

DESIGN DESIGNATION

CURRENT A.D.T. (1994)	=	39,340
DESIGN A.D.T. (2014)	=	59,440
D.H.V. (2014)	=	5,944
D	=	55%
T	=	11 %
V (Design Speed)	=	55 m.p.h.
u. (Legal Speed)	=	55 m.p.h.
FUNCTIONAL CLASSIFICATION	=	Urban Freeway/Expressway

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
FRA-104-8.02
RECONSTRUCTED GRADE SEPARATION WITH
CSX TRANSPORTATION RAILROAD
CITY OF COLUMBUS
FRANKLIN COUNTY

FRA-104-8.02	OHIO FHWA REGION 5	1 185
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NH-1J15(9)

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 SECTIONS 5511.002 OF THE REVISED CODE OF OHIO.

1995 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

FOR CITY OF COLUMBUS

APPROVED Charles R. Serulle Jr.
DATE 10/3/95 STATE/FEDERAL PROJECTS ENGINEER

APPROVED Robert C. Smith, P.E.
DATE 10/24/95 CITY ENGINEER

APPROVED Thomas B. Merritt, P.E.
DATE 10/6/95 DIRECTOR OF PUBLIC SERVICE

APPROVED James P. Jurek, P.E.
DATE 9/20/95 DIRECTOR OF PUBLIC UTILITIES

APPROVED Michael C. Flynn, P.E.
DATE 8/14/95 DISTRICT DEPUTY DIRECTOR OF TRANSPORTATION

APPROVED Richard P. Engel
DATE 10/16/95 ENGINEER, BUREAU OF BRIDGES & STRUCTURAL DESIGN

APPROVED Greg Young
DATE 12/15/95 DIRECTOR, DEPARTMENT OF TRANSPORTATION

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED: _____
DIVISION ADMINISTRATOR DATE

DESIGN EXCEPTIONS

DESIGN FEATURE	APPROVAL DATES	SHEET NUMBERS
SHOULDER WIDTH	<u>12-5-95</u>	99,100
STOPPING SIGHT DISTANCE	<u>12-5-95</u>	85,86

MICROFILMED
JUN 26 1997

CONVENTIONAL SIGNS

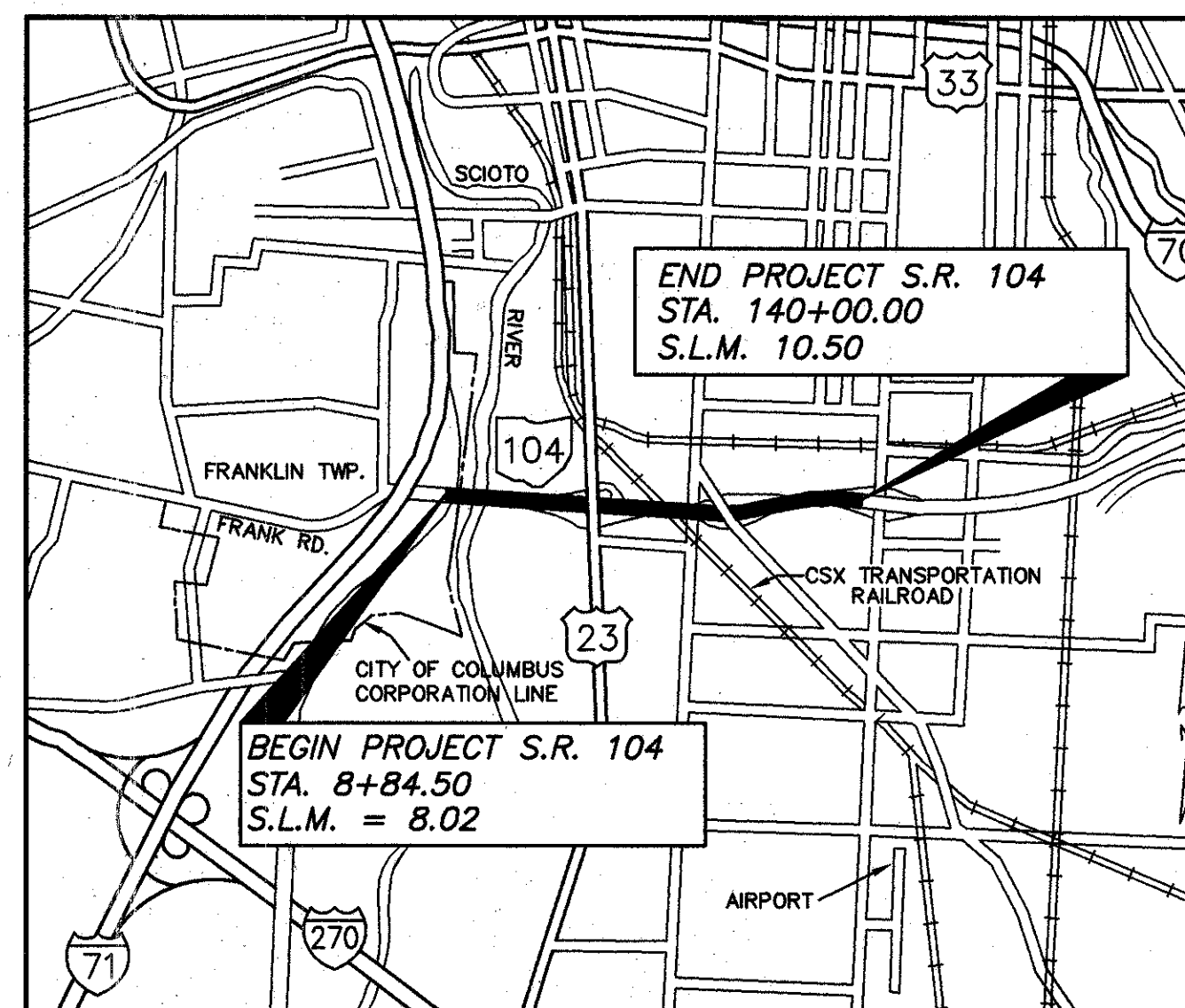
COUNTY LINE _____	LIMITED ACCESS (ONLY) _____ L/A _____
TOWNSHIP LINE _____	RIGHT OF WAY (ONLY) _____ R/W _____
SECTION LINE _____	LIMITED ACCESS & RIGHT OF WAY _____ L/A & R/W _____
CORPORATION LINE _____ OR _____	EXISTING RIGHT OF WAY _____
FENCE LINE (EXISTING) _____ (PROPOSED) _____	PROPERTY LINE _____ (IN EXISTING FENCE) _____
CENTER LINE _____ 97 _____ 98 _____	RAILROAD _____ OR _____
TREES STUMPS (TO BE REMOVED)	GUARDRAIL (EXISTING) (PROPOSED)
UTILITY POLE: TELEPHONE, POWER, LIGHT,	UNDERDRAIN (EXISTING) (PROPOSED)

INDEX OF SHEETS

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LINE DATA

BEGIN PROJECT STA. 8+84.50 S.R. 104 (FRANK RD.)
END PROJECT STA. 140+00.00 S.R. 104 (FRANK RD.)
LENGTH OF PROJECT = 13,115.5 L.F. = 2.484 MILES
BEGIN WORK STA. 46+10 FRANK RD.
END WORK STA. 160+00.00 S.R. 104 (FRANK RD.)
LENGTH OF WORK = 13,700.18 L.F. = 2.595 MILES



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

P.I.D. 8469

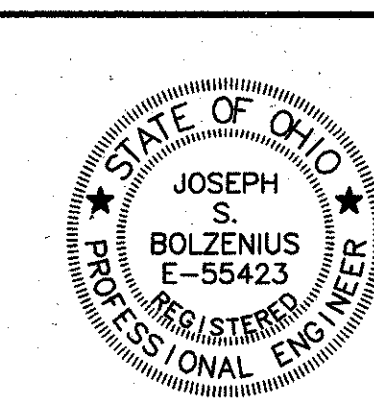
PORTION TO BE IMPROVED _____
STATE & FEDERAL ROUTES _____
OTHER ROADS _____

SCALES

PLAN:	MAINLINE & RAMPS
	50 0 50 100
PROFILE:	MAINLINE & RAMPS
	50 0 50 100
HORIZONTAL:	5 0 5 10
VERTICAL:	10 0 10 20
CROSS SECTIONS:	
HORIZONTAL:	10 0 10 20
VERTICAL:	10 0 10 20

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

Plans Prepared By:
RESOURCE INTERNATIONAL INC.
281 ENTERPRISE DR.
WESTERVILLE, OHIO 43081
(614) 885-1959



SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS

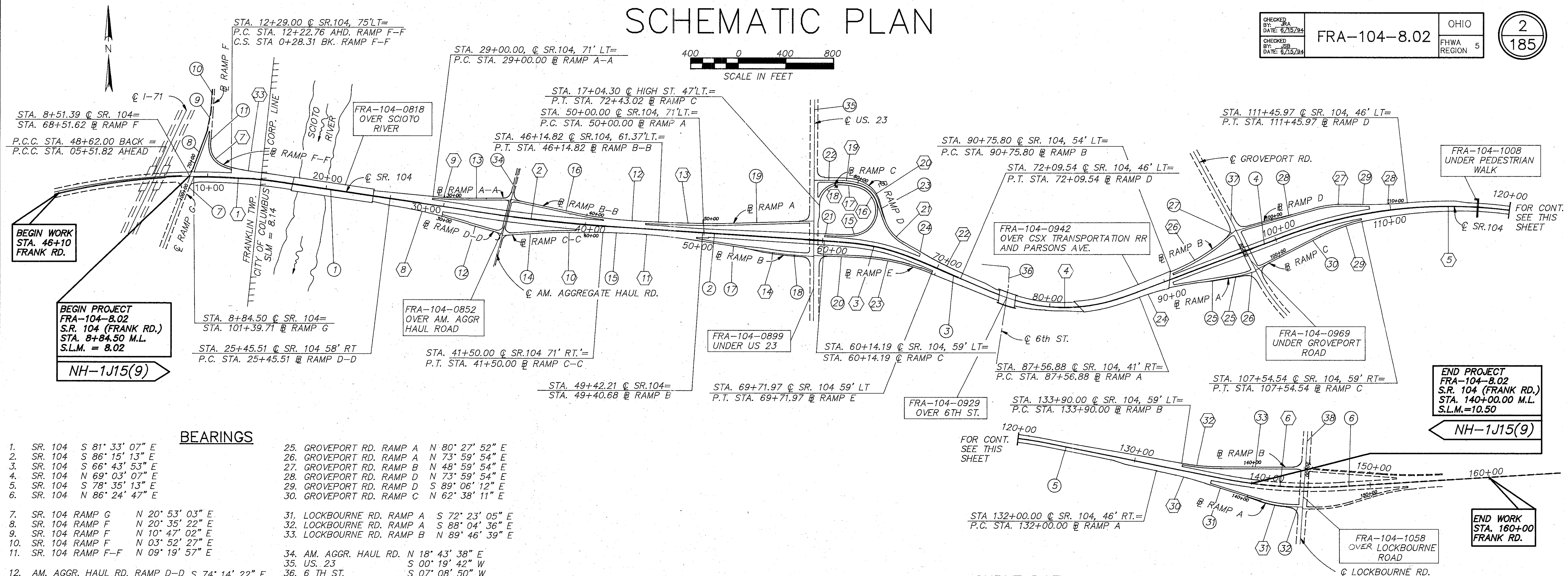
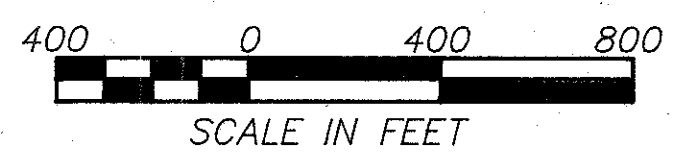
SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS										SUPPLEMENTAL SPECIFICATIONS	
BP-2.1	10/28/94	I-3A&B	4/1/80	TC-42.20	3/26/79	HL-30.22	5/1/87	MT-99.10	11/14/86	802	3/23/95
BP-2.2	10/28/94	PCB-91	4/24/92	TC-51.11	9/30/94	HL-30.31	5/1/87	MT-101.60	7/1/92	820	6/14/95
BP-2.5	2/21/92	TC-7.65	3/1/79	TC-52.10	4/3/79	HL-30.32	5/1/87	MT-105.10	7/1/92	815	7/17/95
BP-3.1	2/21/92	TC-9.10	4/24/80	TC-52.20	4/3/79	HL-30.33	5/1/87	MT-105.11	7/1/92	910	7/17/95
BP-5.1	10/28/94	TC-12.30	1/20/84	TC-61.10	4/5/82	HL-40.10	5/1/87			931	7/17/95
F-1	11/10/83	TC-15.115	3/1/79	TC-65.10	2/1/90	HL-50.11	5/1/87	TC-51.12	1/3/94	933	7/17/95
F-3	5/1/76	TC-16.20	1/20/84	TC-65.11	2/1/90	HL-50.21	5/1/87			944	3/23/95
F-4	11/10/83	TC-21.10	9/1/82	TC-71.10	9/10/91	HL-60.11	5/1/87	CB-2-2A&B	5/1/79		
GR-3.1	5/6/91	TC-21.20	9/1/82	HL-10.11	5/1/87	HL-60.12	5/1/87	MC-6	1/30/84		
GR-3.2	5/6/91	TC-21.40	9/1/82	HL-10.12	5/1/87	BR-1	12/15/94	MC-11	8/1/78		
GR-4.2	5/6/91	TC-22.10	9/1/82	HL-10.13	5/1/87	RB-1-55	2/2/59				
GR-5.3	10/30/92	TC-22.20	9/1/82	HL-20.11	5/1/87	SD-1-69	6/12/69	GR-1.1	5/16/91		
GR-8.1	1/31/94	TC-31.21	9/1/82	HL-20.13	5/1/87	MC-9.2	5/6/91	GR-1.2	10/30/92		
MC-9.3	10/30/92	TC-35.10	8/29/84	HL-20.14	5/1/87	MC-4	7/26/76	GR-1.3	2/21/92		
MC-9.4	10/30/92	TC-41.10	8/29/84	HL-20.15	5/1/87	MC-5	6/12/75	GR-2.1	5/16/91		
CB-458A	5/1/79	TC-41.20	6/21/94	HL-20.31	5/1/87	MT-95.30	10/10/88				
CB-5	11/10/83	TC-41.50	6/21/94	HL-30.11	5/1/87	MT-95.40	10/1/92	F-5	5/1/76		
I-2A	12/18/84	TC-42.10	8/19/77	HL-30.21	5/1/87	MT-98.13	6/24/92				

Project: FRA - 104 - 8.02
Date of letting _____ 19 _____ Contract No. _____

FRA-104-8.02
960147
18SPGS
03-13-96
DIST. 6

SCHEMATIC PLAN

CHECKED BY: JRA DATE: 6/15/94	FRA-104-8.02	OHIO FHWA REGION 5	2 185
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BEARINGS

- | | |
|--|--|
| 1. SR. 104 S 81° 33' 07" E
2. SR. 104 S 86° 15' 13" E
3. SR. 104 S 66° 43' 53" E
4. SR. 104 N 69° 03' 07" E
5. SR. 104 S 78° 35' 13" E
6. SR. 104 N 86° 24' 47" E
7. SR. 104 RAMP G N 20° 53' 03" E
8. SR. 104 RAMP F N 20° 35' 22" E
9. SR. 104 RAMP F N 10° 47' 02" E
10. SR. 104 RAMP F N 03° 52' 27" E
11. SR. 104 RAMP F-F N 09° 19' 57" E
12. AM. AGGR. HAUL RD. RAMP D-D S 74° 14' 22" E
13. AM. AGGR. HAUL RD. RAMP A-A N 89° 32' 23" E
14. AM. AGGR. HAUL RD. RAMP C-C N 86° 30' 04" E
15. AM. AGGR. HAUL RD. RAMP C-C N 88° 28' 52" E
16. AM. AGGR. HAUL RD. RAMP B-B S 77° 45' 58" E
17. US. 23 RAMP B S 81° 07' 42" E
18. US. 23 RAMP B S 85° 40' 18" E
19. US. 23 RAMP A N 88° 19' 42" E
20. US. 23 RAMP E S 87° 21' 00" E
21. US. 23 RAMP C S 87° 41' 09" E
22. US. 23 RAMP D S 89° 40' 18" E
23. US. 23 RAMP D S 18° 55' 40" E
24. US. 23 RAMP D S 59° 34' 08" E | 25. GROVEPORT RD. RAMP A N 80° 27' 52" E
26. GROVEPORT RD. RAMP A N 73° 59' 54" E
27. GROVEPORT RD. RAMP B N 48° 59' 54" E
28. GROVEPORT RD. RAMP D N 73° 59' 54" E
29. GROVEPORT RD. RAMP D S 89° 06' 12" E
30. GROVEPORT RD. RAMP C N 62° 38' 11" E
31. LOCKBOURNE RD. RAMP A S 72° 23' 05" E
32. LOCKBOURNE RD. RAMP A S 88° 04' 36" E
33. LOCKBOURNE RD. RAMP B N 89° 46' 39" E
34. AM. AGGR. HAUL RD. N 18° 43' 38" E
35. US. 23 S 00° 19' 42" W
36. 6 TH ST. S 07° 08' 50" W
37. GROVEPORT RD. S 26° 00' 06" E
38. LOCKBOURNE RD. S 03° 55' 24" W
39. GROVEPORT RD. RAMP A N 80° 27' 52" E
40. GROVEPORT RD. RAMP A N 73° 59' 54" E
41. GROVEPORT RD. RAMP B N 48° 59' 54" E
42. GROVEPORT RD. RAMP D N 73° 59' 54" E
43. GROVEPORT RD. RAMP D S 89° 06' 12" E
44. GROVEPORT RD. RAMP C N 62° 38' 11" E
45. LOCKBOURNE RD. RAMP A S 72° 23' 05" E
46. LOCKBOURNE RD. RAMP A S 88° 04' 36" E
47. LOCKBOURNE RD. RAMP B N 89° 46' 39" E
48. AM. AGGR. HAUL RD. N 18° 43' 38" E
49. US. 23 S 00° 19' 42" W
50. 6 TH ST. S 07° 08' 50" W
51. GROVEPORT RD. S 26° 00' 06" E
52. LOCKBOURNE RD. S 03° 55' 24" W |
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LEGEND

- - CURVES
- - BEARINGS

CURVE DATA

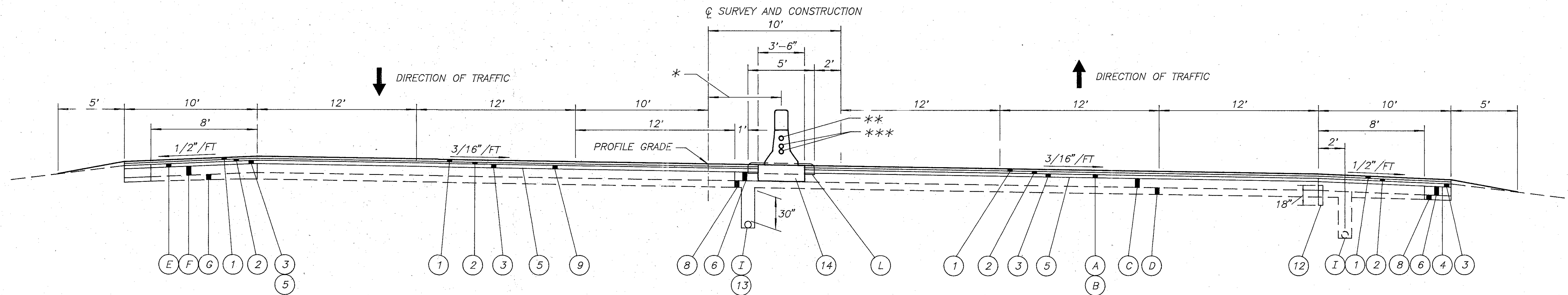
	CURVE #20	CURVE #21	CURVE #22	CURVE #23	CURVE #24	CURVE #25	CURVE #26	CURVE #27	CURVE #28	CURVE #29	CURVE #30	CURVE #31	CURVE #32	CURVE #33
P.I. STA.	61+28.28	65+24.59	70+30.71	66+55.22	89+41.12	96+23.39	93+44.19	104+95.14	109+47.31	105+66.62	134+11.65	142+40.81	135+53.03	13+44.94
Δ	55° 22' 06"	40° 38' 28"	07° 09' 45"	19° 11' 11"	11° 01' 13" RT	06° 27' 58" LT	18° 37' 17" LT	16° 53' 54" RT	05° 57' 54" LT	15° 07' 20" RT	06° 12' 08" RT	15° 41' 31" LT	09° 45' 30" LT	04° 53' 04" LT
Dc	24° 10' 32"	16° 22' 13"	02° 00' 00"	03° 00' 00"	03° 00' 00" RT	06° 00' 00" LT	03° 30' 00" LT	06° 00' 00" RT	10° 30' 00" LT	04° 00' 00" RT	01° 28' 00" RT	06° 00' 00" LT	03° 00' 00" LT	02° 00' 00"
Rc	237.00'	350.00'	2864.789'	1909.859'	1909.859'	954.930'	1637.022'	954.930'	3819.719'	1432.394'	3906.530'	954.930'	1909.859'	2864.77'
Tc	124.34'	129.61'	179.30'	322.80'	184.24'	53.94'	268.39'	141.85'	199.01'	190.13'	211.65'	131.59'	163.03'	122.18'
Lc	229.03'	248.26'	358.12'	639.55'	367.34'	107.77'	532.04'	281.64'	397.67'	378.05'	422.88'	261.53'	325.28'	244.22'
Ec	30.64'	23.23'	5.61'	27.09'	8.87'	1.52'	21.86'	10.48'	5.18'	12.56'	5.73'	9.02'	6.95'	2.60'
SUPERELEV.	0.083' MAX.	0.072' MAX.	0.0156' MAX.	0.032' MAX.	0.0156' MAX.	0.028' MAX.	0.047' MAX.	0.0156' MAX.	0.0156' MAX.	0.042' MAX.	0.0156' MAX.	0.0156' MAX.	0.036' MAX.	0.0156' MAX.
P.C. STA.	62+32.97	66+43.24	72+09.54	69+71.97	91+24.22	96+77.22	96+07.84	106+34.93	111+45.97	107+54.54	136+22.88	143+70.75	137+15.28	14+66.98
P.T. STA.	62+32.97	66+43.24	72+09.54	69+71.97	91+24.22	96+77.22	96+07.84	106+34.93	111+45.97	107+54.54	136+22.88	143+70.75	137+15.28	14+66.98

CURVE DATA

	CURVE #1	CURVE #2	CURVE #3	CURVE #4	CURVE #5	CURVE #6	CURVE #7	CURVE #8	CURVE #9	CURVE #10	CURVE #11	CURVE #12	CURVE #13	CURVE #14	CURVE #15	CURVE #16	CURVE #17	CURVE #18	CURVE #19			
P.I. STA.	11+04.88	38+79.32	64+96.41	81+23.71	111+96.77	142+41.49	01+52.05	02+38.85	03+18.95	27+89.60	30+51.29	39+82.85	47+01.32	43+67.46	51+17.81	56+83.18	62+69.31	68+54.70	68+90.56	71+43.17	59+18.99	
Δ	12° 51' 02" RT	04° 42' 06" LT	05° 31' 20" RT	28° 13' 00" LT	32° 21' 40" RT	15° 00' 00" LT	08° 00' 00" RT	38° 00' 00" RT	07° 18' 46" LT	06° 02' 45" LT	05° 01' 04" RT	07° 21' 09" RT	09° 55' 10" LT	04° 42' 35" LT	04° 32' 36" LT			137° 57' 45"	14° 12' 33"	91° 09' 59"	15° 22' 32"	
Dc	01° 10' 00"	00° 28' 00"	03° 30' 20" RT	04° 00' 00" LT	01° 28' 00" RT	01° 28' 00" LT	08° 00' 00" RT	38° 00' 00" RT	01° 30' 00"	02° 00' 00"	01° 30' 00"	02° 00' 00"	02° 00' 00"	02° 00' 00"	02° 30' 00" LT			28° 38' 52.4"	09° 32' 57.4"	32° 44' 26"	08° 59' 41"	
Rc	4911.07'	12277.67'	1637.022'	1432.394'	3906.530'	3906.530'	150.78'	3819.72'	2864.79'	3819.72'	2864.79'	2864.79'	2864.79'	2864.79'	2291.831'			200.00'	600.00'	175.00'	637.00'	
Tc	553.06'	504.02'	78.95'	360.01'	1133.51'	514.30'	10.54'	244.08'	151.29'	167.37'	184.07'	248.61'	117.81'	90.91'				520.51'	74.78'	178.60'	85.99'	
Lc	1101.48'	1007.48'	157.78'	705.42'	2206.44'	1022.73'	21.05'	487.51'	302.29'	334.52'	367.63'	495.98'	235.48'	181.73'				481.58'	148.80'	278.45'	170.94'	
Ec	31.04'	10.34'	1.90'	44.55'	161.13'	33.71'	0.37'	7.79'	3.99'	3.67'	5.91'	10.77'	2.42'	1.80'				357.61'	4.64'	75.05'	5.78'	
Ls			400.00'	400.00'			200.00'		200.00'									200.00'				
Ps			07-00-00 RT	08-00-00			36° 00' 00"		38° 00' 00"									28-38-52.4				
P			4.07'	4.65'														8.26'				
K			199.90'	199.87'														99.17'				
L.T.			266.88'	266.94'			133.75'		136.54'									135.12'				
S.T.			133.52'	133.58'			73.40'		69.59'									68.30'				
Ts			482.22'	783.64'																		
Es			28.18'	118.70'																		
P.C. STA.	05+51.82	33+75.30			100+63.26	137+27.18			25+45.51	29+00.00	38+15.48	45+17.25	41+18.84	50+00.00	55+92.27	T.S. 61+34.19	C.S. 63+34.19	P.C.C. 68+15.77	P.C.C. 69+64.59	58+33.00		
P.T. STA.	16+53.30	43+82.78			122+69.70	147+49.91			30+33.02	32+02.29	41+50.00	48+84.88	46+14.82	52+35.48	57+74.00	C.S. 63+34.19	P.C.C. 68+15.77	P.C.C. 69+64.57	72+43.02	P.C.C. 60+03.94		
S.C. STA.			64+14.19	77+40.07			C.S. 00+28.31	2+28.32	C.S. 2+49.36													
C.S. STA.			65+71.97	84+45.49			S.C. 2+28.32	2+49.36	S.T. 4+49.36													
SUPER.	0.058' MAX.	0.0156' MAX.	0.083' MAX.	0.083' MAX.	0.036' MAX.	0.036' MAX.	0.055' MAX.	0.055' MAX.	0.055' MAX.	0.0156' MAX.	0.0156' MAX.	0.0156' MAX.	0.0156' MAX.	0.0156' MAX.	0.0156' MAX.	0.0156' MAX.	0.0156' MAX.	0.064' MAX.	0.083' MAX.	0.083' MAX.	0.064' MAX.	0.083' MAX.

TYPICAL SECTIONS

TYPE - 446



SUPERELEVATION
STA 8+84.50 TO STA 13+75.00 = 490.50 L.F.

- * — 5'-6" STA. 9+20 TO STA. 12+75, TRANSITIONS FROM 5'-6" TO 0'-0" FROM STA. 12+75 TO STA. 13+75
- ** — 4" PVC RACEWAY FOR LIGHTING
- *** — 2-4" PVC RACEWAYS FOR TRAFFIC SURVEILLANCE

THE COST FOR THE ABOVE RACEWAYS IS TO BE INCLUDED IN THE PRICE BID FOR ITEM 622 CONCRETE BARRIER

FOR EDGE OF SHOULDER DETAILS SEE SHEET 18
STA. 8+84.50 TO STA. 10+60 IS FULL DEPTH REPLACEMENT PER THE DETAILS ON SHEETS 16 & 17.

PROPOSED LEGEND

- ① ITEM 446 1-1/4" ASPHALT CONCRETE SURFACE COURSE TYPE 1, AC-20
- ② ITEM 446 1-3/4" ASPHALT CONCRETE INTERMEDIATE COURSE TYPE 2, AC-20
- ③ ITEM 302 3-1/2" BITUMINOUS AGGREGATE BASE, AC-20
- ④ ITEM 408 BITUMINOUS PRIME COAT (0.40 GAL/S.Y.)
- ⑤ ITEM 407 TACK COAT
- ⑥ ITEM 304 8" AGGREGATE BASE
- ⑦ ITEM 304 6" AGGREGATE BASE, GRADING 'A'
- ⑧ ITEM 310 6" SUBBASE, TYPE 1, GRADING A
- ⑨ ITEM 202 WEARING COURSE REMOVED
- ⑩ ITEM 612 CONCRETE MEDIAN

- ⑪ ITEM 601 PAVED GUTTER, TYPE 4
- ⑫ ITEM 605 SHALLOW UNDERDRAIN, AS PER PLAN (SEE SHEET 112)
- ⑬ ITEM 605 6" SHALLOW PIPE UNDERDRAIN
- ⑭ ITEM 622 CONCRETE BARRIER, TYPE B-50
- ⑮ ITEM 609 CURB, TYPE 6
- ⑯ ITEM 606 GUARDRAIL, TYPE 5
- ⑰ ITEM 622 CONCRETE BARRIER, TYPE C-50, AS PER PLAN (SEE DETAIL SHEET 6)
- ⑱ ITEM 203 EMBANKMENT

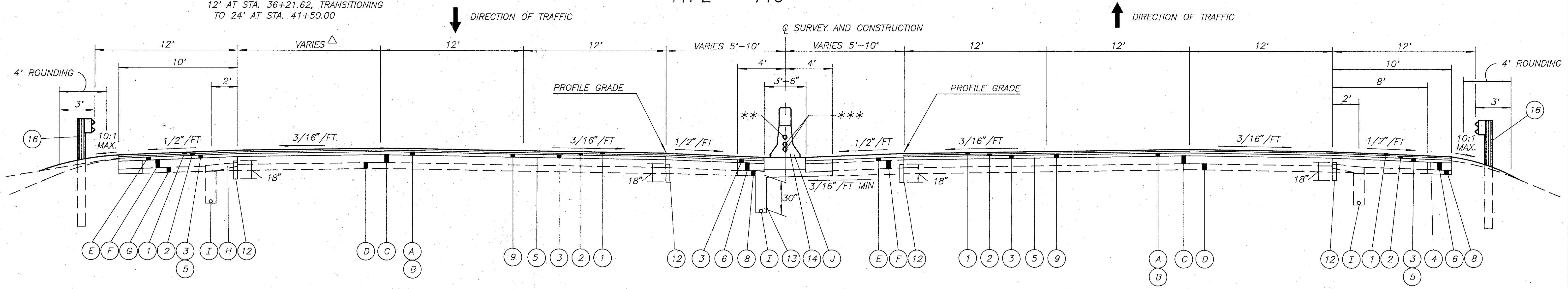
EXISTING LEGEND

- (A) 1-1/4" ASPHALT CONCRETE
- (B) 1-3/4" ASPHALT CONCRETE
- (C) 8" PORTLAND CEMENT CONCRETE BASE
- (D) 6" AGGREGATE SUBBASE, GRADING "A"
- (E) 3" BITUMINOUS AGGREGATE BASE
- (F) 8" AGGREGATE BASE
- (G) AGGREGATE SUBBASE, THICKNESS VARIES
- (H) NO. 8 AGGREGATE, DRAINAGE CONNECTION
- (I) EX. UNDERDRAIN
- (J) EX. CONCRETE BARRIER - 32"
- (K) EX. CONCRETE CURB, TYPE 6
- (L) EX. CONCRETE MEDIAN
- (M) EX. PAVED GUTTER, STD. TYPE 1 MOD.

TYPICAL SECTIONS

TYPE - 446

△ - 12' FROM STA. 16+53.30 TO STA. 16+92.74
 12' FROM STA. 29+00.00 TO STA. 34+56.12
 13'-6" AT STA. 24+31.26, TRANSITIONING
 TO 37' AT STA. 29+00.00
 12' AT STA. 36+21.62, TRANSITIONING
 TO 24' AT STA. 41+50.00



NORMAL SECTION

STA. 16+53.30 TO STA. 16+92.74 = 39.44 L.F.
 STA. 24+31.26 TO STA. 34+56.12 = 1,024.86 L.F.
 W.B. STA. 36+21.62 TO STA. 50+00.00 = 1,378.38 L.F.
 E.B. STA. 36+21.62 TO STA. 49+40.68 = 1,319.06 L.F.

BRIDGE & APPROACH SLAB LIMITING STATIONS

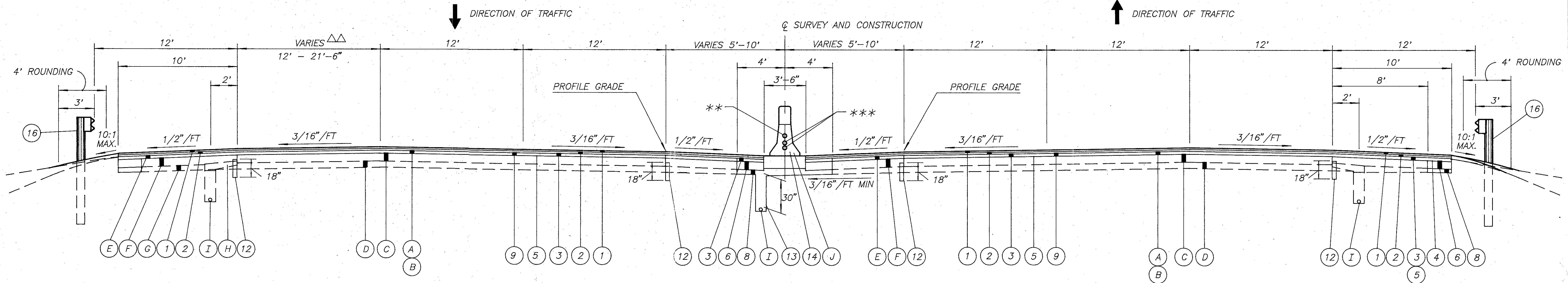
BRIDGE NO.	STATION TO STATION
FRA-104-0818	STA. 16+92.74 TO STA. 24+31.26
FRA-104-0852	STA. 34+56.12 TO STA. 36+21.62

- ** - 4" PVC RACEWAY FOR LIGHTING
- *** - 2-4" PVC RACEWAYS FOR TRAFFIC SURVEILLANCE

THE COST FOR THE ABOVE RACEWAYS IS TO BE INCLUDED IN THE PRICE BID FOR ITEM 622 CONCRETE BARRIER

FOR APPROACH SLAB TYPICALS SEE SHEET 16
 FOR EDGE OF SHOULDER DETAILS SEE SHEET 18
 FOR LEGEND SEE SHEET 3

△△ - 21'-6" AT STA. 13+75, TRANSITIONING
 TO 12' AT STA. 15+00.00

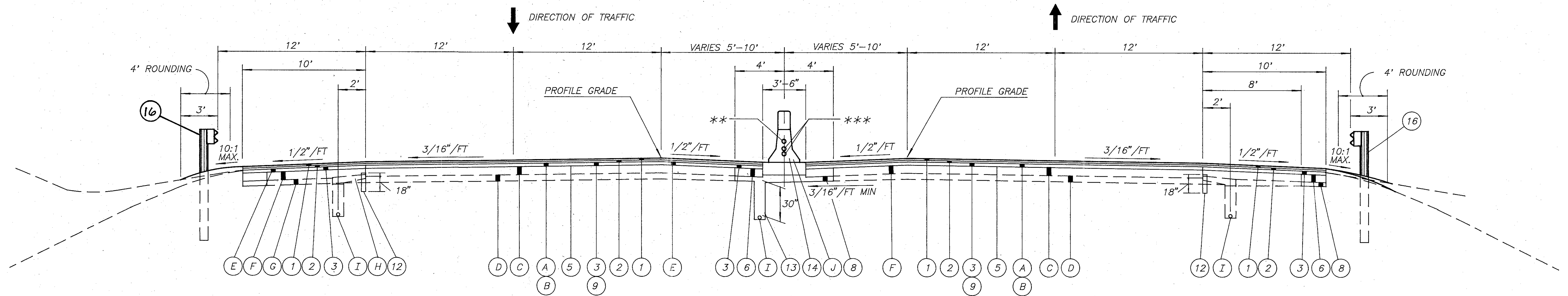


NORMAL SECTION

STA. 13+75.00 TO STA. 16+53.30 = 278.30 L.F.

TYPICAL SECTIONS

TYPE - 446



NORMAL SECTION

WB STA. 50+00 TO STA. 58+64.43 = 864.43 L.F.
 EB STA. 49+40.68 TO STA. 58+64.43 = 923.75 L.F.
 STA. 71+21.73 TO STA. 71+90.31 = 68.58 L.F.
 STA. 90+68.66 TO STA. 98+27.10 = 758.44 L.F.
 STA. 125+05.86 TO STA. 134+91.02 = 985.16 L.F.

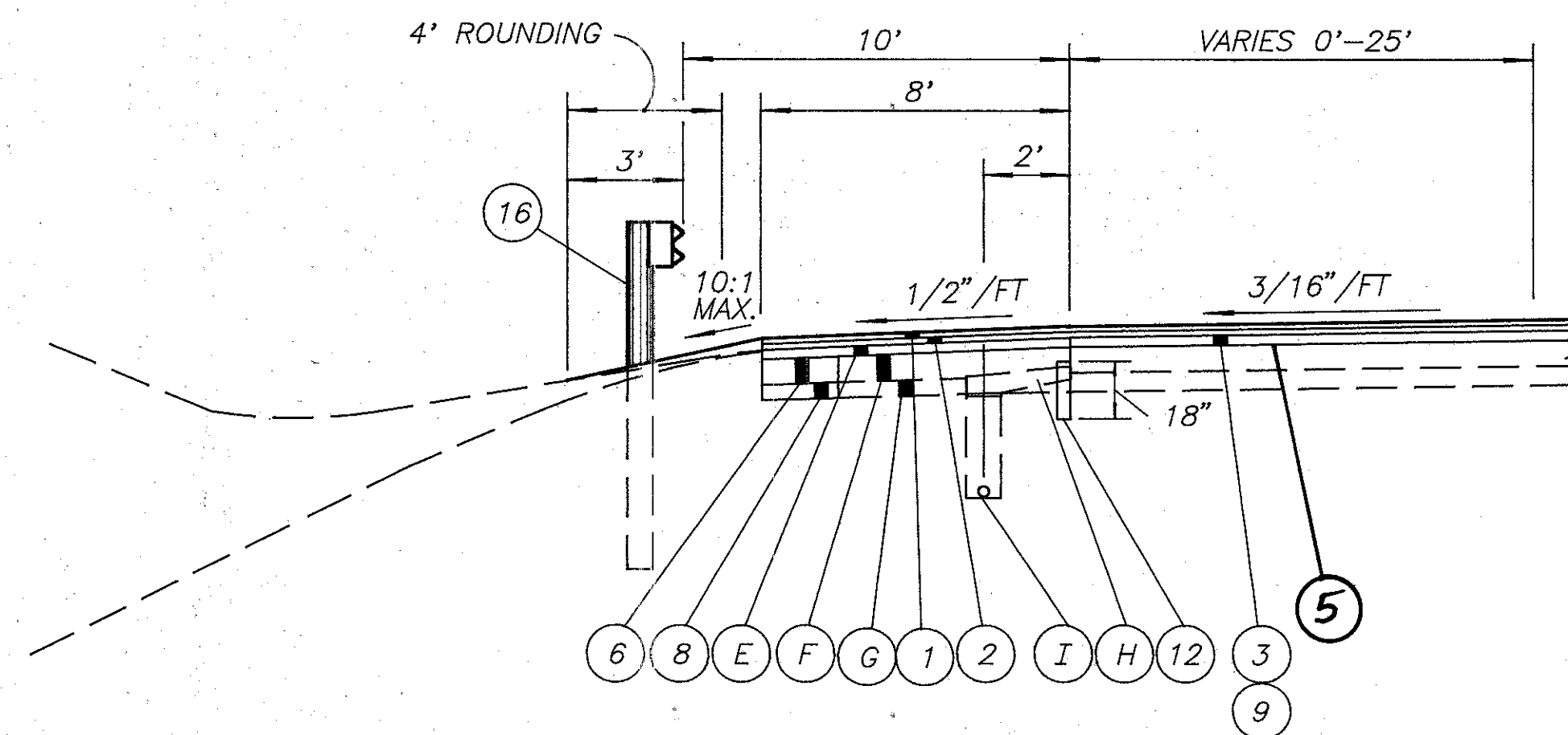
BRIDGE AND APPROACH SLAB LIMITING STATIONS

BRIDGE NO.	STATION TO STATION
FRA-104-0942	STA. 82+23.88 TO STA. 90+68.66

- ** — 4" PVC RACEWAY FOR LIGHTING
- *** — 2-4" PVC RACEWAYS FOR TRAFFIC SURVEILLANCE

THE COST FOR THE ABOVE RACEWAYS IS TO BE INCLUDED IN THE PRICE BID FOR ITEM 622 CONCRETE BARRIER

FOR APPROACH SLAB TYPICALS SEE SHEET 16
 FOR EDGE OF SHOULDER DETAILS SEE SHEET 18
 FOR LEGEND SEE SHEET 3
 FOR FULL DEPTH REPLACEMENT DETAILS AT STRUCTURES
 SEE SHEETS 16 & 17.



ACCELERATION OR DECELERATION LANE DETAIL

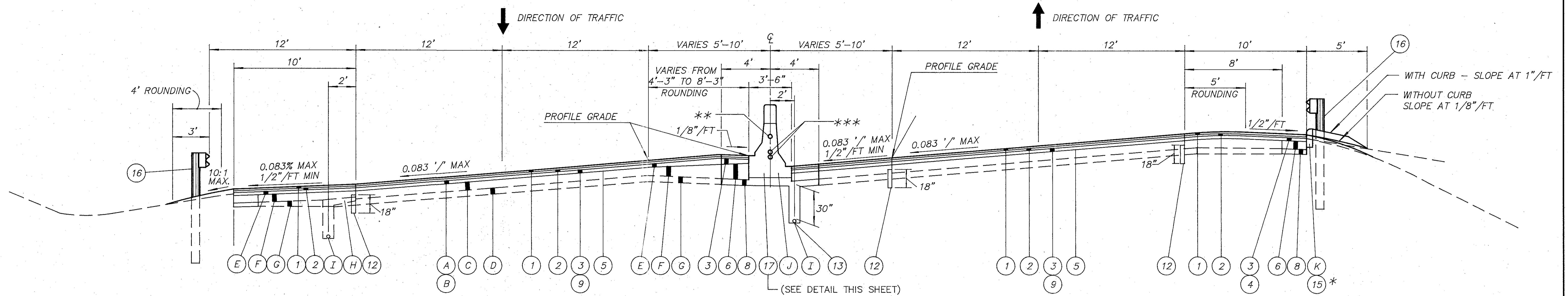
EB STA. 24+00 TO STA. 27+21	WB STA. 14+20 TO STA. 27+60
STA. 42+90 TO STA. 47+00	STA. 43+10 TO STA. 47+20
STA. 71+72 TO STA. 74+12	STA. 55+75 TO STA. 58+14
STA. 81+50 TO STA. 88+69	STA. 70+56 TO STA. 75+24
STA. 109+40 TO STA. 112+83	STA. 79+65 TO STA. 88+16
STA. 128+15 TO STA. 133+81	STA. 110+27 TO STA. 116+50
	STA. 123+90 TO STA. 131+90

TYPICAL SECTIONS

TYPE - 446

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FRA-104-8.02
OHIO
FHWA REGION 5

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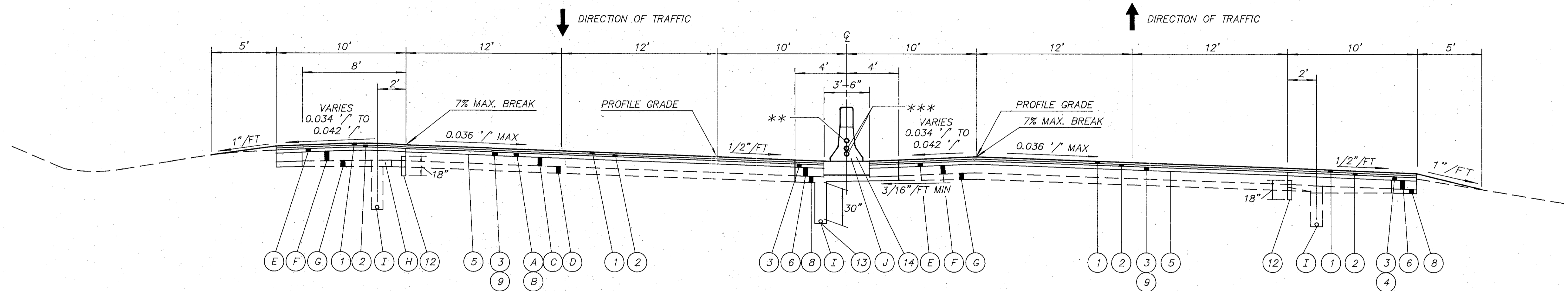


SUPERELEVATED SECTION

STA. 58+64.43 TO STA. 71+21.73 = 1,257.30 L.F.
STA. 71+90.31 TO STA. 75+40.01 = 349.70 L.F.
STA. 77+31.04 TO STA. 82+23.88 = 492.84 L.F.

BRIDGE AND APPROACH SLAB LIMITING STATIONS

BRIDGE NO.	STATION TO STATION
FRA-104-0929	STA. 75+40.01 TO 77+31.04
FRA-104-0942	STA. 82+23.88 TO 90+68.66



SUPERELEVATED SECTION

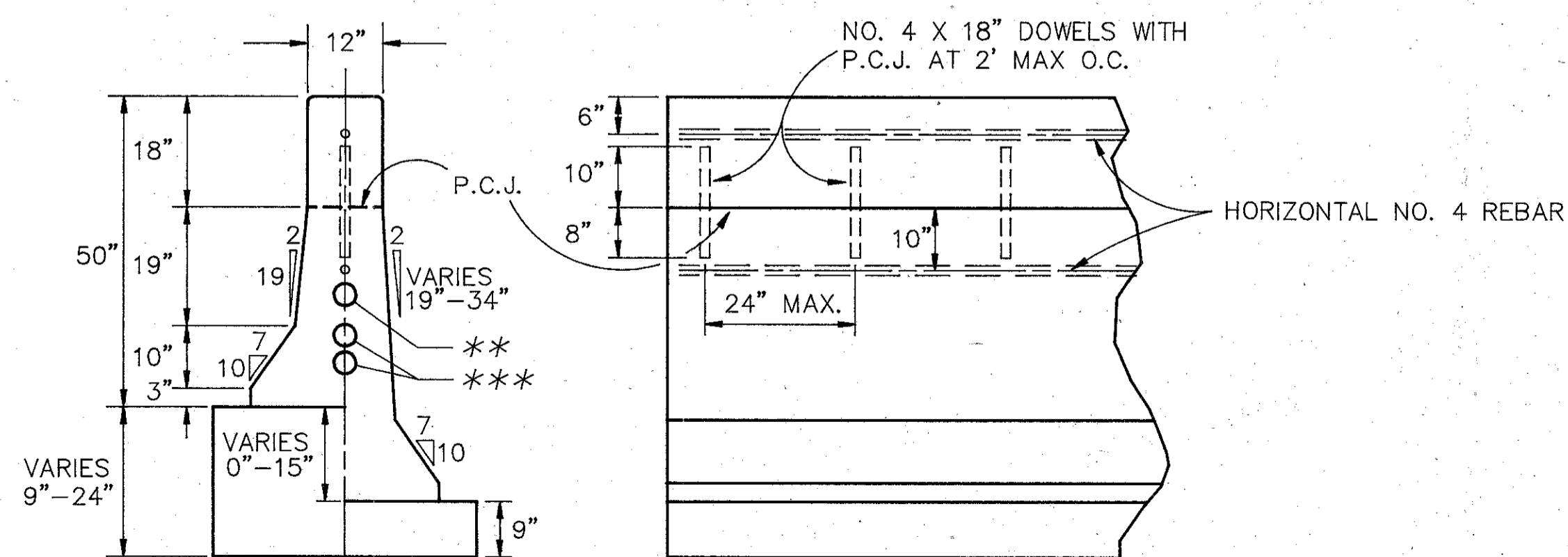
STA. 98+27.10 TO STA. 125+05.86 = 2,678.76 L.F.
STA. 134+91.02 TO STA. 140+00.00 = 508.98 L.F.

STA. 138+25 TO STA. 140+00 IS FULL DEPTH REPLACEMENT PER DETAILS ON SHEETS 16 & 17.

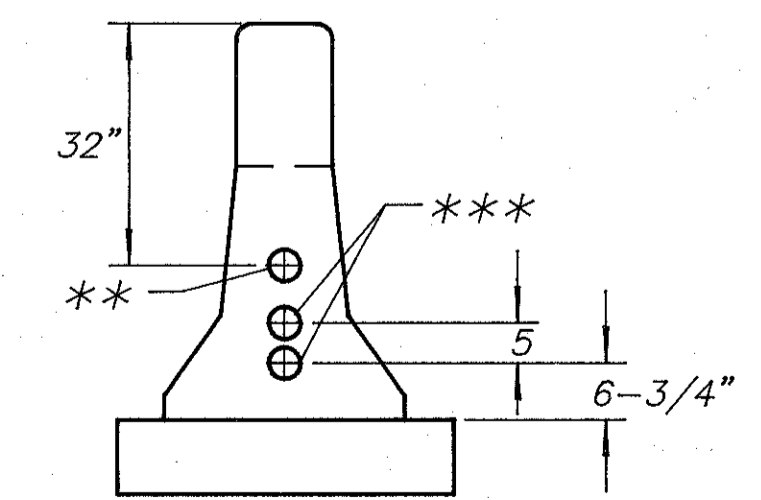
- * — CURB LIMITING STATIONS 58+64.43 TO 67+73.00
- ** — 4" PVC RACEWAY FOR LIGHTING
- *** — 2-4" PVC RACEWAYS FOR TRAFFIC SURVEILLANCE

THE COST FOR THE ABOVE RACEWAYS IS TO BE INCLUDED IN THE PRICE BID FOR ITEM 622 CONCRETE BARRIER

FOR APPROACH SLAB TYPICALS SEE SHEET 16
FOR EDGE OF SHOULDER DETAILS SEE SHEET 18
FOR LEGEND SEE SHEET 3



ITEM 622 CONCRETE BARRIER, TYPE C50, AS PER PLAN DETAIL

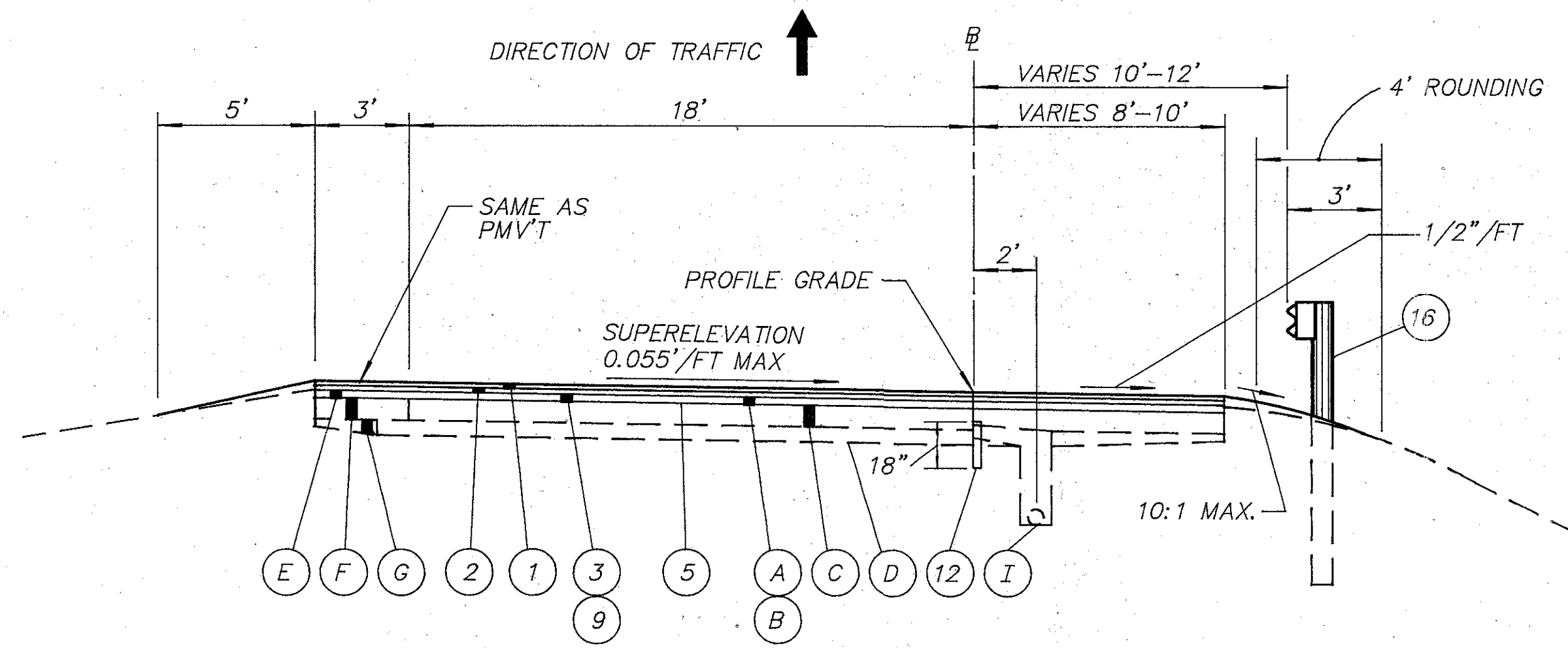


TYPICAL CONDUIT LOCATION

TYPICAL SECTIONS

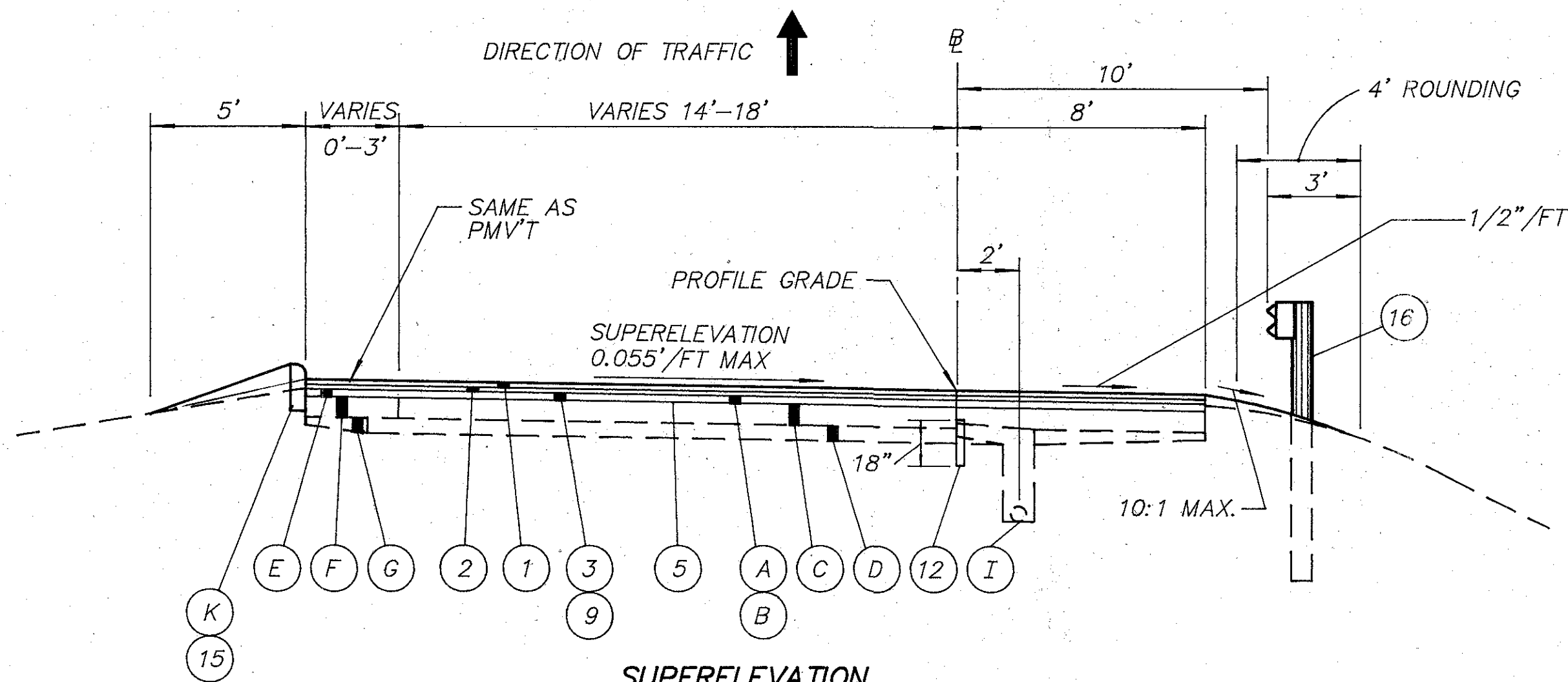
TYPE - 446

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CHECKED BY: JSS DATE: 6/15/84		FHWA REGION 5



SUPERELEVATION

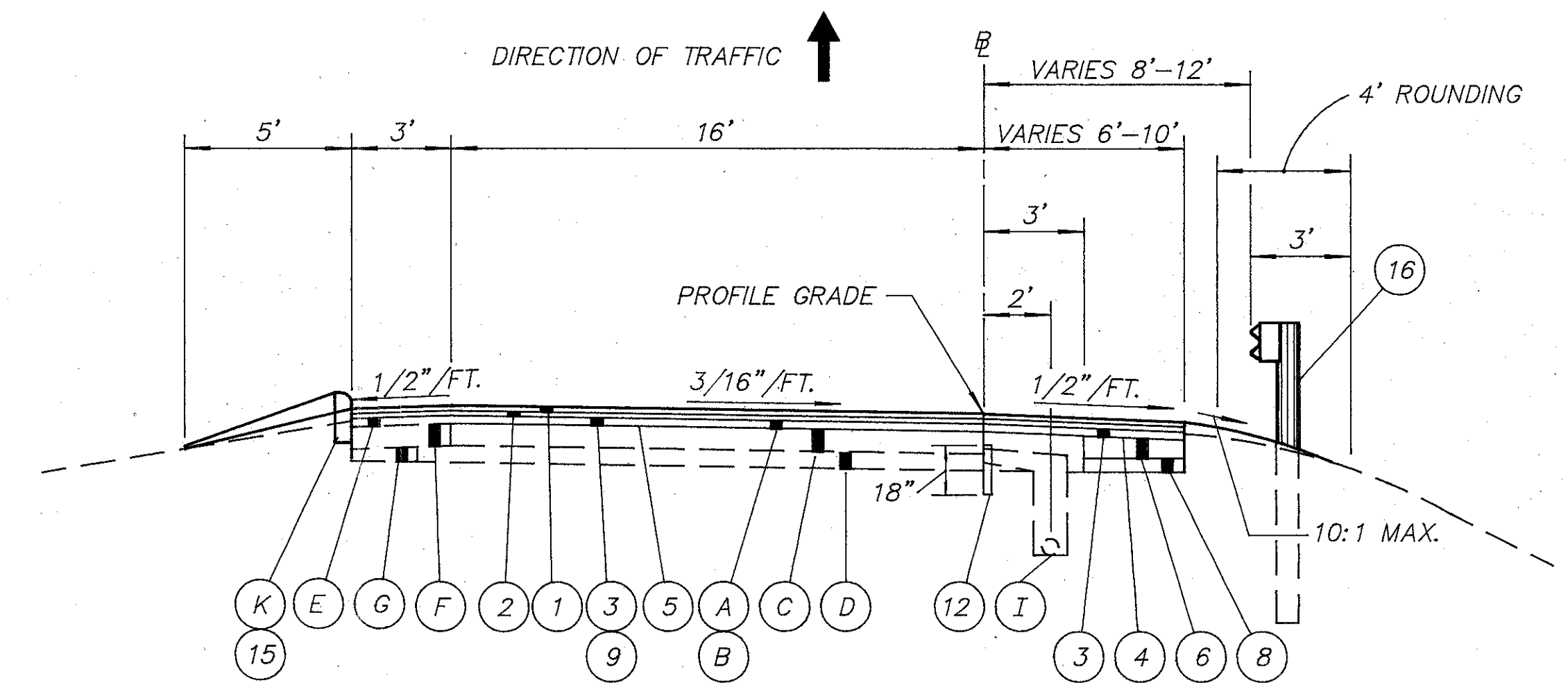
I-71 RAMP "F-F" STA 0+28.31 TO STA 3+02.06 = 273.75 L.F.



SUPERELEVATION

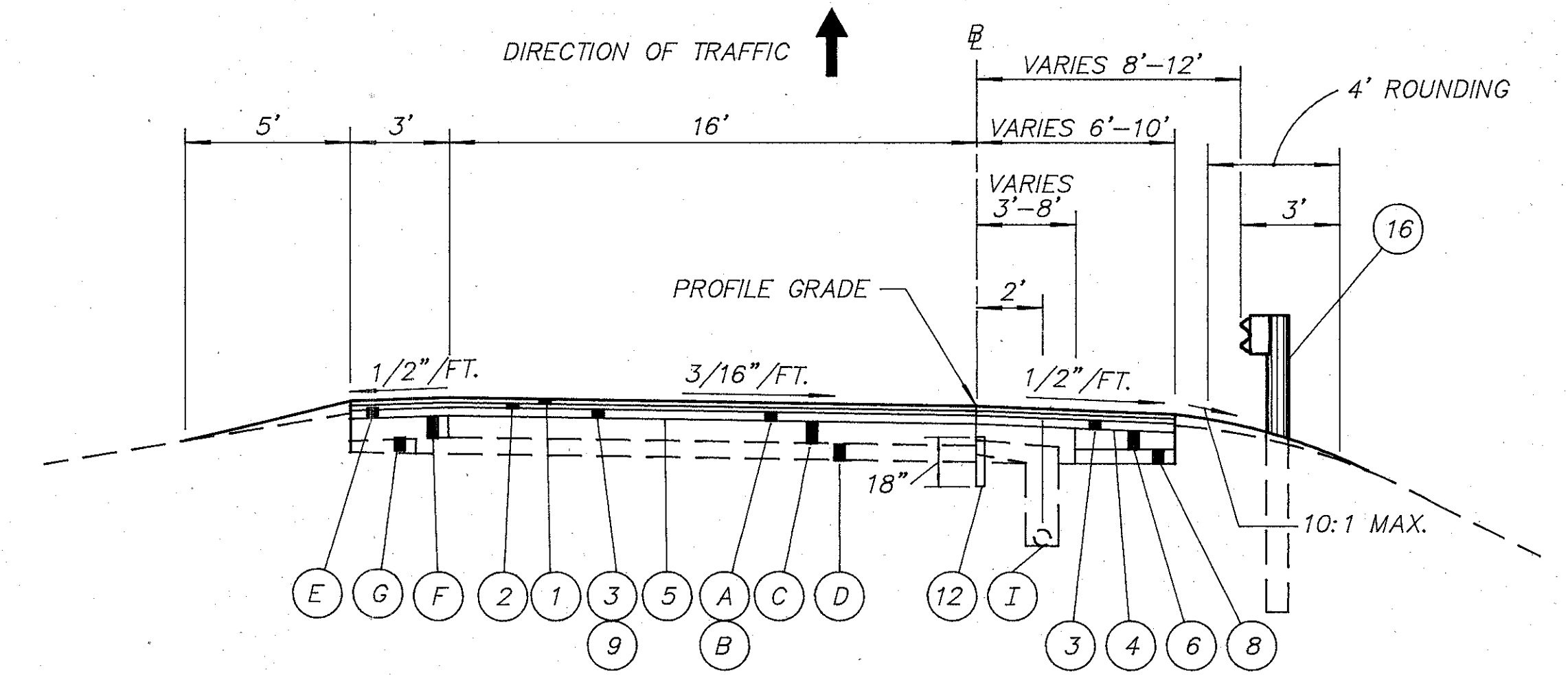
I-71 RAMP "F-F" STA 3+02.06 TO STA 5+02.06 = 200.00 L.F.

FOR EDGE OF SHOULDER DETAILS SEE SHEET 18
FOR LEGEND SEE SHEET 3



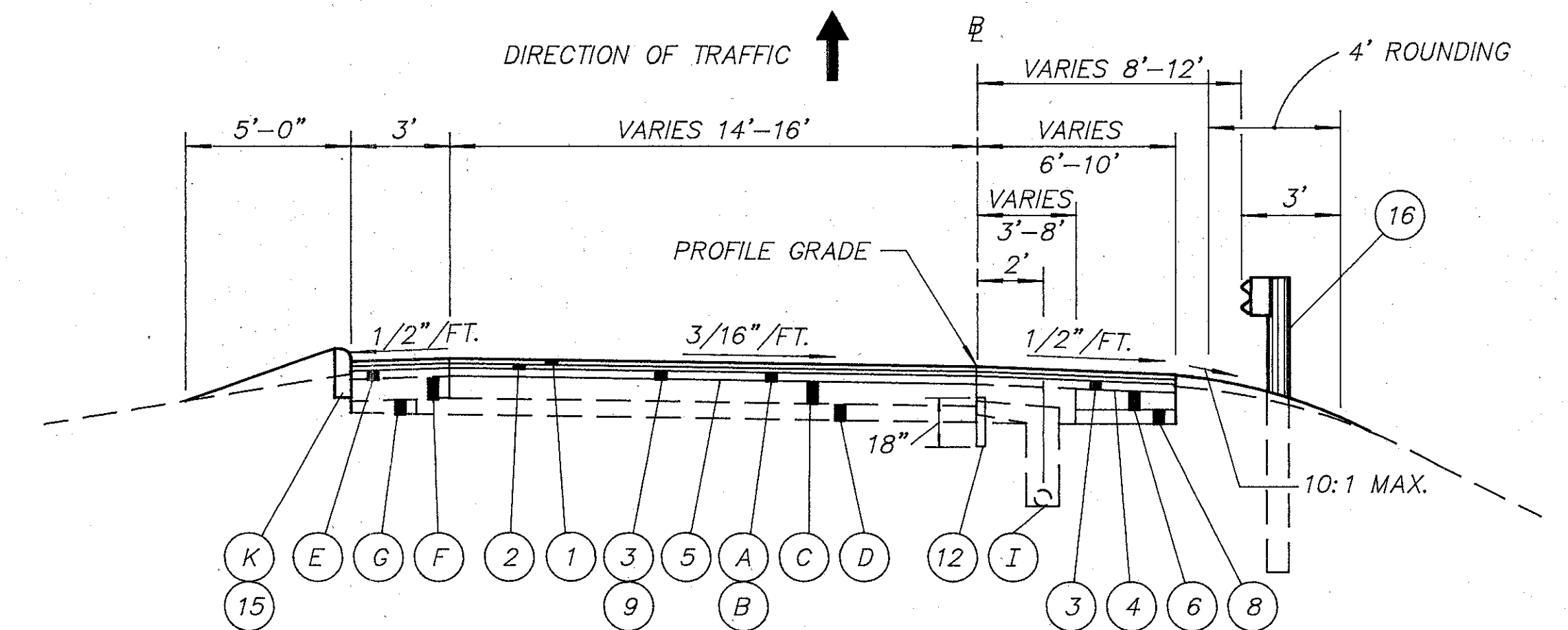
NORMAL SECTION

AM. AGGR. HAUL RD. RAMP "B-B" STA 35+75.00 TO STA 40+53.00 = 478.00 L.F.



NORMAL SECTION

AM. AGGR. HAUL RD. RAMP "B-B" STA 40+53.00 TO STA 41+53.00 = 100.00 L.F.



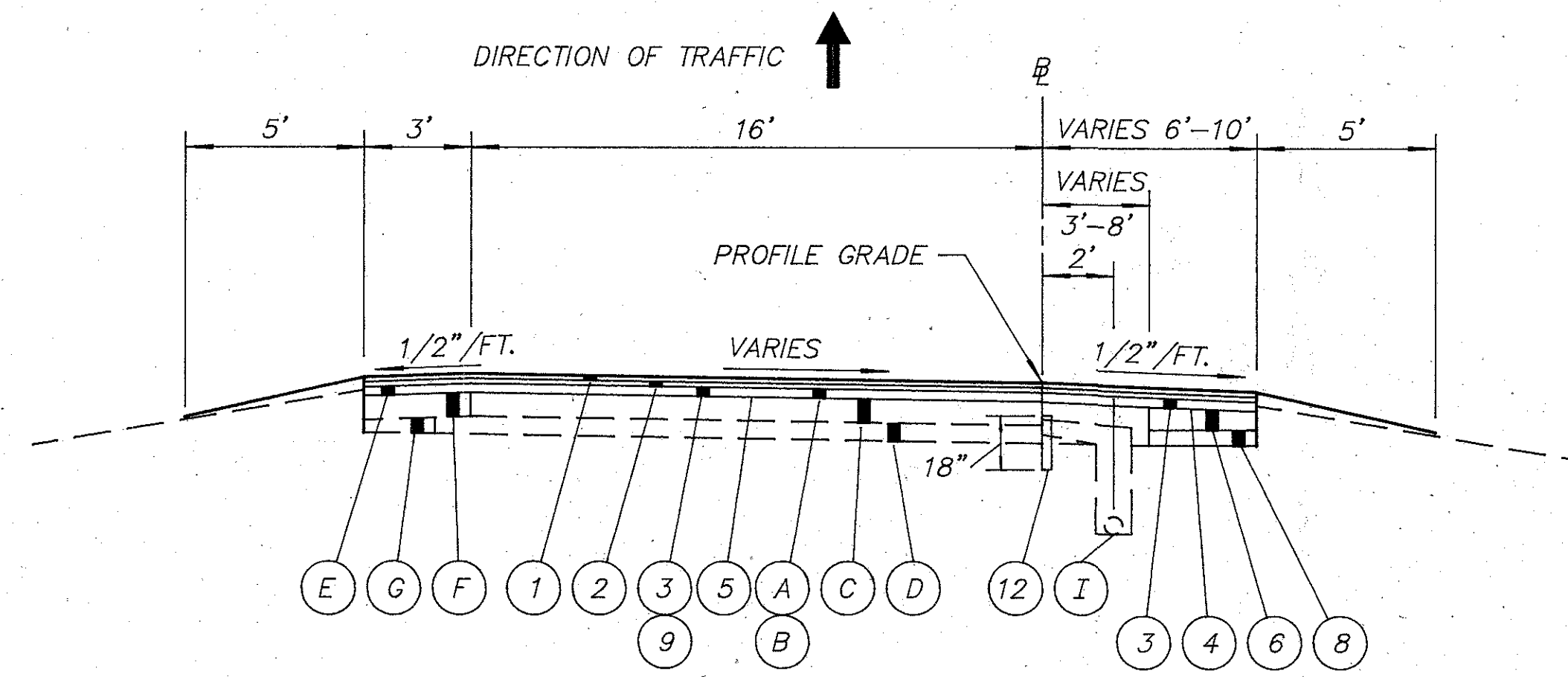
NORMAL SECTION

AM. AGGR. HAUL RD. RAMP "A-A" STA 29+00.00 TO STA 35+48.00 = 648.00 L.F.

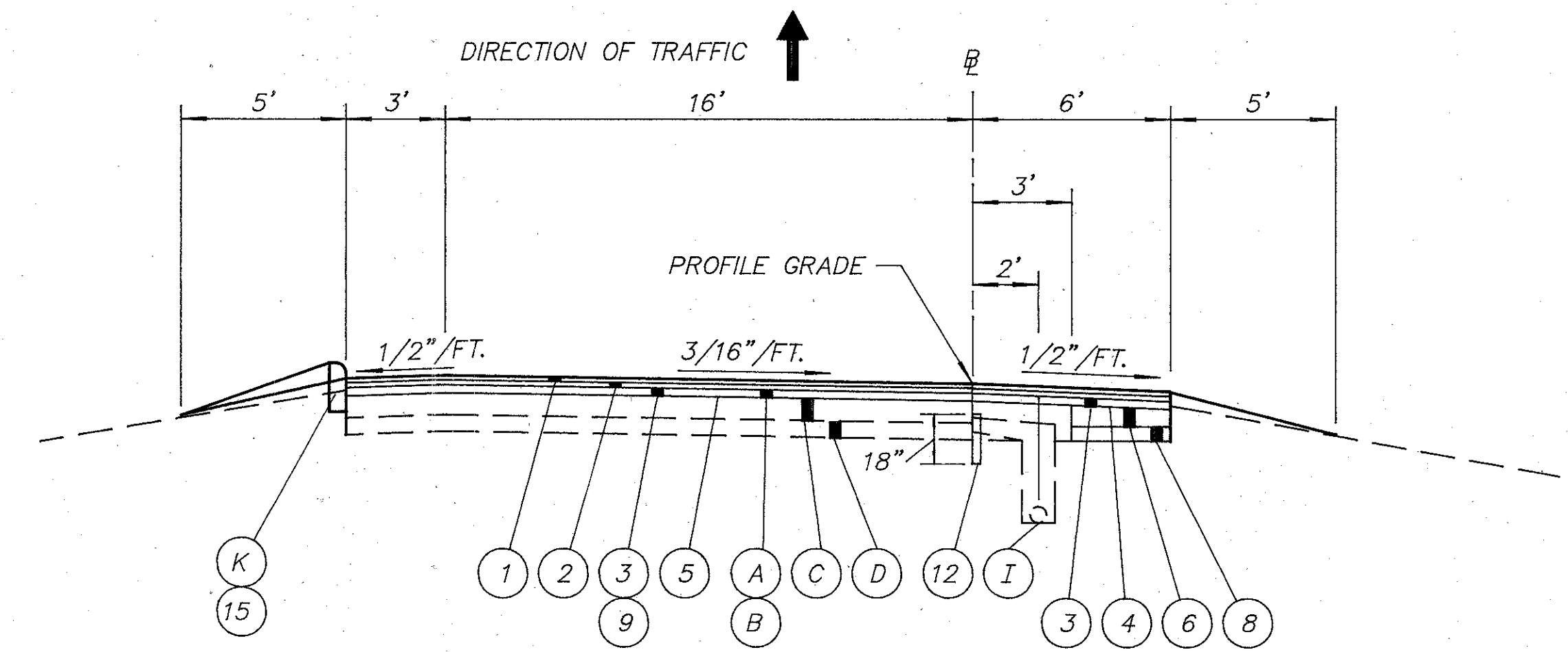
TYPICAL SECTIONS

TYPE - 446

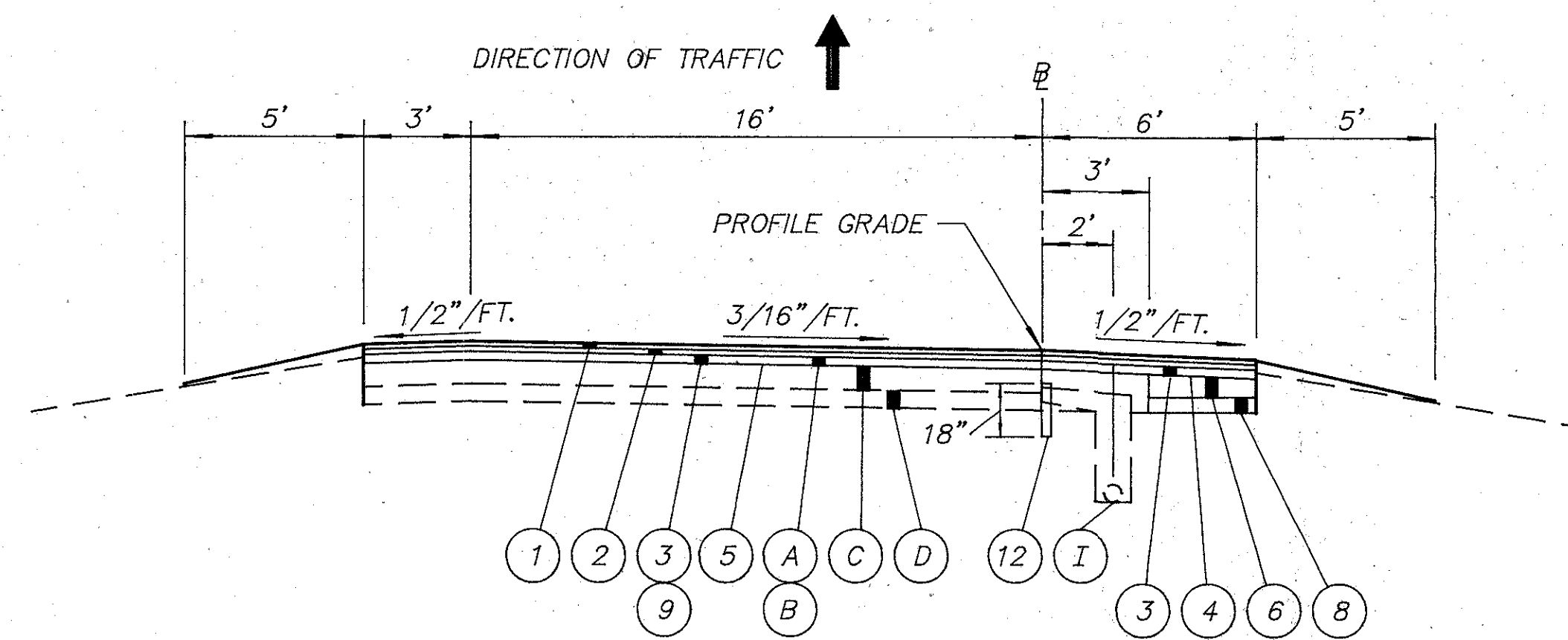
CHECKED BY: JBA DATE: 6/15/94	FRA-104-8.02	OHIO
CHECKED BY: JSB DATE: 6/15/94		FHWA REGION 5



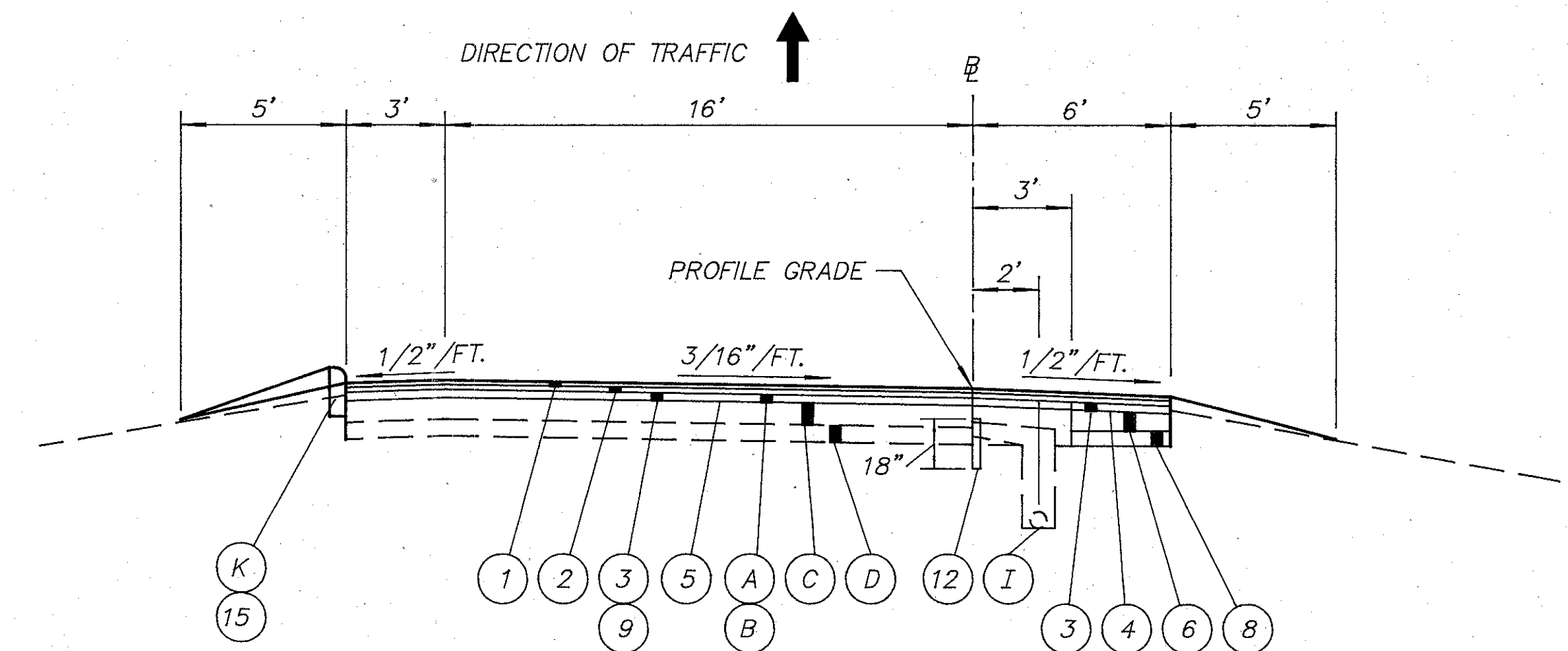
NORMAL SECTION
AM. AGGR. HAUL RD. RAMP "D-D" STA 30+00.00 TO STA 31+00.00 = 100.00 L.F.



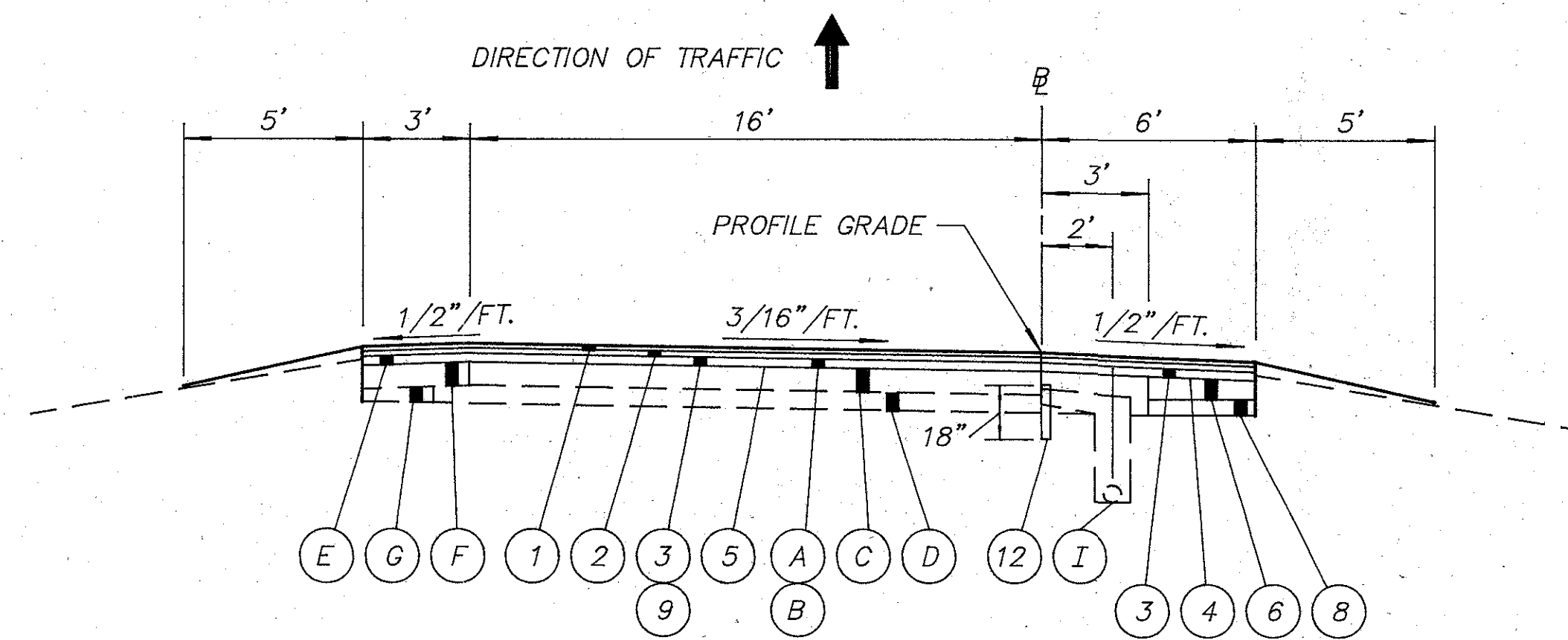
NORMAL SECTION
AM. AGGR. HAUL RD. RAMP "C-C" STA 35+68.00 TO STA 38+00.00 = 232.00 L.F.



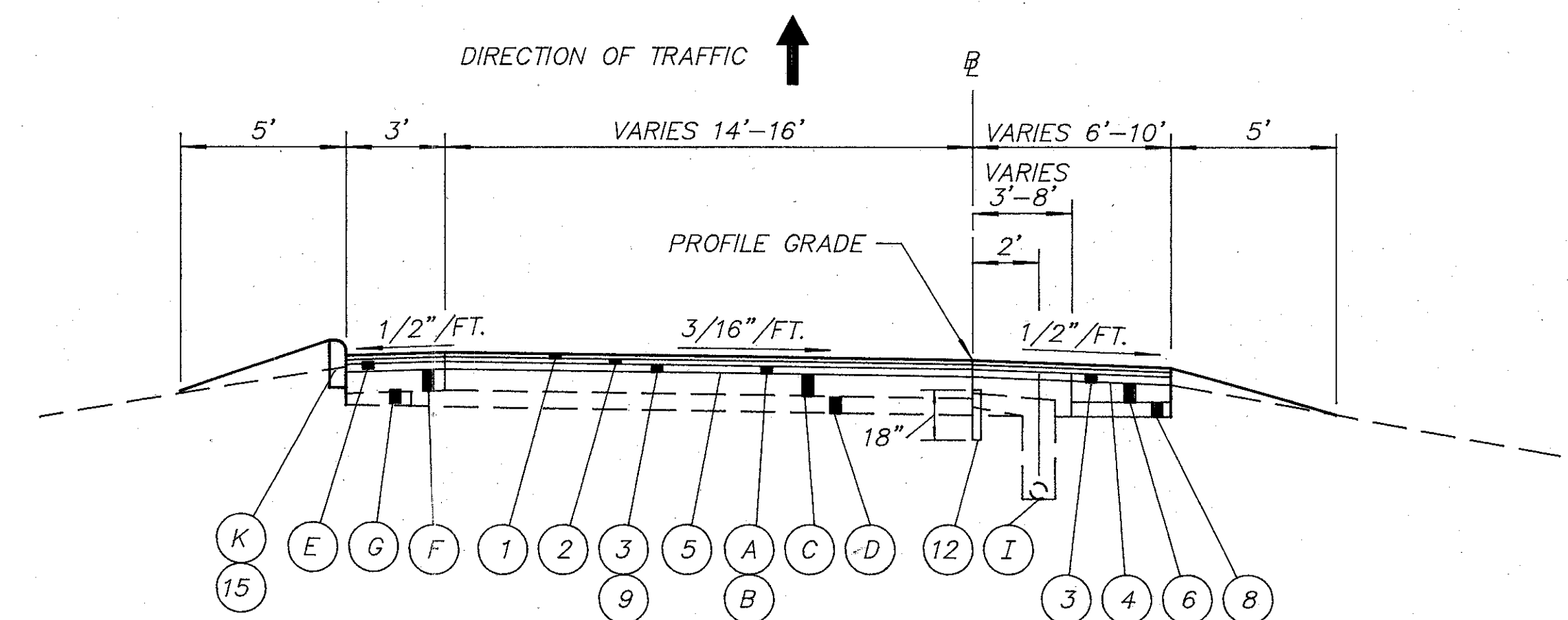
NORMAL SECTION
AM. AGGR. HAUL RD. RAMP "D-D" STA 32+00.00 TO STA 34+85.00 = 285.00 L.F.



NORMAL SECTION
AM. AGGR. HAUL RD. RAMP "C-C" STA 38+00.00 TO STA 39+00.00 = 100.00 L.F.



NORMAL SECTION
AM. AGGR. HAUL RD. RAMP "D-D" STA 31+00.00 TO STA 32+00.00 = 100.00 L.F.
RAMP "D-D" STA 34+85.00 TO STA 35+17.00 = 32.00 L.F.



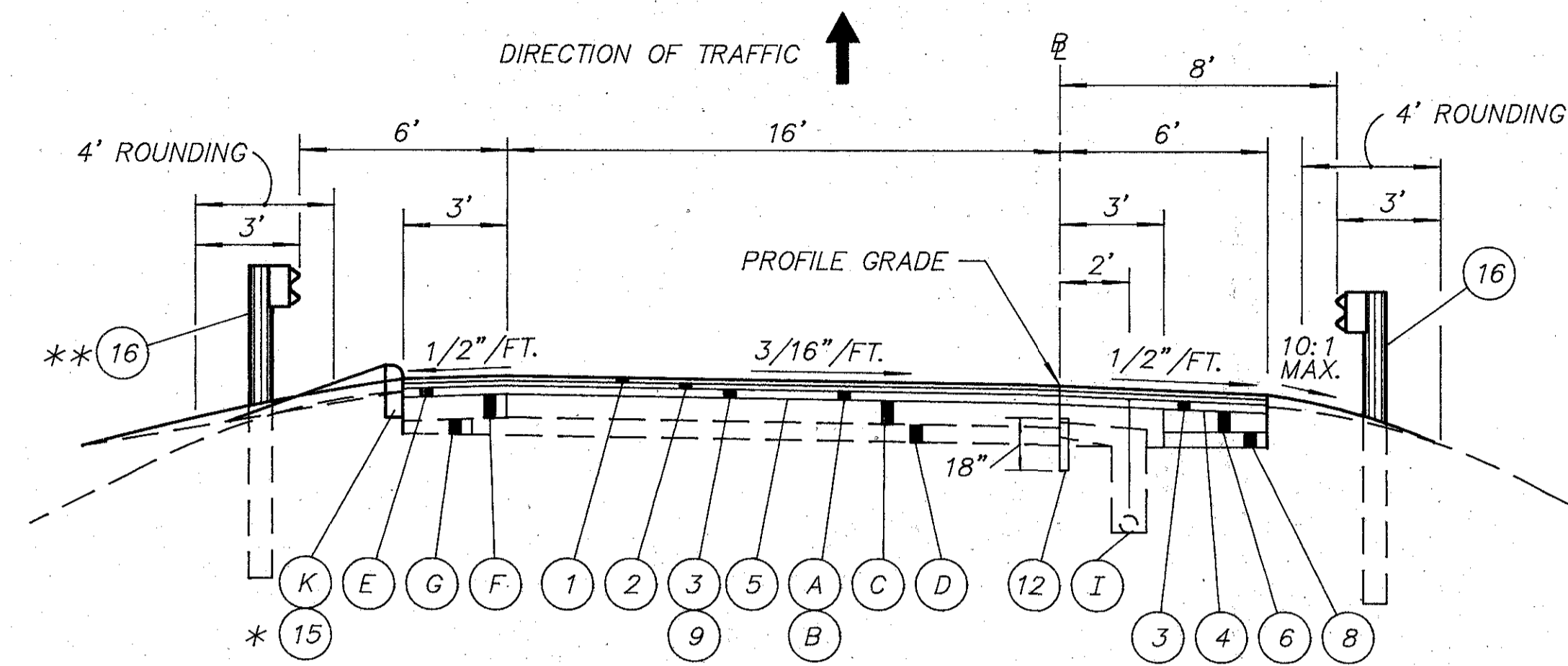
NORMAL SECTION
AM. AGGR. HAUL RD. RAMP "C-C" STA 39+00.00 TO STA 41+50.00 = 250.00 L.F.

FOR EDGE OF SHOULDER DETAILS SEE SHEET 18
FOR LEGEND SEE SHEET 3

TYPICAL SECTIONS

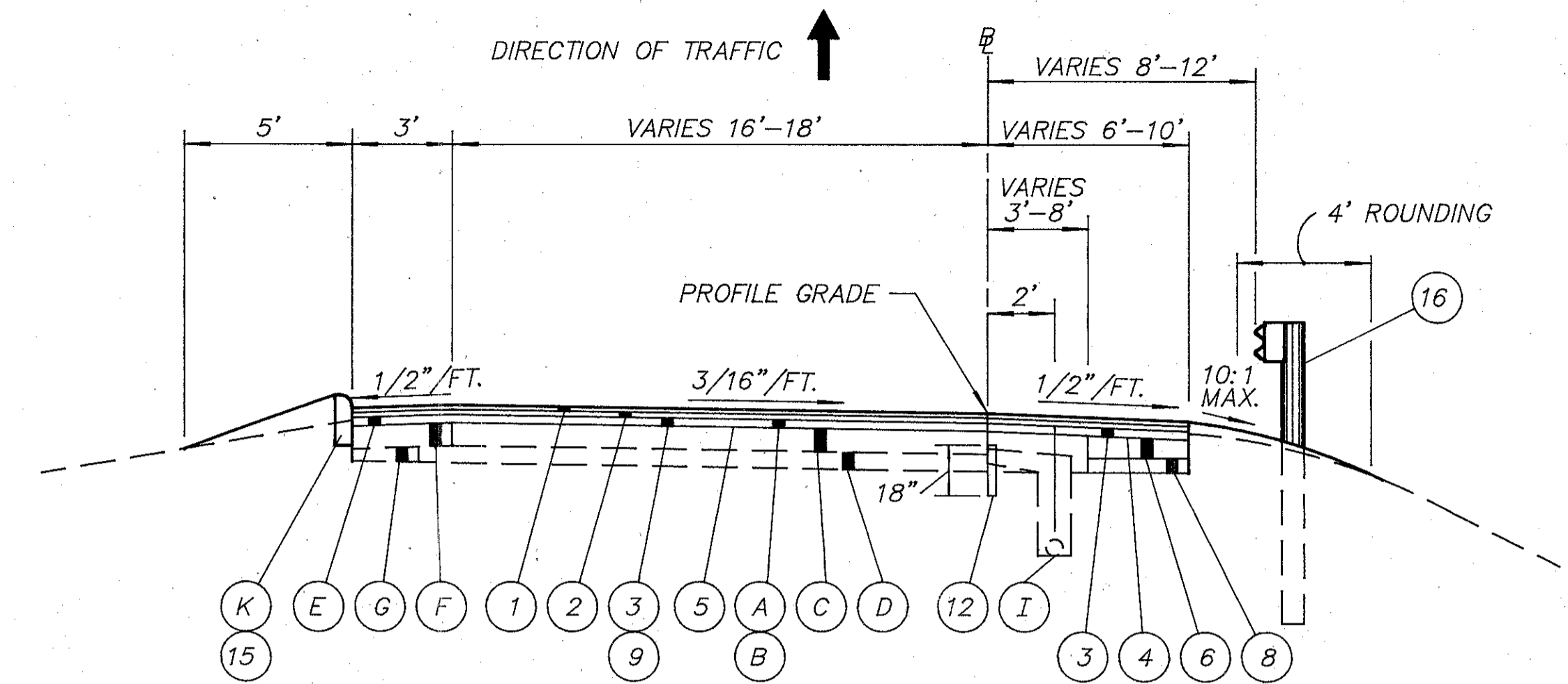
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CHECKED BY: JSB DATE: 6/15/94		FHWA REGION 5



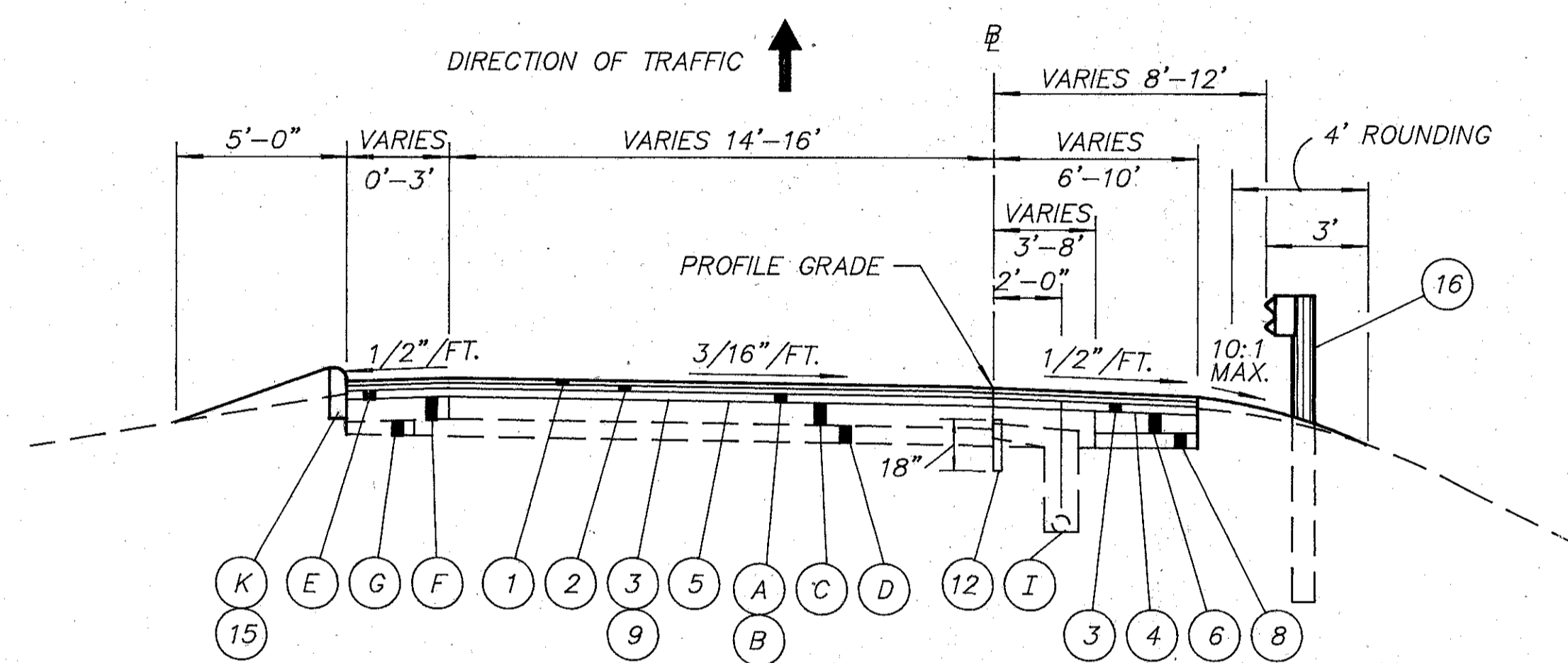
NORMAL SECTION

HIGH STREET RAMP "A" STA 52+00.00 TO STA 58+85.00 = 685.00 L.F.
 * — CURB LIMITING STATIONS 52+00 TO 53+77
 ** — GUARDRAIL LIMITING STATIONS 53+75 TO 58+75



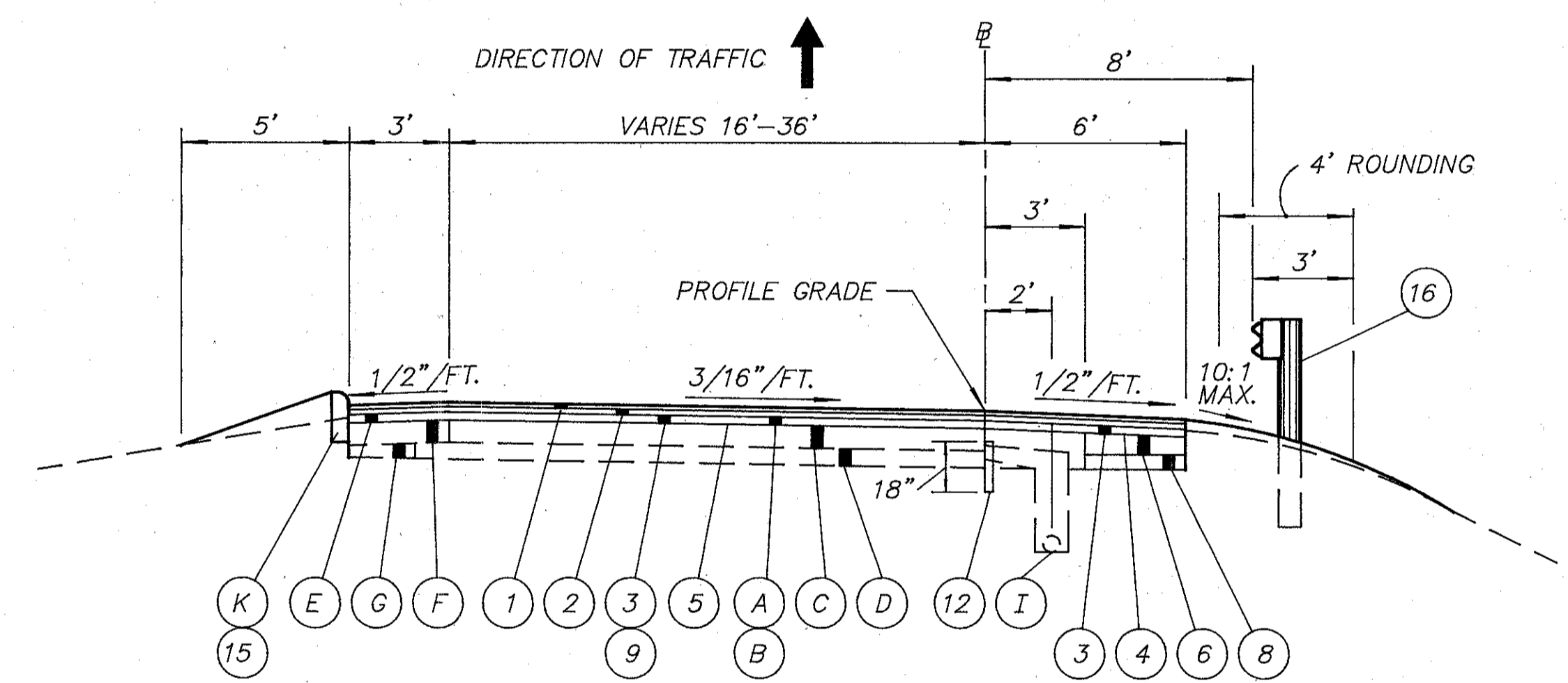
NORMAL SECTION

HIGH STREET RAMP "B" STA 49+40.68 TO STA 50+40.68 = 100.00 L.F.



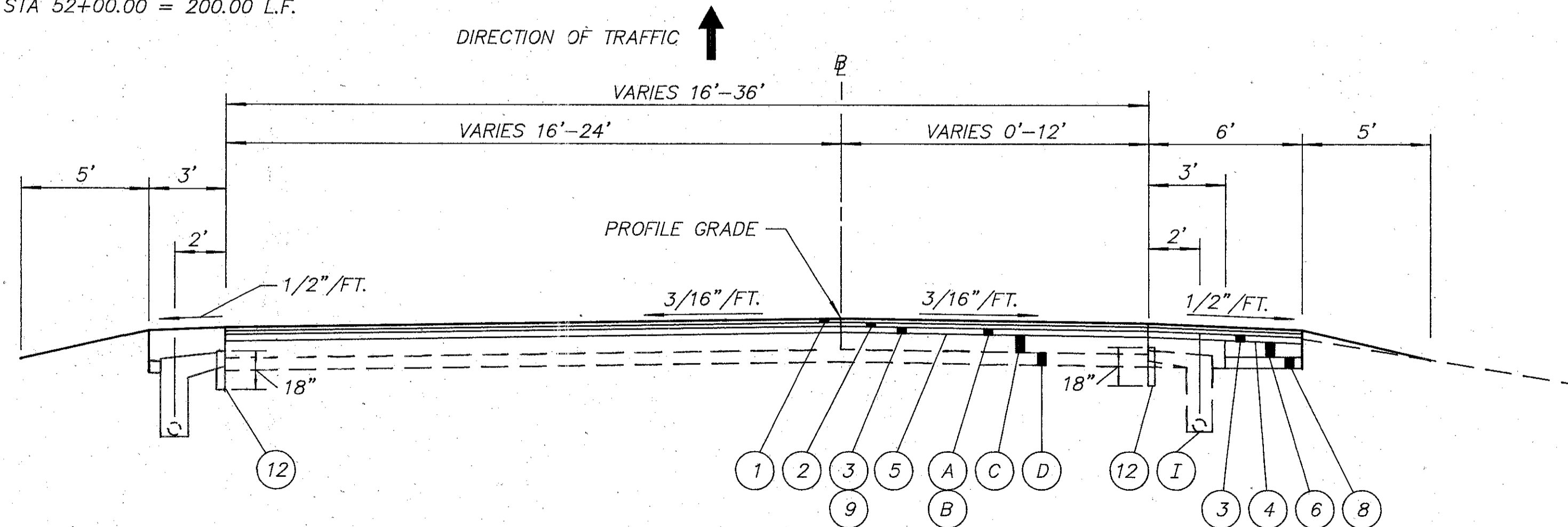
NORMAL SECTION

HIGH STREET RAMP "A" STA 50+00.00 TO STA 52+00.00 = 200.00 L.F.



NORMAL SECTION

HIGH STREET RAMP "B" STA 50+40.68 TO STA 53+50.00 = 309.32 L.F.



3 LANE NORMAL SECTION

HIGH STREET RAMP "B" STA 53+50.00 TO STA 58+56.00 = 506.00 L.F.

FOR EDGE OF SHOULDER DETAILS SEE SHEET 18
 FOR LEGEND SEE SHEET 3

FOR EDGE OF SHOULDER DETAILS SEE SHEET 18
 FOR LEGEND SEE SHEET 3

TYPICAL SECTIONS

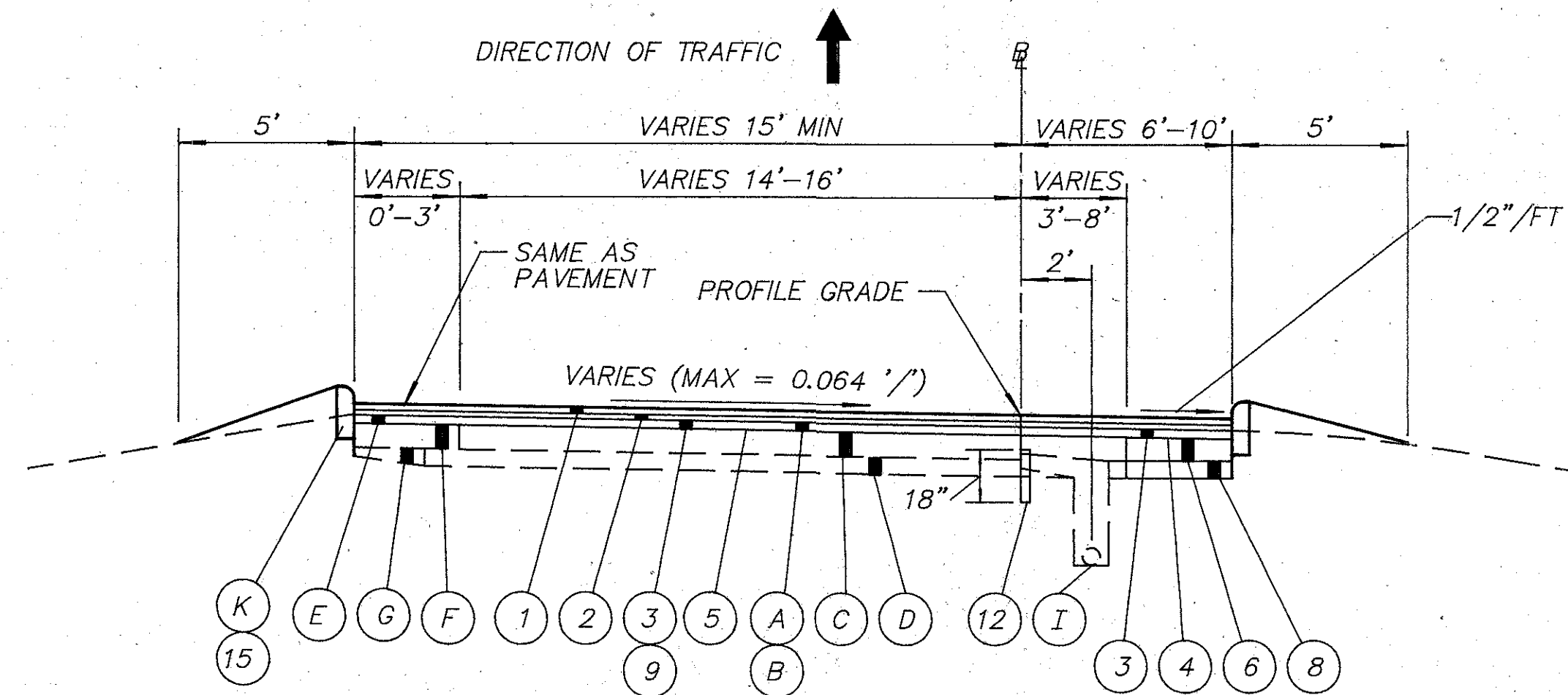
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CHECKED BY: JRA
DATE: 6/15/94
CHECKED BY: JSB
DATE: 6/15/94

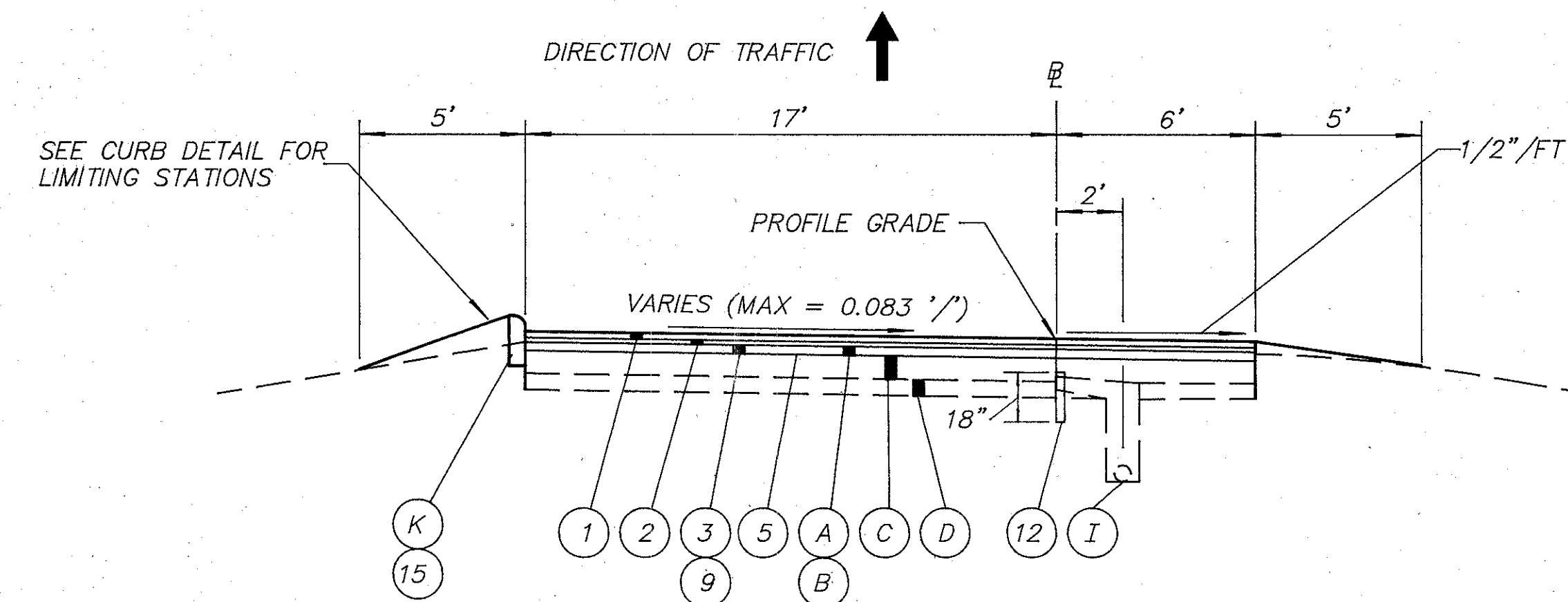
FRA-104-8.02

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FHWA REGION 5

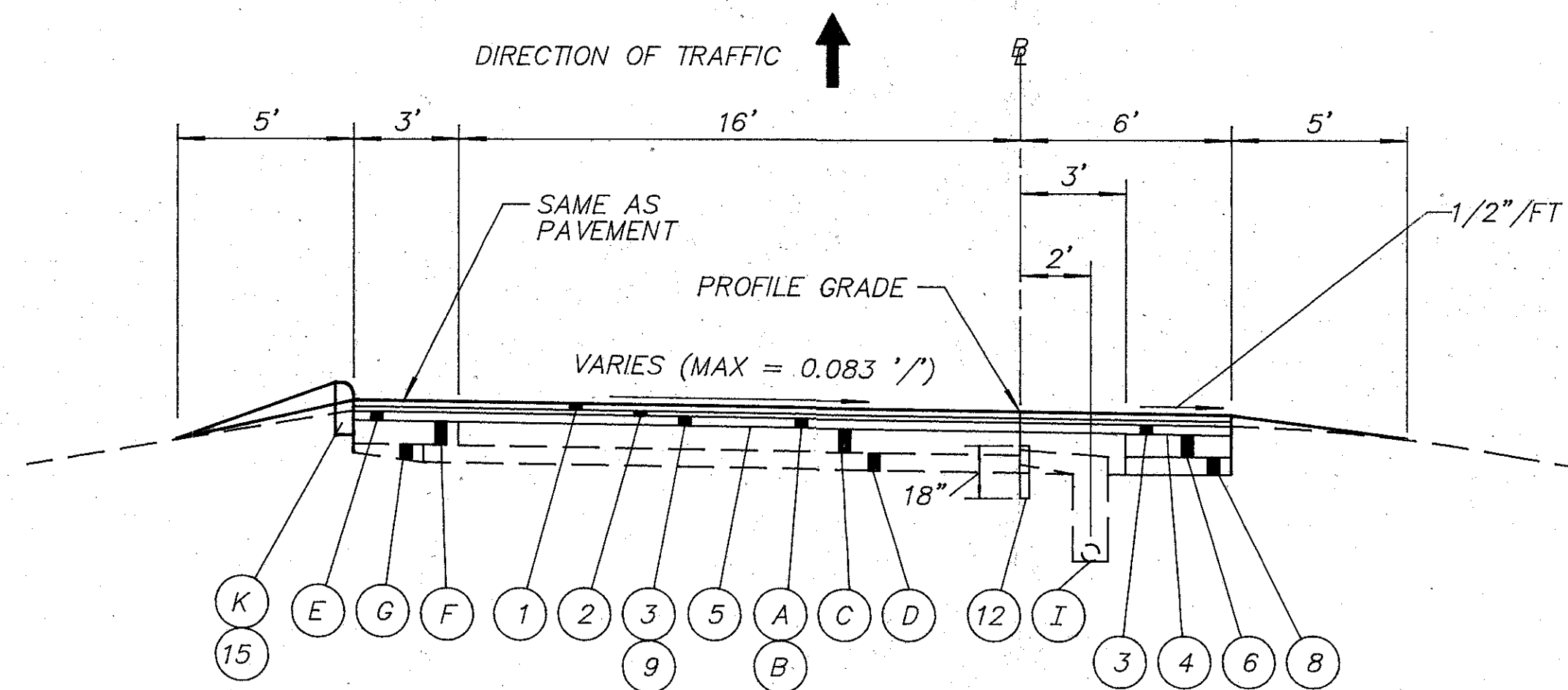
10
185



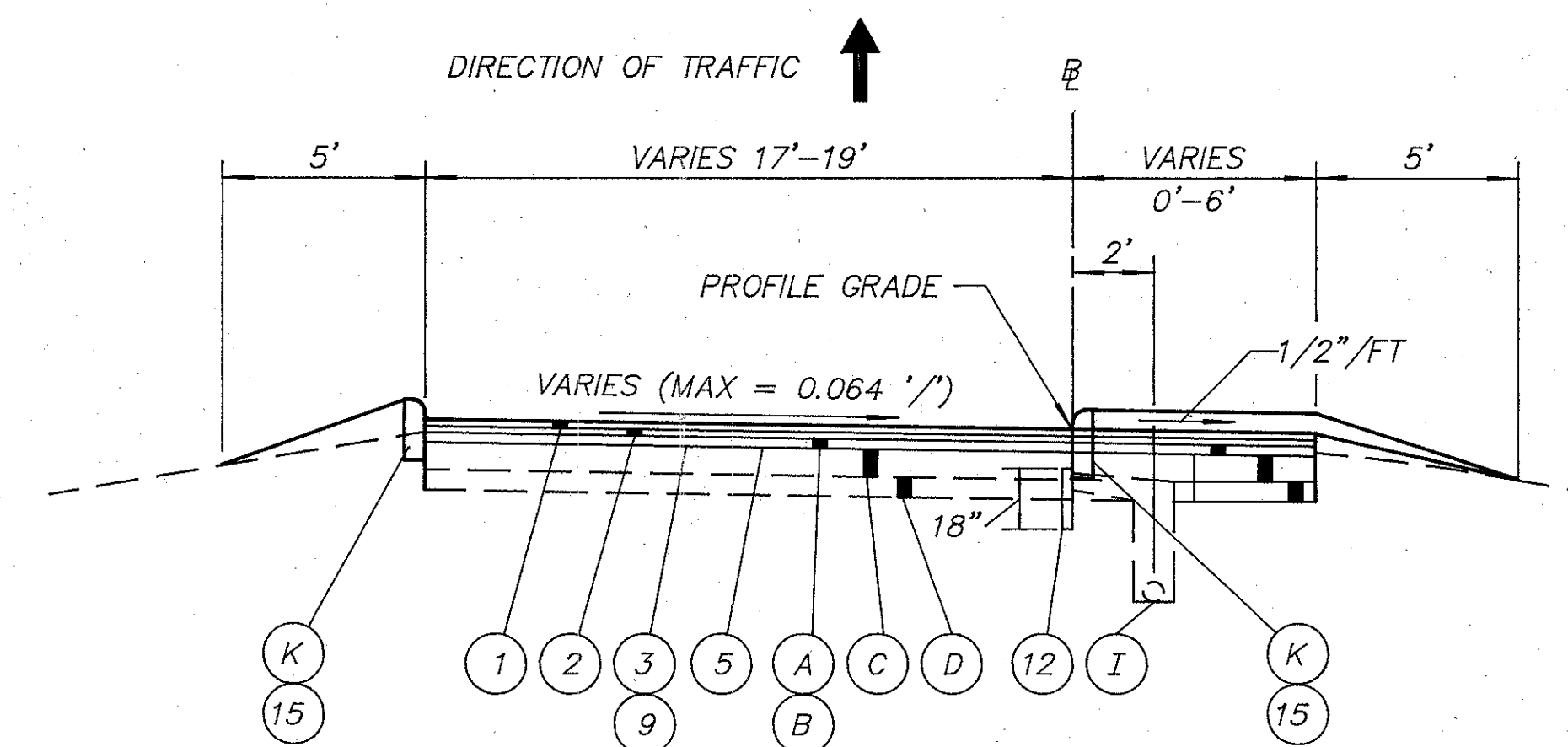
SUPERELEVATION
HIGH STREET RAMP "C" STA 60+14.19 TO STA 62+14.19 = 200.00 L.F.



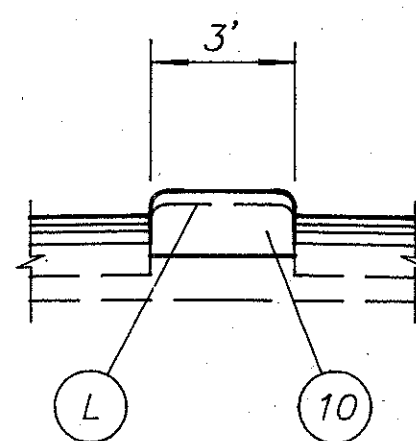
SUPERELEVATION
HIGH STREET RAMP "C" STA 65+06.00 TO STA 70+77.48 = 571.48 L.F.



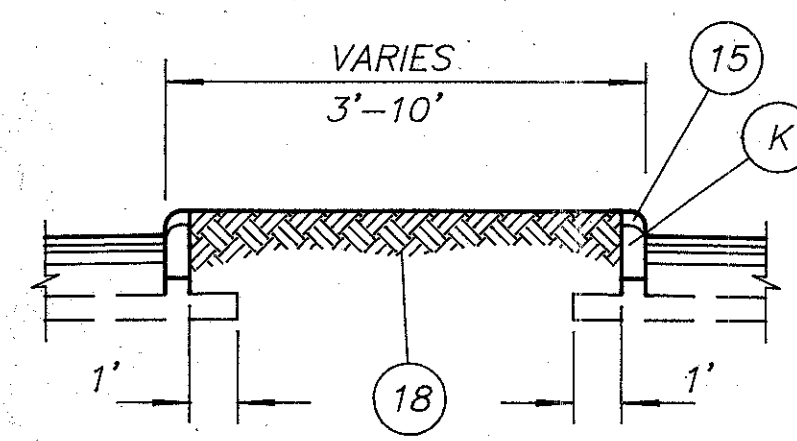
SUPERELEVATION
HIGH STREET RAMP "C" STA 62+14.19 TO STA 65+06.00 = 290.81 L.F.



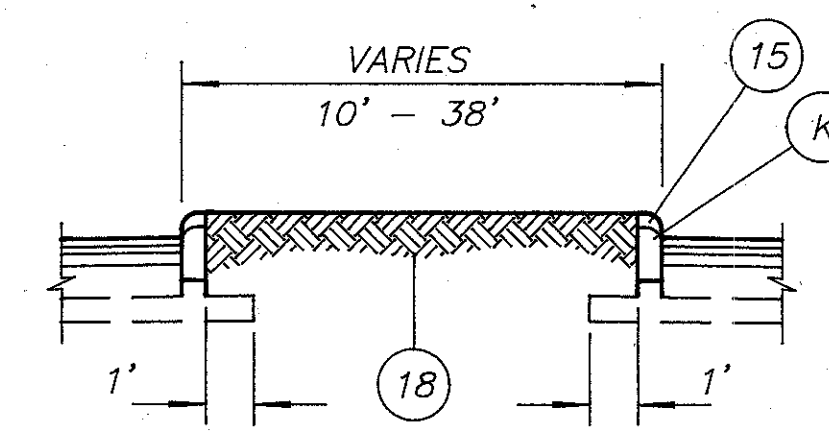
SUPERELEVATION
HIGH STREET RAMP "C" STA 70+77.48 TO STA 71+77.48 = 100.00 L.F.
TREATED SHOULDER STATION LIMITATIONS 70+77.48 TO 71+27.50
CURB LIMITING STATIONS 71+27.50 TO 71+77.48



CURB DETAIL
HIGH STREET RAMP "C" STA 66+23.00 TO STA 69+75.00



CURB DETAIL
HIGH STREET RAMP "C" STA 65+72.00 TO STA 66+23.00
RAMP "C" STA 69+75.00 TO STA 70+14.00



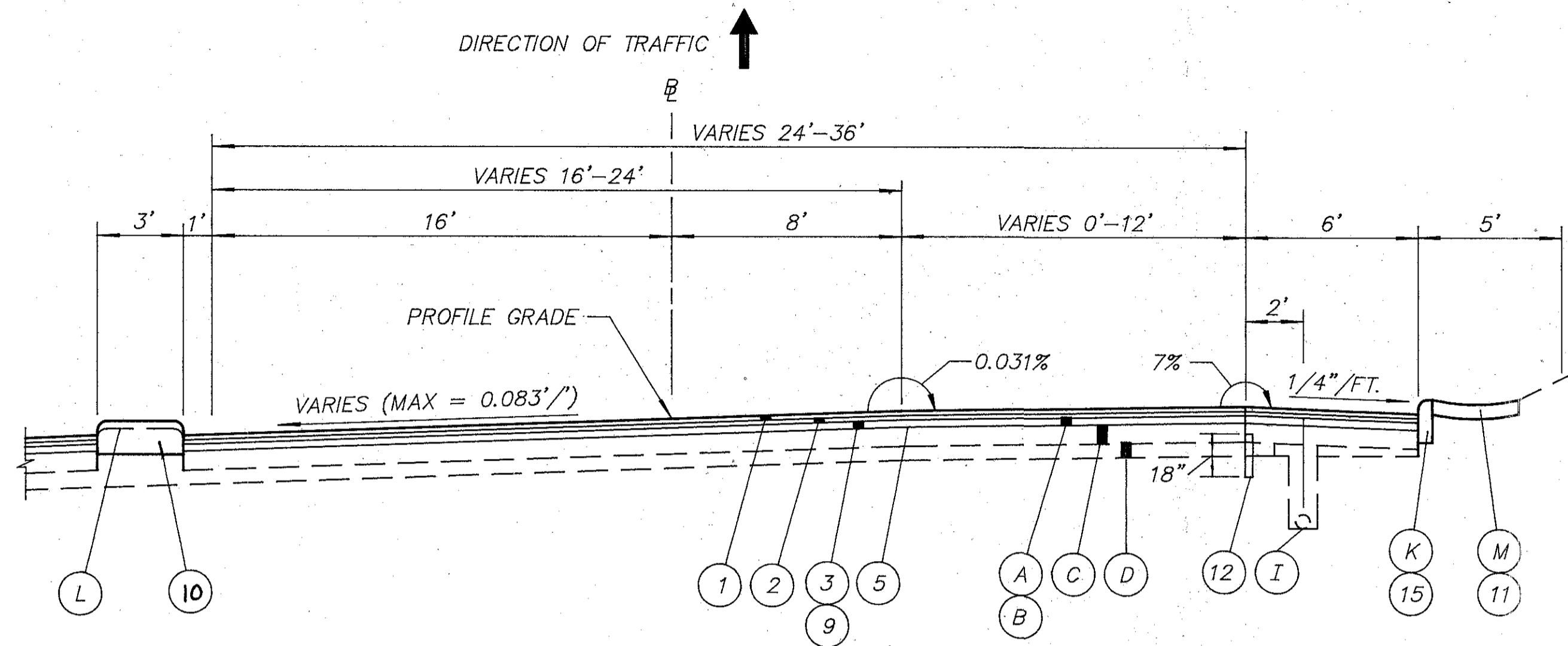
CURB DETAIL
HIGH STREET RAMP "C" STA 65+06.00 TO STA 65+72.00
RAMP "C" STA 70+14.00 TO STA 71+77.48

FOR EDGE OF SHOULDER DETAILS SEE SHEET 18
FOR LEGEND SEE SHEET 3

TYPICAL SECTIONS

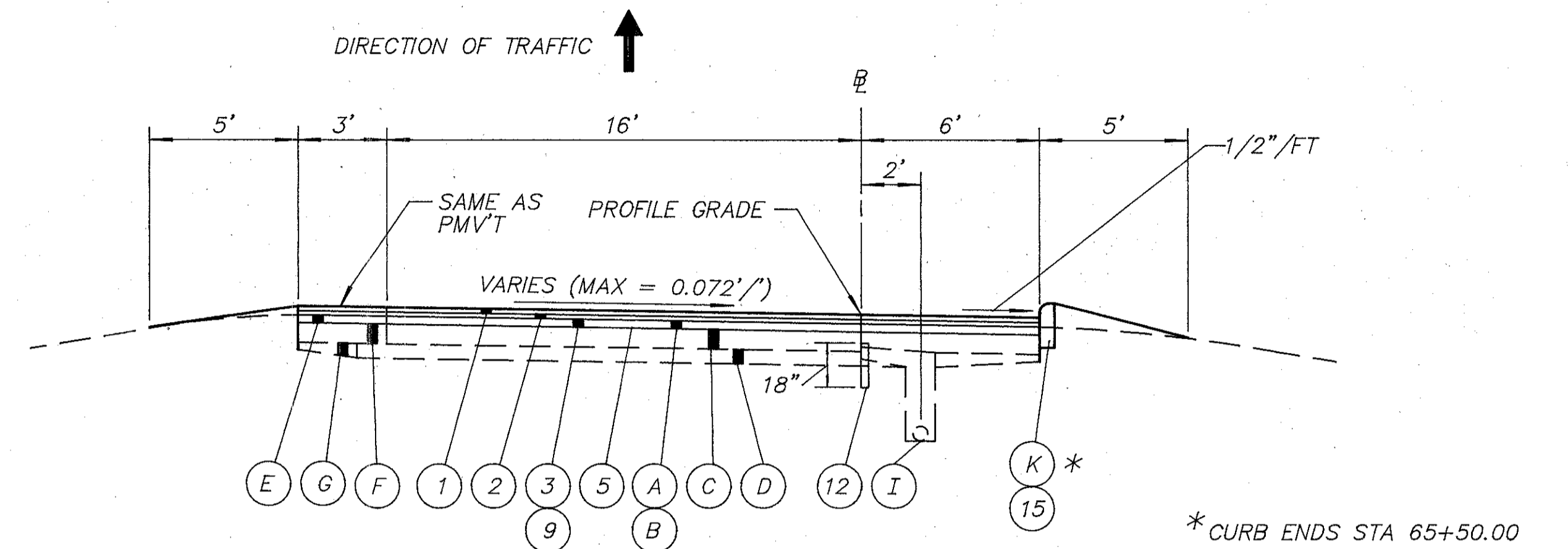
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3 LANE SUPERELEVATION

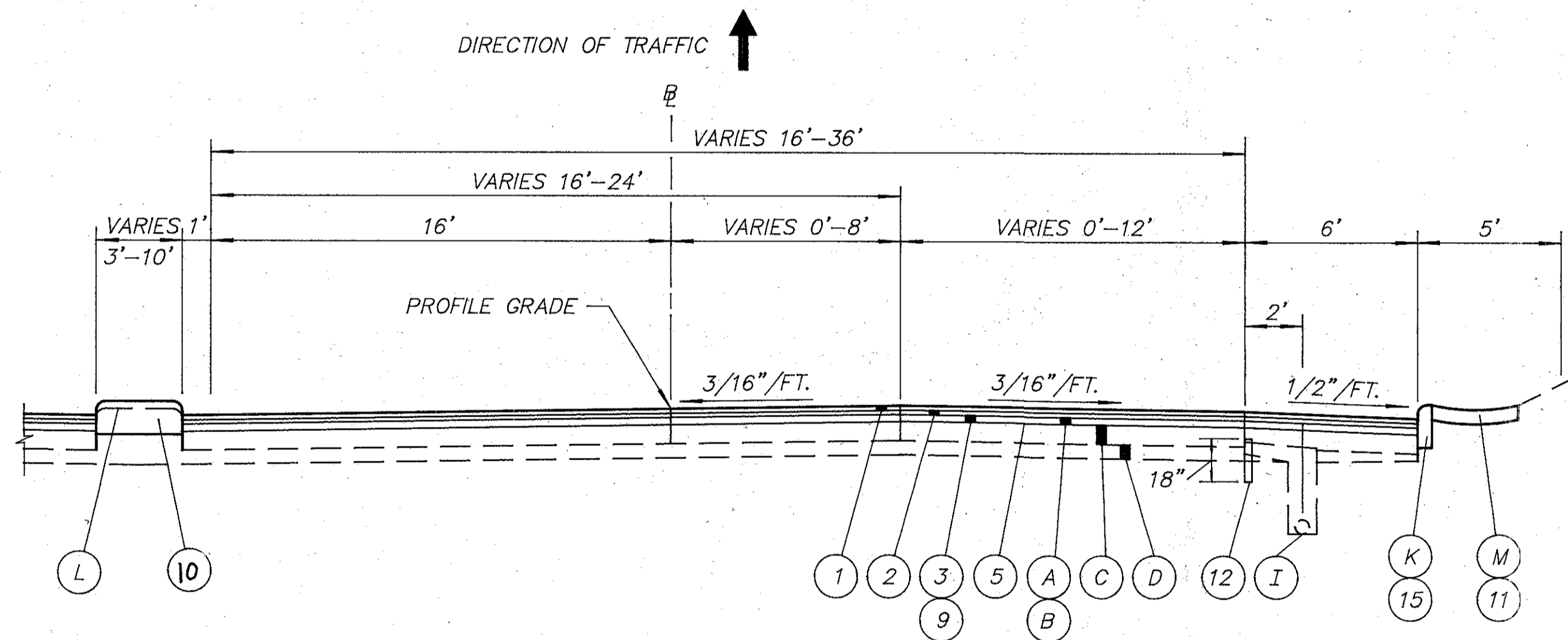
HIGH STREET RAMP "D" STA 58+33.00 TO STA 62+32.97 = 399.97 L.F.



SUPERELEVATION

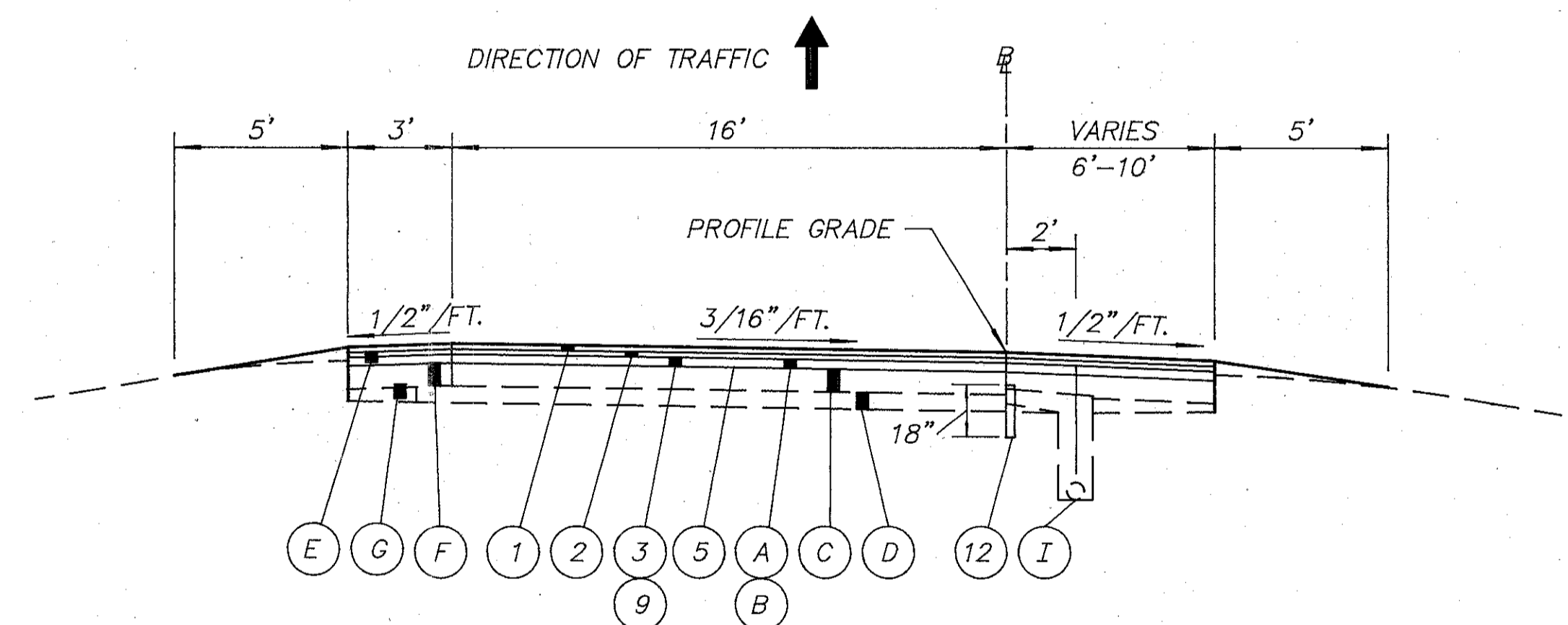
HIGH STREET RAMP "D" STA 63+94.97 TO STA 66+43.24 = 248.27 L.F.

* CURB ENDS STA 65+50.00



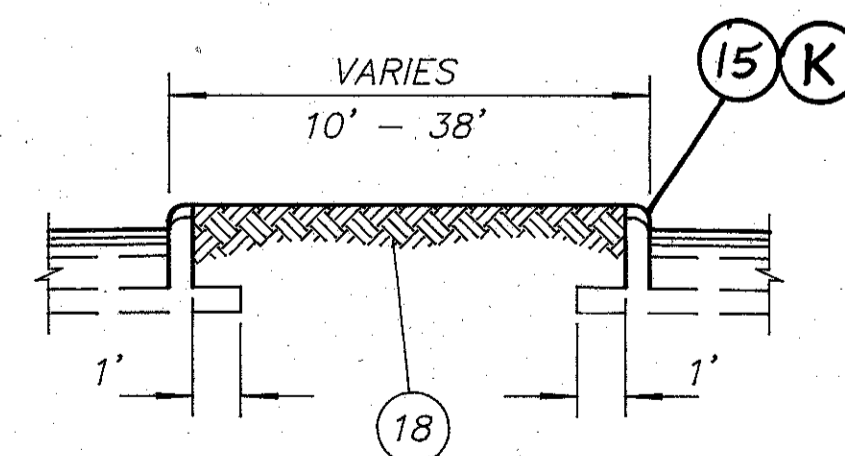
3 LANE NORMAL SECTION

HIGH STREET RAMP "D" STA 56+99.65 TO STA 58+33.00 = 133.35 L.F.
RAMP "D" STA 62+32.97 TO STA 63+94.97 = 162.00 L.F.



NORMAL SECTION

HIGH STREET RAMP "D" STA 66+43.24 TO STA 68+51.42 = 208.18 L.F.



CURB DETAIL

HIGH STREET RAMP "D" STA 56+69.65 TO STA 57+91.00 = 121.35 L.F.
RAMP "D" STA 62+89.00 TO STA 63+62.00 = 73.00 L.F.

FOR EDGE OF SHOULDER DETAILS SEE SHEET 18
FOR LEGEND SEE SHEET 3

TYPICAL SECTIONS

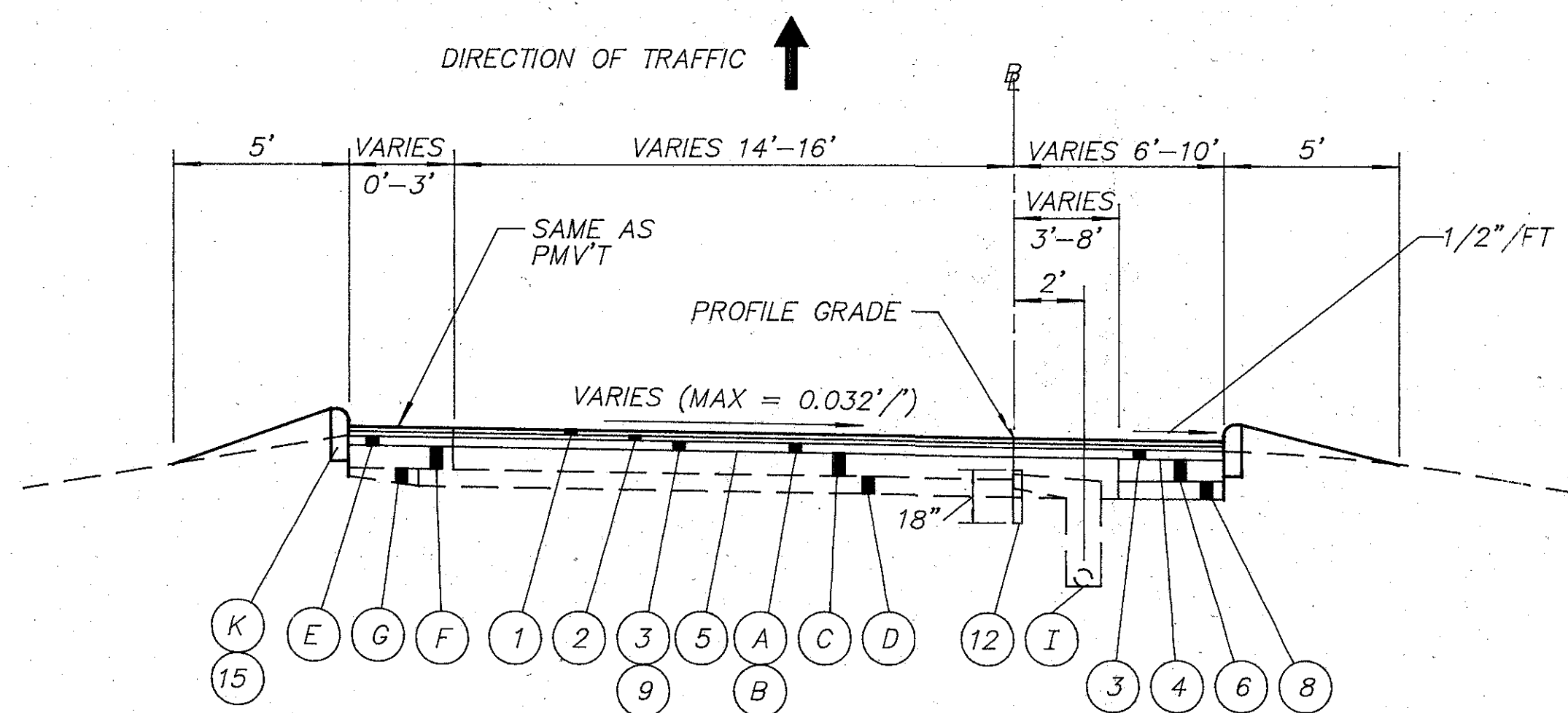
TYPE - 446

CHECKED BY: JRA
DATE: 6/15/84
CHECKED BY: JSB
DATE: 5/15/84

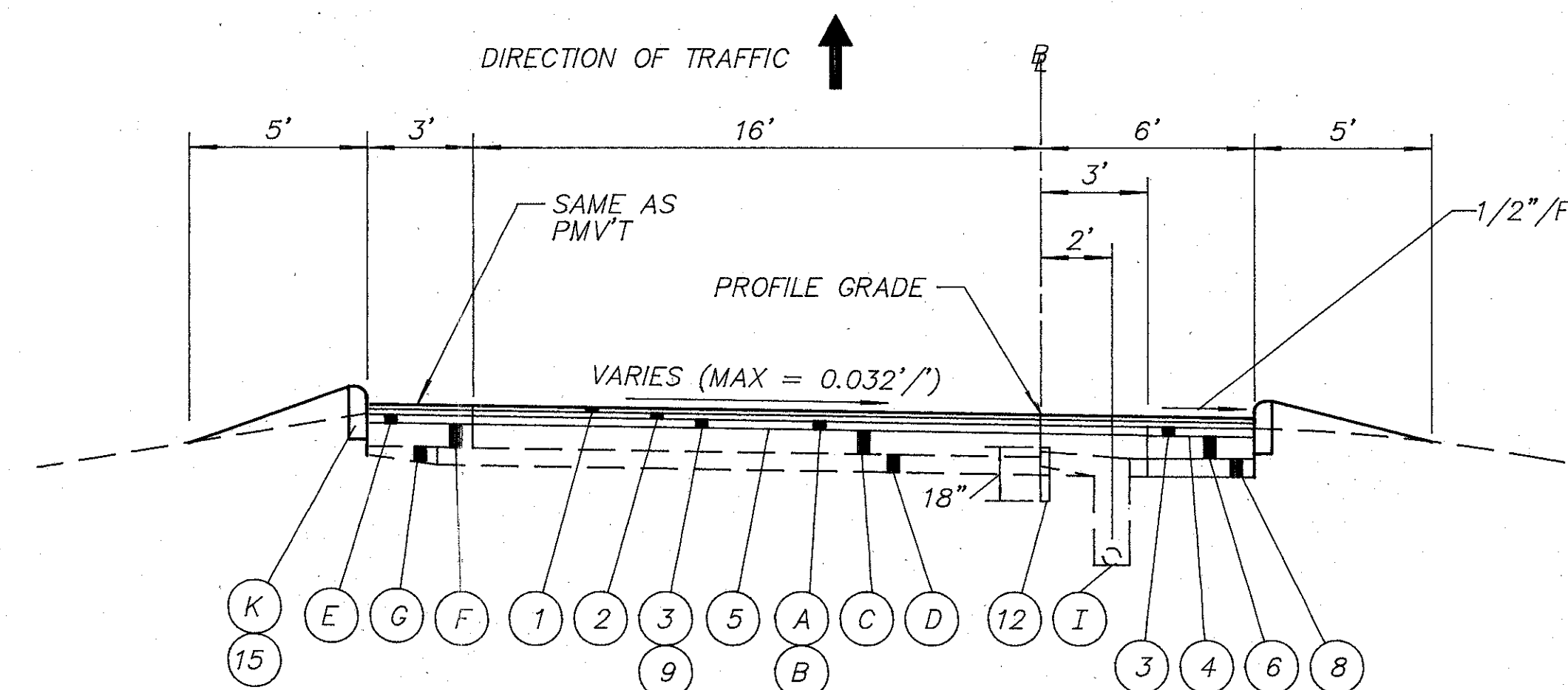
FRA-104-8.02

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FHWA REGION 5

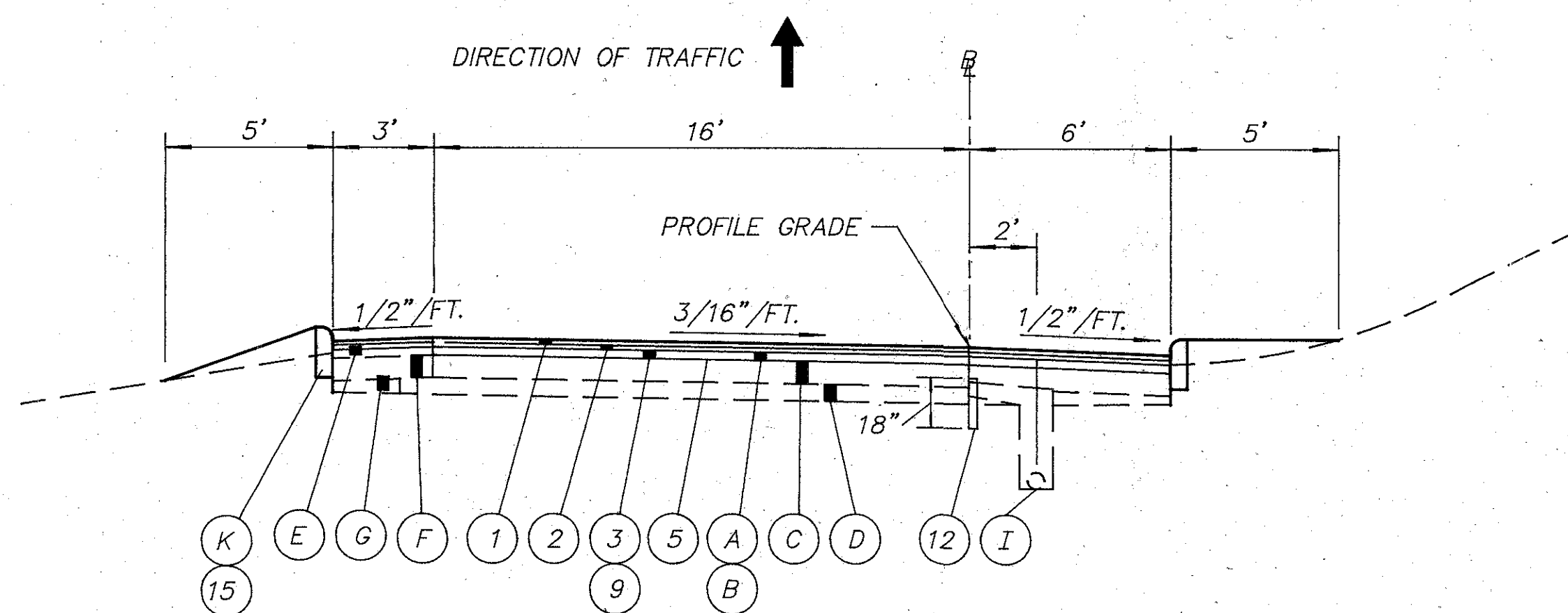
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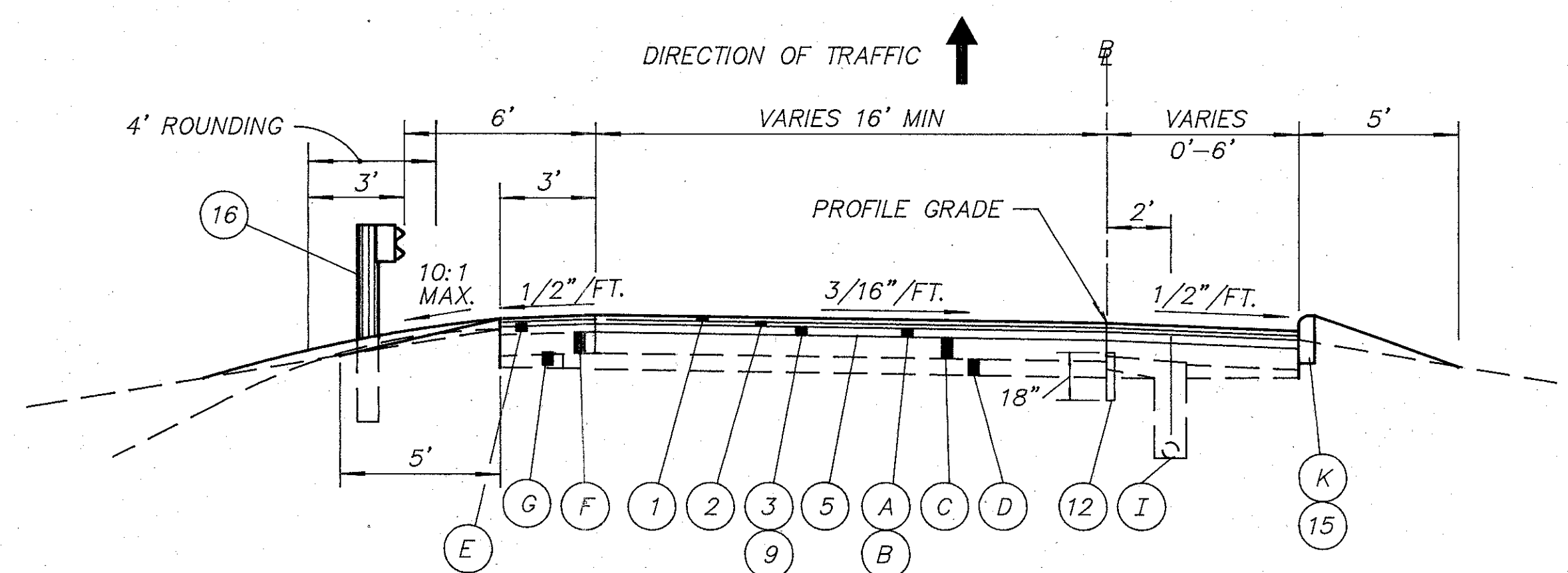
SUPERELEVATION
HIGH STREET RAMP "E" STA 67+71.97 TO 69+71.97 = 200.00 L.F.



SUPERELEVATION
HIGH STREET RAMP "E" STA 63+00.00 TO 67+71.97 = 471.97 L.F.



NORMAL SECTION
HIGH STREET RAMP "E" STA 61+50.00 TO 63+00.00 = 150.00 L.F.



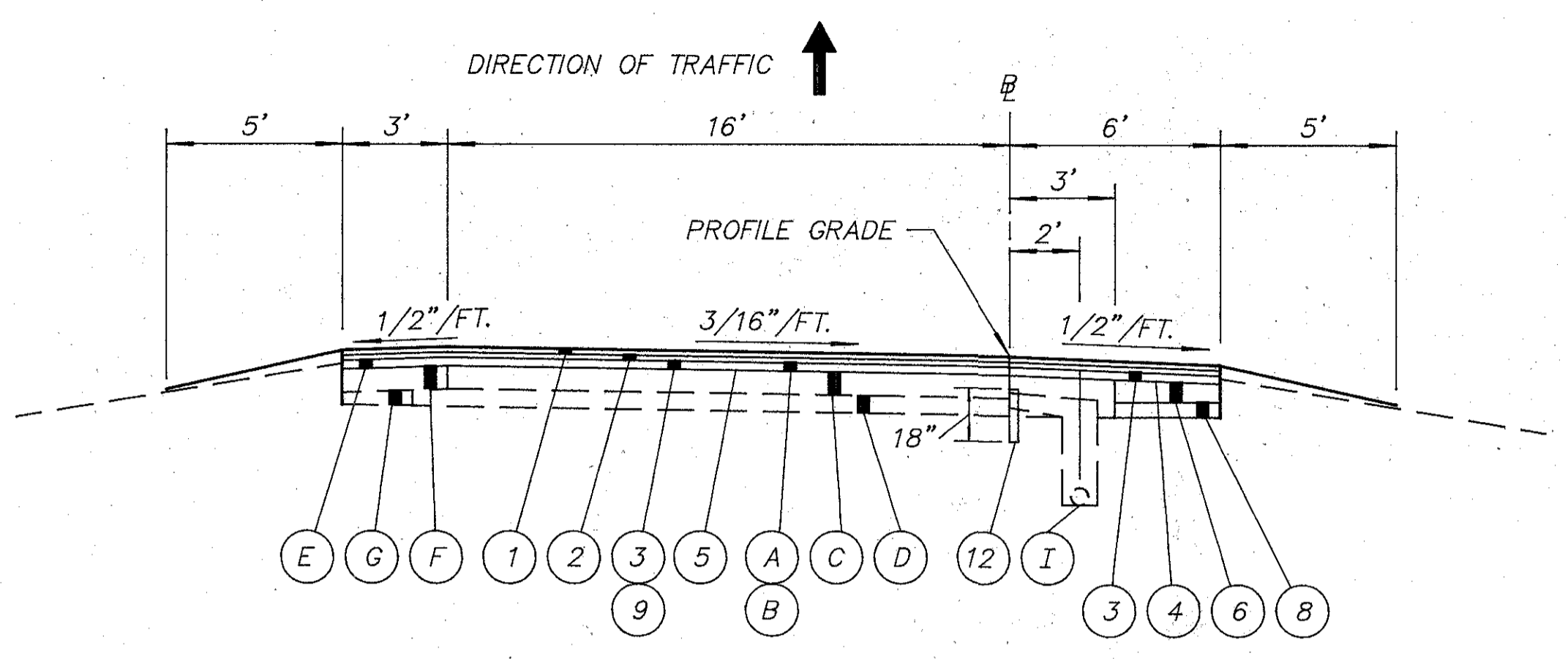
NORMAL SECTION
HIGH STREET RAMP "E" STA 60+50.00 TO 61+50.00 = 100.00 L.F.

FOR EDGE OF SHOULDER DETAILS SEE SHEET 18
FOR LEGEND SEE SHEET 3

TYPICAL SECTIONS

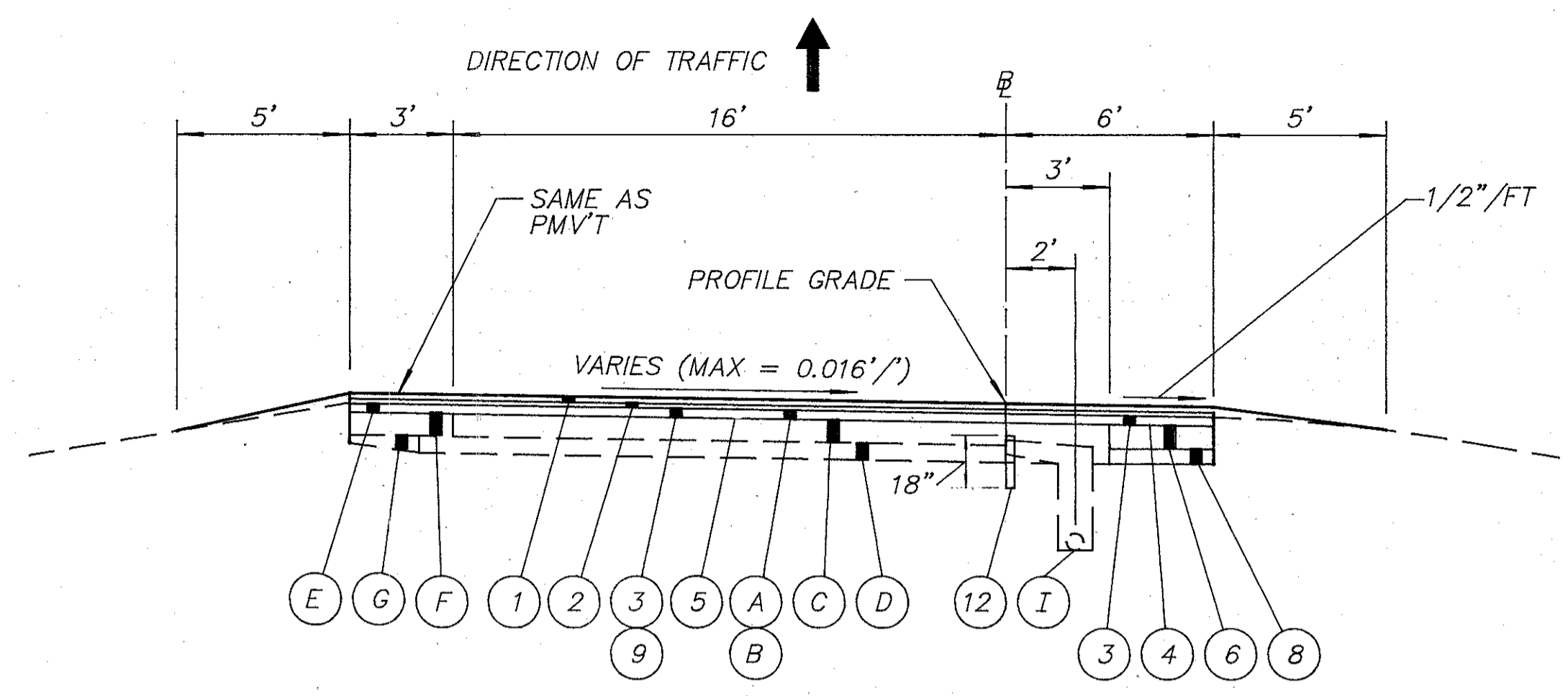
TYPE - 446

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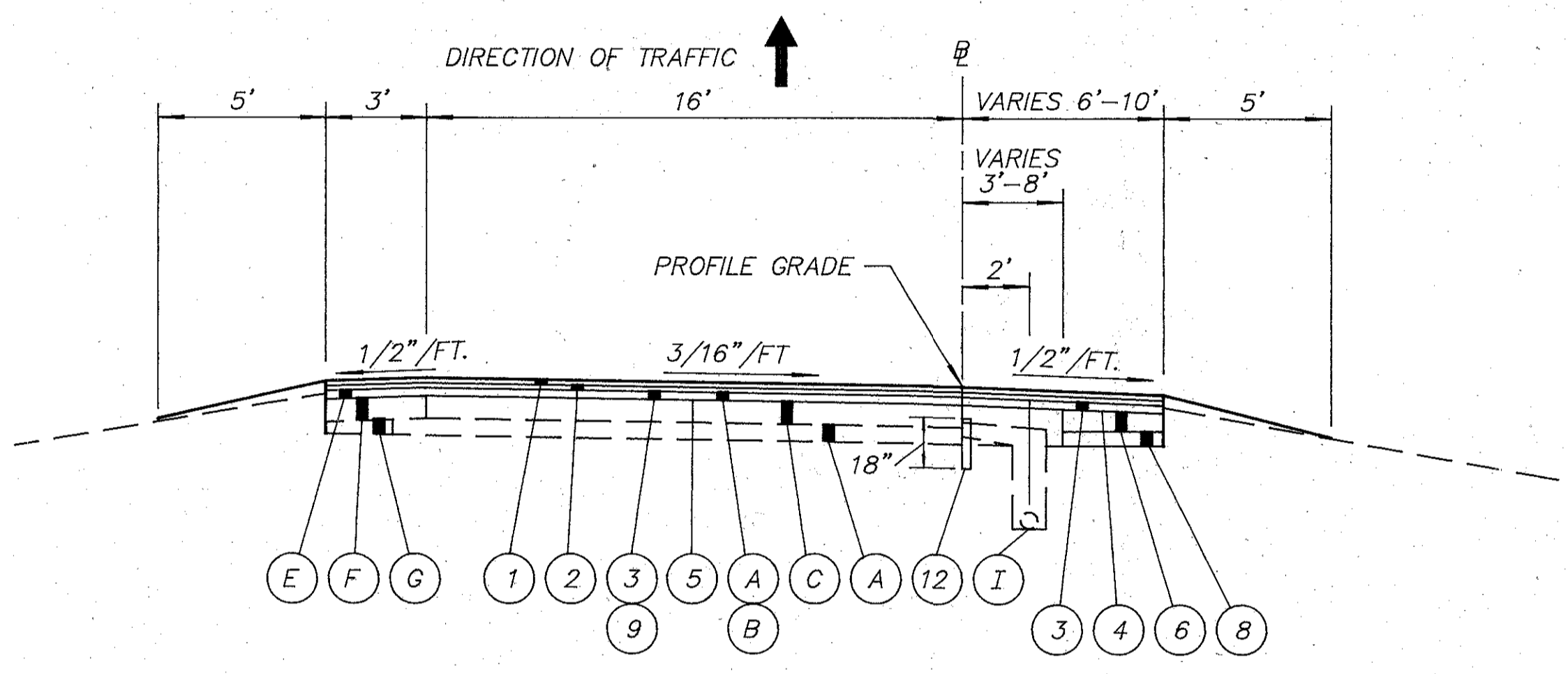


NORMAL SECTION
GROVEPORT ROAD RAMP "C" STA 98+74.81 TO STA 102+75.00 = 400.19 L.F.

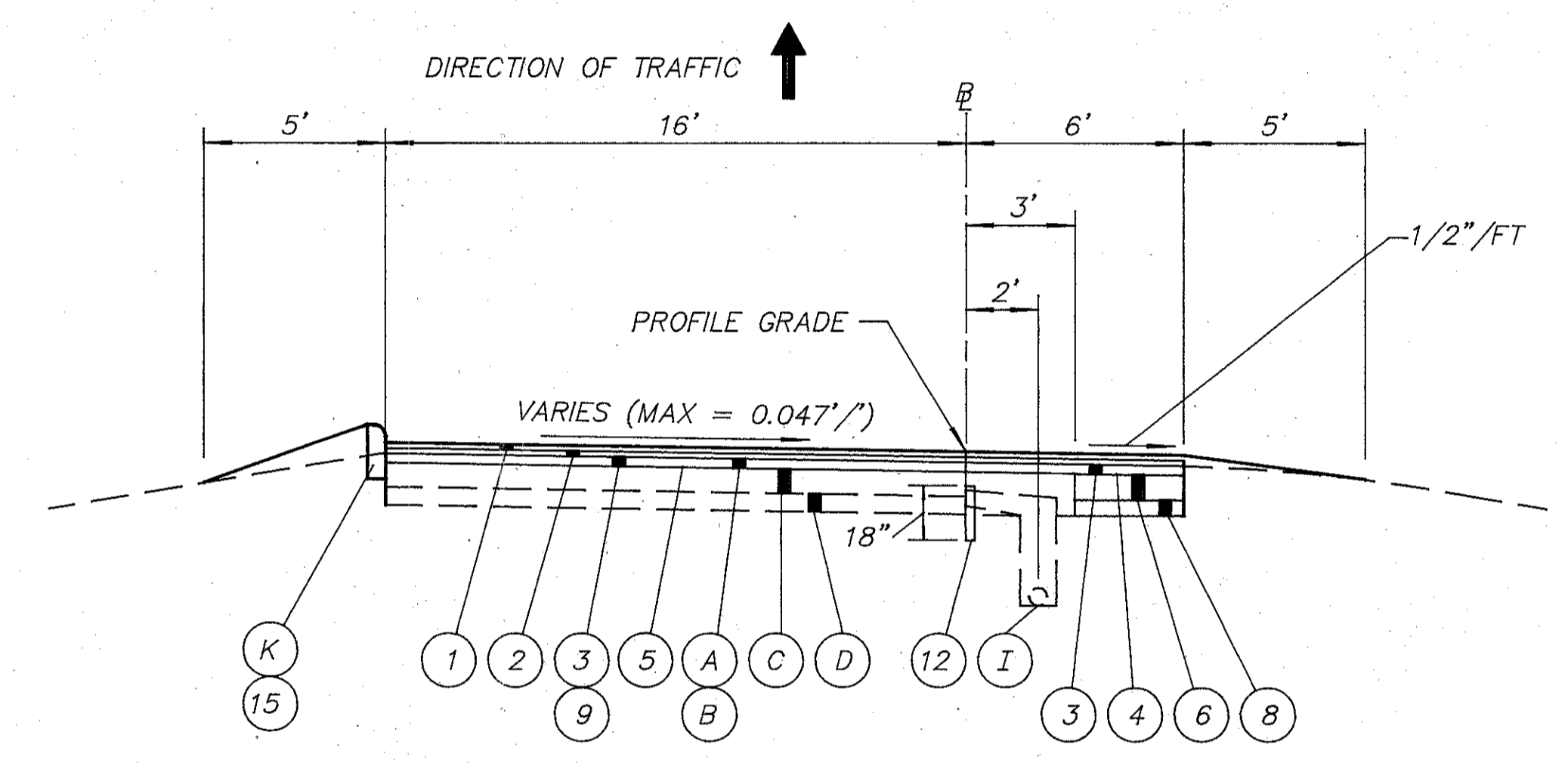
FOR EDGE OF SHOULDER DETAILS SEE SHEET 18
FOR LEGEND SEE SHEET 3



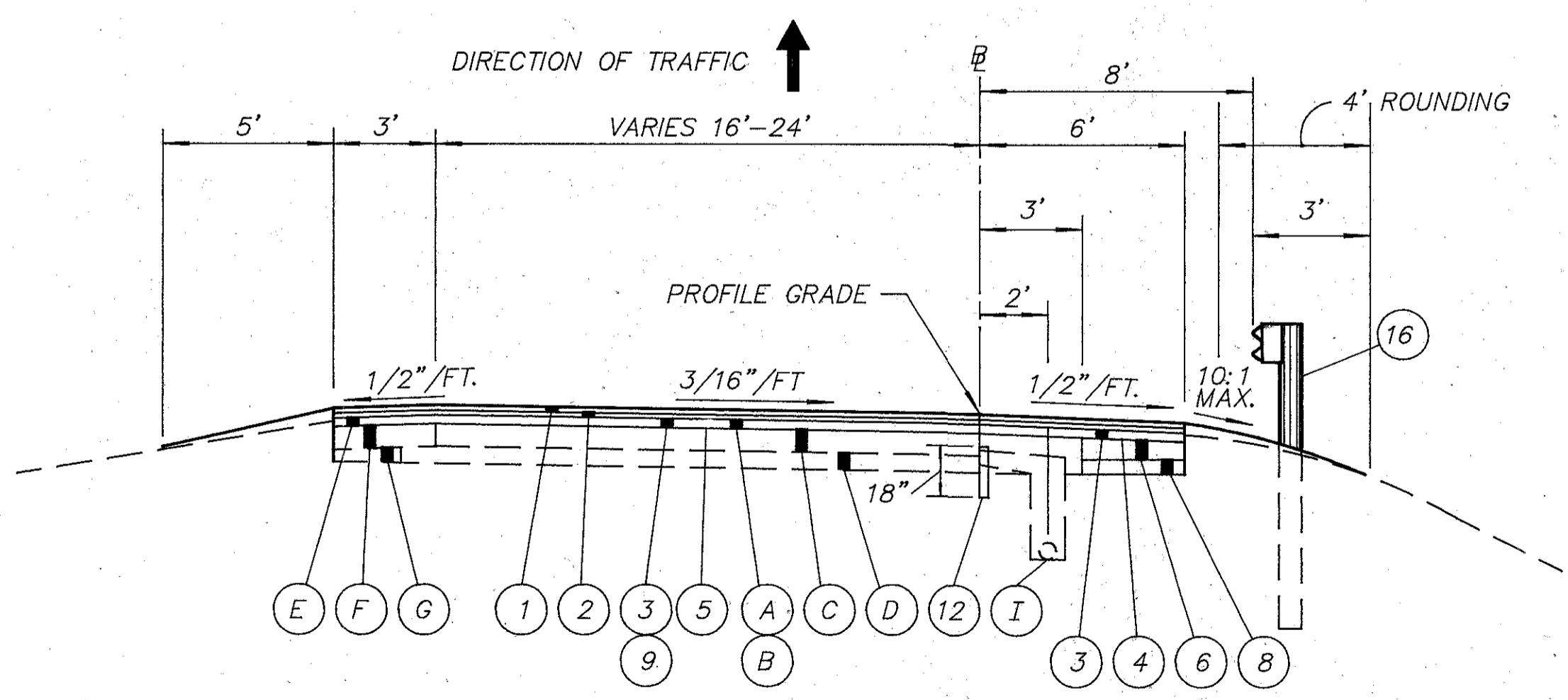
SUPERELEVATION
GROVEPORT ROAD RAMP "D" STA 102+50.00 TO STA 107+25.00 = 475.00 L.F.



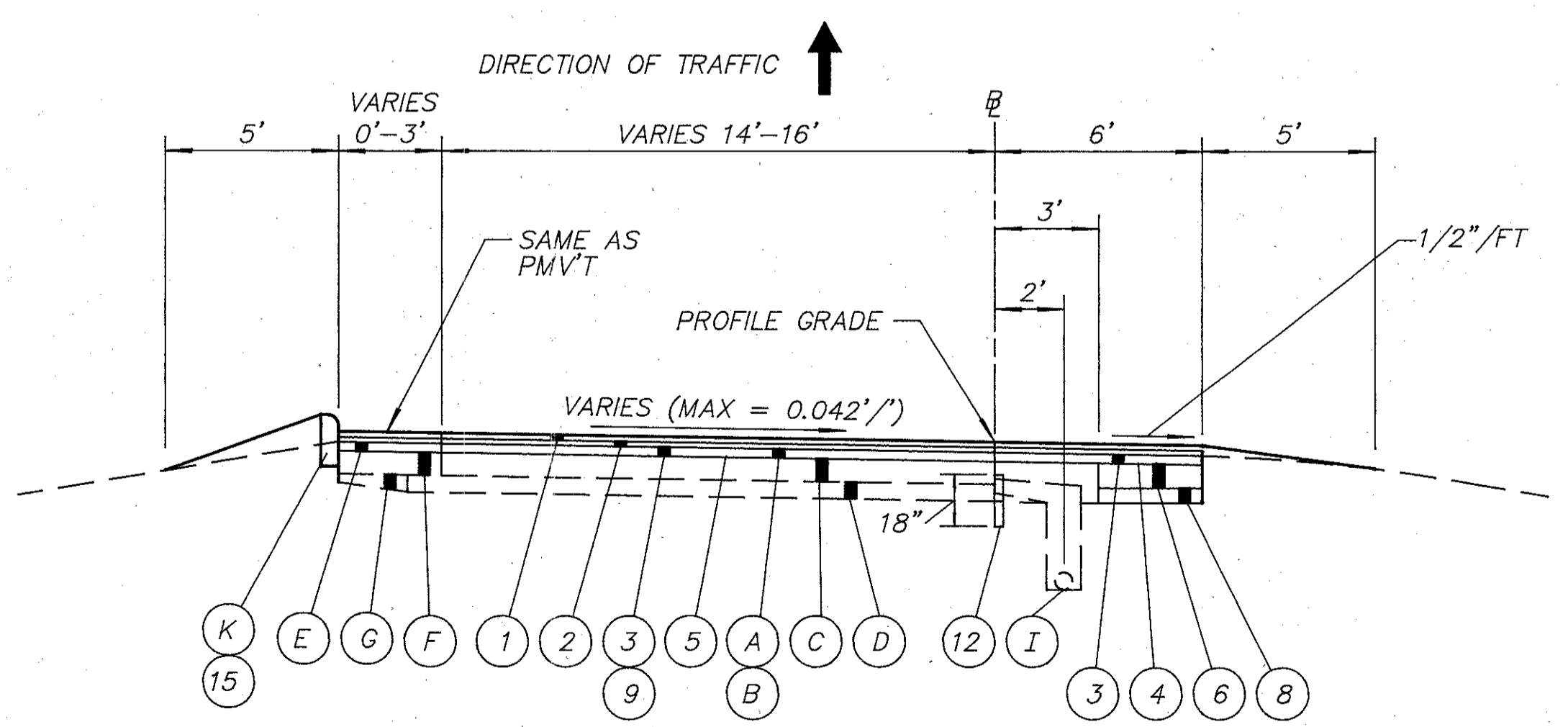
NORMAL SECTION
GROVEPORT ROAD RAMP "D" STA 107+25.00 TO STA 108+48.30 = 123.30 L.F.



SUPERELEVATION
GROVEPORT ROAD RAMP "B" STA 92+75.80 TO STA 96+25.00 = 349.20 L.F.



NORMAL SECTION
GROVEPORT ROAD RAMP "A" STA 91+25.00 TO STA 94+50.00 = 325.00 L.F.
RAMP "D" STA 98+00.00 TO STA 102+50.00 = 450.00 L.F.



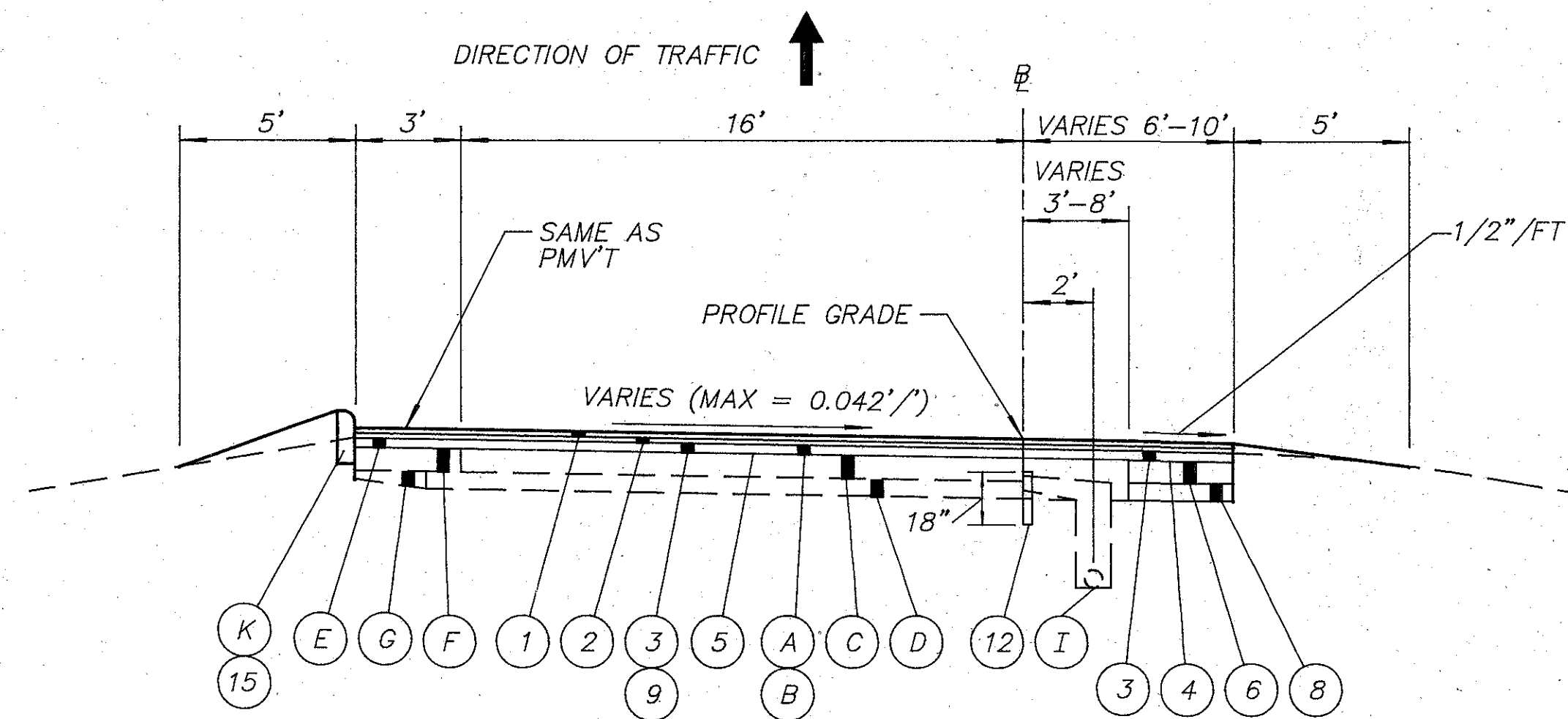
SUPERELEVATION
GROVEPORT ROAD RAMP "B" STA 90+75.80 TO STA 92+75.80 = 200.00 L.F.

TYPICAL SECTIONS

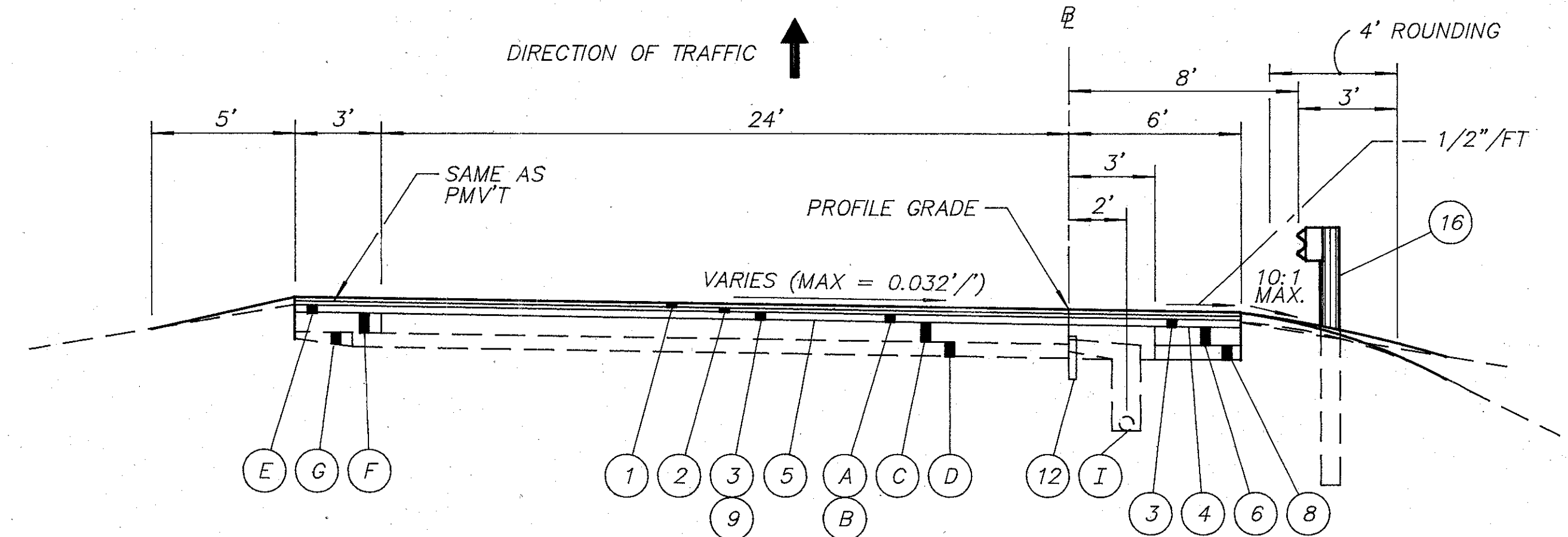
TYPE - 446

CHECKED BY: JRA DATE: 6/15/94	FRA-104-8.02	OHIO
CHECKED BY: JSB DATE: 6/15/94		FHWA REGION 5

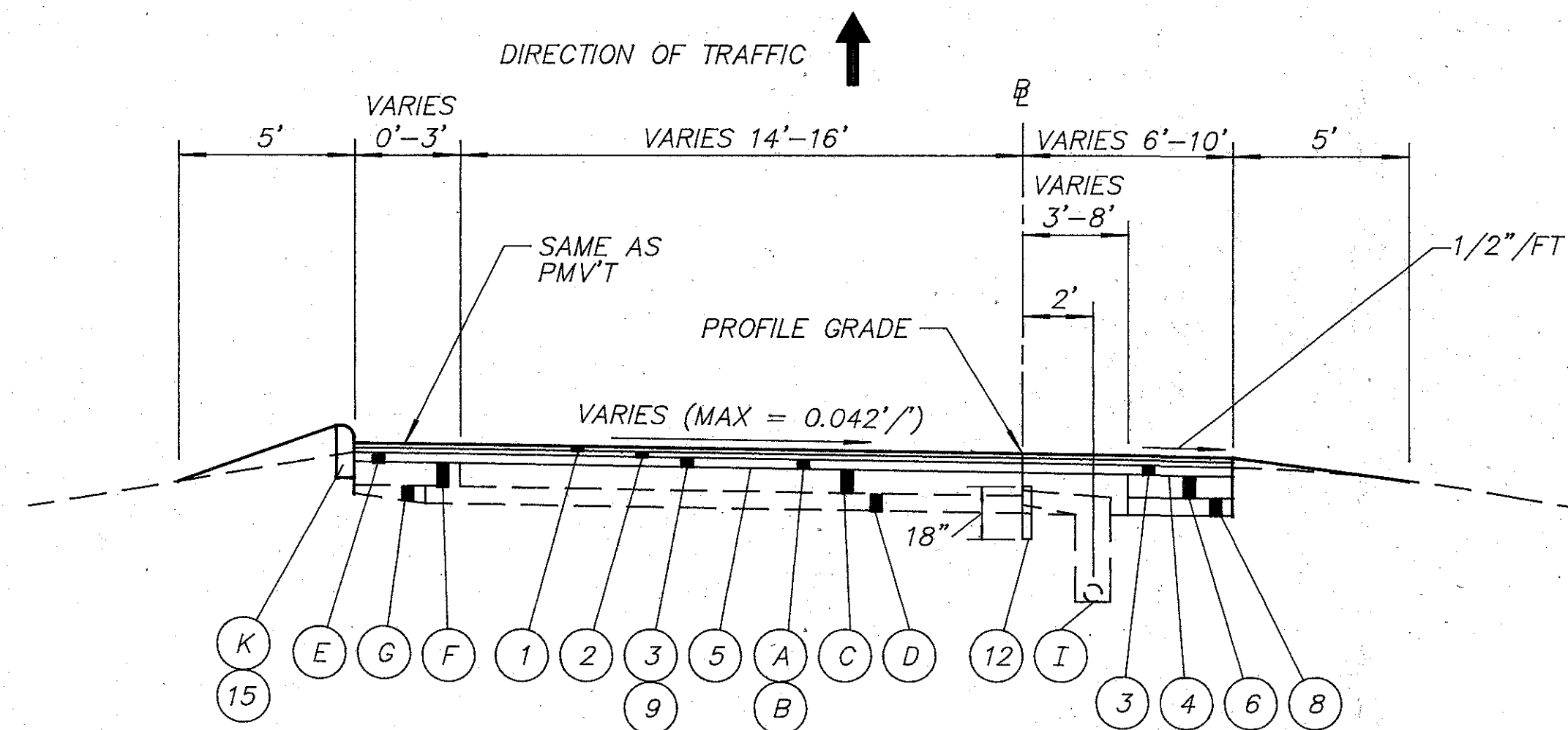
14
185



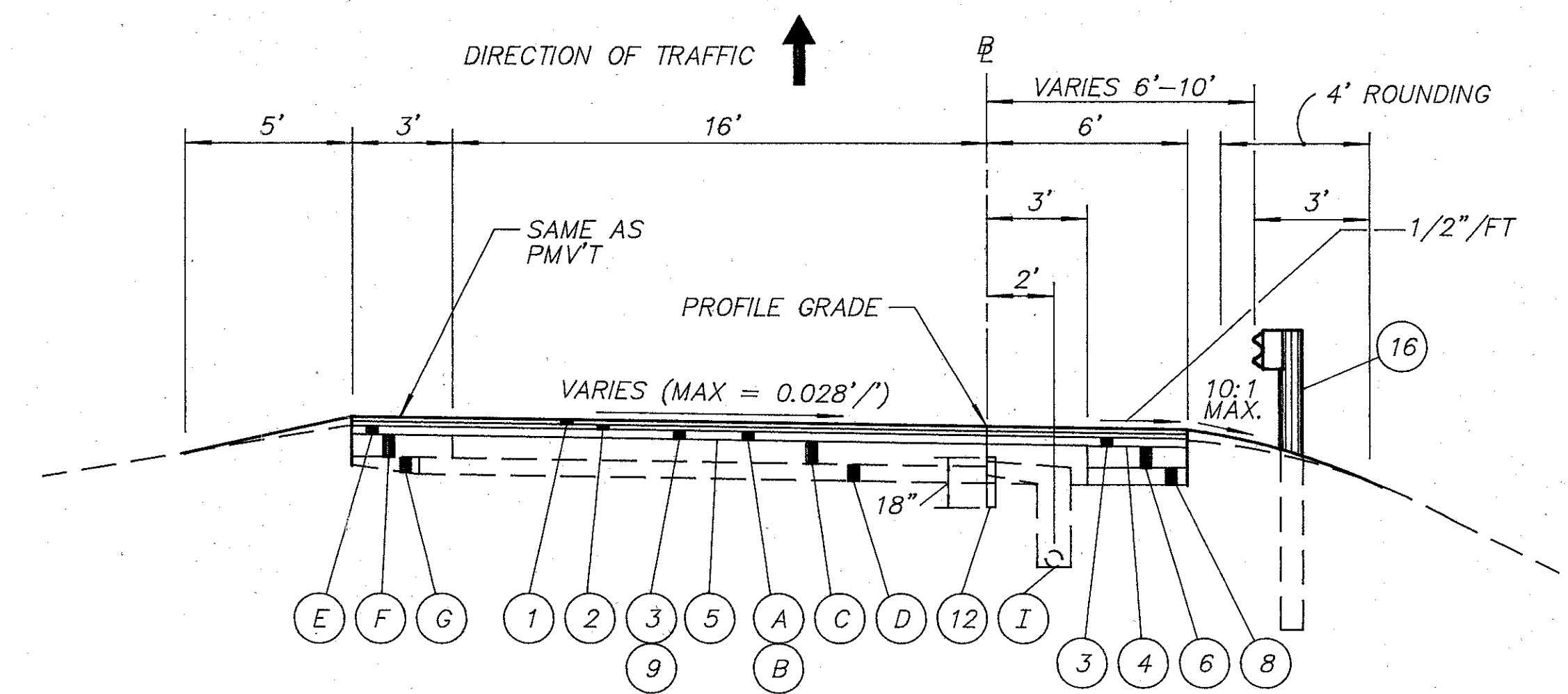
SUPERELEVATION
GROVEPORT ROAD RAMP "C" STA 102+75.00 TO STA 105+54.54 = 279.54 L.F.



SUPERELEVATION
GROVEPORT ROAD RAMP "A" STA 94+50.00 TO STA 96+20.57 = 170.57 L.F.



SUPERELEVATION
GROVEPORT ROAD RAMP "C" STA 105+54.54 TO STA 107+54.54 = 200.00 L.F.



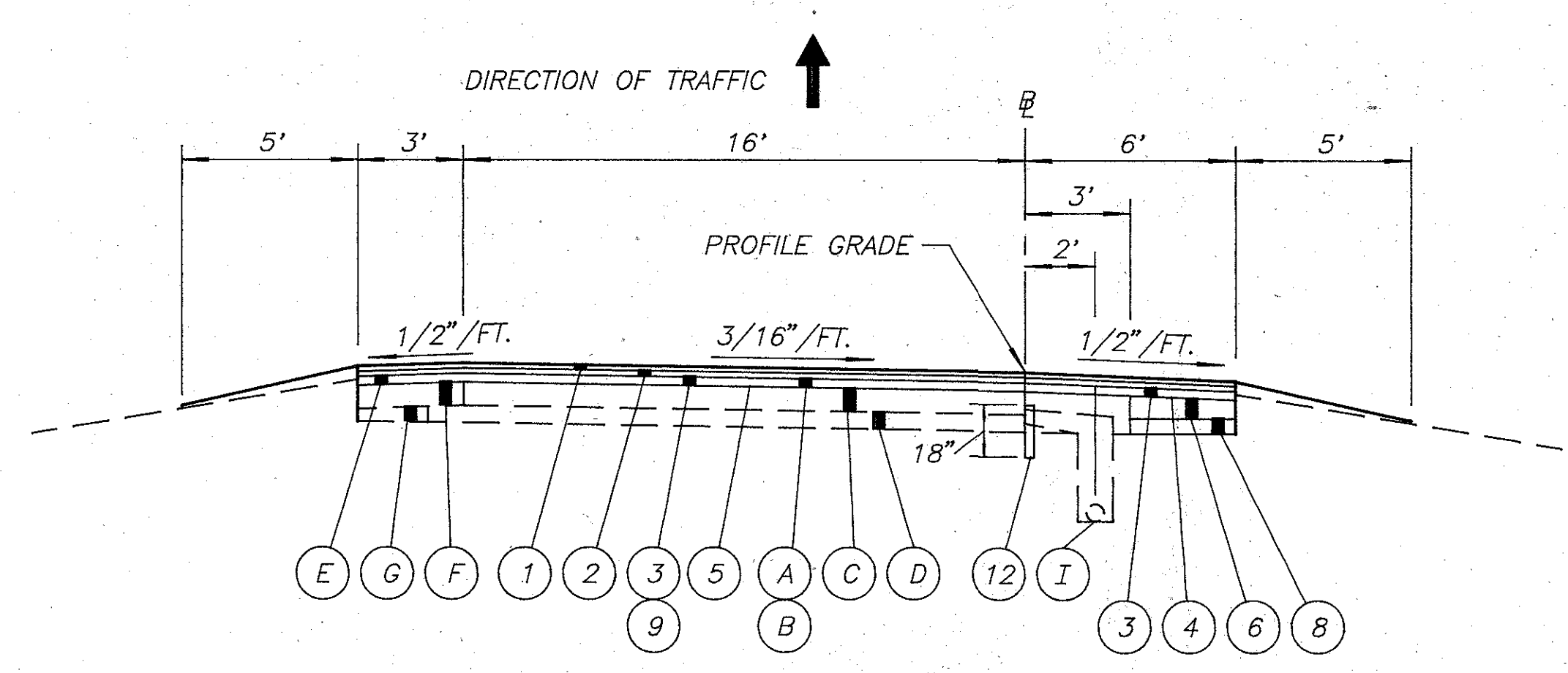
SUPERELEVATION
GROVEPORT ROAD RAMP "A" STA 90+40.33 TO STA 91+25.00 = 84.67 L.F.

FOR EDGE OF SHOULDER DETAILS SEE SHEET 18
FOR LEGEND SEE SHEET 3

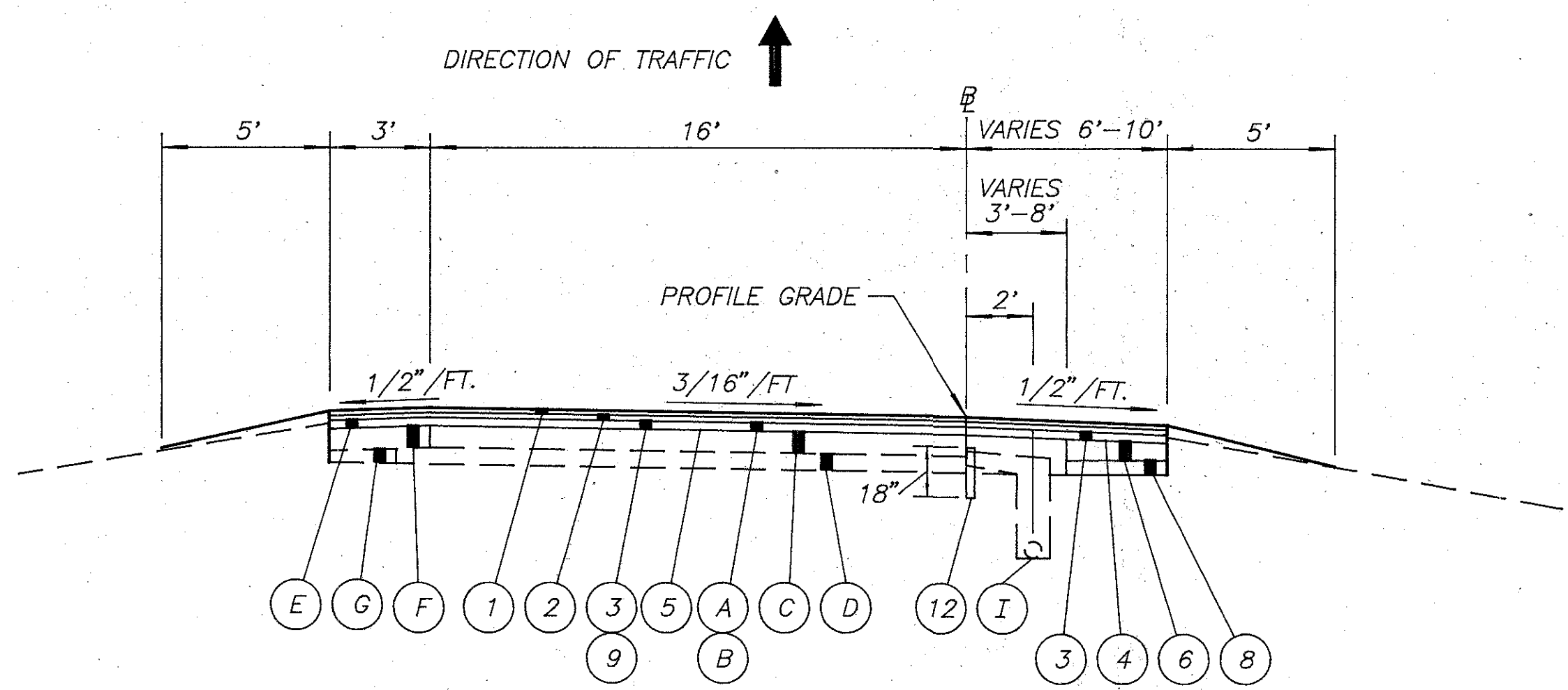
TYPICAL SECTIONS

TYPE - 446

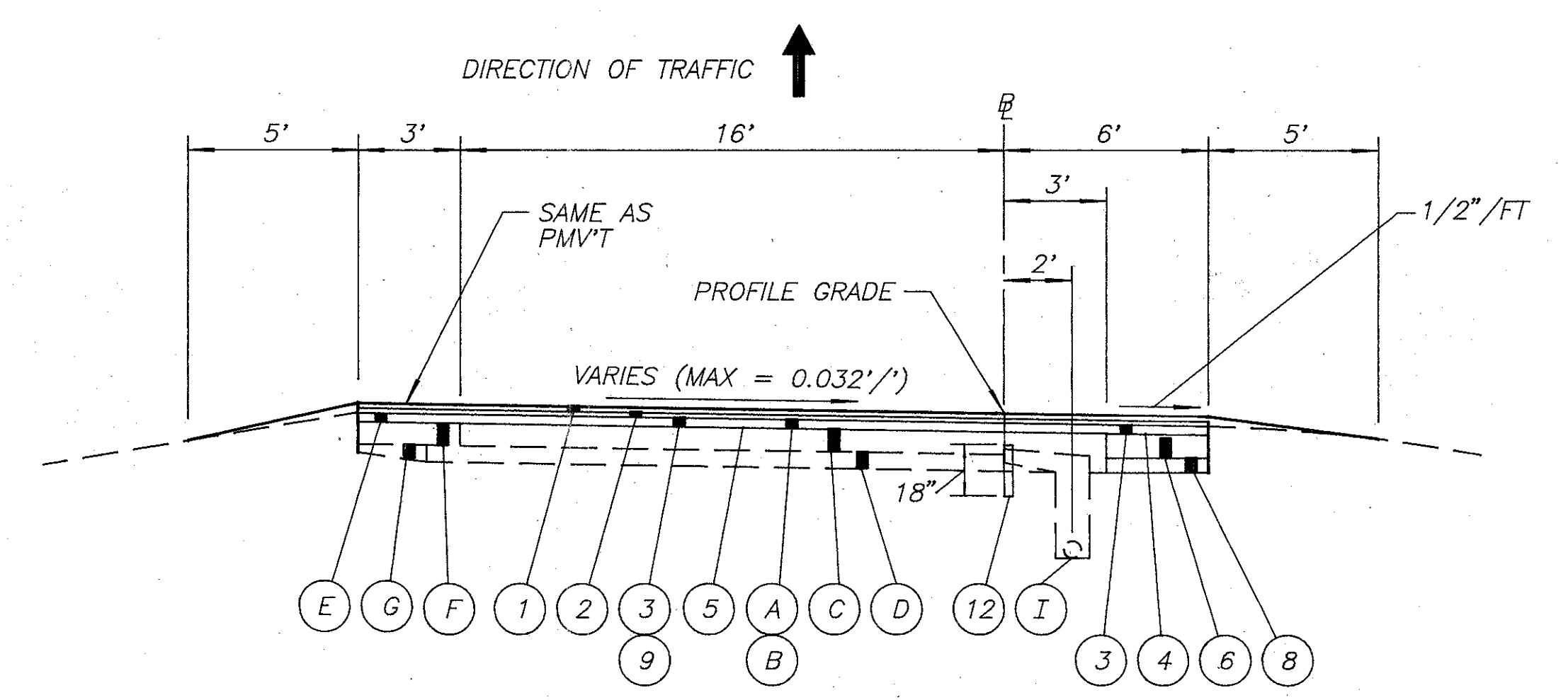
CHECKED BY: JSA DATE: 8/15/94	FRA-104-8.02	OHIO
CHECKED BY: JSB DATE: 8/15/94		FHWA REGION 5



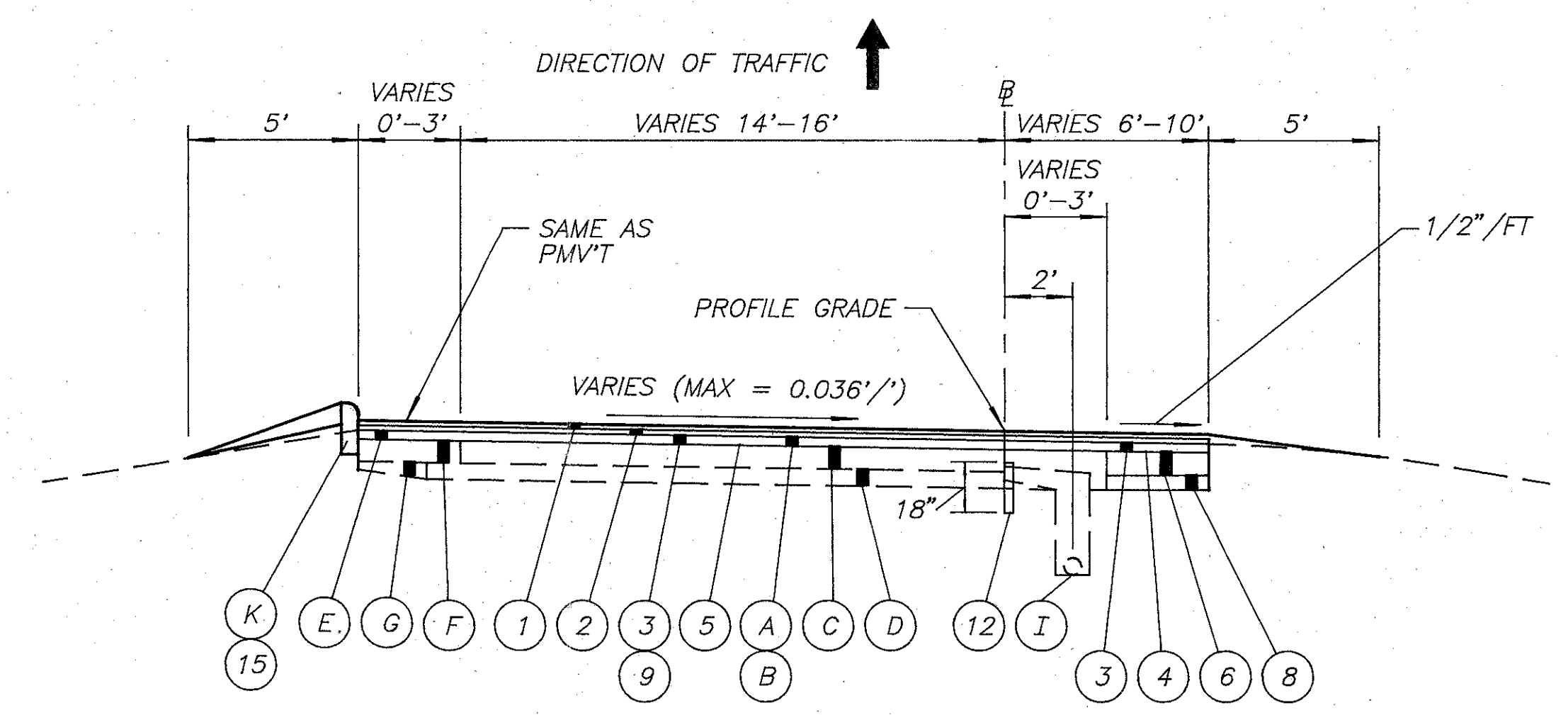
NORMAL SECTION
 LOCKBOURNE ROAD RAMP "A" STA 137+22.88 TO STA 140+00.00 = 277.12 L.F.
 RAMP "B" STA 137+50.00 TO STA 143+10.61 = 560.61 L.F.



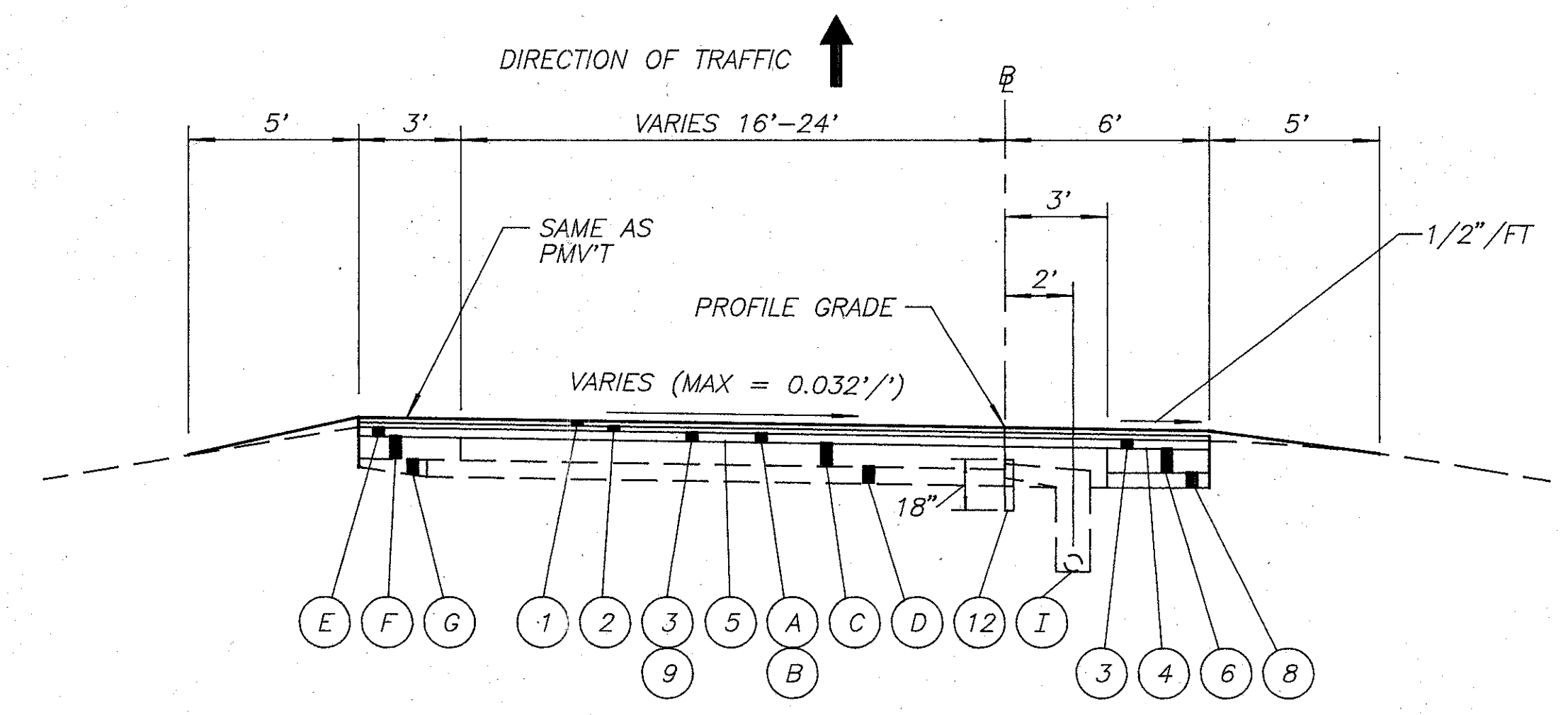
NORMAL SECTION
 LOCKBOURNE ROAD RAMP "A" STA 136+22.88 TO STA 137+22.88 = 100.00 L.F.



SUPERELEVATION
 LOCKBOURNE ROAD RAMP "B" STA 135+90.00 TO STA 137+50.00 = 160.00 L.F.



SUPERELEVATION
 LOCKBOURNE ROAD RAMP "B" STA 133+90.00 TO STA 135+90.00 = 200.00 L.F.



SUPERELEVATION
 LOCKBOURNE ROAD RAMP "A" STA 140+00.00 TO STA 143+25.00 = 325.00 L.F.

