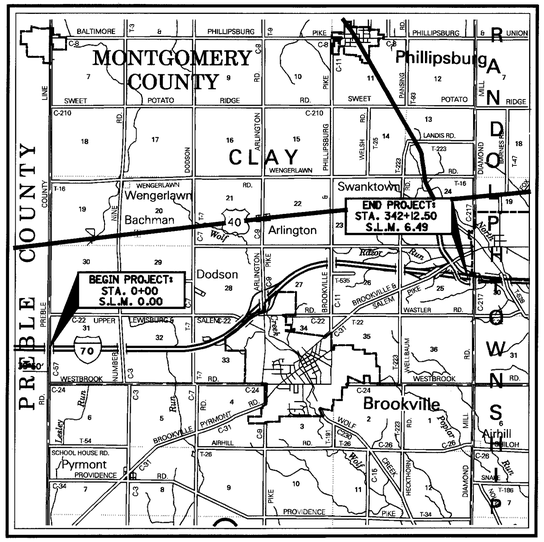


LOCATION MAP

LATITUDE: 39°49'45" LONGITUDE: 84°29'00"

SCALE IN MILES

0 1 2 3 4

N

PORTION TO BE IMPROVED

INTERSTATE & DIVIDED HIGHWAY

UNDIVIDED STATE & FEDERAL ROUTES

OTHER ROADS

DESIGN DESIGNATION

CURRENT ADT (2001)	42,440
DESIGN YEAR ADT (2021)	52,250
DESIGN HOURLY VOLUME (2021)	5,225
DIRECTIONAL DISTRIBUTION	55%
TRUCKS (24 HOUR B&C)	27%
DESIGN SPEED	70 MPH
LEGAL SPEED	65 MPH

DESIGN FUNCTIONAL CLASSIFICATION - RURAL INTERSTATE

DESIGN EXCEPTIONS

DESIGN FEATURE	APPROVAL DATE	SHEET NOS.
VERTICAL CLEARANCE	/ /	46

UNDERGROUND UTILITIES
TWO WORKING DAYS
BEFORE YOU DIG
CALL 1-800-362-2764 (TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

PLAN PREPARED BY:

DISTRICT No. 7
OHIO DEPARTMENT OF TRANSPORTATION

ENGINEERS SEAL:

STATE OF OHIO · PAUL ROBERT HARTKER · 47393 · REGISTERED PROFESSIONAL ENGINEER

SIGNED: Paul Robert Hartker
DATE: 8-22-00

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

MOT-70-0.00

MONTGOMERY COUNTY
PREBLE COUNTY
CITY OF BROOKVILLE
CLAY TOWNSHIP

INDEX OF SHEETS:

PROJECT DESCRIPTION

IMPROVEMENT OF 6.48 MILES OF I.R. 70 BY RESURFACING THE EXISTING PAVEMENT, INCLUDING THE PAINTING OF SOME BRIDGES AND GUARDRAIL UPGRADE WHERE NEEDED.

LIMITED ACCESS

THIS IMPROVEMENT IS ESPECIALLY DESIGNED FOR THROUGH TRAFFIC AND HAS BEEN DECLARED A LIMITED ACCESS HIGHWAY OR FREEWAY BY ACTION OF THE DIRECTOR IN ACCORDANCE WITH THE PROVISIONS OF SECTION 5511.02 OF THE OHIO REVISED CODE.

1997 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. PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

STANDARD CONSTRUCTION DRAWINGS

BP-3.1M	10/28/94	GR-4.2M	10/21/97	BR-1.1M	12/15/94	MT-35.10M	01/30/95
BP-9.1M	04/29/99	GR-4.3M	10/21/97	DBR-2-73	9/15/94	MT-35.11M	01/30/95
		GR-4.4M	10/30/97				
GR-1.1M	10/21/97					MT-95.30M	04/25/94
GR-1.2M	01/03/96	GR-5.1M	04/21/95			MT-95.40M	04/25/94
GR-1.3M	11/30/94	GR-5.2M	11/30/94				
		GR-5.3M	11/30/94			MT-98.12M	06/24/93
GR-2.1M	4/14/98					MT-98.13M	06/24/93
		GR-6.1M	01/03/96			MT-98.14M	06/24/93
GR-3.1M	10/21/97					MT-98.15M	06/24/93
GR-3.2M	10/21/97					MT-98.16M	06/24/93
GR-3.3M	10/21/97	RM-4.3M	10/21/97			MT-98.17M	04/25/94
		RM4.5M	10/21/97			MT-98.18M	04/25/94

SUPPLEMENTAL SPECIFICATIONS

SS806	09/09/97	
SS814	06/02/98	
SS815	05/30/96	
SS830	10/21/98	
SS842	01/06/99	
SS863	10/12/99	
SS870	08/10/99	
SS877	04/13/99	
SS899	10/21/98	
SS905	04/01/98	
SS906	05/05/98	
SS907	10/21/98	
SS908	01/06/99	
SS910	07/28/98	
SS1059	10/12/99	

