



CUY-90-14.90

PID 77332/85531

APPENDIX EX-17

CUY-077-1381 PID 08084

(Reference Document)

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

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

11-0
 PLOT SUBMITTED BY: uliman
 PLOT SUBMITTED: 16-JUN-1992 09:00
 c:\dgn\pid08084\08084gta.dgn

STATE OF OHIO

DEPARTMENT OF TRANSPORTATION

CUY-77-13.81

CITY OF CLEVELAND

VILLAGE OF NEWBURGH HEIGHTS

VILLAGE OF CUYAHOGA HEIGHTS

CUYAHOGA COUNTY

IM-77-5(42)160

DESIGN DESIGNATION

Current A.D.T. (1991) = 107080
 Design Year A.D.T. (2011) = 109300
 D.H.V. = 10930
 D = 55 %
 T = 8 %
 Design Speed = 50 MPH
 Legal Speed = 50 MPH
 Functional Classification = URBAN INTERSTATE
 Design Exception
 Shoulder Width (Median) 3/19/90
 Horizontal Alignment 3/19/90

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

CONVENTIONAL SIGNS

County Line	-----	Limited Access (only)	-----	L/A
Township Line	-----	Right of Way (only)	-----	R/W
Section Line	-----	Limited Access & Right of Way	-----	L/A & R/W
Corporation Line	//////	Existing Right of Way	-----	R/W
Fence Line (existing)	x-x	Property Line	-----	(in existing fence) x-x
Center Line	352 353	Railroad	+++++	or ++++++
Trees	⊙, Stumps	Guardrail (existing)	-----	(proposed) -----
Utility Poles	Telephone ⓪, Power ⓪, Light ⓪			

INDEX OF SHEETS

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LINE DATA

PROJECT LIMITS

STA. 46+76.05 TO STA. 130+41.88 (BK)	= 8365.83 LF.
STA. 30+41.88 (AH) TO STA. 49+81.46	= 1939.58 LF.
STA. 0+00 TO STA. 6+21.14 (RAMP E-17)	= 621.14 LF.
STA. 0+00 TO STA. 4+11.11 (RAMP E-9)	= 411.11 LF.

ADDITIONS +/-OR DEDUCTIONS

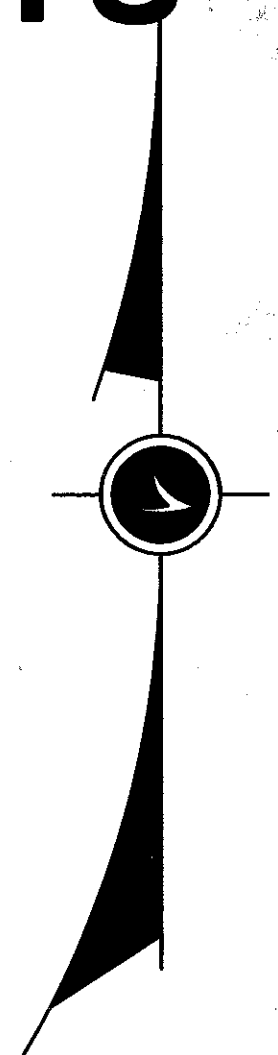
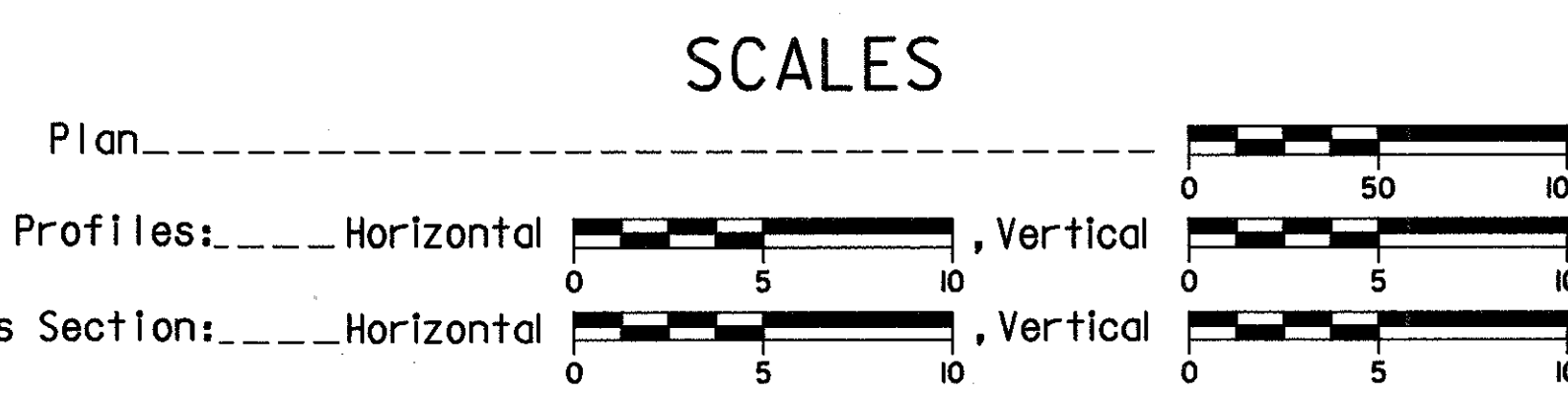
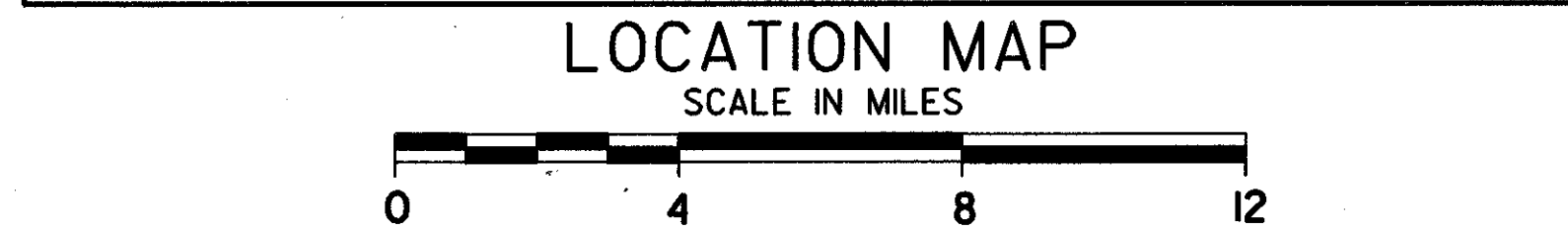
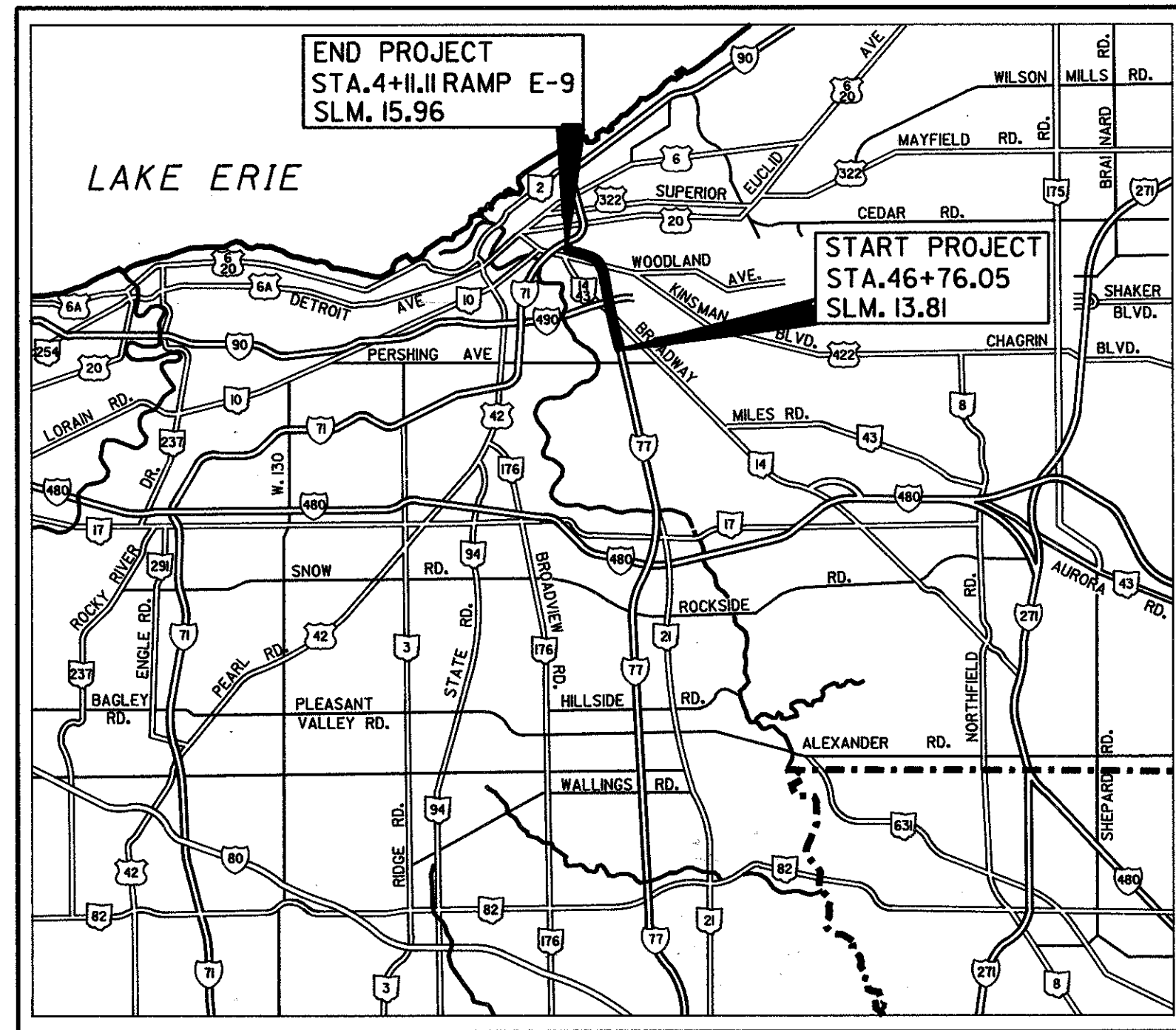
STA. 49+81.46 (R-77)=STA. 0+00 (RAMP E-17)	= 0 LF.
STA. 6+21.14 (RAMP E-17)=STA. 0+00 (RAMP E-9)	= 0 LF.
SUSPENSIONS FOR BRIDGE WORK (SEE SCHEMATIC PLAN)	= -3562.39 LF.
PROJECT LENGTH	= 7775.27 LF.
	1.473 MILES

ADDITIONAL WORK

STA. 157+60 TO STA. 199+83.68BK.	= +4223.68 LF.
STA. 45+76.05AH TO STA. 46+76.05	= +100.00 LF.
STA. 4+11.11 TO STA. 6+71 (RAMP E-9)	= +259.89 LF.
ADDITIONAL BRIDGE WORK (SEE SCHEMATIC PLAN)	= +3562.39 LF.
ADDITIONAL WORK LENGTH	= 15,921.23 LF.
	3.015 MILES

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

Project: CUY-77-13.81
 Date of Letting: 19, Contract No. PID: 8084



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
820	3-18-92	931	3-18-92
852	6-10-87	952	12-14-88
		902	8-31-79
		940	6-10-87
		942	3-18-92
		944	3-18-92
		923	1-10-69

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 and that provisions for the maintenance and safety of traffic will be as set forth in the plans and estimates.

Approved: *Bryan J. Andrus*
 Date: 6/24/92 District Deputy Director of Transportation

Approved: *B.D. Hunkeler*
 Date: 7-3-92 Engineer, Bureau of Bridges and Structural Design

Approved: *James L. Butts*
 Date: 9/14/92 Chief Engineer, 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 LIMITS HEREBY ESTABLISHED SHALL BECOME EFFECTIVE WHEN APPROPRIATE SIGNS GIVING NOTICE THEREOF ARE ERECTED.

Approved: *Jerry Wilson*
 Date: 9-14-92 Director, Department of Transportation

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS

BP-1.1	2-21-92	GR-2.1	5-6-91	MC-4	7-26-76	MT-98.12	8-25-89	TC-22.20	9-01-92	TC-52.20	4-3-79
BP-2.1	2-21-92	GR-3.1	5-6-91	MC-11	8-1-78	MT-98.13	8-25-89	TC-31.21	9-01-92	TC-72.20	2-26-82
BP-2.2	2-21-92	GR-3.2	5-6-91	MC-9.3	10-30-92	MT-98.14	8-25-89	TC-32.10	9-01-92	TC-82.10	8-29-84
BP-2.4	2-21-92	GR-3.3	5-6-91	MC-9.2	5-6-91	MT-98.15	8-25-89	TC-32.11	9-01-92	TC-83.10	3-18-92
BP-2.5	2-21-92	GR-3.4	5-6-91	HL-20.11	5-1-87	MT-99.10	11-14-86	TC-35.10	8-29-84	TC-83.20	1-20-84
BP-3.1	2-21-92	GR-3B	1-21-85	HL-30.11	5-1-87	MT-99.20	4-29-88	TC-41.10	8-29-84	HL-20.13	5-1-87
BP-5.1	2-21-92	GR-4.1	5-6-91	HL-30.21	5-1-87	MT-101.60	7-01-92	TC-41.20	3-26-79	HL-20.14	5-1-87
BP-7.1	10-30-92	GR-4.2	5-6-91	HL-30.22	5-1-87	MT-102.20	8-25-89	TC-41.40	6-18-79		
CB-3	5-1-79	GR-5.1	10-30-92	HL-40.10	5-1-87	TC-7.65	3-1-79	TC-41.50	3-26-79	EXJ-2-81	4-2-84
F-7	11-1-77	GR-8	10-25-90	HL-60.31	5-1-87	TC-9.10	4-24-80	TC-42.10	8-19-77	SD-1-69	6-12-69
GR-1.1	5-6-91	I-2A	12-18-84	MT-95.30	10-10-88	TC-18.24	4-25-79	TC-42.20	3-26-79	VPF-1-90	2-1-92
GR-1.2	10-30-92	I-3A+B	4-1-80	MT-95.31	10-10-88	TC-21.10	9-01-92	TC-51.10	1-20-84	TBR-91	4-24-92
GR-1.3	2-21-92	MC-1	6-13-69	MT-95.32	8-25-89	TC-22.10	9-01-92	TC-52.10	4-3-79	MC-9A	1-11-85

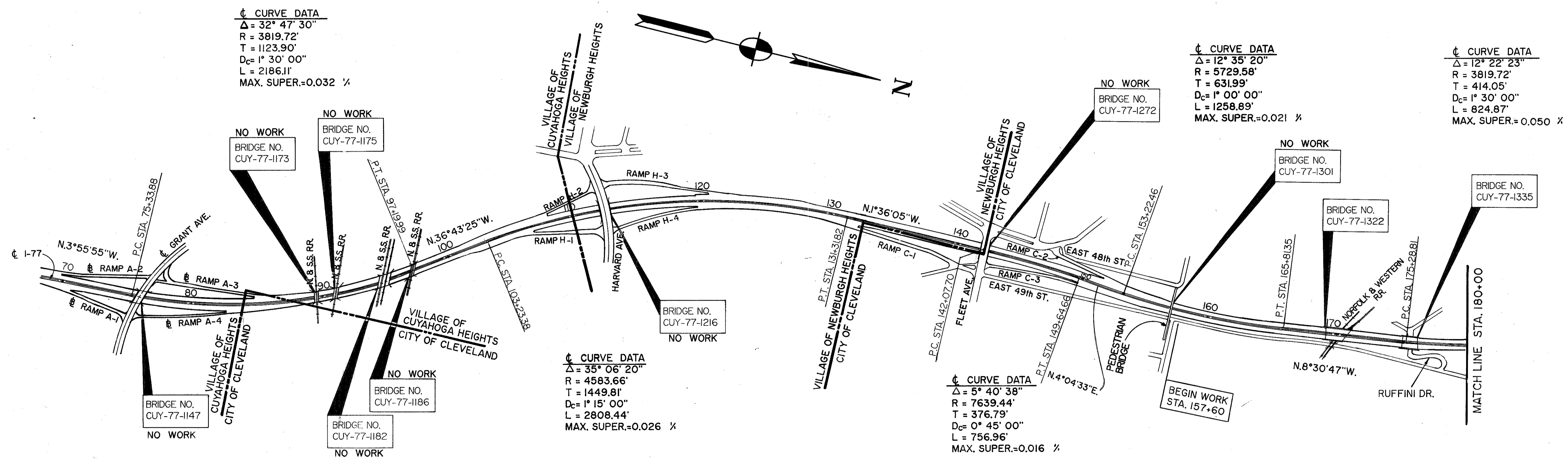
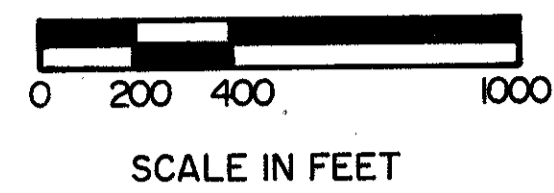
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED

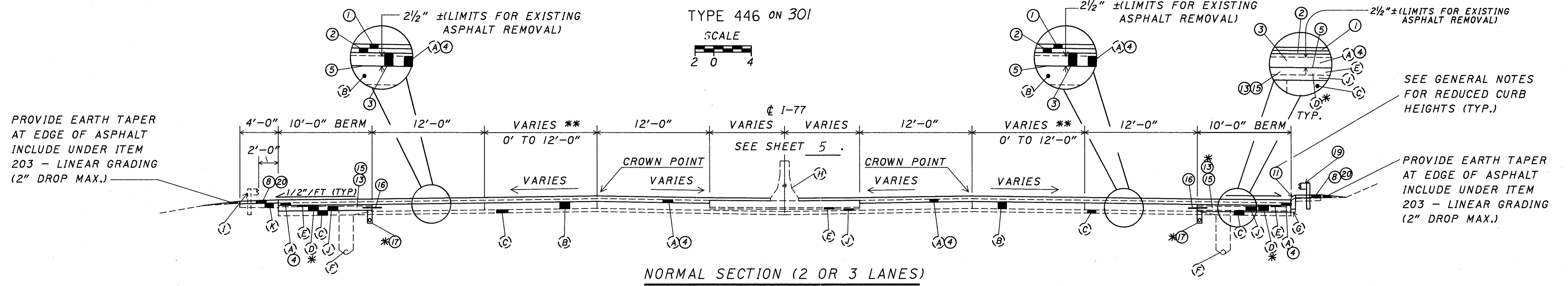
DIVISION ADMINISTRATOR _____ DATE _____

REVISED 1-19-93
 REVISED 12-10-92

SCHEMATIC PLAN



TYPICAL SECTIONS



STA. 46+76.05 TO STA. 59+19.51 **
 STA. 68+80.23 TO STA. 98+26
 STA. 98+26 TO STA. 102+32.99 **
 STA. 128+32.99 TO STA. 130+41.88 **
 STA. 30+41.88 TO STA. 46+50 **
 STA. 46+50 TO STA. 51+77.74

** -2'-0" (3 LANE SECTION)
 * -APPROXIMATELY 50% OF MAINLINE (OUTSIDE) BERMS ARE CONCRETE BASE. OMIT UNDERDRAINS UNDER EXISTING CONCRETE SHOULDERS. OUTLET PROPOSED UNDERDRAINS THROUGH SLOPE OR CONNECT TO DRAINAGE STRUCTURE. BERMS ARE TO BE REPLACED ONLY WHERE ASPHALT BERMS EXIST.

EXISTING LEGEND

- (A) ASPHALT CONCRETE SURFACE COURSE
- (B) 9" REINFORCED CONCRETE PAVEMENT
- (C) SUBBASE
- (D) CONCRETE BASE
- (E) BITUMINOUS AGGREGATE BASE
- (F) UNDERDRAIN
- (G) CURB (SANDSTONE, CONCRETE, OR ASPHALT)
- (H) CONCRETE BARRIER MEDIAN (PRE-1977 SHAPE)
- (I) GUARDRAIL, TYPE 5
- (J) AGGREGATE BASE
- (K) COMPACTED AGGREGATE
- (L) CONCRETE SIDEWALK

PROPOSED LEGEND

- (1) ITEM - 446 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AC-20, AS PER PLAN (1-1/4" THICK)
- (2) ITEM - 446 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, AC-20 (1-3/4" THICK)
- (3) ITEM - 301 BITUMINOUS AGGREGATE BASE, AC-20 (3" THICK OR AS SHOWN)
- (4) ITEM - 202 WEARING COURSE REMOVED, AS PER PLAN
- (5) ITEM - 407 TACK COAT
- (7) ITEM - 617 COMPACTED AGGREGATE, TYPE B, AS PER PLAN
- (8) ITEM - 203 LINEAR GRADING
- (20) ITEM - 448 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1 (UNDER GUARDRAIL), AS PER PLAN (3")
- (9) ITEM - 403 ASPHALT CONCRETE, AC-20 (0.25" AVG.)
- (10) ITEM - 622 CONCRETE BARRIER, TYPE B50, AS PER PLAN. (SEE SHEET 51.)
- (11) ITEM - 609 CURB, TYPE 6
- (13) ITEM - 305 9" CONCRETE BASE, AS PER PLAN
- (14) ITEM - 310 SUBBASE, TYPE 1, AS PER PLAN, GRADING A
- (15) ITEM - 203 EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
- (16) 24" -#5 BAR SEE GENERAL NOTES.
- (17) ITEM - 605 4" SHALLOW PIPE UNDERDRAIN, 707.15, AS PER PLAN
- (18) ITEM - 203 SUBGRADE COMPACTION
- (19) ITEM - 606 GUARDRAIL, TYPE 5

FOR FEATHER DETAILS, SEE SHT. 59.

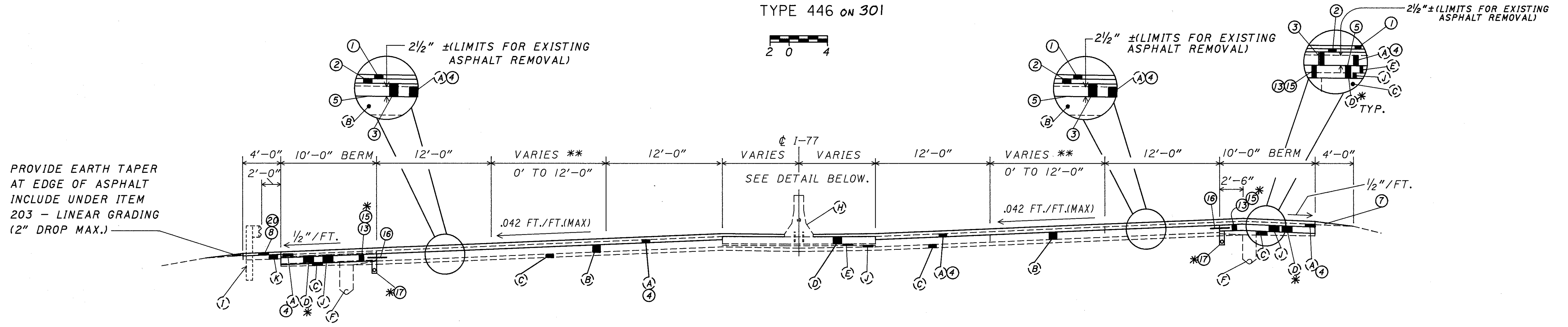
PLOT SUBMITTED BY: BANASZAK
 PLOT SUBMITTED: 05-JUN-1992 07:00
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TYPICAL SECTIONS

CUYAHOGA COUNTY
CUY-77-13.81

OHIO
FHWA REGION 5
FEDERAL PROJECT
5
234

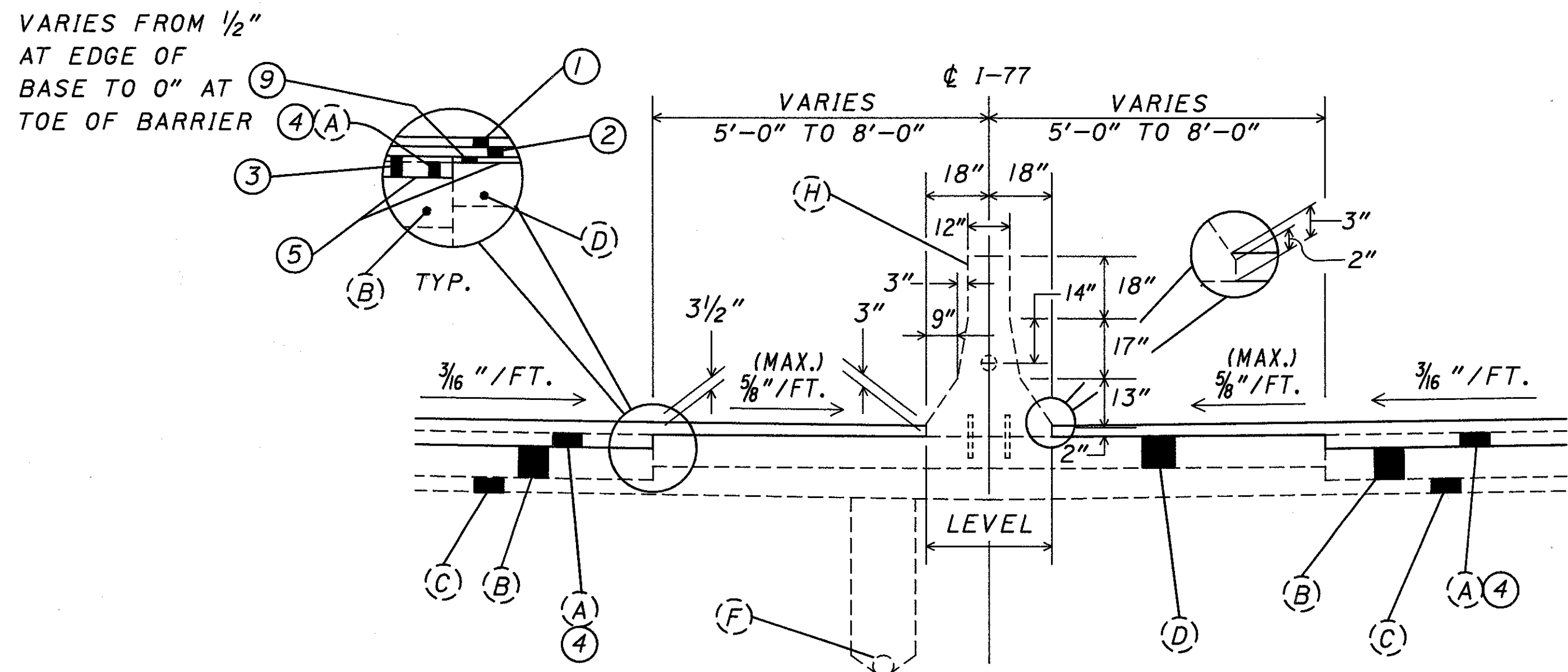
TYPE 446 ON 301



SUPERELEVATED SECTION (2 OR 3 LANES)

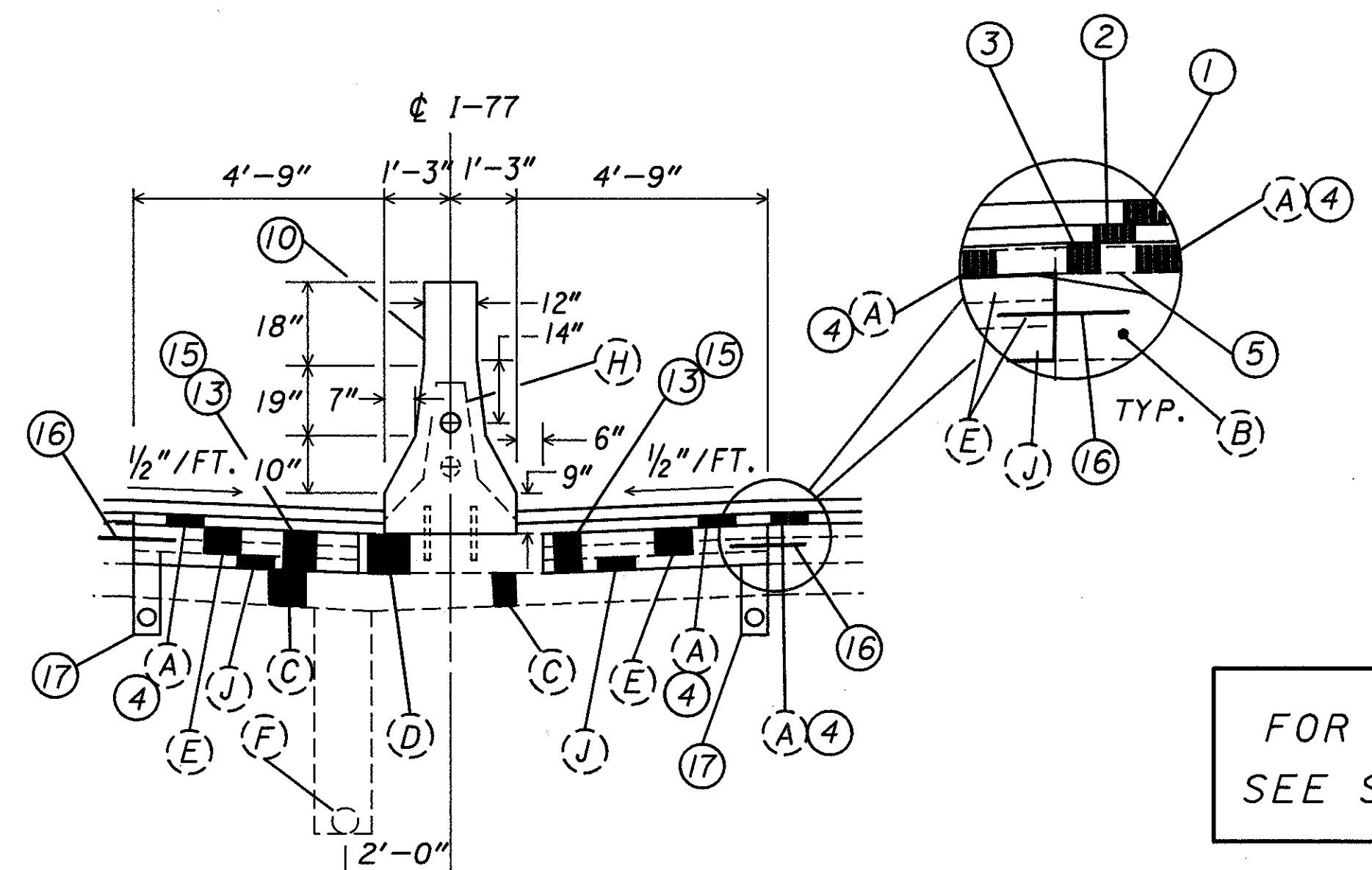
STA. 59+19.51 TO STA. 65+43 **
STA. TO 65+43 TO STA. 68+80.23
STA. 102+32.99 TO STA. 128+32.99 **

- ** -42'-0" (3 LANE SECTION)
- * -APPROXIMATELY 50% OF MAINLINE (OUTSIDE) BERMS ARE CONCRETE BASE. OMIT UNDERDRAINS UNDER EXISTING CONCRETE SHOULDERS. OUTLET PROPOSED UNDERDRAINS THROUGH SLOPE OR CONNECT TO DRAINAGE STRUCTURE. BERMS ARE TO BE REPLACED ONLY WHERE ASPHALT BERMS EXIST.



TYPICAL CONCRETE BARRIER MEDIAN (50")

STA. 65+43 TO STA. 130+41.88
STA. 30+41.88 TO STA. 51+77.74



TYPICAL CONCRETE BARRIER MEDIAN (32" EXISTING BARRIER)

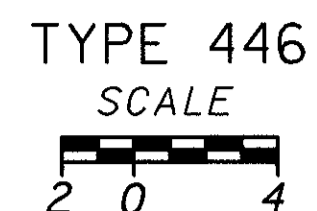
STA. 46+76.05 TO STA. 65+43

FOR LEGEND,
SEE SHEET 4

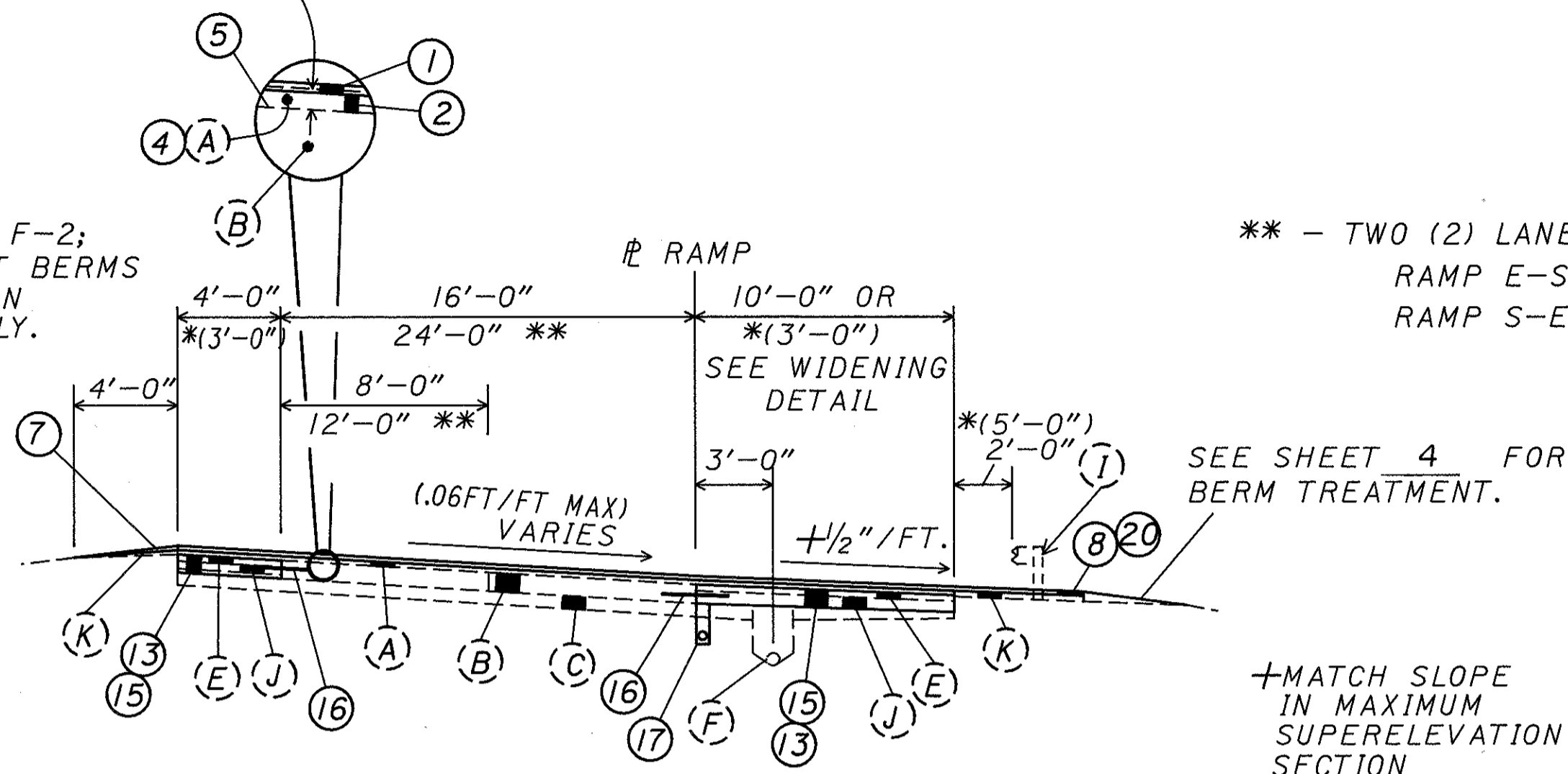
PLOT SUBMITTED BY: BANASZAK
PLOT SUBMITTED: 05-JUN-1992 08:00
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RAMP TYPICAL SECTIONS

2 1/2" (LIMITS FOR EXISTING ASPHALT REMOVAL)



* - RAMP F-1, RAMP F-2; EXISTING ASPHALT BERMS ARE TO REMAIN ON THESE RAMPS ONLY.



NORMAL RAMP SECTION (UNCURBED)

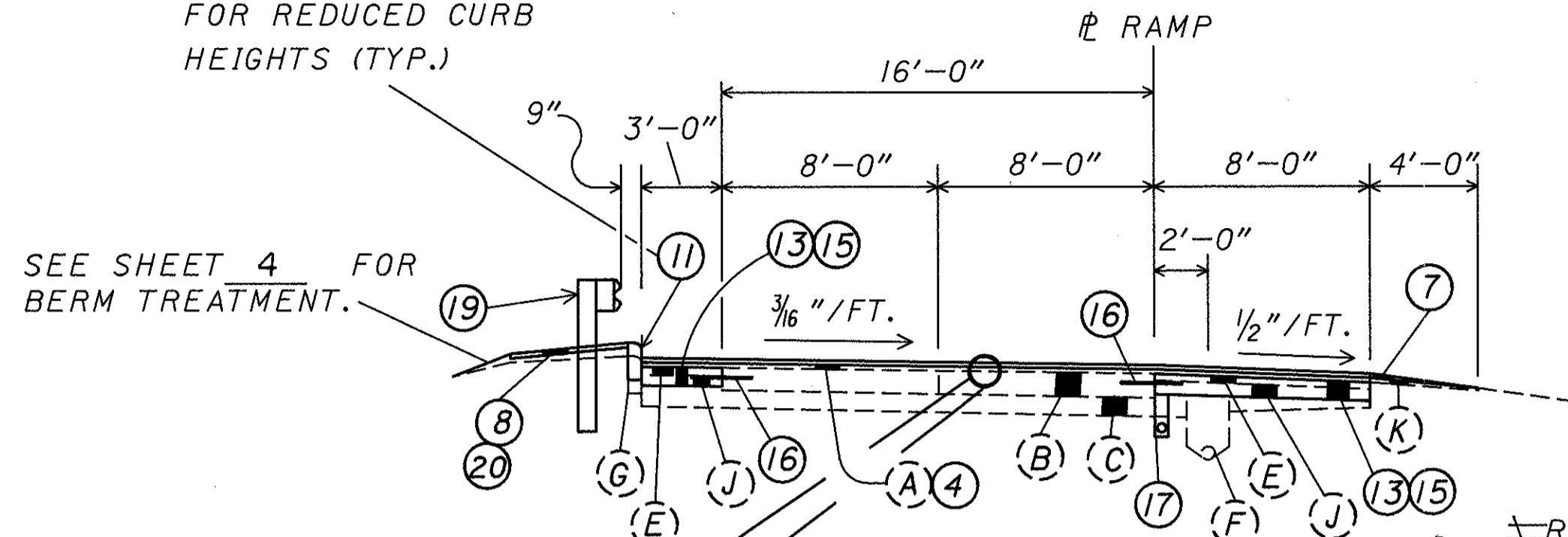
- RAMP N-E
- RAMP E-N
- RAMP F-1*
- RAMP F-2*
- RAMP W-N
- RAMP W-S
- RAMP E-S
- RAMP S-E

** - TWO (2) LANE SECTION
RAMP E-S
RAMP S-E

SEE GENERAL NOTES FOR REDUCED CURB HEIGHTS (TYP.)

SEE SHEET 4 FOR BERM TREATMENT.

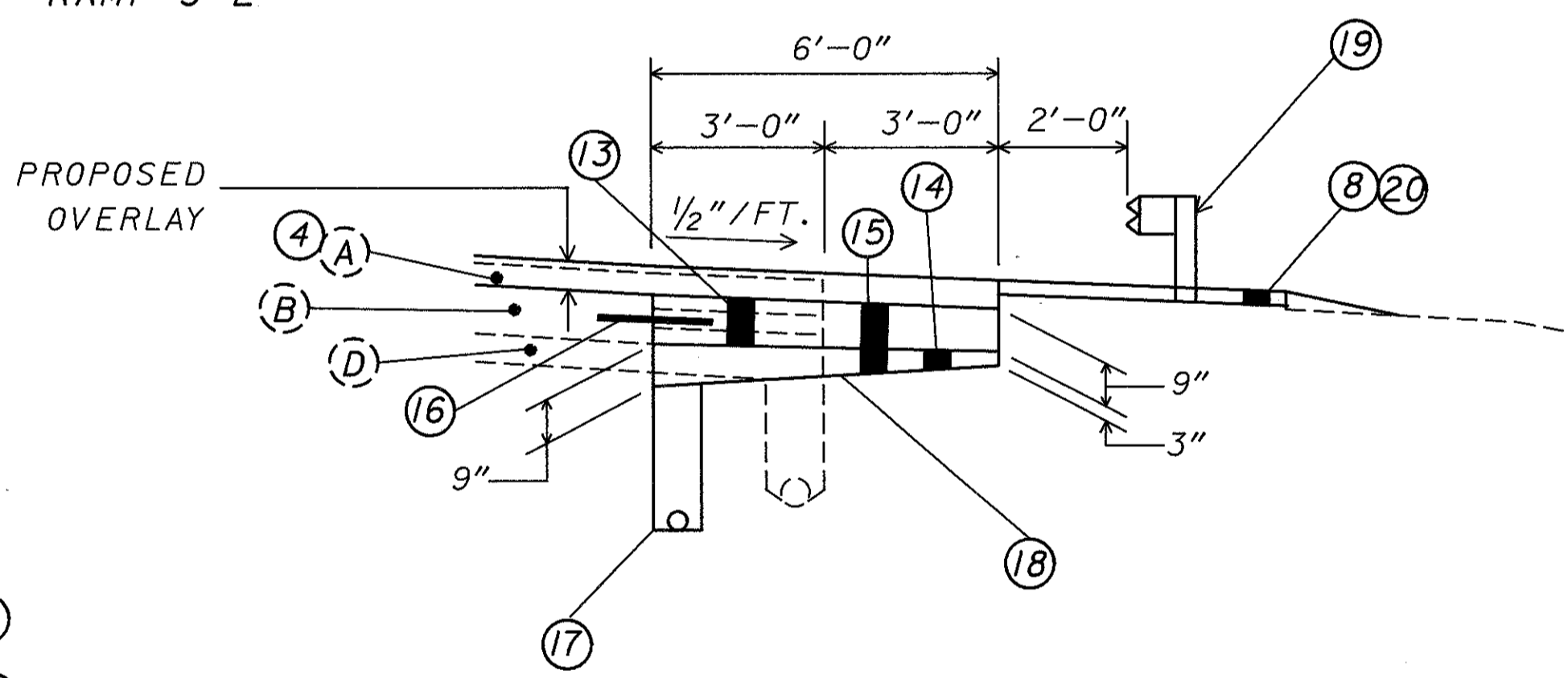
2 1/2" (LIMITS FOR EXISTING ASPHALT REMOVAL)



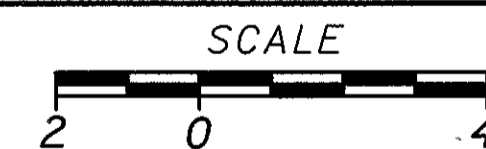
ONE LANE RAMP (ONE SIDE CURBED)

- RAMP E-7
- RAMP E-9
- RAMP E-14
- RAMP E-15
- RAMP E-18
- RAMP F-3
- RAMP F-4

RAMP E-1, RAMP E-9; EXISTING ASPHALT BERMS ARE TO BE REPLACED WITH CONCRETE ON THESE RAMPS ONLY.



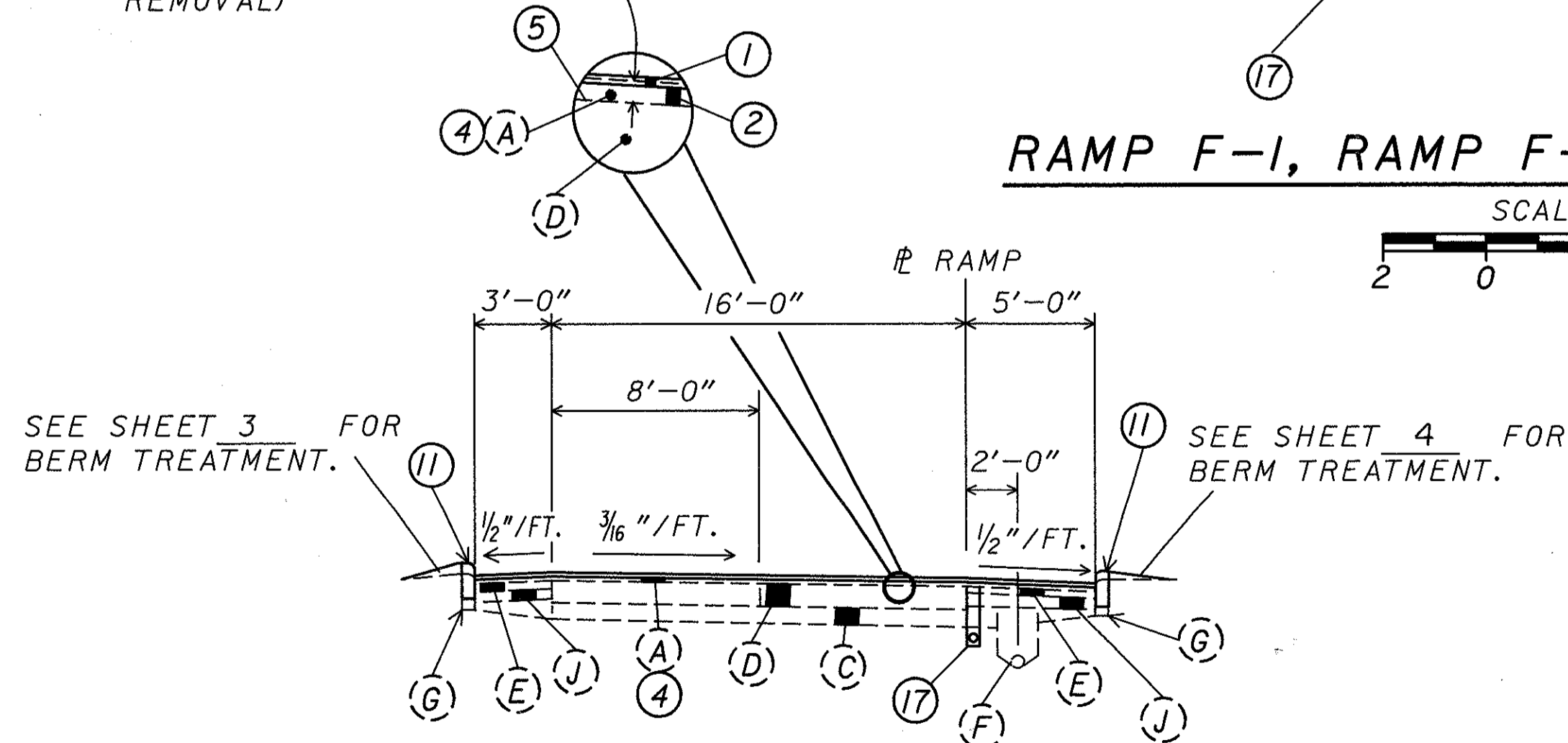
RAMP F-1, RAMP F-2 BERM WIDENING



2 1/2" (LIMITS FOR EXISTING ASPHALT REMOVAL)

SEE SHEET 3 FOR BERM TREATMENT.

SEE SHEET 4 FOR BERM TREATMENT.

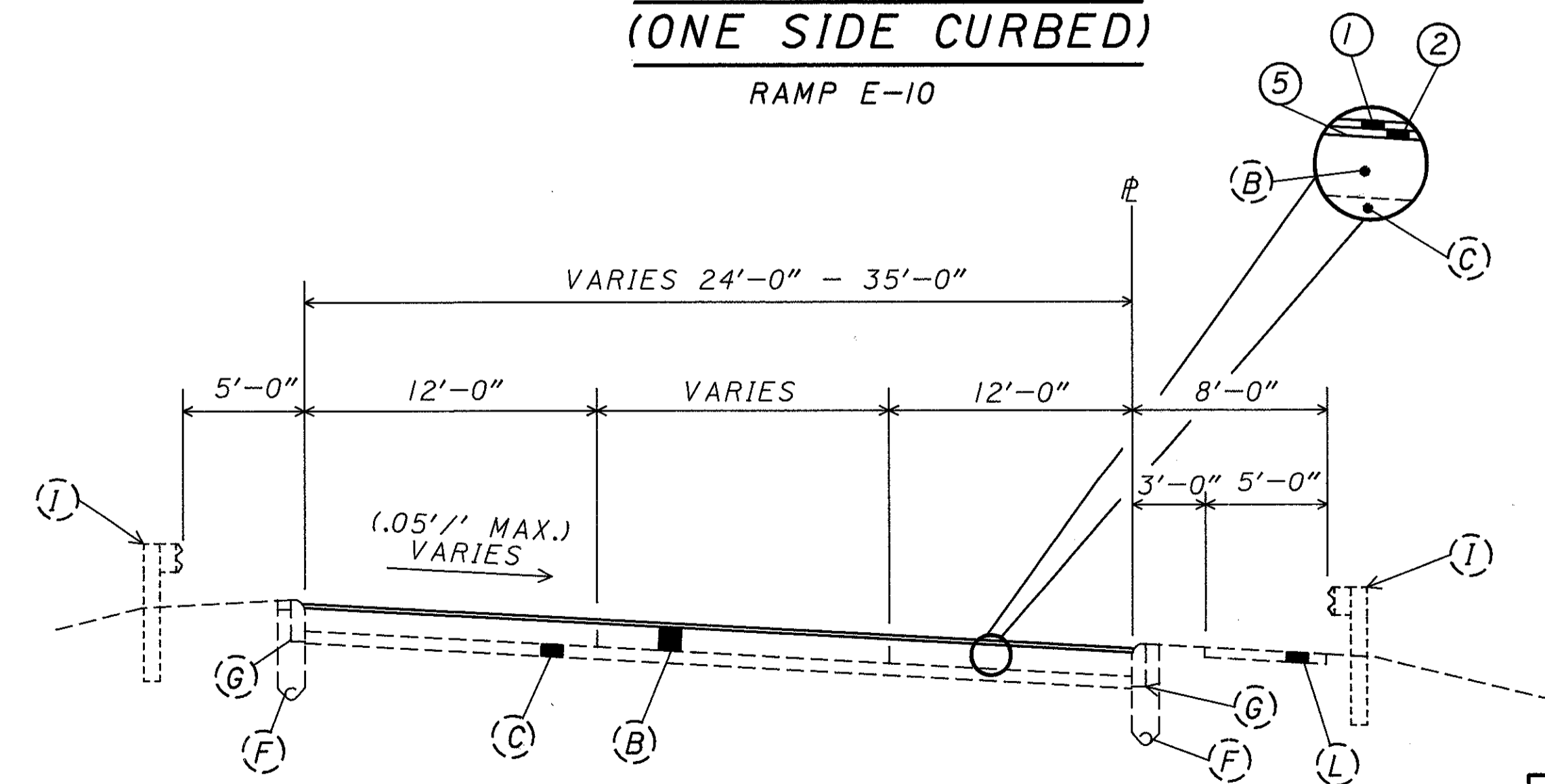


NORMAL RAMP SECTION (CURBED)

- RAMP B-1
- RAMP B-2

TWO LANE RAMP (ONE SIDE CURBED)

RAMP E-10



TWO LANE RAMP (CURBED)

E. 14th ST. (NB. + SB.) SCOVILL (EB. + WB.)

FOR LEGEND, SEE SHEET 4

PLOT SUBMITTED BY: BANASZAK

PLOT SUBMITTED: 05-JUN-1992 14:14

FHWA REGION	STATE	PROJECT	
5	OHIO		

GENERAL

PROJECT DESCRIPTION

THIS PROJECT SHALL CONSIST OF THE SAFETY UPGRADING AND RESURFACING OF IR-77 FROM JUST NORTH OF PERSHING AVE. TO IR-90 IN THE CITY OF CLEVELAND. WORK IS ALSO TO INCLUDE 13 BRIDGES (PATCHING AND WEARING SURFACE TREATMENT). ITEMS INCLUDED SHALL BE GUARDRAIL, ASPHALT CONCRETE OVERLAY, SIGNING, PAVEMENT REPAIR, EROSION CONTROL, AND DRAINAGE WORK.

RIGHT OF WAY

ALL WORK SHALL BE PERFORMED WITHIN THE EXISTING RIGHT OF WAY OR EASEMENTS.

EXISTING TYPICAL SECTIONS

EXISTING TYPICAL SECTIONS HAVE BEEN TAKEN FROM THE RECORDS AND ARE BELIEVED TO REPRESENT THE EXISTING PAVEMENT, BUT THE STATE OF OHIO DOES NOT GUARANTEE THE ACCURACY OF THE SAME.

FOR FURTHER INFORMATION IN REGARD TO THE EXISTING TYPICAL SECTIONS THE CONTRACTOR SHALL REFER TO THE PREVIOUS CONSTRUCTION PLANS. THESE PLANS MAY BE REVIEWED AT THE OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT TWELVE OFFICES, 5500 TRANSPORTATION BLVD., GARFIELD HEIGHTS, OHIO 44125.

CONTINGENCY QUANTITIES

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK FOR PLAN ITEMS SET UP 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.

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:

- | | |
|--|---|
| <ol style="list-style-type: none"> 1. THE CLEVELAND ELECTRIC ILLUMINATING CO.
55 PUBLIC SQUARE
CLEVELAND, OHIO 44101
(216) 479-3452 2. OHIO BELL TELEPHONE CO.
1020 BOLIVAR RD.
CLEVELAND, OHIO 44115
(216) 822-8713 3. THE EAST OHIO GAS CO.
1201 EAST 55TH ST.
CLEVELAND, OHIO 44101-0759
(216) 736-6675 4. CITY OF CLEVELAND
WATER AND POLLUTION CONTROL
1825 LAKESIDE AVE.
CLEVELAND, OHIO 44114
(216) 664-2756 5. CLEVELAND PUBLIC POWER (MELP)
1201 LAKESIDE AVE.
CLEVELAND, OHIO 44114
(216) 664-3922 6. GCRTA
615 SUPERIOR AVE.
CLEVELAND, OHIO 44113
(216) 566-5100 | <ol style="list-style-type: none"> 7. BUCKEYE PIPE LINE
DIXY HIGHWAY AND BUCKEYE RD.
LIMA, OHIO 8. CUYAHOGA COUNTY SANITARY ENGINEER
6100 WEST CANAL RD.
VALLEY VIEW, OHIO 44125
(216) 443-8204 9. CITY OF CLEVELAND,
DEPT. OF WATER
1201 LAKESIDE AVE.
CLEVELAND, OHIO 44114
(216) 664-2444 EXT. 5540 10. CITY OF CLEVELAND,
SAFETY SIGNAL SYSTEM
310 CARNEGIE AVE.
CLEVELAND, OHIO 44115
(216) 664-3247 11. AMERICAN TELEPHONE AND TELEGRAPH
3833 WEYMOUTH RD.
MEDINA, OHIO 44256
(216) 723-9110 |
|--|---|

COOPERATION BETWEEN CONTRACTORS

THE CONTRACTOR SHALL COOPERATE AND COORDINATE HIS OPERATIONS WITH THE CONTRACTOR'S ON OTHER PROJECTS THAT MAY BE IN FORCE DURING THE LIFE OF THIS CONTRACT. NO WAIVER OF ANY PROVISIONS OF 105.07 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS IS INTENDED.

EQUIPMENT AND MATERIAL STORAGE

IN ORDER TO PROVIDE FOR THE SAFETY OF THE TRAVELING PUBLIC THE CONTRACTOR'S ATTENTION IS DIRECTED TO 614.03. IN ADDITION THE FOLLOWING PROVISIONS SHALL APPLY:

- 1) ANY REMOVED ITEMS SHALL NOT BE STORED ON THE RIGHT OF WAY FOR MORE THAN THIRTY DAYS.
- 2) THE STORAGE OF EQUIPMENT, MATERIALS AND VEHICLES WITHIN THE HIGHWAY RIGHT OF WAY WILL BE PERMITTED. THE NUMBER OF AREAS AND EXACT LOCATIONS SHALL BE APPROVED BY THE ENGINEER.
- 3) ALL DISTURBED AREAS SHALL BE RETURNED TO THEIR ORIGINAL CONDITION AT NO EXPENSE TO THE STATE.

COST PARTICIPATION

THE QUANTITIES WHICH APPEAR IN THE GENERAL SUMMARIES HAVE BEEN PLACED IN THE FOLLOWING PARTICIPATION AREAS:

COST PARTICIPATION I - FEDERAL AND STATE
COST PARTICIPATION II - STATE ONLY

ROADWAY

ROUNDING OF CORNERS SHOWN ON CROSS SECTIONS

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

ITEM 201 - CLEARING AND GRUBBING

THIS LUMP SUM ITEM SHALL BE USED TO CLEAR BRUSH AND TREES OBSTRUCTING SIGHT DISTANCES AND INFRINGING ON THE CLEAR ZONE.

THE FIRST LOCATION IS ALONG RAMP E-9 FROM APPROXIMATELY STATION 4+00 TO STATION 6+00. THE AREA SHALL BE CLEARED TO 20 FEET FROM THE LEFT SHOULDER EDGE. ALSO INCLUDED IN THIS ITEM IS THE REMOVAL OF APPROXIMATELY TEN (10) 6" DIAMETER TREES.

THE SECOND LOCATION IS ADJACENT TO BRIDGE NO. CUY-77-1593 ES ON THE SOUTH SIDE, LEFT WINGWALL. THE AREA SHOULD BE CLEARED TO 20 FEET FROM THE LEFT SHOULDER EDGE. ALSO INCLUDED IN THIS ITEM IS THE REMOVAL OF ONE (1) 18" DIAMETER TREE.

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.

ITEM 254 - PAVEMENT PLANING, PORTLAND CEMENT CONCRETE

THIS ITEM SHALL CONSIST OF CHIPPING THE EXISTING CONCRETE PAVEMENT AS DETAILED AND DESCRIBED ON SHEET NO. 59, AND AS DIRECTED BY THE ENGINEER. THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 254 - PAVEMENT PLANING, PORTLAND CEMENT CONCRETE...1300 SQ.YD.

ITEM 254 - PAVEMENT PLANING, BITUMINOUS

THIS ITEM SHALL CONSIST OF REMOVING EXISTING ASPHALT OVERLAY AS DETAILED ON SHEET NO. 59, AND AS DIRECTED BY THE ENGINEER. THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 254 - PAVEMENT PLANING, BITUMINOUS.....6400 SQ.YD.

GENERAL NOTES

CUY-77-13.81

FHWA REGION	STATE	PROJECT	
5	OHIO		

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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.

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.

LOCATION OF GUARDRAIL

THE LOCATIONS OF GUARDRAIL RUNS, AS SHOWN IN THESE PLANS, ARE SUBJECT TO ADJUSTMENT PRIOR TO FINAL ACCEPTANCE. THE ENGINEER SHALL BE SATISFIED THAT ALL INSTALLATIONS WILL AFFORD MAXIMUM PROTECTION FOR TRAFFIC.

GUARDRAIL PROTECTION

NO SIGNS SUPPORTS SHALL BE ERECTED BEFORE THE NECESSARY GUARDRAIL PROTECTION IS IN PLACE. SIMILARLY EXISTING GUARDRAIL WHICH PROTECTS AN OBSTRUCTION OR SLOPE WHICH IS TO BE UPGRADED TO ELIMINATE GUARDRAIL, SHALL NOT BE REMOVED UNTIL THAT WORK HAS BEEN COMPLETED. EXISTING GUARDRAIL WHICH IS SCHEDULED TO BE REPLACED WITH TYPE 5 GUARDRAIL, SHALL NOT BE REMOVED UNTIL THE NEW GUARDRAIL IS READY TO BE INSTALLED. UNDER NO CIRCUMSTANCES SHALL ANY HAZARD BE WITHOUT GUARDRAIL PROTECTION FOR MORE THAN 24 HOURS. (SEE PUBLIC SAFETY NOTE SHEET NO. 15)

ITEM 606 - BRIDGE TERMINAL ASSEMBLY, TYPE J, AS PER PLAN

THE OPTIONAL THIRD ENCASED POST INDICATED IN THE STANDARD DRAWING SHALL BE REQUIRED. PLACEMENT OF ENCASED POSTS FROM THE BRIDGE PARAPET END SHALL BE AS FOLLOWS:

FIRST POST.....2'-3"
SECOND POST.....6'-3"
THIRD POST.....12'-6"

FOR NONCURBED SHOULDERS, A WHEELGUARD SHALL ALSO BE REQUIRED.

ITEM 606 - BRIDGE TERMINAL ASSEMBLY, TYPE 4, AS PER PLAN

THIS ITEM OF WORK SHALL BE USED TO CONSTRUCT A BRIDGE TERMINAL ASSEMBLY TO CONNECT GUARDRAIL OR THRIE BEAM TO A VERTICAL FACE (ABUTMENT OR CONCRETE BARRIER). ALL WORK SHALL CONFORM TO CONST. DWG. GR-3.4 AND AS DETAILED ON SHT 71.

SEE THE GUARDRAIL SUB-SUMMARY FOR QUANTITIES.

ITEM 606 - BRIDGE TERMINAL ASSEMBLY, TYPE 2, AS PER PLAN

THIS ITEM SHALL BE USED TO CONNECT THE CONCRETE BARRIER ON RAMP E-9 TO THE THRIE BEAM BRIDGE RAIL BEING INSTALLED ON BRIDGE NO. CUY-90-1651 ON THE ADJACENT PROJECT. ALL DETAILS AND INFORMATION ON STD. CONST. DWG. GR-3.2 APPLY. THE THRIE BEAM SHALL BE ATTACHED TO THE VERTICAL FACED BARRIER WITH A BACK PLATE AND THRIE BEAM TERMINAL CONNECTOR AS SHOWN ON STD. CONST. DWG. GR-3.1.

PAYMENT FOR ALL WORK MENTIONED ABOVE (NOT INCLUDING THE CONCRETE BARRIER OR TRANSITION) SHALL BE INCLUDED UNDER ITEM 606 - BRIDGE TERMINAL ASSEMBLY, TYPE 2, AS PER PLAN.

ITEM 606 - ANCHOR ASSEMBLY, TYPE A, AS PER PLAN

THIS ITEM OF WORK SHALL BE USED TO CONSTRUCT TYPE A ANCHOR ASSEMBLIES BURIED IN THE EXISTING CUT SLOPE AS SHOWN ON SHEET 72. ALL WORK SHALL CONFORM TO STD. CONST. DWG. GR-4.1 EXCEPT AS NOTED.

SEE THE GUARDRAIL SUB-SUMMARY FOR QUANTITIES.

FASTENING OF BRIDGE TERMINAL ASSEMBLIES

BRIDGE TERMINAL ASSEMBLIES WHICH ARE FASTENED TO THE EXISTING CONCRETE PARAPETS BY STEEL BOX BLOCKOUTS SHALL BE ATTACHED BY MEANS OF THROUGH BOLTS. EXPANSION ANCHOR BOLTS WILL NOT BE PERMITTED.

THIS ITEM REQUIRES THE USE OF POLYESTER RESIN ANCHORS WITH FEMALE THREADED INSERTS (10 INCH LONG) TO ACCEPT 7/8" DIAMETER BOLTS WHEN THRU BOLTS CANNOT BE USED.

TYPE 5 GUARDRAIL POST SPACING

WHEN THE OFFSET BETWEEN THE FACE OF THE GUARDRAIL AND BRIDGE PIERS, MAJOR SIGNS, SIGN SUPPORTS, OR OTHER FIXED OBSTACLES IS LESS THAN 5 FT.-6 INCH, THE GUARDRAIL SHALL BE STIFFENED BY PROVIDING 3 FT.-1.5 INCH POST SPACING FROM 12.5 FEET IN ADVANCE OF THE OBSTRUCTION TO ITS END, AS PER STD. DRAWING GR-2.1

THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 606 - GUARDRAIL, TYPE 5A.....250 L.F.

WHEN THE OFFSET BETWEEN THE FACE OF THE GUARDRAIL AND A FIXED OBSTACLE IS FROM 3.5' TO 2.75', THRIE BEAM GUARDRAIL SHALL BE USED. SEE GUARDRAIL SUB-SUMMARY SHEET FOR LOCATIONS AND QUANTITIES.

SEQUENCE OF OPERATIONS FOR GUARDRAIL INSTALLATION EXCEPT FOR SHOULDER WIDENING SECTION. (SEE MAINTENANCE OF TRAFFIC NOTES)

1. COMPLETE SHOULDER CONSTRUCTION
2. REMOVE EXISTING GUARDRAIL (INSTALL TEMPORARY CONCRETE BARRIER AT HAZARDS-SEE PUBLIC SAFETY NOTE).
3. CONSTRUCT STRIP OF ITEM 448 AS PER TYPICAL SECTIONS.
4. INSTALL GUARDRAIL

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.....10 MGAL.
ITEM 616 - CALCIUM CHLORIDE.....5 TON

SPECIAL CURB HEIGHT

THE CURB HEIGHT ALONG THE FLARED PORTION OF THE GUARDRAIL (THAT IS, 9" OFFSET FROM CURB) SHALL BE REDUCED TO 3 INCHES WHERE THE CURB IS BEING REPLACED. THE CURB HEIGHT SHALL ALSO BE REDUCED AT ANY CATCH BASINS WHICH OCCUR WITHIN THIS AREA.

CURB WORK

THE FOLLOWING CURB WORK SHALL BE PERFORMED AS STATED BELOW AND AS DIRECTED BY THE ENGINEER:

MAINLINE AND PREVIOUSLY OVERLAID RAMPS

ALL CURB SHALL BE REMOVED AND REPLACED IN THE SAME LOCATIONS AS SHOWN IN THE CURB REPLACEMENT SUB-SUMMARY AND DETAIL SHEET 60 TO FACILITATE DRAINAGE. (SEE SHEET 28 FOR ESTIMATED QUANTITIES).

RAMP INTERSECTIONS

THE FOLLOWING ESTIMATED QUANTITIES SHALL BE USED TO REPLACE ALL OF THE EXISTING CURB AND DISPLACED 4" CONCRETE MEDIAN AS SHOWN ON THE CURB REPAIR DETAIL B SHT 60. THE LOCATIONS ARE SHOWN ON THE PLAN SHEETS.

THE EXISTING CURB SHALL BE ENTIRELY REPLACED EXCEPT FOR THE NOSE WHICH SHALL REMAIN. ALL UNDERDRAINS SHALL ALSO REMAIN. CARE SHOULD BE TAKEN AS TO NOT DISTURB THE EXISTING UNDERDRAIN. THE 4" CONCRETE MEDIAN HAS UPLIFTED OR SAGGED FROM ITS ORIGINAL LOCATION. REPLACE AFFECTED AREAS WITH ITEM 608 - 4" CONCRETE WALK.

ITEM	DESCRIPTION	QUANTITY	UNIT
202	CURB REMOVED, AS PER PLAN	750	LIN.FT.
202	CONCRETE MEDIAN REMOVED	500	SQ.YD.
608	4" CONCRETE WALK	4500	SQ.FT.
609	CURB, TYPE 6	750	LIN.FT.

EAST 14TH ST. AND SCOVILL

THE FOLLOWING CONTINGENCY QUANTITY SHALL BE USED TO REPLACE DAMAGED CURB AND CONCRETE WALK PRIOR TO RESURFACING. CURB REVEAL SHALL MATCH EXISTING AND CARE SHOULD BE TAKEN NOT TO DISTURB THE EXISTING UNDERDRAIN. ALL LOCATIONS SHALL BE DETERMINED BY THE ENGINEER. SEE DETAIL B, SHEET 60 FOR DETAILS.

ITEM	DESCRIPTION	QUANTITY	UNIT
202	CURB REMOVED, AS PER PLAN	1750	LIN.FT.
202	WALK REMOVED	4500	SQ.FT.
608	4" CONCRETE WALK	4500	SQ.FT.
609	CURB, TYPE 6	1750	LIN.FT.

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ITEM 622 - CONCRETE BARRIER, TYPE B50, AS PER PLAN

THIS ITEM SHALL BE USED TO CONSTRUCT A CONCRETE BARRIER AS SHOWN ON SHEET 51.

TRANSITIONS ARE AS SHOWN ON STANDARD CONSTRUCTION DRAWING MC-9. FOR QUANTITIES, SEE SHEET 51.

ITEM 622 - CONCRETE BARRIER, AS PER PLAN

THIS ITEM OF WORK SHALL BE USED TO CONSTRUCT CONCRETE BARRIERS AS SHOWN ON SHEETS 64 TO 66. FOR QUANTITIES, SEE SHEET 51.

IF CONCRETE FOUNDATIONS (FOOTINGS) ARE ENCOUNTERED DURING CONCRETE BARRIER PILE EXCAVATION, THE 6'-0" DEPTH MAY BE SHORTENED TO ABOUT THE FOOTING. THE #601 BARS SHALL BE TRIMMED, REPAIRED, AND DOWELLED (8" MIN.) INTO THE FOOTING AS PER ITEMS 509 AND 510. ALL WORK SHALL BE AS DIRECTED BY THE ENGINEER AND INCLUDED UNDER ITEM 622 - CONCRETE BARRIER, AS PER PLAN.

IMPACT ATTENUATOR WORK (HEX FOAM SANDWICH SYSTEM)

THESE ITEMS OF WORK SHALL INCLUDE REMOVAL AND REPLACEMENT OF THE EXISTING HI-DRO CELL IMPACT ATTENUATOR. REMOVAL SHALL NOT INCLUDE ANY PART OF THE BACK-UP WALL, CONCRETE PAD, OR THE FRONT ANCHORAGE ASSEMBLY AS SHOWN ON SHEET 63.

THE EXISTING ATTENUATOR, HI-DRO CELL MODEL #209508H8S, MANUFACTURED BY ENERGY ABSORPTION SYSTEMS, INC., SHALL BE REMOVED INCLUDING ALL CELLS, PANELS, CABLES, AND MISCELLANEOUS HARDWARE AND DELIVERED BY THE CONTRACTOR TO O.D.O.T. RIVEREDGE YARD, 4940 OLD GRAYTON RD., CLEVELAND, OHIO 44135. (216)676-5295. AT LEAST 48 HOURS ADVANCE NOTICE WILL BE REQUIRED BEFORE DELIVERY. THE REMAINING BACKWALL SHALL BE CLEANED AND FREE OF RUST AND DEBRIS.

THE PROPOSED REPLACEMENT ATTENUATOR, HEX FOAM SANDWICH SYSTEM, MODEL #209508H8S, MANUFACTURED BY ENERGY ABSORPTION SYSTEMS, INC., OR APPROVED EQUAL, SHALL BE RETROFITTED ON THE EXISTING BACKWALL AND ANCHORED AS SHOWN ON SHEET 63, OR AS RECOMMENDED BY THE MANUFACTURER.

AFTER ALIGNMENT, STANDARD INSTALLATION PROCEDURES SHALL BE AS PER MANUFACTURERS INSTRUCTIONS. DETAILS FOR PLACEMENT CAN BE OBTAINED THROUGH THE DISTRICT OFFICE.

THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM	DESCRIPTION	QUANTITY	UNIT
202	IMPACT ATTENUATOR REMOVED	1	EACH
SPEC	IMPACT ATTENUATOR, HEX FOAM SANDWICH SYSTEM, MODEL #209508H8S	1	EACH

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

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING THE IMPACT ATTENUATOR AS REQUIRED IN THE PLANS. THIS ITEM OF WORK SHALL INCLUDE ALL INCLUDED HARDWARE NOT SEPARATELY SPECIFIED, CONCRETE PAD INSTALLATION (INCLUDING MISCELLANEOUS REMOVALS), BACK-UP WALL SYSTEM, AND ALL ITEMS AS REQUIRED BY THE MANUFACTURER TO CONSTRUCT COMPLETE AND FUNCTIONAL G.R.E.A.T. IMPACT ATTENUATOR SYSTEMS. THE ATTENUATOR SHALL BE PLACED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION AND AT THE LOCATIONS SHOWN IN THE PLANS. THE IMPACT ATTENUATOR SHALL BE MANUFACTURED BY THE ENERGY ABSORPTION SYSTEMS, INC., ONE EAST WACKER DRIVE, CHICAGO, ILL. 60601. (312) 467-6750.

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

THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED AS OUTLINED ABOVE:

ITEM	DESCRIPTION	QUANTITY	UNIT
SPEC	IMPACT ATTENUATOR, G.R.E.A.T. TYPE, MODEL #300300SF3	1	EACH

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.

LONGITUDINAL JOINTS

LONGITUDINAL JOINTS BETWEEN A PAVEMENT LANE AND ADJOINING BERM OR SPEED CHANGE LANE AND BETWEEN A SPEED CHANGE LANE AND THE ADJOINING BERM SHALL BE MADE THE SAME DAY. ALL LONGITUDINAL JOINTS SHALL BE HOT WITH THE EXCEPTION OF ONE COLD JOINT PER ROADWAY. LONGITUDINAL JOINT LOCATIONS SHALL BE AS APPROVED BY THE ENGINEER. EACH RAMP SHALL HAVE ONLY ONE LONGITUDINAL COLD JOINT LOCATED APPROXIMATELY HALFWAY ACROSS THE RAMP.

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 3 OR 3 1/2 INCHES ABOVE THAT OF THE EXISTING PAVEMENT.

CONTRACTION JOINTS IN PAVEMENT WIDENING

WHERE NEW CONCRETE PAVEMENT IS PLACED ADJACENT TO EXISTING CONCRETE PAVEMENT, CONTRACTION JOINTS SHALL BE PROVIDED IN THE NEW CONCRETE SO AS TO FORM A CONTINUOUS JOINT WITH THAT IN THE EXISTING PAVEMENT. SKEW REQUIREMENTS AS PER BP-2.2 FOR CONTRACTION JOINTS IN CONCRETE BERMS SHALL BE WAIVED.

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 254 - PAVEMENT PLANING, BITUMINOUS

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.....2000 SQ.YDS.

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. 58

ITEM 252 - FULL DEPTH RIGID PAVEMENT REMOVAL AND FLEXIBLE REPLACEMENT

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

WHEN TWO OF THREE LANES HAVE ABUTTING FULL DEPTH FLEXIBLE REPAIRS AN ADJACENT AREA IN THE 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.....4500 SQ.YDS. AND FLEXIBLE REPLACEMENT
- ITEM 252 - FULL DEPTH PAVEMENT SAWING.....9000 LIN.FT.

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 ONE HALF INCH OF THE THICKNESS SHOWN ON THE TYPICAL SECTIONS. ADDITIONAL COMPENSATION SHALL BE MADE BY CHANGE ORDER FOR THE MATERIAL COST OF CONCRETE ONLY WHEN THE AVERAGE THICKNESS EXCEEDS THE ONE HALF INCH MAXIMUM TOLERANCE ABOVE. THE VOLUME OF ADDITIONAL CONCRETE PAID FOR SHALL BE BASED UPON THE AMOUNT OF CONCRETE ABOVE THE ONE HALF INCH TOLERANCE LIMIT.

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. 58

ITEM 202 - WEARING COURSE REMOVED, 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.

PRIOR TO REMOVING ANY AREA OF WEARING COURSE 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 202 - WEARING COURSE REMOVED, AS PER PLAN.

ITEM 305 - PORTLAND CEMENT CONCRETE BASE, AS PER PLAN

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

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'."

ITEM 310 - SUBBASE, TYPE 1, GRADING A, AS PER PLAN

MATERIALS FURNISHED FOR THIS ITEM SHALL EXCLUDE ALL SLAG EXCEPT GRANULATED SLAG OR CRUSHED AIR-COOLED BLAST FURNACE SLAG AND SHALL EXCLUDE BROKEN SALVAGED PORTLAND CEMENT PAVEMENT.

GENERAL NOTES

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ITEM 304 - AGGREGATE BASE, AS PER PLAN

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

ITEM 301 - BITUMINOUS AGGREGATE BASE, AC-20

THIS ITEM SHALL BE USED ON ALL BERMS TO REPAIR BADLY DAMAGED BERM AREAS. THIS WORK SHALL INCLUDE THE CONSTRUCTION OF A 3" OR 6" COURSE OF ITEM 301 ON THE EXISTING SUBBASE OR NEW SUBBASE AT THE CROSS SLOPES AS SHOWN ON THE TYPICAL SECTIONS.

THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 301 - BITUMINOUS AGGREGATE BASE, AC-20.....300 CU.YDS.
ITEM 203 - EXCAVATION NOT INCLUDING EMBANKMENT.....300 CU.YDS.
CONSTRUCTION

ITEM 310 - SUBBASE, TYPE 1, GRADING A, AS PER PLAN

THIS ITEM SHALL BE USED TO REPLACE EXISTING UNSUITABLE SUBBASE PRIOR TO THE PLACING OF ITEM 301. SUBBASE MATERIAL SHALL BE AS STATED ABOVE. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 310 - SUBBASE, TYPE 1, GRADING A, AS PER PLAN.....300 CU.YDS.
ITEM 203 - EXCAVATION NOT INCLUDING EMBANKMENT.....300 CU.YDS.
CONSTRUCTION

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 0.075 GALLONS PER SQUARE YARD OF TACK COAT FOR ESTIMATING PURPOSES ONLY. THE ESTIMATED QUANTITY IS SUFFICIENT FOR THREE APPLICATIONS, ONE FOR EXISTING PAVEMENT AND ONE FOR EACH ASPHALT OVERLAY.

ITEM 446 - ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AC-20, AS PER PLAN

THE AGGREGATE IN THE 446 SURFACE COURSE TYPE 1 IS RESTRICTED TO SLAG WHEN USED AS A SURFACE COURSE.

STATION MARKINGS IN ASPHALT CONCRETE SURFACE COURSE

THE CONTRACTOR SHALL INSTALL AN INLAID THERMOPLASTIC MARKING EACH 100 FEET INTO THE WARM SURFACE BY THE USE OF A MECHANICAL ROLLER.

THESE MARKINGS WILL NOT BE REQUIRED FOR THOSE SECTIONS OF ROADWAY WHICH HAVE STATION MARKINGS IN THE CONCRETE BARRIER.

THE MARKINGS SHALL BE LOCATED TWELVE INCHES IN FROM THE RIGHT EDGE OF THE PAVED SHOULDER AND SHALL BE SHAPED AS FOLLOWS:

- 1) ONE 4 INCH X 12 INCH RECTANGLE AT EACH 1000 FOOT STATION.
EXAMPLE: STA. 220+00
- 2) TWO 4 INCH DOTS AT EACH 500 FOOT STATION.
EXAMPLE: STA. 225+00
- 3) ONE 4 INCH DOT AT ALL REMAINING 100 FOOT STATIONS.
EXAMPLE: STA. 223+00

ALL COSTS OF MATERIALS AND INSTALLATION SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 446 - ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AS PER PLAN.

ITEM 446 - ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, AC-20

THIS ITEM SHALL BE USED IN AREAS OF IRREGULAR RAMP SHOULDERS TO PROVIDE A LEVEL SURFACE TO PLACE THE SURFACE COURSE.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED DURING RESURFACING AS DIRECTED BY THE ENGINEER:

ITEM 446 - ASPHALT CONCRETE INTERMEDIATE COURSE,300 CU.YDS.
TYPE 2, AC-20

ASPHALT APPROACHES AT BRIDGES

THE ASPHALT APPROACHES TO STRUCTURES SHALL BE PLACED AS SHOWN ON THE DETAILS ON SHEET NO. 59.

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

ITEM 609 - ASPHALT CONCRETE CURB, TYPE 1

THIS ITEM SHALL BE USED TO RE-DIRECT THE FLOW OF WATER AWAY FROM BRIDGE ABUTMENTS LOCATED AT THE DOWNGRADE SIDE OF EACH BRIDGE.

TWENTY FIVE (25) FEET OF ASPHALT CURB SHALL BE USED AT EACH LOCATION. THE CURB SHALL BUTT CLOSELY TO THE WINGWALL AND BE LOCATED EITHER BEHIND OR UNDER THE GUARDRAIL.

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

ITEM 609 - ASPHALT CONCRETE CURB, TYPE 1.....100 LIN.FT.

ITEM 617 - COMPACTED AGGREGATE, TYPE B, AS PER PLAN

THE TOP TWO (2) INCHES (SEE REF. 7 OF THE TYPICAL SECTIONS) OF THIS ITEM SHALL BE NEW MATERIALS. THE REMAINING PORTION MAY BE RECLAIMED MATERIAL FROM THE ADJACENT SHOULDER WORK OR NEW MATERIAL. ITEM 617 SPECIFICATIONS ARE WAIVED FOR THE RECLAIMED MATERIAL EXCEPT FOR COMPACTION. WATER, IF NEEDED, SHALL BE APPLIED AS PER 617 AND INCLUDED UNDER ITEM 617 - COMPACTED AGGREGATE, TYPE B, AS PER PLAN.

SEE SHEET 28 FOR QUANTITIES.

PREFORMED EXPANSION JOINT MATERIAL

WHERE NEW CONCRETE IS PLACED ADJACENT TO EXISTING CONCRETE BARRIER, CURB, OR NEW CONCRETE OF ANOTHER PAY ITEM, PREFORMED EXPANSION JOINT MATERIAL, AS PER 705.03 SHALL BE PLACED BETWEEN THE CONCRETE. ALL COSTS FOR THE JOINT MATERIAL SHALL BE INCLUDED IN THE PERTINENT CONCRETE ITEM.

JOINT SEALER

ALL REFERENCES TO 705.01 OR 705.02, APPEARING ON STANDARD DRAWINGS OR ON THE PLANS SHALL BE CONSIDERED TO READ 705.04.

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 SPECIAL	DESCRIPTION	QUANTITY	UNIT
	SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS, 705.04	30000	LIN.FT.

TIE BARS FOR CONCRETE BERM WORK

TIE BARS FOR CONCRETE BERM WIDENINGS (SEE TYPICAL SECTION REF. #16) SHALL BE 24" LONG #5 BARS GROUTED INTO 12" DEEP, 3/4" DIAMETER DRILLED HOLES USING GROUT MEETING THE REQUIREMENTS OF SUPPLEMENTAL SPECIFICATION 952. THE DEPTH AND SPACING OF THE TIE BARS SHALL BE AS SHOWN ON STANDARD CONSTRUCTION DRAWING BP-2.1.

ITEM SPECIAL - PRESSURE RELIEF JOINTS, TYPE C

THESE ITEMS OF WORK SHALL BE USED TO RECONSTRUCT EXISTING PRESSURE RELIEF JOINTS. CARE SHOULD BE TAKEN AS TO NOT DISTURB THE EXISTING PRESSURE RELIEF JOINT UNDERDRAIN.

PRESSURE RELIEF JOINTS, TYPE C SHALL CROSS THE ENTIRE JOINT (SEE MAINTENANCE OF TRAFFIC PLANS FOR SEQUENCE). WORK SHALL CONFIRM TO STD. CONST. DRAWING BP-2.4.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED AS OUTLINED ABOVE:

ITEM SPEC - PRESSURE RELIEF JOINT, TYPE C..... 1100 L.F.

ITEM 403 - ASPHALT CONCRETE, AC-20

THIS ITEM SHALL BE USED IN AREAS OF IRREGULAR SHOULDERS TO PROVIDE A LEVEL SURFACE PRIOR TO MOVING TRAFFIC ONTO THEM.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED PRIOR TO RESURFACING AS DIRECTED BY THE ENGINEER:

ITEM 403 - ASPHALT CONCRETE, AC-20.....300 C.Y.

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. 59) 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.

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, ALONG WITH LOCAL REPRESENTATIVES, SHALL MAKE AN INSPECTION OF THE EXISTING SEWERS WITHIN THE WORK LIMITS WHICH ARE TO REMAIN IN SERVICE AND WHICH MAY BE AFFECTED BY THE WORK. THE CONDITION OF THE EXISTING CONDUITS AND THEIR APPURTENANCES SHALL BE DETERMINED FROM FIELD OBSERVATIONS. RECORDS OF THE INSPECTIONS SHALL BE KEPT IN WRITING BY THE STATE.

ALL 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.

EROSION CONTROL

ALL PERMANENT EROSION CONTROL ITEMS SHALL BE PLACED IMMEDIATELY AFTER THE EARTHWORK IS COMPLETED AT EACH LOCATION.

ITEMS 601 AND 660 ARE PROVIDED IN THE PLANS FOR EROSION CONTROL. ROCK OF A STABLE NATURE WILL NOT BE REMOVED IN ORDER TO PLACE ANY OF THESE ITEMS. THE ENGINEER SHALL CHECK AND NON-PERFORM QUANTITIES OR ADJUST LOCATIONS AND QUANTITIES FOR THIS ITEM WHERE INDICATED BY FIELD CONDITIONS DURING CONSTRUCTION.

ITEM 601-DUMPED ROCK FILL, TYPE D

THIS ITEM SHALL BE USED AS EROSION CONTROL UNDER STRUCTURES AS SHOWN IN THE PLANS, TO PROVIDE A 12" AGGREGATE COVER THROUGHOUT THE EROSION CONTROL LIMITS. SEE THE STRUCTURE GENERAL PLANS AND ELEVATIONS FOR LOCATIONS AND LIMITS.

ITEM 601 - CONCRETE SLOPE PROTECTION, AS PER PLAN

AREAS OF THE EXISTING SLOPE PROTECTION FOR CUY-77-1518, CUY-77-1562, AND CUY-422-0084 SHALL BE REMOVED AND REPLACED.

THIS WORK SHALL INCLUDE THE FOLLOWING:

- 1) EXCAVATION AND EMBANKMENT: THE EXCAVATION OF MATERIAL (APPROXIMATELY 300 C.Y.) FOR THE PROPOSED CONCRETE SLOPE PROTECTION, THE REMOVAL OF THE EXISTING CONCRETE OF THE SLOPE PROTECTION, AND THE PLACING OF EMBANKMENT MATERIAL (APPROXIMATELY 300 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 75, 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. 75.

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, TYPE 2 PAVED GUTTER, AND ABUTMENT DRAIN CONDUIT EXTENSIONS SHALL BE INCLUDED UNDER ITEM 601- CONCRETE SLOPE PROTECTION, AS PER PLAN.

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

ITEM 604-INLETS, ADJUSTED TO GRADE, AS PER PLAN

ITEM 604-MANHOLE, ADJUSTED TO GRADE, AS PER PLAN

ITEM 604-MONUMENT BOX, 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. 61.

THE ESTIMATED QUANTITIES FOR THE ABOVE MENTIONED WORK ARE AS FOLLOWS:

- ITEM 604-CATCH BASINS, ADJUSTED TO GRADE, AS PER PLAN..... 8 EA.
- ITEM 604-INLETS, ADJUSTED TO GRADE, AS PER PLAN.....15 EA.
- ITEM 604-MANHOLE, ADJUSTED TO GRADE, AS PER PLAN..... 5 EA.
- ITEM 604-MONUMENT BOX, ADJUSTED TO GRADE, AS PER PLAN.....15 EA.

SUPPLEMENTAL UNDERDRAIN CRITERIA

THE EXISTING MAINLINE UNDERDRAIN SYSTEM (UNDERDRAINS AND OUTLETS) SHALL BE SUPPLEMENTED WITH AN UNDERDRAIN SYSTEM AS SHOWN ON SHEET 54. 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. 54.

FOR ESTIMATED QUANTITIES, SEE SHEET 27.

ITEM	DESCRIPTION
603	CONDUIT, TYPE B
603	6" CONDUIT, TYPE F, 707.17 NON-PERFORATED, ASTM 3034 OR SDR 35 OR SS 931
605	4" SHALLOW PIPE UNDERDRAIN, 707.15, AS PER PLAN
SPEC	PRECAST REINFORCED CONCRETE OUTLET

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..... 100 L.F.
- * 707.17 NON-PERFORATED, ASTM 3034 OR SDR 35 OR SS 931

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 DRAIN..... 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..... 1 M.GAL

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 CONTROL MEASURES:

- ITEM 207 - FILTER FABRIC FENCE..... 500 LIN.FT.
- ITEM 207 - TEMPORARY SEEDING AND MULCHING..... 72 SQ.YD. 72)
- ITEM 207 - STRAW OR HAY BALES..... 250 EACH
- ITEM 659 - MOWING..... 1 M.SQ.FT.
- ITEM 659 - COMMERCIAL FERTILIZER..... 0.02 TON
- ITEM 659 - REPAIR SEEDING AND MULCHING..... 20 SQ.YD.
- ITEM 659 - WATER..... 1 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, NO. I-3B50, AS PER PLAN, BY TYPE

ITEM 604-INLET, BY TYPE, AS PER PLAN

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

ALL REQUIRED REINFORCING STEEL AS LISTED ON THE STANDARD CONSTRUCTION DRAWING(S) (OR AS MODIFIED) SHALL BE EPOXY-COATED IN ACCORDANCE WITH 709.00 OR SUPPLEMENTAL SPECIFICATION 941 AND PLACED AS PER 509.10. I-BEAMS AND/OR ADDITIONAL PRECAST-REQUIRED REINFORCEMENT FOR BASE SECTIONS ARE NOT SUBJECT TO THIS REQUIREMENT.

ALL COSTS OF THIS TREATMENT SHALL BE INCLUDED IN THE COST OF THESE ITEMS.

GENERAL NOTES

CUY-77-13.81

FHWA REGION	STATE	PROJECT	
5	OHIO		

13
234

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..... 5000 LBS.

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

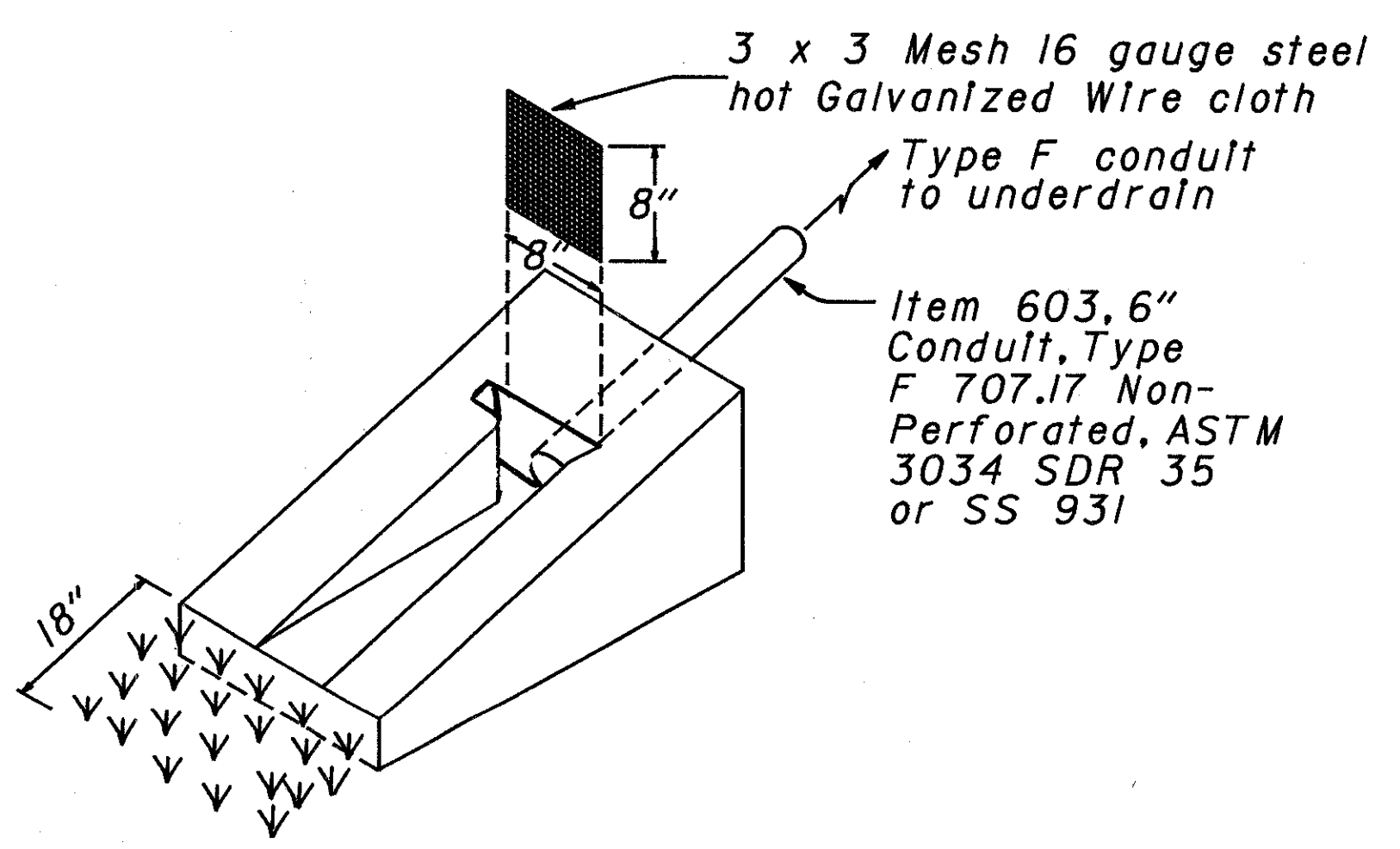
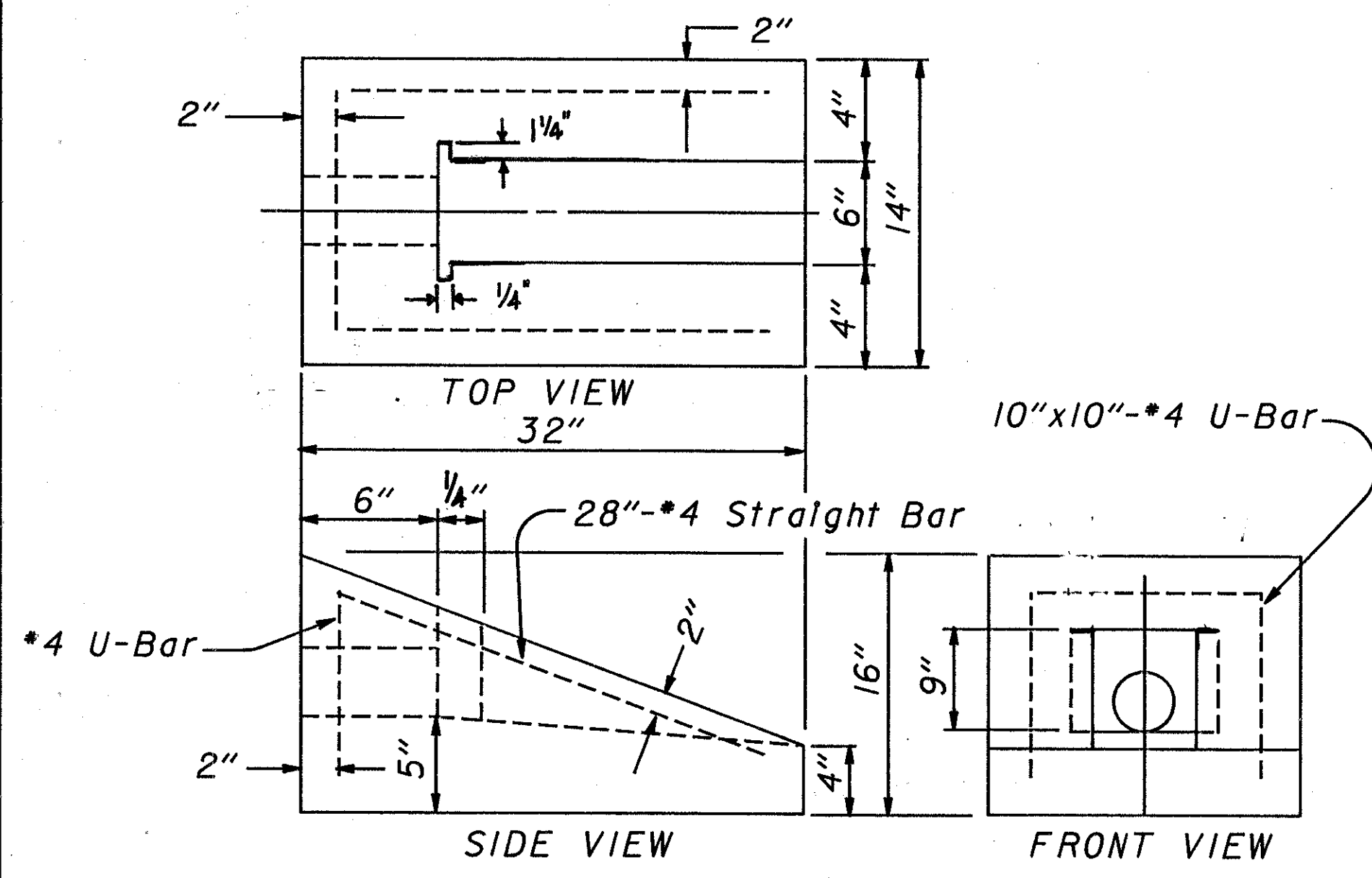
ITEM SPECIAL-SEALING OF CONCRETE SURFACE (EPOXY)

EXISTING BARRIER MEDIAN 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)..... 300 SQ.YD.

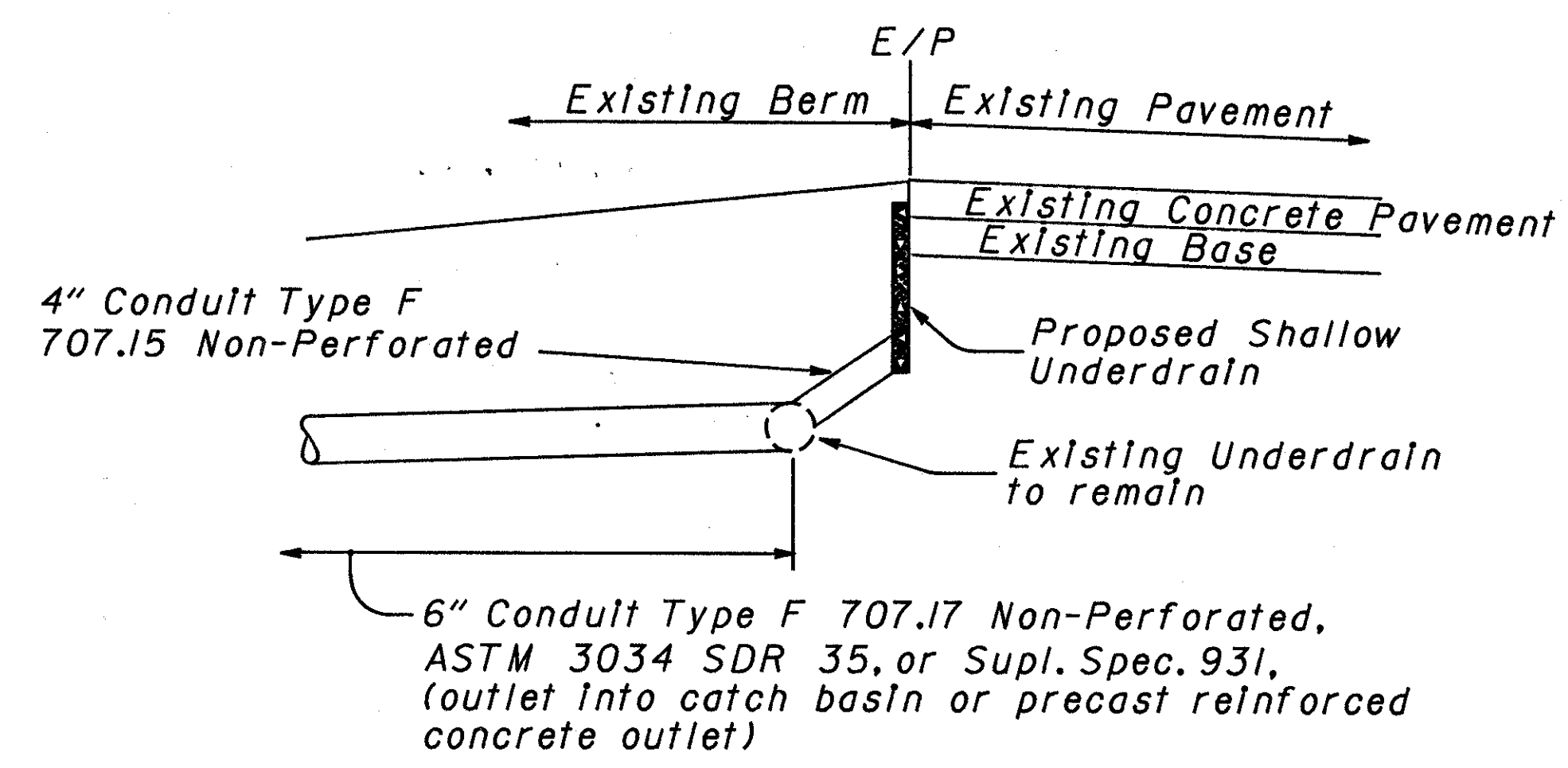
ITEM SPECIAL - PRECAST REINFORCED CONCRETE OUTLET

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.

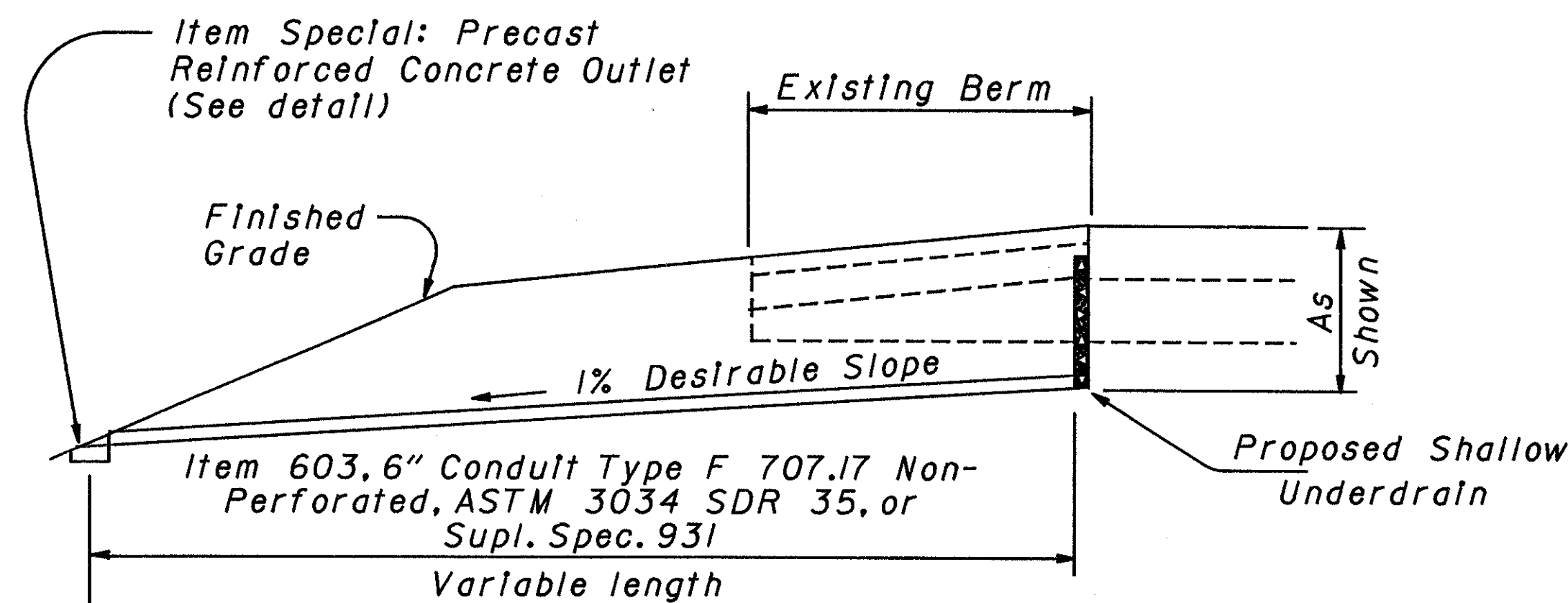


NOTE: The Sod shall be in accordance with Item 660 and staked at each corner approximately 3 inches in from the edge.

OUTLET DETAIL



NOTE: The cost of the 4" 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.



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

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.

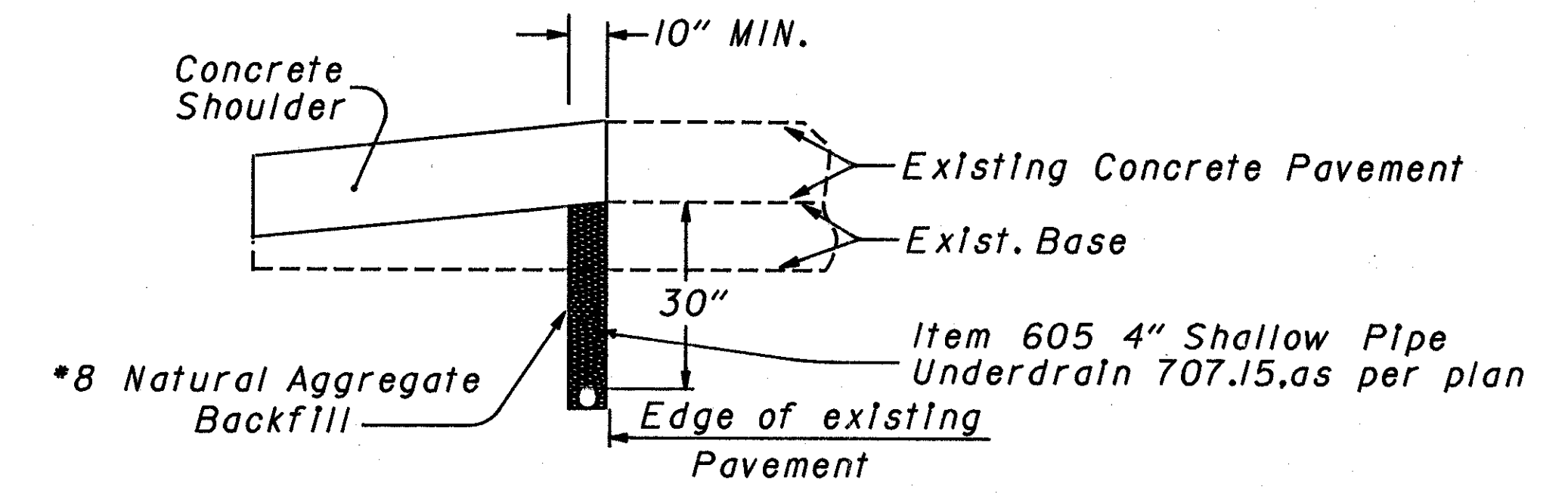
The outlets for the underdrain system shall be constructed as soon as possible after placement of the underdrain to drain the subbase & subgrade. All pipe bends & branches needed to connect the proposed underdrain to the proposed outlet or to an existing underdrain shall be manufactured fittings.

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 4" 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.

PIPE UNDERDRAIN DETAIL FOR CONCRETE SHOULDERS



ITEM 605 4" SHALLOW PIPE UNDERDRAIN 707.15, AS PER PLAN

ZFA2:[200005]605UDRAIN.DGN

MAINTENANCE OF 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:

- A. IN AREAS WHERE EXISTING GUARDRAIL HAS BEEN REMOVED OR THE GUARDRAIL IS IN A PARTIAL STAGE OF COMPLETION, THE CONTRACTOR SHALL PROVIDE AND MAINTAIN DRUMS 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 DRUM.
- B. IF THE EXISTING GUARDRAIL IS FOR THE PROTECTION OF AN OBSTACLE (I.E. SIGN SUPPORT, BRIDGE PARAPET, ETC.) THE CONTRACTOR SHALL ERECT CONCRETE BARRIER AS DETAILED ON SHEET NO. 84 IN THE DIRECTION OF TRAFFIC. THE REQUIREMENTS OF PARAGRAPH "A" SHALL APPLY TO THE REMAINING GUARDRAIL WITHIN THE RUN. TEMPORARY BARRIER SHALL BE FLARED AT A 13:1 TAPER RATE AND SHALL INCLUDE A TEMPORARY END TERMINAL AS PER MC-9.2.
- C. 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 TEMPORARY CONCRETE BARRIER IN THE INTERIM TIME IT TAKES TO COMPLETE THE WORK. THE APPROACH END OF THE TEMPORARY CONCRETE BARRIER SHALL BE FLARED 10 F.T. (130' AT 13:1 TAPER) AND SHALL INCLUDE A TEMPORARY 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 TEMPORARY BARRIERS TO PROVIDE FOREWARNING TO THE APPROACHING TRAFFIC.
- D. TEMPORARY CONCRETE BARRIER IS NOT REQUIRED TO SEPARATE OPPOSING TRAFFIC WHEN THE MEDIAN BARRIER IS REMOVED PROVIDED THAT BOTH MEDIAN LANES REMAIN CLOSED UNTIL THE NEW MEDIAN BARRIER IS IN PLACE. FOR HAZARDS WITHIN THIS ZONE, PARAGRAPHS A, B, AND C ABOVE STILL APPLY.

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 TH IN THE LUMP SUM BID 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 (EXCEPT THE ASPHALT CONCRETE OVERLAY) SHALL BE PERFORMED IN AN ORDERLY SEQUENCE SUCH THAT IT WILL NOT BE NECESSARY TO AGAIN CLOSE THAT LANE UNTIL THE OVERLAY AND PAVEMENT MARKING OPERATIONS BEGIN.

IT IS THE INTENT OF THIS PROJECT TO MAINTAIN A MINIMUM OF TWO LANES OF TRAFFIC IN EACH DIRECTION ON THE MAINLINE PAVEMENT AND ONE LANE DURING NON-RUSH HOUR PERIODS.

NOT WITHSTANDING THE ABOVE REQUIREMENTS, NO SHORT-TERM LANE CLOSURES SHALL BE IMPLEMENTED OR IN PLACE DURING INCREASED TRAFFIC VOLUMES CAUSED BY SPECIAL EVENTS, WHEN THE ENGINEER DEEMS THE CLIMATOLOGICAL CONDITION S TOO HAZARDOUS, OR DURING THE PERIOD BEGINNING AT 12:00 NOON ON THE DAY PRECEDING AND CONTINUING UNTIL 12:00 NOON ON THE DAY FOLLOWING LEGAL HOLIDAYS AND HOLIDAY WEEKENDS (MEMORIAL DAY, FOURTH OF JULY, AND LABOR DAY).

ALL MAINLINE NIGHTTIME ADDITIONAL LANE CLOSURES SHALL BE IMPLEMENTED BETWEEN 11:00 PM AND 6:00 AM (SEE "SCHEDULE OF THRU LANES TO BE MAINTAINED AND SHT 80 FOR DETAILS). THE ONLY TIME WORK HOURS MAY BE EXTENDED IS ON SATURDAY OR SUNDAY MORNING WHEN THERE IS NO SPECIAL EVENT OR HOLIDAY (SEE ABOVE) OCCURING. THE CONTRACTOR NEED NOT OPEN THE CLOSED LANE UNTIL TRAFFIC IS BACKED UP ONE-HALF (1/2) 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 WITHIN THIS TIME FRAME, LIQUIDATED DAMAGES WILL BE ASSESSED AS STATED UNDER "LIQUIDATED DAMAGES/ SHORT TERM LANE CLOSURES" IN THESE NOTES.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO BE AWARE OF THE BACK UP SO THAT WHEN THE ENGINEER NOTIFIES THE CONTRACTOR TO OPEN THE LANE, THE CONTRACTOR CAN IMMEDIATELY DO SO.

IT IS ALSO REQUIRED OF THE CONTRACTOR TO HAVE ALL LANES OF TRAFFIC OPENED THROUGHOUT THE WINTER SEASON (NOVEMBER 15TH TO APRIL 15TH) THE CONTRACTOR IS CAUTIONED TO SCHEDULE HIS WORK, ESPECIALLY ASPHALT OVERLAYS, TO MEET THIS REQUIREMENT. SEE "TRAFFIC CONTROL OF OPERATIONS FOR ASPHALT CONCRETE WORK" NOTE FOR ADDITIONAL INFORMATION.

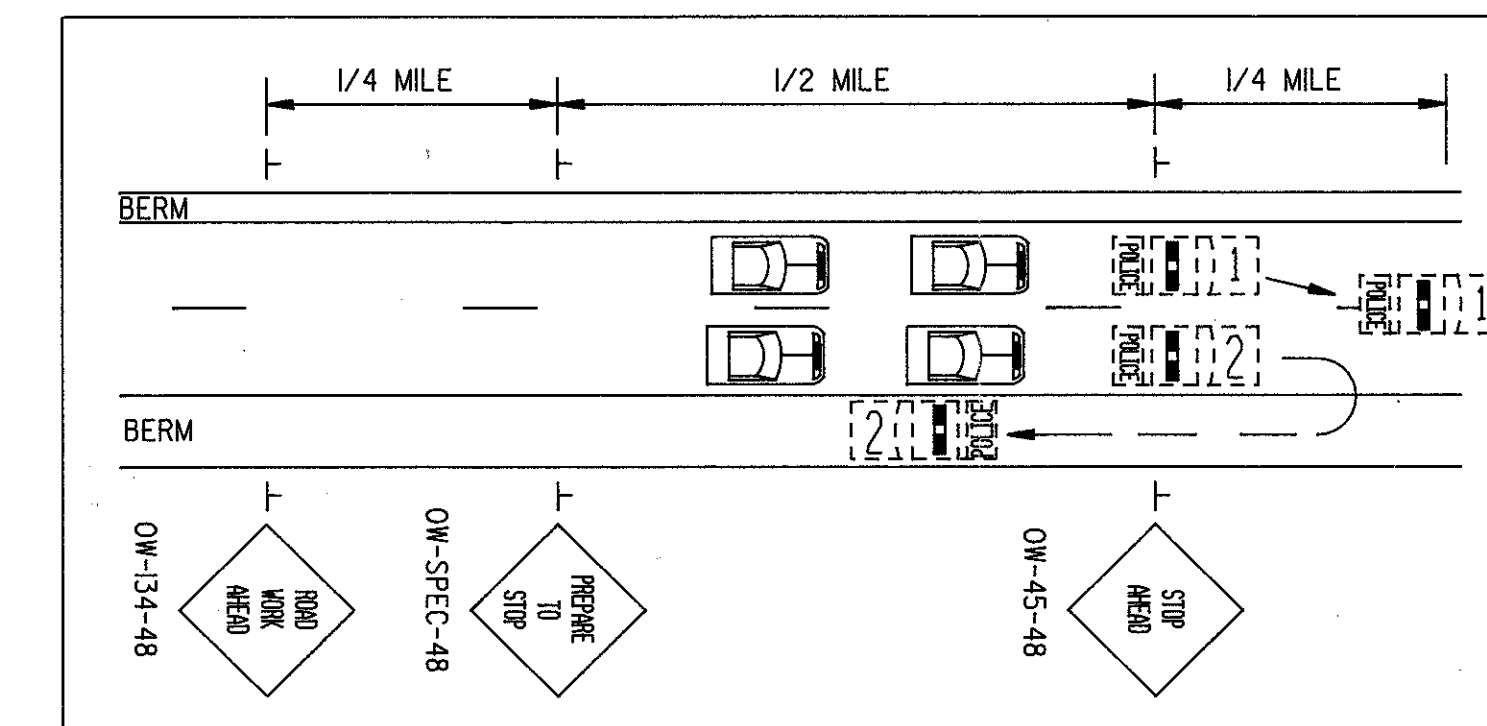
OVERHEAD SIGNS AND SUPPORTS THAT ARE BEING INSTALLED TO REPLACE EXISTING SIGNS AND SUPPORTS SHALL BE IN PLACE PRIOR TO THE REMOVAL OF THE EXISTING SIGNS AND SUPPORTS.

MAINTAINING VEHICULAR TRAFFIC

GENERAL PROVISIONS

- 1. TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE WITH THE SCHEDULE AND SEQUENCE OF THRU LANES TO BE MAINTAINED DESCRIBED ON SHEET NO 80 . THE CONTRACTOR SHALL SET UP AND OPERATE HIS EQUIPMENT IN SUCH A MANNER AS TO MINIMIZE ENCROACHMENT UPON THE TRAVELLED WIDTH OF PAVEMENT.
- 2. 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.
- 3. NO STOPPAGE OF TRAFFIC OR ESTABLISHMENT OF LANE RESTRICTIONS SHALL OCCUR WITHOUT LAW ENFORCEMENT PERSONNEL AT EACH LOCATION TO DIRECT TRAFFIC.
- 4. 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.
- 5. DURING NON-WORKING PERIODS, OPEN EXCAVATIONS SHALL BE Delineated WITH WARNING FLASHERS AND/OR OTHER APPROVED DEVICES AS DEEMED APPROPRIATE BY THE ENGINEER.

- 6. 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.
- 7. THE CONTRACTOR SHALL FURNISH, ERECT AND MAINTAIN ALL NEW WARNING AND INFORMATION SIGNS NECESSARY FOR MAINTAINING TRAFFIC. THE CONTRACTOR SHALL DETERMINE WHAT SIGNS ARE NEEDED AND ADVISE THE ENGINEER TWO (2) WEEKS IN ADVANCE OF HIS DETAILED PLANS.
- 8. 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 COVERED OR SET ASIDE OUT OF THE VIEW OF TRAFFIC.
- 9. 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 MINUTES 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 RAMPS 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 SIGN SPANS SHALL BE DONE AT NIGHT BETWEEN THE HOURS OF 10 P.M. AND 6 A.M. WHEN THE REMOVAL OR ERECTION OF A SIGN REQUIRES CLOSING MORE LANES THAN PERMITTED ON SHT NO 83 THAT WORK SHALL ALSO BE PERFORMED AT NIGHT AS ALLOWED ABOVE.



- 10. PLACEMENT OF FINAL ROADWAY PAVEMENT MARKINGS SHALL BE ACCOMPLISHED ONLY MONDAY THRU FRIDAY BETWEEN THE HOURS OF 9:00 A.M. AND 3:00 P.M. WITH A MAXIMUM OF ONE LANE EACH DIRECTION CLOSED AT ANY TIME.

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.

11. A 45 MPH REGULATORY SPEED LIMIT ZONE WILL BE ESTABLISHED FOR THIS PROJECT AS INDICATED ON THE MAINTENANCE OF TRAFFIC SHEETS. (SEE ITEM 614 - WORK ZONE SPEED LIMIT SIGNS FOR MORE INFORMATION).
12. 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 DAY. 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 DAY.
13. 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".
14. 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.

MAJOR WORK ITEMS

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

- A. REMOVAL OF OVERHEAD SIGN SUPPORTS
- B. INSTALLATION OF OVERHEAD SIGN SUPPORTS, INCLUDING SIGNS
- C. EXISTING WEARING COURSE REMOVAL
- D. REPAIR OF PAVEMENT JOINTS
- E. REPAIR OF PAVEMENT PANELS
- F. CONCRETE SHOULDER INSTALLATION WHERE APPLICABLE
- G. ASPHALT CONCRETE OVERLAY
- H. BRIDGE REHABILITATION
- I. PAVEMENT MARKING
- J. MEDIAN BARRIER INSTALLATION

TRAFFIC CONTROL OF OPERATION FOR ASPHALT CONCRETE WORK (ITEM 446 COURSES AND ITEM 301 INTERMEDIATE COURSE)

ALL ASPHALT CONCRETE OPERATIONS SHALL BE CONDUCTED IN A MANNER THAT WILL ASSURE MINIMUM DANGER AND INCONVENIENCE TO THE HIGHWAY USERS. ALL 446 AND 301 MAINLINE ASPHALT CONCRETE WORK SHALL BE PERFORMED AT NIGHT BETWEEN THE HOURS OF 11:00 P.M. AND 6:00 A.M..

ALL ASPHALT OVERLAYS (INTERMEDIATE AND SURFACE COURSES) SHALL BE PLACED AFTER THE COMPLETION OF BOTH PHASE I AND PHASE II. EACH COURSE SHALL ALSO BE PLACED FULL WIDTH OF EXISTING PAVEMENT WITH TEMPORARY PAVEMENT MARKINGS PRIOR TO STARTING THE NEXT COURSE.

WHENEVER TRAFFIC IS SUBJECTED TO HALF-WIDTH OVERLAYS PRIOR TO COMPLETING THE ASPHALT COURSE, THE CONTRACTOR SHALL PROVIDE OW-171-48 AND OW-P-171-24 SIGNS (DUAL SIGN INSTALLATION). PLACEMENT SHALL BE AS DIRECTED BY THE ENGINEER AND INCLUDED IN THE LUMP SUM BID FOR ITEM 614 - MAINTAINING TRAFFIC.

PROCEDURE FOR INSTALLATION OF ANY ASPHALT LAYER SHALL BE SUCH THAT NO GREATER THAN 3 INCH DISCONTINUITY IN THE ELEVATION OF THE TRAVELED SURFACE SHALL EXIST AT ANY TIME OTHER THEN DURING THE PERMITTED WORKING HOURS AND THEN ONLY WHEN SUCH PROPER TRAFFIC CONTROL DEVICES ARE IN PLACE AS WILL PREVENT SUCH A DISCONTINUITY BEING A DANGER TO HIGHWAY USERS (SEE SHT 84 FOR RAMPING DETAILS).

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" AND RAMPED AS STATED ABOVE.

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 OR HAS THIS REQUIREMENT WAIVED, THE CONTRACTOR SHALL INCREASE THE THICKNESS OF THE 446 SURFACE COURSE BY 1/2" ENTIRELY AT HIS EXPENSE FOR LABOR, MATERIALS, AND EQUIPMENT.

TRAFFIC CONTROL FOR WEARING COURSE REMOVAL

ALL PAVEMENT PLANING SHALL BE DONE DURING THE HOURS OF 11:00 PM AND 6:00 AM AND SHALL FOLLOW THE EXAMPLE OF NIGHT TIME LANE CLOSURES USING DRUMS, SIGNING AND FLASHING ARROW BOARD ONLY. NORMAL LANES OF TRAFFIC SHALL BE OPEN AT ALL OTHER TIMES.

ANY DISCONTINUITY THAT EXISTS BETWEEN LANES OF A PLANED AND NON-PANED SURFACE SHALL BE TAPERED TWO FEET WITH THAT TAPER OCCURRING PAST THE PLANED LANE(S) TO ACCOMMODATE TEMPORARY PAVEMENT MARKINGS WHICH MUST BE IN PLACE PRIOR TO 6:00 AM.

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".

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. 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.

E. 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.

DETOUR ROUTES

THE CONTRACTOR IS CAUTIONED TO SCHEDULE HIS WORK ON EAST 14TH STREET CONNECTOR TO MAINTAIN ALL NORMAL LANES OF TRAFFIC DURING THE CLOSING OF RAMP E-16 DURING PHASE I (TWO WEEKS MAX. CLOSURE).

THE CONTRACTOR IS ALSO NOT PERMITTED TO HAVE TRAFFIC SHIFTED OR CONSTRUCTED ON EAST 14TH STREET, SCOVILL, OR THE EAST 18TH CONNECTORS DURING THE CLOSING OF RAMPS E-15, E-18, AND E-7 DURING PHASE II (THREE WEEKS MAX. CLOSURE).

REFER TO THE DETOUR PLANS ON SHEET 126-127 FOR FURTHER INFORMATION AND DETAILS. SEE LIQUIDATED DAMAGES NOTE FOR NON-COMPLIANCE.

TEMPORARY IMPACT ATTENUATOR

A TEMPORARY TRUCK MOUNTED ATTENUATOR (TMA) SHALL BE IN PLACE FOR THE DURATION OF THE EXISTING IMPACT ATTENUATOR RETROFIT AT STA. 89+00 +/- (I.R.-77 S.B.). 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 THEIR DISCRETION, PROVIDE TMA PROTECTION AT OTHER LOCATIONS. ALL WORK SHALL BE AS DIRECTED BY THE ENGINEER AND INCLUDED FOR PAYMENT UNDER THE LUMP SUM BID FOR ITEM 614 - MAINTAINING TRAFFIC.

COVERING OF SIGNS

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

LIQUIDATED DAMAGES

LIQUIDATED DAMAGES/ LONG TERM LANE CLOSURES

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:

LOCATION	DIRECTION	PHASE	TIME LIMIT
ALL	NB *	PRELIMINARY	10 DAYS
	SB *	PRELIMINARY	10 DAYS
RAMP E-16	SB	I	2 WEEKS
RAMPS E-7	SB	II	3 WEEKS
E-15			
E-18			

* - IN ADDITION TO LIQUIDATED DAMAGES/SHORT TERM LANE CLOSURE REQUIREMENTS STATED BELOW.

NON-RUSH HOUR CLOSURES AS PERMITTED BY THE "SCHEDULE OF THRU LANES TO BE MAINTAINED" TABLE ON SHEET 80 ARE NOT CONSIDERED WITHIN THE TIME LIMITS ABOVE. (THOSE CLOSURES ARE DISCUSSED IN THE "LIQUIDATED DAMAGES/ SHORT TERM LANES 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 CALENDER 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/ SHORT TERM LANE CLOSURES

SHORT TERM LANE CLOSURES ARE THOSE WHICH ARE PERMITTED BY THE PLANS FOR NON-RUSH HOUR CLOSURES. THE WORK PERFORMED DURING THESE CLOSURES IS TYPICALLY THE SET UP AND TAKE DOWN OF TRAFFIC CONTROL ZONES AND RESURFACING OPERATIONS. THE TIME INTERVALS ALLOWED FOR THESE CLOSURES ARE AS SHOWN ON THE "SCHEDULE OF THRU LANES TO BE MAINTAINED" TABLE ON SHEET 80.

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 THESE LANE CLOSURES SHALL NOT BE SUFFICIENT CAUSE FOR EXTENDING THE RE-OPENING TIME.

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.

NOTICE OF CLOSURE SIGNS

THESE SIGNS SHALL BE ERECTED BY THE CONTRACTOR AT LEAST ONE WEEK IN ADVANCE OF THE SCHEDULED ROAD OR RAMP CLOSURE. THE SIGNS SHALL BE ERECTED ON THE RIGHT HAND SIDE OF THE ROAD/RAMP FACING TRAFFIC. THEY SHALL BE LOCATED IN THE FIELD OF VIEW SO AS NOT TO INTERFERE WITH ANY PERMANENT SIGNS. ON ROADWAYS THEY SHOULD BE ERECTED AT THE POINT OF CLOSURE. ON RAMPS, THE SIGNS MAY BE ERECTED ANYWHERE ALONG IT, AS LONG AS IT IS VISIBLE TO THE MOTORISTS USING THE RAMP. ON ENTRANCE RAMPS, THE SIGNS SHALL BE ERECTED WELL IN ADVANCE OF THE MERGE AREA TO AVOID DISTRACTING THE MOTORISTS.

PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614 -MAINTAINING TRAFFIC AND SHALL INCLUDE FURNISHING, ERECTING, MAINTAINING AND REMOVING THE SIGNS INCLUDING SUPPORTS.

DRUM/ CONE PLACEMENT AT ENTRANCE RAMP MERGES

ALTHOUGH DRUMS ARE SHOWN THROUGHOUT THE PLAN FOR MAINTENANCE OF TRAFFIC PURPOSES, THE PROJECT ENGINEER MAY, AT THEIR DISCRETION, INSTRUCT THE CONTRACTOR TO PLACE CONES INSTEAD OF BARRELS AT ALL ENTRANCE RAMP MERGES WHERE THERE IS A SLIGHT DISTANCE PROBLEM. THE MAXIMUM LENGTH FOR THE CONE REPLACEMENT SHALL BE 600 FT. AS DIRECTED BY THE ENGINEER.

CONES SHALL HAVE A MINIMUM HEIGHT OF 28 INCHES AND PROVISIONS SHALL BE MADE TO SAFELY STABILIZE THE CONES TO PREVENT THEM BEING BLOWN OVER. IF THIS CAN NOT BE ACHIEVED, DRUMS SHALL BE USED.

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. THIS ITEM SHALL ALSO BE USED FOR TEMPORARY ASPHALT RAMPS ALONG LONGITUDINAL OR TRANSVERSE JOINTS AND ADJACENT TO CASTINGS SUBJECT TO TRAFFIC, PRIOR TO ADJUSTMENT.

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...500 CU. YDS.

ITEM 614 - WORK ZONE SPEED LIMIT SIGN

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

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

THE WORK ZONE SPEED LIMIT SIGNS MAY BE ERECTED AND COVERED PRIOR TO STARTING WORK OR MAY BE ERECTED UNCOVERED NO MORE THAN 4 HOURS BEFORE THE ACTUAL START OF WORK. THE SIGNS SHALL BE REMOVED OR COVERED NO LATER THAN 4 HOURS FOLLOWING RESTORATION OF ALL LANES 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 EXPECTED TO LAST AT LEAST 30 DAYS OR AS DIRECTED BY THE ENGINEER. THE SIGN SHALL BE MOUNTED ON BOTH SIDES OF DIVIDED HIGHWAYS, 500 FEET IN ADVANCE OF THE LANE REDUCTION TAPER. THE SIGN SHALL BE MOUNTED ON THE RIGHT SIDE, 250 FEET IN ADVANCE OF THE LANE REDUCTION TAPER ON UNDIVIDED HIGHWAYS. THE SIGN SHALL BE REPEATED, ON THE SIDE NEAREST TRAFFIC, EVERY 1 MILE FOR 55 MPH ZONES AND EVERY 1/2 MILE FOR 45 MPH ZONES. THESE SIGNS SHALL ALSO BE ERECTED IMMEDIATELY AFTER EACH ENTRANCE RAMP WITHIN THE ZONE. A SIGN TO INDICATE THE RESUMPTION OF THE STATUTORY SPEED LIMIT SHALL BE ERECTED AT THE END OF ANY REDUCED SPEED ZONE. THIS SIGN SHALL BE A R-8A.

THE CONTRACTOR MAY USE SIGNS AND SUPPORTS IN USED BUT GOOD CONDITION PROVIDED THE SIGNS MEET CURRENT ODOT SPECIFICATIONS. SIGN FACES SHALL BE REFLECTORIZED WITH TYPE G SHEETING COMPLYING WITH THE REQUIREMENTS OF 730.19 AND U.S. DEPARTMENT OF TRANSPORTATION SUPPLEMENTAL SPECIFICATION FOR TYPE III 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.

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

ITEM 614 - WORK ZONE SPEED LIMIT SIGN.....30 EACH

ITEM 614 - WORK ZONE MARKING SIGNS

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN, AND REMOVE WORK ZONE MARKING SIGNS IN ACCORDANCE WITH STANDARD DRAWING MT-99.10.

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

ITEM 614 - WORK ZONE MARKING SIGNS.....30 EACH

GENERAL NOTES

CUY-77-13.81

FHWA REGION	STATE	PROJECT
5	OHIO	

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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.....500 EACH
ITEM 614 - BARRIER REFLECTORS, TYPE B.....1200 EACH

ITEM 614 - TEMPORARY PAVEMENT MARKINGS (RESURFACING OR LANE SHIFT REMOVALS)

TEMPORARY MARKINGS SHALL BE PLACED AT THE LOCATIONS OF THE PERMANENT MARKINGS AS SHOWN IN THE TRAFFIC CONTROL PLANS.

AFTER THE OVERLAYS ARE PLACED OR FOLLOWING LANE SHIFT REMOVALS, THE FOLLOWING TEMPORARY PAVEMENT MARKINGS SHALL BE USED:

ITEM 614 - TEMPORARY LANE LINES, CLASS II.....53 MILES
ITEM 614 - TEMPORARY CHANNELIZING LINES, CLASS I.... .29000 LIN. FT .
ITEM 614 - TEMPORARY EDGE LINES, CLASS I.....26 MILES
ITEM 614 - TEMPORARY GORE MARKINGS, CLASS II.....3300 LIN. FT
ITEM 614 - TEMPORARY STOP LINES, CLASS I.....500 LIN. FT .

ITEM 614 - TEMPORARY PAVEMENT MARKINGS (LANE SHIFTS OR WEARING COURSE REMOVALS)

LANE SHIFTS OR LANE CLOSURES SHALL BE IMPLEMENTED USING 50:1 MAXIMUM TAPER RATE ON MAINLINE PAVEMENT AND 35:1 MAXIMUM TAPER RATE ON RAMPS. SEE MAINTENANCE OF TRAFFIC SHEETS FOR ACTUAL LOCATIONS.

ALL CONFLICTING PAVEMENT MARKINGS (INCLUDING THE LANE LINE ADJACENT TO THE LANE CLOSURE TAPER) SHALL BE REMOVED PRIOR TO PLACING THESE PAVEMENT MARKINGS.

SEE SHEET 26 FOR ESTIMATED QUANTITIES TO BE USED AS OUTLINED ABOVE.

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 PORTABLE CONCRETE BARRIER AS DESCRIBED UNDER PUBLIC SAFETY SHALL BE INCLUDED IN THE LUMP SUM BID PRICE FOR ITEM 614 - MAINTAINING TRAFFIC.

PORTABLE PRECAST BARRIERS (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, 32".

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 ON STD. DWG. MC-9.2 APPLIES. SEE NOTES AND DETAILS ON SHT REGARDING SPECIAL DECK SURFACE PREPARATION, BOLTED END CONNECTIONS AND JOINT BLOCKING. PAYMENT SHALL BE INCLUDED UNDER ITEM 622 - PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED.

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

ITEM 622 - PORT. CONCRETE BARRIER, 32".....1640 LIN.FT.
ITEM 622 - PORT. CONCRETE BARRIER, 32", BRIDGE MOUNTED..2440 LIN.FT.

ITEM 644 - REMOVAL OF PAVEMENT MARKINGS

THIS ITEM SHALL BE USED TO REMOVE EXISTING PERMANENT PAVEMENT MARKINGS AS DETAILED IN THE MAINTENANCE OF TRAFFIC PLANS IN AREAS WHERE THERE IS NO WEARING COURSE REMOVAL. PAYMENT SHALL BE BASED ON THE ACTUAL LENGTH REMOVED. (GAPS SHALL NOT BE INCLUDED IN THE MEASURED LENGTH). THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS OUTLINED ABOVE:

ITEM 644 - REMOVAL OF PAVEMENT MARKINGS.....10000 L.F.

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..

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN PROVIDED IN THE GENERAL SUMMARY TO BE USED AS OUTLINED ABOVE.

ITEM SPECIAL - REPLACEMENT SIGNS.....500 SQ. FT.

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 THE NEW DRUMS SHALL BE MADE AT THE BID PRICE PER EACH FOR ITEM SPECIAL REPLACEMENT DRUM AND SHALL INCLUDE THE COST OF REMOVING AND DISPOSING OF THE DAMAGED DRUM; AND PROVIDING AND MAINTAINING THE REPLACEMENT DRUM IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS FOR THE ORIGINAL DRUM.

THE FOLLOWING QUANTITY HAS BEEN PROVIDED IN THE GENERAL SUMMARY TO BE USED AS OUTLINED ABOVE.

ITEM SPECIAL - REPLACEMENT DRUMS.....500 EACH

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 A PATROL CAR

ITEM SPECIAL - LAW ENFORCEMENT OFFICER WITH PATROL CAR... 400 HOURS

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 EQUIPED 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. THE CONTRACTOR MUST PROVIDE TEN MINUTES RESPONSE SERVICE EVEN THOUGH THERE MIGHT 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.

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 THE PROJECT (MAINLINE AND RAMPS).

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 EACH 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.....300 EACH

RESURFACING QUANTITIES

CUYAHOGA COUNTY
CUY-77-13.81

OHIO
FHWA REGION 5
FEDERAL PROJECT 234

RESURFACING QUANTITIES

LOCATION		SIDE	END WIDTHS	SURFACE AREA	446	446	301	202
FROM	TO				1-1/4" SURFACE COURSE, TYPE I, AC-20 AS PER PLAN	1-3/4" INTERMEDIATE	3" BITUMINOUS AGGREGATE BASE	WEARING COURSE REMOVED, A.P.P.
MAINLINE			LIN FT	SQ.YDS.	CU.YD.	CU.YD.	CU.YD.	SQ.YDS.
45+76.05	48+10.78	NB	48	1252	43	61	104	1252
48+10.78	50+70.58	NB	48-70	1703	59	83	142	1703
50+70.58	59+19.51	NB	36	3396	118	165	283	3396
59+19.51	65+00	NB	36-68	3354	116	163	280	3354
65+00	75+13.27	NB	24	2702	94	131	225	2702
79+39.2	87+29.50	NB	24	2107	73	102	176	2107
107+52.62	110+13.45	NB	36-71	1551	54	75	129	1551
110+13.45	118+89.71	NB	36	3505	122	170	292	3505
124+11.43	130+41.88	NB	36	2522	88	123	210	2522
30+41.88	34+02.53	NB	64-36	2004	70	97	167	2004
36+16.47	42+45.12	NB	36	2515	87	122	210	2515
44+54.88	46+85.02	NB	36-57	1189	41	58	99	1189
46+85.02	49+30.16	NB	24	654	23	32	55	654
45+76.05	54+75	SB	36-61	4844	160	235	404	4844
54+75	55+75	SB	36	400	14	19	33	400
55+75	64+50	SB	36-61	4715	164	229	393	4715
64+50	75+13.27	SB	24	2835	98	138	236	2835
79+39.20	87+29.50	SB	24	2107	73	102	176	2107
107+52.62	109+50	SB	36	790	27	38	66	790
109+50	113+69.99	SB	36-57	2170	75	105	181	2170
113+69.99	118+89.71	SB	36	2079	72	101	173	2079
124+11.43	130+41.88	SB	36	2522	88	122	210	2522
30+41.88	31+53.44	SB	36	446	15	22	37	446
31+53.44	34+02.53	SB	69-36	1453	50	71	121	1453
36+16.47	42+52.12	SB	36	2543	88	124	212	2543
44+54.88	46+37.62	SB	36	731	25	36	61	731
46+37.62	48+73.11	SB	36-51	1138	40	55	95	1138
48+73.11	49+30.16	SB	33	209	7	10	17	209
TOTALS				57,436	1,984	2,789	4,787	57,436

RESURFACING QUANTITIES

LOCATION		SIDE	END WIDTHS	SURFACE AREA	446	446	301	202
FROM	TO				1-1/4" SURFACE COURSE, TYPE I, AC-20 AS PER PLAN	1-3/4" INTERMEDIATE COURSE	3" BITUMINOUS AGGREGATE BASE	WEARING COURSE REMOVED, A.P.P.
OUTSIDE	SHOULDER		LIN FT	SQ.YDS.	CU.YD.	CU.YD.	CU.YD.	SQ.YDS.
45+76.05	48+10.78	NB	8	209	7	10	17	209
48+10.78	50+70.58	NB	8-10	260	9	13	22	260
50+70.58	75+13.27	NB	10	2714	94	132	226	2714
79+39.20	87+29.50	NB	10	878	30	43	73	878
107+52.62	118+89.71	NB	10	1263	44	61	105	1263
124+11.43	130+41.88	NB	10	701	24	34	58	701
30+41.88	34+02.53	NB	8	321	11	16	27	321
36+16.47	42+45.12	NB	10	699	24	34	58	699
44+54.88	49+30.16	NB	10	528	18	26	44	528
45+76.05	54+75	SB	8	799	28	39	67	799
54+75	64+50	SB	10	1083	38	53	90	1083
64+50	65+39	SB	10-20	148	5	7	12	148
65+39	75+13.27	SB	10	1083	38	53	90	1083
79+39.20	87+29.20	SB	10	878	30	43	73	878
107+52.62	113+69.99	SB	10	686	24	33	57	686
113+69.99	115+41	SB	6-20	247	9	12	21	247
115+41	118+89.71	SB	10	387	13	19	32	387
124+11.43	130+41.88	SB	10	701	24	34	58	701
30+41.88	31+53.44	SB	10	124	4	6	10	124
31+53.44	34+02.53	SB	8	221	8	11	18	221
36+16.47	42+45.12	SB	10	699	24	34	58	699
44+54.88	48+13.11	SB	10	465	16	23	39	465
TOTALS				15,094	522	736	1255	15,094

RESURFACING QUANTITIES

LOCATION		SIDE	END WIDTHS	SURFACE AREA	446	446	301	403
FROM	TO				1-1/4" SURFACE COURSE, TYPE I, AC-20 AS PER PLAN	1-3/4" INTERMEDIATE COURSE	3" BITUMINOUS AGGREGATE BASE	1/4" INTERMEDIATE COURSE
INSIDE	SHOULDER		LIN FT	SQ.YDS.	CU.YD.	CU.YD.	CU.YD.	CU.YD.
45+76.05	65+43	BOTH	9.5	2076	72		173	
65+43	66+75	BOTH	9.5	139	5		12	
66+75	68+75	BOTH	8.25	183	6	9		1
68+75	75+13.27	BOTH	7	496	17	24		3
79+39.20	87+29.50	BOTH	7	615	21	30		4
107+52.62	118+89.71	BOTH	7	884	31	43		6
124+11.43	130+25	BOTH	10	682	24	33		5
130+25	130+41.88	BOTH	13	24	1	1		1
30+41.88	34+02.53	BOTH	13	521	18	25		4
36+16.47	42+45.12	BOTH	13	908	32	44		6
44+54.88	49+30.16*	BOTH	13	687	24	33*		5
TOTALS				7215	251	242	185	35

ITEM 407 - TACK COAT

79,743 SQ.YDS. X 0.075 GAL./SQ. YD.= 5,981 GAL.

5,981 X 3 = 17,943 GAL.

RESURFACING QUANTITIES

PLOT SUBMITTED: 04-JUN-1992 13:01

PLOT SUBMITTED BY: BANASZAK

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RESURFACING QUANTITIES

RESURFACING QUANTITIES									
LOCATION		SIDE	END WIDTHS LIN FT	SURFACE AREA SQ YDS	446		446		202
FROM	TO				1-1/4" SURFACE COURSE, TYPE I, AC-20 AS PER PLAN CU.YD.	1-3/4" INTERMEDIATE COURSE CU.YD.	WEARING COURSE REMOVED, A.P.P. SQ.YD.		
RAMP									
RAMP B-1									
10+67.53	10+90	BOTH	30-31	76	3	4			76
10+90	11+63.06	BOTH	26-31	231	8	11			231
11+63.06	11+84	BOTH	24-26	58	2	3			58
11+84	14+29.75	BOTH	24	655	23	32			655
14+29.75	15+78.78	BOTH	24-36	497	17	24			497
15+78.78	16+38	BOTH	36-37	240	8	12			240
16+38	17+60	BOTH	37	502	17	24			502
RAMP TURNOUT		BOTH		215	7	10			215
RAMP B-2									
14+54.09	15+04.09	BOTH	22	122	4	6			122
15+04.09	15+54.09	BOTH	22-23	125	4	6			125
15+54.09	16+54.09	BOTH	23-26	272	9	13			272
16+54.09	19+37	BOTH	26	817	28	40			817
19+37	20+00	BOTH	26-24	175	6	9			175
20+00	20+75	BOTH	24	200	7	10			200
20+75	22+63.47	BOTH	24-30	565	20	27			565
22+63.47	23+00	BOTH	27-35	126	4	6			126
23+00	24+20	BOTH	14-18	213	7	10			213
RAMP TURNOUT		BOTH		93	3	5			93
RAMP W-S									
15+63.21	16+38.21	BOTH	30	250	9	12			250
16+38.21	21+71.02	BOTH	38-63	2990	104	145			2990
21+71.02	22+71.02	BOTH	38	422	15	21			422
22+71.02	23+71.02	BOTH	36-38	411	14	20			411
RAMP S-E									
5+82.84	6+82.84	BOTH	38-40	433	15	21			433
6+82.84	9+92.00	BOTH	38-52	1546	54	75			1546
9+92.00	10+75.47	BOTH	52-76	594	21	29			594
10+75.47	11+75.47	BOTH	38-40	433	15	21			433
11+75.47	16+95.42	BOTH	38	2195	76	107			2195
16+95.42	17+95.42	BOTH	36-38	411	14	20			411
17+95.42	24+19.00	BOTH	39-67	3672	128	179			3672
TOTALS				18,539	642	902			18,539

RESURFACING QUANTITIES									
LOCATION		SIDE	END WIDTHS LIN FT	SURFACE AREA SQ YDS	446		446		202
FROM	TO				1-1/4" SURFACE COURSE, TYPE I, AC-20 AS PER PLAN CU.YD.	1-3/4" INTERMEDIATE COURSE CU.YD.	WEARING COURSE REMOVED, A.P.P. SQ.YD.		
RAMP E-S									
4+98.80	5+98.80	BOTH	38-40	433	15	21			433
5+98.80	8+02.70	BOTH	38	861	30	42			861
11+08.37	16+17.56	BOTH	38	2150	75	105			2150
RAMP E-N									
9+13.57	10+13.57	BOTH	38-40	433	15	21			433
10+13.57	14+69.63	BOTH	38	1926	67	94			1926
14+69.63	16+14.00	BOTH	38-40	626	22	30			626
16+14.00	17+92.61	BOTH	40-76	1151	40	56			1151
17+92.61	18+92.61	BOTH	30-32	344	12	17			344
18+92.61	21+22.44	BOTH	30	766	27	37			766
21+22.44	22+22.44	BOTH	26-30	311	11	15			311
22+22.44	23+22.44	BOTH	24-26	278	10	14			278
23+22.44	24+44.00	BOTH	40-55	642	22	31			642
24+44.00	25+75.94	BOTH	38-40	572	20	28			572
25+75.94	26+99.50	BOTH	38	522	18	25			522
RAMP N-E									
3+28.01	4+28.01	BOTH	30-32	344	12	17			344
4+28.01	8+00.96	BOTH	30	1243	43	60			1243
13+33.46	18+55.00	BOTH	30	1738	60	84			1738
18+55.00	19+11.22	BOTH	30-40	219	8	11			219
RAMP N-W									
4+58.50	5+32.48	BOTH	38	312	11	15			312
5+32.48	6+33.00	BOTH	38-40	436	15	21			436
6+33.00	7+26.00	BOTH	40-48	455	16	22			455
7+26.00	8+19.86	BOTH	48-68	605	21	29			605
8+19.86	8+94.86	BOTH	30	250	9	12			250
RAMP F-I									
2+80.63	3+80.63	BOTH	25-27	289	10	14			289
3+80.63	7+75.00	BOTH	25	1095	38	53			1095
7+75.00	9+75.00	BOTH	25-33	644	22	31			644
9+75.00	10+42.33	BOTH	33	247	9	12			247
10+42.33	11+60.00	BOTH	30-32	405	14	20			405
RAMP TURNOUT		BOTH		289	10	14			289
TOTALS				19,586	682	951			19,586

RESURFACING QUANTITIES									
LOCATION		SIDE	END WIDTHS LIN FT	SURFACE AREA SQ YDS	446		446		202
FROM	TO				1-1/4" SURFACE COURSE, TYPE I, AC-20 AS PER PLAN CU.YD.	1-3/4" INTERMEDIATE COURSE CU.YD.	WEARING COURSE REMOVED, A.P.P. SQ.YD.		
RAMP F-2									
5+21.87	6+21.87	BOTH	22-24	256	9	12			256
6+21.87	7+21.87	BOTH	22-25	261	9	13			261
7+21.87	10+22.49	BOTH	25	835	29	41			835
10+22.49	11+22.49	BOTH	22-27	272	9	13			272
11+22.49	11+45.00	BOTH	27-45	90	3	4			90
RAMP F-4									
1+73.65	6+16.40	BOTH	27	1328	46	65			1328
6+16.40	7+16.40	BOTH	22-27	272	9	13			272
RAMP F-3									
3+53.61	7+04.20	BOTH	27	1052	37	51			1052
7+04.20	9+04.20	BOTH	17-27	489	17	24			489
RAMP E-14									
2+76.73	4+72.70	BOTH	27-29	610	21	30			610
4+72.70	7+76.96	BOTH	29-63	1555	54	76			1555
7+76.96	9+79.56	BOTH	27	608	21	30			608
9+79.56	10+79.56	BOTH	22-27	272	9	13			272
ACCESS RD.									
3+02.49	12+71.48	BOTH	24	2584	90	126			2584
TOTALS				10,484	363	511			10,484

ITEM 407 - TACK COAT	
48,609 SQ.YDS. X 0.075 GAL./SQ. YD.= 3,646 GAL.	
3,646 X 3 = 10,938 GAL.	

PLOT SUBMITTED BY: BANASZAK
 PLOT SUBMITTED: 04-JUN-1992 06:04
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RESURFACING QUANTITIES

CUYAHOGA COUNTY
CUY-77-13.81

OHIO

FHWA
REGION 5

FEDERAL
PROJECT

21
234

RESURFACING QUANTITIES

LOCATION		SIDE	END WIDTHS	SURFACE AREA	446		446		WEARING COURSE REMOVED, A.P.P.
FROM	TO				1-1/4" SURFACE COURSE, TYPE I, AC-20 AS PER PLAN	1-3/4" INTERMEDIATE COURSE	CU.YD.	CU.YD.	
FROM	TO		LIN. FT.	SQ.YDS.	CU.YD.	CU.YD.			SQ.YD.
RAMP E-17									
1+25.62	2+31.62	BOTH	57-68	736	26	36			736
2+31.62	4+41.14	BOTH	37	861	30	42			861
4+41.14	5+21.14	BOTH	37-39	338	12	16			338
5+21.14	7+06.65	BOTH	37-63	1031	36	50			1031
7+06.65	7+81.65	BOTH	30	250	9	12			250
9+95.65	10+70.65	BOTH	15-23	158	5	8			158
RAMP E-9									
0+93.60	1+73.60	BOTH	27-29	249	9	12			249
1+73.60	4+36.00	BOTH	27	787	27	38			787
4+36.00	4+61.00	BOTH	29	81	3	4			81
EAST 14th ST. (SB)									
3+69.00	4+39.86	BOTH	34	268	9	13			
4+39.86	5+05.69	BOTH	35-58	340	12	17			
5+05.69	10+94.82	BOTH	35	2291	80	111			
10+94.82	11+38.54	BOTH	35-43	189	7	9			
RAMP E-10									
9+38.16	9+90.00	BOTH	37-39	219	8	11			219
9+90.00	10+40.00	BOTH	37.5-39.5	214	7	10			214
10+40.00	16+52.72	BOTH	37.5	2553	89	124			2553
16+52.72	18+12.64	BOTH	37.5-42.5	711	25	35			711
RAMP E-15									
0+00	1+00	BOTH	19-20	217	8	11			217
1+00	4+17.75	BOTH	20	706	25	34			706
6+85.67	7+92.31	BOTH	20	237	8	12			237
9+84.06	12+25.74	BOTH	27-29	752	26	37			752
12+25.74	14+05.74	BOTH	22-27	490	17	24			490
14+05.74	15+02.70	BOTH	36-43	426	15	21			426
15+02.70	15+27.70	BOTH	36	100	3	5			100
16+96.91	17+40.32	BOTH	22-24.5	112	4	5			112
TOTALS				14,316	500	697			11,228

RESURFACING QUANTITIES

LOCATION		SIDE	END WIDTHS	SURFACE AREA	446		446		WEARING COURSE REMOVED, A.P.P.
FROM	TO				1-1/4" SURFACE COURSE, TYPE I, AC-20 AS PER PLAN	1-3/4" INTERMEDIATE COURSE	CU.YD.	CU.YD.	
FROM	TO		LIN FT	SQ YDS	CU.YD.	CU.YD.			SQ.YD.
RAMP E-7									
1+36.63	4+50.40	BOTH	27	941	33	46			941
4+50.40	6+50.40	BOTH	17-27	489	17	24			489
RAMP E-18									
1+92.54	5+79.00	BOTH	27	1159	40	56			1159
5+79.00	8+10.00	BOTH	27-29	719	25	35			719
EAST 14th ST. (NB)									
3+69.00	4+05.70	BOTH	24	98	3	5			
TURNOUT				156	5	8			
4+05.70	4+84.69	BOTH	24-48	316	11	15			
4+84.69	12+76.10	BOTH	24	2110	73	103			
12+76.10	13+47.91	BOTH	35-45	319	11	16			
13+47.91	17+47.93	BOTH	35	1556	54	76			
17+47.93	18+15	BOTH	57-63	446	15	22			
18+15	20+58.49	BOTH	52-57	1474	51	72			
20+58.49	21+32.05	BOTH	52-63	470	16	23			
21+32.05	23+65	BOTH	24	621	22	30			
RAMP E-18 (TURNOUT)									
0+63.20	2+70.00	BOTH	35	804	28	39			
2+70.00	3+40.00	BOTH	35-70	408	14	20			
TOTALS				12,086	418	590			3,308

RESURFACING QUANTITIES

LOCATION		SIDE	END WIDTHS	SURFACE AREA	446		446		WEARING COURSE REMOVED, A.P.P.
FROM	TO				1-1/4" SURFACE COURSE, TYPE I, AC-20 AS PER PLAN	1-3/4" INTERMEDIATE COURSE	CU.YD.	CU.YD.	
FROM	TO		LIN FT	SQ YDS	CU.YD.	CU.YD.			SQ.YD.
SCOVIL (EB)									
3+42.00	5+63.57	BOTH	24	591	21	29			
5+63.57	6+70.36	BOTH	35-52	516	18	25			
6+70.36	9+75.00	BOTH	35	1185	41	58			
9+75.00	10+00	BOTH	35-55	125	4	6			
SCOVIL (WB)									
9+01.00	9+75.00	BOTH	24	197	7	10			
9+75.00	10+00	BOTH	24-45	96	3	5			
0+00	0+50	BOTH	24	133	5	6			
0+50	1+30	BOTH	30	267	9	13			
1+30	3+21	BOTH	38	806	28	39			
3+21	4+59	BOTH	24-38	475	16	23			
4+59	7+69.33	BOTH	24	828	29	40			
ADDITIONAL RAMP FEATHERS									
RAMP W-N									
13+70.40	14+45.40	BOTH	30	250	9	12			250
RAMP S-W									
3+96.08	4+71.08	BOTH	34	283	10	14			283
RAMP E-8									
0+47.96	1+22.96	BOTH	27	225	8	11			225
TOTALS				5,977	208	291			758

ITEM 407 - TACK COAT

32,379 SQ.YDS. X 0.075 GAL./SQ. YD.= 2,428 GAL.

2,428 X 3 = 7,284 GAL.

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PLOT SUBMITTED: 04-JUN-1992 05:54

PLOT SUBMITTED BY: BANASZAK

DRAINAGE QUANTITIES

* - 707.17, NON-PERFORATED ASTM 3034 OR SDR 35 OR SS 931

LEGEND: MI= MEDIAN INLET
 CB = CATCH BASIN
 MH = MANHOLE
 SI = SHOULDER INLET
 PRCO = PRECAST REIN. CONCRETE
 OUTLET

CUYAHOGA COUNTY
 CUY-77-13.81

OHIO
 FHWA
 REGION 5
 FEDERAL
 PROJECT

25
 234

DRAINAGE QUANTITIES

LOCATION	STATION		LENGTH LIN. FT.	NUMBER OF SIDES	ITEM - 605		ITEM - 603		TO EXISTING CATCH BASIN, MANHOLE, ETC...	SPEC. PRECAST REINFORCED CONCRETE OUTLET EA.	
	FROM	TO			4" SHALLOW PIPE UNDERDRAIN 707.15 AS PER PLAN LIN. FT.	PIPE UNDERDRAIN LIN. FT.	6" CONDUIT				
							TYPE B LIN. FT.	TYPE F * LIN. FT.			
MAINLINE I-77	49+65	47+03(NB)	262		262		7		INLET		
	48+82	47+03(NB)	179		179		10		M.I.		
	48+82	47+03(SB)	179		179		10		M.I.		
	48+74	47+26(SB)	148		148		18		INLET		
	51+97	49+90(NB)	297		207		10		M.H.		
	51+97	49+00(SB)	297		297		10		M.H.		
	51+97	48+88(SB)	309		309						
	52+00	49+90(NB)	210		210		10		INLET		
	52+00	49+90(SB)	210		210		10		INLET		
	52+00	54+60(SB)	260		260		22		INLET		
	54+74	57+91(SB)	317		317		10		M.H.		
	51+68	59+30(NB)	762		762		35		C.B.		
	58+00	59+35(SB)	135		135		20		M.H.		
	58+10	61+40(NB)	330		330		10		M.I.		
	58+10	61+40(SB)	330		330		10		M.I.		
	59+10	62+00(NB)	290		290		20		C.B.		
	64+60	62+00(NB)	260		260		10		C.B.		
	63+00	61+55(NB)	145		145		10		M.I.		
	63+00	61+55(SB)	145		145		10		M.I.		
	64+80	63+10(NB)	170		170		10		M.I.		
	65+44	63+10(SB)	234		234		10		M.I.		
	59+20	61+20(SB)	200		200		10		C.B.		
	61+25	61+95(SB)	70		70		10		C.B.		
	62+00	62+77(SB)	77		77		10		C.B.		
	64+50	62+78(SB)	172		172		15		C.B.		
	69+75	64+65(SB)	510		510		125		M.H.		
	69+75	66+54(NB)	321		321		25		PRCO	I	
	66+00	66+54(NB)	54		54		27		M.I.		
	115+50	113+00(NB)	250		250		27		PRCO	I	
	130+48.50	128+50(NB)	199		199		20		PRCO	I	
130+48.50	129+00(SB)	149		149		23		PRCO	I		
128+50	129+00(SB)	50		50							
RAMP B-1	9+85	11+85(RT)	200		200		10		S.I.		
	12+90	11+85(RT)	105		105		10		S.I.		
	11+10	11+75(LT)	65		65		10		M.H.		
	12+70	11+60(LT)	110		110		10		M.H.		
RAMP B-2	22+60	17+80(RT)	480		480		10		S.I.		
	14+50	15+75(LT)	125		125		10		S.I.		
	15+85	16+80	95		95		10		S.I.		
	16+80	17+50	70		70		10		S.I.		
	23+75	17+50	625		625		10		S.I.		
RAMP E-S	4+98.80	5+50(LT)	51		51				PRCO		
	7+80	5+50(LT)	230		230		85		PRCO	I	
	11+10	11+40	30		30		20		C.B.		
	18+50	11+40	710		710		20		C.B.		
SUB-TOTAL						10417		769		5	

DRAINAGE QUANTITIES

LOCATION	STATION		LENGTH LIN. FT.	NUMBER OF SIDES	ITEM - 605		ITEM - 603		TO EXISTING CATCH BASIN, MANHOLE, ETC...	SPEC. PRECAST REINFORCED CONCRETE OUTLET EA.
	FROM	TO			4" SHALLOW PIPE UNDERDRAIN 707.15 AS PER PLAN LIN. FT.	6" DEEP PIPE UNDERDRAIN LIN. FT.	6" CONDUIT			
							TYPE B LIN. FT.	TYPE F * LIN. FT.		
RAMP N-E	0+00	7+25(LT)	725		725				C.B.	
	7+97	7+25(LT)	72		72				C.B.	
	17+00	19+10(LT)	210		210				PRCO	I
RAMP N-W	4+85	8+06(RT)	321		321				20	PRCO I
RAMP W-S	19+00	16+48(LT)	225		252				10	PRCO I
RAMP S-W	1+00	3+20(LT)	220		220				10	C.B.
RAMP S-E	9+00	17+00(RT)	800		800				10	C.B.
	17+00	19+10(RT)	210		210				20	C.B.
RAMP E-N	17+92.61	18+25(RT)	32		32				10	C.B.
	26+75	18+25(RT)	850		850				10	C.B.
RAMP W-N	15+23	14+40	283		83				15	PRCO I
RAMP F-1	11+52	10+60(LT)	92		92				10	C.B.
	2+97	10+60(LT)	736		763				10	C.B.
RAMP F-2	1+60	4+00(RT)	240		240				10	PRCO I
	6+04	4+00(RT)	204		204					PRCO
	7+00	11+10(RT)	410		410				10	S.I.
	6+87	5+20(LT)	167		167				10	C.B.
	RAMP E-7	2+60	5+16.5(LT)	257		257				10
7+70		5+16.5(LT)	254		254				10	INLET
2+00		2+60(RT)	60		60				10	PRCO I
RAMP E-17	2+40	4+50(RT)	210		210				10	PRCO I
	6+90	4+50(RT)	240		240					PRCO
	6+90	7+21.14(RT)	31		31				10	PRCO I
RAMP E-9	4+75	1+00(RT)	375		375				30	PRCO I
RAMP E-10	17+36	13+00(LT)	436		436				10	INLET
	13+00	9+85(LT)	315		315				10	C.B.
RAMP E-18	7+99.55	4+97(LT)	303		303				10	C.B.
	1+75	3+35(RT)	160		160				10	C.B.
	4+97	3+35(RT)	162		162				10	C.B.
RAMP E-15	6+85.67	7+92(RT)	106		106				10	PRCO I
	3+40	0+50(LT)	290		290				10	C.B.
	11+10	12+40(RT)	130		130				10	PRCO I
RAMP F-3	14+00	12+40(RT)	160		160					PRCO
	7+80	3+75(RT)	405		405				10	PRCO I
	3+75	1+85(LT)	190		190				10	S.I.
RAMP F-4	4+00	7+00(LT)	300		300				10	PRCO I
	7+00	9+10(RT)	210		210				10	S.I.
SUB-TOTAL						10245				13
GRAND TOTAL						20662				18

QUANTITIES SHOWN ARE FOR ESTIMATING PURPOSES ONLY - SEE SHEET NO. 12 FOR QUANTITIES

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PLOT SUBMITTED: 09-JUN-1992 14:23

PLOT SUBMITTED BY: BANASZAK

TEMPORARY PAVEMENT MARKING QUANTITIES

CUYAHOGA COUNTY
CUY-77-13.81

OHIO
FHWA REGION 5
FEDERAL PROJECT

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234

Y- YELLOW
W- WHITE

TEMPORARY PAVEMENT MARKING QUANTITIES											
PHASE	ITEM 614										
	TEMP. EDGE LINE CLASS I, 740.05 TYPE C		TEMP. EDGE LINE CLASS I, 642 PAINT		TEMP. LANE LINE CLASS I, 740.05 TYPE C	TEMP. TRANSVERSE LINE, CLASS I, 740.05 TYPE C	TEMP. CHANNELIZING LINE, CLASS I, 740.05 TYPE C	TEMP. DOTTED LINE, CLASS I, 740.05 TYPE C	TEMP. CENTERLINE CLASS I, 740.05 TYPE C		
	W L.F.	Y L.F.	W L.F.	Y L.F.							
PHASE I	48164	2806		39545	26682	445	4958	4370	465		
PHASE II	4080	48501	37905		27326	715	6182	2335	445		
PRELIMINARY PHASE	41973	42834			39399		9350				
TOTALS	94217	94141	37905	39545	93407	1160	20490	6705	910		
	188358 (35.67 mi)		77450 (14.67 mi)		17.69mi				0.17 mi		

- NOTES: 1. TYPE C MARKINGS SHALL BE USED AT ALL GORES, BRIDGE DECKS, AND NON-OVERLAID SECTIONS.
2. 642 PAINT SHALL BE USED FOR TEMPORARY EDGE LINES ONLY ON BERMS DURING PHASE I AND PHASE II.
3. TYPE C MARKINGS SHALL BE USED AFTER THE ASPHALT WEARING COURSE HAS BEEN REMOVED (PRELIMINARY PHASE) PRIOR TO IMPLEMENTING PHASE I. MARKINGS SHALL BE IN PLACE PRIOR TO OPENING THE NIGHTTIME CLOSURES. THE LOCATIONS SHALL COINCIDE WITH THE ORIGINAL LOCATIONS.

PLOT SUBMITTED BY: uliman
 PLOT SUBMITTED: 12-JUN-1992 13:30
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COMPUTATIONS AND SUB-SUMMARIES

** QUANTITY BASED ON 4' WIDE x 1.5" DEEP

COMPACTED AGGREGATE					
LOCATION	SIDE	STATION		617	
				COMPACTED ** AGGREGATE, TYPE B, AS PER PLAN	
		FROM	TO		
I-77	N.B.	49+01.71	50+70.58	3	
I-77	N.B.	51+71	56+98	10	
I-77	N.B.	60+68	63+27.50	5	
I-77	N.B.	64+90	65+00	1	
I-77	N.B.	65+99	72-13	11	
I-77	N.B.	74+75	75+00	1	
I-77	N.B.	106+90	107+24	1	
I-77	N.B.	111+13	112+29.50	2	
I-77	N.B.	113+24	118+60	1	
I-77	N.B.	129+64	33+00	6	
I-77	N.B.	33+00	33+80	2	
I-77	N.B.	44+80	47+70.50	5	
I-77	S.B.	46+76.05	54+75	15	
I-77	S.B.	64+50	64+71	1	
I-77	S.B.	66+44	73+87	14	
I-77	S.B.	106+90	107-35	2	
I-77	S.B.	130+24	34+69	8	
I-77	S.B.	36+50	37+20	1	
RAMP B-2	LT	16+43	16+54	1	
RAMP B-2	LT	23+17	24+25	2	
RAMP B-2	RT	20+46	23+75	6	
RAMP B-2	RT	0+00	5+55.57	10	
RAMP S-E	RT	0+00	0-40	1	
RAMP S-E	RT	0-40	8+80	16	
RAMP S-E	RT	10+42	18+00	14	
RAMP S-E	LT	6+00	8+80	5	
RAMP S-E	LT	10+42	10+71.01	1	
RAMP S-E	LT	11+90	15+45.42	7	
RAMP S-E	LT	16+95.42	18+00	2	
RAMP N-E	RT	4+28.01	6+25	4	
RAMP N-E	RT	13+60	19+10	10	
RAMP N-E	LT	1+00	6-22	10	
RAMP E-N	RT	18+00	25+15	13	
RAMP E-N	LT	18+92.61	20+72.44	3	
RAMP E-N	LT	23+17	25+15	4	
RAMP E-S	LT	11+00	17+70	12	
RAMP E-S	RT	11+00	16+15	10	
RAMP S-W	LT	4+00	4+65	1	
TOTALS				221	

COMPACTED AGGREGATE					
LOCATION	SIDE	STATION		617	
				COMPACTED ** AGGREGATE, TYPE B, AS PER PLAN	
		FROM	TO		
RAMP N-W	RT	4+70	5+73	2	
RAMP N-W	RT	7+35	9+00	3	
RAMP N-W	LT	4+70	6+05	3	
RAMP N-W	LT	7+55	8+20	1	
RAMP W-N	LT	13+70	14+70	2	
RAMP W-N	RT	13+70	14+40	1	
RAMP W-S	LT	16+38	21+22	9	
RAMP W-S	RT	15+60	20+00	8	
RAMP F-1	RT	8+47	11+60	6	
RAMP F-1	LT	2+85	11+60	16	
RAMP F-2	LT	9+97	10+22	1	
RAMP F-3	RT	7+50	9+00	3	
RAMP F-4	RT	1+25	3+50.50	4	
RAMP E-15	RT	0+00	4+00	7	
RAMP E-15	RT	10+10	13+54	6	
RAMP E-15	LT	10+10	10+33	1	
RAMP E-15	LT	12+57	14+00	3	
RAMP E-7	LT	1+00	5+93	9	
RAMP E-14	RT	7+80	17+50	18	
RAMP E-14	LT	10+00	12+90	5	
RAMP E-10	LT	9+35	18+00	16	
RAMP E-17	RT	6+87	7+00	1	
RAMP E-17	LT	6+94	7+00	1	
RAMP E-17	RT	10+25	11+00	1	
RAMP E-17	LT	10+25	11+00	1	
RAMP E-8	LT	0+00	1+30	2	
RAMP E-8	RT	0+00	1+30	2	
RAMP E-18	RT	1+70	6+45	9	
RAMP E-18	LT	1+70	2+27	1	
RAMP E-18	LT	7+70	8+00	1	
TOTALS				143	
				(THIS SHEET)	364 C.Y.

CURB REPLACEMENT SUB-SUMMARY						
SHEET NO.	LOCATION STATION		SIDE	202		609
				CURB REMOVED, AS PER PLAN	CURB, TYPE 6, AS PER PLAN	
	FROM	TO				LIN. FT.
MAINLINE						
	46+76.05	49+01.71	N.B.-RT.	226		226
	51+2.50	51+71	N.B.-RT.	59		59
	56+75	64+50	S.B.-LT.	775		775
	79+50	87+05	N.B. RT.			* 755
RAMP B-1						
	0+00	2+94	RT.	294		294
	2+94	8+00	RT.	506		506
	3+25	8+80	LT.	555		555
RAMP B-2						
	5+55.67	19+37	RT.	1381		1381
	16+54	23+17	LT.	663		663
	23+75	24+45	RT.	70		70
RAMP S-E						
	0+40	2+75	RT.	235		235
RAMP W-S						
	23+71.02	20+00	RT.	371		371
RAMP F-2						
	10+22	11+50	RT.	129		129
RAMP F-3						
	10+51.81	3+90	LT.	662		662
RAMP F-4						
	0+00	6+50	LT.	650		650
RAMP E-7						
	8+50	1+10	RT.	740		740
RAMP E-15						
	0+00	3+65	LT.	365		365
	6+73	7+70	LT.	97		97
	7+23	7+80	RT.	57		57
RAMP E-18						
	7+70	2+27	LT.	543		543
TOTALS				8377		9132

* ASPHALT CURB TO BE REPLACED. REMOVAL INCLUDED WITH ITEM 609 CURB, TYPE 6, AS PER PLAN.

GENERAL SUMMARY

CUYAHOGA COUNTY
CUY-77-13.81

OHIO

FHWA
REGION 5

FEDERAL
PROJECT

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PARTICIPATION CODE
I - FEDERAL AND STATE
II - STATE ONLY

PLOT SUBMITTED: 23-JUN-1992 05:35

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PLOT SUBMITTED BY: BANASZAK

ITEM	SHEET NUMBER										PARTICIPATION		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN SHEET REF.
	8	9	12	23	24	27	51	74	76	I	II							
ROADWAY (CONT.)																		
608	9000							5950				14950	608	10000	14950	SQ FT	4" CONCRETE WALK	
608					32							32	608	51000	32	EACH	CURB RAMP, TYPE 2	
622							115					115	622	80000	115	LIN FT	GLARE SCREEN	
SPECIAL													SPECIAL	69010200		EACH	IMPACT ATTENUATOR, G.R.E.A.T. TYPE, MODEL NO. 300300SF3	9
SPECIAL													SPECIAL	69010400		EACH	IMPACT ATTENUATOR, HEX FOAM SANDWICH SYSTEM, MODEL NO. 209508H8S	9
EROSION CONTROL																		
207			72									72	207	10000	72	SQ YD	TEMPORARY SEEDING AND MULCHING	
207			500									500	207	30000	500	LIN FT	FILTER FABRIC FENCE	
207			250									250	207	70000	250	EACH	STRAW OR HAY BALES	
601								2359				2359	601	21001	2359	SQ YD	CONCRETE SLOPE PROTECTION, AS PER PLAN	12
601								1726				1726	601	28000	1726	CU YD	DUMPED ROCK FILL, TYPE D	
659					328							357	659	10000	357	SQ YD	SEEDING AND MULCHING	
659			20									20	659	14000	20	SQ YD	REPAIR SEEDING AND MULCHING	
659			0.02			0.03						0.05	659	20000	0.05	TON	COMMERCIAL FERTILIZER	
659						0.15						0.15	659	30000	0.15	TON	AGRICULTURAL LIMING	
659			2									2	659	35000	2	M GAL	WATER	
659			1									1	659	40000	1	M SQ FT	MOWING	

GENERAL SUMMARY

PARTICIPATION CODE
 I - FEDERAL AND STATE
 II - STATE ONLY

CUYAHOGA COUNTY
 CUY-77-13.81

OHIO
 FHWA
 REGION 5
 FEDERAL
 PROJECT

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 234

PLOT SUBMITTED BY: BANASZAK

PLOTTED FROM: c:\dgn\pid08084\08084ggc.dgn

PLOT SUBMITTED: 24-JUN-1992 12:47

ITEM	SHEET NUMBER						PARTICIPATION		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN SHEET REF.			
	7	10	12	13	25	27	57	58							76	I	II
DRAINAGE																	
SPECIAL				300						300		SPECIAL	51267502	300	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY)	13
603			100		1154					120		603	01500	1374	LIN FT	6" CONDUIT, TYPE F, 707.17 NON-PERFORATED ASTM 3034 OR SDR 35 OR SS 931	
603												603	04400	116	LIN FT	12" CONDUIT, TYPE B	
603												603	05900	48	LIN FT	15" CONDUIT, TYPE B	
603												603	10400	4	LIN FT	24" CONDUIT, TYPE B	
603												603	13400	16	LIN FT	30" CONDUIT, TYPE B	
604												604	00401	2	EACH	CATCH BASIN, NO. 3, AS PER PLAN	12
604			8									604	09001	8	EACH	CATCH BASIN ADJUSTED TO GRADE, AS PER PLAN	12
604												604	14603	5	EACH	INLET, NO. 3B50, AS PER PLAN "A"	54
604												604	14603	1	EACH	INLET, NO. 3B50, AS PER PLAN "B"	55
604												604	14603	1	EACH	INLET, NO. 3B50, AS PER PLAN "C"	56
604												604	17501	15	EACH	INLET, NO. 2-A-6, AS PER PLAN	61
604												604	17901	3	EACH	INLET, NO. 2-A-8, AS PER PLAN	61
604												604	18301	4	EACH	INLET, NO. 2-A-10, AS PER PLAN	61
604												604	19101	1	EACH	INLET, NO. 2-A-14, AS PER PLAN	61
604			15									604	20601	15	EACH	INLET ADJUSTED TO GRADE, AS PER PLAN	12
604			5									604	34501	5	EACH	MANHOLE ADJUSTED TO GRADE, AS PER PLAN	12
SPECIAL												SPECIAL	60436600	18	EACH	PRECAST REINFORCED CONCRETE OUTLET	14
SPECIAL				5000		18						SPECIAL	60450000	5000	POUND	MISCELLANEOUS METAL	13
605					20662							605	05101	20662	LIN FT	4" SHALLOW PIPE UNDERDRAIN, 707.15, AS PER PLAN	14
605										1163		605	11100	1803	LIN FT	6" SHALLOW PIPE UNDERDRAIN	
605			500									605	31100	500	LIN FT	AGGREGATE DRAIN	
PAVEMENT																	
251										6000		251	01001	6000	SQ YD	PARTIAL DEPTH PAVEMENT REPAIR, AS PER PLAN	10
252			4500									252	01000	4500	SQ YD	FULL DEPTH RIGID PAVEMENT REMOVAL AND FLEXIBLE REPLACEMENT	
252			9000									252	01500	9000	LIN FT	FULL DEPTH PAVEMENT SAWING	
254	6400	2000										254	01000	8400	SQ YD	PAVEMENT PLANING, BITUMINOUS	
254	1300											254	01010	1300	SQ YD	PAVEMENT PLANING, PORTLAND CEMENT CONCRETE	
255										9000		255	10001	9000	SQ YD	FULL DEPTH RIGID PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS C, AS PER PLAN 'A'	10
255										9000		255	10001	9000	SQ YD	FULL DEPTH RIGID PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS C, AS PER PLAN 'B'	10
255										36000		255	20000	36000	LIN FT	FULL DEPTH PAVEMENT SAWING	

GENERAL SUMMARY

CUYAHOGA COUNTY
CUY-77-13.81

OHIO

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PARTICIPATION CODE
I - FEDERAL AND STATE
II - STATE ONLY

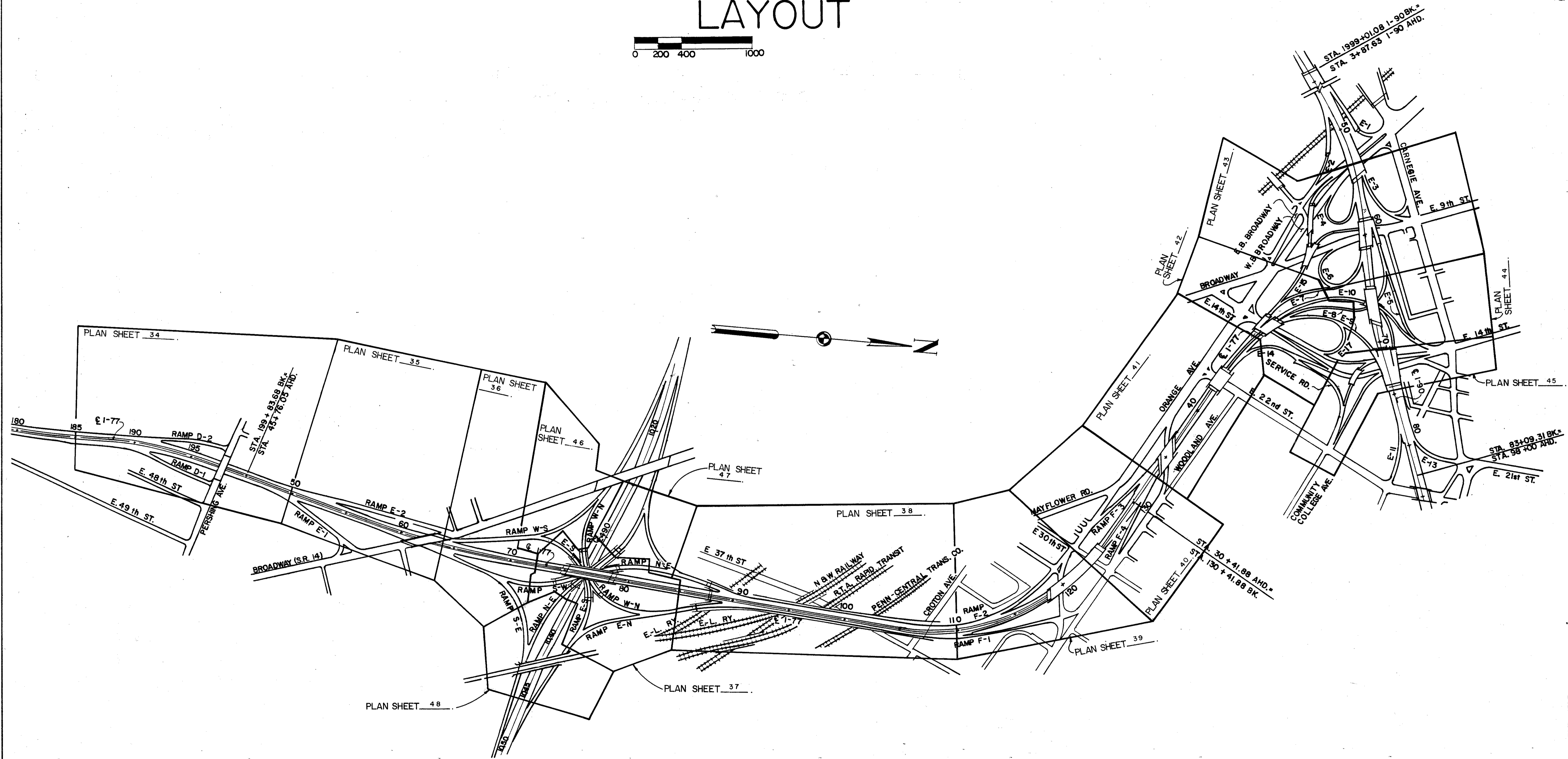
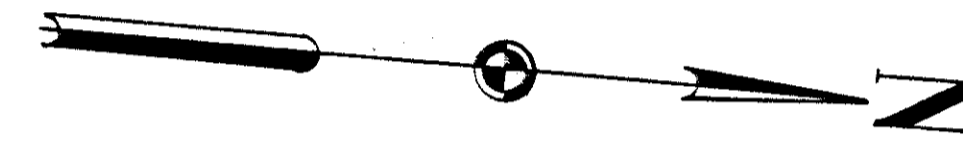
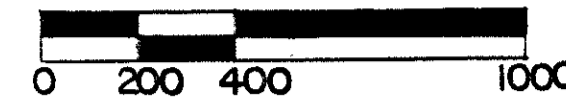
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PLOT SUBMITTED FROM: c:\dgn\pid08084\08084ggf.dgn

PLOT SUBMITTED: 23-JUN-1992 13:21

ITEM	SHEET NUMBER																PARTICIPATION		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN SHEET REF.
	191	8	11	18	19	20	21	22	23	24	28	50	57	58	76	51	I	II						
PAVEMENT (CONT.)																								
301		300		6227							15	65					6607	301	10002	6607	CU YD	BITUMINOUS AGGREGATE BASE, AC-20		
304														400			400	304	20001	400	CU YD	AGGREGATE BASE, AS PER PLAN	11	
305							19877				175	789					20841	305	13001	20841	SQ YD	9" CONCRETE BASE, AS PER PLAN		
310		300									23	131					454	310	12001	454	CU YD	SUBBASE, TYPE I, GRADING A, AS PER PLAN	10,11	
403		300		35													335	403	20000	335	CU YD	ASPHALT CONCRETE, AC-20		
407				17943	10938	7284											36165	407	10000	36165	GALLON	TACK COAT		
446		300		3767	2364	1578											8009	446	01200	8009	CU YD	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, AC-20		
446				2757	1687	1126											5570	446	01401	5570	CU YD	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AC-20, AS PER PLAN	11	
448								435	146								581	448	14101	581	CU YD	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1 (UNDER GUARDRAIL), AS PER PLAN	8	
SPECIAL			30000														30000	SPECIAL	45014000	30000	LIN FT	SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINT, 705.04	11	
SPECIAL			1100														1100	SPECIAL	45132000	1100	LIN FT	PRESSURE RELIEF JOINT, TYPE C	11	
609			100														100	609	10000	100	LIN FT	ASPHALT CONCRETE CURB, AC-20, TYPE 1		
609		2500													965		3465	609	26000	3465	LIN FT	CURB, TYPE 6		
609											9132						9132	609	26001	9132	LIN FT	CURB, TYPE 6, AS PER PLAN		
617											364						364	617	10201	364	CU YD	COMPACTED AGGREGATE, TYPE B, AS PER PLAN	11	
622															1732		1732	622	23405	1732	LIN. FT.	CONCRETE BARRIER, TYPE B-50, AS PER PLAN	9	
622								88	880								968	622	24001	968	LIN. FT.	CONCRETE BARRIER, TYPE D, AS PER PLAN		
622								98	56								154	622	25001	154	LIN. FT.	CONCRETE BARRIER, AS PER PLAN	9	
FOR MAINTENANCE OF TRAFFIC SUMMARY SEE SHEET 147 FOR TRAFFIC CONTROL SUMMARY SEE SHEET 145 FOR LIGHTING SUMMARY SHEET SEE 187 FOR STRUCTURES SUMMARY SEE SHEET 202																								
614																	LUMP	614	11000	LUMP		MAINTAINING TRAFFIC		
619																	LUMP	619	15020	LUMP		FIELD OFFICE, TYPE C		
623																	LUMP	623	10001	LUMP		CONSTRUCTION LAYOUT STAKES, AS PER PLAN	11,59	
624																	LUMP	624	10000	LUMP		MOBILIZATION		
SPECIAL	LUMP																LUMP	SPECIAL	100 00300	LUMP		PREMIUM ON RAILROAD'S, PUBLIC LIABILITY AND PROPERTY DAMAGE LIABILITY INSURANCE PROTECTIVE		

SCHEMATIC PLAN SHEET LAYOUT

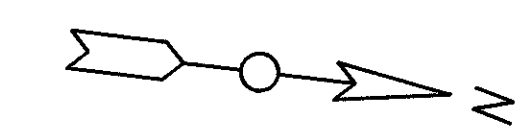
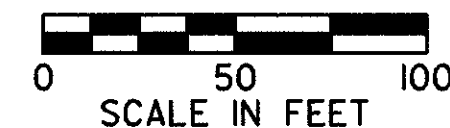


PLAN SHEET

CUYAHOGA COUNTY
CUY-77-13.81

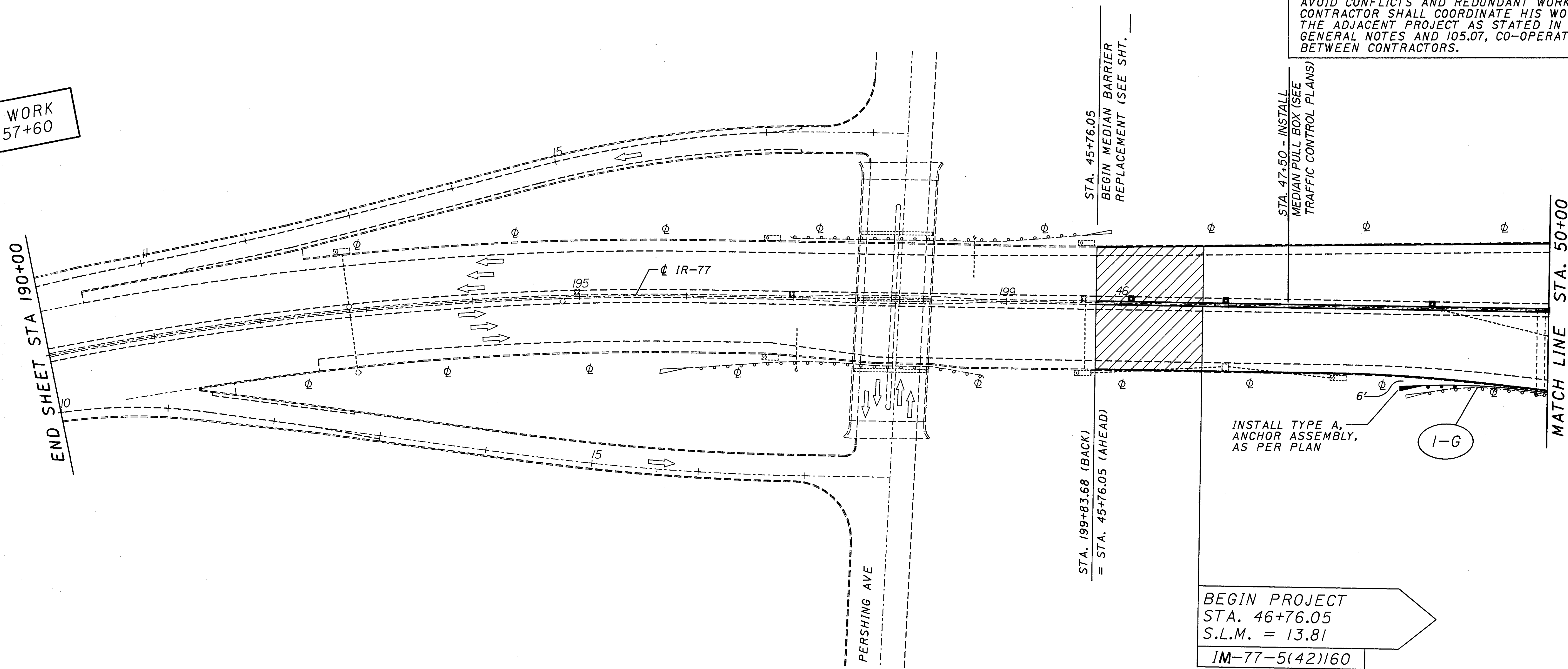
OHIO
FHWA
REGION 5
FEDERAL
PROJECT

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234



NOTE:
THE CONTRACTOR IS CAUTIONED TO BE AWARE OF THE ADJACENT (IR-77/IR-90 INTERCHANGE) SAFETY UPGRADING PROJECT CUY-90-16.24, TO AVOID CONFLICTS AND REDUNDANT WORK. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THE ADJACENT PROJECT AS STATED IN THE GENERAL NOTES AND 105.07, CO-OPERATION BETWEEN CONTRACTORS.

BEGIN WORK
STA. 157+60



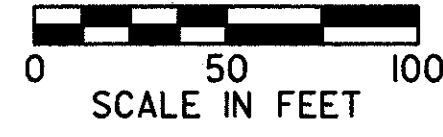
- LEGEND:**
- EXISTING CATCH BASIN
 - EXISTING MANHOLE (STORM)
 - EXISTING PAVED SHOULDER INLET
 - EXISTING MEDIAN INLET
 - EXISTING LIGHTPOLE
 - ASPHALT LIMITS
 - EXISTING MEDIAN LIGHTPOLE
 - EXISTING IMPACT ATTENUATOR

BEGIN PROJECT
STA. 46+76.05
S.L.M. = 13.81
IM-77-5(42)160

CROSS REFERENCE	
ITEM	SHEET
GUARDRAIL	23
FEATHER	59
BARRIER (MEDIAN)	51
DRAINAGE	27

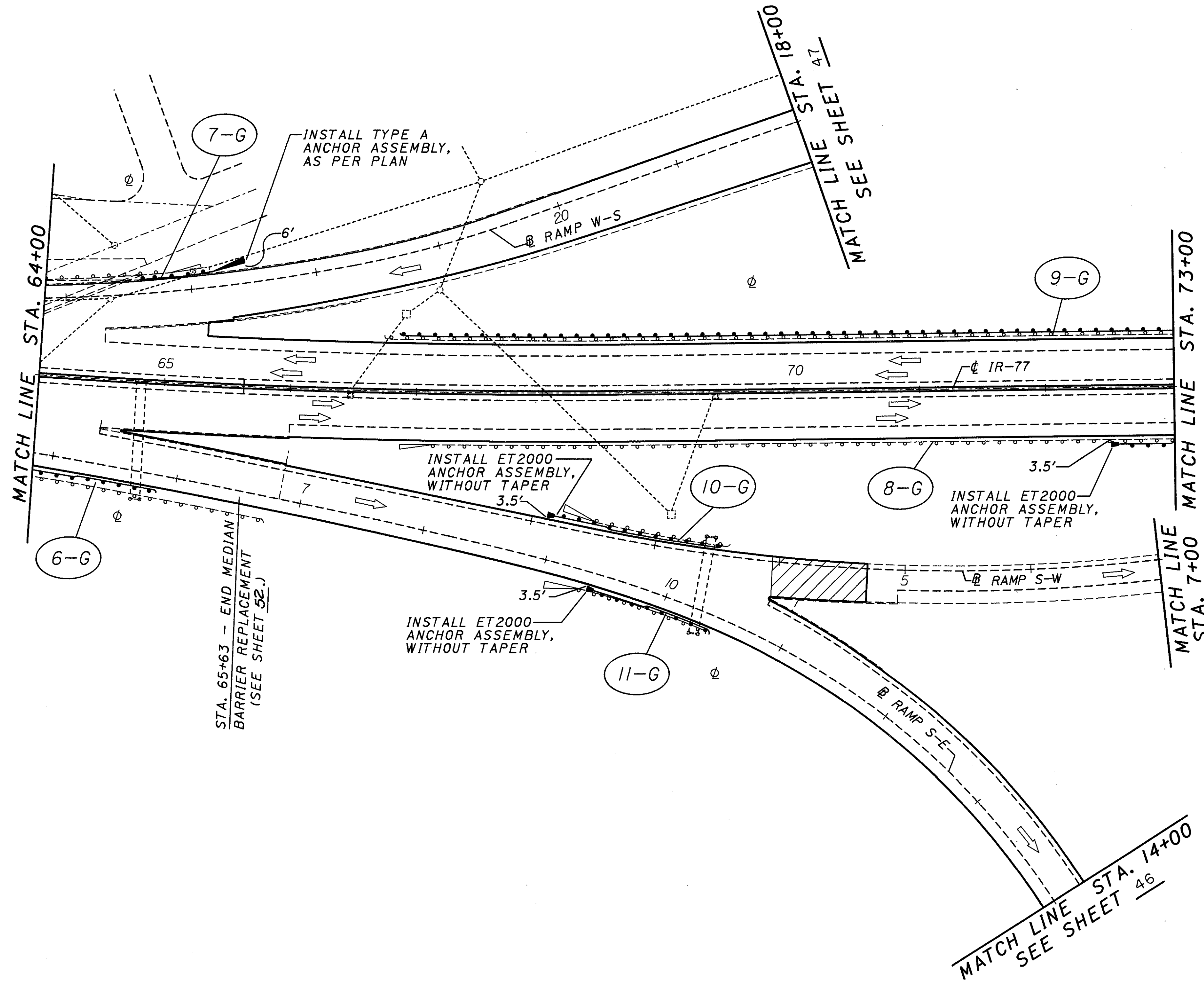
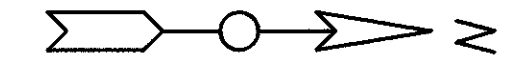
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PLAN SHEET



CUYAHOGA COUNTY CUY-77-13.81	OHIO	36
	FHWA REGION 5	234
FEDERAL PROJECT		

FOR LEGEND SEE SHEET 34.



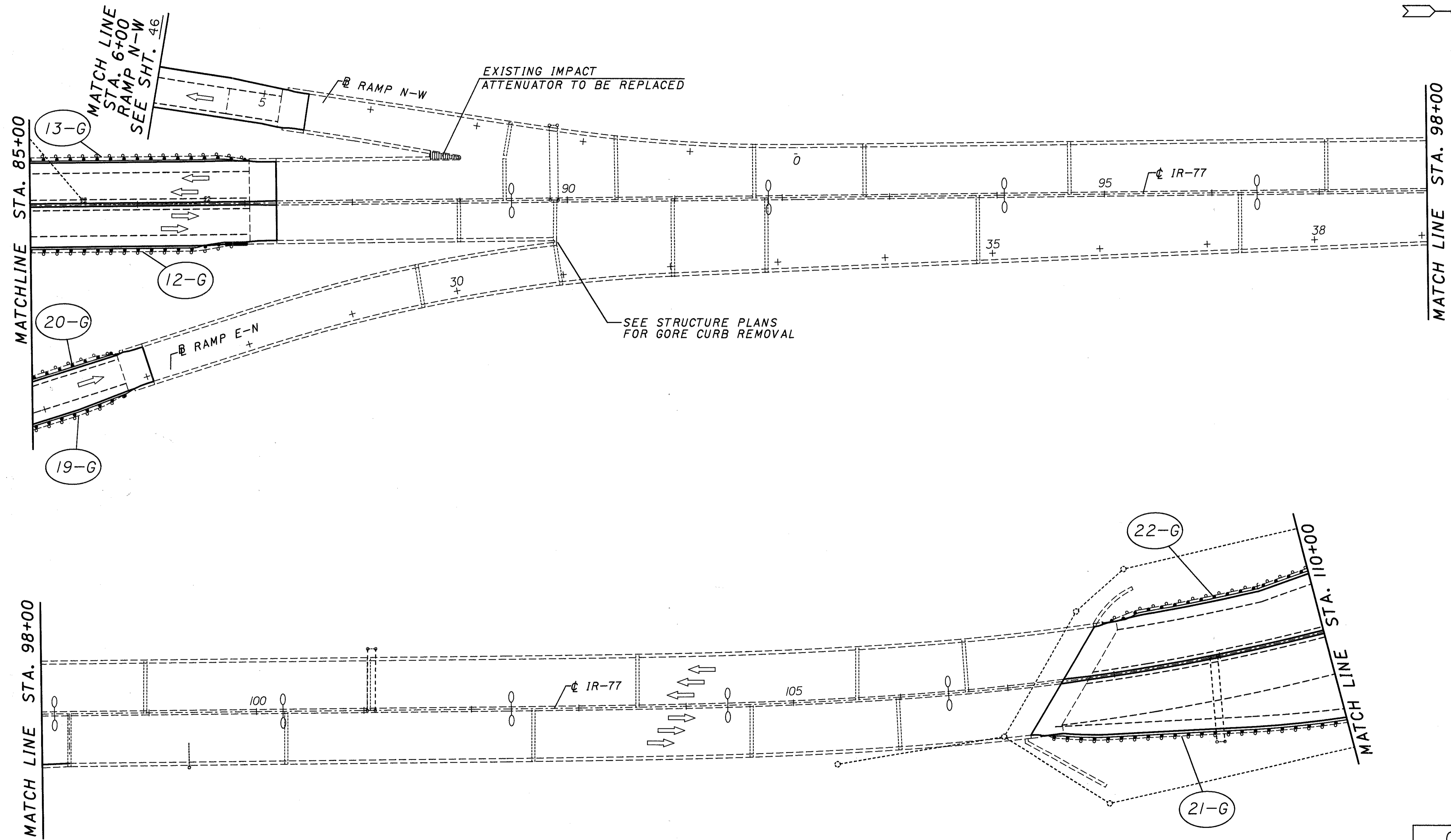
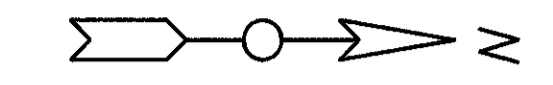
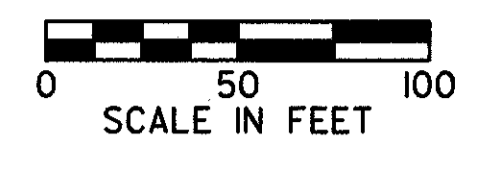
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 PLOT SUBMITTED: 15-JUN-1992 10:2

PLAN SHEET

CUYAHOGA COUNTY
 CUY-77-13.81

OHIO	38
FHWA REGION 5	234
FEDERAL PROJECT	

FOR LEGEND SEE SHEET 34.