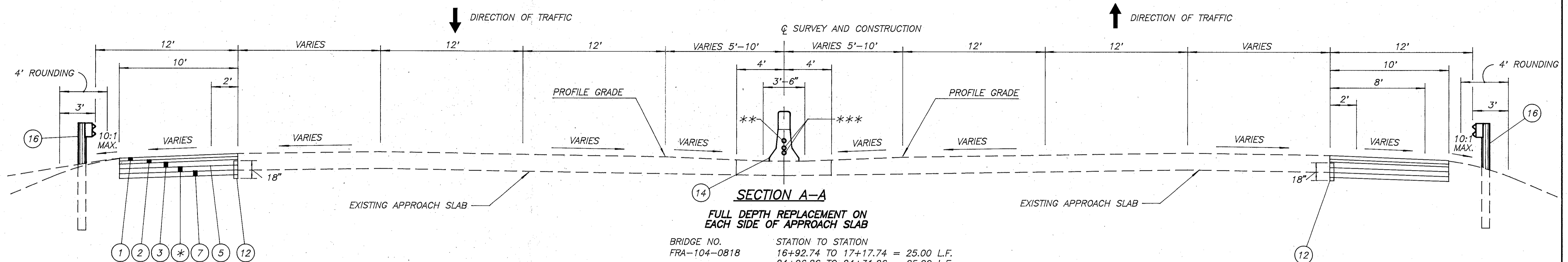
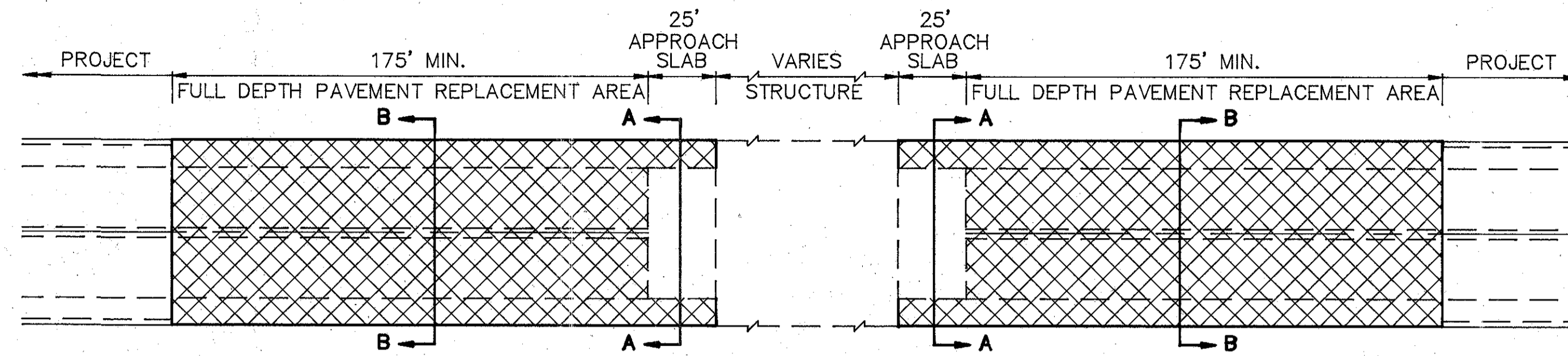
FOR EDGE OF SHOULDER DETAILS SEE SHEET 18
 FOR LEGEND SEE SHEET 3

TYPICAL SECTIONS NEAR APPROACH SLABS TYPE - 446

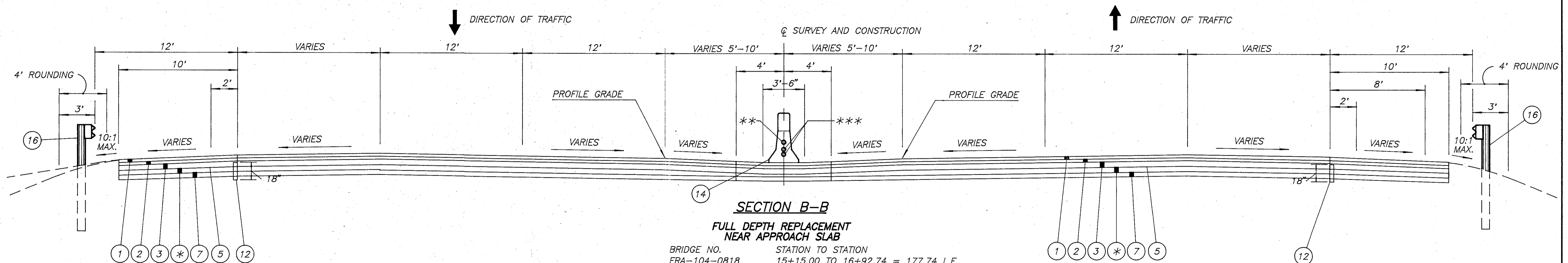
CHECKED BY: JRA DATE: 6/15/94	FRA-104-8.02	OHIO FHWA REGION 5
CHECKED BY: JSB DATE: 6/15/94		

- * — ITEM 305 8" CONCRETE BASE
 - ** — 4" PVC RACEWAY FOR LIGHTING
 - *** — 2-4" PVC RACEWAYS FOR TRAFFIC SURVEILLANCE
- THE COST FOR THE ABOVE RACEWAYS IS TO BE INCLUDED IN THE PRICE BID FOR ITEM 622 CONCRETE BARRIER

FOR EDGE OF SHOULDER DETAILS SEE SHEET 18
FOR LEGEND SEE SHEET 3



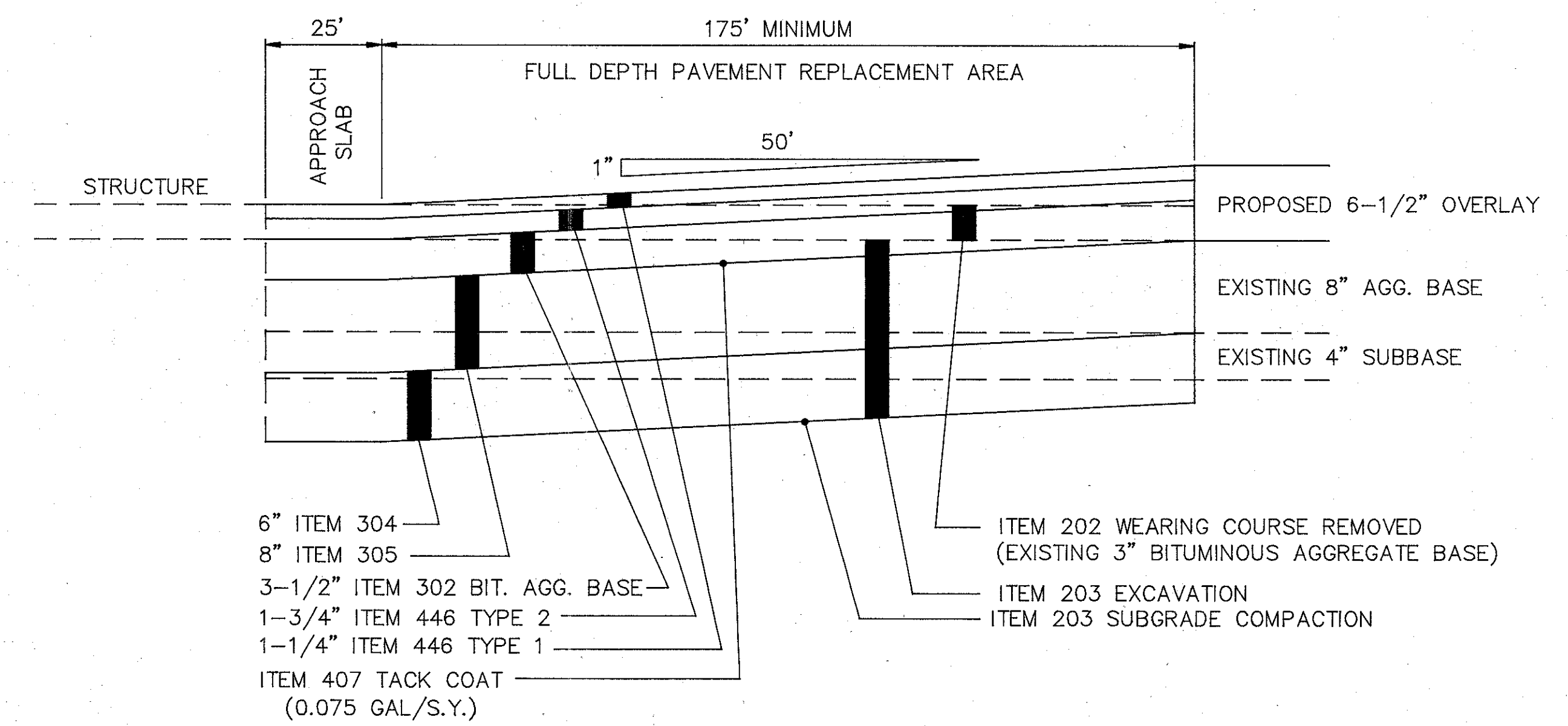
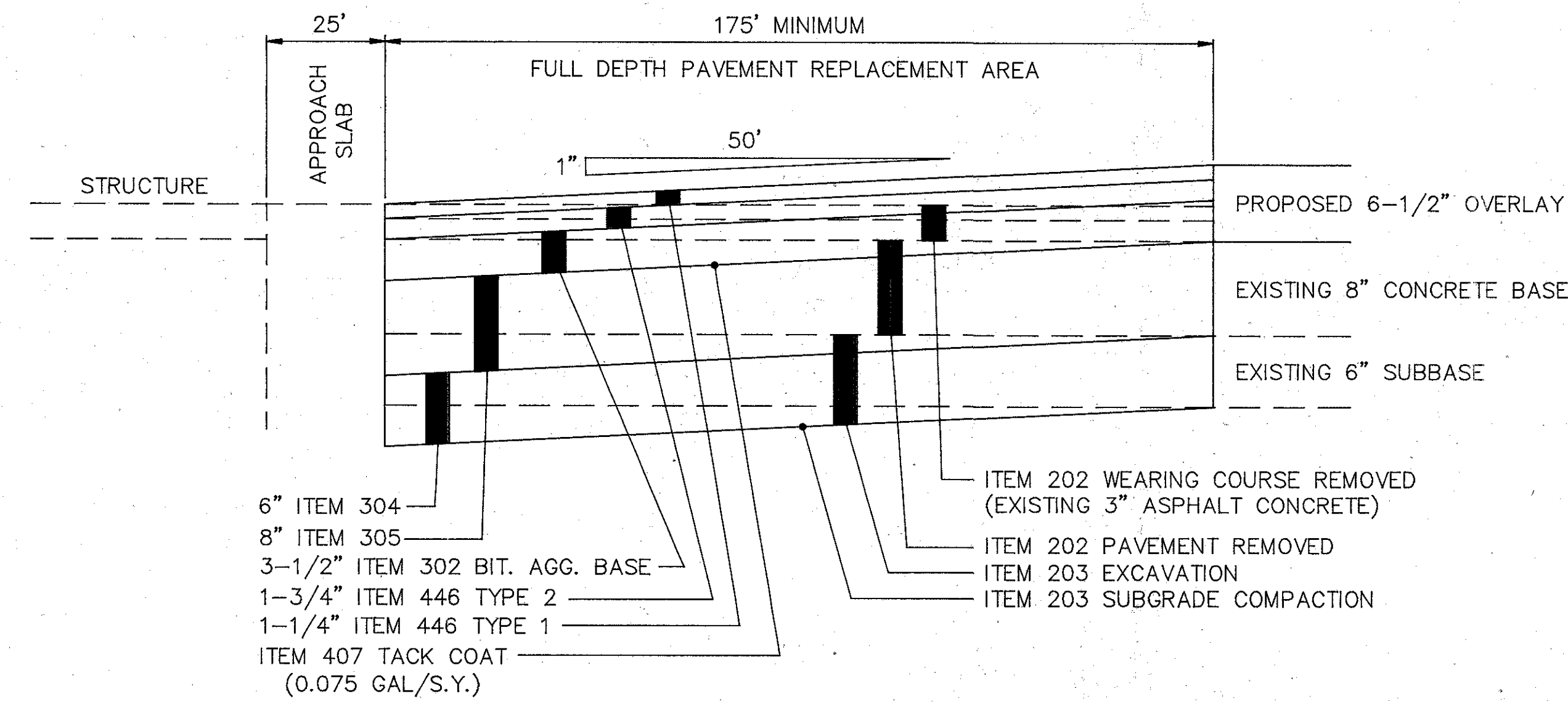
BRIDGE NO.	STATION TO STATION
FRA-104-0818	16+92.74 TO 17+17.74 = 25.00 L.F.
FRA-104-0852	24+06.26 TO 24+31.26 = 25.00 L.F.
FRA-104-0929	34+56.12 TO 34+81.12 = 25.00 L.F.
FRA-104-0942	35+96.62 TO 36+21.62 = 25.00 L.F.
	75+40.01 TO 75+65.01 = 25.00 L.F.
	77+06.04 TO 77+31.04 = 25.00 L.F.
	82+23.88 TO 82+48.88 = 25.00 L.F.
	90+43.66 TO 90+68.66 = 25.00 L.F.



BRIDGE NO.	STATION TO STATION
FRA-104-0818	15+15.00 TO 16+92.74 = 177.74 L.F.
FRA-104-0852	24+31.26 TO 26+10.00 = 178.74 L.F.
FRA-104-0929	32+80.00 TO 34+56.12 = 176.12 L.F.
FRA-104-0942	36+21.62 TO 38+00.00 = 178.38 L.F.
	73+50.00 TO 75+40.01 = 190.01 L.F.
	77+31.04 TO 81+00.00 = 368.96 L.F.
	81+00.00 TO 82+23.88 = 123.88 L.F.
	90+68.66 TO 92+65.00 = 196.34 L.F.

FULL DEPTH PAVEMENT REPLACEMENT AND FEATHERING DETAILS

CALC. BY: JRA DATE: 6/15/94	FRA-104-8.02	OHIO
CHECKED BY: JRB DATE: 5/15/94		FHWA REGION 5



DETAIL FOR FULL DEPTH PAVEMENT REPLACEMENT AT STRUCTURES

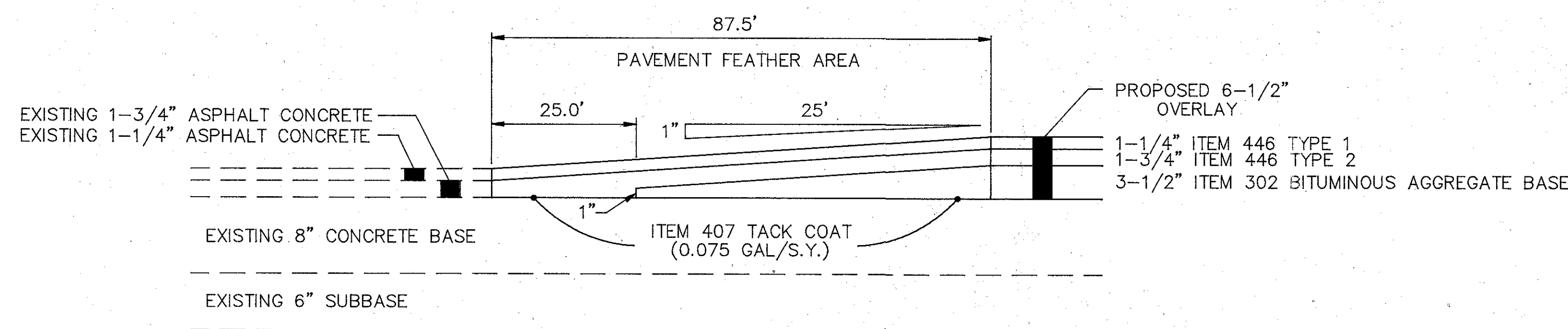
FRA-104-0818
FRA-104-0852

FRA-104-0929
FRA-104-0942

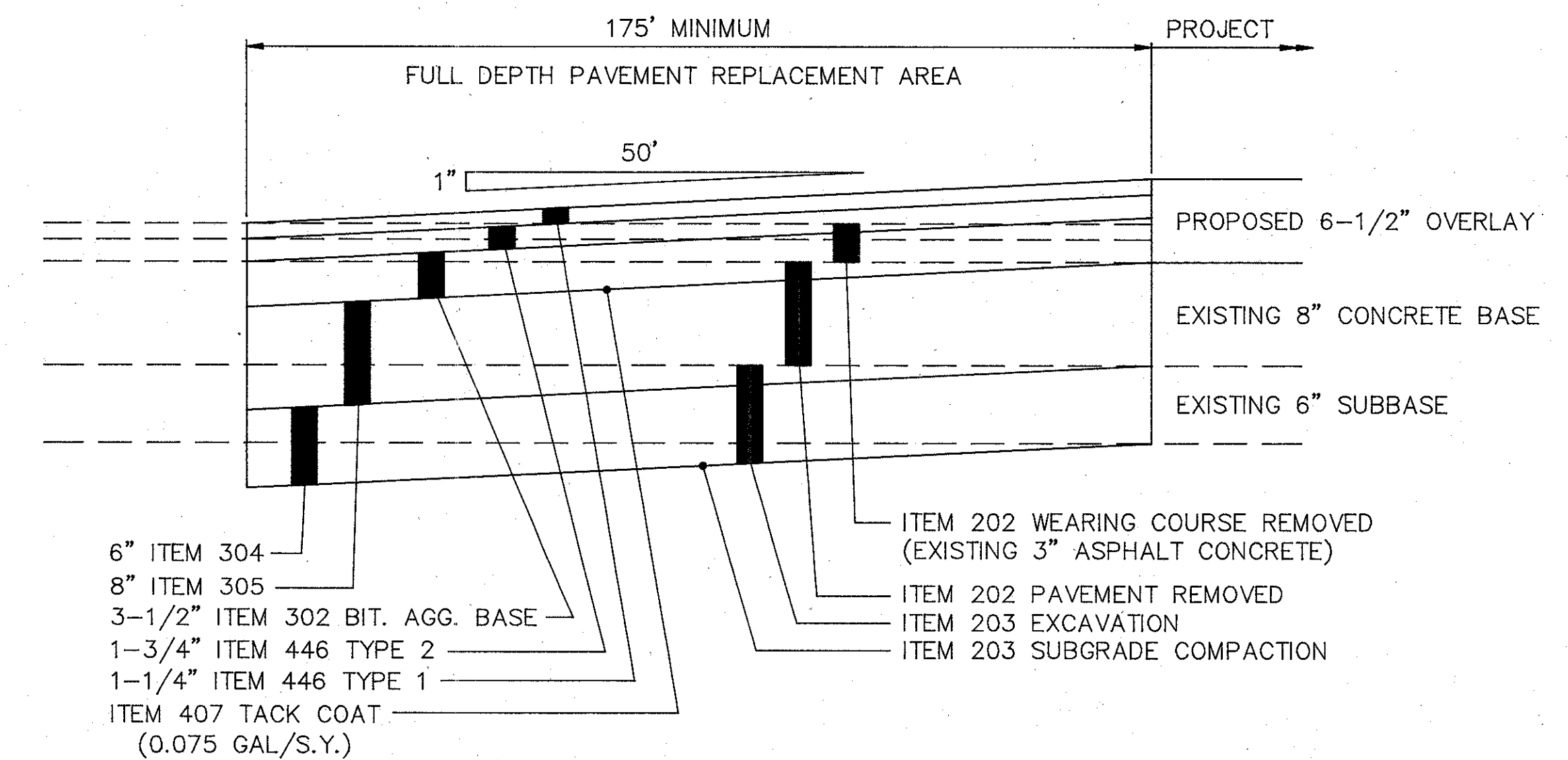
DETAIL FOR FULL DEPTH SHOULDER REPLACEMENT AT STRUCTURES

FRA-104-0818
FRA-104-0852

FRA-104-0929
FRA-104-0942



DETAIL FOR PAVEMENT FEATHERING ON RAMPS (TYP.)



DETAIL FOR FULL DEPTH PAVEMENT REPLACEMENT AT PROJECT BEGINNING AND END

SHOULDER GRADING DETAILS

CALC. BY: JBA
DATE: 6/15/94
CHECKED BY: JSB
DATE: 6/15/94

FRA-104-8.02

OHIO
FHWA REGION 5

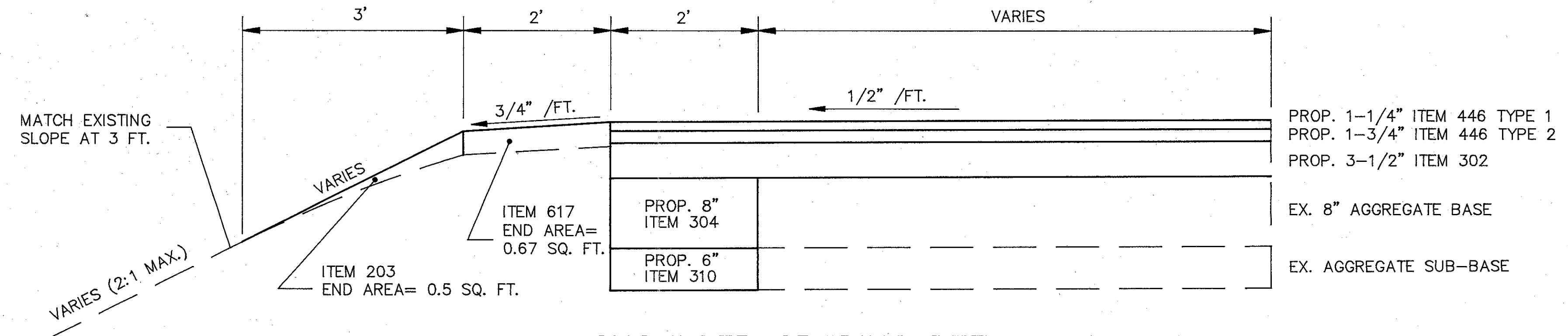
18
185

STATION		LENGTH	ITEM 203 EMBANKMENT		ITEM 617 COMPACTED AGGREGATE TYPE A AS PER PLAN		ITEM 659 SEEDING AND MULCHING	
FROM	TO		END AREA (S.F.)	VOLUME (C.Y.)	END AREA (S.F.)	VOLUME (C.Y.)	WIDTH (LIN. FT.)	AREA (S.Y.)
EASTBOUND								
8+70	17+18	848	0.5	15.7	0.67	21.0	8.0	753.8
24+06	30+00	594	0.5	11.0	0.67	14.7	8.0	528.0
30+00	34+81	481	0.5	8.9	0.67	11.9	8.0	427.6
35+96	40+15	419	0.5	7.7	0.67	10.4	8.0	372.4
41+50	49+41	791	0.5	14.6	0.67	19.6	8.0	703.1
49+88	67+73	1785	1.2	79.3			10.0	1983.3
69+72	75+65	593	0.5	11.0	0.67	14.7	8.0	527.1
77+06	82+49	543	0.5	10.0	0.67	13.5	8.0	482.7
90+66	105+75	1509	0.5	27.9	0.67	37.4	8.0	1341.3
107+54	136+23	2869	0.5	53.1	0.67	71.2	8.0	2550.2
136+60	140+00	340	0.5	6.3	0.67	8.4	8.0	302.2
WESTBOUND								
9+00	12+31	331	0.5	6.1	0.67	8.2	8.0	294.2
12+23	17+18	495	0.5	9.2	0.67	12.3	8.0	440.0
24+06	29+00	494	0.5	9.1	0.67	12.3	8.0	439.1
30+55	34+81	426	0.5	7.9	0.67	10.6	8.0	378.7
35+97	41+50	553	0.5	10.2	0.67	13.7	8.0	491.6
41+53	50+00	847	0.5	15.7	0.67	20.1	8.0	752.9
50+00	60+15	1015	0.5	18.8	0.67	25.2	8.0	902.2
62+38	68+21	583	0.5	10.8	0.67	14.5	8.0	518.2
68+51	82+49	1398	0.5	25.9	0.67	34.7	8.0	1242.7
92+45	108+29	1584	0.5	29.3	0.67	39.3	8.0	1408.0
108+48	133+90	2542	0.5	47.1	0.67	63.1	8.0	2259.6
133+90	140+00	610	0.5	11.3	0.67	15.1	8.0	542.2
I-70 (INTERCHANGE)								
RAMP F-F	860	0.5	15.9	0.67	21.3	8.0	764.4	
HAUL ROAD								
RAMP A-A	1157	0.5	21.4	0.67	28.7	8.0	1028.4	
	150	1.2	6.7			10.0	166.7	
RAMP B-B	1221	0.5	22.6	0.67	30.3	8.0	1085.3	
RAMP C-C	1188	0.5	22.0	0.67	29.5	8.0	1056.0	
	150	1.2	6.7			10.0	166.7	
RAMP D-D	1063	0.5	19.7	0.67	26.4	8.0	944.9	
U.S. RT. 23								
RAMP A	1287	0.5	23.8	0.67	31.9	8.0	1144.0	
	536	1.2	23.8			10.0	595.6	
RAMP B	1867	0.5	34.5	0.67	46.3	8.0	1659.5	
	112	1.2	5.0			10.0	124.4	
RAMP C	2205	0.5	40.8	0.67	63.1	8.0	2450	
	337	1.2	15.0			10.0	374.4	
RAMP D	2355	0.5	43.6	0.67	58.4	8.0	2093.3	
	71	1.2	3.2			10.0	78.9	
RAMP E	2001	0.5	37.0	0.67	49.6	8.0	1778.6	
GROVEPORT								
RAMP A	1372	0.5	25.4	0.67	34.0	8.0	1219.6	
RAMP B	1187	0.5	22.0	0.67	29.4	8.0	1055.1	
RAMP C	1829	0.5	33.9	0.67	45.4	8.0	1625.8	
RAMP D	2569	0.5	47.6	0.67	63.7	8.0	2283.6	
LOCKBOURNE								
RAMP A	1667	0.5	30.9	0.67	41.4	8.0	1481.8	
RAMP B	2129	0.5	39.4	0.67	52.8	8.0	1892.4	
TOTALS:				987.8		1144.1		44710.5

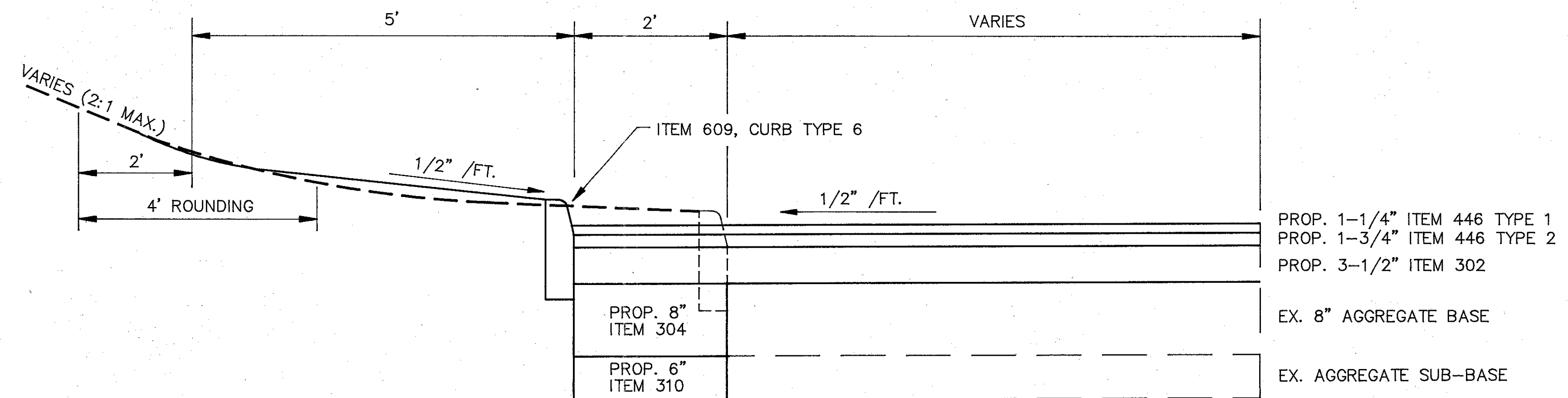
ITEM 659 - WATER
44,710 S.Y. X 9 S.F./S.Y. X (240 GAL./1000 S.F.) = **96,574 GALLONS**

ITEM 659 - AGRICULTURAL LIMING
44,710 S.Y. X 9 S.F./S.Y. X (0.1 LBS. / S.F.) / (2000 LBS. / TON) = **20.0 TONS**

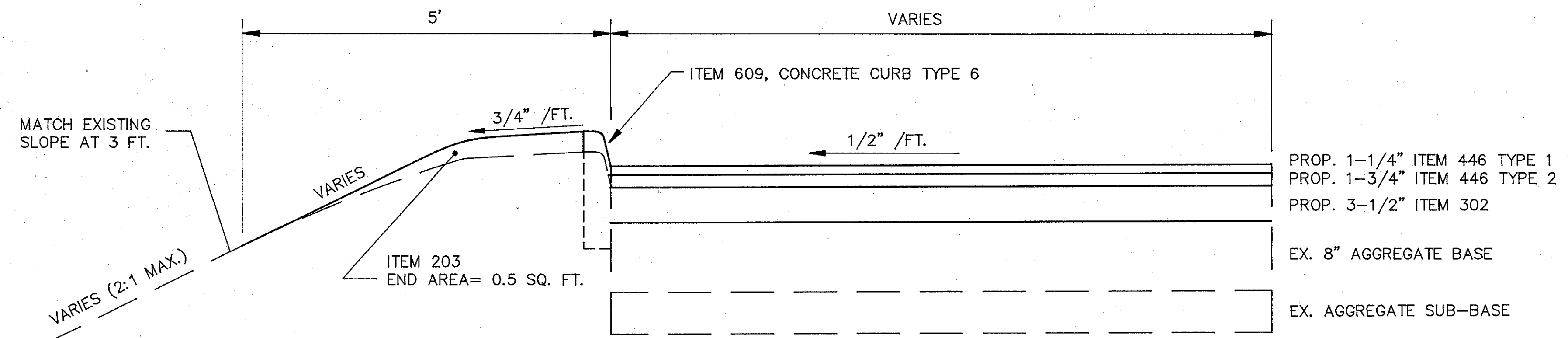
ITEM 659 - COMMERCIAL FERTILIZER
44,710 S.Y. X 9 S.F./S.Y. X (20 LBS. / 1000 S.F.) / (2000 LBS. / TON) = **4.0 TONS**



SHOULDER GRADING DETAIL WITHOUT CURB



SHOULDER GRADING DETAIL WITH CURB
STA. 49+88 TO STA. 67+73 E.B.



RAMP SHOULDER GRADING DETAIL WITH CURB

QUANTITIES CARRIED TO THE GENERAL SUMMARY:

ITEM 203 - EMBANKMENT _____ 990 C.Y.
ITEM 617 - COMPACTED AGGREGATE, TYPE "A", AS PER PLAN _____ 1145 C.Y.
ITEM 659 - SEEDING AND MULCHING _____ 44711 S.Y.
ITEM 659 - WATER _____ 97 M. GAL.
ITEM 659 - AGRICULTURAL LIMING _____ 20.0 TONS
ITEM 659 - COMMERCIAL FERTILIZER _____ 4.0 TONS.

PAVEMENT QUANTITIES

OVERLAY AREA (ITEMS 302, 407 AND 446 TYPE 1 & 2)

EASTBOUND - MAINLINE		LENGTH	WIDTH	AREA
STATION		(FT.)	(AVG. FT)	(S.Y.)
10+60	12+75	215.00	48.00	1146.67
12+75	14+00	125.00	51.13	710.14
14+00	15+15	115.00	54.25	693.19
26+10	30+00	390.00	80.13	3472.30
30+00	32+80.00	280.00	54.25	1687.78
38+00	41+50	350.00	54.25	2109.72
41+50	44+00	250.00	72.50	2013.89
44+00	49+41	541.00	65.63	3945.09
49+41	67+73	1832.00	42.25	8600.22
67+73	69+71.97	198.97	47.00	1039.07
69+71.97	73+50	378.03	63.13	2651.67
92+65	96+00	335.00	40.50	1507.50
96+00	105+74	974.00	42.25	4572.39
105+74	107+54	180.00	48.13	962.60
107+54	111+00	346.00	62.88	2417.39
111+00	117+55	655.00	50.38	3666.54
117+55	128+24	1069.00	42.25	5018.36
128+24	129+24	100.00	48.25	536.11
129+24	132+80	356.00	54.25	2145.89
132+80	136+22.88	342.88	65.63	2500.36
136+22.88	136+61	38.12	VARIES	225.56 *
136+61	138+25	164.00	42.25	769.89
TOTALS:				52,392.33
WESTBOUND - MAINLINE		LENGTH	WIDTH	AREA
STATION		(FT.)	(AVG. FT)	(S.Y.)
10+60	12+29	169.00	47.00	882.56
12+29	15+15	286.00	72.63	2308.02
26+10	29+00	290.00	71.88	2316.13
29+00	32+80	380.00	54.25	2290.56
38+00	41+53	353.00	54.25	2127.81
41+53	44+00	247.00	83.00	2277.89
44+00	45+64	164.00	70.75	1289.22
45+64	50+00	436.00	76.00	3681.78
50+00	54+00	400.00	47.00	2088.89
54+00	60+14.19	614.19	59.63	4069.35
60+14.19	62+33	218.81	46.38	1127.60
62+33	68+22	589.00	42.25	2765.03
68+22	68+51.42	29.49	VARIES	193.79 *
68+51.42	70+00	148.58	69.13	1141.26
70+00	71+00	100.00	58.78	653.11
71+00	73+50	250.00	55.28	1535.56
92+65	96+00	335.00	40.50	1507.50
96+00	108+28	1228.00	42.25	5764.78
108+28	108+51	23.00	53.00	135.44
108+51	111+00	249.00	65.88	1822.68
111+00	115+50	450.00	54.50	2725.00
115+50	116+50	100.00	48.25	536.11
116+50	123+90	740.00	42.25	3473.89
123+90	131+00	710.00	51.13	4033.59
131+00	133+90	290.00	63.63	2050.30
133+90	138+25	435.00	42.25	2042.08
TOTALS:				54,839.93

* AREA BY CAD

OVERLAY AREA (ITEMS 302, 407 AND 446 TYPE 1 & 2)

RAMP		LENGTH	WIDTH	AREA
STATION		(FT.)	(AVG. FT)	(S.Y.)
I-71				
RAMP F-F				
00+28.31	00+50	21.69	31.00	74.71
00+50	5+02.17	452.17	30.00	1507.23
AM. AGG. HAUL ROAD				
RAMP A-A				
29+00	30+00	100.00	23.00	255.56
30+00	30+55	55.00	23.50	143.61
30+55	34+60.50	405.50	25.00	405.50
RAMP B-B				
36+62.50	40+00	337.50	25.00	937.50
40+00	41+00	100.00	27.00	300.00
41+00	41+53	53.00	29.00	170.78
RAMP C-C				
36+09.50	40+00	390.50	25.00	1084.72
40+00	41+00	100.00	27.00	300.00
41+00	41+50	50.00	29.00	161.11
RAMP D-D				
30+00	31+00	100.00	27.00	300.00
31+00	34+29.50	329.50	25.00	915.28
HIGH STREET (U.S. 23)				
RAMP A				
50+00	51+00	100.00	27.00	300.00
51+00	57+96.50	696.50	25.00	1934.72
RAMP B				
49+40.68	50+40.68	100.00	27.00	294.44
50+40.68	53+50	309.32	25.00	859.22
53+50	55+00	150.00	35.00	583.33
55+00	58+15.50	315.50	45.00	1577.50
RAMP C				
60+14.19	61+14.19	100.00	23.00	255.56
61+14.19	62+14.19	100.00	23.00	261.11
62+14.19	65+06	291.81	25.00	810.58
65+06	70+77.48	571.48	23.00	1460.45
70+77.48	70+89.50	12.02	23.21	31.00
RAMP D				
57+37.50	58+33	95.50	43.00	456.28
58+33	62+32.97	399.97	47.00	1644.32
62+32.97	63+62	67.03	34.32	206.12
63+62	63+94.97	32.97	30.50	93.42
63+94.97	67+50	355.03	25.00	986.19
67+50	68+50	100.00	27.00	300.00
68+50	68+51.42	1.42	29.00	4.58
RAMP E				
60+85.50	61+50	64.50	23.50	161.25
61+50	67+71.97	621.97	25.00	1727.69
67+71.97	68+50	78.03	23.92	207.43
68+50	69+50	100	23.64	262.72
69+50	69+71.79	21.97	24.22	58.88
GROVEPORT ROAD				
RAMP A				
92+16	92+50	34.00	25.00	94.44
92+50	94+00	150.00	29.00	483.33
94+00	96+42.50	242.50	33.00	889.17
TOTALS:				22,499.73

OVERLAY AREA (ITEMS 302, 407 AND 446 TYPE 1 & 2)

RAMP		LENGTH	WIDTH	AREA
STATION		(FT.)	(AVG. FT)	(S.Y.)
LOCKBOURNE ROAD				
RAMP A				
136+22.88	136+50	27.12	29.00	87.39
136+50	137+50	100.00	27.00	300.00
137+50	140+00	250.00	25.00	694.44
140+00	141+09.22	109.22	27.50	333.73
141+09.22	143+25	215.78	30.00	719.27
143+25	143+42.50	17.50	26.70	51.92
RAMP B				
133+90	134+00	10.00	24.00	26.67
134+00	135+00	100.00	23.25	258.89
135+00	135+90	90.00	23.80	238.00
135+90	143+11	721.00	25.00	2002.78
TOTALS:				11,250.98
SHOULDER WIDENING (302, 304, 310 AND 408)				
LOCATION	LENGTH	WIDTH	AREA	
STATION	(FT.)	(FT.)	(S.Y.)	
EAST BOUND MAINLINE				
10+60	15+15	455.00	2.00	101.11
26+10	30+00	390.00	2.00	86.67
30+00	32+80	280.00	2.00	62.22
38+00	40+15	215.00	2.00	47.78
41+50	49+42.21	792.21	2.00	176.05
49+87	67+73	1786.00	2.00	396.89
69+71.97	73+50	378.03	2.00	84.01
92+65	105+73	1308.00	2.00	290.67
107+54.54	136+22.88	2868.34	2.00	637.41
136+60	138+25	165.00	2.00	36.67
WEST BOUND MAINLINE				
10+60	12+30	170.00	2.00	37.78
12+22.76	15+15	292.24	2.00	64.94
26+10	29+00	290.00	2.00	64.44
30+55	32+80	225.00	2.00	50.00
38+00	41+50	350.00	2.00	77.78
41+53	50+00	847.00	2.00	188.22
50+00	60+14.19	1014.19	2.00	225.38
62+34	68+22	588.00	2.00	130.67
68+51.42	73+50	498.58	2.00	110.80
92+65	108+29	1564.00	2.00	347.56
108+48.30	133+90	2541.70	2.00	564.82
133+90	138+25	435.00	2.00	96.67
TOTALS:				3,878.54

FULL DEPTH PAVEMENT REPLACEMENT (ITEMS 302, 304, 305, 407 AND 446 TYPE 1 & 2)

LOCATION	LENGTH	WIDTH	AREA	
STATION	(FT.)	(AVG. FT)	(S.Y.)	
E.B.				
15+15	16+92.74	177.74	54.25	1071.37
24+31.26	26+10	178.74	60.38	1199.15
32+80	34+56.12	176.12	54.25	1061.61
36+21.62	38+00	178.38	54.25	1075.24
73+50	75+40.01	190.01	54.00	1140.06
77+31.04	81+50.00	418.96	40.00	1862.04
81+50.00	82+23.88	73.88	VARIES	455.56 *
90+68.66	92+65	196.34	37.75	823.54
W.B.				
15+15	16+92.74	177.74	54.25	1071.37
24+31.26	26+10	178.74	54.25	1077.41
32+80	34+56.12	176.12	54.25	1061.61
36+21.62	38+00	178.38	54.25	1075.24
73+50	74+22.88	72.88	54.25	439.30
74+22.88	75+40.01	117.13	48.88	636.15
77+31.04	82+23.88	492.84	42.25	2313.61
90+68.66	92+65	196.34	39.75	867.17
GROVEPORT ROAD				
RAMP A			487.00 *	
RAMP B			436.75 *	
BEGIN PROJECT				
8+84.50	10+60	175.50	VARIES	2028.00 *
END PROJECT				
138+25	140+00	175.00	42.25X2	1643.06
TOTALS:			21,825.24	

SHOULDER WIDENING (302, 304, 310 AND 408)

RAMP	LOCATION	LENGTH	WIDTH	AREA		
	STATION	(FT.)	(FT.)	(S.Y.)		
(1)	RAMP F-F	0+28.31	5+02.17	473.86	3.00	157.95
(2)	RAMP A-A	29+00	35+48	648.00	3.00	216.00
(2)	RAMP B-B	35+75	41+53	578.00	3.00	192.67
(2)	RAMP C-C	35+22	41+50	628.00	3.00	209.33
(2)	RAMP D-D	30+00	35+17	517.00	3.00	172.33
(3)	RAMP A	50+00	58+00	800.00	3.00	266.67
(3)	RAMP B	49+40.68	58+43	902.32	3.00	300.77
(3)	RAMP C	60+14.19	71+27.50	1113.31	3.00	371.10
(3)	RAMP D	56+50	68+51.42	1201.42	3.00	400.47
(3)	RAMP E	59+98	69+71.97	973.97	3.00	324.66
(4)	RAMP A	90+40.33	97+30	689.67	3.00	229.89
(4)	RAMP B	90+75.80	97+01	625.20	3.00	208.40
(4)	RAMP C	97+90	107+54.54	964.54	3.00	321.51
(4)	RAMP D	97+08	108+48.30	1140.30	3.00	380.10
(5)	RAMP A	136+22.88	144+30	807.12	3.00	269.04
(5)	RAMP B	133+90	143+97	1007.00	3.00	335.67
TOTALS:				4,356.56		

- (1) - I-71
- (2) - AMERICAN AGGREGATE HAUL ROAD INTERCHANGE
- (3) - HIGH STREET INTERCHANGE
- (4) - GROVEPORT ROAD INTERCHANGE
- (5) - LOCKBOURNE ROAD INTERCHANGE

PAVEMENT QUANTITIES

**RAMP FEATHERING
(ITEMS 302 AND 446 TYPE 1 AND 2)**

CROSS ROAD	AREA (BY CAD) (S.Y.)
RAMP	
AM. AGG. HAUL ROAD	
RAMP A-A	445.08
RAMP B-B	435.87
RAMP C-C	412.37
RAMP D-D	366.65
HIGH STREET (U.S. 23)	
RAMP A	312.31
RAMP B	477.03
RAMP C	213.32
RAMP D	483.56
RAMP E	367.95
GROVEPORT ROAD	
RAMP A	419.73
RAMP B	301.99
RAMP C	317.71
RAMP D	364.44
LOCKBOURNE ROAD	
RAMP A	444.91
RAMP B	325.19
TOTALS:	5,688.11

FEATHERING QUANTITIES

ITEM 446 1-1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AC-20
 $[100\% \times (\text{AREA}) \times (1.25/36)] = (0.035 \text{ YDS.}) \times (\text{AREA S.Y.}) = 199.08 \text{ C.Y.}$

ITEM 446 1-3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, AC-20
 $[29\% \times (\text{AREA}) \times ((2.75+1.75)/2)/36] + [71\% \times (\text{AREA}) \times (1.75/36)] = (0.053 \text{ YDS.}) \times (\text{AREA S.Y.}) = 301.47 \text{ C.Y.}$

ITEM 302 3-1/2" BITUMINOUS AGGREGATE BASE
 $[71\% \times (\text{AREA}) \times ((3.50 + 1.00)/2)/36] = (0.044 \text{ YDS.}) \times (\text{AREA S.Y.}) = 250.28 \text{ C.Y.}$

**FULL DEPTH SHOULDER REPLACEMENT AT STRUCTURES
NEXT TO APPROACH SLABS (ITEM 408, 304 AND 301)**
 $2 \times (10' \times 25') / 9 = 55.55 \text{ S.Y. PER APPROACH SLAB}$
 $55.55 \text{ S.Y.} \times 6 \text{ APPROACH SLABS} = 333.30 \text{ S.Y.}$

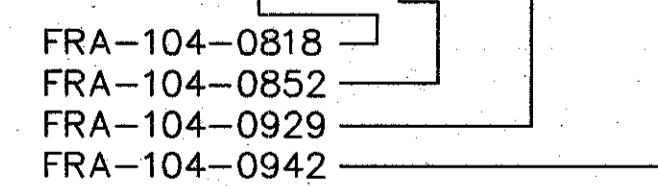
QUANTITIES CARRIED TO THE GENERAL SUMMARY:

ITEM	QUANTITY
ITEM 446 1-1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AC-20	5,965 C.Y.
ITEM 446 1-3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, AC-20	8,180 C.Y.
ITEM 408 BITUMINOUS PRIME COAT	3,300 GAL.
ITEM 407 TACK COAT	12,660 GAL.
ITEM 310 SUBBASE	1,375 C.Y.
ITEM 305 8" CONCRETE BASE	21,980 S.Y.
ITEM 304 AGGREGATE BASE, GRADING A	3,663 C.Y.
ITEM 304 AGGREGATE BASE	1,830 C.Y.
ITEM 302 3-1/2" BITUMINOUS AGGREGATE BASE, AC-20	16,100 C.Y.
ITEM 203 EXCAVATION, NOT INCLUDING EMBANKMENT	8,620 C.Y.
ITEM 203 SUBGRADE COMPACTION	30,215 S.Y.
ITEM 202 WEARING COURSE REMOVED	154,725 S.Y.
ITEM 202 PAVEMENT REMOVED	21,645 S.Y.
ITEM 202 CONCRETE BARRIER REMOVED	10,883 LIN. FT.

ITEM 202 - CONCRETE BARRIER REMOVED

STA. 13+75 TO STA. 140+00
 TOTAL LENGTH OF BARRIER = 12,625 LIN. FT.

DEDUCT BRIDGE DECK BARRIER
 $12,625 - 689 - 116 - 142 - 795 = 10,883 \text{ LIN. FT.}$



ITEM 446 1-1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AC-20		
TOTAL MAINLINE E.B.	$(52,392.33 \text{ S.Y.}) \times (1.25/36) =$	1,819.18 C.Y.
TOTAL MAINLINE W.B.	$(54,839.93 \text{ S.Y.}) \times (1.25/36) =$	1,904.16 C.Y.
TOTAL RAMPS	$(22,499.73 + 11,250.98 \text{ S.Y.}) \times (1.25/36) =$	1,276.07 C.Y.
TOTAL FULL DEPTH REPLACEMENT	$(21,644.71 + 333.30 \text{ S.Y.}) \times (1.25/36) =$	763.13 C.Y.
TOTAL FEATHERING	199.08 C.Y. =	199.08 C.Y.
		5,961.62 C.Y.
ITEM 446 1-3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, AC-20		
TOTAL MAINLINE E.B.	$(52,392.33 \text{ S.Y.}) \times (1.75/36) =$	2,546.85 C.Y.
TOTAL MAINLINE W.B.	$(54,839.93 \text{ S.Y.}) \times (1.75/36) =$	2,665.83 C.Y.
TOTAL RAMPS	$(22,499.73 + 11,250.98 \text{ S.Y.}) \times (1.75/36) =$	1,640.66 C.Y.
TOTAL FULL DEPTH REPLACEMENT	$(21,644.71 + 333.30 \text{ S.Y.}) \times (1.75/36) =$	1,068.38 C.Y.
TOTAL FEATHERING	301.47 C.Y. =	255.96 C.Y.
		8,177.68 C.Y.
ITEM 408 - BITUMINOUS PRIME COAT		
SHOULDER WIDENING	$(3,878.54 + 4,356.56 \text{ S.Y.}) \times (0.40 \text{ GAL/S.Y.}) =$	3,294.04 GAL.
ITEM 407 - TACK COAT		
TOTAL MAINLINE E.B.	$(52,392.33 \text{ S.Y.}) \times (0.075 \text{ GAL/S.Y.}) =$	3,929.42 GAL.
TOTAL MAINLINE W.B.	$(54,839.93 \text{ S.Y.}) \times (0.075 \text{ GAL/S.Y.}) =$	4,117.04 GAL.
TOTAL RAMPS	$(22,499.73 + 11,250.98 \text{ S.Y.}) \times (0.075 \text{ GAL/S.Y.}) =$	2,531.30 GAL.
TOTAL FULL DEPTH REPLACEMENT	$(21,644.71 + 333.30 \text{ S.Y.}) \times (0.075 \text{ GAL/S.Y.}) =$	1,648.35 GAL.
TOTAL FEATHERING	$(5,688.11 \text{ S.Y.}) \times (0.075 \text{ GAL/S.Y.}) =$	426.61 GAL.
		12,652.72 GAL.
ITEM 310 SUBBASE, TYPE 1, GRADING A		
SHOULDER WIDENING	$(3,878.54 + 4,356.56 \text{ S.Y.}) \times (6/36) =$	1,372.52 C.Y.
ITEM 305 8" CONCRETE BASE		
TOTAL FULL DEPTH REPLACEMENT	$(21,644.71 + 333.30 \text{ S.Y.}) =$	21,978.01 S.Y.
ITEM 304 AGGREGATE BASE, GRADING A		
TOTAL FULL DEPTH REPLACEMENT	$(21,644.71 + 333.30 \text{ S.Y.}) \times (6/36) =$	3,663.00 C.Y.
ITEM 304 AGGREGATE BASE		
SHOULDER WIDENING	$(3,878.54 + 4,356.56 \text{ S.Y.}) \times (8/36) =$	1,830.02 C.Y.
ITEM 302 3-1/2" BITUMINOUS AGGREGATE BASE, AC-20		
TOTAL MAINLINE E.B.	$(52,392.33 \text{ S.Y.}) \times (3.50/36) =$	5,093.70 C.Y.
TOTAL MAINLINE W.B.	$(54,839.93 \text{ S.Y.}) \times (3.50/36) =$	5,331.66 C.Y.
TOTAL RAMPS	$(22,499.73 + 11,250.98 \text{ S.Y.}) \times (3.50/36) =$	3,281.32 C.Y.
TOTAL FULL DEPTH REPLACEMENT	$(21,644.71 + 333.30 \text{ S.Y.}) \times (3.50/36) =$	2,136.75 C.Y.
TOTAL FEATHERING	250.28 C.Y. =	250.28 C.Y.
		16,093.71 C.Y.
ITEM 203 EXCAVATION, NOT INCLUDING EMBANKMENT		
TOTAL FULL DEPTH REPLACEMENT	$(21,644.71 + 333.30 \text{ S.Y.}) \times (9.5 + 6.0)/2/36) =$	4,731.38 C.Y.
SHOULDER WIDENING	$(3,878.54 + 4,356.56 \text{ S.Y.}) \times (17/36) =$	3,888.80 C.Y.
		8,620.18 C.Y.
ITEM 203 SUBGRADE COMPACTION		
TOTAL FULL DEPTH REPLACEMENT	$(21,644.71 + 333.30 \text{ S.Y.}) =$	21,978.01 S.Y.
SHOULDER WIDENING	$(3,878.54 + 4,356.56 \text{ S.Y.}) =$	8,235.10 S.Y.
		30,213.11 S.Y.
ITEM 202 WEARING COURSE REMOVED		
TOTAL MAINLINE E.B.	52,392.33 S.Y. =	52,392.33 S.Y.
TOTAL MAINLINE W.B.	54,839.93 S.Y. =	54,839.93 S.Y.
TOTAL RAMPS	22,499.73 + 11,250.98 S.Y. =	33,750.71 S.Y.
TOTAL FULL DEPTH REPLACEMENT	$(21,644.71 + 333.30 \text{ S.Y.}) =$	21,978.01 S.Y.
SHOULDER WIDENING	$-(3,878.54 + 4,356.56 \text{ S.Y.}) =$	-8,235.10 S.Y.
		154,725.88 S.Y.
ITEM 202 PAVEMENT REMOVED		
TOTAL FULL DEPTH REPLACEMENT	$(21,644.71 \text{ S.Y.}) =$	21,644.71 S.Y.

JOINT REPAIR CALCULATIONS

MAINLINE JOINT REPAIR QUANTITIES

STATION		NO. LANES	LENGTH	NO. JOINTS	(NO. LANES) X (NO. JOINTS) =
FROM	TO				
EASTBOUND					
8+70	44+10	3	3540	208	625
44+10	140+00	2	9590	564	1128
DEDUCT BRIDGE/APP. SLAB					
16+92	24+31	3	-739	-44	-132
34+56	36+21	3	-165	-10	-33
75+40	77+31	2	-191	-11	-22
82+23	90+68	2	-845	-50	-100
WESTBOUND					
8+70	13+00	3	430	26	9
13+00	14+20	2	120	7	14
14+20	44+80	3	3060	180	540
44+80	140+00	2	9520	560	1120
DEDUCT BRIDGE/APP. SLAB					
16+92	24+31	3	-739	-44	-132
34+56	36+21	3	-165	-10	-33
75+40	77+31	2	-191	-11	-22
82+23	90+68	2	-845	-50	-100
TOTALS:					2862

RAMP JOINT REPAIR QUANTITIES

RAMP	STATION		WIDTH	LENGTH	NO. JOINTS	(WIDTH) X (NO. JOINTS) =
	FROM	TO				
I-71						
RAMP F-F	5+02	14+20	17.0	672	40	680
AM. AGG. HAUL RD.						
RAMP A-A	26+20	35+00	16.0	880	52	832
RAMP B-B	36+00	45+80	16.0	980	58	928
RAMP C-C	35+82	45+00	16.0	918	54	864
RAMP D-D	25+50	35+00	16.0	950	56	896
HIGH ST. (U.S. 23)						
RAMP A	45+80	58+00	16.0	1220	72	1152
RAMP B	45+00	55+00	16.0	1000	59	944
	55+00	58+85	36.0	385	23	828
RAMP C	55+80	71+80	16.0	1600	94	1504
RAMP D	56+67	59+67	36.0	300	18	648
	59+67	62+40	30.0	273	16	480
	62+40	72+41	16.0	1001	59	944
RAMP E	60+23	74+12	16.0	1389	82	1312
GROVEPORT RD.						
RAMP A	90+68	94+00	16.0	332	20	320
	94+00	97+10	24.0	310	18	432
RAMP B	90+68	96+61	16.0	593	35	560
RAMP C	98+23	112+83	16.0	1460	86	1376
RAMP D	97+27	100+00	24.0	273	16	384
	100+00	112+89	16.0	1289	76	1216
LOCKBOURNE RD.						
RAMP A	129+20	141+50	16.0	1230	72	1152
	141+50	144+10	21.0	260	15	315
RAMP B	129+50	143+63	16.0	1413	83	1328
TOTALS:						19095 LIN. FT.

ITEM 251 PARTIAL DEPTH PAVEMENT REPAIR

AN ESTIMATE OF 3400 S.Y., WHICH IS BASED UPON 2% OF THE TOTAL PAVEMENT AREA, HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER.

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

ALL JOINTS SHALL BE CONSTRUCTED AS PER ITEM 255 AND BP-13. ALL JOINT REPAIRS WILL BE A MINIMUM OF 6 FT. IN LENGTH AND TYPE Y-Y. REPAIRS IN ADJACENT LANES SHALL LINE UP WHEN PRACTICAL.

THE INTENT OF THIS PAY ITEM IS TO REMOVE AND REPLACE THE DETERIORATED CONCRETE PAVEMENT NEAR THE JOINTS WHICH ARE IN THE WORST CONDITION ONLY. IT IS NOT THE INTENT THAT THESE QUANTITIES BE USED TO TRY TO REPAIR EVERY JOINT HOWEVER.

THE FOLLOWING CONDITIONS WERE USED FOR ESTIMATION PURPOSES.

ITEM 255 FULL DEPTH RIGID PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS C
 6 FT. X 12 FT. / 9 = **8 S.Y./LANE/REPAIR**

ITEM 255 FULL DEPTH PAVEMENT SAWING
 12 FT. + 12 FT. + 6 FT. = **30 FT./LANE/REPAIR**

ITEM 413 - SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS, 705.04

12 FT. X 2 = **24 FT./LANE/REPAIR**

ITEM 301 BITUMINOUS AGGREGATE BASE, AC-20

TOTAL FULL DEPTH RIGID PAVEMENT REMOVAL AND RIGID REPLACEMENT X (6/36) = 2,735 S.Y. X 6/36 = **456 C.Y.**

PAVEMENT REPAIR CALCULATIONS

MAINLINE JOINT REPAIR QUANTITIES

TOTAL NUMBER OF JOINTS = 2862

ITEM 255 FULL DEPTH RIGID PAVEMENT REMOVAL AND RIGID REPLACEMENT
 2862 X 0.05 X 8 S.Y. = 1,145 S.Y. FOR JOINT REPAIR
 2862 X 0.05 X 8 S.Y. = 1,145 S.Y. FOR MID-SLAB CRACK REPAIR

ITEM 255 FULL DEPTH PAVEMENT SAWING
 2862 X 0.05 X 30 LIN. FT. = 4,293 LIN. FT. FOR JOINT REPAIR
 2862 X 0.05 X 30 LIN. FT. = 4,293 LIN. FT. FOR MID-SLAB CRACK REPAIR

ITEM 413 - SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS
 2862 X 1.00 X 24 LIN. FT. = 68,688 LIN. FT. FOR JOINT REPAIR
 2862 X 0.05 X 24 LIN. FT. = 3,434 LIN. FT. FOR MID-SLAB CRACK REPAIR

RAMP JOINT REPAIR QUANTITIES

TOTAL NUMBER OF JOINTS = 19095 LIN. FT.

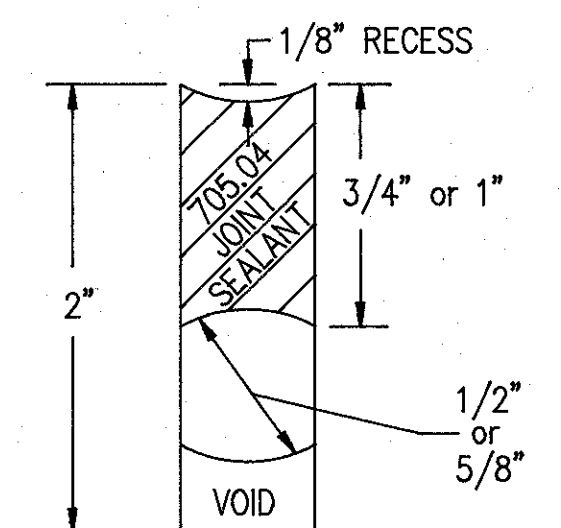
ITEM 255 FULL DEPTH RIGID PAVEMENT REMOVAL AND RIGID REPLACEMENT
 19095 FT. X 0.025 X 6 FT./9 = 318 S.Y. FOR JOINT REPAIR
 19095 FT. X 0.01 X 6 FT./9 = 127 S.Y. FOR MID-SLAB CRACK REPAIR

ITEM 255 FULL DEPTH PAVEMENT SAWING
 19095 X 0.025 X 2 = 955 LIN. FT. FOR JOINT REPAIR
 19095 X 0.01 X 2 = 382 LIN. FT. FOR MID-SLAB CRACK REPAIR

ITEM 413 - SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS
 19095 X 1.00 X 2 = 38,190 LIN. FT. FOR JOINT REPAIR
 19095 X 0.01 X 2 = 382 LIN. FT. FOR MID-SLAB CRACK REPAIR

DETAIL

ITEM 413 - SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS, 705.04

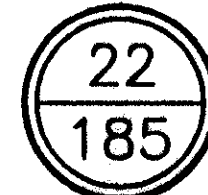


TOTAL QUANTITIES CARRIED TO THE GENERAL SUMMARY:

ITEM	DESCRIPTION	QUANTITY
ITEM 413	SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS, 705.04	110,694 LIN. FT.
ITEM 301	BITUMINOUS AGGREGATE BASE, AC-20	456 C.Y.
ITEM 255	FULL DEPTH RIGID PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS C, AS PER PLAN	2,735 S.Y.
ITEM 255	FULL DEPTH PAVEMENT SAWING	11,641 LIN. FT.
ITEM 251	PARTIAL DEPTH PAVEMENT REPAIR	3,400 S.Y.

GENERAL NOTES

CALC BY: JRA DATE: 6/15/94 CHECKED BY: JSB DATE: 6/15/94	FRA-104-8.02	OHIO FHWA REGION 5
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PROJECT DESCRIPTION

THE FOLLOWING LIST CONTAINS SOME OF THE MAJOR WORK ITEMS INCLUDED IN THIS PROJECT:

- A. INSTALLATION OF NEW OR SUPPLEMENTAL UNDERDRAINS
- B. SHOULDER WIDENING OR REPLACEMENT
- C. REMOVAL AND REPLACEMENT OF ASPHALT
- D. PAVEMENT REPAIR
- E. INSTALLATION OF CONCRETE BARRIER AND GUARDRAIL
- F. REPLACEMENT OF SIGNS
- G. REPAIR OF STRUCTURES AND INSTALLATION OF RIGHT OF WAY FENCING
- H. REPLACEMENT OF LIGHTING

RIGHT OF WAY

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

PROFILE AND ALIGNMENT

THE WORK PROPOSED BY THIS PROJECT IS FOR THE MINOR PLANNING OF THE EXISTING ASPHALT OVERLAY AND SUBSEQUENT RESURFACING OF THE PAVEMENT. THE PROFILE OF THE PROPOSED SURFACE SHALL BE APPROXIMATELY THREE (3) INCHES ABOVE THAT OF THE EXISTING PAVEMENT AND SHALL FOLLOW THE ALIGNMENT AND PROFILE OF THE EXISTING PAVEMENT. PREVIOUS CONSTRUCTION PLANS SHOWING THE ORIGINAL ALIGNMENT AND PROFILE GRADE ARE ON FILE FOR INSPECTION IF NECESSARY AT THE ODOT DISTRICT 6 OFFICE.

THE FOLLOWING LIST OF CONSTRUCTION PLANS APPLY TO THIS PROJECT:

FRA-104-8.04 FRA-104-8.73

ELEVATION DATUM

ELEVATION SHOWN ON THESE PLANS ARE BASED ON THE ORIGINAL CONSTRUCTION DRAWINGS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THESE ELEVATIONS AND MAKE THE NECESSARY ADJUSTMENTS.

UTILITY OWNERSHIP

THE FOLLOWING UTILITIES AND OWNERS ARE LOCATED WITHIN THE EXISTING RIGHT-OF-WAY OF THIS PROJECT.

COLUMBIA GAS OF OHIO CITY OF COLUMBUS
 101 WEST TOWN STREET DIVISION OF SEWERAGE AND DRAINAGE
 COLUMBUS, OHIO 43215 910 DUBLIN ROAD
 (614)460-2222 COLUMBUS, OHIO 43215

CITY OF COLUMBUS COLUMBUS SOUTHERN POWER
 DIVISION OF ELECTRICITY 215 NORTH FRONT STREET
 910 DUBLIN ROAD COLUMBUS, OHIO 43215
 COLUMBUS, OHIO 43215 (614)464-7294
 (614)645-7294 (614)464-7911

CITY OF COLUMBUS OHIO BELL TELEPHONE COMPANY
 DIVISION OF WATER 11TH FLOOR
 910 DUBLIN ROAD 150 EAST GAY STREET
 COLUMBUS, OHIO 43215 COLUMBUS, OHIO 43215
 (614)645-7788

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 FOR SUCH ITEMS SHALL BE INCORPORATED INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT.

SEEDING

QUANTITIES OF SEEDING ARE CALCULATED FOR THE SOIL AREAS BETWEEN THE EDGE OF SHOULDER OR CURB AND TEN (10) FEET OUT.

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 TEMPORARY SEEDING AND MULCHING	9,000 SQ. YD.
ITEM 207 FILTER FABRIC FENCE	1,600 L.F.
ITEM 207 STRAW OR HALE BALES	400 EACH
ITEM 659 MOWING	110 M. SQ. FT.
ITEM 659 REPAIR SEEDING AND MULCHING	2,500 SQ. YD.
ITEM 659 WATER	25 M. GAL.

FULL DEPTH PAVEMENT REPAIRS "AS DIRECTED BY THE ENGINEER"

THE FOLLOWING QUANTITIES SHALL BE USED "AS DIRECTED BY THE ENGINEER" IN LOCATIONS WHERE THE CONCRETE PAVEMENT HAS FAILED. FULL DEPTH RIGID PAVEMENT REPLACEMENT SHALL BE PERFORMED IN THESE LOCATIONS. IT SHALL BE THE RESPONSIBILITY OF THE ENGINEER TO DETERMINE THE LOCATIONS AND LIMITS OF THESE REPAIRS.

ITEM 202 - PAVEMENT REMOVED	1500 S.Y.
ITEM 203 - EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	200 C.Y.
ITEM 203 - SUBGRADE COMPACTION	750 S.Y.
ITEM 304 - AGGREGATE BASE, GRADING A	200 C.Y.
ITEM 305 - 8" CONCRETE BASE	1500 S.Y.
ITEM 407 - TACK COAT	120 GAL

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

WHERE PAVEMENT REPAIR LENGTHS EXCEED 10 FT. AND WHERE ONE OR MORE REPAIR LIMITS ARE LOCATED MORE THAN 3 FT. FROM AN EXISTING JOINT TO REMAIN IN PLACE, THE CONTRACTOR WILL BE REQUIRED, AT THE DIRECTION OF THE ENGINEER, TO PLACE CONTRACTION JOINTS WITH DOWEL BASKET ASSEMBLIES IN ACCORDANCE WITH ITEM 451 AND BP-2.2. THE PLACEMENT AND LOCATION OF THE CONTRACTION JOINTS SHALL BE AT THE SAME LOCATION AND IN ALIGNMENT WITH EXISTING JOINT(S) WHICH ARE TO REMAIN IN PLACE. REQUIREMENTS FOR JOINT SAWING SHALL BE AS PER ITEM 451. REQUIREMENTS FOR JOINT SEALING SHALL BE AS PER ITEM 305 FOR PAVEMENT WHICH WILL BE OVERLAID WITH ASPHALT CONCRETE. THE COSTS ASSOCIATED WITH THE PLACEMENT OF DOWEL BASKET ASSEMBLIES, THE REQUIREMENTS FOR SAWING AND SEALING SHALL BE INCIDENTAL TO ITEM 255 FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, AS PER PLAN.

IN ADDITION TO THE REQUIREMENTS OF 255.09, ACCEPTED QUANTITIES WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE YARD, WHICH PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL JOINT SEALING AND CLEANING.

SUBBASE/SUBGRADE FAILURES

IF AFTER REMOVAL OF THE RIGID PAVEMENT, THE ENGINEER DETERMINES THAT THE SUBBASE OR SUBGRADE HAS FAILED OR IS PUMPING, HE SHALL DIRECT THE CONTRACTOR TO EXCAVATE THE UNSUITABLE MATERIAL AND REPLACE IT WITH ITEM 304 AGGREGATE BASE.

ITEM 203 - EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	3,250 C.Y.
ITEM 304 - AGGREGATE BASE, GRADING A	3,250 C.Y.

ITEM 446 ASPHALT CONCRETE

ON THIS PROJECT, PROPERTIES OF MIXTURES FOR HEAVY TRAFFIC VOLUMES SHALL APPLY.

ITEM 407 - TACK COAT

THE RATE OF APPLICATION OF 407 TACK COAT SHALL BE SUBJECT TO THE ADJUSTMENT, 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.

ITEM 305 8" CONCRETE BASE

WHERE NEW PAVEMENT BUTTS INTO EXISTING PAVEMENT, A DOWELED TYPE Y JOINT PER BP-2.5 SHALL BE PROVIDED. GROUTING AND DRILLING REQUIREMENTS SHALL BE PER ITEM 255 AND BP-2.5. ALL WORK AND MATERIALS TO PROVIDE THESE JOINTS SHALL BE INCIDENTAL TO ITEM 305 8" CONCRETE BASE.

ITEM 617 COMPACTED AGGREGATE, TYPE A, AS PER PLAN

THE WATER AND ANY SHOULDER PREPARATION REQUIRED FOR A COMPLETE INSTALLATION OF THE COMPACTED AGGREGATE SHALL BE INCLUDED IN ITEM 617 COMPACTED AGGREGATE, TYPE A, AS PER PLAN.

ITEM 202 - CONCRETE BARRIER REMOVED

THIS ITEM SHALL CONSIST OF REMOVING THE EXISTING 32" OF CONCRETE BARRIER AND BASE IN THE LOCATION SHOWN ON THE PLAN. ALL MATERIALS SHALL BE DISPOSED OF IN ACCORDANCE WITH 203.05 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS. PAYMENT FOR REMOVING AND DISPOSING OF ALL MATERIALS AND LABOR SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR ITEM 202 CONCRETE BARRIER REMOVED.

GUARDRAIL REPLACEMENT

NO HAZARD SHALL BE LEFT UNPROTECTED EXCEPT FOR THE ACTUAL TIME NECESSARY TO REMOVE, GRADE AND REINSTALL GUARDRAIL IN A CONTINUOUS OPERATION. THE REMOVAL OF ALL GUARDRAIL SHALL AT ALL TIMES BE AS DIRECTED BY THE ENGINEER. NO GUARDRAIL SHALL BE REMOVED UNTIL THE REPLACEMENT MATERIAL IS ON THE SITE READY FOR INSTALLATION. FAILURE

TO COMPLY WITH THIS REQUIREMENT SHALL BE DEEMED SUFFICIENT CAUSE TO ORDER WORK SUSPENDED ON THIS PROJECT UNTIL SUCH TIME THAT THE ENGINEER IS ASSURED OF SAID COMPLIANCE.

ITEM 606 - GUARDRAIL POST, 9 FT.

PAYMENT FOR ITEM 606, GUARDRAIL POST, 9 FT. SHALL INCLUDE COSTS OVER AND ABOVE THE PRICE BID FOR ITEM 606, GUARDRAIL TYPE 5 FOR UTILIZING 9 FOOT GUARDRAIL POSTS IN PLACE OF NORMAL LENGTH (6 FOOT) POSTS THROUGHOUT THE PROJECT. 9 FOOT GUARDRAIL POSTS SHALL BE INSTALLED WITH A MINIMUM EMBEDMENT DEPTH OF 6'-5", 1800 EACH HAS BEEN PROVIDED FOR THIS ITEM.
GUARDRAIL REPLACEMENT

SPECIAL CARE SHALL BE TAKEN WHEN THE PLACEMENT OF GUARDRAIL IS IN AN AREA WHERE CONDUITS CUT TRANSVERSELY ACROSS THE POSITION OF THE GUARDRAIL. LOCATION OF CONDUITS IS TO BE VERIFIED IN THE FIELD BEFORE POSTS ARE DRIVEN TO AVOID RUPTURING OR DAMAGING ANY OF THESE CONDUITS.

ITEM 606 ANCHOR ASSEMBLY, TYPE E

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

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

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

ITEM SPECIAL - IMPACT ATTENUATOR, ADIEM TYPE

THIS WORK SHALL CONSIST OF FURNISHING IMPACT ATTENUATORS AS REQUIRED IN THE PLANS. THIS ITEM SHALL INCLUDE ALL RELATED HARDWARE, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER TO CONSTRUCT COMPLETE AND FUNCTIONAL ADIEM IMPACT ATTENUATOR SYSTEMS. THE ATTENUATORS SHALL BE PLACED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND AT THE LOCATIONS SHOWN ON THE PLANS. THE IMPACT ATTENUATOR SHALL BE MANUFACTURED BY THE SYRO STEEL COMPANY, 1170 NORTH STATE STREET, GIRARD, OHIO 44420, 1-800-321-2755.

THE NOSE OF THE ATTENUATOR SHALL HAVE A DIAMOND SHAPED OBJECT MARKER DESIGN X-1 AS PER THE ODOT. THIS 18"X18" FLAT SHEET, TYPE G SHALL HAVE A YELLOW REFLECTIVE MATERIAL OVER ITS ENTIRE SURFACE AREA MEETING THE REQUIREMENTS OF 730.19. IT SHALL BE CENTERED AND FASTENED USING AN APPROVED CONSTRUCTION ADHESIVE.

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

FOR LOCATIONS OF THE ATTENUATORS SEE PLAN SHEET 78. THESE PERMANENTLY LOCATED ATTENUATORS SHALL BE BID PER EACH PER THE FOLLOWING ITEM DESCRIPTION:

ITEM SPECIAL - IMPACT ATTENUATOR, ADIEM TYPE

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

RAISED PAVEMENT MARKERS AND DELINEATORS REMOVED

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY TO BE USED THROUGHOUT THIS PROJECT:

ITEM 202 - RAISED PAVEMENT MARKERS REMOVED FOR STORAGE	870 EACH
ITEM 620 - DELINEATOR REMOVED FOR DISPOSAL	150 EACH

JOINT REPAIR PREMARKING

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 APROPRIATE 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 255 FULL DEPTH PAVEMENT REMOVAL AND RIGID REPLACEMENT, CLASS C.

JOINT REPAIR

THE EXISTING PAVEMENT CONSISTS OF 3" OF ASPHALT ON 8" OF UNDOWELED, UNREINFORCED 305 CONCRETE BASE. DUE TO THE PRESENCE OF HEAVY TRUCKS AND THE ABSENCE OF DOWELS, THERE IS SIGNIFICANT VERTICAL MOVEMENT AT THE JOINTS RESULTING IN SEVERE DETERIORATION IN THE ASPHALT OVERLAY AT THE JOINTS. THE AVERAGE CONDITION OF ALL THE JOINTS IS POOR. IT IS NOT THE INTENT OF THESE PLANS TO REPAIR THE JOINTS IN AVERAGE CONDITION BUT ONLY THOSE FEW IN THE WORST CONDITION. THE MOST SEVERE DETERIORATION GENERALLY OCCURS AT THE OUTSIDE EDGE AND THESE LIKELY DO NOT REQUIRE FULL DEPTH REPAIRS. JOINTS SHOWING HIGH SEVERITY DETERIORATION ALONG THEIR ENTIRE LENGTH AND ESPECIALLY NEAR A TIED LONGITUDINAL JOINT SHOULD BE REPAIRED. SOME REPAIR QUANTITY SHOULD BE SAVED FOR AREAS REVEALED AFTER THE EXISTING ASPHALT IS REMOVED. THE ENGINEER IS CAUTIONED AGAINST EXCESSIVE REPAIRS. PLAN QUANTITIES GIVEN FOR JOINT REPAIR AND FULL DEPTH SLAB REPLACEMENT ARE SUFFICIENT TO FULFILL THE INTENT OF THESE PLANS AND ALL REASONABLE ATTEMPTS SHOULD BE MADE TO REMAIN WITHIN THE PLAN QUANTITIES.

DOWEL BASKET ASSEMBLIES

WHERE DOWEL BASKET ASSEMBLIES ARE USED BY THE CONTRACTOR, ALL SPACER WIRES (SHIPPING WIRES) SHALL BE REMOVED FROM THE BASKET ASSEMBLIES PRIOR TO PAVING. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSURE THE DOWEL BASKET ASSEMBLIES ARE STABLE AND HELD FIRMLY IN PLACE.

ITEM 413 - SAWING AND SEALING ASPHALT CONCRETE PAVEMENT JOINTS, 705.04

UPON THE COMPLETION OF ALL WORK UNDER THIS ITEM, ALL DEBRIS FROM THE SAWING IS TO BE CLEANED BEFORE ANY PERMANENT PAVEMENT MARKINGS ARE APPLIED OR THE CONTRACTOR MAY IF HE CHOOSES TO, AND AT THE APPROVAL OF THE ENGINEER, PLACE PERMANENT MARKINGS FIRST AND THEN PERFORM THE WORK OF SAWING AND SEALING THE ASPHALT CONCRETE IN THE INDICATED AREAS.

GENERAL SUMMARY

SHEET NUMBERS																														ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.						
18	20	22	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104							105	106	107	108	109	
																														ROADWAY											
	21645	1500																																	202	23000	23,145	SQ YD	PAVEMENT REMOVED		
	154725																																		202	23500	154,725	SQ YD	WEARING COURSE REMOVED		
	10883							33																		498									202	30500	531	LIN FT	CONCRETE MEDIAN REMOVED		
								412	1000	373									304				536	267	642	976	644	227	170	511	195	195	476	202	30700	10,883	LIN FT	CONCRETE BARRIER REMOVED			
																																				202	32000	6,928	LIN FT	CURB REMOVED	
				741.5	456	1078.5	1059	961	383.5	598	1268	295	450	160	20	150	175	482	633.5	515.5				925	409		100	492	240		650				202	38000	12,243	LIN FT	GUARDRAIL REMOVED		
		870																																		202	54100	870	EACH	RAISED PAVEMENT MARKER REMOVED FOR STORAGE	
																																				202	58100	1	EACH	CATCH BASIN REMOVED	
																																				202	58200	15	EACH	INLET REMOVED	
																																				202	75000	26,060	LIN FT	FENCE REMOVED	
																																				202	75250	7	EACH	GATE REMOVED	
	8620	3450																																		203	12000	12,070	CU YD	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	
990																																				203	20000	1,115	CU YD	EMBANKMENT	
	30215	750																																		203	50000	30,965	SQ YD	SUBGRADE COMPACTION	
				605.2	381	1028.5	921.5	931	107.5	560.5	1168	245	156	142.5	407	126.5	137.5	482	608.5	503				850	397		50	454.5	190		612.5				606	13000	11,065	LIN FT	GUARDRAIL, TYPE 5		
		1800																																		606	18500	1,800	EACH	GUARDRAIL POST, 9 FT.	
																																				606	26100	21	EACH	ANCHOR ASSEMBLY, TYPE E	
																																				606	26500	11	EACH	ANCHOR ASSEMBLY, TYPE T	
																																				606	35000	16	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1	
																																				606	35100	7	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 2	
																																				607	23000	26,060	LIN FT	FENCE, TYPE CLT	
																																				607	61200	7	EACH	GATE, TYPE CLT	
																																				609	26000	6,647	LIN FT	CURB, TYPE 6	
																																				612	42000	185	SQ YD	CONCRETE MEDIAN	
		150																																		620	31200	150	EACH	DELINEATOR REMOVED FOR DISPOSAL	
																																				622	23404	8,667	LIN FT	CONCRETE BARRIER, TYPE B-50	
																																				622	23505	2,082	LIN FT	CONCRETE BARRIER, TYPE C-50, AS PER PLAN	6
																																				622	24000	364	LIN FT	CONCRETE BARRIER, TYPE D	
																																				802	00100	151	EACH	BARRIER REFLECTOR, TYPE A	
																																				802	00200	8	EACH	BARRIER REFLECTOR, TYPE B	
																																				SPECIAL	69010120	1	EACH	IMPACT ATTENUATOR, ADIEM	22
																														EROSION CONTROL											
																																				207	10000	9,000	SQ YD	TEMPORARY SEEDING AND MULCHING	
		9000																																		207	30000	1,600	LIN FT	FILTER FABRIC FENCE	
		1600																																		207	70000	400	EACH	STRAW OR HAY BALES	
		400																																		659	10000	44,711	SQ YD	SEEDING AND MULCHING	
44711																																				659	14000	2,500	SQ YD	REPAIR SEEDING AND MULCHING	
		2500																																		659	20000	4	TON	COMMERCIAL FERTILIZER	
																																				659	30000	20	TON	AGRICULTURAL LIMING	
																																				659	35000	122	M. GAL	WATER	
																																				659	40000	110	M. SQ FT	MOWING	

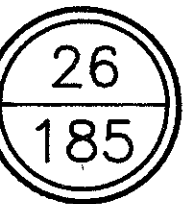
GENERAL SUMMARY

SHEET NUMBERS														ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
28A	26	27	28	29	30	31	32	33	34										
																		MAINTENANCE OF TRAFFIC	
		500												404	35000	500	CU. YD.	BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC	
	10													614	12460	10	EACH	WORK ZONE MARKING SIGN	
	28													614	12470	28	EACH	WORK ZONE SPEED LIMIT SIGN	
		300		55	160	44	44	187	72					614	12800	862	EACH	TEMPORARY RAISED PAVEMENT MARKER	
					472	167	327	63						614	13300	1,029	EACH	BARRIER REFLECTOR, TYPE B	
					455	160	316	60						614	13350	991	EACH	OBJECT MARKER	
	4	2												614	18501	6	EACH	PORTABLE CHANGEABLE MESSAGE SIGN, 72" X 48", AS PER PLAN	26
		15,000		19,780	850	6,400	1,230	6,500	750					614	20000	9.6	MILE	TEMPORARY LANE LINE, CLASS I	
		35,000												614	20300	6.7	MILE	TEMPORARY LANE LINE, CLASS I, 740.05, TYPE C	
		35,000		24,292	34,800	38,823	41,955	34,632	40,150					614	22000	47.3	MILE	TEMPORARY EDGE LINE, CLASS I	
		95,000												614	22300	18.0	MILE	TEMPORARY EDGE LINE, CLASS I, 740.05, TYPE C	
					5,255	3,174	1,344	2,780	3,674	1,620				614	23000	17,847	LIN. FT.	TEMPORARY CHANNELIZING LINE, CLASS I	
		8,000												614	23600	8,000	LIN. FT.	TEMPORARY CHANNELIZING LINE, CLASS I, 740.05, TYPE C	
				1,460	1,574	1,635	1,980	2,297	640					614	24000	9,586	LIN. FT.	TEMPORARY DOTTED LINE, CLASS I	
		1,000												614	24600	1,000	LIN. FT.	TEMPORARY DOTTED LINE, CLASS I, 740.05, TYPE C	
		1,200												614	25600	1,200	LIN. FT.	TEMPORARY TRANSVERSE LINE, CLASS I, 740.05, TYPE C	
		300												614	26600	300	LIN. FT.	TEMPORARY STOP LINE, CLASS I, 740.05, TYPE C	
		400												614	27600	400	LIN. FT.	TEMPORARY CROSSWALK LINE, CLASS I, 740.05, TYPE C	
		35												614	30600	35	EACH	TEMPORARY LANE ARROW, CLASS I, 740.05, TYPE C	
		15												614	31600	15	EACH	TEMPORARY WORD ON PAVEMENT, 72", CLASS I, 740.05, TYPE C	
					279	439								615	25000	718	SQ. YD.	TEMPORARY PAVEMENT, CLASS B	
				100										616	10000	100	M. GAL.	WATER	
				10										616	20000	10	TON	CALCIUM CHLORIDE	
		500		100	7,845	2,430	6,065	1620						622	40020	18,560	LIN. FT.	PORTABLE CONCRETE BARRIER, 32"	
					3,570	1,630	1,910							622	40041	7,110	LIN. FT.	PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED, AS PER PLAN	27,76
		600												630	80103	600	SQ. FT.	SIGN, FLAT SHEET, TYPE G, AS PER PLAN	26
		1,000												630	80306	1,000	SQ. FT.	SIGN, TEMPORARY OVERLAY, TYPE G	
	200													614	11100	200	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR	28A
		150												SPECIAL 61412500	150	SQ. FT.		REPLACEMENT SIGN	26
		500		100										SPECIAL 61412600	600	EACH		REPLACEMENT DRUM	28
		50												SPECIAL 61412730	50	EACH		REBOUNDABLE TUBULAR PYLON	27
				2										SPECIAL 61412760	2	EACH		FLASHING ARROW PANEL, TYPE C	27
		5												SPECIAL 61418000	5	EACH		MAINTAINING TRAFFIC ITEM, MISC.: FLASHING ARROW PANEL, TYPE C (PER DAY)	28
		10												SPECIAL 61418000	10	EACH		MAINTAINING TRAFFIC ITEM, MISC.: TYPE III BARRICADE (10 FT. LONG)	12, 23, 74
						LUMP								614	11000	LUMP		MAINTAINING TRAFFIC	
														619	15010	LUMP		FIELD OFFICE, TYPE B	
														623	10000	LUMP		CONSTRUCTION LAYOUT STAKES	
														624	10000	LUMP		MOBILIZATION	
														SPECIAL 61925610	LUMP			COMPUTER EQUIPMENT FOR TYPE B OR C OFFICE	
																		FOR TRAFFIC CONTROL QUANTITIES SEE SHEET 114 FOR LIGHTING QUANTITIES SEE SHEET 137 FOR STRUCTURE QUANTITIES SEE SHEET 160	

FHWA/OSHA 7-10-85

MAINTENANCE OF TRAFFIC GENERAL NOTES

CALC BY: JRA DATE: 6/15/94 CHECKED BY: USB DATE: 6/15/94	FRA-104-8.02	OHIO FHWA REGION 5
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TRAFFIC CONTROL DEVICES

ALL TRAFFIC CONTROL DEVICES SHALL BE FURNISHED, ERECTED, MAINTAINED, AND REMOVED BY THE CONTRACTOR IN ACCORDANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR CONSTRUCTION AND MAINTENANCE OPERATIONS (CURRENT REVISION), COPIES OF WHICH ARE AVAILABLE FROM THE OHIO DEPARTMENT OF TRANSPORTATION, BUREAU OF TRAFFIC, 25 SOUTH FRONT STREET, COLUMBUS, OHIO 43215.

ITEM 614 - MAINTAINING TRAFFIC

IN ADDITION TO THE REQUIREMENTS OF MAINTAINING TRAFFIC AS INDICATED IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, CURRENT EDITION, AND PERTINENT ITEMS OF THE SPECIFICATIONS, THE FOLLOWING REQUIREMENTS SHALL APPLY:

MAINTENANCE OF TRAFFIC CONTROL PLAN

A MAINTENANCE OF TRAFFIC CONTROL PLAN (MTCPP) SHALL BE SUBMITTED TO THE DIVISION OF TRAFFIC ENGINEERING CONSTRUCTION COORDINATOR (645-6269) AT THE PRECONSTRUCTION MEETING OR A MINIMUM OF TEN (10) WORKING DAYS PRIOR TO BEGINNING WORK. COPIES OF THE APPROVED MTCPP SHALL BE GIVEN TO THE PROJECT ENGINEER AND KEPT ON THE PROJECT ALONG WITH THE STREET CLOSURE PERMIT.

CONSTRUCTION INITIATION

THE CONTRACTOR WILL ADVISE THE ODOT DISTRICT SIX COMMUNICATIONS OFFICER AT (614) 363-1251 EXTENSION 261 OR BY FAX AT (614) 469-0235 SEVEN DAYS PRIOR TO THE START OF CONSTRUCTION ACTIVITIES. THE PROJECT ENGINEER WILL PROVIDE ASSISTANCE/CLARIFICATION FOR ANY QUESTIONS.

COORDINATION WITH THE COLUMBUS PAVING THE WAY PROGRAM (PTWP)

THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IN WRITING OF ALL TRAFFIC RESTRICTIONS AND UPCOMING MAINTENANCE OF TRAFFIC CHANGES ON A WEEKLY BASIS. WHEN DETOURS ARE PLANNED THIS NOTIFICATION SHALL BE AT THE PRECONSTRUCTION MEETING OR 30 DAYS IN ADVANCE ONCE CONSTRUCTION HAS BEGUN. LANE AND RAMP CLOSURES FOR TWO OR MORE WEEKS SHALL BE REPORTED TWO WEEKS IN ADVANCE OF CLOSURE. LANE AND RAMP CLOSURES OR LESS THAN TWO WEEKS DURATION AND MORE THAN TWO DAYS SHALL BE REPORTED AT LEAST 3 WORKING DAYS IN ADVANCE. FOR SHORT-TERM LANE OR RAMP CLOSURES (TWO DAYS OR LESS) NOTIFICATION SHALL BE MADE AT LEAST ONE WORKING DAY IN ADVANCE.

INFORMATION SHALL INCLUDE BUT NOT LIMITED TO ALL CONSTRUCTION ACTIVITIES THAT IMPACT TRAFFIC AT PRESENT AND IN THE NEXT 30 DAYS. THE REPORT SHALL BE OF A FORMAT APPROVED BY THE PROJECT ENGINEER OR ONE SUPPLIED BY THE PTWP. THE CONTRACTOR SHALL DESIGNATE AN INDIVIDUAL WHO WILL BE RESPONSIBLE TO PREPARE THIS REPORT AT THE PRECONSTRUCTION MEETING.

ANY UNFORESEEN IMPACTS TO TRAFFIC SHALL BE REPORTED TO THE PROJECT ENGINEER AS SOON AS POSSIBLE.

THE PROJECT ENGINEER SHALL PROVIDE THIS INFORMATION TO THE PTWP PROGRAM. ALL CONSTRUCTION ACTIVITIES THAT INTERFERE WITH TRAFFIC SHALL BE REPORTED TO THE PTWP. THIS INFORMATION SHALL BE PROVIDED TO THE PROGRAM INFORMATION ASSISTANT AT 614-645-6016 OR THE PROGRAM COORDINATOR AT 645-3970, OR BY FAX 614-645-5844.

COOPERATION BETWEEN CONTRACTORS

THE CONTRACTOR IS ADVISED OF THE POSSIBLE PRESENCE OF THE FRA-71-0.00 CONSTRUCTION CONTRACT IN THE VICINITY OF THIS PROJECT WHICH MIGHT BE GOING ON CONCURRENTLY WITH THIS PROJECT. CLOSE COOPERATION BETWEEN THE CONTRACTORS IS REQUIRED TO ENSURE THAT TRAFFIC MAINTENANCE OPERATIONS FOR EACH PROJECT ARE AT ALL TIMES COMPATIBLE. ANY CONFLICTS SHALL BE RESOLVED BY THE ENGINEER.

STARTING WORK NOTIFICATION

THE DIVISION OF TRAFFIC AND ENGINEERING CONSTRUCTION COORDINATOR (645-6269) SHALL BE NOTIFIED A MINIMUM OF FIVE (5) WORKING DAYS PRIOR TO STARTING WORK WITHIN THE ROADWAY RIGHT-OF-WAY.

ROADWAY MAINTENANCE

THE PURPOSE OF THIS NOTE IS TO DEFINE THE CONTRACTOR'S MAINTENANCE RESPONSIBILITIES DURING THE LIFE OF THE CONTRACT. THE CONTRACTOR SHALL, THEREFORE, BE RESPONSIBLE FOR THE MAINTENANCE OF ALL PORTIONS OF THE ROADWAY WITHIN HIS "WORK ZONE" FROM THE TIME HE MOVES INTO THIS AREA AND UNTIL THE TIME OF FINAL INSPECTION AND ACCEPTANCE BY THE OHIO DEPARTMENT OF TRANSPORTATION. THIS SHALL INCLUDE WEEKENDS, AND ANY TIME BEYOND NORMAL WORKING HOURS. THE ROADWAY AREA SHALL BE KEPT IN AN ACCEPTABLE LEVEL OF MAINTENANCE AS DETERMINED BY THE ENGINEER.

A "WORK ZONE" IS DEFINED AS ANY THAT THE CONTRACTOR HAS OCCUPIED OR IS OCCUPYING TO PERFORM ANY ITEM OF WORK. ONCE THE CONTRACTOR HAS OCCUPIED A "WORK ZONE" TO PERFORM ANY ITEM OF WORK, HE SHALL BE RESPONSIBLE FOR MAINTAINING THE ROADWAY IN A SATISFACTORY CONDITION AND TO A STANDARD ACCEPTABLE TO THE ENGINEER. NECESSARY REPAIRS IN ANY TRAVELLED LANES SHALL BE REPAIRED IMMEDIATELY.

GENERAL

THE CONTRACTOR SHALL ARRANGE HIS OPERATIONS SO AS TO PREVENT ANY INTERFERENCE TO THE CONTINUOUS FLOW OF TRAFFIC. ALL VEHICLES, EQUIPMENT, MEN AND OTHER ACTIVITIES ARE RESTRICTED AT ALL TIMES TO ONE SIDE OF THE PAVEMENT UNLESS OTHERWISE APPROVED BY THE ENGINEER.

THE BERM SHALL BE AT THE SAME STAGE OF COMPLETION AS THE MAIN LINE PAVEMENT BEFORE TRAFFIC IS RETURNED TO A DIVERTED SECTION.

A WATCHMAN SHALL BE ON DUTY TWENTY-FOUR (24) HOURS PER DAY DURING THE TIME RESTRICTED TRAFFIC IS BEING MAINTAINED TO INSURE PROPER FUNCTIONING OF THE VARIOUS TRAFFIC CONTROL DEVICES, EXCEPT WHEN THE CONTRACTOR IS PERFORMING WORK IN THE AREAS.

BEFORE WORK BEGINS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER THE NAMES AND TELEPHONE NUMBERS OF A PERSON OR PERSONS WHO CAN BE CONTACTED 24 HOURS A DAY BY THE OHIO DEPARTMENT OF TRANSPORTATION AND ALL INTERESTED POLICE AGENCIES. THIS PERSON OR PERSONS SHALL BE RESPONSIBLE FOR REPLACING NECESSARY TRAFFIC CONTROL DEVICES. IN ADDITION, THE INDIVIDUAL SHALL BE ABLE TO RESPOND AND BE ON THE PROJECT WITHIN SIXTY (60) MINUTES AFTER A CALL AND HAVE SUFFICIENT INVENTORY ON HAND TO REPAIR OR REPLACE THE DAMAGED OR MISSING TRAFFIC CONTROL DEVICES. (THIS INFORMATION SHALL ALSO BE GIVEN TO THE COLUMBUS TRAFFIC COORDINATOR AT (614) 645-6269).

WHEN WORK IS BEING PERFORMED OR EQUIPMENT IS ON BERMS OR SHOULDERS AND IS WITHIN 5' OF A TRAVELLED LANE, THAT LANE SHALL BE CLOSED UNLESS PROPERLY PROTECTED BY PORTABLE CONCRETE BARRIER.

EQUIPMENT, VEHICLES AND MATERIAL SHALL NOT BE STORED OR PARKED ON THE PROJECT WITHIN THIRTY (30) FEET OF THE EDGE OF THE TRAVELLED PAVEMENT UNLESS BEHIND GUARDRAIL.

SIGNS NOT IN USE SHALL BE ADEQUATELY COVERED OR REMOVED.

BEFORE WORK IS STARTED ON THIS PROJECT, THE CONTRACTOR SHALL SUBMIT A SCHEDULE OF OPERATIONS IN WRITING TO THE ENGINEER FOR APPROVAL. THE SCHEDULE OF OPERATIONS SHALL BE IN ACCORDANCE WITH THE APPROVED CONSTRUCTION SEQUENCE. AFTER RECEIVING A COPY OF THE APPROVED SCHEDULE OF OPERATION THE CONTRACTOR SHALL OBTAIN THE NECESSARY CITY PERMIT FOR ANY CLOSURES. A COPY OF THE PERMIT SHALL BE RETAINED ON THE JOB AT ALL TIMES. A PERMIT WILL BE REQUIRED FROM THE CITY OF COLUMBUS FOR ANY LANE CLOSURES WITHIN THE CITY.

IF FULL DEPTH SHOULDER/MEDIAN REPLACEMENT IS REQUIRED, THEN ADJACENT JOINT REPAIRS TO FULL DEPTH SHOULDER/MEDIAN REPLACEMENT AREAS SHALL BE DONE PRIOR TO THE FULL DEPTH SHOULDER/MEDIAN REPLACEMENT.

THE CONTRACTOR WILL BE REQUIRED TO PROVIDE, ERECT, AND MAINTAIN ALL TRAFFIC CONTROL DEVICES NECESSARY FOR THE MAINTENANCE OF TRAFFIC, INCLUDING REGULATORY SIGNS AND PAVEMENT MARKINGS. THIS SHALL INCLUDE THE COVERING OR REMOVAL OF ALL INAPPROPRIATE TRAFFIC CONTROL DEVICES.

ALL ADVANCE SIGNS AND ALL TEMPORARY CONSTRUCTION SIGNS SHALL HAVE TWO RED FLAGS AND BE EQUIPPED WITH TYPE "A" FLASHING LIGHTS.

ADVANCE CONSTRUCTION SIGNING PLAN

THE REMOVAL AND REERECTION, AS REQUIRED BY THIS PLAN, OF SIGNS AND OVERLAYS DURING THE LIFE OF THE CONTRACT SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 614-MAINTAINING TRAFFIC.

ALL SIGNS, SUPPORTS AND OVERLAYS SHOWN ON THE ADVANCE CONSTRUCTION SIGN PLAN SHALL BE REMOVED AT THE END OF THE CONTRACT. THIS WORK SHALL BE INCLUDED IN ITEM 614-MAINTAINING TRAFFIC FOR PAYMENT.

SIGNS, FLAT SHEET, TYPE G, AS PER PLAN

THIS ITEM SHALL INCLUDE THE COST OF ALL HARDWARE, POSTS AND ANY ADDITIONAL MATERIAL FOR A COMPLETE INSTALLATION IN PLACE INCLUDING BOTH ERECTION AND REMOVAL, AS DIRECTED BY THE ENGINEER.

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. THE COST FOR COVERING OF SIGNS SHALL BE INCLUDED IN ITEM 614-MAINTAINING TRAFFIC.

BEFORE ANY RAMP IS CLOSED AND WORK IS BEGUN ALL ADVANCED CLOSURE SIGNS MUST BE IN PLACE. THIS SHALL INCLUDE ALL GROUND MOUNTED AND OVERLAY SIGNS.

ITEM 614 - PORTABLE CHANGEABLE MESSAGE SIGN, TYPE III, AS PER PLAN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN, AND REMOVE, WHEN NO LONGER NEEDED, A CHANGEABLE MESSAGE SIGN, ON SITE, FOR THE DURATION OF THE PROJECT. THE SIGN SHALL BE OF A TYPE SHOWN ON A LIST OF APPROVED PCMS UNITS MAINTAINED BY THE DIRECTOR. THE LIST CURRENTLY CONTAINS CLASS III AND II UNITS WITH MINIMUM LEGIBILITY DISTANCES OF 650 FT. AND 850 FT. RESPECTIVELY.

EACH SIGN SHALL BE TRAILER MOUNTED AND EQUIPPED WITH A FUNCTIONAL DIMMING MECHANISM TO DIM THE SIGN DURING DARKNESS AND A TAMPER AND VANDAL PROOF ENCLOSURE. EACH SIGN SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATING INSTRUCTIONS TO ENABLE ON-SITE PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT. THE SIGN SHALL ALSO BE CAPABLE OF BEING POWERED BY AN ELECTRICAL SERVICE DROP FROM A LOCAL UTILITY COMPANY.

THE PROBABLE LOCATIONS FOR THE PCMS IS SHOWN ON SHEET 35. PLACEMENT, OPERATION, MAINTENANCE, AND ALL ACTIVATION OF THE SIGNS BY THE CONTRACTOR SHALL BE DIRECTED BY THE ENGINEER. THE PCMS SHALL BE LOCATED IN A HIGHLY VISIBLE POSITION YET PROTECTED FROM TRAFFIC. THE CONTRACTOR SHALL, AT THE DIRECTION OF THE ENGINEER, RELOCATE THE PCMS TO IMPROVE VISIBILITY OR ACCOMMODATE CHANGED CONDITIONS. WHEN NOT IN USE, THE PCMS WILL BE TURNED OFF, FACING AWAY FROM ALL TRAFFIC AND SHALL DISPLAY AT LEAST THREE (3) HIGH INTENSITY YELLOW REFLECTIVE SHEETING SURFACES OF 9-INCH BY 15-INCH MINIMUM SIZE FACING TRAFFIC AND BE PROTECTED BY AT LEAST 6 DRUMS IF NOT BEHIND GUARDRAIL.

THE ENGINEER SHALL BE PROVIDED ACCESS TO EACH SIGN UNIT AND SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ODOT PERSONNEL TO OPERATE AND TROUBLE-SHOOT THE UNIT AND REVISE SIGN MESSAGES, IF NECESSARY.

THE CONTRACTOR SHALL IMPLEMENT A SYSTEM WHEREBY CHANGED MESSAGES WILL BE IMPLEMENTED WITHIN 4 HOURS DURING PERIODS OF NO WORK AND 30 MINUTES WHEN WORK IS IN PROGRESS FOLLOWING TELEPHONE NOTIFICATION FROM THE PROJECT ENGINEER TO A DESIGNATED PHONE.

ALL MESSAGES TO BE DISPLAYED ON THE SIGN WILL BE PROVIDED BY THE ENGINEER. A LIST OF ALL REQUIRED PREPROGRAMMED MESSAGES WILL BE GIVEN TO THE CONTRACTOR AT THE PROJECT PRECONSTRUCTION CONFERENCE. THE SIGN SHALL HAVE THE CAPABILITY TO STORE UP TO 99 MESSAGES. MESSAGE MEMORY OR PRE-PROGRAMMED DISPLAYS SHALL NOT BE LOST AS A RESULT OF POWER FAILURES TO THE ON BOARD COMPUTER. THE SIGN LEGEND SHALL BE CAPABLE OF BEING CHANGED IN THE FIELD. THREE-LINE PRESENTATION FORMATS WITH A MAXIMUM OF SIX MESSAGE PHASES SHALL BE SUPPORTED, BUT NORMALLY, NOT MORE THAN TWO MESSAGE PHASES SHALL BE EMPLOYED, ALTHOUGH THREE PHASES MAY BE USED IN UNUSUAL CONDITIONS. PCMS FORMAT SHALL PERMIT THE COMPLETE MESSAGE FOR EACH PHASE TO BE READ AT LEAST ONCE.

THE PCMS SHALL CONTAIN AN ACCURATE CLOCK AND PROGRAMMING LOGIC WHICH WILL ALLOW THE SIGN TO BE ACTIVATED, DEACTIVATED OR MESSAGES CHANGED AUTOMATICALLY AT DIFFERENT TIMES OF THE DAY FOR DIFFERENT DAYS OF THE WEEK.

THE PCMS UNIT SHALL BE MAINTAINED IN GOOD WORKING ORDER BY THE CONTRACTOR IN ACCORDANCE WITH THE PROVISIONS OF 614.03 (C). THE CONTRACTOR SHALL, PRIOR TO ACTIVATING THE UNIT, MAKE ARRANGEMENTS WITH AN AUTHORIZED SERVICE AGENT FOR THE PCMS TO ASSURE PROMPT SERVICE IN THE EVENT OF FAILURE. ANY FAILURE SHALL NOT RESULT IN THE SIGN BEING OUT OF SERVICE FOR MORE THAN 12 HOURS INCLUDING WEEKENDS. FAILURE TO COMPLY MAY RESULT IN AN ORDER TO STOP WORK AND OPEN ALL TRAFFIC LANES AND/OR IN THE DEPARTMENT TAKING APPROPRIATE ACTION TO SAFELY CONTROL TRAFFIC AND THE ENTIRE COST TO CONTROL TRAFFIC ACCRUED BY THE DEPARTMENT WILL BE DEDUCTED FROM MONEYS DUE, OR TO BECOME DUE TO THE CONTRACTOR ON HIS CONTRACT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR 24 HOURS PER DAY OPERATION AND MAINTENANCE OF THESE SIGNS ON THE PROJECT FOR THE DURATION OF THE PHASES WHEN THE PLAN REQUIRES THEIR USE.

THE REQUIREMENT TO FURNISH, INSTALL, MAINTAIN, AND REMOVE A PCMS UNIT ON THIS PROJECT SHALL NOT IN ANY WAY RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITIES AS OUTLINED IN 104.04.

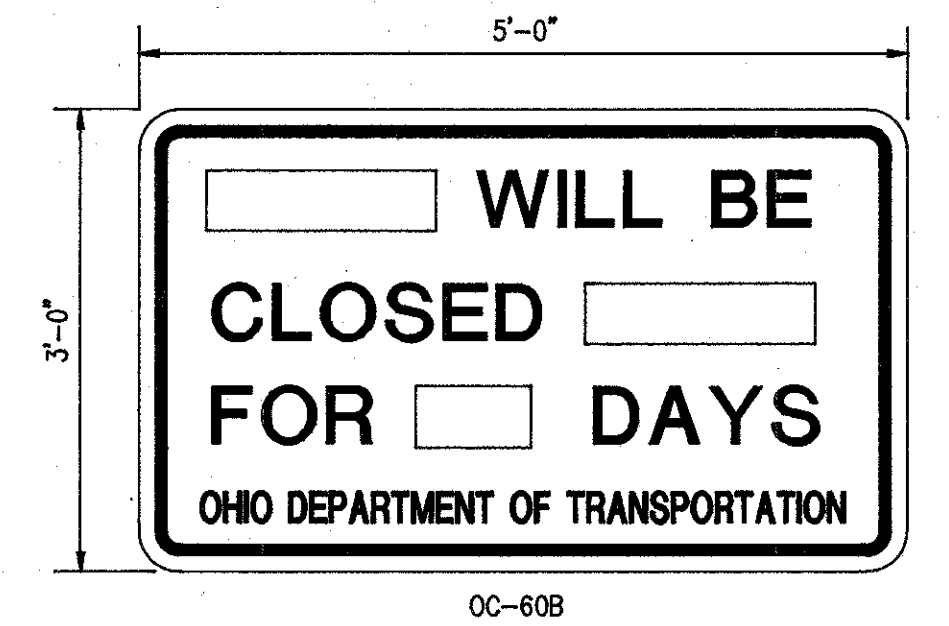
PAYMENT FOR THE ABOVE DESCRIBED ITEM SHALL BE AT THE CONTRACT UNIT PRICE BID PER SIGN-MONTH FOR EACH ITEM 614 - PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN, AND SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, FUELS, LUBRICATING OILS, SOFTWARE, HARDWARE, AND INCIDENTALS TO PERFORM THE ABOVE DESCRIBED WORK.

ITEM 614 PORTABLE CHANGEABLE MESSAGE SIGN, TYPE III, AS PER PLAN, 4 EACH

NOTICE OF CLOSURE SIGNS

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

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.



ITEM 614 - WORK ZONE MARKING SIGNS

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER.

ITEM 614 - WORK ZONE MARKING SIGNS 10 EACH

A QUANTITY OF 10 SIGNS, OW-167-48, "NO EDGE LINES," HAS BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED AS PER STD. DWG MT-99.10.

WORK ZONE SPEED LIMIT SIGN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN, COVER DURING SUSPENSION OF WORK, AND REMOVE WORK ZONE SPEED LIMITS SIGNS AND SUPPORTS (OW-143-48) (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 WHICH IS 1/2 MILE OR MORE IN LENGTH AND WHICH IS EXPECTED TO LAST AT LEAST 30 CONSECUTIVE CALENDAR DAYS OR AS DIRECTED BY THE ENGINEER. THE SIGN SHALL BE MOUNTED ON BOTH SIDES OF DIVIDED HIGHWAYS, 500 FEET IN ADVANCE OF THE LANE REDUCTION TAPER, THE SIGNS SHALL BE REPEATED ON BOTH SIDES AND EVERY 1/2 MILE FOR 45 MPH ZONES. THESE SIGNS SHALL ALSO BE ERECTED IMMEDIATELY AFTER EACH OPEN ENTRANCE RAMP WITHIN THE ZONE. A SIGN TO INDICATE THE RESUMPTIONS OF THE STATUTORY SPEED LIMIT SHALL BE ERECTED AT THE END OF ANY REDUCED SPEED ZONE. THIS SIGN SHALL BE AN 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 OR APPROVED EQUAL.

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

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

ITEM - 614 WORK ZONE SPEED LIMIT SIGN 28 EACH

A TOTAL QUANTITY OF 28 SIGNS HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR THIS PURPOSE.

ITEM SPECIAL REPLACEMENT SIGN

FLAT SIGNS FURNISHED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS 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 OF THE APPROVAL OF THE ENGINEER.

MAINTENANCE OF TRAFFIC GENERAL NOTES

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CHECKED BY: JSS DATE: 6/15/94		FHWA REGION 5	

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

AN ESTIMATED QUANTITY OF 150 SQUARE FEET HAS BEEN PROVIDED IN THE GENERAL SUMMARY.

PAVEMENT WORK

FOR EACH PHASE OF THE MAINTENANCE OF TRAFFIC PLAN ALL WORK INCLUDING PERMANENT OR TEMPORARY PAVEMENT MARKINGS SHALL BE COMPLETED BEFORE OPENING THE PAVEMENT TO TRAFFIC

MINIMUM LANE WIDTHS OF 10' SHALL BE PROVIDED ON THE MAINLINE.

THE TACK COAT SHALL BE APPLIED AS REQUIRED EACH DAY PRIOR TO PLACING ASPHALT CONCRETE AND ONLY FOR THAT LENGTH WHICH, UNDER NORMAL PAVING PRODUCTION, COULD BE COVERED EACH DAY. SCHEDULING OF THE PLACEMENT OF THE TACK COAT SHALL BE APPROVED BY THE ENGINEER.

RESURFACING OPERATIONS

PRIOR TO COMMENCING RESURFACING OPERATIONS, THE CONTRACTOR SHALL PROVIDE SURVEY REFERENCE POINTS FOR BOTH EDGES OF THE MAINLINE AND RAMP PAVEMENTS ON BOTH SIDES OF THE ROADWAY IN A MANNER SATISFACTORY TO THE ENGINEER. MAINLINE PAVEMENT SHALL BE REFERENCED A MAXIMUM OF 1000 FEET ON TANGENT SECTIONS AND 200 FEET ON CURVED SECTIONS. RAMP PAVEMENT SHALL BE REFERENCED A MAXIMUM OF 200 FEET IN TANGENT SECTIONS AND 50 FEET IN CURVED SECTIONS. THESE REFERENCE POINTS SHALL BE USED REESTABLISH THE TRAVELLED LANES DURING AND AT THE CONCLUSION OF THE RESURFACING OPERATIONS AND TO PROVIDE THE NECESSARY CONTROL FOR PAVEMENT MARKING LAYOUT.

ALL MATERIALS USED IN REFERENCING THE ABOVE SHALL BE REMOVED AT THE COMPLETION OF THE WORK.

ITEM 404 - BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC

A QUANTITY OF BITUMINOUS CONCRETE HAS BEEN PROVIDED FOR MAINTAINING THE MEDIAN SHOULDER DURING PHASE I CONSTRUCTION.

THE CONTRACTOR SHALL MAINTAIN AND RESTORE PAVEMENT OR BERM DAMAGED BY TRAFFIC OPPOSITE THE WORK AREAS. ASPHALT CONCRETE FEATHERING SHALL BE USED AS NECESSARY TO SAFELY MAINTAIN ALL TRAFFIC INCLUDING MOTORCYCLES. ALL ASPHALT CONCRETE FEATHERING SHALL BE REMOVED PRIOR TO ANY PAVING OPERATIONS. THE COST OF THIS REMOVAL SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 404 - BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC.

QUANTITIES SHALL BE USED AS DIRECTED BY THE ENGINEER AND PAYMENT WILL BE AT THE CONTRACT UNIT PRICE FOR ITEM 404 - BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC.

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

TEMPORARY PAVEMENT

TEMPORARY PAVEMENT SHALL BE CLASS B, CONFORMING TO ITEM 615.05 AND PAYMENT SHALL BE AT THE SQUARE YARD PRICE BID FOR ITEM 615-TEMPORARY PAVEMENT, CLASS B. IT IS NOT INTENDED THAT TEMPORARY PAVEMENT BE USED EXCLUSIVELY FOR MAINTAINING TRAFFIC ON THIS PROJECT, BUT THAT MAXIMUM USAGE BE MADE OF EXISTING AND PROPOSED PAVEMENT. THE LIMITS AND DURATION FOR USE OF TEMPORARY PAVEMENT SHALL BE HELD TO AN ABSOLUTE MINIMUM AND IN ALL CASES SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.

AN ESTIMATED QUANTITY OF 718 CU. YDS. HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS INDICATED.

TEMPORARY PAVEMENT SHALL BE CONSTRUCTED IN THE FOLLOWING AREAS:

- RAMP F-F TEMPORARY RAMP
- STA. 11+50 TO STA. 12+28, 4.5 FT. STRIP LEFT SIDE
- STA. 8+90 TO STA. 11+50, 2.5 FT. STRIP LEFT SIDE
- STA. 9+00 TO STA. 15+00, 2.5 FT. STRIP RIGHT SIDE
- STA. 140+00 TO STA. 143+00, 2.0 FT. STRIP RIGHT/LEFT SIDE

MAINTAINING RAMP ACCESS

THE CONTRACTOR SHALL PROVIDE AN ASPHALT WEDGE COURSE ACROSS WORK AREAS TO MAINTAIN ACCESS TO OPEN RAMPS. THE FOLLOWING QUANTITY HAS BEEN PROVIDED TO BE USED FOR THIS PURPOSE AS DIRECTED BY THE ENGINEER.

ITEM 404 - BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC 300 C.Y.

RAMP BEVELING

TEMPORARY BEVELED RAMPS SHALL BE PROVIDED AT ALL TIMES WHERE TRAFFIC IS REQUIRED TO TRAVEL FROM/ONTO A PAVEMENT SURFACE OF DIFFERENT ELEVATION. THESE RAMPS SHALL BE REMOVED PRIOR TO PLACING THE SPECIFIED PAVEMENT COURSES. THE MINIMUM LENGTH OF THE BEVELED RAMPS SHALL BE IN ACCORDANCE WITH STD DWG. BP-3.1, UNLESS APPROVED OTHERWISE BY THE PROJECT ENGINEER. COST FOR PLACING AND REMOVING THESE RAMPS SHALL BE INCLUDED IN ITEM 614, MAINTAINING TRAFFIC.

RESTRICTIONS TO ACCELERATION OR DECELERATION LANES

WHERE EITHER THE ACCELERATION LANE OR THE DECELERATION LANE IS SHORTENED OR OBSTRUCTED DUE TO WORK AND/OR STANDARD LANE CLOSURES, SUCH WORK OR PORTION OF WORK SHALL BE COMPLETED AS SOON AS POSSIBLE SO AS TO PERMIT THE LANE CLOSURE TO BE MOVED TO PROVIDE AS LONG OF AN ACCELERATION OR DECELERATION LANE AS POSSIBLE.

VERTICAL DROPS

VERTICAL DROPS OR DIFFERENCES IN PAVEMENT ELEVATIONS SHOULD BE AVOIDED WHENEVER POSSIBLE FOR ADJACENT LANES WHICH ARE OPEN TO TRAFFIC AT THE SAME TIME. WEDGE TREATMENT SHOULD BE APPLIED TO THOSE VERTICAL DROPS WHICH ARE UNAVOIDABLE THROUGHOUT THE COURSE OF THE PROJECT. SEE SHEET 77, "DROP-OFFS IN WORK ZONES" FOR FURTHER DETAILS.

TEMPORARY DRAINAGE

THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE TEMPORARY POSITIVE DRAINAGE MEASURES THROUGHOUT THE DURATION OF THE CONSTRUCTION, INCLUDING SHUT-DOWN PERIODS. THE COST OF THIS WORK WILL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614 - MAINTAINING TRAFFIC.

LONGITUDINAL PAVEMENT JOINTS

WHERE POSSIBLE, ALL LONGITUDINAL PAVEMENT JOINTS IN THE ASPHALT COURSES SHALL BE PLACED SO AS TO AVOID THE WHEEL PATH IN THE FINISHED LANES. THIS WILL ALSO INCLUDE JOINTS IN THE CONCRETE FOR ANY FULL DEPTH REPLACEMENT SECTIONS.

OVERNIGHT TRENCH CLOSING

NO TRENCH WILL BE LEFT OVERNIGHT, IN CASE WORK MUST BE SUSPENDED BECAUSE OF INCLEMENT WEATHER OR OTHER REASONS. THE TRENCH WILL BE BACKFILLED AT THE DIRECTION OF THE ENGINEER. ANY JOINT REPAIRS WHICH ARE TO BE MADE MAY NOT INCLUDE ANY EXCAVATION WHICH CAN NOT BE BACKFILLED IN THE SAME DAY.

ITEM 622 - DELINEATION OF PORTABLE CONCRETE BARRIER

PORTABLE CONCRETE BARRIER (PCB) SHALL BE DELINEATED WITH REFLECTORS, OBJECT MARKERS, AND REFLECTIVE SHEETING. STEADY BURN WARNING LIGHTS ARE NOT REQUIRED ON PCB.

A. 32" PORTABLE CONCRETE BARRIER WITHOUT GLARE SCREEN

1. REFLECTORS SHALL BE MOUNTED ON THE FACE OF THE PCB WITH THE TOP OF THE REFLECTOR APPROXIMATELY 26 INCHES ABOVE THE BASE AND AT A MAXIMUM SPACING OF 25 FEET. THE REFLECTOR SHALL BE: CUBE CORNER PRISM, REFLEXIVE-SHEETING, OR 3-M DIAMOND GRADE SHEETING. THE REFLECTOR SHALL HAVE A MINIMUM AREA OF 7.5 SQUARE INCHES WITH NO DIMENSION LESS THAN 2-INCHES. THEY SHALL BE YELLOW IF ON THE LEFT SIDE OF TRAFFIC AND WHITE ON THE RIGHT. WHEN ADJACENT TO A REVERSIBLE TRAFFIC DIRECTION LANE, YELLOW AND WHITE REFLECTORS SHALL BE PAIRED BACK-TO-BACK.

2. TOP MOUNTED OBJECT MARKERS (9" X 15") WITH ORANGE REFLECTIVE SHEETING, TYPE G (730.19) SHALL BE MOUNTED MIDWAY BETWEEN THE FACE MOUNTED REFLECTORS. WHEN ADJACENT TO A REVERSIBLE TRAFFIC DIRECTION LANE OR BETWEEN OPPOSING TRAFFIC FLOWS, THEY SHALL BE MOUNTED IN PAIRS FACING TRAFFIC FROM EACH DIRECTION. SEE SHEET 76 FOR MORE DETAILS.

ITEM 622 - PORTABLE CONCRETE BARRIER

IT IS ANTICIPATED THAT THE SAME BARRIER WILL BE USED IN VARIOUS PHASES OF CONSTRUCTION. MOVEMENT OF THE CONCRETE BARRIER BETWEEN PHASES SHALL BE ACCOMPLISHED IN ONE WORKING DAY. FLAGGERS AND LEO'S SHALL BE UTILIZED FOR PROTECTION OF VEHICULAR TRAFFIC UNTIL MOVEMENT OF THE BARRIER IS COMPLETE.

ALL COSTS INVOLVED IN REMOVING AND REINSTALLING THE CONCRETE BARRIER WILL BE INCLUDED IN THE CONTRACT PRICE FOR ITEM 622, PORTABLE CONCRETE BARRIER.

ITEM 622 - PORTABLE CONCRETE BARRIER, 32"

PORTABLE CONCRETE BARRIER, 32" SHALL BE TIED TOGETHER. TONGUE AND GROOVE SECTIONS WILL NOT BE PERMITTED ON THIS PROJECT.

ITEM 622 - PORTABLE CONCRETE BARRIER, 32" BRIDGE MOUNTED, AS PER PLAN

PORTABLE CONCRETE BARRIER, 32" BRIDGE MOUNTED, AS PER PLAN SHALL BE FASTENED TO THE BRIDGE DECK WITH ANGLE BACKUP. FOR FURTHER DETAILS SEE SHEET 76.

ITEM 614 - BARRIER REFLECTORS

THESE REFLECTORS AND THEIR MOUNTINGS SHALL CONFORM TO SUPPLEMENTAL SPECIFICATION 802 EXCEPT THAT THE SPACING SHALL BE AS PER PLAN. FOR DETAILS SEE SHEET 76.

TEMPORARY PAVEMENT MARKINGS

ALL TEMPORARY PAVEMENT MARKINGS TO BE APPLIED TO FINAL SURFACES SHALL BE 947.03, TYPE C ONLY. TEMPORARY MARKINGS APPLIED TO UNFINISHED SURFACES MAY BE PAINT OR TAPE. ALL CONFLICTING MARKINGS SHALL BE REMOVED.

CONFLICTING PAVEMENT MARKINGS

IF THE CONSTRUCTION OPERATION REQUIRES THE LANE CLOSURE FOR MORE THAN ONE DAY, THEN THE REFLECTORS FROM THE RAISED PAVEMENT MARKERS (RPMS) SHALL BE REMOVED AND THE EXISTING CONFLICTING PAVEMENT MARKINGS SHALL EITHER BE REMOVED, OR COVERED WITH CONSTRUCTION GRADE BLACK OUT TAPE. THE APPROPRIATE COLOR TEMPORARY EDGE LINE SHALL BE APPLIED WHEN SPECIFIED IN THE PLAN. TEMPORARY EDGE LINES WHICH WOULD CONFLICT WITH FINAL TRAFFIC LANES SHALL BE REMOVABLE (740.05, 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 641.10, AND THE ORIGINAL MARKINGS AND PAVEMENT MARKER REFLECTORS SHALL BE RESTORED.

FREEWAY STRUCTURES OVER SIDE ROADS AND RAILROADS

ALL EXISTING LANES OF TRAFFIC IN EACH DIRECTION ON SIDE ROADS SHALL BE MAINTAINED AT ALL TIMES DURING REHABILITATION OF MAINLINE BRIDGES EXCEPT DURING THE FOLLOWING OPERATIONS OR AS DIRECTED BY THE ENGINEER:

1. DEMOLITION OF THE EXISTING BRIDGE PARAPETS
2. CONSTRUCTION OF THE PROPOSED PARAPET OVER THE LOCAL ROAD WHERE THE ENGINEER BELIEVES TEMPORARY CLOSURE OF A TRAFFIC LANE IS WARRANTED.

A SAFETY NET OR PLATFORM SHALL BE REQUIRED TO PROTECT THE UNDERPASS ROADWAY AND RAILROAD DURING REMOVAL OF EXISTING AND CONSTRUCTION OF NEW CONCRETE PARAPETS. THE DESIGN OF THE NET OR PLATFORM SHALL CONFORM WITH OSHA REQUIREMENTS, SHALL HAVE APPROVAL FROM THE ODOT BUREAU OF BRIDGES AND STRUCTURAL DESIGN, AND SHALL REMAIN IN PLACE UNTIL WORK HAS BEEN COMPLETED. THE EXISTING VERTICAL CLEARANCE OVER THE UNDERPASS ROADWAY AND RAILROAD SHALL BE MAINTAINED AT ALL TIMES. IN THE EVENT A LANE RESTRICTION IS NECESSARY, THE METHOD OF INSTALLATION AND DESIGN OF THE TEMPORARY LANE CLOSURE SHALL CONFORM TO STANDARD DRAWINGS MT-95.30 OR MT-97.10. IN THE EVENT THAT A DETOUR IS NECESSARY, THEN THE METHOD SHALL BE APPROVED BY THE ENGINEER AND SET UP BY THE CONTRACTOR. COST FOR THE ABOVE WORK SHALL BE CONSIDERED INCIDENTAL AND INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614-MAINTAINING TRAFFIC.

SIDE ROAD STRUCTURES OVER FREEWAY

AT LEAST ONE LANE OF TRAFFIC IN EACH DIRECTION ON S.R. 104 SHALL BE MAINTAINED AT ALL TIMES DURING THE REHABILITATION OF THE EXISTING STRUCTURES OVER THE FREEWAY EXCEPT AS FOLLOWS:

1. UNLESS OTHERWISE SHOWN IN THE PLAN OR DIRECTED BY THE ENGINEER.

A SAFETY NET OR PLATFORM SHALL BE REQUIRED TO PROTECT THE TRAVEL LANES OF THE FREEWAY DURING REHABILITATION OF EXISTING STRUCTURE. THE DESIGN OF THE NET OR PLATFORM SHALL CONFORM WITH OSHA REQUIREMENTS, SHALL HAVE APPROVAL FROM THE ODOT BUREAU OF BRIDGES AND STRUCTURAL DESIGN, AND SHALL REMAIN IN PLACE UNTIL WORK HAS BEEN COMPLETED. THE EXISTING VERTICAL CLEARANCE OVER THE FREEWAY SHALL BE MAINTAINED AT ALL TIMES.

IN THE EVENT A LANE RESTRICTION ON THE FREEWAY IS NECESSARY, THE METHOD OF INSTALLATION AND DESIGN OF TEMPORARY LANE CLOSURE SHALL BE IN ACCORDANCE WITH STANDARD DRAWING MT-95.30. COST FOR THE ABOVE WORK SHALL BE CONSIDERED INCIDENTAL AND SHALL BE INCLUDED IN ITEM 614 MAINTAINING TRAFFIC.

CONTRACTOR'S EQUIPMENT OPERATION AND STORAGE

IN ADDITION TO THE REQUIREMENTS OF SECTION 614.03A OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS THE FOLLOWING SHALL APPLY.

THE CONTRACTOR'S EQUIPMENT SHALL BE OPERATED IN THE DIRECTION OF TRAFFIC WHERE PRACTICAL. A FLAGGER SHALL BE USED WHERE THE CONTRACTOR'S EQUIPMENT MUST MERGE WITH THE TRAFFIC STREAM. THE CONTRACTOR'S VEHICLES AND EQUIPMENT SHALL BE EQUIPPED WITH AT LEAST ONE AMBER FLASHING LIGHT OR ROTATING BEACON, VISIBLE OVER 360 DEGREES.

EQUIPMENT MAY BE PARKED IN AREAS ALONG THE HIGHWAY WHEN VARIOUS OPERATIONS ARE SCHEDULED TO CONTINUE THE NEXT WORKDAY, ON WEEKENDS OR AT OTHER TIMES OF STANDARD FROM THE RIGHT-OF-WAY. THE LOCATION SHALL HAVE PRIOR APPROVAL OF THE ENGINEER. NO EQUIPMENT SHALL BE PARKED IN THE MEDIAN OF THE HIGHWAY. ADEQUATE BARRICADES AND LIGHTS SHALL BE PLACED ON THE PAVEMENT SIDE OF THE EQUIPMENT TO IDENTIFY THE LIMITS OF THE EQUIPMENT. ALL OTHER EQUIPMENT, INCLUDING PRIVATE VEHICLES, SHALL BE STORED, OR PARKED AT THE APPROVED CONTRACTOR'S STORAGE AREA.

TEMPORARY PAVEMENT MARKING "AS DIRECTED QUANTITIES"

THE FOLLOWING ITEMS ARE TO BE USED DURING REQUIRED SHUT-DOWN PERIODS. THE TEMPORARY PAVEMENT MARKING SHALL BE PLACED TO MATCH THE PERMANENT LAYOUT OF EACH ROADWAY. FOR PERMANENT LAYOUT DETAILS SEE TRAFFIC CONTROL PLAN.

THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR USE "AS DIRECTED BY THE ENGINEER".

ITEM 614	TEMPORARY LANE LINE, CLASS I, 740.05, TYPE C	35,000 L.F.
ITEM 614	TEMPORARY EDGE LINE, CLASS I, 740.05, TYPE C	85,000 L.F.

ITEM 614	TEMPORARY CHANNELIZING LINE, CLASS I, 740.05, TYPE C	8,000 L.F.
ITEM 614	TEMPORARY TRANSVERSE LINE, CLASS I, 740.05, TYPE C	1,200 L.F.
ITEM 614	TEMPORARY STOP LINE, CLASS I, 740.05, TYPE C	300 L.F.
ITEM 614	TEMPORARY CROSSWALK LINE, CLASS I, 740.05, TYPE C	400 L.F.
ITEM 614	TEMPORARY DOTTED LINE, CLASS I, 740.05, TYPE C	1,000 L.F.
ITEM 614	TEMPORARY LANE ARROW, CLASS I, 740.05, TYPE C	35 EACH
ITEM 614	TEMPORARY WORD ON PAVEMENT, 72", CLASS I, 740.05, TYPE C	15 EACH

ADDITIONAL TEMPORARY TRAFFIC CONTROL DEVICES

THE FOLLOWING ITEMS ARE TO BE USED WHEN IT HAS BEEN DETERMINED BY THE ENGINEER THAT ADDITIONAL TEMPORARY TRAFFIC CONTROL DEVICES NOT SHOWN IN THE MAINTENANCE OF TRAFFIC PLANS ARE REQUIRED.

DRUMS, BARRICADES OR SIGNS AND PAVEMENT MARKINGS FURNISHED WILL BE IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS FOR THE ORIGINAL.

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

PAVEMENT MARKINGS FURNISHED UNDER THIS ITEM SHALL INCLUDE INSTALLATION AND REMOVAL OF BOTH TEMPORARY AND PERMANENT.

THE FOLLOWING QUANTITIES FOR THESE ITEMS HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER:

ITEM SPECIAL	REPLACEMENT DRUMS	500 EACH
ITEM 630	SIGN, FLAT SHEET, TYPE G, AS PER PLAN	600 S.F.
ITEM 630	SIGN, TEMPORARY OVERLAY, TYPE G	1000 S.F.
ITEM 614	TEMPORARY EDGE LINE, CLASS I	35,000 L.F.
ITEM 614	TEMPORARY LANE LINE, CLASS I	15,000 L.F.
ITEM 614	TEMPORARY EDGE LINE, CLASS I, 740.05, TYPE C	10,000 L.F.
ITEM SPECIAL	FLASHING ARROW PANELS, TYPE C (PER DAY)	5 EACH
ITEM 622	PORTABLE CONCRETE BARRIER, 32"	500 L.F.
ITEM SPECIAL	REBOUNDABLE TUBULAR PYLON	50 EACH
ITEM SPECIAL	TYPE III BARRICADE (10 FEET LONG)	10 EACH
ITEM 614	TEMPORARY RAISED PAVEMENT MARKER	300 EACH
ITEM 614	PORTABLE CHANGEABLE MESSAGE SIGNS, TYPE III, AS PER PLAN	2 EACH

PAYMENT FOR THESE ITEMS WILL BE AT THE CONTRACT UNIT PRICE INCLUDING ALL NECESSARY MATERIAL, PARTS, EQUIPMENT, AND LABOR.

ITEM SPECIAL - REBOUNDABLE TUBULAR PYLON

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

QUANTITY: THE BASE BID SHALL INCLUDE THE NUMBER INDICATED OF REBOUNDABLE TUBULAR PYLONS AS HEREIN SPECIFIED.

MATERIAL: THE PYLONS SHALL BE TUBULAR SHAPED LOW DENSITY, CO-EXTRUDED POLY-ETHYLENE WITH ULTRA VIOLET INHIBITORS, AND A MINIMUM OF 48 INCHES IN LENGTH.

COLOR: THE TUBE COLOR SHALL BE ORANGE.

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

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

REBOUNDABLE TUBULAR PYLONS TO BE APPROVED EQUAL IN QUALITY, DESIGN AND PERFORMANCE TO SAFE-HIT CORPORATION, DESIGN NO. SH 34SMAOS.

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

MAINTENANCE OF TRAFFIC GENERAL NOTES

CALC BY: JJA DATE: 6/15/94	FRA-104-8.02	OHIO
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ITEM SPECIAL - REPLACEMENT DRUM

DRUMS FURNISHED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS 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 DRUMS SHALL BE NEW.

PAYMENT FOR THE NEW DRUMS SHALL BE MADE AT THE CONTRACT 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 REQUIREMENT FOR THE ORIGINAL DRUM.

AN ESTIMATED QUANTITY OF 100 EACH HAS BEEN PROVIDED IN THE GENERAL SUMMARY.

ITEM SPECIAL - FLASHING ARROW PANEL, TYPE C

FLASHING ARROW PANELS USED ON THIS PROJECT FOR MAINTENANCE OF TRAFFIC PURPOSES SHALL CONFORM TO STANDARD DRAWING TC-35.10.

AN ESTIMATED QUANTITY OF 2 FLASHING ARROW PANELS, TYPE C HAVE BEEN PROVIDED IN THE GENERAL SUMMARY.

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. THE INSTALLATION AND OPERATION OF ALL TRAFFIC CONTROL AND TRAFFIC CONTROL DEVICES REQUIRED BY THE "OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" LATEST EDITION, OR AS DIRECTED BY THE ENGINEER, SHALL BE PROVIDED BY THE CONTRACTOR WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

FLOODLIGHTING

FLOODLIGHTING OF THE WORK SITE FOR OPERATIONS CONDUCTED DURING NIGHT TIME PERIODS WILL BE ACCOMPLISHED SO THAT THE LIGHTS DO NOT CAUSE GLARE TO THE DRIVERS ON THE HIGHWAY. TO INSURE THE ADEQUACY OF THE FLOODLIGHT PLACEMENT, THE CONTRACTOR AND THE ENGINEER WILL DRIVE THROUGH THE WORK SITE EACH NIGHT, WHEN THE LIGHT IS IN PLACE AND OPERATIVE, PRIOR TO COMMENCING ANY WORK. IF GLARE IS DETECTED, THE LIGHT PLACEMENT AND SHIELDING WILL BE ADJUSTED TO THE SATISFACTION OF THE ENGINEER BEFORE WORK PROCEEDS. THE COST OF FLOODLIGHTING IS TO BE INCLUDED IN ITEM 614-MAINTAINING TRAFFIC.

DUST CONTROL

THE CONTRACTOR SHALL FURNISH AND APPLY WATER AND CALCIUM CHLORIDE FOR DUST CONTROL AS DIRECTED BY THE ENGINEER. THE FOLLOWING CONTINGENCY ITEMS HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR DUST CONTROL.

ITEM 616, WATER	100 M-GAL
ITEM 616, CALCIUM CHLORIDE	10 TONS

ALTERNATIVE METHODS

IF THE CONTRACTOR SO ELECTS, HE MAY SUBMIT ALTERNATE METHODS FOR THE MAINTENANCE OF TRAFFIC PROVIDED THE INTENT OF THE ABOVE PROVISIONS IS FOLLOWED AND NO ADDITIONAL INCONVENIENCE TO THE TRAVELING PUBLIC RESULTS THEREFROM. NO ALTERNATE PLAN WILL BE PUT INTO EFFECT UNTIL THE APPROVAL HAS BEEN GRANTED, IN WRITING, BY THE DIRECTOR.

WORKING HOURS

THE CONTRACTOR MAY WORK 24 HOURS A DAY AND 7 DAYS A WEEK (EXCEPT DURING WINTER SHUTDOWN PERIODS).

WINTER TRAFFIC LIMITATIONS

ALL EXISTING LANES AND RAMPS SHALL BE OPEN TO TRAFFIC BETWEEN DECEMBER 1ST AND MARCH 1ST WITH THE EXCEPTION OF SHORT TERM DAYLIGHT ONLY CLOSURES. THE CONTRACTOR IS CAUTIONED TO SCHEDULE HIS WORK, ESPECIALLY ASPHALT OVERLAYS, TO MEET THIS REQUIREMENT. DECEMBER 1ST SHALL BE CONSIDERED TO CONSTITUTE AN INTERIM/FINAL COMPLETION DATE AND SHOULD THE CONTRACTOR FAIL TO MEET THIS REQUIREMENT THE CONTRACTOR SHALL BE ASSESSED LIQUIDATED DAMAGES IN ACCORDANCE WITH SECTION 108.07 OF THE CONSTRUCTION AND MATERIALS SPECIFICATIONS FOR EACH CALENDAR DAY THAT ALL LANES ARE NOT OPEN AND AVAILABLE TO TRAFFIC.

CONSTRUCTION LIMITATIONS

FROM DECEMBER 1, 1995 TO MARCH 1, 1996, AND DECEMBER 1, 1996, TO MARCH 1, 1997. ALL LANES WILL BE OPEN TO TRAFFIC IN EACH DIRECTION.

NO LANE CLOSURE SETUPS OR TAKE DOWNS WILL OCCUR BETWEEN 7:00 AM AND 9:00 AM AND BETWEEN 3:00 PM AND 6:00 PM ON WEEKDAYS.

ALL LANES, RAMPS, AND BERMS SHALL BE AT THE SAME ELEVATION DURING THE PERIOD OF TIME WHEN ALL LANES ARE OPEN TO TRAFFIC. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PLACING OR REPLACING ALL PAVEMENT MARKINGS NECESSARY TO MAINTAIN THE NORMAL EXISTING TRAFFIC PATTERNS.

INTERIM COMPLETION DATES

ALL DATES, AS LISTED UNDER THE CONSTRUCTION LIMITATIONS NOTE AND THE SEQUENCE OF RAMP CLOSING NOTES, SHALL BE CONSIDERED INTERIM COMPLETION DATES.

WITH RESPECT TO SECTION 108.06 OF THE OHIO DEPARTMENT OF TRANSPORTATION'S CONSTRUCTION AND MATERIALS SPECIFICATIONS, THE CONTRACTOR IS HEREBY ADVISED THAT FOR PURPOSES OF ALL INTERIM COMPLETION DATES AND THE FINAL COMPLETION DATE, THIS SPECIFICATION SHALL BE STRICTLY INTERPRETED AND RIGIDLY FOLLOWED, WITH THE FOLLOWING MODIFICATIONS:

(A) WRITTEN SUBSTANTIATED REQUESTS FOR EXTENSIONS OF TIME SHALL BE SENT TO THE OFFICE OF THE DIRECTOR NO LATER THAN FIFTEEN (15) DAYS FOLLOWING THE TERMINATION OF THE DELAYS (INCLUDING BUT NOT LIMITED TO THE WEATHER). FAILURE TO FOLLOW THIS REQUIREMENT FULLY SHALL RESULT IN THE DENIAL OF THE REQUEST FOR EXTENSION OF TIME. WHEN SUBMITTED PROPERLY, THE DIRECTOR SHALL GIVE DUE CONSIDERATION TO THE REQUEST.

(B) APPROVAL OF A TIME EXTENSION BY THE DIRECTOR SHALL BE GRANTED ONLY WHEN A DELAY HAS RESULTED DUE TO THE OCCURRENCE OF AN EXTRAORDINARY CIRCUMSTANCE BEYOND THE CONTROL OF THE CONTRACTOR.

FINAL COMPLETION DATE

IN LIEU OF THE SCHEDULE OF LIQUIDATED DAMAGES FOUND IN SECTION 108.07 OF THE OHIO DEPARTMENT OF TRANSPORTATION'S CONSTRUCTION AND MATERIAL SPECIFICATIONS DATED 1995, THE DEPARTMENT SHALL ASSESS \$ 800 IN LIQUIDATED DAMAGES FOR EACH AND EVERY CALENDAR DAY WORK IS PROSECUTED BEYOND THE FINAL COMPLETION DATE.

LIQUIDATED DAMAGES

SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THE REQUIREMENTS SET FORTH IN THE PLANS, INCLUDING THE DATES SET FOR INTERIM COMPLETION OR THE DATE SET FOR FINAL COMPLETION, THE CONTRACTOR SHALL BE SUBJECT TO LIQUIDATED DAMAGES IN THE AMOUNT OF \$ 800 PER DAY.

IT IS ANTICIPATED BY THE DEPARTMENT THAT IN ORDER FOR THE CONTRACTOR TO MEET THE ABOVE INTERIM COMPLETION DATES AND/OR FINAL COMPLETION DATE, HE MAY USE ALL MEANS POSSIBLE, INCLUDING BUT NOT LIMITED TO, MULTIPLE SHIFTS WORKING TWENTY FOUR (24) HOURS A DAY AND SEVEN (7) DAYS A WEEK, ADDITIONAL CREWS, MULTIPLE MATERIAL SOURCES, MULTIPLE SUBCONTRACTORS (NOT TO EXCEED PROVISIONS OF CMS 108.01) AND ANY OTHER PERMISSIBLE MEANS AVAILABLE.

SEQUENCE OF CONSTRUCTION

IT IS THE INTENT OF THE FOLLOWING SEQUENCE OF CONSTRUCTION TO PROVIDE A WORK AREA FOR THE CONTRACTOR WHILE ALSO MAINTAINING TRAFFIC IN A MANNER WHICH IS SAFE FOR THE TRAVELLING PUBLIC; THEREFORE, ALL PHASES SHALL HAVE STRICT ADHERENCE.

ALL TEMPORARY OR PERMANENT PAVEMENT MARKINGS SHALL BE IN PLACE BEFORE ANY PAVEMENT IS OPENED TO TRAFFIC

AT LEAST TWO LANES OF TRAFFIC IN EACH DIRECTION IS TO BE MAINTAINED FROM STA. 8+00 TO STA. 42+00 AT ALL TIMES.

AT LEAST ONE LANE OF TRAFFIC IN EACH DIRECTION TO BE MAINTAINED FROM STA. 42+00 TO STA. 140+00 AT ALL TIMES.

RAMP C-C AT THE AM. AGG. HAUL RD., RAMPS C AND E AT U.S. 23, RAMPS A, B AND C AT GROVEPORT RD., AND RAMP B AT LOCKBOURNE RD. SHALL BE CLOSED TO TRAFFIC DURING PHASES ONE, TWO, THREE AND FOUR, AND OPEN DURING PHASE FIVE.

THE REMAINING RAMPS SHALL BE CLOSED ONLY DURING THEIR SPECIFIED PHASE AND SHALL REMAIN OPEN OR BE RE-OPENED AT ALL OTHER TIMES.

THE CONTRACTOR SHALL MAINTAIN PEDESTRIAN BRIDGE TRAFFIC DURING SCHOOL HOURS. THE PEDESTRIAN BRIDGE MAY BE CLOSED TO ALL PUBLIC TRAFFIC DURING THE SUMMER MONTHS WHEN SCHOOL IS NOT IN SESSION.

PHASE ONE

THE CONTRACTOR SHALL PLACE A 5 FOOT WIDE MEDIAN SHOULDER OVERLAY REINFORCEMENT ADJACENT TO THE EDGE OF PAVEMENT FROM STA. 12+75 TO STA. 50+00 BOTH SIDES OF EXISTING MEDIAN.

PHASE TWO - A, B, C AND D

GENERAL

TRAFFIC SHALL BE MAINTAINED ON THE INSIDE LANE(S) AND THE CONTRACTOR SHALL PERFORM THE WORK ON THE OUTSIDE LANE(S), SHOULDERS AND RAMPS.

PHASE TWO WORK SHALL CONSIST OF:

- OUTSIDE SHOULDERS
- MAINLINE AND RAMP JOINT REPAIR
- MAINLINE AND RAMP PLANING AND OVERLAY
- FULL DEPTH PAVEMENT REPLACEMENT AT MAINLINE AT-GRADE STRUCTURES.
- STRUCTURE WORK (PARAPET) FOR MAINLINE STRUCTURES.
- PAINTING STRUCTURES
- REPLACING CATCH BASINS AND CULVERT ENDS IN SHOULDER AREAS.
- REPLACING GUARDRAIL
- REPLACING UNDERDRAINS
- RAMP LIGHTING AND UNDERPASS LIGHTING REMOVAL AND REPLACEMENT.
- REPLACE EXISTING SIGN FACES
- REPLACING R/W FENCING
- GRADING AND SEEDING

PHASE TWO-A, TWO-B, TWO-C, AND TWO-D SHALL BE DONE CONSECUTIVELY.

ALL PERMANENT CONSTRUCTION SHALL BE COMPLETED TO THE TOP OF ITEM 446 TYPE 2 IN PHASE TWO PRIOR TO USING THE PHASE TWO WORK AREA FOR MAINTENANCE OF TRAFFIC.

TEMPORARY PAVEMENT, AS PER PLAN SHALL BE CONSTRUCTED IN THE FOLLOWING AREAS.

- RAMP F-F TEMPORARY RAMP
- STA. 11+50 TO STA. 12+28 4.5 FT. STRIP LEFT SIDE
- STA. 8+90 TO STA. 11+50 2.5 FT. STRIP LEFT SIDE
- STA. 9+00 TO STA. 15+00, 2.5 FT. STRIP RIGHT SIDE
- STA. 140+00 TO STA. 143+00, 2.0 FT. STRIP RIGHT/LEFT SIDE.

PHASE TWO-A

THE CONTRACTOR SHALL PERFORM WORK ON RAMP C-C AT AM. AGG. HAUL RD., RAMPS C AND E AT U.S. 23, RAMPS A, B AND C AT GROVEPORT RD AND RAMP B AT LOCKBOURNE RD.

PHASE TWO-B

THE CONTRACTOR SHALL PERFORM WORK ON RAMP B-B AT AM. AGG. HAUL RD., RAMP A AT U.S. 23, AND RAMP A AT LOCKBOURNE ROAD.

PHASE TWO-C

THE CONTRACTOR SHALL RE-OPEN PHASE TWO-B RAMP CLOSURES, THEN CLOSE AND PERFORM WORK ON RAMP B AT U.S. 23, AND RAMP D AT GROVEPORT ROAD.

PHASE TWO-D

THE CONTRACTOR SHALL RE-OPEN PHASE TWO-C RAMP CLOSURES, THEN CLOSE AND PERFORM WORK ON RAMP F-F AT I-71, RAMPS A-A AND D-D AT AM. AGG. HAUL RD., AND RAMP D AT U.S. 23. AT THE COMPLETION OF THIS PHASE THE RAMPS CLOSED IN THIS PHASE SHALL BE RE-OPENED.

LISTED BELOW IS THE SEQUENCE OF RAMP CLOSINGS DURING PHASE TWO-A, B, C AND D. CLOSURE LIMITATIONS AND LIQUIDATED DAMAGES ARE ALSO LISTED.

RAMP NAME	TYPE	LOCATION	MAXIMUM LENGTH OF CLOSURE (CONSECUTIVE CALENDAR DAYS)	DAMAGES	PHASE
RAMP F-F	OFF	I-71	18	*	TWO-D
RAMP A-A	ON	AM. AGG. HAUL ROAD	21	*	TWO-D
RAMP B-B	OFF	AM. AGG. HAUL ROAD	21	*	TWO-B
RAMP C-C	ON	AM. AGG. HAUL ROAD	21	*	TWO-C
RAMP D-D	OFF	AM. AGG. HAUL ROAD	21	*	TWO-D
RAMP A	ON	U.S. 23	21	*	TWO-B
RAMP B	OFF	U.S. 23	21	*	TWO-C
RAMP C	ON	U.S. 23	**	*	TWO-A
RAMP D	OFF	U.S. 23	21	*	TWO-D
RAMP E	ON	U.S. 23	**	*	TWO-A
RAMP A	OFF	GROVEPORT ROAD	**	*	TWO-A
RAMP B	ON	GROVEPORT ROAD	**	*	TWO-A
RAMP C	ON	GROVEPORT ROAD	**	*	TWO-A
RAMP D	OFF	GROVEPORT ROAD	21	*	TWO-C
RAMP A	OFF	LOCKBOURNE ROAD	21	*	TWO-B
RAMP B	ON	LOCKBOURNE ROAD	**	*	TWO-A

(*) - THE MAXIMUM LENGTH OF CLOSURE (CALENDAR DAYS) SHOWN SHALL BE CONSIDERED AN INTERIM COMPLETION DATE (SECTION 108) AND FOR EACH CALENDAR DAY THAT THE RAMP REMAINS CLOSED TO THE TRAFFIC BEYOND THAT DATE, THE CONTRACTOR WILL BE ASSESSED LIQUIDATED DAMAGES IN ACCORDANCE WITH SECTION 108.07 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS.

(**) - INDICATES THAT THIS PARTICULAR RAMP IS CLOSED FOR THE DURATION OF PHASES ONE THROUGH FOUR. A NUMBER IN THIS POSITION INDICATES THAT THIS IS THE MAXIMUM LENGTH OF CLOSURE FOR EACH INDIVIDUAL RAMP, AND SHALL NOT EXCEED THE NUMBER OF CONSECUTIVE CALENDAR DAYS AS SHOWN.

ONCE CLOSURE OF THE RAMP IS MADE, THE CONTRACTOR SHALL DILIGENTLY PURSUE THE WORK TO MINIMIZE THE INCONVENIENCE TO THE TRAVELING PUBLIC.

PHASE THREE

TRAFFIC SHALL BE MAINTAINED ON THE REHABILITATED OUTSIDE LANE(S), SHOULDERS, TEMPORARY PAVEMENTS AND RAMPS. THE CONTRACTOR SHALL PERFORM THE WORK ON THE INSIDE LANE(S) AND MEDIAN.

PHASE THREE WORK SHALL CONSIST OF:

- MEDIAN SHOULDERS
- MAINLINE JOINT REPAIR
- MAINLINE PLANING AND OVERLAY
- FULL DEPTH PAVEMENT REPLACEMENT AT MAINLINE AT-GRADE STRUCTURES.
- REMOVAL OF CONCRETE MEDIAN AND BARRIER AND REPLACEMENT WITH AN IMPACT ATTENUATOR AND B-50 CONCRETE BARRIERS WITH INLETS.
- CONCRETE BARRIER STRUCTURE WORK FOR MAINLINE STRUCTURES
- REPLACING UNDERDRAINS
- MEDIAN LIGHTING REMOVAL AND REPLACEMENT
- REPLACE EXISTING SIGN FACES
- PAINTING STRUCTURES
- PLACE ITEM 446 TYPE 1 TO FINAL GRADE
- PERMANENT STRIPING AND TRAFFIC CONTROL
- OTHER MISCELLANEOUS WORK AS REQUIRED.

PHASE FOUR

TRAFFIC SHALL BE MAINTAINED AS REQUIRED IN PHASE TWO - A, B, C AND D. THE CONTRACTOR SHALL PERFORM WORK ON THE OUTSIDE LANE(S), SHOULDERS AND RAMPS.

PHASE FOUR WORK SHALL CONSIST OF:

- PLACE ITEM 446 TYPE 1 TO FINAL GRADE
- PERMANENT STRIPING AND TRAFFIC CONTROL
- OTHER MISCELLANEOUS WORK AS REQUIRED

PHASE FIVE

TRAFFIC SHALL BE MAINTAINED ON ALL MAINLINE LANES AND RAMPS. THE CONTRACTOR SHALL PERFORM WORK ON THE GROVEPORT ROAD BRIDGE.

DUE TO THE BRIDGE CLOSURE AND SUBSEQUENT WORK, TRAFFIC HEADING SOUTH ON GROVEPORT ROAD SHALL BE DETOURED TO THE WEST TO THE HIGH STREET (U.S. 23) INTERCHANGE AT WHICH POINT IT WILL BE DIRECTED SOUTH ON HIGH STREET TO THE EAST BOUND ON RAMP BACK ONTO S.R. 104 AND BACK TO GROVEPORT ROAD, WHILE TRAFFIC HEADING NORTHBOUND ON GROVEPORT ROAD SHALL BE DETOURED EAST TO THE LOCKBOURNE ROAD INTERCHANGE AT WHICH POINT IT WILL BE DIRECTED NORTH ON LOCKBOURNE ROAD TO THE WEST BOUND ON RAMP BACK ONTO S.R. 104 AND BACK TO GROVEPORT ROAD. SEE SHEET 72 FOR DETAILS.

THE DECK REPAIR OF THE GROVEPORT ROAD BRIDGE STRUCTURE SHALL LAST FOR A PERIOD OF NO LONGER THAN 30 CALENDAR DAYS. AT THE COMPLETION OF THIS 30 DAYS, IF THE CONTRACTOR HAS NOT COMPLETED THE INDICATED WORK THEN LIQUIDATED DAMAGES IN THE AMOUNT OF \$ 300 PER DAY SHALL BE ASSESSED.

PHASE FIVE WORK SHALL CONSIST OF:

- DECK REPAIR AND MICRO-SILICA CONCRETE OVERLAY FOR GROVEPORT BRIDGE.

PAYMENT

PAYMENT FOR ALL OF THE ABOVE WORK REQUIRED FOR TRAFFIC CONTROL INCLUDING PROVIDING, ERECTING, MAINTAINING, AND REMOVING ALL LIGHTS, SIGNS, BARRICADES, DRUMS, REGULATORY SIGNS, AND ALL OTHER TRAFFIC CONTROL DEVICES SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614 - MAINTAINING TRAFFIC UNLESS SEPARATELY ITEMIZED IN THIS PLAN.

MAINTENANCE OF TRAFFIC GENERAL NOTES

CALC BY: JRA DATE: 6/15/84	FRA-104-8.02	OHIO
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ITEM 614 - LAW ENFORCEMENT OFFICER WITH PATROL CAR

ONE (1) SPECIAL DUTY LAW ENFORCEMENT OFFICER (L.E.O.) AND PATROL CAR SHALL BE PROVIDED FOR THE PURPOSE OF CLOSING ONE OR MORE LANES OF DIRECTIONAL TRAFFIC AND CHANNELIZING THAT TRAFFIC INTO ONE OR TWO LANES. WHEN THE PERIOD OF CLOSURE IS EXPECTED TO LAST MORE THAN ONE WORKING DAY, THE L.E.O. SHALL BE PRESENT DURING THE INITIAL FIRST DAY SET-UP PERIOD BUT IS NOT CONSIDERED TO BE NECESSARY AND SHALL NOT BE INCLUDED FOR PAYMENT UNDER L.E.O. WITH PATROL CAR DURING THE REMAINDER OF THE PERIOD OF USE OF A GIVEN CLOSURE ARRANGEMENT. A FLASHING ARROW PANEL WITH SIGNS AND DRUMS AS DETAILED IS SUFFICIENT FOR WARNING AT THE BEGINNING AND END OF SUCH ARRANGEMENTS AFTER THE FIRST DAY. A DOWN-STREAM EXTENSION OF SUCH ARRANGEMENT SHALL NOT REQUIRE THE USE OF AN L.E.O.

WHEN THE BEGINNING POINT OF A LANE CLOSURE OPERATION IS SHIFTED SUBSTANTIALLY, OR A NEW LANE CLOSURE ARRANGEMENT IS INITIATED IN ANOTHER PART OF THE PROJECT AREA, AN L.E.O. AND PATROL CAR SHALL AGAIN BE REQUIRED.

ONE (1) L.E.O. AND PATROL CAR SHALL BE PROVIDED AT THE SIGNAL INTERSECTION OF FRANK ROAD AND S.R. 104 BETWEEN 6 A.M. AND 9 A.M. AND 2:30 P.M. TO 6:30 P.M. DURING WEEKDAYS TO DIRECT TRAFFIC.

IN ADDITION TO THE SERVICES DESCRIBED ABOVE, THE CONTRACTOR MAY UTILIZE AN L.E.O. AND PATROL CAR FOR ANY OTHER MAINTENANCE OPERATIONS NEEDED AS APPROVED BY THE ENGINEER.

THE HOURS PAID SHALL INCLUDE MINIMUM SHOW-UP TIME REQUIRED BY THE LAW ENFORCEMENT AGENCY INVOLVED.

IF THE CONTRACTOR WISHES TO UTILIZE L.E.O.'S FOR FLAGGING AND TRAFFIC CONTROL OTHER THAN FOR THAT REQUIRED IN THESE PLANS, HE MAY DO SO AT HIS OWN EXPENSE. PAYMENT FOR THE EXCESS ABOVE THE CONTRACT REQUIREMENTS WILL BE INCLUDED UNDER ITEM 614 MAINTAINING TRAFFIC.

PAYMENT FOR THE L.E.O. SHALL BE MADE AT THE CONTRACT UNIT PRICE FOR ITEM 614 LAW ENFORCEMENT OFFICER WITH PATROL CAR.

ITEM 614 - LAW ENFORCEMENT OFFICER WITH PATROL CAR 200 HRS.

MAINTENANCE OF TRAFFIC SUB-SUMMARY

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CHECKED BY: JSB DATE: 6/15/94		FHWA REGION 5

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SHEET NUMBER	PHASE	REF. NUMBER	614										615		622			
			STATION TO STATION		TEMP. EDGE LINES, CLASS 1		TEMP. LANE LINES, CLASS 1	TEMPORARY CHANNELIZING LINES, CLASS 1	TEMP. DOTTED LINES, CLASS 1		TEMP. RAISED PAVEMENT MARKERS		BARRIER REFLECTORS TYPE B		OBJECT MARKERS	TEMPORARY PAVEMENT, CLASS B	PORTABLE CONCRETE BARRIER, 32"	PORTABLE CONCRETE BARRIER 32", BRIDGE MOUNTED
			FROM	TO	WHITE LF.	YELLOW LF.			WHITE LF.	YELLOW LF.	WHITE EACH	YELLOW EACH	WHITE EACH	YELLOW EACH				
37	ONE	EL-1	8+70	21+00	1230													
37	ONE	EL-2	8+70	21+00														
37	ONE	EL-3	12+00	21+00														
37	ONE	EL-4	14+50	21+00	650													
37	ONE	EL-5	21+00	24+50	350													
37	ONE	EL-6	21+00	37+00														
37	ONE	EL-7	30+00	37+00	700													
37	ONE	EL-8	21+00	25+00	400													
37	ONE	EL-9	21+00	37+00														
37	ONE	EL-10	27+70	37+00	1000													
37	ONE	LL-1	8+70	21+00				1230										
37	ONE	LL-2	8+70	21+00				1230										
37	ONE	LL-3	8+70	21+00				1230										
37	ONE	LL-4	21+00	37+00				1600										
37	ONE	LL-5	21+00	37+00				1600										
37	ONE	LL-6	21+00	37+00				1600										
37	ONE	LL-7	24+00	37+00				1300										
37	ONE	CL-1	12+25	14+25						200								
37	ONE	CL-2	12+25	21+00						875								
37	ONE	CL-3	28+40	30+00						320								
37	ONE	CL-4	21+00	24+00						300								
37	ONE	DL-1	24+50	28+40														
37	ONE	TP-1	12+75	21+00					390									
37	ONE	TP-2	12+75	21+00														
37	ONE	TP-3	21+00	37+00														
37	ONE	TP-4	21+00	37+00														
38	ONE	EL-1	37+00	41+50	450													
38	ONE	EL-2	37+00	52+00		1500												
38	ONE	EL-3	50+00	52+00	200													
38	ONE	EL-4	37+00	52+00		1500												
38	ONE	EL-5	37+00	41+50	450													
38	ONE	EL-6	52+00	55+00		300												
38	ONE	LL-1	37+00	37+40				40										
38	ONE	LL-2	37+00	52+00				1500										
38	ONE	LL-3	37+00	47+00				1000										
38	ONE	LL-4	37+00	52+00				1500										
38	ONE	LL-5	52+00	55+00				300										
38	ONE	CL-1	37+40	50+00						1260								
38	ONE	CL-2	46+00	50+00						400								
38	ONE	CL-3	41+50	42+75						250								
38	ONE	CL-4	47+00	50+00						600								
38	ONE	TP-1	37+00	50+00														
38	ONE	TP-2	37+00	50+00														
39	TWO-A	EL-1	99+00, "G"	100+40, "G"	140													
39	TWO-A	DL-1	99+00, "G"	100+40, "G"					140									
39	TWO-A	PCB-1	100+00, "G"	101+00, "G"											100			
40	TWO-A	EL-1	8+70	21+00	1230													
40	TWO-A	EL-2	8+70	21+00		1230												
40	TWO-A	EL-3	8+80	12+30	350													
40	TWO-A	EL-4	8+80	21+00		1220												
40	TWO-A	EL-5	12+28	21+00	872													
40	TWO-A	EL-6	21+00	30+00	900													
40	TWO-A	EL-7	21+00	37+00		1600												
40	TWO-A	EL-8	30+00	37+00	700													
40	TWO-A	EL-9	21+00	29+90	890													
40	TWO-A	EL-10	21+00	37+00		1600												
40	TWO-A	EL-11	30+00	37+00	700													
40	TWO-A	LL-1	8+70	21+00				1230										
40	TWO-A	LL-2	8+80	21+00				1220										
40	TWO-A	LL-3	21+00	37+00				1600										
40	TWO-A	LL-4	21+00	37+00				1600										
40	TWO-A	CL-1	12+28	13+45						234								
40	TWO-A	CL-2	28+00	30+00						400								
40	TWO-A	CL-3	27+92	30+00						416								
40	TWO-A	DL-1	6+40	8+70														
40	TWO-A	DL-2	6+40	8+70					460									
40	TWO-A	DL-3	8+00	8+80					160	230								
40	TWO-A	DL-4	8+00	8+80						80								
TOTALS CARRIED TO GENERAL SUMMARY:					11212	13080	19780	5255	1150	310	55	-0-	-0-	-0-	-0-	-0-	100	-0-

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MAINTENANCE OF TRAFFIC SUB-SUMMARY

CALC. BY: JRA DATE: 6/15/94	FRA-104-8.02	OHIO
CHECKED BY: JSB DATE: 6/15/94		FHWA REGION 5

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SHEET NUMBER	PHASE	REF. NUMBER	614								615				622			
			STATION TO STATION		TEMP. EDGE LINES, CLASS 1		TEMP. LANE LINES, CLASS 1	TEMPORARY CHANNELIZING LINES, CLASS 1	TEMP. DOTTED LINES, CLASS 1		TEMP. RAISED PAVEMENT MARKERS		BARRIER REFLECTORS TYPE B		OBJECT MARKERS	TEMPORARY PAVEMENT, CLASS B	PORTABLE CONCRETE BARRIER, 32"	PORTABLE CONCRETE BARRIER 32", BRIDGE MOUNTED
			FROM	TO	WHITE LF.	YELLOW LF.	LF.	LF.	WHITE LF.	YELLOW LF.	WHITE EACH	YELLOW EACH	WHITE EACH	YELLOW EACH		SQ. YD.	LF.	LF.
40	TWO-A	DL-5	13+45	16+00														
40	TWO-A	DL-6	25+40	28+00					255									
40	TWO-A	DL-7	25+00	27+92					260									
40	TWO-A	PCB-1	100+10, "G"	110+00, "G"					292									
40	TWO-A	PCB-2	12+35	21+00								4		4		90		
40	TWO-A	PCB-3	16+00	21+00								35		34		470	390	
40	TWO-A	PCB-4	21+00	25+00								21		20		120	380	
40	TWO-A	PCB-5	21+00	29+90								17		16		90	310	
40	TWO-A	PCB-6	30+20	37+00								36		35		580	310	
40	TWO-A	PCB-7	33+70	37+00								28		27		560	120	
40	TWO-A	TP-1	8+90	12+28								14		13		210	120	
40	TWO-A	TP-2	9+00	15+00											112			
															167			
41	TWO-A	EL-1	37+00	49+40	1240													
41	TWO-A	EL-2	37+00	52+00		1500												
41	TWO-A	EL-3	49+40	52+00	260													
41	TWO-A	EL-4	37+00	41+50	450													
41	TWO-A	EL-5	37+00	52+00		1500												
41	TWO-A	EL-6	41+50	50+00	850													
41	TWO-A	EL-7	50+00	52+50	200													
41	TWO-A	EL-8	52+00	67+00	1500													
41	TWO-A	EL-9	52+00	67+00		1500												
41	TWO-A	EL-10	52+00	67+00	1500													
41	TWO-A	EL-11	52+00	67+00		1500												
41	TWO-A	LL-1	37+00	37+50			50											
41	TWO-A	LL-2	37+00	45+00			800											
41	TWO-A	CL-1	37+50	45+46				796										
41	TWO-A	CL-2	45+46	49+40				788		20								
41	TWO-A	CL-3	41+50	42+40				180		41								
41	TWO-A	CL-4	45+00	47+00				200		11								
41	TWO-A	CL-5	47+00	50+00				300		10								
41	TWO-A	DL-1	43+00	44+00						31								
41	TWO-A	PCB-1	37+00	41+50					100				19		18	450		
41	TWO-A	PCB-2	55+40	60+30									20		19	490		
41	TWO-A	PCB-3	58+20	63+07									20		19	490		
42	TWO-A	EL-1	67+00	81+00	1400													
42	TWO-A	EL-2	67+00	81+00		1400												
42	TWO-A	EL-3	67+00	68+20	120													
42	TWO-A	EL-4	67+00	81+00		1400												
42	TWO-A	EL-5	68+20	81+00	1280													
42	TWO-A	EL-6	81+00	95+00	1400													
42	TWO-A	EL-7	81+00	95+00		1400												
42	TWO-A	EL-8	81+00	95+00	1400													
42	TWO-A	EL-9	81+00	95+00		1400												
42	TWO-A	CL-1	68+20	70+00			360			19								
42	TWO-A	DL-1	70+00	73+20					320									
42	TWO-A	PCB-1	68+85	81+00								49		48		1065	150	
42	TWO-A	PCB-2	74+00	81+00								29		28		550	150	
42	TWO-A	PCB-3	81+00	92+00								45		44		290	810	
42	TWO-A	PCB-4	81+00	95+00								57		56		570	830	
43	TWO-A	EL-1	95+00	110+00	1500													
43	TWO-A	EL-2	95+00	110+00		1500												
43	TWO-A	EL-3	95+00	108+25	1325													
43	TWO-A	EL-4	95+00	110+00		1500												
43	TWO-A	EL-5	108+25	110+00	175													
43	TWO-A	EL-6	110+00	124+00	1400													
43	TWO-A	EL-7	110+00	124+00		1400												
43	TWO-A	EL-8	110+00	124+00	1400													
43	TWO-A	EL-9	110+00	124+00		1400												
43	TWO-A	CL-1	108+25	110+00			350			19								
43	TWO-A	CL-2	110+00	111+00			200			9								
43	TWO-A	DL-1	111+00	114+20					320									
43	TWO-A	PCB-1	95+00	98+35								14		13		340		
43	TWO-A	PCB-2	95+00	101+11								26		25		620		
43	TWO-A	PCB-3	113+75	118+05								19		18		430		
43	TWO-A	PCB-4	116+55	120+85								19		18		430		
TOTALS CARRIED TO GENERAL SUMMARY:					17400	17400	850	3174	1574	-0-	160	-0-	472	-0-	455	279	7845	3570

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MAINTENANCE OF TRAFFIC SUB-SUMMARY

CALC. BY: JRA DATE: 6/15/94	FRA-104-8.02	OHIO
CHECKED BY: JSB DATE: 6/15/94		FHWA REGION 5

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SHEET NUMBER	PHASE	REF. NUMBER	614										615		622			
			STATION TO STATION		TEMP. EDGE LINES, CLASS 1		TEMP. LANE LINES, CLASS 1	TEMPORARY CHANNELIZING LINES, CLASS 1	TEMP. DOTTED LINES, CLASS 1		TEMP. RAISED PAVEMENT MARKERS		BARRIER REFLECTORS TYPE B		OBJECT MARKERS	TEMPORARY PAVEMENT, CLASS B	PORTABLE CONCRETE BARRIER, 32"	PORTABLE CONCRETE BARRIER 32", BRIDGE MOUNTED
			FROM	TO	WHITE LF.	YELLOW LF.			WHITE LF.	YELLOW LF.	WHITE EACH	YELLOW EACH	WHITE EACH	YELLOW EACH				
54	THREE	EL-1	37+00	41+50	450													
54	THREE	EL-2	37+00	52+00		1500												
54	THREE	EL-3	50+00	52+00	200													
54	THREE	EL-4	37+00	41+50	450													
54	THREE	EL-5	37+00	52+00		1500												
54	THREE	EL-6	45+50	48+00	250													
54	THREE	EL-7	50+00	52+00	200													
54	THREE	EL-8	52+00	67+00	1500													
54	THREE	EL-9	52+00	67+00		1500												
54	THREE	EL-10	52+00	67+00	1500													
54	THREE	EL-11	52+00	67+00		1500												
54	THREE	LL-1	37+00	37+50			50											
54	THREE	LL-2	37+00	45+50			850											
54	THREE	CL-1	37+50	46+00				850		22								
54	THREE	CL-2	46+00	50+00				800		22								
54	THREE	CL-3	41+50	42+65				230										
54	THREE	CL-4	45+50	50+00				900										
54	THREE	DL-1	41+50	46+00					450									
54	THREE	DL-2	42+65	45+50					285									
54	THREE	PCB-1	37+00	40+70								15	14		370			
54	THREE	PCB-2	54+80	60+30								23	22		550			
54	THREE	PCB-3	58+20	63+70								23	22		550			
55	THREE	EL-1	67+00	81+00	1400													
55	THREE	EL-2	67+00	81+00		1400												
55	THREE	EL-3	67+00	69+00	200													
55	THREE	EL-4	67+00	81+00		1400												
55	THREE	EL-5	72+20	81+00	880													
55	THREE	EL-6	81+00	95+00	1400													
55	THREE	EL-7	81+00	95+00		1400												
55	THREE	EL-8	81+00	95+00	1400													
55	THREE	EL-9	81+00	95+00		1400												
55	THREE	DL-1	69+00	72+20					320									
55	THREE	PCB-1	70+87	81+00								41	40		865	150		
55	THREE	PCB-2	74+00	81+00								29	28		550	150		
55	THREE	PCB-3	81+00	95+00								57	56		620	780		
55	THREE	PCB-4	81+00	95+00								57	56		570	830		
56	THREE	EL-1	95+00	110+00	1500													
56	THREE	EL-2	95+00	110+00		1500												
56	THREE	EL-3	95+00	109+00	1400													
56	THREE	EL-4	95+00	110+00		1500												
56	THREE	EL-5	110+00	124+00	1400													
56	THREE	EL-6	110+00	124+00		1400												
56	THREE	EL-7	112+00	124+00	1200													
56	THREE	EL-8	110+00	124+00		1400												
56	THREE	DL-1	109+00	110+00					100									
56	THREE	DL-2	110+00	112+00					200									
56	THREE	PCB-1	95+00	98+35								14	13		335			
56	THREE	PCB-2	95+00	101+75								28	27		675			
56	THREE	PCB-3	113+17	118+10								20	19		490			
56	THREE	PCB-4	116+60	121+47								20	19		490			
57	THREE	EL-1	124+00	128+90	490													
57	THREE	EL-2	124+00	139+00		1500												
57	THREE	EL-3	124+00	139+00	1500													
57	THREE	EL-4	124+00	139+00		1500												
57	THREE	EL-5	135+15	139+00	385													
57	THREE	EL-6	139+00	145+30	630													
57	THREE	EL-7	139+00	142+00		300												
57	THREE	EL-8	139+00	148+60	960													
57	THREE	EL-9	139+00	151+00		1200												
57	THREE	LL-1	142+00	145+30			330											
57	THREE	DL-1	128+90	135+15					625									
58	THREE	EL-1	151+00	158+60	760													
TOTALS CARRIED TO GENERAL SUMMARY:					20055	21900	1230	2780	1980	-0-	44	-0-	-0-	327	316	-0-	6065	1910

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MAINTENANCE OF TRAFFIC SUB-SUMMARY

CALC. BY: JRA DATE: 6/15/94	FRA-104-8.02	OHIO
CHECKED BY: JSB DATE: 6/15/94		FHWA REGION 5

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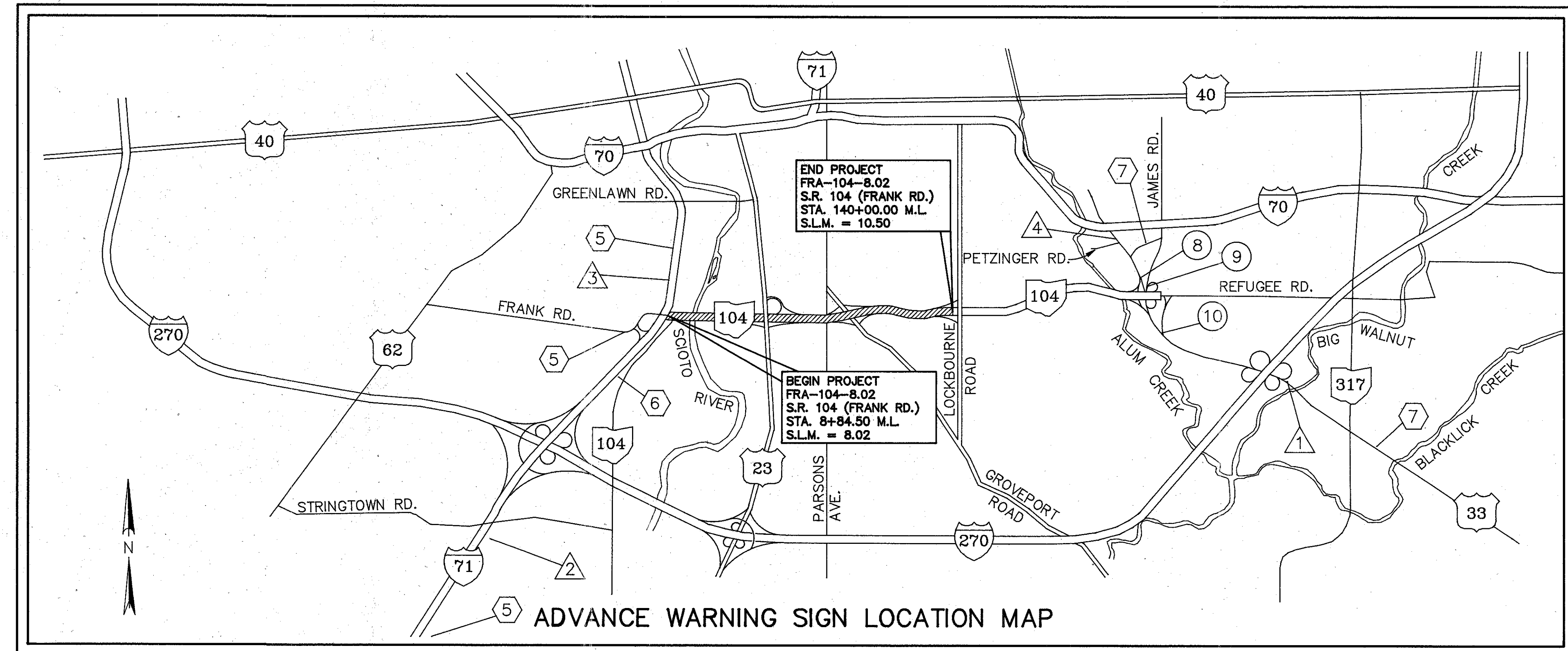
SHEET NUMBER	PHASE	REF. NUMBER	STATION TO STATION		TEMP. EDGE LINES, CLASS 1		TEMP. LANE LINES, CLASS 1	TEMPORARY CHANNELIZING LINES, CLASS 1	TEMP. DOTTED LINES, CLASS 1		TEMP. RAISED PAVEMENT MARKERS		BARRIER REFLECTORS TYPE B		OBJECT MARKERS	615		622	
					WHITE LF.	YELLOW LF.			WHITE LF.	YELLOW LF.	WHITE EACH	YELLOW EACH	WHITE EACH	YELLOW EACH		TEMPORARY PAVEMENT, CLASS B	PORTABLE CONCRETE BARRIER, 32"	PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED	
			FROM	TO											SQ. YD.	LF.	LF.		
59	FOUR-A	EL-1	99+00, "G"	100+40, "G"	140														
59	FOUR-A	DL-1	99+00, "G"	100+40, "G"					140										
59	FOUR-A	PCB-1	100+00, "G"	101+00, "G"														100	
60	FOUR-A	EL-1	8+70	21+00	1230														
60	FOUR-A	EL-2	8+70	21+00		1230													
60	FOUR-A	EL-3	8+80	12+30	350														
60	FOUR-A	EL-4	8+80	21+00		1220													
60	FOUR-A	EL-5	12+28	21+00	872														
60	FOUR-A	EL-6	21+00	30+00	900														
60	FOUR-A	EL-7	21+00	37+00		1600													
60	FOUR-A	EL-8	30+00	37+00	700														
60	FOUR-A	EL-9	21+00	29+90	890														
60	FOUR-A	EL-10	21+00	37+00		1600													
60	FOUR-A	EL-11	30+00	37+00	700														
60	FOUR-A	LL-1	8+70	21+00			1230												
60	FOUR-A	LL-2	8+80	21+00			1220												
60	FOUR-A	LL-3	21+00	37+00			1600												
60	FOUR-A	LL-4	21+00	37+00			1600												
60	FOUR-A	CL-1	12+28	13+45				234											
60	FOUR-A	CL-2	28+00	30+00				400					12						
60	FOUR-A	CL-3	27+92	30+00				416					21						
60	FOUR-A	DL-1	6+40	8+70					460										
60	FOUR-A	DL-2	6+40	8+70						230									
60	FOUR-A	DL-3	8+00	8+80					160										
60	FOUR-A	DL-4	8+00	8+80						80									
60	FOUR-A	DL-5	13+45	16+00					255										
60	FOUR-A	DL-6	25+40	28+00					260										
60	FOUR-A	DL-7	25+00	27+92					292										
60	FOUR-A	PCB-1	100+10, "G"	110+00, "G"									4		4			90	
61	FOUR-A	EL-1	37+00	49+40	1240														
61	FOUR-A	EL-2	37+00	52+00		1500													
61	FOUR-A	EL-3	49+40	52+00	260														
61	FOUR-A	EL-4	37+00	41+50	450														
61	FOUR-A	EL-5	37+00	52+00		1500													
61	FOUR-A	EL-6	41+50	50+00	850														
61	FOUR-A	EL-7	50+00	52+50	200														
61	FOUR-A	EL-8	52+00	67+00	1500														
61	FOUR-A	EL-9	52+00	67+00		1500													
61	FOUR-A	EL-10	52+00	67+00	1500														
61	FOUR-A	EL-11	52+00	67+00		1500													
61	FOUR-A	LL-1	37+00	37+50			50												
61	FOUR-A	LL-2	37+00	45+00			800												
61	FOUR-A	CL-1	37+50	45+46				796					20						
61	FOUR-A	CL-2	45+46	49+40				788					41						
61	FOUR-A	CL-3	41+50	42+40				180					11						
61	FOUR-A	CL-4	45+00	47+00				200					10						
61	FOUR-A	CL-5	47+00	50+00				300					31						
61	FOUR-A	DL-1	43+00	44+00					100										
61	FOUR-A	PCB-1	37+00	41+50									19		18			450	
61	FOUR-A	PCB-2	55+40	60+30									20		19			490	
61	FOUR-A	PCB-3	58+20	63+07									20		19			490	
62	FOUR-A	EL-1	67+00	81+00	1400														
62	FOUR-A	EL-2	67+00	81+00		1400													
62	FOUR-A	EL-3	67+00	68+20	120														
62	FOUR-A	EL-4	67+00	81+00		1400													
62	FOUR-A	EL-5	68+20	81+00	1280														
62	FOUR-A	EL-6	81+00	95+00	1400														
62	FOUR-A	EL-7	81+00	95+00		1400													
62	FOUR-A	EL-8	81+00	95+00	1400														
62	FOUR-A	EL-9	81+00	95+00		1400													
62	FOUR-A	CL-1	68+20	70+00				360					19						
62	FOUR-A	DL-1	70+00	73+20					320										
TOTALS CARRIED TO GENERAL SUMMARY:					17382	17250	6500	3674	1987	310	187	-0-	63	-0-	60	0	1620	-0-	

MAINTENANCE OF TRAFFIC SUB-SUMMARY

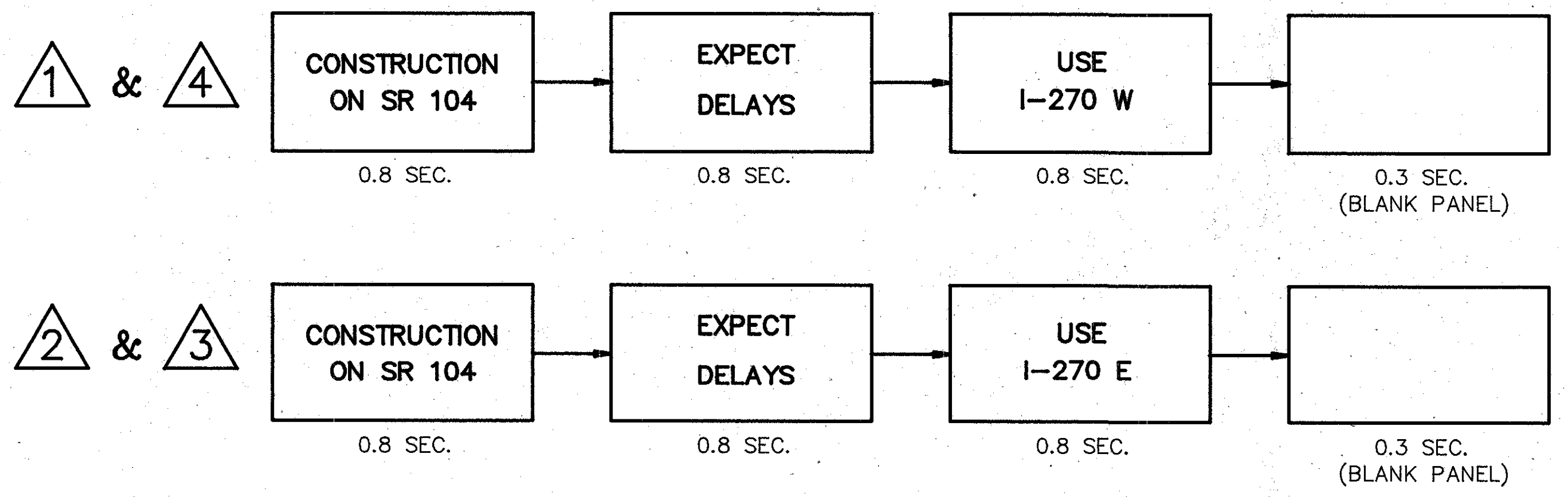
CALC. BY: JRA DATE: 6/15/94	FRA-104-8.02	OHIO
CHECKED BY: JRB DATE: 6/15/94		FHWA REGION 5

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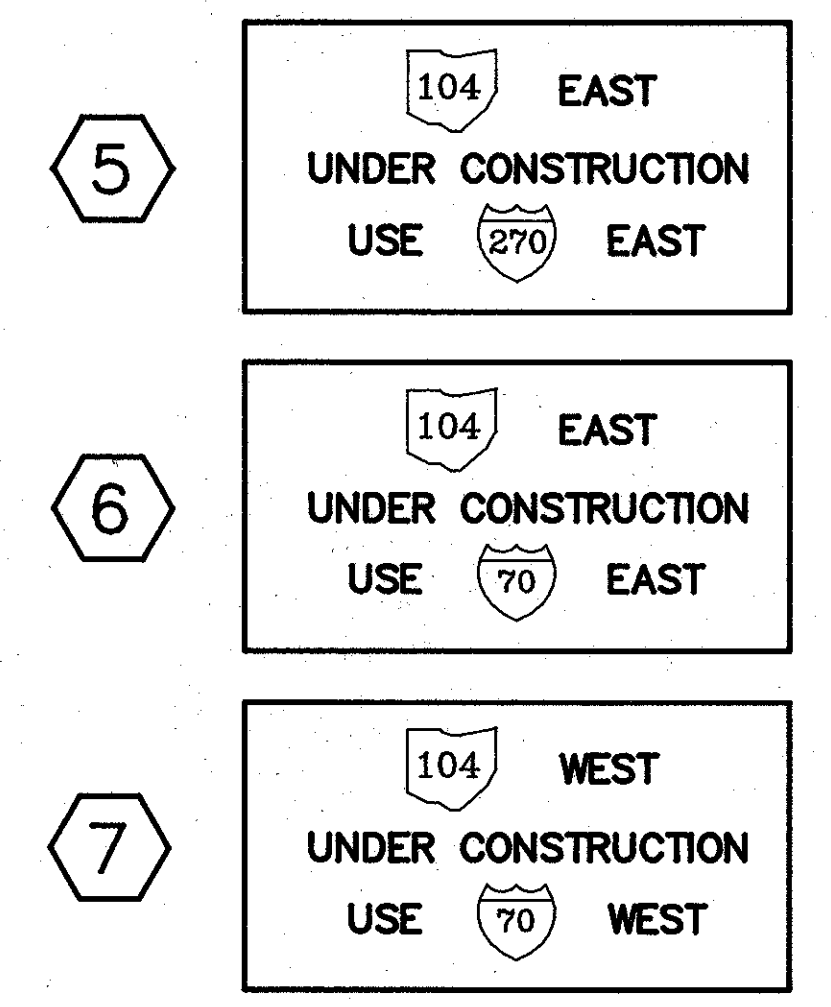
SHEET NUMBER	PHASE	REF. NUMBER	614										615		622			
			STATION TO STATION		TEMP. EDGE LINES, CLASS 1		TEMP. LANE LINES, CLASS 1	TEMPORARY CHANNELIZING LINES, CLASS 1	TEMP. DOTTED LINES, CLASS 1		TEMP. RAISED PAVEMENT MARKERS		BARRIER REFLECTORS, TYPE B	OBJECT MARKERS	TEMPORARY PAVEMENT, CLASS B	PORTABLE CONCRETE BARRIER, 32"	PORTABLE CONCRETE BARRIER, 32", BRIDGE MOUNTED	
			FROM	TO	WHITE LF.	YELLOW LF.	LF.	LF.	WHITE LF.	YELLOW LF.	WHITE EACH	YELLOW EACH	WHITE EACH	YELLOW EACH	EACH	SQ. YD.	LF.	LF.
63	FOUR-A	EL-1	95+00	110+00	1500													
63	FOUR-A	EL-2	95+00	110+00		1500												
63	FOUR-A	EL-3	95+00	108+25	1325													
63	FOUR-A	EL-4	95+00	110+00		1500												
63	FOUR-A	EL-5	108+25	110+00	175													
63	FOUR-A	EL-6	110+00	124+00	1400													
63	FOUR-A	EL-7	110+00	124+00		1400												
63	FOUR-A	EL-8	110+00	124+00	1400													
63	FOUR-A	EL-9	110+00	124+00		1400												
63	FOUR-A	CL-1	108+25	110+00			350			19								
63	FOUR-A	CL-2	110+00	111+00			200			9								
63	FOUR-A	DL-1	111+00	114+20				320										
64	FOUR-A	EL-1	124+00	136+60	1260													
64	FOUR-A	EL-2	124+00	139+00		1500												
64	FOUR-A	EL-3	136+60	139+00	240													
64	FOUR-A	EL-4	124+00	139+00	1500													
64	FOUR-A	EL-5	124+00	139+00		1500												
64	FOUR-A	EL-6	139+00	142+00	300													
64	FOUR-A	EL-7	139+00	142+00		300												
64	FOUR-A	EL-8	139+00	151+00	1200													
64	FOUR-A	EL-9	139+00	150+00		1100												
64	FOUR-A	EL-10	150+00	151+00		100												
64	FOUR-A	CL-1	133+40	136+60			640			33								
64	FOUR-A	DL-1	130+20	133+40				320										
65	FOUR-A	EL-1	151+00	158+60	760													
66	FOUR-B	EL-1	41+50	50+00	850													
67	FOUR-B	EL-1	130+20	136+60	640													
68	FOUR-C	EL-1	41+50	50+00	850													
68	FOUR-C	LL-1	37+50	45+00		750												
69	FOUR-C	EL-1	108+25	110+00	175													
69	FOUR-C	EL-2	110+00	114+20	420													
70	FOUR-D	EL-1	73+50, "F"	16+00	925													
70	FOUR-D	CL-1	71+22, "F"	11+45	430		430			11								
71	FOUR-D	EL-1	68+20	73+20	500													
	RAMPS				7000	7000												
TOTALS CARRIED TO GENERAL SUMMARY:					22850	17300	750	1620	640	-0-	72	-0-	-0-	-0-	-0-	-0-	-0-	-0-



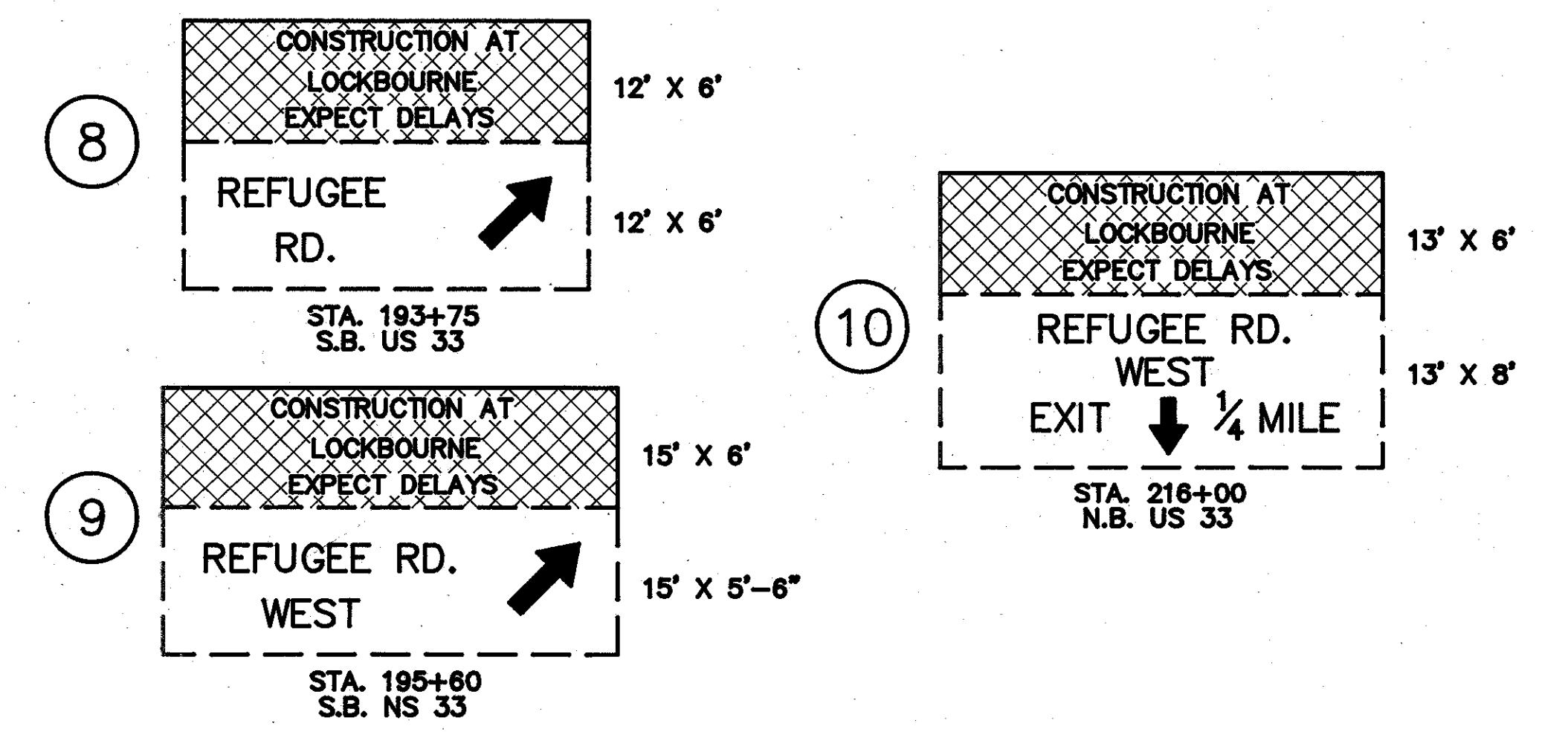
PORTABLE CHANGEABLE MESSAGE SIGNS

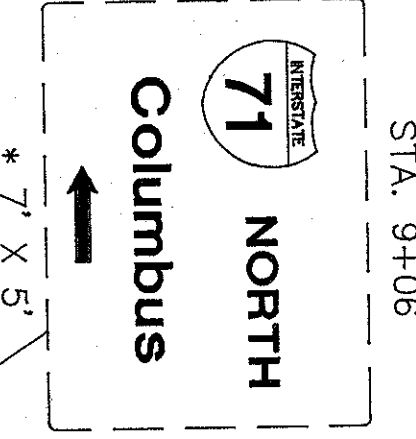
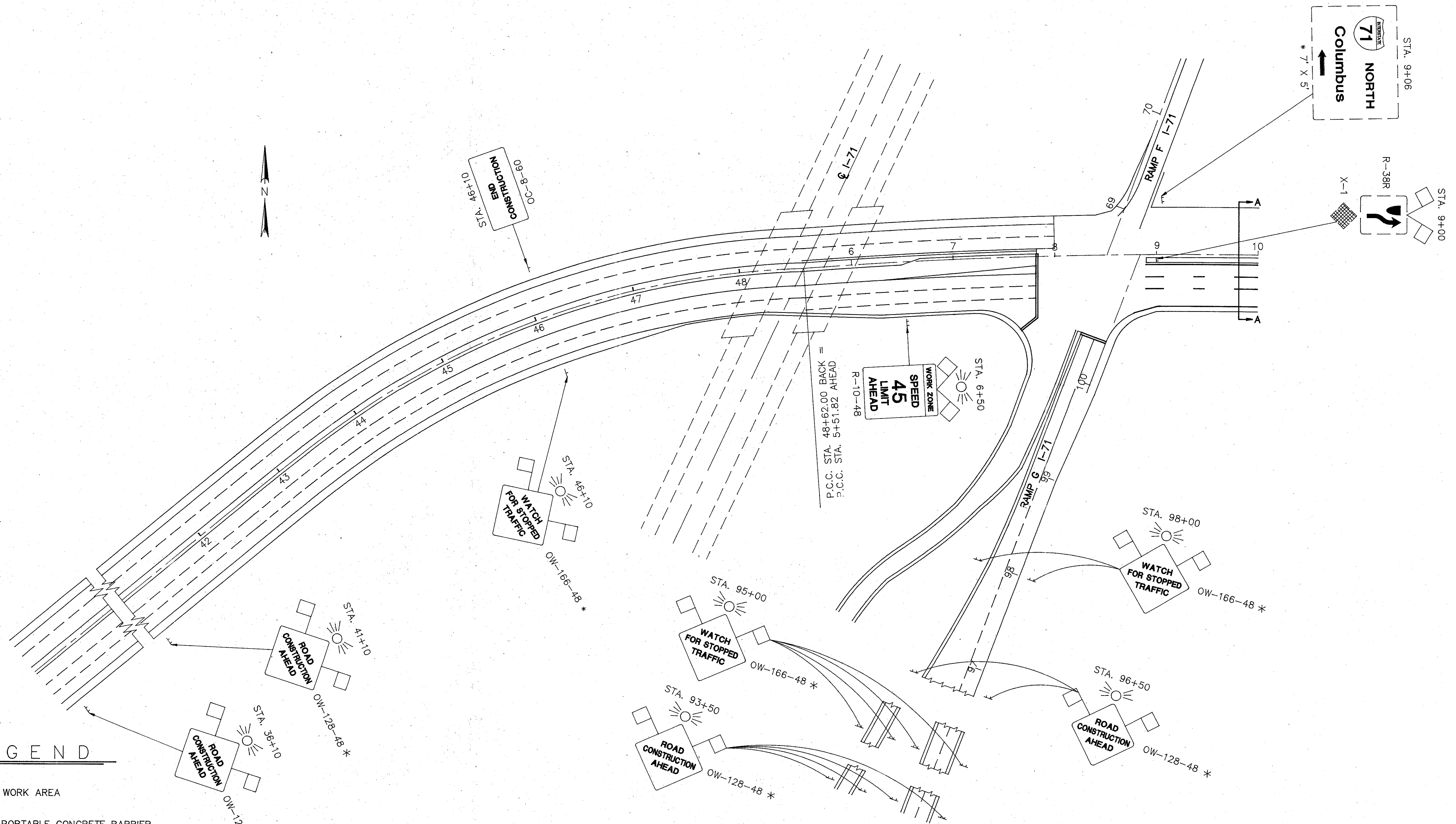


SPECIAL GROUND SIGNS
BLACK ON ORANGE - 15' X 8'








SPECIAL OVERLAY SIGNS
LEVEL I
BLACK ON ORANGE

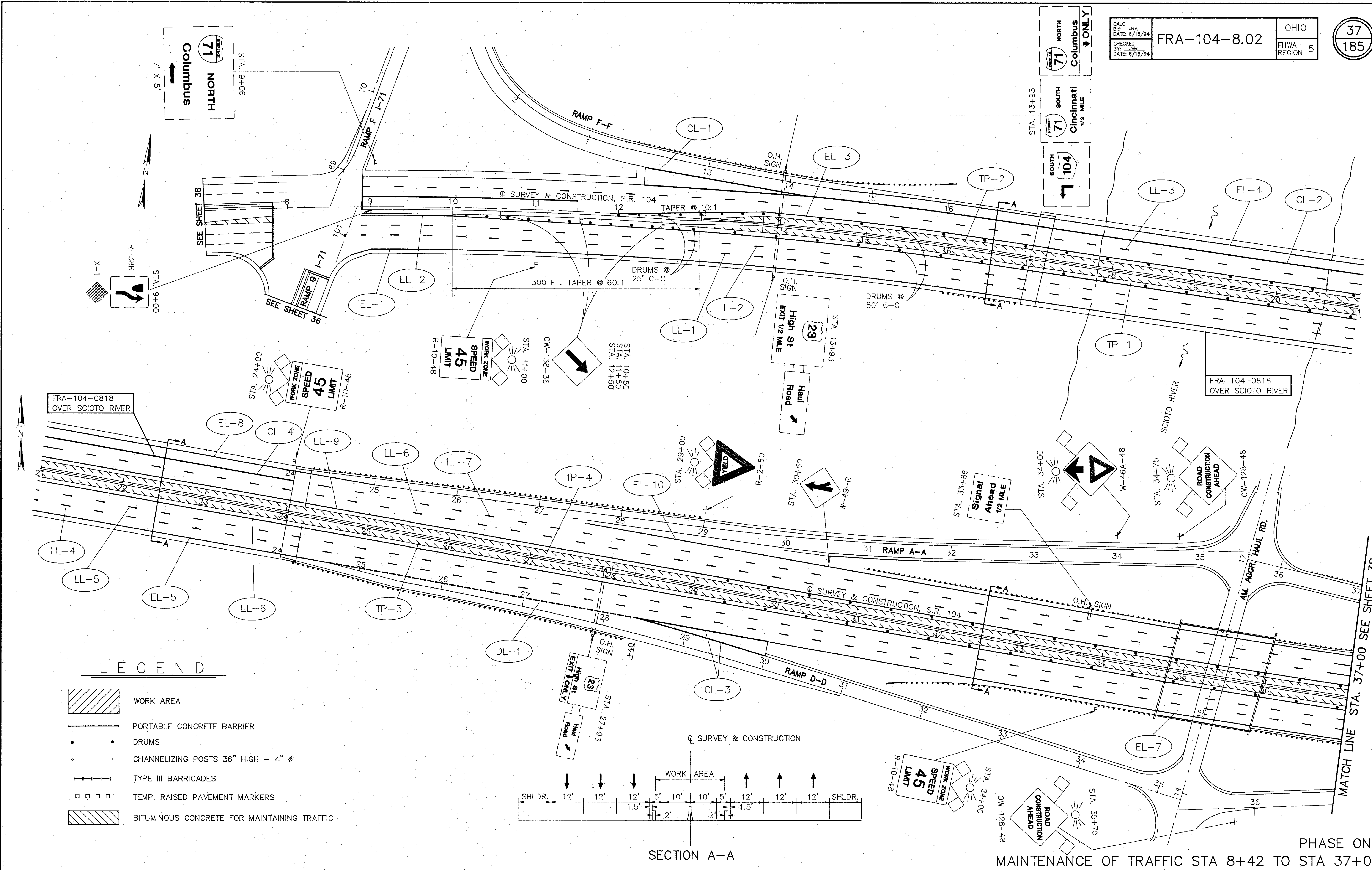




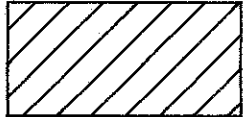



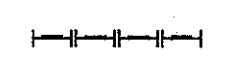
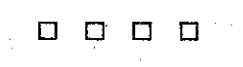
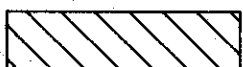
LEGEND

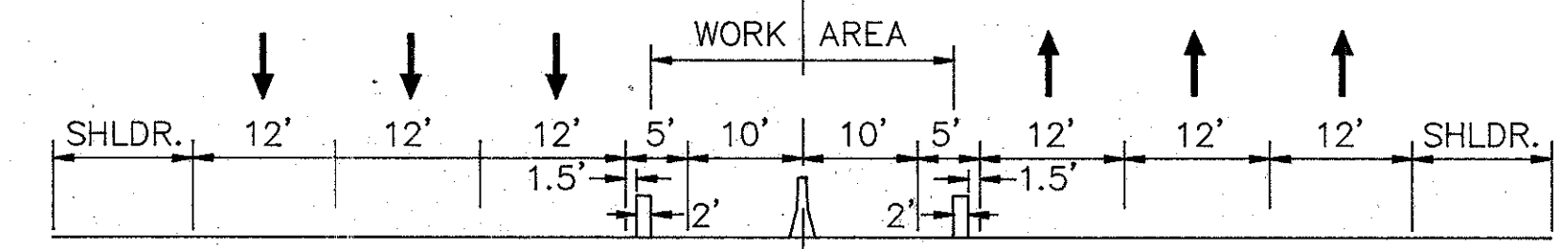
-  WORK AREA
 -  PORTABLE CONCRETE BARRIER
 -  DRUMS
 -  CHANNELIZING POSTS 36" HIGH - 4" Ø
 -  TYPE III BARRICADES
- * NOTE MOUNT ON TYPE III WING BARRICADE

PHASE ONE
MAINTENANCE OF TRAFFIC STA 6+00 TO STA 8+42



LEGEND

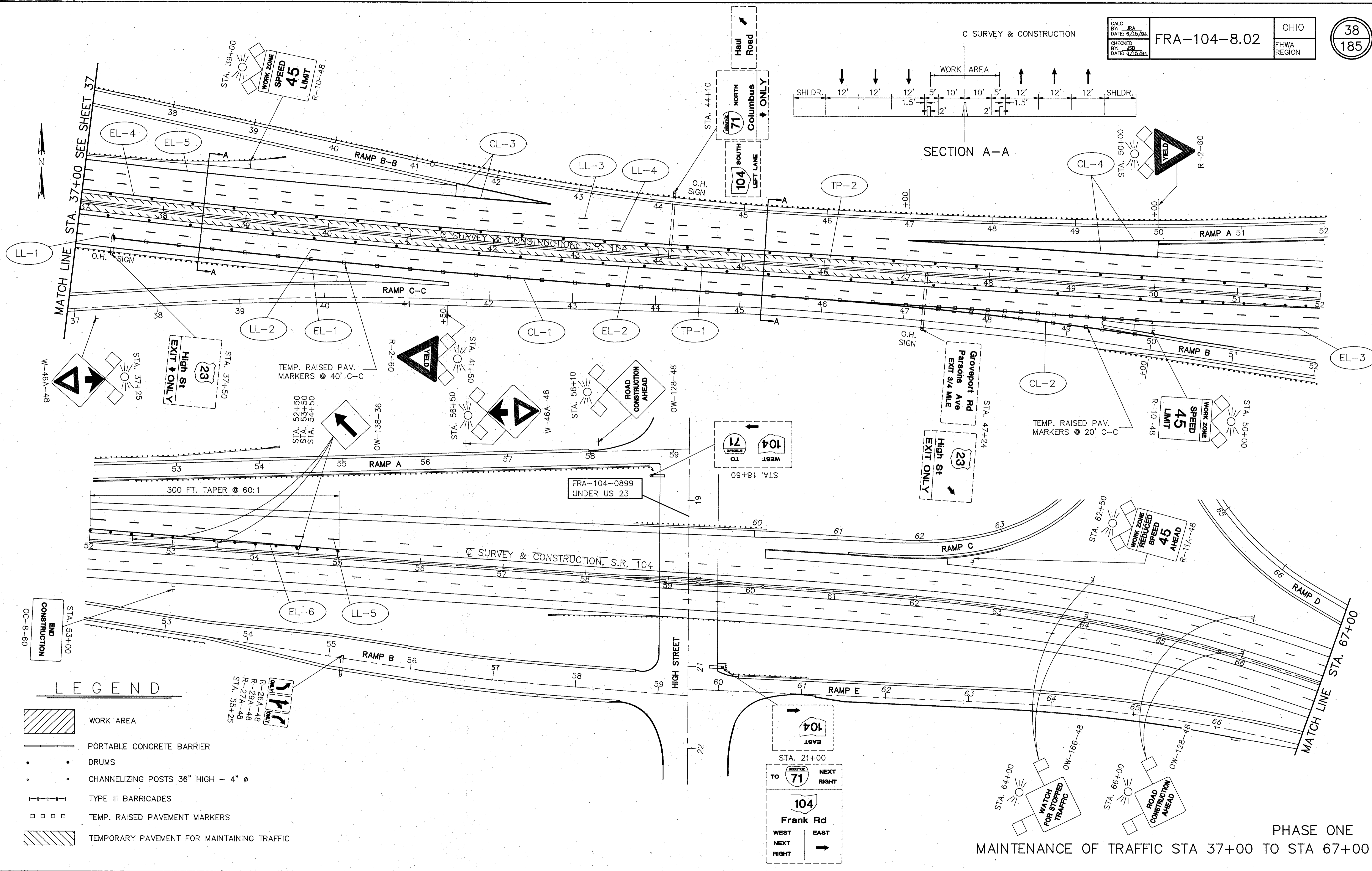
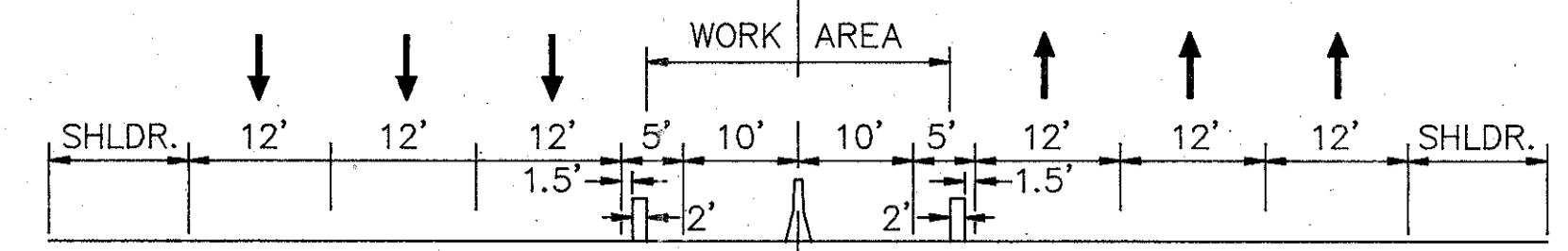
-  WORK AREA
-  PORTABLE CONCRETE BARRIER
-  DRUMS
-  CHANNELIZING POSTS 36" HIGH - 4" Ø
-  TYPE III BARRICADES
-  TEMP. RAISED PAVEMENT MARKERS
-  BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC



SECTION A-A

PHASE ONE
 MAINTENANCE OF TRAFFIC STA 8+42 TO STA 37+00

FRA-104-8.02

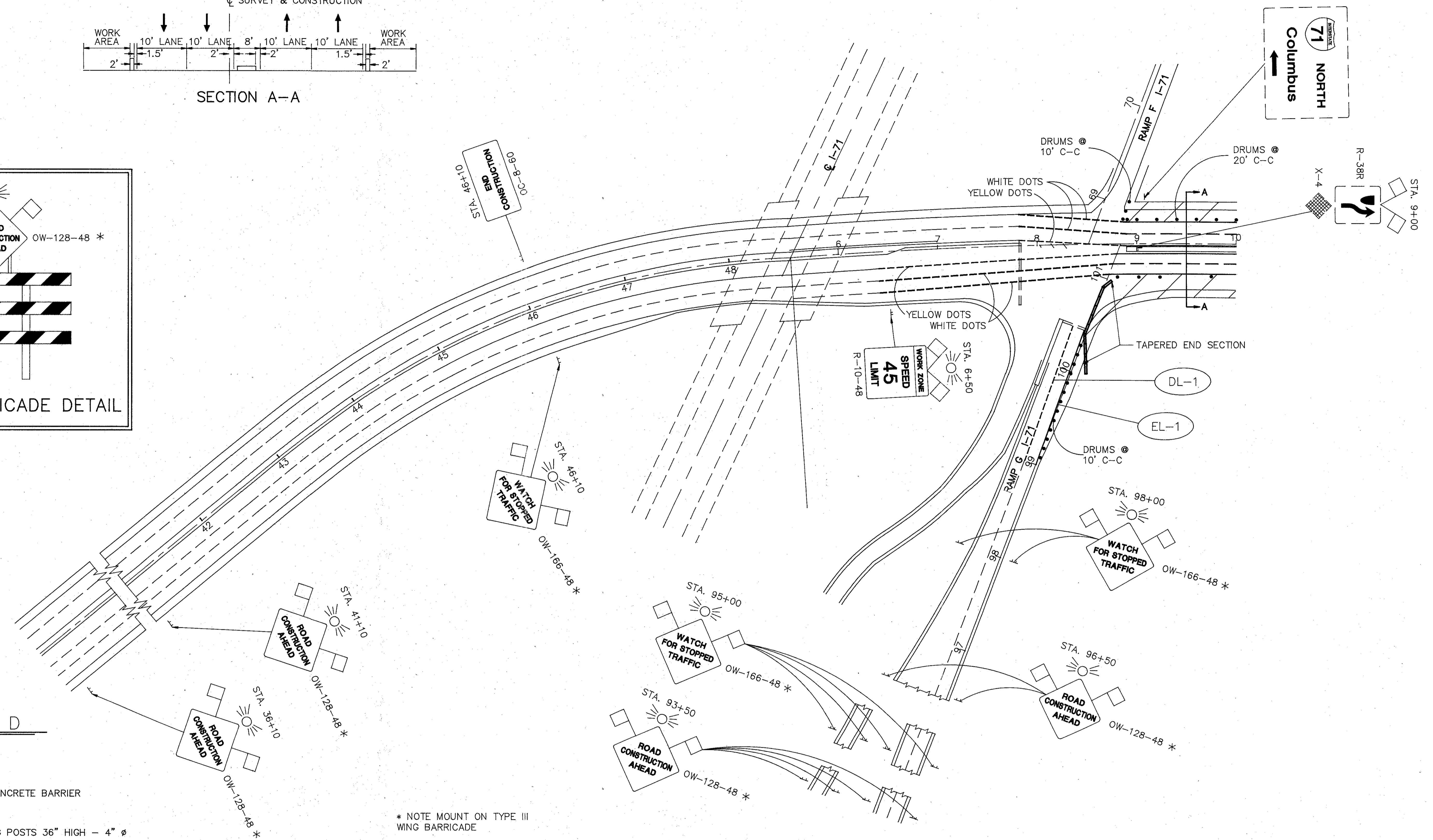
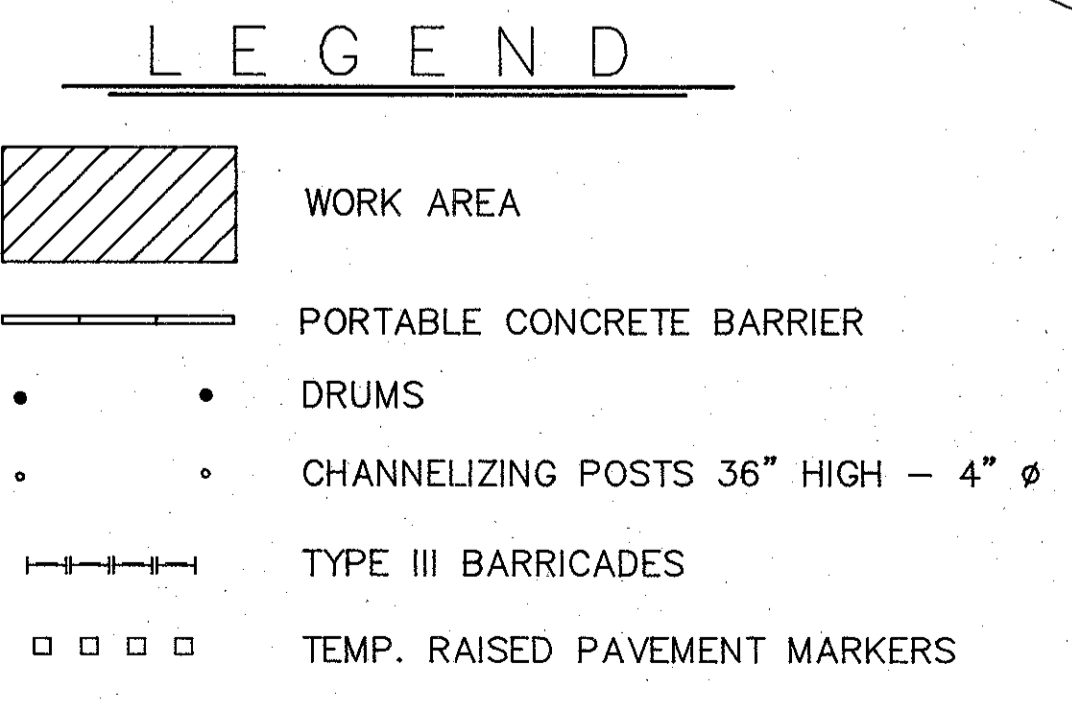
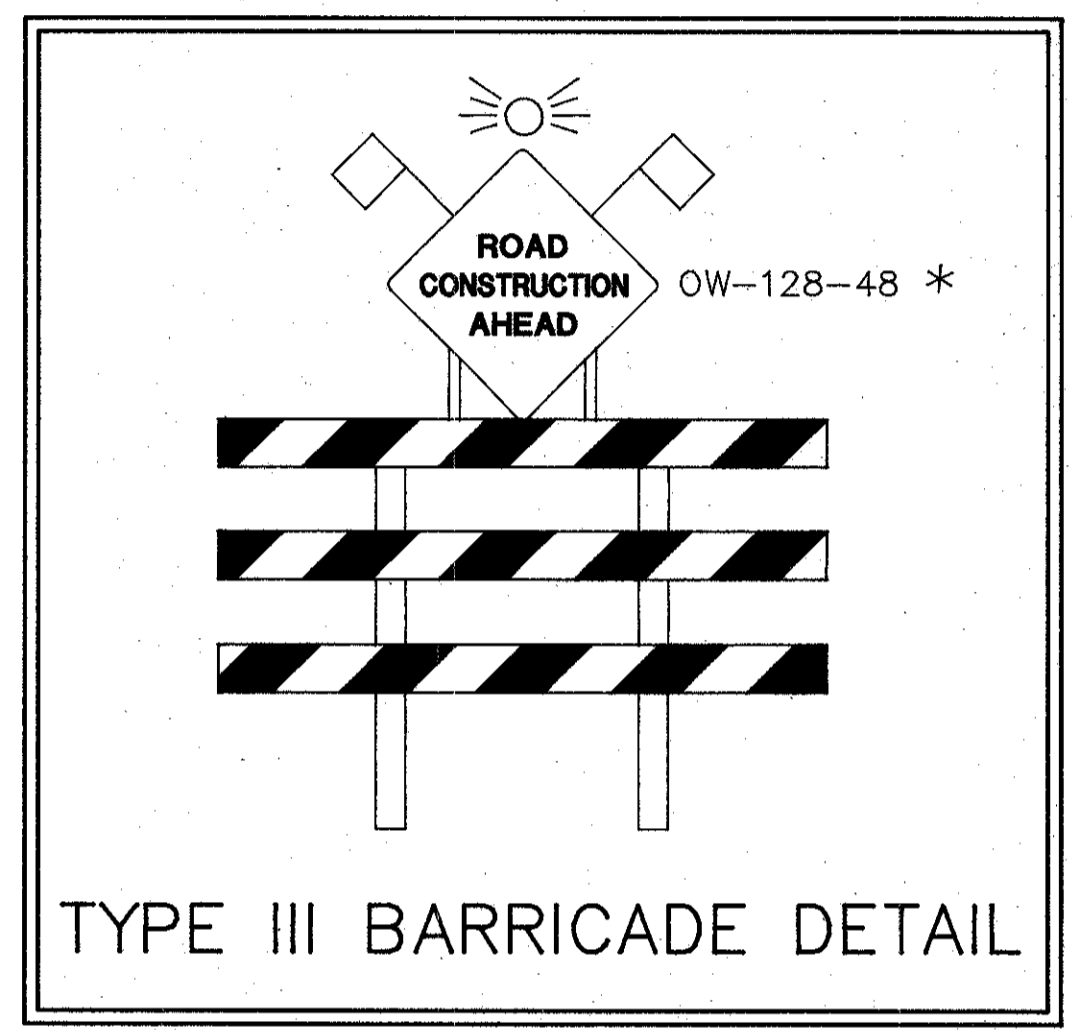
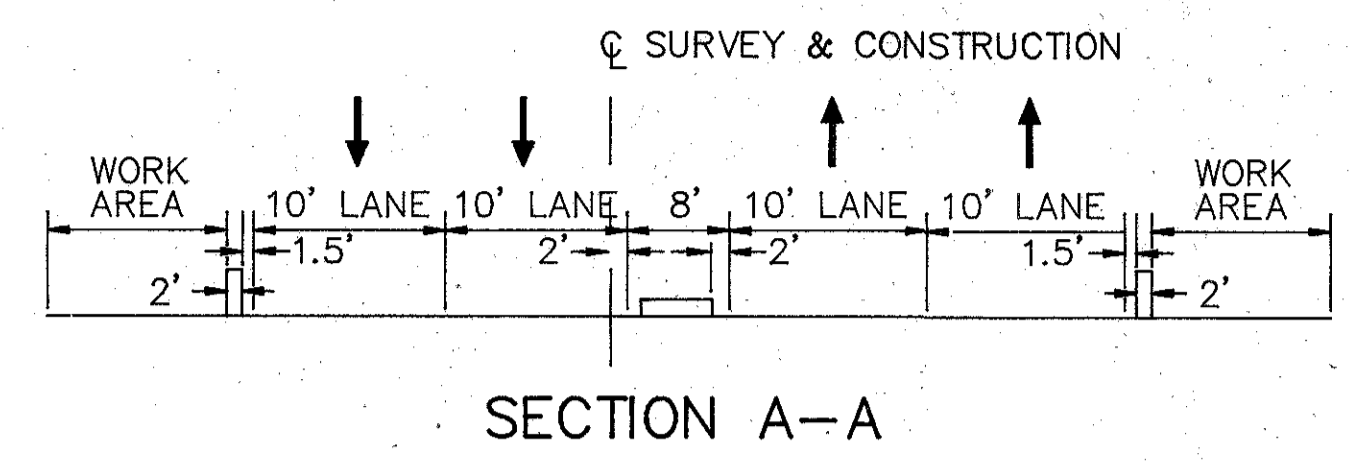


LEGEND

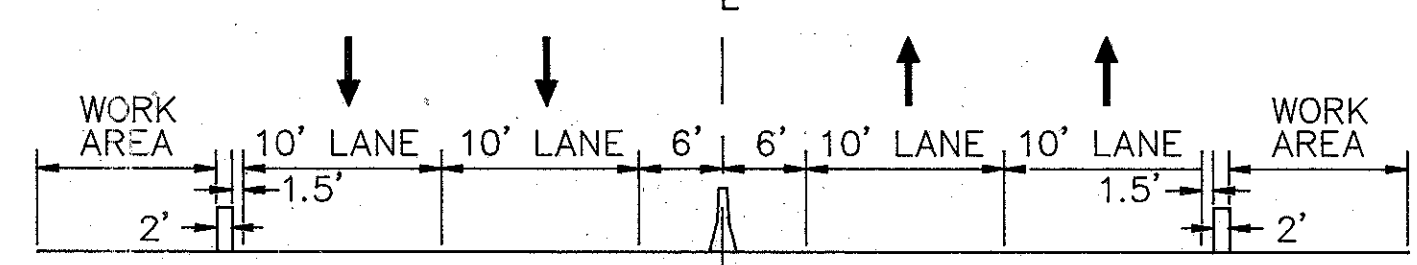
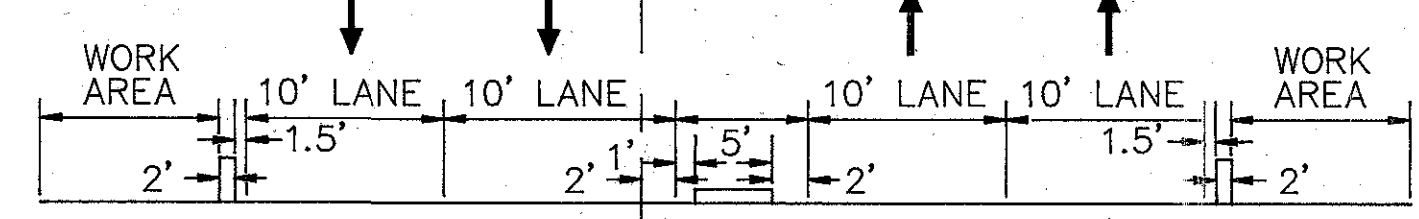
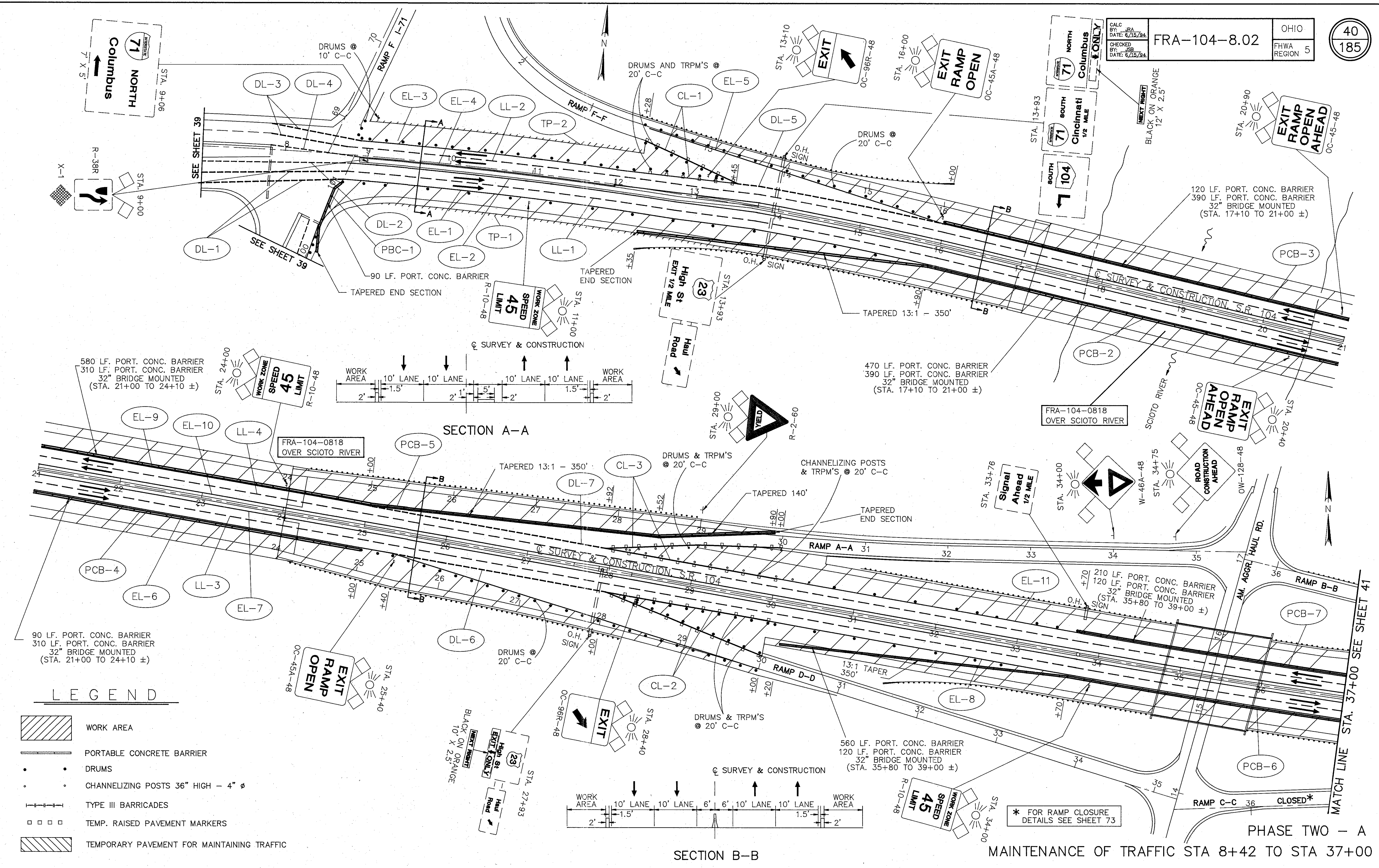
- WORK AREA
- PORTABLE CONCRETE BARRIER
- DRUMS
- CHANNELIZING POSTS 36" HIGH - 4" Ø
- TYPE III BARRICADES
- TEMP. RAISED PAVEMENT MARKERS
- TEMPORARY PAVEMENT FOR MAINTAINING TRAFFIC

PHASE ONE
 MAINTENANCE OF TRAFFIC STA 37+00 TO STA 67+00

5/11/94 7:11:44



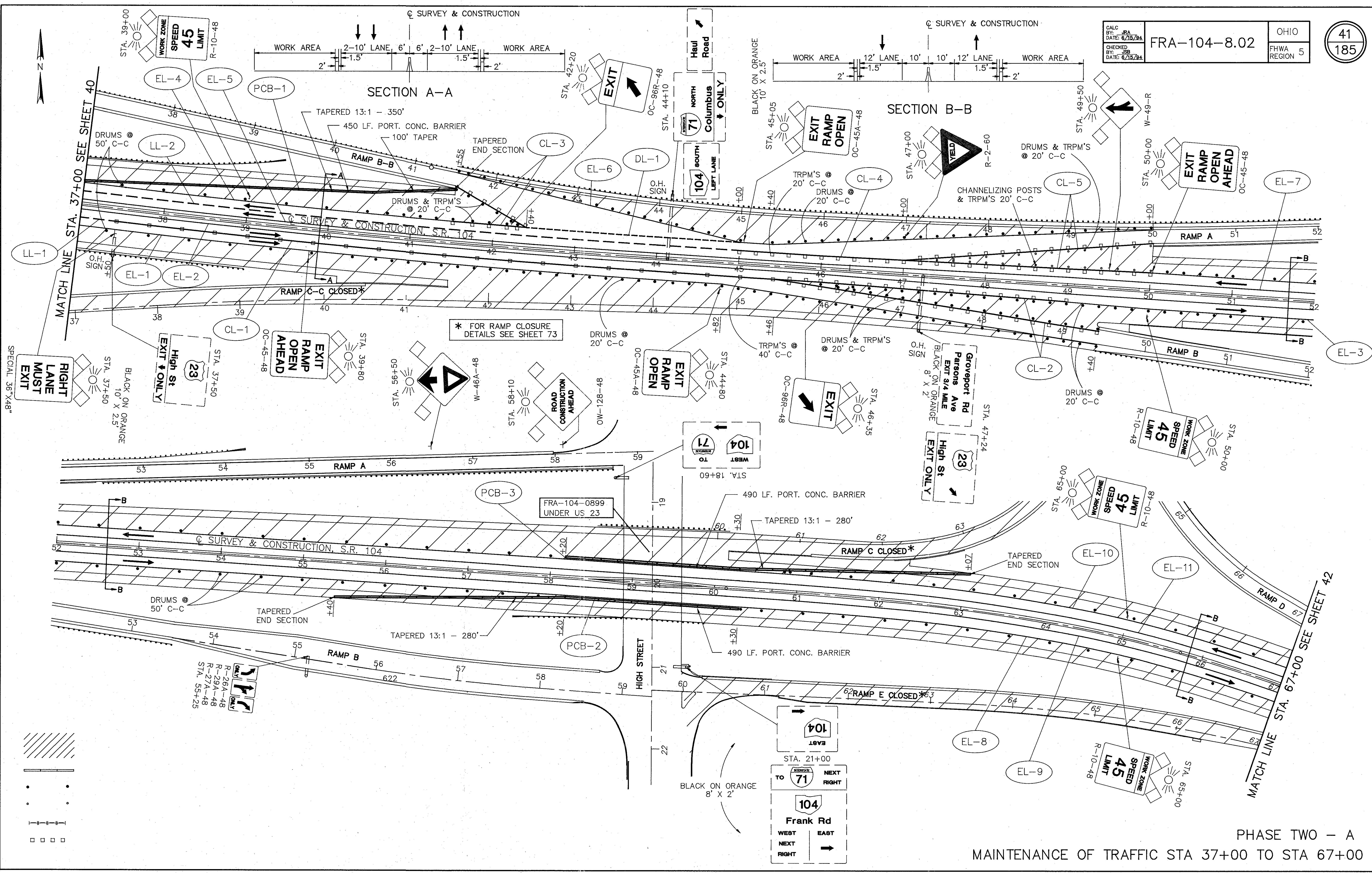
* NOTE MOUNT ON TYPE III WING BARRICADE



- LEGEND**
- WORK AREA
 - PORTABLE CONCRETE BARRIER
 - DRUMS
 - CHANNELIZING POSTS 36" HIGH - 4" Ø
 - TYPE III BARRICADES
 - TEMP. RAISED PAVEMENT MARKERS
 - TEMPORARY PAVEMENT FOR MAINTAINING TRAFFIC

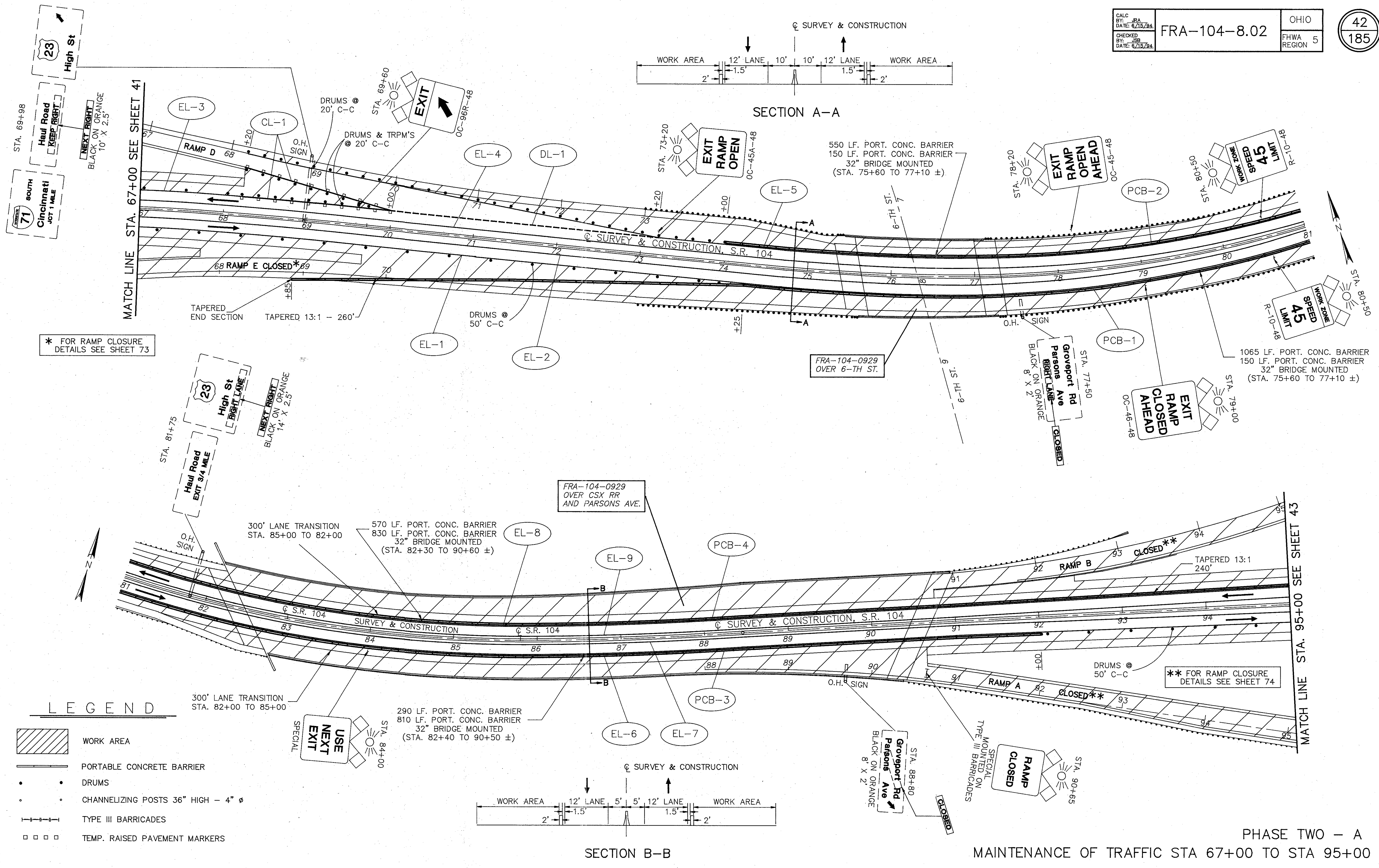
* FOR RAMP CLOSURE
DETAILS SEE SHEET 73

PHASE TWO - A
MAINTENANCE OF TRAFFIC STA 8+42 TO STA 37+00



PHASE TWO - A
 MAINTENANCE OF TRAFFIC STA 37+00 TO STA 67+00

FRA104-3 7-1-94



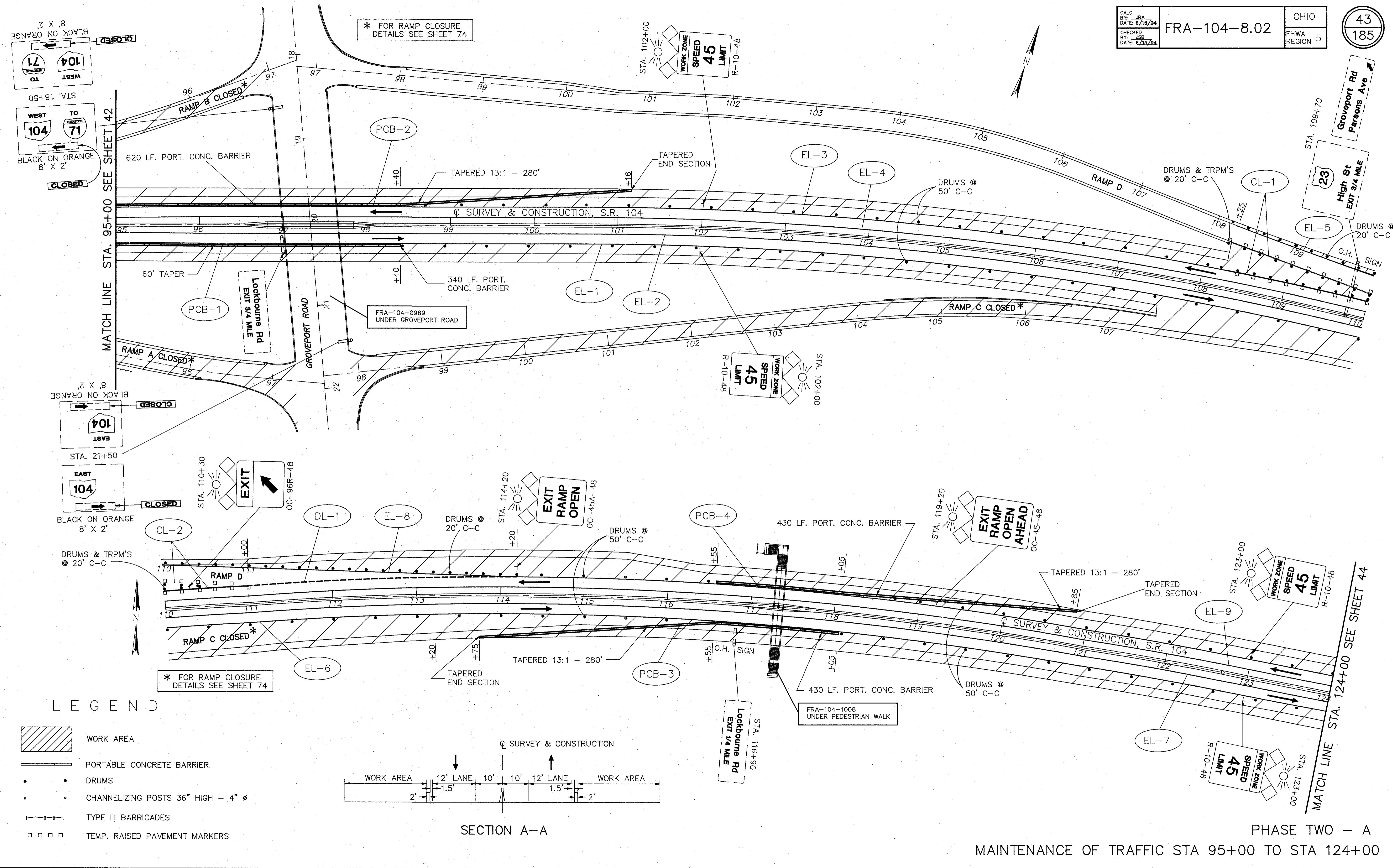
* FOR RAMP CLOSURE
DETAILS SEE SHEET 73

** FOR RAMP CLOSURE
DETAILS SEE SHEET 74

FRA-104-0929
OVER CSX RR
AND PARSONS AVE.