SPECIAL PROVISIONS

NWP#3 06/22/00

APPROVED William H. Harsha
DATE 8-22-2000 DISTRICT DEPUTY DIRECTOR

APPROVED Gordon Proctor
DATE 8.25.00 DIRECTOR, DEPARTMENT OF TRANSPORTATION

FEDERAL PROJECT NO.	PID NO.	CONSTRUCTION PROJECT NO.	STATE JOB NO.
TE21-G000(379)	17068		074820

RAILROAD INVOLVEMENT: NONE

MOT-70-0.00

1 / 112

MOT - IR 70 -000
000505
PID# 17068

10/25/00
DIST 07

kde

0 100 200 400
HORIZONTAL SCALE IN FEET

CALCULATED

CHECKED

SCHEMATIC PLAN
STA. 0+00 TO STA. 110+00

MOT-70-0.00

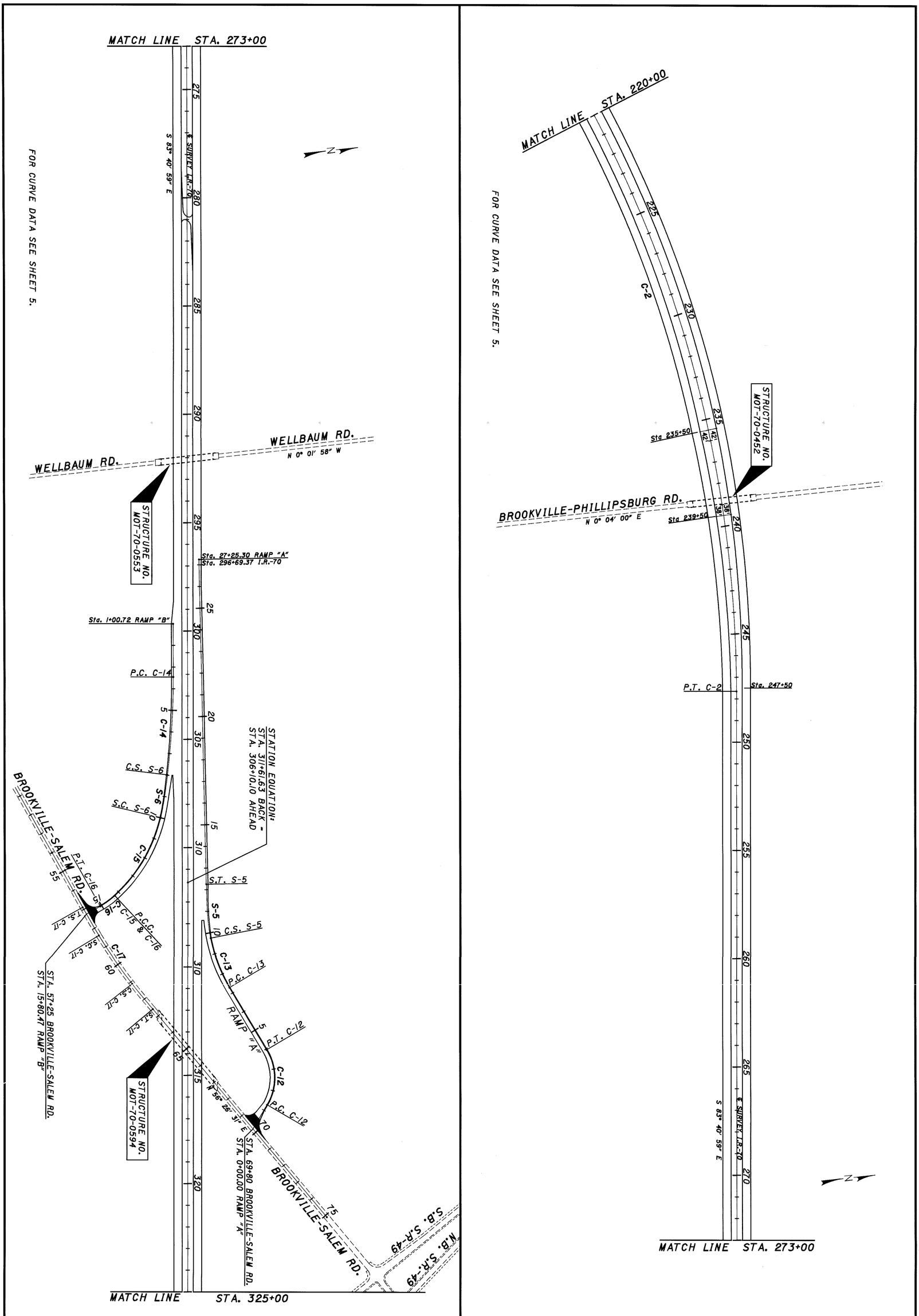
0 100 200 400
HORIZONTAL SCALE IN FEET

CALCULATED | CHECKED

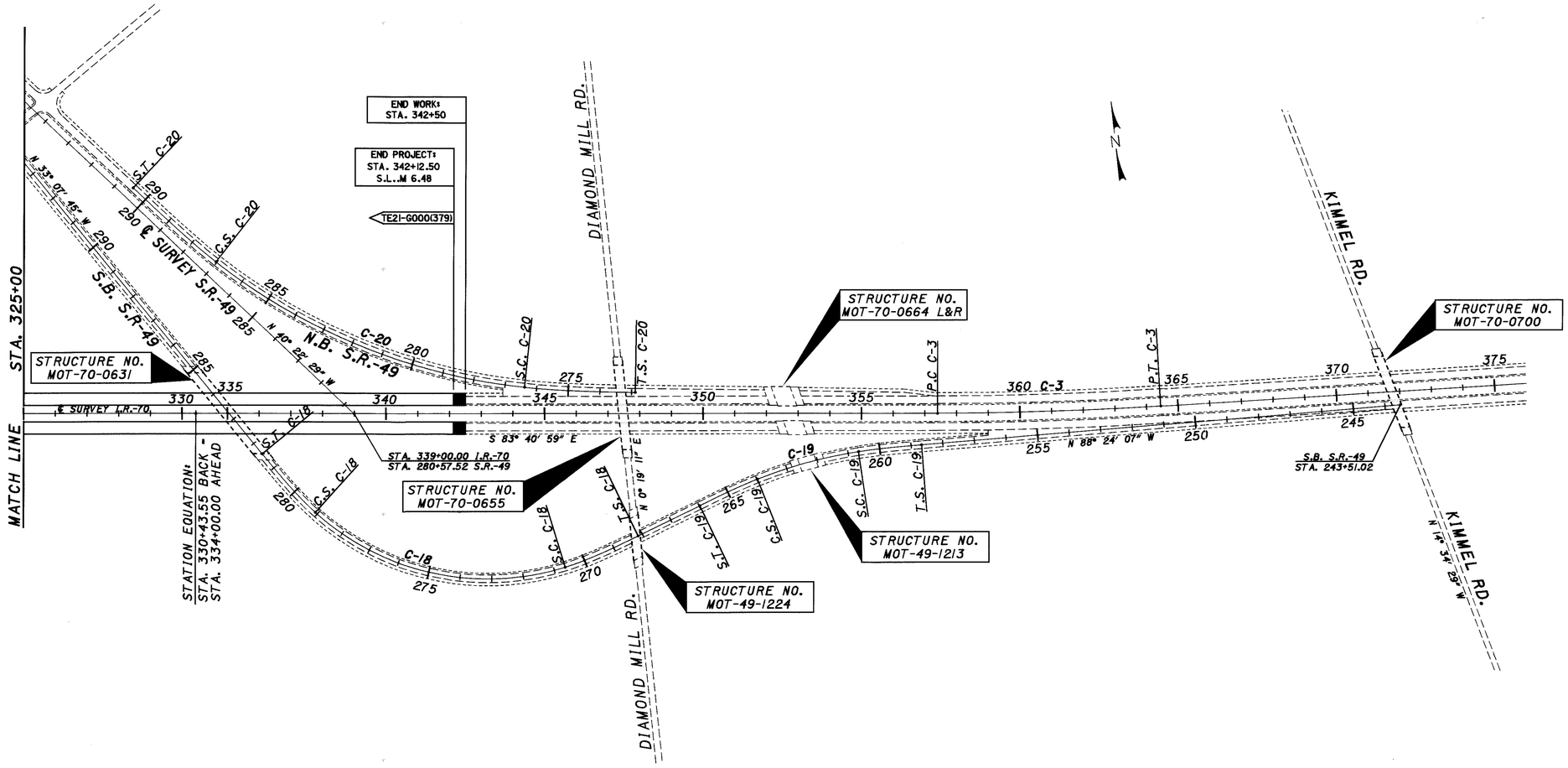
SCHEMATIC PLAN
STA. 110+00 TO STA. 220+00