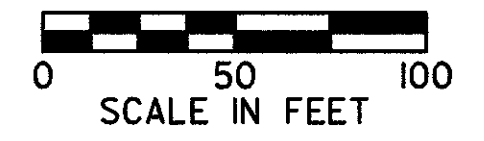
CROSS REFERENCE	
ITEM	SHEET
GUARDRAIL	23
IMPACT ATTENUATOR	62
FEATHER	59

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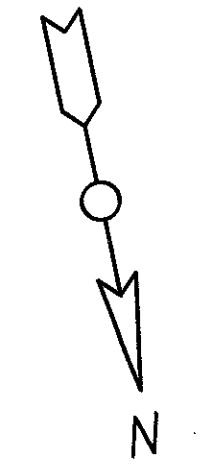
PLAN SHEET

CUYAHOGA COUNTY
 CUY-77-13.81

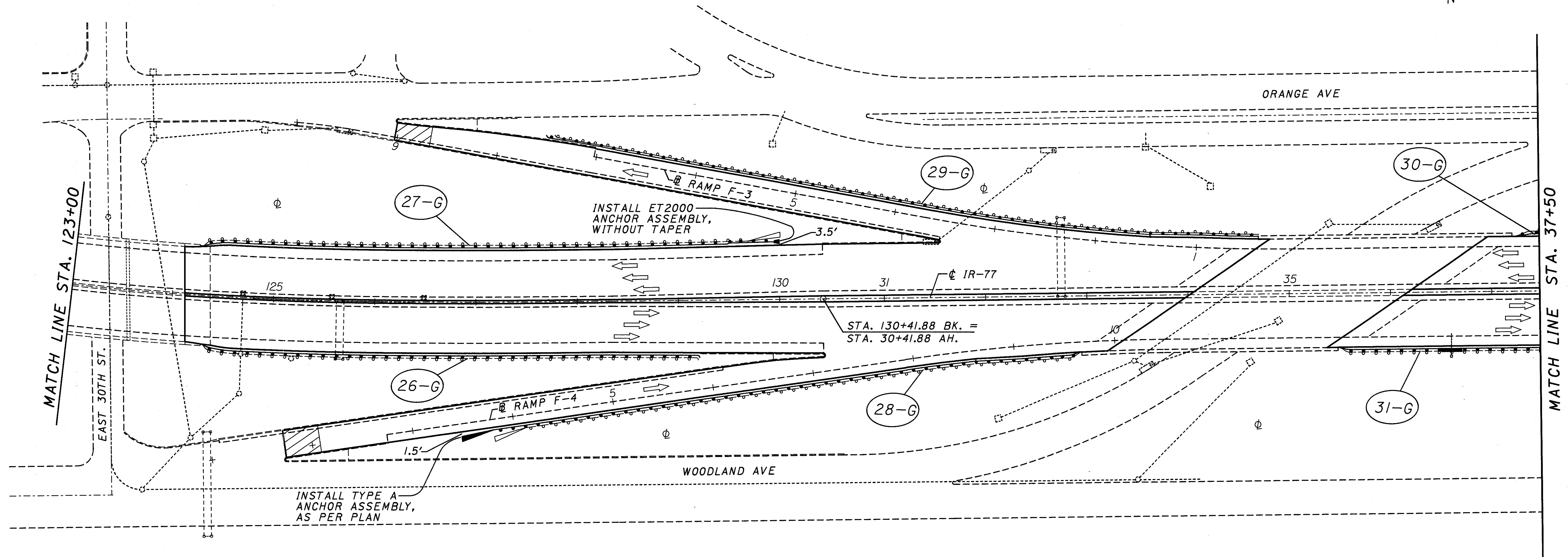
OHIO	40
FHWA REGION 5	234
FEDERAL PROJECT	



FOR LEGEND SEE SHEET 34.



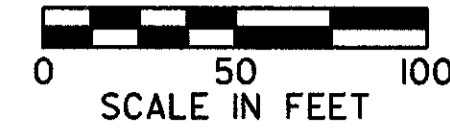
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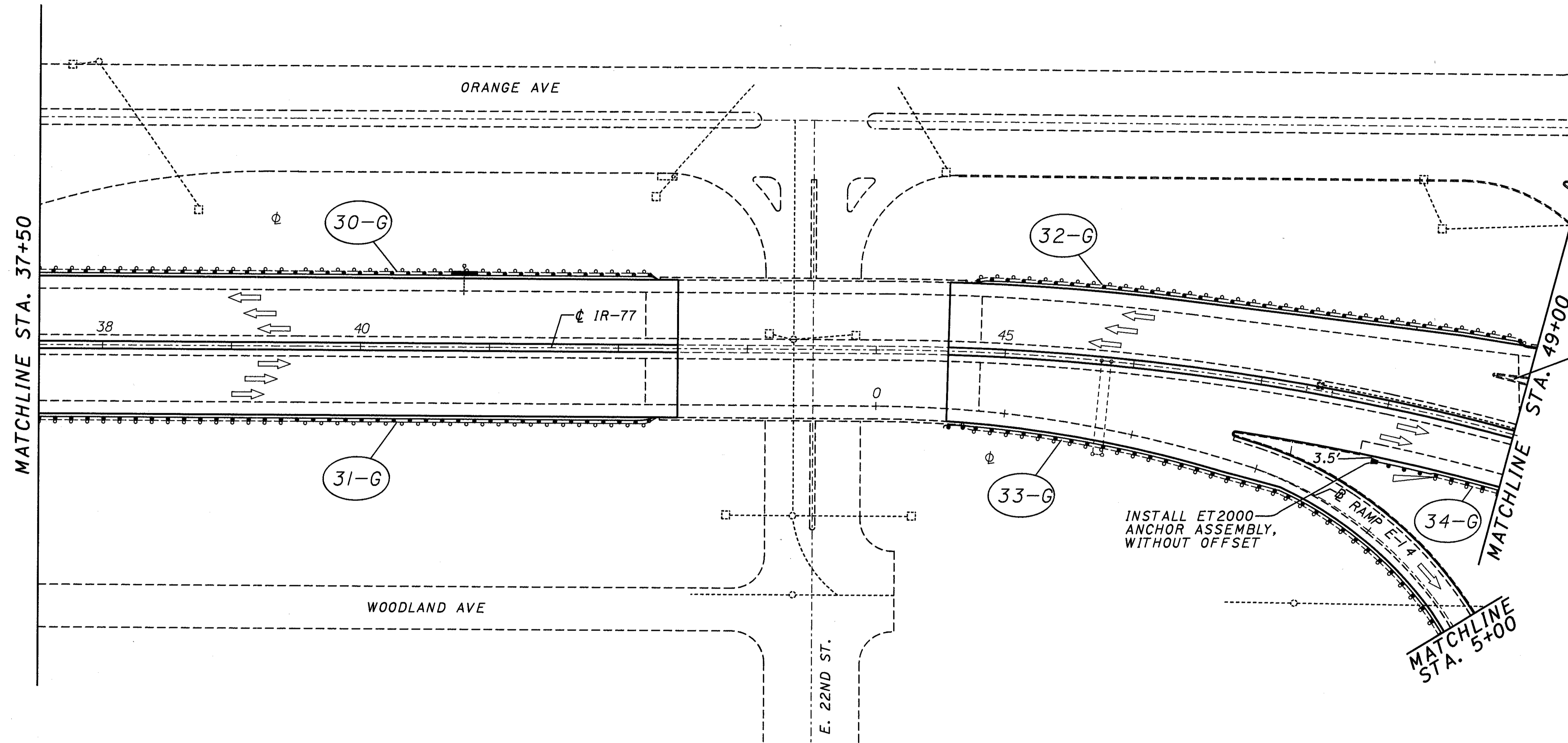
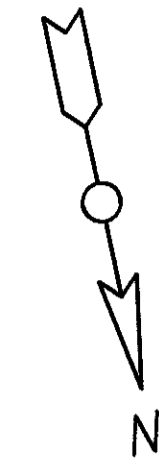
CROSS REFERENCE	
ITEM	SHEET
GUARDRAIL	23
FEATHER	59
BARRIER (SIGN PROT.)	70

PLAN SHEET

CUYAHOGA COUNTY	OHIO	41 234
CUY-77-13.81	FHWA REGION 5	
FEDERAL PROJECT		



FOR LEGEND SEE SHEET 34.



SEE STRUCTURE PLANS FOR GORE CURB REMOVAL

INSTALL ET2000 ANCHOR ASSEMBLY, WITHOUT OFFSET

CROSS REFERENCE	
ITEM	SHEET
GUARDRAIL	23

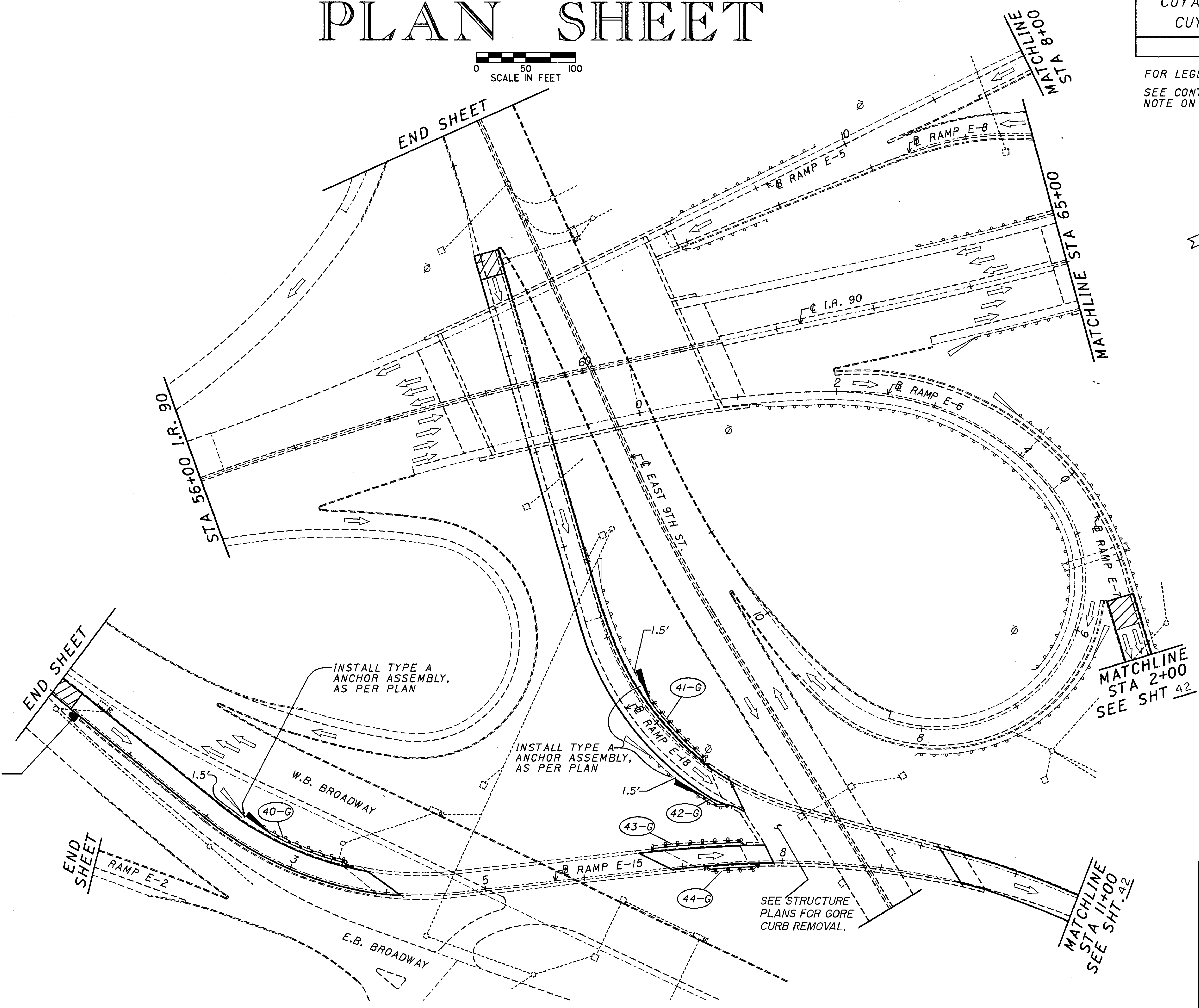
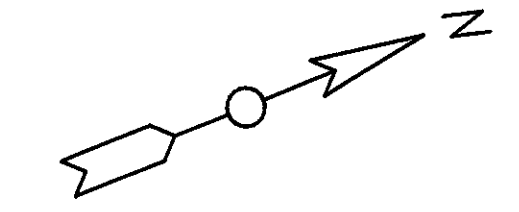
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PLAN SHEET



CUYAHOGA COUNTY	OHIO	43
CUY-77-13.81	FHWA REGION 5	234
	FEDERAL PROJECT	

FOR LEGEND SEE SHEET 34.
SEE CONTRACTOR COOPERATION
NOTE ON SHEET 7.



INSTALL IMPACT ATTENUATOR (G.R.E.A.T. TYPE) AS SHOWN ON SHT. 62 AND AS STATED IN THE GENERAL NOTES.

INSTALL TYPE A ANCHOR ASSEMBLY, AS PER PLAN

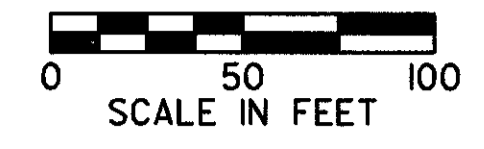
INSTALL TYPE A ANCHOR ASSEMBLY, AS PER PLAN

SEE STRUCTURE PLANS FOR GORE CURB REMOVAL.

CROSS REFERENCE	
ITEM	SHEET
GUARDRAIL	23
FEATHER	59
IMPACT ATTENUATOR	62

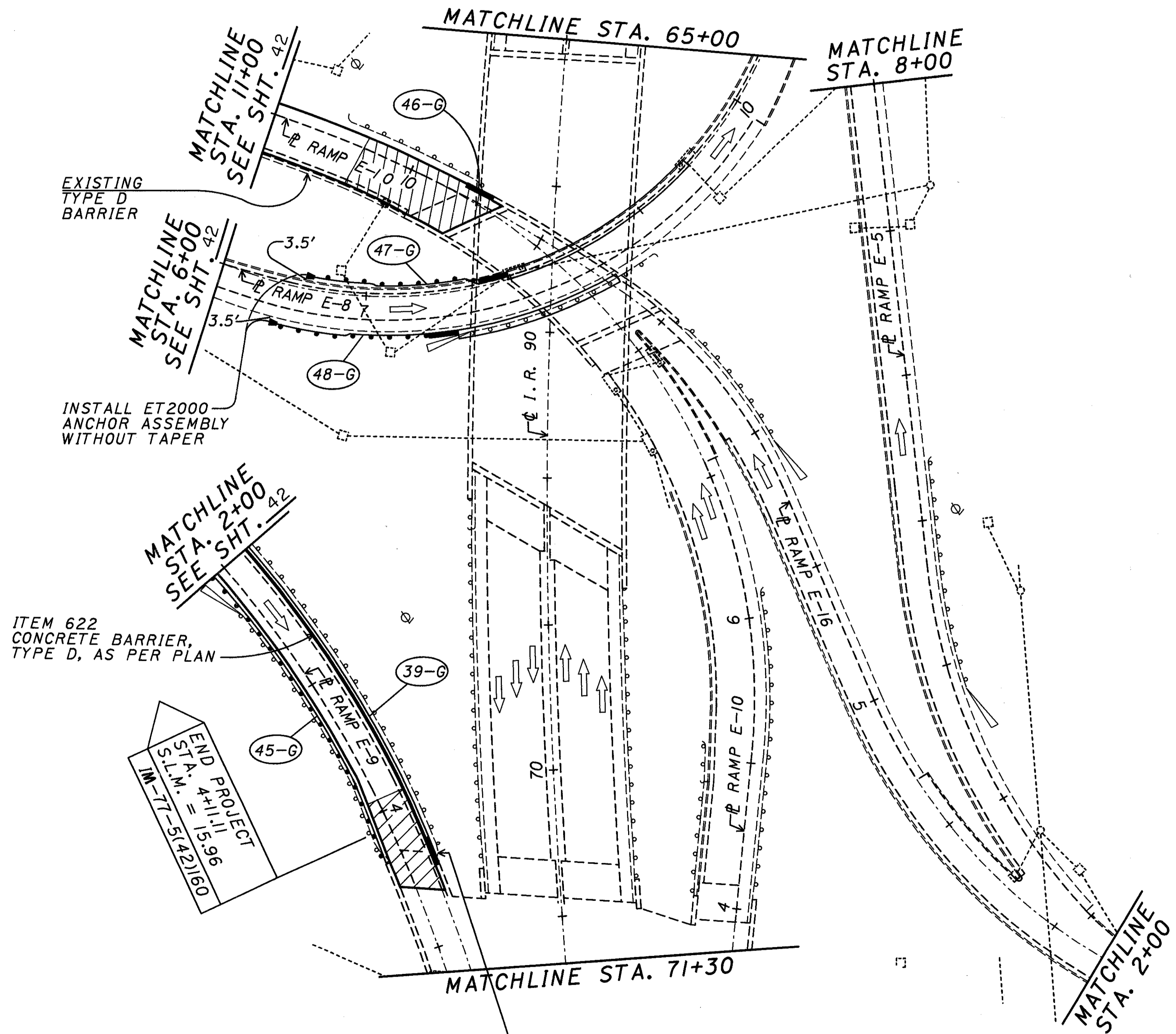
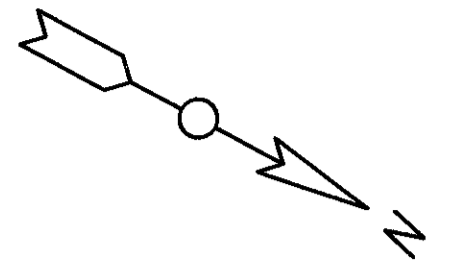
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PLAN SHEET



CUYAHOGA COUNTY	OHIO	44 234
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FEDERAL PROJECT		

FOR LEGEND SEE SHEET 34.
SEE CONTRACTOR COOPERATION
NOTE ON SHEET 7.



CROSS REFERENCE	
ITEM	SHEET
GUARDRAIL	23
FEATHER	59
BARRIER (PIER PROT.)	49
DRAINAGE DETAILS	53
BARRIER SLOPE PROT.)	50

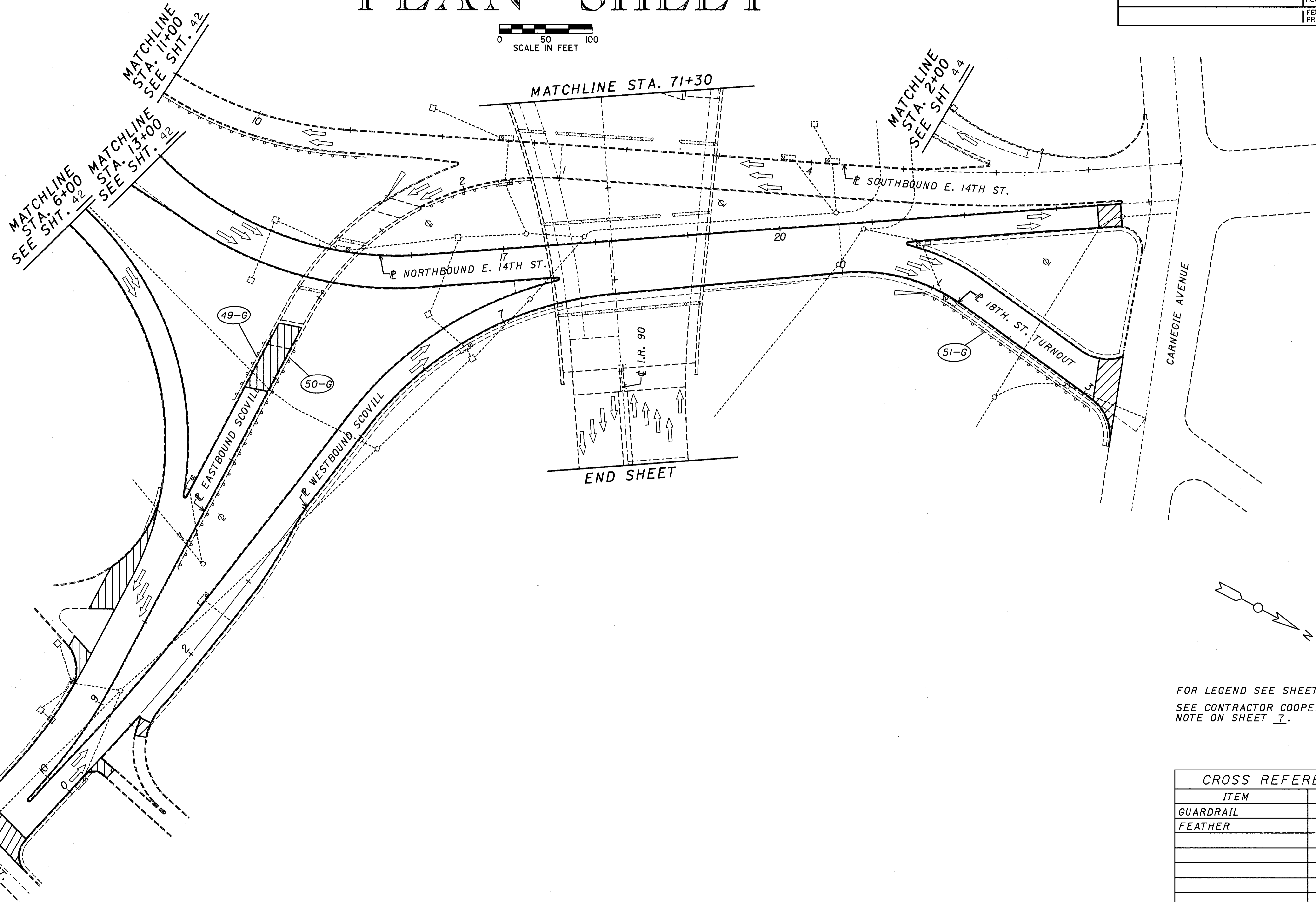
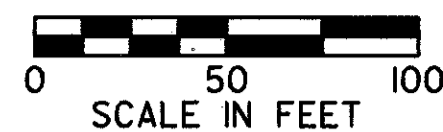
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PLAN SHEET

CUYAHOGA COUNTY
 CUY-77-13.81

OHIO
 FHWA
 REGION 5
 FEDERAL
 PROJECT

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 234



FOR LEGEND SEE SHEET 34.
 SEE CONTRACTOR COOPERATION
 NOTE ON SHEET 7.

CROSS REFERENCE	
ITEM	SHEET
GUARDRAIL	23
FEATHER	59

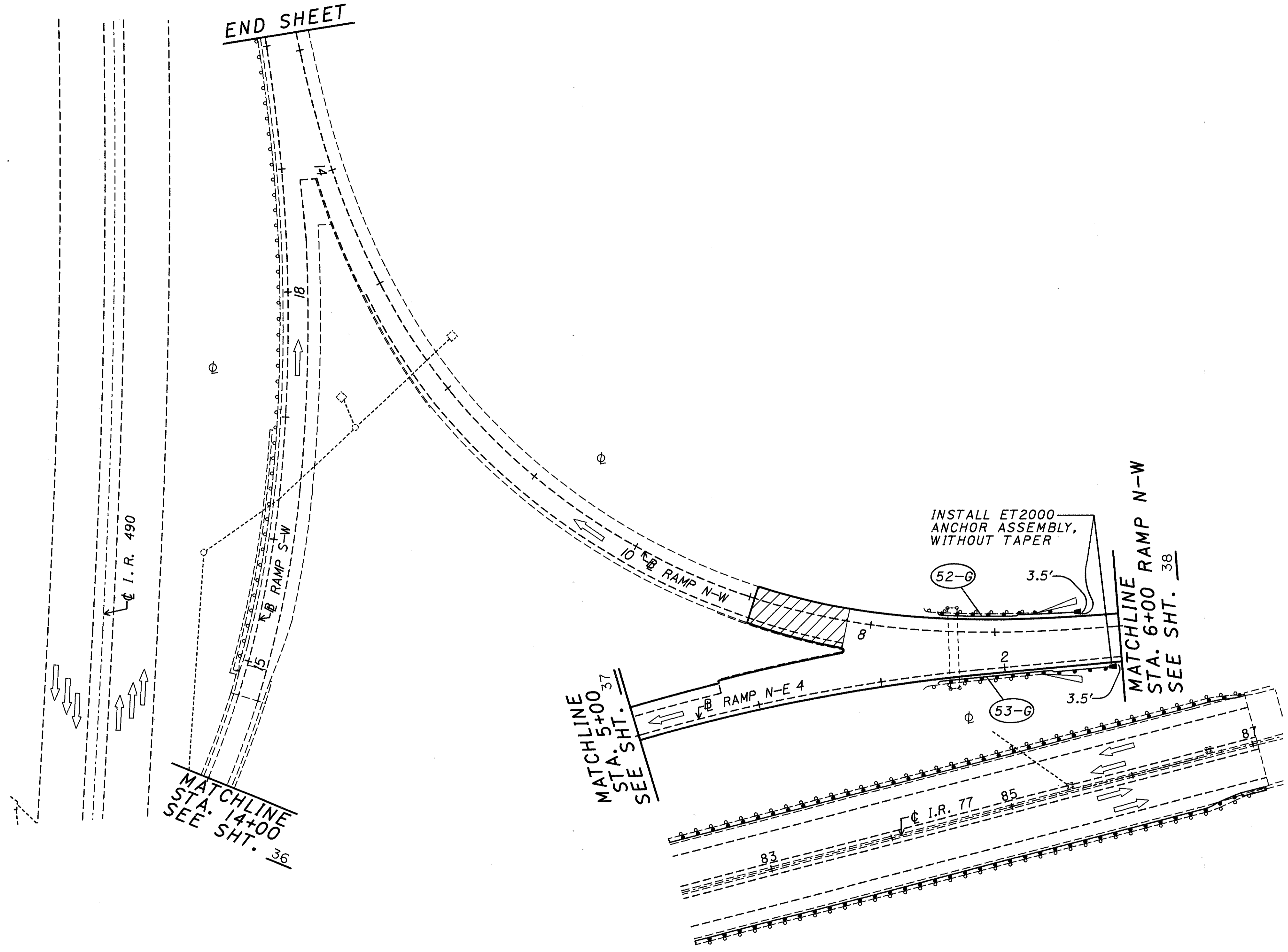
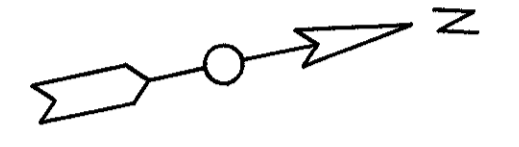
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 PLOT SUBMITTED: 16-JUN-1992 15:00

PLAN SHEET



CUYAHOGA COUNTY CUY-77-13.81	OHIO	46 234
	FHWA REGION 5	
FEDERAL PROJECT		

FOR LEGEND SEE SHEET 34.
SEE CONTRACTOR COOPERATION
NOTE ON SHEET 7.



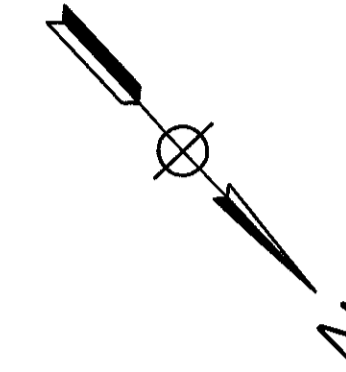
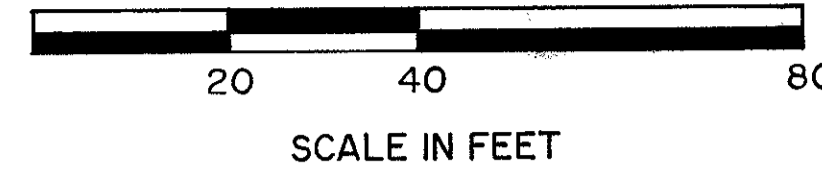
CROSS REFERENCE	
ITEM	SHEET
GUARDRAIL	23
FEATHER	59

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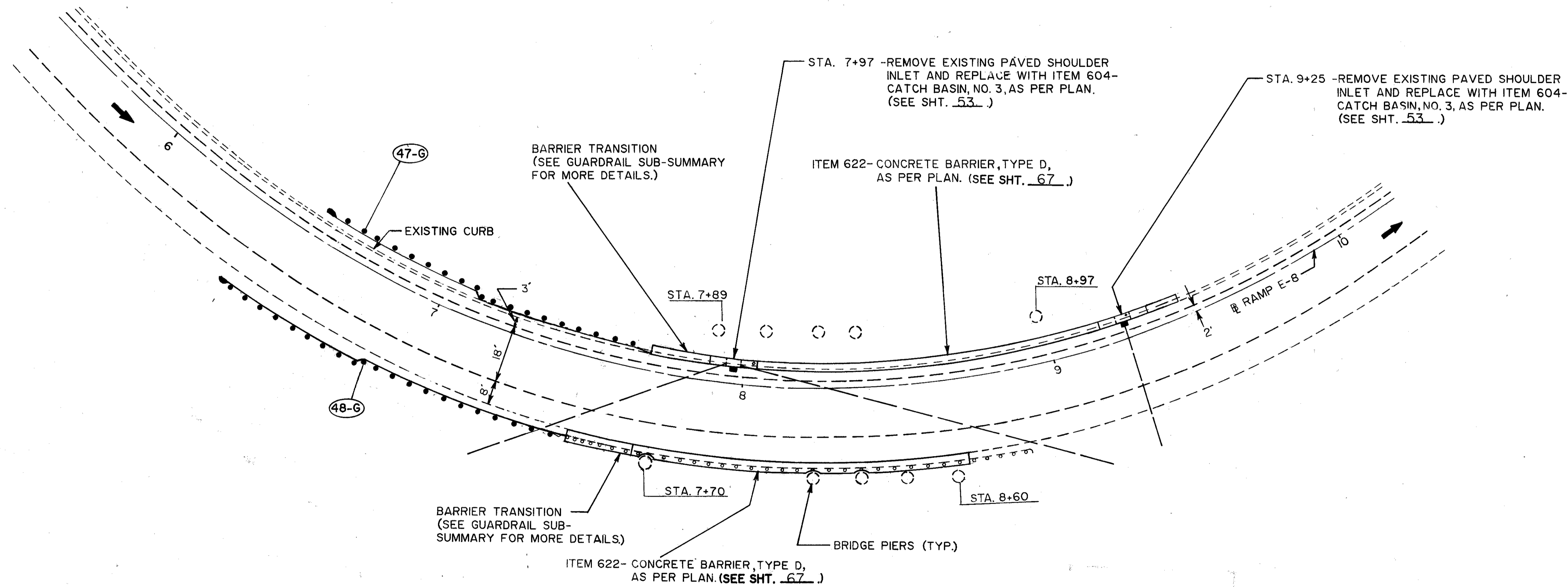
RAMP E-8 DETAILS

CUYAHOGA COUNTY
CUY - 77 - 13.81

OHIO	49
FHWA REGION 5	234
FEDERAL PROJECT	



NOTES:
 FOR DRAINAGE DETAILS, SEE SHEET 53-55
 FOR GUARDRAIL QUANTITIES SEE SHEET 23-24
 FOR BARRIER TRANSITION DETAILS, SEE SHEETS 64-66

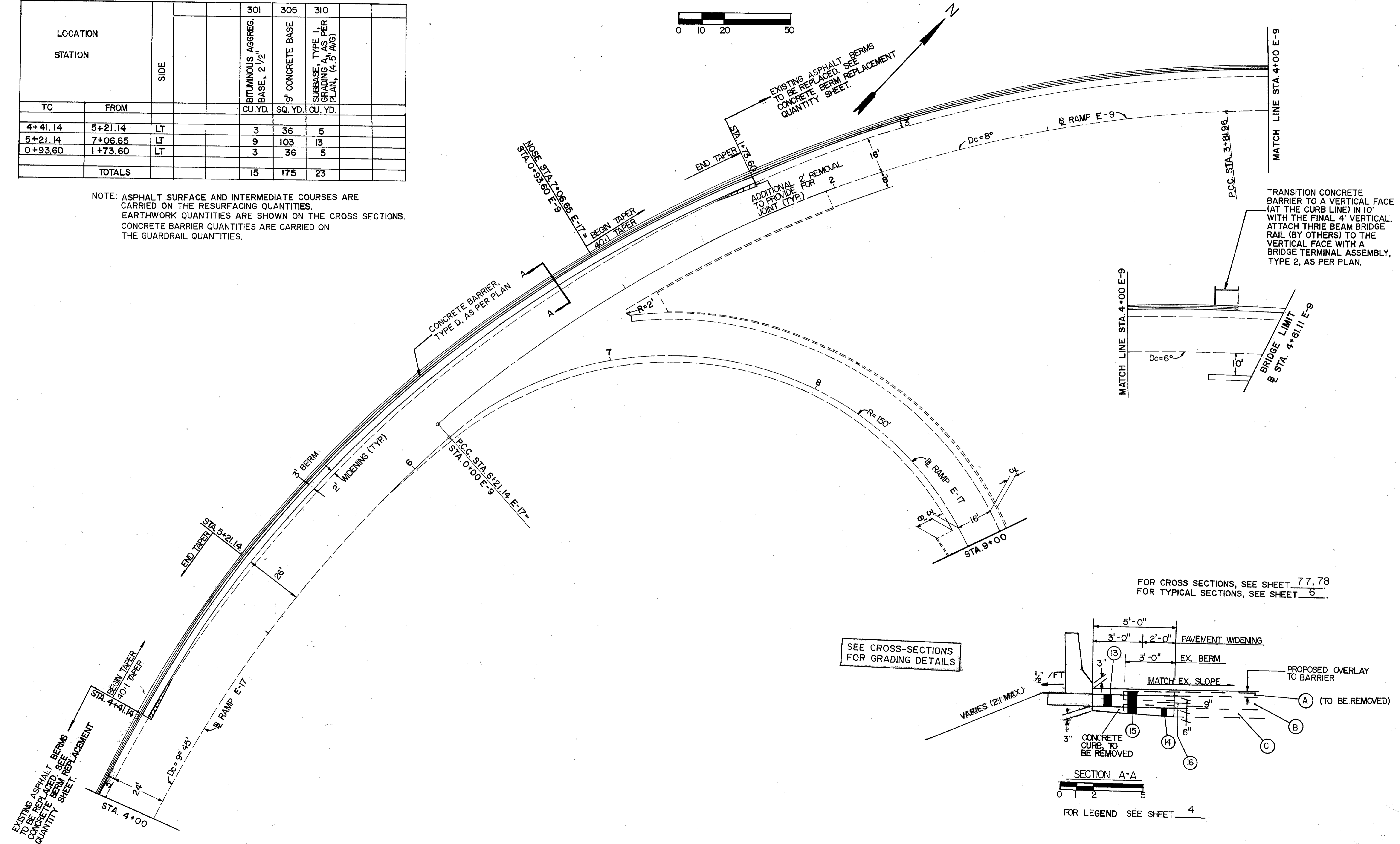


PLAN

RAMP E-9/ RAMP E-17 WIDENING DETAILS

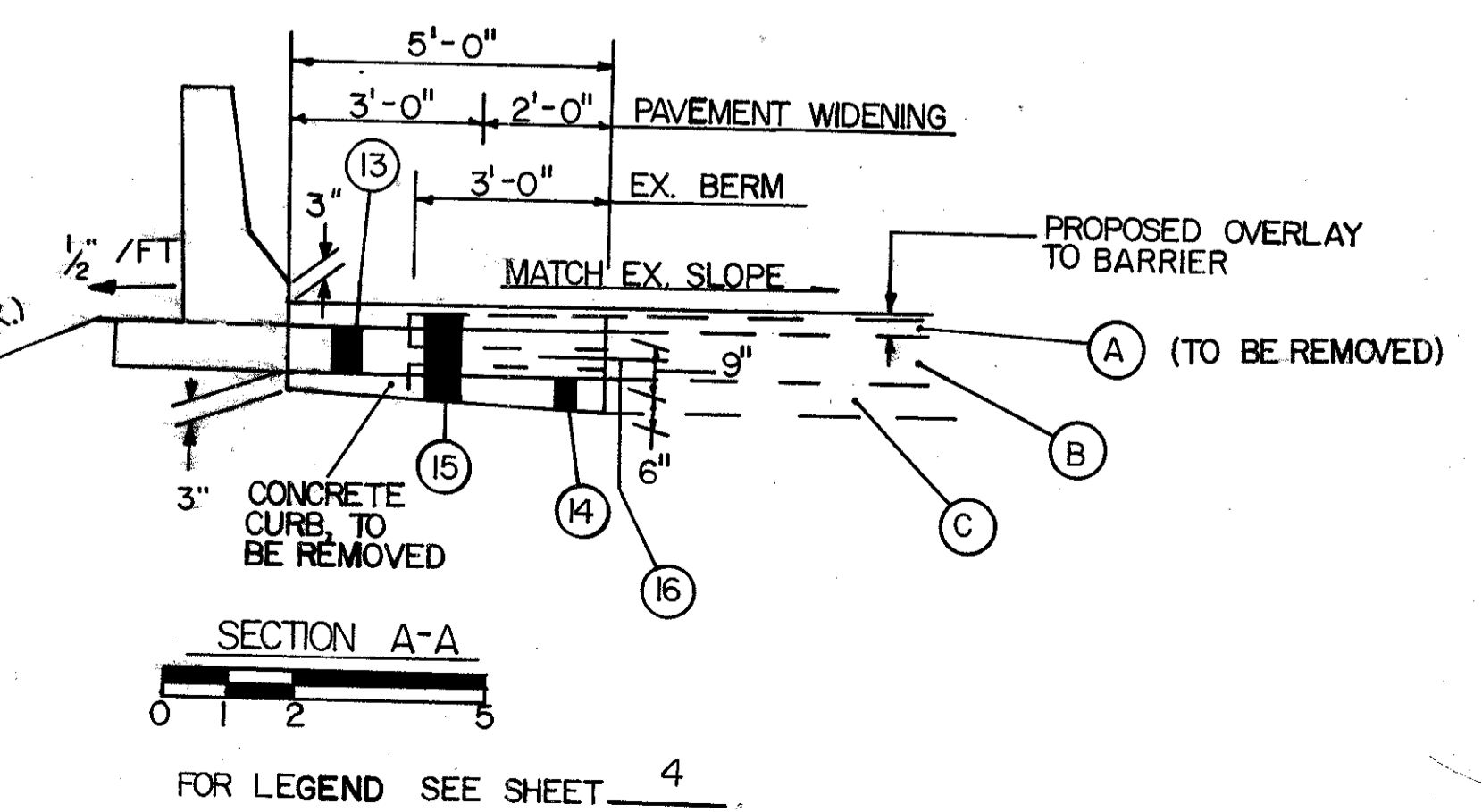
LOCATION STATION		SIDE	ESTIMATED QUANTITIES		
TO	FROM		BITUMINOUS AGGREG. BASE, 2 1/2" CU. YD.	9" CONCRETE BASE SQ. YD.	SUBBASE, TYPE 1, GRADING, A, AS PER PLAN, (4.5" AVG) CU. YD.
4+41.14	5+21.14	LT	3	36	5
5+21.14	7+06.65	LT	9	103	13
0+93.60	1+73.60	LT	3	36	5
TOTALS			15	175	23

NOTE: ASPHALT SURFACE AND INTERMEDIATE COURSES ARE CARRIED ON THE RESURFACING QUANTITIES. EARTHWORK QUANTITIES ARE SHOWN ON THE CROSS SECTIONS. CONCRETE BARRIER QUANTITIES ARE CARRIED ON THE GUARDRAIL QUANTITIES.



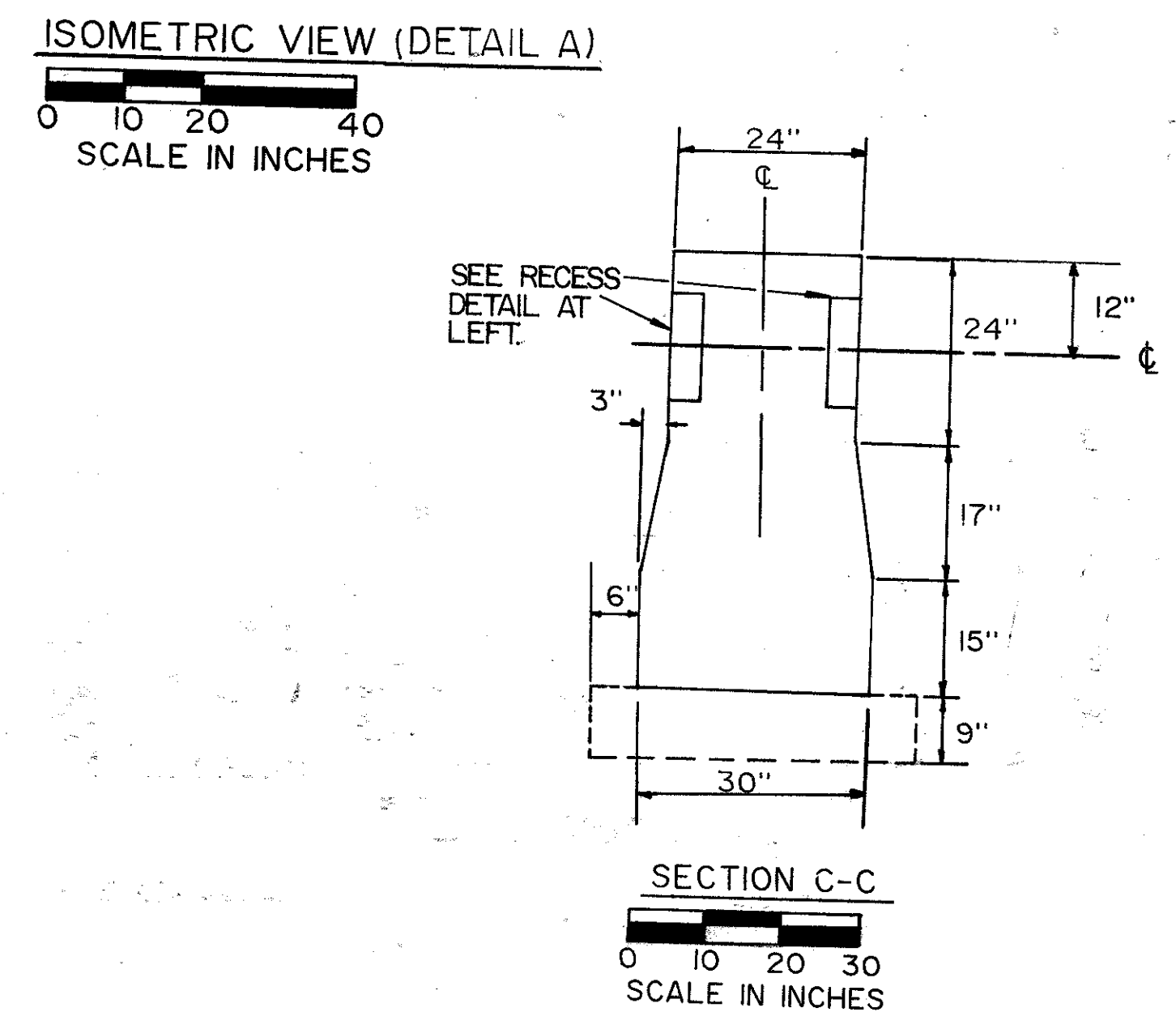
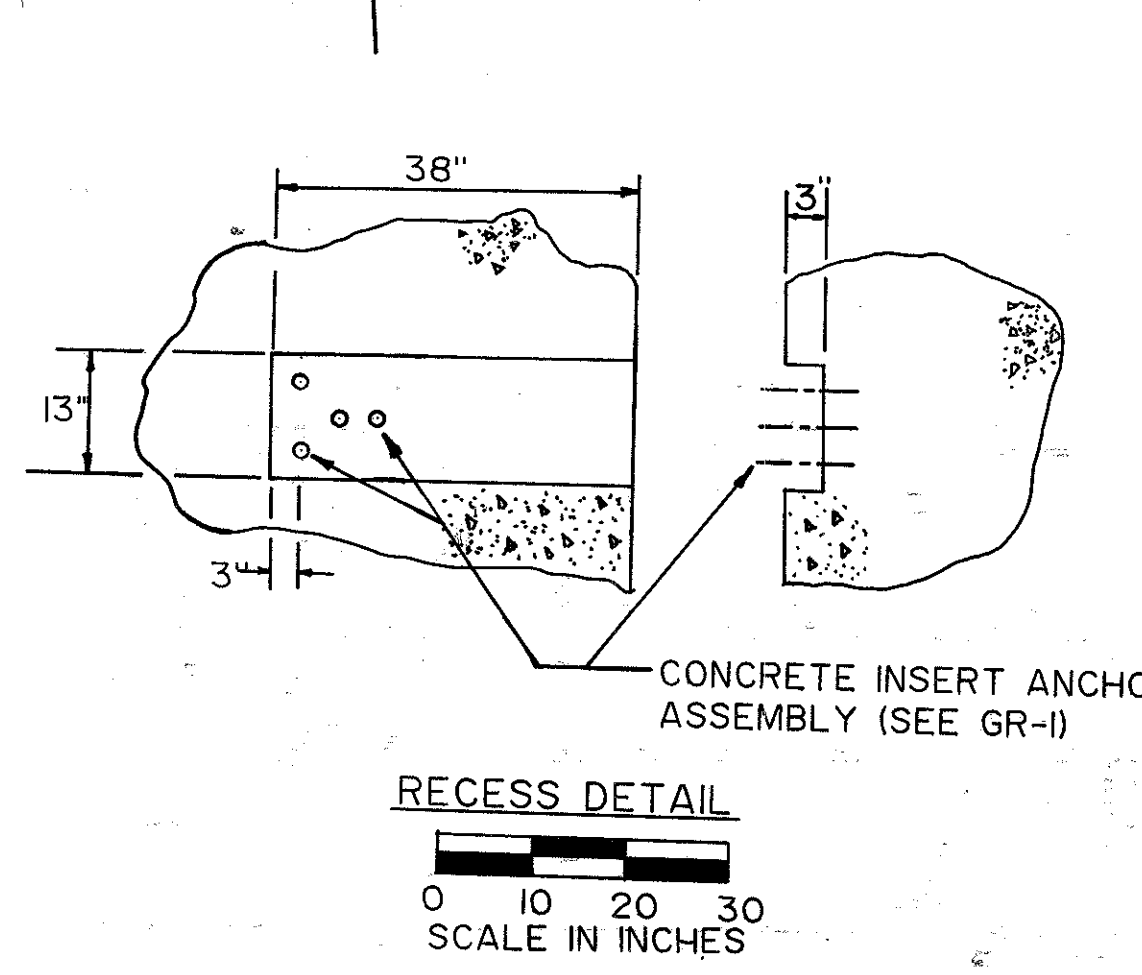
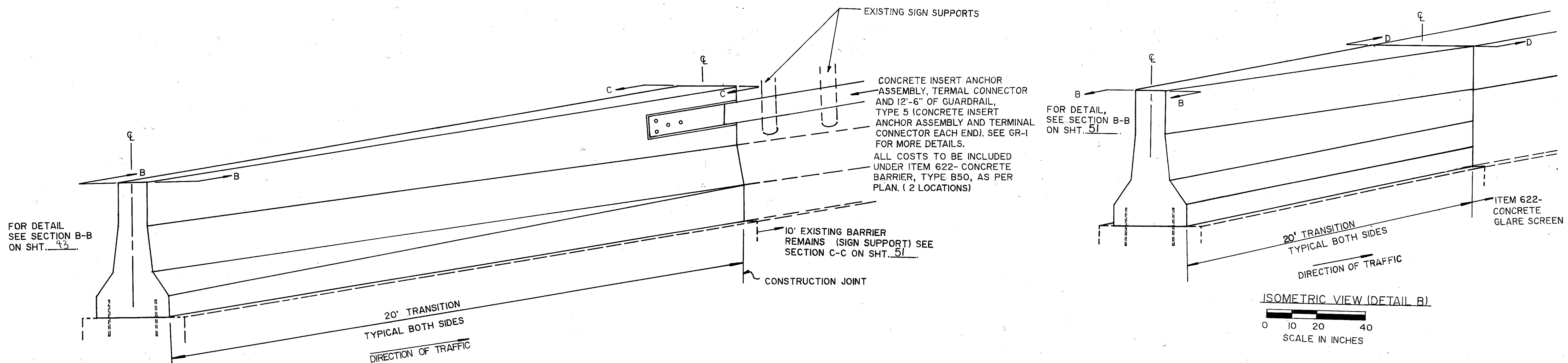
FOR CROSS SECTIONS, SEE SHEET 77, 78
FOR TYPICAL SECTIONS, SEE SHEET 6

SEE CROSS-SECTIONS FOR GRADING DETAILS



MEDIAN CONCRETE BARRIER DETAILS

(ASPHALT OVERLAY NOT SHOWN FOR CLARITY)

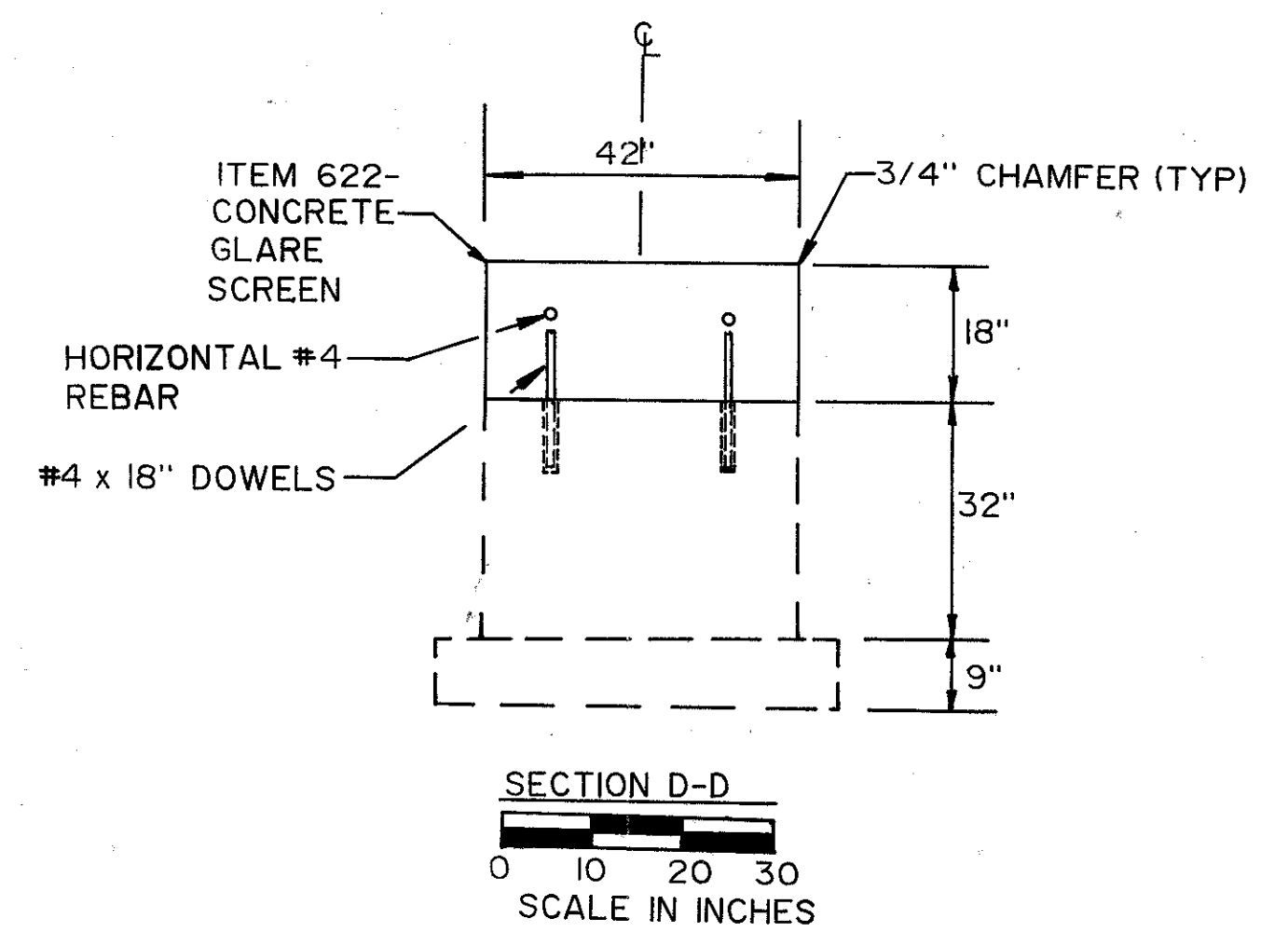


FOR ADDITIONAL NOTES AND DETAILS SEE STD. CONSTRUCTION DRAWING MC-9.

CONTRACTION JOINTS SHALL BE TOOLED OR SAWN A MINIMUM OF 1 1/2 INCHES DEEP. SPACING SHALL MATCH EXISTING.

DOWELS SHALL BE INSTALLED AS SHOWN ON THESE DETAILS AND MC-9. DOWELS SHALL BE CONSTRUCTED AT 4' MAXIMUM SPACING. START AND END DOWELS 6" FROM ALL BARRIER EXPANSION AND CONTRACTION JOINTS. DOWEL HOLES AND GROUTING SHALL BE AS PER ITEM 510 AND INCLUDED UNDER THIS ITEM OF WORK FOR PAYMENT.

3/4" P.E.J.F. (705.03) IS REQUIRED AROUND EACH PIER AND AT EXPANSION JOINTS.



DRAINAGE DETAILS

CUYAHOGA COUNTY
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OHIO

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FHWA
REGION 5

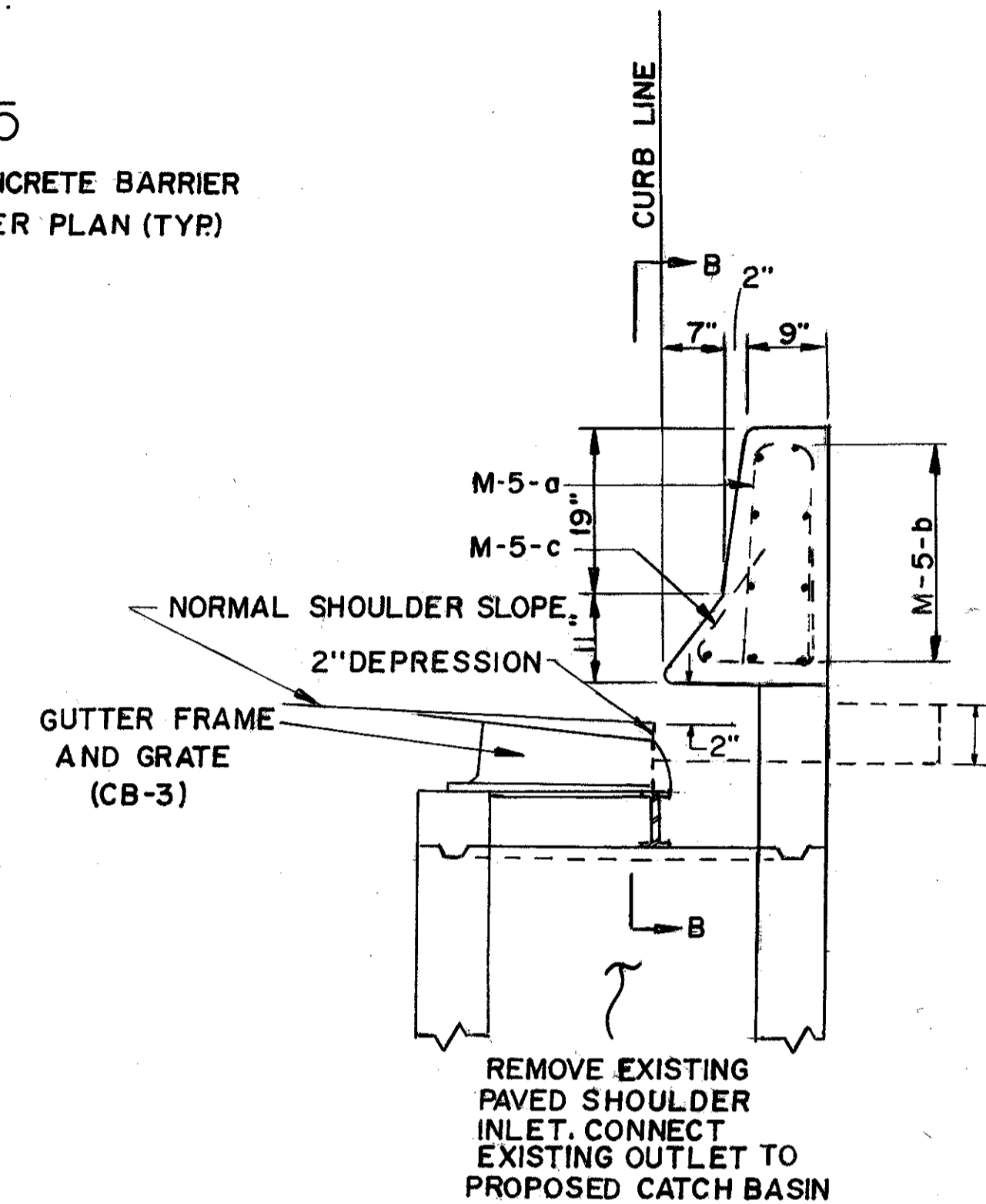
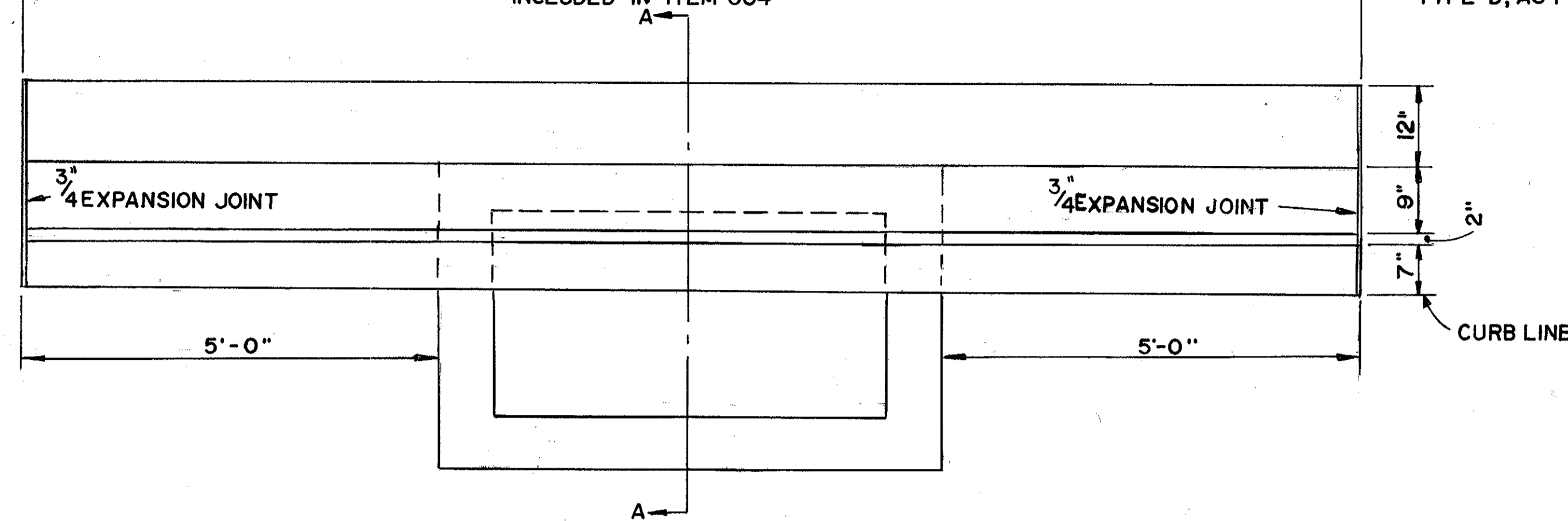
234

FEDERAL
PROJECT

CATCH BASIN, NO. 3, AS PER PLAN

RAMP E-8
STA 7+97, STA 9+25

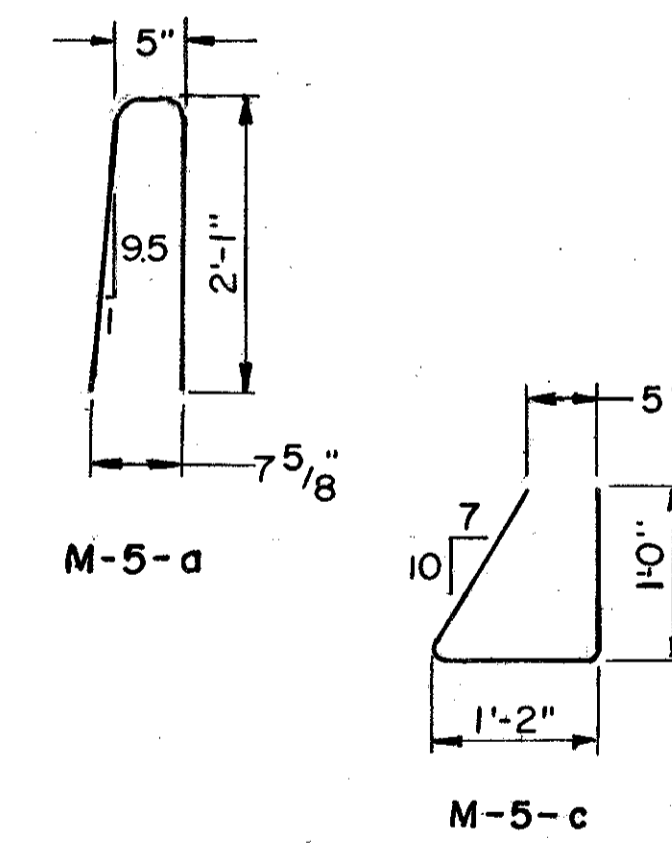
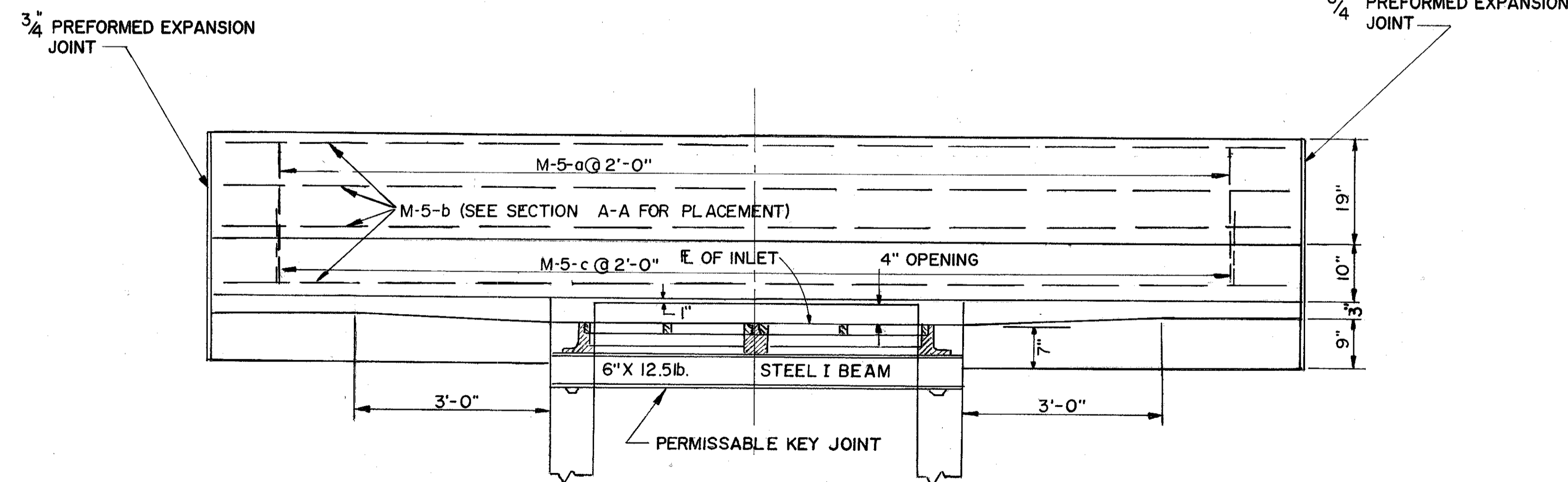
PROPOSED CONCRETE BARRIER TYPE D, AS PER PLAN (TYP) DEDUCT 16 LIN. FT. FROM CONCRETE BARRIER. ALL COSTS FOR CONCRETE BARRIER AND CATCH BASIN ARE INCLUDED IN ITEM 604



STEEL LIST			
MARK	NO.	LENGTH	WEIGHT
M-5-a	8	4'-3"	35
M-5-b	9	15'-8"	147
M-5-c	8	3'-1"	26
TOTAL REINFORCING STEEL			208 lbs.

NOTES:
THE STEEL LIST TABLE QUANTITY IS INCLUDED WITH THIS DRAWING FOR ESTIMATING PURPOSES ONLY.

FOR NOTES, DIMENSIONS AND DETAILS NOT SHOWN, SEE STANDARD CONSTRUCTION DRAWING CB-3 AND I-3A+B.



DRAINAGE DETAILS

ITEM 604-INLET, NO. I-3B50, AS PER PLAN "B"

Sta. 61+50

CUYAHOGA COUNTY
CUY-77 -13.81

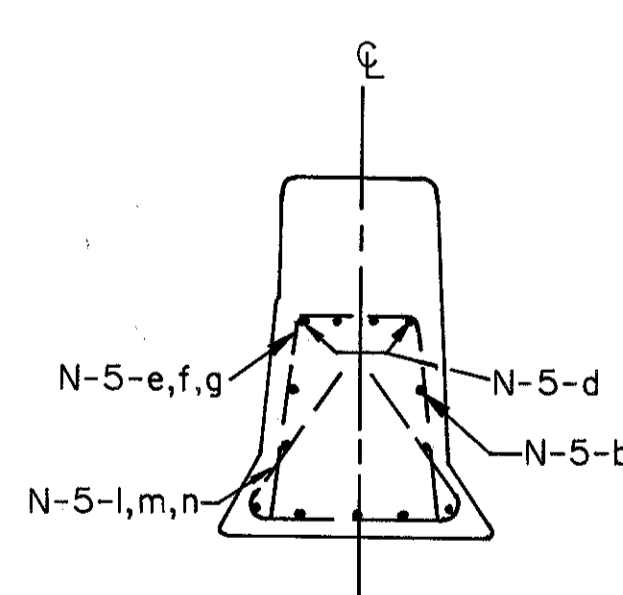
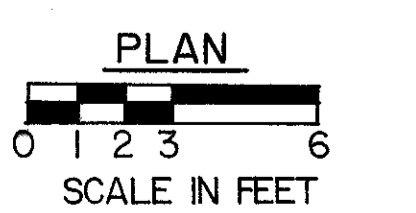
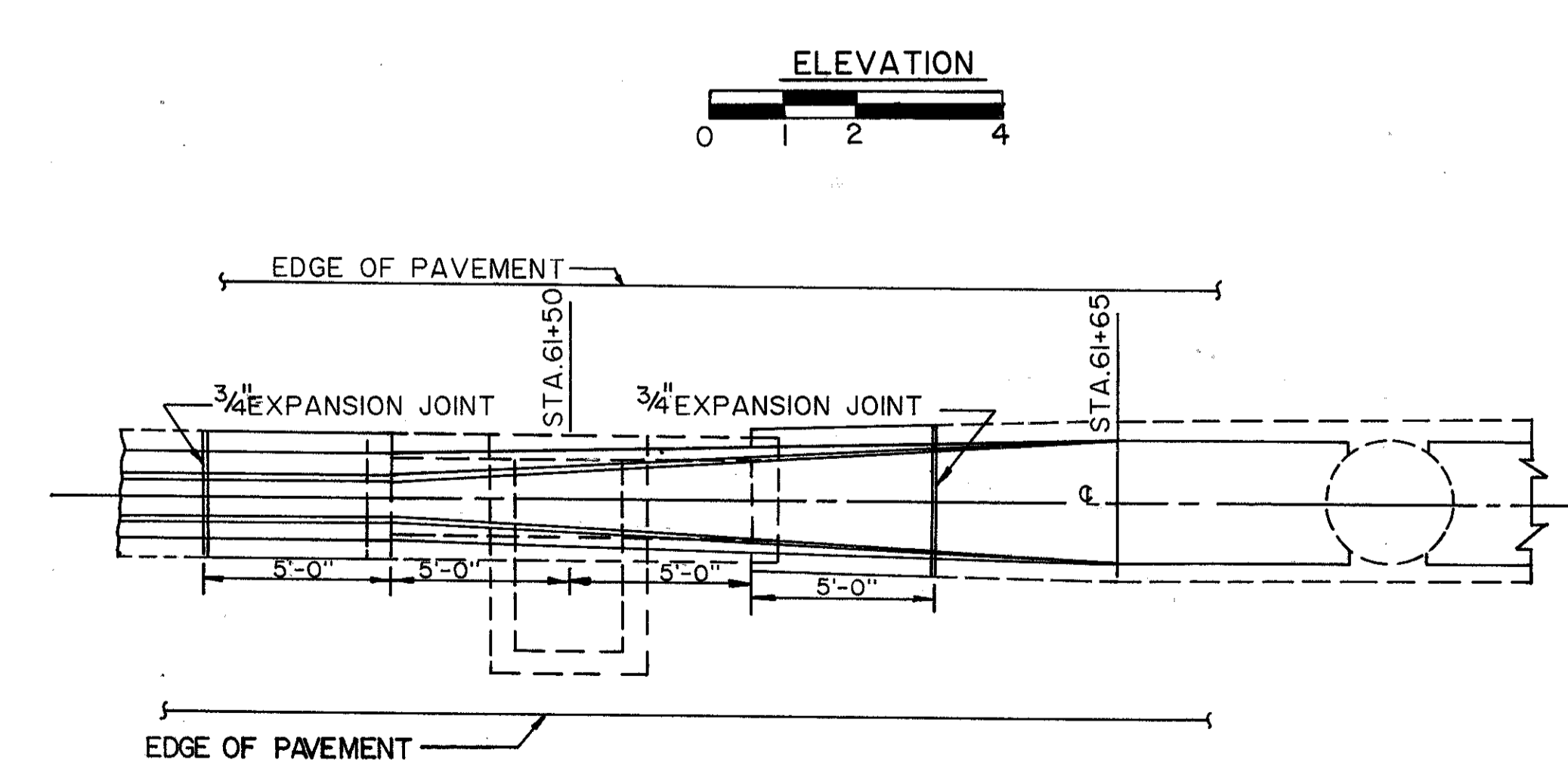
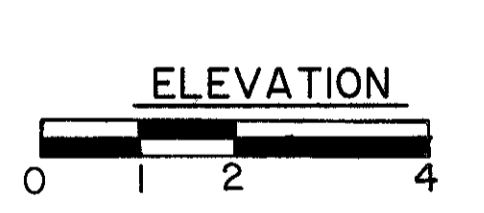
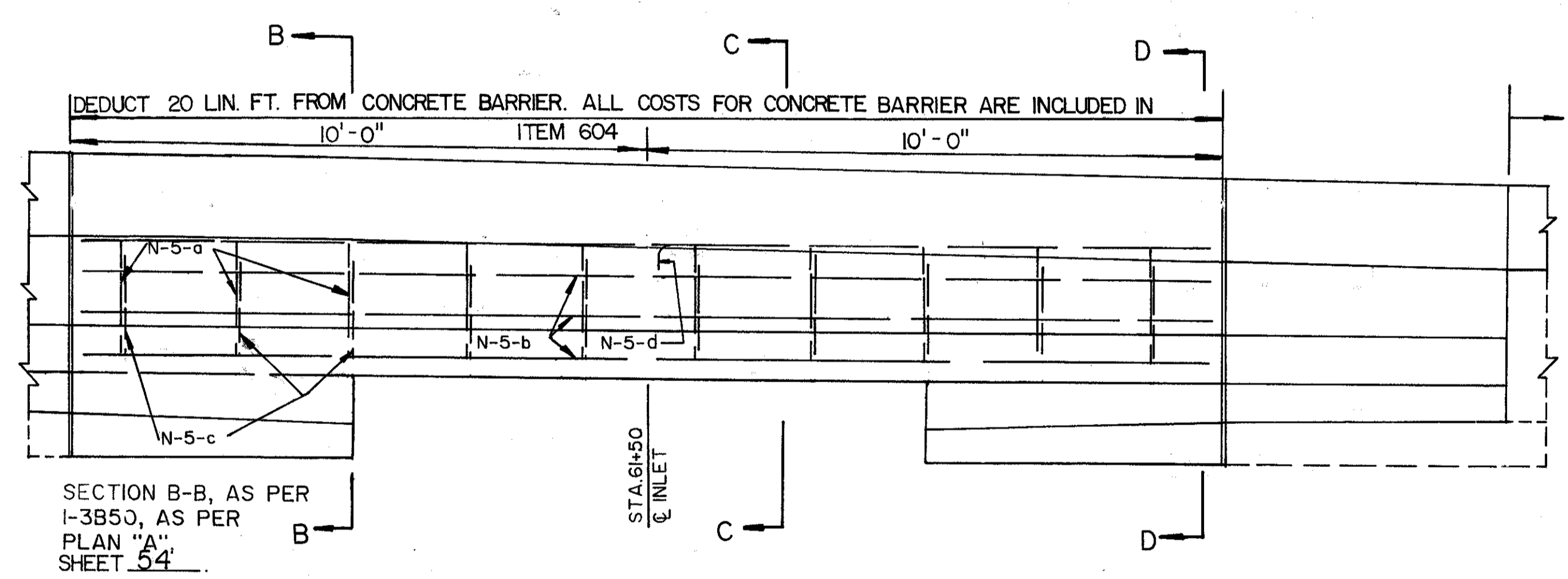
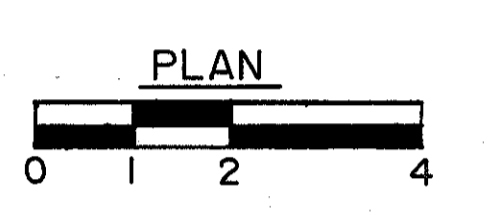
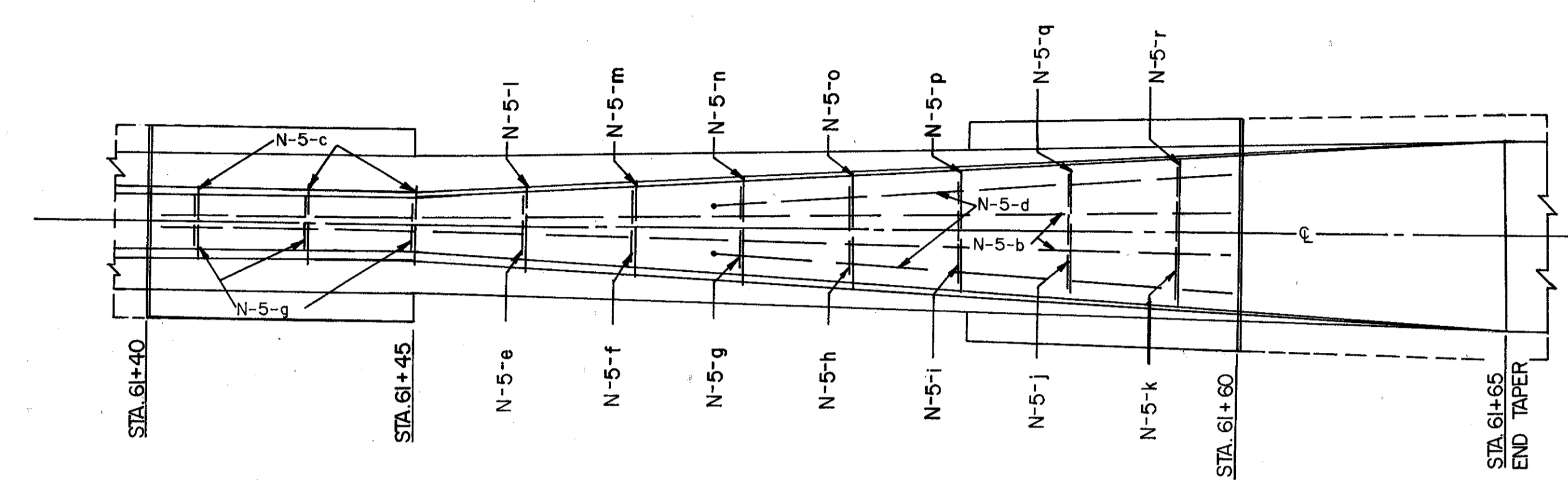
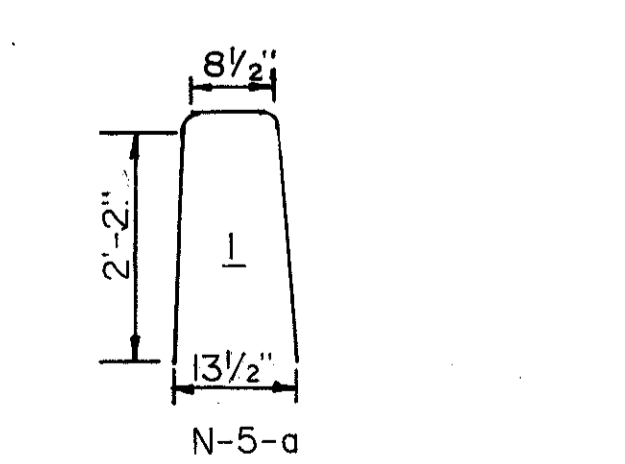
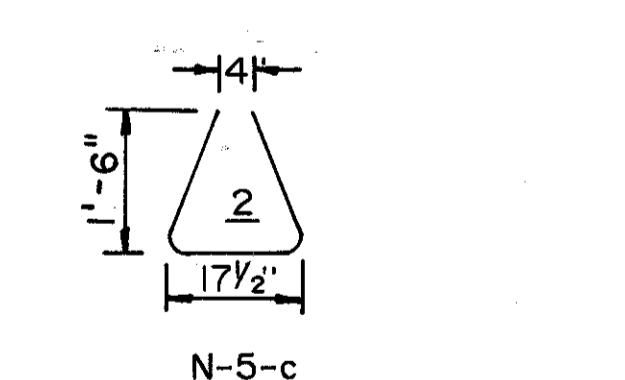
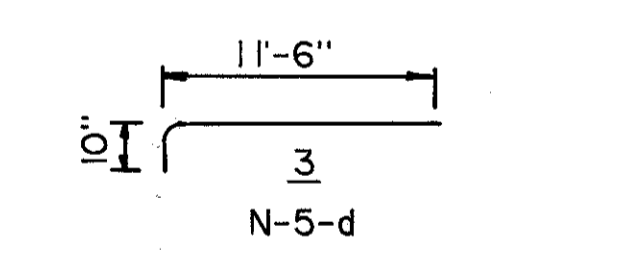
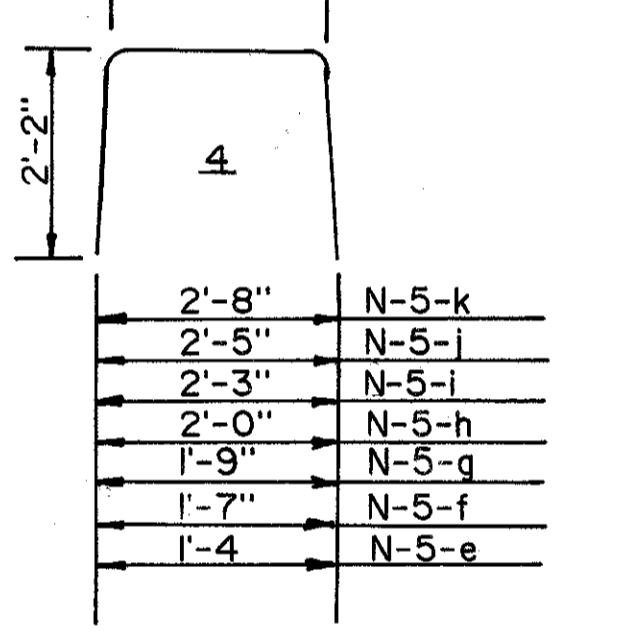
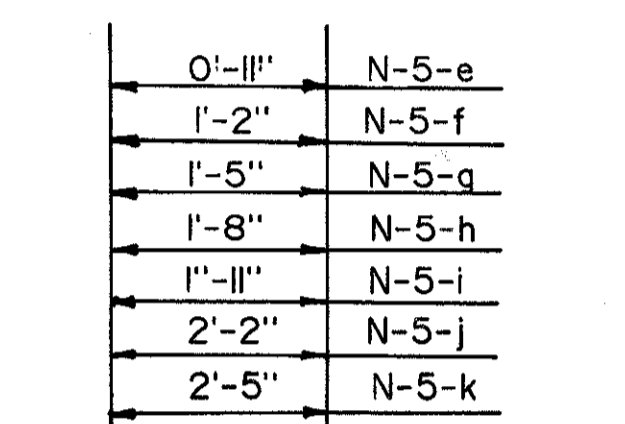
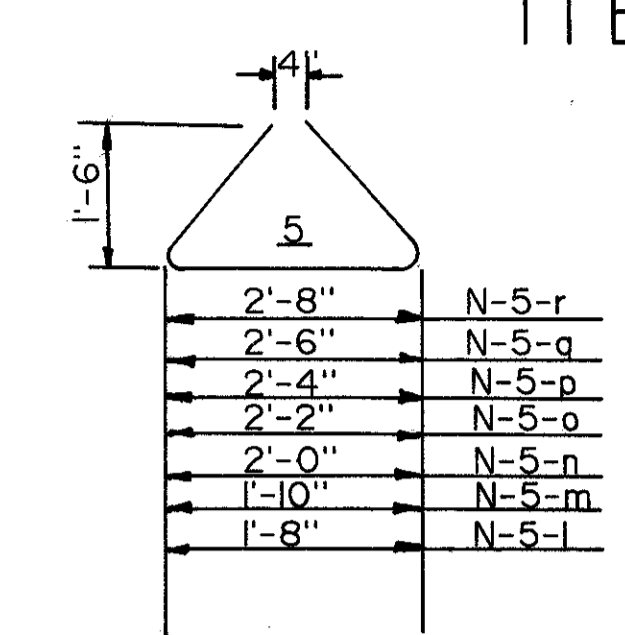
OHIO

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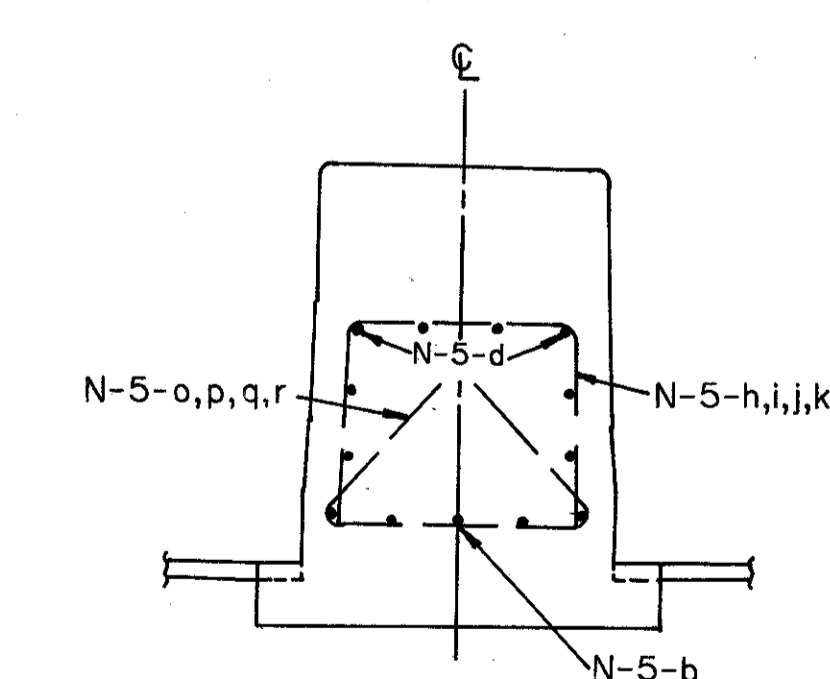
FHWA
REGION 5

234

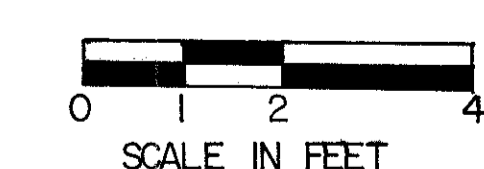
FEDERAL
PROJECT



SECTION C-C



SECTION D-D



STEEL LIST #5 BARS				
MARK	NO.	LENGTH	SHAPE	WEIGHT
N-5-a	3	5'-0"	1	16
N-5-b	11	19'-8"	Str.	226
N-5-c	3	4'-6"	2	14
N-5-d	2	12'-2"	3	25
N-5-e	1	4'-10"	4	5
N-5-f	1	5'-1"	4	5
N-5-g	1	5'-4"	4	6
N-5-h	1	5'-7"	4	6
N-5-i	1	5'-10"	4	6
N-5-j	1	6'-1"	4	6
N-5-k	1	6'-4"	4	7
N-5-l	1	5'-0"	5	5
N-5-m	1	5'-2.5"	5	5
N-5-n	1	5'-5"	5	6
N-5-o	1	5'-8"	5	6
N-5-p	1	5'-11"	5	6
N-5-q	1	6'-2"	5	6
N-5-r	1	6'-8"	5	7
TOTAL REINFORCING STEEL				363 lbs.

NOTES:
THE STEEL LIST TABLE QUANTITY IS INCLUDED WITH THIS DRAWING FOR ESTIMATING PURPOSES ONLY.
FOR NOTES, DIMENSIONS AND DETAILS NOT SHOWN, SEE STANDARD CONSTRUCTION DRAWING I-3A&B AND DRAINAGE DETAIL SHEET 54 (INLET, NO. I-3B50, AS PER PLAN "A")
ASPHALT OVERLAY (6") NOT SHOWN FOR CLARITY.

DRAINAGE DETAILS

ITEM 604-INLET, NO. I-3B50, AS PER PLAN "C"
STA. 63+10

CUYAHOGA COUNTY
CUY-77-13.81

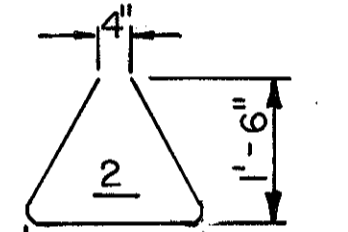
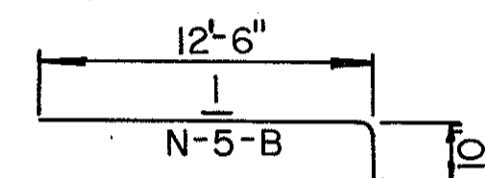
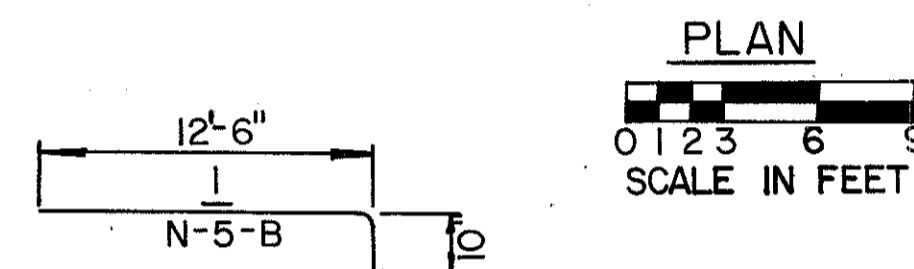
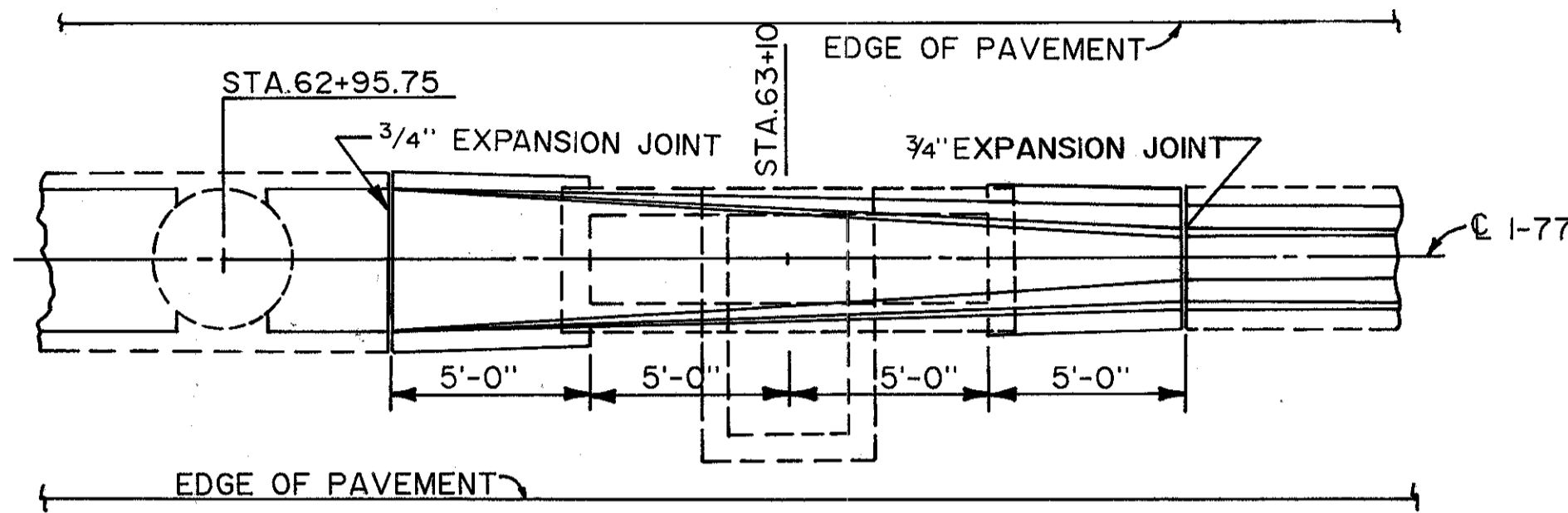
OHIO

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FHWA
REGION 5

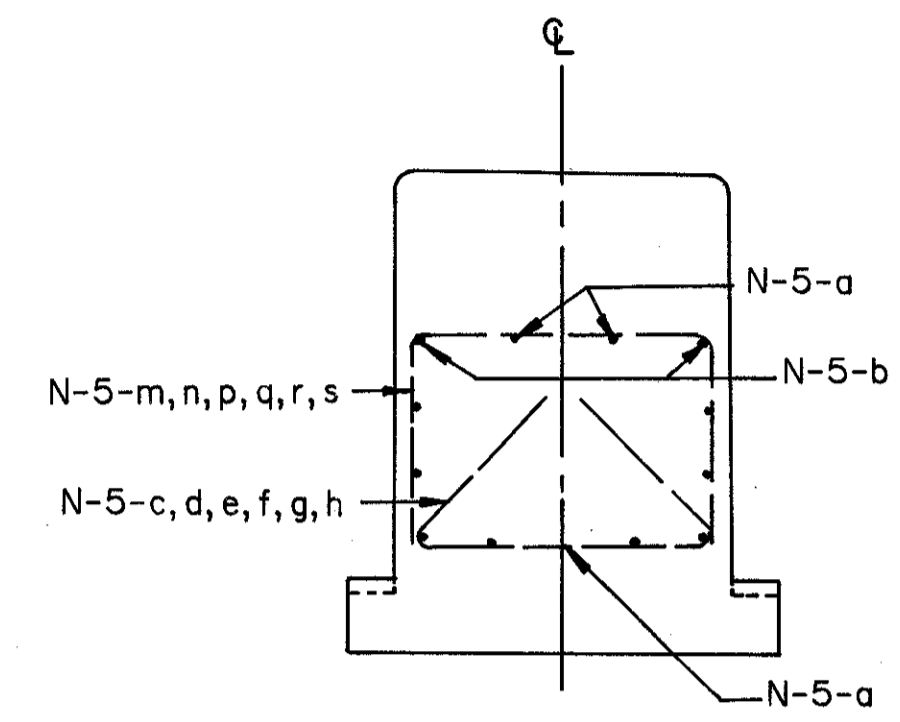
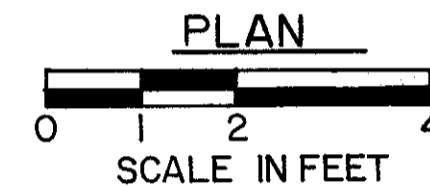
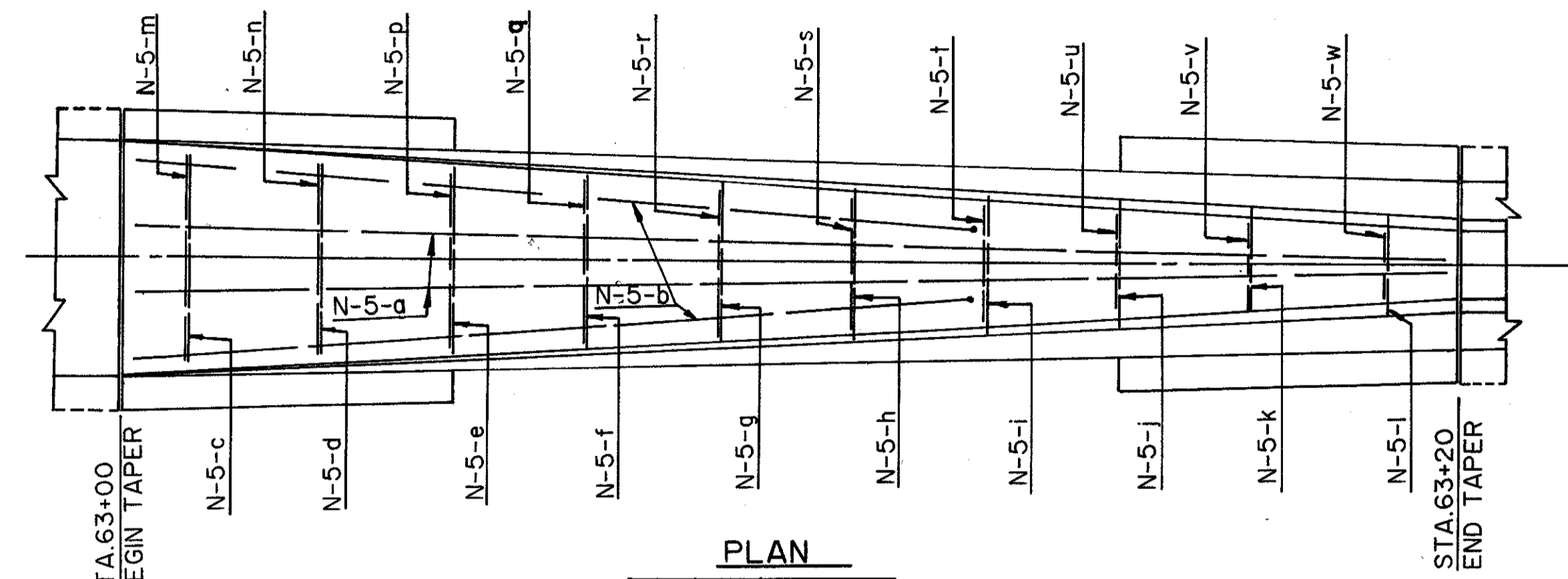
234

FEDERAL
PROJECT

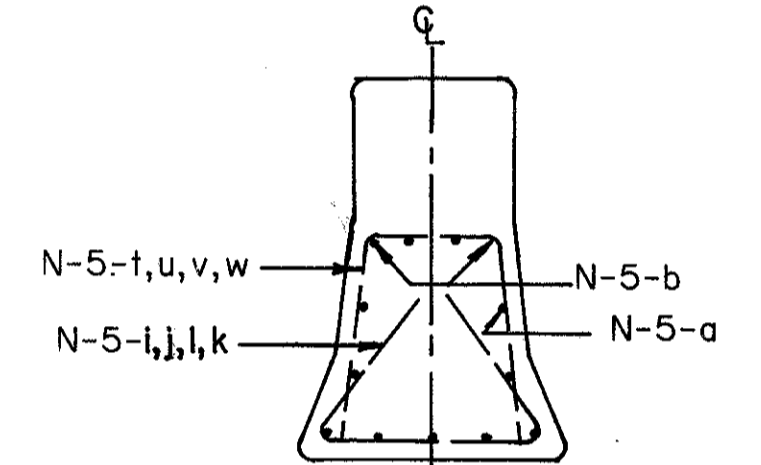


3'-1"	N-5-c
2'-11"	N-5-d
2'-9"	N-5-e
2'-7"	N-5-f
2'-5"	N-5-g
2'-3"	N-5-h
2'-1"	N-5-i
1'-11"	N-5-j
1'-9"	N-5-k
1'-7"	N-5-l

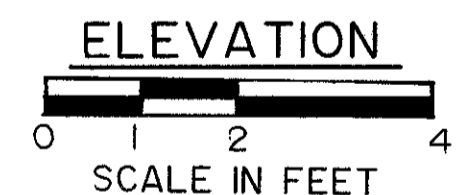
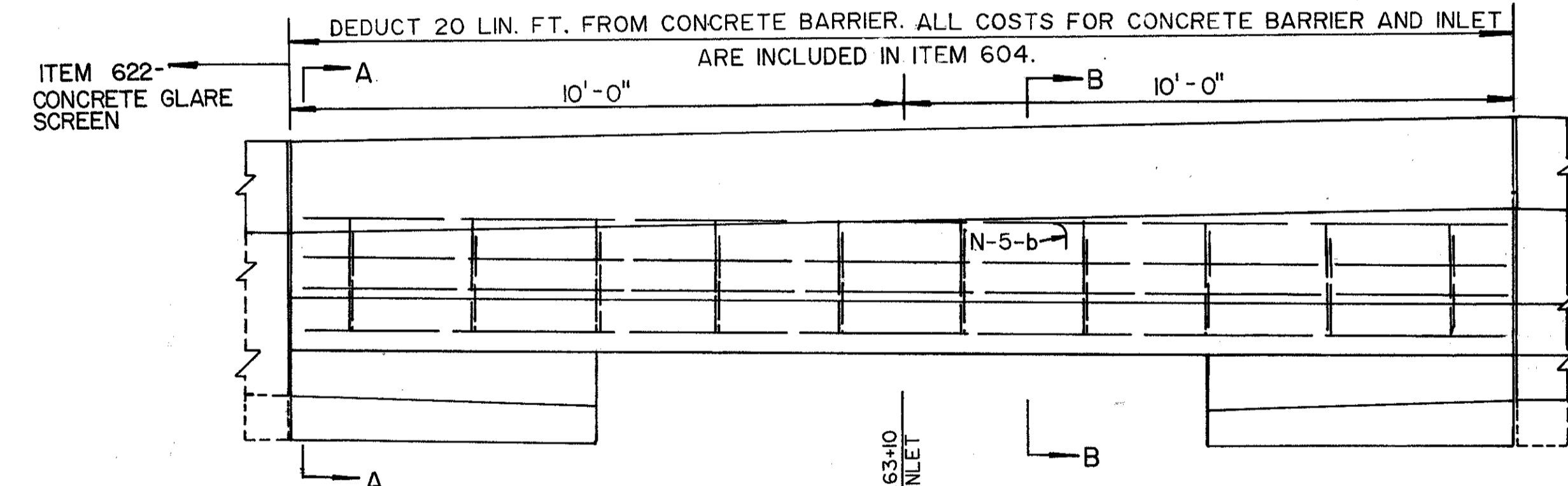
0'-10"	N-5-w
1'-1"	N-5-v
1'-4"	N-5-u
1'-7"	N-5-t
1'-10"	N-5-s
2'-1"	N-5-r
2'-4"	N-5-q
2'-7"	N-5-p
2'-9.5"	N-5-n
3'-0"	N-5-m
3'-0"	N-5-m
2'-10"	N-5-n
2'-8"	N-5-p
2'-6"	N-5-q
2'-4"	N-5-r
2'-1.5"	N-5-s
1'-11"	N-5-t
1'-9"	N-5-u
1'-7"	N-5-v
1'-5"	N-5-w



SECTION A-A



SECTION B-B

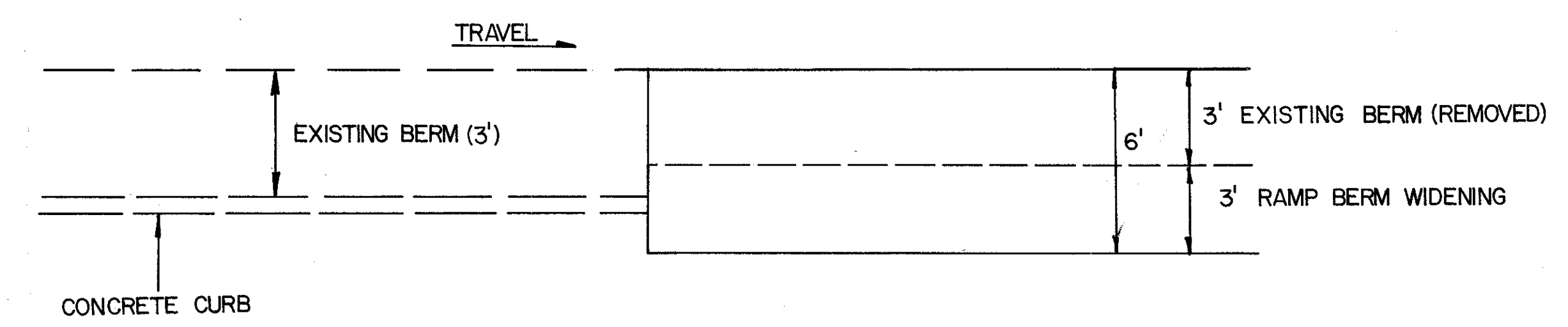


NOTES:
THE STEEL LIST TABLE QUANTITY IS INCLUDED WITH THIS DRAWING FOR ESTIMATING PURPOSES ONLY.
FOR NOTES, DIMENSIONS AND DETAILS NOT SHOWN, SEE STANDARD CONSTRUCTION DRAWING I-3A&B AND DRAINAGE DETAIL SHEET 54 (INLET, NO. I-3B50, AS PER PLAN A) ASPHALT OVERLAY (6") NOT SHOWN FOR CLARITY.

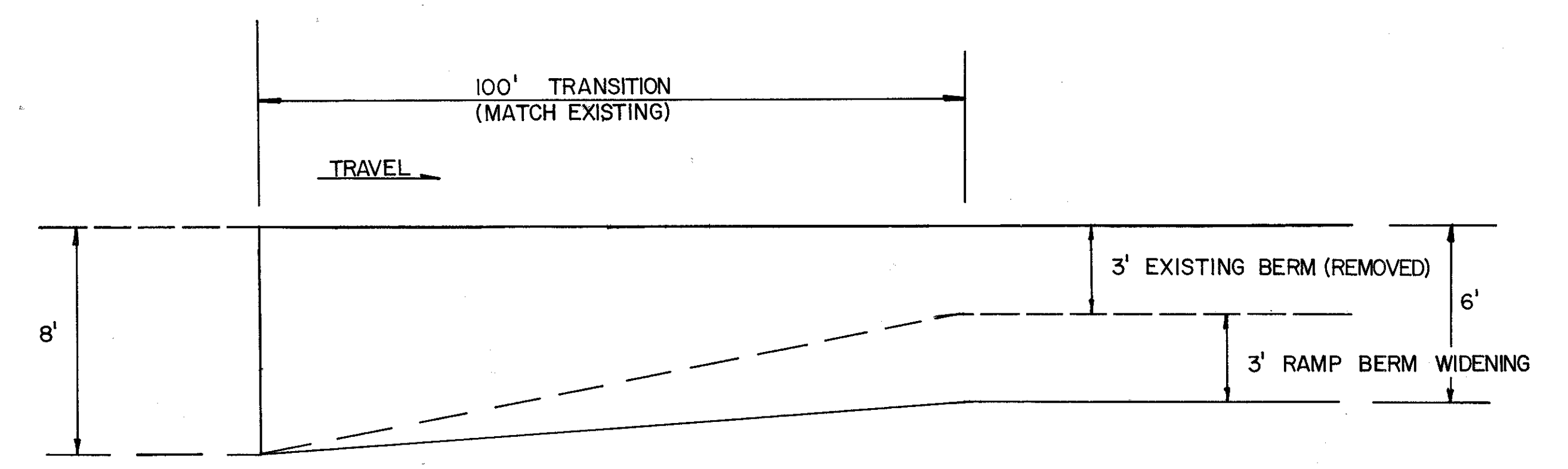
STEEL LIST NO. 5 BARS				
MARK	NO.	LENGTH	SHAPE	WEIGHT
N-5-a	11	19'-8"	Str.	226
N-5-b	2	13'-2"	1	27
N-5-c	1	7'-2"	2	7
N-5-d	1	6'-10.5"	2	7
N-5-e	1	6'-7"	2	7
N-5-f	1	6'-3.5"	2	7
N-5-g	1	6'-0"	2	6
N-5-h	1	5'-9"	2	6
N-5-i	1	5'-6"	2	6
N-5-j	1	5'-3"	2	6
N-5-k	1	5'-0"	2	5
N-5-l	1	4'-9.5"	2	5
N-5-m	1	7'-0"	3	7
N-5-n	1	6'-9"	3	7
N-5-p	1	6'-7"	3	7
N-5-q	1	6'-4"	3	7
N-5-r	1	6'-1"	3	6
N-5-s	1	5'-10"	3	6
N-5-t	1	5'-7"	3	6
N-5-u	1	5'-4"	3	6
N-5-v	1	5'-1"	3	5
N-5-w	1	4'-10"	3	5
TOTAL REINFORCING STEEL				377 Lbs.

RAMP WIDENING DETAILS

(NOT TO SCALE)



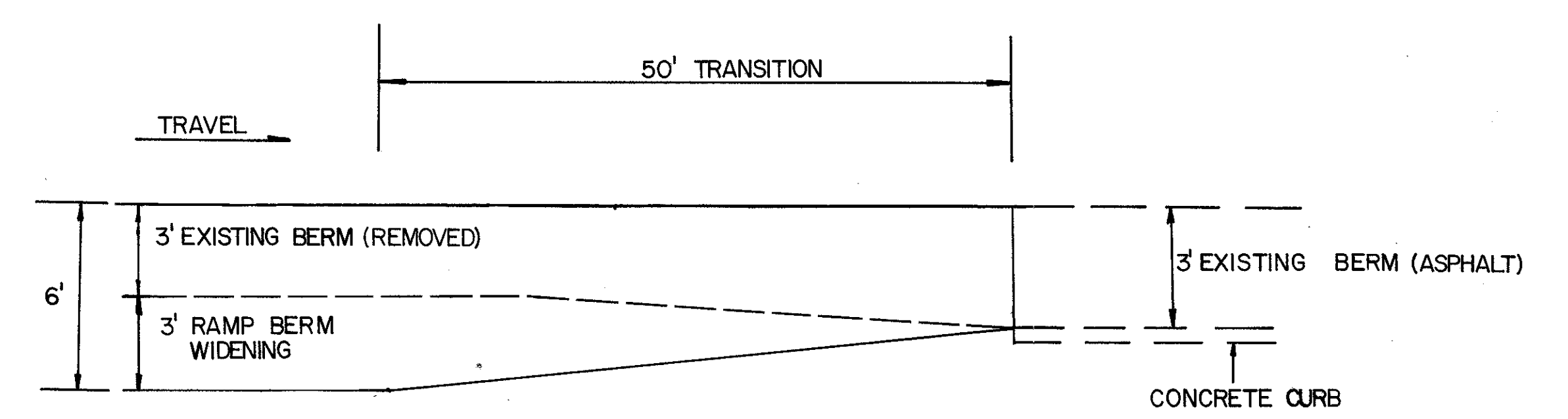
RAMP BEGINNING AT CURB



UNCURBED RAMP TRANSITION

RAMP WIDENING		ESTIMATED QUANTITIES *							
LOCATION STATION	SHOULDER WIDTH	RT	LT	203	203	301	305	310	605
				EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	SUBGRADE COMPACTION	BITUMINOUS AGGREGATE BASE 3" THICK	CONCRETE BASE, 9" THICK	SUBBASE TYPE 1, AS PER PLAN 6" AG.	6" SHALLOW PIPE UNDERDRAIN
FROM	TO			CU. YD.	SQ. YD.	CU. YD.	SQ. YD.	CU. YD.	LIN. FT.
RAMP	F-1								
2+80.63	3+80.63	8-6		39	78	6	78	13	100
3+80.63	9+92.33	6		204	408	34	408	68	612
9+92.33	10+42.33	6-3		13	25	2	25	4	50
RAMP	F-2								
6+21.87	7+21.87	8-6		39	78	6	78	13	100
7+21.87	10+22.49	6		100	200	17	200	33	301
TOTAL				395	789	65	789	131	1163

* - QUANTITIES CARRIED TO GENERAL SUMMARY



RAMP TERMINATING AT CURB

PAVEMENT REPAIR DETAILS

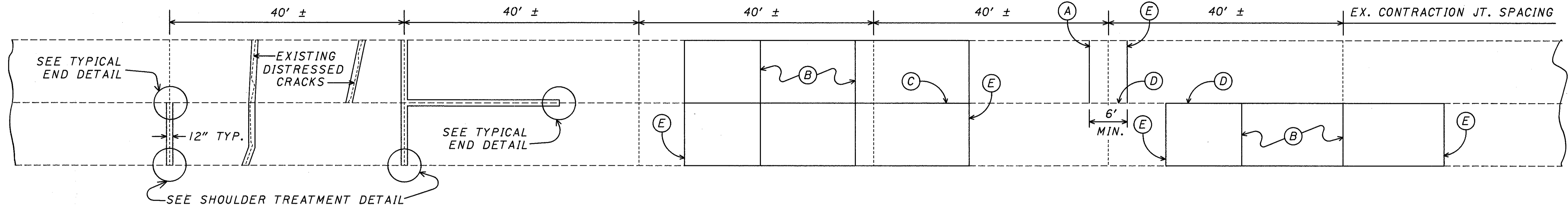
CUYAHOGA COUNTY
CUY-77-13.81

OHIO

FHWA
REGION 5

FEDERAL
PROJECT

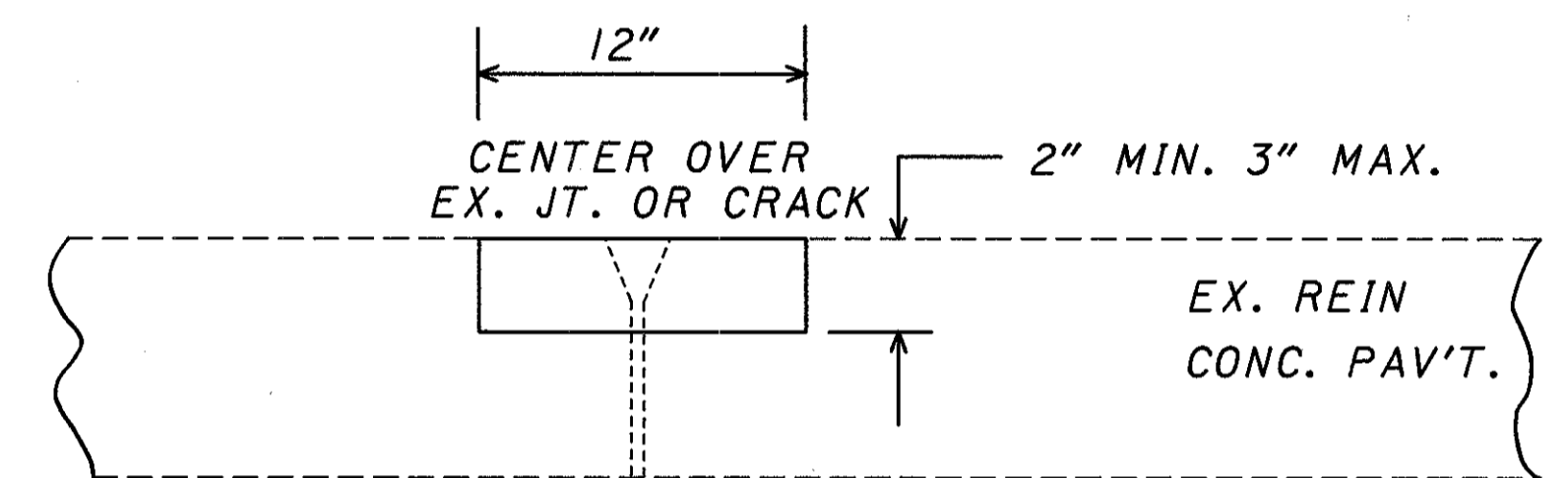
58
234



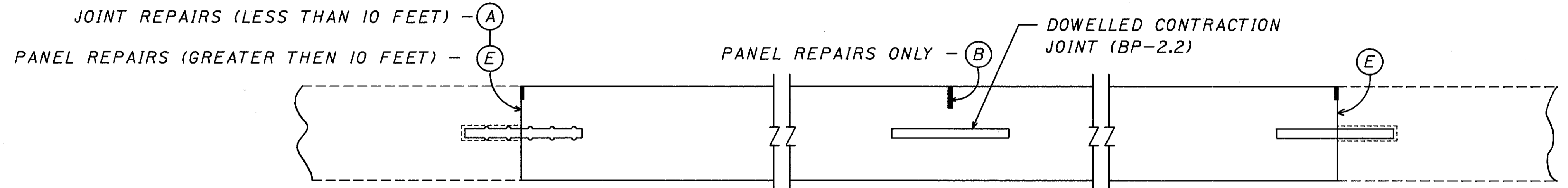
PARTIAL DEPTH JOINT OR CRACK REPAIR

TYPICAL TWO LANE REPLACEMENT

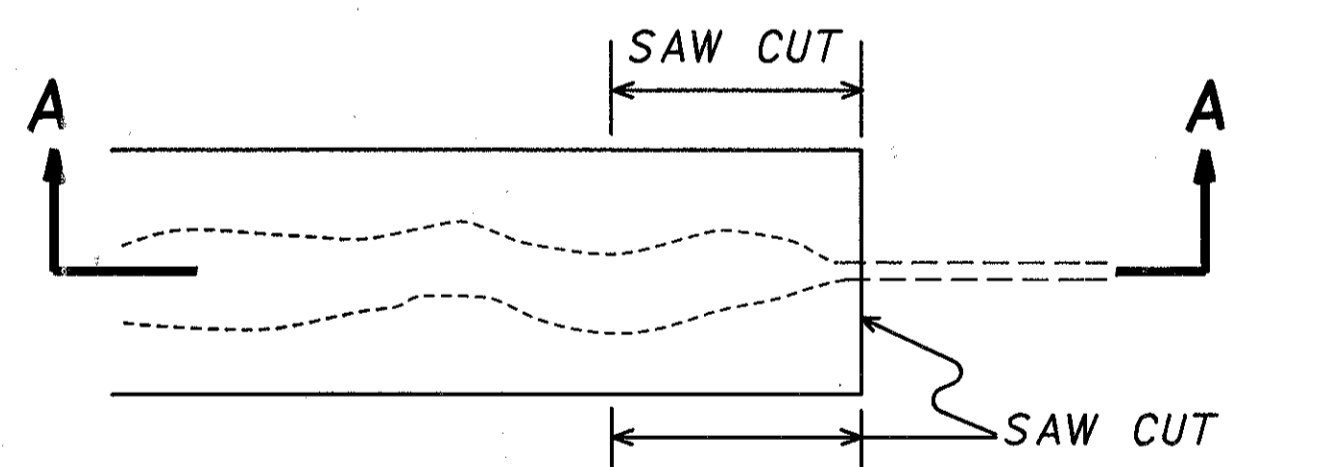
TYPICAL ONE LANE REPLACEMENT



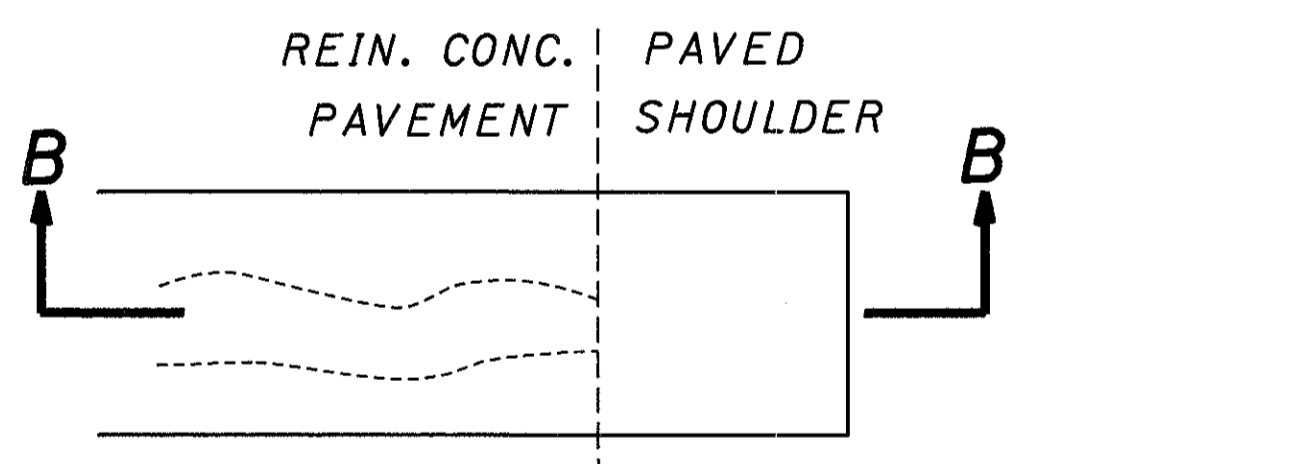
ITEM 251 - PARTIAL DEPTH PAV'T REPAIR



ITEM 255 - FULL DEPTH RIGID PAVEMENT REMOVAL AND RIGID REPLACEMENT



DISTRESSED JOINT-PLAN VIEW



DISTRESSED JOINT-PLAN VIEW

LEGEND

- (A) TYPE T TIED REPAIR JOINT, AS PER BP-2.5
- (B) SAWED CONTRACTION JOINT AS PER BP-2.2 MAX. SPACING 20' C/C
- (C) LONGITUDINAL BUTT JOINT AS PER BP-2.1 (USING HOOK BOLTS)
- (D) LONGITUDINAL JOINTS AS PER BP-2.5
- (E) TYPE Y DOWELLED REPAIR JOINTS, AS PER BP-2.5

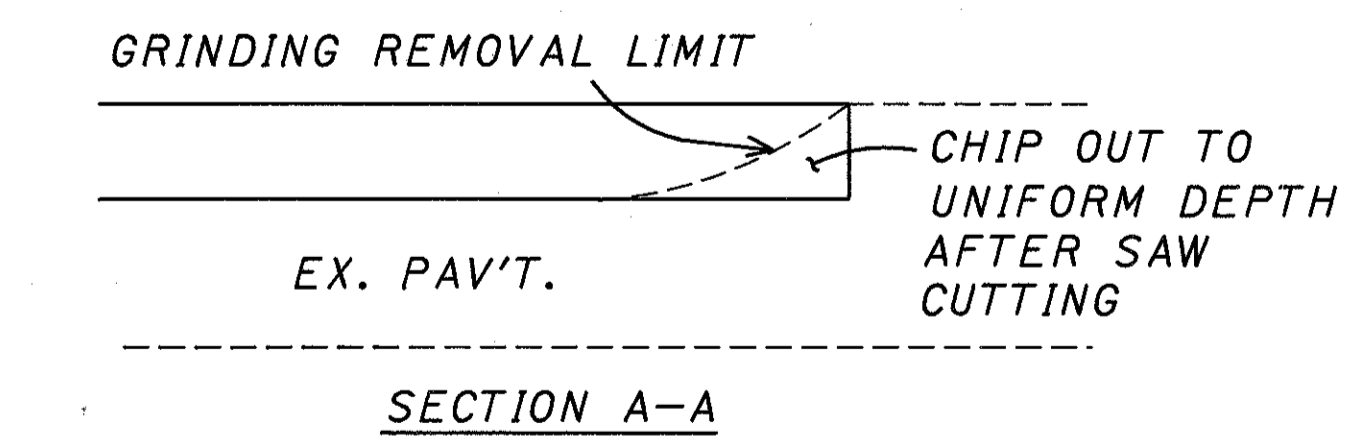
SEE GENERAL NOTES ON SHEET 10 / ___ FOR ADDITIONAL INFORMATION.

ESTIMATED QUANTITIES *	
ITEM 255	FULL DEPTH RIGID PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS C AS PER PLAN A 9000 SQ. YDS.
ITEM 255	FULL DEPTH RIGID PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS C AS PER PLAN B 9000 SQ. YDS.
ITEM 255	FULL DEPTH PAVEMENT SAWING 36000 LIN. FT.
ITEM 203	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION 400 CU. YDS.
ITEM 304	AGGREGATE BASE, AS PER PLAN 400 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.

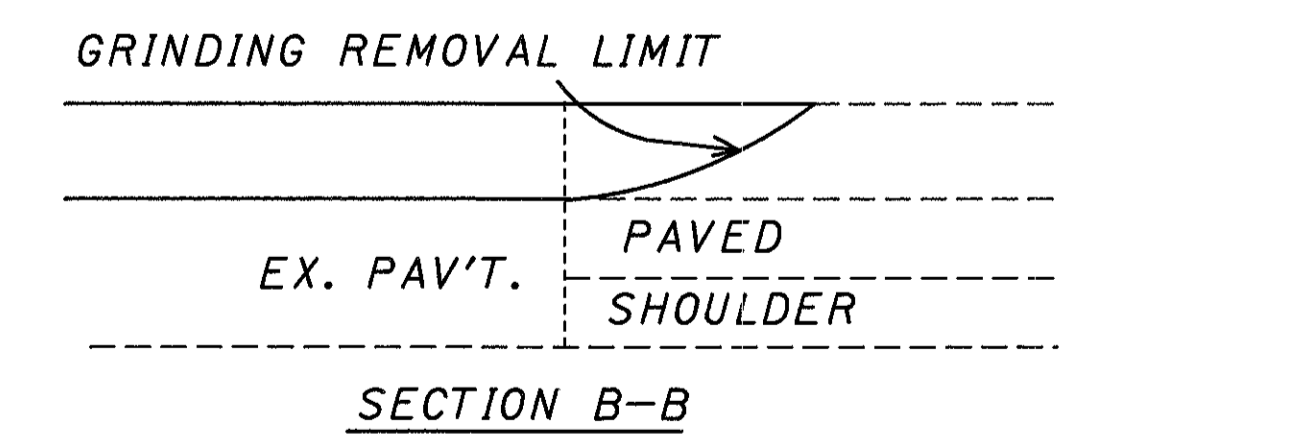
VISUAL SURVEY DATE - 9/6/91

EXISTING PORTLAND CEMENT CONCRETE SURFACE AREA = 119,072 SQ. YDS.



**SECTION A-A
TYPICAL END DETAIL**

NO SEPARATE PAYMENT WILL BE MADE FOR THESE SAW CUTS



**SECTION B-B
SHOULDER TREATMENT DETAIL**

MEASURED QUANTITY SHALL NOT INCLUDE THE PAVED SHOULDER AREA

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

ESTIMATED QUANTITY *
ITEM 251 - PARTIAL DEPTH PAVEMENT REPAIR, AS PER PLAN 6000 SQ. YDS.

PLOTTED FROM: c:\dgn\p1d08084\08084gab.dgn
 PLOT SUBMITTED: 26-MAY-1992 07:27
 00000XXX.dgn
 PLOT SUBMITTED BY: uliman

MISCELLANEOUS DETAILS

CUYAHOGA COUNTY
CUY-77-13.81

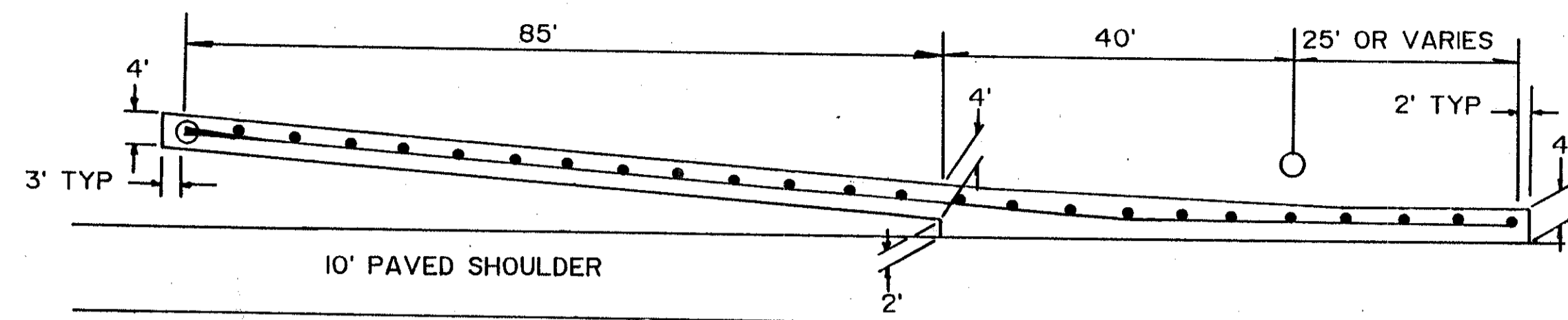
OHIO

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FHWA
REGION 5

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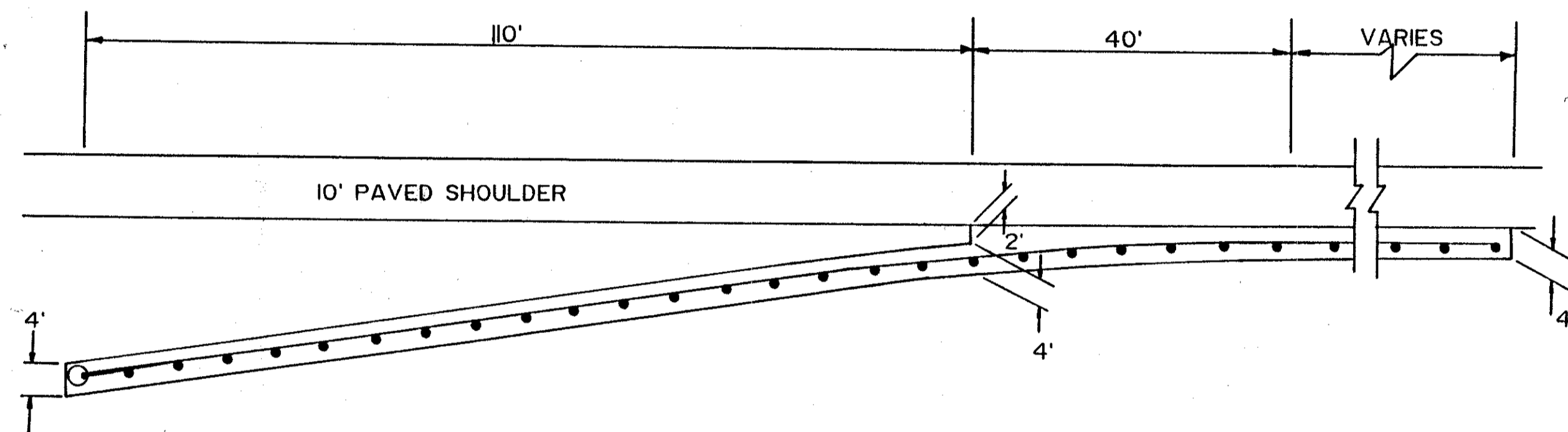
FEDERAL
PROJECT



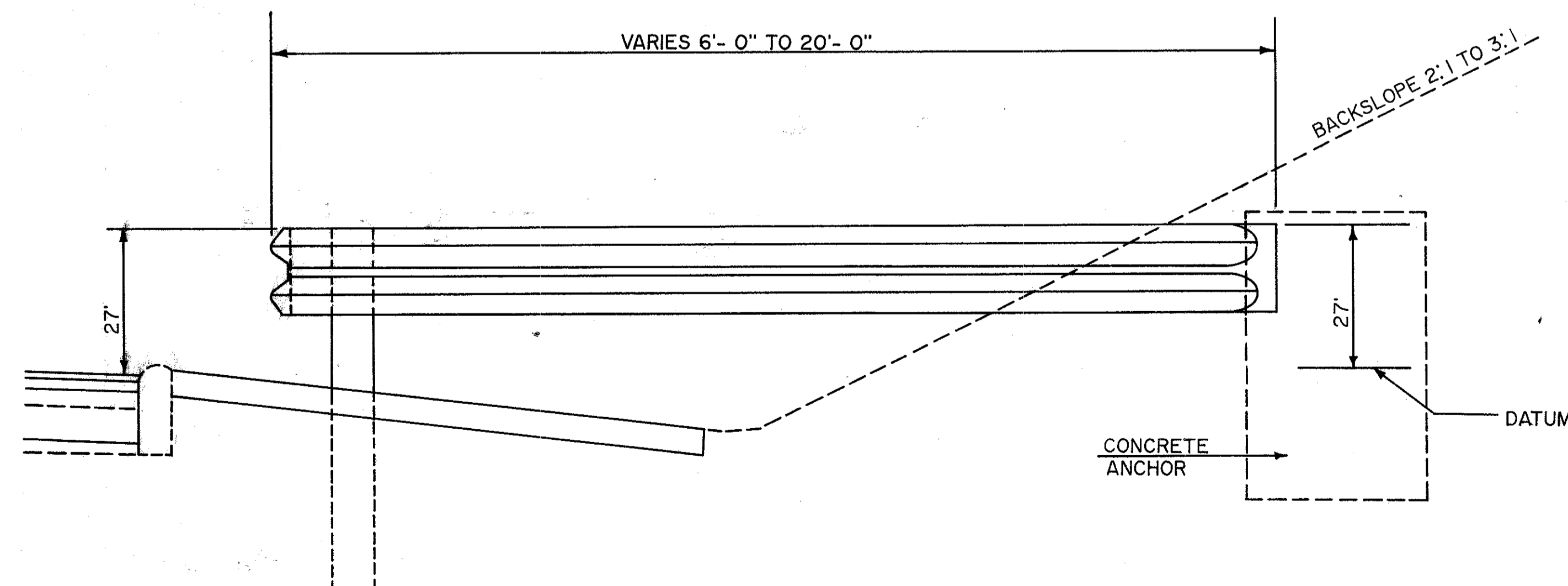
ITEM 448 FOR EROSION CONTROL WITH 8.30' GUARDRAIL FLARE

NOTE:
GUARDRAIL SHOWN MAY BE
EXISTING, PROPOSED, OR
RAISED AS SHOWN IN THE
PLANS.

A 4' WIDE STRIP OF ITEM 448
SHALL BE CONSTRUCTED UNDER
ALL PROPOSED GUARDRAIL. SEE
TYPICAL SECTIONS FOR DETAILS
WHEN GUARDRAIL OFFSET EXCEEDS
2 FEET FROM EDGE OF PAVED BERM



ITEM 448 FOR EROSION CONTROL WITH 18' GUARDRAIL FLARE



ITEM 448 FOR EROSION CONTROL WITH BURIED ANCHOR ASSEMBLY

NOTES: IF NO EXISTING CONSTRUCTION JOINT,
CONTRACTOR MAY MAKE A CLEAN CUT
BELOW THE TROUGH AS NECESSARY.

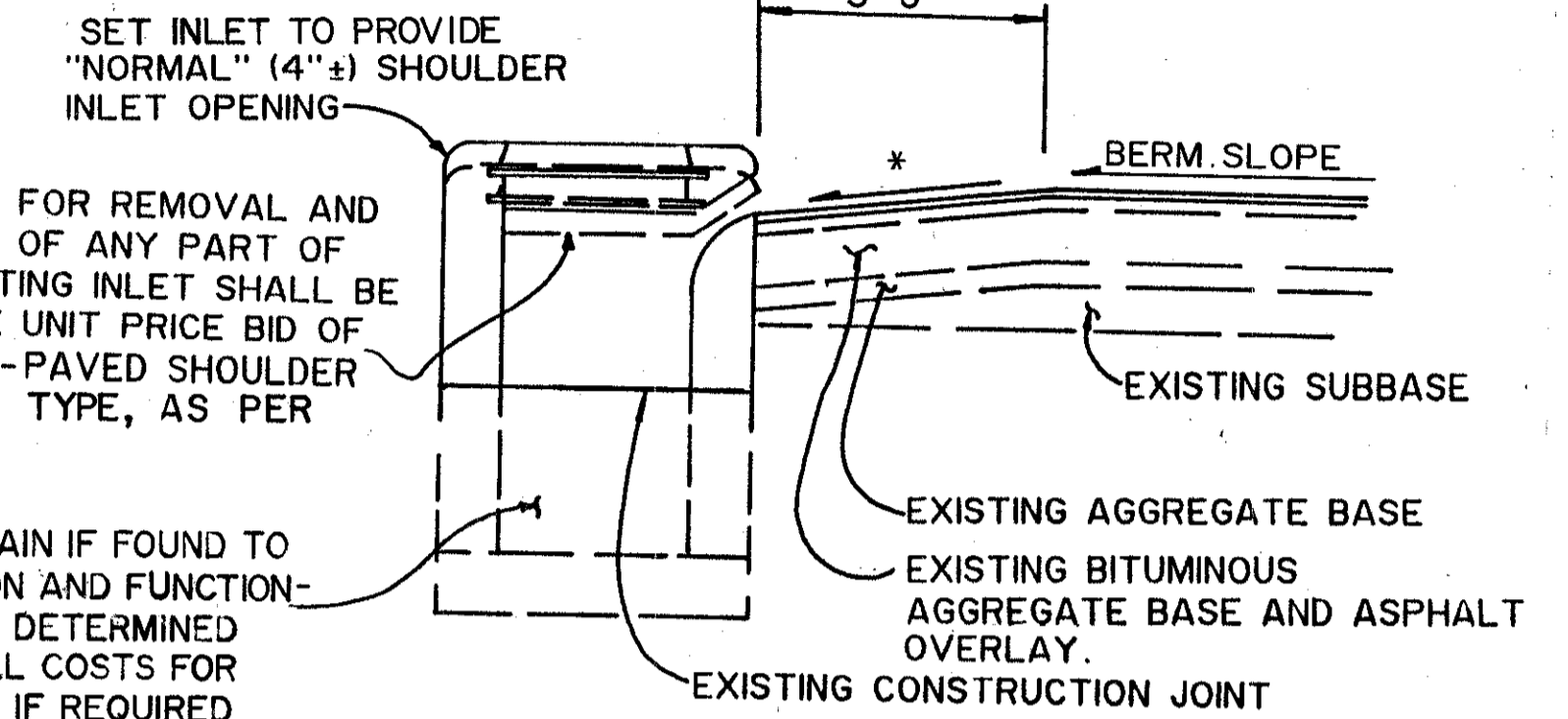
INLET BASIN MAY BE REPLACED AT
CONTRACTOR'S OPTION. NO ADDITIONAL
PAYMENT SHALL BE MADE.

FOR REINFORCEMENT AND ADDITIONAL
DETAILS, SEE STANDARD CONSTRUCTION
DRAWING I-2A.

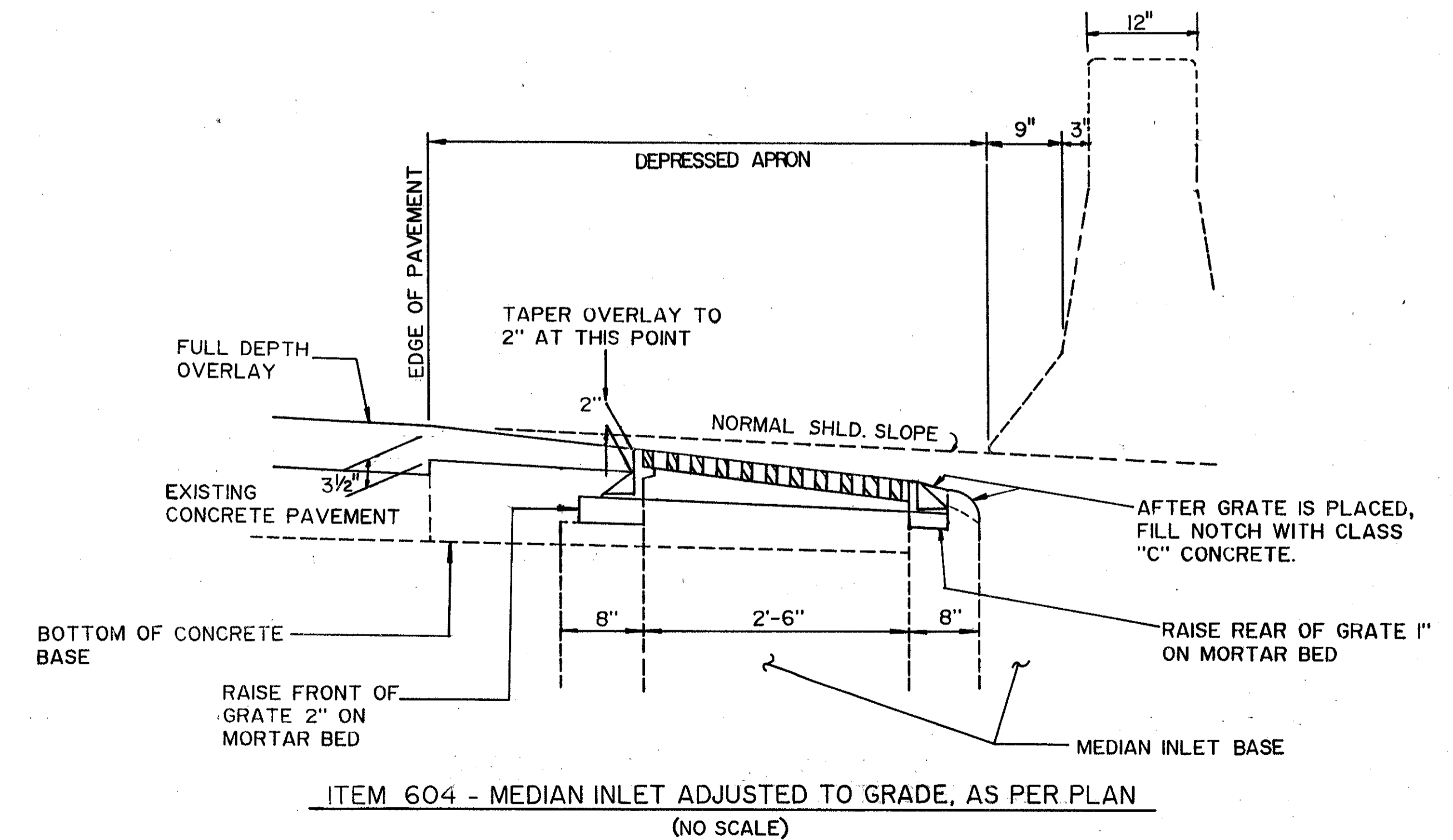
FOR QUANTITIES, SEE SHT 27

PAYMENT FOR REMOVAL AND
DISPOSAL OF ANY PART OF
THE EXISTING INLET SHALL BE
WITH THE UNIT PRICE BID OF
ITEM 604-PAVED SHOULDER
INLET, BY TYPE, AS PER
PLAN.

INLET BASIN MAY REMAIN IF FOUND TO
BE IN SOUND CONDITION AND FUNCTION-
ING PROPERLY AS DETERMINED
BY THE ENGINEER. ALL COSTS FOR
REPLACING THE BASIN IF REQUIRED
(MATCH EXISTING LOCATION AND
SIZE) WILL BE INCLUDED
UNDER ITEM 604-PAVED
SHOULDER INLET, BY TYPE,
AS PER PLAN.



ITEM 604-PAVED SHOULDER INLET,
BY TYPE, AS PER PLAN
(NO SCALE)



ITEM 604 - MEDIAN INLET ADJUSTED TO GRADE, AS PER PLAN
(NO SCALE)

IMPACT ATTENUATOR DETAILS

RAMP E-15

(SEE THE GENERAL NOTES FOR MORE INFORMATION)

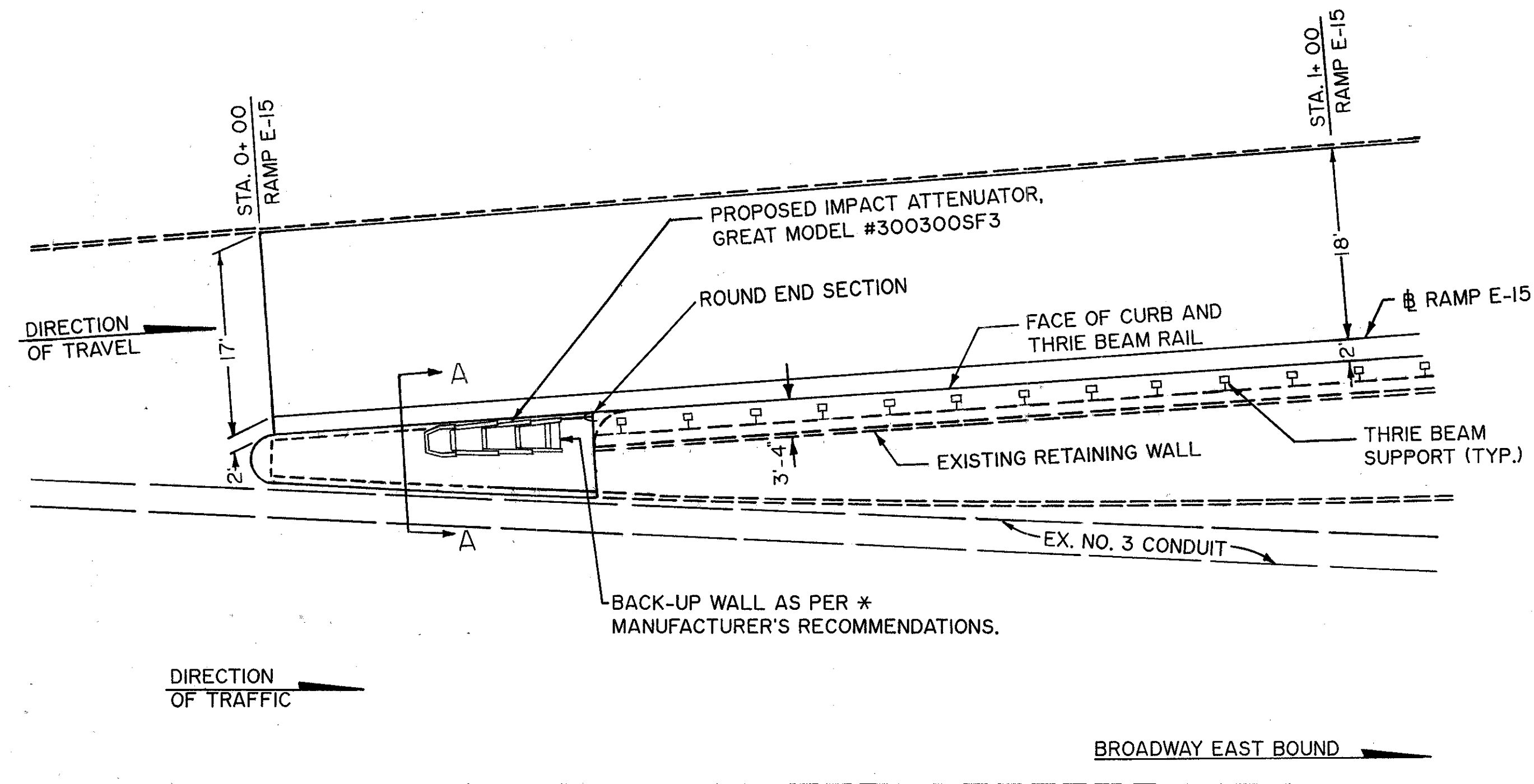
CUYAHOGA COUNTY
CUY- 77- 13.81

OHIO

FHWA
REGION 5

FEDERAL
PROJECT

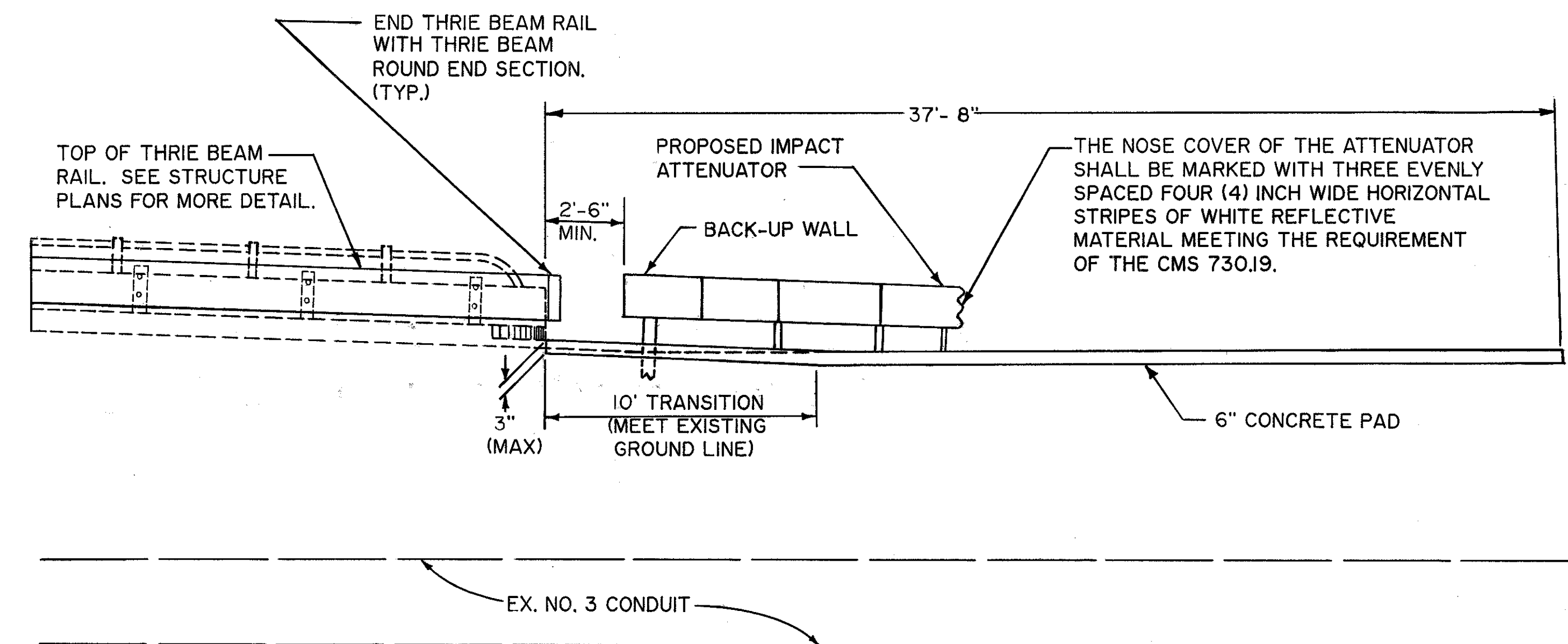
62
234



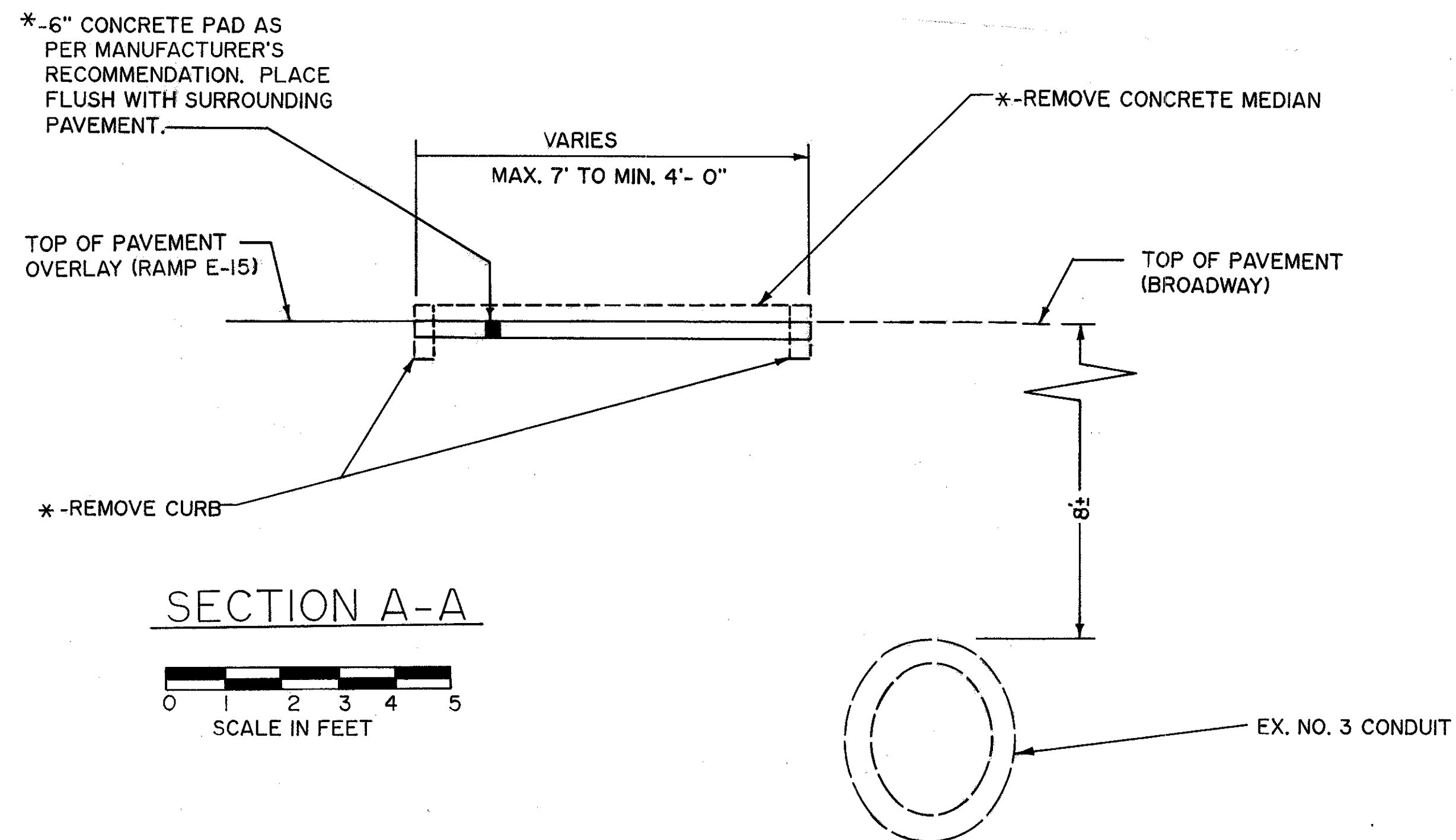
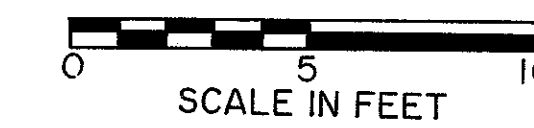
PLAN



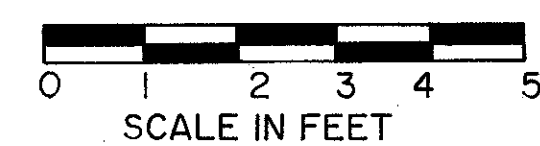
*-ALL WORK TO BE INCLUDED UNDER ITEM SPECIAL- IMPACT ATTENUATOR, GREAT SYSTEM, MODEL #300300SF3 FOR PAYMENT.



ELEVATION



SECTION A-A



IMPACT ATTENUATOR DETAILS

CUYAHOGA COUNTY
CUY - 77 - 13.81

OHIO

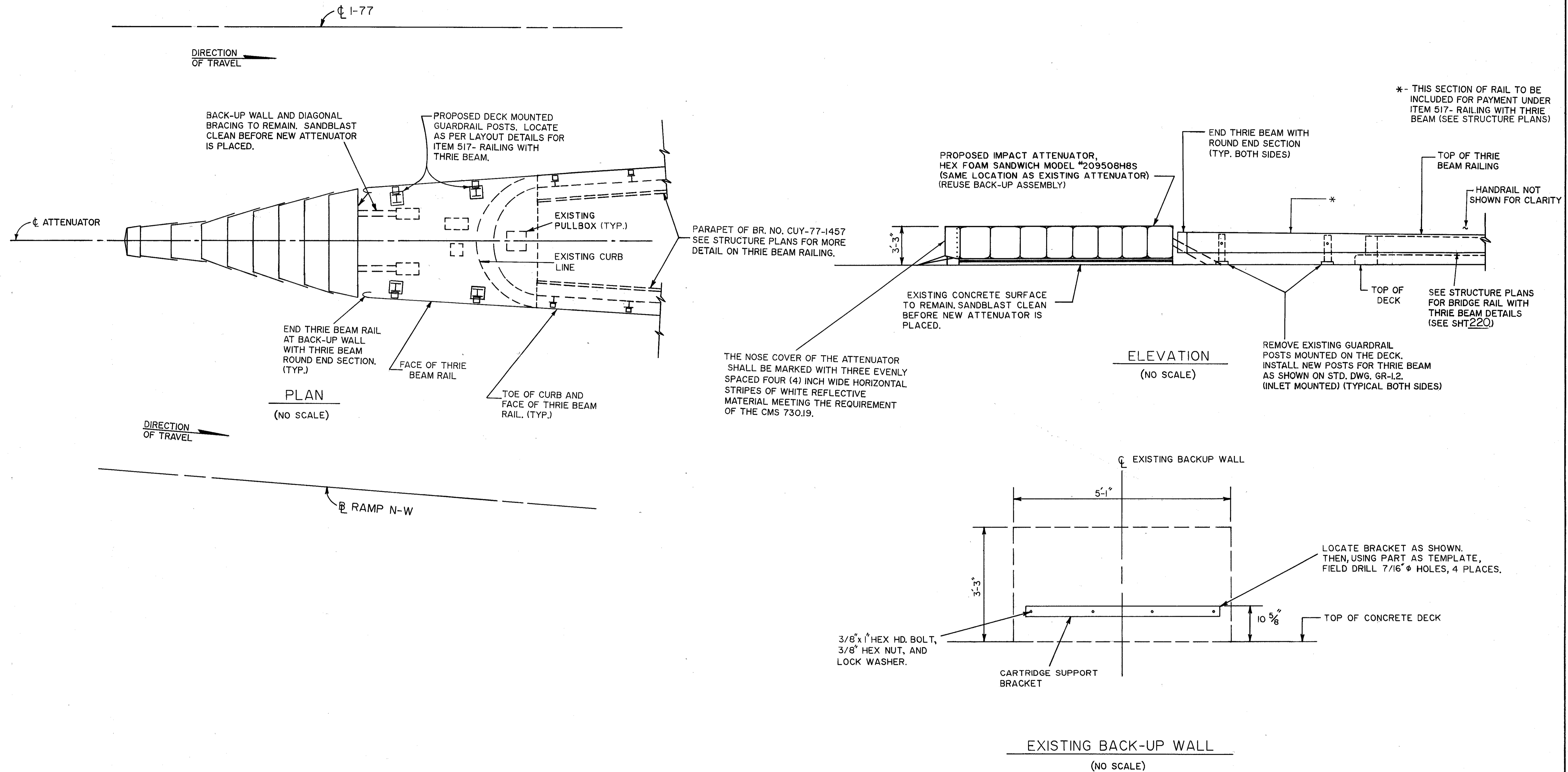
63

FHWA
REGION 5

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FEDERAL
PROJECT

FOR FURTHER INFORMATION, SEE GENERAL NOTE SHT. 9
BR. NO. CUY-77-1457

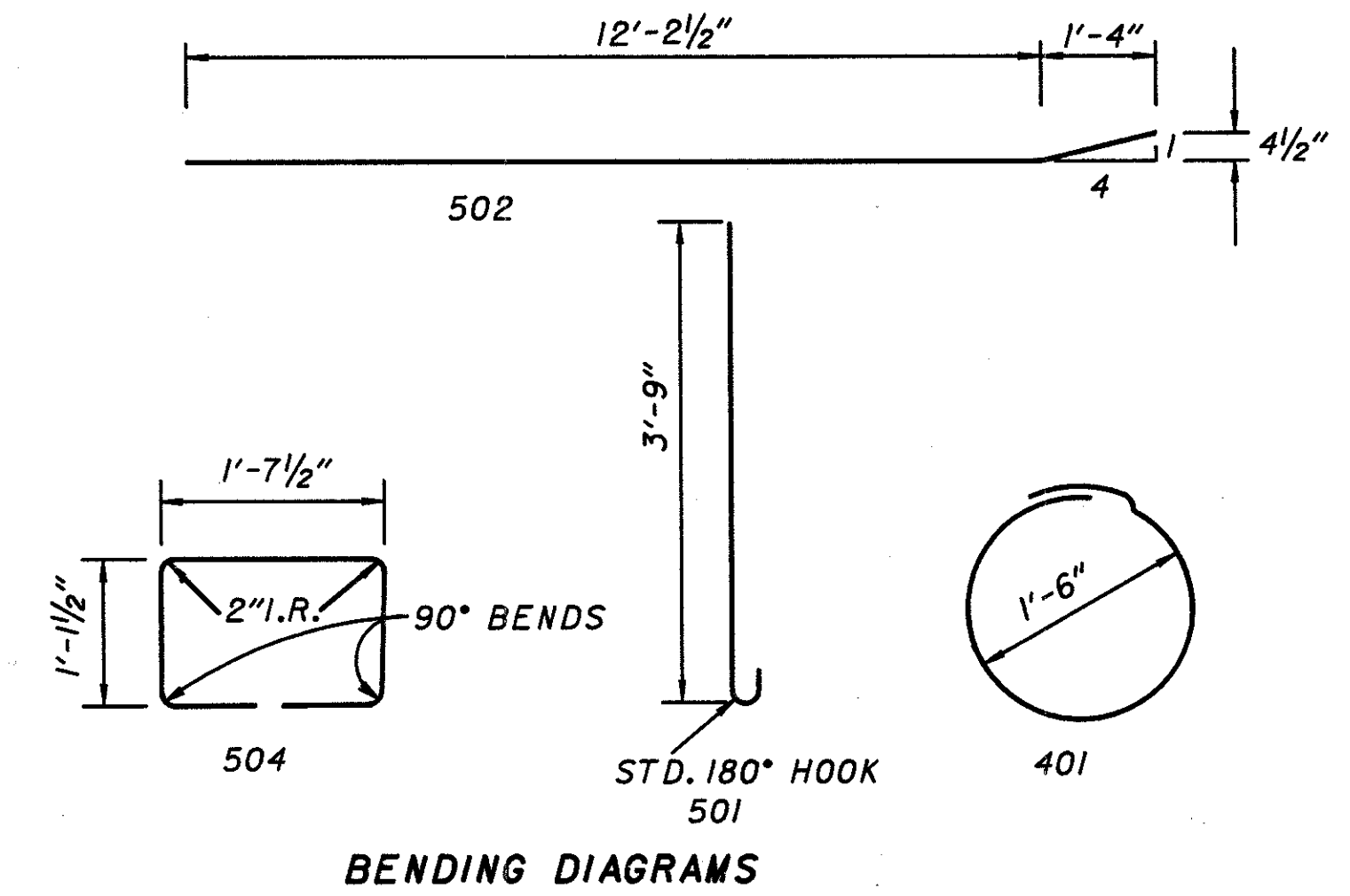
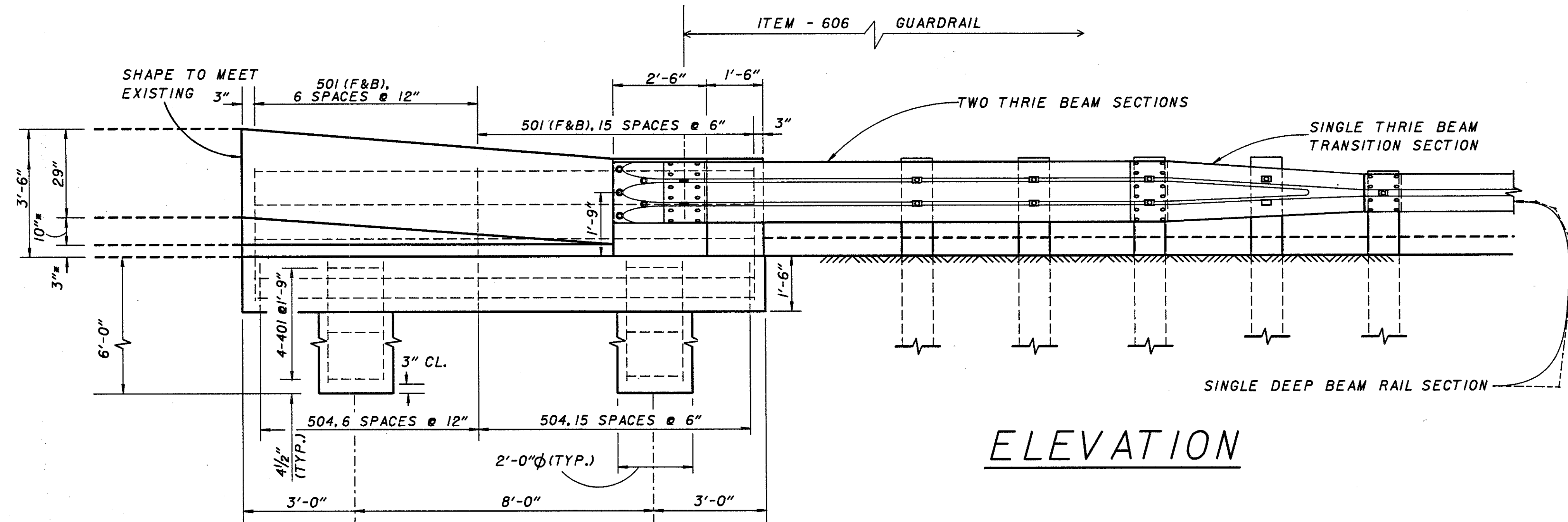
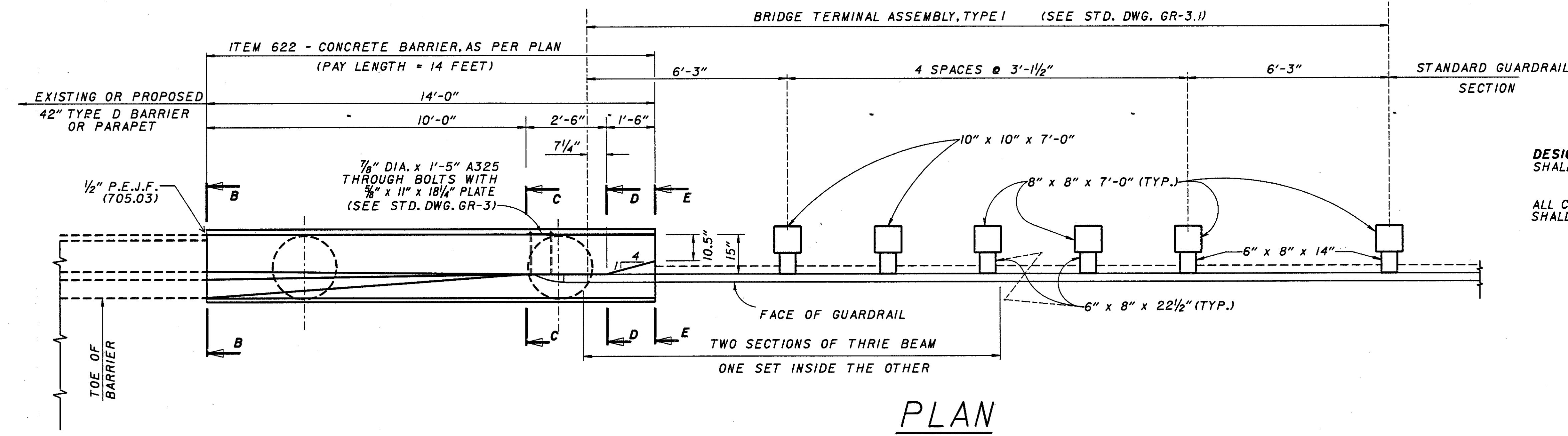


PLOT SUBMITTED BY: BANASZAK

GENERAL NOTES

DESIGN DATA: CONCRETE SHALL BE CLASS C. REINFORCING STEEL SHALL BE GRADE 60

ALL COSTS FOR EXCAVATION AND EMBANKMENT SHALL BE PAID FOR SEPARATELY UNDER LINEAR GRADING.



REINFORCING BAR LIST

MARK	NO.	LENGTH	TYPE
401	8	6'-0"	BT.
501	44	4'-4"	BT.
502	5	13'-7"	BT.
503	7	13'-7"	STR.
504	22	5'-0 1/2"	BT.
601	12	5'-6"	STR.

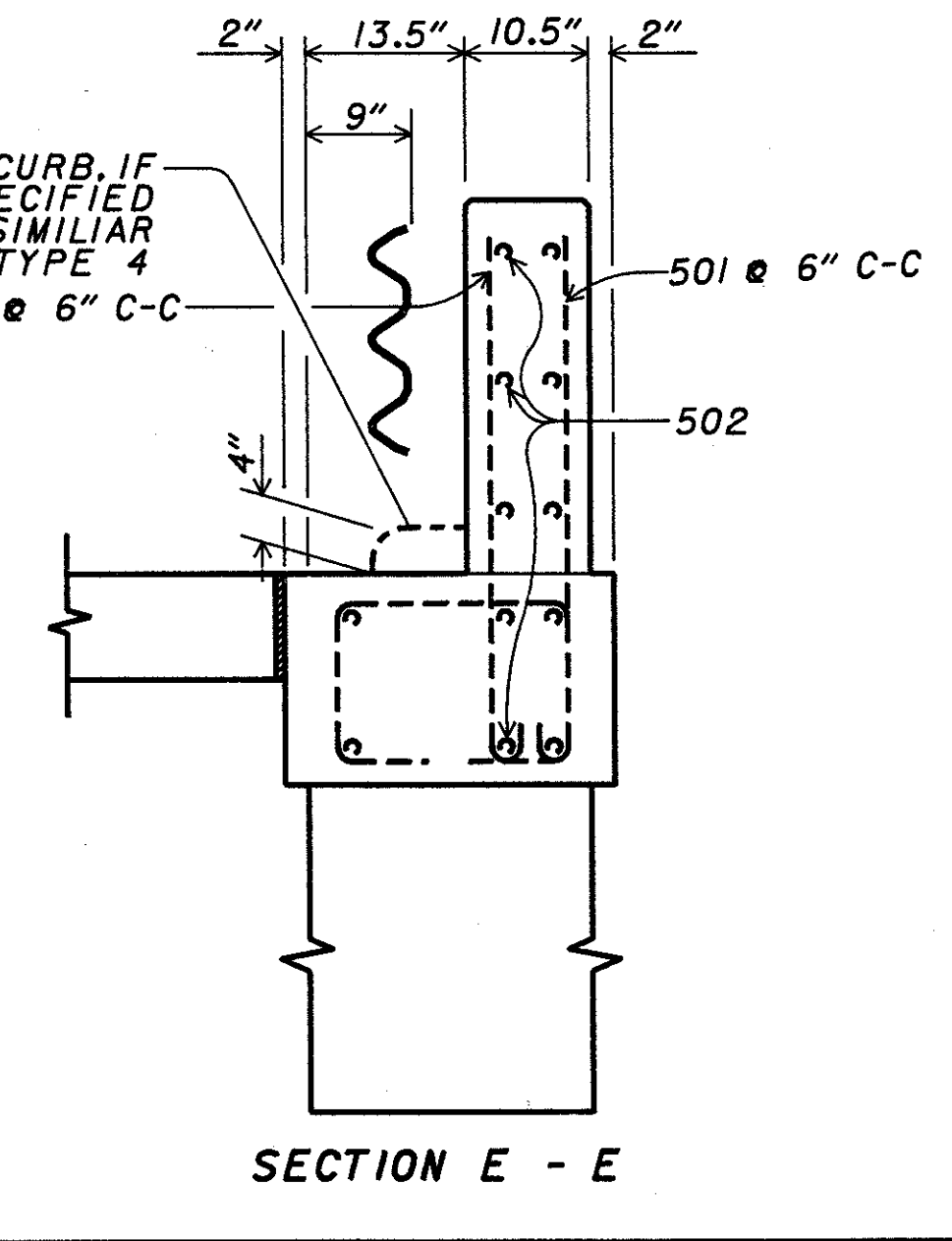
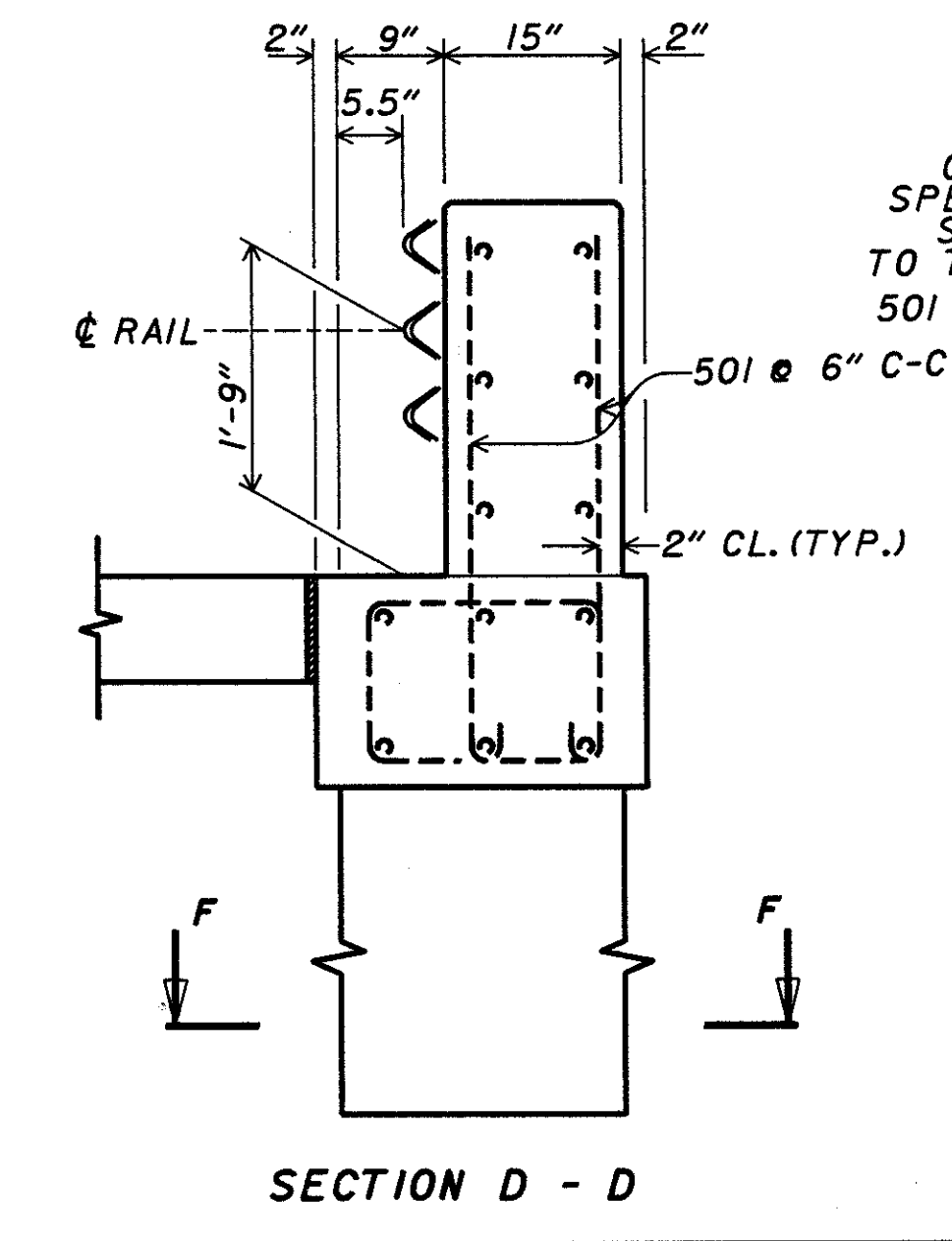
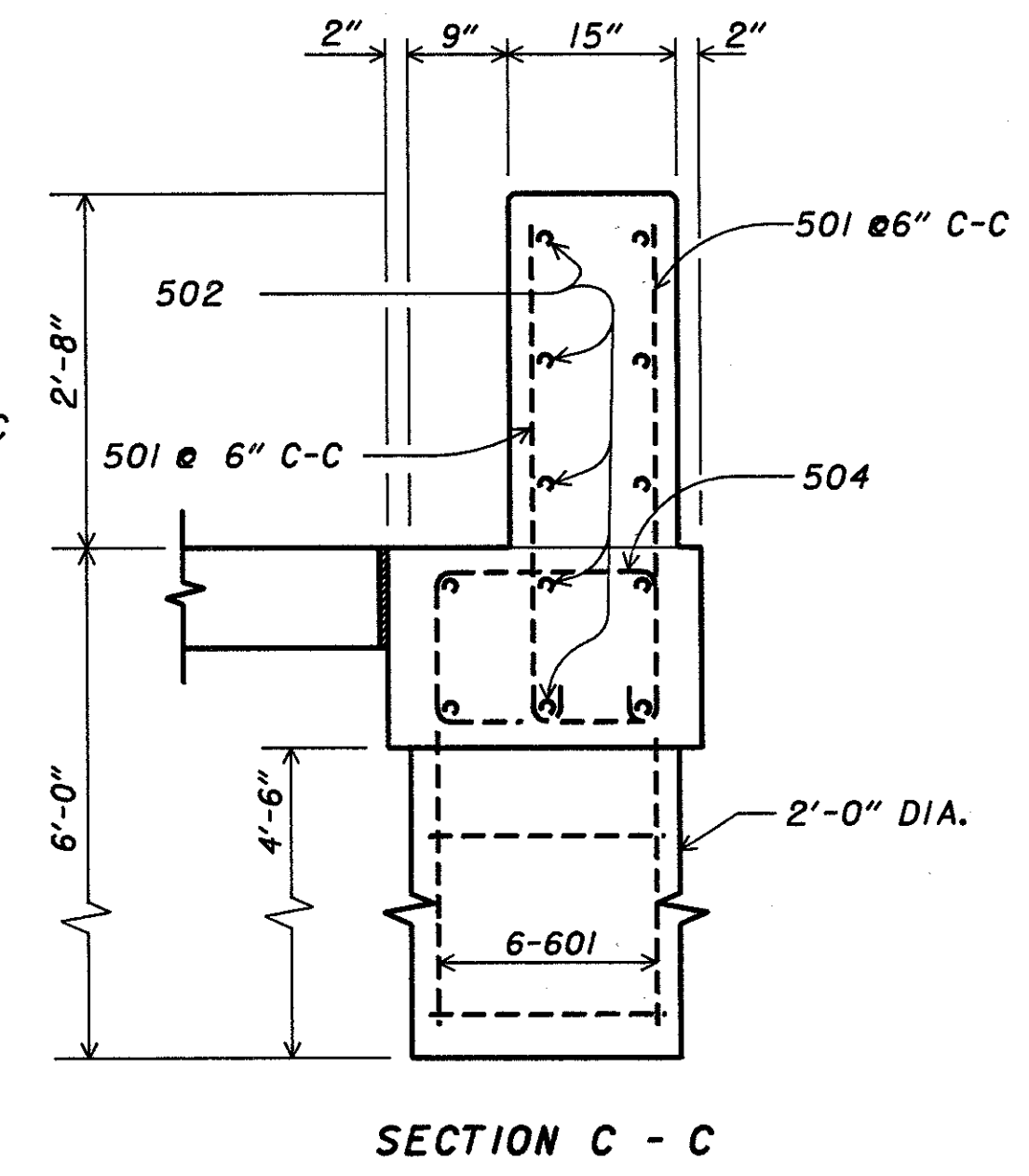
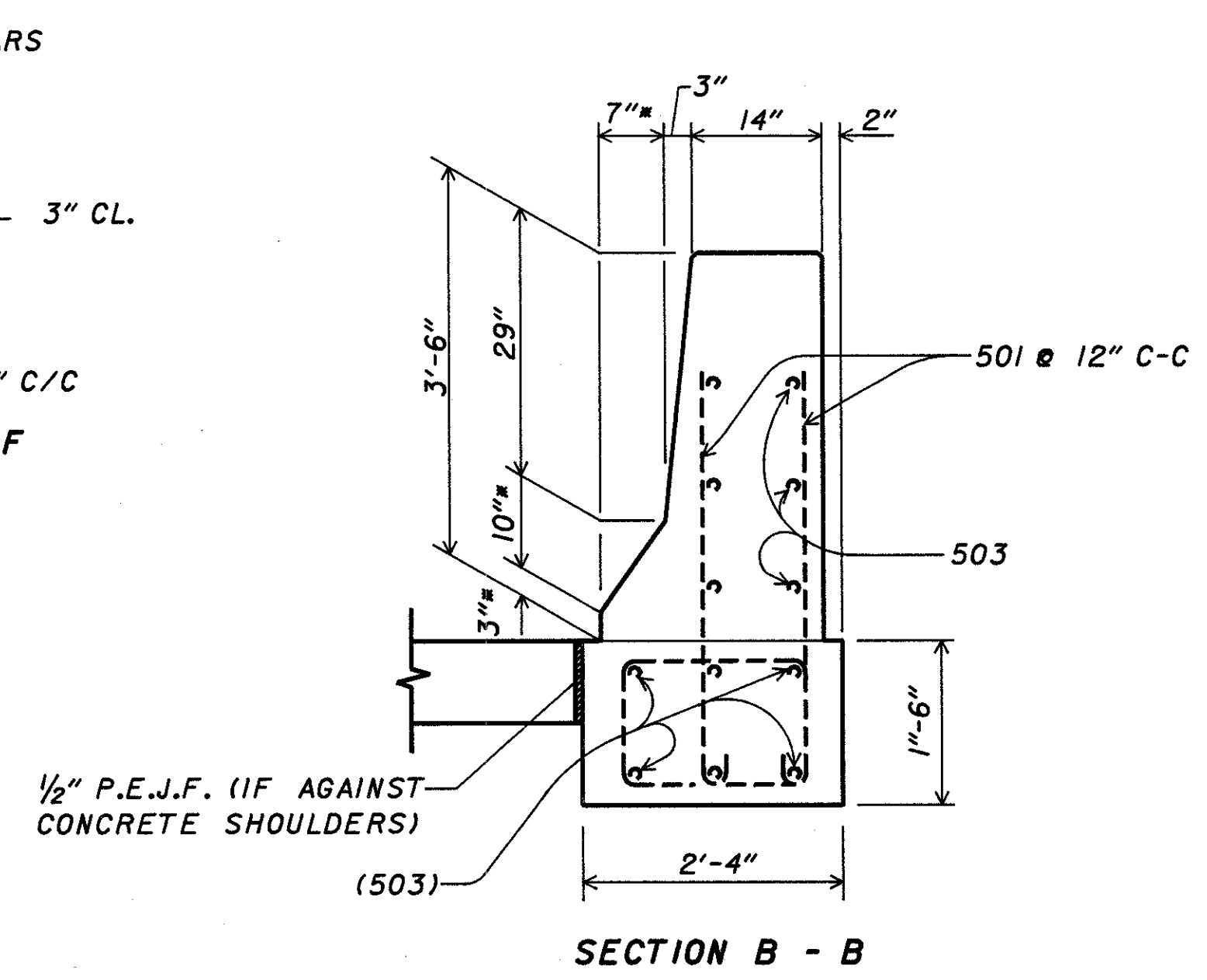
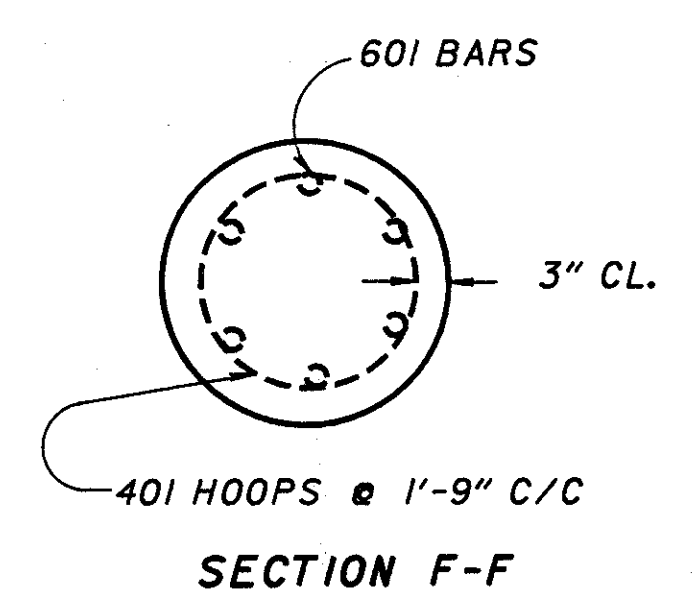
ALL REINFORCING BARS SHALL BE EPOXY COATED

MARCH 12, 1991

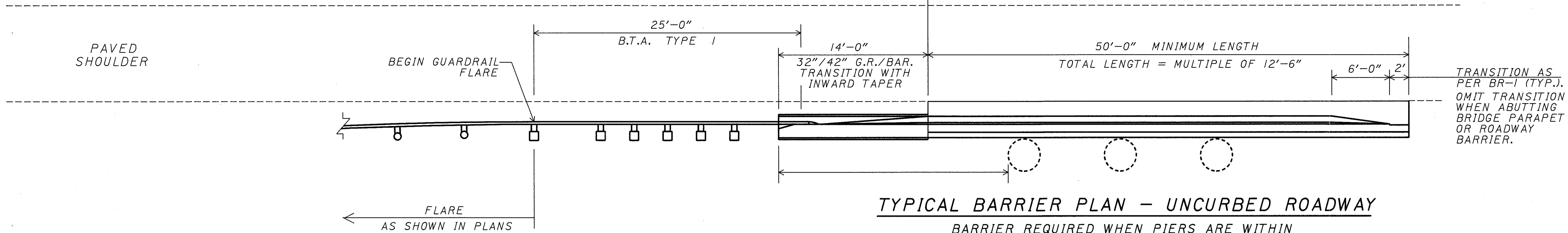
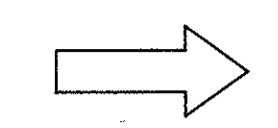
STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

32"/42" GUARDRAIL/BARRIER TRANSITION WITH TAPERED BOTTOM (WITH OR WITHOUT CURBS)

DESIGNED LDH	TRACED GJU	CHECKED ENF	REVIEWED	REVISED
DATE	DATE	DATE	DATE	SHEET



← CONCRETE BARRIER AS PER PLAN SEE DETAIL, SHEET NO. 64 →
CONCRETE BARRIER, TYPE D, AS PER PLAN SEE DETAIL BELOW →



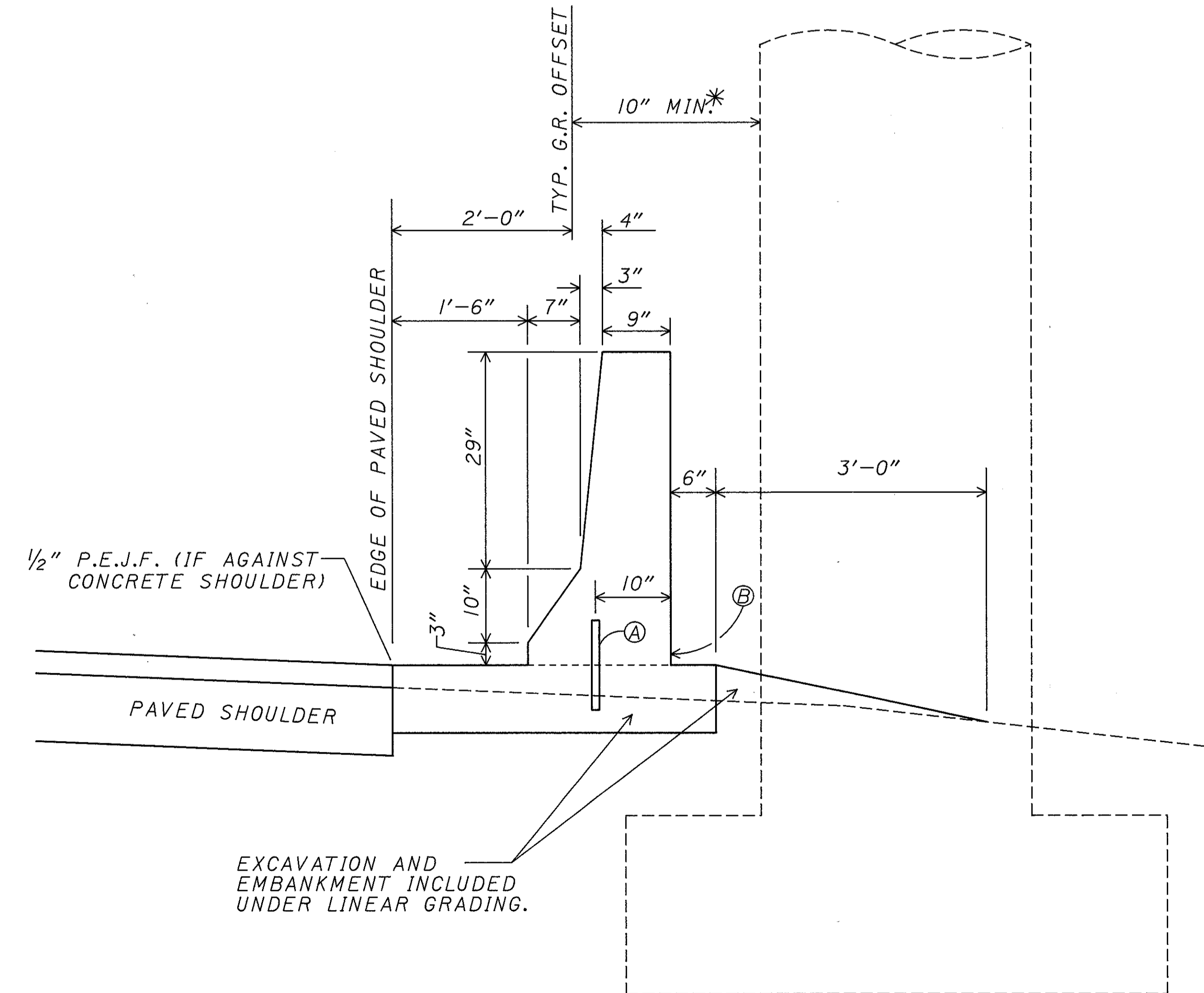
TYPICAL BARRIER PLAN - UNCURBED ROADWAY

BARRIER REQUIRED WHEN PIERS ARE WITHIN 2'-9" OF NORMAL GUARDRAIL OFFSET

* - IF PIER IS CLOSER THAN 13 1/2 INCHES TO NORMAL GUARDRAIL OFFSET THEN REDUCE BARRIER TOP WIDTH AT PIER ONLY AND PLACE 1/2" P.E.J.F. (705.03) BETWEEN PIER AND BARRIER. TREAT CONCRETE BASE SIMILARLY.

Ⓐ - No. 8 DEFORMED STEEL BARS, 12" LONG, SPACED ON 2' CENTERS

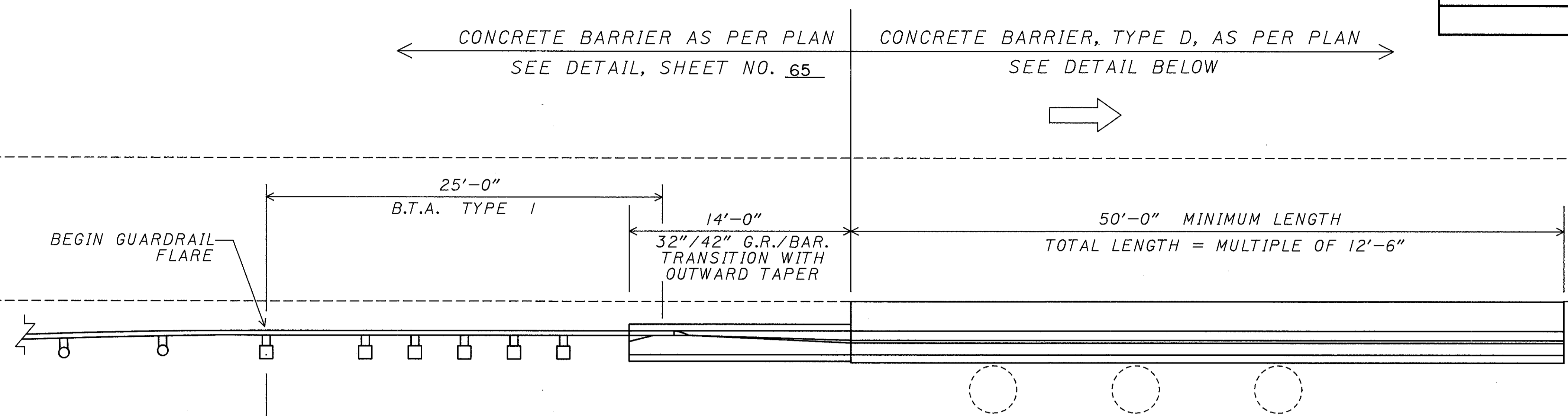
Ⓑ - PROVIDE 2" X 18" DRAINAGE SLOTS 5' CENTER TO CENTER IN SAGS AND 10' CENTER TO CENTER IN INSTALLATIONS LONGER THAN 100 FEET.



TYPICAL BARRIER SECTION - UNCURBED ROADWAY

ITEM 622 - CONCRETE BARRIER, TYPE D, AS PER PLAN

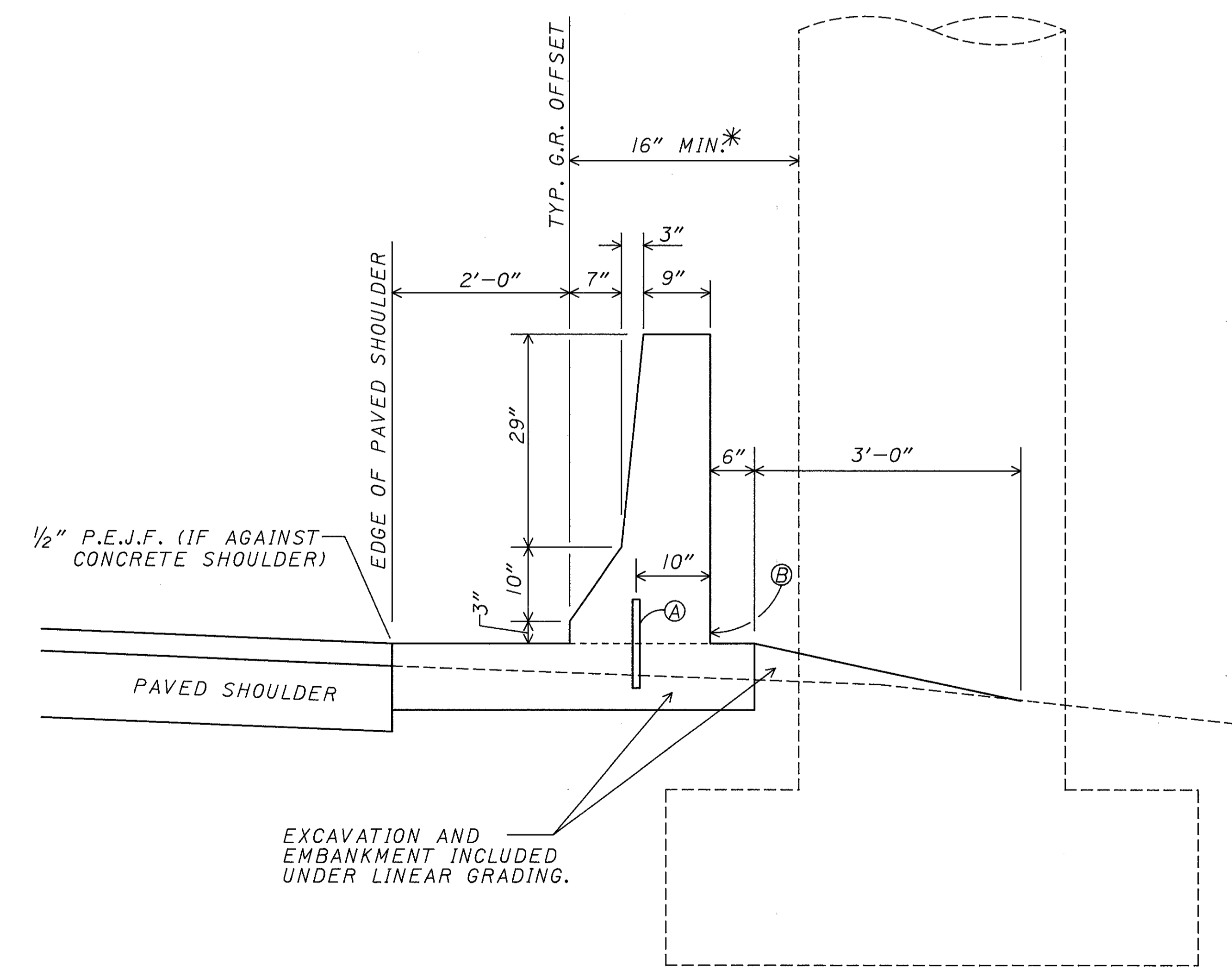
PLOT SUBMITTED BY: ulman
 PLOT SUBMITTED: 15-JUN-1992 17:00
 c:\dgn\pfd08084\brailg.dgn



TYPICAL BARRIER PLAN - UNCURBED ROADWAY

BARRIER REQUIRED WHEN PIERS ARE WITHIN 2'-9" OF NORMAL GUARDRAIL OFFSET

- * - IF PIER IS CLOSER THAN 19 1/2 INCHES TO NORMAL GUARDRAIL OFFSET THEN REDUCE BARRIER TOP WIDTH AT PIER ONLY AND PLACE 1/2" P.E.J.F. (705.03) BETWEEN PIER AND BARRIER. TREAT CONCRETE BASE SIMILARLY.
- Ⓐ - No. 8 DEFORMED STEEL BARS, 12" LONG, SPACED ON 2' CENTERS
- Ⓑ - PROVIDE 2" X 18" DRAINAGE SLOTS 5' CENTER TO CENTER IN SAGS AND 10' CENTER TO CENTER IN INSTALLATIONS LONGER THAN 100 FEET.



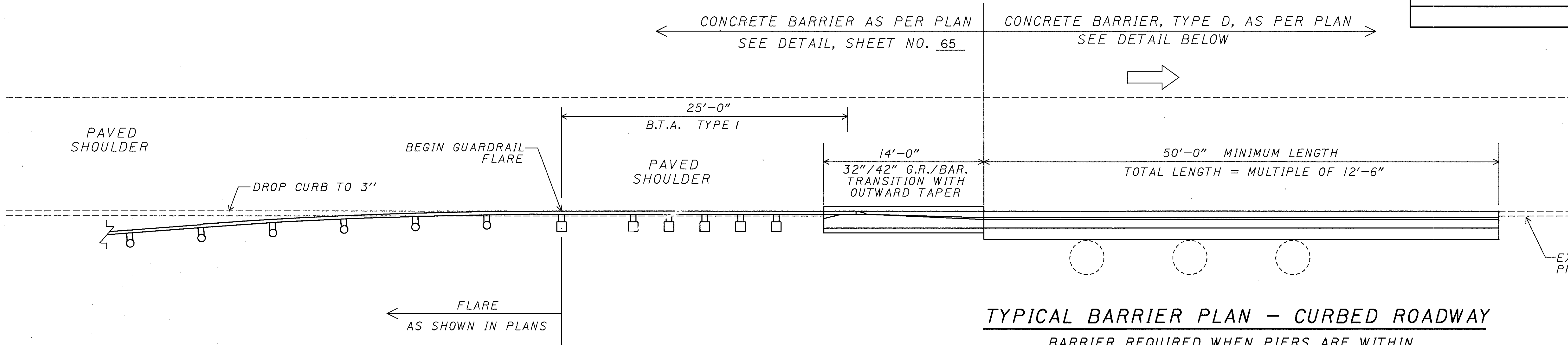
TYPICAL BARRIER SECTION - UNCURBED ROADWAY

ITEM 622 - CONCRETE BARRIER, TYPE D, AS PER PLAN

EXCAVATION AND EMBANKMENT INCLUDED UNDER LINEAR GRADING.