FRA-104-0929
OVER 6-TH ST.

FRA-104-8.02



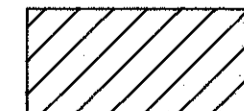
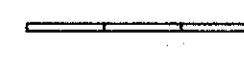


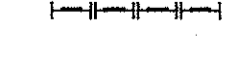
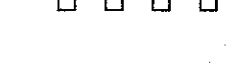
MATCH LINE STA. 95+00 SEE SHEET 42

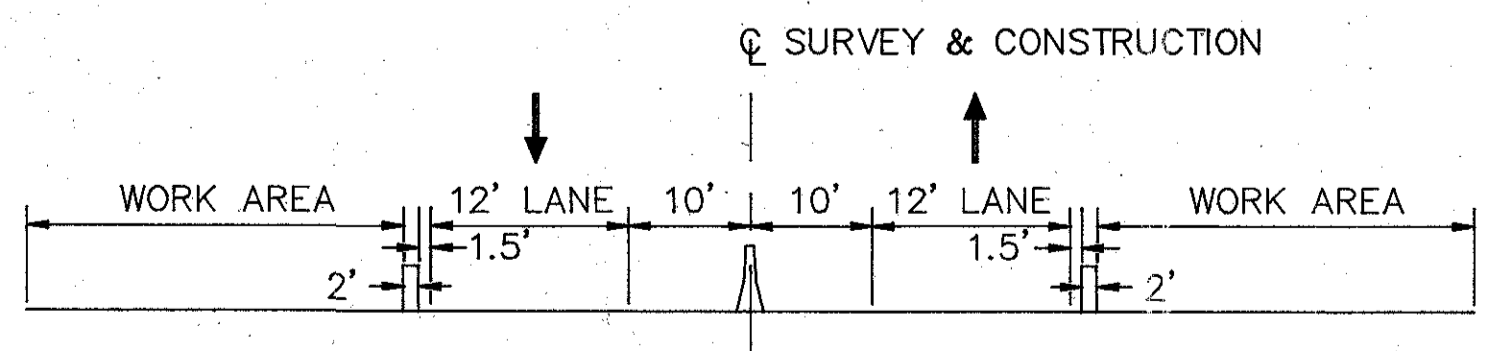
MATCH LINE STA. 124+00 SEE SHEET 44

* FOR RAMP CLOSURE DETAILS SEE SHEET 74

* FOR RAMP CLOSURE DETAILS SEE SHEET 74

LEGEND

-  WORK AREA
-  PORTABLE CONCRETE BARRIER
-  DRUMS
-  CHANNELIZING POSTS 36" HIGH - 4" Ø
-  TYPE III BARRICADES
-  TEMP. RAISED PAVEMENT MARKERS



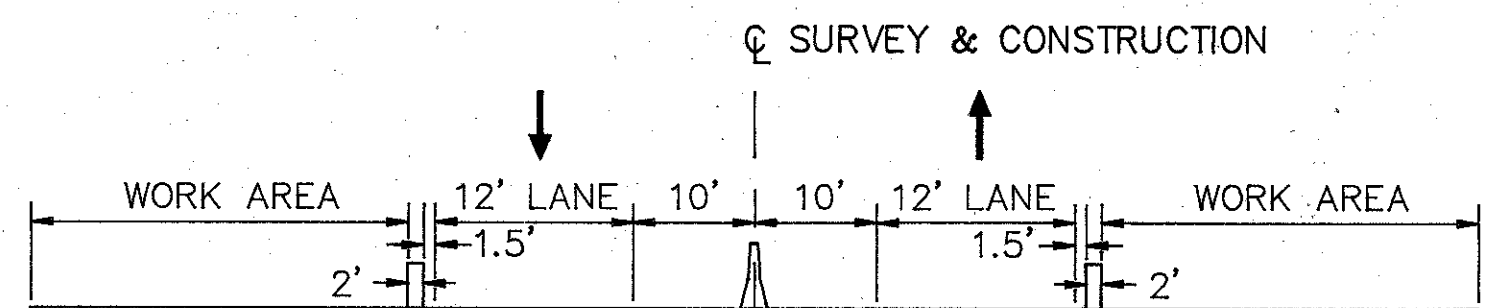
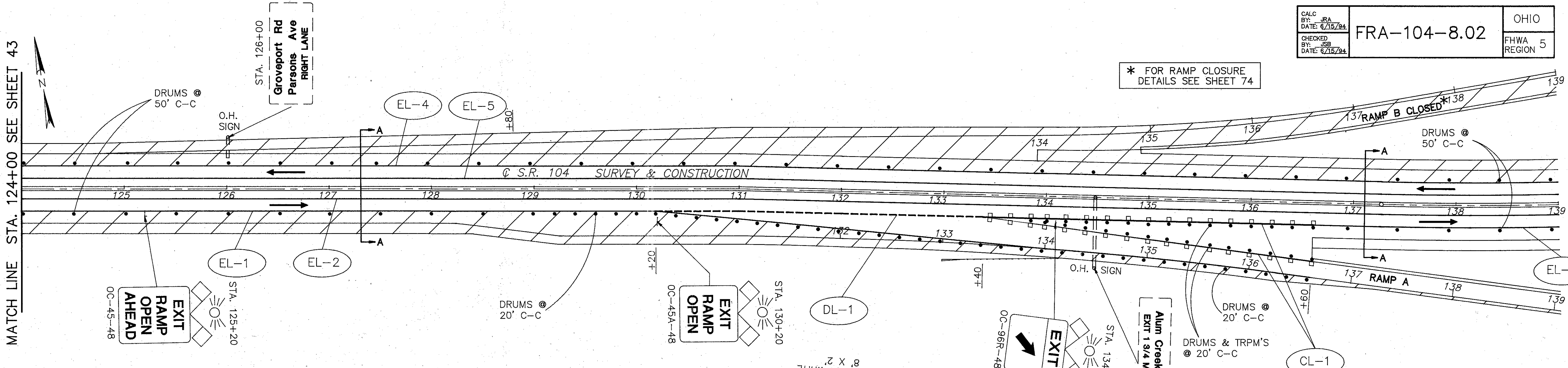
SECTION A-A

PHASE TWO - A
 MAINTENANCE OF TRAFFIC STA 95+00 TO STA 124+00

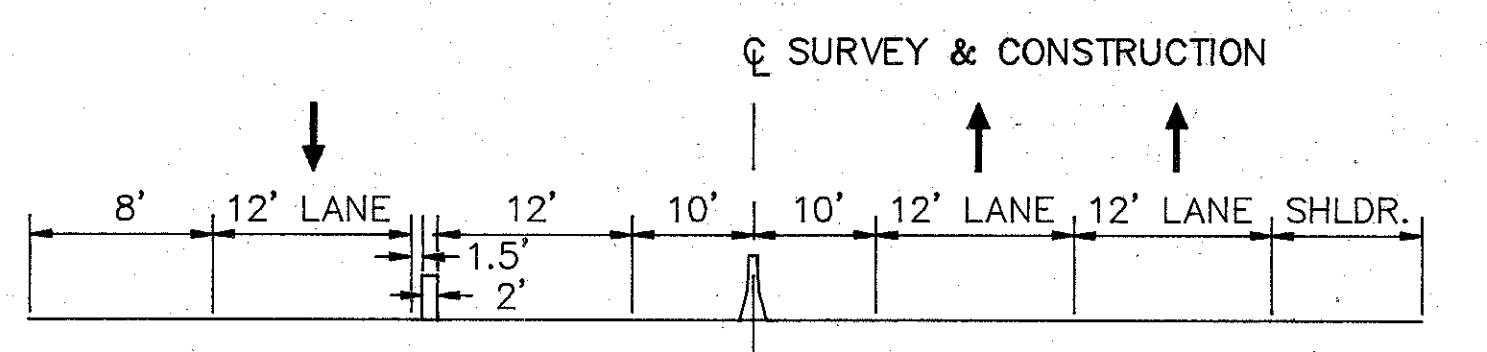
FRA-104-8.02

* FOR RAMP CLOSURE DETAILS SEE SHEET 74

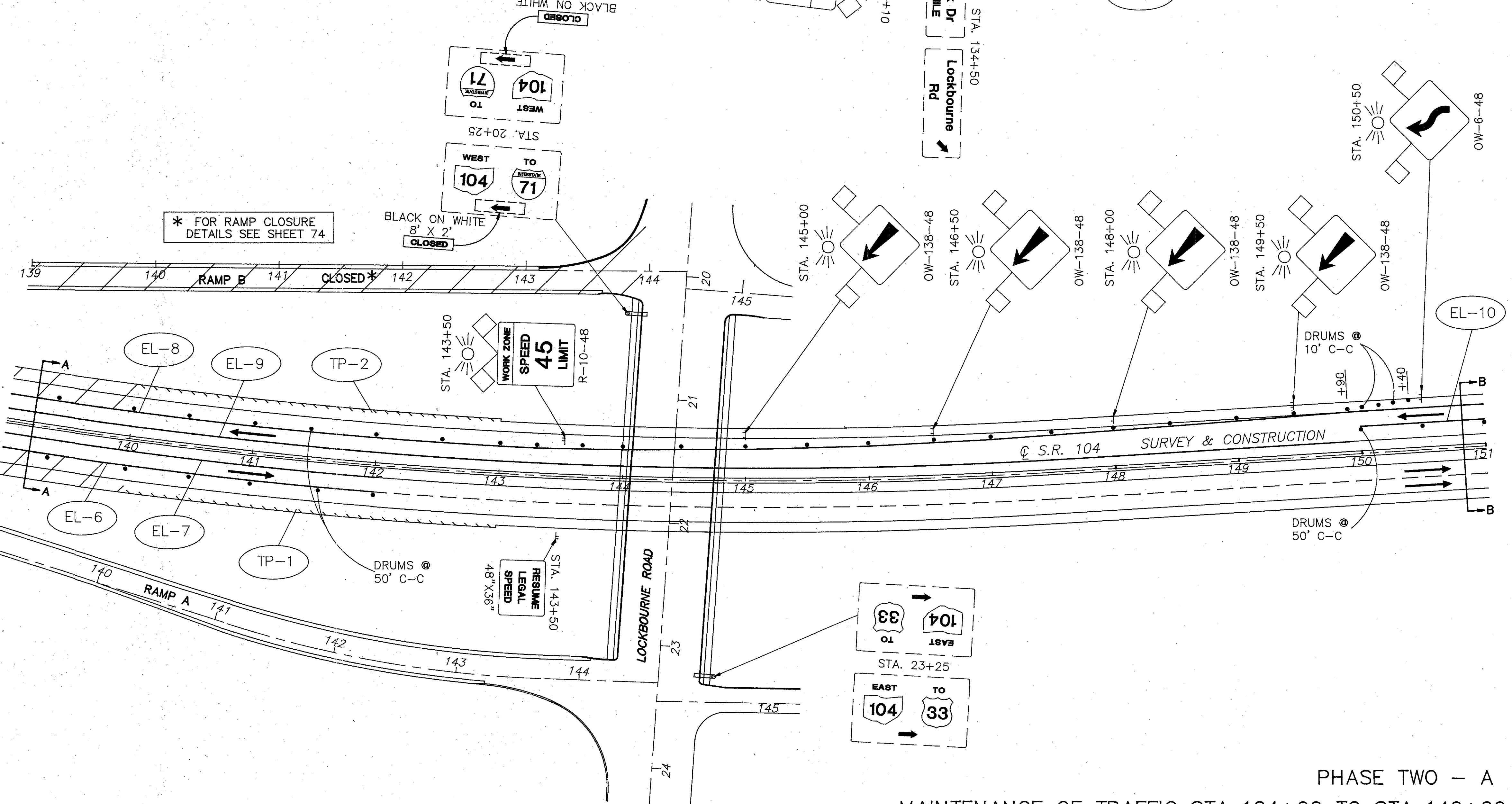
MATCH LINE STA. 124+00 SEE SHEET 43



SECTION A-A



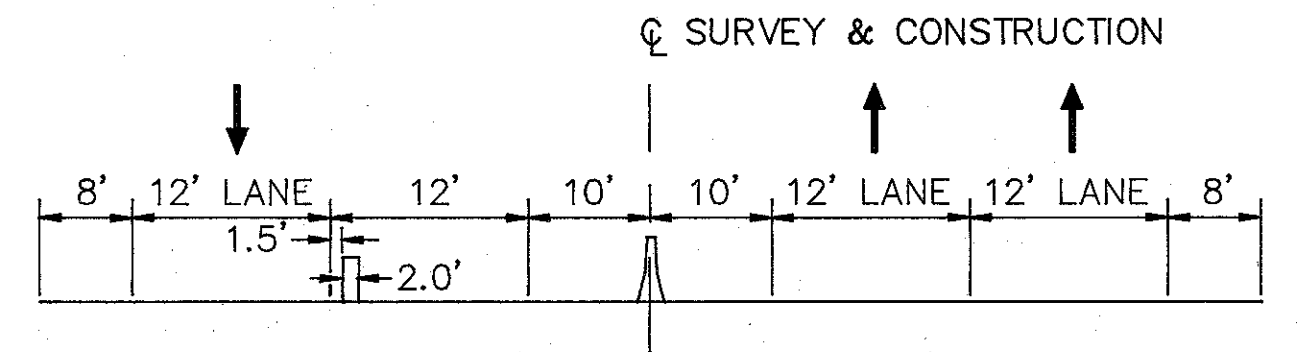
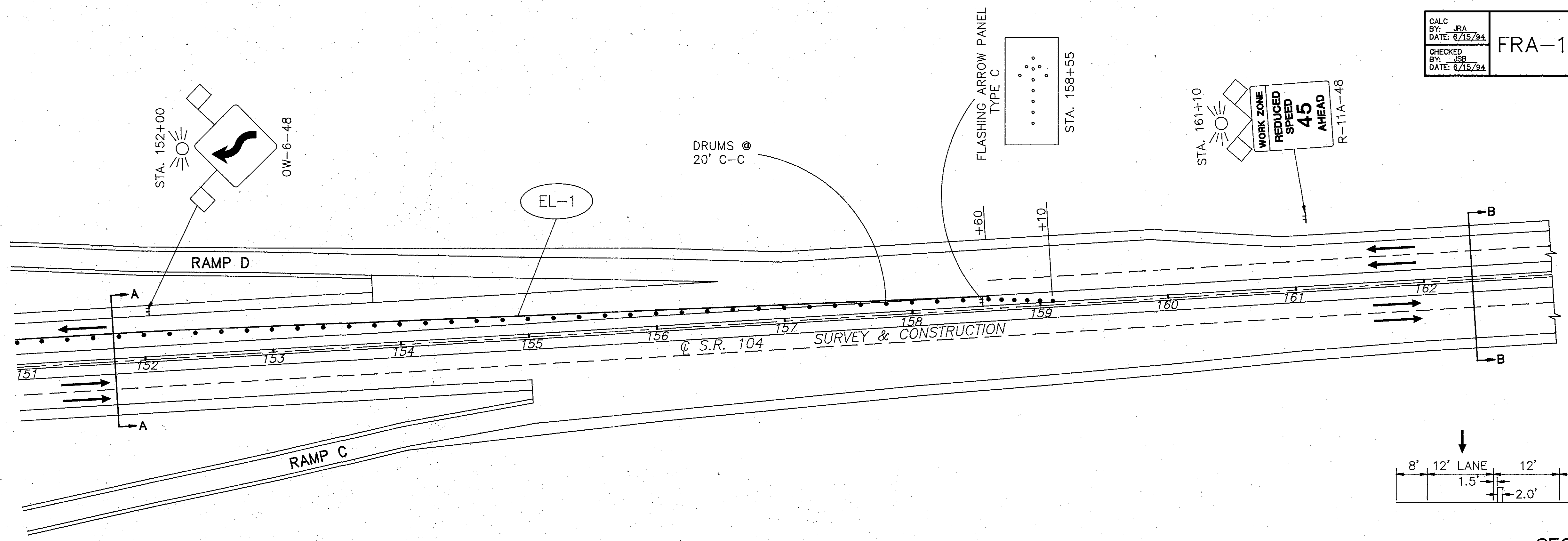
SECTION B-B



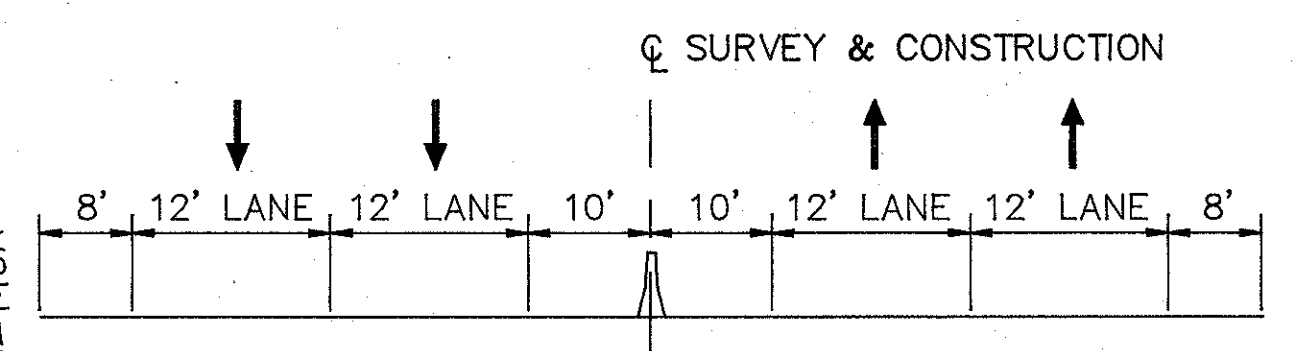
* FOR RAMP CLOSURE DETAILS SEE SHEET 74

- LEGEND**
- WORK AREA
 - PORTABLE CONCRETE BARRIER
 - DRUMS
 - CHANNELIZING POSTS 36" HIGH - 4" Ø
 - TYPE III BARRICADES
 - TEMP. RAISED PAVEMENT MARKERS
 - TEMPORARY PAVEMENT FOR MAINTAINING TRAFFIC

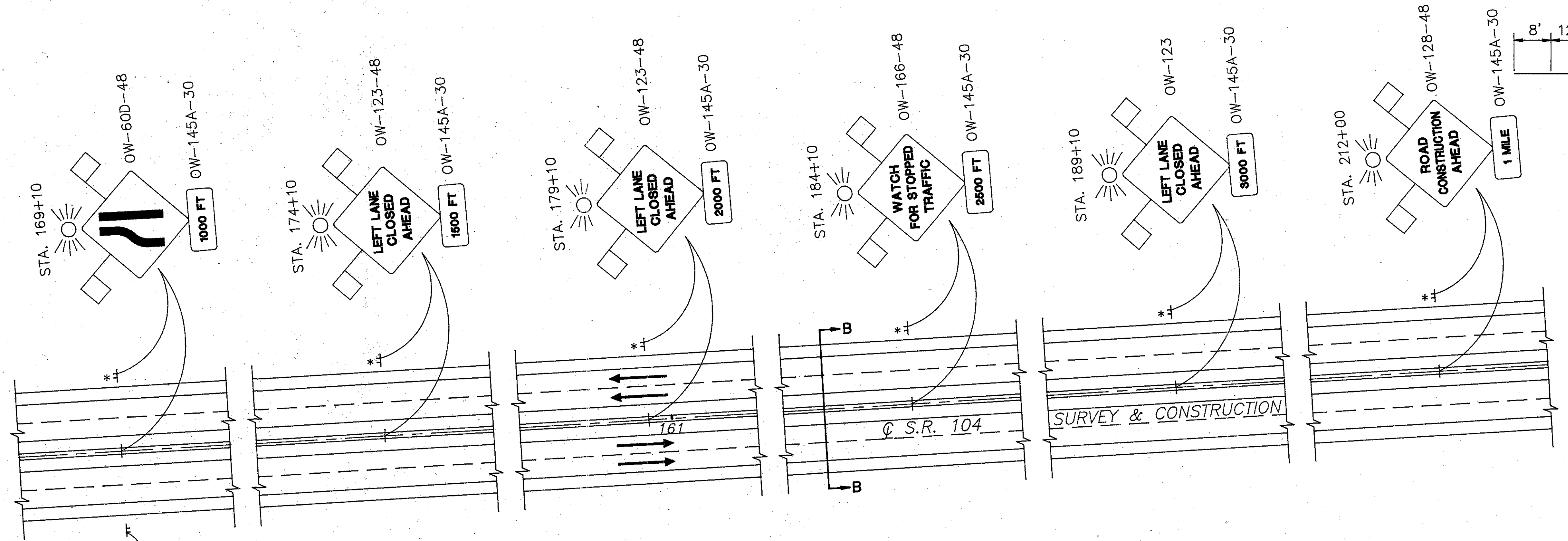
PHASE TWO - A
 MAINTENANCE OF TRAFFIC STA 124+00 TO STA 140+00



SECTION A-A



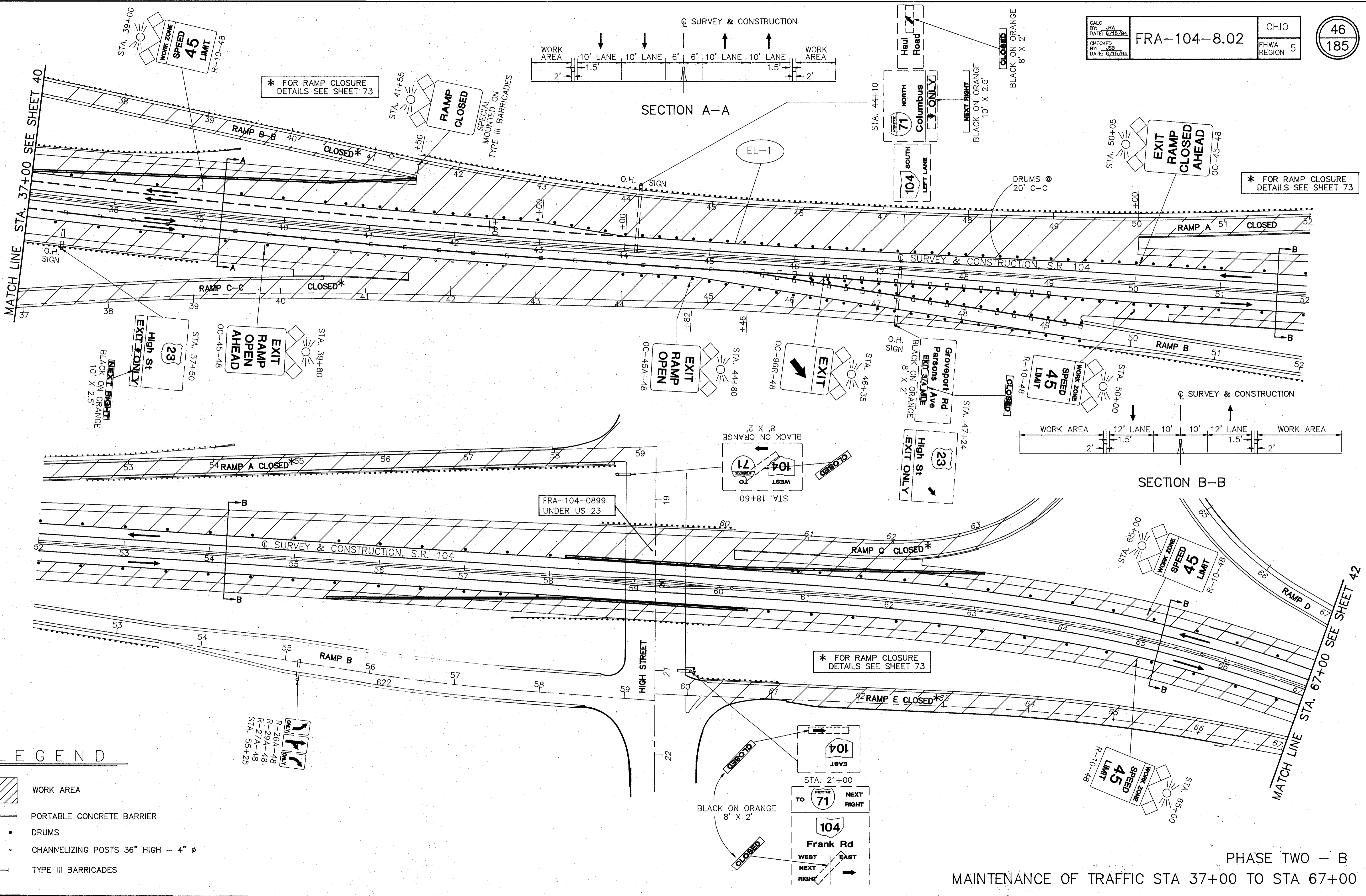
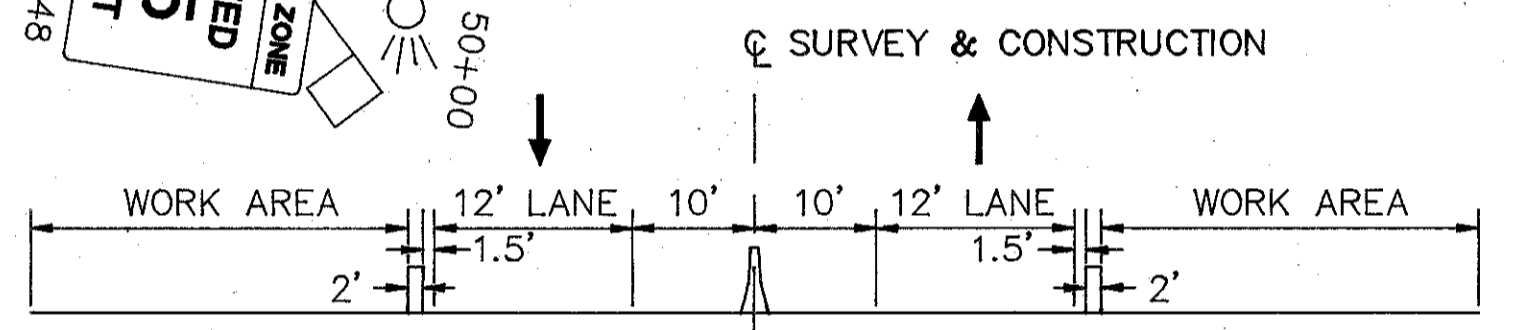
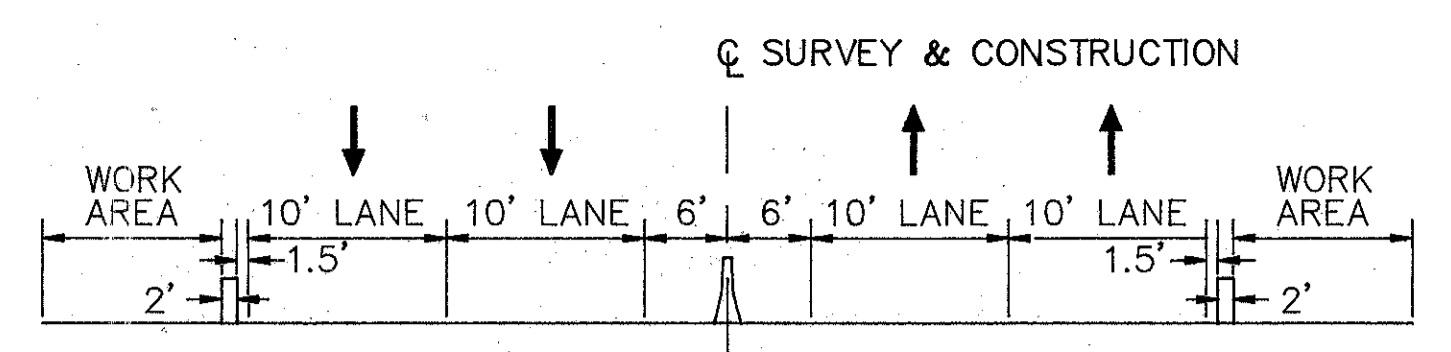
SECTION B-B



* NOTE: MOUNT ON TYPE III WING BARRICADE

LEGEND

- WORK AREA
- PORTABLE CONCRETE BARRIER
- DRUMS
- CHANNELIZING POSTS 36" HIGH - 4" Ø
- TYPE III BARRICADES



* FOR RAMP CLOSURE DETAILS SEE SHEET 73

* FOR RAMP CLOSURE DETAILS SEE SHEET 73

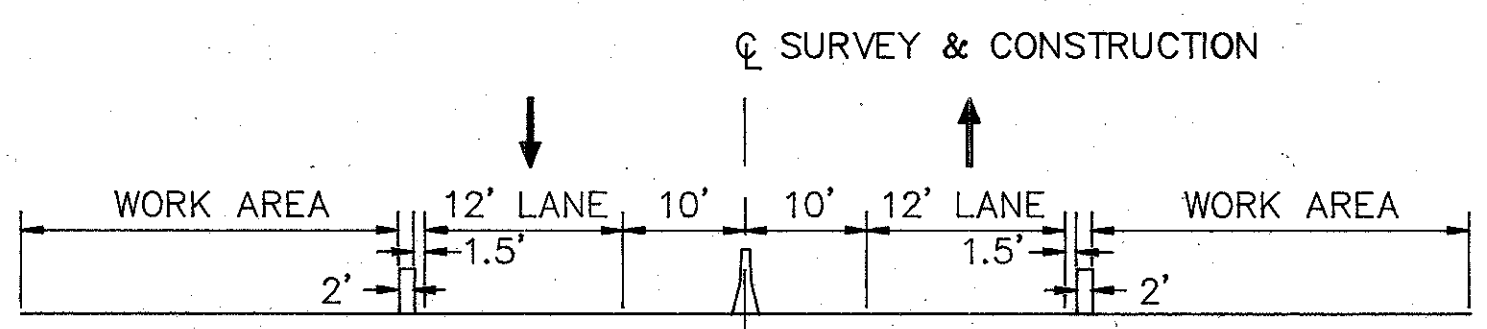
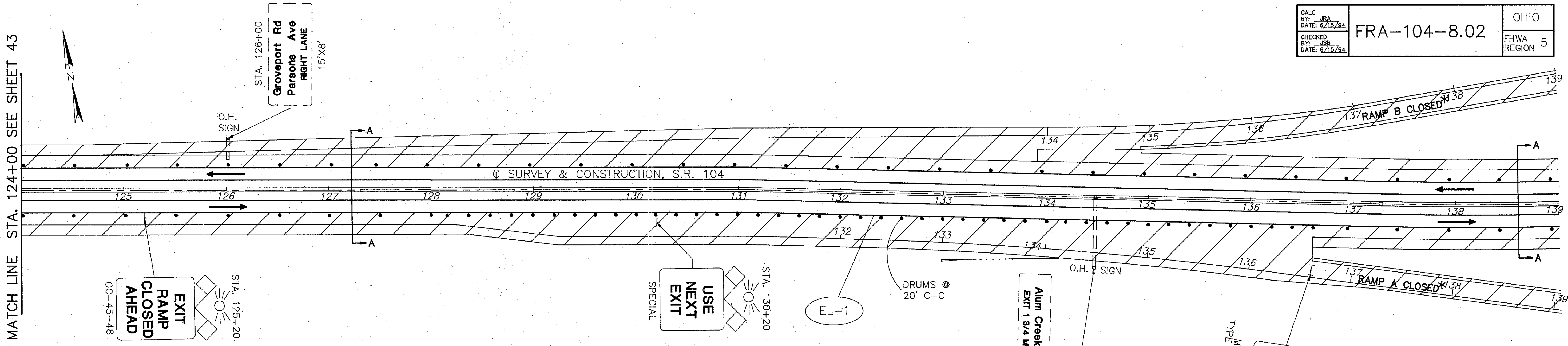
* FOR RAMP CLOSURE DETAILS SEE SHEET 73

- LEGEND**
- WORK AREA
 - PORTABLE CONCRETE BARRIER
 - DRUMS
 - CHANNELIZING POSTS 36" HIGH - 4" Ø
 - TYPE III BARRICADES

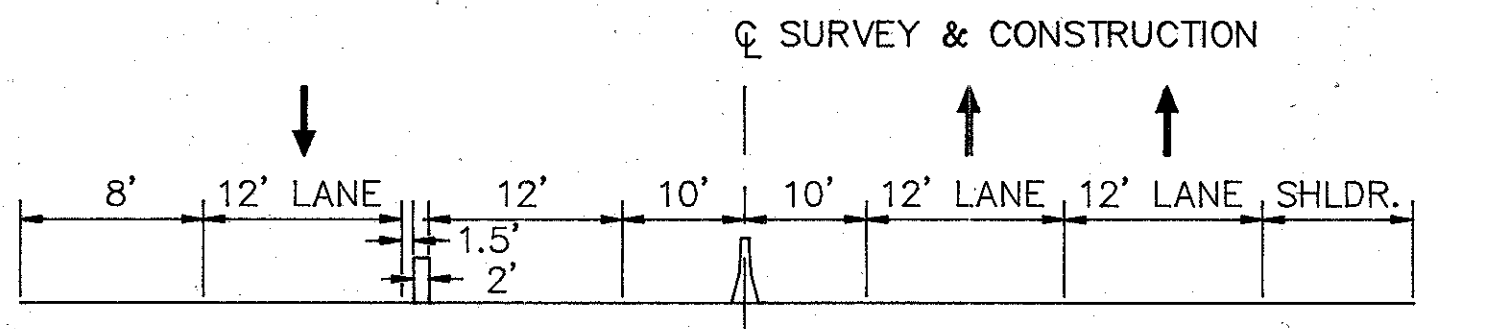
PHASE TWO - B
MAINTENANCE OF TRAFFIC STA 37+00 TO STA 67+00

28-3 7-1-94

MATCH LINE STA. 124+00 SEE SHEET 43



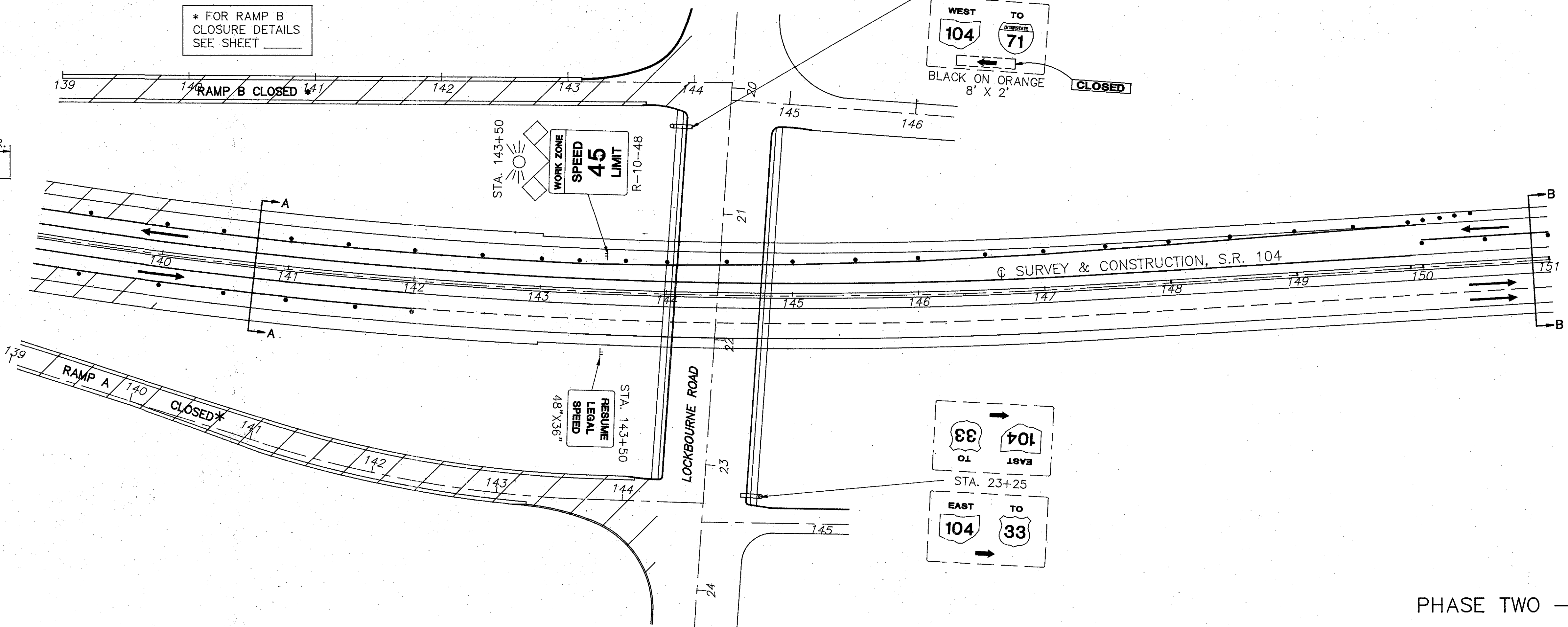
SECTION A-A



SECTION B-B

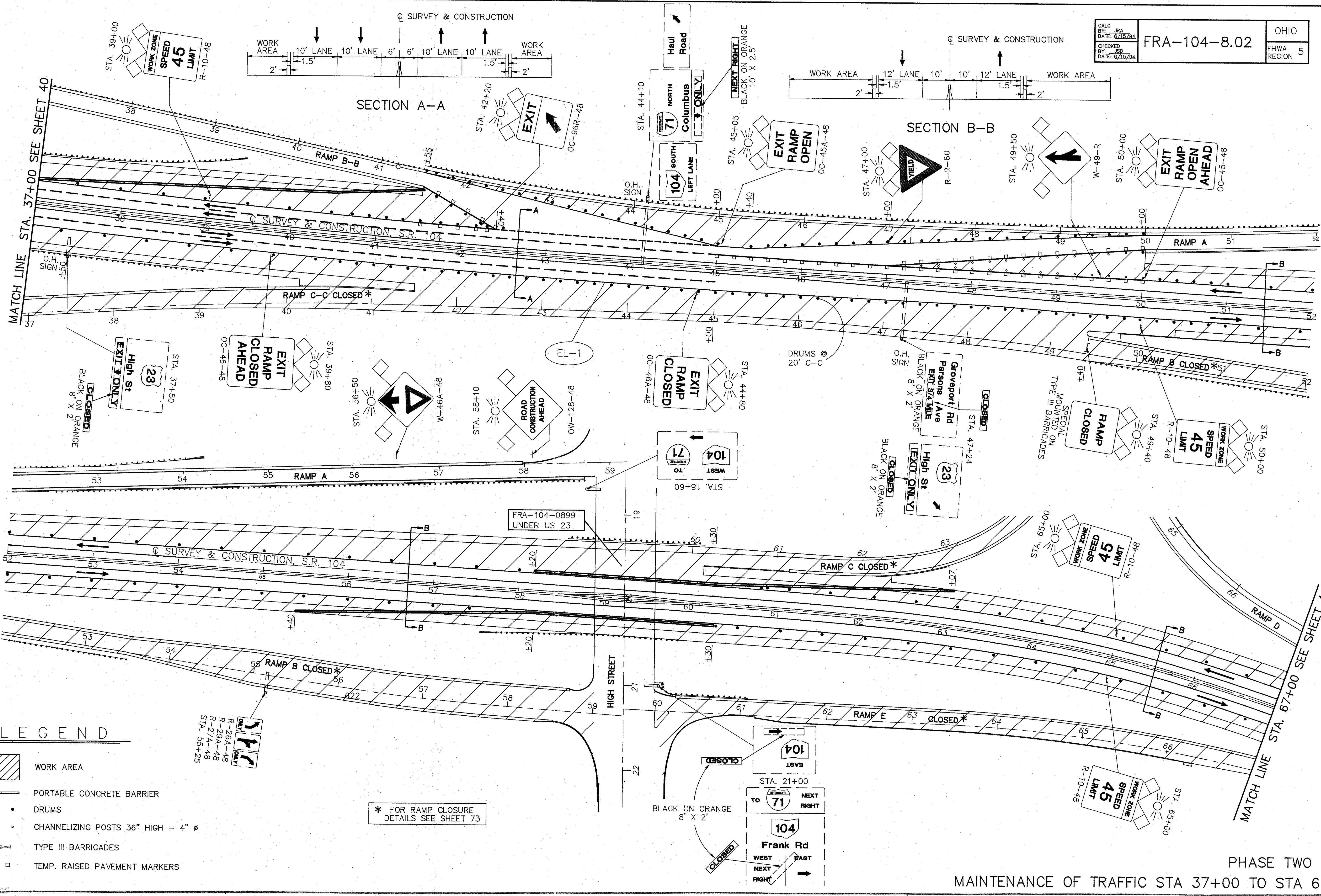
* FOR RAMP B CLOSURE DETAILS SEE SHEET

* FOR RAMP CLOSURE DETAILS SEE SHEET 72



- LEGEND**
- WORK AREA
 - PORTABLE CONCRETE BARRIER
 - DRUMS
 - CHANNELIZING POSTS 36" HIGH - 4" Ø
 - TYPE III BARRICADES

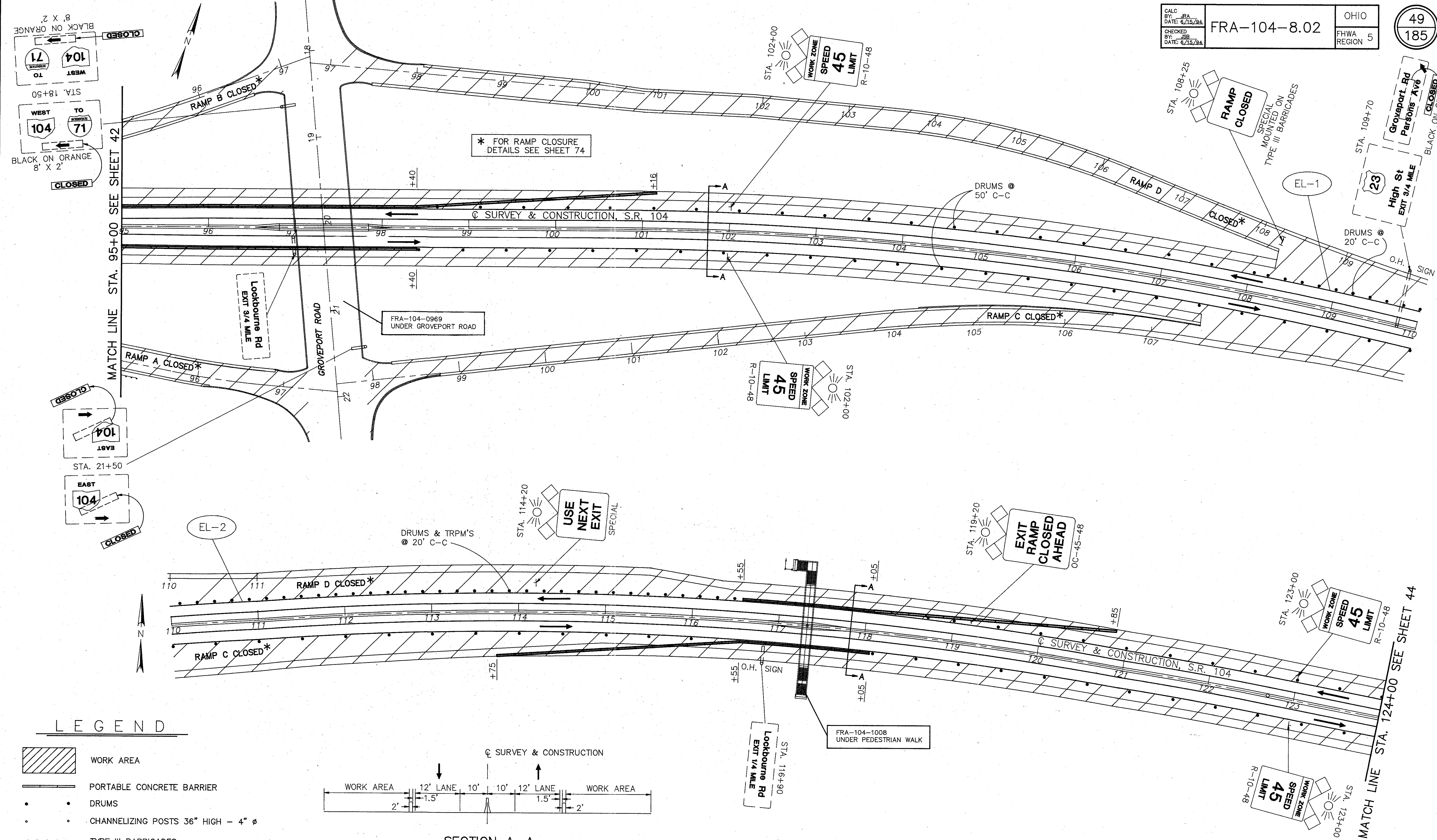
PHASE TWO - B
MAINTENANCE OF TRAFFIC STA 124+00 TO STA 151+00



- LEGEND**
- WORK AREA
 - PORTABLE CONCRETE BARRIER
 - DRUMS
 - CHANNELIZING POSTS 36" HIGH - 4" Ø
 - TYPE III BARRICADES
 - TEMP. RAISED PAVEMENT MARKERS

* FOR RAMP CLOSURE DETAILS SEE SHEET 73

PHASE TWO - C
MAINTENANCE OF TRAFFIC STA 37+00 TO STA 67+00

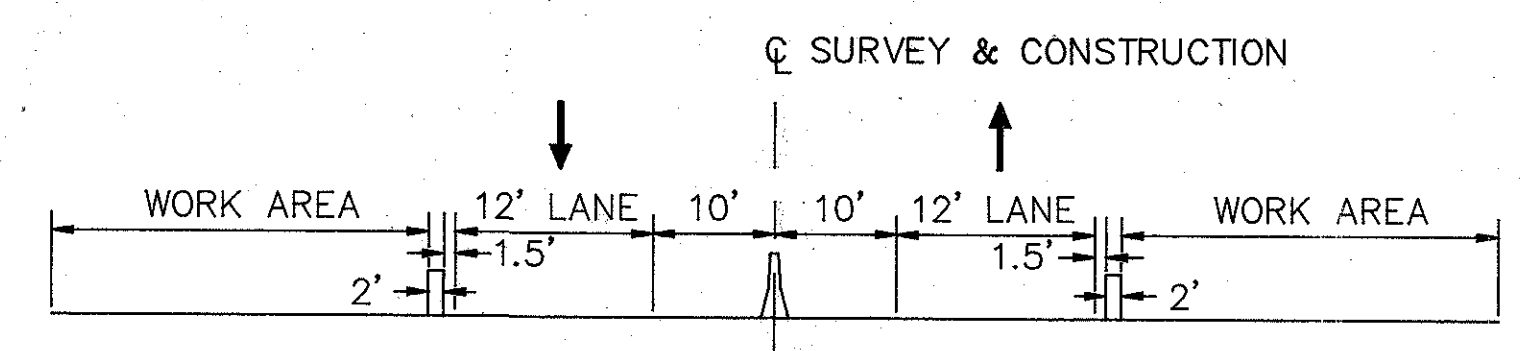


MATCH LINE STA. 95+00 SEE SHEET 42

MATCH LINE STA. 124+00 SEE SHEET 44

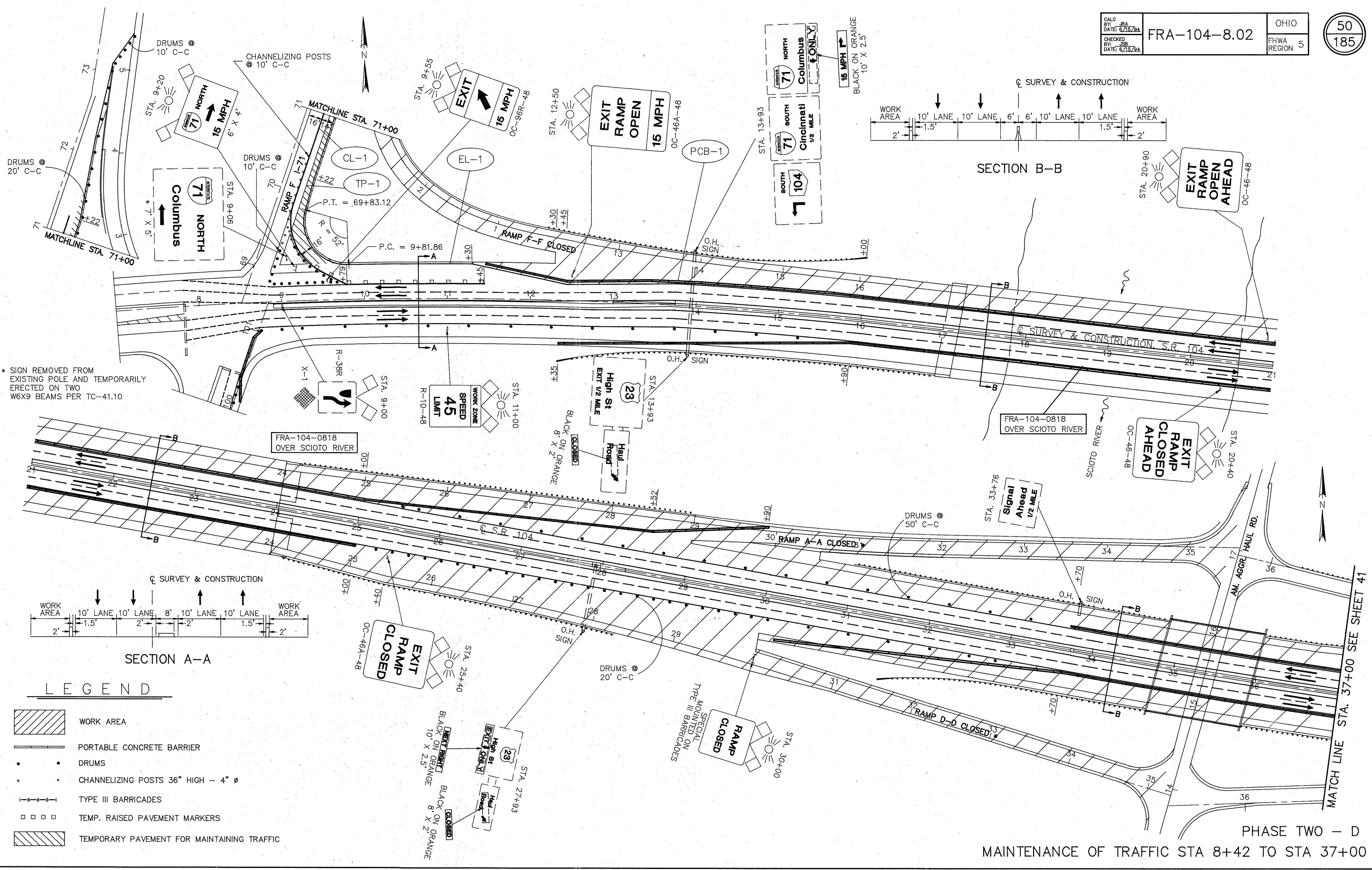
LEGEND

- WORK AREA
- PORTABLE CONCRETE BARRIER
- DRUMS
- CHANNELIZING POSTS 36" HIGH - 4" Ø
- TYPE III BARRICADES
- TEMP. RAISED PAVEMENT MARKERS

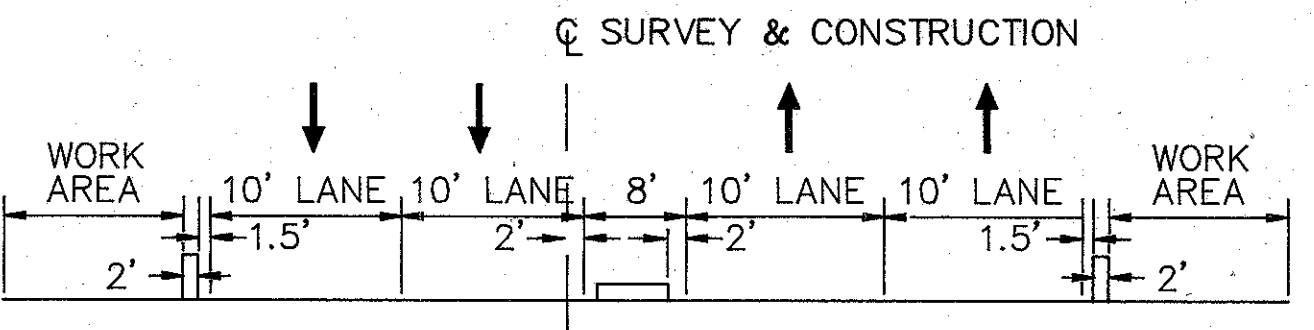
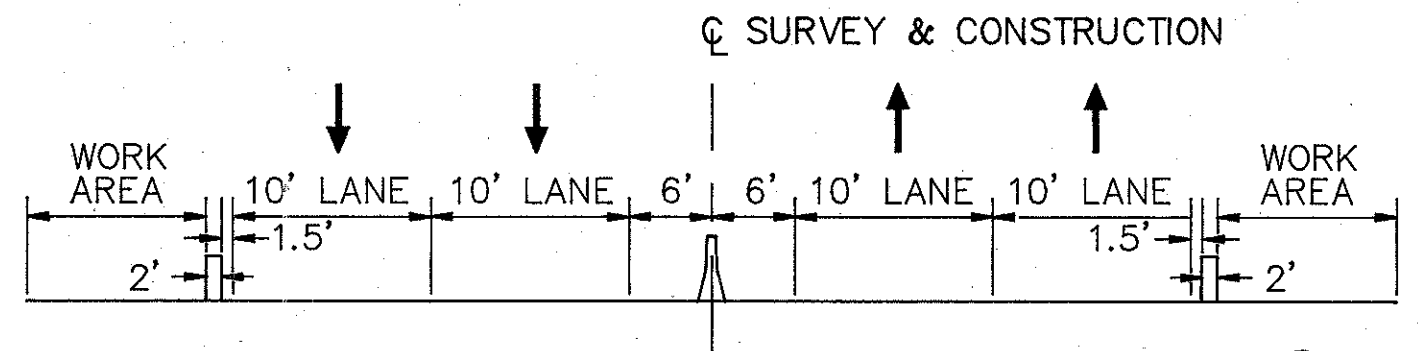


SECTION A-A

PHASE TWO - C
MAINTENANCE OF TRAFFIC STA 95+00 TO STA 124+00



* SIGN REMOVED FROM EXISTING POLE AND TEMPORARILY ERECTED ON TWO W6X9 BEAMS PER TC-41.10



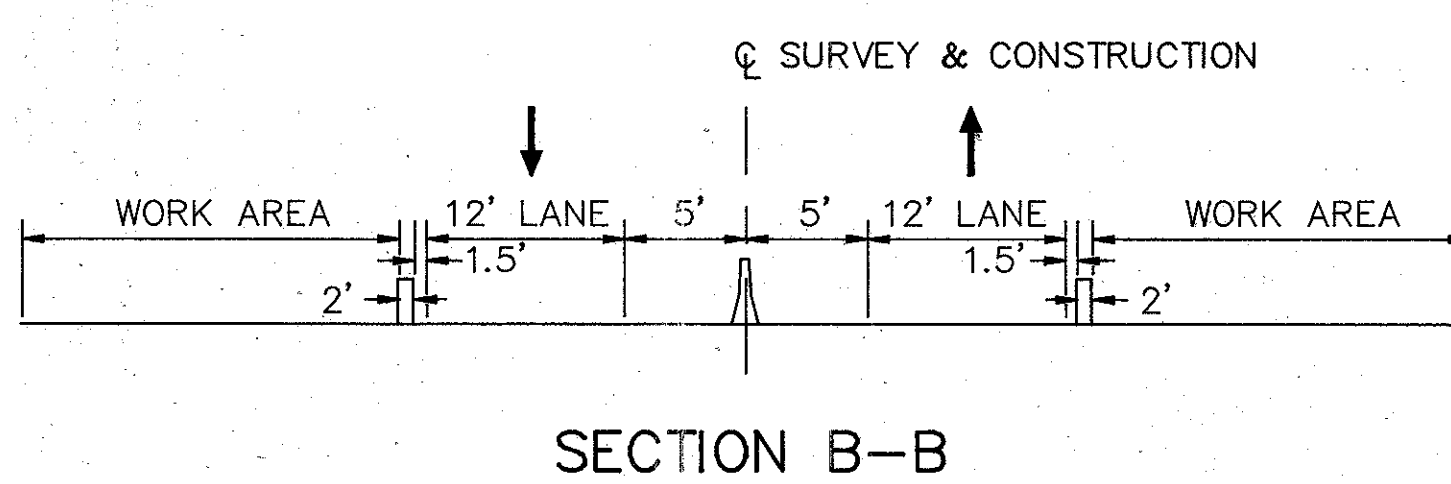
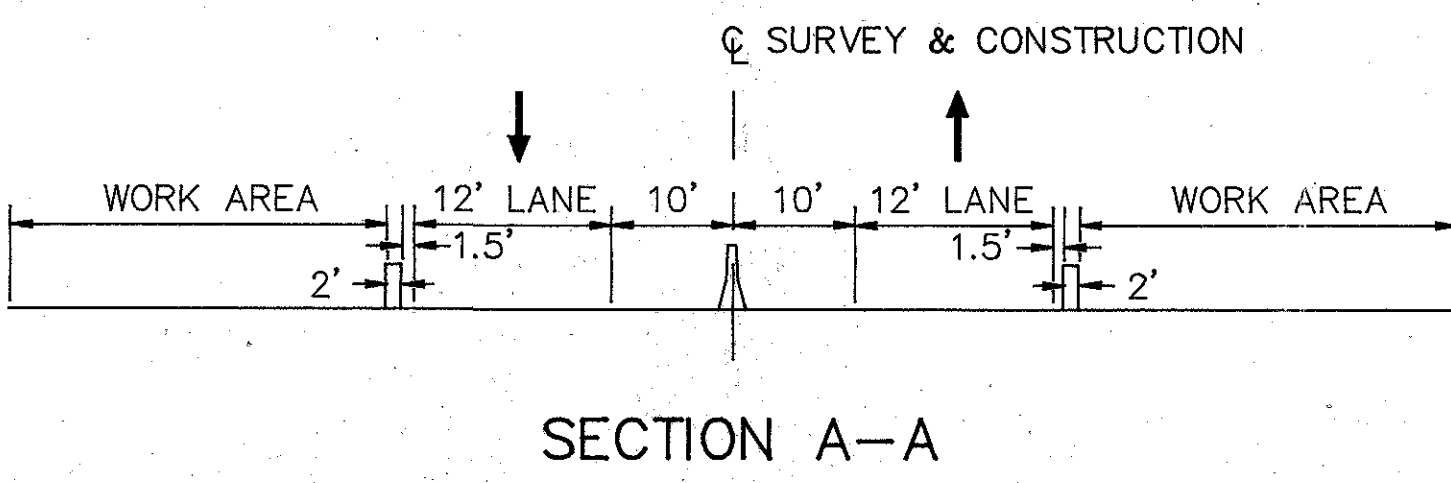
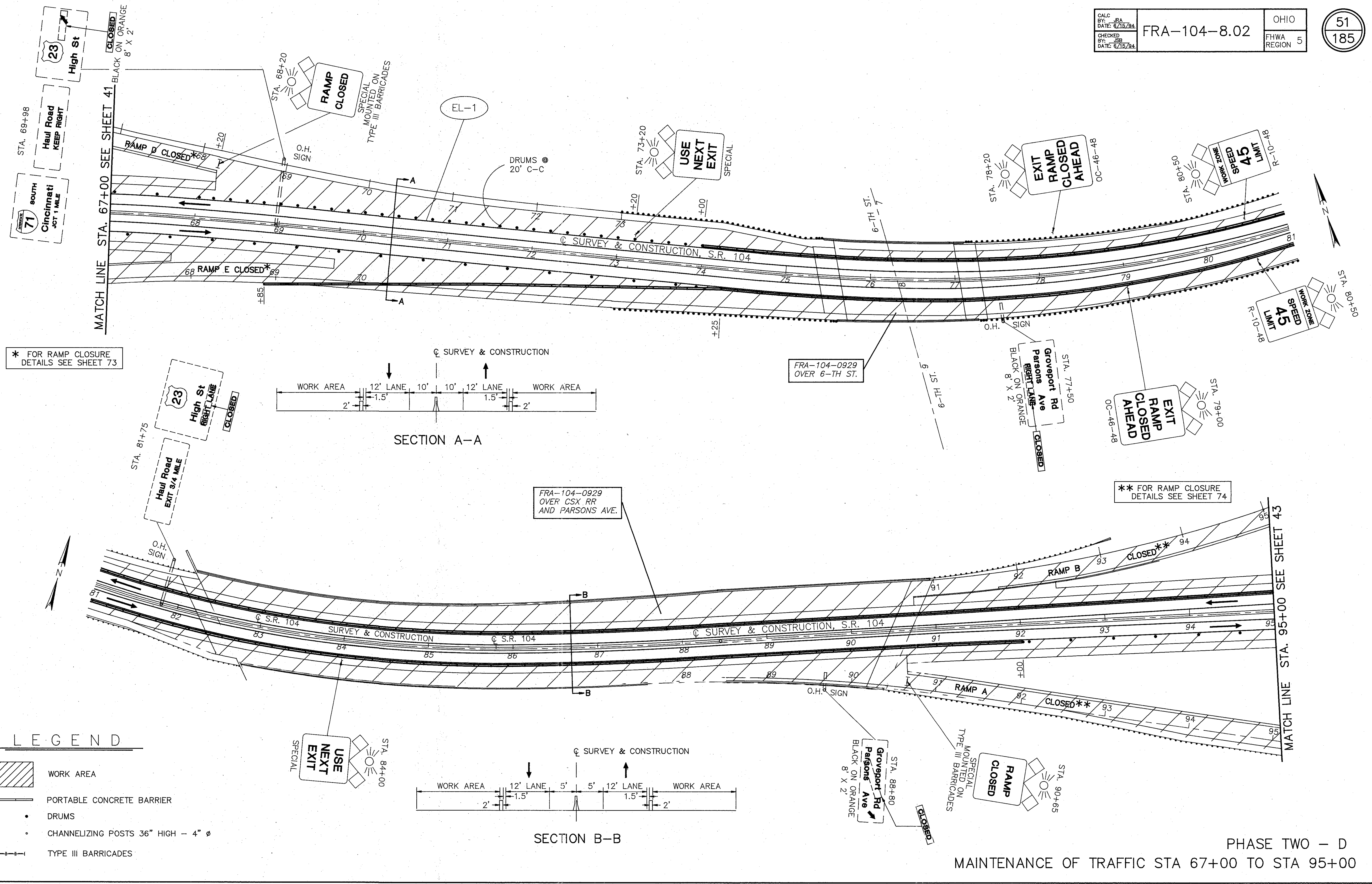
SECTION A-A

LEGEND

- WORK AREA
- PORTABLE CONCRETE BARRIER
- DRUMS
- CHANNELIZING POSTS 36" HIGH - 4" Ø
- TYPE III BARRICADES
- TEMP. RAISED PAVEMENT MARKERS
- TEMPORARY PAVEMENT FOR MAINTAINING TRAFFIC

PHASE TWO - D
MAINTENANCE OF TRAFFIC STA 8+42 TO STA 37+00

MATCH LINE STA. 37+00 SEE SHEET 41



* FOR RAMP CLOSURE DETAILS SEE SHEET 73

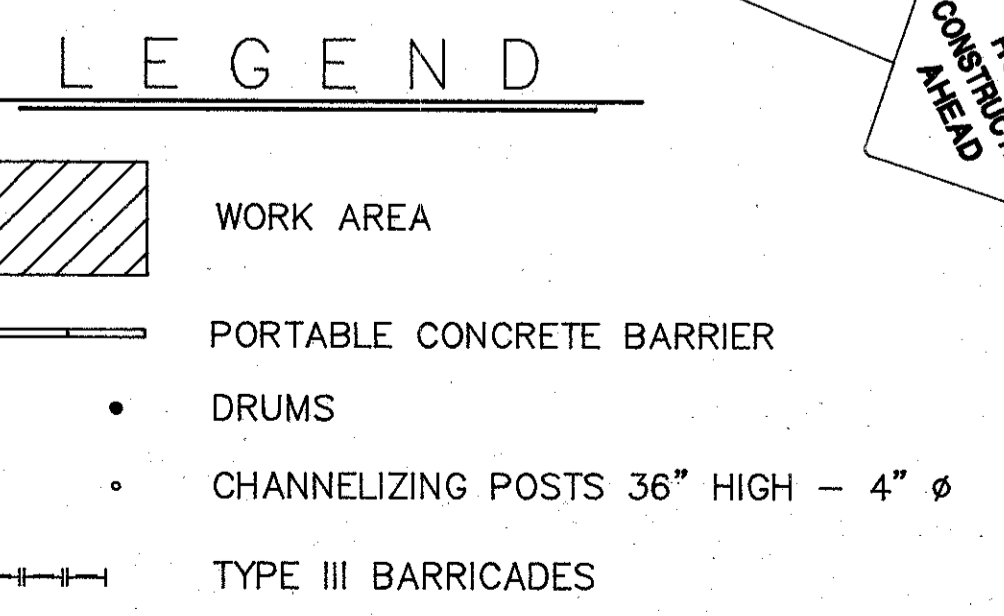
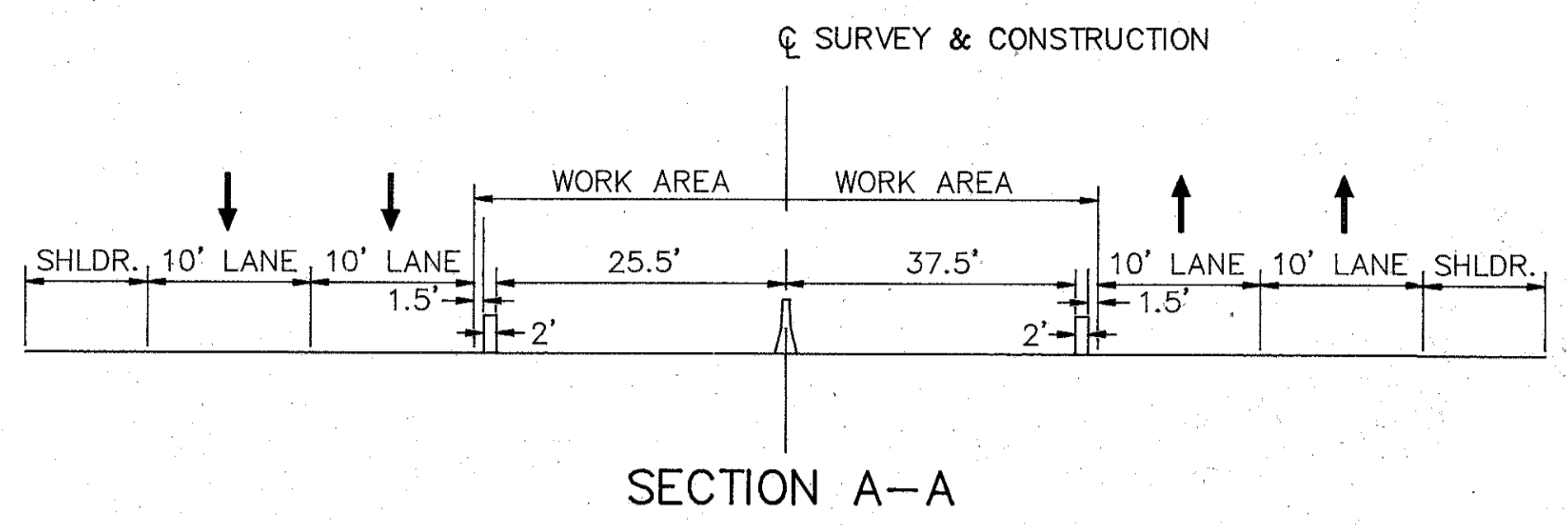
** FOR RAMP CLOSURE DETAILS SEE SHEET 74

- LEGEND**
- WORK AREA
 - PORTABLE CONCRETE BARRIER
 - DRUMS
 - CHANNELIZING POSTS 36" HIGH - 4" Ø
 - TYPE III BARRICADES

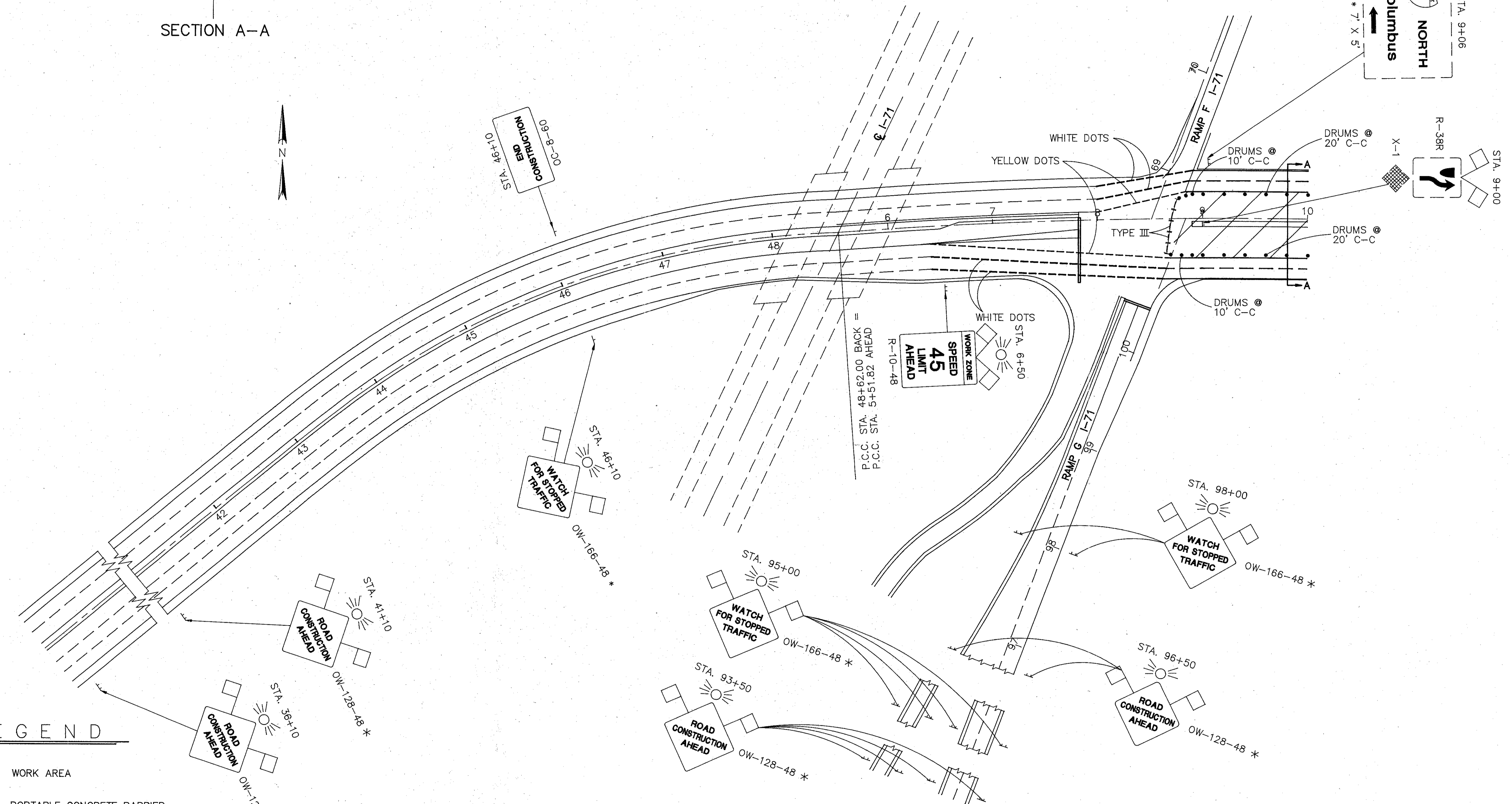
PHASE TWO - D
 MAINTENANCE OF TRAFFIC STA 67+00 TO STA 95+00

FRA-104-8.02

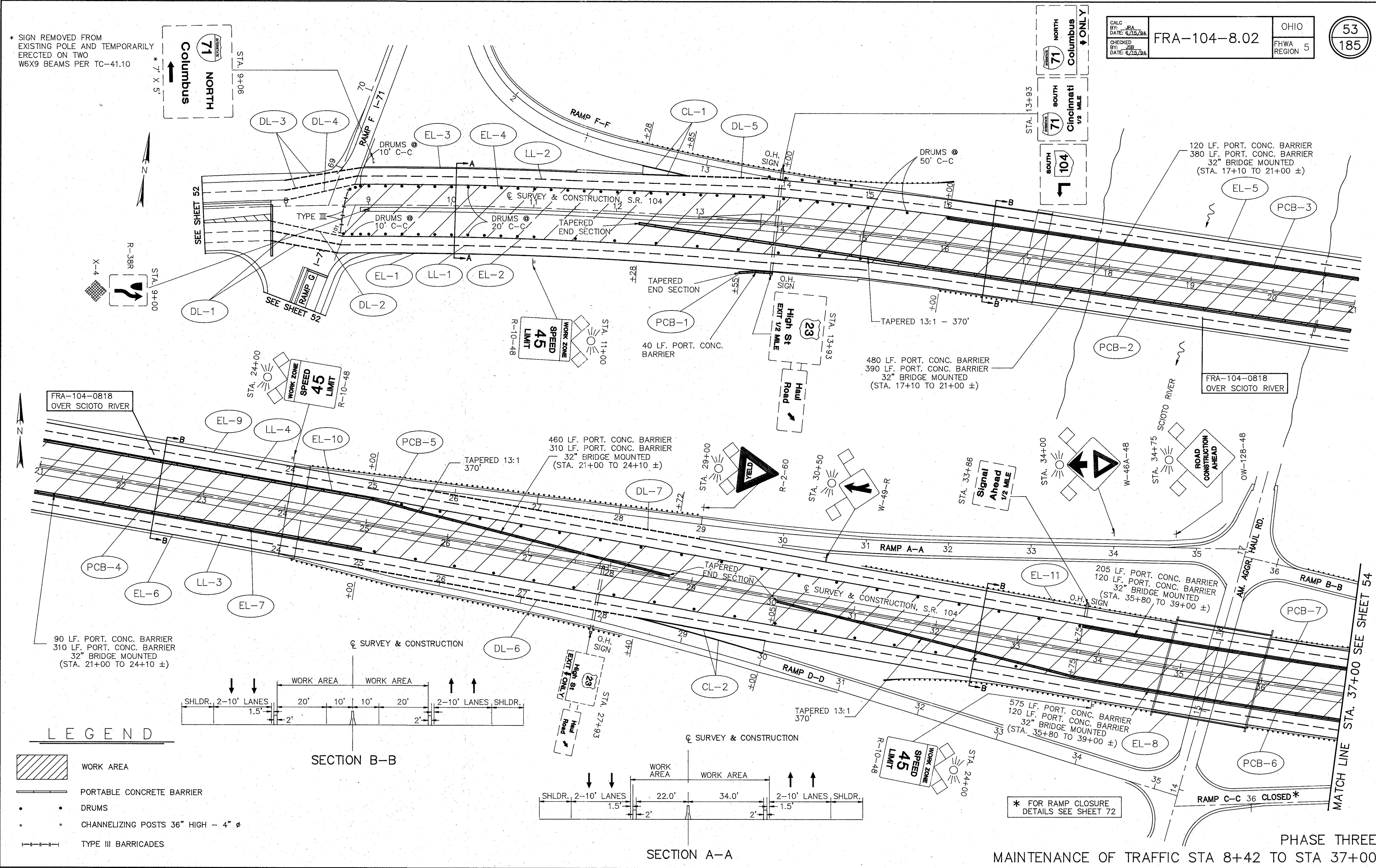
* SIGN REMOVED FROM EXISTING POLE AND TEMPORARILY ERECTED ON TWO W6X9 BEAMS PER TC-41.10



* NOTE MOUNT ON TYPE III WING BARRICADE



* SIGN REMOVED FROM EXISTING POLE AND TEMPORARILY ERECTED ON TWO W6X9 BEAMS PER TC-41.10



FRA-104-0818 OVER SCIOTO RIVER

90 LF. PORT. CONC. BARRIER
310 LF. PORT. CONC. BARRIER
32" BRIDGE MOUNTED
(STA. 21+00 TO 24+10 ±)

460 LF. PORT. CONC. BARRIER
310 LF. PORT. CONC. BARRIER
32" BRIDGE MOUNTED
(STA. 21+00 TO 24+10 ±)

480 LF. PORT. CONC. BARRIER
390 LF. PORT. CONC. BARRIER
32" BRIDGE MOUNTED
(STA. 17+10 TO 21+00 ±)

120 LF. PORT. CONC. BARRIER
380 LF. PORT. CONC. BARRIER
32" BRIDGE MOUNTED
(STA. 17+10 TO 21+00 ±)

205 LF. PORT. CONC. BARRIER
120 LF. PORT. CONC. BARRIER
32" BRIDGE MOUNTED
(STA. 35+80 TO 39+00 ±)

575 LF. PORT. CONC. BARRIER
120 LF. PORT. CONC. BARRIER
32" BRIDGE MOUNTED
(STA. 35+80 TO 39+00 ±)

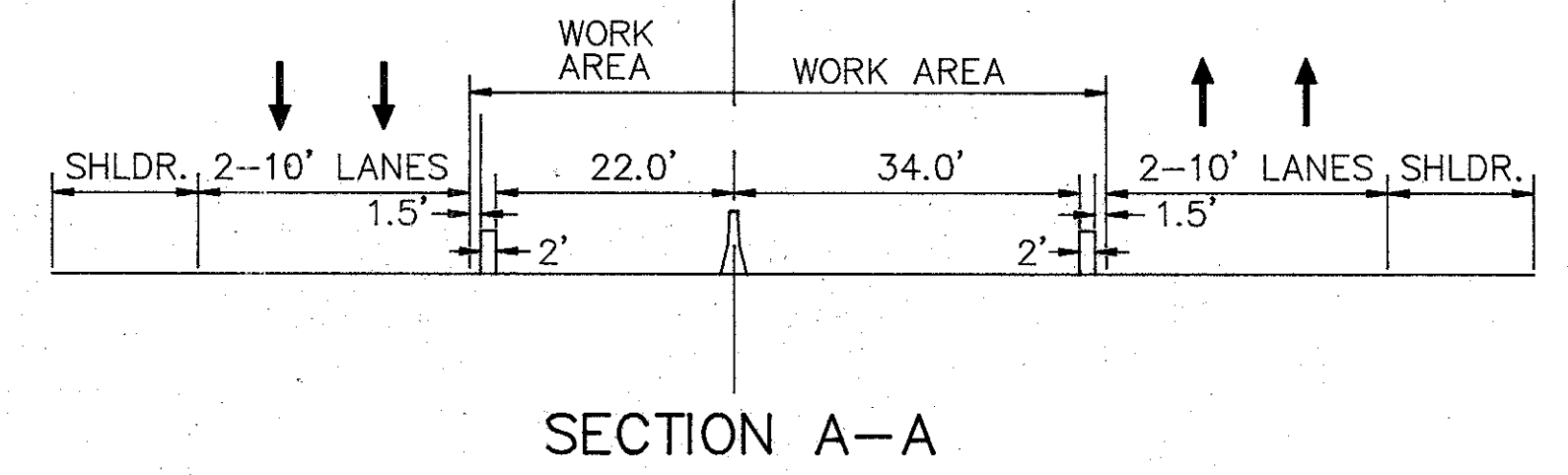
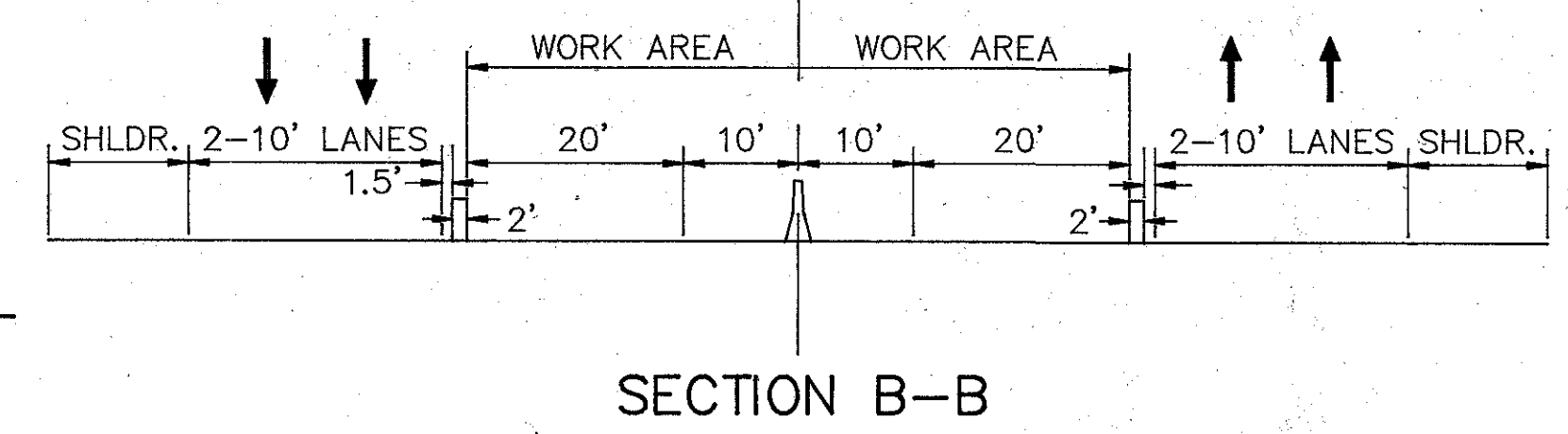
RAMP C-C 36 CLOSED*

* FOR RAMP CLOSURE DETAILS SEE SHEET 72

PHASE THREE
MAINTENANCE OF TRAFFIC STA 8+42 TO STA 37+00

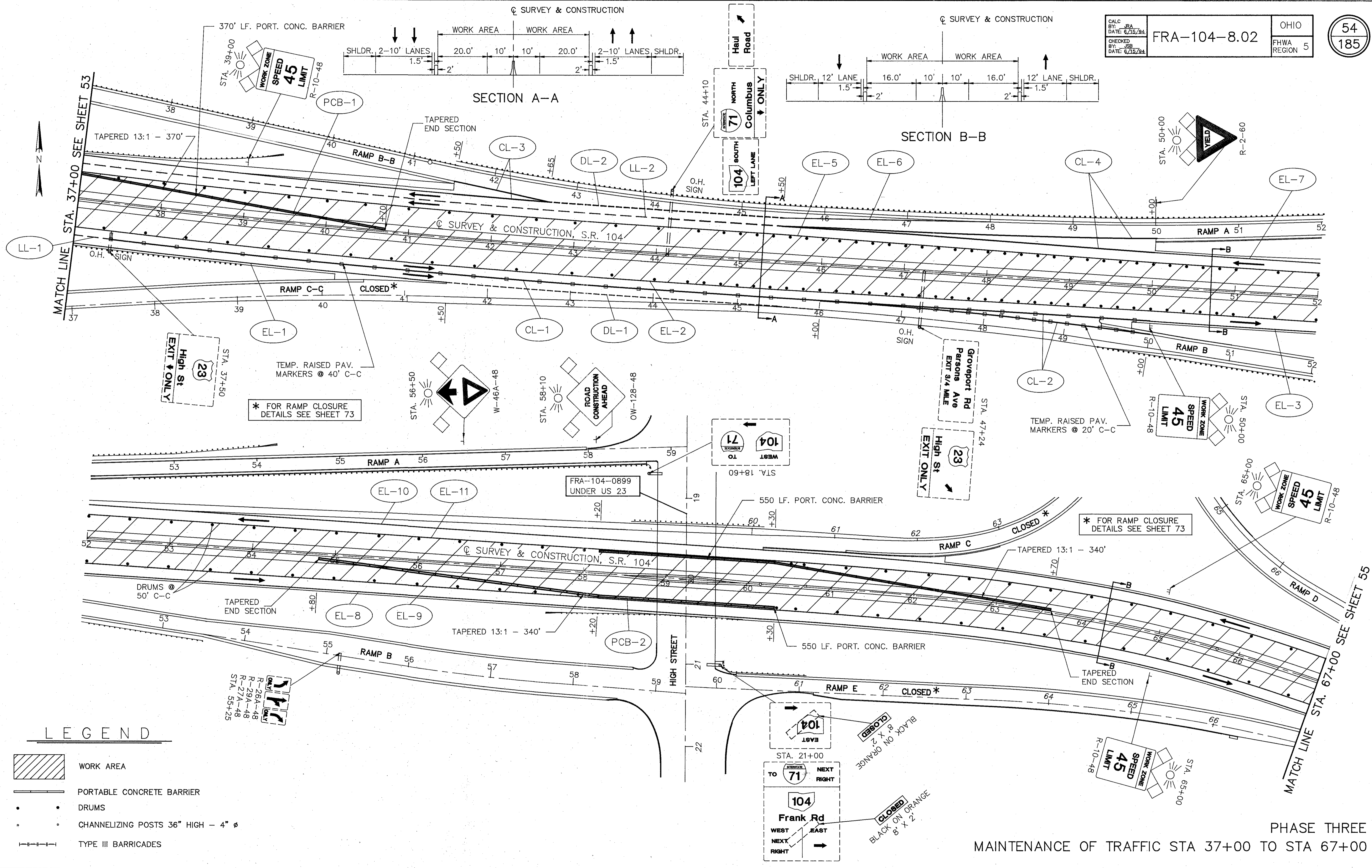
LEGEND

- WORK AREA
- PORTABLE CONCRETE BARRIER
- DRUMS
- CHANNELIZING POSTS 36" HIGH - 4" Ø
- TYPE III BARRICADES



MATCH LINE STA. 37+00 SEE SHEET 54

RAMP-3 7-1-84

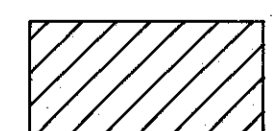
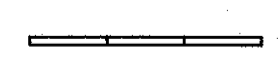


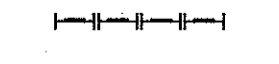


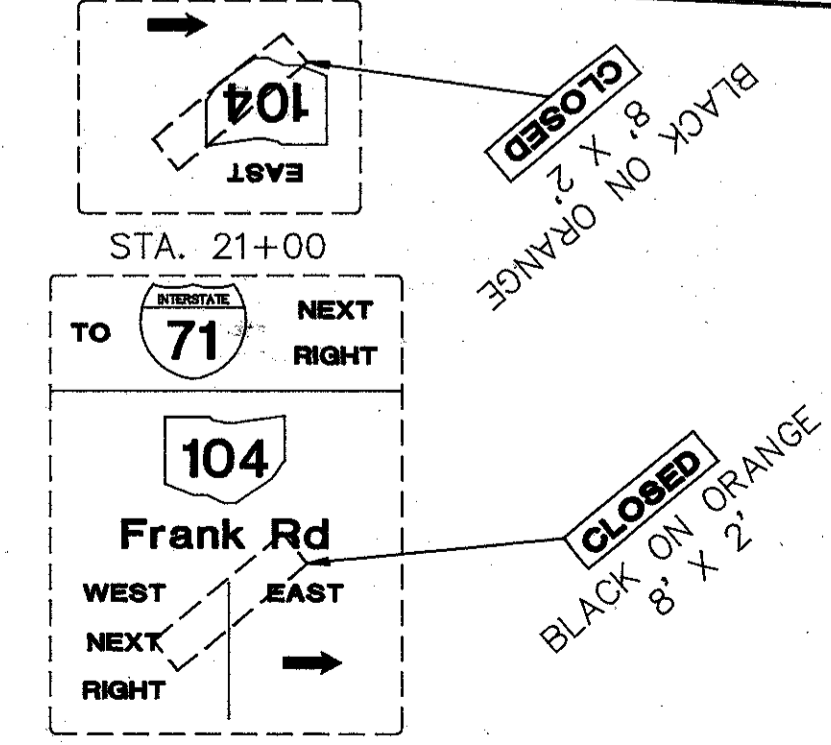
TEMP. RAISED PAV.
 MARKERS @ 40' C-C
 * FOR RAMP CLOSURE
 DETAILS SEE SHEET 73

TEMP. RAISED PAV.
 MARKERS @ 20' C-C

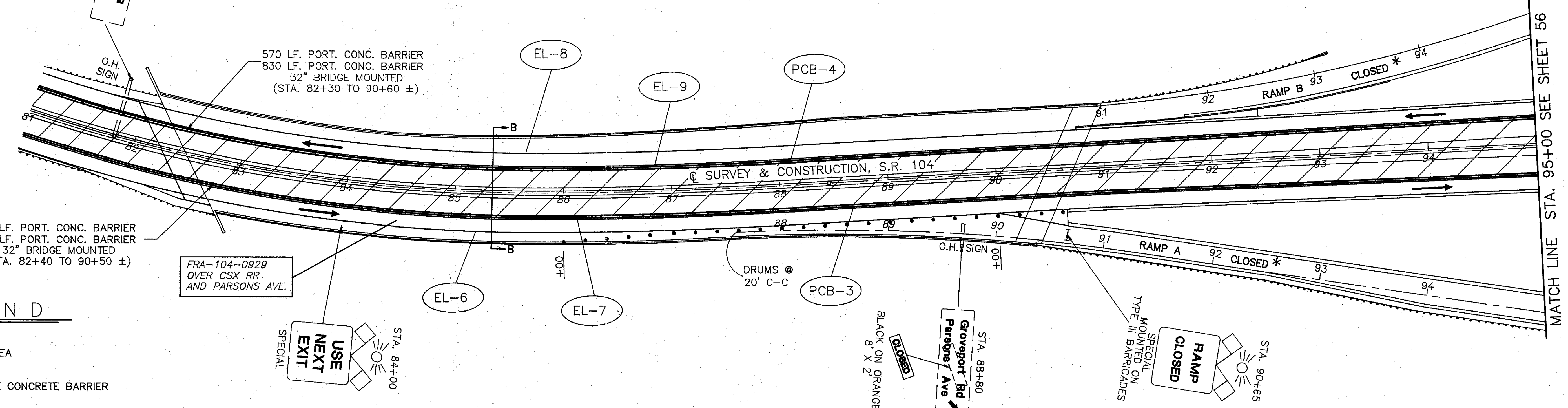
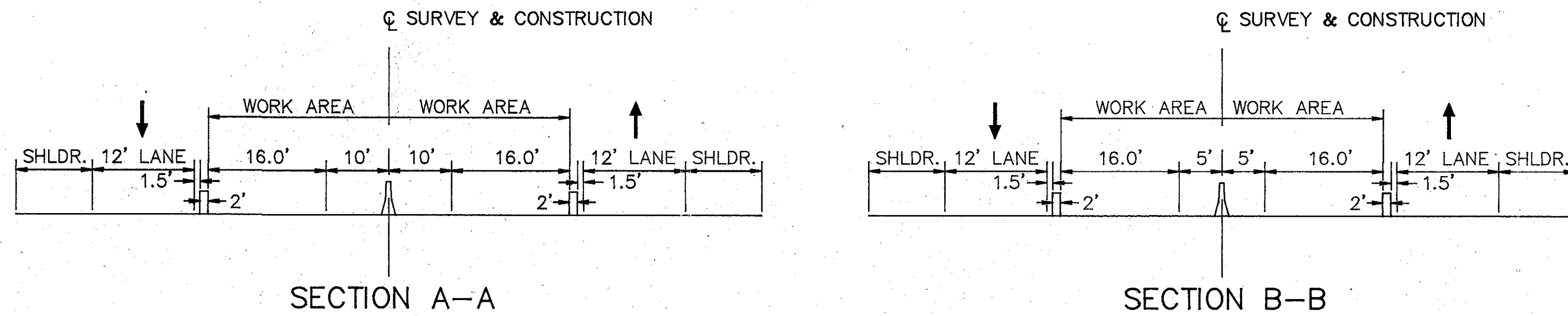
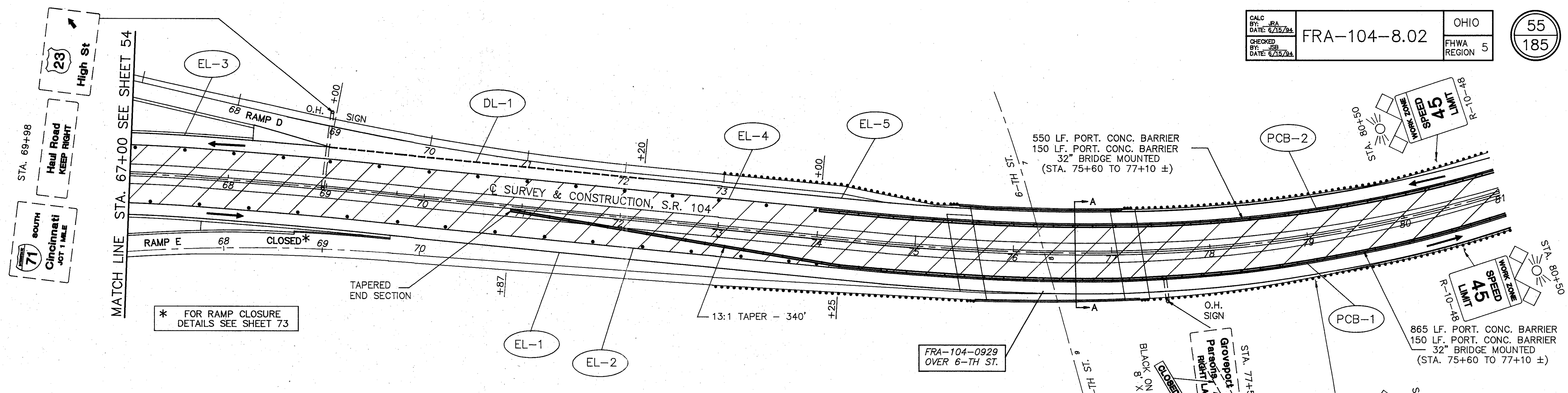
* FOR RAMP CLOSURE
 DETAILS SEE SHEET 73


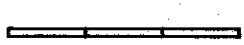



LEGEND

-  WORK AREA
-  PORTABLE CONCRETE BARRIER
-  DRUMS
-  CHANNELIZING POSTS 36" HIGH - 4" Ø
-  TYPE III BARRICADES



PHASE THREE
 MAINTENANCE OF TRAFFIC STA 37+00 TO STA 67+00



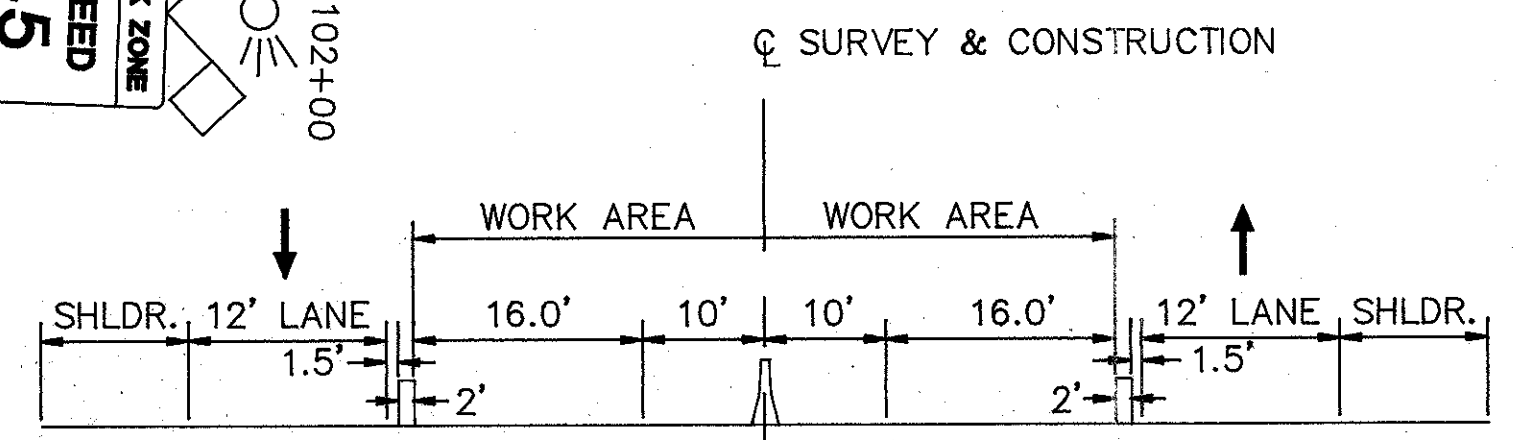
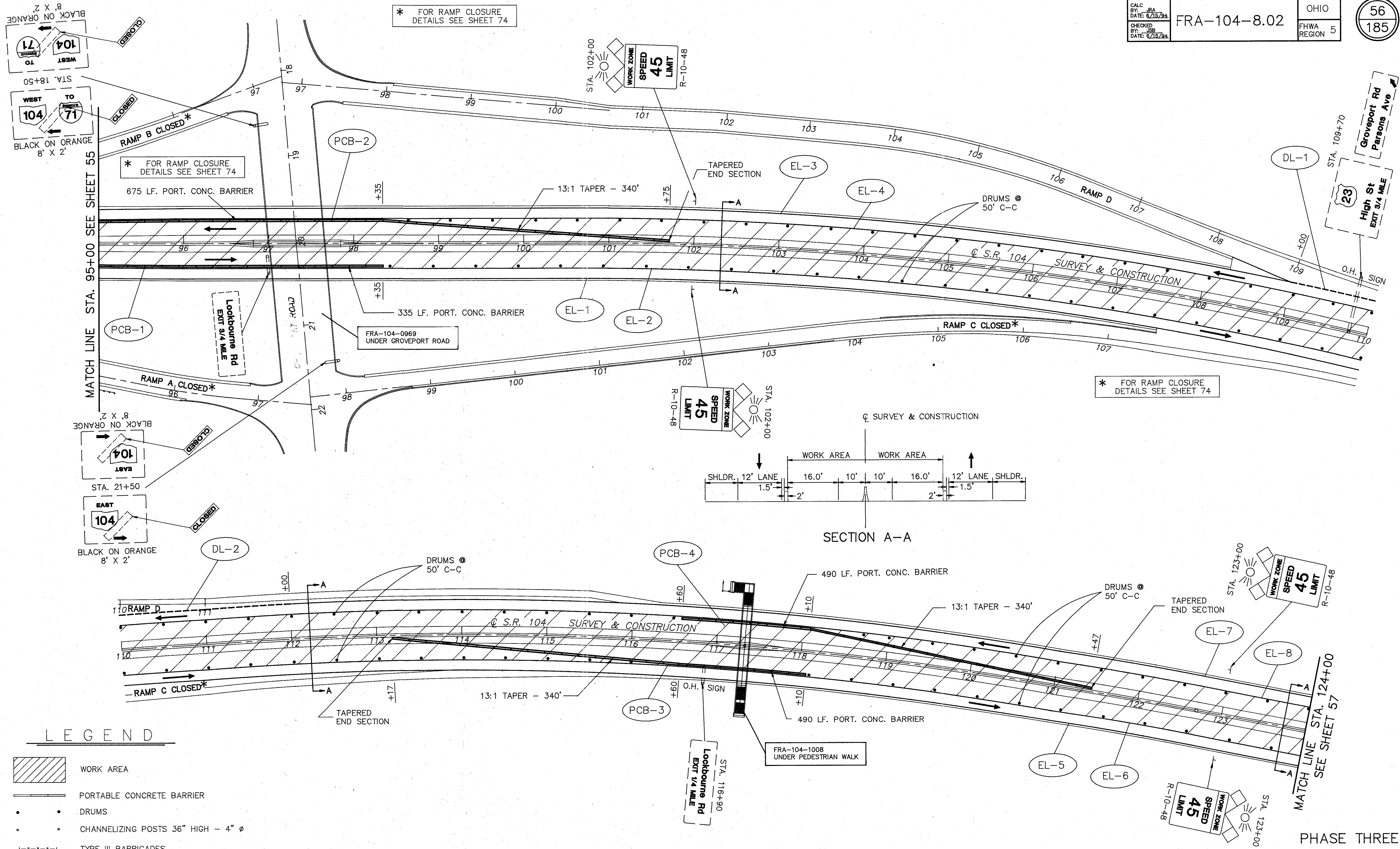
- LEGEND**
-  WORK AREA
 -  PORTABLE CONCRETE BARRIER
 -  DRUMS
 -  CHANNELIZING POSTS 36" HIGH - 4" φ
 -  TYPE III BARRICADES

PHASE THREE
 MAINTENANCE OF TRAFFIC STA 67+00 TO STA 95+00

* FOR RAMP CLOSURE DETAILS SEE SHEET 74

* FOR RAMP CLOSURE DETAILS SEE SHEET 74

* FOR RAMP CLOSURE DETAILS SEE SHEET 74

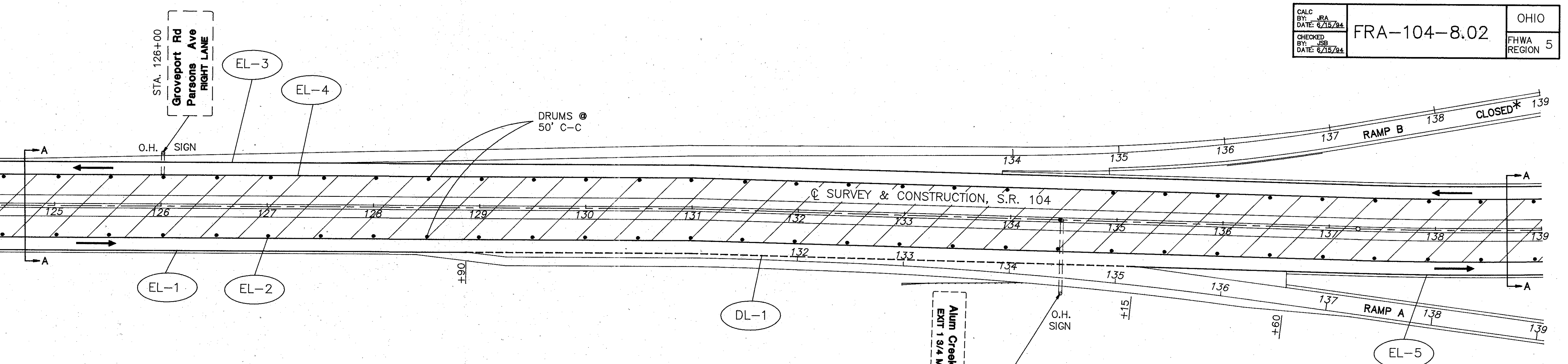
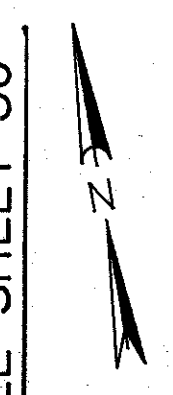


- LEGEND**
- WORK AREA
 - PORTABLE CONCRETE BARRIER
 - DRUMS
 - CHANNELIZING POSTS 36" HIGH - 4" Ø
 - TYPE III BARRICADES

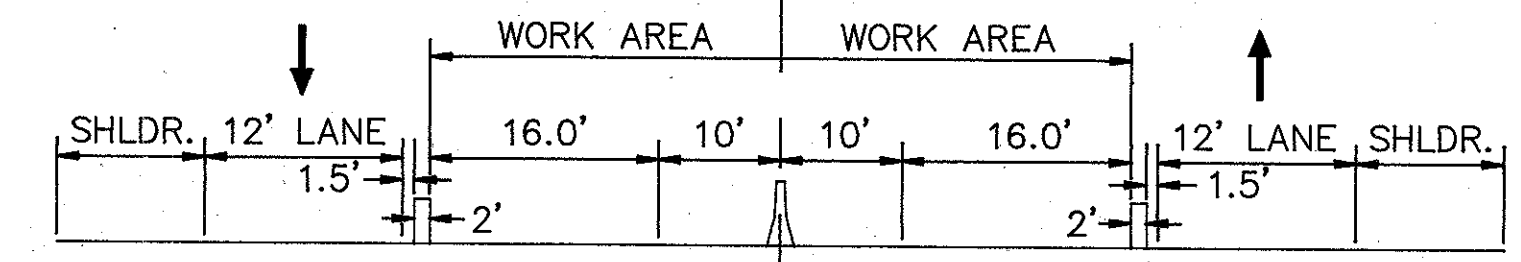
PHASE THREE
 MAINTENANCE OF TRAFFIC STA 95+00 TO STA 124+00

PART 5 7-1-84

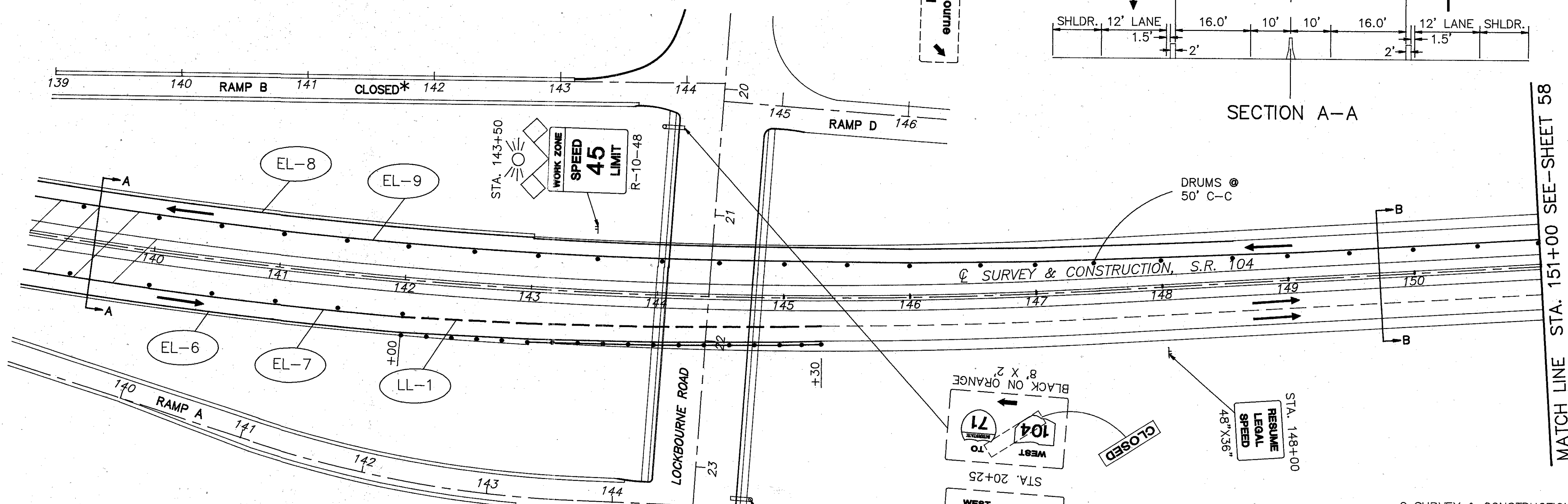
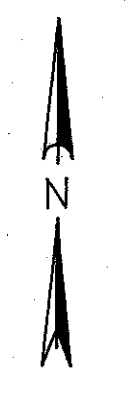
MATCH LINE STA. 124+00 SEE SHEET 56



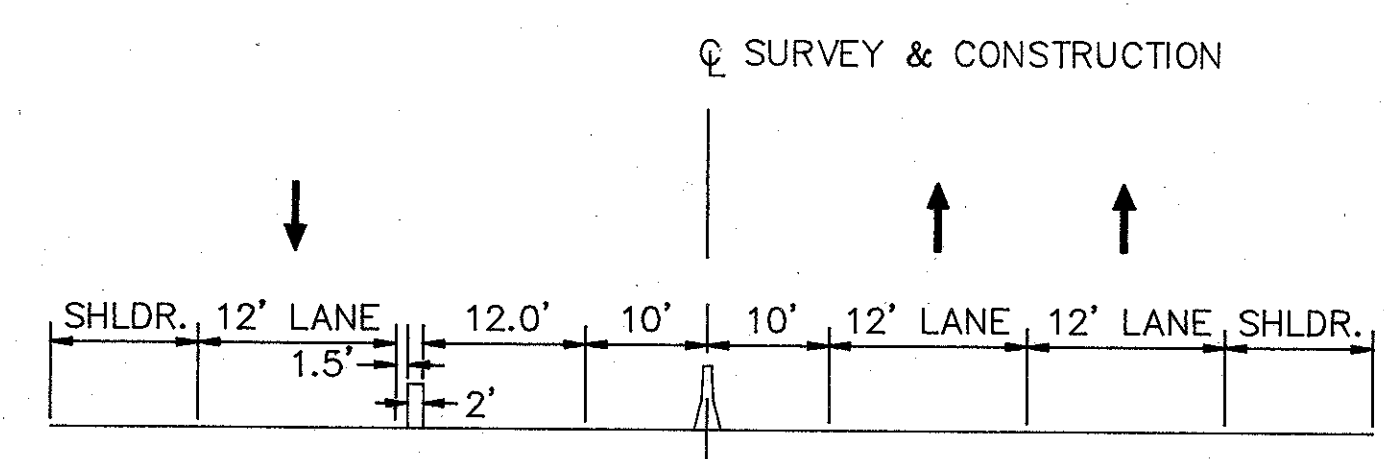
* FOR RAMP CLOSURE
DETAILS SEE SHEET 72



SECTION A-A



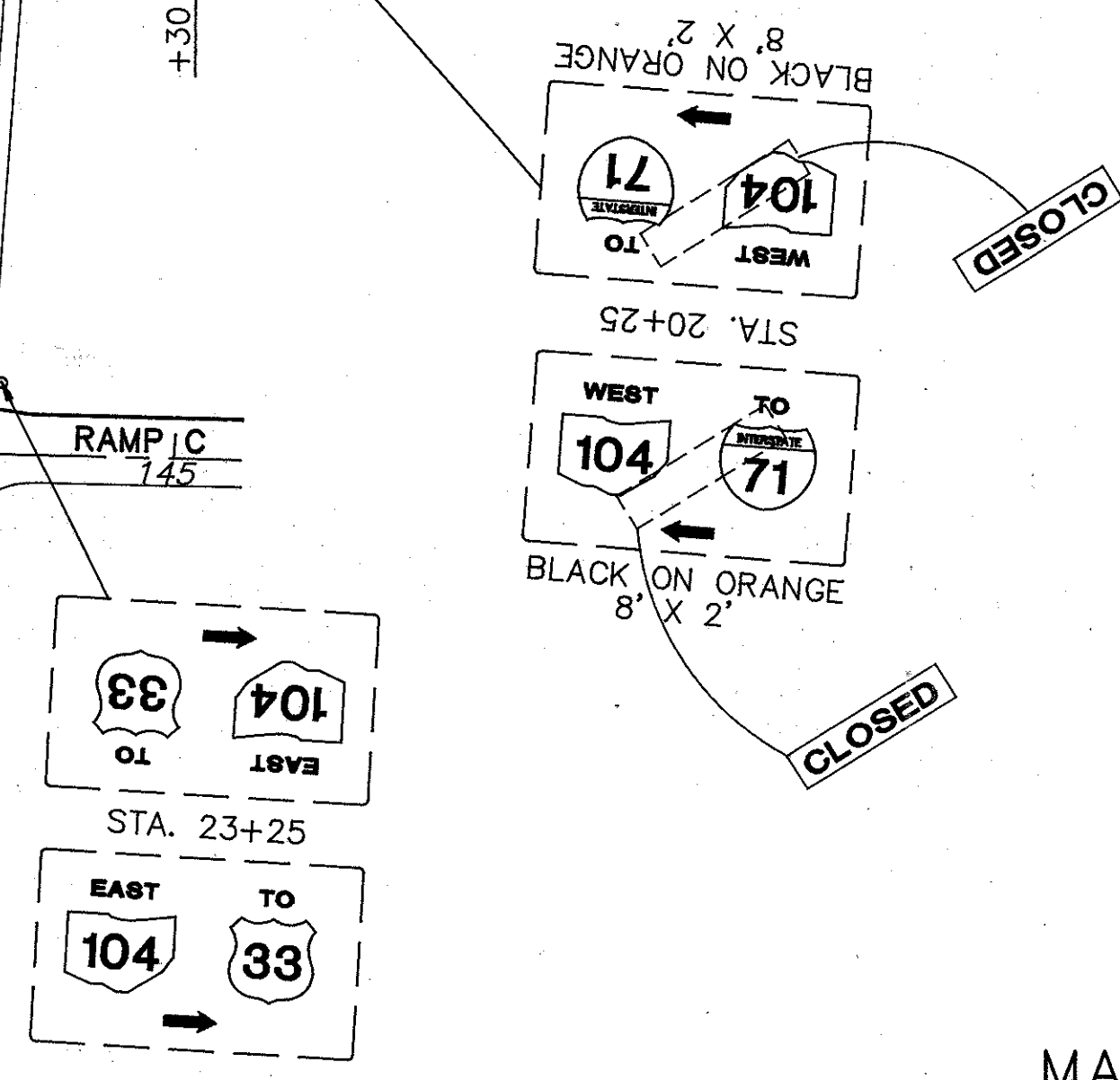
MATCH LINE STA. 151+00 SEE SHEET 58



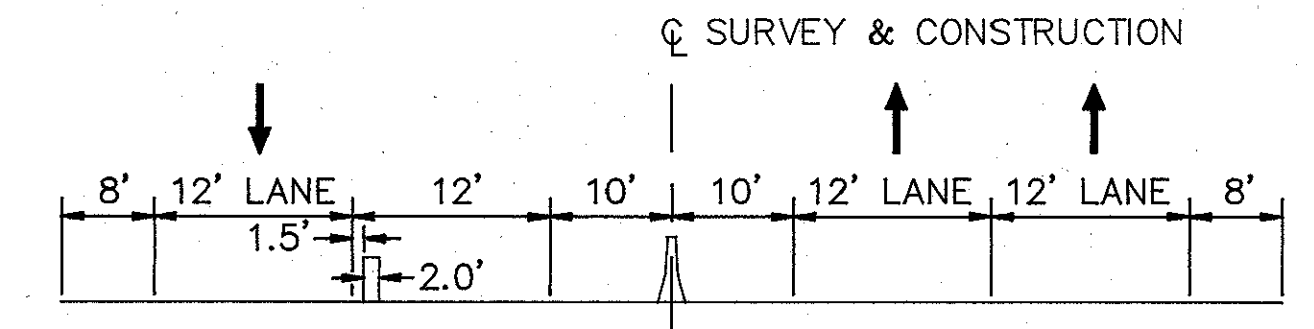
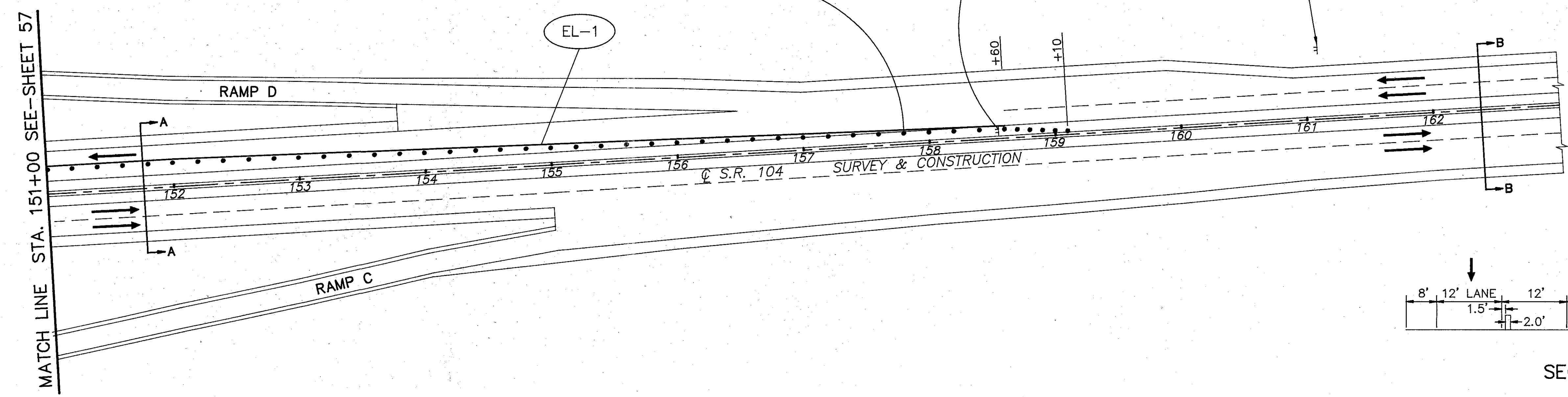
SECTION B-B

LEGEND

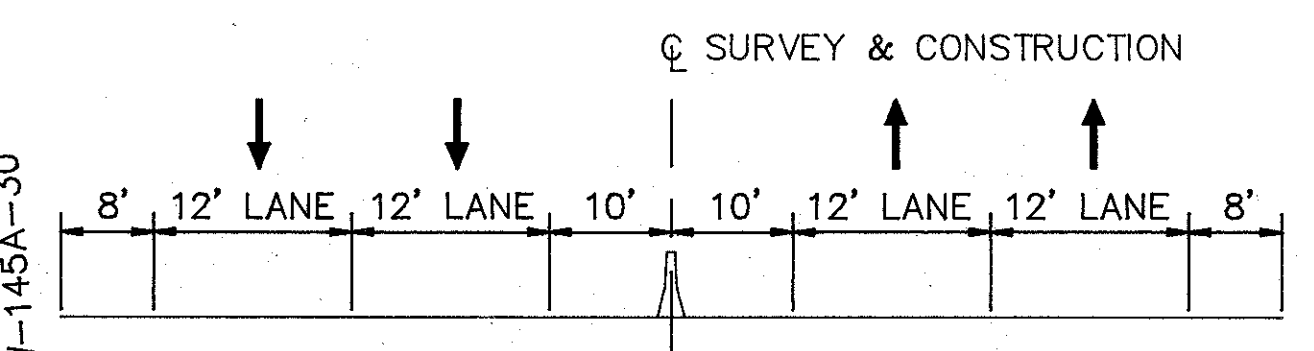
- WORK AREA
- PORTABLE CONCRETE BARRIER
- DRUMS
- CHANNELIZING POSTS 36" HIGH - 4" Ø
- TYPE III BARRICADES



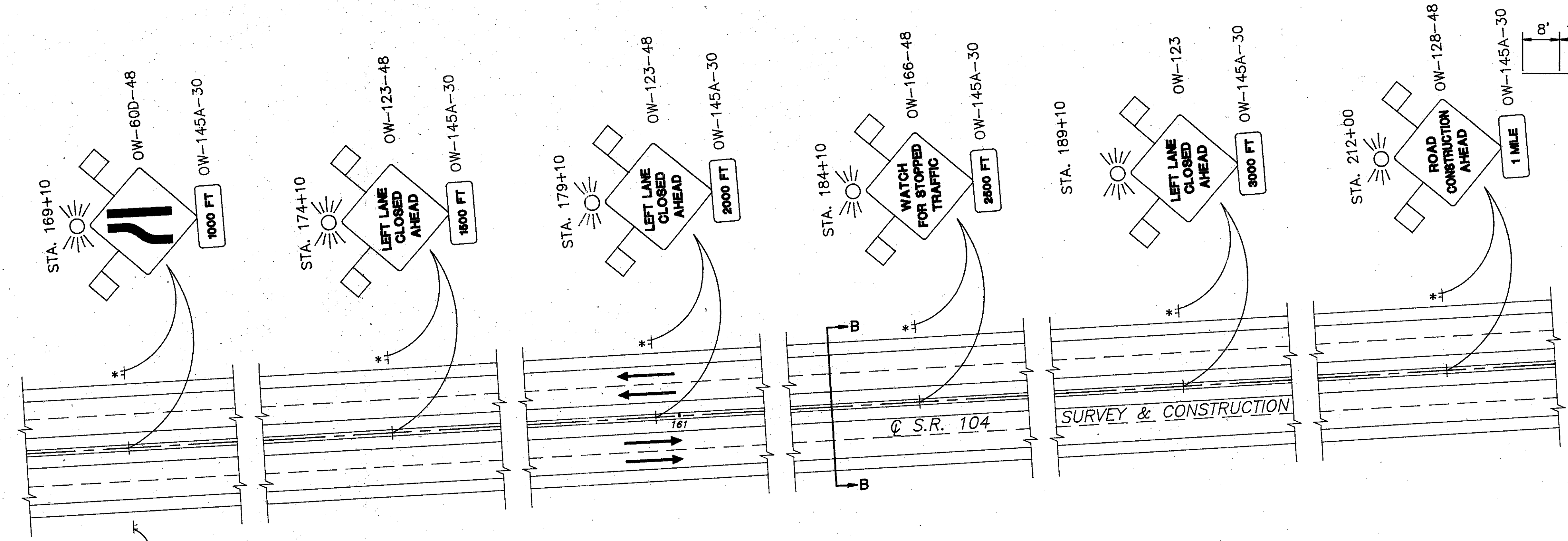
PHASE THREE
MAINTENANCE OF TRAFFIC STA 124+00 TO STA 140+00



SECTION A-A



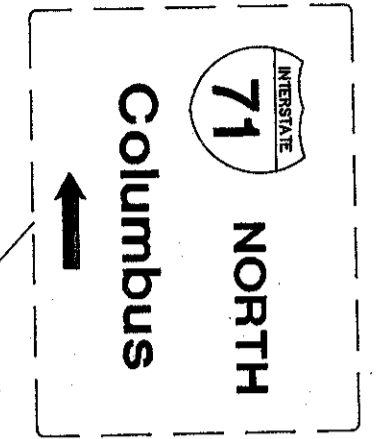
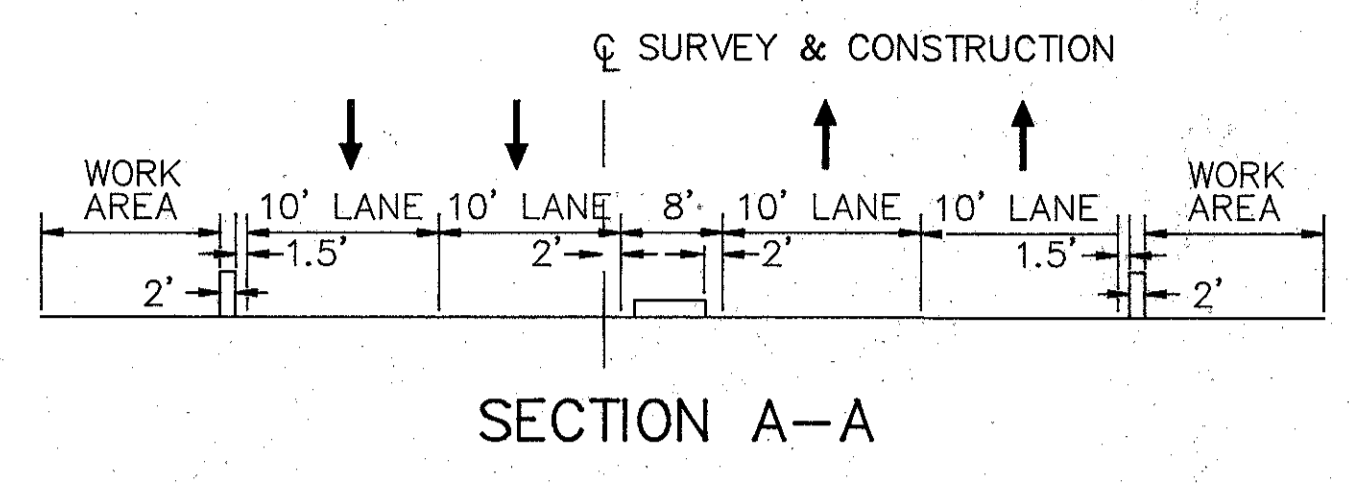
SECTION B-B



* NOTE: MOUNT ON TYPE III WING BARRICADE

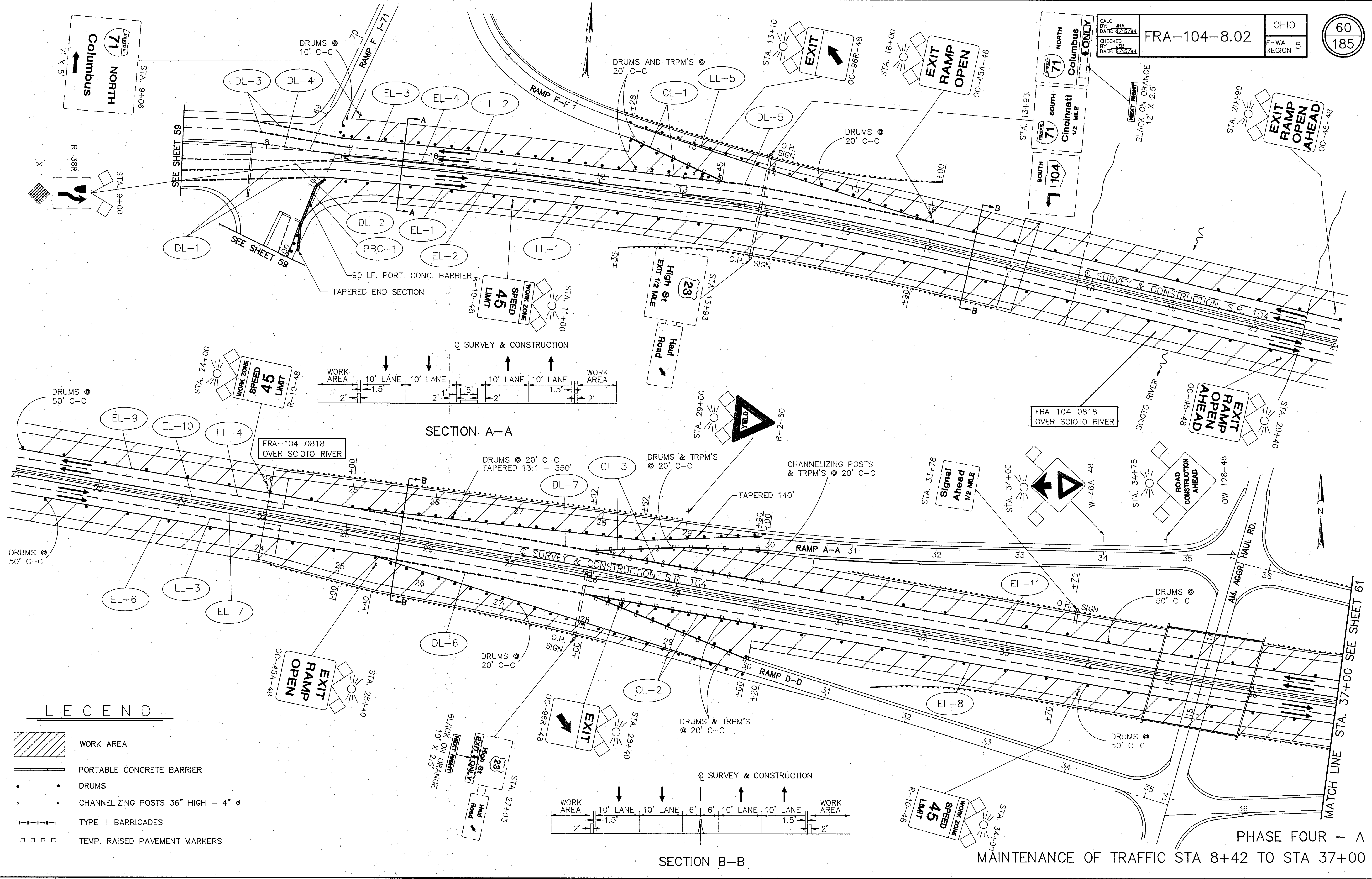
LEGEND

- WORK AREA
- PORTABLE CONCRETE BARRIER
- DRUMS
- CHANNELIZING POSTS 36" HIGH - 4" Ø
- TYPE III BARRICADES



- LEGEND**
- WORK AREA
 - PORTABLE CONCRETE BARRIER
 - DRUMS
 - CHANNELIZING POSTS 36" HIGH - 4" φ
 - TYPE III BARRICADES
 - TEMP. RAISED PAVEMENT MARKERS

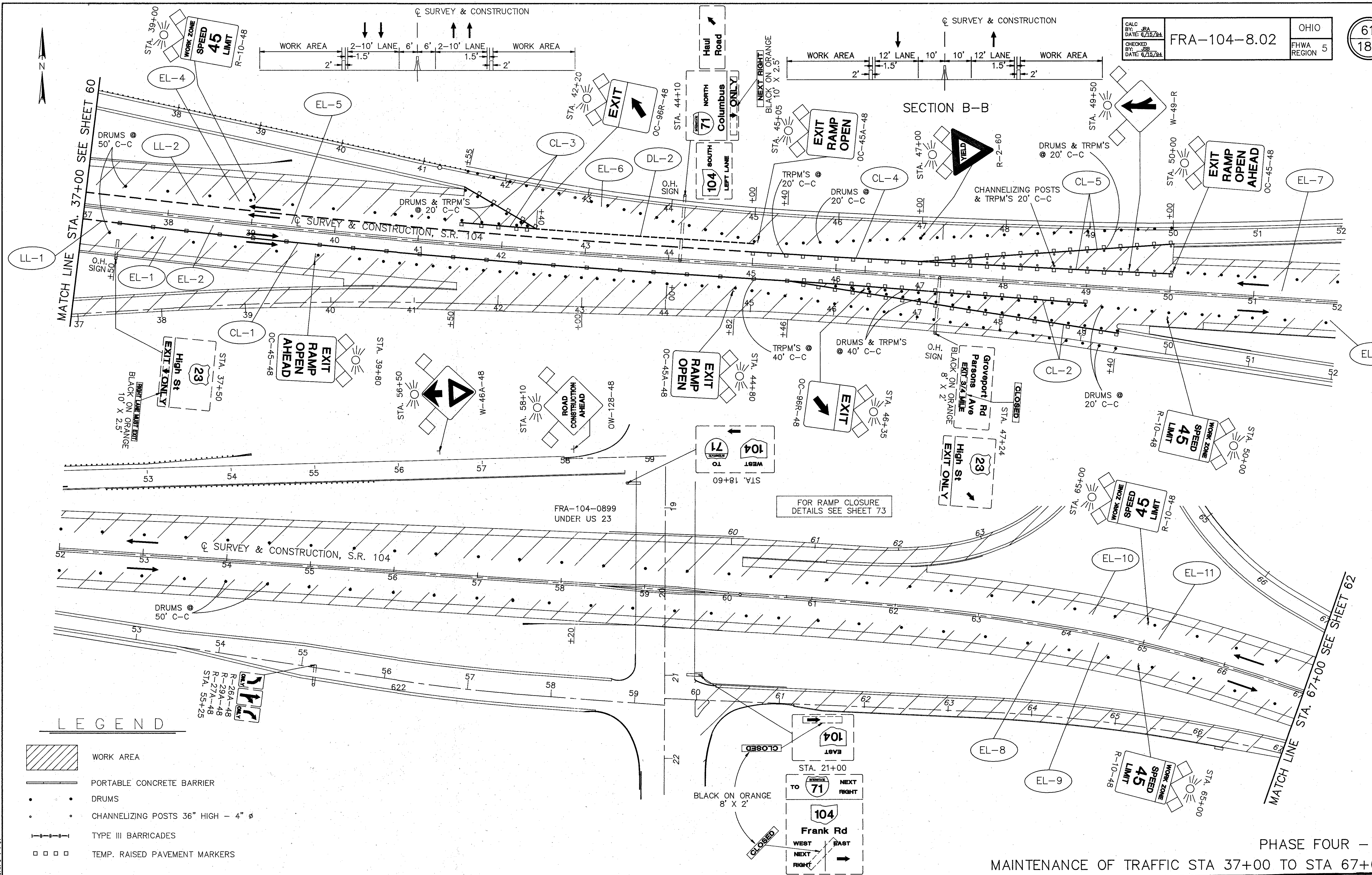
* NOTE MOUNT ON TYPE III WING BARRICADE



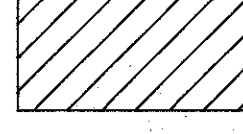
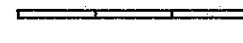


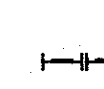
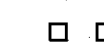
- LEGEND**
- WORK AREA
 - PORTABLE CONCRETE BARRIER
 - DRUMS
 - CHANNELIZING POSTS 36" HIGH - 4" Ø
 - TYPE III BARRICADES
 - TEMP. RAISED PAVEMENT MARKERS

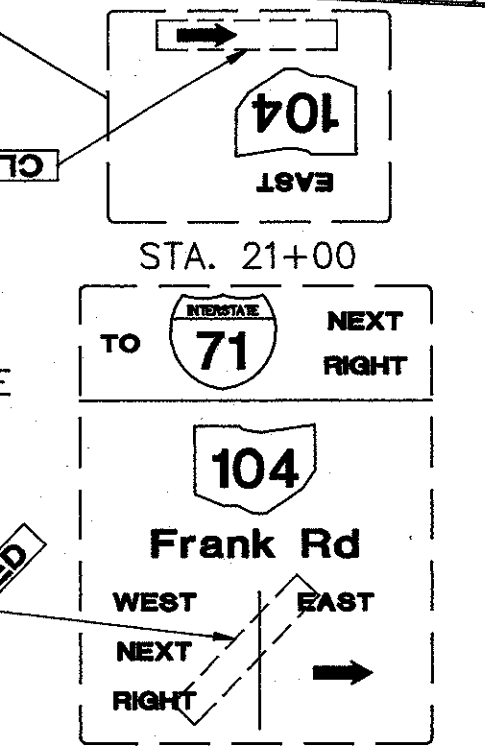
PHASE FOUR - A
 MAINTENANCE OF TRAFFIC STA 8+42 TO STA 37+00

MATCH LINE STA. 37+00 SEE SHEET 61



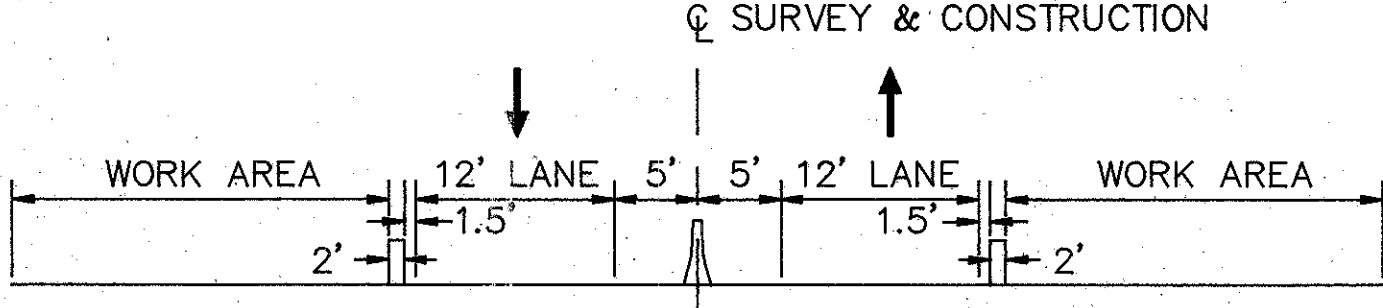
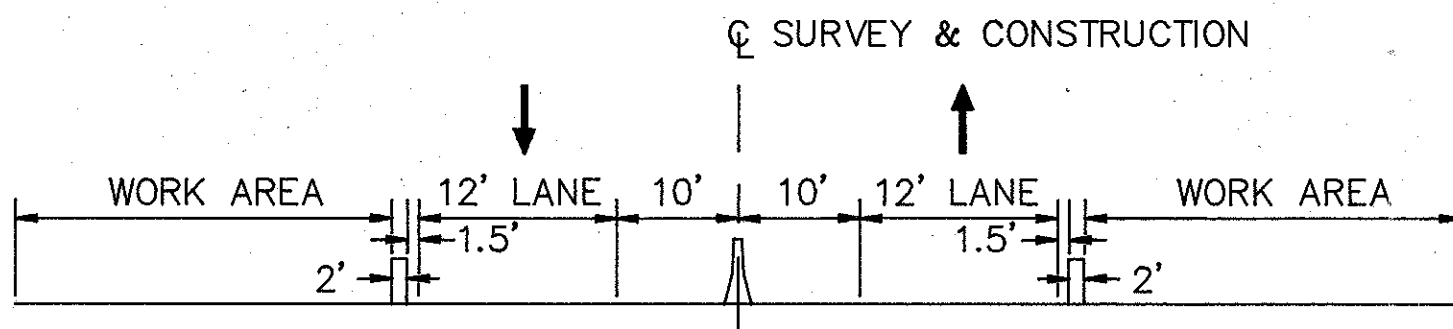
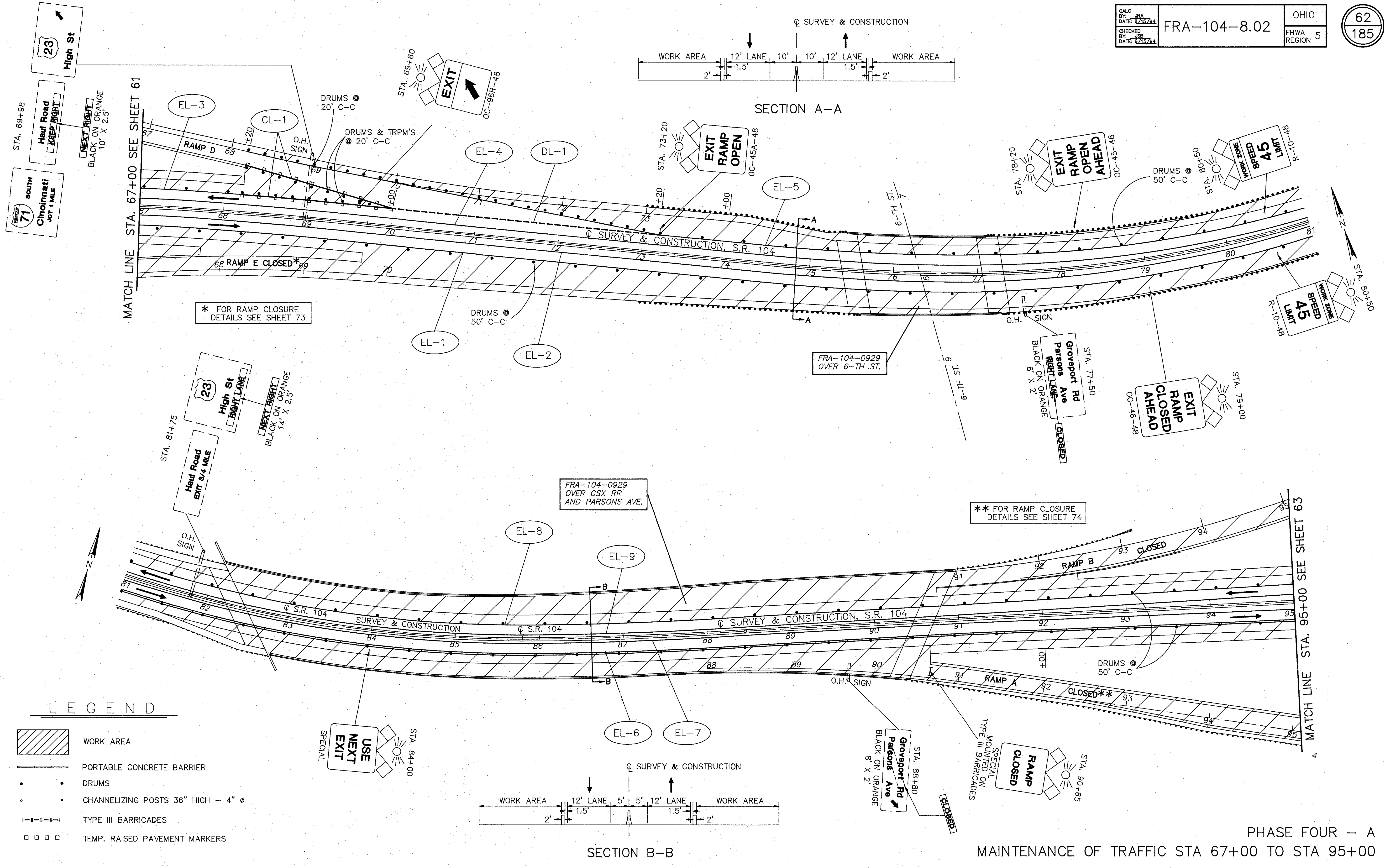
LEGEND

-  WORK AREA
-  PORTABLE CONCRETE BARRIER
-  DRUMS
-  CHANNELIZING POSTS 36" HIGH - 4" Ø
-  TYPE III BARRICADES
-  TEMP. RAISED PAVEMENT MARKERS



PHASE FOUR - A
 MAINTENANCE OF TRAFFIC STA 37+00 TO STA 67+00

FMTA-3 7-1-84



* FOR RAMP CLOSURE DETAILS SEE SHEET 73

** FOR RAMP CLOSURE DETAILS SEE SHEET 74

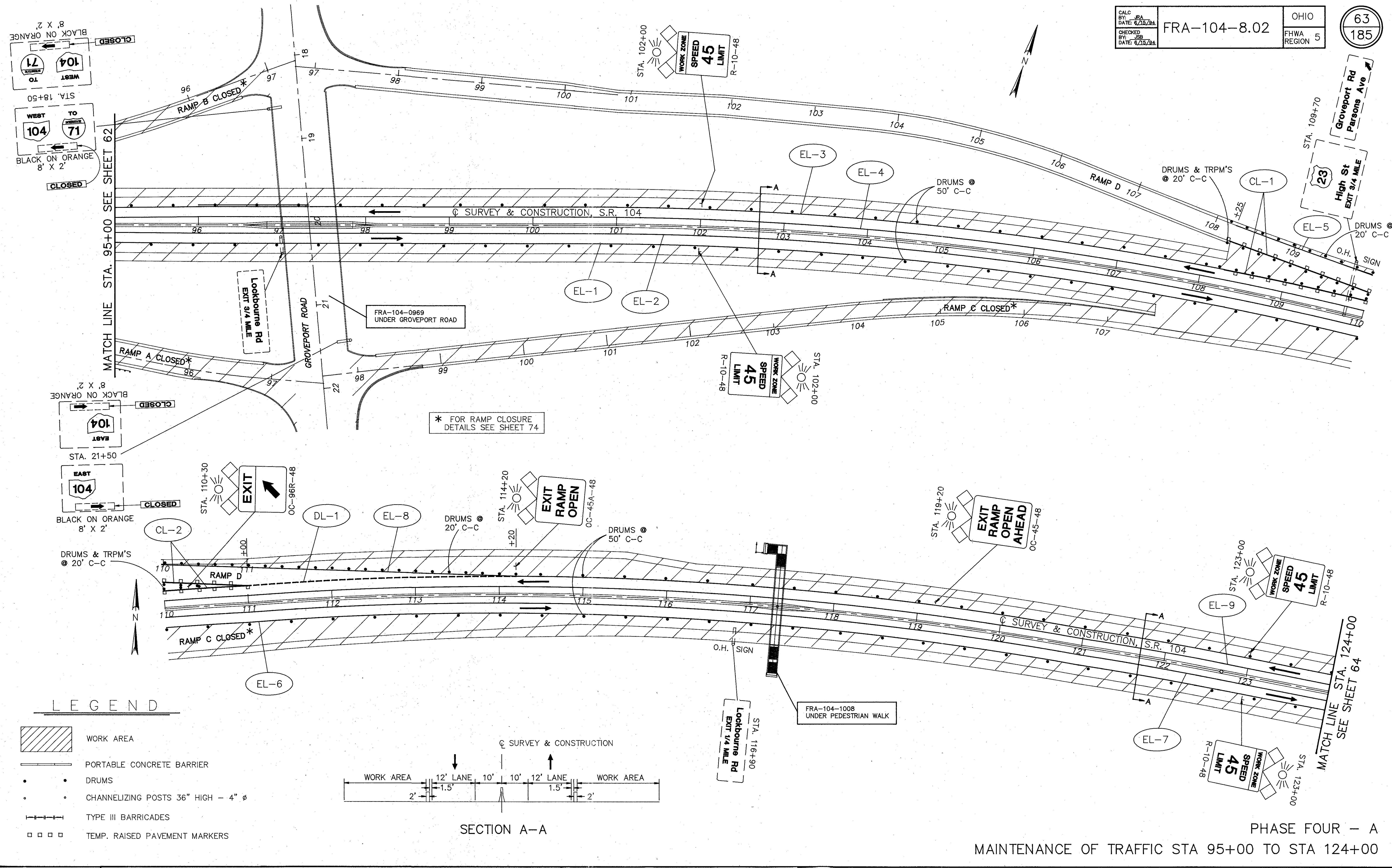
FRA-104-0929 OVER CSX RR AND PARSONS AVE.

FRA-104-0929 OVER 6-TH ST.

- LEGEND**
- WORK AREA
 - PORTABLE CONCRETE BARRIER
 - DRUMS
 - CHANNELIZING POSTS 36" HIGH - 4" Ø
 - TYPE III BARRICADES
 - TEMP. RAISED PAVEMENT MARKERS

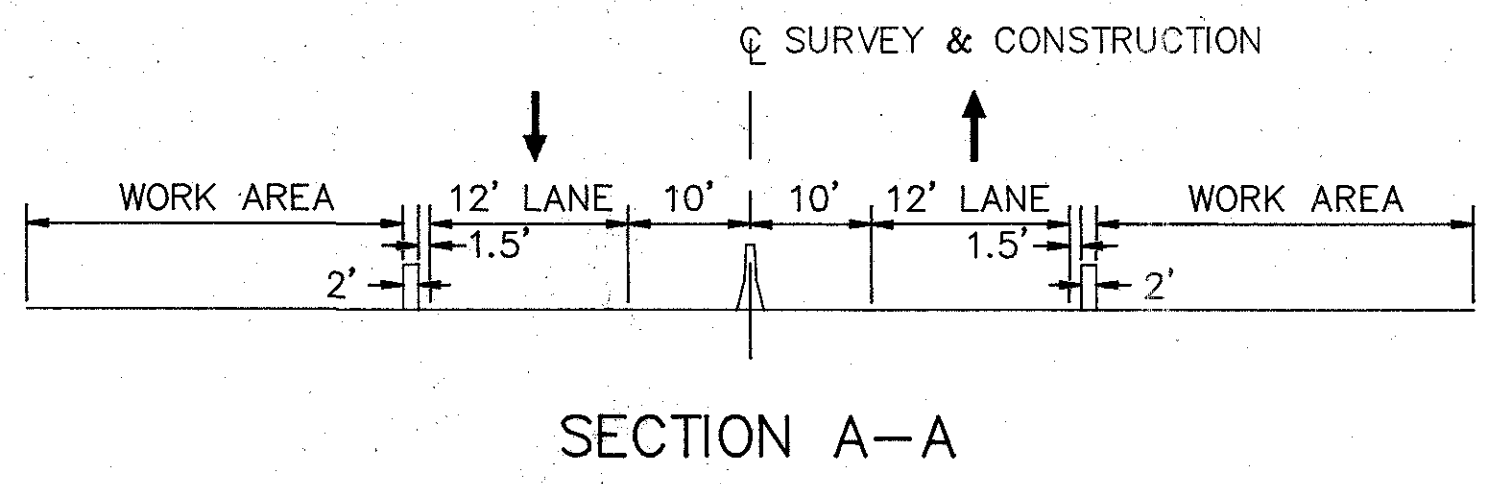
PHASE FOUR - A
MAINTENANCE OF TRAFFIC STA 67+00 TO STA 95+00

FRA-104-7-1-94

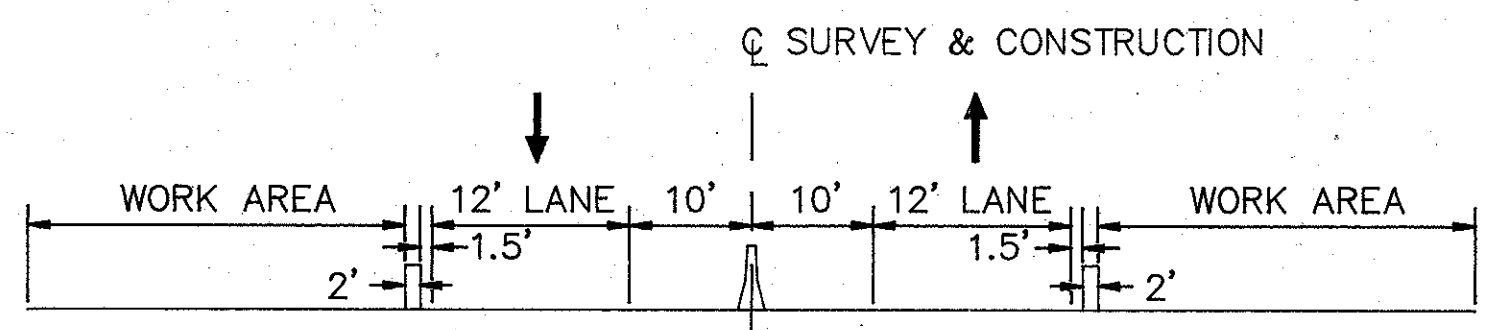
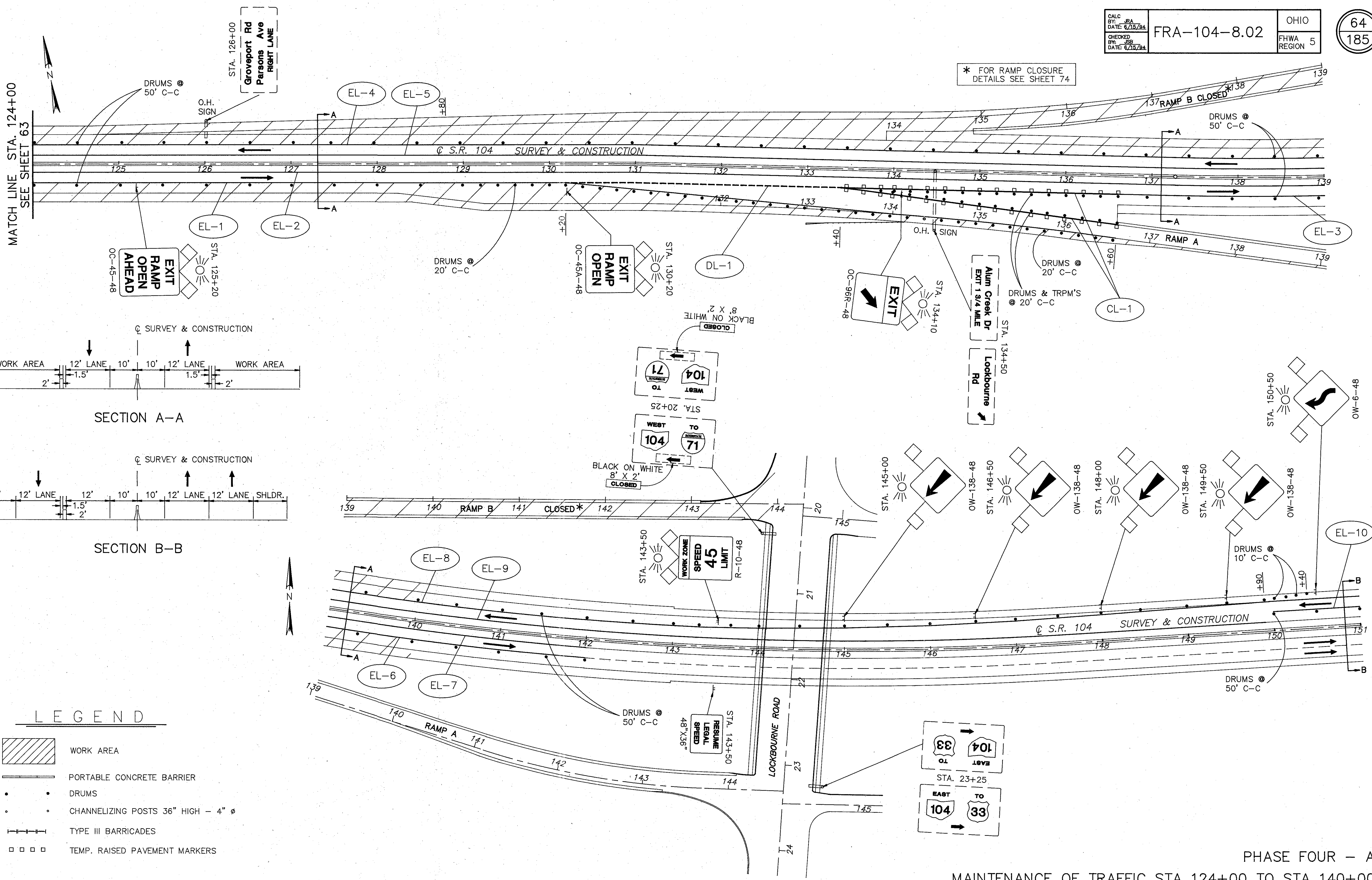


* FOR RAMP CLOSURE DETAILS SEE SHEET 74

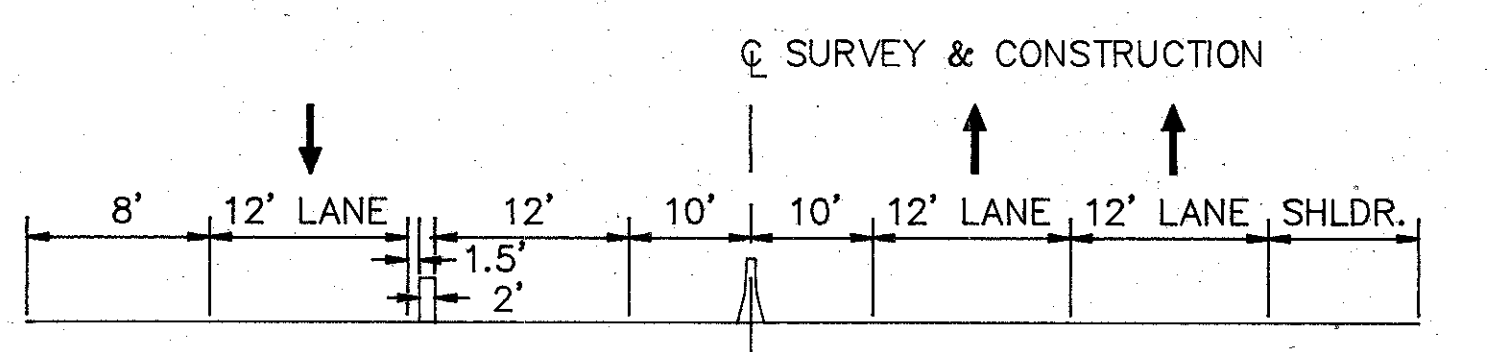
- LEGEND**
- WORK AREA
 - PORTABLE CONCRETE BARRIER
 - DRUMS
 - CHANNELIZING POSTS 36" HIGH - 4" Ø
 - TYPE III BARRICADES
 - TEMP. RAISED PAVEMENT MARKERS



* FOR RAMP CLOSURE DETAILS SEE SHEET 74



SECTION A-A

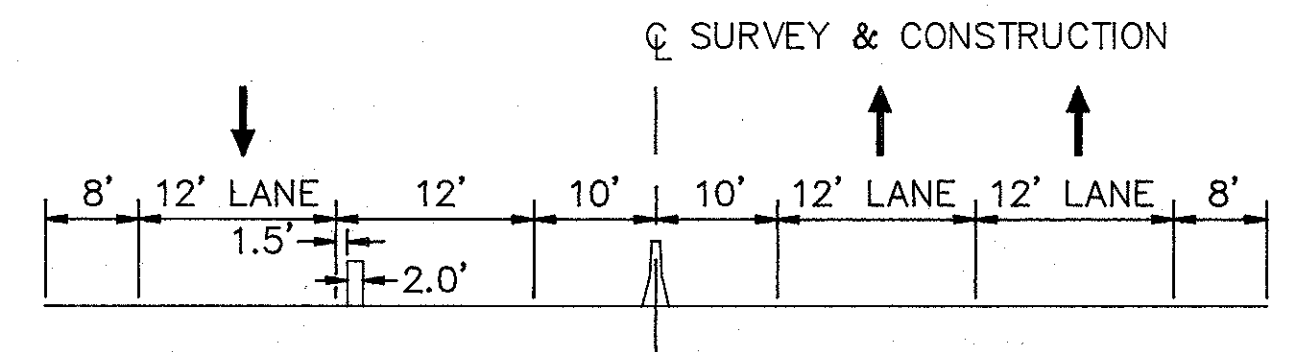
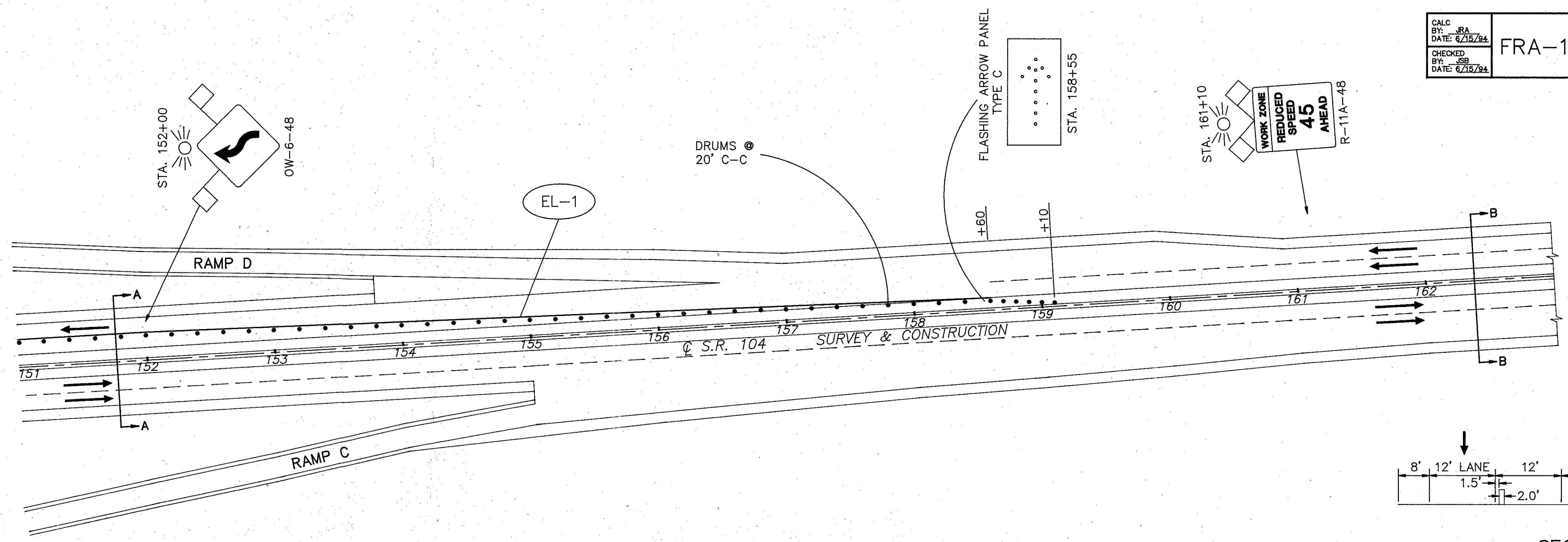


SECTION B-B

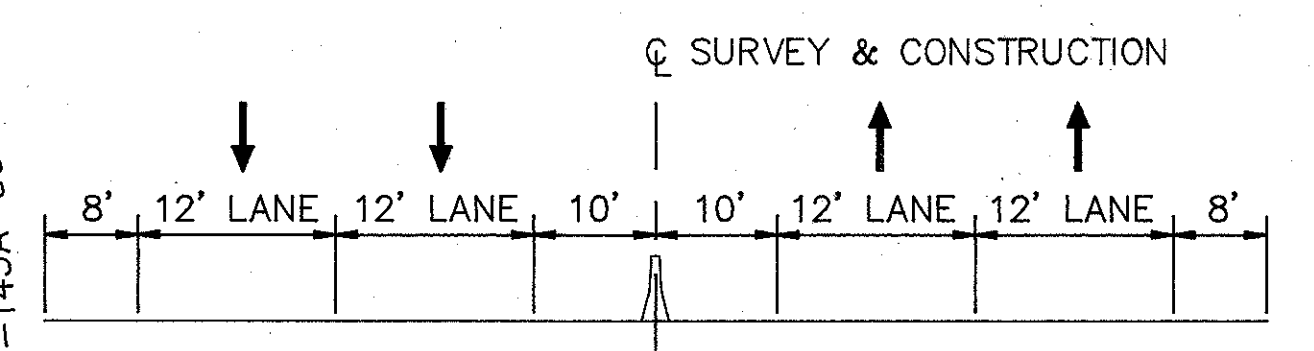
LEGEND

- WORK AREA
- PORTABLE CONCRETE BARRIER
- DRUMS
- CHANNELIZING POSTS 36" HIGH - 4" φ
- TYPE III BARRICADES
- TEMP. RAISED PAVEMENT MARKERS

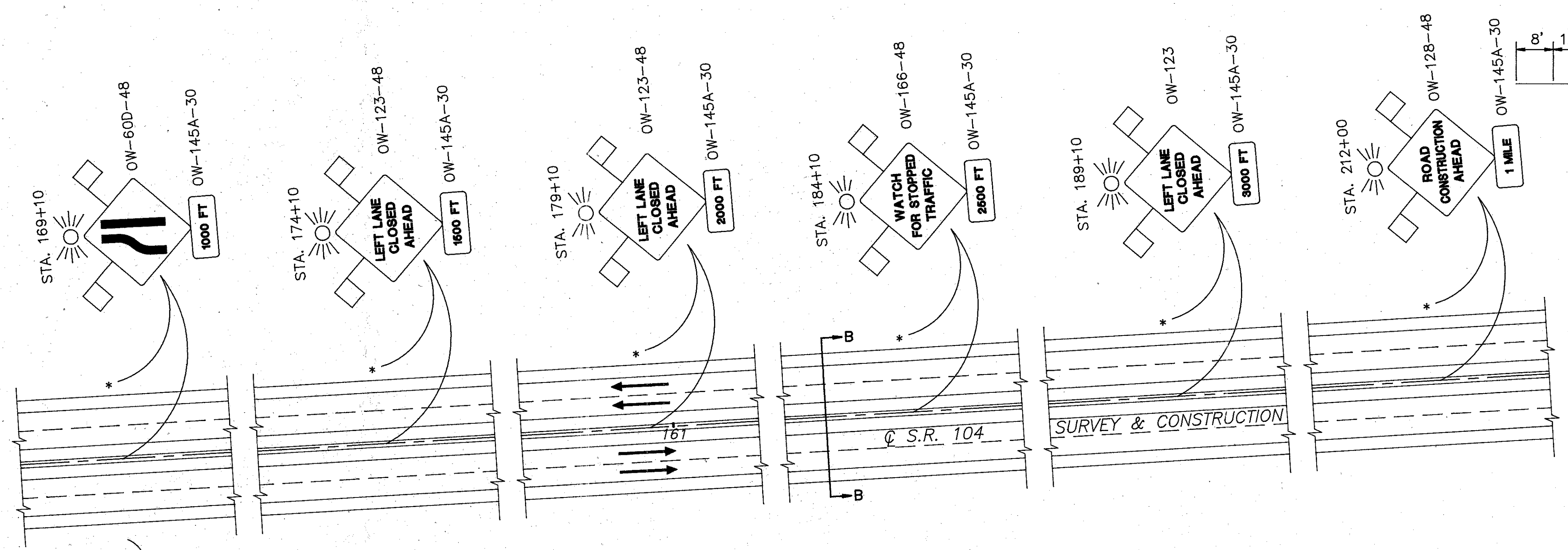
PHASE FOUR - A
MAINTENANCE OF TRAFFIC STA 124+00 TO STA 140+00



SECTION A-A



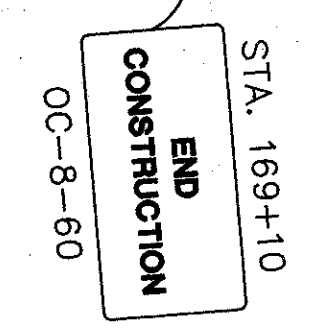
SECTION B-B

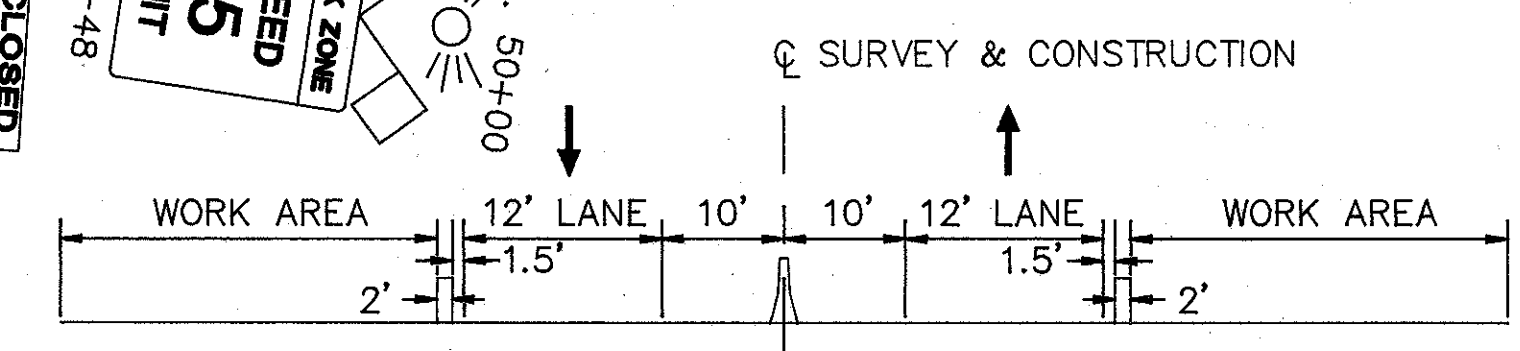
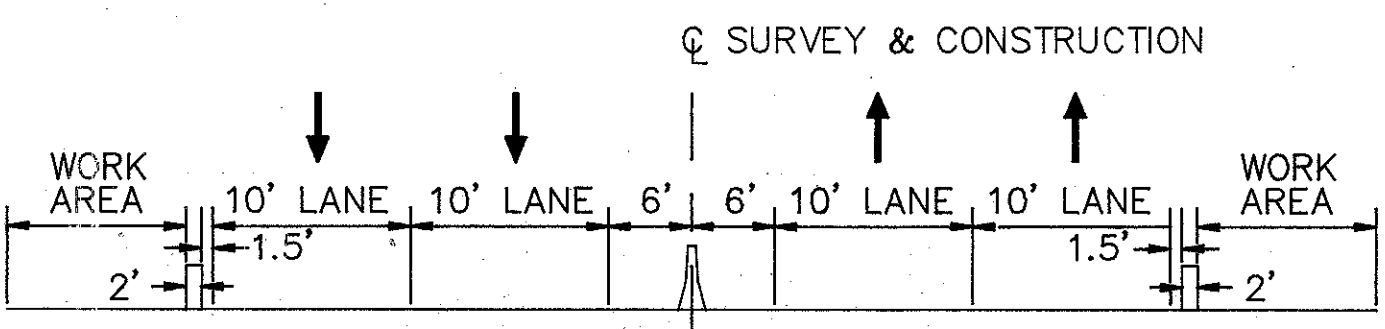
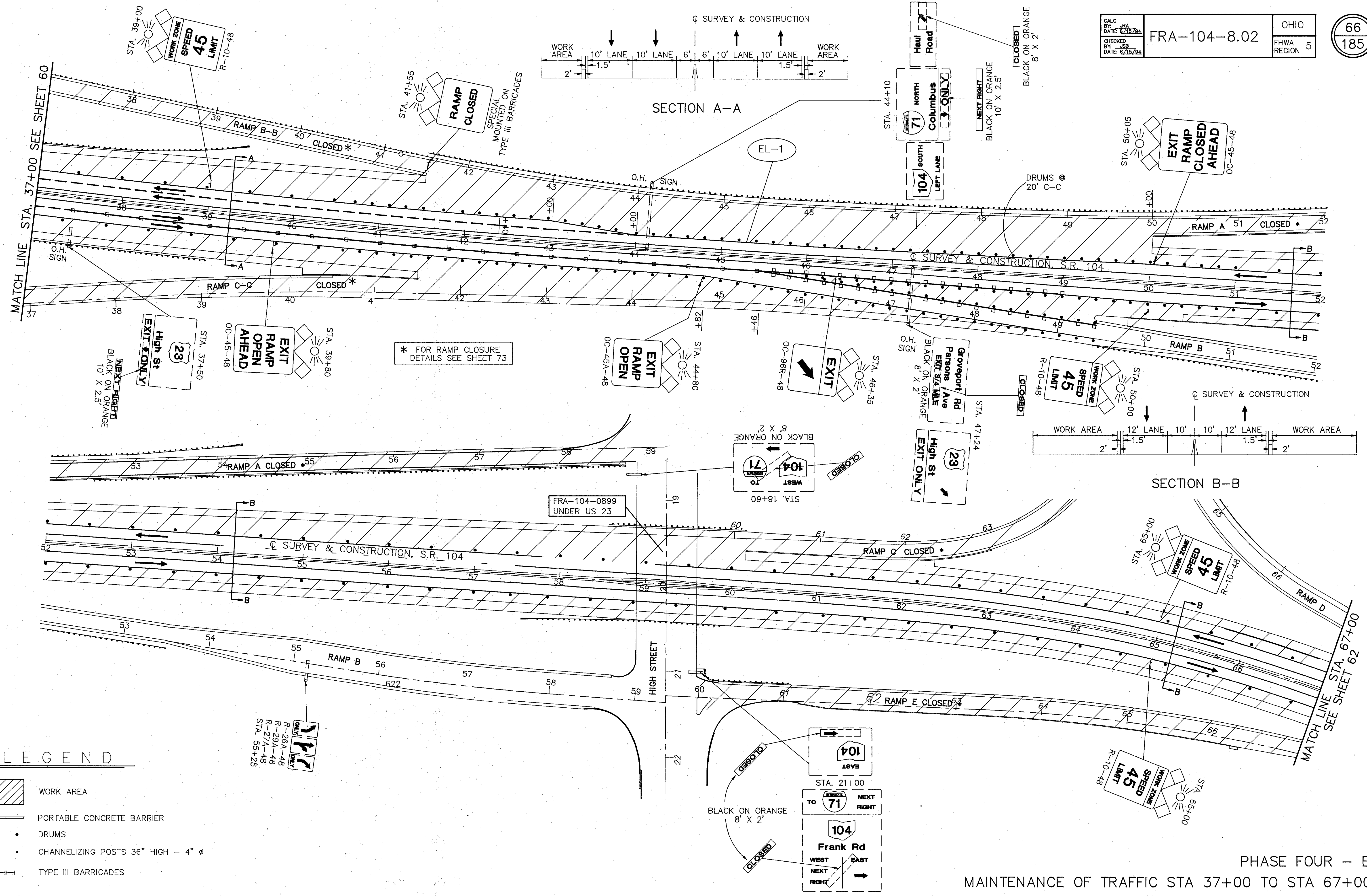


* NOTE: MOUNT ON TYPE III WING BARRICADE

LEGEND

- WORK AREA
- PORTABLE CONCRETE BARRIER
- DRUMS
- CHANNELIZING POSTS 36" HIGH - 4" Ø
- TYPE III BARRICADES





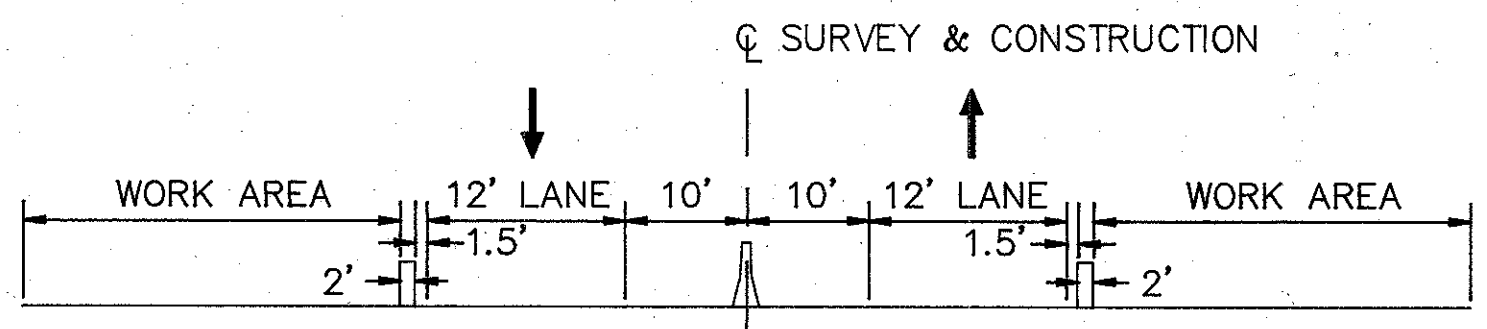
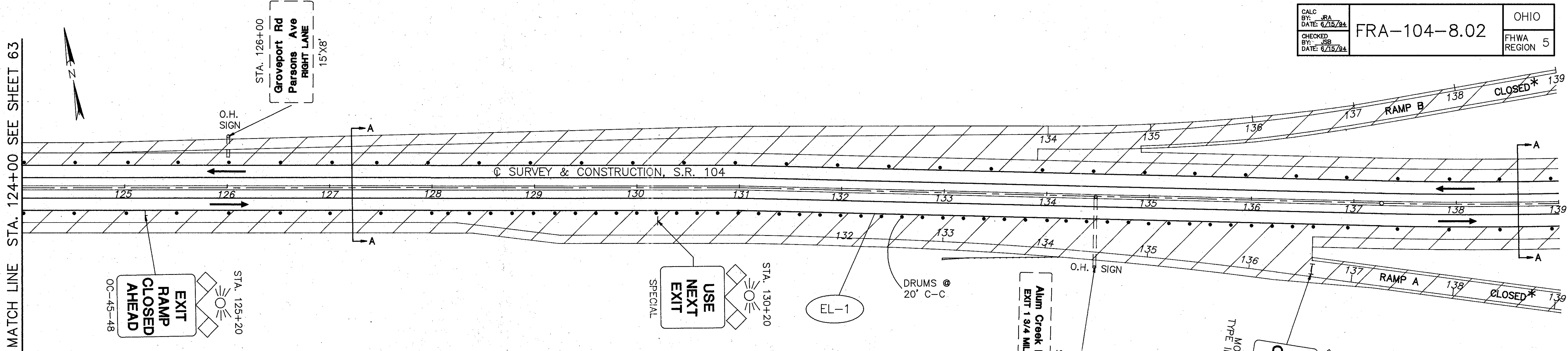
* FOR RAMP CLOSURE
 DETAILS SEE SHEET 73

FRA-104-0899
 UNDER US 23

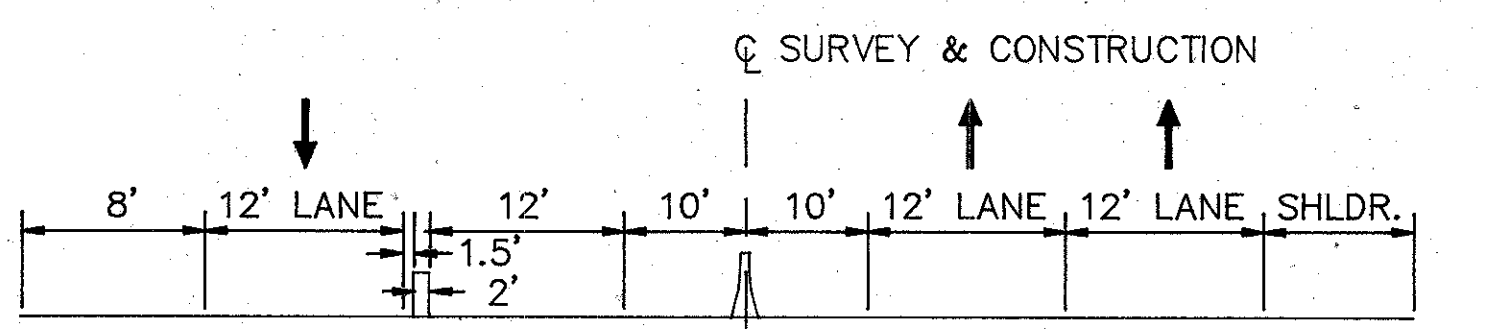
- LEGEND**
- WORK AREA
 - PORTABLE CONCRETE BARRIER
 - DRUMS
 - CHANNELIZING POSTS 36" HIGH - 4" φ
 - TYPE III BARRICADES

PHASE FOUR - B
 MAINTENANCE OF TRAFFIC STA 37+00 TO STA 67+00

MATCH LINE STA. 124+00 SEE SHEET 63

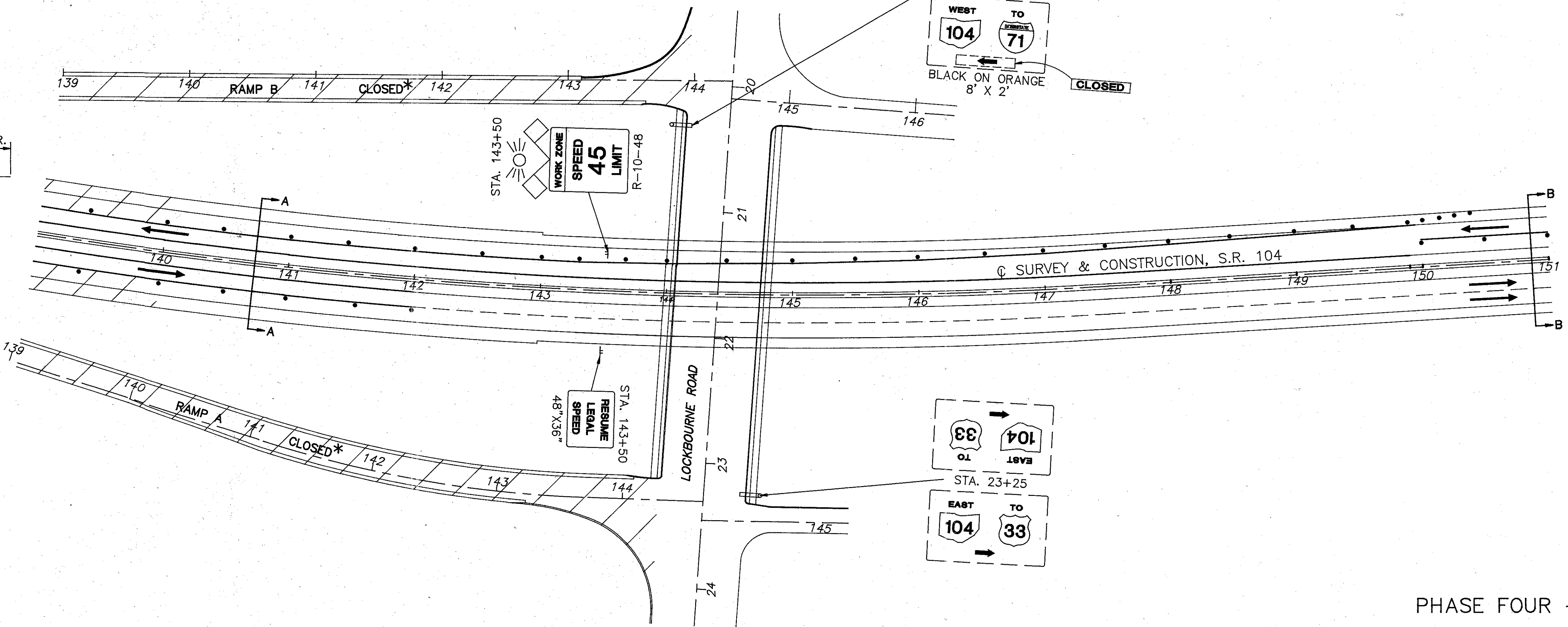


SECTION A-A

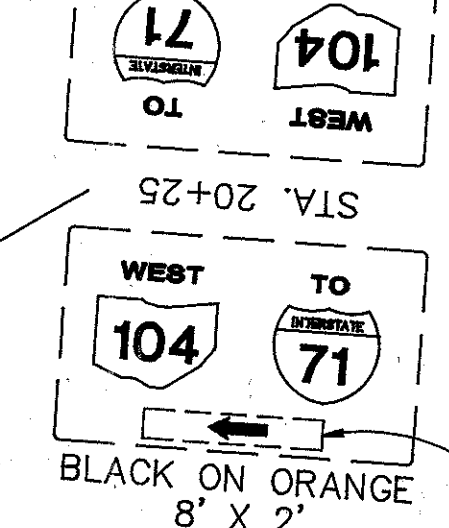
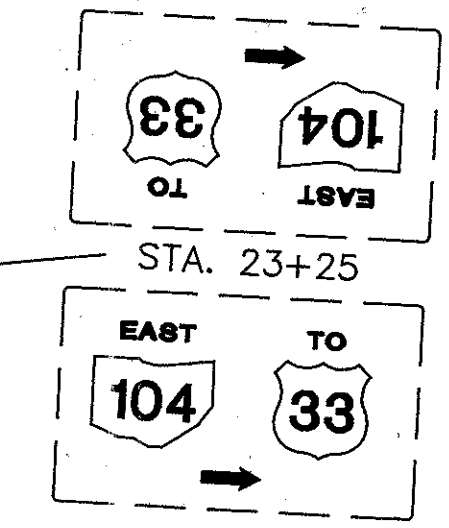


SECTION B-B

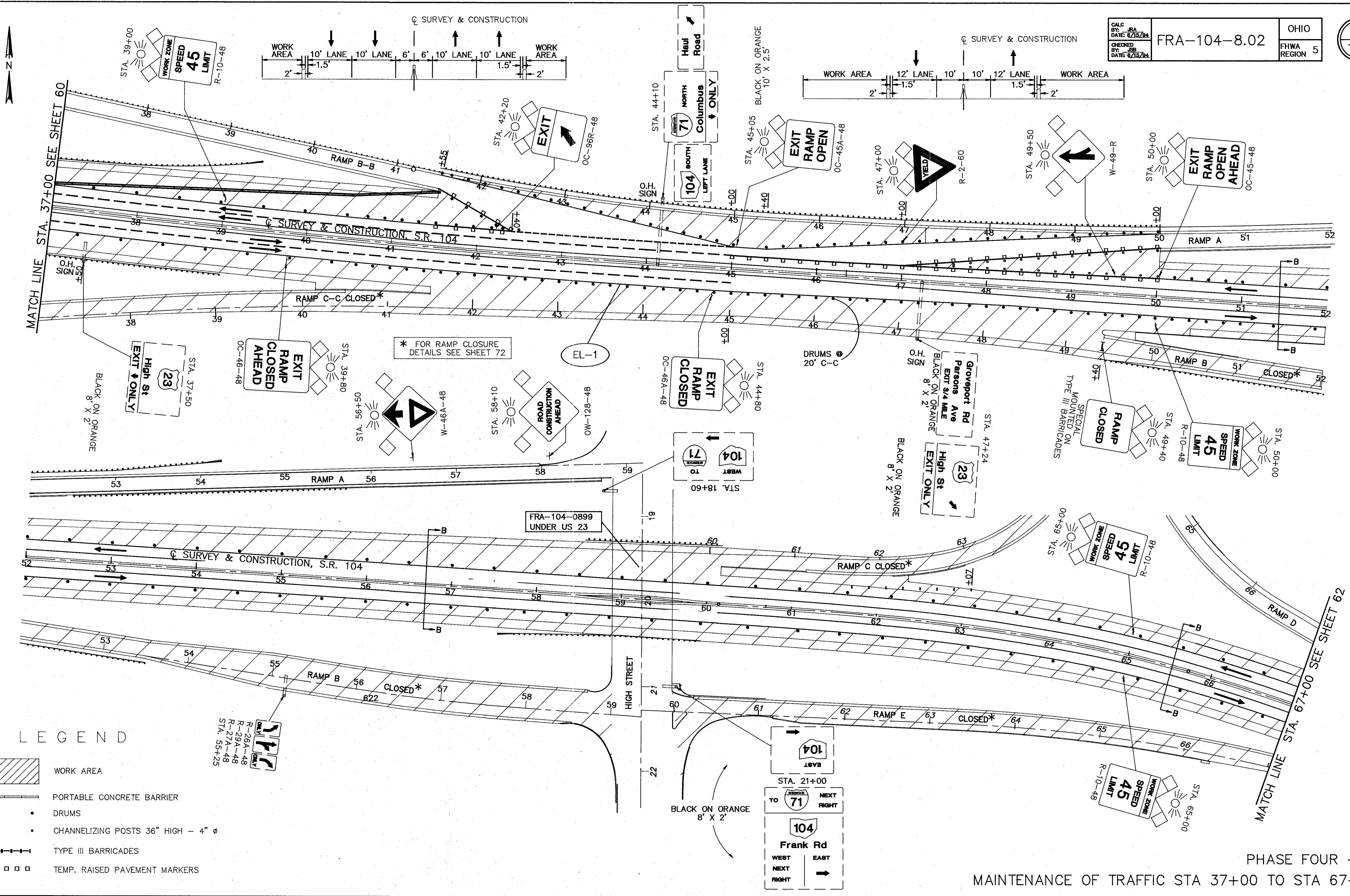
* FOR RAMP CLOSURE DETAILS SEE SHEET 74



- LEGEND**
- WORK AREA
 - PORTABLE CONCRETE BARRIER
 - DRUMS
 - CHANNELIZING POSTS 36" HIGH - 4" Ø
 - TYPE III BARRICADES

