALL COMPLETED PATCHES.

PLACE AND ACCEPTED. IF THE PATCH INCLUDES CORNERS OR EDGES OF MEMBERS ALL OF THE EXPOSED SURFACES SHALL BE INCLUDED. THE COST OF ALL LABOR, EQUIPMENT, INCIDENTALS AND MATERIALS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THIS ITEM.

BASIS OF PAYMENT: PAYMENT WILL BE MADE AT THE CONTRACT PRICE BID FOR:

ITEM	UNIT	DESCRIPTION
519	SQUARE FEET	PATCHING CONCRETE STRUCTURES AS PER PLAN

# GENERAL NOTES

CUYAHOGA COUNTY  
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## ITEM SPECIAL - PATCHING CONCRETE BRIDGE DECK OVERLAYS

A. DESCRIPTION. THIS ITEM SHALL CONSIST OF FURNISHING THE NECESSARY LABOR, MATERIALS AND EQUIPMENT TO REPAIR CONCRETE BRIDGE DECK OVERLAYS, INCLUDING THE REMOVAL OF LOOSE AND UNSOUND CONCRETE, BITUMINOUS PATCHES, SURFACE PREPARATION, BONDING COAT AND THE MIXING, PLACING, FINISHING, CURING, AND COMPRESSIVE STRENGTH TESTING OF ALL THE PATCHES AS DIRECTED BY THE ENGINEER.

B. REMOVAL OF UNSOUND CONCRETE. THE ENGINEER SHALL SOUND THE WEARING SURFACE AND BACKWALL TOPS AND OUTLINE THE AREAS TO BE REMOVED. SOUNDING MAY HAVE TO BE DELAYED UNTIL THE DECK IS SUFFICIENTLY DRY TO PERMIT DETECTION OF ALL AREAS OF DELAMINATION. THE PERIMETER OF ALL REMOVAL AREAS SHALL BE SAWED TO A DEPTH OF 2" TO PRODUCE A VERTICAL OR SLIGHTLY UNDERCUT FACE. ADDITIONAL SAW CUTS MAY BE REQUIRED TO FACILITATE REMOVAL. SAW CUTS SHALL NOT EXTEND BEYOND THE LIMITS OF THE PATCH. COOLING WATER FROM WET SAWING AND DUST FROM DRY SAWING SHALL NOT BE ALLOWED TO CONTAMINATE THE EXPOSED PATCH HOLES. ALL PATCHES OTHER THAN SOUND CONCRETE AND ALL OBVIOUSLY LOOSE AND DISINTEGRATED CONCRETE SHALL BE REMOVED. THE UNSOUND CONCRETE MAY BE REMOVED BY CHIPPING OR HAND DRESSING. CHIPPING HAMMERS SHALL NOT BE HEAVIER THAN THE NOMINAL 35-POUND CLASS AND SHALL BE OPERATED AT AN ANGLE OF LESS THAN 45 DEGREES MEASURED FROM THE SURFACE OF THE DECK. CONCRETE SHALL BE REMOVED IN A MANNER THAT PREVENTS CUTTING, ELONGATING OR DAMAGING REINFORCING STEEL. WHERE THE BOND BETWEEN THE CONCRETE AND A PRIMARY REINFORCING BAR HAS BEEN DESTROYED, OR WHERE MORE THAN ONE HALF OF THE PERIPHERY OF SUCH A BAR HAS BEEN EXPOSED, THE ADJACENT CONCRETE SHALL BE REMOVED TO A DEPTH THAT WILL PROVIDE A MINIMUM 3/4 INCH CLEARANCE AROUND THE BAR EXCEPT WHERE OTHER REINFORCING BARS MAKE THIS IMPRACTICABLE. REINFORCEMENT WHICH HAS BECOME LOOSE SHALL BE ADEQUATELY SUPPORTED AND TIED BACK INTO PLACE.

C. SURFACE PREPARATION. CLEANING SHALL CLOSELY PRECEDE APPLICATION OF THE BONDING GROUT OR THE PATCHING MATERIAL. THE SURFACE TO BE PATCHED AND THE EXPOSED REINFORCING STEEL SHALL BE THOROUGHLY CLEANED WITHIN 24 HOURS PRIOR TO PATCHING BY ABRASIVE BLASTING FOLLOWED BY AN AIR BLAST. BLASTING ABRASIVES CONTAINING MORE THAN 1% FREE SILICA SHALL NOT BE ALLOWED. IT MAY BE NECESSARY TO USE HAND TOOLS TO REMOVE SCALE FROM THE REINFORCING STEEL.

CONTAMINATION OF THE AREA TO BE PATCHED BY CONSTRUCTION EQUIPMENT OR FROM ANY OTHER SOURCE SHALL BE PREVENTED BY PLACEMENT OF A CLEAN 4-MIL POLYETHYLENE SHEET (OR ANY OTHER COVERING AS APPROVED BY THE ENGINEER) ON THE SURFACE OF THE DECK FOLLOWING THE AIR BLAST CLEANING.

WHERE REINFORCING STEEL IS EXPOSED, THE CONTRACTOR SHALL PROVIDE ADEQUATE SUPPORTS FOR THE CONCRETE MIXER SO THAT REINFORCING STEEL AND ITS BOND WITH THE CONCRETE WILL NOT BE DAMAGED BY THE WEIGHT AND MOVEMENT OF THE CONCRETE MIXER, OR SHALL PROVIDE MEANS TO CONVEY CONCRETE FROM THE MIXER TO THE PATCH LOCATIONS.

FOR PATCHES WHICH DO NOT USE WATER AS THE ACTIVATOR, THE PREPARED SURFACE SHALL BE SURFACE DRY. FOR PATCHES WHICH REQUIRE WATER AS THE ACTIVATOR THE PREPARED SURFACE SHALL BE LEFT IN THE CONDITION AS RECOMMENDED BY THE MANUFACTURER. ANY ADDITIONAL SURFACE PREPARATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS FOR THE PATCHING MATERIAL WHICH IS USED.

D. MATERIALS, PLACING, AND CURING. OVERLAYS SHALL BE PATCHED WITH EITHER MSMC OR QSC OR A COMBINATION THEREOF.

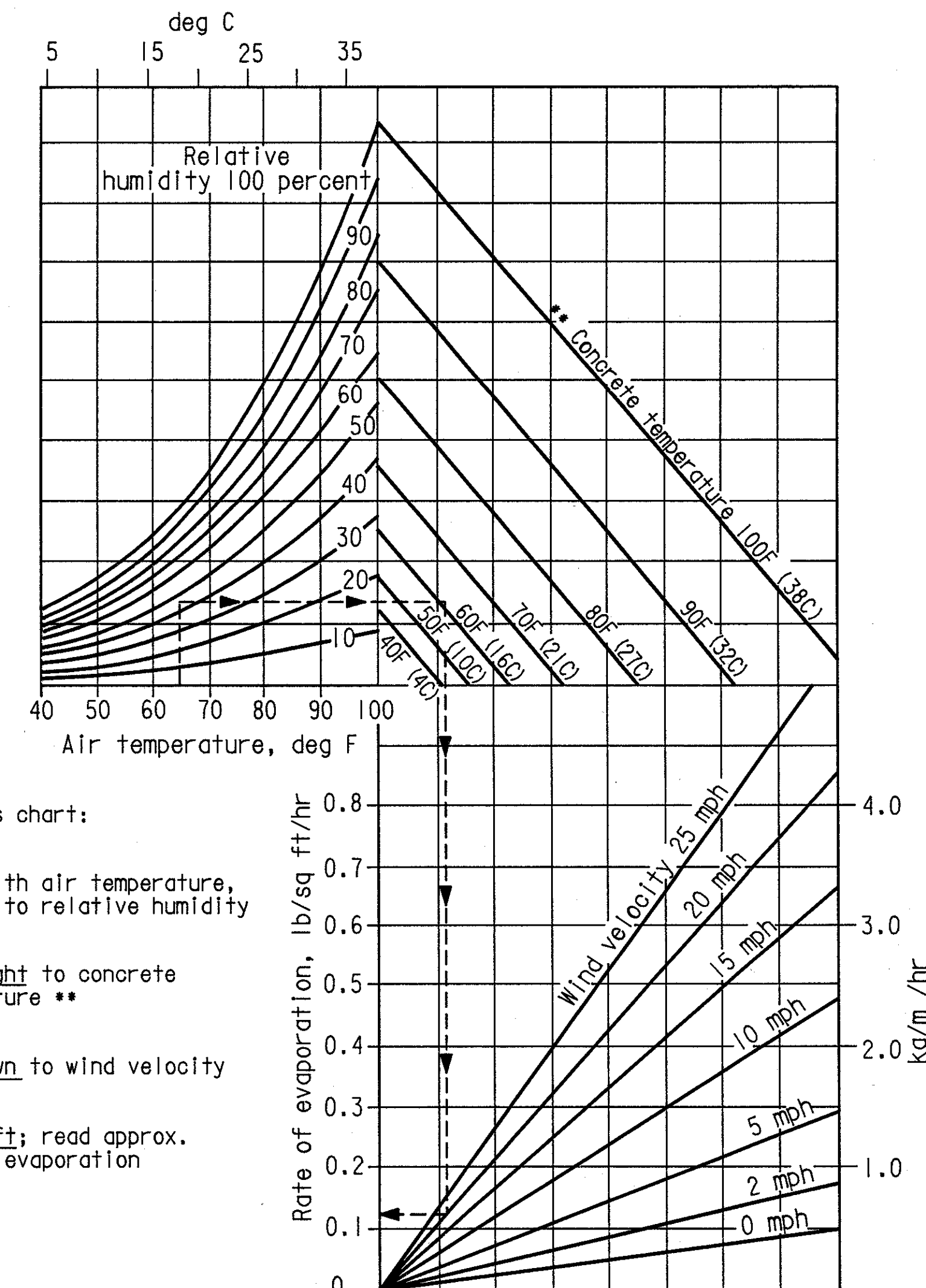
MICRO-SILICA MODIFIED CONCRETE (MSMC)

MATERIAL SHALL CONFORM TO THE FOLLOWING:

FINE AGGREGATE (NATURAL SAND)	703.02
COARSE AGGREGATE (NO. 8)	703.02
PORTLAND CEMENT, TYPE I	701.04 OR 701.01
WATER	499.02
CHEMICAL ADMIXTURE	705.12, ASTM C 494, TYPE A OR D
AIR-ENTRAINING ADMIXTURE	705.10
SUPERPLASTICIZING ADMIXTURE (HIGH RANGE WATER REDUCER)	705.12, ASTM C 494, TYPE F OR G
CURING MATERIALS	705.05 OR 705.06, WHITE OPAQUE
MICRO-SILICA ADMIXTURE	AS RECOMMENDED AND FURNISHED BY:  ELBORG TECH. CO. PITTSBURGH, PA.  OR  GRACE CONSTRUCTION  PRODUCTS CAMBRIDGE, MA  OR  SIKA CORPORATION LYNDHURST, NJ  OR  MASTER BUILDERS CLEVELAND, OHIO

BONDING GROUT. GROUT FOR MSMC PATCHES SHALL CONSIST OF PARTS BY VOLUME AS FOLLOWS:

1 PART MICROSILICA SLURRY MIX  
6 PARTS CEMENT  
10 PARTS SAND  
1-1/2 PARTS WATER AS REQUIRED TO ACHIEVE A STIFF SLURRY.



To use this chart:

1. Enter with air temperature, move up to relative humidity
2. Move right to concrete temperature \*\*
3. Move down to wind velocity
4. Move left; read approx. rate of evaporation

Fig. 1\*- Effect of concrete and air temperatures, relative humidity, and wind velocity on the rate of evaporation of surface moisture from concrete. This chart provides a graphic method of estimating the loss of surface moisture for various weather conditions. To use the chart, follow the four steps outlined above.

\* ACI Committee 308, "Standard Practice for Curing Concrete (ACI 308-81)", American Concrete Institute, Detroit, 1984, 11 pp.

\*\* In using this figure, the concrete temperature shall be taken as the average of the deck surface temperature and the plastic concrete temperature.

STATE OF OHIO  
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DISTRICT 12 LOCATION & DESIGN

STRUCTURE NOTES

DESIGNED LDH DATE	TRACED RWT DATE	CHECKED ENF DATE	REVIEWED BOW DATE	REVISED SHEET
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GENERAL NOTES

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THE CONSISTENCY OF THIS SLURRY SHALL BE SUCH THAT IT CAN BE APPLIED WITH A STIFF BRUSH OR BROOM TO THE EXISTING SURFACE IN A THIN, UNIFORM COATING. THE COATING OF GROUT SHALL BE SCRUBBED ONTO THE DRY SURFACE IMMEDIATELY BEFORE PLACING THE CONCRETE. CARE SHALL BE EXERCISED TO INSURE THAT NO EXCESS GROUT IS PERMITTED TO COLLECT IN LOW SPOTS. IN NO CASE SHALL THE GROUT BE PERMITTED TO DRY BEFORE PLACING THE NEW CONCRETE. GROUT SHALL BE PAINTED OVER ALL JOINTS BETWEEN THE NEW AND EXISTING CONCRETE IMMEDIATELY AFTER THE FINISHING HAS BEEN COMPLETED. THE GROUT SHALL BE MIXED AND PLACED WITHIN THE SAME TIME REQUIREMENTS AS FOR THE MSMC PATCHES.

PROPORTIONING AND ALL OTHER REQUIRED CHARACTERISTICS OF THE MIX, I.E. AIR ENTRAINMENT AND SLUMP, SHALL BE ADJUSTED OFF THE DECK BEFORE PLACEMENT OF THE PATCHES BEGINS. THE MSMC MIXTURE SHALL CONSIST OF A WORKABLE MIXTURE OF UNIFORM COMPOSITION AND CONSISTENCY WITH THE FOLLOWING PROPORTIONS:

TYPE OF COARSE AGGREGATE	AGGREGATE (LBS.)	COARSE AGGREGATE (LBS.)	FINE CEMENT (LBS.)	SILICA (LBS.)	MAXIMUM WATER- CEMENT RATIO
GRAVEL	1520	1170	700	105	0.36
LIMESTONE	1540	1170	700	105	0.36
SLAG	1335	1170	700	105	0.36

\* THE SPECIFIC GRAVITIES USED FOR DETERMINING THE ABOVE WEIGHTS ARE: NATURAL SAND 2.62, GRAVEL 2.62, LIMESTONE 2.65, SLAG 2.30 AND MICRO-SILICA 2.20.

NOTE: THE CONTRACTOR SHALL OBTAIN A WRITTEN STATEMENT FROM THE MANUFACTURER OF THE MICRO-SILICA ADMIXTURE THAT HE IS SATISFIED WITH THE COMPATIBILITY OF THE COMBINATION OF MATERIALS AND THE SEQUENCE IN WHICH THEY ARE COMBINED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO SUPPLY A CONCRETE WHICH MEETS THESE SPECIFICATIONS AND PROVIDES THE NECESSARY WORKABILITY, FINISHABILITY AND PUMPABILITY IF NEEDED. THE INCORPORATION OF INDIVIDUALLY APPROVED MATERIALS INTO THE CONCRETE WILL NOT NECESSARILY RESULT IN AN ACCEPTABLE MIX. THE USE OF DIFFERENT CHEMICAL ADMIXTURES OR AGGREGATES IS A DISTINCT POSSIBILITY, ALL COSTS OF WHICH SHALL BE INCLUDED UNDER THIS ITEM OF WORK.

DELETERIOUS MATERIAL SHALL NOT EXCEED ONE-HALF THE REQUIREMENT FOR SUPERSTRUCTURE AGGREGATE AND SODIUM SULFATE SOUNDNESS LOSS SHALL NOT EXCEED THAT SPECIFIED FOR SUPERSTRUCTURE CONCRETE IN 703.02.

THE BATCH WEIGHTS PREVIOUSLY DESCRIBED SHALL BE CORRECTED TO COMPENSATE FOR THE MOISTURE CONTAINED IN THE AGGREGATE AT THE TIME OF USE. A CHEMICAL ADMIXTURE (705.12, TYPE A OR D) SHALL BE USED. THE TRANSIT MIXER CHARGE SHALL BE LIMITED TO 3/4 OF ITS RATED CAPACITY OR 6 CUBIC YARDS, WHICHEVER IS THE SMALLER, UNLESS A LARGER SIZE IS APPROVED BY THE ENGINEER. ANY ADMIXTURE ADDED AFTER THE INITIAL MIXING SHALL BE MIXED A MINIMUM OF 5 MINUTES AT MIXING SPEED. AFTER ALL COMPONENTS HAVE BEEN ADDED, THE SLUMP RANGE SHALL BE 6 + 2 INCHES. THE AIR CONTENT SHALL BE 8 + 2 PERCENT AT THE POINT OF DISCHARGE. IF SLUMP LOSS OCCURS AFTER MIXING, THE MIX MAY BE "RETEMPERED" WITH THE ADMIXTURE. IF THE CONSISTENCY OF THE CHARGE AFTER "RETEMPERING" IS SUCH AS TO CAUSE SEGREGATION OF THE COMPONENTS, THIS WILL BE CAUSE FOR REJECTION OF THE LOAD. THE MSMC SHALL STILL BE PLACED WITHIN THE 90 MINUTE LIMITATION.

CONCRETE SHALL BE MIXED IN A CENTRAL MIXING PLANT OR READY-MIXED CONCRETE TRUCK CAPABLE OF DISCHARGING CONCRETE HAVING A MINIMUM WATER-CEMENT RATIO OF 0.36.

CENTRAL MIXING PLANTS AND READY-MIXED CONCRETE TRUCKS SHALL MEET THE REQUIREMENTS OF 499.04 (B). ADMIXTURES SHALL BE INTRODUCED INTO THE CONCRETE IN SUCH A MANNER THAT WILL DISPERSE IT THROUGHOUT THE ENTIRE LOAD. BATCH PLANTS SHALL MEET THE REQUIREMENTS OF 499.04 (A) AND SHALL BE LOCATED SUCH THAT THE MAXIMUM TIME REQUIRED FROM START OF MIXING TO COMPLETION OF DISCHARGE OF THE CONCRETE AT THE SITE OF WORK SHALL NOT EXCEED 90 MINUTES.

THE OVERLAY PATCHES SHALL BE WATER CURED AS PER CMS 511.14 METHOD (A), USING CONTINUOUS SPRINKLING AND NO PLASTIC SHEETING, FOR A MINIMUM OF 24 HOURS FOLLOWED BY A MEMBRANE CURE PER CMS 511.14

METHOD (B).

AN EVAPORATION RETARDANT AND FINISHING AID MAY BE USED AT THE CONTRACTOR'S OPTION PRIOR TO THE TEXTURING OPERATION. ANY PRODUCT USED FOR SUCH PURPOSE SHALL BE SPECIFICALLY MARKETED FOR SAID USE. (PLAIN WATER IS NOT ACCEPTABLE) THE APPLICATION RATE SHALL NOT EXCEED THE HOURLY SURFACE EVAPORATION RATE AS DETERMINED BY FIGURE 1 ON SHEET 245.

IMMEDIATELY AFTER THE TEXTURING OPERATION THE CONTRACTOR SHALL SPRAY AN EVAPORATION RETARDANT OVER THE TEXTURED AREA. THE APPLICATION RATE SHALL BE AS PER THE MANUFACTURER'S RECOMMENDATIONS. THE WET BURLAP CURE SHALL FOLLOW THIS OPERATION AS CLOSELY AS POSSIBLE.

THE CONTRACTOR WILL SUPPLY A PROPERLY CALIBRATED IMPACT REBOUND HAMMER TO VERIFY THAT THE PATCHES HAVE REACHED 2000 P.S.I. COMPRESSIVE STRENGTH PRIOR TO OPENING TO TRAFFIC.

THE MSMC PATCHING MATERIAL SHALL BE PLACED ONLY WHEN THE LOCAL AMBIENT TEMPERATURE IS ABOVE 45 DEGREES FAHRENHEIT AND IS FORECAST TO REMAIN ABOVE 45 DEGREES FAHRENHEIT FOR THE CURING PERIOD. THE MSMC SHALL NOT BE PLACE WHEN RAIN IS FORECAST WITHIN THE INTENDED WORKING PERIOD. MSMC SHALL BE PLACED ONLY IF THE PATCH SURFACE EVAPORATION RATE, AS AFFECTED BY THE AMBIENT AIR TEMPERATURE, CONCRETE TEMPERATURE, DECK TEMPERATURE, RELATIVE HUMIDITY AND WIND VELOCITY, IS 0.1 POUND PER SQUARE FOOT PER HOUR OR LESS. THE CONTRACTOR SHALL DETERMINE AND DOCUMENT THE ATMOSPHERIC CONDITIONS SUBJECT TO VERIFICATION BY THE ENGINEER. NO MSMC SHALL BE PLACED IF THE AMBIENT AIR TEMPERATURE IS 85 DEGREES FAHRENHEIT OR HIGHER OR PREDICTED TO GO ABOVE 85 DEGREES FAHRENHEIT DURING THE PATCHING PROCEDURE REGARDLESS OF THE SURFACE EVAPORATION RATE.

NO TRAFFIC SHALL BE PERMITTED ON THE PATCHES UNTIL THE 24 HOUR WATER CURE IS COMPLETED AND THE 2000 PSI STRENGTH IS OBTAINED. THE TEMPERATURE AT THE PATCH SURFACE SHALL BE MAINTAINED ABOVE 35 DEGREES FAHRENHEIT UNTIL THE CURING PERIOD IS COMPLETED.

FIGURE 1 ON SHEET 245 SHALL BE USED TO DETERMINE GRAPHICALLY THE LOSS OF SURFACE MOISTURE FOR THE PATCHES. IN NO CASE SHALL THE TEMPERATURE OF THE MSMC EXCEED 90 DEGREES FAHRENHEIT DURING PLACEMENT. IF RAIN OCCURS DURING PLACING OF THE MATERIAL, ALL OPERATIONS SHALL CEASE. NO MSMC PATCHES SHALL BE PLACED AFTER OCTOBER 31ST EXCEPT BY SPECIFIC PERMISSION OF THE DIRECTOR.

DURING DELAYS IN THE PATCH PLACEMENT OPERATIONS OF MORE THAN 10 MINUTES, THE WORK FACE OF THE PLACED PATCH MATERIAL AND ANY BONDING GROUTED AREAS SHALL BE TEMPORARILY COVERED WITH WET BURLAP. IF AN EXCESSIVE DELAY IS ANTICIPATED, A BULKHEAD SHALL BE INSTALLED AT THE WORK FACE AND THE OVERLAY PLACEMENT OPERATION TERMINATED.

UNLESS OTHERWISE AUTHORIZED BY THE ENGINEER, PATCH SHALL NOT BE PLACED ADJACENT TO A PREVIOUS PATCH WHICH HAS CURED FOR LESS THAN 24 HOURS.

ADEQUATE PRECAUTIONS SHALL BE TAKEN TO PROTECT THE FRESHLY PLACED MSMC FROM RAIN.

QUICK SET CONCRETE (QSC)

MATERIAL SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

WATER -499.02

THE AGGREGATE SHALL MEET THE FOLLOWING REQUIREMENTS:

1. AGGREGATE SHALL MEET THE GRADING REQUIREMENTS OF TABLE 703-1 OF THE CMS FOR NO. 8, 89, 9 OR A COMBINATION THEREOF.
2. MAXIMUM PASSING OF NO. 200 - NOT TO EXCEED 0.2%.
3. ABSORPTION - NOT MORE THAN 2%.
4. SOUNDNESS LOSS - NOT MORE THAN 2%.

QUICK SETTING CONCRETE PATCHING MATERIALS WITH HIGH STRENGTH AND HIGH BONDING QUALITIES SHALL BE USED FOR PERMANENT REPAIRS TO CONCRETE.

THE DELIVERED MATERIAL SHALL BE A COMPLETE DRY MIX REQUIRING MIXING WITH WATER OR ACTIVATOR TO FORM THE PATCHING MATERIAL PRIOR TO PLACEMENT. 50 POUNDS OF THE DRY MIX SHALL YIELD A MINIMUM OF 0.4 CUBIC FEET OF THE PATCHING MATERIAL WHEN MIXED IN THE AMOUNT DESIGNATED ON THE SHIPPING CONTAINER. THE COLOR OF THE MIXED PATCHING MATERIAL SHALL BE CEMENT GRAY. THE DRY MIX SHALL BE CAPABLE OF BEING MIXED AND THE PATCHING MATERIAL USED WITHOUT SACRIFICE IN QUALITY OF THE FINISHED PRODUCT, WITHIN A TEMPERATURE RANGE FROM 32 TO 90 DEGREES FAHRENHEIT. THE NEAT MIXED PATCHING MATERIAL SHALL BE CAPABLE OF USE TO A MINIMUM DEPTH OF 1/2 INCH AND SHALL BE CAPABLE OF EXTENSION BY ADDING UP TO 50 PERCENT BY WEIGHT OF 1/4 TO 1/2 INCH AGGREGATE.

THE MIXED PATCHING MATERIAL SHALL NOT CONTAIN SOLUBLE CHLORIDES AND/OR SOLUBLE SULFATES IN SUFFICIENT QUANTITIES TO CAUSE CORROSION OF REINFORCING STEEL OR DAMAGE TO PORTLAND CEMENT CONCRETE. THE DRY MIX SHALL NOT CONTAIN OR REACT CHEMICALLY TO FORM ANY SUBSTANCES WHICH ARE HAZARDOUS OR OFFENSIVE TO WORKMEN, WHEN THE MATERIAL IS HANDLED AND/OR USED IN ACCORDANCE WITH ACCEPTED PROCEDURES.

STATE OF OHIO  
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## STRUCTURE NOTES

DESIGNED LDH DATE	TRACED RWT DATE	CHECKED ENF DATE	REVIEWED BGW DATE	REVISED DATE
				SHEET /

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GENERAL NOTES

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# GENERAL NOTES

THE MIXED PATCHING MATERIAL SHALL MEET THE FOLLOWING REQUIREMENTS:

- SETTING TIME (ASTM C 266) \*\*  
INITIAL SETTING TIME SHALL BE 10 MINUTES MINIMUM
  
- COMPRESSIVE STRENGTH (ASTM C 109) \*\*
  - 1 HOUR 2,000 PSI MINIMUM
  - 24 HOURS 5,000 PSI MINIMUM
  - 7 DAYS 7,000 PSI MINIMUM
  
- COMPRESSIVE STRENGTH (ASTM C 39) \*
  - 1 HOUR 2,000 PSI MINIMUM
  - 24 HOURS 3,500 PSI MINIMUM
  - 7 DAYS 6,000 PSI MINIMUM
  
- FLEXURAL STRENGTH (ASTM C 78) \*
  - 4 HOURS 200 PSI MINIMUM
  - 3 DAYS 500 PSI MINIMUM
  
- FREEZE AND THAW TEST (ASTM C 666, PROCEDURE A) \*\*  
300 CYCLES DURABILITY FACTOR 79% MINIMUM

- \* THE TEST SPECIMENS SHALL BE EXTENDED 50 PERCENT BY DRY MORTAR WEIGHT WITH AGGREGATE.
  
- \*\* THE MORTAR SHALL BE TESTED AS RECEIVED WITH NOTHING ADDED EXCEPT THE AMOUNT OF WATER DESIGNATED ON THE SHIPPING CONTAINER.

THE MIXED PATCHING MATERIAL SHALL BE SUITABLE FOR FINISHING WITH HAND TOOLS. IT SHALL NOT REQUIRE SPECIAL CURING PROCEDURES.

THE NET WEIGHT OF EACH DELIVERED CONTAINER OF DRY MIX SHALL BE 50 POUNDS OR LESS. THE DRY MIX SHALL BE PACKAGED IN STRONG MOISTURE RESISTANT BAGS OR OTHER SUITABLE CONTAINERS CAPABLE OF WITHSTANDING NORMAL SHIPPING AND HANDLING WITHOUT DAMAGE. THE CONTAINER SHALL BE CAPABLE OF PROTECTING THE DRY MIX FOR A PERIOD OF NOT LESS THAN 6 MONTHS WHEN STORED IN A DRY CONDITION. COMPLETE MIXING INSTRUCTIONS SHALL BE PRINTED ON EACH CONTAINER.

THE MANUFACTURER SHALL CERTIFY THAT THE DRY MIX FURNISHED AND DELIVERED COMPLIES WITH THIS SPECIFICATION AND SHALL FURNISH SUPPORTING TEST RESULTS FROM A RECOGNIZED LABORATORY.

QSC PATCHES SHALL BE CURED FOR A MINIMUM OF 2 HOURS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. 2000 PSI COMPRESSIVE STRENGTH SHALL BE VERIFIED WITH A PROPERLY CALIBRATED IMPACT REBOUND HAMMER PRIOR TO OPENING TO TRAFFIC.

E. PLACING. QSC PATCHES SHALL BE PROPORTIONED, MIXED, BONDED AND PLACED PER THE MANUFACTURER'S RECOMMENDATIONS WHEN THE AMBIENT TEMPERATURE IS ABOVE 40 DEGREES FAHRENHEIT. COARSE AGGREGATE, WHICH HAS BEEN CLEANED, DRIED AND BAGGED, SHALL BE ADDED AT A RATE OF 30 POUNDS OF AGGREGATE PER 50 LBS. OF DRY QSC MORTAR.

IF PLACEMENT OF THE PATCHES IS TO BE MADE AT NIGHT, THE CONTRACTOR SHALL SUBMIT A PLAN WHICH PROVIDES ADEQUATE LIGHTING FOR WORK AREA. THE PLAN SHALL BE SUBMITTED AT LEAST 15 CALENDAR DAYS IN ADVANCE AND BE APPROVED BY THE ENGINEER BEFORE CONCRETE IS PLACED. THE LIGHTS SHALL BE DIRECTED SO THAT THEY DO NOT AFFECT OR DISTRACT APPROACHING TRAFFIC.

THE PATCHING MATERIAL SHALL BE PLACED, CONSOLIDATED AND FINISHED TO THE ADJACENT GRADE. PATCHES EXCEEDING 50 S.F. SHALL BE LEVELED AND CONSOLIDATED WITH A MECHANICAL VIBRATING SCREED. SMALLER PATCHES SHALL BE HAND VIBRATED AND LEVELED WITH A STRAIGHTEDGE. THE SCREED SHALL BE PLACED PARALLEL TO THE BRIDGE CENTERLINE SO THAT THE DECK PROFILE REMAINS CONSISTENT WITH THE WORN SURFACE.

THE CONTRACTOR SHALL TEST THE SURFACE OF THE PLASTIC CONCRETE FOR TRUENESS AND FOR BEING FLUSH WITH THE EDGES OF THE ADJACENT SURFACES BY USE OF A STRAIGHTEDGE. THE STRAIGHTEDGING SHALL BE DONE BY PLACING THE STRAIGHTEDGE PARALLEL TO THE BRIDGE CENTERLINE WITH THE ENDS RESTING ON THE EXISTING WEARING SURFACE ADJACENT TO THE PATCH AND DRAWING THE STRAIGHTEDGE ACROSS THE PATCH. THE STRAIGHTEDGE SHOULD BE IN CONTACT WITH THE ADJACENT EXISTING SURFACE 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.

F. FINISHING. AFTER THE PATCHES HAVE BEEN CONSOLIDATED AND FINISHED THEY SHALL BE TEXTURED IN ACCORDANCE WITH SECTION 451.09 OF THE CMS.

G. INSPECTION AND SOUNDING OF CONCRETE PATCHES. AFTER CURING AND BEFORE FINAL ACCEPTANCE, ALL PATCHED AREAS SHALL BE SOUNDED. ALL DELAMINATED AREAS SHALL BE REMOVED AND REPATCHED ACCORDING TO THIS NOTE.

ALL SOUNDING AND REPLACEMENT OF REJECTED AREAS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND INCLUDED IN THE UNIT BID PRICE FOR THIS ITEM.

H. METHOD OF MEASUREMENT. THE QUANTITY SHALL BE THE ACTUAL AREA IN SQUARE YARDS OF THE EXPOSED SURFACE OF ALL PATCHES, IRRESPECTIVE OF THE DEPTH OF THE PATCH, COMPLETE, IN PLACE AND ACCEPTED.