MOT-70-0.00

3
112



4 / 112	MOT-70-0.00	SCHEMATIC PLAN STA. 220+00 TO STA. 325+00	CALCULATED CHECKED	0 200 100 400 HORIZONTAL SCALE IN FEET

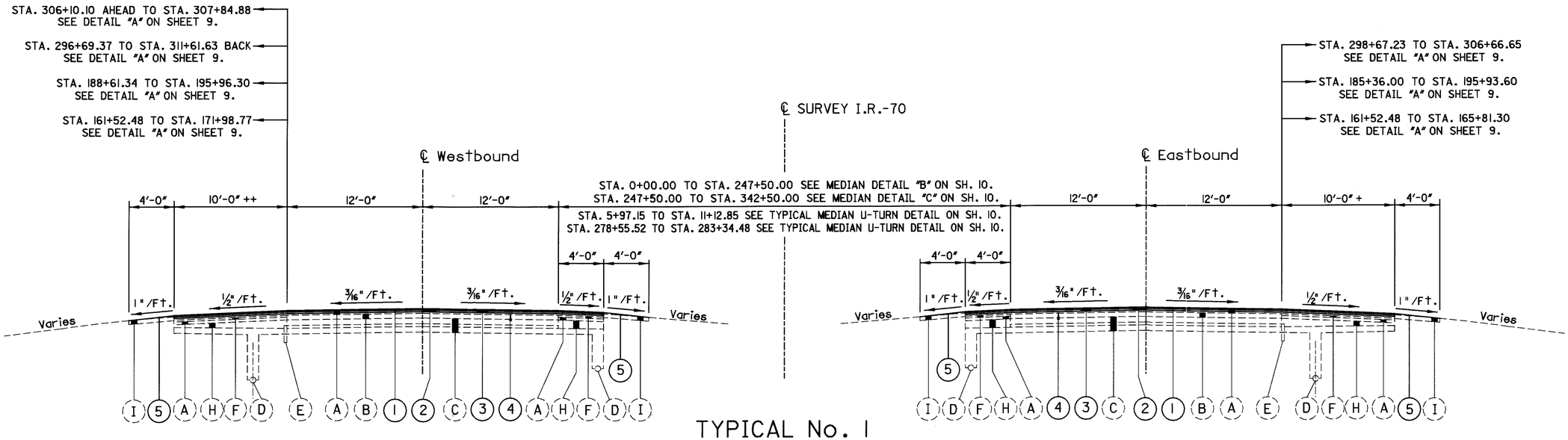


CURVE DATA FOR INTERSTATE 70 AND INTERSECTING ROADS AND RAMPS

CURVE No.	REMARKS	T.S. OR C.S.	S.C., P.C., OR P.C.C.	P.I.	C.S., P.T., OR P.C.C.	S.T. OR S.C.	△	Dc	R	T	E	Ls	θs	LT	ST	X	Y	K	P	△c	Lc	Ts	Es
C-1	I.R.-70		P.C. 98+27.16	127+50.72	P.T. 153+78.55		44° 24' 40" LT.	0° 48' 00"	7,161.97'	2,923.56'	573.73'									44° 24' 40" LT.	5,551.39'		
C-2	I.R.-70		P.C. 197+45.20	224+29.14	P.T. 247+65.21		50° 12' 00" RT.	1° 00' 00"	5,729.58'	2,683.93'	597.47'									50° 12' 00" RT.	5,020.00'		
ARLINGTON RD.																							
C-4	RAMP "B"		P.C 3+45.99	5+72.79	C.S 7+99.06	S.C. 9+99.06	6° 47' 46" RT.	1° 30' 00"	3,819.72'	226.80'	6.73'									6° 47' 46" RT.	453.07'		
S-1	RAMP "B"	C.S 7+99.06	S.C 9+99.06						880.00'			200.00'	6° 30' 39"	133.42'	66.75'	199.74'	7.57'	99.96'	1.89'				
C-5	RAMP "B"		P.C 9+99.06	11+81.05	P.T. 13+55.49		28° 30' 48" RT.	8° 00' 00"	716.20'	181.98'	22.76									28° 30' 48" RT.	356.42'		
C-6	RAMP "A"		P.C. 1+28.72	2+59.17	P.T. 3+59.91		66° 13' 47" LT.	28° 38' 52"	200.00'	130.45'	38.78'									66° 13' 47" LT.	231.19'		
C-7	RAMP "A"		P.C. 6+00.97	8+28.32	C.S. 10+41.26		35° 13' 22" RT.	8° 00' 00"	716.20'	227.35'	35.22'									35° 13' 22" RT.	440.29'		
S-2	RAMP "A"	C.S. 10+41.26				S.T. 12+41.26			716.20'			200.00'	8° 00' 00"	133.47'	66.79'	199.61'	9.30'	99.34'	2.33'				
C-8	RAMP "C"		P.C. 3+45.99	5+72.79	C.S. 7+99.06		6° 47' 46" RT.	1° 30' 00"	3,819.72'	226.80'	6.73'									6° 47' 46" RT.	452.80'		
S-3	RAMP "C"	C.S. 7+99.06	S.C. 10+49.06									250.00'	6° 15' 48"	141.84'	108.40'				0.91'				
C-9	RAMP "C"		S.C. 10+49.06	12+20.27	P.T. 13+85.17		26° 53' 20" RT.	8° 00' 00"	716.20'	171.21'	20.18'									26° 53' 20" RT.	336.12'		
C-10	RAMP "D"		P.C. 1+28.78	2+75.63	P.T. 3+94.33		60° 51' 36" LT.	22° 55' 06"	250.00'	146.85'	39.94'									60° 51' 36" LT.	265.55'		
C-11	RAMP "D"		P.C. 7+53.15	9+30.77	C.S. 11+01.37		27° 51' 26" RT.	8° 00' 00"	716.20'	177.62'	21.70'									27° 51' 26" RT.	348.22'		
S-4	RAMP "D"	C.S. 11+01.37				S.T. 13+51.37			716.20'			250.00'	10° 00' 00"	166.93'	83.58'	249.24'	14.51'	124.87'	3.63'				
ARLINGTON RD.																							
C-12	RAMP "A"		P.C. 1+28.72	2+75.98	P.T. 3+94.88		60° 59' 58" LT.	22° 55' 06"	250.00'	147.26'	40.15'									60° 59' 58" LT.	266.16'		
C-13	RAMP "A"		P.C. 7+29.03	8+53.26	C.S. 9+75.04		19° 40' 51" RT.	8° 00' 00"	716.20'	124.23'	10.69'									19° 40' 51" RT.	246.01'		
S-5	RAMP "A"	C.S 9+75.04				S.T. 12+25.04			716.20'			250.00'	10° 00' 00"	166.93'	83.58'	249.24'	14.51'	124.87'	3.63'				
C-14	RAMP "B"		P.C. 3+45.98	5+72.78	C.S. 7+99.05		6° 47' 46" RT.	1° 30' 00"	3,819.72'	226.80'	6.73'									6° 47' 46" RT.	453.07'		
S-6	RAMP "B"	C.S. 7+99.05				S.C. 9+99.05						200.00'	5° 01' 33"	113.50'	86.62'				0.59'				
C-15	RAMP "B"		S.C. 9+99.05	12+17.63	P.C.C. 14+23.35		33° 56' 37" RT.	8° 00' 00"	716.20'	218.58'	32.61'									33° 56' 37" RT.	424.30'		
C-16	RAMP "B"		P.C.C. 14+23.35	14+65.15	P.T. 15+06.57		13° 18' 56" RT.	16° 00' 00"	358.10'	41.80'	2.43'									13° 18' 56" RT.	83.22'		