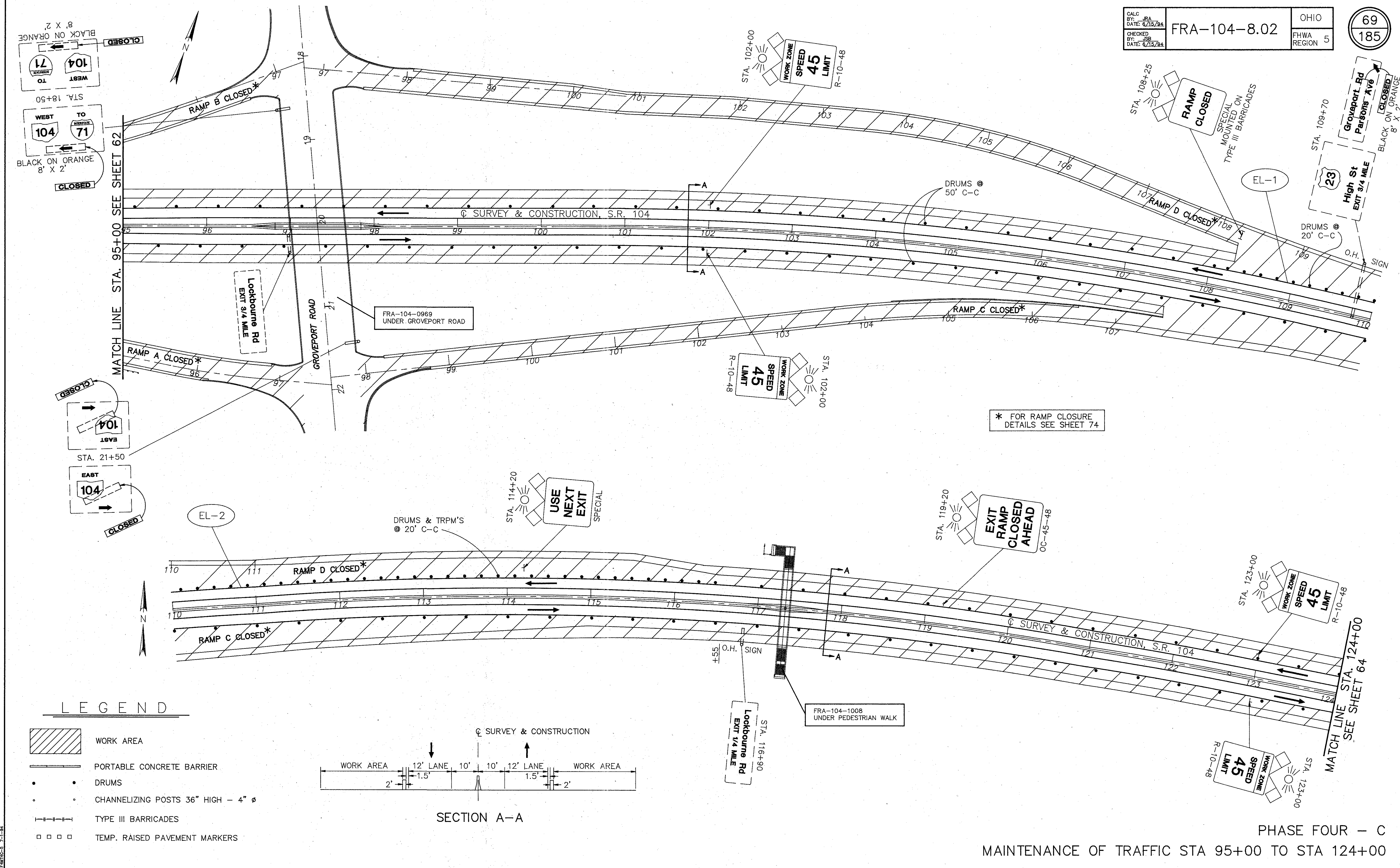


PHASE FOUR - B
 MAINTENANCE OF TRAFFIC STA 124+00 TO STA 151+00



- LEGEND
- WORK AREA
 - PORTABLE CONCRETE BARRIER
 - DRUMS
 - CHANNELIZING POSTS 36" HIGH - 4" Ø
 - TYPE III BARRICADES
 - TEMP. RAISED PAVEMENT MARKERS

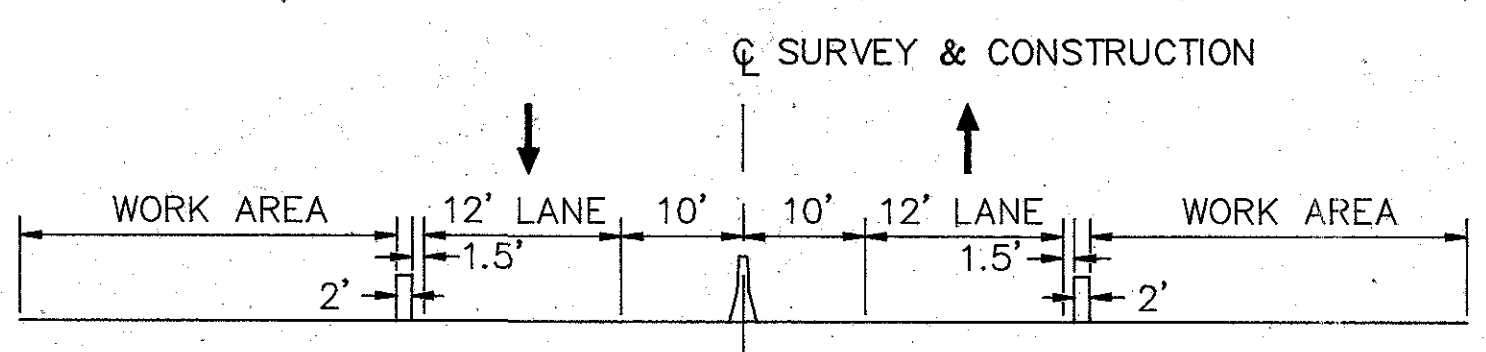
PHASE FOUR - C
 MAINTENANCE OF TRAFFIC STA 37+00 TO STA 67+00



* FOR RAMP CLOSURE DETAILS SEE SHEET 74

LEGEND

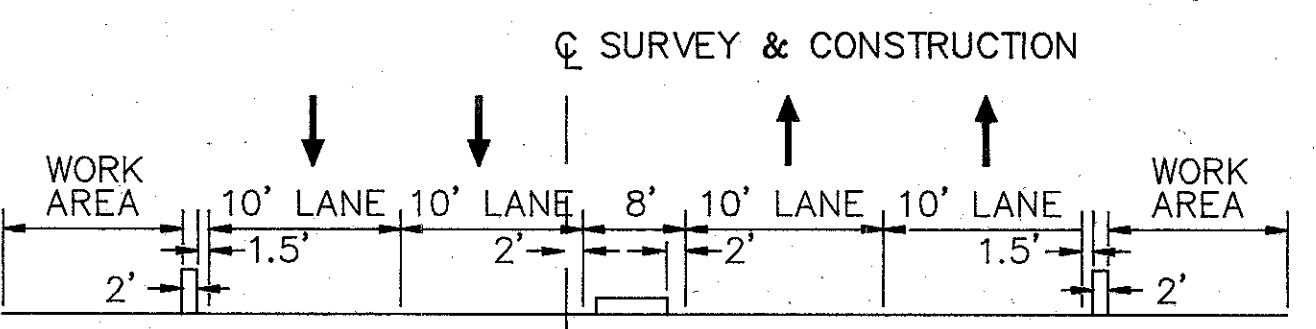
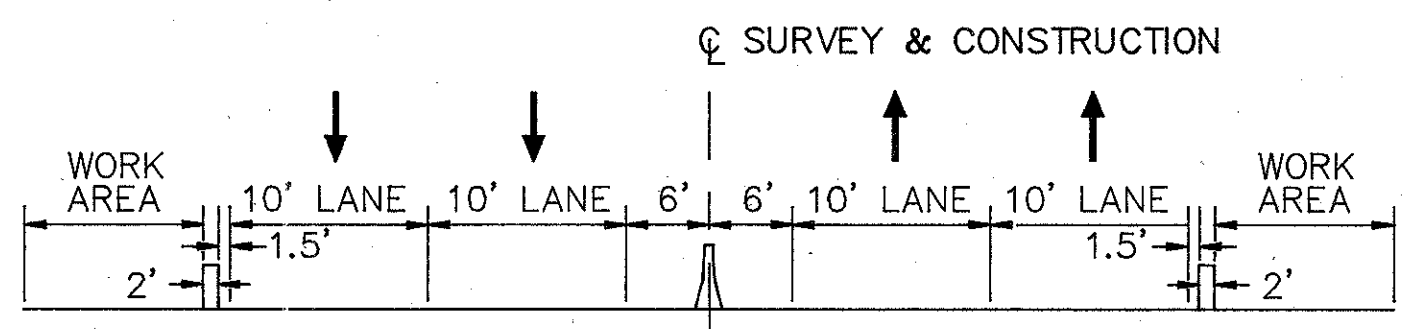
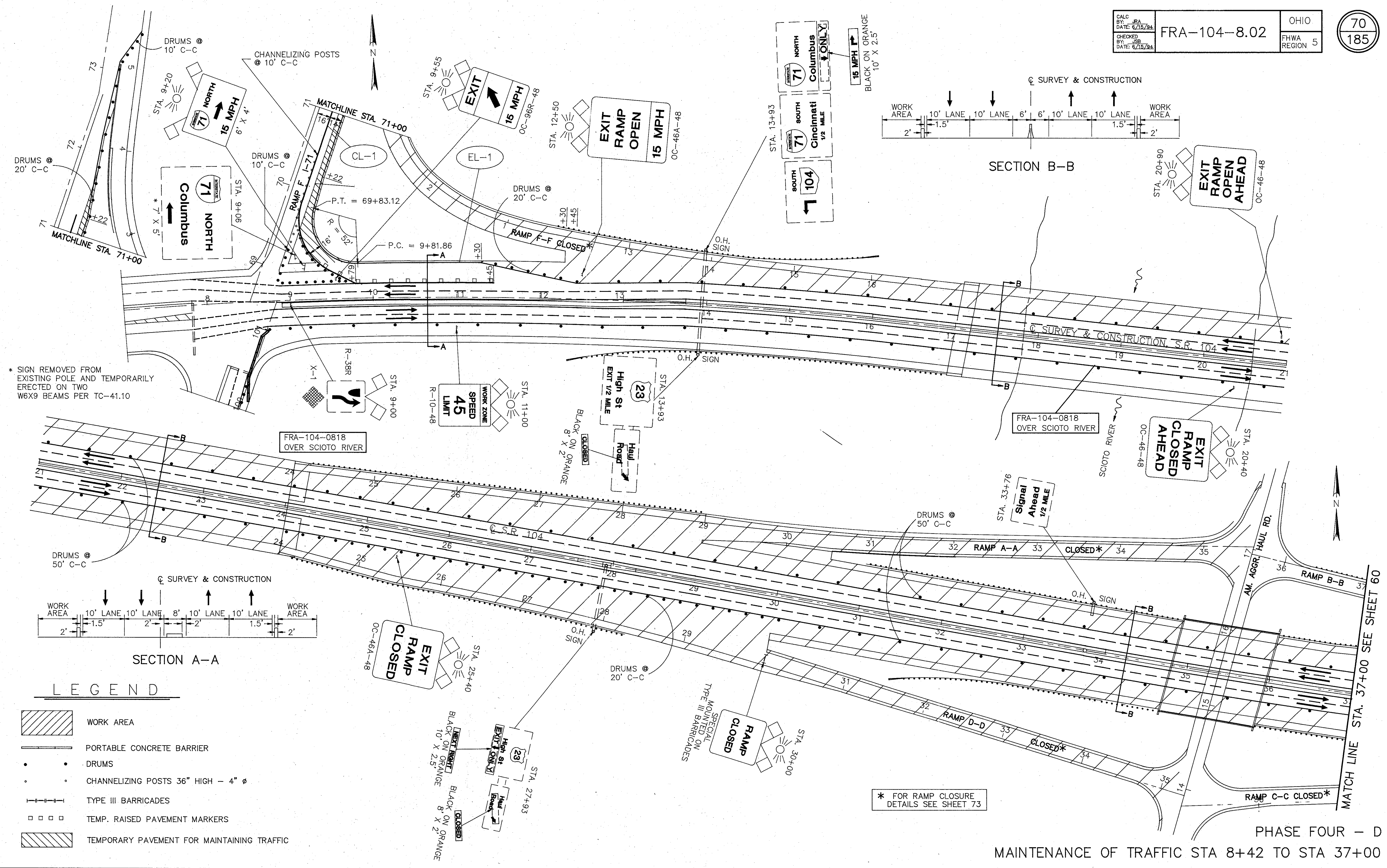
- WORK AREA
- PORTABLE CONCRETE BARRIER
- DRUMS
- CHANNELIZING POSTS 36" HIGH - 4" Ø
- TYPE III BARRICADES
- TEMP. RAISED PAVEMENT MARKERS



SECTION A-A

PHASE FOUR - C
MAINTENANCE OF TRAFFIC STA 95+00 TO STA 124+00

FRA-104-8.02



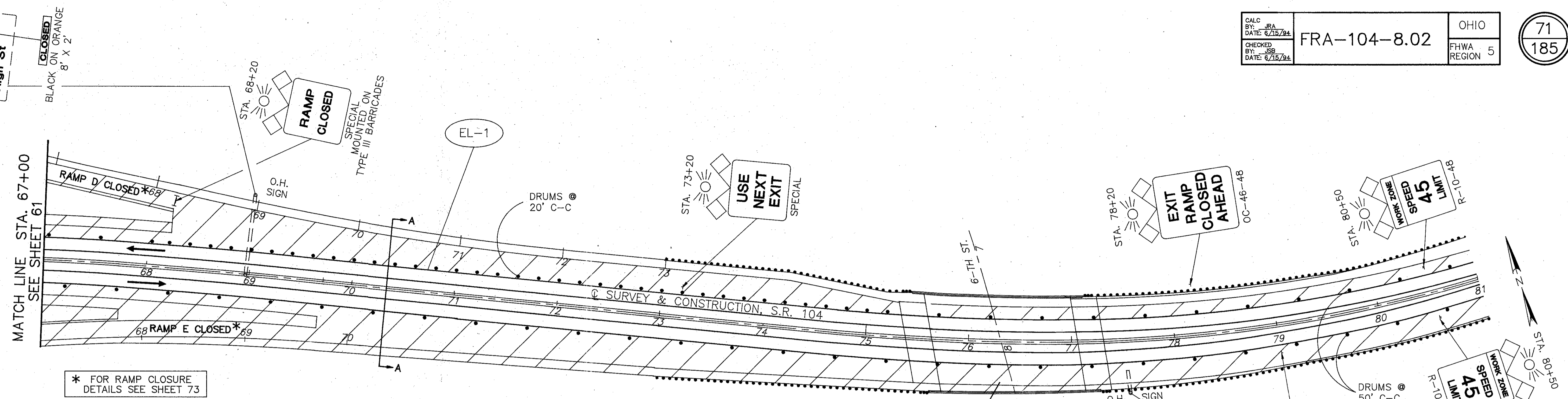
- LEGEND**
- WORK AREA
 - PORTABLE CONCRETE BARRIER
 - DRUMS
 - CHANNELIZING POSTS 36" HIGH - 4" Ø
 - TYPE III BARRICADES
 - TEMP. RAISED PAVEMENT MARKERS
 - TEMPORARY PAVEMENT FOR MAINTAINING TRAFFIC

* FOR RAMP CLOSURE DETAILS SEE SHEET 73

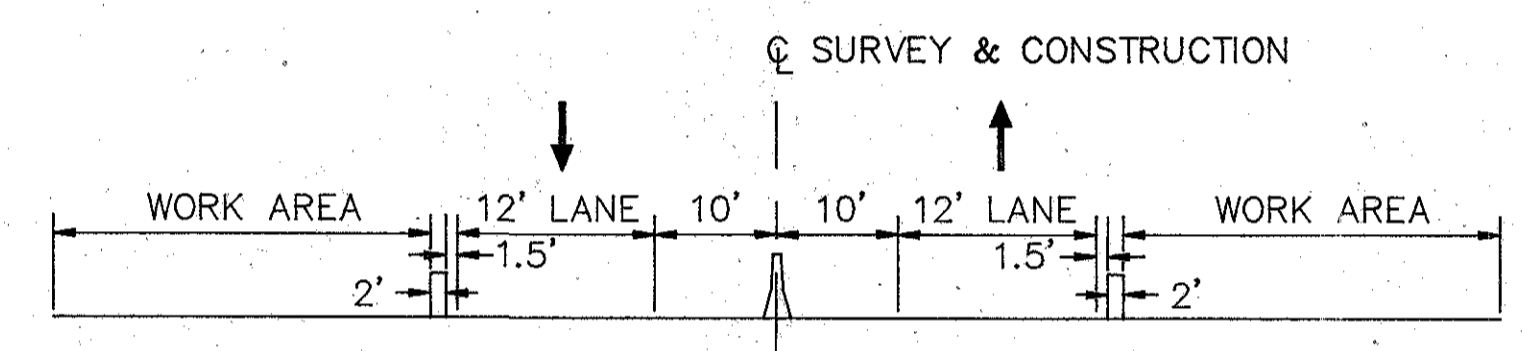
PHASE FOUR - D
 MAINTENANCE OF TRAFFIC STA 8+42 TO STA 37+00

* SIGN REMOVED FROM EXISTING POLE AND TEMPORARILY ERECTED ON TWO W6X9 BEAMS PER TC-41.10

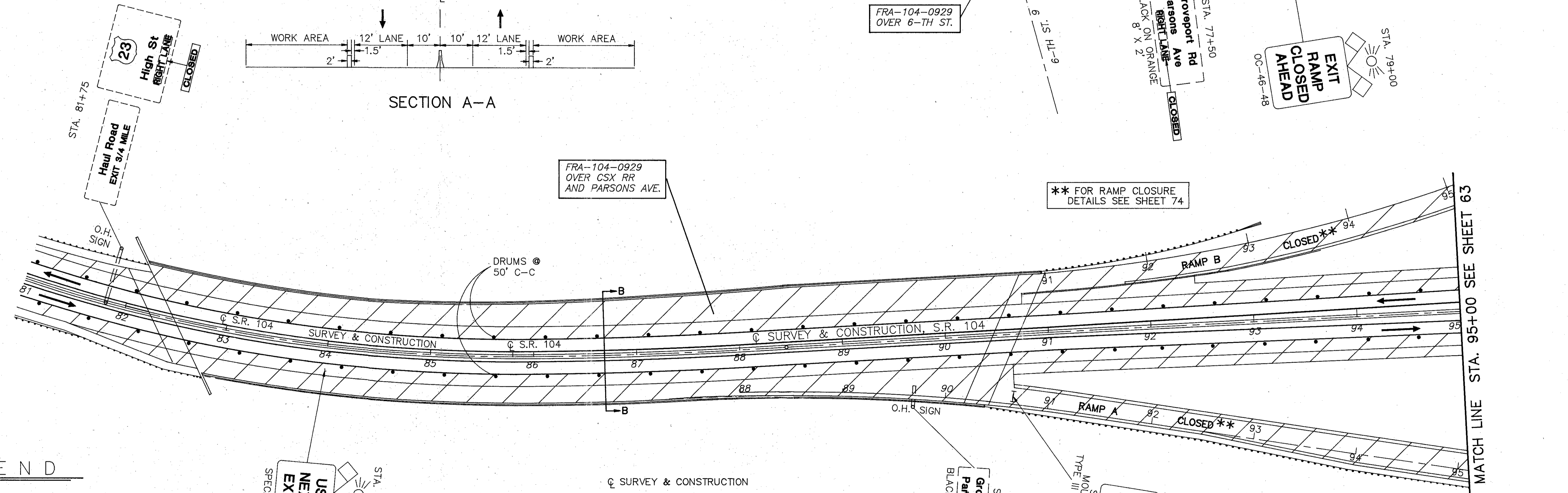
MATCH LINE STA. 37+00 SEE SHEET 60



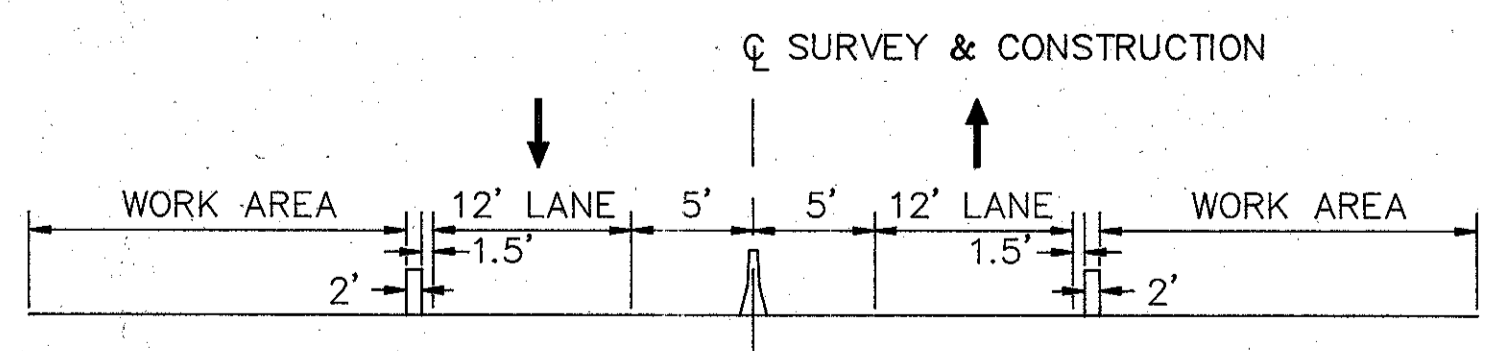
* FOR RAMP CLOSURE DETAILS SEE SHEET 73



SECTION A-A



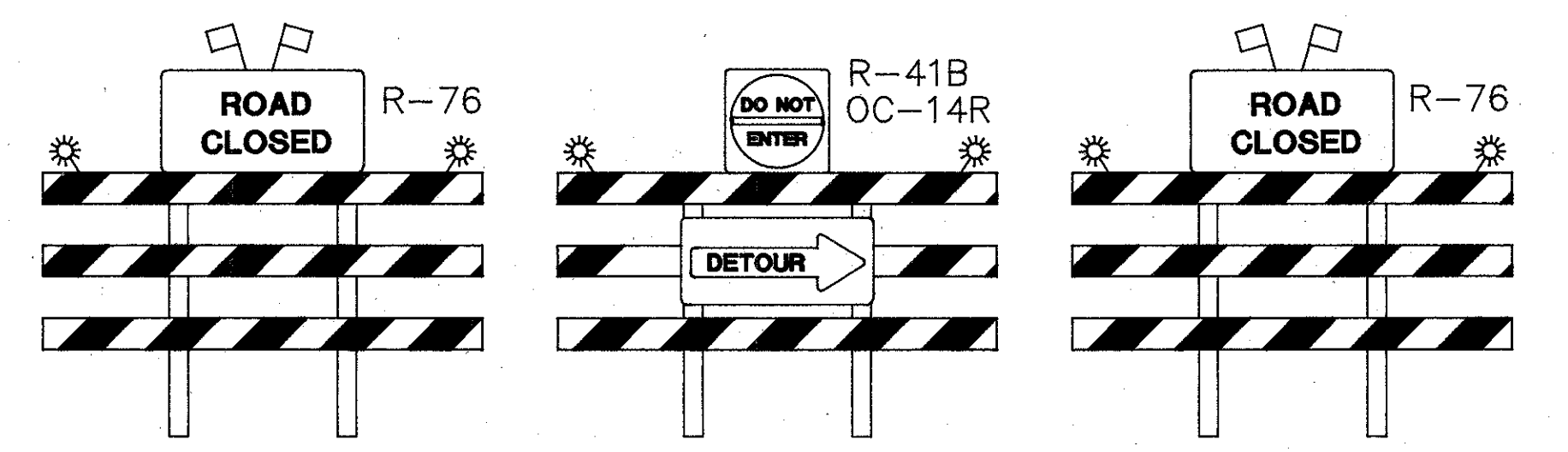
** FOR RAMP CLOSURE DETAILS SEE SHEET 74



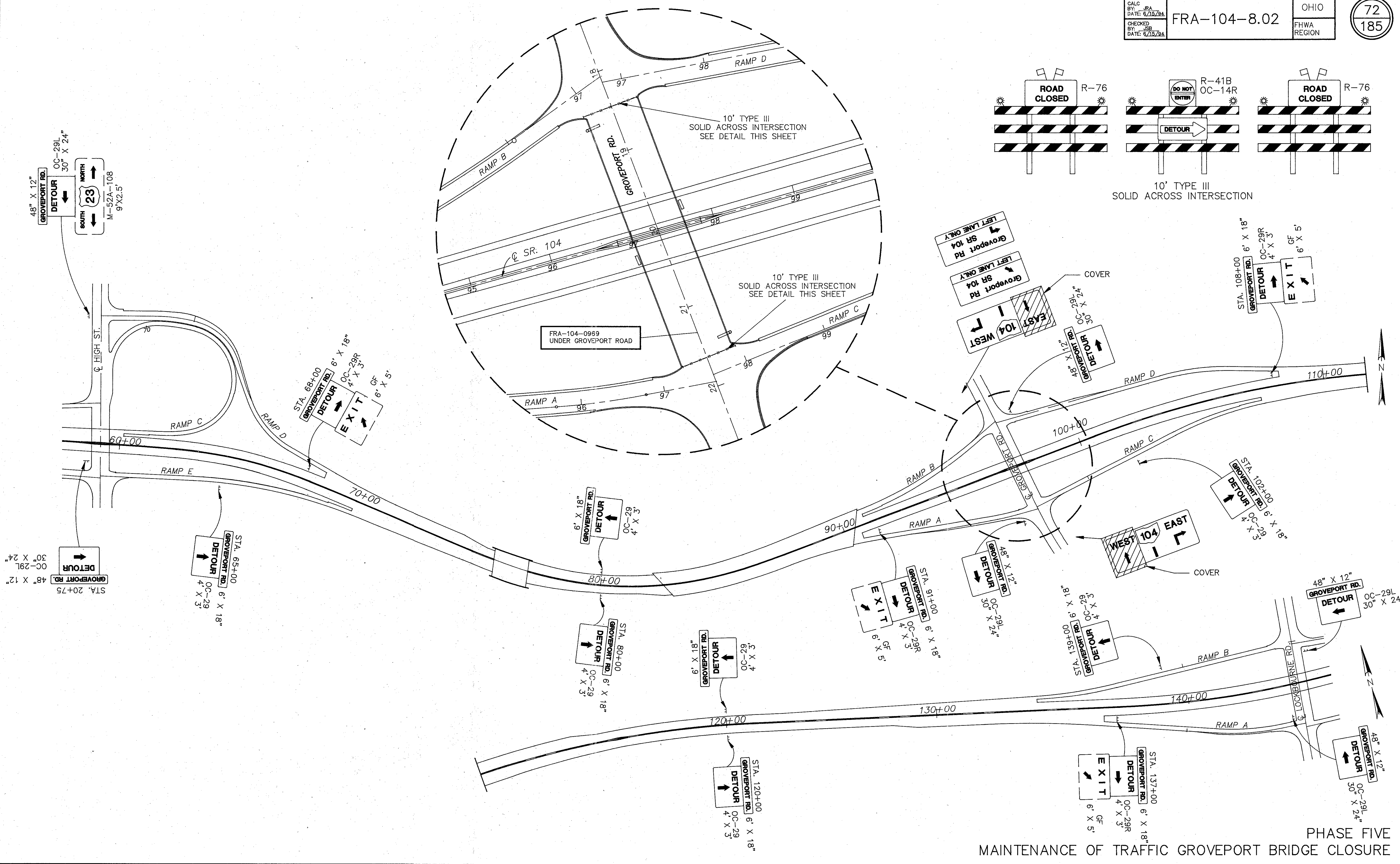
SECTION B-B

- LEGEND**
- WORK AREA
 - PORTABLE CONCRETE BARRIER
 - DRUMS
 - CHANNELIZING POSTS 36" HIGH - 4" Ø
 - TYPE III BARRICADES

PHASE FOUR - D
MAINTENANCE OF TRAFFIC STA 67+00 TO STA 95+00

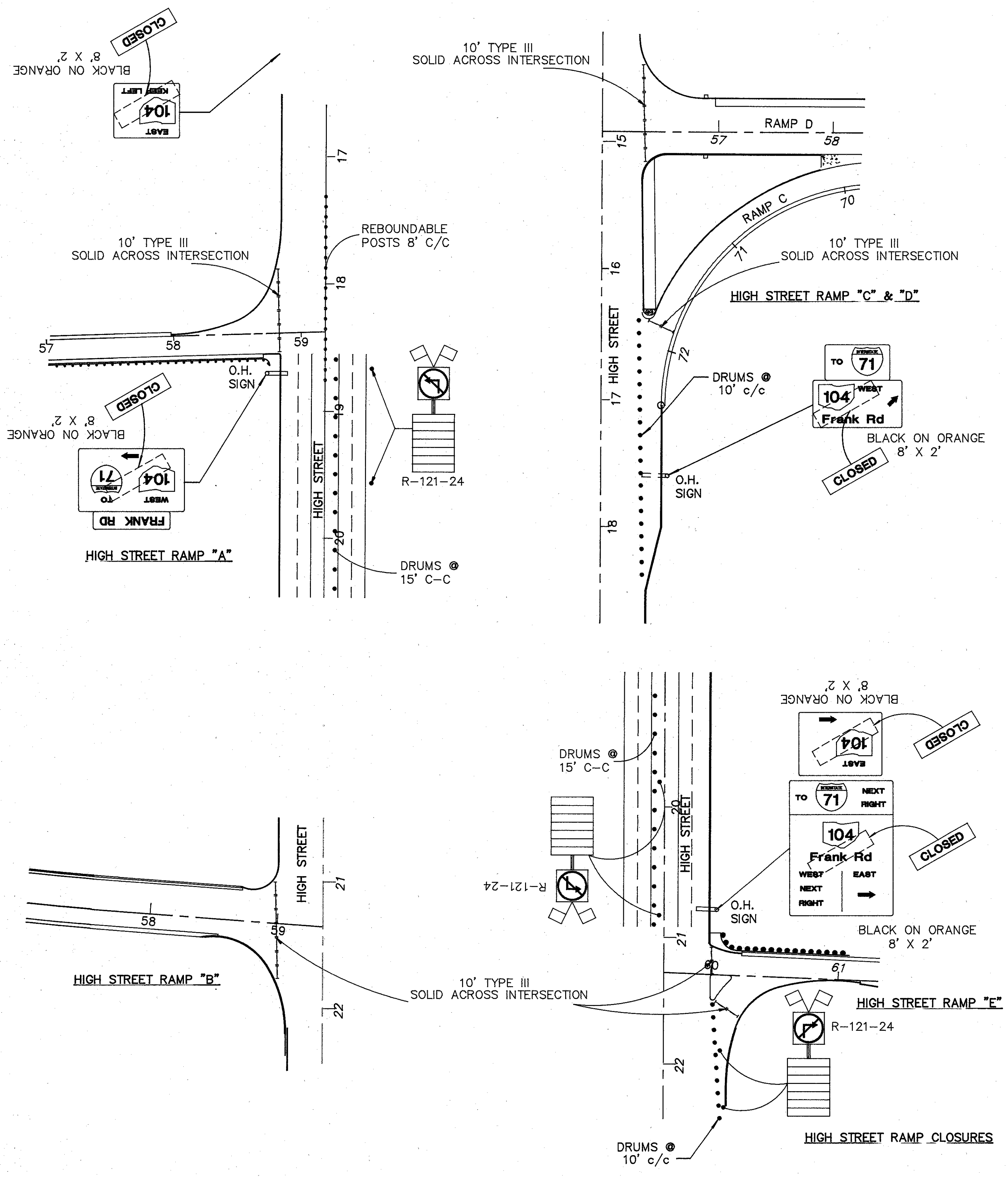
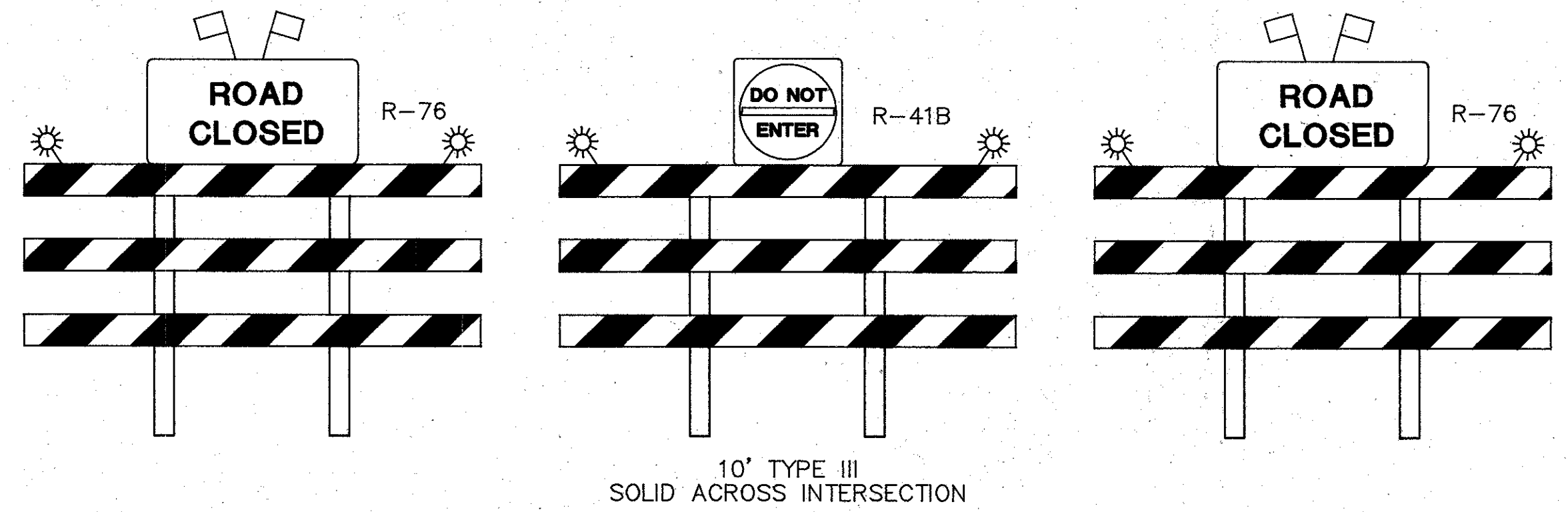
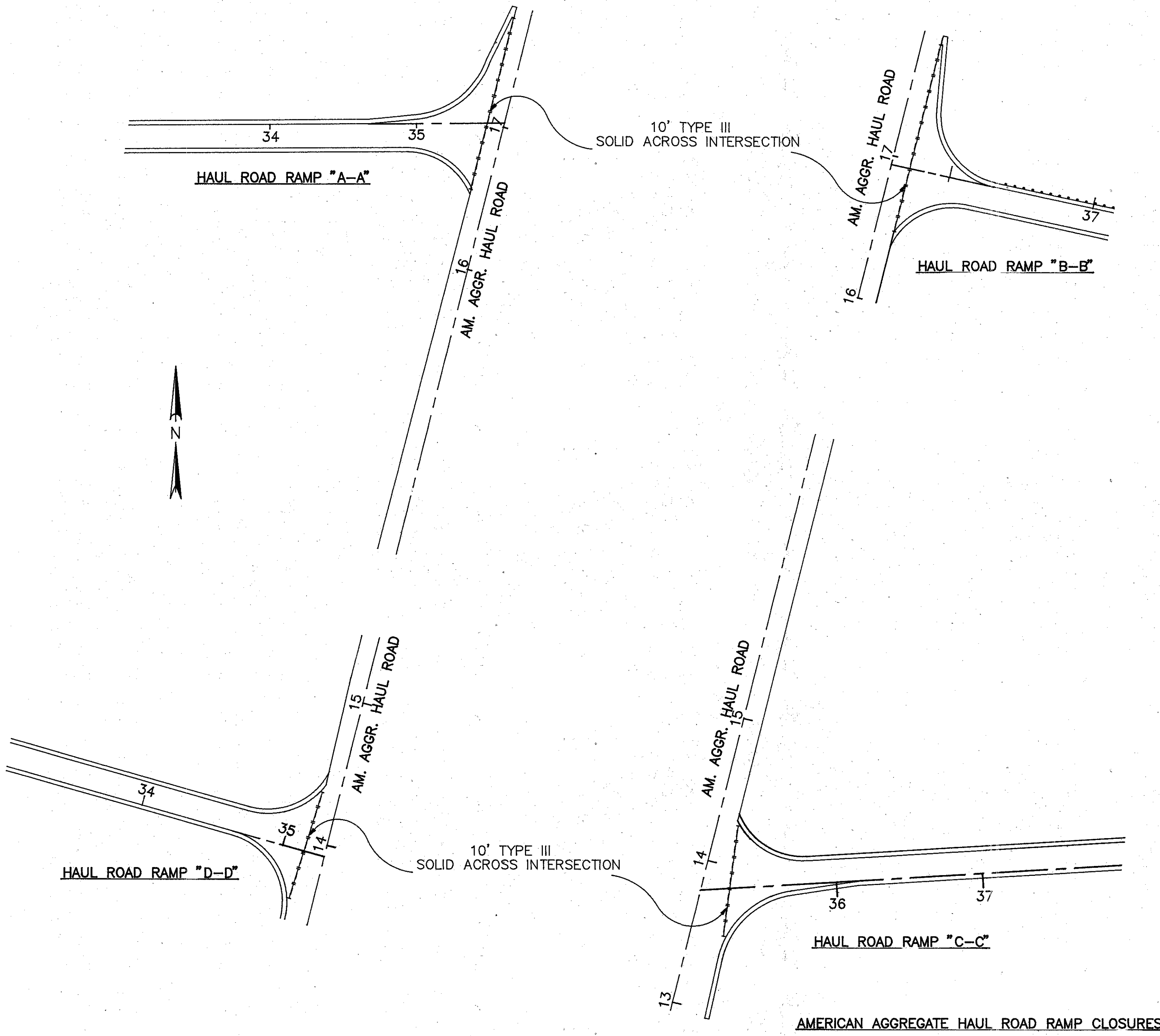


10' TYPE III
SOLID ACROSS INTERSECTION

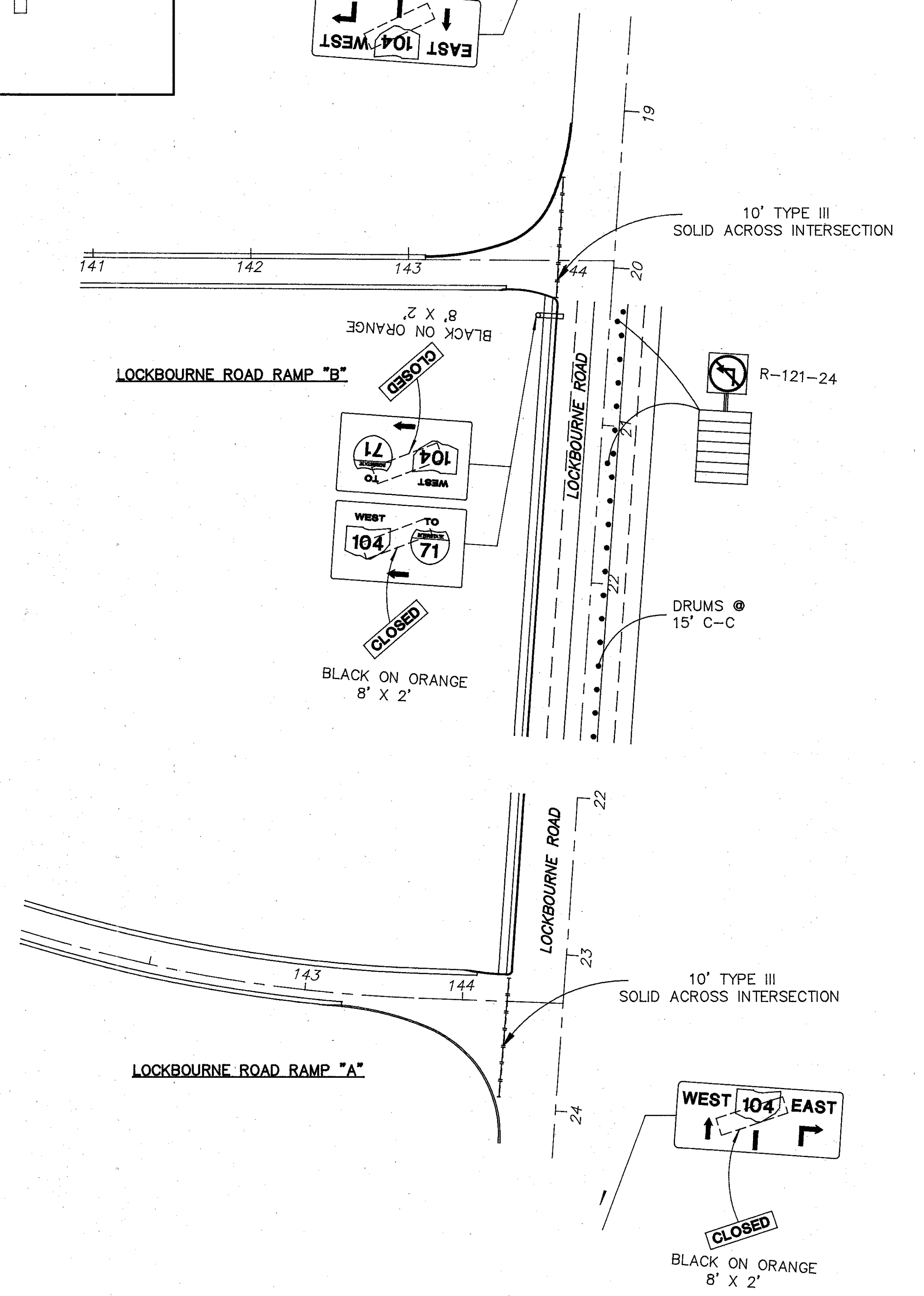
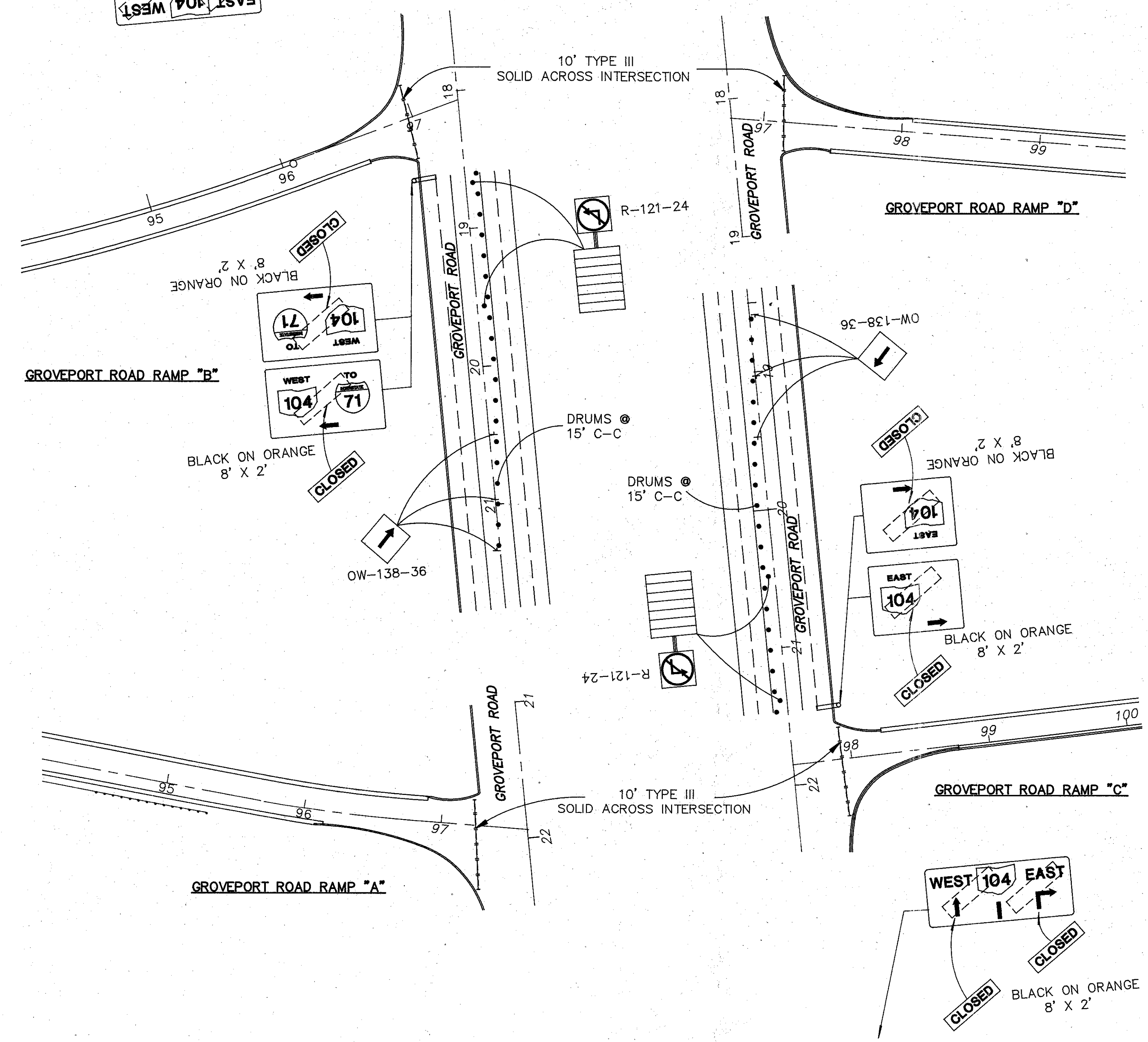
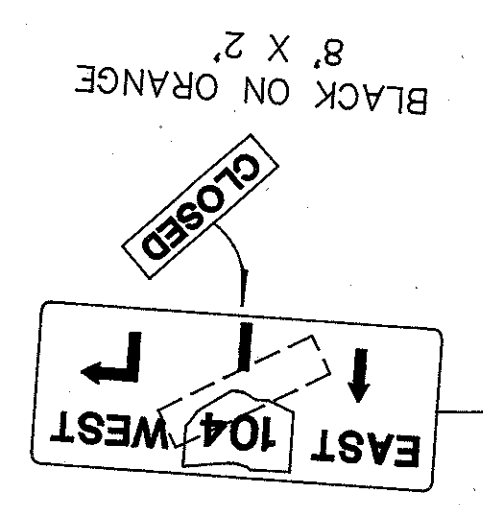
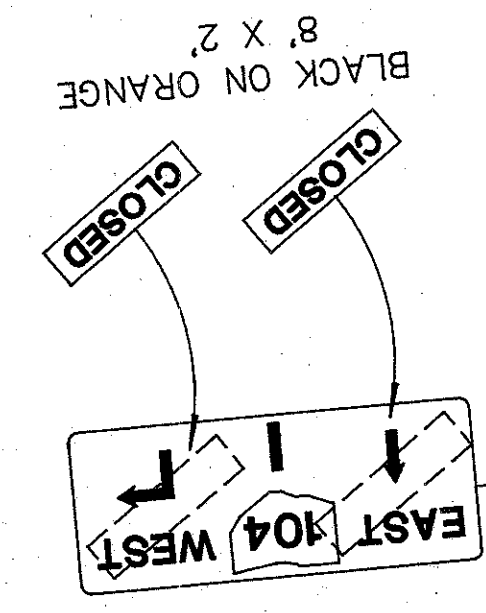
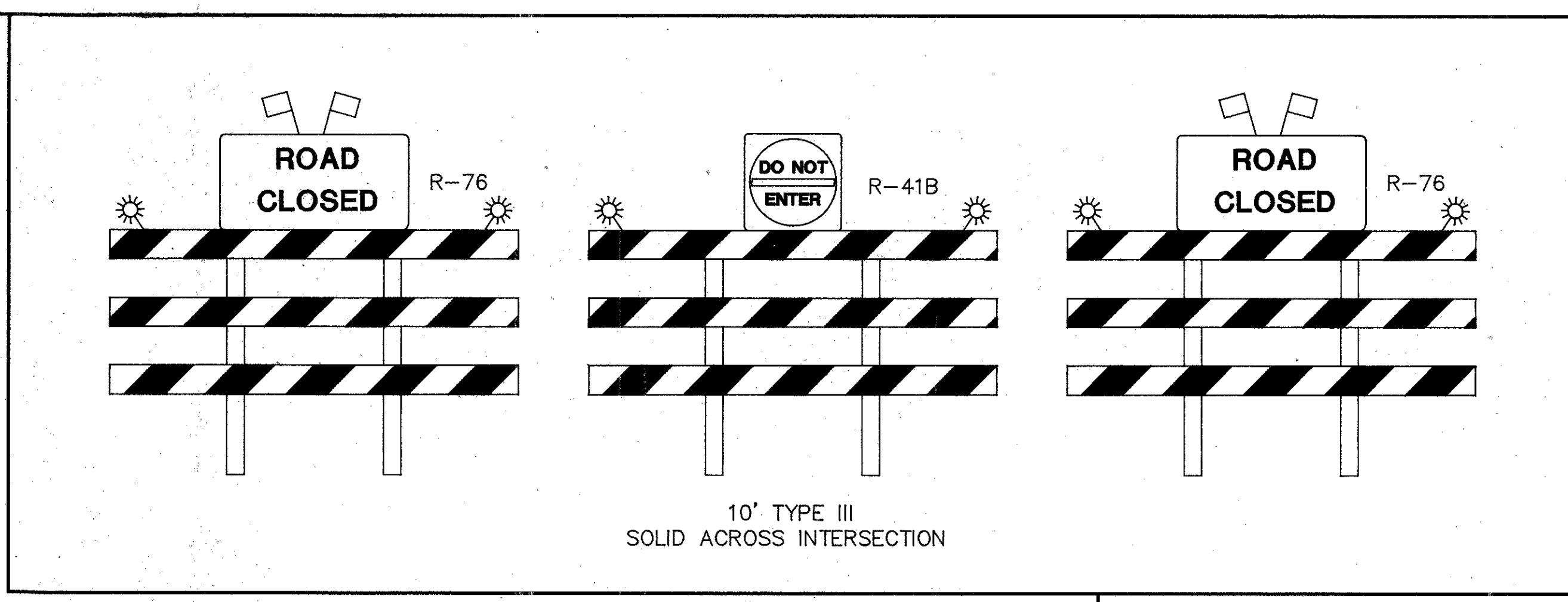


PHASE FIVE
MAINTENANCE OF TRAFFIC GROVEPORT BRIDGE CLOSURE

FMS 7-1-94



MAINTENANCE OF TRAFFIC - RAMP CLOSURE



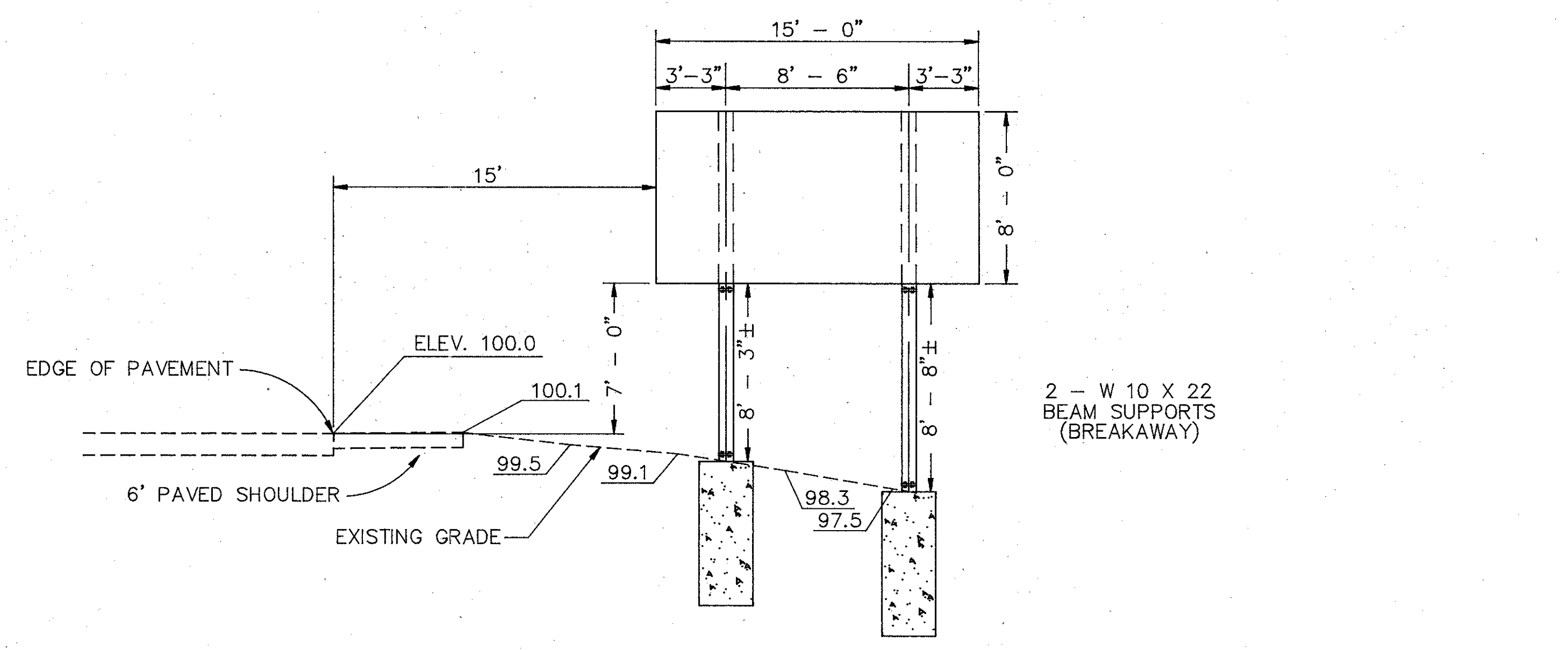
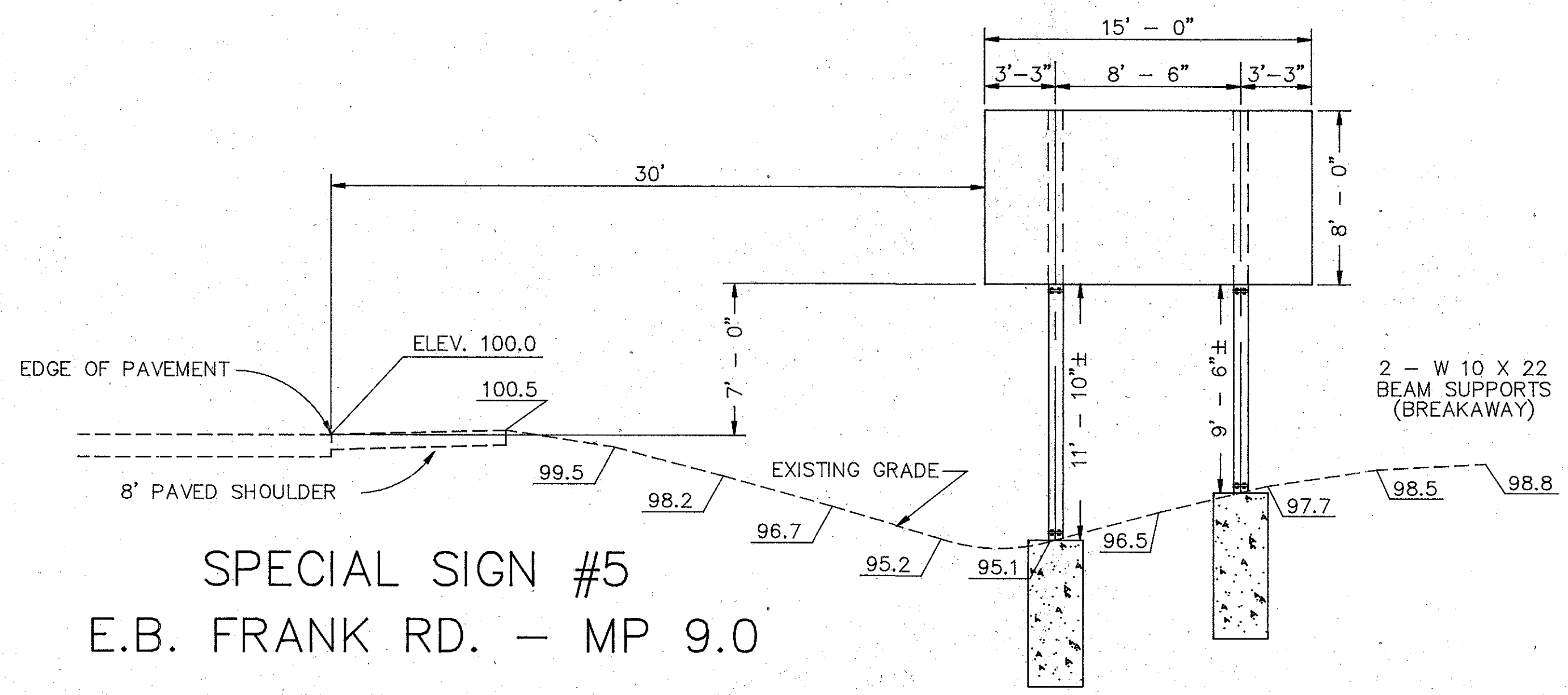
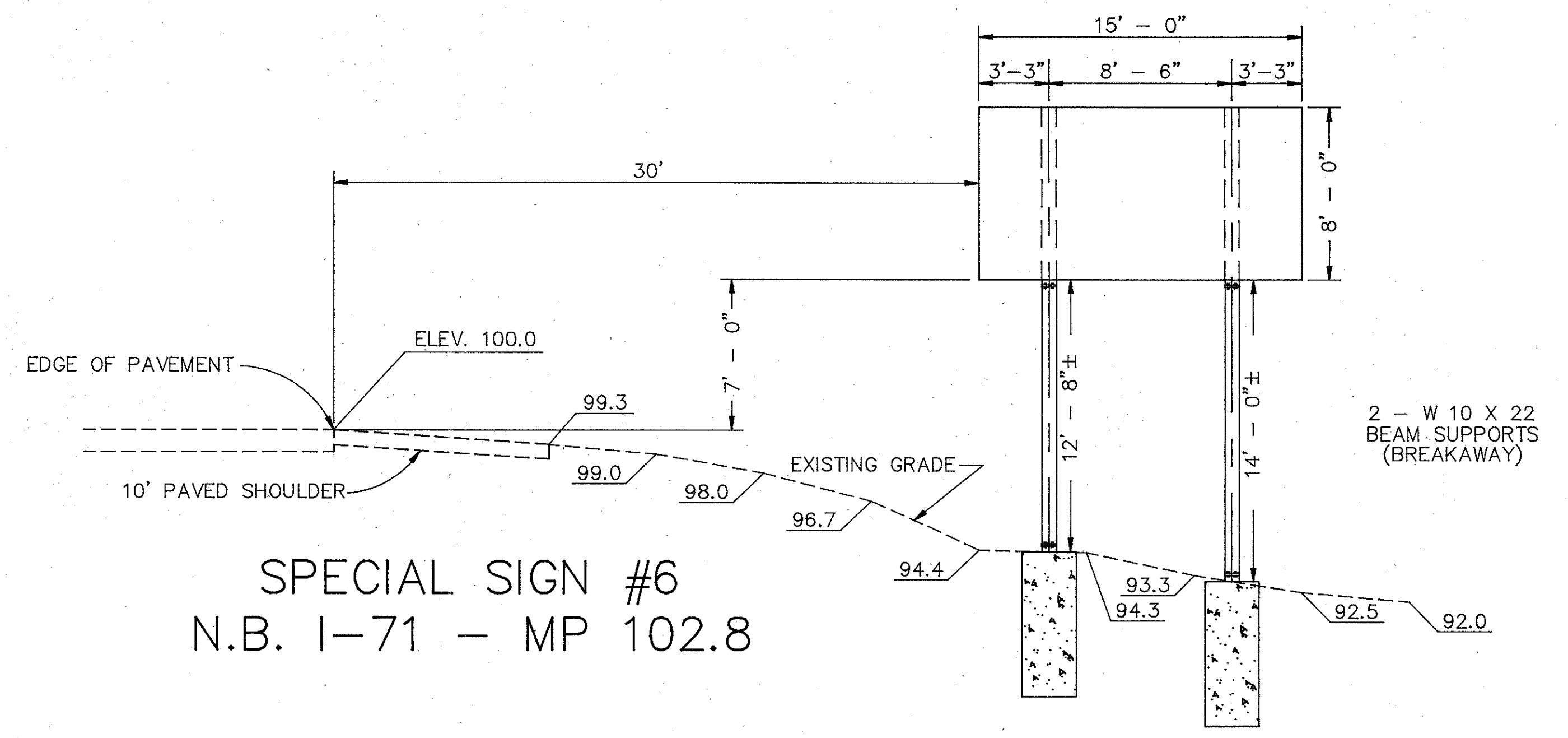
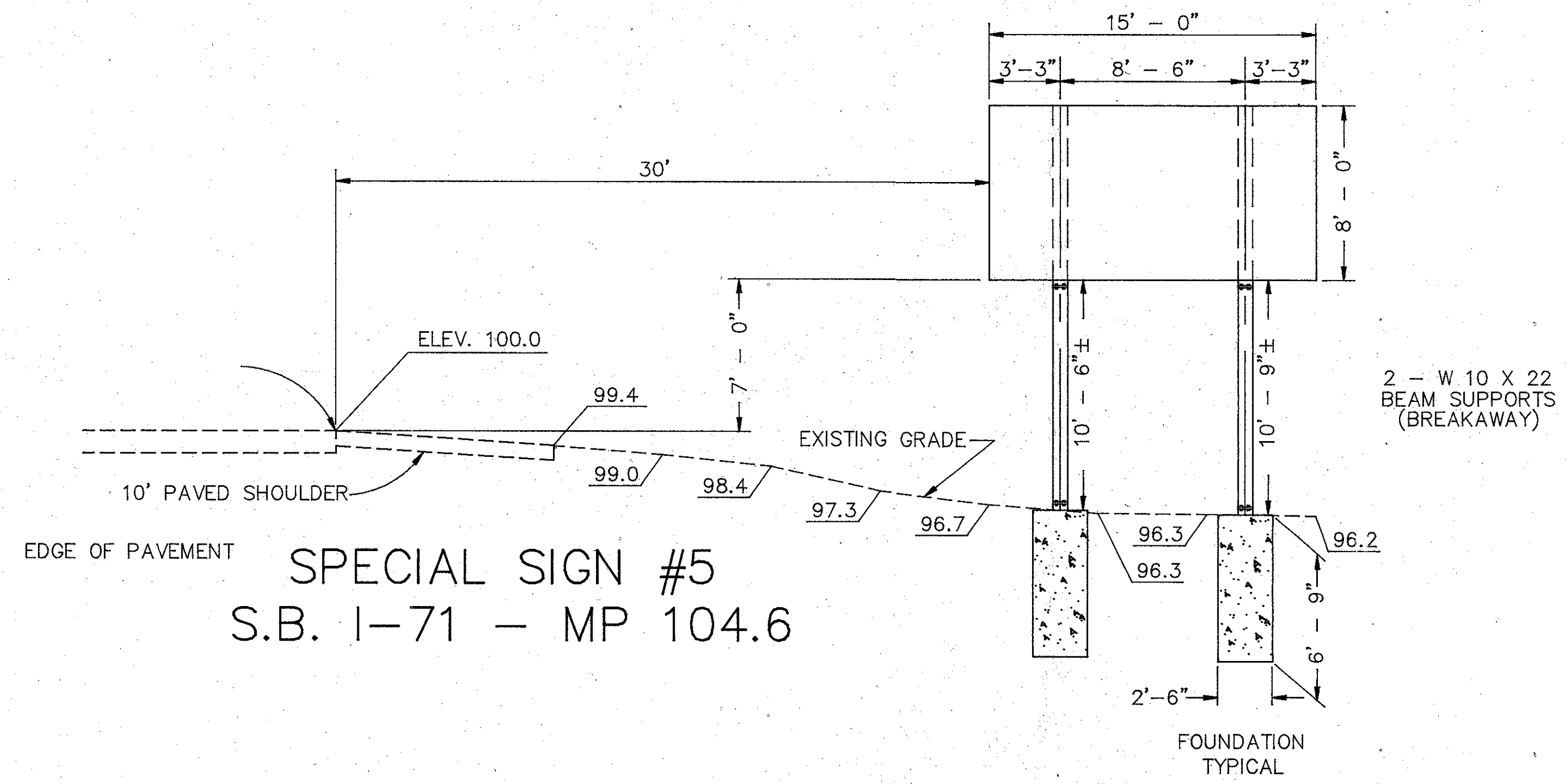
MAINTENANCE OF TRAFFIC - RAMP CLOSURE

FHW-2 7-1-94

MAINTENANCE OF TRAFFIC SIGN DETAILS

CALC. BY: JFA DATE: 6/15/94	FRA-104-8.02	OHIO
CHECKED BY: JSB DATE: 6/15/94		FHWA REGION 5

75
185

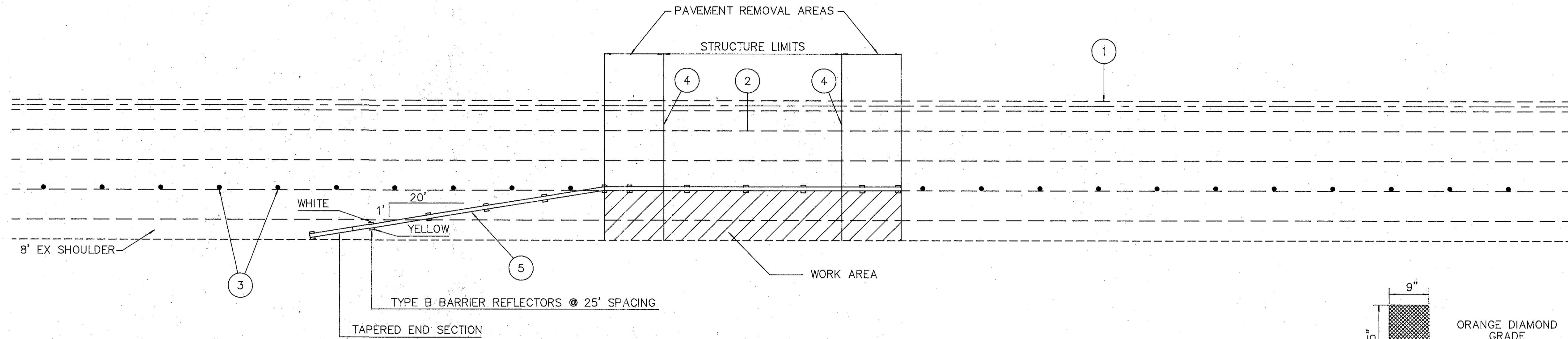


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PORTABLE CONCRETE BARRIER FOR STRUCTURE REPAIR

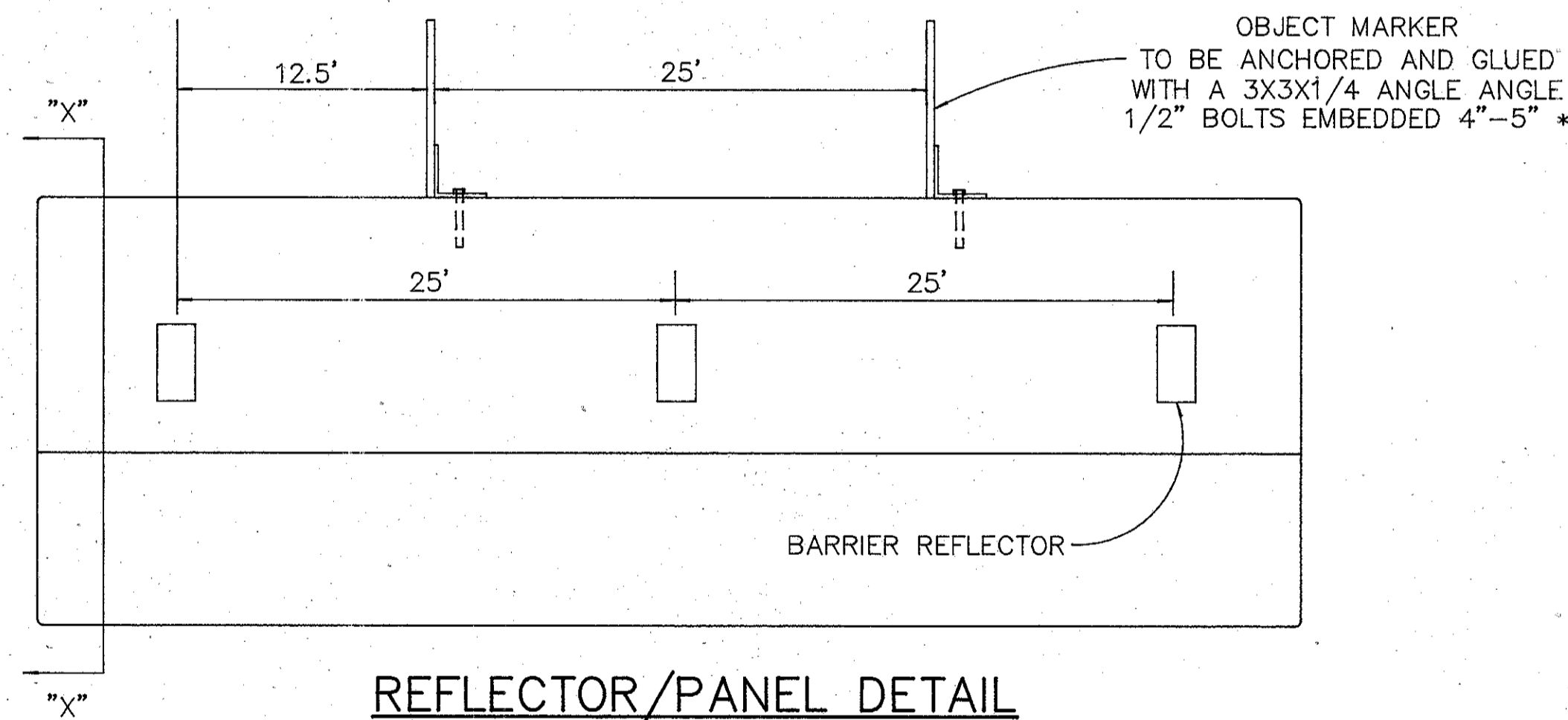
CALC BY: JRA DATE: 6/15/94 CHECKED BY: JSB DATE: 6/15/94	FRA-104-8.02	OHIO FHWA REGION 5
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76
185

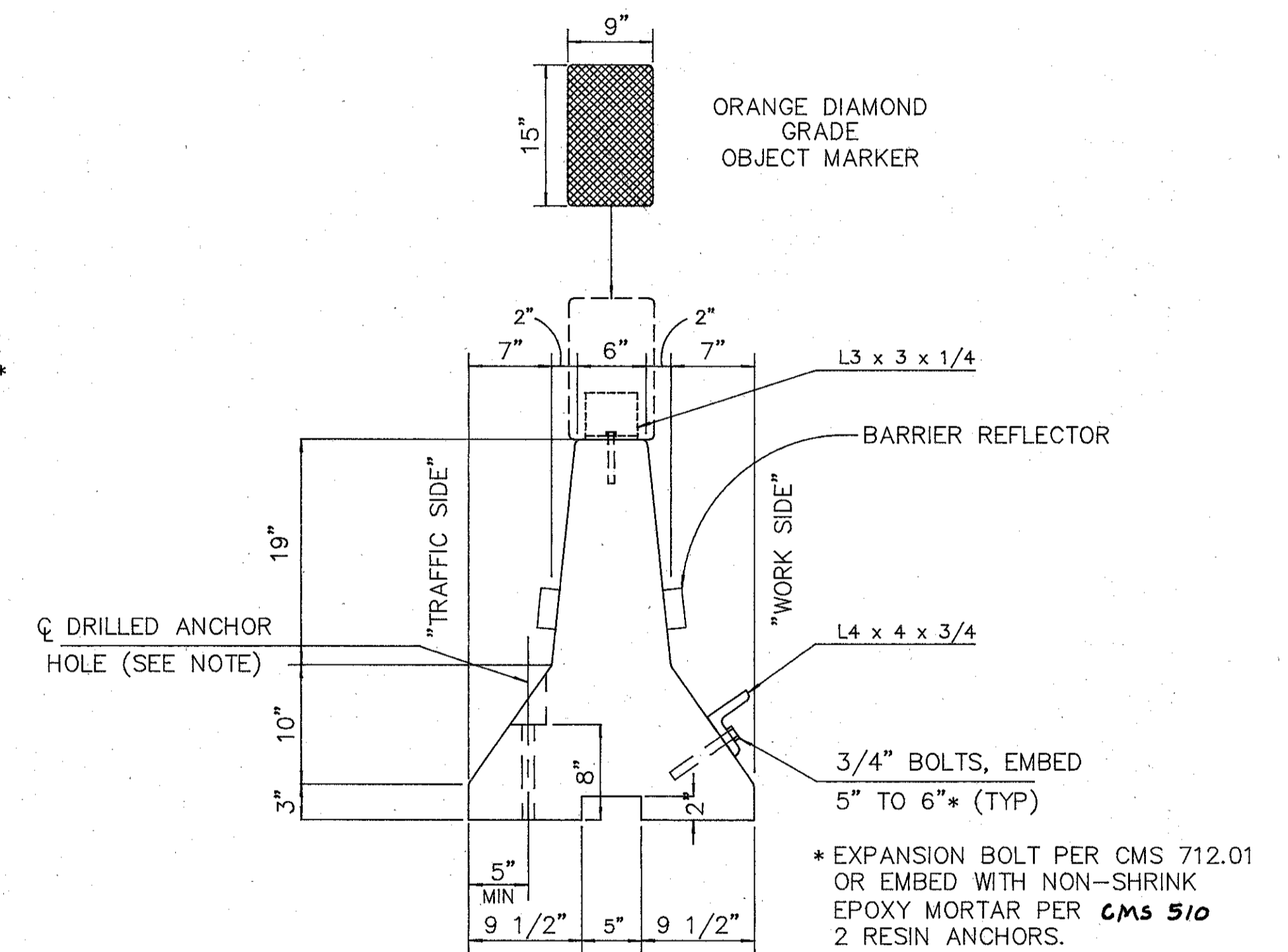


- ① 4" TEMPORARY EDGE LINE, YELLOW, CLASS 1.
- ② REMOVE EXISTING EDGE LINE. REPLACE WHEN WORK IS COMPLETED.
- ③ DRUMS OR BARRICADES SPACED 25 FEET CENTER TO CENTER, OR LESS.
- ④ ITEM 404 TO BE PLACED AS DIRECTED BY THE ENGINEER TO MAINTAIN TRAFFIC.
- ⑤ INSTALL ITEM 622 32" PORTABLE CONCRETE BARRIER DURING ALL WORK ON THE STRUCTURES. THE PAY QUANTITY INCLUDES ENOUGH BARRIER FOR EACH SETUP.

FOR PHASING, SEE DETAIL IN THE AREA OF SPECIFIC BRIDGE



REFLECTOR/PANEL DETAIL



SECTION "X-X"

NOTES:

TEMPORARY BARRIER, BRIDGE MOUNTED, AS PER PLAN SHALL CONFORM TO STANDARD DRAWING MC-9.2 WITH THE FOLLOWING MODIFICATIONS.

- A. REPLACE CONNECTION PINS WITH 1 1/4" DIA HIGH STRENGTH BOLTS.
- B. FURTHER STIFFEN THE CONNECTION, BY FASTENING AN ANGLE (4" x 4" x 3/4") TO THE BACK FACE OF JOINT.
- C. LIMIT THE SLACK IN JOINTS BETWEEN SEGMENTS TO A MAXIMUM OF 3 DEGREES BY SHIMMING AND/OR GROUTING THE JOINT.
- D. FASTEN THE PORTABLE BARRIER ON THE BRIDGE DECK BY USING THREE 1" HIGH STRENGTH THRU BOLTS OR 1" APPROVED RESIN ANCHORS FOR EACH 10' BARRIER SECTION.

BRIDGE DECK SURFACE PREPARATION:

- A. THE BRIDGE DECK SURFACE AREA ON WHICH THE PRECAST CONCRETE BARRIERS WILL REST, SHALL BE CLEARED OF ALL LOOSE SAND, GRAVEL, DIRT AND DEBRIS.
- B. ANY IRREGULARITIES IN THE BRIDGE DECK AREA UNLESS JUDGED BY THE ENGINEER TO BE INCONSEQUENTIAL, SHALL BE LEVELED WITH GROUT AND/OR ASPHALT.
- C. 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.

ITEM 614 - BARRIER REFLECTORS

THESE REFLECTORS AND THEIR MOUNTING SHALL CONFORM TO SUPPLEMENTAL SPECIFICATION 802 EXCEPT THAT SPACING SHALL BE AS SHOWN ON THIS SHEET

NOTE:

IN ORDER TO ANCHOR THE BARRIER TO THE BRIDGE DECK, WHERE ANCHORING IS REQUIRED, 1 1/4" MIN DIA HOLES MUST BE DRILLED THROUGH THE BARRIER TOE AT THE LOCATION SHOWN IN SECTION "X" (THIS SHEET). GREAT CARE MUST BE USED IN DRILLING AND INSTALLING THE BARRIER SEGMENTS, AS ANY DAMAGE TO THEM WILL BE CONSIDERED CAUSE FOR THEIR REJECTION.

ALL ANCHORS SHALL BE 1" DIA, HIGH STRENGTH, THRU BOLTS OR APPROVED RESIN ANCHORS. WHEN RESIN ANCHORS ARE USED, THEY MUST BE EMBEDDED A MINIMUM OF 6" INTO FIRM CONCRETE.

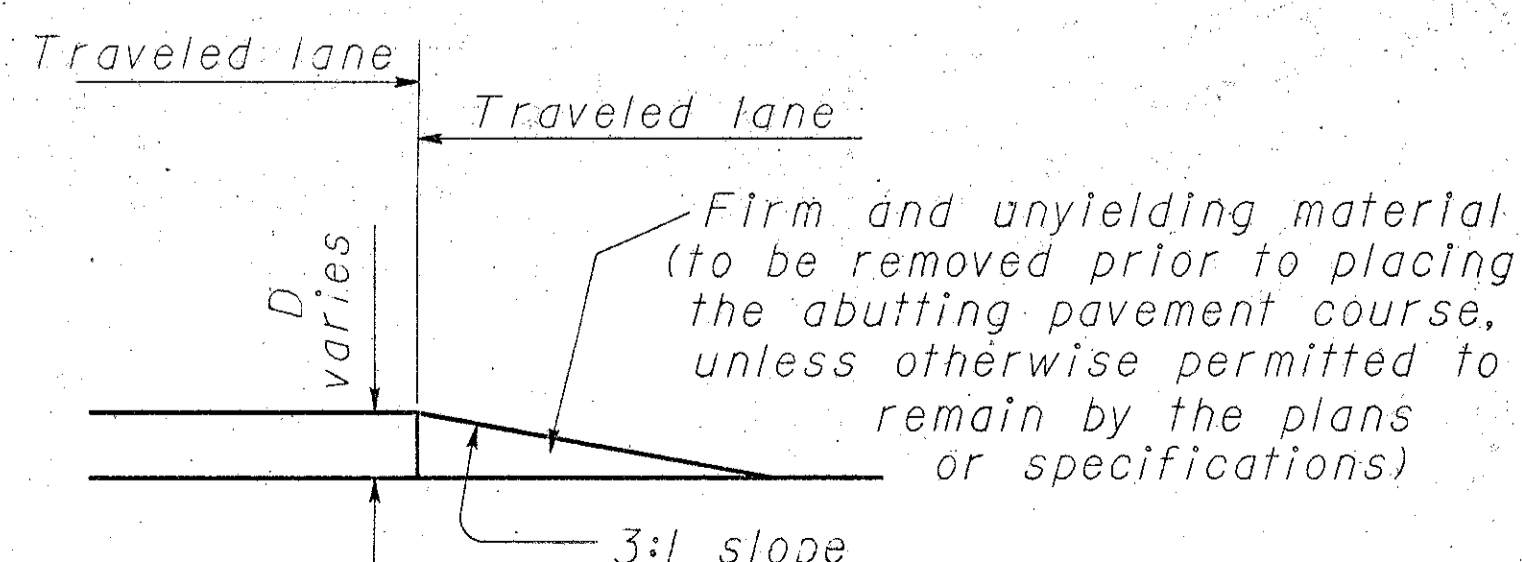
ANCHOR PATTERN MUST BE SYMMETRICAL ABOUT THE CENTER OF EACH TEN FOOT SEGMENT.

GENERAL NOTES

- It is intended that this drawing be used for treatment of drop-offs that develop during construction operations, and that are not otherwise provided for in the construction plans. Where the plans do not provide specific items for labor, equipment, or materials to implement the drop-off treatments specified hereon, they shall be included for payment in the lump sum bid for Item 614 - Maintaining Traffic.
- While the need for certain advisory signing is noted hereon, it is not intended that this be indicative of all signing that may be required to advise or warn motorists, and all requirements of the Ohio Manual of Uniform Traffic Control Devices (OMUTCD) must be fulfilled.
- In urban or otherwise heavily developed areas where pedestrians and/or bicyclists may be present in significant numbers, additional signing and protective measures other than those shown hereon may be required.
- The drop-off treatment selected for use at any given location shall be as appropriate for the prevailing conditions at the site.
- Where concrete barrier is specified, it shall be in accordance with Standard Construction Drawing MC-9.2 and Item 622.
- When drums are specified for a dropoff condition, a minimum number of four drums shall be used. Spacing shall be as indicated in the plans or as specified in the OMUTCD.
- When OW-151 (Low Shoulder) signs or OW-171 (Uneven Lanes) and OWP-171 signs are required, they shall be placed 750' in advance of the condition, on all intersecting entrance ramps within the limits of the condition and immediately beyond all intersecting roadways within the limits of the condition. When the dropoff condition extends more than one-half mile, additional signs should be erected at intervals of one mile or less.
- For locations, such as at ramps, lane shifts, lane closures, etc., where traffic is required to negotiate any difference in elevation between pavements, a 3:1 slope treatment similar to the Optional Wedge Treatment shall be provided.
- Portable concrete barrier shall be placed on the same level as the traffic surface and shall not encroach on lane width(s) designated as the minimum required for traffic use. Where drums are used, and their presence would reduce traveled lane widths to less than 10', drums may be placed on the opposite level from that of traffic provided the dropoff depth does not exceed 5" and approval is granted by the Project Engineer.
- Pavement Repairs (or similar work):
 - Lengths greater than 60 feet - utilize appropriate treatment from Condition I.
 - Lengths of 60 feet or less - repairs shall be effected in accordance with 255.08. Drums may be used as a separator adjacent to the traveled lane.

OPTIONAL WEDGE TREATMENT (MILLING OR RESURFACING)

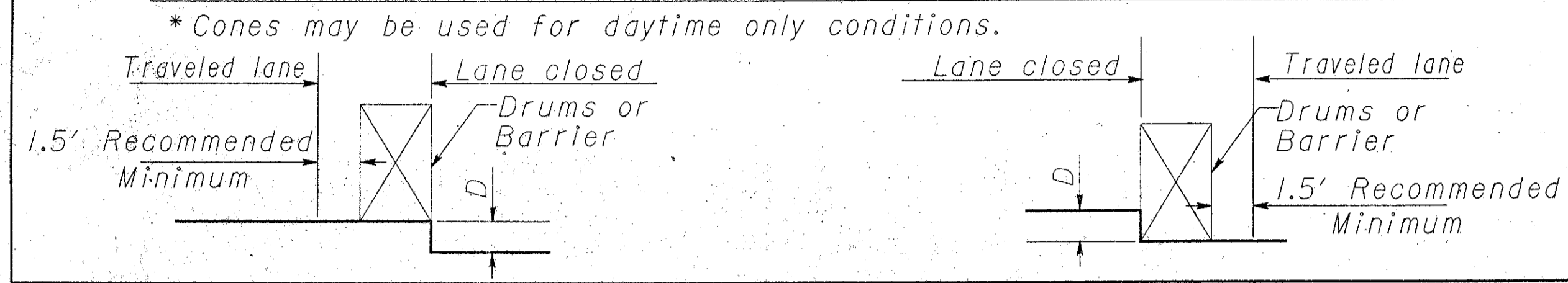
- This treatment may be used when permitted for Condition I only.
- OW-171 and OWP-171 signs required.



CONDITION I DROPOFFS BETWEEN TRAVELED LANES

- These treatments are to be used for resurfacing, pavement planing, excavation, etc. between or within traveled lanes.

D (In.)	Treatment
≤ 1/2	Erect OW-171 and OWP-171 signs.
> 1/2 - 3	1) Lane closure utilizing drums* as shown below OR 2) Optional Wedge Treatment
> 3 - 5	Lane closure utilizing drums as shown below.
> 5	Lane closure utilizing portable concrete barrier as shown below.



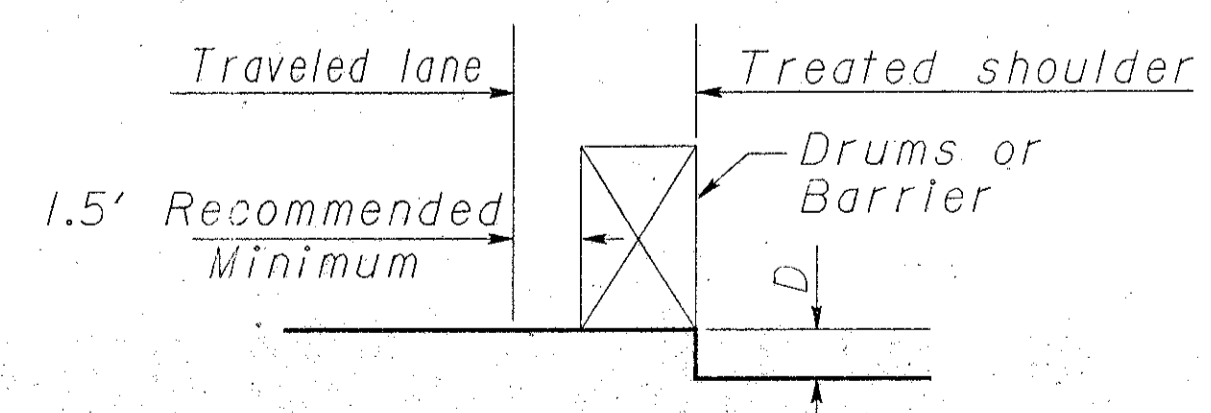
* Cones may be used for daytime only conditions.

CONDITION II DROPOFFS WITHIN GRADED SHOULDER AREA

- The treatments indicated below are for use in conjunction with resurfacing, planing, or excavations within the graded shoulder area.
- The graded shoulder area is that flat or gradually sloping area between the edge of a normally traveled lane and the more steeply sloping ditch foreslope or embankment slope. Its surface may be soil or turf, and/or it may be inclusive of a "treated" area (improved with aggregates, asphaltic materials, or concrete). For the purposes herein, its maximum width shall be considered to be twelve (12) feet.

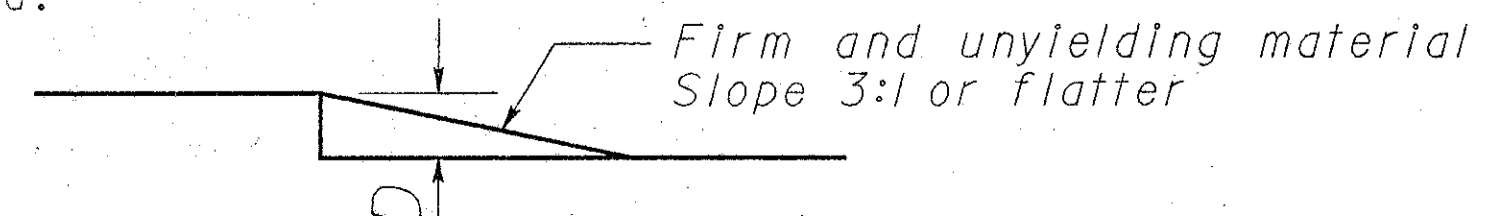
D (In.)	Treatment
≤ 1/2	1) If edgelines are present, no treatment necessary OR 2) Erect OW-171 and OWP-171 signs.
> 1/2 - 5	1) If min. lane width* requirements can be met, maintain lanes utilizing drums as shown below OR 2) If min. lane width* requirements cannot be met, close adjacent lane utilizing drums OR 3) Optional Shoulder Treatment.
> 5 - 12 Daylight only	If min. lane width* requirements can be met, maintain lanes utilizing drums as shown below.
> 5 - 24	1) If min. lane width* requirements can be met, maintain lanes utilizing portable concrete barrier as shown below. OR 2) If min. lane width* requirements cannot be met, close adjacent lane utilizing drums.
> 24	Lane closure utilizing portable concrete barrier as shown below.

* Minimum lane widths shall be 10' unless otherwise specified in the plans.



OPTIONAL SHOULDER TREATMENT

- This treatment may not be used within a bituminous shoulder where a hot longitudinal joint per 401.15 is required.
- OW-151 signs required.



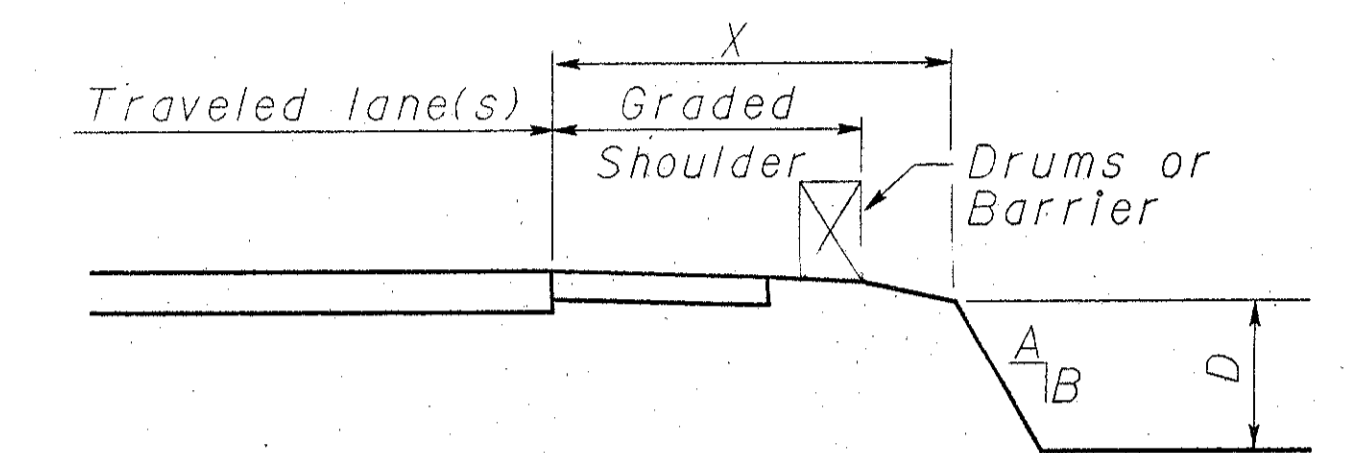
CONDITION III

DROPOFFS BEYOND GRADED SHOULDER OR BACK OF CURB

- See Note 2 under Condition II.
- Use Chart A or B below, as applicable.

CHART A

- USE FOR:
- Uncurbed Facilities.
 - Curbed Facilities, where:
 - Curbs are less than 6" in height.
 - Curbs are 6" or greater in height and the legal speed is greater than 40 mph.

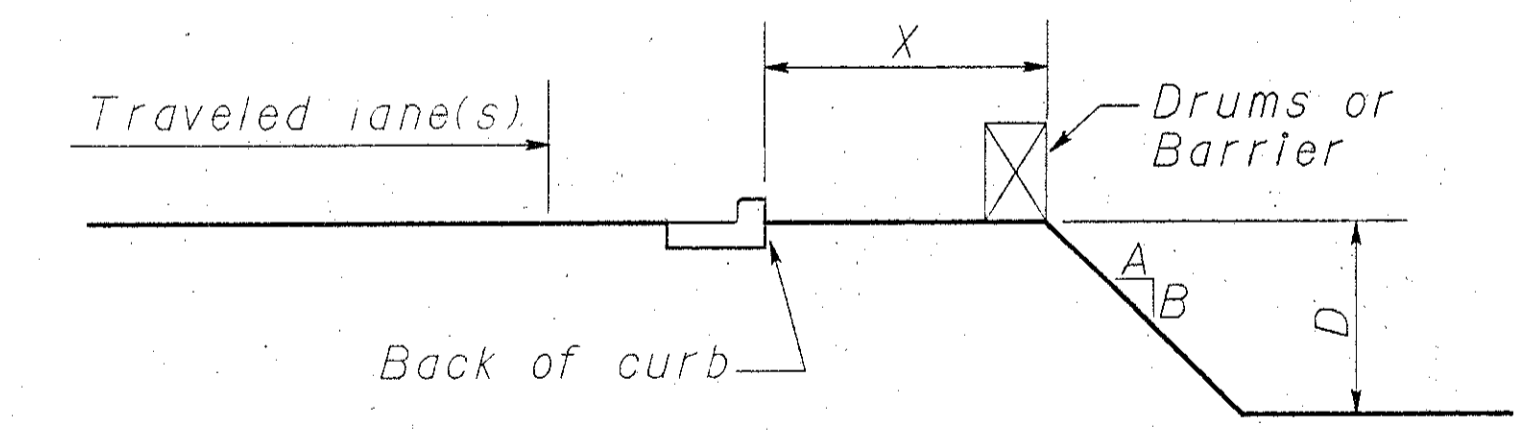


X (Ft.)	D (In.)	A/B	Treatment Required	
			Day	Night
0-4	Any	Any	(a)	(a)
4-30	Any	3:1 or Flatter	None	None
4-12	< 3	Steeper than 3:1	None	None
4-12	> 3 - < 12	Steeper than 3:1	Drums	Drums
4-12	> 12	Steeper than 3:1	Drums	Barrier
> 12 - 20	< 12	Steeper than 3:1	None	None
> 12 - 20	> 12 - < 24	Steeper than 3:1	Drums	Drums
> 12 - 20	> 24	Steeper than 3:1	Drums	Barrier
> 20 - 30	< 24	Steeper than 3:1	None	Drums
> 20 - 30	> 24	Steeper than 3:1	Drums	Barrier
> 30	Any	Any	None	None

(a) Use treatment specified under Condition II.

CHART B

- USE FOR: Curbed facilities, where the curb is 6" or greater in height and the legal speed is 40 mph or less.

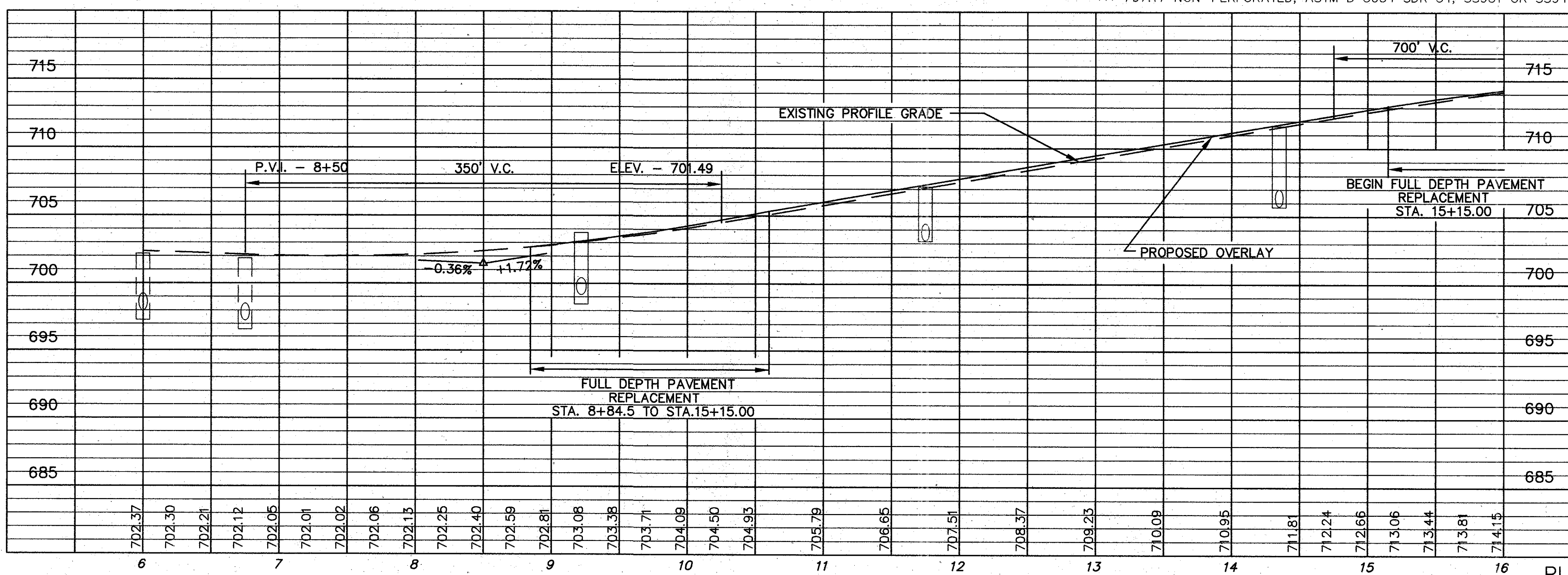
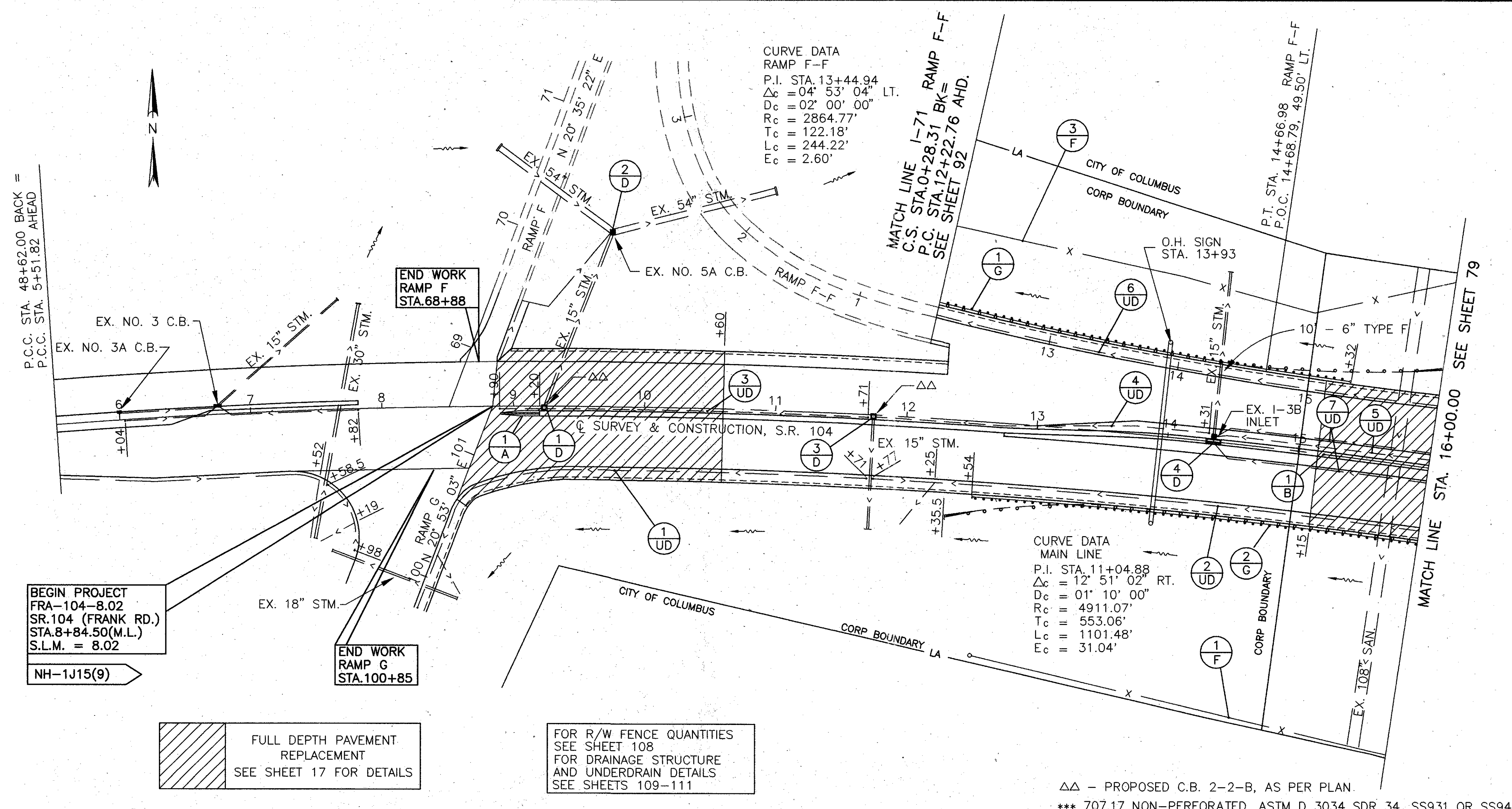


X (Ft.)	D (In.)	A/B	Treatment Required	
			Day	Night
0-10	< 12	Any	None	Drums
0-10	> 12	Any	Drums	Drums
> 10	Any	Any	None	None

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF LOCATION AND DESIGN

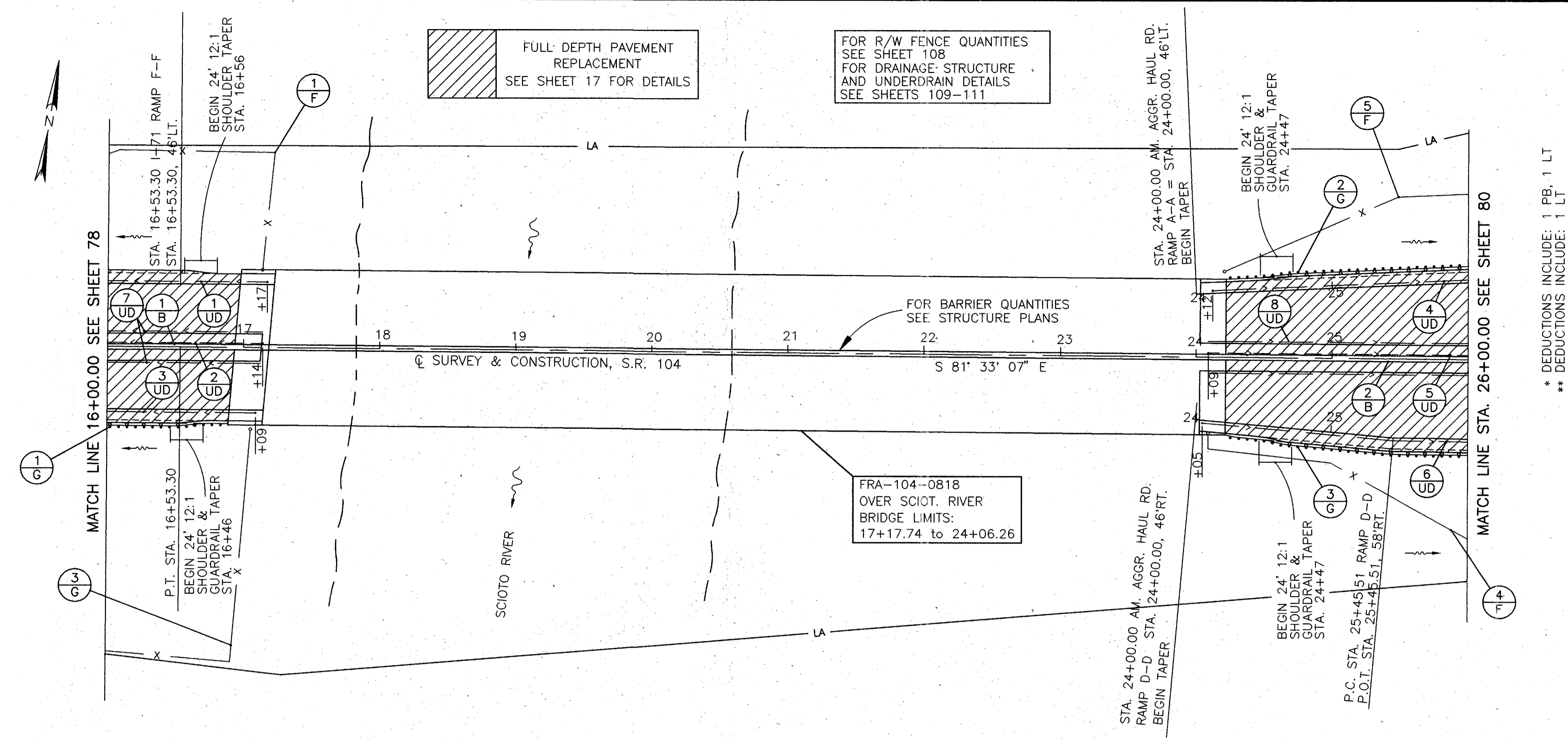
DROPOFFS IN WORK ZONES

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED

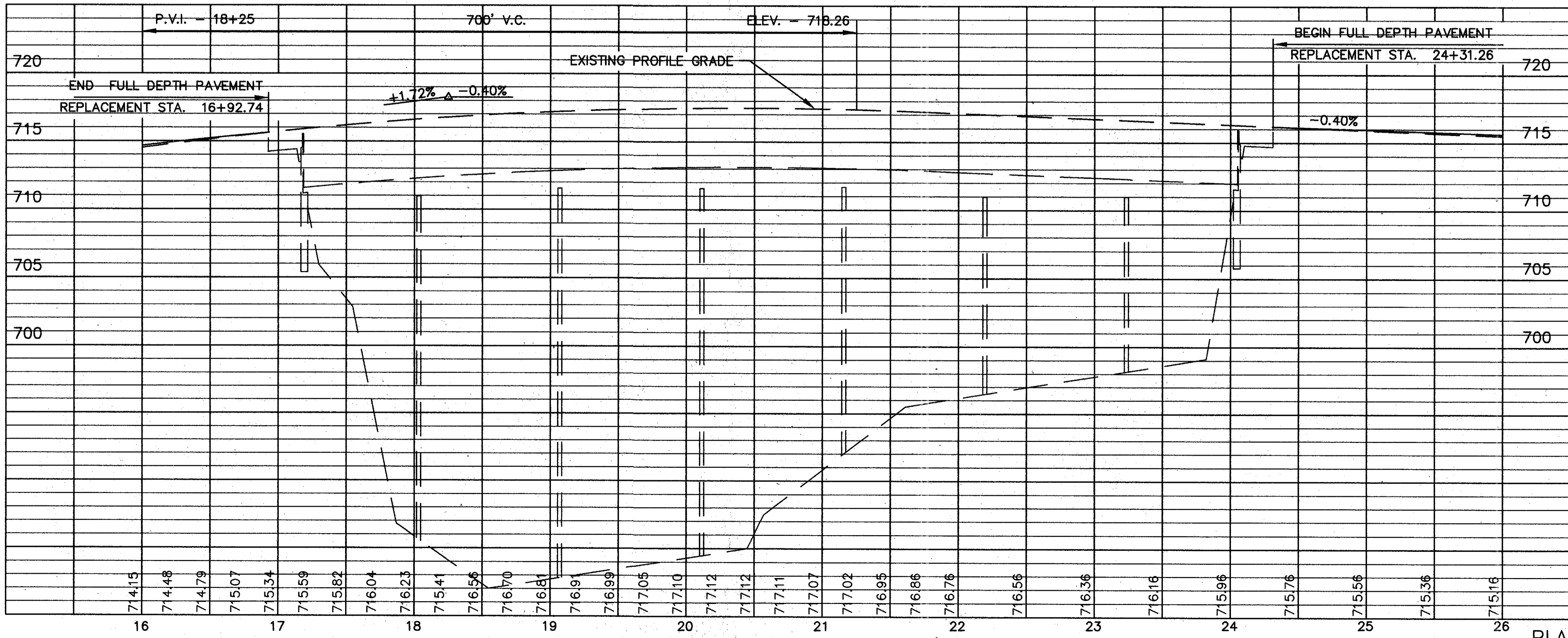


REF. NO.	STATION TO STATION	SIDE	ESTIMATED QUANTITIES		* DEDUCTIONS INCLUDE:		** AS PER PLAN										
			INLET REMOVED	GUARDRAIL REMOVED	6" SHALLOW PIPE UNDERDRAIN	SHALLOW UNDERDRAIN AS PER PLAN	GUARDRAIL TYPE 5	ANCHOR ASSEMBLY TYPE E	CONCRETE BARRIER TYPE B-50	BARRIER REFLECTOR TYPE A	BARRIER TYPE W	BARRIER TYPE Y	ADDITIONAL ATTENUATOR	SPECIAL			
1-UD	99+97	RT	1														
2-UD	11+77	RT	1														
3-UD	8+90	MED	1		257												
4-UD	11+75	MED	1		246												
5-UD	14+35	MED	1		163												
6-UD	12+23	LT	1			377											
7-UD	14+35	L&R	1			326											
1-D	9+22	MED	1														
2-D	9+75	LT	1														
3-D	11+75	MED	1														
4-D	14+35	MED	1														
1-G	12+23	LT		377													
2-G	12+35.5	RT		364.5													
1-B	9+20	MED			284.2	1											
1-A	8+90	MED			321	1											
							657.5*										
TOTALS:			3	741.5	90	1	2	1	666	1538	605.2	2	657.5	8			1

PLAN & PROFILE SR. 104 STA. 6+40.00 TO STA. 16+00.00



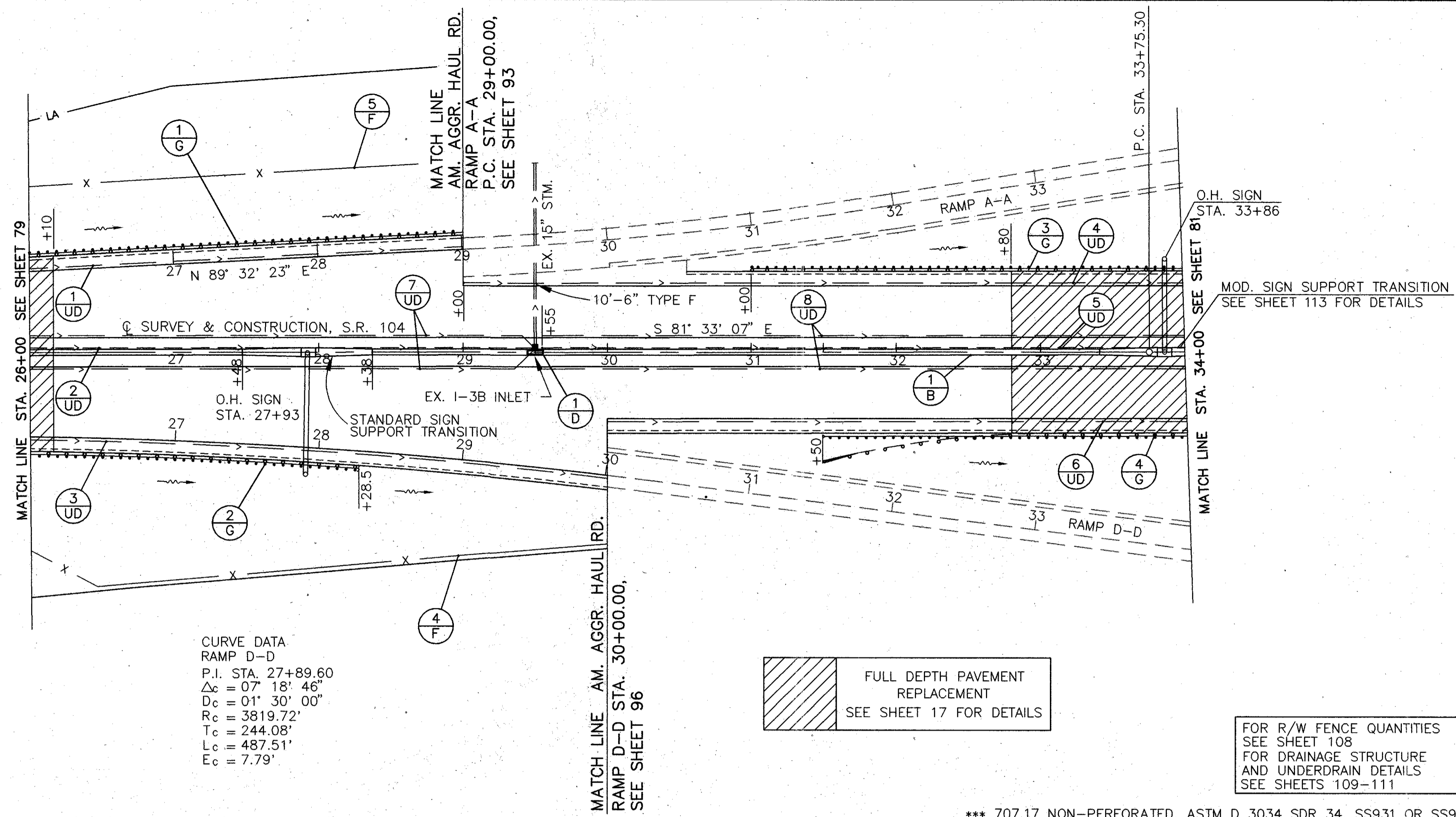
* DEDUCTIONS INCLUDE: 1 PB, 1 LT
 ** DEDUCTIONS INCLUDE: 1 LT
 *** AS PER PLAN



ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202	605	606	622	802	SEE SHEET NO.
1-UD	16+00	LT	LF	SHALLOW PIPE UNDERDRAIN	BRIDGE TERMINAL ASSEMBLY, TYPE 1	CONCRETE BARRIER TYPE B50	BARRIER REFLECTOR TYPE A	112
2-UD	16+00	MED	114	117	EACH			112
3-UD	16+00	RT		109				112
4-UD	24+12	LT		188				112
5-UD	24+09	MED		191				112
6-UD	24+05	RT		195				112
7-UD	16+00	L&R		228				112
8-UD	24+09	L&R		382				112
1-G	16+00	RT	98		1		1	
2-G	24+26	LT	174		1		2	
3-G	24+16	RT	184		1		2	
1-B	16+00	MED				112.74 *		
2-B	24+06.26	MED				191.24 **		
							TOTALS:	5

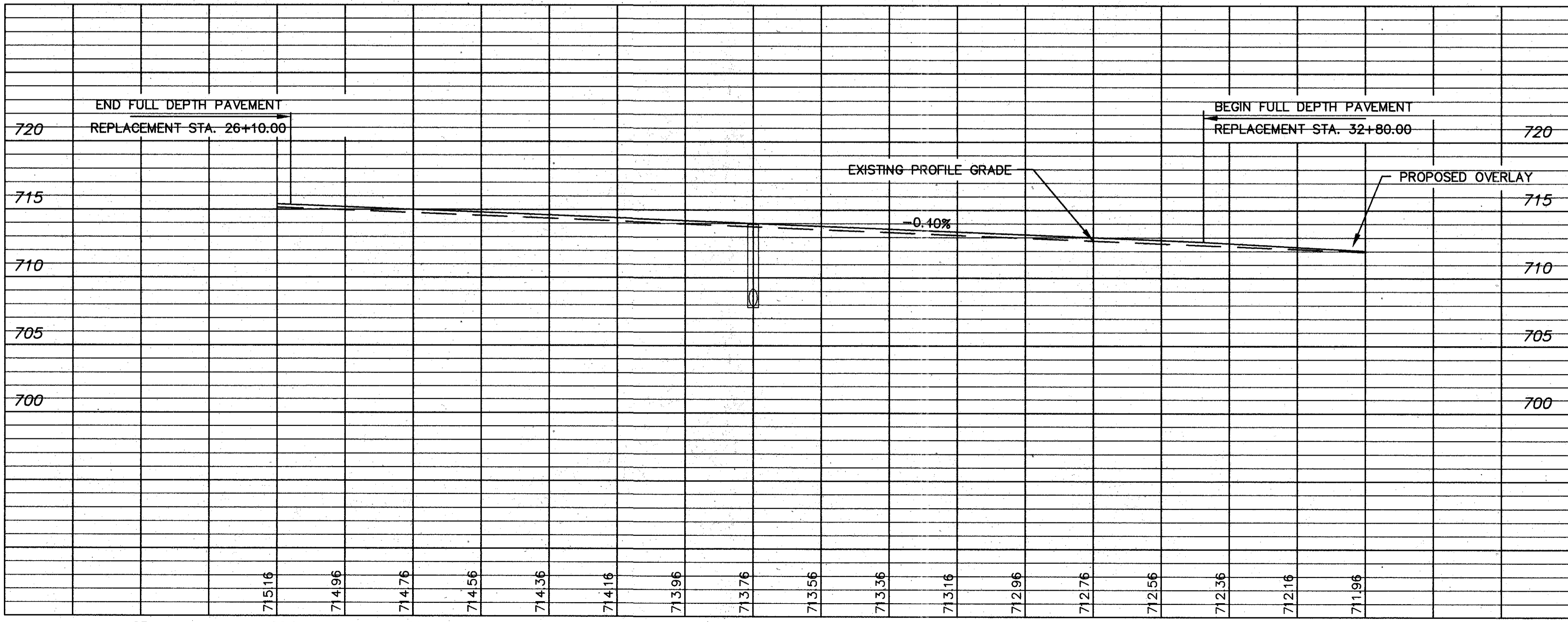
PLAN & PROFILE SR. 104 STA. 16+00.00 TO STA. 26+00.00



CURVE DATA
 RAMP D-D
 P.I. STA. 27+89.60
 $\Delta_c = 07' 18'' 46''$
 $D_c = 01' 30'' 00''$
 $R_c = 3819.72'$
 $T_c = 244.08'$
 $L_c = 487.51'$
 $E_c = 7.79'$

FULL DEPTH PAVEMENT REPLACEMENT
 SEE SHEET 17 FOR DETAILS

FOR R/W FENCE QUANTITIES
 SEE SHEET 108
 FOR DRAINAGE STRUCTURE
 AND UNDERDRAIN DETAILS
 SEE SHEETS 109-111



ESTIMATED QUANTITIES

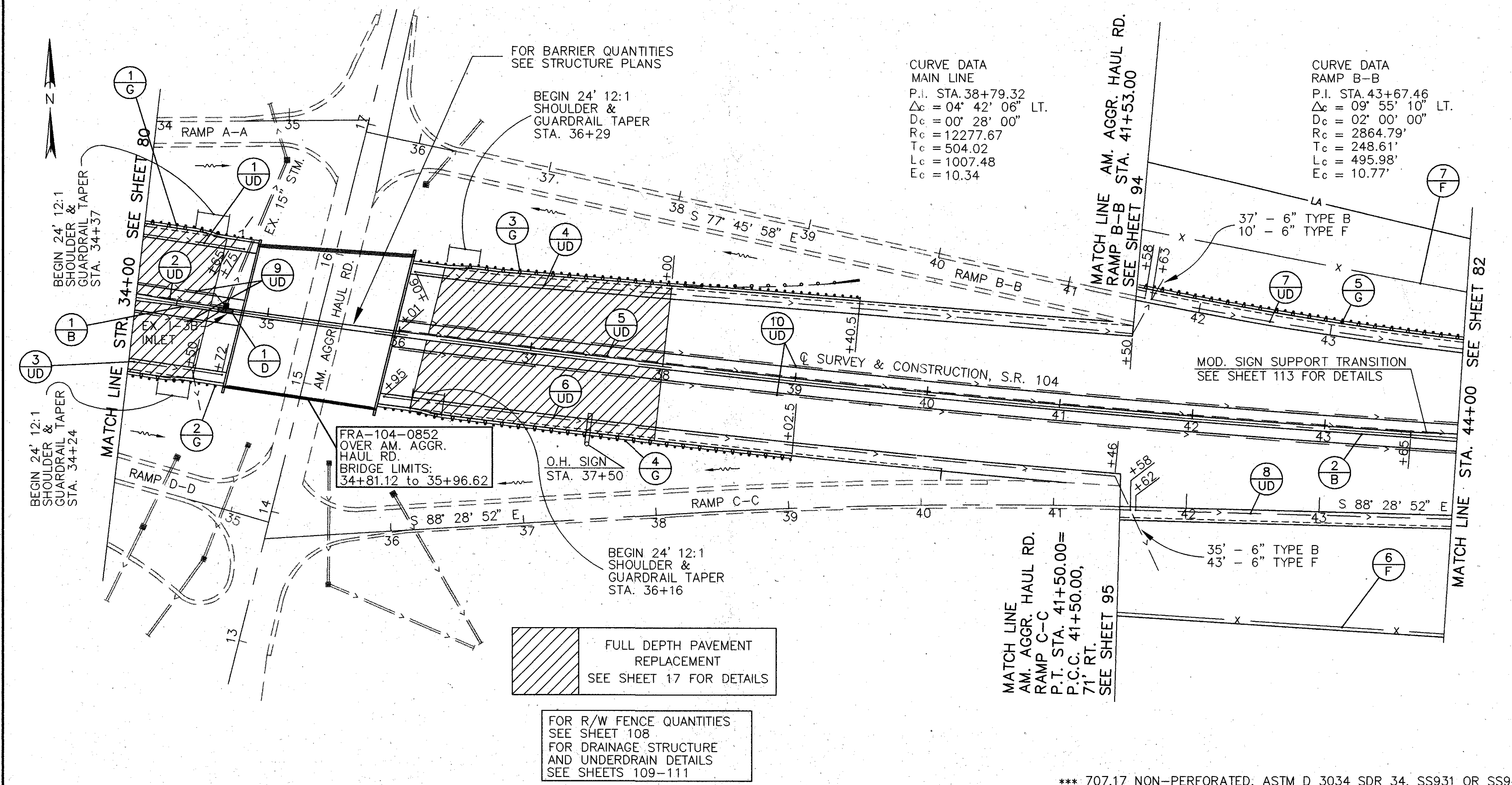
* DEDUCTIONS INCLUDE: 2 SIGNS, 2 PB'S, 5 L'S, 1 INLET.

REF. NO.	STATION TO STATION	SIDE	INLET REMOVED EACH	GUARDRAIL REMOVED LF	6" CONDUIT, INLET 3B-50 *** LF	6" SHALLOW PIPE UNDERDRAIN LF	SHALLOW UNDERDRAIN AS PER PLAN LF	GUARDRAIL TYPE 5 LF	ANCHOR ASSEMBLY TYPE E LF	CONCRETE BARRIER REFLECTOR TYPE B50	802 BARRIER REFLECTOR TYPE A	SEE SHEET NO.									
1-UD	26+00	LT					300					112									
2-UD	26+00	MED			10	350						112									
3-UD	26+00	RT					400					112									
4-UD	29+00	LT				445						112									
5-UD	29+55	MED					400					112									
6-UD	30+00	RT			20		700					112									
7-UD	26+00	L&R					880					112									
8-UD	29+55	L&R										112									
1-D	29+50	MED	1																		
1-G	26+00	LT		300				300													
2-G	26+00	RT		228.5				216			4										
3-G	31+00	LT		300				287.5	1		3										
4-G	31+50	RT		250				225	1		3										
1-B	26+00	MED							1	742.5 *											
TOTALS:											1	1078.5	40	1	795	3080	1028.5	1	2	742.5	14

** AS PER PLAN

PLAN & PROFILE SR. 104 STA. 26+00.00 TO STA. 34+00.00

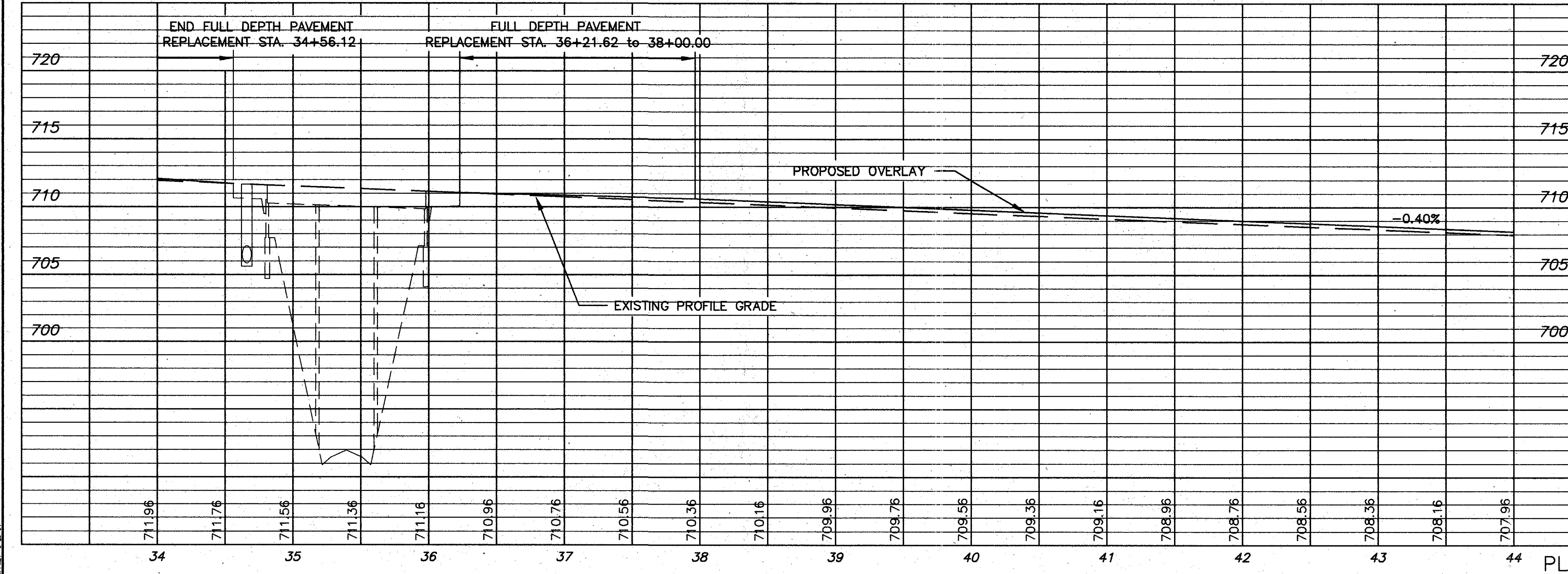
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 DATE: 8/15/94
 CHECKED BY: LWB
 DATE: 8/15/94

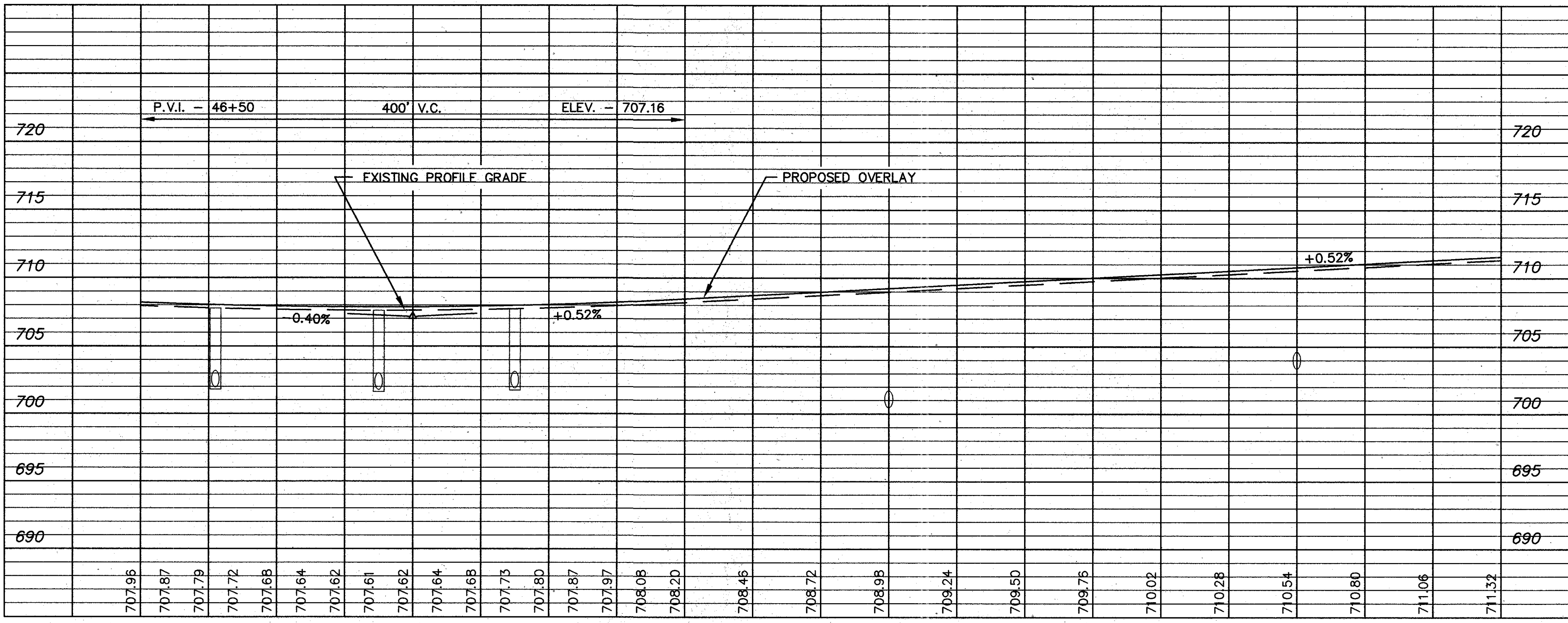
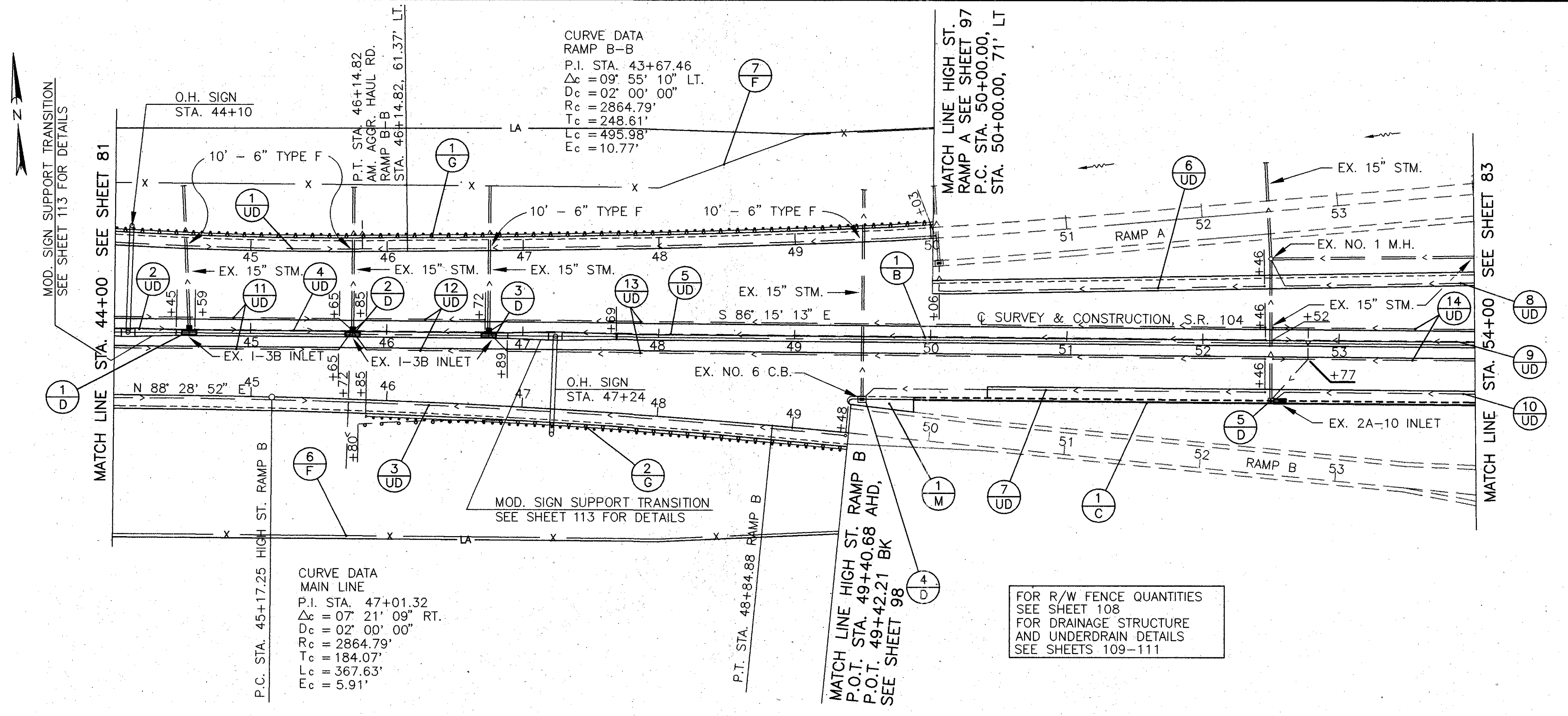


* DEDUCTIONS INCLUDE: 1 SIGN, 1 LT., 1 INLET
 ** DEDUCTIONS INCLUDE: 2 PB'S, 6 LTS
 *** AS PER PLAN

ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 INLET REMOVED		6" CONDUIT, TYPE F ***	603 6" INLET CONDUIT TYPE B		604 INLET 3B-50	605 6" SHALLOW UNDERDRAIN		SHALLOW UNDERDRAIN	606 ANCHOR ASSEMBLY		BRIDGE TERM. ASSEMBLY TYPE 1	CONCRETE BARRIER TYPE B50	802 BARRIER REFLECTOR TYPE A
			EACH	LF		LF	LF		LF	EACH		EACH	LF			
1-UD	34+00	34+75	LT		10			83								
2-UD	34+00	34+66	MED		10			56								
3-UD	34+00	34+72	RT		10			84								
4-UD	36+06	41+70	LT		10	37		544								
5-UD	36+01	44+00	MED					799								
6-UD	35+95	41+84	RT		43	35		551								
7-UD	41+63	44+00	LT					237								
8-UD	41+62	44+00	RT		20			238								
9-UD	34+00	34+66	L&R					112								
10-UD	36+01	44+00	L&R					1598								
1-D	34+66		MED	1												
1-G	34+00	34+87	LT													
2-G	34+00	34+75	RT					62								
3-G	36+03	39+40.5	LT					50								
4-G	35+90	39+02.5	RT					287.5								
5-G	36+01	44+00	LT					275								
1-B	34+00	34+81.12	MED													
2-B	35+96.62	44+00	MED													
TOTALS:																
																921.5
																855
																3447
																1
																1059
																72
																103
																70
																715
																720



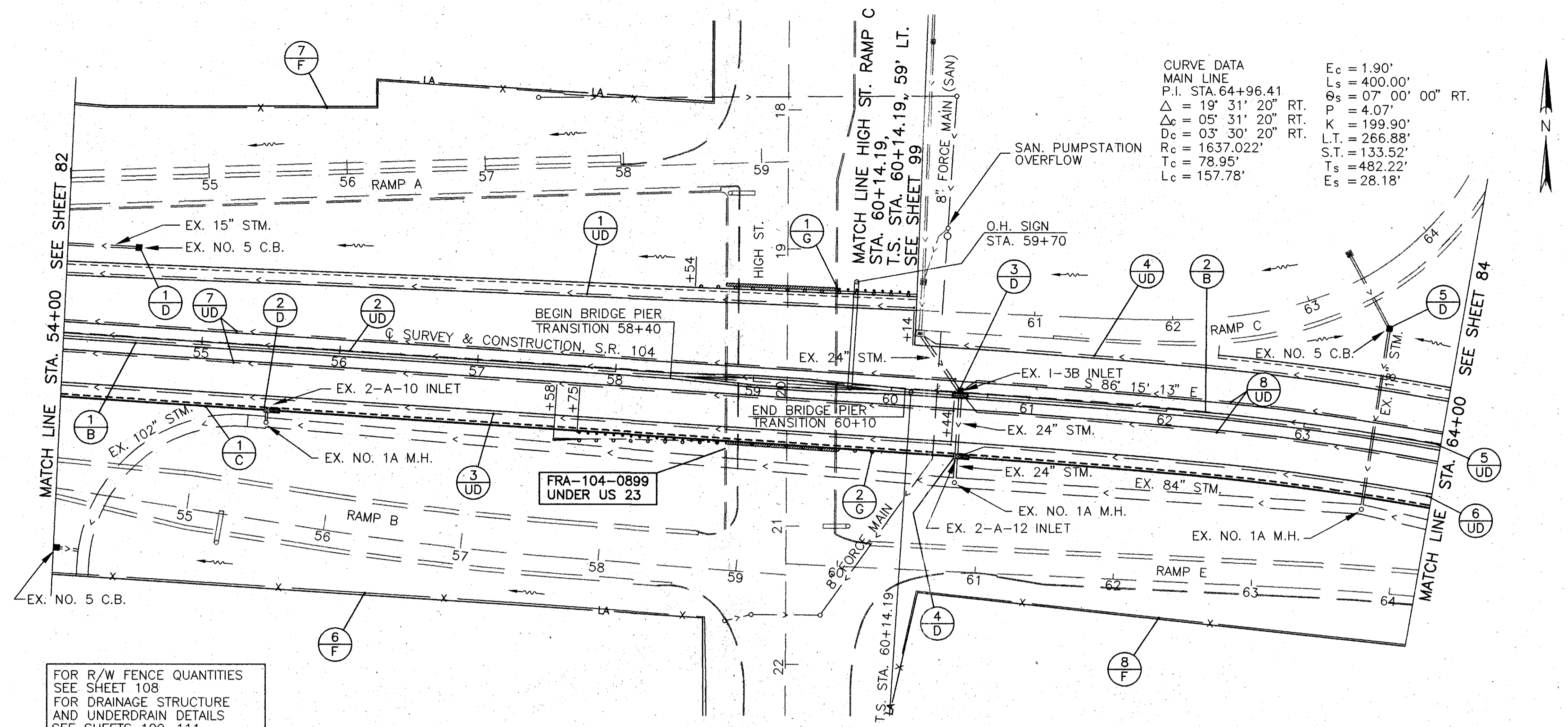


ESTIMATED QUANTITIES

* DEDUCTIONS INCLUDE: 2 SIGNS, 1 PB, 7 LTS, 3 INLETS ** AS PER PLAN

REF. NO.	STATION TO STATION	SIDE	202		603		604		605		606		609		612		622		SEE SHEET NO.		
			INLET	GUARDRAIL	CONCRETE	CONCRETE	SHALLOW	GUARDRAIL	ANCHOR	CURB	CONCRETE	CONCRETE	CONCRETE	CONCRETE	CONCRETE	CONCRETE	CONCRETE	CONCRETE		CONCRETE	CONCRETE
1-UD	44+00	50+03	LT																		
2-UD	44+00	44+55	MED																		
3-UD	44+00	49+48	RT																		
4-UD	44+59	46+72	MED																		
5-UD	46+75	52+46	MED																		
6-UD	50+06	52+46	LT																		
7-UD	49+50	52+46	RT																		
8-UD	52+50	54+00	LT																		
9-UD	52+52	54+00	MED																		
10-UD	52+50	54+00	RT																		
11-UD	44+00	45+60	L&R																		
12-UD	45+85	46+72	L&R																		
13-UD	46+89	52+46	L&R																		
14-UD	52+52	54+00	L&R																		
1-D	44+55		MED	1																	
2-D	45+75		MED	1																	
3-D	46+75		MED	1																	
4-D	49+50		RT		1																
5-D	52+50		RT			1															
1-G	44+00	50+00	LT																		
2-G	45+80	49+40.68	RT																		
1-B	44+00	54+00	MED																		
1-M	49+40.68	49+88	RT																		
1-C	49+88	54+00	RT																		
			TOTALS:	3	960.68	412	33	200	51	1	1	1	3	948	3890	930.68	1	412	11	900	12

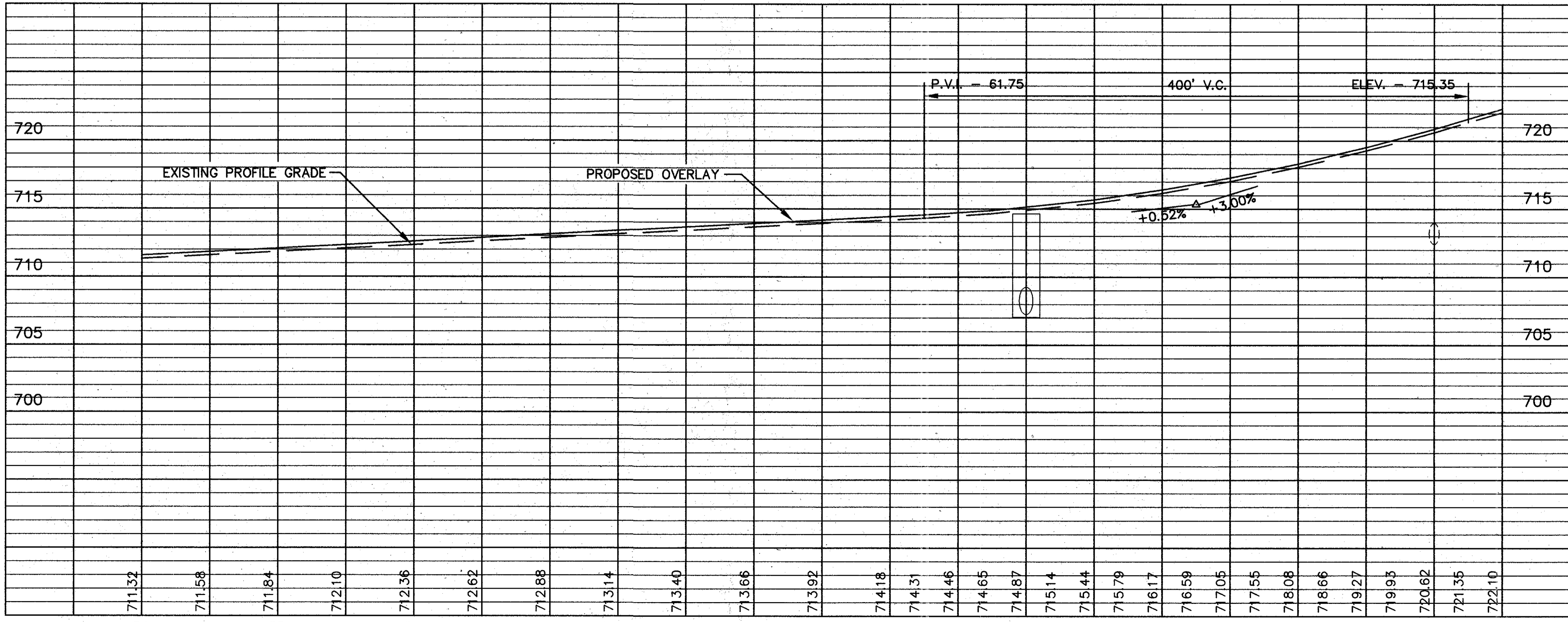
PLAN & PROFILE SR. 104 STA. 44+00.00 TO STA. 54+00.00



CURVE DATA
 MAIN LINE
 P.I. STA. 64+96.41
 $\Delta = 19^\circ 31' 20''$ RT.
 $\Delta_c = 05^\circ 31' 20''$ RT.
 $\Delta_s = 03^\circ 30' 20''$ RT.
 $R_c = 1637.022'$
 $T_c = 78.95'$
 $L_c = 157.78'$
 $E_c = 1.90'$
 $L_s = 400.00'$
 $\phi_s = 07^\circ 00' 00''$ RT.
 $P = 4.07'$
 $K = 199.90'$
 $L.T. = 266.88'$
 $S.T. = 133.52'$
 $T_s = 482.22'$
 $E_s = 28.18'$

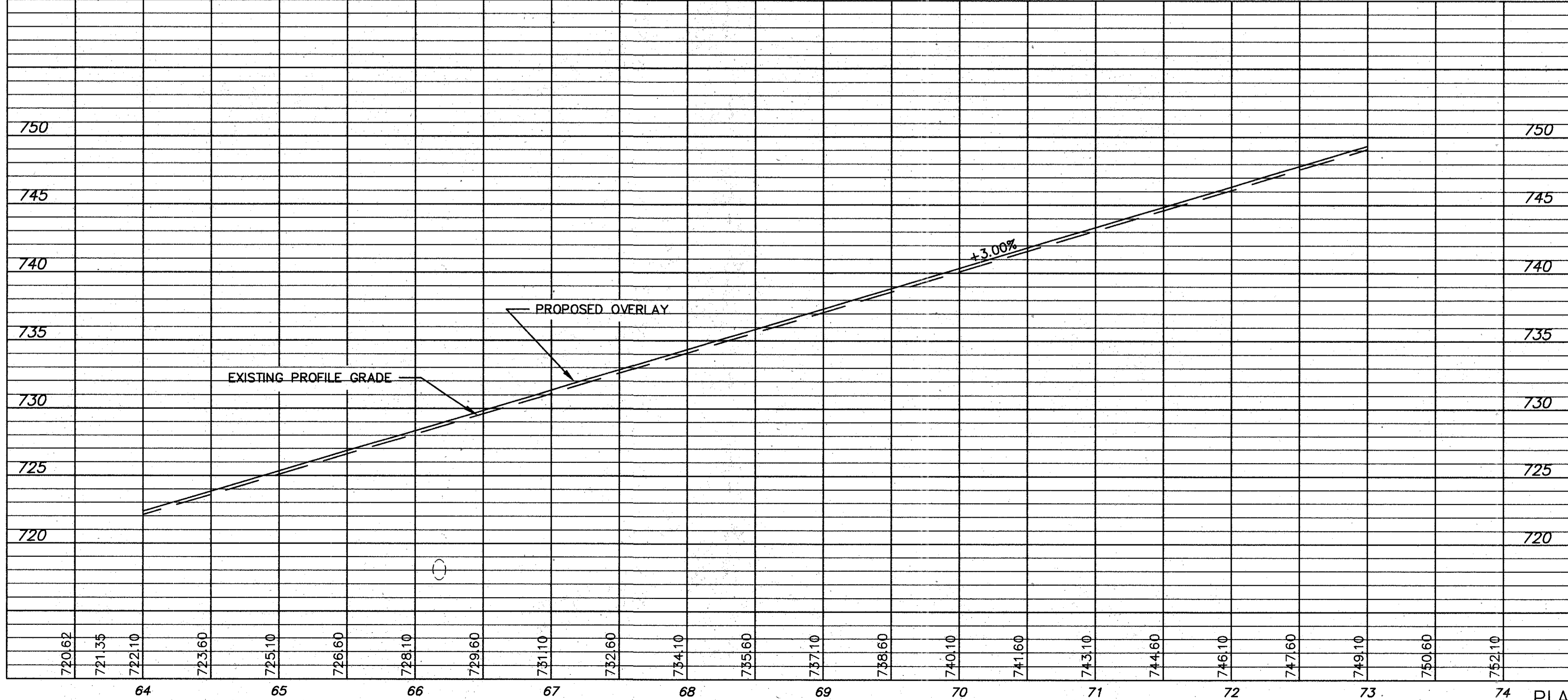
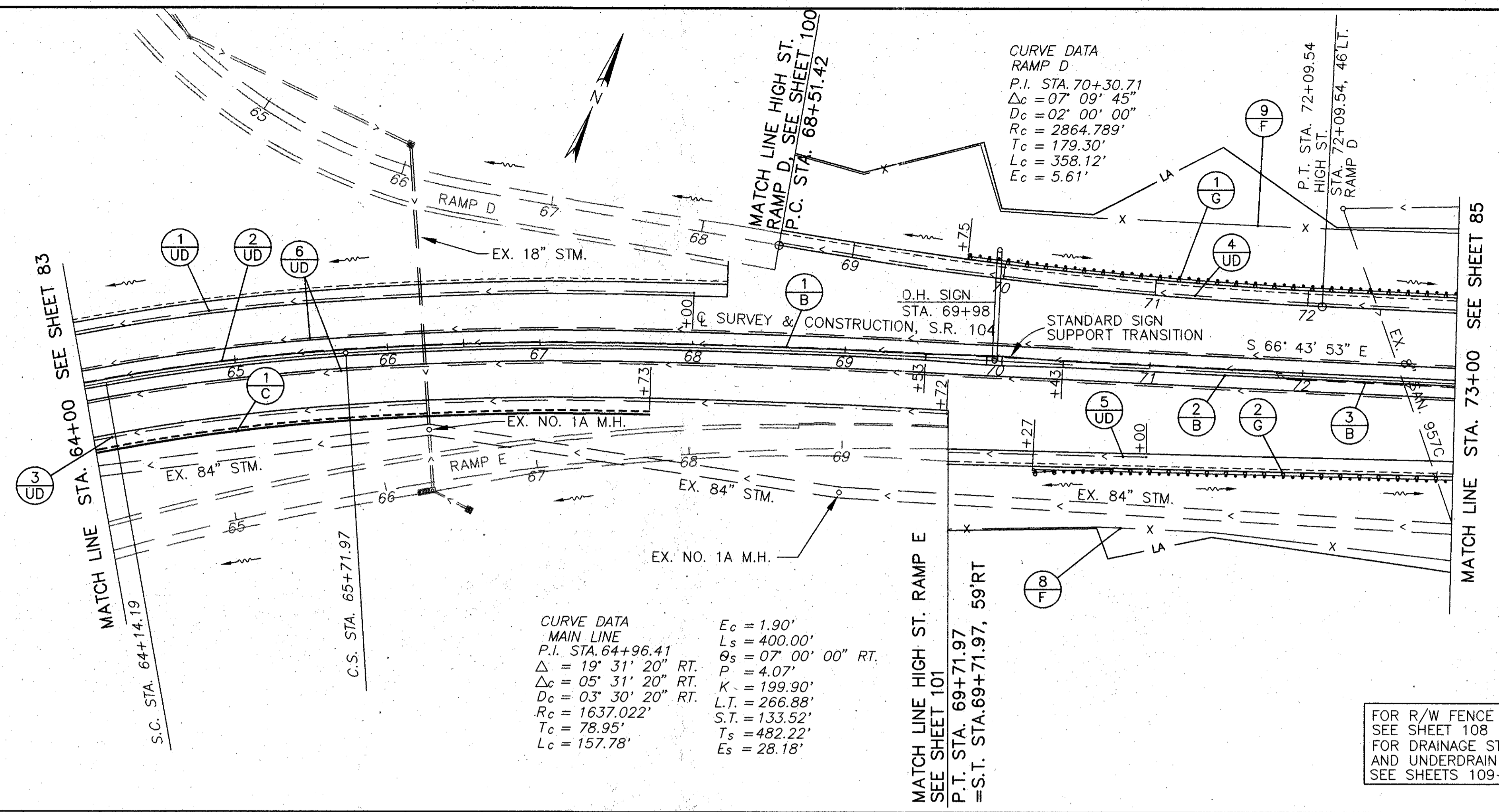
FOR R/W FENCE QUANTITIES
 SEE SHEET 108
 FOR DRAINAGE STRUCTURE
 AND UNDERDRAIN DETAILS
 SEE SHEETS 109-111

*** 707.17 NON-PERFORATED, ASTM D 3034 SDR 34, SS931 OR SS944
 * SHALLOW PIPE



REF. NO.	STATION TO STATION	SIDE	202		603		604		605		606		609		622		802	
			INLET	GUARDRAIL REMOVED	6" CONDUIT TYPE F	** C.B. ADJUSTED TO GRADE	INLET RECONSTRUCTED TO GRADE	6" UNDERDRAIN AS PER PLAN	SHALLOW UNDERDRAIN	GUARDRAIL TYPE 5	ANCHOR BRIDGE TERMINAL ASSEMBLY TYPE E	CURB TYPE 6	CONCRETE BARRIER TYPE	DI B50 (50" A(W) B(W)	REFLECTOR EACH	REFLECTOR EACH	REFLECTOR EACH	REFLECTOR EACH
1-UD	54+00	60+14	LT															
2-UD	54+00	60+44	MED															
3-UD	54+00	60+44	RT															
4-UD	60+18	64+00	LT		10													
5-UD	60+50	64+00	MED		10													
6-UD	60+50	64+00	RT		10													
7-UD	54+00	60+44	L&R		20													
8-UD	60+50	64+00	L&R															
1-D	54+50		LT															
2-D	55+50		RT															
3-D	60+50		MED	1														
4-D	60+50		RT															
5-D	63+50		LT															
1-G	58+54	60+00	LT															
2-G	57+58	59+95.5	RT															
1-B	54+00	58+64	MED															
2-B	58+64	64+00	MED															
1-C	54+00	64+00	RT															
			TOTALS:	1	383.5	1000												

PLAN & PROFILE SR. 104 STA. 54+00.00 TO STA. 64+00.00



ESTIMATED QUANTITIES

* DEDUCTIONS INCLUDE: 1 PB, 6 LTS, 1 SIGN

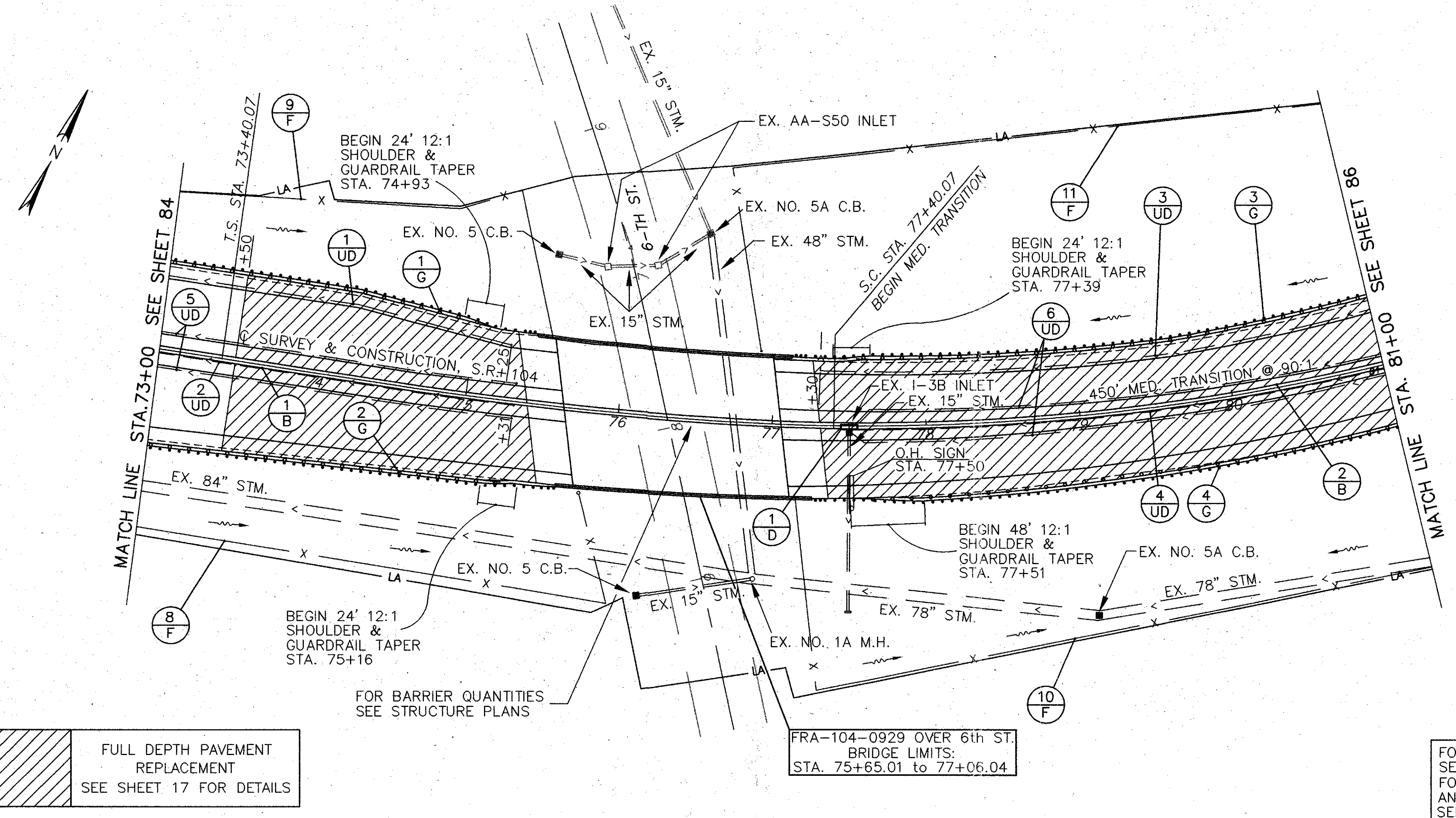
REF. NO.	STATION TO STATION	SIDE	202		605		606		609		622		802		SEE SHEET NO.
			GUARDRAIL REMOVED	CURB REMOVED	6" SHALLOW UNDERDRAIN	SHALLOW UNDERDRAIN AS PER PLAN	GUARDRAIL TYPE 5	ANCHOR ASSEMBLY TYPE E	CURB TYPE 6	CONCRETE BARRIER B50 C50 AS PER PLAN	CONCRETE BARRIER TYPE A	GUARDRAIL TYPE 5	SHALLOW UNDERDRAIN AS PER PLAN	GUARDRAIL TYPE 5	
1-UD	64+00	LT				400								112	
2-UD	64+00	MED			900									112	
3-UD	64+00	RT				572								112	
4-UD	68+51	LT				449								112	
5-UD	69+72	RT				128								112	
5-UD	64+00	L&R				1800								112	
1-G	69+75	LT	325				312.5	1							
2-G	70+27	RT	273				248	1							
1-B	64+00	MED												6	
2-B	71+22	MED									68	697*		6	
3-B	71+90	MED										107.5*		6	
1-C	64+00	RT		373											
TOTALS:			598	373		3349	900	560.5	1	1	373	68	804.5	7	

PLAN & PROFILE SR. 104 STA. 64+00.00 TO STA. 73+00.00

MAINLINE
 CURVE DATA
 P.I. STA. 81+23.71
 $\Delta = 44^\circ 13' 00''$ LT.
 $\Delta_c = 28^\circ 13' 00''$ LT.
 $D_c = 04' 00' 00''$ LT.
 $R_c = 1432.394'$
 $T_c = 360.01'$
 $L_c = 705.42'$
 $E_c = 44.55'$
 $L_s = 400.00'$
 $\theta_s = 08^\circ 00' 00''$
 $P = 4.65'$
 $K = 199.87'$
 $L.T. = 266.94'$
 $S.T. = 133.58'$
 $T_s = 783.64'$
 $E_s = 118.70'$

* DEDUCTIONS INCLUDE: 2 LTS
 ** DEDUCTIONS INCLUDE: 1 PB, 3 LTS, 1 INLET

REF. NO.	STATION TO STATION	SIDE	INLET REMOVED	GUARDRAIL REMOVED	6" CONDUIT, TYPE F ***	6" SHALLOW DRAIN	605 SHALLOW UNDERDRAIN	606 GUARDRAIL TYPE 5	606 BRIDGE TERM. CONCRETE BARRIER TYPE C50	622 BARRIER REFLECTOR TYPE A	SEE SHEET NO.
1-UD	73+00	LT									112
2-UD	73+00	MED				231	225				112
3-UD	77+30	LT			25	340					112
4-UD	77+50	MED			10	462					112
5-UD	73+00	L&R			20	680					112
6-UD	77+50	L&R									112
1-D	77+50	MED	1								
1-G	73+00	LT		242.17				217.17	1		
2-G	73+00	RT		264.27				239.27	1	3	
3-G	77+11.51	LT		388.49				363.49	1	3	
4-G	77+27.51	RT		372.49				347.49	1	4	
1-B	73+00	MED									6
2-B	77+06.04	MED									6
											260.01 *
											363.96 **
											623.97
											14
TOTALS:											

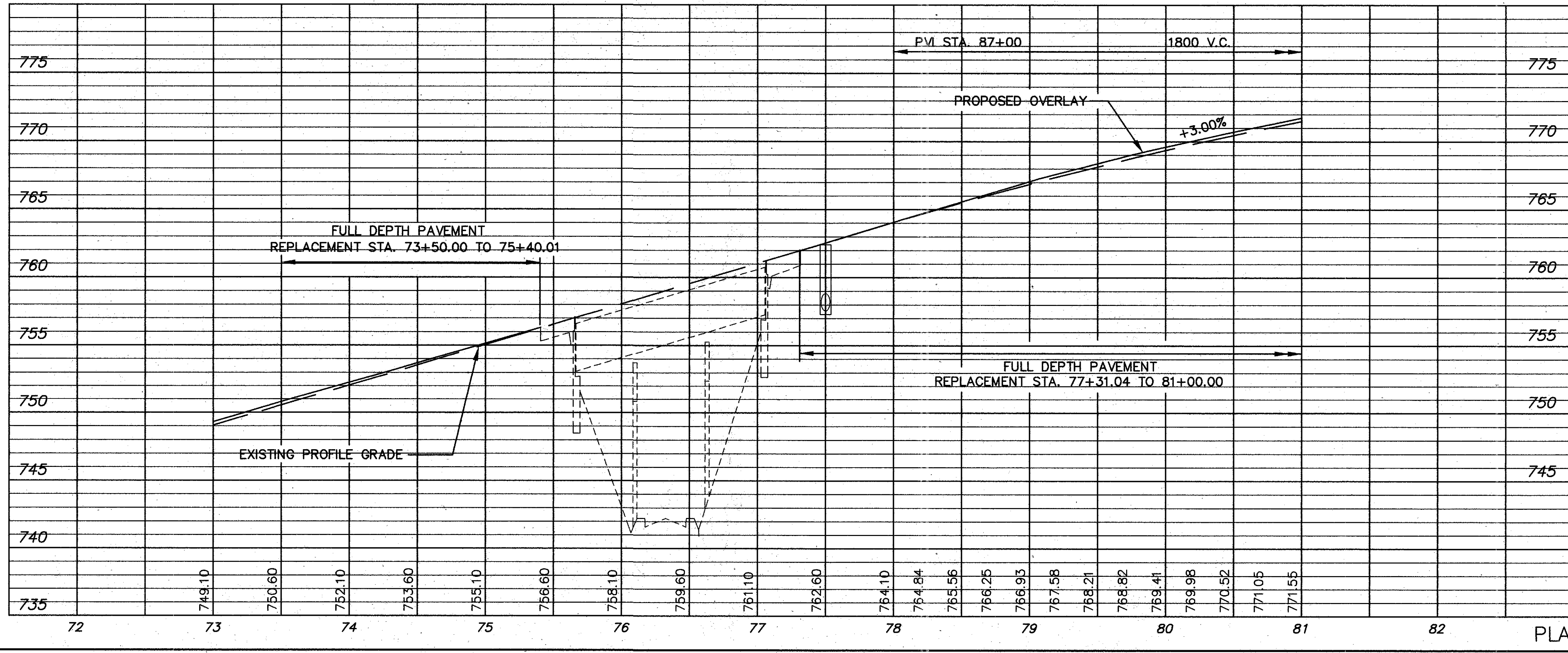


FULL DEPTH PAVEMENT REPLACEMENT SEE SHEET 17 FOR DETAILS

FRA-104-0929 OVER 6th ST. BRIDGE LIMITS: STA. 75+65.01 TO 77+06.04

FOR R/W FENCE QUANTITIES SEE SHEET 108 FOR DRAINAGE STRUCTURE AND UNDERDRAIN DETAILS SEE SHEETS 109-111

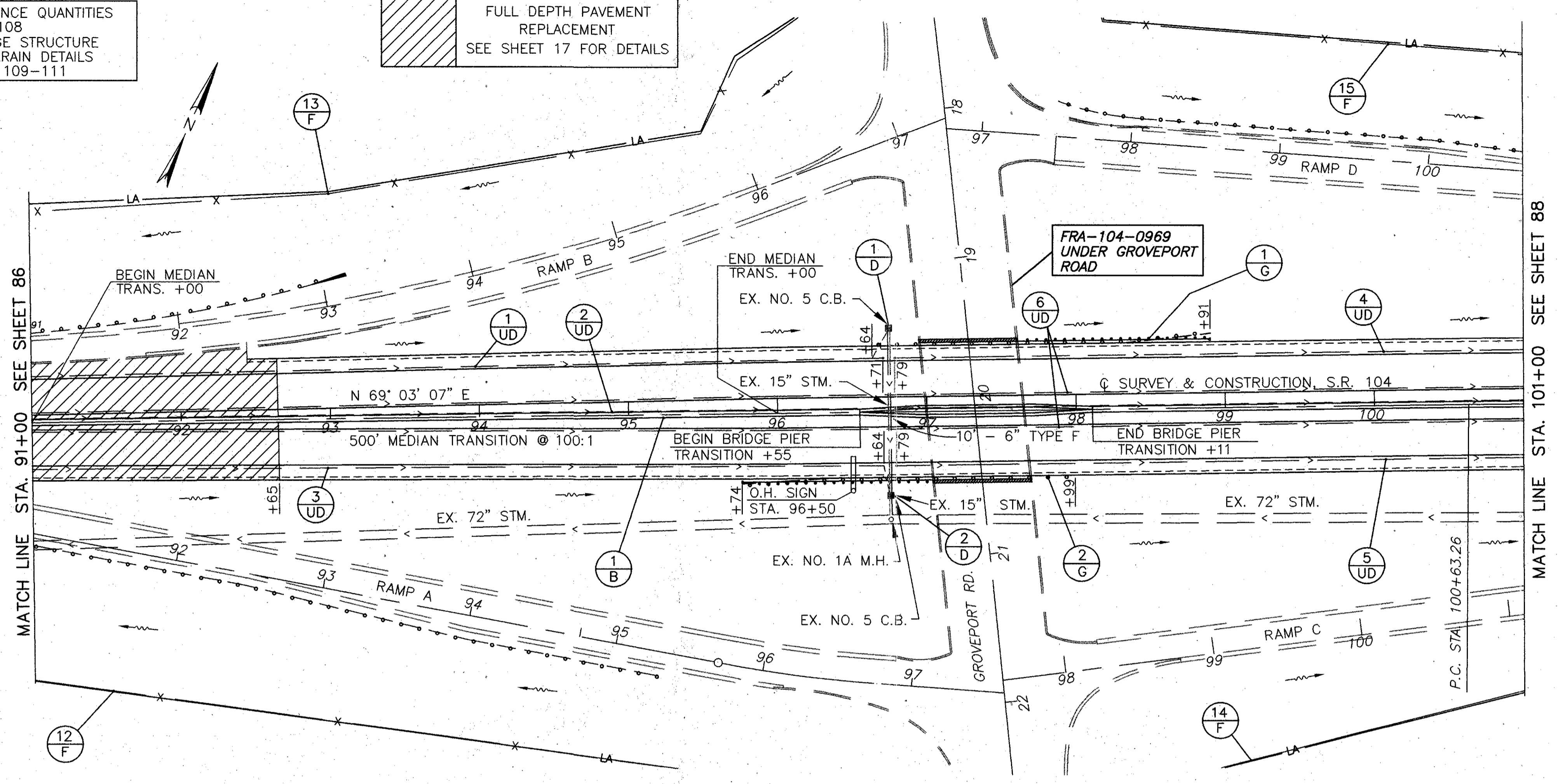
*** 707.17 NON-PERFORATED, ASTM D 3034 SDR 34, SS931 OR SS944



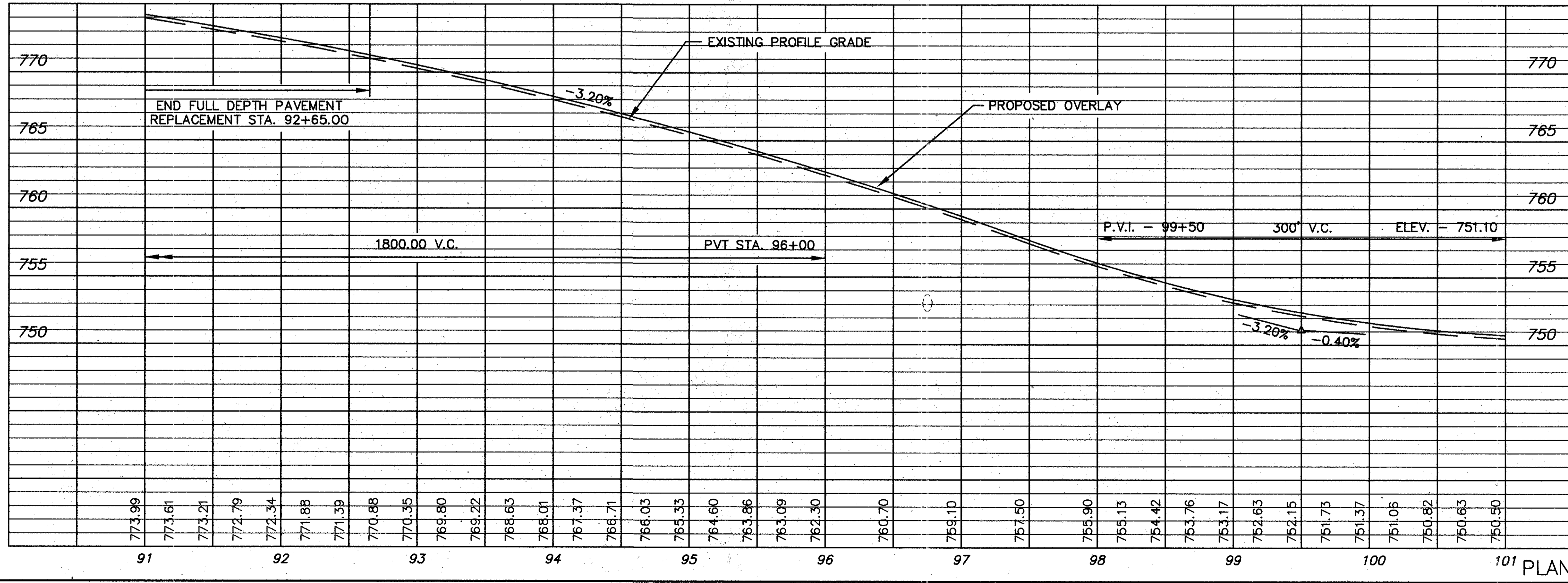
PLAN & PROFILE SR. 104 STA. 73+00.00 TO STA. 81+00.00

FOR R/W FENCE QUANTITIES SEE SHEET 108
 FOR DRAINAGE STRUCTURE AND UNDERDRAIN DETAILS SEE SHEETS 109-111

FULL DEPTH PAVEMENT REPLACEMENT SEE SHEET 17 FOR DETAILS



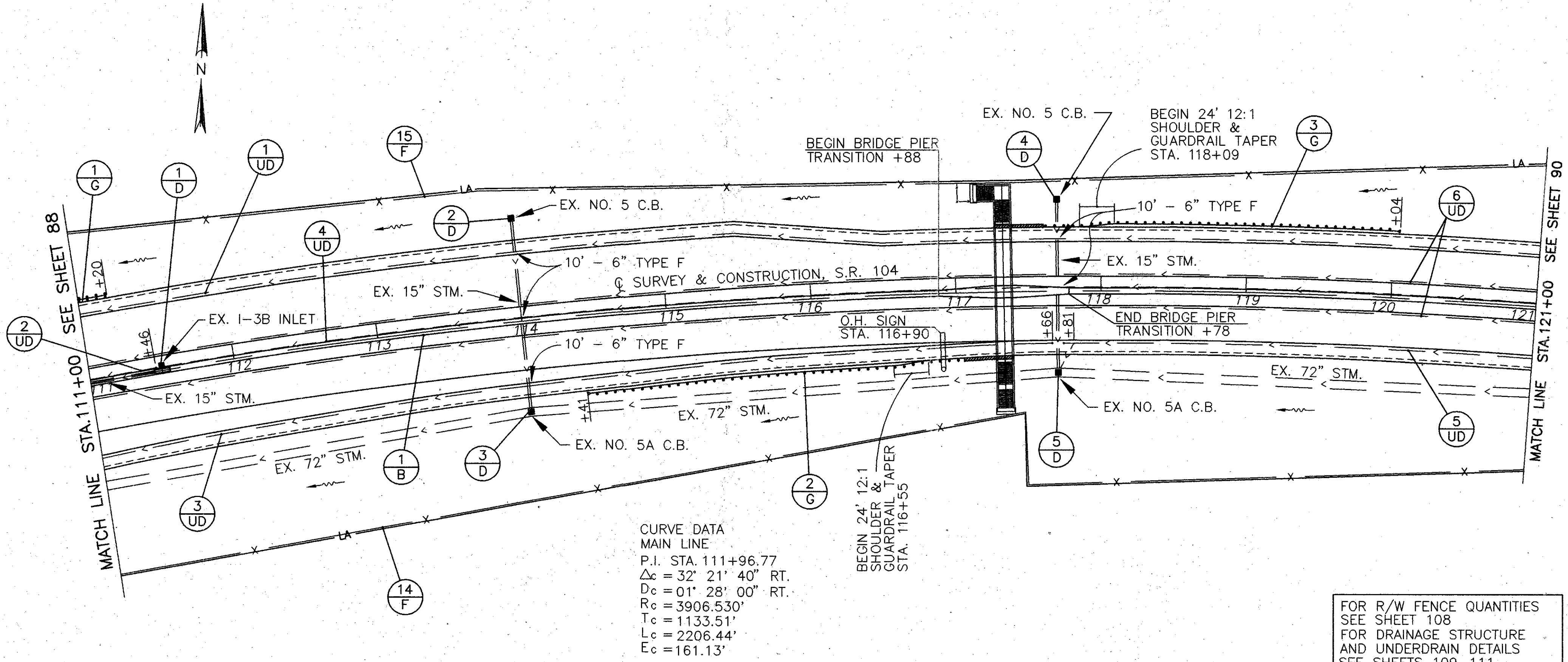
*** 707.17 NON-PERFORATED, ASTM D 3034 SDR 34, SS931 OR SS944



* DEDUCTIONS INCLUDED: 1 PB, 7 LTS

REF. NO.	STATION TO STATION	SIDE	202 GUARDRAIL REMOVED		603 6" CONDUIT TYPE F ***		604 C.B. ADJUSTED TO GRADE AS PER PLAN		605 SHALLOW UNDERDRAIN AS PER PLAN		606 GUARDRAIL TYPE 5		606 ANCHOR ASSEMBLY TYPE E		606 BRIDGE TERM. ASSEMBLY TYPE 1		622 CONC. BARR. REFLECTOR TYPE D		802 BARRIER REFLECTOR A(W) B(W)	
			LF	RT	LF	RT	LF	RT	LF	RT	LF	RT	LF	RT	LF	RT	LF	RT	LF	RT
1-UD	91+00	LT			10				582											
2-UD	91+00	MED			10				1000											
3-UD	91+00	RT			10				582											
4-UD	96+79	LT							421											
5-UD	96+79	RT							421											
	91+00	L&R							2000											
1-D	96+75	LT					1													
2-D	96+75	RT					1													
1-G	96+66	LT		225							78									
2-G	95+74	RT		225							78									
1-B	91+00	MED																		
			TOTALS:		450	30	2	1000	4006	156	2	2	134	980	4	2				

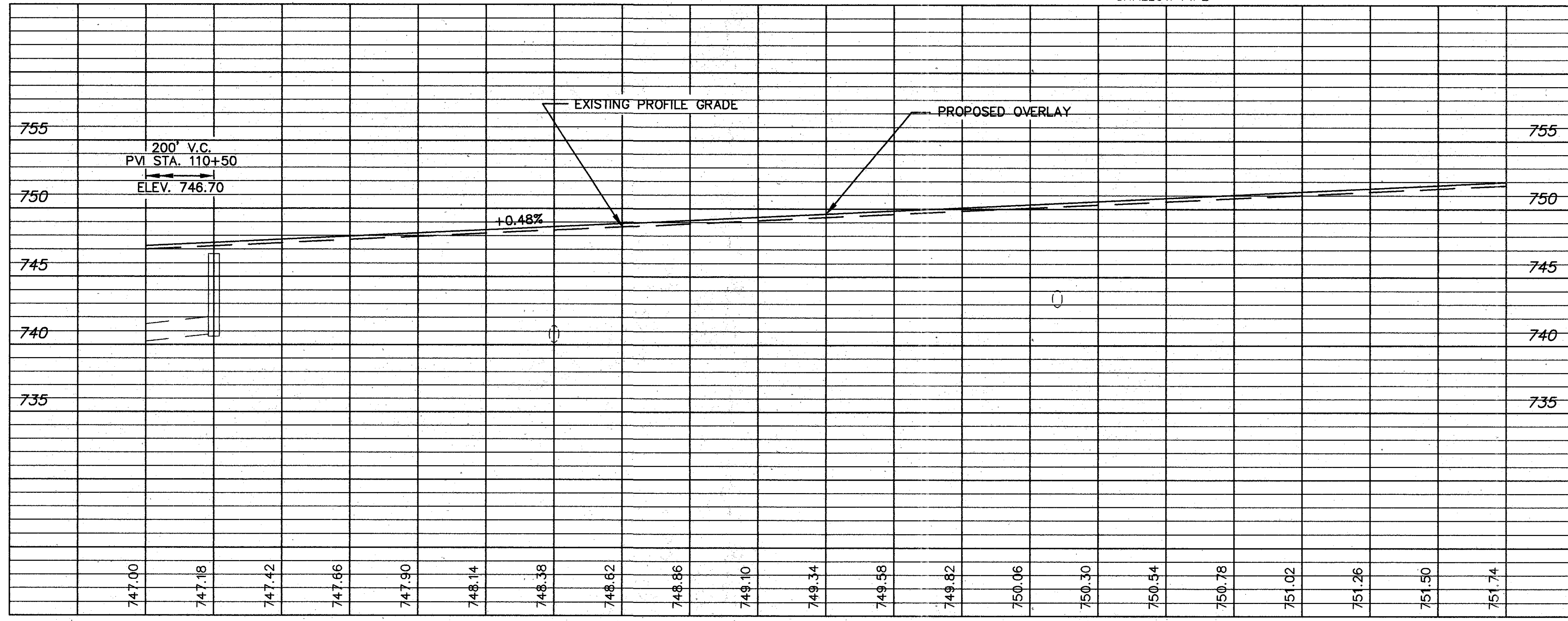
PLAN & PROFILE SR. 104 STA. 91+00.00 TO STA. 101+00.00



CURVE DATA
 MAIN LINE
 P.I. STA. 111+96.77
 $\Delta_c = 32^\circ 21' 40''$ RT.
 $D_c = 01' 28' 00''$ RT.
 $R_c = 3906.530'$
 $T_c = 1133.51'$
 $L_c = 2206.44'$
 $E_c = 161.13'$

FOR R/W FENCE QUANTITIES
 SEE SHEET 108
 FOR DRAINAGE STRUCTURE
 AND UNDERDRAIN DETAILS
 SEE SHEETS 109-111

*** 707.17 NON-PERFORATED, ASTM D 3034 SDR 34, SS931 OR SS944
 * SHALLOW PIPE

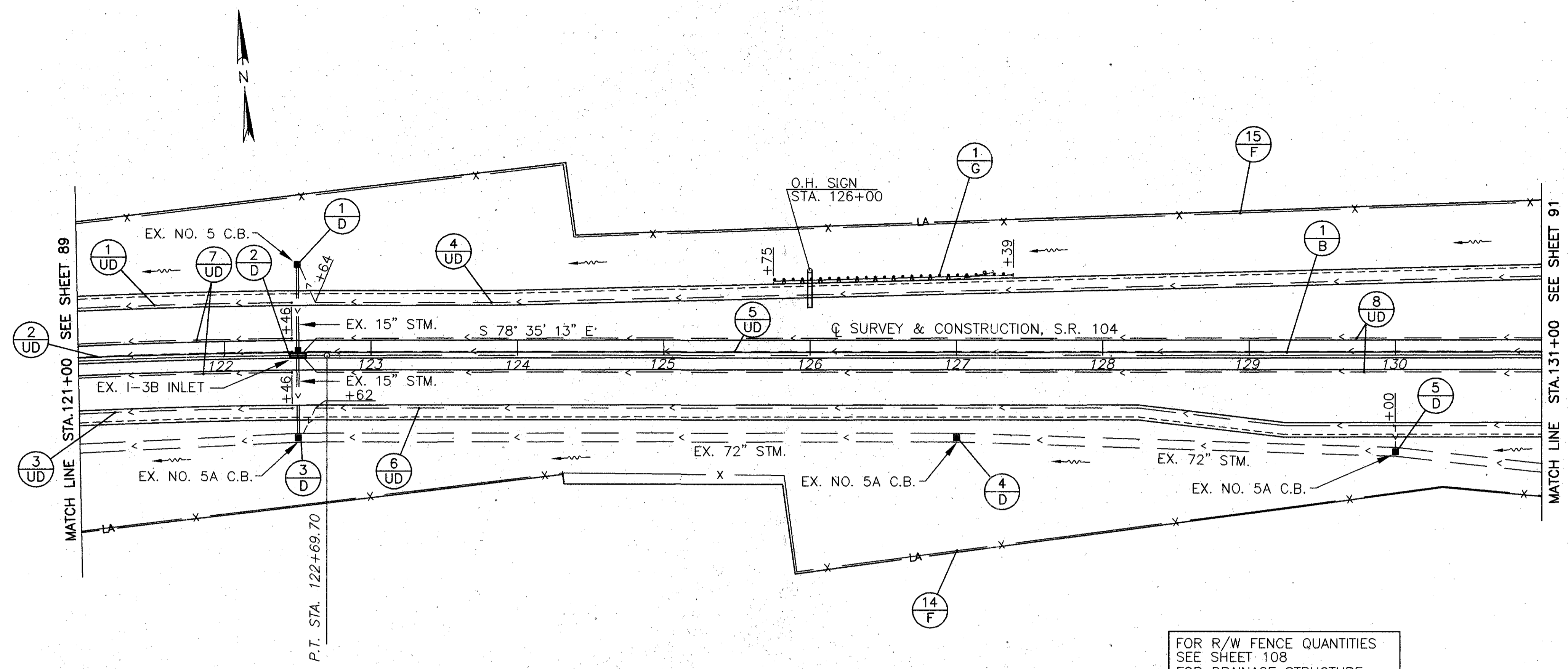


ESTIMATED QUANTITIES

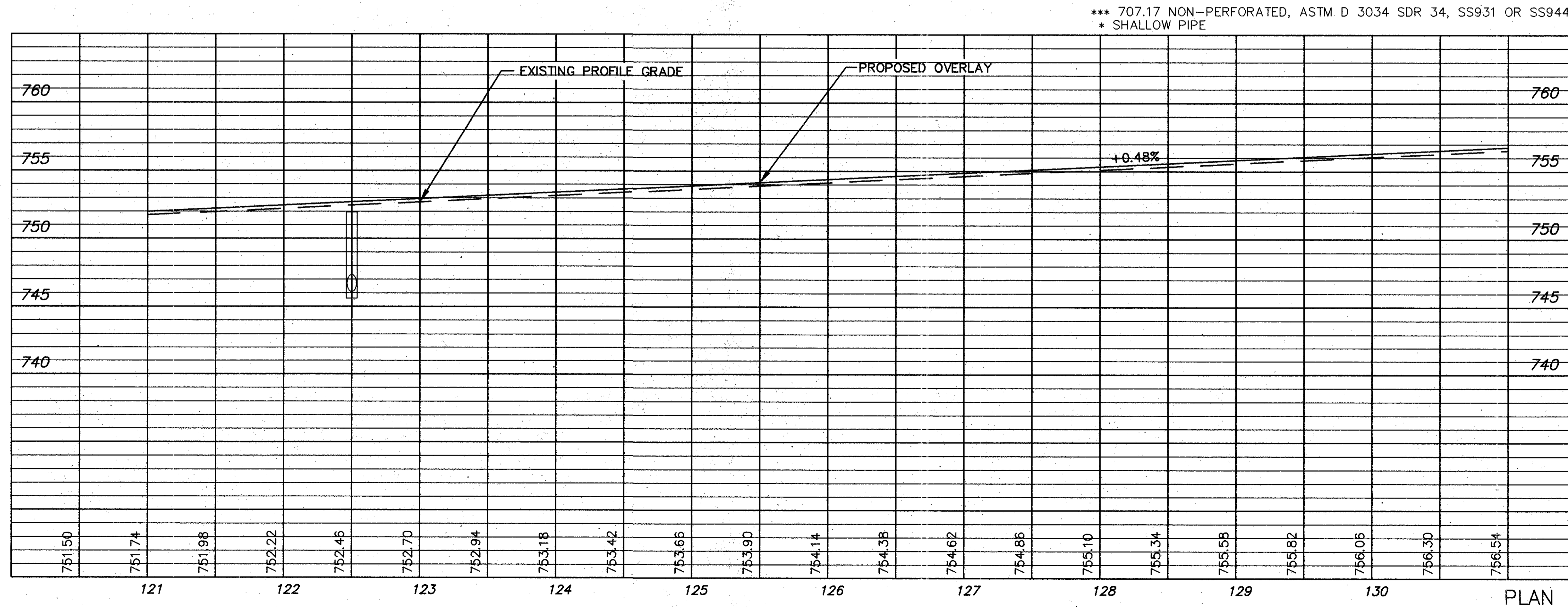
* DEDUCTIONS INCLUDE: 1 PB, 7 LTS, 1 INLET

REF. NO.	STATION TO STATION	SIDE	INLET REMOVED EACH	GUARDRAIL REMOVED LF	6" CONDUIT, C.B. ADJUSTED TO GRADE, TO GRADE, 3B-50 AS PER PLANS PER PLAN	6" * UNDER-DRAIN AS PER PLAN	SHALLOW UNDERDRAIN AS PER PLAN	GUARDRAIL TYPE 5 LF	ANCHOR ASSEMBLY TYPE E EACH	BRIDGE TERMINAL ASSEMBLY TYPE 1 EACH	CONCRETE BARRIER REFLECTOR A(W) B(W) LF	SEE SHEET NO.
1-UD	111+00	LT	1				1000					112
2-UD	111+00	MED			46		666					112
3-UD	111+00	RT				940						112
4-UD	111+50	MED					336					112
5-UD	117+81	RT					2000					112
6-UD	111+00	L&R										109
1-D	111+50	MED	1									109
2-D	114+00	LT			1							109
3-D	114+00	RT			1							109
4-D	117+70	LT			1							109
5-D	117+70	RT			1							109
1-G	111+00	LT		20								
2-G	114+41	RT										
3-G	117+27	LT										
1-B	111+00	MED										
TOTALS:												
												1
												20
												100
												2
												2
												1
												986
												4002
												407
												3
												2
												68
												960
												7
												2

PLAN & PROFILE SR. 104 STA. 111+00.00 TO STA. 121+00.00



FOR R/W FENCE QUANTITIES
 SEE SHEET 108
 FOR DRAINAGE STRUCTURE
 AND UNDERDRAIN DETAILS
 SEE SHEETS 109-111

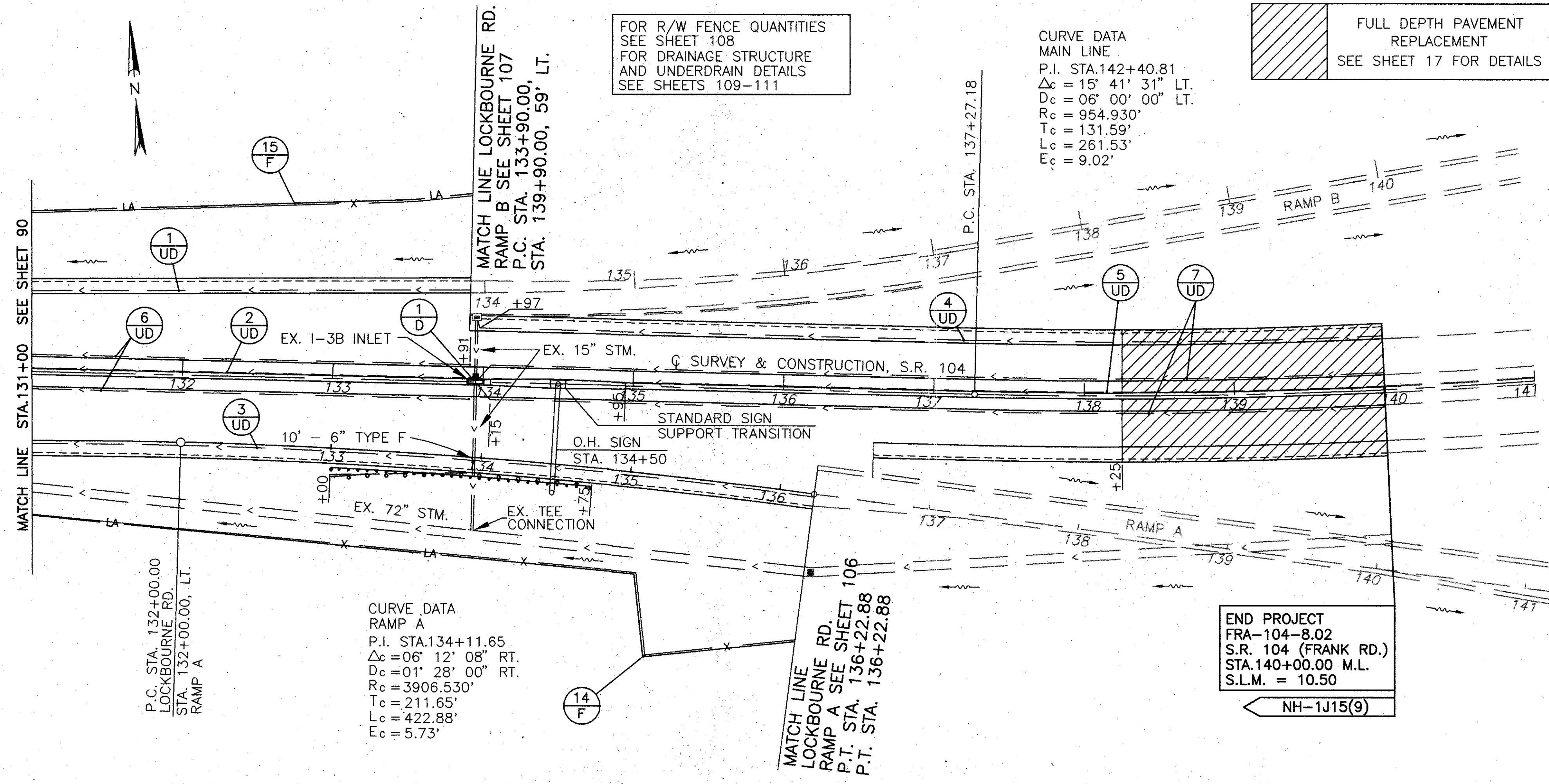


*** 707.17 NON-PERFORATED, ASTM D 3034 SDR 34, SS931 OR SS944
 * SHALLOW PIPE

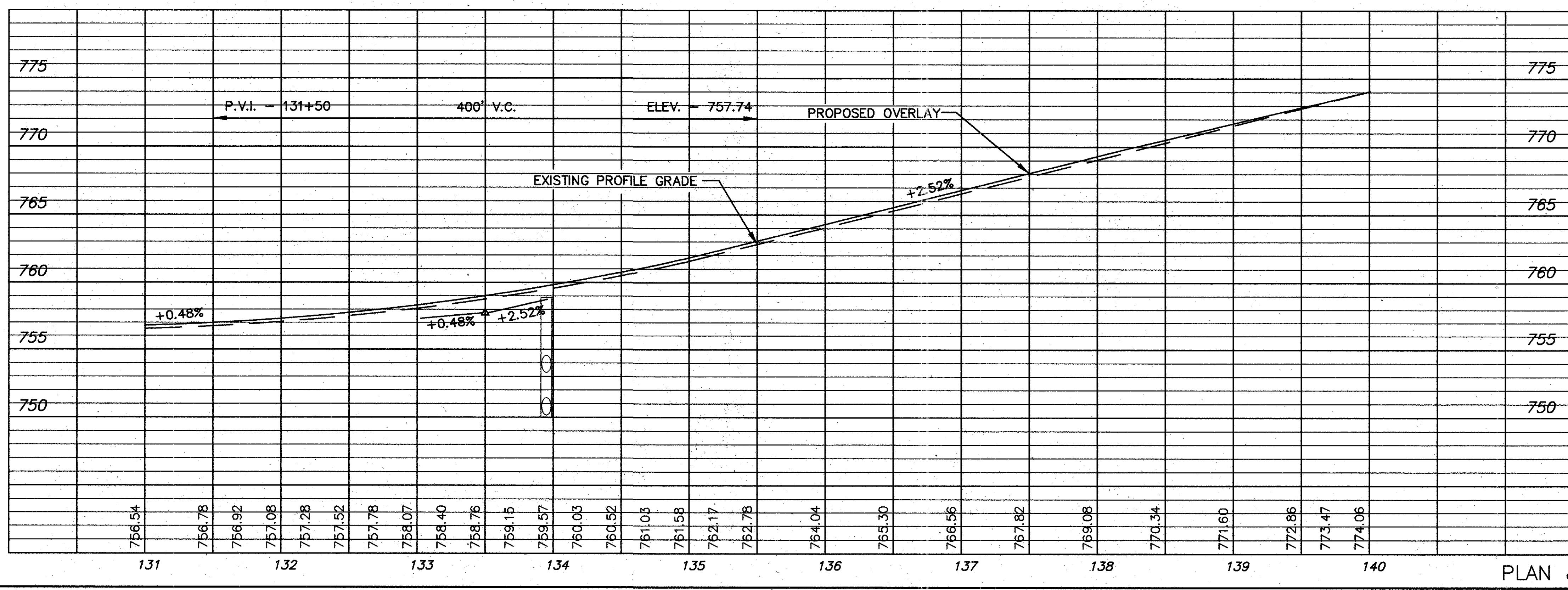
ESTIMATED QUANTITIES * DEDUCTIONS INCLUDE: 1 PB, 7 LTS, 1 INLET

REF. NO.	STATION TO STATION	SIDE	INLET REMOVED EACH	C.B. REMOVED EACH	GUARDRAIL REMOVED LF	6" CONDUIT TO GRADE AS PER PLAN LF	C.B. RECONSTRUCT TO GRADE AS PER PLAN LF	604 INLET EACH	6" UNDER DRAIN LF	605 SHALLOW UNDER DRAIN AS PER PLAN LF	606 GUARDRAIL TYPE 5 LF	ANCHOR ASSEMBLY TYPE E EACH	CONCRETE BARRIER TYPE B50 LF	802 BARRIER REFLECTOR TYPE A EACH	SEE SHEET NO.
1-UD	121+00	RT								146					112
2-UD	121+00	MED							146						112
3-UD	121+00	RT								854					112
4-UD	122+64	LT				10									112
5-UD	122+50	MED				10									112
6-UD	122+62	RT				10									112
7-UD	121+00	L&R				20				1680					112
8-UD	122+50	L&R													112
1-D	122+50	LT		1				1							109
2-D	122+50	MED													109
3-D	122+50	RT													109
4-D	127+00	RT													109
5-D	130+00	RT													109
1-G	125+75	LT			150						126.5	1		3	
1-B	121+00	MED											960*		
TOTALS:															

PLAN & PROFILE SR. 104 STA. 121+00.00 TO STA. 131+00.00



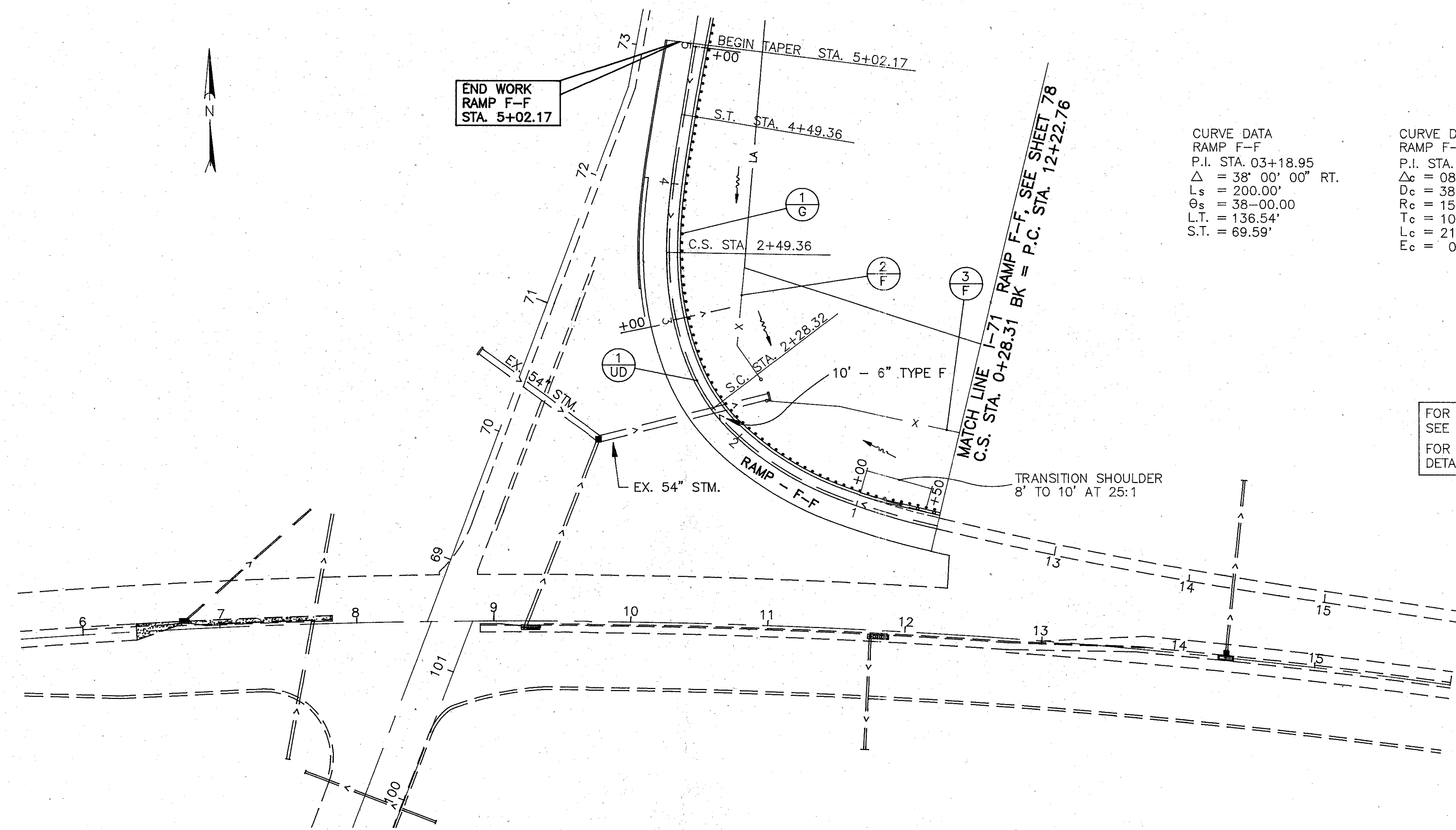
*** 707.17 NON-PERFORATED, ASTM D 3034 SDR 34, SS931 OR SS944



* DEDUCTIONS INCLUDE: 2 PB, 5 LTS, 1 SIGN, 1 INLET

REF. NO.	STATION TO STATION	SIDE	INLET REMOVED	GUARDRAIL REMOVED	603		604		605		606		622		SEE SHEET NO.
					6" CONDUIT, TYPE F ***	6" SHALLOW UNDERDRAIN AS PER PLAN	SHALLOW UNDERDRAIN AS PER PLAN	GUARDRAIL TYPE 5	ANCHOR ASSEMBLY TYPE E	CONCRETE BARRIER TYPE B50	BARRIER REFLECTOR TYPE A				
1-UD	133+90	LT													112
2-UD	133+91	MED													112
3-UD	136+23	RT			10										112
4-UD	140+00	LT			10										112
5-UD	140+00	MED			10										112
6-UD	133+91	L&R			10										112
7-UD	140+00	L&R													112
1-D	133+95	MED	1												
1-G	134+75	RT		175											
1-B	140+00	MED													
TOTALS:															
															1
															175
															40
															1
															866
															3188
															137.5
															1
															1
															852.5 *
															3
															852.5
															3

PLAN & PROFILE SR. 104 STA. 131+00.00 TO STA. 141+00.00

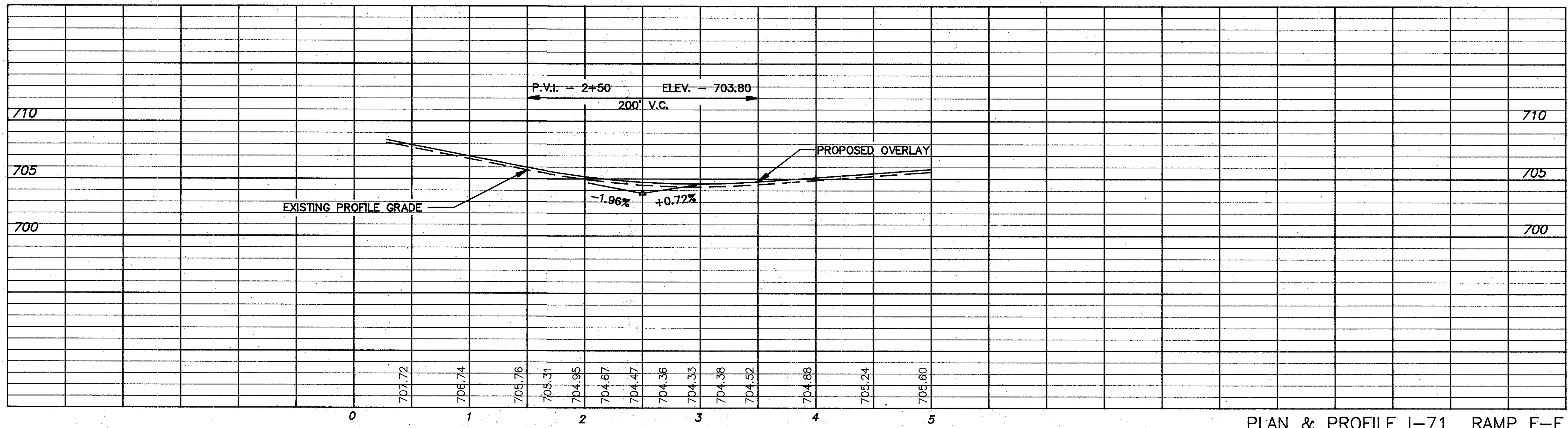


CURVE DATA
 RAMP F-F
 P.I. STA. 03+18.95
 $\Delta = 38^{\circ} 00' 00''$ RT.
 $L_s = 200.00'$
 $\theta_s = 38-00-00$
 $L.T. = 136.54'$
 $S.T. = 69.59'$

CURVE DATA
 RAMP F-F
 P.I. STA. 02+38.85
 $\Delta = 08-00-00$ RT.
 $D_c = 38-00-00$
 $R_c = 150.78'$
 $T_c = 10.54'$
 $L_c = 21.05'$
 $E_c = 0.37'$

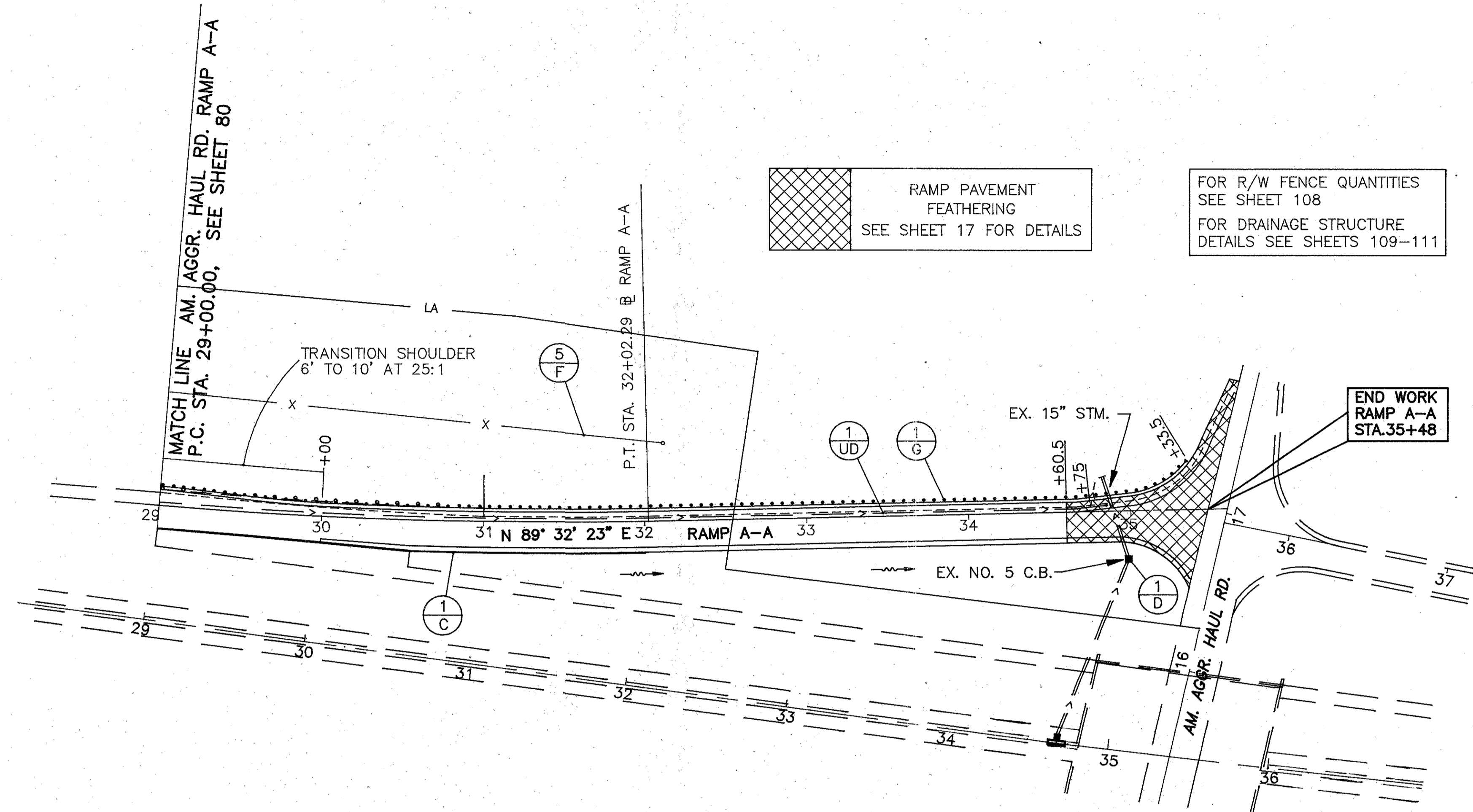
CURVE DATA
 RAMP F-F
 P.I. STA. 01+52.05
 $\Delta = 40+00.00$ LT.
 $L_s = 200.00'$
 $\theta_s = 36-00-00$
 $L.T. = 133.75'$
 $S.T. = 73.40'$

FOR R/W FENCE QUANTITIES
 SEE SHEET 108
 FOR DRAINAGE STRUCTURE
 DETAILS SEE SHEETS 109-111



REF. NO.	STATION TO STATION	SIDE	GUARDRAIL REMOVED	6" CONDUIT TYPE F	SHALLOW UNDERDRAIN AS PER PLAN	GUARDRAIL TYPE 5	BARRIER REFLECTOR TYPE A	SEE SHEET NO.
1-UD	0+28 - 5+00	RT	LF	20	485	LF	W	112
1-C	0+28 - 5+00	RT	LF			482	6	
TOTALS:								