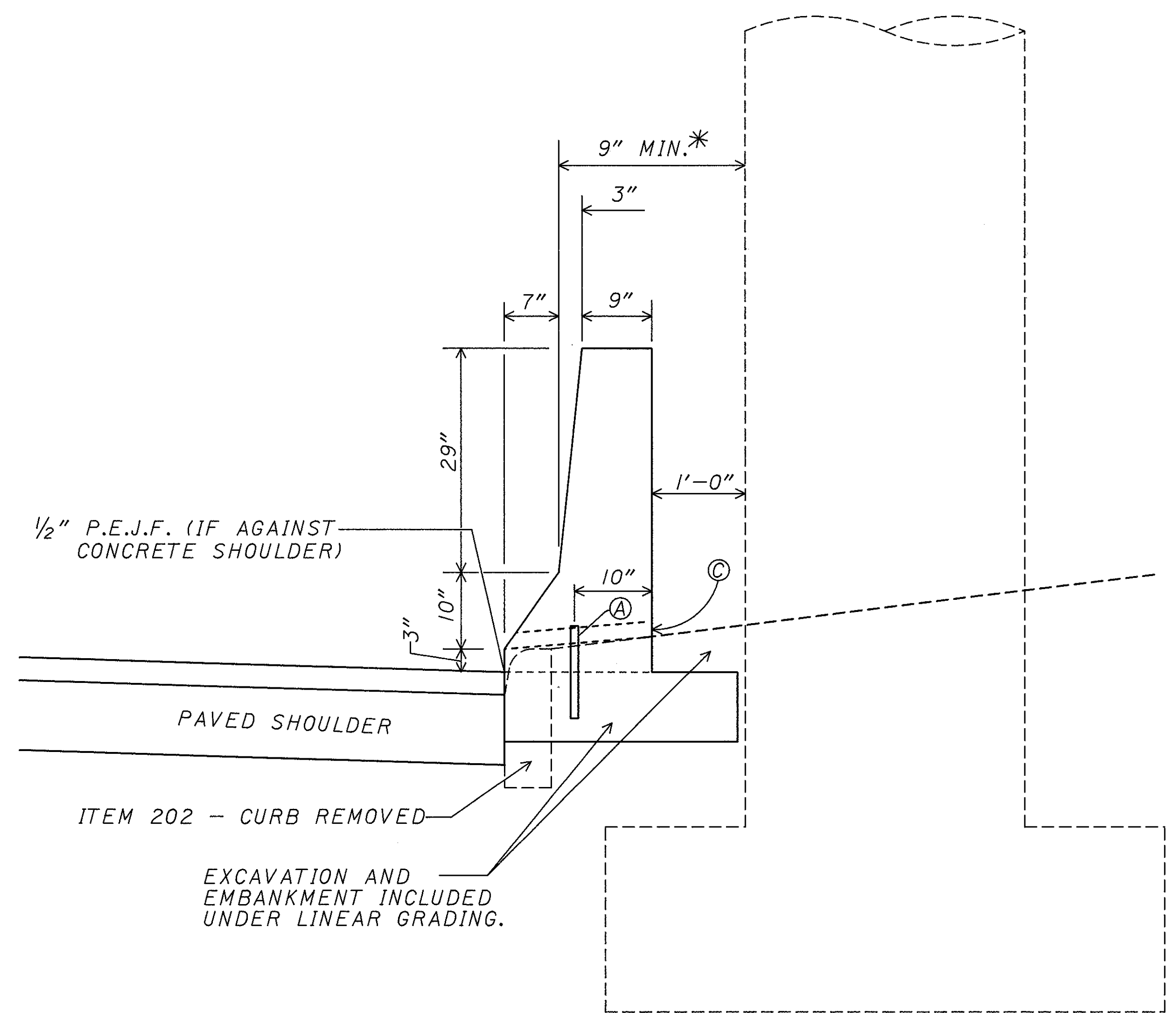
PLOT SUBMITTED BY: ul lman
 PLOT SUBMITTED: 15-JUN-1992 17:17:00
 c:\dgn\pid08084\brrai lh.dgn

PLOT SUBMITTED: 15-JUN-1992 08:15
 PLOT SUBMITTED BY: uliman
 c:\dgn\pid08084\brailj.dgn



TYPICAL BARRIER PLAN - CURBED ROADWAY

BARRIER REQUIRED WHEN PIERS ARE WITHIN
2'-9" OF NORMAL GUARDRAIL OFFSET

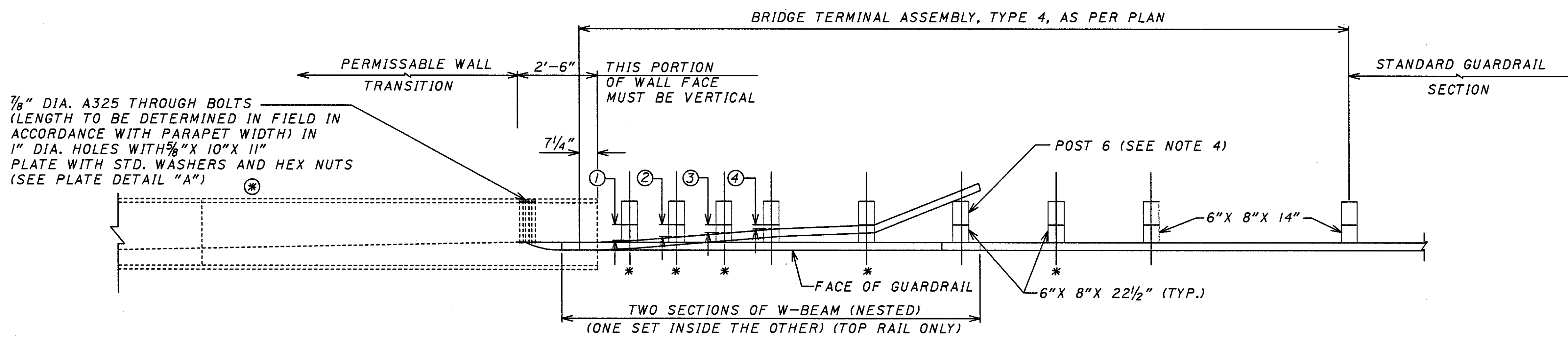


TYPICAL BARRIER SECTION - CURBED ROADWAY

ITEM 622 - CONCRETE BARRIER, TYPE D, AS PER PLAN

- * - IF PIER IS CLOSER THAN 12 1/2 INCHES TO NORMAL GUARDRAIL OFFSET THEN REDUCE BARRIER TOP WIDTH AT PIER ONLY AND PLACE 1/2" P.E.J.F. (705.03) BETWEEN PIER AND BARRIER. TREAT CONCRETE BASE SIMILARLY.
- Ⓐ - No. 8 DEFORMED STEEL BARS, 12" LONG, SPACED ON 2' CENTERS
- Ⓒ - PROVIDE 2" X 18" DRAINAGE SLOTS 5' CENTER TO CENTER

PLOT SUBMITTED: 27-MAY-1992 07:08
 FILENAME: dgn
 PLOTTED BY: BANASZAK
 PLOTTED FROM: c:\dgn\pic07090\7090grcc.dgn



* 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. (PLATE DETAIL NOT REQUIRED)

PLAN

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

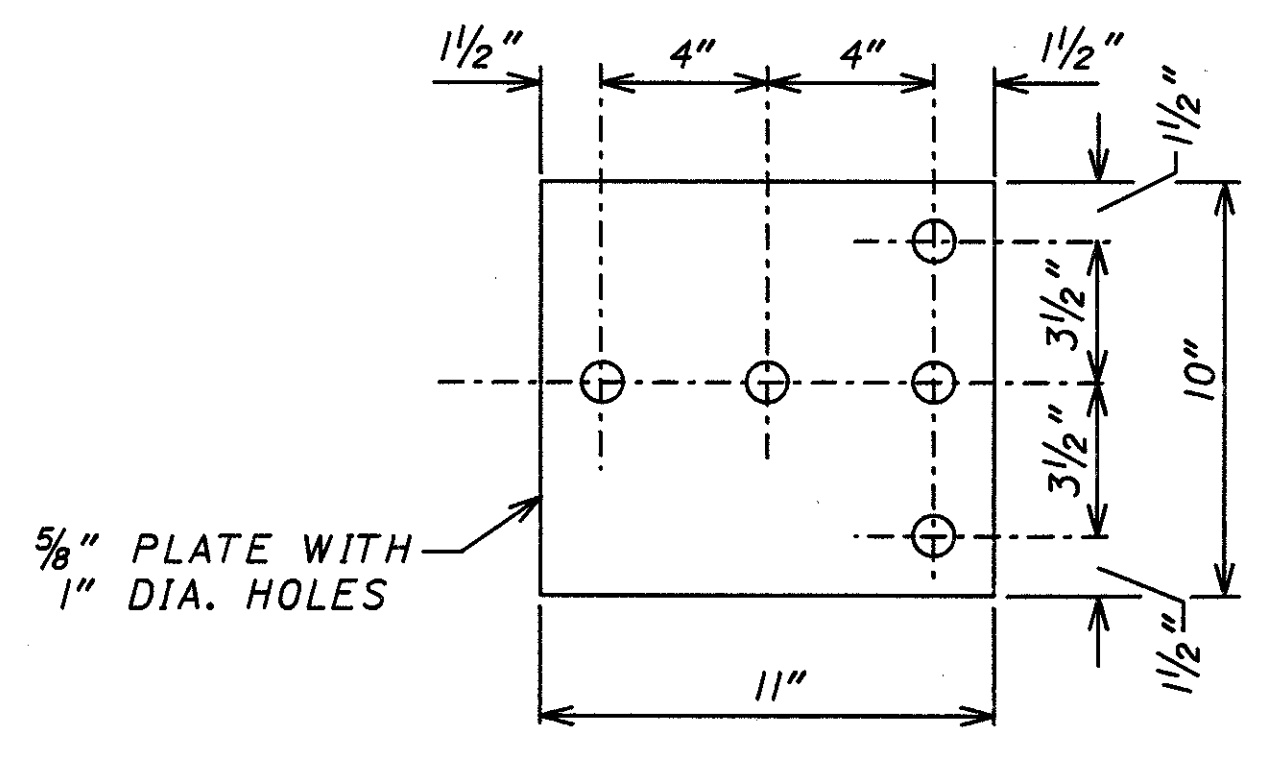
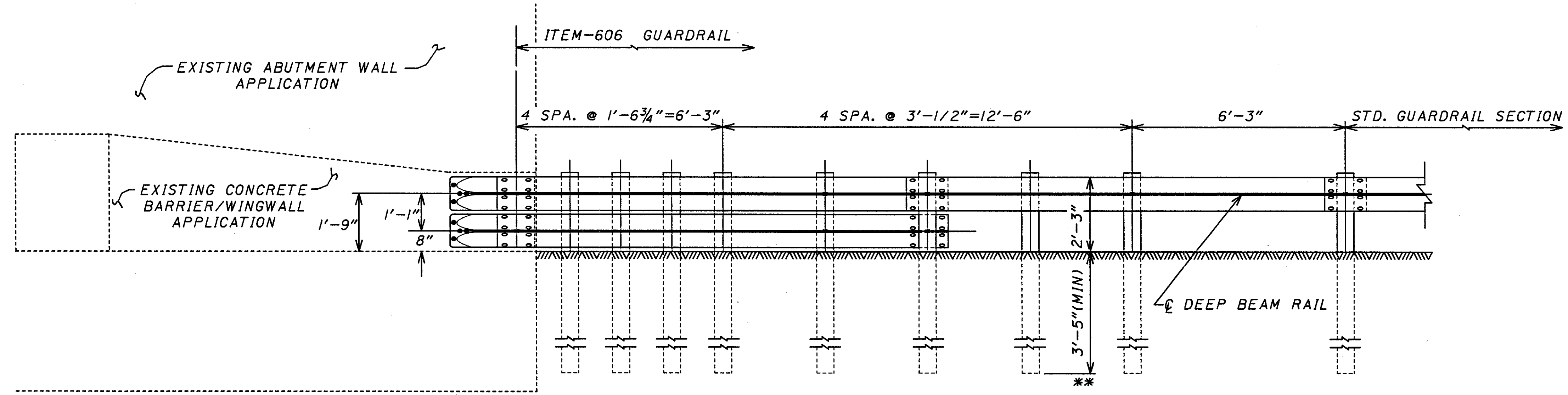


PLATE DETAIL "A"



ELEVATION

** 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 7/8" 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.

BLOCKOUT CHART BOTTOM BEAM WOOD BLOCKS 1'-2" X 6"	
POST	THICKNESS
①	7"
②	6"
③	4.5"
④	3"

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"

MAY 26, 1992

STATE OF OHIO
 DEPARTMENT OF TRANSPORTATION
 DISTRICT 12 LOCATION & DESIGN

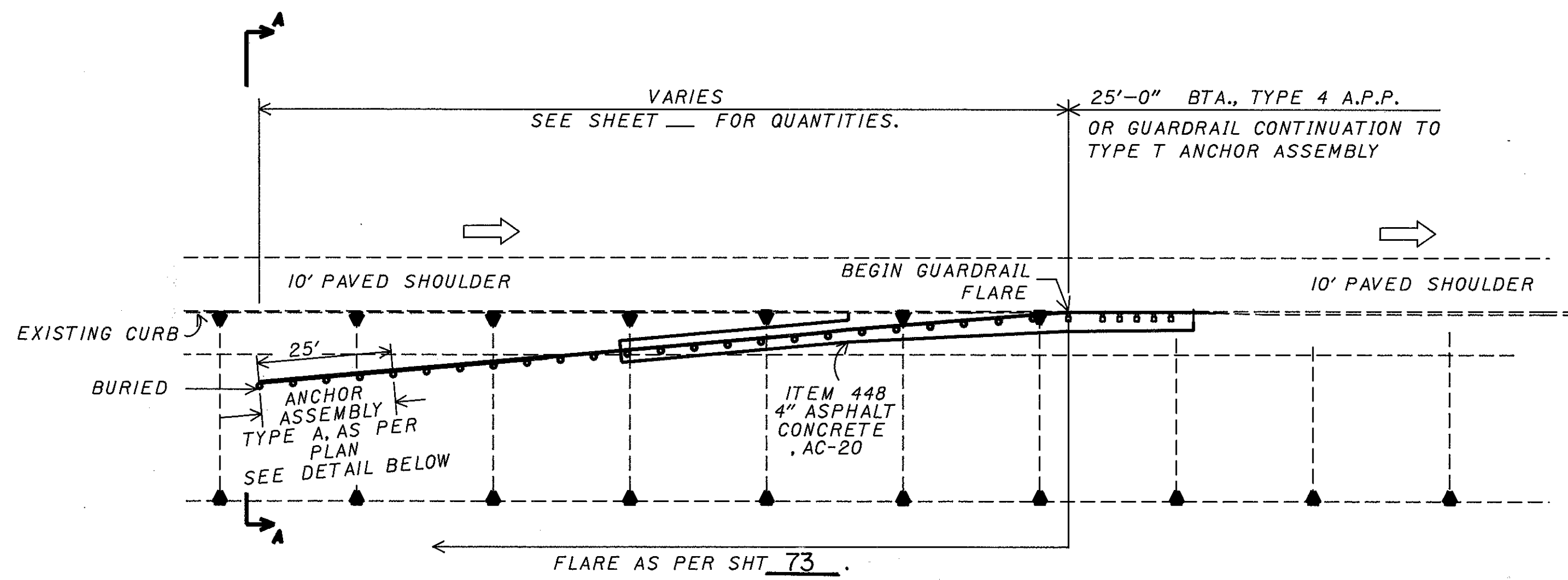
BRIDGE TERMINAL ASSEMBLY,
 - TYPE 4,
 AS PER PLAN

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

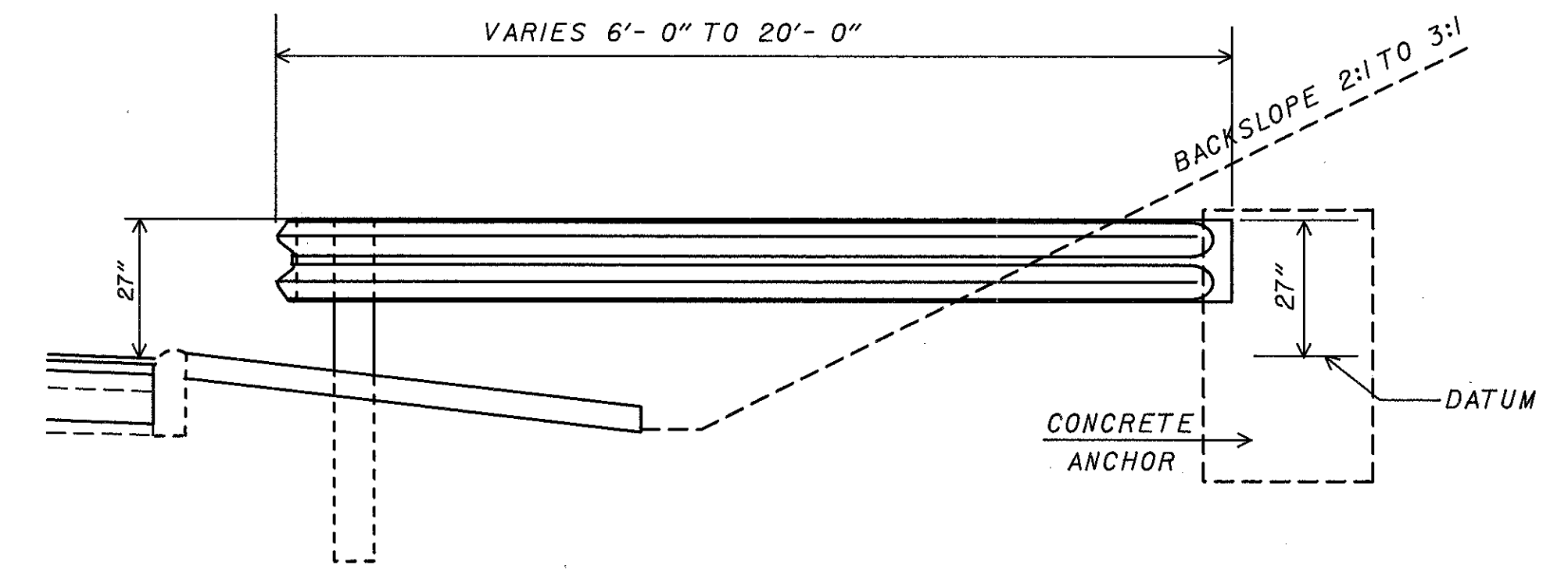
MISCELLANEOUS DETAILS

CUYAHOGA COUNTY
 CUY-77-13.81

OHIO	72
FHWA REGION 5	234
FEDERAL PROJECT	

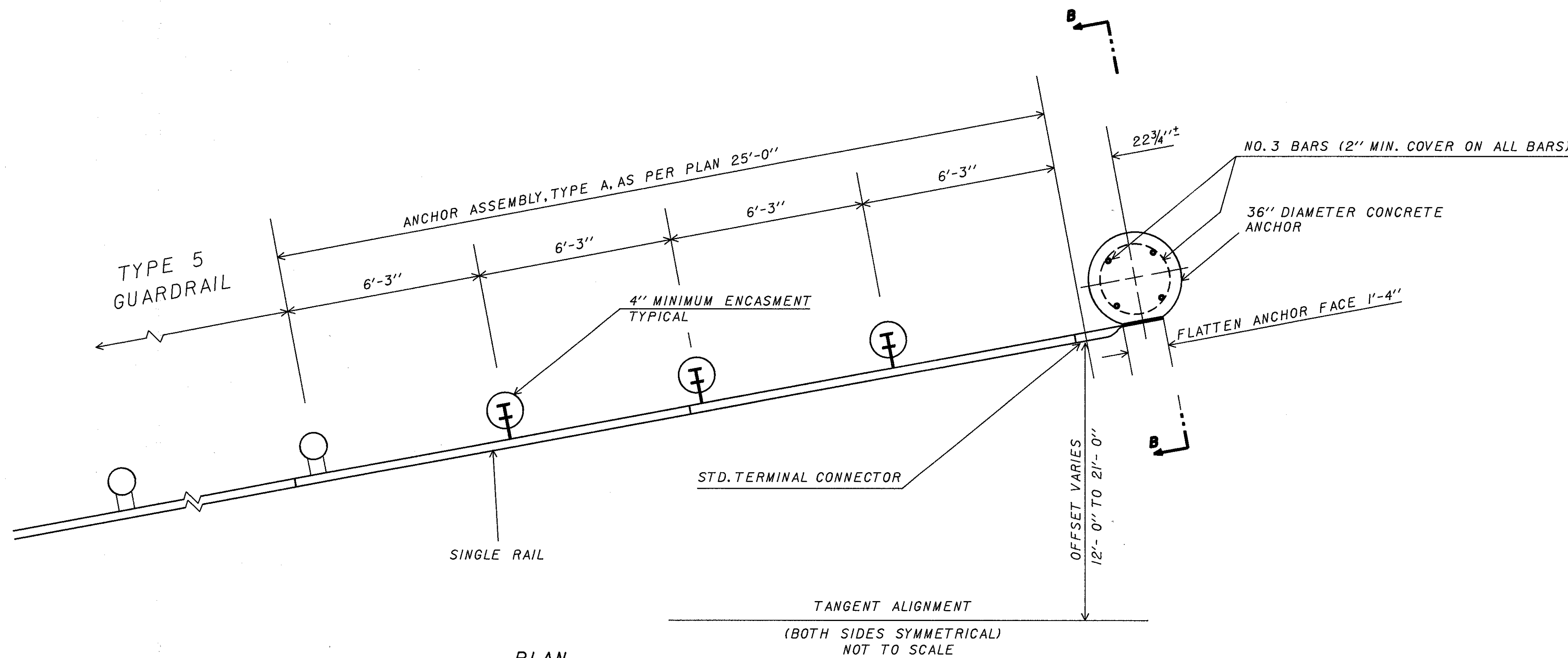


**GUARDRAIL FLARE TIED TO BRIDGE TERMINAL ASSEMBLY
 OR TYPE T ANCHOR ASSEMBLY**

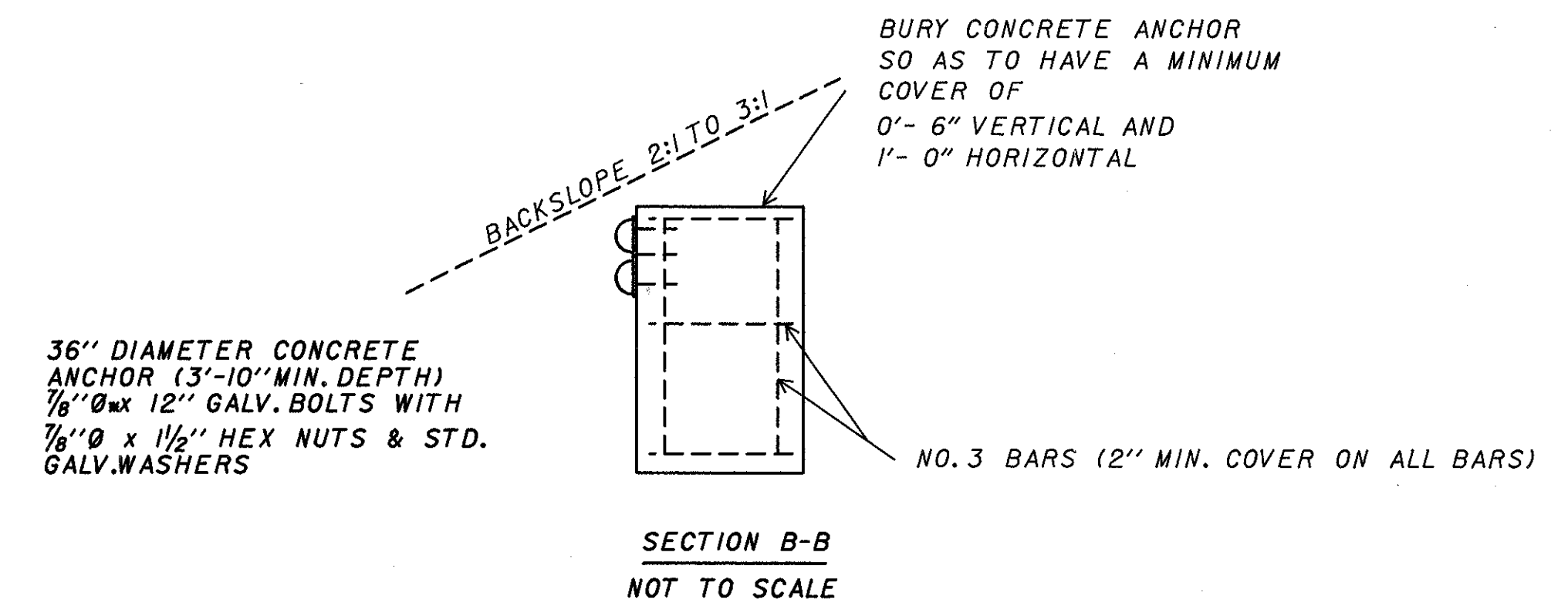


**SECTION A-A
 NOT TO SCALE**

NOTE: FOR ADDITIONAL DETAILS AND GUARDRAIL FLARE OFFSETS
 SEE SHT. 73.



**PLAN
 ANCHOR ASSEMBLY, TYPE A AS PER PLAN
 FOR FURTHER DETAILS SEE STD. DRAWING GR-4.1
 NOT TO SCALE**



**SECTION B-B
 NOT TO SCALE**

PLOT SUBMITTED: 04-JUN-1992 12:04

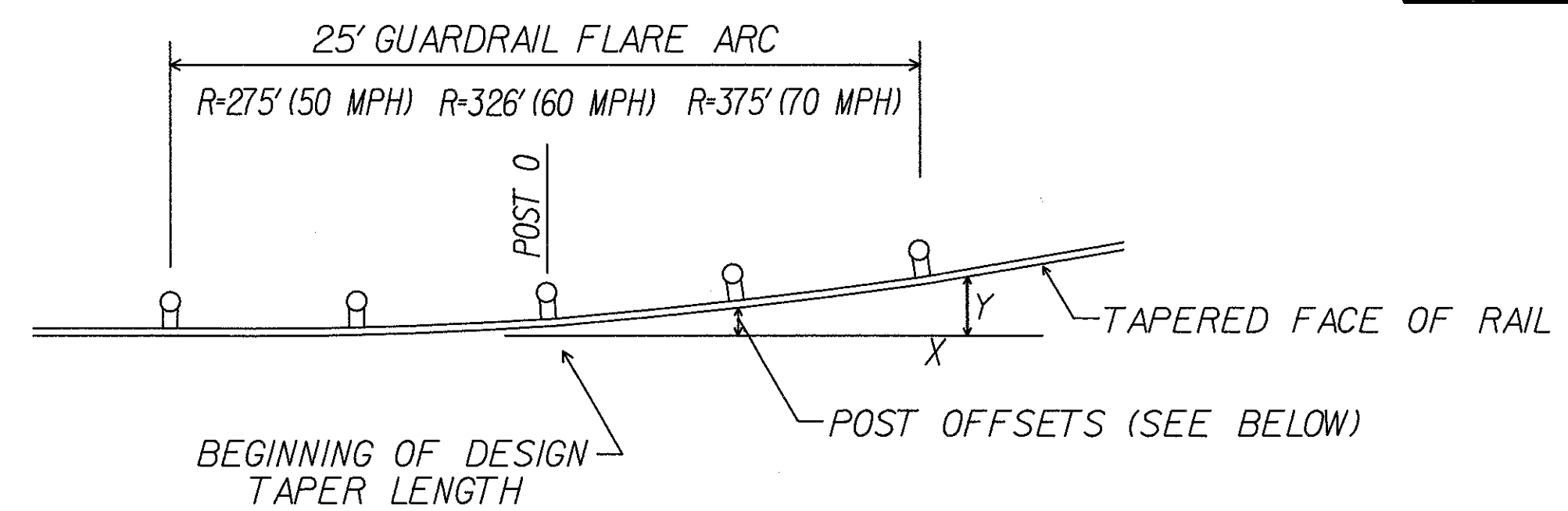
PLOT SUBMITTED BY: uliman

c:\dgn\pid08084\08084gmc.dgn

* - DESIGN SPEED OF THIS PROJECT

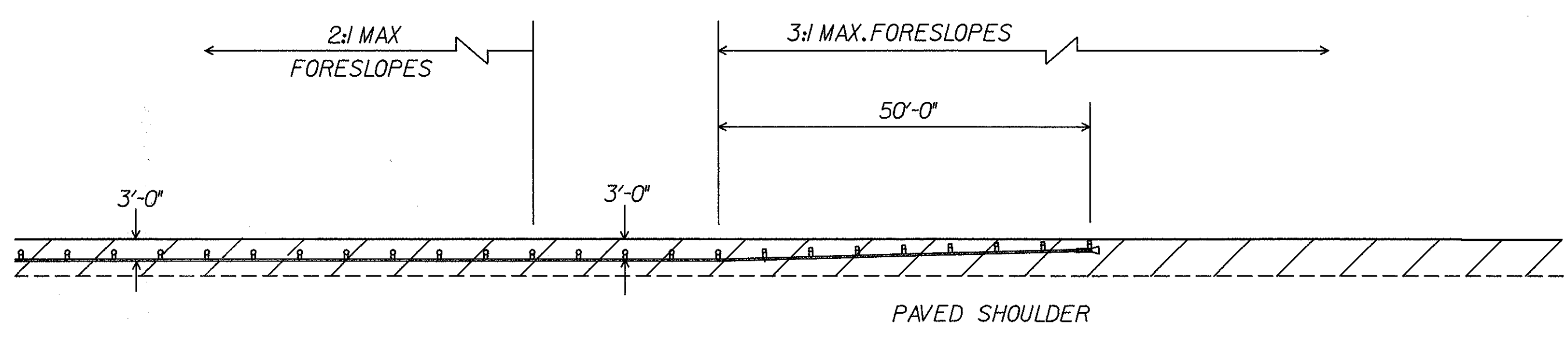
TAPERED GUARDRAIL OFFSETS

POST	* 50 MPH 11:1 TAPER 320' RUNOUT		60 MPH 13:1 TAPER 400' RUNOUT		70 MPH 15:1 TAPER 480' RUNOUT		
	*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	
25' TAPER LENGTH	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	
50' TAPER LENGTH	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	
75' TAPER LENGTH	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	
100' TAPER LENGTH	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	
125' TAPER LENGTH	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	
150' TAPER LENGTH	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	
175' TAPER LENGTH	28	174.28	15.84	174.48	13.42	174.61	11.64



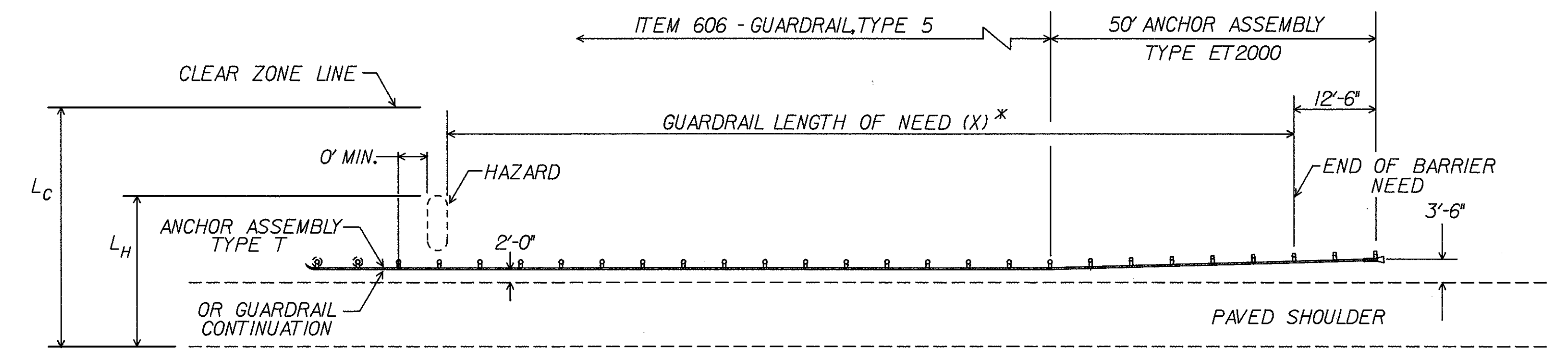
0.00	0.07	0.28	0.63	1.13	50 MPH	POST OFFSETS
0.00	0.06	0.24	0.54	0.96	60 MPH	
0.00	0.05	0.21	0.47	0.83	70 MPH	

GUARDRAIL FLARE ARC DETAIL



GRADING ALONG UNTAPERED GUARDRAIL

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



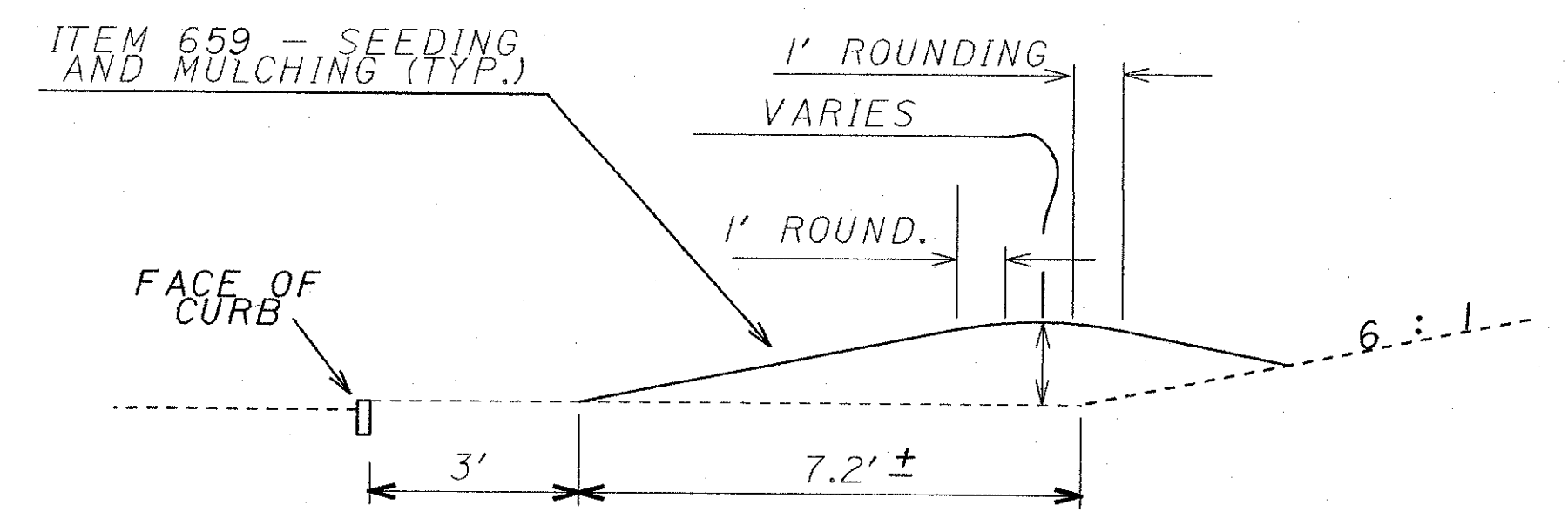
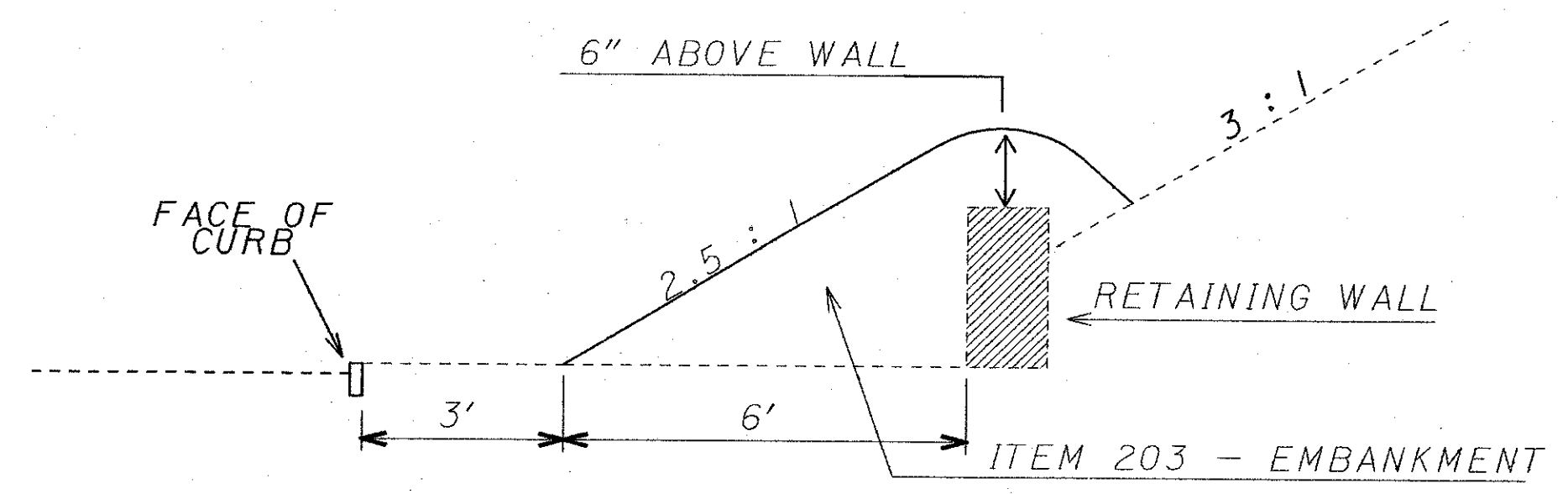
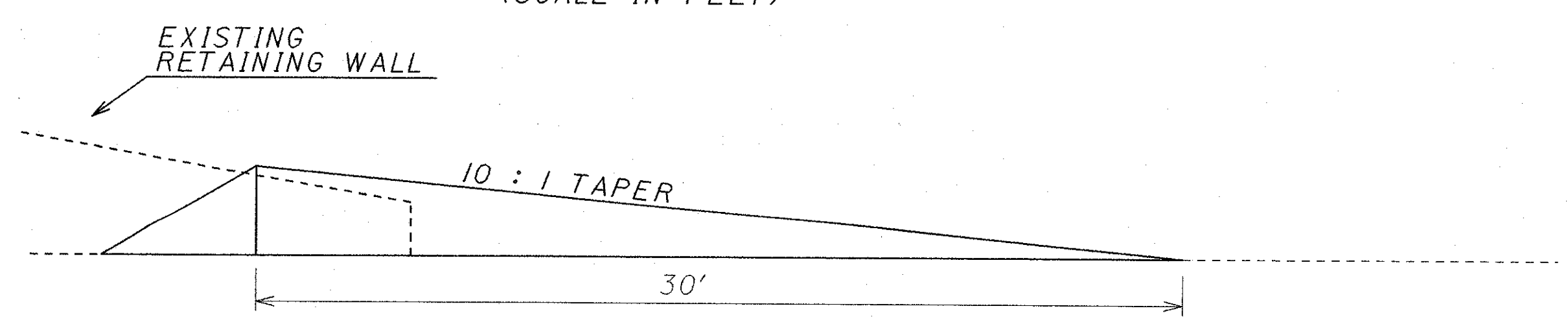
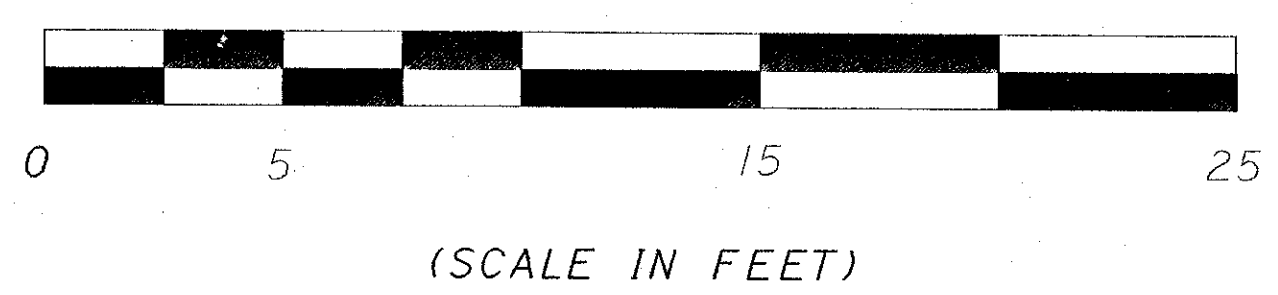
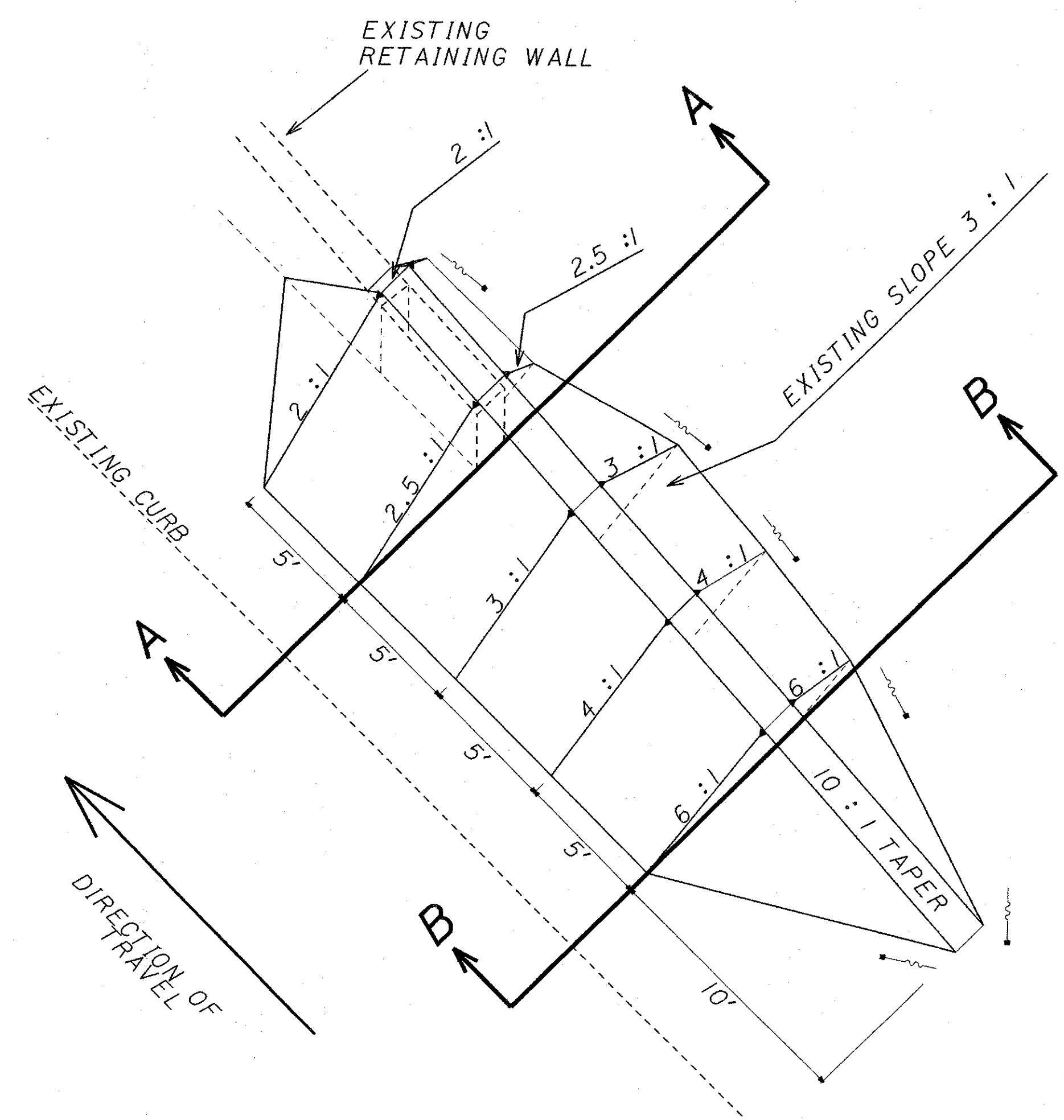
UNTAPERED GUARDRAIL PROTECTION OF HAZARDS

PLOT SUBMITTED BY: ul lman
 PLOT SUBMITTED: 04-JUN-1992 12:12
 c:\dgn\pld08084\08084gre.dgn

GUARDRAIL DETAILS

REFERENCE 4-G
RAMP B-2, STA 19+21

CUYAHOGA COUNTY CUY-77-13.81	OHIO FHWA REGION 5	74 234
FEDERAL PROJECT		



- NOTE:**
- All embankment work shall conform to Item 203.
 - All seeding and mulching work shall conform to Item 660.
 - The following estimated quantities have been carried to the General Summary to provide for this work:

Item	Description	Qty
203	Embankment, As Per Plan	10 C.Y.
659	Seeding and Mulching	29 S.Y.

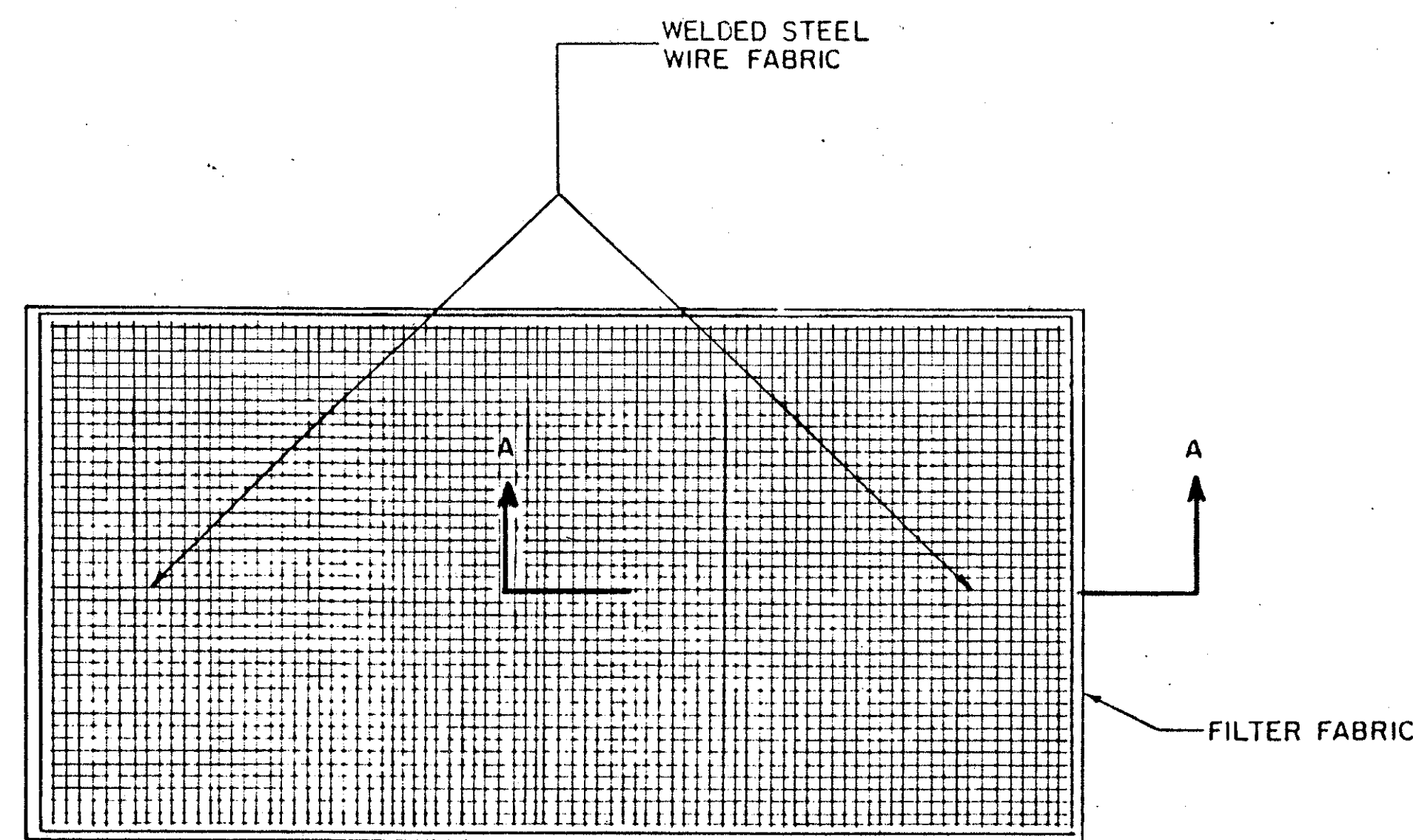
PLOT SUBMITTED: 12-FEB-1992 08:38
 PLOTTED FROM: c:\dgn\guarddet.dgn
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 PLOT SUBMITTED BY: cadared1

EROSION CONTROL DETAILS

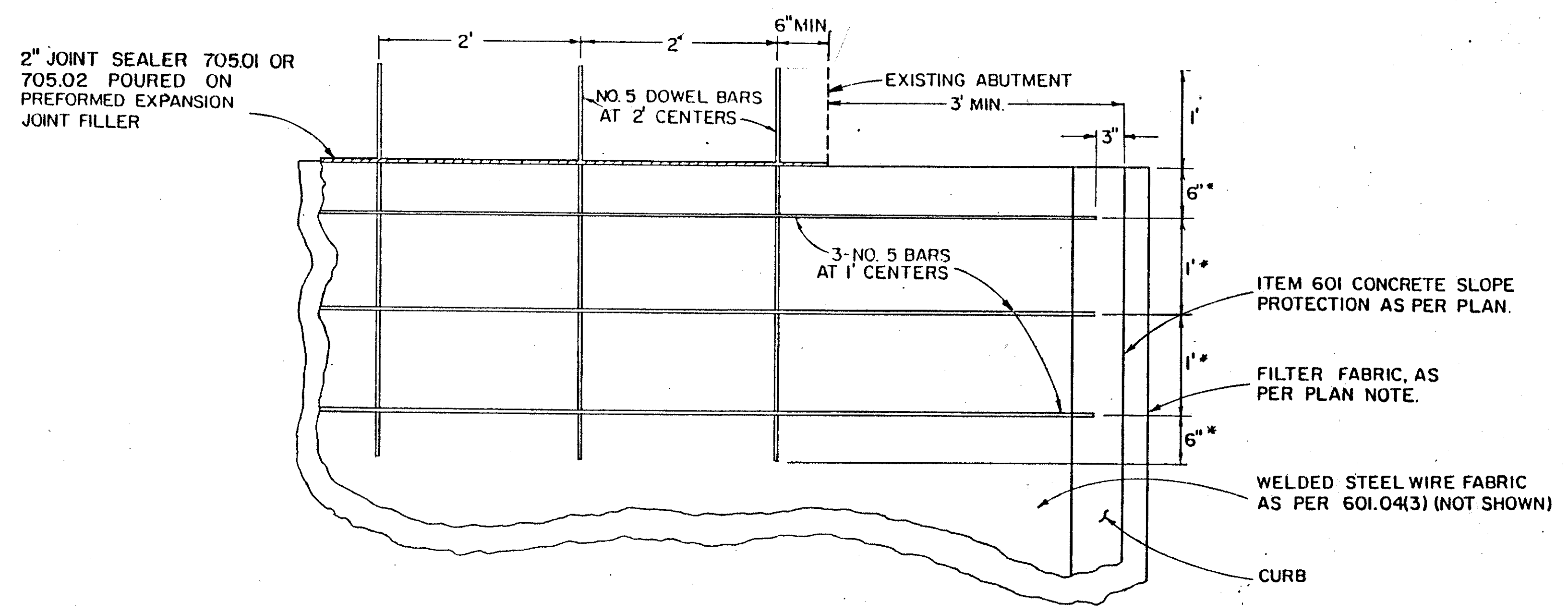
FHWA REGION	STATE	PROJECT
5	OHIO	

75
234

CUYAHOGA COUNTY
CUY-77-13.81

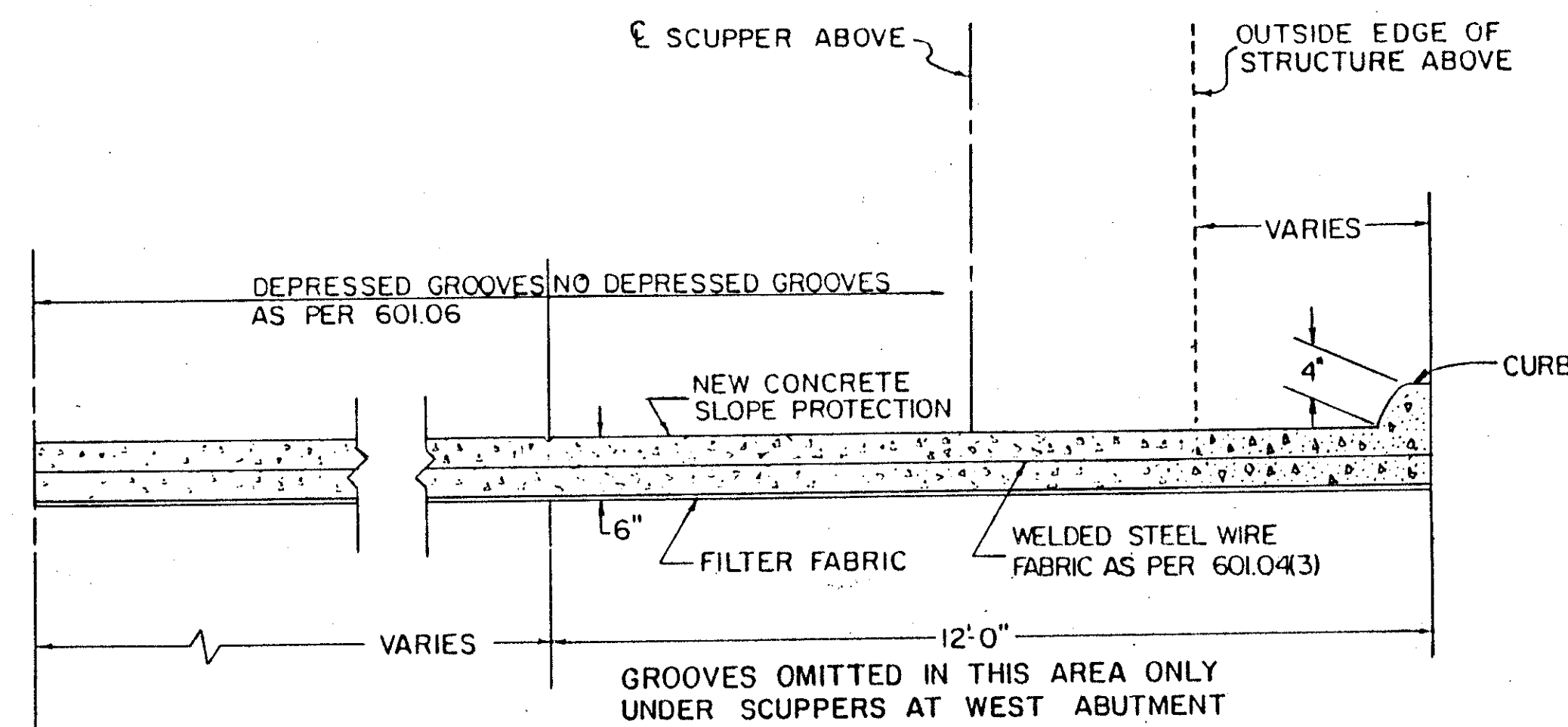


CONCRETE SLOPE PROTECTION
AS PER PLAN



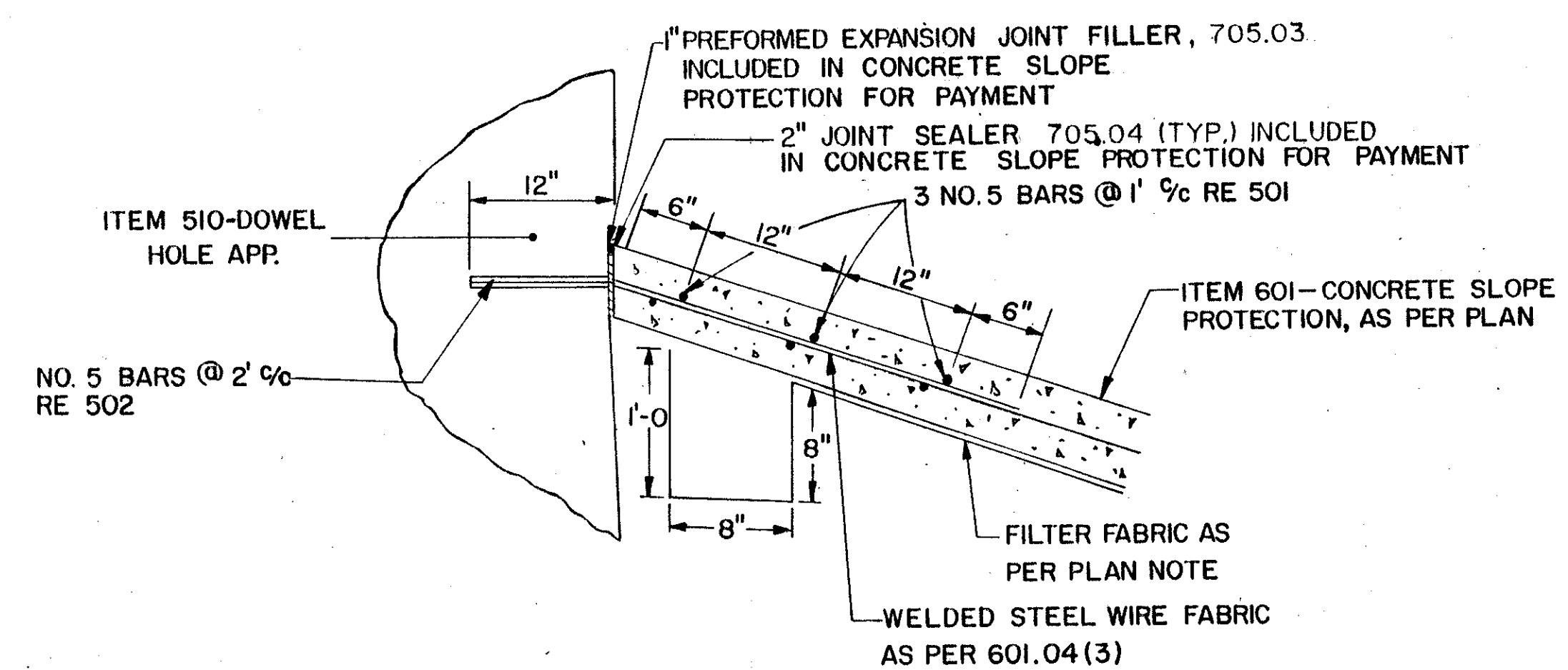
SLOPE PROTECTION REINFORCING DETAIL

*LENGTH AS MEASURED ALONG SLOPE.



CONCRETE SLOPE PROTECTION
AS PER PLAN

SECTION A-A

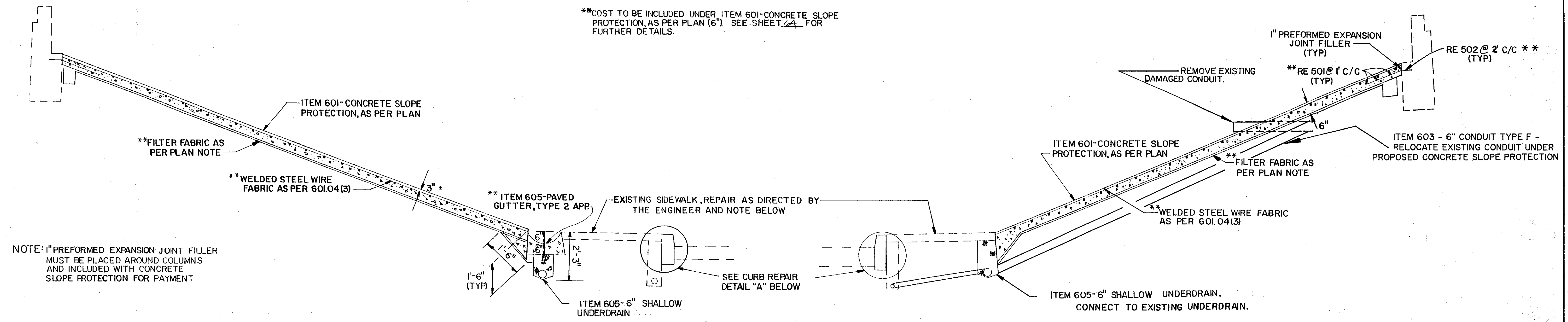


ANCHORING DETAIL

STATE OF OHIO DEPARTMENT OF HIGHWAYS DIVISION OF DESIGN AND CONSTRUCTION BUREAU OF BRIDGES		
EROSION CONTROL DETAILS		
REVIEWED	DATE	REVISED

EROSION CONTROL DETAILS

**COST TO BE INCLUDED UNDER ITEM 601-CONCRETE SLOPE PROTECTION, AS PER PLAN (6"). SEE SHEET 4 FOR FURTHER DETAILS.



NOTE: 1" PREFORMED EXPANSION JOINT FILLER MUST BE PLACED AROUND COLUMNS AND INCLUDED WITH CONCRETE SLOPE PROTECTION FOR PAYMENT

TYPICAL SLOPE PROTECTION REPAIR (W/PAVED GUTTER)

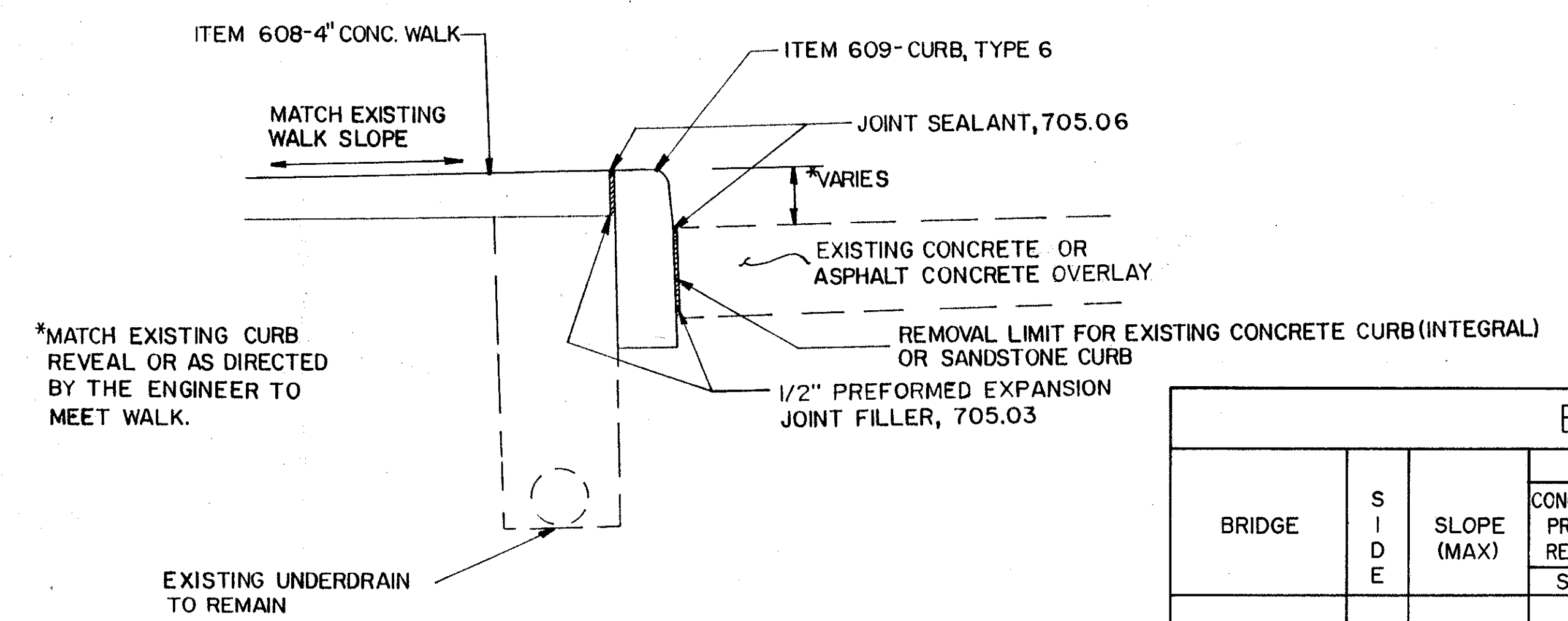
CUY-77-1518
CUY-422-0084(FWD.)

SLOPE PROTECTION DETAILS

(NOT TO SCALE)

TYPICAL SLOPE PROTECTION REPAIR (W/O PAVED GUTTER)

CUY-77-1562
CUY-422-0084(REAR)



CURB REPAIR DETAIL A

SIDEWALK AND CURB REPAIRS

THESE ITEMS OF WORK SHALL BE USED TO REPLACE EXISTING CONCRETE WALK THAT HAS BUCKLED, CRACKED, OR MOVED FROM ITS INTENDED LOCATION. THIS IN TURN ALSO CAUSED THE EXISTING FENCE TO MOVE AND BE IN NEED OF REPLACEMENT. ALL REPLACEMENT WALK SHALL BE IN THE SAME LOCATION AS EXISTING AND SHALL BE AS DIRECTED BY THE ENGINEER (TYPICAL ALL APPLICABLE BRIDGES).
ALSO, THE CONCRETE CURB IN SOME LOCATIONS NEEDS REPLACEMENT. REPLACE AS SHOWN IN DETAIL "A" THIS SHEET.
THE FOLLOWING QUANTITIES FROM THE SUB-SUMMARY BELOW HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR THE WORK.

+ ITEMS FOR USE WITH SIDEWALK AND CURB REPAIRS.
#-707.17 NON-PERFORATED, ASTM 3034 OR SDR 35 OR SS 931

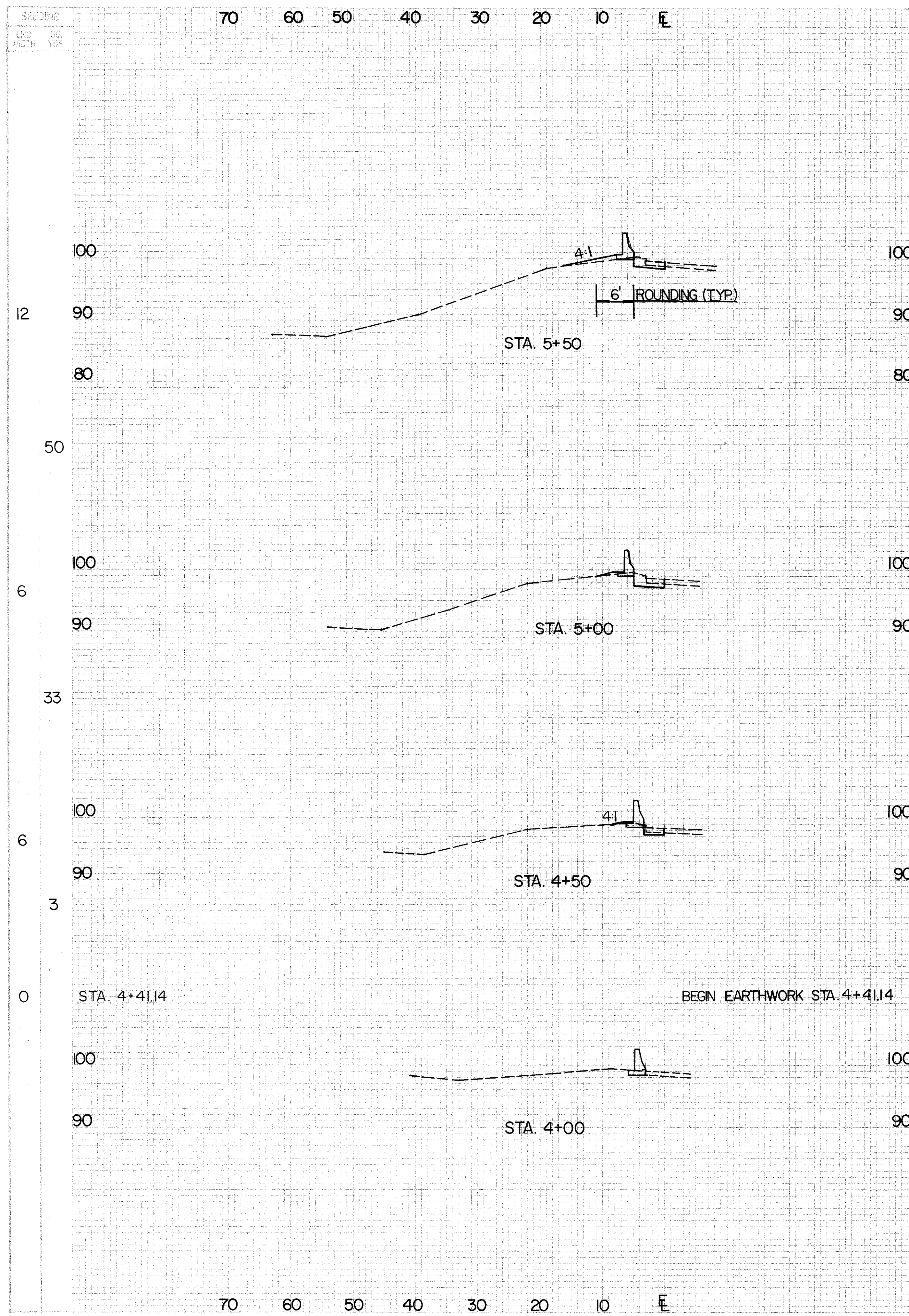
BRIDGE	SIDE	SLOPE (MAX)	EROSION CONTROL ESTIMATED QUANTITIES									
			202	202	202	601	601	608	609	603	605	
			CONC. SLOPE PROTECT. REMOVED SQ. YD.	CURB REMOVED AS PER PLAN + LIN. FT.	WALK REMOVED + SQ. FT.	CONC SLOPE PROTECT A.P.P.(6") SQ. YD.	DUMPED ROCK FILL, TYPE D CU. YD.	4" CONC. WALK + SQ. YD.	CURB, TYPE 6 + LIN. FT.	6" CONDUIT TYPE F # LIN. FT.	6" SHALLOW UNDERDRAIN # LIN. FT.	
CUY-77-1457	REAR	2:1		150			482			150		
CUY-77-1518	BOTH	2:1	749	230		749				230	40	228
CUY-77-1546	BOTH	2:1		225	2000		414		2000	225		
CUY-77-1562	BOTH	2:1	1076	150	3000	1076			3000	150	40	242
CUY-490-0190SW	BOTH	2:1					480					
CUY-490-0187WN	BOTH	2:1					130					
CUY-77-1575	FWD.	2:1		75	750		106		750	75		
CUY-77-1593ES	BOTH	2:1					72					
CUY-422-0084	BOTH	2:1	534	85	200	534			200	85	40	170
CUY-422-0078L	FWD.	2:1		50			42			50		
TOTALS			2359	965	5950	2359	1726		5950	965	120	640

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

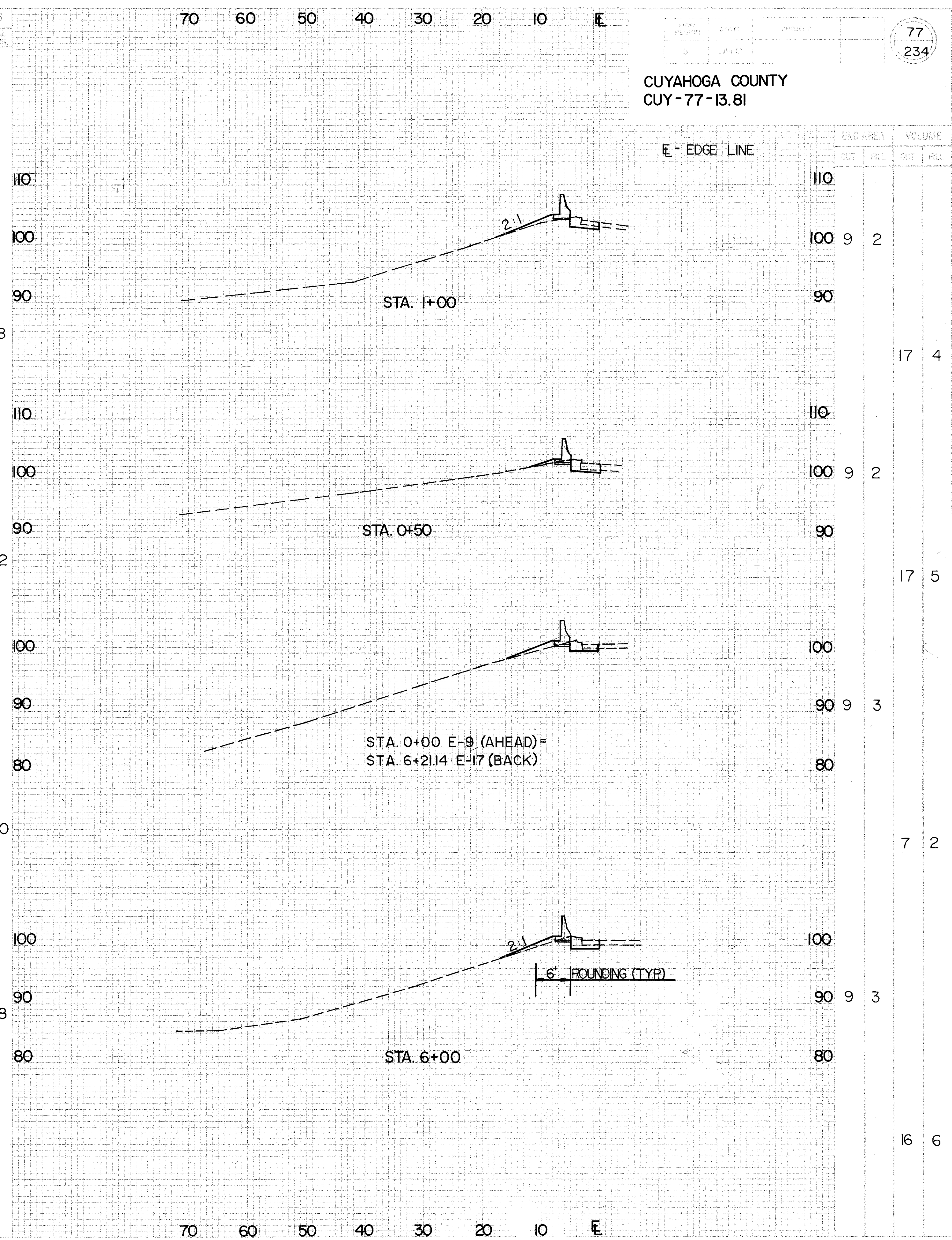
EROSION CONTROL DETAILS

CUYAHOGA COUNTY OHIO

DESIGNED	TRACED	CHECKED	REVIEWED	REVISED
DATE	LM	DATE	DATE	DATE
				SHEET



END AREA		VOLUME		SEEDING	
CUT	FILL	CUT	FILL	END WIDTH	SQ. YDS.
8	3			14	
17	5			7	
10	2			42	
13	4			8	
2	1			20	
4	0			9	



END AREA		VOLUME	
CUT	FILL	CUT	FILL
9	2		
9	2		
17	5		
9	3		
9	3		
16	6		

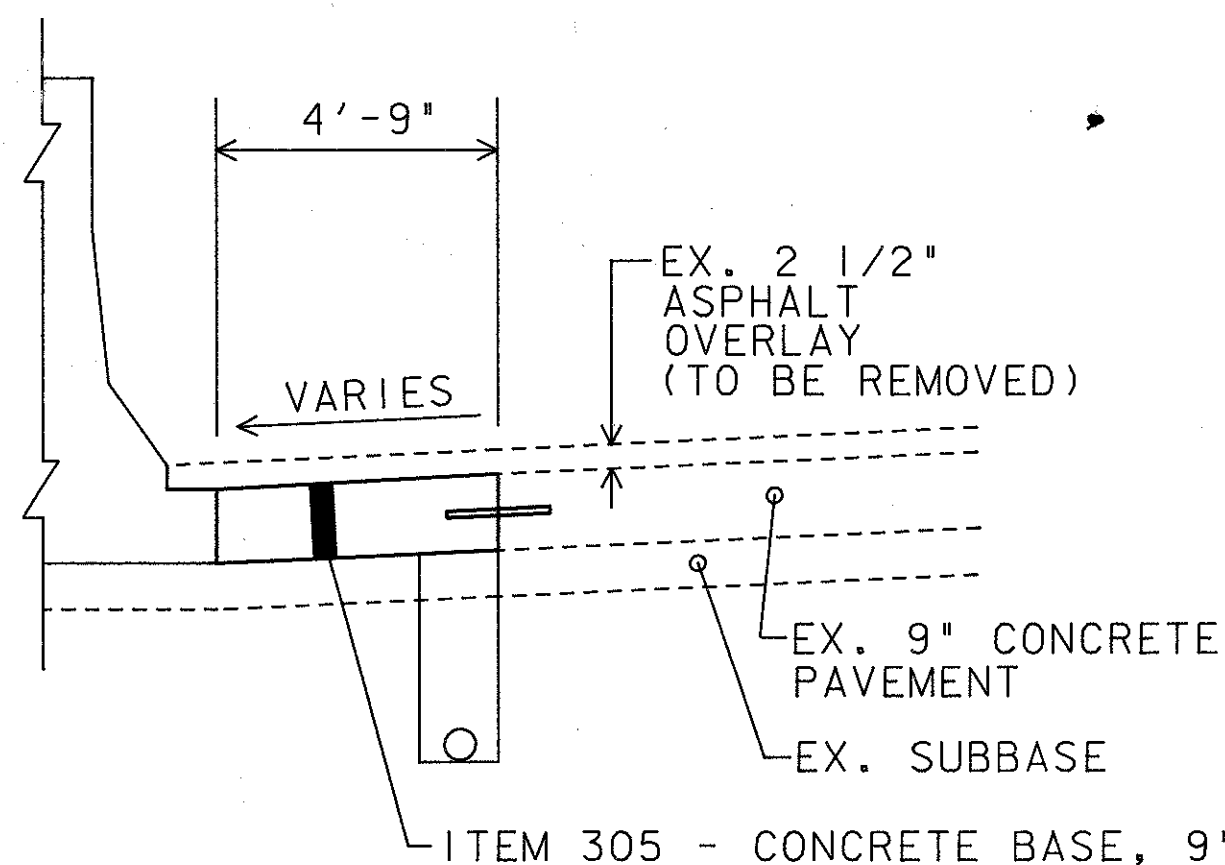
CROSS SECTIONS STA. 4+00 RAMP E-17 TO STA. 1+00 RAMP E-9

PRELIMINARY PHASE

THIS PRELIMINARY PHASE SHALL BE USED TO REMOVE THE ENTIRE EXISTING ASPHALT OVERLAY (2 1/2" +/-) AND THEN REPLACE ALL APPLICABLE LEFT BERMS (SEE ROADWAY PLANS FOR BERM SECTIONS TO BE REPLACED WITH ITEM 305). REPLACE APPLICABLE UNDERDRAINS AT THIS TIME.

LANE CLOSURE SHALL BE IMPLEMENTED, WITH FLASHING ARROW BOARDS, DRUMS, AND SIGNING ONLY, FOLLOWING THE GUIDELINES AS STATED IN THE ADVANCE WARNING SIGN. CHART ON SHT. 81. WITHOUT SHIFTING TRAFFIC ONTO THE BERMS. ALL CLOSURES SHALL BE LIMITED TO NIGHT WORK BETWEEN THE HOURS OF 11:00 P.M. AND 6:00 A.M. FOR THIS PHASE ONLY. WORK SHALL BE CONCENTRATED IN ONE DIRECTION, NB OR SB (AT THE CONTRACTOR'S OPTION), UNTIL THAT ENTIRE DIRECTION IS COMPLETE. BEFORE STARTING WORK IN THE OPPOSITE DIRECTION, SEE THE LIQUIDATED DAMAGES NOTE FOR TIME LIMITATIONS FOR THIS PHASE. TEMPORARY PAVEMENT MARKINGS SHALL BE IN PLACE PRIOR TO RETURNING TO THE NORMAL TRAFFIC PATTERN. (SEE TEMPORARY PAVEMENT MARKING SUB-SUMMARY, SHT. 26.)

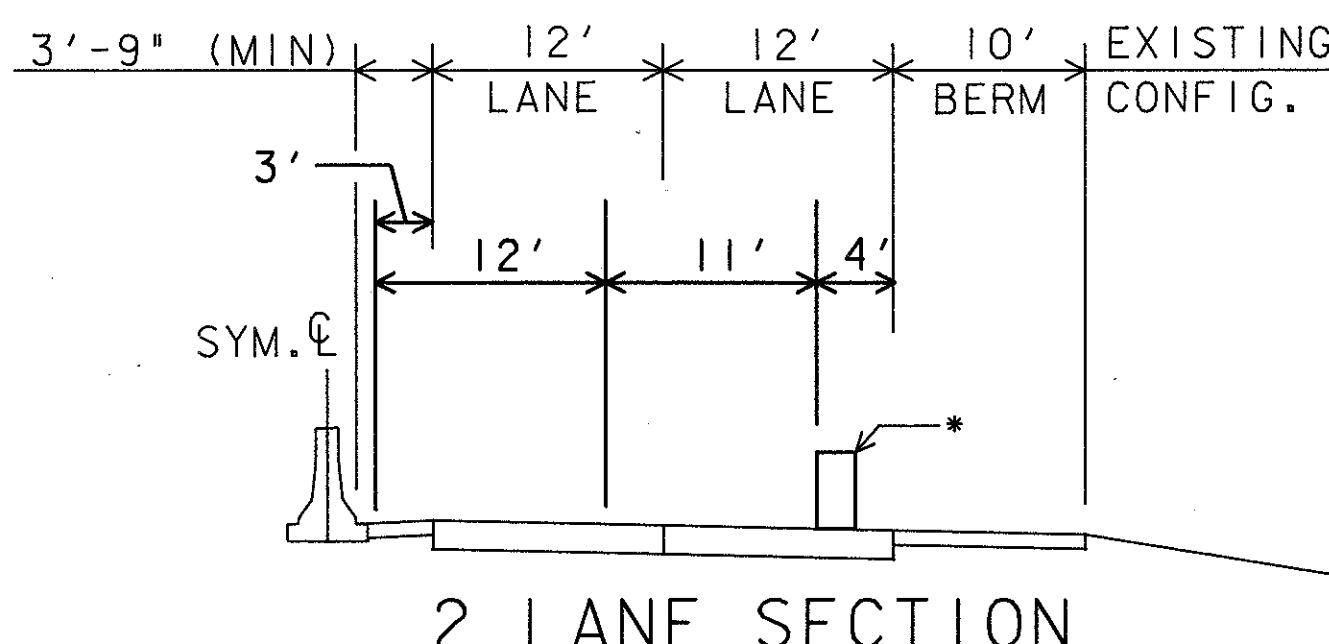
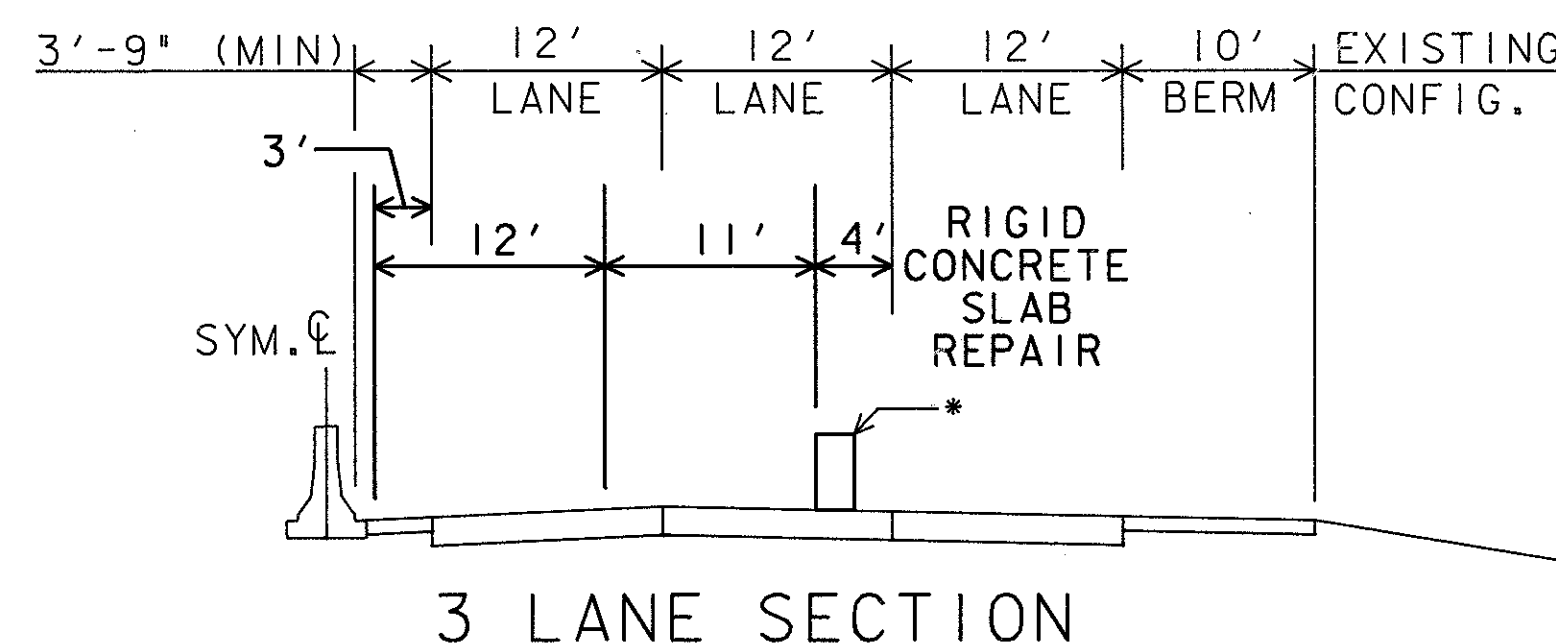
THE CONTRACTOR SHALL SCHEDULE HIS WORK ACCORDINGLY TO MINIMIZE OPEN BERM EXCAVATIONS TO ONE (1) DAY. HIGH EARLY CONCRETE SHALL BE USED TO EXPEDITE BERM REPLACEMENTS. (SEE BELOW)



(SEE TYPICAL SECTIONS FOR FURTHER INFORMATION)

PHASE I

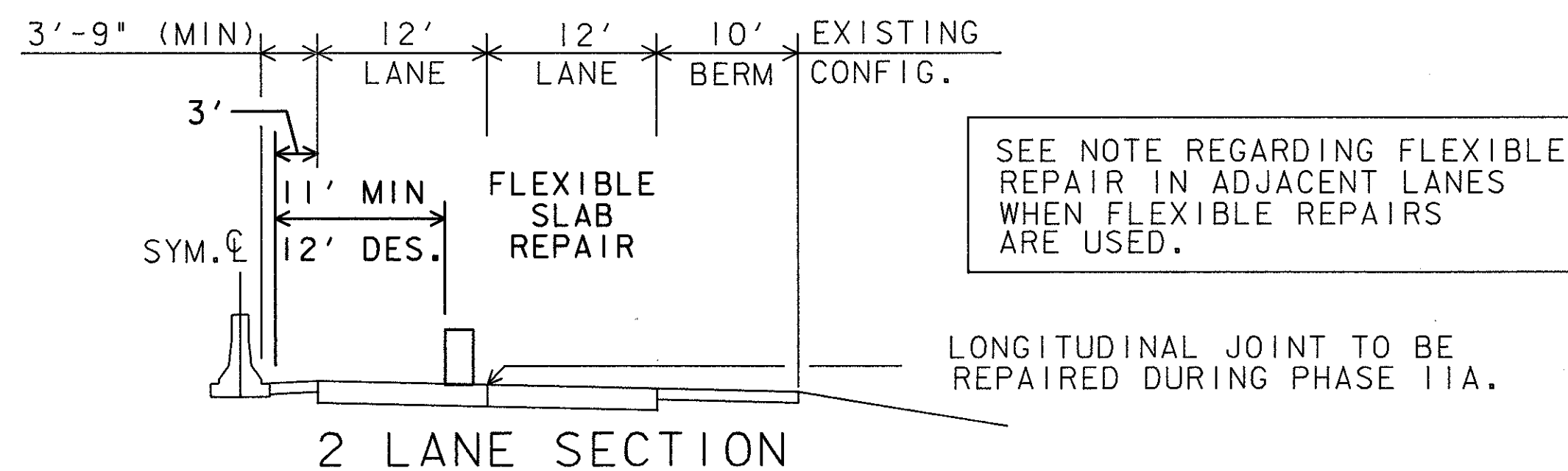
ALL APPLICABLE RIGHT BERMS SHALL BE REPLACED DURING PHASE I. THESE TWO PHASES SHALL REPAIR THE RIGHT LANE AND JOINT. INCLUDED SHALL BE PAVEMENT REPAIR (PARTIAL OR FULL DEPTH), UNDERDRAIN, AND DRAINAGE WORK.



RAMPS WILL BE MAINTAINED AS PER STD. DRAWING MT-98.12 UNLESS SHOWN OTHERWISE. ENTRANCE RAMPS WILL BE MAINTAINED AS PER STD. DWG 98.15 OR SHT. 85 (AS DETERMINED BY THE ENGINEER.)

PHASE IA

THIS SUB-PHASE WILL ONLY BE PERFORMED AT NIGHT BETWEEN THE HOURS OF 11:00 PM AND 6:00 AM TO REPAIR THE RIGHT LANE (2-LANE SECTION). INCLUDED SHALL BE PAVEMENT REPAIR (PARTIAL OR FULL-DEPTH) AND JOINT REPAIR.



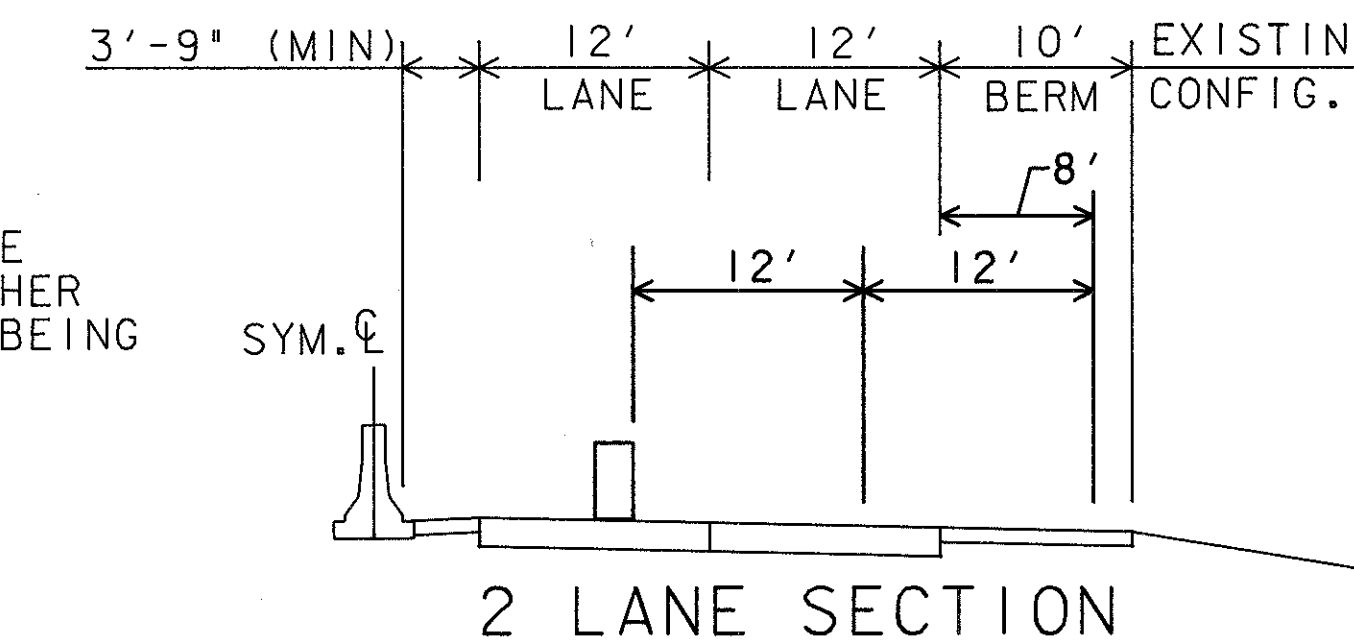
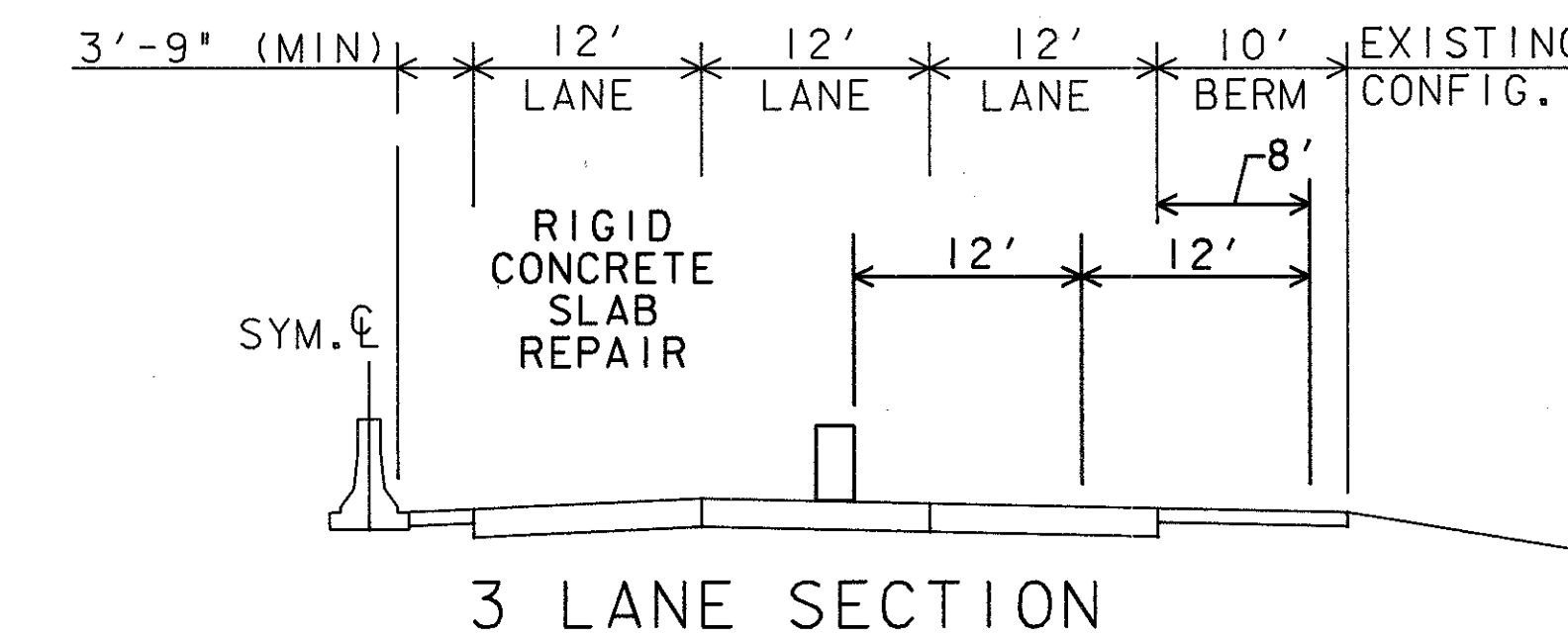
SEE NOTE REGARDING FLEXIBLE REPAIR IN ADJACENT LANES WHEN FLEXIBLE REPAIRS ARE USED.

LONGITUDINAL JOINT TO BE REPAIRED DURING PHASE IIA.

NOTE: ALL ASPHALT CONCRETE (446 AND 301) OVERLAYS SHALL BE PLACED FULL WIDTH AFTER THE COMPLETION OF ALL REPAIR WORK STATED UNDER PHASE I, IA, II, AND IIA USING NIGHT CLOSURES ONLY (DRUMS, SIGNING, AND FLASHING ARROW BOARDS).

PHASE II

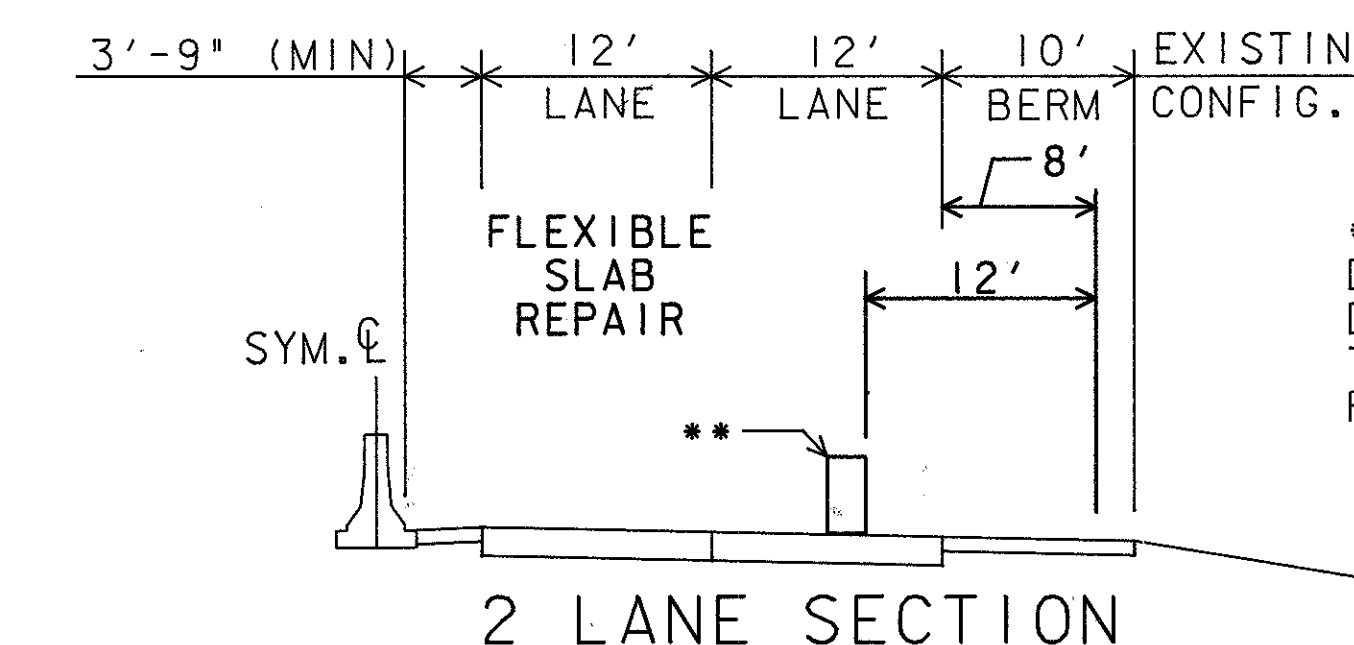
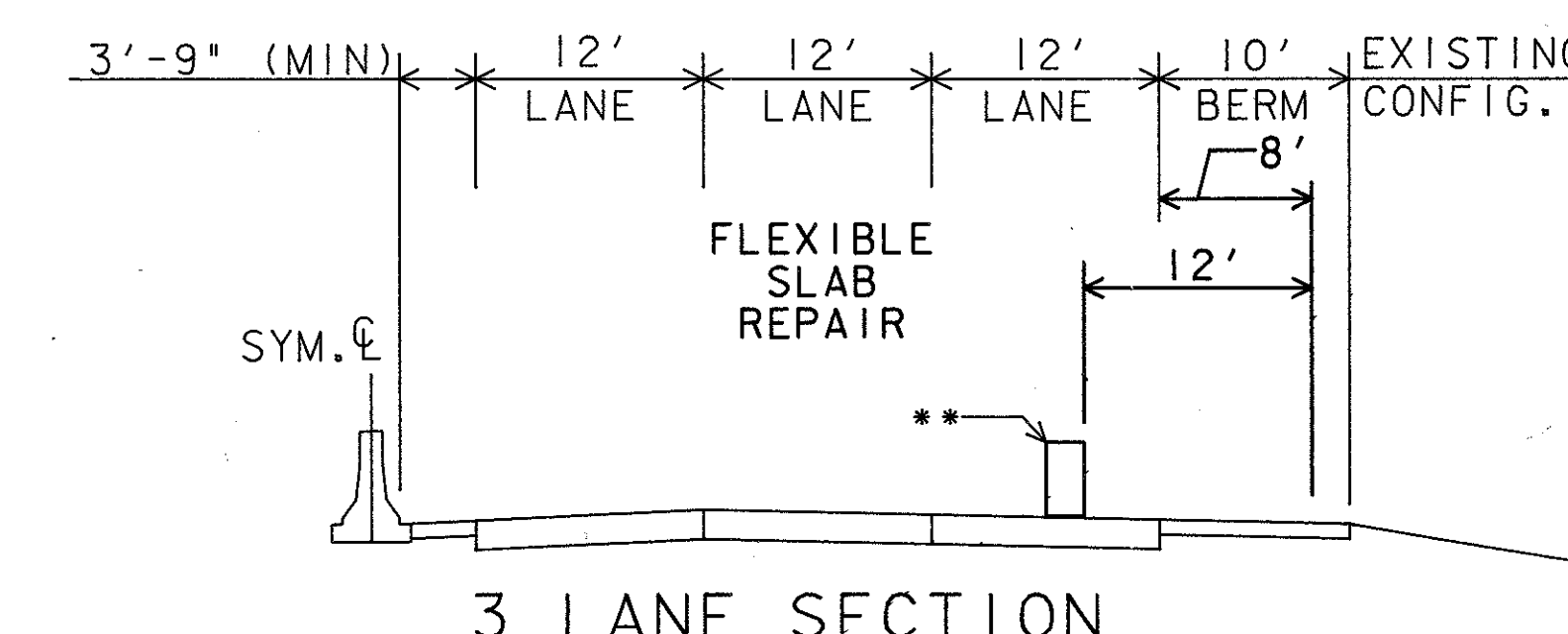
PHASE II AND IIA SHALL REPAIR THE LEFT TWO (2) JOINTS, LEFT LANE, AND THE CONCRETE BARRIER (3-LANE SECTION) AND THE CONCRETE BARRIER AND LEFT JOINT (2-LANE SECTION). INCLUDED SHALL BE PAVEMENT REPAIR (PARTIAL OR FULL-DEPTH), JOINT REPAIR, BARRIER REPLACEMENT, UNDERDRAIN, AND DRAINAGE WORK.



RAMPS WILL BE MAINTAINED AS PER STD. DRAWING MT-98.14. UNLESS SHOWN OTHERWISE. ENTRANCE RAMPS WILL BE MAINTAINED AS PER STD. DWG 98.15 OR SHT. 85 (AS DETERMINED BY THE ENGINEER.)

PHASE IIA

THIS SUB-PHASE WILL ONLY BE PERFORMED AT NIGHT BETWEEN THE HOURS OF 11:00 PM AND 6:00 AM TO REPAIR THE MIDDLE LANE AND JOINT (3 LANE SECTION) AND THE LEFT LANE AND CENTER JOINT (2-LANE SECTION). INCLUDED SHALL BE PAVEMENT REPAIR (PARTIAL OR FULL DEPTH) AND JOINT REPAIR.



** - LOCATE DRUM AS SHOWN DURING REPAIR WORK. MOVE DRUM 2' LEFT AT ALL OTHER TIMES WHEN WORK IS NOT BEING PERFORMED.

PLOT SUBMITTED BY: uliman
PLOT SUBMITTED: 12-JUN-1992 11:00
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TRAFFIC MAINTENANCE

CUYAHOGA COUNTY
CUY-77-13.81

OHIO
FHWA
REGION 5
FEDERAL
PROJECT

80
234

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 OR WEARING COURSE REMOVAL
<u>IR-77 N.B. & S.B.</u>		
STA. 45+76.05 TO STA. 65+43 (3 LANE)	⊕ 2	1
STA. 65+43 TO STA. 90+00 (2 LANE)	+ 1	1
STA. 90+00 TO STA. 130+41.88 STA. 30+41.88 TO STA. 51+00 (3 LANE)	⊕ 2	1
<u>RAMPS</u>		
ALL	⊗ 1	⊗ 1

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 17.

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)

* THE SET UP AND BREAKDOWN OF LONG TERM TRAFFIC CONTROL ZONES AND ADDITIONAL LANE CLOSURES FOR PAVEMENT REPAIR, CLEANING AND SEALING SHALL BE LIMITED TO BETWEEN THE HOURS 11:00 PM TO 6:00 A.M.

**ALLOWABLE RESURFACING OR WEARING COURSE REMOVAL TIMES ARE AS FOLLOWS:
MAINLINE : 11:00 PM TO 6:00 AM

RAMPS (ALL OTHERS) : 11:00 PM TO 6:00 AM
RAMP B-1, B-2, F-1, F-2, : 9:00 A.M. TO 3:00 A.M.
F-3, F-4 : 11:00 P.M. TO 6:00 A.M.

+ CLOSURE TIME LIMITED TO 11:00 PM TO 6:00 AM (SEE GENERAL CONSTRUCTION SEQUENCE NOTE)

⊕ ONE (1) ADDITIONAL LANE (PHASE II ONLY) CLOSURE.
CLOSURE TIME LIMITED TO 11:00 PM TO 6:00 AM (SEE GENERAL CONSTRUCTION SEQUENCE NOTE)

⊗ RAMP E-15/E-18/E-7 (CLOSED DURING PHASE I)(SEE MAINTENANCE OF TRAFFIC NOTES)
RAMP E-16 (CLOSED DURING PHASE I)(SEE MAINTENANCE OF TRAFFIC NOTES)

PLOT SUBMITTED BY: uliman

PLOT SUBMITTED: 04-JUN-1992 07:00

TRAFFIC MAINTENANCE

CUYAHOGA COUNTY
CUY-77-13.81

OHIO
FHWA REGION 5
FEDERAL PROJECT
81
234

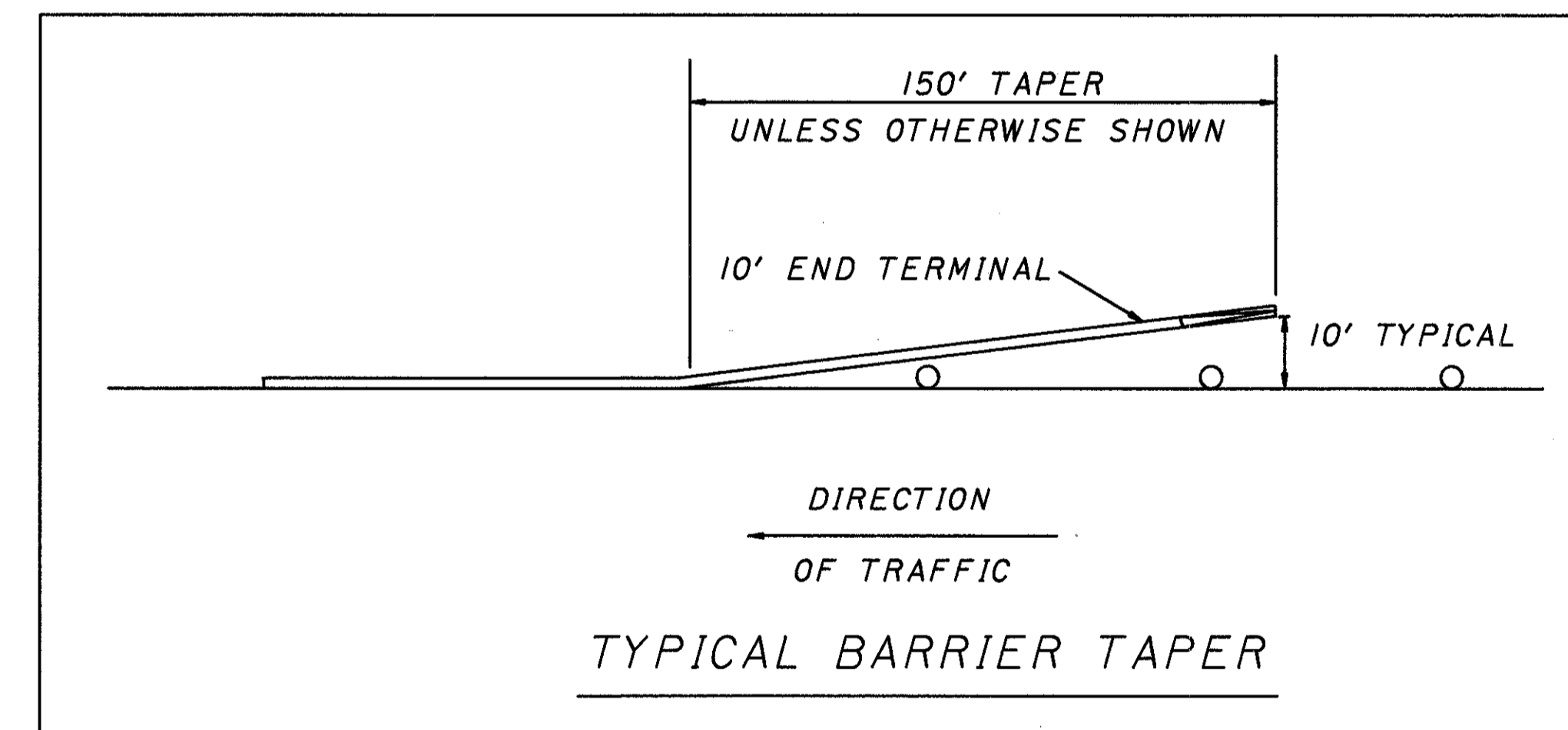
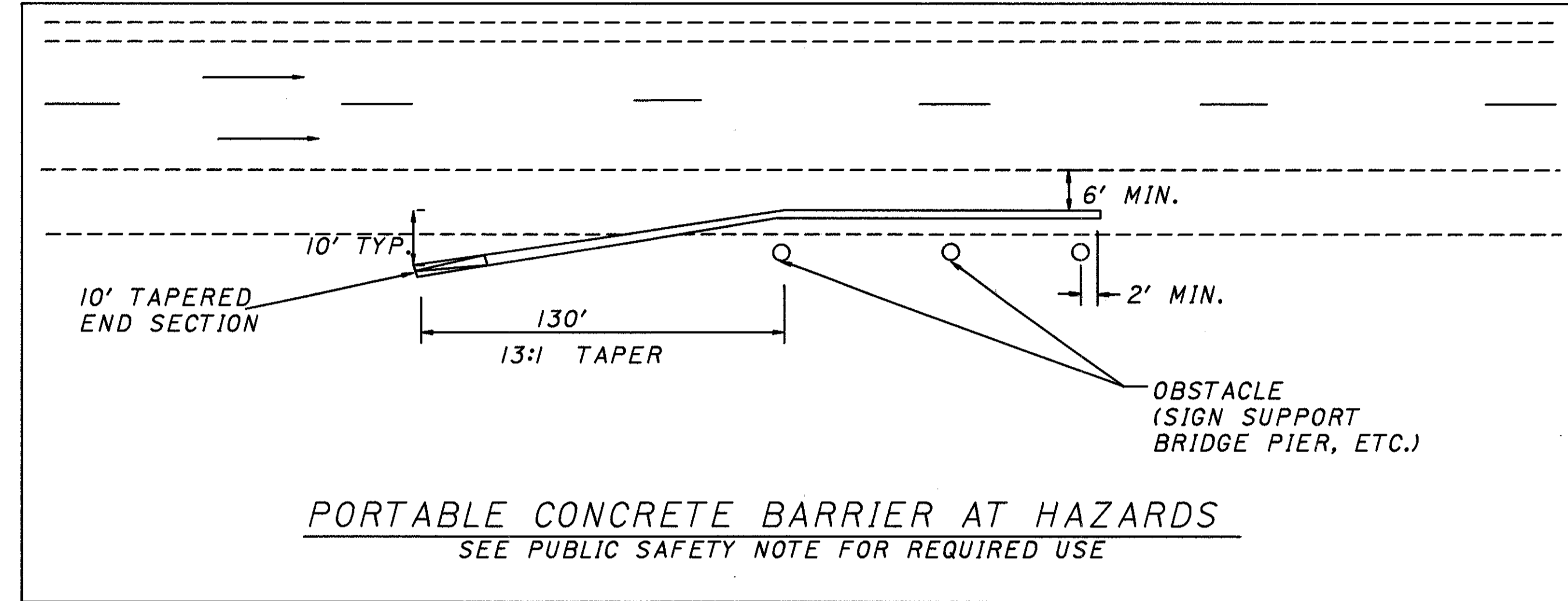
ADVANCE WARNING SIGNS

	DISTANCE *	SIGN	SIZE	DESCRIPTION
LEFT LANE CLOSED	500'	OW-60D	48"X48"	WIDTH TRANSITION (SYMBOLIC)
	1000'	OW-143	24"X24"	35 MPH
		OW-123 MOD	48"X48"	LEFT LANE CLOSED 1000 FT.
	2000'	OW-123 MOD	48"X48"	LEFT LANE CLOSED 2000 FT.
	3000'	OW-134	48"X48"	ROAD WORK AHEAD
RIGHT LANE CLOSED	500'	OW-60C	48"X48"	WIDTH TRANSITION (SYMBOLIC)
	1000'	OW-143	24"X24"	35 MPH
		OW-122 MOD	48"X48"	RIGHT LANE CLOSED 1000 FT.
	2000'	OW-122 MOD	48"X48"	RIGHT LANE CLOSED 2000 FT.
	3000'	OW-134	48"X48"	ROAD WORK AHEAD
LEFT 2 LANES CLOSED	500'	OW-60D	48"X48"	WIDTH TRANSITION (SYMBOLIC)
	1000'	OW-43	24"X24"	35 M.P.H.
		OW-123MOD	48"X48"	LEFT 2 LANES CLOSED 1000 FT.
	2000'	OW-123MOD	48"X48"	LEFT 2 LANES CLOSED 2000 FT.
	3000'	OW-134	48"X48"	ROAD WORK AHEAD
RIGHT 2 LANES CLOSED	500'	OW-60C	48"X48"	WIDTH TRANSITION (SYMBOLIC)
	1000'	OW-43	24"X24"	35 M.P.H.
		OW-122MOD	48"X48"	RIGHT 2 LANES CLOSED 1000 FT.
	2000'	OW-122MOD	48"X48"	RIGHT 2 LANES CLOSED 2000 FT.
	3000'	OW-134	48"X48"	ROAD WORK AHEAD
LANE SHIFT (ADVANCE)	500'	OW-5,5A OR 5B	48"X48"	LANE SHIFT (SYMBOLIC)
	1000'	OW-143	24"X24"	35 MPH
		OC-53	36"X36"	MAINTAIN PRESENT LANE
	2000'	OC-49R	48"X48"	RIGHT LANE MUST USE SHOULDER
		OW-145A	30"X16"	2000 FT.
3000'	OC-SPEC	48"X48"	ALL TRUCKS LEFT LANE	
LANE SHIFT (THRU)	500'	OC-49R	48"X48"	RIGHT LANE MUST USE SHOULDER
	1500'c/c	OC-49R	48"X48"	RIGHT LANE MUST USE SHOULDER
LANE SHIFT (END)	0'	OC-6,6A OR 6B	48"X48"	LANE SHIFT (SYMBOLIC)
		OC-143	24"X24"	35 MPH

DUAL SIGN INSTALLATION

DUAL

SINGLE



ADVANCE WAR. SIGNS (CONT.)

EXIT RAMP ACROSS CLSD LANE	GORE	OW-SPEC	48"X48"	EXIT RAMP ↗
EXIT ONLY LANE	500'	OW-SPEC	48"X48"	EXIT RAMP 500 FT.
	1000'	OW-SPEC	48"X48"	EXIT RAMP 1000 FT.
	500'	OW-SPEC	48"X48"	RIGHT LANE MUST EXIT
EXIT ONLY LANE	1000'	OW-SPEC	48"X48"	RIGHT LANE MUST EXIT
	2000'	OW-SPEC	48"X48"	RIGHT LANE MUST EXIT

* DISTANCES ARE MEASURED FROM BEGINNING OF LANE CLOSURE, LANE SHIFT OR PAINTED GORE.

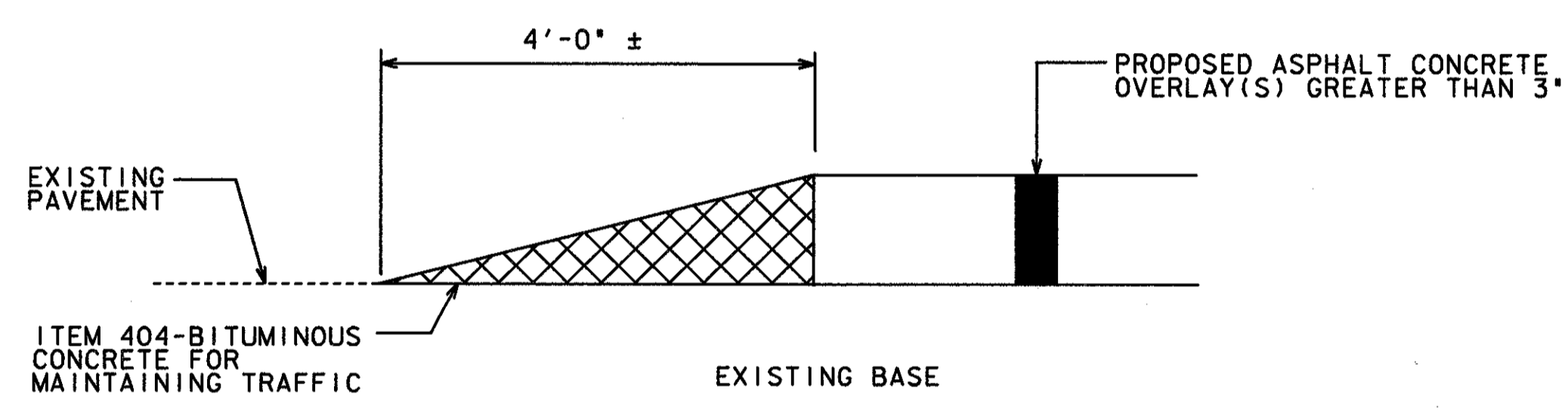
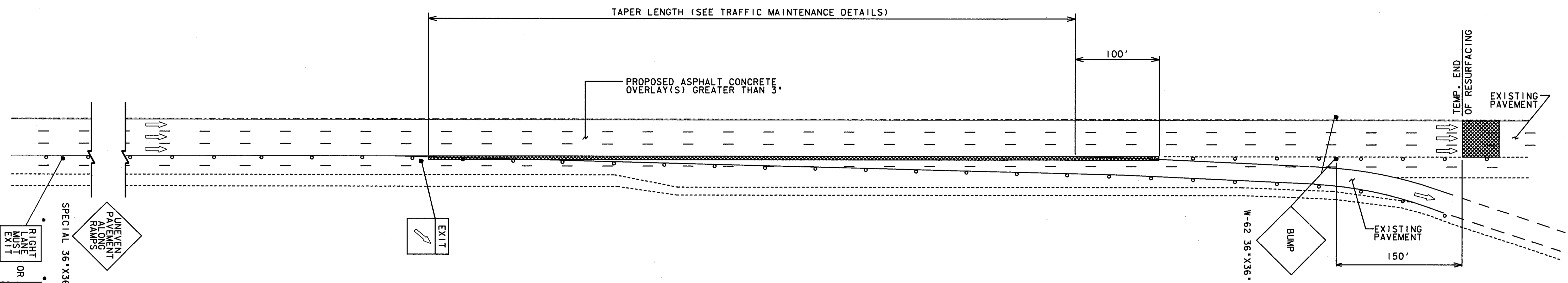
SINGLE INSTALLATION

PLOT SUBMITTED BY: uliman

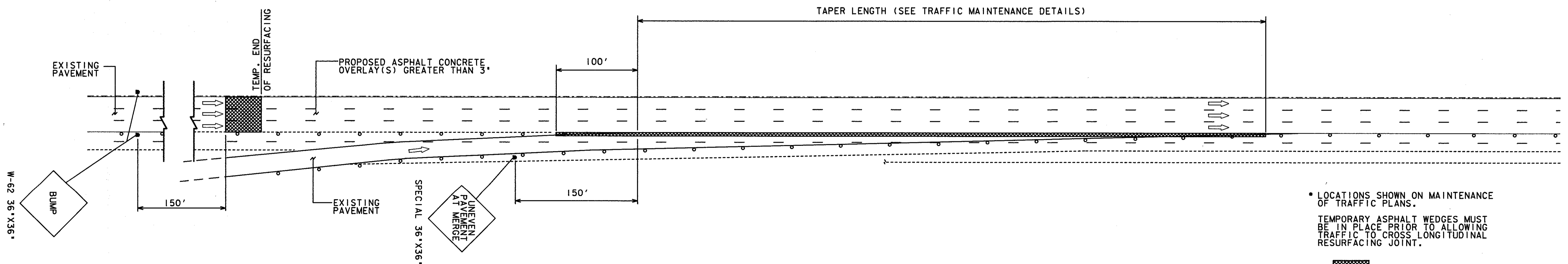
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NOTE: THIS DETAIL APPLIES ONLY TO OVERLAY PLACEMENT PHASES WHEN TRAFFIC IS EXPOSED TO A GREATER THAN 3" DROP (ENTRANCE/EXIT RAMP)



TYPICAL WEDGE PLACEMENT-EXIT RAMP
 (3 LANES MAINTAINED SHOWN, 2 LANES MAINTAINED SIMILAR)



TYPICAL WEDGE PLACEMENT-ENTRANCE RAMP
 (3 LANES MAINTAINED SHOWN, 2 LANES MAINTAINED SIMILAR)

• 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.

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

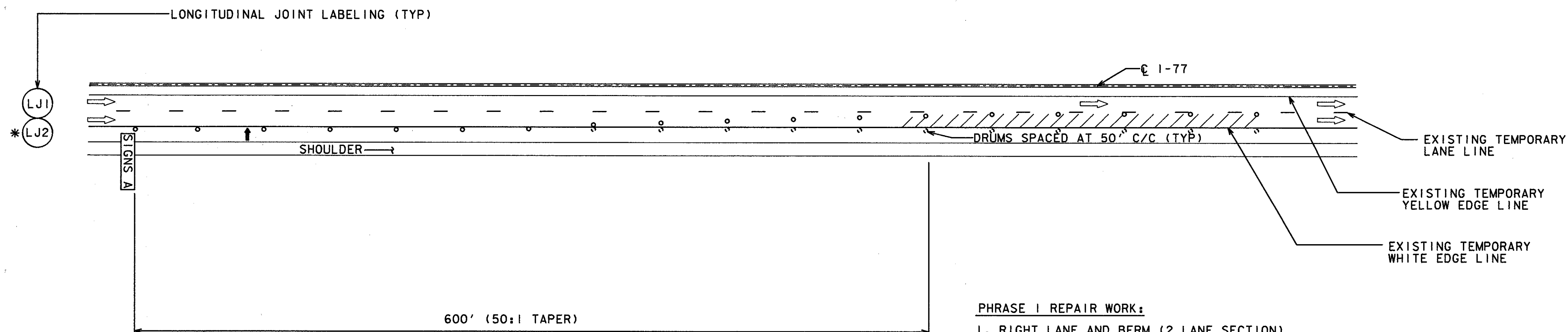
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TRAFFIC MAINTENANCE

(3 LANES SECTION SHOWN, 2 LANES SECTION SIMILAR)



- PHASE I REPAIR WORK:**
1. RIGHT LANE AND BERM (2 LANE SECTION)
 2. NO NIGHT CLOSURE IN 3 LANE SECTION DURING PHASE I.

PHASE I

(TRAFFIC IS SHIFTED ONTO THE LEFT BERM)

* LJ2 IS SEEN IN THE 3 LANE SECTION ONLY.

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	

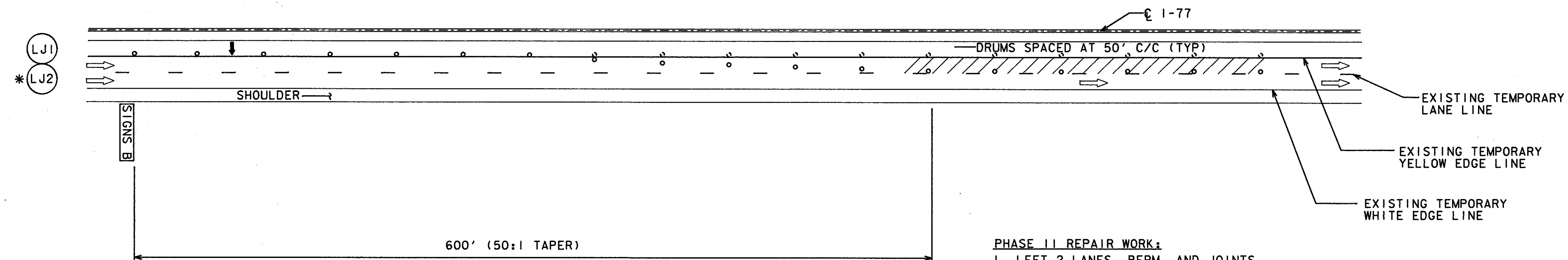
RIGHT LANE CLOSED 500 FT.

SIGNS B 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	

LEFT LANE CLOSED 500 FT.

/// ADDITIONAL WORK AREA
→ FLASHING ARROW BOARD



- PHASE II REPAIR WORK:**
1. LEFT 2 LANES, BERM, AND JOINTS (LJ1, LJ2) (3 LANE SECTION)
 2. LEFT LANE, BERM, AND JOINT (LJ1) (2 LANE SECTION)

PHASE II

(TRAFFIC IS SHIFTED ONTO THE RIGHT BERM)

ADDITIONAL LANE CLOSURE FOR NIGHTTIME OPERATIONS

NOTES

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

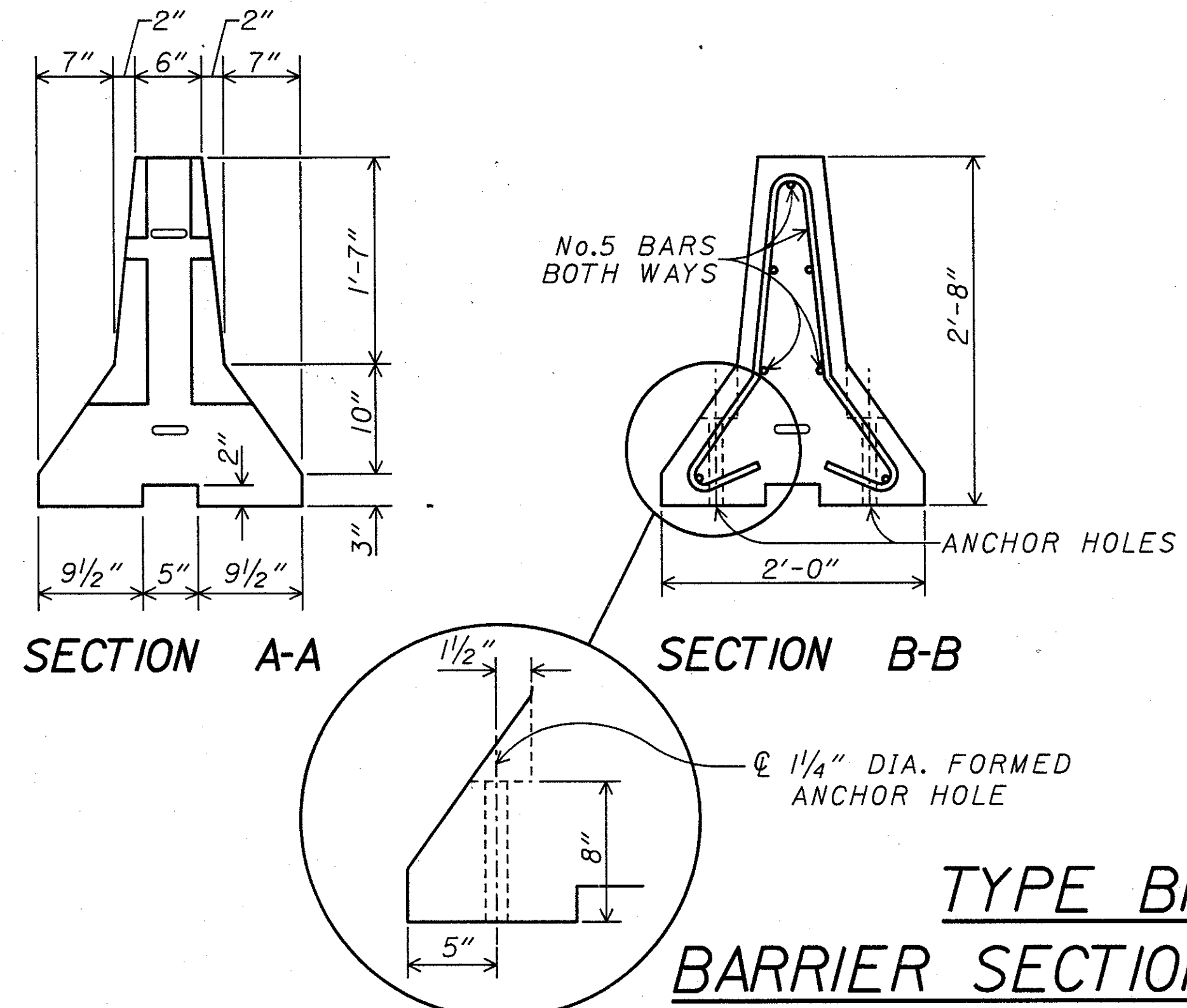
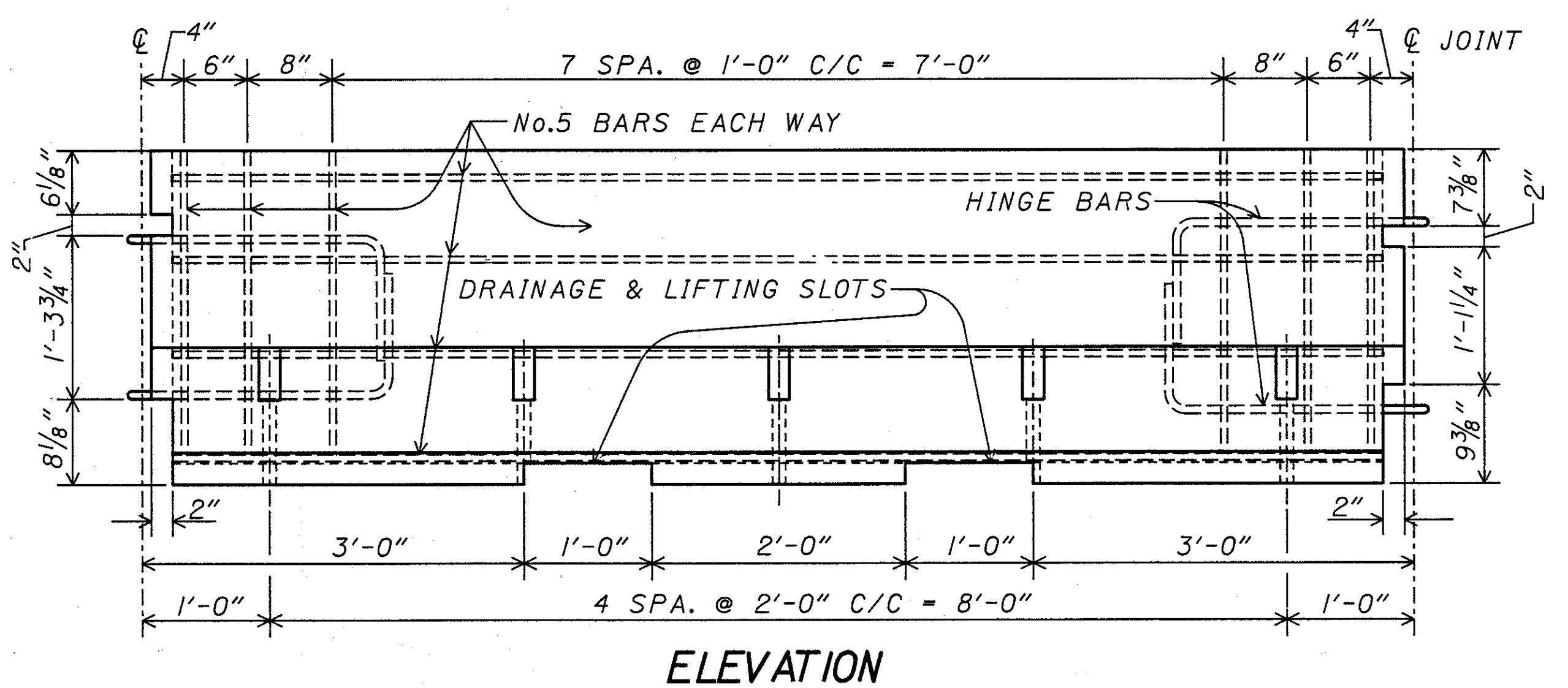
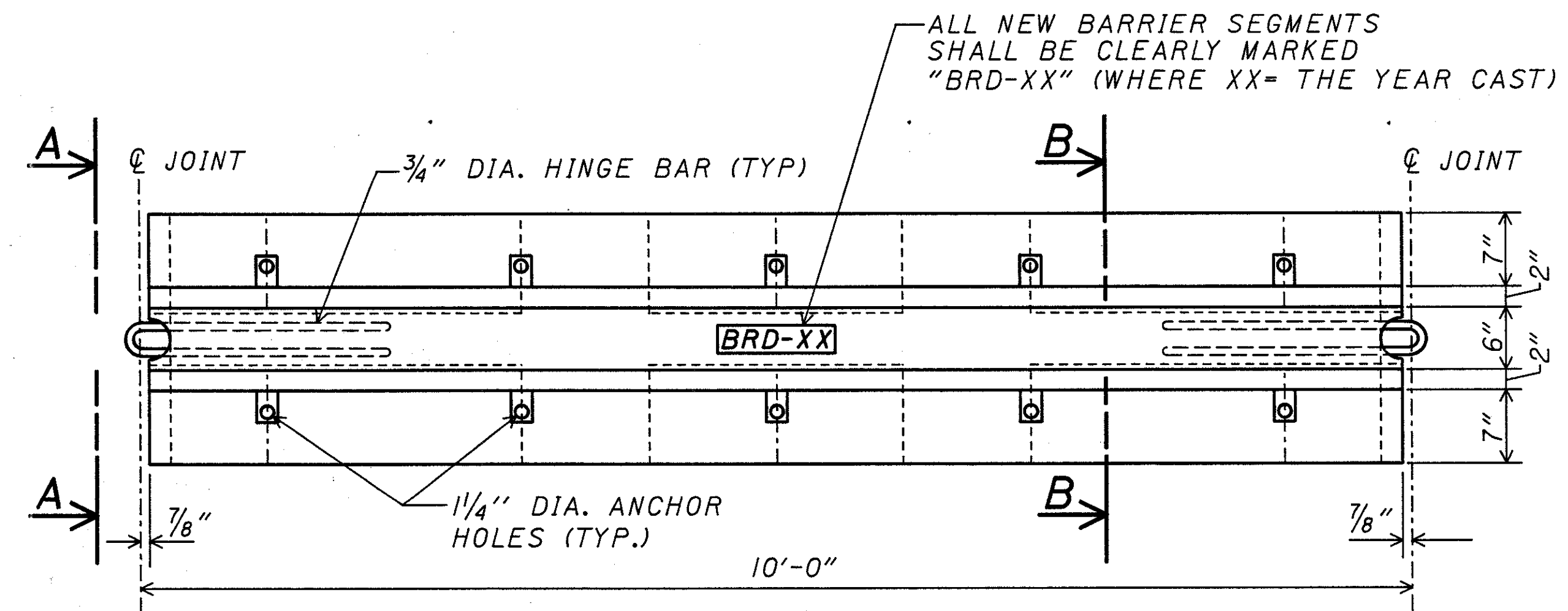
THE ADDITIONAL LANE CLOSURE FOR NIGHTTIME OPERATIONS SHALL ONLY BE IMPLEMENTED WHEN PERMITTED BY THE SCHEDULE OF THRU LANES TO BE MAINTAINED. LENGTH OF ADDITIONAL WORK SHALL NOT BE LONGER THAN WORK TO BE COMPLETED DURING THE NIGHTTIME CLOSURE. SEE MAINTENANCE OF TRAFFIC FOR ADDITIONAL NOTES AND RESTRICTIONS.

FOR LANE WIDTHS, SEE MAINTENANCE OF TRAFFIC PLANS.

IF THE ADDITIONAL LANE CLOSURE OCCURS AT THE BEGINNING OF A PROJECT, PLEASE REFER TO THE TABLE OF ADVANCED WARNING SIGNS, SHEET 81.

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

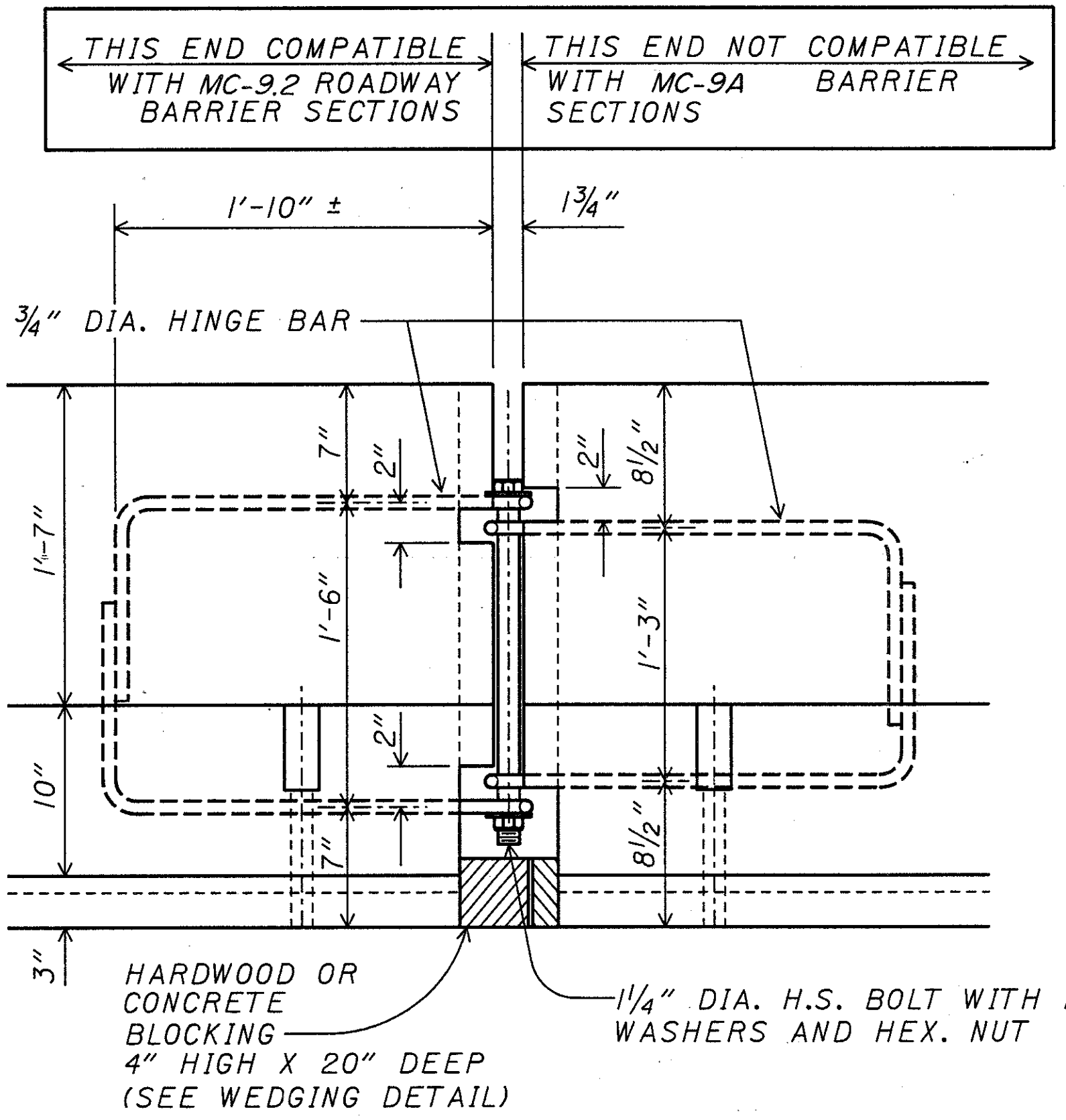
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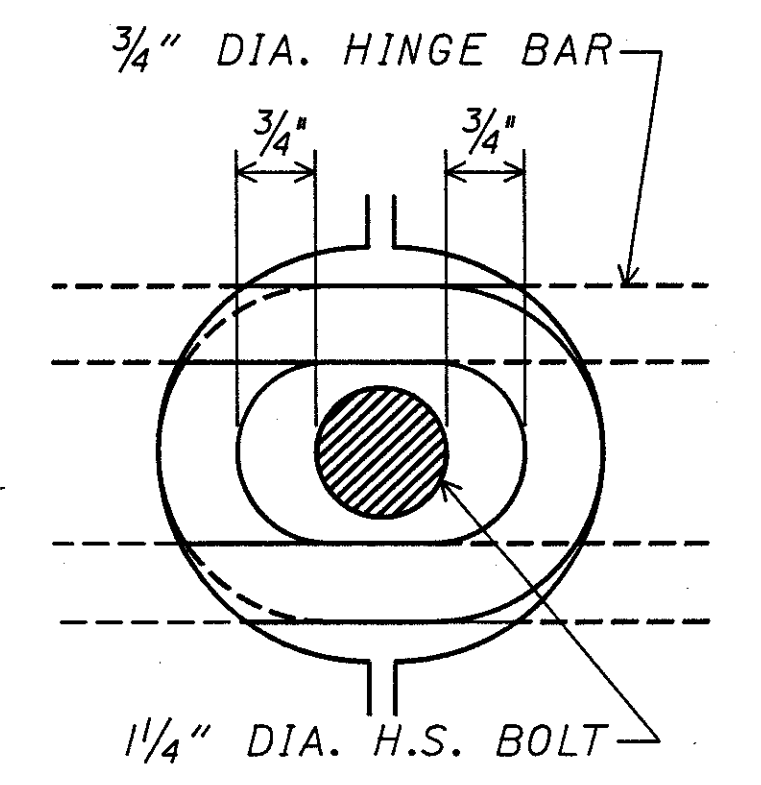
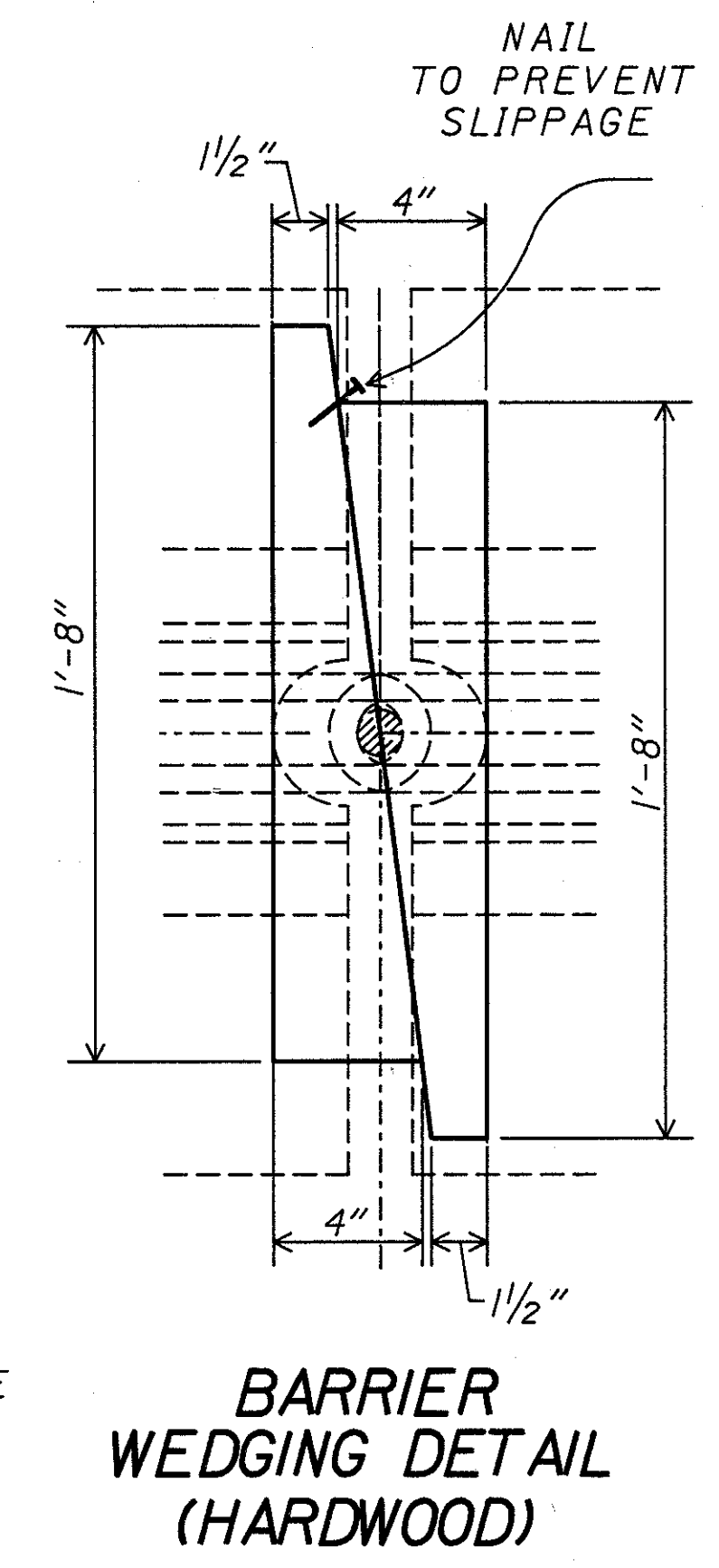
TYPE BRD BARRIER SECTIONS

MATERIAL REQUIREMENTS:

1. THE CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI. AND SHALL CONTAIN A CALCIUM NITRITE CORROSION INHIBITING ADMIXTURE. THE ADMIXTURE SHALL BE ADDED TO THE CONCRETE AT THE RATE OF 4.0 GALLONS PER CUBIC YARD OF CONCRETE AND SHALL BE ADDED AS AN AQUEOUS SOLUTION, SUCH AS W.R. GRACE'S DCI CORROSION INHIBITOR (30% SOLIDS) OR APPROVED EQUAL. THE WATER IN SUCH SOLUTION SHALL BE COUNTED AS MIXING WATER FOR THE PURPOSE OF DETERMINING THE WATER TO CEMENT RATIO OF THE CONCRETE. THE CALCIUM NITRITE MUST BE ADDED TO THE MIX IMMEDIATELY AFTER THE AIR-ENTRAINING AND RETARDING ADMIXTURES HAVE BEEN INTRODUCED TO THE BATCH.
2. ALL REINFORCING STEEL AND STEEL ROD CONNECTING LOOPS SHALL BE GRADE 60 REINFORCING STEEL WITH A MINIMUM YIELD STRENGTH OF 60,000 PSI.

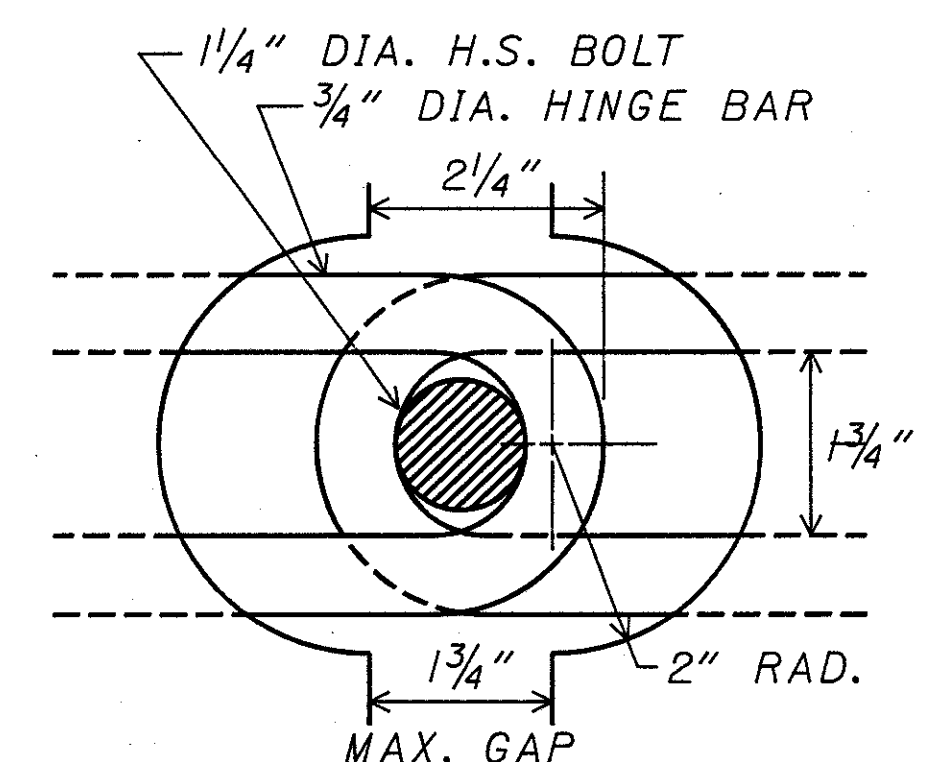


DETAIL AT HINGED CONNECTION



INITIAL JOINT

BARRIER SEGMENTS SHOULD INITIALLY BE PLACED CLOSER TOGETHER SO THAT BOLTS CAN BE EASILY INSERTED THROUGH HINGE BAR LOOPS.



FINAL JOINT

BARRIER JOINTS MUST BE FULLY OPEN BEFORE OPENING IS BLOCKED WITH CONCRETE OR HARDWOOD.

COMMON NOTES:

ALL PORTABLE CONCRETE BARRIERS ON STRUCTURES

BRIDGE DECK SURFACE PREPARATION

1. THE BRIDGE DECK SURFACE AREA ON WHICH THE PRECAST CONCRETE BARRIER SEGMENTS WILL REST SHALL BE CLEARED OF ALL LOOSE SAND, GRAVEL, DIRT AND DEBRIS.
2. ANY IRREGULARITIES IN THE BRIDGE DECK AREA, UNLESS JUDGED BY THE ENGINEER TO BE INCONSEQUENTIAL, SHALL BE LEVELED WITH GROUT AND/OR ASPHALT.
3. ASPHALT ROLL ROOFING SHALL BE PLACED ON THOSE BRIDGE DECK AREAS, AS JUDGED BY THE ENGINEER, TO HAVE A SURFACE ROUGHNESS WHICH WOULD INHIBIT FRICTION CONTACT BETWEEN BARRIER SEGMENTS AND DECK.

BOLTED JOINT CONNECTIONS

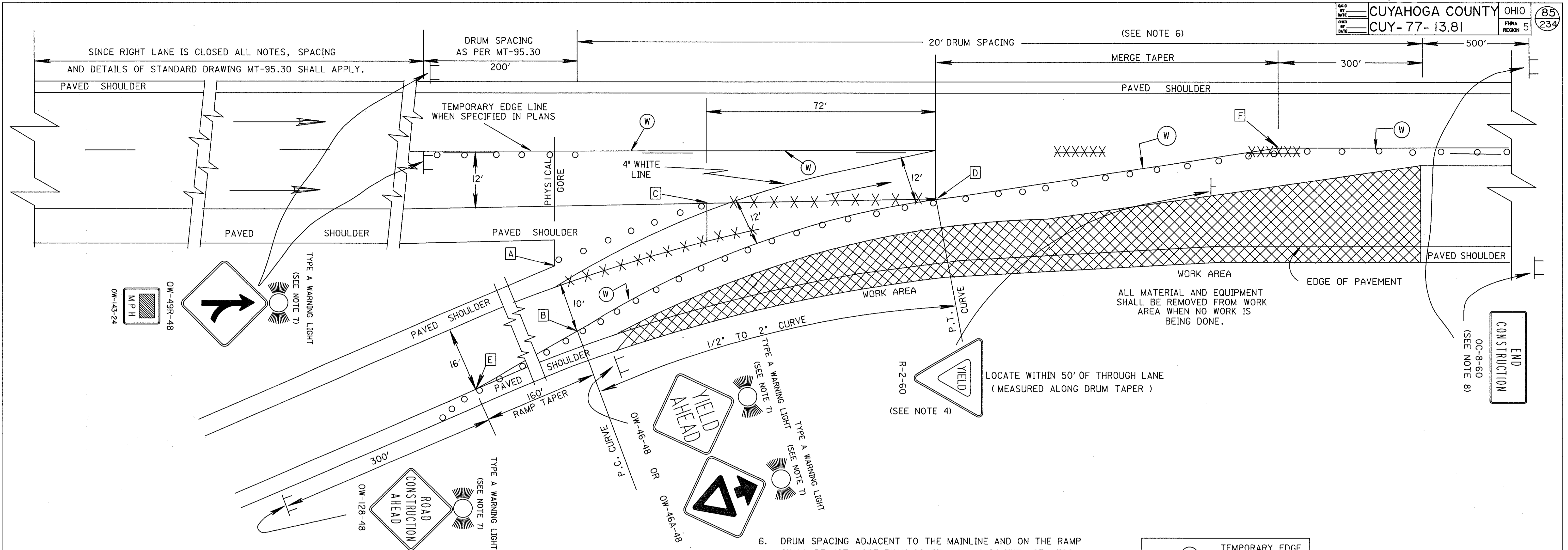
4. WHEN STANDARD MC-9.2 BARRIER SECTIONS OR TYPE BRD BARRIER SECTIONS ARE USED ON STRUCTURES, THEY SHALL BE BOLTED TOGETHER AND BLOCKED AS SHOWN ABOVE (BOLTING AND BLOCKING DIMENSIONS FOR MC-9.2 BARRIER MAY VARY FROM THOSE SHOWN).

PORTABLE BARRIER, TYPE BRD, ANCHORED

ALL ANCHORS SHALL BE 1" DIAMETER, HIGH STRENGTH, THRU BOLTS OR APPROVED RESIN ANCHORS. WHEN RESIN ANCHORS ARE USED, THEY MUST BE EMBEDDED A MINIMUM OF 6" INTO FIRM CONCRETE. THE NUMBER OF ANCHORS SHALL BE AS SHOWN BELOW AND SHALL BE PLACED SYMMETRICALLY ABOUT THE TRANSVERSE C OF BARRIER SECTION ON THE ROADWAY SIDE OF THE BARRIER.

BRIDGE NO.	TRAFFIC CONTROL PHASE	NO. ANCHORS / 10' SECTION

ZFI:[200,5]BRDBAR.DGN:1



GENERAL NOTES

1. 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.
2. 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.

3. RAMP SIGNS SHALL BE DUAL MOUNTED ON MULTI-LANE RAMPS. WHEN THE RAMP IS NOT LONG ENOUGH TO ALLOW PLACEMENT AS SPECIFIED ABOVE, THE SIGNS MAY BE SPACED PROPORTIONATELY WITHIN THE SPACE AVAILABLE AS DETERMINED BY THE ENGINEER (A 200 FOOT MINIMUM SPACING MUST BE MAINTAINED).
4. 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.
5. 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.

6. 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.~~
7. 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.
8. 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.
9. 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).
10. 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

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	
LANE CLOSURE AT ENTRANCE RAMP PLAN B	DATE 04/03/90
PLAN INSERT SHEET	

TEMPORARY SIGN SUPPORT REQUIREMENTS

CALC BY _____	CUYAHOGA COUNTY	OHIO	86
DATE _____	CUY - 77 - 13.81	FHWA REGION 5	234
CHKD BY _____			
DATE _____			

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:
 - a) - 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 1/2 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:
 - a) - 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. 87)

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 OMUTCD. 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
TEMPORARY SIGN SUPPORT	
PLAN INSERT SHEET	

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 ERRECTED. 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.

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.

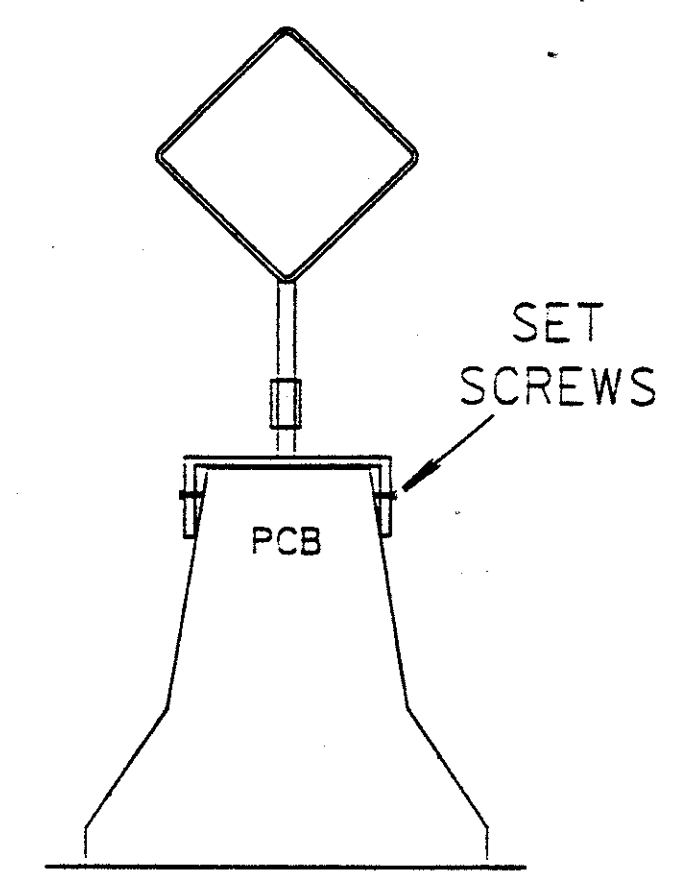
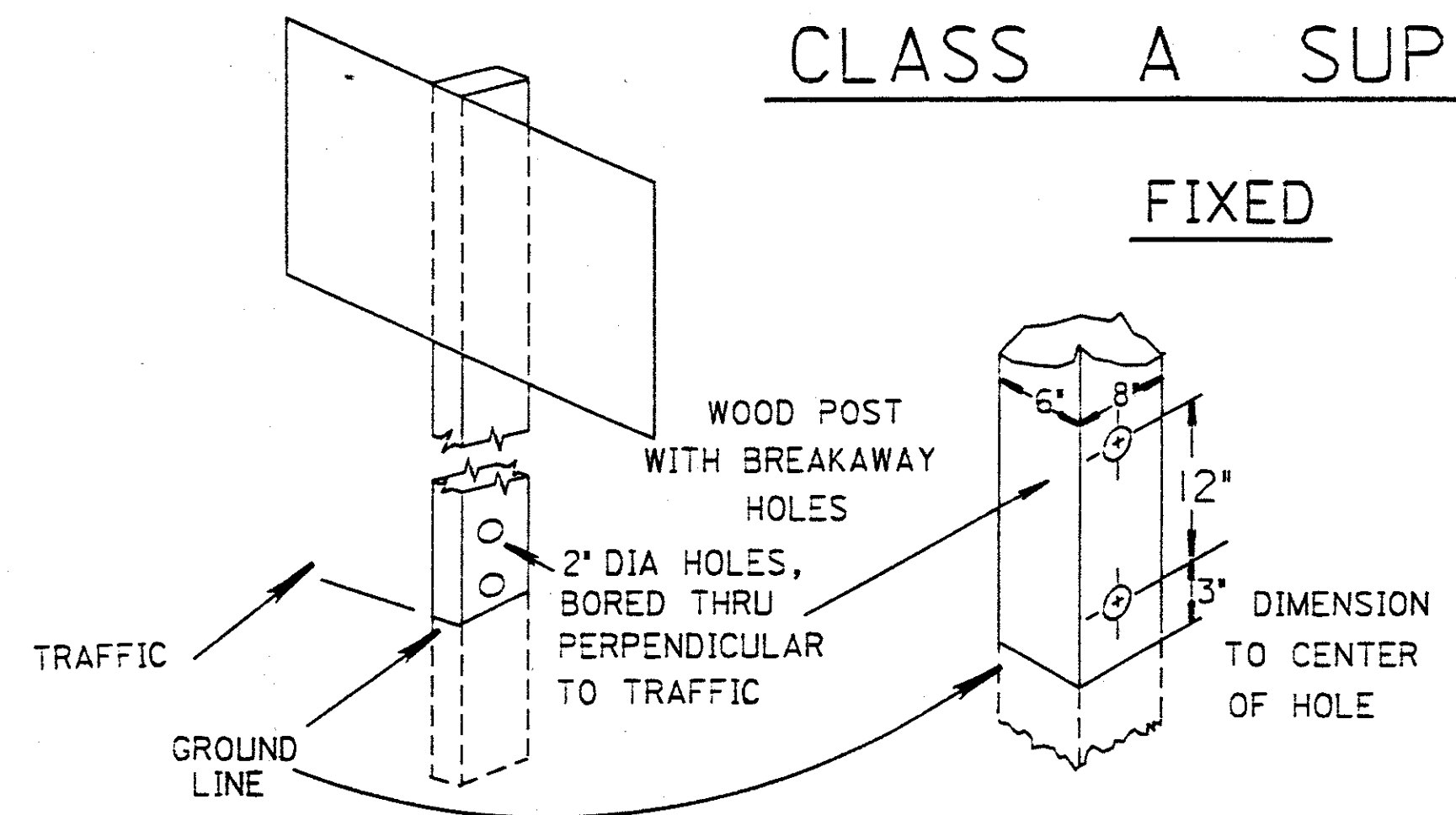
3) CLASS C:

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.

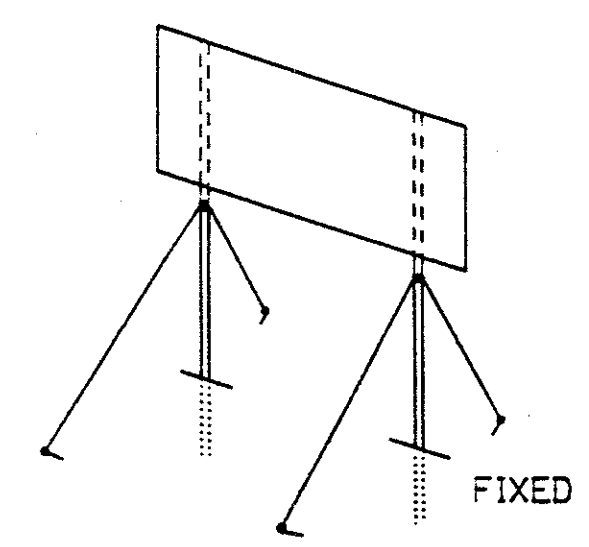
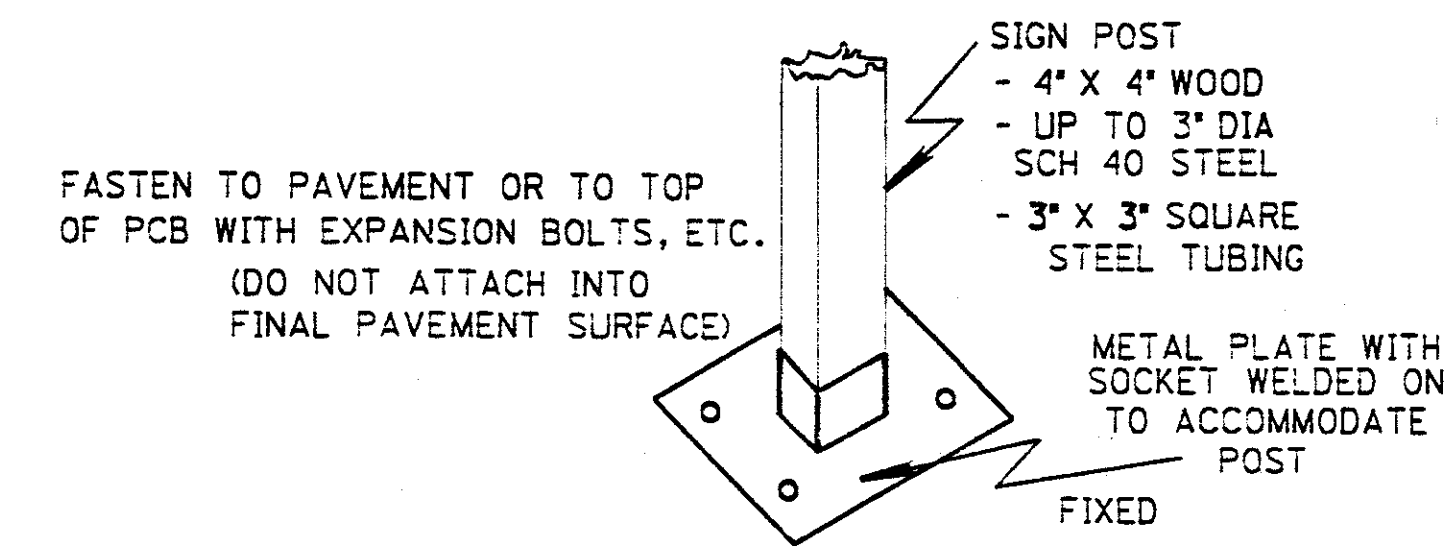
CALC BY _____
 DATE _____
 CHKD BY _____
 DATE _____

CLASS A SUPPORTS

FIXED

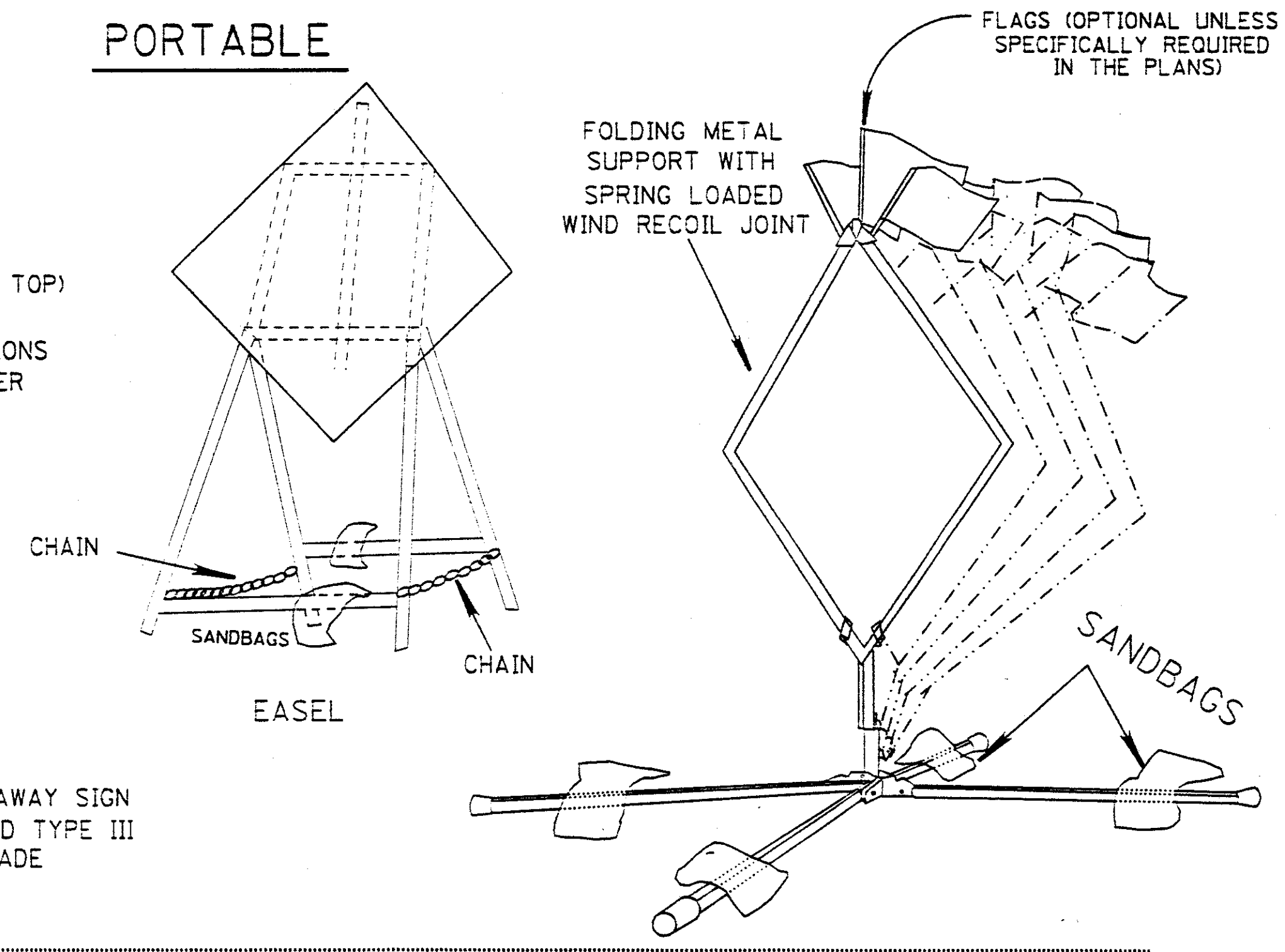
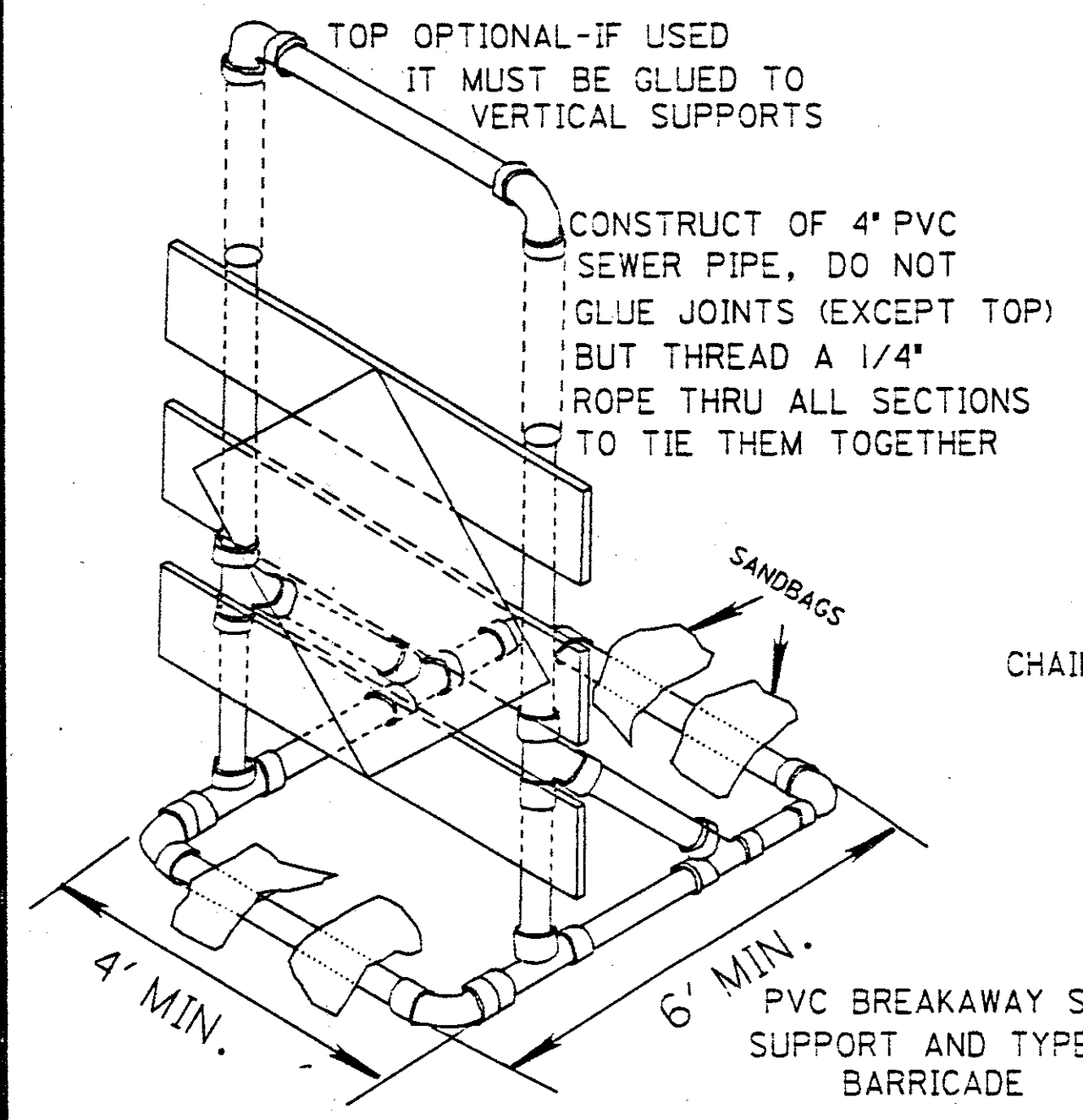


CLASS B SUPPORTS



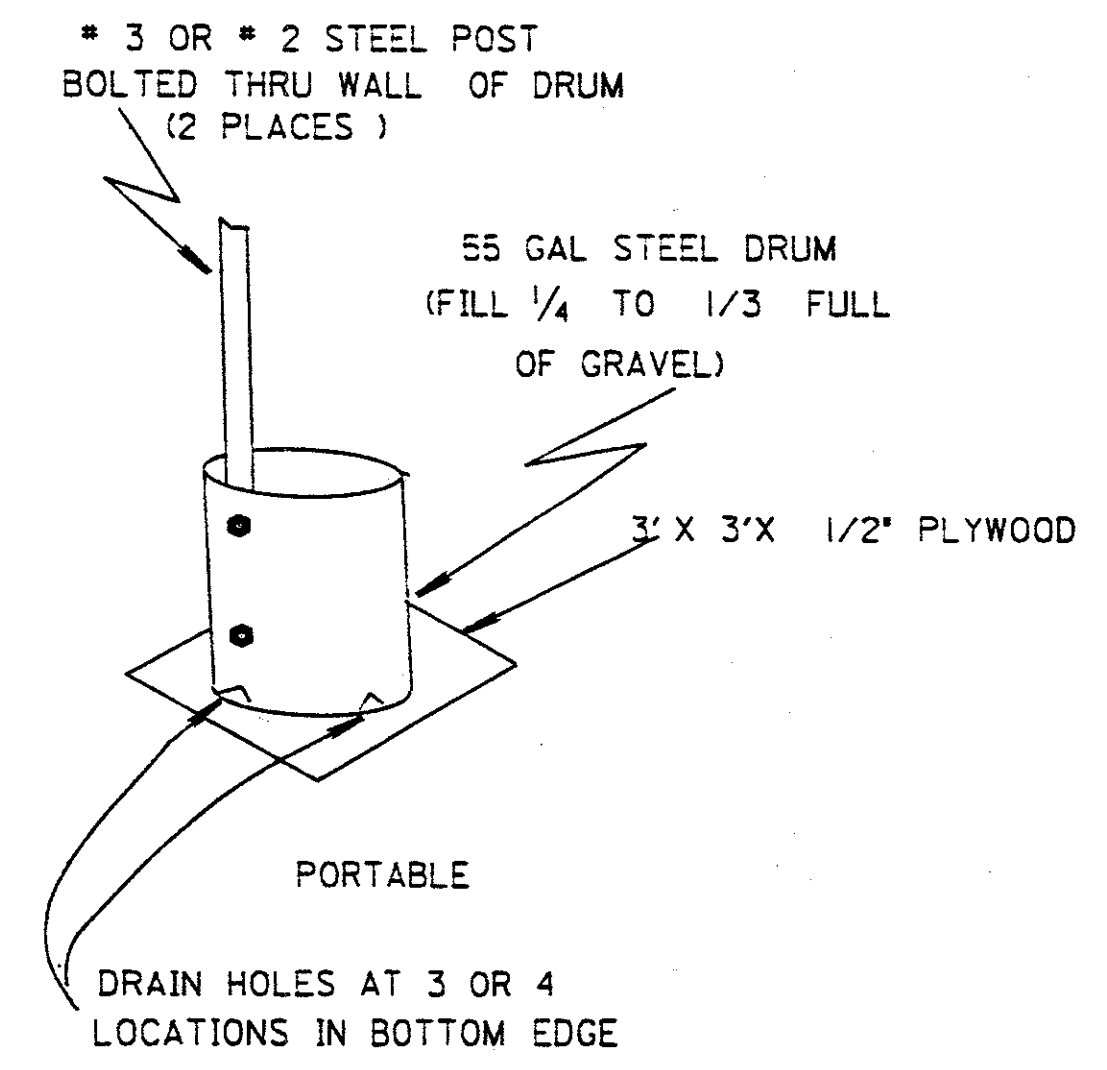
ANY CLASS A SIGN POST WITH GUY WIRES ADDED TO INCREASE SIGN CARRYING ABILITY. (GUY WIRES SHALL NOT BE HEAVIER THAN 1/8\"/>

PORTABLE



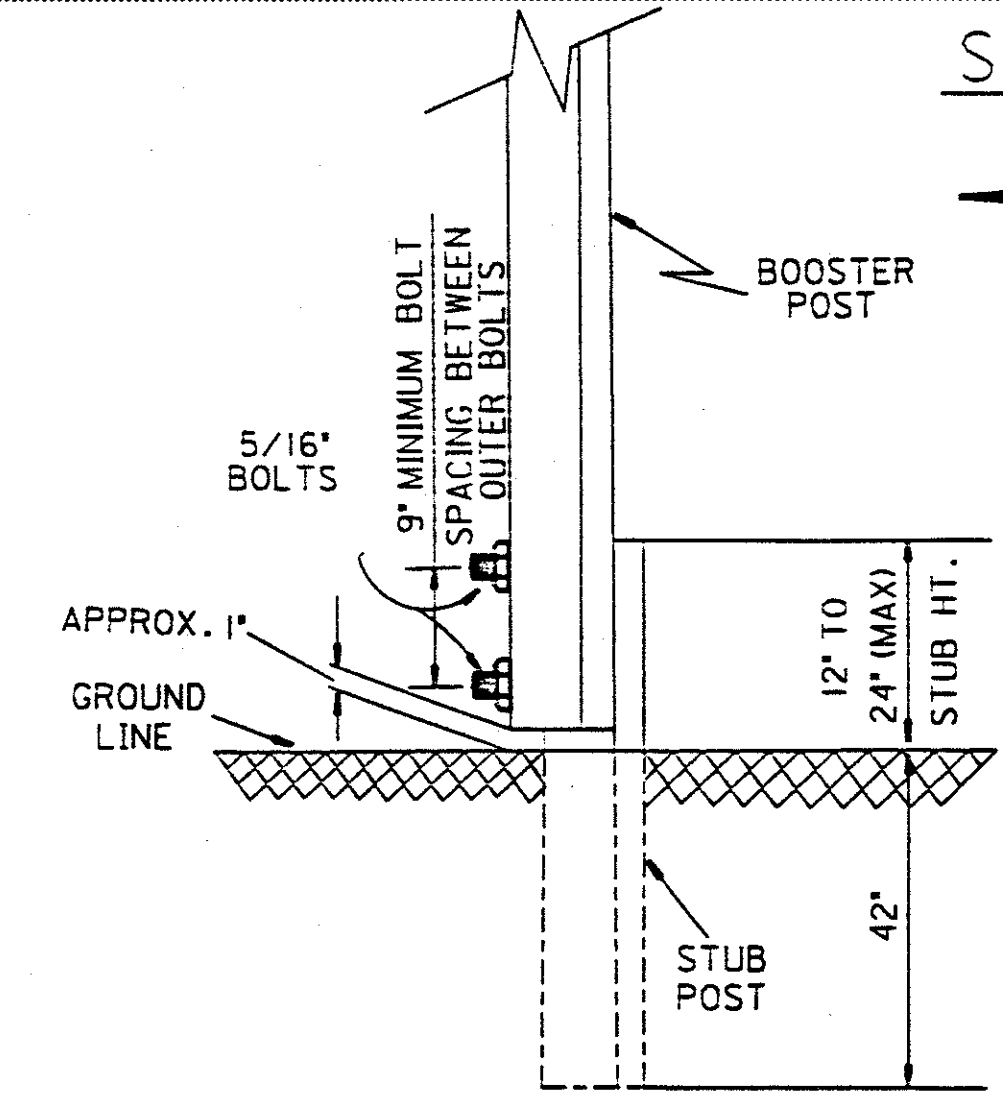
CLASS C SUPPORTS

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

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MAINTENANCE OF TRAFFIC

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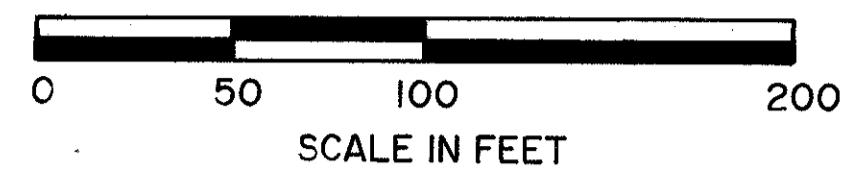
OHIO

FHWA
REGION 5

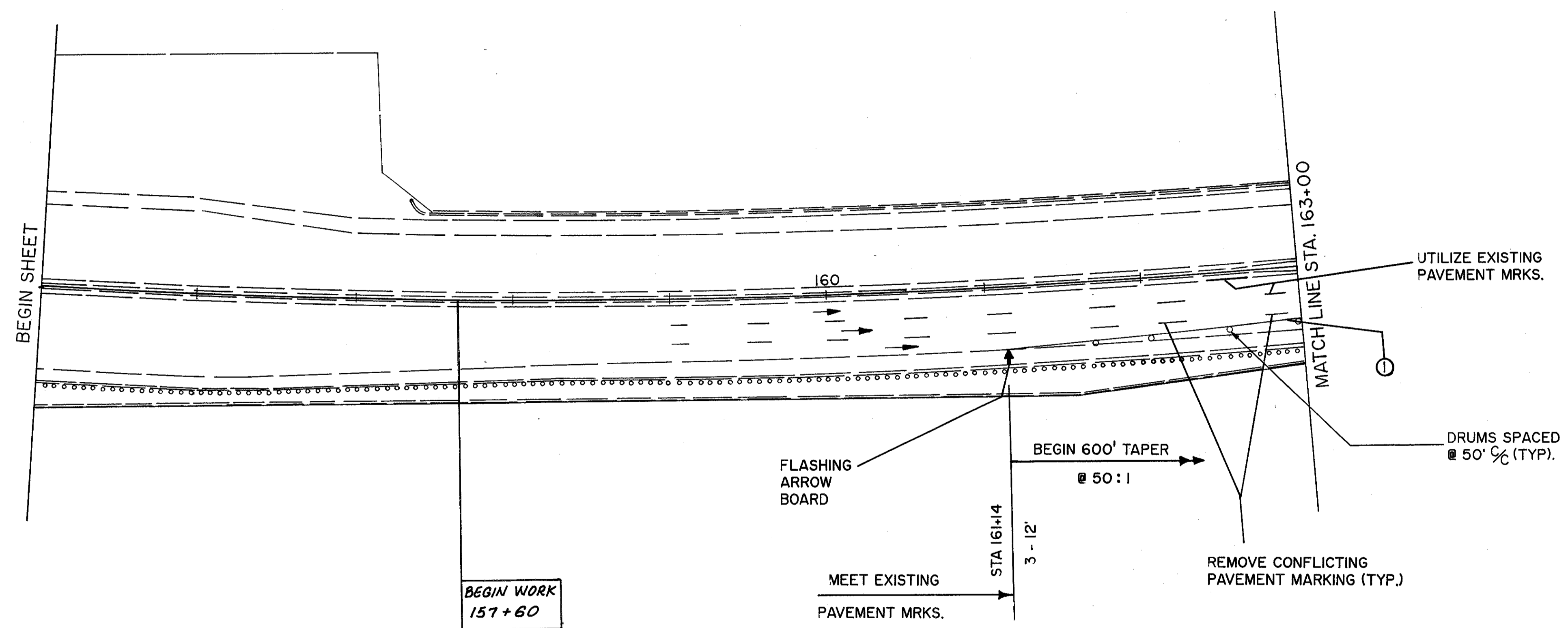
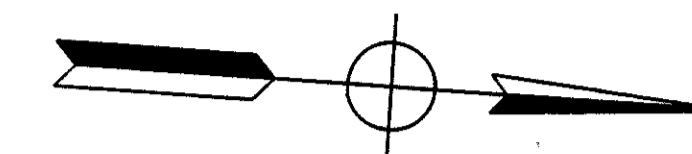
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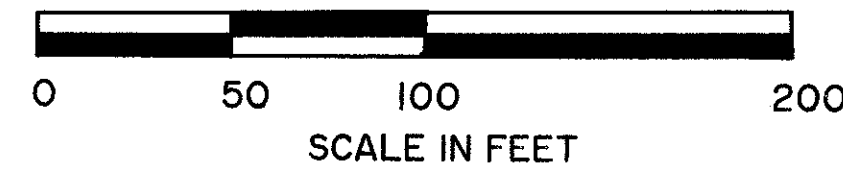


FOR LEGEND, SEE SHT. 91

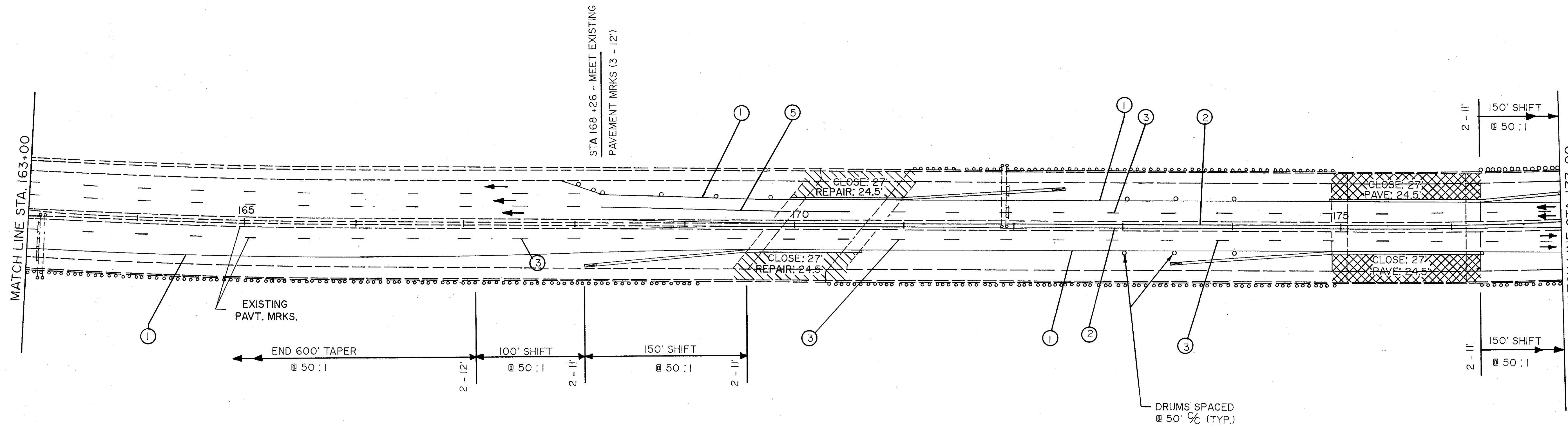
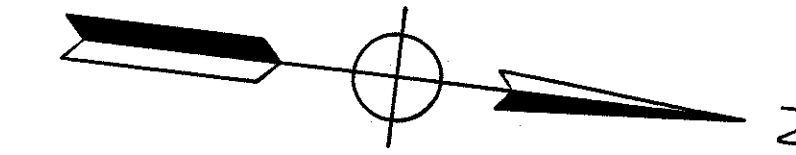


MAINTENANCE OF TRAFFIC

PHASE I



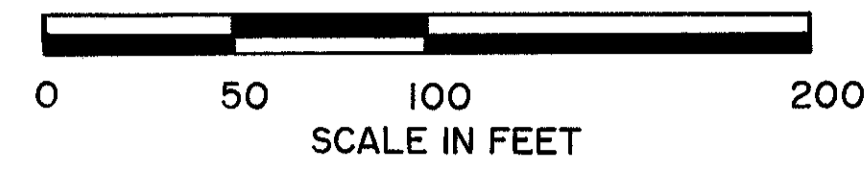
FOR LEGEND, SEE SHT 91.



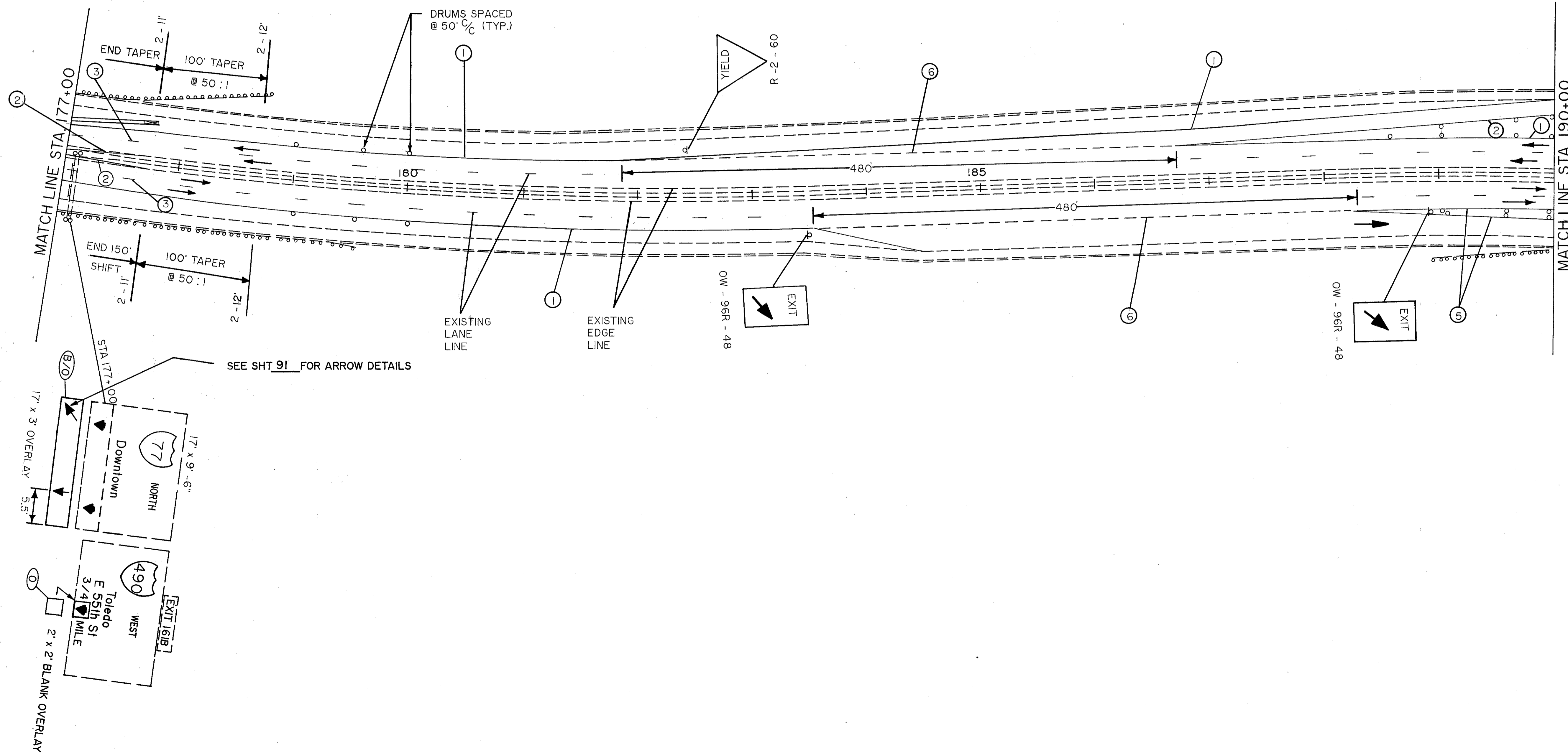
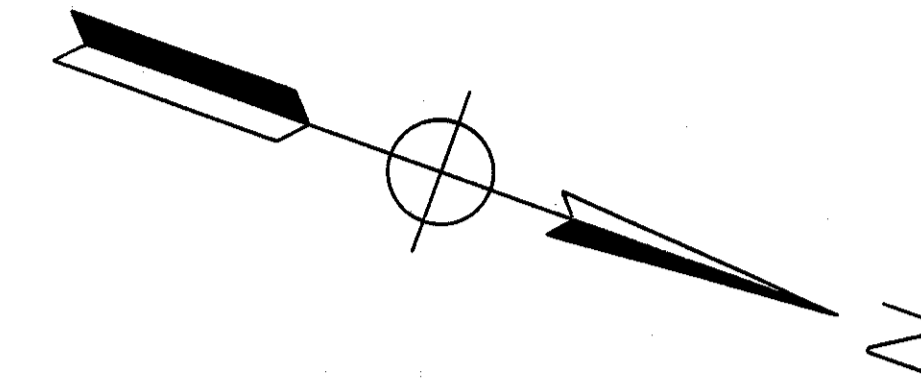
- BRIDGE WORK LEGEND**
 (SEE STRUCTURE PLANS FOR WORK DETAIL)
- REPLACE FORWARD EXPANSION JOINT, PATCH **OVERLAY**. SEAL DECK WITH HMWM RESIN GROOVE WEARING SURFACE, PATCH AND SEAL CONCRETE SURFACES.
 - REPLACE ASPHALT WEARING SURFACE WITH MSC OVERLAY. PATCH AND SEAL CONCRETE SURFACES.