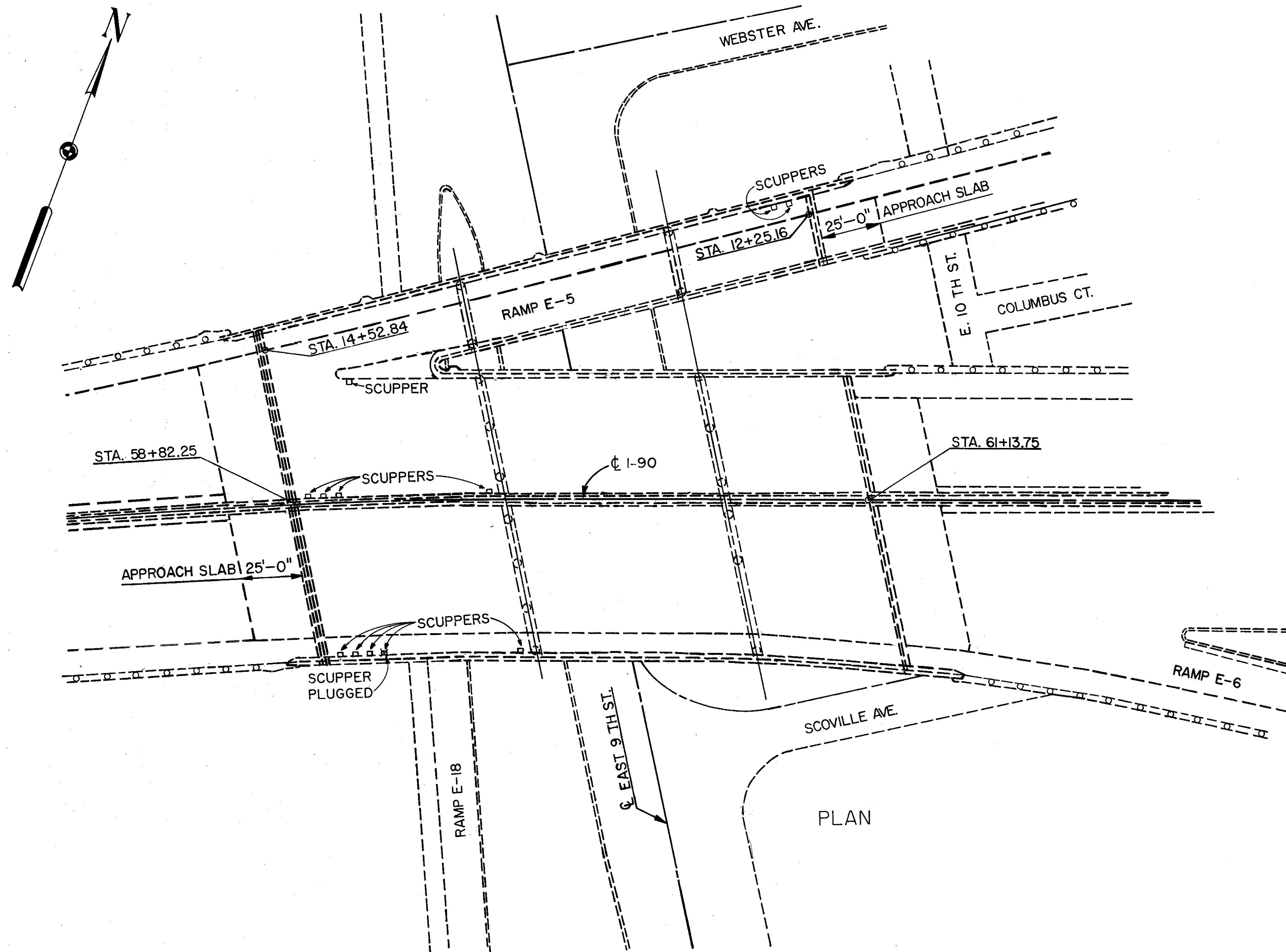
I. BASIS OF PAYMENT. PAYMENT SHALL BE MADE AT THE CONTRACT PRICE BID FOR:

ITEM	UNIT	DESCRIPTION
SPECIAL	SQ. YD.	PATCHING CONCRETE BRIDGE DECK OVERLAYS

STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 12 LOCATION & DESIGN				
<h2 style="margin: 0;">STRUCTURE NOTES</h2>				
DESIGNED LDH DATE	TRACED RMT DATE	CHECKED EMF DATE	REVIEWED BOW DATE	REVISED DATE SHEET /

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**EXISTING STRUCTURE**

TYPE: CONTINUOUS ROLLED BEAM WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE  
 SPANS: 87'-9", 88'-9" AND 55'-0" ALONG  $\bar{C}$  INNER BELT  
 ROADWAY: 114'-0" (NORMAL) F/F PARAPETS  
 LOADING: CF 2000-ADEQUATE FOR A.A.S.H.O. ALTERNATE LOADING  
 SURFACE COURSE: 1" MONOLITHIC CONCRETE  
 ALIGNMENT: 2° 00' RT. TANGENT  
 APPROACH SLABS: AS-1-54 (25' LONG)  
 SUPERELEVATION: VARIES  
 SKEW: VARIES

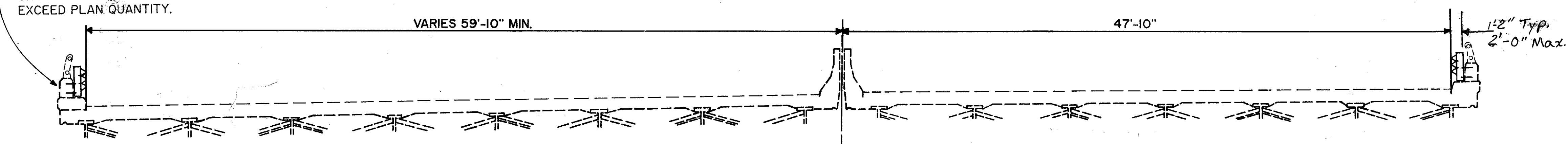
LOCATION	SPECIAL	519	
	SOUNDING CONCRETE BRIDGE COMPONENTS	PATCHING CONCRETE STRUCTURES A.P.P. *	
	SQ. FT	SQ. FT	
ABUT. + WINGWALL	2349	68	
PARAPET	9792	25	
PIERS & CAPS	6246	44	
BARRIER	1584	15	
TOTALS	19971	152	

**PROPOSED WORK**

1. PATCH DECK, HMWM TREATMENT, AND GROOVE
2. PATCHING AND SEALING OF CONCRETE SURFACES
3. INSTALLATION OF GUARDRAIL ON PARAPET
4. SCUPPER MODIFICATION

\* AN ADDITIONAL PERCENTAGE WAS ADDED TO THE 519 PATCHING QUANTITY TO COMPENSATE FOR ANY DETERIORATION THAT MAY HAVE OCCURRED BETWEEN THE TIME OF BRIDGE SOUNDING AND CONSTRUCTION.

PATCH ONLY AS ABSOLUTELY NECESSARY ON PARAPET. DO NOT EXCEED PLAN QUANTITY.



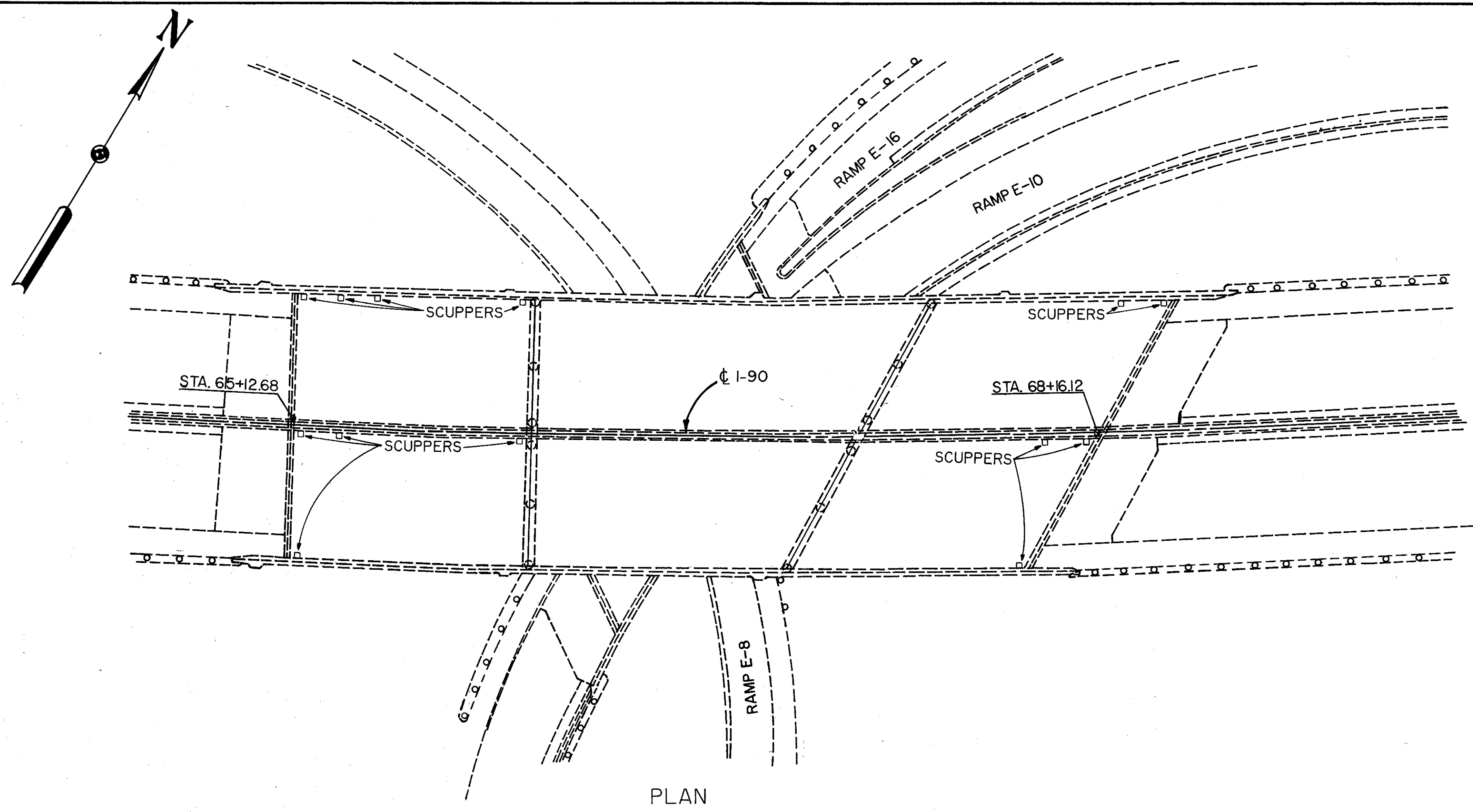
TRANSVERSE SECTION

REVISED 1-5-93

**PLAN AND TRANSVERSE SECTION**

BR. NO. CUY-90-1628EN/1628L/1628R  
 IR 90 OVER RAMP E-18 AND E. 9 TH ST.

CUYAHOGA COUNTY	OHIO		
TRACED ZMZ	CHECKED LAM	REVIEWED DWL	



**EXISTING STRUCTURE**

TYPE: CONTINUOUS WELDED STEEL GIRDER WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE

SPANS: 90'-0", 123'-8 1/4", AND 89'-9" ALONG  $\phi$  INNER BELT

ROADWAY: 102'-0" F/F PARAPETS

LOADING: OF 2000 - ADEQUATE FOR A.A.S.H.O. ALTERNATE LOADING

SURFACE COURSE: 1" MONOLITHIC CONCRETE

ALIGNMENT: 1° 30' CURVE LEFT

APPROACH SLABS: AS-1-54 (25' LONG)

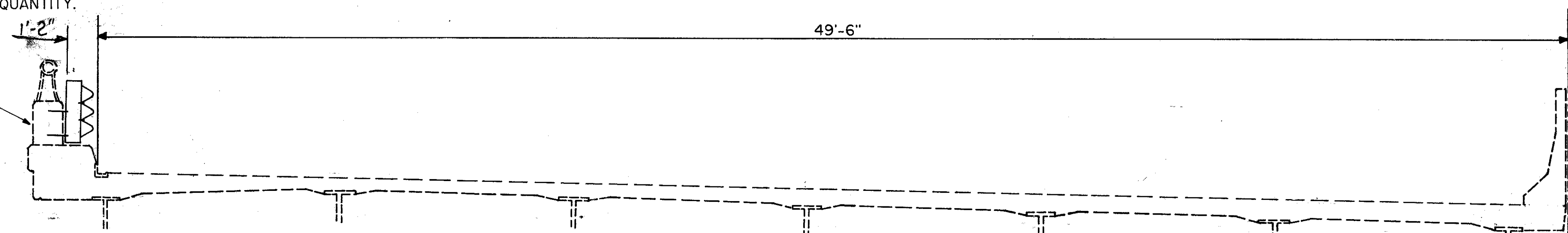
SUPERELEVATION: .03 FT. PER FT.

SKEW: VARIES

LOCATION	SPECIAL	519	
	SOUNDING CONCRETE BRIDGE COMPONENTS	PATCHING CONCRETE STRUCTURES A.P.P. *	
	SQ. FT.	SQ. FT.	
ABUT. & WINGWALL	2934	200	
PARAPET	7623	25	
PIERS & CAPS	6525	44	
BARRIER	2079	20	
TOTALS	19161	289	

- PROPOSED WORK**
1. PATCH DECK, HMWM TREATMENT, AND GROOVE
  2. PATCHING AND SEALING OF CONCRETE SURFACES
  3. INSTALLATION OF GUARDRAIL ON PARAPET
  4. RESET BEARINGS
  5. STRUCTURAL STEEL REPAIR
  6. SCUPPER MODIFICATION
- \* AN ADDITIONAL PERCENTAGE WAS ADDED TO THE 519 PATCHING QUANTITY TO COMPENSATE FOR ANY DETERIORATION THAT MAY HAVE OCCURED BETWEEN THE TIME OF BRIDGE SOUNDING AND CONSTRUCTION.

PATCH ONLY AS ABSOLUTELY NECESSARY ON PARAPET. DO NOT EXCEED PLAN QUANTITY.



TRANSVERSE SECTION

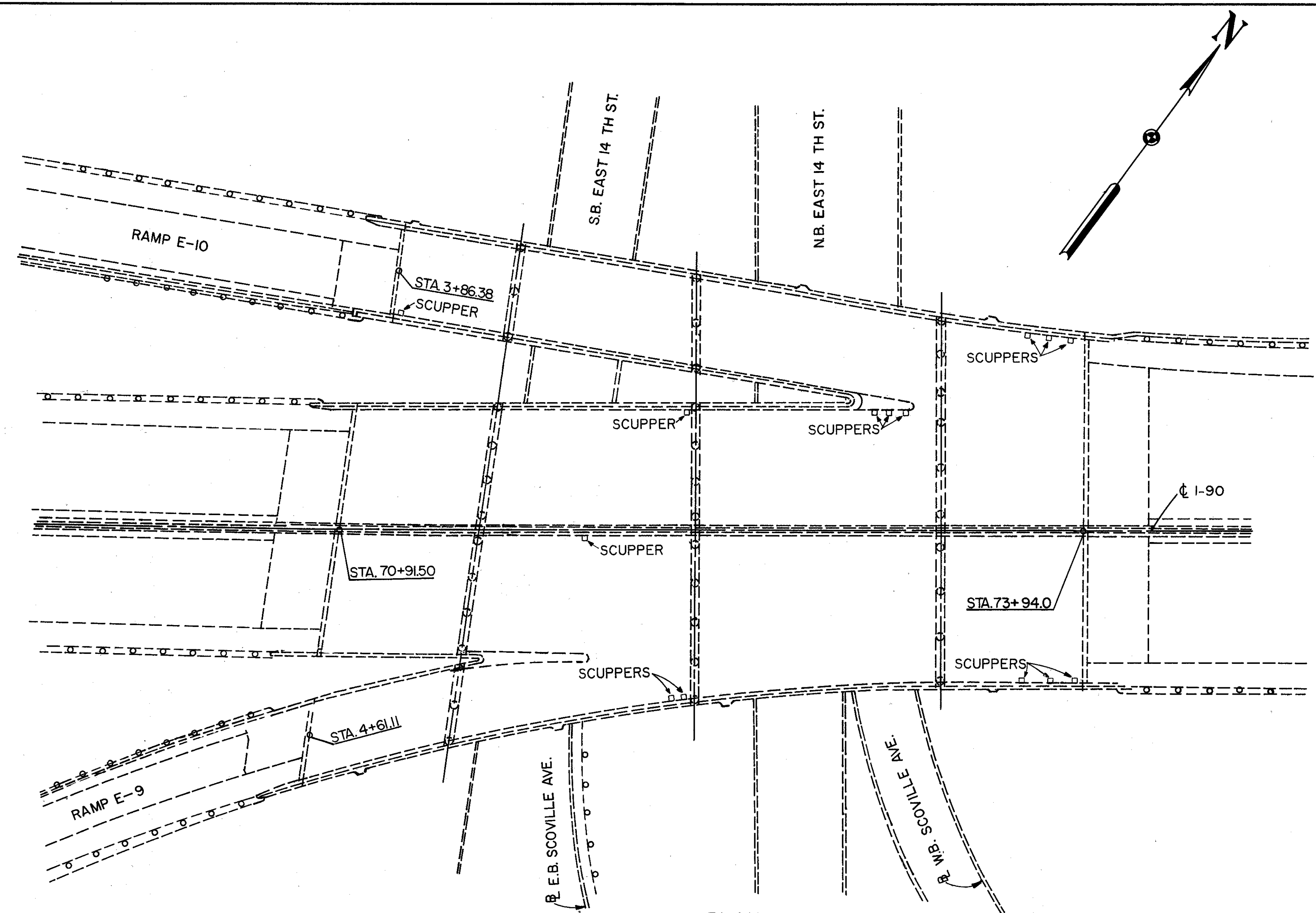
REVISED 1-5-93

**PLAN AND TRANSVERSE SECTION**

BR. NO. CUY-90-1640  
IR 90 OVER RAMPS E-8, E-10, AND E-16

CUYAHOGA COUNTY	OHIO
TRACED ZMZ	CHECKED LAM
REVIEWED DWL	





PLAN

**EXISTING STRUCTURE**

TYPE: CONTINUOUS WELDED STEEL GIRDER WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE  
 SPANS: 55'-0", 88'-6", 99'-0", AND 60'-0" ALONG  $\bar{C}$  INNER BELT  
 ROADWAY: VARIES  
 LOADING: CF 2000 - ADEQUATE FOR A.A.S.H.O. ALTERNATE LOADING  
 SURFACE COURSE: 1" MONOLITHIC CONCRETE  
 ALIGNMENT: 1° 30' LT. TANGENT  
 APPROACH SLABS: AS-1-54 (25' LONG)  
 SUPERELEVATION: VARIES  
 SKEW: VARIES

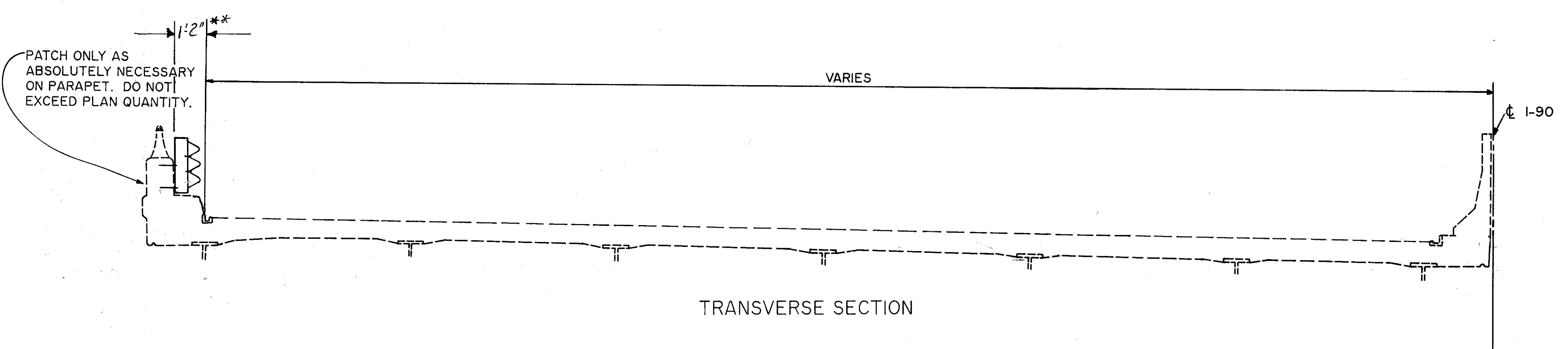
LOCATION	SPECIAL	519	
	SOUNDING CONCRETE BRIDGE COMPONENTS	PATCHING CONCRETE STRUCTURES *	
	SQ. FT.	SQ. FT.	
ABUT. & WINGWALL	3591	304	
PARAPET	13797	50	
PIERS & CAPS	12303	26	
BARRIER	2079	20	
RETAINING WALL	2934	30	
TOTALS	34707	430	

**PROPOSED WORK**

1. PATCH DECK, HMWM TREATMENT, AND GROOVE
2. PATCHING AND SEALING OF EXPOSED CONCRETE SURFACES
3. INSTALLATION OF GUARDRAIL ON PARAPET
4. DRAINAGE REPAIR AND RETROFIT
5. SCUPPER MODIFICATION

\* AN ADDITIONAL PERCENTAGE WAS ADDED TO THE 519 PATCHING QUANTITY TO COMPENSATE FOR ANY DETERIORATION THAT MAY HAVE OCCURED BETWEEN THE TIME OF BRIDGE SOUNDING AND CONSTRUCTION.

\*\* See sheet 237 for additional information.



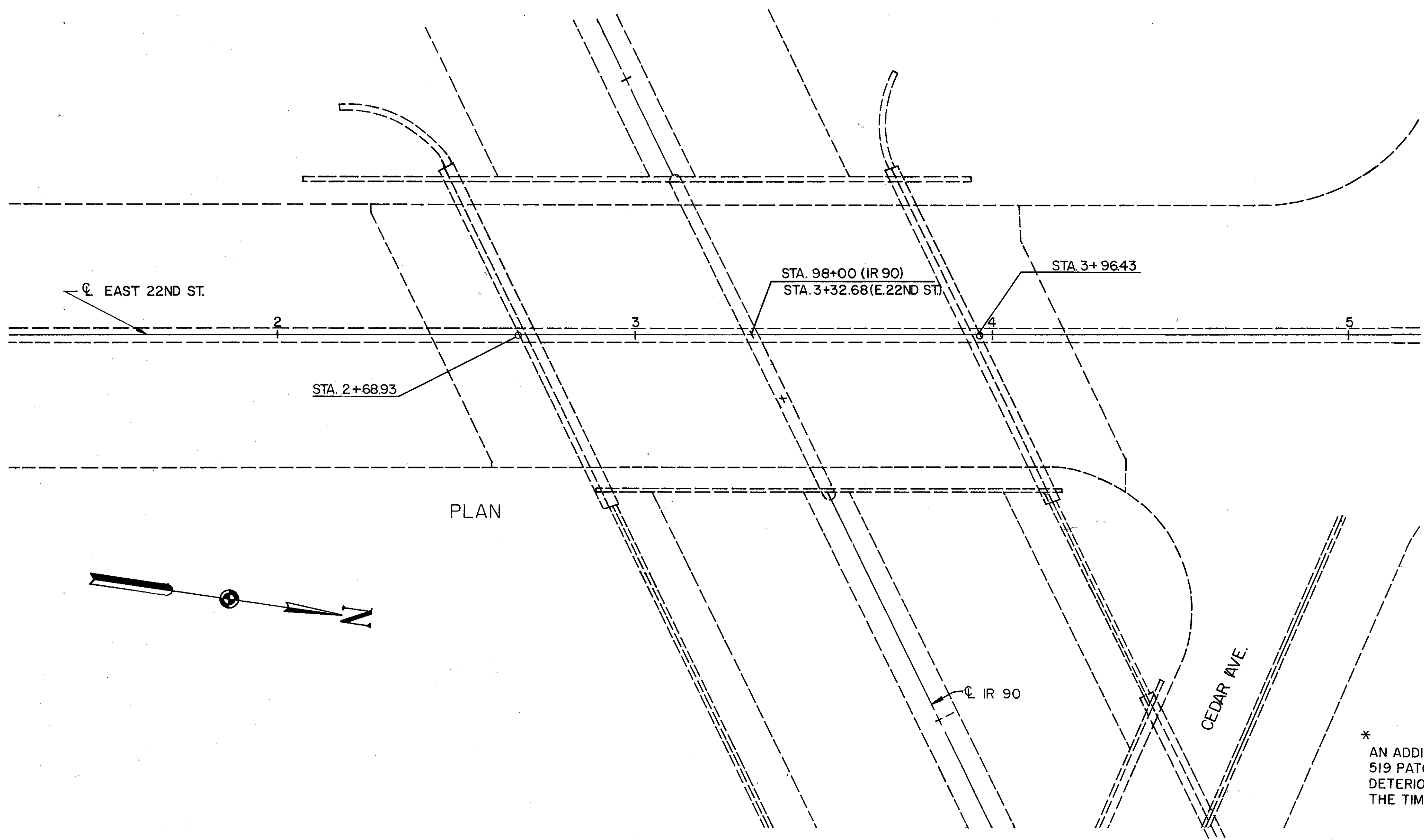
TRANSVERSE SECTION

REVISED 1-5-93

**PLAN AND TRANSVERSE SECTION**

BR. NO. CUY-90-1651EX/1651L/1651R  
 IR 90 OVER EAST 14 TH ST. AND SCOVILLE AVE.

CUYAHOGA COUNTY	OHIO
TRACED ZMZ	CHECKED LAM
REVIEWED DWL	



**EXISTING STRUCTURE**

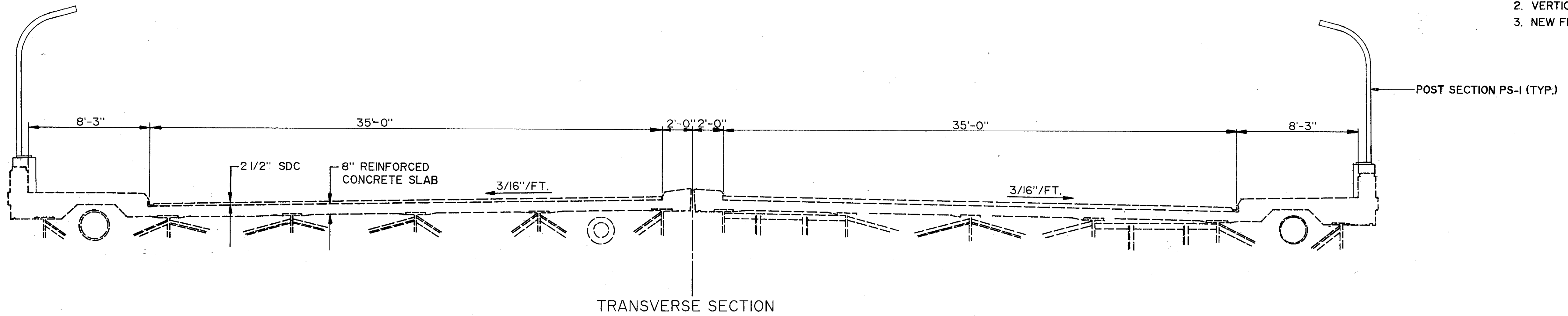
TYPE: CONTINUOUS STEEL BEAMS WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE  
 SPANS: 61.25' - 61.25' C/C BRIDGES  
 ROADWAY: 74'-0" F/F CURBS WITH TWO 8' S.W.  
 LOADING: CF = 2000 (51)  
 WEARING SURFACE: 2 1/2" SDC OVERLAY  
 ALIGNMENT: TANGENT  
 APPROACH SLABS: AS-1-54 (25' LONG)  
 SKEW: 25°-51' RF

LOCATION	SPECIAL	519	
	SOUNDING CONCRETE BRIDGE COMPONENTS	PATCHING CONCRETE STRUCTURES A.P.P. *	
	SQ. FT.	SQ. FT.	
RETAINING WALLS	.8154	816	
<b>TOTALS</b>	<b>8154</b>	<b>816</b>	

\* AN ADDITIONAL PERCENTAGE WAS ADDED TO THE 519 PATCHING QUANTITY TO COMPENSATE FOR ANY DETERIORATION THAT MAY HAVE OCCURED BETWEEN THE TIME OF BRIDGE SOUNDING AND CONSTRUCTION.

**PROPOSED WORK**

1. PATCHING AND SEALING OF RETAINING WALLS
2. VERTICAL EXTENSION OF SIDEWALK PARAPETS
3. NEW FENCE INSTALLATION

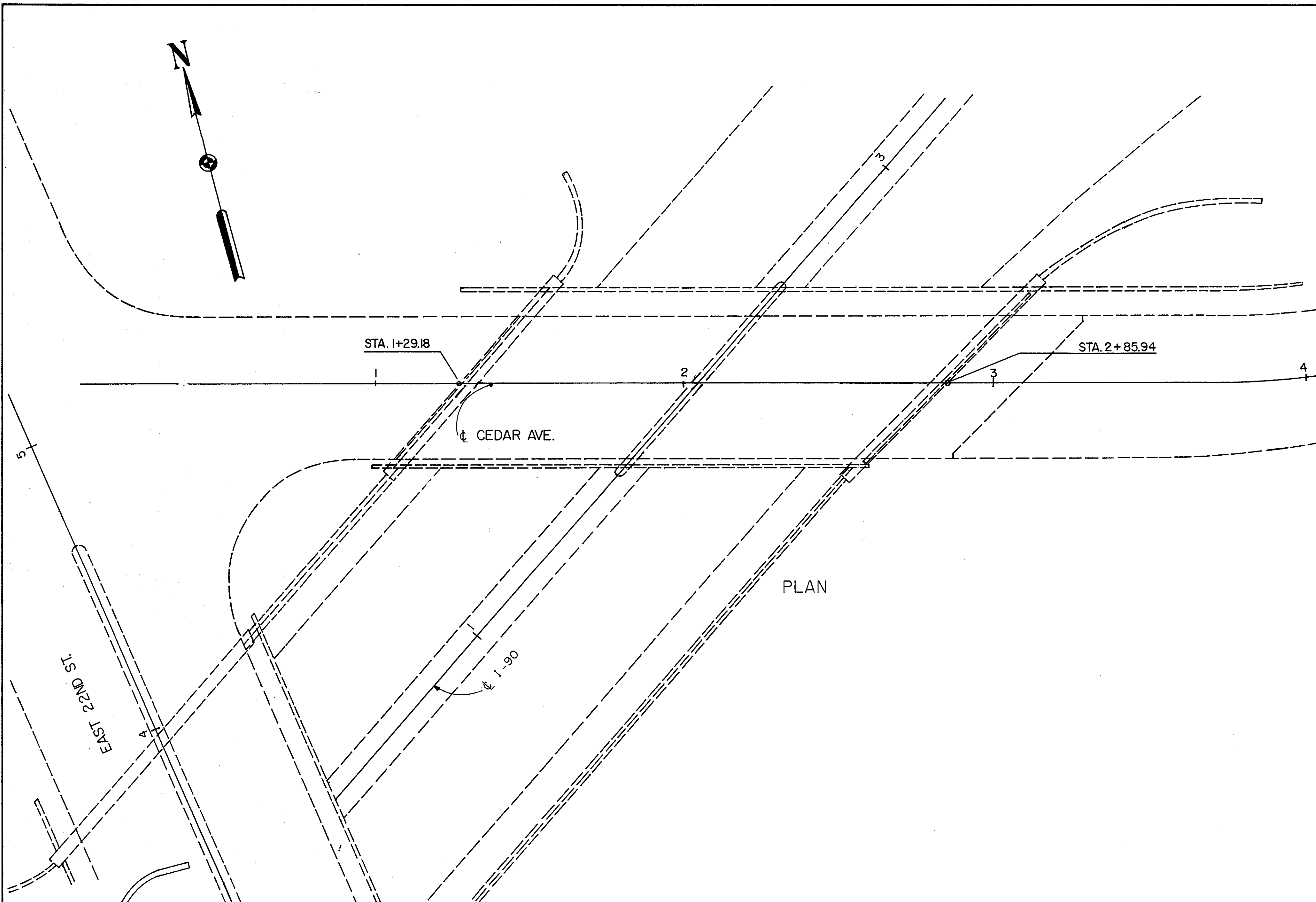


STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 12 LOCATION & DESIGN				
PLAN AND TRANSVERSE SECTION BR. NO. CUY-90-1676 EAST 22ND ST. OVER IR 90				
DESIGNED	TRACED ZMZ	CHECKED LAM	REVIEWED DWL	REVISED
				SHEET /