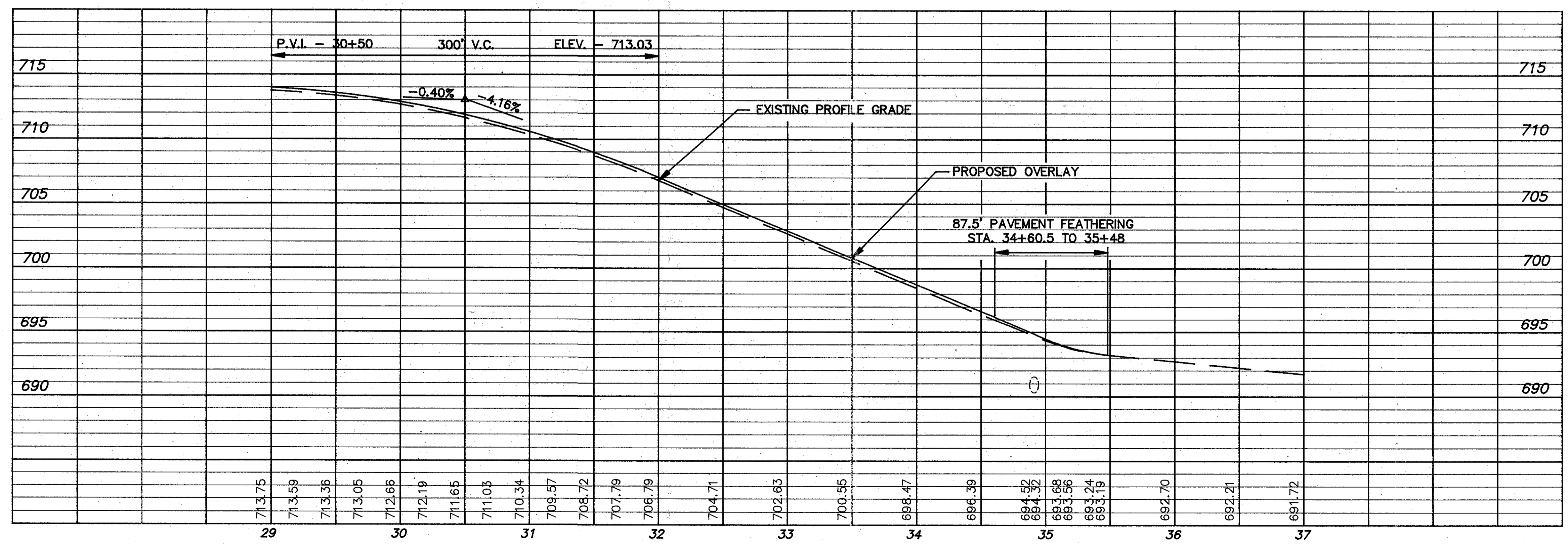
PLAN & PROFILE I-71 RAMP F-F STA. 0+28.31 TO STA. 5+02.17



RAMP PAVEMENT FEATHERING
 SEE SHEET 17 FOR DETAILS

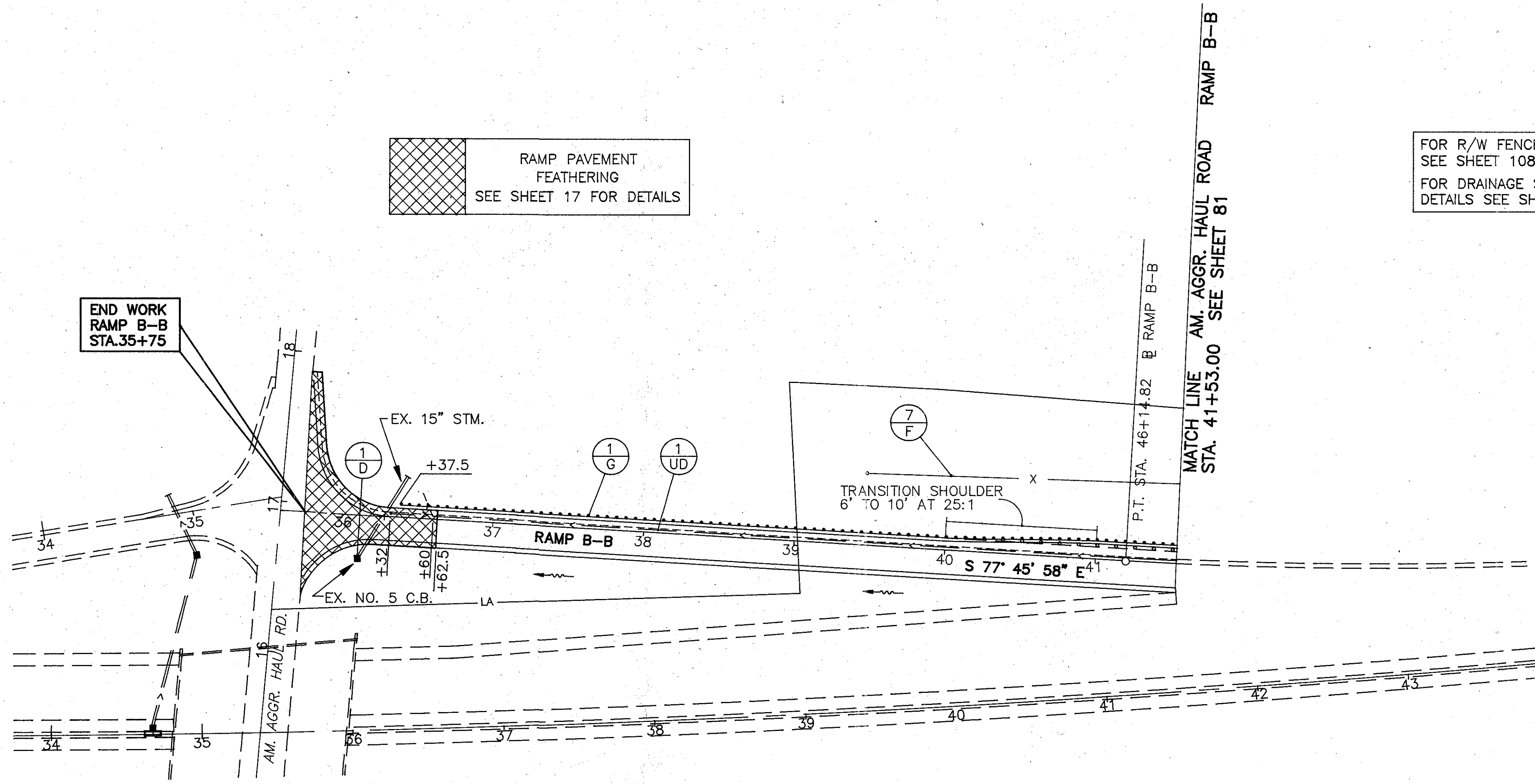
FOR R/W FENCE QUANTITIES
 SEE SHEET 108
 FOR DRAINAGE STRUCTURE
 DETAILS SEE SHEETS 109-111

CURVE DATA
 RAMP A-A
 P.I. STA. = 30+51.29
 ΔC = 06° 02' 45" LT.
 R_c = 02° 00' 00"
 T_c = 2864.79'
 L_c = 151.29'
 E_c = 302.29'
 F_c = 3.99'



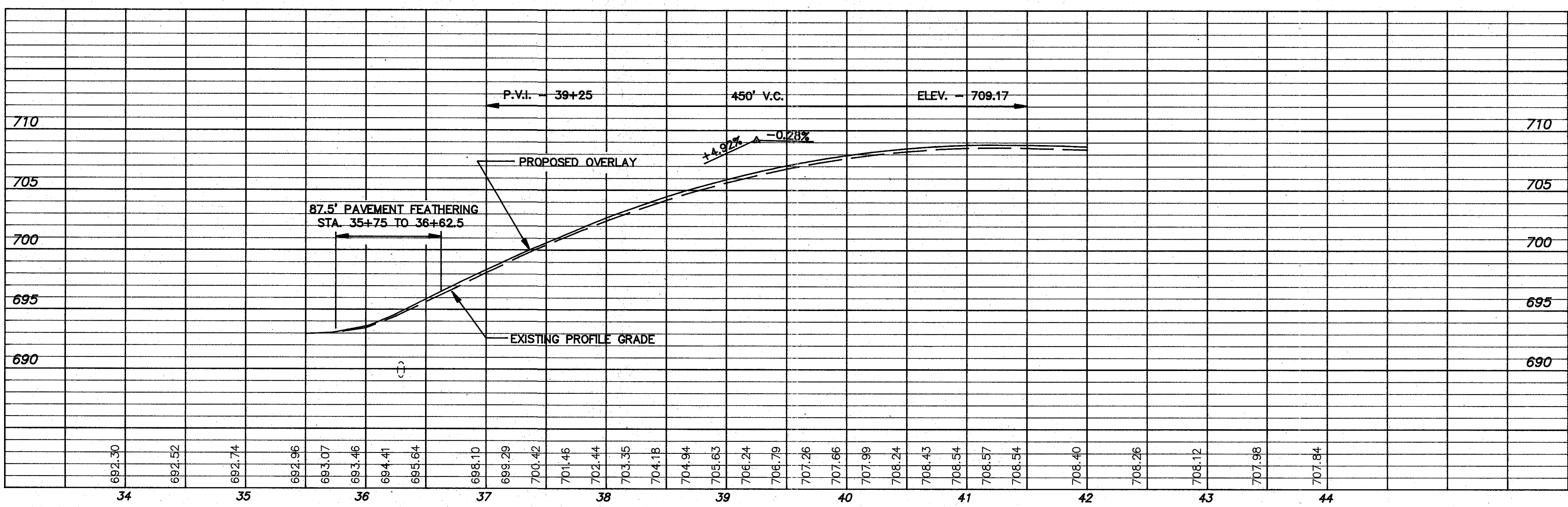
REF. NO.	STATION TO STATION	SIDE	GUARDRAIL REMOVED	CURB REMOVED	6" CONDUIT, TYPE F	C.B. ADJUSTED TO GRADE, AS PER PLAN	SHALLOW UNDERDRAIN, AS PER PLAN	GUARDRAIL TYPE 5	ANCHOR ASSEMBLY TYPE E	CURB TYPE 6	BARRIER REFLECTOR TYPE A	SEE SHEET NO.
1-UD	29+00	34+85	LT		10		593				W	112
1-D	34+98		RT			1					Y	109
1-G	29+00	35+33.5	LT					608.5	1		7	
1-C	29+00	32+00	RT	304						304		
TOTALS:												

PLAN & PROFILE AM. AGGR. HAUL RD. RAMP A-A STA. 29+00.00 TO STA. 35+59.81



FOR R/W FENCE QUANTITIES
 SEE SHEET 108
 FOR DRAINAGE STRUCTURE
 DETAILS SEE SHEETS 109-111

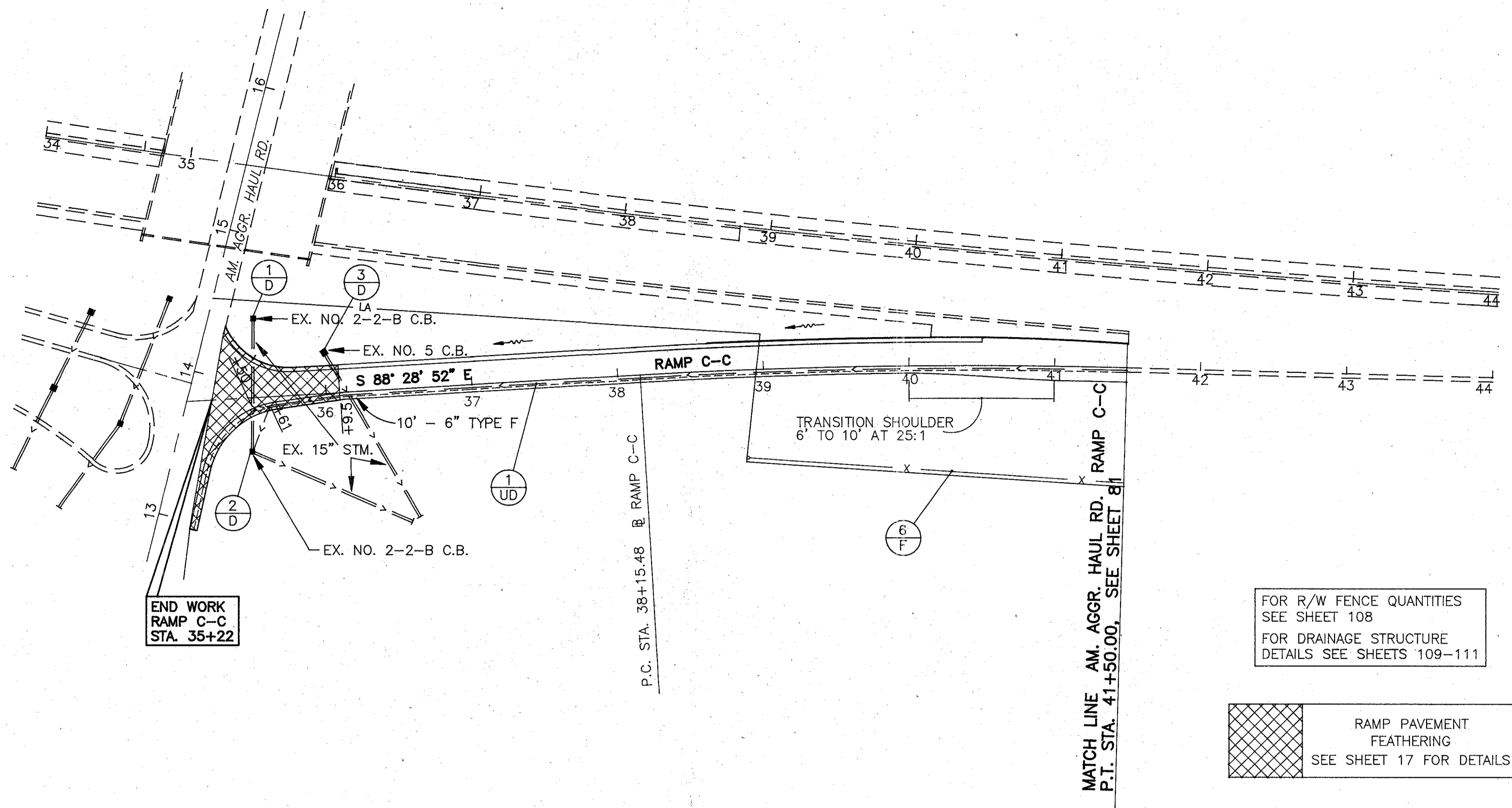
CURVE DATA
 RAMP F-F
 P.I. STA. 43+67.46
 $\Delta\theta = 09^\circ 55' 10''$ LT.
 $D_c = 02^\circ 00' 00''$
 $R_c = 2864.79'$
 $T_c = 248.61'$
 $L_c = 495.98'$
 $E_c = 10.77'$



REF. NO.	STATION TO STATION	SIDE	QUANTITY	UNIT	ITEM
1-UD	36+32 - 41+58	LT	10	LF	603 6" CONDUIT, TYPE F
1-D	36+12	RT			604 C.B. ADJUSTED TO GRADE, AS PER PLAN
1-G	36+37.5 - 41+53	LT	515.5	LF	605 SHALLOW UNDERDRAIN, AS PER PLAN
					606 GUARDRAIL TYPE 5
					606 ANCHOR ASSEMBLY TYPE T
					802 BARRIER REFLECTOR TYPE A
					112
					109
TOTALS:			515.5	10	

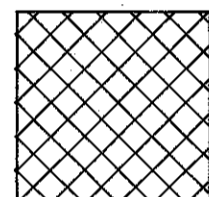
PLAN & PROFILE AM. AGGR. HAUL RD. RAMP B-B STA. 35+57.88 TO STA. 41+50.00

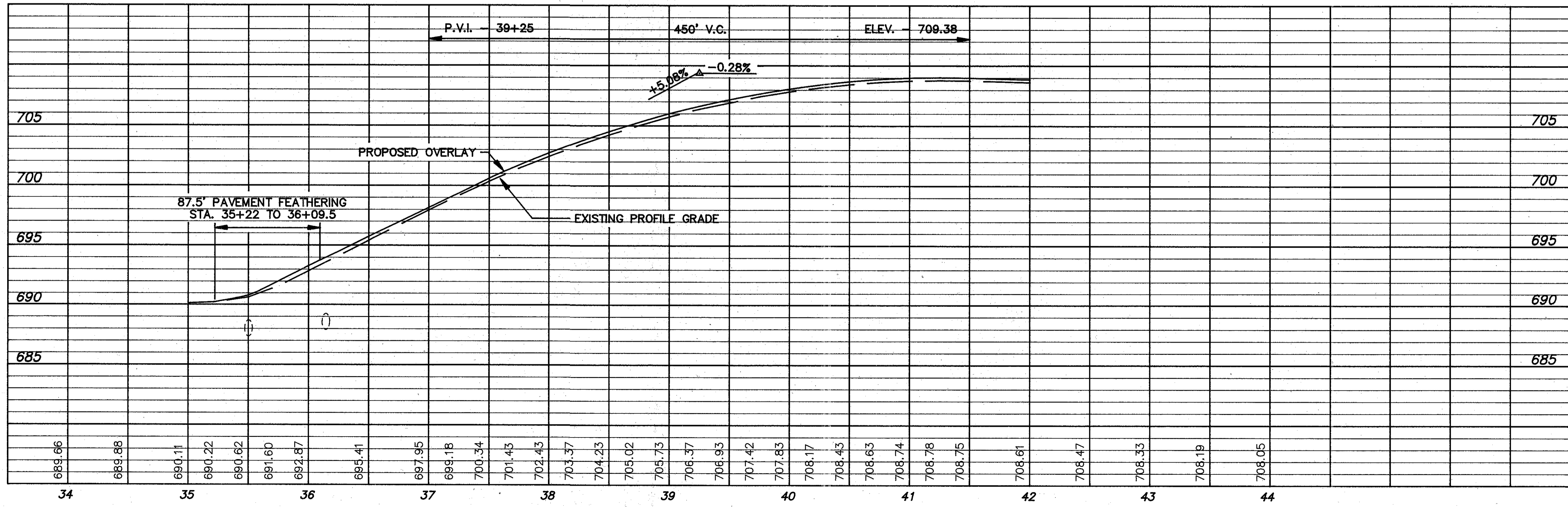
FRA-104-8.02



FOR R/W FENCE QUANTITIES
 SEE SHEET 108
 FOR DRAINAGE STRUCTURE
 DETAILS SEE SHEETS 109-111

CURVE DATA
 RAMP C-C
 P.I. STA. 39+82.85
 $\Delta_c = 05^\circ 01' 04''$ RT.
 $D_c = 01' 30' 00''$
 $R_c = 3819.72'$
 $T_c = 167.37'$
 $L_c = 334.52'$
 $E_c = 3.67'$

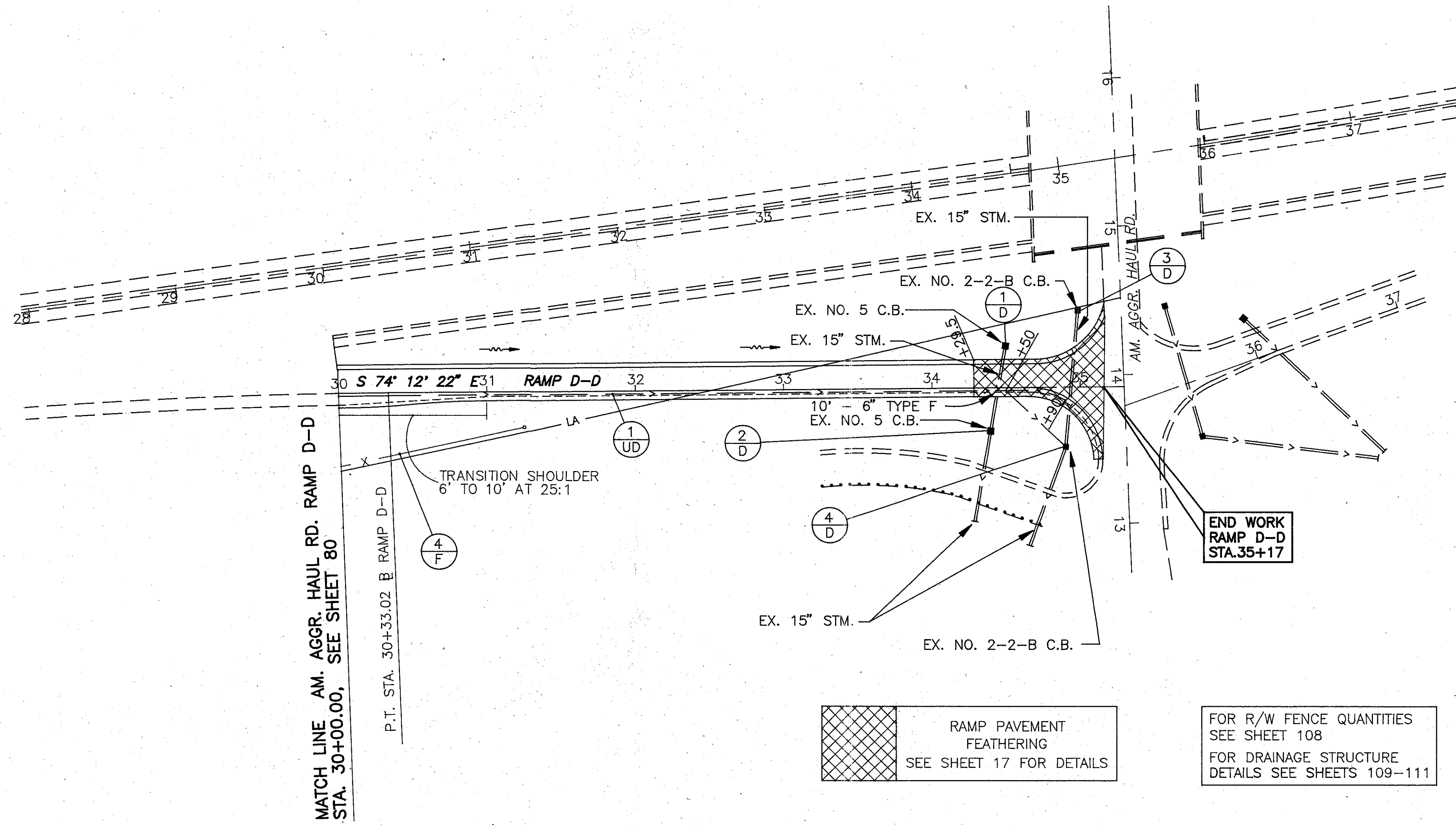

 RAMP PAVEMENT
 FEATHERING
 SEE SHEET 17 FOR DETAILS



REF. NO.	STATION TO STATION	SIDE	6" CONDUIT, TYPE F	C.B. ADJUSTED TO GRADE AS PER PLAN	C.B. GRATE	SHALLOW UNDERDRAIN AS PER PLAN	SEE SHEET NO.	
1-UD	35+50	RT	20			644	112	
1-D	35+53	LT		1			109	
2-D	35+07	RT		1			109	
3-D	36+00	LT		1				
TOTALS:							20	644

PLAN & PROFILE AM. AGGR. HAUL RD. RAMP C-C STA. 35+06.99 TO STA. 41+50.00

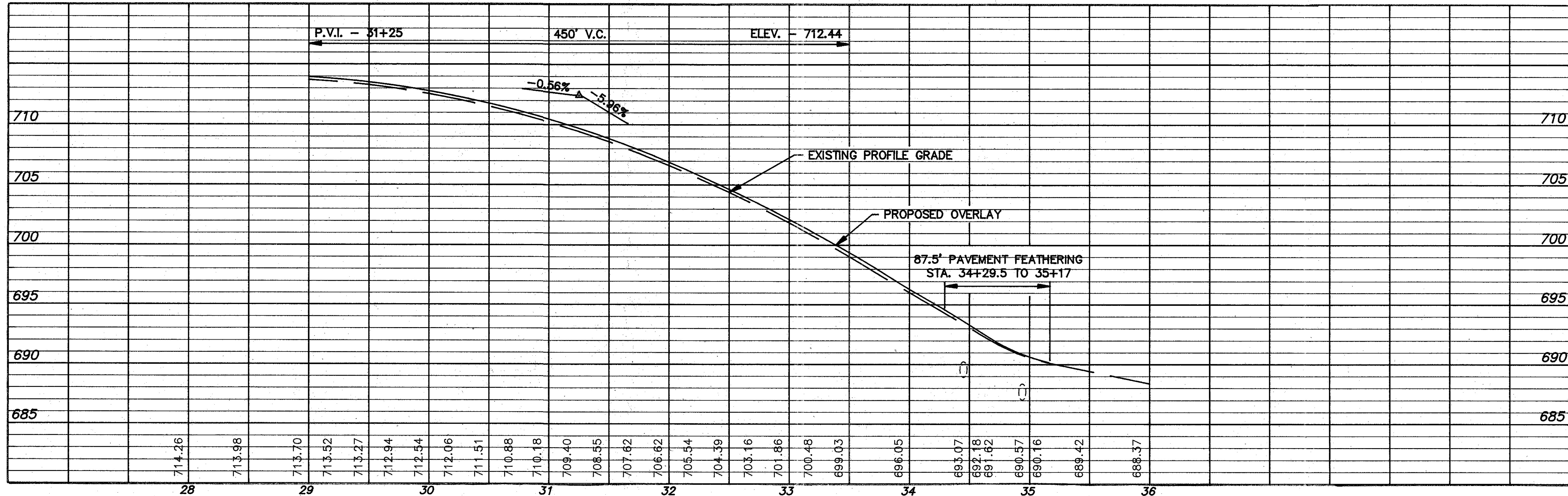
CALC. BY: JRA
DATE: 6/15/94
CHECKED BY: JSB
DATE: 6/15/94



CURVE DATA
RAMP F-F
P.I. STA. 27+89.60
 $\Delta c = 07' 18' 46''$
 $D_c = 01' 30' 00''$
 $R_c = 3819.72'$
 $L_c = 244.08'$
 $E_c = 487.51'$
 $E_c = 7.79'$

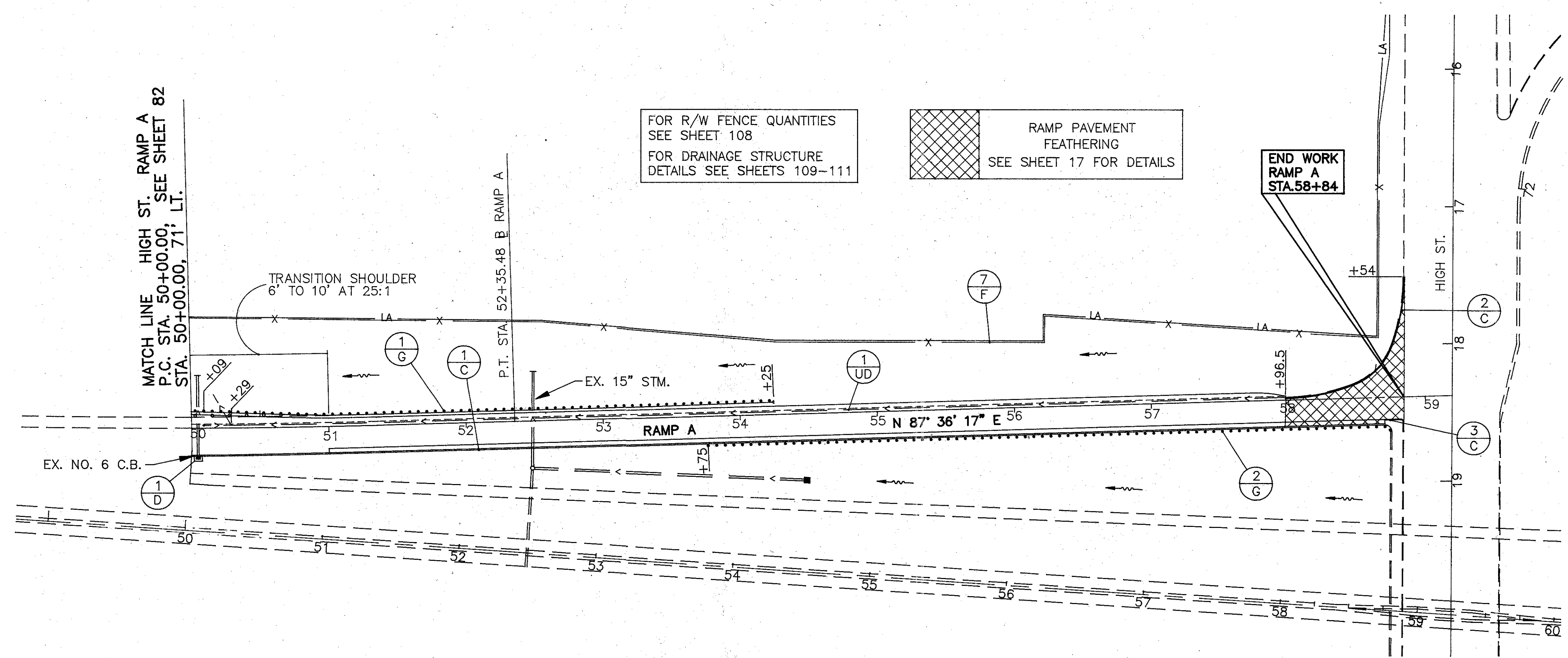
RAMP PAVEMENT FEATHERING
SEE SHEET 17 FOR DETAILS

FOR R/W FENCE QUANTITIES
SEE SHEET 108
FOR DRAINAGE STRUCTURE
DETAILS SEE SHEETS 109-111



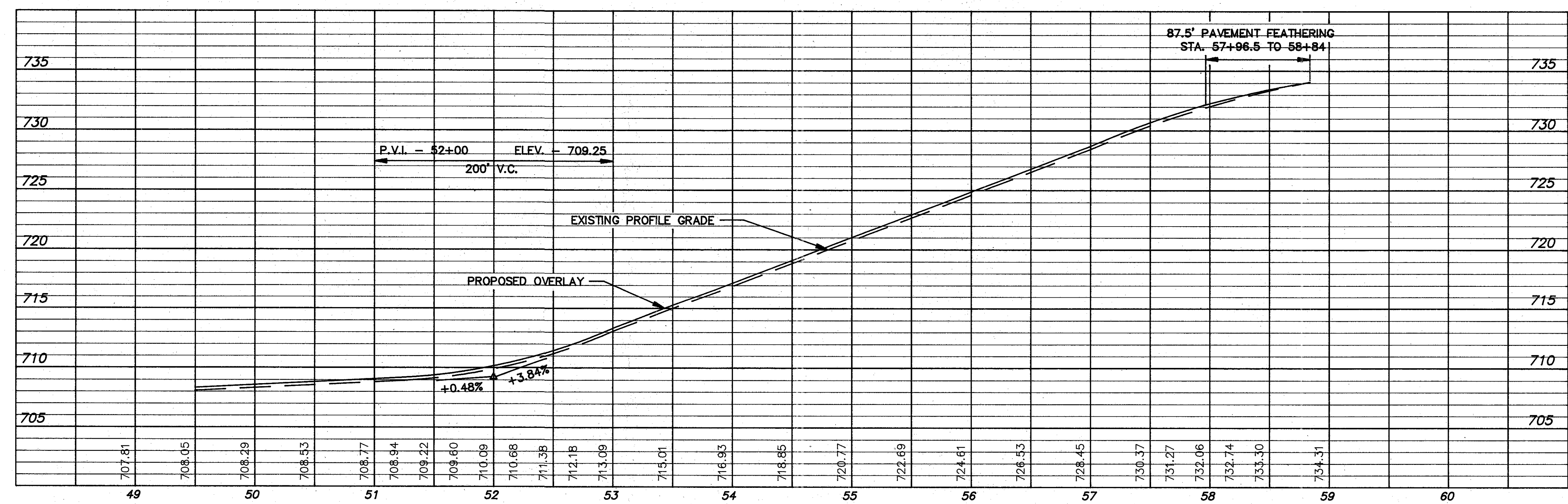
REF. NO.	STATION TO STATION	SIDE	ESTIMATED QUANTITIES	
			603	604
1-UD	29+00 - 34+90	RT	6" CONDUIT TYPE F LF 20	605 SHALLOW UNDERDRAIN AS PER PLAN LF 530
1-D	34+50	LT	C.B. ADJUSTED TO GRADE AS PER PLAN EACH 1	
2-D	34+40	RT	C.B. ADJUSTED TO GRADE AS PER PLAN EACH 1	
3-D	34+99	LT	C.B. ADJUSTED TO GRADE AS PER PLAN EACH 1	
4-D	34+90	RT	C.B. ADJUSTED TO GRADE AS PER PLAN EACH 1	
TOTALS:			20	530

PLAN & PROFILE AM. AGGR. HAUL RD. RAMP D-D STA. 30+00.00 TO STA. 35+28.89



CURVE DATA
 RAMP F-F

P.I. STA. 51+17.81
 $\Delta K = 04' 42' 35"$
 $R_c = 02' 00' 00"$
 $T_c = 2864.79'$
 $L_c = 117.81'$
 $E_c = 235.48'$
 $F_c = 2.42'$



ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	GUARDRAIL REMOVED	CURB REMOVED	6" CONDUIT, TYPE F	SHALLOW UNDERDRAIN AS PER PLAN	GUARDRAIL TYPE 5	ANCHOR ASSEMBLY TYPE E	BRIDGE TERM. ASSEMBLY TYPE I	CURB TYPE 6	BARRIER REFLECTOR TYPE A	SEE SHEET NO.
1-UD	50+09	LT				940						112
1-D	50+06	RT										109
1-G	50+00	LT	425				400	1				
2-G	53+75	RT	500				450	1				
1-C	50+00	RT		377								
2-C	57+90	LT		143								
3-C	58+70	RT		16								
TOTALS:												925

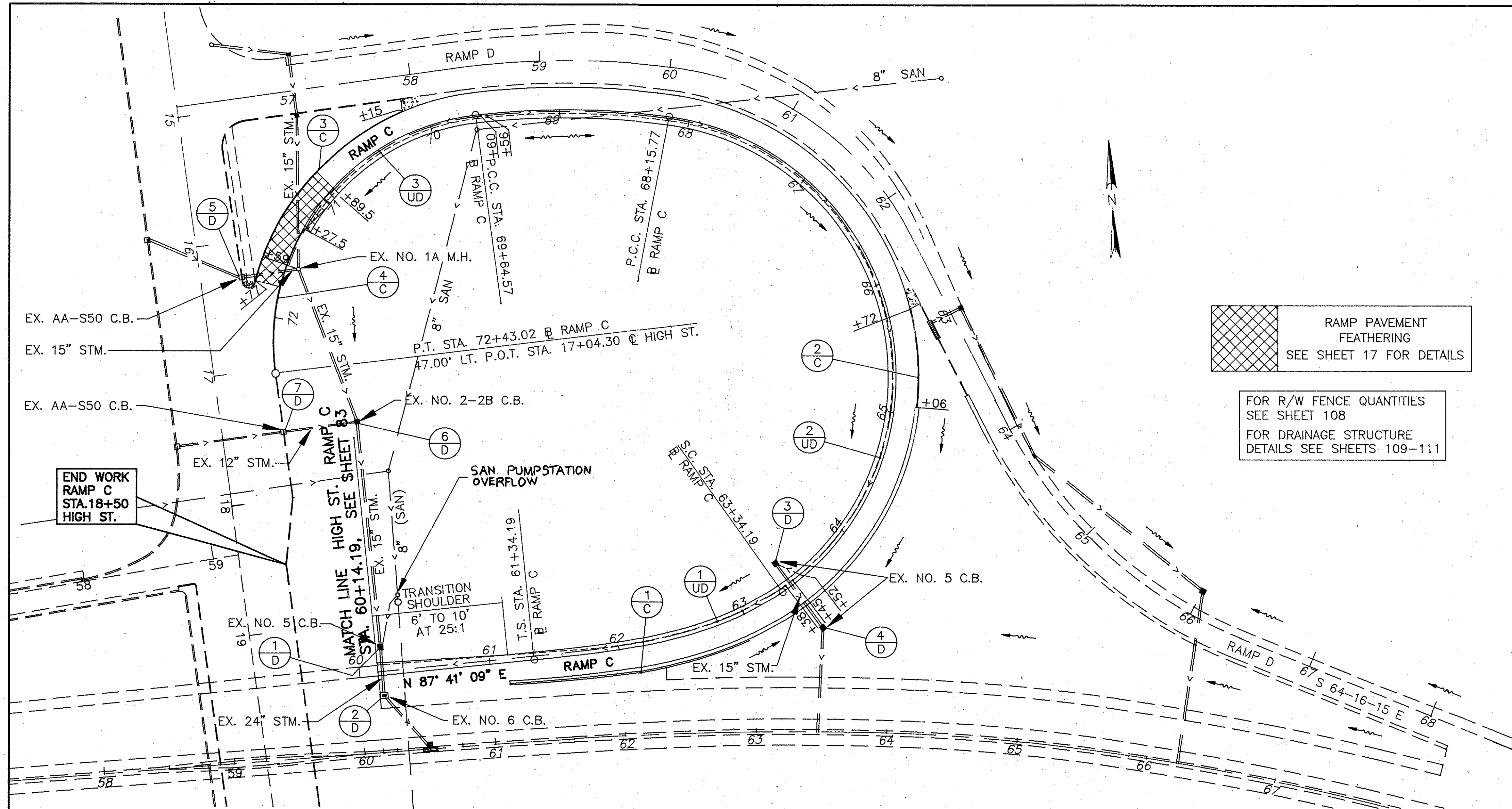
PLAN & PROFILE HIGH ST. RAMP A STA. 50+00.00 TO STA. 59+19.37

CHECKED BY: JRA
DATE: 6/15/94
CHECKED BY: JSB
DATE: 6/15/94

FRA-104-8.02

OHIO
FHWA REGION 5

99
185



CURVE DATA
RAMP C
P.I. STA. 71+43.17
 $\Delta c = 91^{\circ} 09' 59''$
 $D_c = 32' 44' 26''$
 $R_c = 175.00'$
 $T_c = 178.60'$
 $L_c = 278.45'$
 $E_c = 75.05'$

CURVE DATA
RAMP C
P.I. STA. 68+90.56
 $\Delta c = 14^{\circ} 12' 33''$
 $D_c = 9' 32' 57.4''$
 $R_c = 600.00'$
 $T_c = 74.78'$
 $L_c = 148.80'$
 $E_c = 4.64'$

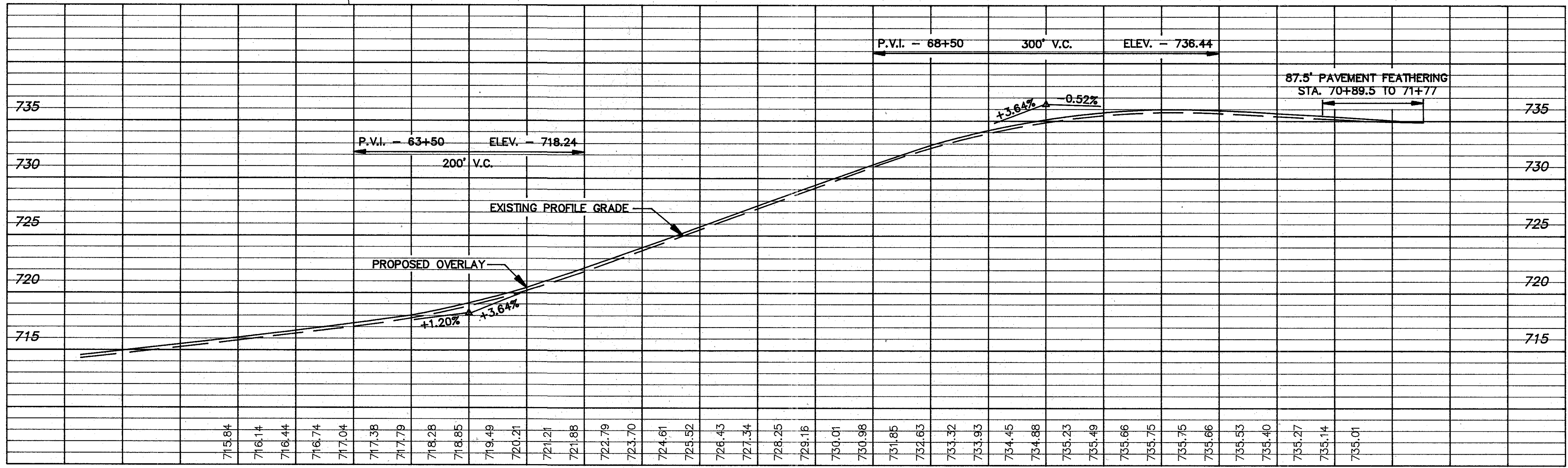
CURVE DATA
RAMP C
P.I. STA. 68+54.70
 $\Delta c = 137^{\circ} 57' 45''$
 $D_c = 28' 38' 52.4''$
 $R_c = 200.00'$
 $T_c = 520.51'$
 $L_c = 481.58'$
 $E_c = 357.61'$

CURVE DATA
RAMP C
 $L_s = 200.00'$
 $\theta_s = 28^{\circ} 38' 52.4''$
 $P = 8.26'$
 $K = 99.17'$
 $L.T. = 135.12'$
 $S.T. = 68.30'$

RAMP PAVEMENT FEATHERING
SEE SHEET 17 FOR DETAILS

FOR R/W FENCE QUANTITIES
SEE SHEET 108
FOR DRAINAGE STRUCTURE
DETAILS SEE SHEETS 109-111

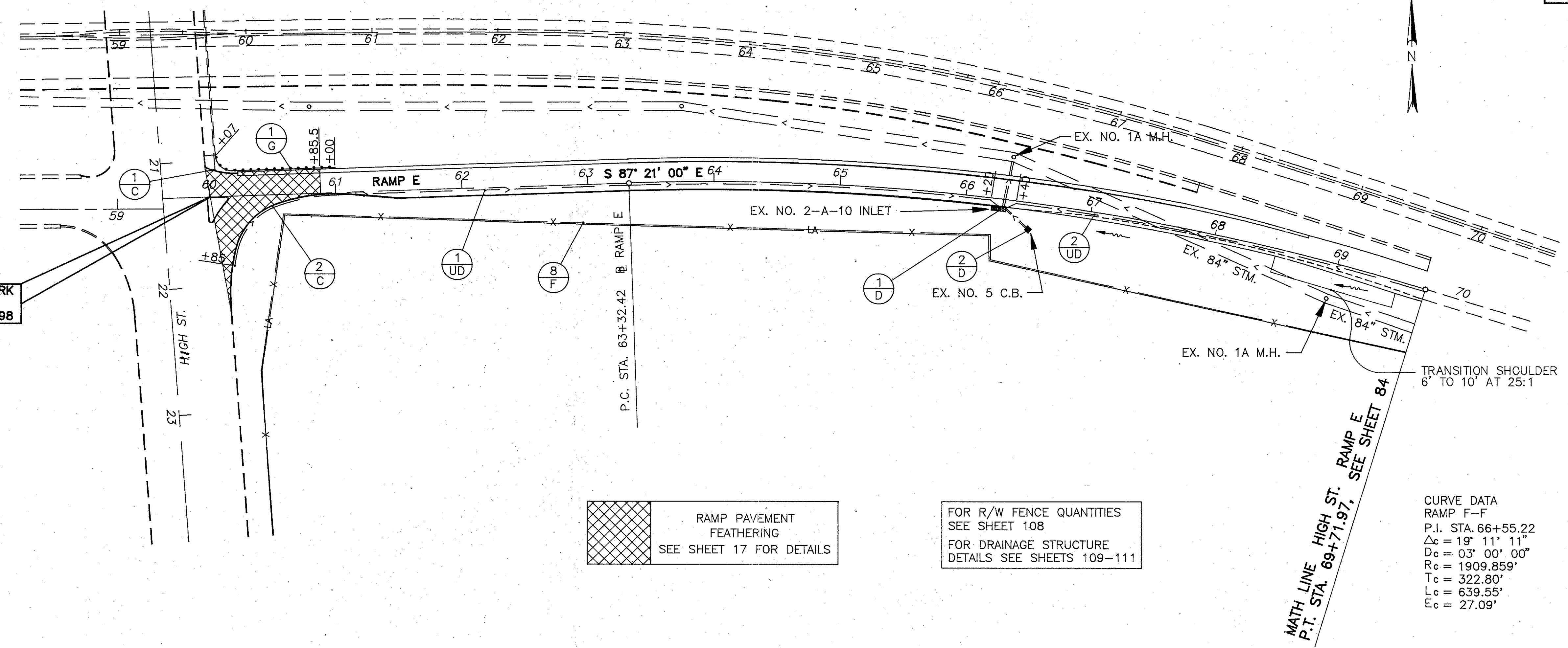
END WORK
RAMP C
STA. 18+50
HIGH ST.



ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	CURB REMOVED	6" CONDUIT, TYPE F	C.B. ADJUSTED TO GRADE, AS PER PLAN	C.B. GRATE EACH	SHALLOW UNDERDRAIN, AS PER PLAN	CURB TYPE 6	SEE SHEET NO.
1-UD	60+14	LT							112
2-UD	63+45	LT		10			324		112
3-UD	69+60	LT		10			629		112
1-D	60+18	LT							109
2-D	60+18	LT			1				109
3-D	63+42	LT			1				109
4-D	63+50	RT			1				109
5-D	16+29	LT			1				109
6-D	17+50	LT			1				109
7-D	17+50	LT			1				109
1-C	61+14	RT	281						
2-C	65+06	RT	71					71	
3-C	70+15	RT	175					175	
4-C	71+27.5	LT	115					115	
TOTALS:									361
									1149
									7
									20
									652

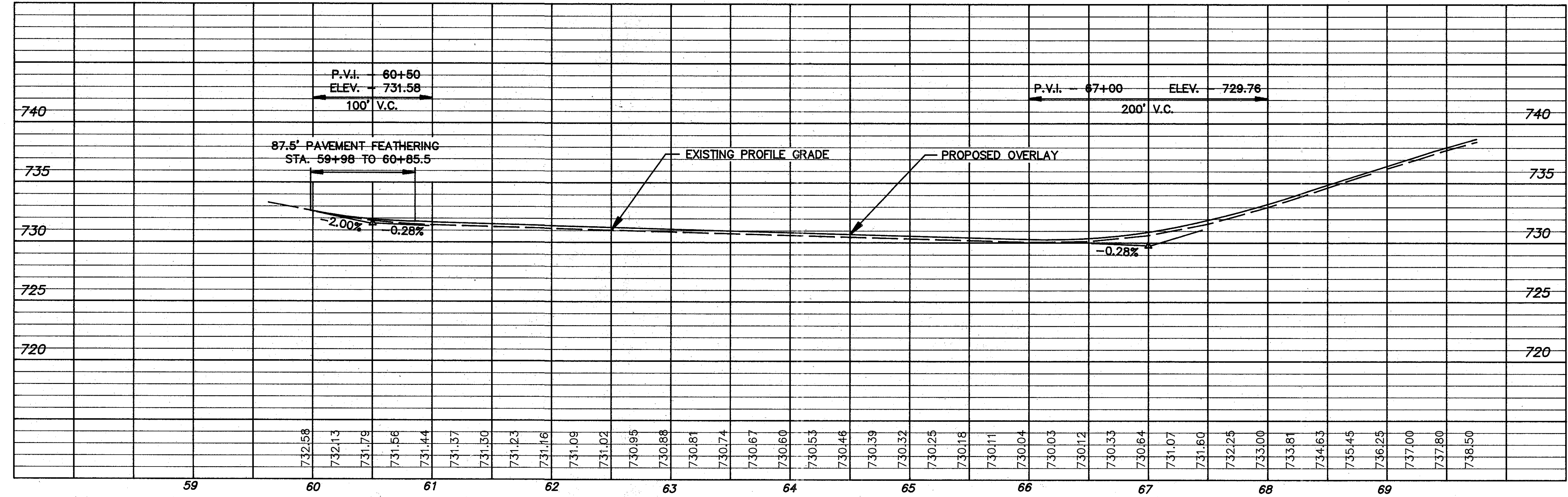
PLAN & PROFILE HIGH ST. RAMP C STA. 35+06.99 TO STA. 60+14.19



RAMP PAVEMENT FEATHERING SEE SHEET 17 FOR DETAILS

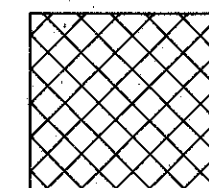
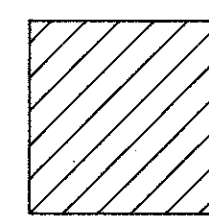
FOR R/W FENCE QUANTITIES SEE SHEET 108
 FOR DRAINAGE STRUCTURE DETAILS SEE SHEETS 109-111

CURVE DATA
 RAMP F-F
 P.I. STA. 66+55.22
 $\Delta\theta = 19^\circ 11' 11''$
 $D_c = 03' 00' 00''$
 $R_c = 1909.859'$
 $T_c = 322.80'$
 $L_c = 639.55'$
 $E_c = 27.09'$



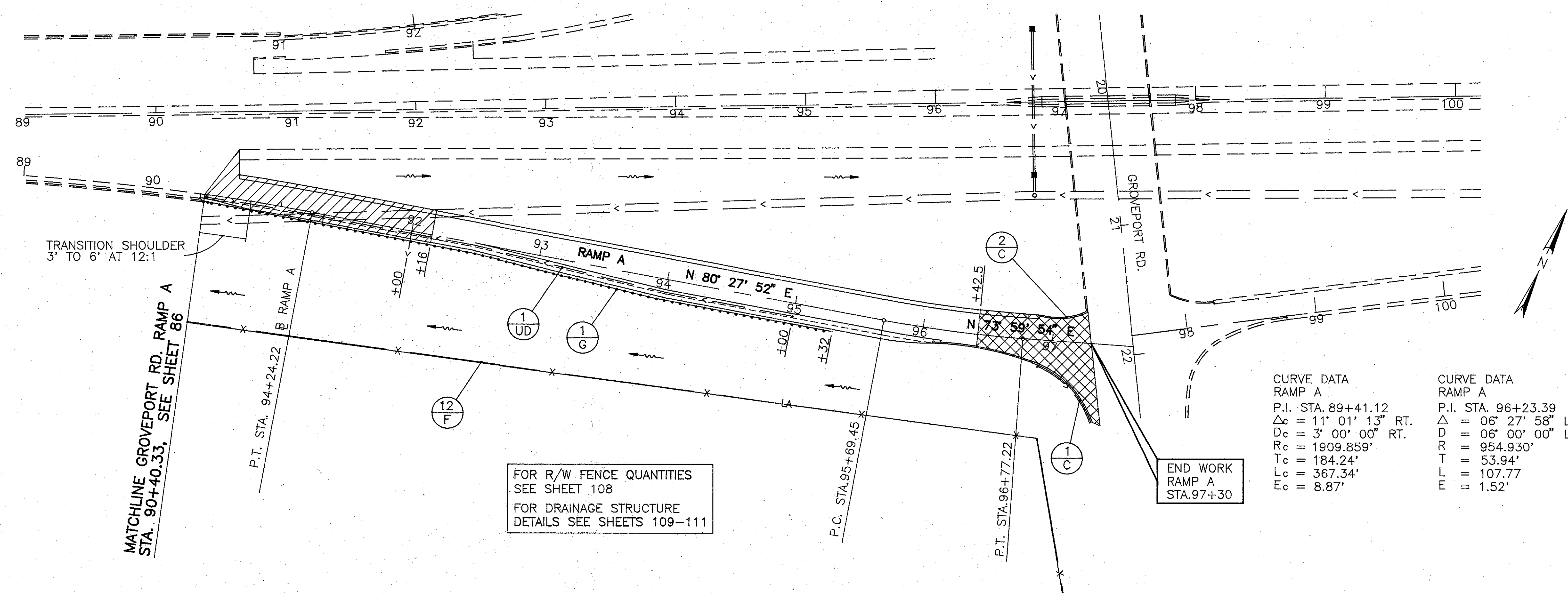
REF. NO.	STATION TO STATION	SIDE	GUARDRAIL REMOVED		CURB REMOVED		6" CONDUIT, C.B. ADJUSTED TO GRADE AS PER PLAN		INLET ADJUSTED TO GRADE AS PER PLAN		SHALLOW UNDERDRAIN AS PER PLAN		GUARDRAIL TYPE 5		ANCHOR ASSEMBLY TYPE E		BRIDGE TERM. ASSEMBLY TYPE 1		CURB TYPE 6		BARRIER REFLECTOR TYPE A		SEE SHEET NO.
			LF	RT	LF	RT	EACH	EACH	LF	RT	EACH	EACH	LF	RT	EACH	EACH	LF	RT	W	Y			
1-UD	21+85	RT																					112
2-UD	66+30	RT					10				308												112
1-D	66+25	RT							1														109
2-D	66+50	RT																					
1-G	60+07	LT											50		1							2	
1-C	60+00	LT																		26			
1-C	60+15	RT																		618			
		TOTALS:		100		644		10		1		653		50		1		1		644		2	

PLAN & PROFILE HIGH ST. RAMP E STA. 59+62.89 TO STA. 69+71.97

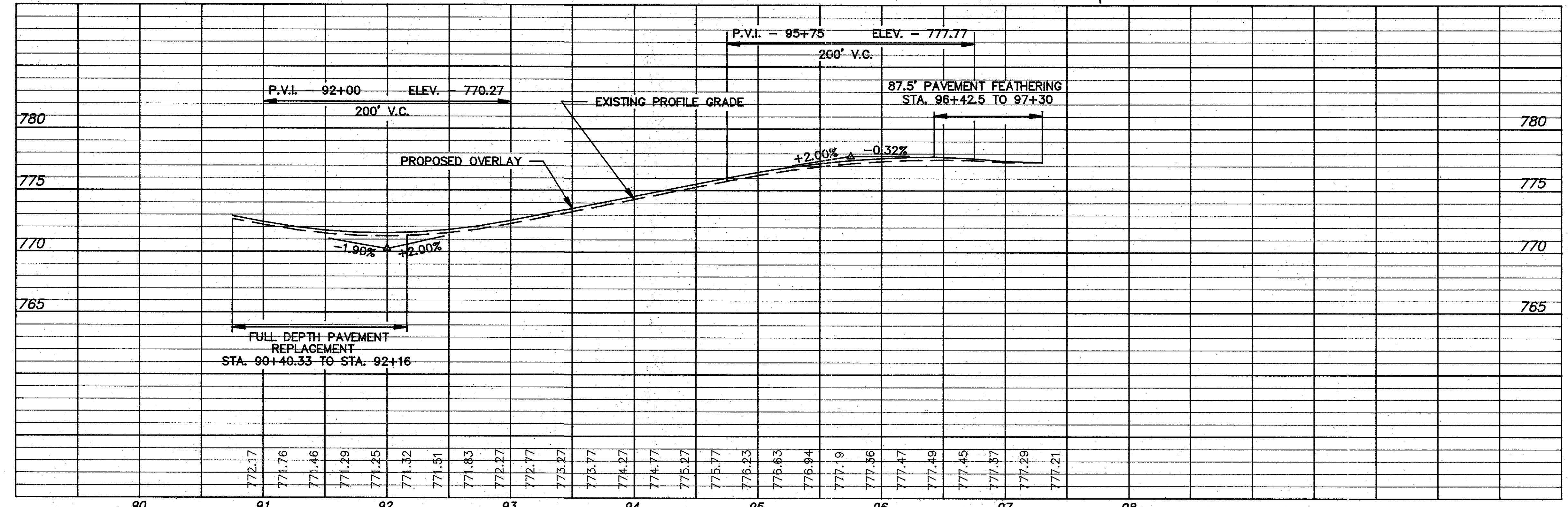
 RAMP PAVEMENT FEATHERING
SEE SHEET 17 FOR DETAILS
 FULL DEPTH PAVEMENT REPLACEMENT
SEE SHEET 17 FOR DETAILS

CALC. BY: JRA
 DATE: 6/15/84
 CHECKED BY: JSB
 DATE: 6/15/84
 FRA-104-8.02
 OHIO
 FHWA REGION 5

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FOR R/W FENCE QUANTITIES
 SEE SHEET 108
 FOR DRAINAGE STRUCTURE
 DETAILS SEE SHEETS 109-111



ESTIMATED QUANTITIES

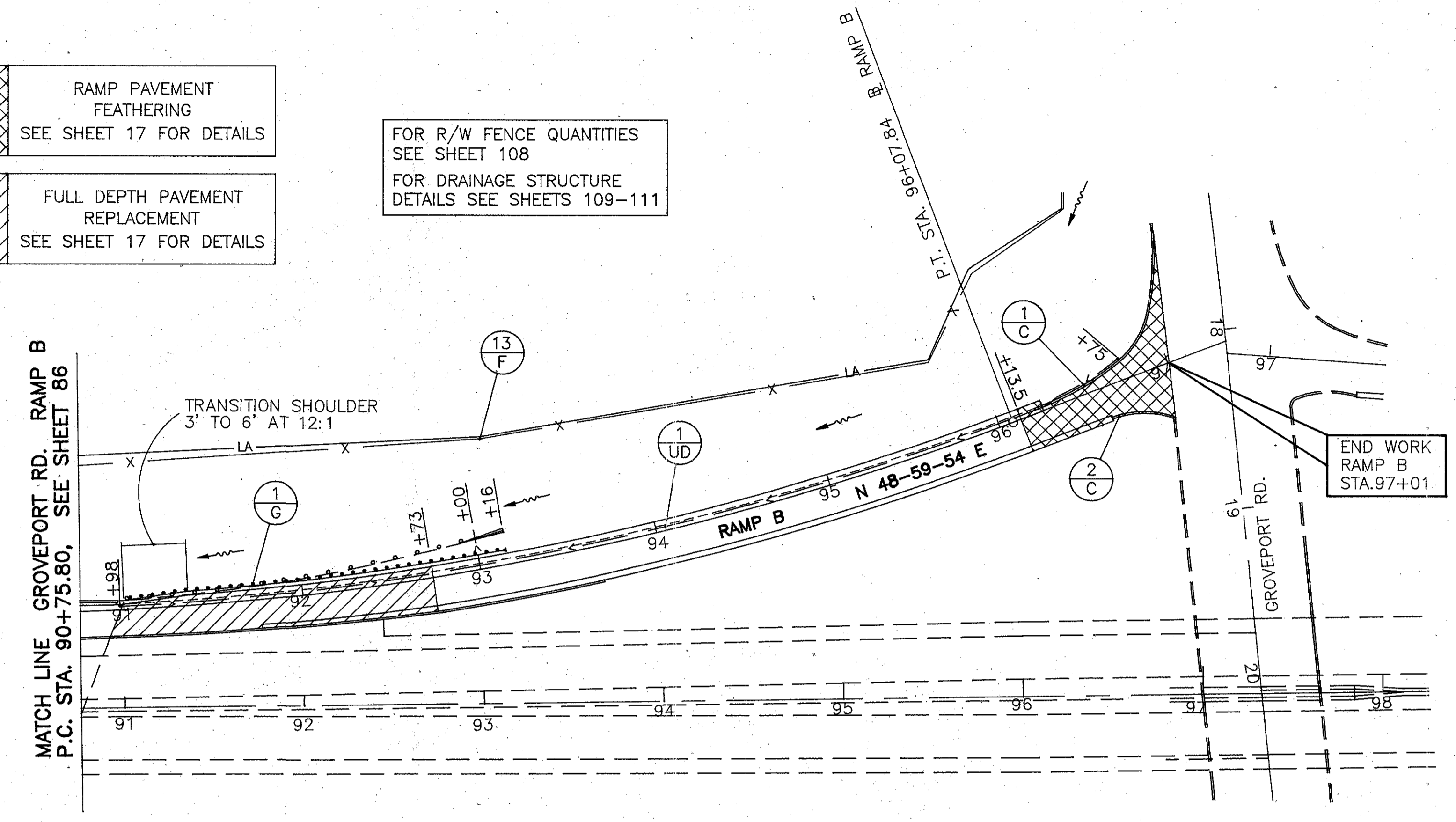
REF. NO.	STATION TO STATION	SIDE	GUARDRAIL REMOVED	GUARDRAIL TYPE 5	SHALLOW UNDERDRAIN AS PER PLAN	ANCHOR ASSEMBLY TYPE T	BRIDGE TERM. ASSEMBLY TYPE 2	CURB TYPE 6	BARRIER REFLECTOR TYPE A	SEE SHEET NO.
1-UD	90+40	RT			367					112
1-G	90+40.33	RT	492		454.5	1	1		6	
1-C	96+10	RT						189		
2-C	96+88	LT						38		
TOTALS:			492		367	1	1	227	6	

PLAN & PROFILE GROVEPORT ROAD RAMP A STA. 90+40.33 TO STA. 97+62.23

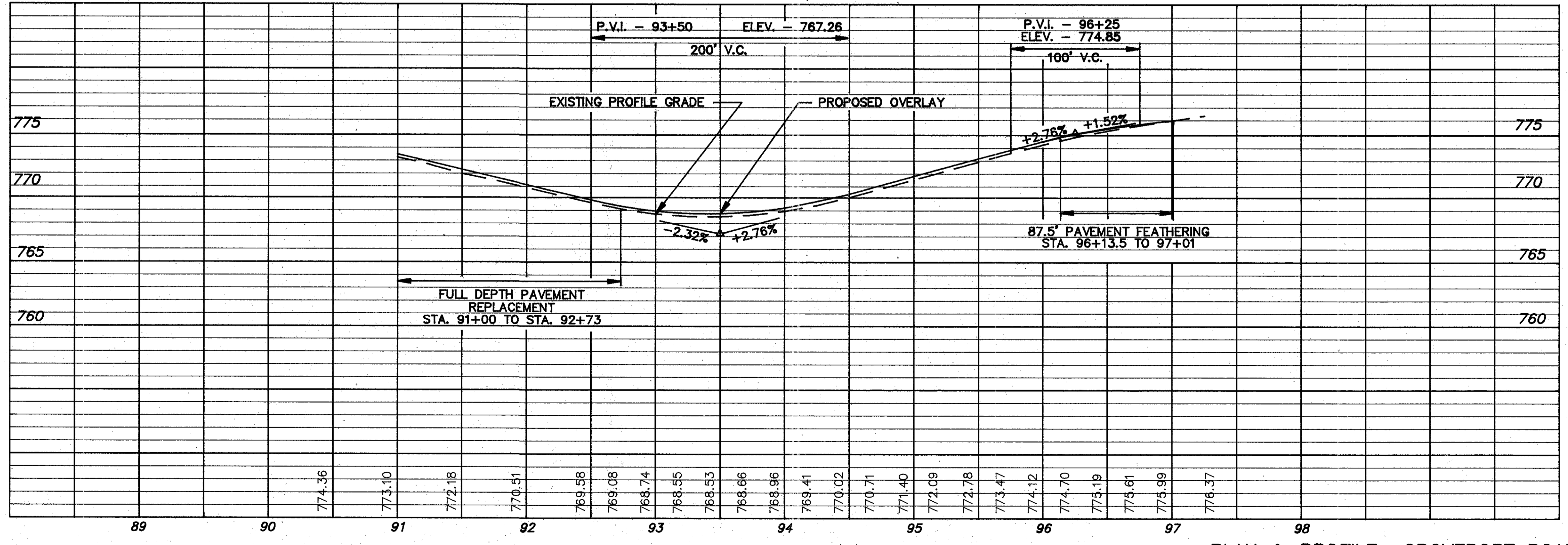
	RAMP PAVEMENT FEATHERING SEE SHEET 17 FOR DETAILS
	FULL DEPTH PAVEMENT REPLACEMENT SEE SHEET 17 FOR DETAILS

FOR R/W FENCE QUANTITIES
SEE SHEET 108

FOR DRAINAGE STRUCTURE
DETAILS SEE SHEETS 109-111

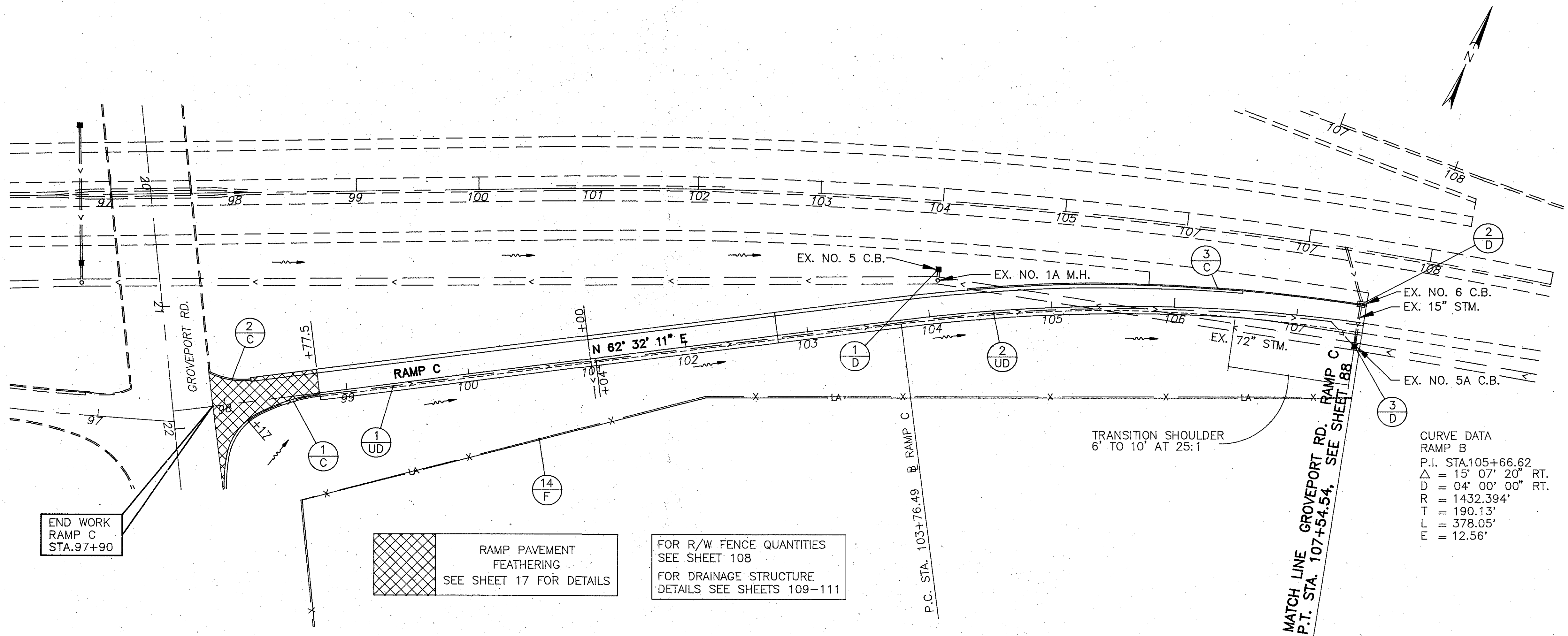


CURVE DATA
 RAMP B
 P.I. STA. 96+23.39
 Δ = 06-27-58 LT.
 D = 06-00-00 LT.
 R = 954.930'
 T = 53.94'
 L = 107.77'
 E = 1.52'



REF. NO.	STATION TO STATION	SIDE	GUARDRAIL REMOVED	6" CONDUIT, TYPE F AS PER PLAN	SHALLOW UNDERDRAIN	GUARDRAIL TYPE 5	ANCHOR ASSEMBLY TYPE E	BRIDGE TERM. ASSEMBLY TYPE 1	CURB TYPE 6	BARRIER REFLECTOR TYPE A	SEE SHEET NO.
1-UD	90+98	96+75	LT								112
1-UD	90+75.80	93+16	LT			190.2	1	1			
1-C	96+26	97+10	LT	133					133		
2-C	96+60	96+93	RT	37					37		
TOTALS:											

PLAN & PROFILE GROVEPORT ROAD RAMP B STA. 90+75.80 TO STA. 97+01

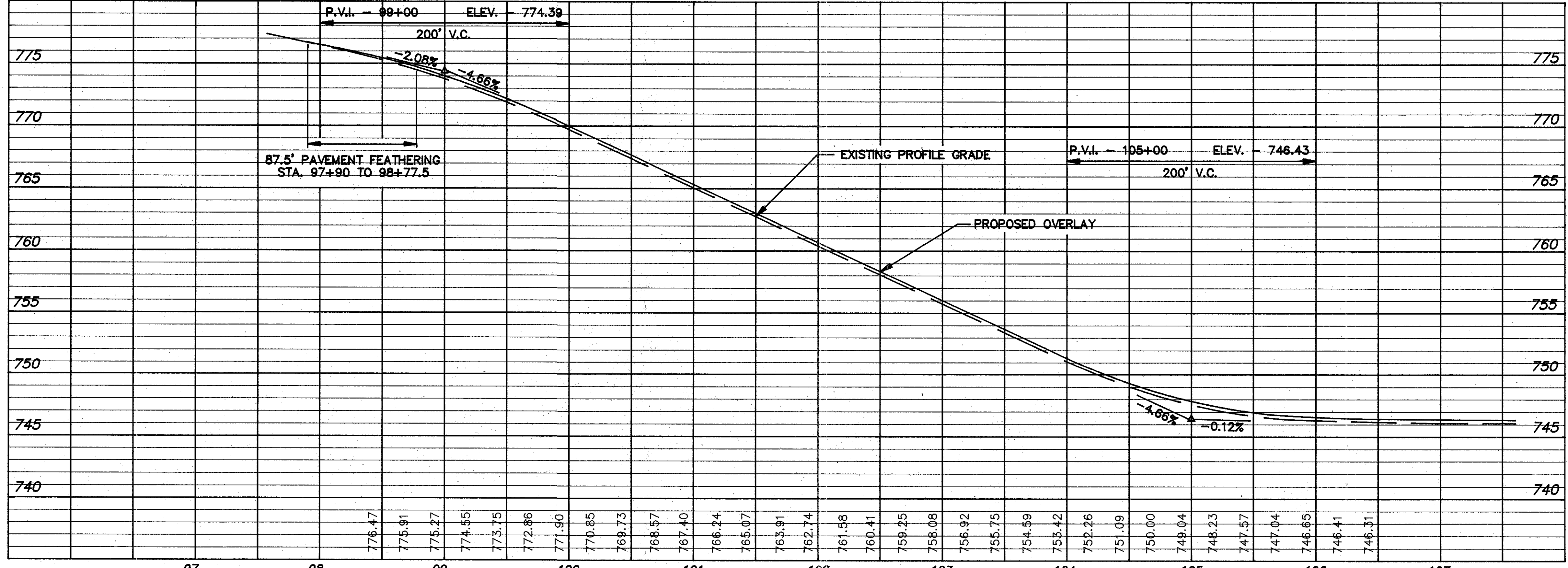


CURVE DATA
 RAMP B
 P.I. STA. 105+66.62
 $\Delta = 15^\circ 07' 20''$ RT.
 $D = 04' 00' 00''$ RT.
 $R = 1432.394'$
 $T = 190.13'$
 $L = 378.05'$
 $E = 12.56'$

END WORK RAMP C STA. 97+90

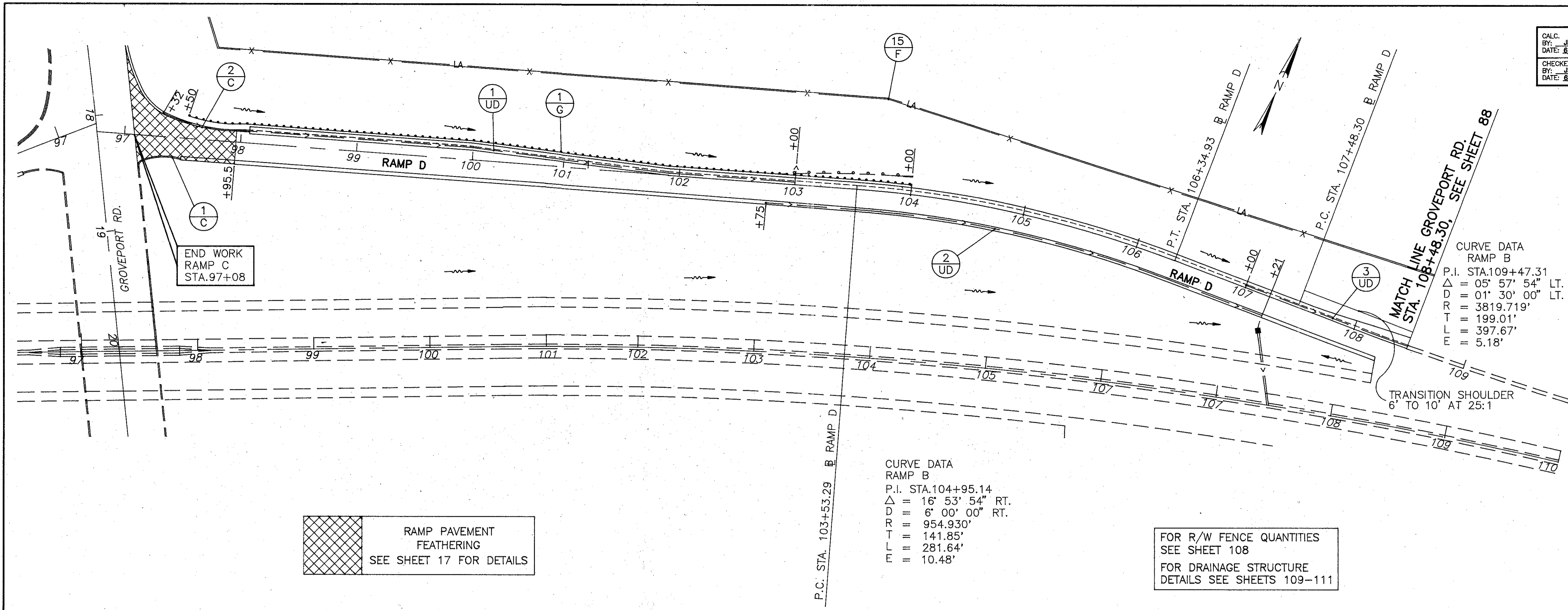
RAMP PAVEMENT FEATHERING SEE SHEET 17 FOR DETAILS

FOR R/W FENCE QUANTITIES SEE SHEET 108
 FOR DRAINAGE STRUCTURE DETAILS SEE SHEETS 109-111



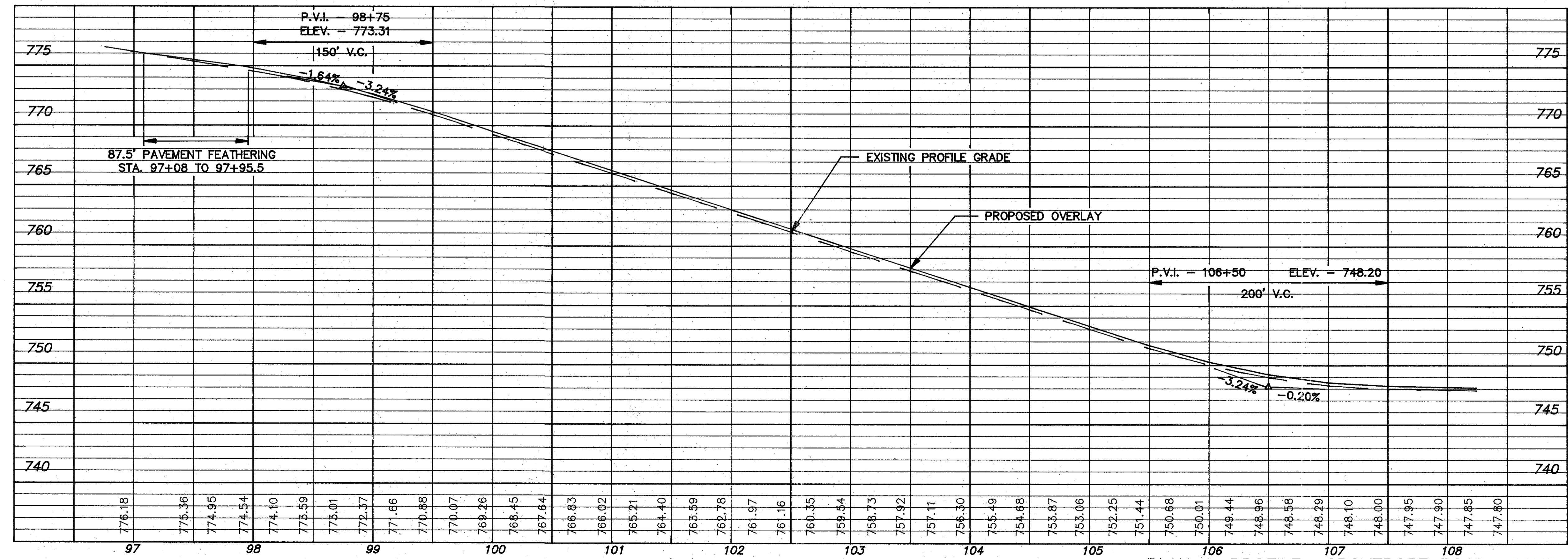
REF. NO.	STATION TO STATION	SIDE	202 CURB REMOVED	6" CONDUIT TYPE F	603 C.B. ADJUSTED TO GRADE	604 SHALLOW UNDERDRAIN TYPE 6	605 CURB TYPE 6	SEE SHEET NO.	
1-UD	98+17	RT						112	
2-UD	101+04	RT		10	304			112	
1-D	104+00	LT			636			109	
2-D	107+50	LT		1				109	
3-D	107+50	RT						109	
1-C	97+90	RT					151		
2-C	97+90	LT					36		
3-C	104+33	LT					324		
TOTALS:									

PLAN & PROFILE GROVEPORT ROAD RAMP C STA. 97+57.39 TO STA. 107+54.54

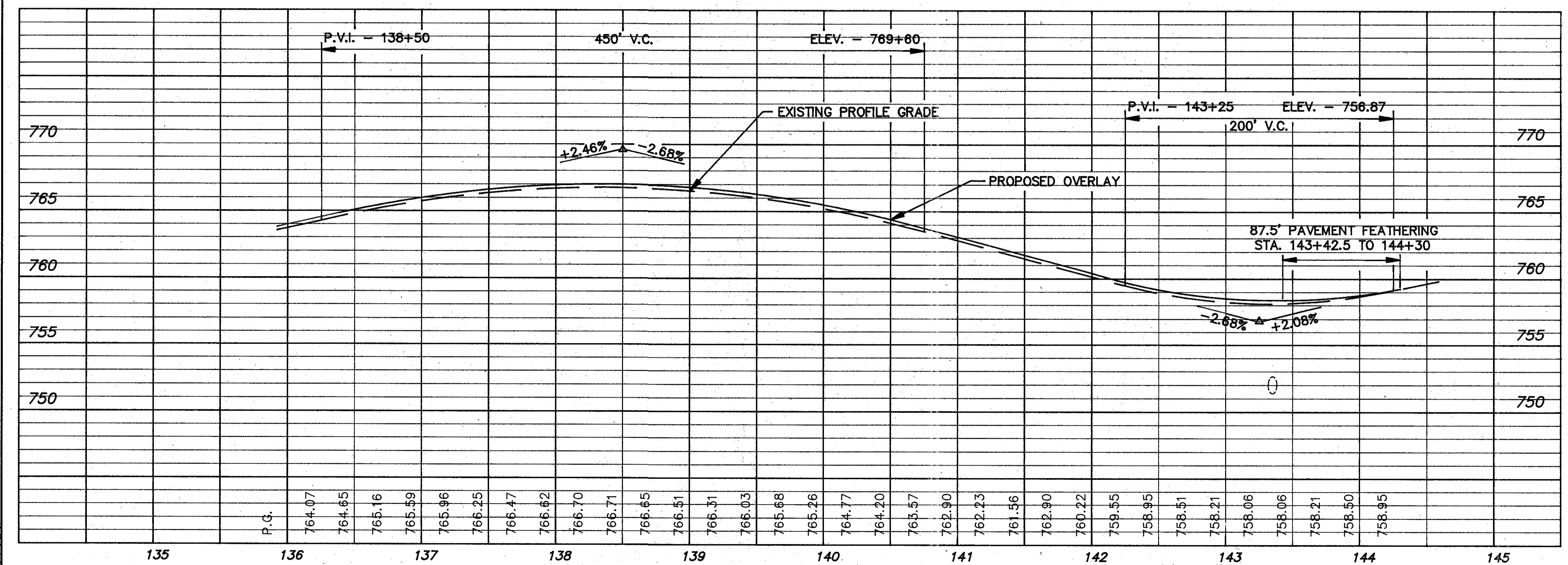
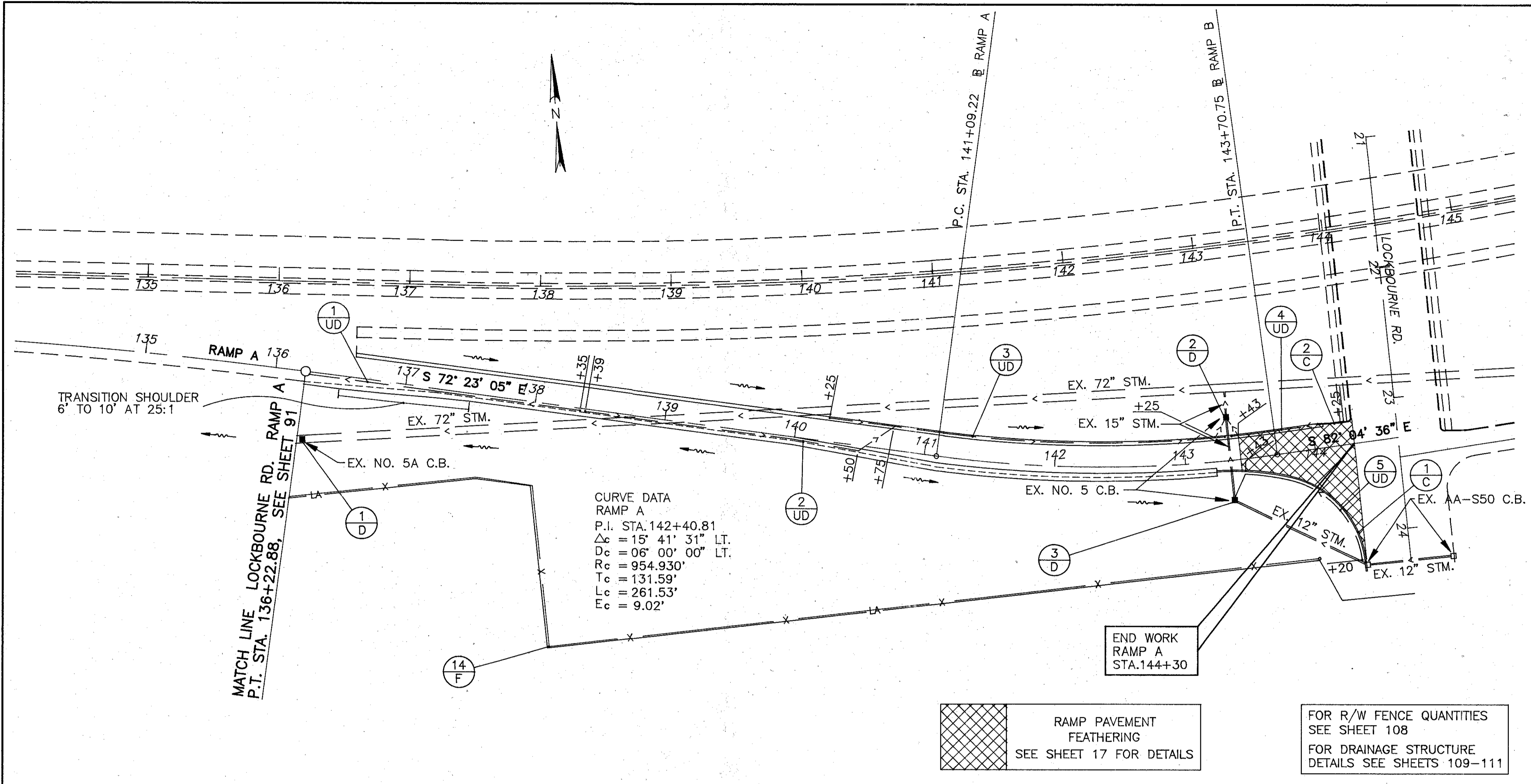


ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	GUARDRAIL REMOVED	CURB REMOVED	6" CONDUIT, UNDERDRAIN AS PER PLAN	SHALLOW GUARDRAIL TYPE 5	ANCHOR ASSEMBLY TYPE E	CURB TYPE 6	BARRIER REFLECTOR TYPE A	SEE SHEET NO.
1-UD	97+32	LT			10	588				112
2-UD	102+75	RT			10	448				112
3-UD	107+00	LT				148				112
1-G	97+50	LT				612.5	1			
1-C	97+13	RT		38						
2-C	98+92	LT		157						
TOTALS:										7



DATE: 6/15/94



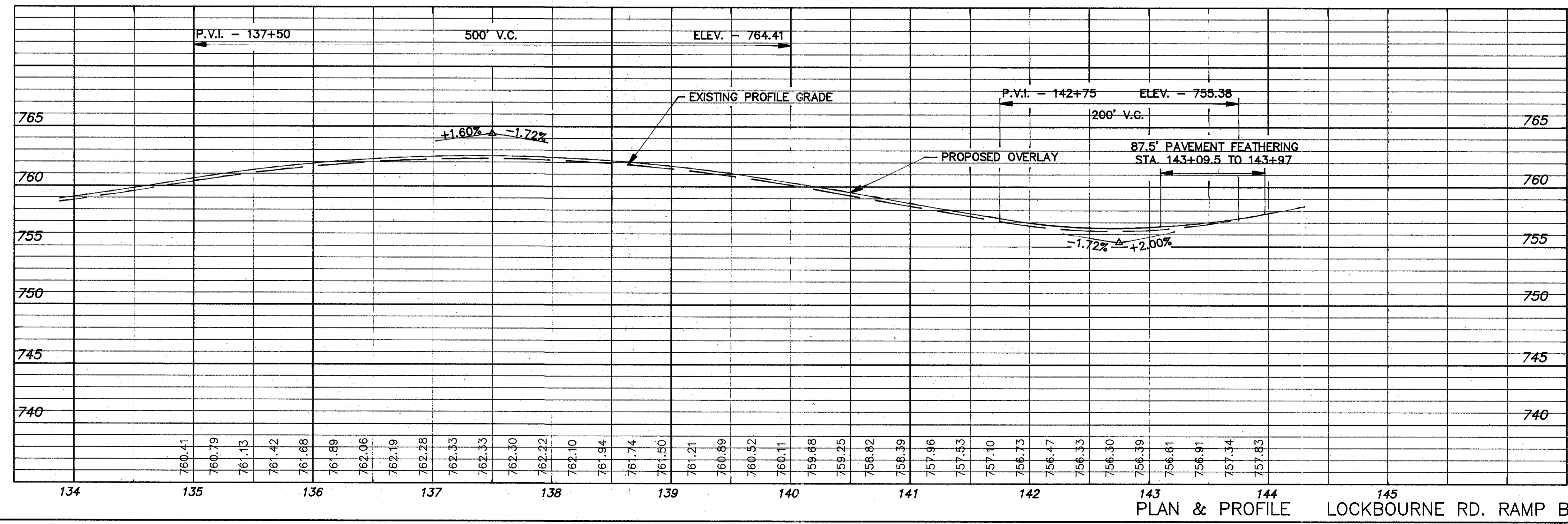
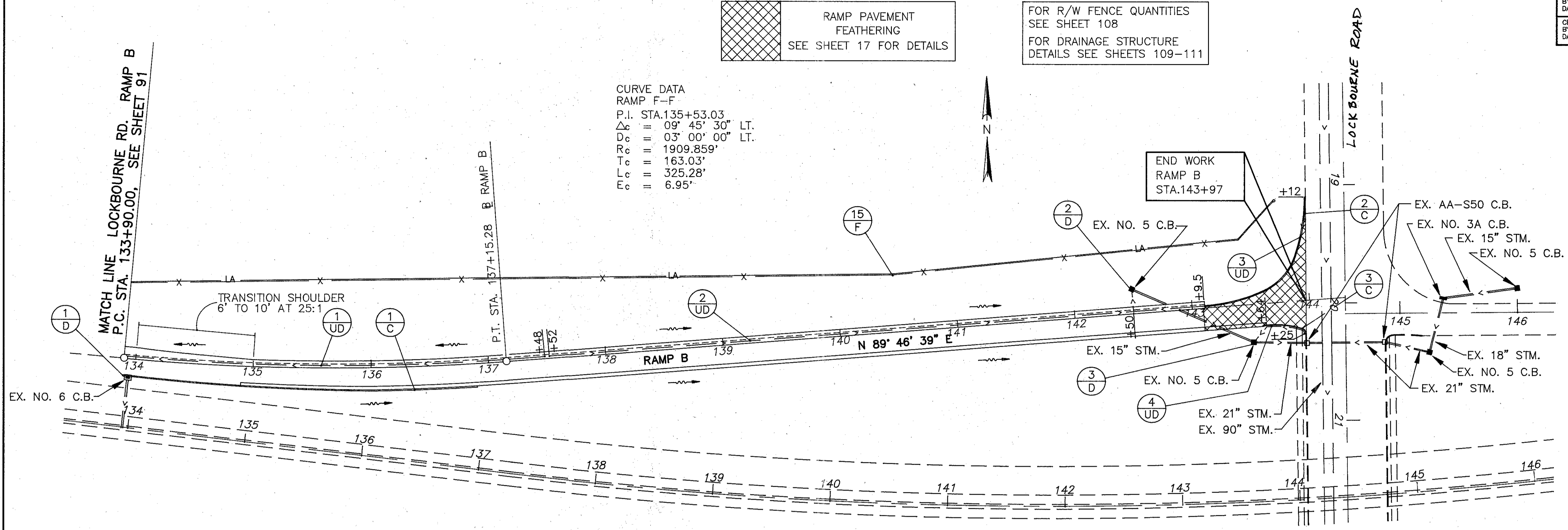
REF. NO.	STATION TO STATION	SIDE	ESTIMATED QUANTITIES		6" CONDUIT, 6" CONDUIT, C.B. ADJUSTED TO GRADE, UNDERDRAIN, AS PER PLANS PER PLAN EACH	604	605	609	TOTALS:
			202 CURB REMOVED	6" CONDUIT, TYPE F					
1-UD	136+23	RT	LF	212	1	3	195	991	195
2-UD	138+39	RT	LF	34	1	34	169		
3-UD	140+25	LT	LF	10	1	30	26		
4-UD	143+35	LT	LF	10					
5-UD	143+35	RT	LF	151					
1-D	136+21	RT							
2-D	143+35	LT							
3-D	143+35	RT							
1-D	143+20	RT							
2-D	144+06	LT							
									TOTALS:

PLAN & PROFILE LOCKBOURNE RD. RAMP A STA. 136+22.88 TO STA. 144+63.91

RAMP PAVEMENT FEATHERING
 SEE SHEET 17 FOR DETAILS

FOR R/W FENCE QUANTITIES
 SEE SHEET 108
 FOR DRAINAGE STRUCTURE
 DETAILS SEE SHEETS 109-111

CURVE DATA
 RAMP F-F
 P.I. STA. 135+53.03
 $\Delta_c = 09^\circ 45' 30''$ LT.
 $D_c = 03^\circ 00' 00''$ LT.
 $R_c = 1909.859'$
 $L_c = 163.03'$
 $E_c = 325.28'$
 $F_c = 6.95'$



ESTIMATED QUANTITIES

REF. NO.	STATION TO STATION	SIDE	202 CURE REMOVED	603 6" CONDUIT, TYPE F	604 C.B. ADJUSTED TO GRADE, AS PER PLAN	605 SHALLOW UNDERDRAIN PER PLAN	609 CURB TYPE 6	
1-UD	133+90	LT						
2-UD	137+48	LT				358		
3-UD	142+50	LT		10		506		
4-UD	143+50	RT		10		165		
	143+95	RT				40		
1-D	133+95	RT			1			
2-D	142+50	LT			1			
3-D	143+50	RT			1			
1-C	136+89	RT	299				299	
2-C	143+11	LT	144				144	
3-C	143+64	RT	33				33	
TOTALS:								476
							3	1069
							30	476

PLAN & PROFILE LOCKBOURNE RD. RAMP B STA. 133+90.00 TO STA. 144+30.35

R/W FENCE TABLES

A.C. = ABUTMENT CONNECTION
 E.P.A. = END POST ASSEMBLY
 C.P.A. = CORNER POST ASSEMBLY
 I.A.P.A. = INTERMEDIATE ANCHOR POST ASSEMBLY

"F-F" - REFERS TO RAMP CALL OUT.

REF. NO.	STATION AND OFFSET		TYPE OF ASSEMBLY	202 FENCE REMOVED FOR STORAGE LIN. FT.	607 FENCE TYPE CLT LIN. FT.	607 GATE		202 GATE REMOVED EA.
	FROM	TO				WALK EACH	VEHICLE EACH	
1-F	12+60, 175' RT.	14+47, 200' RT.	E.P.A. - CORP. LINE	189	189			
	14+47, 200' RT.	16+91, 231' RT.	CORP. LINE - C.P.A.	240	240			
	16+05, RT.		VEHICLE GATE			1		1
	16+91, 231' RT.	17+06, RT. ABUTMENT	C.P.A. - A.C.	170	170			
2-F	80+19, 74' RT. "F-F"	79+00, 85' RT. "F-F"	I.A.P.A. - I.A.P.A.	125	125			
	79+00, 85' RT. "F-F"	73+05, "F-F"	I.A.P.A. - I.A.P.A.	595	595			
	79+60, "F-F"		WALK GATE			1		1
	73+05, "F-F"	71+20, 140' RT. "F-F"	I.A.P.A. - I.A.P.A.	219	219			
3-F	71+20, 140' RT. "F-F"	71+03, 165' RT. "F-F"	I.A.P.A. - E.P.A.	30	30			
	10+93, 164' LT.	11+45, 162' LT.	E.P.A. - I.A.P.A.	54	54			
	11+45, 162' LT.	14+00, 123' LT.	I.A.P.A. - I.A.P.A.	268	268			
	14+00, 123' LT.	14+96, 106' LT.	I.A.P.A. - CORP. LINE	96	96			
	14+96, 106' LT.	19+00, 106' LT.	CORP. LINE - I.A.P.A.	4	4			
	16+00		WALK GATE			1		1
	15+00, 106' LT.	16+10, 150' LT.	I.A.P.A. - I.A.P.A.	120	120			
	16+25, LT.		WALK GATE			1		1
	16+10, 150' LT.	17+24, 150' LT.	I.A.P.A. - C.P.A.	120	120			
	17+24, 150' LT.	17+15, LT. ABUTMENT	C.P.A. - A.C.	89	89			
4-F	24+10, RT. ABUTMENT	24+10, 70' RT.	A.C. - C.P.A.	10	10			
	24+20, 70' RT.	25+00, 80' RT.	C.P.A. - I.A.P.A.	92	92			
	25+00, 80' RT.	26+45, 161.0' RT.	I.A.P.A. - C.P.A.	166	166			
	26+40		VEHICLE GATE			1		1
5-F	26+45, 161.0' RT.	31+20, 124.21' RT.	C.P.A. - E.P.A.	480	480			
	24+22, LT. ABUTMENT	25+50, 115' LT.	A.C. - I.A.P.A.	140	140			
	25+50, 115' LT.	31+00, 141' LT.	I.A.P.A. - I.A.P.A.	554	554			
6-F	31+00, 141' LT.	32+00, 141' LT.	I.A.P.A. - E.P.A.	100	100			
	39+00, 160' RT.	48+00, 150' RT.	E.P.A. - I.A.P.A.	900	900			
	48+00, 150' RT.	49+31.32, 143.06' RT.	I.A.P.A. - I.A.P.A.	132	132			
	49+31.32, 143.06' RT.	50+10, 134.50' RT.	I.A.P.A. - I.A.P.A.	151	151			
	50+10, 134.50' RT.	51+01, 138.50' RT.	I.A.P.A. - I.A.P.A.	90	90			
	50+85		WALK GATE			1		1
	51+01, 138.50' RT.	53+43.60, 171.50' RT.	I.A.P.A. - I.A.P.A.	244	244			
53+43.60, 171.50' RT.	58+65.00, 171.00' RT.	I.A.P.A. - I.A.P.A.	520	520				
58+65.00, 171.00' RT.	58+76.00, 172.00' RT.	I.A.P.A. - C.P.A.	10	10				
58+76.00, 172.00' RT.	25+19, 56.50' RT.	C.P.A. - E.P.A.	347	347				
7-F	39+50, 154' LT.	40+00, 153' LT.	E.P.A. - I.A.P.A.	45	45			
	40+00, 153' LT.	44+00, 111' LT.	I.A.P.A. - I.A.P.A.	448	448			
	44+00, 111' LT.	48+00, 110' LT.	I.A.P.A. - I.A.P.A.	400	400			
	48+00, 110' LT.	48+99.71, 149' LT.	I.A.P.A. - I.A.P.A.	115	115			
	48+99.71, 149' LT.	52+50, 169' LT.	I.A.P.A. - I.A.P.A.	346	346			
	52+50, 169' LT.	54+21.50, 166' LT.	I.A.P.A. - I.A.P.A.	174	174			
	54+21.50, 166' LT.	56+16, 178.50' LT.	I.A.P.A. - C.P.A.	193	193			
	56+16, 178.50' LT.	56+15, 198' LT.	C.P.A. - C.P.A.	20	20			
	56+16		WALK GATE			1		1
	56+15, 198' LT.	58+58.5, 198' LT.	C.P.A. - C.P.A.	243	243			
	58+58.5, 198' LT.	16+42.5, 54' RT.	C.P.A. - I.A.P.A.	152	152			
	16+42.5, 54' RT.	15+92.5, 47' RT.	I.A.P.A. - I.A.P.A.	50	50			
	15+92.5, 47' RT.	14+10.00, 47' RT.	I.A.P.A. - E.P.A.	183	183			
8-F	25+50, 66.50' LT.	22+00, 66.50' LT.	E.P.A. - I.A.P.A.	50	50			
	22+00, 66.50' LT.	60+28, 143' RT.	I.A.P.A. - I.A.P.A.	67	67			
	60+28, 143' RT.	64+95.76, 121' RT.	C.P.A. - I.A.P.A.	465	465			
	64+95.76, 121' RT.	66+20, 118' RT.	I.A.P.A. - C.P.A.	114	114			
	66+20, 118' RT.	66+25, 137.5' RT.	C.P.A. - C.P.A.	20	20			
	66+25, 137.5' RT.	70+72.50, 104' RT.	C.P.A. - I.A.P.A.	434	434			
	70+72.50, 104' RT.	71+46.50, 103' RT.	I.A.P.A. - I.A.P.A.	73	73			
	71+46.50, 103' RT.	76+00, 123' RT.	I.A.P.A. - I.A.P.A.	446	446			
76+00, 123' RT.	75+78, 53' RT.	I.A.P.A. - A.C.	77	77				

REF. NO.	STATION AND OFFSET		TYPE OF ASSEMBLY	202 FENCE REMOVED FOR STORAGE LIN. FT.	607 FENCE TYPE CLT LIN. FT.	607 GATE		
	FROM	TO				WALK EACH	VEHICLE EACH	
9-F	14+55, 65' LT.	60+57.5, 544' LT.	E.P.A. - I.A.P.A.	36	36			
	60+57.5, 544' LT.	61+06.5, 556.52' LT.	I.A.P.A. - I.A.P.A.	52	52			
	61+06.5, 556.52' LT.	61+83, 556' LT.	I.A.P.A. - I.A.P.A.	74	74			
	61+83, 556' LT.	62+75, 544.5' LT.	I.A.P.A. - I.A.P.A.	158	158			
	62+75, 544.5' LT.	63+40, 506.5' LT.	I.A.P.A. - I.A.P.A.	75	75			
	63+40, 506.5' LT.	63+99, 513' LT.	I.A.P.A. - C.P.A.	58	58			
	63+99, 513' LT.	64+09, 430' LT.	C.P.A. - C.P.A.	84	84			
	64+09, 430' LT.	65+57, 199' LT.	C.P.A. - I.A.P.A.	282	282			
	65+57, 199' LT.	68+99.75, 112' LT.	I.A.P.A. - I.A.P.A.	373	373			
	68+99.75, 112' LT.	69+73.75, 138' LT.	I.A.P.A. - C.P.A.	80	80			
	69+73.75, 138' LT.	69+90.50, 96' LT.	C.P.A. - C.P.A.	45	45			
	69+90.50, 96' LT.	70+52.50, 98' LT.	C.P.A. - I.A.P.A.	63	63			
	70+52.50, 98' LT.	72+10.82, 103.5' LT.	I.A.P.A. - I.A.P.A.	157	157			
	72+10.82, 103.5' LT.	74+83, 123' LT.	I.A.P.A. - I.A.P.A.	272	272			
	74+83, 123' LT.	75+23.5, 139' LT.	I.A.P.A. - C.P.A.	46	46			
75+23.5, 139' LT.	75+55, 45' LT.	C.P.A. - A.C.	90	90				
10-F	77+15, 49' RT.	77+28, 174' RT.	A.C. - C.P.A.	123	123			
	77+28, 174' RT.	83+00, 169.50' RT.	C.P.A. - C.P.A.	646	646			
	83+00, 169.50' RT.	84+17, 124.75' RT.	C.P.A. - C.P.A.	136	136			
	84+17, 124.75' RT.	82+93, 52' RT.	C.P.A. - A.C.	148	148			
11-F	77+00, 45.0' LT.	76+68.5, 163.5' LT.	A.C. - C.P.A.	122	122			
	76+68.5, 163.5' LT.	82+17.50, 144.50' LT.	C.P.A. - C.P.A.	492	492			
	82+17.50, 144.50' LT.	82+17.50, 47' LT.	C.P.A. - A.C.	127	127			
12-F	90+16, 66' RT.	90+17.5, 163' RT.	A.C. - C.P.A.	97	97			
	90+17.5, 163' RT.	96+75.50, 259' RT.	C.P.A. - C.P.A.	690	690			
	96+75.50, 259' RT.	24+50, 89' RT.	C.P.A. - I.A.P.A.	126	126			
	24+50, 89' RT.	25+68, 84' RT.	C.P.A. - E.P.A.	127	127			
13-F	90+71, 60' LT.	90+72, 137' LT.	A.C. - C.P.A.	76	76			
	90+72, 137' LT.	93+00, 148.75' LT.	C.P.A. - I.A.P.A.	230	230			
	93+00, 148.75' LT.	95+50, 187' LT.	I.A.P.A. - C.P.A.	256	256			
	95+50, 187' LT.	95+75, 236' LT.	C.P.A. - I.A.P.A.	54	54			
	95+75, 236' LT.	17+24.50, 82' RT.	I.A.P.A. - C.P.A.	63	63			
	17+24.50, 82' RT.	15+62.50, 65.50' RT.	C.P.A. - E.P.A.	161	161			
14-F	26+60, 63' LT.	25+10.05, 69.92' LT.	E.P.A. - I.A.P.A.	150	150			
	25+10.05, 69.92' LT.	24+57.32, 73.94' LT.	I.A.P.A. - I.A.P.A.	53	53			
	24+57.32, 73.94' LT.	98+54, 250.50' RT.	I.A.P.A. - C.P.A.	176	176			
	98+54, 250.50' RT.	101+87.75, 168.50' RT.	C.P.A. - I.A.P.A.	344	344			
	101+87.75, 168.50' RT.	107+50, 119.00' RT.	I.A.P.A. - I.A.P.A.	565	565			
	107+50, 119.00' RT.	117+46.25, 83.25' RT.	I.A.P.A. - C.P.A.	997	997			
	117+46.25, 83.25' RT.	117+47.25, 133.25' RT.	C.P.A. - C.P.A.	50	50			
	117+47.25, 133.25' RT.	124+31, 80.50' RT.	C.P.A. - I.A.P.A.	686	686			
	124+31, 80.50' RT.	125+82.25, 87' RT.	I.A.P.A. - C.P.A.	152	152			
	125+82.25, 87' RT.	125+90.50, 148' RT.	C.P.A. - C.P.A.	62	62			
	125+90.50, 148' RT.	130+32.2, 91' RT.	C.P.A. - I.A.P.A.	446	446			
	130+32.2, 91' RT.	135+04.25, 124' RT.	I.A.P.A. - C.P.A.	474	474			
	135+04.25, 124' RT.	135+11.75, 178.50' RT.	C.P.A. - C.P.A.	55	55			
	135+11.75, 178.50' RT.	137+53, 147' RT.	C.P.A. - I.A.P.A.	245	245			
	137+53, 147' RT.	137+95, 153' RT.	I.A.P.A. - C.P.A.	43	43			
	137+95, 153' RT.	138+08, 276' RT.	C.P.A. - C.P.A.	125	125			
	138+08, 276' RT.	143+63.39, 247.5' RT.	C.P.A. - E.P.A.	556	556			
	15-F	15+56, 69' LT.	98+20, 259.90' LT.	E.P.A. - C.P.A.	204	204		
98+20, 259.9' LT.		103+79.50, 223' LT.	C.P.A. - I.A.P.A.	578	578			
103+79.5, 223' LT.		113+80, 94.50' LT.	I.A.P.A. - I.A.P.A.	1046	1046			
113+80.00, 94.50' LT.		117+46.93, 75' LT.	I.A.P.A. - I.A.P.A.	375	375			
117+46.93, 75' LT.		124+32, 130' LT.	I.A.P.A. - C.P.A.	701	701			
124+32, 130' LT.		124+39, 80.75' LT.	C.P.A. - C.P.A.	50	50			
124+39, 80.75' LT.		133+50, 118' LT.	C.P.A. - I.A.P.A.	913	913			
133+50, 118' LT.		140+47, 194.25' LT.	I.A.P.A. - I.A.P.A.	686	686			
140+47, 194.25' LT.		143+57, 223' LT.	I.A.P.A. - I.A.P.A.	294	294			
143+57, 223' LT.		143+91, 254.75' LT.	I.A.P.A. - E.P.A.	45	45			
TOTALS THIS COLUMN				15,690	15,690	-0-	-0-	
TOTALS FROM PREVIOUS COLUMN				10,370	10,370	5	2	
TOTALS CARRIED TO GENERAL SUMMARY				26,060	26,060	5	2	

DRAINAGE STRUCTURE NOTES & DETAILS

CALC BY: JRA DATE: 6/15/94 CHECKED BY: JSB DATE: 6/15/94	FRA-104-8.02	OHIO FHWA REGION
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109
185

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

THIS ITEM SHALL BE CONSTRUCTED AS PER STANDARD DRAWING CB-5, EXCEPT THAT BRICK AND BLOCK WILL NOT BE ALLOWED AND THE CONCRETE APRON SHALL BE MODIFIED AS DETAILED ON THIS SHEET. THE EXISTING GRATE SHALL BE REUSED IF POSSIBLE. THE COST OF REMOVING THE EXISTING CATCH BASIN AND CONCRETE APRON ARE TO BE INCLUDED IN THE COST OF THE PROPOSED CATCH BASIN. THE EXACT DEPTH AND LAYOUT OF THE CATCH BASINS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO THE FABRICATION.

THE STANDARD APRON DESIGN WILL BE REPLACED BY #1 STONE PLACED 1'-6" DEEP BY THE WIDTH SHOWN IN THE STANDARD DRAWING. THE STONE SHALL BE LEVELED AND THE VOIDS COMPLETELY FILLED BY GROUT AS PER ITEM 601 OF THE C.M.S. IF ANY CONDUIT IS DAMAGED DURING THIS OPERATION, THE REPAIRS SHALL BE AT THE CONTRACTOR'S EXPENSE.

PAYMENT SHALL INCLUDE ALL LABOR, MATERIAL, AND EQUIPMENT NECESSARY TO PERFORM THE WORK AND SHALL BE PAID FOR AT THE UNIT PRICE BID PER EACH ITEM 604 - CATCH BASIN NO. 5, AS PER PLAN.

ITEM 604 CATCH BASIN, NO. 2-2B, AS PER PLAN

THIS ITEM SHALL BE CONSTRUCTED AS PER STANDARD DRAWING CB-2-2 A&B, EXCEPT THAT THE GRATE SHALL BE A NEENAH R-4852 WITH A HEAVY DUTY R-4899 FRAME, OR APPROVED EQUAL.

PAYMENT SHALL INCLUDE ALL LABOR, MATERIAL, AND EQUIPMENT NECESSARY TO PERFORM THE WORK AND SHALL BE PAID FOR AT THE UNIT PRICE BID PER EACH ITEM 604 - CATCH BASIN NO. 2-2B, AS PER PLAN.

ITEM 604 - CATCH BASIN ADJUSTED TO GRADE, AS PER PLAN ITEM 604 - CATCH BASIN RECONSTRUCTED TO GRADE, AS PER PLAN

THESE ITEMS SHALL INCLUDE ALL WORK AS DESCRIBED IN THE C.M.S. UNDER ITEM 604 ALONG WITH THE CONSTRUCTION OF AN APRON AS DESCRIBED ABOVE IN CASES WHERE THERE NOW EXISTS A CONCRETE APRON. THE NEW APRON SHALL BE PROVIDED AS DETAILED ON THIS SHEET.

PAYMENT SHALL INCLUDE LABOR, MATERIAL, AND EQUIPMENT NECESSARY TO PERFORM THE WORK AND SHALL BE PAID FOR AT THE UNIT BID PRICE BID PER EACH ITEM 604 - CATCH BASIN ADJUSTED TO GRADE, AS PER PLAN OR CATCH BASIN RECONSTRUCTED TO GRADE, AS PER PLAN.

CONNECTIONS OF EXISTING CONDUITS TO PROPOSED CATCH BASINS

THE FOLLOWING QUANTITIES HAVE BEEN ADDED TO THE PLAN AS CONTINGENCY QUANTITIES, IN THE EVENT THAT ANY EXISTING CONDUITS ARE DAMAGED DURING THE REMOVAL OR REPLACEMENT OF CATCH BASINS, OR IN THE EVENT THAT CONDUIT IS NEEDED TO CONNECT EXISTING CONDUITS TO ANY PROPOSED CATCH BASINS. THE FOLLOWING QUANTITIES ARE MEANT TO BE USED AS DIRECTED BY THE ENGINEER AND HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR THIS PURPOSE:

ITEM 603 - 12" CONDUIT, TYPE C	250 LIN. FT.
ITEM 603 - 15" CONDUIT, TYPE C	200 LIN. FT.
ITEM 603 - 18" CONDUIT, TYPE C	150 LIN. FT.
ITEM 603 - 21" CONDUIT, TYPE C	25 LIN. FT.
ITEM 603 - 24" CONDUIT, TYPE C	25 LIN. FT.
ITEM 603 - 27" CONDUIT, TYPE C	25 LIN. FT.
ITEM 603 - 30" CONDUIT, TYPE C	25 LIN. FT.
ITEM 603 - 36" CONDUIT, TYPE C	25 LIN. FT.

THE FOLLOWING ITEMS ARE ALSO INCLUDED AS CONTINGENCY QUANTITIES FOR USE BY THE ENGINEER IN CONJUNCTION WITH ITEM 605 SHALLOW UNDERDRAIN, AS PER PLAN AS DETAILED FURTHER ON SHEET 112.

ITEM 603 - 6" CONDUIT, TYPE F	1000 LIN. FT.
ITEM SPECIAL PRECAST REINFORCED CONCRETE OUTLET	50 EACH

ITEM 203 - EMBANKMENT

ALL EXCAVATIONS AND VOIDS SHALL BE BACKFILLED AND COMPACTED TO THE TOP OF THE EXISTING GROUND AS PER 604.04. AN ESTIMATED QUANTITY OF 125 CU.YDS. OF EMBANKMENT HAS BEEN PROVIDED FOR FILL AROUND CATCH BASINS AS NEEDED.

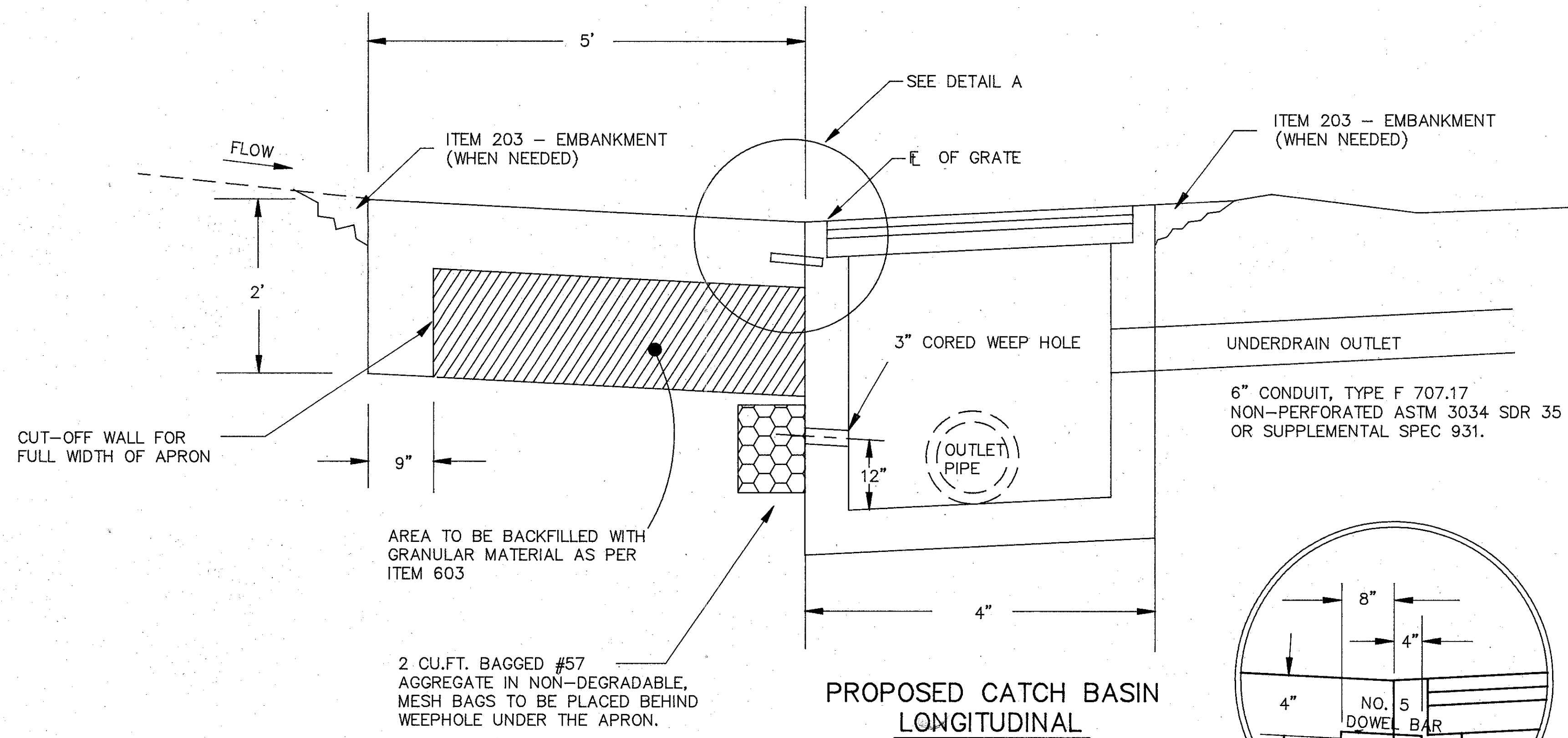
(TOTAL CARRIED TO GENERAL SUMMARY)

ITEM 604 CATCH BASIN GRATE

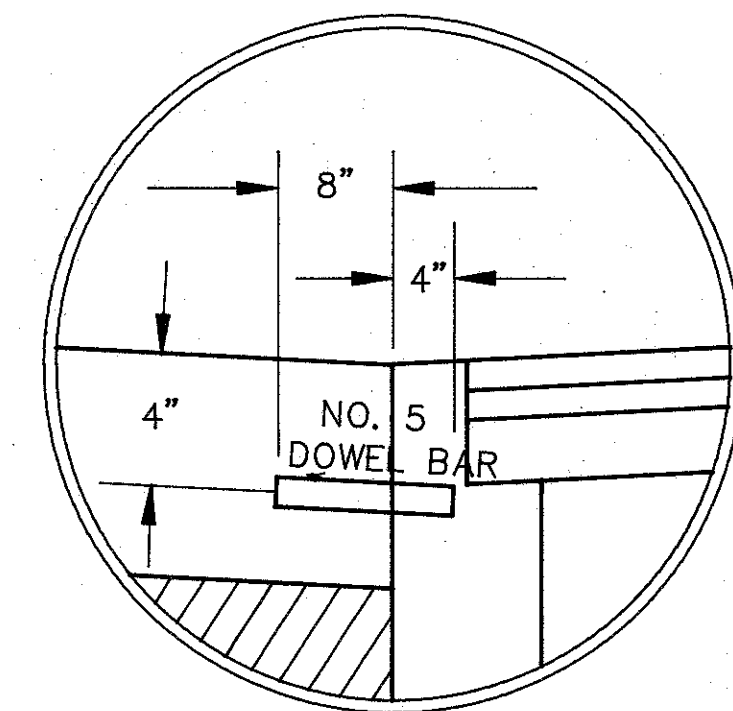
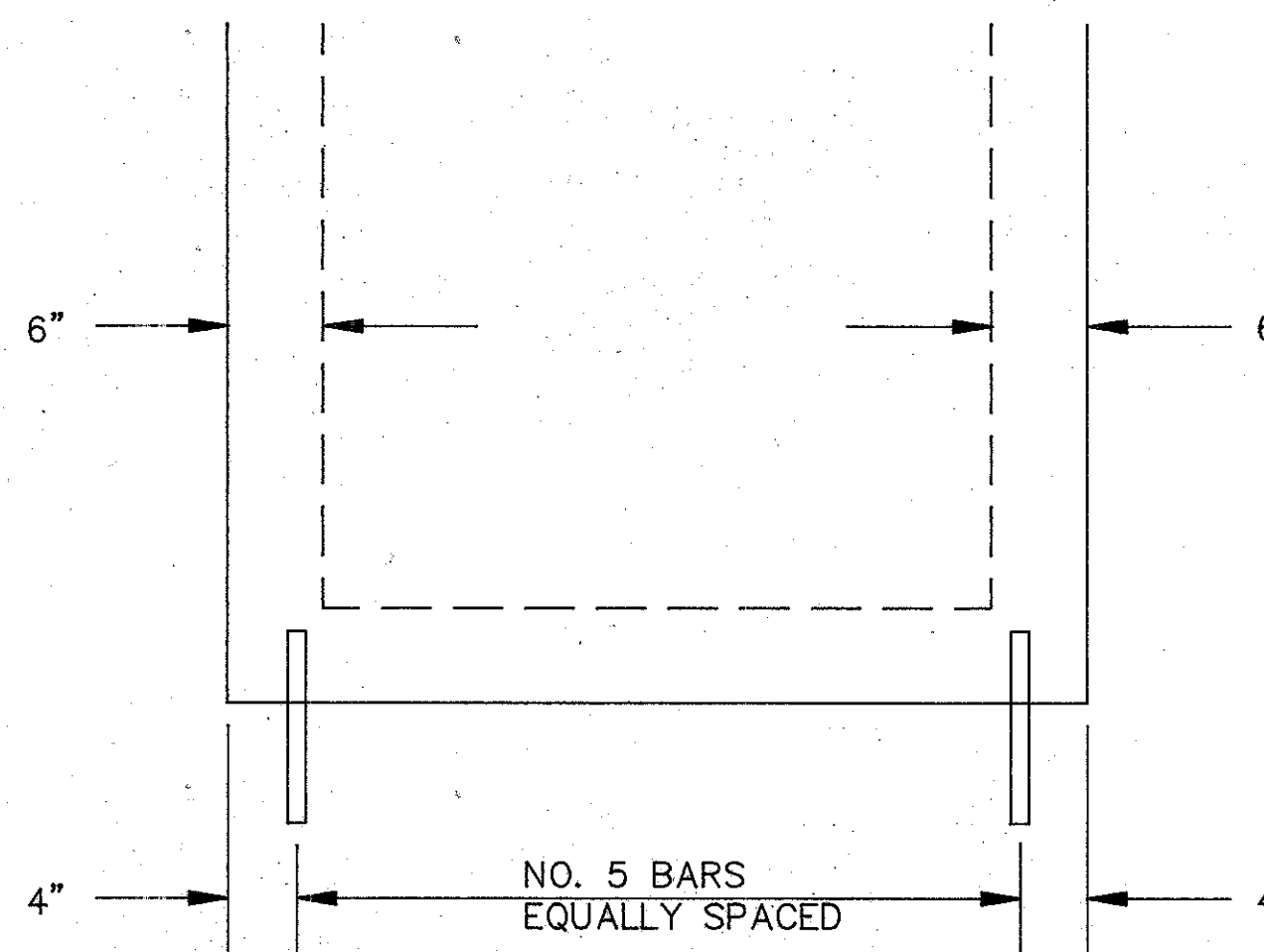
EXISTING GRATES FOR THE CATCH BASINS SHALL BE REUSED UNLESS DIRECTED OTHERWISE. A CONTINGENCY QUANTITY OF REPLACEMENT GRATES HAS BEEN PROVIDED, TO REPLACE ANY DAMAGED GRATE WHEN DIRECTED.

TOTAL = 10 EACH

* FOR DETAILS NOT SHOWN FOR CONCRETE APRON, SEE STD. DWG. CB-5



BAR LOCATION DETAIL FOR CATCH BASINS



THE NUMBER OF BARS NEEDED ALONG EACH SIDE OF A NO. 5 CATCH BASIN WITH A CONCRETE APRON IS FOUR (4).

CATCH BASIN NO.	TOTAL NUMBER OF BARS FOR A	
	STD. APRON	SAG APRON
5	12	16

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

TOTALS OF CONDUIT, EMBANKMENT, AND GRATES ARE CARRIED TO THE GENERAL SUMMARY.

DRAINAGE STRUCTURE REPLACEMENT DATA

SHEET NO.	REF. NO.	SIDE	STATION	ITEM 604 EXISTING STRUCTURE TYPE								APPROXIMATE ELEVATION		SIDE, SIZE, AND ELEVATION OF CONNECTING PIPES	SIDE AND ELEVATION OF 6" UNDERDRAIN CONNECTIONS	
				C.B. NO. 5	C.B. NO. 5A	C.B. NO. 6	C.B. 2-2-B	INLET 2-A-10	INLET 2-A-12	INLET 2-A-14	INLET 3B	STRUCTURE GRATE (EXISTING)	STRUCTURE BOTTOM			
78	1-D	MED	9+22							1 **			703.00	699.17	N-15" - 699.17	W & E - 699.69
78	2-D	LT	9+75		1							698.85	692.12	W & E-54" - 692.12, S-15" - 695.85		
78	3-D	MED	11+75							1 **		707.03	703.20	S-15" - 703.20	E - 703.70	
78	4-D	MED	14+35								1 ***	711.26	705.76	N-15" - 705.76	E - 706.84	
80	1-D	MED	29+50								1 ***	713.43	707.93	N-15" - 707.93	W - 709.23	
81	1-D	MED	34+66								1 ***	711.36	705.86	N-15" - 705.86	W - 707.16	
82	1-D	MED	44+55								1 ***	707.46	701.96	N-15" - 701.96	W - 703.25	
82	2-D	MED	45+75								1 ***	707.28	701.78	N-15" - 701.78	W & E - 703.09	
82	3-D	MED	46+75								1 ***	707.40	701.90	N-15" - 701.90	E - 703.19	
82	4-D	RT	49+50			1						708.23	703.50	N-15" - 703.50	E - 703.50	
82	5-D	RT	52+50					1				709.66	703.60	N-15" - 703.60	E - 704.20	
83	1-D	LT	54+50	1								709.15	705.07	W-15" - 705.07		
83	2-D	RT	55+50					1				711.22	707.22	S-18" - 707.22		
83	3-D	MED	60+50								1 ***	714.67	707.27	N & S-24" - 707.27	E - 708.14	
83	4-D	RT	60+50							1		714.67	706.64	N & S-24" - 706.64	E - 708.00	
83	5-D	LT	63+50	1								716.37	713.13	N-15" - 713.38, S-18" - 713.13		
85	1-D	MED	77+50								1 ***	762.10	757.58	S-15" - 757.58	E - 757.58	
86	1-D	RT	90+22	1								741.50	738.50	N-15" - 738.50		
86	2-D	LT	90+69	1								749.00	746.00	S-15" - 746.00		
87	1-D	LT	96+75	1								757.28	753.06	S-15" - 753.06		
87	2-D	RT	96+75	1								757.28	751.94	N & S-15" - 751.94		
88	1-D	LT	107+25	1								746.15	742.76	S-15" - 742.76		
88	2-D	MED	109+25								1 ***	746.70	734.78	E-15" - 734.78	W - 740.83	
88	3-D	LT	110+37	1								745.00	733.00	S-36" - 733.00	W - 741.33, E - 741.74	
88	4-D	MED	110+40								1 ***	746.42	732.64	W-15"-732.74, N-36"-733.74, E-15"-739.60, S-36" - 732.64	E & W - 740.54	
88	5-D	RT	110+37	1								743.00	731.22	N-36" - 732.37, E & W-72" - 731.22		
89	1-D	MED	111+50								1 ***	746.68	740.81	W-15" - 740.81	E - 740.81	
89	2-D	LT	114+00	1								745.35	740.85	S-15" - 740.85		
89	3-D	RT	114+00		1							745.55	732.83	N-15" - 739.55, E & W-72" - 732.83		
89	4-D	LT	117+70	1								747.90	743.40	S-15" - 743.40		
89	5-D	RT	117+70		1							747.60	734.36	N-15" - 742.25, E & W-72" - 734.36		
90	1-D	LT	122+50	1*								750.00	746.45	S-15" - 746.45	E - 746.45	
90	2-D	MED	122+50								1 ***	751.96	745.83	N & S-15" - 745.83	E - 746.09	
90	3-D	RT	122+50		1							749.95	736.26	N-15" - 744.85, E & W-72" - 736.26	E - 745.80	
90	4-D	RT	127+00		1							752.21	737.84	E & W-72" - 737.84		
90	5-D	RT	130+00		1							753.00	738.89	S-15" - 750.60, E & W-72" - 738.89		
91	1-D	MED	133+95								1 ***	758.90	750.17	N-15" - 753.31, S-15" - 750.17		
93	1-D	RT	34+98	1								692.40	690.30	N & S-15" - 690.30		
94	1-D	RT	36+12	1								692.00	689.90	N-15" - 689.90		
95	1-D	LT	35+53				1					689.09	687.35	S-15" - 687.35		
95	2-D	RT	35+07				1					688.81	687.03	N & E-15" - 687.03	N - 687.33	
95	3-D	LT	36+00	1								691.30	689.20	S-15" - 689.20		

NOTE: ALL STRUCTURES TO BE ADJUSTED OR RECONSTRUCTED TO GRADE EXCEPT:
 * - STRUCTURE TO BE REPLACED WITH A CATCH BASIN NO. 5, AS PER PLAN (SEE SHEET 109)
 ** - STRUCTURE TO BE REPLACED WITH A CATCH BASIN, NO. 2-2B, AS PER PLAN (SEE SHEET 109)
 *** - STRUCTURE TO BE REPLACED WITH AN INLET, NO. 3B50

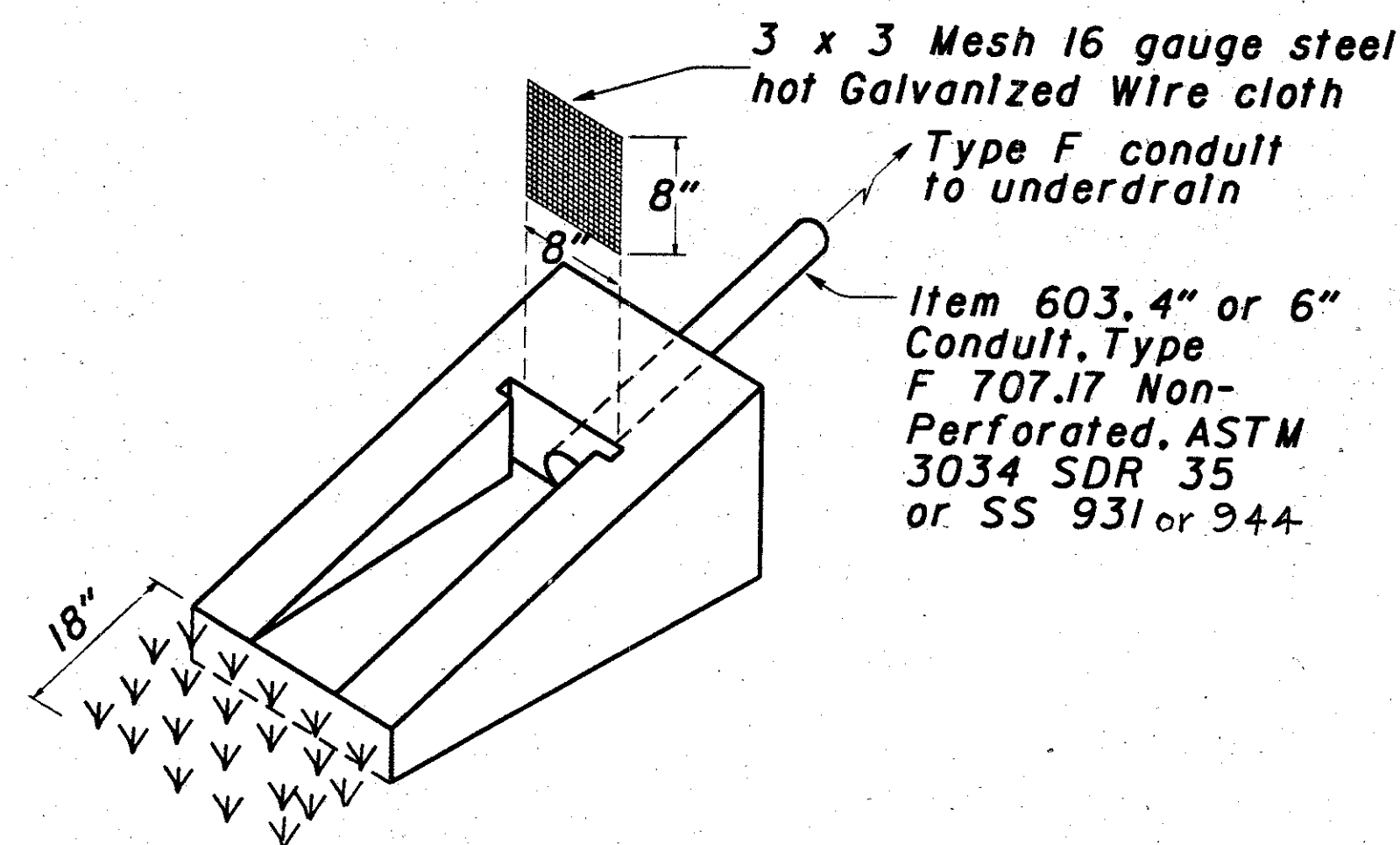
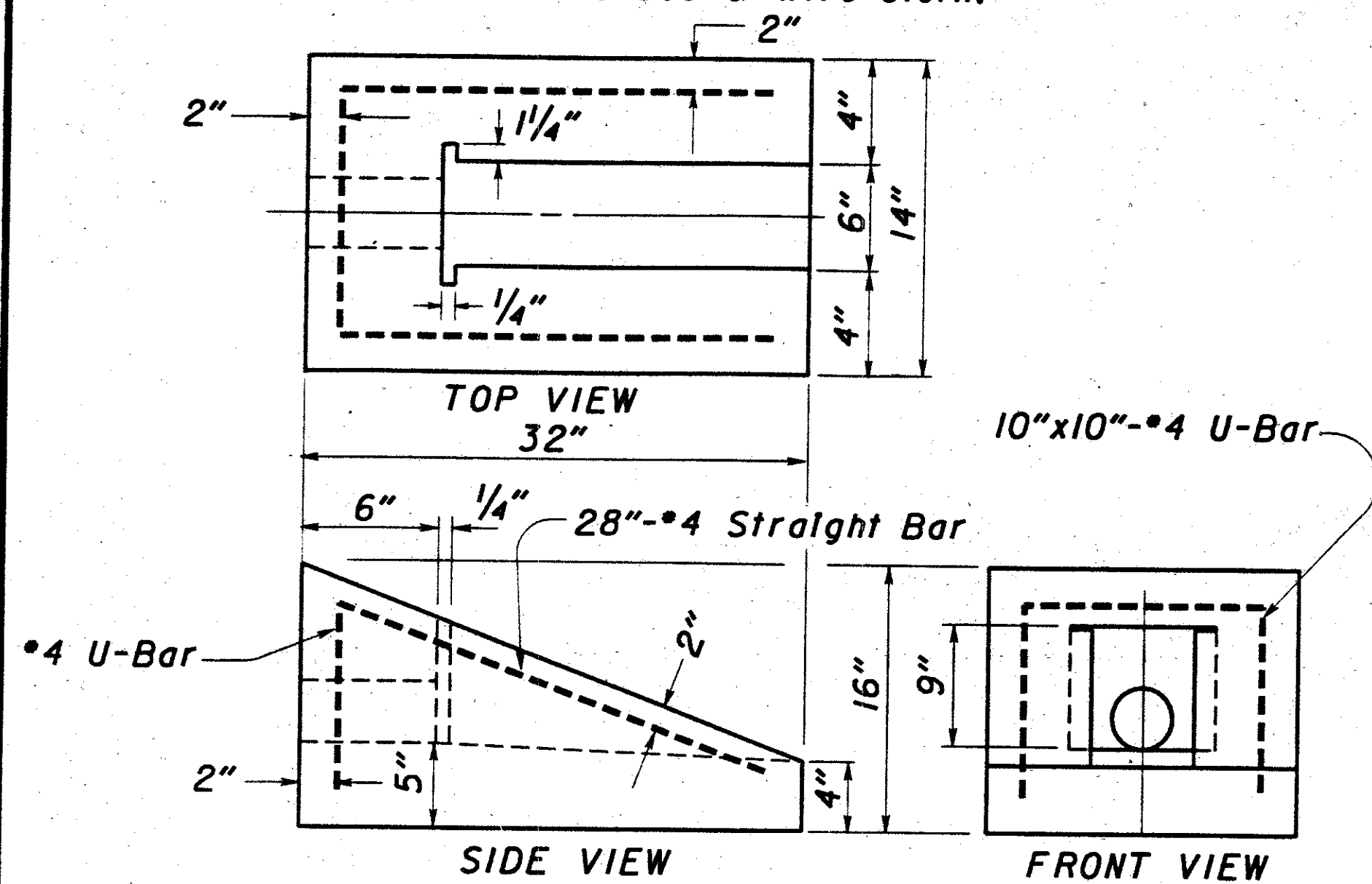
DRAINAGE STRUCTURE REPLACEMENT DATA

SHEET NO.	REF. NO.	SIDE	STATION	ITEM 604									APPROXIMATE ELEVATION		SIDE, SIZE, AND ELEVATION OF CONNECTING PIPES	SIDE AND ELEVATION OF 6" UNDERDRAIN CONNECTIONS
				EXISTING STRUCTURE TYPE									STRUCTURE GRATE (EXISTING)	STRUCTURE BOTTOM		
				C.B. AA-S50	C.B. NO. 3A	C.B. NO. 5	C.B. NO. 5A	C.B. NO. 6	C.B. 2-2-B	INLET 2-A-10	INLET 2-A-14	M.H. NO. 1				
96	1-D	LT	34+50			1							691.50	689.40	S-15" - 689.40	
96	2-D	RT	34+40			1							691.00	688.65	N-15" - 688.90, S-18" - 688.65	
96	3-D	LT	34+99									1	689.09	687.35	S-15" - 687.35	
96	4-D	RT	34+90									1	688.81	687.20	N-15" - 688.81, S-18" - 687.20	
97	1-D	RT	50+06							1			708.44	704.01	N-15" - 704.01	
98	1-D	RT	54+00			1							707.75	701.50	E-15" - 701.50	
99	1-D	LT	60+18			1							712.11	708.02	N-15" - 708.77, S-24" - 708.02, N-8" - 710.69	
99	2-D	LT	60+18							1			714.23	707.72	N & S-24" - 707.72	E - 708.50
99	3-D	LT	63+42			1							716.01	713.75	E-15" - 713.75	
99	4-D	RT	63+50			1							716.37	713.13	W-15" - 713.38, E - 15" - 713.13	
99	5-D	LT	16+29	1									734.78	729.62	W-12" - 729.62, E-15" - 729.62	N - 733.21
99	6-D	LT	17+50							1			731.55	724.43	W-12" - 727.70, N & S-15" - 724.43	
99	7-D	LT	17+50	1									733.84	731.45	E & W-12" - 731.45	N - 731.94
100	1-D	LT	14+10	1									735.82	733.82	S-15" - 733.82	
100	2-D	LT	14+49								1		735.47	730.93	N-15" - 733.21, E - 15" - 730.93	
100	3-D	LT	57+00		1								734.95	728.75	N-15" - 730.45, E - 15" - 728.75	W - 728.75
100	4-D	RT	57+00		1								735.00	724.28	N & S-24" - 728.28	E & W - 728.88
100	5-D	RT	63+00										727.70	724.20	E-15" - 724.20	
100	6-D	LT	63+00								1		727.77	724.07	W & S-15" - 724.07	
100	7-D	LT	64+32		1								725.65	719.97	N-15" - 720.22, SE - 18" - 719.97	W - 719.97
100	8-D	LT	66+00			1							726.54	719.00	NW-18" - 719.00, SE - 18" - 719.00	
101	1-D	RT	66+25										730.14	723.50	N-15" - 723.50, SE - 12" - 725.48	E & W - 723.50
101	2-D	RT	66+50			1							728.48	726.00	NW-12" - 726.00	
104	1-D	LT	104+00			1							746.60	743.60	S-15" - 743.60	
104	2-D	LT	107+50							1			746.51	740.11	N & S-15" - 740.11	
104	3-D	RT	107+50				1						743.70	729.53	N-15" - 739.15, E & W-72" - 729.53	
106	1-D	RT	136+21							1			759.00	740.95	E & W-72" - 740.95	
106	2-D	LT	143+35			1							756.55	751.73	N-15" - 751.98, S-15" - 751.73	
106	3-D	RT	143+35			1							755.32	747.69	N-15" - 751.98, S-15" - 751.73	
107	1-D	RT	133+95								1		758.95	754.82	S-15" - 754.82	
107	2-D	LT	142+50			1							754.75	748.98	E-15" - 748.98	
107	3-D	RT	143+50			1							755.00	748.00	W-15" - 748.00, E-21" - 748.00	

NOTE: ALL STRUCTURES THIS SHEET ARE TO BE ADJUSTED OR RECONSTRUCTED TO GRADE

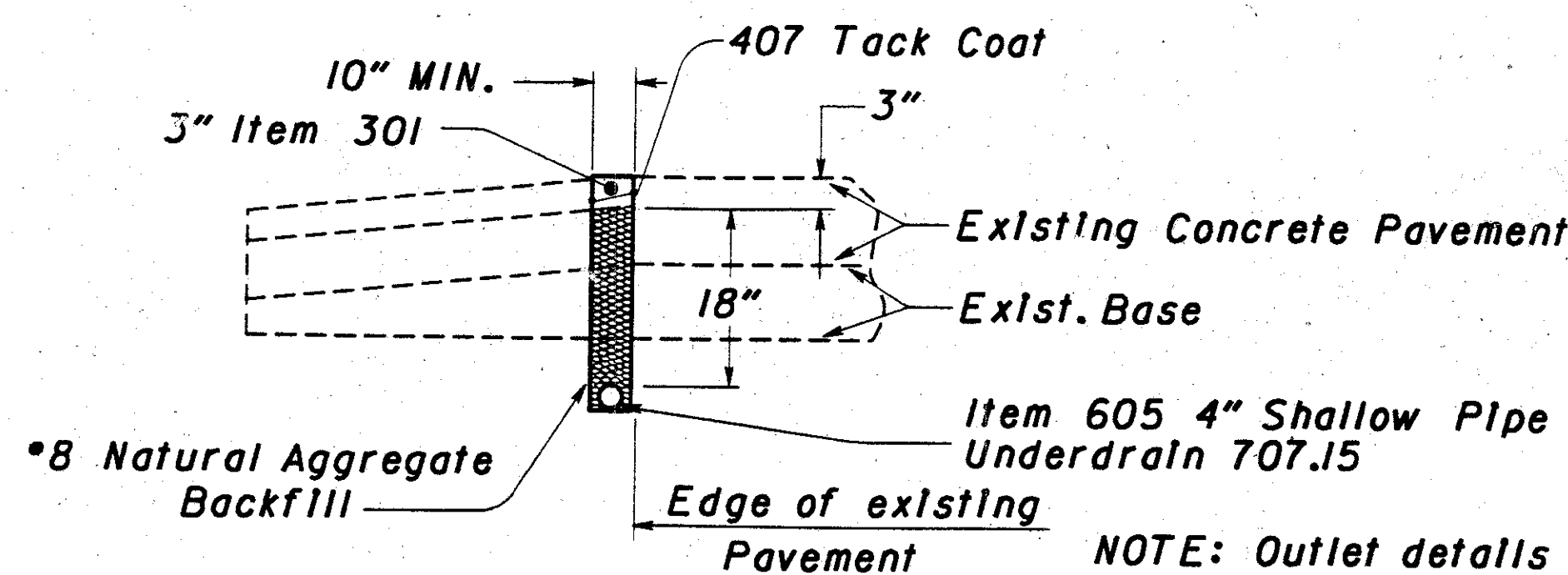
ITEM SPECIAL - PRECAST REINFORCED CONCRETE OUTLET

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.



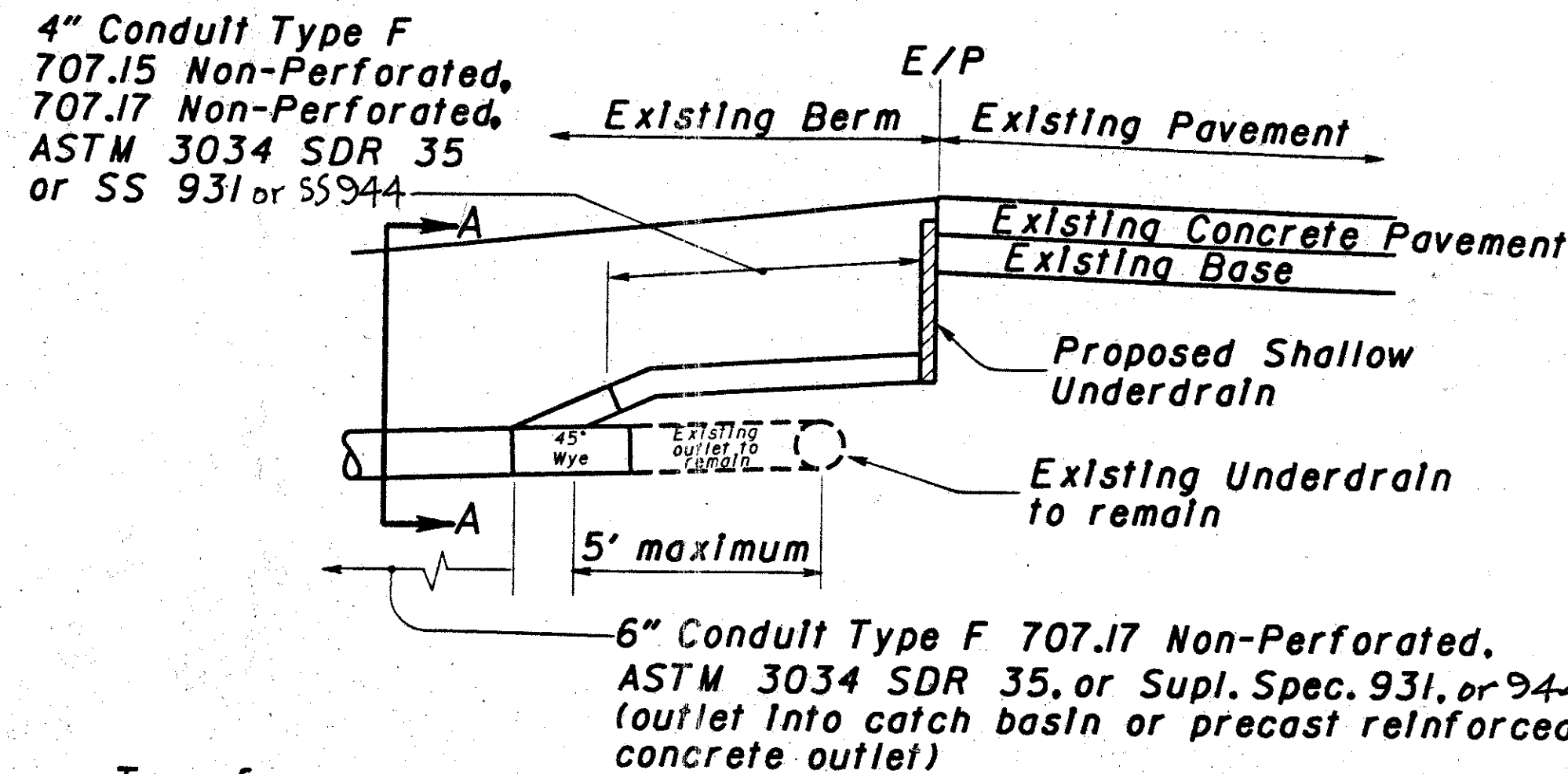
NOTE: The Sod shall be in accordance with Item 660 and staked at each corner approximately 3 inches in from the edge.

PIPE UNDERDRAIN SYSTEM

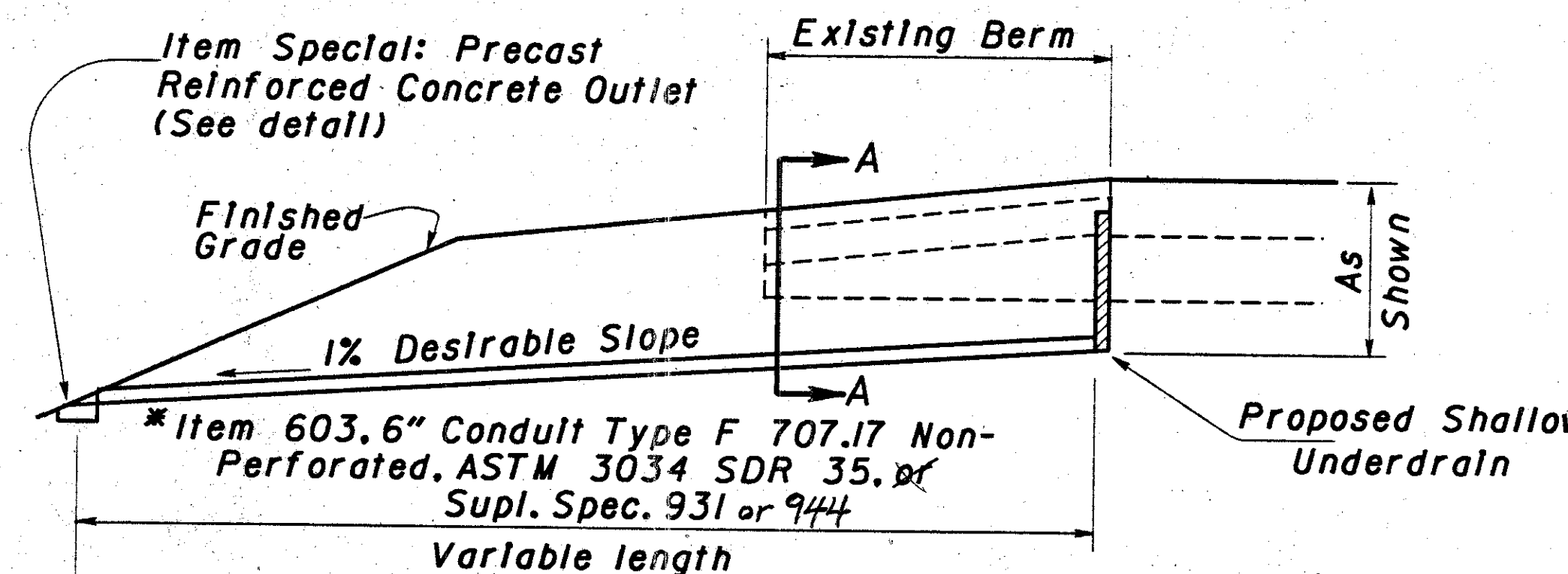
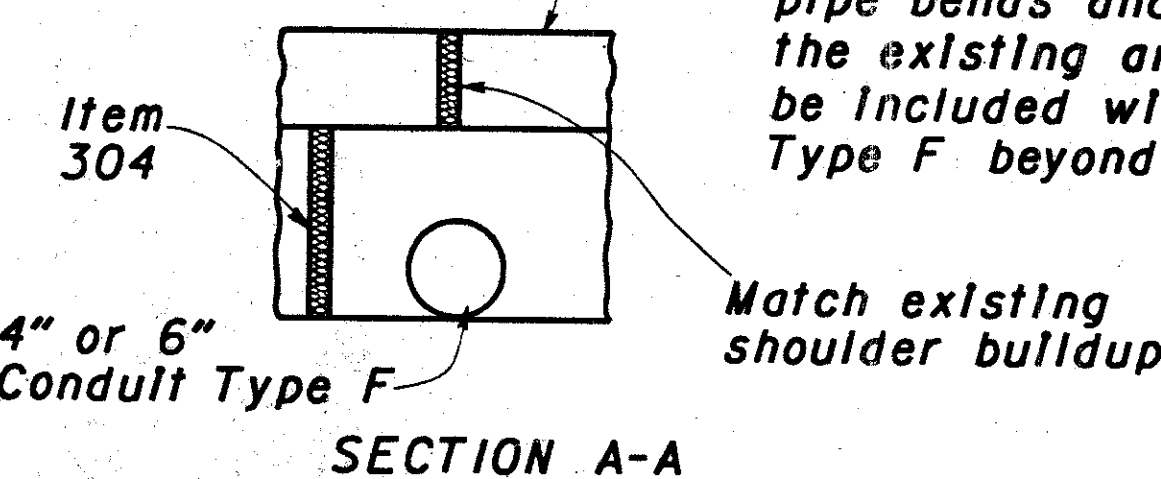


NOTE: Outlet details to be the same as shown above.

OUTLET DETAILS

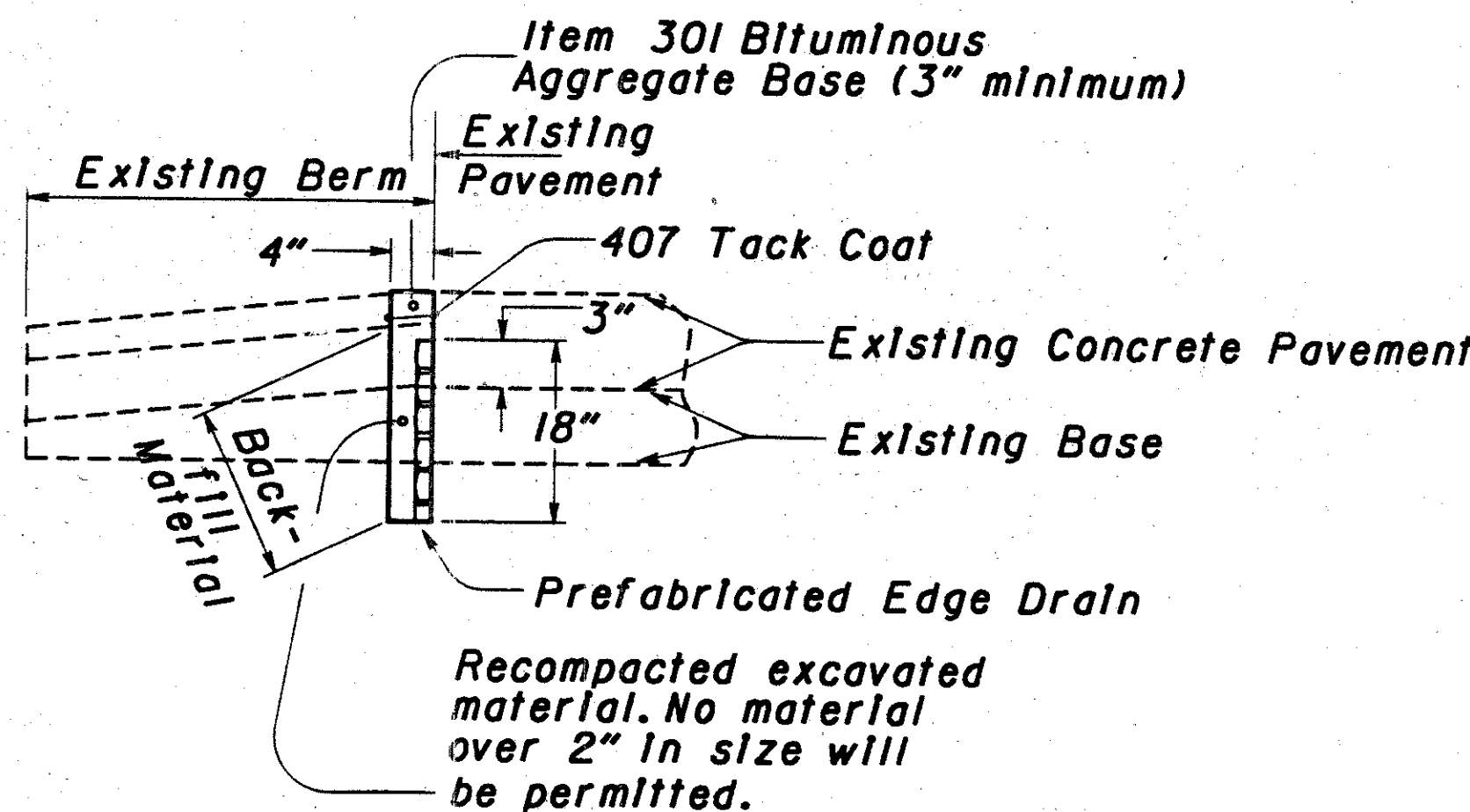


NOTE: The cost of the 4 inch conduit Type F and necessary pipe bends and branches needed to connect the existing and proposed underdrains shall be included with the cost of the 6 inch conduit Type F beyond the existing underdrain.



NOTE: For underdrain outlets into catch basins the above Type F Conduit shall be used entirely between the underdrain & catch basin. * If prefabricated edge drain is used then 4 inch Conduit shall be used for the outlet in lieu of 6 inch Conduit. The 4 inch Conduit shall be paid at the unit price bid for the 6 inch Conduit.

PREFABRICATED EDGE DRAIN SYSTEM



DESCRIPTION: The Item shall consist of furnishing and installing a pipe underdrain system or prefabricated edge drain 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 or a prefabricated edge drain system meeting the following requirements. The prefabricated edge drain shall consist of a polymeric core with a minimum thickness of one inch wrapped in fabric meeting 712.09 Type A. The drain shall be flexible, rectangular in shape and of hollow construction. The core material shall be resistant to petroleum based chemicals, natural occurring soil chemicals, and road de-icing agents.

The core shall provide a minimum of 100 square inches unobstructed (one side only) drainage area per foot of width. Side walls of the core shall provide at least 5% open area to permit unobstructed flow through the filter and wall to the core.

The prefabricated edge drain shall have a minimum compressive strength of 6000 pounds per square foot with a maximum 20% compression in a parallel plate compression test (ASTM-D 695). The minimum (single side) core flow capacity shall be 10 gallons per minute per foot of width for a 0.1 gradient at 10 pounds per square inch bladder load per ASTM D 4716

In lieu of the above requirements the following products are acceptable pre-fabricated edge drains:

- Hydraway Drain by Monsanto Company
- PDS 25 by Prodrain Sytems
- Strip Drain 100 by Contech Construction Products, Inc.
- AdvanEDGE by Advanced Drainage Systems, Inc.

CONSTRUCTION: The prefabricated edge drain shall be installed in a trench as shown on the plans and in accordance with the manufacturer's recommendations. The contractor has the option to backfill the trench with the excavated material or No. 8 natural aggregate. If the excavated material is used for the backfill it shall be placed in three (3) lifts minimum with each lift of uncompacted material not exceeding 8 inches in thickness. Each lift shall be compacted to 95% of the maximum dry weight density as determined by AASHTO T99. If No. 8 natural aggregate is used it shall be placed in one (1) or more lifts with a vibratory compactor run over the final lift to consolidate the aggregate prior to placing the asphalt plug. The first layer of the backfill material shall be placed simultaneously with the trenching operation to hold the edge drain flush against the trench wall.

The prefabricated edge drain shall be spliced as required prior to placement in the trench, using material furnished by the manufacturer and in accordance with the manufacturer's directions. All material required for the splices will be supplied by the manufacturer, but any equipment required shall be furnished by the Contractor.

The underdrain outlets shall be placed in accordance with Item 603 as directed by the Engineer, using outlet fittings. The manufacturer shall supply outlet fittings which will make the transition between the prefabricated edge drain and the outlet pipe. Fittings shall be installed as recommended by the manufacturer.

The outlets for the underdrain system shall be constructed as soon as possible after placement of the underdrain. The outlets on crack & seat projects shall be in place and functional prior to cracking and seating the existing pavement.

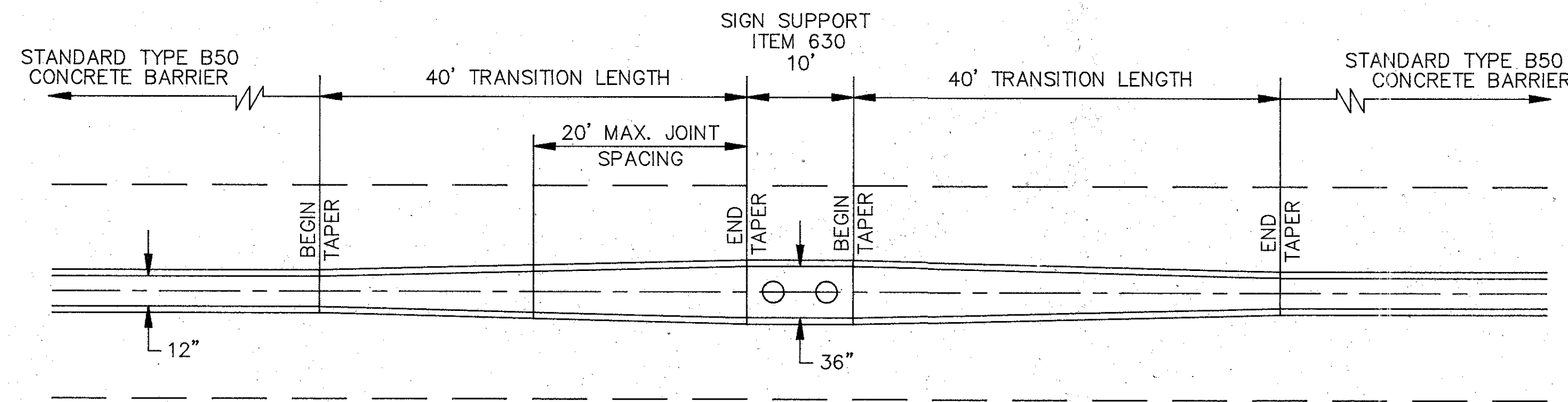
METHOD OF MEASUREMENT: Completed and accepted underdrains will be measured by the linear foot in place.

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 - Shallow Underdrain, as per plan, which price shall be full compensation for excavation and backfill; removing and disposing all surplus excavation in accordance with 203; for furnishing materials, including material for splices; outlet fittings and Item 301; for all labor, tools, equipment, and incidentals necessary to complete the work.

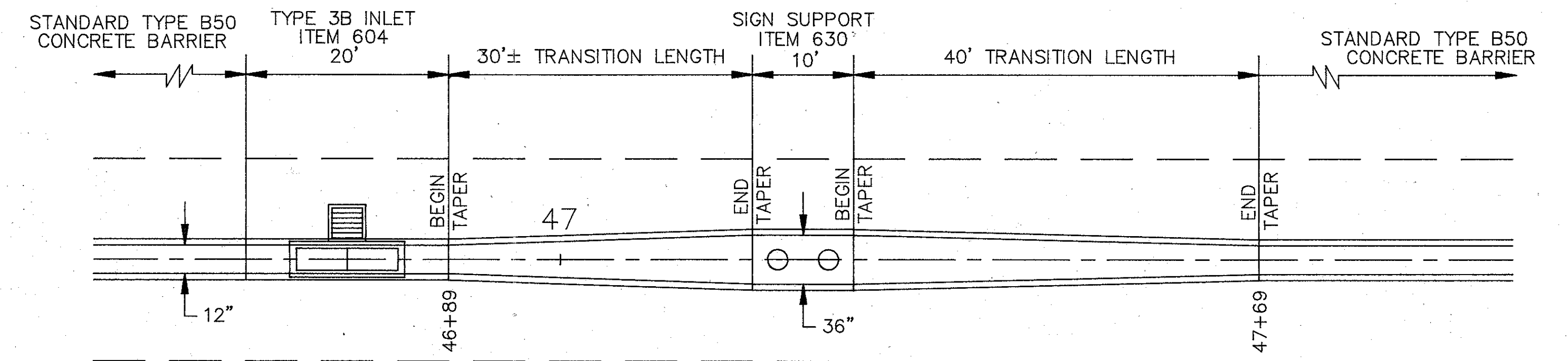
ITEM 605-SHALLOW UNDERDRAIN, AS PER PLAN

FHWA REGION	STATE	PROJECT	112
5	OHIO	FRA-104-8.02	185

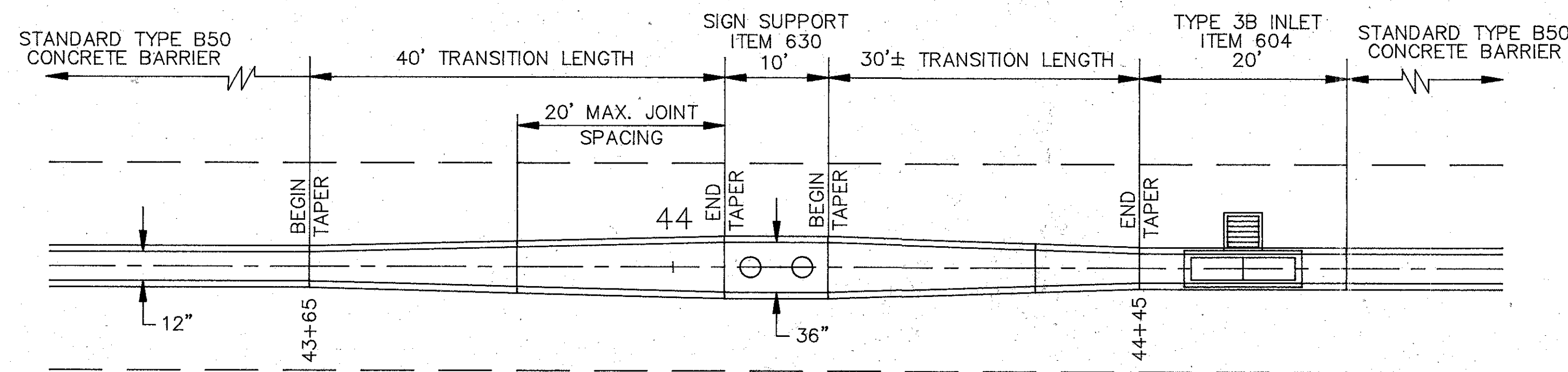
MODIFIED BARRIER TRANSITION DETAILS



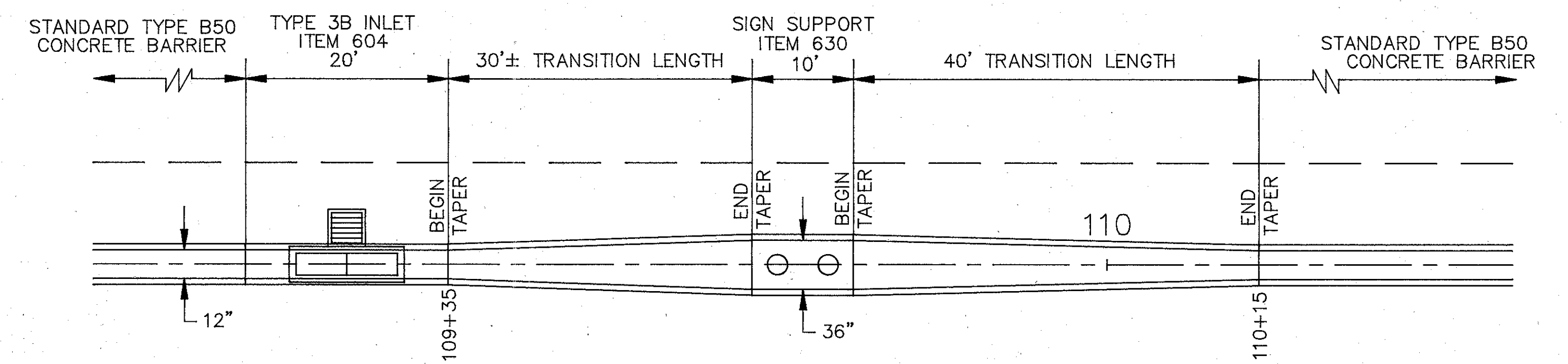
STANDARD SIGN SUPPORT TRANSITION



MODIFIED SIGN SUPPORT TRANSITION
STATION 46+89 TO 47+69



MODIFIED SIGN SUPPORT TRANSITION
STATION 43+65 TO 44+45



MODIFIED SIGN SUPPORT TRANSITION
STATION 109+35 TO 110+15

SIGN SUB-SUMMARY

GROUND MOUNTED SIGNS

ITEM 630

REF. NO.	SHEET NO.	STATION	LOCATION ☐ S.R. 104 UNLESS OTHER- WISE SPECIFIED	SIDE	CODE	SIZE	ITEM 630													
							SIGNS FLAT SHEET TYPE G	SIGNS EXTRUSHEET TYPE G	REMOVAL OF GROUND MOUNTED SIGN & DISPOSAL	REMOVAL OF GROUND MOUNTED MAJOR SIGN & DISPOSAL	REMOVAL OF GROUND MOUNTED POST SUPPORT & DISPOSAL	REMOVAL OF GROUND MOUNTED BEAM SUPPORT & DISPOSAL	BREAKAWAY BEAM CONNECTION	FOUNDATION CONCRETE	DRIVE POSTS		SUPPORT BEAMS			
							FTXFT	S.F.	S.F.	EACH	EACH	EACH	EACH	EACH	C.Y.	#3 L.F.	#4 L.F.	S4X7.7 L.F.	W10X22 L.F.	
1	123	9+00		MED	R-37R-36	2'X2.5'	5		1								6			
1A		8+90	FACE OF ATTENUATOR	MED	X-1	1.5'X1.5'	2.3		1			1								
2	123	2+60	RAMP F-F	LT	W-33-36	3'X4'	12												35	
3	123	1+80	RAMP F-F	LT	W-33-36	3'X4'	12												35	
4	123	1+00	RAMP F-F	LT	W-33-36	3'X4'	12												35	
5	123	12+19		LT	M-45	3.5'X5'		17.5						2	0.54				32	
					SPECIAL	3.5'X1.5'	5.3													
6	123	12+60		RT	GCP	16'X4'		64		1			2		2.46					46
7	123	12+75	RAMP F-F	LT	W-83-48	4'X4'	16		1			2						35		
8	123	14+43	RAMP F-F	LT	W-98-48	4'X5'			1			2								
9	123	14+75		RT	GN	8.5'X3.5'		18		1			2	0.54					37	
10	123	16+75		RT	R-15B-36	3'X3'	9		1			1					16			
10A	123	24+25		LT	W-99R	10'X10'		100						2	2.46					40
11	123	29+00	RAMP A-A	LT	R-2-48	4'X4'X4'	6.9		1			1				32				
12	124	30+10		RT	GF	6'X5'		30		1			2	0.54					32	
13	124	31+00		LT	W-49R-48	4'X4'	16		1			1								
				LT	W-145B-24	2'X1.5'	3												32	
14	124	32+50	RAMP D-D	LT	R-41A-36	3'X3'	9		1			1					15			
				LT	R-15C-24	2'X1'	2													
15	124	32+50	RAMP D-D	RT	R-41A-36	3'X3'	9		1			1								
16	124	34+85		RT/EB	R-1-48	4'X4'	16		1			1							32	
				WB	R-41B-36	3'X3'	9		1											
17	124	34+90	RAMP D-D	LT/EB	R-1-48	4'X4'	16		1											
				WB	R-41B-36	3'X3'	9		1											
				SB	R-43L-48	4'X1.5'	6		1			1							32	
				NB	R-43R-48	4'X1.5'	6		1											
18	124	36+10	RAMP B-B	LT/WB	R-1-48	4'X4'	16		1			1							32	
				EB	R-41B-36	3'X3'	9		1											
19	124	36+00	RAMP B-B	LT/WB	R-1-48	4'X4'	16		1											
				EB	R-41B-36	3'X3'	9		1			1							32	
				NB	R-43L-48	4'X1.5'	6		1											
				SB	R-43R-48	4'X1.5'	6		1											
20	124	39+00	RAMP B-B	LT	R-41A	3'X2'			1			1								
20A	124	38+27	RAMP B-B	LT	R-41A-36	3'X3'	9												16	
					R-15C-24	2'X1'	2													
21	124	39+00	RAMP B-B	RT	R-41A	3'X2'			1			1								
21A	124	38+27	RAMP B-B	RT	R-15C-24	2'X1'	2												16	
22	124	39+50	RAMP C-C	LT	W-49R-48	4'X4'	16		1			1							32	
23	124	41+40		LT	GF	6'X5'		30				1		2	0.54				32	
24	124	41+50	RAMP C-C	RT	R-2-48	4'X4'X4'	6.9		1			1				32				32
25	124	50+00		RT	GF	6'X5'		30				1		2	0.54					32
26	124	50+30	RAMP A	LT	R-2-48	4'X4'X4'	6.9		1			1				32				
27	124	52+00		LT	W-49R-48	4'X4'	16		1			1							32	
28	124	53+00		RT	M-37-36	3'X1.5'	4.5		1										16	
				RT	M-2-36-2	3.8'X3'	9		1			1								
29	124	54+00	RAMP B	RT/EB	M-1-36	3'X3'			1											
				EB	M-25-30	2.5'X2'			1			2								
				EB	D-4D	6'X2'			1											
				WB	R-41A	3'X2'			1											
29A	124	54+00	RAMP B	RT	R-41A-36	3'X3'	9												16	
30	124	54+00	RAMP B	LT	R-41A	3'X2'			1			1								
31	124	56+50	RAMP B	LT	N-18H	1.5'X4'	6		1											
				LT	SPECIAL	1.5'X1.5'	2.3		1			1							19	
				LT	R-41A-36	3'X3'	9													
				LT	R-15C-24	2'X1'	2													
TOTALS THIS SHEET:							345	290	36	5	25	10	14	7.62	148	447	165	86		

SIGN SUB-SUMMARY

CALC. BY: _____	FRA-104-8.02	OHIO
DATE: _____		FHWA REGION 5
CHECKED BY: _____		
DATE: _____		

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185

GROUND MOUNTED SIGNS

REF. NO.	SHEET NO.	STATION	LOCATION <small>Q S.R. 104 UNLESS OTHER- WISE SPECIFIED</small>	SIDE	CODE	SIZE	ITEM 630													
							SIGNS FLAT SHEET TYPE G	SIGNS EXTRUSHEET TYPE G	REMOVAL OF GROUND MOUNTED SIGN & DISPOSAL	REMOVAL OF GROUND MOUNTED MAJOR SIGN & DISPOSAL	REMOVAL OF GROUND MOUNTED POST SUPPORT & DISPOSAL	REMOVAL OF GROUND MOUNTED BEAM SUPPORT & DISPOSAL	BREAKAWAY BEAM CONNECTION	FOUNDATION CONCRETE	DRIVE POSTS		SUPPORT	BEAMS		
							FTXFT	S.F.	S.F.	EACH	EACH	EACH	EACH	EACH	C.Y.	#3 L.F.	#4 L.F.	S4X7.7 L.F.	W10X22 L.F.	
32	125	57+70	RAMP A	LT	R-15B-30	2.5'X1.5'	3.8			1										
33	125	58+50		RT	R-10-48	4'X5'	20			1										
34	125	58+70		LT/WB	R-41B-36	3'X3'	9			1										
				NB	R-43R-48	4'X1.5'	6			1										
				SB	R-43L-48	4'X1.5'	6			1										
35	125	58+70		RT/WB	R-41B-36	3'X3'	9			1										
				NB	R-43R-48	4'X1.5'	6			1										
				SB	R-43L-48	4'X1.5'	6			1										
36	125	18+00	HIGH ST.	RT	R-121-24	2'X2'	4			1										
37	125	14+90	HIGH ST.	RT	M-52A-108	9'X2.5'	22.5	11			1									
38	125	71+50	RAMP C	LT	W-98-48	4'X5'	20			1										
39	125	56+67	RAMP D	RT/EB	R-41B-36	3'X3'	9			1										
				SB	R-43R-48	4'X1.5'	6			1										
				NB	R-43L-48	4'X1.5'	6			1										
				WB	R-31N	4'X2.5'	10			1										
40	125	56+67	RAMP D	LT/EB	R-41B-36	3'X3'	9			1										
				SB	R-43R-48	4'X1.5'	6			1										
				NB	R-43L-48	4'X1.5'	6			1										
				WB	R-31N	4'X2.5'	10			1										
41	125	56+80	RAMP D	RT	N-18H	1.5'X4'	6			1										
					SPECIAL	1.5'X1.5'	2.3			1										
42	125	57+70	RAMP D	RT	R-41A-36	3'X3'	9			1										
43	125	57+70	RAMP D	LT	R-41A-36	3'X3'	9			1										
				LT	R-15C-24	2'X1'	2			1										
44	125	70+00	RAMP C	LT	R-15B-30	2.5'X1.5'	3.8			1										
45	125	59+12	RAMP D	LT	R-31N	4'X2.5'	10			1										
46	125	62+50	RAMP D	LT	M-1-36-2	3'X3'				1										
					M-25-30	2.5'X2'				1										
					D-4D	6'X2'				1										
47	125	63+00		LT	W-50R-48	4'X4'	16			1										
47A	125	63+40	RAMP D	LT	W-47-48	4'X4'	16													
					W-45B-30	2.5'X2'	5													
47B	125	64+25	RAMP D	LT	R-41A-36	3'X3'	9													
47C	125	64+25	RAMP D	RT	R-41A-36	3'X3'	9													
48	125	21+00	HIGH ST.	LT	M-52A-108	9'X2.5'		22.5												
49	125	61+00	RAMP E	RT	R-15B-30	2.5'X1.5'	3.8			1										
50	125	67+00		RT	W-49R-48	4'X4'	16			1										
50A	125	70+00	RAMP E	RT	W-68-48	4'X4'	16													
51	125	63+80	RAMP D	RT	W-33-36	3'X4'	12			1										
52	125	64+80	RAMP D	RT	W-33-36	3'X4'	12			1										
53	125	65+80	RAMP D	RT	W-33-36	3'X4'	12			1										
54	125	67+10	RAMP D	LT	W-49R-48	4'X4'	16			1										
55	125	68+00		LT	GF	6'X5'		30												
55A	126	74+30		LT	W-97-48	4'X4'	16													
56	126	78+00		LT	M-38-36	3'X1.5'	4.5			1										
					M-2-36-3	3.8'X3'	11.3			1										
57	126	81+00		RT	M-37-36	3'X1.5'	4.5			1										
					M-2-36-3	3.8'X3'	11.3			1										
58	127	91+00		RT	GF	6'X5'		30												
59	127	93+00	RAMP A	RT/EB	D-4B-60	10'X4'		40												
				WB	R-41A	3'X2'				1										
59A	127	94+60	RAMP A	RT	R-41A-36	3'X3'	9													
					R-15C-24	2'X1'	2													
					R-31B	3'X2.5'	7.5													
60	127	93+00	RAMP A	LT	R-41A	3'X2'				1										
60A	127	94+60	RAMP A	LT	R-41A-36	3'X3'	9													
60B	127	95+70	RAMP A	RT	R-31B	3'X2.5'	7.5													
TOTALS THIS SHEET:							442	134	40	5	31	12	10	2.70	152	597	190			

SIGN SUB-SUMMARY

 CALC. BY: JRA
 DATE: 6/15/94
 CHECKED BY: JSP
 DATE: 6/15/94

FRA-104-8.02

 OHIO
 FHWA REGION 5

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GROUND MOUNTED SIGNS

ITEM 630

REF. NO.	SHEET NO.	STATION	LOCATION <small>Q S.R. 104 UNLESS OTHERWISE SPECIFIED</small>	SIDE	CODE	SIZE	ITEM 630												
							SIGNS FLAT SHEET TYPE G	SIGNS EXTRUSHEET TYPE G	REMOVAL OF GROUND MOUNTED SIGN & DISPOSAL	REMOVAL OF GROUND MOUNTED MAJOR SIGN & DISPOSAL	REMOVAL OF GROUND MOUNTED POST SUPPORT & DISPOSAL	REMOVAL OF GROUND MOUNTED BEAM SUPPORT & DISPOSAL	BREAKAWAY BEAM CONNECTION	FOUNDATION CONCRETE	DRIVE POSTS		SUPPORT BEAMS		
							S.F.	S.F.	EACH	EACH	EACH	EACH	EACH	C.Y.	#3 L.F.	#4 L.F.	S4X7.7 L.F.	W10X22 L.F.	
61	127	93+00		LT	W-49R-48	4'X4'	16		1										
62	127	96+00	RAMP B	LT	R-15B-30	2.5'X1.5'	3.8		1							15			
63	127	97+10	RAMP A	LT	R-1-48	4'X4'	16		1									32	
64	127	97+10	RAMP A	RT	R-1-48	4'X4'	16		1									32	
65	127	97+15	RAMP A	LT/WB	R-41B-36	3'X3'	9		1										
				NB	R-43R-48	4'X1.5'	6		1									32	
				SB	R-43L-48	4'X1.5'	6		1										
66	127	97+15	RAMP A	RT/WB	R-41B-36	3'X3'	9		1										
				NB	R-43R-48	4'X1.5'	6		1									32	
				SB	R-43L-48	4'X1.5'	6		1										
67	127	97+25	RAMP D	LT/EB	R-41B-36	3'X3'	9		1										
				SB	R-43R-48	4'X1.5'	6		1									32	
				NB	R-43L-48	4'X1.5'	6		1										
67A	127	97+70	RAMP D	LT	R-31B	3'X2.5'	7.5											32	
68	127	97+25	RAMP D	RT/EB	R-41B-36	3'X3'	9		1										
				SB	R-43R-48	4'X1.5'	6		1									32	
				NB	R-43L-48	4'X1.5'	6		1										
69	127	97+28	RAMP D	LT	R-1-48	4'X4'	16		1									32	
70	127	97+28	RAMP D	RT	R-1-48	4'X4'	16		1									32	
70A	127	97+65±		LT	W-68-48	4'X4'	16												
71	127	99+00	RAMP C	RT	R-15B-30	2.5'X1.5'	3.8		1							15			
72	127	102+00	RAMP D	LT/WB	D-4B	10'X4'		40		1			2		2	0.54		42	
				EB	R-41A	3'X2'			1										
72A	127		RAMP D	LT/EB	R-15C-24	2'X1'	2											32	
				EB	R-41A-36	3'X3'	9												
				WB	R-31B	3'X2.5'	7.5												
73	127	102+00	RAMP D	RT	R-41A	3'X2'			1										
73A	127		RAMP D	RT	R-15C-24	2'X1'	2											16	
74	128	105+50		RT	W-49R-48	4'X4'	16		1									32	
75	128	108+00		LT	GF	6'X5'		30		1		2	2	2	0.54			32	
76	128	120+00		LT	R-10-48	4'X5'	20		1			2	2	2	0.54			42	
77	129	133+90	RAMP B	LT	R-2-48	4'X4'X4'	6.9		1			1				32			
78	129	136+00		LT	W-49R-48	4'X4'	16		1			1						32	
79	129	137+00		RT	GF	6'X5'		30		1		2	2	2	0.54			32	
80	129	139+00	RAMP A	LT	R-41A	3'X2'			1			1							
81	129	139+00	RAMP A	RT/WB	R-41A	3'X2'			1									42	
				EB	D-4D	10'X2'		20		1			2	2	0.54				
82	129	141+00	RAMP A	RT	R-31B	3'X2.5'			1			2							
82A	129			RT/EB	R-31B	3'X2.5'	7.5											32	
				WB	R-15C-24	2'X1'	2												
				WB	R-41A-36	3'X3'	9												
83	129	141+00	RAMP A	LT	R-31B	3'X2.5'			1			2							
83A	129			LT/EB	R-31B	3'X2.5'	7.5											32	
				WB	R-41A-36	3'X3'	9												
84	129	143+00	RAMP B	LT	R-15B-30	2.5'X1.5'	3.8		1							15			
85	129	143+85	RAMP A	LT/EB	R-31B	3'X2.5'	7.5		1										
				WB	R-41B-36	3'X3'	9					2						32	
				NB	R-43R-48	4'X1.5'	6		1										
				SB	R-43L-48	4'X1.5'	6		1										
86	129	143+85	RAMP A	RT/EB	R-31B	3'X2.5'	7.5		1										
				WB	R-41B-36	3'X3'	9		1			2						32	
				NB	R-43R-48	4'X1.5'	6		1										
				SB	R-43L-48	4'X1.5'	6		1										
				TOTALS THIS SHEET:				371	120	38	4	29	10	10	2.70	77	528	190	-0-
				TOTALS SHEET 115:				345	290	36	5	25	10	14	7.62	148	447	165	86
				TOTALS SHEET 116:				442	134	40	5	31	12	10	2.70	152	597	190	-0-
				TOTALS TO GENERAL SUMMARY:				1158	544	114	14	85	32	34	13.0	377	1572	545	86

F:\SSM 2-7-94

PAVEMENT MARKING QUANTITIES

CALC. BY: RA DATE: 8/15/84	FRA-104-8.02	OHIO
CHECKED BY: JBB DATE: 8/15/84		FHWA REGION 5

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PAVEMENT	LOCATION AND STATION		SIDE	ITEM 644									
				5" LANE LINES	5" EDGE LINES		10" CHANNELIZING LINES	20" BROAD TRANSVERSE LINES		20" STOP LINES	LANE ARROWS	WORD ON PAVEMENT 72"	CURB MARKINGS
					WHITE	YELLOW		WHITE	YELLOW				
	FROM	TO	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH	LIN. FT.		
E.B.	F-104 MAINLINE												
	8+90	24+00	RT.		1510								
	8+90	29+00	RT.	2010									
	8+90	29+00	RT.			2010							
	8+90	12+50	RT.				144						
	13+00	29+00	RT.	1600									
	26+11	27+21	RT.	110									
	27+21	29+00	RT.				179						
	29+00	30+00	RT.				100						
	29+00	42+50	RT.	1350									
	29+00	57+50	RT.	2850									
	29+00	57+50	RT.			2850							
	30+00	42+90	RT.		1290								
	42+50	49+91	RT.				691						
	49+41	57+50	RT.		809								
	57+50	71+72	RT.		1422								
	57+50	73+00	RT.	1550									
	57+50	73+00	RT.			1550							
	73+00	88+50	RT.	1550									
	73+00	88+50	RT.			1550							
	81+00	81+50	RT.		50								
	85+60	88+50	RT.	290									
	88+50	88+69	RT.	19									
	88+50	105+00	RT.	1650									
	88+50	105+00	RT.			1650							
	88+69	90+66	RT.				197						
	90+66	105+00	RT.		1434								
	105+00	109+40	RT.		440								
	105+00	132+00	RT.	2700									
	105+00	132+00	RT.			2700							
	117+55	128+25	RT.		1070								
	131+50	132+00	RT.	50									
	132+00	133+81	RT.	181									
	132+00	140+00	RT.	800									
	132+00	140+00	RT.			800							
	133+81	136+60	RT.				279						
	136+60	140+00	RT.		340								
W.B.	F-104 MAINLINE												
	8+90	8+90	LT/C					40					
	8+90	29+00	LT.			2010							
	8+90	12+00	LT.				310						
	8+90	29+00	LT.	2010									
	8+90	12+30	LT.		340								
	9+20	9+20	RT/LT					3					
	9+80	9+80	RT/LT					3	3				
	10+40	10+40	RT/LT					3					
	11+60	11+60	RT/LT					3					
	12+30	14+20	LT.				190						
	14+20	24+00	LT.				980						
	16+00	24+00	LT.		800								
	24+00	29+00	LT.	500									
	29+00	57+50	LT.			2850							
	29+00	57+50	LT.	2850									
	29+00	44+80	LT.	1580									
	29+00	41+50	LT.		1250								
	41+50	43+10	LT.				160						
	47+20	50+14	LT.		296								
TOTALS TO SECOND COLUMN				23650	10711	17970	3086	-0-	144	40	9	3	-0-

PAVEMENT	LOCATION AND STATION		SIDE	ITEM 644									
				5" LANE LINES	5" EDGE LINES		10" CHANNELIZING LINES	20" BROAD TRANSVERSE LINES		20" STOP LINES	LANE ARROWS	WORD ON PAVEMENT 72"	CURB MARKINGS
					WHITE	YELLOW		WHITE	YELLOW				
	FROM	TO	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH	LIN. FT.		
W.B.	F-104 MAINLINE (CONT.)												
	57+50	73+00	LT.					1550			1550		
	57+50	73+00	LT.	1550									
	57+50	58+14	LT.	64									
	58+14	68+22	LT.			1008							
	68+22	70+56	LT.				234						
	70+56	72+41	LT.	185									
	73+00	88+50	LT.					1550					
	73+00	88+50	LT.	1550									
	75+24	79+65	LT.			441							
	76+16	88+50	LT.			234							
	88+50	105+00	LT.					1650					
	88+50	105+00	LT.	1550									
	88+50	105+00	LT.			1650							
	105+00	132+00	LT.					2700					
	105+00	132+00	LT.	2700									
	105+00	108+29	LT.			129							
	108+29	110+27	LT.				198						
	110+27	112+89	LT.	262									
	116+50	123+90	LT.			740							
	131+90	132+00	LT.			10							
	132+00	140+00	LT.				800						
	132+00	140+00	LT.	800									
	132+00	140+00	LT.			800							
	I-71 INTERCHANGE												
	RAMP F-F												
	0+28	4+02	LT.										
	0+28	5+02	RT.			474							
	12+23	16+00	LT.			377							
	12+29	14+20	RT.				180			224			
	AMERICAN AGG. HAUL RD. INTERCHANGE												
	RAMP D-D												
	24+00	35+08	RT.		1108								
	27+21	30+00	LT.										
	30+00	35+08	LT.				508			279	350		
	35+08	35+08	RT/LT							60			
	RAMP C-C												
	35+82	45+00	RT.		918								
	35+82	40+50	LT.			468							
	40+50	41+50	LT.							140			
	41+50	42+90	LT.										
	42+90	44+10	LT.	120									
	RAMP A-A												
	24+00	35+00	LT.		1100								
	26+20	27+60	RT.	140									
	27+60	30+55	RT.							295			
	30+55	35+00	RT.			445							
	RAMP B-B												
	35+77	35+77	RT/LT							110			
	35+77	41+50	RT.										
	35+77	46+00	LT.			1023							
	41+50	43+10	RT.				160			95			
TOTALS:				8921	10012	10618	1486	669	-0-	170	-0-	-0-	100
TOTALS FROM FIRST COLUMN:				23650	10711	17970	3086	-0-	144	40	9	3	-0-
TOTALS THIS SHEET:				32571	20723	28588	4572	669	144	210	9	3	100

621 RAISED PAVEMENT MARKER TABLE

STATION		DESCRIPTION	SIDE	SPACING	ONE WAY WHITE	ONE WAY YELLOW
FROM	TO					
EAST BOUND S.R. 104						
8+90	42+50	LANE LINE	RT	80	42	
8+90	140+00	LANE LINE	RT	80	164	
8+90	12+75	MEDIAN MARKINGS	RT	20		20
42+50	47+00	CHANNELIZING LINE	RT	20	24	
AMERICAN AGGREGATE HAUL ROAD						
27+21	30+00	GORE @ RAMP D-D	RT	20	15	
30+00	30+80		RT	40	2	
27+21 "D-D"	30+00 "D-D"		LT	20	14	
30+00 "D-D"	30+80 "D-D"		LT	40		2
39+30	42+90	GORE @ RAMP C-C	RT	40	10	
39+30 "C-C"	40+90 "C-C"		LT	40		5
40+90 "C-C"	42+90 "C-C"		LT	40	4	
HIGH ST.						
47+00	49+40	GORE @ RAMP B	RT	20	12	
49+40	50+20		RT	40	2	
47+00 "B"	49+40 "B"		LT	20	12	
49+40 "B"	50+20 "B"		LT	40		2
68+92	71+72	GORE @ RAMP E	RT	40	8	
68+92 "E"	69+32 "E"		LT	40		2
69+32 "E"	71+72 "E"		LT	40	6	
GROVEPORT RD.						
88+69	90+63	GORE @ RAMP A	RT	20	11	
90+63	91+43		RT	40	2	
88+69 "A"	90+63 "A"		LT	20	10	
90+63 "A"	91+43 "A"		LT	40		2
106+75	109+40	GORE @ RAMP C	RT	40	8	
106+75 "C"	107+15 "C"		LT	40		2
107+15 "C"	109+40 "C"		LT	40	6	
LOCKBOURNE RD.						
133+81	136+60	GORE @ RAMP A	RT	20	15	
136+60	137+40		RT	40	2	
133+81 "A"	136+60 "A"		LT	20	14	
136+60 "A"	137+40 "A"		LT	40		2
WEST BOUND S.R. 104						
8+90	140+00	LANE LINE	LT	80	164	
14+20	24+00	CHANNELIZING LINE	LT	20	49	
24+00	44+80	LANE LINE	LT	80	26	
I-71						
11+49	12+29	GORE @ RAMP F-F	LT	40	2	
12+29	14+20		LT	20	11	
1+00 "F-F"	12+29 "F-F"		RT	40		2
12+29 "F-F"	14+20 "F-F"		RT	20	10	
AMERICAN AGGREGATE HAUL ROAD						
27+60	31+35	GORE @ RAMP A-A	LT	40	10	
27+60 "A-A"	29+75 "A-A"		RT	40	6	
29+75 "A-A"	31+35 "A-A"		RT	40		4
40+70	41+50		GORE @ RAMP B-B	LT	40	2
41+50	43+10	LT		20	9	
40+70 "B-B"	41+50 "B-B"	RT		40		2
41+50 "B-B"	43+10 "B-B"	RT		20	8	
HIGH ST.						
47+20	50+80	GORE @ RAMP A	LT	40	10	
47+20 "A"	50+00 "A"		RT	40	8	
50+00 "A"	50+80 "A"		RT	40		2
58+14	60+94	GORE @ RAMP C	LT	40	8	
58+14 "C"	60+14 "C"		RT	40	6	
60+14 "C"	60+94 "C"		RT	40		2
71+00 "C"	71+80 "C"	GORE @ RAMP C & HIGH ST	RT	40		2
71+80 "C"	18+50 HIGH ST.		LT	20	11	
15+60 HIGH ST.	16+25 HIGH ST.		LT	40	2	
16+25 HIGH ST.	18+50 HIGH ST.		LT	20	12	
67+82	68+22	GORE @ RAMP D	LT	40	2	
68+22	70+56		LT	20	13	
67+82 "D"	68+22 "D"		RT	40		2
68+22 "D"	70+56 "D"		RT	20	12	
TOTALS:					764	53

CALC. BY: JBA DATE: 6/15/94	FRA-104-8.02	OHIO
CHECKED BY: JBA DATE: 6/15/94		FHWA REGION 5

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STATION		DESCRIPTION	SIDE	SPACING	ONE WAY WHITE	ONE WAY YELLOW
FROM	TO					
GROVEPORT RD.						
86+16	91+56	GORE @ RAMP B	LT	40	14	
86+16 "B"	90+76 "B"		RT	40	12	
90+76 "B"	91+56 "B"		RT	40		2
107+44	108+24	GORE @ RAMP D	LT	40	2	
108+24	110+27		LT	20	11	
107+44 "D"	108+24 "D"		RT	40		2
108+24 "D"	110+27 "D"		RT	20	10	
LOCKBOURNE RD.						
131+90	134+70	GORE @ RAMP B	LT	40	8	
131+90 "B"	133+90 "B"		RT	40	6	
133+90 "B"	134+70 "B"		RT	40		2
TOTALS:					63	6
TOTALS FIRST COLUMN:					764	53
TOTALS TO GENERAL SUMMARY SHEET:					827	59

620 DELINEATOR TABLE

P = POST MOUNTED
B = BRACKET MOUNTED

STATION		LOCATION	SIDE	SPACING	TYPE C ONE WAY		TYPE D ONE WAY		TYPE D TWO WAY	
FROM	TO				P	B	P	B	P	B
I-71										
0+50	4+00 BK.	RAMP F-F	LT	35				11		
0+50	16+00 AHD.		LT	100	5					
AMERICAN AGGREGATE HAUL RD.										
24+00	35+00	RAMP A-A	LT	200	6					
37+00	41+00		RT	200			3			
42+00	44+00	RAMP B-B	LT	200	2					
36+00	44+00	RAMP C-C	RT	200	5					
24+00	30+00	RAMP D-D	RT	200	4					
30+00	34+00		LT	200				3		
HIGH ST.										
46+00	58+00	RAMP A	LT	200	7					
50+00	52+00		RT	200			2			
46+00	50+00	RAMP B	RT	200	3					
50+00	58+00		LT	200			5			
50+00	58+00		LT	200	5					
60+00	63+00	RAMP C	LT	100	4					
63+00	65+40		RT	40			7			
65+40	70+00		RT	40					12	
70+00	71+60		RT	40			5			
71+60	18+00 HIGH ST.		LT	100	3					
57+00	59+00	RAMP D	LT	100	3					
59+00	63+00		LT	50	8					
63+50	68+00		RT	50			10			
68+00	74+00		LT	200	5					
62+00	68+00	RAMP E	LT	200			4			
68+00	74+00		RT	200	5					
GROVEPORT RD.										
82+00	90+00	RAMP A	RT	200	1	4				
91+00			RT		1					
91+00	97+00		LT	200		4				
82+00	90+00	RAMP B	LT	200	1	4				
91+00	92+00		LT	200	2					
92+00	96+00		RT	200		5				
99+00	103+00	RAMP C	RT	200	3					
103+00	107+00		LT	200		3				
107+00	117+00		RT	200	6					
98+00	116+00	RAMP D	LT	200	10					
LOCKBOURNE RD.										
129+00	143+00	RAMP A	RT	200	8					
129+00	143+00	RAMP B	LT	200	8					
135+00	137+00	RAMP B	RT	200	2					
TOTALS TO GENERAL SUMMARY SHEET:					107	20	50	-0-	12	-0-

FREEWAY SURVEILLANCE ESTIMATED QUANTITIES

CALC. BY: JRA
DATE: 6/15/94
CHECKED BY: JSB
DATE: 6/15/94

FRA-104-8.02

OHIO
FHWA
REGION 5

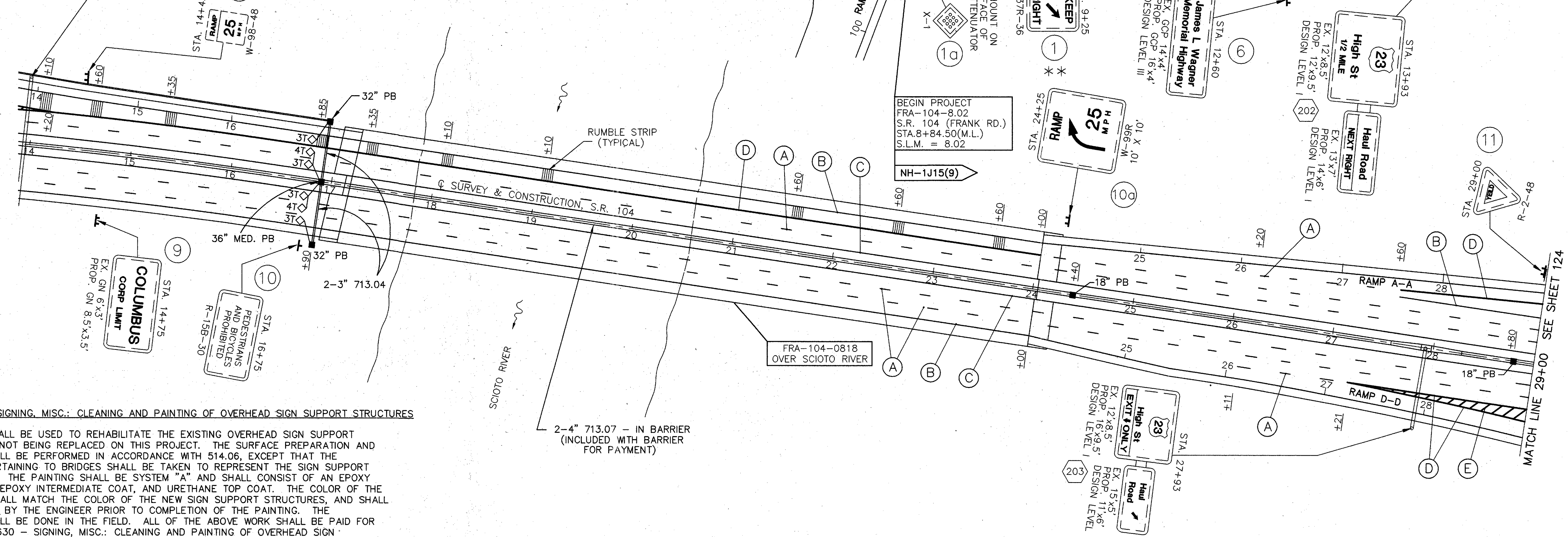
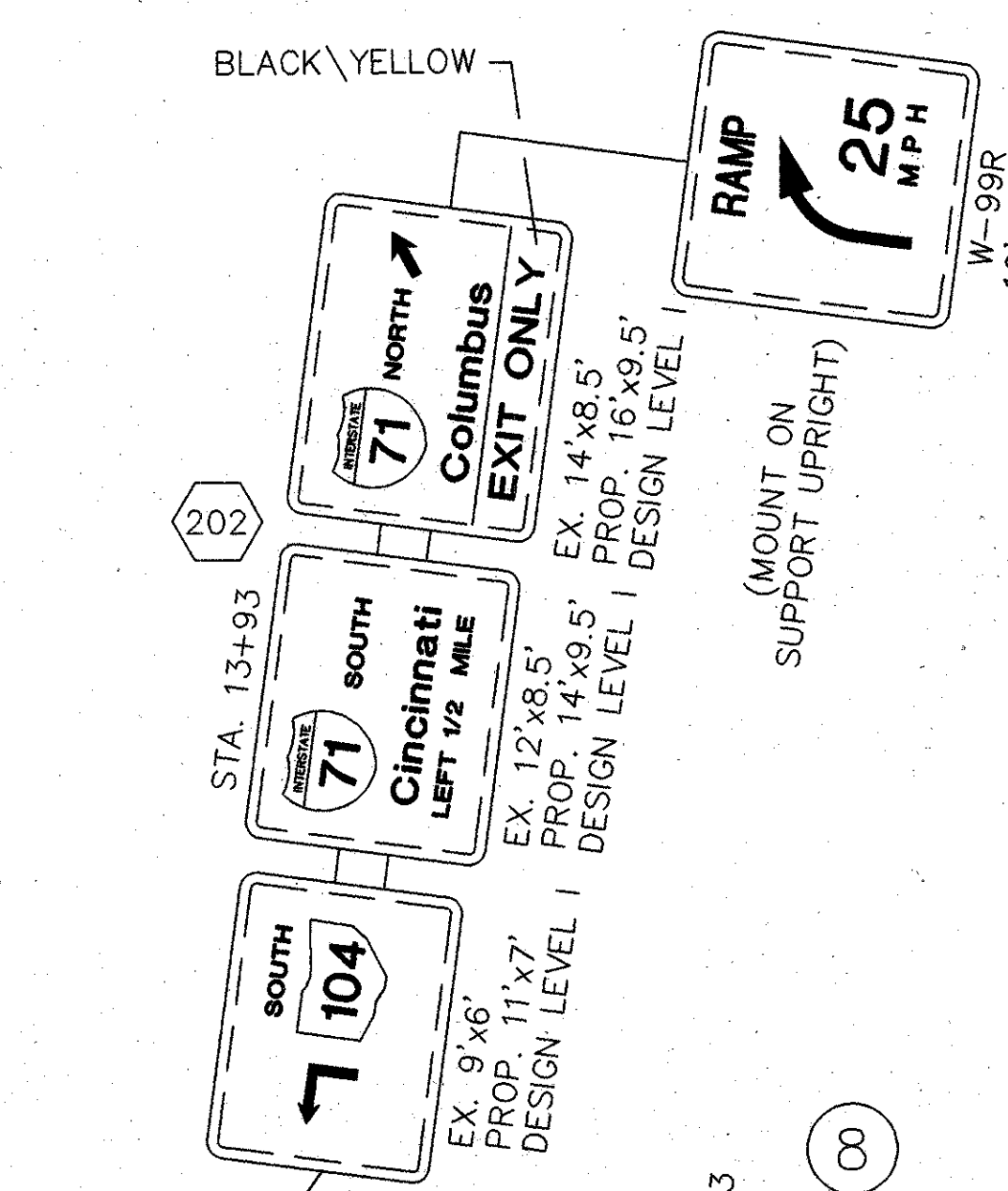
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SHEET NO.	STATION TO STATION		TYPICAL	LOCATION	625				632					LOOP DETECTOR PAVEMENT CUTTING	LOOP DETECTOR WIRE, TYPE E	LOOP DETECTOR LEAD-IN CABLE
					PULL BOX, MISC.: 32", AS PER PLAN	PULL BOX, 713.08, 18", AS PER PLAN	MEDIAN PULL BOX, 18", AS PER PLAN	MEDIAN PULL BOX, 36", AS PER PLAN	TRENCH	CONDUIT, 1 1/2", 713.07	CONDUIT, 2", 713.04	CONDUIT, 3", 713.04	CONDUIT, 4", 713.07			
					EACH	EACH	EACH	EACH	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.
123	1+85		EXIT RAMP	RAMP FF		1								45	119	
123	1+85	16+90		RAMP/M-L					650				1300			
123	16+90		DETECTOR STATION	MAINLINE	2			1	70			280		256	632	
123	16+90	24+40		MAINLINE				1	750				1500			
123	24+40	28+80		MAINLINE				1	440				880			
123	28+80	31+60		MAINLINE		2			70			280				
124	31+60		ENTRANCE RAMP	RAMP A-A		1			50			100		39	113	
124	31+60		EXIT RAMP	RAMP D-D		2			70			80	30	45	119	
124	31+60	34+30		MAINLINE					270				540			
124	34+30		SPEED TRAP	MAINLINE	1	1			70			280		512	1264	
124	34+30	39+60		MAINLINE					530				1060			
124	39+60			MAINLINE		2			80			320				
124	39+60		EXIT RAMP	RAMP B-B		1			40			80		45	119	
124	39+60		ENTRANCE RAMP	RAMP C-C		1			40			80		39	113	
124	39+60	45+80		MAINLINE				1	620				1240			
124	45+80	52+20		MAINLINE					640				1280			
124	52+20		DETECTOR STATION	MAINLINE	1	1			50			200		156	378	
124	52+20		ENTRANCE RAMP	RAMP A		2			75			100	25	39	113	
124	52+20		EXIT RAMP	RAMP B		2			75			100	25	45	119	
124	52+20	57+90		MAINLINE				1	570				1140			
125	57+90	63+15		MAINLINE					525				1050			
125	63+15			MAINLINE		1			50			100				
125	63+15		ENTRANCE RAMP	RAMP C		2			70			80	30	39	113	
125	63+15	66+80		MAINLINE					365				730			
125	66+80		DETECTOR STATION	MAINLINE	1	1			50			200		156	378	
125	66+80		EXIT RAMP	RAMP D		2			70			80	30	45	119	
125	66+80			RAMP E		1			50			100				
125	66+80	66+80	ENTRANCE RAMP	RAMP E		1			90	90				39	113	
125	66+80	72+80		MAINLINE				1	600				1200			
126	72+80	77+40		MAINLINE					460				920			
126	77+40	82+00		MAINLINE					460				920			
127	82+00	90+80		MAINLINE					880				1760			
127	90+80	92+80		MAINLINE					200				400			
127	92+80		DETECTOR STATION	MAINLINE	1	1			50			200		312	756	
127	92+80		EXIT RAMP	MAINLINE		2			90			80	50	45	119	
127	92+80	93+80	ENTRANCE RAMP	RAMP B		2			150	110		80		39	113	
127	92+80	98+90		MAINLINE				1	610				1220			
127	98+90	105+90		MAINLINE					700				1400			
128	105+90		DETECTOR STATION	MAINLINE	1	1			50			200		156	378	
128	105+90	104+30	ENTRANCE RAMP	RAMP C		1			200	160		80		39	113	
128	105+90		EXIT RAMP	RAMP D		2			100	60		80		45	119	
128	105+90	111+90		MAINLINE				1	600				1200			
128	111+90	116+60		MAINLINE					470				940			
128	116+60	123+30		MAINLINE					670				1340			
128	123+30		DETECTOR STATION	MAINLINE	2	1			80			200		156	378	
128	123+30	129+30		MAINLINE				1	600				1200			
129	129+30	135+30		MAINLINE					600				1200			
129	135+30	137+90		MAINLINE					260				520			
129	137+90		DETECTOR STATION	MAINLINE	1	1			50			200		312	756	
129	137+90		EXIT RAMP	RAMP B		3			60			80	20	45	119	
129	137+90		ENTRANCE RAMP	RAMP A		2			90	50		80		45	119	
129	137+90	139+80		MAINLINE					190				380			
QUANTITIES FOR REPLACEMENT OF EXISTING LOOPS																
123	9+32		SIGNAL DETECTOR	MAINLINE										100	200	
125	58+70		SIGNAL DETECTOR	RAMP B		1			100		100			300	600	100
125	56+90		SIGNAL DETECTOR	RAMP D										300	600	
129	143+80		SIGNAL DETECTOR	RAMP A										80	160	
129	143+95		SIGNAL DETECTOR	RAMP A										70	140	
TOTALS TO THE TRAFFIC CONTROL GENERAL SUMMARY:					19	33	13	12	14750	470	100	3742	25540	3544	8482	100

FASNOTS 12-16-84

LEGEND

- (A) 4" LANE LINE
- (B) 4" EDGE LINE (WHITE)
- (C) 4" EDGE LINE (YELLOW)
- (D) 10" CHANNELIZING LINE
- (E) 24" BROAD TRANSVERSE LINE (WHITE)
- (F) 24" STOP LINE
- (G) 24" BROAD TRANSVERSE LINE (YELLOW)
- (O1) GROUND MOUNTED SIGNS
- (O2) OVERHEAD MOUNTED SIGNS
- ↑ SINGLE POST MOUNTED
- ↑↑ DOUBLE POST OR BEAM MOUNTED
- NEW SIGN
- EXISTING SIGN TO BE REMOVED
- EXISTING SIGN TO BE REPLACED
- ** FOR BARRIER MOUNTING DETAILS SEE SHEET 126



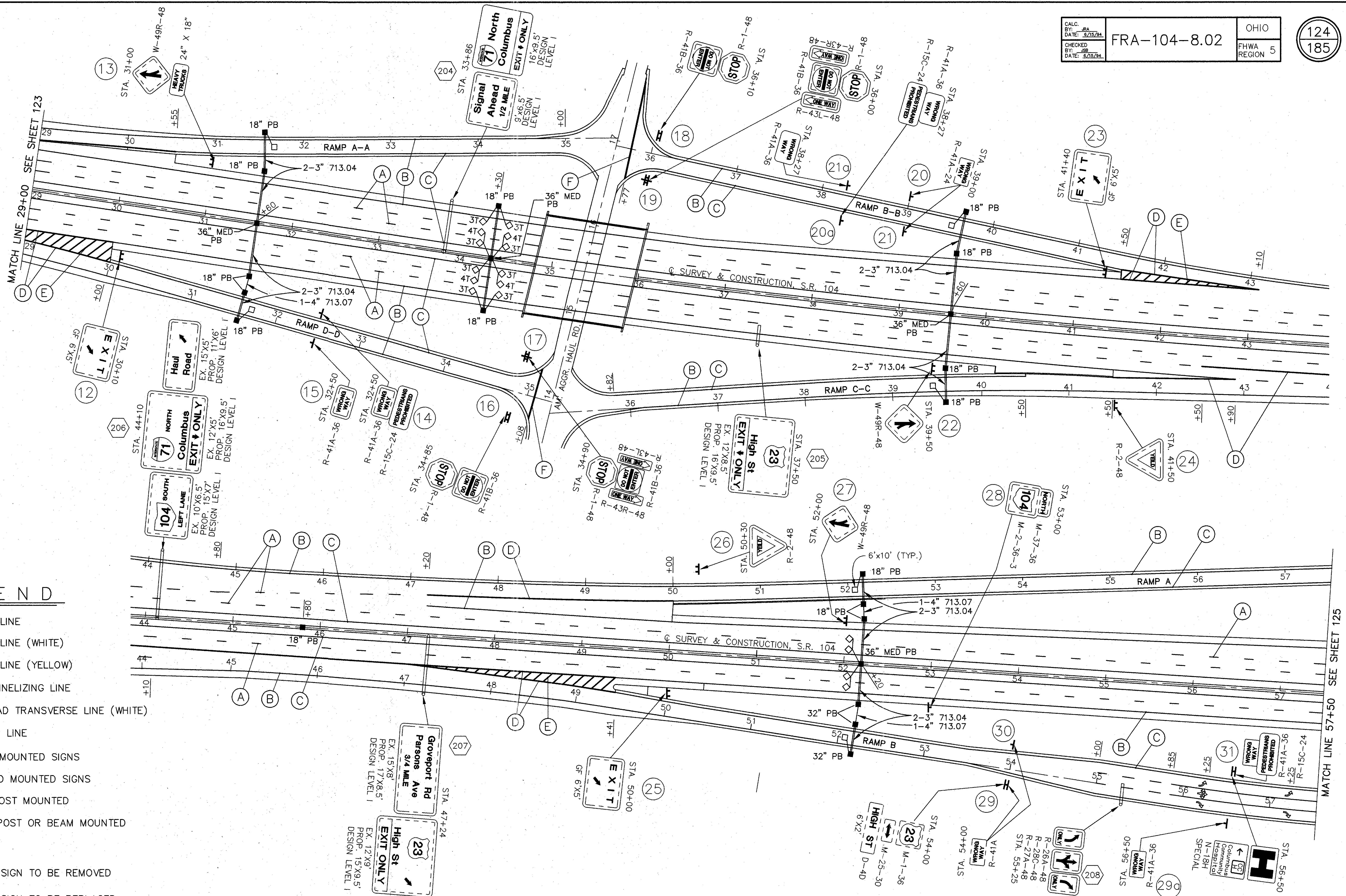
ITEM 630 - SIGNING, MISC.: CLEANING AND PAINTING OF OVERHEAD SIGN SUPPORT STRUCTURES

THIS ITEM SHALL BE USED TO REHABILITATE THE EXISTING OVERHEAD SIGN SUPPORT STRUCTURES NOT BEING REPLACED ON THIS PROJECT. THE SURFACE PREPARATION AND PAINTING SHALL BE PERFORMED IN ACCORDANCE WITH 514.06, EXCEPT THAT THE SECTIONS PERTAINING TO BRIDGES SHALL BE TAKEN TO REPRESENT THE SIGN SUPPORT STRUCTURES. THE PAINTING SHALL BE SYSTEM "A" AND SHALL CONSIST OF AN EPOXY PRIME COAT, EPOXY INTERMEDIATE COAT, AND URETHANE TOP COAT. THE COLOR OF THE TOP COAT SHALL MATCH THE COLOR OF THE NEW SIGN SUPPORT STRUCTURES, AND SHALL BE ACCEPTED BY THE ENGINEER PRIOR TO COMPLETION OF THE PAINTING. THE PAINTING SHALL BE DONE IN THE FIELD. ALL OF THE ABOVE WORK SHALL BE PAID FOR UNDER ITEM 630 - SIGNING, MISC.: CLEANING AND PAINTING OF OVERHEAD SIGN SUPPORT STRUCTURES, PER EACH.