SCHEMATIC PLAN
STA. 325+00 TO STA. 375+00

MOT-70-0.00



TYPICAL No. 1

NORMAL SECTION

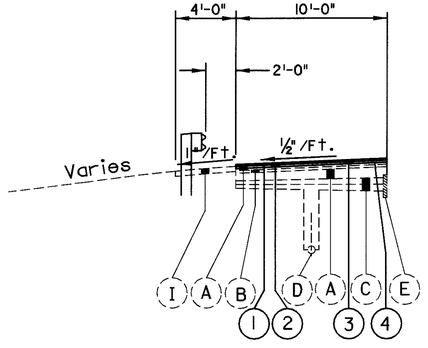
++ Sta. 187+61.34 to Sta. 188+61.34
BERM VARIES FROM 10' TO 14'

+ Sta. 165+81.30 to Sta. 166+81.30
BERM VARIES FROM 14' TO 10'

Sta. 306+67.23 to Sta. 307+67.23
BERM VARIES FROM 14' TO 10'

LIMITING STATIONS

(STATION EQUATION)	STA. 939+89.68 BACK = STA. 0+00.00 AHEAD	
	STA. 0+00.00 TO STA. 97+02.36 =	9702.36 LIN. FT.
	STA. 161+52.48 TO STA. 173+79.00 =	1226.52 LIN. FT.
	STA. 185+36.00 TO STA. 195+93.60 =	1057.60 LIN. FT.
	STA. 249+16.80 TO STA. 311+61.63 =	6244.83 LIN. FT.
(STATION EQUATION)	STA. 311+61.63 BACK = STA. 306+10.10 AHEAD	
	STA. 306+10.10 TO STA. 311+26.00 =	515.90 LIN. FT.
	STA. 315+74.00 TO STA. 328+90.55 =	1316.55 LIN. FT.
		20,063.76 LIN. FT.



TYPICAL GUARDRAIL SECTION

EXISTING LEGEND

- (A) EXISTING ASPHALT CONCRETE
- (B) EXISTING BITUMINOUS AGGREGATE BASE
- (C) EXISTING REINFORCED CONCRETE ON SUBBASE
- (D) EXISTING PIPE UNDERDRAINS
- (E) EXISTING SHALLOW PIPE UNDERDRAIN
- (F) WATERPROOF AGGREGATE BASE, ON POROUS BASE COURSE
- (I) VARIABLE DEPTH AGGREGATE BASE
- (J) SUBBASE
- (K) EXISTING COMPACTED AGGREGATE
- (L) EXISTING BRIDGE DECK OR APPROACHES

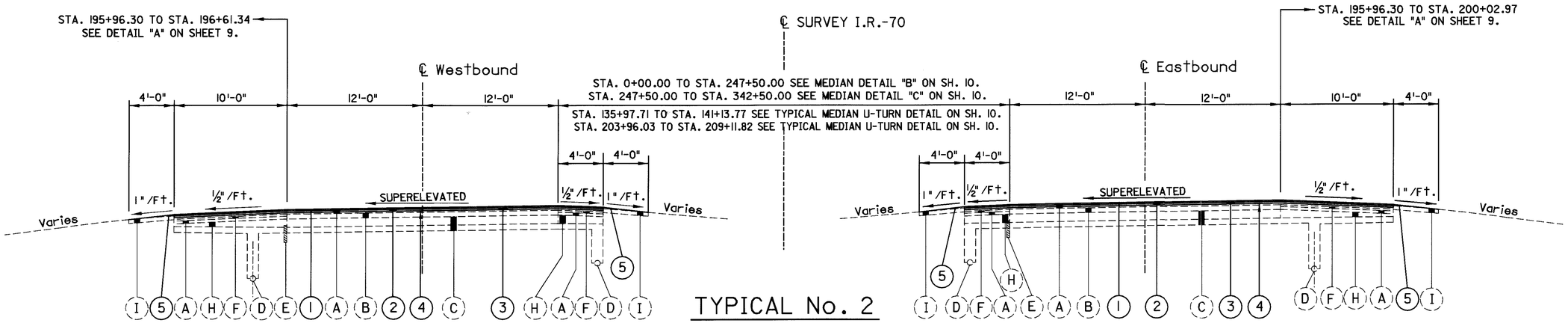
PROPOSED LEGEND

- (1) — ITEM 446 - 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE 1H, PG76-22, WITH SUPPLEMENT 1059 WARRANTY
- (2) — ITEM 446 - 1¾" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG76-22, AS PER PLAN
- (3) — ITEM 254 - 1¾" PAVEMENT PLANING, BITUMINOUS
- (4) — ITEM 407 - TACK COAT (SEE GENERAL NOTE)
- (5) — ITEM 617 - COMPACTED AGGREGATE
- (6) — ITEM 446 - VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE 1H
- (7) — ITEM 517 - RAILING (DEEP BEAM RAIL WITH STEEL TUBULAR BACKUP AND TYPE 2 STEEL POSTS)