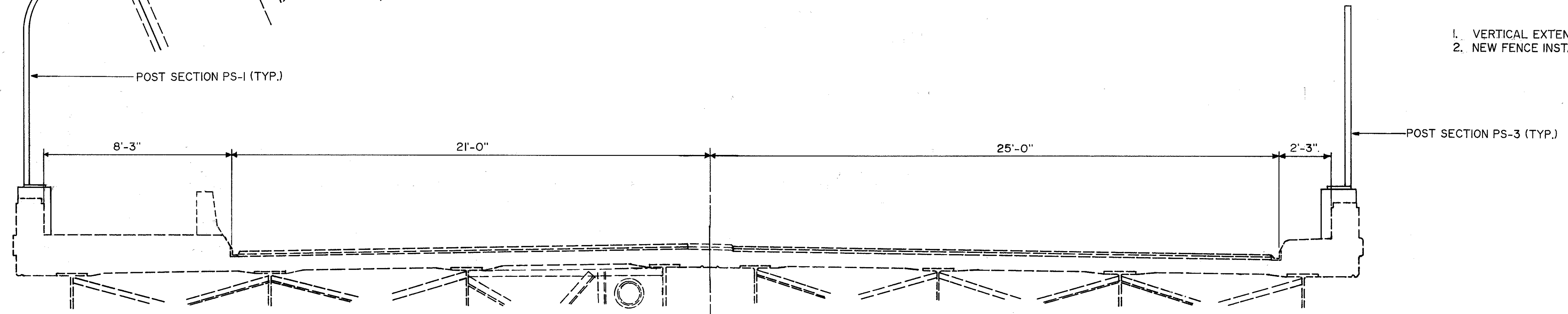
**EXISTING STRUCTURE**

TYPE: CONT. STEEL BEAMS WITH REINF. CONC. DECK AND REINFORCED CONC. SUBSTR.  
 SPANS: 73.37' AND VARIABLE (74.18' TO 80.57')  
 ROADWAY: 46' F/F CURBS WITH 8" S.W. ON NORTH & 2' SAFETY CURB ON SOUTH  
 LOAD FREQUENCY: CF=2000(5I)  
 SKEW: 40°-5' & 44°-30'  
 WEARING SURFACE: 2 1/2" SDC  
 APPROACH SLABS: AS-1-54(25' LONG)  
 ALIGNMENT: TANGENT

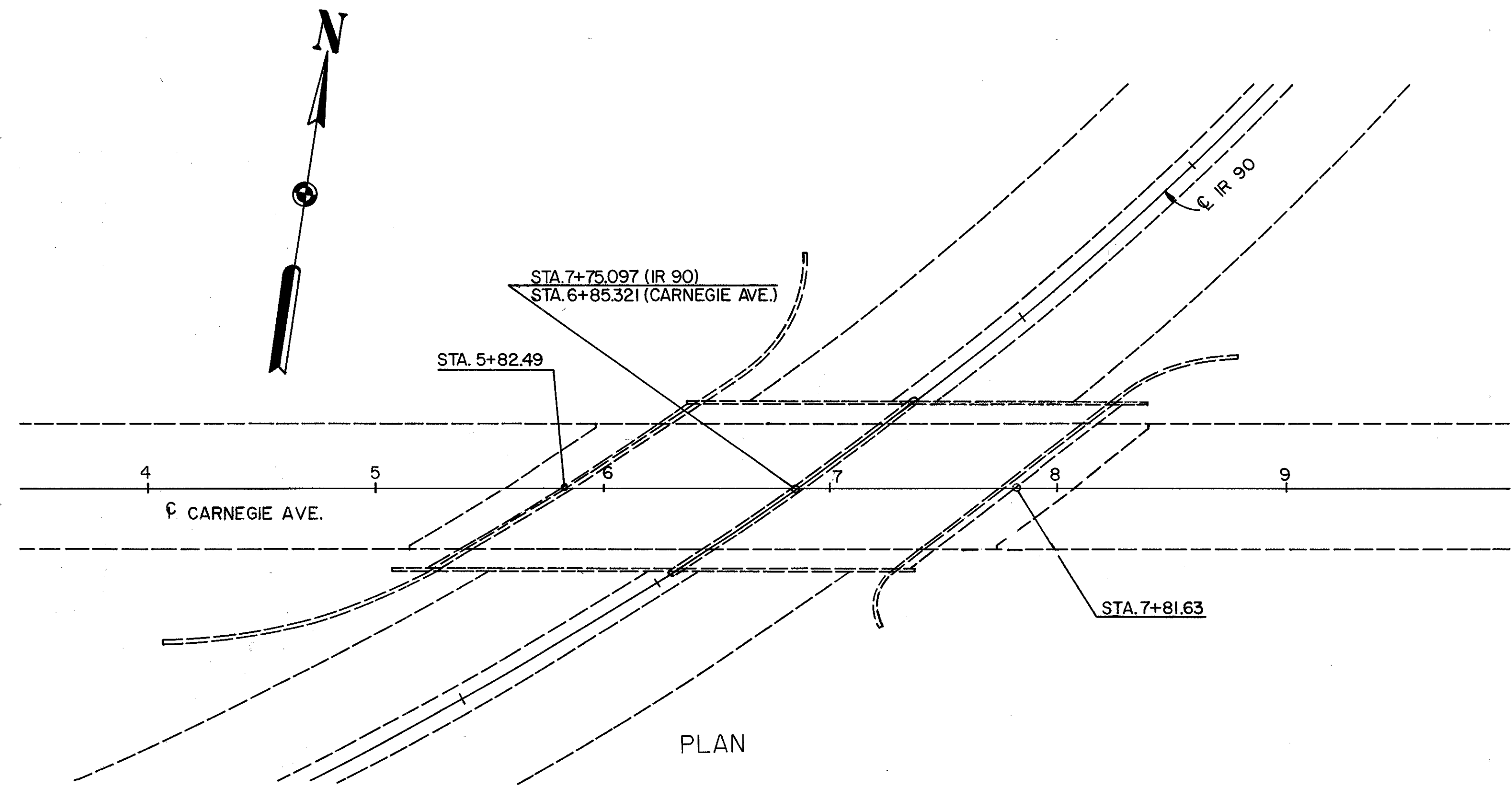


**PROPOSED WORK**

1. VERTICAL EXTENSION OF SIDEWALK PARAPETS
2. NEW FENCE INSTALLATION

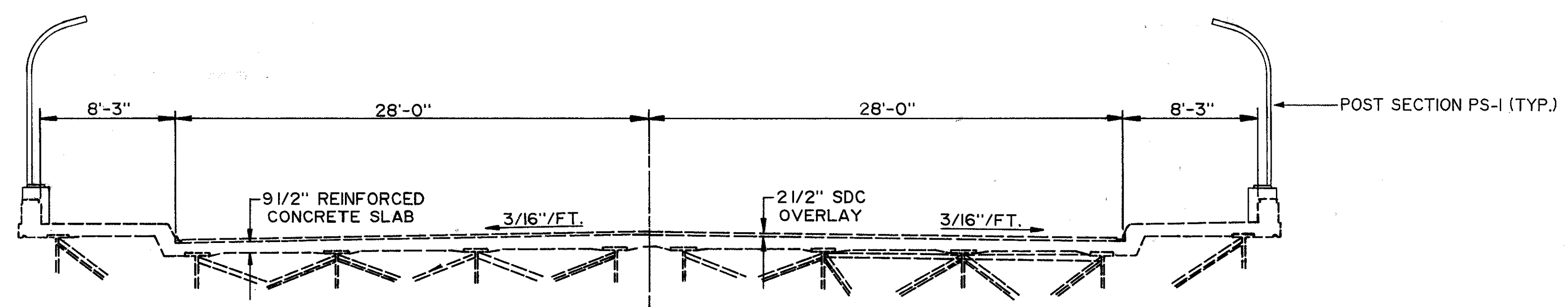


STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 12 LOCATION & DESIGN					
PLAN AND TRANSVERSE SECTION					
BR. NO. CUY-90-1681 CEDAR AVE. OVER IR 90					
CUYAHOGA COUNTY			OHIO		
DESIGNED DATE	TRACED DATE	CHECKED DATE	REVIEWED DATE	REVISED DATE	SHEET
	ZMZ	LAM	DWL		



EXISTING STRUCTURE	
TYPE: CONTINUOUS STEEL GIRDERS WITH CONCRETE DECK AND SUBSTRUCTURE	
SPANS: VARIES 98.04'-92.36' C/C BRIDGES ON ROADWAY	
ROADWAY: 56' F/F OF CURBS	
SIDEWALKS: 2' 8'-0"	
LOAD FREQUENCY: CF=2000(5)	
SKEW: VARIES	
WEARING SURFACE: 2 1/2" SUPERPLASTICIZED DENCE CONCRETE OVERLAY	
APPROACH SLABS: AS- 1-54(25' LONG)	
ALIGNMENT: TANGENT	

PLAN



TRANSVERSE SECTION

PROPOSED WORK

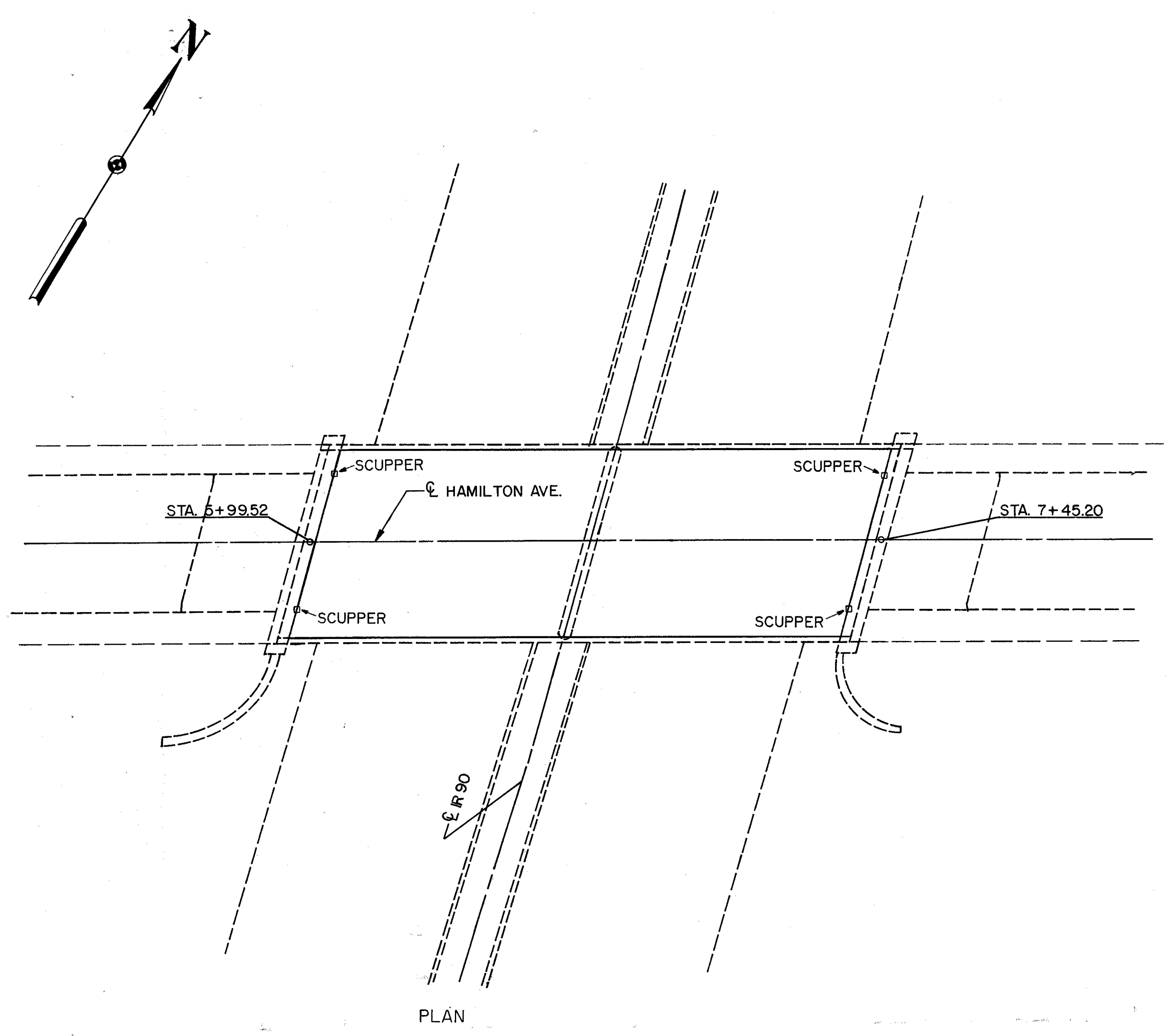
1. VERTICAL EXTENSION OF SIDEWALK PARAPETS
2. NEW FENCE INSTALLATION

STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 12 LOCATION & DESIGN				
PLAN AND TRANSVERSE SECTION BR. NO. CUY-90-1692 CARNEGIE AVE. OVER IR 90				
CUYAHOGA COUNTY		OHIO		
DESIGNED	TRACED	CHECKED	REVIEWED	REVISED
	ZMZ	LAM	DWL	
				SHEET /

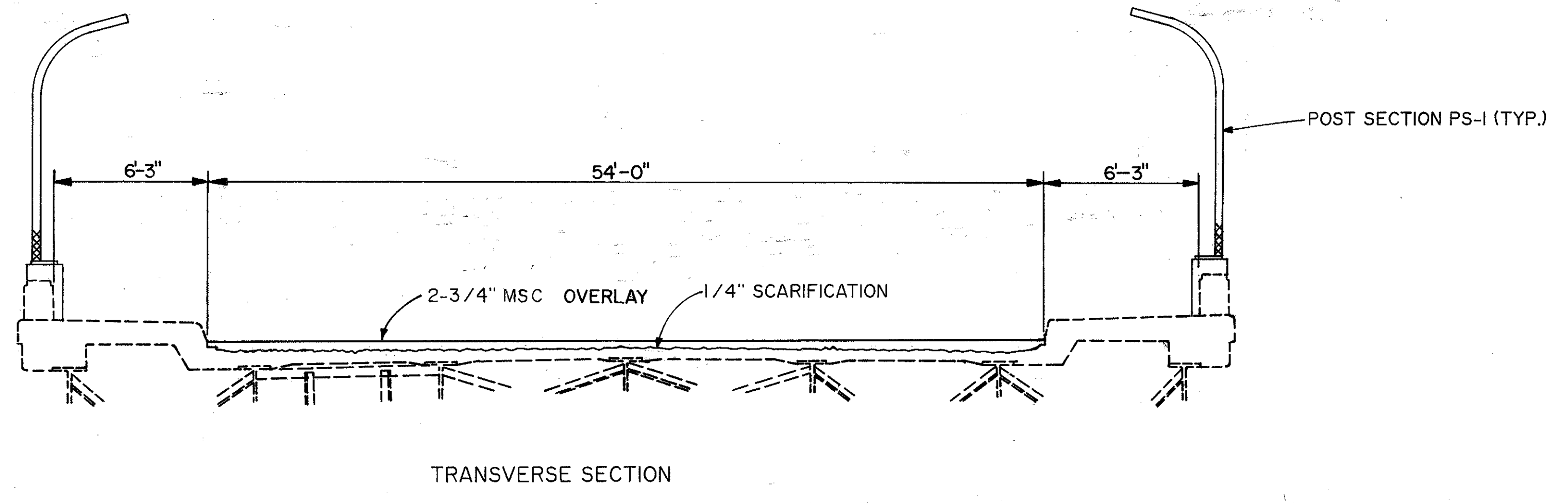


**EXISTING STRUCTURE**

TYPE: CONTINUOUS STEEL BEAMS WITH REINFORCED CONCRETE SUBSTRUCTURE  
 SPANS: 70.5'-70.5' CTR. TO CTR. OF BRIDGES  
 ROADWAY: 34'-0" F/F CURBS WITH TWO 6' SIDEWALKS  
 LOAD FREQUENCY: CF 2000  
 WEARING SURFACE: BITUMINOUS  
 APPROACH SLABS: AS-1-54 (25' LONG)  
 ALIGNMENT: TANGENT  
 SKEW: 15°-55' LEFT FORWARD



	SPECIAL	519		SPECIAL
LOCATION	SOUNDING CONCRETE BRIDGE COMPONENTS	PATCHING CONCRETE STRUCTURES A.P.P. *		EPOXY INJECTION
	SQ. FT.	SQ. FT.		LIN. FT.
ABUT. & WINGWALL	3519	30		352
PARAPET	4473	20		
PIERS & CAPS	1341	15		
TOTALS	9333	65		352

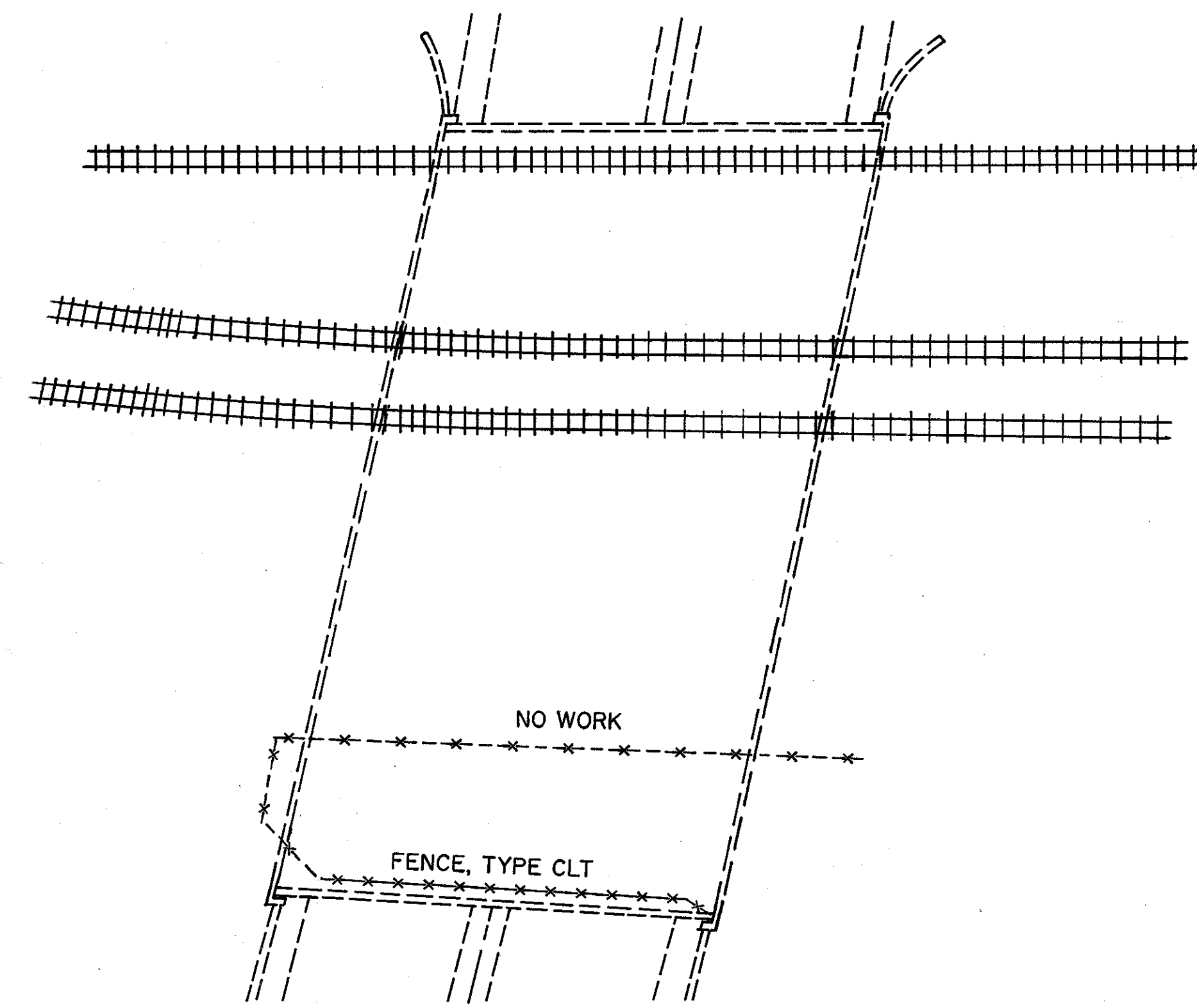


- PROPOSED WORK**
1. REMOVE BITUMINOUS OVERLAY, NEW 2-3/4" MSC OVERLAY
  2. PATCHING AND SEALING OF EXPOSED CONCRETE
  3. VERTICAL EXTENSION OF SIDEWALK PARAPET
  4. FENCE INSTALLATION
  5. SOUNDING AND LOW PRESSURE EPOXY INJECTION OF DECK BOTTOMS
  - \* 6. SCUPPER MODIFICATION
- AN ADDITIONAL PERCENTAGE WAS ADDED TO THE 519 PATCHING QUANTITY TO COMPENSATE FOR ANY DETERIORATION THAT MAY HAVE OCCURED BETWEEN THE TIME OF BRIDGE SOUNDING AND CONSTRUCTION.

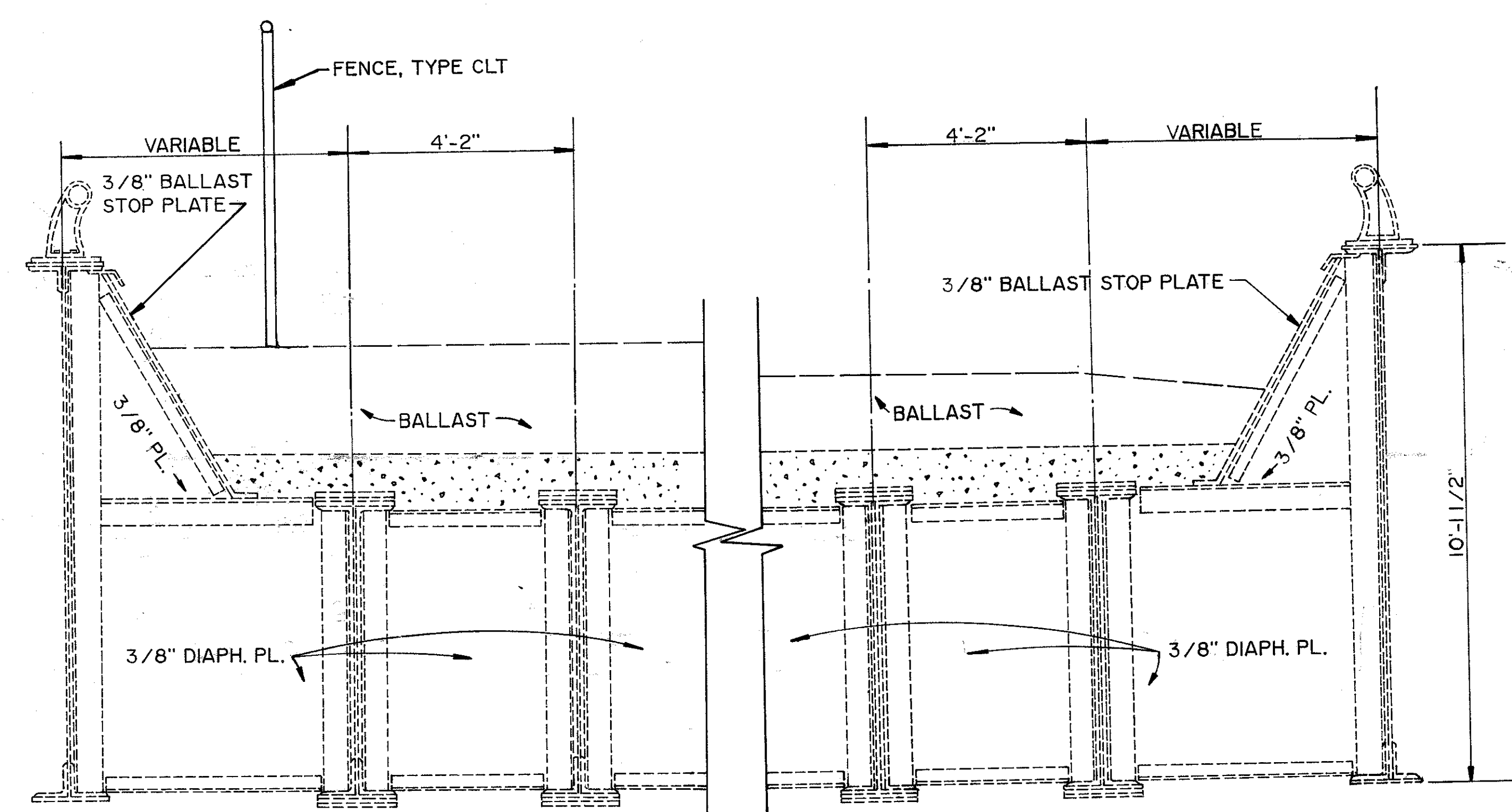
**PLAN AND TRANSVERSE SECTION**

BR. NO. CUY-90-1794  
HAMILTON AVE. OVER IR 90

CUYAHOGA COUNTY	OHIO
TRACED ZMZ	CHECKED LAM
REVIEWED DWL	



PLAN



TRANSVERSE SECTION

**EXISTING STRUCTURE**  
 TYPE: STEEL GIRDER BRIDGE WITH REINFORCED CONCRETE SUBSTRUCTURE  
 SPANS: 2 @ 63'-9" CLEAR (NORMAL TO  $\bar{C}$  INNER BELT)  
 WIDTH: 18 TRACKS, 269'± (NORMAL  $\bar{C}$  INNER BELT)  
 CLEARANCE: 15'-0" MIN.  
 LOADING: COOPERS E-72  
 SKEW: VARIES

	SPECIAL	519	
LOCATION	SOUNDING CONCRETE BRIDGE COMPONENTS	PATCHING CONCRETE STRUCTURES A.P.P. *	
	SQ. FT.	SQ. FT.	
ABUT. & WINGWALL	16092	34	
PIERS & CAPS	9594	40	
TOTALS	25686	74	

**PROPOSED WORK**

- PATCHING AND SEALING OF EXPOSED CONCRETE SURFACES
- FENCE, TYPE CLT

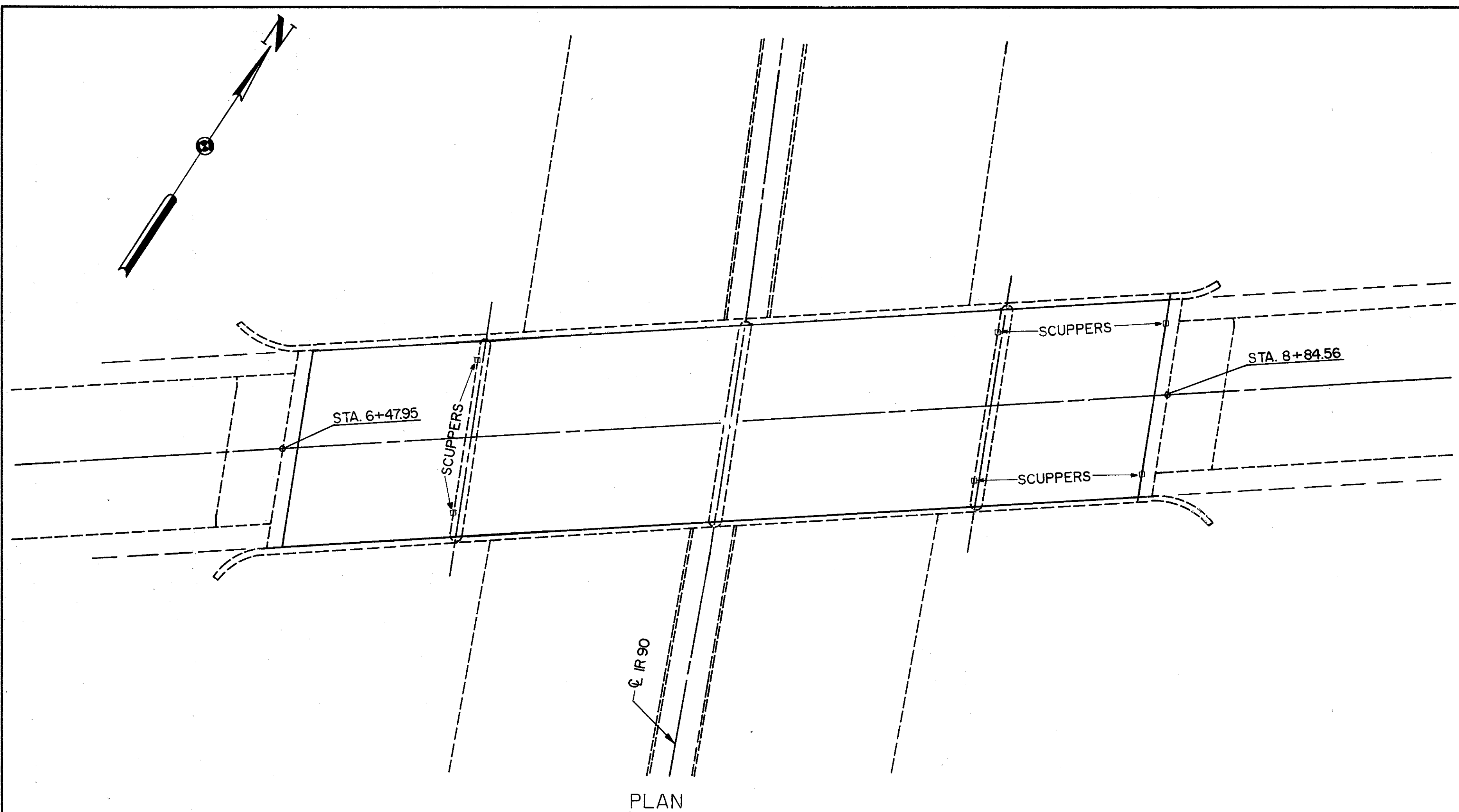
\* AN ADDITIONAL PERCENTAGE WAS ADDED TO THE 519 PATCHING QUANTITY TO COMPENSATE FOR ANY DETERIORATION THAT MAY HAVE OCCURRED BETWEEN THE TIME OF BRIDGE SOUNDING AND CONSTRUCTION.

PLAN AND TRANSVERSE SECTION

BR. NO. CUY-90-1796  
CONRAIL R.R. OVER IR 90

CUYAHOGA COUNTY	OHIO
TRACED ZMZ	CHECKED LAM
REVIEWED	

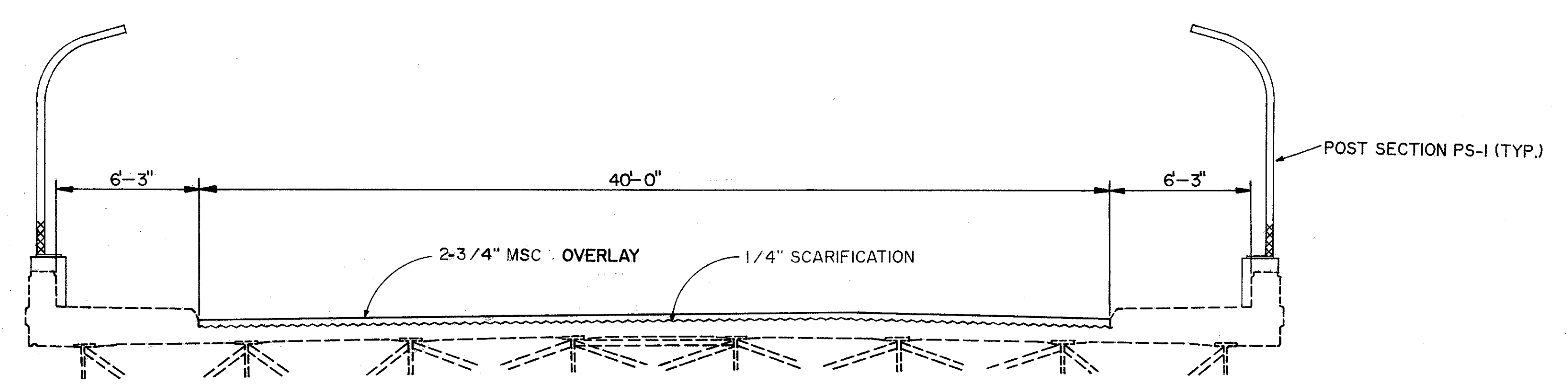




**EXISTING STRUCTURE**

TYPE: CONTINUOUS STEEL BEAMS WITH CONCRETE DECK AND CONCRETE SUBSTRUCTURE  
SPAN: 48'-69.5'-69.5'-45' C/C BEARINGS  
ROADWAY: 40' F/F CURBS  
SIDEWALKS: 2 @ 6'-0"  
LOAD FREQUENCY: CF = 2000 (51)  
WEARING SURFACE: BITUMINOUS  
ALIGNMENT: TANGENT  
APPROACH SLABS: AS-1-54 (15' LONG)  
SKEW: 12°-28'-38" L.F.

LOCATION	SPECIAL	519	
	SOUNDING CONCRETE BRIDGE COMPONENTS	PATCHING CONCRETE STRUCTURES A.P.P. *	
	SQ. FT.	SQ. FT.	
ABUT. & WINGWALL	1269	6	
PARAPET	7992	8	
PIERS & CAPS	3690	50	
BARRIER WALL	1665	10	
TOTALS	14616	74	



**PROPOSED WORK**

1. PATCHING AND SEALING OF EXPOSED CONCRETE SURFACES
2. REFACE PARAPET
3. FENCE INSTALLATION
4. REMOVE BITUMINOUS OVERLAY, NEW 2-3/4" MSC OVERLAY
5. SOUNDING AND LOW PRESSURE EPOXY INJECTION OF DECK BOTTOMS
6. SCUPPER MODIFICATION

\* AN ADDITIONAL PERCENTAGE WAS ADDED TO THE 519 PATCHING QUANTITY TO COMPENSATE FOR ANY DETERIORATION THAT MAY HAVE OCCURED BETWEEN THE TIME OF BRIDGE SOUNDING AND CONSTRUCTION.