MAINTENANCE OF TRAFFIC

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FOR LEGEND, SEE SHT 91



MAINTENANCE OF TRAFFIC

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FHWA
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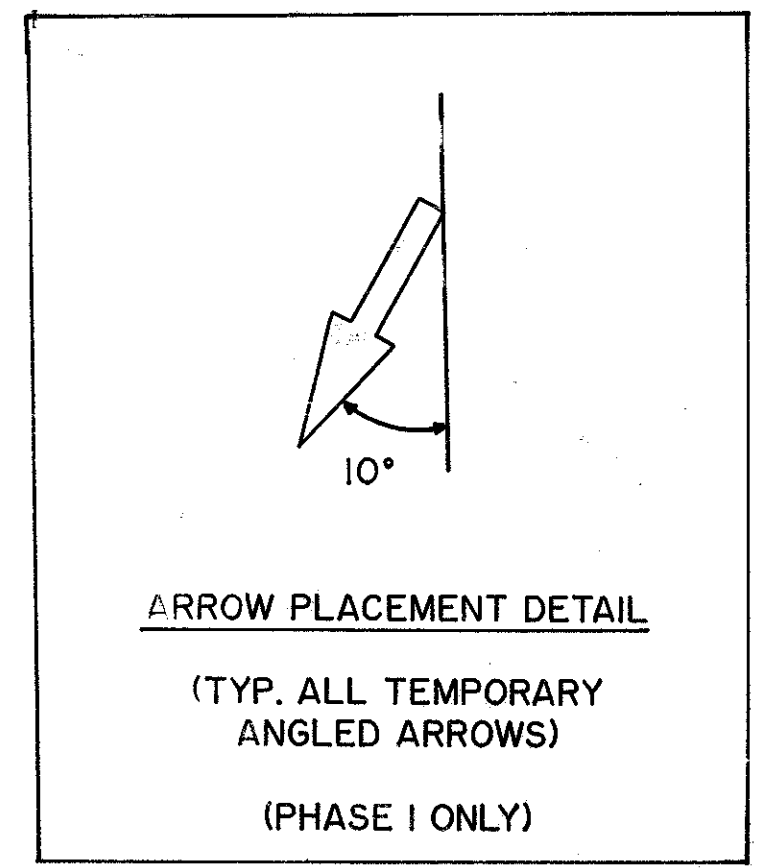
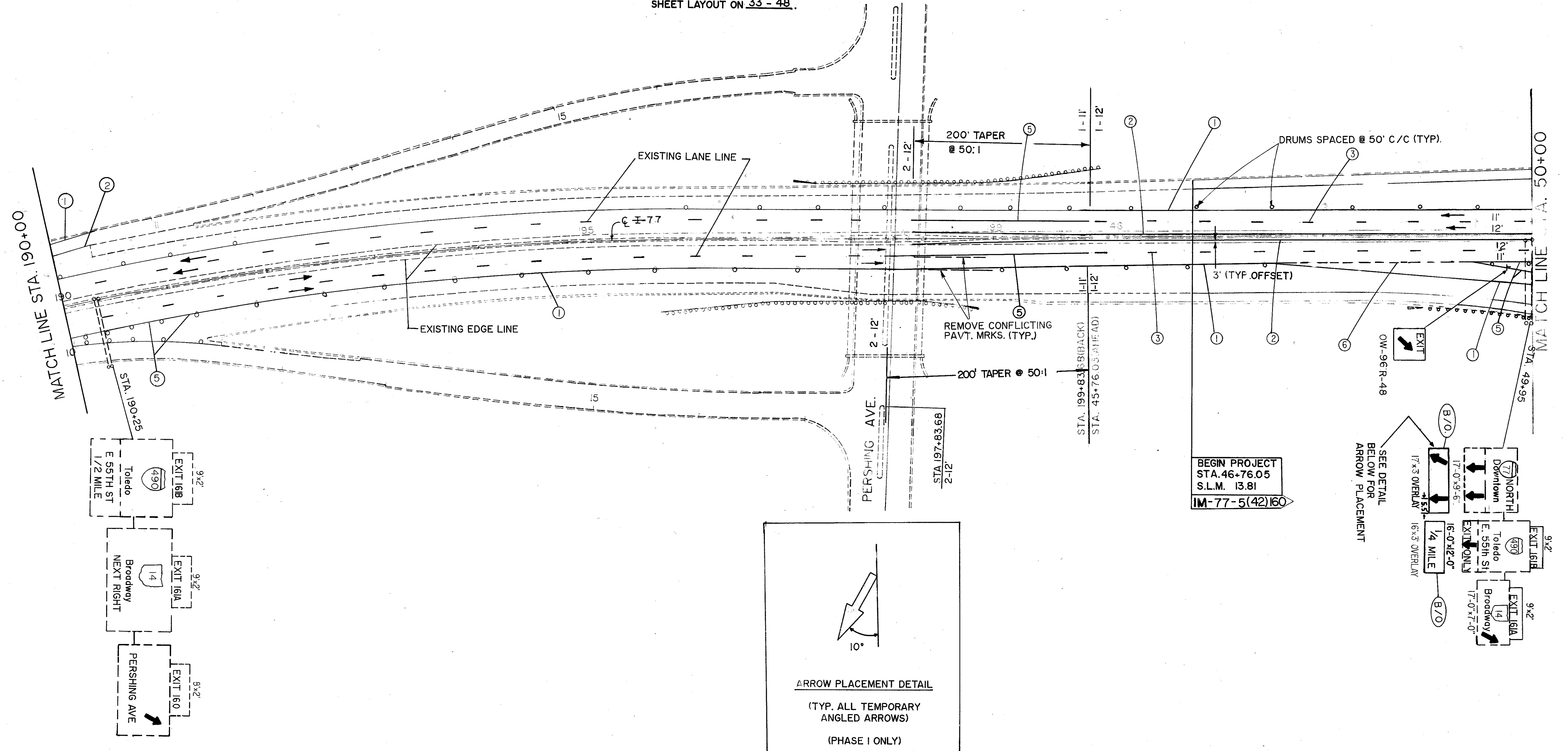
PHASE I



- NOTE:
1. BARRIER REFLECTORS SHALL BE PLACED DURING THE SHOULDER REPLACEMENT PORTION OF THE PRELIMINARY PHASE.
 2. ALL CHANNELIZING CURB SHALL BE REMOVED PRIOR TO SHIFTING TRAFFIC.
 3. LEFT BERM SHALL BE REPLACED WITH ITEM 305 BEFORE TRAFFIC IS SHIFTED TO PHASE I. (SEE CONSTRUCTION SEQUENCE NOTE.)
 4. FOR MAINTENANCE OF TRAFFIC PLAN SHEET LAYOUT, SEE ROADWAY PLAN SHEET LAYOUT ON 33 - 48.
 5. SEE SHEET 83.85 FOR ADDITIONAL LANE CLOSURE DETAILS (2 LANE SECTION ONLY)

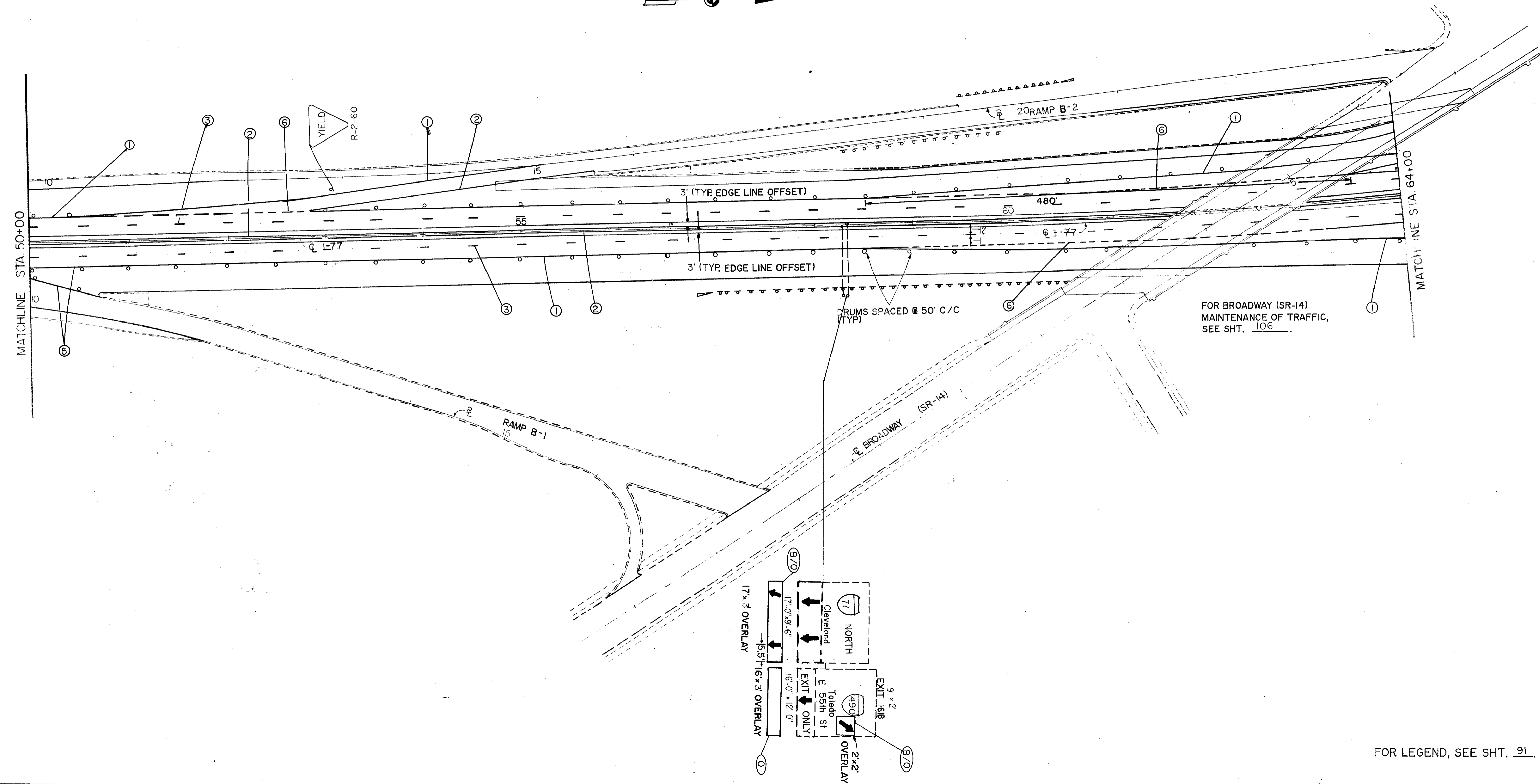
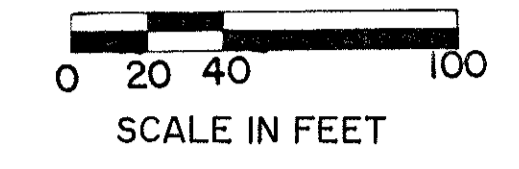
TEMPORARY PAVT MARKING LEGEND.

1. TEMPORARY EDGE LINE, CLASS I (WHITE)
2. TEMPORARY EDGE LINE, CLASS I (YELLOW)
3. TEMPORARY LANE LINE, CLASS I
4. TEMPORARY TRANSVERSE LINE, CLASS I (WHITE)
5. TEMPORARY CHANNELIZING LINE, CLASS I (WHITE)
6. TEMPORARY DOTTED LINES, CLASS I
7. TEMPORARY CENTER LINE, CLASS I
- B/O - BLACK ON ORANGE
- O - ORANGE

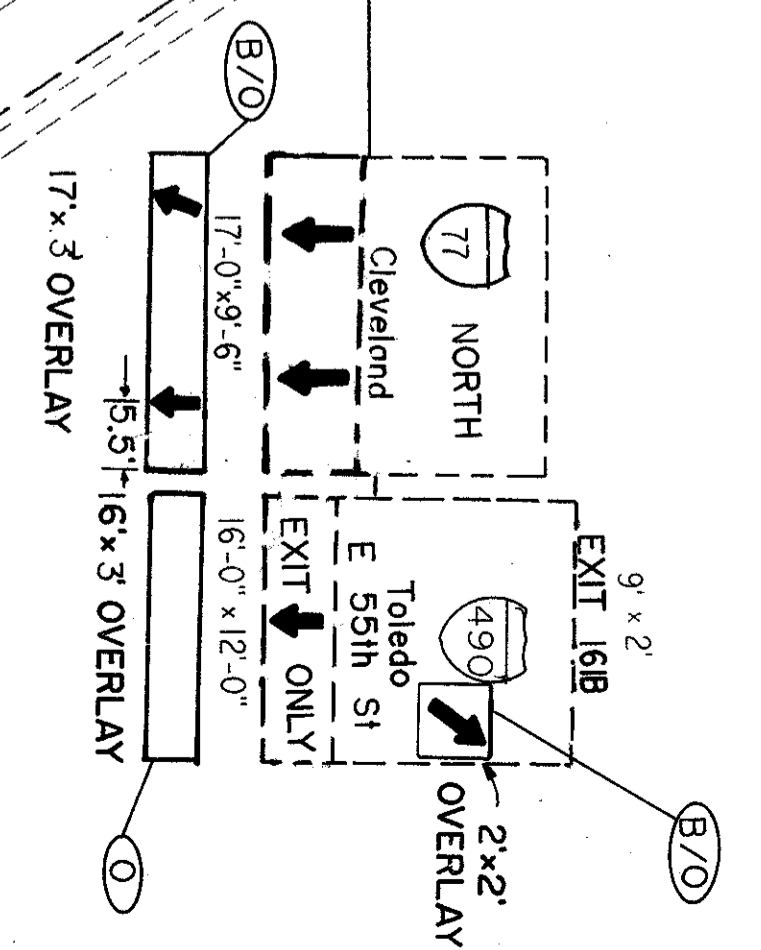


MAINTENANCE OF TRAFFIC

PHASE I



FOR BROADWAY (SR-14)
MAINTENANCE OF TRAFFIC,
SEE SHT. 106.



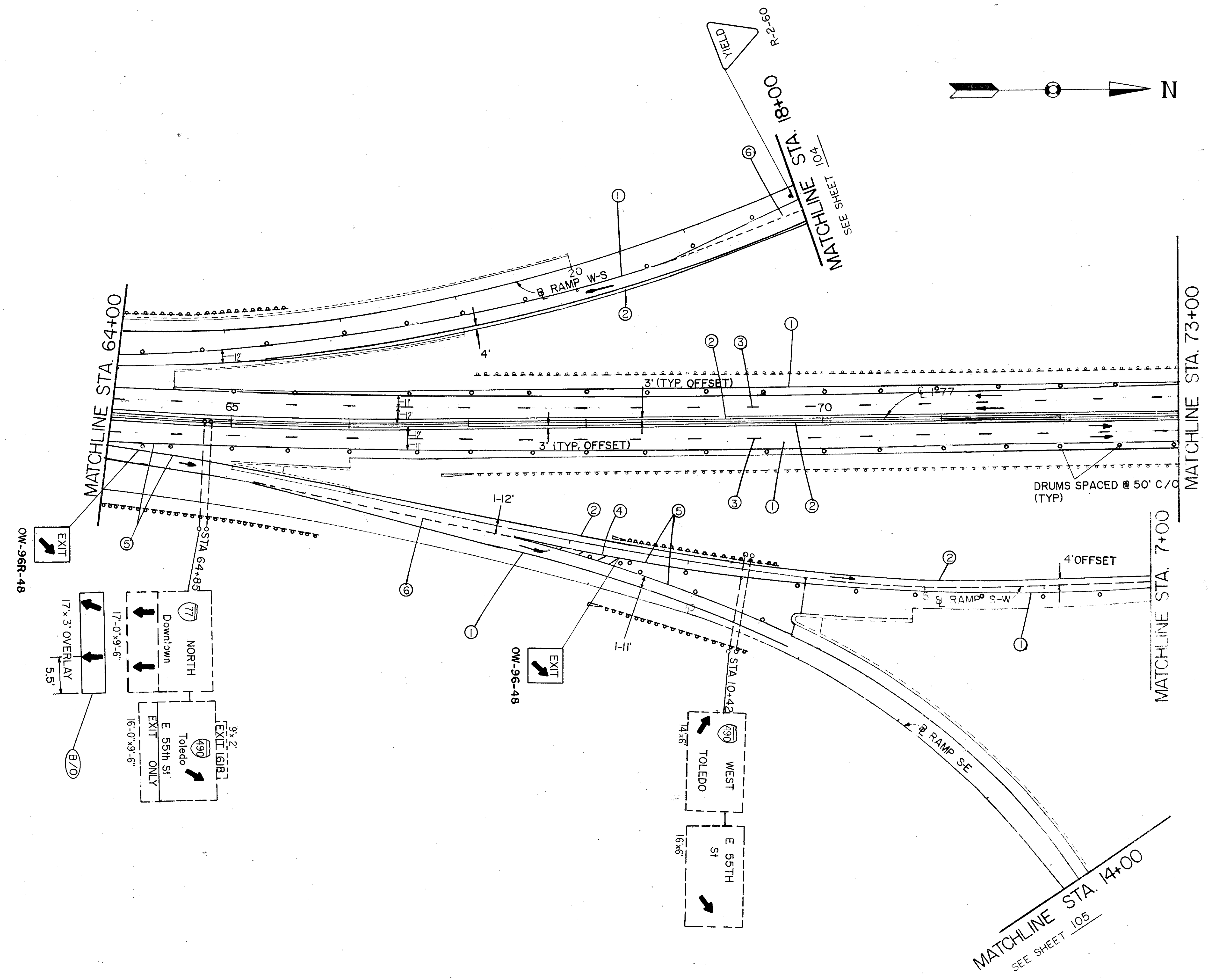
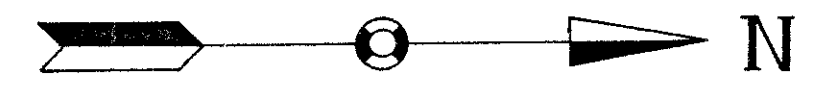
FOR LEGEND, SEE SHT. 91.

MAINTENANCE OF TRAFFIC

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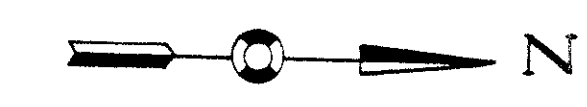
NOTE: IMPLEMENT NIGHTTIME CLOSURE AS SHOWN ON SHEET 83, FOR 2 LANE (NORMAL CONDITIONS) SECTION ONLY

FOR LEGEND, SEE SHT. 91

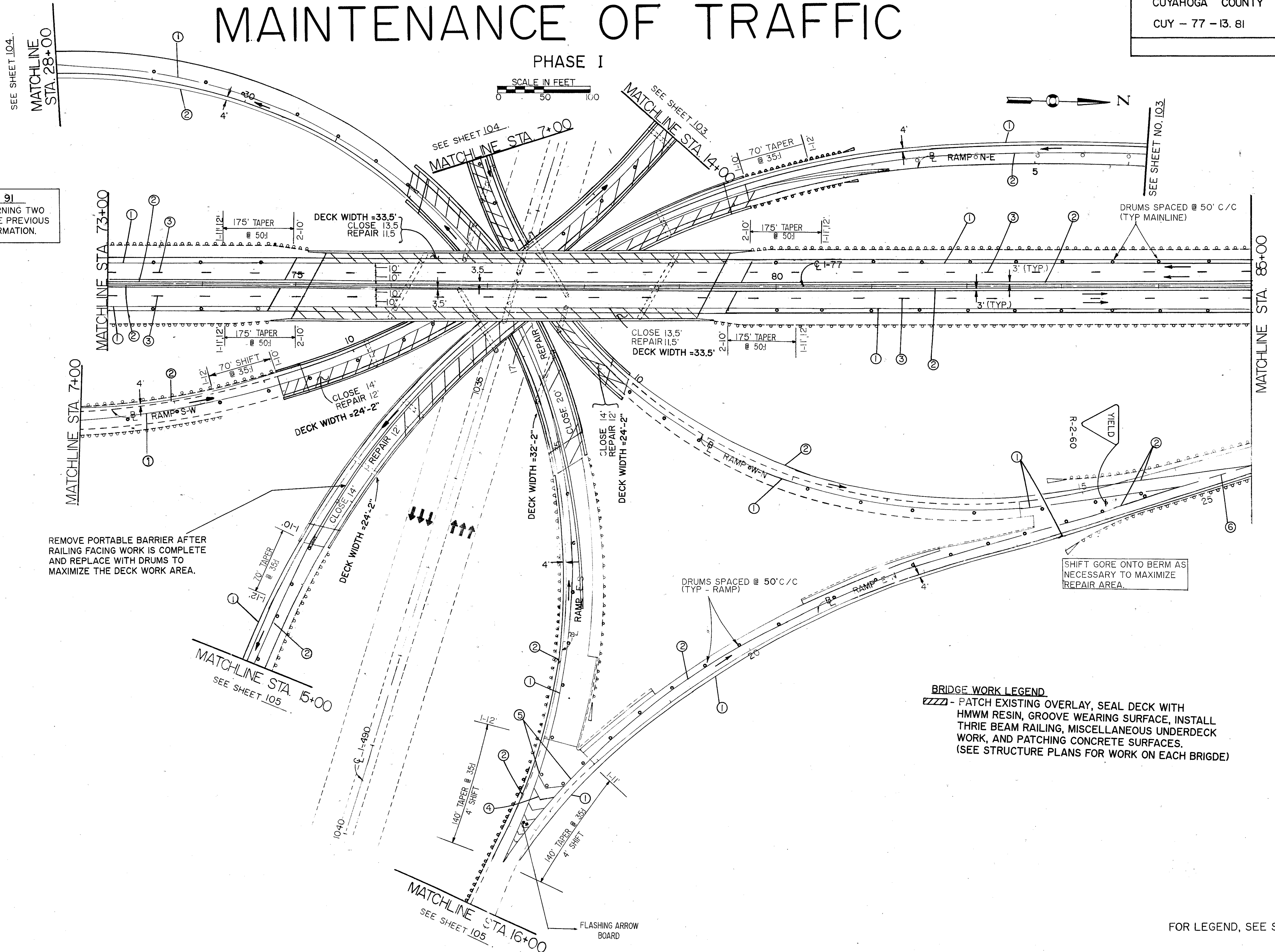
MAINTENANCE OF TRAFFIC

PHASE I

SCALE IN FEET
0 50 100



SEE NOTE 4 ON SHEET 91 AND THE NOTE CONCERNING TWO LANE SECTIONS ON THE PREVIOUS SHEET FOR MORE INFORMATION.



REMOVE PORTABLE BARRIER AFTER RAILING FACING WORK IS COMPLETE AND REPLACE WITH DRUMS TO MAXIMIZE THE DECK WORK AREA.

SHIFT GORE ONTO BERM AS NECESSARY TO MAXIMIZE REPAIR AREA.

BRIDGE WORK LEGEND
 - PATCH EXISTING OVERLAY, SEAL DECK WITH HMWM RESIN, GROOVE WEARING SURFACE, INSTALL THRIE BEAM RAILING, MISCELLANEOUS UNDERDECK WORK, AND PATCHING CONCRETE SURFACES. (SEE STRUCTURE PLANS FOR WORK ON EACH BRIGDE)

FOR LEGEND, SEE SHT. 91

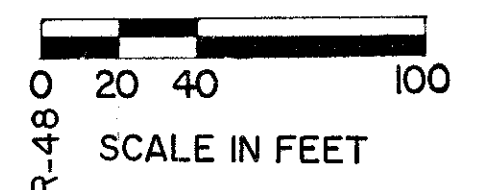
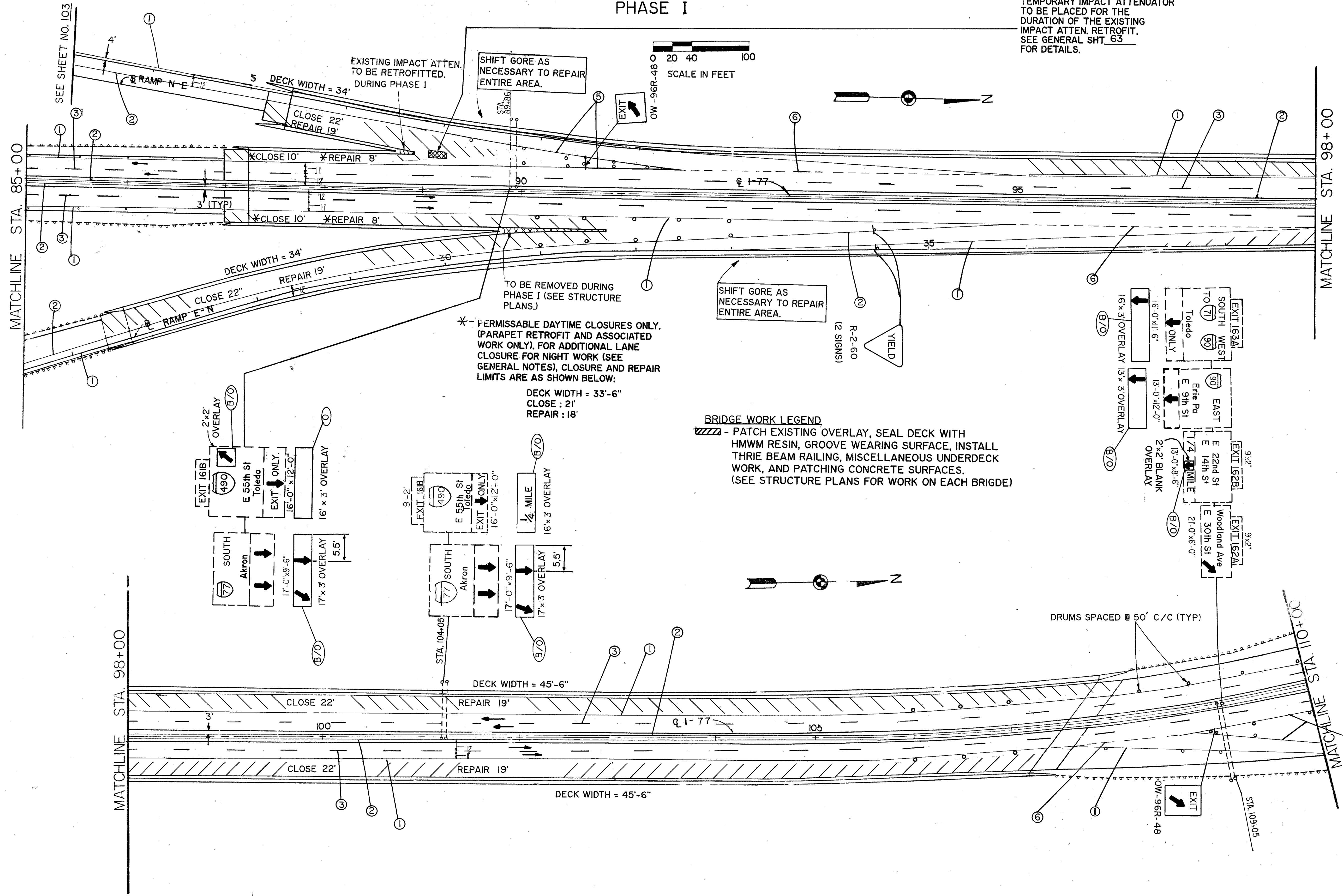
MAINTENANCE OF TRAFFIC

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PHASE I

TEMPORARY IMPACT ATTENUATOR TO BE PLACED FOR THE DURATION OF THE EXISTING IMPACT ATTEN. RETROFIT. SEE GENERAL SHT. 63 FOR DETAILS.

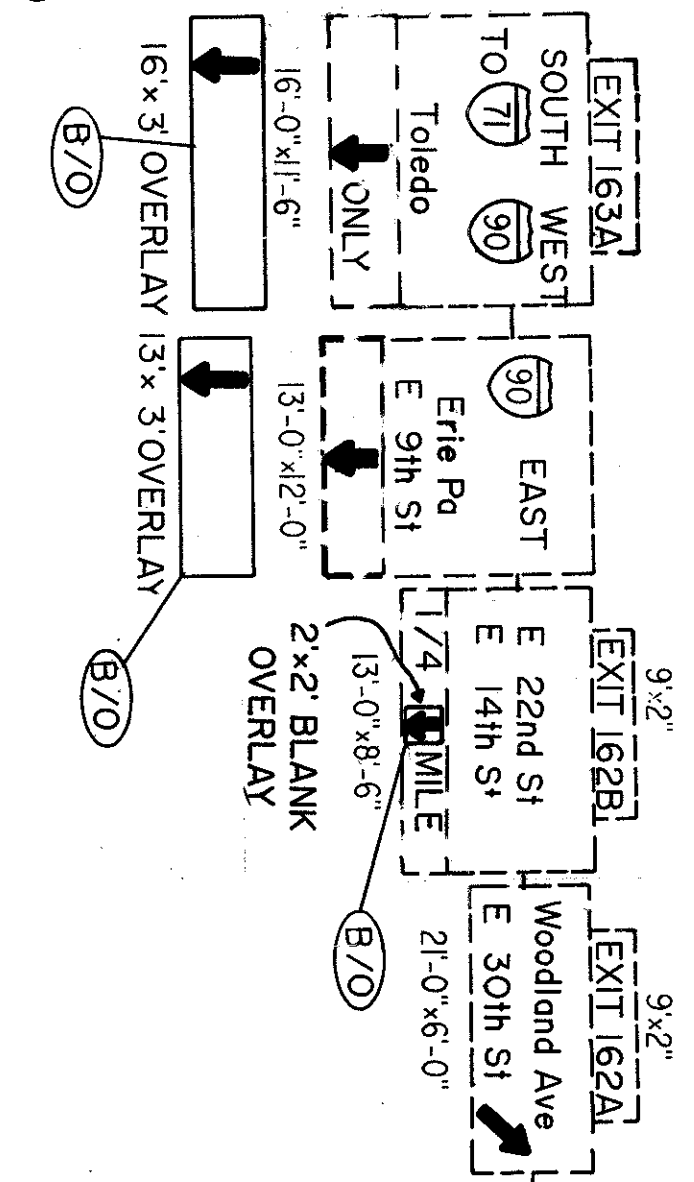
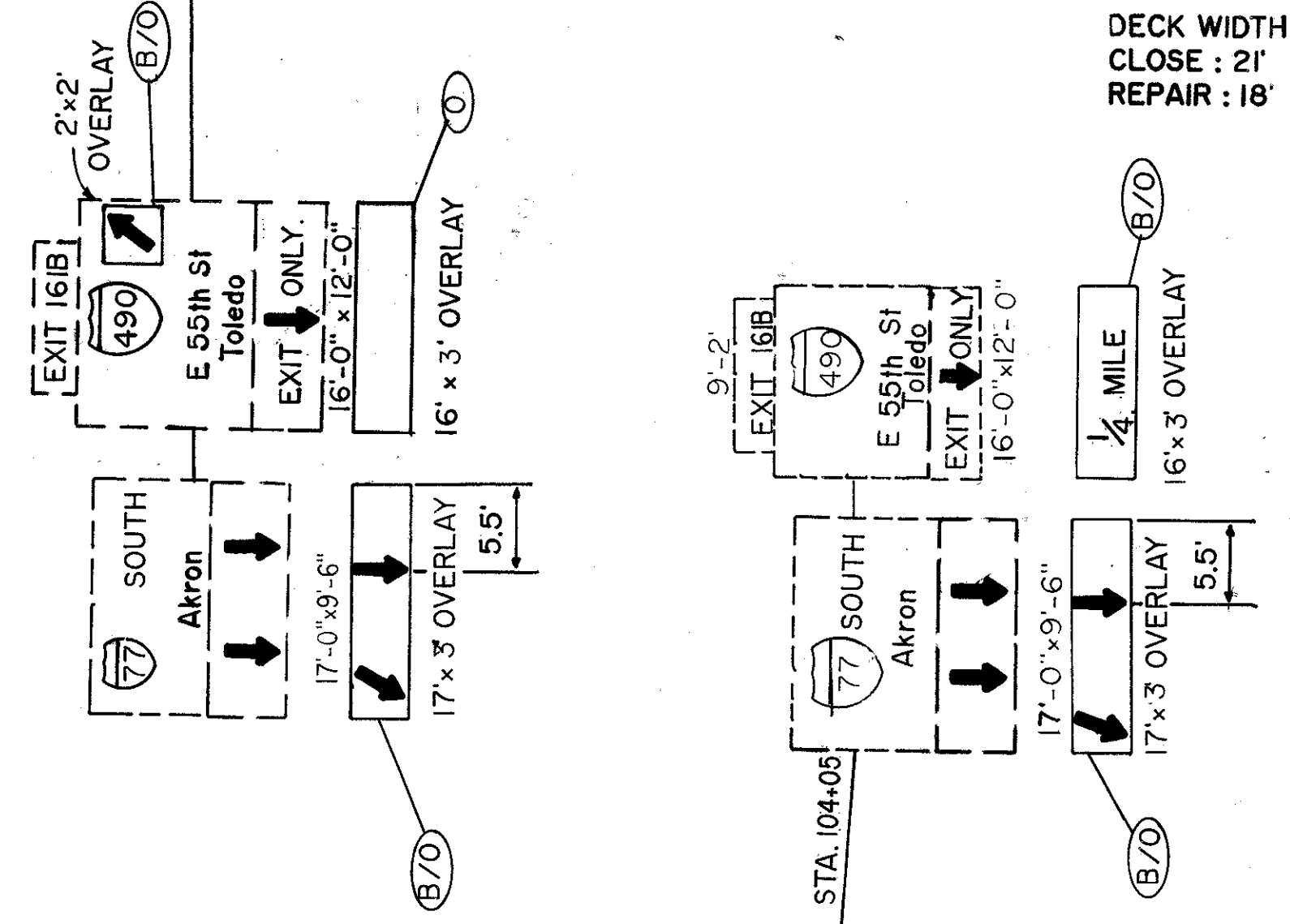


* PERMISSIBLE DAYTIME CLOSURES ONLY. (PARAPET RETROFIT AND ASSOCIATED WORK ONLY). FOR ADDITIONAL LANE CLOSURE FOR NIGHT WORK (SEE GENERAL NOTES), CLOSURE AND REPAIR LIMITS ARE AS SHOWN BELOW:

DECK WIDTH = 33'-6"
 CLOSE : 21'
 REPAIR : 18'

BRIDGE WORK LEGEND

▨ - PATCH EXISTING OVERLAY, SEAL DECK WITH HMWM RESIN, GROOVE WEARING SURFACE, INSTALL THREE BEAM RAILING, MISCELLANEOUS UNDERDECK WORK, AND PATCHING CONCRETE SURFACES. (SEE STRUCTURE PLANS FOR WORK ON EACH BRIDGE)



DRUMS SPACED @ 50' C/C (TYP)

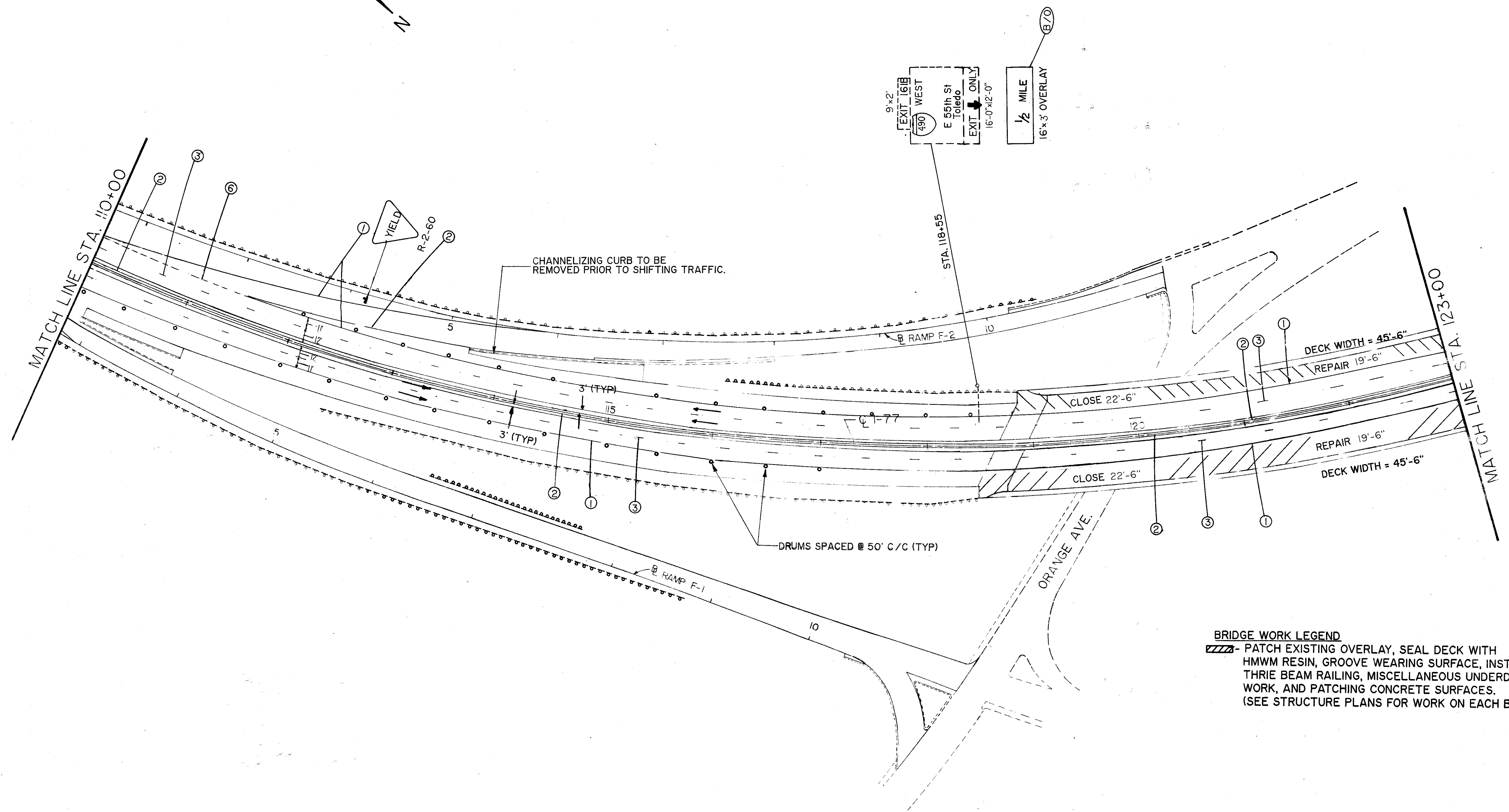
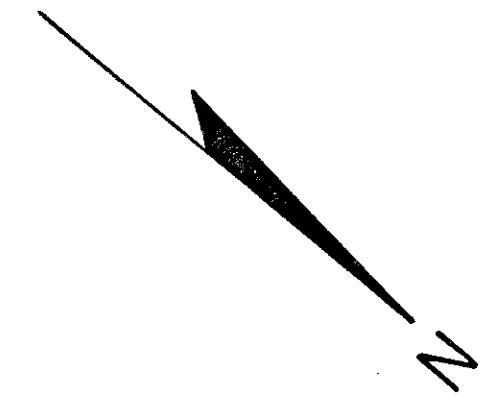
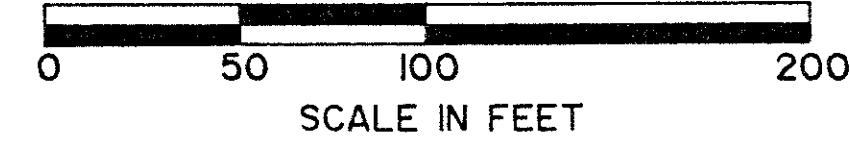
FOR LEGEND, SEE SHT. 91

MAINTENANCE OF TRAFFIC

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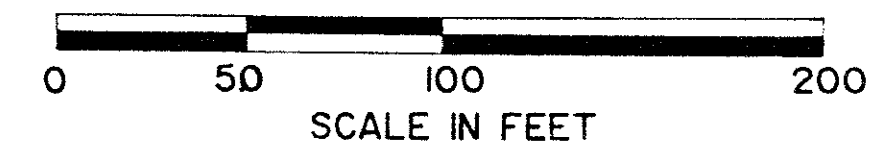


BRIDGE WORK LEGEND
 - PATCH EXISTING OVERLAY, SEAL DECK WITH HMWM RESIN, GROOVE WEARING SURFACE, INSTALL THREE BEAM RAILING, MISCELLANEOUS UNDERDECK WORK, AND PATCHING CONCRETE SURFACES.
 (SEE STRUCTURE PLANS FOR WORK ON EACH BRIDGE)

FOR LEGEND, SEE SHT. 91

MAINTENANCE OF TRAFFIC

PHASE I

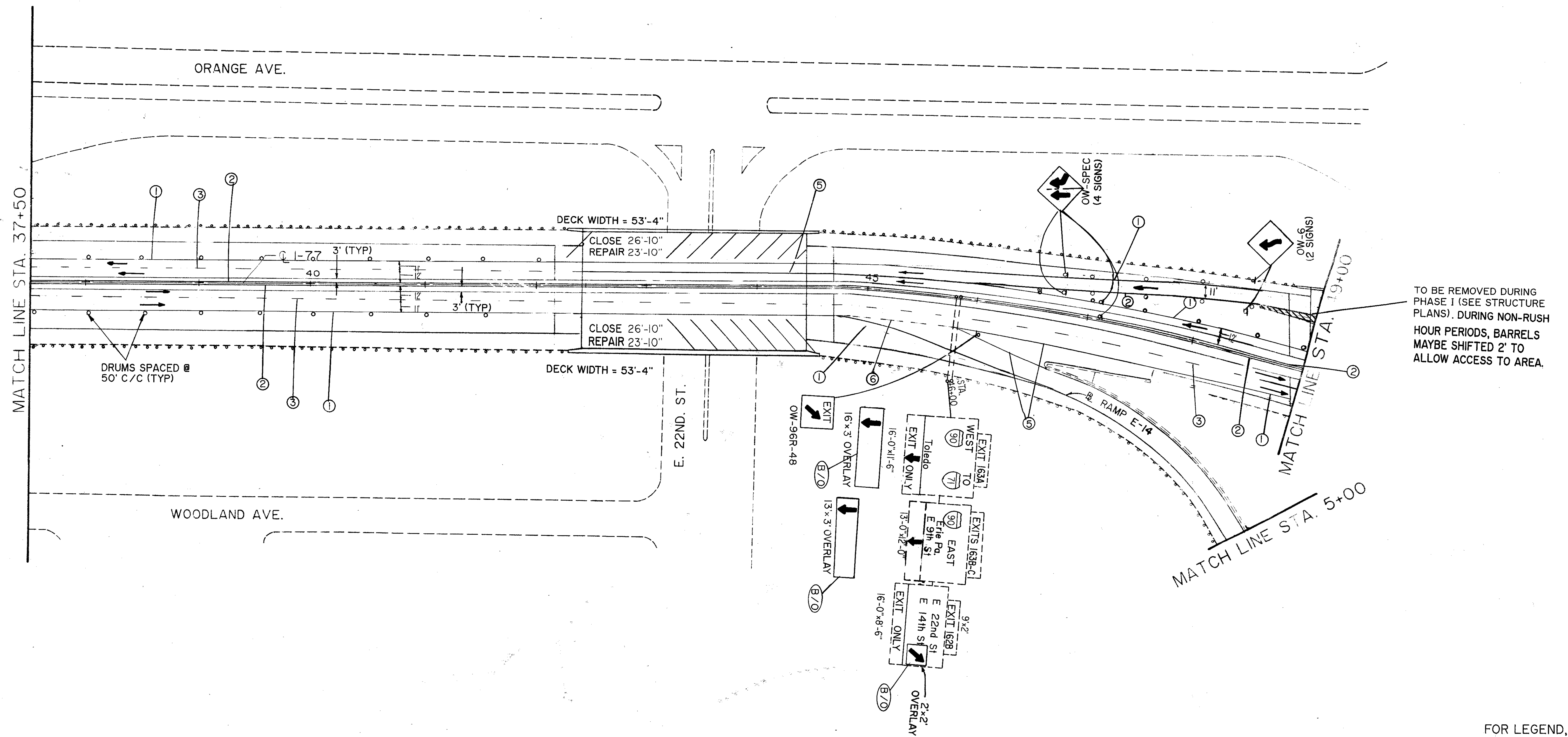


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BRIDGE WORK LEGEND

▨ - PATCH EXISTING OVERLAY, SEAL DECK WITH HMWM RESIN, GROOVE WEARING SURFACE, INSTALL THREE BEAM RAILING, MISCELLANEOUS UNDERDECK WORK, AND PATCHING CONCRETE SURFACES. (SEE STRUCTURE PLANS FOR WORK ON EACH BRIDGE)



FOR LEGEND, SEE SHT. 91

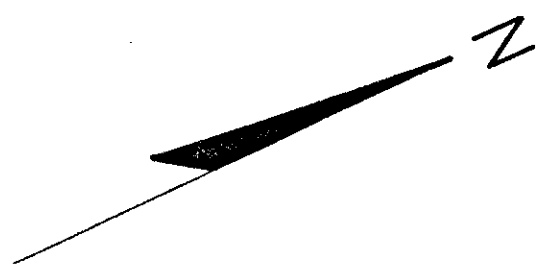
MAINTENANCE OF TRAFFIC

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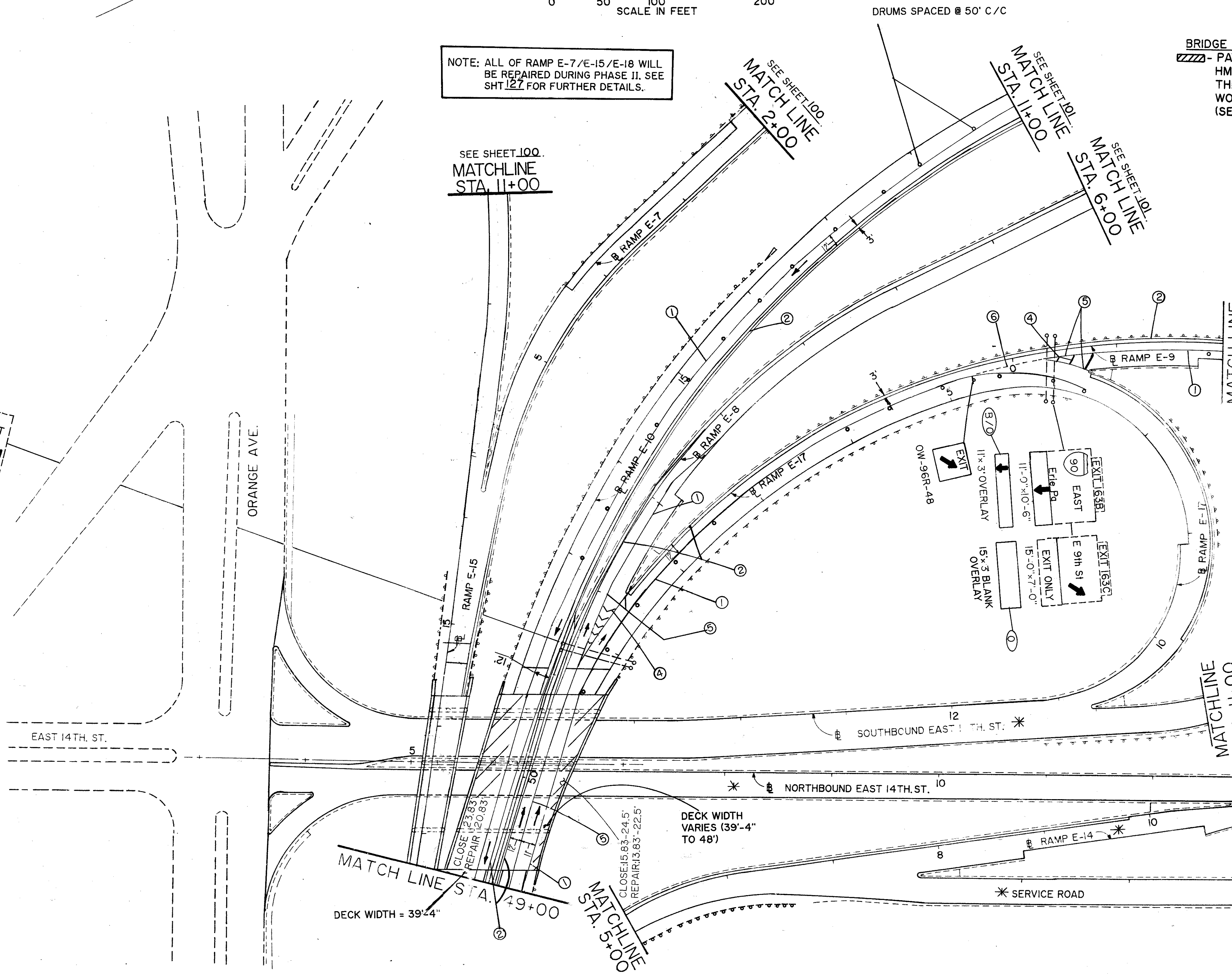
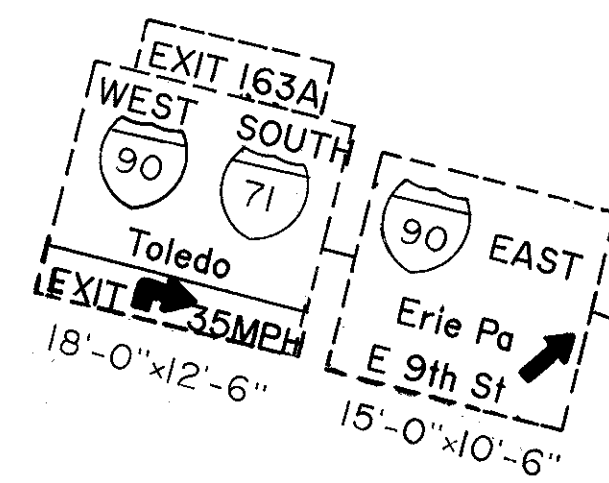
FOR LEGEND, SEE SHT. 91

PHASE I



NOTE: ALL OF RAMP E-7/E-15/E-18 WILL BE REPAIRED DURING PHASE II. SEE SHT 127 FOR FURTHER DETAILS.

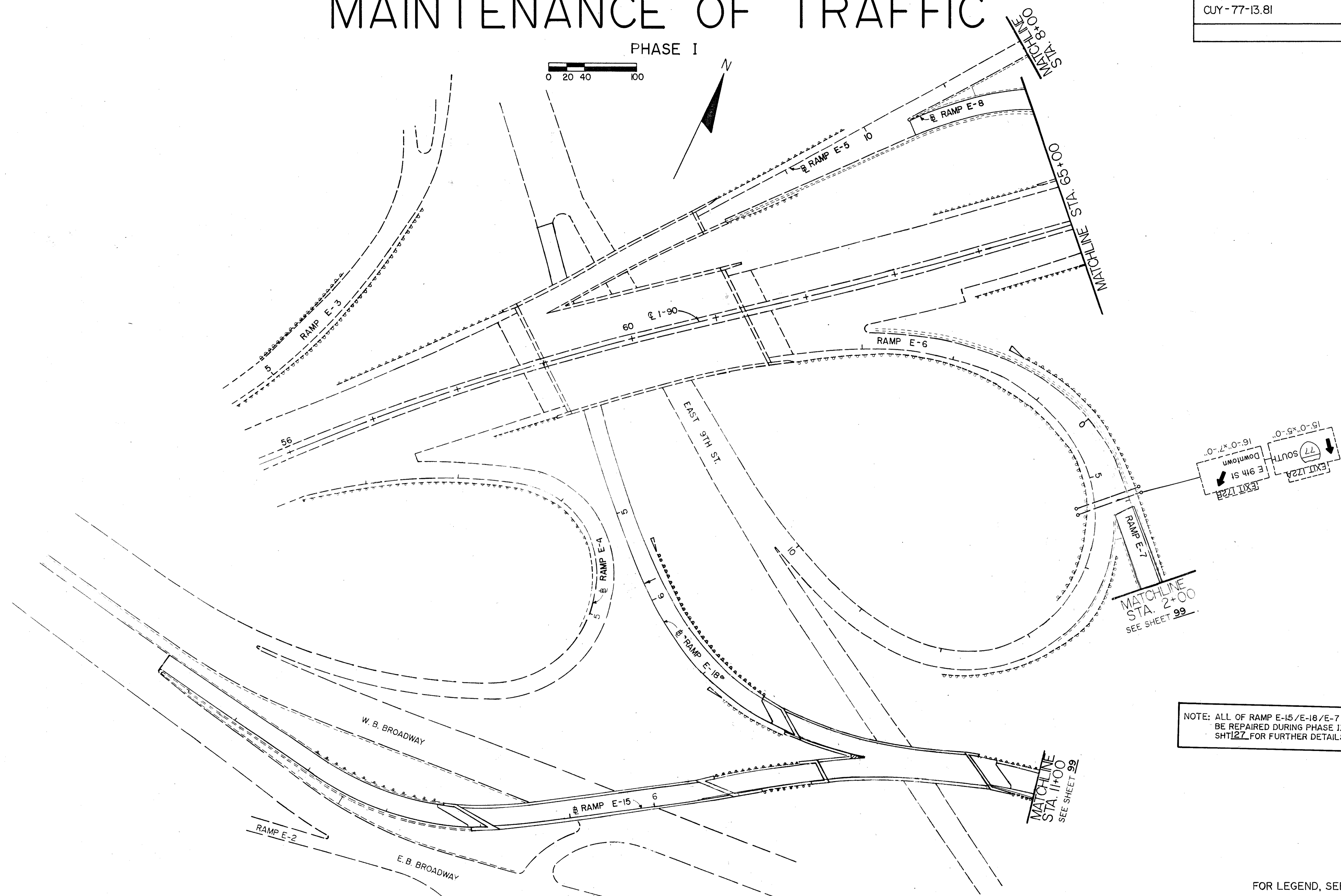
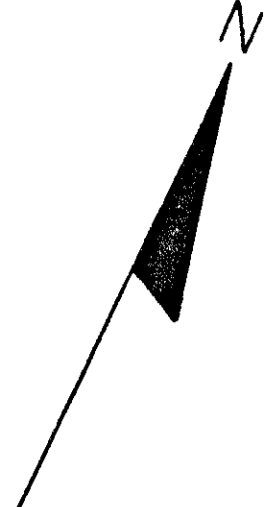
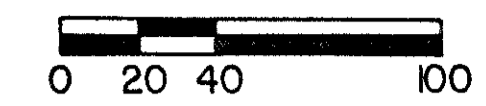
BRIDGE WORK LEGEND
 - PATCH EXISTING OVERLAY, SEAL DECK WITH HMWM RESIN, GROOVE WEARING SURFACE, INSTALL THREE BEAM RAILING, MISCELLANEOUS UNDERDECK WORK, AND PATCHING CONCRETE SURFACES. (SEE STRUCTURE PLANS FOR WORK ON EACH BRIDGE)



MAINTENANCE OF TRAFFIC

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	FHWA REGION 5	234
FEDERAL PROJECT		

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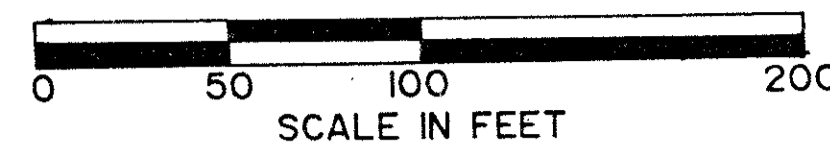


NOTE: ALL OF RAMP E-15/E-18/E-7 WILL BE REPAIRED DURING PHASE II. SEE SHT 127 FOR FURTHER DETAILS.

FOR LEGEND, SEE SHT. 91

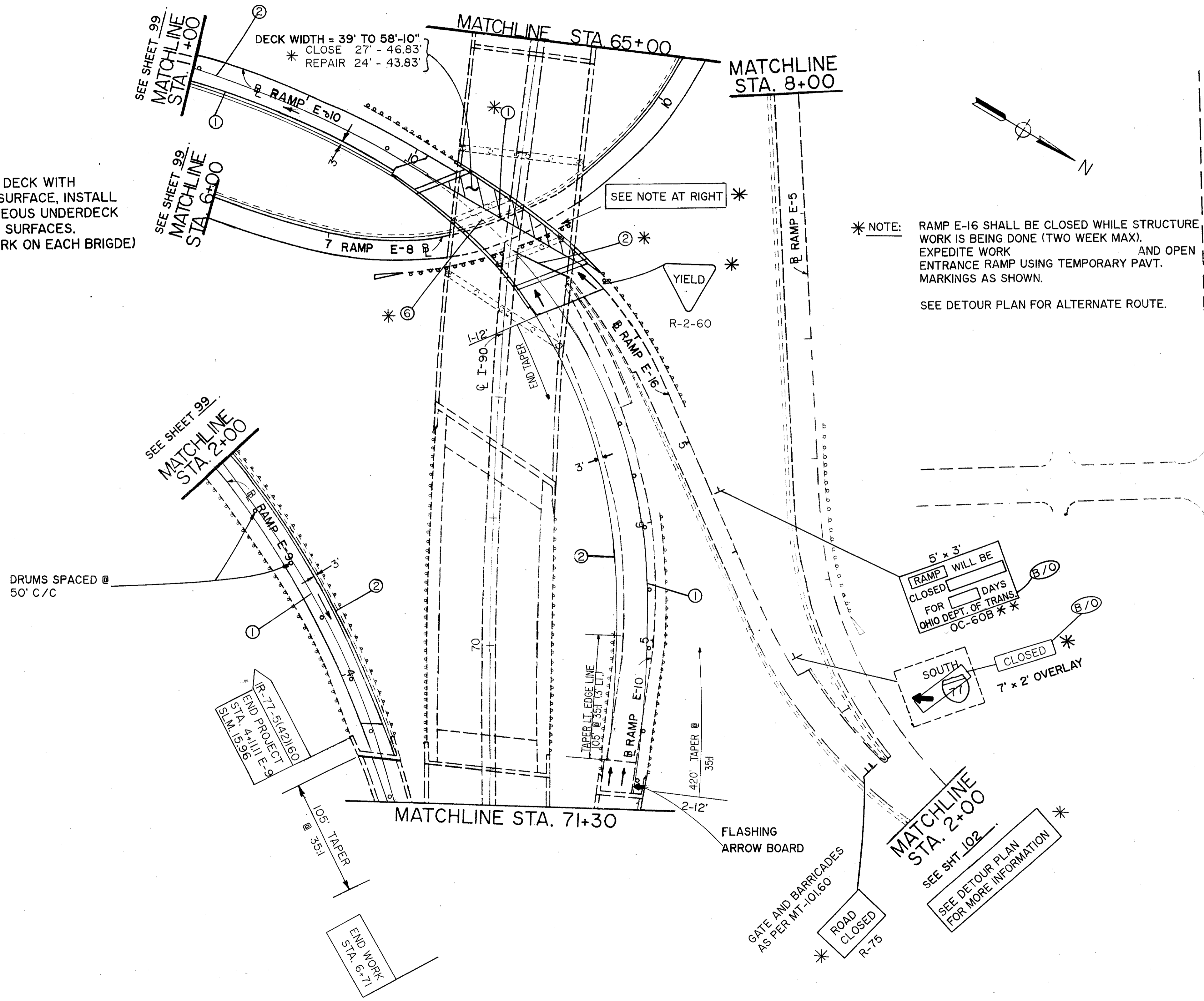
MAINTENANCE OF TRAFFIC

PHASE I



BRIDGE WORK LEGEND

- PATCH EXISTING OVERLAY, SEAL DECK WITH HMWM RESIN, GROOVE WEARING SURFACE, INSTALL THREE BEAM RAILING, MISCELLANEOUS UNDERDECK WORK, AND PATCHING CONCRETE SURFACES. (SEE STRUCTURE PLANS FOR WORK ON EACH BRIDGE)



FOR LEGEND, SEE SHT. 91

MAINTENANCE OF TRAFFIC

CUYAHOGA COUNTY
CUY-77-13.81

OHIO

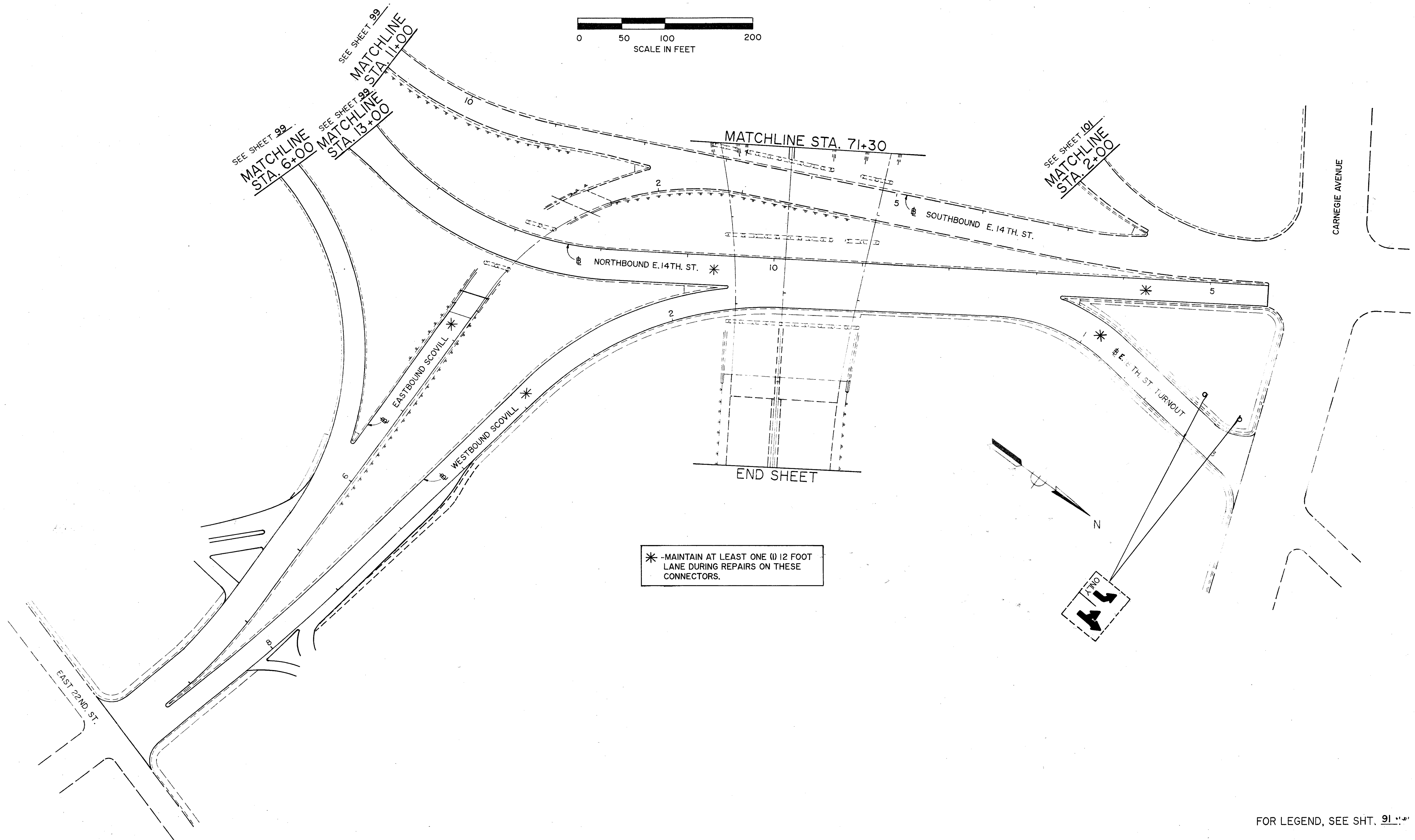
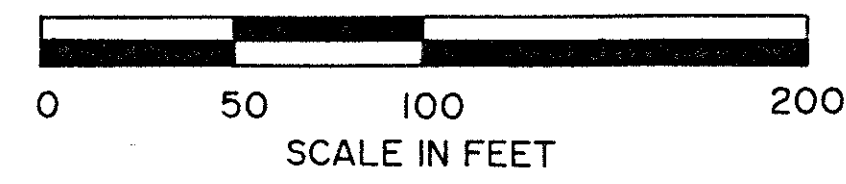
102

FHWA
REGION 5

234

FEDERAL
PROJECT

PHASE I



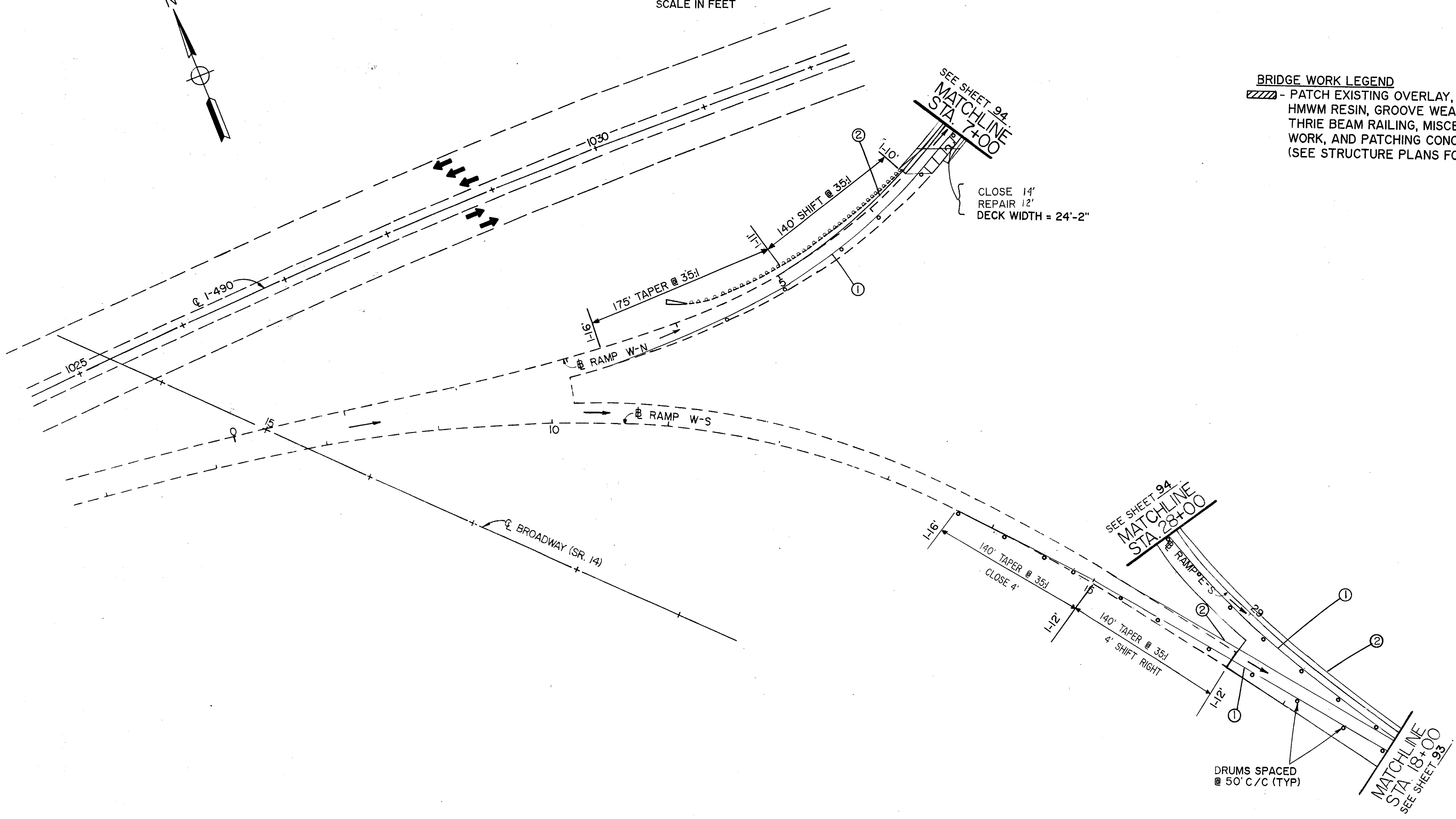
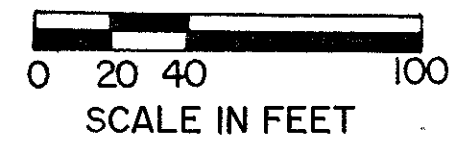
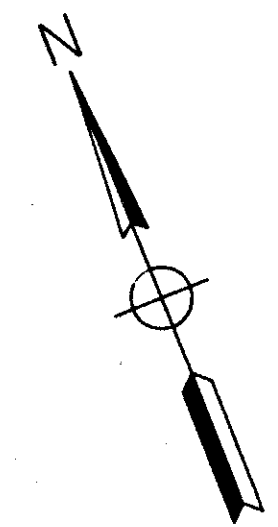
* - MAINTAIN AT LEAST ONE (1) 12 FOOT LANE DURING REPAIRS ON THESE CONNECTORS.

FOR LEGEND, SEE SHT. 91

MAINTENANCE OF TRAFFIC

PHASE I

CUYAHOGA COUNTY CUY-77-13.81	OHIO	104
	FHWA REGION 5	234
FEDERAL PROJECT		



BRIDGE WORK LEGEND
 - PATCH EXISTING OVERLAY, SEAL DECK WITH HMWM RESIN, GROOVE WEARING SURFACE, INSTALL THREE BEAM RAILING, MISCELLANEOUS UNDERDECK WORK, AND PATCHING CONCRETE SURFACES.
 (SEE STRUCTURE PLANS FOR WORK ON EACH BRIDGE)

FOR LEGEND, SEE SHT. 91.

MAINTENANCE OF TRAFFIC

CUYAHOGA COUNTY
CUY- 77-13.81

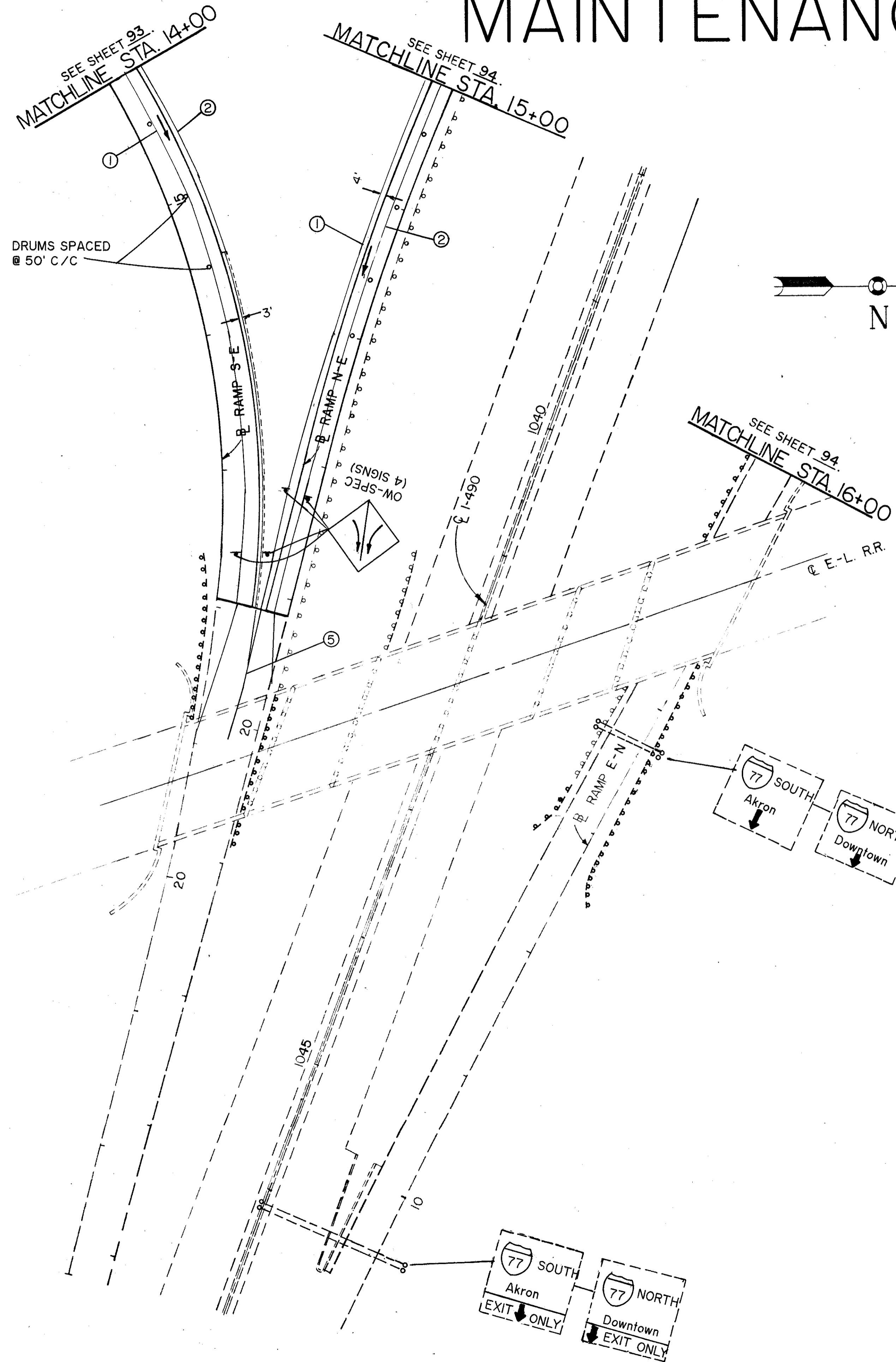
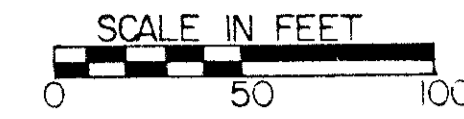
OHIO

FHWA
REGION 5

FEDERAL
PROJECT

105
234

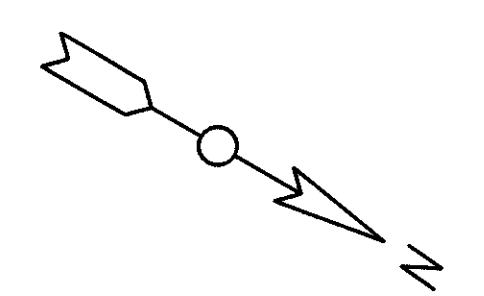
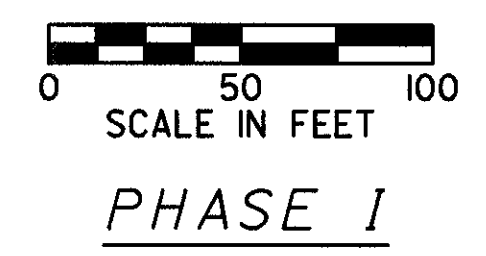
PHASE I



FOR LEGEND, SEE SHT. 91

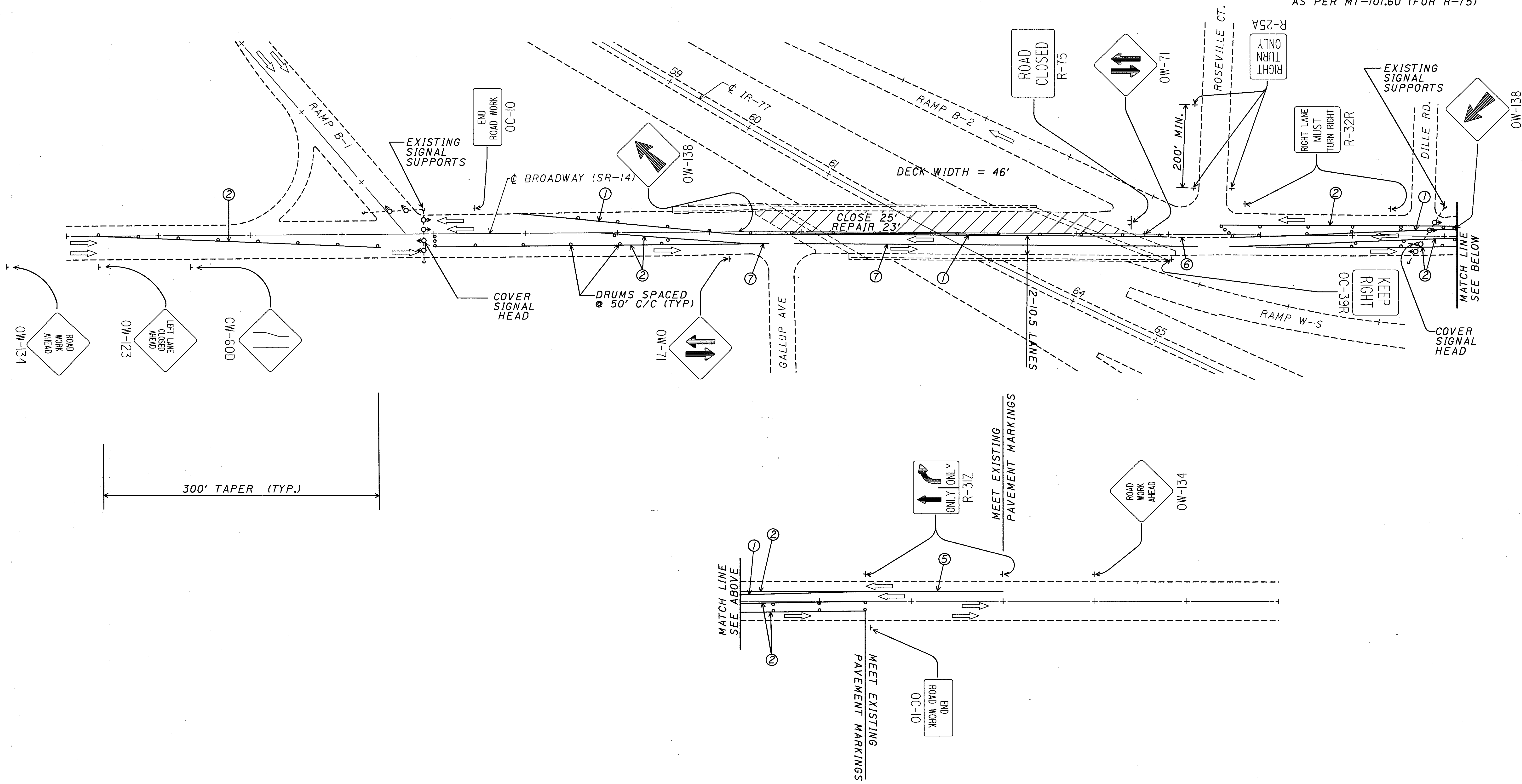
MAINTENANCE OF TRAFFIC

CUYAHOGA COUNTY CUY-77-13.81	OHIO	106
	FHWA REGION 5	234
	FEDERAL PROJECT	



NOTES:
FOR LEGEND SEE SHEET 91.
GATES AND BARRICADES PLACED AS PER MT-101.60 (FOR R-75)

PLOT SUBMITTED BY: GRMOVSEK
 ZF3: [1100100108084MPA.DGN: 1
 PLOT SUBMITTED: 18-MAY-1992 12:44

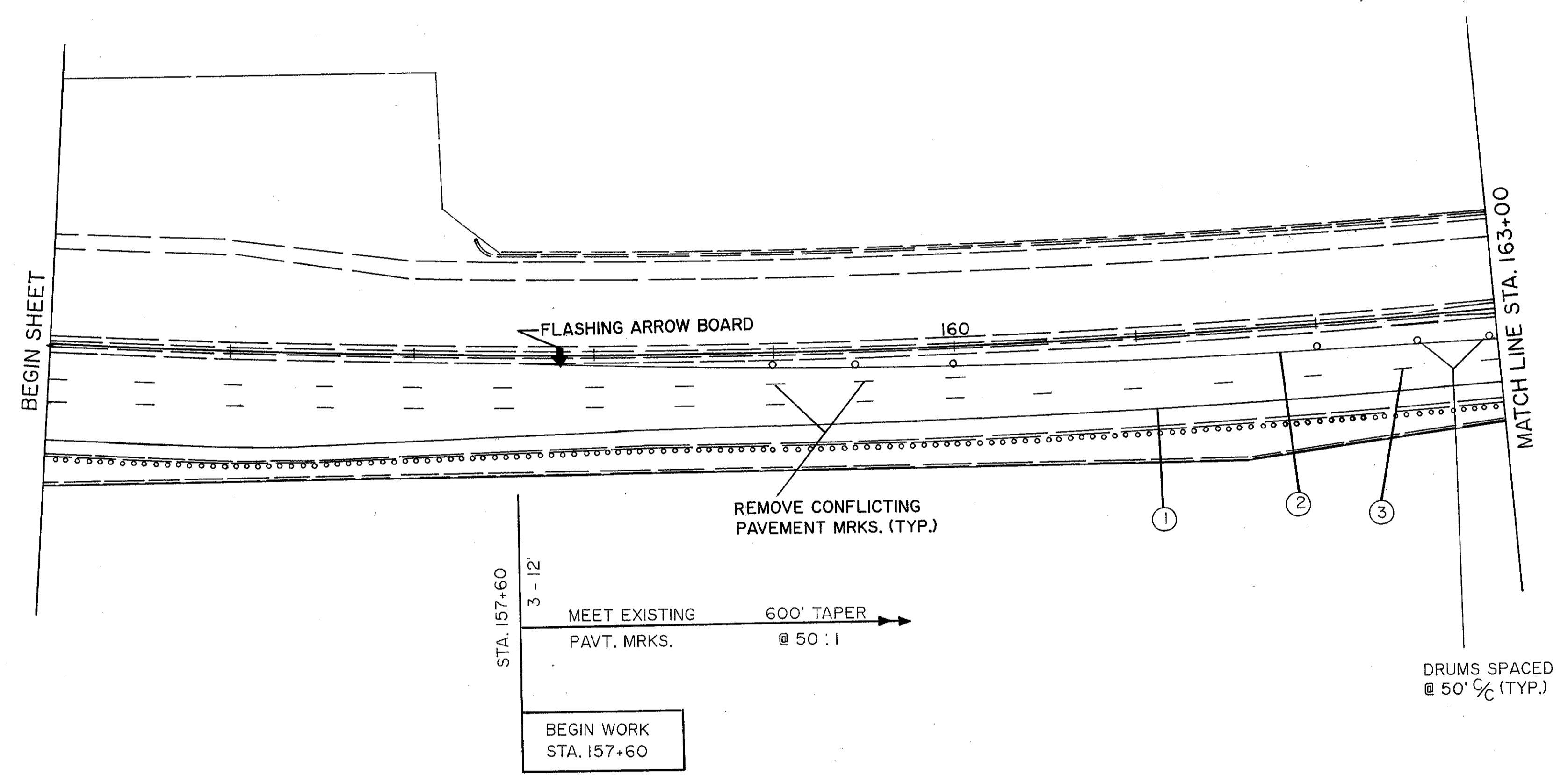
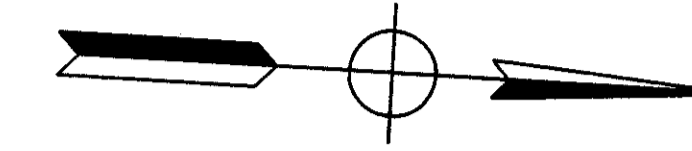
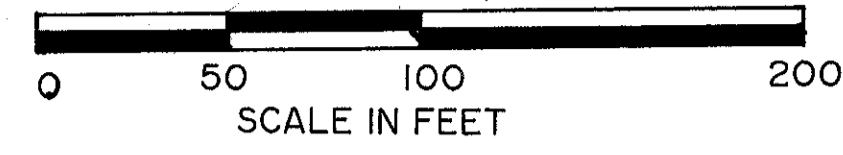


MAINTENANCE OF TRAFFIC

PHASE II

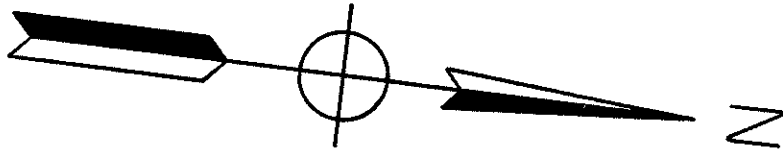
CUYAHOGA COUNTY CUY-77-13.81	OHIO	107 234
	FHWA REGION 5	
	FEDERAL PROJECT	

FOR LEGEND, SEE SHT 91.



MAINTENANCE OF TRAFFIC

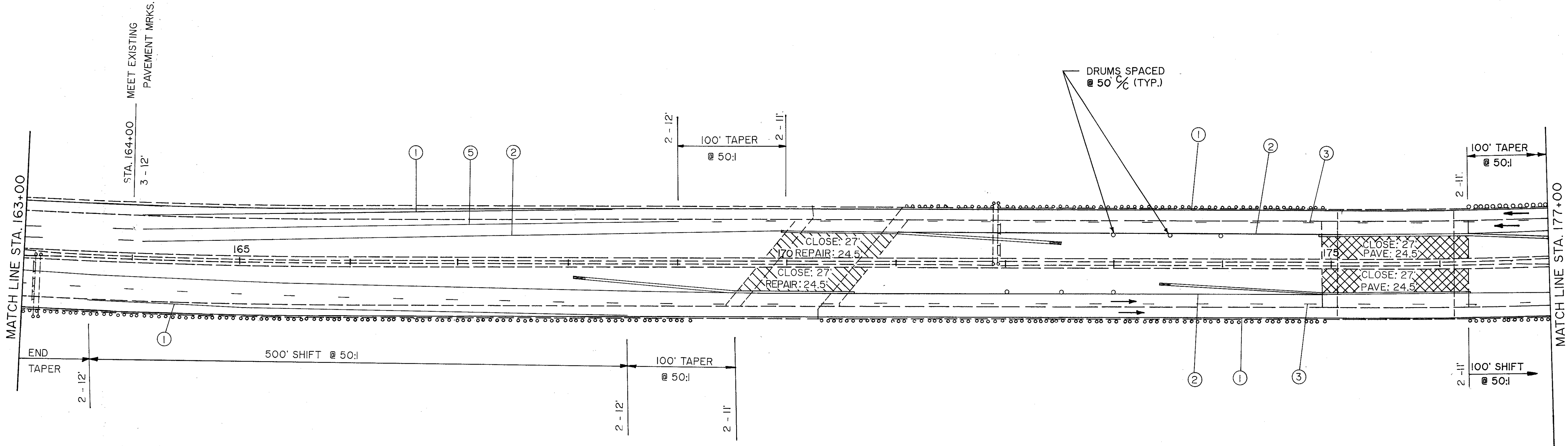
PHASE II



CUYAHOGA COUNTY
CUY-77-13.81

OHIO	108 234
FHWA REGION 5	
FEDERAL PROJECT	

FOR LEGEND SEE SHT 91

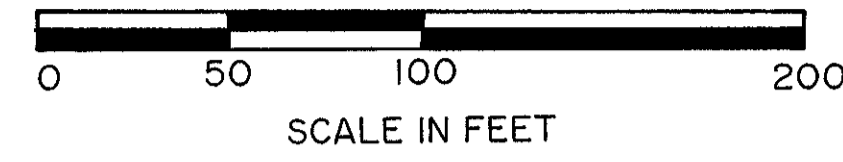


BRIDGE WORK LEGEND
(SEE STRUCTURE PLANS FOR MORE DETAIL)

- REPLACE FORWARD EXPANSION JOINT, PATCH OVERLAY, SEAL DECK WITH HMWM RESIN, GROOVE WEARING SURFACE, PATCH AND SEAL CONCRETE SURFACES.
- REPLACE ASPHALT WEARING SURFACE WITH MSC. OVERLAY, PATCH AND SEAL CONCRETE SURFACES.

MAINTENANCE OF TRAFFIC

PHASE II



CUYAHOGA COUNTY
CUY-77-13.81

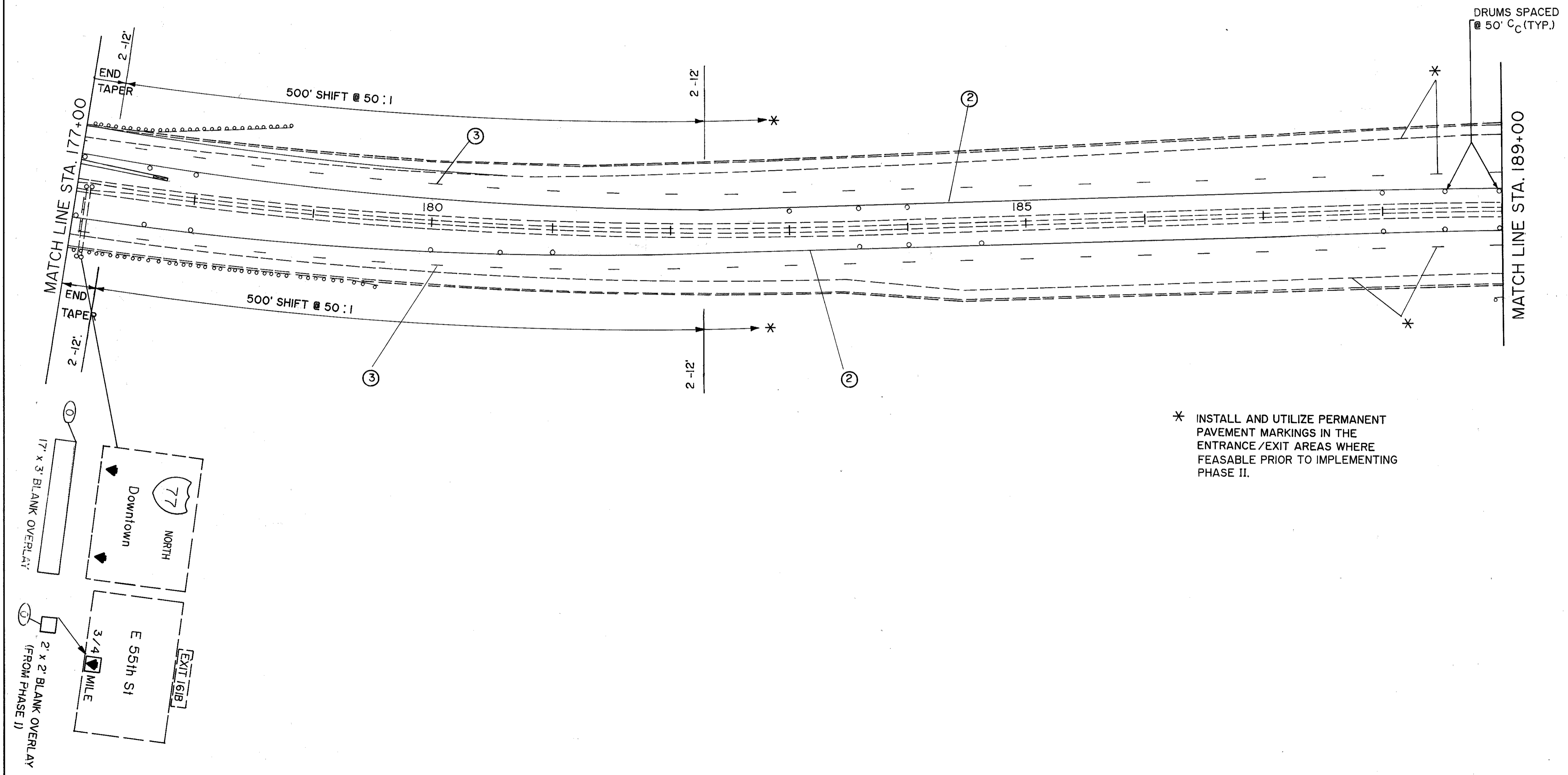
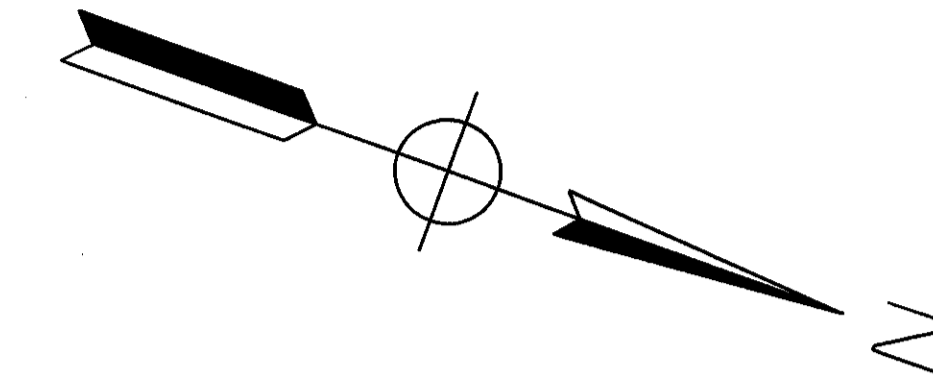
OHIO

FHWA
REGION 5

FEDERAL
PROJECT

109
234

FOR LEGEND, SEE SHT 91.



* INSTALL AND UTILIZE PERMANENT PAVEMENT MARKINGS IN THE ENTRANCE/EXIT AREAS WHERE FEASIBLE PRIOR TO IMPLEMENTING PHASE II.

MAINTENANCE OF TRAFFIC

PHASE II



CUYAHOGA COUNTY
CUY - 77 - 13.81

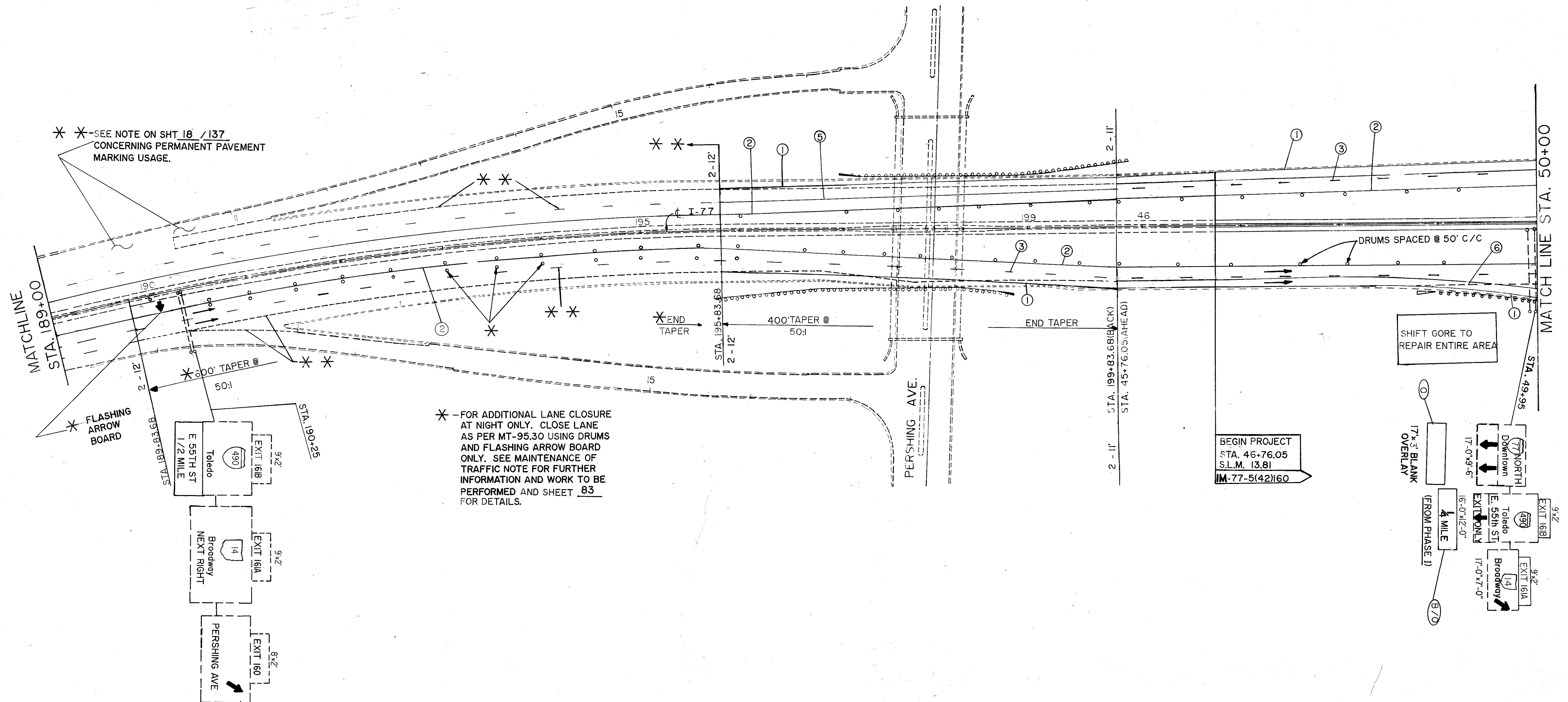
OHIO

FHWA
REGION 5

110

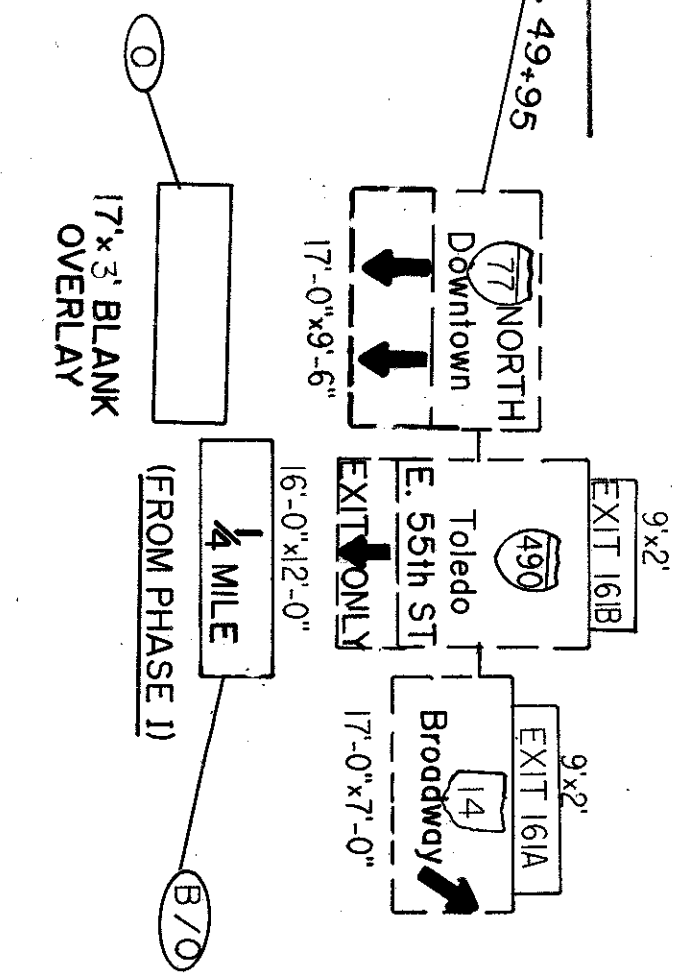
234

FEDERAL
PROJECT



SHIFT GORE TO REPAIR ENTIRE AREA

BEGIN PROJECT
STA. 46+76.05
S.L.M. 13.81
IM-77-5(42)160



FOR LEGEND, SEE SHT 91

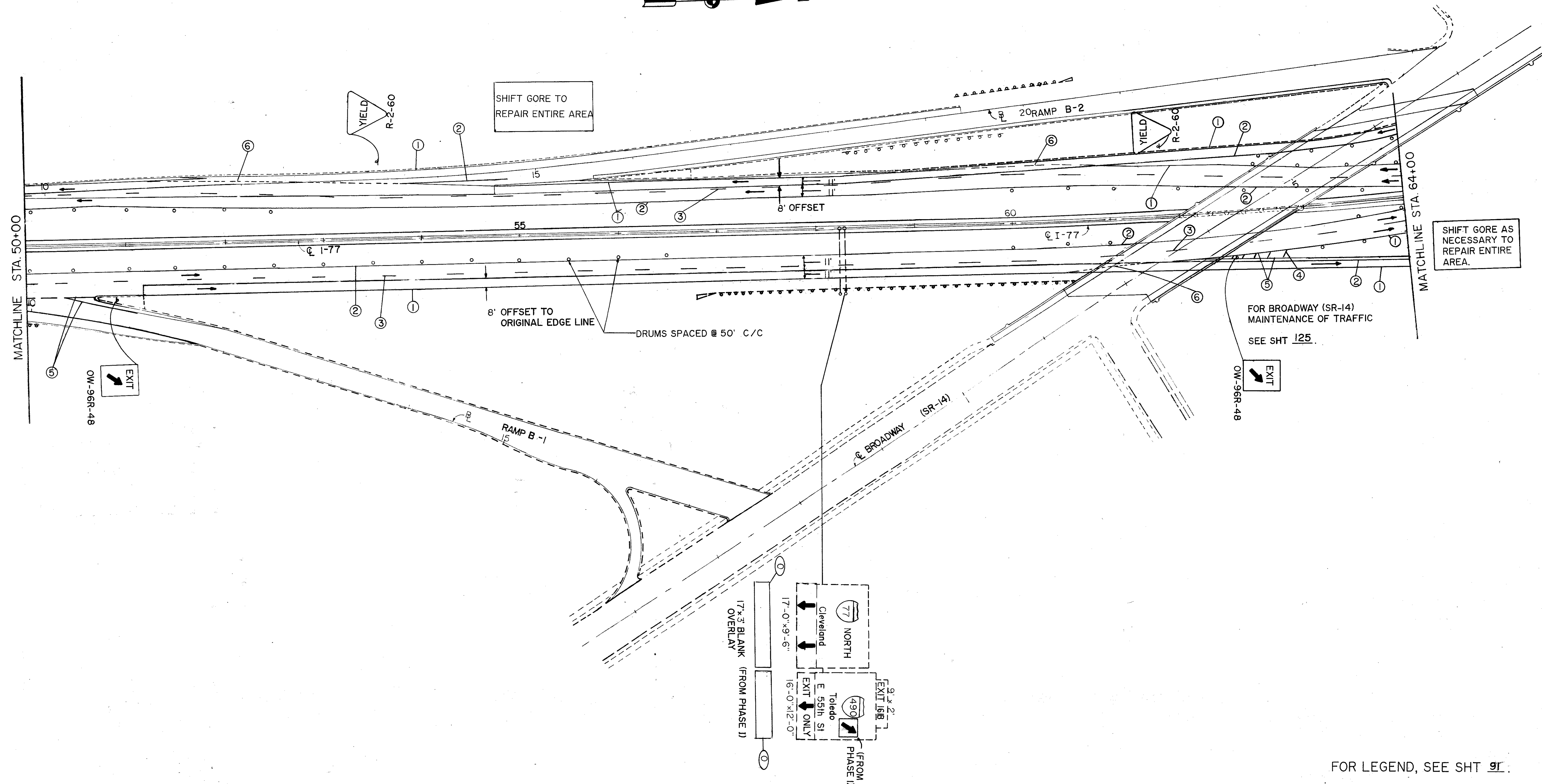
MAINTENANCE OF TRAFFIC

CUYAHOGA COUNTY
CUY-77-13.81

OHIO
FHWA
REGION 5
234

FEDERAL
PROJECT

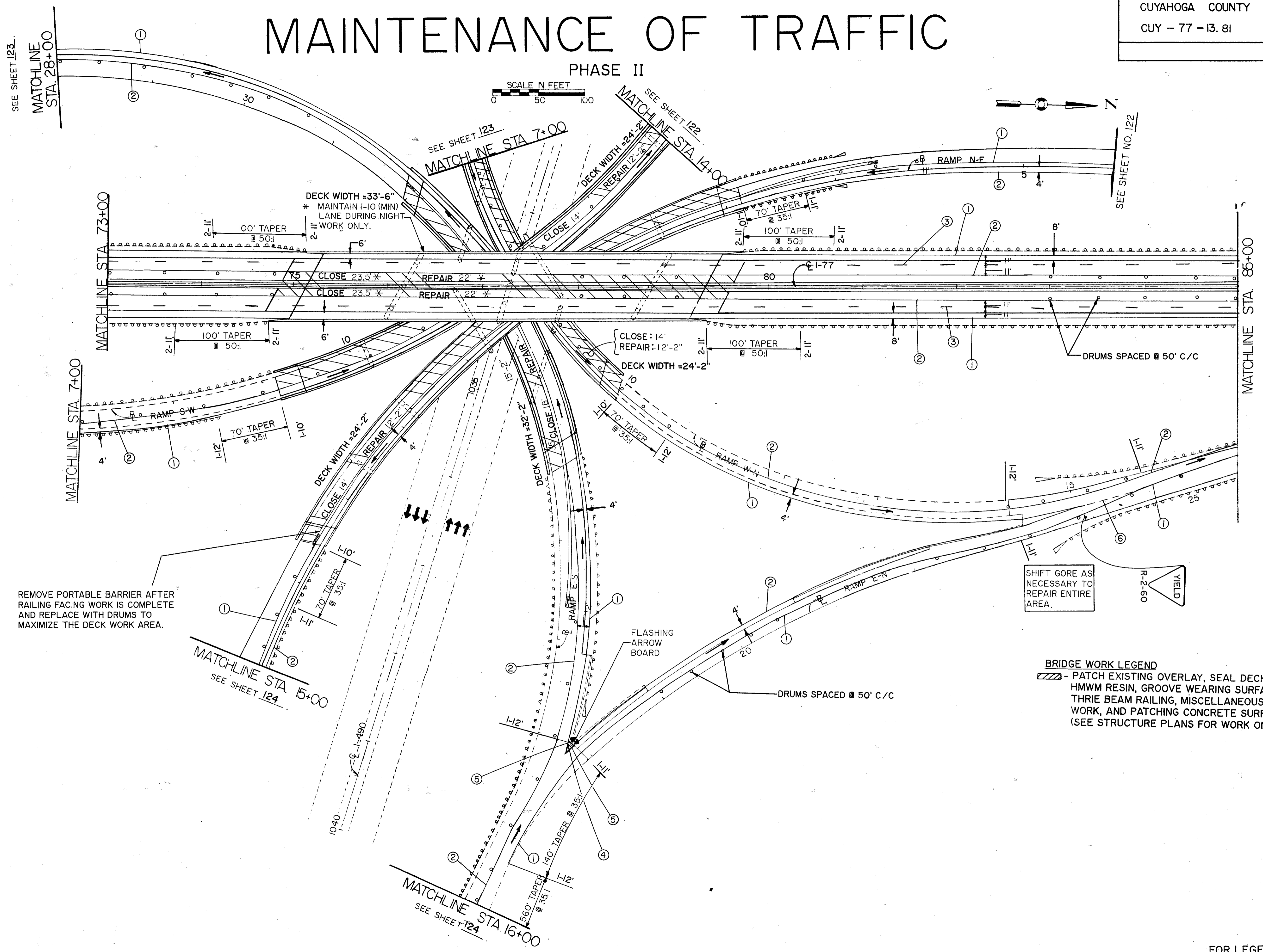
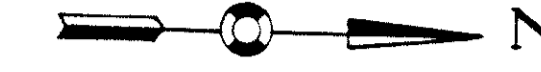
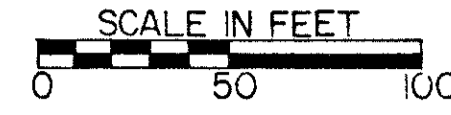
PHASE II
0 20 40 100
SCALE IN FEET



MAINTENANCE OF TRAFFIC

CUYAHOGA COUNTY	OHIO	113
CUY - 77 - 13. 81	FHWA REGION 5	234
	FEDERAL PROJECT	

PHASE II

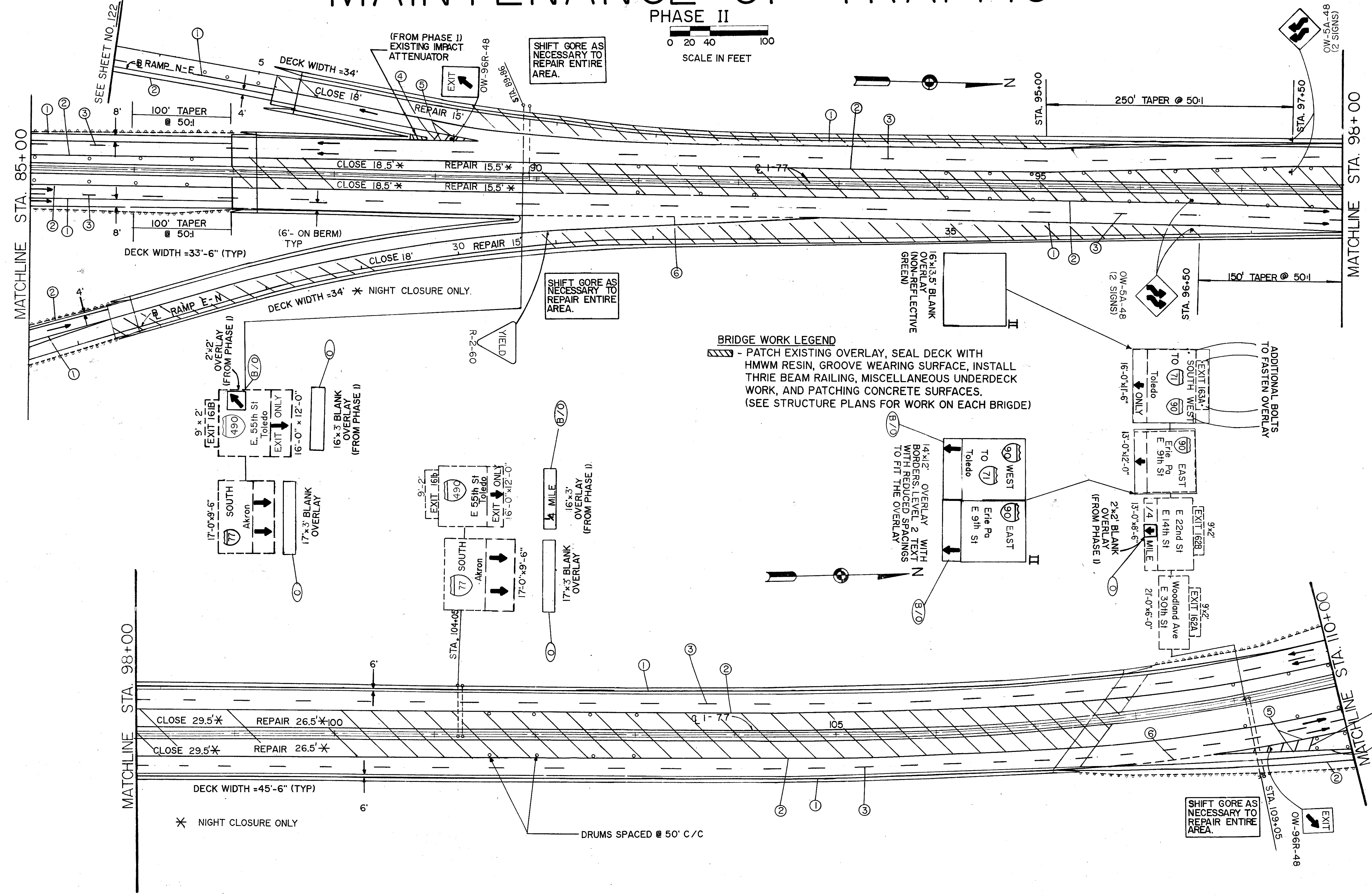
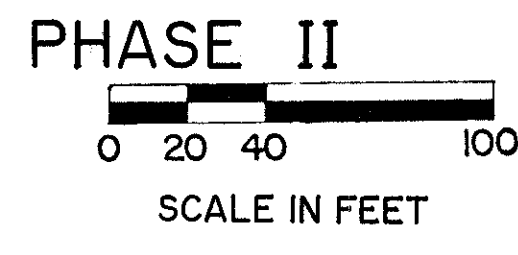


REMOVE PORTABLE BARRIER AFTER RAILING FACING WORK IS COMPLETE AND REPLACE WITH DRUMS TO MAXIMIZE THE DECK WORK AREA.

SHIFT GORE AS NECESSARY TO REPAIR ENTIRE AREA.

BRIDGE WORK LEGEND
 - PATCH EXISTING OVERLAY, SEAL DECK WITH HMWM RESIN, GROOVE WEARING SURFACE, INSTALL THRIE BEAM RAILING, MISCELLANEOUS UNDERDECK WORK, AND PATCHING CONCRETE SURFACES. (SEE STRUCTURE PLANS FOR WORK ON EACH BRIDGE)

MAINTENANCE OF TRAFFIC

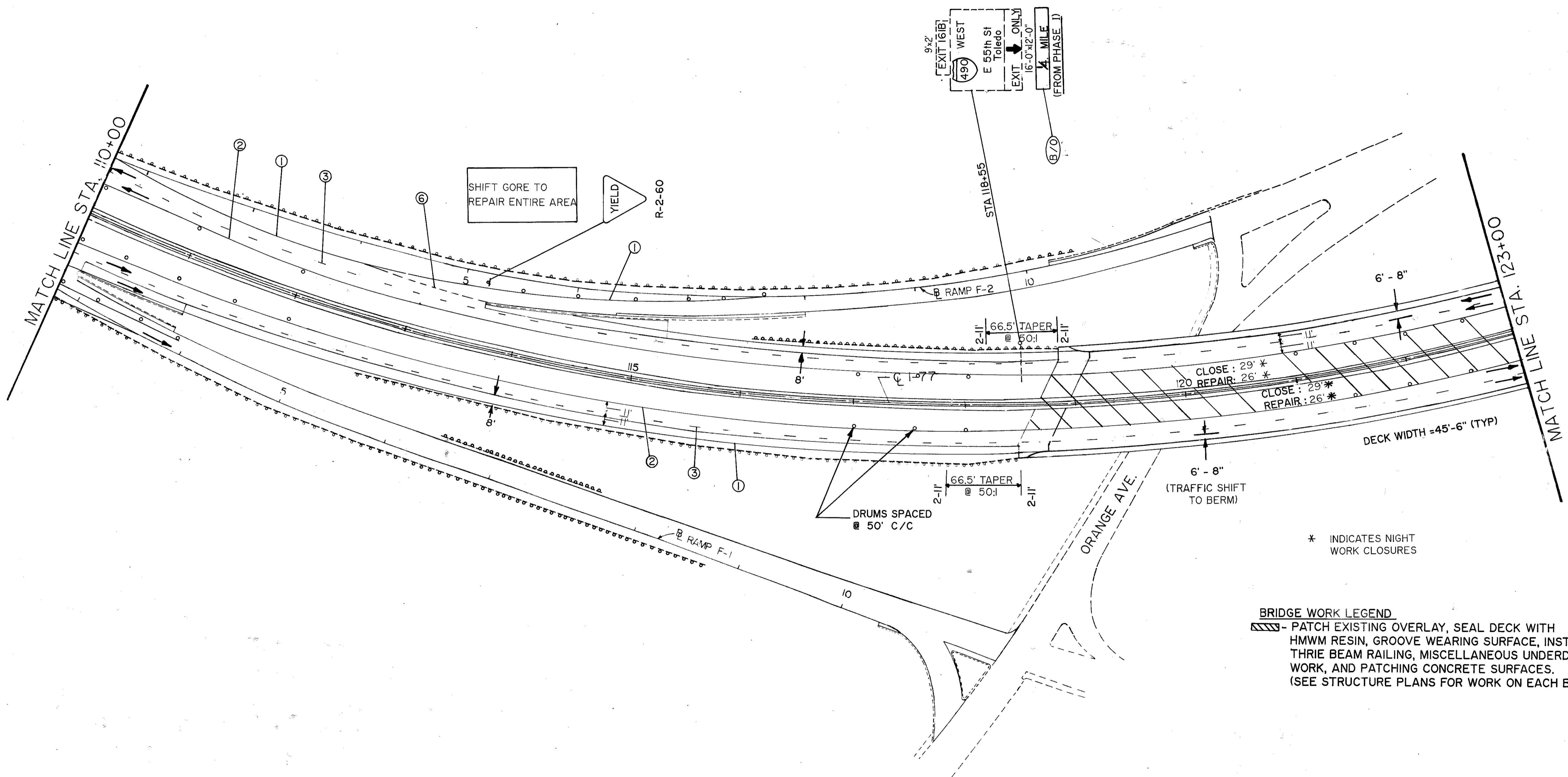
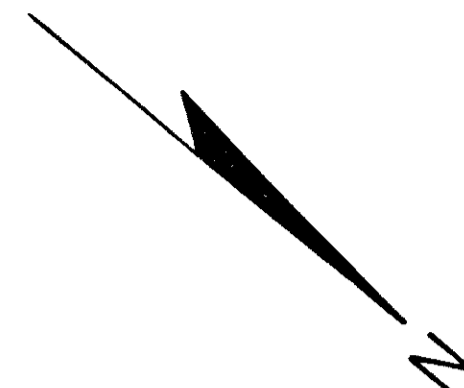


SHIFT GORE AS NECESSARY TO REPAIR ENTIRE AREA.

FOR LEGEND, SEE SHT. 91.

MAINTENANCE OF TRAFFIC

PHASE II



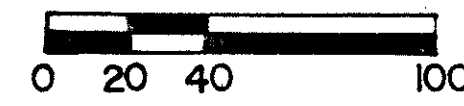
BRIDGE WORK LEGEND
 [Hatched Pattern] - PATCH EXISTING OVERLAY, SEAL DECK WITH HMWM RESIN, GROOVE WEARING SURFACE, INSTALL THREE BEAM RAILING, MISCELLANEOUS UNDERDECK WORK, AND PATCHING CONCRETE SURFACES. (SEE STRUCTURE PLANS FOR WORK ON EACH BRIDGE)

* INDICATES NIGHT WORK CLOSURES

FOR LEGEND, SEE SHT. 91

MAINTENANCE OF TRAFFIC

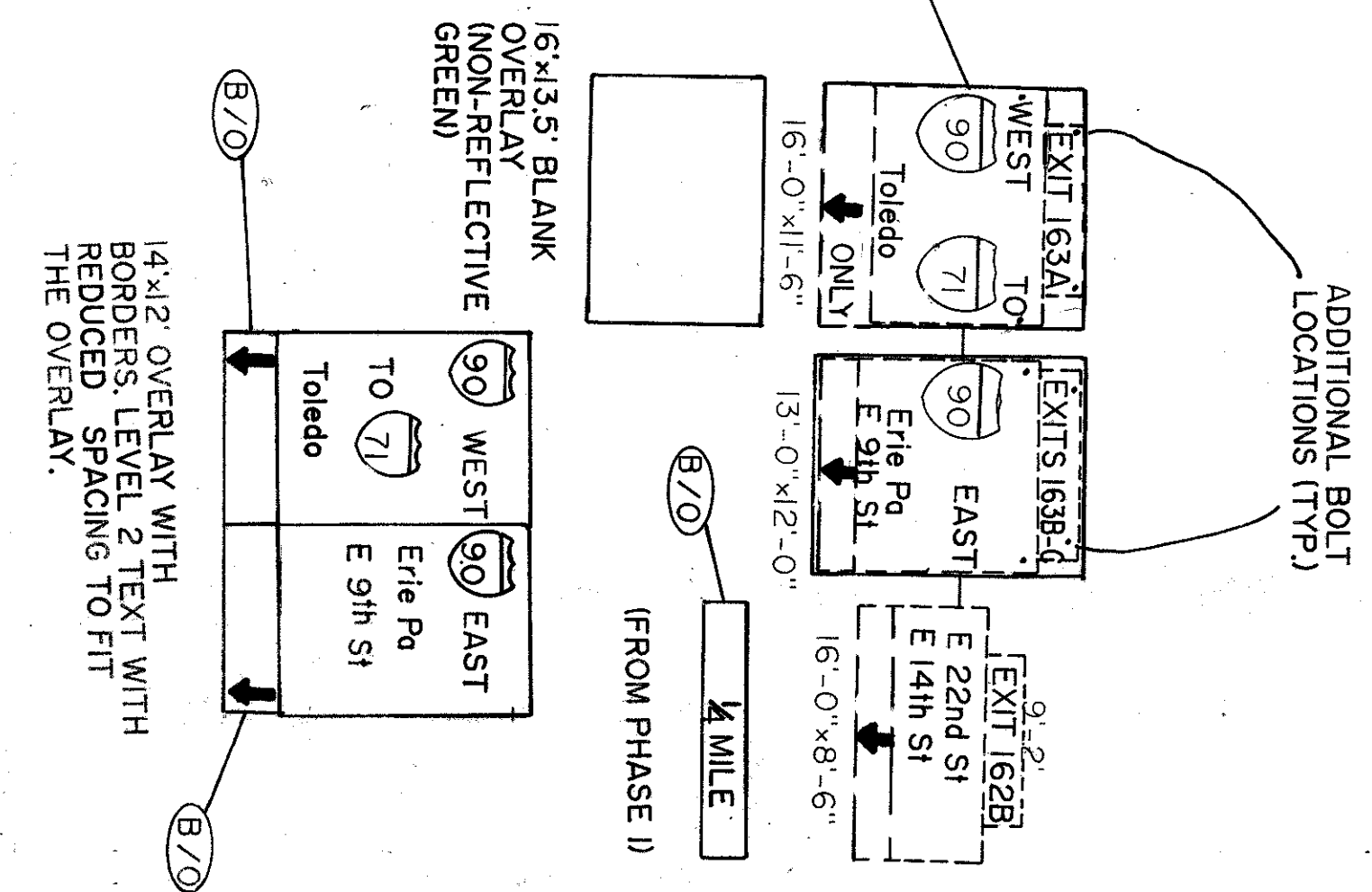
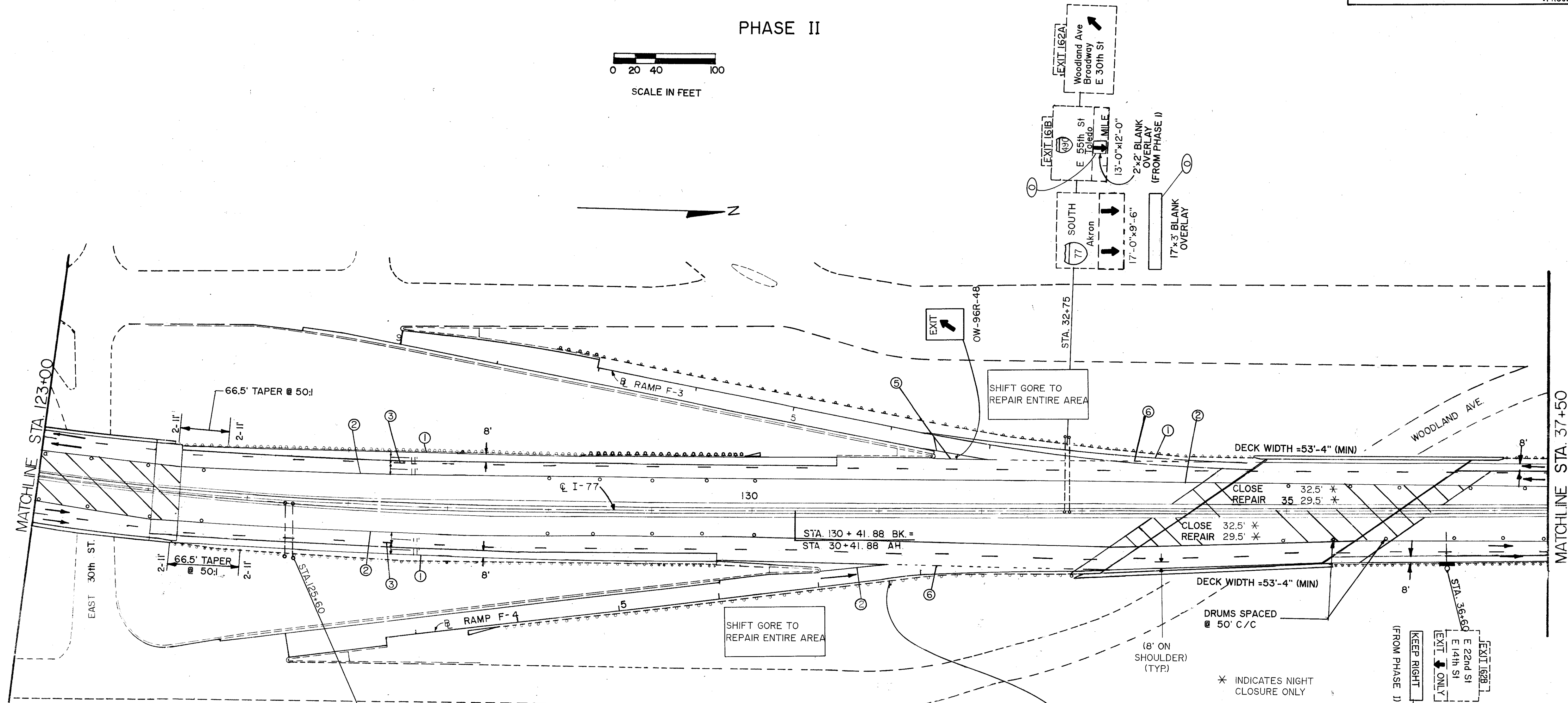
PHASE II



SCALE IN FEET



CUYAHOGA COUNTY	OHIO	116
CUY-77-13.81	FHWA REGION 5	234
FEDERAL PROJECT		

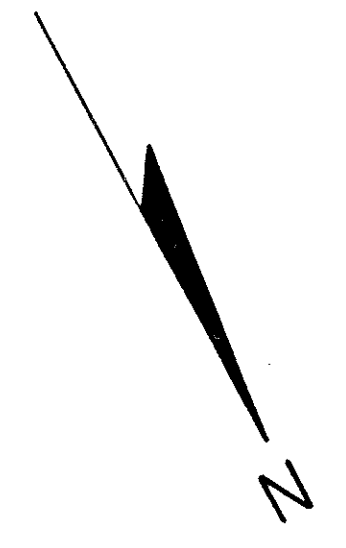
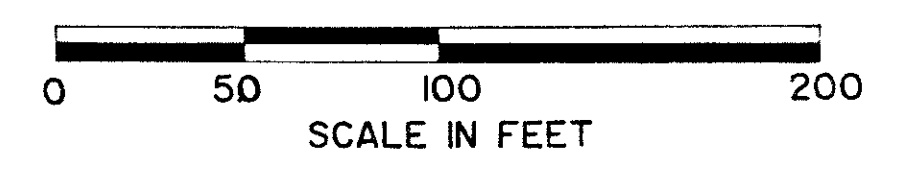


* INDICATES NIGHT CLOSURE ONLY

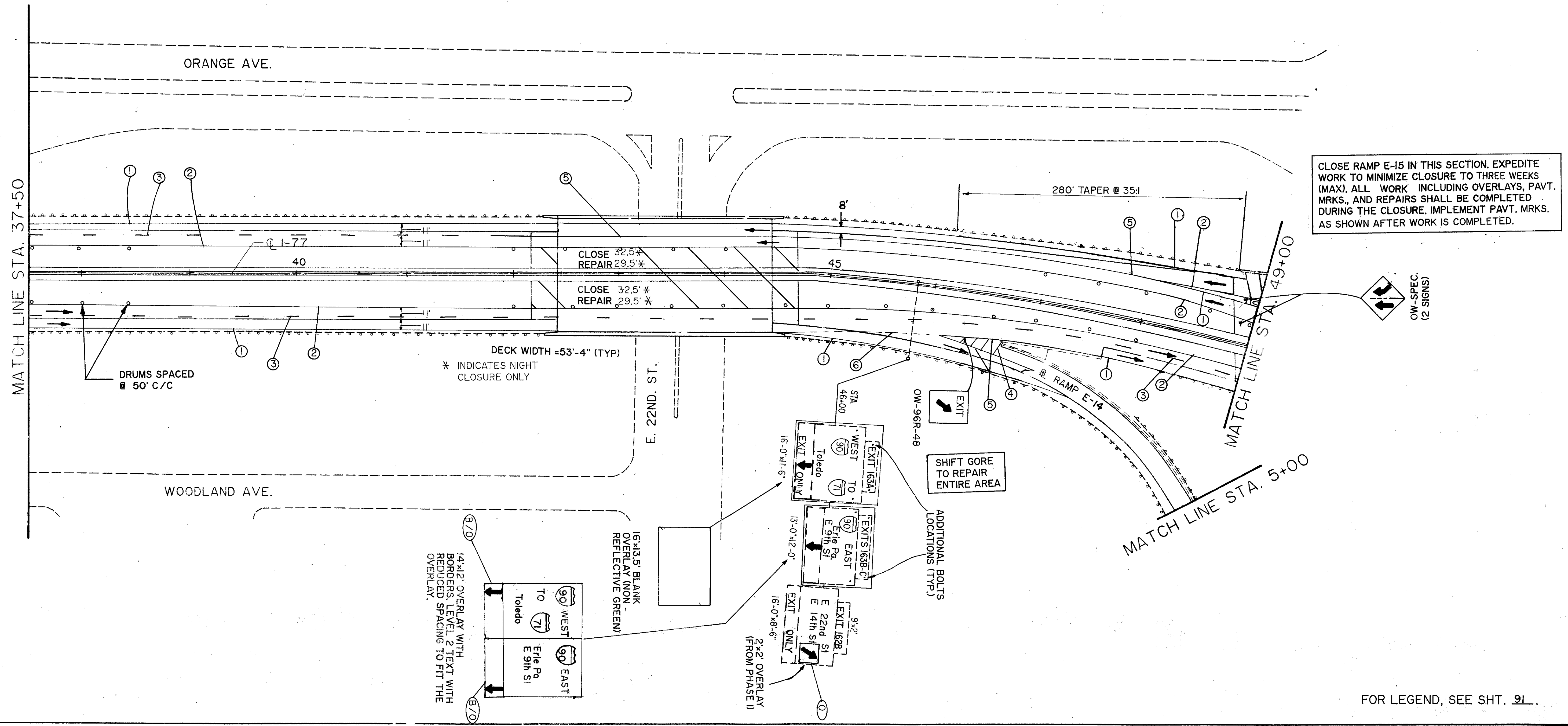
BRIDGE WORK LEGEND
 [Symbol] - PATCH EXISTING OVERLAY, SEAL DECK WITH HMWM RESIN, GROOVE WEARING SURFACE, INSTALL THREE BEAM RAILING, MISCELLANEOUS UNDERDECK WORK, AND PATCHING CONCRETE SURFACES. (SEE STRUCTURE PLANS FOR WORK ON EACH BRIDGE)

MAINTENANCE OF TRAFFIC

PHASE II



BRIDGE WORK LEGEND
 - PATCH EXISTING OVERLAY, SEAL DECK WITH HMWM RESIN, GROOVE WEARING SURFACE, INSTALL THREE BEAM RAILING, MISCELLANEOUS UNDERDECK WORK, AND PATCHING CONCRETE SURFACES.
 (SEE STRUCTURE PLANS FOR WORK ON EACH BRIDGE)

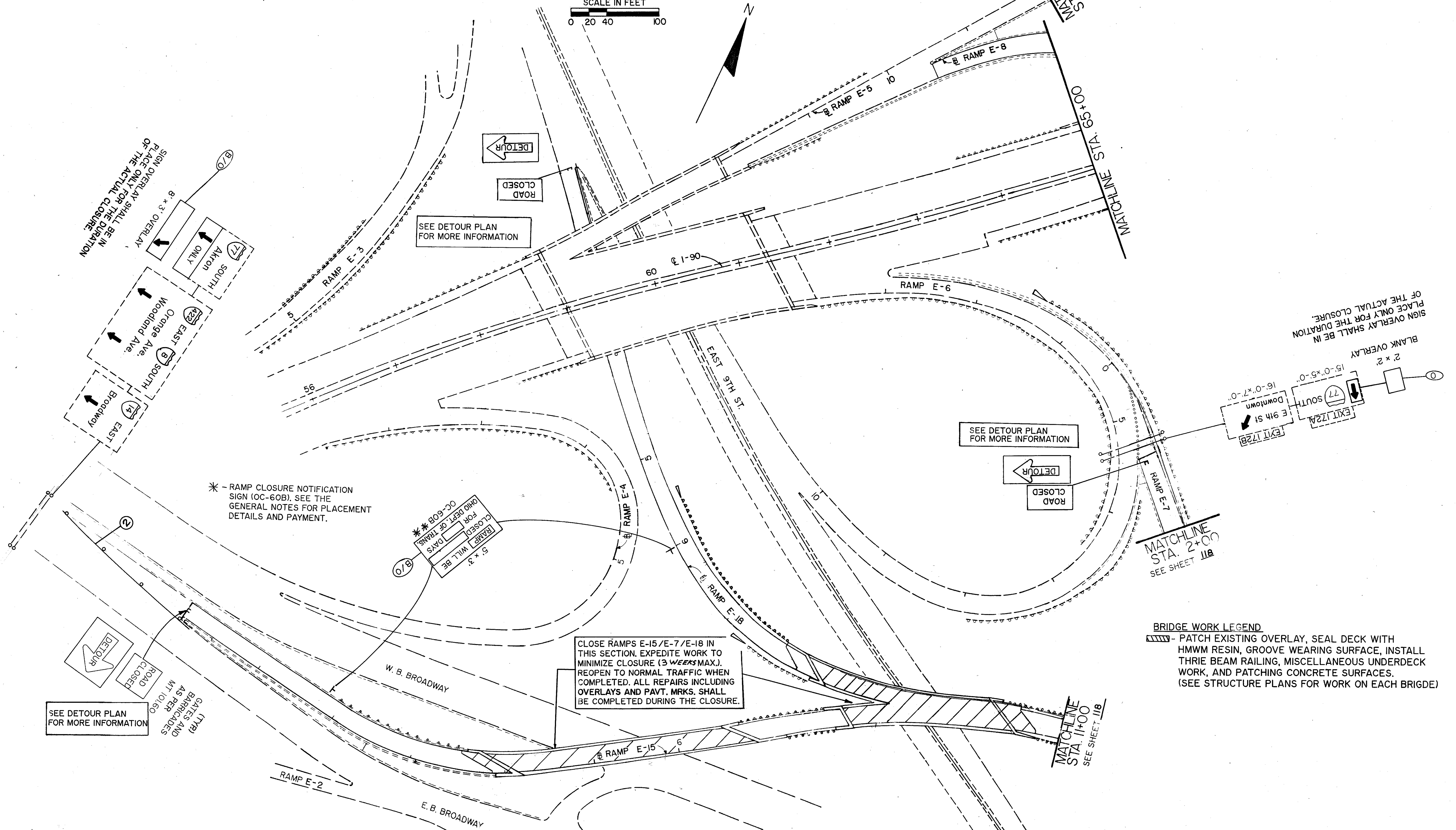
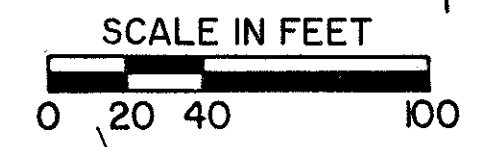


FOR LEGEND, SEE SHT. 91

MAINTENANCE OF TRAFFIC

CUYAHOGA COUNTY CUY-77-13.81	OHIO	119
	FHWA REGION 5	234
FEDERAL PROJECT		

PHASE II



8' x 3' OVERLAY
SIGN OVERLAY SHALL BE IN PLACE ONLY FOR THE DURATION OF THE ACTUAL CLOSURE.

SEE DETOUR PLAN FOR MORE INFORMATION

SEE DETOUR PLAN FOR MORE INFORMATION

16'-0" x 7'-0" SIGN OVERLAY SHALL BE IN PLACE ONLY FOR THE DURATION OF THE ACTUAL CLOSURE.

* - RAMP CLOSURE NOTIFICATION SIGN (OC-60B). SEE THE GENERAL NOTES FOR PLACEMENT DETAILS AND PAYMENT.

5' x 3' RAMP WILL BE CLOSED FOR TRAFFIC FOR OCCASIONAL TRAFFIC

CLOSE RAMPS E-15/E-7/E-18 IN THIS SECTION. EXPEDITE WORK TO MINIMIZE CLOSURE (3 WEEKS MAX.). REOPEN TO NORMAL TRAFFIC WHEN COMPLETED. ALL REPAIRS INCLUDING OVERLAYS AND PAVT. MRKS. SHALL BE COMPLETED DURING THE CLOSURE.

BRIDGE WORK LEGEND
 - PATCH EXISTING OVERLAY, SEAL DECK WITH HMWM RESIN, GROOVE WEARING SURFACE, INSTALL THREE BEAM RAILING, MISCELLANEOUS UNDERDECK WORK, AND PATCHING CONCRETE SURFACES. (SEE STRUCTURE PLANS FOR WORK ON EACH BRIDGE)

SEE DETOUR PLAN FOR MORE INFORMATION

(TYP) GATES AND BARRICADES AS PER MT 101.60

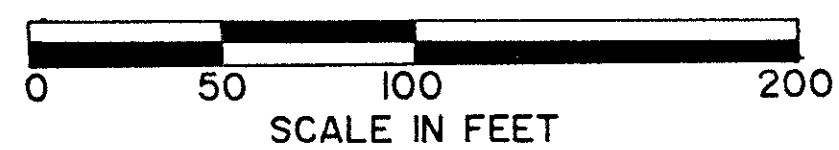
MATCHLINE STA. 1+00 SEE SHEET 118

MATCHLINE STA. 2+00 SEE SHEET 118

FOR LEGEND, SEE SHT. 91.

MAINTENANCE OF TRAFFIC

PHASE II



CUYAHOGA COUNTY
CUY - 77 - 13.81

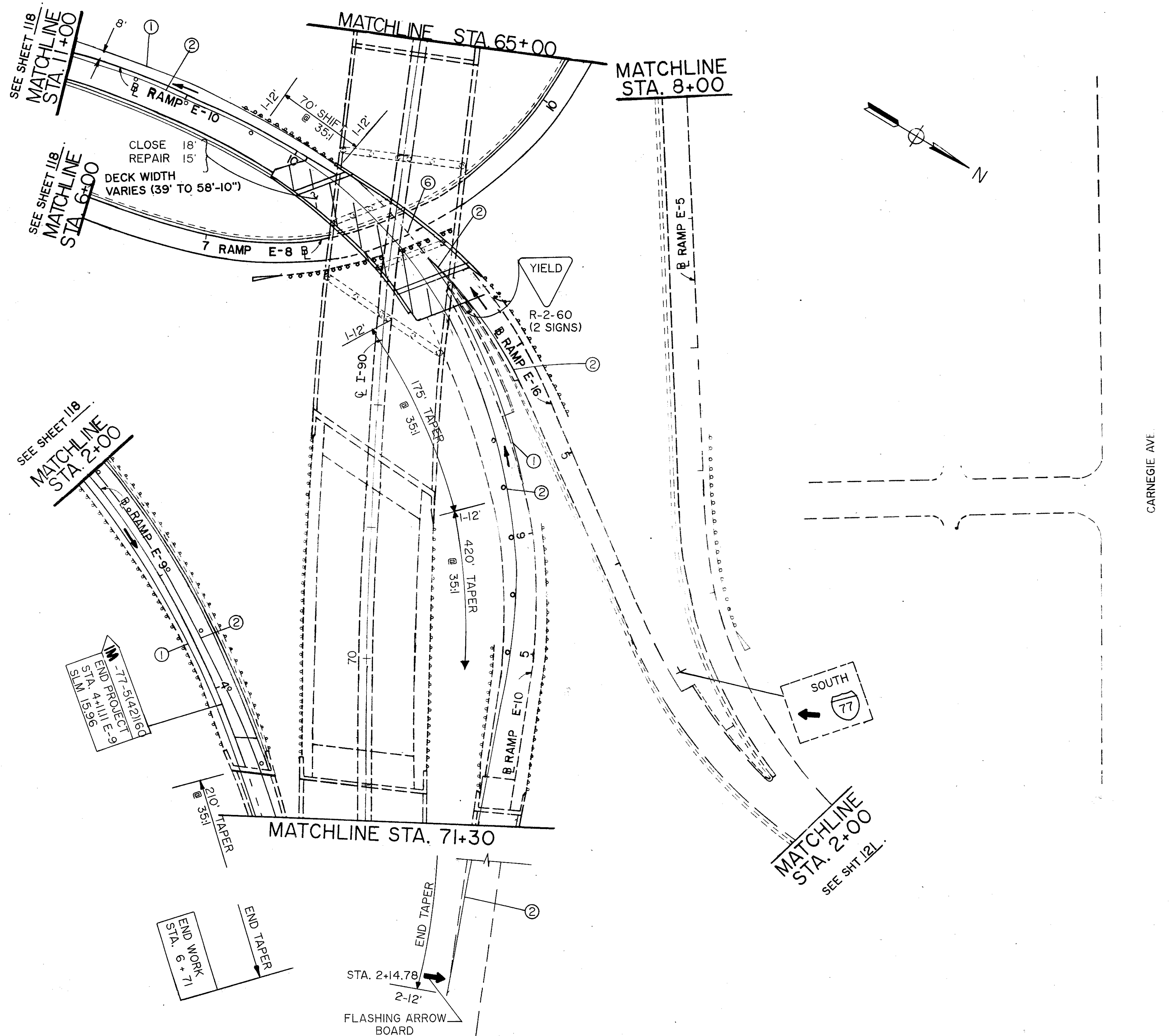
OHIO

120

FHWA
REGION 5

234

FEDERAL
PROJECT



BRIDGE WORK LEGEND

- PATCH EXISTING OVERLAY, SEAL DECK WITH HMWM RESIN, GROOVE WEARING SURFACE, INSTALL THREE BEAM RAILING, MISCELLANEOUS UNDERDECK WORK, AND PATCHING CONCRETE SURFACES. (SEE STRUCTURE PLANS FOR WORK ON EACH BRIDGE)

FOR LEGEND, SEE SHT. 91.

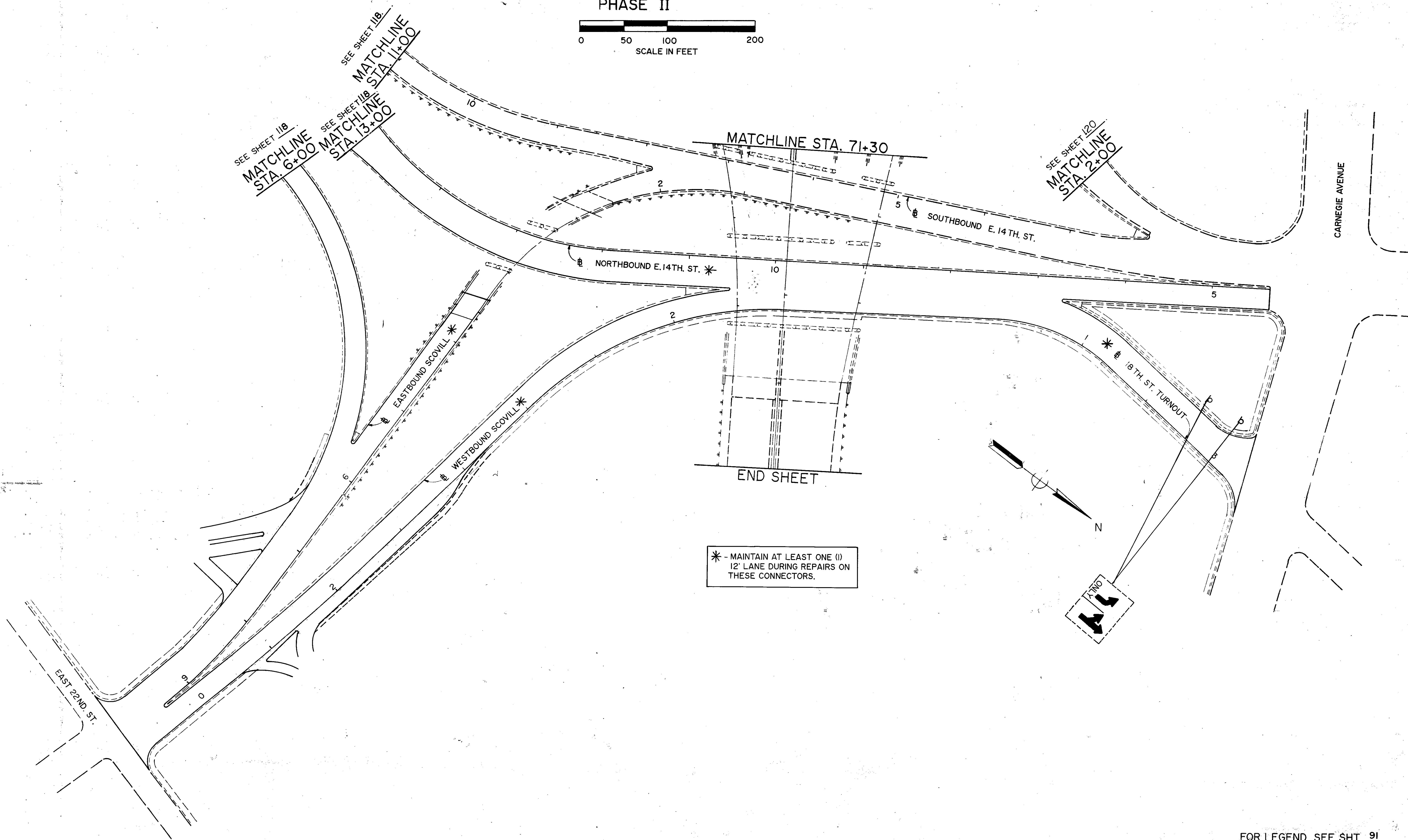
MAINTENANCE OF TRAFFIC

CUYAHOGA COUNTY
CUY-77-13.81

OHIO
FHWA
REGION 5
FEDERAL
PROJECT

121
234

PHASE II
0 50 100 200
SCALE IN FEET

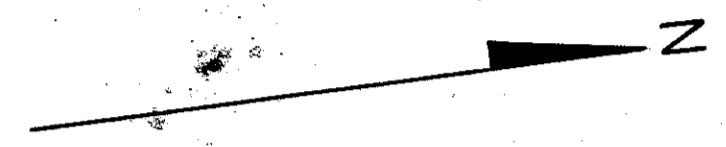
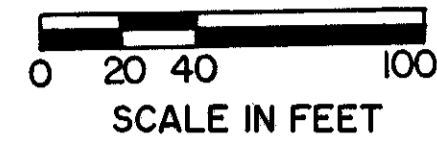


FOR LEGEND, SEE SHT. 91

MAINTENANCE OF TRAFFIC

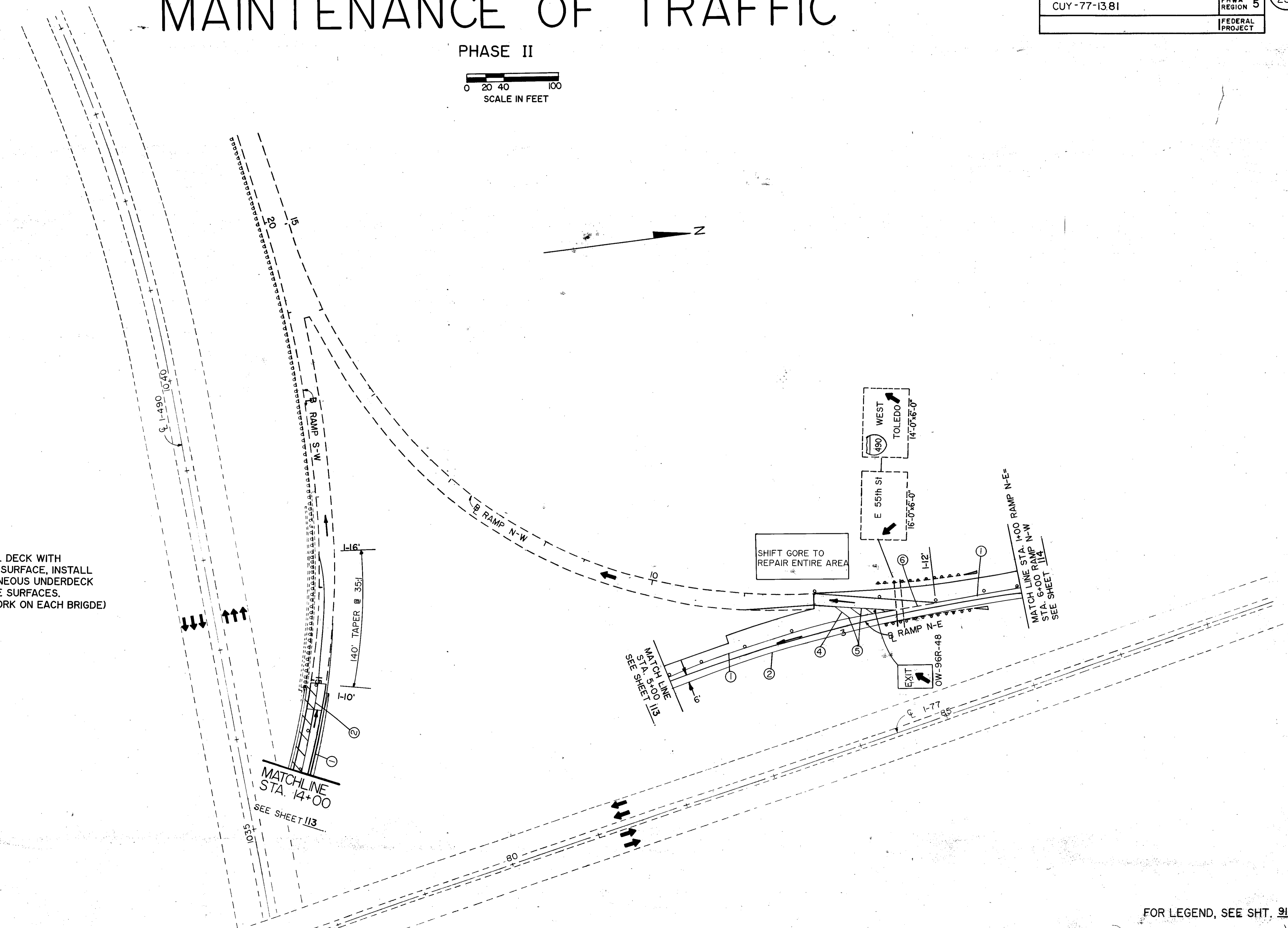
CUYAHOGA COUNTY	OHIO	122
CUY-77-13.81	FHWA REGION 5	234
FEDERAL PROJECT		

PHASE II



BRIDGE WORK LEGEND

- PATCH EXISTING OVERLAY, SEAL DECK WITH HMWM RESIN, GROOVE WEARING SURFACE, INSTALL THREE BEAM RAILING, MISCELLANEOUS UNDERDECK WORK, AND PATCHING CONCRETE SURFACES. (SEE STRUCTURE PLANS FOR WORK ON EACH BRIDGE)

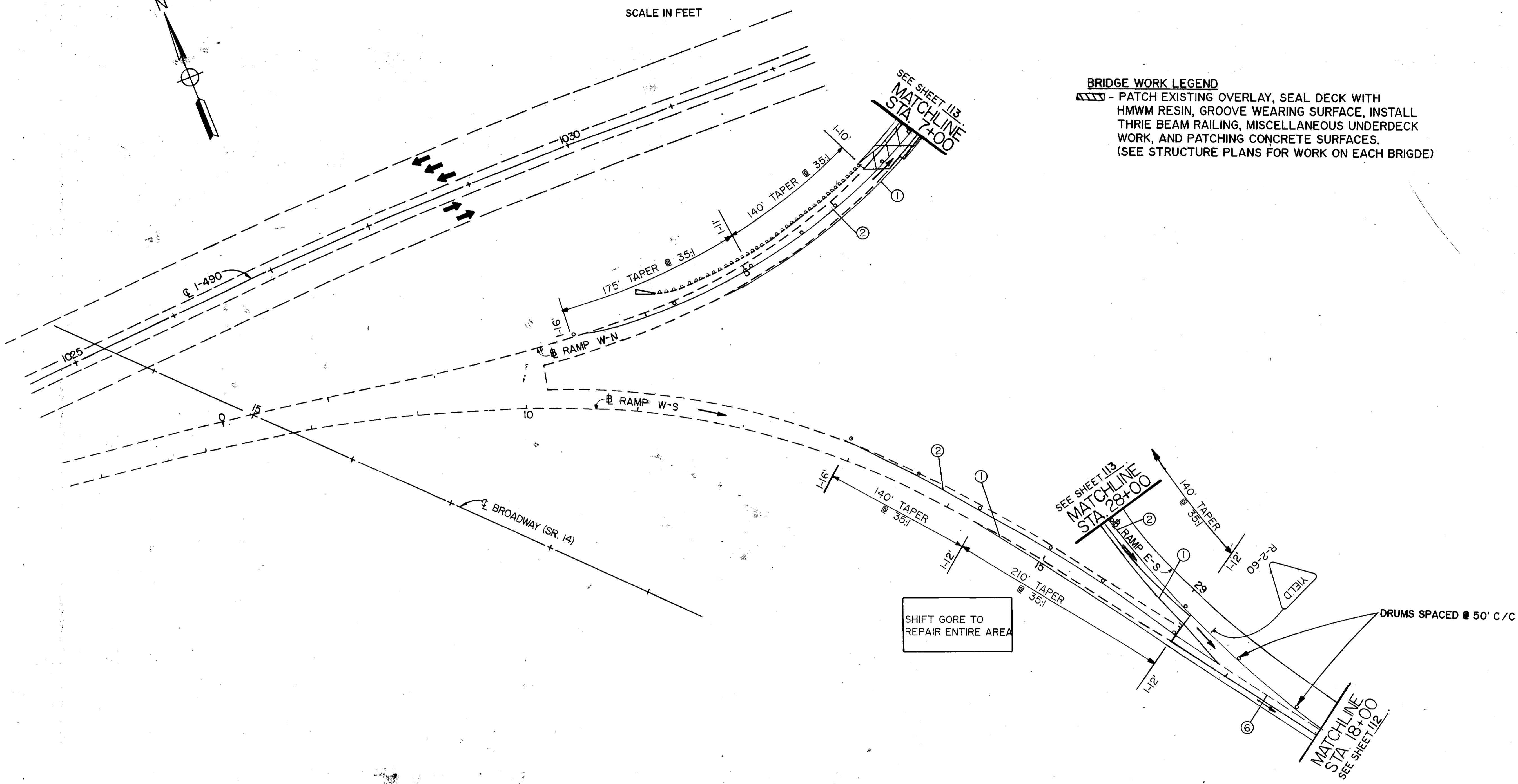
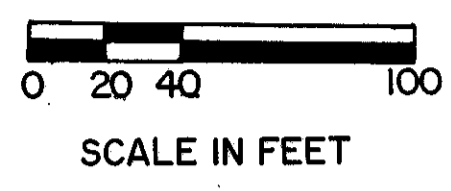
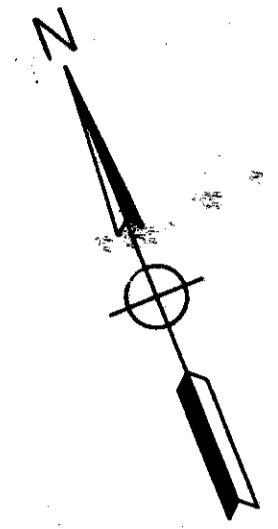


FOR LEGEND, SEE SHT. 91.

MAINTENANCE OF TRAFFIC

PHASE II

CUYAHOGA COUNTY	OHIO	123
CUY-77-13.81	FHWA REGION 5	234
	FEDERAL PROJECT	



BRIDGE WORK LEGEND
 - PATCH EXISTING OVERLAY, SEAL DECK WITH HMWM RESIN, GROOVE WEARING SURFACE, INSTALL THREE BEAM RAILING, MISCELLANEOUS UNDERDECK WORK, AND PATCHING CONCRETE SURFACES. (SEE STRUCTURE PLANS FOR WORK ON EACH BRIDGE)

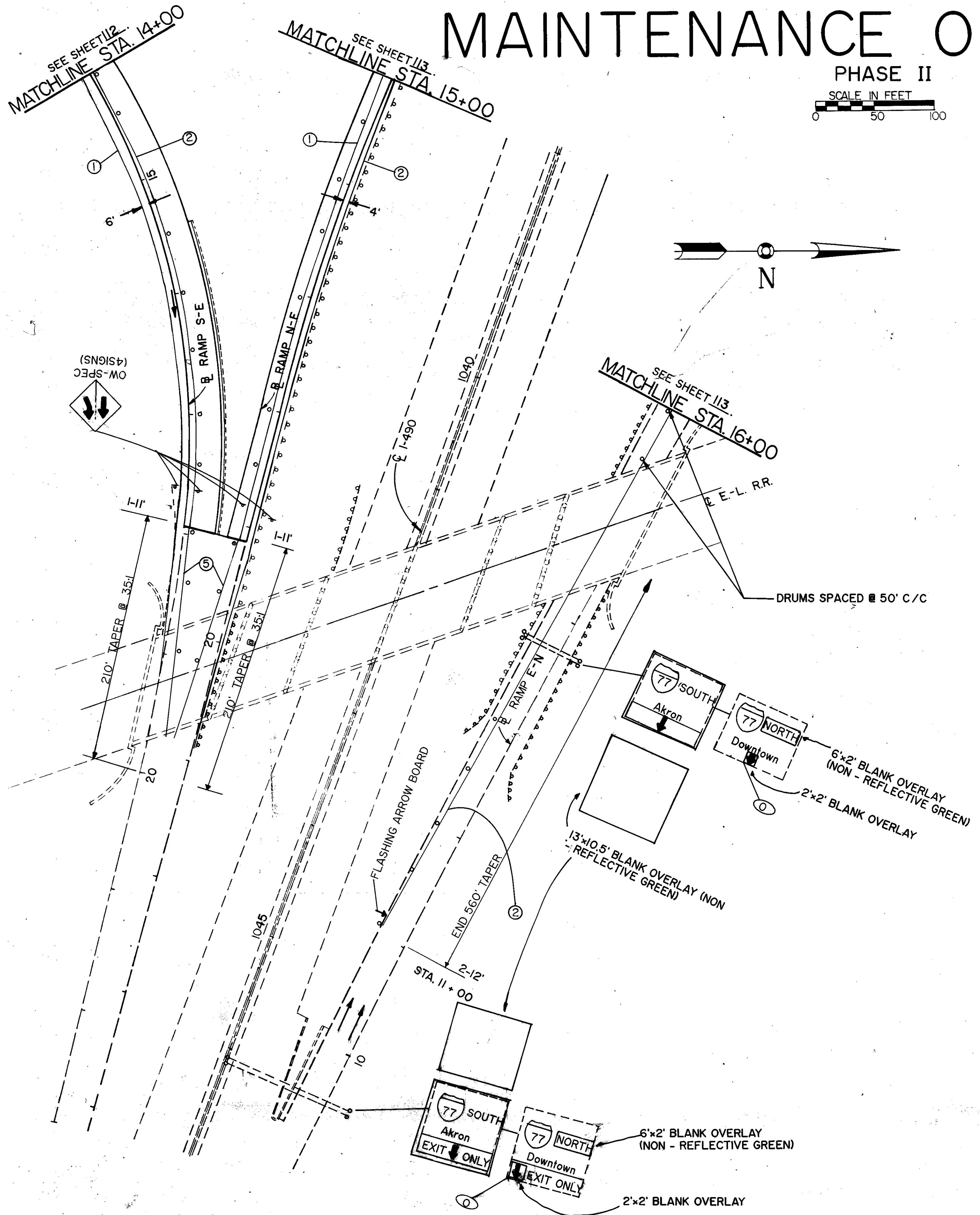
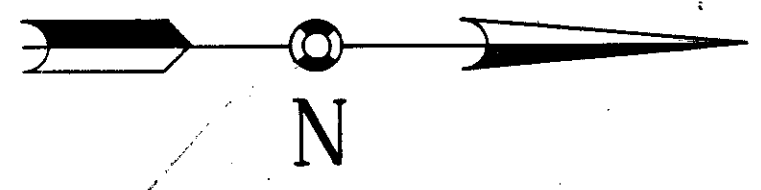
SHIFT GORE TO REPAIR ENTIRE AREA

DRUMS SPACED @ 50' C/C

FOR LEGEND, SEE SHT. 91

MAINTENANCE OF TRAFFIC

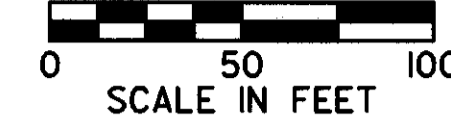
PHASE II
SCALE IN FEET
0 50 100



FOR LEGEND, SEE SHT. 91.

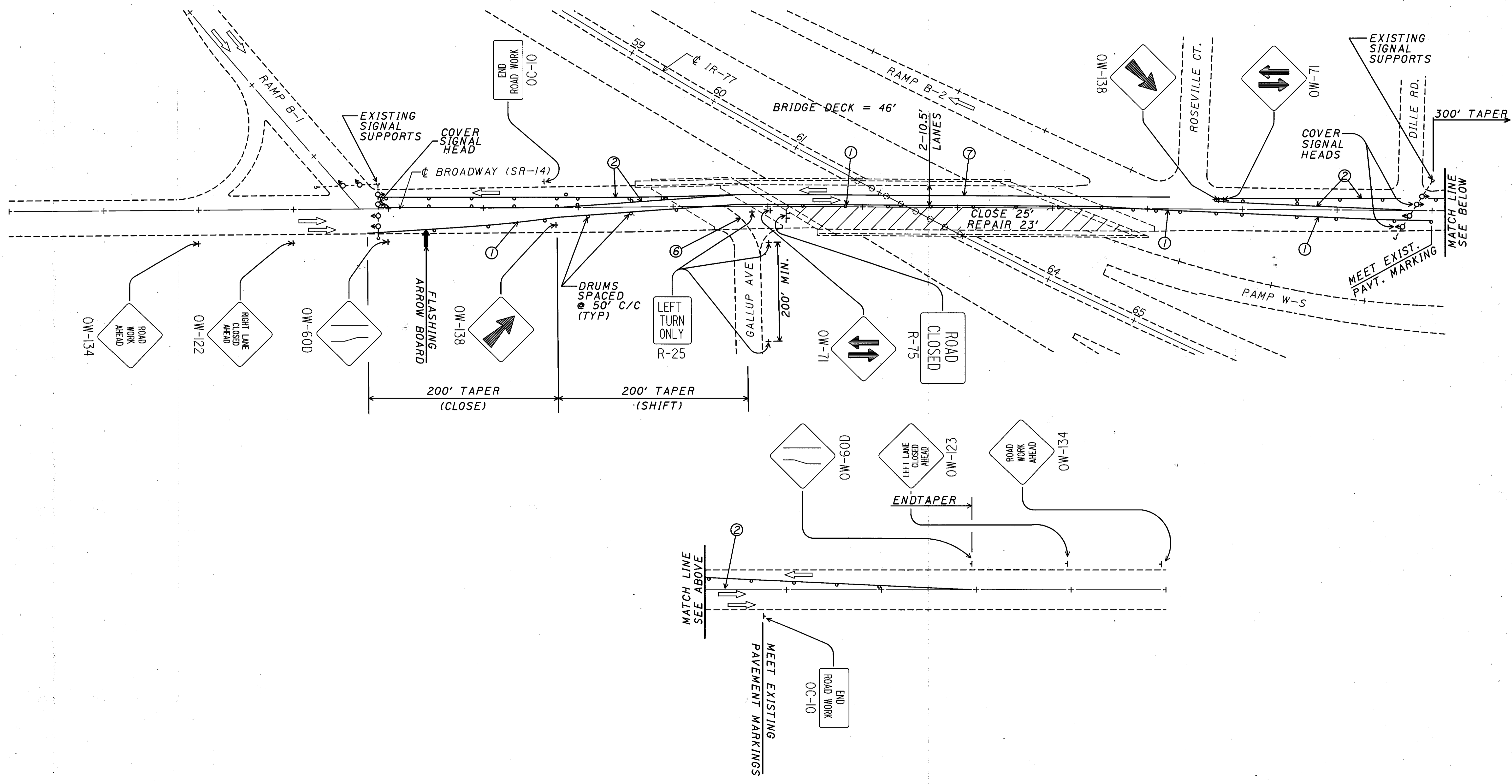
MAINTENANCE OF TRAFFIC

CUYAHOGA COUNTY CUI-77-13.81	OHIO FHWA REGION 5	125 234
FEDERAL PROJECT		



PHASE II

NOTES:
FOR LEGEND SEE SHEET 91.
GATES AND BARRICADES PLACED AS PER MT-101.60 (FOR R-75)

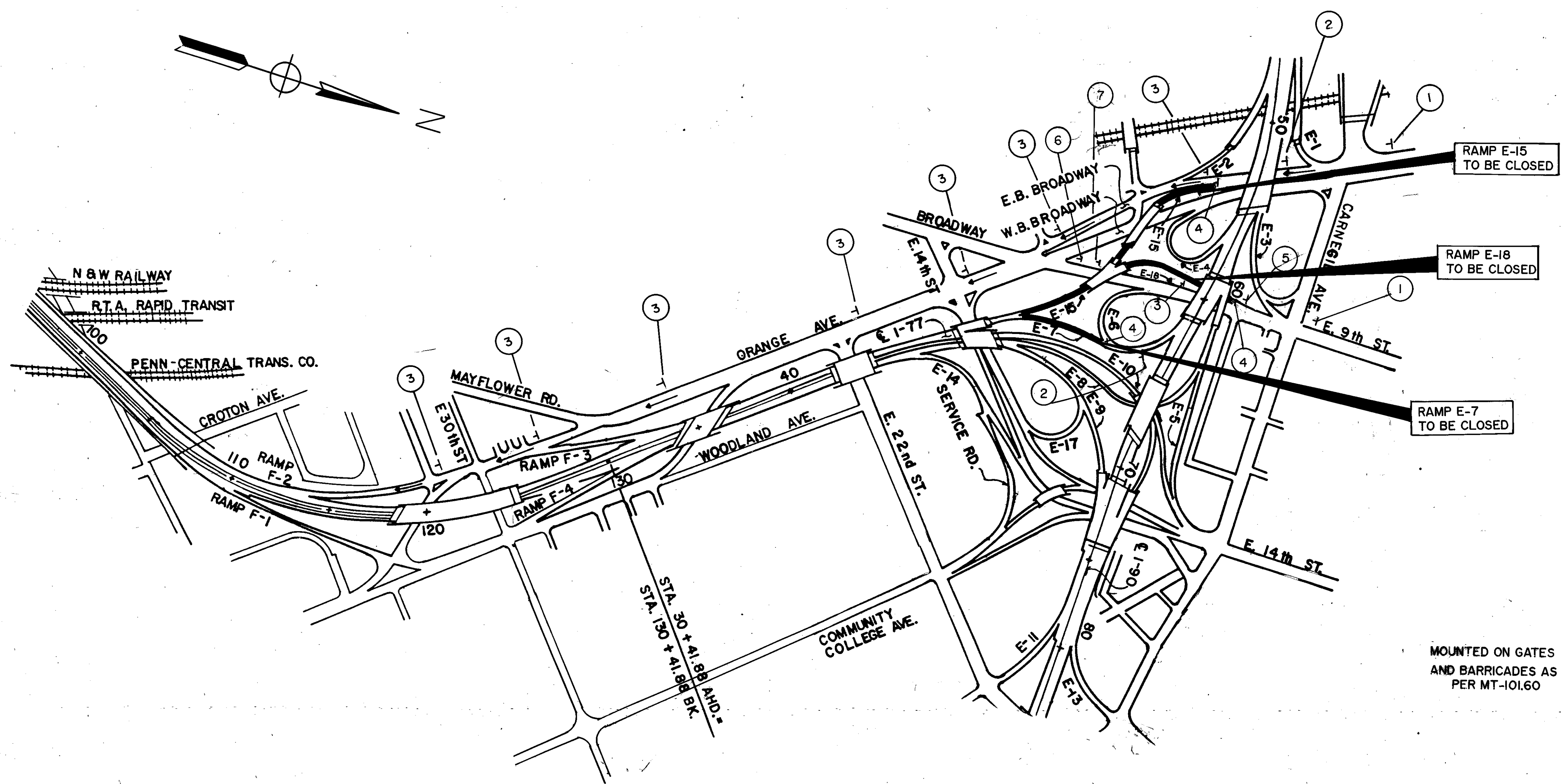


PLOT SUBMITTED BY: GRMOVSEK
 PLOT SUBMITTED: 18-MAY-1992 12:41
 ZF3: I100100J08084MPB.DGN: 1

DETOUR PLAN

RAMP E-15 / E-18 / E-7
PHASE II

CUYAHOGA COUNTY CUY-77-13.81	OHIO	127
	FHWA REGION 5	234
	FEDERAL PROJECT	



LEGEND

	M-38
	M-5C-2
	OW-127
	M-38
	M-5C-2
	OC-39R
	M-38
	M-5C-2
	OC-29
	R-75
	OC-14R OR OC-14L
	M-38
	M-5C-2
	OC-39L
	M-38
	M-5C-2
	OC-29L
	M-38
	M-5C-2
	OC-29L

M-38	
M-5C-2	
OC-29 LT	

FOR FURTHER DETAILS, SEE
MAINTENANCE OF TRAFFIC PLAN
SHEETS AND GENERAL NOTES

MOUNTED ON GATES
AND BARRICADES AS
PER MT-101.60

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.

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.

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 FLATSHEET SIGN INSTALLATIONS

ALL FREEWAY FLATSHEET SIGN INSTALLATIONS NOT BEHIND GUARDRAIL SHALL BE OFFSET 30 FEET FROM THE EDGE OF PAVEMENT. SEE SHEET 175 FOR DETAILS.

USE STANDARD DRAWING TC-42.20 FOR FLATSHEET SIGNS INSTALLED BEHIND GUARDRAIL, ON CROSS ROADS, ON RAMPS AND BETWEEN RAMPS AND MAINLINE.

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 ENCLOSURE MOUNTING BRACKET ASSEMBLY, REMOTE BALLAST

BALLAST ENCLOSURE MOUNTING BRACKET ASSEMBLIES SHALL BE FURNISHED FOR INSTALLATION FOR OVERPASS MOUNTED LIGHTING ONLY. 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 631 - BALLAST ENCLOSURE, TYPE B

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 TYPE B FOR OVERPASS STRUCTURES AS DETAILED IN THE PLANS. SEE SHEET 178 FOR DETAILS.

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

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.
CUY-77-10.50	355-72
CUY-77-10.39	658-90
CUY-77/90 - 13.79/16.24	1981 PROJECT

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

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 - 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 178.

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 SHT 177. SIGNS SHALL BE PAID FOR SEPARATELY.

ITEM 630 - SIGN SUPPORT ASSEMBLY, BRIDGE MOUNTED, TYPE 1, AS PER PLAN A

THIS ITEM OF WORK SHALL CONSIST OF THE INSTALLATION OF THE CHEVRON'S MODIFIED STAINLESS STEEL SIGN SUPPORTS TO THE PARAPET OF CURVED BRIDGES. THE SIGN SUPPORT ASSEMBLY SHALL BE AS PER STANDARD DRAWING TC-41.40 AND MODIFIED AS SHOWN IN THE DETAILS ON SHEET 178 OF 234. USING STAINLESS STEEL MATERIAL. ANCHORS SHALL BE 6 1/2" X 6 1/2" DIA. STAINLESS STEEL STUDS AND GROUTED AS PER SUPPLEMENTAL SPECIFICATION 852.

PAYMENT FOR THIS ITEM SHALL INCLUDE ALL NECESSARY LABOR, MATERIAL, MISCELLANEOUS HARDWARE, AND EQUIPMENT REQUIRED TO INSTALL THE NEW SIGN SUPPORT ASSEMBLY. PAYMENT SHALL BE MADE UNDER:

ITEM	DESCRIPTION	UNIT
630	SIGN SUPPORT ASSEMBLY MOUNTED, TYPE 1, AS PER PLAN "A"	EACH

ITEM 630 - SIGN SUPPORT ASSEMBLY, BRIDGE MOUNTED, TYPE 1, AS PER PLAN B

THIS ITEM OF WORK SHALL CONSIST OF INSTALLING THE CLEARANCE SIGN'S STAINLESS STEEL SUPPORT TO THE PARAPET OF A BRIDGE AS PER STD. DWG. TC-41.40 AND AS DETAILED ON SHT 179 USING STAINLESS STEEL MATERIAL.

PAYMENT FOR THIS ITEM SHALL INCLUDE ALL LABOR, EQUIPMENT, AND MATERIAL REQUIRED TO INSTALL THE NEW SIGN SUPPORT ASSEMBLY. PAYMENT SHALL BE MADE UNDER:

ITEM	DESCRIPTION	UNIT
630	SIGN SUPPORT ASSEMBLY, BRIDGE MOUNTED, TYPE 1, AS PER PLAN "B"	EACH

LOOP DETECTORS

ESTIMATED QUANTITIES OF ITEM 632-LOOP DETECTOR PAVEMENT CUTTING AND LOOP DETECTOR WIRE, TYPE E ARE PROVIDED AS A CONTINGENCY WHEN WIRE IS CUT, BROKEN OR DESTROYED DUE TO PAVEMENT REPAIR, OR BUTT JOINT OPERATIONS.

NEW LOOP DETECTORS SHALL BE PLACED AT THE SAME LOCATIONS AND SAME SIZE AS THE EXISTING. THE LOOP DETECTOR WIRE SHALL BE REPLACED TO THE PULL BOX OR POLE, WHICHEVER IS APPLICABLE, UNDER ITEM 632 AND TC-82.10.

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

	QUANTITY	UNIT
ITEM 632-LOOP DETECTOR PAVEMENT CUTTING	300	L.F.
ITEM 632-LOOP DETECTOR WIRE, TYPE E	600	L.F.

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 TO DECREASE THE SPACINGS TO MATCH S.S. 802.

FOR ESTIMATED QUANTITIES, SEE SHT 23-24 (GUARDRAIL/BARRIER SUB-SUMMARY)

TRAFFIC CONTROL (CONT'D)

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 CERTIFIED TEST DATA IN ACCORDANCE WITH REQUIREMENTS OF THIS SPECIFICATION.

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

2/26/92

LOCATIONS

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

SUPPORT NO.	NEW GALVANIZED SECTIONS	EXISTING SECTIONS
84		1 VERT. POLE, 1 ARM
87		2 END FRAMES
88		2 END FRAMES
167	2 END FRAMES	

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

ITEM SPECIAL - SURFACE PREPARATION, EXISTING SUPPORT SECTIONS	6 EACH
ITEM SPECIAL - SURFACE PREPARATION, NEW SUPPORT SECTIONS	2 EACH
ITEM SPECIAL - COATING, EPOXY PRIME COAT, SUPPORT SECTIONS	8 EACH
ITEM SPECIAL - COATING, EPOXY INTERMEDIATE COAT, SUPPORT SECTIONS	8 EACH
ITEM SPECIAL - COATING, URETHANE TOP COAT, SUPPORT SECTIONS	8 EACH

TRAFFIC CONTROL (CONT'D)

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.

TRAFFIC CONTROL

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 CONSISTENCY 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
SOLOM, 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.

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.

TRAFFIC CONTROL QUANTITIES

CUYAHOGA COUNTY
CUY-77-13.81

OHIO
FHWA REGION 5
FEDERAL PROJECT

132
234

PAVEMENT MARKINGS

REFERENCE NO.	PLAN SHEET NO.	ROADWAY	LOCATION	PAVEMENT MARKINGS																																	
				EDGE LINES (WHITE)	EDGE LINES (YELLOW)	LANE LINES	CENTER LINES SOLID DOUBLE	CENTER LINES BROKEN SINGLE	CENTER LINES BROKEN AND SOLID DOUBLE	CHANNELIZING LINES (WHITE)	CHANNELIZING LINES (YELLOW)	STOP LINES	CROSSWALK LINES	TRANSVERSE LINES (WHITE)	TRANSVERSE LINES (YELLOW)	CURB MARKING	ISLAND MARKING	RAILROAD SYMBOL MARKINGS	SCHOOL SYMBOL MARKINGS, 72" IN	SCHOOL SYMBOL MARKINGS, 96" IN	PARKING LOT STALL MARKING	LANE ARROWS	WORD "ONLY" ON PAVEMENT, 72" IN	WORD "ONLY" ON PAVEMENT, 96" IN													
			FROM STATION	TO STATION	644	644	644	644	644	644	644	644	644	644	644	644	644	644	644	644	644	644	644	644	644	644	644	644	644	644	644	644	644				
					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	SO FT	EACH	EACH	EACH	LIN FT	EACH	EACH	EACH	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT						
		I-77 NORTHBOUND	183+83.61	195+83.68			2400																														
			183+83.61	195+83.68		1200																															
			195+83.68	199+83.68			800																														
			195+83.68	199+83.68		400																															
			45+76.05	59+22				1346																													
			190+30	192+24									194																								
			192+24	195+83.68		360																															
			195+83.68	196+80		96																															
			45+76.05	49+56				380																													
			45+76.05	130+41.88			8466																														
			45+76.05	130+41.88				8466																													
			49+56	51+62									203																								
			51+62	59+22		760																															
			59+22	65+96									674																								
			65+96	93+05		2709																															
			93+05	130+41.88			3735																														
			98+44	107+50		906																															
			108+85	111+18									233																								
			30+41.88	42+45.12																																	
			30+41.88	42+45.12			1203																														
			30+41.88	42+45.12				1203																													
			30+41.88	31+80									138																								
			111+18	129+50		1832																															
			129+50	130+41.88									92																								
			33+79	42+45.12		866																															
			42+45.12	45+00																																	
			42+45.12	45+20		275																															
			42+45.12	50+80																																	
			42+45.12	51+85			940																														
			50+90	51+85									95																								
			45+00	47+68																																	
			47+68	50+24		256																															
TOTALS					8060	15944	16688					1900																									
					24004 LIN.FT.		3.16																														
					4.55 MILES		MILES																														

PLOTTED BY: uliman
 PLOTTED FROM: c:\dgn\p\d08084\08084tga.dgn
 08084TGA.DGN
 PLOT SUBMITTED: 18-JUN-1992 13:52

TRAFFIC CONTROL QUANTITIES

CUYAHOGA COUNTY
CUY-77-13.81

OHIO

FHWA
REGION 5

FEDERAL
PROJECT

142
234

GROUND MOUNTED SIGNS

REFERENCE NO.	PLAN SHET NO.	ELEVATION VIEW SHEET NO.	SPECIAL DETAIL SHEET NO.	LOCATION	SIGN CODE NO.	SIGN SIZE	SIGNS, FLAT SHEET, TYPE G	SIGNS, EXTRUSHEET, TYPE G	GROUND MOUNTED SUPPORTS, NO. 2 POST	GROUND MOUNTED SUPPORTS, NO. 3 POST	GROUND MOUNTED SUPPORTS, NO. 4 POST	GROUND MOUNTED SUPPORTS, NO. 6 POST	SIGN SUPPORT ASSEMBLY POLE MOUNT, A.P.P. 'A'	SIGN SUPPORT ASSEMBLY POLE MOUNTED, A.P.P. 'B'	GROUND MOUNTED SUPPORTS S4 X 7.7 BEAM	GROUND MOUNTED SUPPORTS W6 X 9 BEAM	GROUND MOUNTED SUPPORTS W10 X 12 BEAM	CONCRETE FOR EMBEDDED FOUNDATIONS	BREAKAWAY BEAM CONNECTION	SIGN SUPPORT ASSEMBLY, BRIDGE MTD, TYPE I, A.P.P. 'A'	SIGN SUPPORT ASSEMBLY, BRIDGE MTD, TYPE I, A.P.P. 'B'	ONE WAY SUPPORT NO. 4 POST	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	REMOVAL OF GROUND MOUNTED BEAM SUPPORT
							SQ FT	SQ FT	LIN FT	LIN FT	LIN FT	LIN FT	EACH	EACH	LIN FT	LIN FT	LIN FT	CU YD	EACH	EACH	EACH	LIN FT	EACH	EACH	EACH	EACH	EACH
62B	159			4+05 E14 SB RT	D-11A	12'x 1.5'	18																				
62C				4+05 E14 SB RT	N-5	2'x 2'	4																				
63				3+75 E14 NB RT	R-37R-36	2'x 3'	6			12.5																	
64				3+50 E14 NB RT	R-2-48	4'x 4'x 4'	14				14.7 - 15.0																
65				3+25 E14 SB RT	R-2-48	4'x 4'x 4'	14				14.7 - 15.0																
66				3+75 E14 SB RT	RP-120-24	3'x 3'	9			12.5																	
67				14+35 RAMP E-15 RT	X-6R	1'x 3'	3		14.0																		
68				17+90 RAMP E-10 RT	X-6R	1'x 3'	3		14.0																		
69				14+35 RAMP E-15 LT	X-6L	1'x 3'	3		14.0																		
70				1+87 RAMP E-17 LT	W-33-30	2.5'x 3'	7.5																				
71				17+15 RAMP E-10 RT	W-49R-48	4'x 4'	16				15.3 - 15.7																
72				0+20 RAMP E-8 LT	W-33-30	2.5'x 3'	7.5			12.5																	
73				1+00 RAMP E-8 LT	W-33-30	2.5'x 3'	7.5			12.5																	
74				49+05 I-77 NB LT	X-6L	1'x 3'	3						1														
75				49+05 I-77 NB RT	X-6R	1'x 3'	3		14.0																		
76				7+10 E14 SB RT	R-31E-48	4'x 2.5'	10			13.7-14																	
77A				10+95 E14 NB RT	WP-49R-36	3'x 3'	9																				
77B				10+95 E14 NB RT	W-49-36	3'x 3'	9				13.7																
79				1+80 RAMP E-8 LT	W-33-30	2.5'x 3'	7.5				14.5																
80				2+50 RAMP E-8 LT	W-33-30	2.5'x 3'	7.5				14.5																
81				12+60 RAMP E-15 RT	W-49L-48	4'x 4'	16				15.3 - 15.7																
82				12+65 RAMP E-15 LT	R-2-48	4'x 4'x 4'	7.5				14.7 - 15.0																
83				13+60 RAMP E-8 RT	W-33-30	2.5'x 3'	7.5			14.5																	
85A				3+15 RAMP E-8 RT	W-14-36	3'x 3'	9				15.3 - 15.7																
85B				3+15 RAMP E-8 RT	W-143-24	2'x 2'	4																				
86A				3+15 RAMP E-8 LT	W-14-36	3'x 3'	9				15.3 - 15.7																
86B				3+15 RAMP E-8 LT	W-143-24	2'x 2'	4																				
89A				0+45 RAMP E-17 RT	W-SPECIAL	3'x 3'	9																				
89B				0+45 RAMP E-17 RT	W-143-24	2'x 2'	4																				
89C				0+45 RAMP E-17 RT	N-68-24	2'x 2'	4																				
89D				0+45 RAMP E-17 RT	M-24-30	2.5'x 2'	5																				
143				3+20 RAMP F-17 RT	GC	11'x 5'		55								14.5 - 14.8		.66	2								
90				11+25 RAMP E-17 RT	R-31E-48	4'x 2.5'	10				13.7 - 14.0																
91				10+55 RAMP E-17 RT	R-2-48	4'x 4'x 4'	14				14.7 - 15.0																
78A				6+40 RAMP E-14 RT	N-29-24	2'x 2'	4																				
78B	159			6+40 RAMP E-14 RT	M-27	2.5'x 2'	5																				

273.5 55 56 92.2 313.2 5 3 29.3 .66 2 5 25 1 30

TRAFFIC CONTROL QUANTITIES, GROUND MOUNTED SIGNS

lenon

TRAFFIC CONTROL SUMMARY

PARTICIPATION
I - FEDERAL AND STATE
II - STATE ONLY

CUYAHOGA COUNTY
 CUY-77-13.81

OHIO
FHWA REGION 5
FEDERAL PROJECT

234

PLOT SUBMITTED BY: BANASZAK

PLOT SUBMITTED FROM: c:\dgn\pi\d08084\08084ggd.dgn

PLOT SUBMITTED: 24-JUN-1992 06:59

ITEM	SHEET NUMBER														PARTICIPATION		ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN SHEET REF.		
	23	24	129						139	140	141	142	143	144	180	I						II	
TRAFFIC CONTROL																							
630															80	80		603	00400	80	LIN FT	4" CONDUIT, TYPE E	
625															120	120		625	25500	120	LIN FT	CONDUIT, 3", 713.04	
625															140	140		625	29000	140	LIN FT	TRENCH	
625															2	2		625	30700	2	EACH	PULLBOX, 713.08, 18"	
625															2	2		625	31500	2	EACH	MEDIAN PULLBOX	
625															2	2		625	32000	2	EACH	GROUND ROD	
630								4.84								4.84		630	00000	4.84	CU YD	CONCRETE FOR ANCHOR BASE FOUNDATION	
630								0.54	4.21	0.66	1.62					7.03		630	00100	7.03	CU YD	CONCRETE FOR EMBEDDED FOUNDATION	
630								42	70	56	168					336		630	02100	336	LIN FT	GROUND MOUNTED SUPPORT, NO. 2 POST	
630										92.2	26					118		630	03100	118	LIN FT	GROUND MOUNTED SUPPORT, NO. 3 POST	
630								312.8	110.7	313.2	136.4	276.3				1150		630	04100	1150	LIN FT	GROUND MOUNTED SUPPORT, NO. 4 POST	
630								29.3	77.5		98.7					206		630	06400	206	LIN FT	GROUND MOUNTED SUPPORT, S4X7.7 BEAM	
630									29.3	29.3						59		630	06500	59	LIN FT	GROUND MOUNTED SUPPORT, W6X9 BEAM	
630									37							37		630	07600	37	LIN FT	GROUND MOUNTED SUPPORT, W10X12 BEAM	
630									27							27		630	08100	27	LIN FT	ONE WAY SUPPORT, NO. 4 POST	
630								2	10	2	6					20		630	09000	20	EACH	BREAKAWAY BEAM CONNECTION	
SPECIAL			6													6		SPECIAL	63009100	6	EACH	SURFACE PREPARATION, EXISTING SUPPORT SECTION	131
SPECIAL			2													2		SPECIAL	63009102	2	EACH	SURFACE PREPARATION, NEW SUPPORT SECTION	131
SPECIAL			8													8		SPECIAL	63009104	8	EACH	COATING, EPOXY PRIME COAT, SUPPORT SECTION	129
SPECIAL			8													8		SPECIAL	63009106	8	EACH	COATING, EPOXY INTERMEDIATE COAT, SUPPORT SECTION	130
SPECIAL			8													8		SPECIAL	63009108	8	EACH	COATING, URETHANE TOP COAT, SUPPORT SECTION	129
630																1		630	36000	1	EACH	OVERHEAD SIGN SUPPORT, TYPE TC-7.65 DESIGN 6, 62 FOOT SPAN	
630								79								79		630	75000	79	EACH	SIGN ATTACHMENT ASSEMBLY	
630								45								45		630	75106	45	EACH	LUMINAIRE SUPPORT ASSEMBLY, TYPE TC-31.21	
630									4	7	5	1				17		630	79501	17	EACH	SIGN SUPPORT ASSEMBLY, POLE MOUNTED, AS PER PLAN "A"	128
630										6	3					11		630	79501	11	EACH	SIGN SUPPORT ASSEMBLY, POLE MOUNTED, AS PER PLAN "B"	128
630									12							13		630	79601	13	EACH	SIGN SUPPORT ASSEMBLY, BRIDGE MOUNTED, TYPE I, AS PER PLAN "A"	128
630									2							2		630	79601	2	EACH	SIGN SUPPORT ASSEMBLY, BRIDGE MOUNTED, TYPE I, AS PER PLAN "B"	128
630																1495		630	80102	1495	SQ FT	SIGN, FLAT SHEET, TYPE G	
630								2878	83	406.3	273.5	345.75	189.5			3115		630	80204	3115	SQ FT	SIGN, EXTRUSHEET, TYPE G	
630									15	23	25	27	15			105		630	84900	105	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
630									1	2	1					4		630	85400	4	EACH	REMOVAL OF GROUND MOUNTED MAJOR SIGN AND DISPOSAL	
632															1.84	1.84		632	72000	1.84	CU YD	CONCRETE FOR ANCHOR BASE FOUNDATIONS	
632															2	2		632	89800	2	EACH	PEDESTAL, 3", TRANSFORMER BASE	
632															6	6		632	90400	6	EACH	PIEZOCABLE CLASS II AXLE SENSOR	
802	150	81														231		802	00100	231	EACH	BARRIER REFLECTOR, TYPE A	
802	155	64														219		802	00200	219	EACH	BARRIER REFLECTOR, TYPE B	

TRAFFIC CONTROL SUMMARY

CUYAHOGA COUNTY
CUY-77-13.81

OHIO

FHWA
REGION 5

FEDERAL
PROJECT

146
234

PARTICIPATION
I - FEDERAL AND STATE
II - STATE ONLY

PLOT SUBMITTED: 24-JUN-1992 08:07

PLOTTED FROM: c:\dgn\pid08084\08084gge.dgn

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PLOT SUBMITTED BY: BANASZAK

ITEM	SHEET NUMBER																PARTICIPATION		ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN SHEET REF.
	128	132	133	134	135	136	137	138	139	140	141	142	143	144	180	I	II						
TRAFFIC CONTROL (CONTINUED)																							
630									22	11	30	28	17			108		630	86000	108	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT	
630										8		2				10		630	86100	10	EACH	REMOVAL OF GROUND MOUNTED BEAM SUPPORT	
630								37								37		630	87400	37	EACH	REMOVAL OF OVERHEAD MOUNTED SIGN AND DISPOSAL	
630									1	2	5					8		630	87500	8	EACH	REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL	
630								1								1		630	89702	1	EACH	REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL	
631								2								2		631	70100	2	EACH	BALLAST WIRING ENCLOSURE, TYPE B	
631								2								2		631	71000	2	EACH	BALLAST WIRING ENCLOSURE MOUNTING BRACKET	
631								32								32		631	84300	32	EACH	SIGN WIRED	
631								2								2		631	84400	2	EACH	SIGN WIRED, OVERPASS STRUCTURE MOUNTED	
631								21								21		631	85100	21	EACH	DISCONNECT SWITCH WITH ENCLOSURE, TYPE X	
631								2								2		631	85500	2	EACH	SWITCH ENCLOSURE MOUNTING BRACKET ASSEMBLY	
631								2								2		631	87100	2	EACH	BALLAST, TYPE CMRI-100-480	
631								13								13		631	87102	13	EACH	BALLAST, TYPE CMRI-100-480, INTEGRAL	
631								23								23		631	87202	23	EACH	BALLAST, TYPE CMRI-175-480, INTEGRAL	
631								7								7		631	87302	7	EACH	BALLAST, TYPE CMRI-250-480, INTEGRAL	
631								15								15		631	89100	15	EACH	MERCURY VAPOR LUMINAIRE, TYPE TC-31.21 WITH 100 WATT LAMP	
631								23								23		631	89200	23	EACH	MERCURY VAPOR LUMINAIRE, TYPE TC-31.21 WITH 175 WATT LAMP	
631								7								7		631	89300	7	EACH	MERCURY VAPOR LUMINAIRE, TYPE TC-31.21 WITH 250 WATT LAMP	
631								42								42		631	94200	42	EACH	REMOVAL OF LUMINAIRE AND DISPOSAL	
631								21								21		631	94304	21	EACH	REMOVAL OF DISCONNECT SWITCH AND DISPOSAL	
632	300														570	870		632	27500	870	LIN FT	LOOP DETECTOR PAVEMENT CUTTING	
632	600														1350	1950		632	64900	1950	LIN FT	LOOP DETECTOR WIRE, TYPE E	
632															560	560		632	65200	560	LIN FT	LOOP DETECTOR LEAD-IN CABLE	
644		4.55	4.11	2.92	2.48	2.56	0.78	1.03								18.43		644	00100	18.43	MILE	EDGE LINE	
644		3.16	3.33		0.15	0.30	0.47	1.63								9.04		644	00200	9.04	MILE	LANE LINE	
644		1900	2426	2495	2140	2150	685	250								12046		644	00400	12046	LIN FT	CHANNELIZING LINE	
644			60		70		265	65								460		644	00500	460	LIN FT	STOP LINE	
644			280		140		150	250								820		644	00600	820	LIN FT	CROSSWALK LINE	
644				1025	395	225	225									1870		644	00700	1870	LIN FT	TRANSVERSE LINE, 12"	
644			5		5		3	4								17		644	01300	17	EACH	LANE ARROW	
644			2		1											3		644	01400	3	EACH	WORD ON PAVEMENT, 72"	
633															2	2		633	65001	2	EACH	CABINET, WITHOUT CONTROLLER, PREWIRED, PEDESTAL MOUNTING, TYPE G, AS PER PLAN	180

TRAFFIC CONTROL SUMMARY

PARTICIPATION
I - FEDERAL & STATE ONLY
II - STATE ONLY

CALC. BY:	CUYAHOGA COUNTY CUI-77-13.81	OHIO	147 234
DATE:		FHWA REGION 5	
CHKD BY:		FEDERAL PROJECT	
DATE:			

ITEM	SHEET NUMBER				PARTICIPATION		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN SHEET REF.
	8	17	18	26	I	II						
											MAINTENANCE OF TRAFFIC	
404		500				500	404	35000	500	CU YD	BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC	
614		30				30	614	12460	30	EACH	WORK ZONE MARKING SIGN	
614		30				30	614	12470	30	EACH	WORK ZONE SPEED LIMIT SIGN	
SPECIAL			500			500	SPECIAL	614 12500	500	SQ FT	REPLACEMENT SIGN	
SPECIAL			500			500	SPECIAL	614 12600	500	EACH	REPLACEMENT DRUM	
614			500			500	614	13200	500	EACH	BARRIER REFLECTOR, TYPE A	
614			1200			1200	614	13300	1200	EACH	BARRIER REFLECTOR, TYPE B	
614			53			53	614	20400	53	MILE	TEMPORARY LANE LINE, CLASS II	
614					17.69	17.69	614	20300	17.69	MILE	TEMPORARY LANE LINE, CLASS I, 740.05, TYPE C	
614					0.17	0.17	614	21300	0.17	MILE	TEMPORARY CENTER LINE, CLASS I, 740.05, TYPE C	
614			26			26	614	22000	26	MILE	TEMPORARY EDGE LINE, CLASS I	
614					14.67	14.67	614	22100	14.67	MILE	TEMPORARY EDGE LINE, CLASS I, 642 PAINT	
614					35.67	35.67	614	22300	35.67	MILE	TEMPORARY EDGE LINE, CLASS I, 740.05, TYPE C	
614			29000			29000	614	23000	29000	LIN FT	TEMPORARY CHANNELIZING LINE, CLASS I	
614					20490	20490	614	23600	20490	LIN FT	TEMPORARY CHANNELIZING LINE, CLASS I, 740.05, TYPE C	
614					6705	6705	614	24600	6705	LIN FT	TEMPORARY DOTTED LINE, CLASS I, 740.05, TYPE C	
614					1160	1160	614	25600	1160	LIN FT	TEMPORARY TRANSVERSE LINE, CLASS I, 740.05, TYPE C	
614			500			500	614	26000	500	LIN FT	TEMPORARY STOP LINE, CLASS I	
614			3300			3300	614	28000	3300	LIN FT	TEMPORARY GORE MARKING, CLASS II	
616	10					10	616	10000	10	M GAL	WATER	
616	5					5	616	20000	5	TON	CALCIUM CHLORIDE	
622			1640			1640	622	40020	1640	LIN FT	PORTABLE CONCRETE BARRIER, 32"	
622			2440			2440	622	40040	2440	LIN FT	PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED	
644			10000			10000	644	30000	10000	LIN FT	REMOVAL OF PAVEMENT MARKINGS	
SPECIAL			300			300	SPECIAL	690 98000	300	EACH	ROADWAY, MISC.: TOW TRUCK SERVICE	
SPECIAL			400			400	SPECIAL	614 11100	400	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR	18

PLOTTED BY: ujiman
 PLOTTED FROM: c:\dgn\p\d08084\08084t.gk.dgn
 SUBMITTED: 12-JUN-1992 13:58
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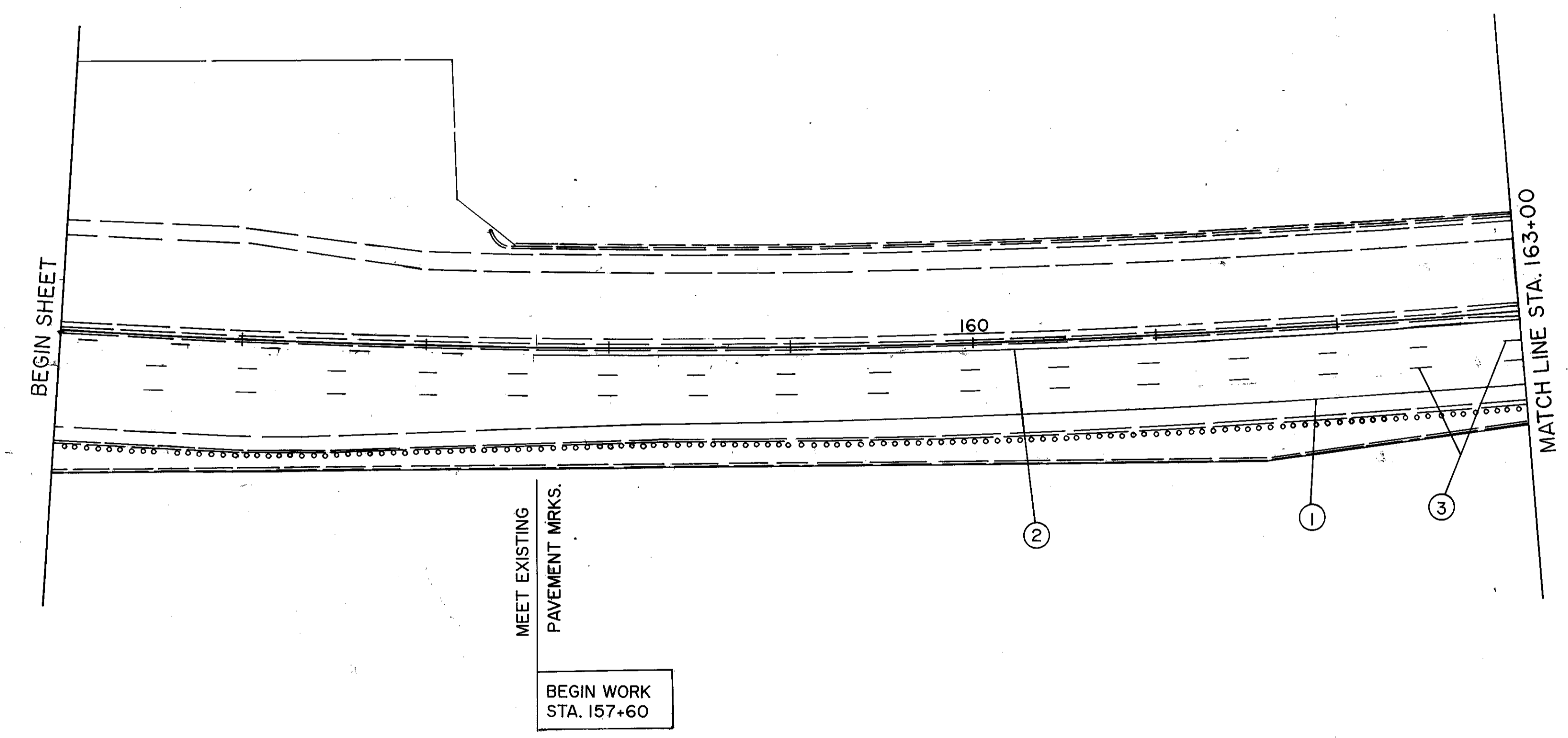
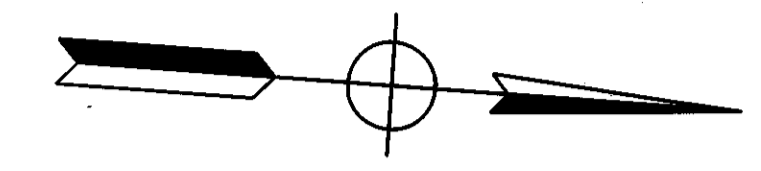
TRAFFIC CONTROL

CUYAHOGA COUNTY
CUY-77-13.81

OHIO
FHWA
REGION 5
FEDERAL
PROJECT

148
234

FOR LEGEND, SEE SHT 151



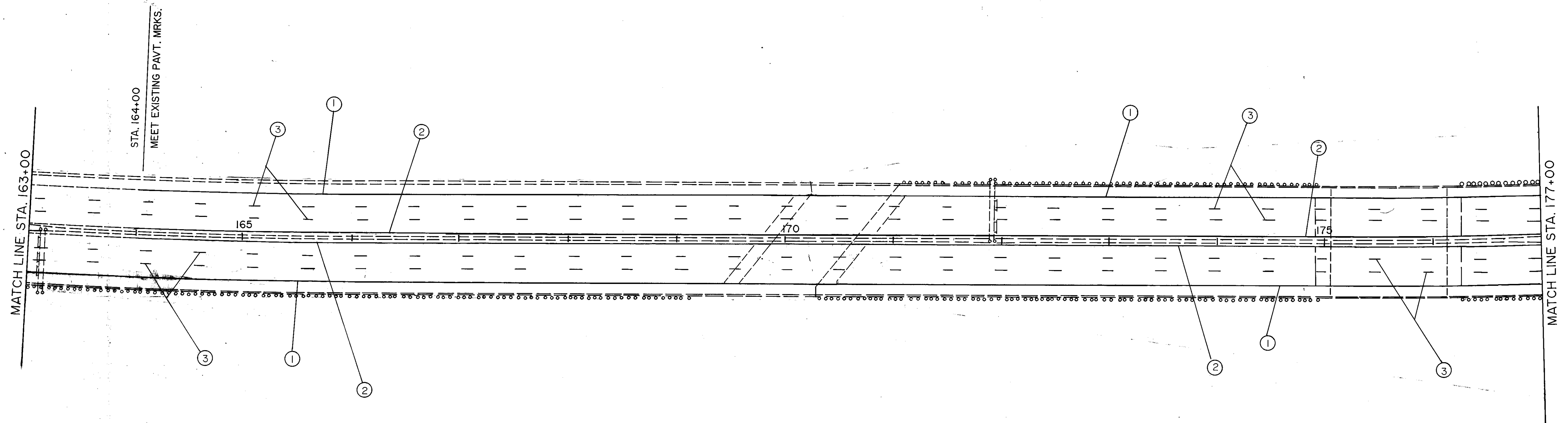
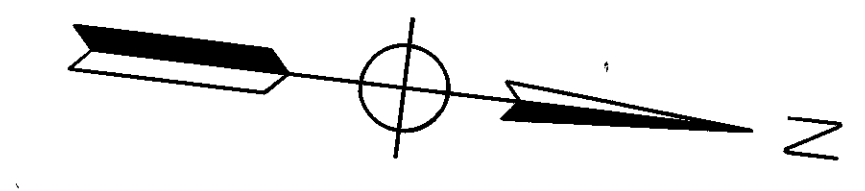
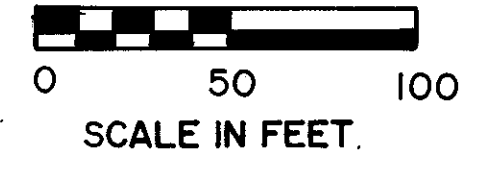
TRAFFIC CONTROL

CUYHOGA COUNTY
CUY-77-13.81

OHIO
FHWA REGION 5
FEDERAL PROJECT

149
234

FOR LEGEND SEE SHT 151.