CALCULATED | CHECKED

TYPICAL SECTION

MOT-70-0.00

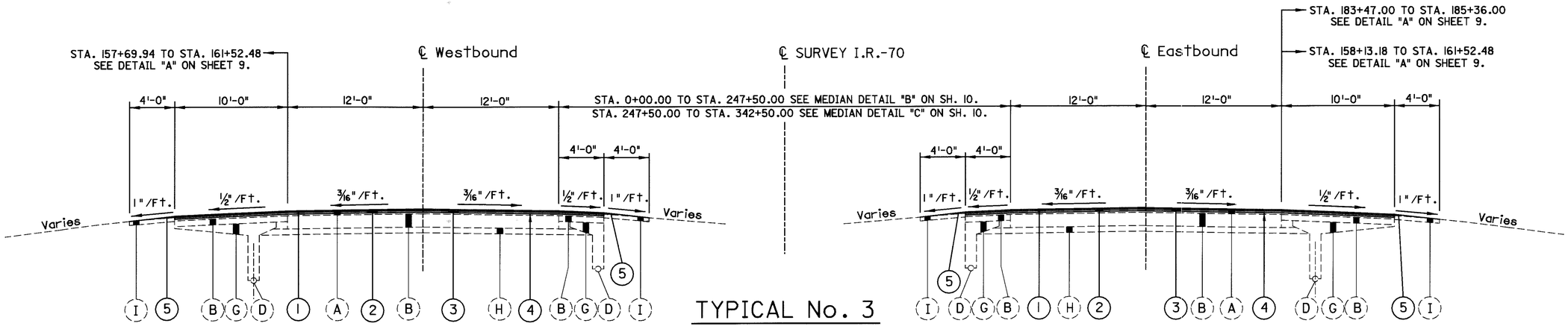


TYPICAL No. 2

SUPERELEVATED SECTION
LIMITING STATIONS

STA. 97+02.36 TO STA. 151+65.52 = 5463.16 LIN. FT.
STA. 195+93.60 TO STA. 235+50.00 = 3926.40 LIN. FT.
STA. 242+13.00 TO STA. 249+16.80 = 703.80 LIN. FT.
10,093.36 LIN. FT.

FOR PAVEMENT LEGEND SEE SHEET 6.



TYPICAL No. 3

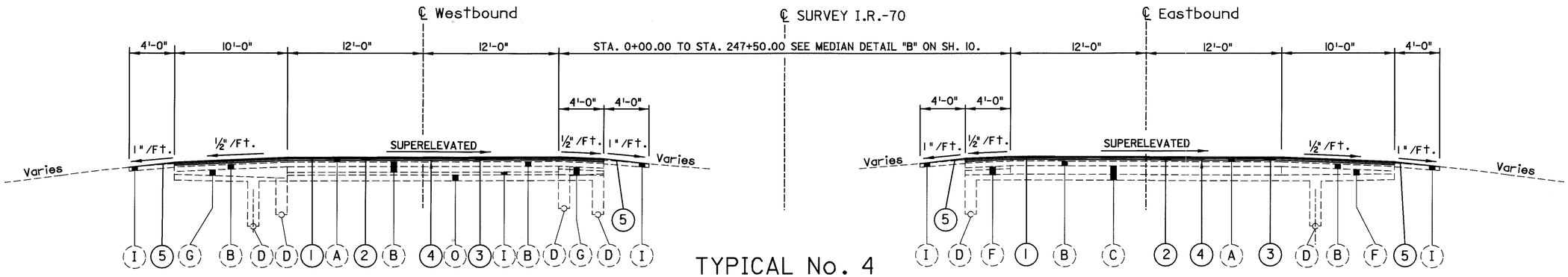
NORMAL SECTION
LIMITING STATIONS

STA. 151+65.52 TO STA. 155+26.39 = 360.87 LIN. FT.
STA. 155+26.39 TO STA. 157+91.61 = BRIDGE NO. MOT-70-0295 L&R AND APPROACH SLABS AND TRANSITIONS
STA. 157+91.61 TO STA. 161+52.48 = 360.87 LIN. FT.
STA. 173+79.00 TO STA. 180+77.50 = 698.5 LIN. FT.
STA. 181+85.00 TO STA. 185+36.00 = 350.00 LIN. FT.
STA. 311+26.00 TO STA. 315+74.00 = 448.00 LIN. FT.
STA. 328+90.55 TO STA. 330+43.55 = 153.00 LIN. FT.
(STATION EQUATION) STA. 330+43.55 BACK = STA. 334+00.00 AHEAD
STA. 334+00.00 TO STA. 334+44.00 = 44.00 LIN. FT.
2,415.24 LIN. FT.

CALCULATED | CHECKED

TYPICAL SECTION

MOT-70-0.00

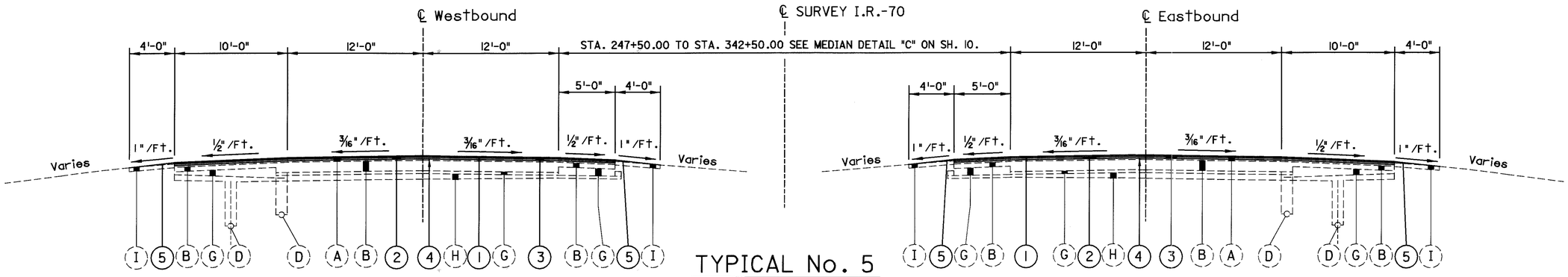


TYPICAL No. 4

SUPERELEVATED SECTION
LIMITING STATIONS

STA. 235+50.00 TO STA. 242+13.00 = 663.00 LIN. FT.