**PLAN AND TRANSVERSE SECTION**

BR. NO. CUY-90-1803  
LAKESIDE AVE. OVER IR 90

CUYAHOGA COUNTY	OHIO
TRACED ZMZ	CHECKED LAM
REVIEWED DWL	

**EXISTING STRUCTURE**

TYPE: STEEL GIRDER BRIDGE WITH REINFORCED  
 CONCRETE SUBSTRUCTURE  
 SPANS: TWO @ 63'-8" CLEAR (NORMAL TO  $\phi$  INNER  
 BELT)  
 WIDTH: 8 TRACKS 10' ROADWAY, 115± ALONG  $\phi$  INNER  
 BELT  
 CLEARANCE: 15'-0" MINIMUM  
 LOADING: COOPERS E-72  
 SKEW: VARIES

LOCATION	SPECIAL	519	
	SOUNDING CONCRETE BRIDGE COMPONENTS	PATCHING CONCRETE STRUCTURES A.P.P. *	
	SQ. FT.	SQ. FT.	
ABUT. & WINGWALL	8901	16	
PIERS & CAPS	4941	50	
TOTALS	13842	66	

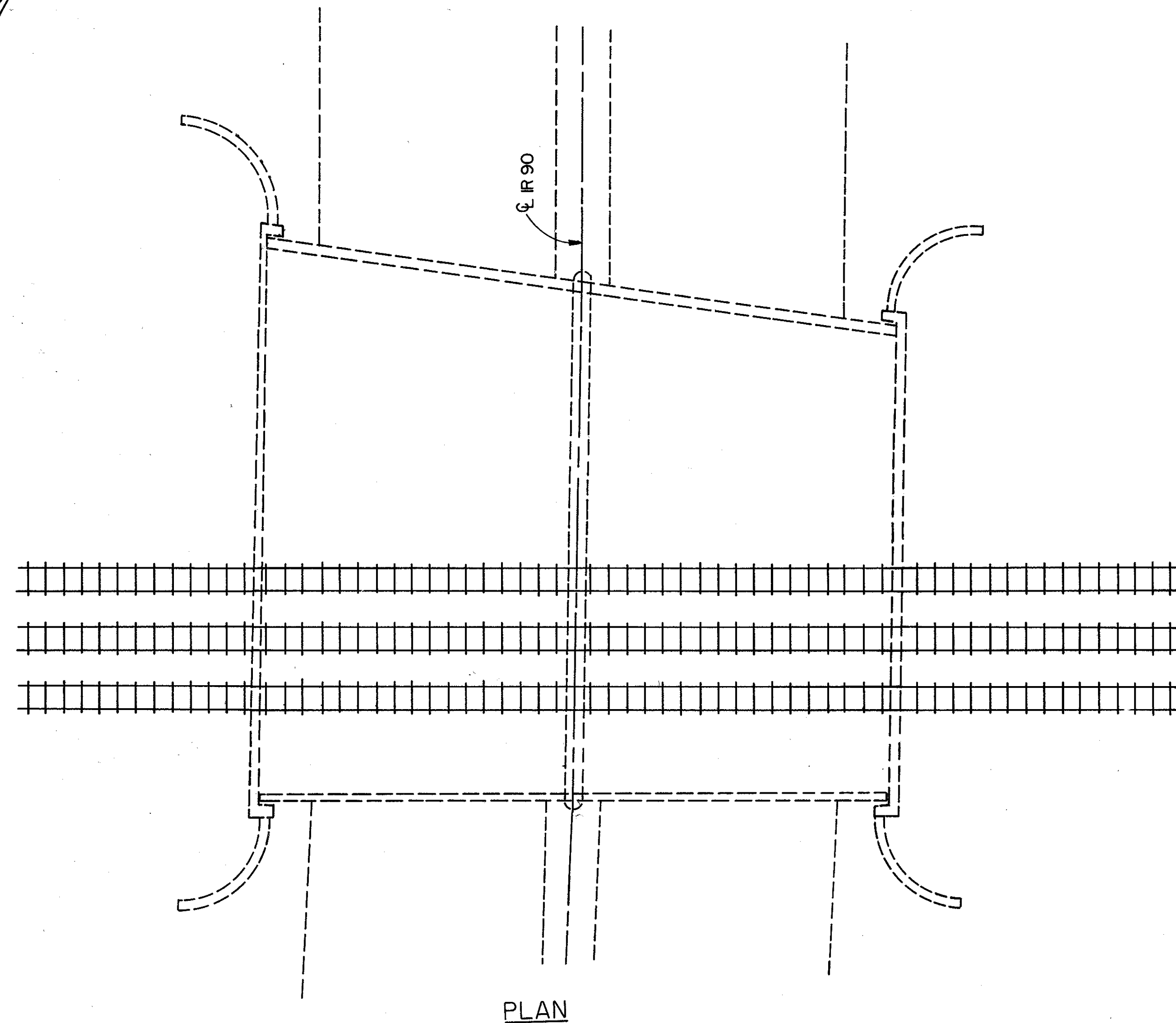
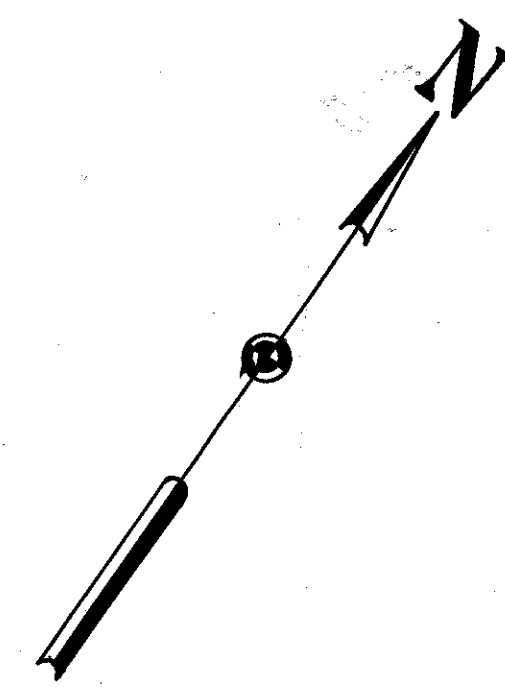
**PROPOSED WORK**

- I. PATCHING AND SEALING OF EXPOSED CONCRETE SURFACES

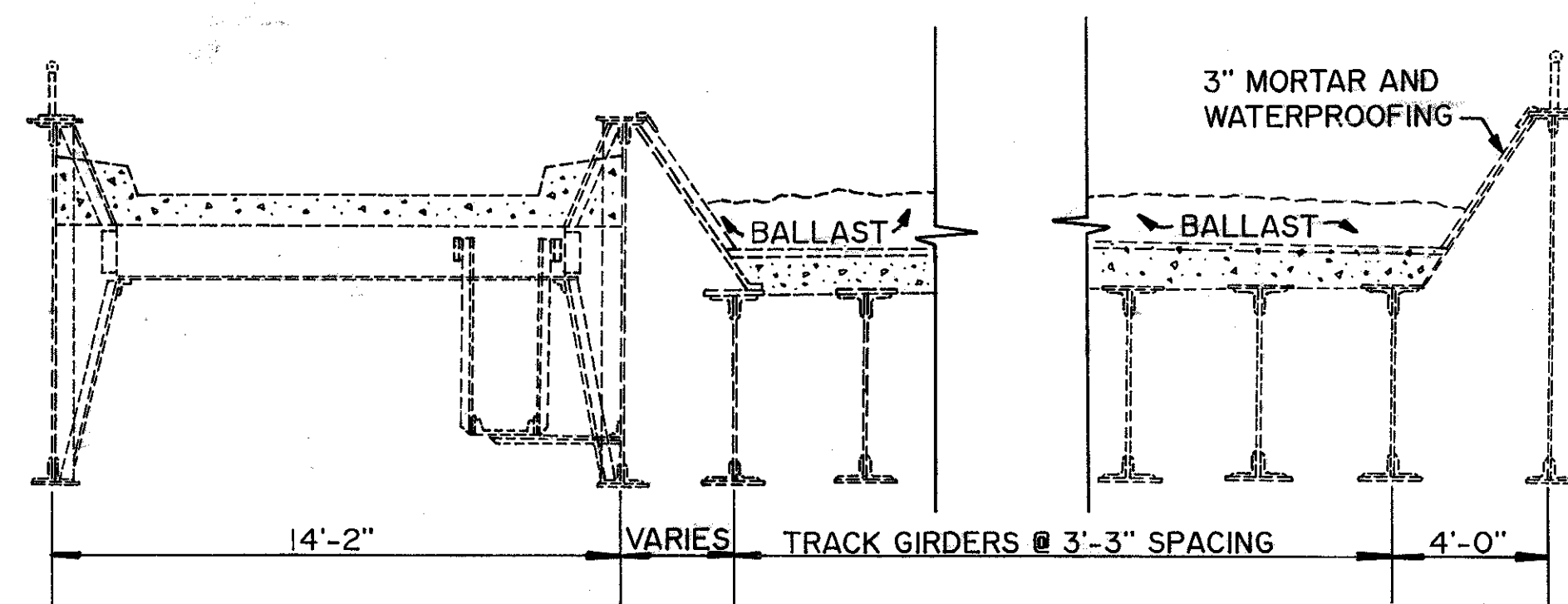
\* AN ADDITIONAL PERCENTAGE WAS ADDED TO THE 519 PATCHING QUANTITY TO COMPENSATE FOR ANY DETERIORATION THAT MAY HAVE OCCURRED BETWEEN THE TIME OF BRIDGE SOUNDING AND CONSTRUCTION.

**PLAN AND TRANSVERSE SECTION**

BR. NO. CUY-90-1812  
 CONRAIL OVER IR 90.

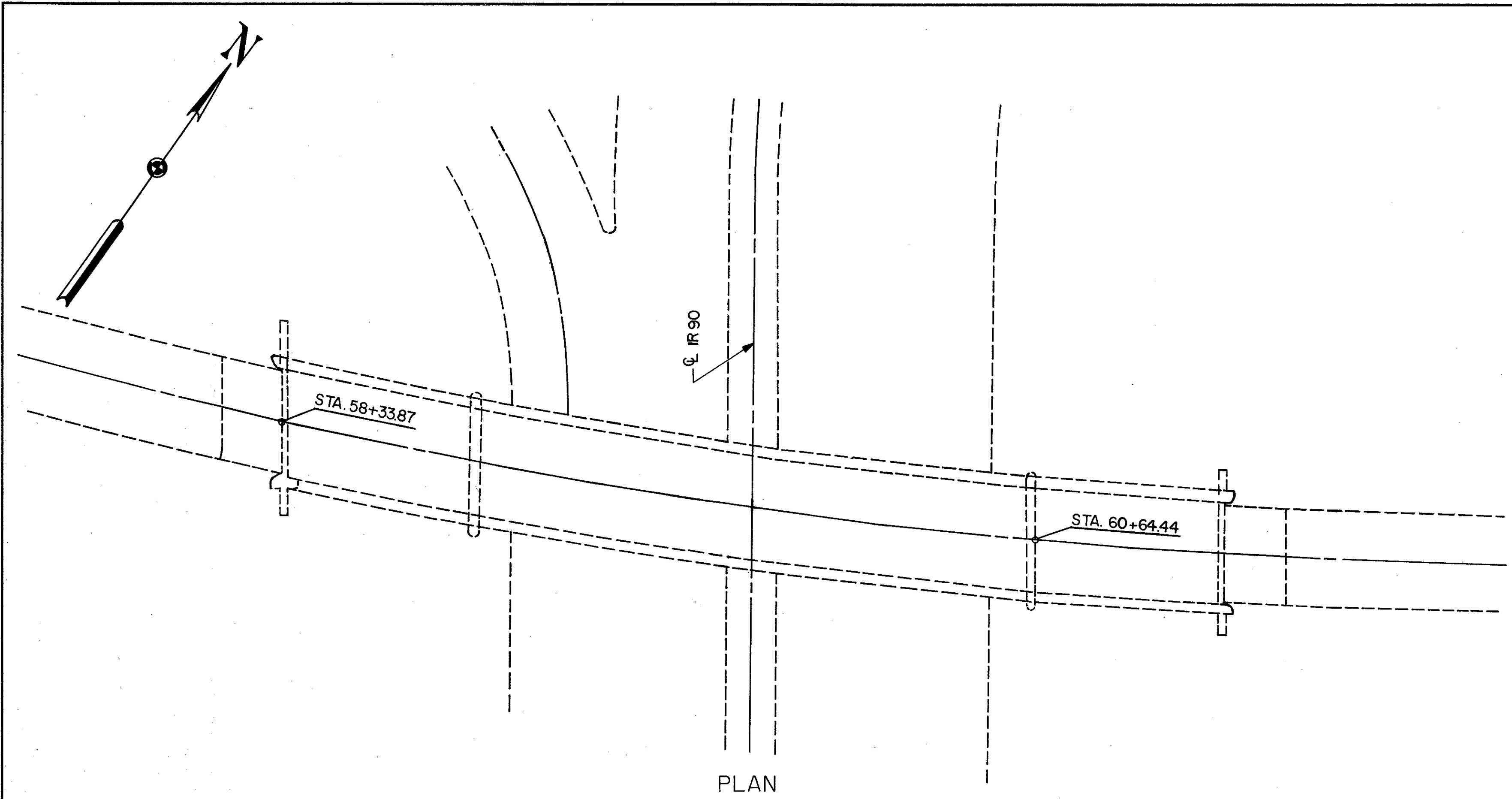


PLAN



TRANSVERSE SECTION

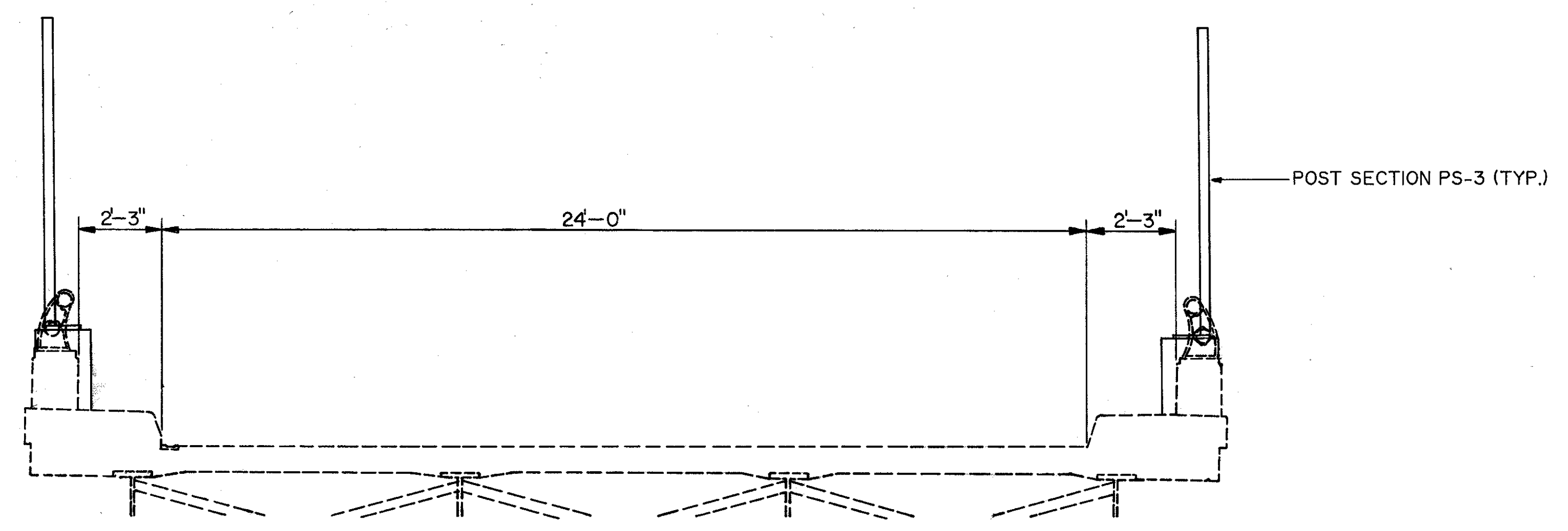




**EXISTING STRUCTURE**

TYPE: CONTINUOUS STEEL BEAMS WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE  
 SPANS: 45'-68'-68'-45' CTR. TO CTR. OF BEARINGS  
 ROADWAY: 24'-0" F/F 2'-0" SAFETY CURBS  
 LOAD FREQUENCY: CF=400(51)  
 SURFACE COURSE: 1" MONOLITHIC CONCRETE  
 ALIGNMENT: 4°-00' LEFT CURVE  
 APPROACH SLABS: AS-1-54 (15' LONG)  
 SUPERELEVATION: 3/16" PER FT.  
 SKEW: 7°-29' AT CL BRIDGE

	SPECIAL	519	
LOCATION	SOUNDING CONCRETE BRIDGE COMPONENTS	PATCHING CONCRETE STRUCTURES A.P.P. *	
	SQ. FT.	SQ. FT.	
ABUT. & WINGWALL	792	0	
PARAPET	5391	184	
PIERS & CAPS	2790	30	
TOTALS	8973	214	



**PROPOSED WORK**

1. PATCHING AND SEALING OF EXPOSED CONCRETE SURFACES
2. VERTICAL EXTENSION OF SIDEWALK PARAPETS
3. FENCE INSTALLATION
4. SOUNDING AND LOW PRESSURE EPOXY INJECTION OF DECK BOTTOMS
5. SCUPPER MODIFICATION

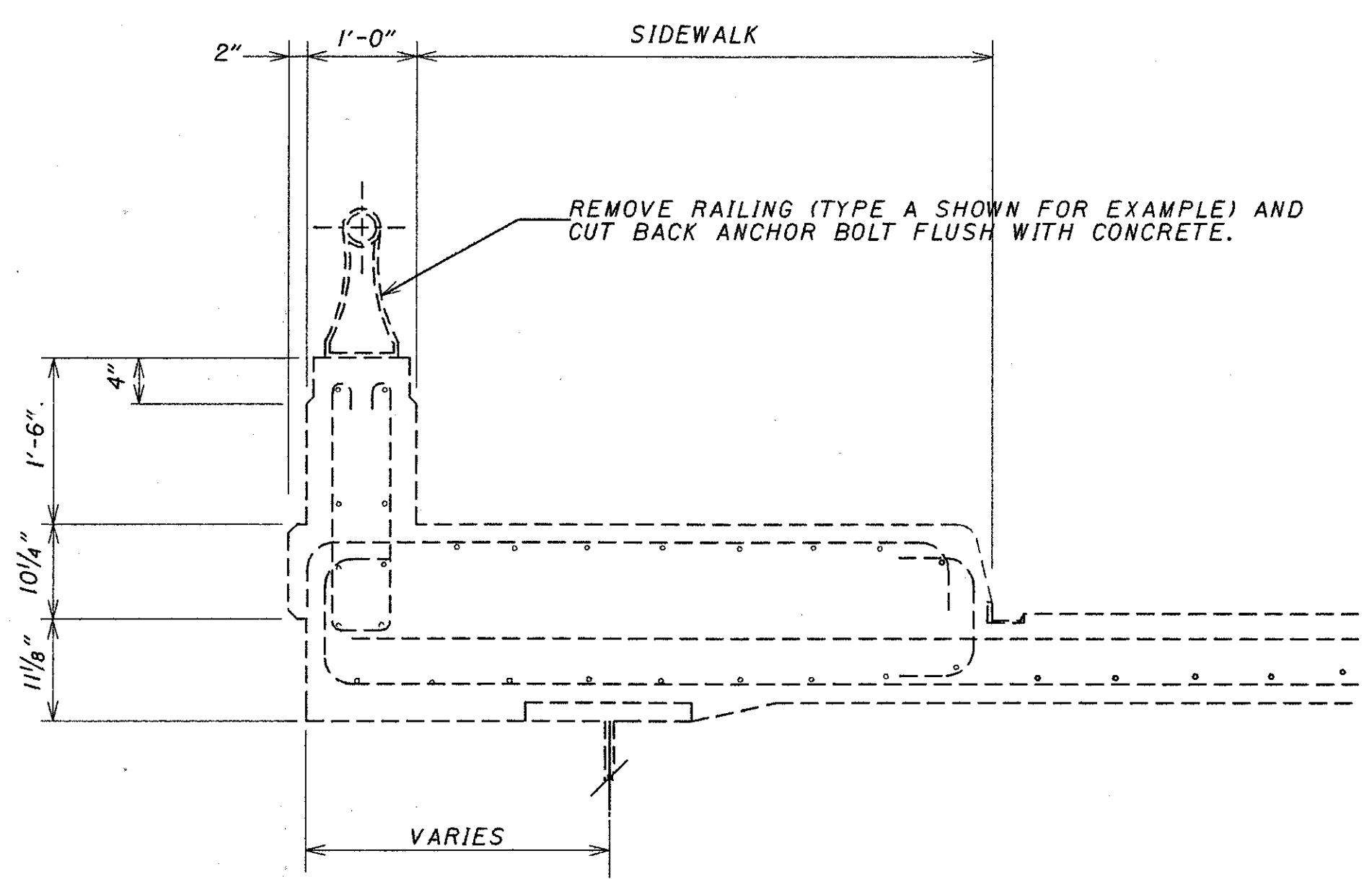
\* AN ADDITIONAL PERCENTAGE WAS ADDED TO THE 519 PATCHING QUANTITY TO COMPENSATE FOR ANY DETERIORATION THAT MAY HAVE OCCURRED BETWEEN THE TIME OF BRIDGE SOUNDING AND CONSTRUCTION.

PLAN AND TRANSVERSE SECTION

BR. NO. CUY-90-1815  
SOUTH MARGINAL RD. OVER IR 90

CUYAHOGA COUNTY OHIO

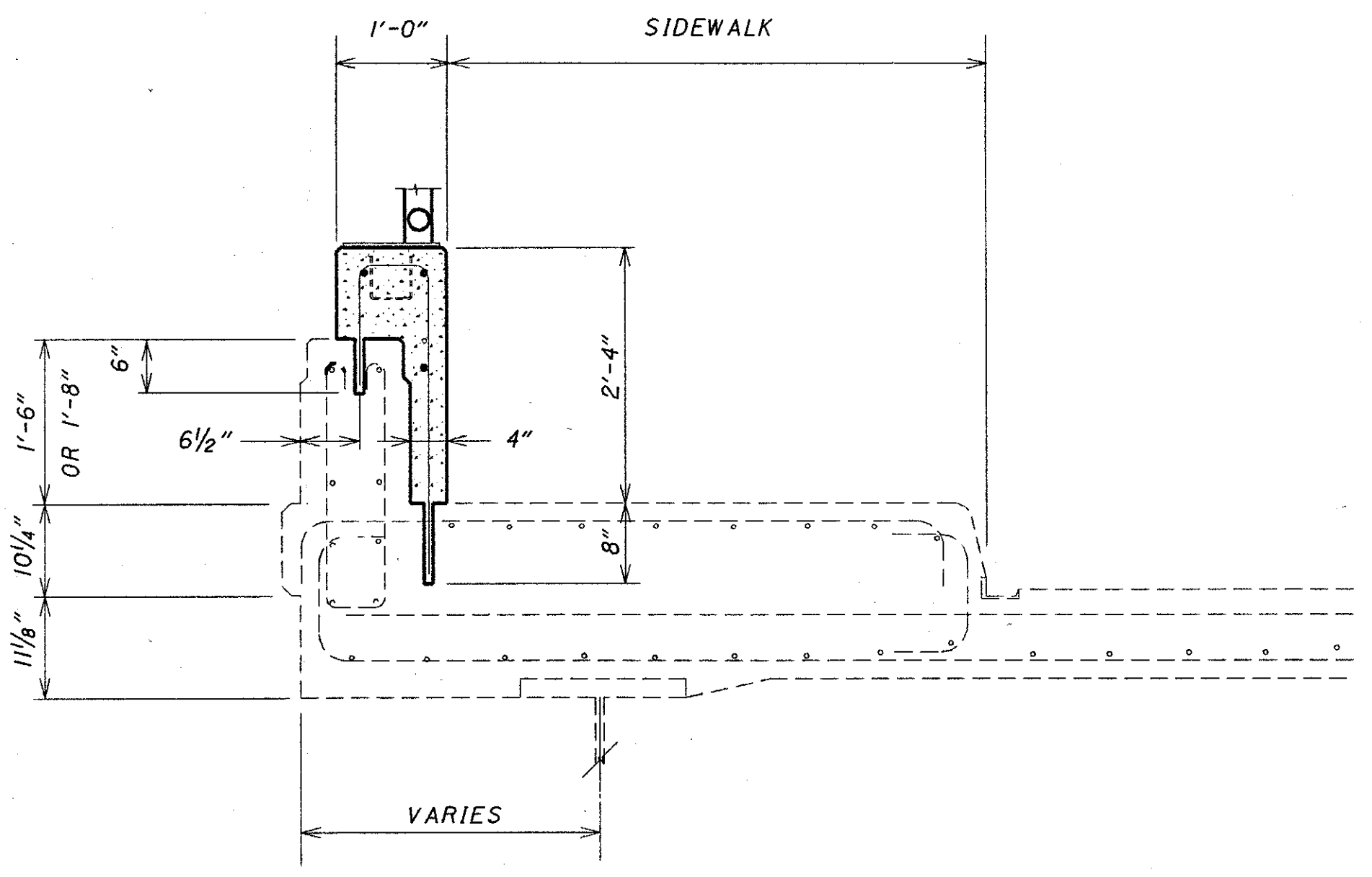
TRACED ZMZ	CHECKED LAM	REVIEWED DWL	
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**EXISTING SECTION**

**NOTES:**

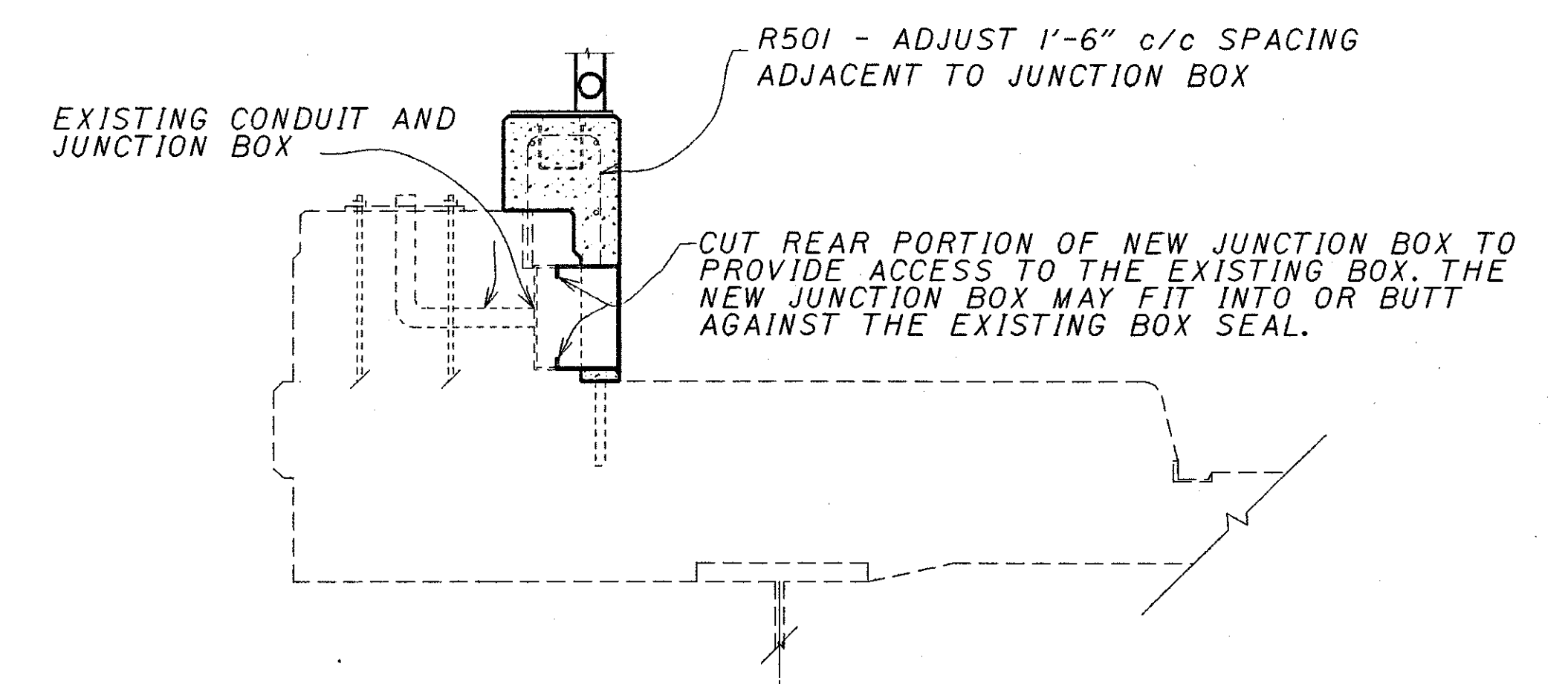
- 1.) EXACT REBAR LOCATIONS UNKNOWN.
- 2.) VERTICAL REINFORCING STEEL SHALL BE SPACED 1'-6" c/c MAXIMUM. VERTICAL STEEL SHALL MISS EXISTING DEFLECTION JOINT BY 3" MINIMUM
- 3.) ALL LONGITUDINAL REINFORCING STEEL SHALL BE CONTINUOUS NO.5 BARS WITH MINIMUM LAP LENGTH OF 1'-8".
- 4.) CONCRETE COVER SHALL BE 2" (TYPICAL).
- 5.) REINFORCING STEEL SHALL BE ASTM A615, A616, OR A617; GRADE 60,  $f_y = 60 \text{ ksi}$ ,  $f_s = 24 \text{ ksi}$ .



**MODIFIED SECTION**

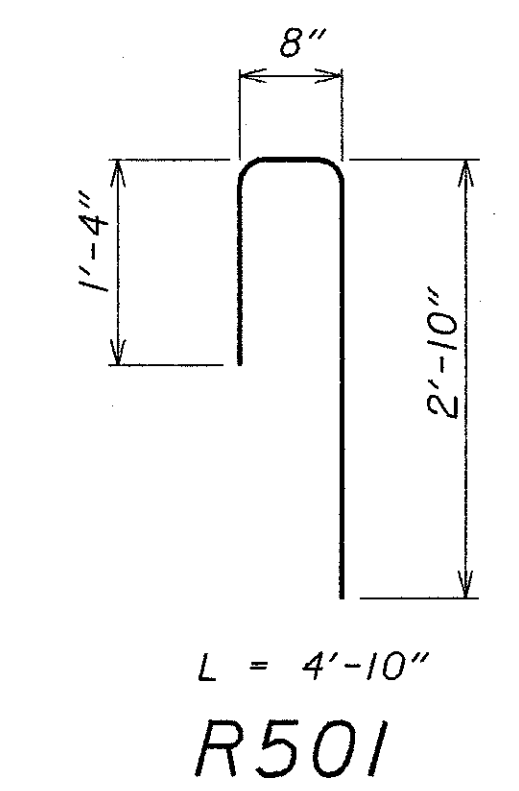
**ITEM 517- RAILING FACED AS PER PLAN, TYPE SW**

- A. **DESCRIPTION:** THIS ITEM SHALL CONSIST OF FACING THE EXISTING CONCRETE PARAPET WITH A TALLER CONCRETE PARAPET.
- B. **REMOVAL:** THE CONTRACTOR SHALL CAREFULLY REMOVE THE EXISTING ALUMINUM RAILING AND POSTS.  
  