2-4" 713.07 - IN BARRIER (INCLUDED WITH BARRIER FOR PAYMENT)

TRAFFIC CONTROL STA. 8+84.50 TO STA. 29+00

DATE: 6-15-94



LEGEND

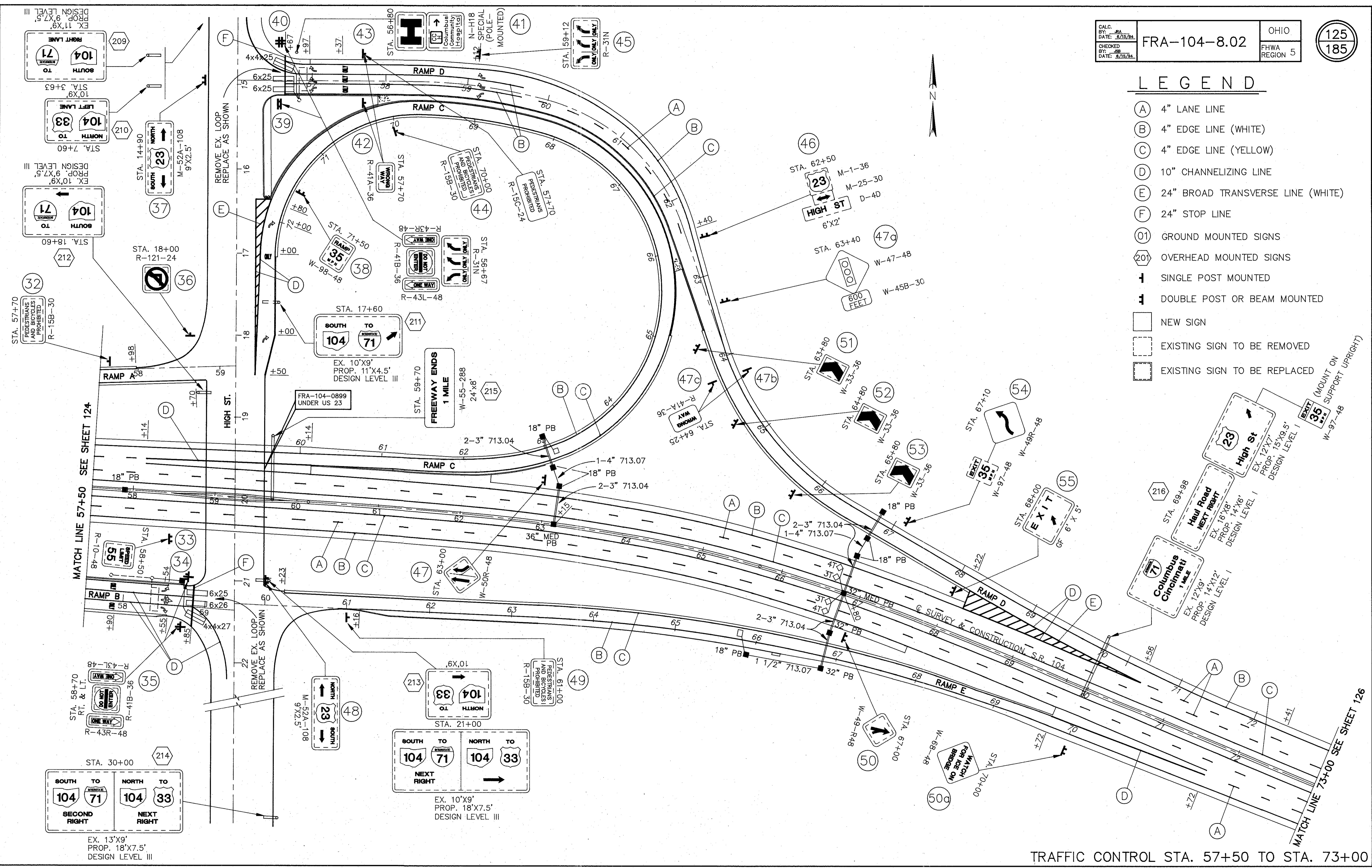
- (A) 4" LANE LINE
- (B) 4" EDGE LINE (WHITE)
- (C) 4" EDGE LINE (YELLOW)
- (D) 10" CHANNELIZING LINE
- (E) 24" BROAD TRANSVERSE LINE (WHITE)
- (F) 24" STOP LINE
- (O1) GROUND MOUNTED SIGNS
- (O20) OVERHEAD MOUNTED SIGNS
- ┆ SINGLE POST MOUNTED
- ┆ DOUBLE POST OR BEAM MOUNTED
- NEW SIGN
- EXISTING SIGN TO BE REMOVED
- EXISTING SIGN TO BE REPLACED

TRAFFIC CONTROL STA. 29+00 TO STA. 57+50

44102 6-13-94

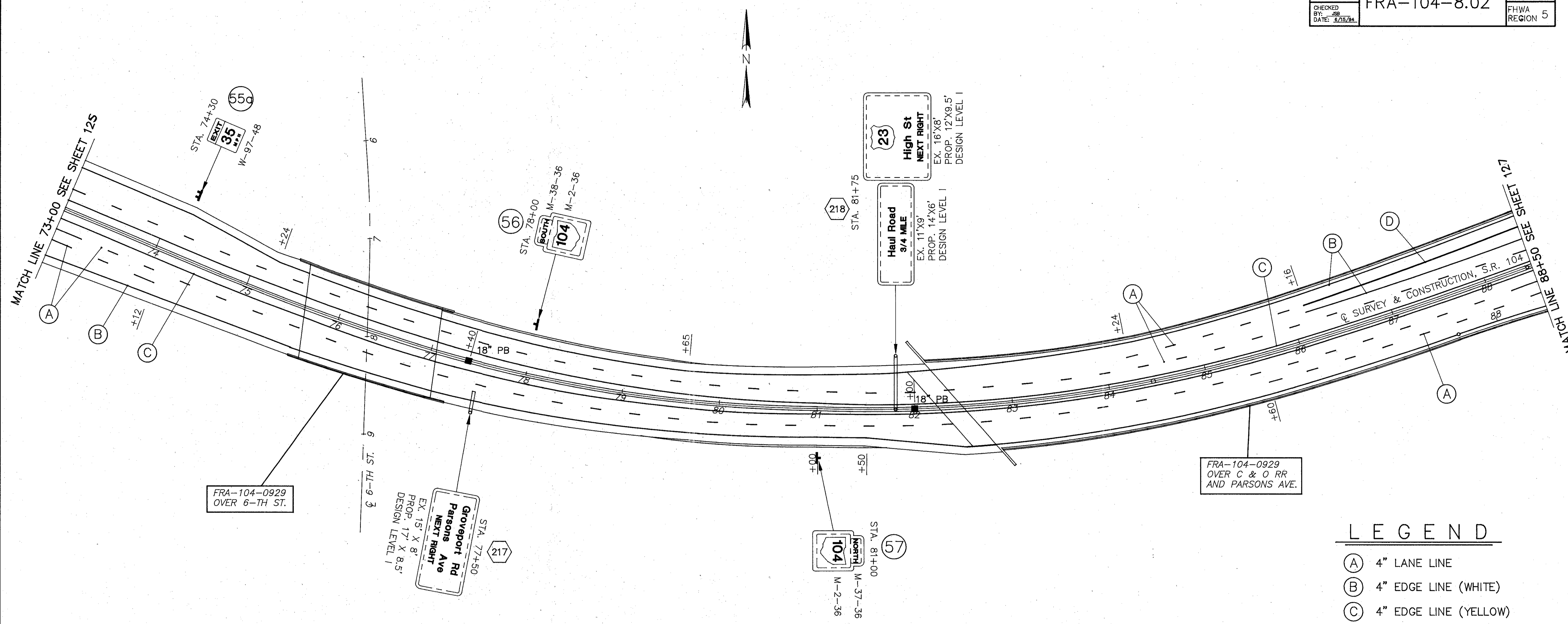
LEGEND

- (A) 4" LANE LINE
- (B) 4" EDGE LINE (WHITE)
- (C) 4" EDGE LINE (YELLOW)
- (D) 10" CHANNELIZING LINE
- (E) 24" BROAD TRANSVERSE LINE (WHITE)
- (F) 24" STOP LINE
- (01) GROUND MOUNTED SIGNS
- (20) OVERHEAD MOUNTED SIGNS
- ↑ SINGLE POST MOUNTED
- ↑↑ DOUBLE POST OR BEAM MOUNTED
- NEW SIGN
- EXISTING SIGN TO BE REMOVED
- EXISTING SIGN TO BE REPLACED



TRAFFIC CONTROL STA. 57+50 TO STA. 73+00

DATE: 8-15-84



FRA-104-0929
OVER 6-TH ST.

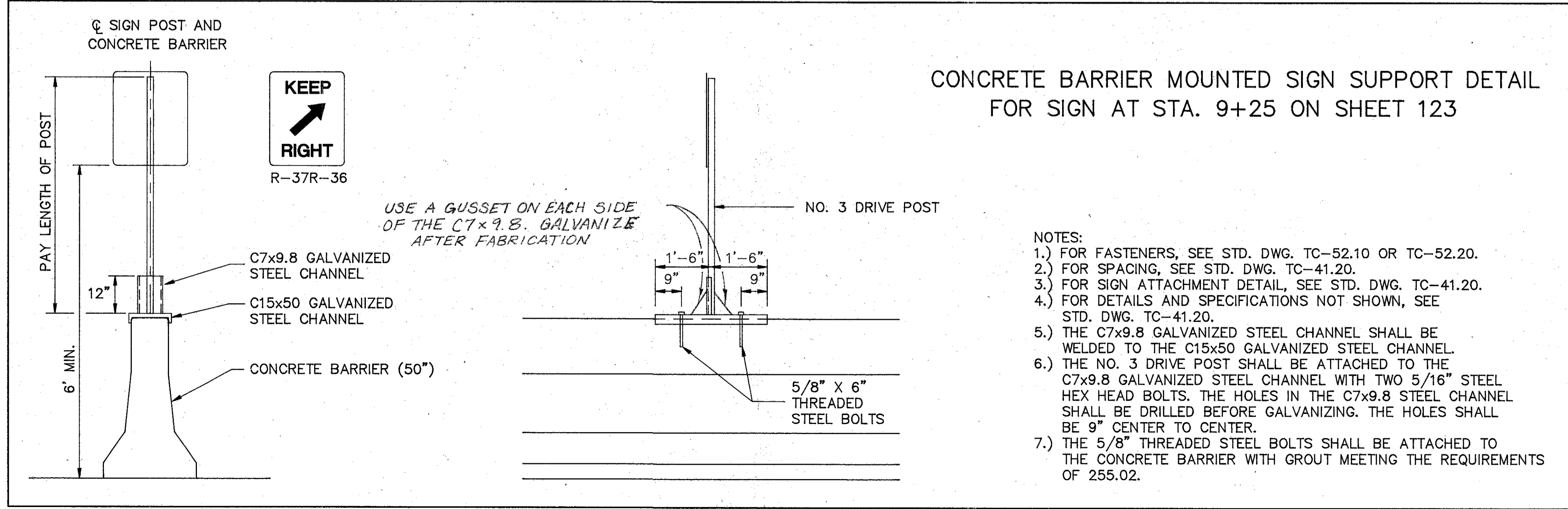
Grovesport Rd
Parsons Ave
NEXT RIGHT
EX. 17' X 8.5'
PROP. 17' X 8.5'
DESIGN LEVEL I

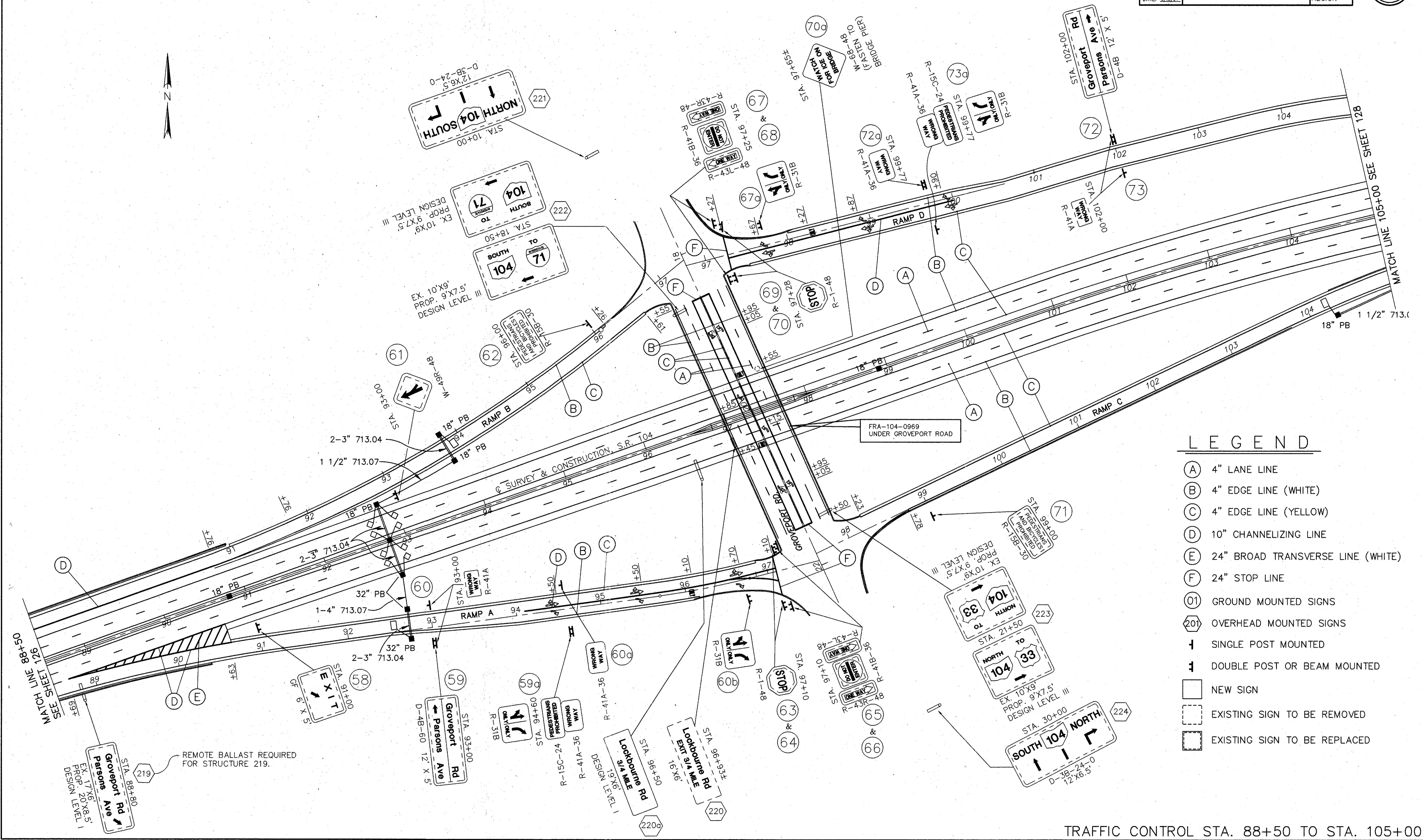
Station 104
M-37-36
M-2-36

FRA-104-0929
OVER C & O RR
AND PARSONS AVE.

LEGEND

- (A) 4" LANE LINE
- (B) 4" EDGE LINE (WHITE)
- (C) 4" EDGE LINE (YELLOW)
- (D) 10" CHANNELIZING LINE
- (E) 24" BROAD TRANSVERSE LINE (WHITE)
- (F) 24" STOP LINE
- (O1) GROUND MOUNTED SIGNS
- (O2) OVERHEAD MOUNTED SIGNS
- † SINGLE POST MOUNTED
- ‡ DOUBLE POST OR BEAM MOUNTED
- NEW SIGN
- EXISTING SIGN TO BE REMOVED
- EXISTING SIGN TO BE REPLACED



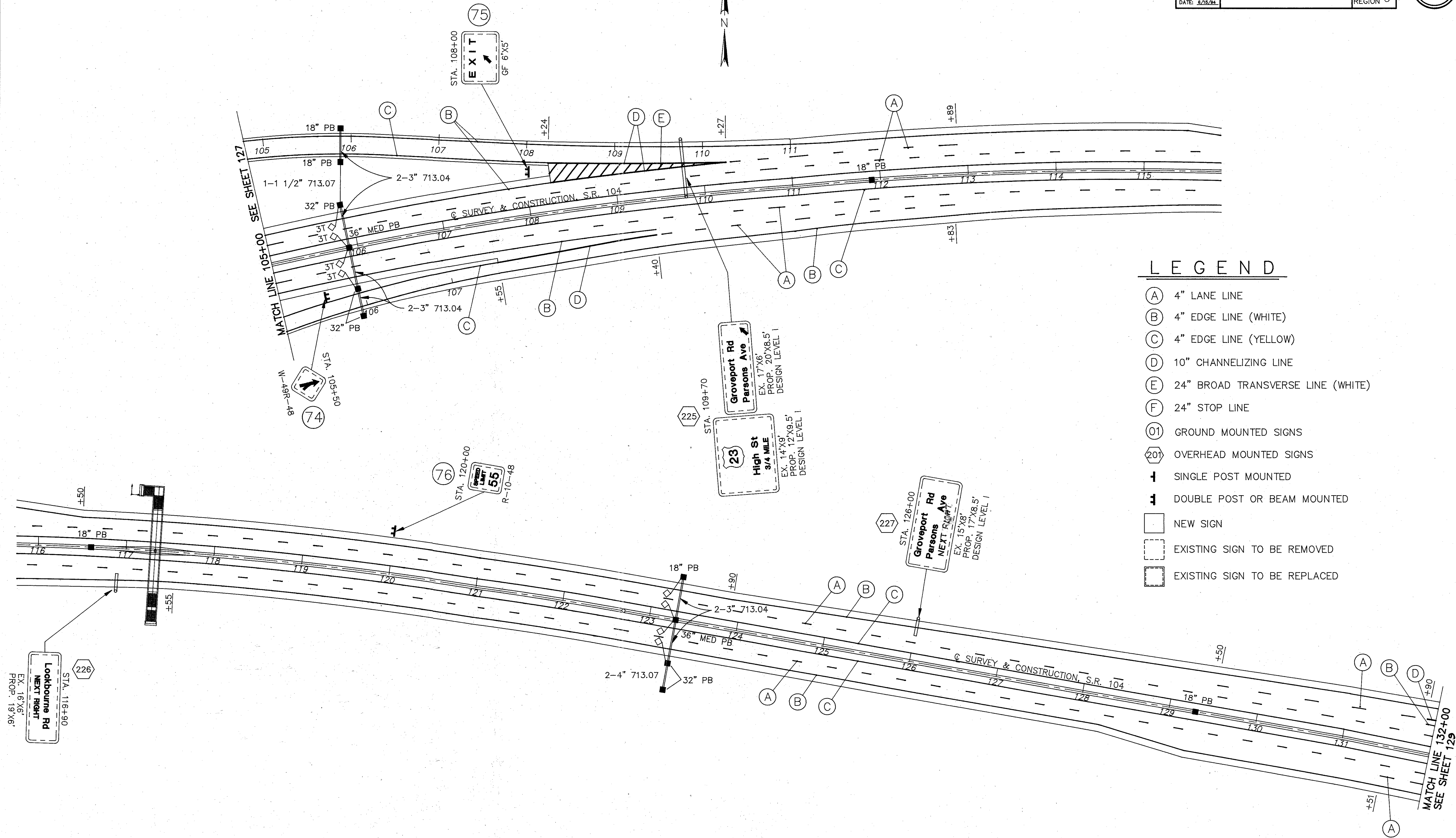
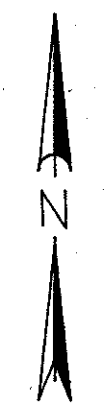


LEGEND

- (A) 4" LANE LINE
- (B) 4" EDGE LINE (WHITE)
- (C) 4" EDGE LINE (YELLOW)
- (D) 10" CHANNELIZING LINE
- (E) 24" BROAD TRANSVERSE LINE (WHITE)
- (F) 24" STOP LINE
- (O1) GROUND MOUNTED SIGNS
- (O2) OVERHEAD MOUNTED SIGNS
- ↑ SINGLE POST MOUNTED
- ↑ DOUBLE POST OR BEAM MOUNTED
- NEW SIGN
- EXISTING SIGN TO BE REMOVED
- EXISTING SIGN TO BE REPLACED

TRAFFIC CONTROL STA. 88+50 TO STA. 105+00

6-13-84

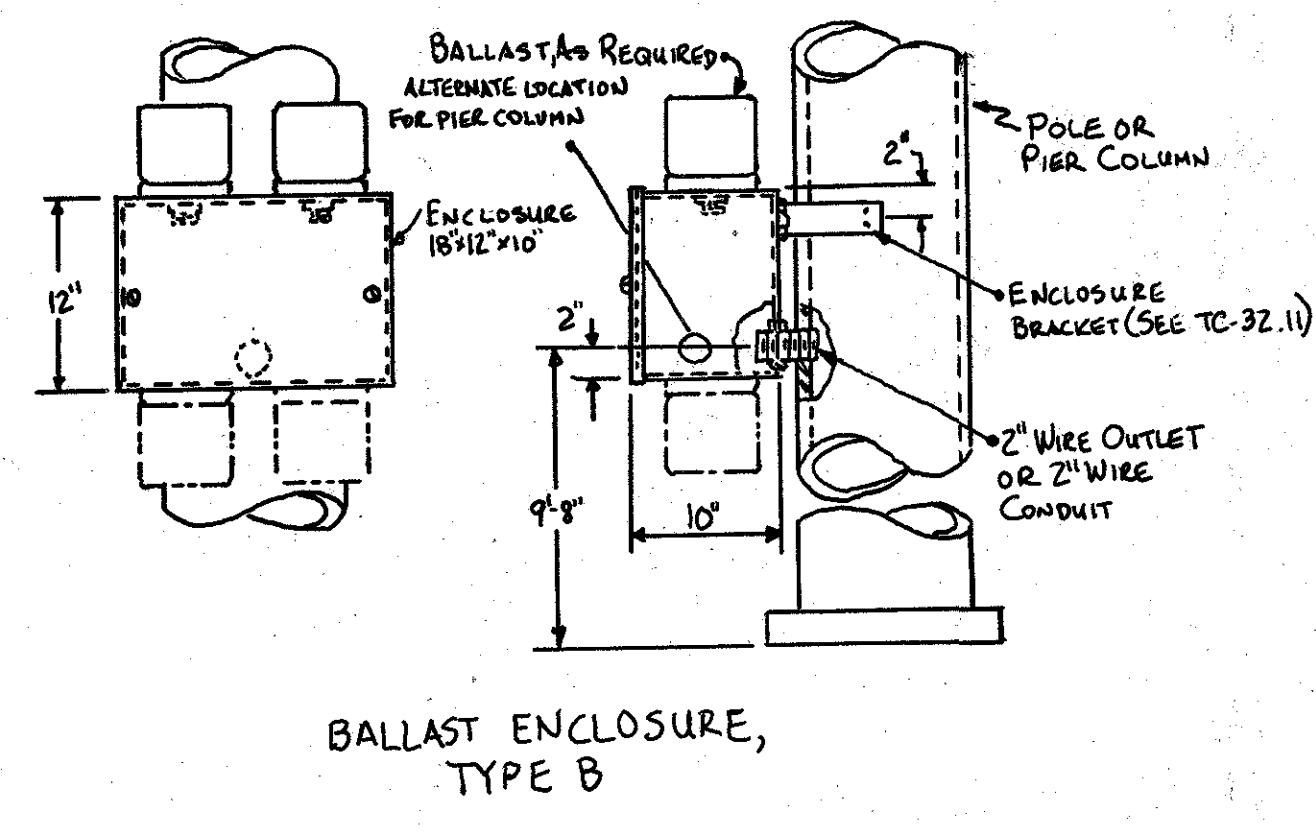
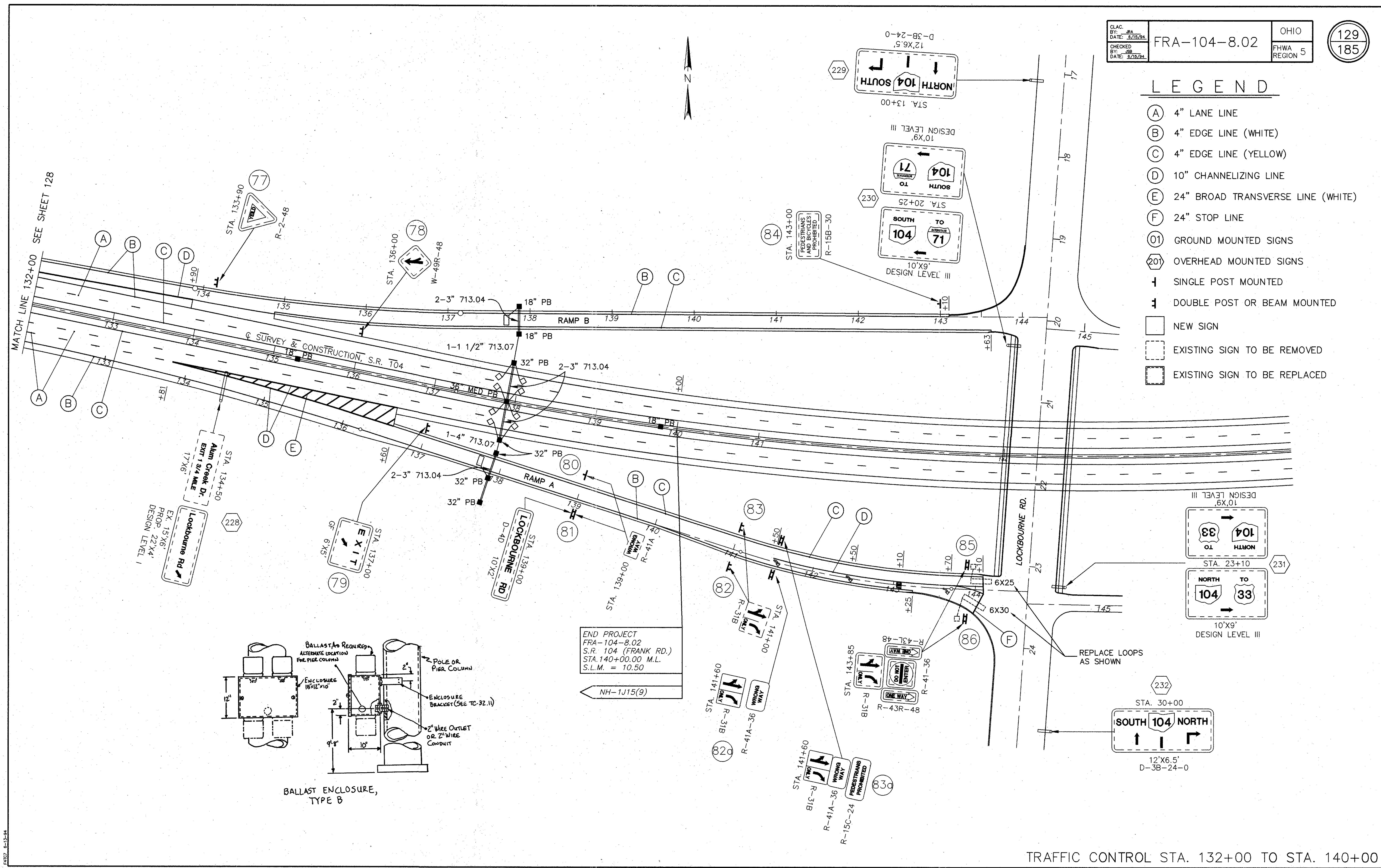


LEGEND

- (A) 4" LANE LINE
- (B) 4" EDGE LINE (WHITE)
- (C) 4" EDGE LINE (YELLOW)
- (D) 10" CHANNELIZING LINE
- (E) 24" BROAD TRANSVERSE LINE (WHITE)
- (F) 24" STOP LINE
- (O1) GROUND MOUNTED SIGNS
- (O2) OVERHEAD MOUNTED SIGNS
- ┆ SINGLE POST MOUNTED
- ┆ DOUBLE POST OR BEAM MOUNTED
- NEW SIGN
- EXISTING SIGN TO BE REMOVED
- EXISTING SIGN TO BE REPLACED

LEGEND

- (A) 4" LANE LINE
- (B) 4" EDGE LINE (WHITE)
- (C) 4" EDGE LINE (YELLOW)
- (D) 10" CHANNELIZING LINE
- (E) 24" BROAD TRANSVERSE LINE (WHITE)
- (F) 24" STOP LINE
- (01) GROUND MOUNTED SIGNS
- (201) OVERHEAD MOUNTED SIGNS
- ↑ SINGLE POST MOUNTED
- ↑↑ DOUBLE POST OR BEAM MOUNTED
- NEW SIGN
- EXISTING SIGN TO BE REMOVED
- EXISTING SIGN TO BE REPLACED



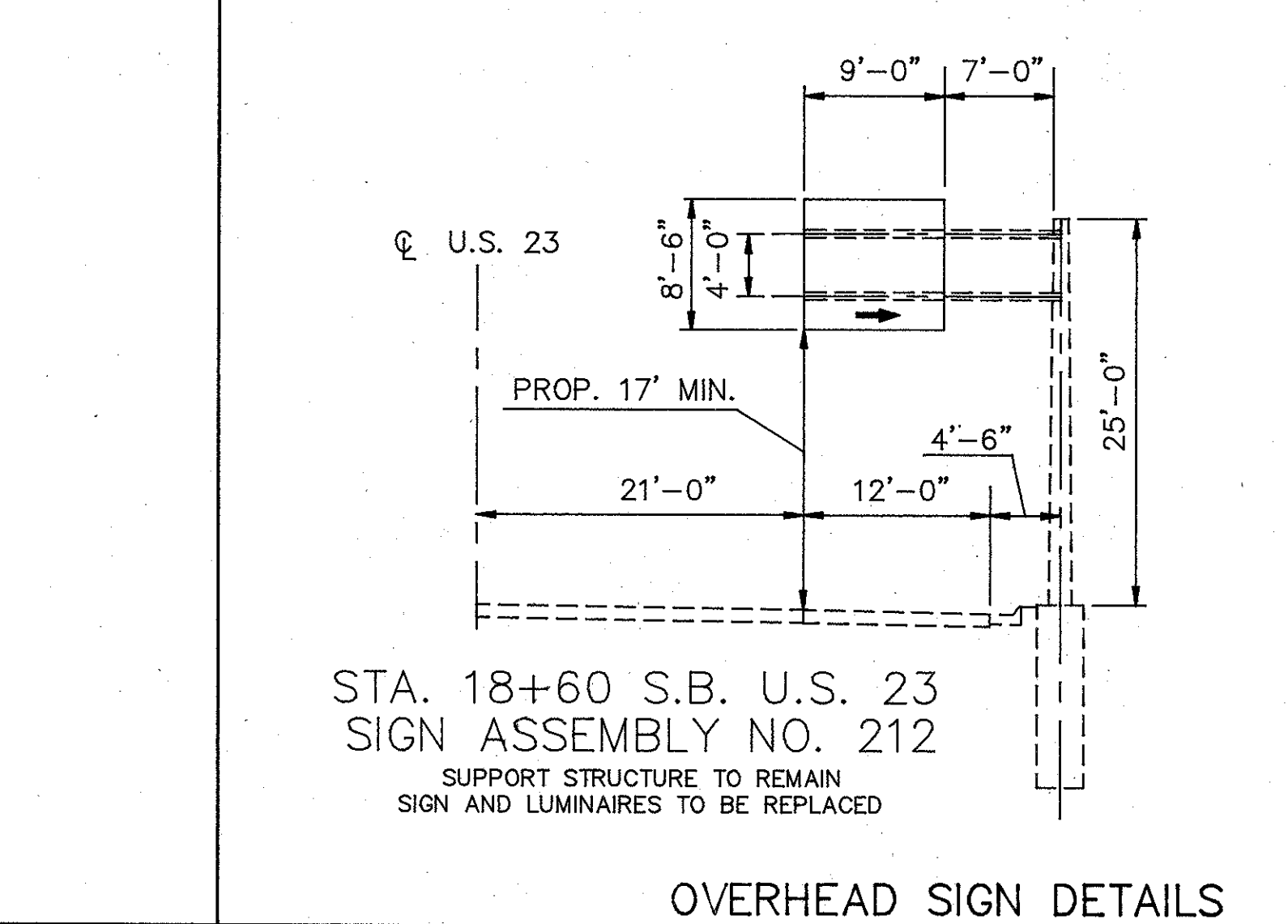
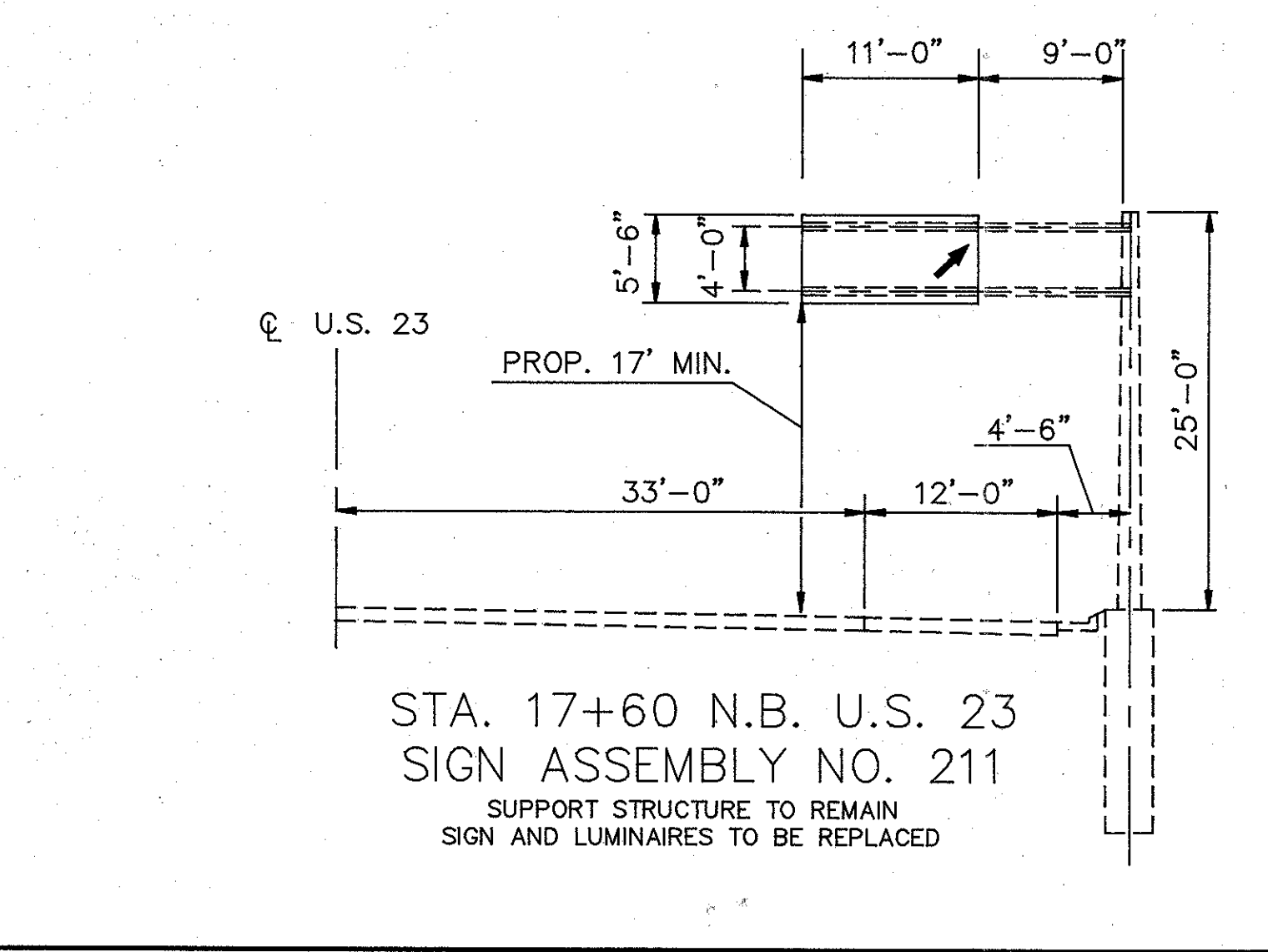
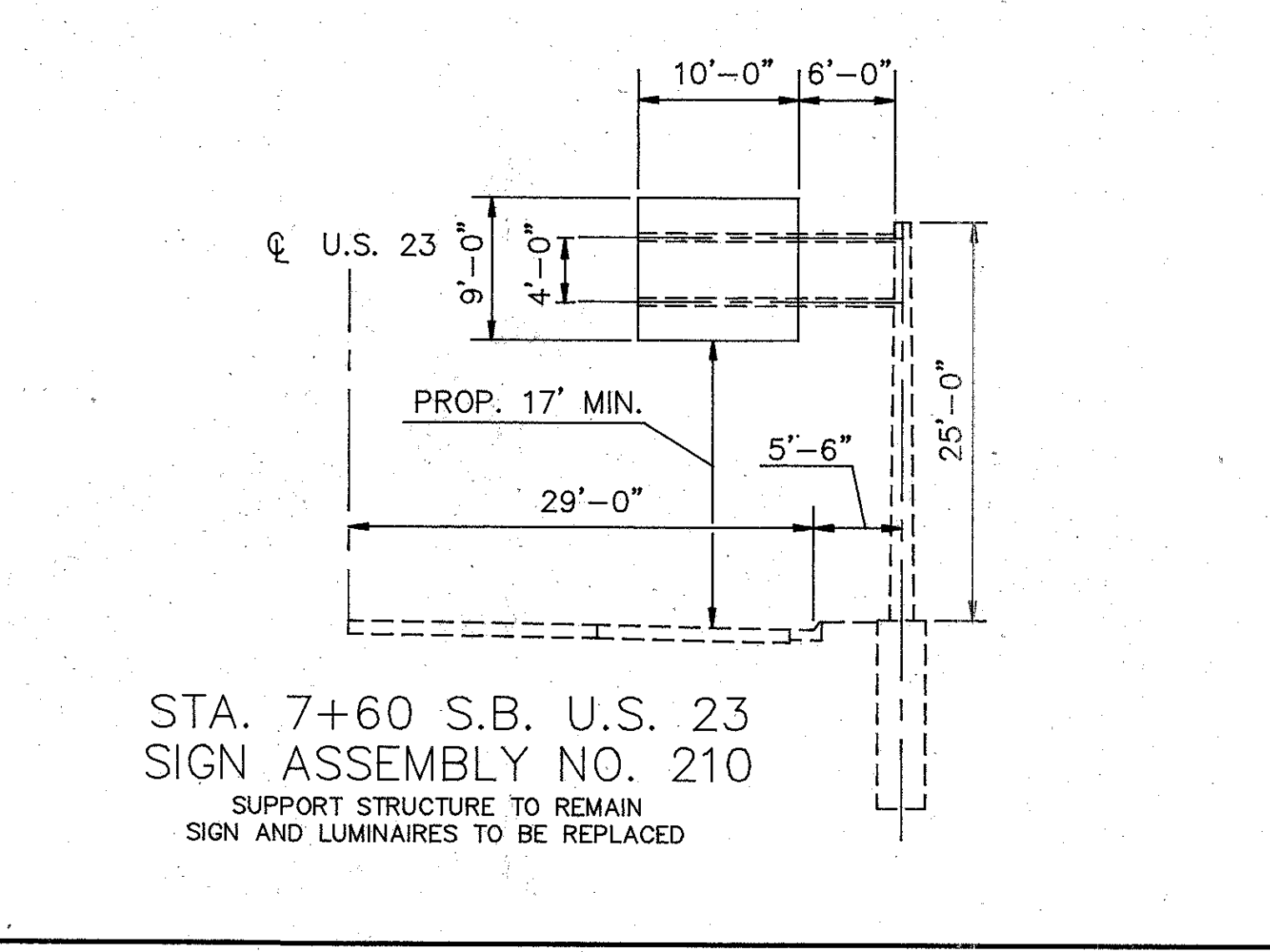
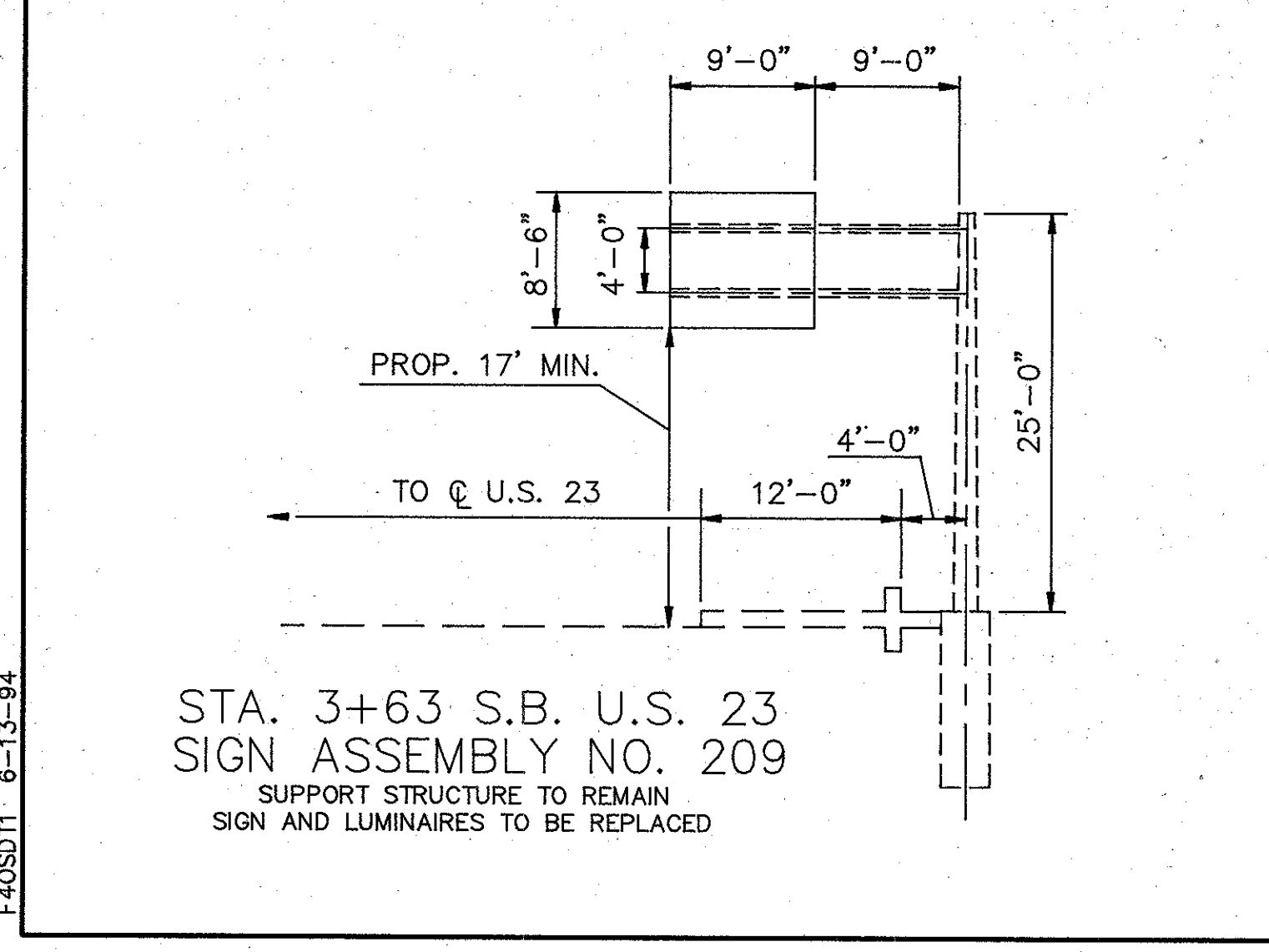
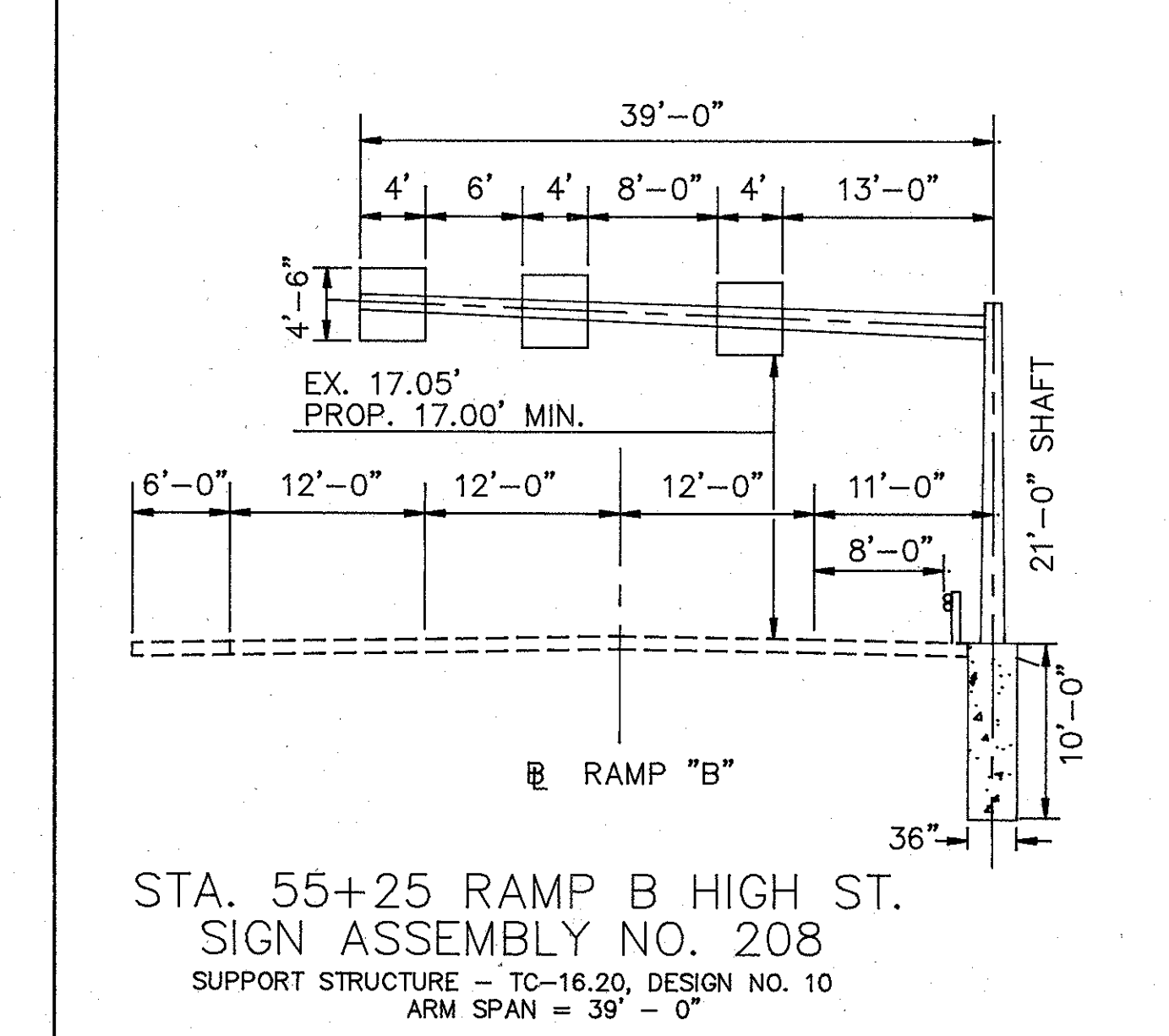
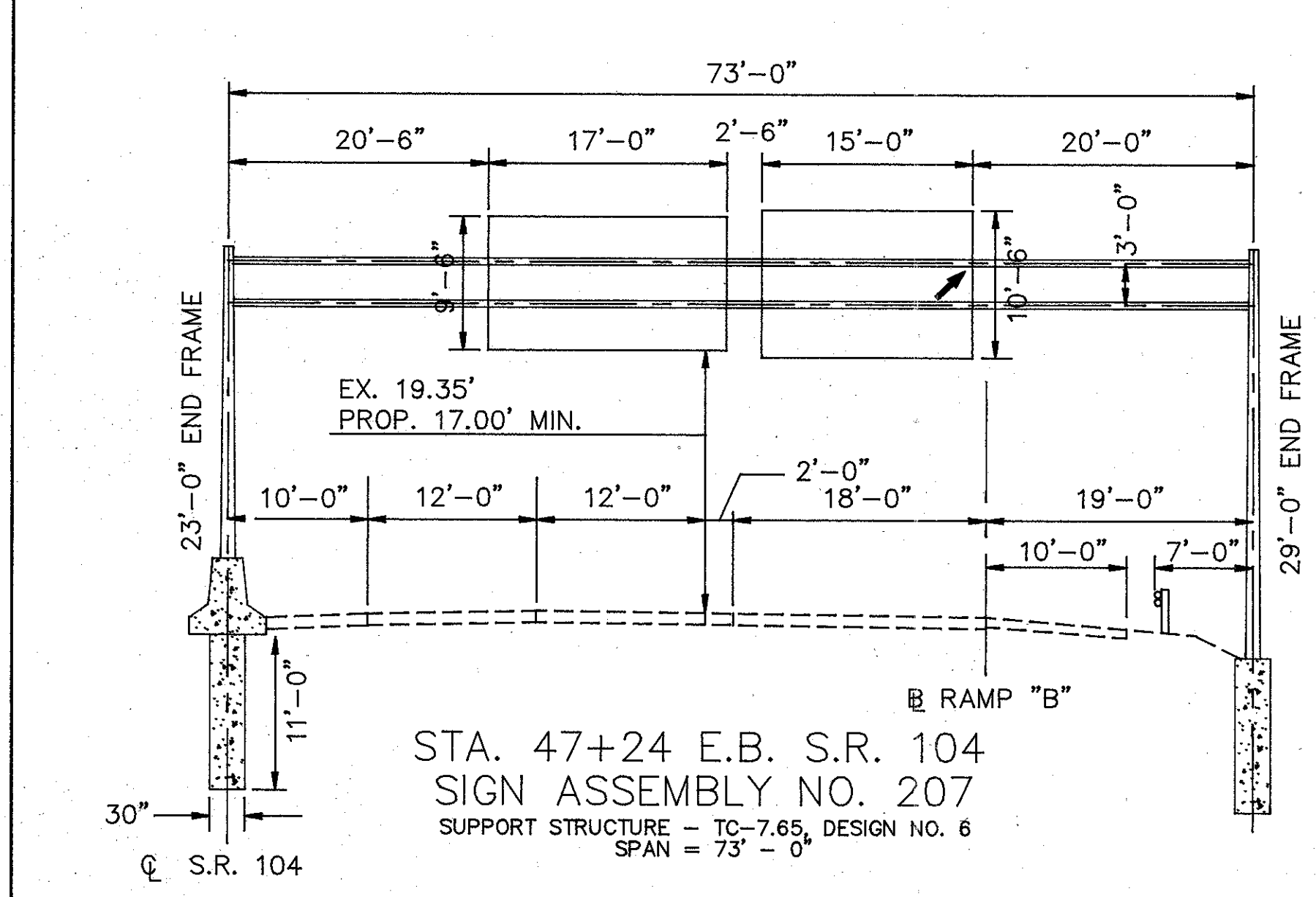
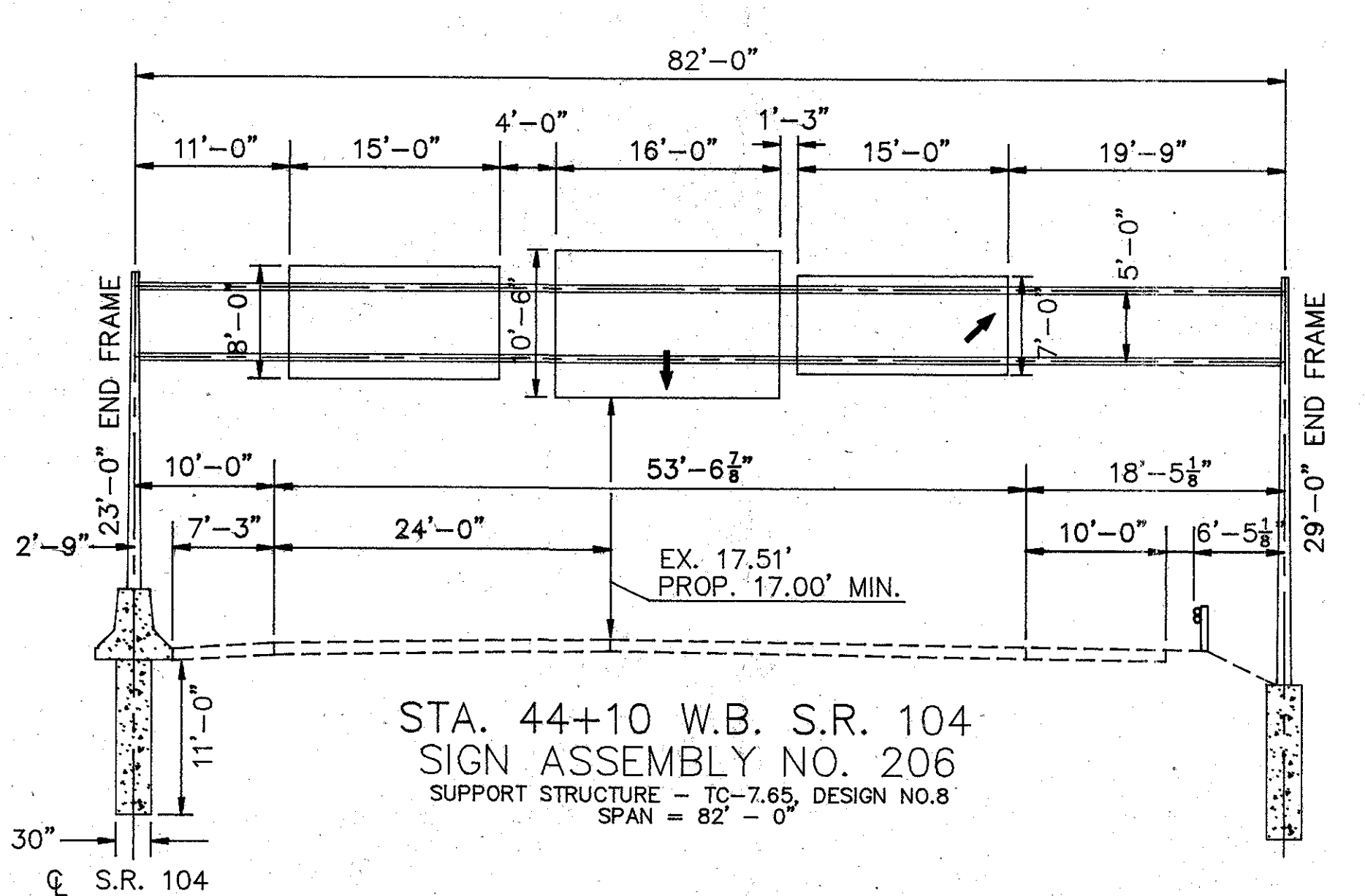
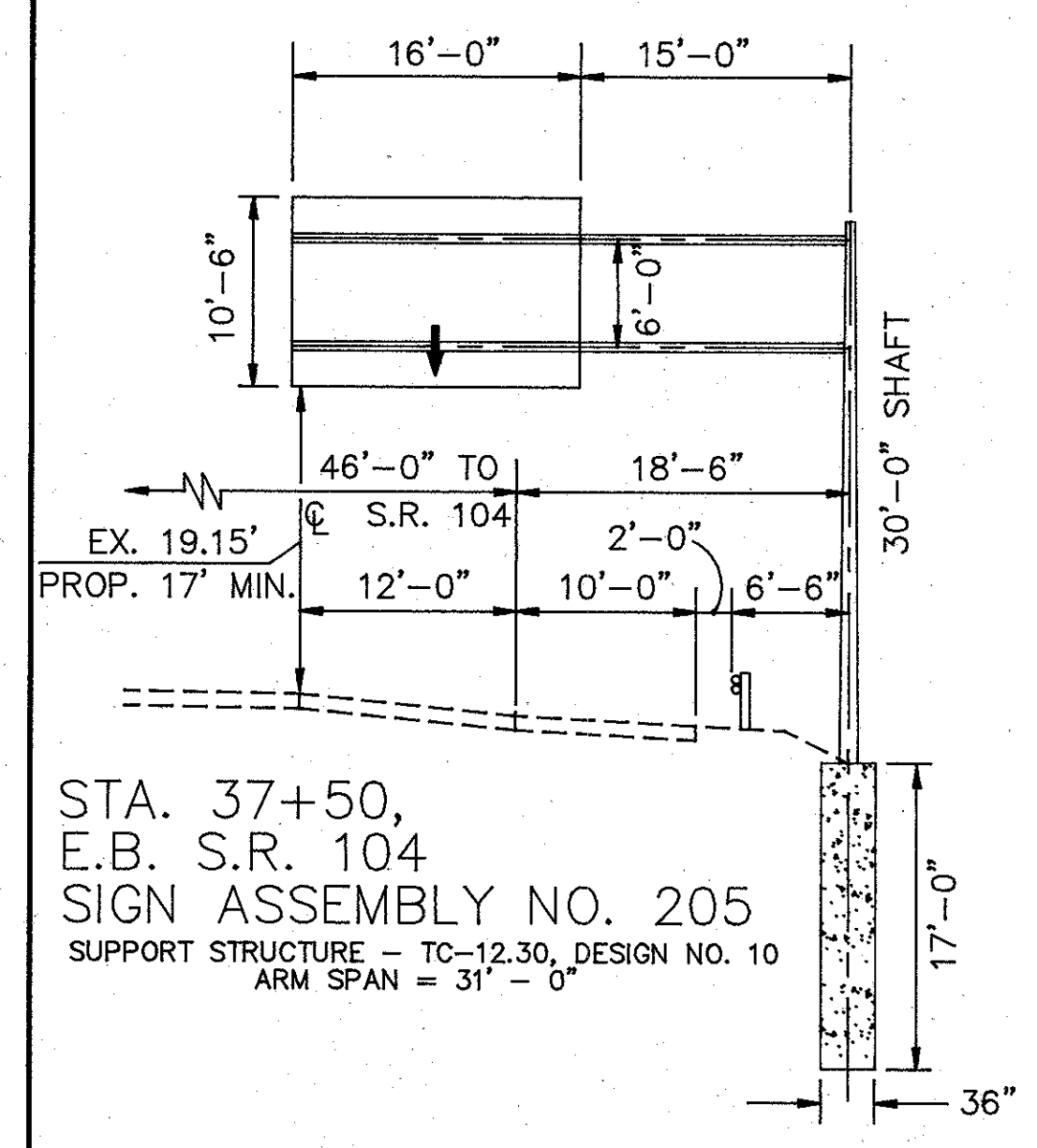
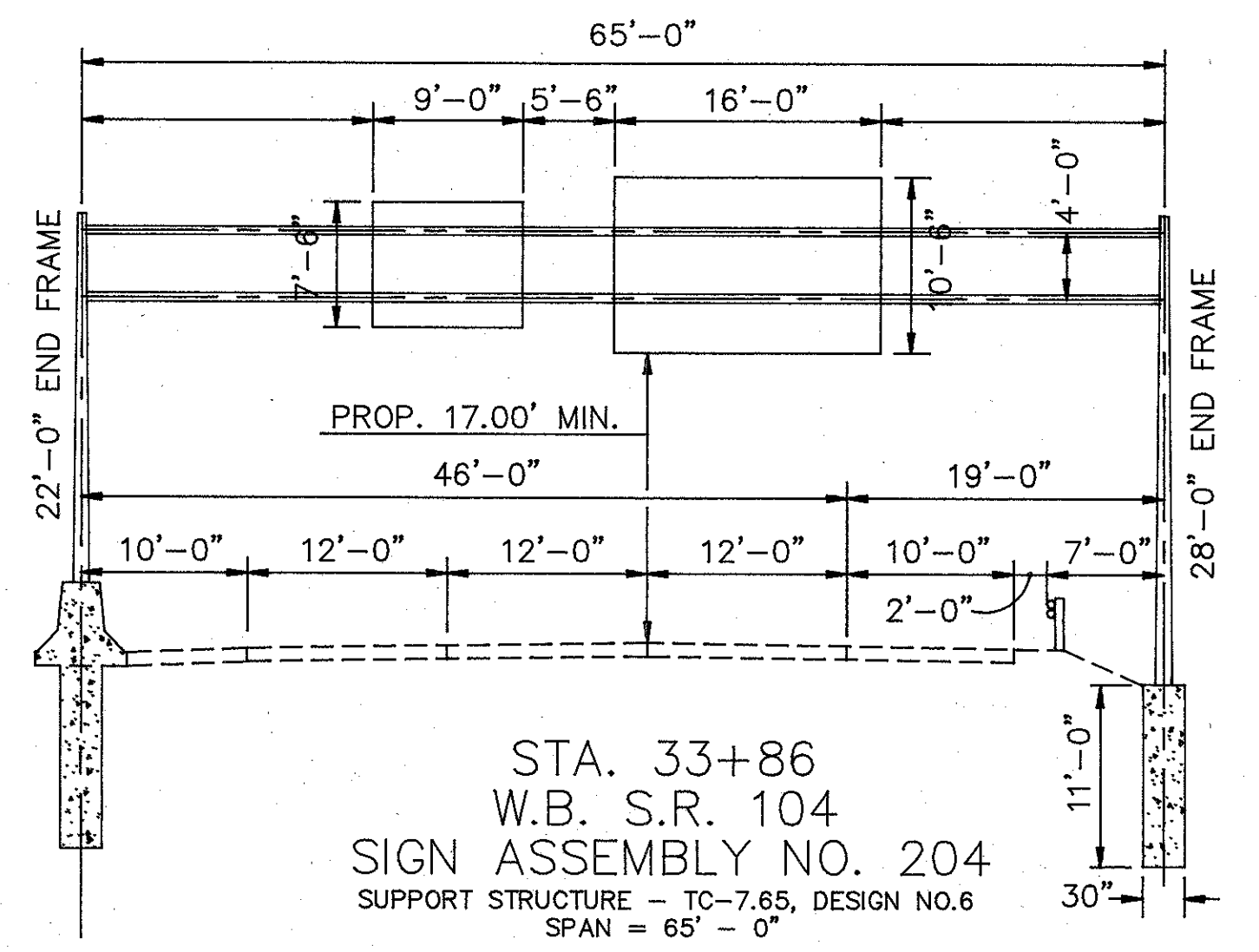
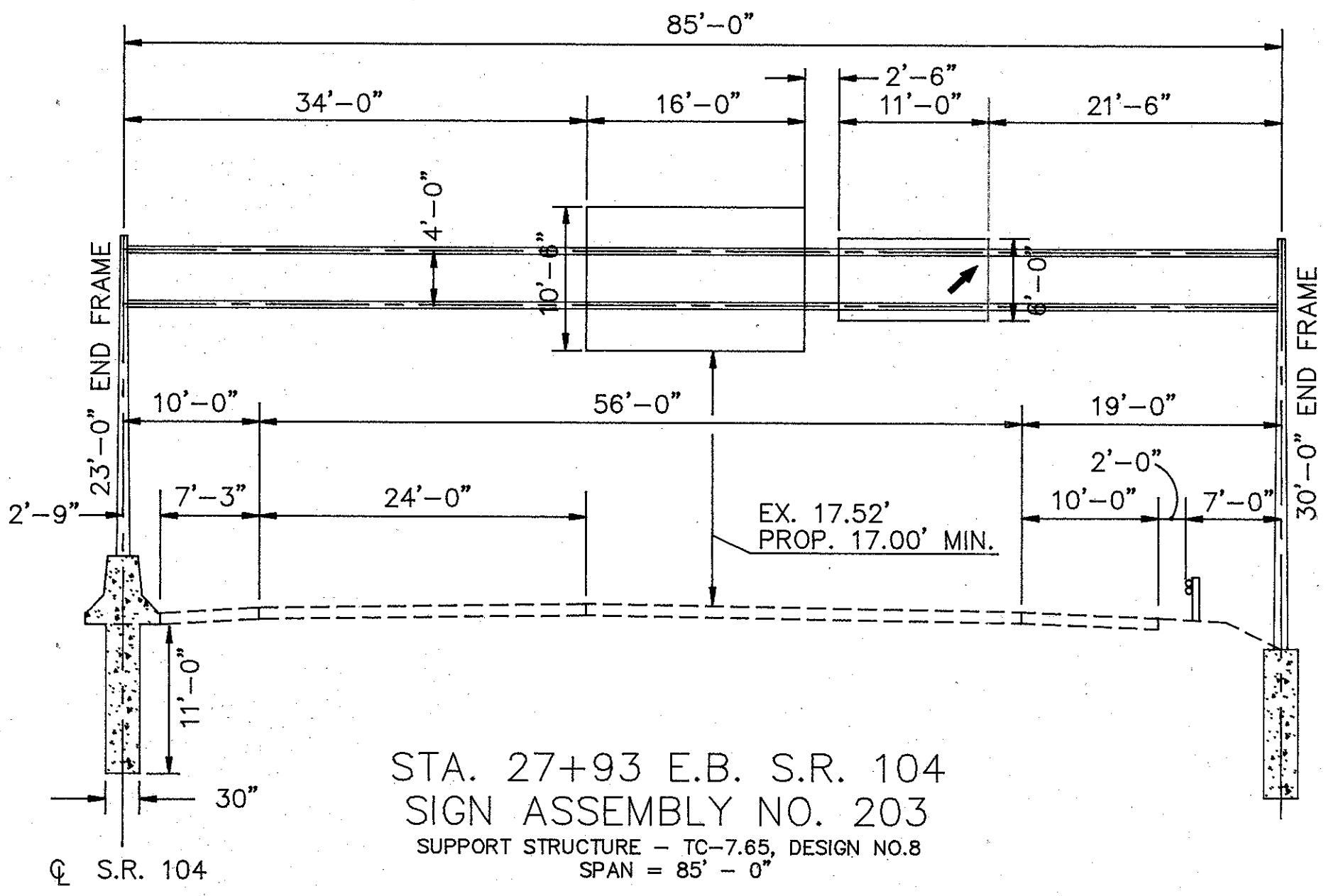
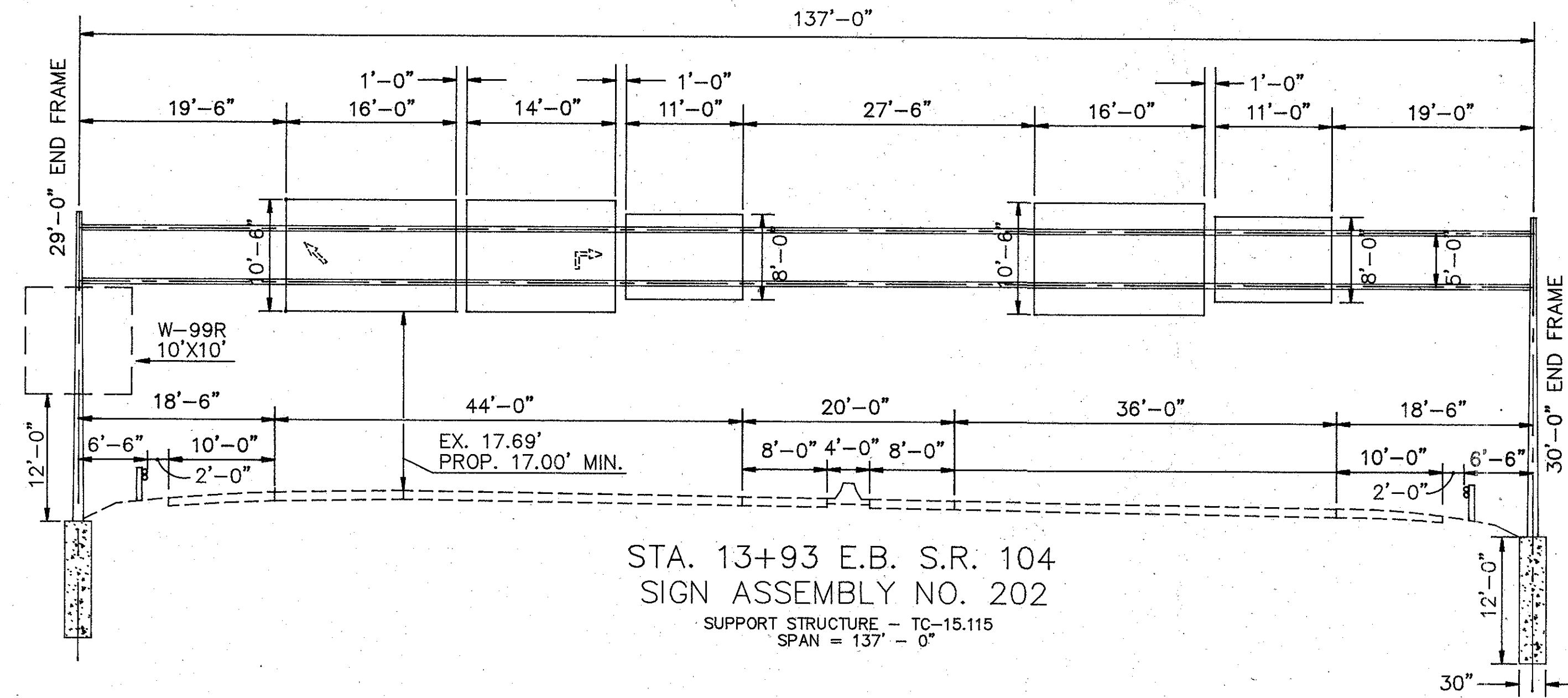
END PROJECT
FRA-104-8.02
S.R. 104 (FRANK RD.)
STA. 140+00.00 M.L.
S.L.M. = 10.50

NH-1J15(9)

TRAFFIC CONTROL STA. 132+00 TO STA. 140+00

* NOTE: ALL SIGN SIZES SHOWN INCLUDE 1' GLARE SHIELD

CHECKED BY: JRA DATE: 6/15/94	FRA-104-8.02	OHIO	130 185
CHECKED BY: JSB DATE: 6/15/94		FHWA REGION 5	



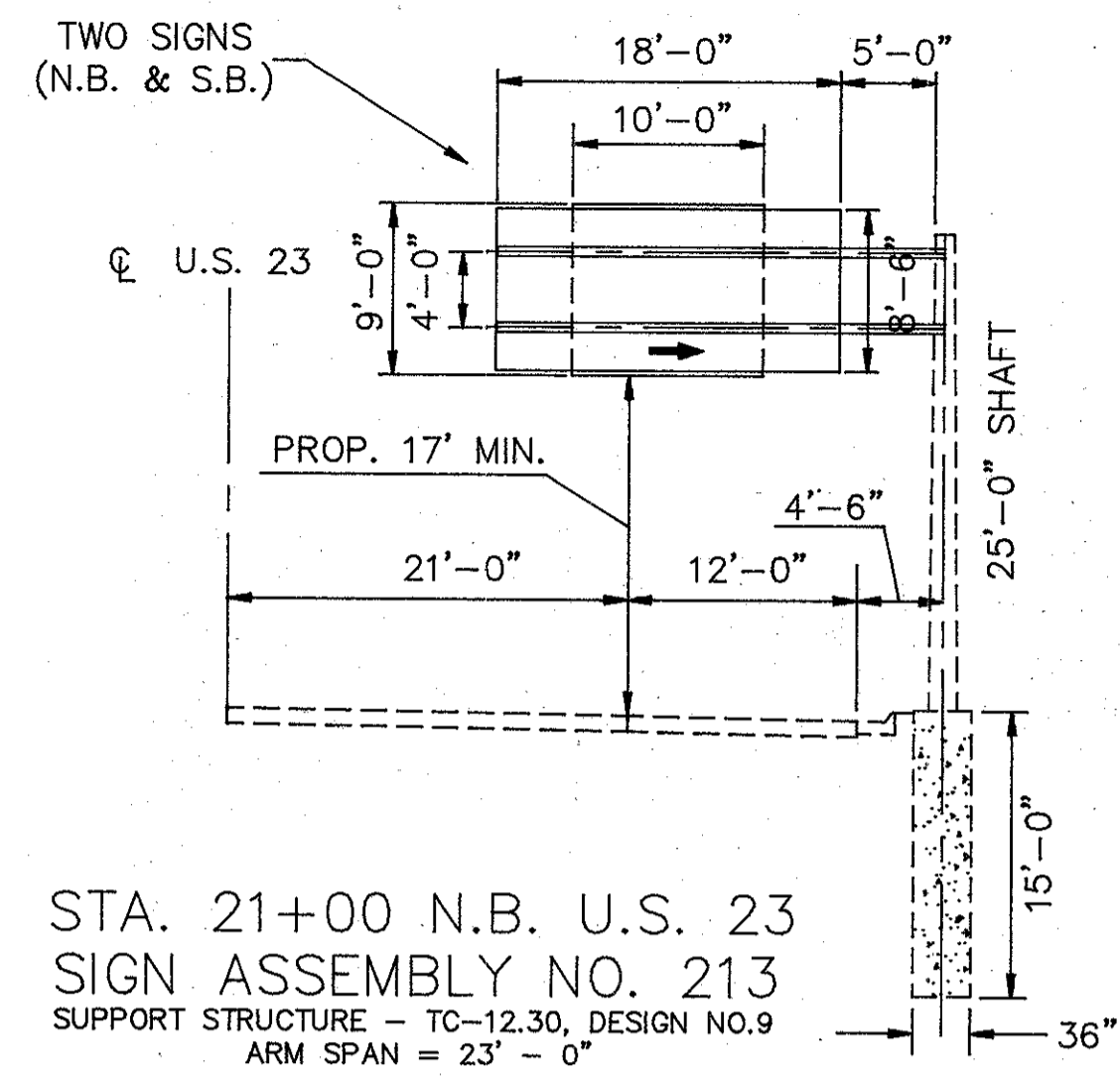
OVERHEAD SIGN DETAILS

F40SDT1 6-13-94

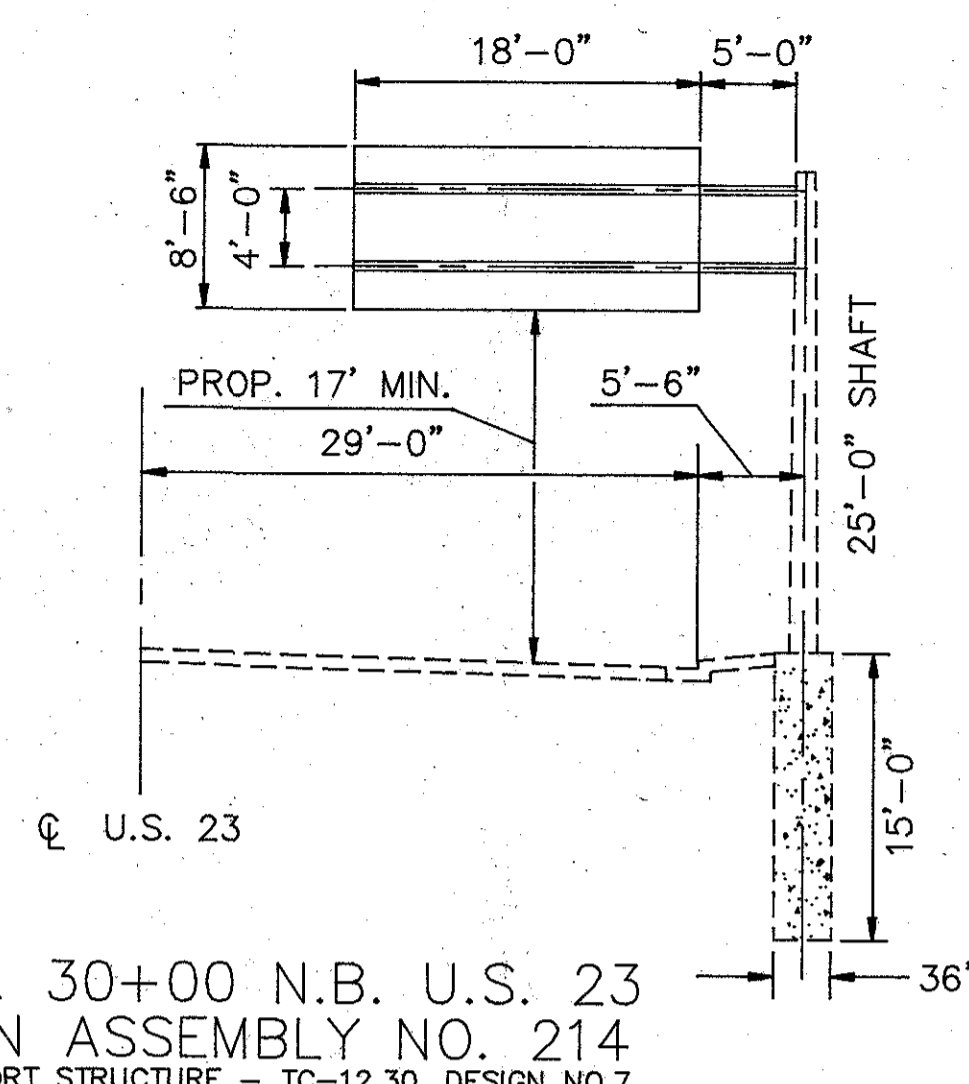
* NOTE: ALL SIGN SIZES SHOWN INCLUDE 1' GLARE SHIELD

CHECKED BY: JRA DATE: 6/15/94	FRA-104-8.02	OHIO
CHECKED BY: JSB DATE: 6/15/94		FHWA REGION 5

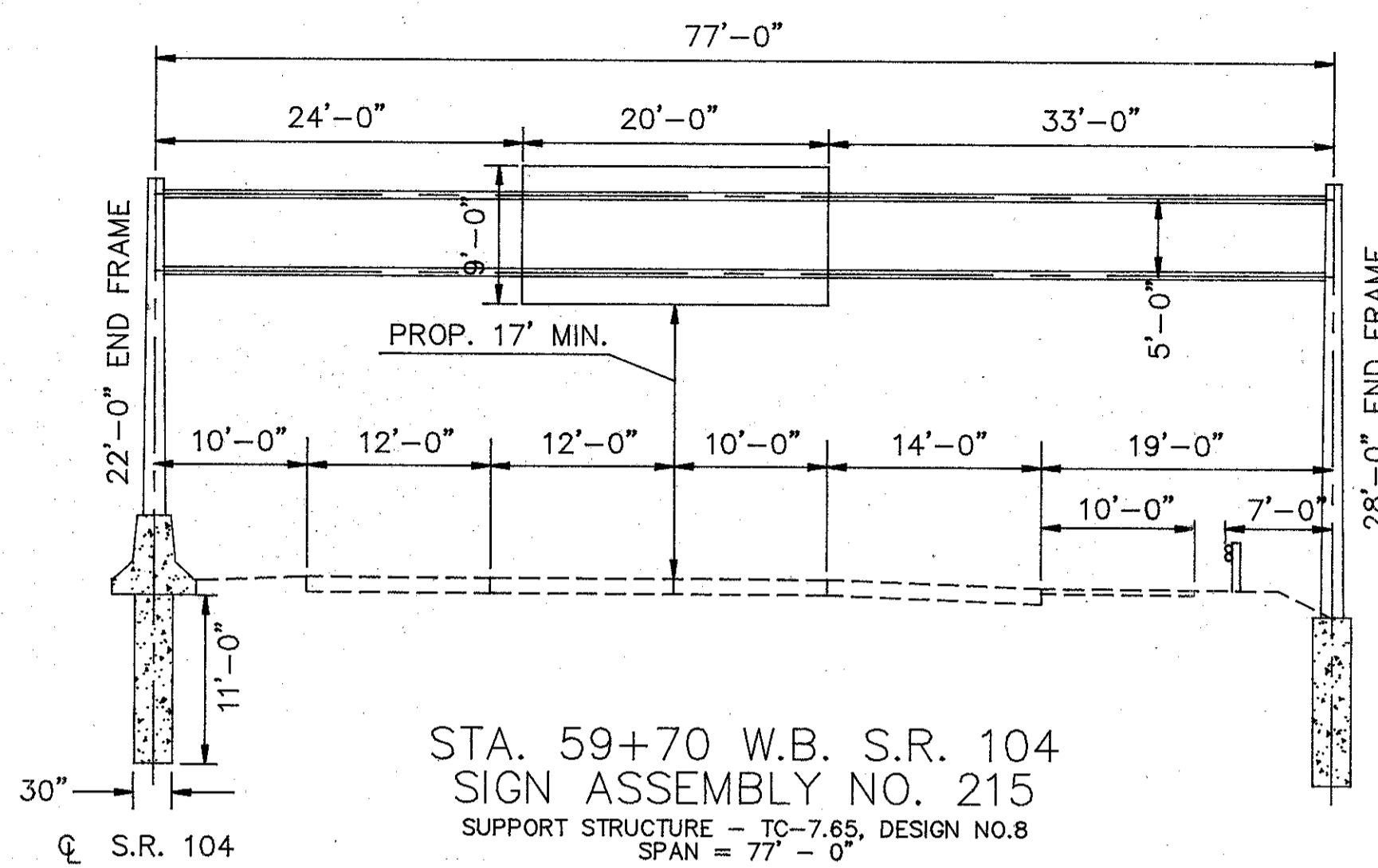
131
185



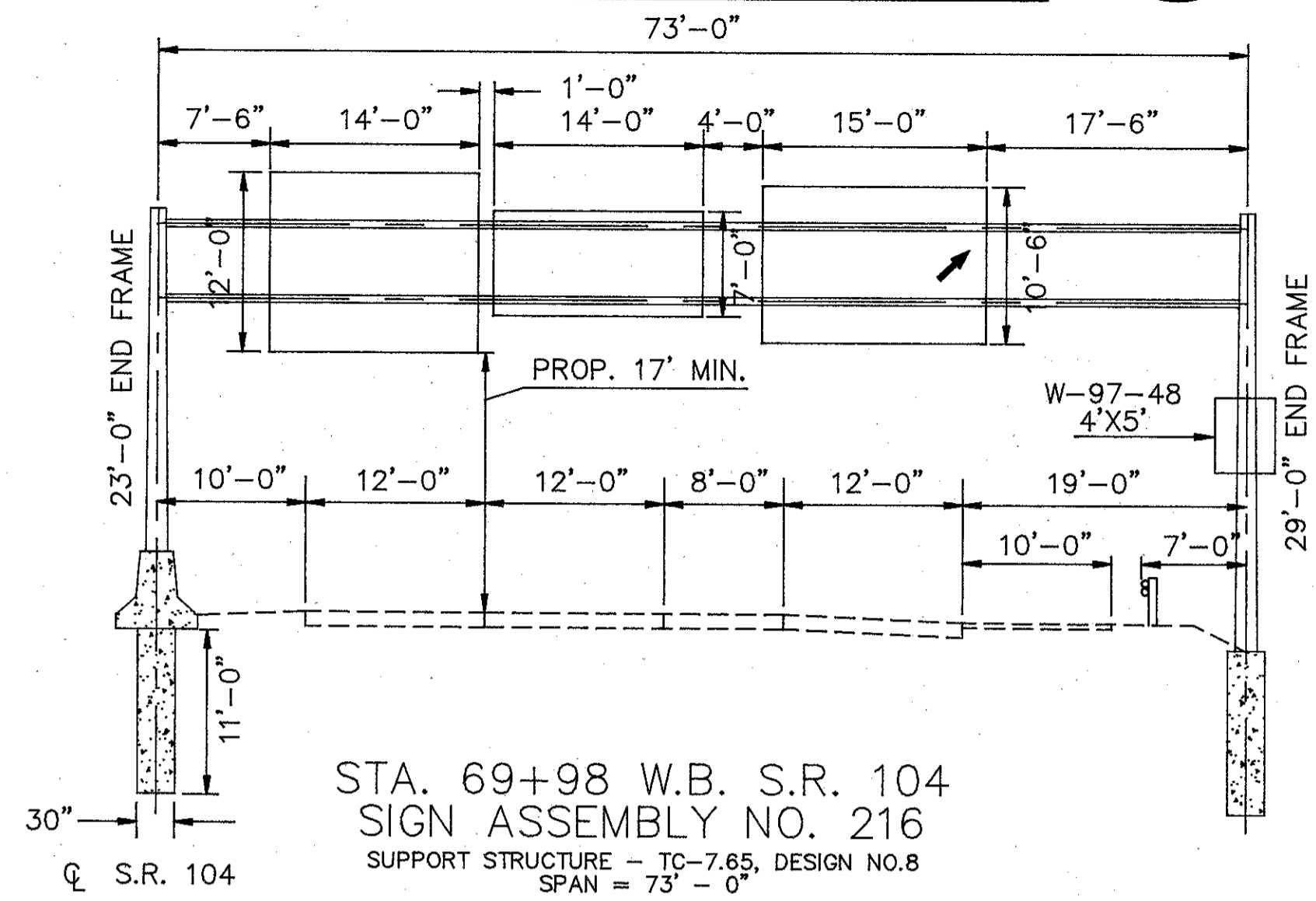
STA. 21+00 N.B. U.S. 23
SIGN ASSEMBLY NO. 213
SUPPORT STRUCTURE - TC-12.30, DESIGN NO.9
ARM SPAN = 23' - 0"



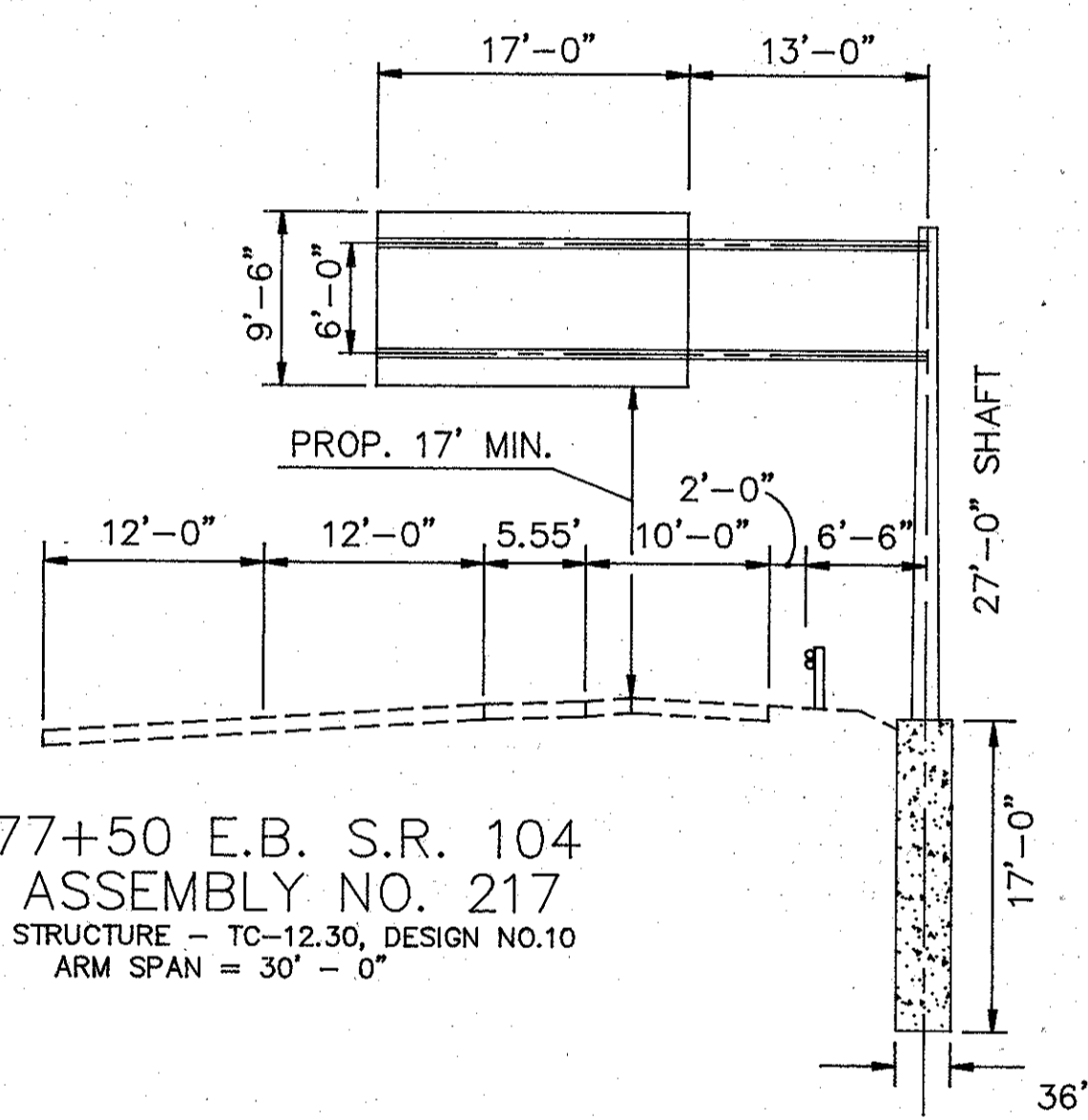
STA. 30+00 N.B. U.S. 23
SIGN ASSEMBLY NO. 214
SUPPORT STRUCTURE - TC-12.30, DESIGN NO.7
ARM SPAN = 23' - 0"



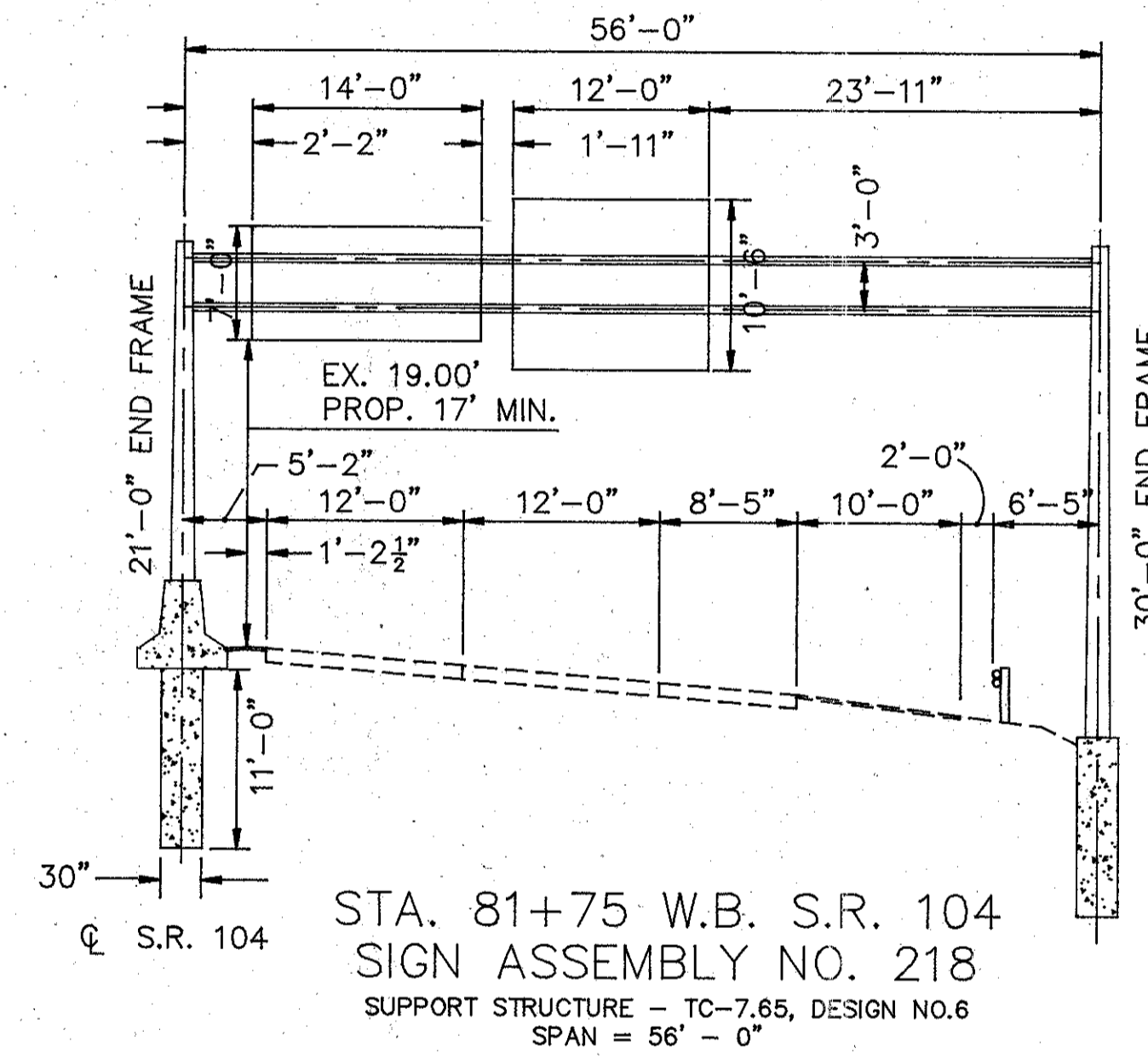
STA. 59+70 W.B. S.R. 104
SIGN ASSEMBLY NO. 215
SUPPORT STRUCTURE - TC-7.65, DESIGN NO.8
SPAN = 77' - 0"



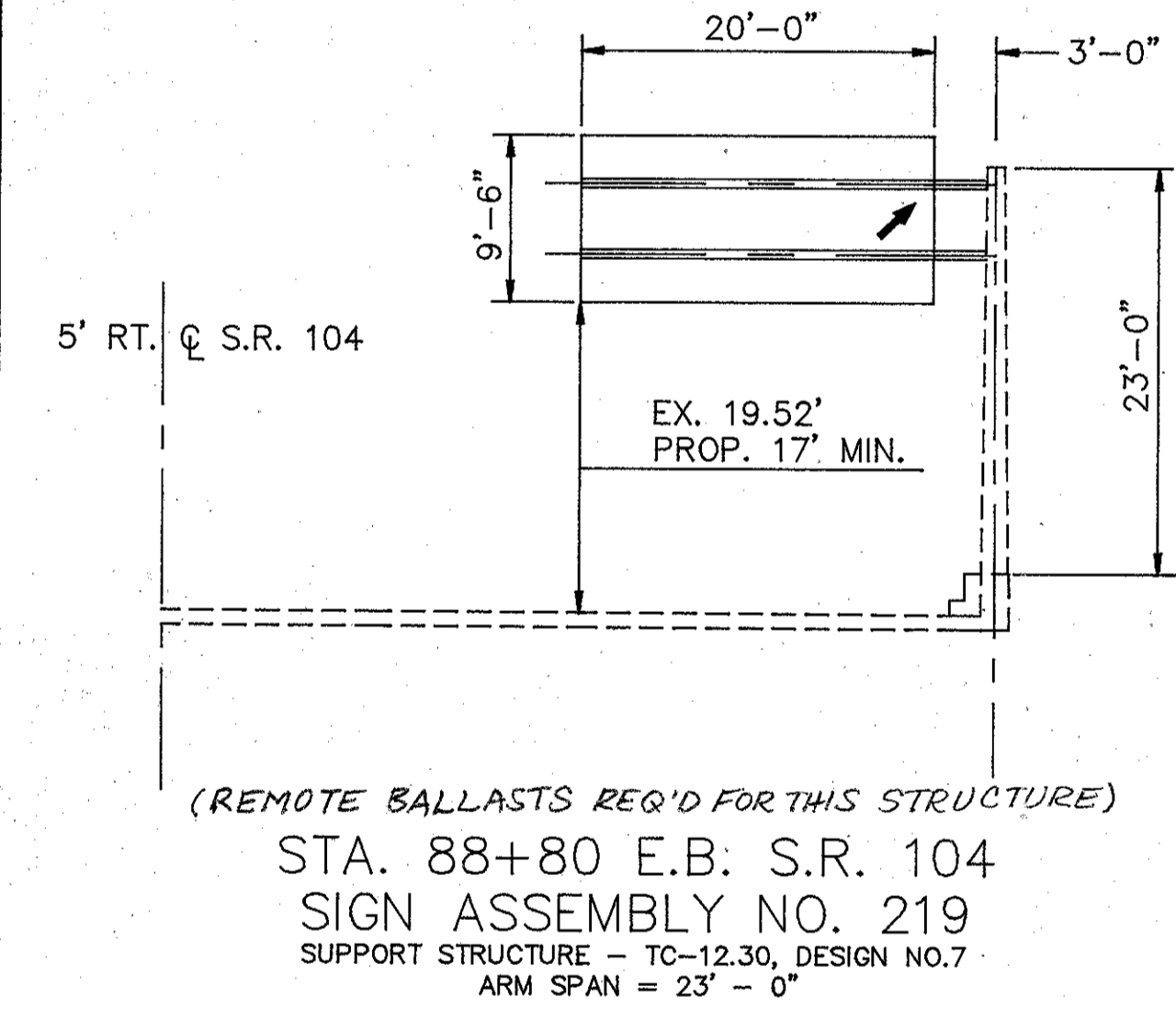
STA. 69+98 W.B. S.R. 104
SIGN ASSEMBLY NO. 216
SUPPORT STRUCTURE - TC-7.65, DESIGN NO.8
SPAN = 73' - 0"



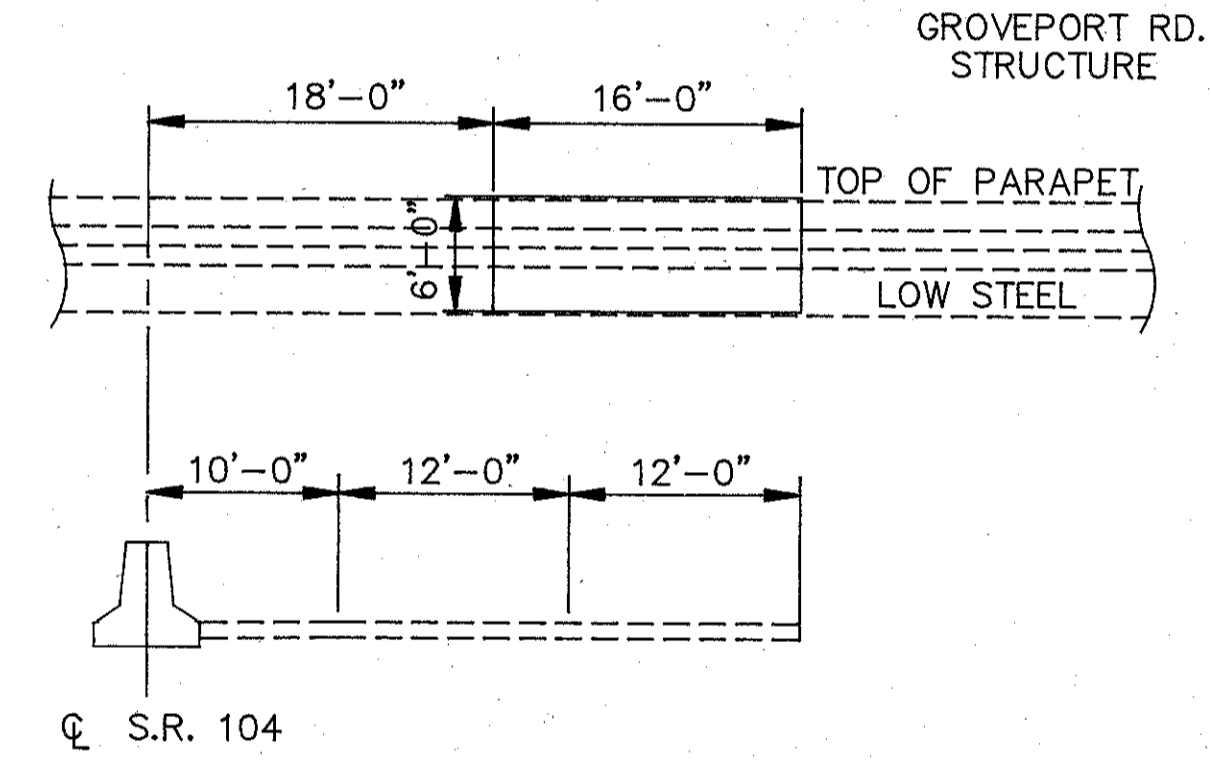
STA. 77+50 E.B. S.R. 104
SIGN ASSEMBLY NO. 217
SUPPORT STRUCTURE - TC-12.30, DESIGN NO.10
ARM SPAN = 30' - 0"



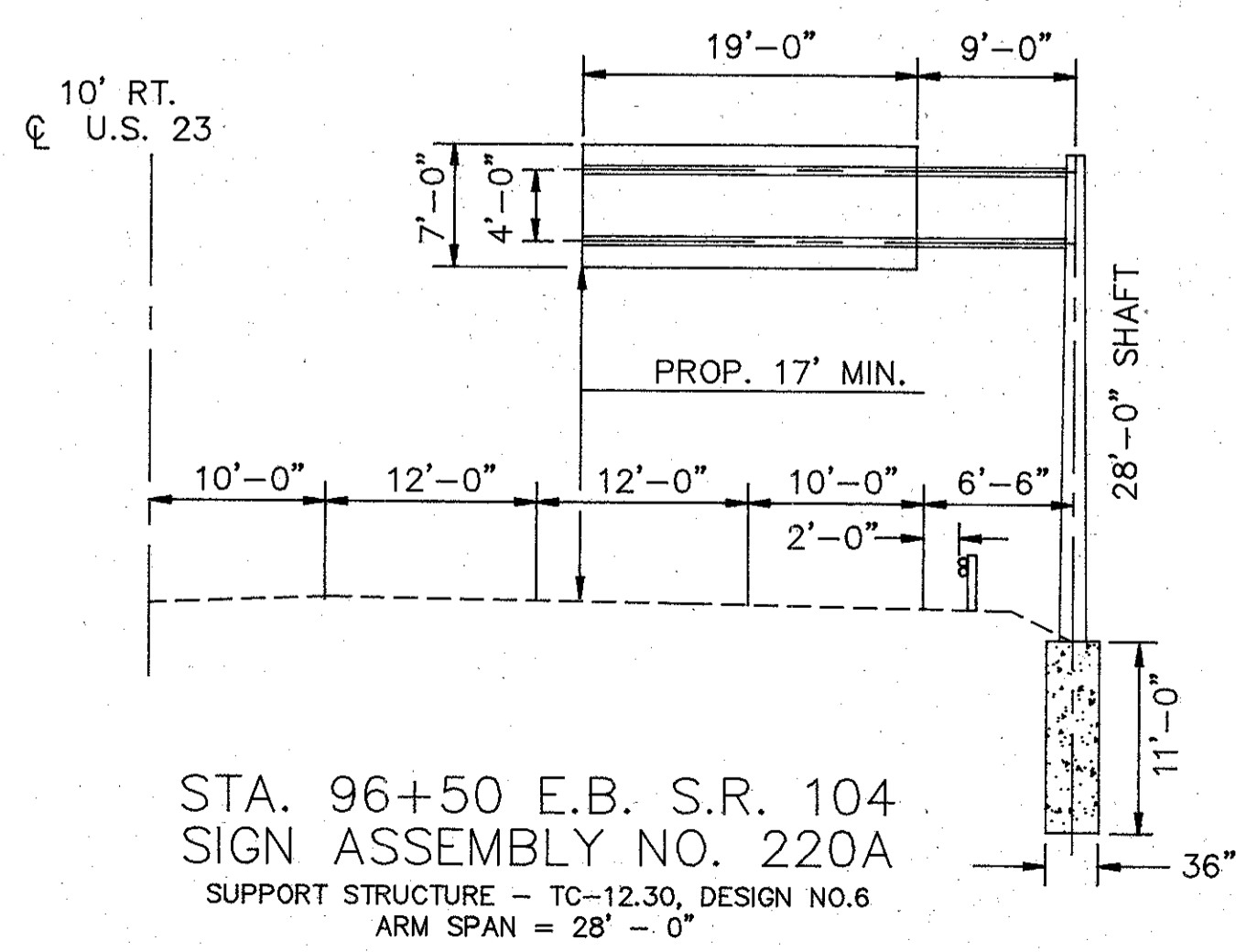
STA. 81+75 W.B. S.R. 104
SIGN ASSEMBLY NO. 218
SUPPORT STRUCTURE - TC-7.65, DESIGN NO.6
SPAN = 56' - 0"



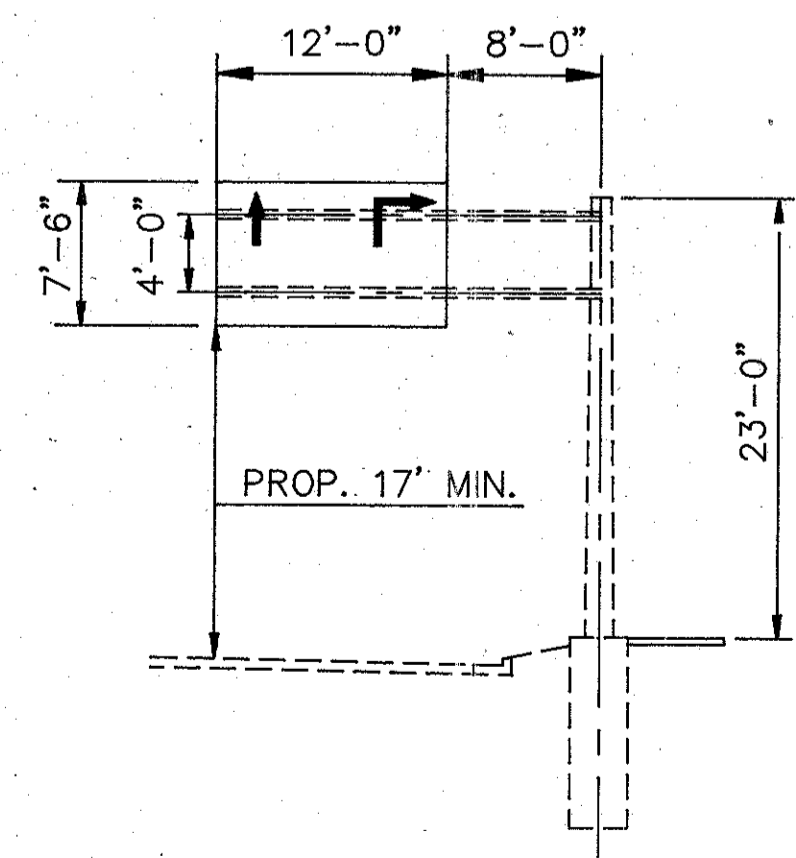
STA. 88+80 E.B. S.R. 104
SIGN ASSEMBLY NO. 219
SUPPORT STRUCTURE - TC-12.30, DESIGN NO.7
ARM SPAN = 23' - 0"



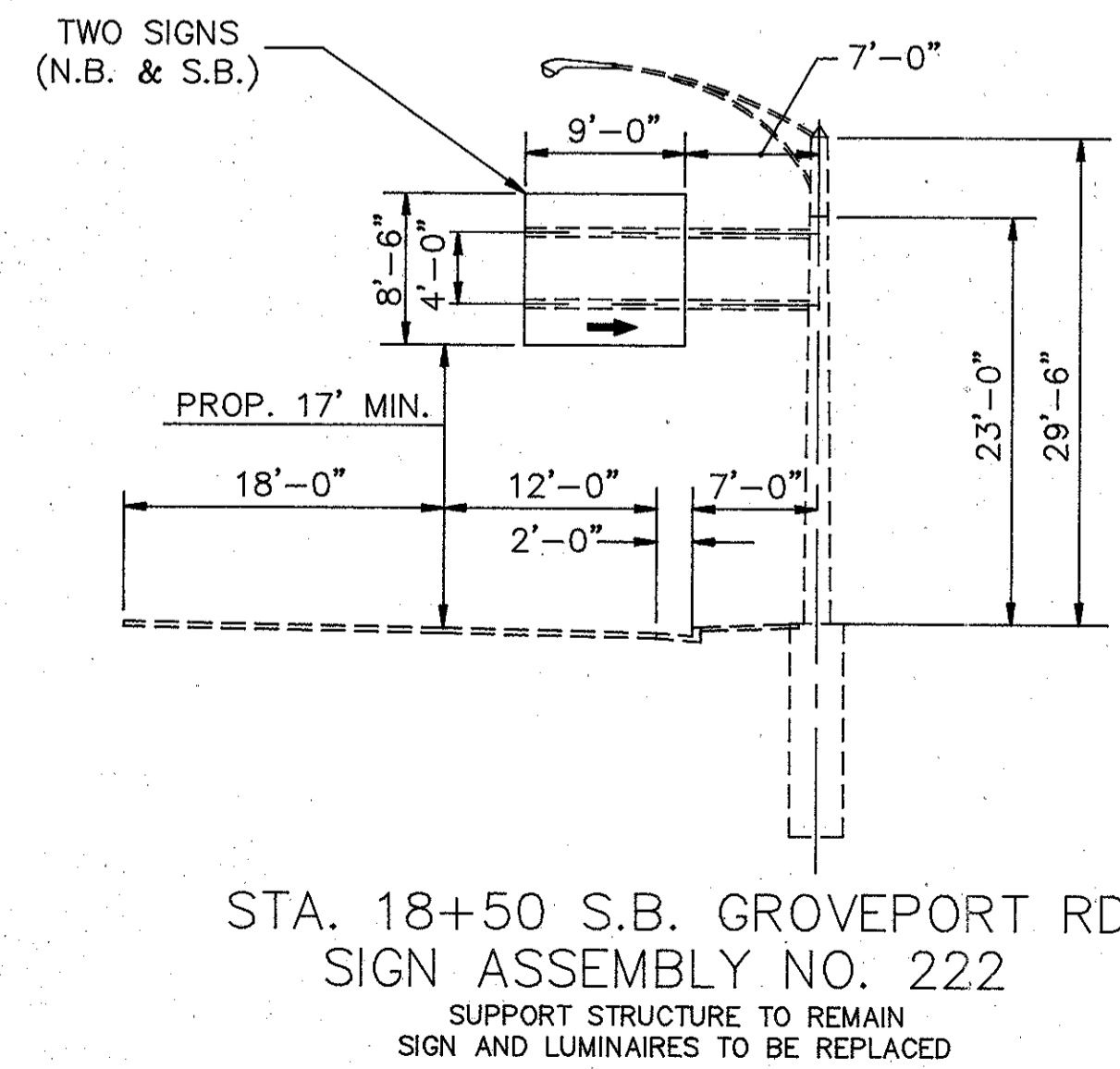
STA. 96+93± E.B. S.R. 104
SIGN ASSEMBLY NO. 220
SIGN AND SIGN SUPPORT STRUCTURE TO BE REMOVED



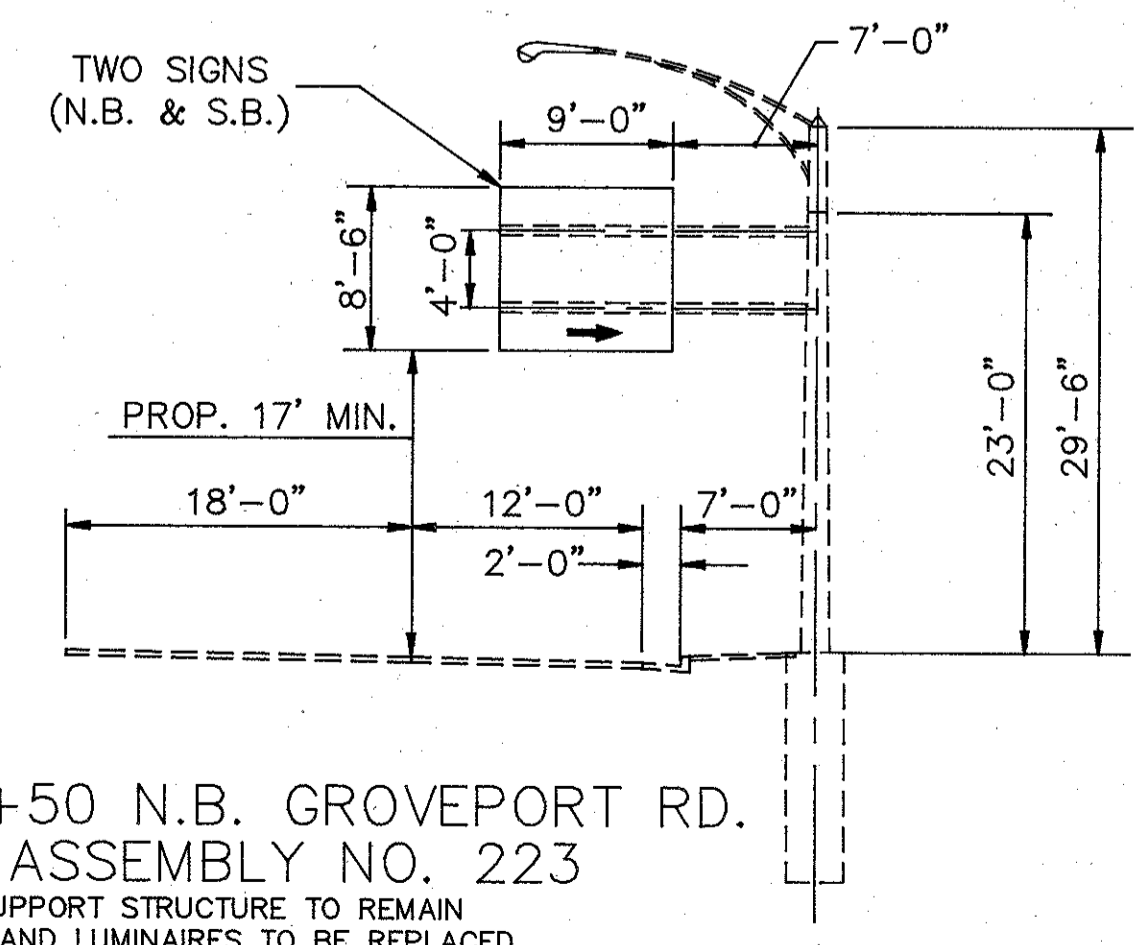
STA. 96+50 E.B. S.R. 104
SIGN ASSEMBLY NO. 220A
SUPPORT STRUCTURE - TC-12.30, DESIGN NO.6
ARM SPAN = 28' - 0"



STA. 10+00 S.B. GROVEPORT RD.
SIGN ASSEMBLY NO. 221
SUPPORT STRUCTURE TO REMAIN
SIGN AND LUMINAIRES TO BE REPLACED



STA. 18+50 S.B. GROVEPORT RD.
SIGN ASSEMBLY NO. 222
SUPPORT STRUCTURE TO REMAIN
SIGN AND LUMINAIRES TO BE REPLACED



STA. 21+50 N.B. GROVEPORT RD.
SIGN ASSEMBLY NO. 223
SUPPORT STRUCTURE TO REMAIN
SIGN AND LUMINAIRES TO BE REPLACED

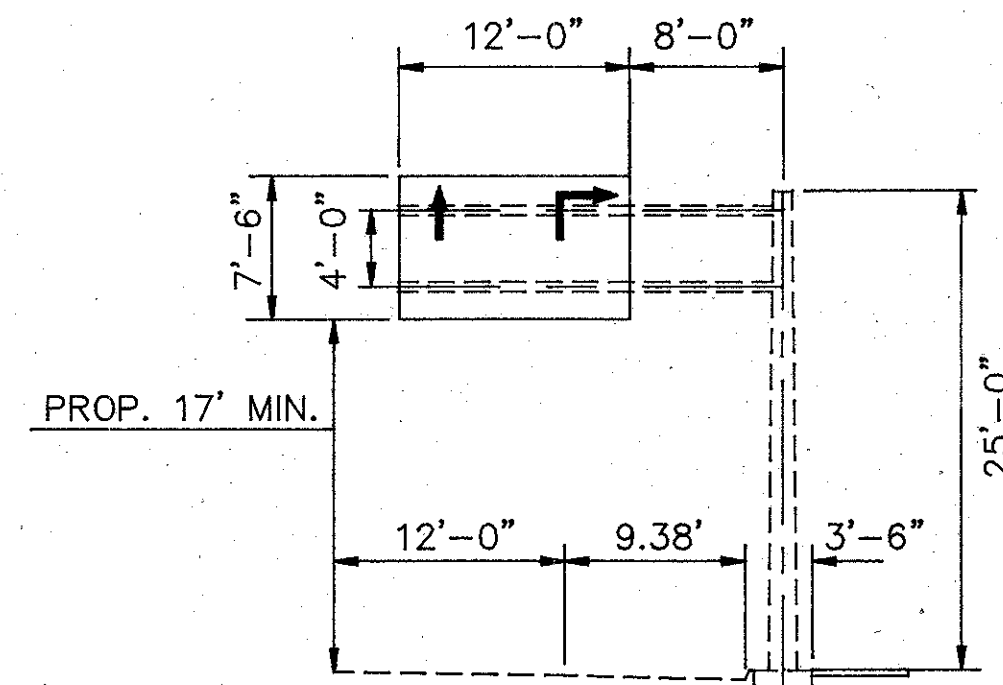
OVERHEAD SIGN DETAILS

F40SDT2 6-13-94

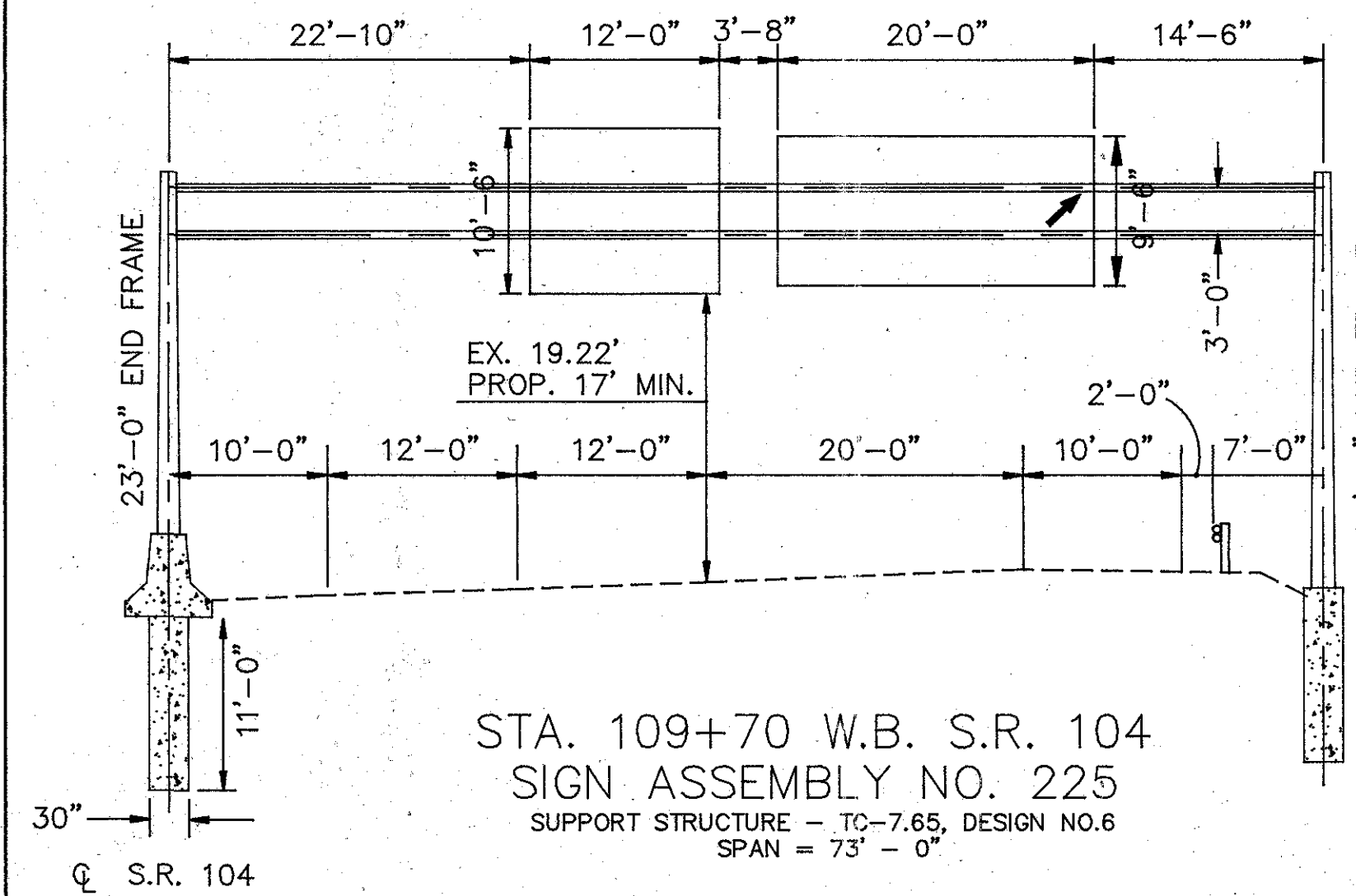
* NOTE: ALL SIGN SIZES SHOWN INCLUDE 1' GLARE SHIELD

CHECKED BY: JRA DATE: 6/15/94	FRA-104-8.02	OHIO
CHECKED BY: JSB DATE: 6/15/94		FHWA REGION 5

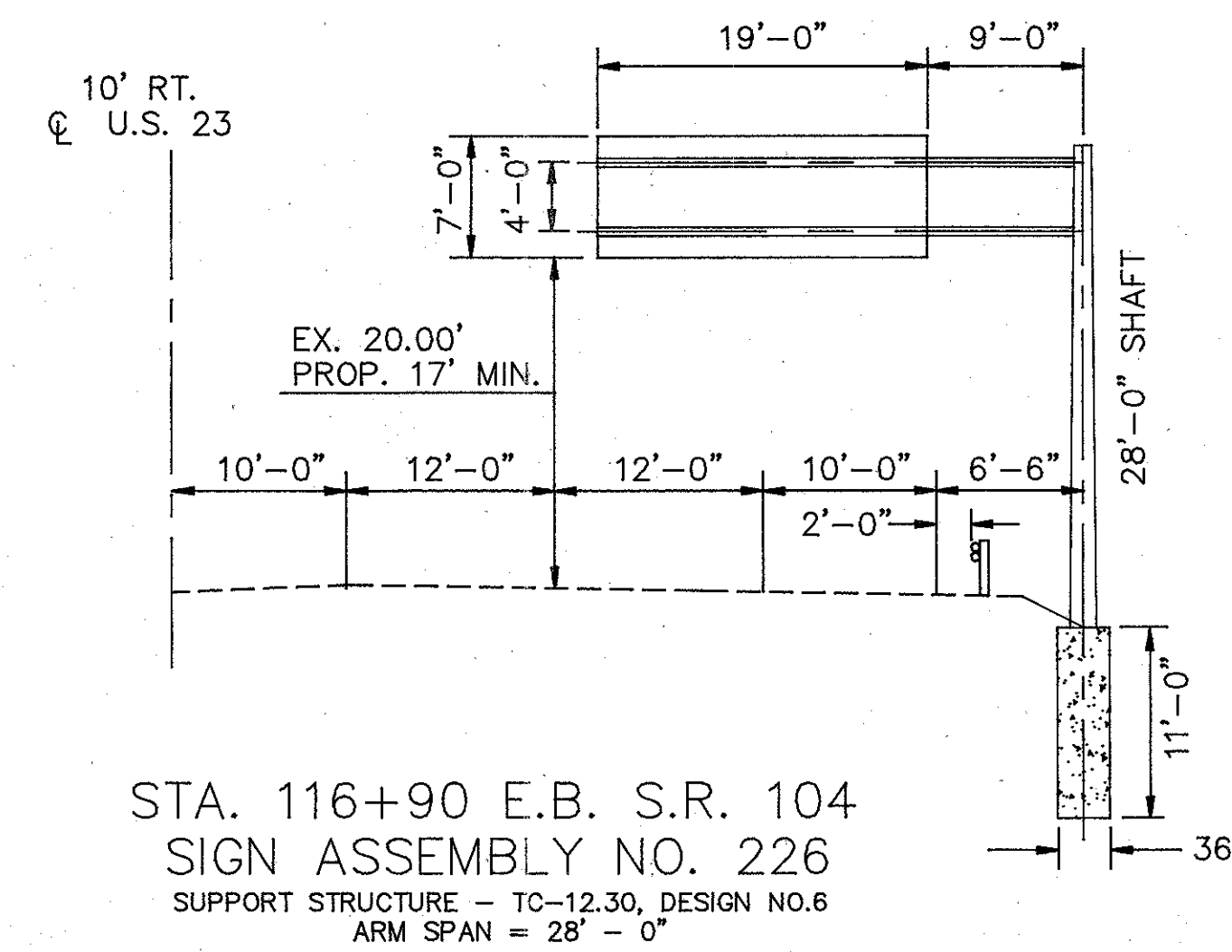
132
185



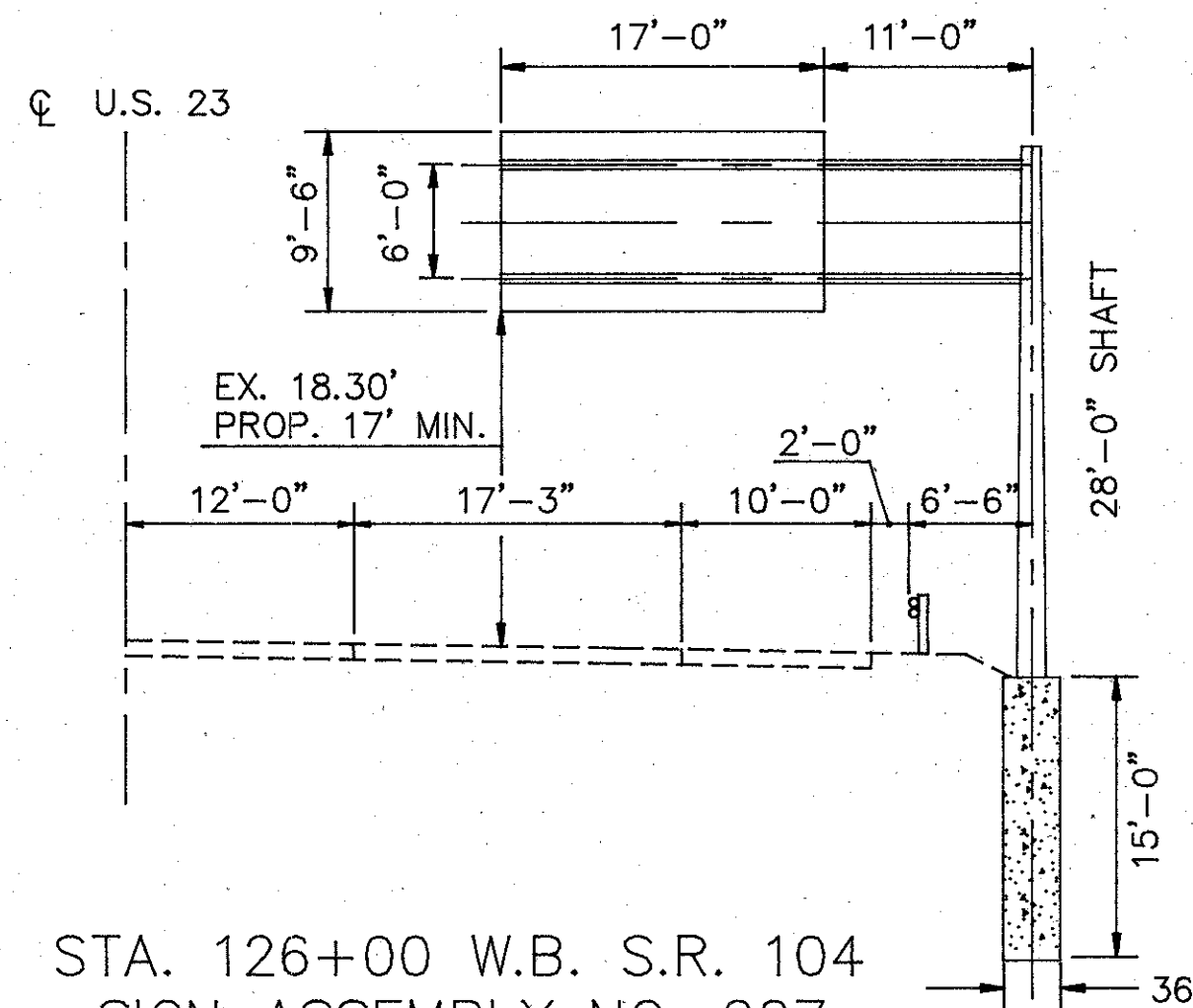
STA. 30+00 N.B. GROVEPORT RD.
SIGN ASSEMBLY NO. 224
SUPPORT STRUCTURE TO REMAIN
SIGN AND LUMINAIRES TO BE REPLACED



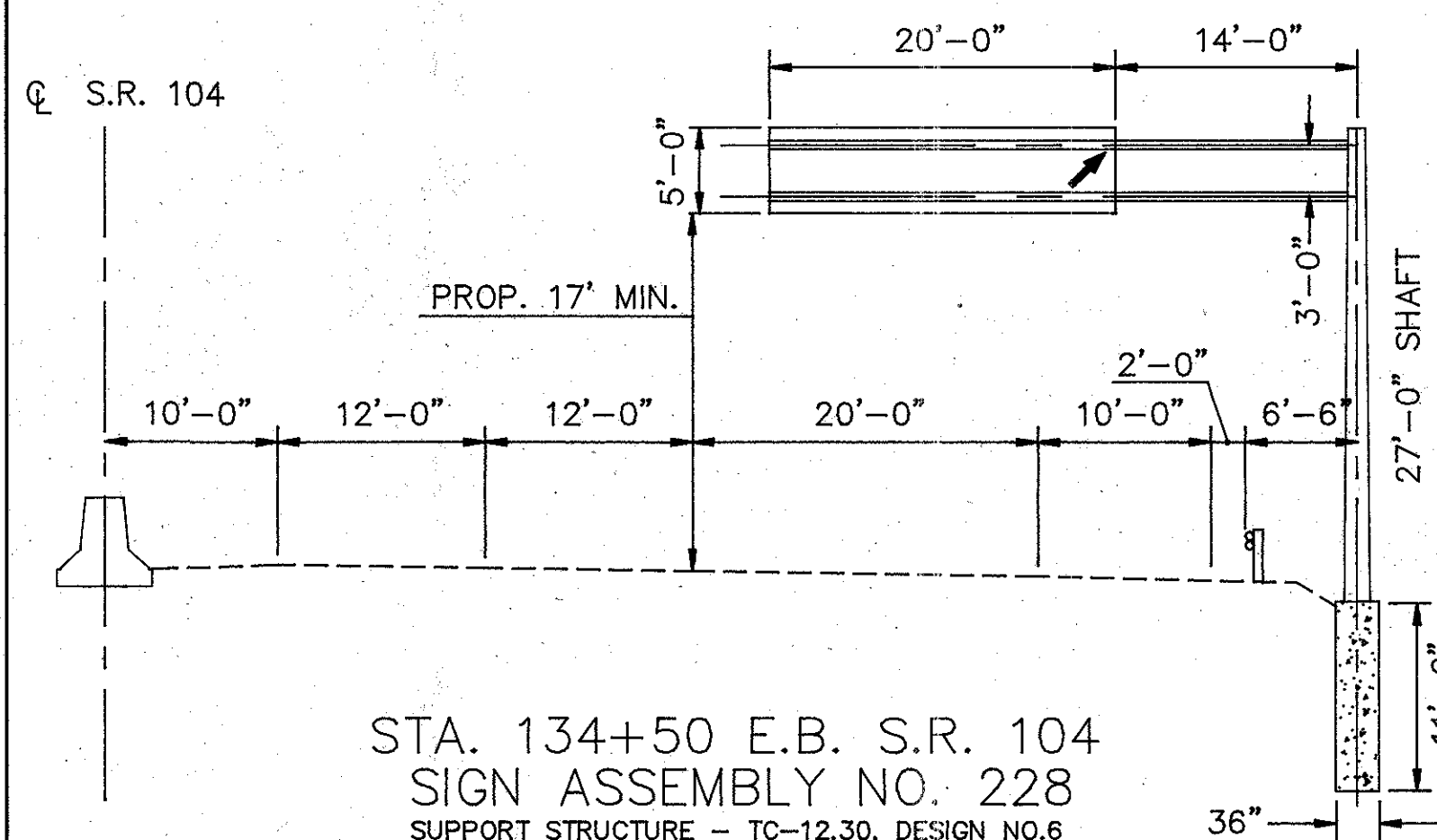
STA. 109+70 W.B. S.R. 104
SIGN ASSEMBLY NO. 225
SUPPORT STRUCTURE - TC-7.65, DESIGN NO.6
SPAN = 73' - 0"



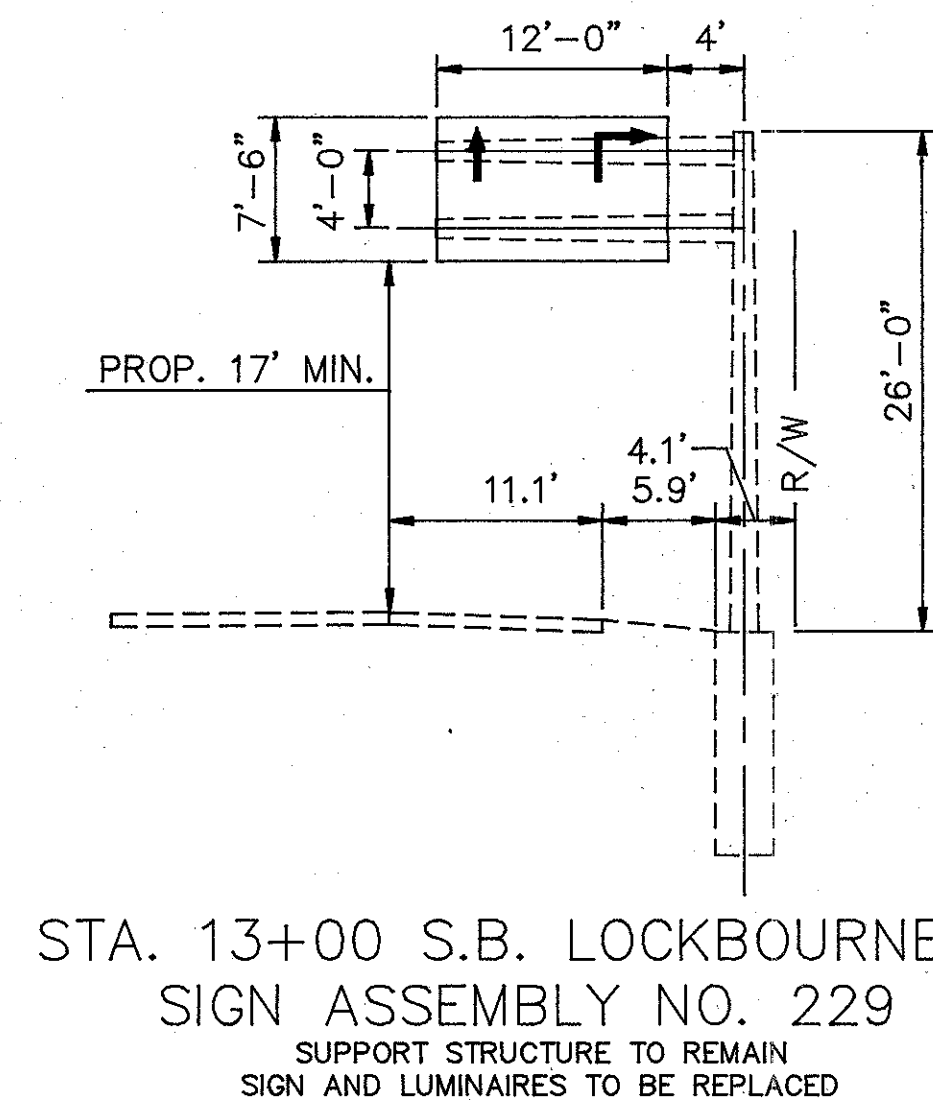
STA. 116+90 E.B. S.R. 104
SIGN ASSEMBLY NO. 226
SUPPORT STRUCTURE - TC-12.30, DESIGN NO.6
ARM SPAN = 28' - 0"



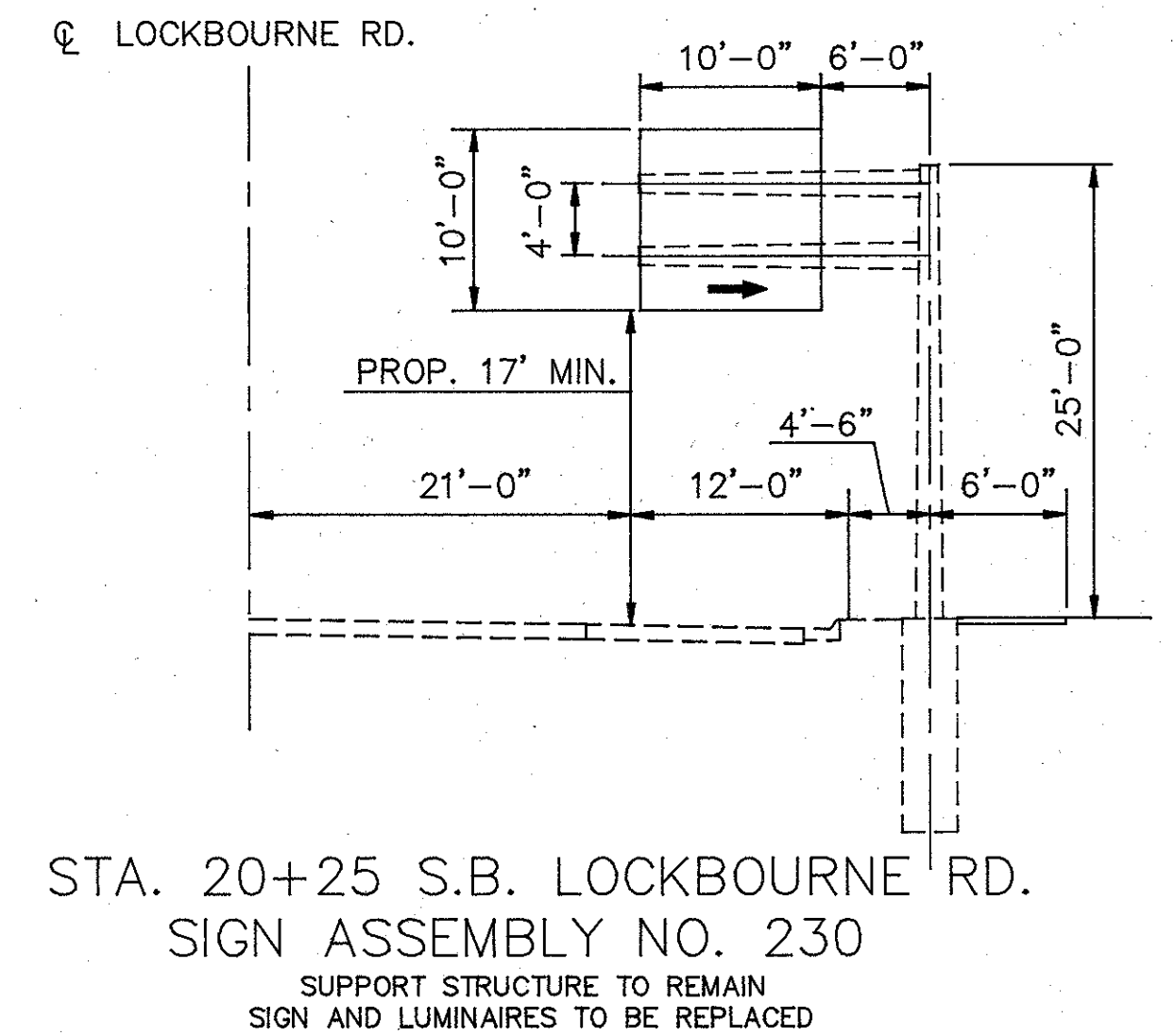
STA. 126+00 W.B. S.R. 104
SIGN ASSEMBLY NO. 227
SUPPORT STRUCTURE - TC-12.30, DESIGN NO.8
ARM SPAN = 28' - 0"



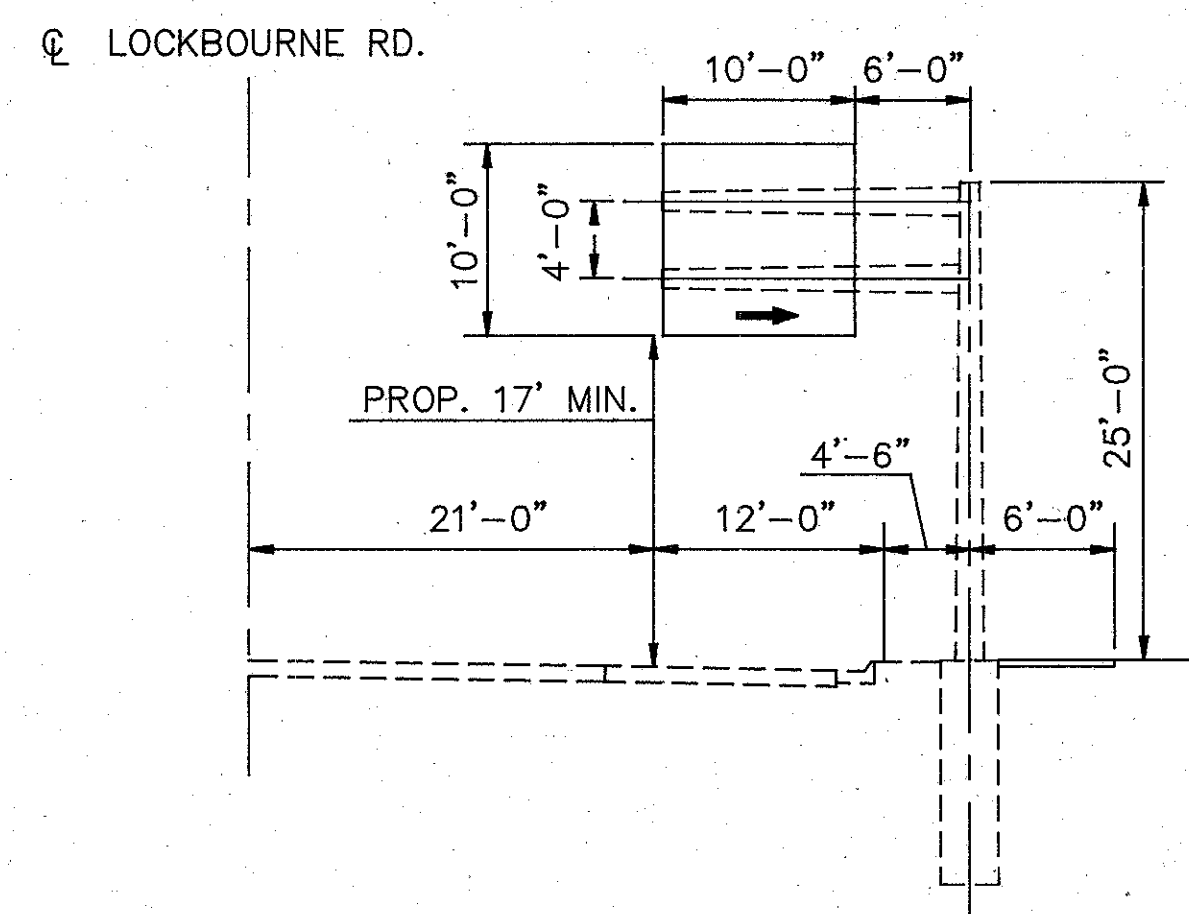
STA. 134+50 E.B. S.R. 104
SIGN ASSEMBLY NO. 228
SUPPORT STRUCTURE - TC-12.30, DESIGN NO.6
ARM SPAN = 34' - 0"



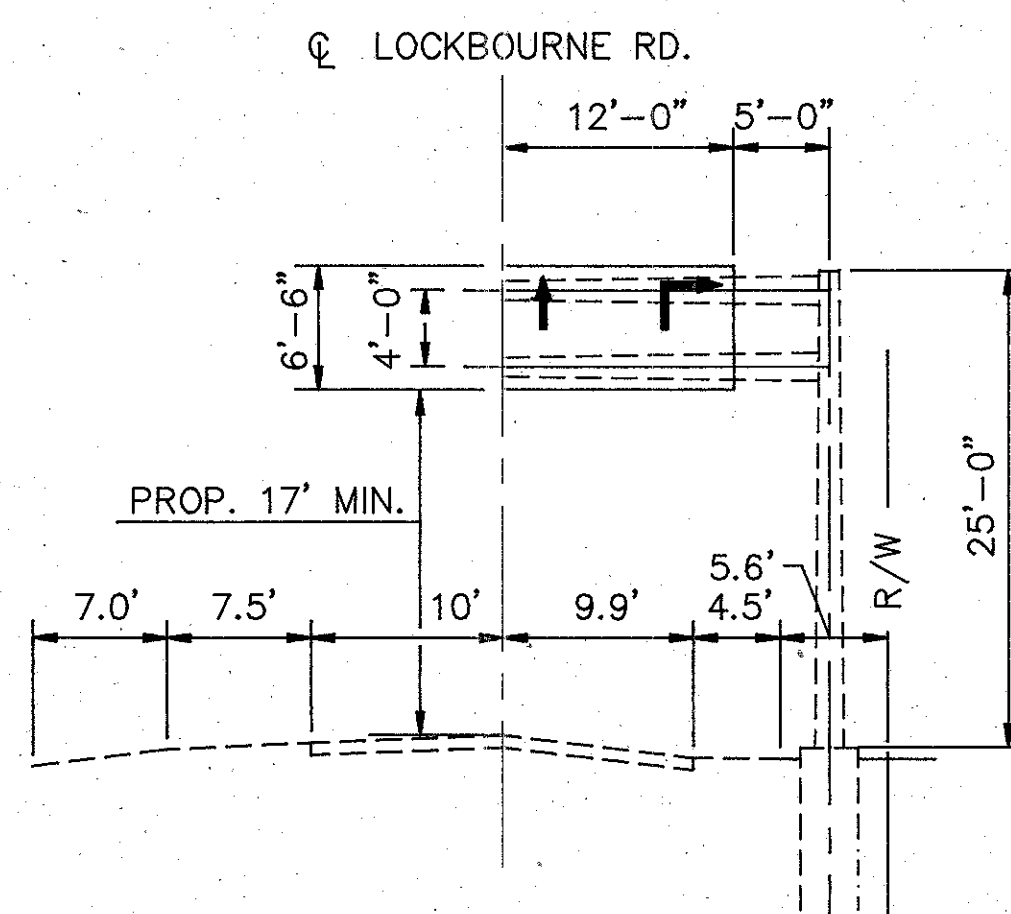
STA. 13+00 S.B. LOCKBOURNE RD.
SIGN ASSEMBLY NO. 229
SUPPORT STRUCTURE TO REMAIN
SIGN AND LUMINAIRES TO BE REPLACED



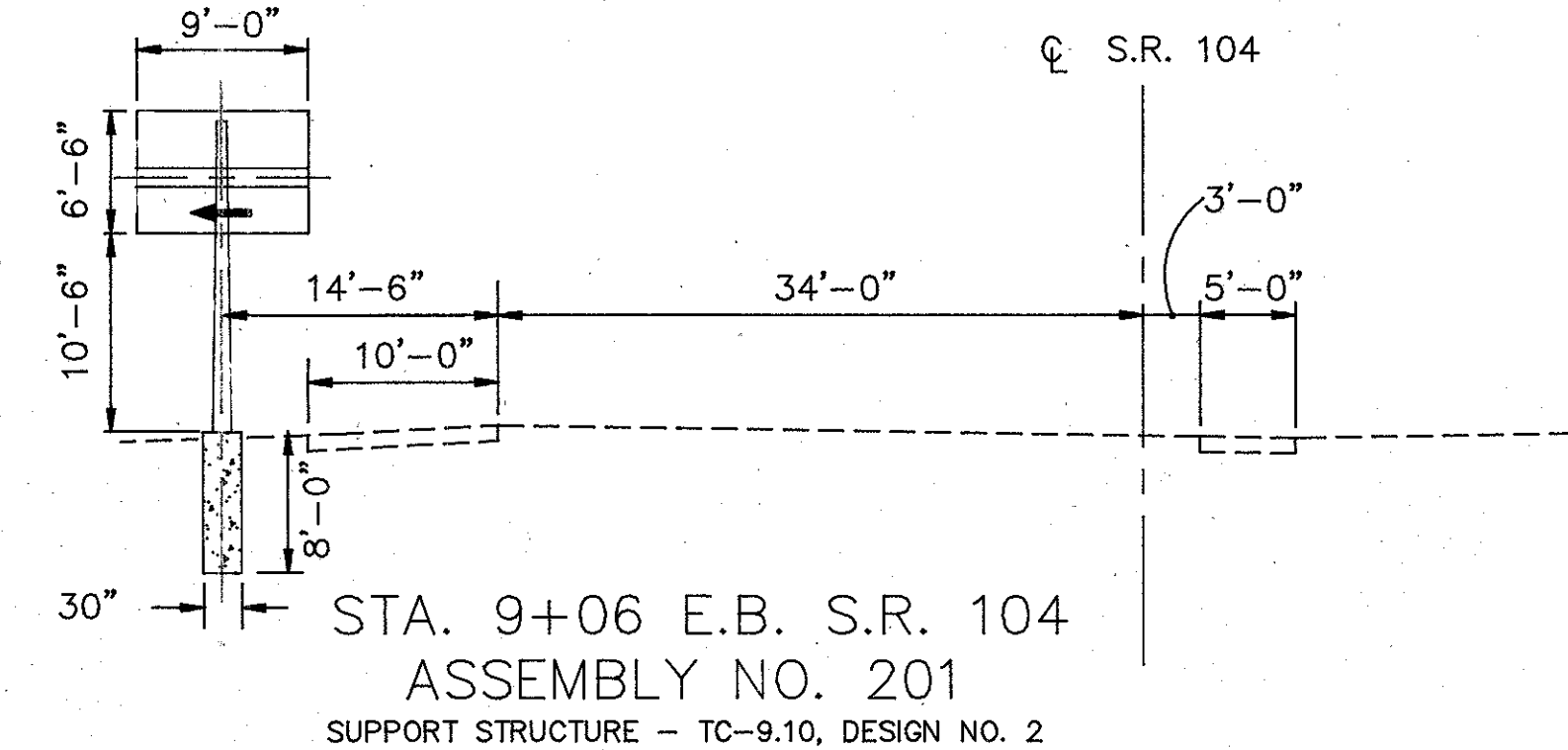
STA. 20+25 S.B. LOCKBOURNE RD.
SIGN ASSEMBLY NO. 230
SUPPORT STRUCTURE TO REMAIN
SIGN AND LUMINAIRES TO BE REPLACED



STA. 23+10 N.B. LOCKBOURNE RD.
SIGN ASSEMBLY NO. 231
SUPPORT STRUCTURE TO REMAIN
SIGN AND LUMINAIRES TO BE REPLACED



STA. 30+00 N.B. LOCKBOURNE RD.
SIGN ASSEMBLY NO. 232
SUPPORT STRUCTURE TO REMAIN
SIGN AND LUMINAIRES TO BE REPLACED

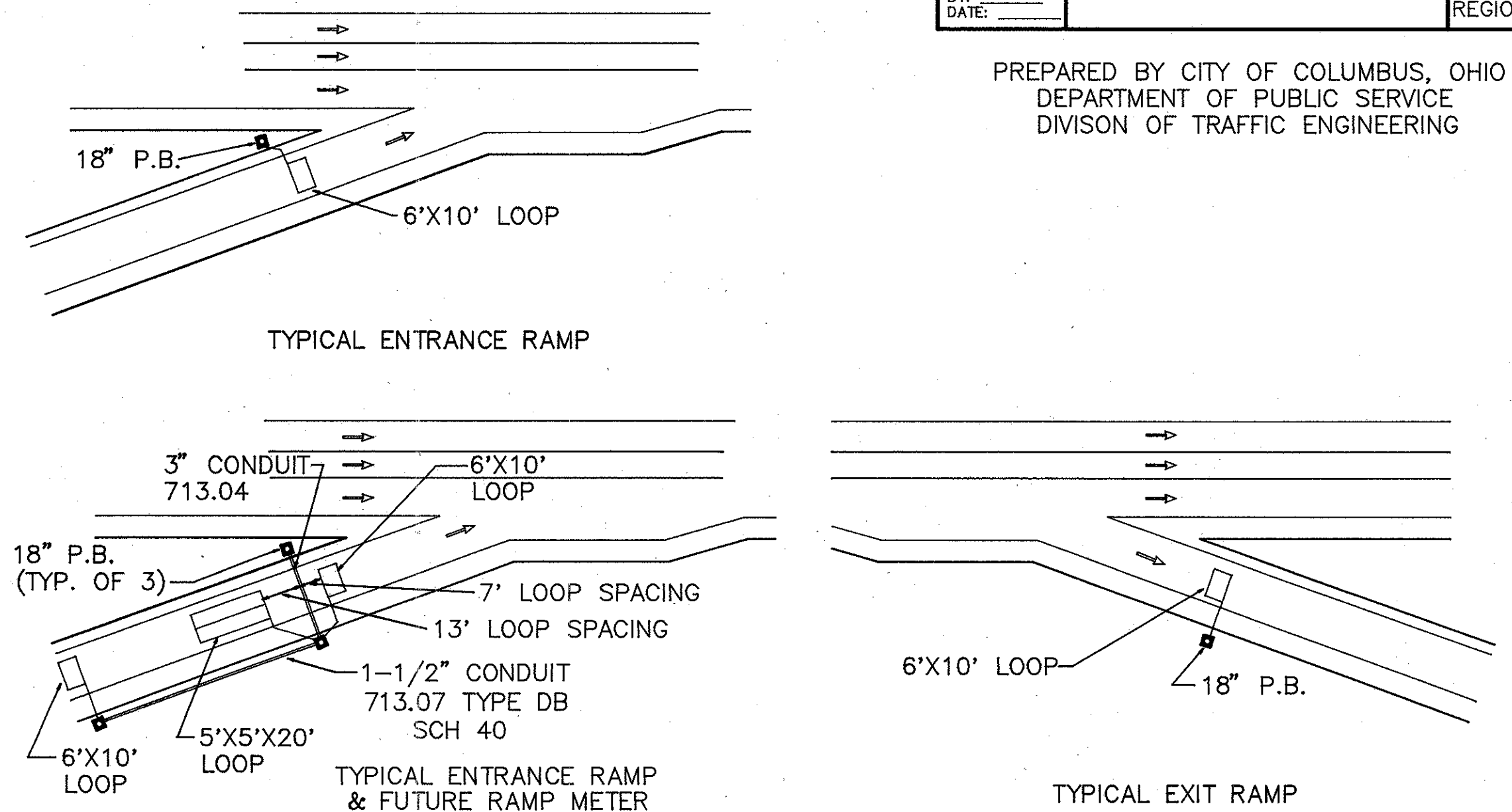
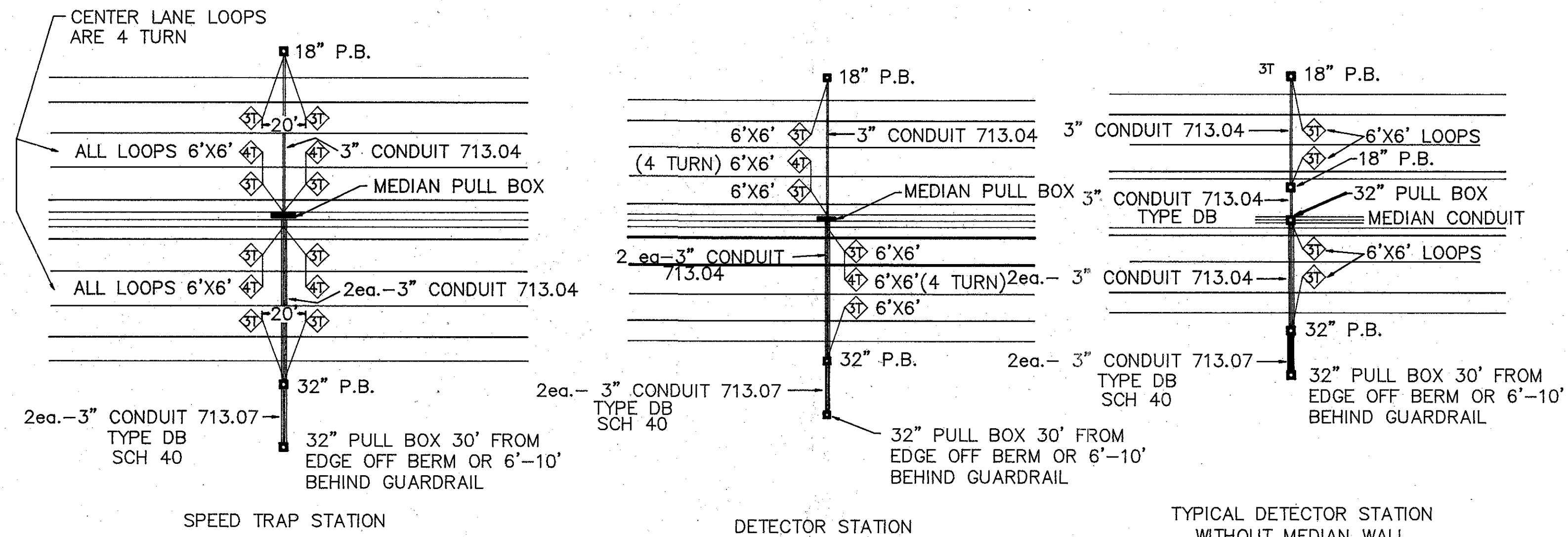


STA. 9+06 E.B. S.R. 104
ASSEMBLY NO. 201
SUPPORT STRUCTURE - TC-9.10, DESIGN NO. 2

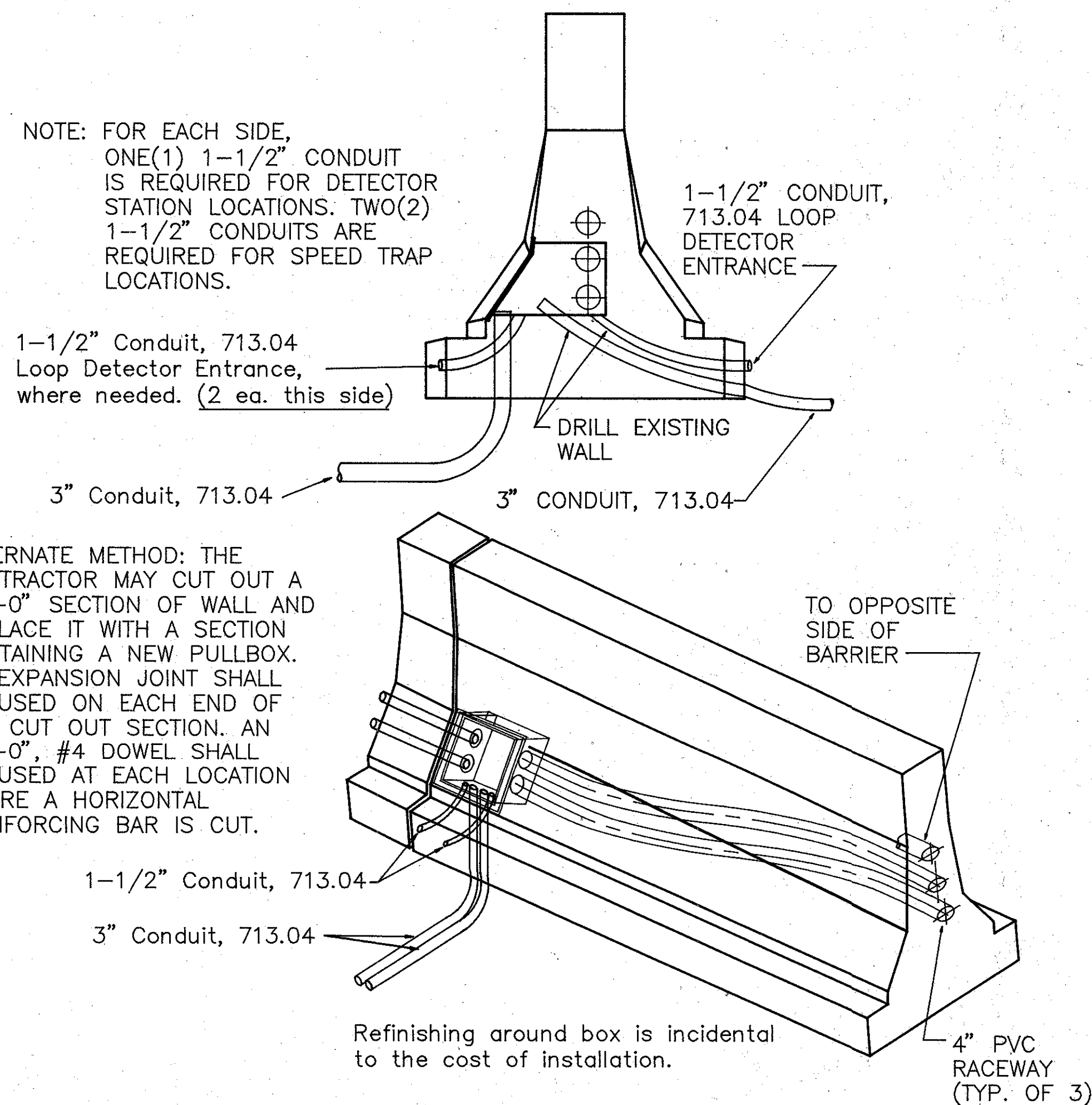
F40SDT3 6-13-94

PREPARED BY CITY OF COLUMBUS, OHIO
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF TRAFFIC ENGINEERING

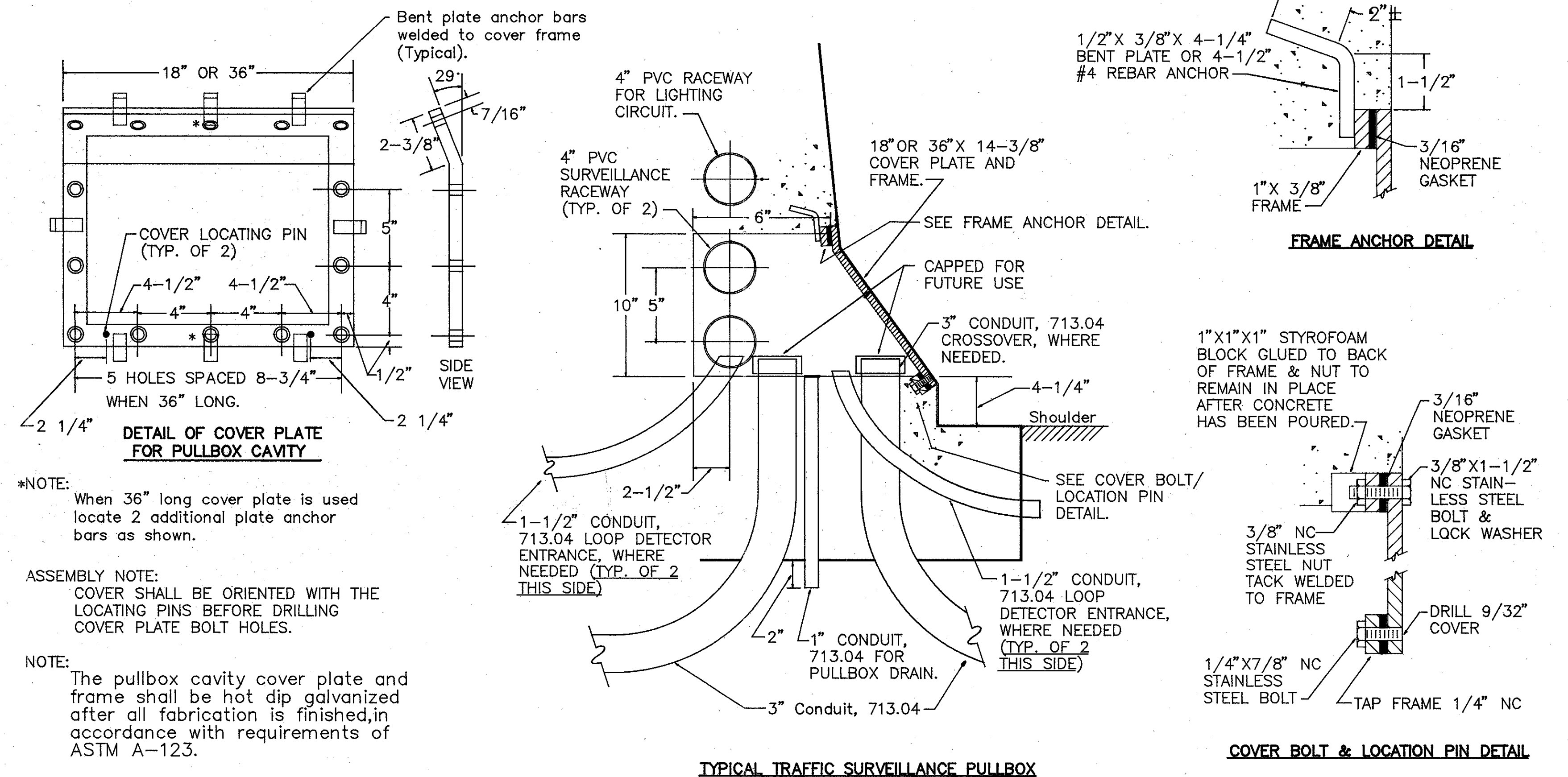
LOOP PLACEMENT



SURVEILLANCE PULL BOX & CONDUIT MODIFICATIONS TO EXISTING MEDIAN PULL BOX



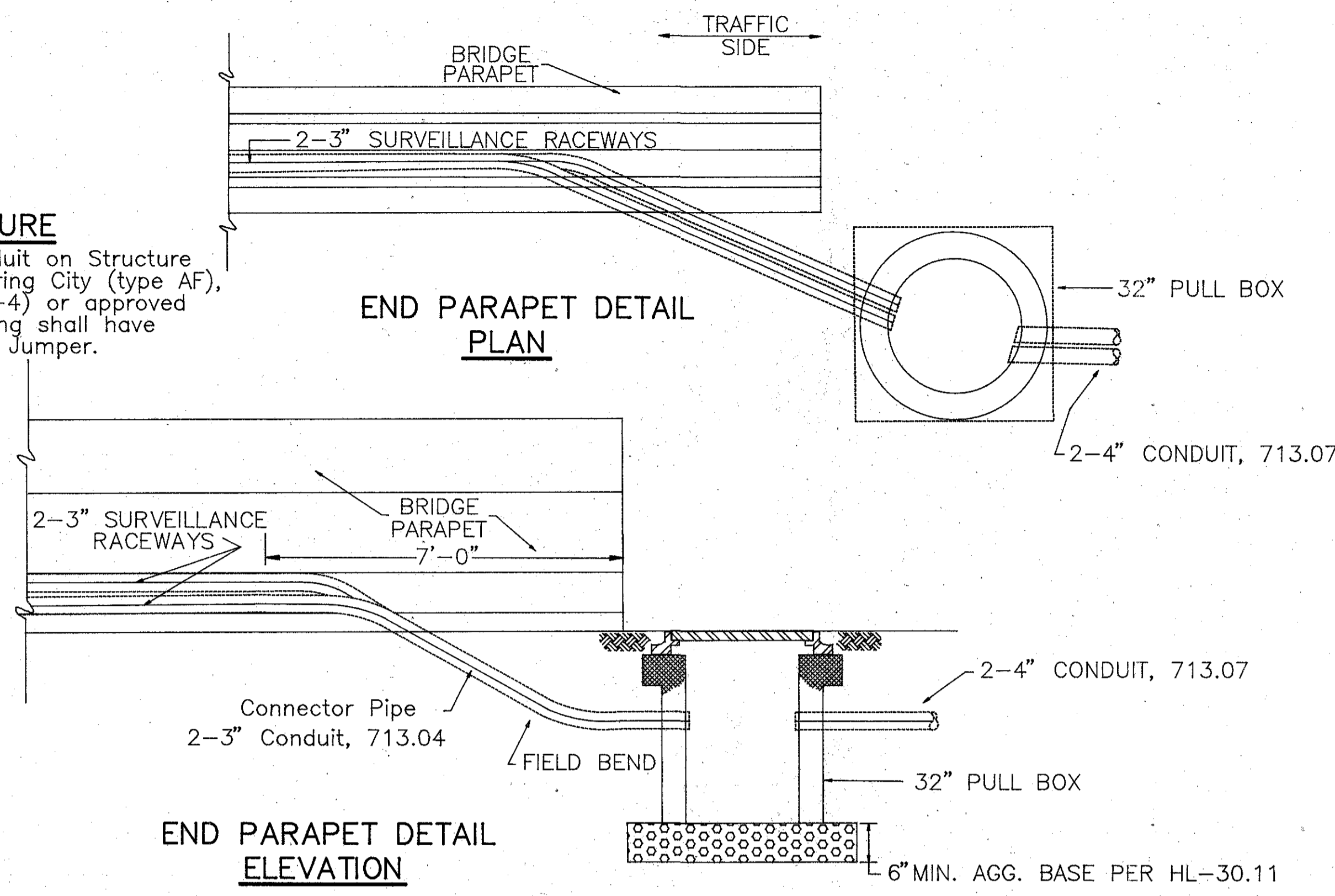
NEW SURVEILLANCE MEDIAN PULL BOX & CONDUIT



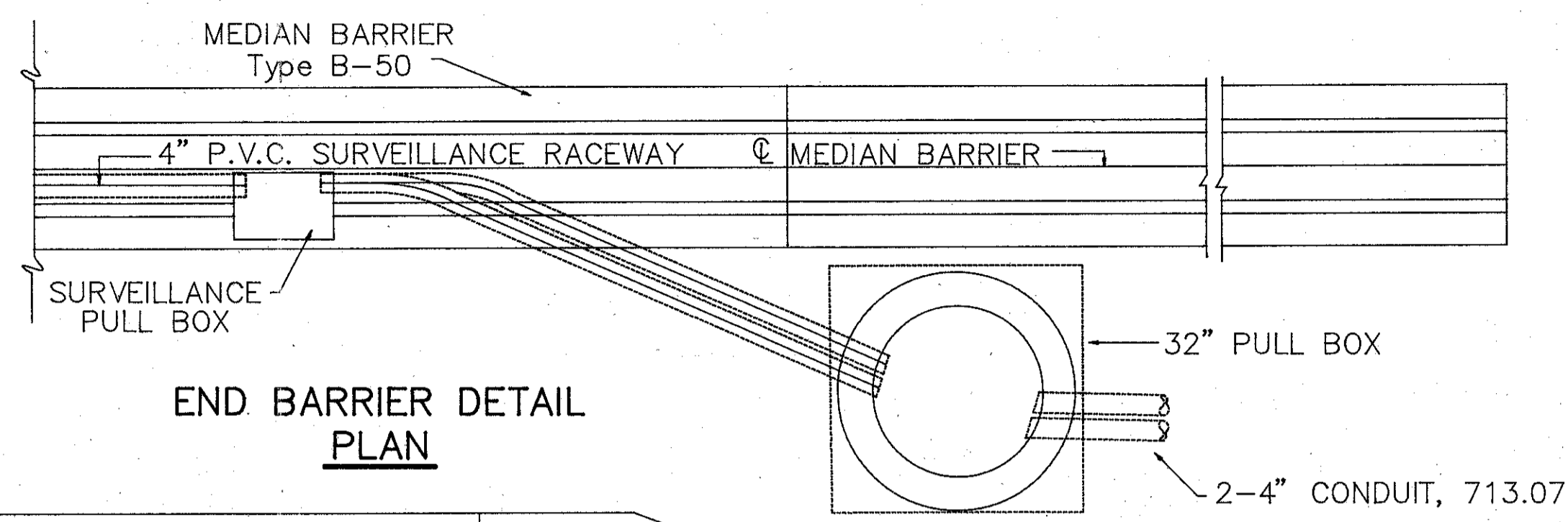
PREPARED BY CITY OF COLUMBUS, OHIO
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF TRAFFIC ENGINEERING

CONDUIT ON STRUCTURE

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

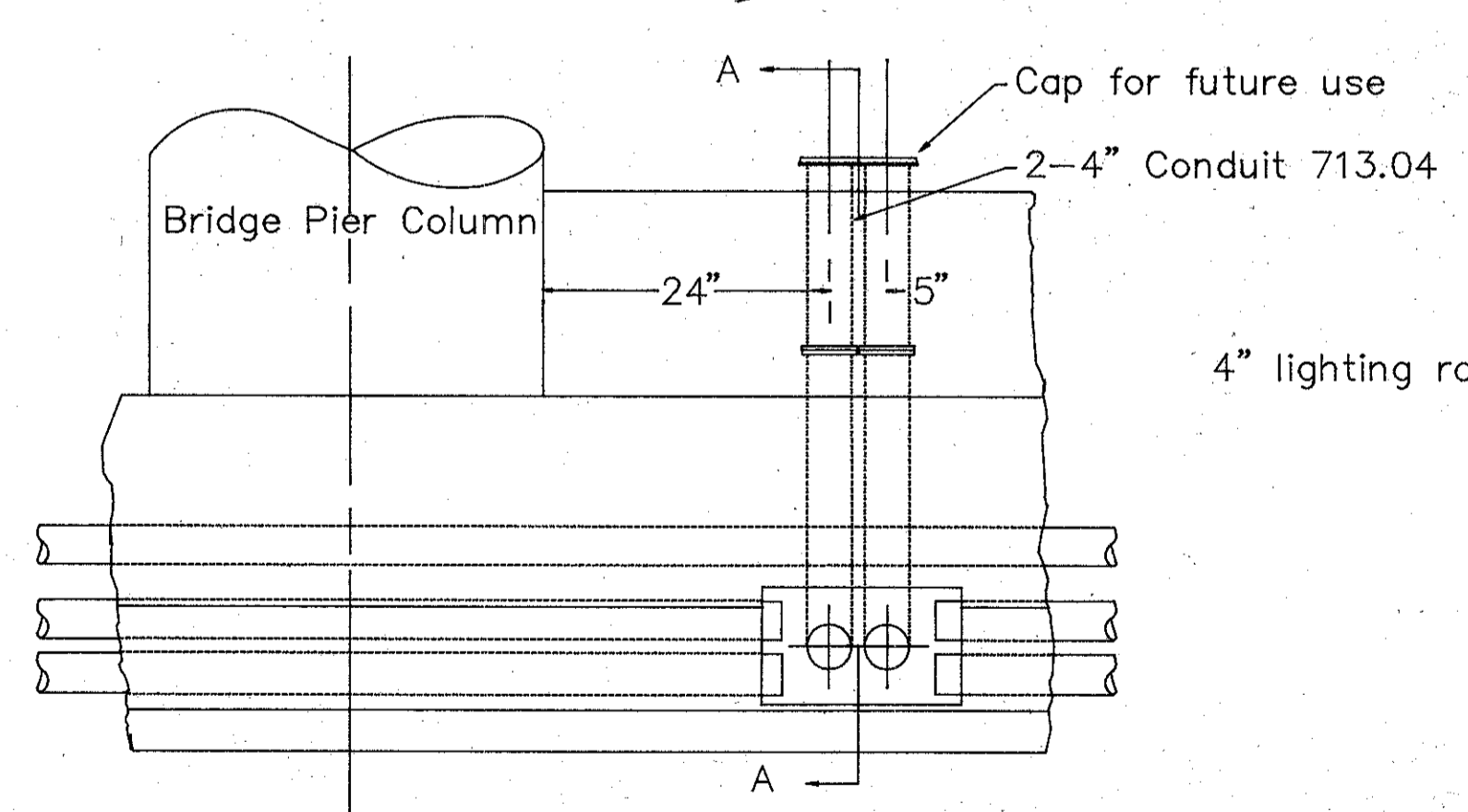


TYPICAL SURVEILLANCE CONDUIT TREATMENT AT END OF BRIDGE PARAPET



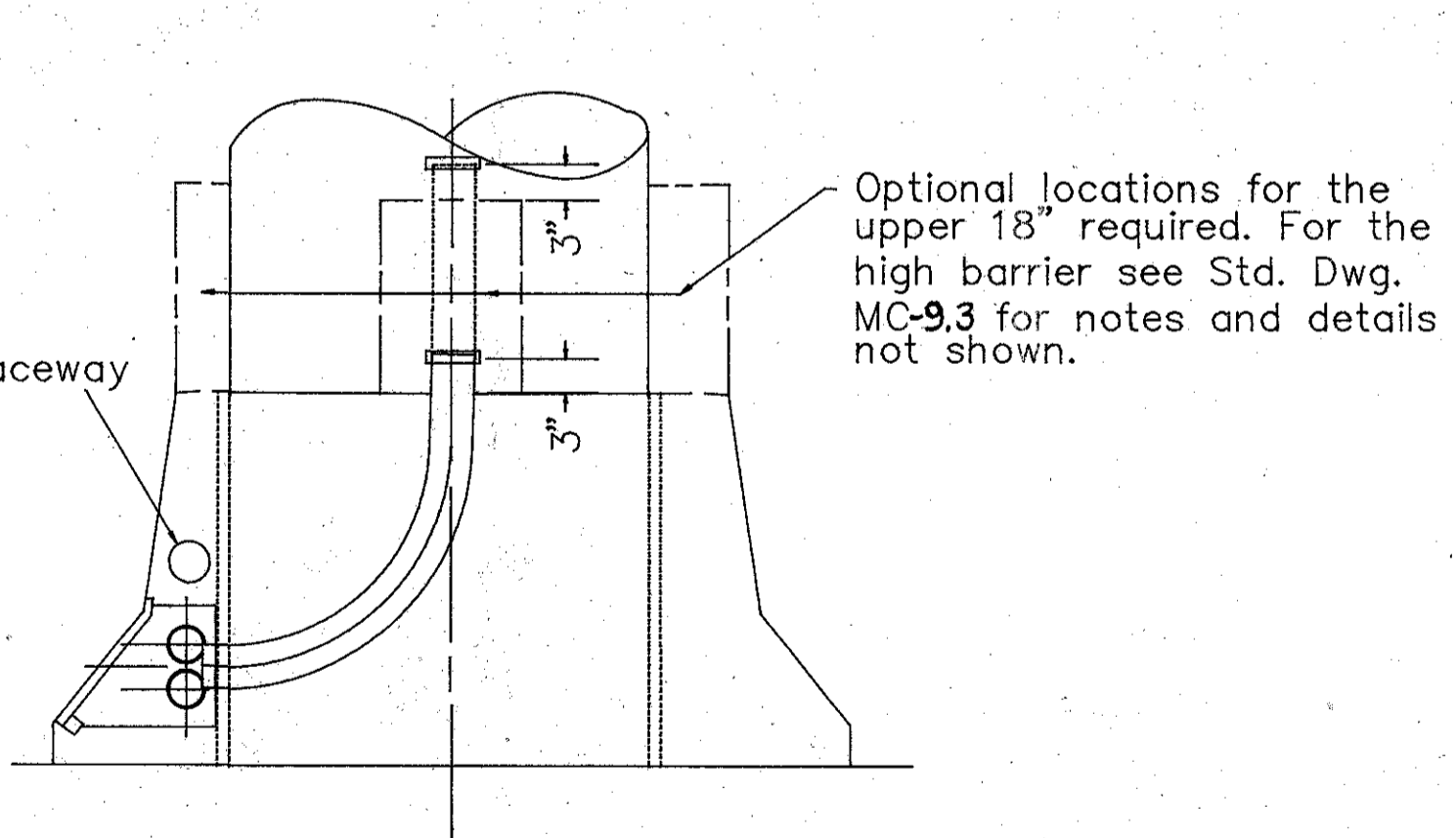
TYPICAL SURVEILLANCE CONDUIT TREATMENT AT END BARRIER WALL

Direction of Traffic →



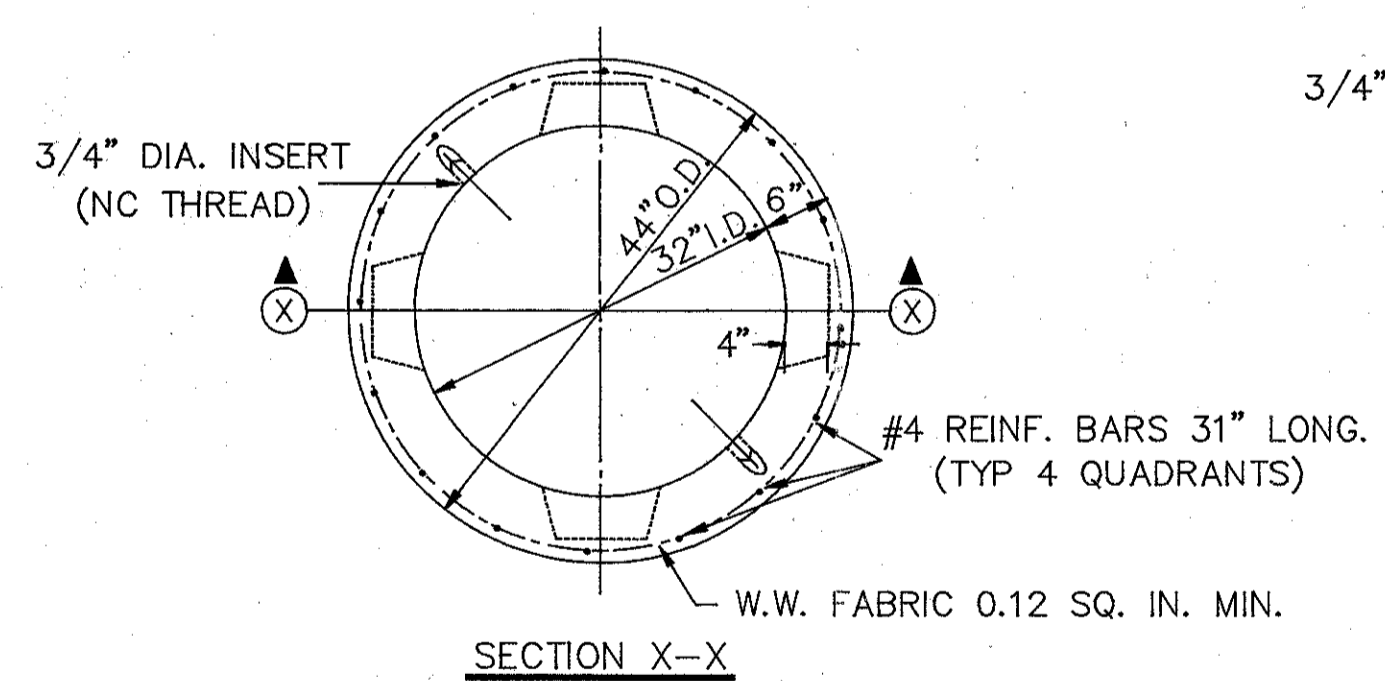
BRIDGE PIER RISER

Section A-A



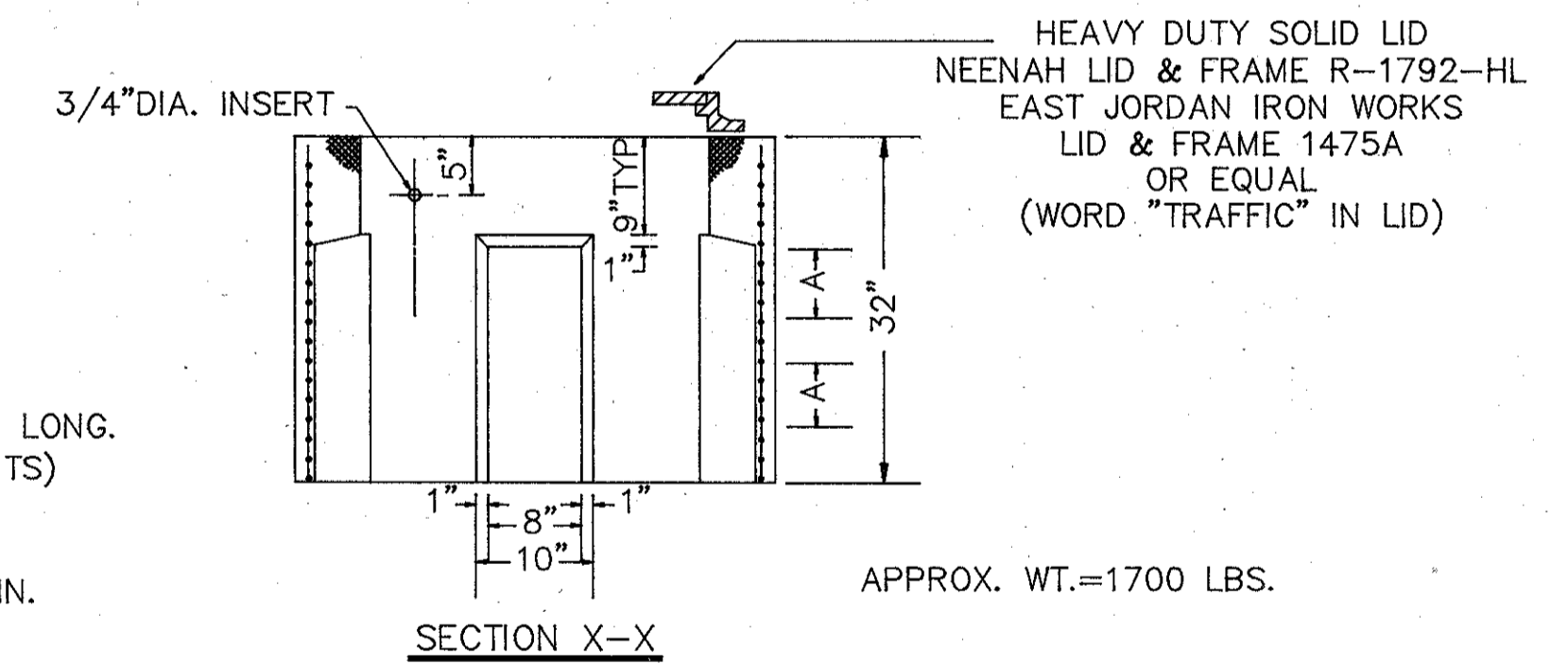
"A" Cut out 4 wires in the area of the reduced wall section. Also include the vertical wire for removal.
Concrete Comp. Strength-4000psi min. Design.
Concrete Air Entrainment to be 6% ± 1 1/2%.
Coating of protective Acrylic is to be applied to the top 12" of the outside face and total inside face.
Lid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

REV. 6-29-90



PULL BOX, MISC.: 32", AS PER PLAN

PULL BOXES SHALL BE CONCRETE, AND CONSTRUCTED IN ACCORDANCE WITH THE DETAIL ITEM SPECIAL, 32" PULL BOX.
ALL PULL BOX LIDS SHALL BE MARKED "TRAFFIC".
DRAINS SHALL BE INSTALLED AS PER HL-30.11.
NEENAH R-1792-HL OR JORDAN 1475A FRAMES AND LIDS SHALL BE USED.
PULL BOXES MAY BE POURED IN PLACE OR PRE-CAST. IF THEY ARE POURED IN PLACE, ALL STEEL SHALL BE INSPECTED BEFORE THE POUR IS MADE. CLASS "C" CONCRETE SHALL BE USED FROM AN ODOT APPROVED PLANT. CERTIFICATION FOR ALL STEEL AND ALL CONCRETE TICKETS SHALL BE FURNISHED
IF THE PULL BOXES ARE PRECAST, CERTIFICATION FROM THE MANUFACTURER SHALL BE FURNISHED. NO PAYMENT WILL BE MADE FOR UNINSPECTED OR UNDOCUMENTED PULL BOXES.



PULL BOX 713.08, 18", AS PER PLAN

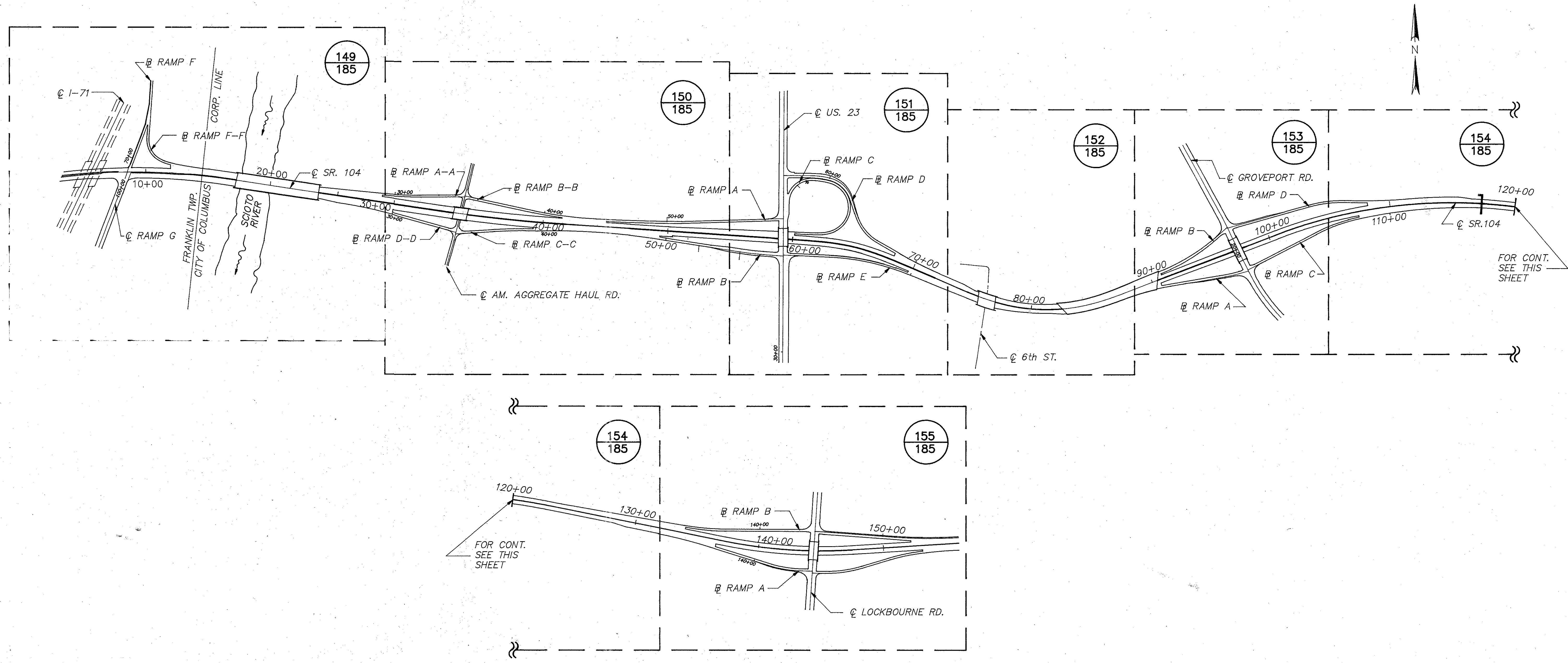
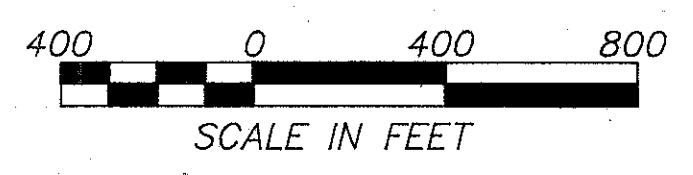
EIGHTEEN (18) INCH PULL BOXES SHALL BE CONCRETE, AND INSTALLED IN ACCORDANCE WITH ITEM 625.11 AND STANDARD DRAWING HL-30.11.
ALL PULL BOX LIDS SHALL BE MARKED "TRAFFIC". IF STEEL PLATE COVERS ARE USED, THE TAGS SHALL BE DIE STAMPED ONLY. ETCHED OR ENGRAVED LETTERS ARE NOT ACCEPTABLE.
THE PULL BOX LIDS SHALL BE SECURED WITH 3/8 NC X 1" STAINLESS STEEL HEX HEAD CAP SCREWS IN LIEU OF THE COUNTERSUNK FLAT HEAD SCREWS SPECIFIED ON HL-30.11.
CERTIFICATION IS REQUIRED FOR ALL PULL BOXES.

LIGHTING PLAN LAYOUT

FRA-104-8.02

OHIO
FHWA REGION 5

135
185



80-0302 FALSCHDING DATE: 2-21-84

LIGHTING GENERAL NOTES

FRA-104-8.02

OHIO
FHWA
REGION 5

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REFERENCES

EXISTING PLAN REFERENCES: THE FOLLOWING SHEETS FROM EXISTING PLANS SHALL BE USED AS REFERENCE FOR THE EXISTING LIGHTING CIRCUITS:

- 1) I.R. 71 TO HIGH ST. - FRA-104-8.04 (SHEETS 183 TO 201)
- 2) HIGH ST. TO LOCKBOURNE RD. - FRA-104-8.73 (SHEETS 353 TO 365D)

POWER SERVICE

THE POWER SUPPLYING AGENCY FOR THIS PROJECT IS:

CITY OF COLUMBUS
DIVISION OF ELECTRICITY
MUNICIPAL ELECTRIC LIGHT & POWER
95 WEST LONG STREET
COLUMBUS, OH 43215
(614) 645-7627

ELECTRICAL ENERGY FROM EXISTING POWER SERVICES SHALL CONTINUE TO BE CHARGED TO THE MAINTAINING AGENCY. THE CONTRACTOR SHALL PAY ELECTRICAL ENERGY CHARGES FOR NEW POWER SERVICES ESTABLISHED BY THIS PROJECT. AFTER ACCEPTANCE OF THE LIGHTING WORK, POWER SERVICE ELECTRICAL ENERGY ACCOUNTS SHALL BE TRANSFERRED TO THE MAINTAINING AGENCIES NOTED IN THE PLANS. THIS SHALL INCLUDE NEW POWER SERVICE ESTABLISHED BY THIS PROJECT AS WELL AS REASSIGNMENT OF EXISTING SERVICE DUE TO WORK PERFORMED BY THIS PROJECT.

IN ADDITION TO THE REQUIREMENTS OF 625.18, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PAYMENT OF ALL CHARGES MADE BY THE POWER COMPANY FOR INSTALLATION AND REARRANGEMENT OF POWER COMPANY EQUIPMENT NEEDED TO MAKE THIS CONNECTION TO POWER COMPANY FACILITIES AND ESTABLISH ELECTRICAL SERVICE.

ITEM 202. LUMINAIRE REMOVED FOR STORAGE, AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF REMOVING AN EXISTING LUMINAIRE AND STORING IT ON THE PROJECT SITE FOR REERECTION.

PAYMENT WILL BE MADE AT THE UNIT PRICE BID FOR EACH ITEM 202 "LUMINAIRE REMOVED FOR STORAGE, AS PER PLAN" AND SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS, AND INCIDENTALS REQUIRED TO COMPLETE THE WORK SATISFACTORILY.

ITEM 202. LIGHT POLE REMOVED FOR STORAGE, AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF REMOVING AN EXISTING LIGHT POLE INCLUDING THE BRACKET ARM(S), TRANSFORMER BASE, IF ANY, AND STORING THIS ASSEMBLY ON THE PROJECT SITE UNTIL REERECTED.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INSURE THAT ALL MATERIALS ARE STORED IN AN ACCEPTABLE FASHION SO THAT THEY MAY BE USED AT A FUTURE TIME ELSEWHERE ON THE PROJECT SITE.

PAYMENT WILL BE MADE AT THE UNIT PRICE THAT HAS BEEN BID FOR EACH "ITEM 202. LIGHT POLE REMOVED FOR STORAGE, AS PER PLAN" WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS, AND INCIDENTALS REQUIRED FOR SATISFACTORY PERFORMANCE OF THIS WORK.

ITEM 202 - LUMINAIRE REMOVED, AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF REMOVING AN EXISTING LUMINAIRE. LUMINAIRES REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF, OFF THE PROJECT SITE. PAYMENT WILL BE MADE FOR EACH ITEM 202 - LUMINAIRE REMOVED, AS PER PLAN.

ITEM 202 - LIGHT POLE REMOVED, AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF REMOVING AN EXISTING LIGHT POLE INCLUDING THE BRACKET ARM(S), AND TRANSFORMER BASE (IF USED). ALL REMOVED MATERIAL SHALL BE SEPARATED AND STORED ON SITE FOR REMOVAL BY CITY OF COLUMBUS DIVISION OF ELECTRICITY FORCES. PAYMENT WILL BE MADE AT THE UNIT BID PRICE FOR EACH ITEM 202 - LIGHT POLE REMOVED, AS PER PLAN.

ITEM 202 - LIGHT POLE FOUNDATION REMOVED, AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF REMOVING AN EXISTING LIGHT POLE FOUNDATION TO A MINIMUM OF ONE FOOT BELOW FINISHED GRADE, OR REMOVING THE FOUNDATION COMPLETELY, BACKFILLING THE RESULTANT DEPRESSION WITH COMPACTED SOIL AND RESTORING THE DISTURBED AREA. PAYMENT WILL BE MADE FOR EACH ITEM 202 - LIGHT POLE FOUNDATION REMOVED, AS PER PLAN.

ITEM 625 - REERECT LIGHT POLE AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF REERECTING EXISTING LIGHT POLES REMOVED FROM PREVIOUS LOCATIONS ON THE PROJECT SITE. THESE LIGHT POLES WILL BE INSTALLED ON NEW FOUNDATIONS AS INDICATED IN THE PLANS OR AS DETAILED IN THE BRIDGE PORTION OF THESE PLANS.

LIGHT POLE PLACEMENT

ALL POLES SHALL BE CONSTRUCTED AND PLACED WITH OFFSETS IN ACCORDANCE WITH STANDARD DRAWINGS EXCEPT THAT ALL LIGHT POLES PLACED ALONG EXIT AND ENTRANCE RAMPS SHALL BE PLACED 12' FROM THE EDGE OF PAVEMENT ALLOWING THE CENTER OF LUMINAIRE TO BE LOCATED OVER THE EDGE OF THE PAVEMENT.

ITEM 625 - LIGHTING, MISC.: RELABEL EXISTING POLES

THIS ITEM SHALL CONSIST OF THE REMOVAL AND REPLACEMENT OF LIGHT POLE LABELS FOR CIRCUIT IDENTIFICATION ON EXISTING POLES WHICH ARE TO REMAIN IN SERVICE ON NEW CIRCUITS. REFERENCE IS MADE TO STANDARD DRAWING HL-10.12 FOR DETAILS OF CIRCUIT IDENTIFICATION LABELS. THE FOLLOWING QUANTITY HAS BEEN INCLUDED IN THE PLANS FOR THIS PURPOSE:

ITEM 625 - LIGHTING, MISC.: RELABEL EXISTING POLES 20 EACH

PADLOCKS AND KEYS

PADLOCKS FURNISHED SHALL BE EITHER BRASS OR BRONZE MASTER NO. 4BKA OR WILSON BOHANNAN 660A OR EQUAL, AND SHALL BE KEYPED IN ACCORDANCE WITH SPECIFICATION 631.08, PAYMENT SHALL BE INCLUDED IN THE BID FOR ITEM(S) BEING LOCKED.

ITEM 625 - LIGHTING MISC.: REFURBISH EXISTING POWER SERVICE, AS PER PLAN

THIS ITEM OF WORK SHALL CONSISTS OF THE REMOVAL OF THOSE PORTIONS OF AN EXISTING POWER SERVICE NOT BEING REUSED AND THE INSTALLATION OF A NEW POWER SERVICE AS PER 625.18. ALL EXISTING LIGHTING CIRCUITS AND CONNECTIONS SHALL BE REMOVED FROM THE EXISTING PULL BOX TO THE DISCONNECT SWITCH. THE ENCLOSURE AND RELATED COMPONENTS OF THE POWER SERVICE SHALL BE CLEANED OF ALL MUD, DEBRIS AND EXISTING FUSES. THE EXISTING FUSES SHALL BE REPLACED IN KIND WITH NEW FUSES. THE EXISTING CONTROL TRANSFORMER, PHOTOCCELL, AND CONTACTOR COIL SHALL BE REMOVED AND REPLACED WITH A NEW LINE VOLTAGE CONTACT COIL AND PHOTOCCELL SO THAT RESULTANT CONTROL WIRING WILL CONFORM TO STANDARD DRAWING HL-60.31 (480 VOLT, TWO WIRE GROUNDED), EXCEPT THAT A TRANSFORMER (480V-120V) SHALL BE INCLUDED IN ORDER TO PROVIDE A CONTROL VOLTAGE OF 120V FOR THE CONTROL BOX. THE GROUND AREA AROUND THE CONTROL CENTER SHALL HAVE ALL DEBRIS REMOVED AND THE GRASS TRIMMED. ALL MATERIALS REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE PROJECT SITE.

PAYMENT WILL BE MADE AT THE UNIT BID PRICE FOR EACH ITEM 625 - LIGHTING MISC.: REFURBISH EXISTING POWER SERVICE, AS PER PLAN, AND SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THE INSTALLATION IN A SATISFACTORY WORKMANLIKE MANNER.

UTILITIES NOTIFICATION

AT LEAST TWO (2) WORKING DAYS PRIOR TO COMMENCING CONSTRUCTION OPERATIONS IN ANY AREA WHICH MAY INVOLVE UNDERGROUND FACILITIES, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER, THE REGISTERED UNDERGROUND UTILITY PROTECTION SERVICES AND THE OWNERS OF ALL UNDERGROUND UTILITY FACILITIES SHOWN IN THE PLANS.

AFTER NOTICE IS RECEIVED, THE OWNER OF ANY UNDERGROUND UTILITY FACILITY THAT IS TO REMAIN IN SERVICE DURING AND/OR AFTER CONSTRUCTION SHALL WITHIN FORTY-EIGHT HOURS, EXCLUDING SATURDAYS, SUNDAYS, AND LEGAL HOLIDAYS, STAKE, MARK, OR OTHERWISE DESIGNATE THE LOCATION OF THE UNDERGROUND FACILITIES IN THE CONSTRUCTION AREA IN SUCH A MANNER AS TO INDICATE THEIR COURSE TOGETHER WITH THE APPROXIMATE DEPTH AT WHICH THEY WERE INSTALLED. THE MARKING OR LOCATING SHALL BE COORDINATED TO STAY APPROXIMATELY TWO (2) DAYS AHEAD OF THE PLANNED CONSTRUCTION.

ITEM SPECIAL - DISCONNECT EXISTING CIRCUIT

THIS ITEM OF WORK SHALL CONSIST OF THE DISCONNECTION OF EXISTING LIGHT CIRCUIT(S) IN A PULLBOX OR TRANSFORMER BASE.

DISCONNECTION AT A PULL BOX SHALL INVOLVE CUTTING THE EXISTING CIRCUIT(S) AND REMOVING ALL SPLICE KITS. ANY CABLE THAT IS TO BE ABANDONED SHALL BE TERMINATED FROM THE PULL BOX SO THAT NO CABLE IS LEFT IN THE BOX.

DISCONNECTION AT THE TRANSFORMER BASE SHALL INVOLVE CUTTING THE EXISTING CIRCUIT AND REMOVING ALL CONNECTOR KITS. ALL DUCT CABLE NOT TO BE REUSED SHALL BE REMOVED FROM THE TRANSFORMER BASE AND THE EXITING CONDUIT IN THE FOUNDATION SHALL BE CLEANED OF ALL CABLE AND DEBRIS SO THAT THE NEW DUCT-CABLE CAN BE INSTALLED. ALL EXISTING CABLE TO REMAIN ACTIVE SHALL BE CUT IN A MANNER SO THAT THERE IS SUFFICIENT CABLE LEFT FOR RECONNECTION.

THOSE WIRES THAT ARE TO REMAIN ON ACTIVE CIRCUITS SHALL HAVE A WATER RESISTANT SEAL AT THE CUT END. THE WATER RESISTANT SEAL SHALL BE ACCOMPLISHED BY PLUGGING THE DEACTIVATED PORT OF AN EXISTING CONNECTOR KIT OR BY INSTALLING A CABLE SPLICE KIT ON THE CUT END OF THE CABLE.