FOR PAVEMENT LEGEND SEE SHEET 6.



TYPICAL No. 5

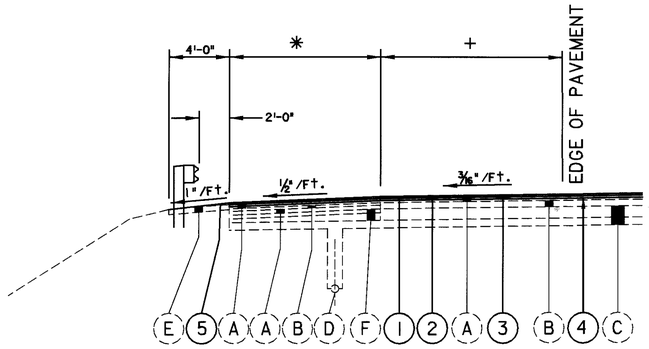
NORMAL SECTION
LIMITING STATIONS

STA. 334+44.00 TO STA. 342+12.50 = 768.50 LIN. FT.

CALCULATED | CHECKED

TYPICAL SECTION

MOT-70-0.00



DETAIL "A"

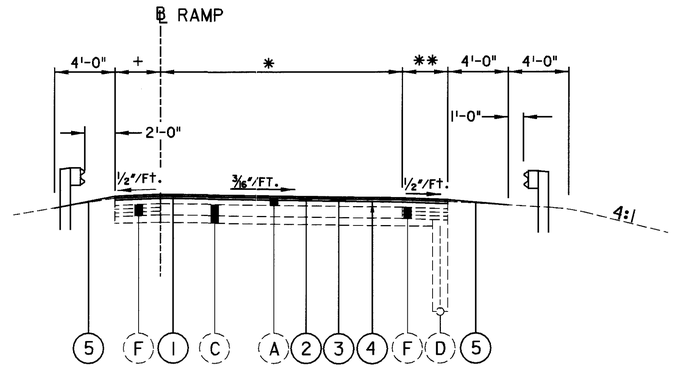
ACCELERATION/DECELERATION DETAIL

ARLINGTON RD., RAMPS "A" & "C"
ARLINGTON RD., RAMPS "B" & "D" (OPPOSITE HAND)

BROOKVILLE - SALEM RD., RAMP "A"
BROOKVILLE - SALEM RD., RAMP "B" (OPPOSITE HAND)

LOCATON	STATION TO STATION		LENGTH	*	+
I-70 AT ARLINGTON RD.					
RAMP "A"	157+69.94	170+47.42	1277.48'	8'	4.64' to 31.25'
	170+47.42	171+98.77	151.35'	8' to 3'	31.25' TO 38.5'
RAMP "B"	158+13.18	158+81.30	68.12'	8'	3.9' to 12'
	158+81.30	161+27.29	245.99'	8'	12'
	161+27.29	165+81.30	454.01'	8' TO 3'	12' to 37'
RAMP "C"	188+61.34	193+15.35	454.01'	3' TO 8'	36' to 12'
	193+15.35	195+60.62	245.27'	8'	12'
	195+60.62	196+61.34	100.72'	8' to 10'	12' to 0'
RAMP "D"	183+47.04	185+00.00	152.96'	3' to 8'	38' TO 31.5'
	185+00.00	188+00.00	300'	8'	31.5' TO 25'
	188+00.00	200+02.97	1202.97'	8' to 10'	25' to 0'
I-70 AT BROOKVILLE - SALEM RD.					
RAMP "A"	296+69.37	311+61.63	1492.26	10' to 8'	0' to 31'
	STATION EQUATION STA. 311+61.63 BACK TO STA. 306+10.10 AHEAD				
	306+10.10	307+84.88	174.78'	8' to 3'	31' to 39'
RAMP "B"	298+67.23	299+67.95	100.72'	10' to 8'	0' to 12'
	299+67.95	302+12.51	244.56'	8'	12'
	302+12.51	306+66.65	454.14'	8' to 3'	12' to 39'

FOR PAVEMENT LEGEND SEE SHEET 6.