TRAFFIC CONTROL

CUYAHOGA COUNTY
CUY-77-13.81

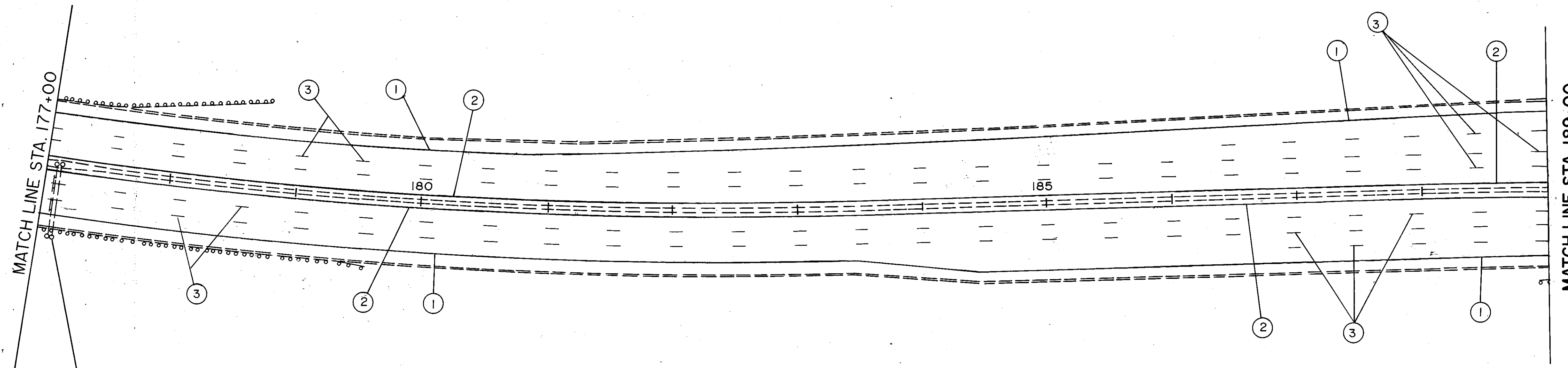
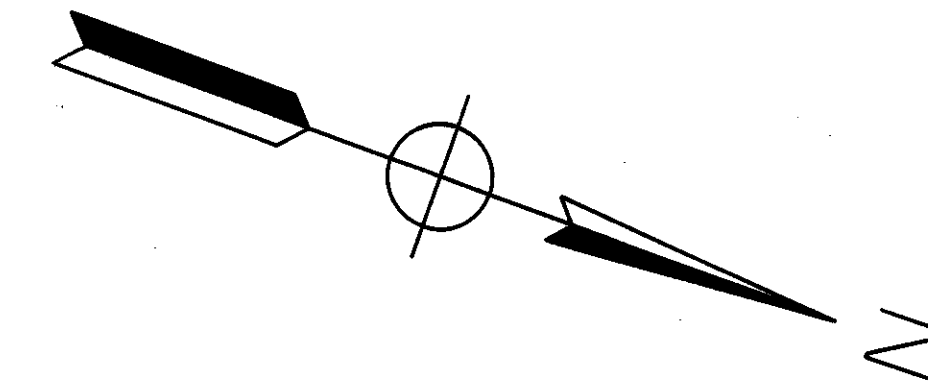
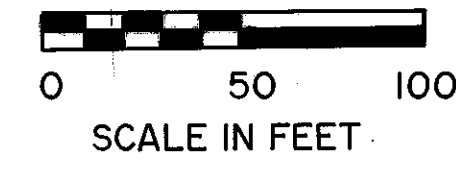
OHIO

FHWA
REGION 5

FEDERAL
PROJECT

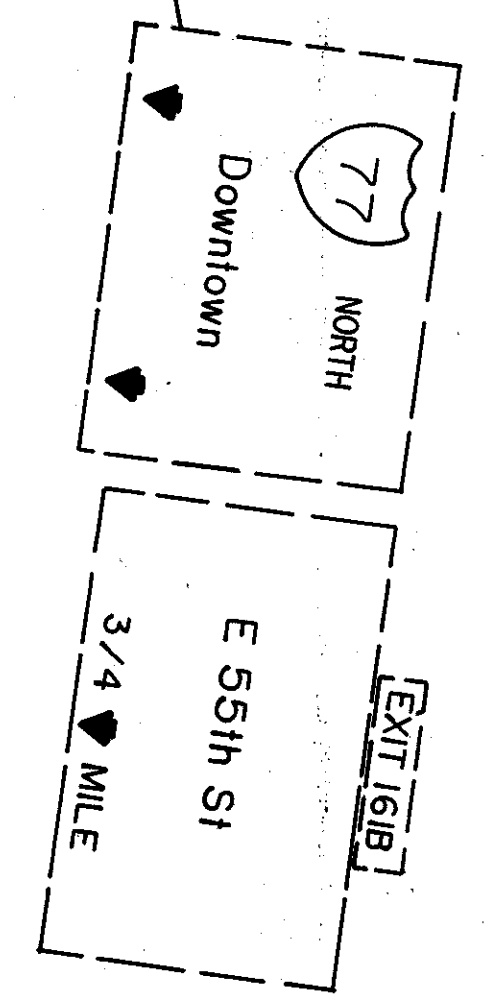
150
234

FOR LEGEND, SEE SHT 151

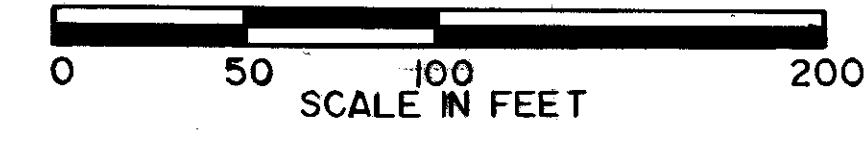


MATCH LINE STA. 177+00

MATCH LINE STA. 189+00

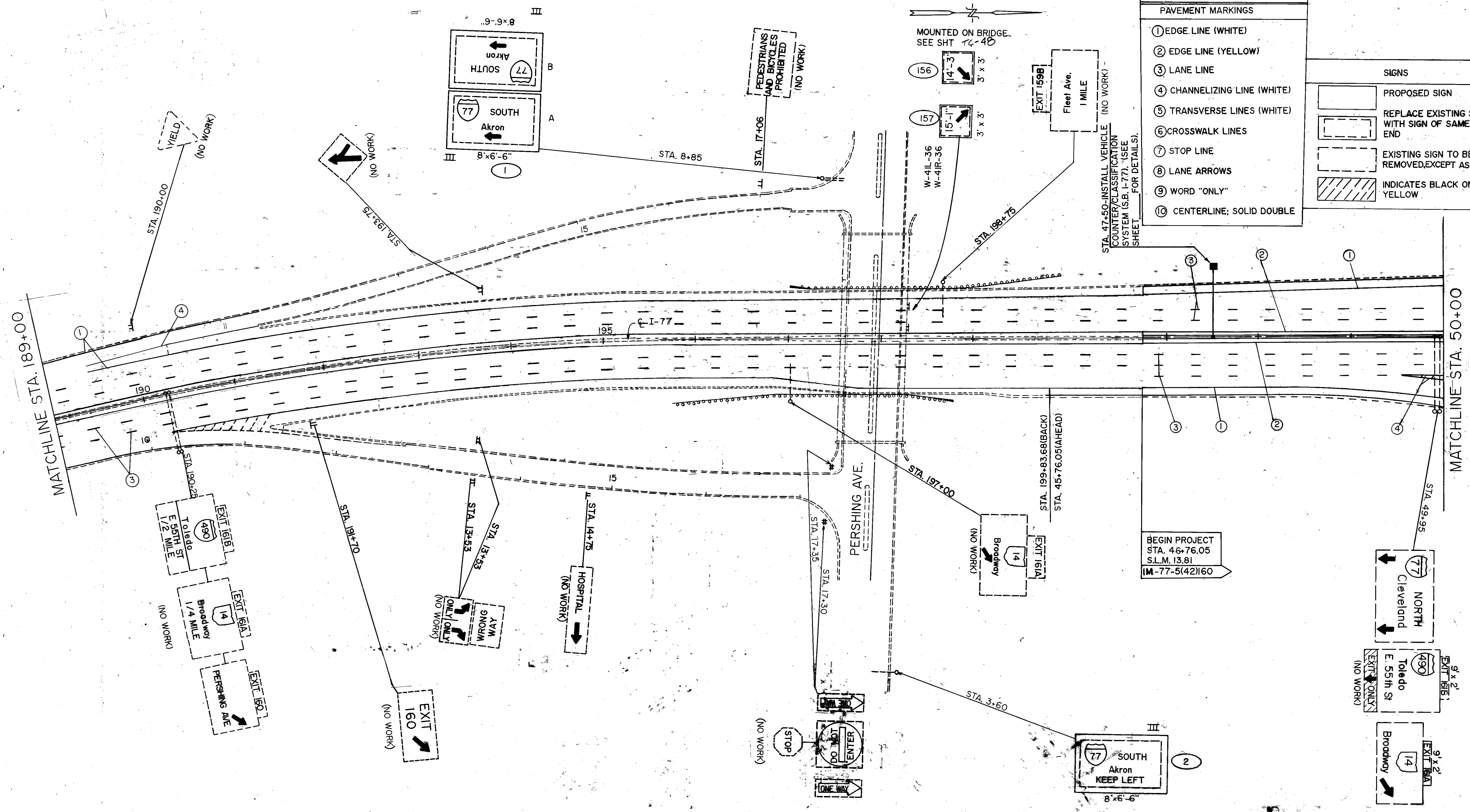


TRAFFIC CONTROL



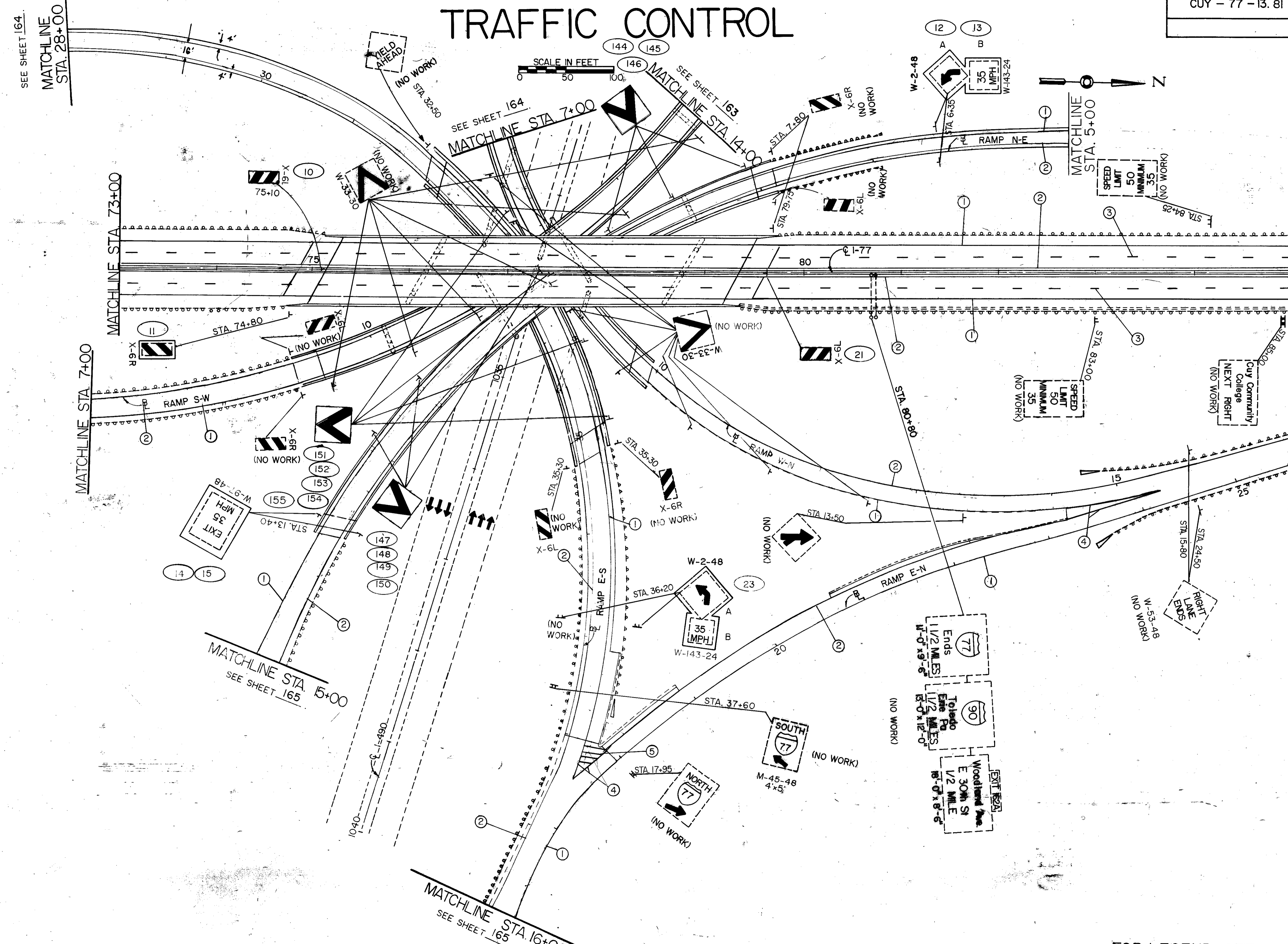
LEGEND	
PAVEMENT MARKINGS	
①	EDGE LINE (WHITE)
②	EDGE LINE (YELLOW)
③	LANE LINE
④	CHANNELIZING LINE (WHITE)
⑤	TRANSVERSE LINES (WHITE)
⑥	CROSSWALK LINES
⑦	STOP LINE
⑧	LANE ARROWS
⑨	WORD "ONLY"
⑩	CENTERLINE; SOLID DOUBLE

SIGNS	
	PROPOSED SIGN
	REPLACE EXISTING SIGN WITH SIGN OF SAME LEG- END
	EXISTING SIGN TO BE REMOVED, EXCEPT AS NOTED
	INDICATES BLACK ON YELLOW



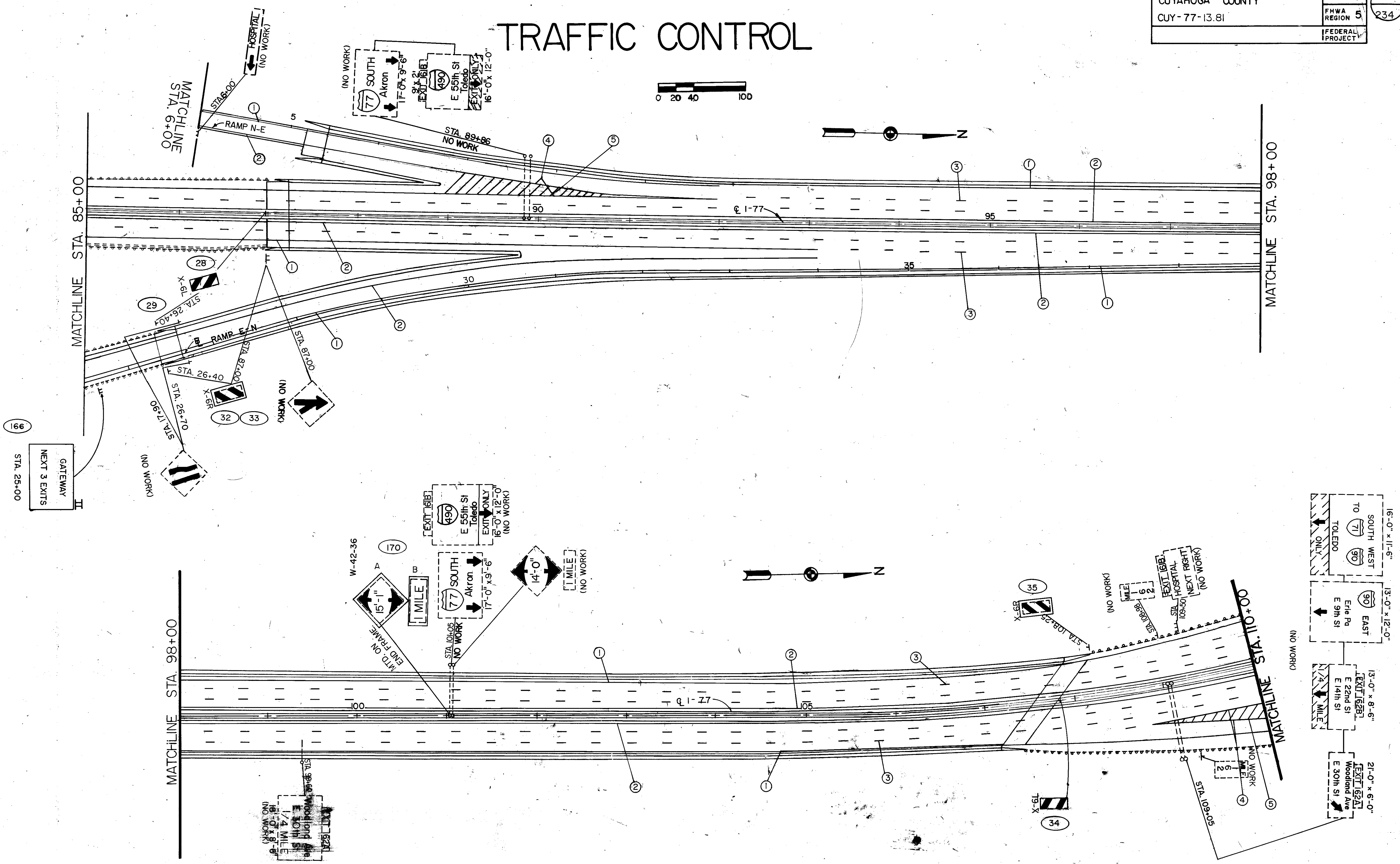
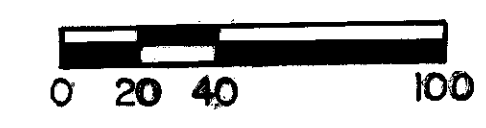
BEGIN PROJECT
STA. 46+76.05
S.L.M. 13.81
IM-77-5(42)160

TRAFFIC CONTROL



FOR LEGEND, SEE SHT 151

TRAFFIC CONTROL

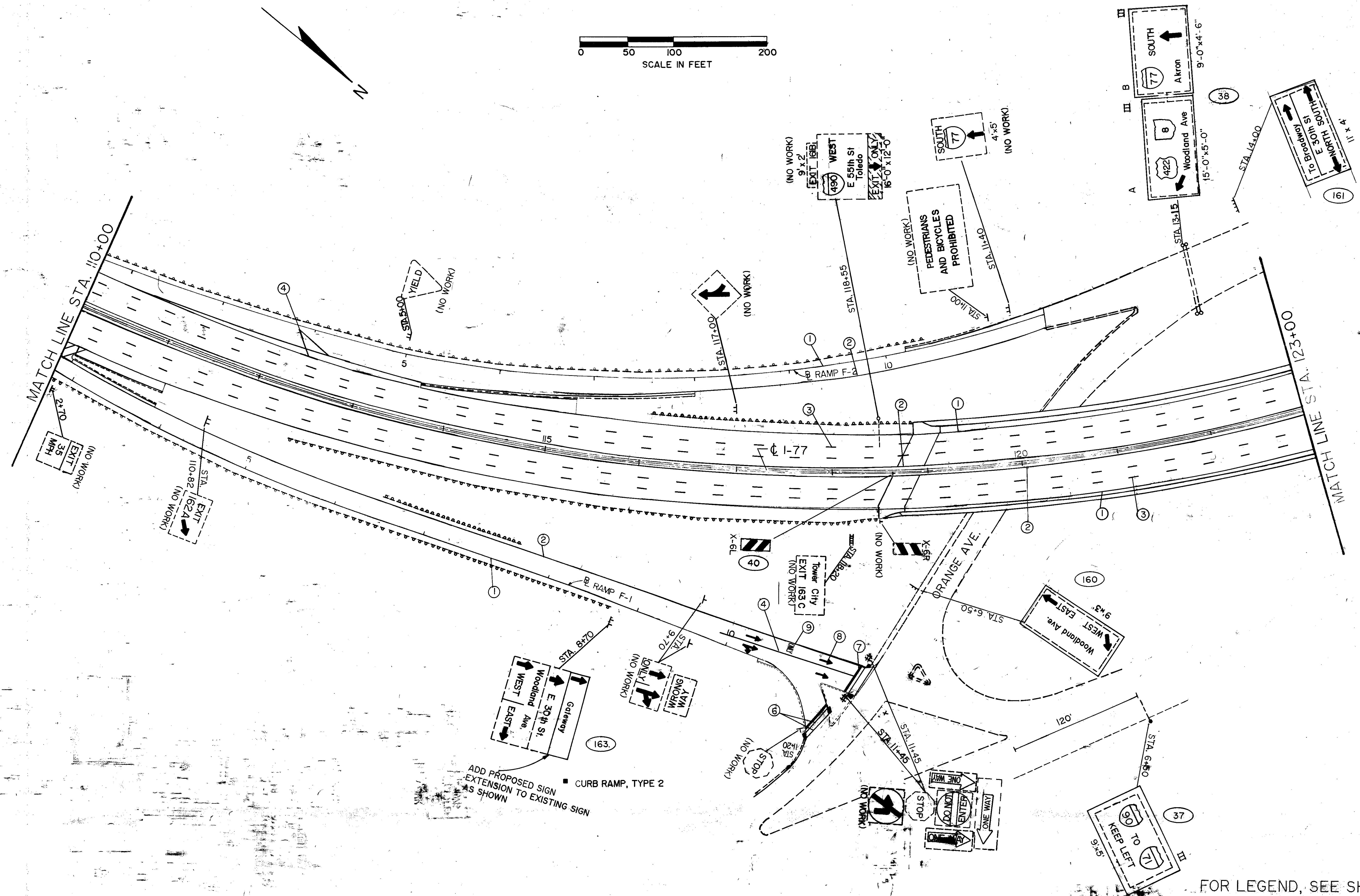
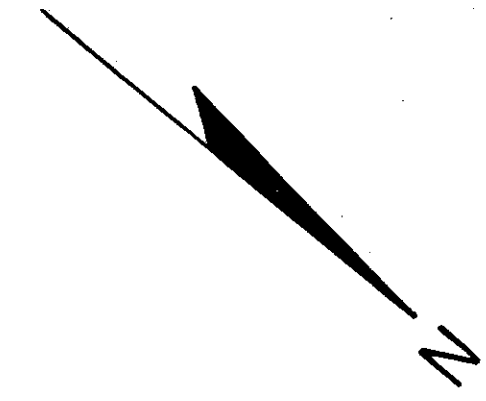
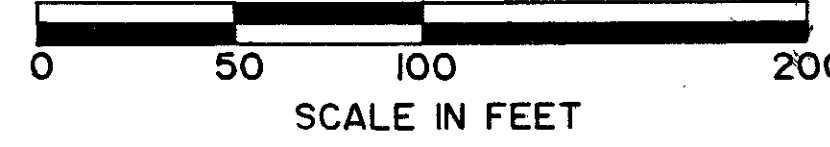


FOR LEGEND, SEE SHT 151

TRAFFIC CONTROL

CUYAHOGA COUNTY
 CUY - 77 - 13.81

OHIO	156
FHWA REGION 5	234
FEDERAL PROJECT	

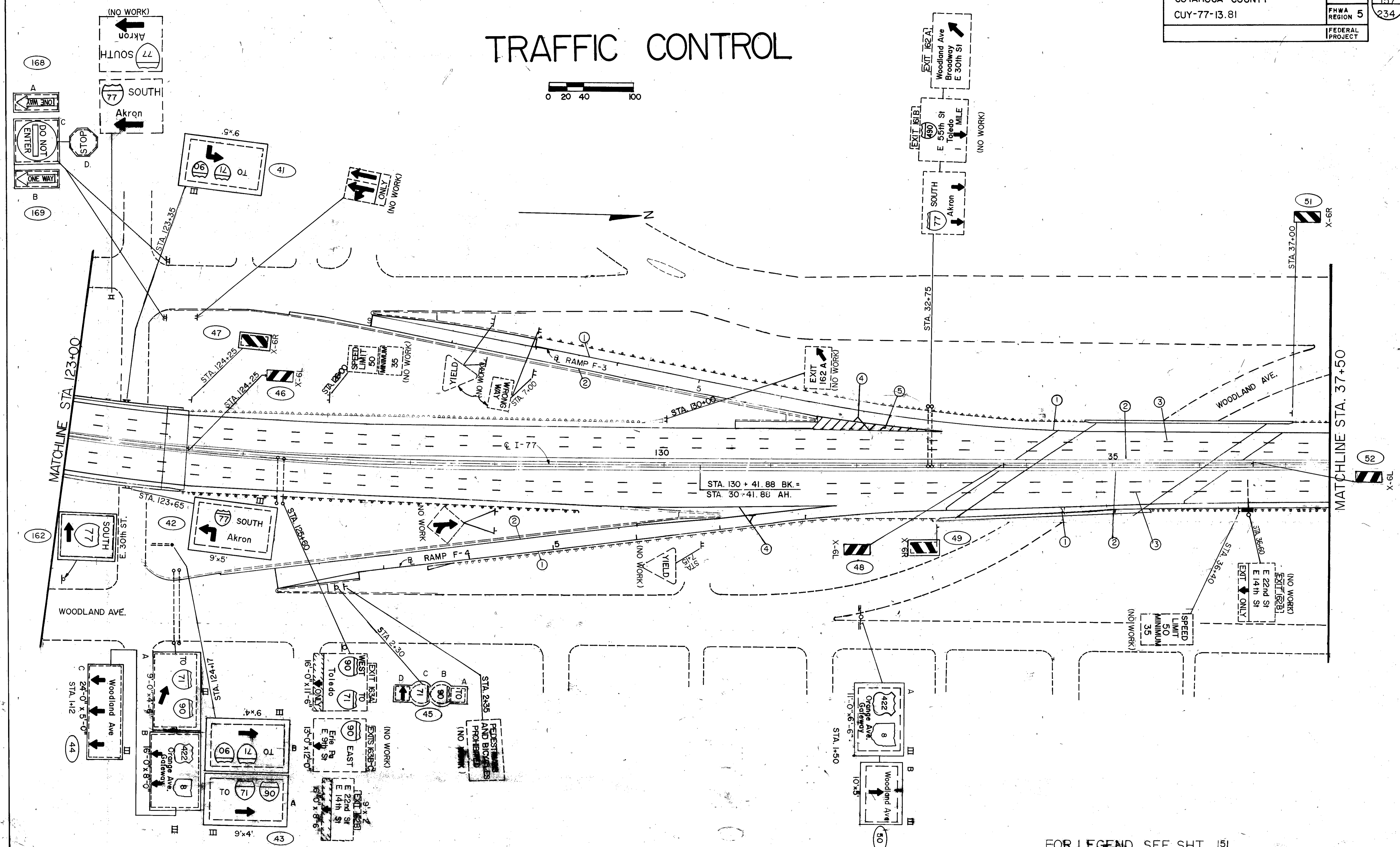
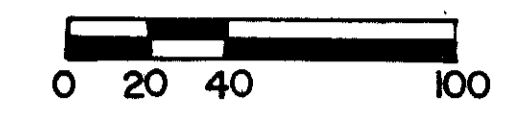


ADD PROPOSED SIGN EXTENSION TO EXISTING SIGN AS SHOWN

■ CURB RAMP, TYPE 2

FOR LEGEND, SEE SHT 151

TRAFFIC CONTROL

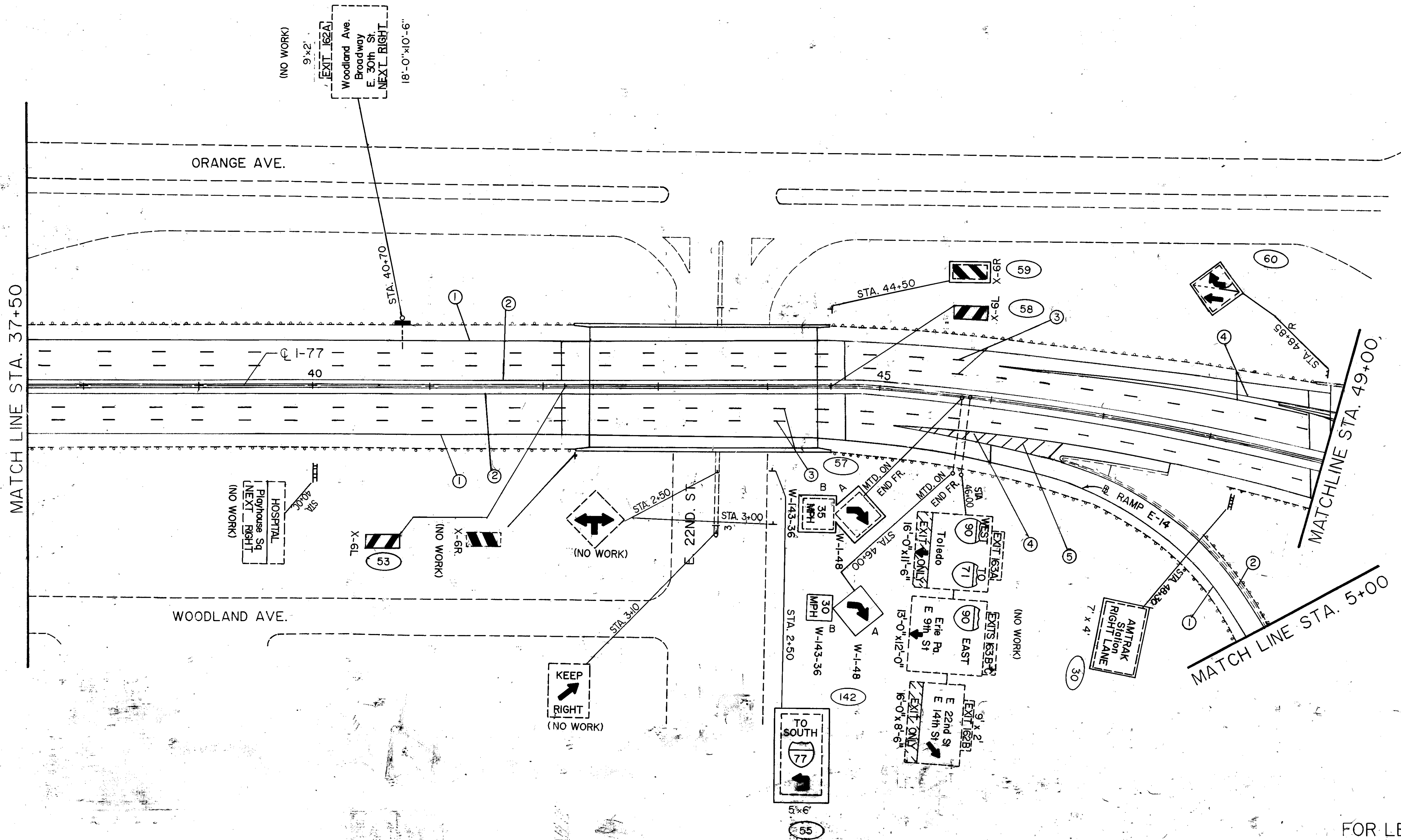
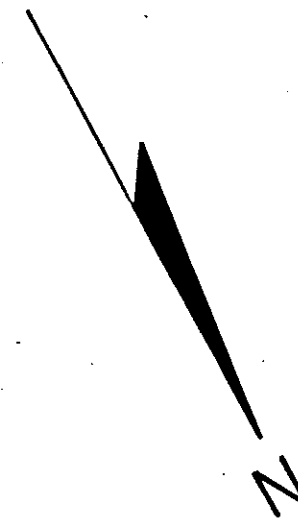
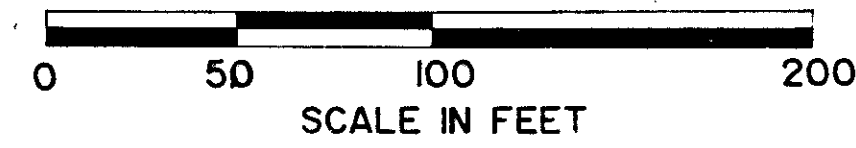


FOR LEGEND, SEE SHT 151

TRAFFIC CONTROL

CUYAHOGA COUNTY
CUY - 77 - 13.81

OHIO	158
FHWA REGION 5	234
FEDERAL PROJECT	

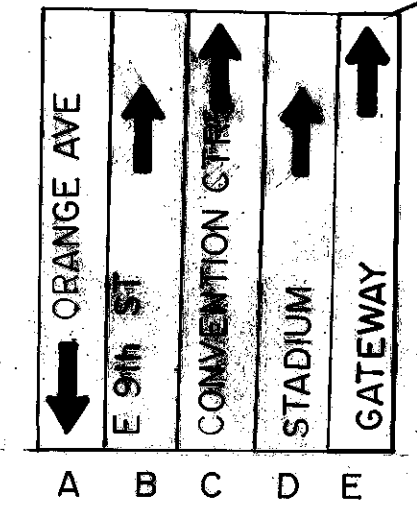
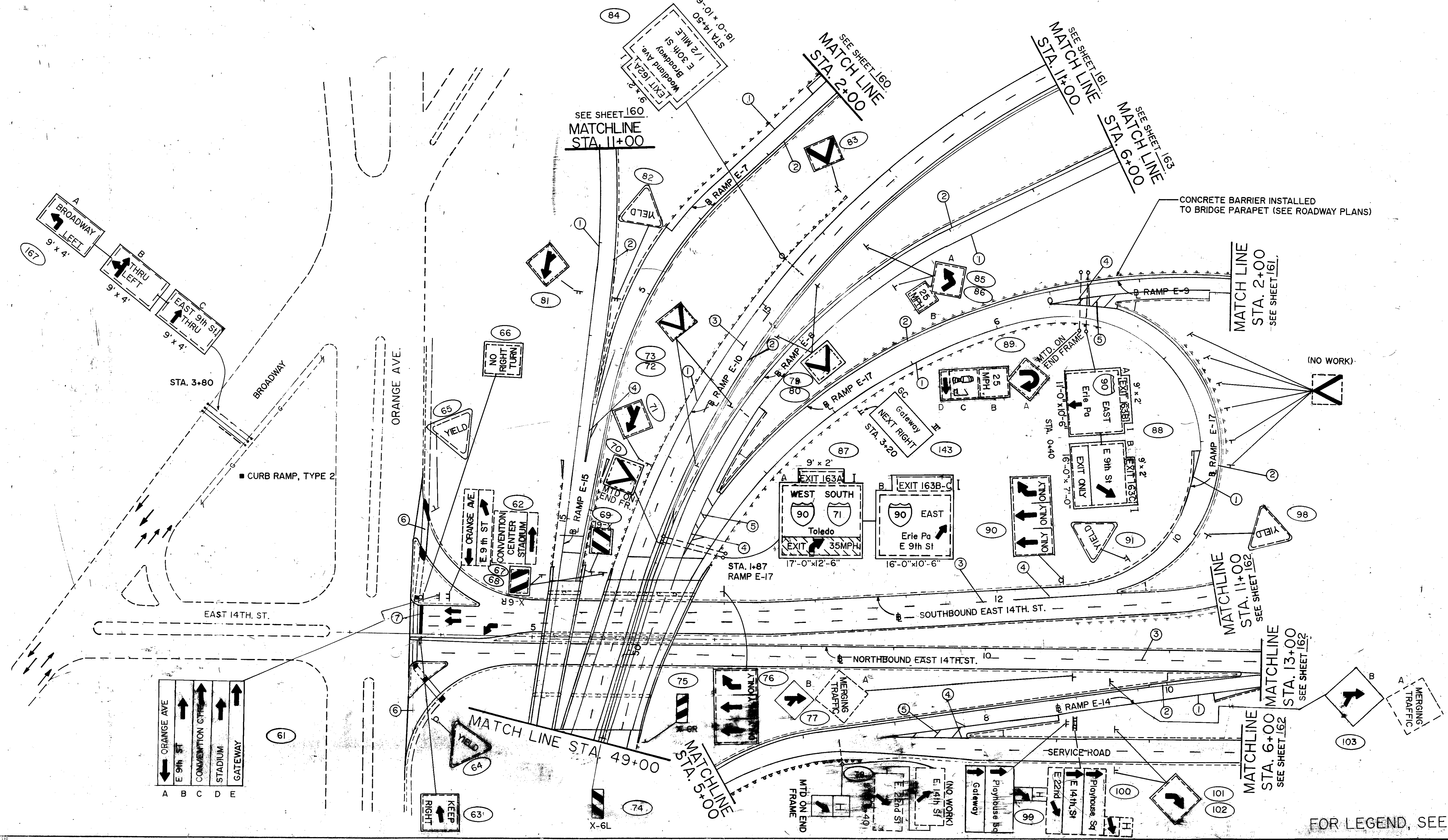
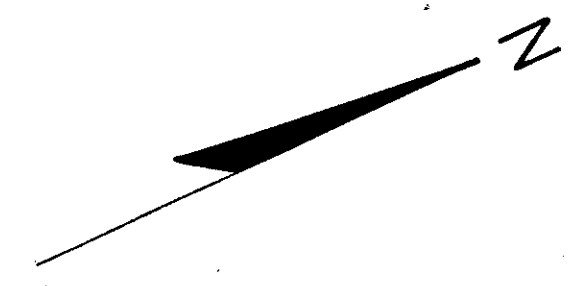


FOR LEGEND, SEE SHT 151

TRAFFIC CONTROL

CUYAHOGA COUNTY
CUY - 77 - 13.81

OHIO	159
FHWA REGION 5	234
FEDERAL PROJECT	

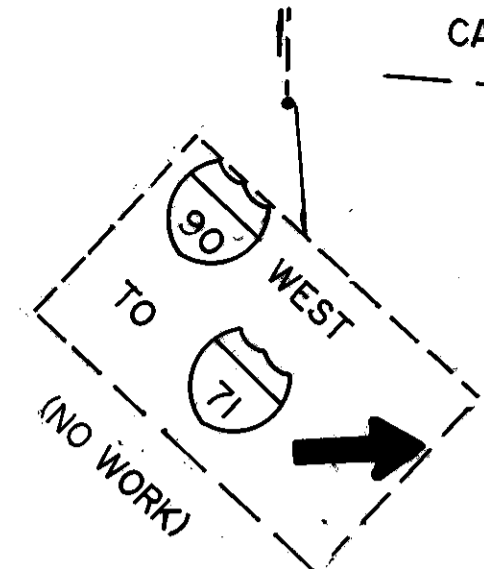


FOR LEGEND, SEE SHT 151

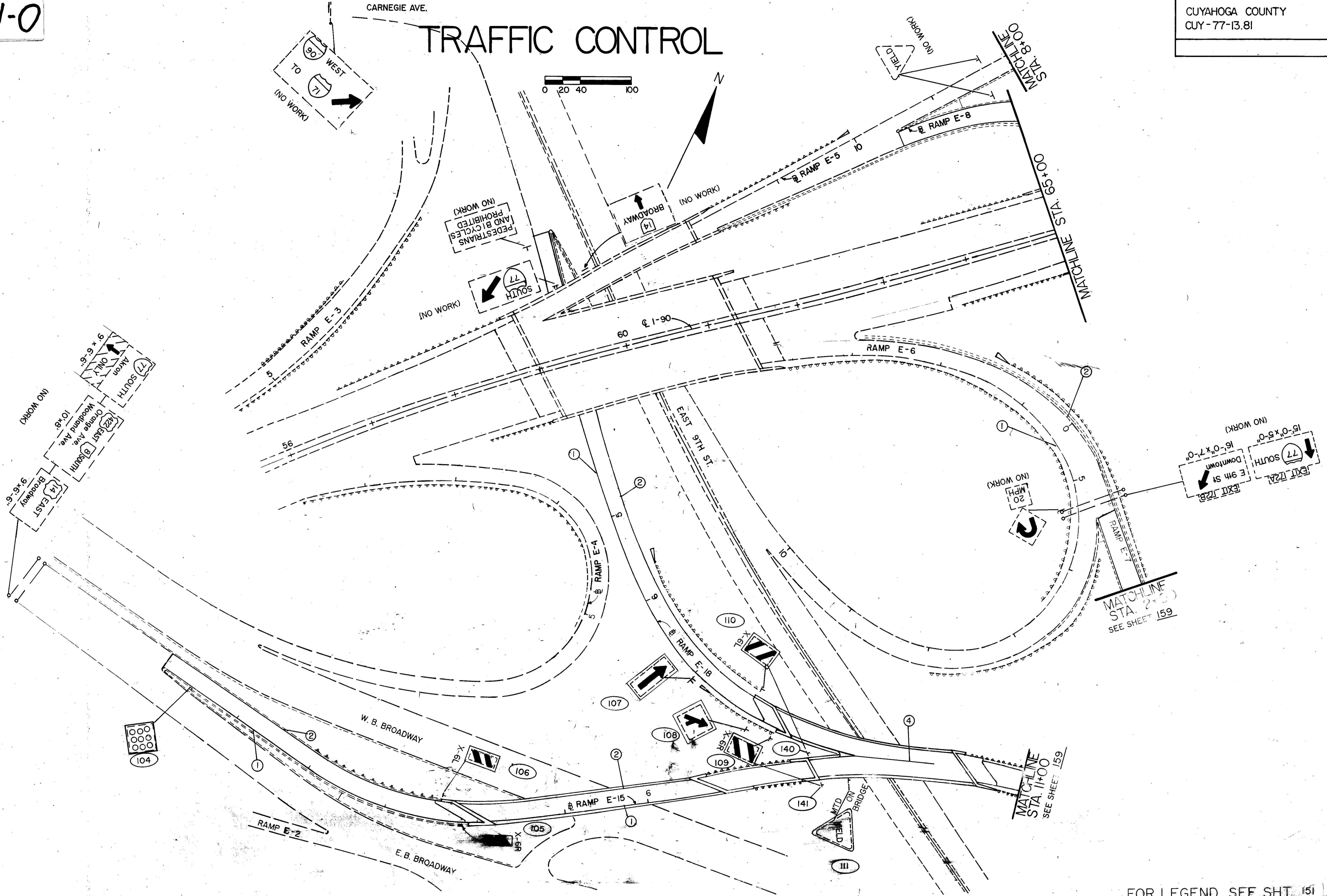
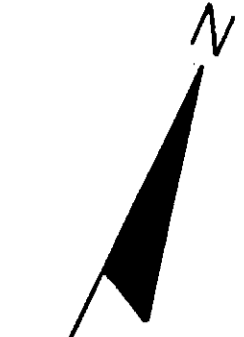
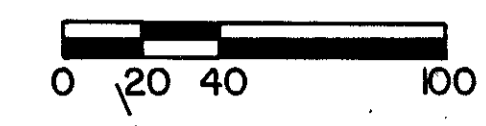
11-0

CUYAHOGA COUNTY CUY-77-13.81	OHIO	160
	FHWA REGION 5	234
FEDERAL PROJECT		

TRAFFIC CONTROL



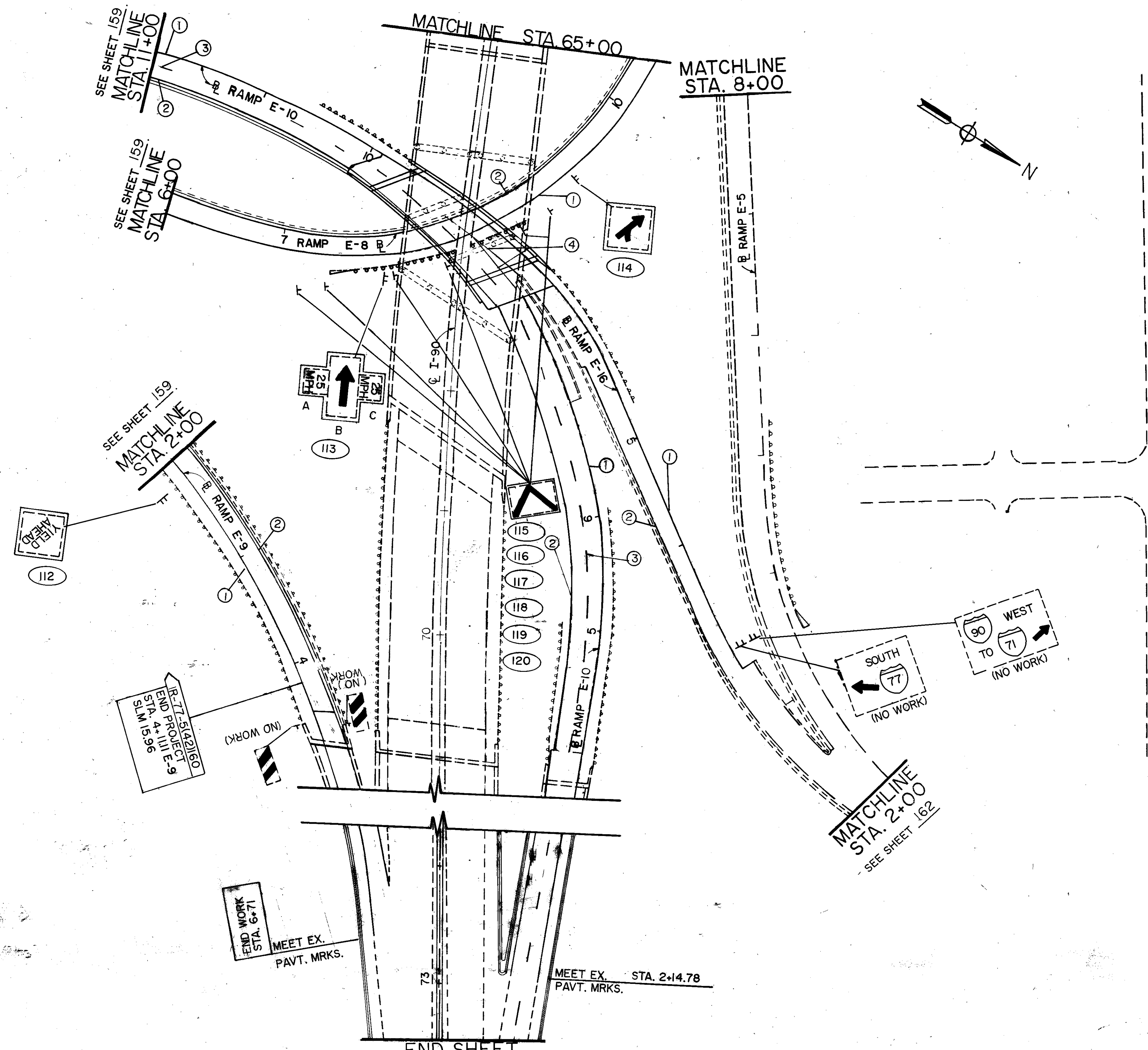
CARNEGIE AVE.



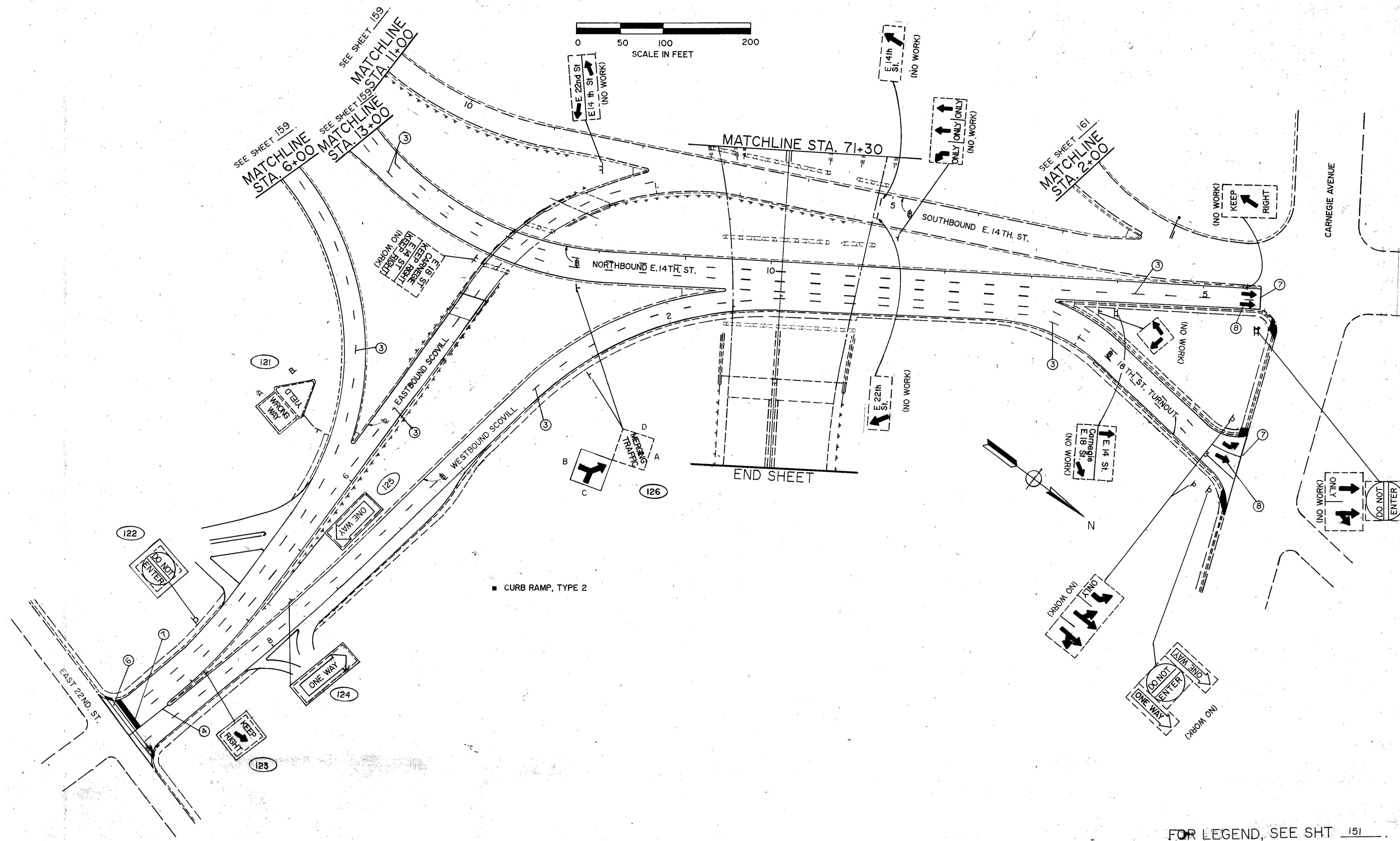
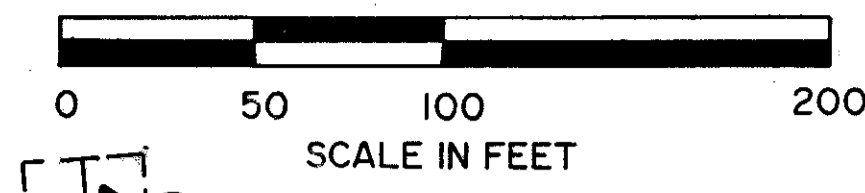
FOR LEGEND, SEE SHT. 151

TRAFFIC CONTROL

CUYAHOGA COUNTY CUY - 77 - 13.81	OHIO FHWA REGION 5	16J 234
FEDERAL PROJECT		

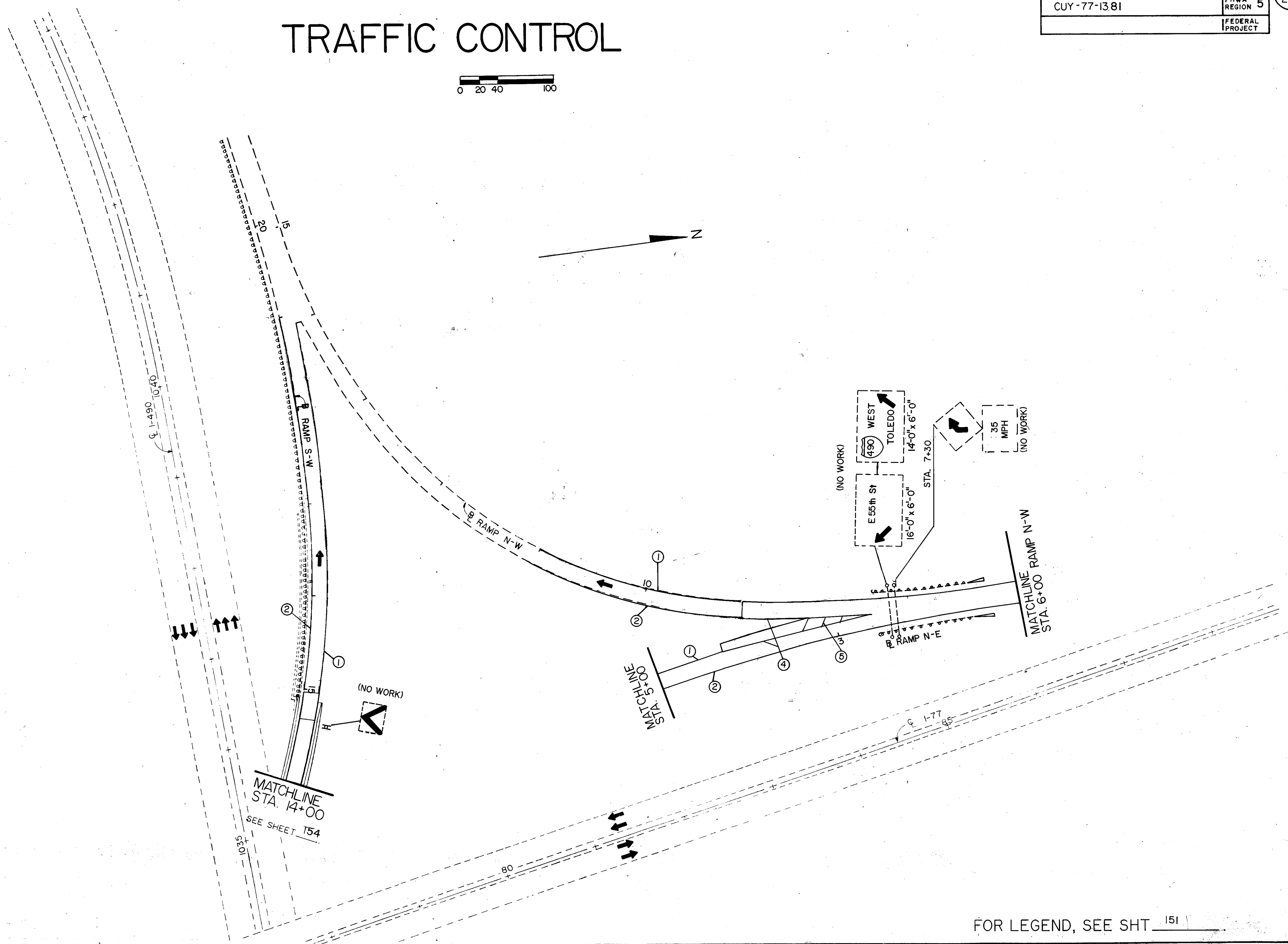
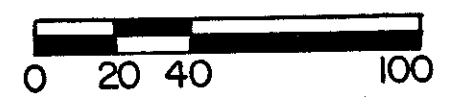


TRAFFIC CONTROL



FOR LEGEND, SEE SHT. 151

TRAFFIC CONTROL

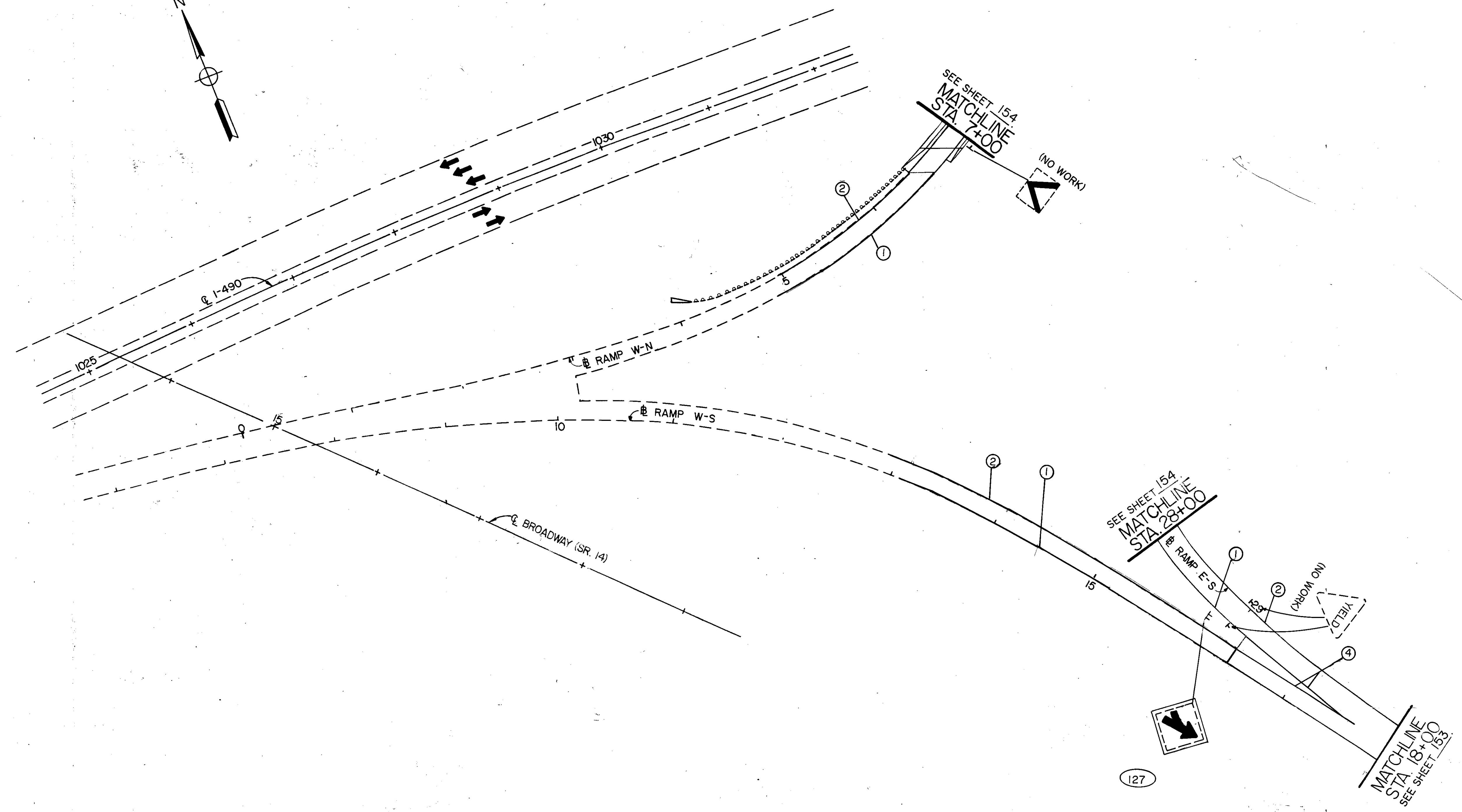
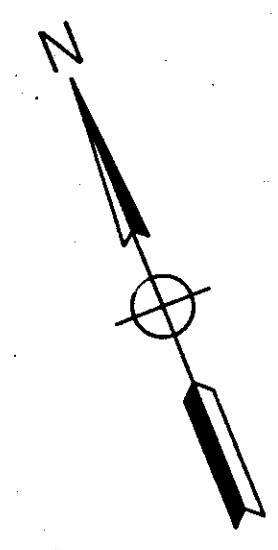
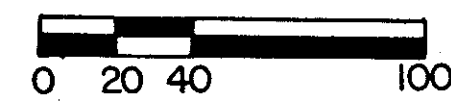


FOR LEGEND, SEE SHT 151

TRAFFIC CONTROL

CUYAHOGA COUNTY
CUY-77-13.81

OHIO	164
FHWA REGION 5	234
FEDERAL PROJECT	

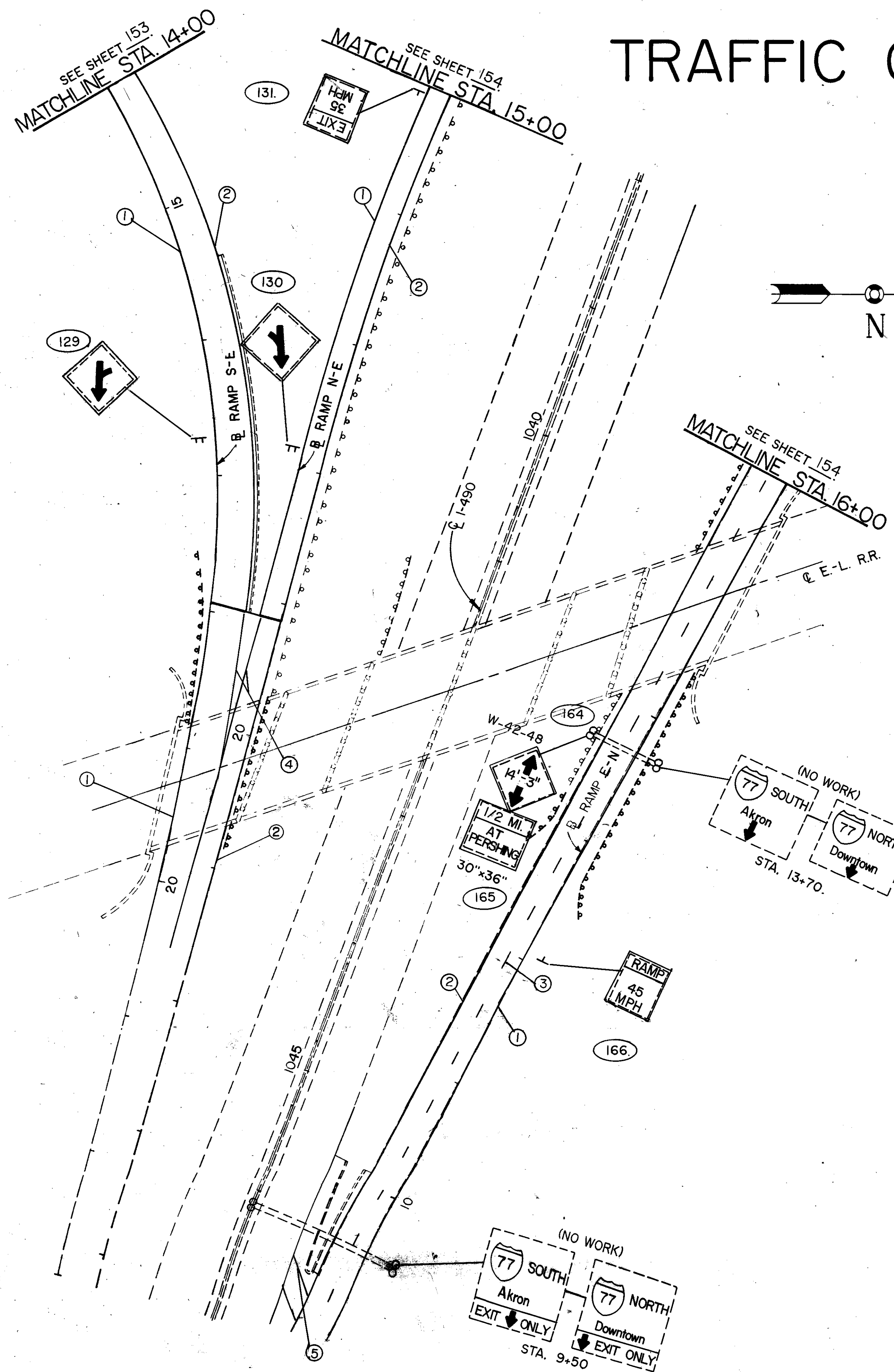
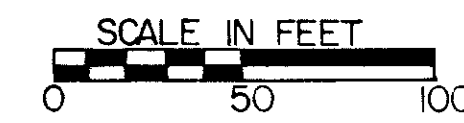


FOR LEGEND, SEE SHT 151

TRAFFIC CONTROL

RAMP W-N, RAMP W-S, RAMP E-S

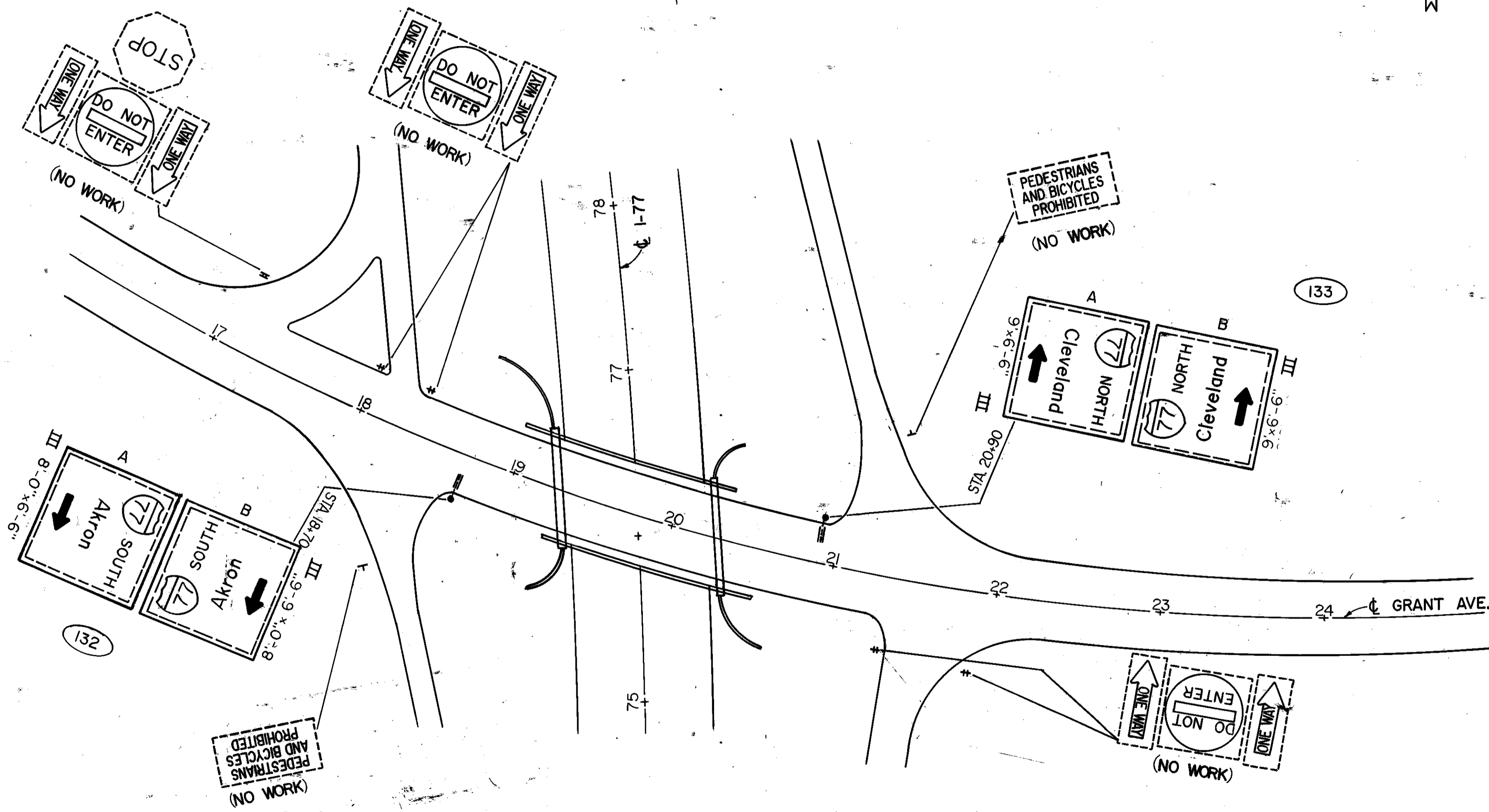
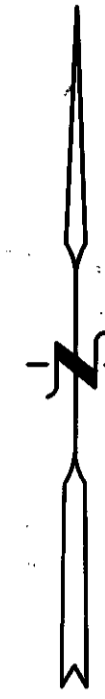
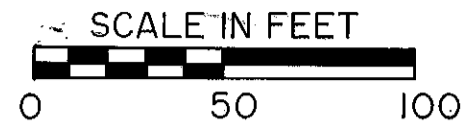
TRAFFIC CONTROL



FOR LEGEND, SEE SHT 151

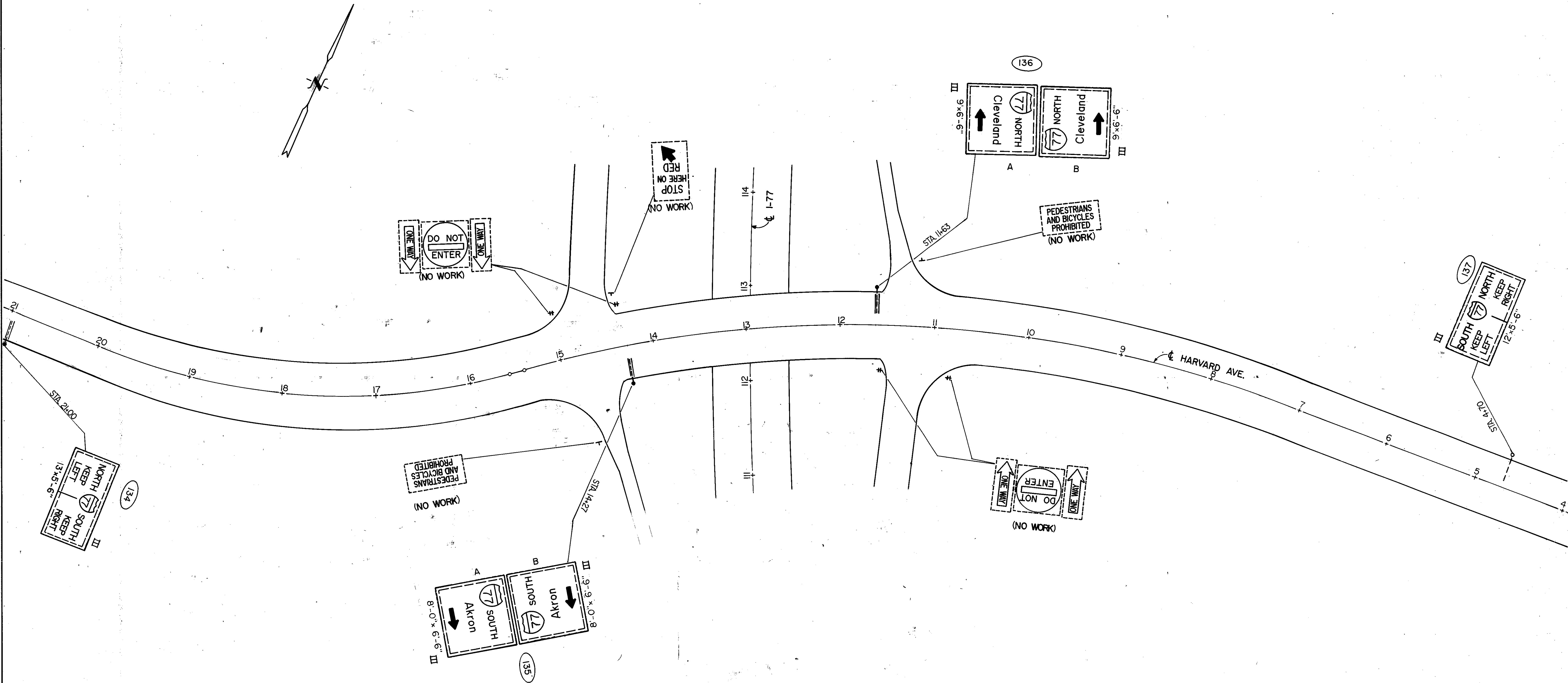
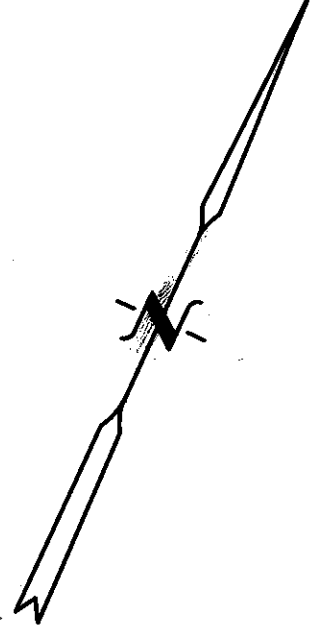
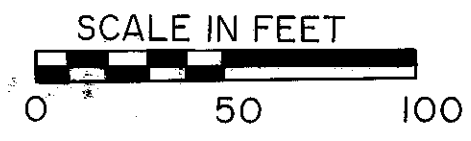
TRAFFIC CONTROL

CUYAHOGA COUNTY CUY-77-13.81	OHIO	166
	FHWA REGION 5	234
FEDERAL PROJECT		



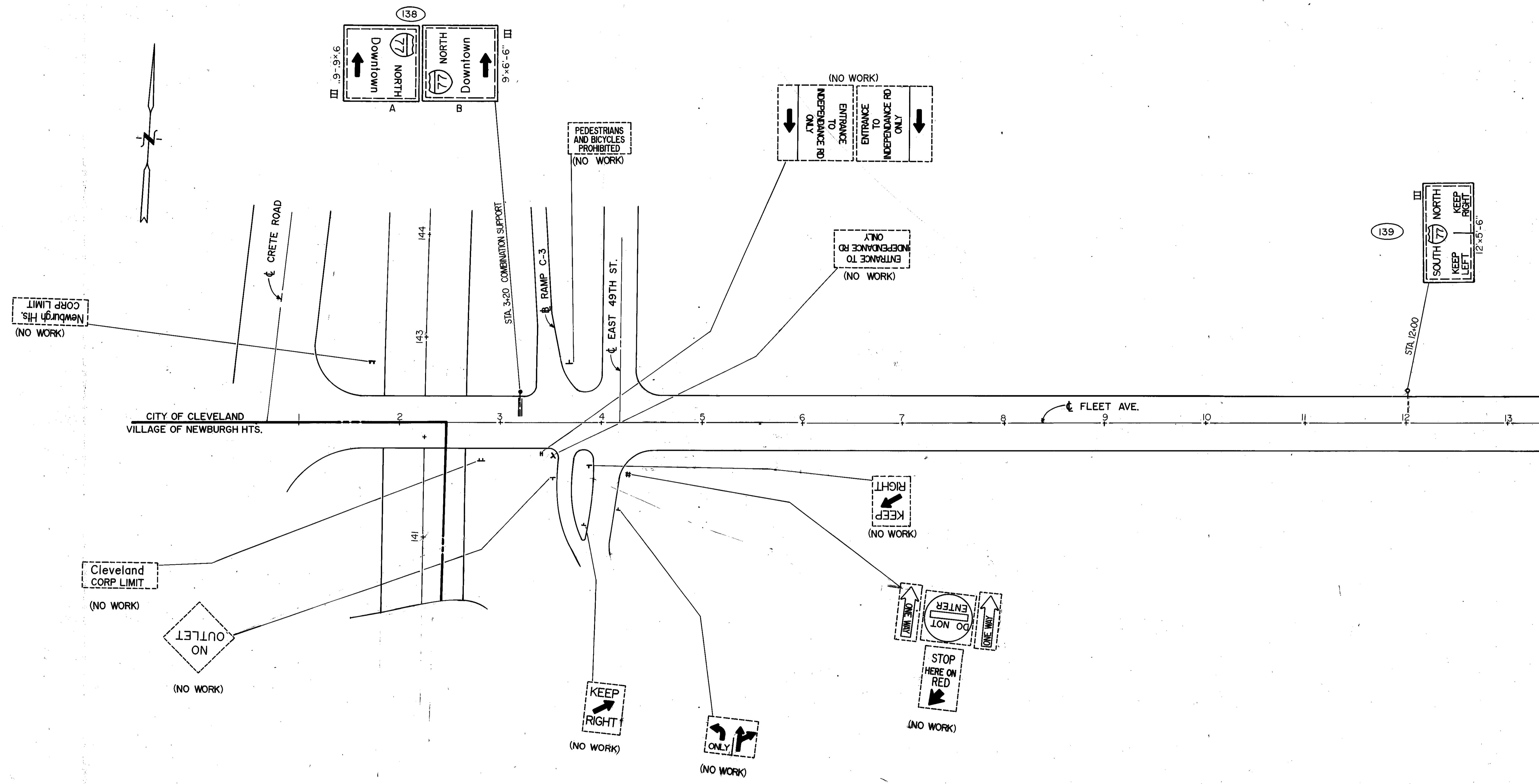
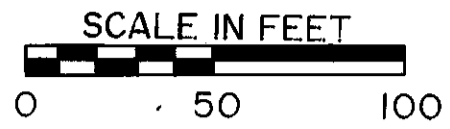
FOR LEGEND, SEE SHT 151

TRAFFIC CONTROL



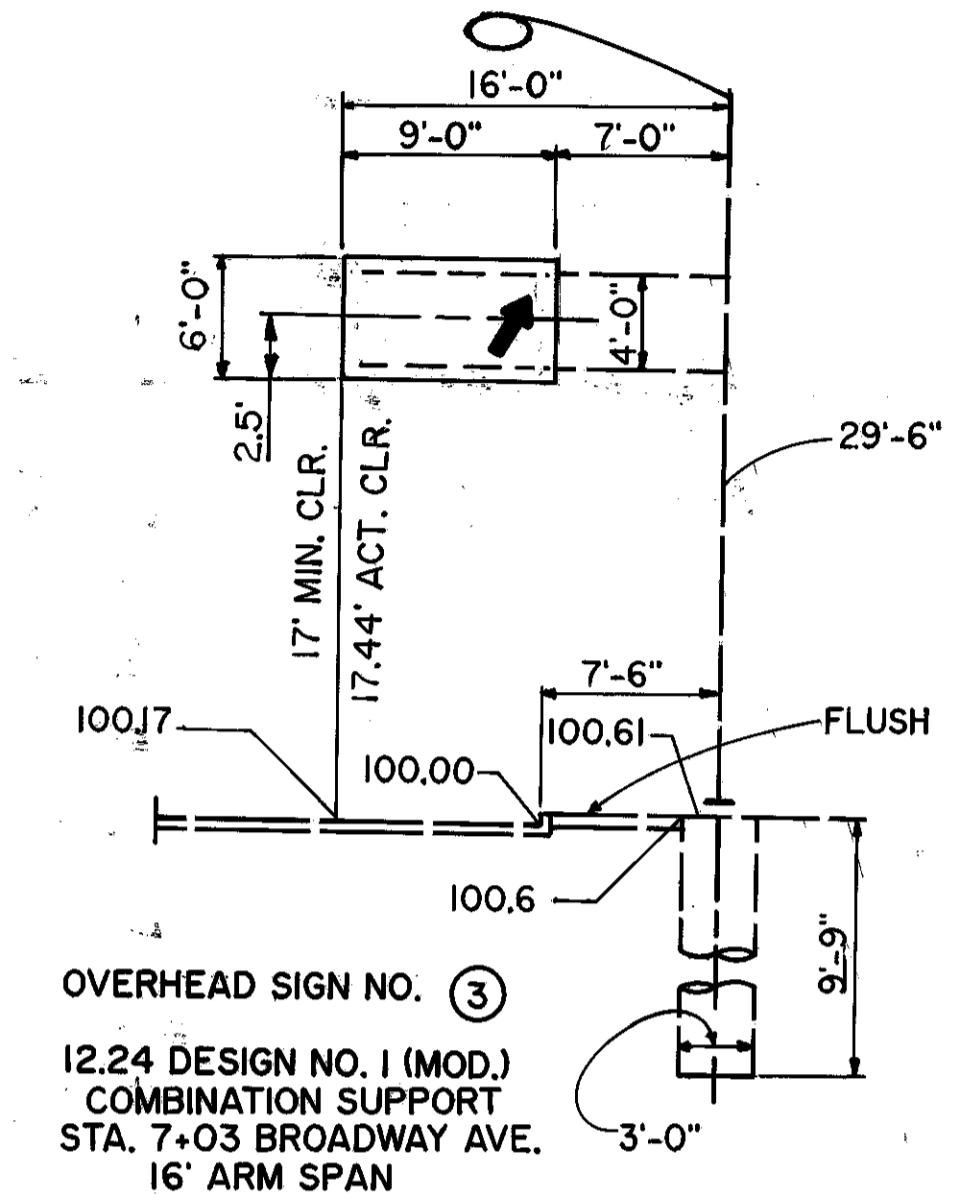
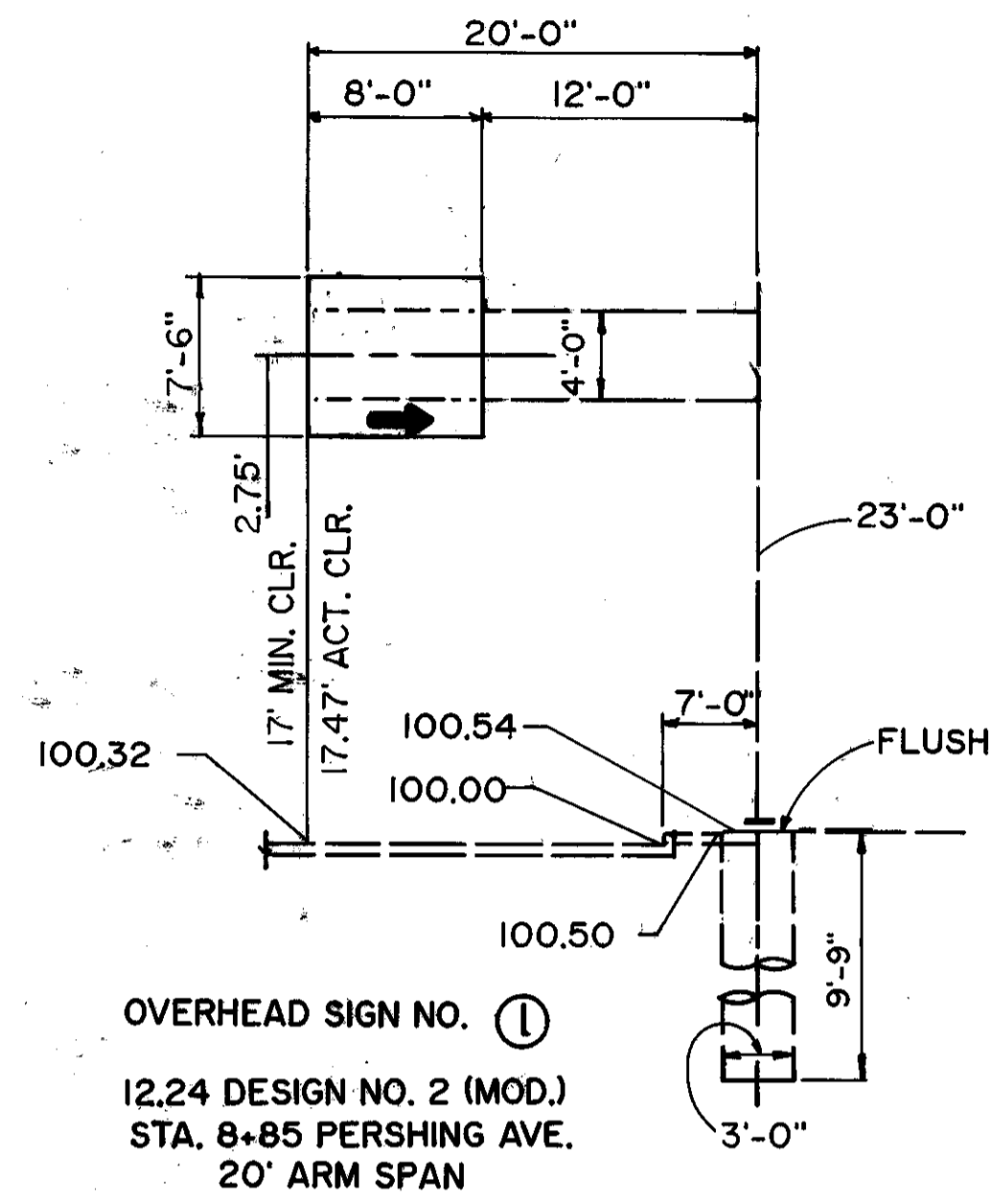
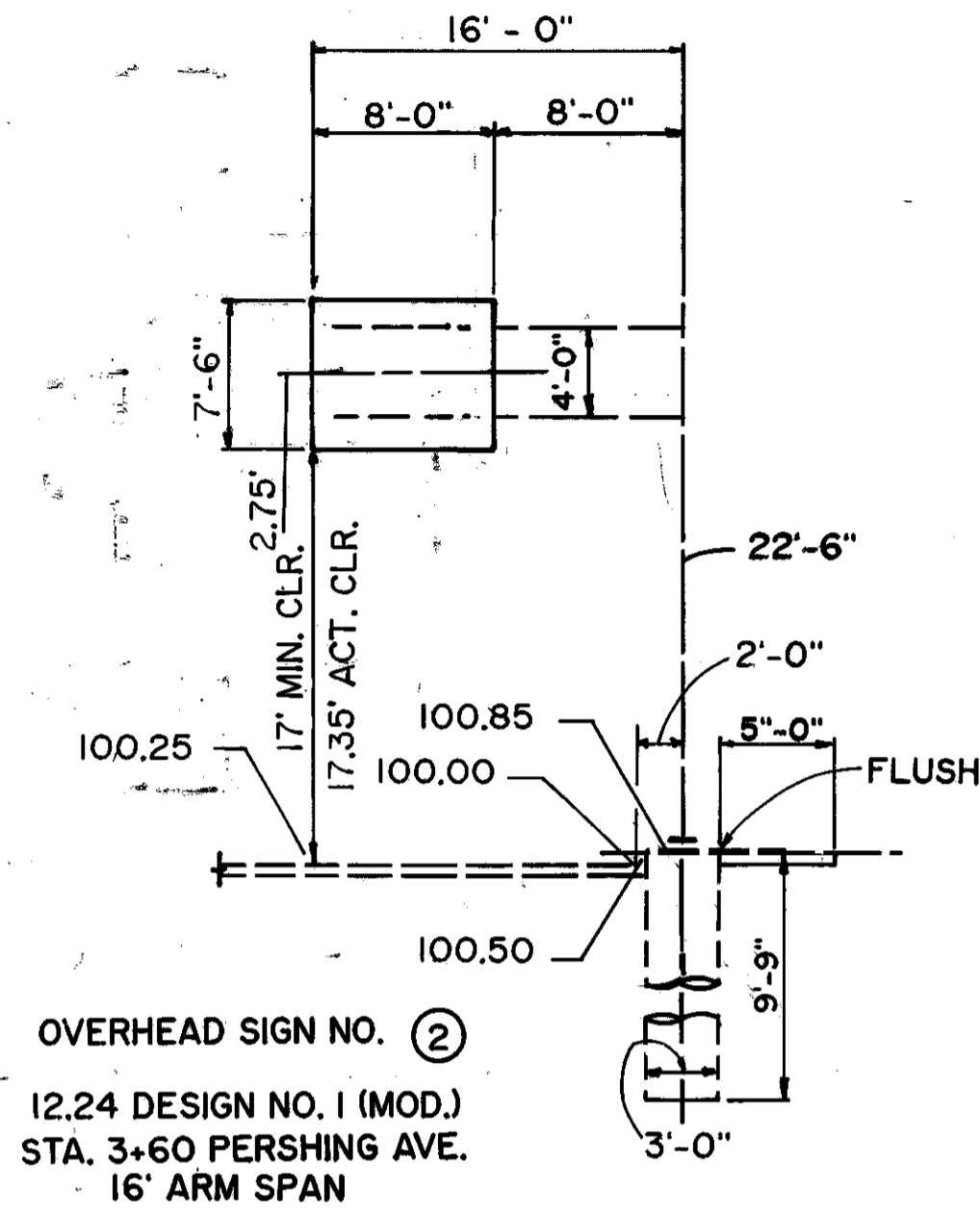
FOR LEGEND, SEE SHT 151

TRAFFIC CONTROL

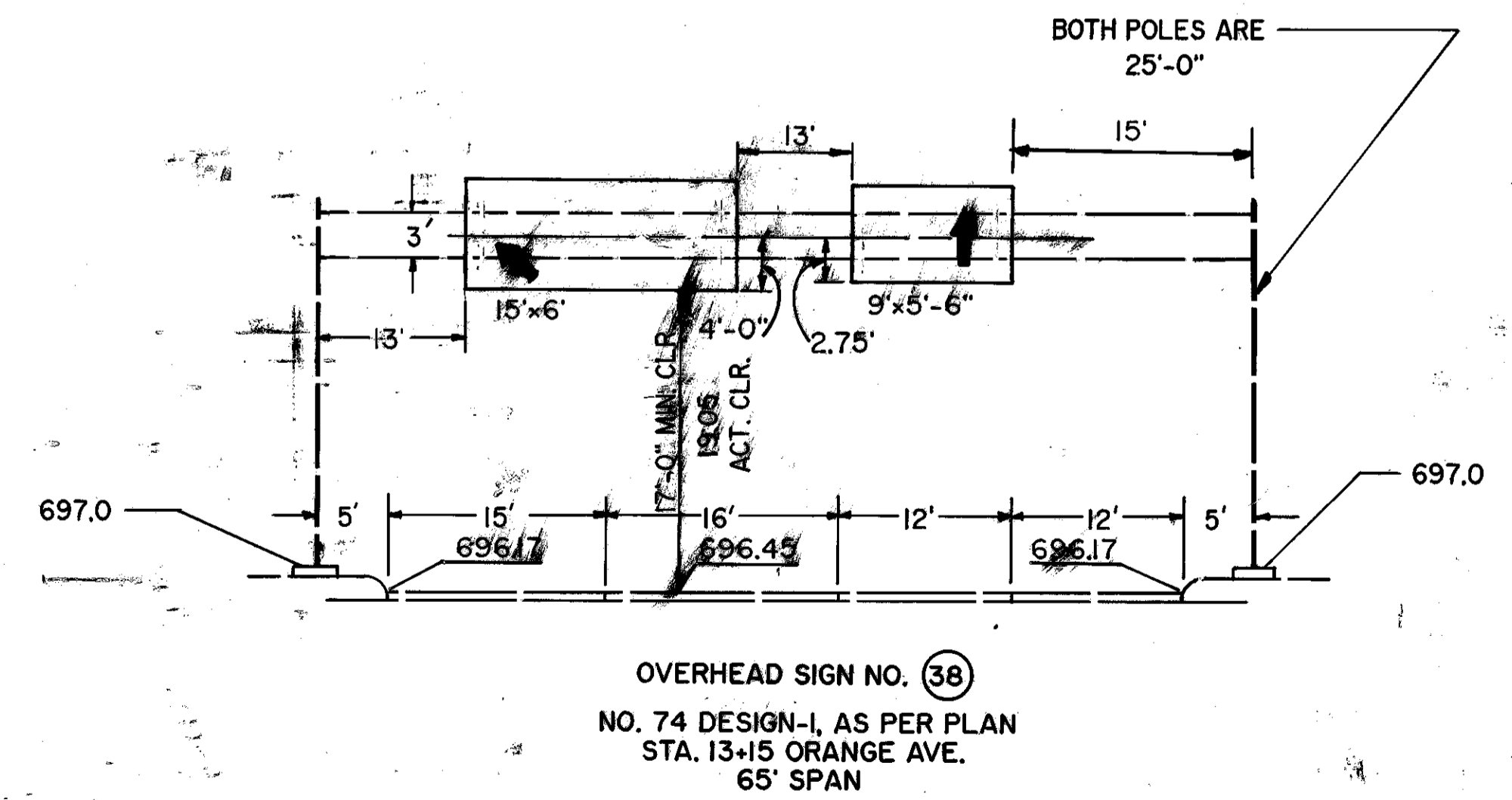
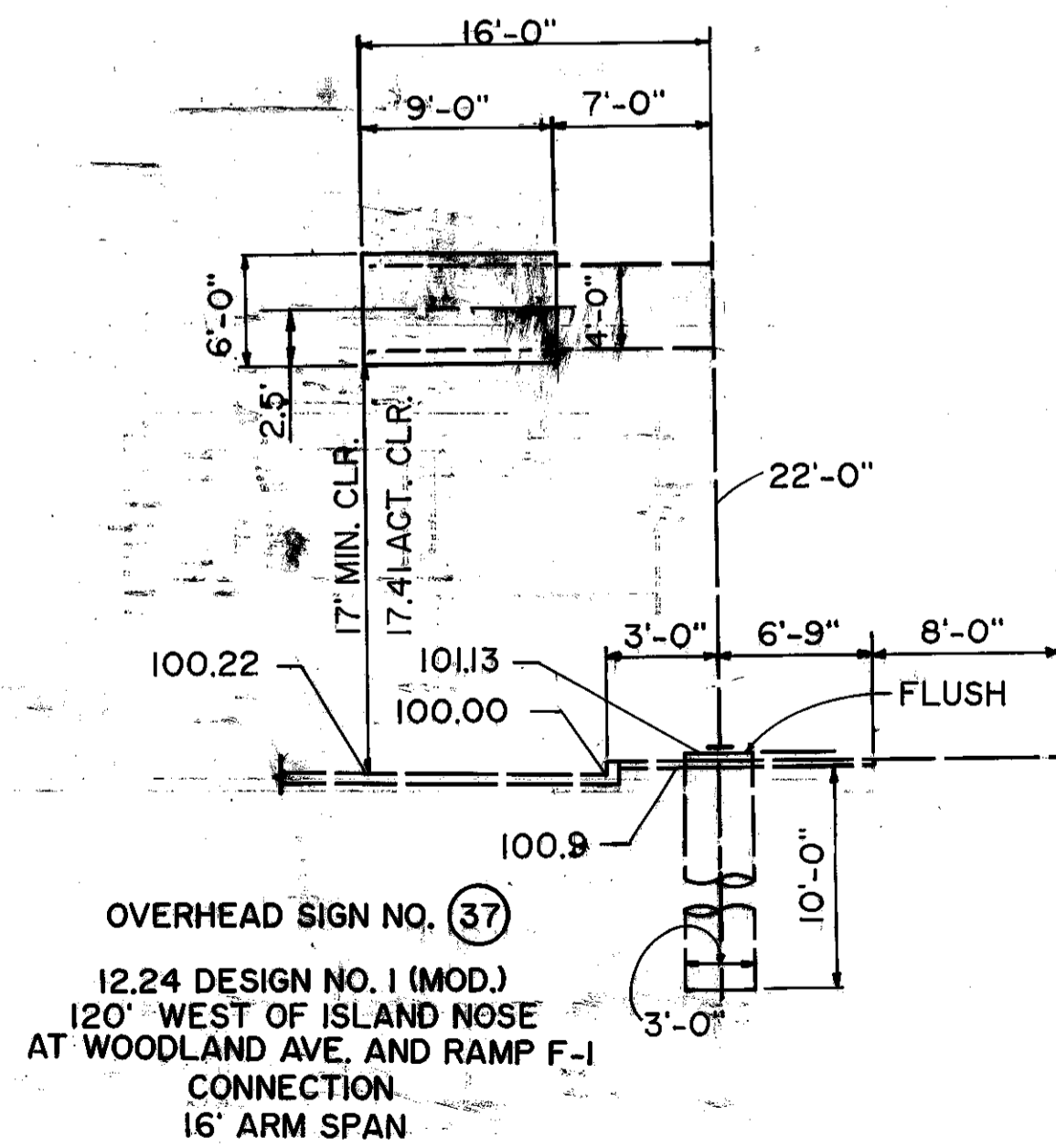


FOR LEGEND, SEE SHT 151

SIGN SUPPORT ELEVATION



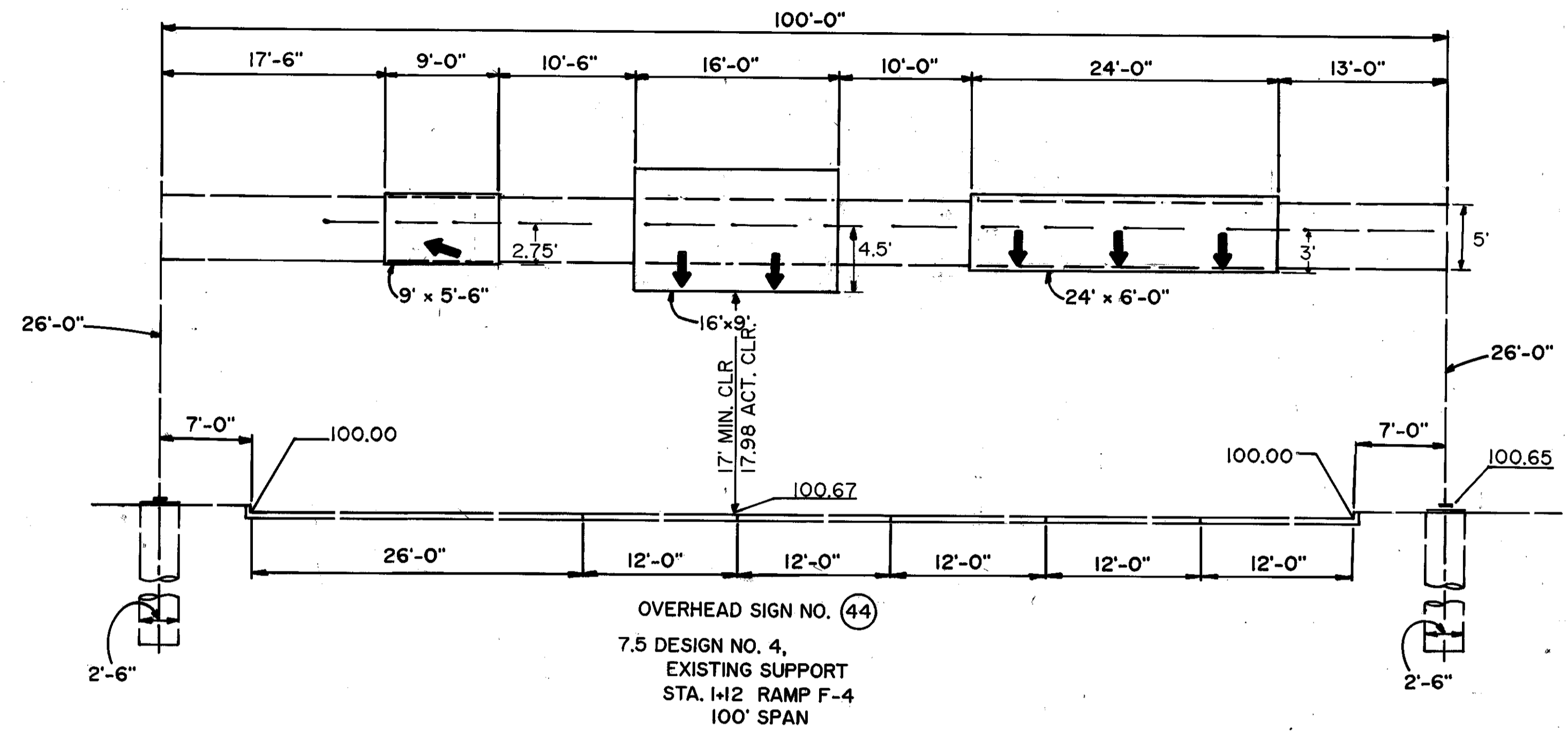
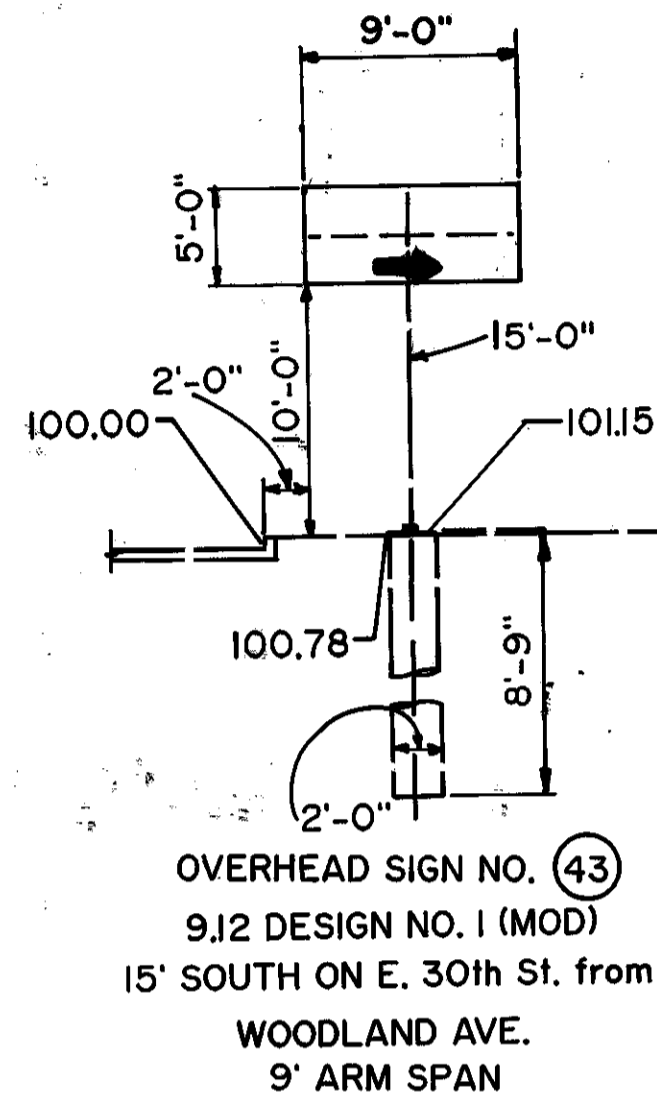
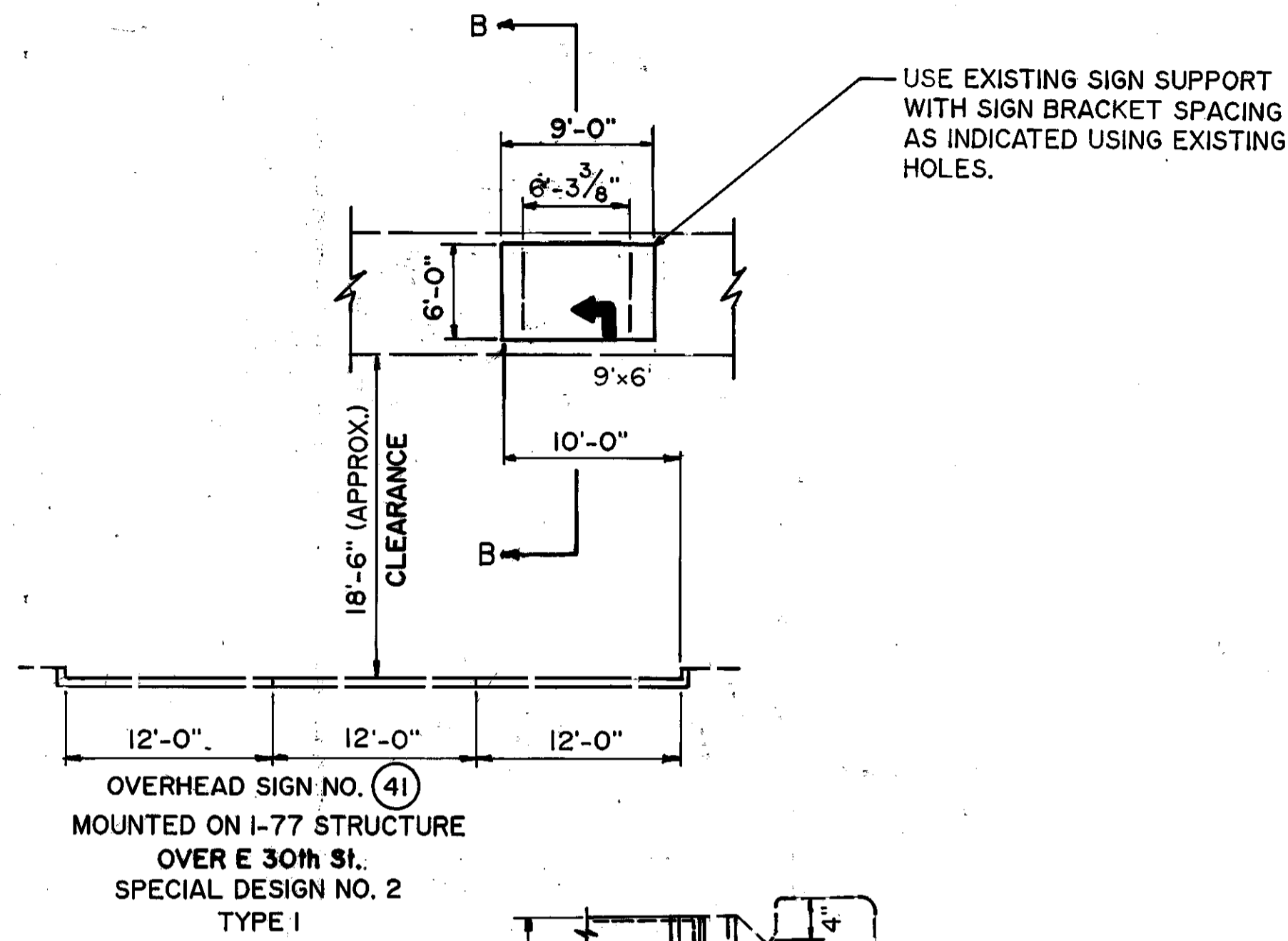
- NOTES:
- SIGN SIZES ARE ACTUAL AND INCLUDE THE ADDITIONAL 1'-0" FOR GLARE SHIELD AND LUMINAIRE ASSEMBLY.(FOR LIGHTED SIGNS ONLY)
 - ELEVATIONS SHOWN INCLUDE PROPOSED OVERLAY(IF APPLICABLE)



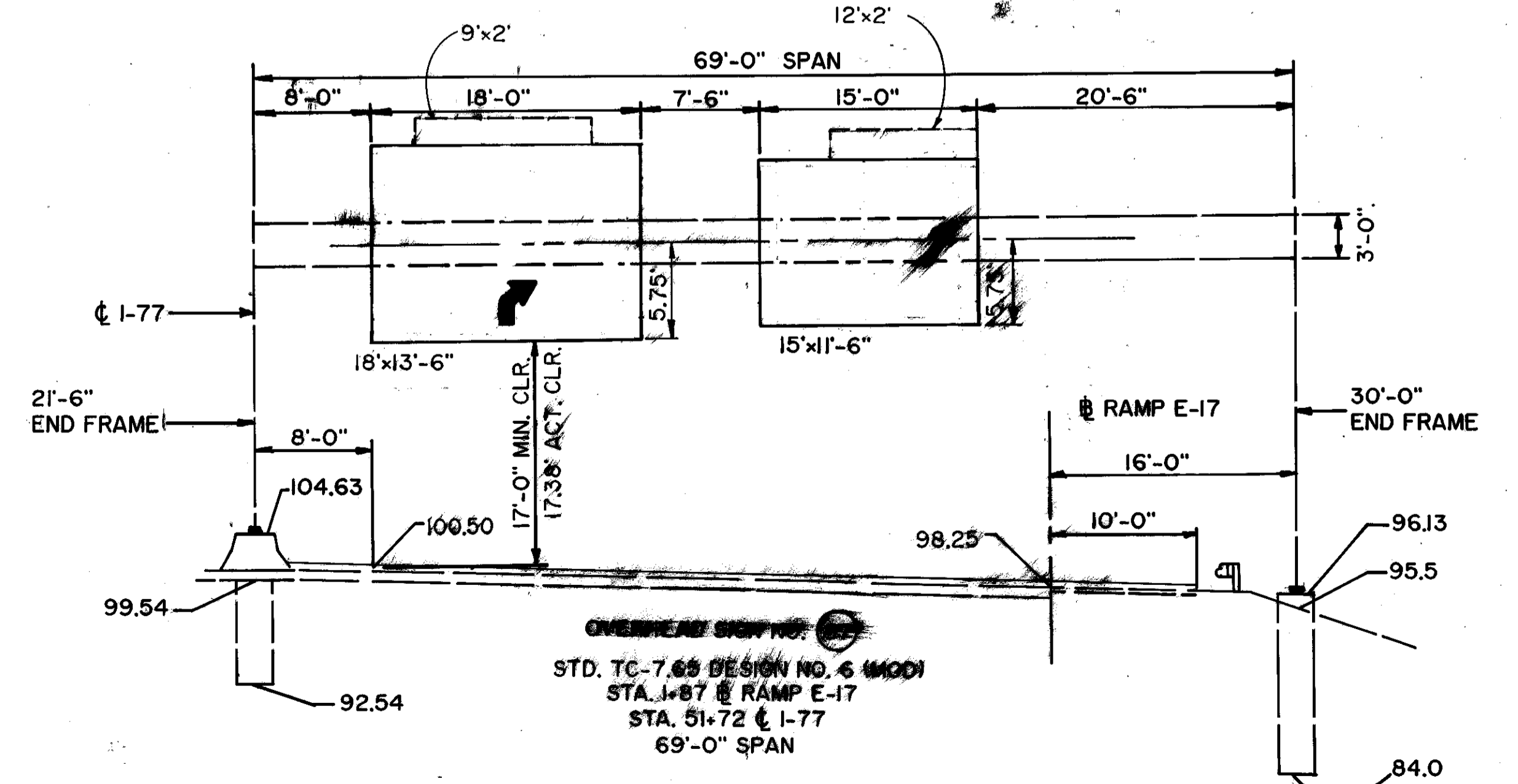
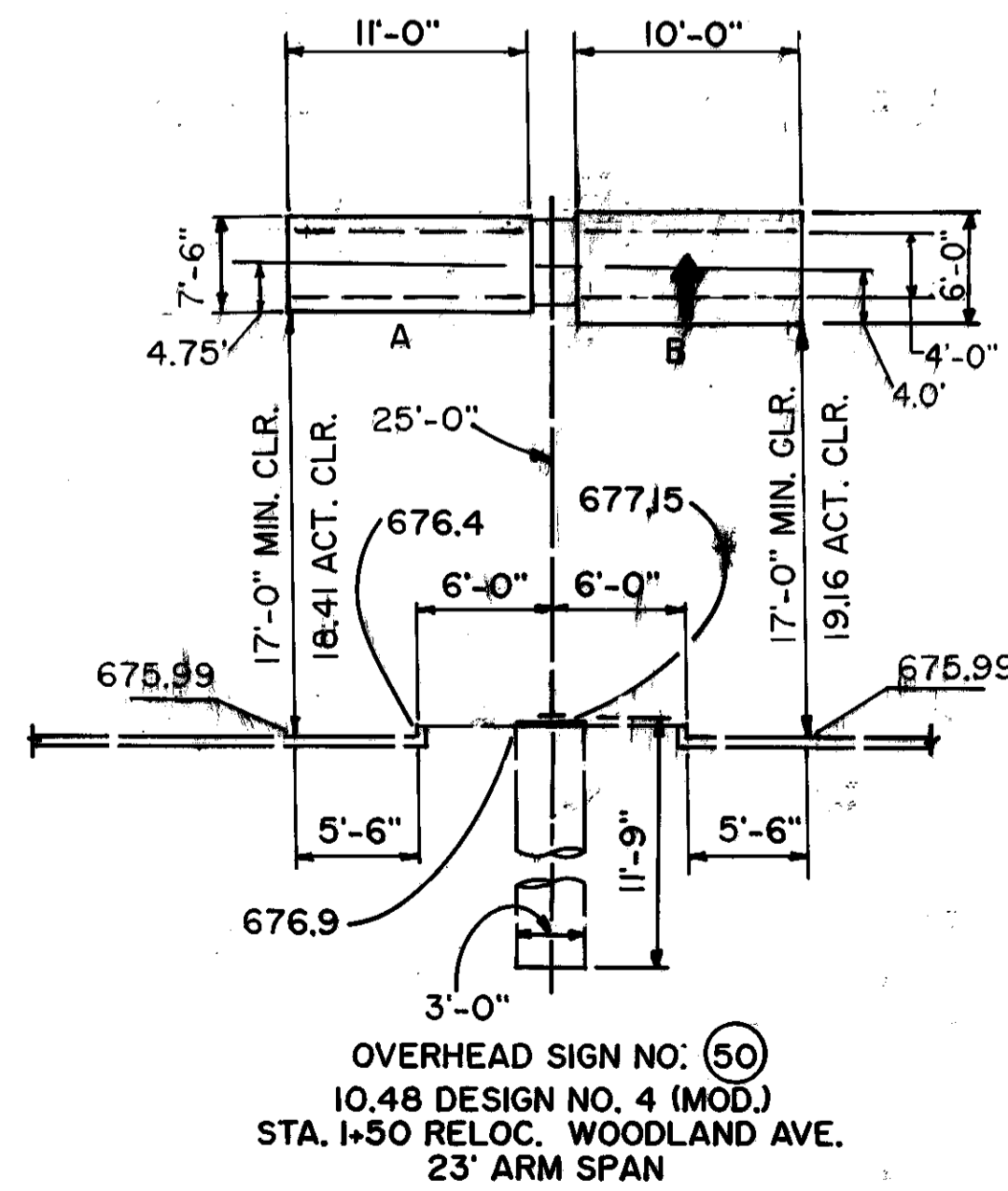
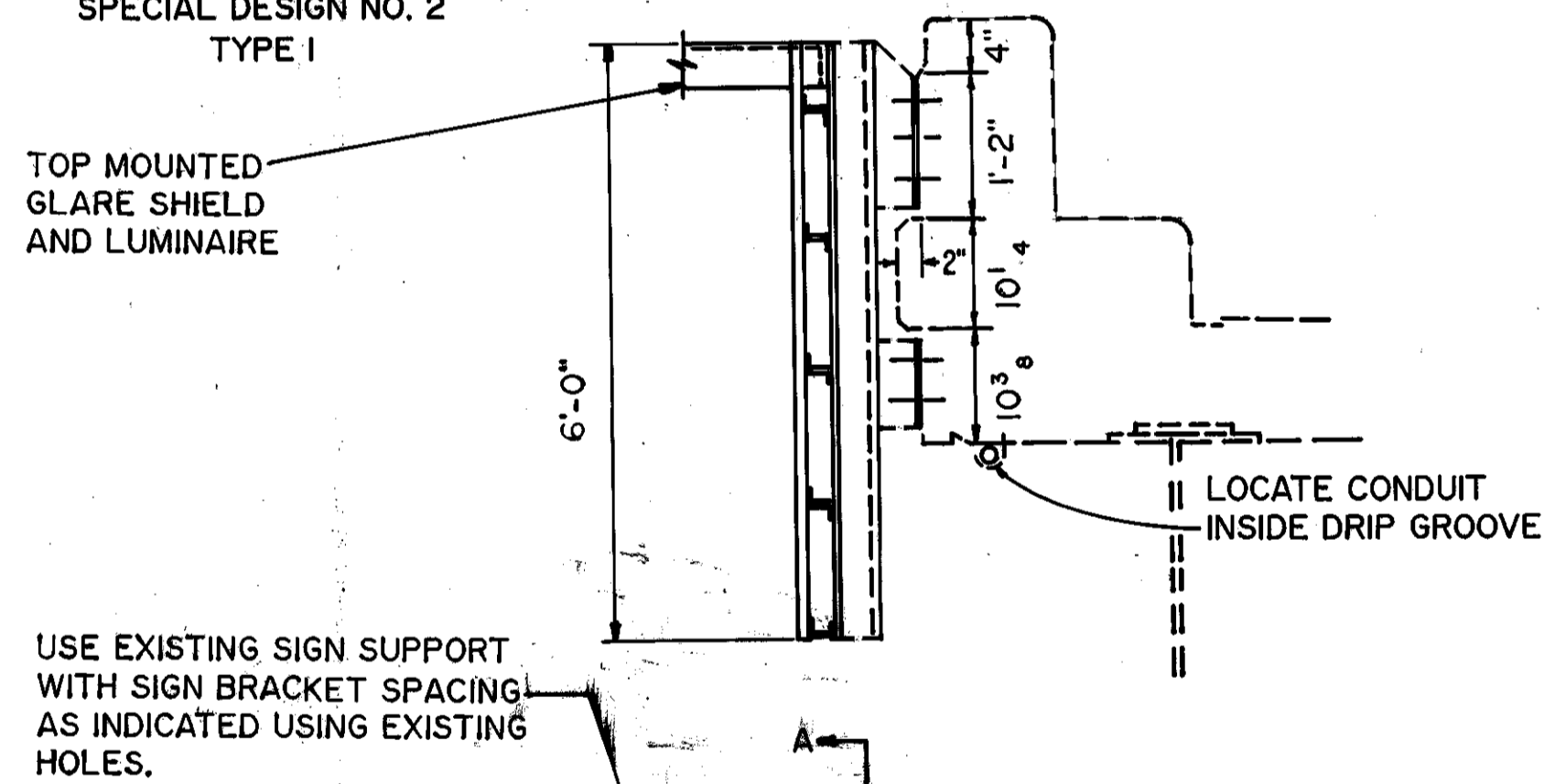
SIGN SUPPORT ELEVATION

CUYAHOGA COUNTY
CUY-77-13.81

OHIO
FHWA REGION 5
171
234
FEDERAL PROJECT

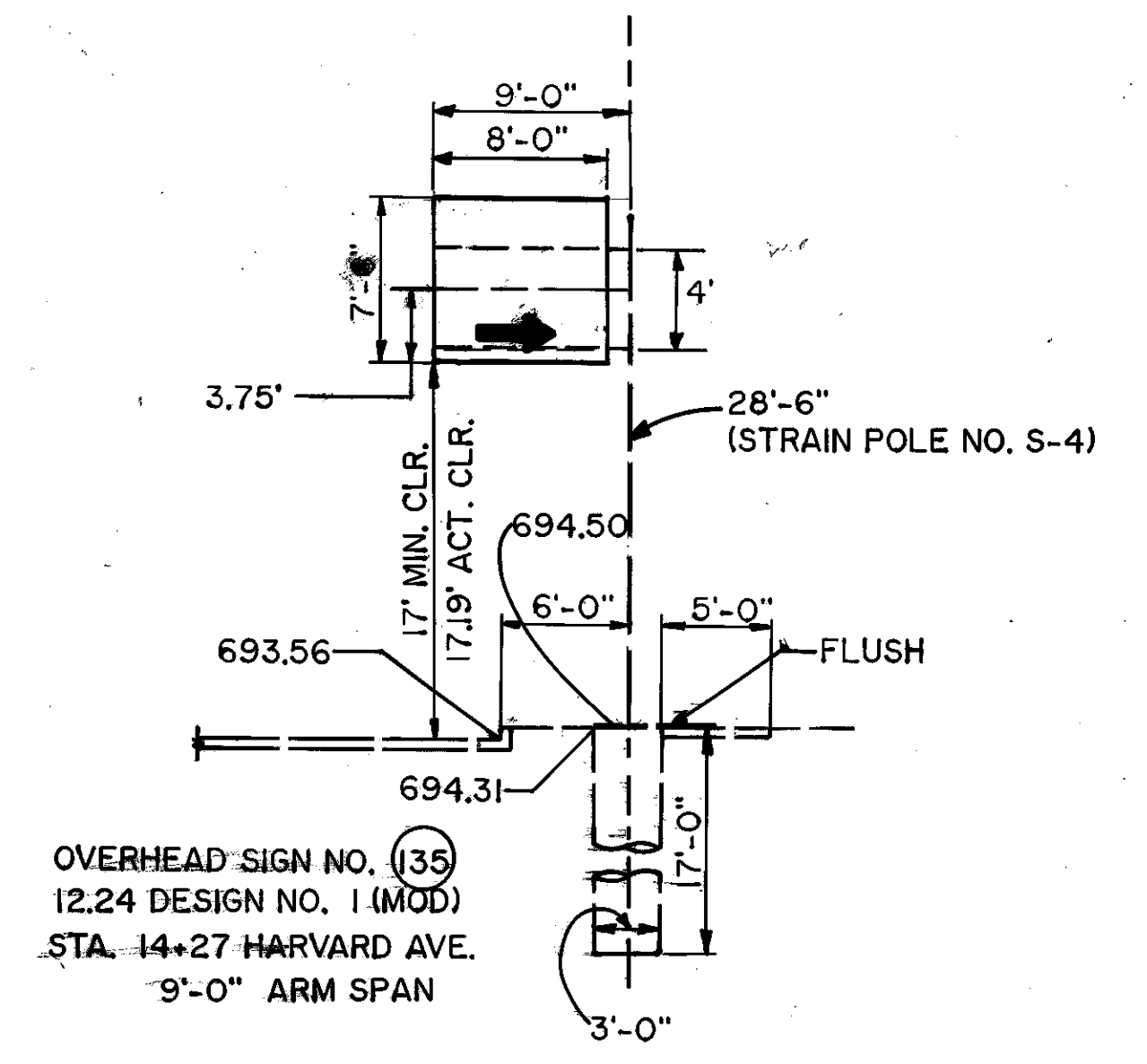
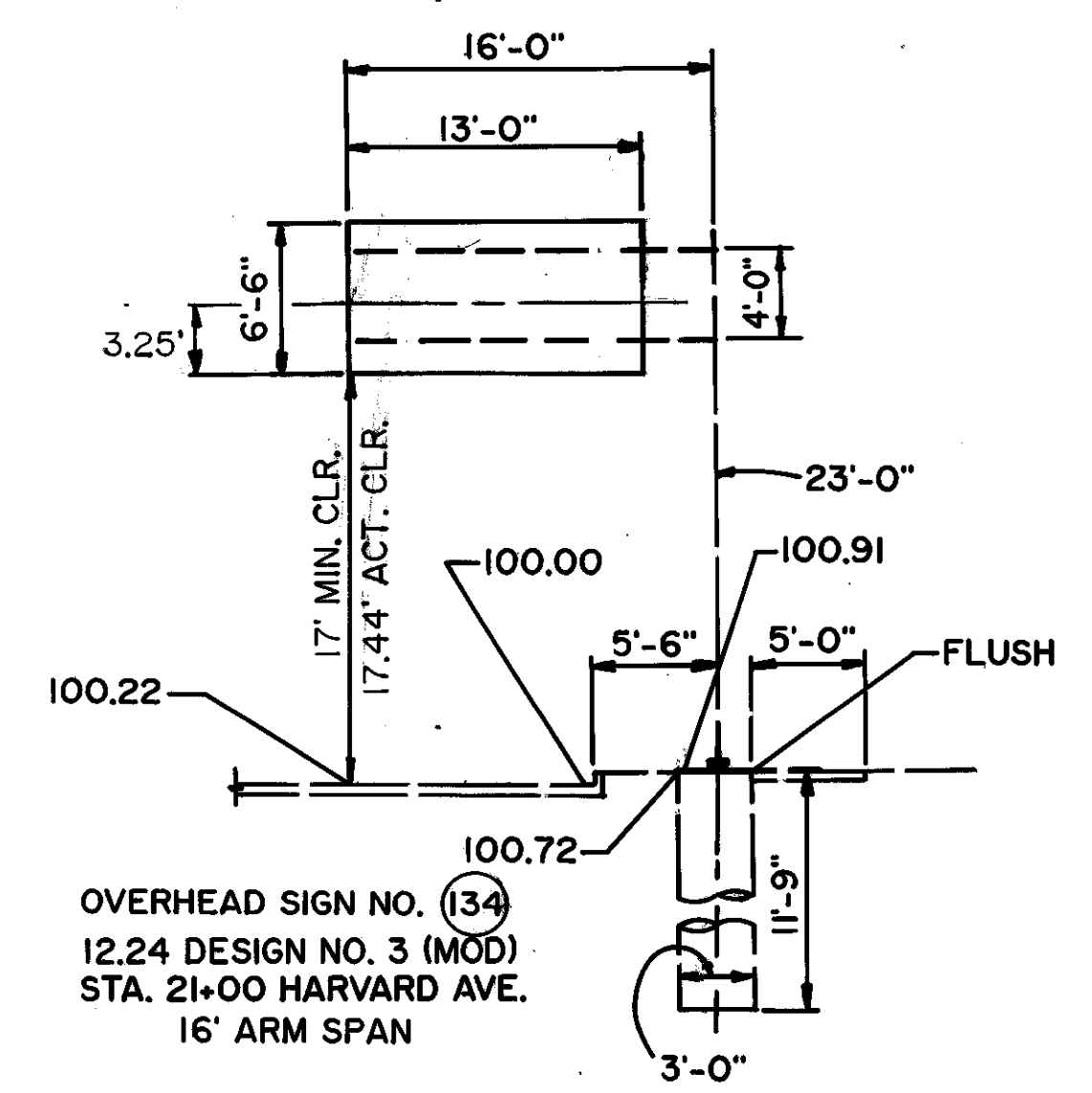
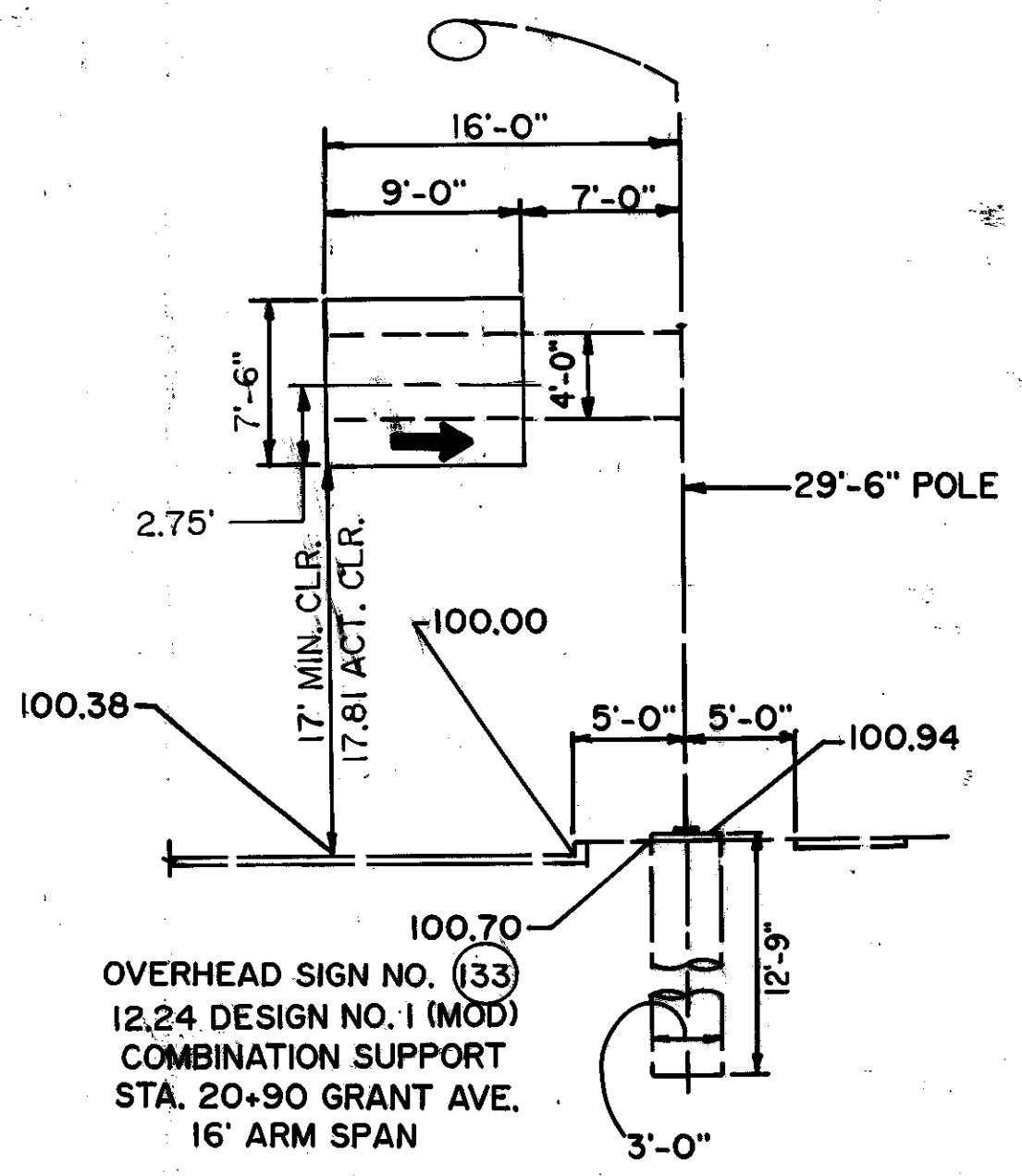
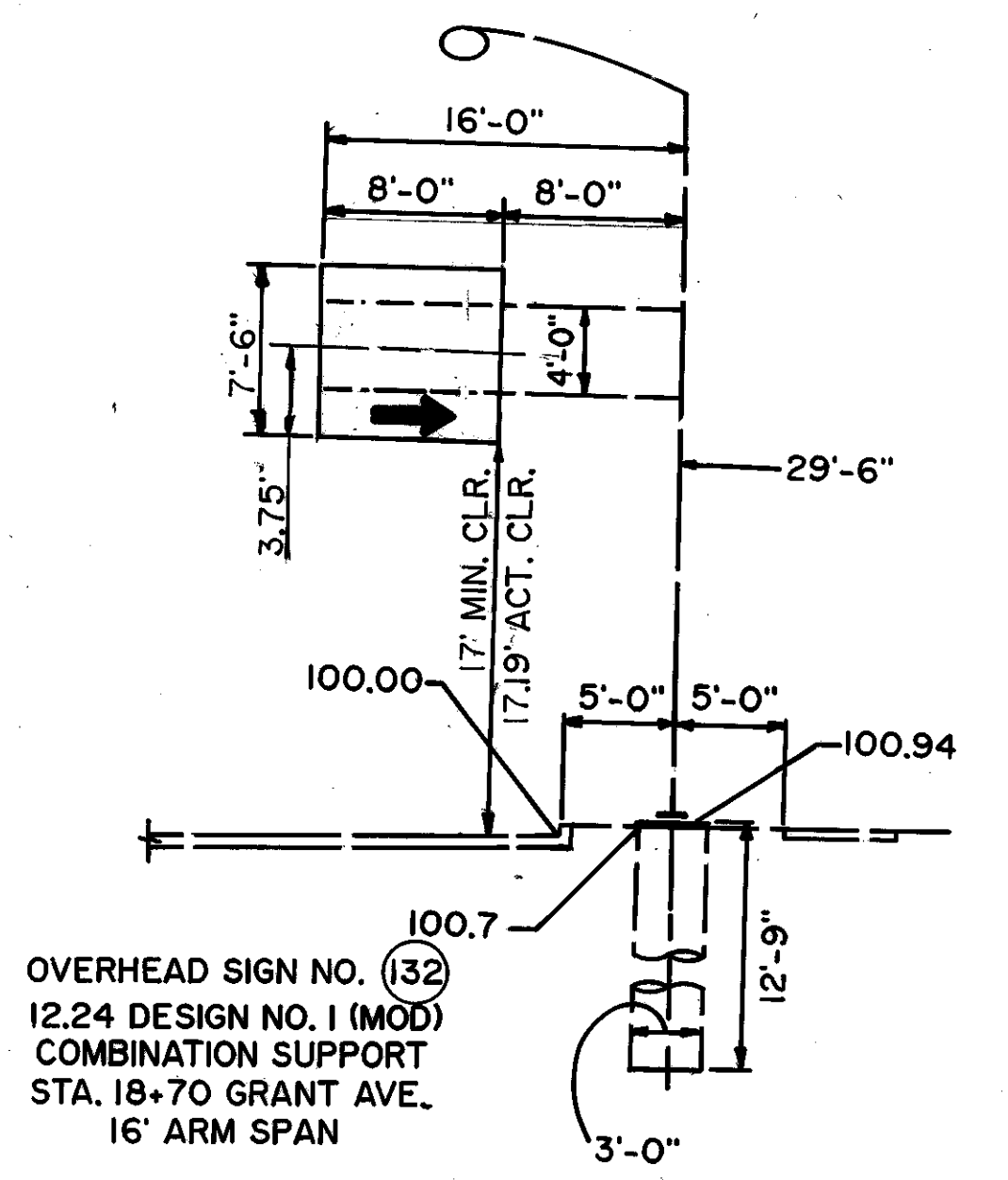
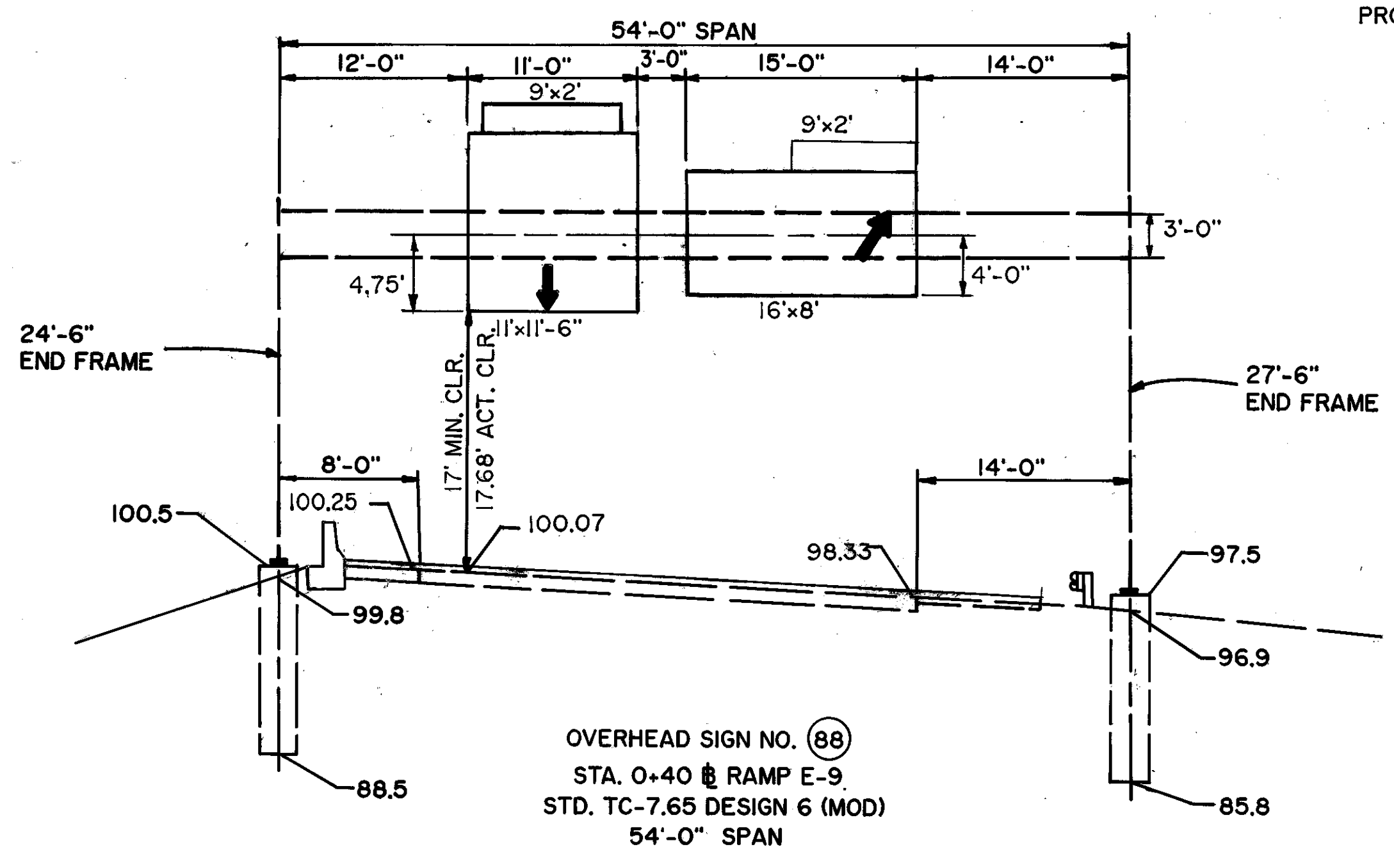
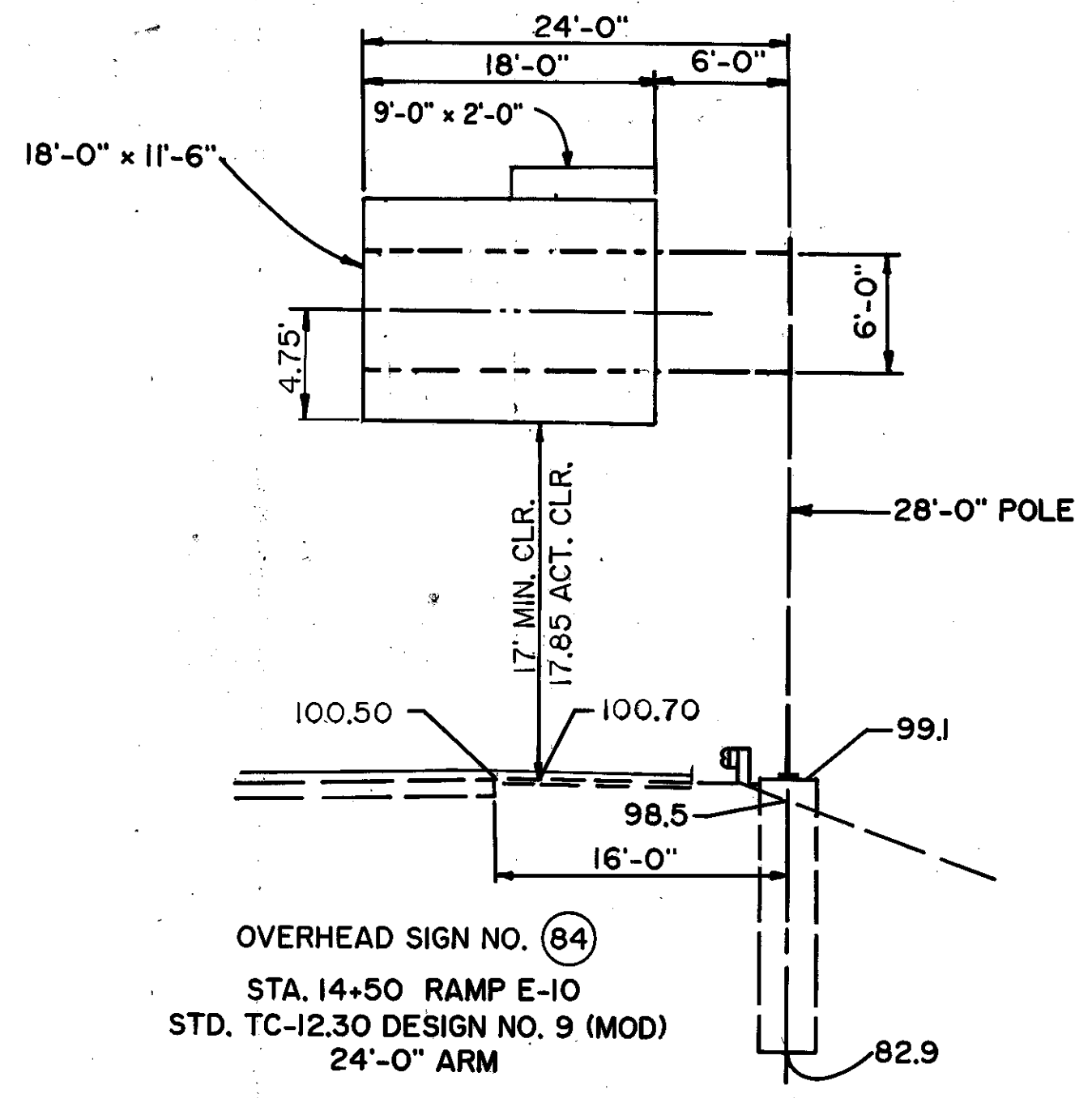


- NOTES:
1. SIGN SIZES ARE ACTUAL AND INCLUDE THE ADDITIONAL 1'-0" FOR GLARE SHIELD AND LUMINAIRE ASSEMBLY (FOR LIGHTED SIGNS ONLY)
2. ELEVATIONS SHOWN INCLUDE PROPOSED OVERLAY (IF APPLICABLE)



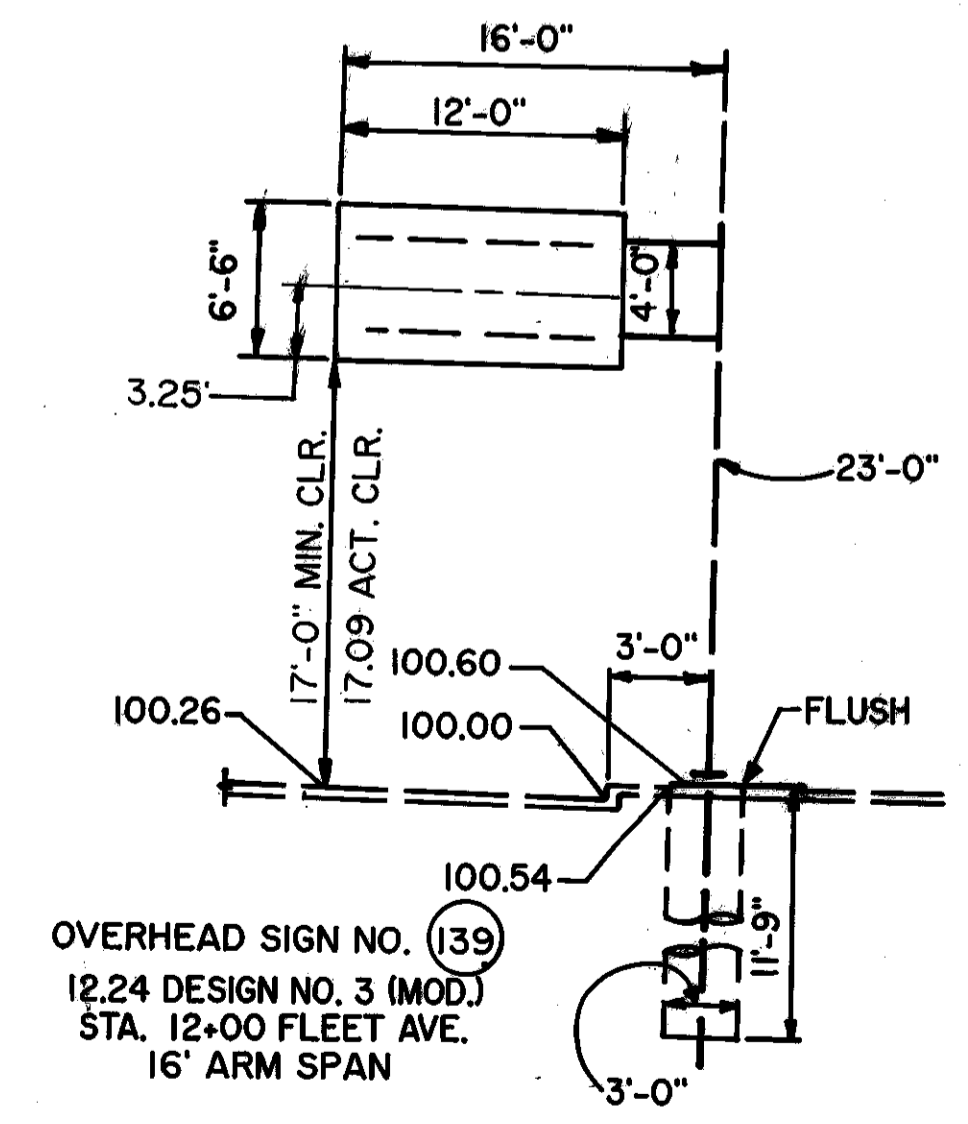
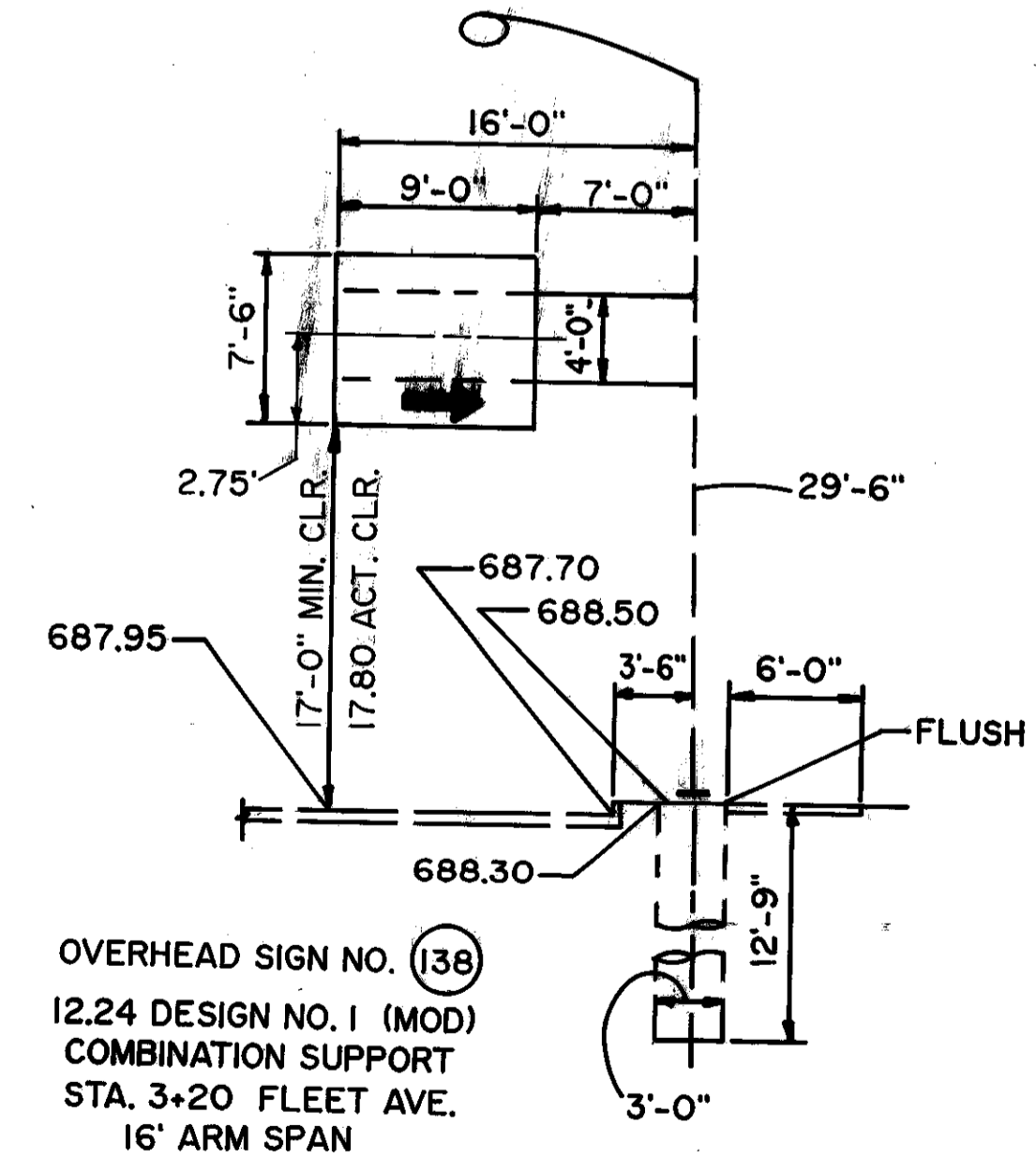
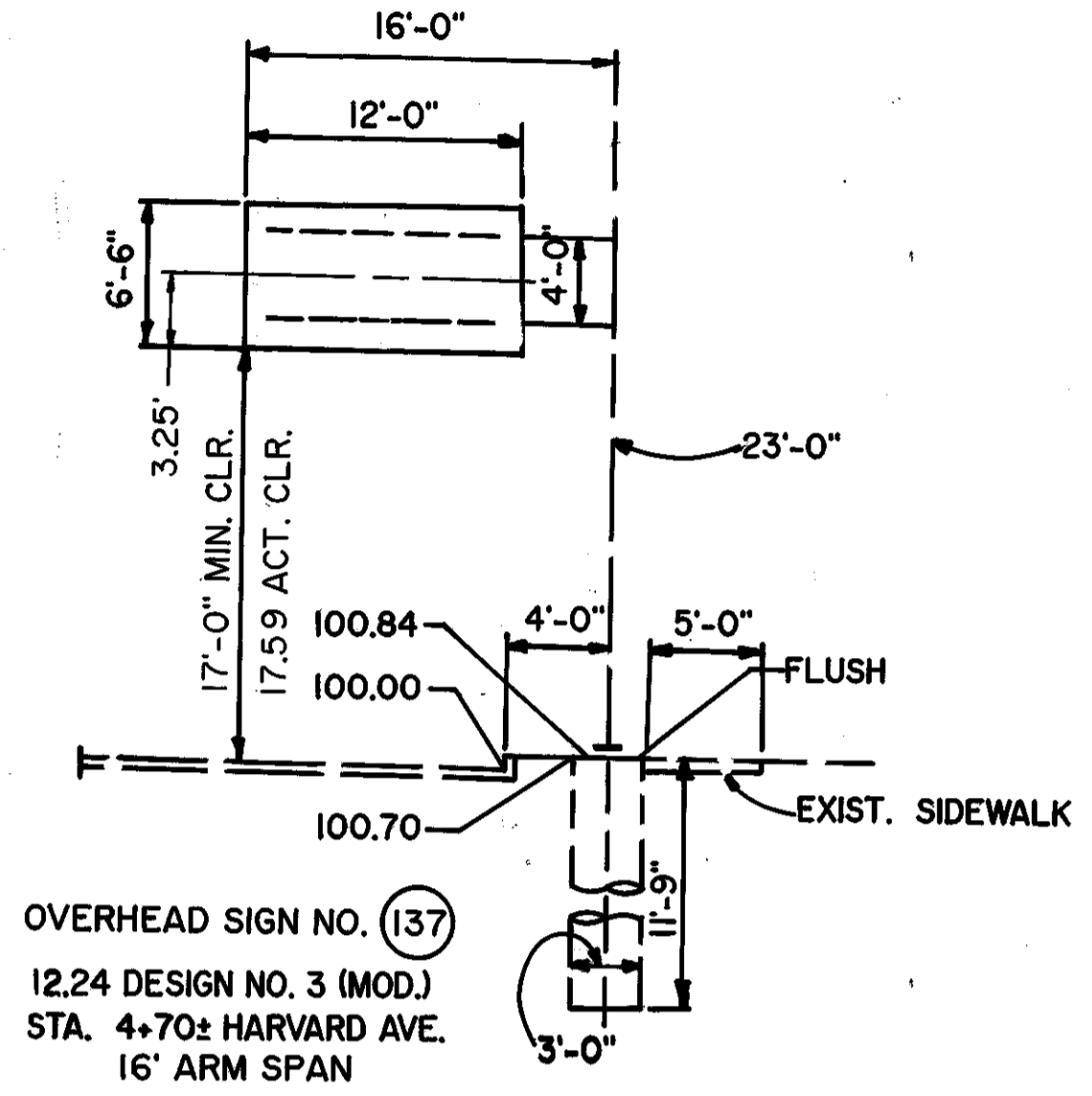
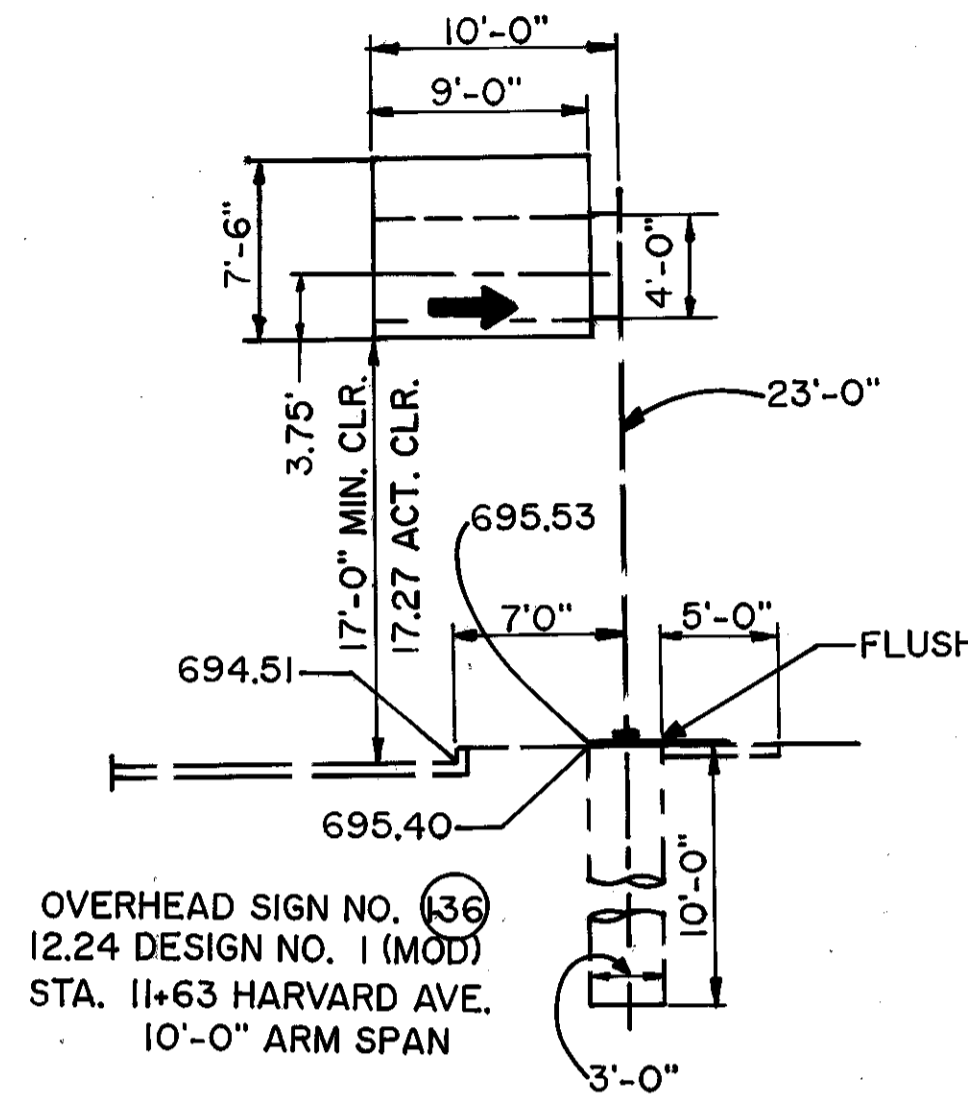
SIGN SUPPORT ELEVATION

NOTES:
 1. SIGN SIZES ARE ACTUAL AND INCLUDE THE ADDITIONAL 1'-0" FOR GLARE SHIELD AND LUMINAIRE ASSEMBLY.(FOR LIGHTED SIGNS ONLY)
 2. ELEVATIONS SHOWN INCLUDE PROPOSED OVERLAY(IF APPLICABLE)



SIGN SUPPORT ELEVATION

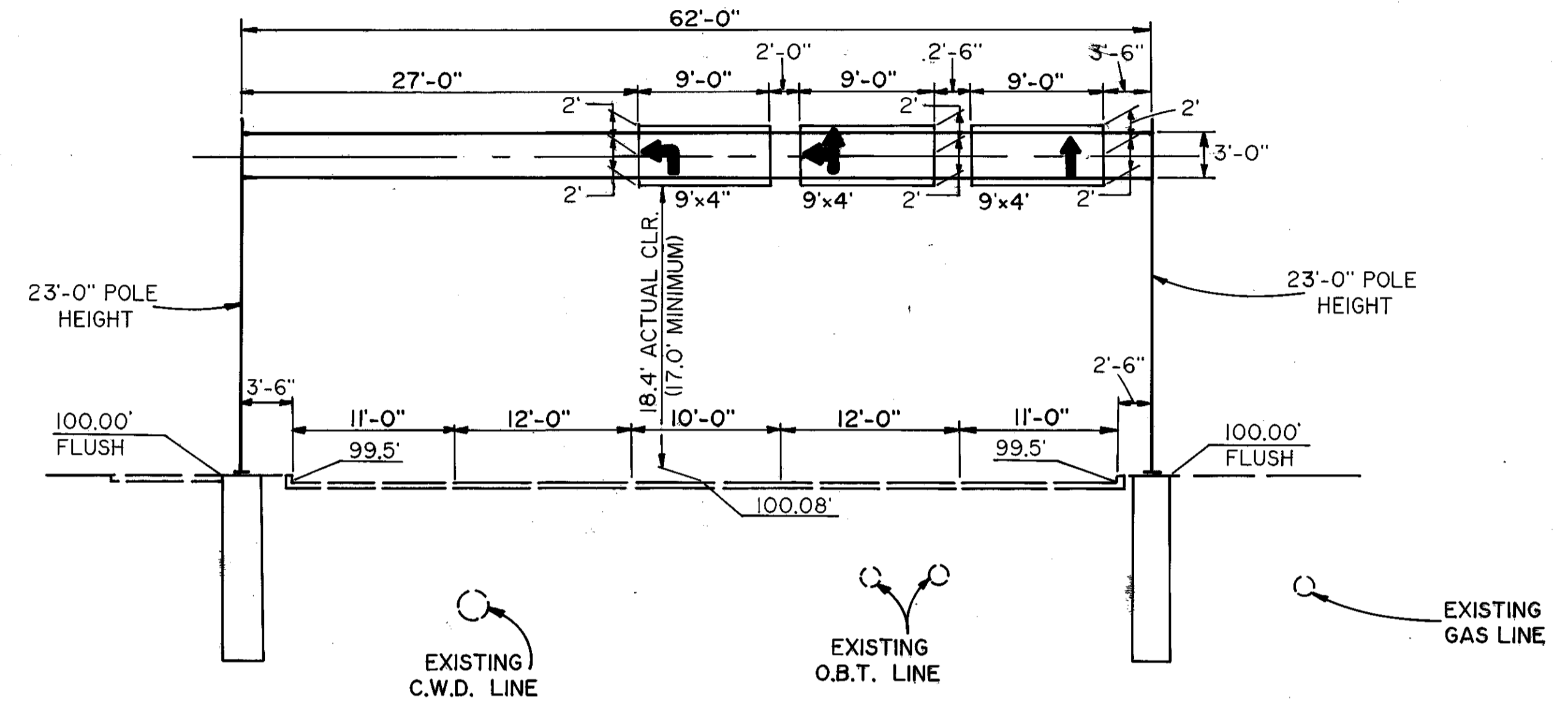
- NOTES:**
- SIGN SIZES ARE ACTUAL AND INCLUDE THE ADDITIONAL 1'-0" FOR GLARE SHIELD AND LUMINAIRE ASSEMBLY. (FOR LIGHTED SIGNS ONLY)
 - ELEVATIONS SHOWN INCLUDE PROPOSED OVERLAY (IF APPLICABLE)



SIGN SUPPORT ELEVATION

CUYAHOGA COUNTY CUY-77-13.81	OHIO	174 234
	FHWA REGION 5	
FEDERAL PROJECT		

- NOTES:**
- SIGN SIZES ARE ACTUAL AND INCLUDE THE ADDITIONAL 1'-0" FOR GLARE SHIELD AND LUMINAIRE ASSEMBLY.(FOR LIGHTED SIGNS ONLY)
 - ELEVATIONS SHOWN INCLUDE PROPOSED OVERLAY (IF APPLICABLE)



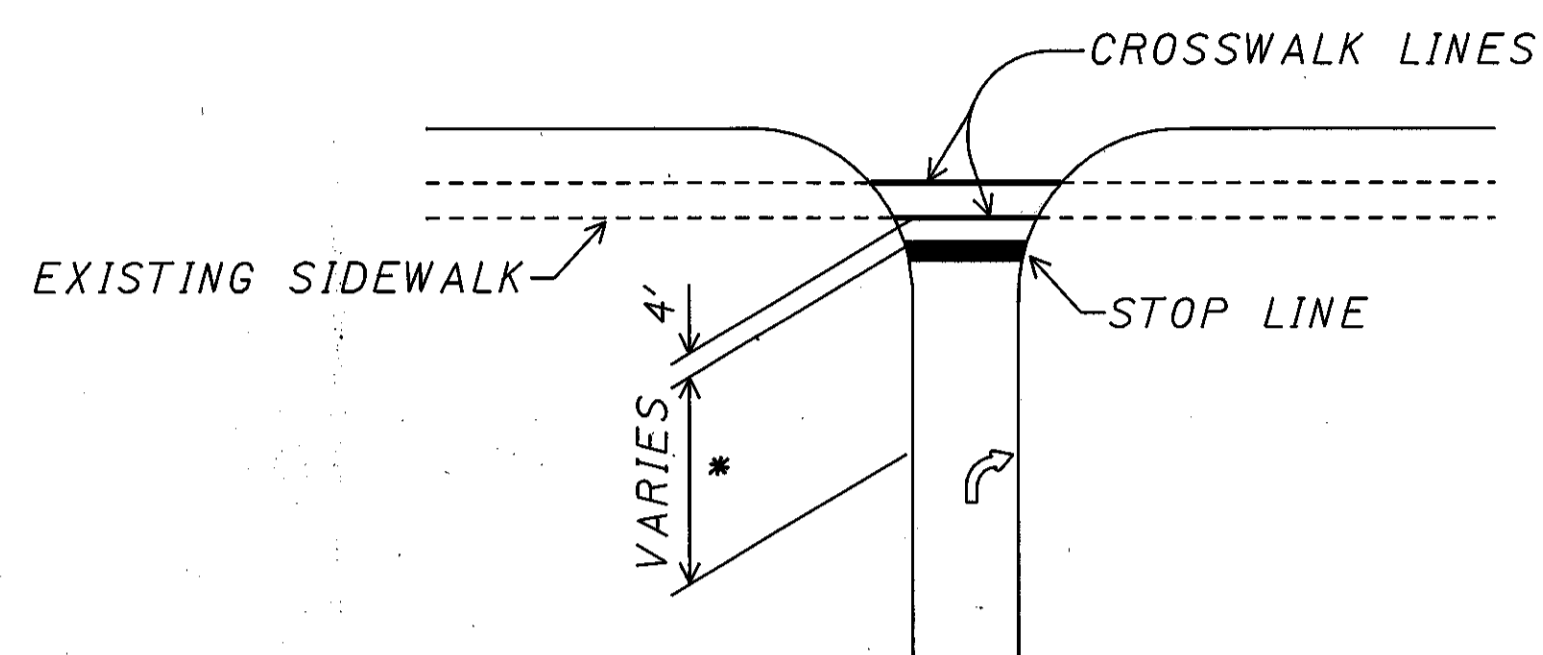
OVERHEAD SIGN NO. (167)
 TC-7.65 DESIGN 6
 STA. 3+80 BROADWAY(SR-14)
 62'-0" SPAN

MISCELLANEOUS DETAILS

CUYAHOGA COUNTY
CUY-77-13.81

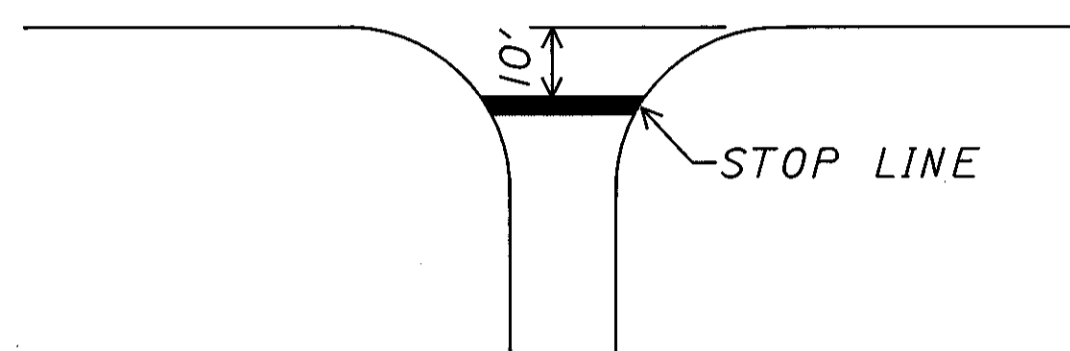
OHIO
FHWA
REGION 5
FEDERAL
PROJECT

175
234

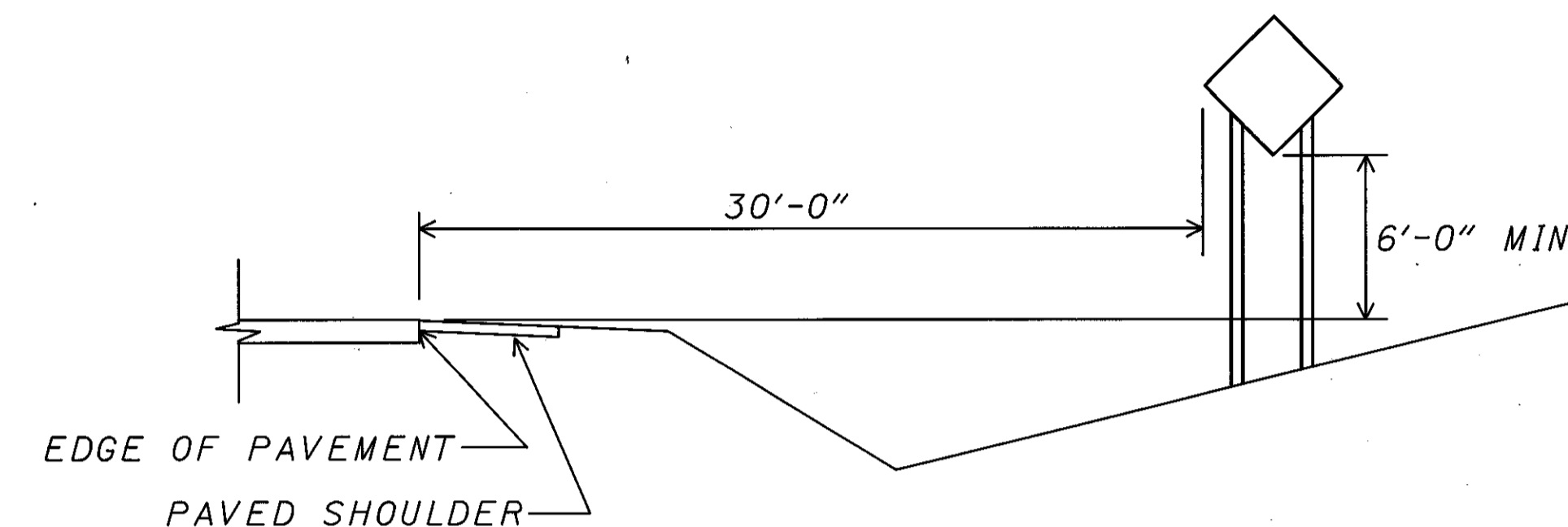


TYPICAL PLACEMENT OF STOP LINES
(WITH SIDEWALKS)

* SEE TRAFFIC CONTROL PLANS



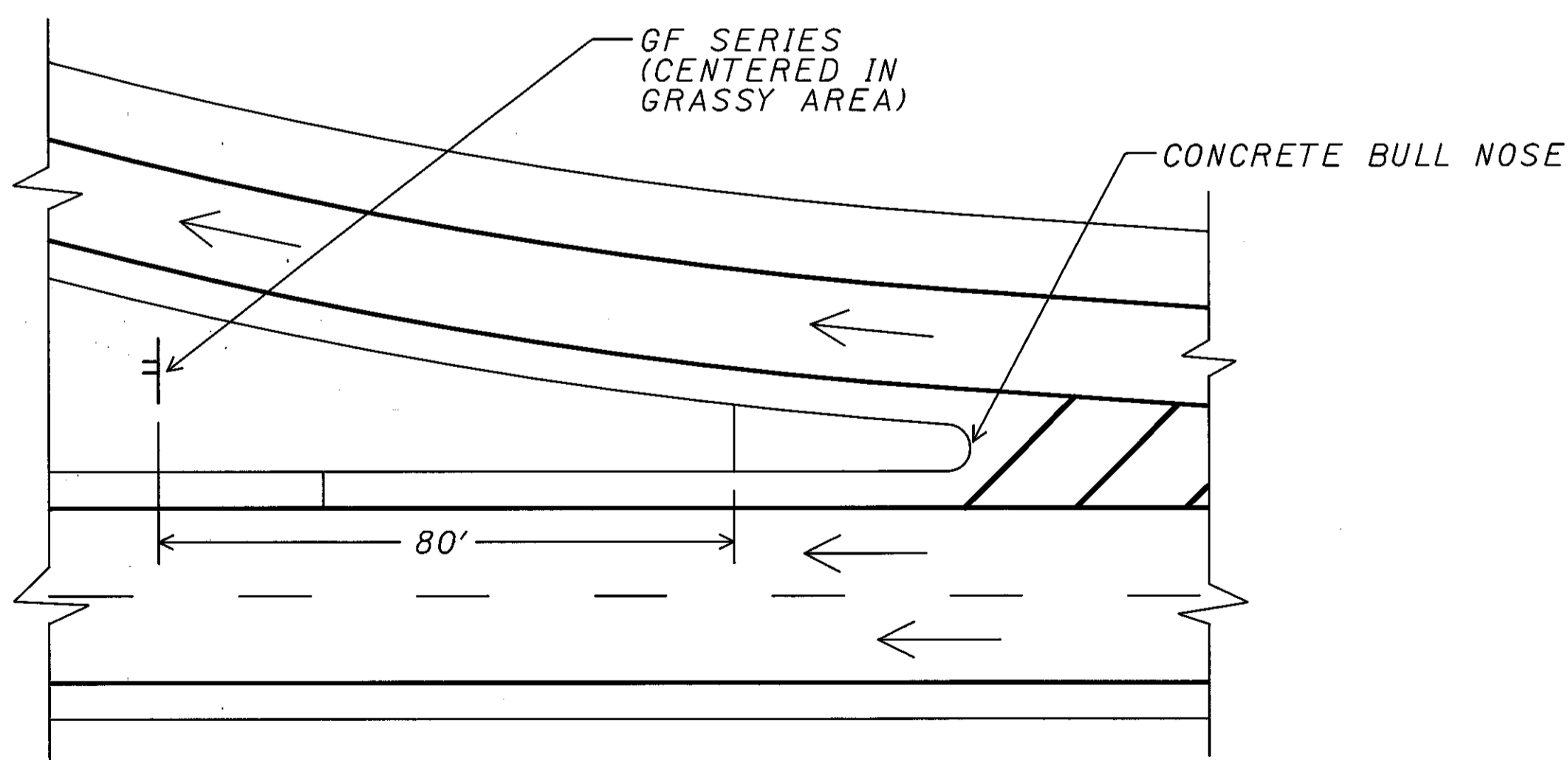
TYPICAL PLACEMENT OF STOP LINES
(WITHOUT SIDEWALKS)



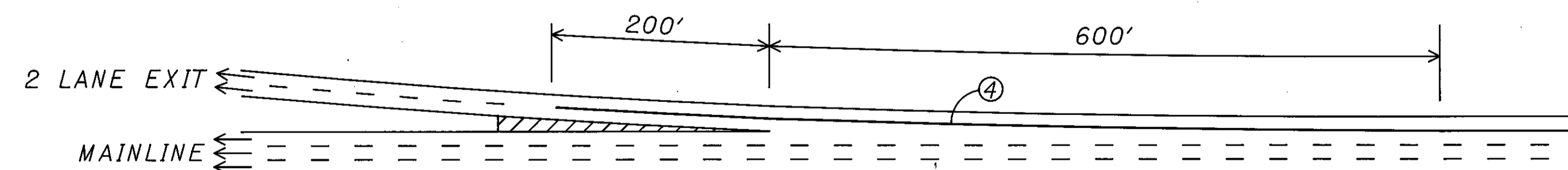
630 - FLATSHEET SIGN INSTALLATIONS

ALL FREEWAY FLATSHEET SIGN INSTALLATIONS NOT BEHIND GUARDRAIL SHALL BE OFFSET 30 FEET FROM THE EDGE OF PAVEMENT.

USE STANDARD DRAWING TC-42.20 FOR FLATSHEET SIGNS INSTALLED BEHIND GUARDRAIL, ON CROSS ROADS, ON RAMPS AND BETWEEN RAMPS AND MAINLINE.



TYPICAL PLACEMENT OF GF SERIES SIGNS
(2 & 3 LANES EACH DIRECTION)



TYPICAL PLACEMENT OF ADDITIONAL CHANNELIZING
LINE AT TWO LANE EXIT TERMINALS

PLOT SUBMITTED: 20-SEP-1991 10:12

PLOT SUBMITTED BY: ulman

WORD AND SYMBOL MARKING DETAILS

FED RD DIVISION	STATE	PROJECT	
5	OHIO	CUY-77-13.81	

176
234

PLAN NO.

NOTES:

1. 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.

2. FOR PURPOSES OF THIS PLAN, THE RAILROAD SYMBOL MARKING SHALL CONSIST OF ONE WHITE 16 INCH CROSSBUCK AND THE WHITE 6 FOOT LETTERS "RR", TWO 24 INCH SOLID WHITE TRANSVERSE LINES AND ONE 24 INCH STOP LINE PERPENDICULAR TO THE CENTER LINE OF THE ROADWAY.

THE RAILROAD SYMBOL SHALL BE LOCATED SO THAT THE W-94, "RAILROAD ADVANCE WARNING SIGN", IS WITHIN THE TWO TRANSVERSE LINES. THE STOP LINE SHALL BE LOCATED FOR BEST SIGHT DISTANCE WITHIN 15 FEET TO 50 FEET OF THE NEAR EDGE OF THE TRACKS. THE WIDTH OF THE "X" MAY VARY ACCORDING TO THE LANE WIDTH.

3. TRANSVERSE LINES USED WITH THE WORD "SCHOOL" SHALL EXTEND ACROSS ALL APPROACH LANES WITH THE WORD "SCHOOL" IN EACH APPROACH LANE. THIS REQUIREMENT IS WAIVED WHERE EXISTING MARKINGS ARE TO BE RETRACTED.

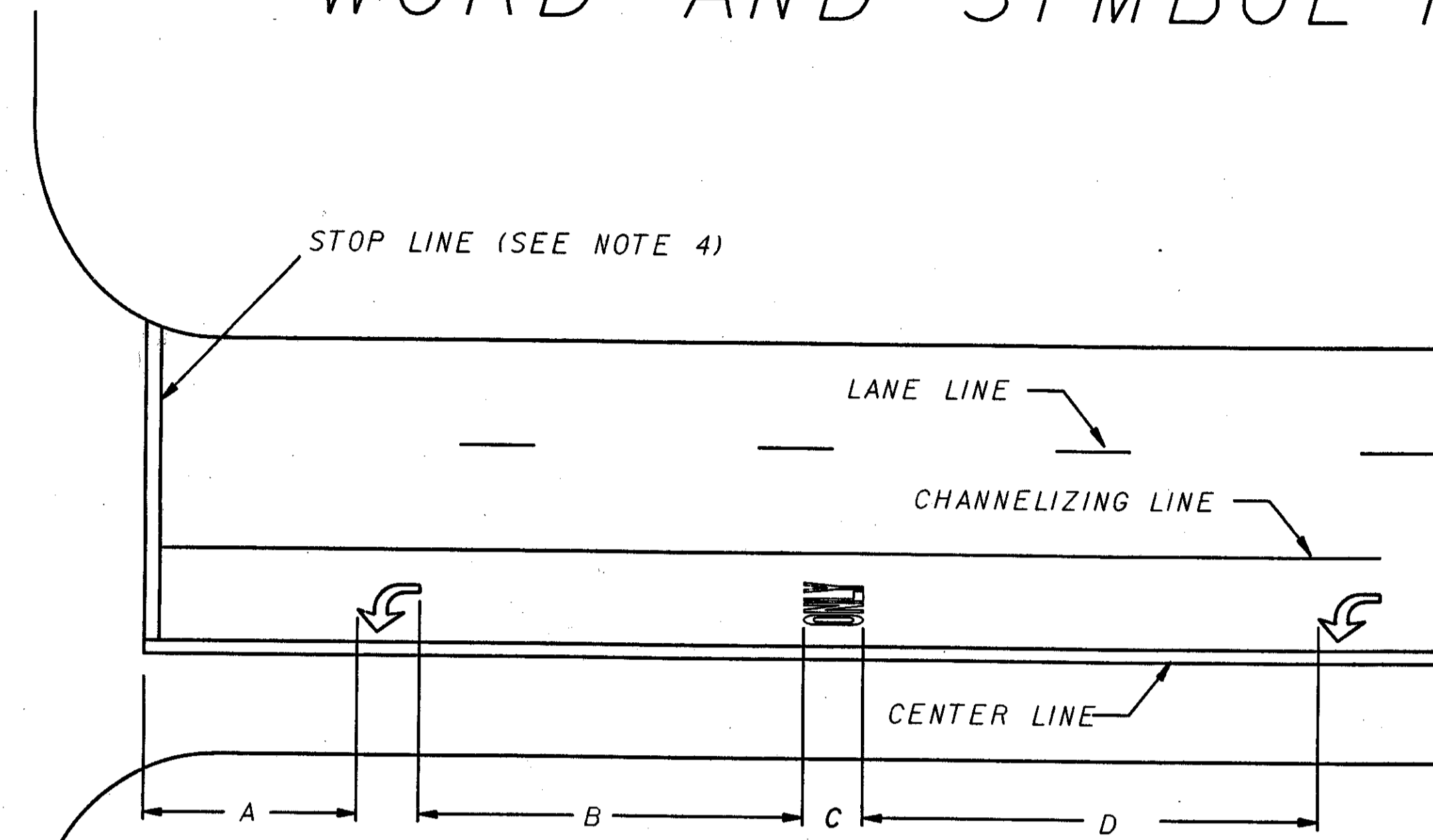
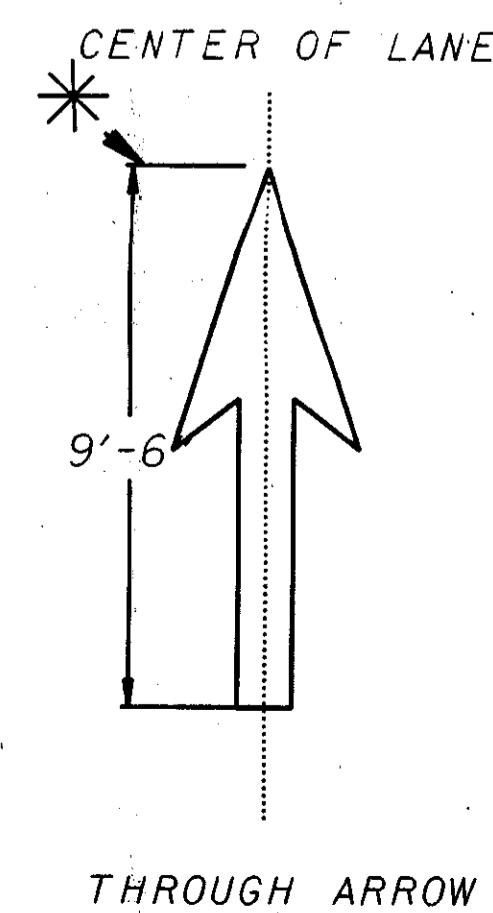
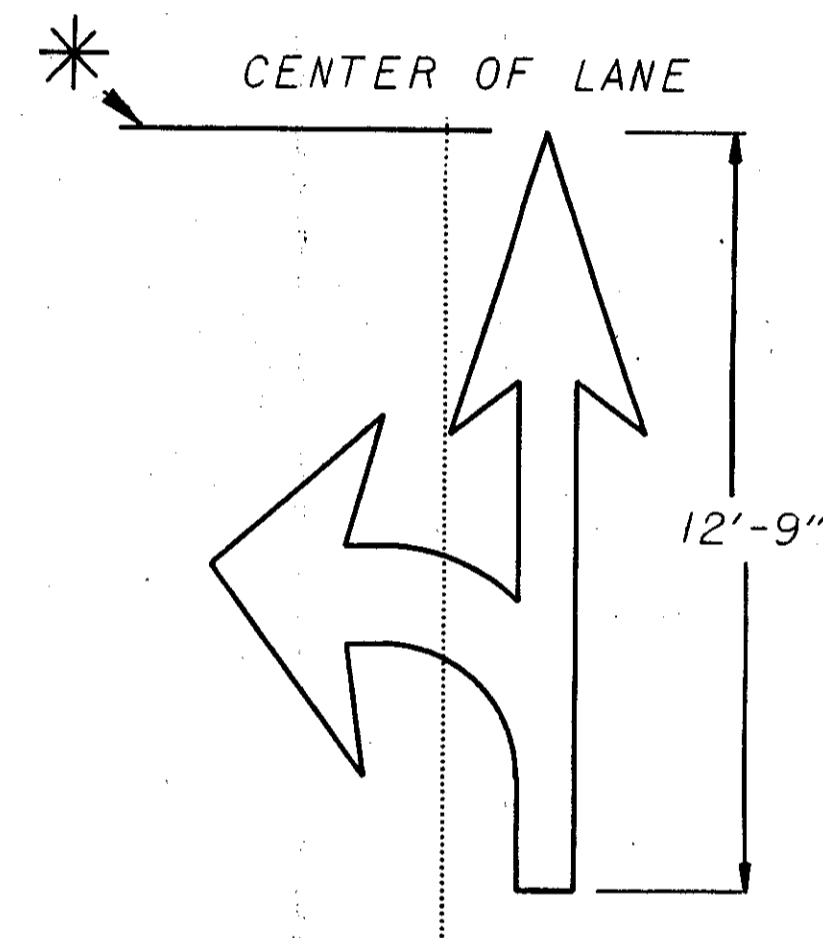
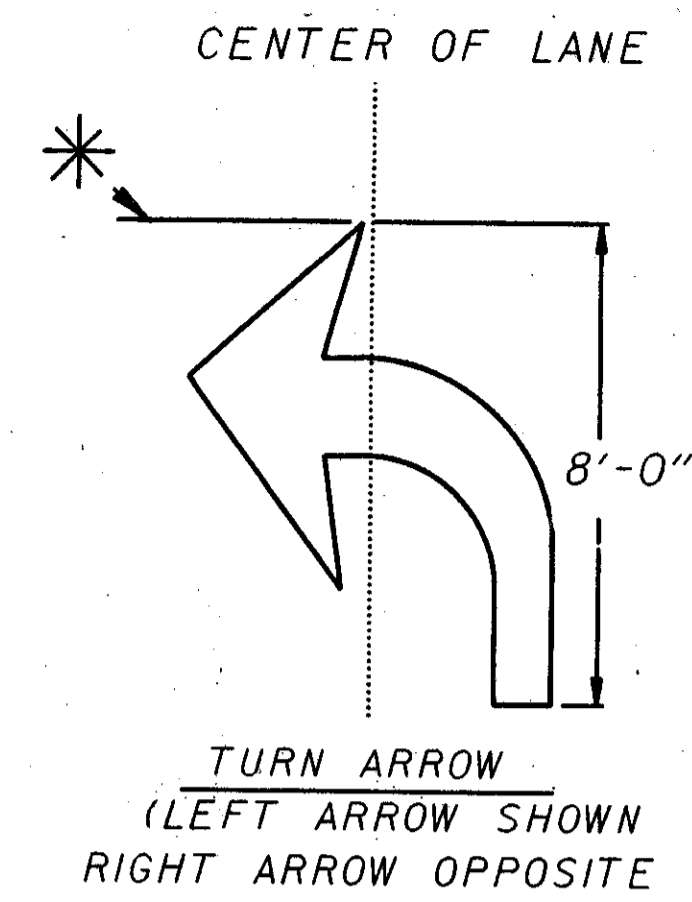
4. THE STOP LINE SHOULD BE PLACED WHERE CROSS-CORNER VISION IS MAXIMUM, IN NO CASE MORE THAN 30 FEET OR LESS THAN 4 FEET FROM THE NEAREST EDGE OF THE INTERSECTING ROADWAY. FOR NORMAL INTERSECTIONS A MAXIMUM DISTANCE OF 10 FEET IS RECOMMENDED.

IF A MARKED CROSSWALK IS PRESENT, THE STOP LINE SHOULD BE PLACED 4 FEET IN ADVANCE OF AND PARALLEL TO THE NEAREST CROSSWALK.

5. FOR TRAFFIC PAINT AND POLYESTER APPLICATION, TEMPLATE GAPS SHALL BE FILLED WITH MARKING MATERIAL IN ACCORDANCE WITH 641.03. FOR EXTRUDED THERMOPLASTIC MATERIALS THESE GAPS MAY REMAIN UNFILLED.

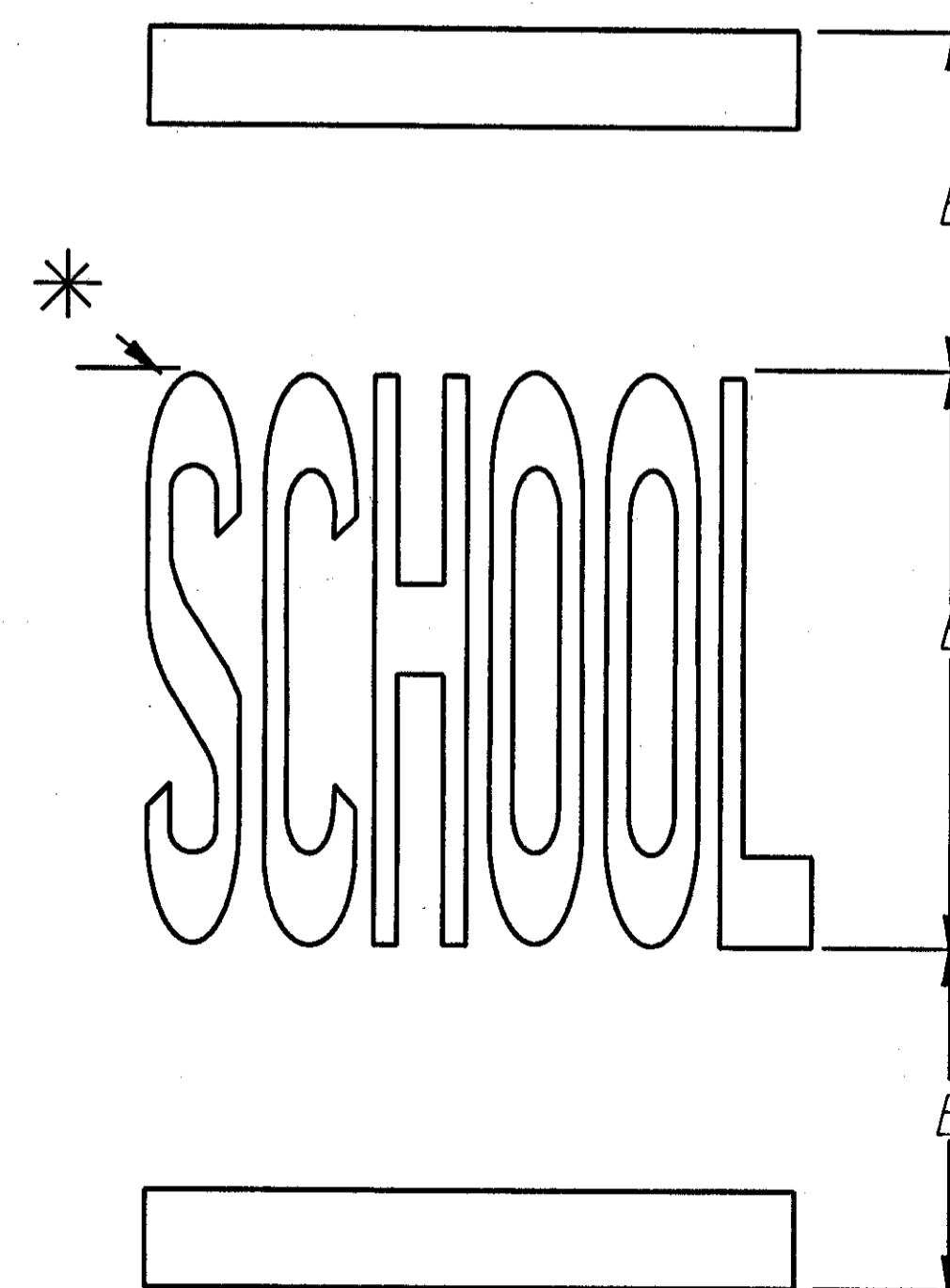
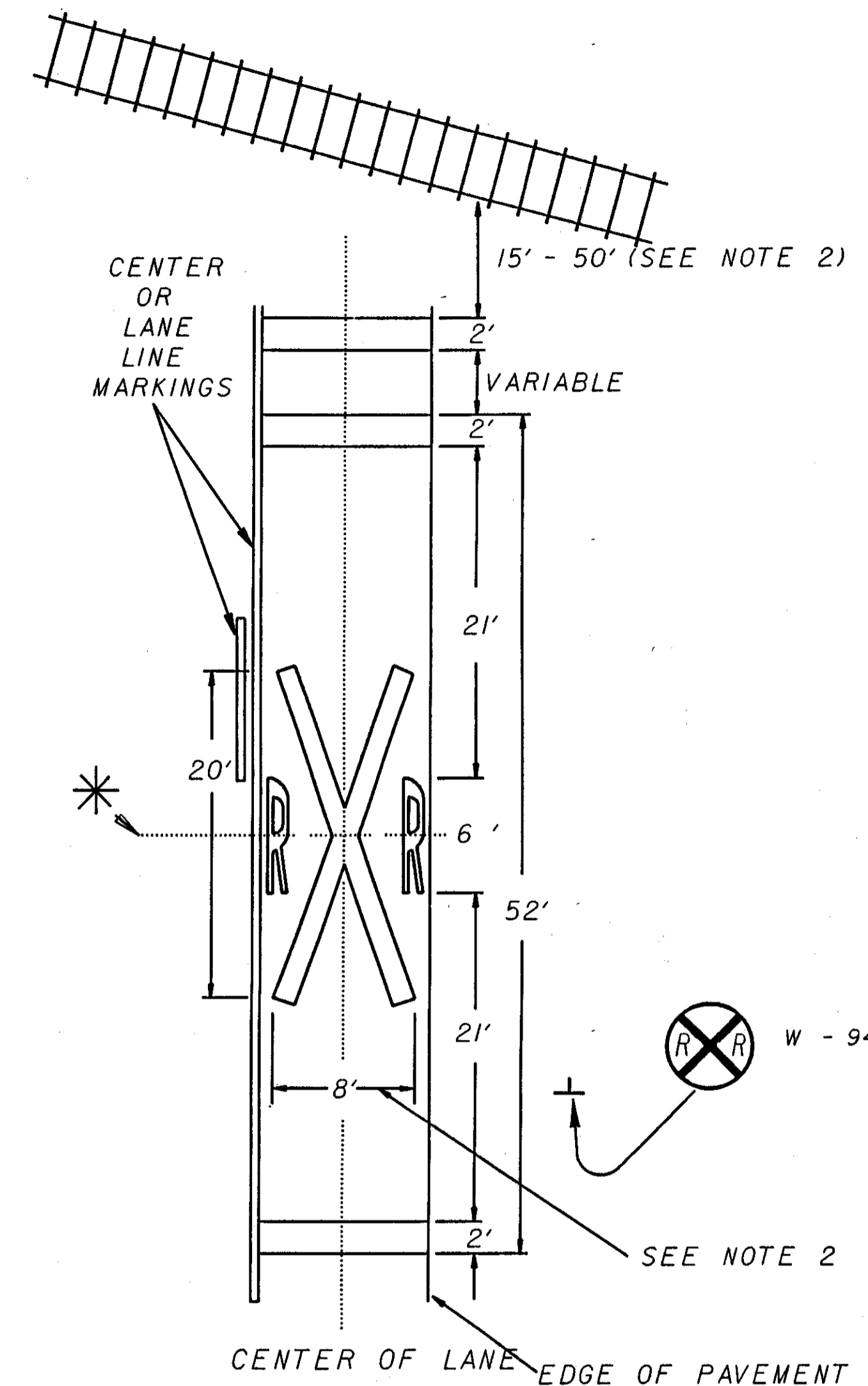
6. STANDARD DIMENSIONS CONFORMING TO REQUIREMENTS OF OMUTCD SECTION 3B-40 THROUGH 3B-43 INCLUSIVE. (THE 1977 METRIC EDITION STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING WITH ERRATA.)