PAYMENT WILL BE MADE AT UNIT PRICE BID FOR EACH ITEM SPECIAL - DISCONNECT EXISTING CIRCUIT. (ESTIMATED AT 40' EACH)

BARRIER MEDIAN RACEWAYS

TWO 4" POLYVINYL CHLORIDE RACEWAYS (FOR ROADWAY BARRIERS) AS DETAILED ON STD. DWG. MC-9 AND THREE 3" RACEWAYS AS DETAILED IN THESE PLANS AND IN ACCORDANCE WITH ITEM 713.07 AND THESE NOTES, SHALL BE PROVIDED FOR THE ENTIRE LENGTH OF ALL BARRIER MEDIAN ON THIS PROJECT. THE RACEWAY SHALL CONTAIN A PULL WIRE AND SHALL BE CAPPED AT BOTH ENDS OF THE BARRIER AS PER ITEM 625.13. PAYMENT FOR THE RACEWAY, PULL WIRE, AND CAPPING SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 622 - CONCRETE BARRIER, IN THE GENERAL SUMMARY, OR BARRIER CONCRETE FOR THE BRIDGES.

UNDERPASS LUMINAIRE 55W LPS

I. QUANTITY
THE BASE BID SHALL INCLUDE THE INDICATED NUMBER OF UNDERPASS LUMINAIRES TO BE INSTALLED AS HEREINAFTER SPECIFIED AT THE LOCATIONS OF THE EXISTING LUMINAIRES (WHICH ARE TO BE REMOVED) LOCATED IN THE FIELD BY THE ENGINEER.

II. MATERIAL

LUMINAIRE - THE LUMINAIRE HOUSING AND LENS SHALL BE ONE PIECE MOLDED POLYCARBONATE MATERIAL WITH PRISMATIC DESIGN FOR DIRECTIONAL LIGHT OUTPUT. HOUSING AND LENS SHALL BE HINGED AND SECURED TO WATER TIGHT ALUMINUM BODY. THE LUMINAIRE BODY SHALL BE PRECISION DIE-CAST CORROSION RESISTANT ALUMINUM, PROVIDING MOUNTING FOR ALL ELECTRICAL COMPONENTS.

THE LUMINAIRE FINISH SHALL BE BRONZE, INTERNALLY APPLIED TO POLYCARBONATE HOUSING AND EXTERNALLY APPLIED TO ALUMINUM BODY AND THE REFLECTOR SHALL BE OF TEXTURED ANODIZED ALUMINUM.

THE LAMP SOCKET SHALL BE OF HIGH TEMPERATURE, FLAME RETARDANT THERMOSET MATERIAL WITH SELF-WIPING SILVER PLATED COPPER ALLOY CONTACTS AND THE LAMP SUPPORT SHALL BE SPRING WIRE TYPE FOR POSITIVE LAMP RETENTION. THE GASKET SHALL BE CLOSED CELL NEOPRENE RUBBER, PROVIDING WEATHER TIGHT SEAL BETWEEN HOUSING AND BODY.

THE BALLAST SHALL BE SUITABLE FOR OPERATING EITHER ONE SOX-35 WATT OR ONE SOX-55 WATT LOW PRESSURE SODIUM LAMP AND SHALL BE RATED REACTOR (480V) TYPE; POWER FACTOR CORRECTED 90% (55 WATT) OR 80% (35 WATT) WITH LAMP WATTAGE REGULATION OF ? 5% WITH LINE VOLTAGE FLUCTUATION OF ? 10%. THE BALLAST SHALL BE SUITABLE FOR HIGH AND LOW AMBIENT TEMPERATURE OPERATION, INTEGRALLY MOUNTED WITHIN SEPARATE COMPARTMENT WITH REMOVABLE COVER FOR WIRING AND MAINTENANCE.

THE LUMINAIRE SHALL PROVIDE TWO (ONE TOP AND ONE SIDE) SURFACE WIRE CONDUIT ENTRY HOLES TAPPED 1/2" NPS, 3-5/16" KNOCKOUTS FOR WALL FASTENERS AND KNOCKOUTS FOR MOUNTING TO STANDARD RECESSED BOXES FOR THROUGH WALL WIRING. THE ENTIRE UNIT SHALL BE PREWIRED AND READY FOR INSTALLATION AND SHALL BE SUPPLIED COMPLETE WITH A 55 WATT SOX LAMP.

LIGHTING GENERAL NOTES (CONT'D)

FRA-104-8.02

OHIO
FHWA
REGION 5

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ITEM SPECIAL - MAINTAIN EXISTING LIGHTING

EXISTING ROADWAYS WHICH ARE TO REMAIN OPEN TO TRAFFIC DURING CONSTRUCTION OF THIS PROJECT AND WHICH ARE LIGHTED SHALL HAVE THE LIGHTING MAINTAINED AS DESCRIBED HEREIN.

BEFORE ANY WORK IS STARTED IN THE IMMEDIATE VICINITY OF ANY, EXISTING LIGHTING CIRCUITS, REPRESENTATIVES OF THE STATE, THE MAINTAINING AGENCY AND THE CONTRACTOR SHALL MAKE A VISUAL INSPECTION OF THE EXISTING ROADWAY LIGHTING CIRCUITS TO BE MAINTAINED. DURING THIS INSPECTION, A WRITTEN RECORD OF THE CONDITION OF THE EXISTING LIGHTING SHALL BE MADE BY THE STATE'S REPRESENTATIVE. THIS WRITTEN REPORT SHALL NOTE INDIVIDUAL LUMINARIES WHICH ARE NOT IN WORKING ORDER, INDIVIDUAL POLES WHICH ARE NOT STANDING, AND INDIVIDUAL CIRCUITS WHICH ARE NOT IN WORKING ORDER. THE COMPLETED REPORT SHALL BE SIGNED BY THE REPRESENTATIVES OF THE STATE, THE MAINTAINING AGENCY AND THE CONTRACTOR.

IF, AS A RESULT OF THIS INSPECTION, IT IS DETERMINED THAT THE CONDITION OF THE EXISTING SYSTEM IS BELOW THAT REQUIRED FOR THE SAFETY OF THE TRAVELLING PUBLIC, THEN THE MAINTAINING AGENCY SHALL MAKE REPAIRS NECESSARY TO RETURN THE SYSTEM TO AN ACCEPTABLE CONDITION. FOLLOWING THESE REPAIRS, THE SYSTEM SHALL AGAIN BE INSPECTED AND A REPORT MADE AND SIGNED AS OUTLINED HEREIN.

WHEN THE EXISTING SYSTEM IS IN AN ACCEPTABLE CONDITION, IT SHALL BE TURNED OVER TO THE CONTRACTOR WHO SHALL THEN BE REQUIRED TO MAINTAIN THE EXISTING LIGHTING TO THE CONDITION OUTLINED IN THIS REPORT WITH THE EXCEPTION OF KNOCKDOWNS DUE TO TRAFFIC ACCIDENTS.

REPLACEMENT OF KNOCKED DOWN UNITS SHALL BE DONE ONLY WHEN THE ENGINEER HAS DETERMINED THAT THE REPLACEMENT OF THE KNOCKED DOWN UNIT IS NECESSARY AND SHALL BE PAID SEPARATELY ON A UNIT BASIS.

BETTERMENTS SHALL BE COVERED IN ITEMS OF WORK PERTAINING TO THE CONSTRUCTION OF PERMANENT IMPROVEMENTS. SHOULD THE CONTRACTOR DESIRE THE REMOVAL OF THE EXISTING LIGHTING BEFORE THE NEW LIGHTING IS OPERATIONAL, THE CONTRACTOR SHALL THEN BE RESPONSIBLE FOR ADEQUATE TEMPORARY LIGHTING OF THAT PORTION OF THE EXISTING ROADWAY AFFECTED BY THE REMOVAL OF THE EXISTING LIGHTING.

PRIOR TO INSTALLING SUCH LIGHTING, THE CONTRACTOR SHALL PREPARE AND SUBMIT FOUR (4) SETS OF THE TEMPORARY LIGHTING PLAN TO THE DIRECTOR FOR REVIEW AND APPROVAL.

THIS PLAN SHALL SHOW LOCATION OF POLES, LENGTH OF BRACKET ARMS, STYLE OF LUMINARIES, MOUNTING HEIGHT, WIRING METHODS AND OTHER PERTINENT INFORMATION. THE TEMPORARY LIGHTING SHALL PROVIDE AN AVERAGE INITIAL INTENSITY OF 1.2 FOOT CANDLES WITH AN AVERAGE TO MINIMUM UNIFORMITY NOT TO EXCEED 4:1. MOUNTING HEIGHT FOR TEMPORARY LUMINARIES SHALL NOT BE LESS THAN 27 FEET AND MINIMUM OVERHEAD CONDUCTOR CLEARANCE SHALL BE 20 FEET. TEMPORARY OVERHEAD CONSTRUCTION SHALL NOT BE LESS THAN GRADE "A" FOR STRENGTH REQUIREMENT AS DEFINED BY THE NATIONAL ELECTRIC SAFETY CODE. WOOD POLES WITH OVERHEAD WIRING MAY BE USED. HOWEVER, TEMPORARY LIGHTING SHALL MEET FEDERAL AND STATE SAFETY CRITERIA. IF BREAKAWAY POLES ARE USED TO MEET THESE CRITERIA, THEN UNDERGROUND WIRING SHALL BE USED. RECONDITIONED OR USED MATERIALS MAY BE FURNISHED FOR TEMPORARY LIGHTING.

ALL MATERIALS NECESSARY TO COMPLETE THE TEMPORARY LIGHTING SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. WHEN NO LONGER NEEDED, THE TEMPORARY LIGHTING INSTALLATION SHALL BE REMOVED AND PROPERLY DISPOSED OF BY THE CONTRACTOR. THE MAINTAINING AGENCY WILL PAY FOR ELECTRICAL ENERGY CONSUMED BY EXISTING POWER SERVICES AND BY PROPOSED PERMANENT POWER SERVICES AFTER ACCEPTANCE. THE CONTRACTOR WILL PAY FOR ELECTRICAL ENERGY, INSTALLATION, REMOVAL AND MAINTENANCE OF ANY TEMPORARY POWER SERVICES.

THE LUMP SUM PRICE BID FOR ITEM SPECIAL - MAINTAIN EXISTING LIGHTING SHALL INCLUDE PAYMENT FOR ALL LABOR, EQUIPMENT, AND MATERIALS AND INCIDENTALS NECESSARY TO MAINTAIN THE EXISTING LIGHTING AS SPECIFIED HEREIN.

THE UNIT PRICE BID FOR ITEM SPECIAL - REPLACEMENT OF EXISTING LIGHTING UNIT, SHALL BE FULL PAYMENT FOR THE REPLACEMENT OF AN EXISTING LIGHTING UNIT WHICH HAS BEEN KNOCKED DOWN AFTER THE AFOREMENTIONED INSPECTION AND SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO PROVIDE A REPLACEMENT FOR SUCH UNIT (A CONTINGENCY QUANTITY OF ONE EACH HAS BEEN ADDED CARRIED TO THE LIGHTING GENERAL SUMMARY FOR THIS PURPOSE).

LOW MAST LUMINAIRES

THE LUMINAIRE ARRAYS AND ASSOCIATED ILLUMINATION TEST AREAS SPECIFIED IN SECTION 713.21 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS ARE HEREBY WAIVED FOR THIS PROJECT. INSTEAD, THE LUMINAIRES FOR LOW MAST LIGHTING SHALL MEET THE FOLLOWING REQUIREMENTS:

ASYMMETRIC, TYPE II OR III, LUMINAIRES FOR LOWMAST LIGHTING MAY BE HOLOPHANE "HMST" TEST #36648, OR GENERAL ELECTRIC "HM" TEST #7349, OR COOPER "HMC" TEST #764130.

SYMMETRIC, TYPE V, LUMINAIRES FOR LOW MAST LIGHTING MAY BE HOLOPHANE "HMST" TEST #36383, OR GENERAL ELECTRIC "HM" TEST #6312, OR COOPER "HAL" TEST #48381.

IN ADDITION, OTHER LUMINAIRES WILL BE CONSIDERED IF THE DESIGNED INTENSITY AND UNIFORMITY ARE PROVIDED USING THE DESIGNED POLE LOCATIONS AND THE TYPE OF FIXTURE PER POLE.

UNDERDRAINS FOR PULL BOXES

REFERENCE IS MADE TO STANDARD DRAWINGS FOR DETAILS OF DRAINING PULL BOXES. UNDERDRAINS FOR PULL BOXES SHALL BE USED AS DIRECTED BY THE ENGINEER AND SHALL BE PROVIDED WHERE THE LENGTH REQUIRED FOR A SATISFACTORY OUTLET DOES NOT EXCEED APPROXIMATELY 20 FEET. AN ESTIMATED QUANTITY OF 40 LIN. FT. OF ITEM 603 - 4" CONDUIT, TYPE E, IS INCLUDED IN THE LIGHTING GENERAL SUMMARY FOR THIS PURPOSE.

SAFETY NOTE

THIS CONTRACT INVOLVES WORK ON LIGHTING CIRCUITS WHICH ARE MAINTAINED BY THE CITY OF COLUMBUS, DIVISION OF ELECTRICITY. THE CONTRACTOR SHALL CONFORM TO THE DIVISION OF ELECTRICITY'S EXISTING SAFETY POLICY, COPIES OF WHICH ARE AVAILABLE FROM THE DIVISION OF ELECTRICITY.

PRIOR TO PERFORMING ANY WORK ON ANY PART OF A LIGHTING CIRCUIT WHICH COULD AFFECT THE DIVISION OF ELECTRICITY, THE CONTRACTOR SHALL NOTIFY THEM AT 645-7627. HE SHALL AGAIN CALL THE DIVISION OF ELECTRICITY THAT SAME DAY WHEN HE IS CLEAR OF THAT WORK.

ITEM 202 - PULLBOX REMOVED, AS PER PLAN

THIS ITEM OF WORK WILL CONSIST OF REMOVING AN EXISTING PULLBOX WHICH SHALL THEN BE PROPERLY DISPOSED OF. THE RESULTANT OPENING SHALL THEN BE BACKFILLED TO GRADE WITH SUITABLE COMPACTED SOIL AND RESTORED TO MATCH SURROUNDING AREA. PAYMENT WILL BE MADE FOR EACH ITEM 202 - PULL BOX REMOVED, AS PER PLAN.

ITEM 202 - REMOVAL MISCELLANEOUS: REMOVE SERVICE TO UNDERPASS LUMINAIRES, AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF REMOVING ALL UNDERPASS LIGHTING UNITS, FIXTURES, BRACKETS, HANGERS, JUNCTION BOXES, CONDUIT, WIRE, AND OTHER MATERIALS OF THE INSTALLATION ON BRIDGE FRA-104-0899 WHICH SHALL BECOME THE PROPERTY OF THE CONTRACTOR FOR DISPOSAL OFF OF THE PROJECT SITE.

PAYMENT SHALL BE AT THE LUMP SUM BID PRICE FOR "ITEM 202 - REMOVAL MISCELLANEOUS: REMOVE SERVICE TO UNDERPASS LUMINAIRES, "AS PER PLAN" INCLUDING ALL LABOR, MATERIAL, EQUIPMENT, AND INCIDENTALS TO COMPLETE THIS ITEM OF WORK.

CONNECTION OF OVERHEAD SIGNS TO NEW LIGHTING CIRCUITS

THE EXISTING LIGHTED SIGNS SHALL BE CONNECTED TO THE NEW LIGHTING CIRCUITS. PAYMENT FOR THIS WORK SHALL BE MADE UNDER THE FOLLOWING ITEMS:
DISCONNECTION OF THE SIGN FROM THE EXISTING CIRCUIT SHALL BE PAID BY ITEM SPECIAL - DISCONNECT EXISTING CIRCUIT.
REMOVAL OF THE EXISTING PULLBOX AND REPLACEMENT OF A NEW PULLBOX AT THE SAME LOCATION SHALL BE PAID UNDER ITEM 625 - PULLBOX REMOVED AND REPLACED.
RECONNECTION OF THE SIGNS TO THE NEW LIGHTING CIRCUIT SHALL BE PROVIDED BY ITEM 625 - CABLE SPLICE KITS (2 PER PULL BOX, TOTAL OF 64 CARRIED TO LIGHTING GENERAL SUMMARY) AND ITEM 631 - SIGN SERVICE, AS PER PLAN.

FENCE GROUNDING

FENCE GROUND RODS SHALL BE INSTALLED IN ALL LOCATIONS AS REQUIRED BY STANDARD DRAWING HL-50.11. THE FOLLOWING HAS BEEN INCLUDED IN THE PLANS AS A CONTINGENCY QUANTITY FOR THIS PURPOSE:

ITEM 625 GROUND ROD 50 EACH

STRUCTURE GROUNDING

ALL BRIDGES WITH STRUCTURE MOUNTED LIGHT POLES SHALL BE GROUNDED AS PER DETAILS ON STANDARD DRAWING HL-50.21. NEW GROUNDING SYSTEMS MAY BE TIED TO EXISTING GROUNDING SYSTEMS IF THE CONTRACTOR CAN SHOW THAT THE NEW SYSTEM IS COMPLETE. THIS WORK SHALL BE PAID FOR UNDER THE FOLLOWING:

ITEM 625 STRUCTURE GROUNDING SYSTEM 4 EACH

SERVICE TO UNDERPASS LIGHTING

THE LIGHTING SYSTEM UNDER THE HIGH STREET OVERPASS BRIDGE SHALL BE REMOVED AND REPLACED. THE UNDERPASS LIGHTING SYSTEM (AS DETAILED ON SHEET 362 OF THE EXISTING PLANS FRA-104-8.73) SHALL BE REBUILT EXCEPT THAT THE POWER SOURCE SHALL BE AS STATED IN THESE PLANS FROM MEDIAN PULL BOX UP THE WESTERN MOST COLUMN OF THE MEDIAN (NO. 2) PIER AND THE DISCONNECT SWITCH SHALL BE MOUNTED ON THE PIER COLUMN IN MEDIAN.

THE INSTALLATION WORK SHALL INCLUDE CONDUITS, CONDUIT GROUNDING, MOUNTINGS, FITTINGS, JUNCTION BOXES, CABLES AND ALL INCIDENTALS NECESSARY TO COMPLETE THE SERVICE NECESSARY FOR THE INDICATED LUMINAIRE ASSEMBLIES. PLACEMENT OF SAID LUMINAIRES IS TO BE IDENTICAL WITH EXISTING LUMINAIRES CURRENTLY IN USE. COMPONENT PARTS NOT SPECIFICALLY MENTIONED BUT REQUIRED FOR SATISFACTORY OPERATION OF THIS ITEM SHALL BE FURNISHED AND PAID FOR AS PART OF THIS ITEM.

THE CONDUIT, JUNCTION BOXES, WIRING AND ALL ASSOCIATED HARDWARE SHALL BE CONSTRUCTED IN THE LOCATIONS SPECIFIED IN THE EXISTING PLAN, AND IN ACCORDANCE WITH STANDARD DRAWING HL-20.31. THE COST FOR PERFORMING THE ABOVE WORK FROM THE PULL BOX TO THE LUMINARIES (EXCLUDING THE LUMINAIRE REMOVAL AND REPLACEMENT, AND POWER SERVICE REMOVAL) SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 625 - SERVICE TO UNDERPASS LIGHTING, AS PER PLAN.

THE REMOVAL OF THE LUMINAIRES SHALL BE PAID FOR UNDER ITEM 202 - LUMINARIES REMOVED, AS PER PLAN. THE REMOVAL OF THE EXISTING CONDUIT AND WIRES, AND ALL ASSOCIATED HARDWARE SHALL BE PAID FOR UNDER ITEM 202 - POWER SERVICE REMOVED, AS PER PLAN.

ITEM 631 - SIGN SERVICE, AS PER PLAN

THIS ITEM IS TO BE USED TO PROVIDE NEW POWER SERVICE TO THE REFURBISHED SIGNS ON THIS PROJECT. THE NEW ELECTRICAL SERVICE SHALL INTERCEPT AND EXTEND THE EXISTING SIGN SERVICE CONDUIT TO THE NEW PULLBOX. THIS ITEM SHALL INCLUDE CLEANING OUT OF THE EXISTING CONDUITS AS REQUIRED, AND ADDING NEW CONDUIT (3", 713.04) TO INSTALL THE NEW SERVICE. A QUANTITY FOR THIS ITEM IS LISTED IN THE TRAFFIC CONTROL GENERAL SUMMARY.

NEW POWER SERVICE AREAS

THE NEW SERVICE POLE SHALL BE INSTALLED BY THE CONTRACTOR IN THE EXACT LOCATION AS DETERMINED BY THE POWER COMPANY. THE CONTROL CENTER AND SERVICE POLE COMPONENTS SHALL BE CONSTRUCTED AS PER STANDARD DRAWING HL-40.10, AND ALL PROVISIONS OF 625.18 SHALL APPLY. THE CONTROL CENTERS SHALL BE DOUBLE ENCLOSURES. THE PROPOSED FENCE ENCLOSURE SHALL BE 12' X 12' WITH FENCE POSTS SPACED AT 6', WITH ONE SIDE OF THE ENCLOSURE ADJACENT TO THE RIGHT OF WAY FENCE, AND THE GATE FACING A SERVICE ACCESS. FENCE AND GATES ARE TO BE 8' HIGH PLUS 1' (3 STRANDS) OF BARBED WIRE AT THE TOP. GATES TO BE 4' WIDE FOR A TOTAL OPENING OF 8'. LOCK TO BE PROVIDED BY THE CITY OF COLUMBUS, DIVISION OF ELECTRICITY.

FENCE FOR POWER SERVICE AREAS

THE EXISTING FENCE SURROUNDING THE EXISTING POWER SERVICE AREAS SHALL BE REMOVED AND REPLACED IN KIND. THE NEW POWER SERVICE FENCE ENCLOSURES SHALL HAVE NEW FENCE CONSTRUCTED IN ACCORDANCE WITH THE NOTE "NEW POWER SERVICE AREAS" ON THIS SHEET. THE SURFACE OF THE ENCLOSED AREA NOT COVERED BY CONCRETE SHALL BE COVERED WITH 6" ITEM 304 (COST TO BE INCLUDED WITH CONTROL CENTER FOR PAYMENT). THE FOLLOWING QUANTITIES HAVE BEEN INCLUDED IN THE PLANS FOR THE POWER SERVICE FENCE ENCLOSURES:

ITEM 202	FENCE REMOVED, AS PER PLAN	200 L.F.
ITEM 607	FENCE, TYPE CL, AS PER PLAN	300 L.F.
ITEM 607	GATE, TYPE CL, AS PER PLAN	10 EACH

LIGHTING GENERAL SUMMARY

SHEET NUMBERS																		PARTICIPATION		ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION
136	136A	138	139	139A	140	141	141A	142	143	144	145	145A	146	147	148	STATE	CITY							
																				202	98100	1	EACH	REMOVAL MISC.: REMOVE SERVICE TO UNDERPASS LUMINAIRES, AS PER PLAN (SEE SHEET 136)
			2	9	5	10	10		13	5	10	7	13	15	15	2			202	75403	116	EACH	LIGHT POLE REMOVED FOR STORAGE, AS PER PLAN (SEE SHEET 136)	
	200																		202	75001	200	LIN. FT.	FENCE REMOVED, AS PER PLAN (SEE SHEET 136)	
			7	8		2	3		2	3	1		1	1					202	75301	28	EACH	PULL BOX REMOVED, AS PER PLAN (SEE SHEET 136)	
			13	1		5			12	10									202	75401	41	EACH	LIGHT POLE REMOVED, AS PER PLAN (SEE SHEET 136)	
			13	3		10	11		8		8	7	6		9	2			202	75501	80	EACH	LIGHT POLE FOUNDATION REMOVED, AS PER PLAN (SEE SHEET 136)	
			13			6			14	10	1								202	75507	44	EACH	LUMINAIRE REMOVED, AS PER PLAN (SEE SHEET 136)	
			4	16	10	19	11		13	10	13	7	20	30	21	2			202	75505	176	EACH	LUMINAIRE REMOVED FOR STORAGE, AS PER PLAN (SEE SHEET 136)	
	820																		603	00400	820	LIN. FT.	4" CONDUIT, TYPE E	
																			607	20001	300	LIN. FT.	FENCE, TYPE CL, AS PER PLAN (SEE SHEET 136A)	
	300																		607	50901	10	EACH	GATE, TYPE CL, AS PER PLAN (SEE SHEET 136A)	
	10																		625	00500	174	EACH	CONNECTOR KIT, TYPE II	
			12	12	10	17	15	8	15	15	11	11	16	15	15	2			625	00600	174	EACH	CONNECTOR KIT, TYPE III	
			2	8	4	1			2	10	4			8	4				625	01004	45	EACH	CONNECTOR KIT, TYPE VII B	
	64	14	8		5	9	6	4	6	15	16	2	8	10					625	01500	169	EACH	CABLE SPLICING KIT	
			10	12	8	7			1	4									625	10500	42	EACH	MEDIAN, LIGHT POLE, MISC.: A LOW MAST, DESIGN AON40.0, AS PER PLAN (SEE SHEET 136)	
			2																625	10471	2	EACH	LOW MAST LIGHT POLE, DESIGN ATON51.7, AS PER PLAN (SEE SHEET 136)	
						10	11	1	14		7	7	6		9	2			625	14000	67	EACH	LIGHT POLE FOUNDATION, 24" X 6" DEEP	
			2						1										625	14100	3	EACH	LIGHT POLE FOUNDATION, 24" X 8" DEEP	
			5	12	8	7			1	10	3		7	15	6				625	14300	74	EACH	MEDIAN LIGHT POLE FOUNDATION, 8" DEEP	
						2770	2680	810	670	490	5220	1600	420	2200	610				625	23200	17470	LIN. FT.	NO. 4 AWG 5000 VOLT DISTRIBUTION CABLE	
																			625	23300	16288	LIN. FT.	NO. 2 AWG 5000 VOLT DISTRIBUTION CABLE	
	3670	4560						668					4940	2450					625	23400	19032	LIN. FT.	NO. 10 AWG POLE AND BRACKET CABLE	
	1224	1734	816	1644	1116	94	1404	2288	1215	651	1874	2820	1965	186					625	24100	10772	LIN. FT.	1-1/2" DUCT CABLE WITH TWO NO. 4 AWG 5000 VOLT CABLES	
				1856	1891	670	2160	45	1410	1585	1155				1545	325			625	24300	2505	LIN. FT.	1-1/2" DUCT CABLE WITH TWO NO. 2 AWG 5000 VOLT CABLES	
	635																		625	25500	470	LIN. FT.	CONDUIT 3", 713.04	
	40			310		30					50			40					625	25900	2335	LIN. FT.	CONDUIT, JACKED OR DRILLED UNDER PAVEMENT, 3"	
			250	280		130	245	305	145	50	250	190	120	175	195				625	26270	2	EACH	LUMINAIRE, LOW MAST ASYMMETRIC, 400 WATT HPS, 480 VOLT, AS PER PLAN (SEE SHEET 136A)	
			2																625	26270	42	EACH	LUMINAIRE, LOW MAST SYMMETRIC, 400 WATT HPS, 480 VOLT, AS PER PLAN (SEE SHEET 136A)	
			10	12	8	7			1	4									625	27500	6	EACH	LUMINAIRE, UNDERPASS, 55 WATT LOW PRESSURE SODIUM, 713.13, 480 VOLT, AS PER PLAN (SEE SHEET 136)	
	1			6															625	29002	12300	LIN. FT.	TRENCH, 24" DEEP	
			625			1586	1801	618	2010	35	1245	1465	1075	100	1435	305			625	29920	3	EACH	STRUCTURE JUNCTION BOX	
			7	3		1	3	2	2	2	6	3	4	3	5				625	30500	41	EACH	PULL BOX, 713.09, 18"	
			1	4	2	1			1	3	1			3	2				625	31500	18	EACH	MEDIAN PULL BOX	
			3	4		4	3		1	3	1	5	3	2	5				625	31506	34	EACH	PULL BOX REMOVED AND REPLACED	
			50	7	12	8	17	11	2	15	10	10	7	13	15	2			625	32000	194	EACH	GROUND ROD	
	4																		625	33000	4	EACH	STRUCTURE GROUNDING SYSTEM	
																			625	34001	2	EACH	POWER SERVICE, AS PER PLAN (SEE SHEET 136)	
																			625	37101	1	EACH	SERVICE TO UNDERPASS LIGHTING, AS PER PLAN (SEE SHEET 136)	
																			625	98000	3	EACH	LIGHTING, MISC.: REFURBISH EXISTING POWER SERVICE, AS PER PLAN	
																			625	98000	31	EACH	LIGHTING, MISC.: LIGHT POLE RELABELED	
																			SPEC	62540010	1	EACH	REPLACEMENT OF EXISTING LIGHTING UNIT	
																			SPEC	62540000	LUMP		MAINTAIN EX. LIGHTING	
																			SPEC	62540020	40	EACH	DISCONNECT EXISTING CIRCUIT	
																			625	38000	LUMP		HIGH VOLTAGE TEST	
																			625	35001	95	EACH	REERECT EXISTING LIGHT POLE, AS PER PLAN (SEE SHEET 136)	
																			625	35101	137	EACH	REERECT EXISTING LUMINAIRE, AS PER PLAN	

LEGEND

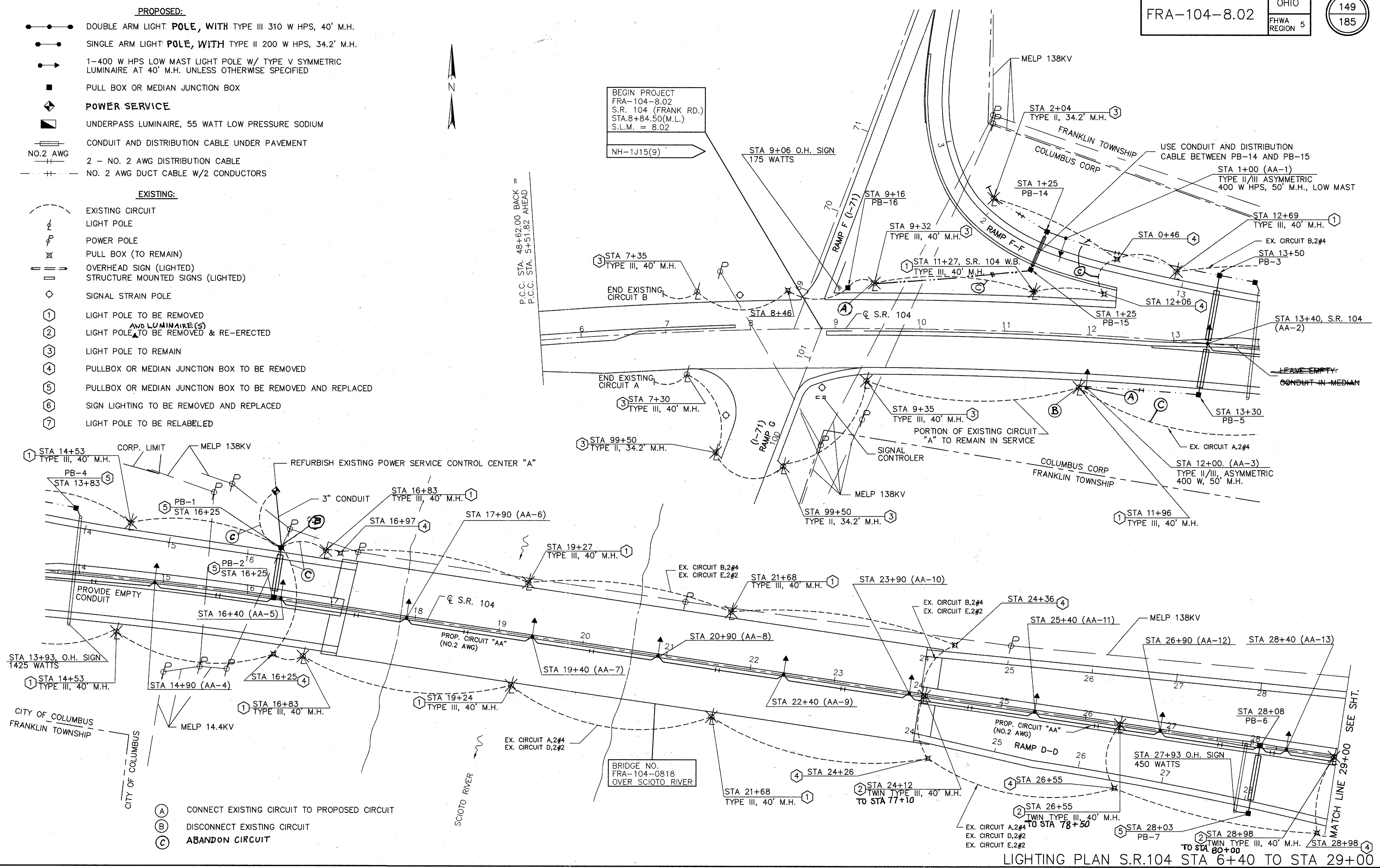
- PROPOSED:**
- DOUBLE ARM LIGHT POLE, WITH TYPE III 310 W HPS, 40' M.H.
 - SINGLE ARM LIGHT POLE, WITH TYPE II 200 W HPS, 34.2' M.H.
 - 1-400 W HPS LOW MAST LIGHT POLE W/ TYPE V SYMMETRIC LUMINAIRE AT 40' M.H. UNLESS OTHERWISE SPECIFIED
 - PULL BOX OR MEDIAN JUNCTION BOX
 - ◆ **POWER SERVICE**
 - ▬ UNDERPASS LUMINAIRE, 55 WATT LOW PRESSURE SODIUM
 - ▬ CONDUIT AND DISTRIBUTION CABLE UNDER PAVEMENT
 - ▬ NO.2 AWG 2 - NO. 2 AWG DISTRIBUTION CABLE
 - ▬ NO. 2 AWG DUCT CABLE W/2 CONDUCTORS

- EXISTING:**
- ⊂ EXISTING CIRCUIT
 - ⊂ LIGHT POLE
 - ⊂ POWER POLE
 - ⊂ PULL BOX (TO REMAIN)
 - ⊂ OVERHEAD SIGN (LIGHTED)
 - ⊂ STRUCTURE MOUNTED SIGNS (LIGHTED)
 - ⊂ SIGNAL STRAIN POLE
 - ① LIGHT POLE TO BE REMOVED AND LUMINAIRE(S)
 - ② LIGHT POLE TO BE REMOVED & RE-ERECTED
 - ③ LIGHT POLE TO REMAIN
 - ④ PULLBOX OR MEDIAN JUNCTION BOX TO BE REMOVED
 - ⑤ PULLBOX OR MEDIAN JUNCTION BOX TO BE REMOVED AND REPLACED
 - ⑥ SIGN LIGHTING TO BE REMOVED AND REPLACED
 - ⑦ LIGHT POLE TO BE RELABELLED



BEGIN PROJECT
 FRA-104-8.02
 S.R. 104 (FRANK RD.)
 STA. 8+84.50 (M.L.)
 S.L.M. = 8.02
 NH-1J15(9)

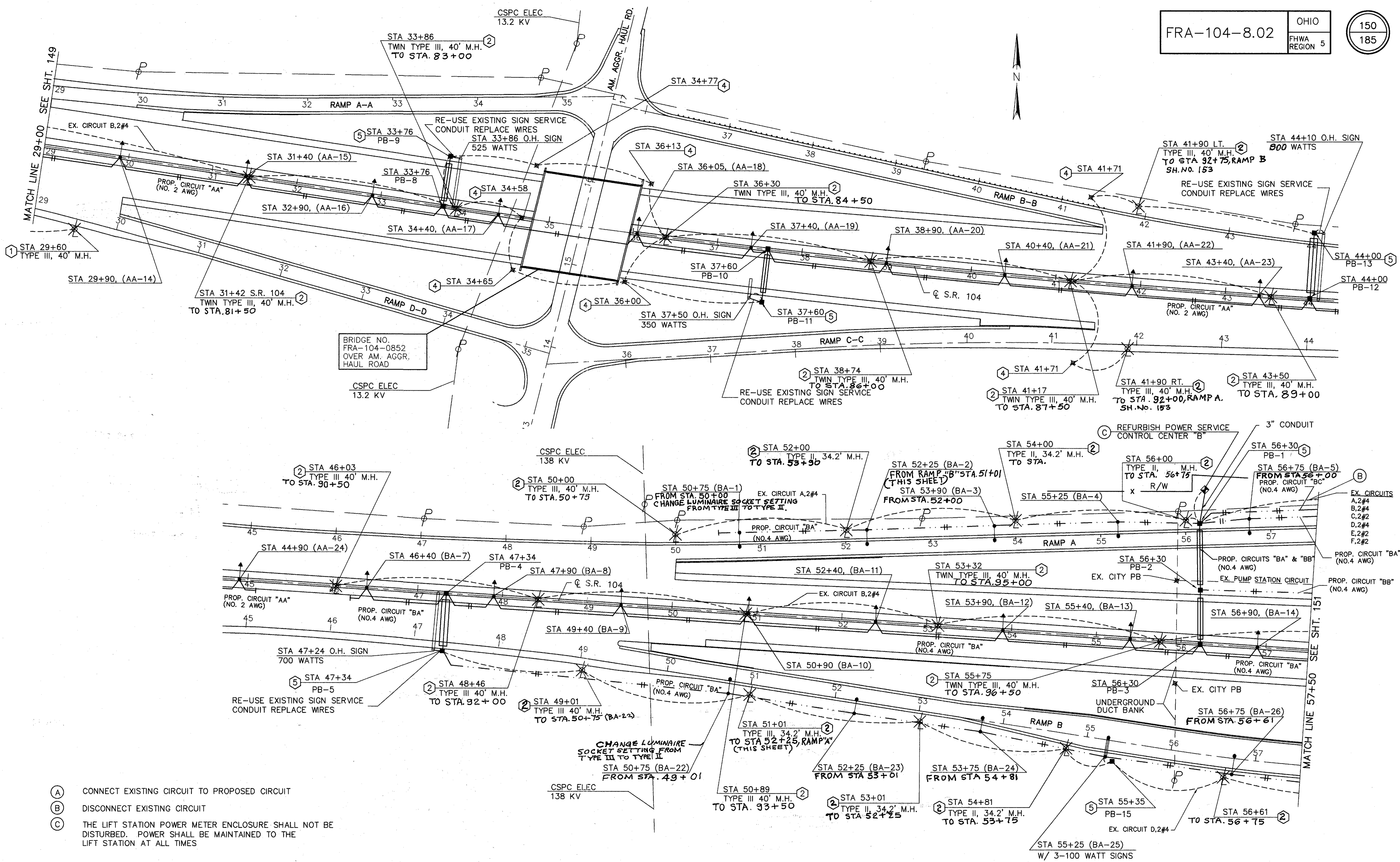
P.C.C. STA. 48+62.00 BACK =
 P.C.C. STA. 5+51.82 AHEAD



- (A) CONNECT EXISTING CIRCUIT TO PROPOSED CIRCUIT
- (B) DISCONNECT EXISTING CIRCUIT
- (C) ABANDON CIRCUIT

LIGHTING PLAN S.R.104 STA 6+40 TO STA 29+00

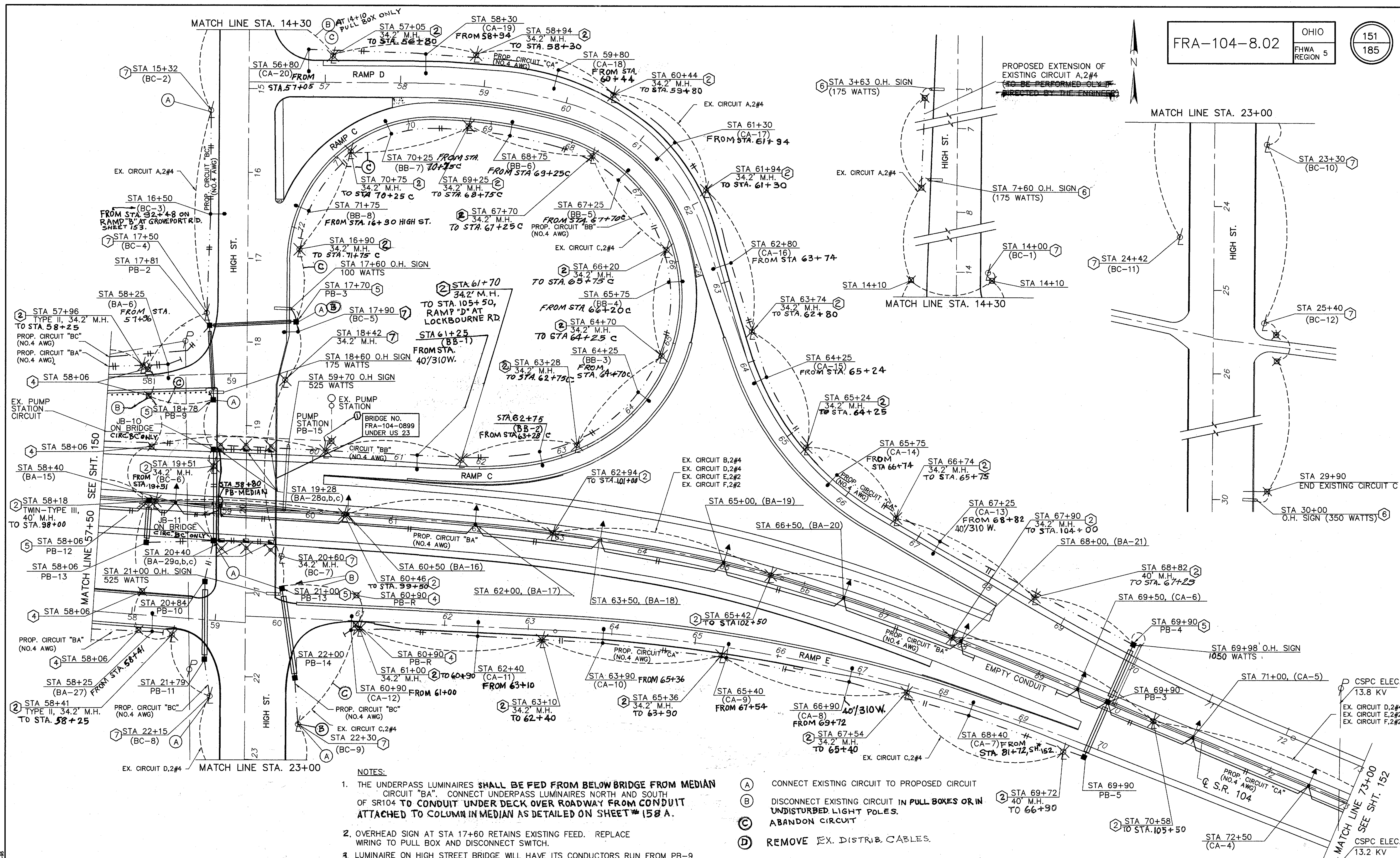
FRI 3-31-95



- (A) CONNECT EXISTING CIRCUIT TO PROPOSED CIRCUIT
- (B) DISCONNECT EXISTING CIRCUIT
- (C) THE LIFT STATION POWER METER ENCLOSURE SHALL NOT BE DISTURBED. POWER SHALL BE MAINTAINED TO THE LIFT STATION AT ALL TIMES

LIGHTING PLAN S.R.104 STA 29+00 TO STA 57+50

F42 3-31-95

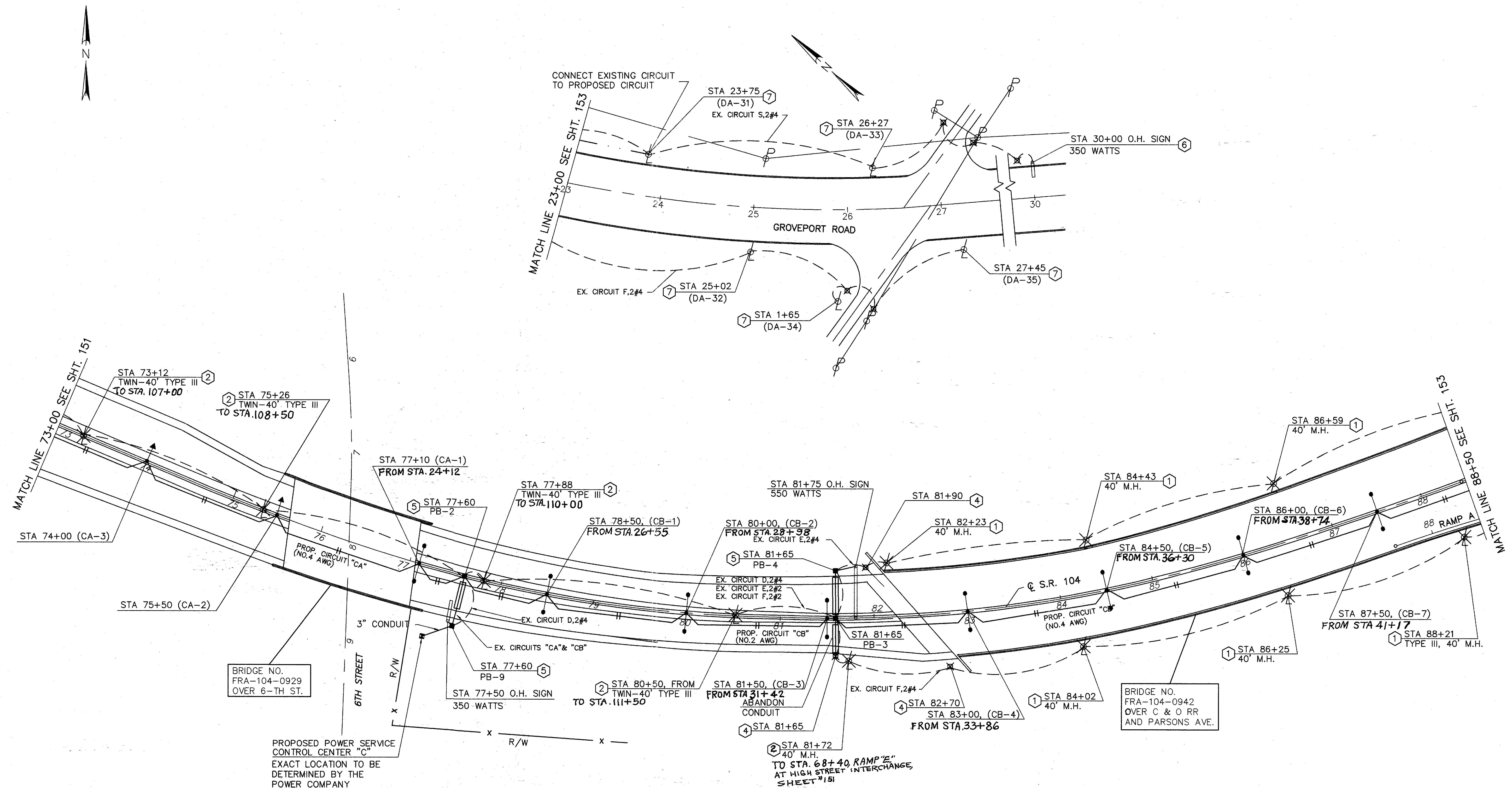


- NOTES:**
1. THE UNDERPASS LUMINAIRES SHALL BE FED FROM BELOW BRIDGE FROM MEDIAN CIRCUIT "BA". CONNECT UNDERPASS LUMINAIRES NORTH AND SOUTH OF SR104 TO CONDUIT UNDER DECK OVER ROADWAY FROM CONDUIT ATTACHED TO COLUMN IN MEDIAN AS DETAILED ON SHEET # 158 A.
 2. OVERHEAD SIGN AT STA 17+60 RETAINS EXISTING FEED. REPLACE WIRING TO PULL BOX AND DISCONNECT SWTCH.
 3. LUMINAIRE ON HIGH STREET BRIDGE WILL HAVE ITS CONDUCTORS RUN FROM PB-9 AT STA 18+78 TO PB-10 AT STA 20+84. LUMINAIRES WILL BE ENERGIZED FROM PROPOSED CIRCUIT "BC" AND LABELED ACCORDINGLY.

- (A) CONNECT EXISTING CIRCUIT TO PROPOSED CIRCUIT
- (B) DISCONNECT EXISTING CIRCUIT IN PULL BOXES OR IN UNDISTURBED LIGHT POLES.
- (C) ABANDON CIRCUIT
- (D) REMOVE EX. DISTRIB. CABLES.

LIGHTING PLAN S.R.104 STA 57+50 TO STA 73+00

FRA 2-2-85



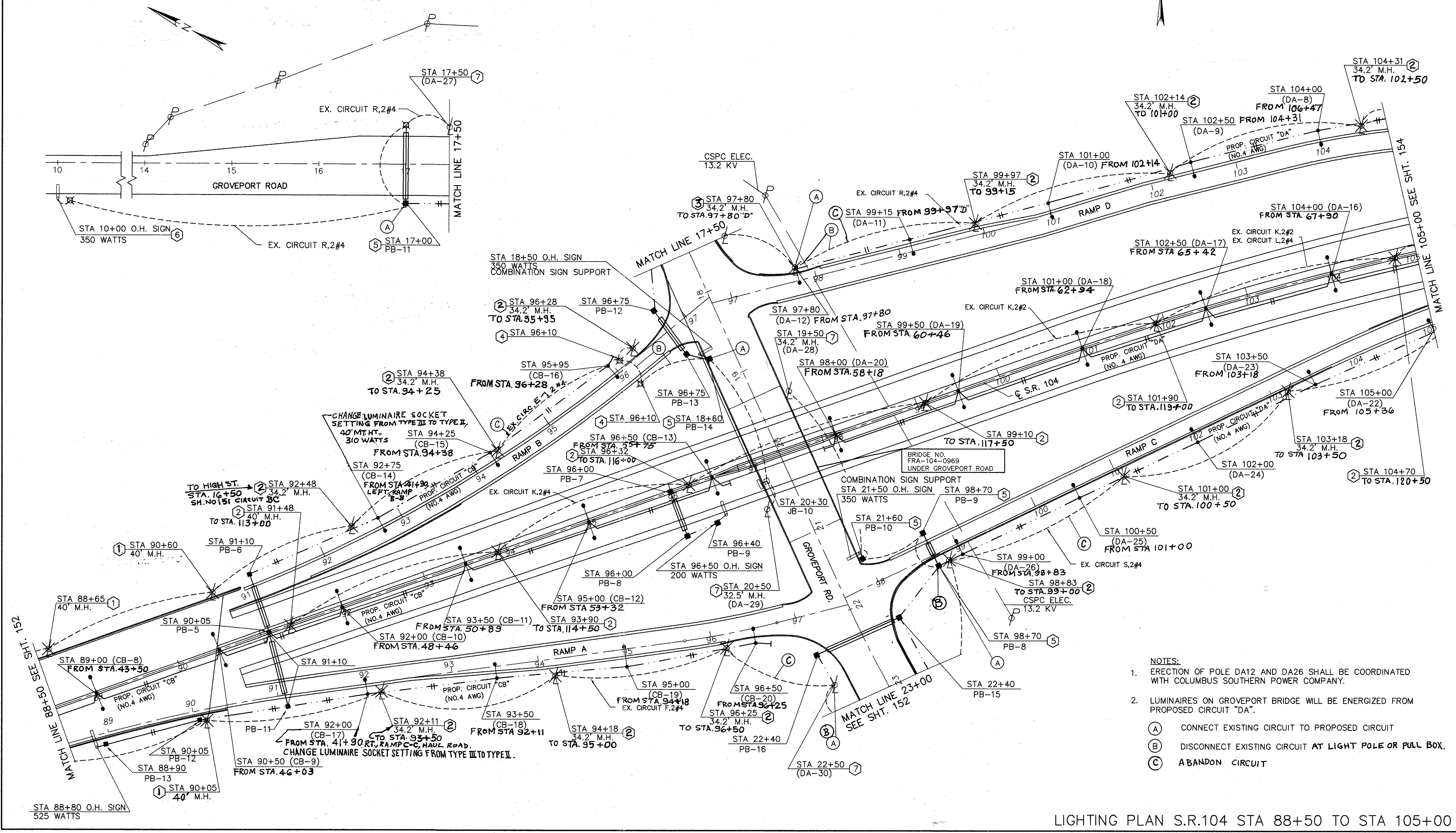
BRIDGE NO.
FRA-104-0929
OVER 6-TH ST.

BRIDGE NO.
FRA-104-0942
OVER C & O RR
AND PARSONS AVE.

PROPOSED POWER SERVICE
CONTROL CENTER "C"
EXACT LOCATION TO BE
DETERMINED BY THE
POWER COMPANY

NOTE:
REUSE EXISTING CROSSUNDER CONDUIT
AT STA 77+60. REPLACE PULL BOXES,
AS DIRECTED BY THE ENGINEER.

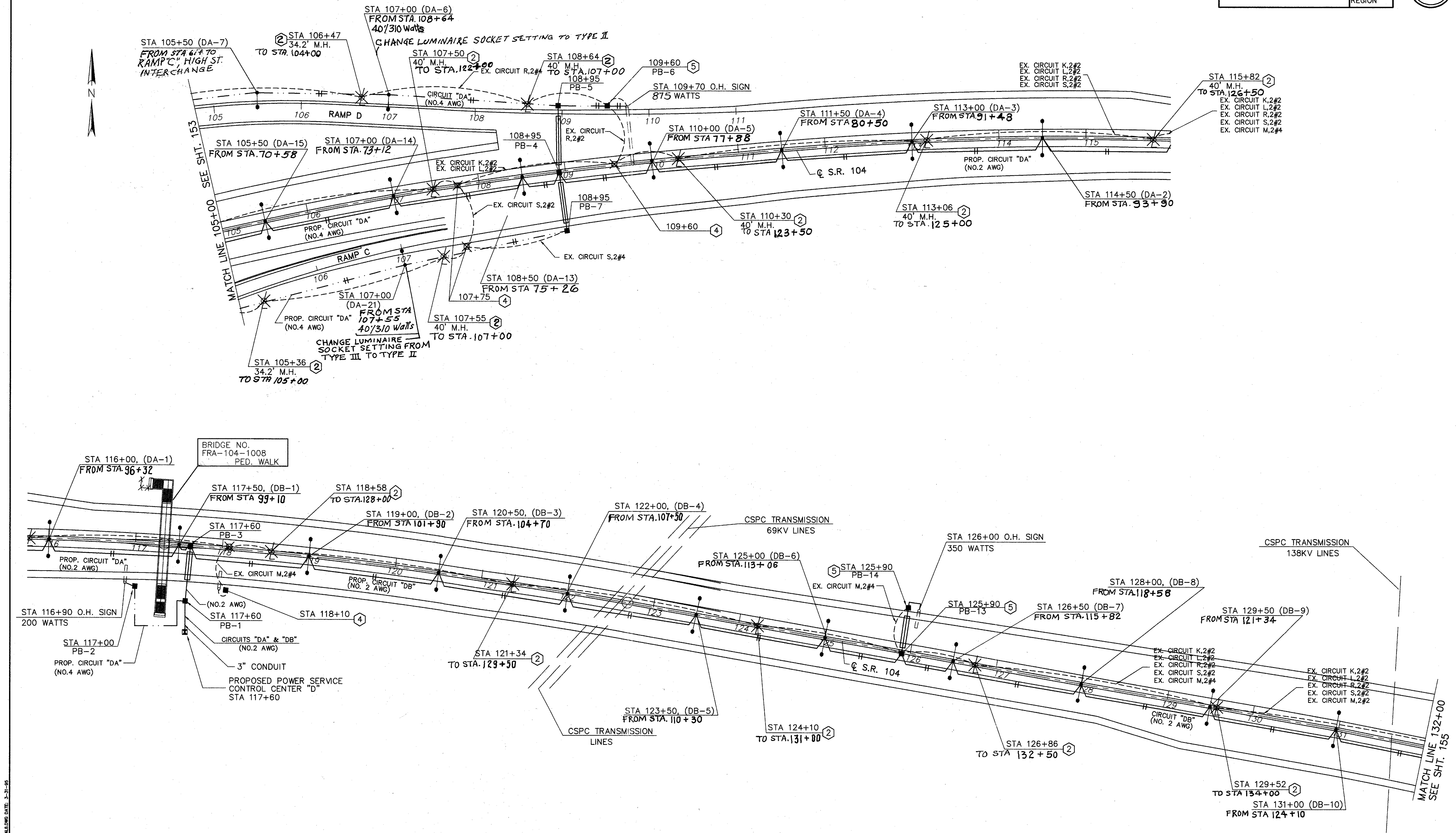
FILE 3-31-95



- NOTES:
- ERECTOR OF POLE DA12 AND DA26 SHALL BE COORDINATED WITH COLUMBUS SOUTHERN POWER COMPANY.
 - LUMINAIRES ON GROVEPORT BRIDGE WILL BE ENERGIZED FROM PROPOSED CIRCUIT "DA".
- (A) CONNECT EXISTING CIRCUIT TO PROPOSED CIRCUIT
 - (B) DISCONNECT EXISTING CIRCUIT AT LIGHT POLE OR PULL BOX.
 - (C) ABANDON CIRCUIT

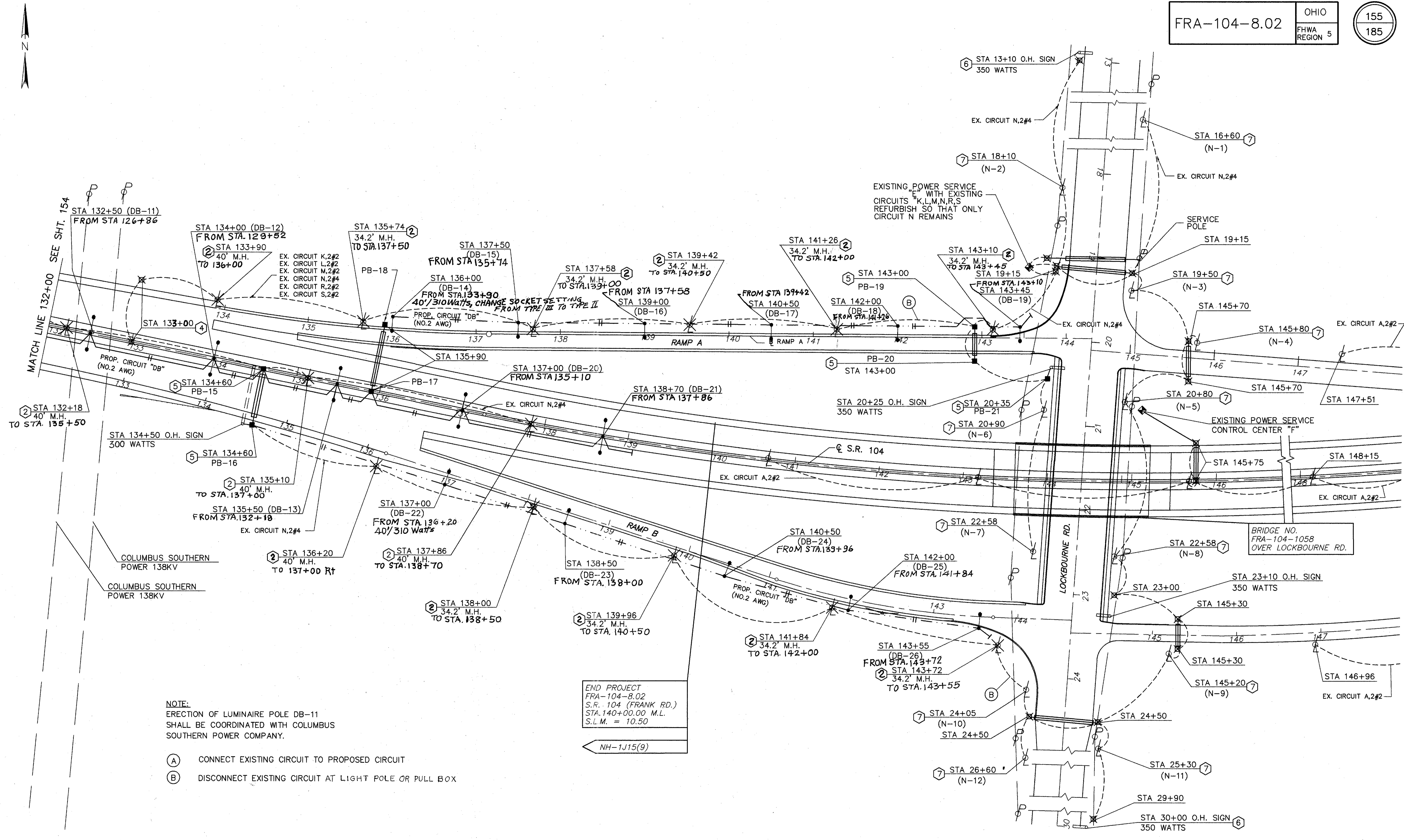
LIGHTING PLAN S.R.104 STA 88+50 TO STA 105+00

FALS 3-31-85



LIGHTING PLAN S.R.104 STA 105+00 TO STA 132+00

96-0302 PAVING DATE: 3-31-95



NOTE:
ERECTION OF LUMINAIRE POLE DB-11
SHALL BE COORDINATED WITH COLUMBUS
SOUTHERN POWER COMPANY.

- (A) CONNECT EXISTING CIRCUIT TO PROPOSED CIRCUIT
- (B) DISCONNECT EXISTING CIRCUIT AT LIGHT POLE OR PULL BOX

END PROJECT
FRA-104-8.02
S.R. 104 (FRANK RD.)
STA. 140+00.00 M.L.
S.L.M. = 10.50
NH-1J15(9)

LIGHTING PLAN S.R.104 STA 132+00 TO STA 140+00

LIGHTING SCHEMATIC PLAN

CIRCUIT "AA"

(TEMPORARY - BEFORE I-71 PROJECT)

- 5 - 700 WATT LIGHTS @ 2.0 AMPS EACH = 10.0 AMPS
- 27 - 400 WATT LIGHTS @ 1.1 AMPS EACH = 29.7 AMPS
- 1 - 175 WATT SIGN @ 0.5 AMPS = 0.5 AMPS
- 1 - 350 WATT SIGN @ 1.0 AMPS = 1.0 AMPS
- 1 - 450 WATT SIGN @ 1.3 AMPS = 1.3 AMPS
- 1 - 525 WATT SIGN @ 1.5 AMPS = 1.5 AMPS
- 1 - 800 WATT SIGN @ 2.3 AMPS = 2.3 AMPS
- 1 - 1425 WATT SIGN @ 4.1 AMPS = 4.1 AMPS

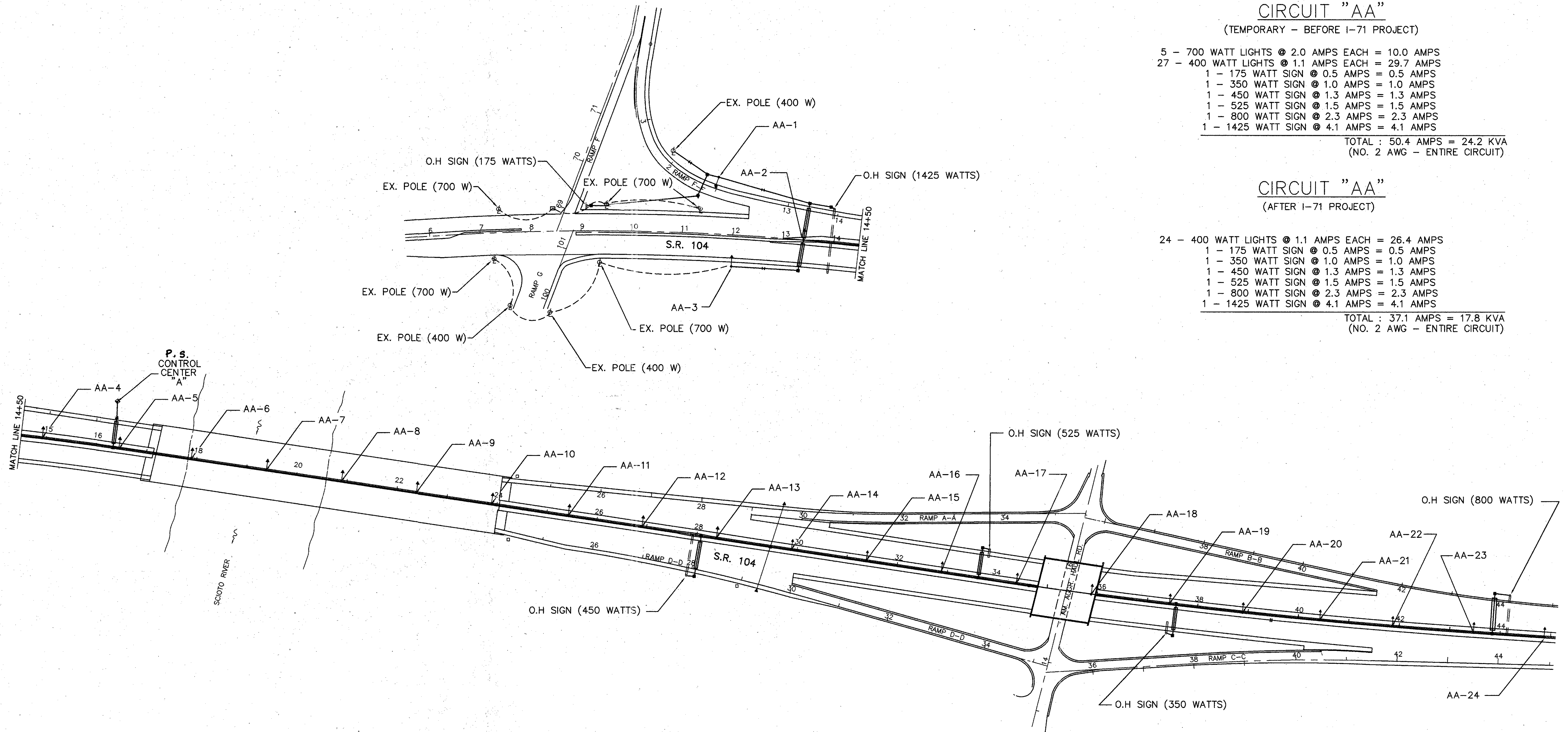
TOTAL : 50.4 AMPS = 24.2 KVA
(NO. 2 AWG - ENTIRE CIRCUIT)

CIRCUIT "AA"

(AFTER I-71 PROJECT)

- 24 - 400 WATT LIGHTS @ 1.1 AMPS EACH = 26.4 AMPS
- 1 - 175 WATT SIGN @ 0.5 AMPS = 0.5 AMPS
- 1 - 350 WATT SIGN @ 1.0 AMPS = 1.0 AMPS
- 1 - 450 WATT SIGN @ 1.3 AMPS = 1.3 AMPS
- 1 - 525 WATT SIGN @ 1.5 AMPS = 1.5 AMPS
- 1 - 800 WATT SIGN @ 2.3 AMPS = 2.3 AMPS
- 1 - 1425 WATT SIGN @ 4.1 AMPS = 4.1 AMPS

TOTAL : 37.1 AMPS = 17.8 KVA
(NO. 2 AWG - ENTIRE CIRCUIT)



LIGHTING SCHEMATIC PLAN

HIGH STREET CIRCUITS "BC"

- 12 - 200 WATT LIGHTS @ 0.6 AMPS EACH = 7.2 AMPS
 - 1 - 100 WATT SIGN @ 0.3 AMPS = 0.3 AMPS
 - 3 - 175 WATT SIGN @ 0.5 AMPS = 1.5 AMPS
 - 1 - 350 WATT SIGN @ 1.0 AMPS = 1.0 AMPS
 - 1 - 525 WATT SIGN @ 1.5 AMPS = 1.5 AMPS
- TOTAL: 11.5 AMPS = 5.5 KVA
(NO. 4 AWG - ENTIRE CIRCUIT)

CIRCUITS "BA"

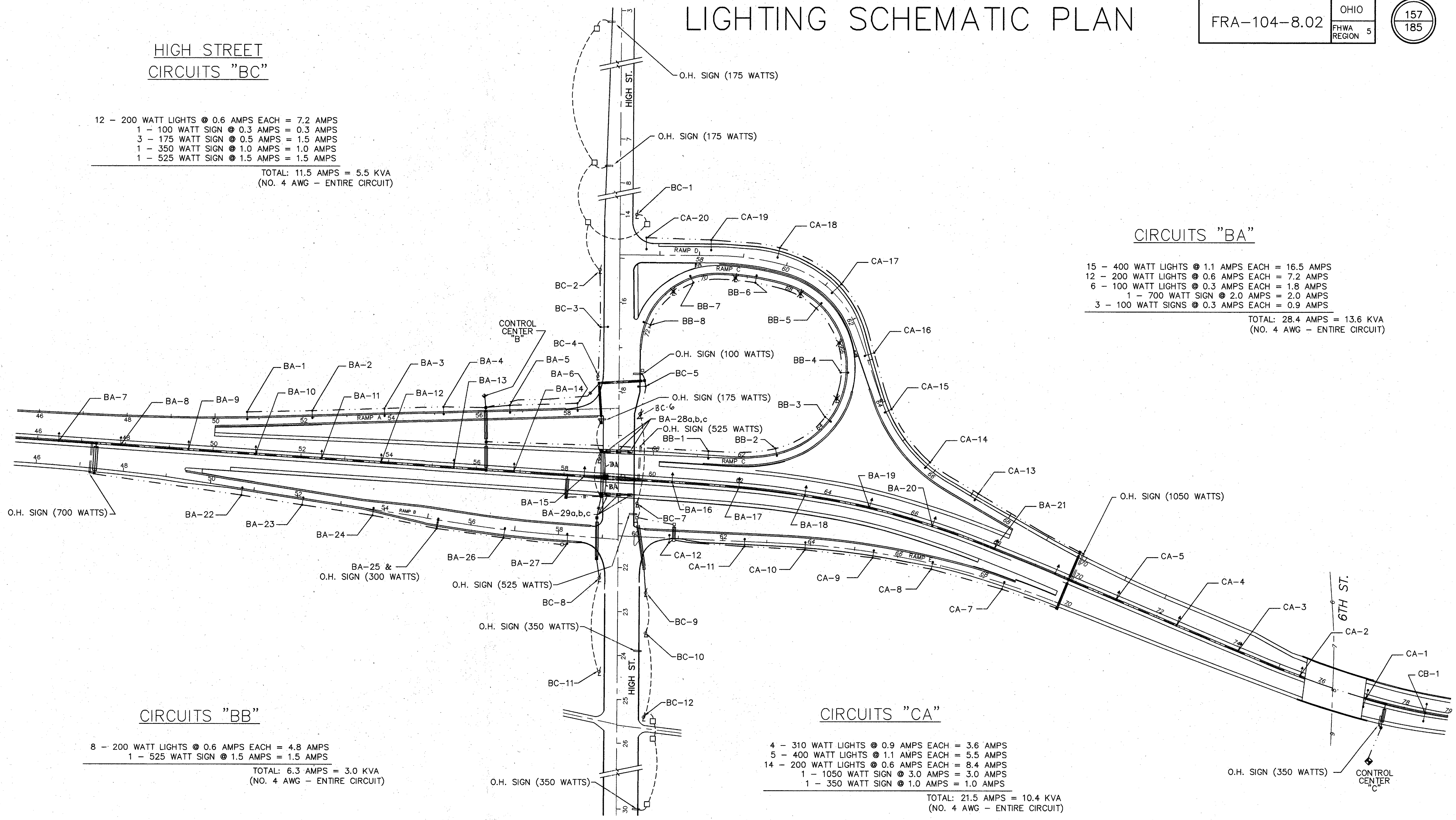
- 15 - 400 WATT LIGHTS @ 1.1 AMPS EACH = 16.5 AMPS
 - 12 - 200 WATT LIGHTS @ 0.6 AMPS EACH = 7.2 AMPS
 - 6 - 100 WATT LIGHTS @ 0.3 AMPS EACH = 1.8 AMPS
 - 1 - 700 WATT SIGN @ 2.0 AMPS = 2.0 AMPS
 - 3 - 100 WATT SIGNS @ 0.3 AMPS EACH = 0.9 AMPS
- TOTAL: 28.4 AMPS = 13.6 KVA
(NO. 4 AWG - ENTIRE CIRCUIT)

CIRCUITS "BB"

- 8 - 200 WATT LIGHTS @ 0.6 AMPS EACH = 4.8 AMPS
 - 1 - 525 WATT SIGN @ 1.5 AMPS = 1.5 AMPS
- TOTAL: 6.3 AMPS = 3.0 KVA
(NO. 4 AWG - ENTIRE CIRCUIT)

CIRCUITS "CA"

- 4 - 310 WATT LIGHTS @ 0.9 AMPS EACH = 3.6 AMPS
 - 5 - 400 WATT LIGHTS @ 1.1 AMPS EACH = 5.5 AMPS
 - 14 - 200 WATT LIGHTS @ 0.6 AMPS EACH = 8.4 AMPS
 - 1 - 1050 WATT SIGN @ 3.0 AMPS = 3.0 AMPS
 - 1 - 350 WATT SIGN @ 1.0 AMPS = 1.0 AMPS
- TOTAL: 21.5 AMPS = 10.4 KVA
(NO. 4 AWG - ENTIRE CIRCUIT)



PAGE 4-3-85

LIGHTING SCHEMATIC PLAN

FRA-104-8.02

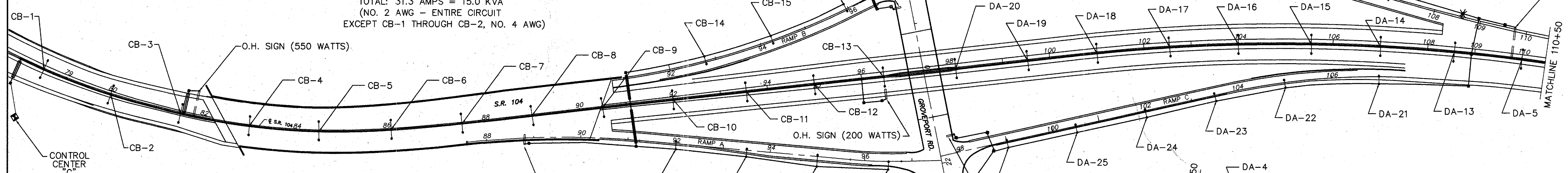
OHIO
FHWA REGION 5

158
185

CIRCUIT "CB"

- 26 - 310 WATT LIGHTS @ 0.9 AMPS EACH = 23.4 AMPS
- 7 - 200 WATT LIGHTS @ 0.6 AMPS EACH = 4.2 AMPS
- 1 - 200 WATT SIGN @ 0.6 AMPS EACH = 0.6 AMPS
- 1 - 525 WATT SIGN @ 1.5 AMPS = 1.5 AMPS
- 1 - 550 WATT SIGN @ 1.6 AMPS = 1.6 AMPS

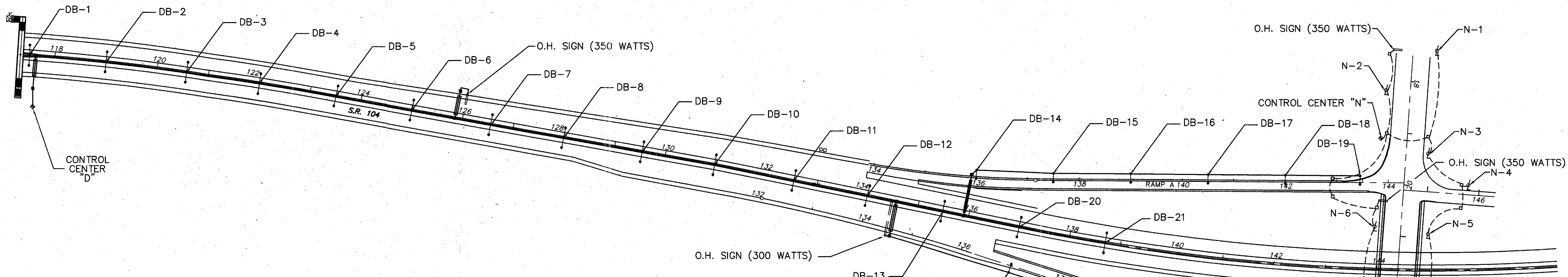
TOTAL: 31.3 AMPS = 15.0 KVA
(NO. 2 AWG - ENTIRE CIRCUIT EXCEPT CB-1 THROUGH CB-2, NO. 4 AWG)



CIRCUIT "DA"

- 26 - 310 WATT LIGHTS @ 0.9 AMPS EACH = 23.4 AMPS
- 22 - 200 WATT LIGHTS @ 0.6 AMPS EACH = 13.2 AMPS
- 1 - 200 WATT SIGN @ 0.6 AMPS = 0.6 AMPS
- 4 - 350 WATT SIGN @ 1.0 AMPS = 4.0 AMPS
- 1 - 875 WATT SIGN @ 2.5 AMPS = 2.5 AMPS

TOTAL: 43.7 AMPS = 21.0 KVA
(NO. 2 AWG - ENTIRE CIRCUIT EXCEPT FOR DA-1 THRU DA-5, NO. 4 AWG)



CIRCUIT "DB"

- 30 - 310 WATT LIGHTS @ 0.9 AMPS EACH = 27.0 AMPS
- 11 - 200 WATT LIGHTS @ 0.6 AMPS EACH = 6.6 AMPS
- 1 - 350 WATT SIGN @ 1.0 AMPS EACH = 1.0 AMPS
- 1 - 300 WATT SIGN @ 0.9 AMPS = 0.9 AMPS

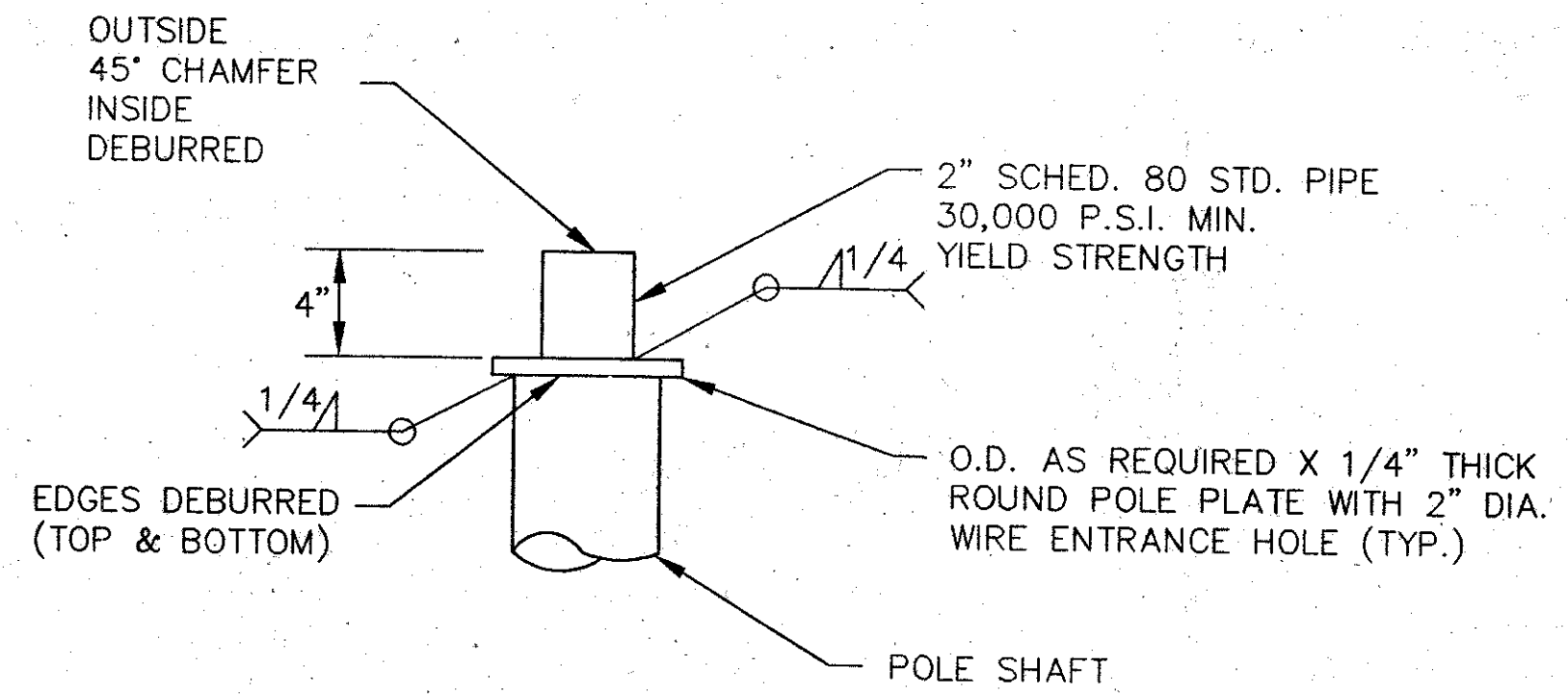
TOTAL: 35.5 AMPS = 17.0 KVA
(NO. 2 AWG - ENTIRE CIRCUIT)

CIRCUIT "N"

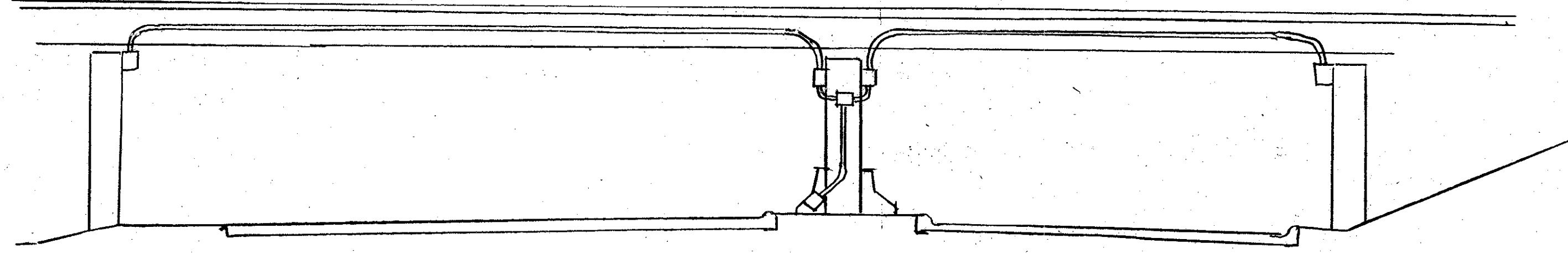
- 12 - 200 WATT LIGHTS @ 0.6 AMPS EACH = 7.2 AMPS
- 4 - 350 WATT SIGNS @ 1.0 AMPS EACH = 4.0 AMPS

TOTAL: 11.2 AMPS = 5.4 KVA
(NO. 4 AWG - ENTIRE CIRCUIT)

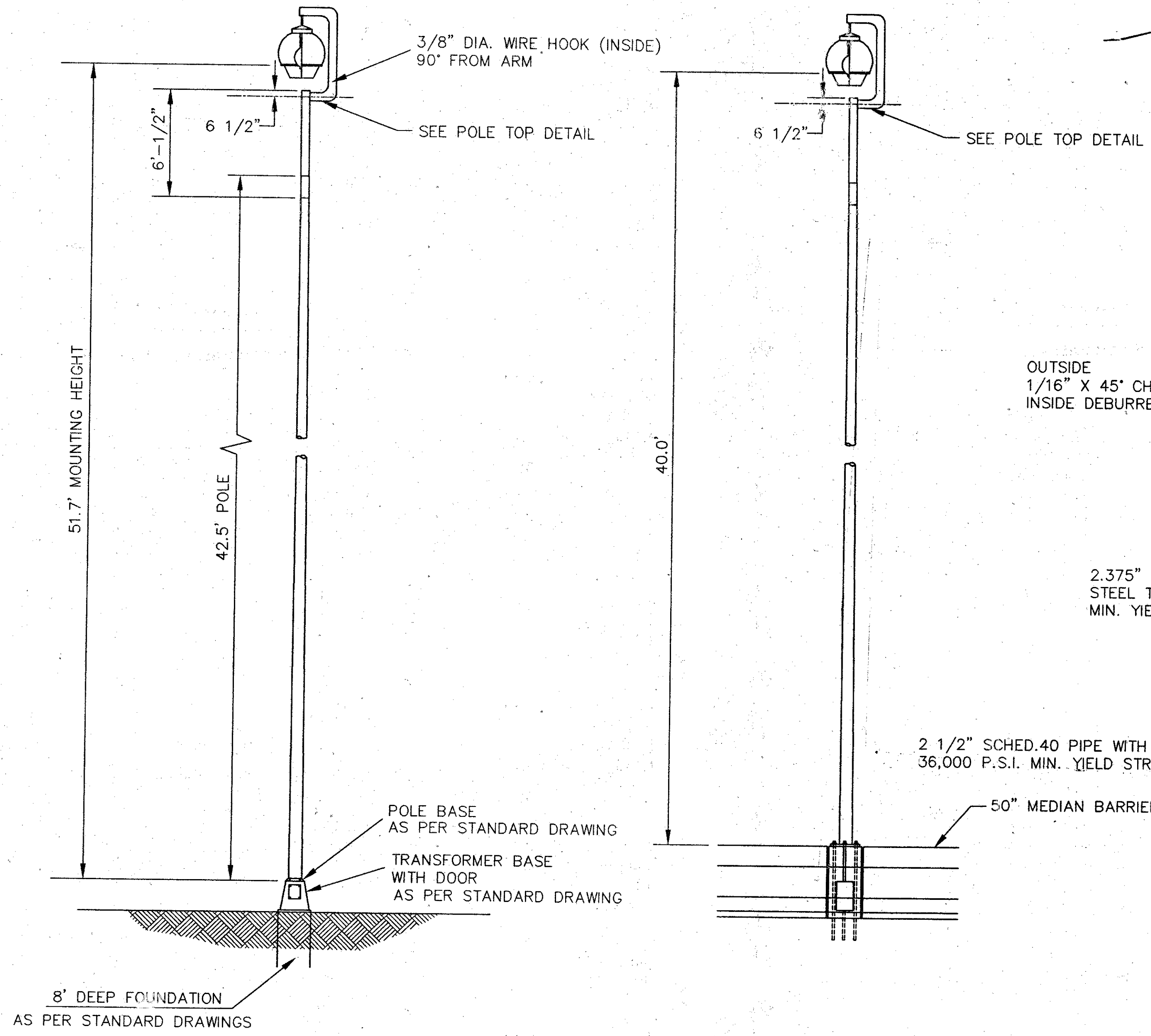
LIGHTING SCHEMATIC PLAN



POLE TOP DETAIL

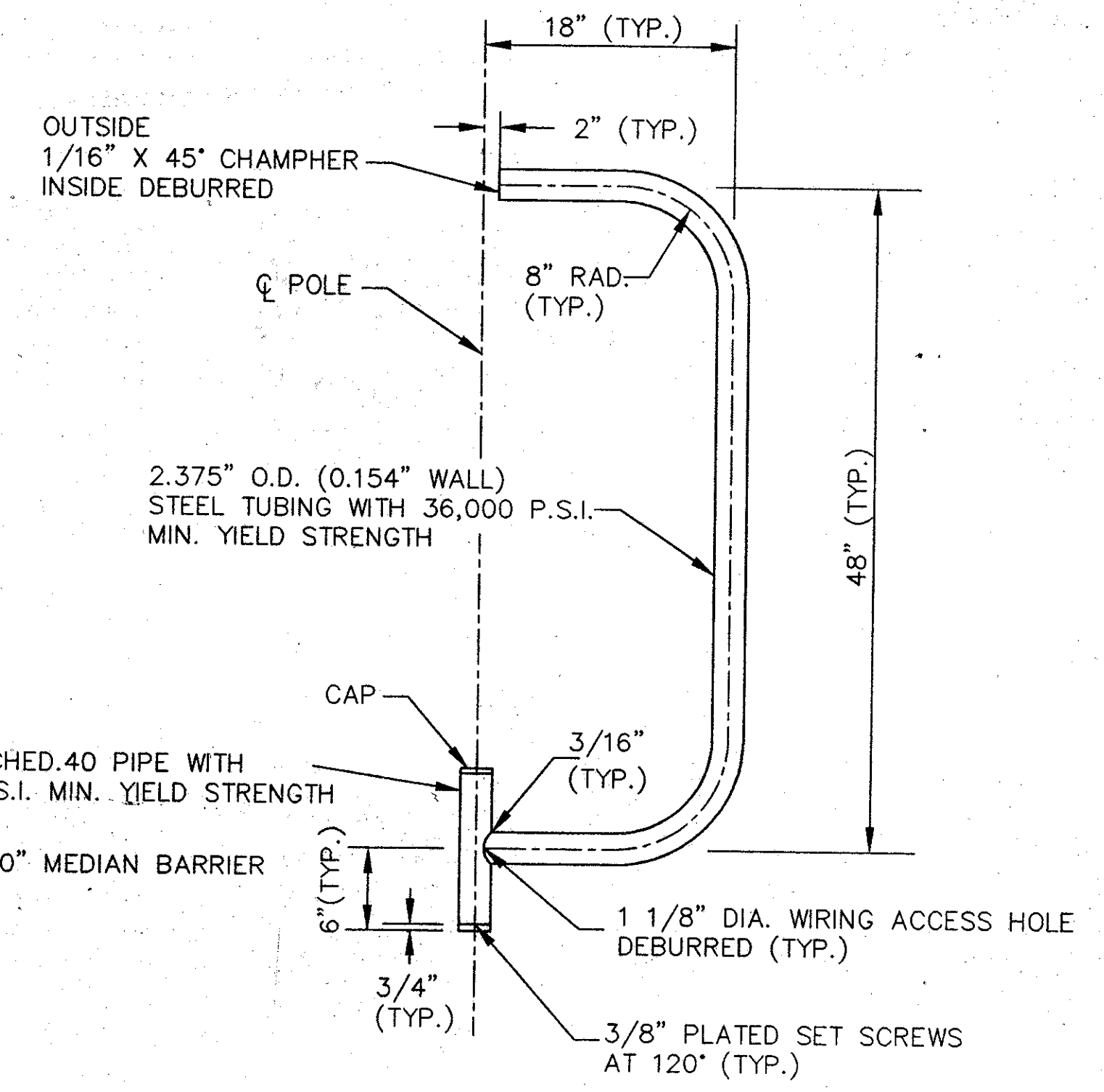


UNDERPASS CONDUIT FROM MEDIAN PULL BOX
 BRIDGE UNDER HIGH STREET

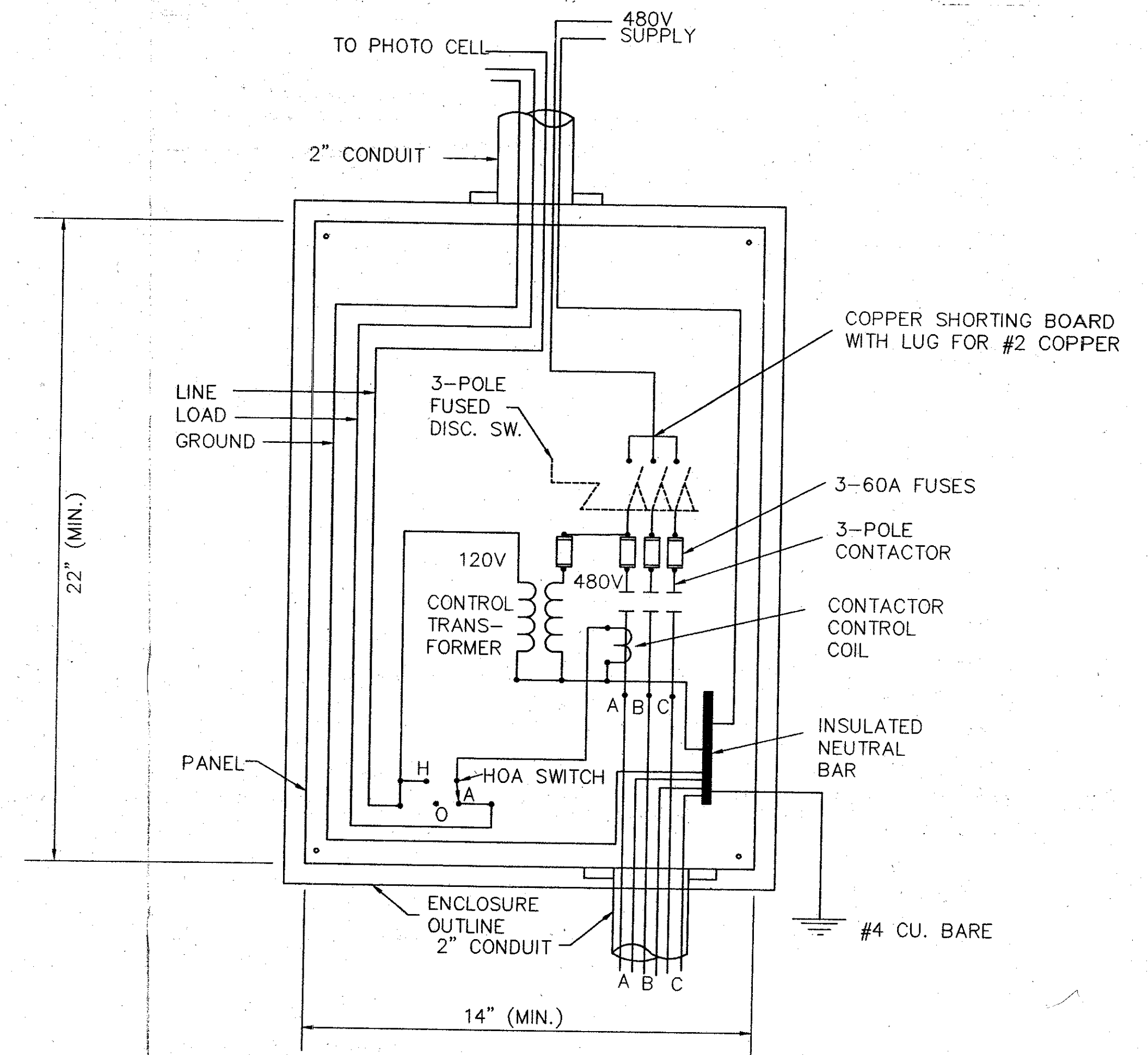


LIGHT POLE, LOW MAST,
 DESIGN ATON 51.7, AS PER PLAN

MEDIAN LIGHT POLE, LOW MAST
 DESIGN AON 40.0, AS PER PLAN
 (TYPICAL)



ARM DETAIL



STREET LIGHT CONTROLLER
 WIRING DIAGRAM 480 VOLTS

FALDET 2-06-85

REFERENCE SHALL BE MADE TO THE FOLLOWING STANDARD DRAWINGS:

NUMBER	DATE
BR-1	5-29-79
GR-3.1	5-06-91
GR-3.2	5-06-91
RB-1-55	2-02-59
SD-1-69	6-12-69

AND TO THE SUPPLEMENTAL SPECIFICATIONS:

NUMBER	DATE	TITLE
933		QUICK-SETTING CONCRETE MORTAR

DESIGN SPECIFICATIONS

THE REPAIRS TO THE STRUCTURES SHALL CONFORM TO THE "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1989, INCLUDING THE 1990 AND 1991 INTERIM SPECIFICATIONS AND THE OHIO "SUPPLEMENT" TO THESE SPECIFICATIONS.

DESIGN DATA

CONCRETE CLASS C-COMPRESSIVE STRENGTH 4000 PSI AFTER 28 DAYS
CONCRETE CLASS S-COMPRESSIVE STRENGTH 4500 PSI AFTER 28 DAYS
STRUCTURAL STEEL-ASTM A36 UNIT STRESS 20000 PSI
REINFORCING STEEL-ASTM A615,A616 OR A617 GRADE 60 MINIMUM YIELD STRENGTH 60000 PSI

SITE WORK

EXISTING STRUCTURE VERIFICATION: DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND/OR FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05 AND 105.02.

CONTRACT BID PRICES ARE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

EXISTING BRIDGE PLANS MAY BE INSPECTED AT THE BUREAU OF BRIDGES AND STRUCTURAL DESIGN IN COLUMBUS, OHIO OR IN THE DISTRICT 6 OFFICE IN DELAWARE, OHIO.

BRIDGE IDENTIFICATION SIGNS

THE EXISTING BRIDGE IDENTIFICATION SIGNS SHALL BE REMOVED FOR RE-ERECTION BY THE CONTRACTOR. AFTER THE PROPOSED BRIDGE RAILING HAS BEEN CONSTRUCTED, THE CONTRACTOR SHALL ATTACH THE SALVAGED SIGNS TO THE RAILING IN A MANNER ACCEPTABLE TO AND AT LOCATIONS DETERMINED BY THE ENGINEER. PAYMENT FOR ALL LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO COMPLETE THIS ITEM SHALL BE INCLUDED IN THE CONTRACT PRICE FOR ITEM 517, RAILING FACED, AS PER PLAN.

REMOVAL AND CONSTRUCTION

THE CONTRACTOR SHALL EXERCISE SUFFICIENT CARE IN REMOVING EXISTING MATERIALS TO PREVENT ANY DAMAGE TO PARTS OF THE STRUCTURE WHICH WILL REMAIN IN PLACE. ANY PORTION OF THE STRUCTURE DAMAGED DURING REMOVAL AND/OR CONSTRUCTION AS A RESULT OF THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT HIS OWN EXPENSE AND TO THE SATISFACTION OF THE ENGINEER.

EXISTING REINFORCING STEEL

WHERE CONCRETE IS BEING REMOVED AND REPLACED, THE EXISTING REINFORCING STEEL SHALL REMAIN AND BE TRIMMED TO PROVIDE THE REQUIRED CLEARANCE. ANY EXISTING REBARS DESIGNED TO BE TRIMMED AND/OR INCORPORATED INTO THE NEW WORK AND WHICH ARE MADE UNUSABLE BY THE CONTRACTOR'S CONCRETE REMOVAL OPERATIONS SHALL BE REPLACED WITH NEW STEEL AT HIS COST.

ITEM 517 - RAILING FACED, AS PER PLAN

THE CONTRACTOR SHALL REMOVE AND DISPOSE OF THE EXISTING ALUMINUM RAILING. THE CONCRETE SAFETY CURB SHALL BE REMOVED, HOLES, 6" DEEP (MIN.), SHALL BE DRILLED AT THE LOCATIONS AS SHOWN ON THE DRAWINGS.

DOWEL HOLES AND REINFORCING STEEL: DOWEL HOLES SHALL BE DRILLED WHERE SHOWN IN THE PLANS. REINFORCING STEEL SHALL BE INSTALLED USING EPOXY GROUT PER CMS 510 (CMS 705.20). ALL EXISTING REINFORCING STEEL BARS IN THE AREA OF THE DOWEL HOLE SHALL BE LOCATED WITH THE AID OF A REINFORCING STEEL BAR LOCATOR (PACHOMETER) PRIOR TO DRILLING THE HOLES. IF AN EXISTING BAR IS ENCOUNTERED AT THE SAME LOCATION AS A PROPOSED DOWEL HOLE, THE DOWEL HOLE SHALL BE TO EITHER SIDE OF THE EXISTING BAR. ALL REINFORCING STEEL, DOWEL HOLES AND GROUTING SHALL BE INCLUDED WITH THIS ITEM 517 FOR PAYMENT.

SURFACE PREPARATION: THE PARAPET SURFACE NEXT TO THE REFACING SHALL BE THOROUGHLY CLEANED BY ABRASIVE BLASTING FOLLOWED BY AN AIR BLAST. USE OF HAND TOOLS MAY BE NECESSARY TO REMOVE SCALE FROM ANY EXPOSED REINFORCING STEEL. THE SURFACE SHALL BE MADE FREE FROM SPALLS, LAITANCE AND ALL TRACES OF FOREIGN MATERIAL. DETERGENT CLEANING SHALL PRECEDE BLAST CLEANING AS NECESSARY TO ENSURE REMOVAL OF CONTAMINANTS THAT ARE DETRIMENTAL TO ACHIEVING AN ADEQUATE BOND.

MATERIALS: REINFORCING STEEL - 509, GRADE 60, EPOXY COATED; CONCRETE: 511 CLASS S

SHRINKAGE CRACK CONTROL JOINTS: SHRINKAGE CONTROL JOINTS SHALL BE PLACED IN THE NEW CONCRETE AT THE SAME LOCATION AS THE EXISTING DEFLECTION JOINTS AND SHALL BE MADE AT RIGHT ANGLE TO THE DECK BY SAWING TO MATCH ALIGNMENT OF EXISTING DEFLECTION JOINTS. THE SAW CUT SHALL BE MADE IN THE COMPLETE CIRCUMFERENCE OF THE PARAPET, STARTING AND ENDING AT THE ELEVATION OF THE CONCRETE DECK. THE DEPTH OF THE SAWCUT SHALL BE ONE INCH. THE SAWING SHALL BE DONE NO MORE THAN 48 HOURS AFTER THE CONCRETE PLACEMENT. THE USE OF AN EDGE GUIDE, FENCE OR JIG IS REQUIRED TO ENSURE THAT THE CUT IS STRAIGHT, TRUE AND ALIGNED ON ALL FACES OF THE PARAPET. THE JOINT SHALL BE THE WIDTH OF THE SAW BLADE, NOT TO EXCEED ONE-QUARTER OF AN INCH. THE SAWCUT SHALL BE FILLED WITH A CAULKING MATERIAL CONFORMING TO FEDERAL SPECIFICATION TT-S-00227E.

METHOD OF MEASUREMENT: THE QUANTITY SHALL BE THE ACTUAL LENGTH OF RAILING FACED AS 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 SHRINKAGE CONTROL JOINTS COMPLETE AND IN PLACE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR:

ITEM	UNIT	DESCRIPTION
517	LIN. FT.	RAILING FACED, AS PER PLAN

ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN.

THIS ITEM SHALL BE USED AS DIRECTED BY THE ENGINEER TO REPAIR DAMAGED CONCRETE AREAS. ALL SURFACES TO BE PATCHED, AND THE EXPOSED REINFORCING STEEL WITHIN SHALL BE THOROUGHLY CLEANED BY SANDBLASTING PRIOR TO THE CLEANING SPECIFIED BY 519.04. CLEANING SHALL PRECEDE APPLICATION OF THE PATCHING MATERIAL OR ERECTION OF THE FORMS BY NOT MORE THAN 24 HOURS.

PAYMENT FOR ALL THE ABOVE SHALL BE AT THE UNIT PRICE BID PER SQUARE FOOT FOR ITEM 519 PATCHING STRUCTURES, AS PER PLAN.

BRIDGE MEDIAN BARRIER MODIFICATION

THE TOP PORTION OF THE EXISTING CONCRETE BRIDGE MEDIAN BARRIER SHALL BE REMOVED BY SAWING AT THE CONSTRUCTION JOINT AS SHOWN ON THE PLANS. DOWELS SHALL BE INSTALLED AT THE LOCATIONS SPECIFIED IN THE PLANS AS DESCRIBED IN ITEM 517 - RAILING FACED, AS PER PLAN. DEFLECTION JOINTS SHALL BE FORMED AND MAY NOT BE SAWCUT INTO THE NEW PORTION OF THE BARRIER. FOR DETAILS AND NOTES CONCERNING THE DEFLECTION JOINTS SEE STANDARD DRAWING BR-1. THE WORK SHALL BE PAID FOR UNDER THE FOLLOWING ITEMS:

202	PORTIONS OF STRUCTURES REMOVED, AS PER PLAN
509	EPOXY COATED REINFORCING STEEL, GRADE 60, PER POUND
510	DOWEL HOLES, AS PER PLAN, EACH
511	CLASS S CONCRETE, SUPERSTRUCTURE, PER CUBIC YARD
SPEC.	SEALING OF CONCRETE SURFACES (EPOXY), PER SQUARE YARD

ITEM 516 - HORIZONTAL EXTENSION OF STRUCTURAL EXPANSION JOINTS

THIS ITEM SHALL CONSIST OF ALL WORK TO EXTEND THE EXISTING END DAM TO THE PROPOSED CURB LINE ALSO INCLUDED SHALL BE THE REMOVAL AND REPLACEMENT OF THE CURB PLATES. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL STEEL BARS, PLATES AND ANGLES. REMOVE AND REPLACE CONCRETE AS SHOWN ON THE PLANS, AND PROVIDE ALL LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO COMPLETE THIS WORK.

ITEM 510 - DOWEL HOLES, AS PER PLAN

THIS ITEM SHALL INCLUDE THE DRILLING OF HOLES INTO CONCRETE OR MASONRY AND THE FURNISHING AND PLACING OF GROUT INTO HOLES.

1-1/8" DIAMETER HOLES, 6 IN. DEEP (MIN.) SHALL BE DRILLED AT 18 IN. C/C OR AS SHOWN ON THE PLANS. THE HOLES SHALL BE THOROUGHLY CLEANED OF ALL DUST AND DELETERIOUS MATERIAL.

ALL DOWEL HOLES SHALL BE GROUTED AS PER ^{510 USING} ~~ITEM 510~~ ANCHORING WITH POLYESTER, VINYLESTER ^{OR} EPOXY MORTARS. PER 705.20

PAYMENT FOR ALL OF THE ABOVE SHALL BE AT THE UNIT PRICE BID PER EACH FOR ITEM 510, DOWEL HOLES, AS PER PLAN, WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.

MAINTENANCE OF TRAFFIC

REFER TO THE ROADWAY MAINTENANCE OF TRAFFIC NOTES AND DETAILS OF THESE PLANS FOR PROVISIONS AFFECTING THE TRAFFIC TO BE MAINTAINED DURING CONSTRUCTION.

A SAFETY NET OR PLATFORM SHALL BE REQUIRED TO PROTECT THE ROADWAYS AND THE SCIOTO RIVER FROM FALLING DEBRIS DURING RETROFITTING OF EXISTING CONCRETE PARAPETS. THE DESIGN OF THE NET OR PLATFORM SHALL CONFORM WITH OSHA REQUIREMENTS AND HAVE APPROVAL FROM THE ODOT BRIDGE BUREAU AND SHALL REMAIN IN PLACE UNTIL THE WORK HAS BEEN COMPLETED. THE EXISTING VERTICAL CLEARANCE OVER THE FREEWAY SHALL BE MAINTAINED AT ALL TIMES.

COOPERATION WITH RAILROADS

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

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

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

RAILROAD PROTECTIVE LIABILITY INSURANCE

THE CONTRACTOR SHALL FURNISH EVIDENCE TO THE HIGHWAY DEPARTMENT THAT, WITH RESPECT TO THE OPERATIONS HE OR ANY OF HIS SUB-CONTRACTORS PERFORM, HE HAS PROVIDED FOR AND IN BEHALF OF THE CSX TRANSPORTATION INC., CASUALTY INSURANCE/RISK MANAGEMENT, 500 WATER STREET, J-270 JACKSONVILLE, FLORIDA 32202 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 OCCURRENCE AND SUBJECT TO THAT LIMIT PER OCCURRENCE, 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 DESCRIBED BY THE FEDERAL HIGHWAY ADMINISTRATION IN FHPM: 6-6-2-2 AS AMENDED.

THE INSURANCE HEREINBEFORE SPECIFIED SHALL BE WITH AN ACCEPTABLE INSURANCE COMPANY AUTHORIZED TO DO BUSINESS IN THE STATE OF OHIO, AND SHALL BE TAKEN OUT BEFORE EXECUTION OF THE CONTRACT BY THE DIRECTOR 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 BY THE STATE. SUCH POLICY SHALL INCLUDE A THIRTY (30) DAYS CANCELING NOTICE.

"EVIDENCE" AS ABOVE SET FORTH SHALL CONSIST OF FURNISHING THE DIRECTOR OF TRANSPORTATION ONE (1) ORIGINAL AND TWO (2) CERTIFIED COPIES OF THE POLICY.

PAYMENT WILL BE MADE AT THE CONTRACT PRICE BID UNDER:

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

RESOURCE INTERNATIONAL INC. 1/27
581 WYVERN DRIVE
WESTERVILLE, OHIO 43081
(614) 886-1986

STRUCTURE GENERAL NOTES

FRANKLIN COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SSK	ARS		JRA	JSB	8/94	

FOR INFORMATION ONLY


ESTIMATED QUANTITIES

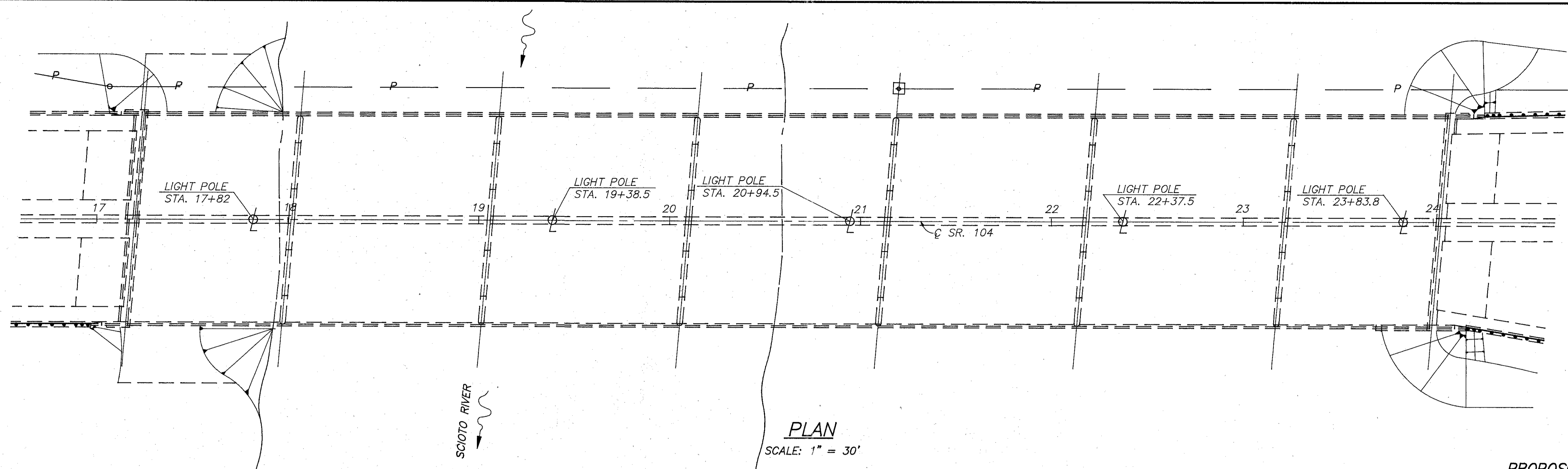
ITEM	ITEM EXTENSION	GRAND TOTAL	UNIT	DESCRIPTION	BRIDGE NUMBER FRA-104-							
					0818	0852	0899	0929	0942	0969	1008	
202	11201	LUMP	SUM	PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	LUMP	LUMP		LUMP	LUMP			
203	12000	200	C.Y.	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION					200			
203	20000	36	C.Y.	EMBANKMENT		36						
203	40001	200	C.Y.	BORROW, AS PER PLAN					200			
509	15830	63191	LB.	EPOXY COATED REINFORCING STEEL, GRADE 60	22490	4074		4920	31707			
510	11101	4600	EACH	DOWEL HOLE, AS PER PLAN	1825	350		375	2050			
511	34400	216	C.Y.	CLASS S CONCRETE, SUPER STRUCTURE	83	15		19	99			
SPECIAL	51267502	3138	S.Y.	SEALING OF CONCRETE SURFACES (EPOXY) (SPN) *	53	320		455	2310			
513	21001	22	EACH	TRIMMING OF BEAM END, AS PER PLAN			22					
601	21001	195	S.Y.	CONCRETE SLOPE PROTECTION, AS PER PLAN				100	95			
601	32100	225	C.Y.	ROCK CHANNEL PROTECTION, TYPE B WITH FILTER	225							
601	37501	42	L.F.	PAVED GUTTER, TYPE 1-2, AS PER PLAN		42						
SPECIAL	51319000	LUMP	SUM	HEAT STRAIGHTENING OF DAMAGED STRUCTURAL STEEL (SPN)				LUMP				
815	00050	231500	S.F.	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU				23,600	18,100	166,000	21,500	2,300
815	00056	231500	S.F.	FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU				23,600	18,100	166,000	21,500	2,300
815	00060	231500	S.F.	FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COAT, SYSTEM OZEU				23,600	18,100	166,000	21,500	2,300
815	00066	231500	S.F.	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU				23,600	18,100	166,000	21,500	2,300
516	11801	147	L.F.	VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINT, AS PER PLAN							147	
516	11901	2	L.F.	HORIZONTAL EXTENSION OF STRUCTURAL EXPANSION JOINT, AS PER PLAN					2			
516	46701	31	EACH	RESET BEARING, AS PER PLAN			22				9	
517	76201	2067	L.F.	RAILING FACED, AS PER PLAN	56	56		330	1625			
518	12801	120	EACH	SCUPPER MODIFICATION, AS PER PLAN	64			14	42			
519	11101	110	S.F.	PATCHING CONCRETE STRUCTURE, AS PER PLAN	10	10		10	20			60
SPECIAL	51911550	10	S.Y.	PATCHING CONCRETE BRIDGE DECKS WITH QSC		10						
SPECIAL	51912600	5	L.F.	CONCRETE REPAIR BY EPOXY INJECTION (SPN)		5						
SPECIAL	51922000	1600	S.Y.	MICRO-SILICA MODIFIED CONCRETE OVERLAY (1.25" THICK) (SPN)						1600		
SPECIAL	51922100	60	C.Y.	MICRO-SILICA MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS) (SPN)						60		
SPECIAL	51922300	LUMP	SUM	TEST SLAB						LUMP		
607	23101	370	L.F.	FENCE REBUILT, AS PER PLAN								370
625	10500	10	EACH	LIGHT POLE, MISC.: STRUCTURE MOUNTING ASSEMBLY, AS PER PLAN	5				5			
653	10000	15	C.Y.	TOPSOIL, FURNISHED AND PLACED					15			
659	10000	200	S.Y.	SEEDING AND MULCHING					200			
659	20000	0.1	TON	COMMERCIAL FERTILIZER					0.1			
SPECIAL	10000300	LUMP	SUM	PREMIUM ON RAILROAD'S PROTECTIVE PUBLIC LIABILITY AND PROPERTY DAMAGE LIABILITY INSURANCE.					LUMP			

* - COLOR SHALL BE WHITE

NOTE: SPN = SEE PROPOSAL NOTE

QUANTITIES BY: JRA 10/6/94
CHECKED BY: JSB 10/6/94

 RESOURCE INTERNATIONAL INC. 281 ENTERPRISE DR. WESTERVILLE, OHIO 43081 (614) 886-1866						2/27
ESTIMATED QUANTITIES						
FRANKLIN COUNTY						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SSK	ARS		JRA	JSB	8/94	

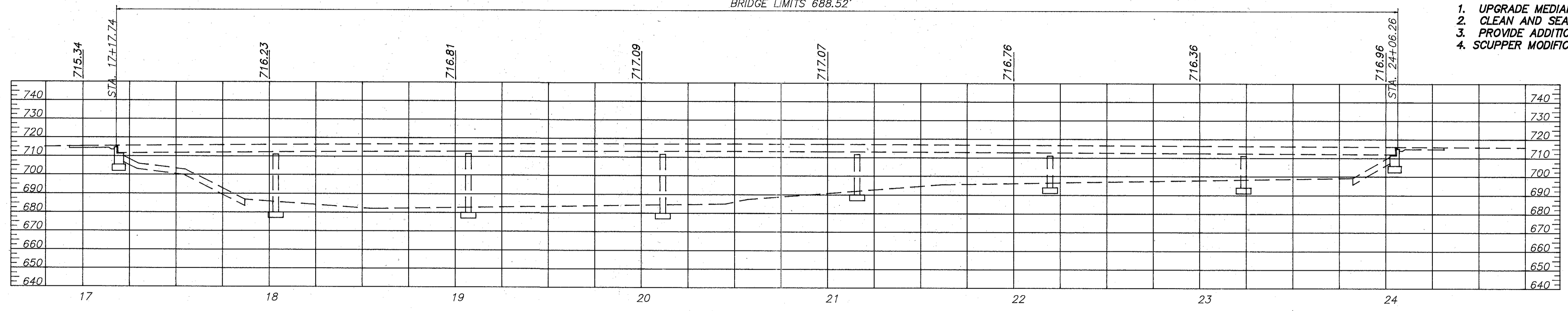


PLAN
SCALE: 1" = 30'

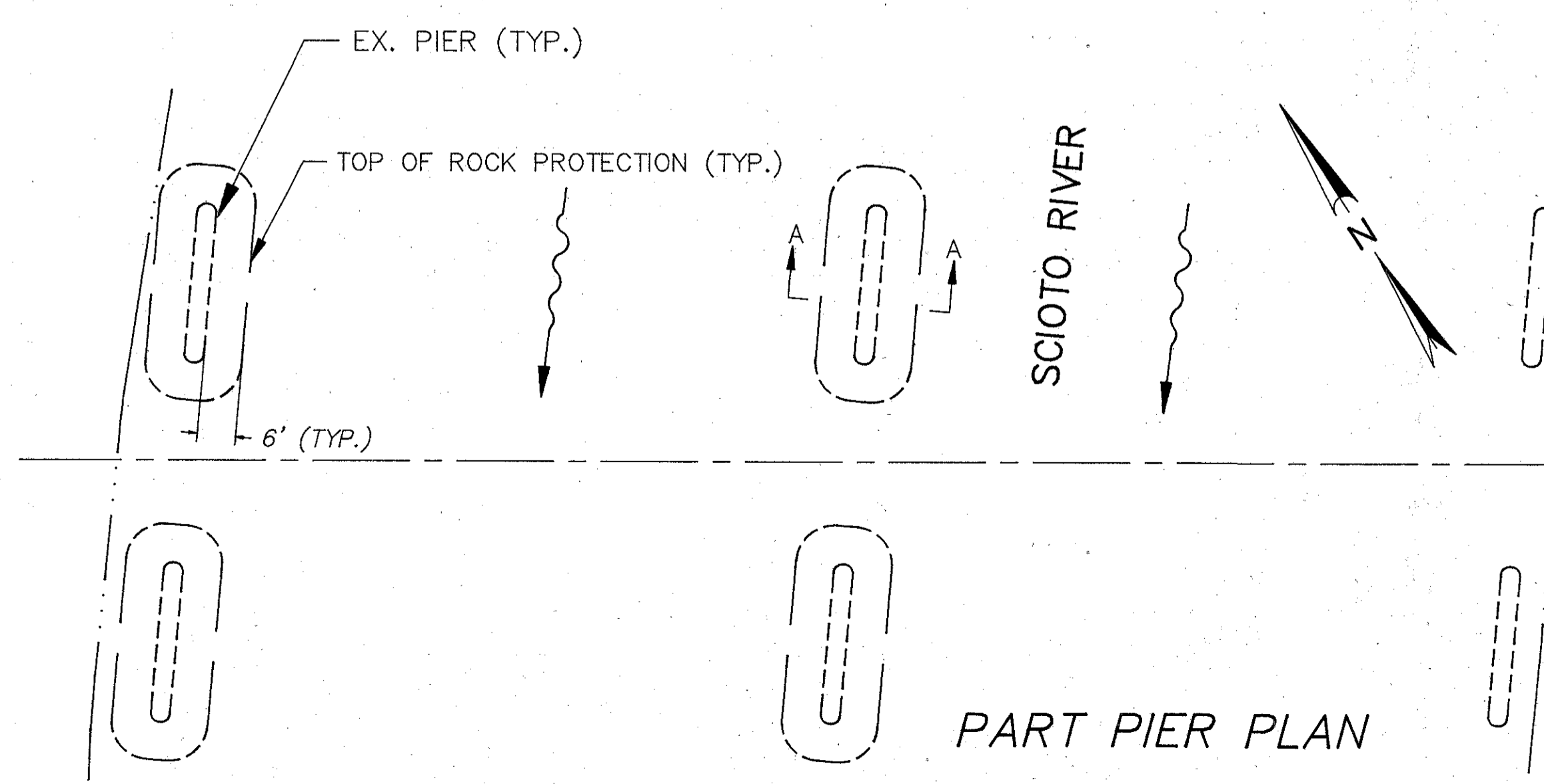
BRIDGE LIMITS 688.52'

PROPOSED BRIDGE WORK

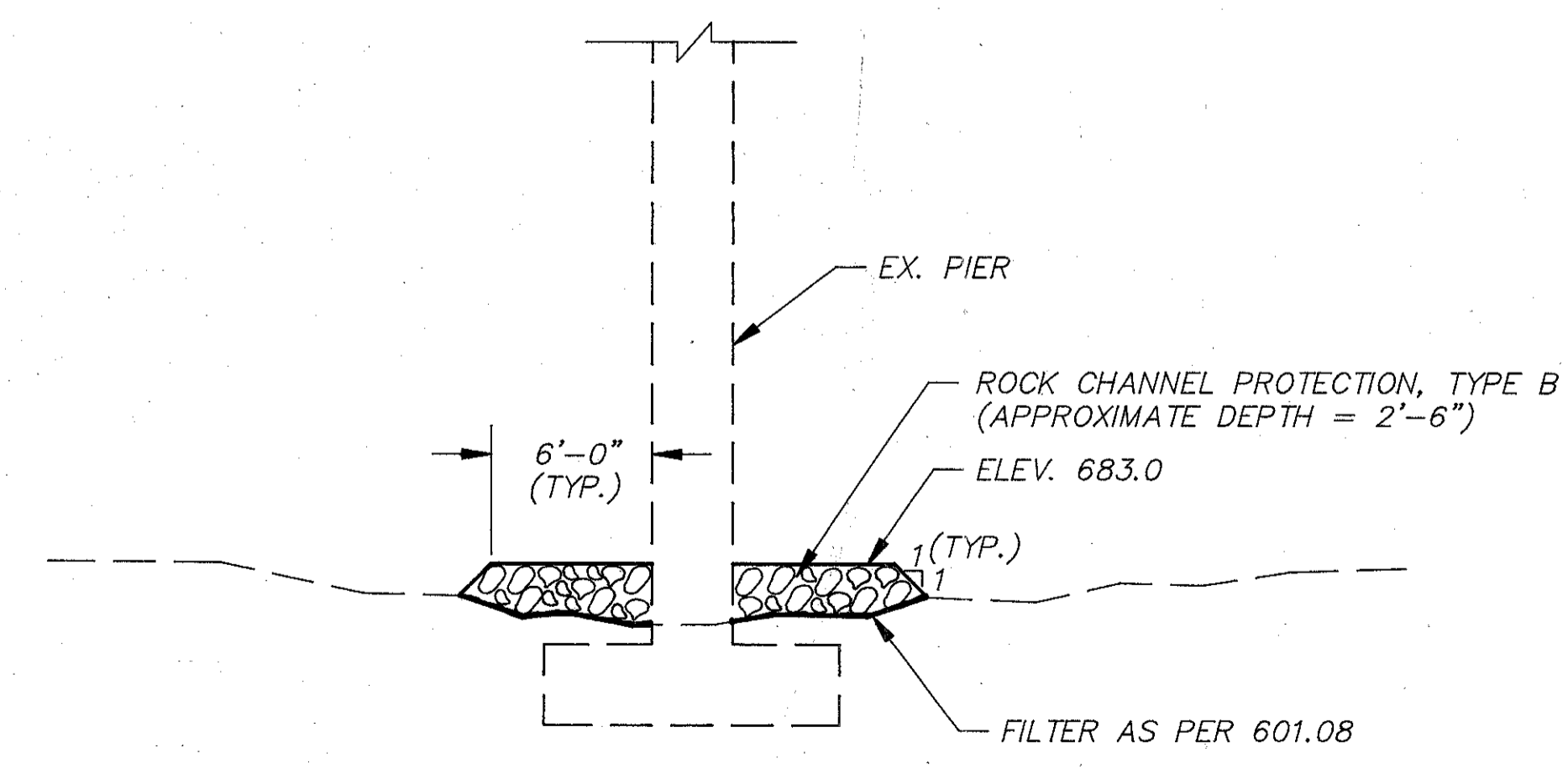
1. UPGRADE MEDIAN BARRIER TO CURRENT STANDARDS
2. CLEAN AND SEAL BRIDGE RAIL
3. PROVIDE ADDITIONAL PIER FOOTING PROTECTION
4. SCUPPER MODIFICATION



PROFILE (ALONG C OF S.R. 104)
(PILES NOT SHOWN)



PART PIER PLAN



SECTION A-A

EXISTING STRUCTURE
 TYPE: CONTINUOUS STEEL GIRDER (A588 STEEL) WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
 SPANS: 82'-0", 5 @ 104'-0", 82'-0"
 ROADWAY: 112'-0" F/F PARAPET WITH BARRIER RAILING AND BARRIER MEDIAN
 LOADING: HS 20-44
 WEARING SURFACE: 1" MONOLITHIC CONCRETE
 SKEW: 5'00" LEFT FORWARD
 ALIGNMENT: TANGENT
 APPROACH SLABS: 25'-0" LONG, SEE AS-1-67

RESOURCES INTERNATIONAL, INC.
 981 ENTERPRISE DR.
 WESTERVILLE, OHIO 43081
 (614) 886-1900

3/27

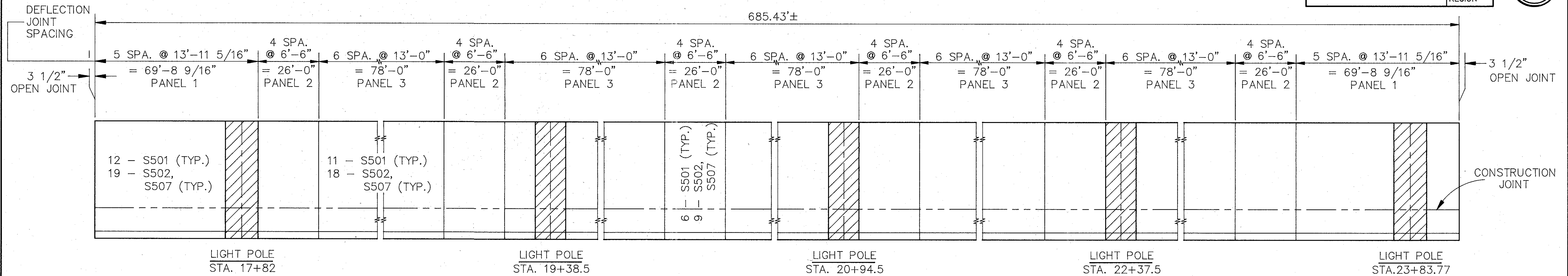
GENERAL PLAN & ELEVATION
 BRIDGE NO. FRA-104-0818
 OVER SCIOTO RIVER

FRANKLIN COUNTY							
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED	
SSK	ARS		JRA	JSB	8/94		

FOR DETAILS OF MEDIAN WITH STRUCTURE MOUNTING ASSEMBLY SEE SHEET 27/27

FRA-104-8.02 OHIO FHWA REGION 5

162 185



BARRIER ELEVATION

REINFORCING STEEL LIST

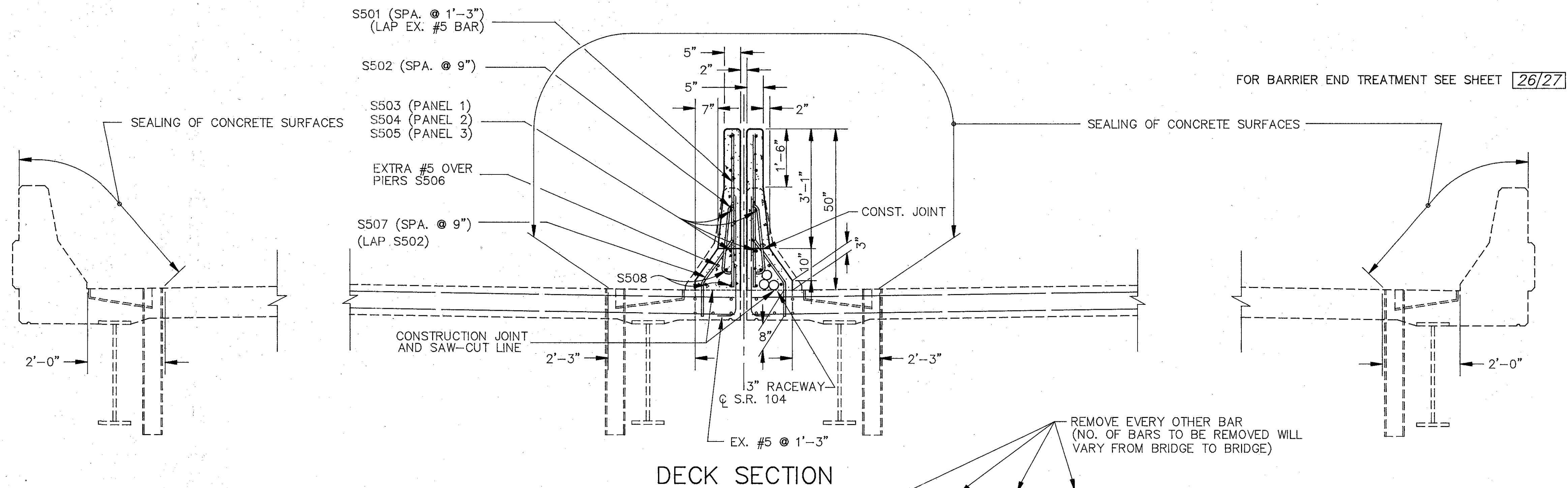
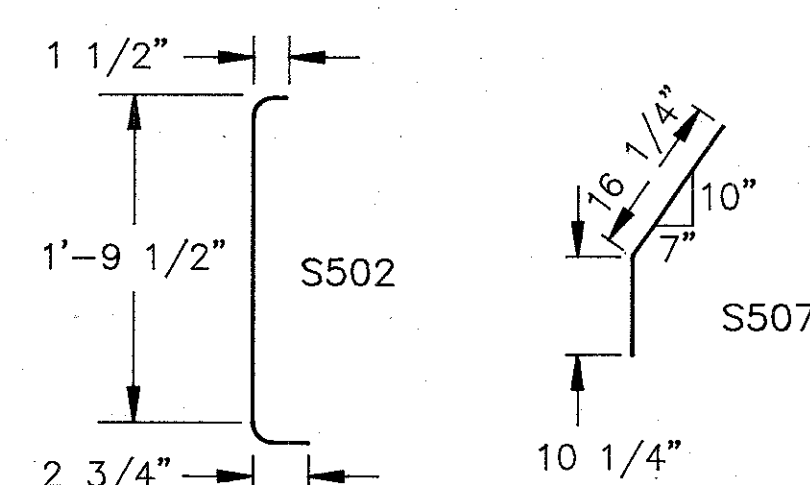
MARK	NO.	LENGTH	WEIGHT	TYPE
S501	1074	3'-11"	4387	STR.
S502	1708	1'-11"	3414	BENT
S503	64	13'-7"	907	STR.
S504	192	6'-2"	1235	STR.
S505	216	12'-8"	2854	STR.
S506	12	40'-0"	501	STR.
S507	1708	2'-2"	3860	BENT
S508	114	38'-8"	4598	STR.
STEEL FOR STRUCTURE MOUNTING ASSEMBLIES				
SL502	4	13'-7 5/16"	56.8	STR.
SL503	4	12'-8"	52.8	STR.
SL505	2	5'-6"	11.5	STR.
SL506	2	5'-11"	12.3	STR.
SL507	4	5'-5"	22.6	STR.
SL509	8	8'-3"	68.8	STR.
SL510	8	7'-9"	64.7	STR.
SL511	19	2'-0"	39.6	BENT
SL512	19	1'-10"	36.3	BENT
SL513	19	5'-7"	110.6	BENT
SL514	19	1'-3"	39.1	STR.
SL515	19	1'-10"	36.3	STR.
SL516	19	3'-0"	59.5	BENT
SL517	19	2'-2 1/2"	43.8	BENT
SL518	19	1'-9"	34.7	BENT
SL519	19	2'-2 1/2"	43.8	BENT

TOTAL WEIGHT = 22,490 LBS.

ALL REINFORCING STEEL SHALL BE EPOXY COATED

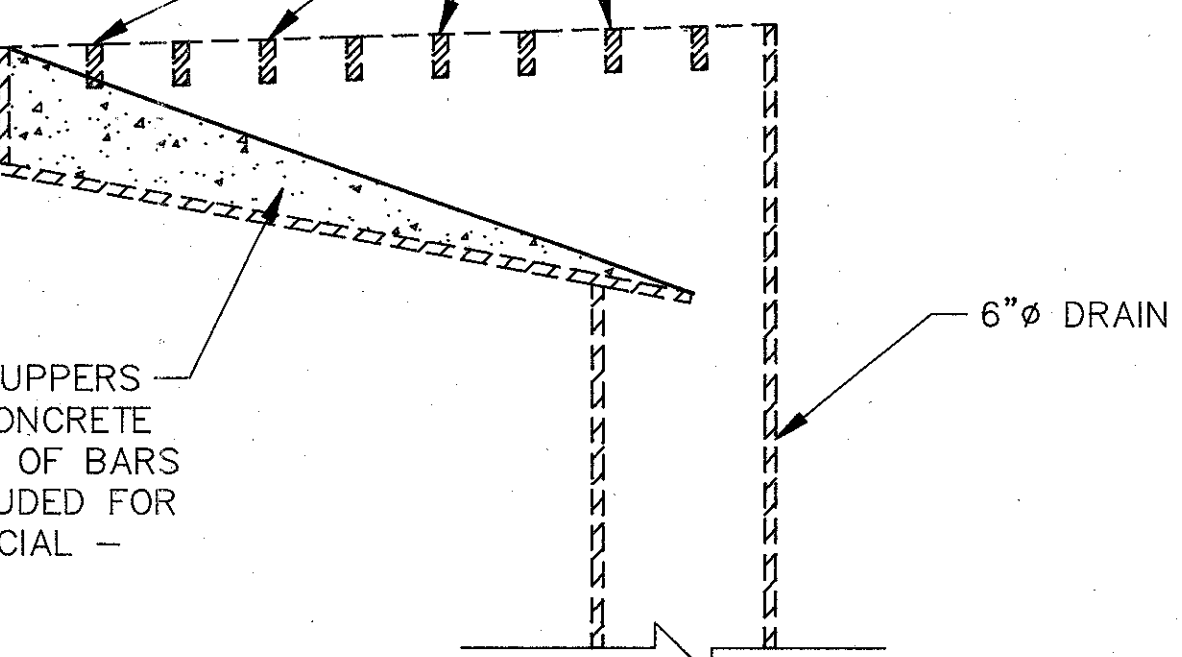
FOR DETAILS OF MEDIAN STRUCTURE ASSEMBLY STEEL SEE SHEET 27/27

BENDING DIAGRAM



DECK SECTION

REMOVE EVERY OTHER BAR (NO. OF BARS TO BE REMOVED WILL VARY FROM BRIDGE TO BRIDGE)



SCUPPER MODIFICATION DETAIL

*SCUPPERS AS FOUND MAY BE REVERSED 180° OR OF ANOTHER TYPE THAN THAT SHOWN.

NOTE: CARE IS TO BE TAKEN WHEN REMOVING THE EXISTING CONCRETE BARRIER SO THAT THE EXISTING VERTICAL STEEL (#5 BARS @ 1'-3") IS NOT DAMAGED AND MAY BE REUSED.

NOTE: EX. MEDIAN BARRIER JOINT ARMOR PLATES SHALL BE RE-USED IN THE NEW MEDIAN BARRIER. THE PLATES SHALL BE FIELD MODIFIED AS NECESSARY TO FIT INTO THE NEW BARRIER CONFIGURATION, AND ANY DAMAGE TO THE EX. PLATES SHALL BE CORRECTED BY THE CONTRACTOR. COST OF THIS WORK SHALL BE INCLUDED WITH ITEM 511 FOR PAYMENT.

FOR BARRIER END TREATMENT SEE SHEET 26/27

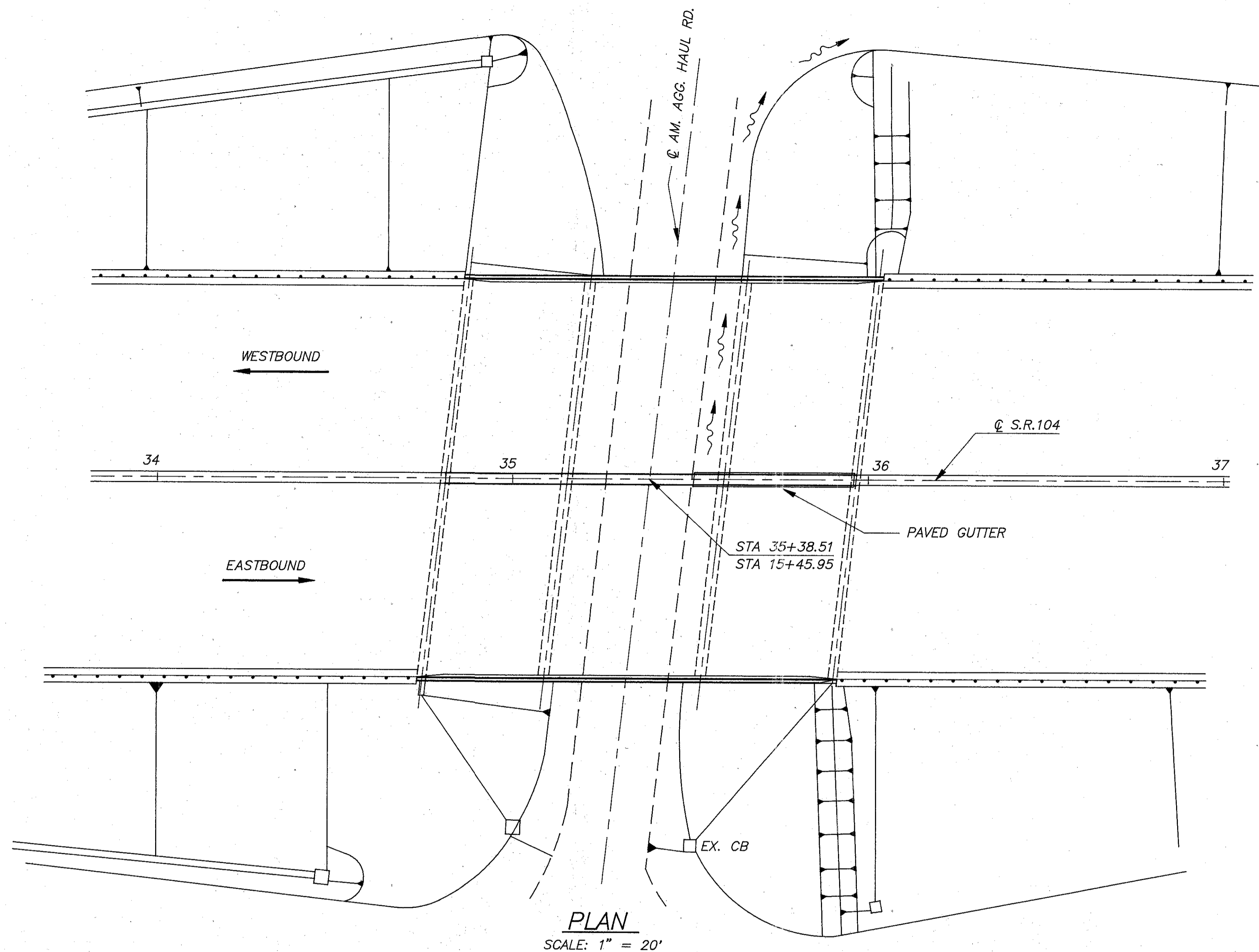
RESOURCE INTERNATIONAL INC. 4/27
 281 ENTERPRISE DR.
 WESTERVILLE, OHIO 43081
 (614) 886-1886

BARRIER DETAILS

STRUCTURE NO. FRA-104-0818
 OVER SCIOTO RIVER

FRANKLIN COUNTY

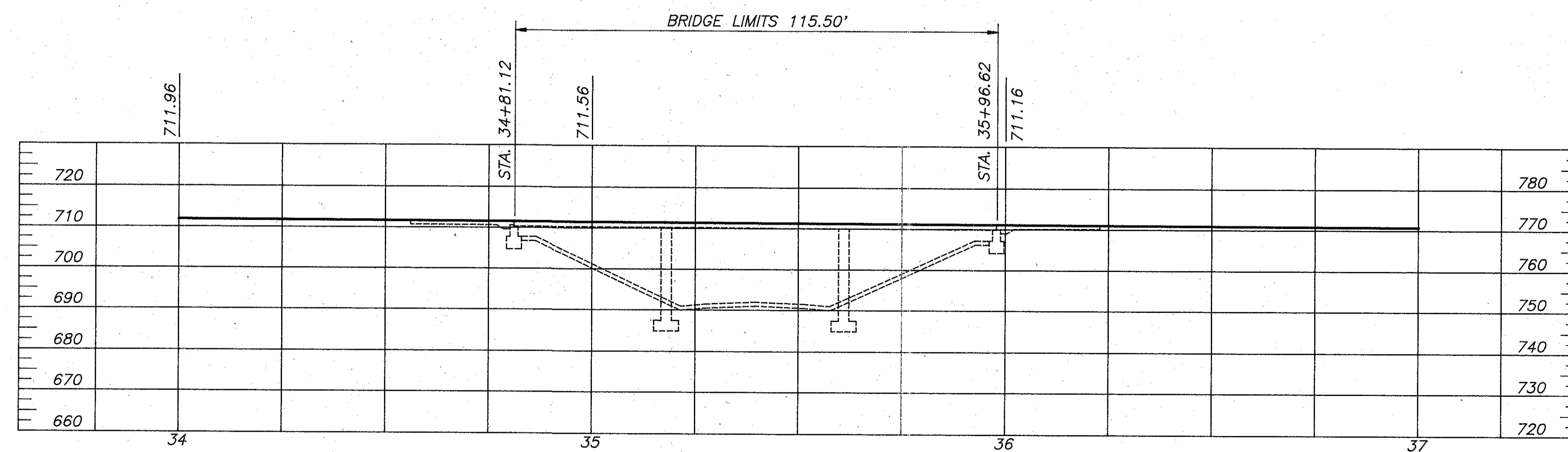
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SSK	ARS		JRA	JSB	8/94	



PLAN
SCALE: 1" = 20'

PROPOSED BRIDGE WORK

1. UPGRADE MEDIAN BARRIER TO CURRENT STANDARDS
2. SEAL BRIDGE RAIL
3. PATCH CONCRETE DECK WITH QUICK SETTING CONCRETE
4. REPAIR PORTION OF ABUTMENT SLOPE
5. REPAIR PORTION OF BRIDGE RAIL (EPOXY INJECTION)



PROFILE (ALONG ϕ OF S.R. 104)

EXISTING STRUCTURE

TYPE: CONTINUOUS REINFORCED CONCRETE SLAB WITH REINFORCED CONCRETE SUBSTRUCTURE

SPANS: 35'-0", 44'-0", 35'-0" C/C

BEARINGS ALONG ϕ ROADWAY

ROADWAY: 112'-0" F/F PARAPETS WITH BARRIER RAILING AND BARRIER MEDIAN

LOADING: HS 20-44

WEARING SURFACE: 1" MONOLITHIC CONCRETE

SKEW: 6'20"27" LEFT FORWARD WITH RESPECT TO THE REFERENCE CHORD

ALIGNMENT: 0'28" CURVE LEFT

APPROACH SLABS: A5-1-67 25'-0" LONG

RESEARCH INTERNATIONAL, INC.
501 WYOMING DR.
WESTERVILLE, OHIO 43081
(614) 885-1800

GENERAL PLAN & ELEVATION

BRIDGE NO. FRA-104-0852
OVER AMERICAN AGG. RD./
HAUL RD./ PRIVATE R.R.

FRANKLIN COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SSK	ARS		JRA	JSB	8/94	

ITEM SPECIAL PATCHING CONCRETE BRIDGE DECK WITH QSC:

DESCRIPTION: THIS ITEM SHALL CONSIST OF FURNISHING THE NECESSARY LABOR MATERIALS AND EQUIPMENT TO REPAIR CONCRETE BRIDGE DECK INCLUDING THE REMOVAL OF ALL LOOSE AND UNSOUND CONCRETE, BITUMINOUS PATCHES, SURFACE, PREPARATION BONDING COAT AND THE MIXING, PLACING, FINISHING, CURING AND SEALING (IF REQUIRED).

REMOVAL OF UNSOUND CONCRETE: THE UNSOUND AREAS FOR REMOVAL SHALL BE DETERMINED BY SOUNDING AND AS PER DIRECTION OF THE ENGINEER. THE PERIMETER OF ALL REMOVAL AREAS SHALL BE SAWS TO A DEPTH OF 1 INCH TO PRODUCE A VERTICAL OR SLIGHTLY UNDERCUT FACE. ADDITIONAL SAW CUTS MAY BE REQUIRED TO FACILITATE REMOVAL. COOLING WATER FROM WET SAWING AND DUST FROM ANY DRY SAWING SHALL NOT BE ALLOWED TO CONTAMINATE THE EXPOSED PATCH HOLES. ALL UNSOUND CONCRETE INCLUDING ALL PATCHES OTHER THAN SOUND PORTLAND CEMENT 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. REINFORCING WHICH AS BECOME LOOSE SHALL BE ADEQUATELY SUPPORTED AND TIED BACK INTO PLACE. AFTER COMPLETION OF THE SECONDARY REMOVAL OPERATIONS. THE ENGINEER WILL SOUND THESE AREAS TO INSURE THAT ONLY SOUND CONCRETE REMAINS.

SURFACE PREPARATION: CLEANING SHALL CLOSELY PRECEDE APPLICATION OF THE BONDING GROUT AND/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. 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.

MATERIALS PLACING AND CURING: THE DECK SHALL BE PATCHED WITH QUICK SET CONCRETE (qsc) WHICH SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

COARSE AGGREGATE (NO. 8)	703.02
QUICK SETTING CONCRETE MORTAR, TYPE 2	SS933
WATER	499.02

QSC PATCHES SHALL BE BONDED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. PROPORTIONING AND PLACING OF QSC PATCHES SHALL BE ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. THE CONCRETE SHALL BE MIXED AND PLACED AS PER MANUFACTURER'S RECOMMENDATIONS WITH THE AMBIENT TEMPERATURE ABOVE 50 DEGREES F. COARSE AGGREGATE, WHICH AS BEEN CLEANED, DRIED AND BAGGED, SHALL BE ADDED AT A RATE OF 30 POUNDS OF AGGREGATE PER 50 POUNDS OF DRY QSC MORTAR.

QSC PATCHES SHALL BE CURED FOR A MINIMUM OF TWO HOURS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. 3000 PSI COMPRESSIVE STRENGTH SHALL BE VERIFIED WITH A PROPERLY CALIBRATED IMPACT REBOUND HAMMER, PROVIDED BY THE CONTRACTOR, PRIOR TO OPENING TO TRAFFIC.

IMMEDIATELY FOLLOWING APPLICATION OF THE BONDING GROUT, THE PATCHING MATERIAL SHALL BE PLACED, CONSOLIDATED AND FINISHED, TO THE EXISTING GRADE AND ELEVATION. PATCHES EXCEEDING 50 SQUARE FEET SHALL BE LEVELED AND CONSOLIDATED WITH A MECHANICAL VIBRATING SCREEN. SMALLER PATCHES SHALL BE HAND VIBRATED AND LEVELED WITH A TEN FOOT STRAIGHTEDGE.

FINISHING: AFTER THE PATCHES HAVE BEEN CONSOLIDATED AND FINISHED, THEY SHALL BE TEXTURED IN ACCORDANCE WITH SECTION 451.09 OF THE CMS.

INSPECTION AND SOUNDING OF CONCRETE PATCHES: AFTER CURING AND BEFORE FINAL ACCEPTANCE, ALL PATCHED AREAS SHALL BE SOUNDED. ALL UNSOUND AREAS AND AREAS EXHIBITING CRACKING 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.

SEALING PATCH EDGES: ALL JOINTS ALONG PATCH EDGES SHALL BE SEALED WITH AN APPROVED HIGH MOLECULAR WEIGHT METHACRYLATE SEALER ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS AND THE HMMW PROPOSAL NOTE ~~(SEE 104-8.02)~~. COST FOR SEALING SHALL BE INCLUDED WITH PATCHING WHEN A SEPARATE PAY ITEM FOR WEARING SURFACE SEALING IS NOT INCLUDED IN THE PLANS.

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.

BASIS OF PAYMENT: PAYMENT SHALL BE MADE AT THE CONTRACT BID PRICE FOR:


ITEM	UNIT	DESCRIPTION
SPECIAL	SQ. YD.	PATCHING CONCRETE BRIDGE DECKS WITH QSC

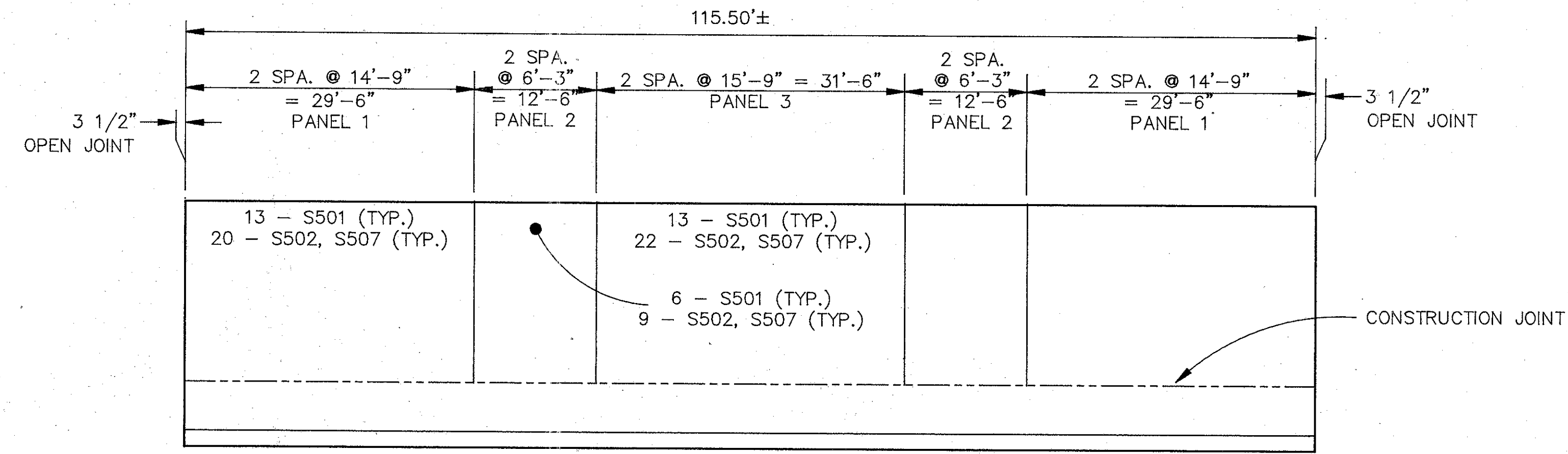
CONCRETE PATCHING

THE CONCRETE PATCHING FOR THE BRIDGE DECKS AS SHOWN ON SHEET 8/27 SHALL BE DONE WITH QSC AS DESECRIBED ABOVE. A CONTINGENCY QUANTITY OF 10 SQUARE FEET HAS BEEN INCLUDED IN THE QUANTITIES TO BE USED FOR AREAS OF DETERIORATED CONCRETE ENCOUNTERED DURING CONCRETE MEDIAN MODIFICATION.

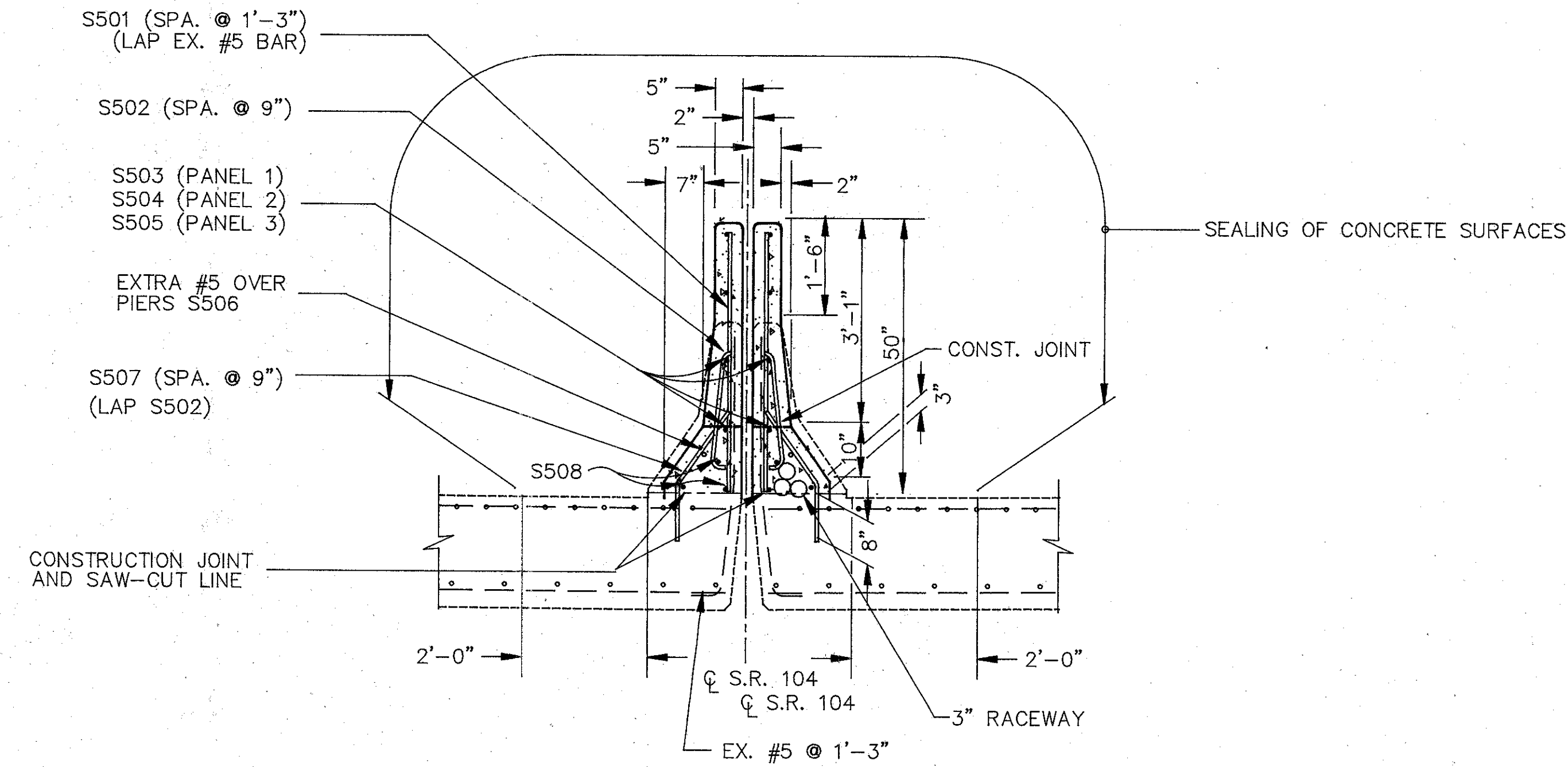
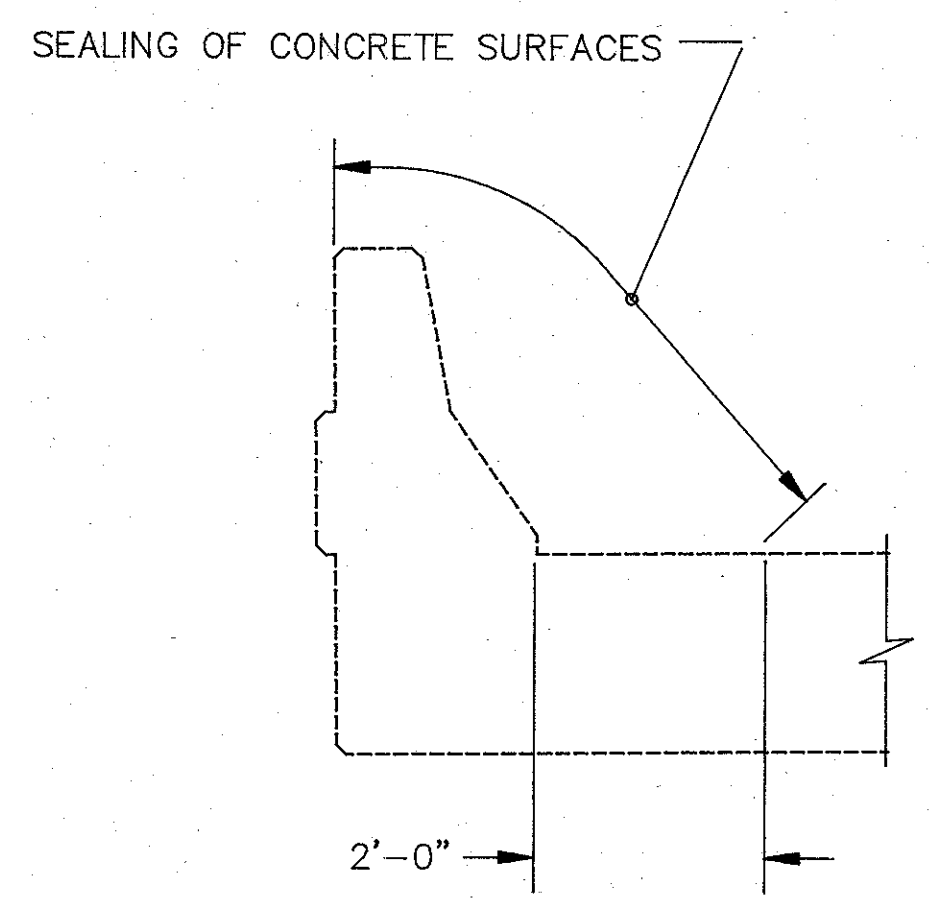
ITEM 601 - PAVED GUTTER, TYPE 1-2, AS PER PLAN

THIS ITEM IS TO BE USED TO CONSTRUCT A CONCRETE GUTTER TO PROTECT THE EAST ABUTMENT SLOPE UNDERNEATH THE MEDIAN JOINT. THE ERODED PORTION OF THE SLOPE SHALL FIRST BE CONSTRUCTED AND PAID FOR UNDER ITEM 203 EMBANKMENT. THE PAVED GUTTER SHALL BE CONSTRUCTED AS SHOWN ON SHEET 8/27. ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO CONSTRUCT THE GUTTER, EXCEPT FOR THE ITEM 203 EMBANKMENT, SHALL BE PAID FOR UNDER ITEM 601 - PAVED GUTTER, TYPE 1-2, AS PER PLAN, PER LINEAL FOOT.

 RESOURCE INTERNATIONAL INC. 581 ENTERPRISE DR. WESTERVILLE, OHIO 43081 (614) 886-1959						6/27
BRIDGE NOTES STRUCTURE NO. FRA-104-0852 OVER AMERICAN AGG. RD. HAUL RD. / PRIVATE R.R. FRANKLIN COUNTY						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SSK	ARS		JRA	JSB	8/94	

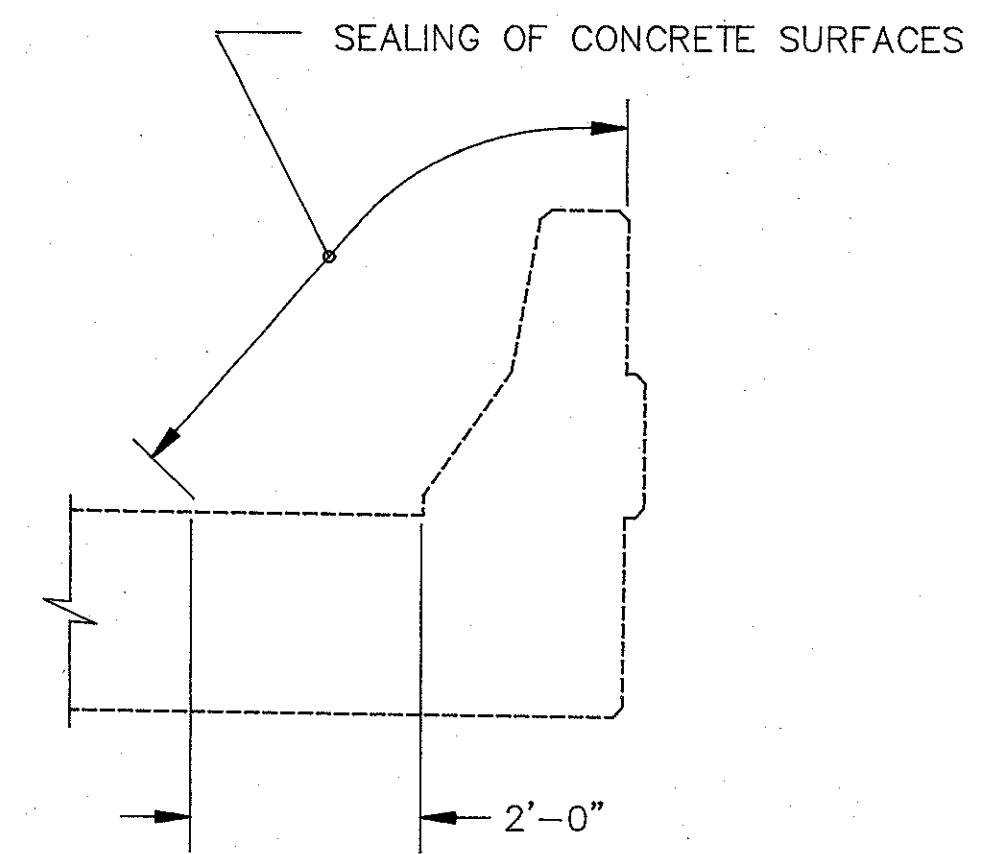


BARRIER ELEVATION



DECK SECTION

FOR BARRIER END TREATMENT SEE SHEET 26/27



NOTE: CARE IS TO BE TAKEN WHEN REMOVING THE EXISTING CONCRETE BARRIER SO THAT THE EXISTING VERTICAL STEEL (#5 BARS @ 1'-3") IS NOT DAMAGED AND MAY BE REUSED.

NOTE: EX. MEDIAN BARRIER JOINT ARMOR PLATES SHALL BE RE-USED IN THE NEW MEDIAN BARRIER. THE PLATES SHALL BE FIELD MODIFIED AS NECESSARY TO FIT INTO THE NEW BARRIER CONFIGURATION, AND ANY DAMAGE TO THE EX. PLATES SHALL BE CORRECTED BY THE CONTRACTOR. COST OF THIS WORK SHALL BE INCLUDED WITH ITEM 511 FOR PAYMENT.

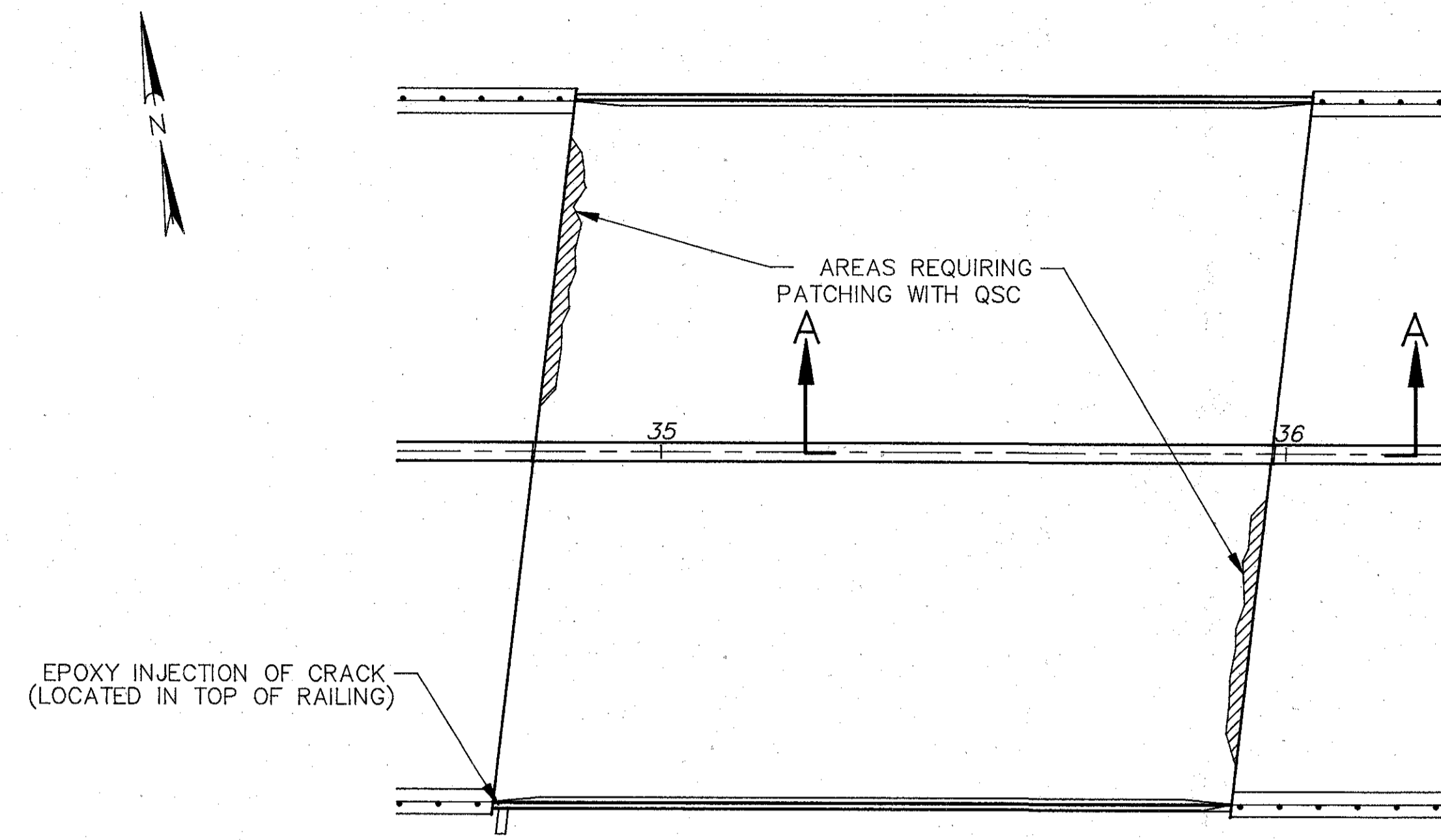
REINFORCING STEEL LIST					BENDING DIAGRAM	
MARK	NO.	LENGTH	WEIGHT	TYPE		
HEADWALLS						
S501	204	3'-11"	834	STR.		
S502	320	1'-11"	640	BENT		
S503	32	14'-5"	481	STR.		
S504	32	5'-11"	197	STR.		
S505	16	15'-5"	257	STR.		
S506	4	40'-0"	167	STR.		
S507	320	2'-2"	724	BENT		
S508	24	30'-11"	774	STR.		
TOTAL WEIGHT = 4,074 LBS.						
ALL REINFORCING STEEL SHALL BE EPOXY COATED						

1/27

RESOURCE INTERNATIONAL INC.
591 RIVERSIDE DR.
 WESTERVILLE, OHIO 43081
 (614) 886-1999

BARRIER DETAILS
 STRUCTURE NO. FRA-104-0852
 OVER AMERICAN AGG. RD.
 HAUL RD. / PRIVATE R.R.
 FRANKLIN COUNTY

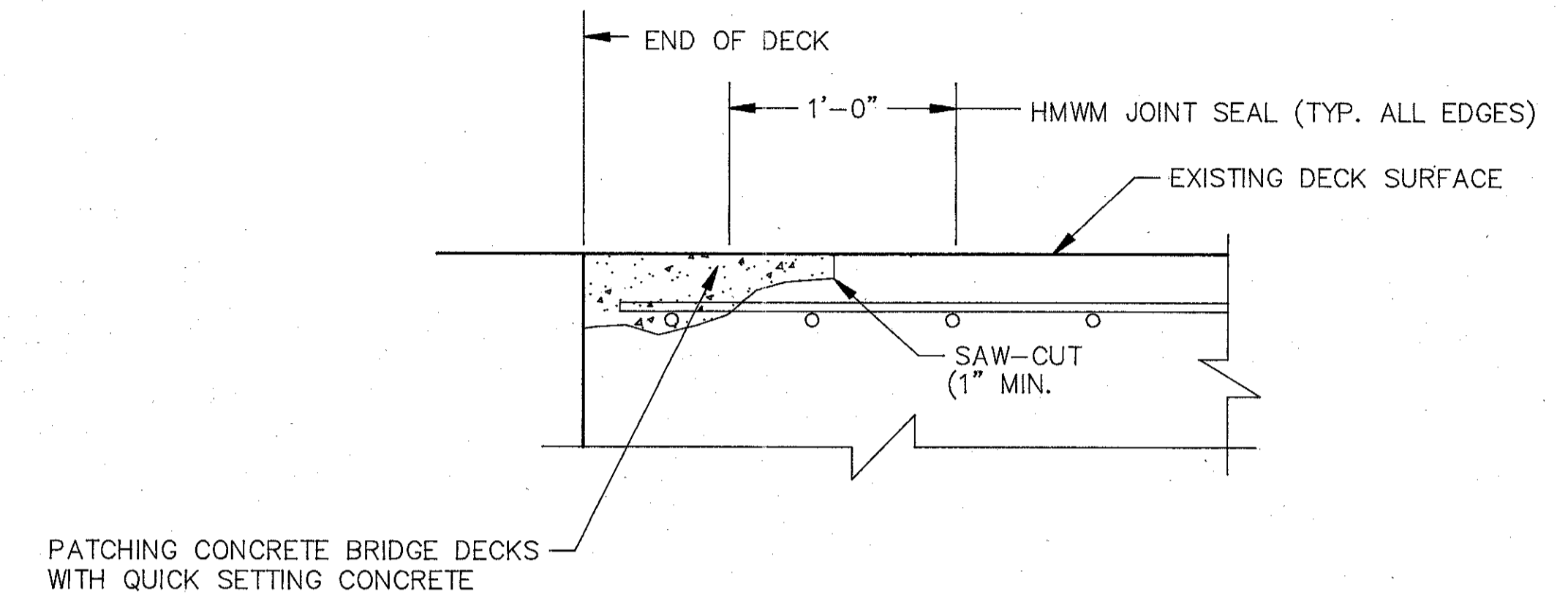
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SSK	ARS		JRA	JSB	8/94	



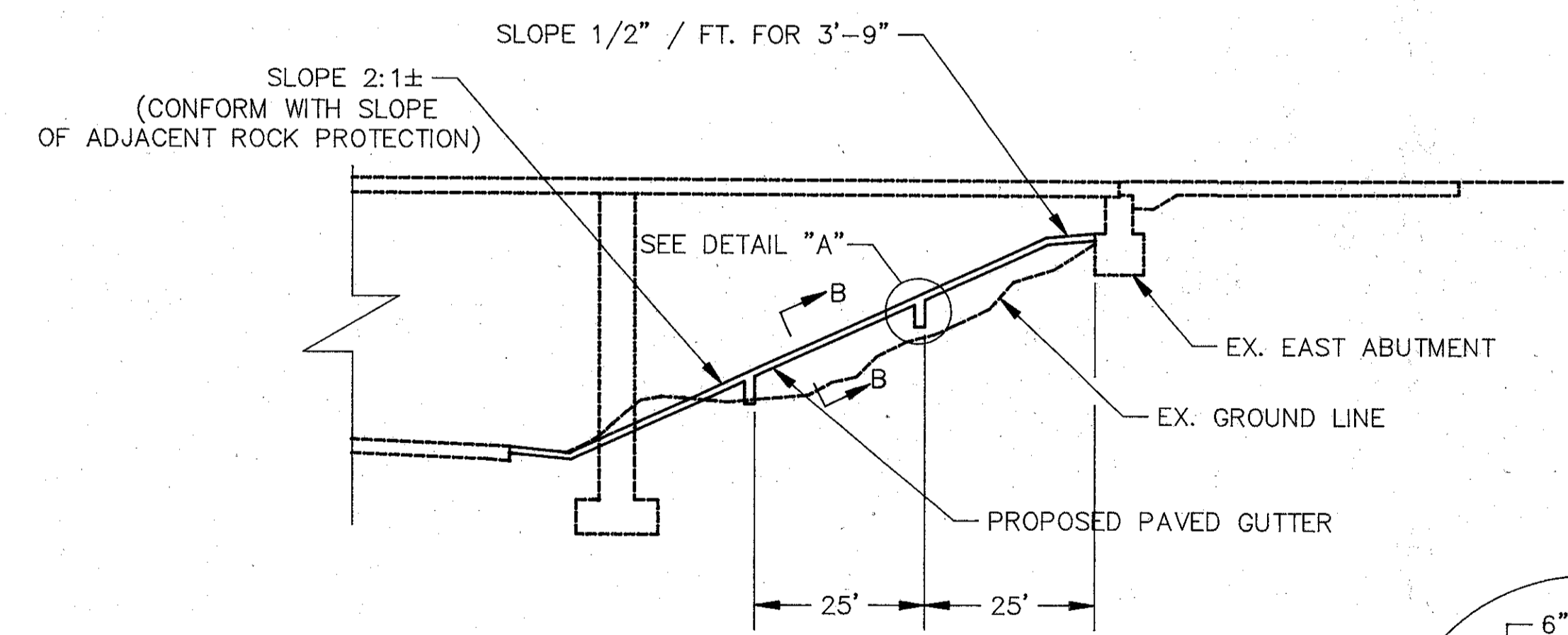
DECK PATCHING PLAN

NOTES

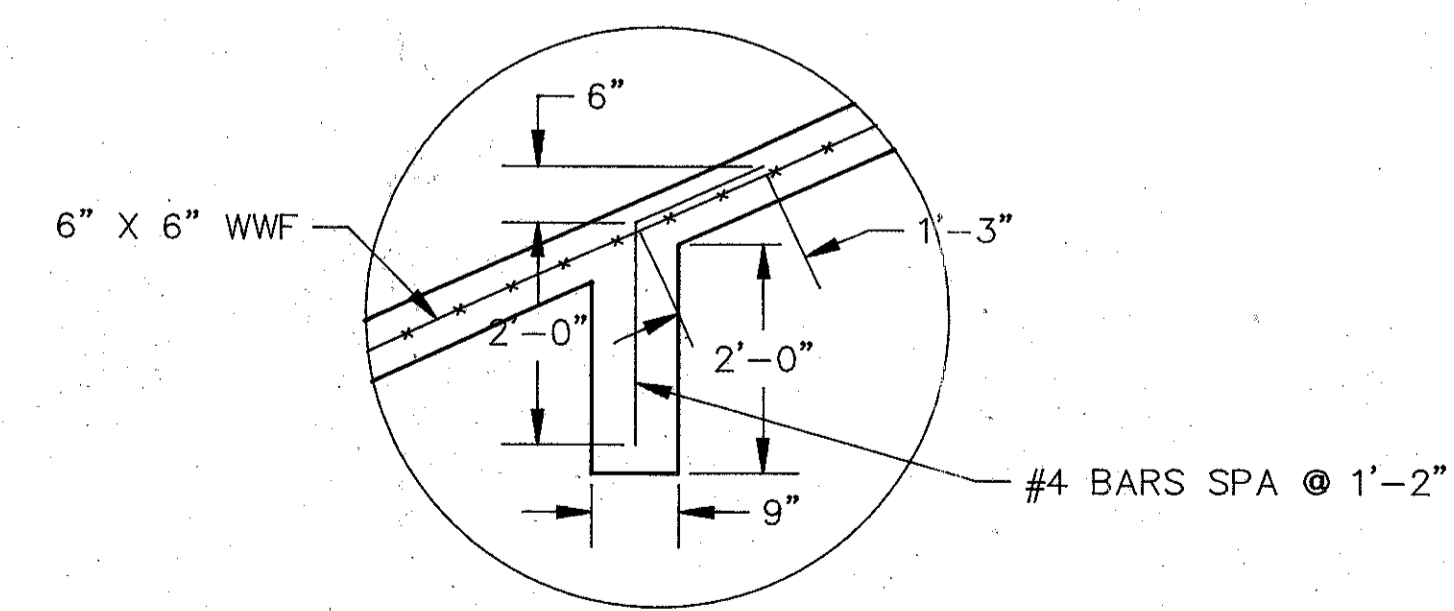
- FOR NOTES CONCERNING PATCHING MATERIALS, PROCEDURES, ETC, SEE SHEET 6 / 27
- PATCHING SHALL BE PLACED TO THE ELEVATION OF THE EXISTING BRIDGE DECK SURFACE



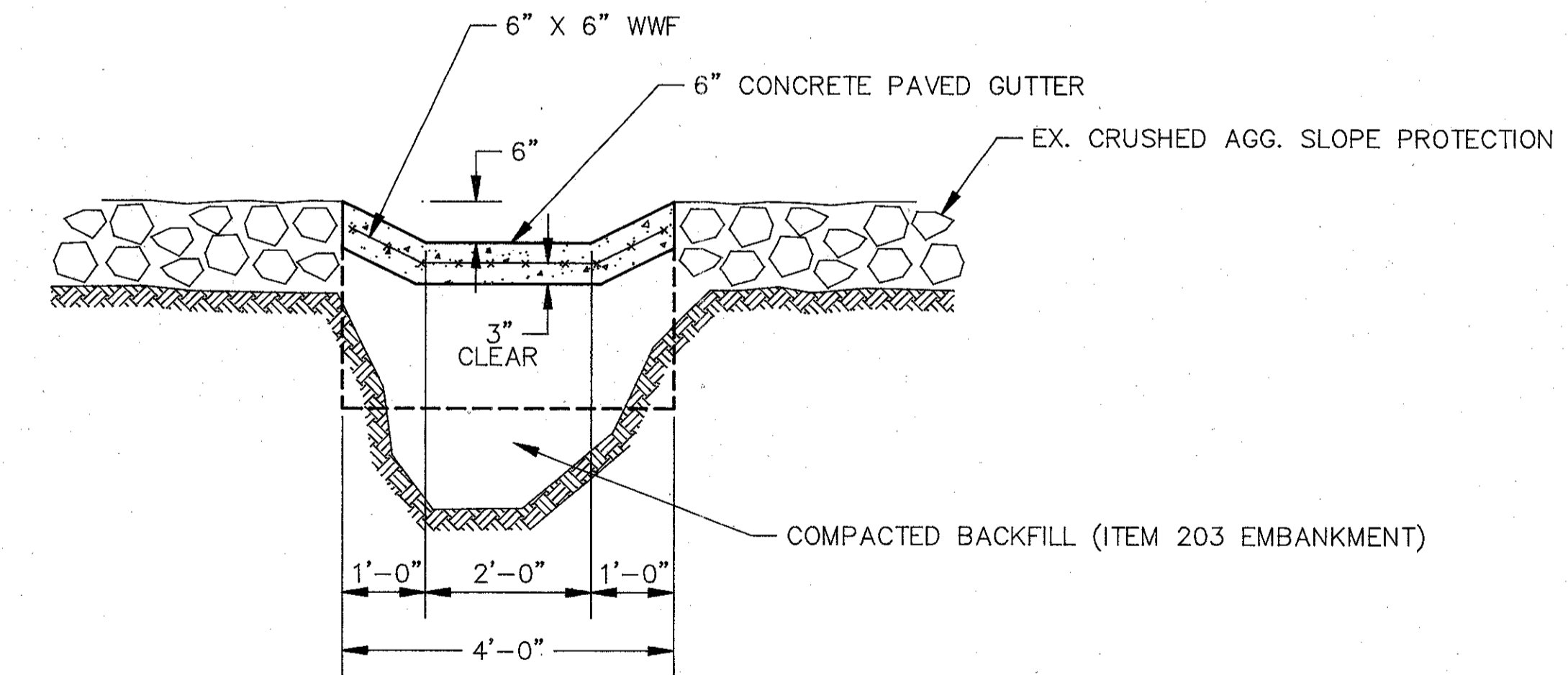
TYPICAL PATCHING SECTION



SECTION A-A



DETAIL A



SECTION B-B

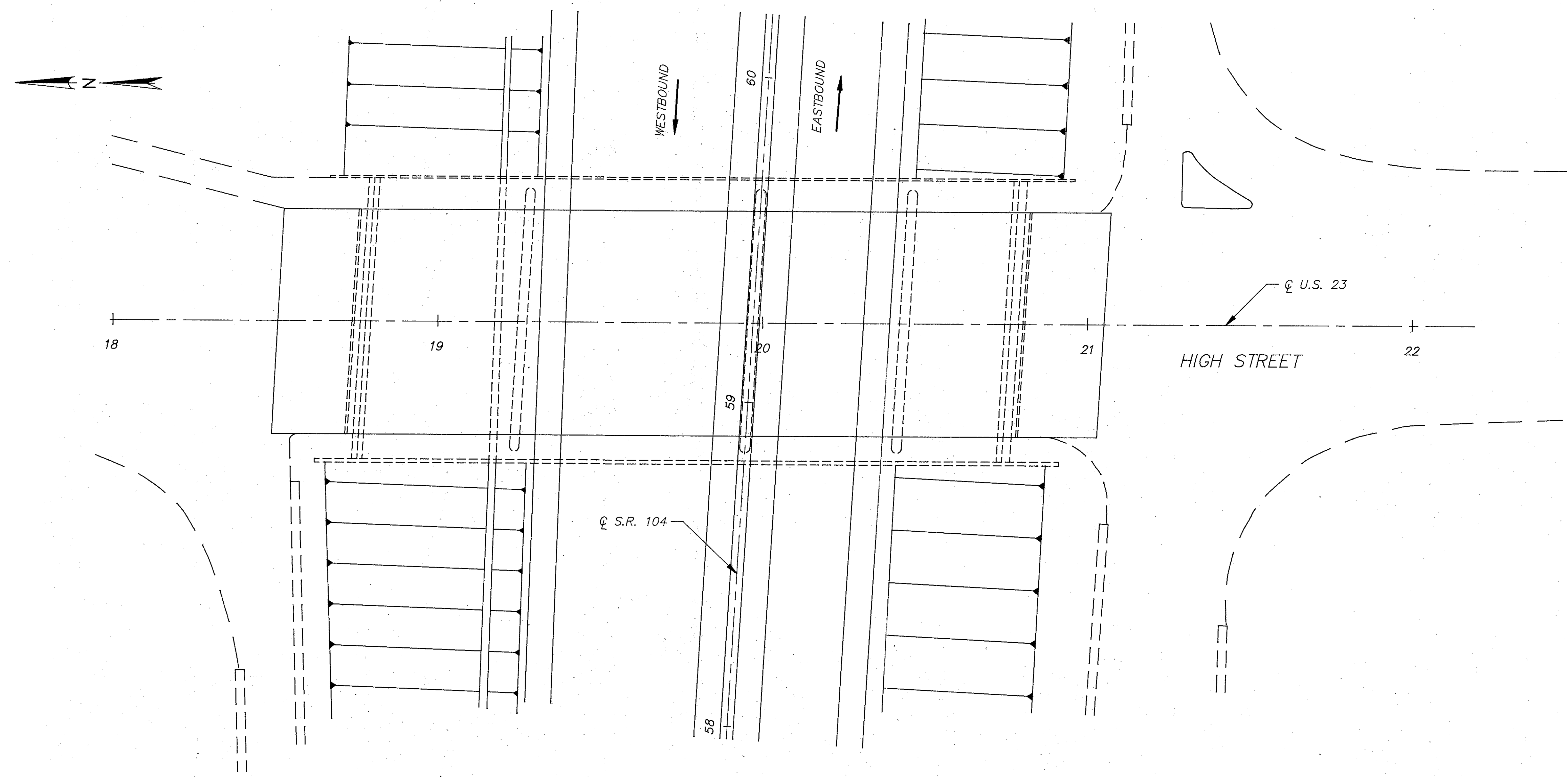
NOTES:

- ALL REINFORCING AND CONCRETE SHALL BE PAID FOR UNDER ITEM 601 - PAVED GUTTER, TYPE 1-2, AS PER PLAN.
- THE PAVED GUTTER SHALL CONFORM TO 601.09.
- FOR ADDITIONAL NOTES REGARDING THIS WORK SEE SHEET 6 / 27
- FOR ALL OTHER DETAILS SEE STD. DWG MC-5.

RESOURCE INTERNATIONAL INC. 8/27
591 INTERPRESE DR.
WESTERVILLE, OHIO 43081
(614) 886-1966

DECK REPAIR & SLOPE EROSION PROTECTION
STRUCTURE NO. FRA-104-0852
OVER AMERICAN AGG. RD./HAUL RD./PRIVATE R.R.
FRANKLIN COUNTY

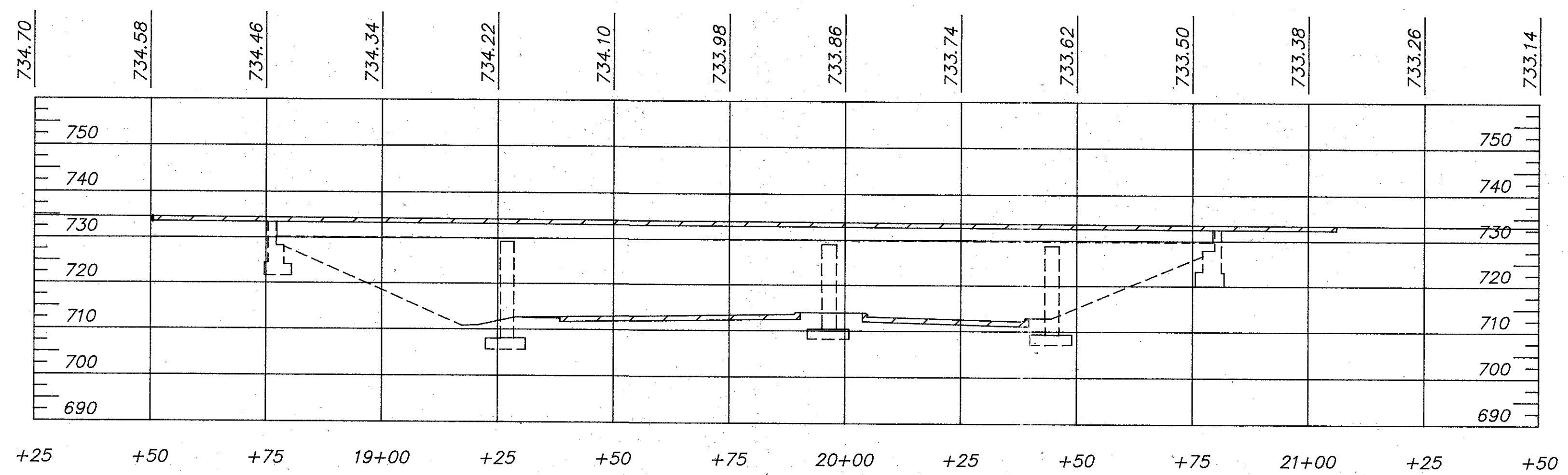
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SSK	ARS		JRA	JSB	8/94	



PLAN

PROPOSED BRIDGE WORK

1. HEAT STRAIGHTEN TWO TRAFFIC DAMAGED BEAMS
2. PAINT STRUCTURAL STEEL (SYSTEM OZEU)
3. RESET ABUTMENT BEARINGS
4. TRIM SOUTH ABUTMENT BEAM ENDS



PROFILE (ALONG \dot{C} OF HIGH STREET)

EXISTING STRUCTURE

TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE.
SPAN: 48'-6", 69'-4", 47'-7", AND 33'-3"
C/C OF BEARINGS
ROADWAY: 70'-0" F/F OF 8'-0" SIDEWALKS
LOAD FREQUENCY: C.F. 2000 (57)
SKEW: 3'25"05" L.F.
WEARING SURFACE: 1" MONOLITHIC CONCRETE
APPROACH SLAB: AS-1-67, (25' LONG)
ALIGNMENT: TANGENT
SUPERELEVATION: NONE
DATE BUILT: 1967

RESOURCE INTERNATIONAL INC.
881 INTERSTATE DR.
WESTERVILLE, OHIO 43081
(614) 885-1900

GENERAL PLAN & ELEVATION

BRIDGE NO. FRA-104-0899
UNDER U.S. 23 (HIGH STREET)

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SSK	ARS		JRA	JSB	8/94	

ITEM 516 - RESET BEARING, AS PER PLAN

THIS ITEM SHALL BE USED TO JACK THE STRUCTURES AND RESET THE EXISTING ABUTMENT ROCKER BEARINGS AS DETAILED IN STANDARD DRAWING RB-1-55.

THE SUPERSTRUCTURE SHALL BE JACKED ABOVE THE EXISTING ABUTMENT SEAT A UNIFORM AMOUNT NOT TO EXCEED ONE (1) INCH.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, INSTALLATION AND OPERATION OF AN ADEQUATE JACKING SYSTEM, INCLUDING ANY TEMPORARY OR PERMANENT SUPPORTS NECESSARY TO PERFORM THE WORK AS DESCRIBED IN THESE PLANS. THREE (3) SETS OF JACKING PLANS, WHICH INCLUDE THE INFORMATION DESCRIBED IN THIS NOTE, SHALL BE SUBMITTED TO THE DIRECTOR FOR APPROVAL AT LEAST THIRTY (30) DAYS BEFORE ACTUAL WORK IS TO BEGIN. THE PLANS SHALL BE PREPARED AND STAMPED BY A REGISTERED ENGINEER.

JACKING SUBMITTALS SHALL INCLUDE AT LEAST THE FOLLOWING:

1. THE SIGNATURE AND NUMBER, OR PROFESSIONAL SEAL, OF THE REGISTERED PROFESSIONAL ENGINEER WHO PREPARED THE SUBMITTAL.
2. CALCULATIONS AND ANALYSIS OF THE STRUCTURE TO DETERMINE AND DEFINE THE ACTUAL LOADING APPLIED AT THE CONTRACTOR'S SELECTED JACKING POINTS.
3. A DRAWING SHOWING THE PHYSICAL AND DIMENSIONAL POSITION OF THE JACKS WITH RESPECT TO THE STRUCTURE INCLUDING CLEARANCES AND CENTER OF LIFT.
4. A SCHEMATIC LAYOUT OF JACKS, CHECK VALVES, PUMPS, PRESSURE GAGES, FLOW CONTROL VALVES, ETC. IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
5. ANALYSIS AND CALCULATIONS OF THE STRESSES INDUCED OR CREATED IN THE STRUCTURE AND ANY TEMPORARY OR PERMANENT SUPPORTS. DESIGN CALCULATIONS FOR ANY TEMPORARY OR PERMANENT SUPPORTS.
6. PHYSICAL DIMENSIONS, MATERIALS, AND FABRICATION DETAILS OF ANY TEMPORARY OR PERMANENT SUPPORTS. HORIZONTAL AND VERTICAL MOVEMENT RESTRAINTS SHALL BE PROVIDED.
7. A STEP BY STEP PROCEDURE DETAILING ALL STEPS IN THE JACKING OPERATION.
8. METHOD OF ATTACHMENT TO STRUCTURAL MEMBERS. WELDING TO TENSION AREAS WILL NOT BE PERMITTED.
9. METHOD OF KEEPING BEAMS SOCKETED INTO THE DECK AND VERIFICATION OF SUCH.
10. METHOD OF VERIFYING THAT ALL BEARINGS ARE SEATED IN THE FINAL LOCATION.

JACKS SHALL HAVE 20% MORE CAPACITY THAN REQUIRED BASED ON THE CALCULATED LOADS.

JACKS SHALL HAVE A SWIVEL LOAD CAP, A DOMED PISTON HEAD OR SOME OTHER DEVICE TO PROTECT AGAINST THE EFFECTS OF SIDE LOAD ON THE JACK.

JACKS ALONE SHALL NOT BE USED TO SUPPORT LOADS EXCEPT DURING THE ACTUAL JACKING OPERATION. TEMPORARY SUPPORTS, BLOCKING OR OTHER METHODS APPROVED BY THE DIRECTOR SHALL BE USED TO SUPPORT THE LOAD DURING THE ACTUAL LIFTING OR LOWERING OPERATION.

SINGLE ACTING RAMS WITH NO OVER-TRAVEL PROTECTION SYSTEM SHALL NOT BE USED.

SPARE EQUIPMENT SHALL BE AVAILABLE ON SITE FOR THE REQUIRED STRUCTURE RAISING TO PROCEED IN THE EVENT OF BREAKDOWN. A LIST OF SPARE EQUIPMENT SHALL BE PROVIDED FOR THE ENGINEER.

AT A MINIMUM, A JACKING OPERATION SHALL LIFT ALL BEAMS AT ANY ONE ABUTMENT OR PIER SIMULTANEOUSLY. THE ONLY EXCEPTION IS THE SITUATION WHERE THE WORK INVOLVES REPLACING OR REHABILITATING INDIVIDUAL BEARINGS, NO PERMANENT SHIMMING IS REQUIRED AND THE HEIGHT OF THE LIFT DOES NOT EXCEED 1/4 INCH.

MAXIMUM DIFFERENTIAL JACKING HEIGHT BETWEEN ANY ADJACENT ABUTMENTS OR PIERS SHALL BE LIMITED BY STRESSES INDUCED IN THE AFFECTED MEMBERS. CALCULATIONS DETAILING ALL STRESSES INDUCED IN THE AFFECTED MEMBERS SHALL BE INCLUDED IN THE JACKING PROCEDURE SUBMITTAL.

IF, DURING THE JACKING OPERATIONS, CRACKING OF THE CONCRETE SUPERSTRUCTURE, SEPARATION OF THE CONCRETE DECK FROM THE STEEL STRINGERS, OR OTHER DAMAGE TO THE STRUCTURE IS VISUALLY OBSERVED, THE JACKING OPERATION SHALL IMMEDIATELY CEASE AND APPROVED SUPPORTS BE INSTALLED. THE CONTRACTOR SHALL THEN ANALYZE THE DAMAGE AND SUBMIT A METHOD OF CORRECTION TO THE ENGINEER FOR APPROVAL. ANY BEAMS THAT SEPARATE FROM THE DECK SHALL BE EPOXY INJECTED FOR THE DISTANCE OF THE SEPARATION IN ACCORDANCE WITH THE PROPOSAL NOTE "CONCRETE REPAIR BY EPOXY INJECTION." COST OF THIS EPOXY INJECTION OR OTHER REQUIRED REPAIRS SHALL BE BORNE BY THE CONTRACTOR.

THE CONTRACTOR SHALL DEMONSTRATE TO THE ENGINEER THAT THE BRIDGE BEARINGS ARE FULLY SEATED BETWEEN ALL CONTACT AREAS. IF FULL SEATING IS NOT ATTAINED, SUITABLE MEANS OF REPAIR, SUBJECT TO THE APPROVAL OF THE ENGINEER, WILL BE REQUIRED AT THE CONTRACTOR'S EXPENSE.

PAYMENT SHALL BE MADE AT THE LUMP SUM PRICE BID FOR ITEM 516, RESET BEARINGS, AS PER PLAN, SHALL INCLUDE ALL NECESSARY TOOLS, LABOR, EQUIPMENT AND MATERIALS NECESSARY TO COMPLETE THIS ITEM OF WORK.

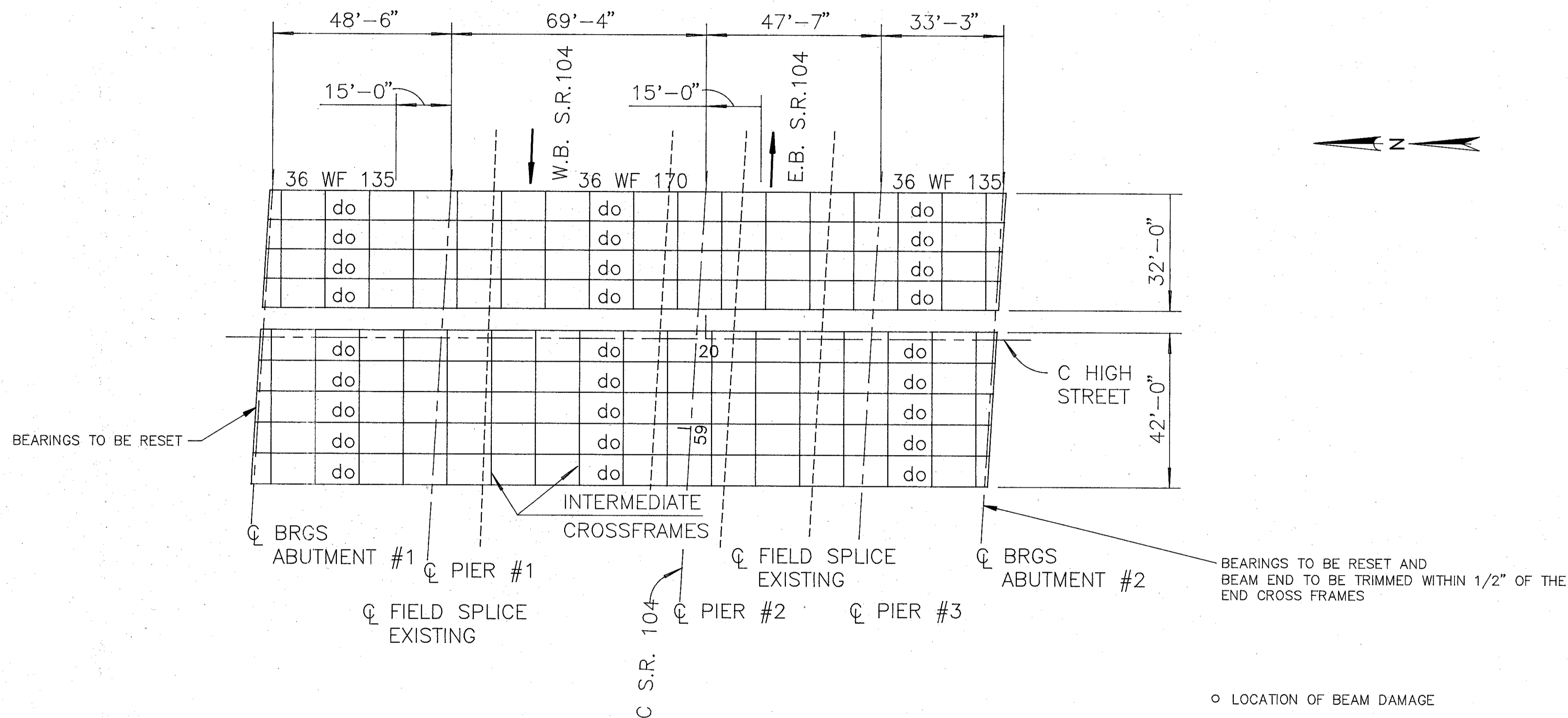
ITEM SPECIAL - HEAT STRAIGHTENING OF DAMAGED STRUCTURAL STEEL

THIS ITEM SHALL BE USED TO RESHAPE THE COLLISION DAMAGED BEAMS ON BRIDGE NO. FRA-104-0899 UNDER HIGH STREET. TWO BEAMS OVER THE EASTBOUND LANES (AS INDICATED ON THE FRAMING PLAN) SHALL BE REPAIRED BY HEAT STRAIGHTENING AS PER PROPOSAL NOTE. INCLUDED IN THE REPAIR SHALL BE THE PAINTING OF THE REPAIR AREAS AS PER SYSTEM OZEU.

ITEM 513 - TRIMMING OF BEAM END, AS PER PLAN

THIS ITEM SHALL BE USED TO TRIM THE ENDS OF BEAMS TO PROVIDE CLEARANCE AS PER DETAILS IN THE PLAN. AREAS TRIMMED SHALL BE GROUND SMOOTH.

PAYMENT FOR ALL THE ABOVE SHALL BE AT THE UNIT PRICE BID PER EACH FOR ITEM 513. TRIMMING OF BEAM END, AS PER PLAN WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK.



FRAMING PLAN

SEE SHEET 16 / 27 FOR PAINTING NOTES

RESOURCE INTERNATIONAL INC.
281 SEVENTH STREET DR.
WESTERVILLE, OHIO 43081
(614) 586-1989

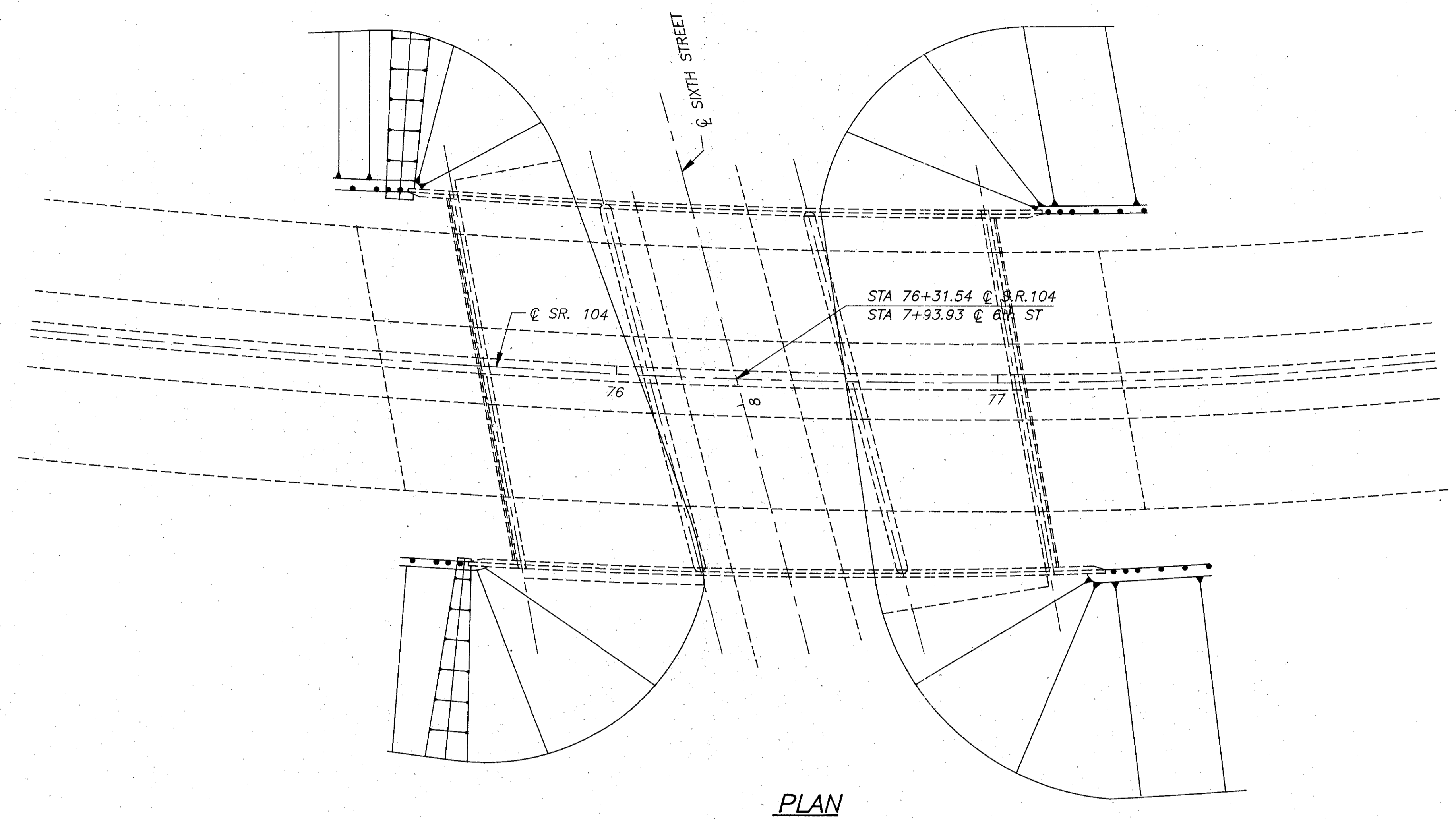
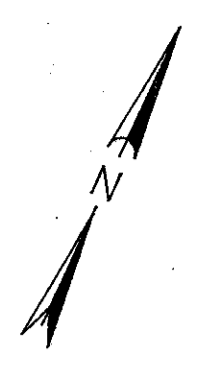
10/27

BRIDGE NOTES & FRAMING PLAN

STRUCTURE NO. FRA-104-0899
UNDER U.S. 23 (HIGH STREET)

FRANKLIN COUNTY

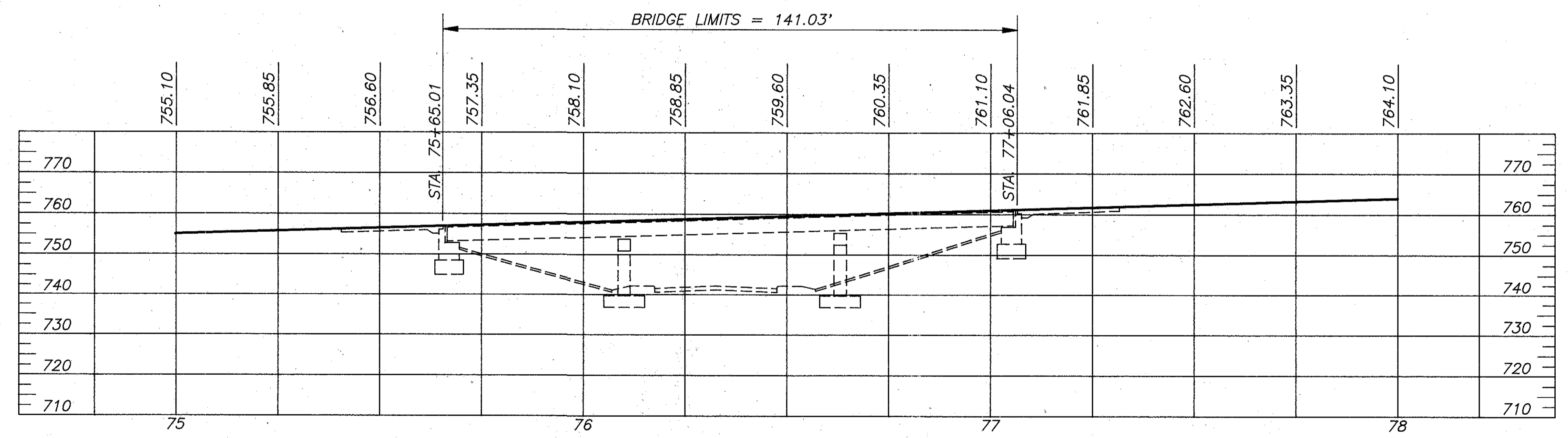
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SSK	ARS		JRA	JSB	8/94	



PLAN

PROPOSED BRIDGE WORK

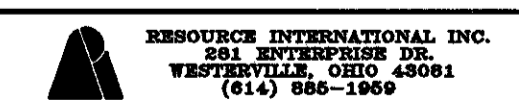
1. PAINT STRUCTURAL STEEL (SYSTEM OZEU)
2. UPGRADE MEDIAN BARRIER AND PARAPETS TO CURRENT STANDARDS
3. REPAIR ABUTMENT SLOPE DRAINAGE PROBLEM



PROFILE (OVER C OF 6th ST.)
(PILES NOT SHOWN)

EXISTING STRUCTURE

TYPE: CONTINUOUS STEEL BEAM BRIDGE WITH REINFORCED CONCRETE SLAB AND SUBSTRUCTURE
 SPANS: 42'-0", 52'-0" AND 42'-0" c/c OF BEARING, MEASURED ALONG TANGENT
 ROADWAY: VARIES BETWEEN 95'-9 3/4" AND 96'-6 1/8" F/F OF PARAPETS
 LOADING: CF 2000 (57)
 SKEW: 11°52'26" R.F.
 WEARING SURFACE: 1" MONOLITHIC CONCRETE
 APPROACH SLAB: AS-1-67 (25' LONG)
 ALIGNMENT: 4°00'00" CURVE
 SUPERELEVATION: VARIABLE
 DATE BUILT: 1967



11/27

GENERAL PLAN & ELEVATION

BRIDGE NO. FRA-104-0929
OVER SIXTH ST.