ALL LOOSE OR UNSOUND PARAPET CONCRETE SHALL BE REMOVED. CONCRETE MAY BE REMOVED BY CHIPPING OR HAND DRESSING. CHIPPING HAMMERS SHALL NOT BE HEAVIER THAN THE NOMINAL 35 LB CLASS
- C. **DOWEL HOLES AND REINFORCING STEEL:** DOWEL HOLES SHALL BE DRILLED AS SHOWN ON THE PLANS. BEFORE ANY DOWELING IS PERFORMED, THE LOCATION OF ALL EXISTING REBARS IN THE AREA OF THE DOWEL HOLE SHALL BE FOUND WITH THE AID OF A REBAR LOCATOR. IT IS IMPORTANT THAT NO EXISTING BARS BE DAMAGED DURING THE DOWELING PROCESS. IF AN EXISTING BAR IS ENCOUNTERED AT THE SAME LOCATION AS A PROPOSED DOWEL HOLE, THE DOWEL HOLE SHALL BE MOVED TO EITHER SIDE OF THE BAR SO AS NOT TO DAMAGE THE EXISTING REBAR. NO CORE DRILLING SHALL BE ALLOWED. ALL REINFORCING STEEL, DOWEL HOLES AND GROUTING ARE INCLUDED UNDER THIS ITEM OF WORK. THE EPOXY GROUT AND HOLES SHALL BE ACCORDING TO SS852 AND SS952.
- D. **SURFACE PREPARATION:** THE PARAPET SURFACE NEXT TO THE FACING SHALL BE THOROUGHLY CLEANED BY ABRASIVE BLASTING FOLLOWED BY AN AIR BLAST. IT MAY BE NECESSARY TO USE HAND TOOLS TO REMOVE SCALE FROM THE REINFORCING STEEL. THE SURFACE SHALL BE MADE FREE OF SPALLS, LAITANCE AND ALL TRACES OF FOREIGN MATERIAL. IF NECESSARY, DETERGENT CLEANING SHALL PRECEDE BLAST CLEANING TO ENSURE THE REMOVAL OF CONTAMINANTS THAT ARE DETRIMENTAL TO ACHIEVING AN ADEQUATE BOND.
- E. **MATERIALS:** REINFORCING STEEL: 509.10, GRADE 60  
CONCRETE: ITEM 511-CLASS S.
- F. **SHRINKAGE CRACK CONTROL JOINTS:** SHRINKAGE CONTROL JOINTS SHALL BE PLACED IN THE NEW CONCRETE PARAPETS AT THE SAME LOCATION AS THE EXISTING DEFLECTION JOINTS AND SHALL BE MADE AT A RIGHT ANGLE TO THE DECK BY SAWING TO MATCH ALIGNMENT OF EXISTING DEFLECTION JOINTS. THE SAWING SHALL BE DONE AFTER THE CONCRETE HAS TAKEN ITS INITIAL SET AND BEFORE ANY SHRINKAGE CRACKS CAN DEVELOP. THE USE OF AN EDGE GUIDE, FENCE OR JIG IS REQUIRED TO ENSURE THAT THE CUT OF THE JOINT IS STRAIGHT, TRUE AND ALIGNED ON ALL FACES OF THE PARAPET. THE DEPTH OF THE SAWCUT SHALL BE 1 1/2 INCHES. THE JOINT WIDTH SHALL BE THE WIDTH OF THE SAW BLADE, NOT TO EXCEED ONE-QUARTER INCH. THE OUTSIDE ONE INCH OF THE PERIMETER OF THE SHRINKAGE CRACK CONTROL JOINT SHALL BE SEALED WITH A POLYURETHANE OR POLYMERIC JOINT SEALANT MEETING THE REQUIREMENTS OF FEDERAL SPECIFICATION TT-S-00-227E. THE BOTTOM ONE-QUARTER INCH OF BOTH THE INSIDE AND OUTSIDE FACES OF THE PARAPET SHOULD BE LEFT UNSEALED TO ALLOW ANY WATER WHICH MAY ENTER THE JOINT TO ESCAPE.
- G. **METHOD OF MEASUREMENT:** THE QUANTITY SHALL BE THE ACTUAL LENGTH OF THE RAILING FACED, MEASURED FROM END OF WINGWALL TO END OF WINGWALL. THIS ITEM SHALL INCLUDE THE FURNISHING OF ALL LABOR, EQUIPMENT AND MATERIALS NECESSARY TO COMPLETE THIS WORK. ALL COSTS OF REMOVAL, DOWEL HOLES, REINFORCING STEEL, CONCRETE, AND INSTALLING SHRINKAGE CRACK CONTROL JOINTS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR:



SEE REFACED PARAPET DETAIL, THIS SHEET, FOR DETAILS AND DIMENSIONS NOT SHOWN.

**MODIFIED SECTION AT JUNCTION BOX**



ESTIMATING INFORMATION	
REIN. STEEL.....	6.49 LBS./L.F.
CONCRETE.....	0.05 C.Y./L.F.
DOWEL HOLES.....	1.33 EACH/L.F.
NOTE: ALL ITEMS PAID FOR UNDER ITEM 517.	

ITEM	UNIT	DESCRIPTION
517	LIN. FT.	RAILING FACED AS PER PLAN, TYPE SW

STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 12 BRIDGE DEPT.				
<b>RAILING FACING DETAILS, TYPE SW</b>				
CUY-90-1676/1681/1692/1794/1803/1815				
DESIGNED BGW	TRACED GLC	CHECKED DWL	REVIEWED GWM	REVISED 2-22-90
DATE	DATE 12-28-90	DATE 4-9-91	DATE 3-9-91	SHEET /

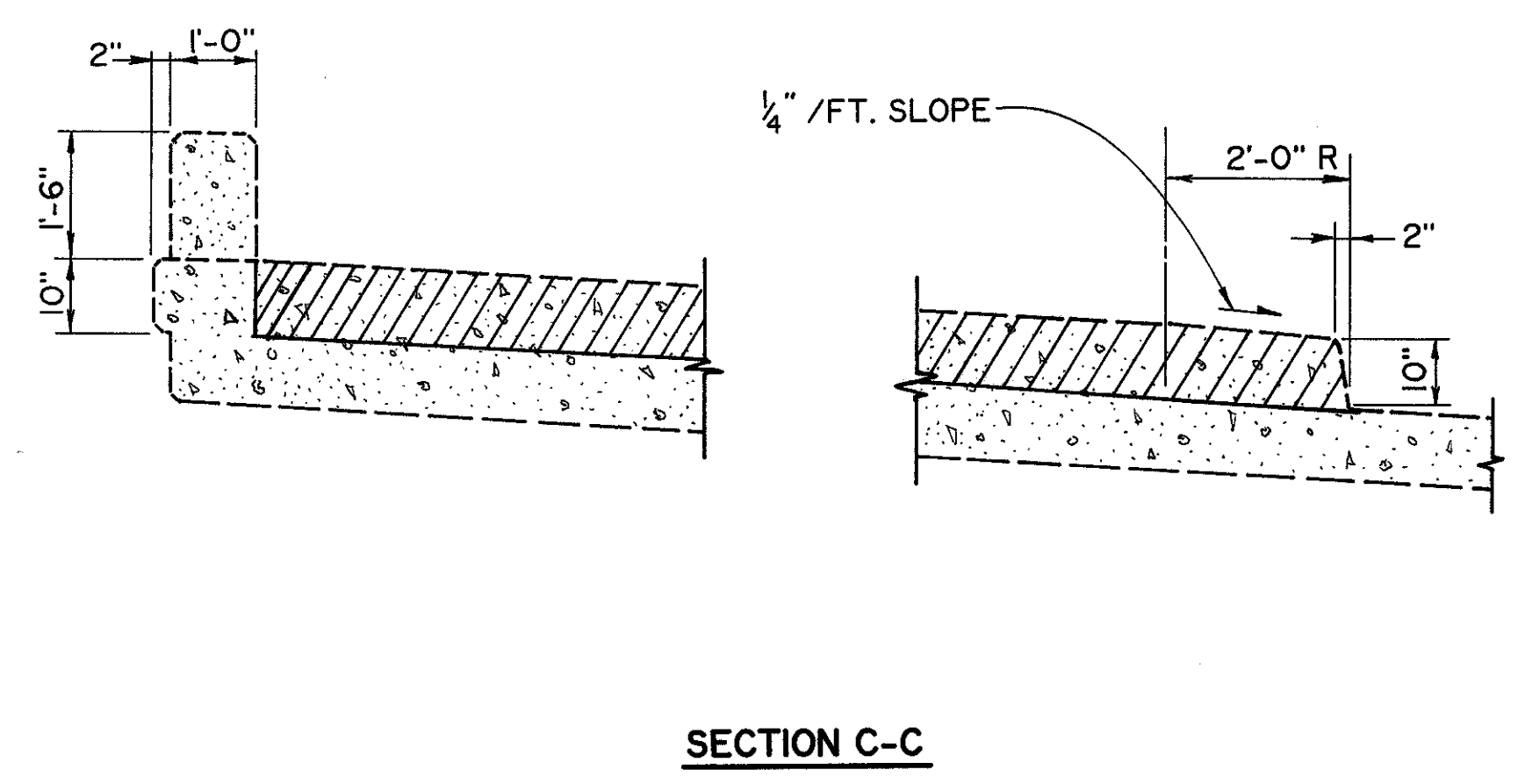
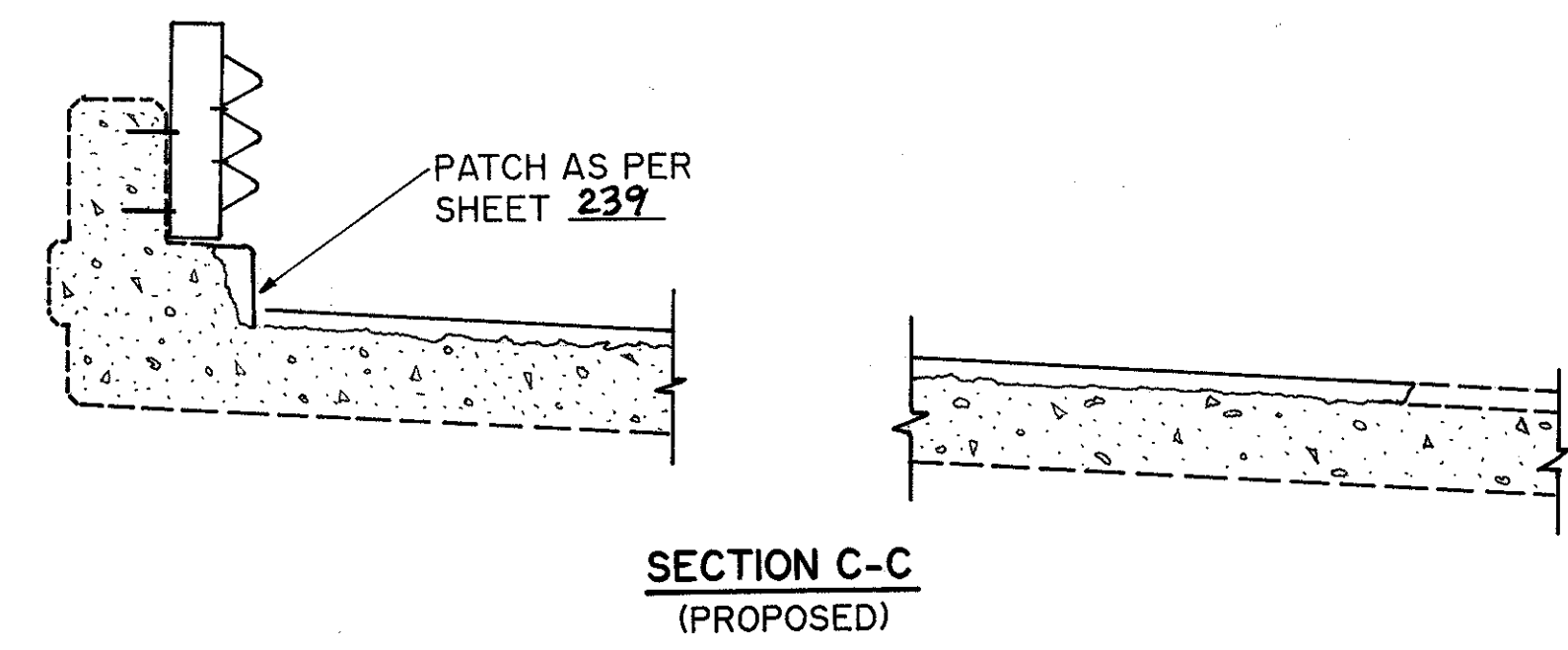
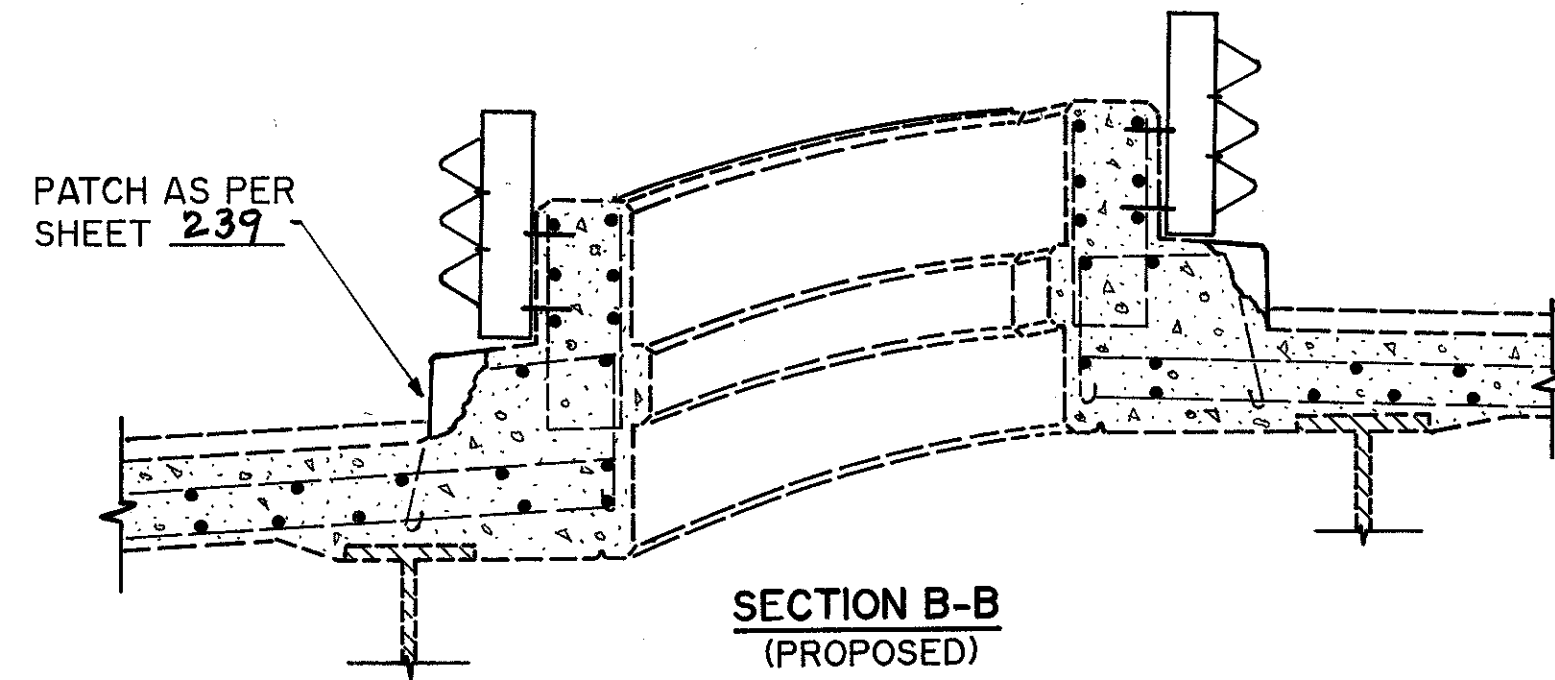
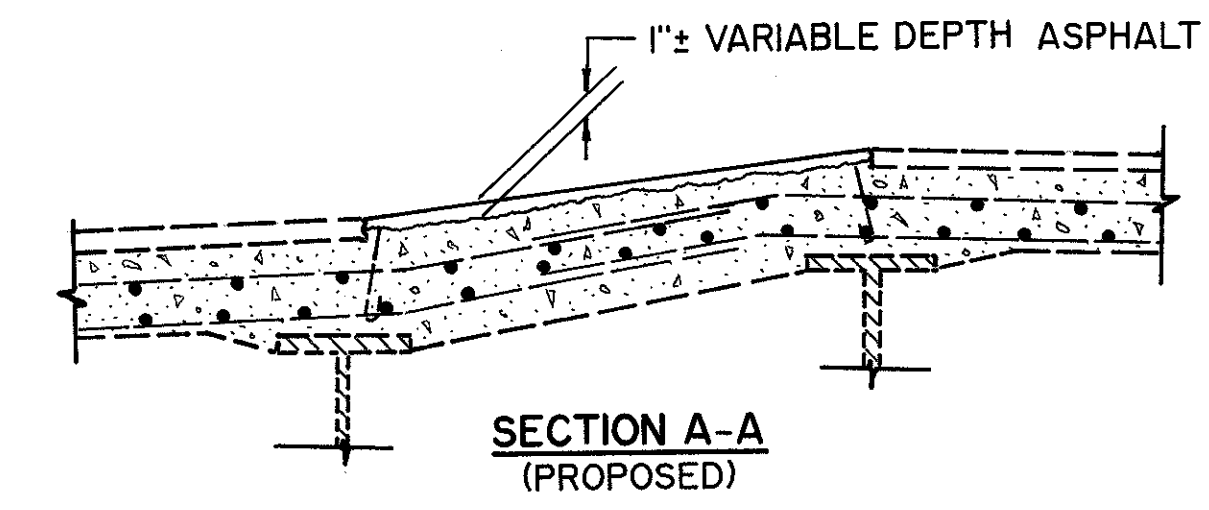
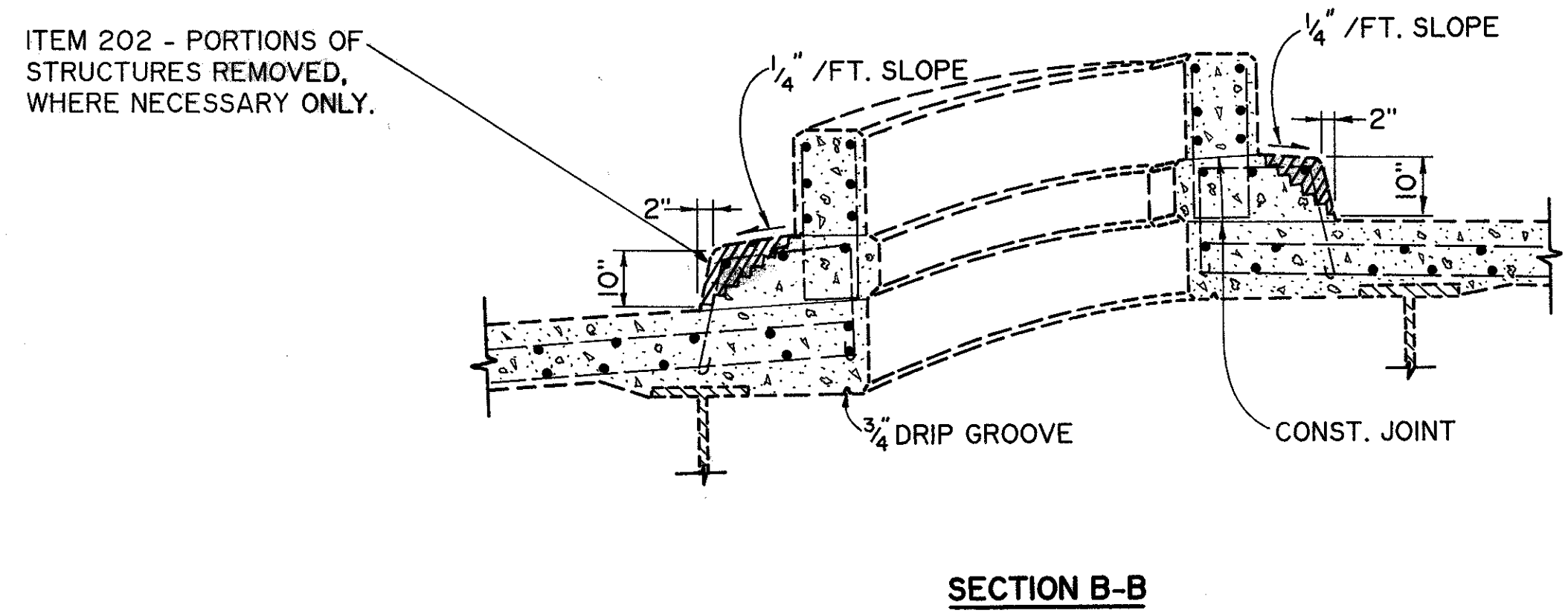
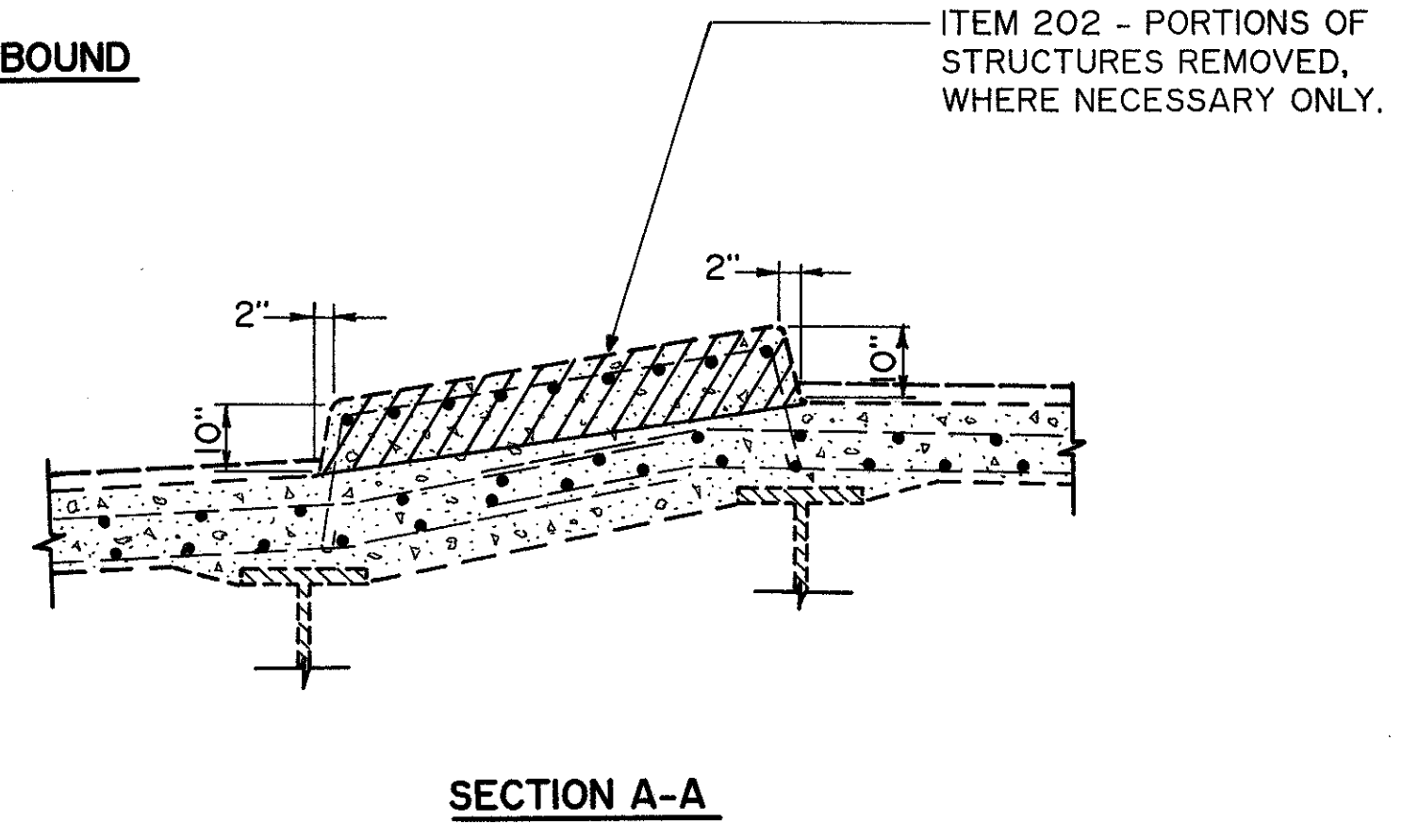
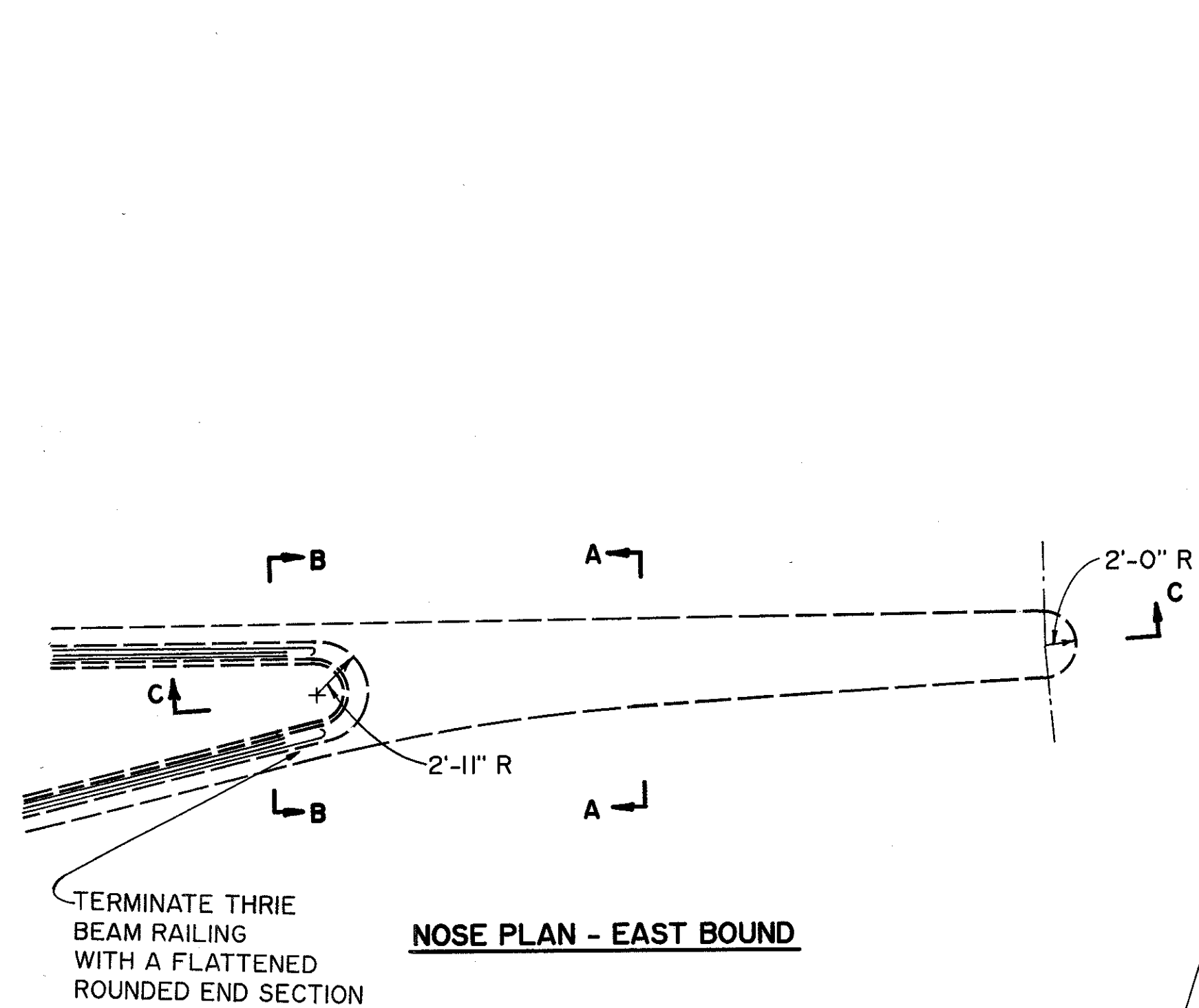
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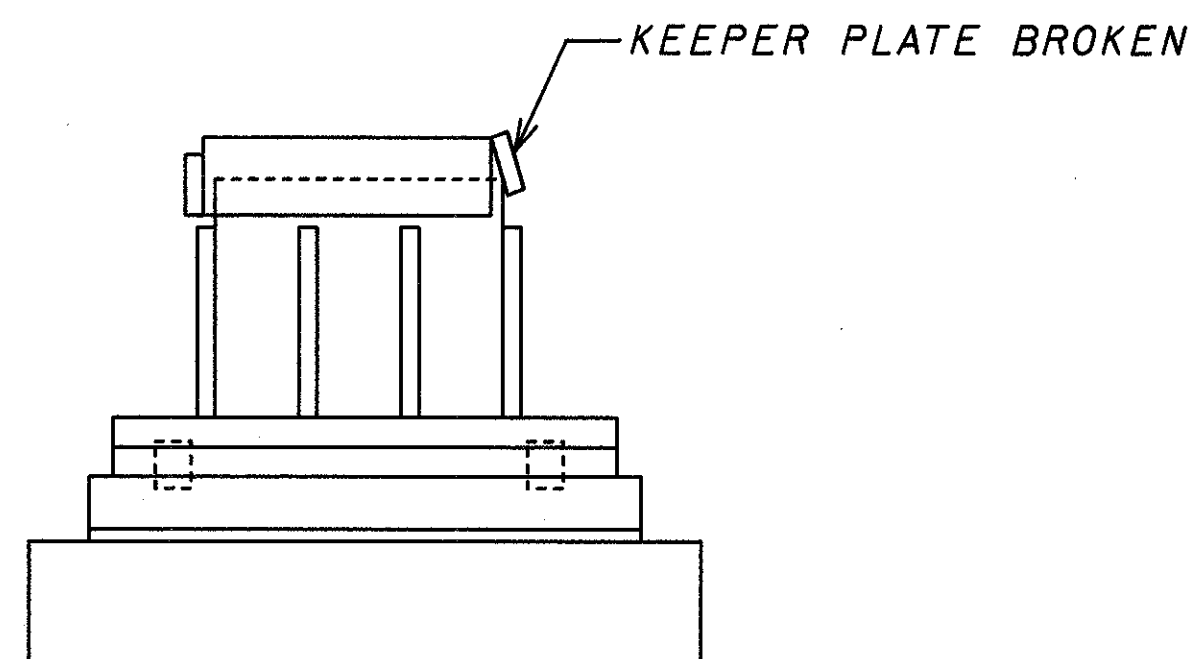
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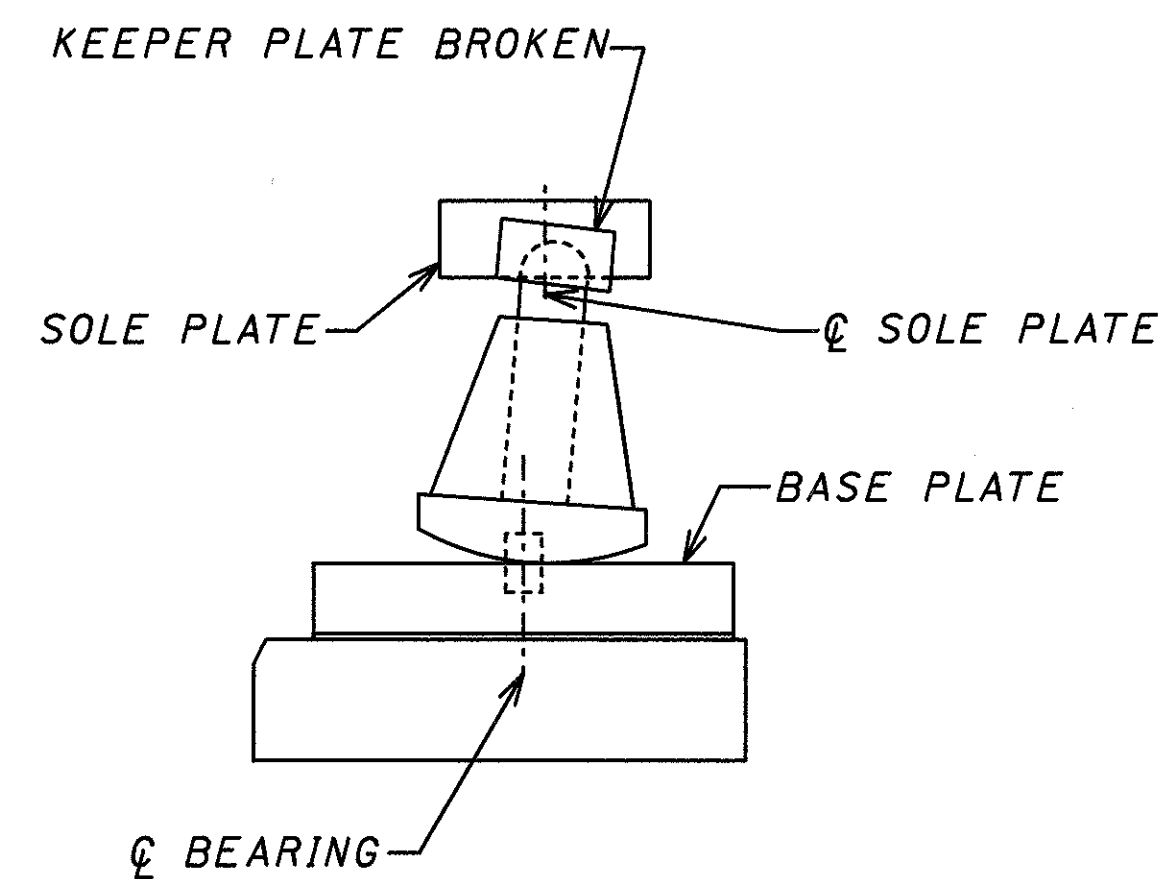


STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 12 LOCATION & DESIGN					
<b>NOSE REMOVAL DETAILS</b>					
INNER BELT FREEWAY OVER EAST 14th St. BRIDGE N° CUY-90-1651					
DESIGNED	DRAWN 9E2	CHECKED	REVIEWED	DATE	REVISED

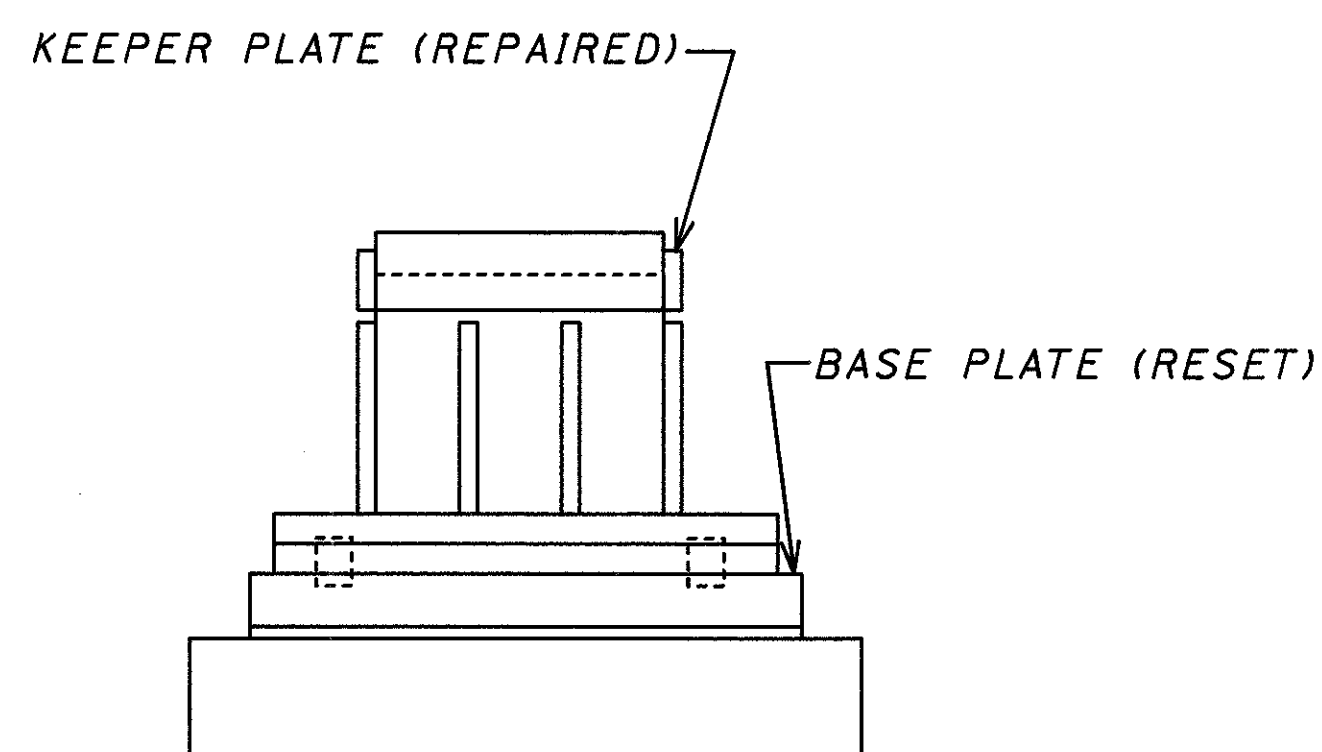
# RESET BEARING DETAILS



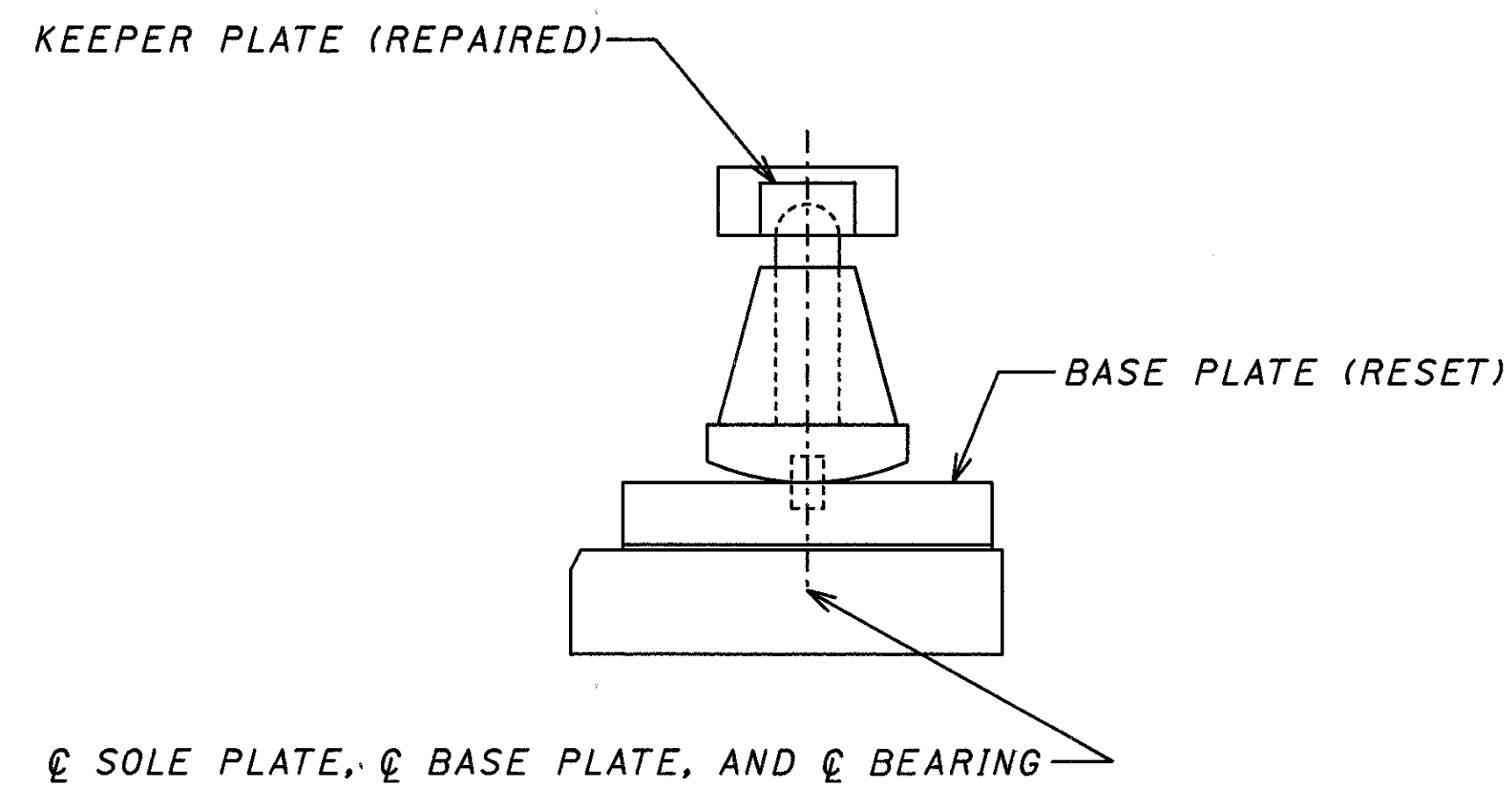
EXISTING FRONT ELEVATION



EXISTING SIDE ELEVATION



MODIFIED FRONT ELEVATION



MODIFIED SIDE ELEVATION

PROCEDURE FOR BEARING REPAIR

AT LOCATIONS WHERE BACKWALL IS RETAINED

1. RAISE THE SUPERSTRUCTURE AT THE ABUTMENT (1/4" MAX.) UNTIL THERE IS NO CONTACT BETWEEN THE SOLE PLATE AND THE BEARING.
2. RESET THE ROCKER AND BASE PLATE OR BASE PLATE ONLY IN FINAL POSITION, BY CENTERING, AT 60° F, THE BASE PLATE UNDER THE SOLE PLATE BOTH IN THE LONGITUDINAL AND TRANSVERSE DIRECTION.
3. LOWER THE SUPERSTRUCTURE (BEAMS).
4. REWELD THE KEEPER PLATE TO THE SOLE PLATE AS REQUIRED WITH A 5/16" FILLET WELD.

PAID FOR UNDER ITEM SPECIAL-RESET BEARINGS, AS PER PLAN

STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION  
DISTRICT 12 LOCATION & DESIGN

RESET BEARING DETAILS  
CUY-90-1640

DESIGNED	DRAWN	CHECKED	REVIEWED	REVISED
DATE	KJB DATE 3/30/92	DATE	DATE	SHEET /

PLOTTED BY: BANASZAK  
 PLOTTED FROM: c:\dgn\pid07090\07090grz.dgn  
 FILENAME: dgn  
 PLOT SUBMITTED: 22-JUN-1992 06:51



# MISCELLANEOUS DETAIL

CUYAHOGA COUNTY  
 CUY-90-16.24

OHIO

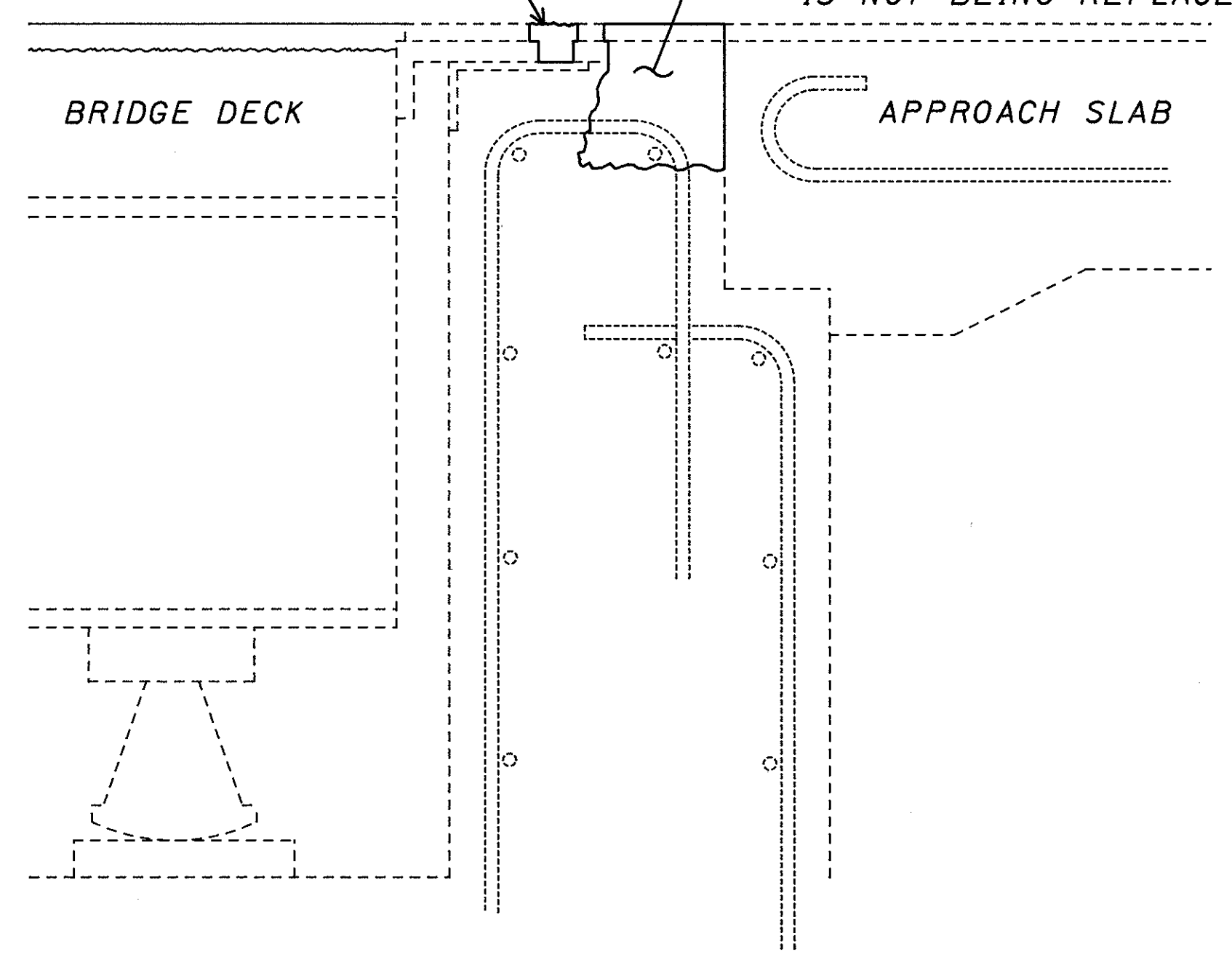
FHWA  
 REGION 5

FEDERAL  
 PROJECT

239  
 245

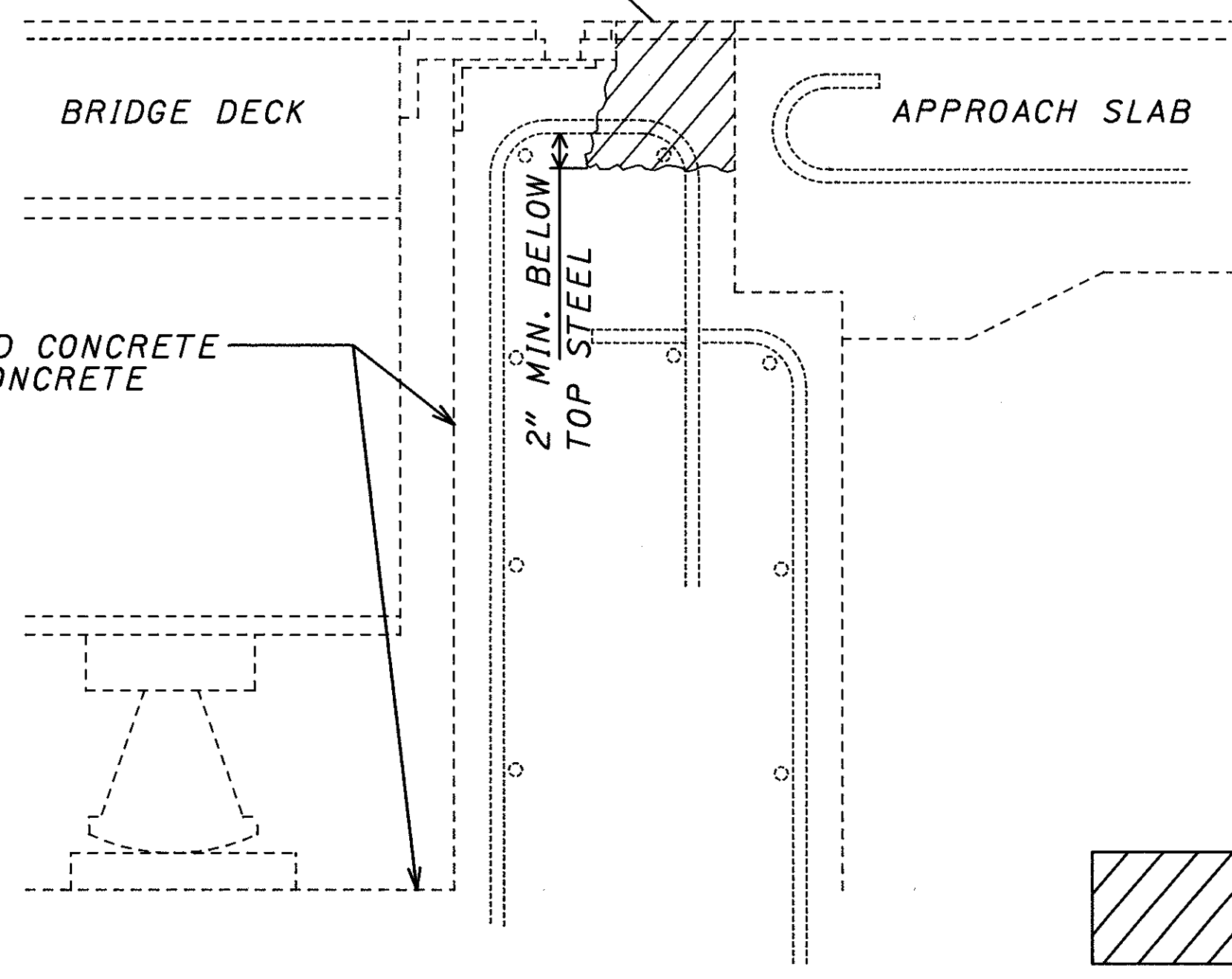
SEAL JOINT AS PER BP-5 USING  
 ITEM SPECIAL-POURED POLYURETHANE  
 JOINT SEAL (REMOVE ANY  
 EXISTING JOINT SEAL MATERIAL)

REPAIR BACKWALL TO  
 FINAL GRADE USING  
 ITEM SPECIAL- MICRO SILICA  
 MODIFIED CONCRETE  
 (VARIABLE THICKNESS) OR  
 PATCH WHERE NEW OVERLAY  
 IS NOT BEING REPLACED



PROPOSED BACKWALL

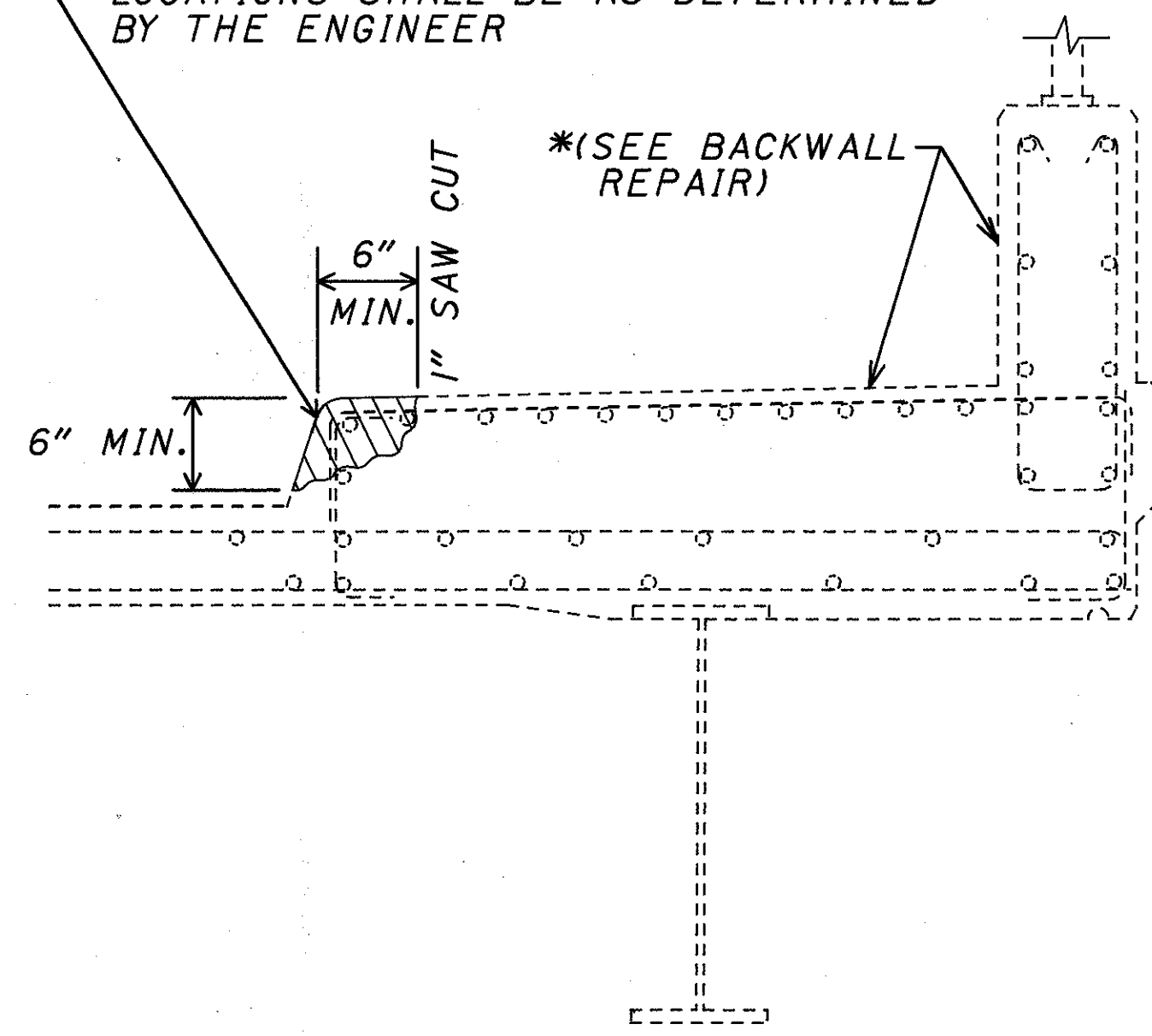
REMOVE EXISTING SOUND CONCRETE  
 AND ANY ADDITIONAL UNSOUND  
 CONCRETE BEYOND THE LIMITS  
 SHOWN.



EXISTING BACKWALL

INDICATES REMOVAL  
 AREA (DO NOT  
 DAMAGE EXISTING  
 REINFORCING STEEL)

ITEM 519 - PATCHING CONCRETE  
 STRUCTURES, AS PER PLAN (EXACT  
 LOCATIONS SHALL BE AS DETERMINED  
 BY THE ENGINEER)



TYPICAL CURB PATCHING

\* REPAIR SPALLS AND UNSOUND CONCRETE  
 USING ITEM 519-PATCHING CONCRETE  
 STRUCTURES, AS PER PLAN

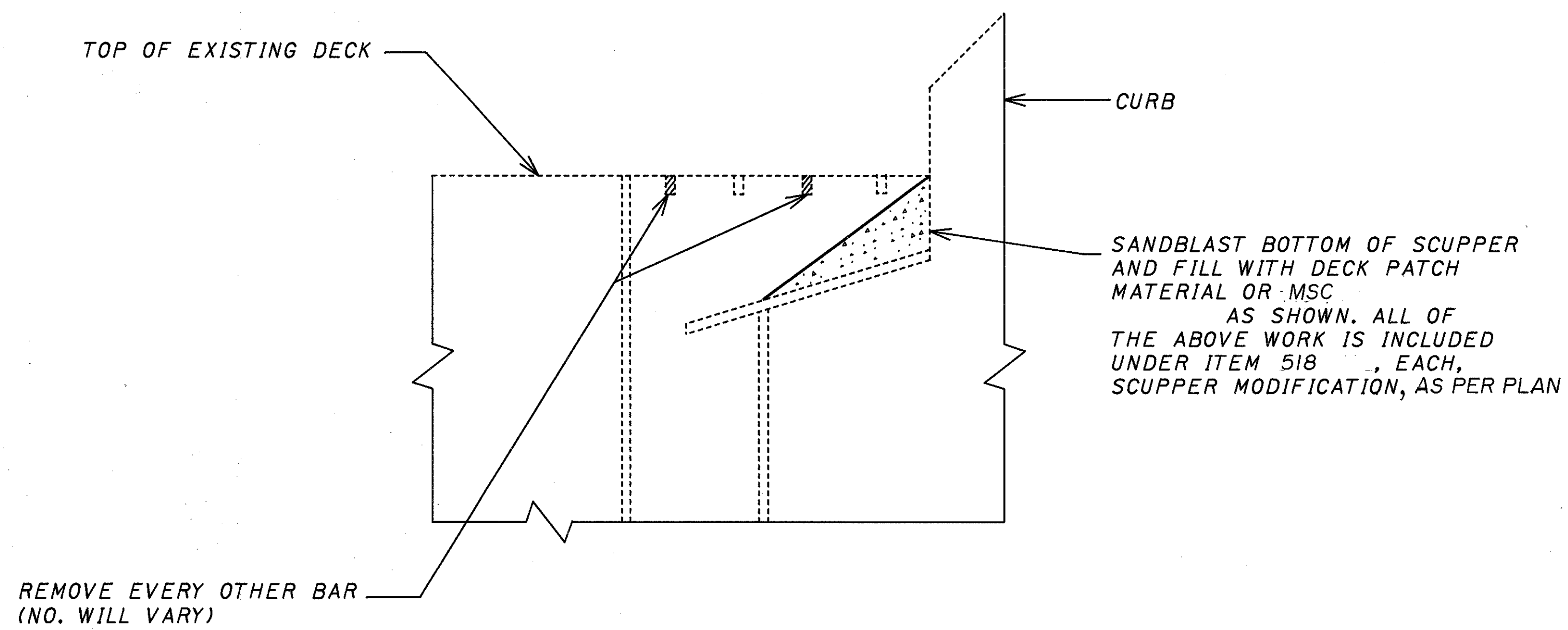
STATE OF OHIO  
 DEPARTMENT OF TRANSPORTATION  
 DISTRICT 12 LOCATION & DESIGN

CURB PATCHING, BACKWALL  
 REPAIR DETAILS

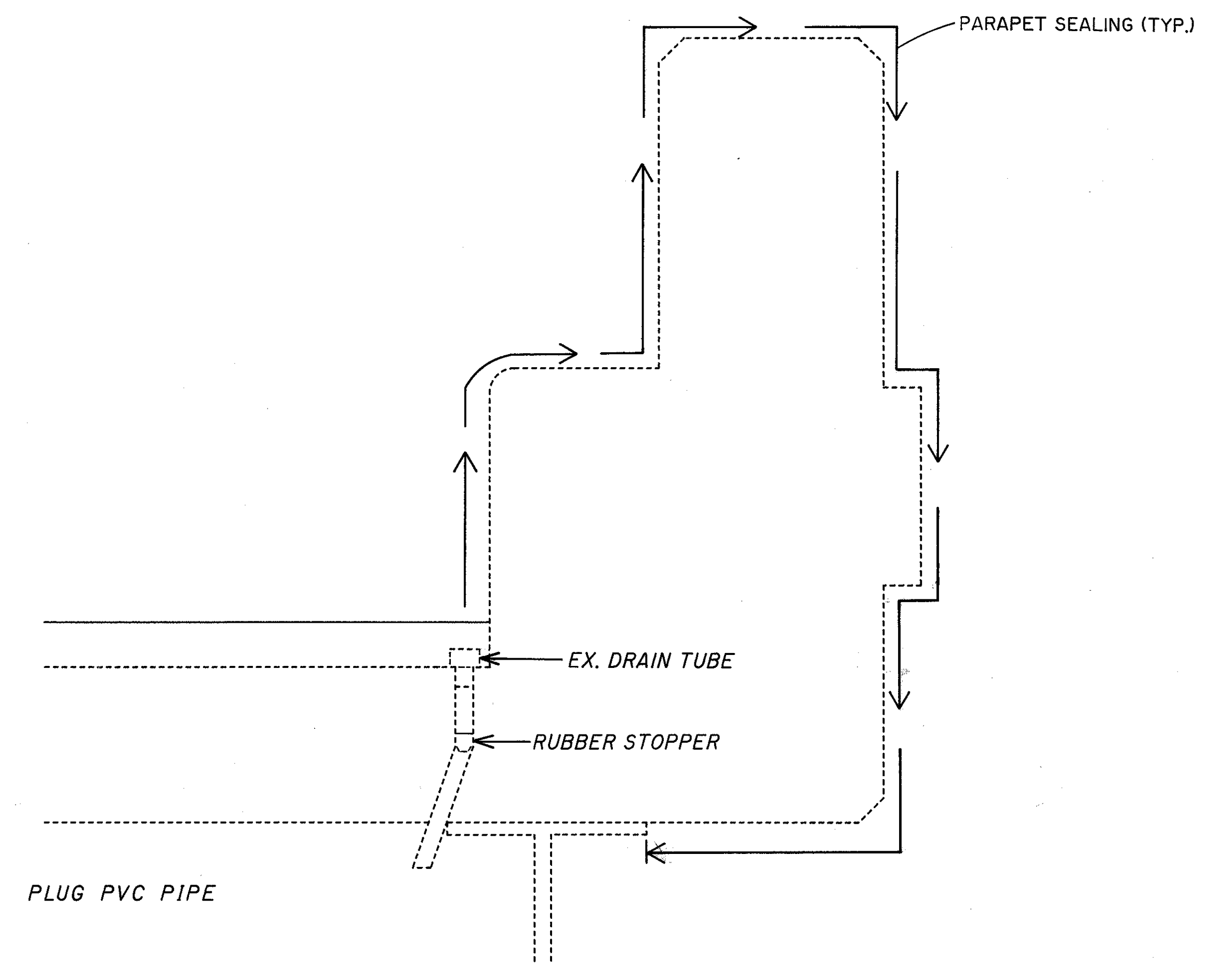
CUYAHOGA COUNTY					OHIO
DESIGNED	TRACED	CHECKED	REVIEWED	REVISED	3/23/92
KJB		ENF	LAM		SHEET

PLOT SUBMITTED BY: BANASZAK  
 PLOT SUBMITTED: 02-JUN-1992 13:13  
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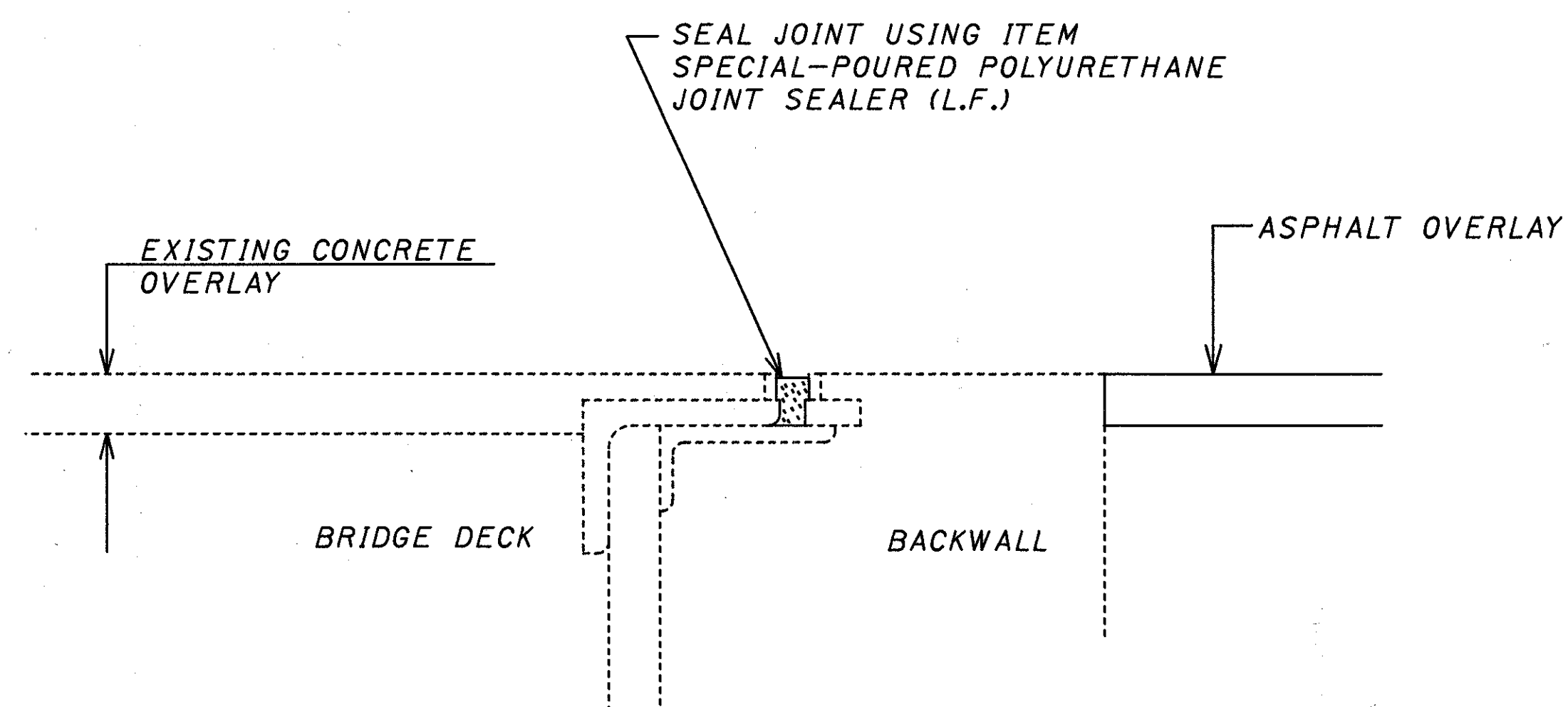
# MISCELLANEOUS DETAILS



ITEM 518 - SCUPPER MODIFICATION, AS PER PLAN



SUBDRAINAGE REMOVAL



TRANSVERSE SEALING OF STRUCTURAL EXPANSION JOINTS

NOTES:  
 THIS ITEM OF WORK SHALL CONSIST OF REMOVING THE EXISTING 1/4" X 1/4" PERFORATED STRUCTURAL TUBING AT EACH GUTTER LINE AND PLUGGING THE 1" PVC DRAIN TUBES AS FOLLOWS:

PROPOSED CONCRETE OVERLAY—DRIVE A CORK OR RUBBER STOPPER INTO THE PVC PIPE AT LEAST 1" BELOW THE CONCRETE SURFACE

PAYMENT PER LUMP SUM FOR PORTION OF STRUCTURES REMOVED INCLUDES ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO PERFORM THIS WORK AS OUTLINED ABOVE.