* INDICATES STATION REFERENCE POINT

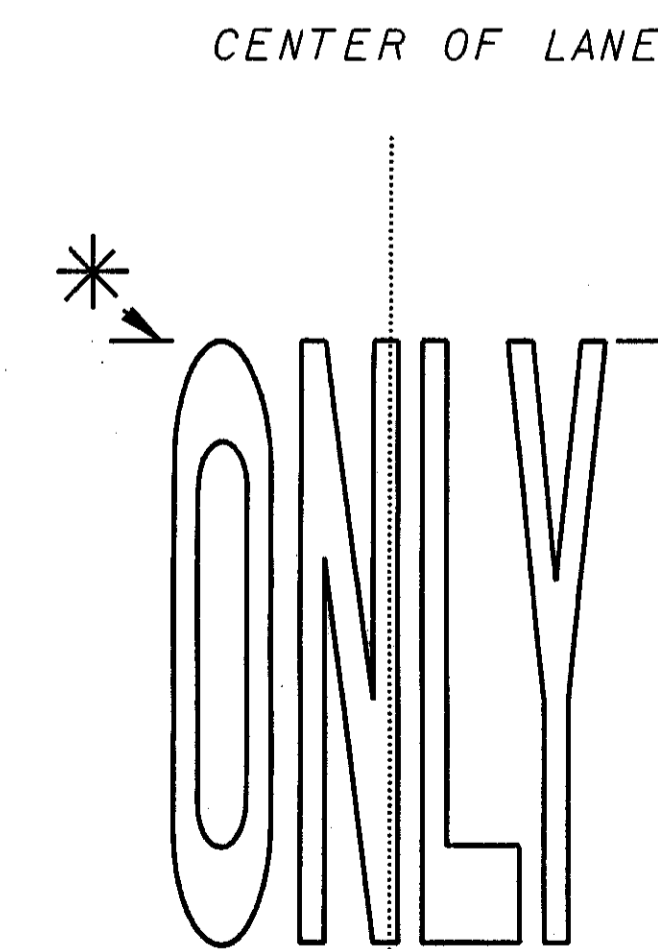


NOTE:
STOP LINE LOCATED MIN. 40' FROM
AT LEAST ONE SIGNAL HEAD WHICH APPLIES
TO THAT APPROACH

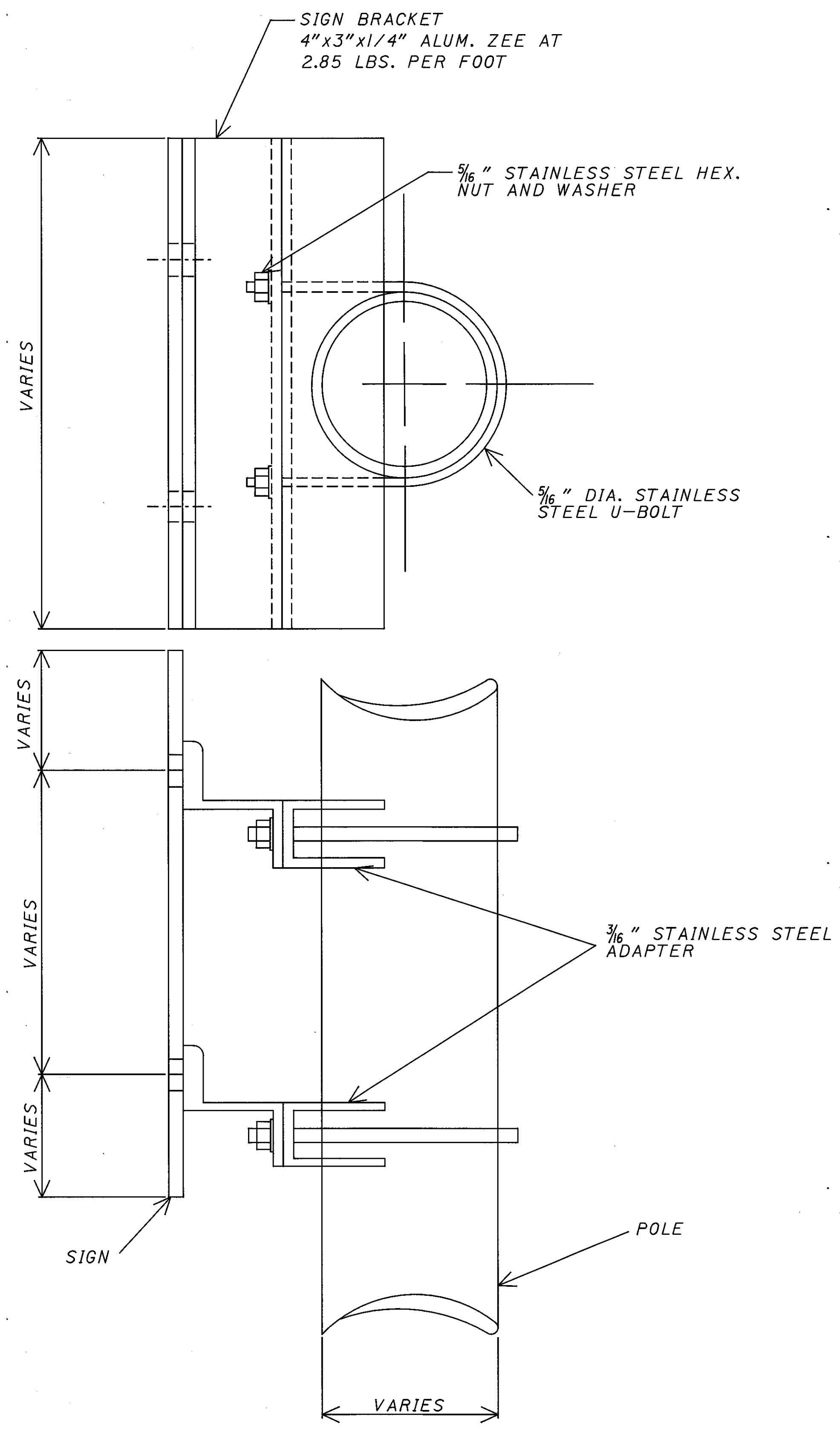
TYPE	DIMENSIONS (FEET)			
	A	B	C	D
RURAL	30 MIN.	32-80	8	32-80
URBAN	10 MIN.	32-80	6	24-60



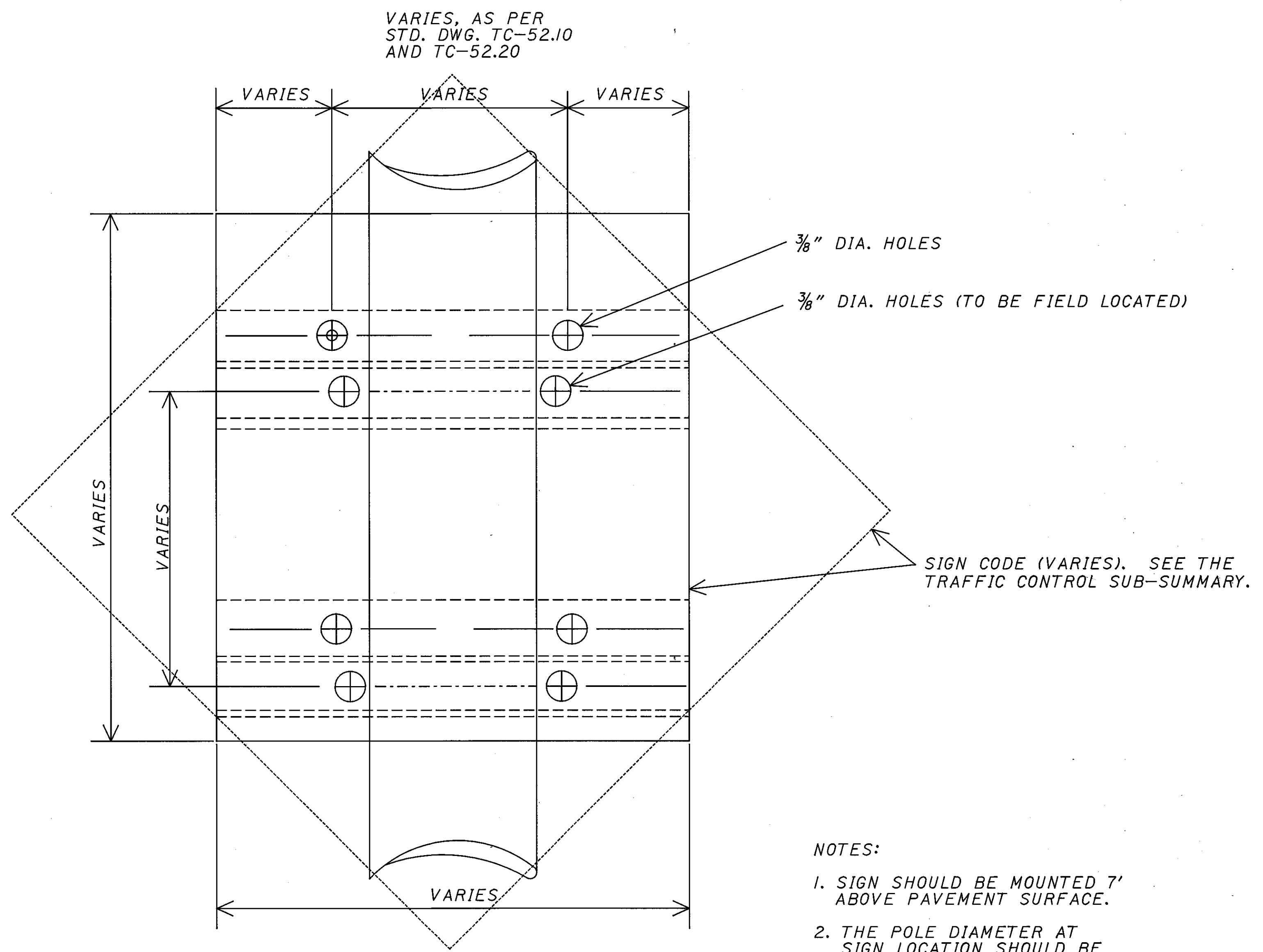
TYPE	INCHES
	E
RURAL	96
URBAN	72



TRAFFIC CONTROL MISCELLANEOUS DETAILS



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



- NOTES:
1. SIGN SHOULD BE MOUNTED 7' ABOVE PAVEMENT SURFACE.
 2. THE POLE DIAMETER AT SIGN LOCATION SHOULD BE APPROXIMATELY 8.5"
 3. FOR DETAILS NOT SHOWN, SEE STD. CONST. DWG. TC-22.20
 4. WHERE SIGN ATTACHES TO ZEE BAR, BOLT HOLE LOCATIONS SHALL BE IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWING TC-52.10 AND TC-52.20

PLOT SUBMITTED BY: ULLMAN
 ZF3: [100100]08084TDC.DGN: 1
 PLOT SUBMITTED: 17-JUN-1992 11:44

TRAFFIC CONTROL MISCELLANEOUS DETAILS

CUYAHOGA COUNTY
CUI-77-13.81

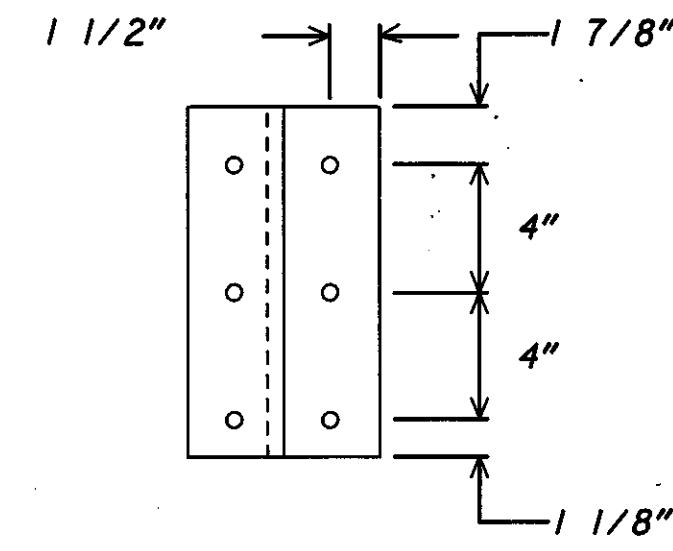
OHIO

FHWA
REGION 5

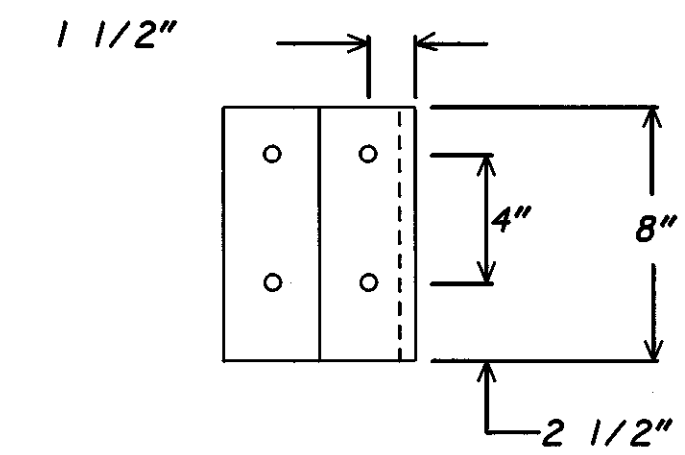
FEDERAL
PROJECT

179

234

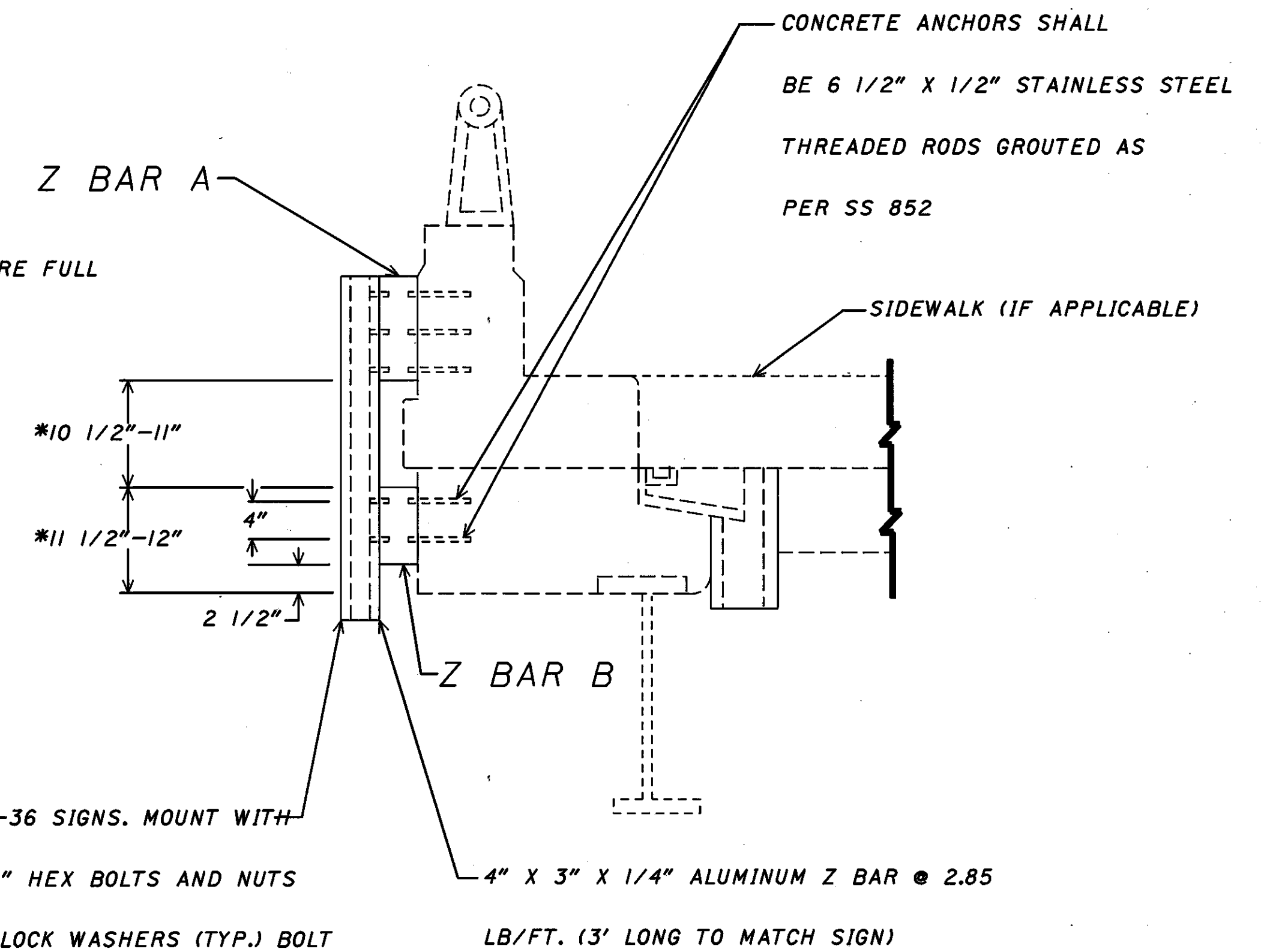


Z BAR A



Z BAR B

* - FIELD LOCATE TO ASSURE FULL ATTACHMENT OF 3' Z-BAR.



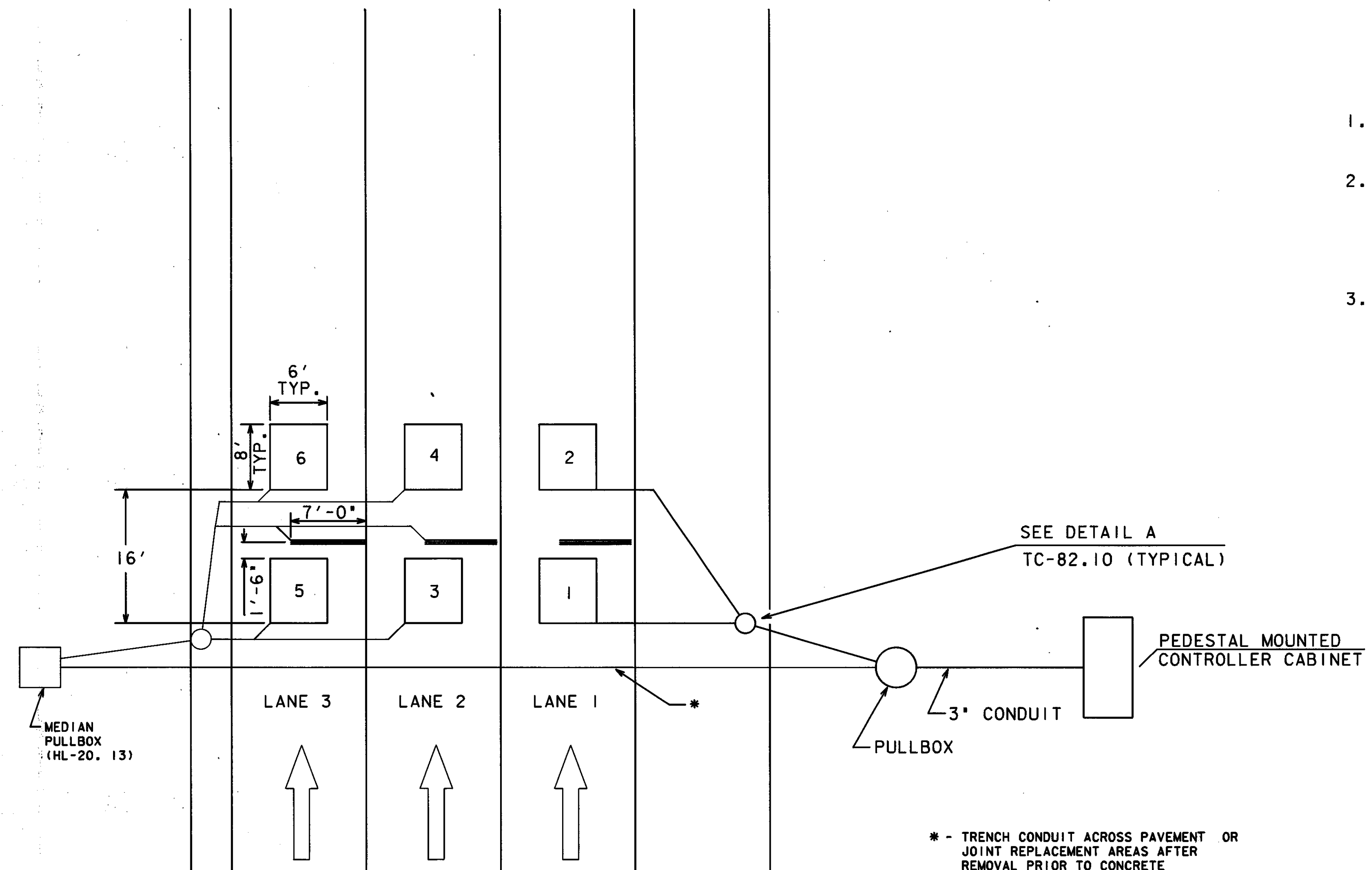
ITEM 630 - SIGN SUPPORT ASSEMBLY
BRIDGE MOUNTED, TYPE I, AS PER PLAN "B"

PLOTTED FROM: c:\dgn\pi\d08084\08084tdz.dgn
 PLOT SUBMITTED: 18-MAR-1992 12:42
 00000XXX.dgn
 BANASZAK

NOTES:

- ALL LOOPS SHALL BE 6' X 8'. LOOPS SHALL BE SPACED 16'-0" FROM LEADING EDGE TO LEADING EDGE. INSTALLATION OF LOOPS SHALL CONFORM TO TC-82.10.
- THE PIEZOCABLE CLASS II AXLE SENSOR SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S DIRECTION. THE END OF A PIEZOCABLE CLASS II AXLE SENSOR SHALL NOT BE INSTALLED WITHIN SIX (6) INCHES OF A LONGITUDINAL JOINT. PAYMENT WILL BE AT THE CONTRACT UNIT PRICE PER EACH FOR ITEM 632 PIEZOCABLE CLASS II AXLE SENSOR AND SHALL INCLUDE ALL MATERIAL, LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY FOR EACH INSTALLATION, IN PLACE COMPLETE AND ACCEPTED.
- THE CABINET SHALL BE CLEAN CUT IN DESIGN AND APPEARANCE AND SHALL CONFORM TO THE FOLLOWING:
 - IT SHALL BE MADE OF ACCEPTABLE STRENGTH ALUMINUM (NATURAL FINISH).
 - THE MINIMUM USABLE INSIDE DIMENSIONS SHALL BE: HEIGHT 30", WIDTH 19", AND DEPTH 13".
 - HINGED DOOR SHALL BE PROVIDED ON THE FRONT OF THE CABINET WHICH SHALL INCLUDE SUBSTANTIALLY THE FULL AREA OF THE FRONT OF THE CABINET.
 - THE DOOR SHALL BE FULLY GASKETED SO THAT WHEN CLOSED IT SHALL FIT CLOSELY TO THE GASKETED MATERIAL, MAKING THE CABINET WEATHER RESISTANT. A ONE POINT LATCH SHALL BE PROVIDED FOR THIS PURPOSE.
 - THE DOOR SHALL BE PROVIDED WITH AN ACCEPTABLE STRONG LOCK WITH PERMANENT LUBRICATION AND A WEATHERPROOF TAB AND FURNISHED WITH TWO KEYS.
 - THE DOOR PINS SHALL BE GREASE-LUBRICATED AND OF A NON-CORRODING STEEL MATERIAL.
 - THE CABINET SHALL CONTAIN ONE SHELF FOR SUPPORT OF TRAFFIC COUNTING EQUIPMENT. SHELF TO BE CENTERED AT 15 INCHES FROM THE TOP OF THE CABINET.
 - THE CABINET SHALL INCLUDE A VENT.
 - TWO EACH 12 WIRE TERMINAL BLOCKS 6 INCHES FROM BOTTOM OF CABINET CENTERED ON BACK PANEL (PENN UNION # 6012 OR APPROVED EQUAL).
 - MOUNTING FACILITIES SHALL INCLUDE ONE BACK PANEL WITH 5 HOLES (ALUMINUM).

ALL PIECES SHALL BE SMOOTH AND FREE FROM FLAWS, CRACKS, BLOWHOLES AND OTHER IMPERFECTIONS. THE CABINET SHALL BE ORIENTED SO THAT THE DOOR OPENS TOWARD THE ROADWAY.
- CABLE AND WIRE SHALL BE IDENTIFIED IN ACCORDANCE WITH 632.04. IDENTIFICATION SHALL INCLUDE THE DIRECTION OF TRAVEL (I.e. NB, WB) AND THE LOOP NUMBER AS SHOWN. EACH CABLE AND WIRE SHALL HAVE 5'-0" COILED IN THE CONTROLLER CABINET FOR CONNECTION BY OTHERS.
- ADJACENT LOOPS (TRANSVERSE AND LONGITUDINAL) SHALL BE INSTALLED IN OPPOSITE DIRECTIONS, I.e., LANE 1, LOOP 1 AND LANE 2, LOOP 4 CLOCKWISE; LANE 1, LOOP2 AND LANE 2, LOOP 3 COUNTERCLOCKWISE.
- REFERENCE IS MADE TO STANDARD DRAWING HL-30.11 FOR DETAILS OF DRAINING PULLBOXES. UNDERDRAINS FOR PULLBOXES SHALL BE USED AS DIRECTED BY THE ENGINEER AND SHALL BE PROVIDED WHERE THE LENGTH REQUIRED FOR A SATISFACTORY OUTLET DOES NOT EXCEED APPROXIMATELY 20 FEET. AN ESTIMATED QUANTITY OF 80 LINEAR FEET OF ITEM 603, 4" CONDUIT TYPE E IS INCLUDED IN THE GENERAL SUMMARY FOR THIS PURPOSE.
- FIVE (5) WORKING DAYS PRIOR TO THE SCHEDULED INSTALLATION, THE CONTRACTOR SHALL CONTACT MR. JAMES ROBSON AT 614-466-3727.
- ALL ITEMS SHALL CONFORM TO C & M SPECIFICATIONS 625, 713, 632, 732, 633 AND 733, UNLESS OTHERWISE SPECIFIED.
- ON AN EIGHT LANE SECTION, LANES 1 AND 2, SHALL BE SAWED TO ONE SIDE OF THE ROADWAY AND LANES 3 AND 4 SHALL BE SAWED TO THE OTHER.
- LOCATIONS AS SHOWN ON THE PLANS MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER TO MINIMIZE CONFLICTS.



* - TRENCH CONDUIT ACROSS PAVEMENT OR JOINT REPLACEMENT AREAS AFTER REMOVAL PRIOR TO CONCRETE REPLACEMENT. SEE PAVEMENT REPAIR DETAIL IN THE ROADWAY PLANS.

AUTOMATIC TRAFFIC RECORDER INSTALLATION
6 LANE SECTION
 (OPPOSITE DIRECTION TO BE THE SAME)

Quantities Carried to Traffic Control General Summary

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION
603	00400	80	LIN.FT.	4" CONDUIT, TYPE E
625	31500	2	EACH	MEDIAN PULLBOX
625	25500	120	LIN.FT.	CONDUIT, 3", 713.04
625	29000	140	LIN.FT.	TRENCH
625	30700	2	EACH	PULL BOX, 713.08, 18"
625	32000	2	EACH	GROUND ROD
632	27500	570	LIN.FT.	LOOP DETECTOR PAVEMENT CUTTING
632	64900	1350	LIN.FT.	LOOP DETECTOR WIRE, TYPE E
632	65200	560	LIN.FT.	LOOP DETECTOR LEAD-IN CABLE
632	72000	1.84	CU.YD.	CONCRETE FOR ANCHOR BASE FOUNDATION
632	89800	2	EACH	PEDESTAL, 3', TRANSFORMER BASE
632	90400	6	EACH	PIEZOCABLE CLASS II AXLE SENSOR
633	65001	2	EACH	CABINET, WITHOUT CONTROLLER, PREWIRED, PEDESTAL MOUNTING, TYPE G, AS PER PLAN

REVISED:	DATE:
TRAFFIC CONTROL	
AUTOMATIC TRAFFIC RECORDER INSTALLATION ---- 6	
PLAN INSERT SHEET	
DATE 06/06/91	

PLOTTED BY: root
 PLOTTED FROM: Zusr2\odot\grmovsek\080841dd.d
 FILENAME: dgn
 PLOT SUBMITTED: 19-JUN-1992 10:50

CUY-77-13.81

NOTES

MATERIALS
 THE OVERHEAD SPAN TRUSS SHALL BE ALUMINUM AND THE END FRAMES SHALL BE STEEL.
 SPAN TRUSS AND END FRAMES, INCLUDING HARDWARE, SHALL BE IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 816 UNLESS OTHERWISE NOTED.

STEEL POLE BASES AND GUSSETS SHALL CONFORM TO THE REQUIREMENTS OF ASTM SPECIFICATION A-373.

AFTER FABRICATION THE TAPERED POLES SHALL HAVE A MINIMUM YIELD STRENGTH OF 48,000 PSI.

FABRICATION
 THE ENTIRE STEEL END FRAME SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH SEC. 711.02. MAXIMUM LENGTH OF SPAN SECTIONS IS 30 FT.

ERECTION
 USE A MINIMUM OF 1" CAMBER IN SPAN TRUSS MEMBER FOR A 50' SPAN; ADD 1/4" OF CAMBER FOR EACH 5' OF INCREASE IN SPAN OVER 50'.

PAYMENT
 PAYMENT FOR THE GALVANIZED CONDUIT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR OVERHEAD SIGN SUPPORTS.

SOILS
 THE FOUNDATION DETAILS SHOWN ARE FOR AVERAGE SOIL CONDITIONS (MEDIUM CLAY, CEMENTED SAND AND GRAVEL, SANDY CLAY, OR STIFF CLAY). FOR POOR SOIL CONDITIONS, INCREASE "D" MIN. BY: 50% IN DRY OR WET SAND, 60% IN SILTY CLAY, 100% IN SOFT CLAY, AND FROM 75% TO 150% IN WET SILT, DEPENDING ON QUICKSAND ACTION.

REINFORCING STEEL
 COST OF REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE FOR ITEM 816 CONCRETE FOR SIGN SUPPORT FOUNDATIONS. BAR SIZE IS INDICATED IN THE BAR MARK. THE FIRST DIGIT WHERE THREE DIGITS ARE USED AND THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATE THE BAR SIZE NUMBER.

FOUNDATION ELEVATION
 ELEVATION OF TOPS OF FOUNDATIONS SHALL BE BUILT UP SO THAT 17' CLEARANCE IS MAINTAINED OVER THE ENTIRE WIDTH OF THE PAVEMENT AND SHOULDERS.

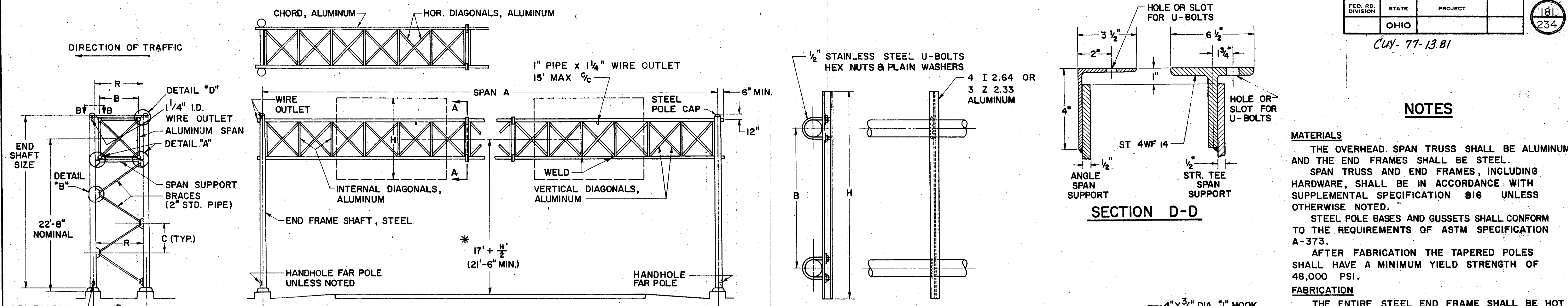
DESIGN
 THE DESIGN OF OVERHEAD SUPPORTS IS IN ACCORDANCE WITH A.A.S.H.O. SPECIFICATION FOR THE DESIGN AND CONSTRUCTION OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, ADOPTED JUNE 12, 1961.

BUREAU OF TRAFFIC
 OHIO DEPARTMENT OF HIGHWAYS

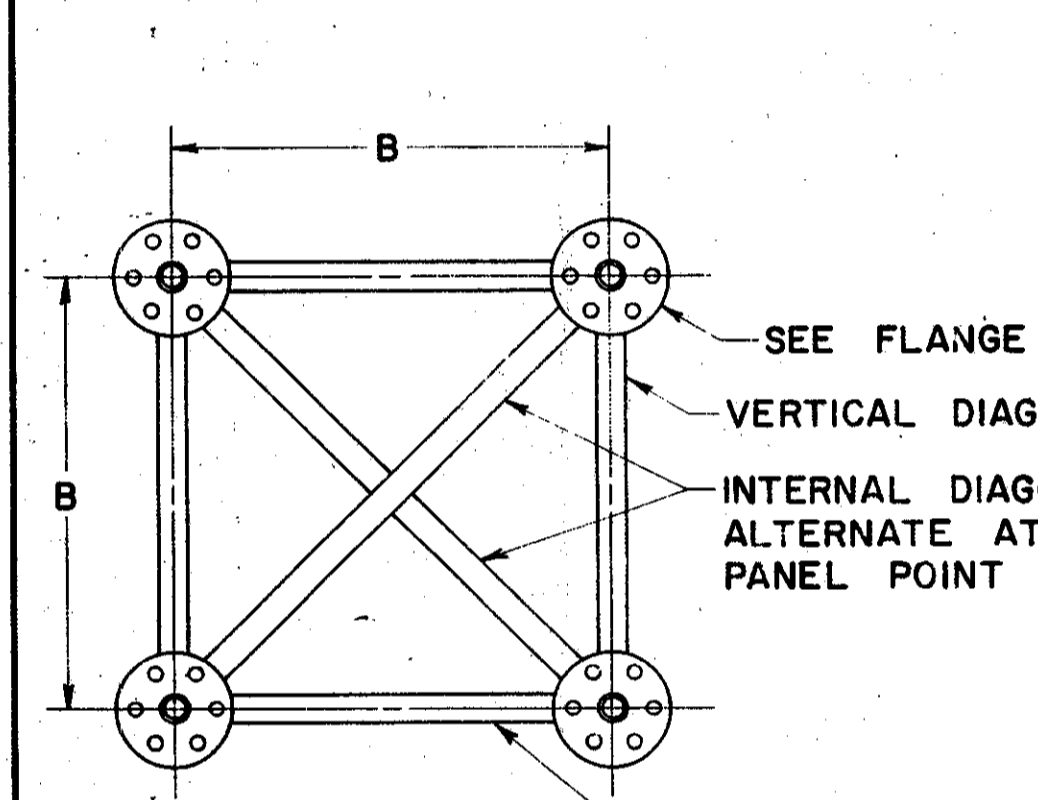
OVERHEAD SIGN SUPPORTS No. 7.4

APPROVED *Robert E. Lomer*
 ENGINEER OF TRAFFIC

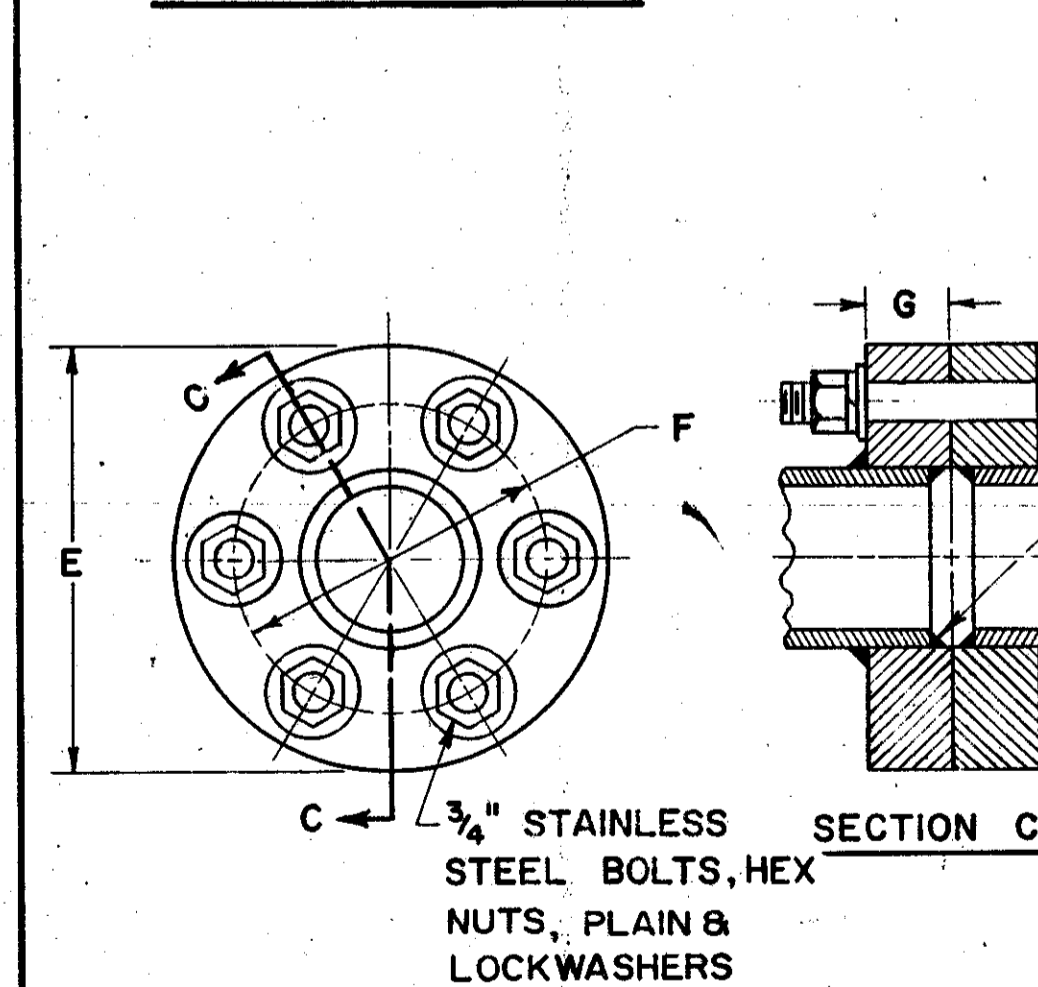
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 6-20-66



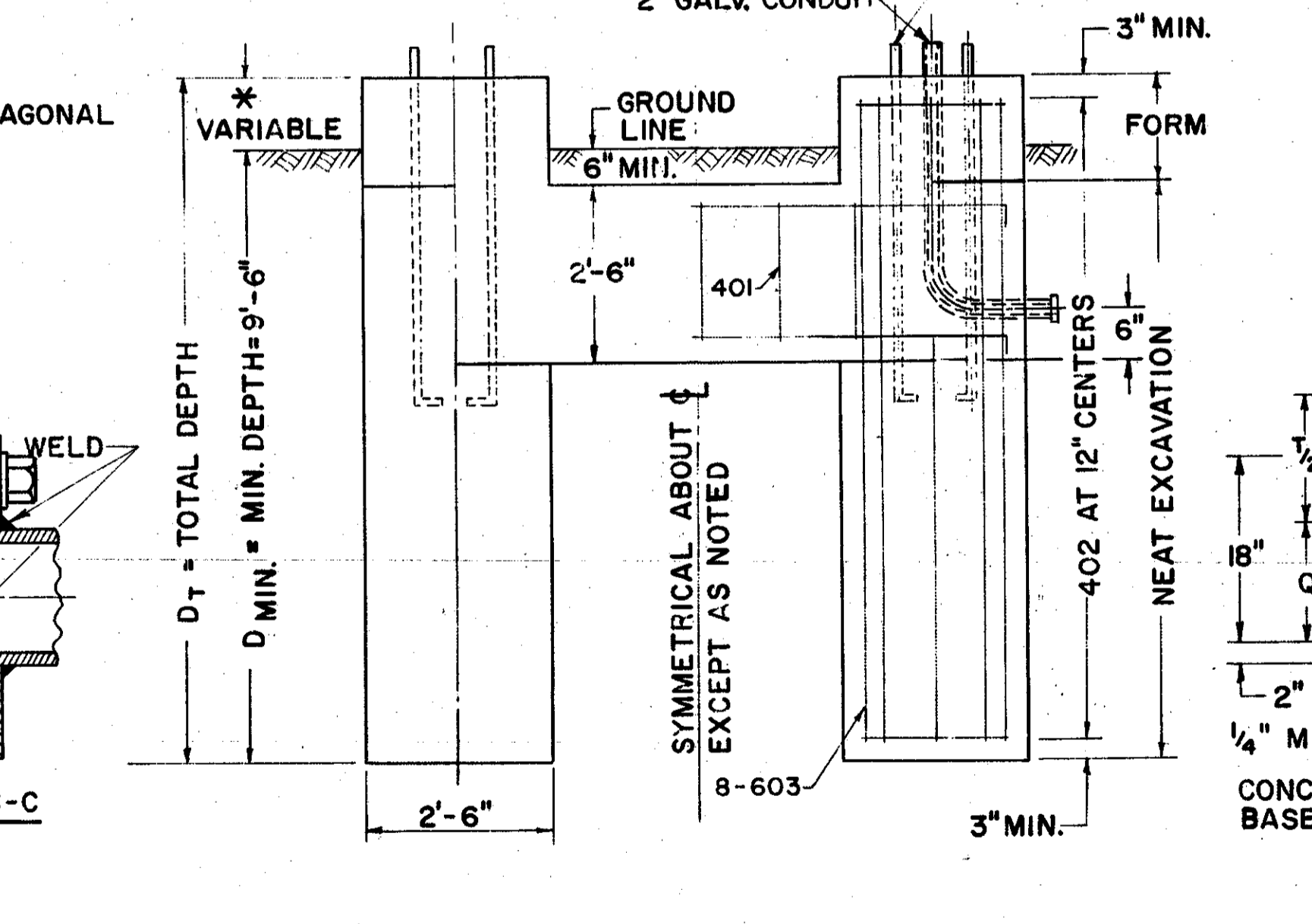
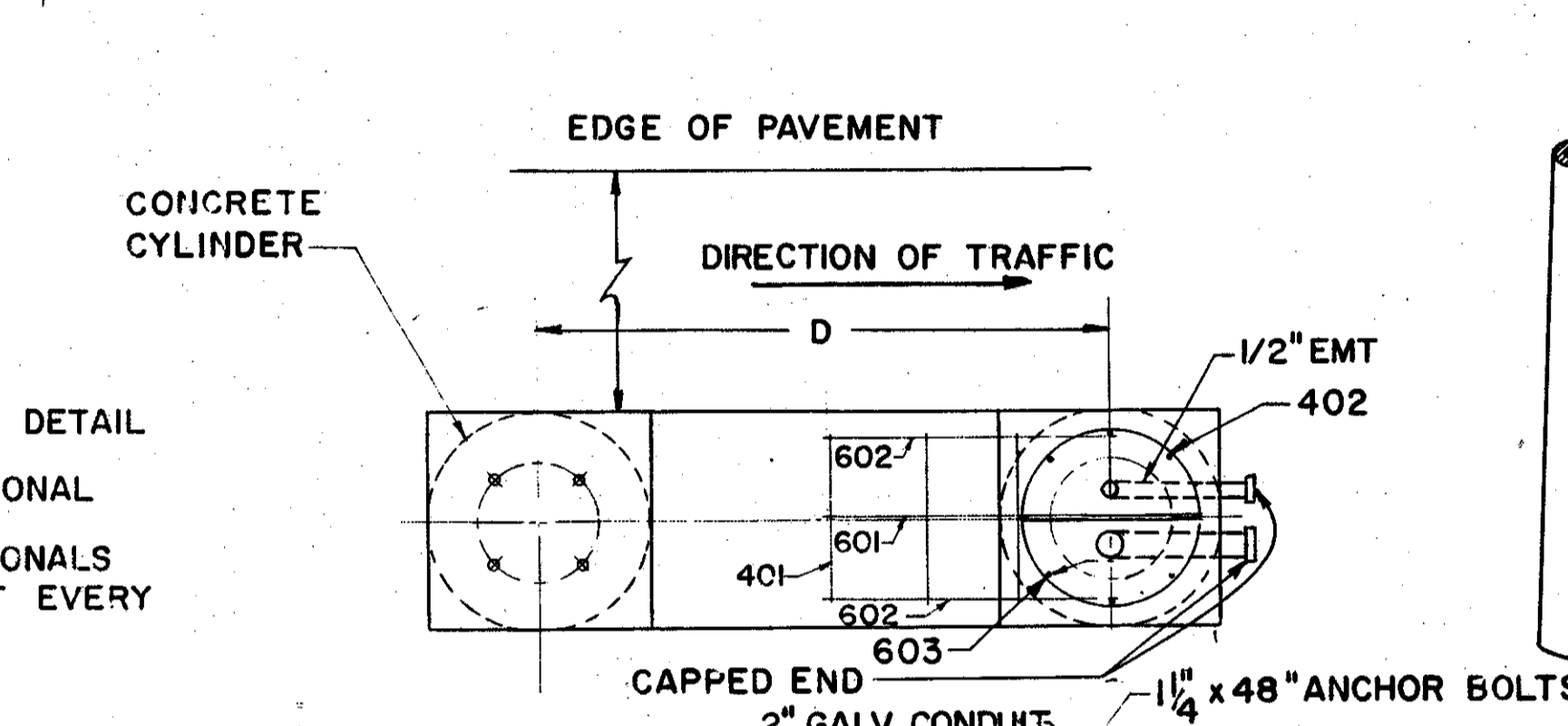
REINFORCED HANDHOLE & COVER, 4" x 6 1/2"



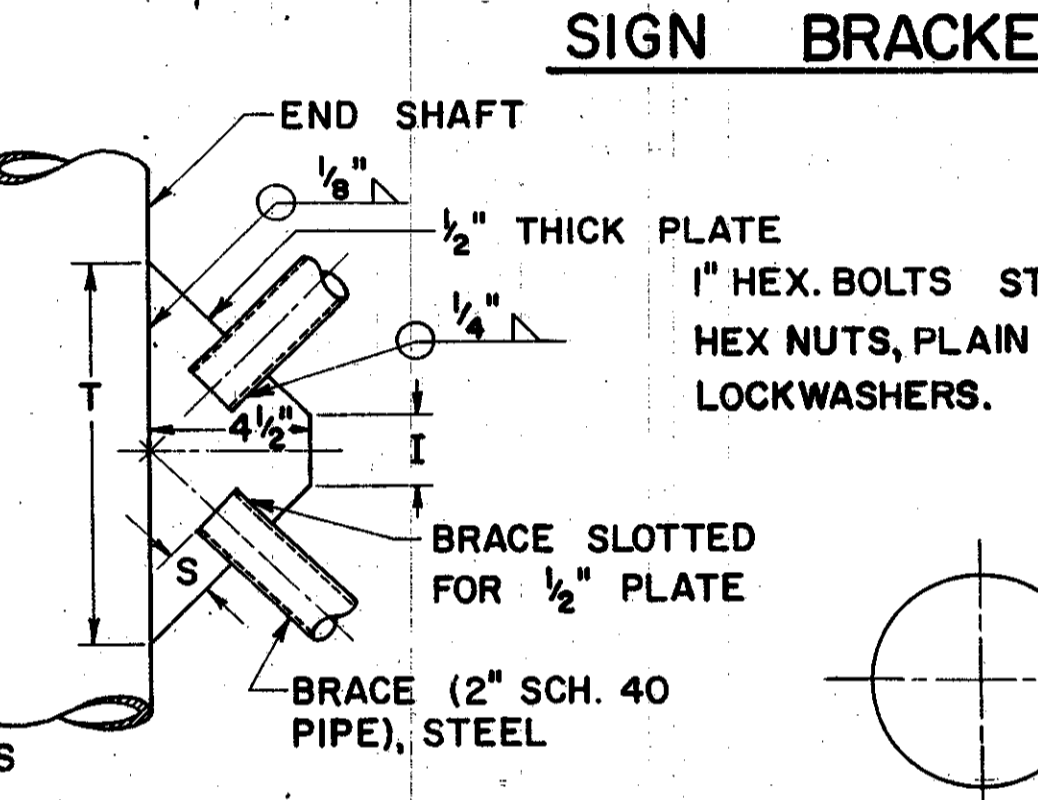
SECTION A-A



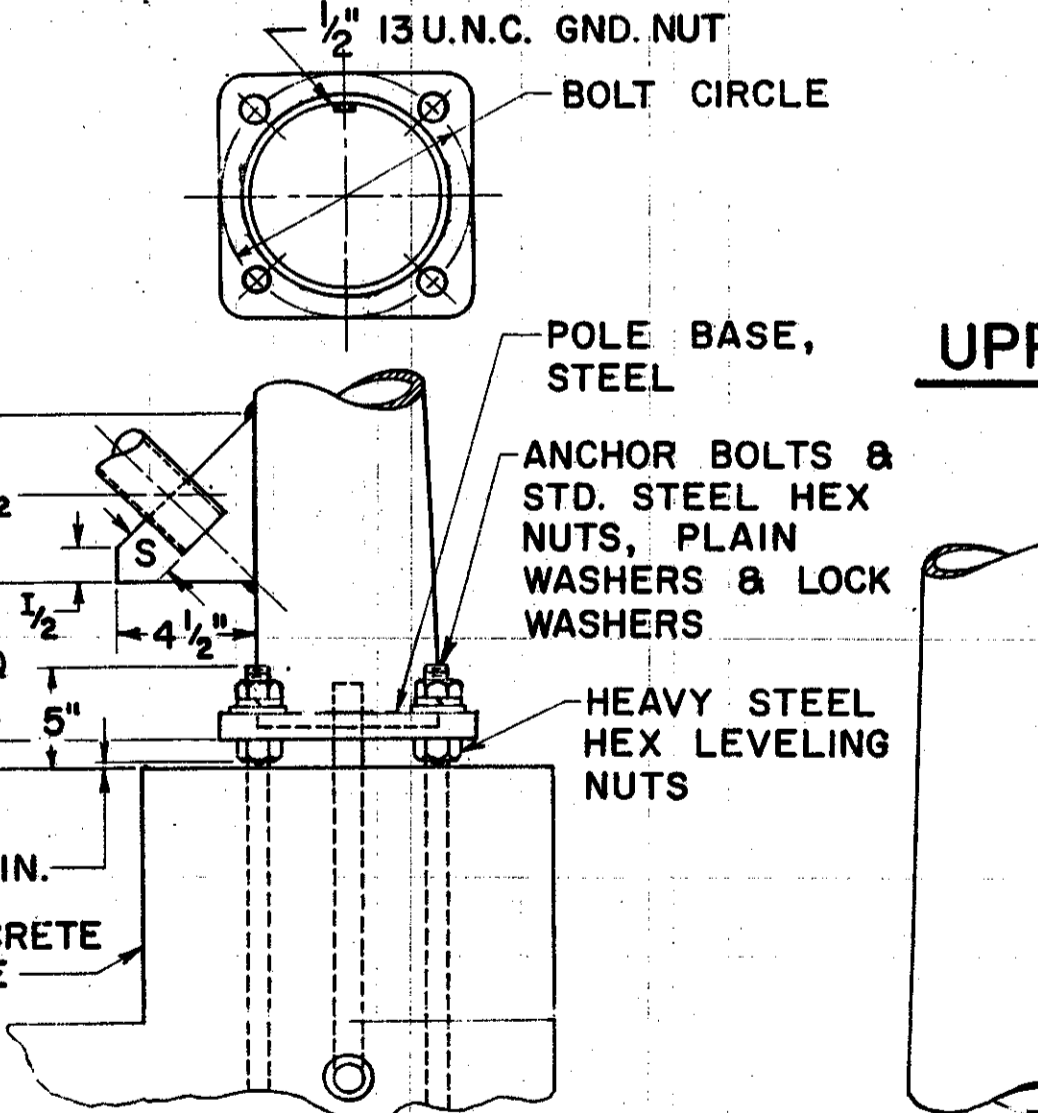
FLANGE DETAIL



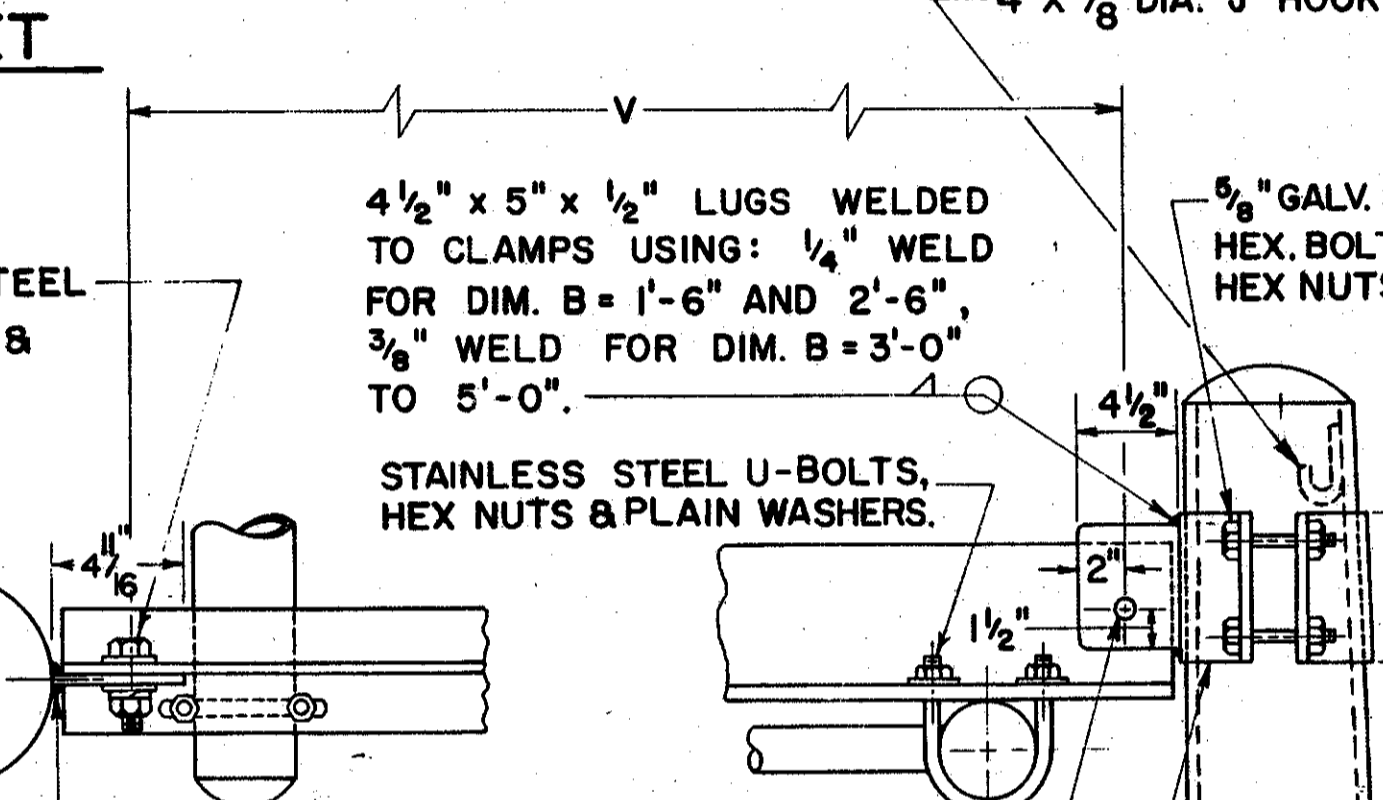
FOUNDATION DETAIL
 (RIGHT HAND SHOWN - LEFT HAND OPPOSITE)



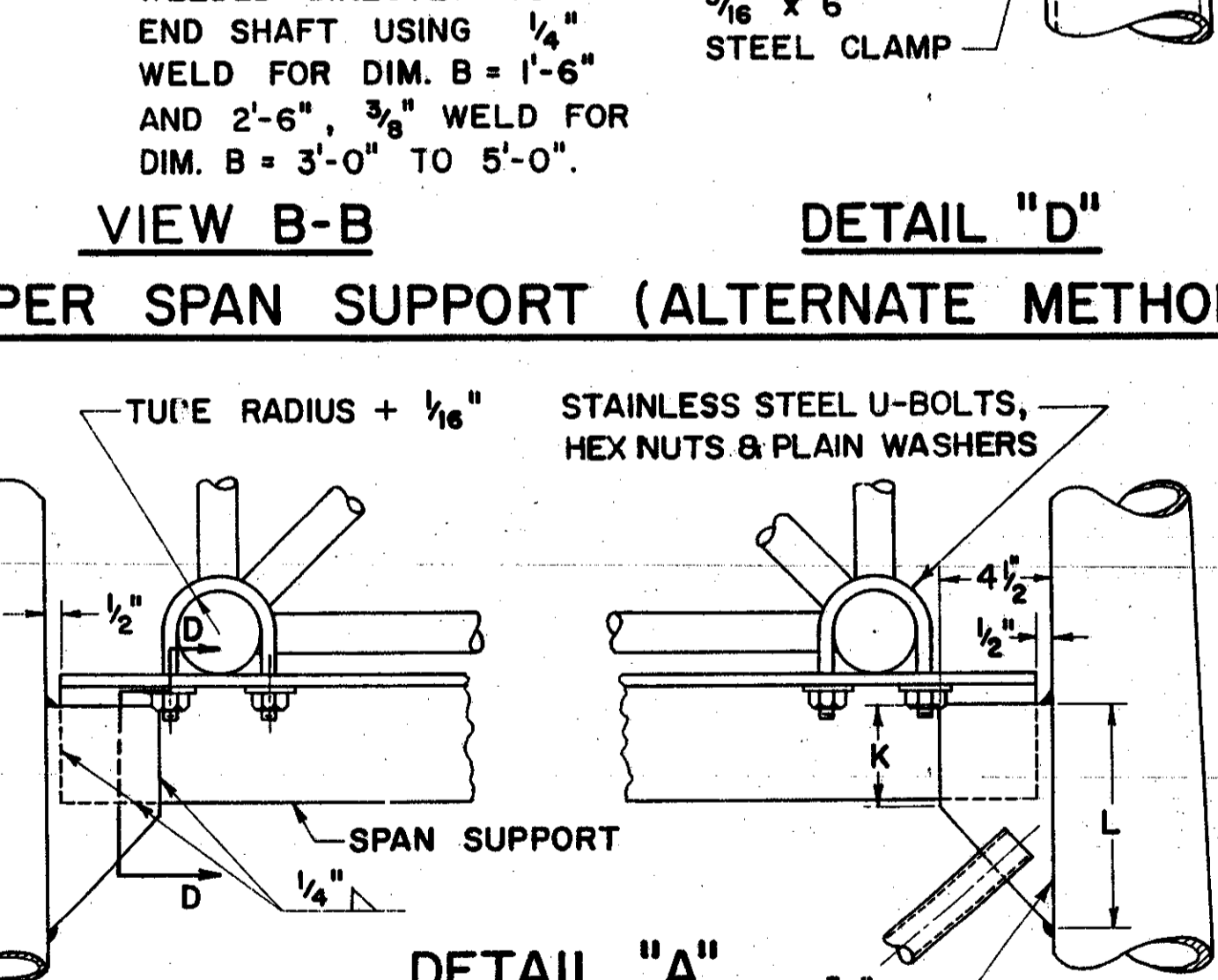
DETAIL "B"



POLE BASE DETAIL

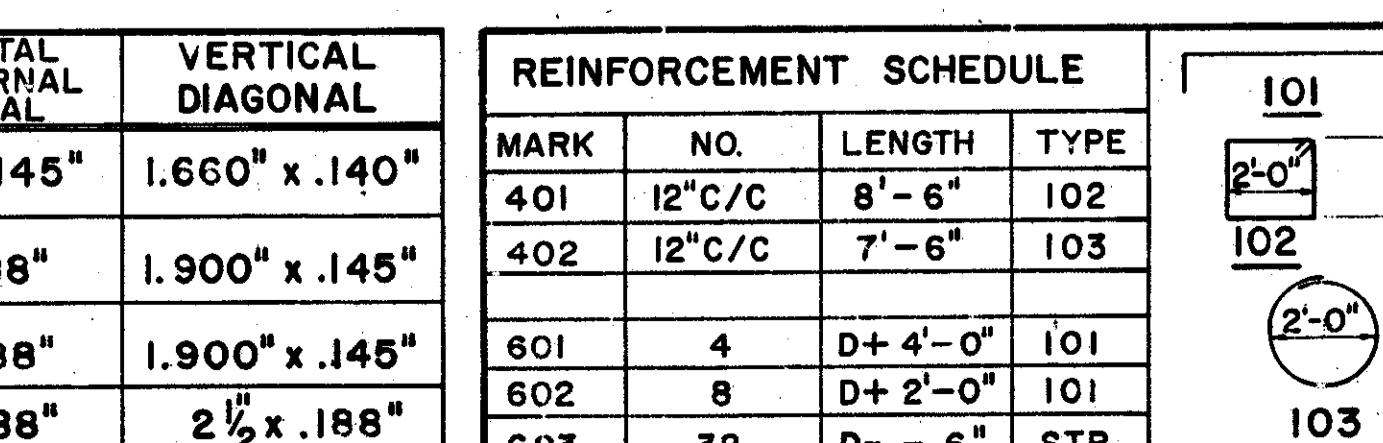


VIEW B-B



LOWER SPAN SUPPORT

UPPER SPAN SUPPORT (ALTERNATE METHODS)



DETAIL "A"

DESIGN NO.	SPAN A	B	C	D	E	END SHAFT	BRACE LENGTH	F	G	I	K	L	P	Q	R	S	T	U	V	BOLT CIRCLE	SPAN SUPPORT SECTION D-D	CHORDS	HORIZONTAL AND INTERNAL DIAGONAL	VERTICAL DIAGONAL
1	50' thru 75'	3'-0"	4'-11 3/4"	4'-5"	9 1/4"	2" x 4.5" x 25'-0", 3 GA.	5'-10 13/16"	7 7/16"	1 3/8"	3 1/2"	4 3/4"	8"	12"	6 5/8"	3'-9"	1 1/2"	10"	5 5/8"	3'-3 5/8"	11"	SPLIT TEE 3'-8"	4 3/4" x .188"	1.900" x .145"	1.660" x .140"
2	76' thru 85'	4'-0"	4'-10 1/4"	5'-7"	9 1/4"	8" x 6.22" x 25'-6", 3 GA.	6'-7 7/8"	7 7/16"	1 3/8"	5 5/8"	4 3/8"	7 3/4"	12'	6 1/4"	4'-10"	1 1/2"	9 1/2"	5 5/8"	4'-4 5/8"	11"	SPLIT TEE 4'-10"	4 3/4" x .188"	2" x .188"	1.900" x .145"
3	86' thru 90'	4'-0"	4'-10 1/4"	5'-7"	11"	8" x 6.22" x 25'-6", 3 GA.	6'-7 7/8"	8 1/2"	1 1/2"	5 5/8"	4 3/8"	7 3/4"	42"	6 1/4"	4'-10"	1 1/2"	9 1/2"	5 5/8"	4'-4 5/8"	11"	SPLIT TEE 4'-10"	5 1/2" x .250"	2" x .188"	1.900" x .145"
4	91' thru 110'	5'-0"	4'-8 1/2"	6'-7"	11"	8" x 6.18" x 26'-0", 3 GA.	7'-3 1/4"	8 1/2"	1 1/2"	-	3 1/2"	7 3/4"	12"	7 1/4"	5'-10"	1 3/4"	11 1/4"	3 3/4"	5'-4 5/8"	11"	SPLIT TEE 5'-10"	5 1/2" x .250"	2 1/2" x .188"	2 1/2" x .188"

REINFORCEMENT SCHEDULE			
MARK	NO.	LENGTH	TYPE
401	12" C/C	8'-6"	102
402	12" C/C	7'-6"	103
601	4	D+ 4'-0"	101
602	8	D+ 2'-0"	101
603	32	D _T - 6"	STR.

CUY-17-13.81

NOTES

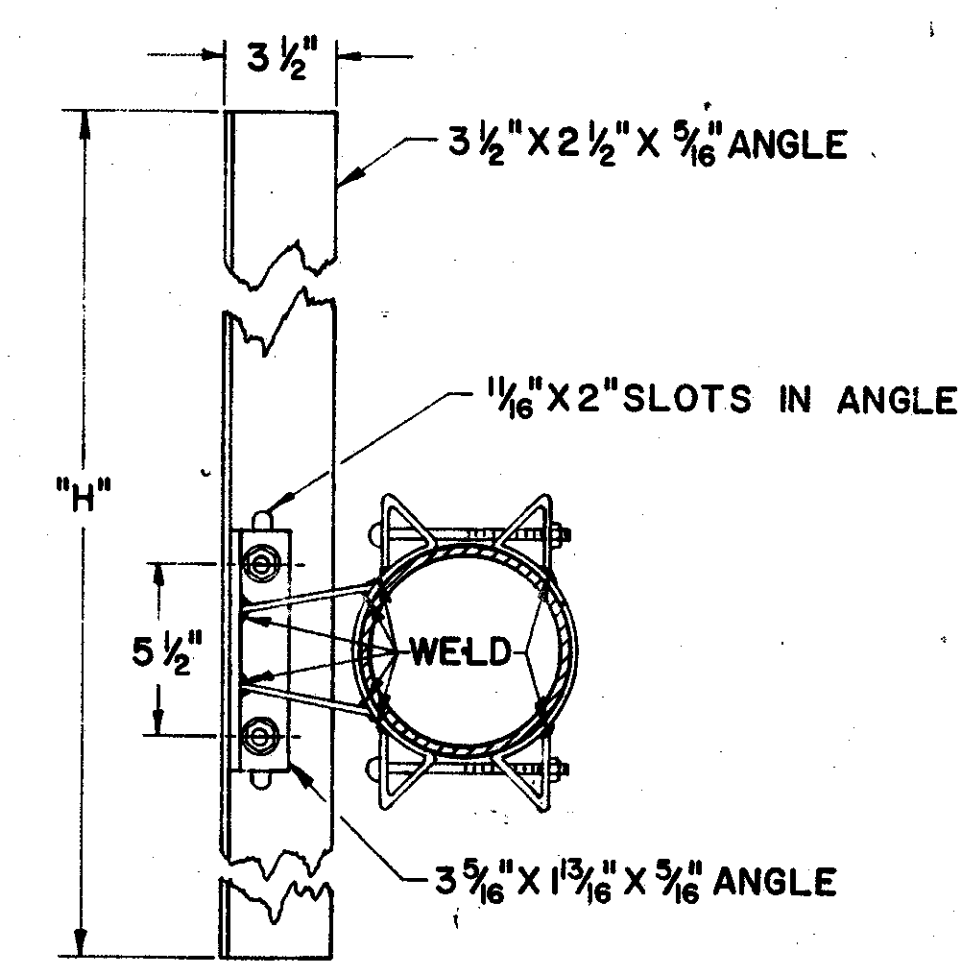
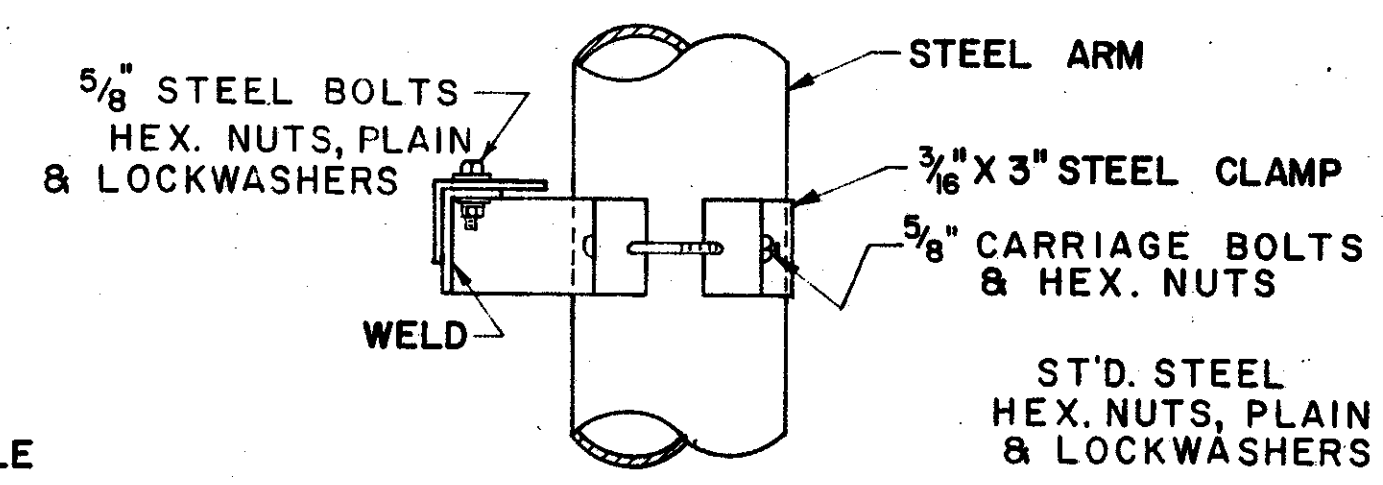
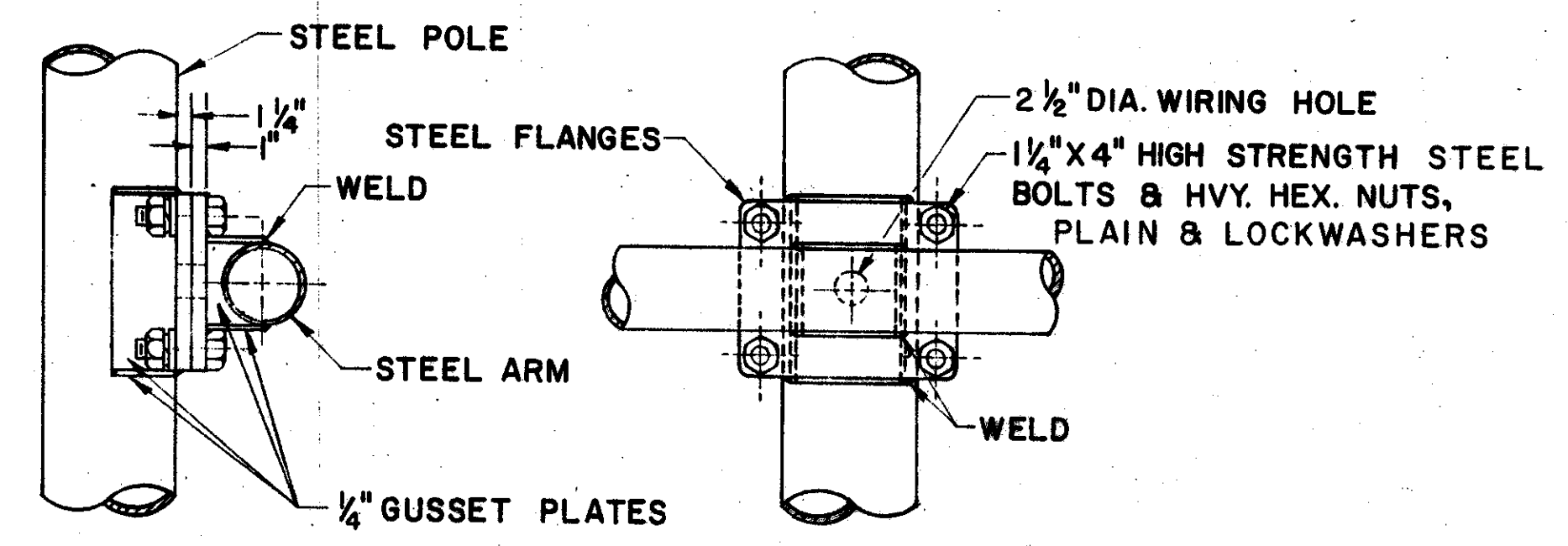
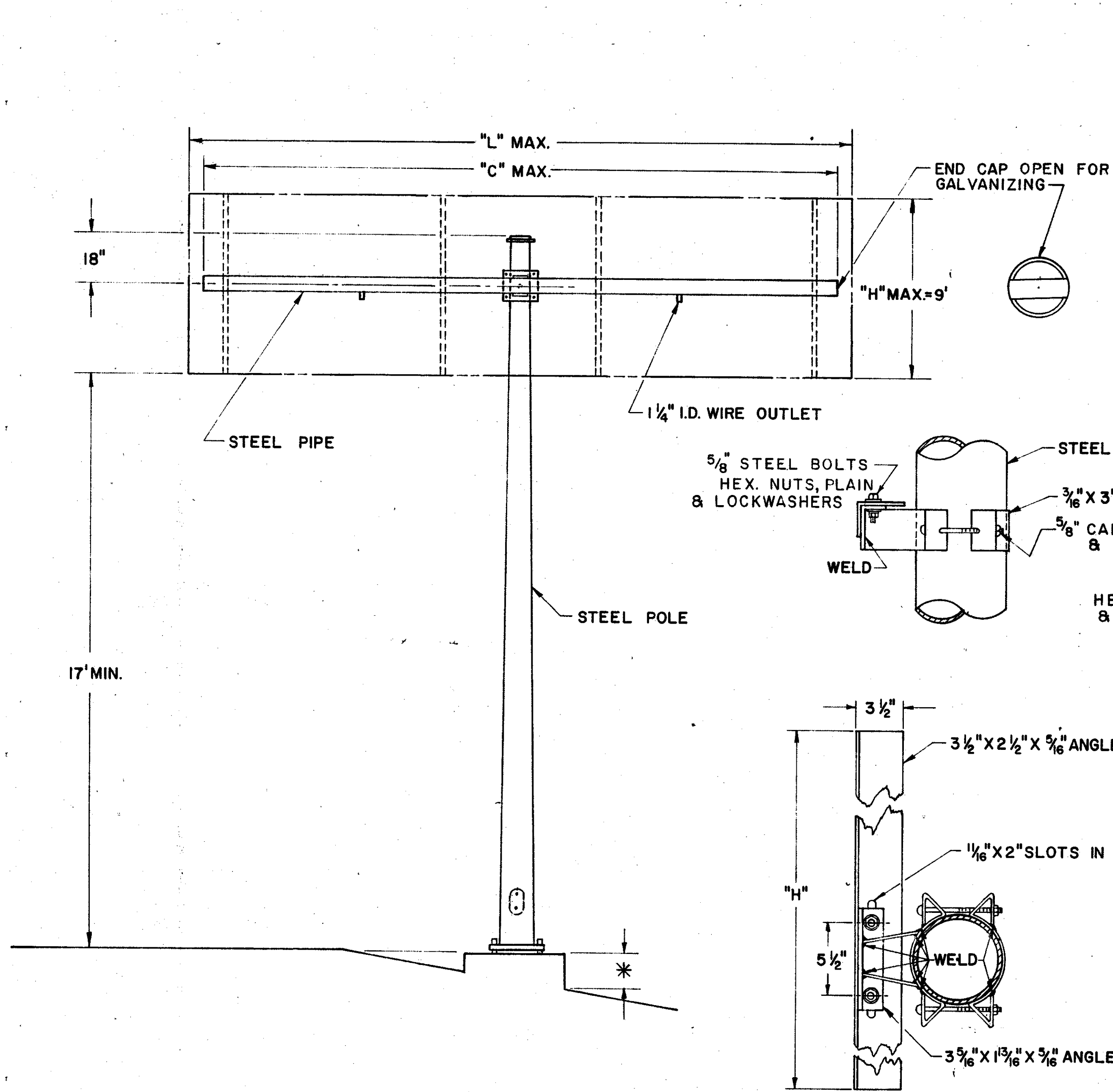
FABRICATION—ALL PORTIONS OF THE SIGN SUPPORT, INCLUDING SIGN ATTACHMENTS, SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH THE REQUIREMENTS OF A.S.T.M. DESIGNATIONS A-123 AND A-153. THE CONDUIT SHALL BE GALVANIZED IN ACCORDANCE WITH SEC. 625.13 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR OVERHEAD SIGN SUPPORTS FOR PAYMENT.

* **FOUNDATION**—THE TOP ELEVATION OF FOUNDATIONS SHALL BE VARIED SO AS TO MAINTAIN A MINIMUM CLEARANCE OF 17' FROM THE BOTTOM OF THE SIGN AND THE HIGHWAY CROWN.

MATERIAL—STEEL POLE BASES, FLANGES, AND END CAPS SHALL CONFORM TO THE REQUIREMENTS OF ASTM SPECIFICATION A 30 GRADE B. HIGH STRENGTH STEEL BOLTS SHALL CONFORM TO ASTM SPECIFICATION A 193 GRADE B7. AFTER FABRICATION TAPERED POLES SHALL HAVE A MINIMUM YIELD STRENGTH OF 48,000 PSI.

SOILS—THE FOUNDATION DETAILS SHOWN ARE FOR AVERAGE SOIL CONDITIONS (MEDIUM CLAY, CEMENTED SAND AND GRAVEL, SANDY CLAY, OR STIFF CLAY). FOR POOR SOIL CONDITIONS, INCREASE "D" MIN. BY: 50% IN DRY OR WET SAND, 60% IN SILTY CLAY, 100% IN SOFT CLAY, AND FROM 75% TO 150% IN WET SILT DEPENDING ON QUICKSAND ACTION.

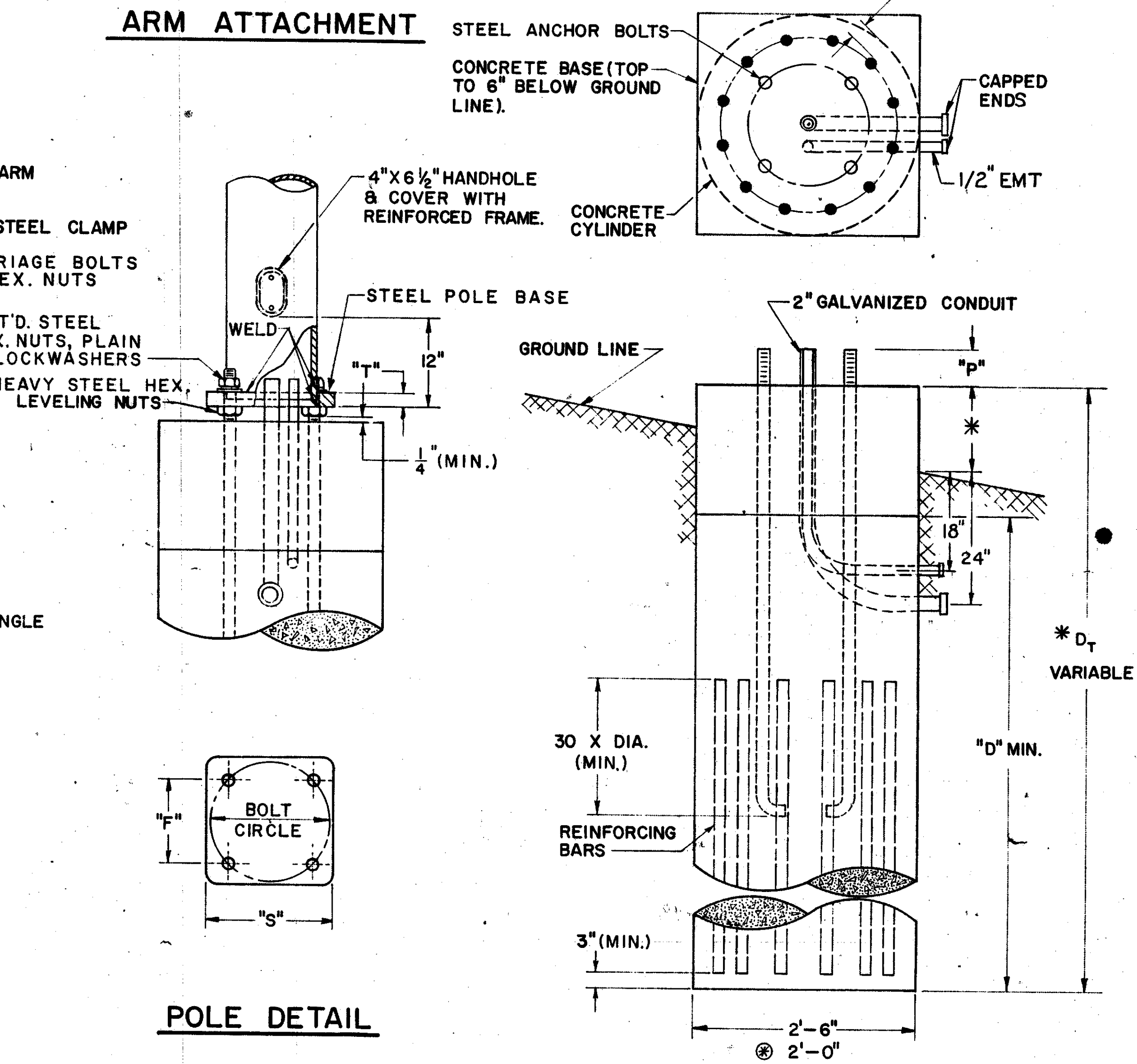
REINFORCING STEEL—REINFORCING STEEL AS SHOWN IN TABLE SHALL BE INSTALLED WHEN "D" EXCEEDS THE ANCHOR BOLT LENGTH BY MORE THAN 3 FT. THE COST AND PLACEMENT OF REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE FOR 816 CONCRETE FOR SIGN SUPPORT FOUNDATION.



ARM ATTACHMENT

SIGN ATTACHMENT DETAIL

POLE DETAIL

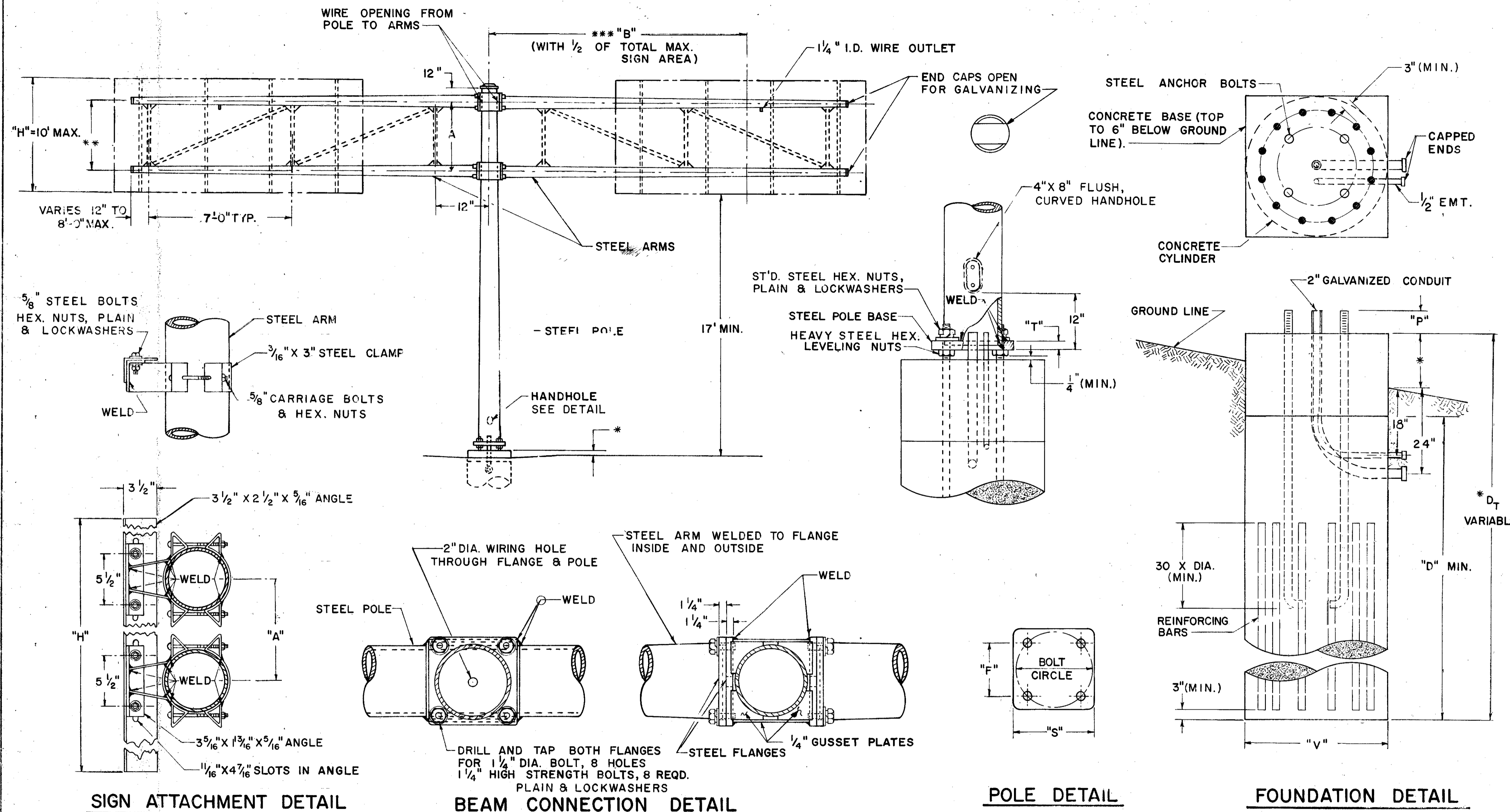


FOUNDATION DETAIL

DESIGN NO.	POLE SIZE	PIPE SIZE	DIM C	DIM F	DIM P	DIM S	DIM T	BOLT CIRCLE	ANCHOR BOLT SIZE	MAX SIGN AREA	MAX. "L" WITH MAX. SIGN AREA	"D" MIN.	REINF. BARS TYPE	REINF. BARS NO.
1	7ga, 11" X 7.99 X 21'-6"	4" SCH. 40 GRADE A	18'	10 5/8"	6 1/2"	15 5/8"	1 1/2"	15"	1 1/2" X 60"	60	24'-9"	7'-0"	*6	8
2	3ga, 13" X 9.99 X 21'-6"	4" SCH. 80 GRADE A	14'	12 3/4"	7 3/4"	18 1/2"	2"	18"	3/4" X 90"	120	16'-9"	8'-6"	*7	12
3	3ga, 13" X 9.99 X 21'-6"	6" SCH. 40 GRADE A	20'	12 3/4"	7 3/4"	18 1/2"	2"	18"	3/4" X 90"	120	24'-0"	9'-0"	*7	12
MOD.	7ga, 8" X 5.90 X 15'-0"	4" SCH. 40 GRADE A	18'	7 3/4"	5 1/4"	11 1/2"	1 1/2"	11"	1 1/4" X 48"	60	20'-0"	8'-0"	*4	8

DESIGN
THE DESIGN OF OVERHEAD SUPPORTS IS IN ACCORDANCE WITH A.A.S.H.O. SPECIFICATION FOR THE DESIGN AND CONSTRUCTION OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, ADOPTED JUNE 12, 1961.

BUREAU OF TRAFFIC OHIO DEPARTMENT OF HIGHWAYS		DATE: 1-19-62 3-30-62
OVERHEAD SIGN SUPPORT No.912		
APPROVED <i>Robert E. Lower</i> ENGINEER OF TRAFFIC		



NOTES

FABRICATION - ALL PORTIONS OF THE SIGN SUPPORT INCLUDING SIGN ATTACHMENTS, SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH THE REQUIREMENTS OF A.S.T.M. DESIGNATIONS A-123 AND A-153. THE CONDUIT SHALL BE GALVANIZED IN ACCORDANCE WITH SEC. 625.13 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR OVERHEAD SIGN SUPPORTS FOR PAYMENT.

*** FOUNDATION** - THE TOP ELEVATION OF ALL FOUNDATIONS SHALL BE BUILT UP 1'-0" ABOVE THE HIGHWAY CROWN.

**** ERECTION** - ARMS 20' AND OVER IN LENGTH SHALL BE TRUSS TYPE USING 3" X 3" X 3/8" ANGLES WELDED TO GUSSET PLATES WITH THE INSIDE EDGES OF THE ARMS PARALLEL.

***** VALUES OF "B" MAY BE EXCEEDED PROVIDED THE PRODUCT OF ACTUAL SIGN AREA TIMES THE DISTANCE FROM C OF POLE TO C OF SIGN DOES NOT EXCEED THE PRODUCT OF "B" TIMES 1/2 THE MAX. SIGN AREA.**

GENERAL - THE MAX. SIGN AREA ON EACH SIDE OF THE POLE EQUALS 1/2 THE MAX. TOTAL AREA IN THE CHART.

MATERIAL - STEEL POLE BASES, AND FLANGES SHALL CONFORM TO THE REQUIREMENTS OF ASTM SPECIFICATION A30 GRADE B. HIGH STRENGTH STEEL BOLTS SHALL CONFORM TO ASTM SPECIFICATION A193 GRADE B7. AFTER FABRICATION TAPERED POLES AND ARMS SHALL HAVE A MINIMUM YIELD STRENGTH OF 48,000 PSI.

SOILS - THE FOUNDATION DETAILS SHOWN ARE FOR AVERAGE SOIL CONDITIONS (MEDIUM CLAY, CEMENTED SAND AND GRAVEL, SANDY CLAY, OR STIFF CLAY). FOR POOR SOIL CONDITIONS, INCREASE "D" MIN. BY: 50% IN DRY OR WET SAND, 60% IN SILTY CLAY, 100% IN SOFT CLAY, AND FROM 75% TO 150% IN WET SILT, DEPENDING ON QUICKSAND ACTION.

REINFORCING STEEL - REINFORCING STEEL AS SHOWN IN TABLE SHALL BE INSTALLED WHEN "D_T" EXCEEDS THE ANCHOR BOLT LENGTH BY MORE THAN 3 FT. THE COST AND PLACEMENT OF REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE FOR 816 CONCRETE FOR SIGN SUPPORT FOUNDATIONS.

DESIGN
 THE DESIGN OF OVERHEAD SUPPORTS IS IN ACCORDANCE WITH A.A.S.H.O. SPECIFICATION FOR THE DESIGN AND CONSTRUCTION OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, ADOPTED JUNE 12, 1961.

DESIGN NO.	POLE SIZE	** ARM SIZE	DIM. A	DIM. *** B	DIM. "D" MIN.	DIM. F	DIM. P	DIM. S	DIM. T	BOLT CIRCLE	ANCHOR BOLT SIZE	DIM. V	MAX SIGN AREA	REINF. BARS SIZE	REINF. BARS NO.
1	3ga. 18" X 14.64" X 24'-0"	7ga., 5.7" X 4.02" X 12'-0"	4'	8'	9'	18"	8 3/8"	26 1/2"	2"	25 1/2"	2" X 96"	3'-0"	160	3/4"	12
2	3ga. 18" X 14.64" X 24'-0"	7ga., 6.9" X 4.66" X 16'-0"	4'	12'	9'	18"	8 3/8"	26 1/2"	2"	25 1/2"	2" X 96"	3'-0"	160	3/4"	12
3	0ga., 18" X 14.64" X 24'-0"	7ga., 7.5" X 5.82" X 12'-0"	4'	8'	11'	18"	9 3/8"	26 1/2"	2 1/2"	25 1/2"	2 1/4" X 108"	3'-0"	240	1"	12
4	0ga., 18" X 14.64" X 24'-0"	7ga., 8.3" X 6.06" X 16'-0"	4'	12'	11'	18"	9 3/8"	26 1/2"	2 1/2"	25 1/2"	2 1/4" X 108"	3'-0"	240	1"	12
5	0ga., 18" X 14.64" X 24'-0"	7ga., 10" X 7.2" X 20'-0"	4'	16'	11'	18"	9 3/8"	26 1/2"	2 1/2"	25 1/2"	2 1/4" X 108"	3'-0"	220	1"	12
6	2 ply 3ga., 18" X 14.5" X 25'-0"	7ga., 10" X 7.48" X 18'-0"	6'	10'	14'	18"	11 1/4"	26 1/2"	3"	25 1/2"	3" X 144"	3'-0"	360	1 1/8"	12
7	2 ply 3ga., 18" X 14.5" X 25'-0"	7ga., 11" X 7.92" X 22'-0"	6'	14'	14'	18"	11 1/4"	26 1/2"	3"	25 1/2"	3" X 144"	3'-0"	360	1 1/8"	12
8	2 ply 0ga., 18" X 14.5" X 25'-0"	7ga., 12.5" X 9.14" X 24'-0"	6'	14'	17'	18"	11 1/4"	26 1/2"	3"	25 1/2"	3" X 168"	3'-0"	480	1 1/4"	12
9	2 ply 0ga., 18" X 14.5" X 25'-0"	3ga., 12.5" X 8.58" X 28'-0"	6'	18'	17'	18"	11 1/4"	26 1/2"	3"	25 1/2"	3" X 168"	3'-0"	480	1 1/4"	12

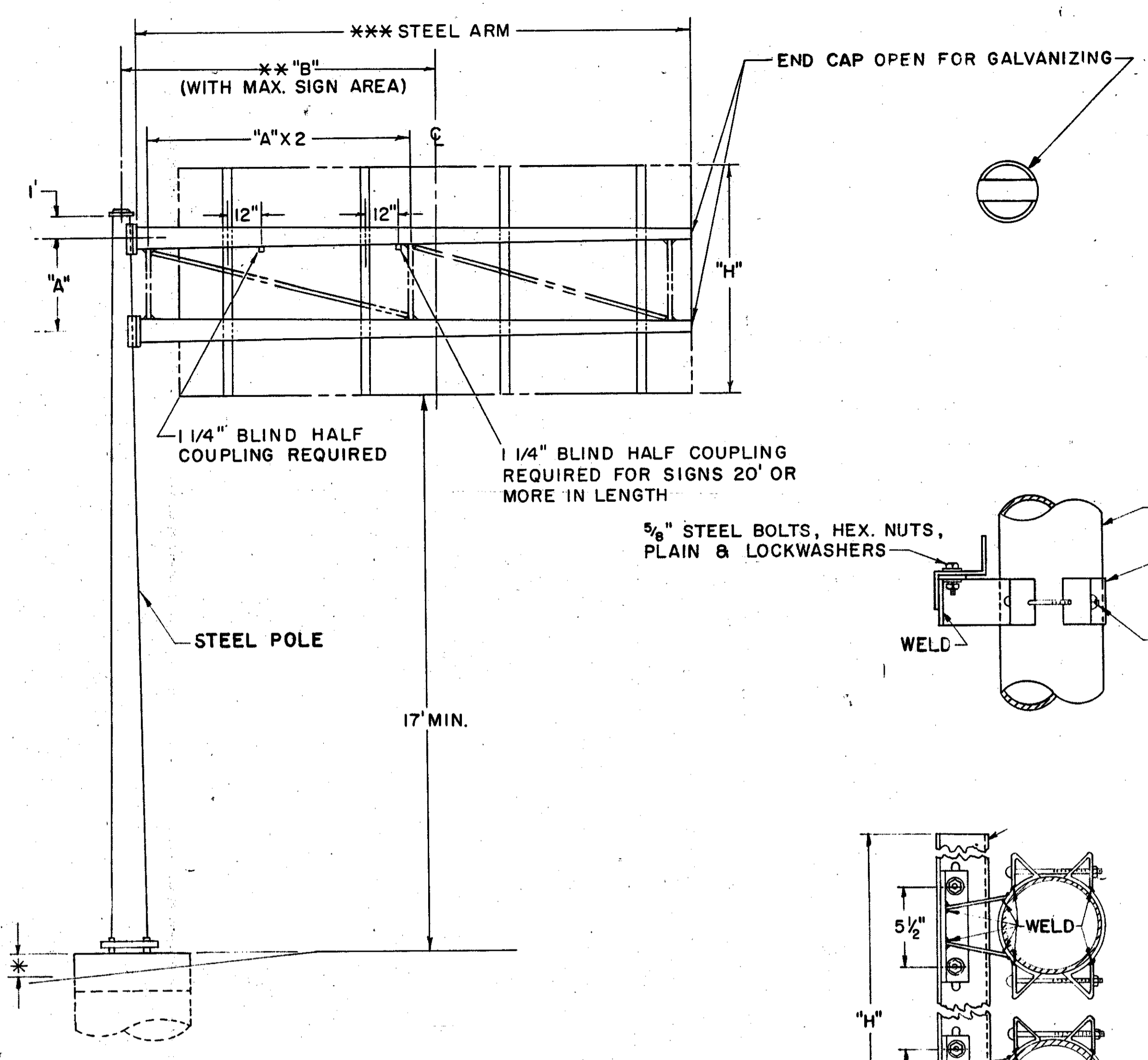
BUREAU OF TRAFFIC
 OHIO DEPARTMENT OF HIGHWAYS

OVERHEAD SIGN SUPPORT **816 No. 10.48**

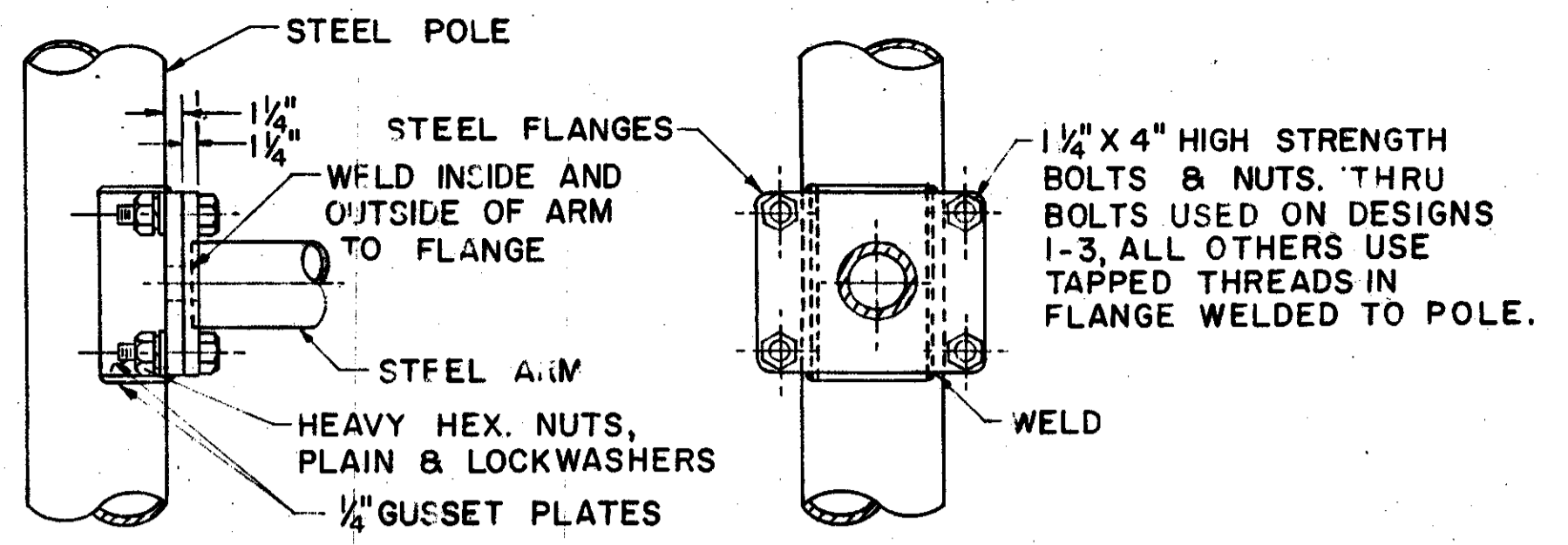
APPROVED *Robert E. ...*
 ENGINEER OF TRAFFIC

DATE
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 1-18-62
 3-30-62
 4-18-62
 9-19-64

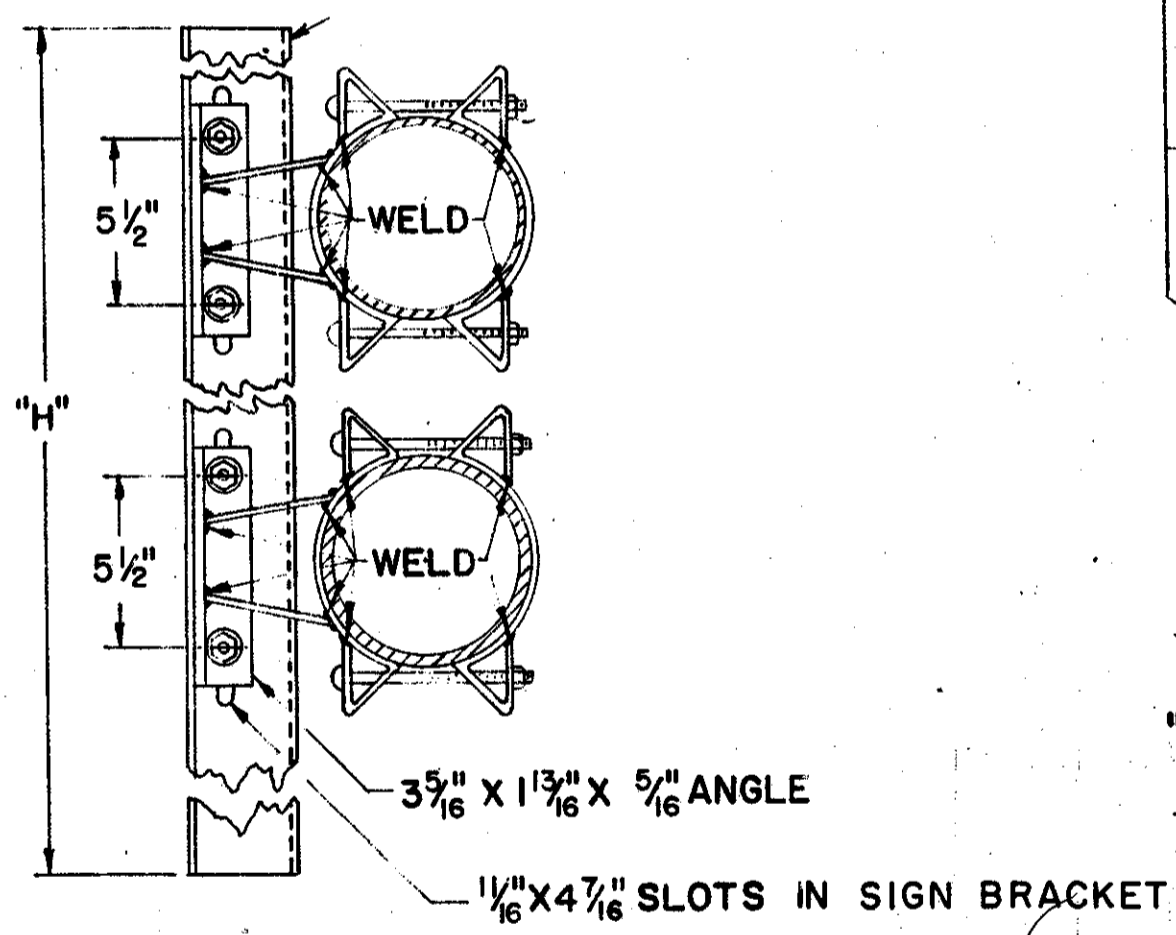
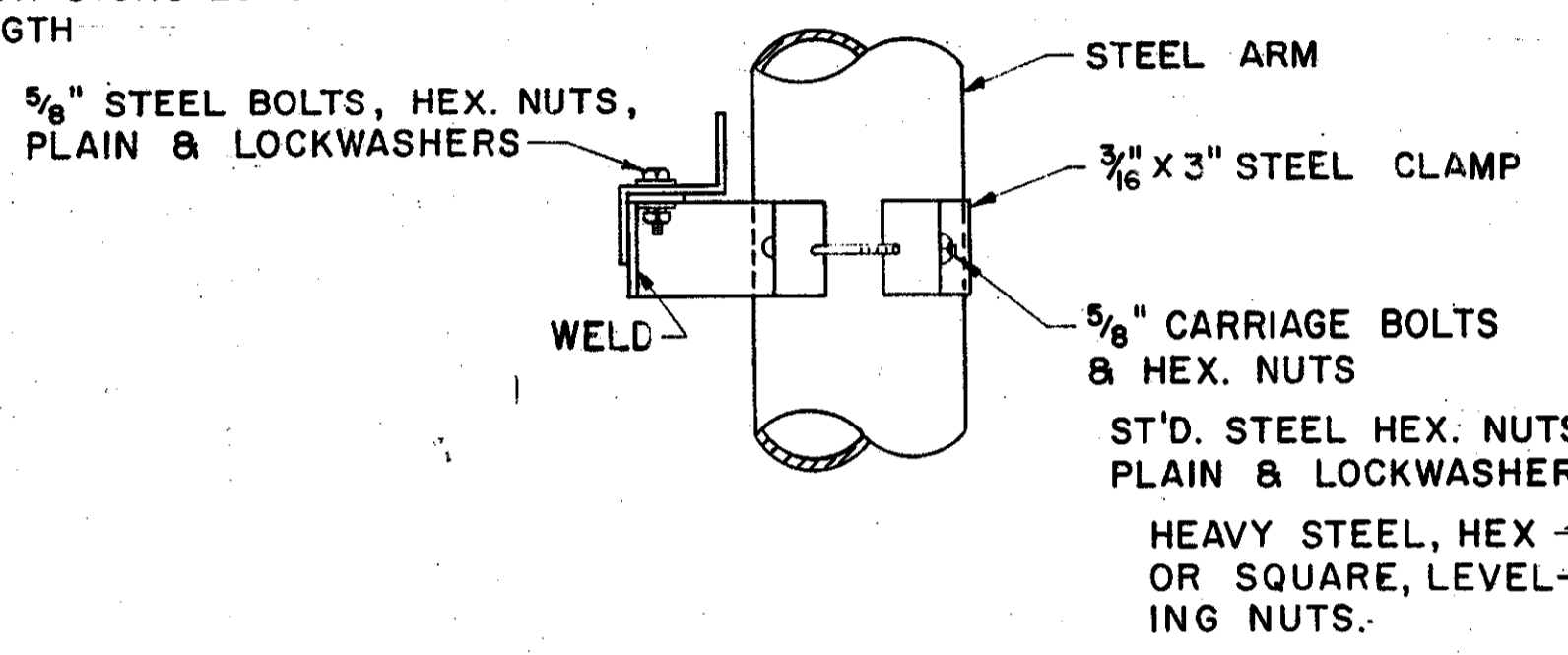
CUY-77-13.81



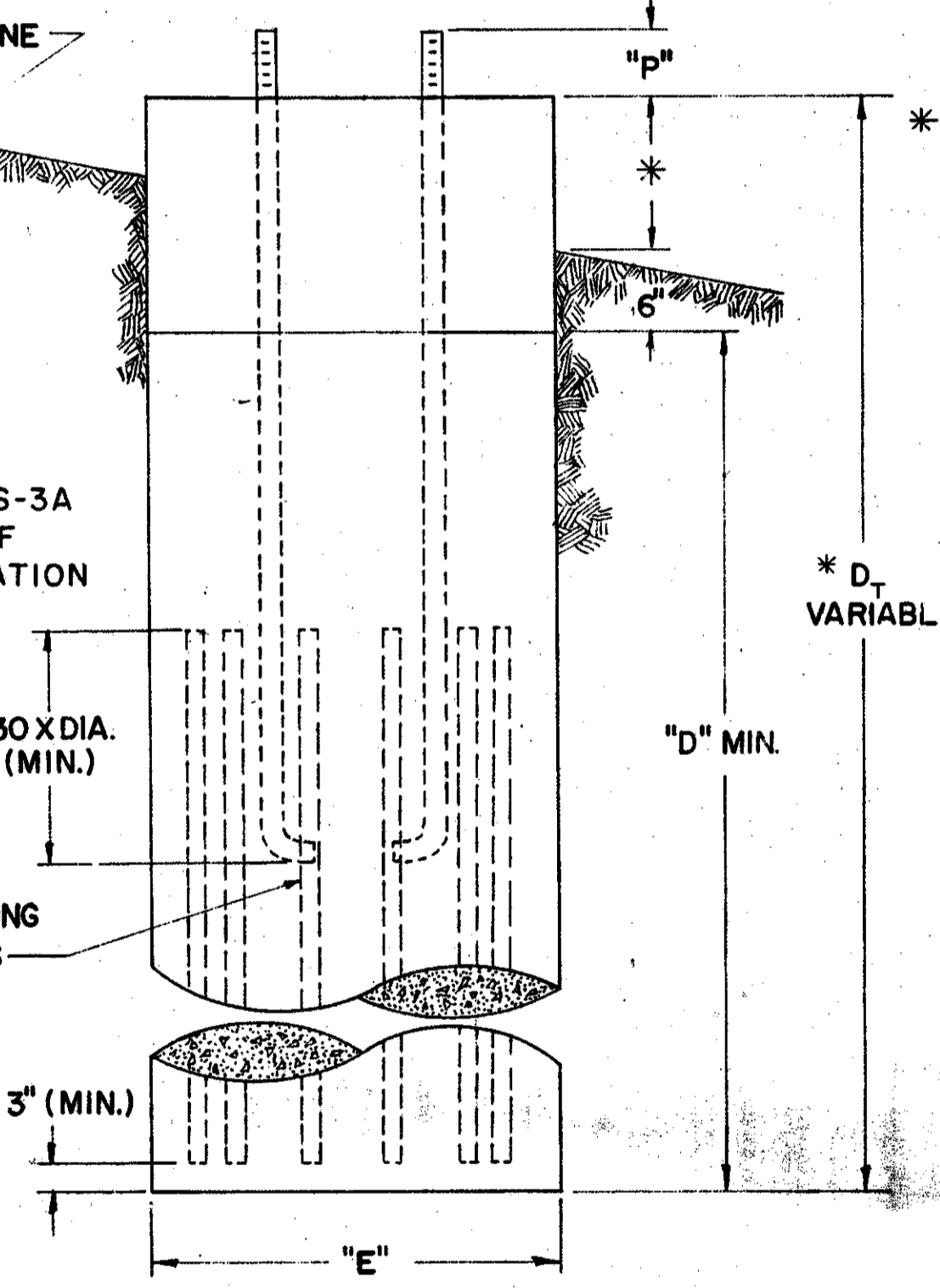
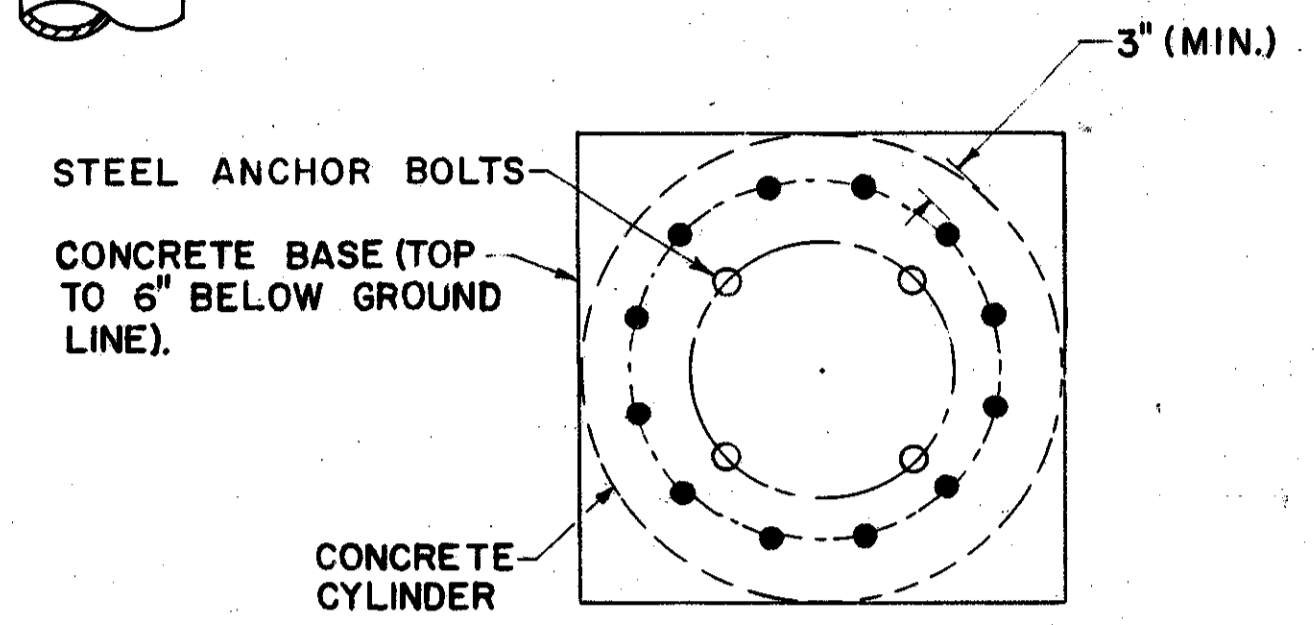
NOTE:
THE 12" DIMENSION SHOWN FOR BLIND HALF COUPLINGS MAY BE INCREASED OR DECREASED WHEN NECESSARY TO PREVENT INTERFERENCE WITH OTHER MEMBERS.



ARM ATTACHMENT



POLE BASE DETAIL



FOUNDATION DETAIL

NOTES

FABRICATION- ALL PORTIONS OF THE SIGN SUPPORT, INCLUDING SIGN ATTACHMENTS, SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH THE REQUIREMENTS OF A.S.T.M. DESIGNATIONS A-123 AND A-153. THE CONDUIT SHALL BE GALVANIZED IN ACCORDANCE WITH SEC. 625.13 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR OVERHEAD SIGN SUPPORTS FOR PAYMENT.

* **FOUNDATION**- THE TOP ELEVATION OF FOUNDATIONS SHALL BE VARIED SO AS TO MAINTAIN A MINIMUM CLEARANCE OF 17' BETWEEN THE BOTTOM OF THE SIGN AND THE HIGHWAY CROWN.

* **ERECTION**- VALUES OF "B" MAY BE EXCEEDED PROVIDED THE PRODUCT OF ACTUAL SIGN AREA TIMES THE DISTANCE FROM C OF POLE TO C OF SIGN DOES NOT EXCEED THE MAX. SIGN AREA TIMES "B".

* **ARMS** 20' LONG OR LONGER ARE TO BE TRUSS TYPE WITH 3" X 3" X 3/8" ANGLES WELDED TO GUSSET PLATES.

MATERIAL- STEEL POLE BASES, FLANGES, AND END CAPS SHALL CONFORM TO THE REQUIREMENTS OF ASTM SPECIFICATION A 30 GRADE B. HIGH STRENGTH STEEL BOLTS SHALL CONFORM TO ASTM SPECIFICATION A193 GRADE B7 AFTER FABRICATION TAPERED POLES AND ARMS SHALL HAVE A MINIMUM YIELD STRENGTH OF 48,000 PSI.

SOILS- THE FOUNDATION DETAILS SHOWN ARE FOR AVERAGE SOIL CONDITIONS (MEDIUM CLAY, CEMENTED SAND AND GRAVEL, SANDY CLAY, OR STIFF CLAY). FOR POOR SOIL CONDITIONS, INCREASE "D" MIN. BY 50% IN DRY OR WET SAND, 60% IN SILTY CLAY, 100% IN SOFT CLAY, AND FROM 75% TO 150% IN WET SILT, DEPENDING ON QUICKSAND ACTION.

REINFORCING STEEL- REINFORCING STEEL AS SHOWN IN TABLE SHALL BE INSTALLED WHEN "D" EXCEEDS THE ANCHOR BOLT LENGTH BY MORE THAN 3 FT. THE COST AND PLACEMENT OF REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE FOR ITEM 816 CONCRETE FOR SIGN SUPPORT FOUNDATIONS.

DESIGN
THE DESIGN OF OVERHEAD SUPPORTS IS IN ACCORDANCE WITH A.A.S.H.O. SPECIFICATIONS FOR THE DESIGN AND CONSTRUCTION OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, ADOPTED JUNE 12, 1961.

SIGN ATTACHMENT DETAIL

DESIGN NO.	POLE SIZE	*** ARM SIZE	DIM A	DIM *** B	DIM "D" MIN.	DIM F	DIM F	DIM P	DIM *S	DIM T	BOLT CIRCLE	ANCHOR BOLT SIZE	MAX SIGN AREA	REINF. BARS SIZE	# REQ'D
1	3 Ga, 12" X 8.78" X 23'-0"	7 Ga, 6.9" X 4.66" X 16'-0"	4'	12'	9'	3'-0"	11 5/16"	7 3/4"	17"	2"	16"	1 3/4" X 90"	80	3/4"	12
2	3 Ga, 12" X 8.78" X 23'-0"	7 Ga, 8" X 5.2" X 20'-0"	4'	16'	9'	3'-0"	11 5/16"	7 3/4"	17"	2"	16"	1 3/4" X 90"	80	3/4"	12
3	3 Ga, 15" X 11.5" X 25'-0"	7 Ga, 8.3" X 6.06" X 16'-0"	4'	12'	11'	3'-0"	15 1/2"	8 3/8"	23"	2"	22"	2" X 96"	120	1"	12
4	3 Ga, 16" X 12.5" X 25'-0"	3 Ga, 9.2" X 6.40" X 20'-0"	4'	16'	11'	3'-0"	16 5/8"	8 3/8"	24 1/2"	2"	23 1/2"	2" X 96"	120	1"	12
5	0 Ga, 18" X 14.36" X 26'-0"	7 Ga, 11" X 7.92" X 22'-0"	6'	14'	13'	3'-0"	18"	9 3/8"	26 1/2"	2 1/2"	25 1/2"	2 1/4" X 120"	180	1 1/8"	12
6	0 Ga, 18" X 14.36" X 26'-0"	7 Ga, 12.5" X 8.86" X 26'-0"	6'	18'	13'	3'-0"	18"	9 3/8"	26 1/2"	2 1/2"	25 1/2"	2 1/4" X 120"	180	1 1/8"	12
7	2 PLY 7 Ga, 18" X 14.36" X 26'-0"	7 Ga, 12.5" X 9.14" X 24'-0"	6'	14'	15'	3'-0"	18"	9 3/4"	26 1/2"	2 1/2"	25 1/2"	2 1/2" X 144"	240	1 1/4"	12
8	2 PLY 1/4", 18" X 14.36" X 26'-0"	3 Ga, 12.5" X 8.58" X 26'-0"	6'	18'	15'	3'-0"	18"	11 1/4"	26 1/2"	3"	25 1/2"	3" X 144"	240	1 1/4"	12

BUREAU OF TRAFFIC
OHIO DEPARTMENT OF HIGHWAYS

OVERHEAD SIGN SUPPORT No. 12.24

APPROVED *Robert E. Connor*
ENGINEER OF TRAFFIC

DATE
8-18-61
4-11-62
4-18-67

GENERAL NOTES

CUY-77-13.81

FHWA REGION	STATE	PROJECT	
5	OHIO		

185
234

LIGHTING

PROPOSED WORK

IT IS THE INTENT OF THESE PLANS TO REPLACE THE EXISTING GROUND MOUNTED POWER SERVICES "CRO", "ORG", AND "GAL" WITH NEW GROUND MOUNTED POWER SERVICES.

WORK SCHEDULING AND TIME LIMITATIONS

POWER SERVICE REPLACEMENT (MAJOR WORK ITEMS)

1. INSTALL FOUNDATIONS FOR PROPOSED POWER SERVICES.
2. INSTALL POWER SERVICE CABINETS AND HARDWARE.
3. DISCONNECT AND REMOVE EXISTING GROUND MOUNTED POWER SERVICE.
4. CONNECT CONDUITS FROM NEW GROUND MOUNTED POWER SERVICE INTO EXISTING 3 INCH DIAMETER CONDUITS.
5. REPLACE WIRING FROM CLEVELAND PUBLIC POWER POLE TO NEW POWER SERVICE INCLUDING BY-PASS CIRCUITS AND FROM NEW POWER SERVICE TO THE FIRST AVAILABLE PULLBOX.
6. RE-ENERGIZE SYSTEM.

THE CONTRACTOR SHALL SCHEDULE HIS WORK TO COMPLETE ITEMS 3 THRU 6 ABOVE WITHIN 48 HOURS AND PREFERABLY WITHIN 1 WORKING DAY.

POWER SUPPLYING AGENCY

THE POWER SUPPLYING AGENCY FOR THIS PROJECT IS:

CITY OF CLEVELAND
CLEVELAND PUBLIC POWER
1201 LAKESIDE AVE.
CLEVELAND, OHIO 44114

BOTH EXISTING AND PROPOSED SUPPLIED POWER SHALL BE CONTROLLED, 480 VOLT, 2 WIRE, ONE SIDE GROUNDED.

ITEM 625 - LIGHTING, MISC.: REMOVAL OF EXISTING WIRING DEVICES

THIS ITEM SHALL BE USED TO PAY FOR THE REMOVAL OF ALL EXISTING CONNECTOR KITS, WIRING AND CLEANING ANY CONDUITS TO BE REUSED. THIS WORK SHALL BE PERFORMED AT EACH POLE BASE OR PULLBOX AND SHALL BE PAID FOR AS 1 EACH PER LOCATION REGARDLESS OF THE NUMBER OF EXISTING CONNECTOR KITS OR CIRCUITS. CARE SHALL BE TAKEN TO ALLOW SUFFICIENT CABLE LENGTH FOR RECONNECTION TO CABLE TO REMAIN WHENEVER NECESSARY.

ITEM 202 - POWER SERVICE REMOVED, AS PER PLAN

THIS ITEM OF WORK SHALL INCLUDE THE REMOVAL OF ALL SWITCHES, BOXES, CONDUIT, CABLE AND ANY INCIDENTALS ATTACHED TO THE EXISTING POWER SERVICE.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COORDINATION WITH THE POWER COMPANY FOR THE DISCONNECTION OR RECONNECTION OF SERVICE. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR ALL CHARGES MADE BY THE POWER COMPANY FOR REMOVAL OR REARRANGEMENT OF POWER COMPANY EQUIPMENT AND ELECTRICAL SERVICE.

PAYMENT WILL BE MADE AT THE UNIT BID PRICE FOR EACH ITEM 202 - POWER SERVICE REMOVED, AS PER PLAN.

ITEM 603 - UNDERDRAINS FOR PULL BOXES

REFERENCE IS MADE TO STANDARD DRAWING HL-30.11 FOR DETAILS OF DRAINING PULL BOXES. UNDERDRAINS FOR PULL BOXES SHALL BE USED AS DIRECTED BY THE ENGINEER AND SHALL BE PROVIDED WHEREVER EXISTING PULLBOX DRAINAGE IS MISSING OR NOT FUNCTIONING. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED AS OUTLINED ABOVE TO DRAIN EXISTING PULLBOXES:

ITEM 603 - 4" CONDUIT, TYPE E 100 L.F.

ITEM 625 - CONDUIT CLEANED AND CABLES REMOVED, AS PER PLAN

THIS ITEM SHALL CONSIST OF LOCATING AND CLEANING AN EXISTING CONDUIT OF ALL EXISTING CABLES, MUD, AND DEBRIS SO THAT NEW CABLES MAY BE INSTALLED. INCIDENTAL TO THE CLEANING IS THE INSTALLATION OF BUSHINGS AND/OR COUPLINGS ON THE ENDS OF THE EXISTING CONDUIT AS REQUIRED. UPON THE EXPOSING OF THE EXISTING CONDUIT ENDS BY THE CONTRACTOR, THE ENGINEER WILL DETERMINE WHETHER THIS ITEM SHALL BE USED OR A NEW CONDUIT INSTALLED BY JACKING (SEPARATE PAY ITEM). THE REMOVAL OF OBSTRUCTIONS FROM DRAIN OUTLETS SHALL BE INCIDENTAL TO THE CONDUITS CLEANED. MATERIAL REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF OFF THE PROJECT SITE. DISTURBED AREAS SHALL BE PROPERLY RESTORED.

PAYMENT WILL BE MADE FOR EACH LINEAR FOOT OF ITEM 625 "CONDUIT CLEANED AND CABLES REMOVED, AS PER PLAN" AND SHALL BE FULL COMPENSATION INCLUDING ALL LABOR, MATERIALS, AND INCIDENTALS REQUIRED TO COMPLETE THE INSTALLATION IN A SATISFACTORY WORKMANLIKE MANNER.

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

ITEM 625 - CONDUIT CLEANED AND CABLES REMOVED AS PER PLAN...75 L.F.
ITEM 625 - CONDUIT, JACKED OR DRILLED UNDER PAVEMENT, 3"....75 L.F.

ITEM 625 - POWER SERVICE ("ORG", "CRO", AND "GAL"), AS PER PLAN

THIS ITEM OF WORK SHALL INCLUDE ALL COSTS OF EQUIPMENT, MATERIALS AND LABOR TO CONSTRUCT A GROUND MOUNTED POWER SERVICE AS DETAILED IN THE PLANS. IN ADDITION TO THE REQUIREMENTS OF 625.18 THIS ITEM SHALL INCLUDE ALL COSTS OF PROVIDING POWER SERVICE FROM AN EXISTING POLE TO A GROUND MOUNTED POWER SERVICE INCLUDING A 20 AMP BY-PASS SWITCH COMPLETE WITH WIRE AND CONDUIT. THE EXACT LOCATION OF THE POWER SERVICE SHALL BE AS DIRECTED BY THE DISTRICT LIGHTING ENGINEER.

ITEM 625 - PULL BOX, 713.08, 18"

THE FOLLOWING ESTIMATED CONTINGENCY QUANTITY SHALL BE USED AS DIRECTED BY THE ENGINEER TO REPLACE ANY BADLY DAMAGED PULLBOXES THAT ARE TO REMAIN IN SERVICE. IF PULLBOXES ARE FOUND TO BE ADEQUATE, THIS ITEM SHALL BE NON-PERFORMED.

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

ITEM	DESCRIPTION	QTY.	UNIT
625	PULLBOX, 713.08, 18"	5	EACH

ACCESS TO POWER SERVICE "CRO"

FOR ACCESS TO THE CLEVELAND PUBLIC POWER POLE FOR POWER SERVICE "CRO" LOCATED WITHIN THE FENCE AS SHOWN ON THE PLANS, CONTACT THE FOLLOWING AGENCY:

STATE OF OHIO
DEPARTMENT OF REHABILITATION AND CORRECTION
NORTHEAST PRE-RELEASED CENTER
2675 EAST 30TH ST.
CLEVELAND, OHIO 44115
(216) 771-6460

PLEASE PROVIDE AT LEAST 24 HOURS ADVANCE NOTICE PRIOR TO BEGINNING WORK.

LIGHTING SUMMARY

CALC. BY:	CUYAHOGA COUNTY CUY-77-13.81	OHIO	187 234
DATE:		FHWA REGION 5	
CHKD BY:		FEDERAL PROJECT	
DATE:			

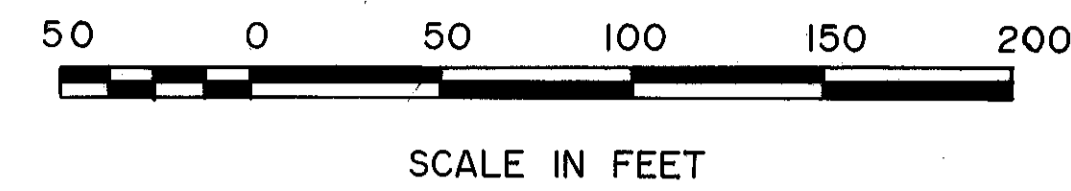
PARTICIPATION
I - FEDERAL AND STATE
II - STATE ONLY

PLOT SUBMITTED BY: BANASZAK

PLOT SUBMITTED: 27-MAY-1992 14:52

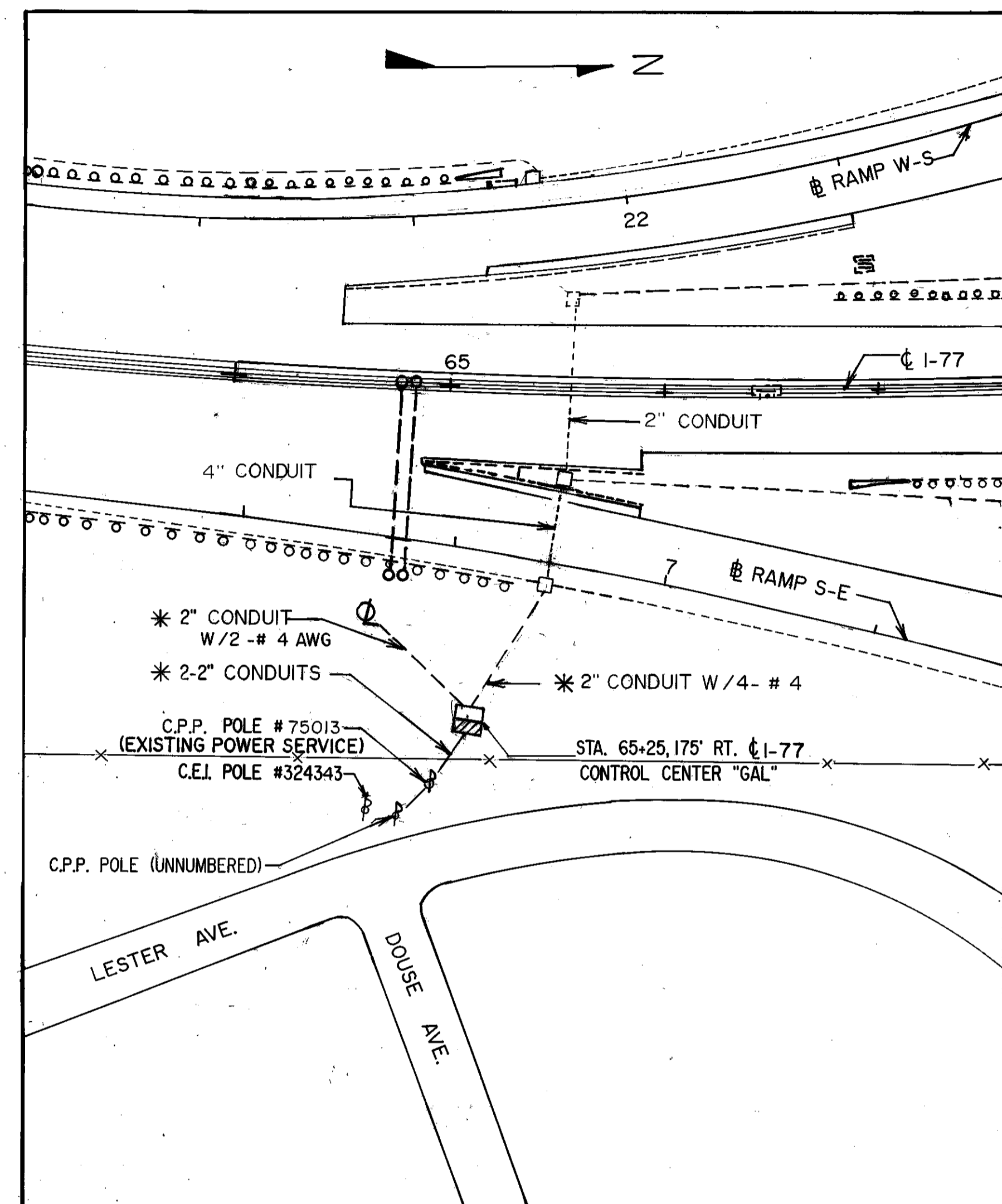
ITEM	SHEET NUMBER		PARTICIPATION		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN SHEET REF.
	183	186	I	II						
									LIGHTING	
202		3		3	202	755II	3	EACH	POWER SERVICE REMOVED, AS PER PLAN	186
603	100			100	603	00400	100	LIN.FT.	4" CONDUIT, TYPE E	
625		14		14	625	01500	14	EACH	CABLE SPLICING KIT	
625		640		640	625	23200	640	LIN.FT.	NO. 4 AWG, 5000 VOLT DISTRIBUTION CABLE	
625		110		110	625	24100	110	LIN.FT.	1-1/2" DUCT-CABLE WITH 2 NO. 4 AWG, 5000-VOLT CABLES	
625	75			75	625	25900	75	LIN.FT.	CONDUIT, JACKED UNDER PAVEMENT, 3"	
625	75			75	625	259II	75	LIN.FT.	CONDUIT CLEANED AND CABLES REMOVED, AS PER PLAN	185
625		215		215	625	29002	215	LIN.FT.	TRENCH, 24" DEEP	
625	5	3		8	625	30700	8	EACH	PULLBOX, 713.08.18"	
625		3		3	625	3400I	3	EACH	POWER SERVICE, AS PER PLAN	185
SPEC		2		2	625	98000	2	EACH	LIGHTING, MISC.: REMOVAL OF EXISTING WIRING DEVICES	

LIGHTING POWER SERVICE



LEGEND:

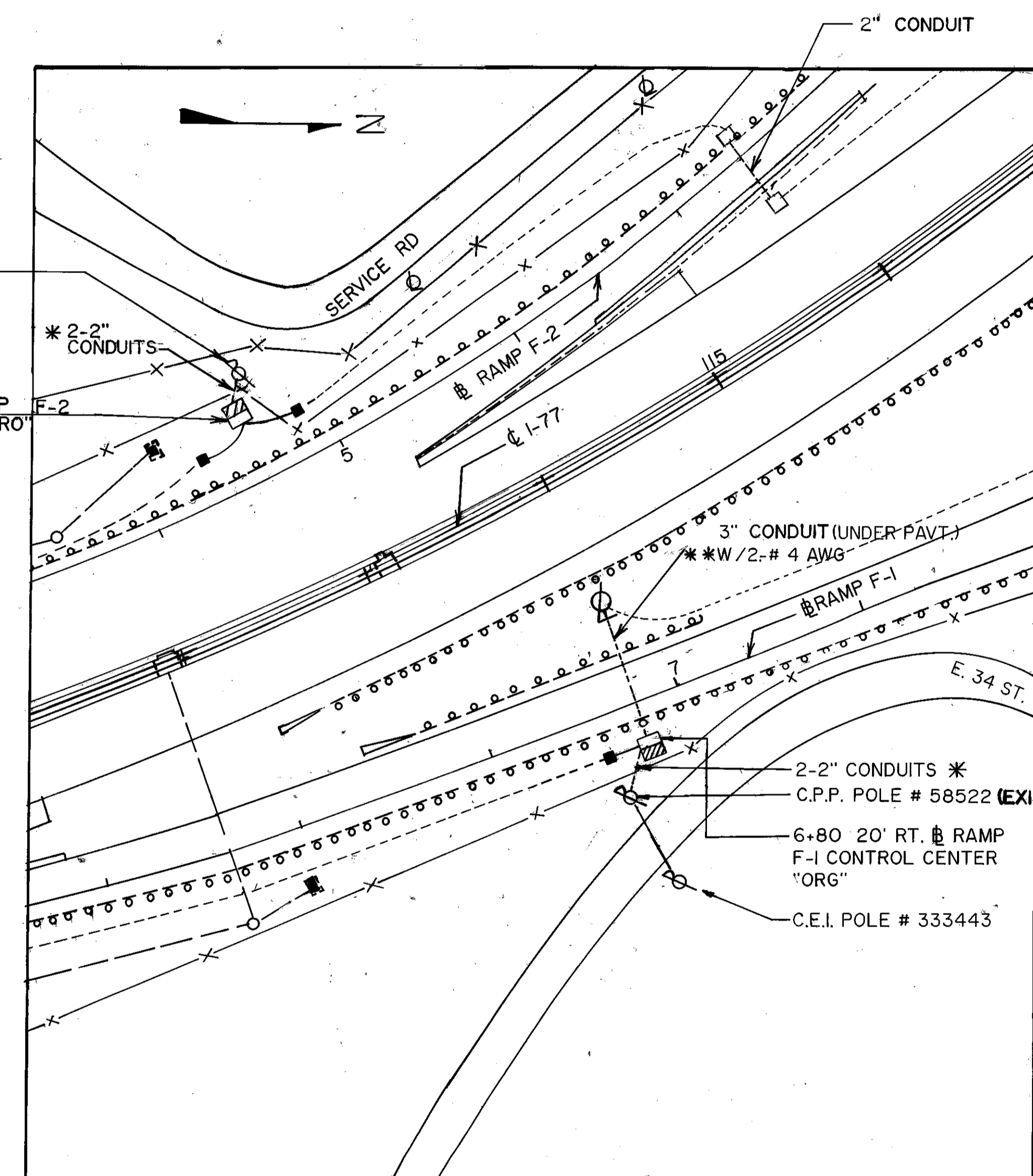
- ⊕ - EX. POWER SERVICE UTILITY POLE (TO BE REUSED)
- ⊗ - EX. FENCE
- ⊙ - EX. LIGHT POLE
- - - - EX. CIRCUIT(S)
- - EX. PULLBOX
- - PROP. PULLBOX (IF NEEDED, AS DETERMINED BY THE ENGINEER)
- ▣ - PROP. PAD MOUNTED CONTROL CENTER (TO BE PLACED ADJACENT TO EXISTING CONTROLLER TO FACILITATE INSTALLATION WHILE MAINTAINING SERVICE)
- - - PROP. 1/2" ∅ DUCT-CABLE W/2- NO. 4 AWG 5000 - VOLT CABLES



POWER SERVICE "GAL"

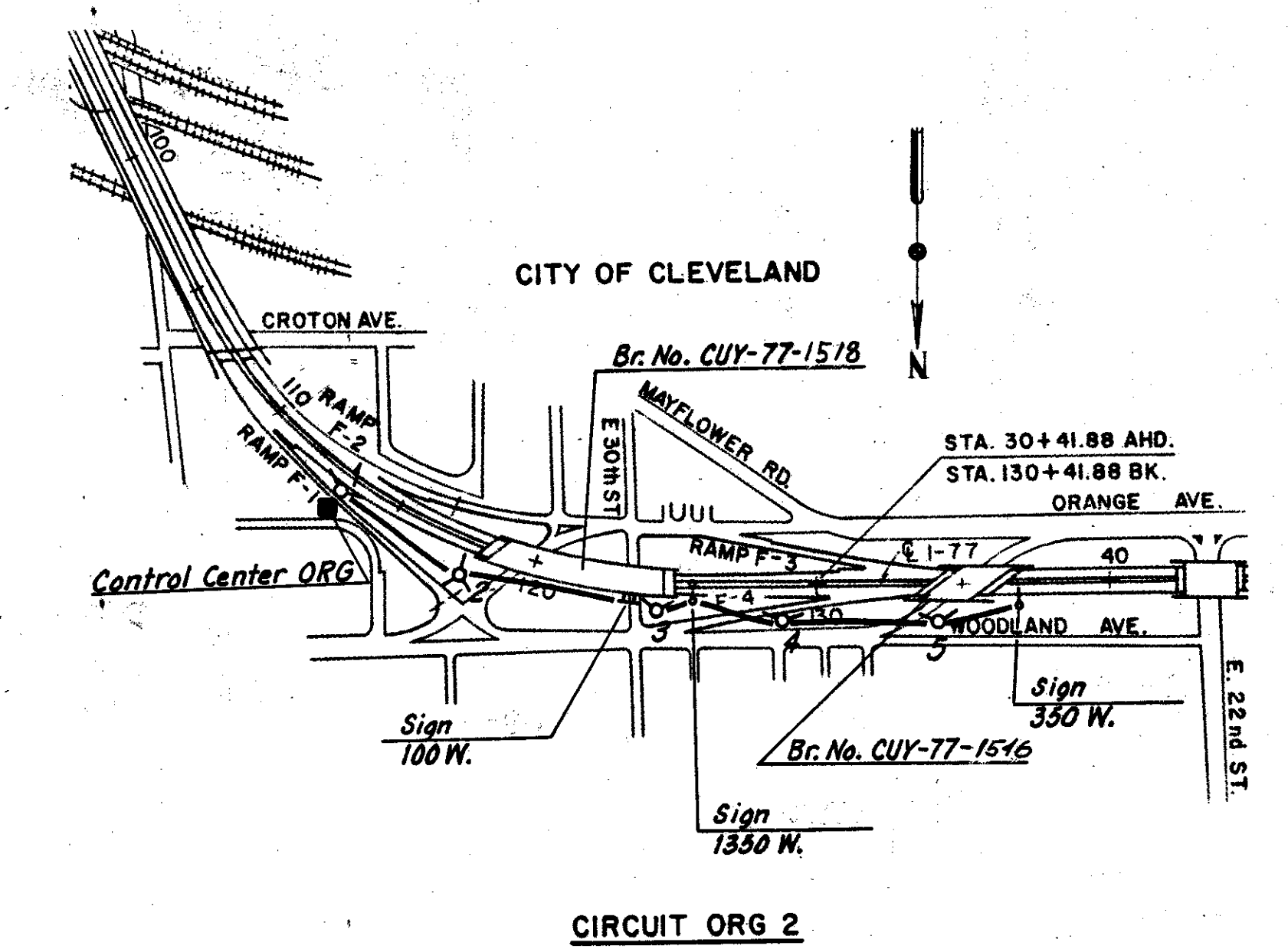
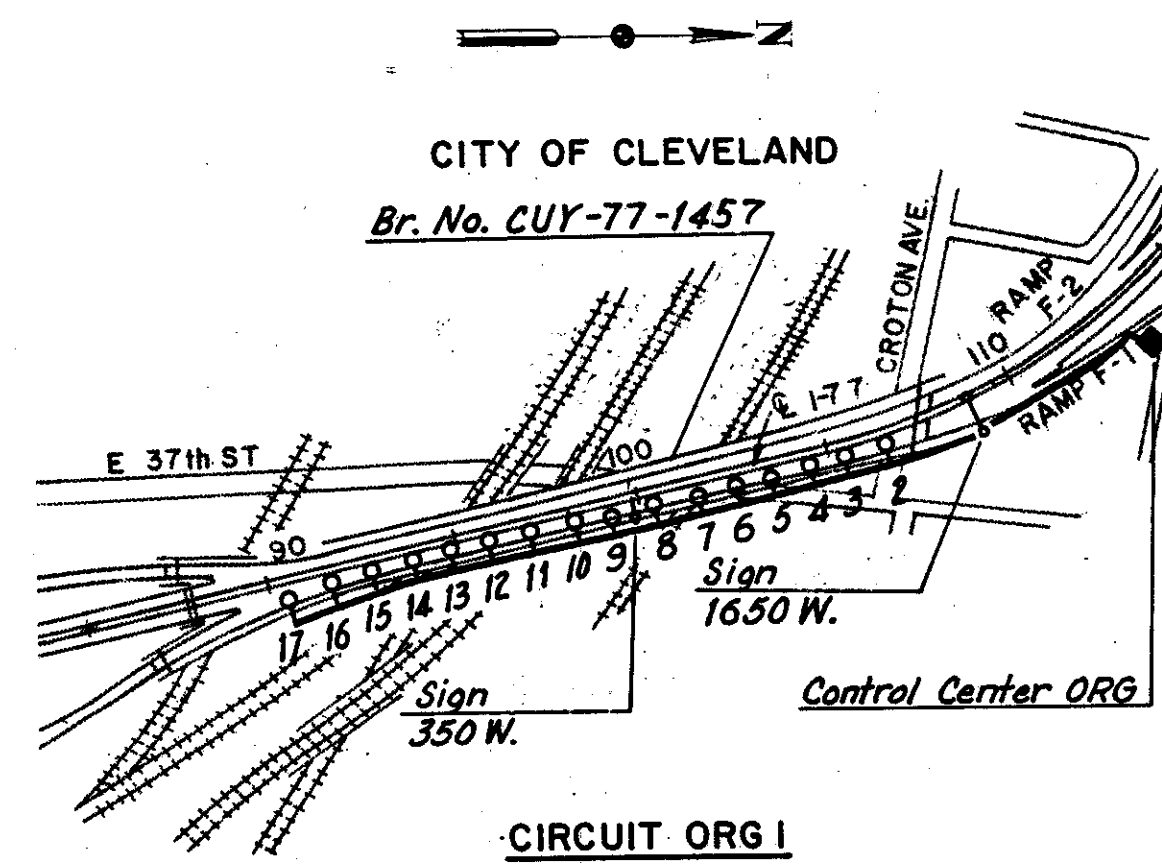
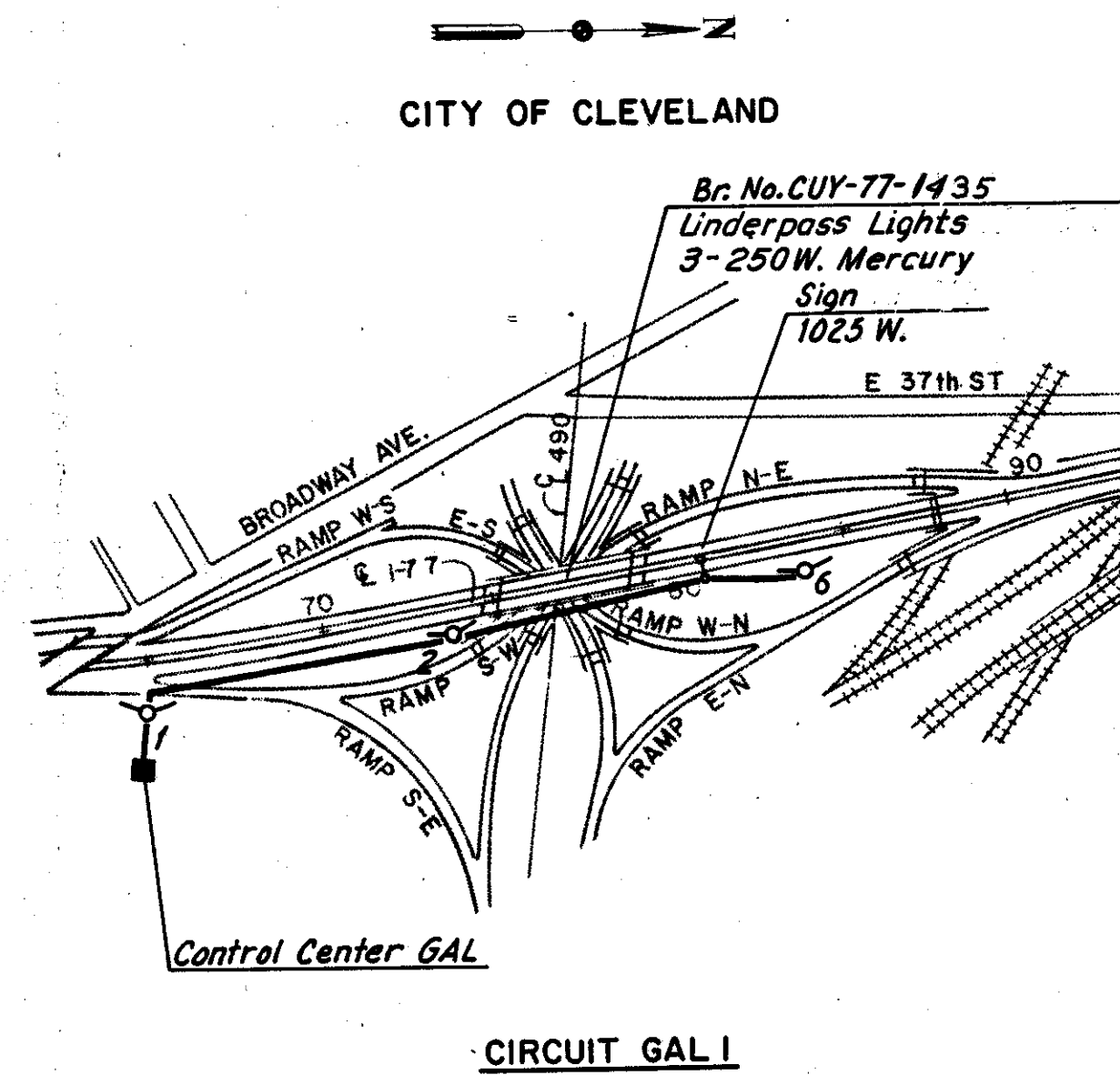
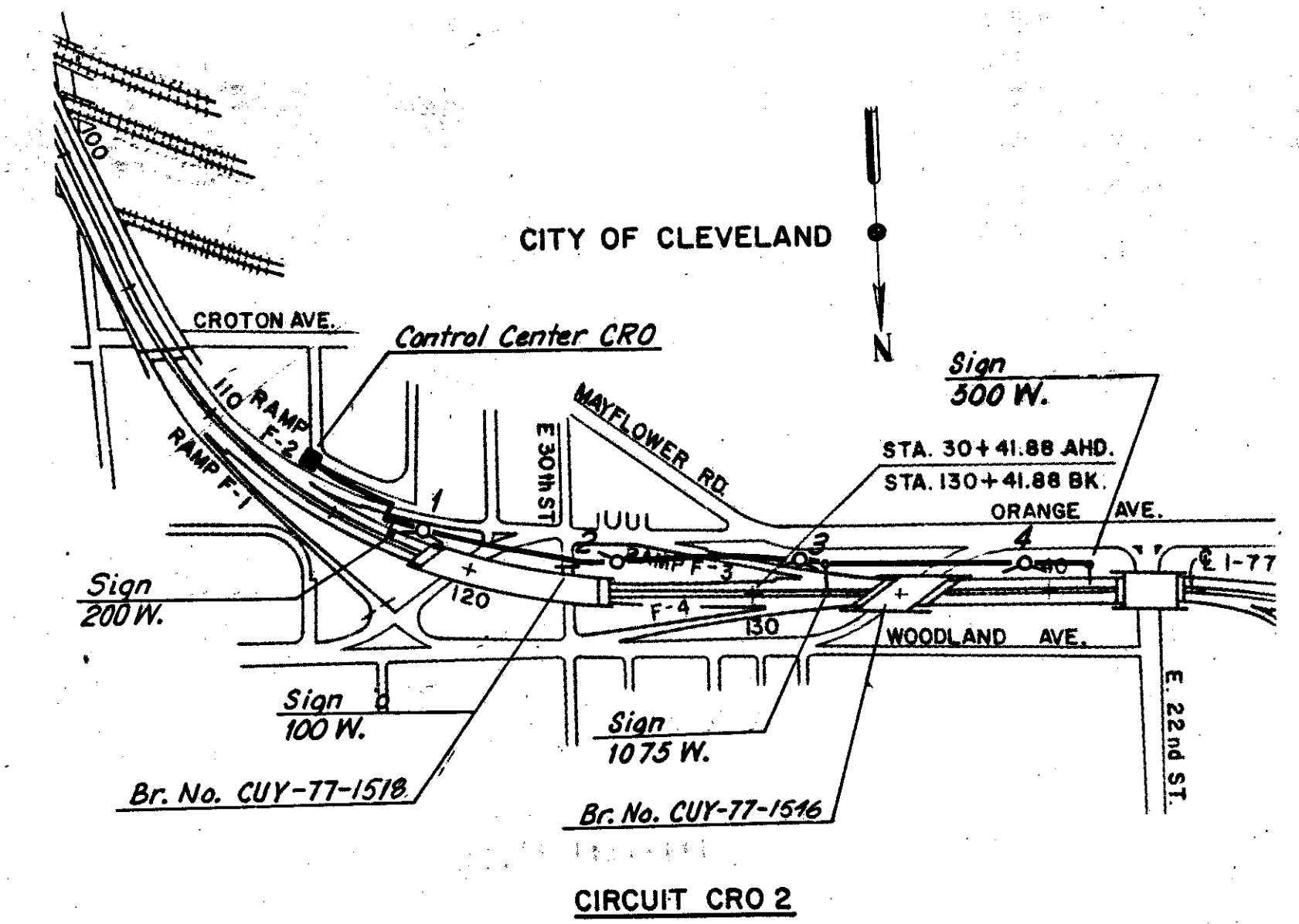
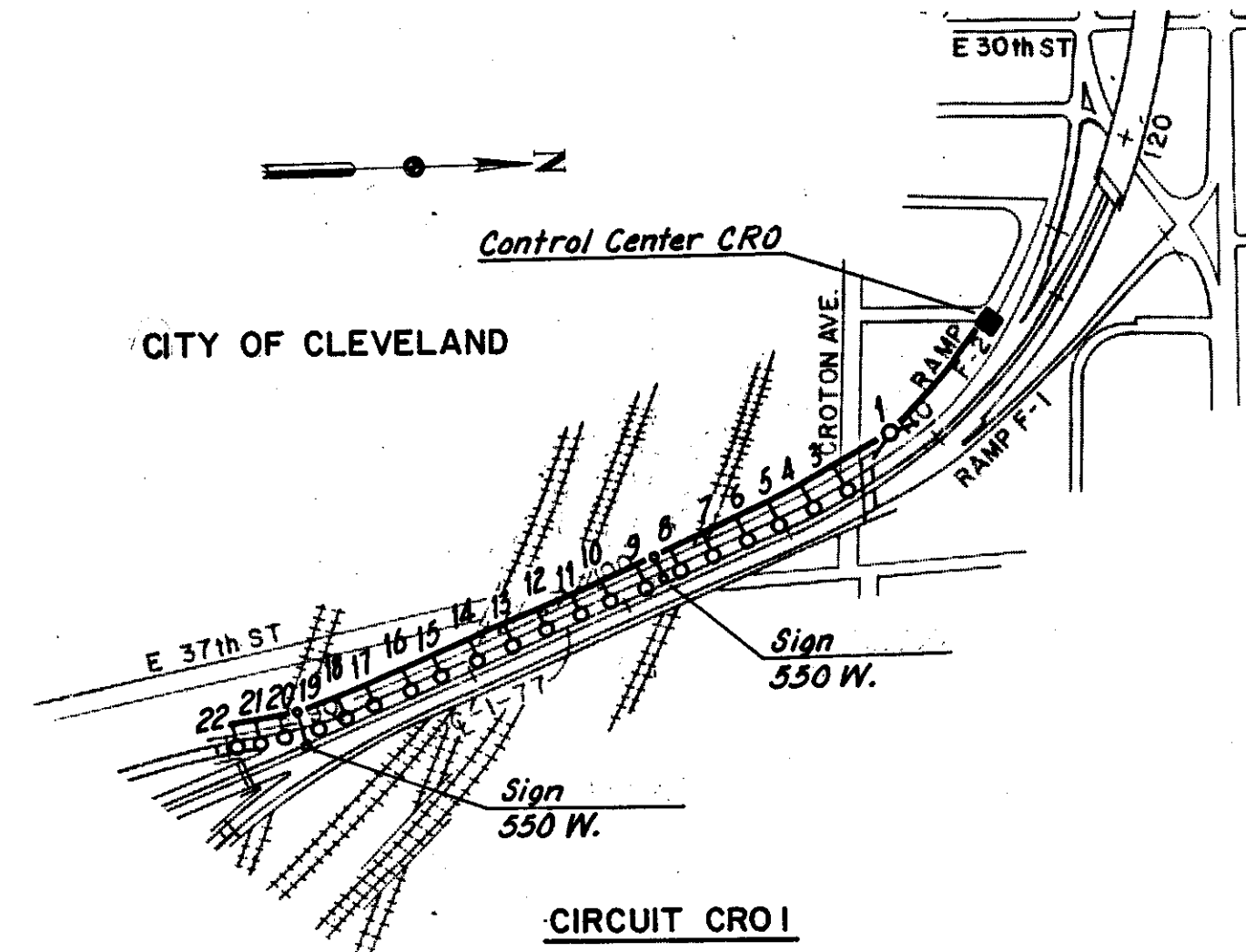
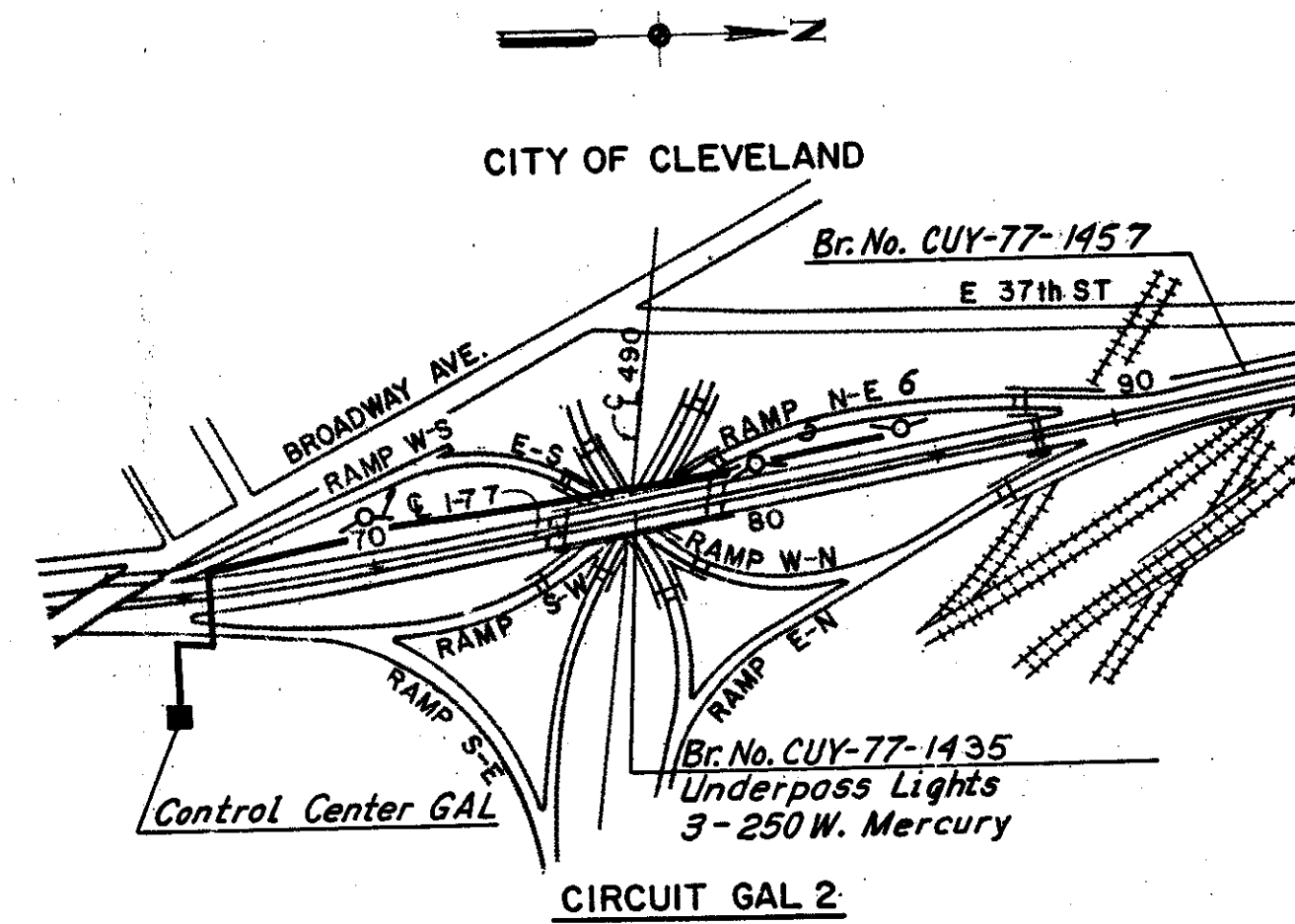
- * CONDUIT AND CABLE TO BE REPLACED (NO. 4 AWG, 5000 VOLT DISTRIBUTION CABLE). CONDUIT PAID FOR UNDER 625- POWER SERVICE, AS PER PLAN.
- * * CONDUIT TO BE REUSED, CABLE TO BE REPLACED (NO. 4 AWG, 5000 VOLT DISTRIBUTION CABLE)- (SEE LIGHTING NOTES)

NOTE A: FOR ACCESS TO THE C.P.P. POLE, CONTACT THE FOLLOWING AGENCY AT LEAST 24 HOURS PRIOR TO BEGINNING WORK:
STATE OF OHIO
DEPT. OF REHABILITATION AND CORRECTION
NORTHEAST PRE-RELEASE CENTER
2675 EAST 30TH ST.
CLEVELAND, OHIO 44115
(216) 771-6460



POWER SERVICE "ORG" AND "CRO"

CIRCUIT LAYOUT MAP

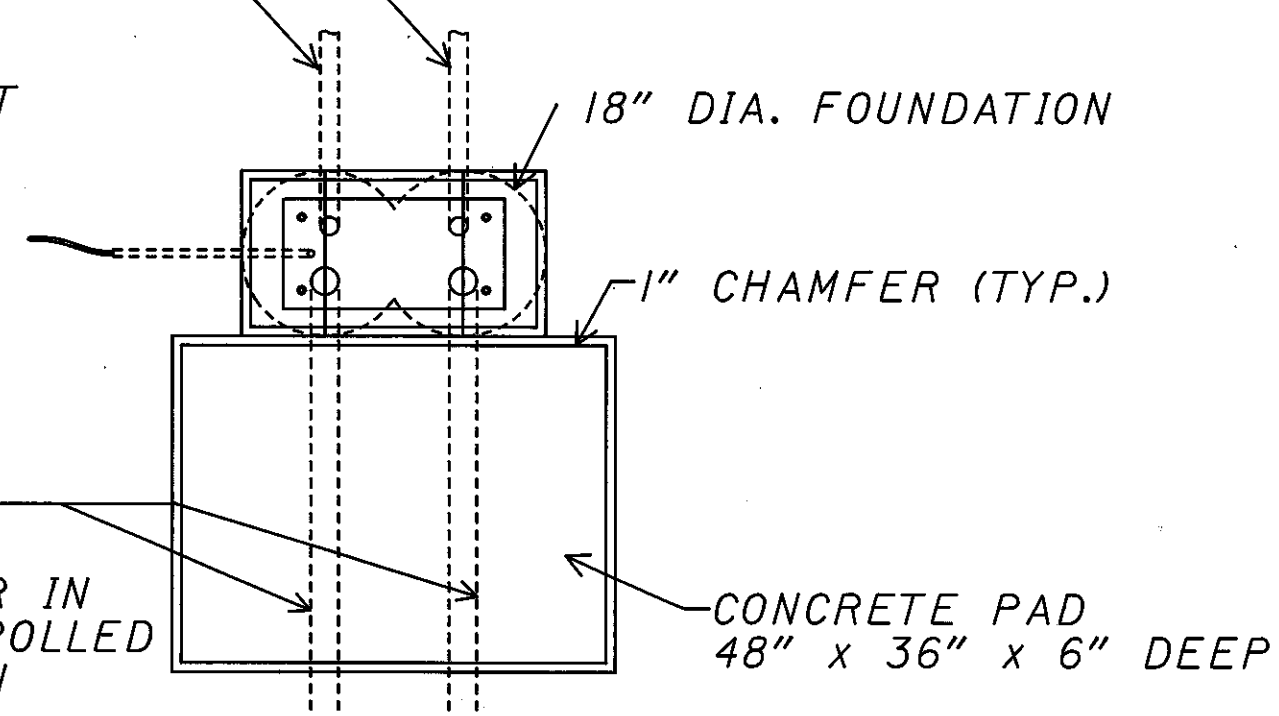


LIGHTING DETAILS

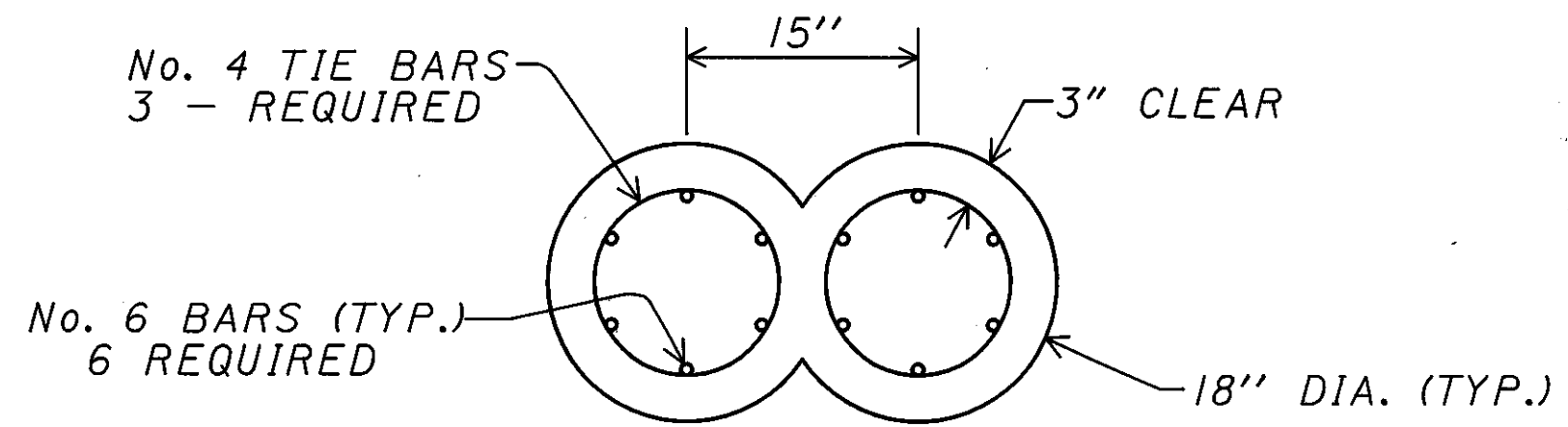
CUYAHOGA COUNTY CUY-77-13.81	OHIO	190 234
	FHWA REGION 5	
	FEDERAL PROJECT	

2" MIN. DIA. CONDUITS
713.04. SEE PLANS FOR
SIZE AND NUMBER REQUIRED.

* ROADWAY LIGHTING CIRCUIT
CONDUIT TO ADJACENT PULLBOX
SHALL BE PAID FOR AS A PART
OF CONTROL CENTER



PLAN



SECTION THRU FOUNDATION

CONTROL BY-PASS CIRCUIT
CONDUCTORS (2 1/C NO. 10) &
SECONDARY SERVICE CONDUCTOR IN
2" MIN. DIA. CONDUIT TO CONTROLLED
SERVICE. PAYMENT INCLUDED IN
ITEM 625 POWER SERVICE
AS PER PLAN. CONTROL
BY-PASS SWITCH TO BE
MOUNTED INSIDE ENCLOSURE
(SEE GENERAL NOTES)

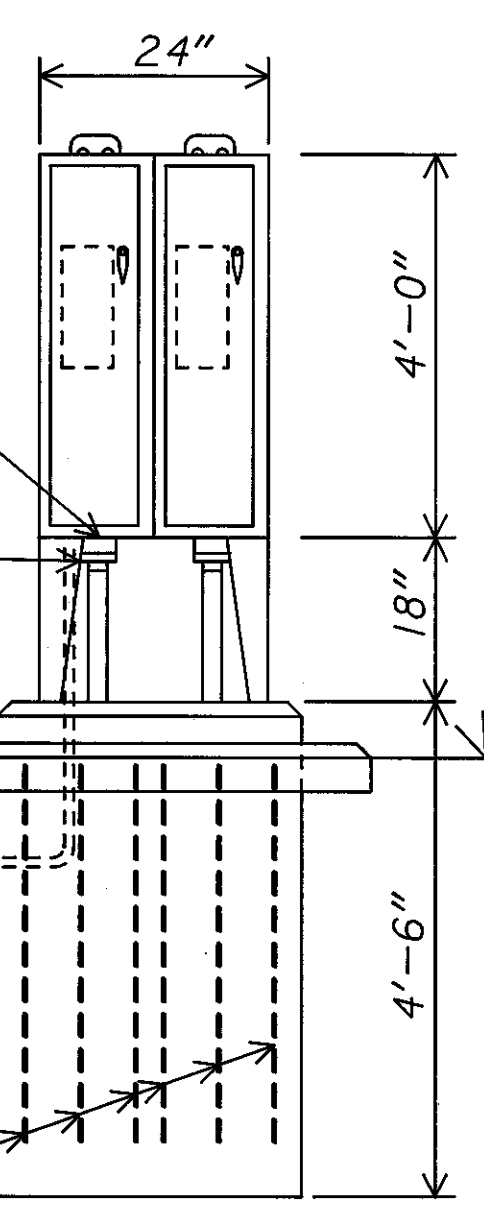
STAINLESS STEEL ENCLOSURE SHALL CONFORM
WITH REQUIREMENTS OF 713.20 WITH EXCEPTION
THAT BOTTOM SHALL BE REINFORCED WITH TWO
LAYERS OF 14 GA. MATERIAL

CONDUITS SHALL ENTER THE ENCLOSURE
BODY BY MEANS OF WATER TIGHT,
RIGID, CONDUIT HUBS

3/4" DIA. EMT CONDUIT FOR
GROUND WIRE ENTRANCE
INTO ENCLOSURE

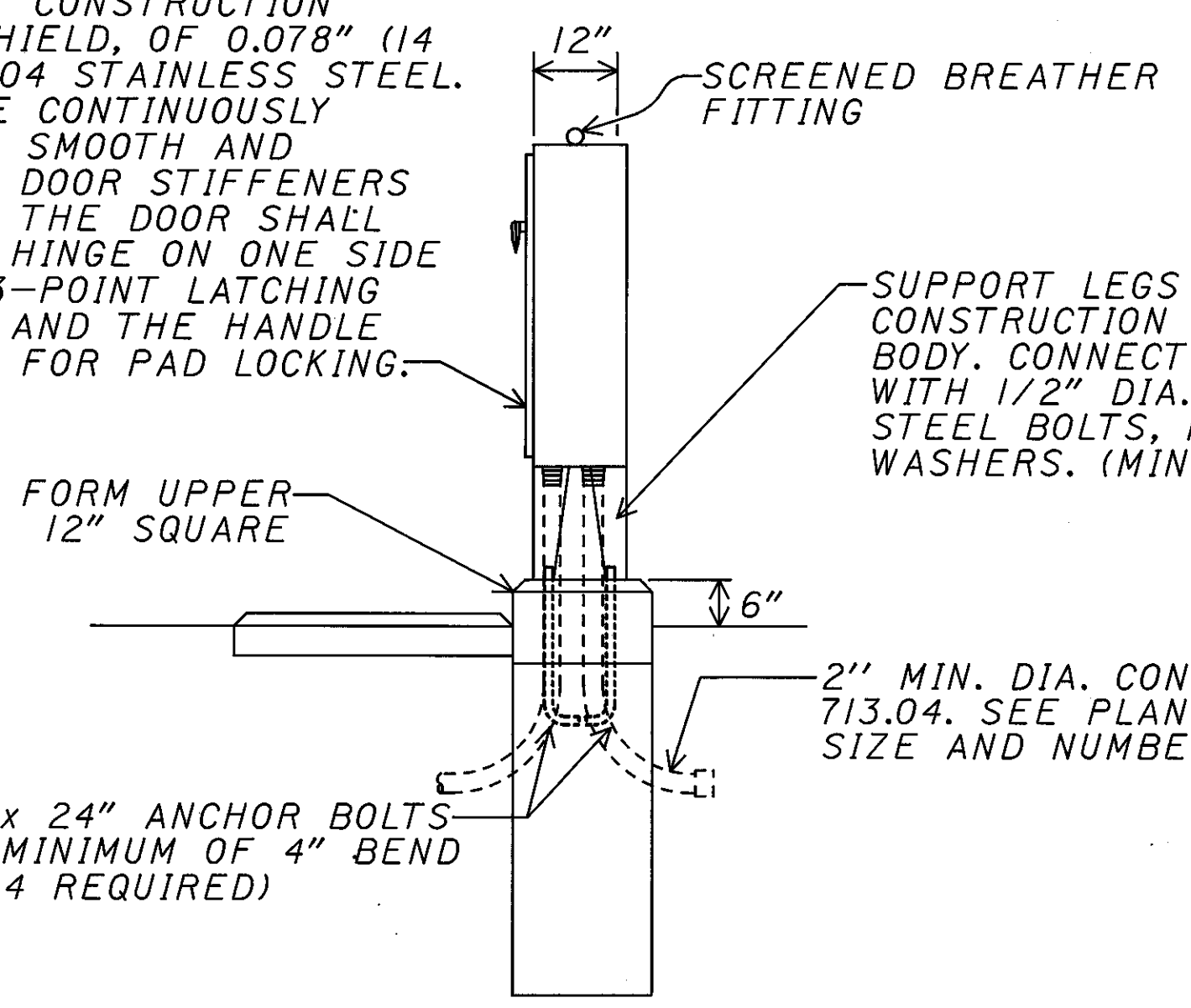
GROUND ROD, 713.16

12 - No. 6 HOOKED REINFORCING
BARS, EQUALLY SPACED TO MISS
CONDUITS. BARS TO BE 6" CLEAR
FROM TOP AND BOTTOM OF
FOUNDATION



FRONT VIEW

DOUBLE DOOR ENCLOSURE OF NEMA
TYPE 4 WATER TIGHT CONSTRUCTION
WITH NEMA 3 RAINSHIELD, OF 0.078" (14
GAGE), ASTM A302-304 STAINLESS STEEL.
ALL SEAMS SHALL BE CONTINUOUSLY
WELDED AND GROUND SMOOTH AND
POLISHED, BODY AND DOOR STIFFENERS
SHALL BE PROVIDED. THE DOOR SHALL
HAVE A CONTINUOUS HINGE ON ONE SIDE
AND BE GASKETED. 3-POINT LATCHING
SHALL BE PROVIDED AND THE HANDLE
SHALL BE ARRANGED FOR PAD LOCKING.



SIDE VIEW

1/2" DIA. x 24" ANCHOR BOLTS
WITH MINIMUM OF 4" BEND
(4 REQUIRED)

SUPPORT LEGS OF SAME
CONSTRUCTION AS ENCLOSURE
BODY. CONNECT TO ENCLOSURE
WITH 1/2" DIA. STAINLESS
STEEL BOLTS, NUTS AND
WASHERS. (MIN. 4 REQ'D)

2" MIN. DIA. CONDUITS
713.04. SEE PLANS FOR
SIZE AND NUMBER REQUIRED.

WEATHER HEAD-MOUNTING
HEIGHT TO BE APPROVED BY
POWER COMPANY

GALVANIZED CLAMPS
@ 6'-0" (MAX.) CENTER

SERVICE CONDUIT LOCATIONS AND
TERMINATION HEIGHTS ON THE SER-
VICE POLES SHALL BE AS DIRECTED
BY THE UTILITY COMPANY. THE CON-
TRACTOR SHALL ARRANGE WITH THE
UTILITY COMPANY FOR A FIELD
INSPECTION OF EACH SERVICE LOCA-
TION PRIOR TO HIS INSTALLATION
OF THE SERVICE EQUIPMENT.

CONDUIT AND CABLE FROM CONTROL
CENTER TO EXISTING POLE SHALL BE
PAID FOR AS PART OF 625
POWER SERVICE, AS PER PLAN

EXISTING CONDUITS, GROUND RODS
AND MISCELLANEOUS ITEMS MAY BE
RE-USED AT THE CONTRACTORS
OPTION.

SINGLE POLE LIGHTING ARRESTOR

CONTRACTOR SHALL PROVIDE
10 FT. MIN. LENGTH OF CABLE
BEYOND WEATHER HEAD FOR
CONNECTION TO TRANSFORMER
AND P.E. CELL BY POWER CO.

4 AWG. INSULATED GROUND
WIRE (TYPICAL)

2" CONDUIT, 713.04 WITH
2-#10 AWG. INSULATED WIRE FOR
CONTROL BY-PASS CIRCUIT AND
2-#4 AWG. WIRES TO GROUND
MOUNTED POWER SERVICE
ENCLOSURE.

MOLDING PROTECTION FOR
GROUND WIRE, EXTENDED
TO 10'-0" ABOVE GRADE.

#4 AWG. GROUND WIRE

1" Ø - 10'-0" LONG
GROUND ROD, 713.16

GROUND MOUNTED POWER SERVICE DETAILS

POWER SERVICE CONNECTION ON EXISTING POLE

PLOT SUBMITTED BY: BANASZAK

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STRUCTURES

SCOPE OF PROPOSED WORK

1. REPLACE THE EXISTING ASPHALT BRIDGE WEARING COURSE WITH A MICRO-SILICA CONCRETE OVERLAY TO GRADE (CUY-77-1335)

NOTE: THE TERM "TO GRADE" SHALL REFER TO THE PROPOSED OVERLAY MEETING THE EXPANSION JOINT FLUSH.
2. PATCH ANY UNSOUND CONCRETE ON PIERS, ABUTMENTS, WINGWALLS, PARAPETS (CUY-77-1322/1335/1409/1435/1518/1546/1562/1575/1435ES, CUY-422-0078/0084, CUY-490-0187WN/0189ES/0190SW/0191NE)
3. SEAL ALL EXPOSED CONCRETE SURFACES EXCEPT PIER CAP BOTTOMS AND 25% OF THE CIRCUMFERENCE OF ALL PIERS (SEE GENERAL NOTE FOR MORE INFORMATION AND SEALING OF REMAINING PORTIONS). (ALL BRIDGES)
4. RESET BEARINGS (BR. NO. CUY-77-1575)
5. SEAL MEDIAN BARRIER JOINTS (BR. NO. CUY-77-1322, CUY-77-1335)
6. MODIFY SCUPPERS (ALL BRIDGES)
7. SEAL EXPANSION JOINTS (ALL BRIDGES)
8. REPLACE FORWARD EXPANSION JOINT (CUY-77-1322)
9. INSTALL THRIE BEAM RAILING TO EXISTING CONCRETE PARAPETS (CUY-77-1435/1457/1518/1546/1562/1575/1593ES, CUY-422-0078/0084)
10. INSTALL CONCRETE DEFLECTOR SHAPE PARAPETS (CUY-490-0189ES/0191NE)
11. MISCELLANEOUS STRUCTURAL REPAIRS.
12. PATCH EXISTING CONCRETE BRIDGE DECK OVERLAYS (CUY-77-1322/1518/1457/1546/1562/1575/1593ES, CUY-422-0078/0084, CUY-490-0187WN/0189ES/0190SW/0191NE).
13. SEAL BRIDGE DECKS WITH HMWM RESIN (CUY-77-1322/1409/1435/1518/1546/1562/1575/1593ES, CUY-422-0078/0084, CUY-490-0187WN/0189ES/0190SW/0191NE)
14. BRIDGE DECK GROOVING (CUY-77-1322/1409/1435/1457/1518/1546/1562/1575/1593ES, CUY-422-0078/0084, CUY-490-0187WN/0189ES/0190SW/0191NE)
15. REMOVE CONCRETE GORE CURB (CUY-77-1457/1575, CUY-422-0084)
16. INSTALL PEDESTRIAN FENCE (CUY-77-1409)

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., GARFIELD HEIGHTS, OHIO.

COOPERATION WITH RAILROADS

THE CONTRACTOR SHALL COOPERATE AT ALL TIMES WITH THE LOCAL OFFICIALS OF THE RAILROADS. HE SHALL USE ALL REASONABLE CARE AND DILIGENCE IN THE WORK IN ORDER TO AVOID ACCIDENTS, DAMAGE OR INTERFERENCE WITH THE TRAINS OR 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, OR HIS AUTHORIZED REPRESENTATIVE, OF THE RAILROAD COMPANY.

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

THE INSURANCE HEREIN BEFORE 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 ORIGINAL AND TWO CERTIFIED COPIES OF EACH RAILROAD POLICY.

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 RAILROAD COMPANY A RAILROAD PROTECTIVE LIABILITY POLICY OF INSURANCE PROVIDING A COMBINED SINGLE LIMIT FOR DAMAGES ARISING OUT OF BODILY INJURIES 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 FHMP: 6-6-2-2 AS AMENDED.

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.

TYING REBARS

THE PURPOSE OF THIS ITEM IS TO TIE EXPOSED STEEL REINFORCING BARS WHICH ARE IN CROSS CONTACT OR LAPPED. TACK WELDING SHALL NOT BE PERMITTED. THIS WORK SHALL BE PERFORMED WHERE AND AS DETERMINED BY THE ENGINEER TO RESTRICT THE RELATIVE MOVEMENT OF THE REINFORCING BARS.

PAYMENT FOR THIS WORK INCLUDING EXTRA REMOVAL OF CONCRETE TO PERMIT TYING SHALL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM SPECIAL MICRO-SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS).

BRIDGE DECK REPAIR AND OVERLAY WITH MICRO-SILICA MODIFIED CONCRETE (SEE PROPOSAL NOTE)

THESE ITEMS SHALL CONFIRM TO THE PROPOSAL NOTE EXCEPT AS NOTED HEREIN:

4.0 PROPORTIONING AND MIXING

THE INITIAL MIX DESIGN SHALL BE BASED UPON THE PROPORTIONING OF COARSE AND FINE AGGREGATE TO A ACHIEVE A MORTAR CONTENT OF 62 PERCENT WHERE ALL AGGREGATE PASSING A NO. 8 SIEVE IS CONSIDERED AS FINE AGGREGATE. THE CONTRACTOR WILL BE SUPPLIED DESIGN CHARTS AT THE PRE-CON TO DETERMINE THE BATCH WEIGHTS BASED UPON THE SIEVE ANALYSIS OF THE AGGREGATE USED. THE CONTRACTOR MAY SUBSEQUENTLY ADJUST HIS AGGREGATES TO IMPROVE WORKABILITY AS PER 499.03.

ITEM 202- WEARING COURSE REMOVED

THIS ITEM OF WORK SHALL INCLUDE THE REMOVAL OF THE ASPHALT WEARING COURSE AND MAY BE PERFORMED IN EITHER A SEPARATE OPERATION FROM THE DECK SCARIFICATION OR IN ONE OPERATION AS LONG AS THE DECK SCARIFICATION IS A UNIFORM 1/4" AFTER THE REMOVAL AS APPROVED BY THE ENGINEER.

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 ARE INCLUDED IN BUT NOT NECESSARILY LIMITED TO THE FOLLOWING LIST:

1. CHANNELIZING CURB ON STRUCTURES CUY-77-1457/1575/ CUY-422-0084 AS SHOWN ON SHEET 215.
2. EXISTING FORWARD EXPANSION JOINT ON STRUCTURE CUY-77-1322 AS SHOWN ON SHEET 224-225.
3. ANY LOOSE CONCRETE FOUND FROM DECK BOTTOM SOUNDING.

ONLY PNEUMATIC OR HAND TOOLS THAT WILL GIVE RESULTS SATISFACTORY TO THE ENGINEER SHALL BE USED IN THE REMOVAL OF THE DISINTEGRATED CONCRETE. EXTREME CARE SHALL BE TAKEN TO AVOID DAMAGING THE EXISTING REINFORCING STEEL WHICH ARE TO REMAIN IN PLACE. NO HOE 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.

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ITEM 509- REINFORCING STEEL, AS PER PLAN

THIS ITEM SHALL BE USED TO REPLACE REINFORCING STEEL WHICH IS BENT, ELONGATED, MISSING OR EXTREMELY CORRODED. BAR SHALL BE THE SAME SIZE AS ORIGINAL BARS AND SHALL BE PLACED AS NEAR AS POSSIBLE TO THEIR ORIGINAL LOCATION. BARS SHALL BE LAPPED ACCORDING TO SECTION 509.08. PAYMENT FOR THIS ITEM SHALL INCLUDE THE COST OF ALL MATERIALS AND LABOR NECESSARY TO COMPLETE THE ABOVE WORK, INCLUDING REMOVAL OF EXISTING STEEL. ANY EXISTING REINFORCING BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND WHICH ARE MADE UNUSEABLE BY THE CONTRACTOR'S REMOVAL OPERATIONS SHALL BE REPLACED WITH NEW STEEL AT HIS COST.

THE FOLLOWING ESTIMATED QUANTITY OF REINFORCING STEEL IS TO BE USED WHERE AND AS DIRECTED BY THE ENGINEER.

ITEM	DESCRIPTION	QTY.
509	REINFORCING STEEL, AS PER PLAN	100 POUNDS

ITEM 516 - STRUCTURAL EXPANSION JOINT AND ELASTOMERIC COMPRESSION SEAL, AS PER PLAN.

THIS ITEM OF WORK SHALL BE USED TO INSTALL A NEW FORWARD EXPANSION JOINT ON STRUCTURE CUY-77-1322. ALL WORK SHALL CONFIRM TO STANDARD CONSTRUCTION DRAWING EXJ-2-81 AND AS DETAILED IN THE PLANS ON SHT 225.

END DAMS, PARAPET SLIDING PLATES AND CURB PLATES

STEEL BAR STOCK UTILIZED FOR END DAMS AND FOR ANCHORS FOR PARAPET SLIDING PLATES, CURB PLATES, AND EXPANSION JOINT ARMOR ANGLES AND CHANNELS MAY BE ANY WELDABLE GRADE OF LOW OR MILD CARBON STEEL AVAILABLE COMMERCIALY. THIS MATERIAL IS TO BE EXCLUDED FROM THE REQUIREMENTS OF 501.07 FOR TEST REPORTS.

ITEM 517 - RAILING FACED, AS PER PLAN

- DESCRIPTION: THIS ITEM SHALL CONSIST OF FACING EXISTING CURB STYLE PARAPETS TO ATTAIN A DEFLECTOR PARAPET SHAPE USING CAST IN PLACE CONCRETE. (SEE DETAIL SHEET NO. 222)
- REMOVAL: THE CONTRACTOR SHALL REMOVE THE EXISTING ALUMINUM RAILING, POSTS, PORTION OF CURB PLATES AND CONCRETE CURB TO PROVIDE CLEARANCE FOR PLACING CONCRETE AS DETAILED IN THE PLANS. ALL LOOSE OR UNSOUND PARAPET CONCRETE SHALL ALSO BE REMOVED. ALL WORK SHALL BE DONE IN A MANNER THAT WILL NOT CUT, ELONGATE OR DAMAGE THE REINFORCING STEEL TO REMAIN IN ANY WAY. CONCRETE MAY BE REMOVED BY CHIPPING OR HAND DRESSING. NO BACKHOE RAMS SHALL BE PERMITTED.
- DOWEL HOLES AND REINFORCING STEEL: DOWEL HOLES SHALL BE DRILLED AT 18 INCH AND 36 INCH CENTER TO CENTER SPACING AS SHOWN ON THE PLANS. THE GROUT AND HOLES SHALL BE AS PER SS 852 AND SS 952. GROUT MATERIAL SHALL BE LIMITED TO SS 952 EPOXY RESIN ONLY. ALL REINFORCING STEEL, DOWEL HOLES AND GROUTING ARE INCLUDED UNDER THIS ITEM OF WORK.
- SURFACE PREPARATION: THE PARAPET SURFACE SHALL BE THOROUGHLY CLEANED WITHIN 24 HOURS PRIOR TO FACING 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. THE SURFACE SHALL BE MADE 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 ACHIEVING AN ADEQUATE BOND.
- MATERIALS

REINFORCING STEEL	509.10, GRADE 60
CONCRETE	511, CLASS "S"
- SHRINKAGE CONTROL JOINTS

SHRINKAGE CONTROL JOINTS SHALL BE PLACED IN THE NEW CONCRETE PARAPETS AT THE SAME LOCATION AS THE EXISTING DEFLECTION JOINTS.

SHRINKAGE CONTROL JOINTS SHALL BE MADE NORMAL (AT RIGHT ANGLE) TO THE DECK BY SAWING. THE SAWING SHALL BE DONE AFTER THE CONCRETE HAS TAKEN ITS INITIAL SET AND BEFORE ANY SHRINKAGE CRACKS DEVELOP. THE USE OF AN EDGE GUIDE, FENCE OR JIG IS REQUIRED TO INSURE THAT THE CUT OF THE JOINT IS STRAIGHT, TRUE AND ALIGNED ON ALL FACES OF THE PARAPET. THE DEPTH OF THE SAW CUT SHALL BE TWO 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 CONTROL JOINT SHALL BE SEALED WITH A POLYURETHANE OR POLYMERIC JOINT SEALANT MEETING THE REQUIREMENTS OF FEDERAL SPECIFICATION TT-S-00227E. THE BOTTOM ONE-HALF INCH OF BOTH THE INSIDE AND OUTSIDE FACES OF THE CONTROL JOINT SHALL BE LEFT UNSEALED TO ALLOW ANY WATER WHICH MAY ENTER THE JOINT TO ESCAPE.
- 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 CONTROL JOINTS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR:

ITEM	UNIT	DESCRIPTION
517	L.F.	RAILING FACED, AS PER PLAN

ITEM 517 - RAILING MISC: TBR-91

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

VOID

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 IS 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 1'-3" INTERVALS EXCEPT AS NOTED BELOW.

GUARDRAIL, HARDWARE AND POSTS SHALL CONFIRM TO ITEM 606 AND STANDARD CONSTRUCTION DRAWINGS 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 SHIM TO THE LAST 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. BECAUSE OF THE EXISTING CURB STYLE, THE RAILING FOR BRIDGE NOS. CUY-77-1435/1457/1518 SHALL BE INSTALLED AS SHOWN IN THE PLANS (TYPE C) DUE TO INCOMPATIBILITY BETWEEN FIELD CONDITIONS AND STD. CONST. DWG. TBR-91.

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.).

Revised 12-10-92

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DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION 8 DESIGN

STRUCTURE NOTES

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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 516 - RESET BEARING

RESETTING BEARINGS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH SHEET 229 OF THE PLANS AND SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE BID FOR ITEM 516 - RESET BEARING. THIS PRICE SHALL BE PAYMENT IN FULL FOR ALL MATERIAL, EQUIPMENT AND LABOR NECESSARY TO COMPLETE THIS WORK.

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 INCLUDING 9" ONTO DECK (ALL FACES).
- 2) CONCRETE BARRIER MEDIANS INCLUDING 9" ONTO DECK (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- 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 516 - BARRIER MEDIAN JOINT SEAL (1/2" X 10" NEOPRENE SHEET)

- A) DESCRIPTION
THIS WORK SHALL INCLUDE FURNISHING AND INSTALLING A NEOPRENE SHEET SEAL ALONG THE TOP OF THE BRIDGE MEDIAN BARRIER IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.
- B) MATERIAL
1) THE NEOPRENE PIECES SHALL MEET THE FOLLOWING SPECIFICATIONS.

PROPERTY	REQUIREMENT	ASTM METHOD
TENSILE STRENGTH, MIN., PSI	2000	D-412-62T
ELONGATION AT BREAK, MIN.	250%	D-412-51T
HARDNESS, DUROMETER A	60 +5	D-2240 MODIFIED
OZONE RESISTANCE, 20% ELONGATION 300 PPHM 40 C (104 F) (70 HRS)		
WIPE SURFACES WITH SOLVENT TO REMOVE CONTAMINATION	NO CRACKS	D-1149
HEAT AGING 70 HRS • 212 F		D-573
TENSILE STRENGTH, MAX. % DECREASE	-20	
ELONGATION, MAX. % DECREASE	-20	
HARDNESS, MAX. CHANGE	+10/-0	
OIL SWELL, ASTM OIL #3 70 HRS. • 212 F MAX. WEIGHT INCREASE AT SPECIFIC GRAVITY 1.35 +3	+45	D-471
COMPRESSION SET, 70 HRS. • 212 F LOW TEMPERATURE	40% MAX. NOT BRITTLE	D-395 (B) D-746
RESISTANCE TO SALT, VARIATION OF VOLUME IN % 70 HRS. AT 40 C IN CALCIUM CHLORIDE SOLUTION	-5% TO +10%	

- 2) ADHESIVES SHALL BE SIKADUR 31 MANUFACTURED BY THE SIKA CHEMICAL COMPANY OF LYNHURST, NEW JERSEY, FEL-POXY FP-01 MANUFACTURED BY THE FELT PRODUCTS COMPANY OF SKOKIE, ILLINOIS, OR AN APPROVED EQUAL. ADHESIVES SHALL BE STORED AT TEMPERATURES BETWEEN 50 F AND 80 F AND SHALL BE USED WITHIN 270 DAYS AFTER THE DATE OF MANUFACTURE.

- C) REQUIREMENTS
THE MEDIAN SEAL SHALL BE CONTINUOUS ALONG THE LENGTH OF THE BRIDGE EXCEPT AT INTERMEDIATE EXPANSION JOINTS AND AT LIGHT AND SIGN SUPPORTS. ELASTOMERIC SHEETS SHALL BE AS LONG AS PRACTICAL WITH FIELD SPLICES BONDED TOGETHER WITH ADHESIVE.

- D) SURFACE PREPARATION
1) NEOPRENE
TO AVOID THE SUBSEQUENT CONTAMINATION OF PREPARED SURFACES ALL SURFACES SHALL BE CLEANED WITH METHYL ETHYL KETON (MEK), TOLUENE (T) OR OTHER APPROVED SOLVENT USING CLEAN DISPOSABLE CLOTHS. THEN NOT MORE THAN 7 DAYS PRIOR TO THE SEAL INSTALLATION; A THIN (1/8" MIN. THICKNESS) COATING OF CYCLIZING PASTE* SHALL BE APPLIED TO THE BONDING SURFACE. AFTER 25 TO 40 MINUTES, THE PASTE SHALL BE WASHED FROM THE SURFACES WITH CLEAN WATER.

*CYCLIZING PASTE IS A MIXTURE OF ONE POUND OF PITTSBURGH PLATE GLASS INDUSTRIES' HISIL 223 OR AN APPROVED ALTERNATE AND SIX POUNDS OF CONCENTRATED SULFURIC ACID (18 MOLAR). TO MIX THE PASTE, ADD HISIL TO ACID SLOWLY WHILE STIRRING MIXTURE TO ACHIEVE A SMOOTH VISCOUS PASTE. NOTE: SINCE CONCENTRATED SULFURIC ACID IS VERY CORROSIVE AND HISIL IS AN EXTREMELY FINE NON-TOXIC POWDER, RUBBER GLOVES AND GLASSES SHOULD BE USED BY THOSE USING THE PASTE, WHILE GLOVES, GLASSES AND A RESPIRATOR SHOULD BE USED BY THOSE MIXING THE PASTE.

- 2) CONCRETE
THE CONCRETE SURFACE SHALL BE THOROUGHLY CLEANED TO REMOVE DUST, CURING COMPOUND, LAITANCE AND ANY OTHER FOREIGN MATERIALS BY MEANS OF SANDBLASTING FOLLOWED BY AIR BROOMING OR POWER SWEEPING TO REMOVE DUST AND SAND FROM THE SURFACE AND OPENED PORES.

- E) FIELD BONDING
IMMEDIATELY PRIOR TO ADHESIVE APPLICATION, BONDING SURFACES SHALL BE CLEAN, DRY AND WARMER THAN 45 F AND SHALL BE MAINTAINED ABOVE 45 F UNTIL THE ADHESIVE HAS CURED.

ADHESIVE COMPONENTS SHALL BE COMBINED IN THE EXACT RATIOS RECOMMENDED BY THE ADHESIVE MANUFACTURER AND SHALL BE THOROUGHLY MIXED TO ENSURE A UNIFORM MATERIAL FREE FROM ENTRAPPED AIR. THE BONDING PROCEDURES AND RATE OF APPLICATION SHALL BE IN ACCORDANCE WITH THE ADHESIVE MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS. FOR PROPER CONTROL DURING CURING, LIGHT PRESSURE SHOULD BE MAINTAINED UNTIL THE ADHESIVE HAS CURED.

- F) MEASUREMENT AND PAYMENT
MEDIAN BARRIER SEAL WILL BE MEASURED BY THE LINEAR FOOT COMPLETED IN PLACE AND PAID FOR AT THE CONTRACT UNIT PRICE BID PER LINEAL FOOT FOR ITEM SPECIAL, MEDIAN BARRIER SEAL. THIS PRICE SHALL BE PAYMENT IN FULL FOR FURNISHING ALL MATERIALS, EQUIPMENT AND LABOR TO COMPLETE THE WORK SPECIFIED FOR ITEM 516 - BARRIER MEDIAN JOINT SEAL (1/2" X 10" NEOPRENE SHEET).

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.

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ITEM 518 - SCUPPER MODIFICATION

THIS ITEM OF WORK SHALL INCLUDE ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO MODIFY THE EXISTING SCUPPERS AS SHOWN ON SHT 231.

PAYMENT SHALL BE MADE UNDER THE UNIT PRICE, EACH, ITEM 518 - SCUPPER MODIFICATION.

ITEM SPECIAL - BRIDGE DECK GROOVING (SEE PROPOSAL)

THIS ITEM OF WORK SHALL BE USED TO CUT TRANSVERSE GROOVES INTO EXISTING CONCRETE BRIDGE DECKS. ALL WORK SHALL CONFORM TO THE PROPOSAL NOTE AND BE PERFORMED AFTER PATCHING AND SEALING THE DECKS (IF APPLICABLE).

ITEM SPECIAL - TREATING CONCRETE BRIDGE DECKS WITH HMW RESIN (SEE PROPOSAL)

THIS ITEM OF WORK SHALL NOT BE PERFORMED UNTIL ALL REPAIRS TO THE DECK AND WALK ARE COMPLETE AND BEFORE GROOVING (IF APPLICABLE). TREATED AREAS SHALL INCLUDE THE DECK, WALKS, AND CURBS.

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 TOP COAT 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) TNEEC 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 TOP COAT SEALER

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 LIFE MASTER 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. 595-16187.

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. YDS.	COATING CONCRETE SURFACES WITH WATER-BASE PAINT

ITEM SPECIAL - CLEANING BRIDGE DRAINAGE SYSTEM

THIS ITEM SHALL CONSIST OF REMOVING ALL DIRT AND DEBRIS FROM THE EXISTING DRAINAGE SYSTEM INCLUDING THE UNDERGROUND SYSTEM. AFTER DIRT AND DEBRIS ARE REMOVED THE SYSTEM SHALL BE FLUSHED WITH CLEAN WATER MAKING CERTAIN THE WATER FLOWS SMOOTHLY. ALL ITEMS REMOVED FOR THE PURPOSE OF CLEANING, SUCH AS CLEAN OUT CAPS, SHALL BE REPLACED.

THIS ITEM SHALL INCLUDE ALL LABOR, EQUIPMENT AND MATERIAL NECESSARY TO COMPLETE THE CLEANOUT OF THE BRIDGE DRAINAGE SYSTEM.

PAYMENT SHALL BE MADE UNDER:

ITEM	UNIT	DESCRIPTION
SPECIAL	LUMP	CLEANING BRIDGE DRAINAGE SYSTEM

ITEM 625 - JUNCTION BOX, AS PER PLAN

THIS ITEM SHALL INCLUDE ALL MATERIALS, LABOR, EQUIPMENT, AND WORK NECESSARY TO MODIFY A NEW JUNCTION BOX TO ALLOW PERMANENT ACCESS TO AN EXISTING JUNCTION BOX. ALL WORK SHALL BE DONE DURING PARAPET RECONSTRUCTION AND AS STATED IN THE PLANS. DAMAGE TO WIRING OR POLES CAUSED BY NEGLECT SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE STATE.

ITEM 625 - CONDUIT, 2", 713.04, AS PER PLAN

EXISTING PLANS SHOW CONDUIT LOCATED IN THE PARAPET OR GORE CURB, YET THE CONDUIT MAY HAVE BEEN LOCATED ELSEWHERE WHEN BUILT OR BECAME OBSOLETE AFTER NUMEROUS UPGRADING PROJECTS IN THE AREA.

DURING THE REMOVAL OPERATION, IF THE EXISTING CONDUIT IS FOUND AND OPERATIONAL, THE CONTRACTOR SHALL REMOVE THE CONDUIT UNDER ITEM 202 AND REPLACE THE CONDUIT AND MAKE ALL THE NECESSARY CONNECTIONS UNDER ITEM 625- CONDUIT, 2", 713.04, AS PER PLAN. THE CONDUIT SHALL BE INSTALLED UNDER THE DECK, PARALLEL TO THE EXISTING CONDUIT AND CONNECTED TO THE EXISTING JUNCTION BOX FOR THE GORE CURB. THE PARAPET CONDUIT SHALL REMAIN IN THE SAME PLACE. THIS ITEM SHALL BE AS DIRECTED BY THE ENGINEER AND USED AS A CONTINGENCY. ANY OR ALL OF THIS WORK MAY BE NON-PERFORMED. (SEE SHT 190)

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

ITEM	DESCRIPTION	QTY.
625	CONDUIT, 2", 713.04, AS PER PLAN	1000 LIN. FT.
625	CONNECTOR KIT, TYPE II	18 EACH
625	CONNECTOR KIT, TYPE III	18 EACH
625	NO. 4 AWG DISTRIBUTION CABLE	2000 LIN. FT.

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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 FOLLOWING REQUIREMENTS:

- A. DESCRIPTION: THIS WORK CONSISTS OF THE REMOVAL OF ALL LOOSE AND DISINTEGRATED CONCRETE, PREPARATION OF THE SURFACE, AND THE MIXING, PLACING, FINISHING AND CURING OF THE PATCHES AS DIRECTED BY THE ENGINEER. THE WORK SHALL BE PERFORMED IN ACCORDANCE WITH THESE SPECIFICATIONS, AND IN REASONABLY CLOSE CONFORMITY WITH THE PLANS AND THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
- B. MATERIALS: THE PATCHING MATERIAL SHALL BE SIKATOP 122 AND 123, THERMAL-CHEM PRODUCT NO. 304, POLYCARB MARK 193.4 AND 194, FIVE STAR HIGHWAY PATCH, UPCO BOSTICK 964, EUCLID CHEMICAL EUCO VERTICOAT, MASTER BUILDERS SET VERTIPATCH OR DURALTOP AND DURALPATCH GEL. THE MATERIAL SHALL BE TINTED TO CURE TO THE COLOR OF THE EXISTING CONCRETE. 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 PATCHING CONCRETE STRUCTURES WITH THE SELECTED MATERIAL.

- C. REMOVAL OF CONCRETE: ALL LOOSE, SOFT, HONEY-COMBED, AND DISINTEGRATED CONCRETE, PLUS ONE-FOURTH OF AN INCH DEPTH OF SOUND CONCRETE SHALL BE REMOVED. WHERE THE BOND BETWEEN THE CONCRETE AND A 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 ONE-HALF OF AN INCH CLEARANCE AROUND THE BAR EXCEPT WHERE OTHER REINFORCING BARS MAKE THIS IMPRACTICAL. AFTER COMPLETION OF THE SECONDARY REMOVAL OPERATION, THE ENGINEER WILL RE-SOUND THE AREAS TO ENSURE THAT ONLY SOLID CONCRETE REMAINS. THE CONTRACTOR SHALL LEAVE HIS LADDERS, PLATFORMS, OR SCAFFOLDS IN PLACE FOR A SUFFICIENT LENGTH OF TIME AND IN SUCH A MANNER TO PERMIT THE ENGINEER TO SOUND THE CONCRETE. ALL WORK SHALL BE DONE IN A MANNER THAT WILL NOT DAMAGE OR SHATTER THE CONCRETE THAT IS TO REMAIN, AND WILL NOT CUT, ELONGATE OR DAMAGE THE REINFORCING STEEL IN ANY WAY. CONCRETE MAY BE REMOVED BY CHIPPING OR HAND DRESSING. CHIPPING HAMMERS SHALL NOT BE HEAVIER THAN THE NORMAL 35-POUND CLASS. WHERE EXISTING REINFORCING BARS WOULD BE LESS THAN ONE INCH FROM THE PROPOSED FINISHED SURFACE OF CONCRETE, THEY SHALL, IF PRACTICAL, BE DRIVEN BACK INTO RECESSES CUT IN THE MASONRY TO OBTAIN THAT COVERAGE UNLESS OTHERWISE APPROVED BY THE ENGINEER.