FRANKLIN COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SSK	ARS		JRA	JSB	8/94	

ITEM 601 - CONCRETE SLOPE PROTECTION, AS PER PLAN

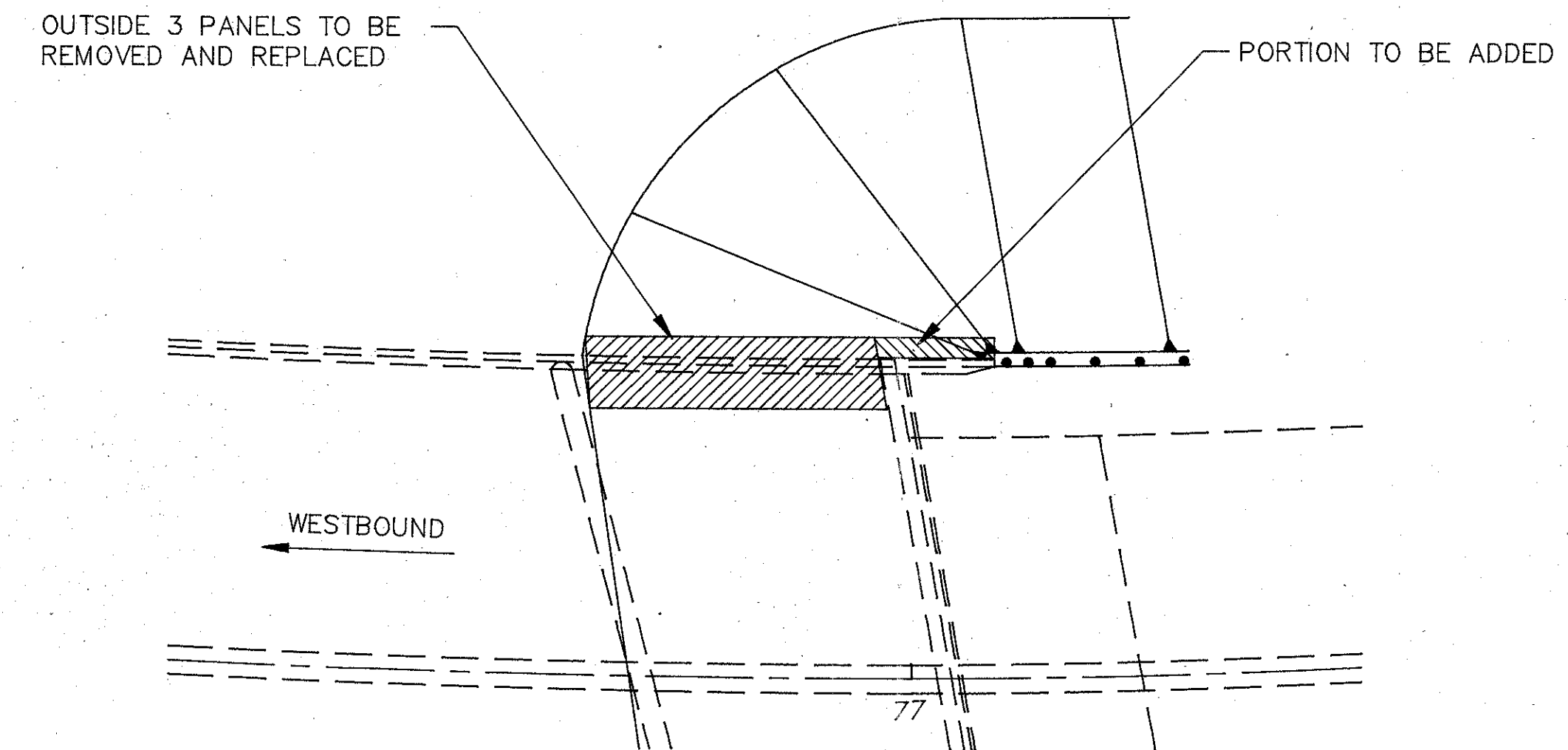
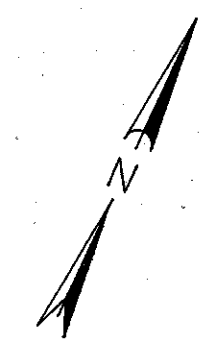
THIS ITEM IS INTENDED TO REPAIR THE EXISTING CONCRETE SLOPE PROTECTION AND TO PROVIDE ADDITIONAL SLOPE PROTECTION WHERE SHOWN ON THE PLANS. THE EXISTING CONCRETE TO BE REMOVED SHALL BE DISPOSED OF IN ACCORDANCE WITH 202.05.

ALL AREAS TO BE PAVED SHALL BE GRADED AS DIRECTED BY THE ENGINEER AND COMPACTED IN ACCORDANCE WITH 203.12. THE SLOPE PROTECTION SHALL BE CONSTRUCTED AS PER 601.05.

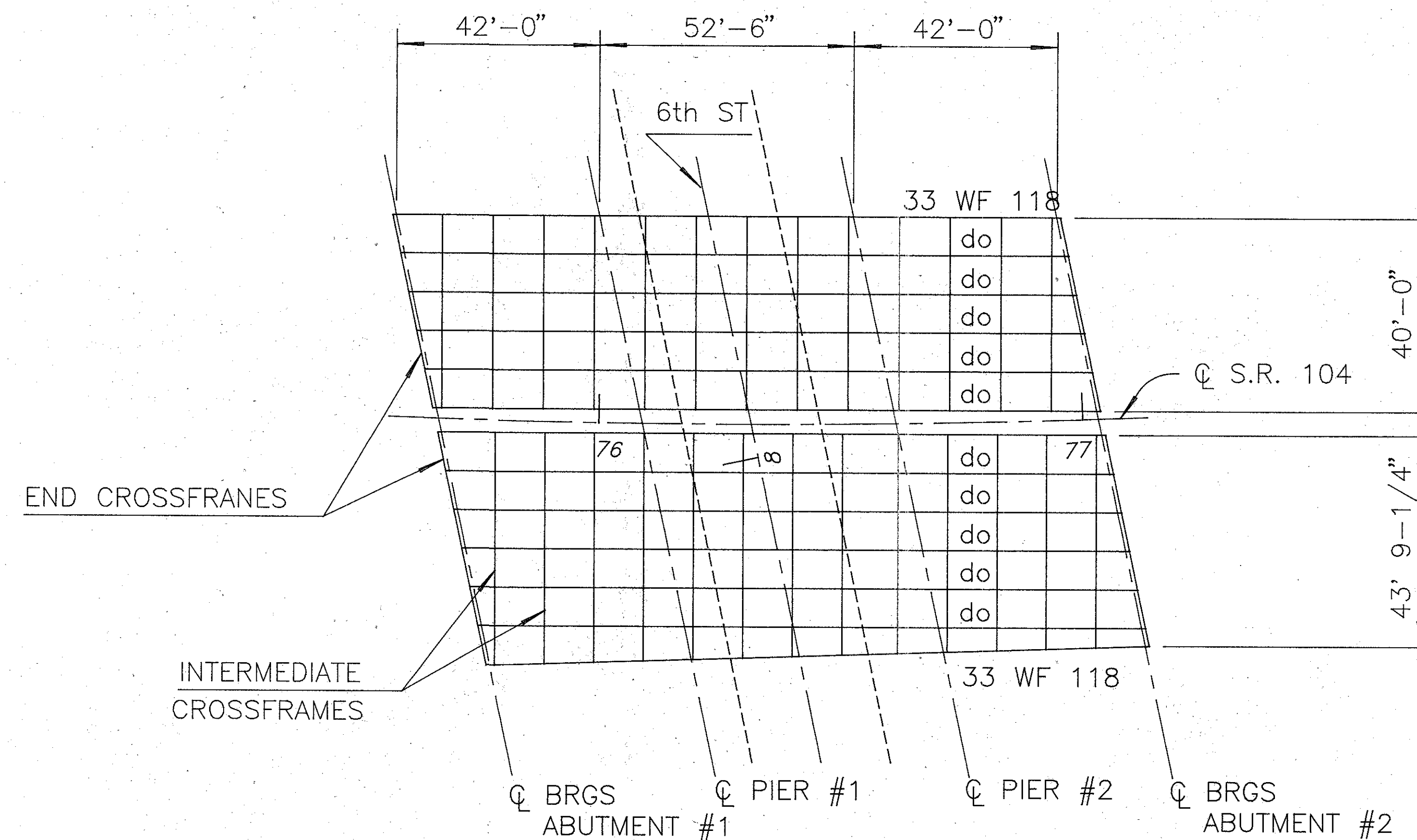
THIS ITEM SHALL CONSIST OF FURNISHING ALL MATERIALS, LABOR, EQUIPMENT AND INCIDENTALS NECESSARY TO REPAIR THE EXISTING CONCRETE SLOPE PROTECTION IN ACCORDANCE WITH THE PLANS.

CONCRETE PATCHING

A CONTINGENCY QUANTITY OF 10 SQUARE FEET HAS BEEN INCLUDED IN THE QUANTITIES TO BE USED FOR AREAS OF DETERIORATED CONCRETE ENCOUNTERED DURING CONCRETE MEDIAN MODIFICATION. THIS ITEM SHALL ONLY BE USED AS DIRECTED BY THE ENGINEER.

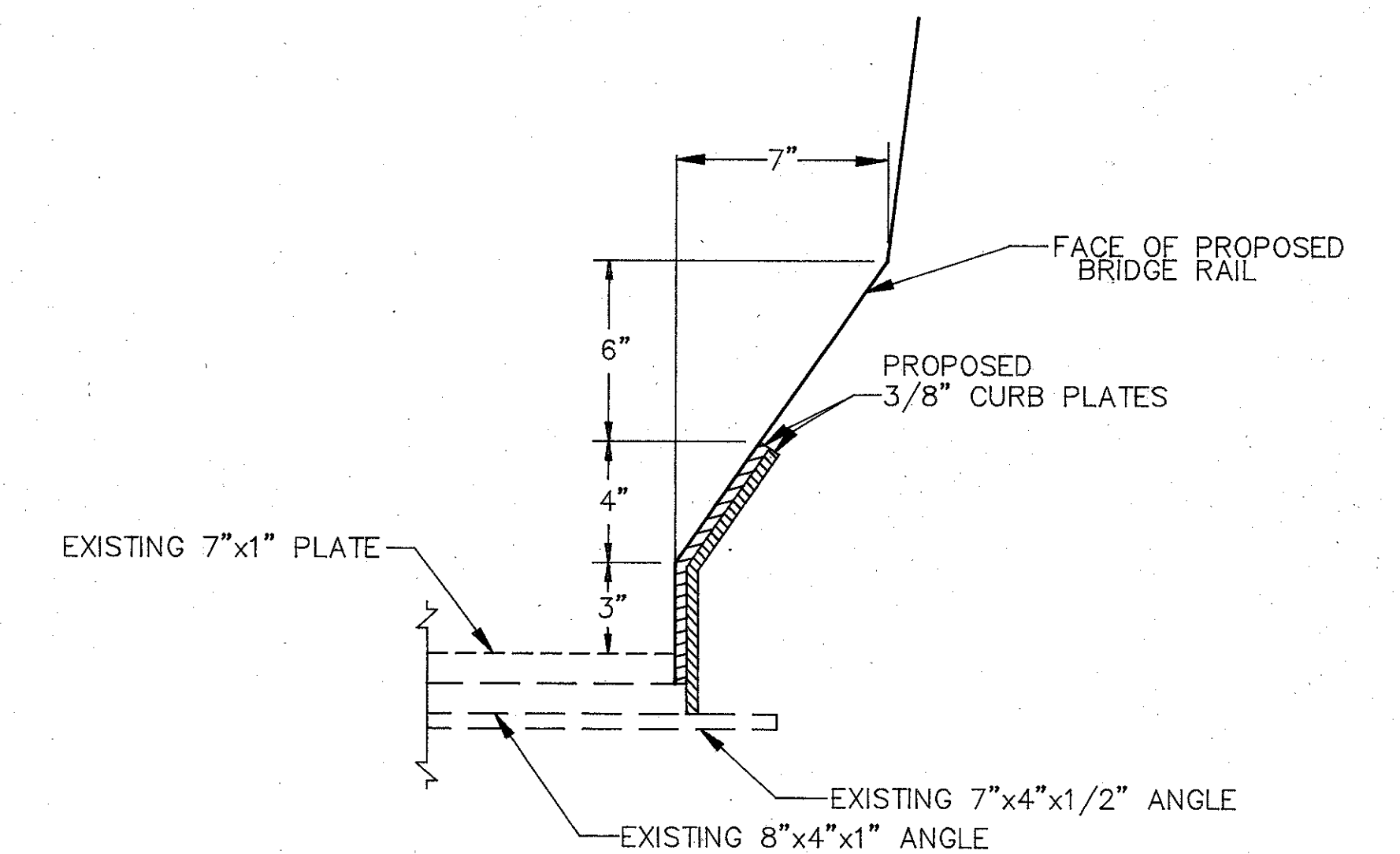


CONCRETE SLOPE PROTECTION REPAIR PLAN



FRAMING PLAN

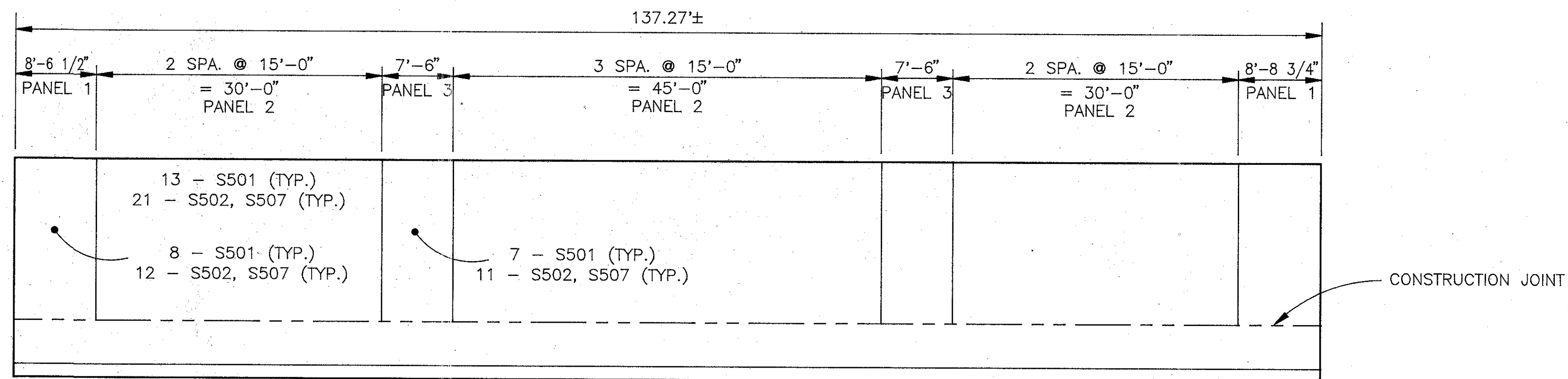
SEE SHEET 16 / 27 FOR PAINTING NOTES



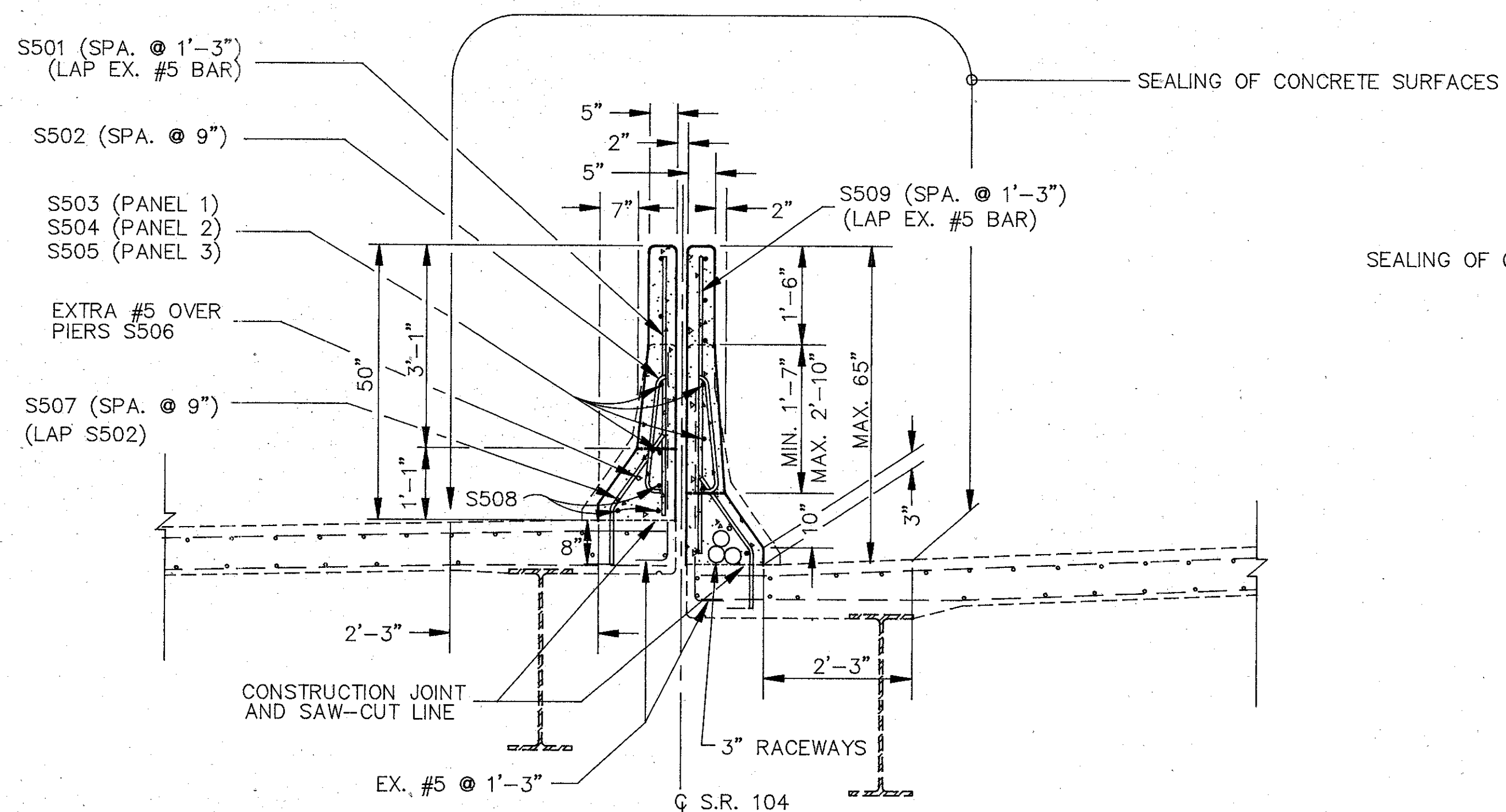
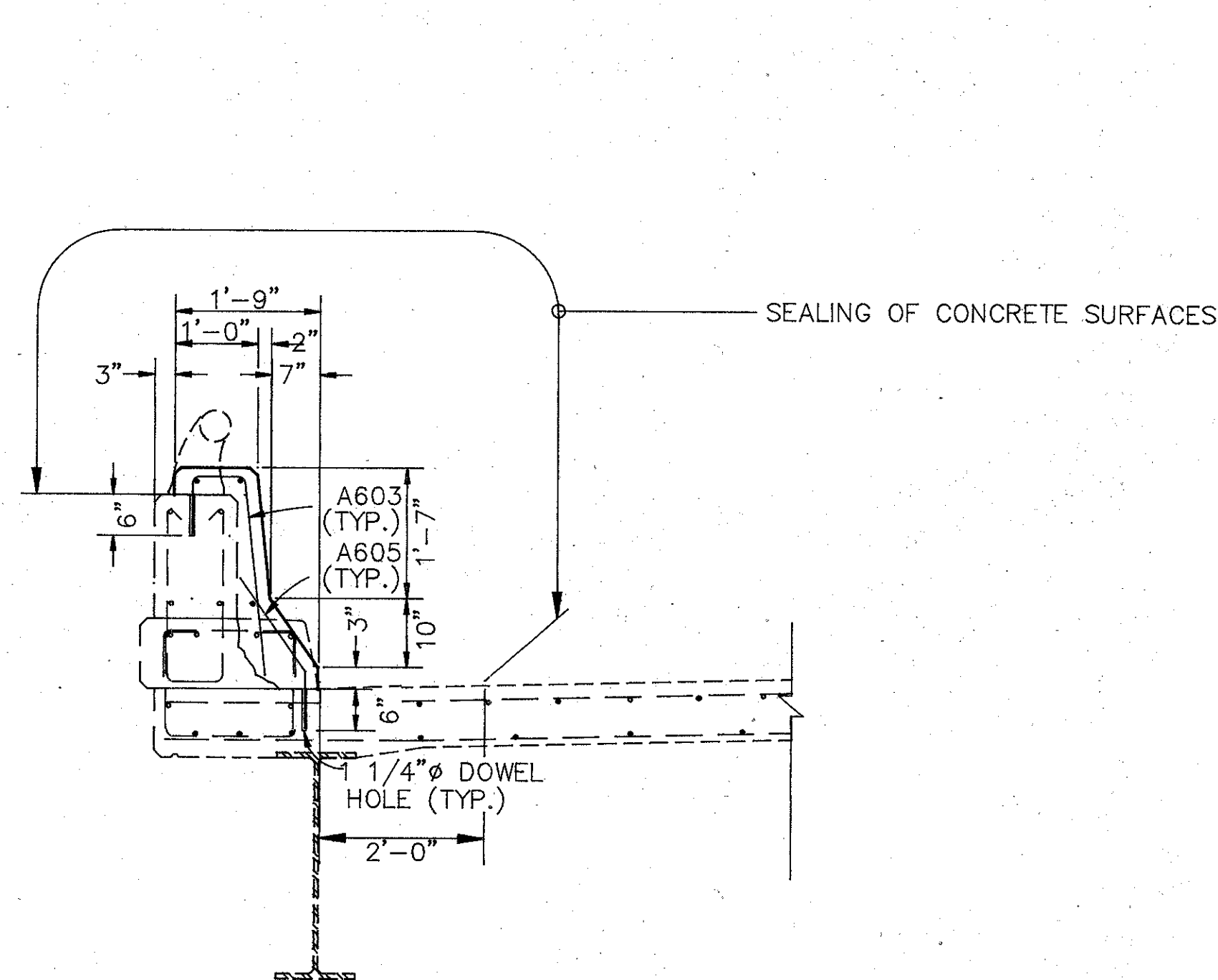
PROPOSED CURB PLATES

NOTE: CURB PLATES, AS SHOWN, SHALL BE INCLUDED WITH ITEM 517-RAILING FACED, AS PER PLAN, FOR PAYMENT.

RESOURCE INTERNATIONAL INC. 281 ENTERPRISE DR. WESTERVILLE, OHIO 43081 (614) 886-1999					12/27
BRIDGE NOTES & FRAMING PLAN STRUCTURE NO. FRA-104-0929 OVER SIXTH ST.					
FRANKLIN COUNTY					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
SSK	ARS		JRA	JSB	8/94
REVISION					

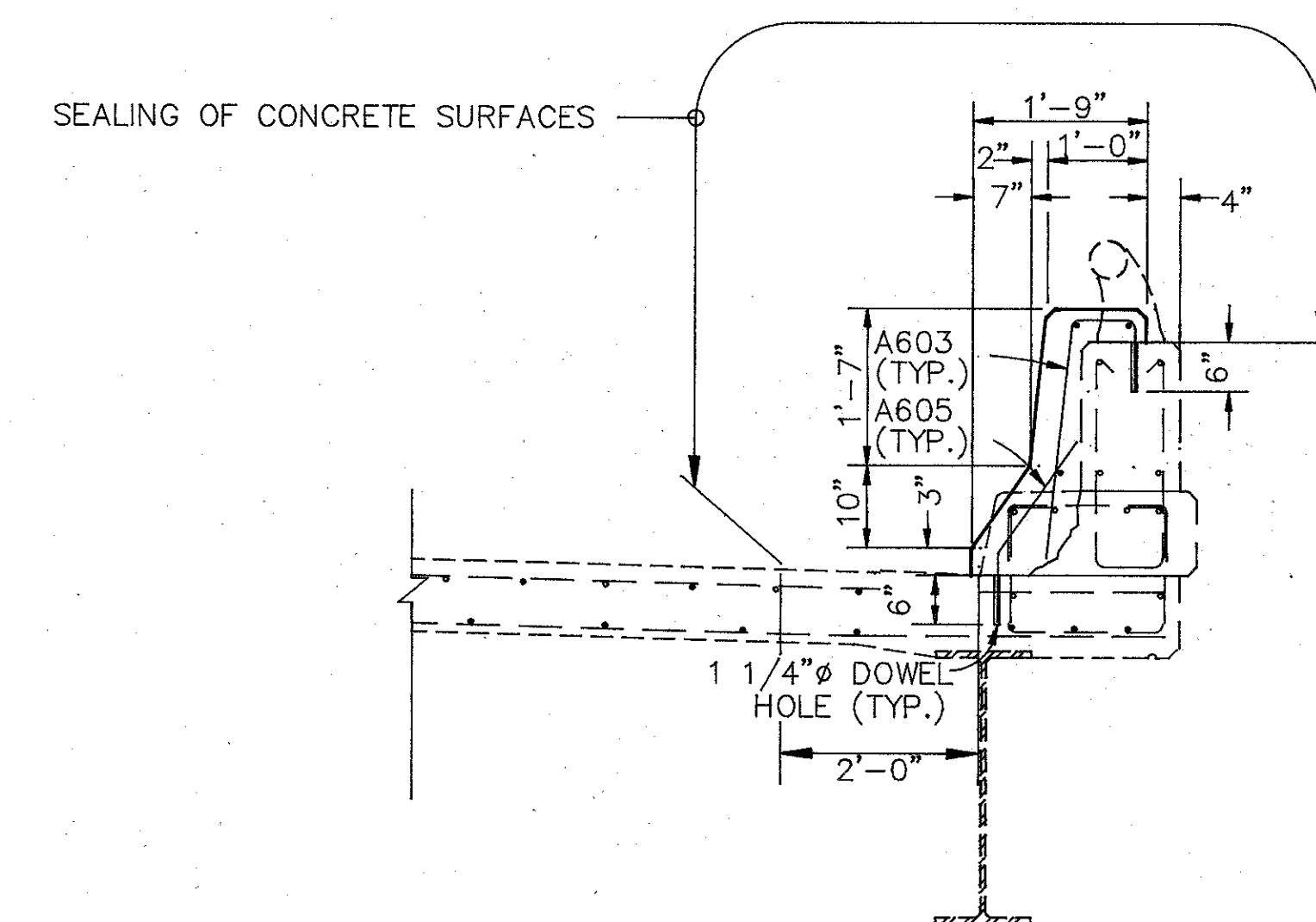


BARRIER ELEVATION



DECK SECTION

NOTE:
FOR REINFORCING AND RAILING
END DETAILS SEE SHEET 25 / 27

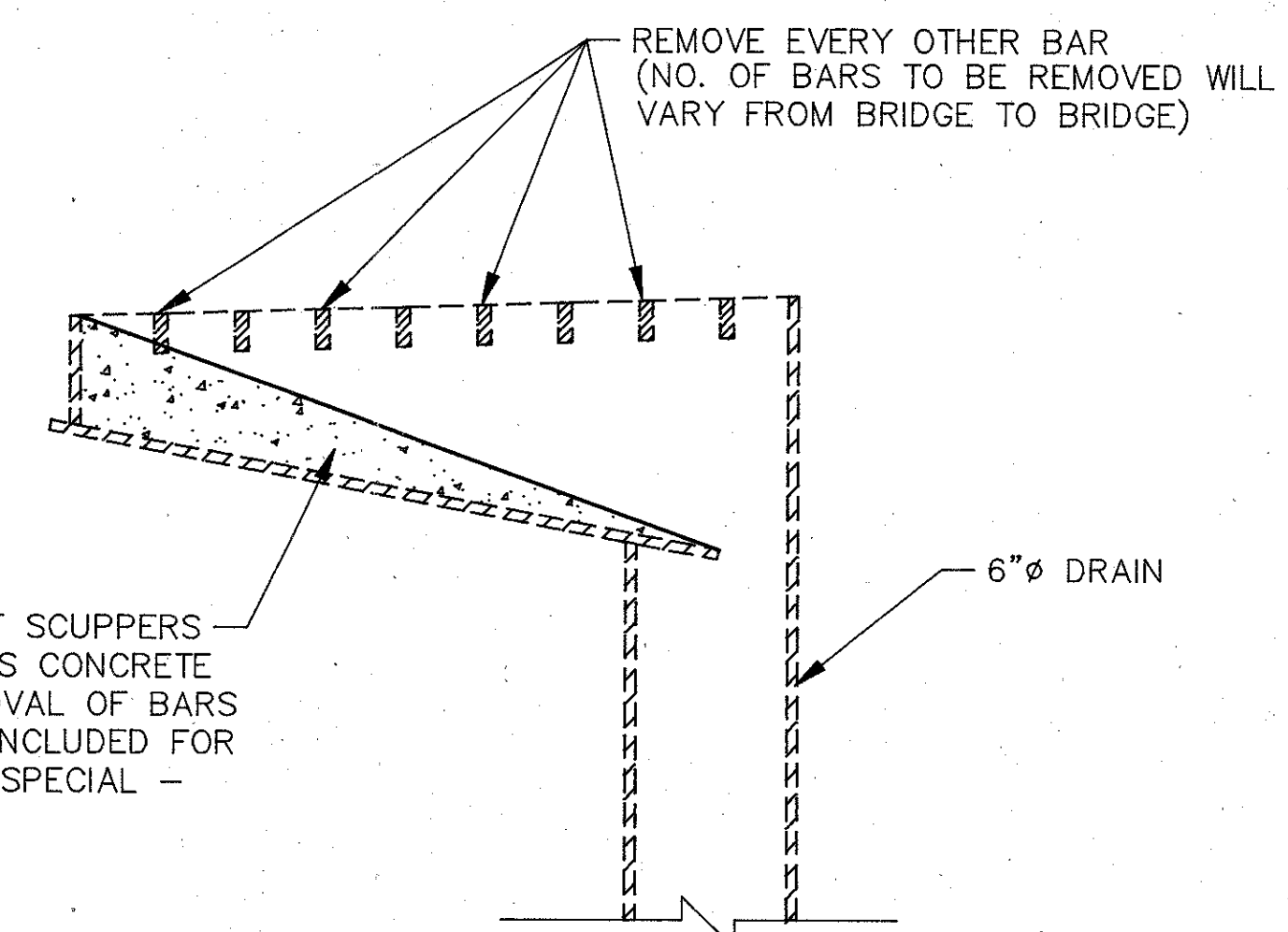


EX. PARAPET FACE AND CURBS
TO BE REMOVED TO THE EXTENT
NECESSARY TO CONSTRUCT 4" MIN.
PARAPET CONCRETE FACING. (TYP.)

REINFORCING STEEL LIST					BENDING DIAGRAM	
MARK	NO.	LENGTH	WEIGHT	TYPE		
HEADWALLS						
S501	121	3'-11"	494	STR.	1 1/2"	10"
S502	344	1'-11"	688	BENT		
S503	20	8'-4"	174	STR.	1'-9 1/2"	7"
S504	70	14'-8"	1071	STR.		
S505	20	7'-2"	149	STR.	2 3/4"	10 1/4"
S506	4	40'-0"	167	STR.		
S507	344	2'-2"	777	BENT		
S508	20	36'-4"	758	STR.		
S509	121	5'-1"	642	STR.		
TOTAL WEIGHT = 4,920 LBS.						
ALL REINFORCING STEEL SHALL BE EPOXY COATED						

NOTE: CARE IS TO BE TAKEN WHEN REMOVING THE EXISTING CONCRETE BARRIER SO THAT THE EXISTING VERTICAL STEEL (#5 BARS @ 1'-3") IS NOT DAMAGED AND MAY BE REUSED.

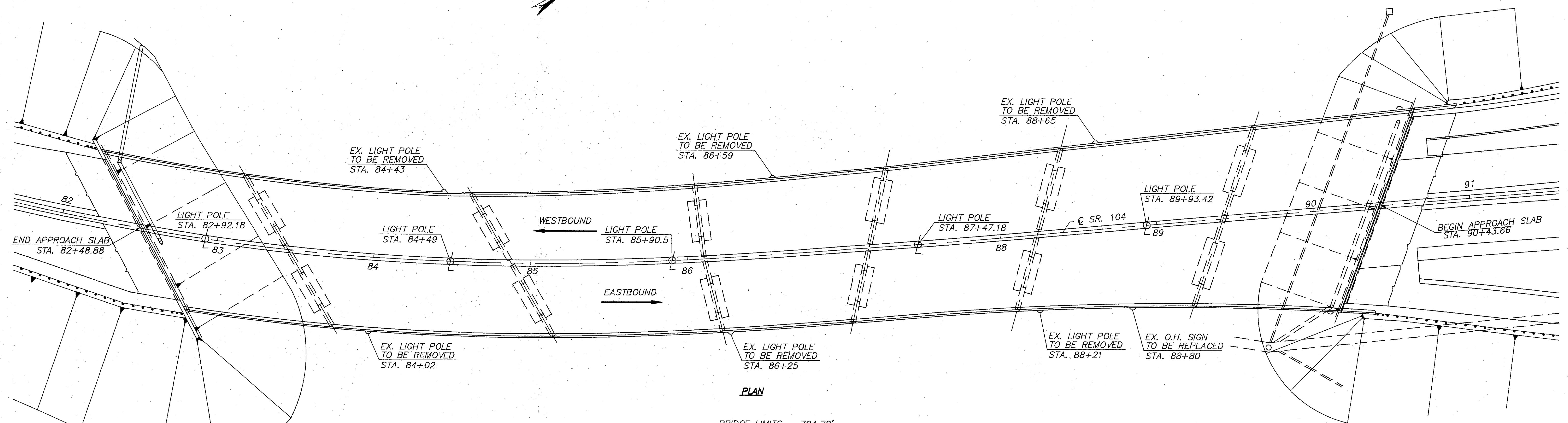
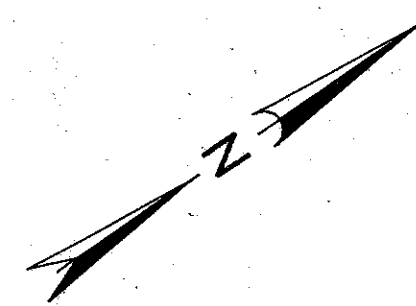
NOTE: EX. MEDIAN BARRIER JOINT ARMOR PLATES SHALL BE RE-USED IN THE NEW MEDIAN BARRIER. THE PLATES SHALL BE FIELD MODIFIED AS NECESSARY TO FIT INTO THE NEW BARRIER CONFIGURATION, AND ANY DAMAGE TO THE EX. PLATES SHALL BE CORRECTED BY THE CONTRACTOR. COST OF THIS WORK SHALL BE INCLUDED WITH ITEM 511 FOR PAYMENT.



SCUPPER MODIFICATION DETAIL

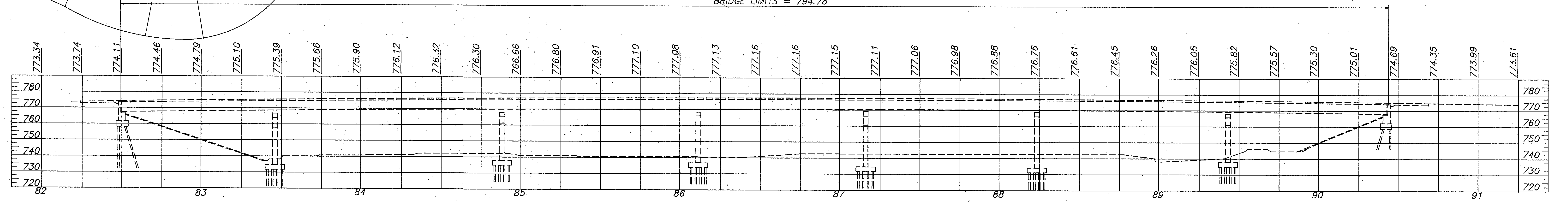
*SCUPPERS AS FOUND MAY BE REVERSED 180° OR OF ANOTHER TYPE THAN THAT SHOWN.

RESOURCE INTERNATIONAL INC. 981 ENTERPRISE DR. WESTERVILLE, OHIO 43081 (614) 886-1999						13/27
BARRIER DETAILS						
STRUCTURE NO. FRA-104-0929 OVER SIXTH ST.						
FRANKLIN COUNTY						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SSK	ARS	JRA	JSB	8/94		



PLAN

BRIDGE LIMITS = 794.78'



PROFILE ALONG C.S.R. 104

PROPOSED BRIDGE WORK

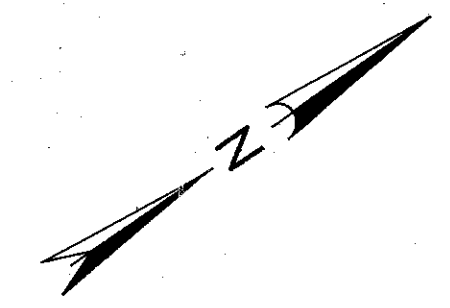
1. UPGRADE MEDIAN BARRIER AND RAILINGS TO CURRENT STANDARDS
2. PAINT STRUCTURAL STEEL (SYSTEM OZEU)
3. REPAIR FAILED ABUTMENT SLOPE
4. REPLACE DAMAGED DRAINAGE SYSTEM COMPONENTS
5. MODIFY SCUPPERS
6. PATCH SMALL AREAS OF ABUTMENTS

EXISTING STRUCTURE
 TYPE: CONTINUOUS WELDED STEEL GIRDERS WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURES
 SPANS: 94.40', 141.35', 123.05', 105.20', 111.00', 116.00' AND 98.00' (C/C BRGS.)
 ROADWAY: VARIABLE
 LOADING: CF 2000(57)
 SKEW: VARIABLE
 WEARING SURFACE: 1" MONOLITHIC CONCRETE
 APPROACH SLABS: AS-1-67, 25' LONG
 ALIGNMENT: 4' CURVE, SPIRAL AND TANGENT
 SUPERELEVATION: VARIABLE

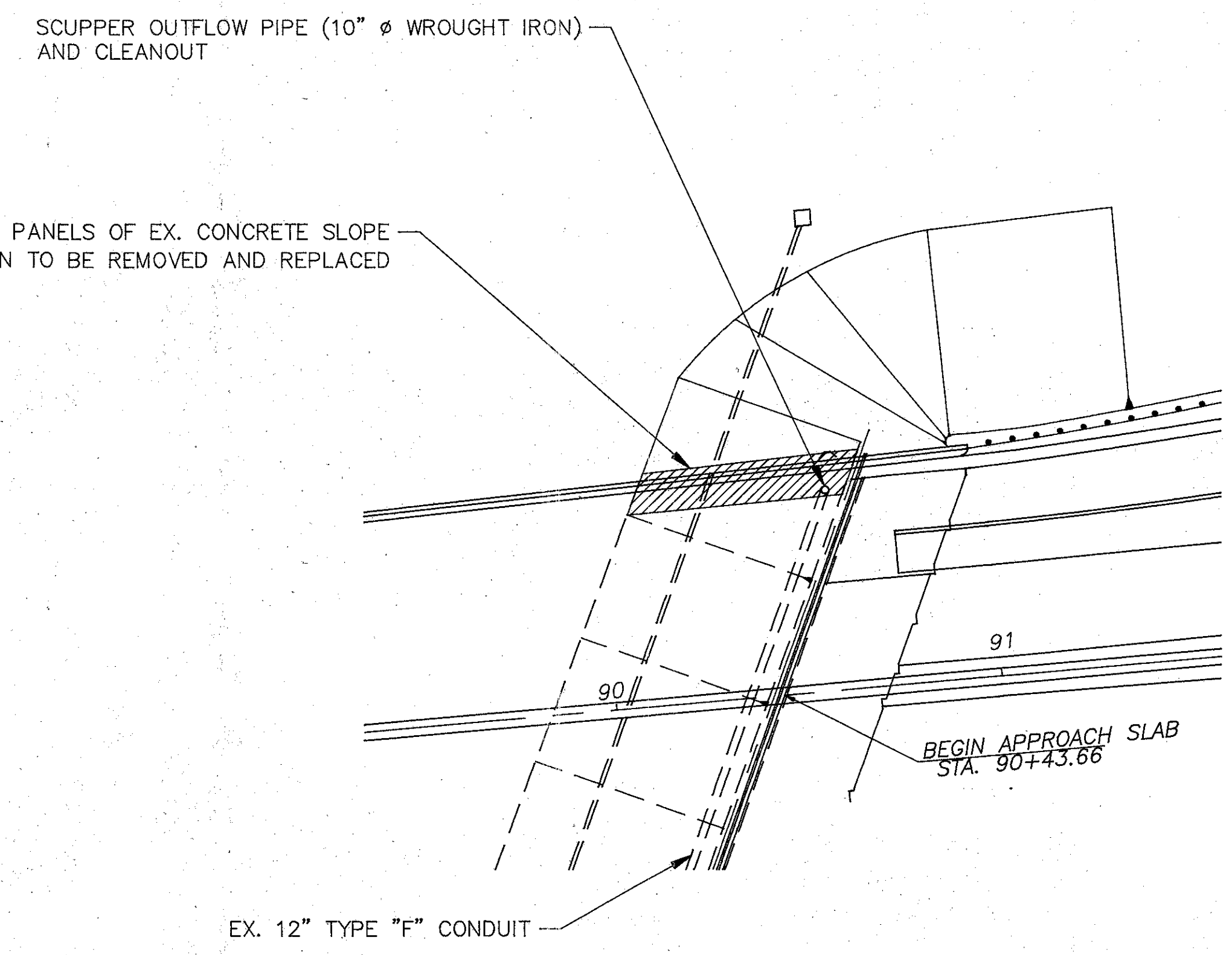
RESOURCE INTERNATIONAL INC. 14/27
 281 ENTERPRISE DR.
 WESTERVILLE, OHIO 43081
 (614) 886-1000

GENERAL PLAN & ELEVATION
 BRIDGE NO. FRA-104-0942
 OVER C&O R.R. AND PARSONS AVE.

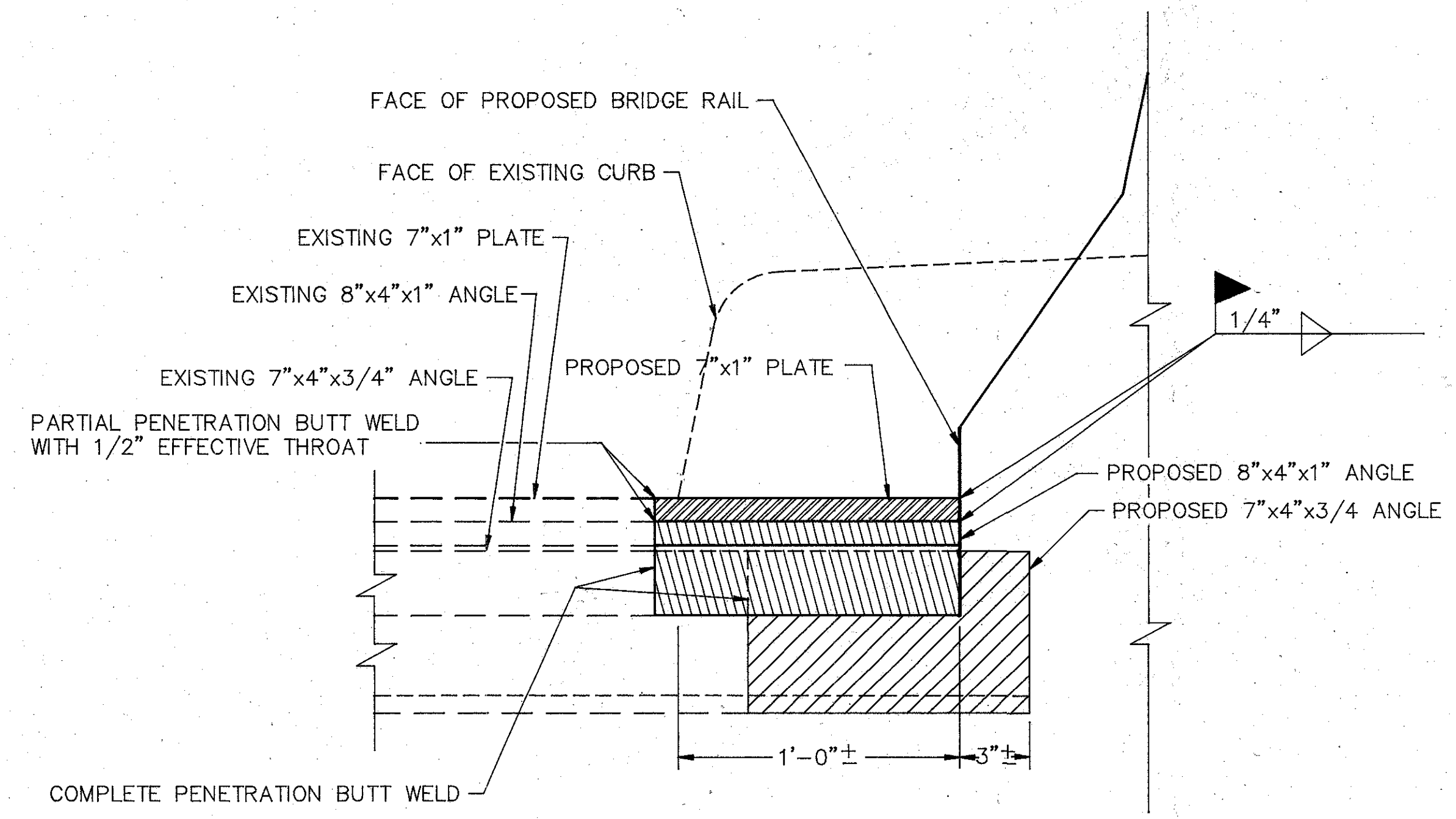
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SSK	ARS		JRA	JSB	8/94	



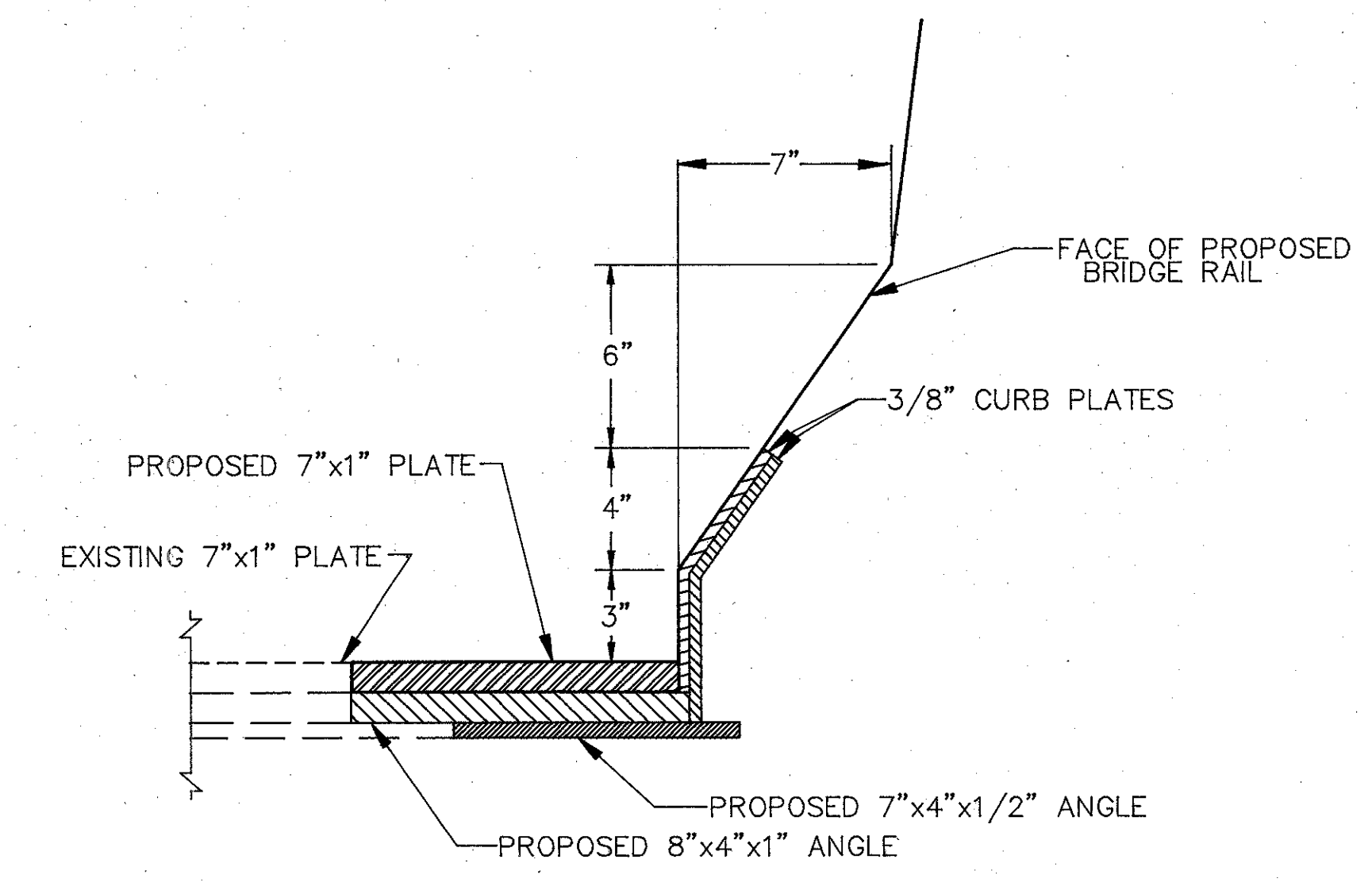
- NOTES:**
1. THE EXISTING CONCRETE SLOPE PROTECTION SHALL BE REPLACED WHERE SHOWN ON THIS SHEET AS DESCRIBED IN THE NOTE ON SHEET [12 / 25]. ALSO INCLUDED IN THE PRICE BID FOR THIS ITEM SHALL BE REPAIRING THE CONNECTION OF THE EXISTING SCUPPER OUTFLOW PIPE TO THE EXISTING TYPE "F" 12" Ø CONDUIT, AND THE CLEANOUT WHICH ARE LOCATED IN THE AREA TO BE REPLACED.
 2. CONCRETE PATCHING
A CONTINGENCY QUANTITY OF 10 SQUARE FEET HAS BEEN INCLUDED IN THE QUANTITIES TO BE USED FOR AREAS OF DETERIORATED CONCRETE ENCOUNTERED DURING CONCRETE MEDIAN MODIFICATION. THIS ITEM SHALL ONLY BE USED AS DIRECTED BY THE ENGINEER.



PARTIAL PLAN
NORTHEAST ABUTMENT SLOPE



HORIZONTAL EXTENSION OF END DAM
BY WELDED BUTT JOINT



PROPOSED CURB PLATE

		15/27				
NOTES & JOINT DETAILS						
STRUCTURE NO. FRA-104-0942 OVER C&O R.R. AND PARSONS AVE. FRANKLIN COUNTY						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SSK	ARS		JRA	JSB	8/94	

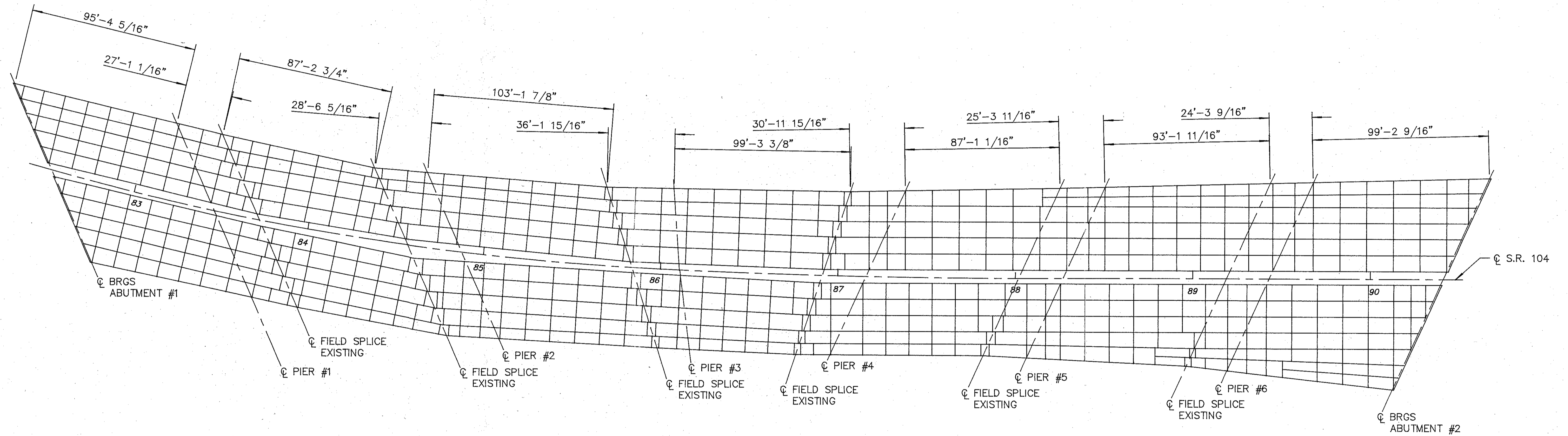


PLATE GIRDER FRAMING PLAN

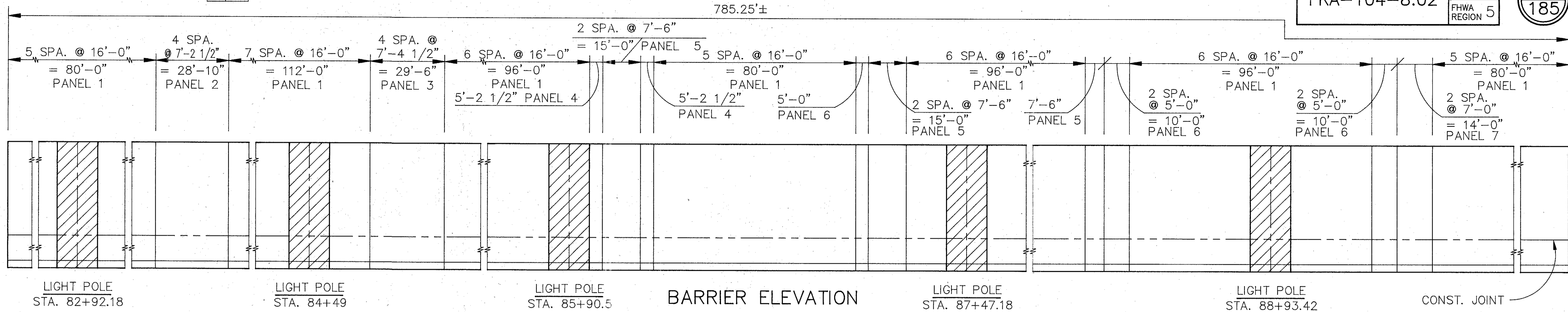
PAINING PROCEDURE NOTES:

1. PAINT ALL STRUCTURAL STEEL BEAMS AND GIRDERS, INCLUDING THE INTERMEDIATE AND END CROSS FRAMES, WEB STIFFENERS (FRA-104-0942 ONLY) AND BEARINGS.
2. ALL WORK SHALL BE GOVERNED BY THE **SS 815** "FIELD PAINTING OF EXISTING STEEL, SYSTEM OZEU."
3. THESE NOTES ALSO APPLY TO WORK SHOWN ON SHEETS **[10 / 27]**, **[12 / 27]**, **[21 / 27]** AND **[24 / 27]** OF THESE PLANS.
4. ANY NEW STEEL SHALL BE GIVEN A WASH COAT OF PAINT IN THE SHOP. NEW STEEL SHALL THEN BE TREATED LIKE EXISTING STEEL FOR PAINTING PURPOSES AND FOR PAYMENT OF PAINTING.
5. QUANTITIES WERE BASED UPON EXISTING PLAN DIMENSIONS OF THE BEAMS, WEB STIFFENERS AND INTERMEDIATE CROSS FRAMES AND 5% ADDED FOR END CROSS FRAMES, BEARINGS, ETC.

 RESOURCE INTERNATIONAL INC. 281 NUTTERWOOD DR. WESTERVILLE, OHIO 43081 (614) 886-1909						16/27
FRAMING PLAN & PAINTING NOTES						
STRUCTURE NO. FRA-104-0942 OVER C&O R.R. AND PARSONS AVE.						
FRANKLIN COUNTY						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SSK	ARS		JRA	JSB	8/94	

FOR DETAILS OF MEDIAN WITH STRUCTURE MOUNTING ASSEMBLY SEE SHEET 27/27

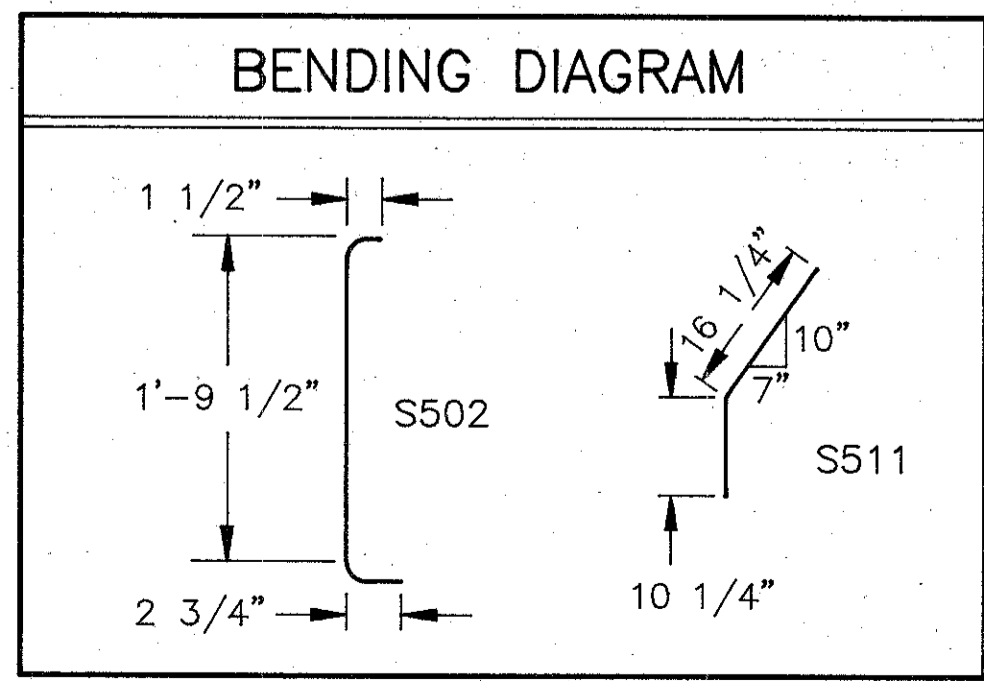
PANEL #	# S501	# S502, S511
1	14	22
2	6	10
3	7	10
4	5	7
5	7	11
6	5	7
7	6	10



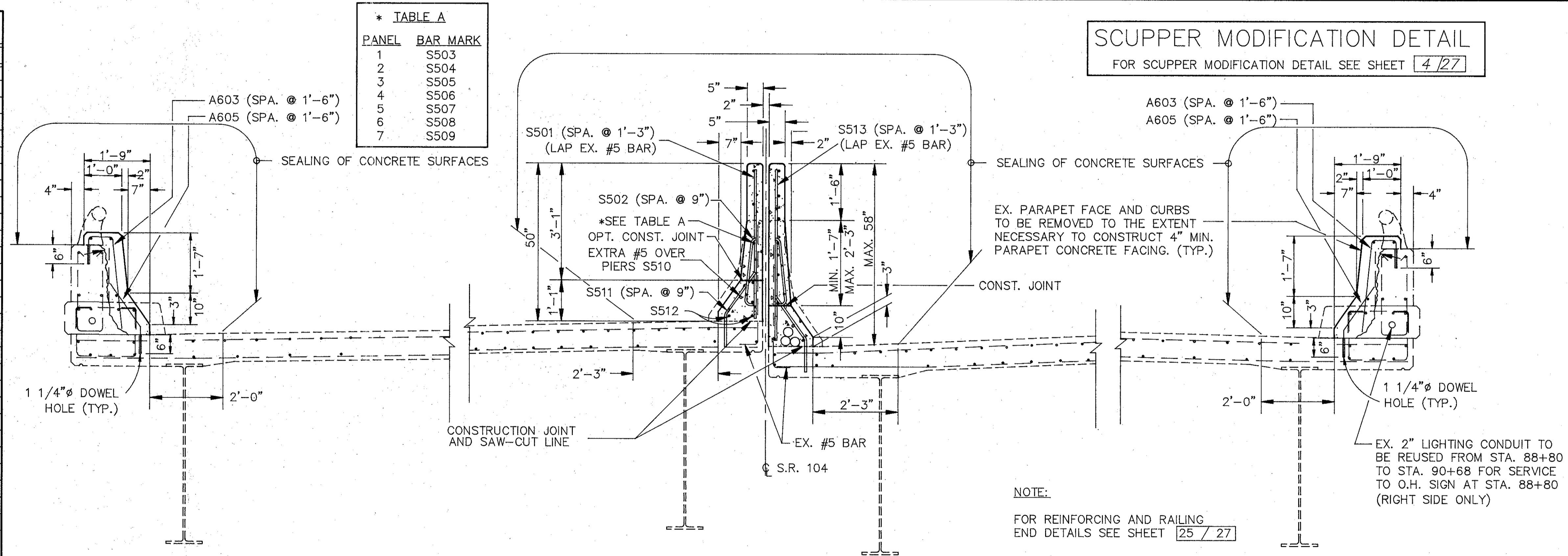
BARRIER ELEVATION

REINFORCING STEEL LIST				
MARK	NO.	LENGTH	WEIGHT	TYPE
S501	1248	3'-11"	5098	STR.
S502	1948	1'-11"	3894	BENT
S503	350	15'-8"	5719	STR.
S504	40	6'-10"	285	STR.
S505	40	7'-0"	292	STR.
S506	20	4'-10"	101	STR.
S507	50	7'-2"	374	STR.
S508	50	4'-8"	243	STR.
S509	20	6'-8"	139	STR.
S510	12	40'-0"	501	STR.
S511	1948	2'-2"	4402	BENT
S512	105	40'-0"	4381	STR.
S513	1248	4'-6"	5857	STR.
STEEL FOR STRUCTURE MOUNTING ASSEMBLIES				
SL501	4	15'-8"	65.4	STR.
SL504	4	6'-11"	28.9	STR.
SL508	8	9'-3"	77.2	STR.
SL511	11	2'-0"	22.9	BENT
SL512	11	1'-10"	22.0	BENT
SL513	11	5'-7"	64.0	BENT
SL514	11	1'-3"	14.3	STR.
SL515	11	1'-10"	21.0	STR.
SL516	11	3'-0"	34.4	BENT
SL517	11	2'-2 1/2"	25.3	BENT
SL518	11	1'-9"	20.1	BENT
SL519	11	2'-2 1/2"	25.3	BENT

TOTAL WEIGHT = 31,707 LBS.
ALL REINFORCING STEEL SHALL BE EPOXY COATED
FOR DETAILS OF MEDIAN STRUCTURE ASSEMBLY STEEL SEE SHEET 27/27



* TABLE A	
PANEL	BAR MARK
1	S503
2	S504
3	S505
4	S506
5	S507
6	S508
7	S509



DECK SECTION

SCUPPER MODIFICATION DETAIL

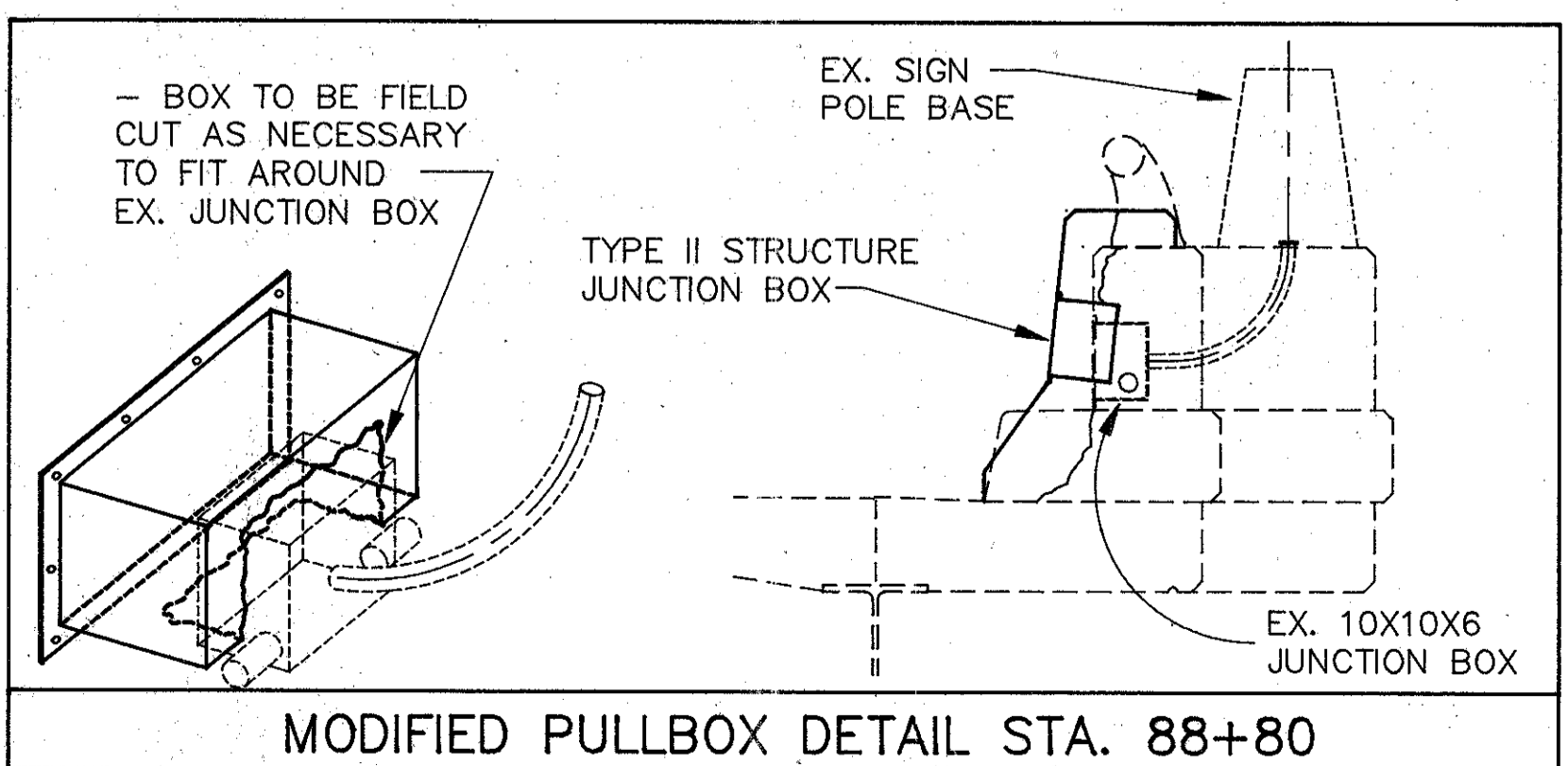
FOR SCUPPER MODIFICATION DETAIL SEE SHEET 4/27

NOTE:
FOR REINFORCING AND RAILING END DETAILS SEE SHEET 25/27

A603 AND A605 BARS SHALL BE SPACED AS SHOWN EXCEPT THEY SHALL BE INSTALLED 4" FROM BOTH SIDES OF DEFLECTION JOINTS.

NOTE: CARE IS TO BE TAKEN WHEN REMOVING THE EXISTING CONCRETE BARRIER SO THAT THE EXISTING VERTICAL STEEL (#5 BARS @ 1'-3") IS NOT DAMAGED AND MAY BE REUSED.

NOTE: EX. MEDIAN BARRIER JOINT ARMOR PLATES SHALL BE RE-USED IN THE NEW MEDIAN BARRIER. THE PLATES SHALL BE FIELD MODIFIED AS NECESSARY TO FIT INTO THE NEW BARRIER CONFIGURATION, AND ANY DAMAGE TO THE EX. PLATES SHALL BE CORRECTED BY THE CONTRACTOR. COST OF THIS WORK SHALL BE INCLUDED WITH ITEM 511 FOR PAYMENT.

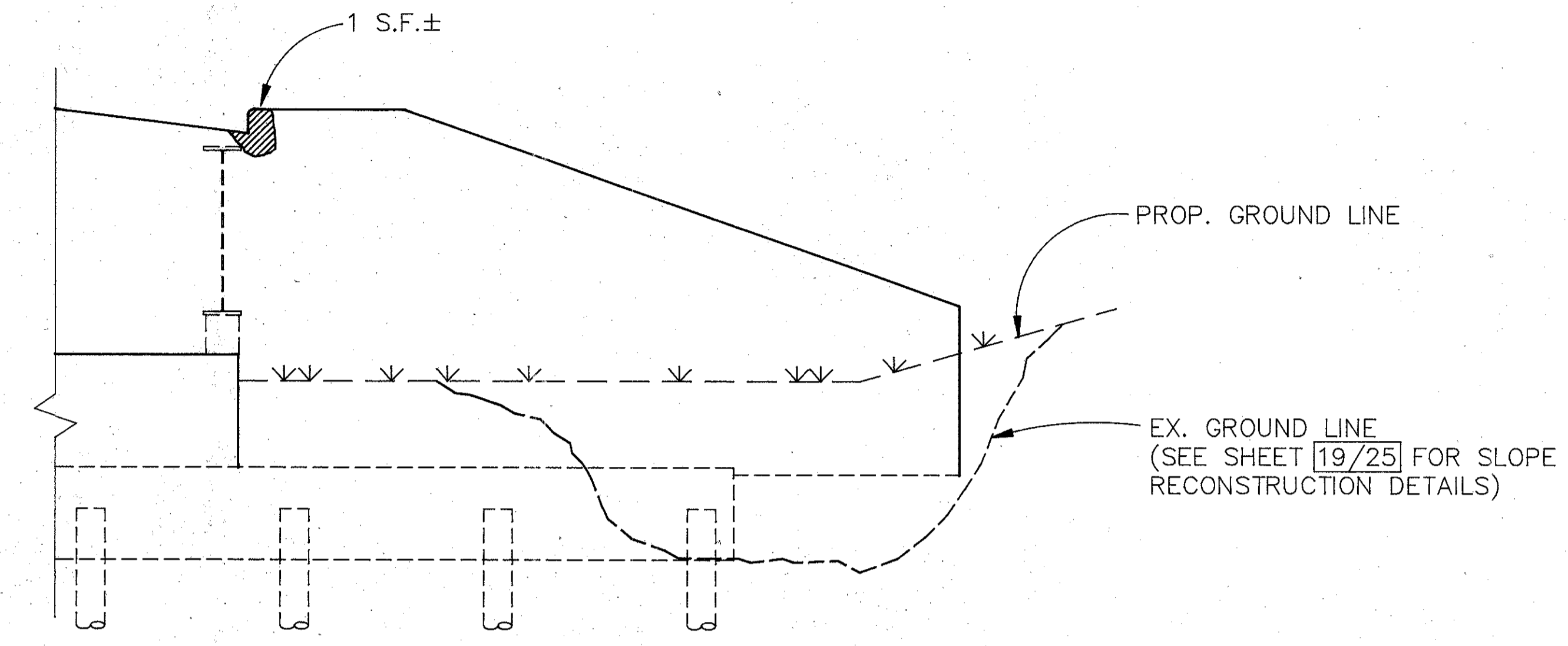


RESOURCE INTERNATIONAL, INC. 17/27
281 WESTERN DR. WESTVILLE, OHIO 43081 (614) 886-1600

BARRIER DETAILS

STRUCTURE NO. FRA-104-0942
OVER CSX R.R. & PARSONS AVE.
FRANKLIN COUNTY

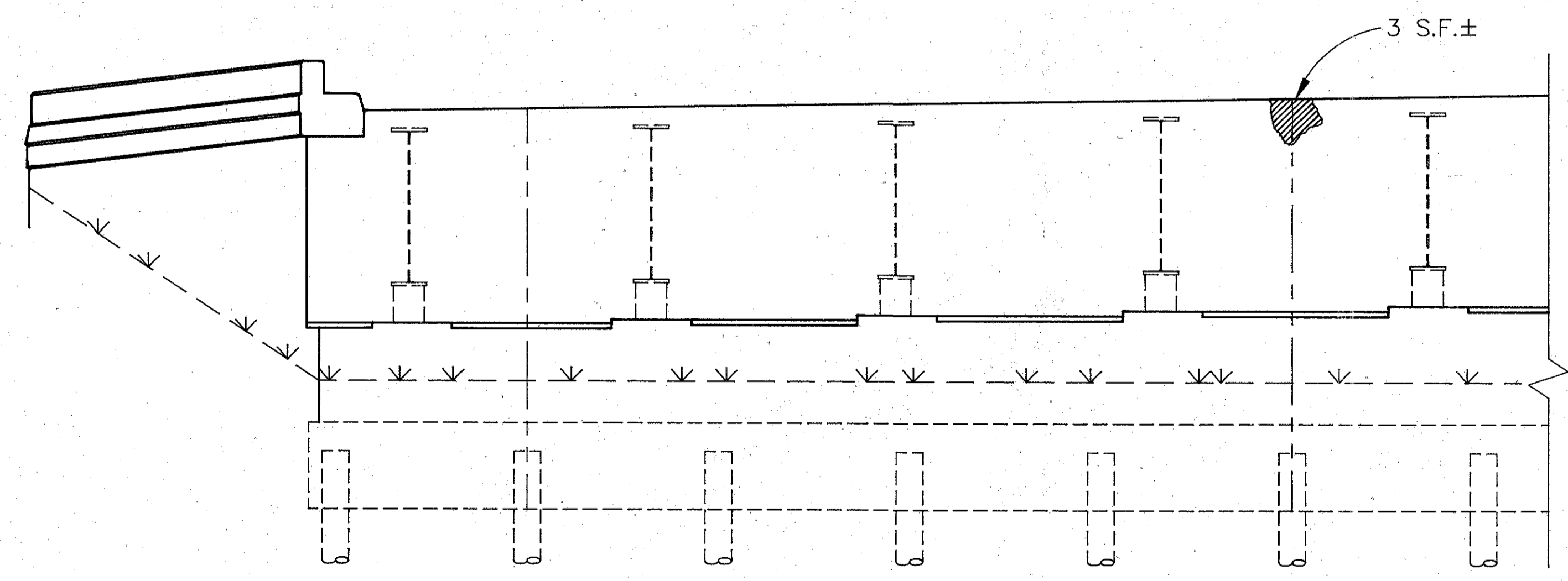
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SSK	ARS		JRA	JSB	8/94	



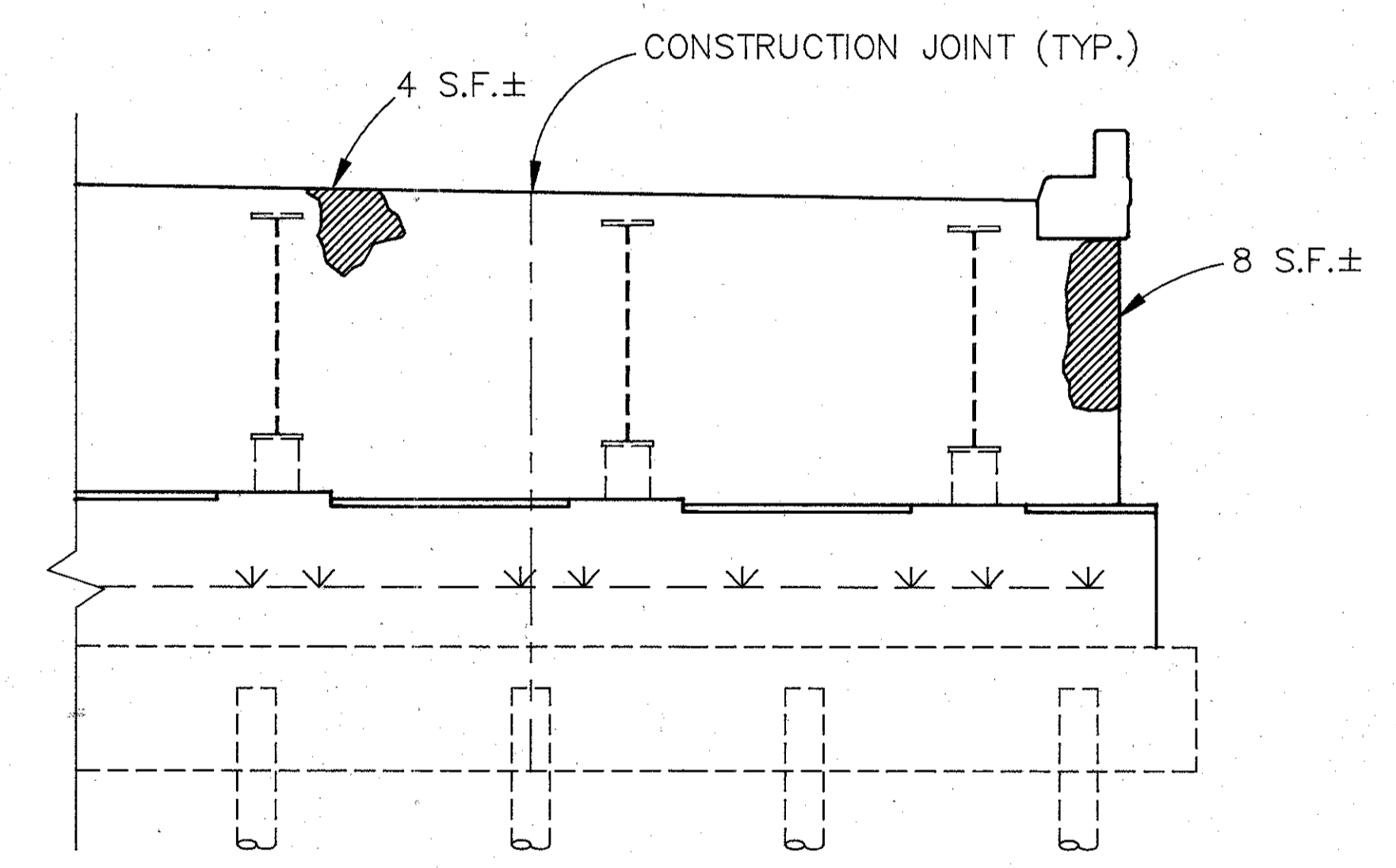
PARTIAL WEST ABUTMENT ELEVATION

LEGEND

 AREAS REQUIRING ITEM 519--PATCHING
CONCRETE STRUCTURE



PARTIAL EAST ABUTMENT ELEVATION

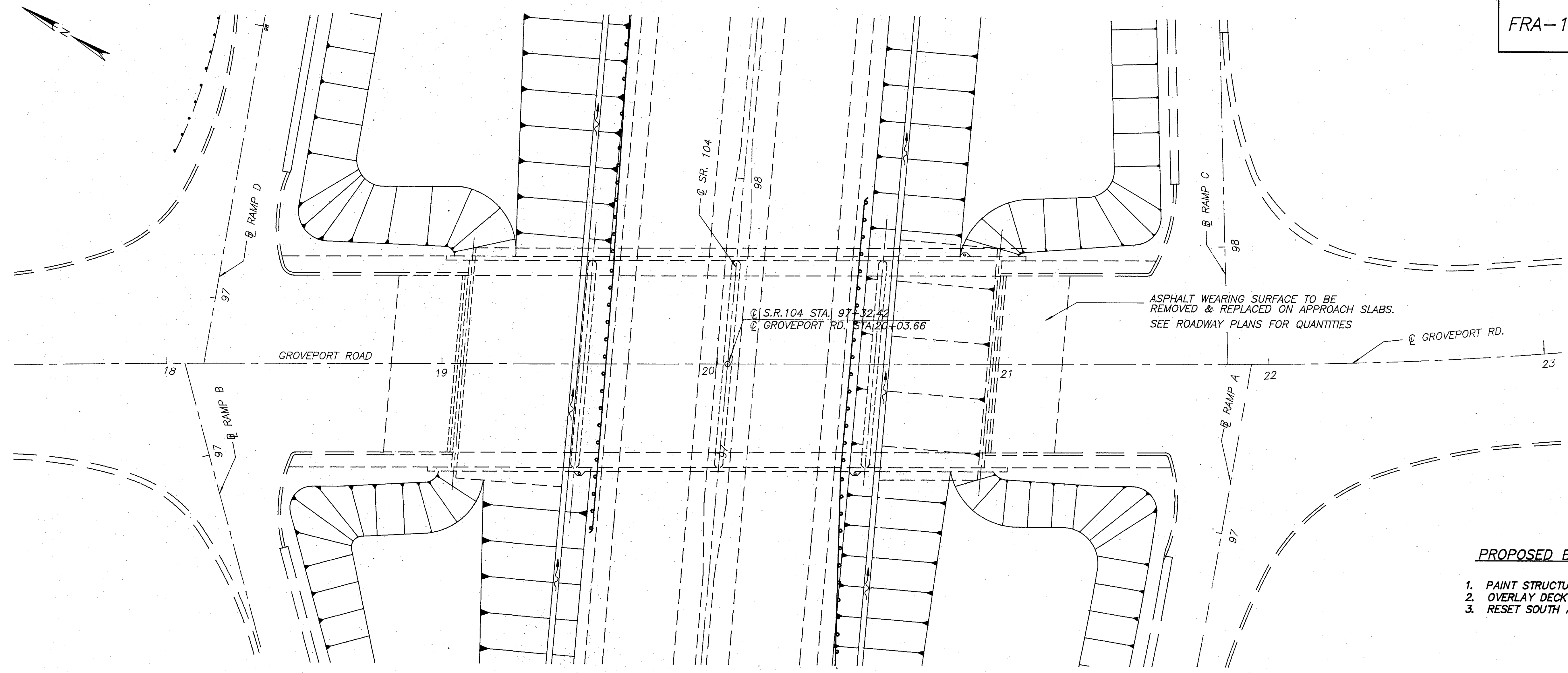


RESOURCE INTERNATIONAL INC. 18/27
281 HINTERHURST DR.
WESTERVILLE, OHIO 43081
(614) 885-1000

CONCRETE PATCHING DETAILS

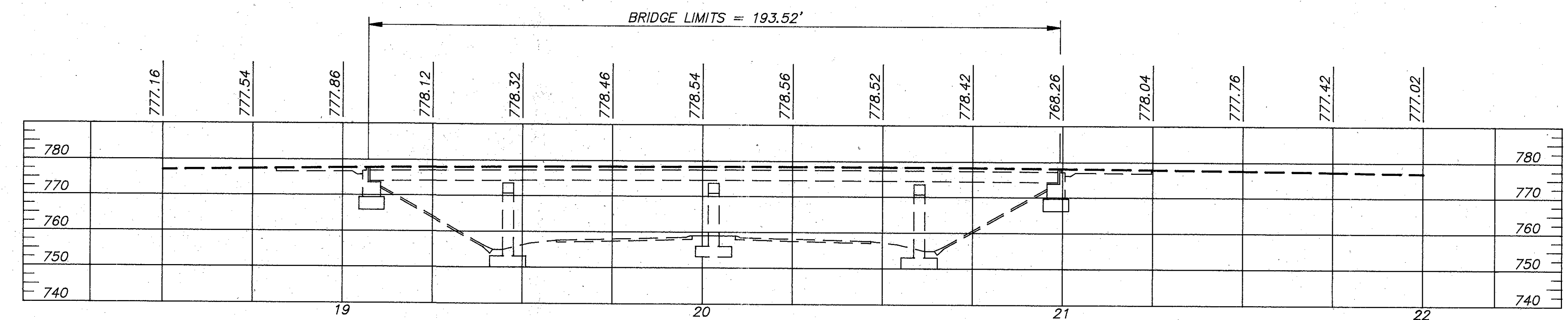
STRUCTURE NO. FRA-104-0942
OVER C&O R.R. AND PARSONS AVE.
FRANKLIN COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SSK	ARS		JRA	JSB	9/92	



- PROPOSED BRIDGE WORK**
1. PAINT STRUCTURAL STEEL (SYSTEM OZEU)
 2. OVERLAY DECK WITH MICRO-SILICA MODIFIED CONCRETE
 3. RESET SOUTH ABUTMENT BEARINGS

PLAN
SCALE: 1" = 20'



PROFILE (ALONG C OF GROVEPORT ROAD)
PILES NOT SHOWN

EXISTING STRUCTURE

TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE

SPANS: 42'-0", 52'-6", 52'-6" AND 42'-0"
c/c OF BEARINGS

ROADWAY: 64'-0" F/F OF 6'-0" SIDEWALKS

SKEW: 5°03'13" L.F.

WEARING SURFACE: 1" MONOLITHIC CONCRETE

APPROACH SLAB: AS-1-67 (25' LONG)

ALIGNMENT: TANGENT

SUPERELEVATION: NONE

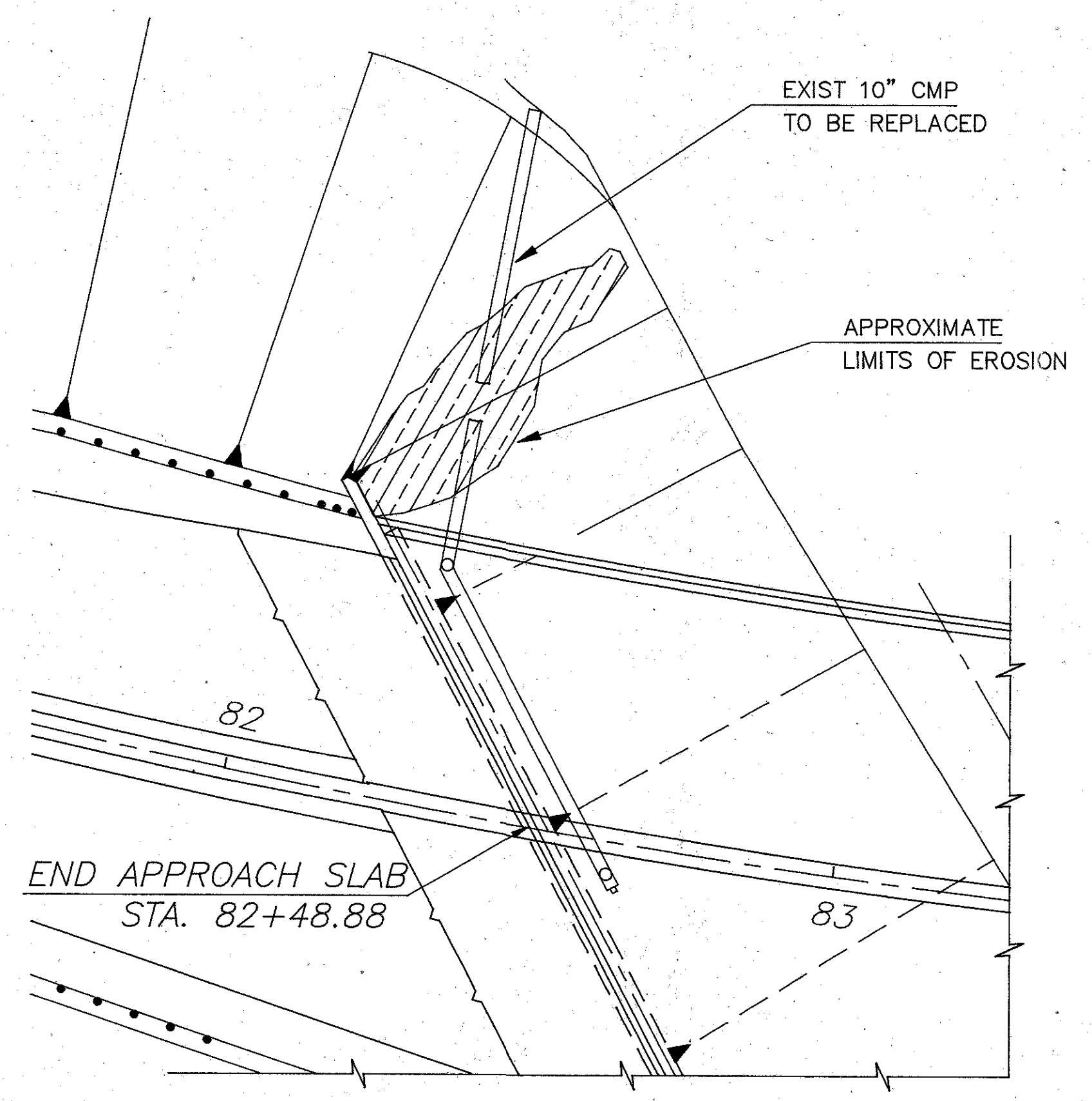
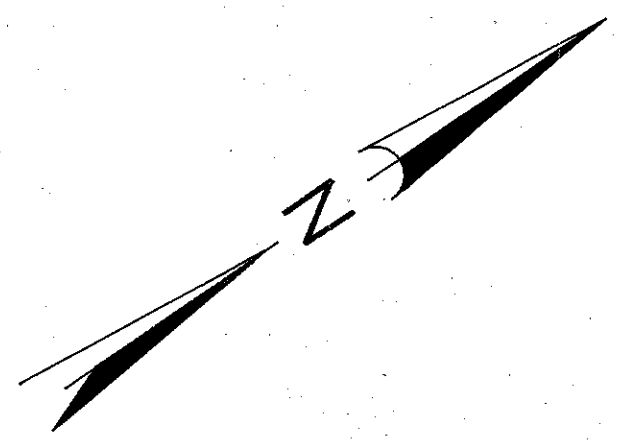
DATE BUILT: 1967

20/27

GENERAL PLAN & ELEVATION

BRIDGE NO. FRA-104-0969
UNDER GROVEPORT RD.

FRANKLIN COUNTY					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
SSK	ARS		JRA	JSB	8/94



PART PLAN
NORTHWEST CORNER

SLOPE FAILURE REPAIR AREAS

THE GENERAL AREA OF SLOPE FAILURE REPAIR IS ON THE NORTHWEST CORNER OF THE BRIDGE. THE FAILURE PLANE SHOWN AND THE LIMITS OF CORRECTIVE WORK IS ESTIMATED.

THE ACTUAL FAILURE PLANE SHALL BE ESTABLISHED BY CAREFUL TRENCHING NORMAL TO THE EMBANKMENT PRIOR TO ANY EXCAVATION AND/OR REMOVAL OF THE FAILED EMBANKMENT MATERIAL. THE PRESENCE OF, AND THE LOCATION OF, THE FAILURE PLANE SHALL BE VERIFIED BY THE ENGINEER.

THE WORK SHALL CONSIST OF REMOVING FAILED SLOPE MATERIAL AND DISPOSING OF ALL MATERIALS SO REMOVED FROM THE PROJECT. THE EXISTING SLOPE SHALL BE BENCHED AS SHOWN ON THE PLANS AND EMBANKMENT MATERIAL FURNISHED, PLACED AND COMPACTED IN ACCORDANCE WITH ITEM 203.

THE CONTRACTOR SHALL OBTAIN FIELD CROSS SECTIONS AND SUBMIT THEM TO THE ENGINEER PRIOR TO THE START OF THE REPAIRS, FROM THE CROSS SECTIONS PROVIDED, THE LIMITS OF WORK AND THE PROPOSED SLOPES WILL BE DETERMINED BY THE ENGINEER.

AFTER COMPLETION OF THE SLOPE REPAIR IN ACCORDANCE WITH THE PROPOSED CROSS SECTIONS DEVELOPED BY THE ENGINEER, THE CONTRACTOR SHALL AGAIN CROSS SECTION THE REPAIR AREA AT THE SAME STATIONS.

THE ACTUAL AMOUNT OF FAILED SLOPE MATERIAL REMOVED AND REPLACED SHALL BE DETERMINED FROM THE FIELD SECTIONS PROVIDED FROM THE CONTRACTOR, BOTH BEFORE AND AFTER REPAIRS.

BENCHING AND LIMITS OF CORRECTIVE WORK SHOWN ON THE DETAIL SHALL BE MODIFIED, IF NECESSARY, IN ACCORDANCE WITH FIELD CONDITIONS TO ENSURE THAT THE FAILURE PLANE IS LOCATED AND MATERIAL IS REMOVED AND REPLACED TO THE DIMENSIONS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

BENCHES SHALL CUT INTO SOFT LOOSE MATERIAL AND EXTEND A MINIMUM OF 4 FEET BEYOND THE FAILURE PLANE INTO FIRM MATERIAL.

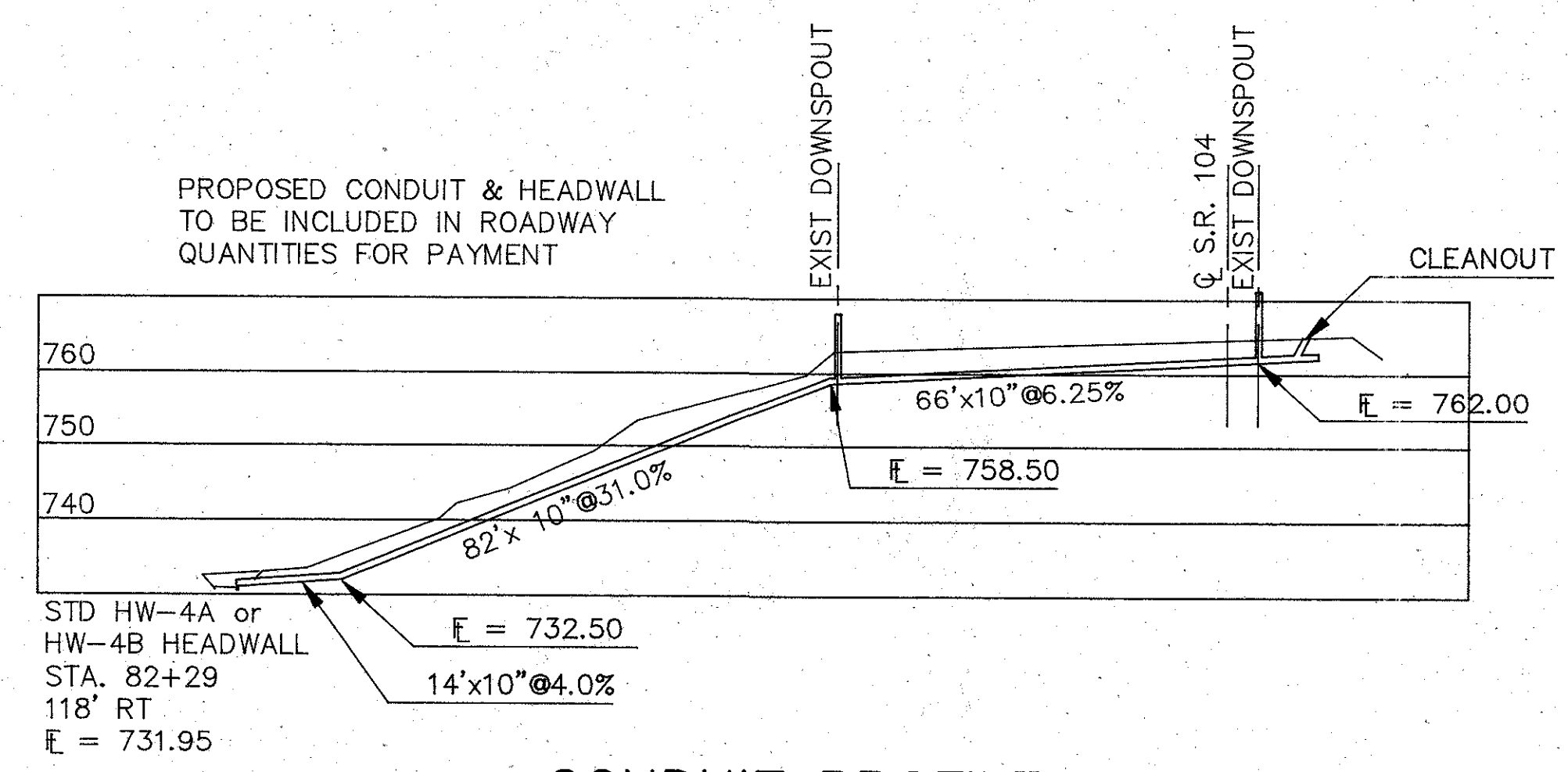
SPECIFIED BORROW TO RECONSTRUCT THE SIDE SLOPES SHALL BE OHIO DEPARTMENT OF TRANSPORTATION TESTING LABORATORY CLASSIFICATION A-2, A-3A, A-4 OR A-6 SOIL AND SHALL BE COMPACTED TO A MINIMUM DENSITY OF 98% (AASHTO T-99).

THE TOP 6 INCHES OF EMBANKMENT REMAINING AFTER REMOVAL TO THE SPECIFIED DEPTH SHALL BE COMPACTED TO A MINIMUM DENSITY OF 98% (AASHTO T-99) PRIOR TO PLACING SPECIAL BORROW MATERIAL.

THE SURFACE OF BENCHED AREAS SHALL BE SLOPED TO DRAIN DURING INCLEMENT WEATHER TO PREVENT SATURATION OF THE CONSTRUCTED BENCHES.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR BIDDING PURPOSES ONLY:

ITEM 203	EXCAVATION, NOT INCLUDING EMBANKMENT CONSTRUCTION	200 C.Y.
ITEM 203	BORROW, AS PER PLAN	200 C.Y.
ITEM 659	SEEDING AND MULCHING	200 S.Y.
ITEM 653	2" TOPSOIL, FURNISHED AND PLACED	15 C.Y.
ITEM 659	COMMERCIAL FERTILIZER	0.10 TON



CONDUIT PROFILE

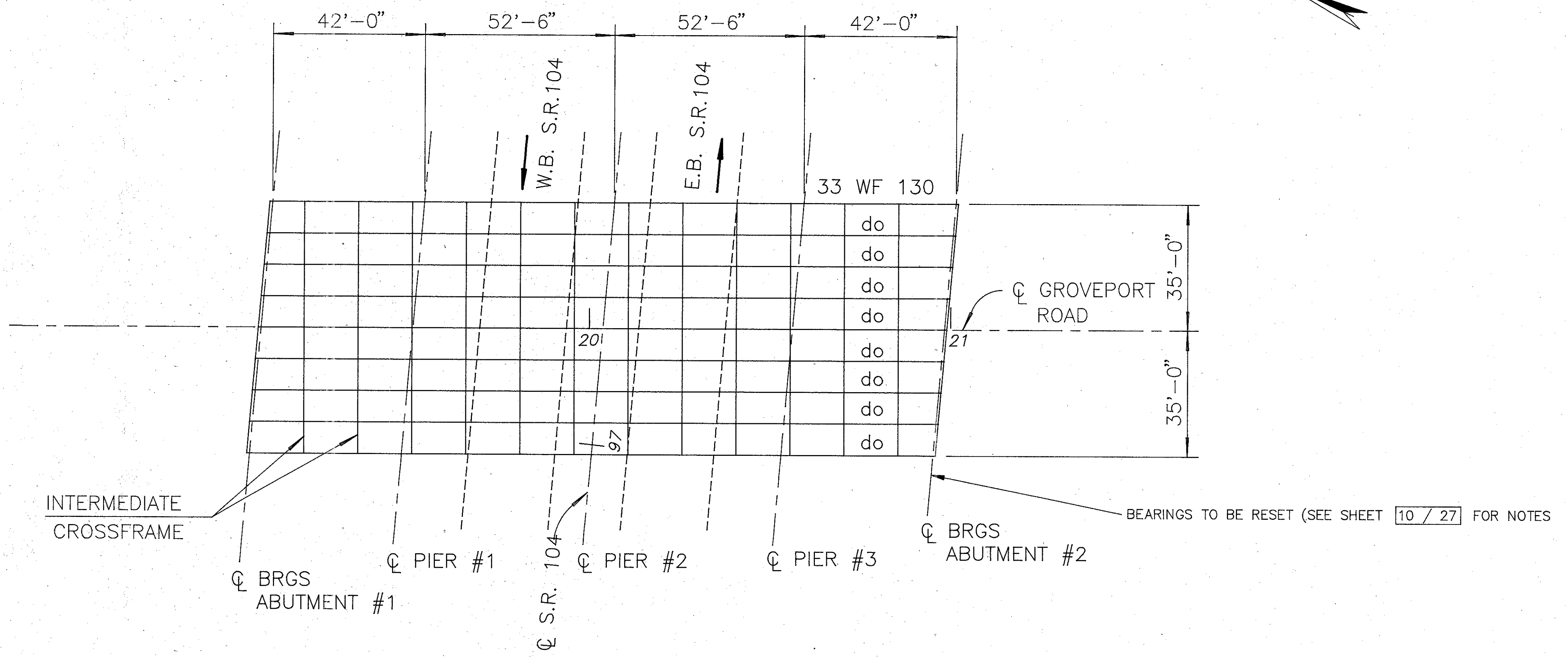
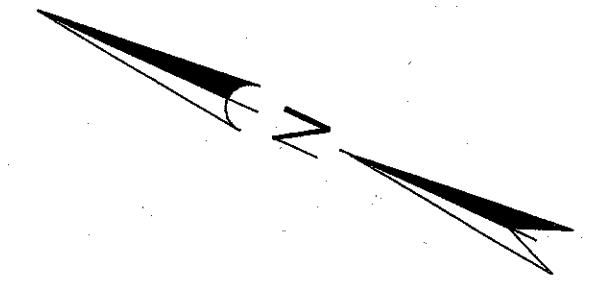
						19/27
<p>NORTHWEST ABUTMENT SLOPE RECONSTRUCTION</p> <p>STRUCTURE NO. FRA-104-0942 OVER CSX R.R. AND PARSONS AVE. FRANKLIN COUNTY</p>						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SSK	ARS		JRA	JSB	8/94	

WORK LIMITATIONS

NO CONCRETE DECK OVERLAYS SHALL BE PLACED BEFORE APRIL 15. THE CONTRACTOR SHALL SCHEDULE THE WORK SO THAT ALL DECK OVERLAYS ARE PLACED BEFORE OCTOBER 15. IF FOR SOME UNFORSEEN CIRCUMSTANCES THE DECK OVERLAYS OR PORTIONS OF DECK OVERLAY ARE NOT PLACED BY OCTOBER 15, REGARDLESS OF THE WORK REMAINING, THE FULL DEPTH REPAIRS SHALL BE COMPLETED AS PER 511 AND THE UNFINISHED DECK SHALL BE RESURFACED WITH ITEM 404 ASPHALT CONCRETE AND OPENED TO TRAFFIC. THE CONTRACTOR SHALL PLACE AND MAINTAIN AT HIS EXPENSE THE ASPHALT WEARING SURFACE UNTIL REMOVED AT HIS EXPENSE THE FOLLOWING SPRING WHEN THE DECK OVERLAY CAN BE PLACED AFTER APRIL 15.

ITEM 516 - VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINTS, AS PER PLAN

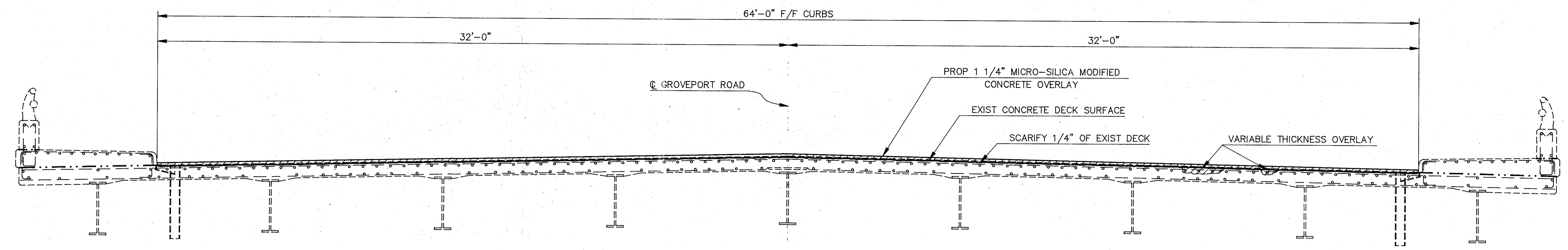
THIS ITEM SHALL CONSIST OF FURNISHING ALL MATERIALS, LABOR, EQUIPMENT AND INCIDENTALS NECESSARY TO EXTEND THE END DAMS IN ACCORDANCE WITH THE PLANS.



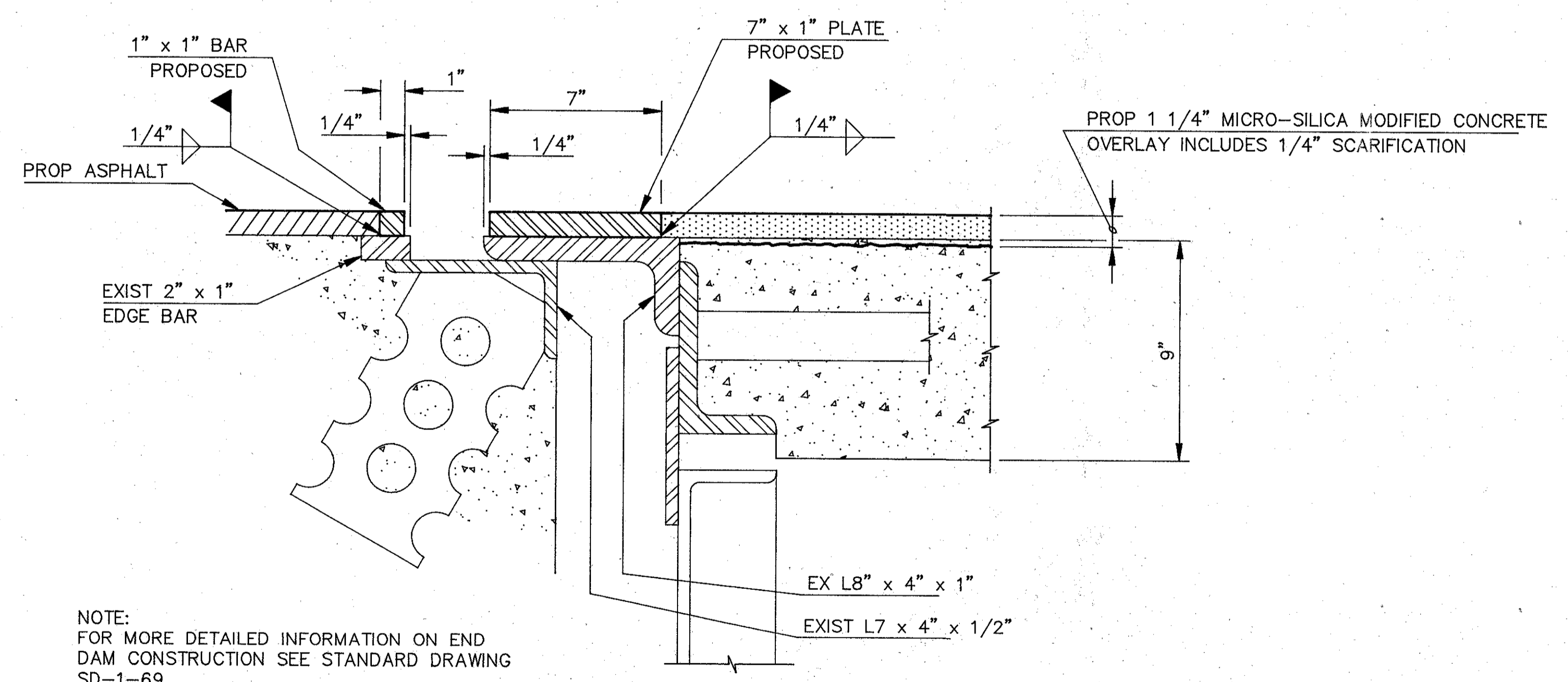
FRAMING PLAN

FOR PAINTING NOTES SEE SHEET 16 / 25

RESOURCE INTERNATIONAL INC. 281 HENTZBERG DR. WESTERVILLE, OHIO 43081 (614) 886-1999						21/27
BRIDGE NOTES & FRAMING PLAN STRUCTURE NO. FRA-104-0969 UNDER GROVEPORT RD. FRANKLIN COUNTY						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SSK	ARS		JRA	JSB	8/94	

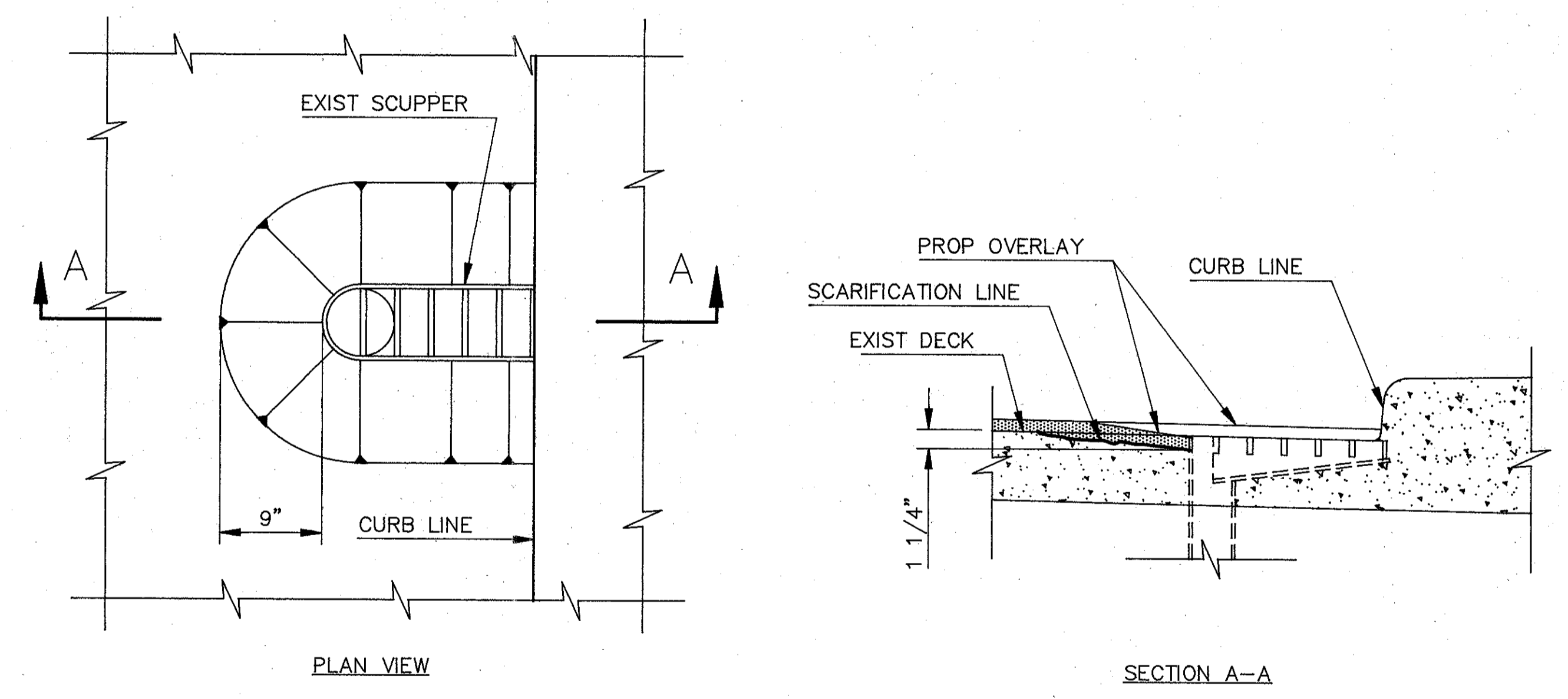


DECK SECTION



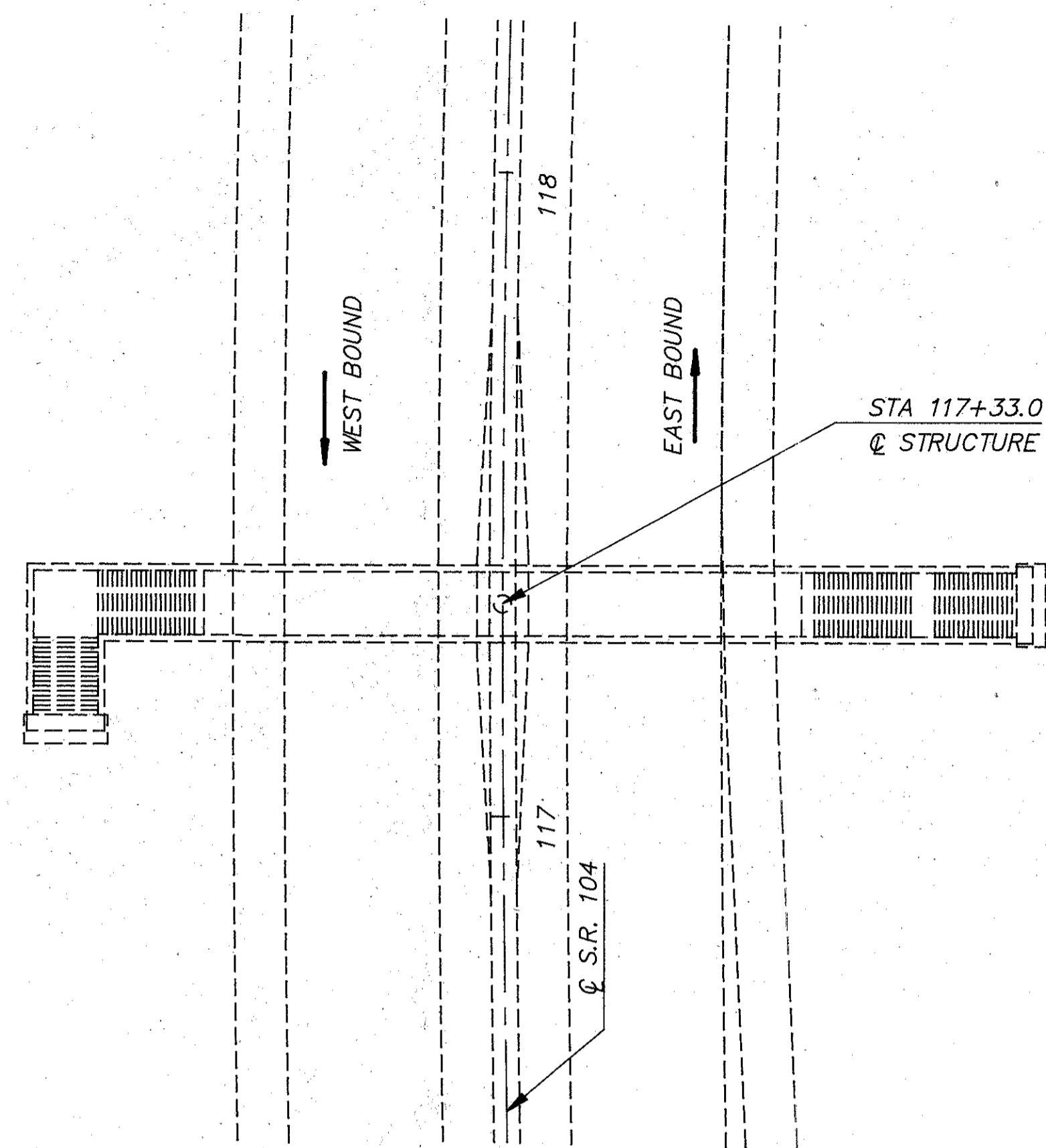
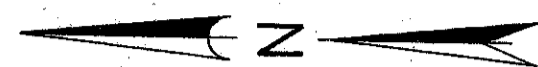
NOTE:
FOR MORE DETAILED INFORMATION ON END
DAM CONSTRUCTION SEE STANDARD DRAWING
SD-1-69.

JOINT SECTION



SCUPPER OVERLAY DETAIL

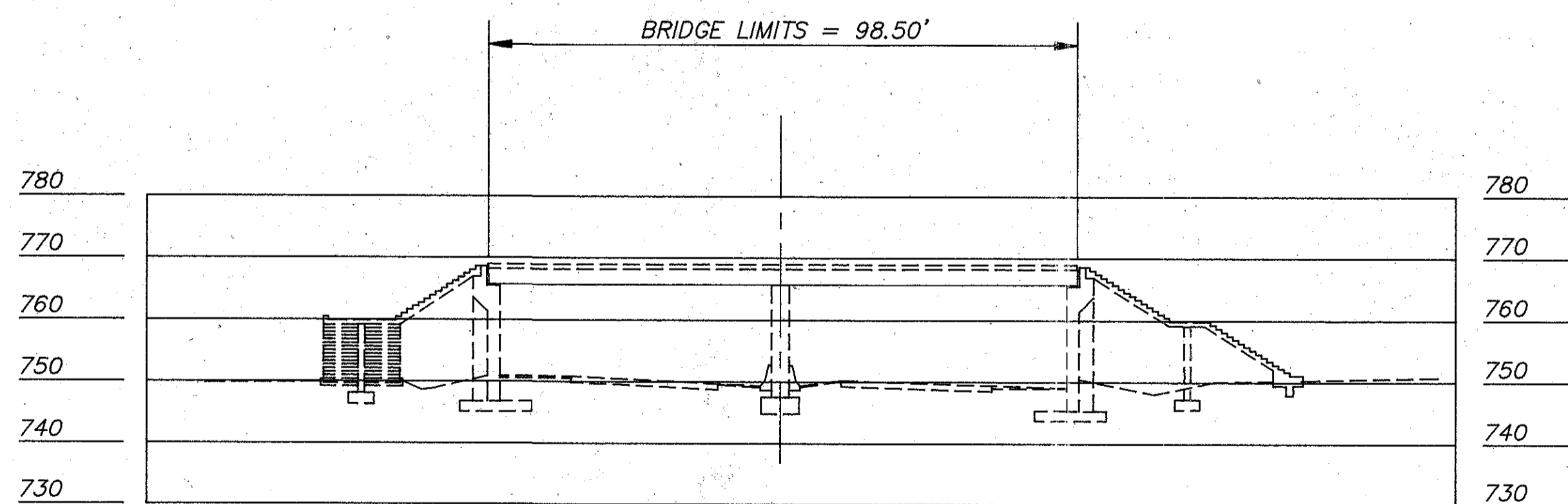
		22/27	
RESOURCE INTERNATIONAL, INC. 551 ENTERPRISE DR. WESTERVILLE, OHIO 43081 (614) 886-1888			
DECK OVERLAY DETAILS			
STRUCTURE NO. FRA-104-0969 UNDER GROVEPORT RD.			
FRANKLIN COUNTY			
DESIGNED	DRAWN	TRACED	CHECKED
SSK	ARS	JRA	JSB
REVIEWED	DATE	REVISI	
	8/94		



PLAN

PROPOSED BRIDGE WORK

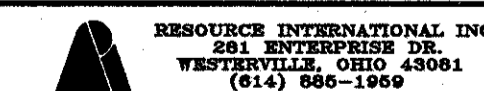
1. PAINT STRUCTURAL STEEL (SYSTEM OZEU)
2. PATCH CONCRETE
3. PAINT STAIR FENCE SUPPORTS
4. REPLACE FENCE



PROFILE (ALONG ϕ CONSTRUCTION)

EXISTING STRUCTURE

TYPE: CONTINUOUS STEEL BEAM WITH CONCRETE DECK, STAIRS AND SUBSTRUCTURE
 SPAN: 47'-0", 47'-0" c/c BEARING
 ROADWAY: 8'-0" F/F CONCRETE PARAPETS WITH PIPE RAILING & CHAIN LINK DEBRIS FENCE
 LOADING: 85 LBS PER SQ FT LIVE LOAD
 SKEW: NONE
 WEARING SURFACE: 1/2" MONOLITHIC CONCRETE
 ALIGNMENT: TANGENT
 DATE BUILT: 1971



GENERAL PLAN & ELEVATION

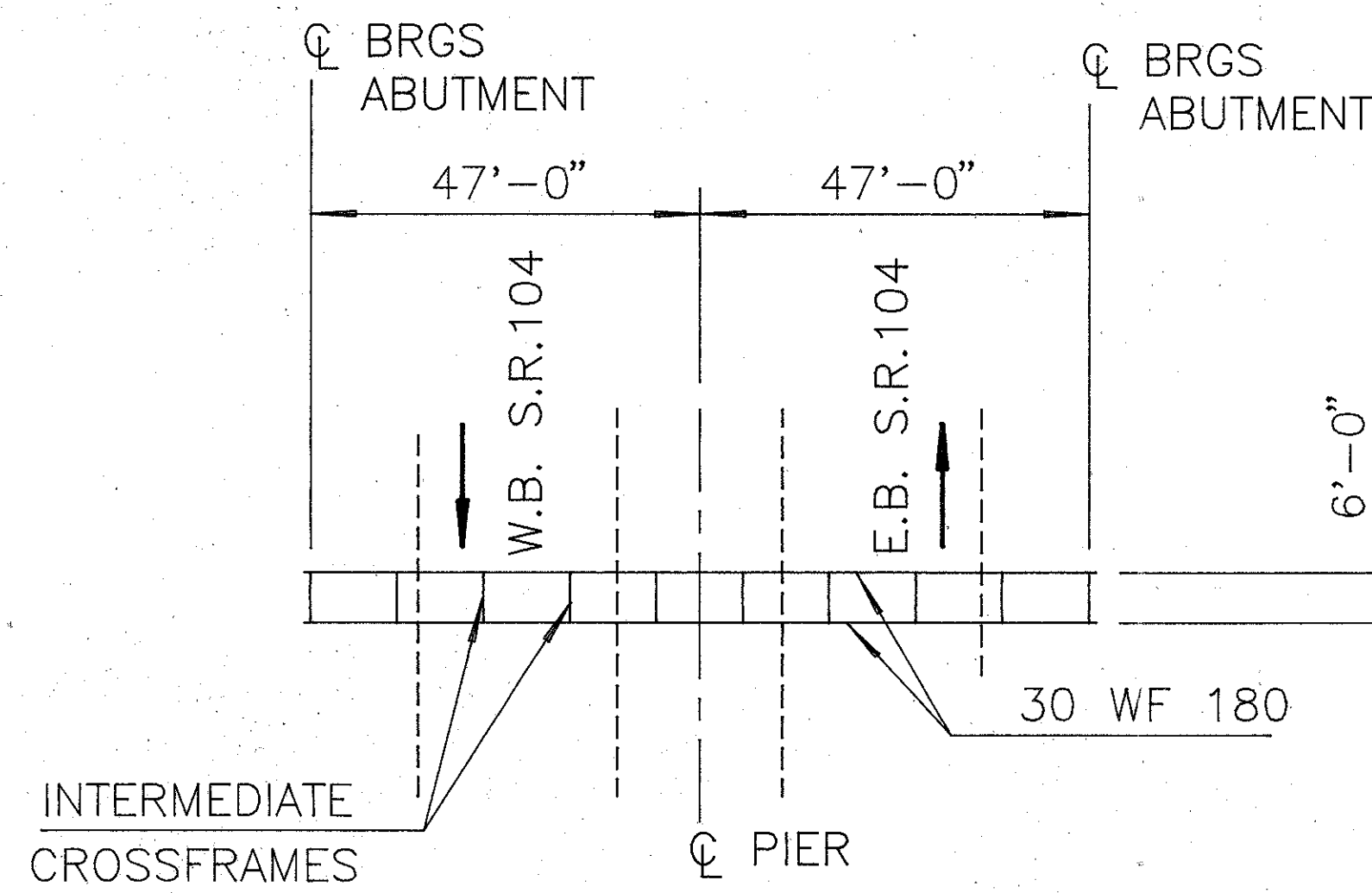
BRIDGE NO. FRA-104-1008
 UNDER PEDESTRIAN WALK

FRANKLIN COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SSK	ARS		JRA	JSB	8/94	

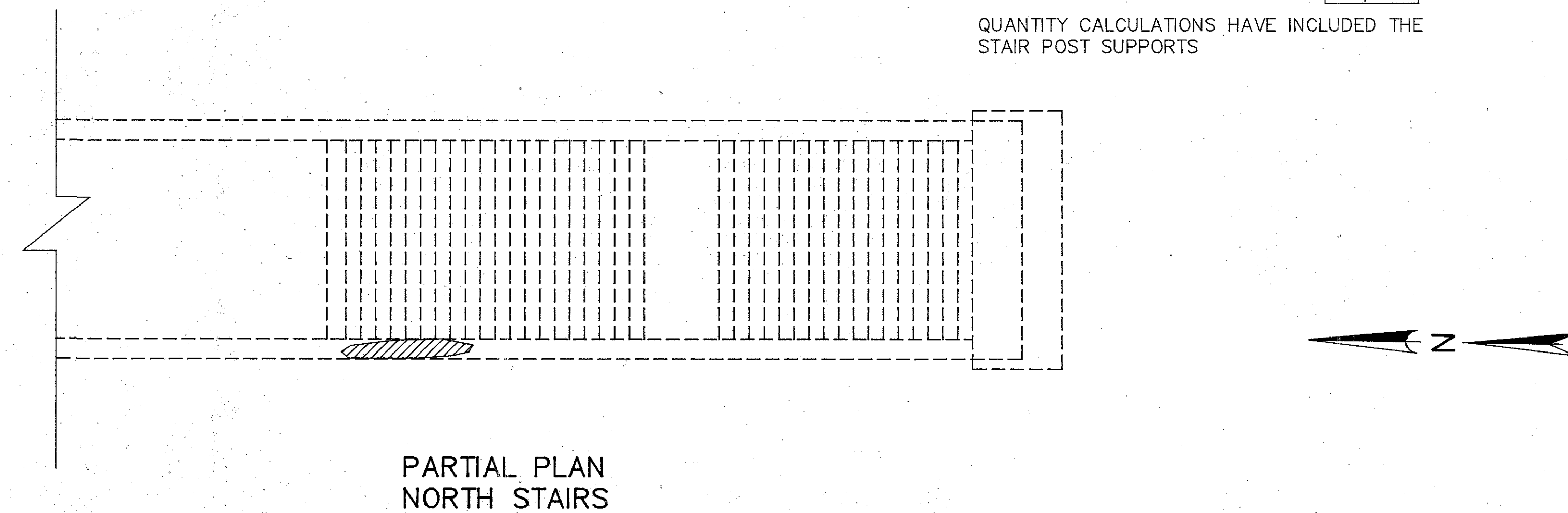
NOTES:

1. CONCRETE PATCHING SHALL BE DONE ON THE AREAS INDICATED ON THE PLAN. THE CONTRACTOR MAY REMOVE THE EXISTING FENCE PRIOR TO PATCHING, BUT SHALL EXERCISE CAUTION IN WORKING AROUND THE FENCE SUPPORTS IN ORDER TO MAINTAIN THE EXISTING POST ALIGNMENTS.
2. AFTER ALL EXISTING FENCE HAS BEEN REMOVED, THE POST SUPPORTS ON THE STAIRS ONLY SHALL BE PAINTED. PAYMENT FOR THE PAINTING SHALL BE INCLUDED WITH THE PAINTING OF THE STRUCTURAL STEEL EXCEPT THAT THE COLOR SHALL BE GRAY.
3. NEW FENCE SHALL BE FABRICATED TO THE SAME DIMENSIONS AS THE EXISTING FENCE, BUT SHALL CONFORM TO THE FOLLOWING:
 THE FENCE SHALL BE 1" DIAMOND FABRIC CONSISTING OF 11 GAGE CORE WIRES, UNIFORMLY GALVANIZED WITH ZINC METAL OF 0.30 OZ./S.F. MINIMUM WEIGHT IN ACCORDANCE WITH ASTM A641-82. THE GALVANIZED WIRE SHALL THEN BE PVC COATED IN ACCORDANCE WITH ASTM F668-84, CLASS 2A WITH THE FOLLOWING CHANGES:
 - A) THE COATING SHALL BE VIRGIN PVC OF 22 MILS THICKNESS
 - B) THE PVC COATING SHALL BE GRAY IN COLOR CLOSELY APPROACHING FEDERAL STANDARD NO. 595A - 16251.
 - C) THE FINISHED FABRIC SHALL BE COMPOSED OF A 1 INCH DIAMOND PATTERN IN WHICH THE INDIVIDUAL PICKETS ARE HELICALLY WOVEN AND INTERWOVEN IN THE FORM OF A CONTINUOUS CHAIN-LINK MESH WITH KNUCKLED SELVAGES.
 - D) ALL PVC COATED FABRIC SHALL BE HANDLED WITH CARE. IF THE PVC COATING IS DAMAGED, THE CONTRACTOR SHALL REPLACE THE FABRIC OR REPAIR THE COATING AS DIRECTED BY THE PROJECT ENGINEER AT NO COST TO THE DEPARTMENT.
 REMOVING AND DISPOSING OF THE EXISTING FENCE, AND REPLACING WITH NEW FENCE AS DESCRIBED ABOVE SHALL BE INCLUDED IN THE PRICE BID PER FOOT FOR ITEM 607 - FENCE REBUILT, AS PER PLAN.

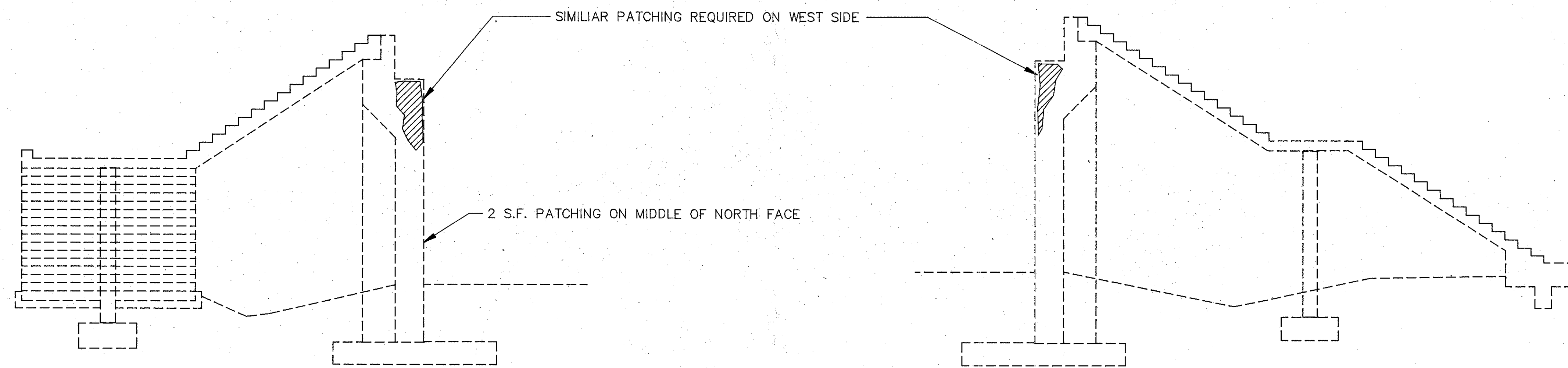


FRAMING PLAN

FOR PAINTING NOTES SEE SHEET 16 / 27
 QUANTITY CALCULATIONS HAVE INCLUDED THE STAIR POST SUPPORTS




PARTIAL PLAN NORTH STAIRS




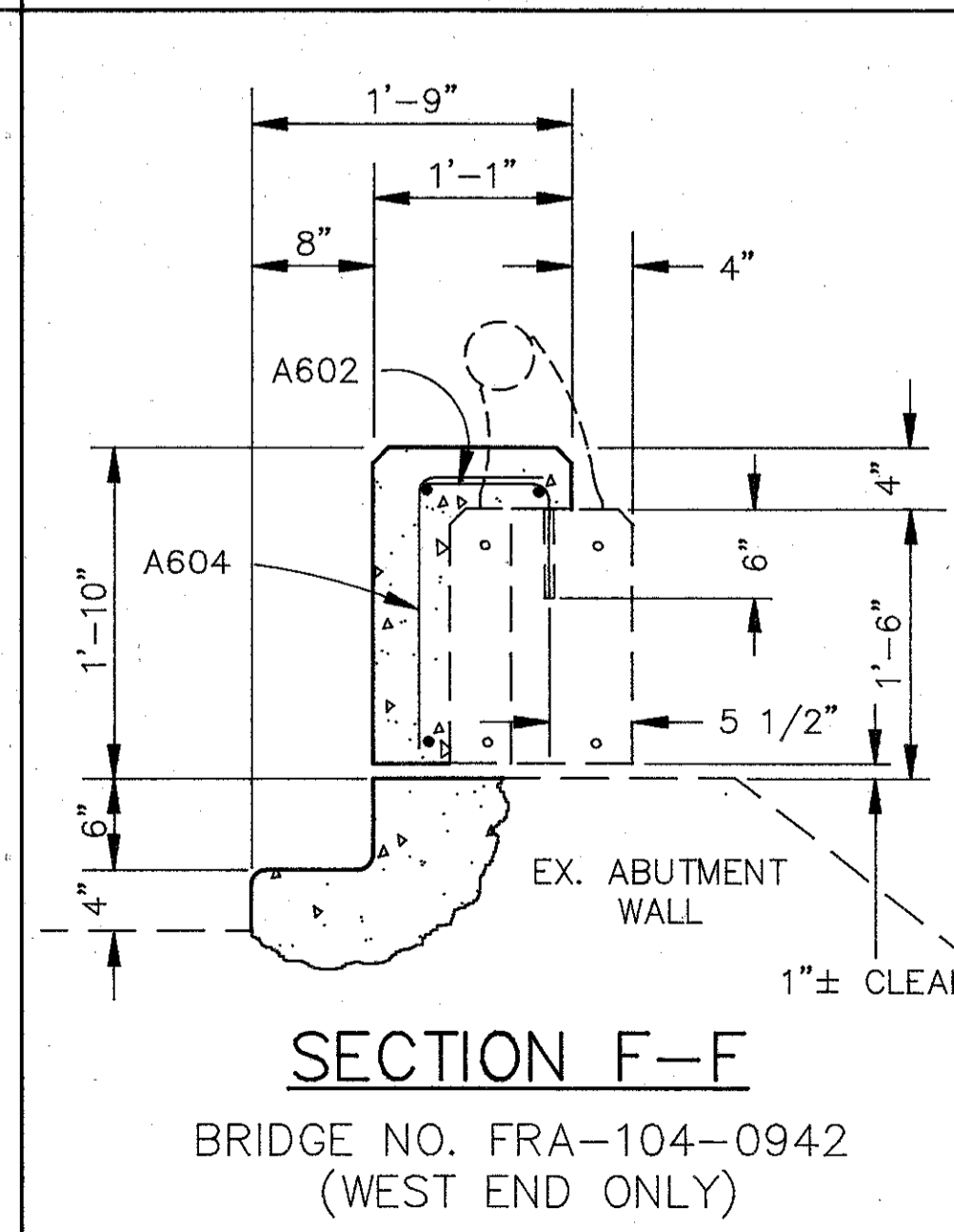
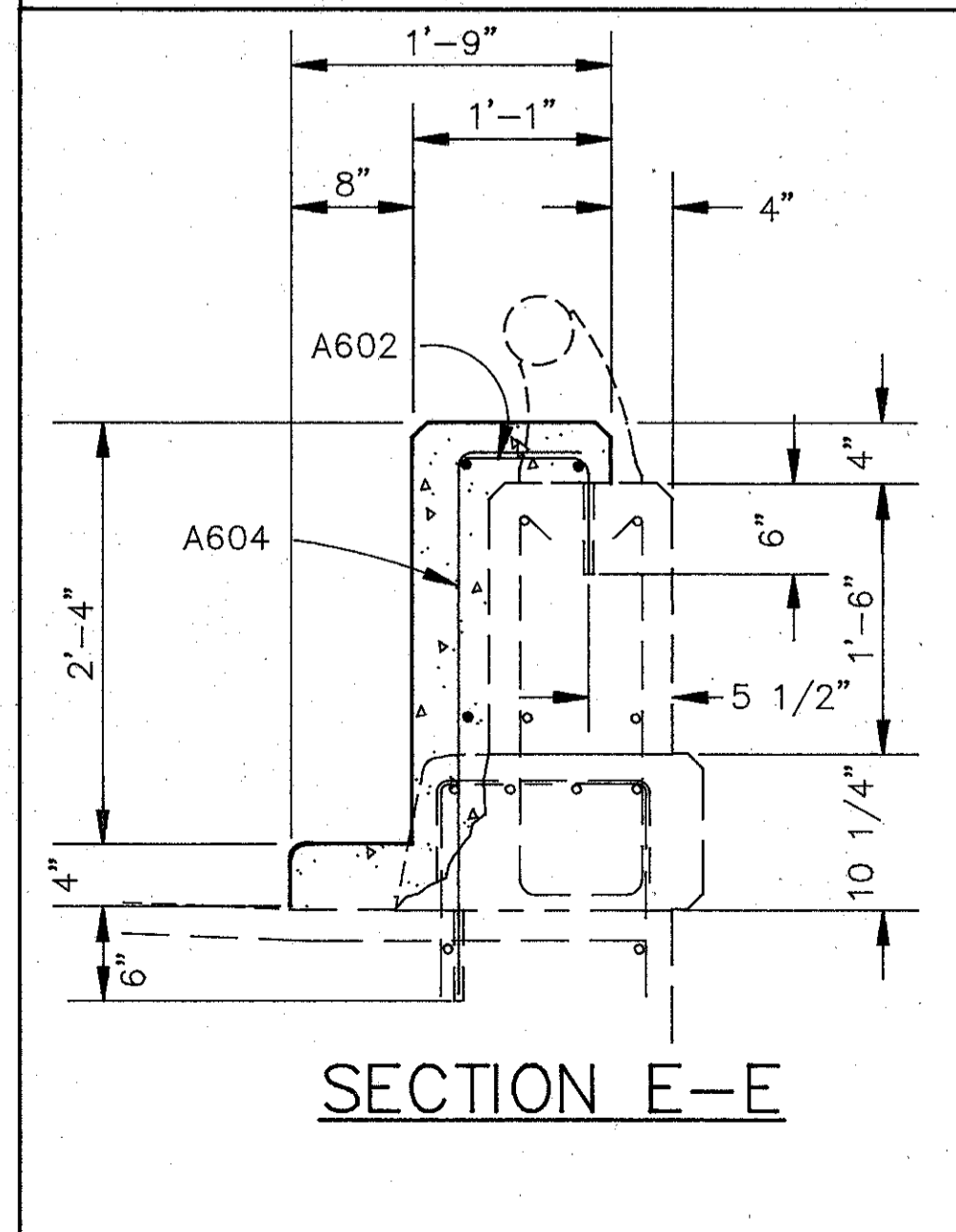
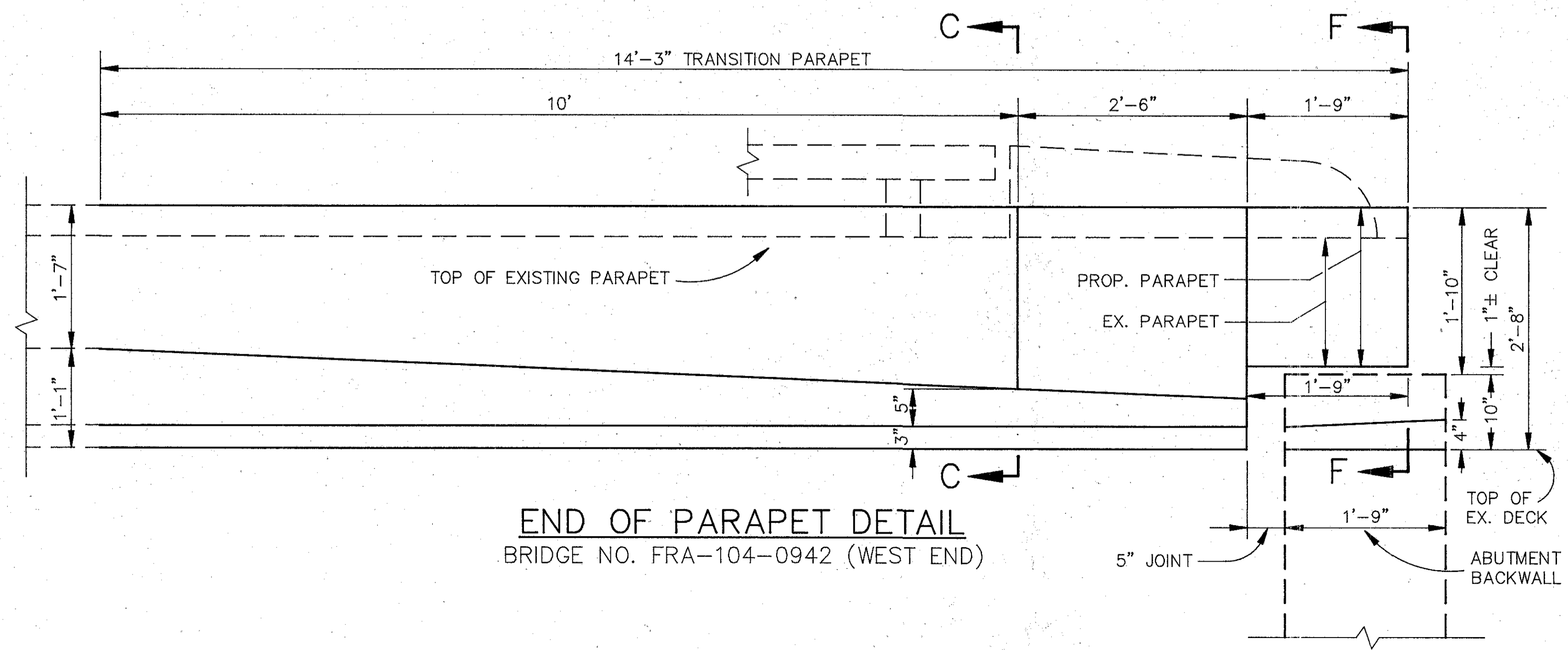
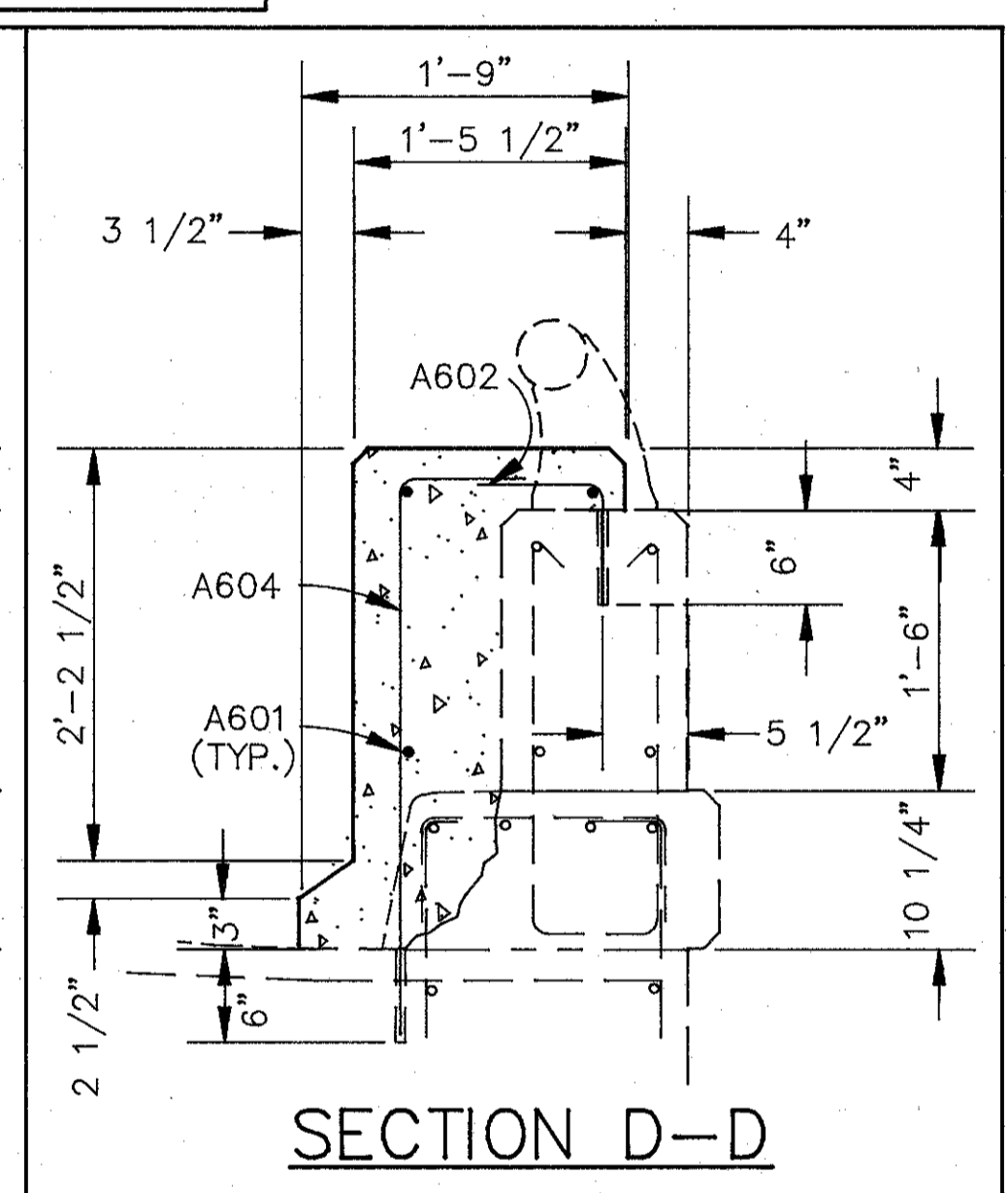
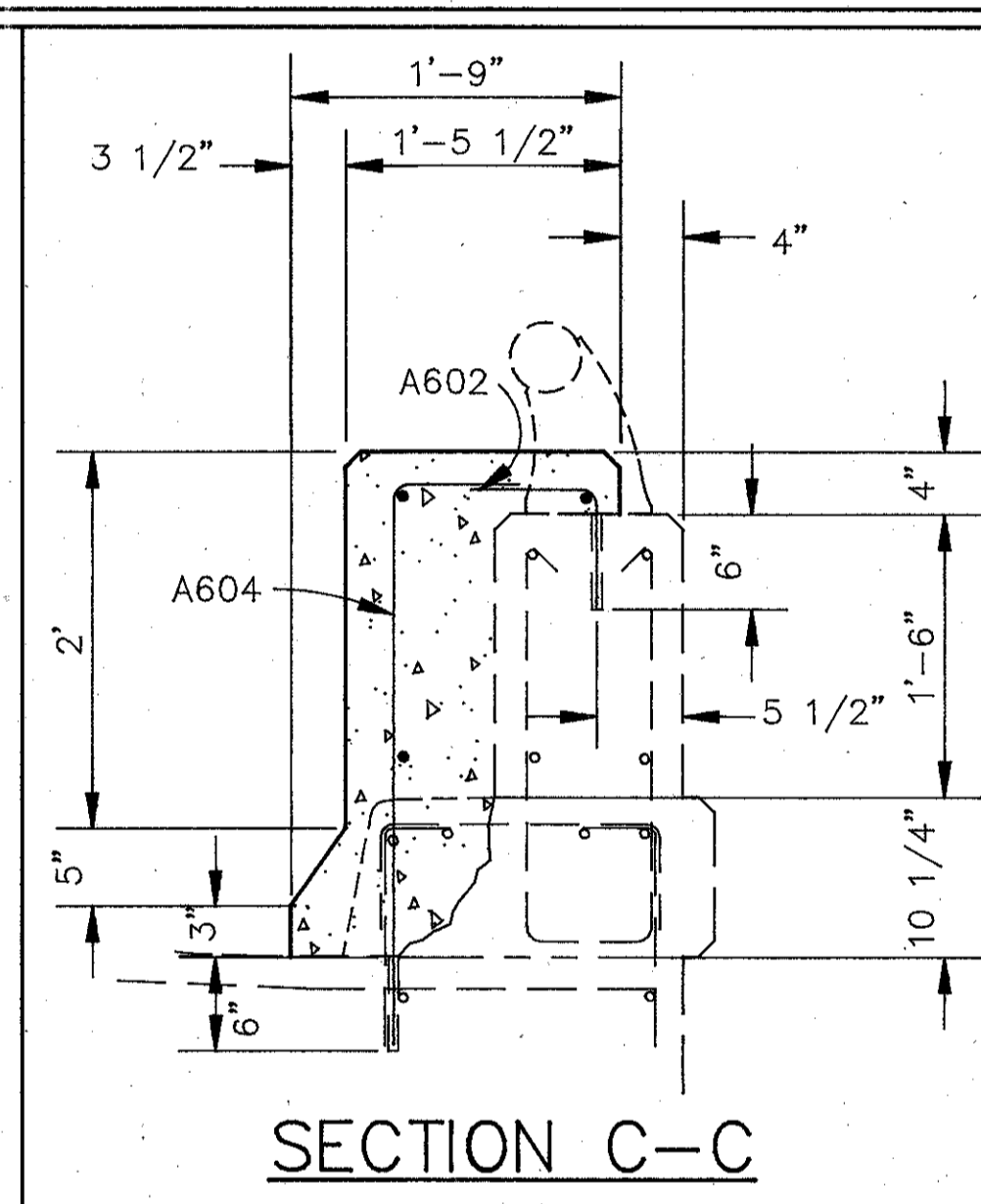
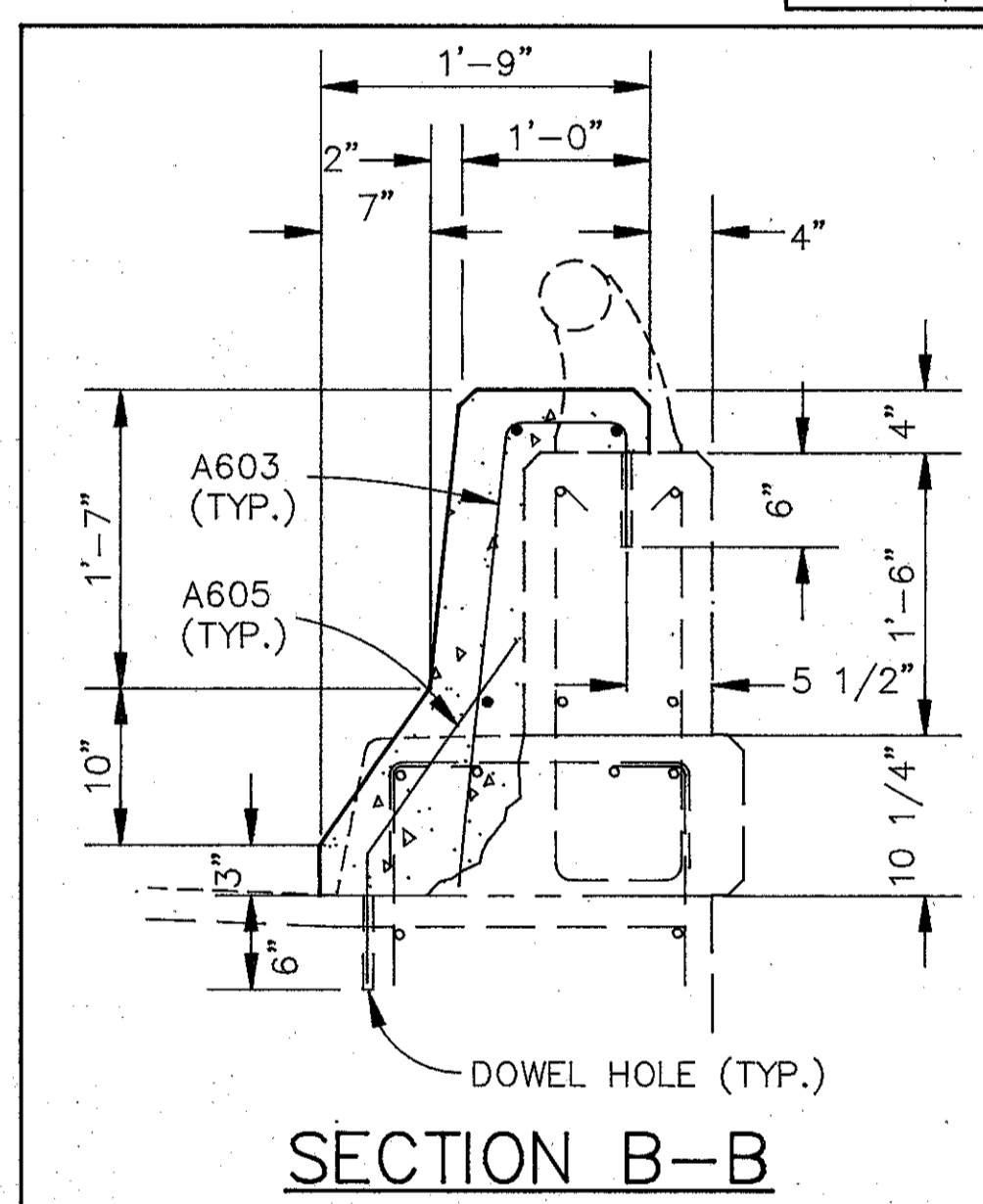
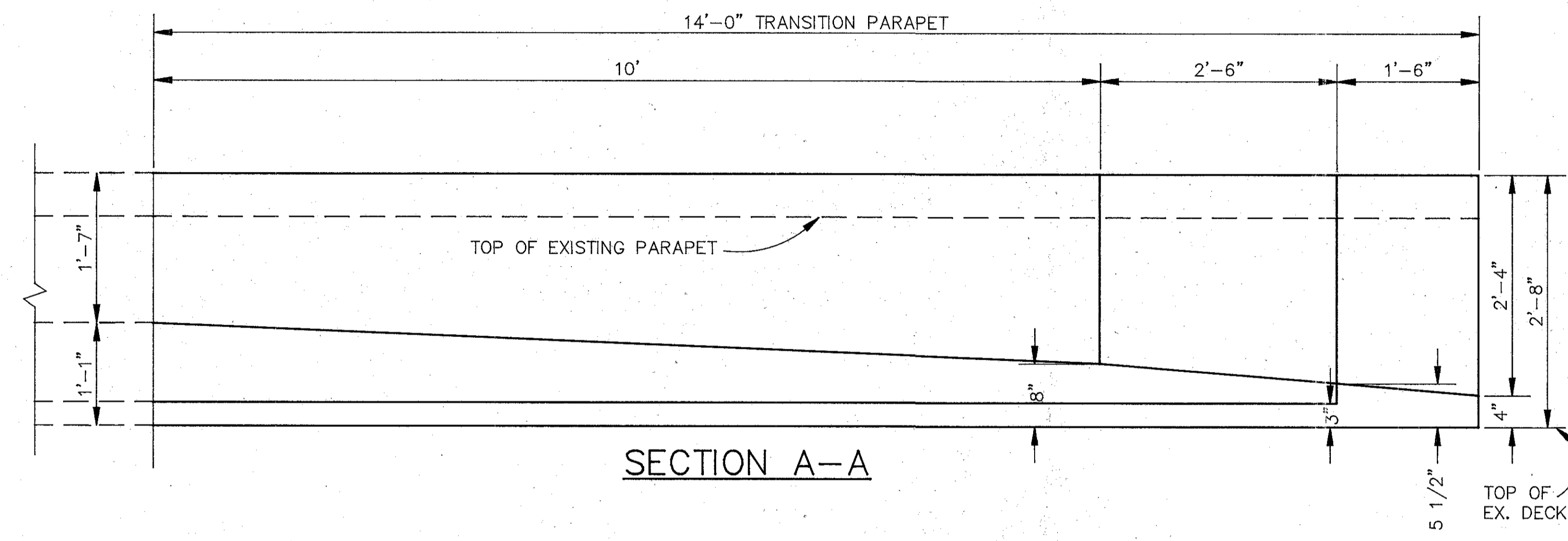
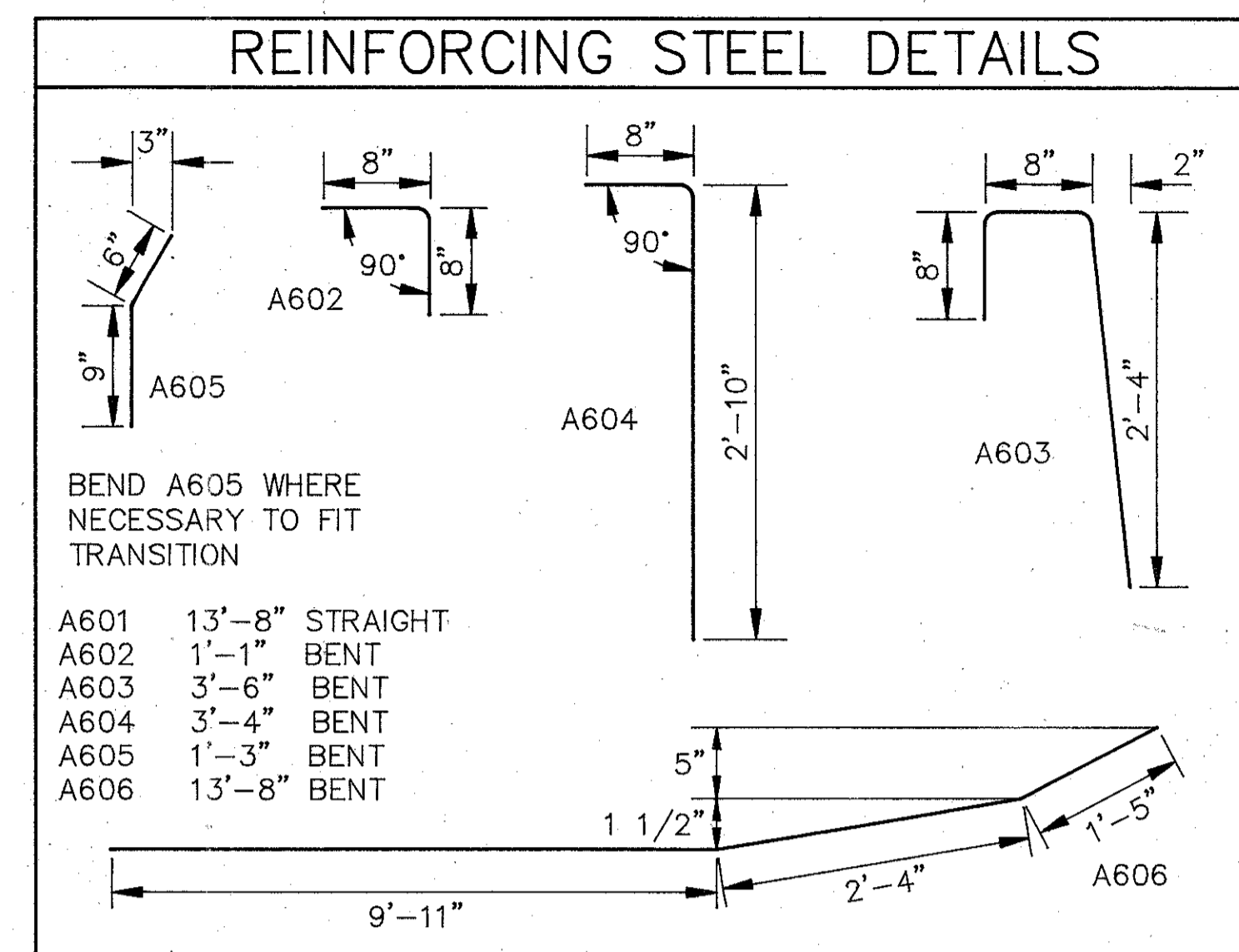
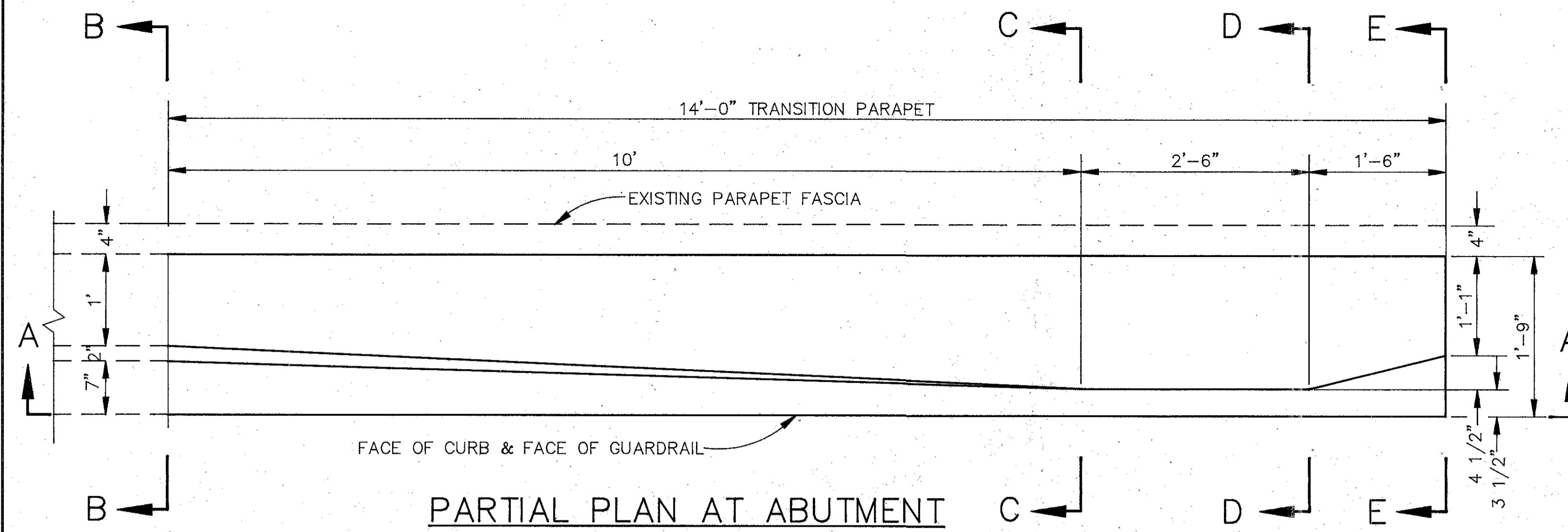
PARTIAL WEST ELEVATION SOUTH ABUTMENT

PARTIAL WEST ELEVATION NORTH ABUTMENT

LEGEND

 AREAS TO BE PATCHED WITH ITEM 519 PATCHING CONCRETE STRUCTURES

 RESOURCE INTERNATIONAL INC. 881 NOTWELL RD. WESTERVILLE, OHIO 43081 (614) 688-1000							24 / 27
BRIDGE NOTES FRAMING PLAN & DETAILS STRUCTURE NO. FRA-104-1008 UNDER PEDESTRIAN WALK FRANKLIN COUNTY							
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED	
SSK	ARS		JRA	SSB	8/94		



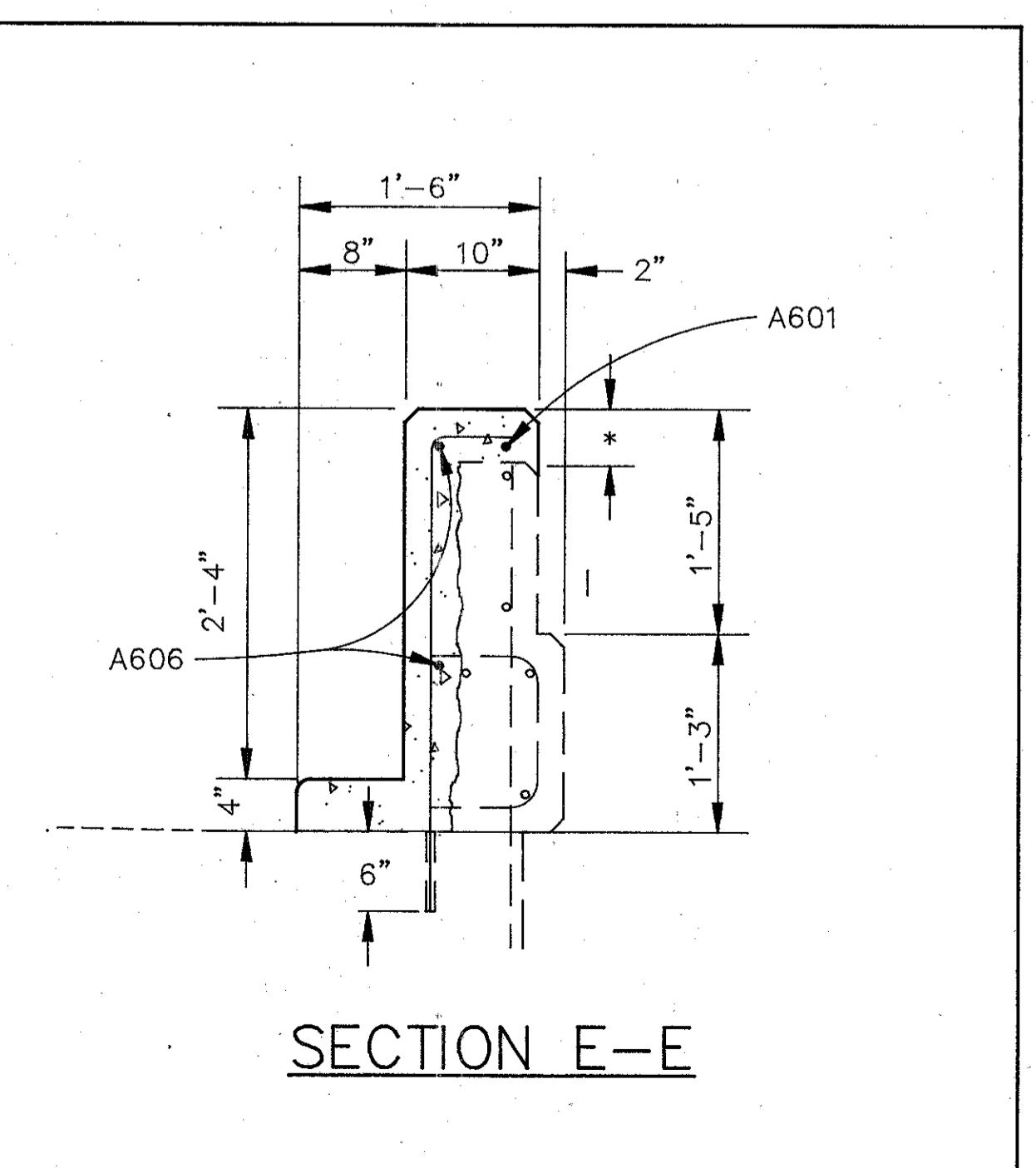
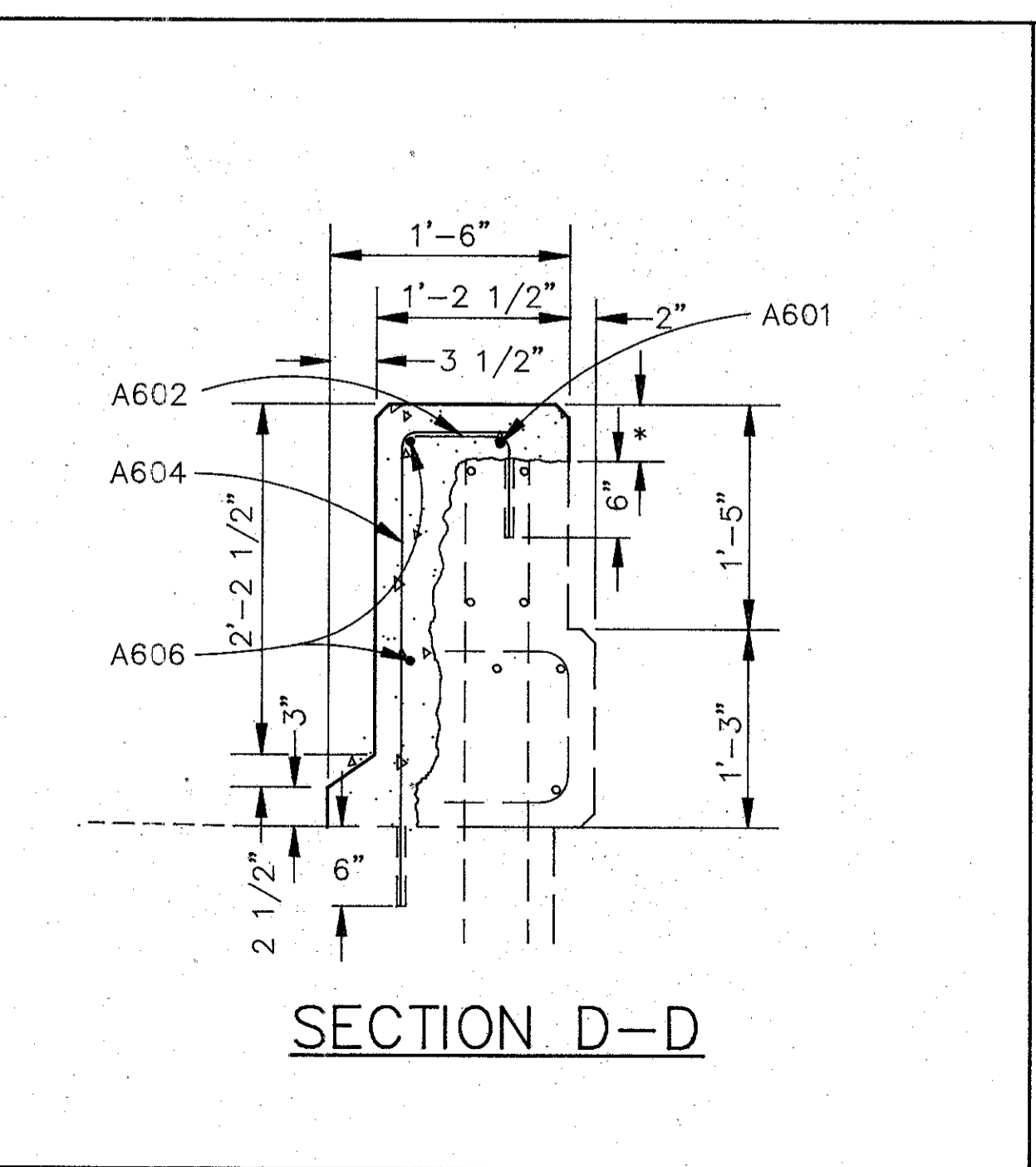
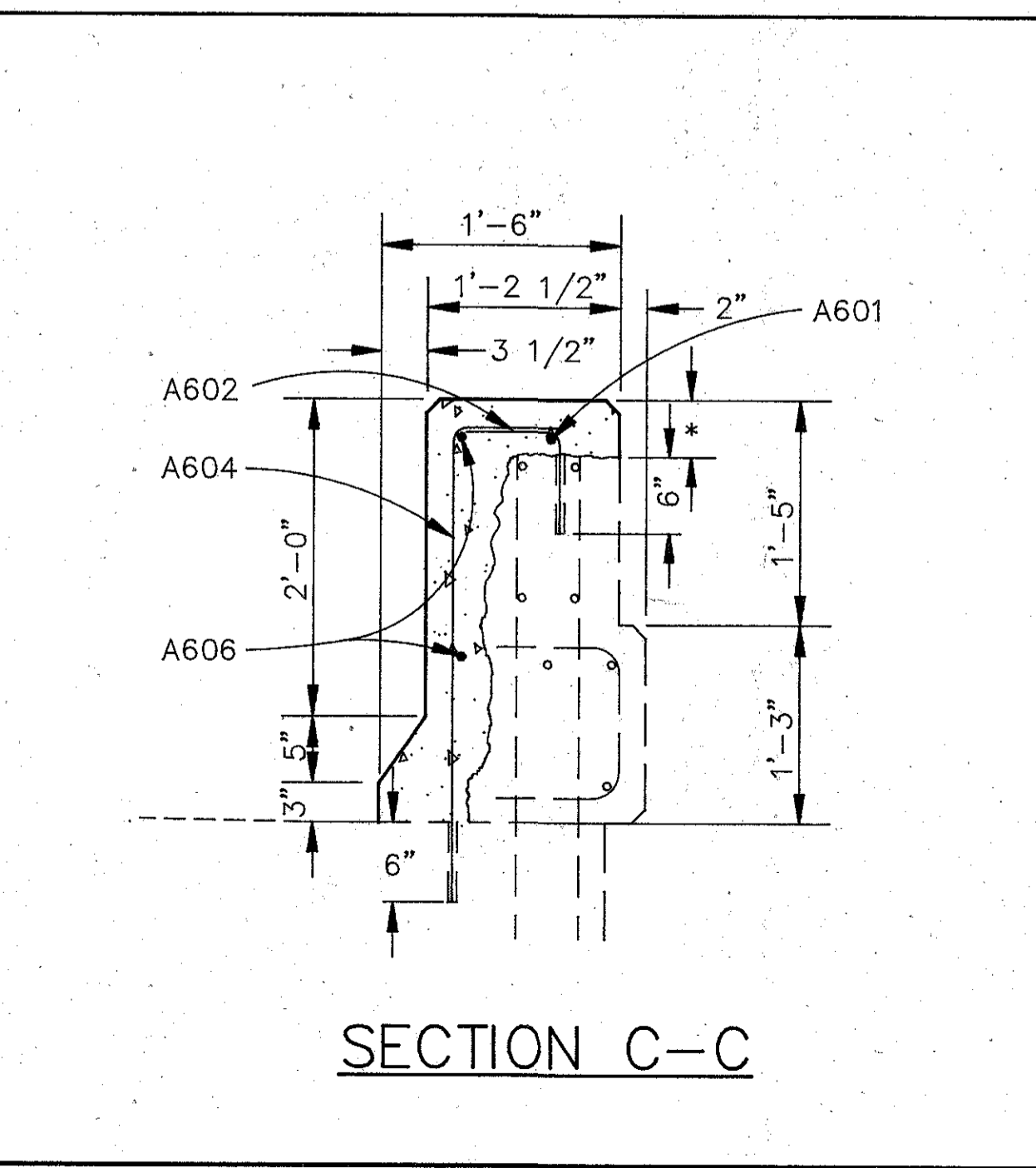
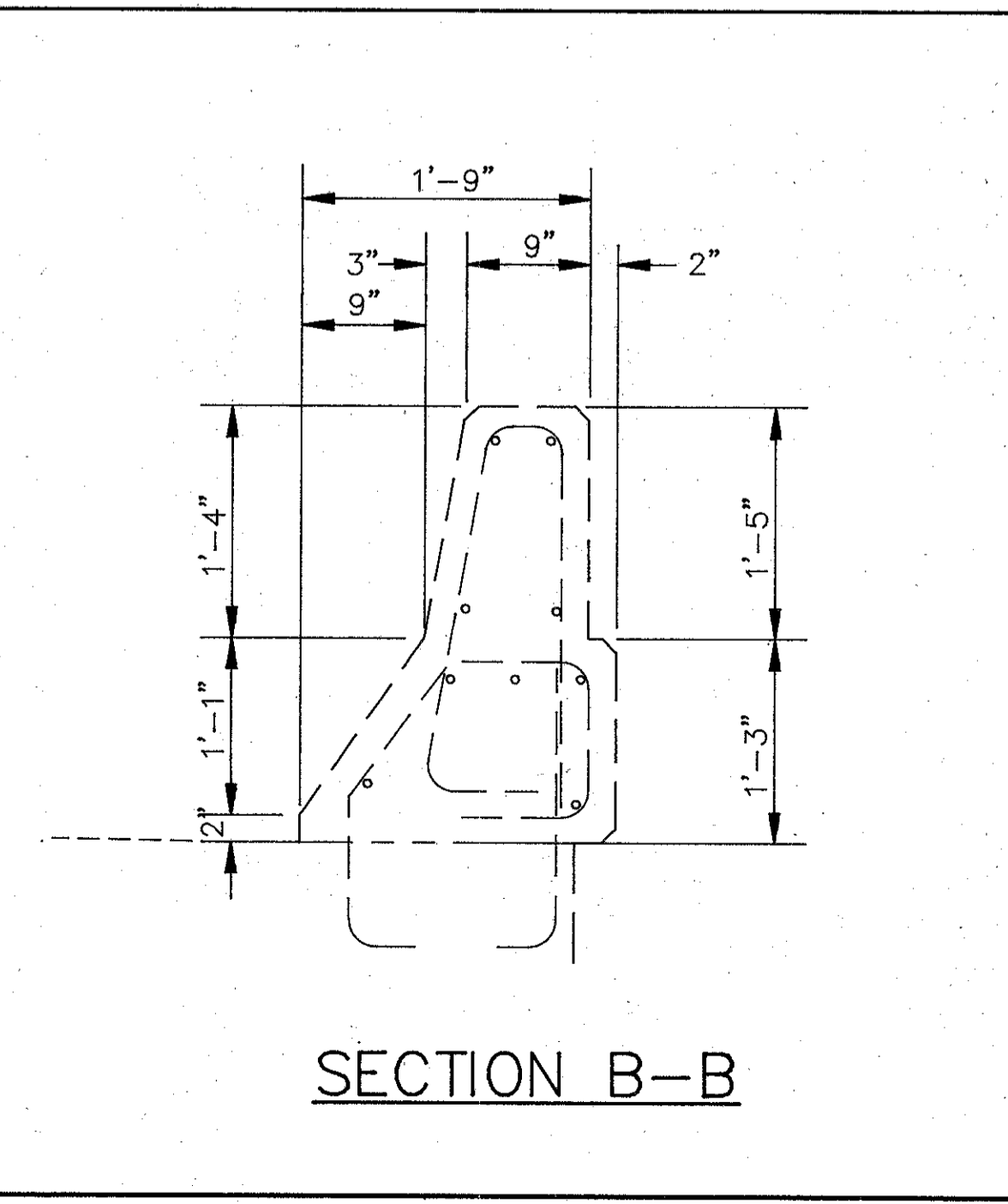
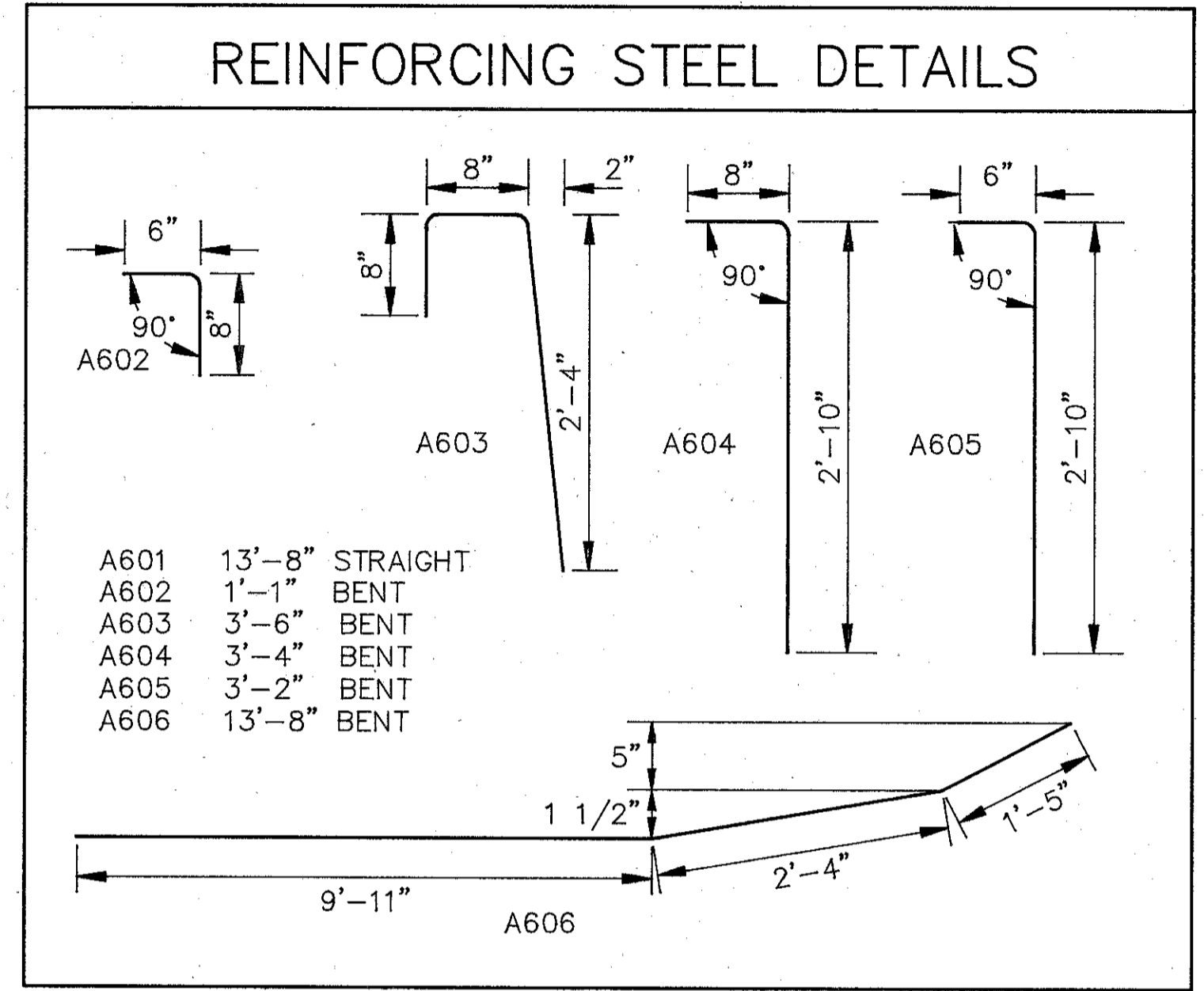
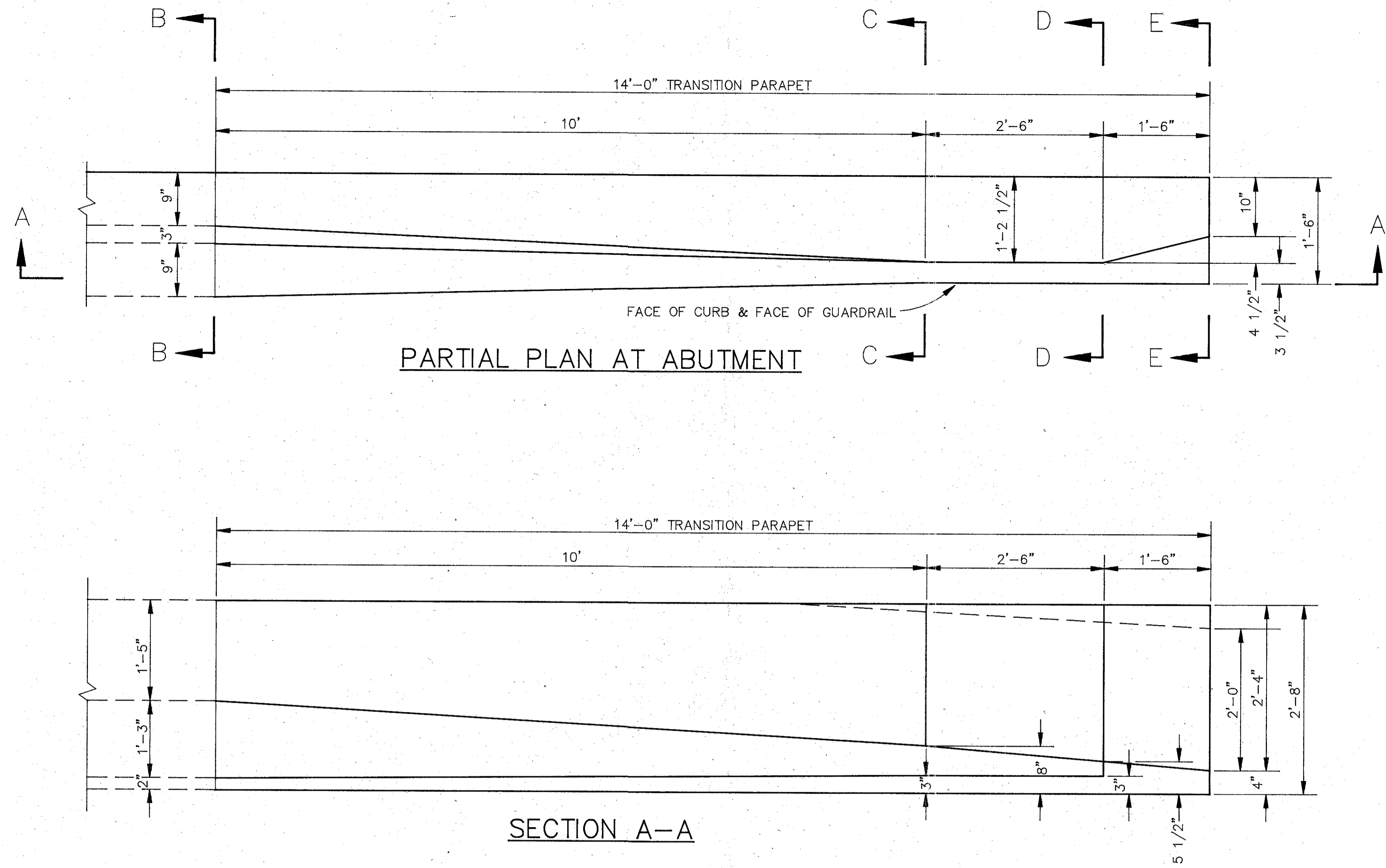
- EXISTING GUARDRAIL ATTACHMENT BOLTS IN THE END OF THE PARAPET TO BE REMOVED.
- THE MINIMUM THICKNESS FOR PROPOSED CONCRETE FACING SHALL BE NO LESS THAN 4".
- ALL RESTEEL SHALL BE PAID FOR UNDER ITEM 517 - RAILING FACED, AS PER PLAN
- CONCRETE RAILING TRANSITIONS TO WHICH BRIDGE TERMINAL ASSEMBLY TYPES 1 AND 2 ATTACH ARE IDENTICAL EXCEPT FOR THE NUMBER AND LOCATION OF BOLT HOLES. SEE STD. DWGS. GR-3.1 AND 3.2.
- CONCRETE SEALING SHALL COVER ALL PROPOSED CONCRETE AND EXTEND 2' ONTO ROADWAY.

RESOURCE INTERNATIONAL INC.
281 ENTERPRISE DR.
WESTERVILLE, OHIO 43081
(614) 886-1909

BRIDGE RAIL
TRANSITION DETAILS
STRUCTURE NO. FRA-104-0929
OVER SIXTH ST.
STRUCTURE NO. FRA-104-0942
OVER CSX TRANS. R.R. AND PARSONS AVE.
FRANKLIN COUNTY

DESIGNED SSK
DRAWN ARS
TRACED
CHECKED JRA
REVIEWED JSB
DATE 8/94
REVISED

25/27



-EXISTING GUARDRAIL ATTACHMENT BOLTS IN THE END OF THE PARAPET TO BE REMOVED.

* - THE MINIMUM THICKNESS FOR PROPOSED CONCRETE FACING SHALL BE NO LESS THAN 4".

-ALL RESTEEL SHALL BE PAID FOR UNDER ITEM 517 RAILING FACED, AS PER PLAN

-CONCRETE RAILING TRANSITIONS TO WHICH BRIDGE TERMINAL ASSEMBLY TYPES 1 AND 2 ATTACH ARE IDENTICAL EXCEPT FOR THE NUMBER AND LOCATION OF BOLT HOLES. SEE STD. DWGS. GR-3.1 AND 3.2.

-CONCRETE SEALING SHALL COVER ALL PROPOSED CONCRETE AND EXTEND 2' ONTO ROADWAY.

RESOURCE INTERNATIONAL INC. 26/27
581 UNIVERSITY DR.
WESTERVILLE, OHIO 43081
(614) 886-1080

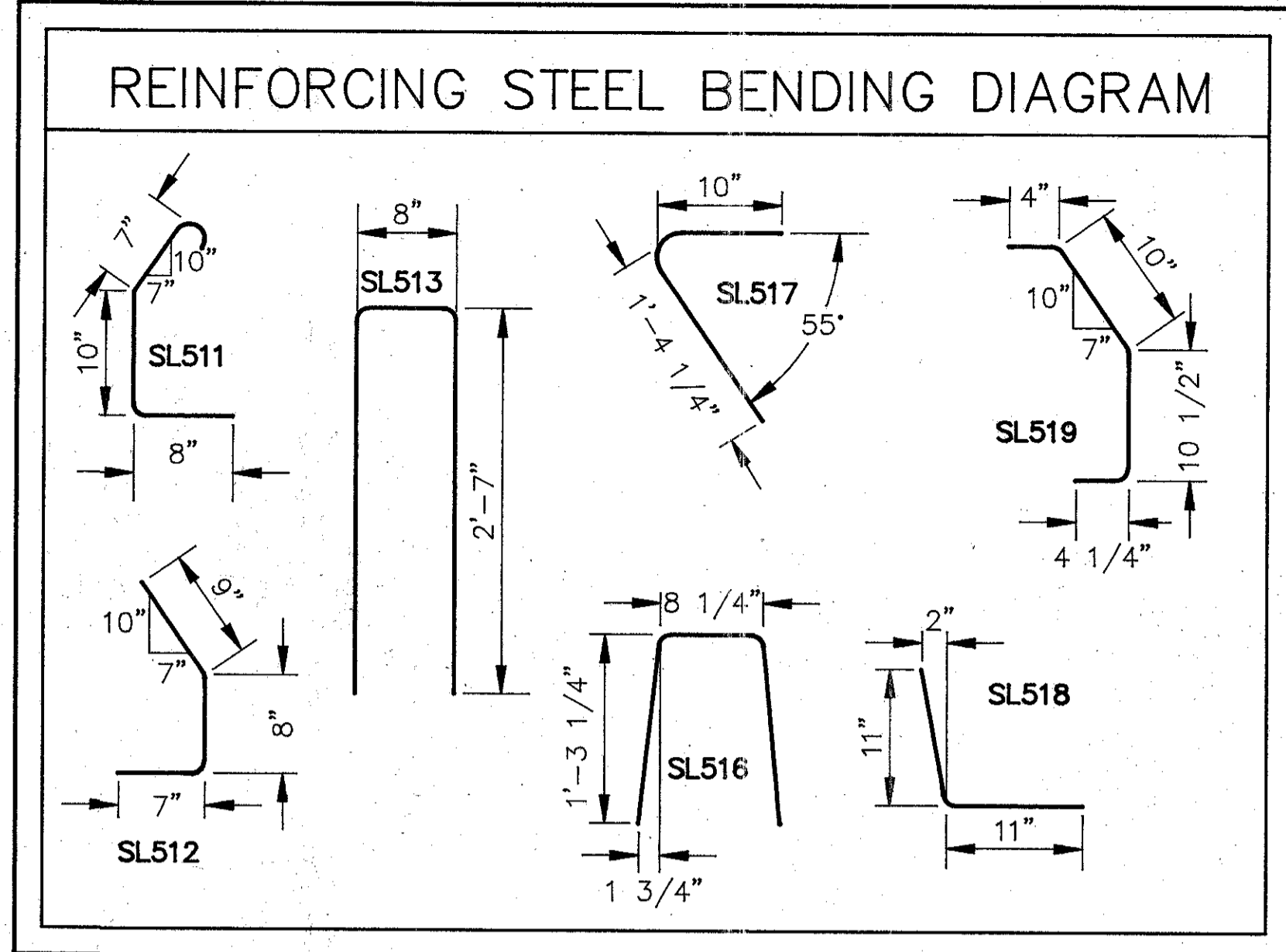
BRIDGE RAIL TRANSITION DETAILS
STRUCTURE NO. FRA-104-0818
OVER SCIOTO RIVER
STRUCTURE NO. FRA-104-0852
OVER AMM. AGG. RD. / HAUL RD.

FRANKLIN COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SSK	ARS		JRA	JSB	8/94	

REINFORCING STEEL LIST					
MARK	PANEL	NO.	LENGTH	WEIGHT	TYPE
SL501	A	4	15'-8"	65.4	STRAIGHT
SL502	B	4	13'-7 5/16"	56.8	STRAIGHT
SL503	C	4	12'-8"	52.8	STRAIGHT
SL504	A	4	6'-11"	28.9	STRAIGHT
SL505	B	2	5'-6"	11.5	STRAIGHT
SL506	B	2	5'-11"	12.3	STRAIGHT
SL507	C	4	5'-5"	22.6	STRAIGHT
SL508	A	8	9'-3"	77.2	STRAIGHT
SL509	B	8	8'-3"	68.8	STRAIGHT
SL510	C	8	7'-9"	64.7	STRAIGHT
SL511	A,B,C	30	2'-0"	62.6	BENT
SL512	A,B,C	30	1'-10"	57.4	BENT
SL513	A,B,C	30	5'-7"	174.7	BENT
SL514	A,B,C	30	1'-3"	39.1	STRAIGHT
SL515	A,B,C	30	1'-10"	57.4	STRAIGHT
SL516	A,B,C	30	3'-0"	93.9	BENT
SL517	A,B,C	30	2'-2 1/2"	69.1	BENT
SL518	A,B,C	30	1'-9"	54.8	BENT
SL519	A,B,C	30	2'-2 1/2"	69.1	BENT

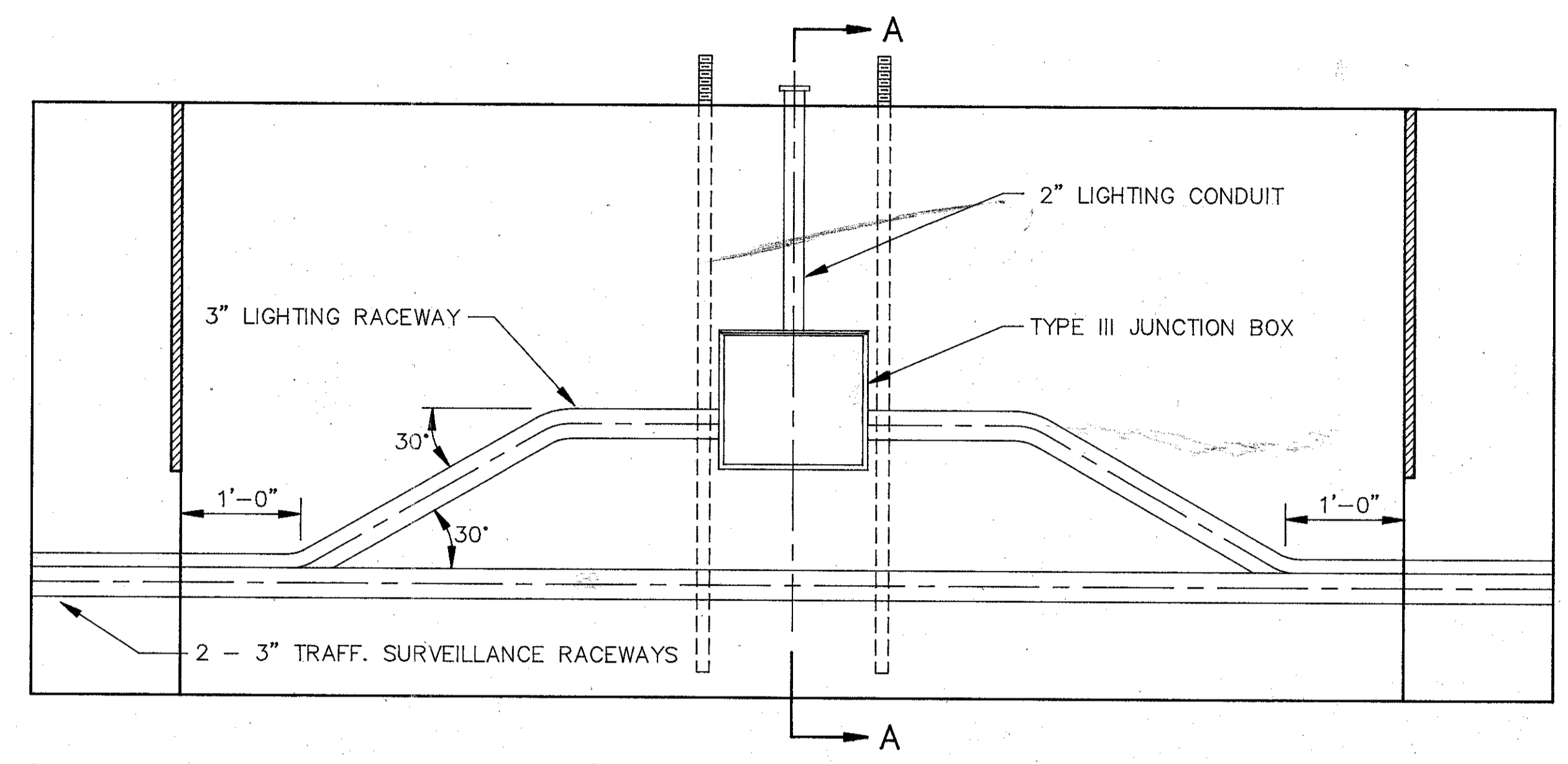
QUANTITIES CARRIED TO INDIVIDUAL BRIDGE SHEETS AND INCLUDED WITH NORMAL BRIDGE BARRIER STEEL QUANTITIES.



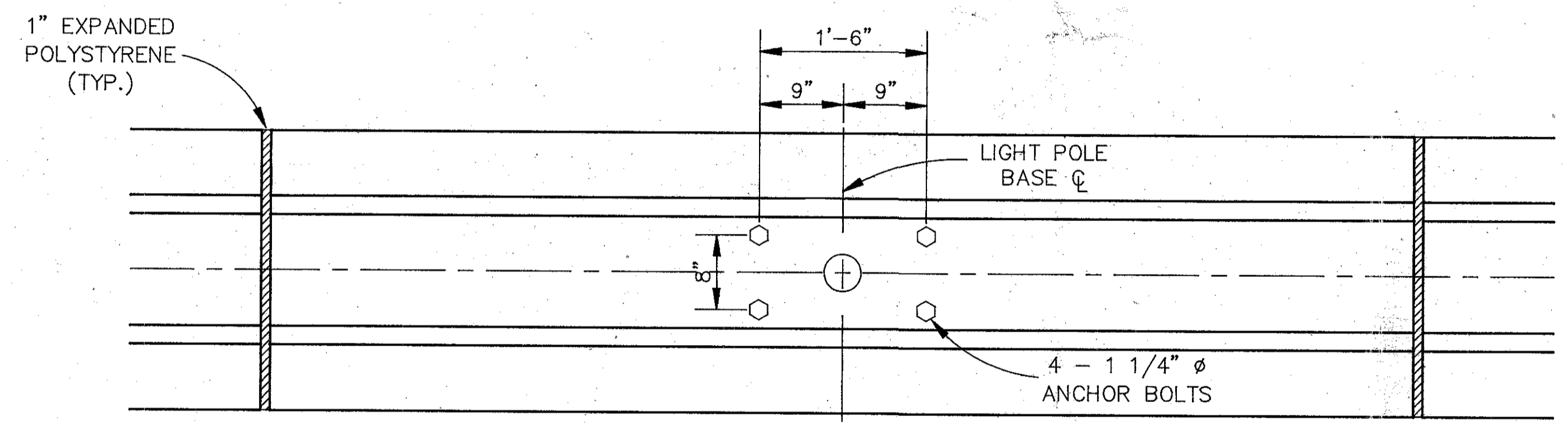
THE UNIT PRICE BID FOR EACH "ITEM 625, LIGHT POLE MISC.: STRUCTURE MOUNTING ASSEMBLY, AS PER PLAN" SHALL BE FULL COMPENSATION FOR FURNISHING AND PLACING ANCHOR BOLTS, TYPE III JUNCTION BOX, AND ALL LABOR, MATERIAL, EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK AS SPECIFIED.

FRA-104-8.02 OHIO
FHWA REGION 5

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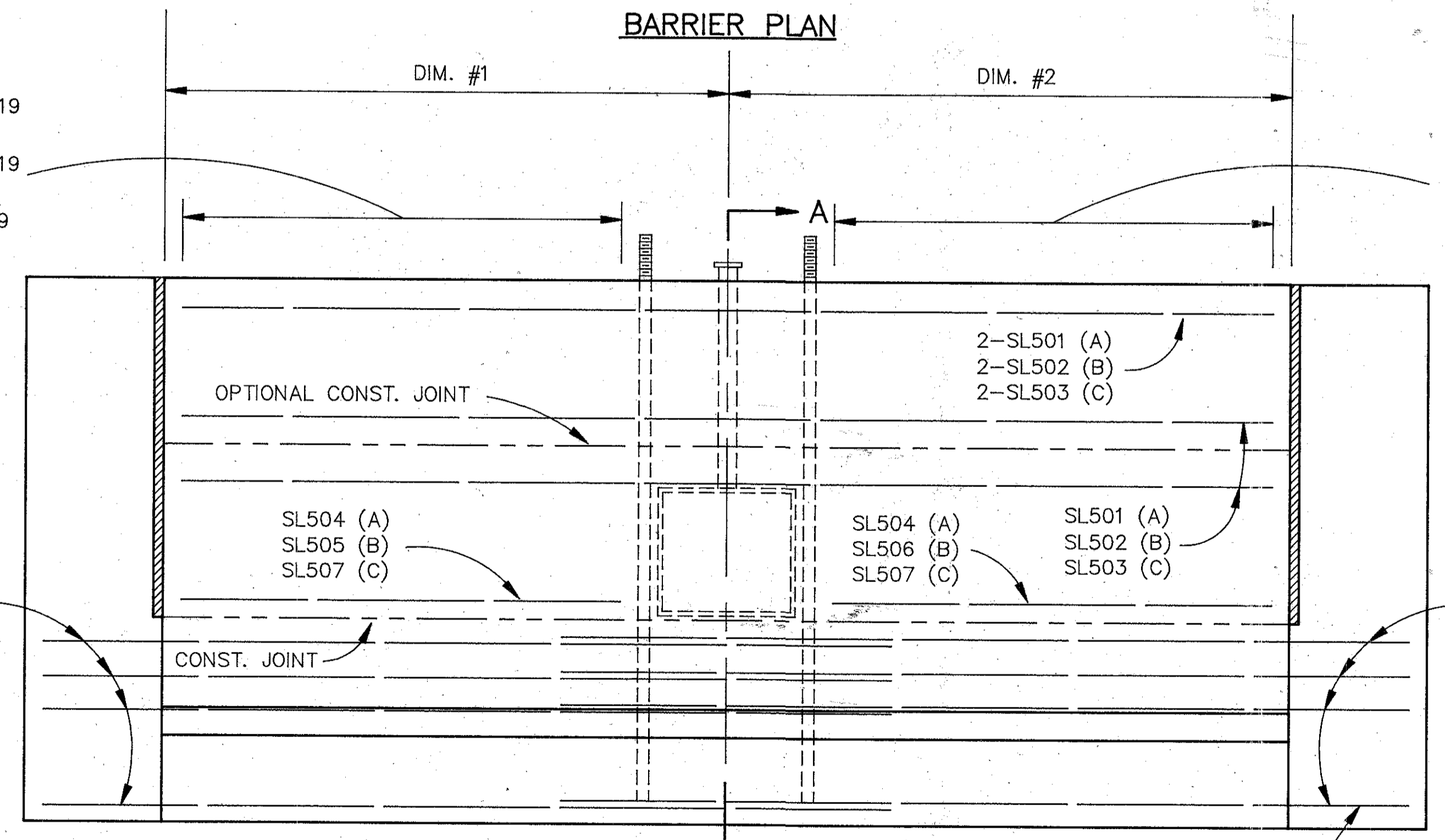
RACEWAY DETAIL



BARRIER PLAN

- (A) 11-SL511 THRU SL519 @ EQUAL SPACING
- (B) 10-SL511 THRU SL519 @ EQUAL SPACING
- (C) 9-SL511 THRU SL519 @ EQUAL SPACING

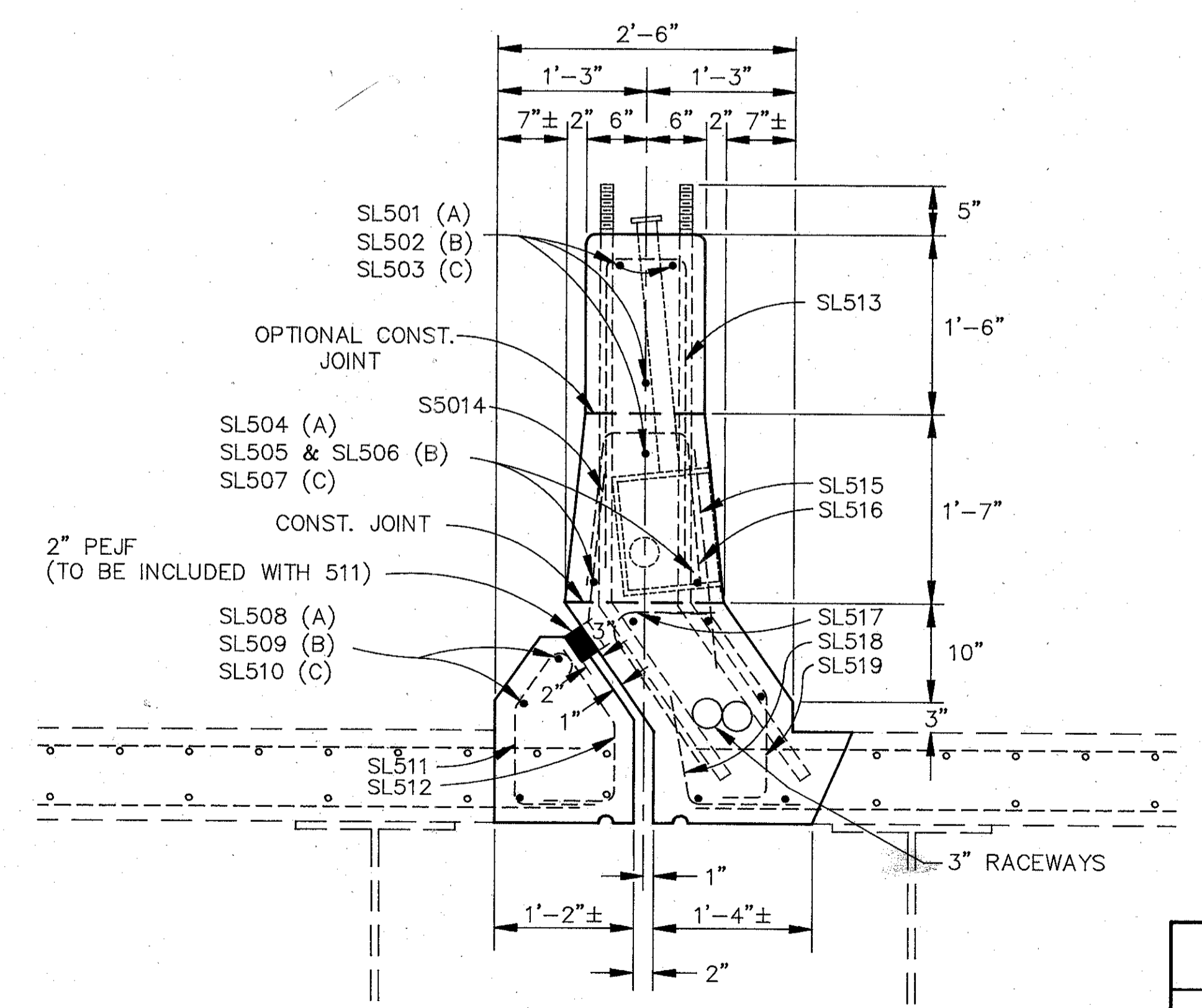
- (A) 11-SL511 THRU SL519 @ EQUAL SPACING
- (B) 10-SL511 THRU SL519 @ EQUAL SPACING
- (C) 9-SL511 THRU SL519 @ EQUAL SPACING



BARRIER ELEVATION

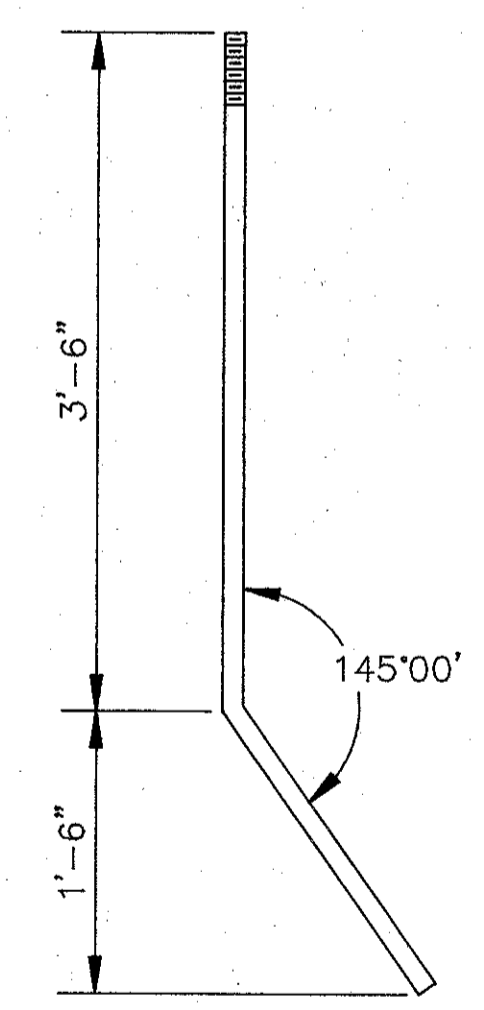
STRUCTURE #	PANEL #	PANEL REFERENCE	DIMENSION #1	DIMENSION #2
FRA-104-0942	1	A	8'-0"	8'-0"
FRA-104-0818	1	B	6'-11 5/16"	7'-0"
FRA-104-0818	3	C	6'-6"	6'-6"

DOWEL 1" INTO PROPOSED MEDIAN BARRIER AND EXISTING BRIDGE DECK



SECTION A-A

DO NOT DISTURB EXIST. REINFORCING STEEL IN DECK



ANCHOR BOLT DETAIL

RESOURCE INTERNATIONAL INC. 27/27
581 ENTERPRISE DR.
WESTERVILLE, OHIO 43081
(614) 886-1050

BARRIER DETAILS FOR
LIGHT MOUNTING ASSEMBLY
STRUCTURE NO. FRA-104-0818
STRUCTURE NO. FRA-104-0942

FRANKLIN COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SSK	ARS		JRA	JSB	8/94	