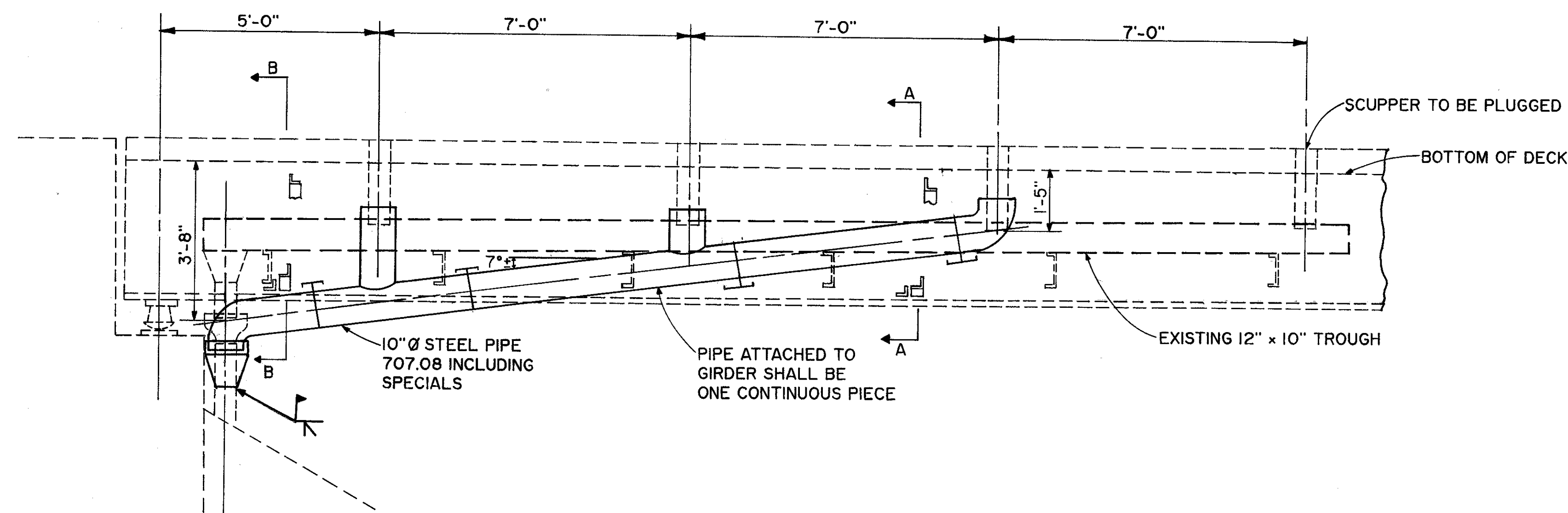
STATE OF OHIO  
 DEPARTMENT OF TRANSPORTATION  
 DISTRICT 12 LOCATION & DESIGN

SCUPPER MODIFICATION,  
 TRANSVERSE SEALING  
 OF EXPANSION JOINTS,  
 SUBDRAINAGE REMOVAL

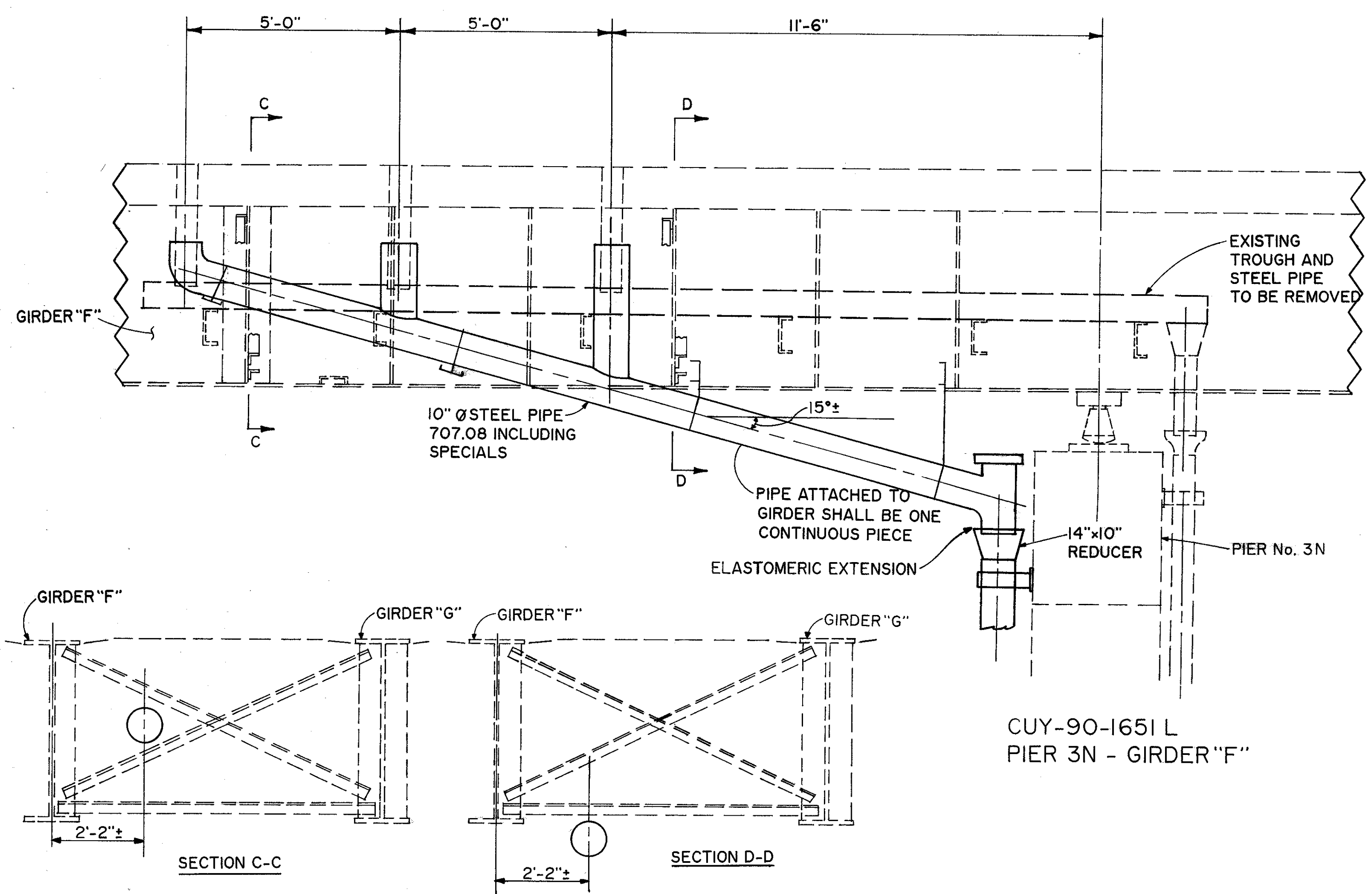
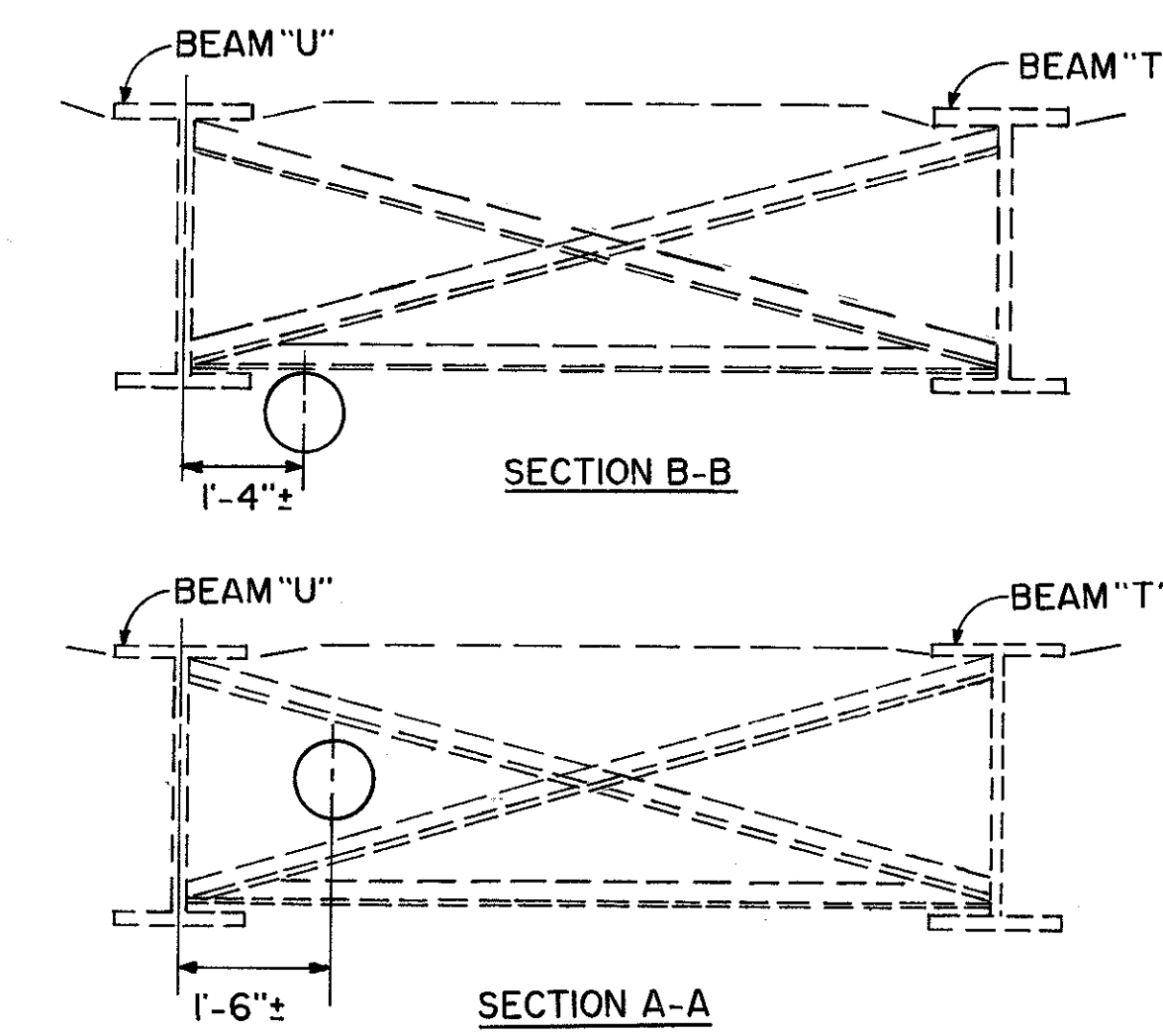
DESIGNED LAM	DRAWN KJB DATE 3/28/92	CHECKED ENF	REVIEWED DWL	REVISED
				SHEET /

PLOTTED BY: BANASZAK  
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 PLOT SUBMITTED: 05-MAY-1992 14:53

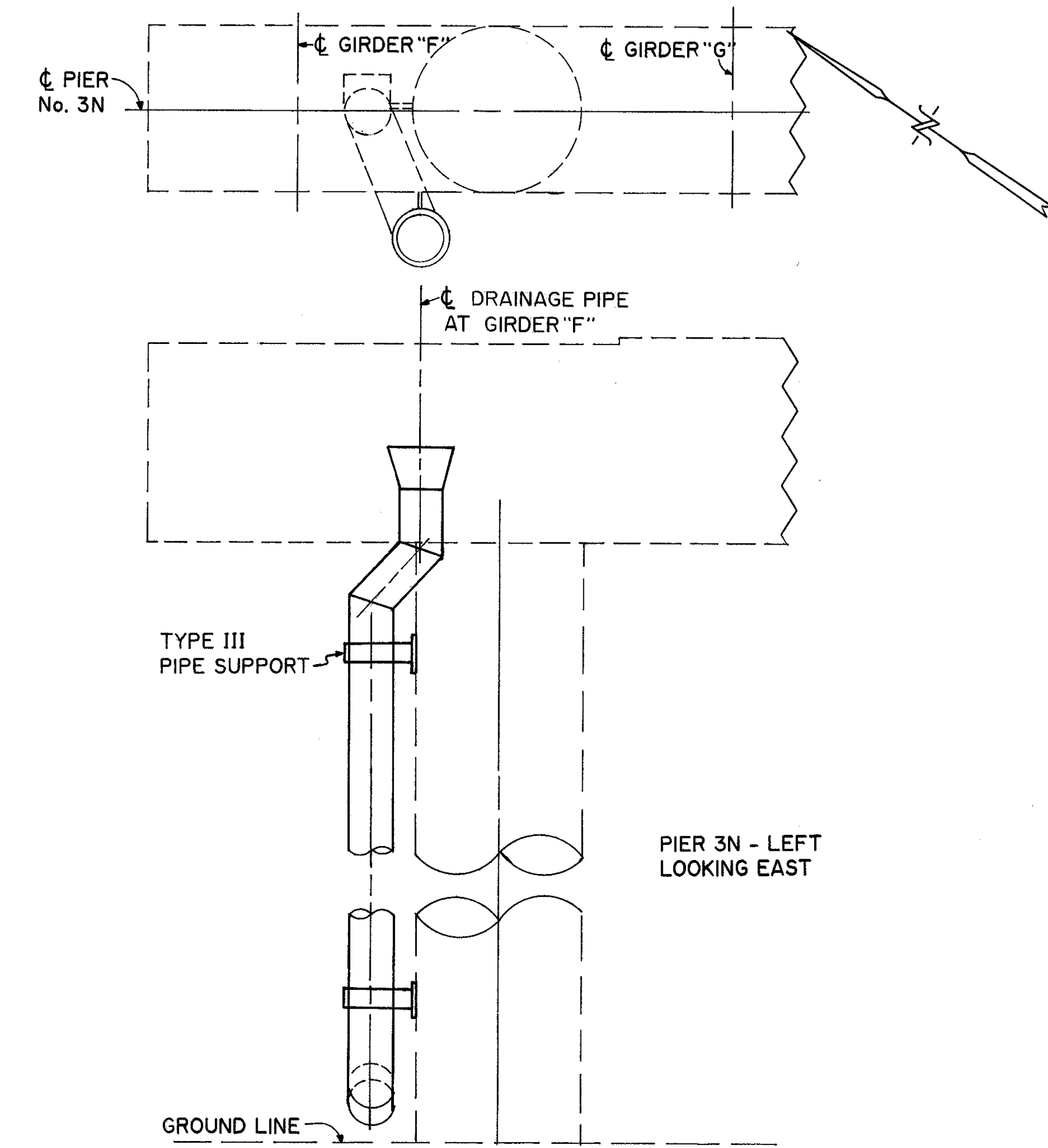




CUY-90-1628 R  
 WEST ABUTMENT, SOUTH HALF



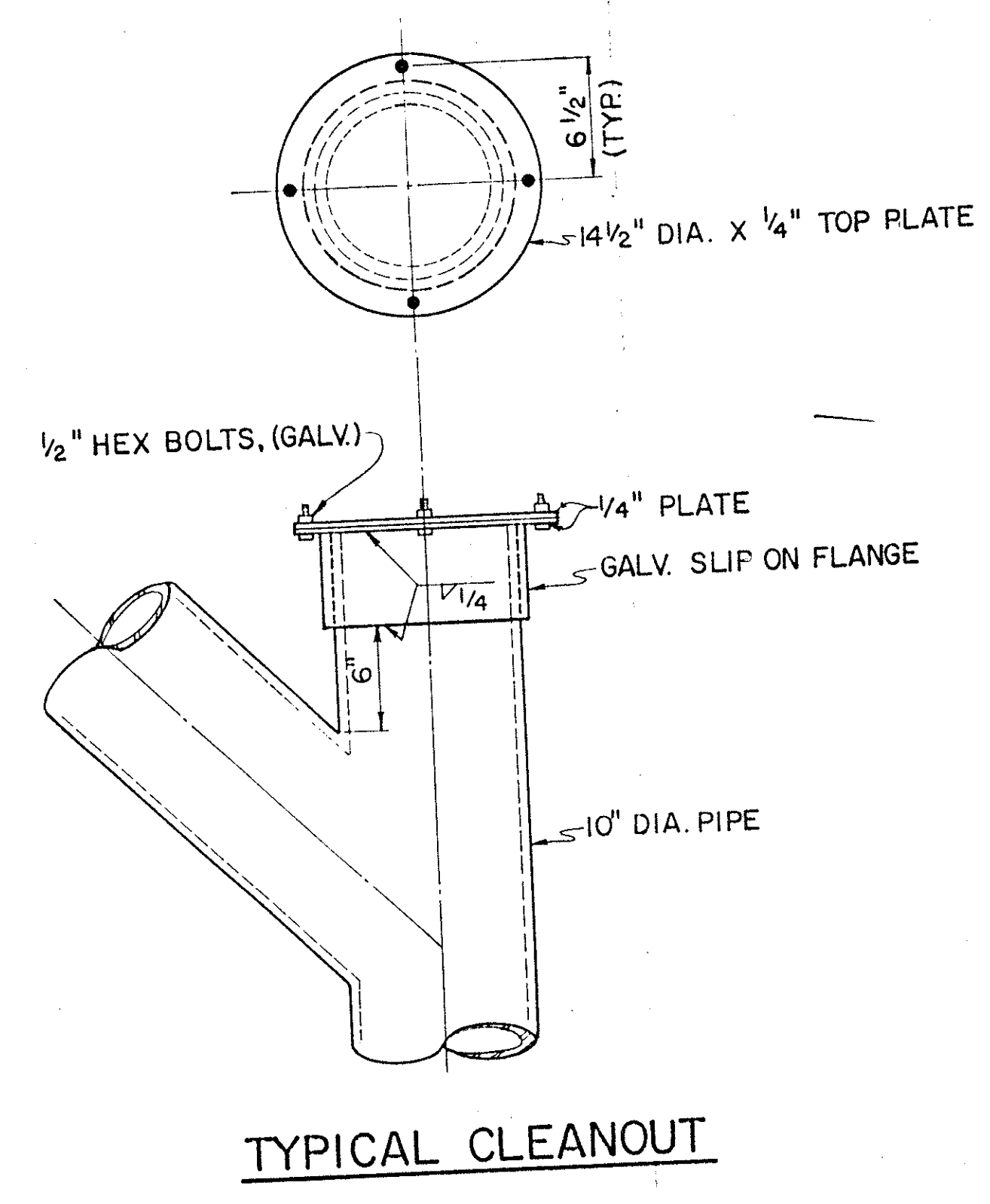
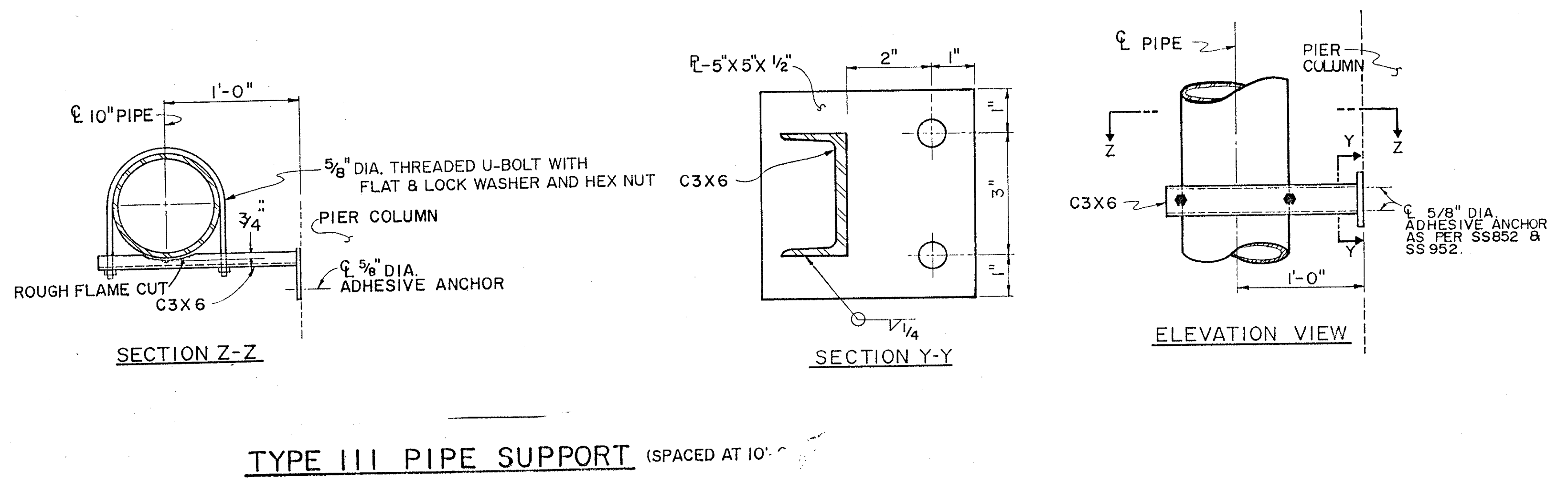
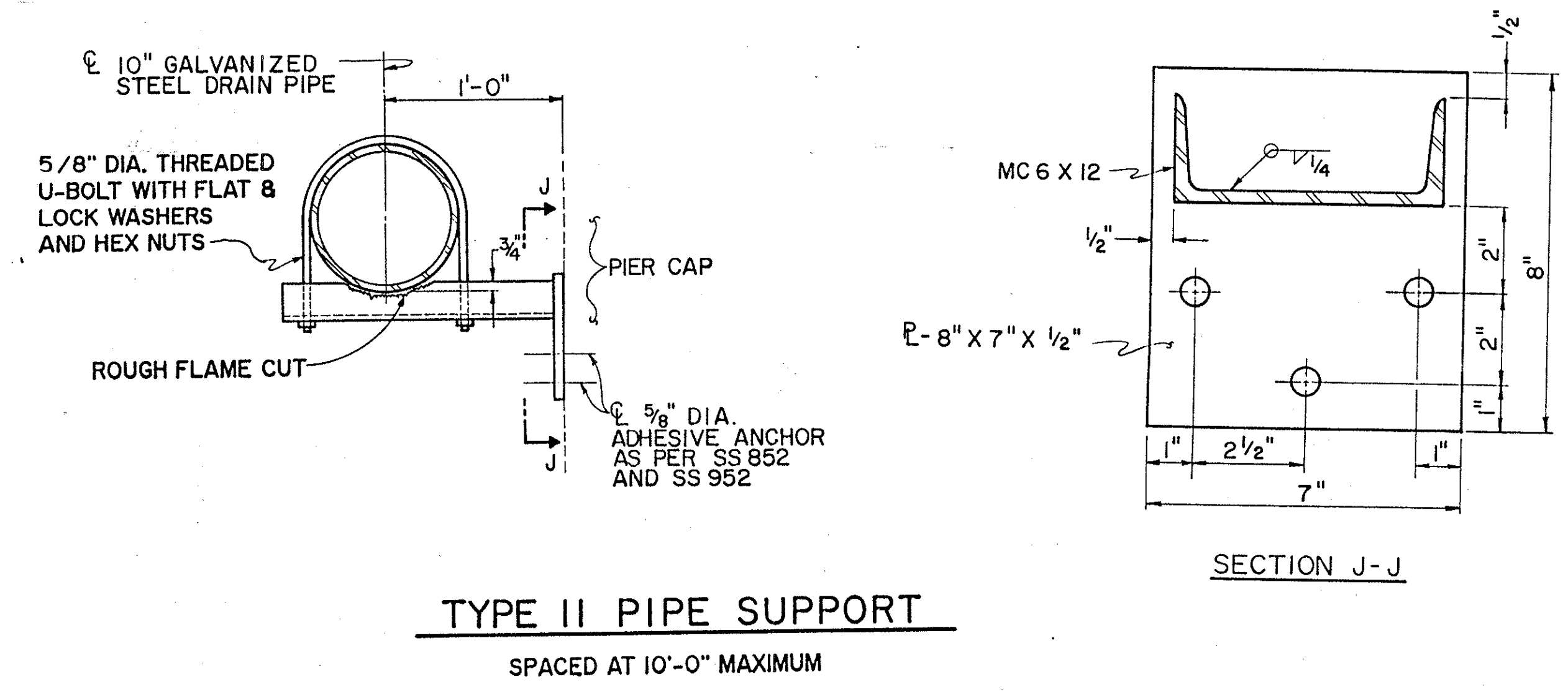
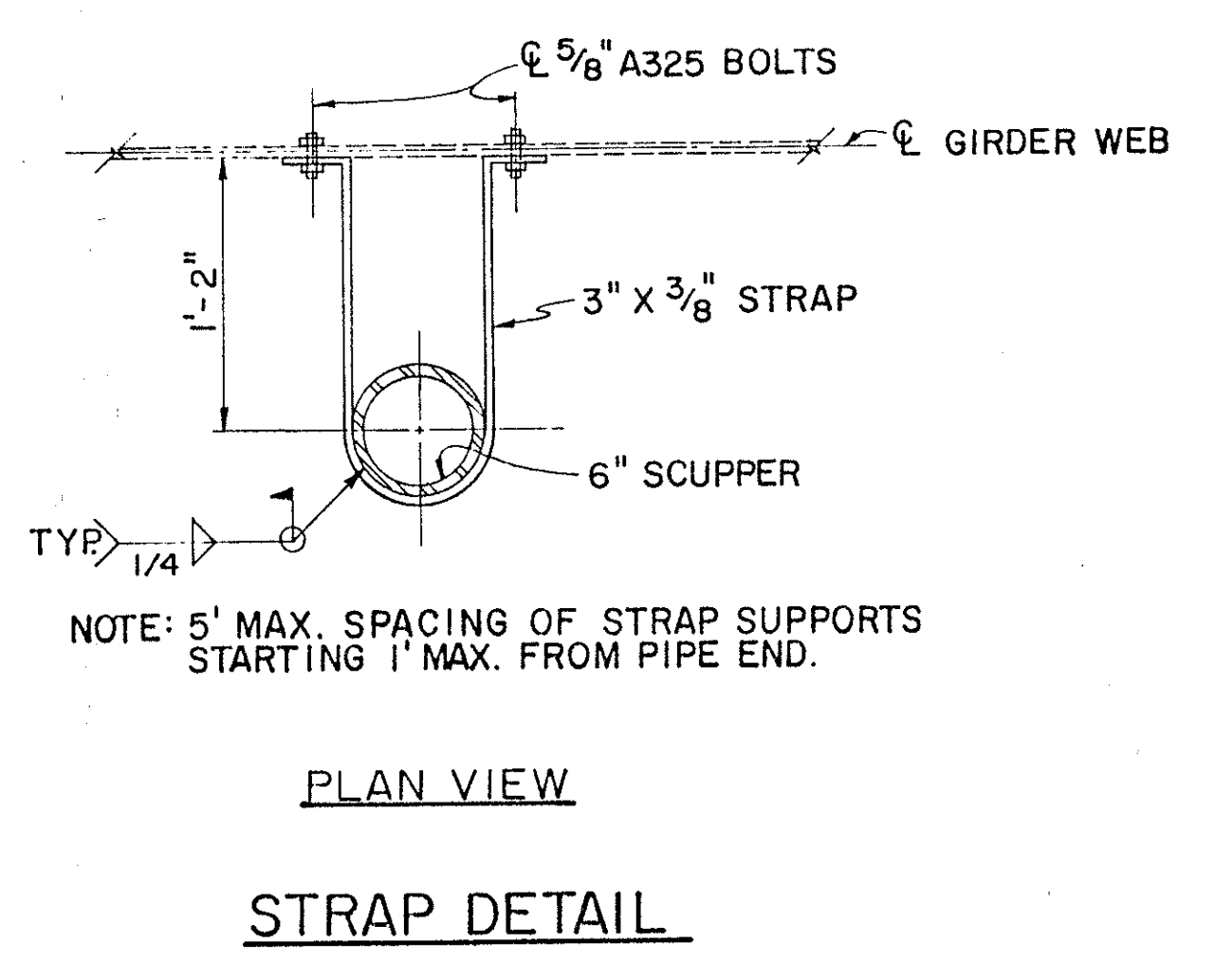
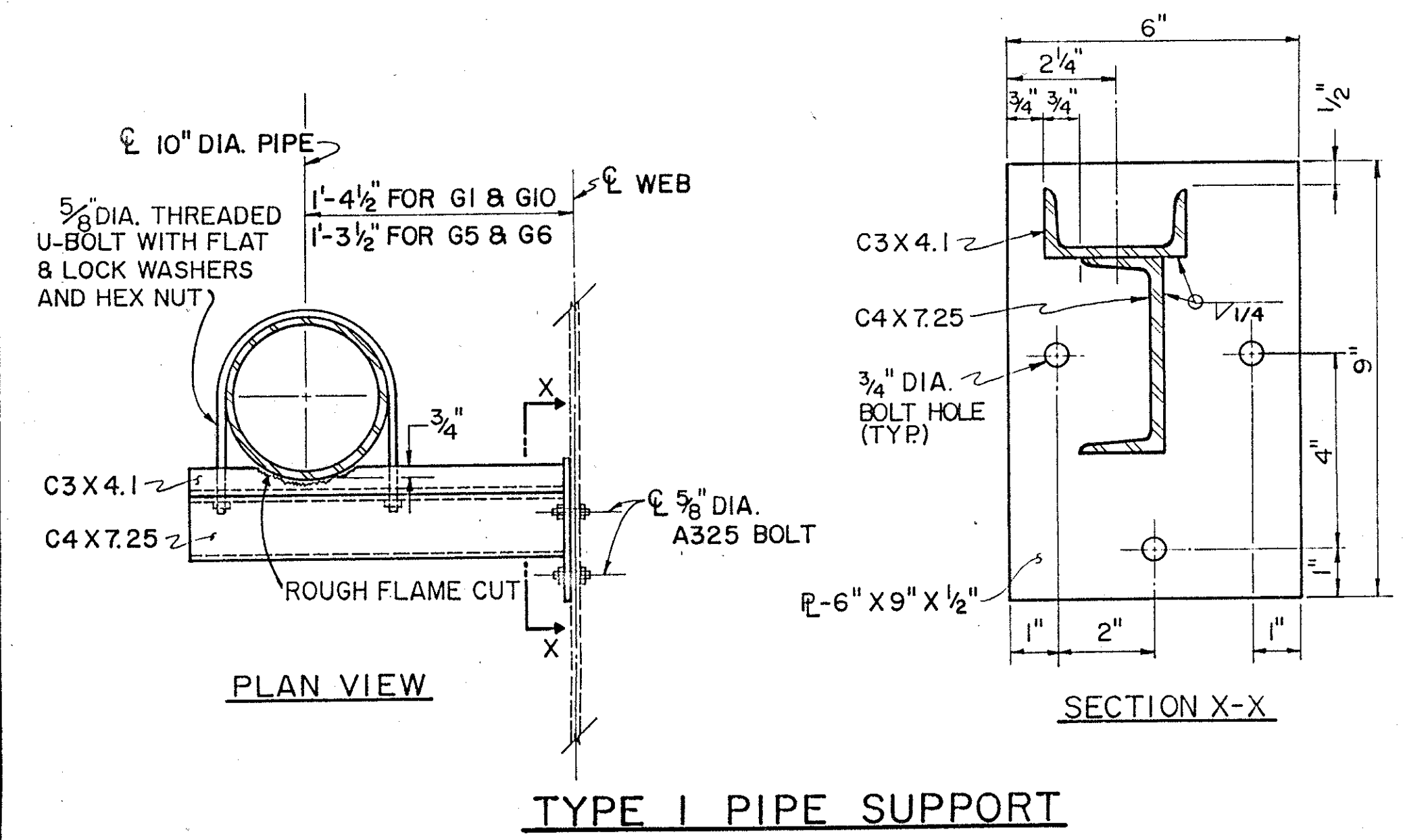
CUY-90-1651 L  
 PIER 3N - GIRDER "F"