- D. SURFACE PREPARATION: CLEANING SHALL PRECEDE APPLICATION OF THE PATCHING MATERIAL BY NOT MORE THAN 24 HOURS. THE SURFACE TO BE PATCHED AND THE EXPOSED REINFORCING STEEL SHALL BE THOROUGHLY CLEANED 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. THE SURFACE SHALL BE MADE FREE OF SPALLS, LAITANCE AND ALL TRACES OF FOREIGN MATERIAL. DETERGENT CLEANING SHALL PRECEDE BLAST CLEANING TO ENSURE THE REMOVAL OF CONTAMINANTS THAT ARE DETRIMENTAL TO ACHIEVING AN ADEQUATE BOND. 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. ALL UNCHIPPED SURFACES THAT WILL RECEIVE NEW MATERIAL SHALL BE MECHANICALLY ROUGHENED.

- E. PATCHING: THE MIXING, PROPORTIONING, PLACING AND CURING PROCEDURES AND TOOLS, EQUIPMENT, LABOR AND MATERIALS USED SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS. THE SURFACE OF THE REPAIR AREA SHALL BE FLUSH WITH THE SURROUNDING AREA.
- F. CURING: PATCHES SHALL BE CURED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- G. METHOD OF MEASUREMENT: THE QUANTITY SHALL BE THE ACTUAL AREA IN SQUARE FEET OF THE EXPOSED SURFACE OF ALL COMPLETED PATCHES. IRRESPECTIVE OF DEPTH OR THICKNESS OF THE PATCH COMPLETE, IN 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.
- H. 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

ITEM SPECIAL - REPAIRING CONCRETE STRUCTURES WITH SOLVENT FREE EPOXY RESIN

- A. DESCRIPTION: THIS ITEM CONSISTS OF THE REMOVAL OF ALL LOOSE AND DISINTEGRATED, CONCRETE, PREPARATION OF THE SURFACE, AND THE MIXING AND APPLICATION OF THE EPOXY RESIN AS DIRECTED BY THE ENGINEER. THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH THESE SPECIFICATIONS, IN REASONABLY CLOSE CONFORMITY WITH THE PLANS AND THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.

- B. MATERIALS: SHALL BE A TWO PART, SOLVENT FREE, EPOXY RESIN COATING. THE COLOR SHALL CLOSELY MATCH THAT OF THE CONCRETE. THE MATERIAL SHALL BE SIKAGARD 62, EUCLID CHEMICAL EPOXY 452 LV, POLY-CARB MARK-65; THERMAL-CHEM PRODUCT NO. 901 OR DURALKOTE.

A MANUFACTURER'S REPRESENTATIVE SHALL BE PRESENT AT THE JOB SITE DURING THE APPLICATION OF THE EPOXY COATING UNTIL SUCH A TIME AS HE AND THE ENGINEER ARE SATISFIED THE CONTRACTOR IS QUALIFIED IN ALL ASPECTS OF APPLYING THE EPOXY COATING.

- C. REMOVAL OF CONCRETE: ALL LOOSE AND DISINTEGRATED CONCRETE SHALL BE REMOVED FROM THE AREAS TO BE REPAIRED IN SUCH A MANNER AND TO SUCH AN EXTENT AS TO EXPOSE A SOLID CONCRETE SURFACE. AFTER COMPLETION OF THE REMOVAL OPERATION THE ENGINEER WILL RE-SOUND THE AREA TO INSURE THAT ONLY SOLID CONCRETE REMAINS. THE CONTRACTOR SHALL LEAVE HIS LADDERS, PLATFORMS, OR SCAFFOLDS IN PLACE FOR A SUFFICIENT LENGTH OF TIME AND IN SUCH A MANNER TO PERMIT THE ENGINEER TO SOUND THE CONCRETE.

CONCRETE MAY BE REMOVED BY SCABBLERS, CHIPPING, OR HAND DRESSING. CHIPPING HAMMERS SHALL NOT BE HEAVIER THAN THE NOMINAL 10 POUND CLASS. CARE SHALL BE USED IN WORKING NEAR REINFORCING STEEL SO AS NOT TO DAMAGE OR DEBOND THE STEEL, OR TO SHATTER THE CONCRETE AROUND IT. WHEN REMOVAL BECOMES EXTENSIVE THE ENGINEER MAY REQUIRE AN AREA TO BE REPAIRED AND PAID FOR UNDER THE APPROPRIATE CONCRETE PATCHING ITEM.

- D. SURFACE PREPARATION: CLEANING SHALL PRECEDE THE APPLICATION OF THE COATING BY NOT MORE THAN 24 HOURS. THE SURFACE TO BE COATED AND EXPOSED REINFORCING STEEL SHALL BE THOROUGHLY CLEANED BY ABRASIVE BLASTING FOLLOWED BY AN AIR BLAST. 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. IT MAY BE NECESSARY TO USE HAND TOOLS TO REMOVE SCALE FROM THE REINFORCING STEEL. SURFACES SHALL BE MADE FREE OF SPALL, LAITANCE, AND ALL TRACES OF FOREIGN MATERIALS.

- E. APPLICATION: THE EPOXY SHALL BE APPLIED TO THE CONCRETE SURFACES BY BRUSHING, UNDER CONDITIONS IN THE MANNER SPECIFIED BY THE MANUFACTURER. TWO COATS SHALL BE APPLIED AT THE RATE OF 200 SQUARE FEET PER GALLON FOR EACH COAT. THE FIRST COAT SHALL BE TINTED TO APPEAR DIFFERENT IN COLOR THAN THE SECOND COAT. THE COLOR OF THE SECOND SHALL CLOSELY MATCH THAT OF THE EXISTING CONCRETE SURFACE.

- F. PAYMENT: THE COST OF ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY FOR THE COATING OF THE CONCRETE INCLUDING REMOVALS AND SURFACE PREPARATION, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR:

ITEM	UNIT	DESCRIPTION
SPECIAL	SQ. FT.	REPAIRING CONCRETE STRUCTURES WITH SOLVENT-FREE EPOXY RESIN

INSPECTION AND SOUNDING OF CONCRETE PATCHES

AFTER CURING AND BEFORE FINAL ACCEPTENCE, ALL PATCHED AREAS SHALL BE SOUNDED. ALL UNSOUND 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 PRICE FOR THE PATCHING ITEM USED.

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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 SAWS 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 705.12, ASTM C 494, TYPE F OR G

(HIGH RANGE WATER REDUCER)

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.

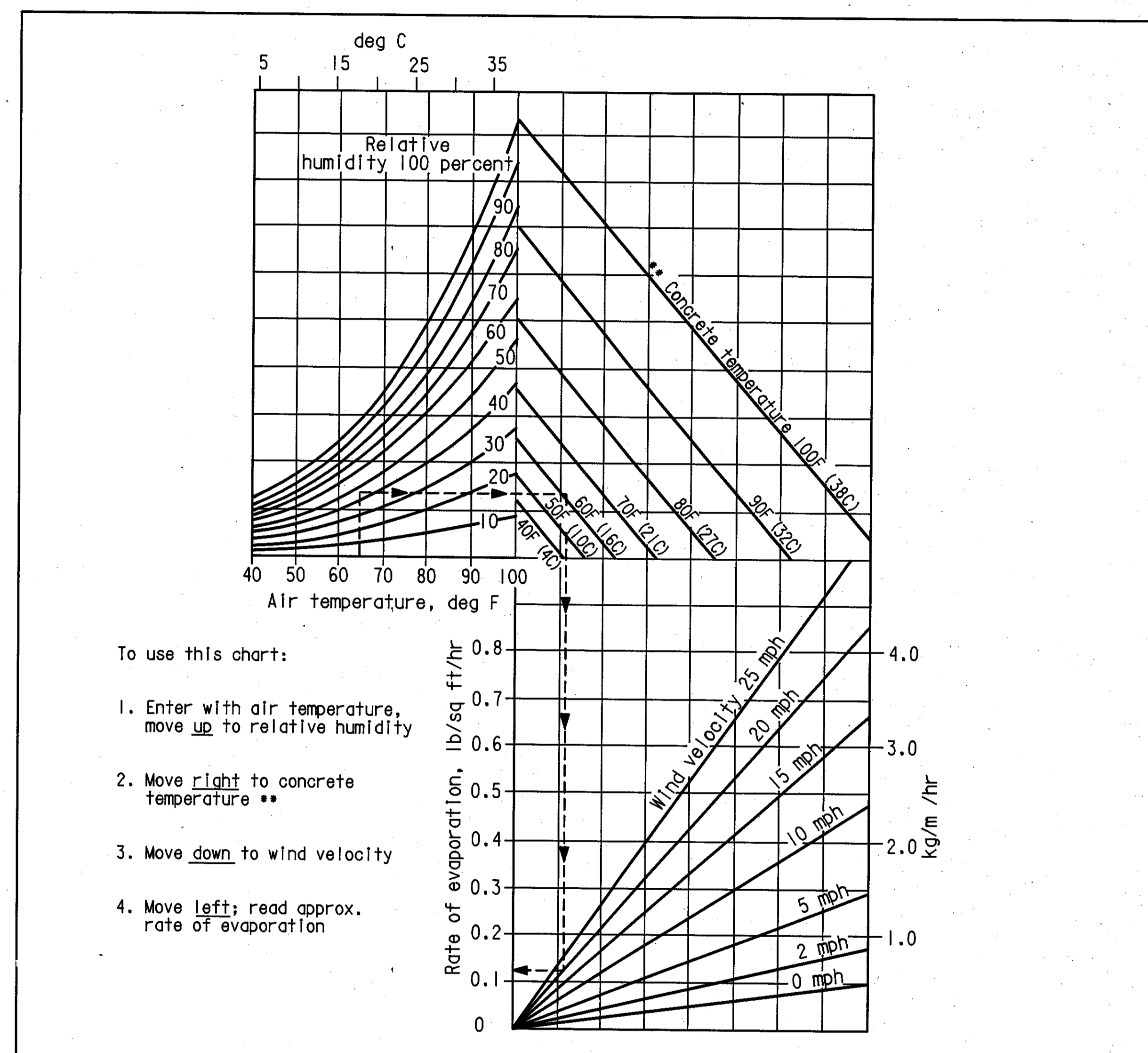


Fig. 1* - Effect of concrete and air temperatures, relative humidity, and wind velocity on the rate of evaporation of surface moisture from concrete. This chart provides a graphic method of estimating the loss of surface moisture for various weather conditions. To use the chart, follow the four steps outlined above.

* ACI Committee 308, 'Standard Practice for Curing Concrete (ACI 308-81)', American Concrete Institute, Detroit, 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.

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GENERAL NOTES

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 196.

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 196 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 DEPARTMENT OF TRANSPORTATION DISTRICT 12 LOCATION & DESIGN				
STRUCTURE NOTES				
DESIGNED LDH DATE	TRACED RWT DATE	CHECKED ENF DATE	REVIEWED BOW DATE	REVISED SHEET 7/44

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				
STRUCTURE NOTES				
DESIGNED LDH DATE	TRACED RWT DATE	CHECKED ENF DATE	REVIEWED BOW DATE	REVISED DATE
				SHEET 8 / 44

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GENERAL NOTES

ITEM SPECIAL - INSPECTION OF PIER CAP FLANGE AND WEBS

THIS WORK SHALL CONSIST OF THE FOLLOWING OPERATIONS PERFORMED ALONG THE BOX PIER CAP FLANGE AND WEBS AS FOLLOWS.

- BOTH SIDES OF BOTH WEBS OF THE BOX GIRDERS.
- THE ENTIRE BOTTOM FLANGE OF THE PIER CAP.

THE CONTRACTOR SHALL ACCOMPANY THE ENGINEER IN CONDUCTING A DETAILED EXAMINATION OF THE PIER CAP. ALL MISPLACED DEPOSITED WELD MATERIAL, FINS, TEARS, SLIVERS, NICKS, AND BURRED OR SHARP EDGES SHALL BE MARKED AS A REPAIR LOCATION TO BE REPAIRED UNDER ITEM SPECIAL - SMOOTHING FLANGE AND/OR WEB.

THE FOOTAGE UNDER THIS ITEM SHALL BE THE NUMBER OF LINEAR FEET ALONG THE BOX PIER CAP THAT ARE SATISFACTORILY INSPECTED AND MARKED.

THE ACCEPTED FOOTAGE WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER LINEAR FOOT, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR AND EQUIPMENT NECESSARY TO INSPECT THE DESIGNATED FLANGE AND WEBS. PAYMENT WILL BE MADE UNDER THE CONTRACT PRICE BID FOR:

ITEM	UNIT	DESCRIPTION
SPECIAL	LIN. FT.	INSPECTION OF PIER CAP FLANGE AND WEBS

ITEM SPECIAL - SMOOTHING FLANGE AND/OR WEB

THIS WORK SHALL CONSIST OF GRINDING SMOOTH THE AREAS IN LOCATIONS PREVIOUSLY MARKED UNDER ITEM SPECIAL - INSPECTION OF PIER CAP FLANGE AND WEBS. THESE AREAS SHALL BE GROUND SMOOTH WITH A DISC GRINDER AS DIRECTED BY THE ENGINEER. THE ENGINEER SHALL IDENTIFY AND MARK THE LIMITS OF THE GRINDING AT EACH LOCATION.

THE QUANTITY UNDER THIS ITEM SHALL BE THE ACTUAL NUMBER OF LOCATIONS WHICH ARE SATISFACTORILY GROUND SMOOTH AND ACCEPTED. IF TWO DEFECTS ARE WITHIN 6 INCHES OF EACH OTHER THIS SHALL BE CONSIDERED ONE PAYMENT. GRINDING SHALL BE PERFORMED IN THE DIRECTION PARALLEL TO THE FLANGE EDGE.

THE ACCEPTED NUMBER WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER EACH, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR AND EQUIPMENT NECESSARY TO GRIND THE DESIGNATED AREAS. PAYMENT WILL BE MADE UNDER THE CONTRACT PRICE BID FOR:

ITEM	UNIT	DESCRIPTION
SPECIAL	EACH	SMOOTHING FLANGE AND/OR WEB

ITEM SPECIAL - SPACER BAR REMOVED

THIS WORK SHALL CONSIST OF REMOVING AND DISPOSING OF THE SPACER BAR WELDED TO THE WEBS OF THE BOX GIRDER. THE WORK SHALL CONSIST OF THE FOLLOWING SEQUENCE OF OPERATIONS:

1. CUT THE END OF THE SPACER BAR BEING CAREFUL TO CUT FAR ENOUGH AWAY FROM THE GIRDER WEB TO AVOID ANY UNDERCUT OR GOUGING OF THE WEB FROM THE CUTTING OPERATION.

ALL CUTTING MAY BE DONE BY EITHER THE OXYGEN CUTTING OR THE AIR CARBON ARC PROCESS. IF OXYGEN CUTTING IS USED THE CUT SHALL BE MADE IN SUCH A LOCATION THAT ONLY THE SPACER BAR IS SEVERED, AND NOT AT A LOCATION WHERE THE CUT WOULD EXTEND INTO THE WELDS. IF AIR CARBON ARC IS USED THE CUT SHALL BE MADE NO CLOSER TO THE WEB THAN 1/8". WITH WHATEVER PROCESS IS USED THE CONTRACTOR SHALL DEMONSTRATE TO THE ENGINEER PRIOR TO THE START OF

WORK THAT HE CAN ACCOMPLISH THE WORK WITHOUT DAMAGE TO THE BOX GIRDER WEB.

2. GRIND ANY REMAINING SPACER BAR AND/OR WELD SO THAT THE RESULTING SURFACE OF THE WEB IS SMOOTH. CARE SHALL BE TAKEN THAT THE FULL THICKNESS OF THE WEB IS MAINTAINED AND NO UNDERCUT, GOUGING OR OVERGRINDING OF THE WEB TAKES PLACE. GRINDING SHALL BE DONE PARALLEL WITH THE BOTTOM FLANGE.
3. CLEAN AND NDT THE RETROFITTED AREA AS OUTLINED IN THE PLANS AND DESCRIBED IN ITEM SPECIAL PENCIL ABRASIVE BLASTING, GRINDING AND NDT.
4. PERFORM STEP 1 THROUGH 3 ON THE OTHER END OF THE BAR AT THIS LOCATION. NO LOCATION SHALL BE LEFT INCOMPLETELY RETROFITTED OVERNIGHT. THE SPACER BAR SHALL BE REMOVED AND DISCARDED PROPERLY OFF THE JOB SITE.

THE ACCEPTED NUMBER OF RETROFITS AS DETAILED ABOVE WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER REMOVED SPACER BAR, WHICH PRICE PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR AND EQUIPMENT NECESSARY TO REMOVE THE BAR, GRIND AND NDT THE WEBS. PAYMENT WILL BE MADE AT THE CONTRACT PRICE BID UNDER:

ITEM	UNIT	DESCRIPTION
SPECIAL	EACH	SPACER BAR REMOVED

ITEM SPECIAL - SPACER PLATE REMOVED

THIS WORK SHALL CONSIST OF REMOVING AND DISPOSING OF THE SPACER PLATE WELDED TO THE WEBS OF THE BOX GIRDER. THE WORK SHALL CONSIST OF THE FOLLOWING SEQUENCE OF OPERATIONS:

1. CUT THE END OF THE SPACER PLATE, BEING CAREFUL TO CUT FAR ENOUGH AWAY FROM THE GIRDER WEB TO AVOID ANY UNDERCUT OR GOUGING OF THE WEB FROM THE CUTTING OPERATION.

ALL CUTTING MAY BE DONE BY EITHER THE OXYGEN CUTTING OR THE AIR CARBON ARC PROCESS. IF OXYGEN CUTTING IS USED THE CUT SHALL BE MADE IN SUCH A LOCATION THAT ONLY THE SPACER PLATE IS SEVERED, AND NOT AT A LOCATION WHERE THE CUT WOULD EXTEND INTO THE WELDS. IF AIR CARBON ARC IS USED THE CUT SHALL BE MADE NO CLOSER TO THE WEB THAN 1/8". WITH WHATEVER PROCESS IS USED THE CONTRACTOR SHALL DEMONSTRATE TO THE ENGINEER PRIOR TO THE START OF WORK THAT HE CAN ACCOMPLISH THE WORK WITHOUT DAMAGE TO THE BOX GIRDER WEB.

2. GRIND ANY REMAINING SPACER PLATE AND/OR WELD SO THAT THE RESULTING SURFACE OF THE WEB IS SMOOTH. CARE SHALL BE TAKEN THAT THE FULL THICKNESS OF THE WEB IS MAINTAINED AND NO UNDERCUT, GOUGING OR OVERGRINDING OF THE WEB TAKES PLACE. GRINDING SHALL BE DONE PARALLEL WITH THE BOTTOM FLANGE.
3. CLEAN AND NDT THE RETROFITTED AREA AS OUTLINED IN THE PLANS AND DESCRIBED IN ITEM SPECIAL PENCIL ABRASIVE BLASTING, GRINDING AND NDT.
4. PERFORM STEP 1 THROUGH 3 ON THE OTHER END OF THE PLATE AT THIS LOCATION. NO LOCATION SHALL BE LEFT INCOMPLETELY RETROFITTED OVERNIGHT. THE SPACER PLATE SHALL BE REMOVED AND DISCARDED PROPERLY OFF THE JOB SITE.

THE ACCEPTED NUMBER OF RETROFITS AS DETAILED ABOVE WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER REMOVED SPACER PLATE, WHICH PRICE PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR AND EQUIPMENT NECESSARY TO REMOVE THE PLATE, GRIND AND NDT THE WEBS. PAYMENT WILL BE MADE AT THE CONTRACT PRICE BID UNDER:

ITEM	UNIT	DESCRIPTION
SPECIAL	EACH	SPACER PLATE REMOVED

ITEM SPECIAL - BACK-UP BAR DISCONTINUITY RETROFIT

THIS ITEM SHALL INCLUDE THE DRILLING OF A HOLE THROUGH THE WEB WHERE A DISCONTINUITY IN THE BACK-UP BAR EXISTS. THE WORK SHALL CONSIST OF THE FOLLOWING SEQUENCE OF OPERATION:

1. DRILL THE HORIZONTAL HOLE THROUGH THE BACK-UP BAR AND WEB. THE HOLE SHALL TOUCH THE BOTTOM FLANGE BUT SHALL NOT GOUGE THE FLANGE.
2. IF THE HORIZONTAL HOLE DID NOT TOUCH THE FACE OF THE FLANGE, THE HOLE SHALL BE GROUND SO THAT A 1-INCH MINIMUM RADIUS FROM THE FACE OF THE FLANGE EXISTS. CARE SHALL BE TAKEN THAT THE FULL THICKNESS OF THE FLANGE IS MAINTAINED AND NO UNDERCUT, GOUGING OR OVERGRINDING TAKES PLACE. USE OF A CUTTING TORCH IS NOT PERMITTED.
3. THE AREA SHALL BE PENCIL ABRASIVE BLASTED TO THE LIMITS AS SHOWN ON THE PLANS. SPECIAL CLEANING BY GRINDING SHALL BE USED ONLY AS DIRECTED BY THE ENGINEER FOR FURTHER INVESTIGATION OF CRACK PRESENCE.
4. THE CONTRACTOR AND THE ENGINEER SHALL CAREFULLY VISUALLY INSPECT THE WEB AND FLANGE. FURTHER CAREFUL GRINDING MAY BE DIRECTED BY THE ENGINEER TO IMPROVE THE PERFORMANCE OF THE NON-DESTRUCTIVE TESTS. GRINDING MUST BE DONE CAUTIOUSLY ESPECIALLY ON THE FLANGE. THE CONTRACTOR SHALL NDT THE AREA WITH MAGNETIC PARTICLE AND/OR DYE PENETRANT SO THE ENGINEER MAY FURTHER INSPECT FOR CRACKS.
5. ALL CRACKS AND/OR CRACK TIPS THAT ARE ACCESSIBLE SHALL BE REMOVED ACCORDING TO, AND PAID FOR, UNDER ITEM SPECIAL - DRILLING STRUCTURAL STEEL.
6. REPEAT STEPS 3 THRU 5 ON THE OTHER SIDE OF THE WEB.
7. THE A325 BOLT, SPACER AND WASHER PLATES SHALL BE PLACED AS SHOWN IN THE PLANS. THE BOLT SHALL BE TIGHTENED AS PER 513.15.

THE ACCEPTED NUMBER OF RETROFITS AS DETAILED ABOVE WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER LOCATION, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR AND EQUIPMENT NECESSARY TO DRILL, GRIND, PERFORM NDT ON BOTH SIDES OF THE WEB AND INSTALL THE PLATES, BOLTS, NUTS AND WASHERS. PAYMENT SHALL BE MADE AT THE CONTRACT PRICE BID UNDER:

ITEM	UNIT	DESCRIPTION
SPECIAL	EACH	BACK-UP BAR DISCONTINUITY RETROFIT

STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 12 LOCATION & DESIGN				
STRUCTURE NOTES				
CUYAHOGA COUNTY OHIO				
DESIGNED BGW DATE	DRAWN MDN DATE	CHECKED DWL DATE	REVIEWED GWM DATE	REVISED SHEET 9/44

PLOTTED BY: brldges
 PLOTTED FROM: c:\dgn\pc6\weber\c771381.dgn
 FILENAME: dgn
 PLOT SUBMITTED: 02-JUN-1992 20:43

GENERAL NOTES

ITEM SPECIAL - DRILLING STRUCTURAL STEEL

THIS WORK SHALL CONSIST OF DRILLING CRACKS AND ENDS OF CRACKS, GRINDING AND NON-DESTRUCTIVE TESTING AS DIRECTED BY THE ENGINEER. NO HOLES SHALL BE DRILLED IN FLANGES WITHOUT BRIDGE DEPARTMENT APPROVAL.

HOLES SHALL BE DRILLED TO REMOVE ENTIRE CRACKS OR THE APPARENT ENDS OF THE CRACKS REVEALED BY THE NDT AND VISUAL INSPECTION PERFORMED UNDER ITEM SPECIAL - PENCIL ABRASIVE BLASTING, GRINDING AND NDT. THE EXPOSED CIRCUMFERENCE OF EACH DRILLED HOLE SHALL BE GROUND SMOOTH AND CAREFULLY INSPECTED FOR CRACKS USING MAGNETIC PARTICLE EXAMINATION DYE PENETRANT. DRILLING, GRINDING AND TESTING SHALL CONTINUE UNTIL ALL CRACK ENDS ARE REMOVED. WHEN NO CRACKS ARE DETECTED AT A LOCATION NO HOLES SHALL BE DRILLED UNDER THIS ITEM.

SINCE ANY OF THESE CRACKS COULD PROPAGATE INTO THE TENSION FLANGE, REMOVING THEIR ENDS IS IMPERATIVE. CRACKS LESS THAN 1/2" LONG, CRACKED AREAS OR DEFECTS LESS THAN 1 1/2" IN DIAMETER SHALL BE REMOVED BY A SINGLE HOLE WHEN PRACTICAL. ENDS OF CRACKS LONGER THAN 1 1/2" AND DEFECTS SMALLER THAN 1/2" SHALL BE DRILLED WITH 1" DIAMETER HOLES. HOLES SHALL BE CAREFULLY EXAMINED FOR CRACKS IN THE PLANE OF THE PLATE. 1 1/2" OR 2" DIAMETER HOLES MAY BE DRILLED WHERE THE PROXIMITY OF THE CRACK END TO ADJACENT STEEL PRECLUDES DRILLING A 1" DIAMETER HOLE.

THE LOCATION OF ALL HOLES SHALL BE DETERMINED BY THE ENGINEER AND DRILLED UNDER HIS DIRECTION.

THE ACCEPTED NUMBER OF HOLES DRILLED IN THE STRUCTURAL STEEL AS DETAILED ABOVE WILL BE PAID FOR AT THE CONTRACT PRICE PER EACH HOLE, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR AND EQUIPMENT NECESSARY FOR DRILLING THE HOLES, GRINDING AND NON-DESTRUCTIVE TESTING. PAYMENTS WILL BE MADE UNDER:

ITEM	UNIT	DESCRIPTION
SPECIAL	EACH	DRILLING STRUCTURAL STEEL (1" DIAMETER HOLE, GRINDING AND NDT)
SPECIAL	EACH	DRILLING STRUCTURAL STEEL (1 1/2" DIAMETER HOLE, GRINDING AND NDT)
SPECIAL	EACH	DRILLING STRUCTURAL STEEL (2" DIAMETER HOLE, GRINDING AND NDT)

ITEM SPECIAL - FIELD PAINTING OF TESTED AND/OR RETROFITTED AREAS

THIS ITEM SHALL CONSIST OF PREPARING AND COATING THE FOLLOWING AREAS OF EXISTING STEEL:

- 1) ANY AREA WHERE DRILLING, GRINDING, OR NDT OCCURRED.
- 2) AREAS THAT WERE ABRASIVE BLASTED.
- 3) DETERIORATED AREAS ON THE INSIDE OF THE BOX AS SHOWN ON THE PLANS.
- 4) ANY AREAS DAMAGED BY THE CONTRACTORS OPERATIONS.

SURFACE PREPARATION SHALL CONSIST OF ABRASIVE BLASTING THE AREA TO BE COATED TO AN SA 2 1/2 NEAR-WHITE CONDITION. BLASTING ABRASIVES CONTAINING MORE THAN 1% FREE SILICA SHALL NOT BE ALLOWED. THESE AREAS SHALL BE COATED THE SAME DAY THAT THEY ARE BLASTED.

THE PREPARED AREAS SHALL BE COATED WITH ONE COAT OF A HIGH SOLIDS EPOXY AT LEAST 5 MILS THICK. THE HIGH SOLIDS EPOXY SHALL BE APPLIED BY BRUSH. THE COLOR OF THE HIGH SOLIDS EPOXY SHALL CLOSELY MATCH THAT COLOR WHICH IS EXISTING.

THE HIGH SOLIDS EPOXY SHALL BE ONE OF THE FOLLOWING PRODUCTS:

- 1) AMERON AMERLOCK 400
- 2) VALSPAR HIGH SOLIDS EPOXY 76 SERIES
- 3) TNEMEC CHEMBUILD SERIES 135
- 4) SHERWIN WILLIAMS - EPOXY-MASTIC COATING

COST FOR FURNISHING ALL MATERIALS, LABOR, AND EQUIPMENT NECESSARY TO COMPLETE THIS ITEM SHALL BE INCLUDED IN THE LUMP SUM BID PRICE FOR THIS ITEM:

ITEM	UNIT	DESCRIPTION
SPECIAL	LUMP SUM	FIELD PAINTING OF TESTED AND/OR RETROFITTED AREAS

ITEM SPECIAL - BOX GIRDER ACCESS DOOR

THIS ITEM SHALL INCLUDE THE REMOVAL OF THE EXISTING STEEL ACCESS DOOR AND THE INSTALLATION OF THE PROPOSED PVC ACCESS DOOR.

THE CONTRACTOR SHALL CAREFULLY REMOVE THE EXISTING STEEL DOOR AND BOLTS. THIS MATERIAL SHALL BE PROPERLY DISPOSED OF OFF THE JOB SITE.

THE PROPOSED DOOR SHALL BE A PVC, TYPE I, AS PER ASTM D1927, 1" THICK SHEET AS DETAILED IN THE PLANS.

THE NEOPRENE PIECES SHALL MEET THE FOLLOWING SPECIFICATIONS:

PROPERTY	REQ.	ASTM METHOD
TENSILE STRENGTH, MIN., PSI	2000	D-412-62T
ELONGATION AT BREAK	250%	D-412-51T
HARDNESS, DUROMETER	60+5	D-2240 MODIFIED
OZONE RESISTANCE, 20% ELONGATION 300 PPHM 40 C (104 F) (70 HRS.) WIPE SURFACES WITH SOLVENT TO REMOVE CONTAMINATION	NO CRACKS	D-1149
HEAT AGING 70 HRS. @ 212 F		D-573
TENSILE STRENGTH, MAX % DECREASE	-20	
ELONGATION, MAX % DECREASE	-20	
HARDNESS, MAX. CHANGE	+10/-0	
OIL SWELL, ASTM OIL #3 70 HRS. 212 F MAX. WEIGHT INCREASE AT SPECIFIC GRAVITY 1.35 + 3	+45	D-471
COMPRESSION SET, 70 HRS. @ 212 LOW TEMPERATURE	40% MAX. NOT BRITTLE	D-395(B) D-746
RESISTANCE TO SALT, VARIATION OF VOLUME IN % 70 HRS. AT 40 C IN CaCl2 SOLUTION AT 30% CONCENTRATION	-5% TO + 10%	D98

ADHESIVES FOR THE NEOPRENE SHEET SHALL BE SIKADUR 31 MANUFACTURE BY THE SIKA CHEMICAL OF LYNDHURST, NEW JERSEY, FEL-EPOXY FP-01 MANUFACTURED BY THE FELT PRODUCTS MANUFACTURING COMPANY OF SKOKIE, ILLINOIS, OR AN APPROVED EQUAL. ADHESIVES SHALL BE STORED AT TEMPERATURES BETWEEN 50 DEGREES FAHRENHEIT AND 80 DEGREES FAHRENHEIT AND SHALL BE USED WITHIN 270 DAYS AFTER THE DATE OF MANUFACTURE.

SURFACES OF THE NEOPRENE SHALL BE CLEANED WITH METHYL ETHYL KETON (MEK) TOLUENE (T), OR OTHER APPROVED SOLVENT USING CLEAN DISPOSABLE CLOTHS. THEN NOT MORE THAN 7 DAYS PRIOR TO THE SEAL INSTALLATION, A THIN (1/8" MIN. THICKNESS) COATING OF CYCLIZING PASTE SHALL BE APPLIED TO THE BONDING SURFACES. AFTER 25 TO 40 MINUTES THE PASTE SHALL BE WASHED FROM THE SURFACES WITH CLEAN WATER. CYCLIZING PASTE IS A MIXTURE OF ONE POUND OF PITTSBURGH PLATE GLASS INDUSTRIES HISIL 223 OR AN APPROVED ALTERNATE AND 6 POUNDS OF CONCENTRATED SULFURIC ACID (18 MOLAR). TO MIX THE PASTE, ADD HISIL TO ACID SLOWLY WHILE STIRRING MIXTURE TO ACHIEVE A SMOOTH VISCOUS PASTE. NOTE: SINCE CONCENTRATED SULFURIC ACID IS VERY CORROSIVE AND HISIL IS AN EXTREMELY FINE NON-TOXIC POWDER, RUBBER GLOVES AND GLASSES SHOULD BE USED BY THOSE USING THE PASTE WHILE GLOVES, GLASSES, AND A RESPIRATOR SHOULD BE USED BY THOSE MIXING THE PASTE.

IMMEDIATELY PRIOR TO ADHESIVE APPLICATION, THE TOP FLANGE SHALL BE CLEAN, DRY AND WARMER THAN 45 F AND SHALL BE MAINTAINED ABOVE 45 F UNTIL THE ADHESIVE HAS CURED. THE STEEL SURFACE SHALL BE THOROUGHLY CLEANED TO REMOVE DUST, AND FOREIGN MATERIALS BY MEANS OF WATER BLASTING FOLLOWED BY AIRBROOMING OR POWER SWEEPING.

ADHESIVE COMPONENTS SHALL BE COMBINED IN THE EXACT RATIOS RECOMMENDED BY THE ADHESIVE MANUFACTURER AND SHALL BE CAREFULLY AND THOROUGHLY MIXED TO ENSURE A UNIFORM MATERIAL FREE FROM ENTRAPPED AIR. THE BONDING PROCEDURES AND RATE OF APPLICATION SHALL BE IN ACCORDANCE WITH THE ADHESIVE MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS. FOR PROPER CONTROL DURING CURING, LIGHT PRESSURE SHOULD BE MAINTAINED UNTIL ADHESIVE HAS CURED.

BOLTS SHALL BE STAINLESS STEEL AS PER 730.10 OF THE CMS.

THE HANDLE SHALL BE A 6' LONG STAINLESS STEEL HANDLE CAPABLE OF HOLDING 100 LBS. OF WEIGHT.

PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR AND EQUIPMENT NECESSARY TO REPLACE THE BOX GIRDER ACCESS DOOR. PAYMENT WILL BE MADE UNDER THE CONTRACT PRICE BID FOR:

ITEM	UNIT	DESCRIPTION
SPECIAL	EACH	BOX GIRDER ACCESS DOOR

ITEM SPECIAL - DRAIN HOLE SCREENING

THIS WORK SHALL CONSIST OF INSTALLING A 16 WIRE CONDUCTOR PIPE STRAINER IN THE BOX GIRDER DRAIN HOLE. THIS SCREENING SHALL BE INSTALLED AFTER THE AREA IS CLEAN AND PAINTED.

THE WIRE SHALL BE GALVANIZED AS PER 711.02. THE WIRE GAUGE SHALL BE 14. THE STRAINER BULB SHALL BE PLACED ON THE OUTSIDE OF THE BOX GIRDER. THE WIRE LEGS SHALL BE PLACED THROUGH THE HOLE AND BENT BACK TO SECURE THE STRAINER IN THE HOLE.

PAYMENT SHALL BE MADE FOR EACH ACCEPTED DRAIN HOLE WHICH IS PROPERLY SCREENED. PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR AND EQUIPMENT NECESSARY TO COMPLETE THE SCREENING. PAYMENT WILL BE MADE UNDER THE CONTRACT PRICE BID FOR:

ITEM	UNIT	DESCRIPTION
SPECIAL	EACH	DRAIN HOLE SCREENING

STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 12 LOCATION & DESIGN				
STRUCTURE NOTES				
DESIGNED BGW	DRAWN MDN	CHECKED DWL	REVIEWED GWM	REVISED
DATE	DATE	DATE	DATE	SHEET 10/44

PLOTTED BY: brldges
 PLOTTED FROM: c:\dgn\pc6\webber\c771381.dgn
 FILENAME: dgn
 PLOT SUBMITTED: 02-JUN-1992 20:41

GENERAL NOTES

ITEM SPECIAL - PLASTIC PIPE EXTENSION

THIS ITEM SHALL BE USED TO REPLACE THE NEOPRENE CHUTES FOR THE DRAINAGE TROUGHS AS SHOWN IN PLANS. THE CONTRACTOR SHALL MEASURE EACH LOCATION PRIOR TO ORDERING MATERIAL AND FABRICATING THE EXTENSIONS. THE PIPE SHALL BE 145 PSI ABS PIPE. ABS PIPE SHALL CONFORM TO CMS 707.19. ADHESIVE SHALL BE COMPATIBLE WITH ABS PIPE. STRAPS SHALL BE 1/2 X 0.03 STAINLESS STEEL BANDS.

INSTALLATION PROCEDURE SHALL BE AS FOLLOWS:

1. REMOVE EXISTING NEOPRENE CHUTE 12" BELOW BOTTOM OF NEOPRENE TROUGH AND DISPOSE OF PROPERLY.
2. FIELD MEASURE AND FABRICATE ABS PIPE UNIT.
3. CEMENT TOP OF ABS PIPE; INSERT INTO NEOPRENE AND DROP INTO COLLECTOR.
4. ADD STEEL BANDS AND INSURE REMAINING NEOPRENE HAS ADHERED TO THE PIPE.

AFTER THE NEOPRENE CHUTE IS REMOVED, THE CONTRACTOR SHALL PROVIDE A TEMPORARY CHUTE TO THE COLLECTOR UNTIL THE RETROFIT IS COMPLETE. THIS MAY BE ELIMINATED IF THE EXTENSION IS COMPLETED IN ONE DAY.

PAYMENT FOR THIS ITEMS SHALL INCLUDE REMOVAL AND DISPOSAL OF THE EXISTING NEOPRENE CHUTE, ALL MATERIALS, LABOR, EQUIPMENT AND ANY OTHER INCIDENTALS NECESSARY TO INSTALL ONE PLASTIC PIPE EXTENSION.

PAYMENT SHALL BE UNDER:

ITEM	UNIT	DESCRIPTION
SPECIAL	EACH	PLASTIC PIPE EXTENSION

ITEM SPECIAL - ELASTOMERIC PIPE EXTENSION

THIS WORK SHALL CONSIST OF SUPPLYING MATERIALS, LABOR AND EQUIPMENT NECESSARY TO INSTALL ELASTOMERIC EXTENSIONS ON PIPES.

THE STRAP SHALL BE COMPRISED OF 1/2 INCH BY 0.030 INGH STAINLESS STEEL STRAPPING BAND.

THE ELASTOMERIC EXTENSIONS SHALL BE SHOP FABRICATED FROM NYLON REINFORCED NEOPRENE SHEET (NRNS). THE SHEET MATERIAL SHALL BE A 3/32-INCH THICK GENERAL PURPOSE, HEAVY DUTY ELASTOMERIC SHEET OF NYLON FABRIC ENCASED IN A NEOPRENE POLYMER. THE ONE-PLY MATERIAL SHALL BE "FAIRPRENE NUMBER NN-0003" AS MANUFACTURED BY THE GOODYEAR TIRE AND RUBBER COMPANY OR AN APPROVED EQUAL NRNS. THE SHEET SHALL CONFORM TO THE FOLLOWING:

DESCRIPTION OF TEST	ASTM METHOD	REQUIREMENT
THICKNESS, INCHES	D 751	0.94" + .010"
BREAKING STRENGTH, GRAB WXF, LBS. MIN.	D 751	700 X 700
ADHESION, 1" STRIP, 2" MIN. LBS. MIN.	D 751	9
BURST STRENGTH (MULLEN) PSI, MIN.	D 751	1400
HEAT AGING 70 HOURS @ 212 F 180 BEND WITHOUT CRACKING	D 753	NO CRACKING OF COATING
LOW TEMPERATURE BRITTLNESS 1 HOUR AT -40 F, BEND AROUND 1/4" MANDREL	D 2136	NO CRACKING OF COATING

THE ADHESIVE AND THINNER SHALL BE AS SPECIFIED BY THE MANUFACTURER OF THE NYLON REINFORCED NEOPRENE SHEET SELECTED FOR USE. ALL MATERIALS SHALL BE STORED AND INCORPORATED IN THE WORK AS SPECIFIED BY THE MANUFACTURER.

PAYMENT UNDER THIS ITEM SHALL BE FOR EACH ELASTOMERIC EXTENSION INSTALLED THAT IS COMPLETE, IN PLACE AND ACCEPTED.

THE ACCEPTED QUANTITIES OF ELASTOMERIC EXTENSIONS SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING AND INSTALLING ALL MATERIALS AND SUPPLYING THE LABOR AND EQUIPMENT NECESSARY TO COMPLETE THE EXTENSION ACCORDING TO THE SPECIFICATIONS.

PAYMENT WILL BE MADE UNDER:

ITEM	UNIT	DESCRIPTION
SPECIAL	EACH	ELASTOMERIC PIPE EXTENSION

ITEM SPECIAL - EXPANSION JOINT END FLASHING

THIS ITEM SHALL BE INSTALLED ON THE UNDERSIDE OF THE DECK EDGES AT THE EXPANSION JOINTS TO CATCH AND CHANNEL THE DECK DRAINAGE INTO THE EXISTING NEOPRENE TROUGHS. SINCE EACH LOCATION IS UNIQUE, THE CONTRACTOR SHALL INSPECT AND MEASURE EACH LOCATION PRIOR TO ORDERING MATERIAL AND FABRICATING FLASHING.

THE RETAINERS, ANGLE AND BACK-UP BAR SHALL BE A36 STEEL AND GALVANIZED AS PER 711.02.

THE FLASHING SHALL BE FABRICATED FROM NYLON REINFORCED NEOPRENE SHEET (NRNS). THE SHEET MATERIAL SHALL BE A 3/32-INCH THICK GENERAL PURPOSE, HEAVY DUTY ELASTOMERIC SHEET OF NYLON FABRIC ENCASED IN A NEOPRENE POLYMER. THE ONE-PLY MATERIAL SHALL BE "FAIRPRENE NUMBER NN-0003" AS MANUFACTURED BY E.I. DUPONT DE NEMOURS & COMPANY, INCORPORATED, "WINGPRENE" AS MANUFACTURED BY THE GOODYEAR TIRE AND RUBBER COMPANY OR AN APPROVED EQUAL NRNS. THE SHEET SHALL CONFORM TO THE FOLLOWING:

DESCRIPTION OF TEST	ASTM METHOD	REQUIREMENT
THICKNESS, INCHES	D 751	.094 + .010"
BREAKING STRENGTH, GRAB WXF, LBS. MIN.	D 751	700 X 700
ADHESION, 1" STRIP, 2" MIN. LBS. MIN.	D 751	9
BURST STRENGTH (MULLEN) PSI, MIN.	D 751	1400
HEAT AGING 70 HOURS @ 212 F, WITHOUT CRACKING	D 753	NO CRACKING OF COATING
LOW TEMPERATURE BRITTLNESS 1 HOUR AT -40F, BEND AROUND 1/4" MANDREL	D 2136	NO CRACKING OF COATING

ALL BOLTS AND STUDS SHALL BE STEEL WITH 55,000 PSI MINIMUM YIELD STRENGTH AND GALVANIZED AS PER 711.02. CONCRETE ANCHORS SHALL BE EPOXY ADHESIVE AS PER SS 852 AND SS 952.

THE DRAWINGS ALLOW THE SLITTING OF THE NEOPRENE TO FIT THROUGH THE GIRDER WEBS, AND/OR THE NOTCHING OF THE GIRDER WEBS TO ALLOW THE NEOPRENE TO FIT, THESE ACTIONS REQUIRE THE ENGINEERS APPROVAL FOR EACH LOCATION.

PAYMENT FOR THIS ITEM SHALL BE MADE AT THE CONTRACT UNIT PRICE FOR EACH EXPANSION JOINT END FLASHING. PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIALS, LABOR AND EQUIPMENT NECESSARY TO INSTALL THE END FLASHING.

ITEM	UNIT	DESCRIPTION
SPECIAL	EACH	EXPANSION JOINT END FLASHING

ITEM SPECIAL - PENCIL ABRASIVE BLASTING, GRINDING AND NDT

THIS WORK SHALL CONSIST OF THE FOLLOWING SEQUENCE OF OPERATIONS PERFORMED AT A SUSPECTED CRACK LOCATION AS DIRECTED BY THE ENGINEER.

1. CLEAN THE SUSPECTED CRACK AREA BY PENCIL ABRASIVE BLASTING THE PAINT AND/OR RUST FROM THE SURFACE OF THE PLATES AND ADJACENT WELDS.
2. THE ENGINEER, ACCOMPANIED BY THE CONTRACTOR, SHALL CAREFULLY VISUALLY INSPECT THE CLEANED AREA. GRINDING MAY BE DIRECTED BY THE ENGINEER TO ENHANCE INVESTIGATION FOR CRACK PRESENCE. ALL GRINDING MUST BE DONE CAUTIOUSLY, ESPECIALLY IN TENSION ZONES. THE GRINDING MOTION SHALL BE PARALLEL WITH THE FLANGE EDGE.
3. THE CONTRACTOR SHALL NON-DESTRUCTIVELY TEST (NDT) THE AREA USING MAGNETIC PARTICLE EXAMINATION AND/OR DYE PENETRANT SO THAT THE ENGINEER MAY FURTHER INSPECT FOR CRACKS.
4. ALL CRACKS AND/OR CRACK TIPS THAT ARE ACCESSIBLE SHALL BE REMOVED ACCORDING TO, AND PAID FOR UNDER, ITEM SPECIAL - DRILLING STRUCTURAL STEEL. ANY CRACKS INACCESSIBLE TO DRILLING SHALL BE REMOVED BY CAREFUL GRINDING OR BY CAREFULLY ENLARGING THE DRILLED HOLES BY GRINDING AND PAID FOR UNDER DRILLING STRUCTURAL STEEL.
5. PERFORM THE STEP 1 THROUGH STEP 4 OPERATIONS ON THE OTHER SIDE OF THIS LOCATION.

THE ACCEPTED NUMBER OF NDT LOCATIONS AS DESCRIBED IN THIS NOTE WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER LOCATION, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR AND EQUIPMENT NECESSARY TO CLEAN, GRIND AND PERFORM NDT ON BOTH SIDES OF THE SUSPECTED CRACK LOCATION.

PAYMENT WILL BE MADE AT THE CONTRACT PRICE BID UNDER:

ITEM	UNIT	DESCRIPTION
SPECIAL	EACH	PENCIL ABRASIVE BLASTING, GRINDING AND NDT

STATE OF OHIO
 DEPARTMENT OF TRANSPORTATION
 DISTRICT 12 LOCATION & DESIGN

STRUCTURE NOTES

CUYAHOGA COUNTY OHIO

DESIGNED BGW DATE	DRAWN MDN DATE	CHECKED DWL DATE	REVIEWED GWM DATE	REVISED
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SHEET 11 / 44

PLOTTED BY: bridges
 PLOTTED FROM: c:\dgn\pc6\weber\c771381.dgn
 FILENAME: dgn
 PLOT SUBMITTED: 02-JUN-1992 20:43

STRUCTURE SUMMARY

PARTICIPATION CODE
 I - FEDERAL AND STATE
 II - STATE ONLY

CUYAHOGA COUNTY
 CUY-77-13.81

OHIO
 FHWA
 REGION 5
 FEDERAL
 PROJECT

203
 234

PLOT SUBMITTED: 08-JUN-1992 12:25
 PLOTTED FROM: c:\dgn\p\d08084\08084sgb.dgn
 00000XXX.dgn
 PLOT SUBMITTED BY: BANASZAK

ITEM	STRUCTURE NUMBER																	PARTICIPATION		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	AS PER PLAN SHEET REF.			
	CUY-77					CUY-490				CUY-422								I	II									
	1322	1335	1409	1435	1457	1518	1546	1562	1575	1593ES	0191NE	0190SW	0189ES	0187WN	0078L	0084	GENERAL											
																											STRUCTURES (CONT'D)	
SPECIAL			LUMP	LUMP	LUMP	LUMP					LUMP				LUMP			LUMP	SPECIAL	530 00200	LUMP						CLEANING BRIDGE DRAINAGE SYSTEM	194
SPECIAL											150	160						310	SPECIAL	530 00400	310	EACH					SMOOTHING FLANGE AND/OR WEB	199
SPECIAL											4	4						8	SPECIAL	530 00400	8	EACH					SPACER PLATE REMOVED	199
SPECIAL											15	32						47	SPECIAL	530 00400	47	EACH					SPACER BAR REMOVED	199
SPECIAL											76	76						152	SPECIAL	530 01300	152	LIN.FT.					INSPECTION OF PIER CAP FLANGE AND WEBS	199
SPECIAL											10	10						20	SPECIAL	513 16800	20	EACH					DRILLING STRUCTURAL STEEL (1" DIA. HOLE, GRINDING, AND NDT)	200
SPECIAL											10	10						20	SPECIAL	513 16800	20	EACH					DRILLING STRUCTURAL STEEL (1 1/2" DIA. HOLE, GRINDING, AND NDT)	200
SPECIAL											30	30						60	SPECIAL	513 16800	60	EACH					DRILLING STRUCTURAL STEEL (2" DIA. HOLE, GRINDING, AND NDT)	200
SPECIAL											7	7						14	SPECIAL	530 00400	14	EACH					BACK-UP BAR DISCONTINUITY RETROFIT	199
SPECIAL											LUMP	LUMP						LUMP	SPECIAL	514 27704	LUMP						FIELD PAINTING OF TESTED AND/OR RETROFITTED AREAS	200
SPECIAL											2	2						4	SPECIAL	530 00400	4	EACH					BOX GIRDER ACCESS DOOR	200
SPECIAL											2	2						4	SPECIAL	530 00400	4	EACH					DRAIN HOLE SCREENING	200
SPECIAL												16						16	SPECIAL	530 00400	16	EACH					PLASTIC PIPE EXTENSION	201
SPECIAL												15						15	SPECIAL	530 00400	15	EACH					ELASTOMERIC PIPE EXTENSION	201
SPECIAL												18						18	SPECIAL	530 00400	18	EACH					EXPANSION JOINT END FLASHING	201
SPECIAL	1205	1143	3048	2547	17166	3268	2128	1451	2218	735	1961	2314	1325	1223	1589	1274		44595	SPECIAL	530 00800	44595	SQ.YD.					URETHANE TOP COAT SEALER FOR CONCRETE SURFACES	194
SPECIAL	301	286	762	637	4292	817	532	363	555	184	490	579	331	306	397	319		11151	SPECIAL	530 00800	11151	SQ.YD.					COATING CONCRETE SURFACES WITH WATER-BASE PAINT	194
SPECIAL											25	25						50	SPECIAL	530 00400	50	EACH					PENCIL ABRASIVE BLASTING, GRINDING, AND NDT	201

STATE OF OHIO
 DEPARTMENT OF TRANSPORTATION
 DISTRICT 12 LOCATION & DESIGN

STRUCTURE SUMMARY

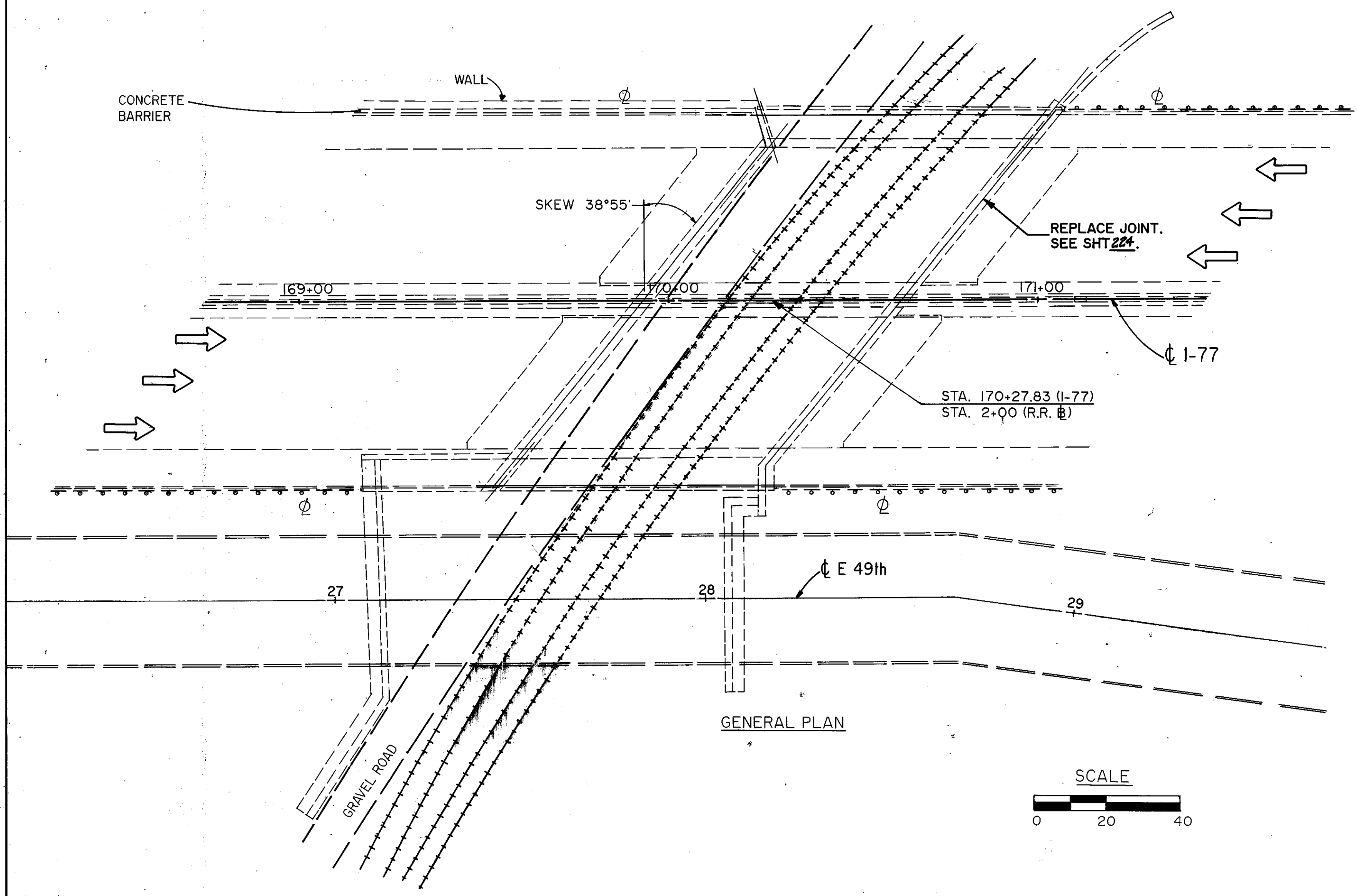
OHIO

DESIGNED LDH	DRAWN KJB DATE 4/6/92	CHECKED ENF	REVIEWED DWL	REVISED
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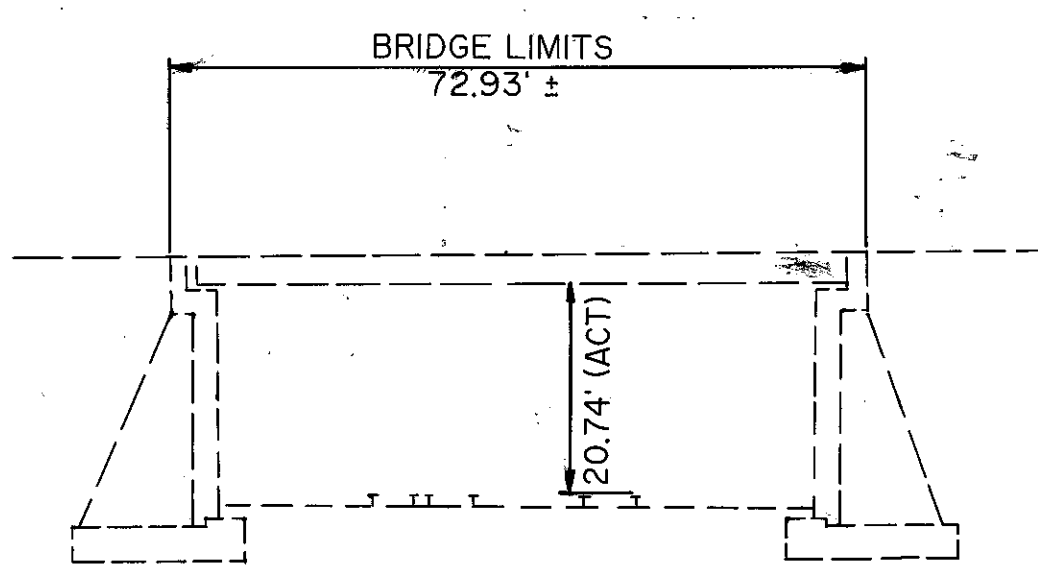
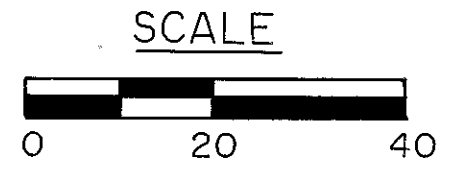
SHEET 13 / 44

FOR LEGEND, SEE SHT 206

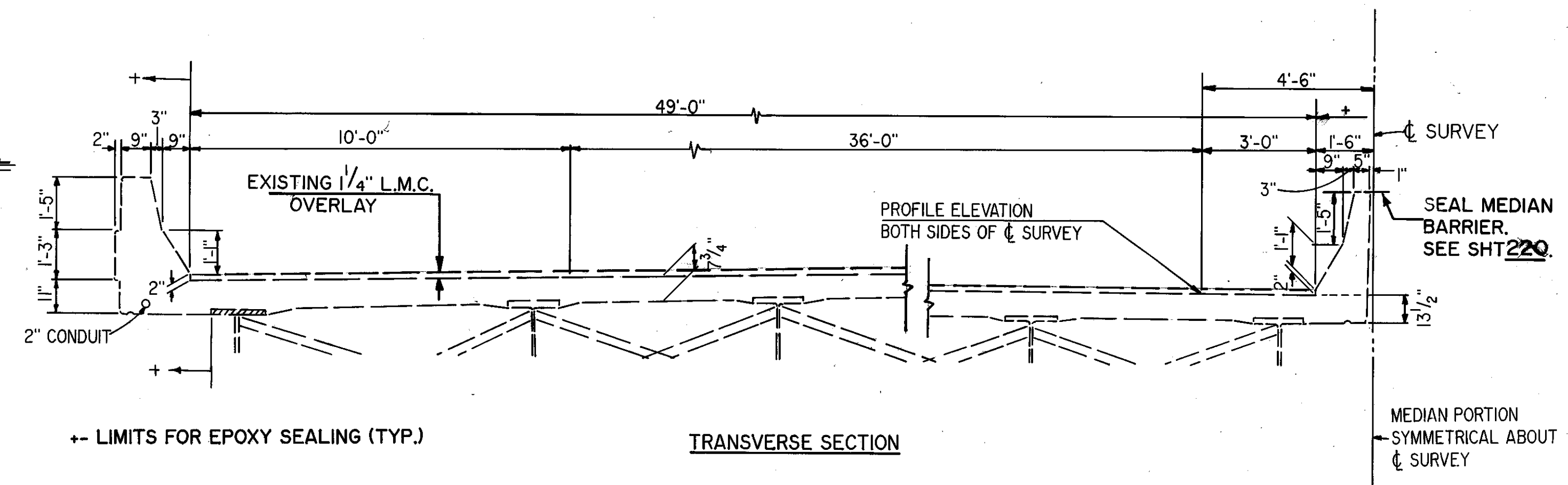
GENERAL PLAN & ELEVATION



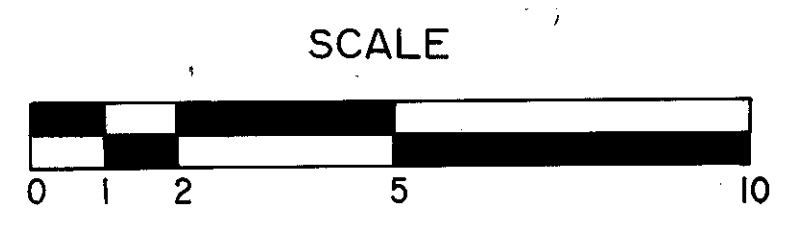
GENERAL PLAN



GENERAL ELEVATION



TRANSVERSE SECTION



- PROPOSED WORK**
1. TRANSVERSE EXPANSION JOINT MODIFICATIONS
 2. PATCH WEARING SURFACE WITH MSC OR QSM
 3. SEAL (HMWM) AND GROOVE WEARING SURFACE
 4. MEDIAN BARRIER JOINT SEAL
 5. PATCH CONCRETE SURFACES AND EPOXY SEAL

EXISTING STRUCTURE

TYPE: SINGLE SPAN STEEL BEAMS WITH REINF. CONC. DECK AND SUBSTRUCTURE
 SPANS: 66.5' C/C
 ROADWAY: 102'-6" F/F CONC. PARAPETS WITH 3'-0" RAISED MEDIAN
 LOADING: HS 20-44 & THE INTERSTATE ALTERNATE LOADING
 SKEW: 38°55'
 SURFACE COURSE: 1/4" L.M.C. OVERLAY
 ALIGNMENT: TANGENT

* ACTUAL UNSOUND AREA OR 5% OF THE SEALED AREA

LOCATION	SPECIAL SOUNDING CONCRETE BRIDGE COMPONENTS SQ. FT.	* 519 PATCHING CONCRETE STRUCTURES AS PER PLAN SQ. FT.	* SPECIAL REPAIRING CONCRETE WITH SOLVENT FREE EPOXY RESIN SQ. FT.
ABUTMENT	8568	530	X
PIER & CAP	0	0	
PARAPET	2277	114	
25% ADDITIONAL		161	
TOTAL	10845	805	

** ESTIMATED QUANTITY TO BE USED AS DIRECTED BY THE ENGINEER

STATE OF OHIO
 DEPARTMENT OF TRANSPORTATION
 DISTRICT 12 LOCATION & DESIGN

GENERAL PLAN & ELEVATION
 CUY-77-1322
 (I-77 OVER N8W RWY.)

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
L.D.H.	J.T.G.	E.N.F.	D.W.L.		

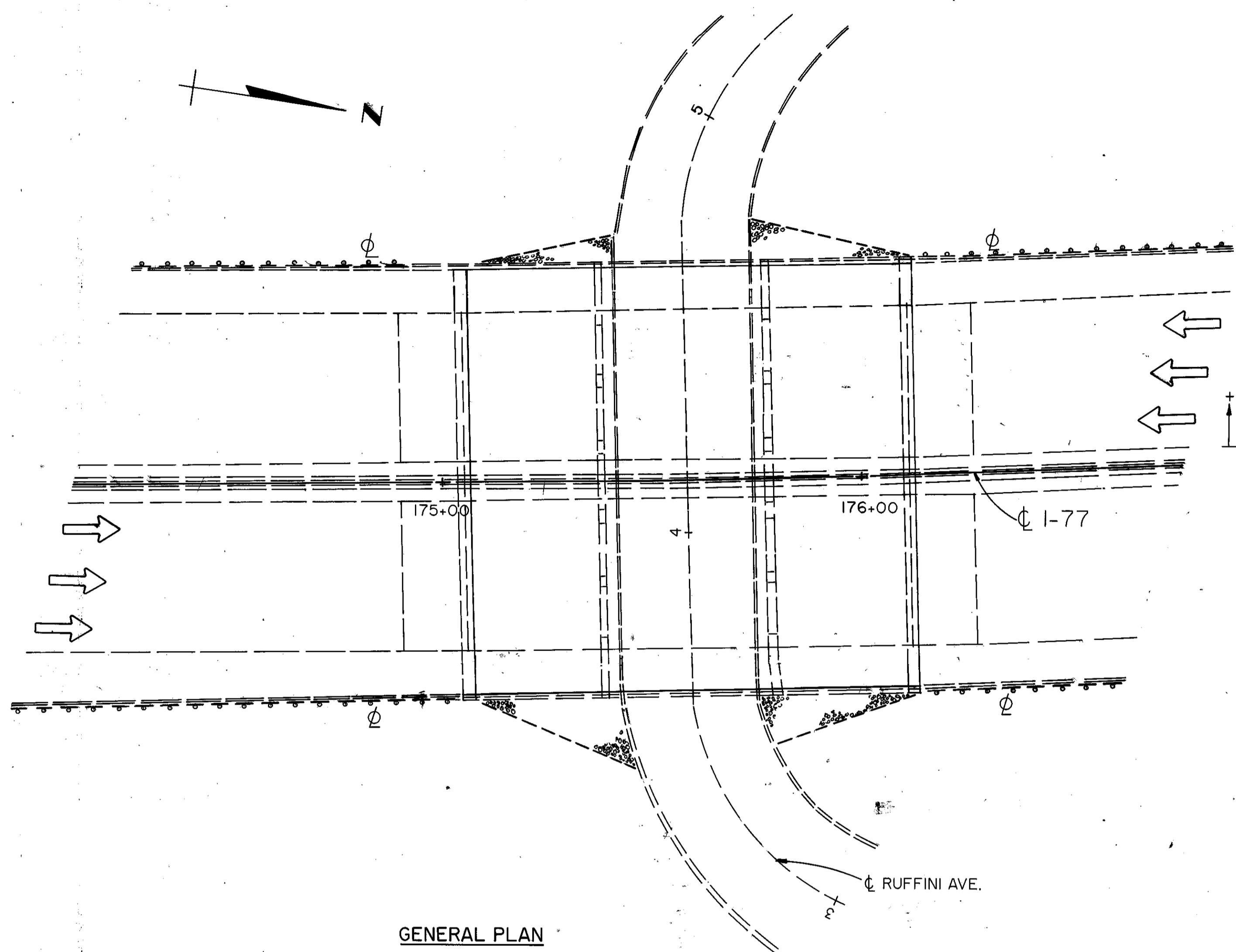
GENERAL PLAN & ELEVATION

CUYAHOGA COUNTY
CUY-77-13.81

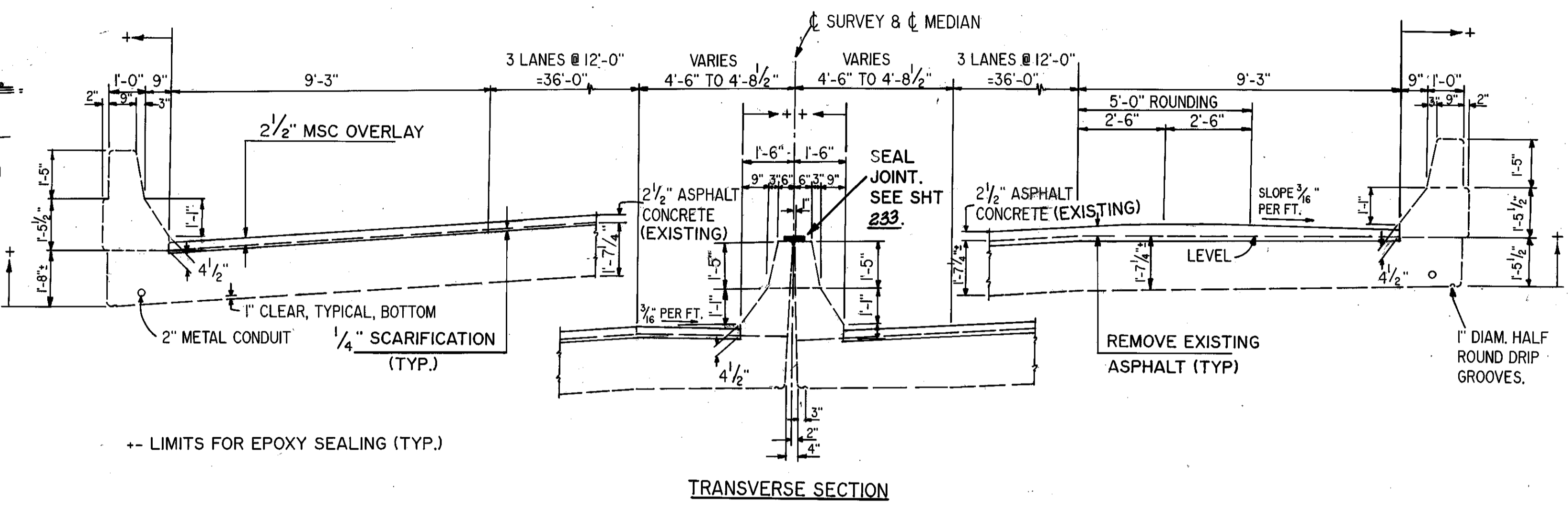
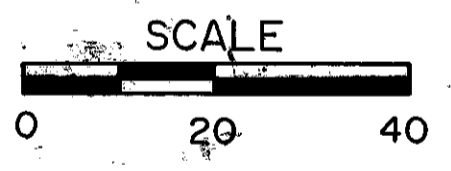
OHIO
FHWA REGION 5
FEDERAL PROJECT

205
234

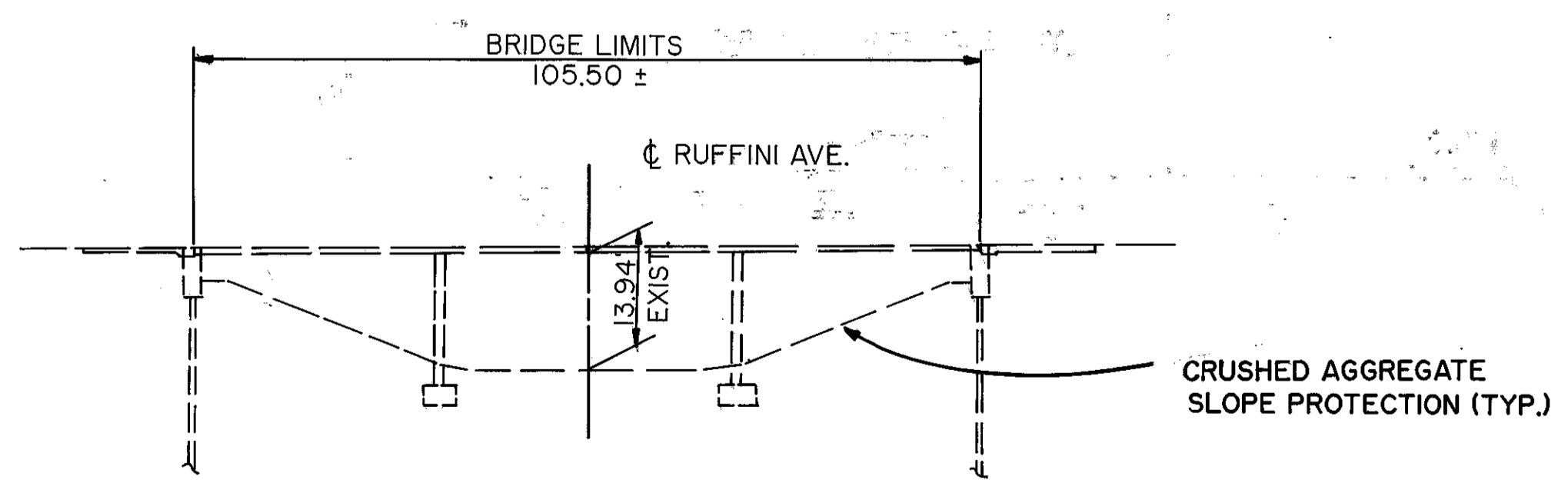
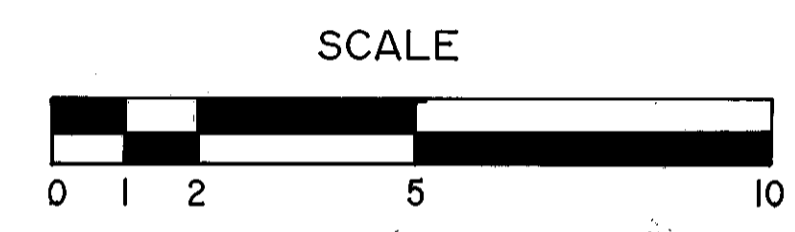
FOR LEGEND, SEE SHT 206.



GENERAL PLAN



TRANSVERSE SECTION



GENERAL ELEVATION

- PROPOSED WORK**
1. REMOVAL OF EXISTING ASPHALT WEARING SURFACE
 2. 2 1/2" MSC OVERLAY TO GRADE
 3. PATCH CONCRETE SURFACES AND EPOXY SEAL
 4. MEDIAN BARRIER JOINT SEAL

EXISTING STRUCTURE

TYPE: CONTINUOUS REINFORCED CONCRETE SLAB WITH REINFORCED CONCRETE SUBSTRUCTURE
 SPANS: 32'-40'-32' C/C BRGS.
 ROADWAY: VARIABLE BETWEEN FACE OF PARAPETS WITH 3'-0" MEDIAN BARRIER
 LOADING: HS 20-44 & THE INTERSTATE ALTERNATE LOADING
 SKEW: NONE
 SURFACE COURSE: 2 1/2" BIT. CONC.
 ALIGNMENT: TANGENT AND 1'-30" LEFT
 SUPERELEVATION: VARIES

* ACTUAL UNSOUND AREA OR 5% OF THE SEALED AREA

LOCATION	SPECIAL SOUNDING CONCRETE BRIDGE COMPONENTS SQ. FT.	* 519 PATCHING CONCRETE STRUCTURES AS PER PLAN SQ. FT.	* SPECIAL REPAIRING CONCRETE WITH SOLVENT FREE EPOXY RESIN SQ. FT.
ABUTMENT	1890	0	150
PIER & CAP	3294	165	0
PARAPET	5103	255	0
25% ADDITIONAL		105	38
TOTAL	10287	525	188

** ESTIMATED QUANTITY TO BE USED AS DIRECTED BY THE ENGINEER

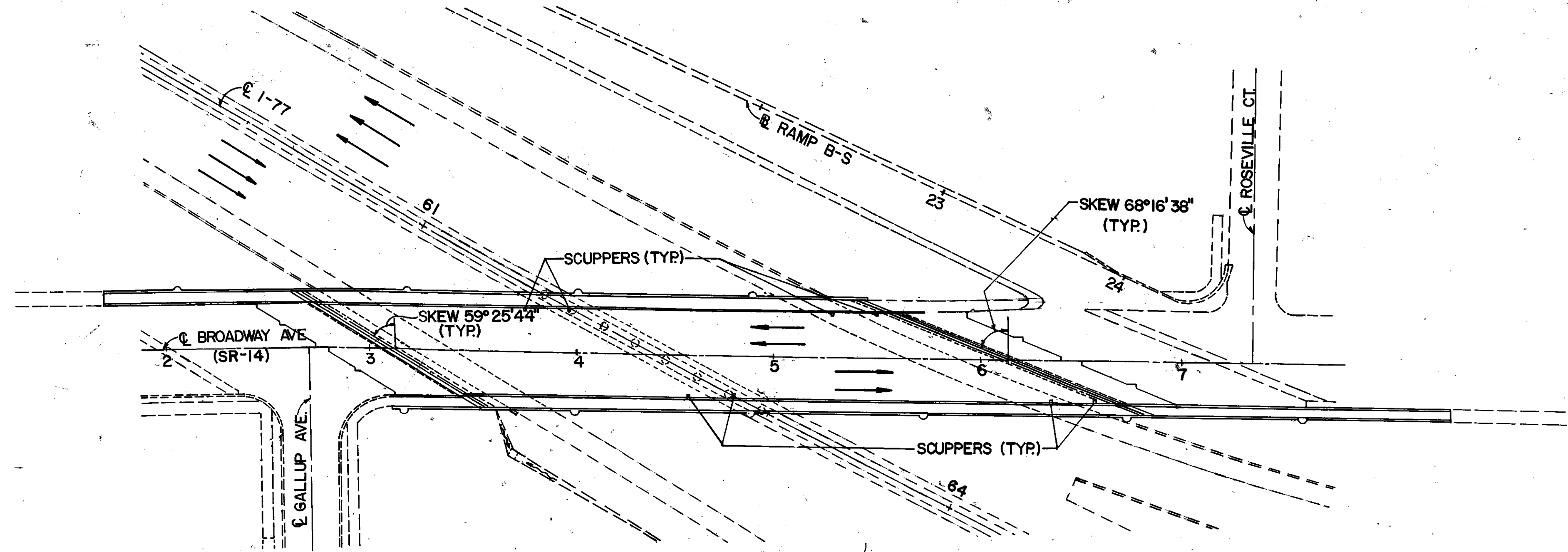
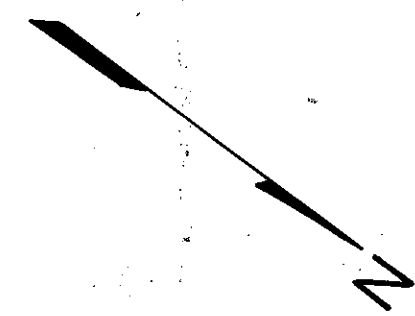
STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

15 / 44

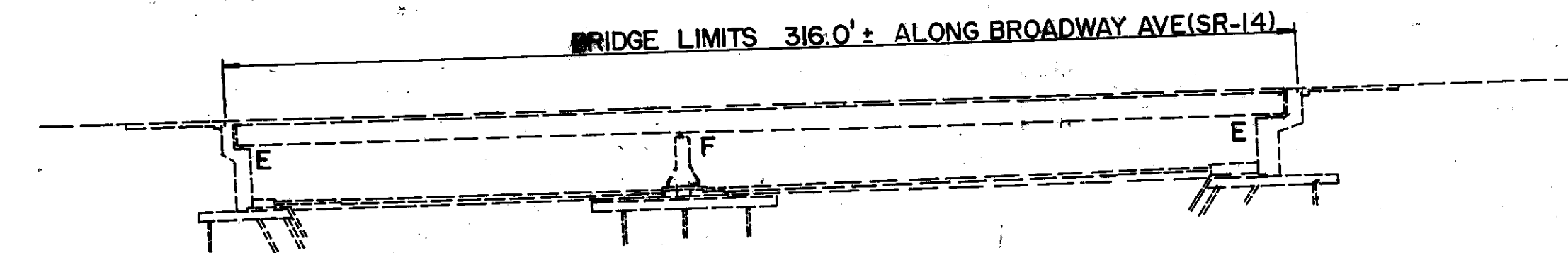
GENERAL PLAN & ELEVATION
CUY-77-1335
(I-77 OVER RUFFINI AVE.)

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
L.D.H.	J.T.G.	E.N.F.	D.W.L.		

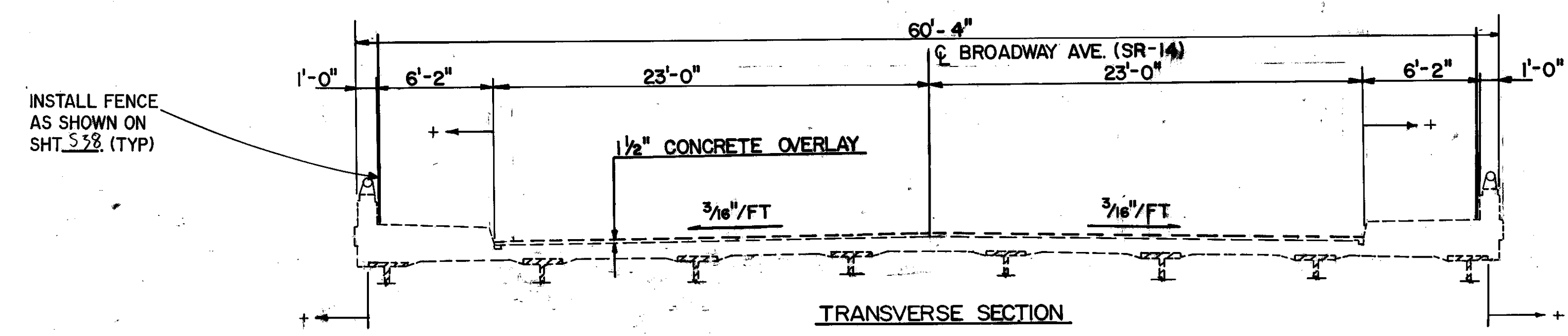
GENERAL PLAN AND ELEVATION



GENERAL PLAN
0 15 30 60
SCALE IN FEET



ELEVATION
0 10 20 50
SCALE IN FEET



TRANSVERSE SECTION

-- LIMITS FOR EPOXY SEALING (TYP.)

- LEGEND**
- CRUSHED AGGREGATE SLOPE PROTECTION
 - CONCRETE SLOPE PROTECTION
 - EXISTING CRUSHED AGGREGATE SLOPE PROTECTION
 - EXISTING CONCRETE SLOPE PROTECTION
 - HMWM - HIGH MOLECULAR WEIGHT METHACRYLATE
 - M.S.C. - MICRO-SILICA MODIFIED CONCRETE
 - EXISTING IMPACT ATTENUATOR
 - E - EXPANSION BEARING
 - F - FIXED BEARING
 - Q.S.M. - QUICK SETTING MORTAR

* ACTUAL UNSOUND AREA OR 5% OF THE SEALED AREA

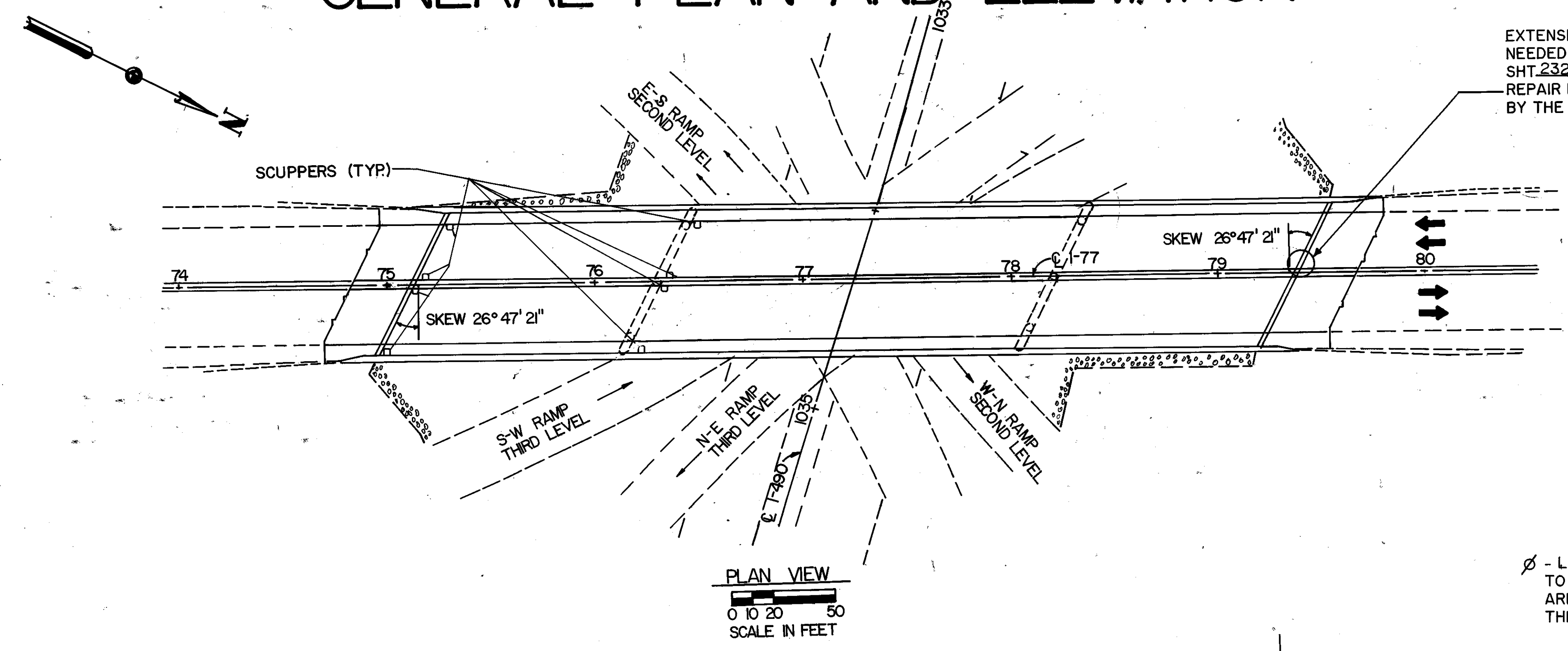
LOCATION	SPECIAL	* 519	* SPECIAL
	SOUNDING CONCRETE BRIDGE COMPONENTS	PATCHING CONCRETE STRUCTURES AS PER PLAN	REPAIRING CONCRETE WITH SOLVENT FREE EPOXY RESIN
	SQ. FT.	SQ. FT.	SQ. FT.
ABUTMENT	14544	200	X
PIER & CAP	1692	800	
PARAPET	11196	560	
25% ADDITIONAL		390	
TOTAL	27432	1950	

** ESTIMATED QUANTITY TO BE USED AS DIRECTED BY THE ENGINEER.

PROPOSED WORK
1. SEAL (HMWM) AND GROOVE WEAR SURFACE. 2. PATCH CONCRETE SURFACES AND EPOXY SEAL 3. DRAINAGE SYSTEM REPAIR AND CLEANING. 4. INSTALL PEDESTRIAN FENCE.
EXISTING STRUCTURE
TYPE: CONTINUOUS WELDED STEEL GIRDER WITH REINFORCED CONCRETE DECKS & SUBSTRUCTURE SPANS: 125'-8" & 171'-8" ROADWAY: 46'-0" T/T OF 6'-2" SIDEWALKS LOADING: C.F. 400 WEARING SURFACE: 1 1/2" CONCRETE OVERLAY ALIGNMENT: TANGENT SKEW: VARIES

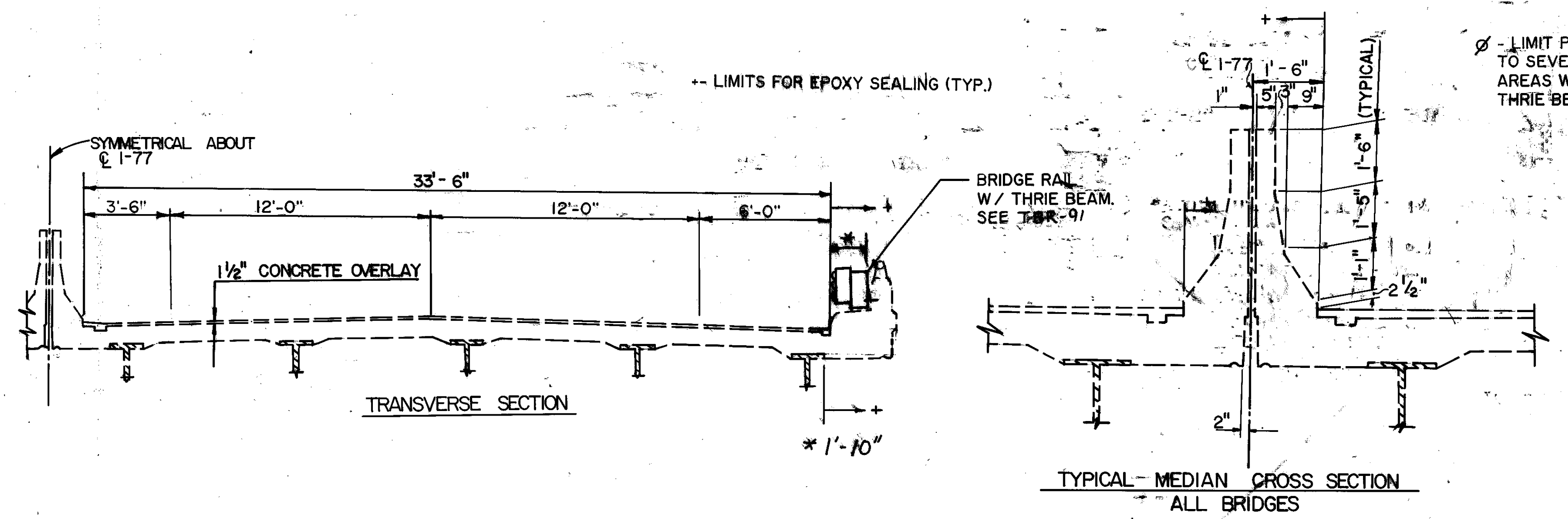
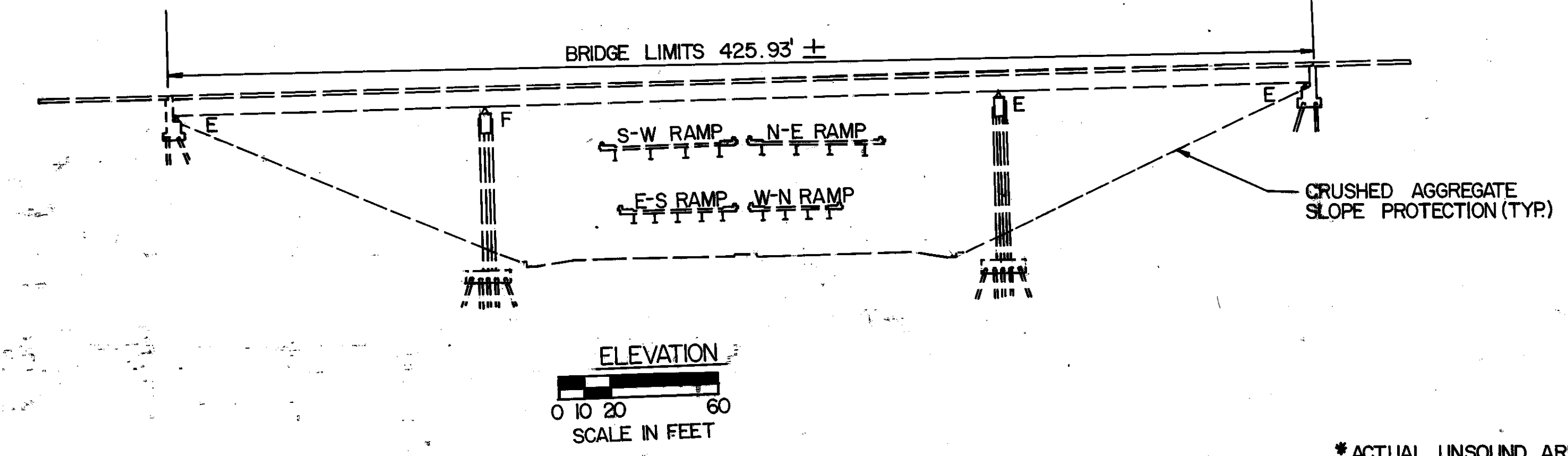
GENERAL PLAN AND ELEVATION

FOR LEGEND, SEE SHEET 206



EXTENSIVE BACKWALL REPAIR NEEDED IN THIS AREA. SEE SHT. 232 FOR DETAILS. ACTUAL REPAIR LIMITS TO BE DETERMINED BY THE ENGINEER.

∅ - LIMIT PARAPET PATCHING TO SEVERELY DETERIORATED AREAS WHICH WOULD HAMPER THRIE BEAM INSTALLATION



*ACTUAL UNSOUND AREA OR 5% OF THE SEALED AREA

LOCATION	SPECIAL SOUNDING CONCRETE BRIDGE COMPONENTS	*519 PATCHING CONCRETE STRUCTURES AS PER PLAN	*SPECIAL REPAIRING CONCRETE WITH SOLVENT FREE EPOXY RESIN
	SQ. FT.	SQ. FT.	SQ. FT.
ABUTMENT	2484	124	
PIER & CAP	8352	120	
∅ PARAPET	12096	605	
25% ADDITIONAL		212	
TOTAL	22932	1061	

**ESTIMATED QUANTITY TO BE USED AS DIRECTED BY THE ENGINEER

- PROPOSED WORK**
1. DRAINAGE SYSTEM REPAIR AND CLEANING
 2. DECK BOTTOM SOUNDINGS AND EPOXY INJECTING
 3. SEAL (HMWM) AND GROOVE WEARING SURFACE
 4. INSTALL RAILING FACED WITH THRIE BEAM
 5. REPAIR BACKWALL
 6. PATCH CONCRETE SURFACES AND EPOXY SEAL

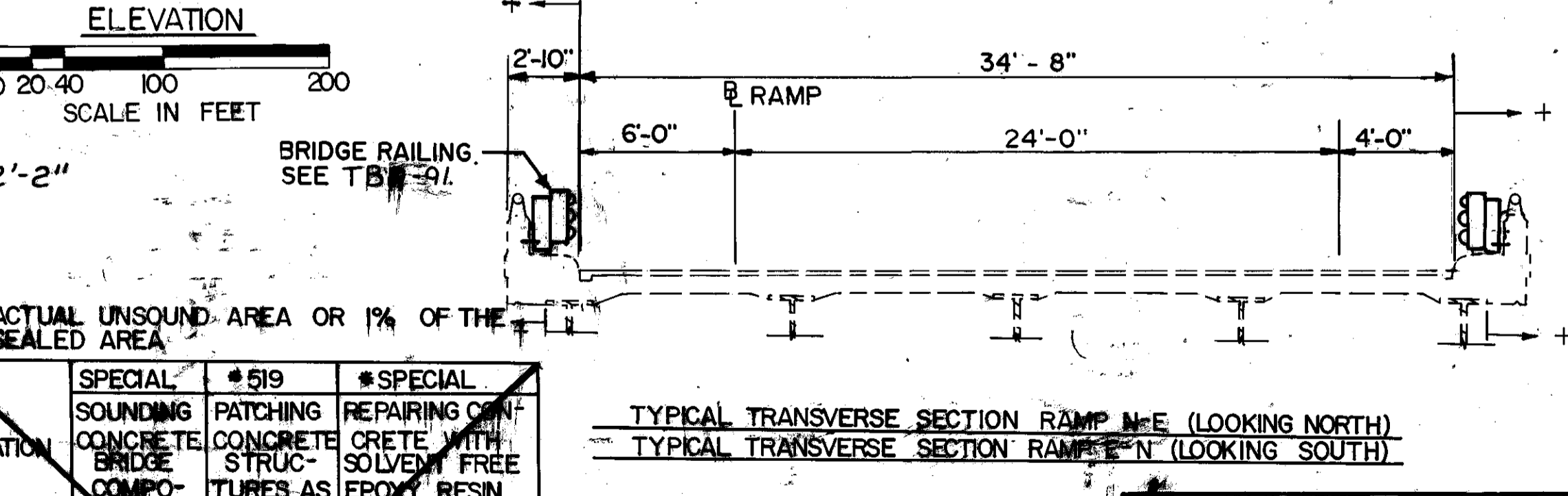
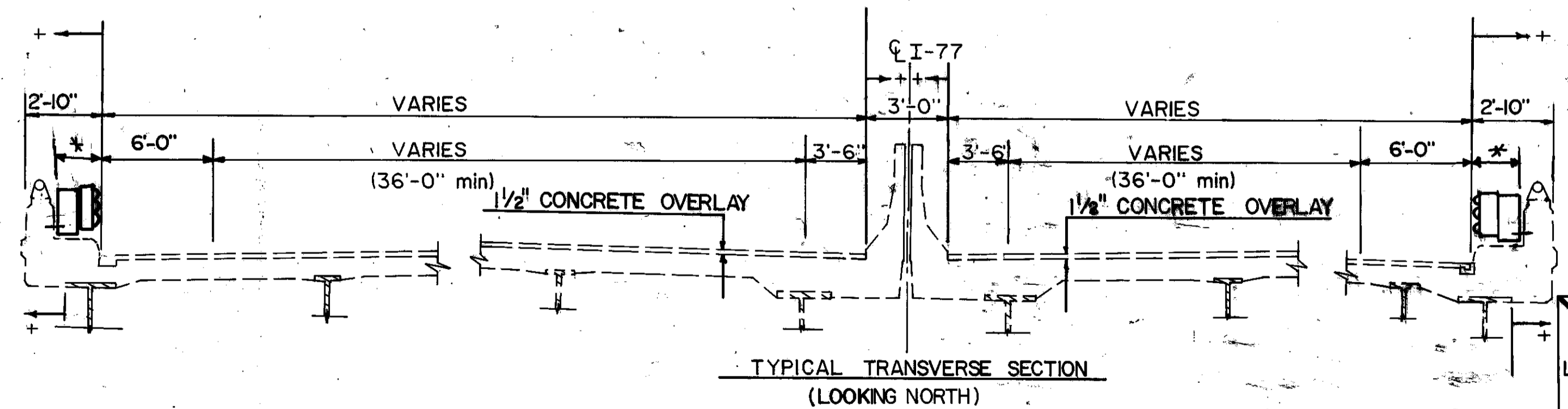
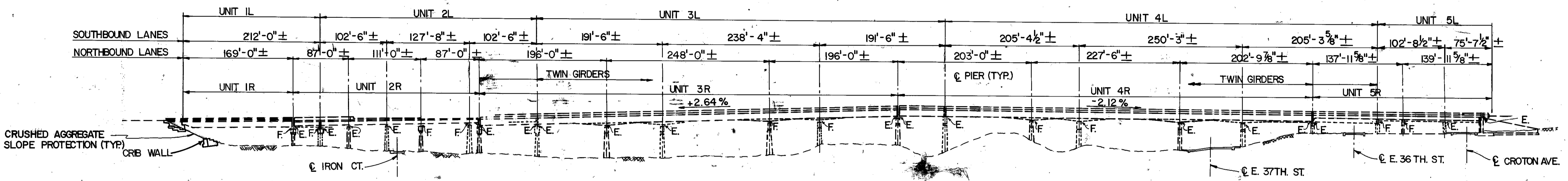
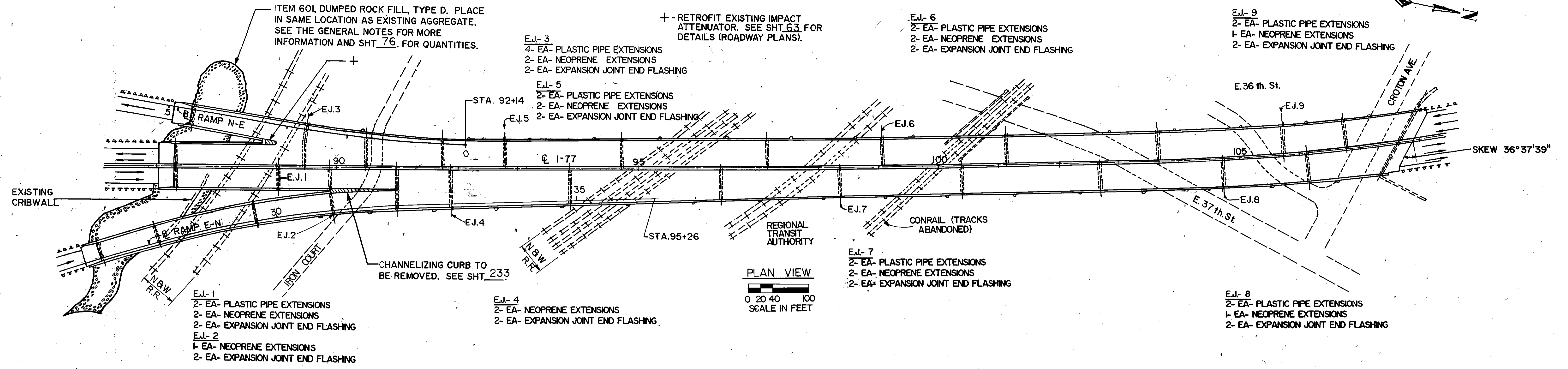
EXISTING STRUCTURE

TYPE: 3 SPAN CONTINUOUS WELDED PLATE GIRDER WITH REINFORCED CONCRETE DECK & SUBSTRUCTURE
 SPANS: 115'-2", 190'-0", 115'-2"
 ROADWAY: DUAL ROADWAYS - EACH 33'-0" F/F CURBS
 LOADING: C.F. 2000
 WEARING SURFACE: 1/2" CONCRETE OVERLAY
 ALIGNMENT: TANGENT
 SKEW: 26°47' 21"

STATE OF OHIO
 DEPARTMENT OF TRANSPORTATION
 DISTRICT 12 LOCATION & DESIGN

GENERAL PLAN AND ELEVATION.
 BR. NO. CUY-77-1435
 (IR-77 OVER IR-490)

GENERAL PLAN AND ELEVATION



EXISTING STRUCTURE

TYPE: SIMPLE, 2B/3 SPAN CONTINUOUS WELDED PLATE GIRDERS WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE.

SPANS: VARY
ROADWAY: 1-77 DUAL ROADWAYS WIDTH F/F CURBS VARIES, 33'-0" & 45'-0"

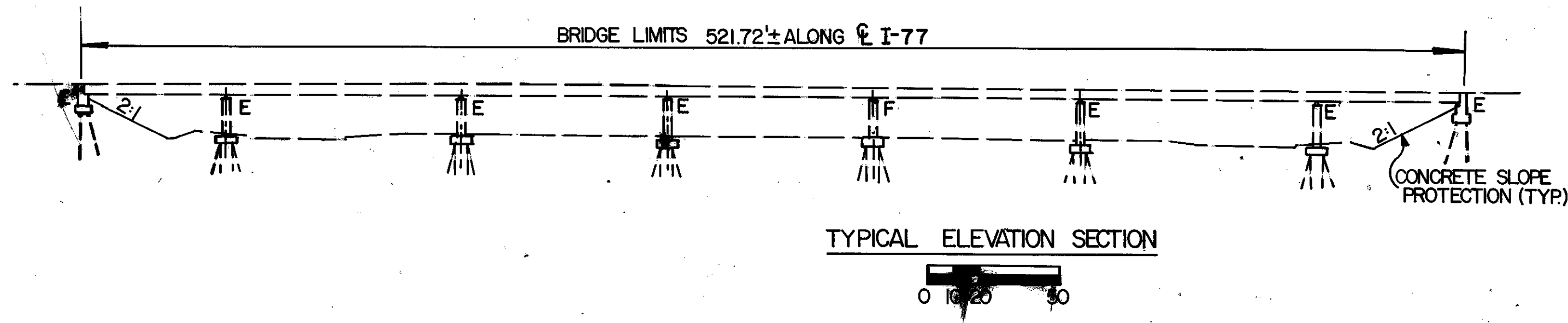
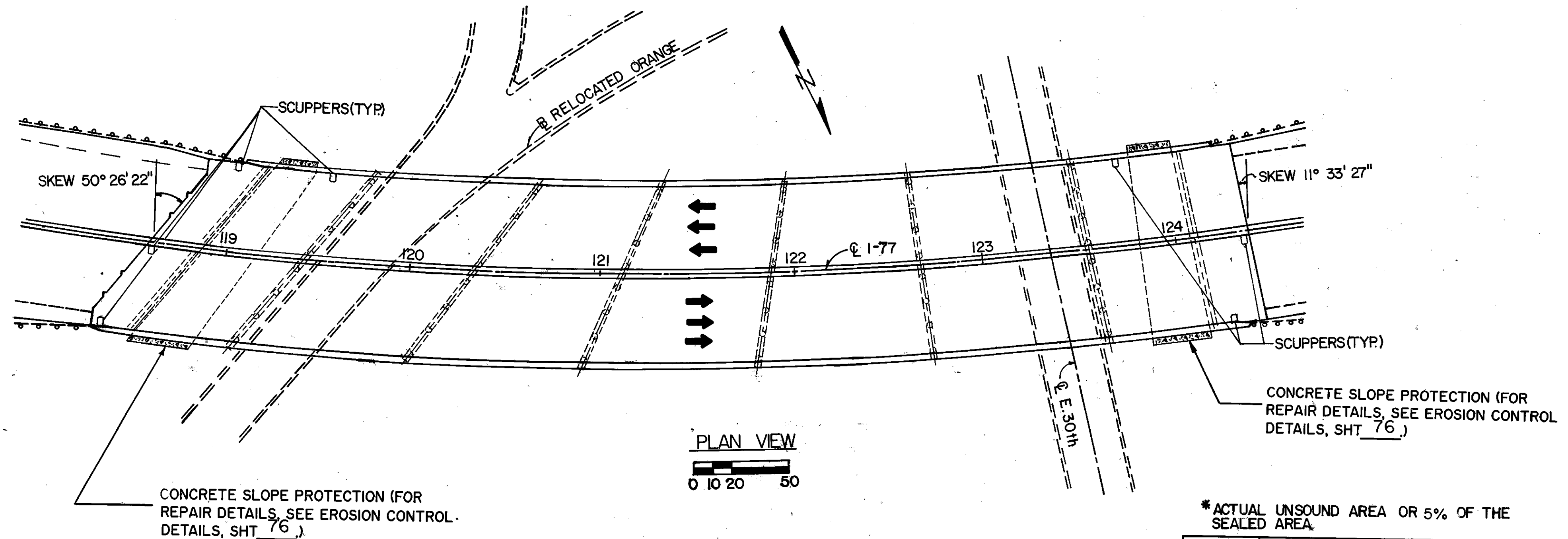
LOADING: CF 2000
WEARING SURFACE: 1 1/2" CONCRETE OVERLAY
ALIGNMENT: TANGENT TO 4° CURVE
SKEW: VARIES

LOCATION	SPECIAL SOUNDING CONCRETE COMPOUNTS SQ. FT.	*519 PATCHING CONCRETE STRUCTURES AS PER PLAN SQ. FT.	*SPECIAL REPAIRING CONCRETE WITH SOLVENT FREE EPOXY RESIN SQ. FT.
ABUTMENT			
PIER & CAP			
PARAPET			
** ADDITIONAL TOTAL			

- PROPOSED WORK**
- GROOVE WEARING SURFACE
 - DRAINAGE SYSTEM REPAIR
 - INSTALL RAILING FACED WITH THIR BEAM
 - SLOPE PROTECTION REPAIR
 - CONCRETE CURB REMOVAL
 - IMPACT ATTENUATOR RETROFIT
 - DRAINAGE TROUGH MODIFICATIONS
 - DRAINAGE CLEANING
 - PATCH WEARING SURFACE WITH QSC OR MSC.

GENERAL PLAN AND ELEVATION

FOR LEGEND, SEE SHEET 206.

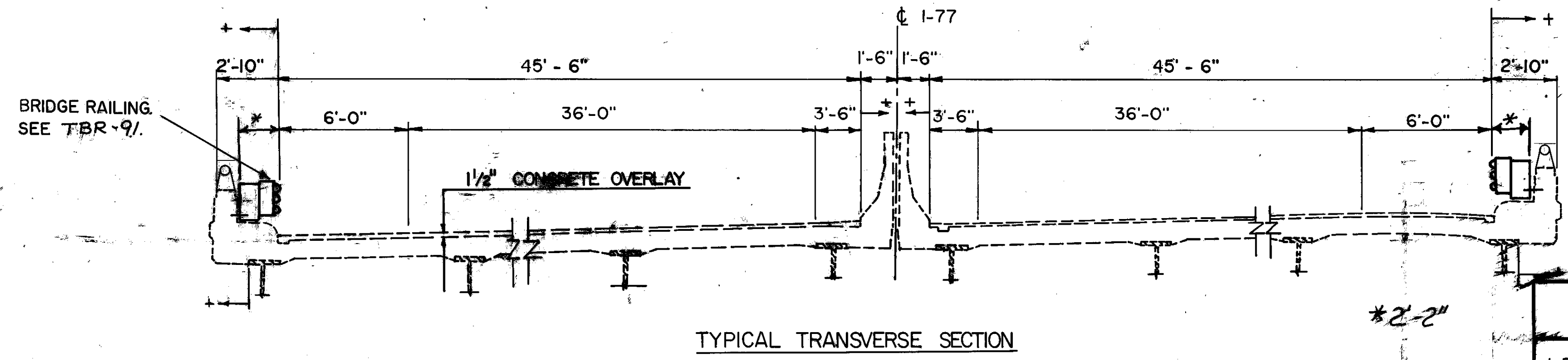


*ACTUAL UNSOUND AREA OR 5% OF THE SEALED AREA

LOCATION	SPECIAL SOUNDING CONCRETE BRIDGE COMPONENTS SQ. FT.	* 519 PATCHING CONCRETE STRUCTURES AS PER PLAN SQ. FT.	* SPECIAL REPAIRING CONCRETE WITH SOLVENT FREE EPOXY RESIN SQ. FT.
ABUTMENT	2547	127	
PIER & CAP	13905	50	
PARAPET	12960	648	
25%			
** ADDITIONAL		206	
TOTAL	29412	1031	

**ESTIMATED QUANTITY TO BE USED AS DIRECTED BY THE ENGINEER

φ - LIMIT PARAPET PATCHING TO SEVERELY DETERIORATED AREAS WHICH WOULD HAMPER THRIE BEAM INSTALLATION



EXISTING STRUCTURE

TYPE: CONTINUOUS WELDED STEEL GIRDER WITH REINFORCED CONCRETE DECK & SUBSTRUCTURE

SPANS: 53'-4", 88'-10", 77'-7", 77'-6", 88'-10", 53'-4"

ROADWAY: DUAL ROADWAYS 45'-0" F/F CURBS

LOADING: C.F. 2000

WEARING SURFACE: 1 1/2" CONCRETE OVERLAY

ALIGNMENT: 3° CURVE LEFT

SKEW: VARIES

- PROPOSED WORK
1. PATCH WEARING SURFACE WITH MSC OR QSM
 2. SEAL (HMWM) AND GROOVE WEARING SURFACE
 3. SLOPE PROTECTION REPAIR
 4. PATCH CONCRETE SURFACES AND EPOXY SEAL
 5. DECK BOTTOM SOUNDING AND EPOXY INJECTING
 6. INSTALL RAILING FACED WITH THRIE BEAM.
 7. DRAINAGE CLEANING

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

GENERAL PLAN AND ELEVATION
CUY-77-1518
(I-77 OVER ORANGE & E.30)

CUYAHOGA COUNTY OHIO

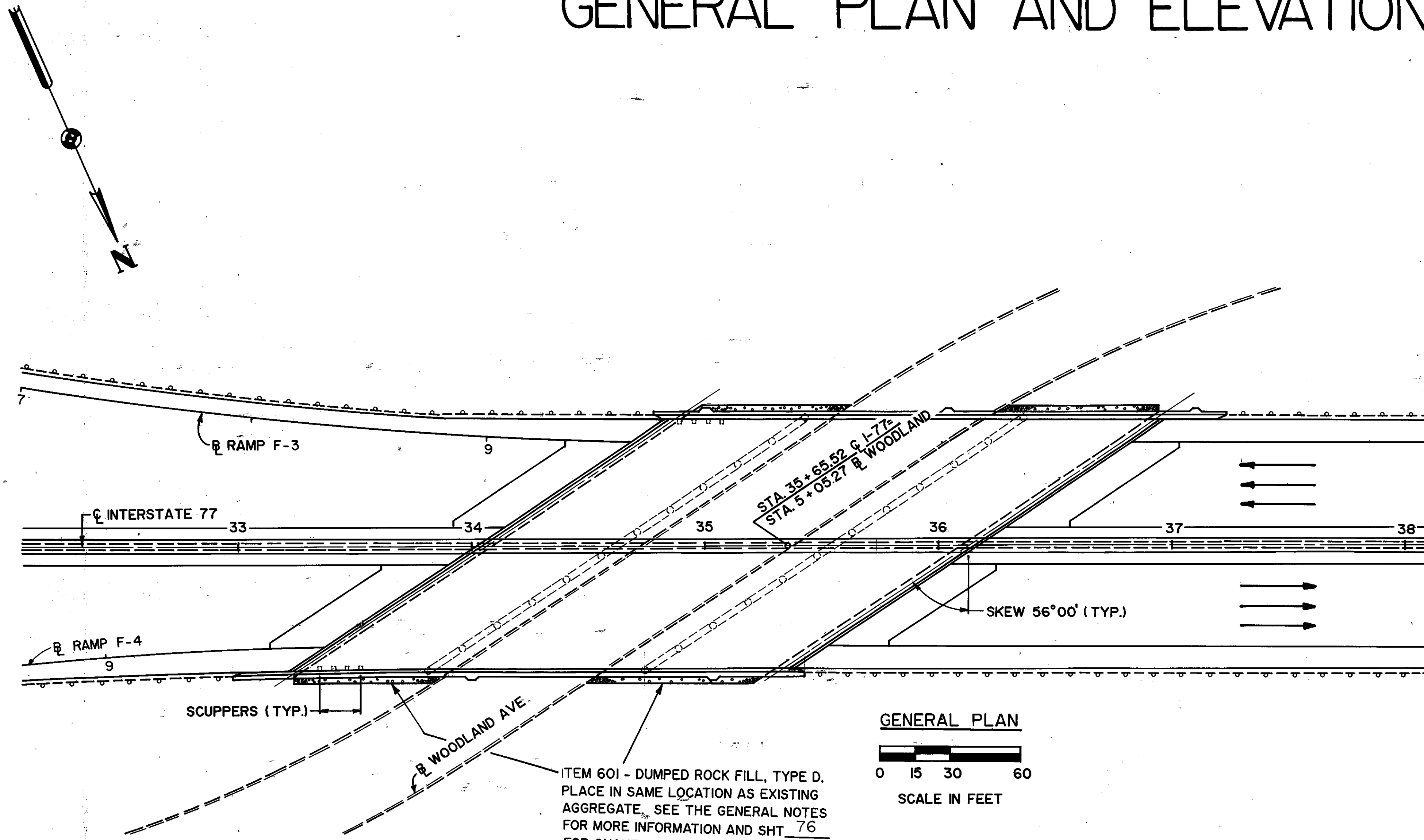
DESIGNED L.D.H. DATE	TRACED L.G.H. DATE	CHECKED E.N.F. DATE	REVIEWED D.W.L. DATE	REVISED
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REVISID 12-10-92

SHEET 19/44

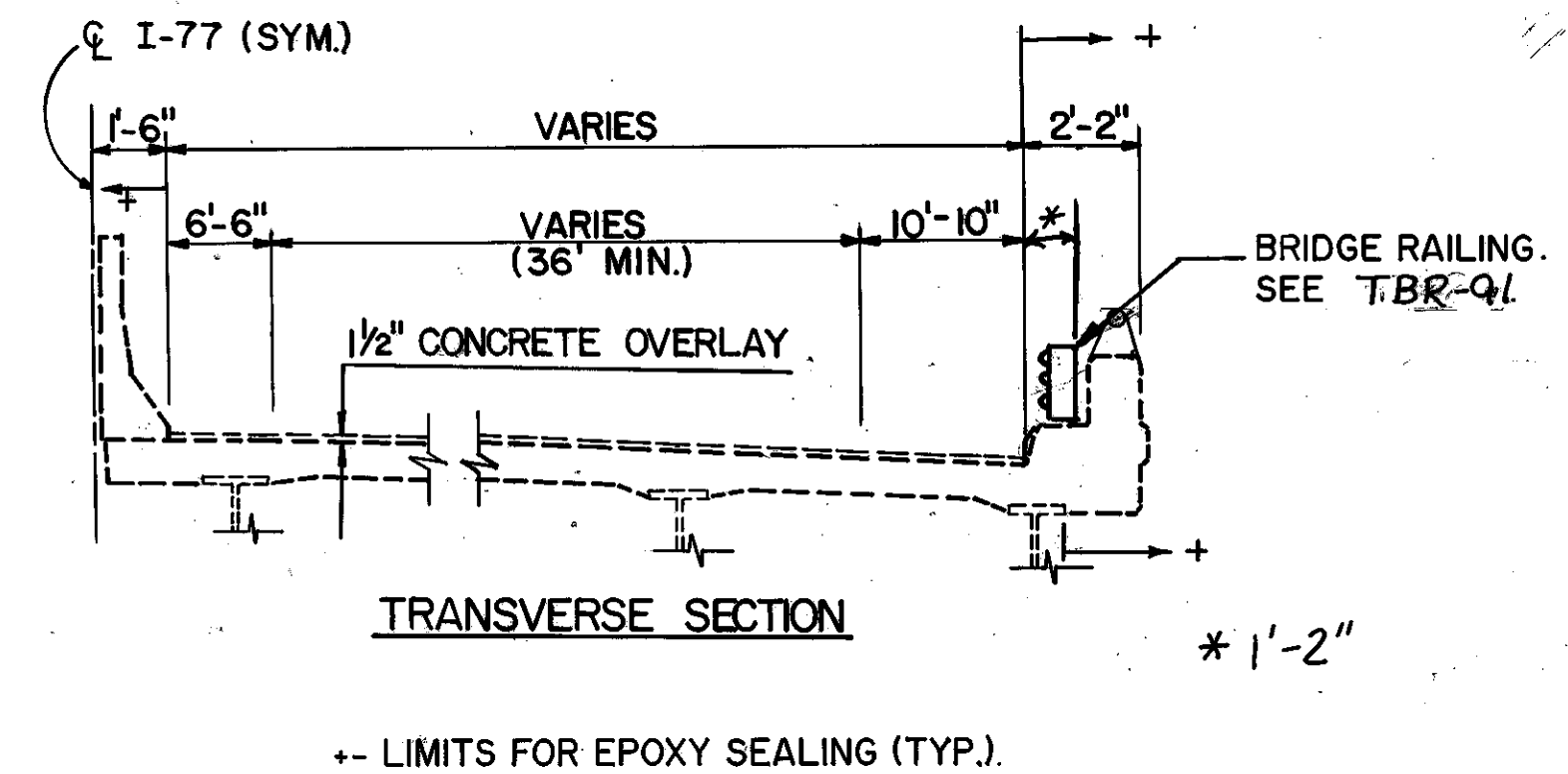
GENERAL PLAN AND ELEVATION

FOR LEGEND, SEE SHEET 206.

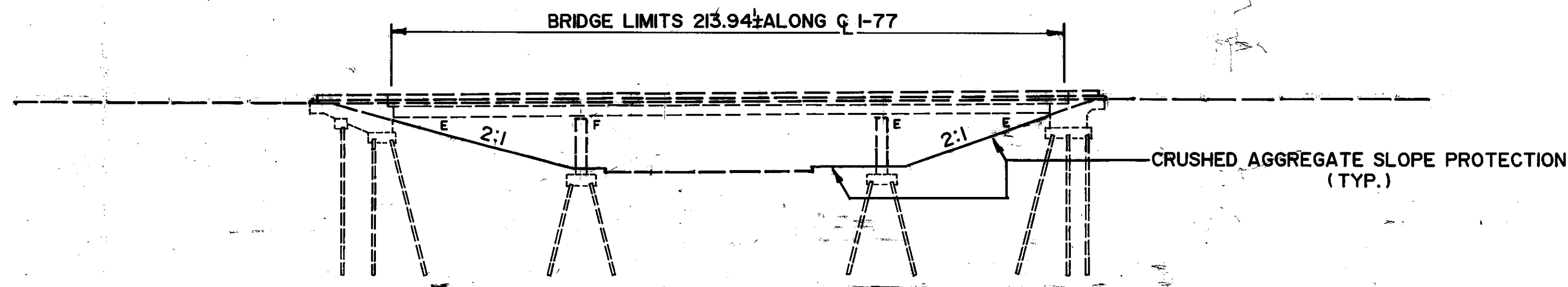


GENERAL PLAN
0 15 30 60
SCALE IN FEET

ITEM 601 - DUMPED ROCK FILL, TYPE D. PLACE IN SAME LOCATION AS EXISTING AGGREGATE. SEE THE GENERAL NOTES FOR MORE INFORMATION AND SHT 76 FOR QUANTITIES.



TRANSVERSE SECTION
* 1'-2"
LIMITS FOR EPOXY SEALING (TYP.)



GENERAL ELEVATION
0 15 30 60
SCALE IN FEET

φ - LIMIT PARAPET PATCHING TO SEVERELY DETERIORATED AREAS WHICH WOULD HAMPER THRIE BEAM INSTALLATION

*ACTUAL UNSOUND AREA OR 5% OF THE SEALED AREA

LOCATION	SPECIAL SOUNDING CONCRETE BRIDGE COMPONENTS	*519 PATCHING CONCRETE STRUCTURES AS PER PLAN	*SPECIAL REPAIRING CONCRETE WITH SOLVENT FREE EPOXY RESIN
	SQ. FT.	SQ. FT.	SQ. FT.
ABUTMENT	3510	2700	
PIER & CAP	10386	519	
PARAPET	5256	263	
25% ADDITIONAL		870	
TOTAL	19152	4352	

**ESTIMATED QUANTITY TO BE USED AS DIRECTED BY THE ENGINEER

PROPOSED WORK

1. PATCH WEARING SURFACE WITH MSC OR QSM
2. SEAL (HMWM) AND GROOVE WEARING SURFACE
3. SLOPE PROTECTION REPAIR
4. PATCH CONCRETE SURFACES AND EPOXY SEAL
5. DECK BOTTOM SOUNDING AND EPOXY INJECTING
6. INSTALL RAILING FACED WITH THRIE BEAM

EXISTING STRUCTURE

TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE.
SPANS: 56'-0", 93'-0", 56'-0"
ROADWAY: 53'-4" (NOMINAL) T/T CURBS (EA. DIR.)
LOADING: C.F. 2000
WEARING SURFACE: 1/2" CONCRETE OVERLAY
ALIGNMENT: TANGENT
SKEW: 56°00'

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

GENERAL PLAN & ELEVATION

CUY-77-1546

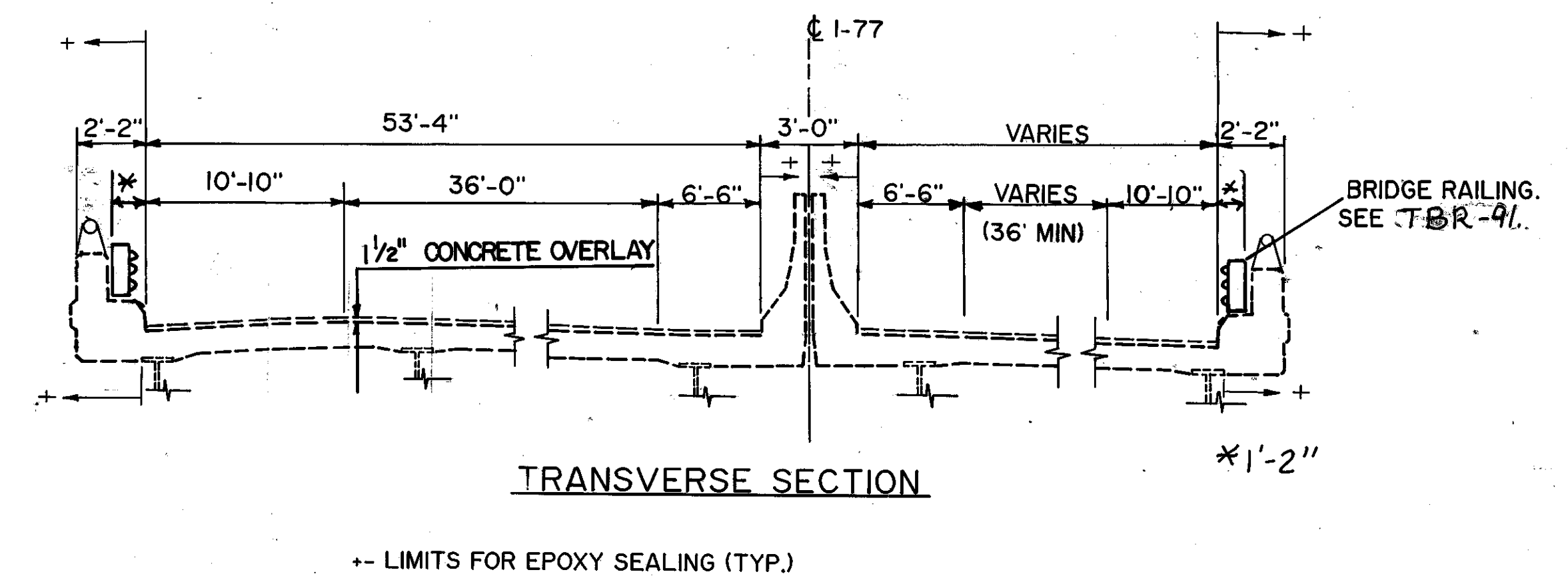
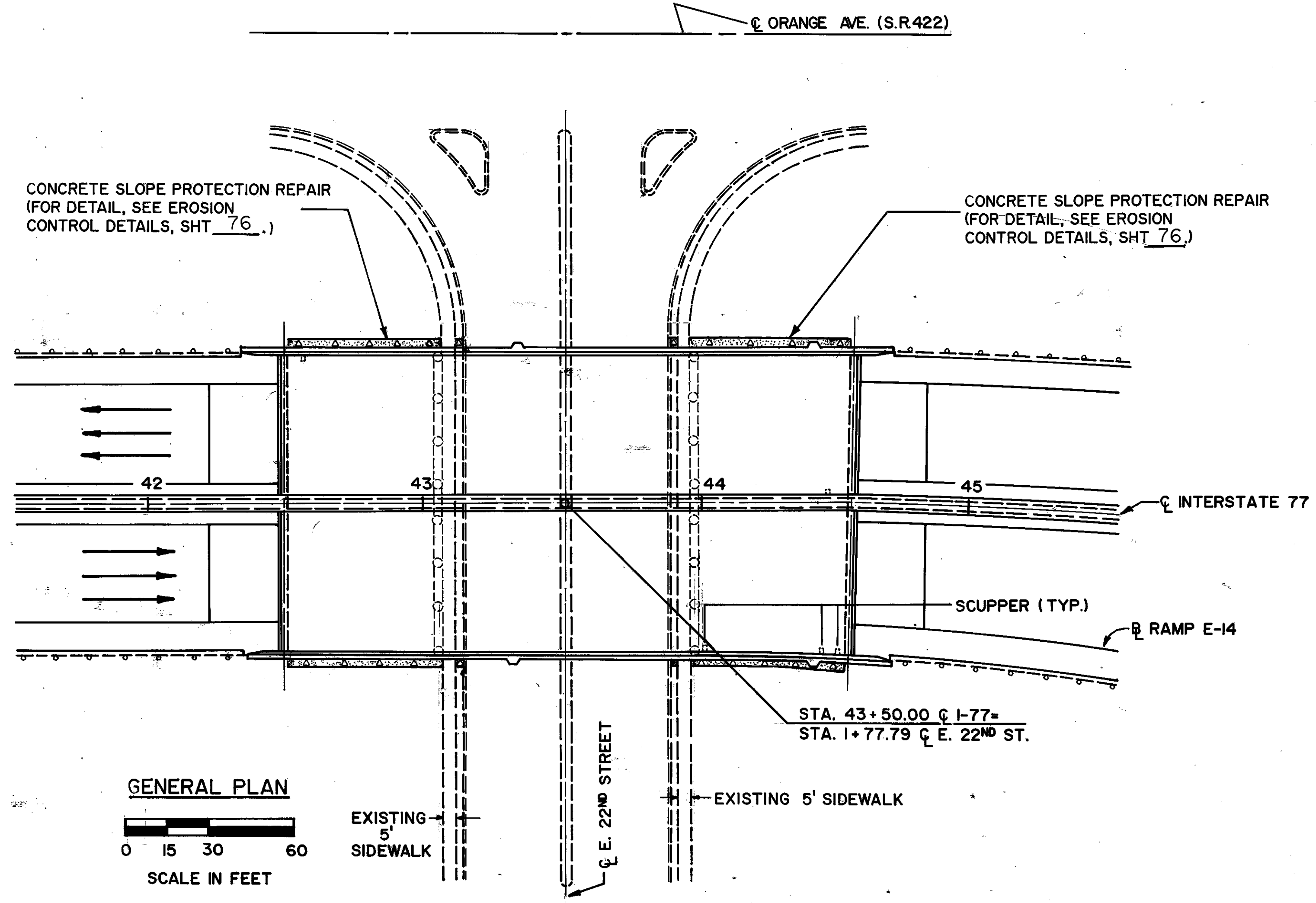
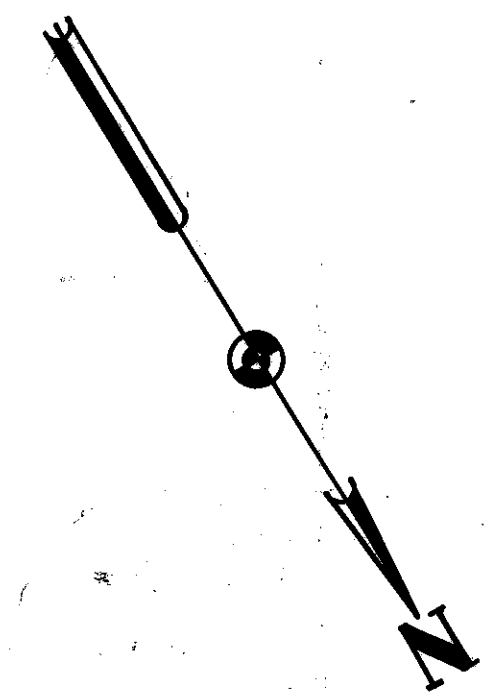
(I-77 OVER WOODLAND AVE.)

DESIGNED L.D.H. DATE	TRACED FLK DATE	CHECKED E.N.F. DATE	REVIEWED D.W.L. DATE	REVISED
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REVISED 12-10-92

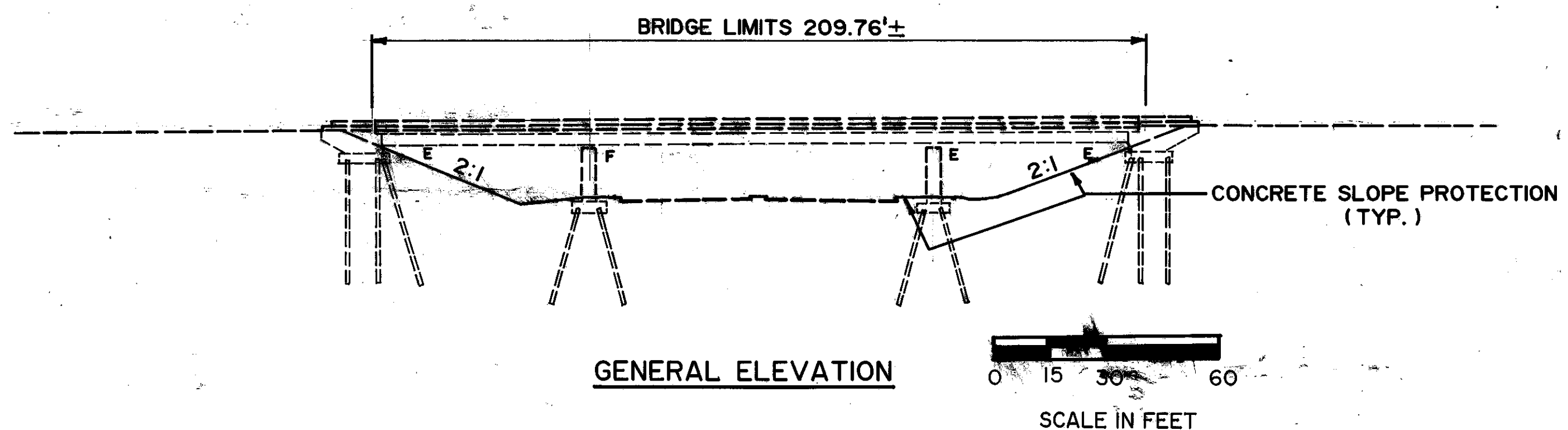
GENERAL PLAN AND ELEVATION

FOR LEGEND, SEE SHEET 206



GENERAL PLAN
SCALE IN FEET

TRANSVERSE SECTION
SCALE 1/2" = 1'



GENERAL ELEVATION
SCALE IN FEET

∅ - LIMIT PARAPET PATCHING TO SEVERELY DETERIORATED AREAS WHICH WOULD HAMPER THRIE BEAM INSTALLATION

- PROPOSED WORK**
1. PATCH WEARING SURFACE WITH MSC OR QSM
 2. SLOPE PROTECTION REPAIR
 3. DECK BOTTOM SOUNDING AND EPOXY INJECTING
 4. SEAL (HMWM) AND GROOVE WEARING SURFACE
 5. PATCH CONCRETE SURFACES AND EPOXY SEAL
 6. INSTALL RAILING FACED WITH THRIE BEAM

EXISTING STRUCTURE

TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE.
 SPANS: 56'-0", 93'-3", 56'-0" ALONG C I-77.
 ROADWAY: 53'-4" (NOMINAL) T/T CURBS (EA. DIR.)
 LOADING: C.F. 2000
 WEARING SURFACE: 1/2" CONCRETE OVERLAY.
 ALIGNMENT: TANGENT 3°00' RT.
 SKEW: NONE

*ACTUAL UNSOUND AREA OR 5% OF THE SEALED AREA

LOCATION	SPECIAL SOUNDING CONCRETE BRIDGE COMPONENTS	*519 PATCHING CONCRETE STRUCTURES AS PER PLAN	*SPECIAL REPAIRING CONCRETE WITH SOLVENT FREE EPOXY RESIN
	SQ. FT.	SQ. FT.	SQ. FT.
ABUTMENT	1926	1000	
PIER & CAP	6057	303	
∅ PARAPET	5076	254	
25% ADDITIONAL		430	
TOTAL	13059	1987	

**ESTIMATED QUANTITY TO BE USED AS DIRECTED BY THE ENGINEER

STATE OF OHIO
 DEPARTMENT OF TRANSPORTATION
 DISTRICT 12 LOCATION & DESIGN

GENERAL PLAN & ELEVATION
 CUY-77-1562
 (I-77 OVER E. 22ND ST.)

CUYAHOGA COUNTY OHIO

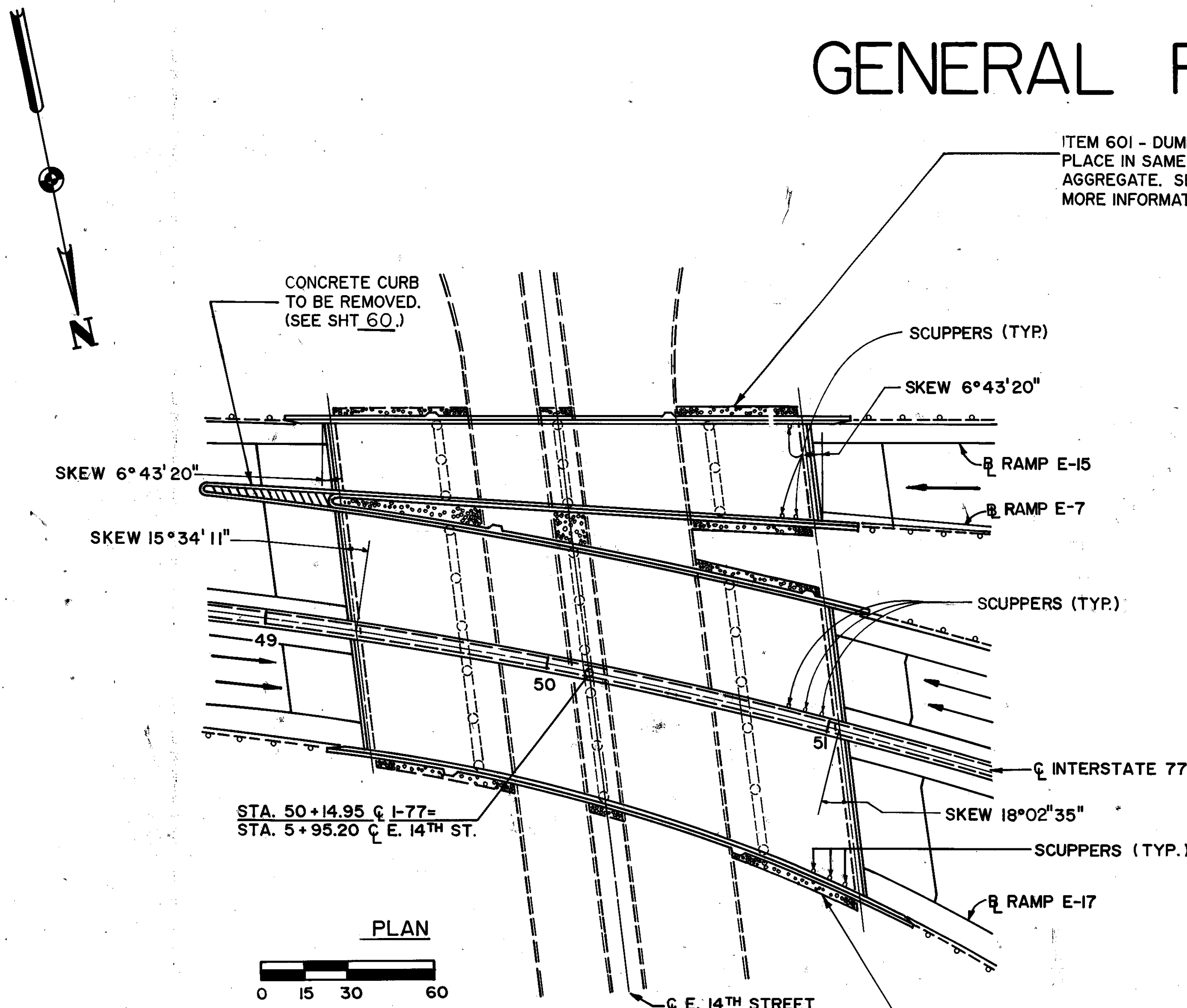
DESIGNED L.D.H. DATE	TRACED PLK DATE	CHECKED E.N.F. DATE	REVIEWED D.W.L. DATE	REVISED
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Revised 12-10-92

SHEET 21/44

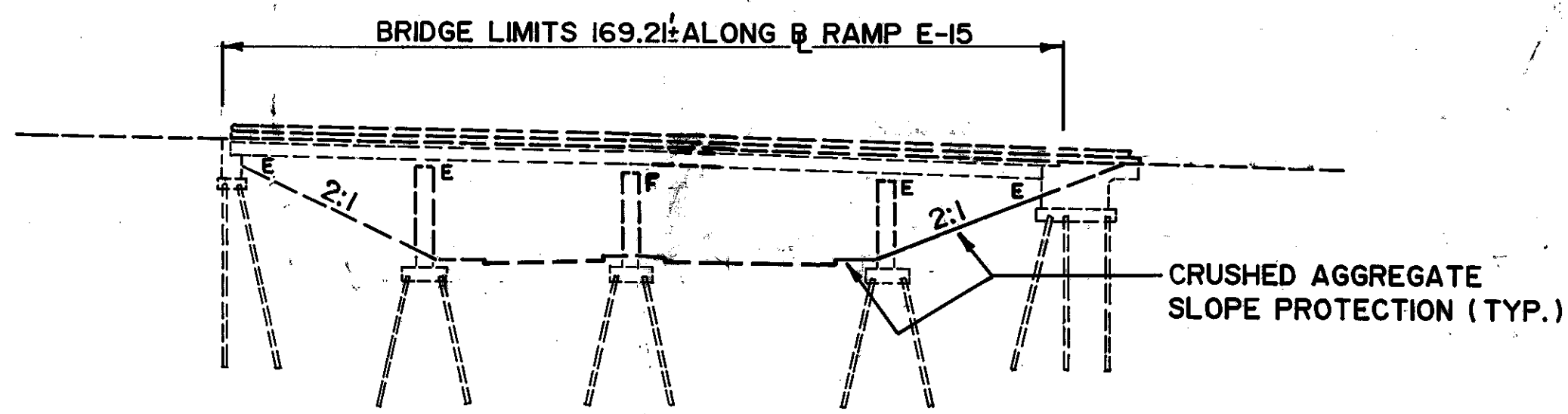
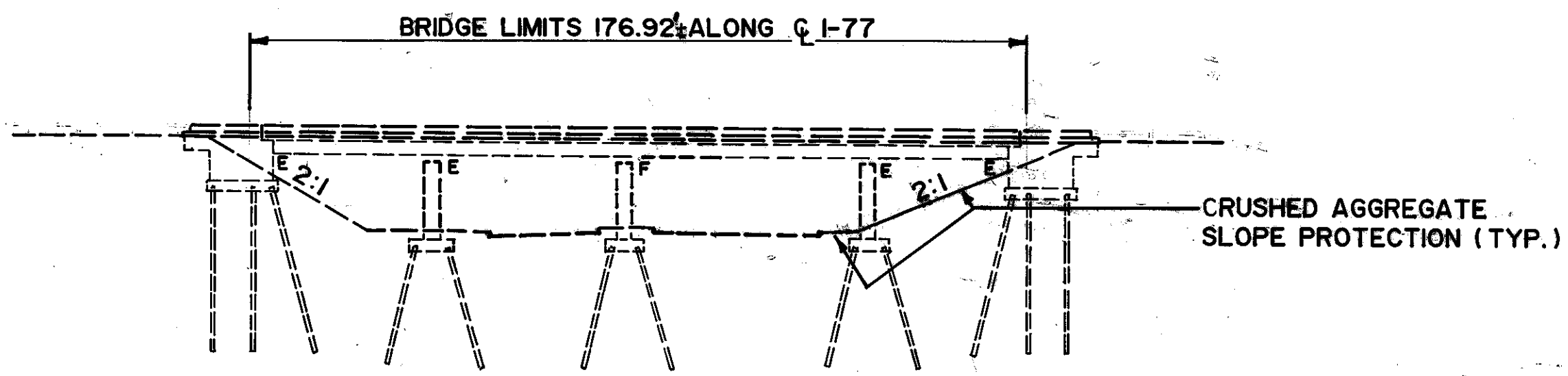
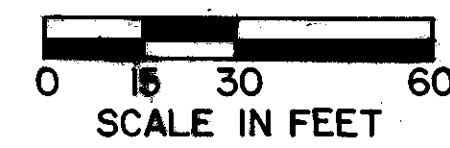
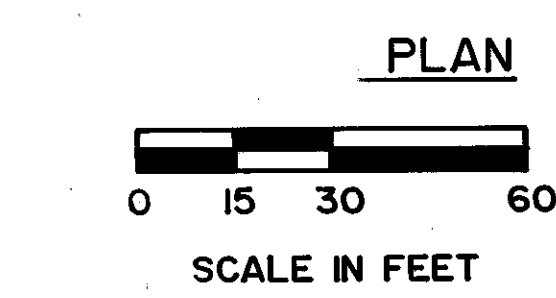
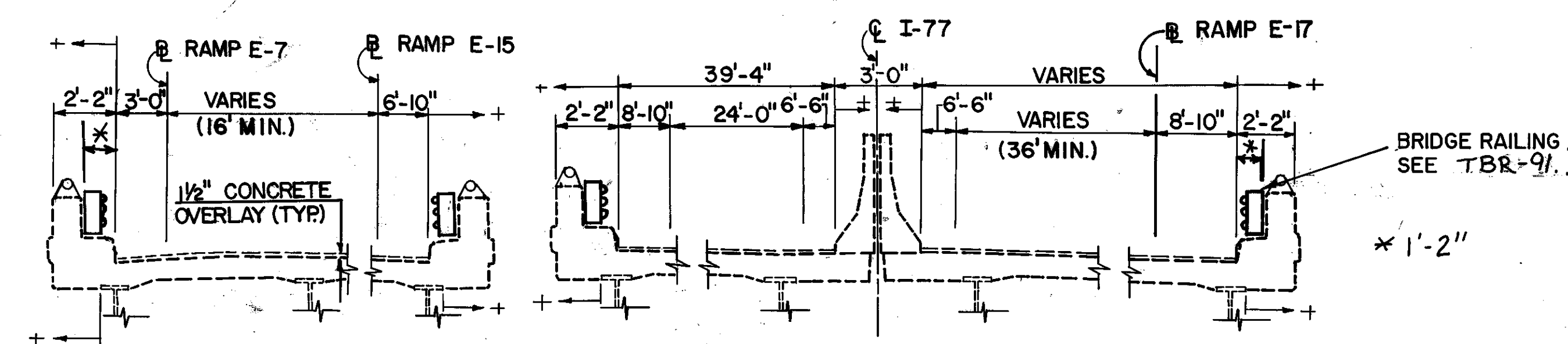
GENERAL PLAN AND ELEVATION

FOR LEGEND, SEE SHEET 206.



ITEM 601 - DUMPED ROCK FILL, TYPE D. PLACE IN SAME LOCATION AS THE EXISTING AGGREGATE. SEE THE GENERAL NOTES FOR MORE INFORMATION AND SHT 76 FOR QUANTITIES.

ITEM 601 - DUMPED ROCK FILL, TYPE D. PLACE IN SAME LOCATION AS THE EXISTING AGGREGATE. SEE THE GENERAL NOTES FOR MORE INFORMATION AND SHT 76 FOR QUANTITIES.



*ACTUAL UNSOUND AREA OR 5% OF THE SEALED AREA

LOCATION	SPECIAL	#519	#SPECIAL
	SOUNDING CONCRETE BRIDGE COMPONENTS	PATCHING CONCRETE STRUCTURES AS PER PLAN	REPAIRING CONCRETE WITH SOLVENT FREE EPOXY RESIN
	SQ. FT.	SQ. FT.	SQ. FT.
ABUTMENT	2079	1040	
PIER & CAP	10485	524	
PARAPET	7524	376	
25%			
** ADDITIONAL		485	
TOTAL	20088	2425	

φ - LIMIT PARAPET PATCHING TO SEVERELY DETERIORATED AREAS WHICH WOULD HAMPER THRIE BEAM INSTALLATION

** ESTIMATED QUANTITY TO BE USED AS DIRECTED BY THE ENGINEER

- PROPOSED WORK
1. PATCH WEARING SURFACE WITH MSC OR QSM
 2. SEAL (HMWM) AND GROOVE WEARING SURFACE
 3. PATCH CONCRETE SURFACES AND EPOXY SEAL
 4. DECK BOTTOM SOUNDING AND EPOXY INJECTING
 5. INSTALL RAILING FACED WITH THRIE BEAM
 6. RESET BEARINGS
 7. SLOPE PROTECTION REPAIR
 8. CONCRETE CURB REMOVAL

EXISTING STRUCTURE

TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE.

SPANS: 38'-7 7/8", 43'-10 1/8", 55'-9 1/4", 33'-11 7/8" ALONG CL I-77
37'-4 1/8", 42'-1 1/8", 53'-1 1/8", 32'-0 7/8" ALONG RAMP E-15

ROADWAY: 25'-10" (MIN) T/T PAR. (E-15), VARIES (E-17)

LOADING: C.F. 2000

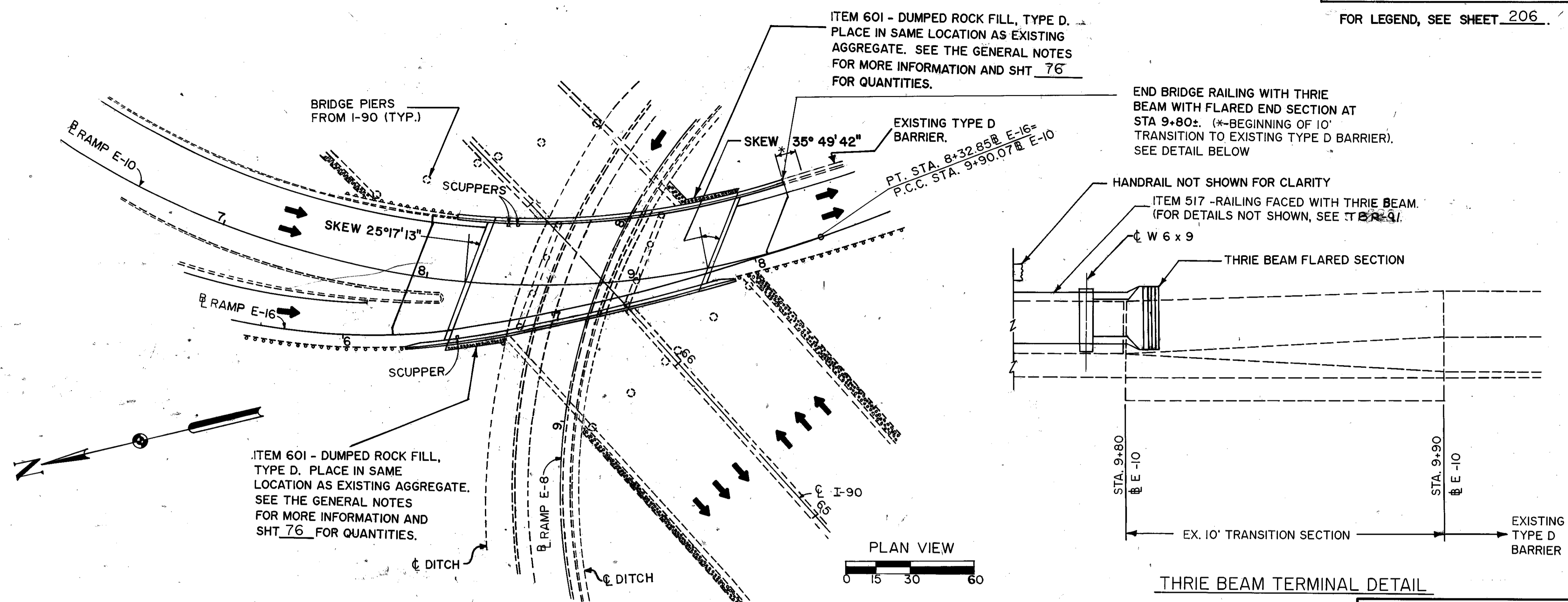
WEARING SURFACE: 1/2" CONCRETE OVERLAY

ALIGNMENT: 3°00' RT. (E-15), TANGENT (E-17)

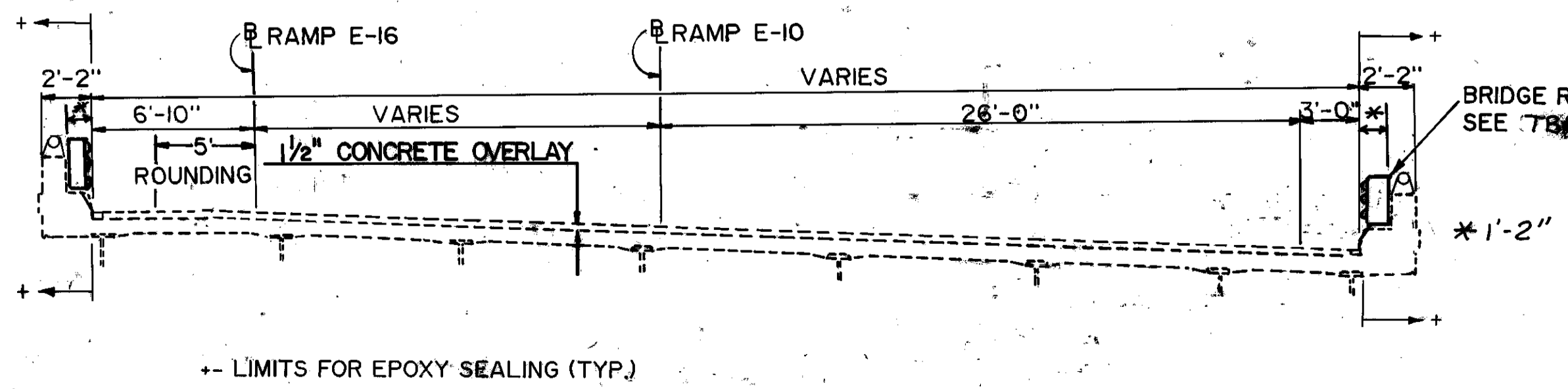
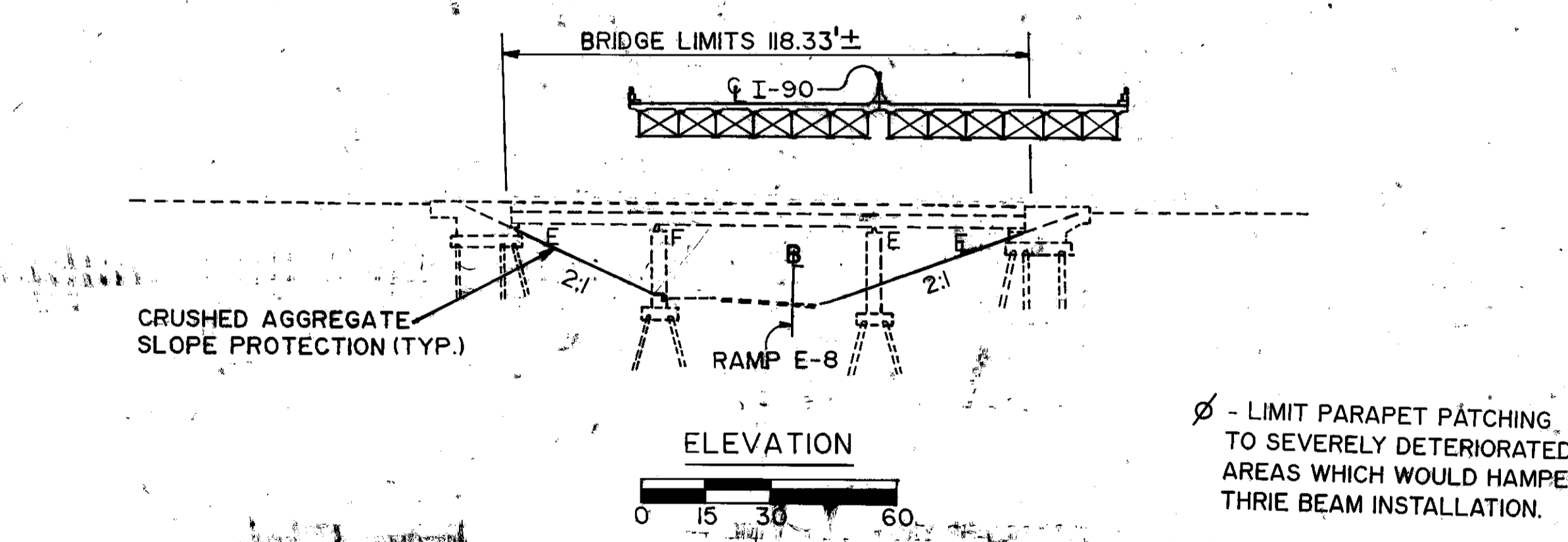
SKEW: VARIES (E-15), 6°43'20" (E-17)

GENERAL PLAN AND ELEVATION

FOR LEGEND, SEE SHEET 206.



THRIE BEAM TERMINAL DETAIL



*ACTUAL UNSOUND AREA OR 5% OF THE SEALED AREA

LOCATION	SPECIAL #519	*SPECIAL	
	SOUNDING CONCRETE BRIDGE COMPONENTS	PATCHING CONCRETE STRUCTURES AS PER PLAN	REPAIRING CONCRETE WITH SOLVENT FREE EPOXY RESIN
	SQ. FT.	SQ. FT.	SQ. FT.
ABUTMENT	891	1000	
PIER & CAP	2448	122	
PARAPET	3276	164	
25% ADDITIONAL		342	
TOTAL	6615	1628	

**ESTIMATED QUANTITY TO BE USED AS DIRECTED BY THE ENGINEER

- PROPOSED WORK
1. PATCH WEARING SURFACE WITH MSC OR QSM
 2. SEAL (HMWM) AND GROOVE WEARING SURFACE
 3. PATCH CONCRETE SURFACES AND EPOXY SEAL
 4. DECK BOTTOM SOUNDING AND EPOXY INJECTING
 5. INSTALL RAILING FACED WITH THRIE BEAM.
 6. SLOPE PROTECTION REPAIR

EXISTING STRUCTURE

TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK & SUBSTRUCTURE

SPANS: 31'-0 3/8", 48'-2 1/4", 34'-1" ALONG @ E-10

ROADWAY: VARIES

LOADING: C.F. 2000

WEARING SURFACE: 1 1/2" CONCRETE OVERLAY

ALIGNMENT: 14° 30' CURVE LEFT

SKEW: VARIES

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

GENERAL PLAN AND ELEVATION

BR. NO. CUY-77-1593 ES

(RAMP E-10 OVER E-8/UNDER IR-90)

DESIGNED L.D.H.	TRACED M.J.M.	CHECKED E.N.F.	REVIEWED D.W.L.	REVISED
DATE	DATE 11-90	DATE	DATE	DATE

OHIO

REVISED 12-10-92

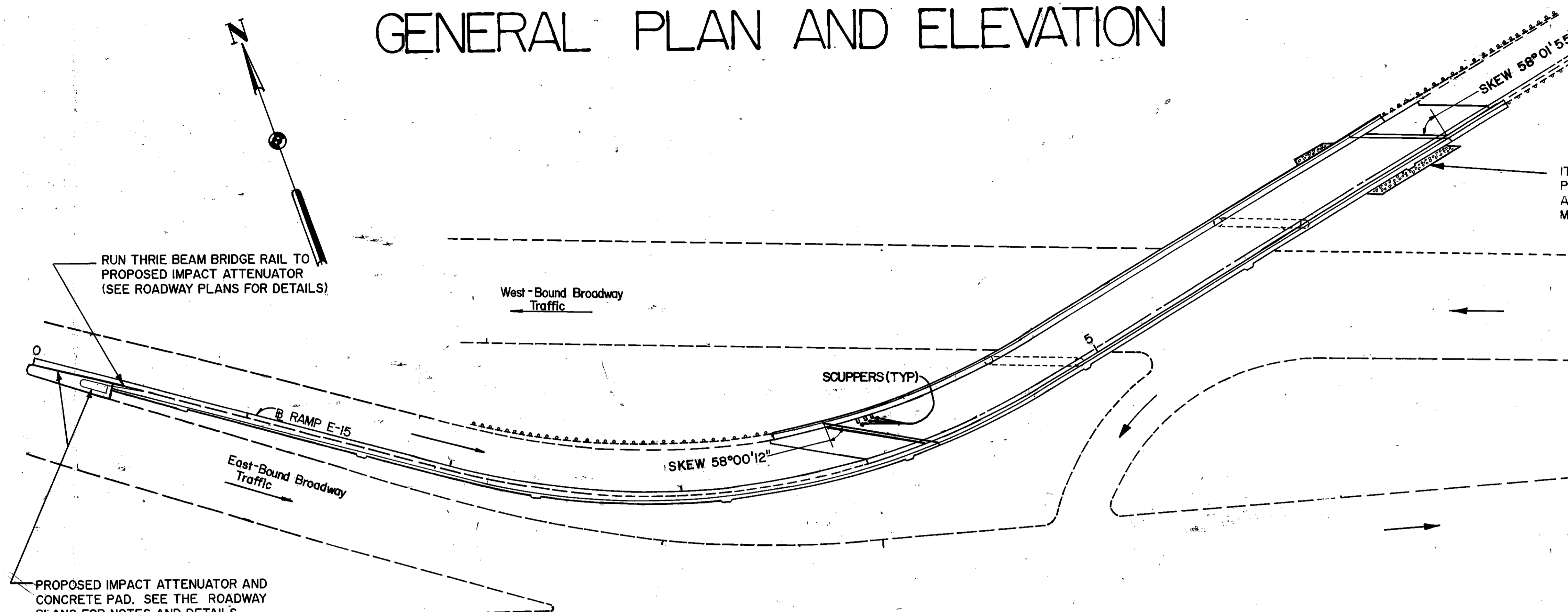
GENERAL PLAN AND ELEVATION

CUYAHOGA COUNTY
 CUY-77-13.81

OHIO
 REGION 5
 FEDERAL PROJECT

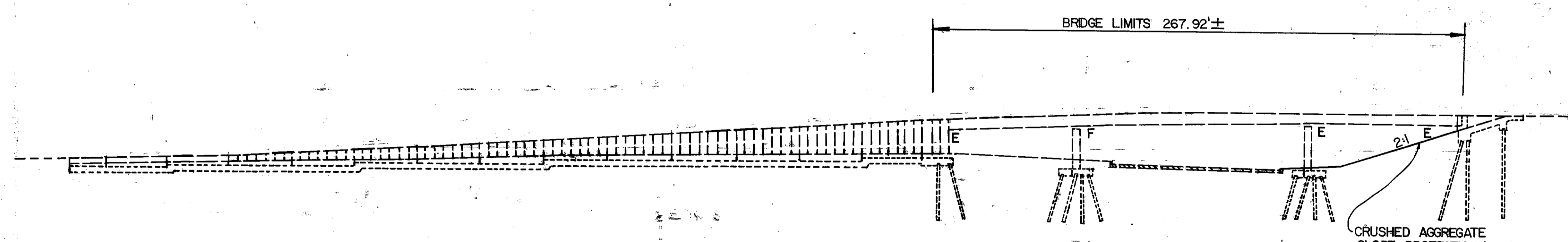
214
 234

FOR LEGEND, SEE SHEET 206.



ITEM 601 - DUMPED ROCK FILL, TYPE D. PLACE IN SAME LOCATION AS THE EXISTING AGGREGATE. SEE THE GENERAL NOTES FOR MORE INFORMATION AND SHT 76 FOR QUANTITIES.

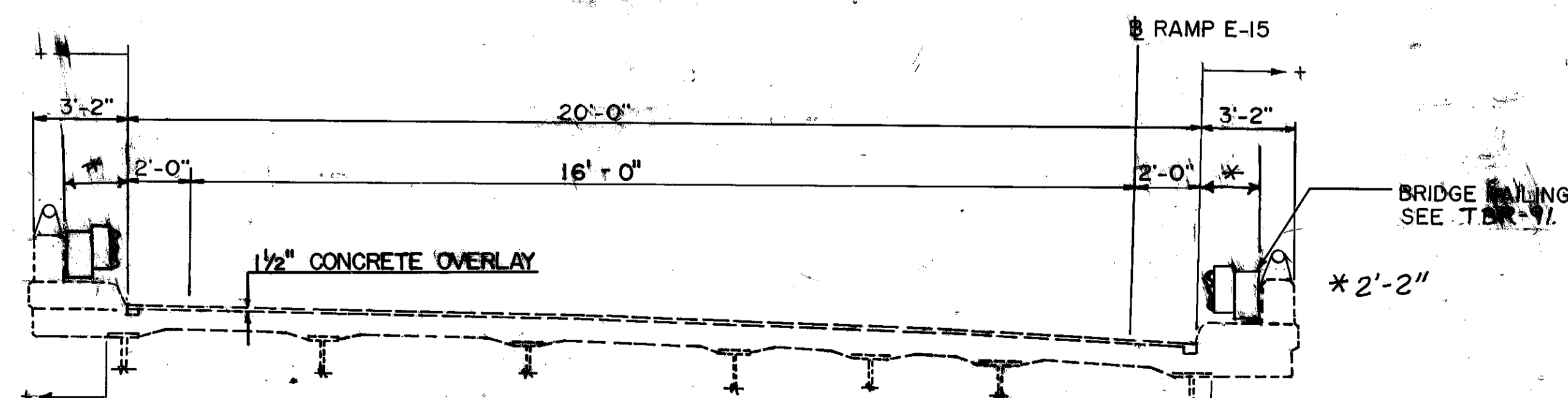
PLAN VIEW
 0 10 20 50
 SCALE IN FEET



Ø - LIMIT PARAPET PATCHING TO SEVERELY DETERIORATED AREAS WHICH WOULD HAMPER THRIE BEAM INSTALLATION

ELEVATION
 0 10 20 50
 SCALE IN FEET

-- LIMITS FOR EPOXY SEALING (TYP.)



TYPICAL TRANSVERSE SECTION

*ACTUAL UNSOUND AREA OR 5% OF THE SEALED AREA

LOCATION	*SPECIAL		*SPECIAL
	SOUNDING CONCRETE BRIDGE COMPONENTS	REPAIRING CONCRETE WITH SOLVENT FREE EPOXY RESIN	
	SQ. FT.	SQ. FT.	SQ. FT.
ABUTMENT	2097	620	
PIER & CAP	774	39	
PARAPET	702	391	
RET. WALL	3609	180	
25% ADDITIONAL		307	
TOTAL	14301	1537	

Revised 12-10-92

**ESTIMATED QUANTITY TO BE USED AS DIRECTED BY THE ENGINEER **

PROPOSED WORK

1. PATCH WEARING SURFACE WITH MSC OR QSM
2. SEAL (HMWM) AND GROOVE WEARING SURFACE
3. DRAINAGE SYSTEM REPAIR AND CLEANING
4. PATCH CONCRETE SURFACES AND EPOXY SEAL
5. DECK BOTTOM SOUNDING AND EPOXY INJECTING
6. INSTALL RAILING FACED WITH THRIE BEAM
7. SLOPE PROTECTION REPAIR

EXISTING STRUCTURE

TYPE: CONTINUOUS STEEL GIRDER WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE.
 SPANS: 71'-7 3/4", 120'-0", AND 72'-0" (ALONG E-15).
 ROADWAY: 20'-0" T/T 2'-0" SAFETY CURBS.
 LOADING: CF 2000.
 WEARING SURFACE: 1 1/2" CONCRETE OVERLAY.
 ALIGNMENT: 17°-00' CURVE LT. AND TANGENT.
 SKEW: VARIES

STATE OF OHIO
 DEPARTMENT OF TRANSPORTATION
 DISTRICT 12 LOCATION & DESIGN

GENERAL PLAN AND ELEVATION

BR. NO. CUY-422-0078L

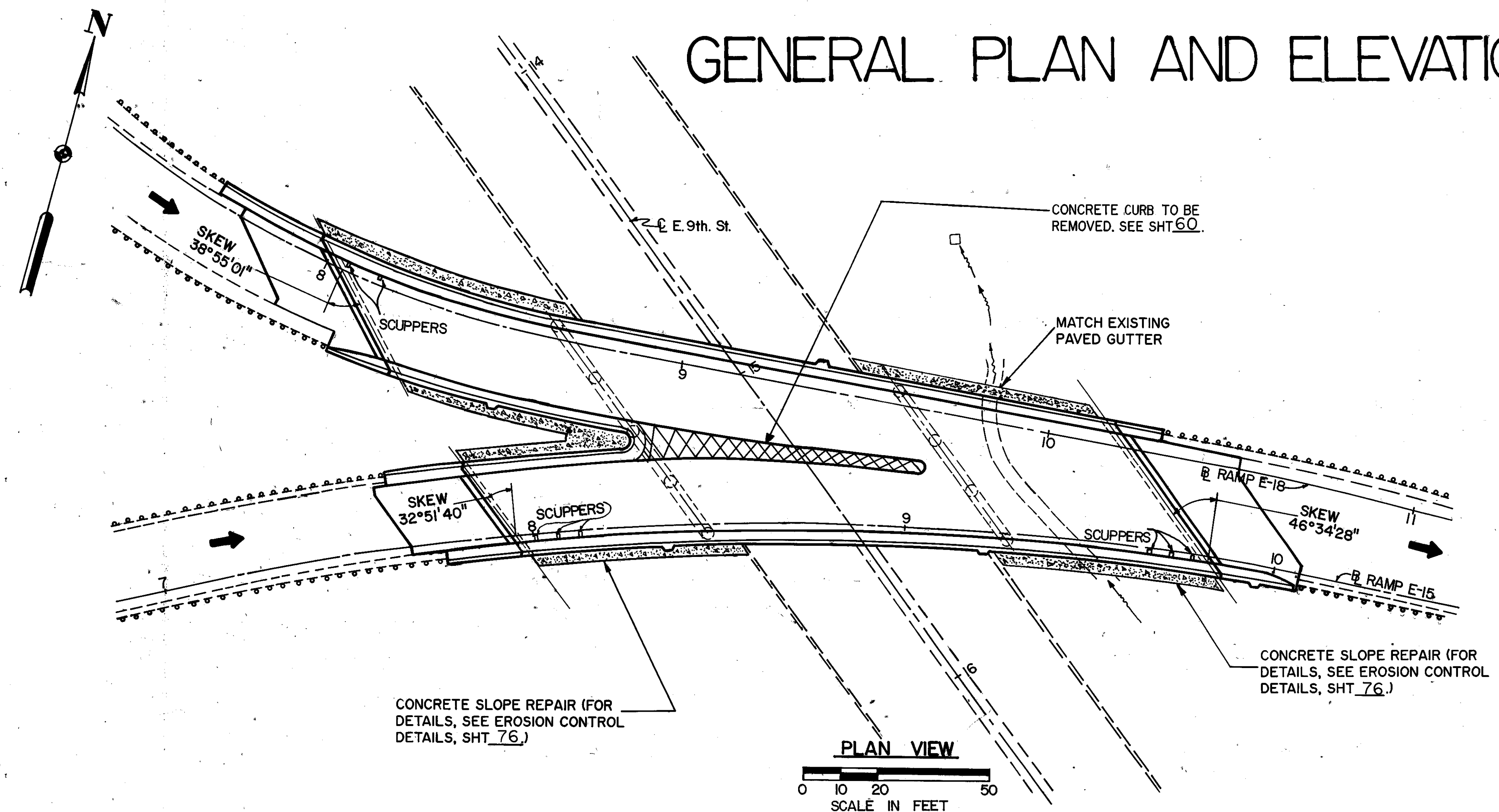
(RAMP E-15 OVER W.B. BROADWAY)

CUYAHOGA COUNTY OHIO

DESIGNED L.D.H. DATE 1/8/91
 TRACED L.D.H. DATE 1/8/91
 CHECKED E.M.F. DATE 1/8/91
 REVIEWED D.W.L. DATE 1/8/91
 SHEET 24/44

FOR LEGEND, SEE SHEET 206

GENERAL PLAN AND ELEVATION

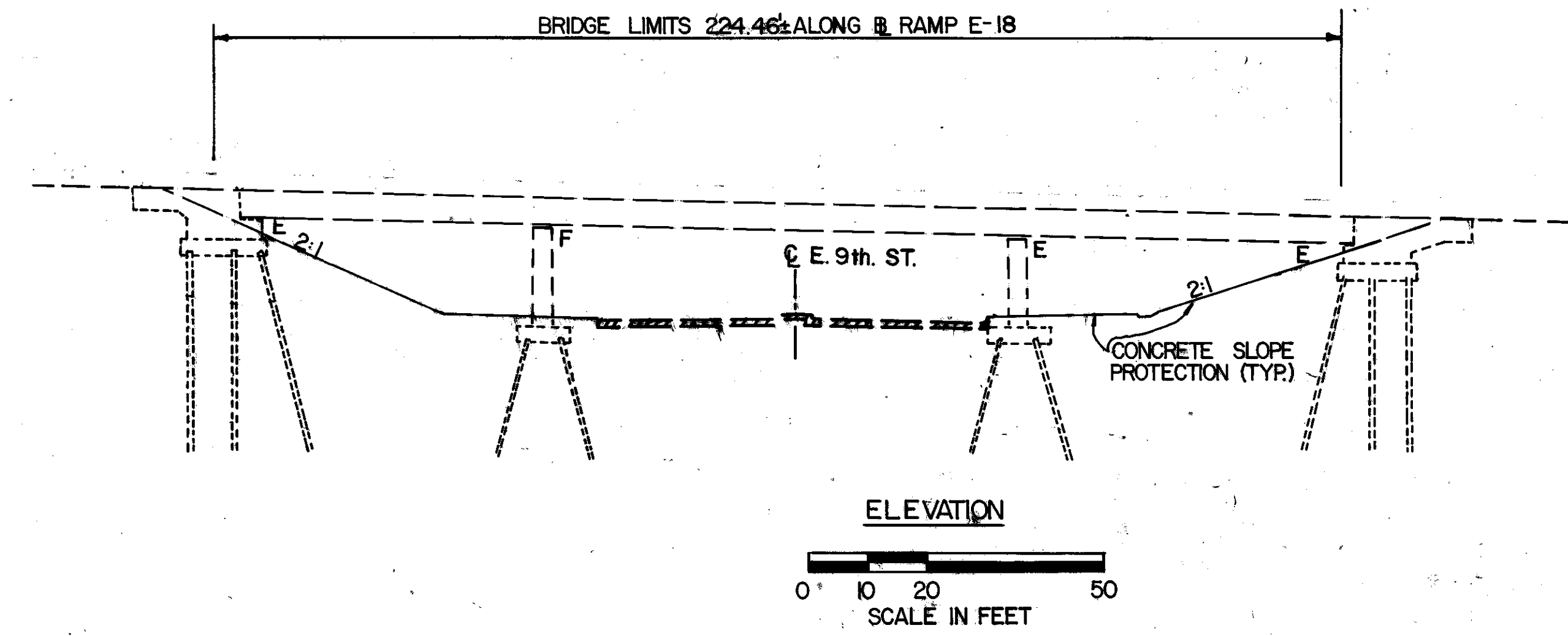


CONCRETE SLOPE REPAIR (FOR DETAILS, SEE EROSION CONTROL DETAILS, SHT 76.)

CONCRETE CURB TO BE REMOVED. SEE SHT 60.

MATCH EXISTING PAVED GUTTER

CONCRETE SLOPE REPAIR (FOR DETAILS, SEE EROSION CONTROL DETAILS, SHT 76.)



Ø - LIMIT PARAPET PATCHING TO SEVERELY DETERIORATED AREAS WHICH WOULD HAMPER THRIE BEAM INSTALLATION

*ACTUAL UNSOUND AREA OR 5% OF THE SEALED AREA

LOCATION	SPECIAL SOUNDING CONCRETE BRIDGE COMPONENTS	*519 PATCHING CONCRETE STRUCTURES AS PER PLAN	*SPECIAL REPAIRING CONCRETE WITH SOLVENT FREE EPOXY RESIN
	SQ.FT.	SQ.FT.	SQ.FT.
ABUTMENT	1197	60	
PIER & CAP	2727	136	
Ø PARAPET	7542	377	
25% ADDITIONAL		144	
TOTAL	11466	717	

**ESTIMATED QUANTITY TO BE USED AS DIRECTED BY THE ENGINEER

- PROPOSED WORK
- PATCH WEARING SURFACE WITH MSC OR QSM
 - SEAL (HMWM) AND GROOVE WEARING SURFACE
 - PATCH CONCRETE SURFACES AND EPOXY SEAL
 - DECK BOTTOM SOUNDING AND EPOXY INJECTING
 - INSTALL RAILING FACED WITH THRIE BEAM
 - SLOPE PROTECTION REPAIR
 - CONCRETE CURB REMOVAL

EXISTING STRUCTURE

TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE.

SPANS: 66'-0", 93'-5 7/8", 58'-2 1/8" ALONG

Ø RAMP E-18. 51'-0", 81'-0", 54'-0" ALONG

Ø RAMP E-15.

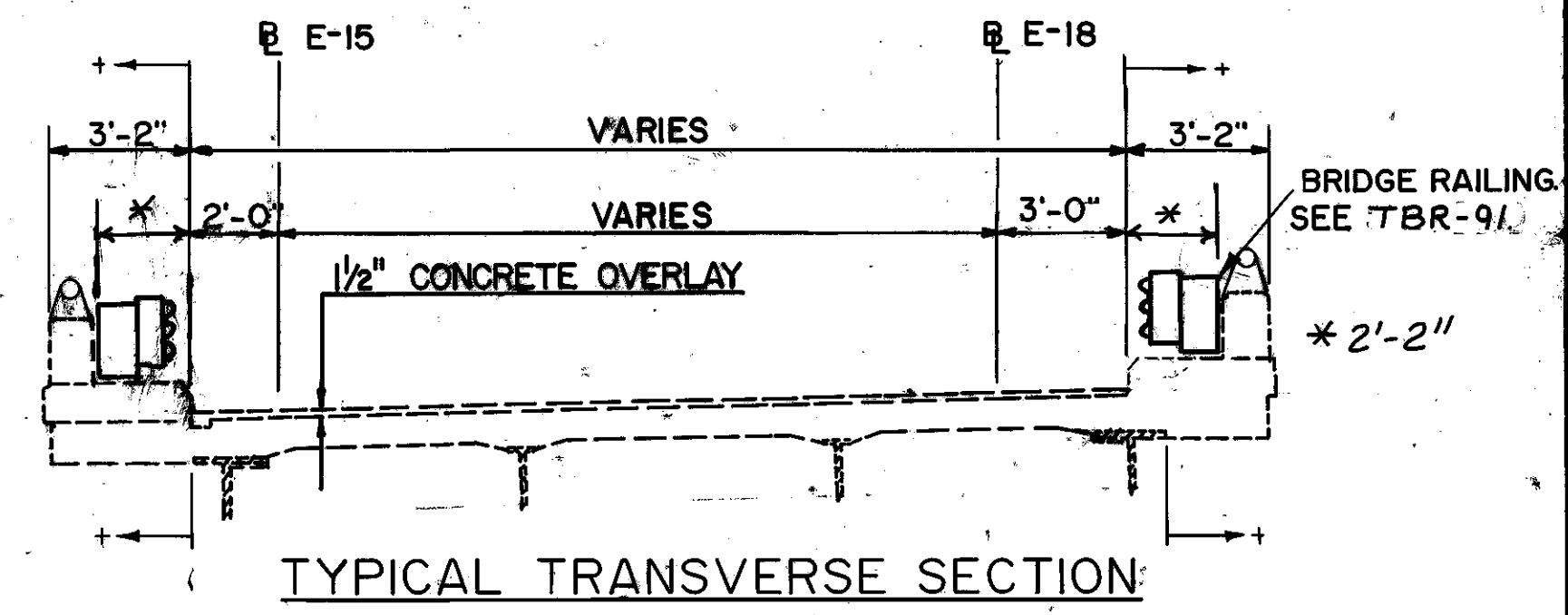
ROADWAYS: VARIES

LOADING: CF 2000

WEARING SURFACE: 1 1/2" CONCRETE OVERLAY

ALIGNMENT: 20°00' RT. Ø E-18, 7°00' RT Ø E-15

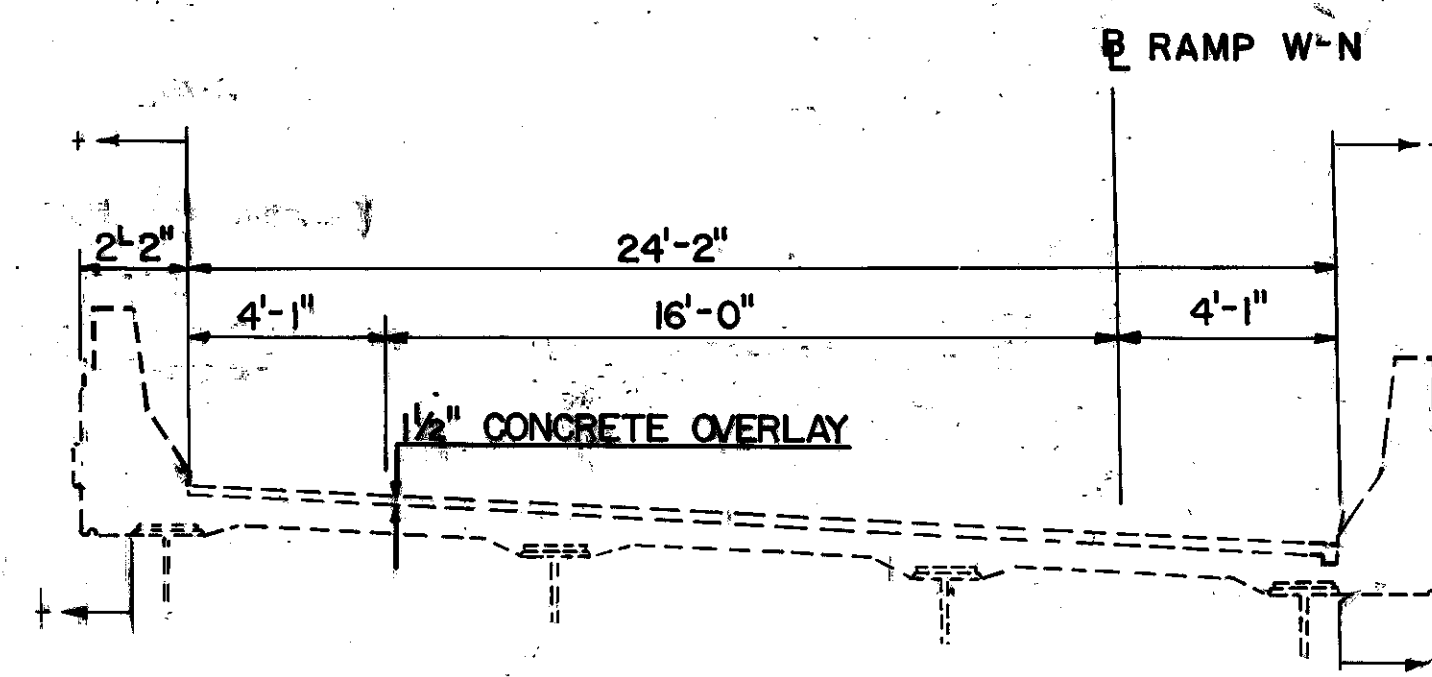
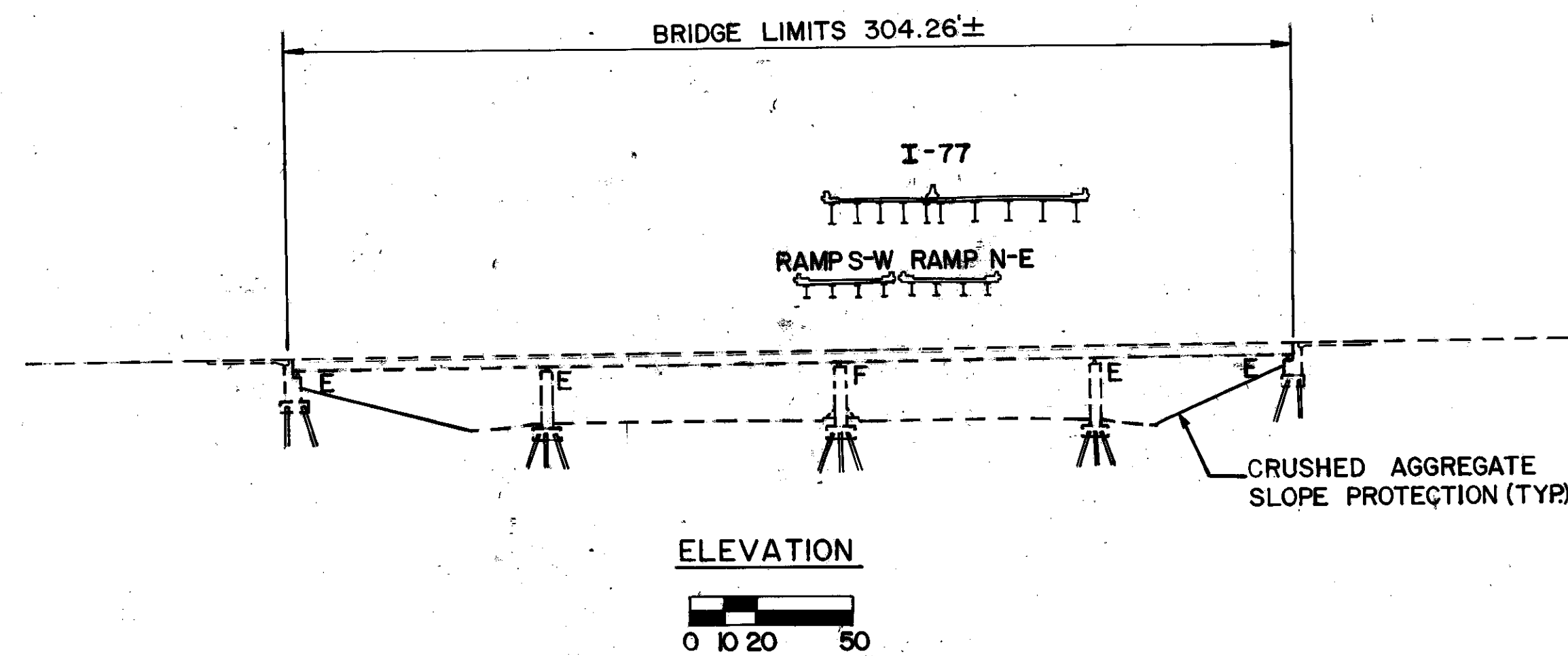
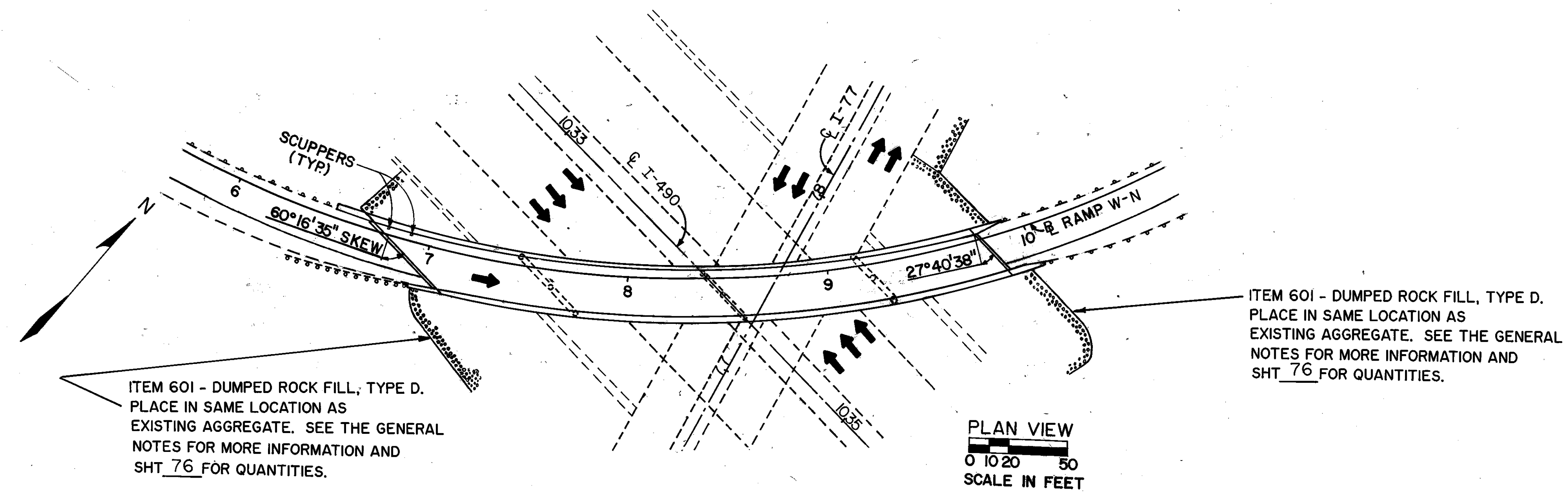
SKEW: VARIES



GENERAL PLAN AND ELEVATION

CUYAHOGA COUNTY CUI-77-13.81	OHIO	216
	FHWA REGION 5	234
FEDERAL PROJECT		

FOR LEGEND, SEE SHEET 206



* ACTUAL UNSOUND AREA OR 5% OF THE SEALED AREA

LOCATION	SPECIAL	*519	*SPECIAL
	SOUNDING CONCRETE BRIDGE COMPONENTS	PATCHING CONCRETE STRUCTURES AS PER PLAN	REPAIRING CONCRETE WITH SOLVENT FREE EPOXY RESIN
	SQ. FT.	SQ. FT.	SQ. FT.
ABUTMENT	1080	54	
PIER & CAP	2520	126	
PARAPET	7407	370	
25% ADDITIONAL		138	
TOTAL	11007	688	

** ESTIMATED QUANTITY TO BE USED AS DIRECTED BY THE ENGINEER

PROPOSED WORK
<ol style="list-style-type: none"> SLOPE PROTECTION REPAIR PATCH CONCRETE SURFACES AND EPOXY SEAL DECK BOTTOM SOUNDING AND EPOXY INJECTING SEAL (HMWM) AND GROOVE WEARING SURFACE PATCH WEARING SURFACE WITH MSC OR QSM
EXISTING STRUCTURE
TYPE: 4 SPAN CONTINUOUS ROLLED BEAM WITH REINFORCED CONCRETE DECK & SUBSTRUCTURE SPANS: 72'-0", 89'-6 1/2", 77'-1 1/8", 57'-8 1/4" ROADWAY: 24'-2" T/T PARAPET LOADING: C.F. 2000 WEARING SURFACE: 1 1/2" CONCRETE OVERLAY ALIGNMENT: 11°00' SKEW: VARIES

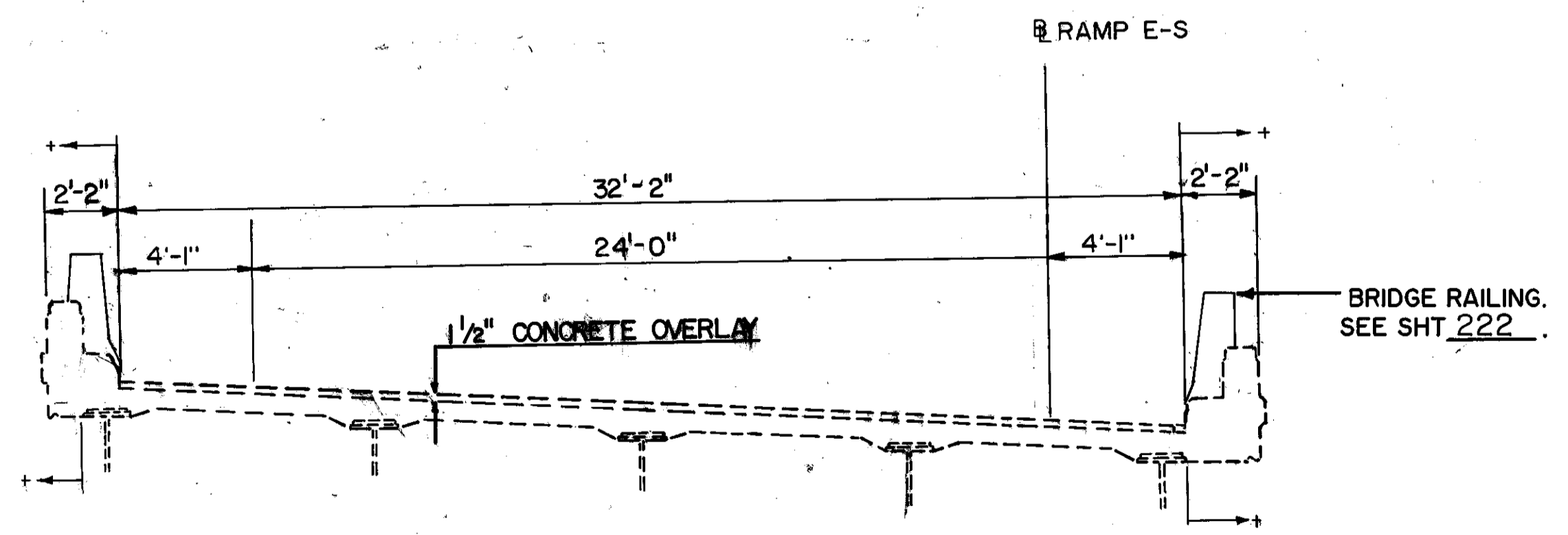
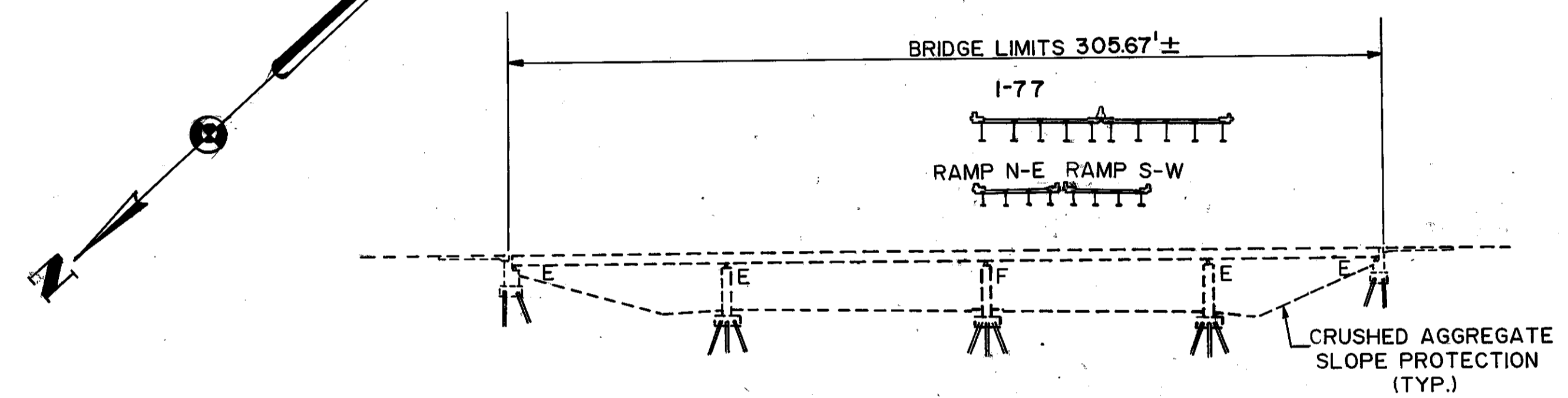
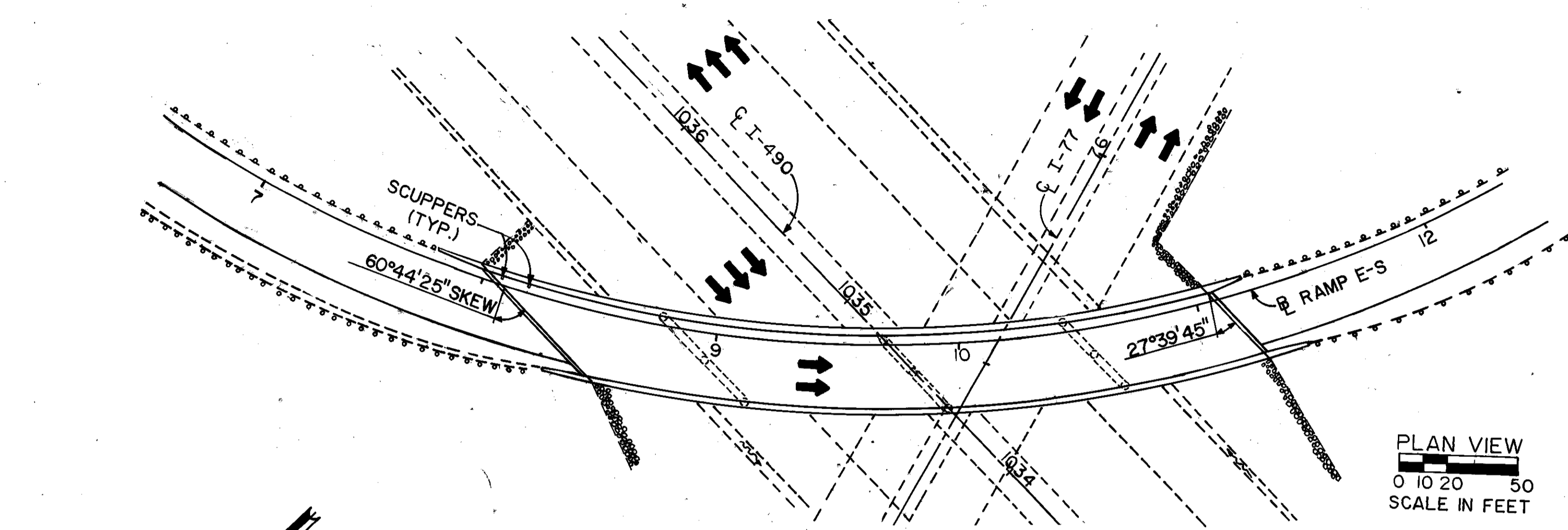
STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

GENERAL PLAN AND ELEVATION
BR. NO. CUY-490-0187 WN
(RAMP W-N OVER IR-490)

DESIGNED L.D.H. DATE	TRACED M.M.M. DATE	CHECKED E.N.F. DATE	REVIEWED D.W.L. DATE	REVISED
				SHEET 26/44

GENERAL PLAN AND ELEVATION

FOR LEGEND, SEE SHEET 206



-- LIMITS FOR EPOXY SEALING (TYP.)