NOTE:  
 ALL EXISTING DIMENSIONS  
 SHALL BE READ AS ±

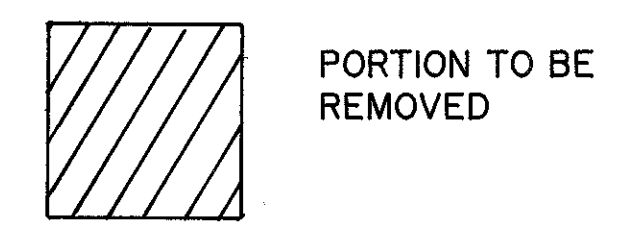
STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 12 LOCATION & DESIGN				
DRAINAGE DETAILS CUY-90-1651 CUY-90-1628				
DESIGNED E.M.K.	TRACED J.G.C.	CHECKED E.N.F.	REVIEWED D.W.L.	REVISED SHEET

# DRAINAGE DETAILS

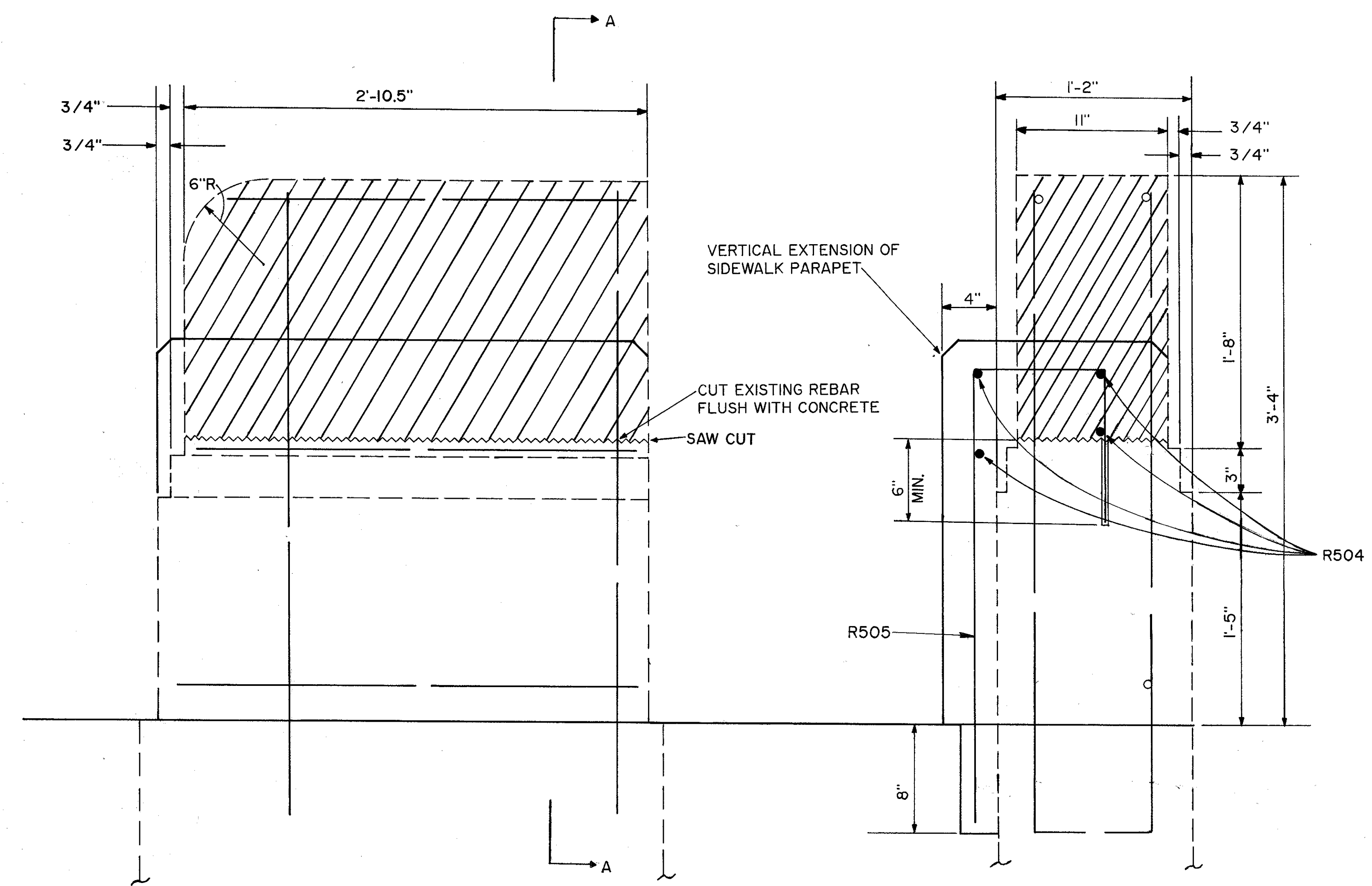


STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 12 LOCATION & DESIGN					
DRAINAGE DETAILS CUY - 90 - 1628/1651					
DESIGNED LAM	DRAWN JGC	CHECKED ENF	REVIEWED DWL	DATE	REVISED

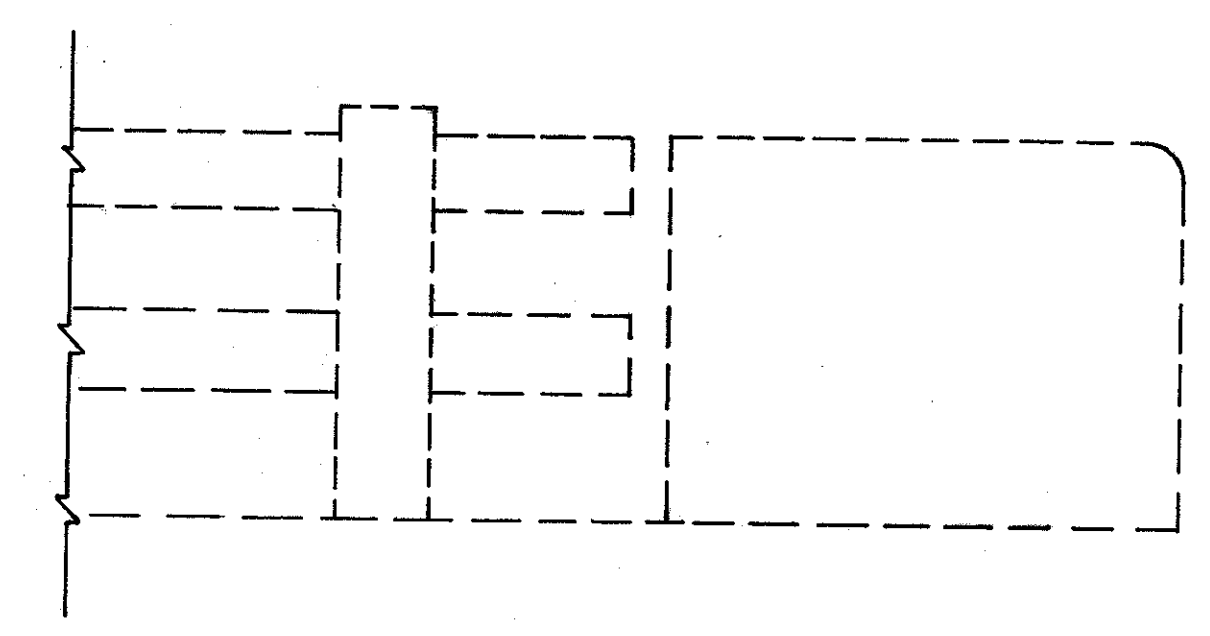




SEE SHEET 236 FOR  
 RAILING FACING  
 DETAILS TYPE SW.



SECTION AA

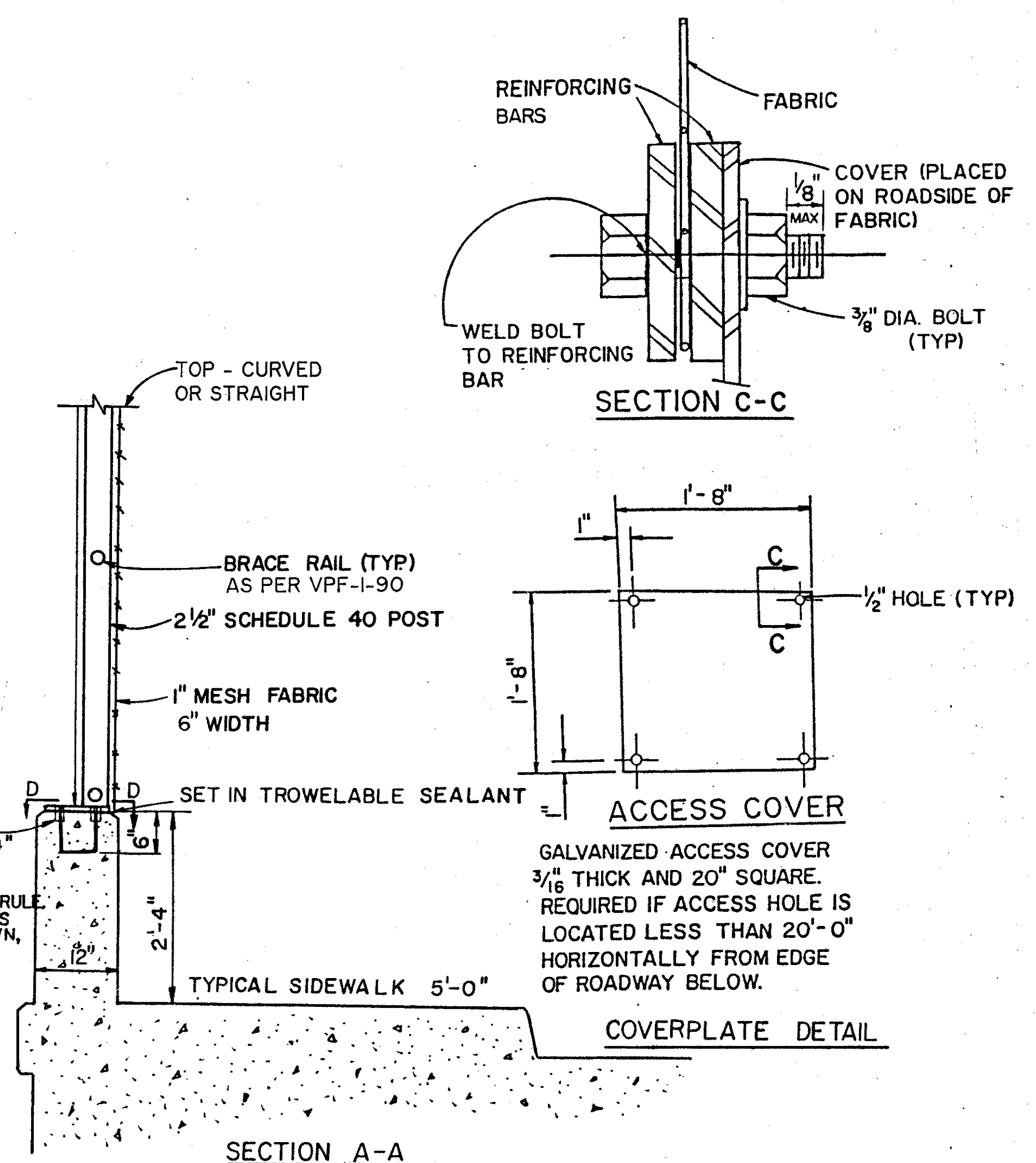
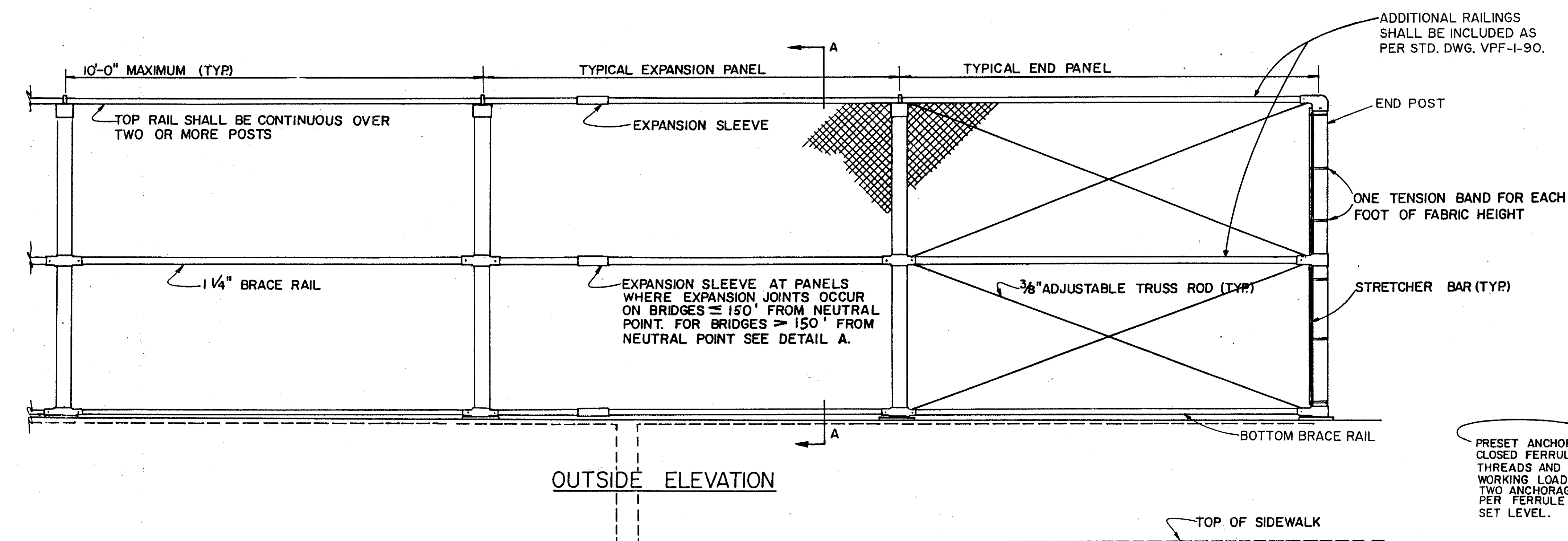


STATE OF OHIO  
 DEPARTMENT OF TRANSPORTATION  
 DISTRICT 12 LOCATION & DESIGN

PORTIONS OF STRUCTURES  
 REMOVED  
 VERTICAL EXTENSION OF  
 SIDEWALK PARAPET  
 CUY-90-1692/1794/1815

CUYAHOGA COUNTY					OHIO
DESIGNED	TRACED	CHECKED	REVIEWED	REVISED	
	JGC	ENF	DWL		SHEET

# VANDAL PROTECTION FENCE DETAIL

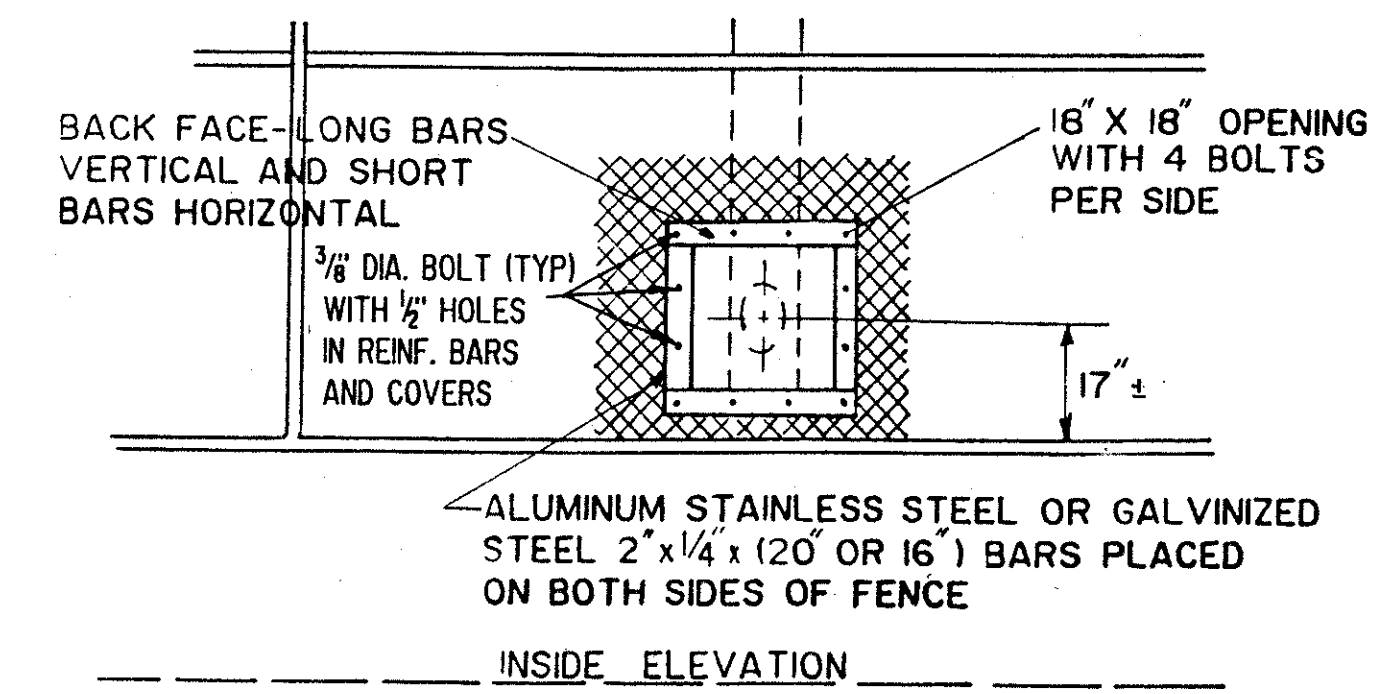
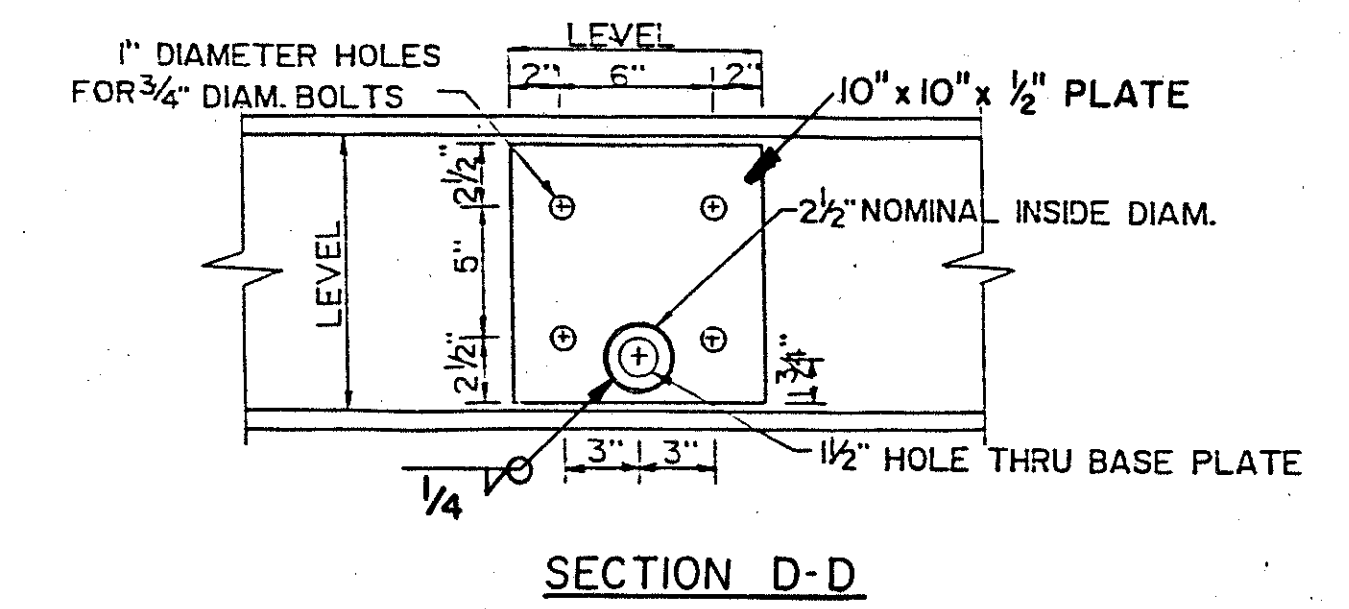
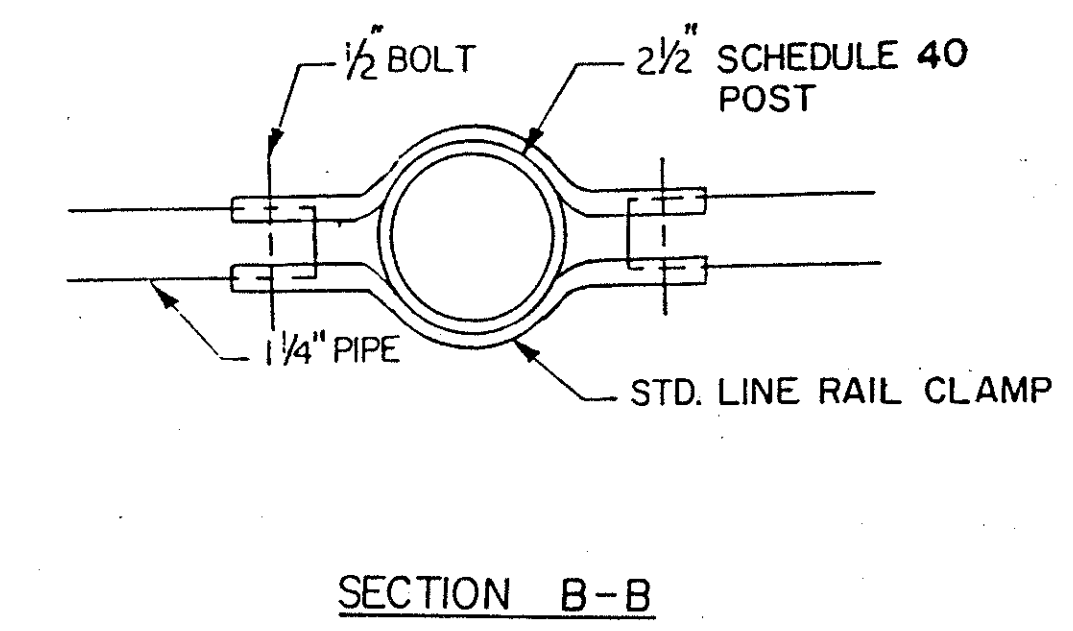
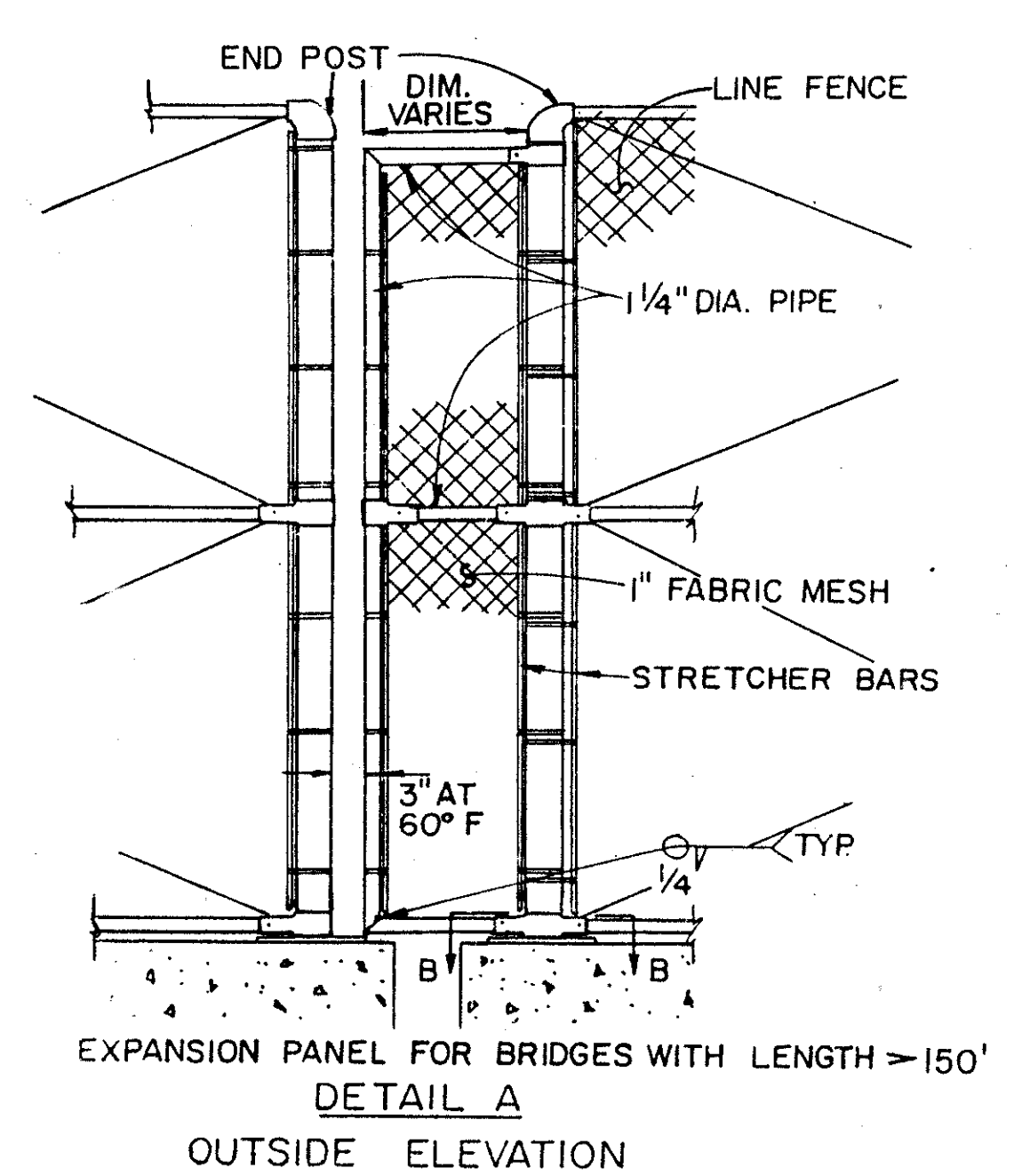


**ITEM SPECIAL - VANDAL PROTECTION FENCE**

THIS ITEM INCLUDES THE FURNISHING OF ALL MATERIALS, LABOR, EQUIPMENT AND INCIDENTALS INCLUDING THE PRESET ANCHOR WITH CLOSED FERRULES NECESSARY TO COMPLETE THE FENCING. MATERIALS AND WORKMANSHIP SHALL MEET THE REQUIREMENTS OF ITEM 607 EXCEPT THAT ALUMINUM ALLOY POSTS SHALL NOT BE USED. CHAIN LINK FENCE SHALL CONFORM TO THE CONSTRUCTION AND MATERIALS SPECIFICATION 710.03. ALUMINUM ALLOY FABRIC AASHTO M-181, TYPE III SHALL BE USED. POSTS SHALL BE VERTICAL. BRACE RAIL SHALL BE PARALLEL TO THE GRADE LINE. FENCE POSTS AND RAILS SHALL BE OF NOMINAL INSIDE DIAMETER, STANDARD WEIGHT AND WALL THICKNESS PIPE, SCHEDULE 40 UNLESS OTHERWISE NOTED. SPRING LOADED EXPANSION SLEEVES SHALL BE PROVIDED AT APPROXIMATELY 100 FOOT INTERVALS IN ALL HORIZONTAL RAILS. STRETCHER BARS AND MISCELLANEOUS HARDWARE SHALL BE THAT OF THE CHAIN-LINK FENCE INDUSTRY STANDARD. THE BASE PLATES MAY BE OF ANY COMMERCIAL WELDABLE STEEL HAVING A YIELD STRENGTH OF NOT LESS THAN 33 KSI. POSTS SHALL HAVE A YIELD STRENGTH OF 30 KSI. TENSION BANDS SHALL BE A MINIMUM OF 12 GAUGE STEEL BY 7/8 INCHES WIDE ASSEMBLED WITH 5/16 INCH DIAMETER BOLTS BY 1-1/4 INCH BOLTS. ALL PARTS SHALL BE STEEL GALVANIZED, CONFORMING TO CMS 710.02, AND ALL GALVANIZING SHALL BE DONE AFTER FABRICATION. FIELD WELDING SHALL NOT BE PERMITTED. CORE WIRE SHALL BE 9 GAGE. PVC COATING SHALL BE 2b. FOR ADDITIONAL NOTES AND DETAILS SEE STD. DWG. VPF-I-90. PAYMENT SHALL BE MADE UNDER

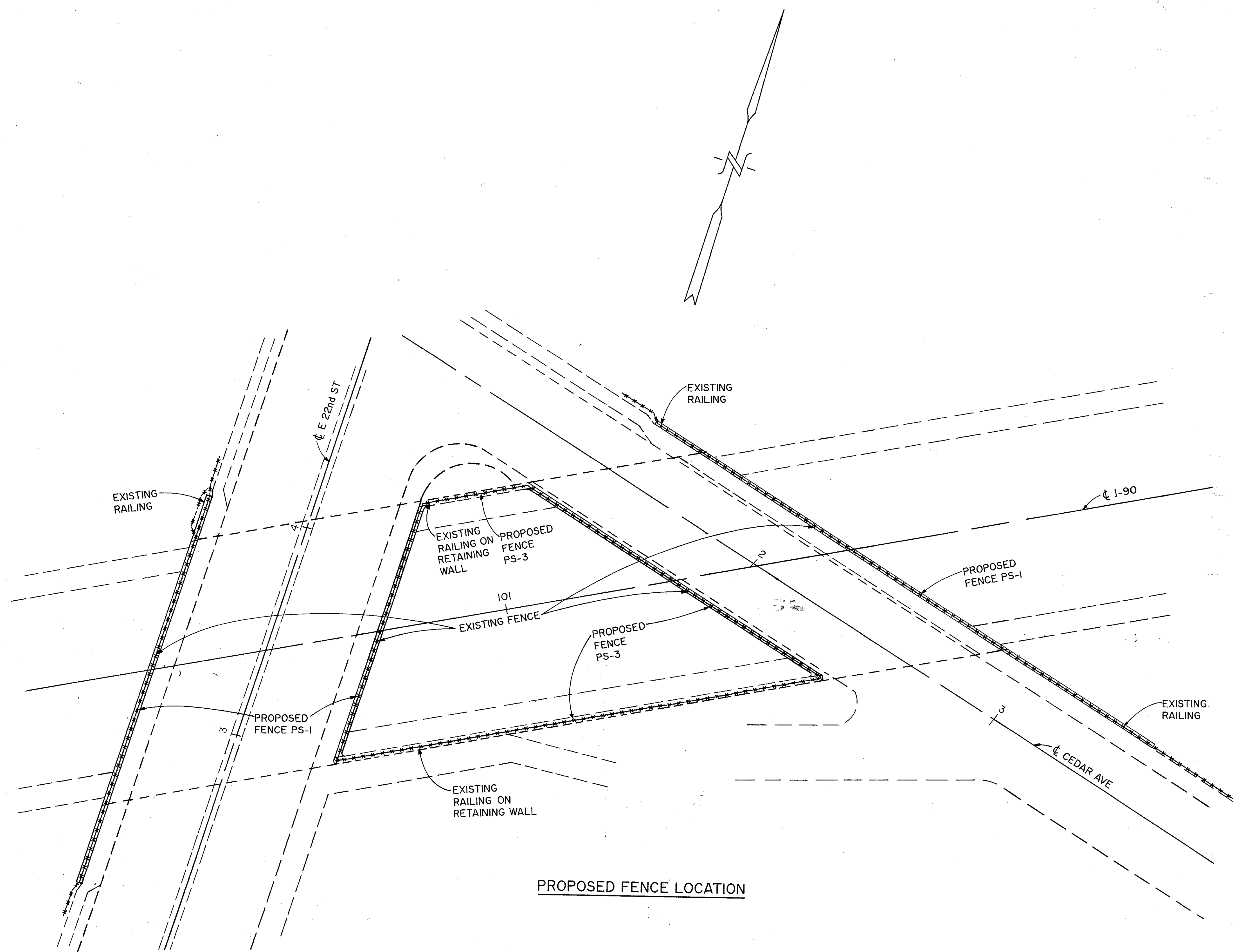
ITEM SPECIAL - VANDAL PROTECTION FENCE, 8' STRAIGHT, COATED FABRIC

ITEM SPECIAL - VANDAL PROTECTION FENCE, 12' STRAIGHT, COATED FABRIC



STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 12 BRIDGE DEPARTMENT					
TOP PARAPET VERTICAL (TPV)					
VANDAL PROTECTION FENCE DETAIL					
CUI - 90 - 1676 / 1681 / 1692 / 1794 / 1803					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
B.G.W.	J.P.H.	J.P.H.	D.W.L.		4/90





PROPOSED FENCE LOCATION

FENCE LOCATION DETAIL			
BR. NO. CUY - 90 - 1676 /1681			
CUYAHOGA COUNTY		OHIO	
DESIGNED LAM	TRACED JGC	CHECKED EMK	REVIEWED DWL