* ACTUAL UNSOUND AREA OR 5% OF THE SEALED AREA

LOCATION	SPECIAL SOUNDING CONCRETE BRIDGE COMPONENTS	*519 PATCHING CONCRETE STRUCTURES AS PER PLAN	*SPECIAL REPAIRING CONCRETE WITH SOLVENT FREE EPOXY RESIN
	SQ. FT.	SQ. FT.	SQ. FT.
ABUTMENT	1422	80	
PIER & CAP	2826	141	
PARAPET	7740	600	
25%			
** ADDITIONAL		205	
TOTAL	11988	1026	

** ESTIMATED QUANTITY TO BE USED AS DIRECTED BY THE ENGINEER

PROPOSED WORK
1. PATCH WEARING SURFACE WITH MSC OR QSM
2. SEAL (HMWM) AND GROOVE WEARING SURFACE
3. PATCH CONCRETE SURFACES AND EPOXY SEAL
4. DECK BOTTOM SOUNDING AND EPOXY INJECTING
5. INSTALL RAILING FACED CONCRETE DEFLECTOR SHAPE

EXISTING STRUCTURE
TYPE: 4 SPAN CONTINUOUS ROLLED BEAM WITH REINFORCED CONCRETE DECKS & SUBSTRUCTURE
SPANS: 72'-0", 90'-3/4", 77'-6 1/4", 57'-10 1/8"
ROADWAY: 32'-2" T/T PARAPET
LOADING: C.F. 2000
WEARING SURFACE: 1/2" CONCRETE OVERLAY
ALIGNMENT: 11°00' CURVE
SKIEW: VARIES

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

GENERAL PLAN AND ELEVATION
BR. NO. CUY-490-0189 ES
(RAMP E-S OVER IR-490)

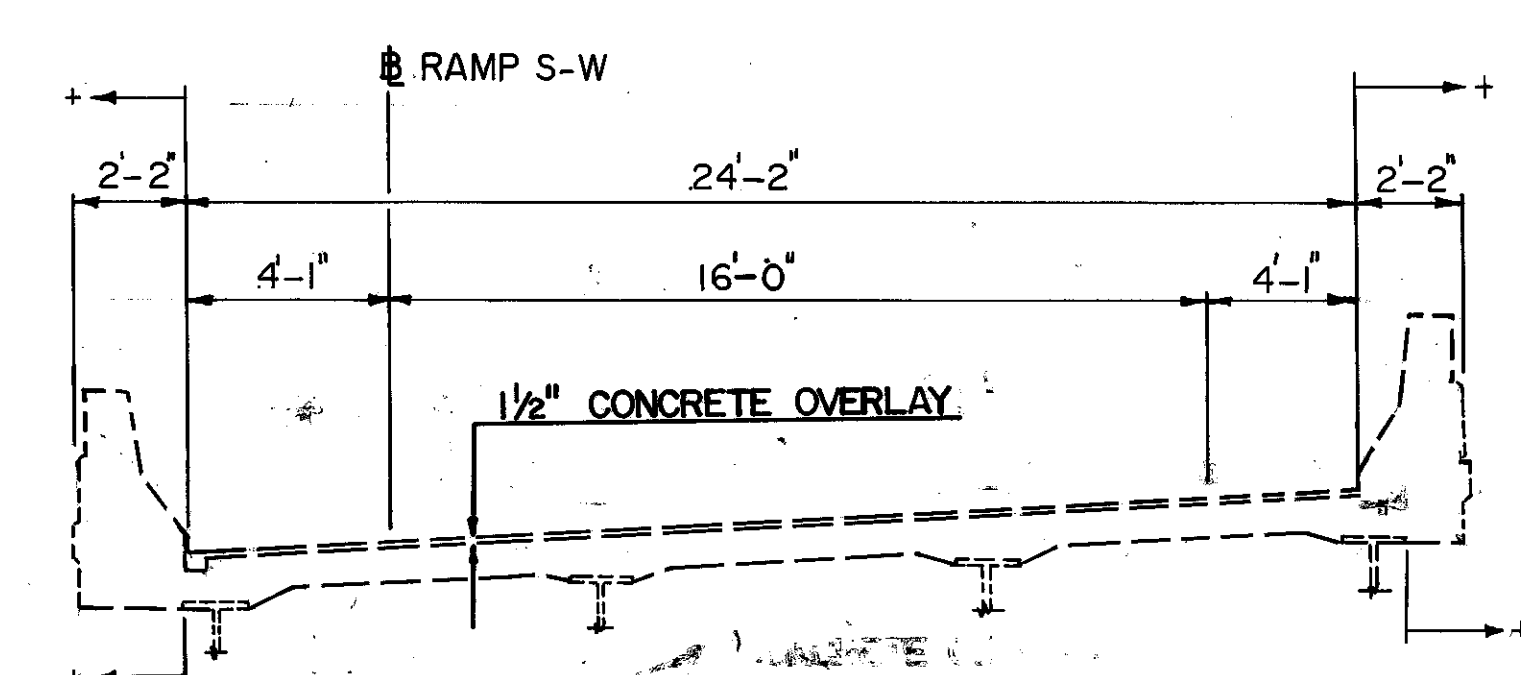
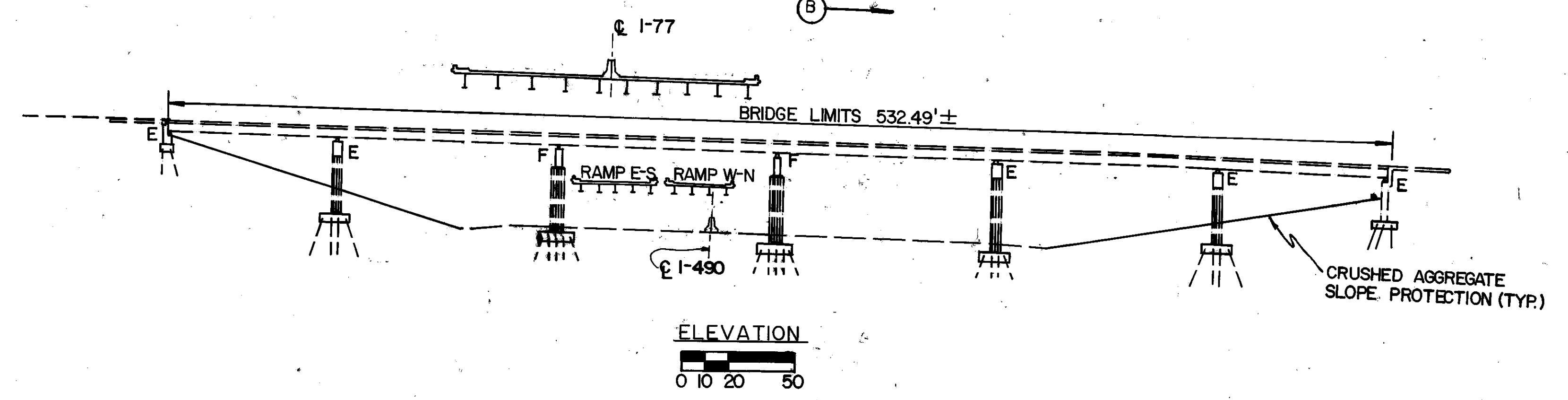
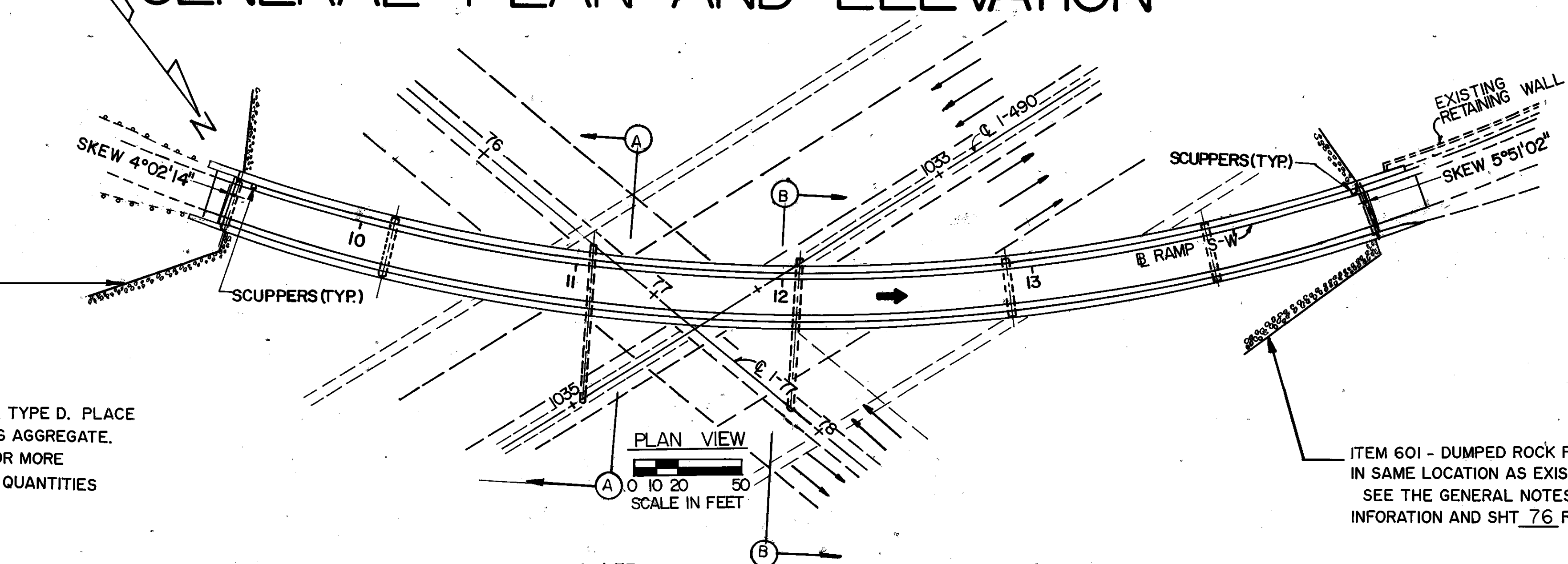
GENERAL PLAN AND ELEVATION

FOR LEGEND, SEE SHEET 206

ITEM 601 - DUMPED ROCK FILL, TYPE D. PLACE IN SAME LOCATION AS EXISTING AGGREGATE. SEE THE GENERAL NOTES FOR MORE INFORMATION AND SHT 76 FOR QUANTITIES

ITEM 601 - DUMPED ROCK FILL, TYPE D. PLACE IN SAME LOCATION AS EXISTING AGGREGATE. SEE THE GENERAL NOTES FOR MORE INFORMATION AND SHT 76 FOR QUANTITIES

FOR SECTIONS A-A AND B-B, SEE SHT 74



± LIMITS FOR EPOXY SEALING (TYP.)

*ACTUAL UNSOUND AREA OR 5% OF THE SEALED AREA

LOCATION	SPECIAL	*519	*SPECIAL
	SOUNDING CONCRETE BRIDGE COMPONENTS	PATCHING CONCRETE STRUCTURES AS PER PLAN	REPAIRING CONCRETE WITH SOLVENT FREE EPOXY RESIN
	SQ. FT.	SQ. FT.	SQ. FT.
ABUTMENT	1206	60	
PIER & CAP	7236	271	
PARAPET	12204	610	
RET-WALL	1989	99	
25% ADDITIONAL		260	
TOTAL	22635	1300	

**ESTIMATED QUANTITY TO BE USED AS DIRECTED BY THE ENGINEER

- PROPOSED WORK**
1. SLOPE PROTECTION REPAIR
 2. PATCH CONCRETE SURFACES AND EPOXY SEAL
 3. DECK BOTTOM SOUNDING AND EPOXY INJECTING
 4. SEAL (HMMW) AND GROOVE WEARING SURFACE
 5. PATCH WEARING SURFACE WITH MSC OR QSM
 6. RETROFIT BOX GIRDERS

EXISTING STRUCTURE

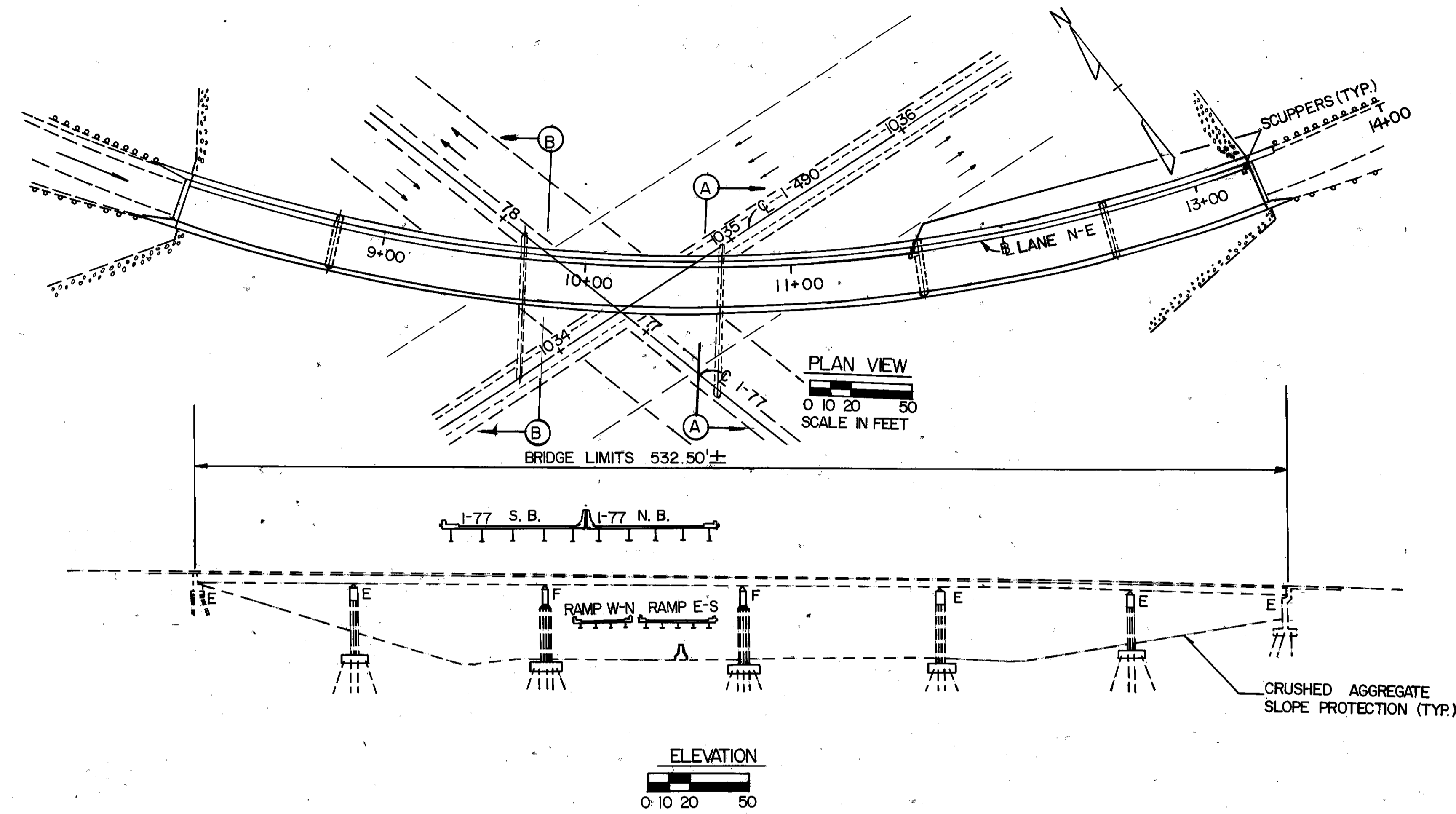
TYPE: 6 SPAN CONTINUOUS ROLLED BEAM WITH REINFORCED CONCRETE DECKS AND SUBSTRUCTURE.
 SPANS: 74'-8", 93'-4", 95'-11", 96'-0", 93'-4", 74'-8"
 ALONG RAMP S-W
 ROADWAY: 24'-2" T/T PARAPET.
 LOADING: C.F. 2000.
 WEARING SURFACE: 1/2" CONCRETE OVERLAY.
 ALIGNMENT: 7°00'00"
 SKEW: VARIES

STATE OF OHIO
 DEPARTMENT OF TRANSPORTATION
 DISTRICT 12 LOCATION & DESIGN

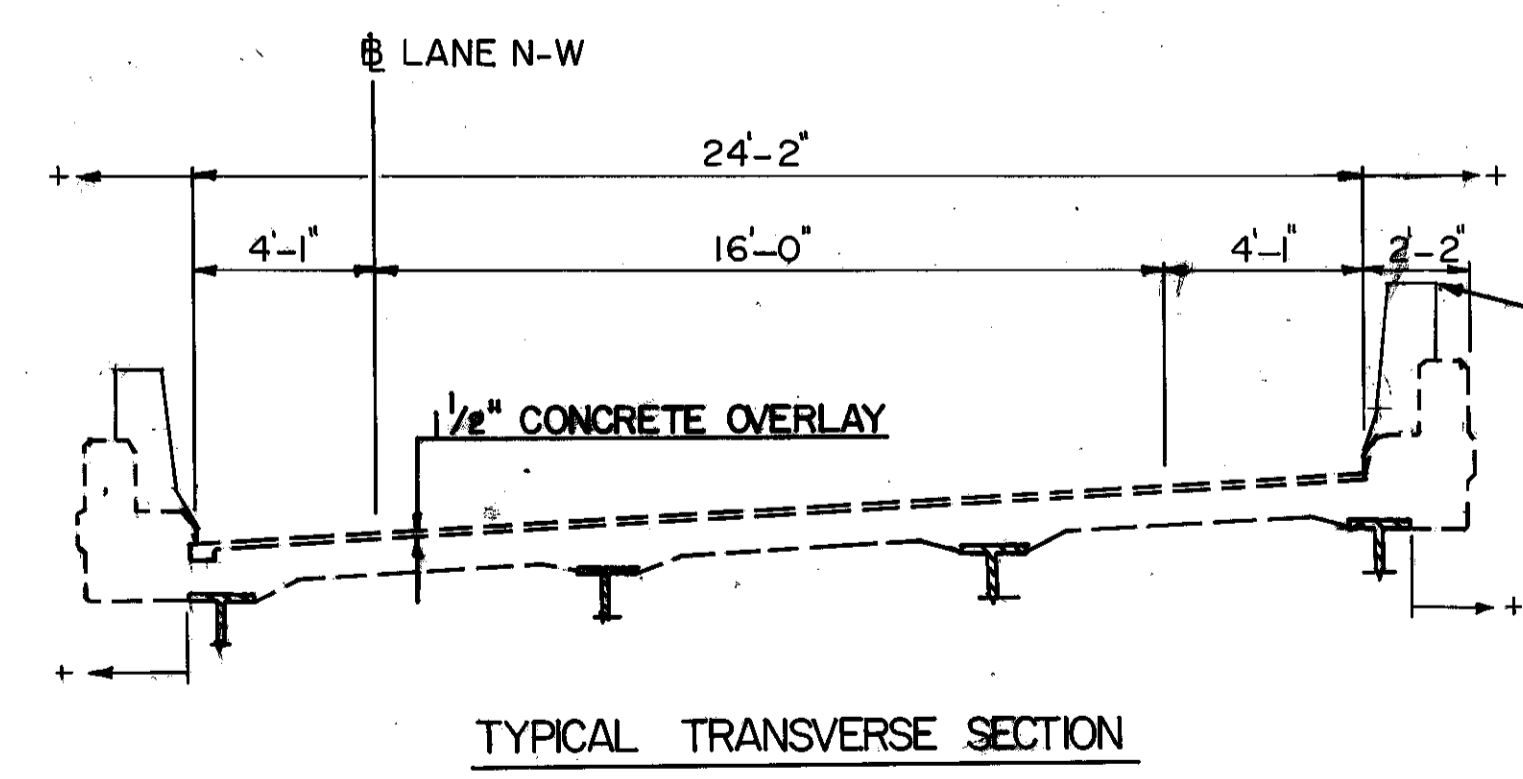
GENERAL PLAN AND ELEVATION
 BR. NO. CUY-490-0190 SW
 (RAMP S-W OVER IR-490)

GENERAL PLAN AND ELEVATION

FOR LEGEND, SEE SHEET 206



FOR SECTIONS A-A AND B-B, SEE SHT 74



+- LIMITS FOR EPOXY SEALING (TYP.)

* ACTUAL UNSOUND AREA OR 5% OF THE SEALED AREA

LOCATION	SPECIAL	*519	*SPECIAL
	SOUNDING CONCRETE BRIDGE COMPONENTS	PATCHING CONCRETE STRUCTURES AS PER PLAN	REPAIRING CONCRETE WITH SOLVENT FREE EPOXY RESIN
	SQ. FT.	SQ. FT.	SQ. FT.
ABUTMENT	1053	80	
PIER & CAP	3267	163	
PARAPET	10863	543	
RET. WALL	2466	123	
25%			
** ADDITIONAL		227	
TOTAL	17649	1136	

** ESTIMATED QUANTITY TO BE USED AS DIRECTED BY THE ENGINEER

PROPOSED WORK
1. PATCH WEARING SURFACE WITH MSC OR QSM
2. SEAL (HMWM) AND GROOVE WEARING SURFACE
3. PATCH CONCRETES AND EPOXY SEAL
4. DECK BOTTOM SOUNDING AND EPOXY INJECTING
5. INSTALL RAILING FACED CONCRETE DEFLECTOR SHAPE
6. RETROFIT BOX GIRDERS
7. BRIDGE DRAINAGE CLEARING

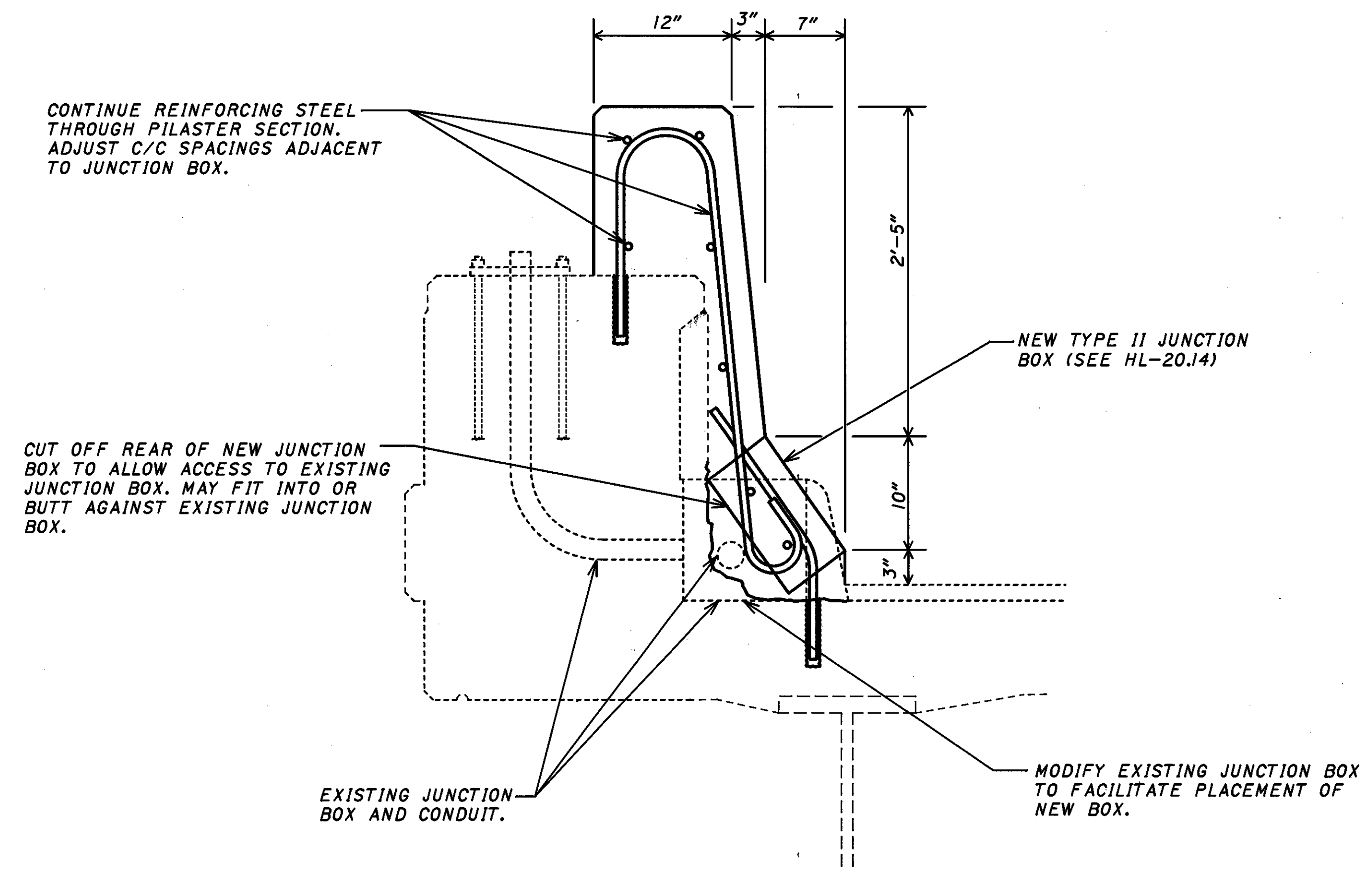
EXISTING STRUCTURE
TYPE: 6 SPAN CONTINUOUS ROLLED BEAMS WITH REINFORCED CONCRETE DECKS & SUBSTRUCTURE
SPANS: 74'-8", 93'-4", 96'-0", 96'-0", 93'-4", & 74'-8"
ROADWAY: 24'-2" T/T PARAPET
LOAD: C.F. 2000
WEARING SURFACE: 1/2" CONCRETE OVERLAY
ALIGNMENT: 7° 30' CURVE

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

GENERAL PLAN AND ELEVATION
BR. NO. CUY-490-019INE
(RAMP N-E OVER IR-490)

DESIGNED L.D.H. DATE	TRACED L.G.M. DATE	CHECKED E.N.F. DATE	REVIEWED D.W.L. DATE	REVISED
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NOTE: FOR DETAILS AND DIMENSIONS NOT SHOWN, SEE THE TYPICAL PARAPET DETAILS, SHEET 234.



PARAPET MODIFICATIONS AT EXISTING LIGHT POLES

PLOT SUBMITTED: 19-JUN-1992 08:59

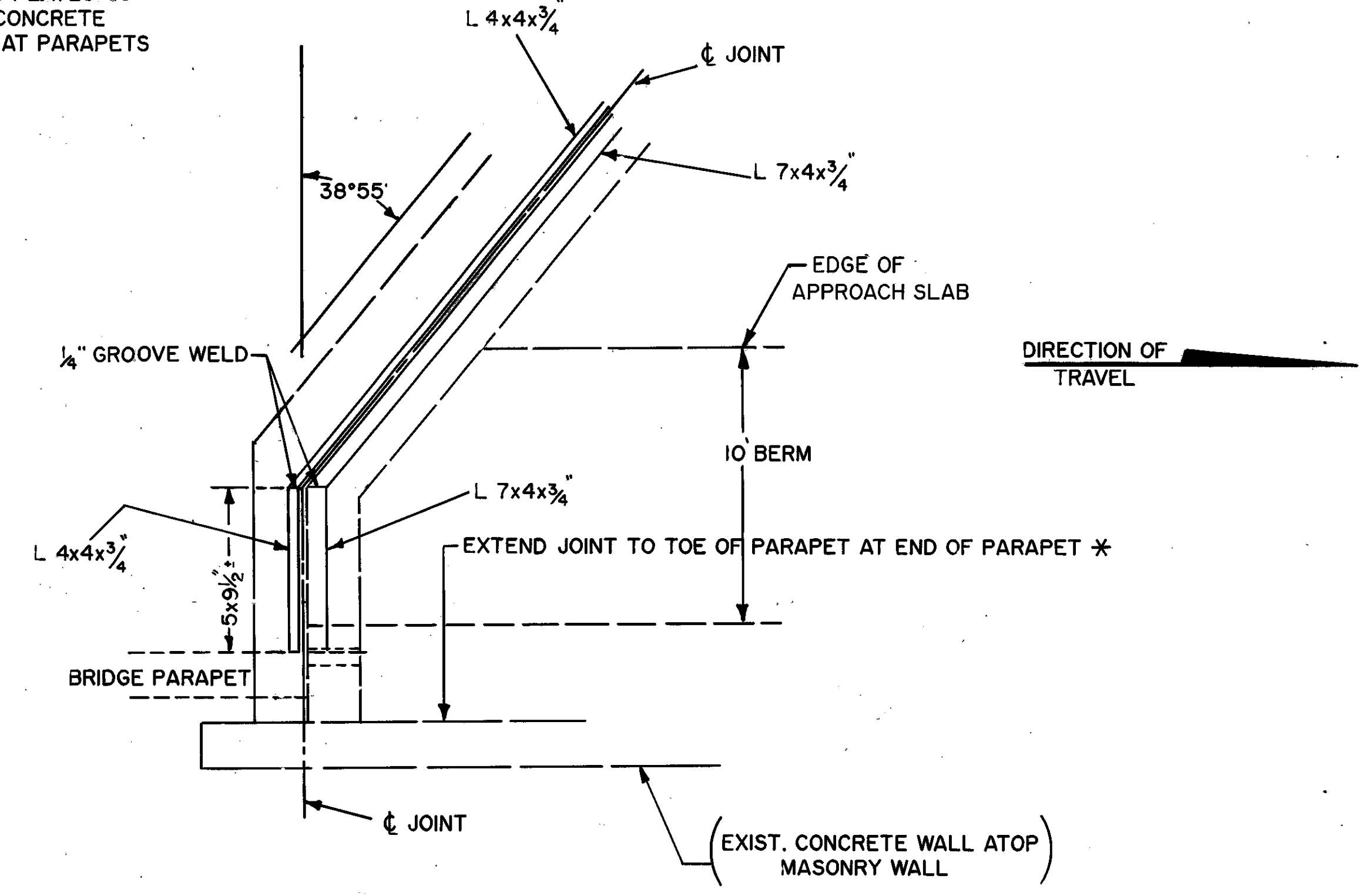
filename.dgn

PLOTTED BY: BANASZAK
 PLOTTED FROM: c:\dgn\p1d08084\08084sbb.dgn

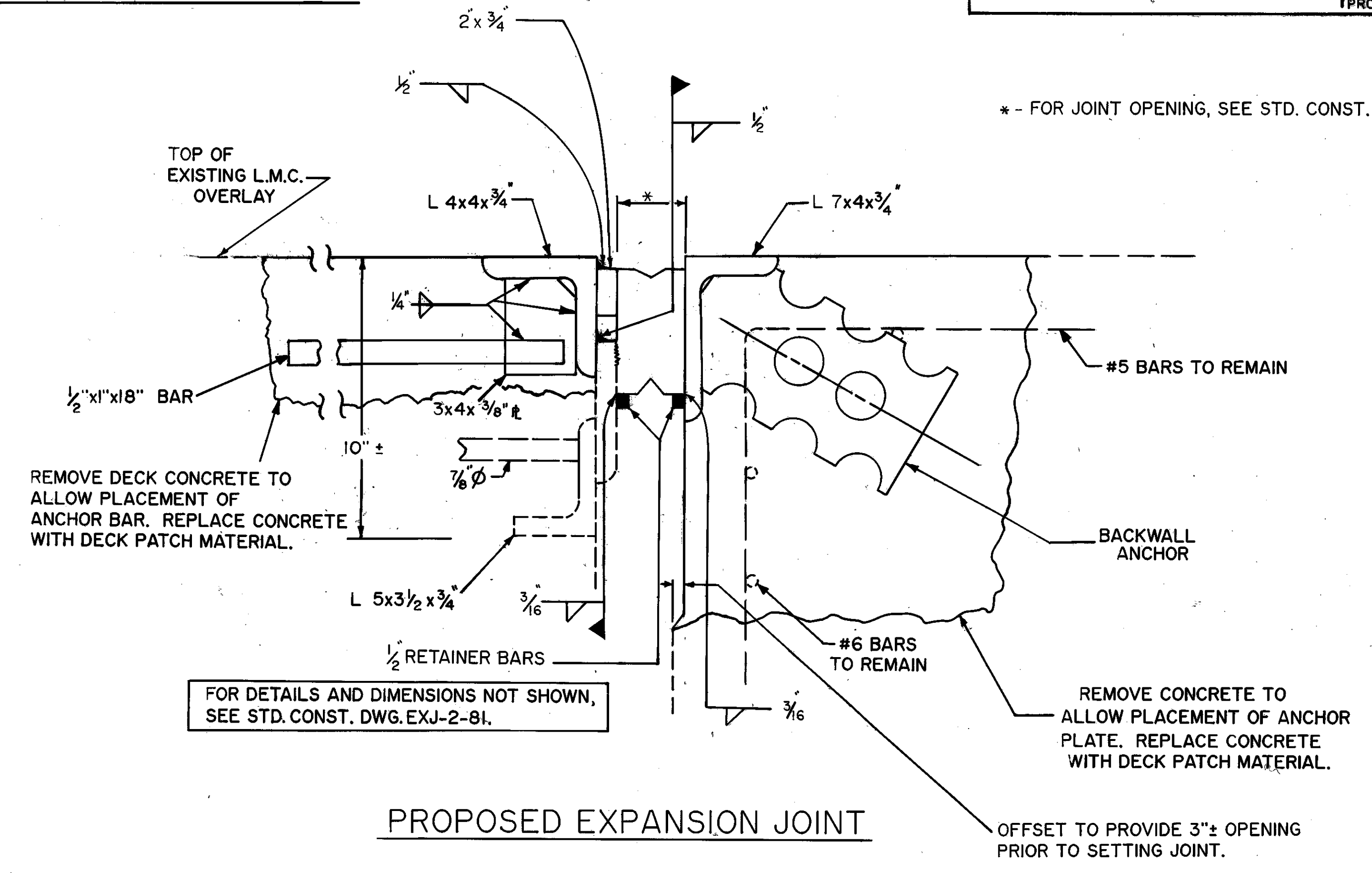
STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 12 LOCATION & DESIGN				
TYPICAL RAILING FACING DETAILS AT LIGHTING JUNCTION BOX				
BR. NO. CUY-490-0191NE BR. NO. CUY-490-0189ES				
DESIGNED LDH	DRAWN KJB	CHECKED ENF	REVIEWED DWL	DATE 4/27/92
				OHIO SHEET 33/44

EXPANSION JOINT DETAILS

*NOTE: MODIFY ANCHOR BARS AND PLATES TO MINIMIZE CONCRETE REMOVAL AT PARAPETS

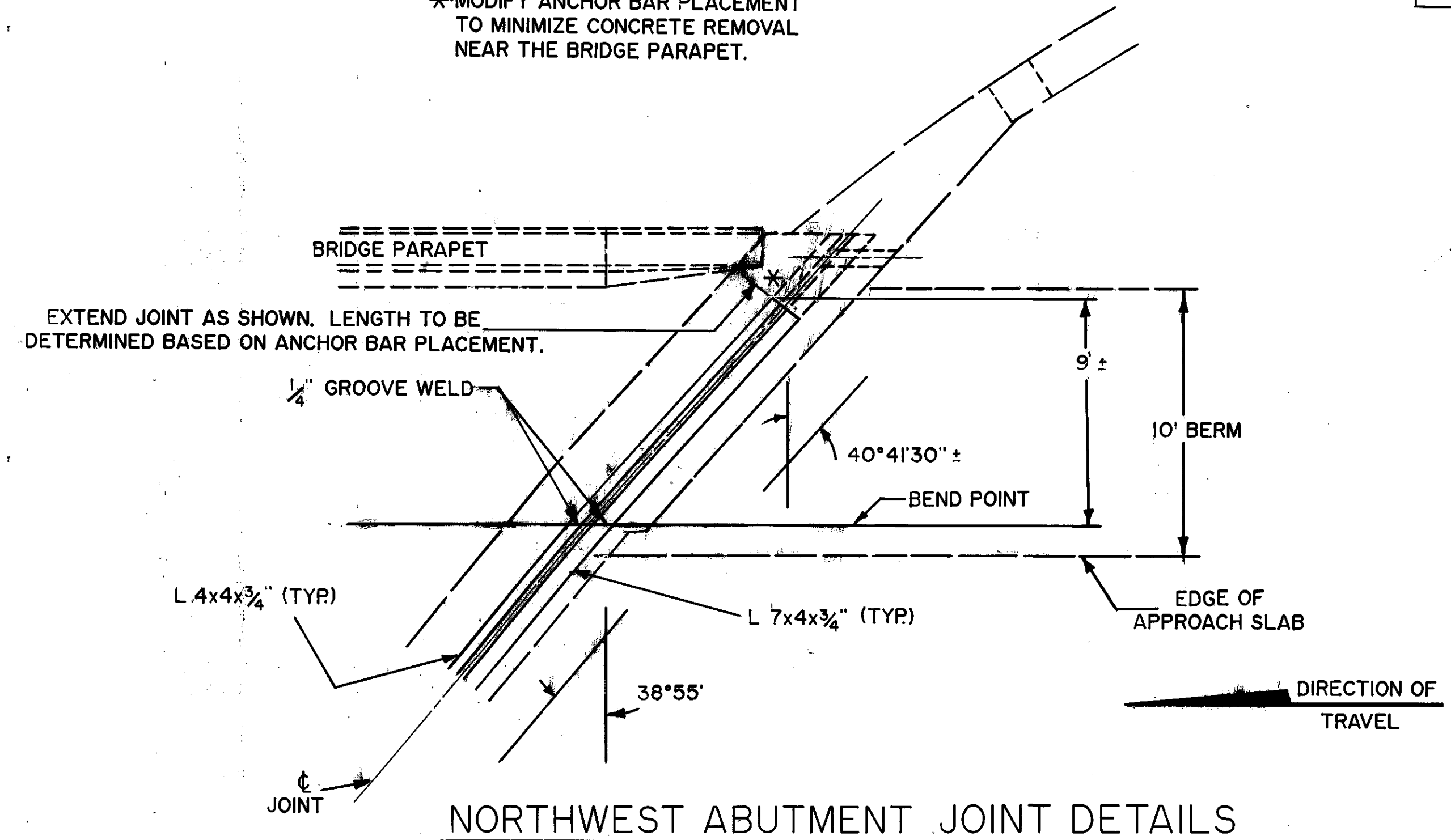


NORTHEAST ABUTMENT JOINT DETAILS



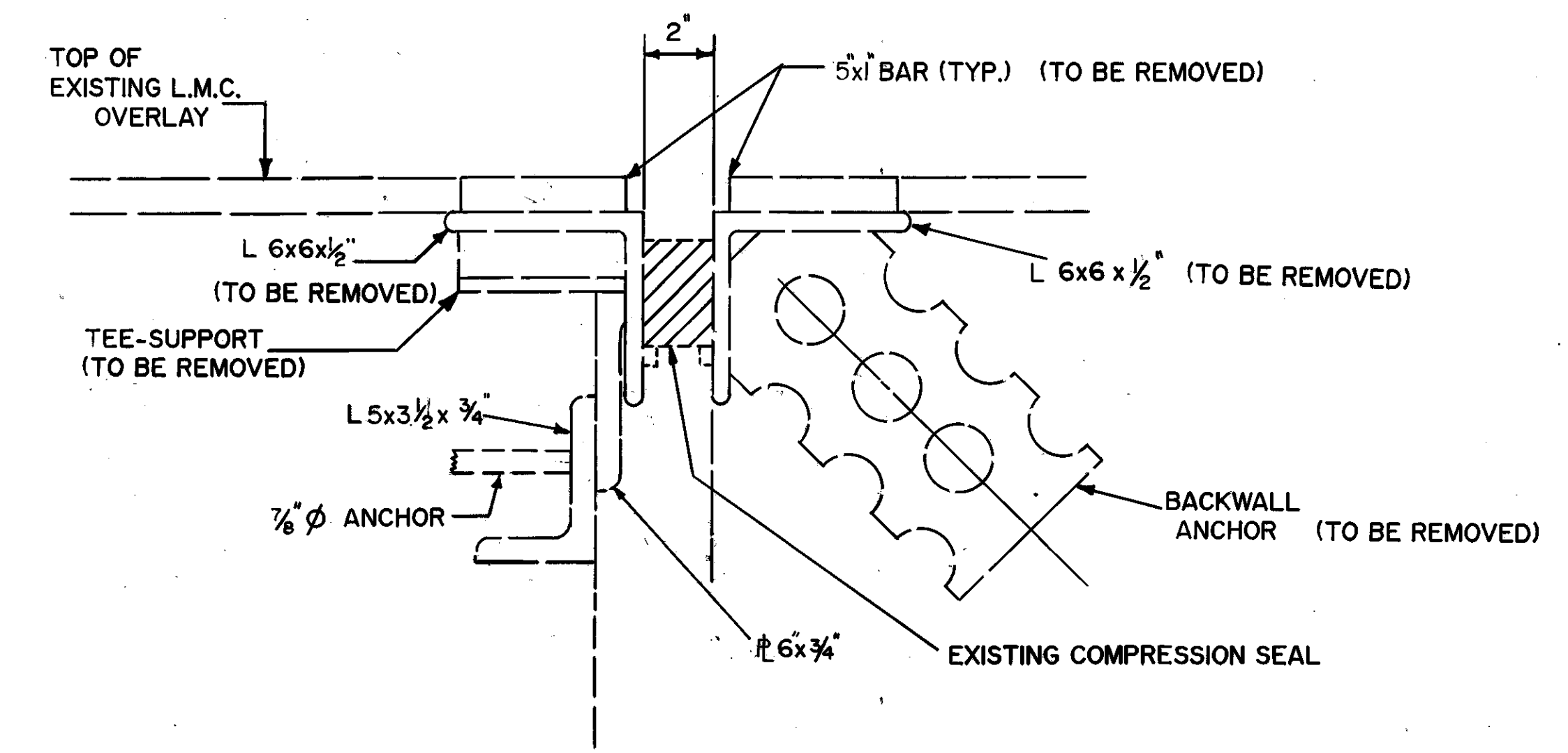
PROPOSED EXPANSION JOINT

*MODIFY ANCHOR BAR PLACEMENT TO MINIMIZE CONCRETE REMOVAL NEAR THE BRIDGE PARAPET.



NORTHWEST ABUTMENT JOINT DETAILS

FOR JOINT TREATMENT AT THE MEDIAN, SEE SHT. 232



EXISTING TRANSVERSE EXPANSION JOINT

* - FOR JOINT OPENING, SEE STD. CONST. DWG. EXJ-2-81.

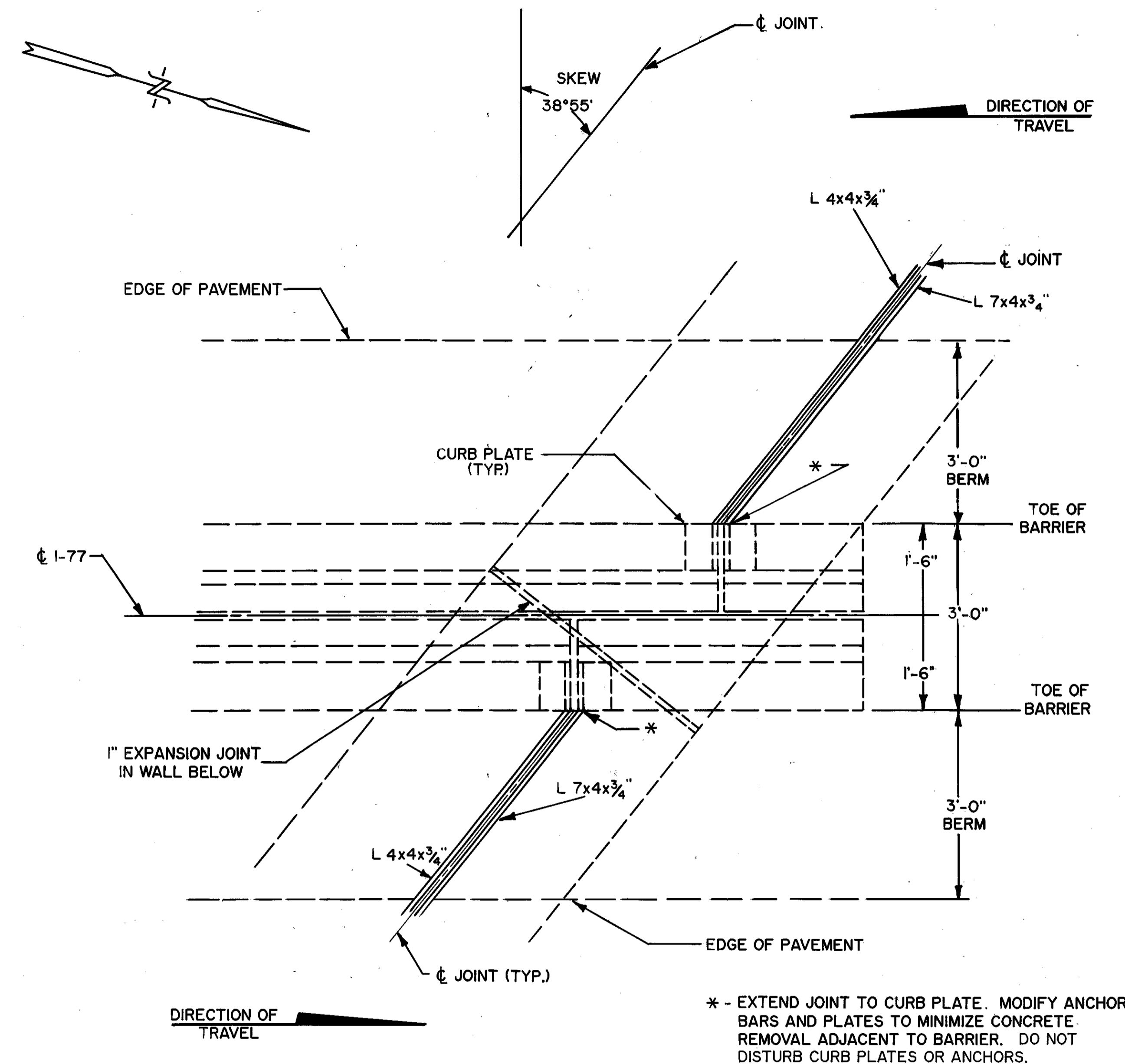
OFFSET TO PROVIDE 3"± OPENING PRIOR TO SETTING JOINT.

STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 12 LOCATION & DESIGN				
EXPANSION JOINT DETAILS BR. NO. CUY-77-1322 (FORWARD ABUTMENT)				
CUYAHOGA COUNTY OHIO				
DESIGNED LDH	TRACED GEA	CHECKED BGH	REVIEWED ENF	REVISED
DATE	DATE 4-3-92	DATE	DATE	DATE
				SHEET 34/44

EXPANSION JOINT DETAILS

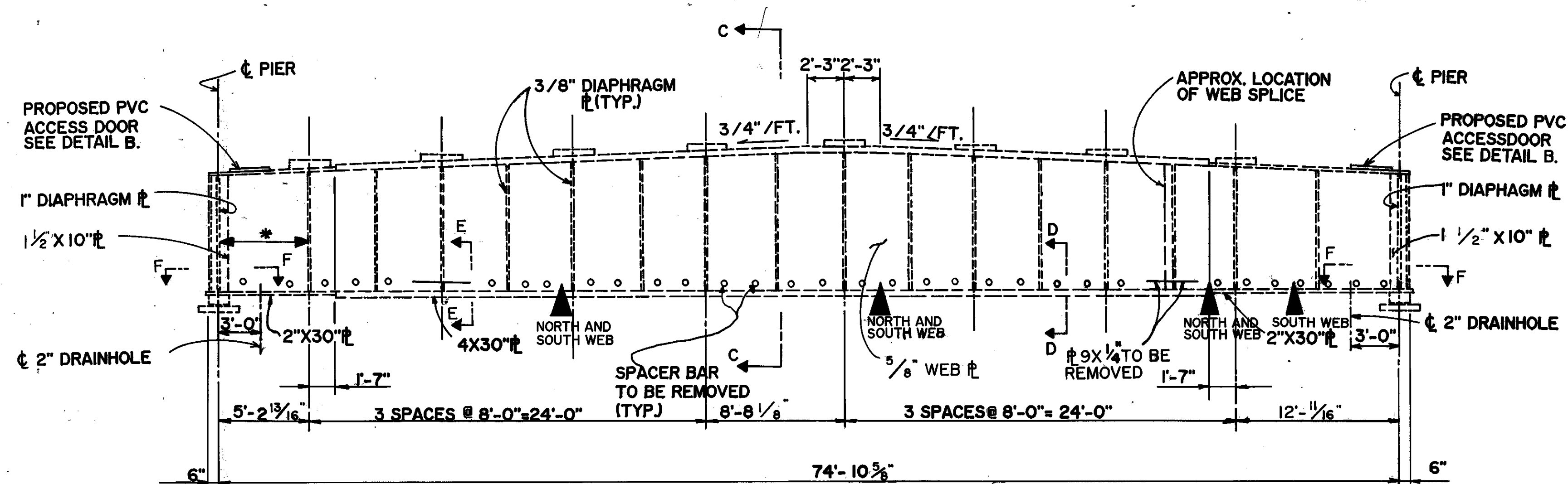
CUYAHOGA COUNTY
CUI-77-13.81

OHIO	225
FHWA REGION 5	234
FEDERAL PROJECT	

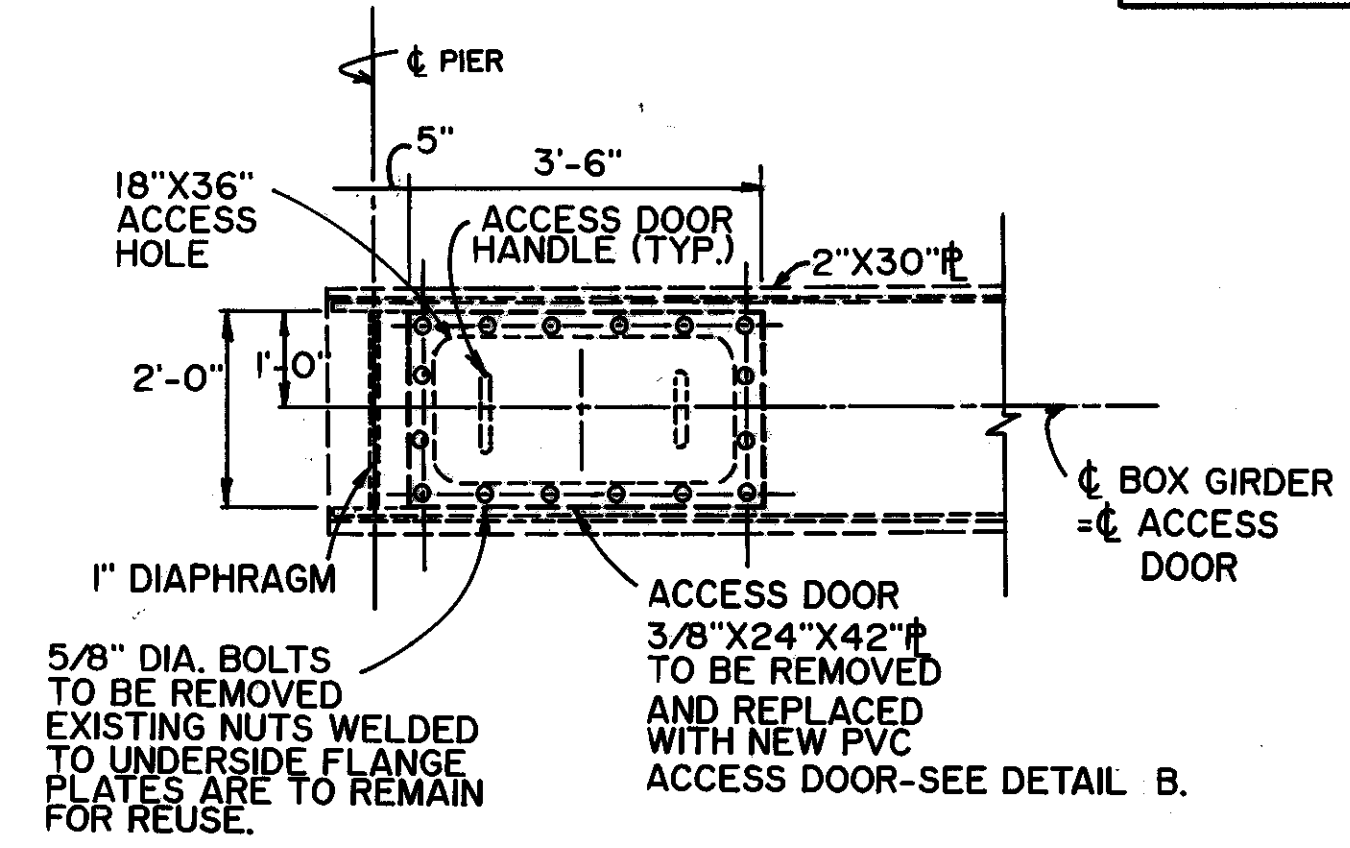


MEDIAN ABUTMENT JOINT DETAILS

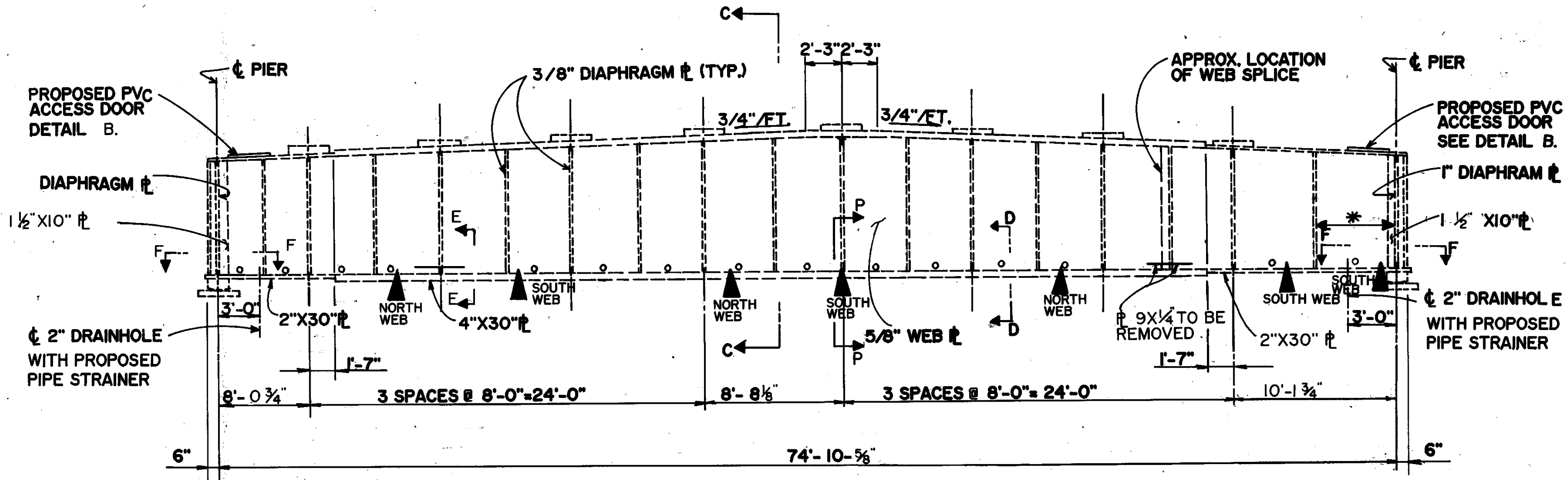
STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 12 LOCATION & DESIGN					35/44
EXPANSION JOINT DETAILS BR.NO. CUY-77-1322 (FORWARD ABUTMENT)					
DESIGNED	DR. NN GA	CHECKED	REVIEWED	DATE	REVISED
	4-9-92				



BOX GIRDER ELEVATION
VIEW B-B BOX GIRDER B LOOKING NORTH
CUY-490-0190 SW

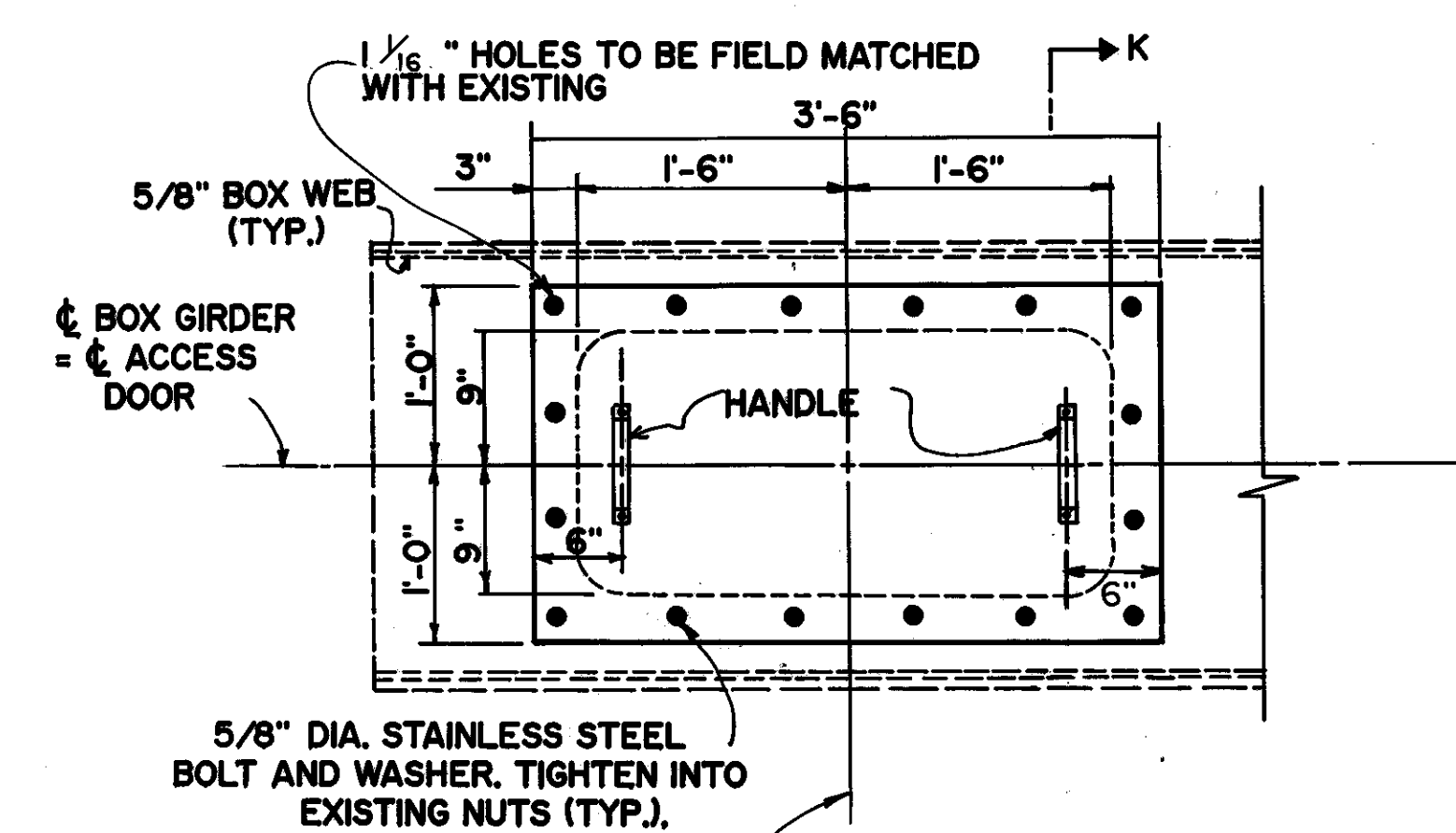


EXISTING ACCESS DOOR
PLAN VIEW

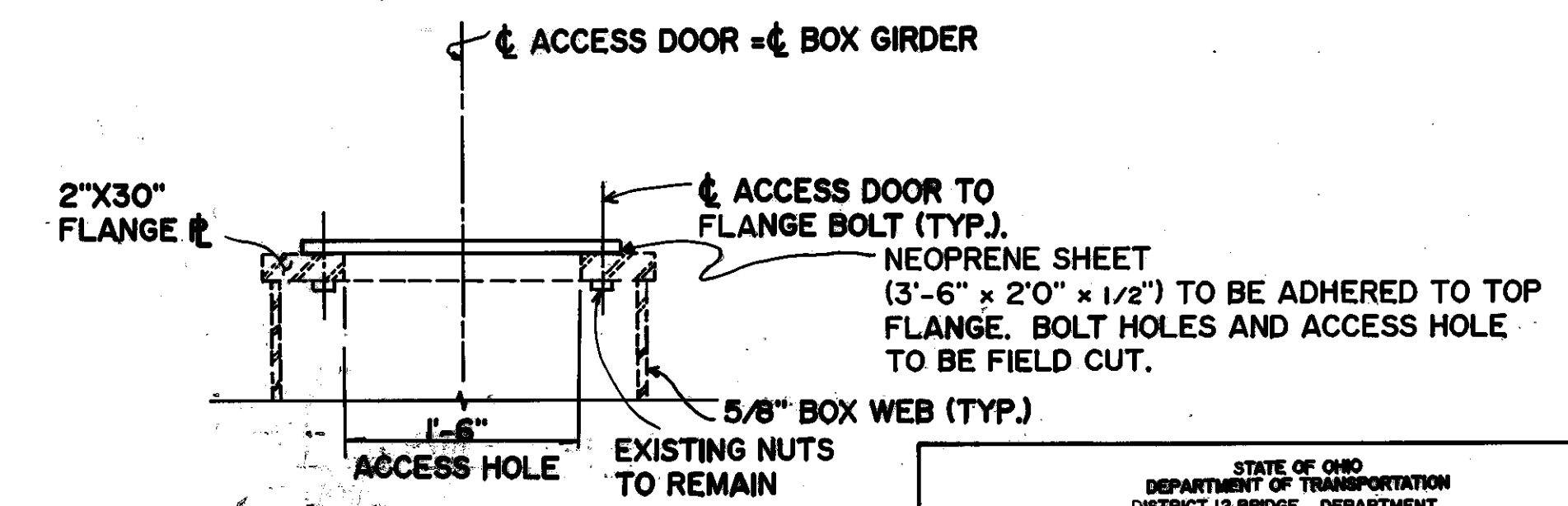


BOX GIRDER ELEVATION
VIEW A-A BOX GIRDER A LOOKING SOUTH
CUY-490-0191 NE

- ▲ - BACK-UP BAR DISCONTINUITY RETROFIT
- * - LIMITS OF PAINTING TOP OF BOTTOM FLANGE

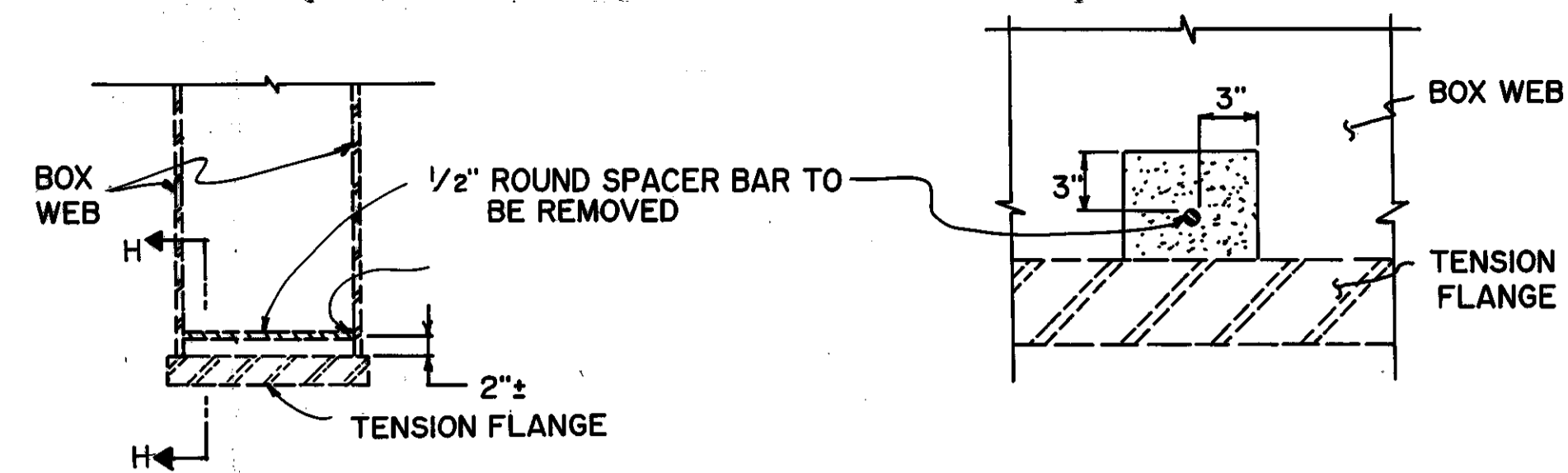


DETAIL B
PLAN VIEW OF PROPOSED ACCESS DOOR

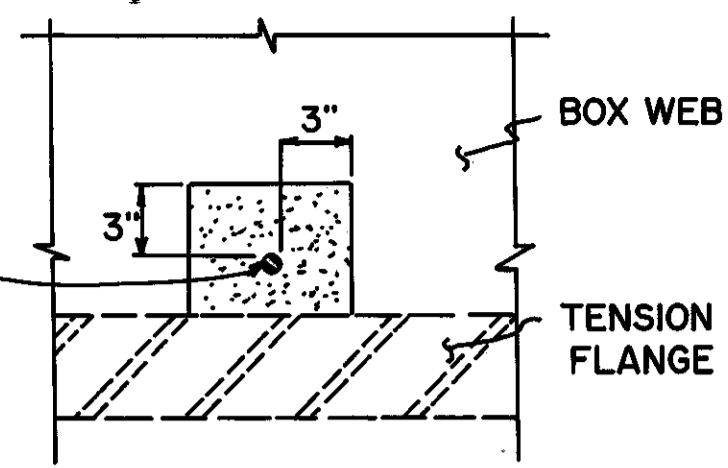


SECTION K-K

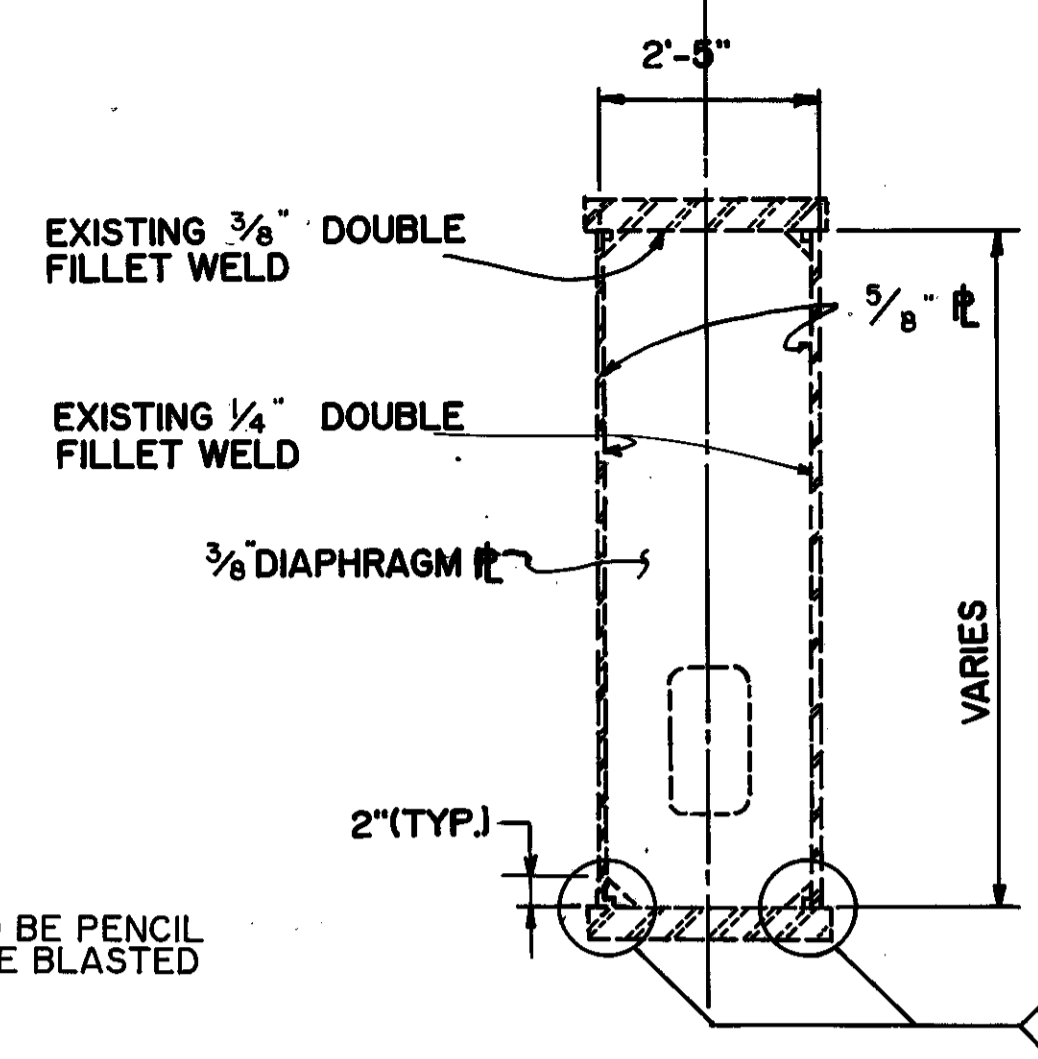
STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 12 BRIDGE - DEPARTMENT				
BOX GIRDER DETAILS BR. NO. CUY-490-0190 SW CUY-490-0191 NE I-77 RAMP OVER I-490				
CUYAHOGA COUNTY	OHIO	DESIGNER	CHECKER	REVIEWER
BGW	PDP	DWL	GWM	
			DATE	36 SHEET / 44



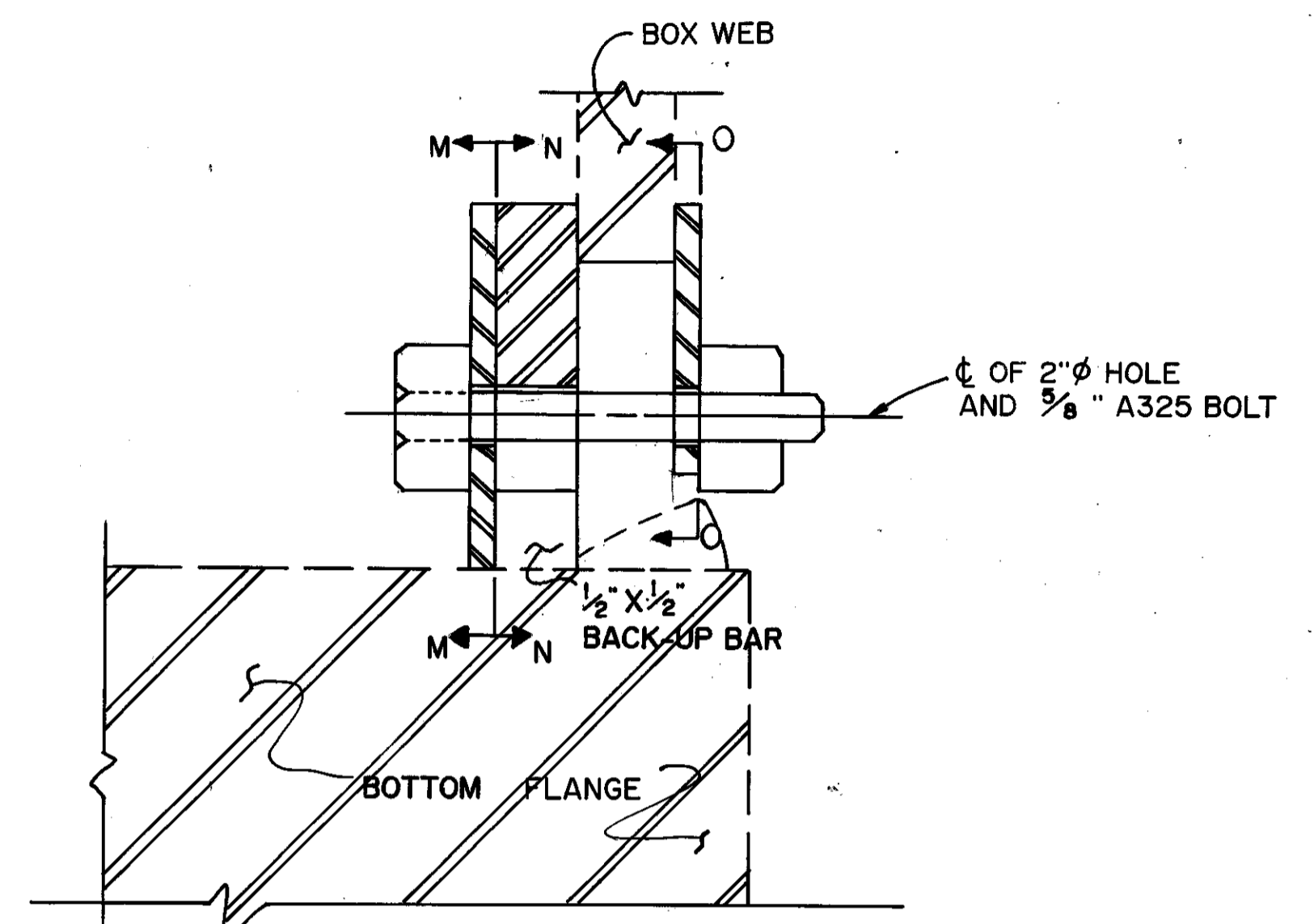
SECTION D-D



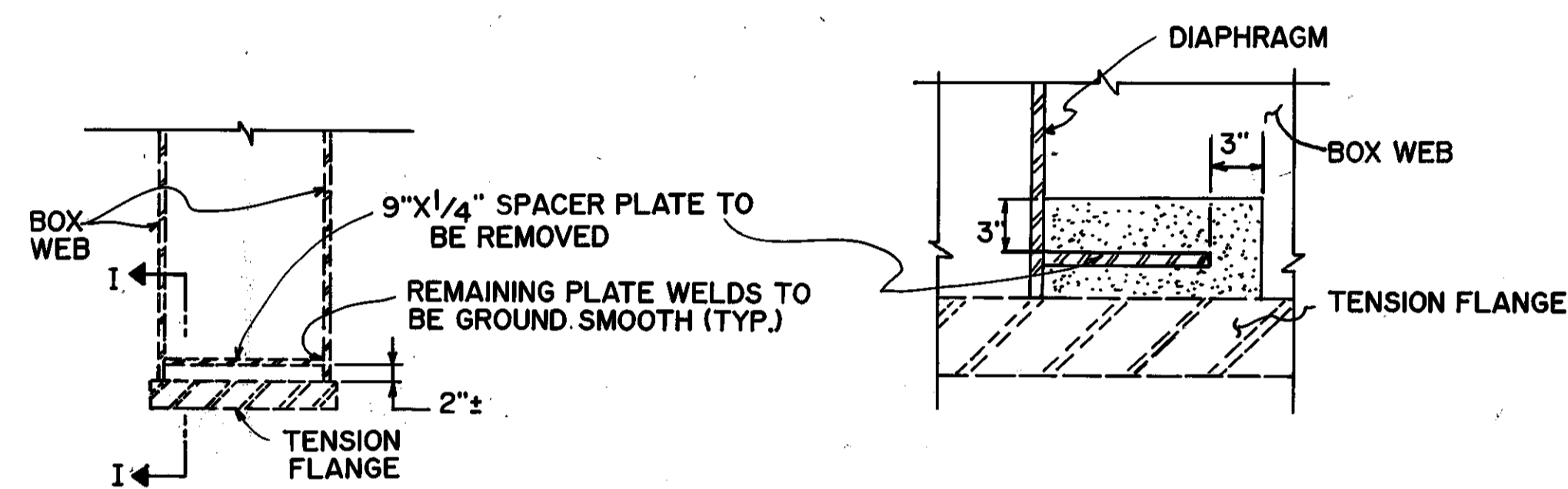
SECTION H-H



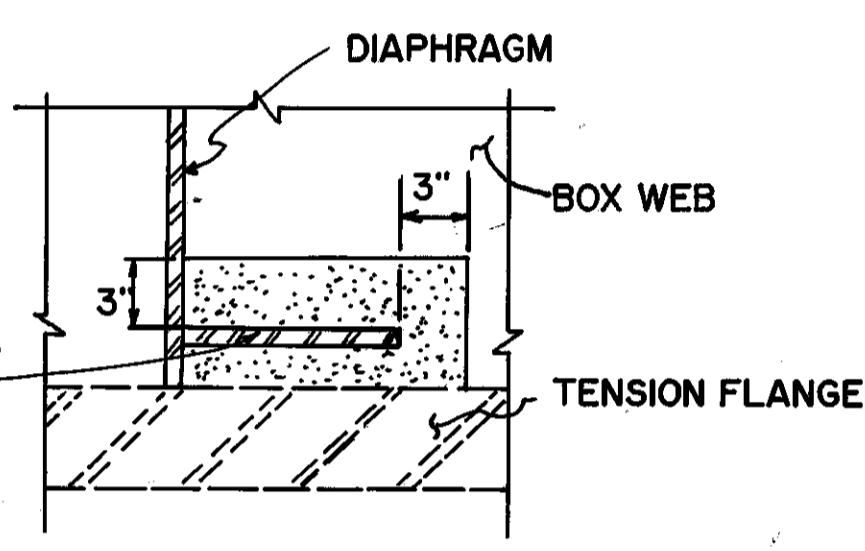
SECTION C-C



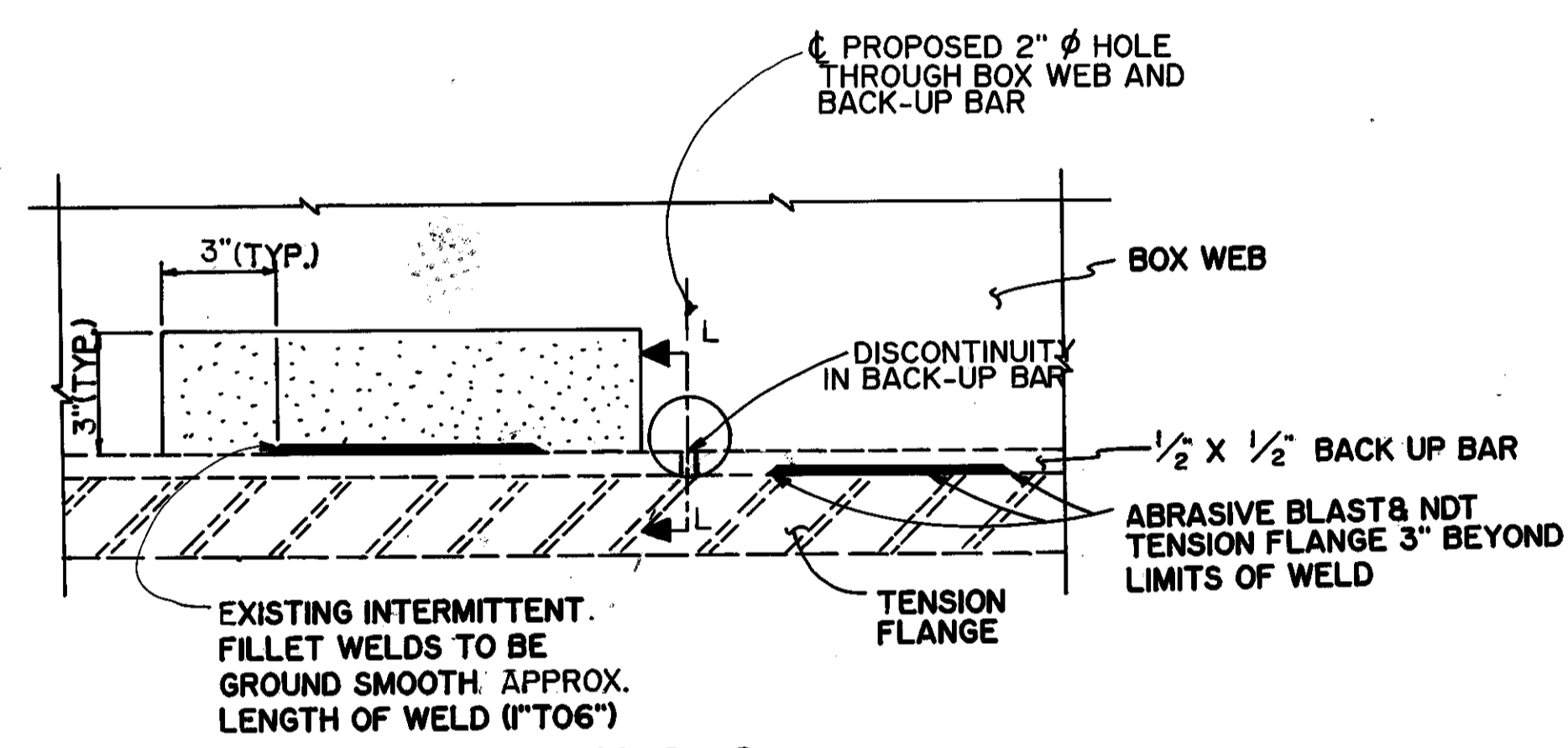
SECTION L-L
BACK-UP BAR DISCONTINUITY RETROFIT



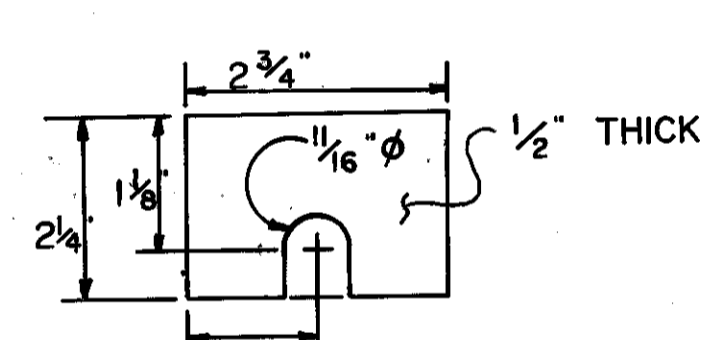
SECTION E-E



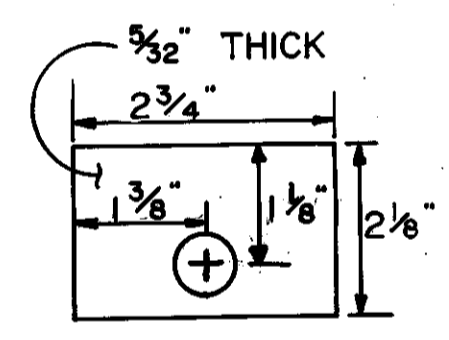
SECTION I-I



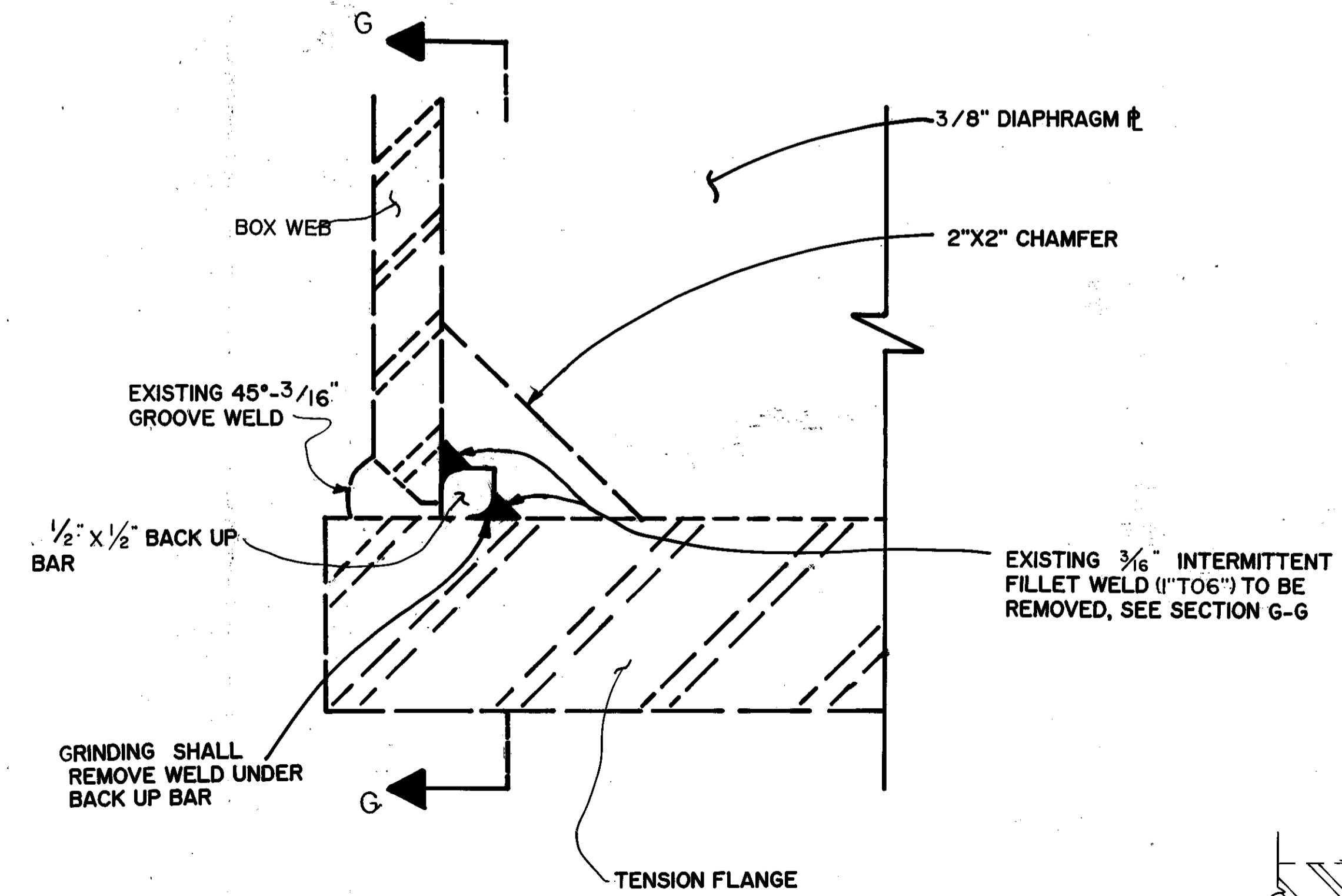
SECTION G-G
INSIDE VIEW



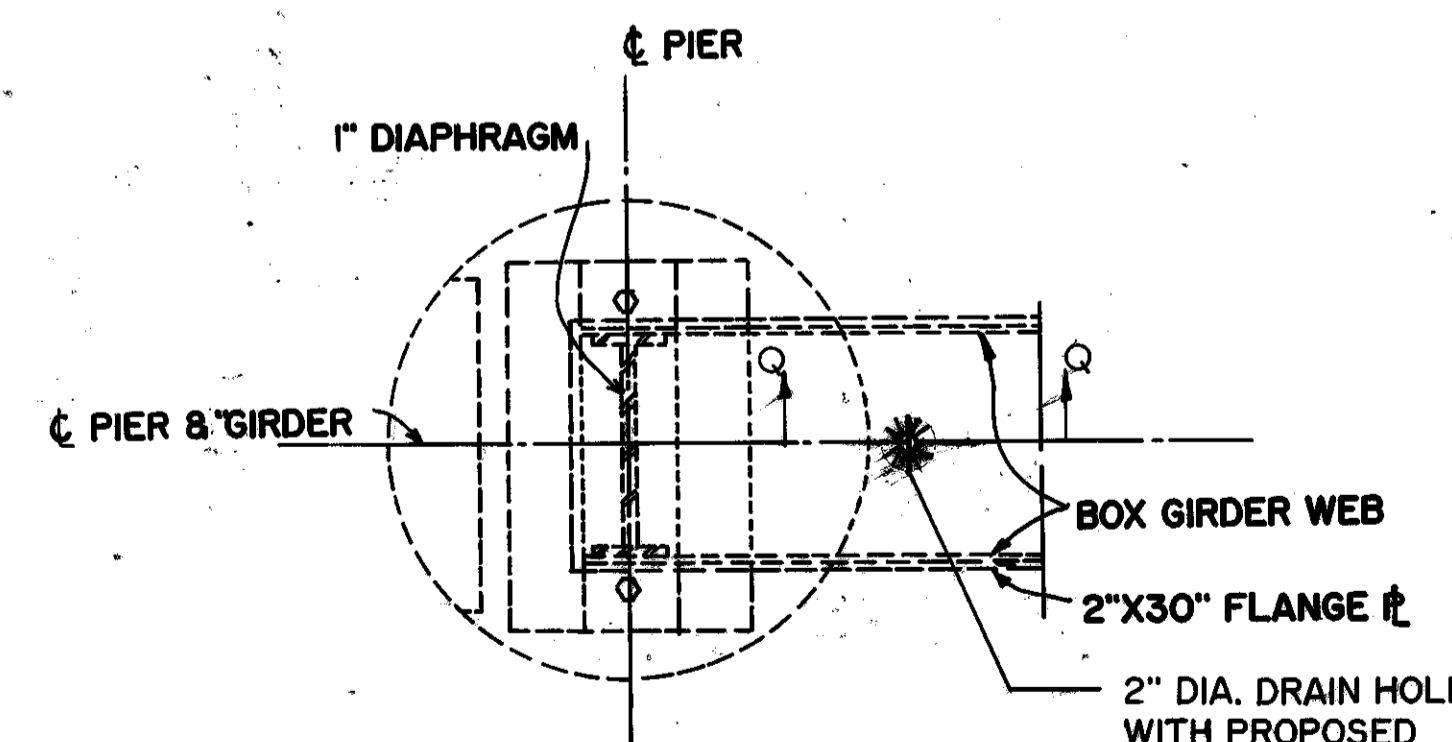
SECTION N-N



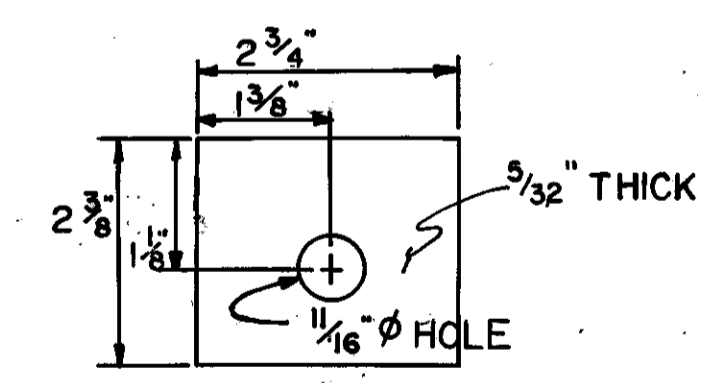
SECTION O-O



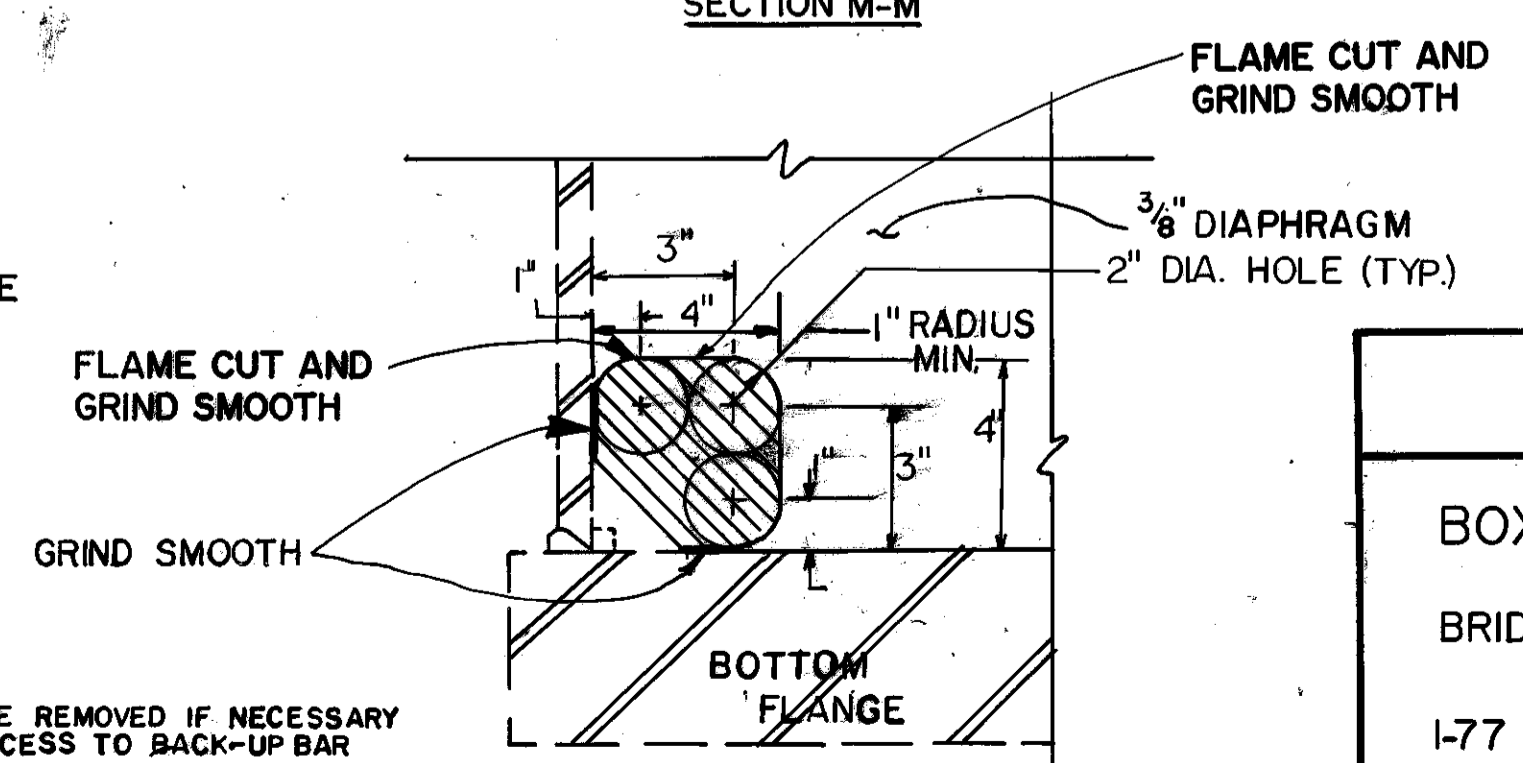
DETAIL A



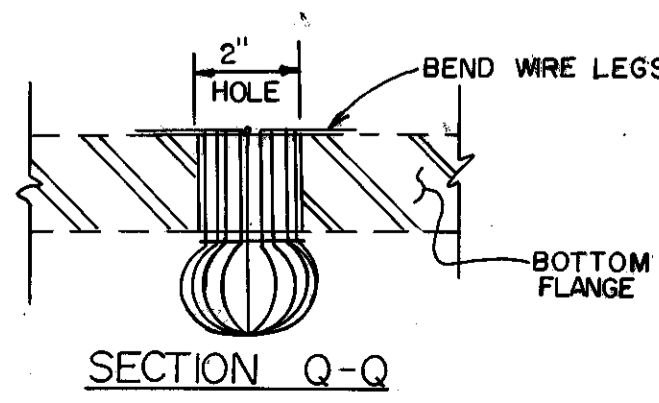
SECTION F-F
FROM VIEW A-A FROM PREVIOUS SHEET



SECTION M-M



SECTION P-P

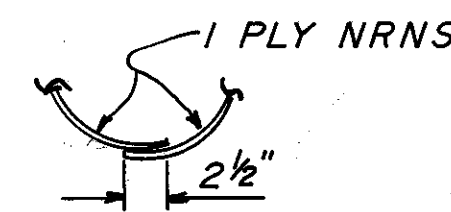
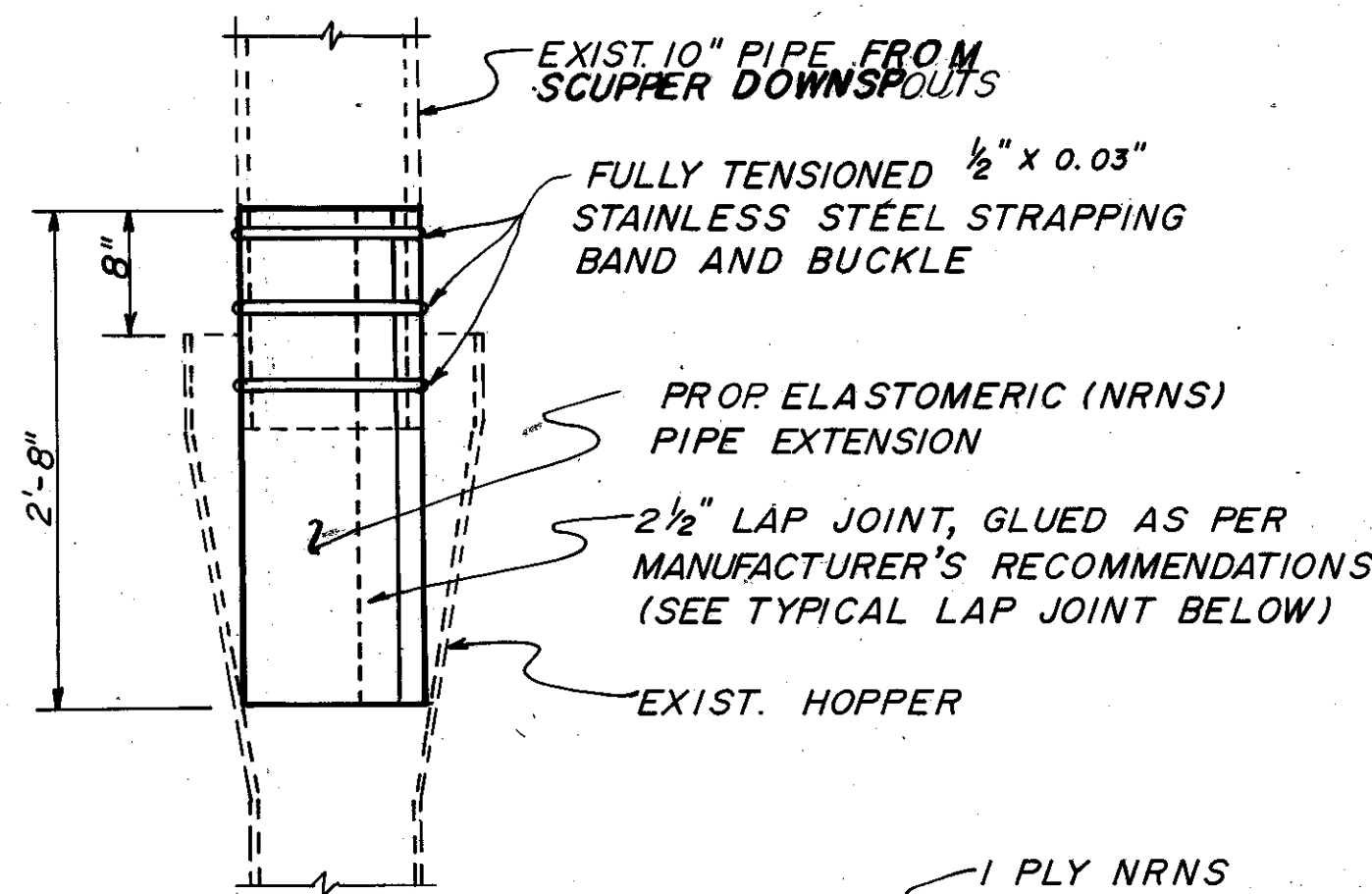


SECTION Q-Q

AREA TO BE REMOVED IF NECESSARY TO GAIN ACCESS TO BACK-UP BAR DISCONTINUITY RETROFIT

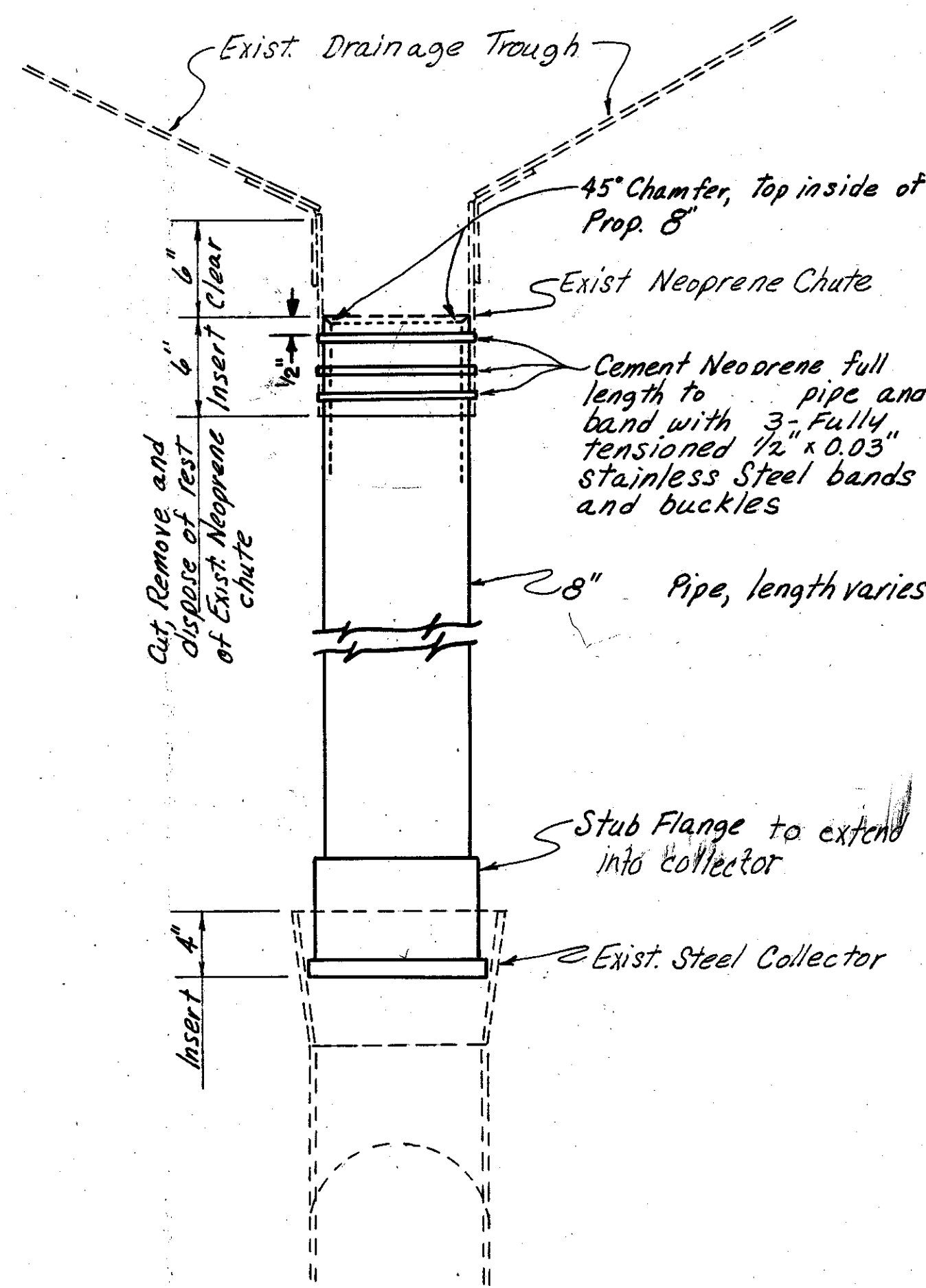
THE COST OF THIS TO BE INCLUDED IN ITEM SPECIAL-BACK UP BAR DISCONTINUITY RETROFIT

STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 12 BRIDGE DEPT.				
BOX GIRDER DETAILS				
BRIDGE NO. CUY-490-0190 SW CUY-490-0191 NE				
I-77 RAMP OVER I-490				
CUYAHOGA COUNTY OHIO				
DESIGNER BGW	CHECKER PDP	REVIEWER DWL	REVISOR GMM	DATE 37
				SHEET 44

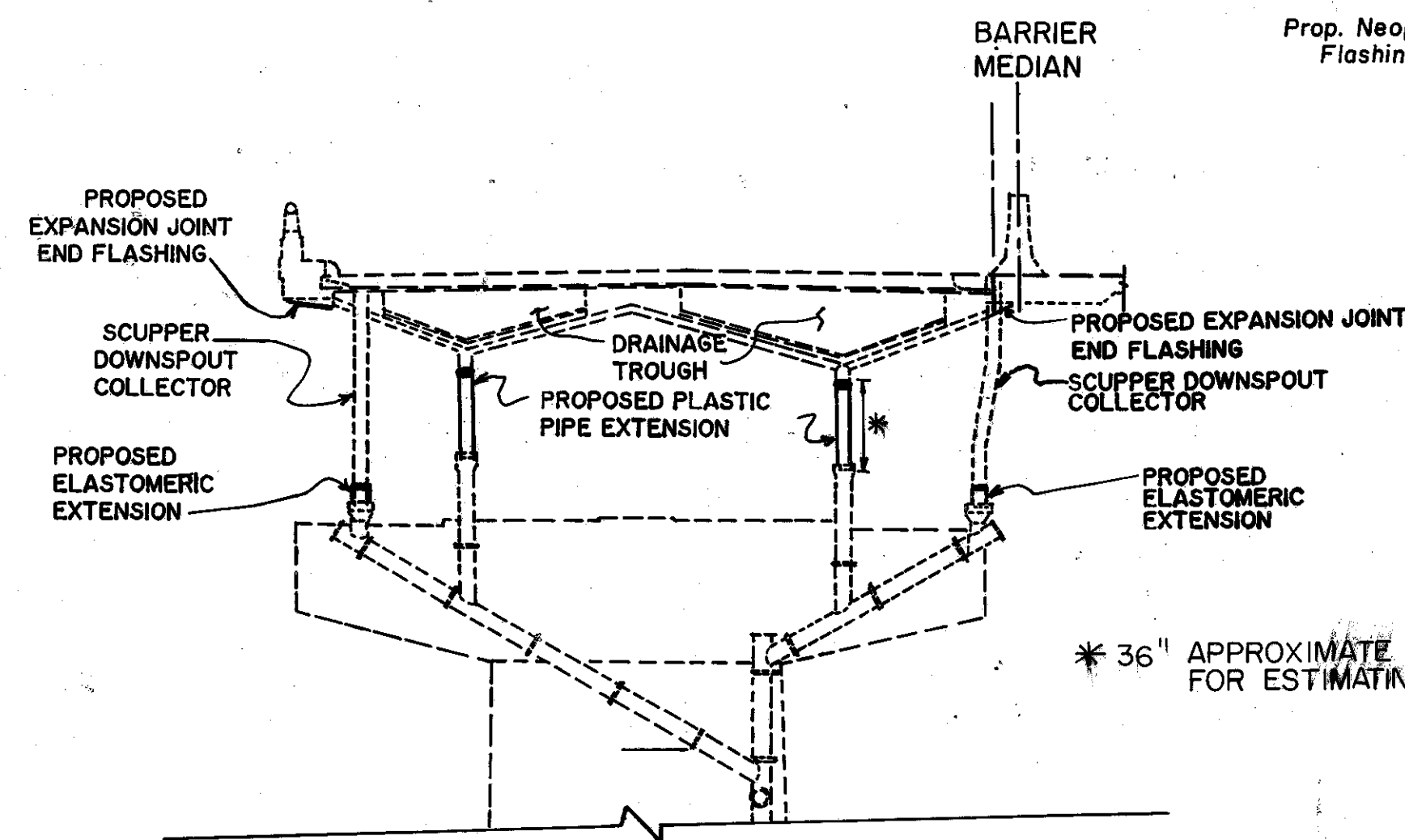


TYPICAL LAP JOINT

ITEM SPECIAL ELASTOMERIC EXTENSION



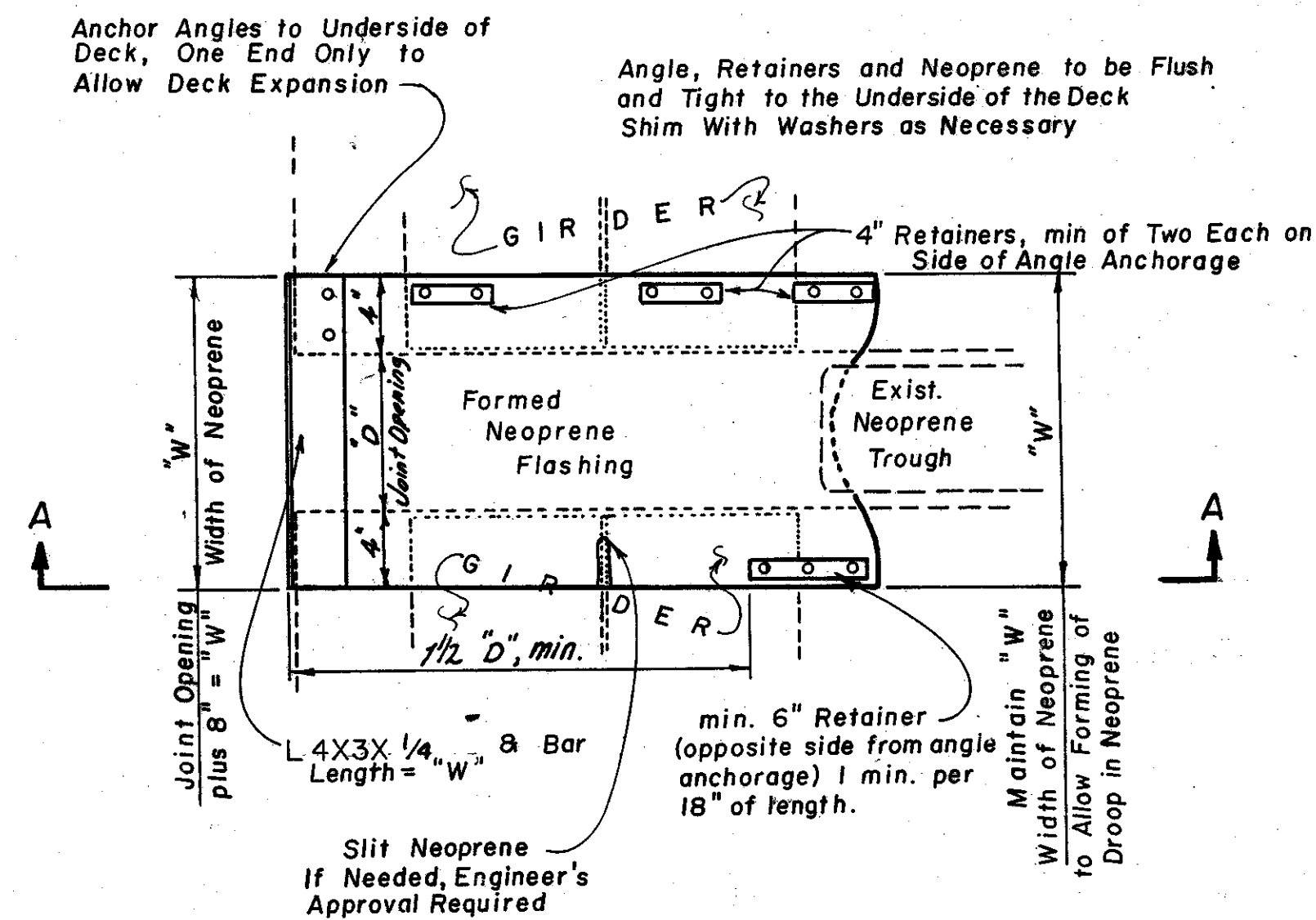
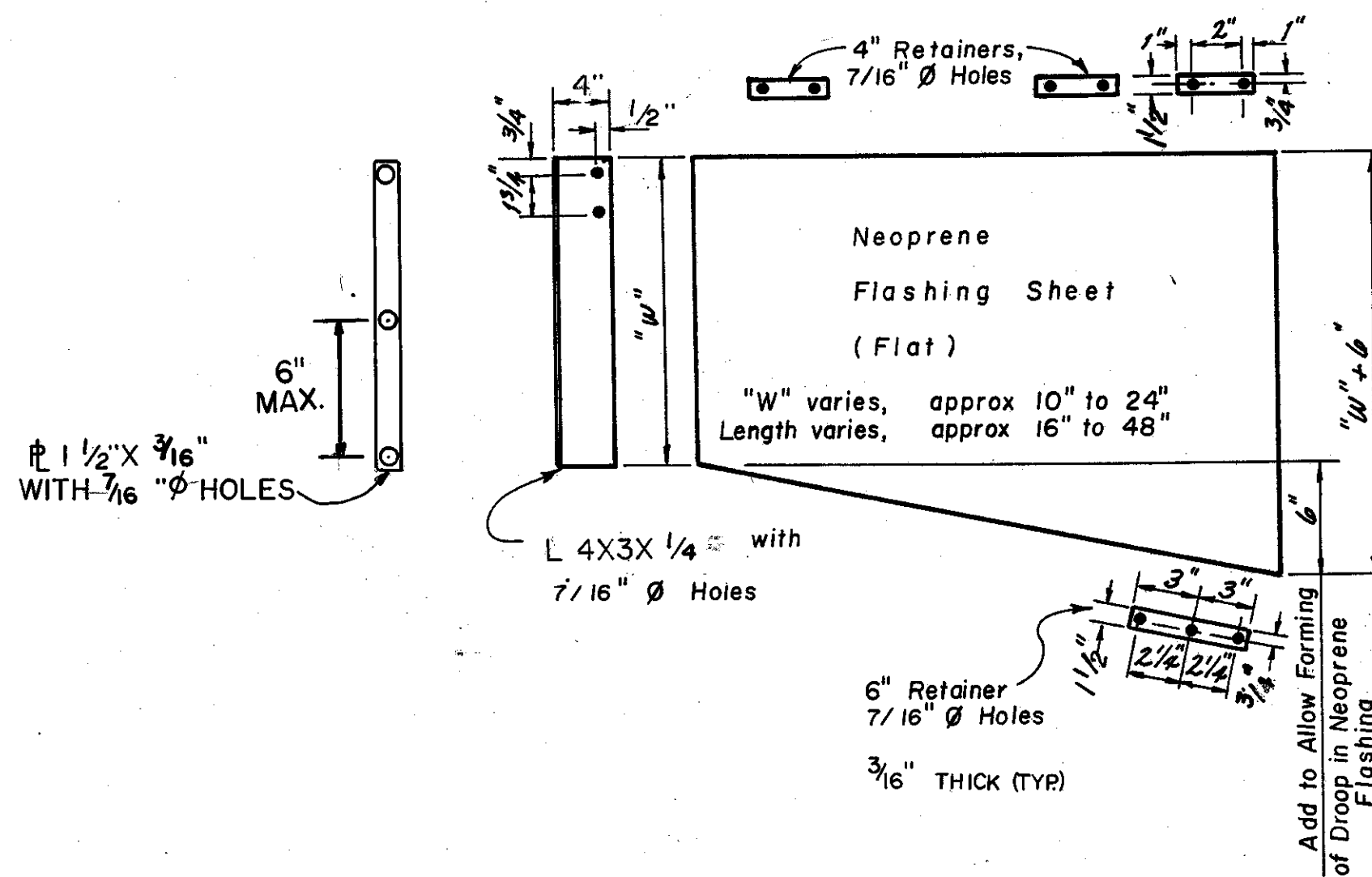
ITEM SPECIAL PLASTIC PIPE EXTENSION



TYPICAL EXPANSION JOINT DRAINAGE EXP. JT. I SHOWN

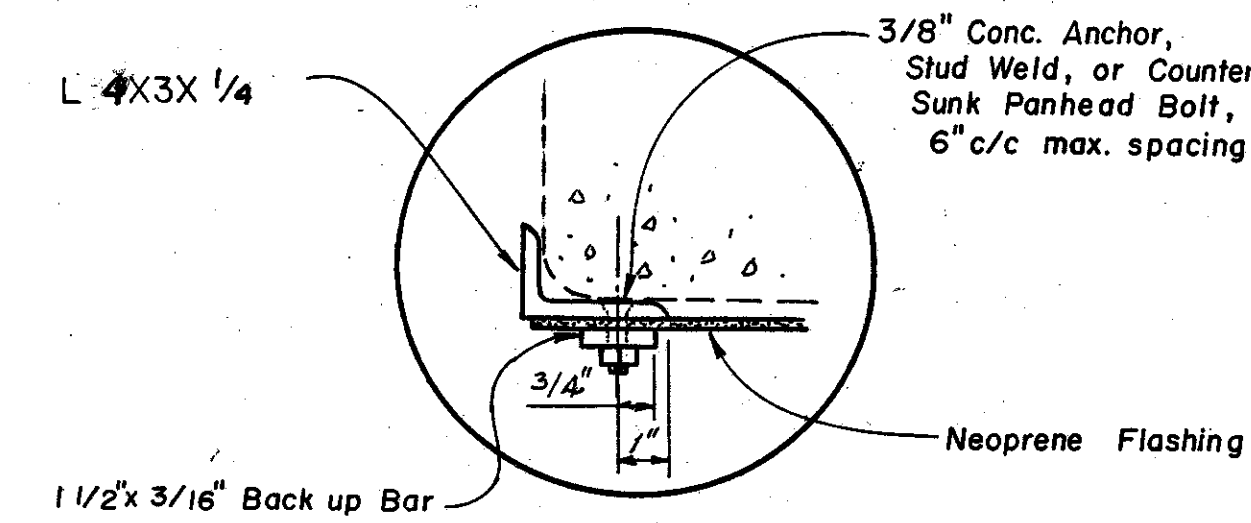
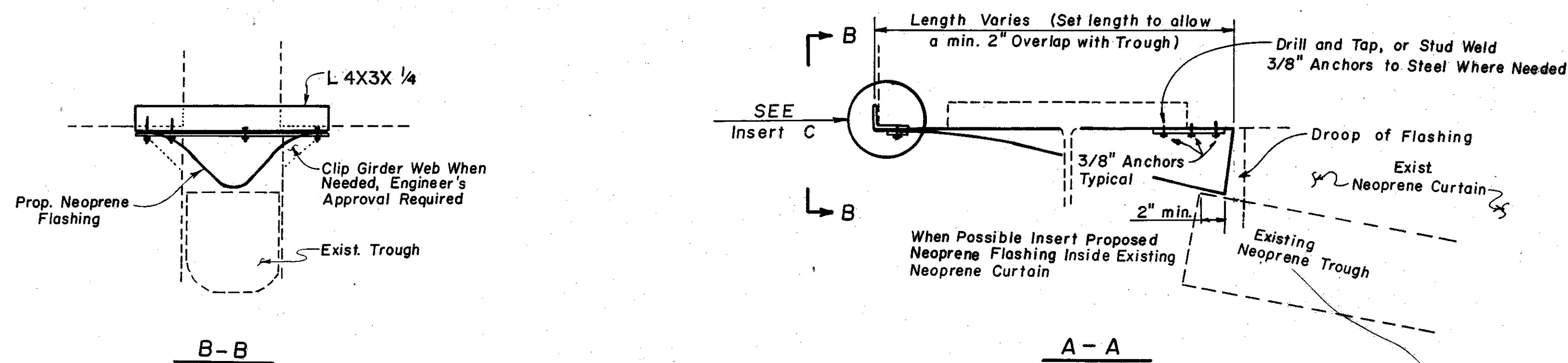
* 36" APPROXIMATE LENGTH TO BE USED FOR ESTIMATING PURPOSES ONLY.

All Anchors, Studs, and Panhead Bolts to be 3/8"



BOTTOM VIEW

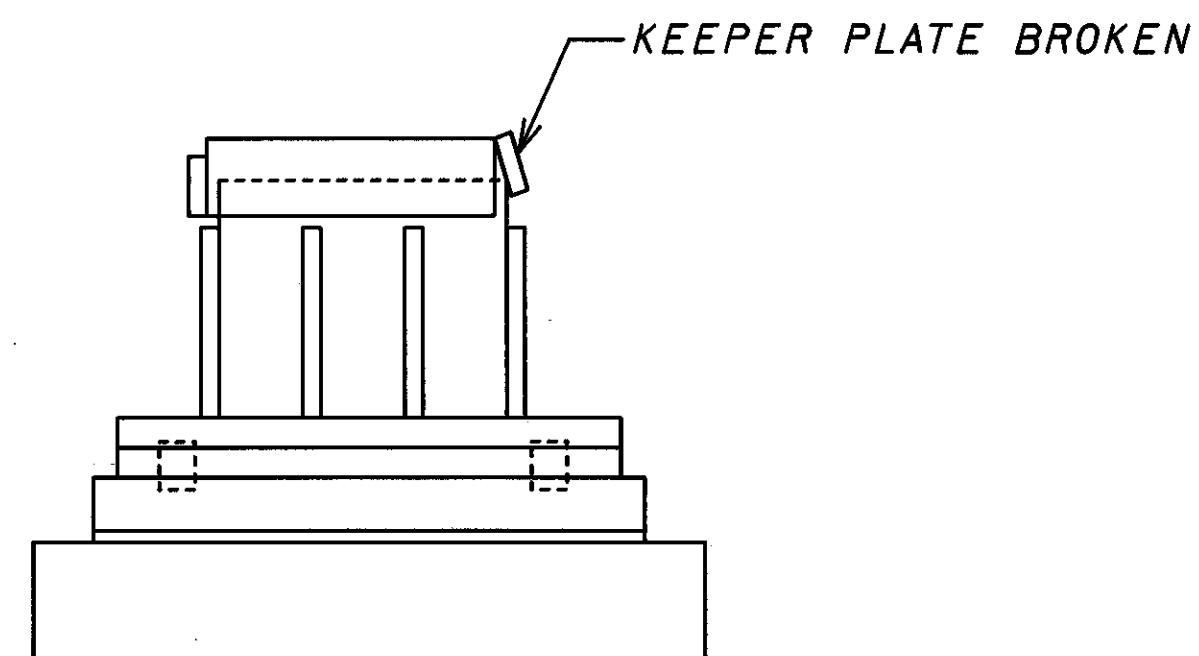
ITEM SPECIAL EXPANSION JOINT END FLASHING



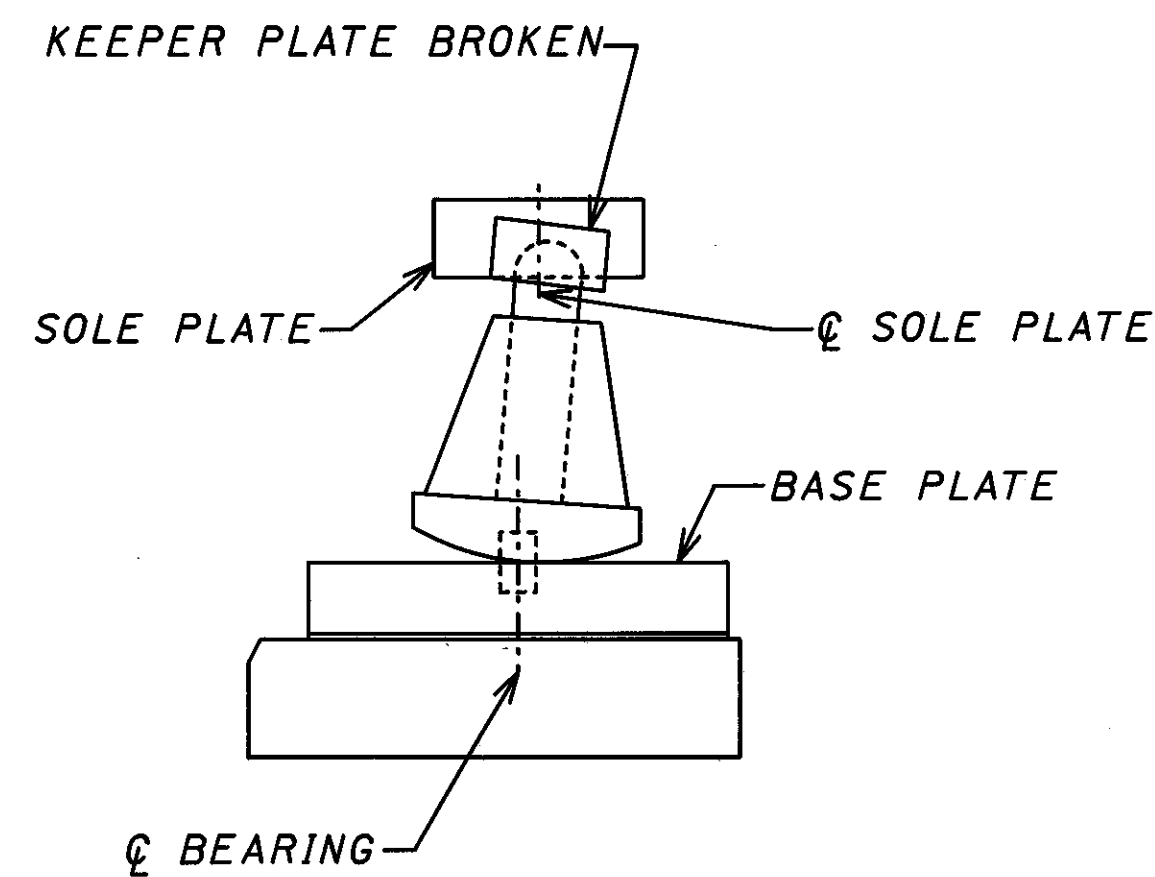
INSERT C

STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 12 BRIDGE DEPARTMENT				
DRAINAGE DETAILS BRIDGE NO. CUY-77-1457 over KINGSBURY RUN				
CUYAHOGA COUNTY OHIO				
DESIGNED BGW	TRACED DCF	CHECKED DWL	REVIEWED GWM	REVISED DATE
				38 SHEET / 44

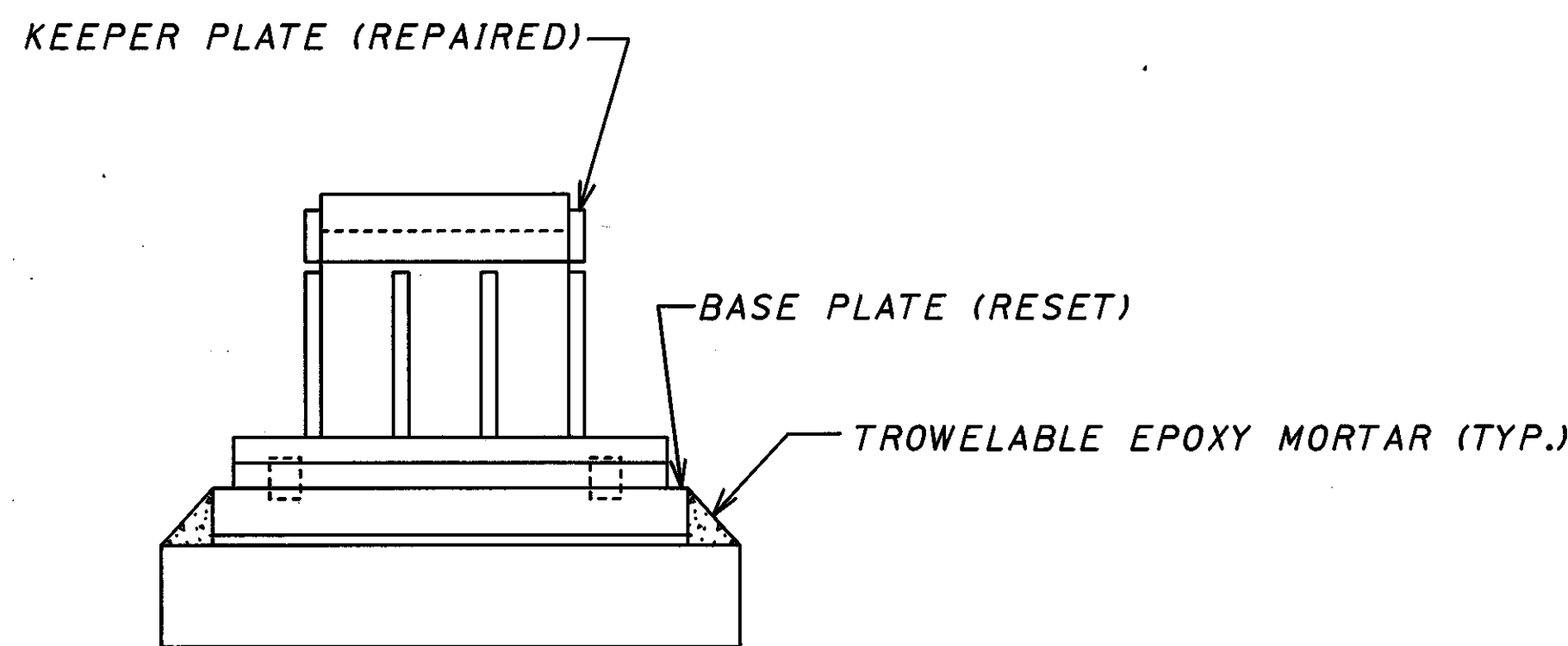
ROCKER DETAILS



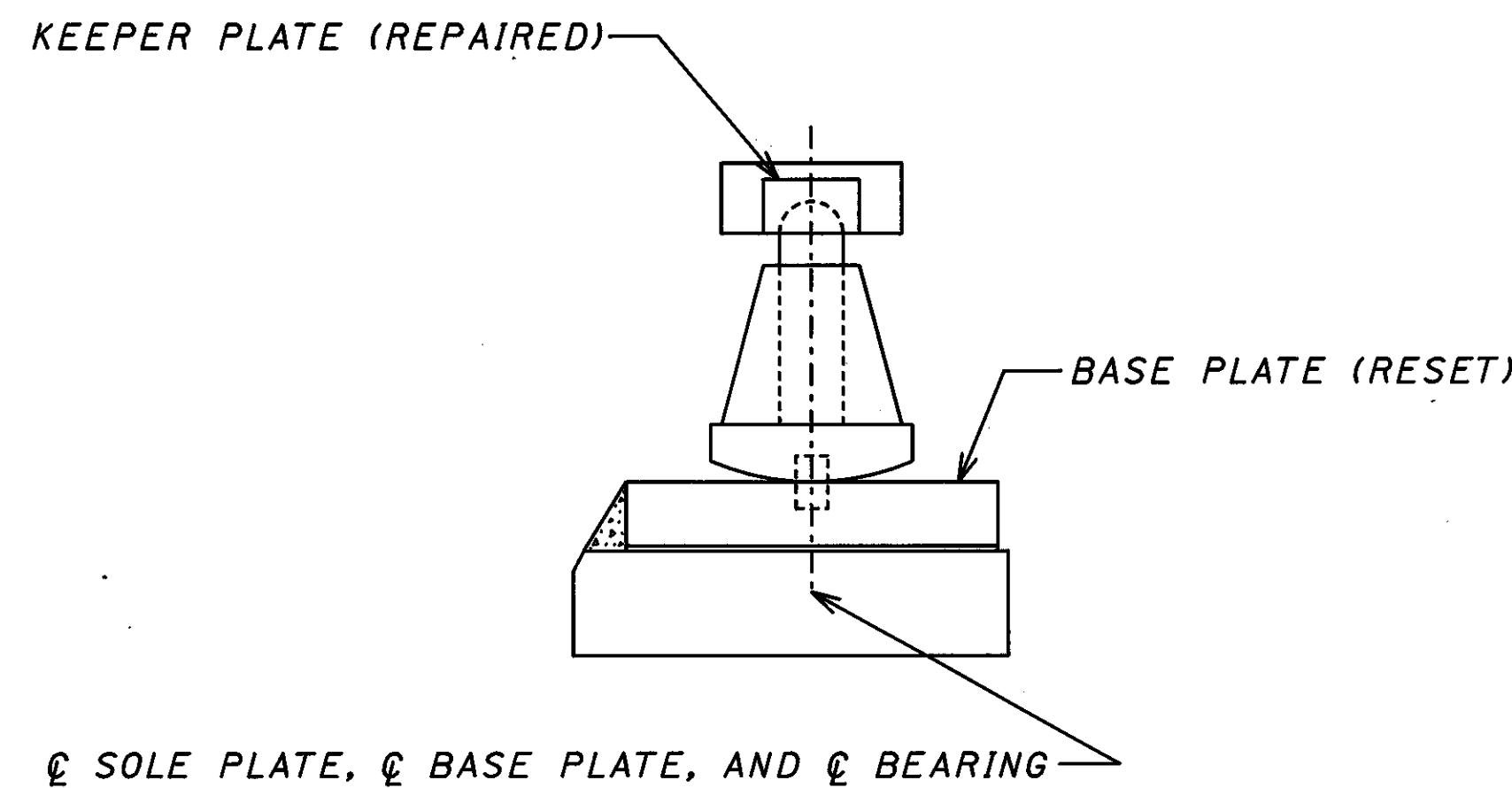
EXISTING FRONT ELEVATION



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.
 5. PLACE TROWELABLE MORTAR (EPOXY) AROUND THE BASE PLATE (SEE ITEM 519-PATCHING CONCRETE STRUCTURES-METHOD 2)
- PAID FOR UNDER ITEM 516-RESET BEARINGS

STATE OF OHIO
 DEPARTMENT OF TRANSPORTATION
 DISTRICT 12 LOCATION & DESIGN

ROCKER DETAILS
 BR. NO. CUY-77-1575

DESIGNED	DRAWN	CHECKED	REVIEWED	REVISED
LDH	KJB	ENF	DWL	
DATE 3/28/92	DATE 3/30/92	DATE 4/29/92	DATE 5/5/92	

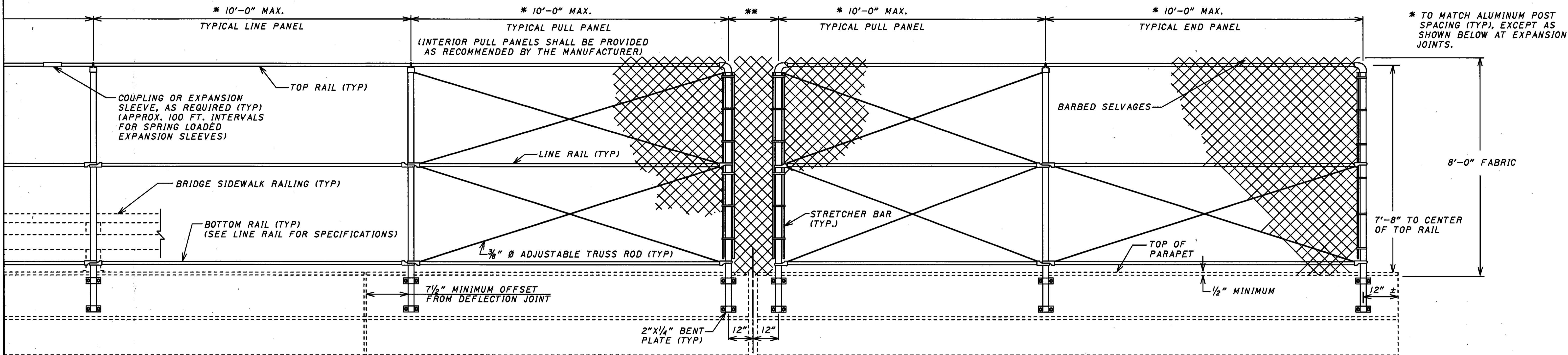
PLOTTED BY: BANASZAK
 PLOTTED FROM: c:\dgn\p1d08084\08084grz.dgn
 FILENAME: dgn
 PLOT SUBMITTED: 12-JUN-1992 06:03

FENCE DETAILS

CUYAHOGA COUNTY
CUY-77-13.81

OHIO
FHWA REGION 5
FEDERAL PROJECT
230
234

**--PROVIDE SLACK IN FABRIC TO MEET EXPANSION (2" ±) IN BRIDGE



INSIDE ELEVATION

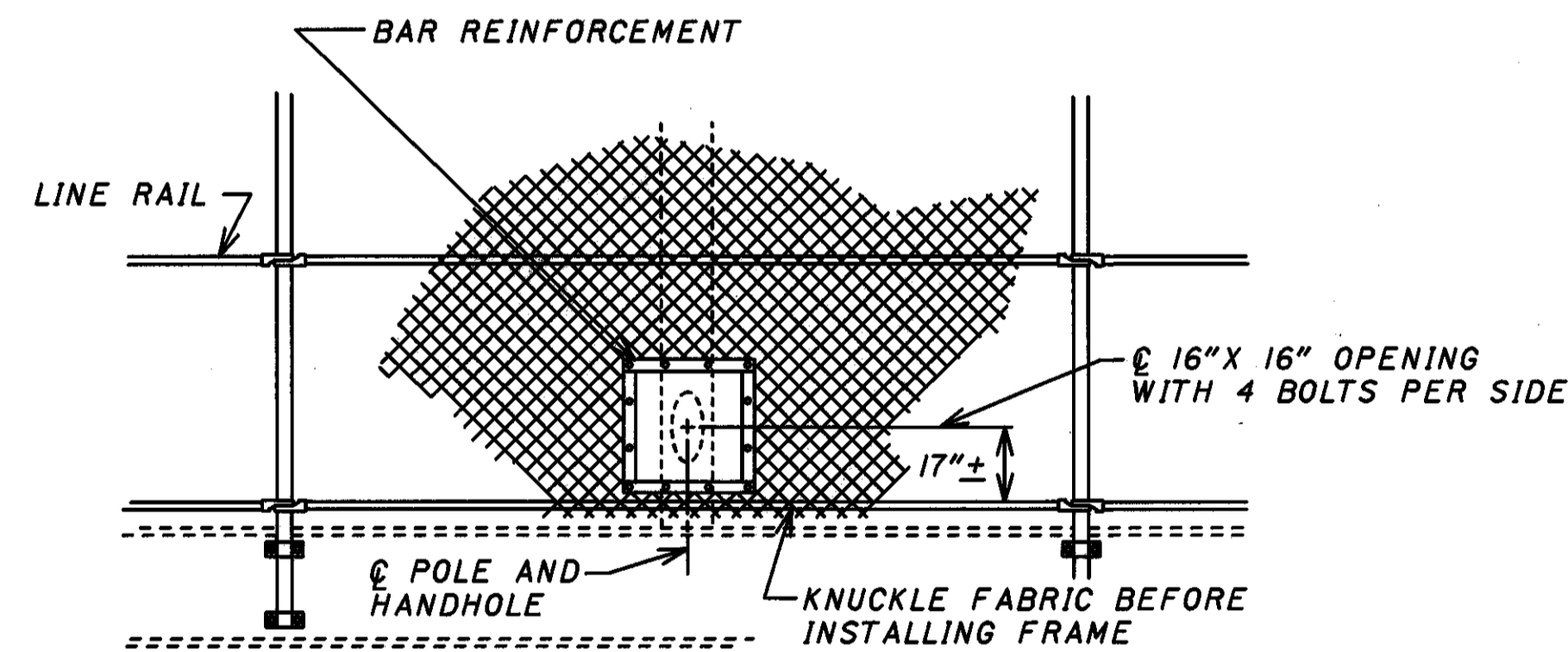
ITEM SPECIAL-VANDAL PROTECTION FENCE

THIS ITEM INCLUDES THE FURNISHING OF ALL MATERIALS, LABOR, EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THE FENCING AS SHOWN. FOR DETAILS AND SPECIFICATIONS NOT SHOWN, SEE STANDARD CONSTRUCTION DRAWING VPF-I-90 WITH THE FOLLOWING EXCEPTIONS:

1. THE BOTTOM RAIL SHALL CONFORM TO SPECIFICATIONS LISTED FOR LINE RAILS AND INSTALLED AS SHOWN IN THE PLANS
2. STEEL FABRIC SHALL BE LIMITED TO 9 GAGE CORE WIRES
3. PVC COATINGS SHALL BE ASTM A641-82, CLASS 2b.

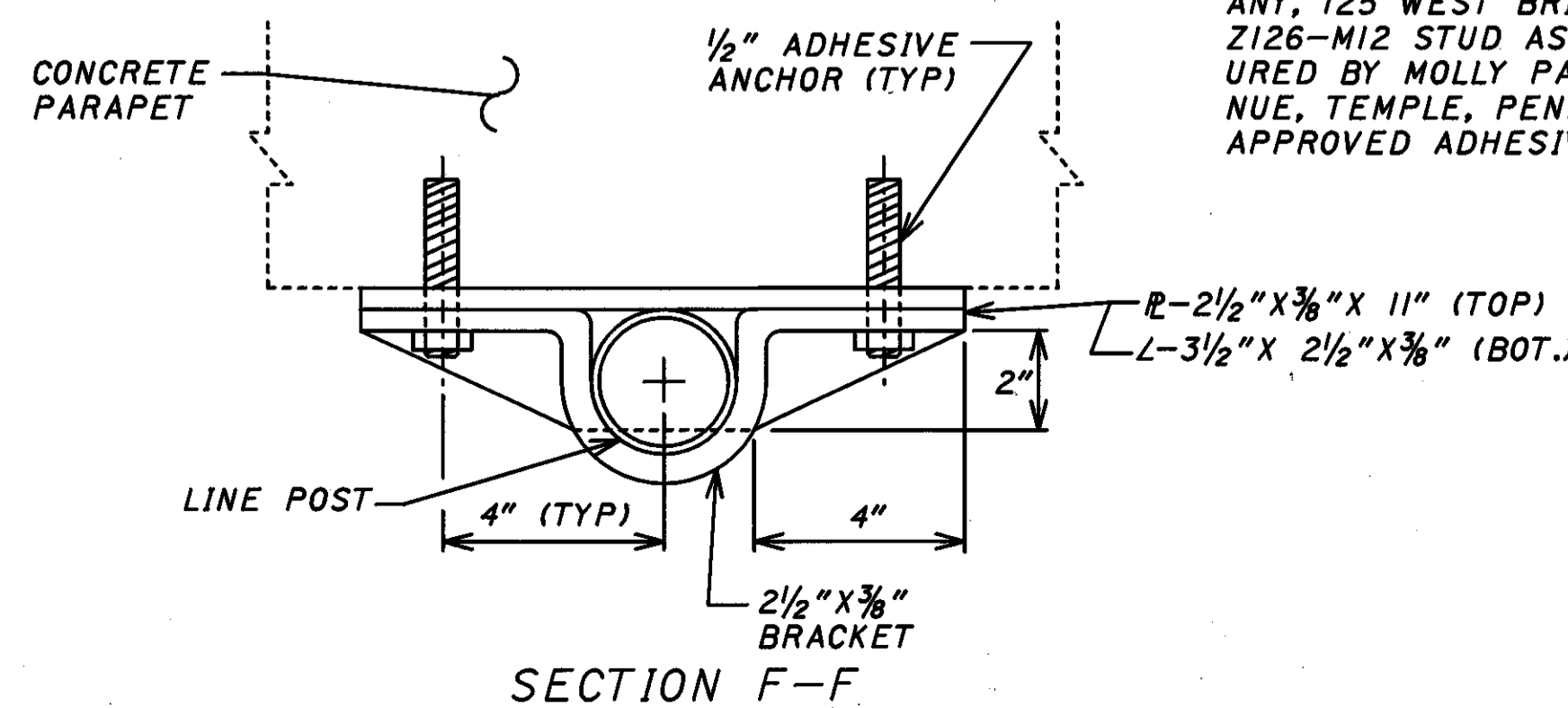
THE FABRIC SHALL BE FREE TO EXPAND OR CONTRACT ACROSS BRIDGE EXPANSION JOINT.

PAYMENT FOR ALL WORK SHALL BE INCLUDED UNDER ITEM SPECIAL-VANDAL PROTECTION FENCE.



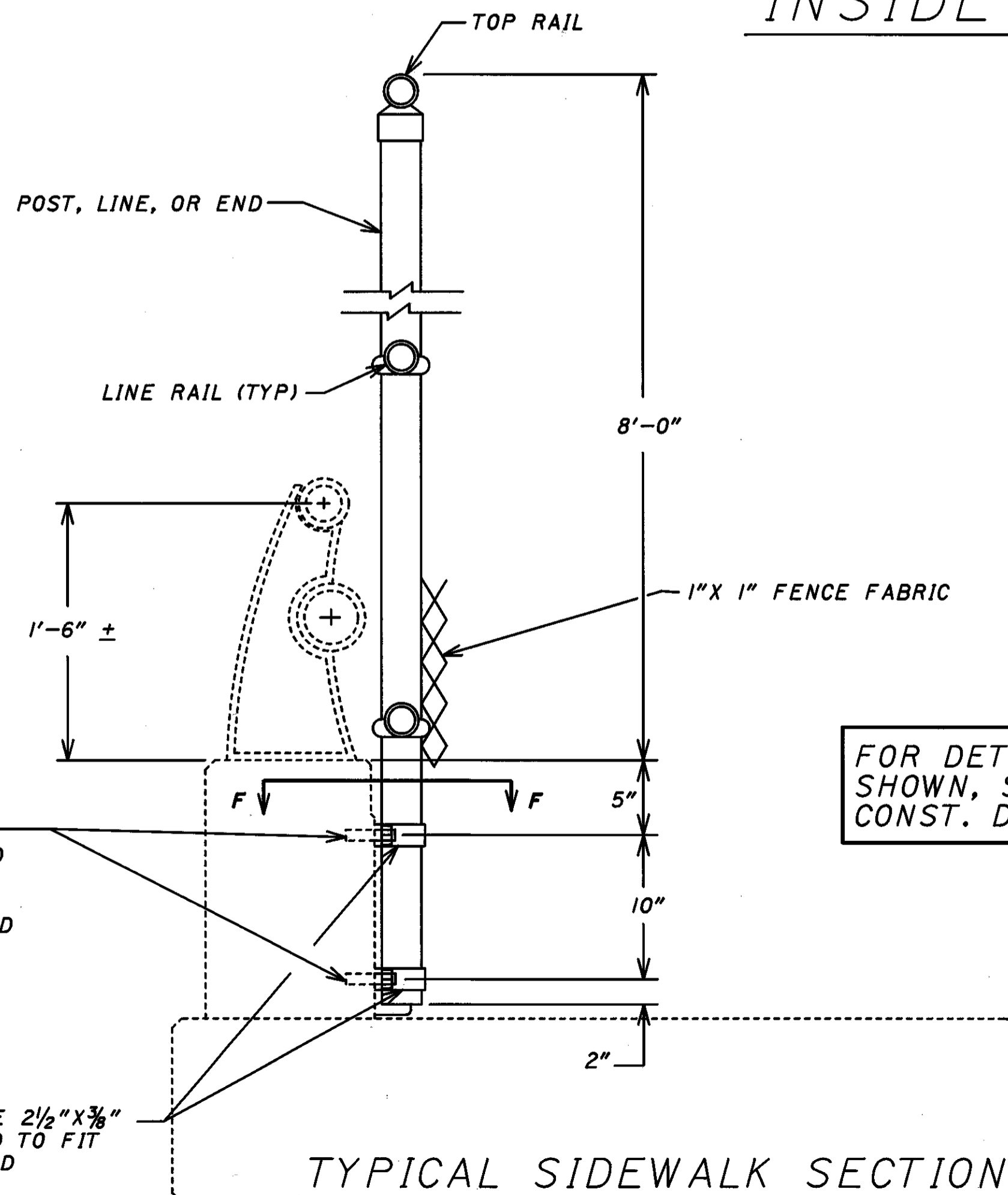
DETAIL AT LIGHT POLE

THE 1/2" ADHESIVE ANCHORS SHALL BE, HAS 12-612 WITH HBP M12-1/2 CARTRIDGE AS MANUFACTURED BY HILTY FASTENING SYSTEMS, P.O. BOX 45400 TULSA, OKLAHOMA 74145 (918) 627-9711, 6513 A 307 STANDARD CARBON STEEL CHEM-STUD ANCHOR RODS WITH A 6503 CHEM-STUD CAPSULE AS MANUFACTURED BY THE RAWPLUG OHIO COMPANY, 125 WEST BRIDGE DRIVE, BEREA, OHIO 44017 (216) 243-9832, Z126-M12 STUD ASSEMBLY WITH A M12-12 PARABOND CAPSULE AS MANUFACTURED BY MOLLY PARABOND CAPSULE ANCHORS, 504 MT. LAUREL AVENUE, TEMPLE, PENNSYLVANIA 19560 (215) 927-5764. AN ENGINEER APPROVED ADHESIVE ANCHOR EQUAL OR ACCORDING TO SS-852



NOTES:

1. POST TOPS SHALL BE FITTED WITH A CAP SUITABLE FOR ACCOMODATING A CONTINUOUS TOP RAIL. THE END POST CAPS SHALL BE OF A DESIGN TO CONTAIN THE TOP RAIL TO PREVENT HORIZONTAL MOVEMENT.
2. THE CONTRACTOR SHALL MAKE EVERY EFFORT TO PLACE POSTS IN A VERTICAL POSITION. IF NECESSARY, GALVANIZED METAL SHIMS SHALL BE USED TO SECURE POSTS IN A PLUMB AND ORGANIZED POSITION.



FOR DETAILS NOT SHOWN, SEE STD. CONST. DWG. VPF-I-90.

POST BRACKETS & BOLTS: POST BRACKET SHALL BE 2 1/2" X 3/8" GALVANIZED BENT PLATE AND SHALL BE SHAPED TO FIT THE POSTS. ADHESIVE ANCHORS TO BE APPROVED BY THE ENGINEER (SEE NOTE THIS SHEET).

FENCE DETAILS

BR. NO. CUY-77-1409

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

DESIGNED LDH	DRAWN KJB	CHECKED ENF	REVIEWED DWL	REVISED
DATE: 1/15/92	DATE: 4/17/92	DATE: 4/29/92	DATE: 5/3/92	

SHEET 40/44

PLOT SUBMITTED: 09-JUN-1992 07:00

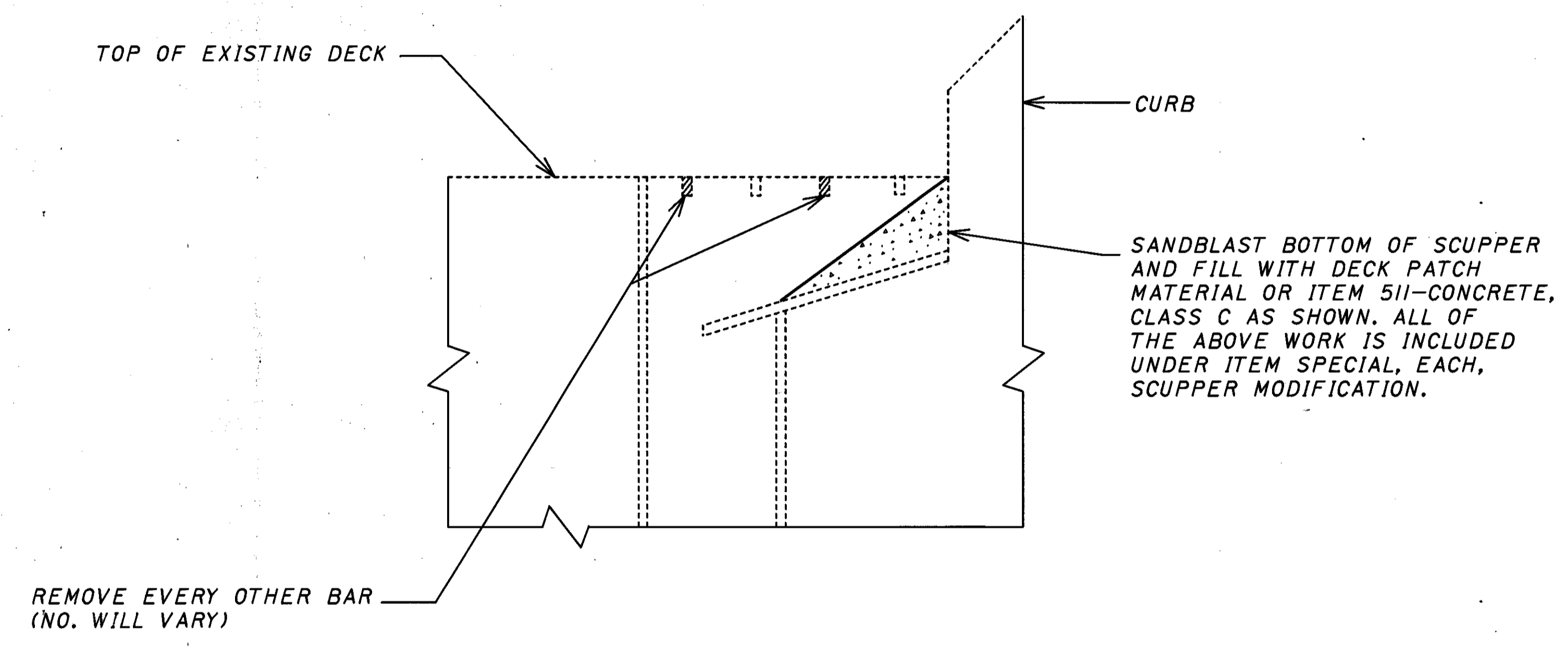
filename.dgn

plotted by: BANASZAK

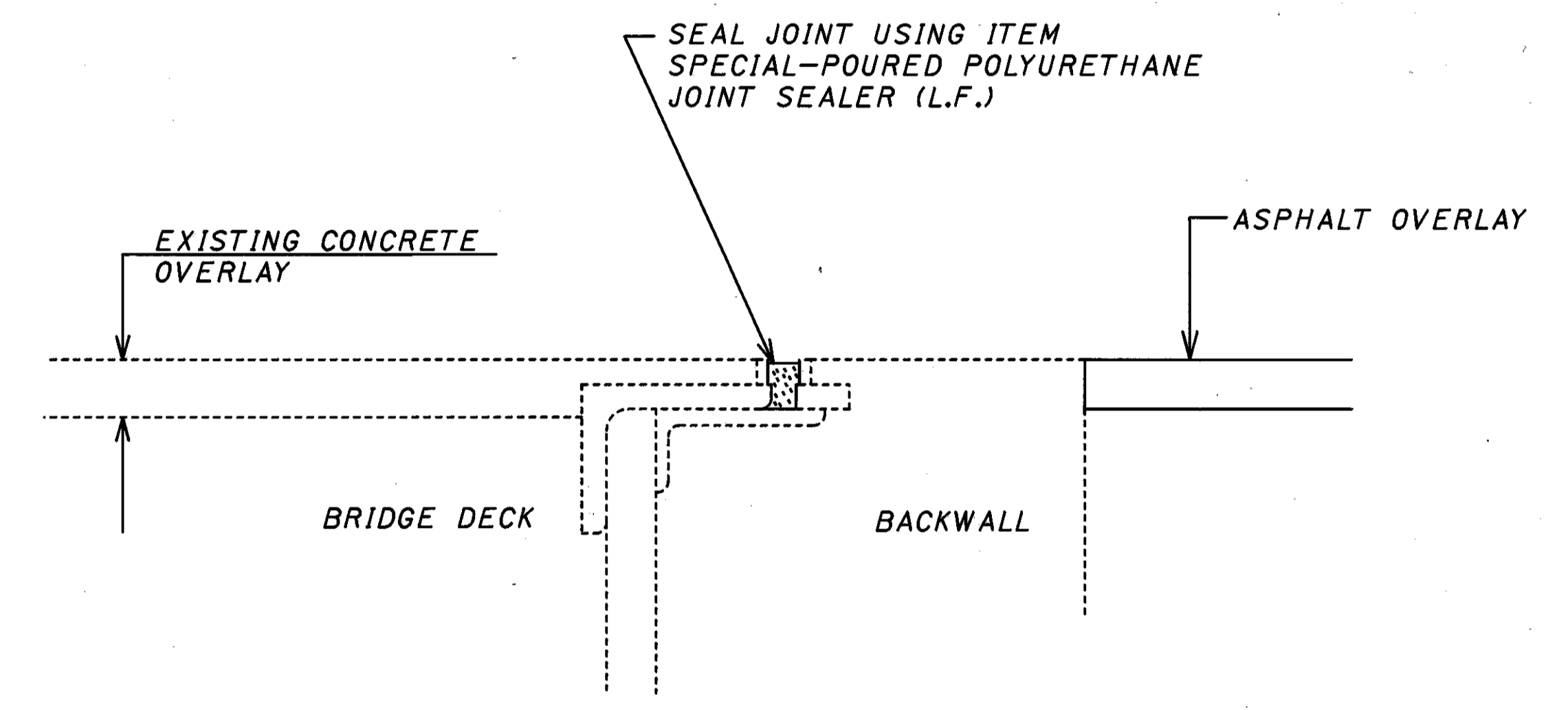
plotted from: c:\dgn\p1\08084\08084gmu.dgn

MISCELLANEOUS DETAILS

PLOTTED BY: BANASZAK
 PLOTTED FROM: c:\dgn\p\d08084\08084gmx.dgn
 FILENAME: dgn
 PLOT SUBMITTED: 12-JUN-1992 06:55



ITEM 518-SCUPPER MODIFICATION
(ALL BRIDGES)



TRANSVERSE SEALING OF STRUCTURAL EXPANSION JOINTS

- | | |
|---------------------|------------------------|
| BR. NO. CUY-77-1409 | BR. NO. CUY -77-1593ES |
| BR. NO. CUY-77-1435 | BR. NO. CUY-422- 0078 |
| BR. NO. CUY-77-1457 | BR. NO. CUY-422-0084 |
| BR. NO. CUY-77-1518 | BR. NO. CUY-490-0187WN |
| BR. NO. CUY-77-1546 | BR. NO. CUY-490-0189ES |
| BR. NO. CUY-77-1562 | BR. NO. CUY-490-0190SW |
| BR. NO. CUY-77-1575 | BR. NO. CUY-490-0191NE |

STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 12 LOCATION & DESIGN				
SCUPPER MODIFICATION, TRANSVERSE SEALING OF EXPANSION JOINTS				
DESIGNED LDH	DRAWN KJB DATE 3/28/92	CHECKED ENF	REVIEWED DWL	REVISED SHEET 41 / 44

MISCELLANEOUS DETAIL

CUYAHOGA COUNTY
CUY-77-13.81

OHIO

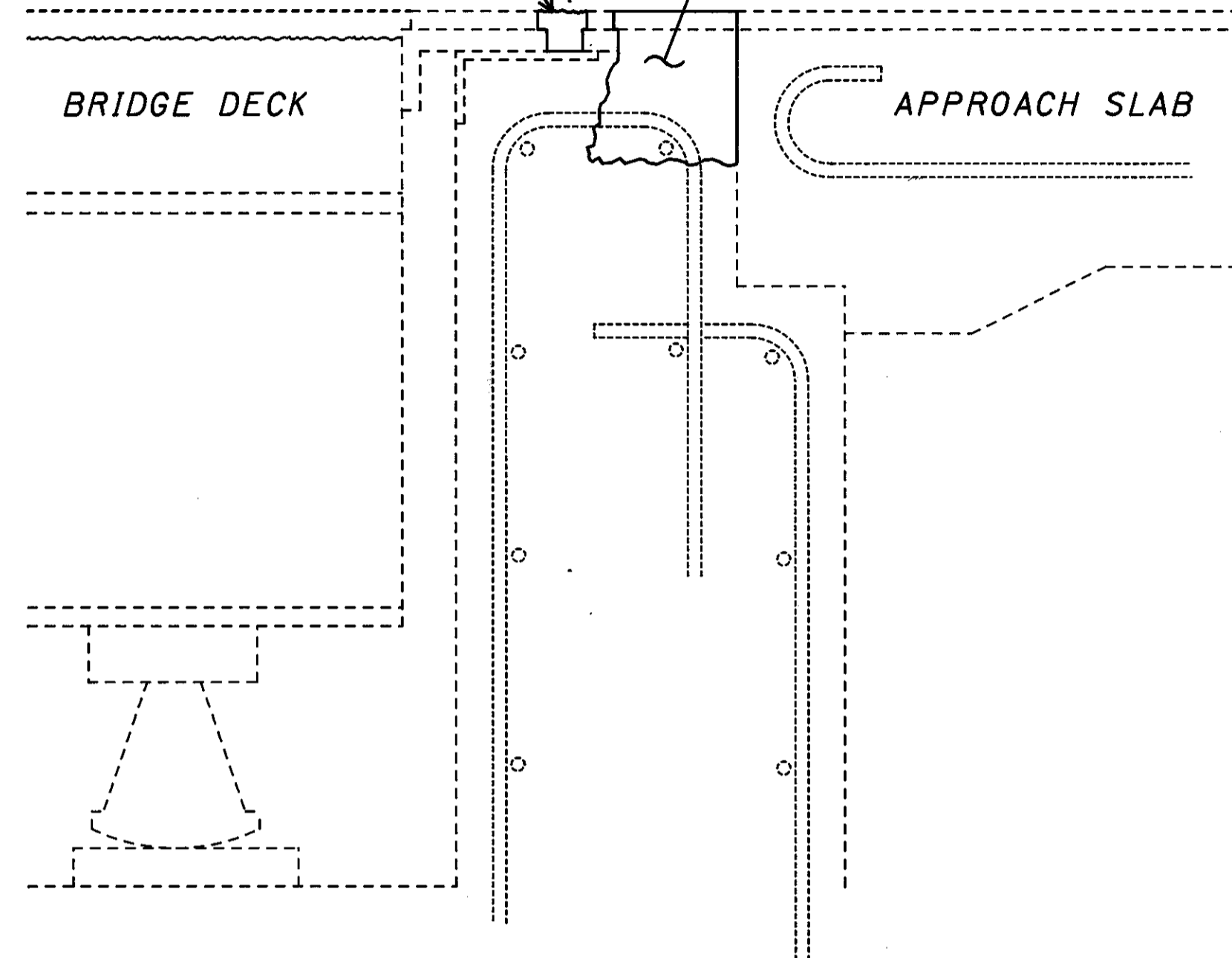
FHWA
REGION 5

FEDERAL
PROJECT

232
234

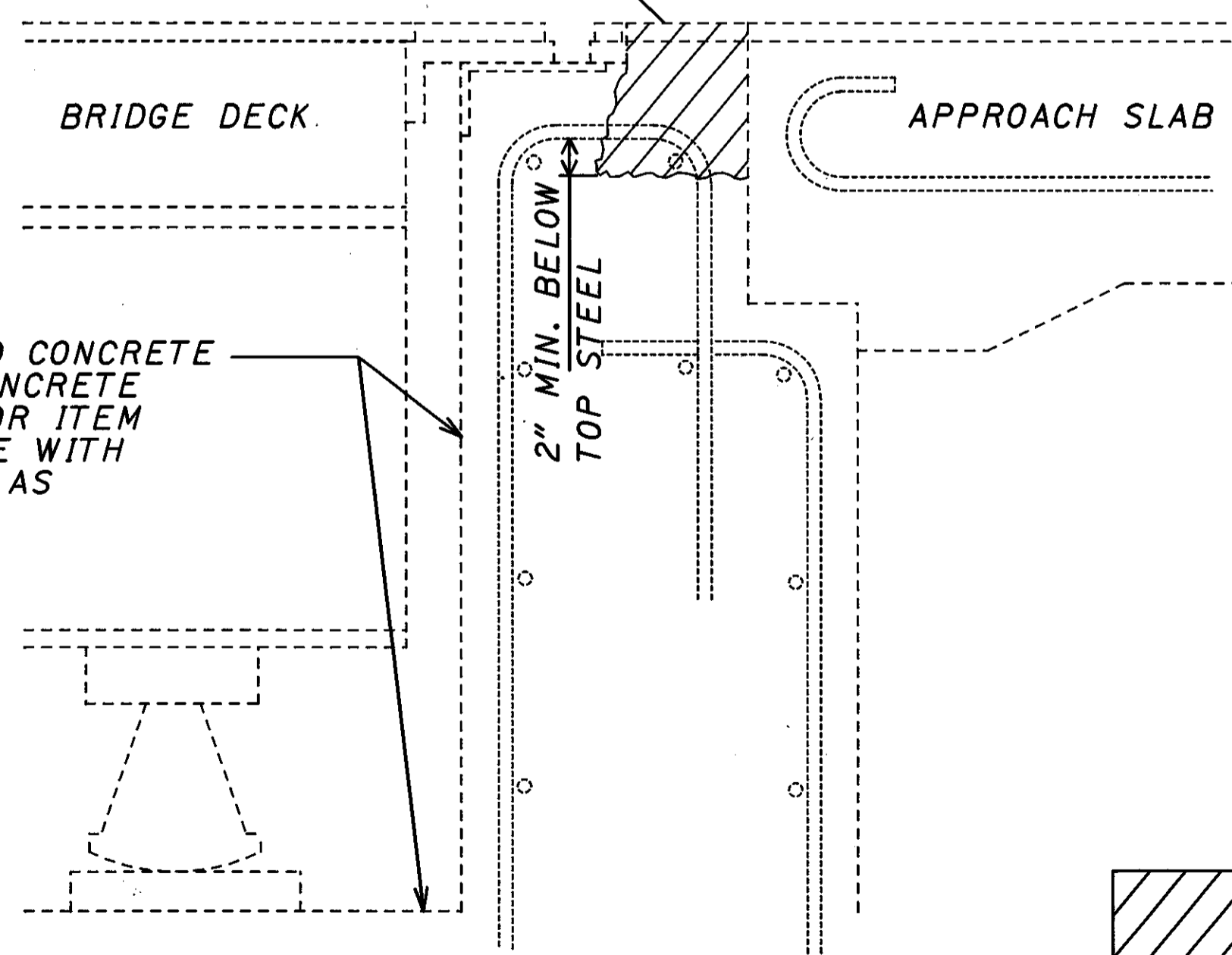
SEAL JOINT USING ITEM
SPECIAL-POURED POLYURETHANE
JOINT SEAL (REMOVE ANY
EXISTING JOINT SEAL MATERIAL)

REPAIR BACKWALL TO
FINAL GRADE USING
ITEM SPECIAL- MICROSILICA
MODIFIED CONCRETE
(VARIABLE THICKNESS) OR
APPLICABLE DECK PATCH
MATERIAL



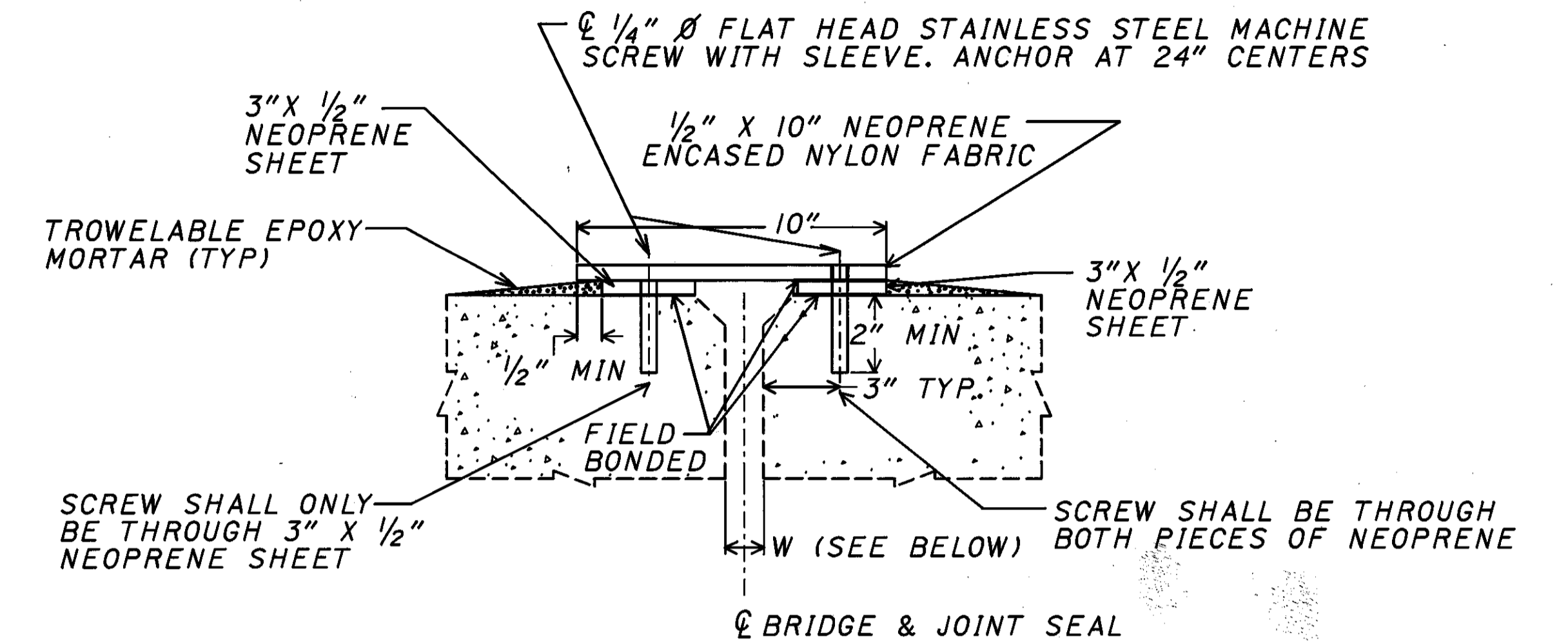
PROPOSED BACKWALL

REMOVE EXISTING SOUND CONCRETE
AND ANY ADDITIONAL UNSOUND
CONCRETE BEYOND THE LIMITS
SHOWN.



EXISTING BACKWALL

CUY-77-1435 PLUS ANY ADDITIONAL BACKWALLS IN NEED
OF REPAIR (AS DETERMINED BY THE ENGINEER)



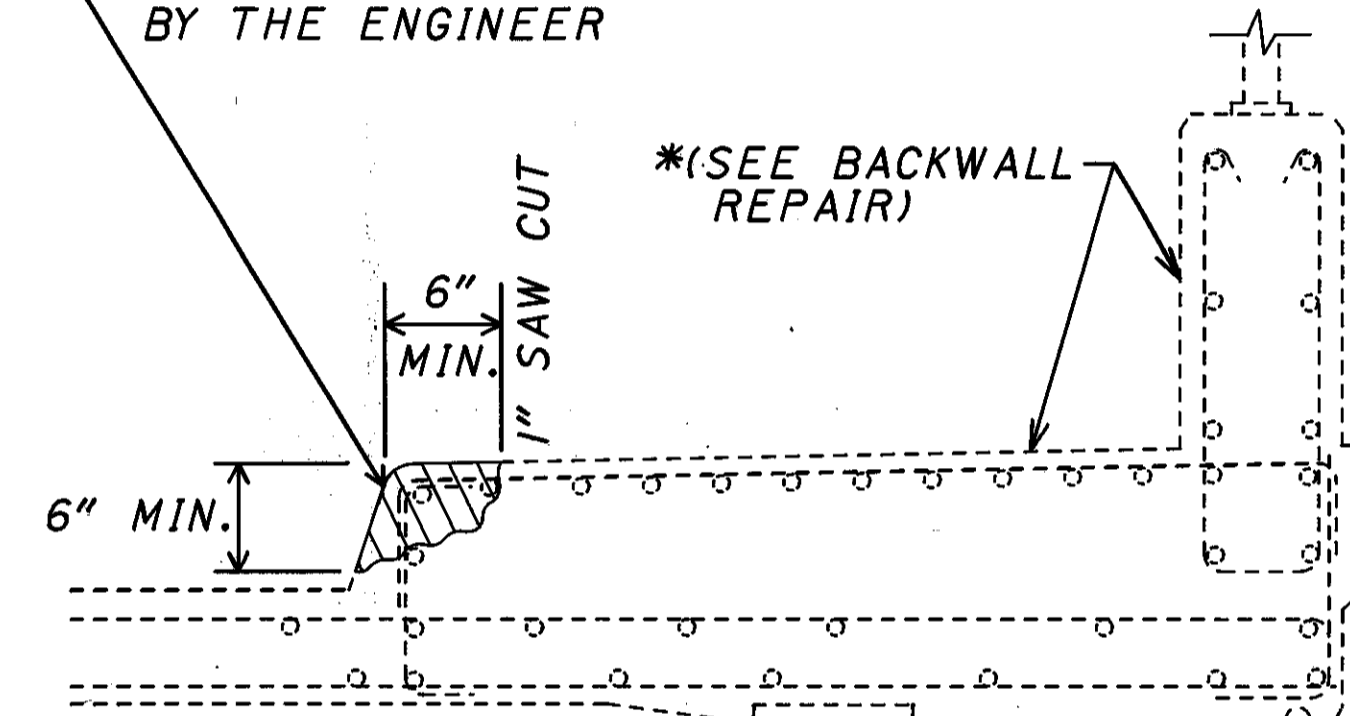
NEOPRENE MEDIAN JOINT SEAL DETAIL

NOTE:
MEDIAN BARRIER SEAL SHALL BE CONTINUOUS
EXCEPT AT SIGN SUPPORTS, LIGHT POLES
AND PULL BOX PILASTERS AND AT
EXPANSION JOINTS.

PAYMENT FOR STAINLESS STEEL SCREWS
AND TROWELABLE MORTAR SHALL BE
INCLUDED IN THE UNIT PRICE BID FOR
ITEM SPECIAL-NEOPRENE SHEET MEDIAN
BARRIER JOINT SEAL. MORTAR SHALL BE
AS SPECIFIED IN ITEM 519-PATCHING
CONCRETE STRUCTURES, AS PER PLAN
(METHOD 2)

BRIDGE	W (IN.)
CUY-77-1322	2
CUY-77-1335	2

ITEM 519 - PATCHING CONCRETE
STRUCTURES, AS PER PLAN (EXACT
LOCATIONS SHALL BE AS DETERMINED
BY THE ENGINEER)



TYPICAL CURB PATCHING

- BR. NO. CUY-77-1409
- BR. NO. CUY-77-1435
- BR. NO. CUY-77-1457
- BR. NO. CUY-77-1518
- BR. NO. CUY-77-1546
- BR. NO. CUY-77-1562
- BR. NO. CUY-77-1575
- BR. NO. CUY-77-1593ES
- BR. NO. CUY-422-0078
- BR. NO. CUY-422-0084

* REPAIR SPALLS AND UNSOUND CONCRETE
USING ITEM 519-PATCHING CONCRETE
STRUCTURES, AS PER PLAN, OR ITEM
SPECIAL-REPAIRING CONCRETE WITH
SOLVENT FREE EPOXY RESIN AS
DIRECTED BY THE ENGINEER.
(SEE GENERAL NOTES)

INDICATES REMOVAL
AREA (DO NOT
DAMAGE EXISTING
REINFORCING STEEL)

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

CURB PATCHING, BACKWALL
REPAIRS, MEDIAN BARRIER
JOINT SEAL

DESIGNED	TRACED	CHECKED	REVIEWED	REVISED	DATE
LDH	KJB	LDH	ENF	3/23/92	OHIO

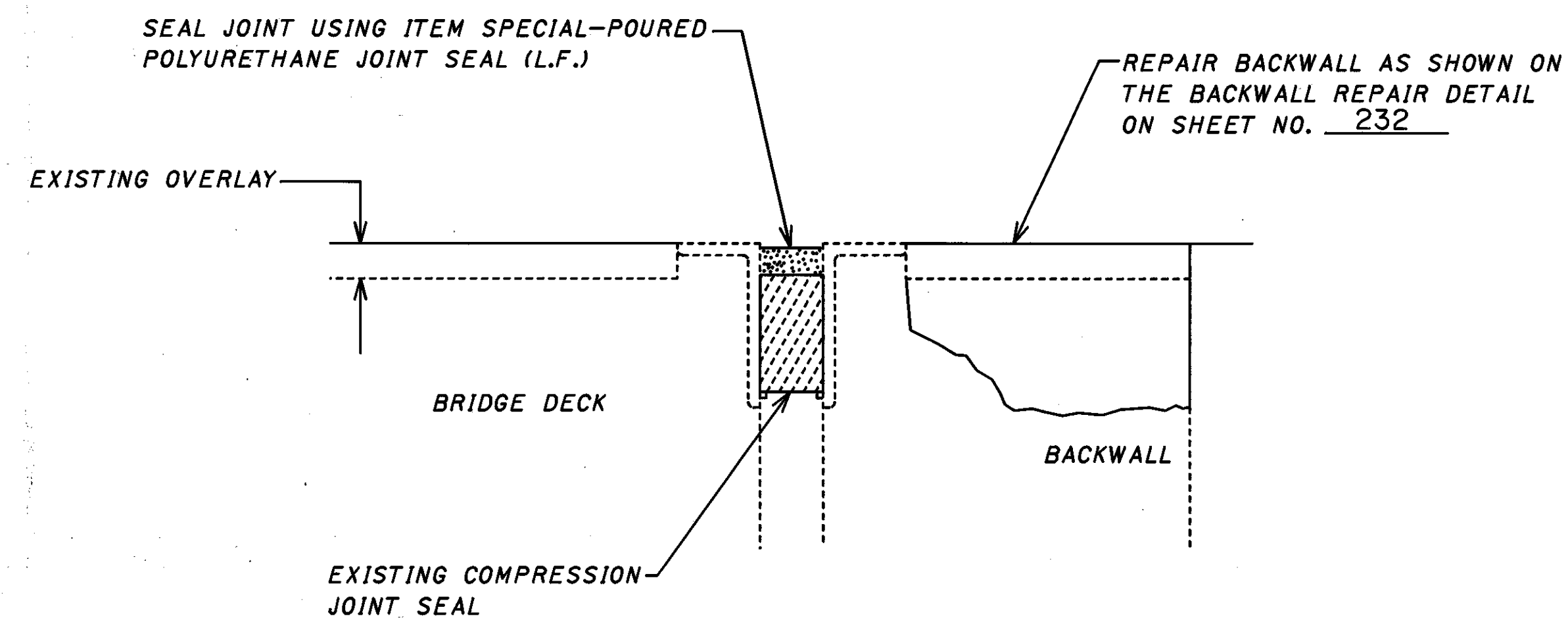
SHEET 42/44

PLOT SUBMITTED: 19-JUN-1992 12:22

PLOT SUBMITTED BY: BANASZAK

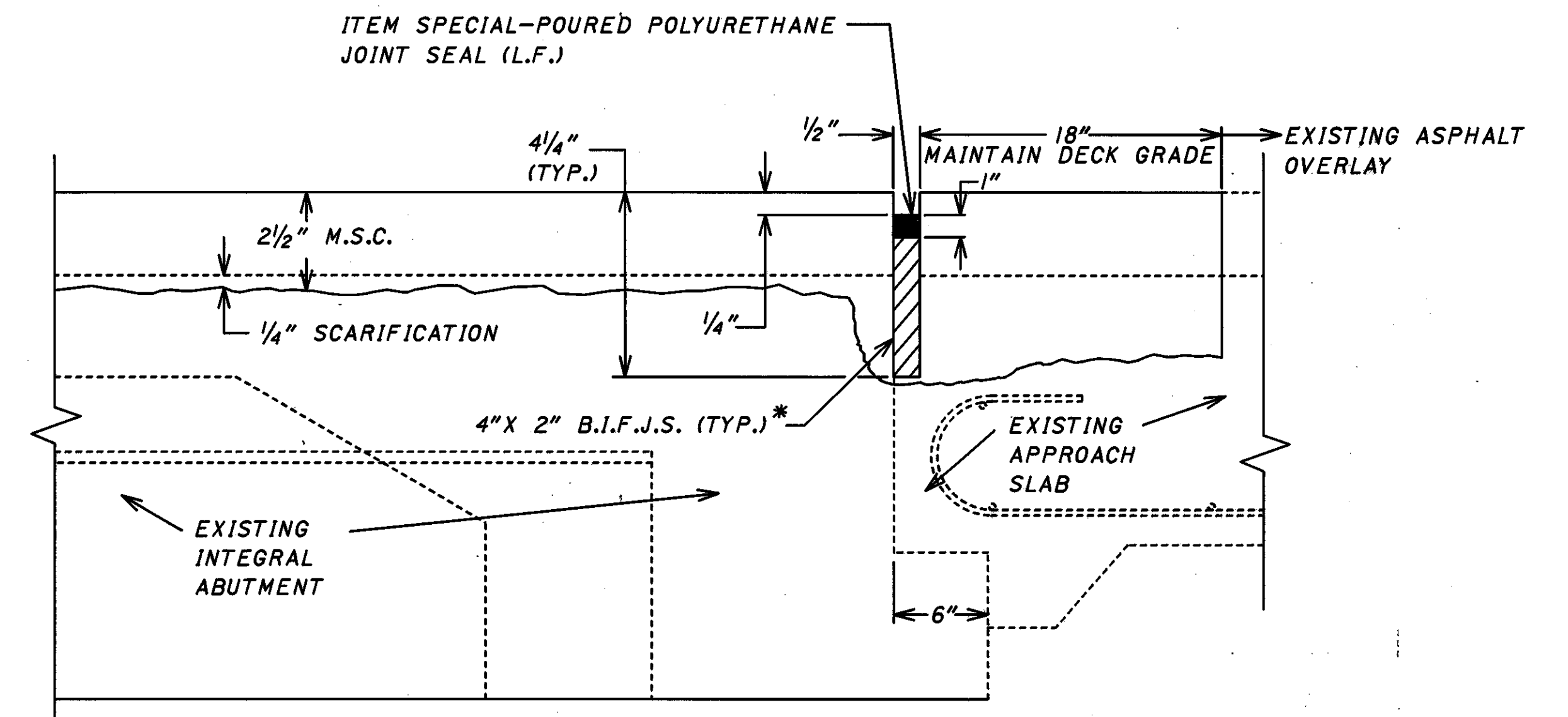
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MISCELLANEOUS DETAILS



TRANSVERSE SEALING OF STRUCTURAL EXPANSION JOINTS
WITH COMPRESSION SEAL

BR. NO. CUY-77-1322 (REAR ABUTMENT)



INTEGRAL ABUTMENT SEAL
 BRIDGE NO. CUY-77-1335

*-ITEM 516-PRECOMPRESSED BITUMEN IMPREGNATED FOAM JOINT SEAL (4" X 2")

PLOT SUBMITTED: 19-JUN-1992 07:13

filename.dgn

PLOTTED BY: BANASZAK
 PLOTTED FROM: c:\dgn\p1d08084\08084gm.v.dgn

STATE OF OHIO
 DEPARTMENT OF TRANSPORTATION
 DISTRICT 12 LOCATION & DESIGN

TRANSVERSE SEALING OF EXPANSION JOINTS WITH COMPRESSION SEAL, INTEGRAL ABUTMENT SEAL

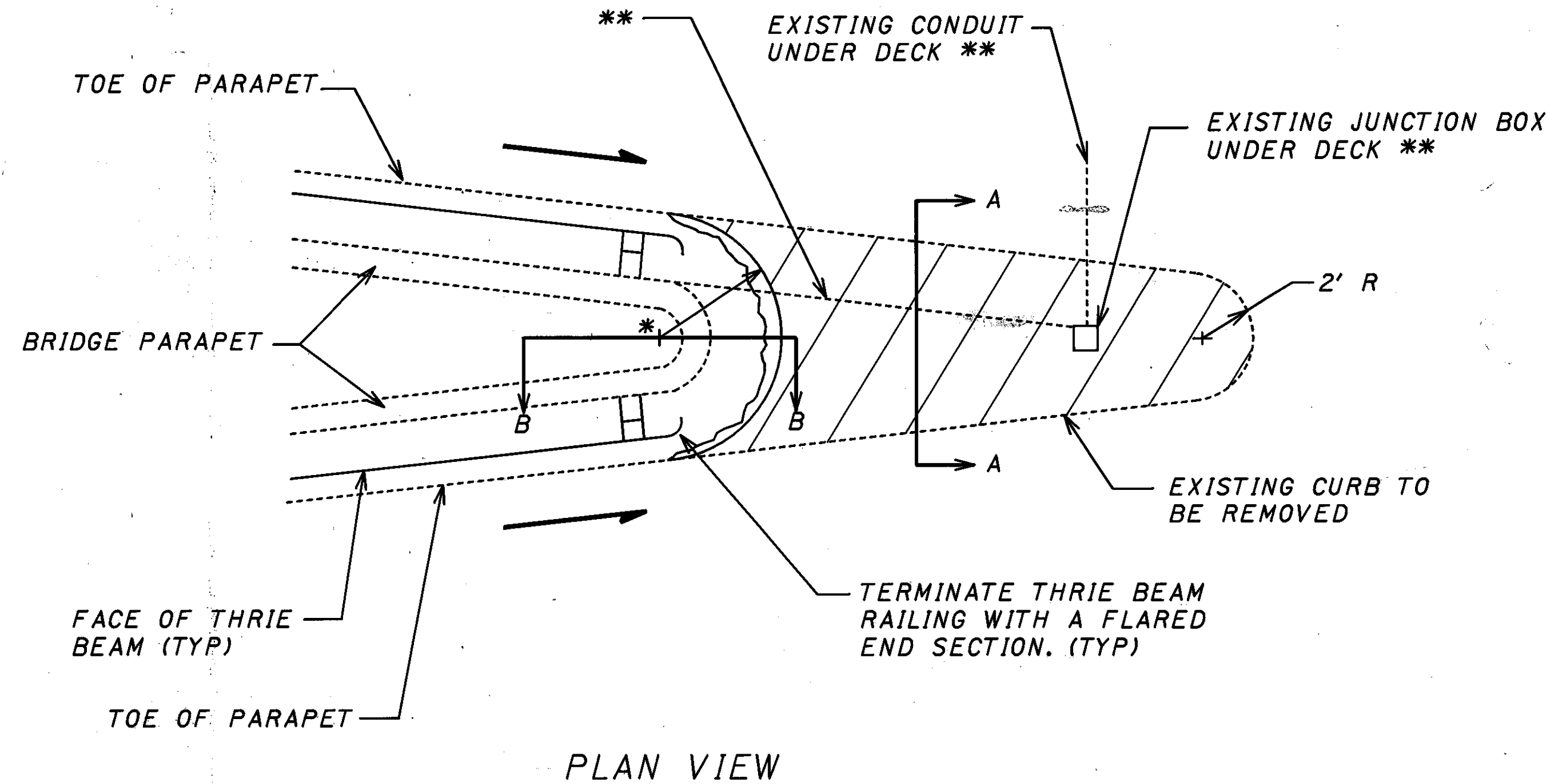
DESIGNED LDH	DRAWN KJB DATE 4/2/92	CHECKED ENF	REVIEWED DWL	REVISED
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OHIO
 SHEET 43/44

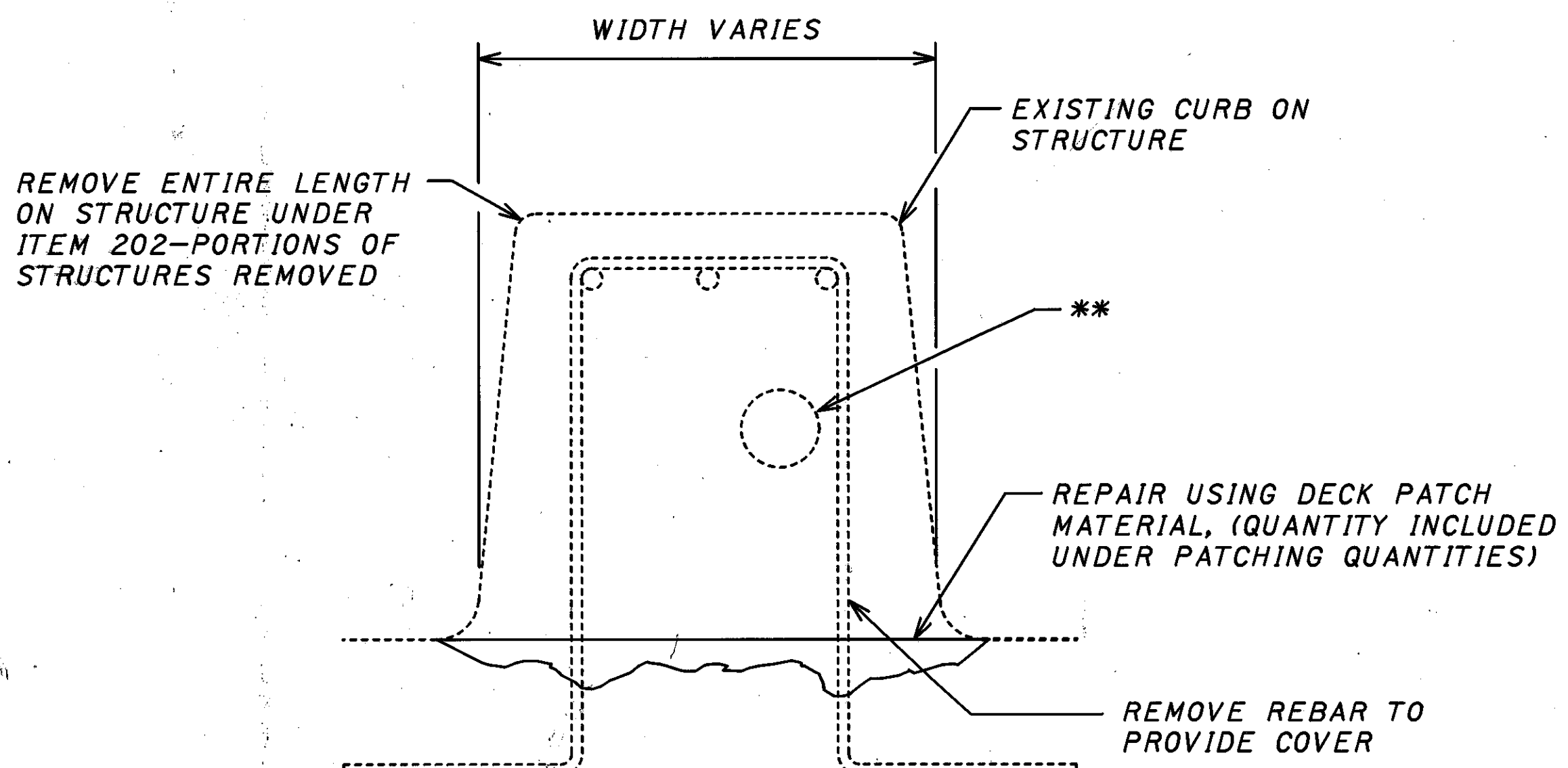
MISCELLANEOUS DETAILS

**EXISTING CONDUIT IN CURB ON STRUCTURE CUY-422-0084. IF ACTIVE, RELOCATE CONDUIT UNDER DECK AS STATED UNDER ITEM 625-CONDUIT, 713.04, 2", AS PER PLAN

*-RADIUS TO MATCH EXISTING GEOMETRICS AND MISS EXISTING PULLBOX (IF PRESENT)



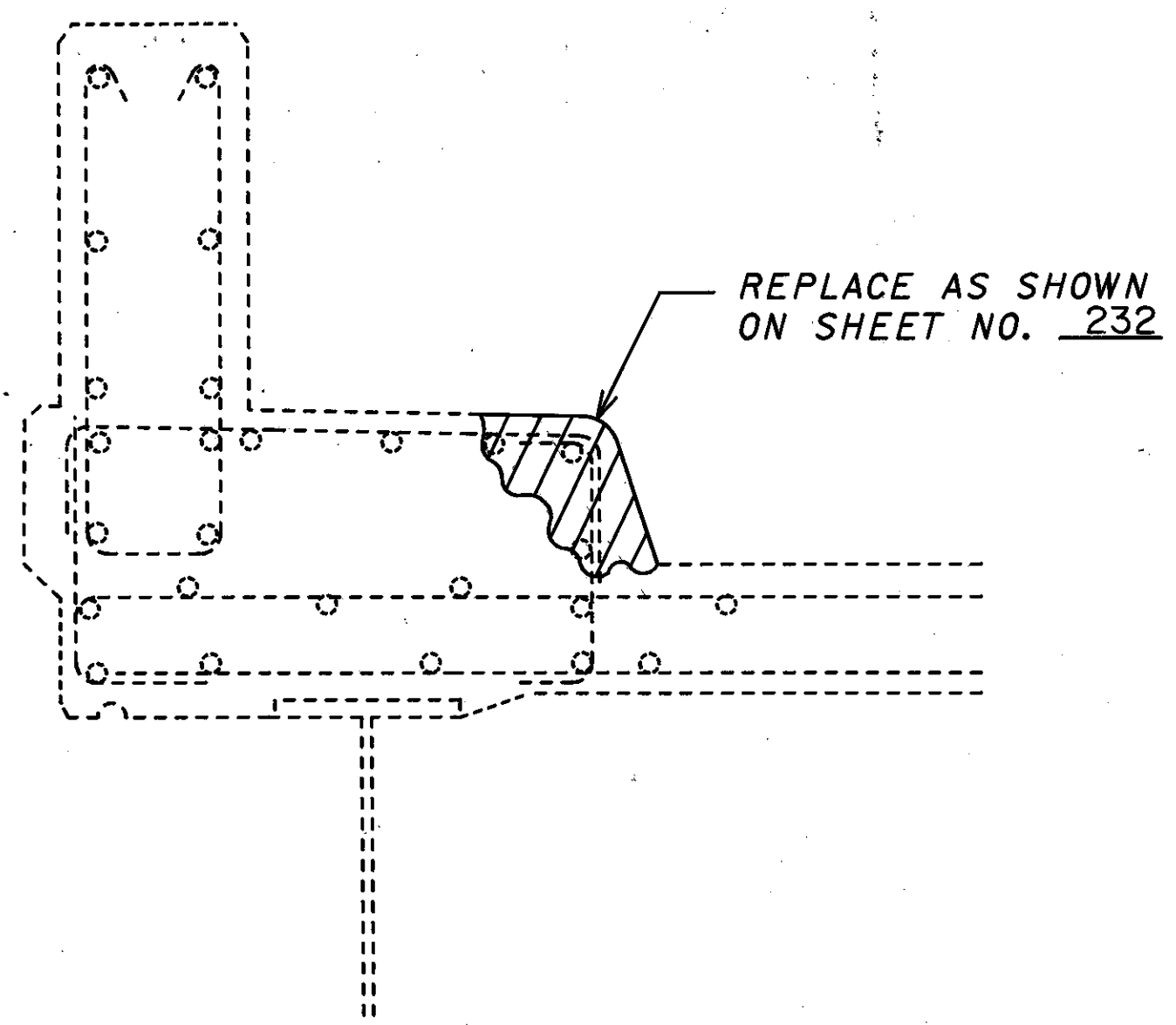
PLAN VIEW



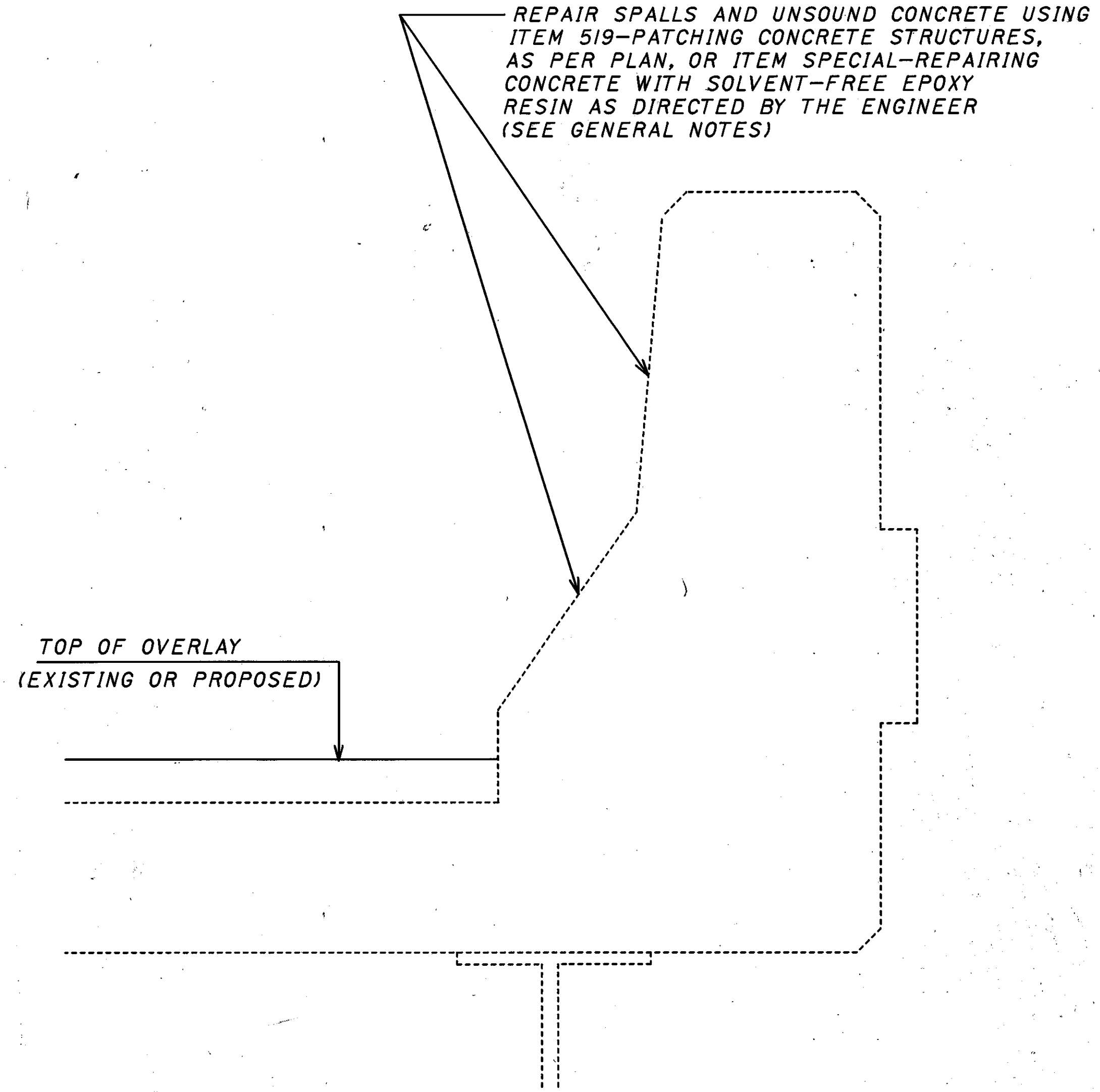
SECTION A-A

BRIDGE NO.	WIDTH (AVG.)	LENGTH
CUY-77-1457	5.25'	105'
CUY-77-1575	5.5'	44'
CUY-422-0084	7.0'	75'

CURB REMOVAL



SECTION B-B



TYPICAL DEFLECTOR SHAPE PARAPET PATCHING

- BR. NO. CUY-77-1322
- BR. NO. CUY-77-1335
- BR. NO. CUY-490-0187WN
- BR. NO. CUY-490-0190SW

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT 12 LOCATION & DESIGN

CONCRETE GORE CURB
REMOVAL, DEFLECTOR
SHAPE PARAPET PATCHING

DESIGNED LDH	DRAWN KJB DATE 3/21/92	CHECKED ENF	REVIEWED LDH	REVISED
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OHIO SHEET 44/44

PLOTTED BY: BANASZAK
 PLOTTED FROM: c:\dgn\p1d08084\08084gmz.dgn
 FILENAME: dgn
 PLOT SUBMITTED: 19-JUN-1992 07:58

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