TYPICAL No. 6

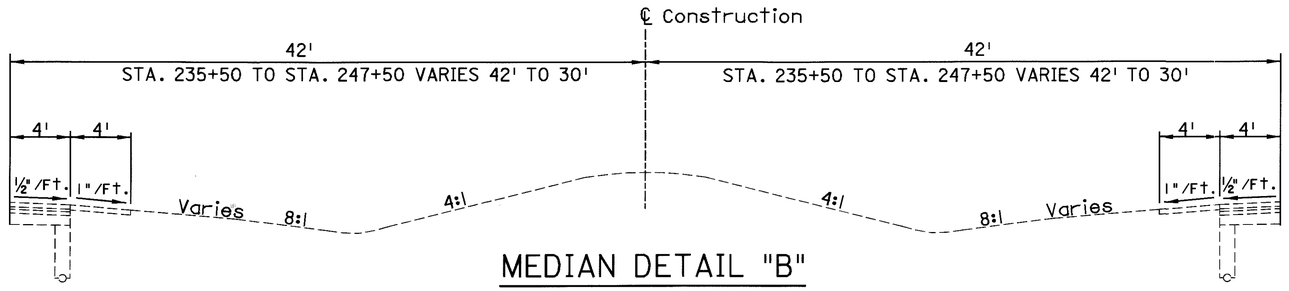
NORMAL RAMP SECTION

LOCATION	STATION TO STATION		LENGTH	*	+	**	DESCRIPTION
I.R.-70 AND ARLINGTON RD. INTERSECTION RAMPS							
RAMP "A"	0+50.40	1+28.72	78.32'	42.8' TO 16'	3'	3'	OPPOSITE HAND
	1+28.72	5+00.00	371.28'	16'	3'	3'	OPPOSITE HAND
	5+00.00	10+91.50	591.50'	16'	3'	3'	
RAMP "B"	7+99.06	15+52.17	753.11'	16'	3'	3'	
	15+52.17	15+75.33	23.16'	16' TO 22.4'	3'	3'	
RAMP "C"	7+99.06	15+59.65	760.59'	16'	3'	3'	
	15+59.65	15+84.04	24.39'	16' TO 22.4'	3'	3'	
RAMP "D"	0+50.27	1+28.78	78.51'	36.7' TO 16'	3'	3'	OPPOSITE HAND
	1+28.78	6+00.00	471.22'	16'	3'	3'	OPPOSITE HAND
	6+00.00	9+52.22	352.22'	16'	3'	3'	
	10+38.36	11+99.57	161.21'	16'	3'	3'	
I.R.-70 AND BROOKVILLE-SALEM RD. INTERSECTION RAMPS							
RAMP "A"	0+50.27	1+28.72	78.45'	32.84' TO 16'	3'	3'	OPPOSITE HAND
	1+28.72	5+50.00	421.28'	16'	3'	3'	OPPOSITE HAND
	5+50.00	10+60.18	510.18'	16'	3'	3'	
RAMP "B"	7+99.05	15+06.57	707.52'	16'	3'	3'	
	15+06.57	15+30.83	24.26	16' TO 20.52'	3'	3'	

CALCULATED | CHECKED

TYPICAL SECTION FOR ACCEL.-DECEL. LANES AND RAMPS

MOT-70-0.00

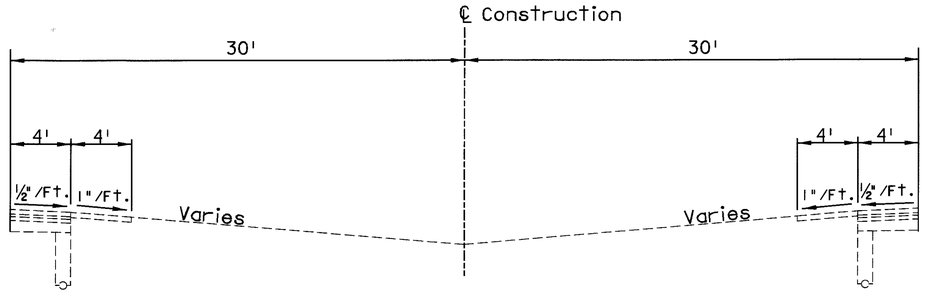


MEDIAN DETAIL "B"

LIMITING STATIONS

STA. 0+00.00 TO STA. 247+50.00

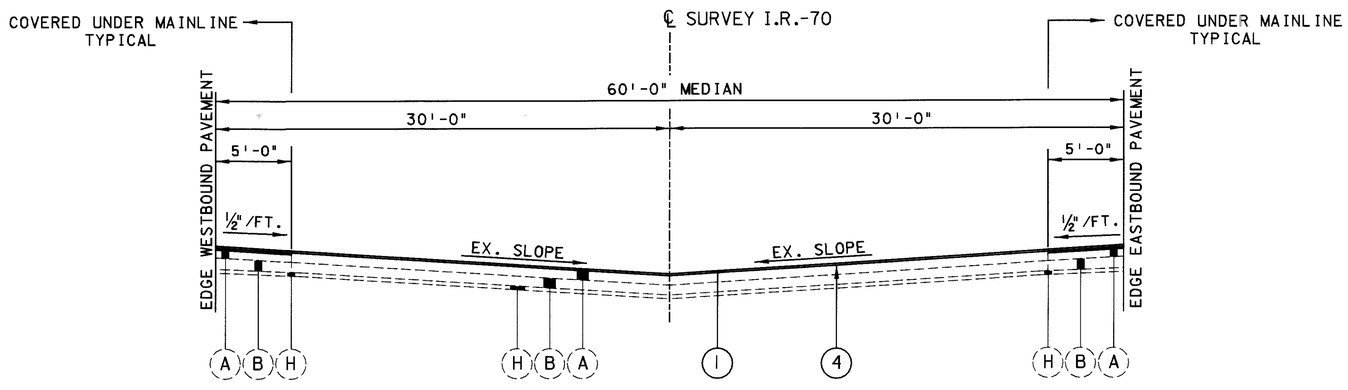
FOR PAVEMENT LEGEND SEE SHEET 6.



MEDIAN DETAIL "C"

LIMITING STATIONS

STA. 247+50.00 TO STA. 342+50.00

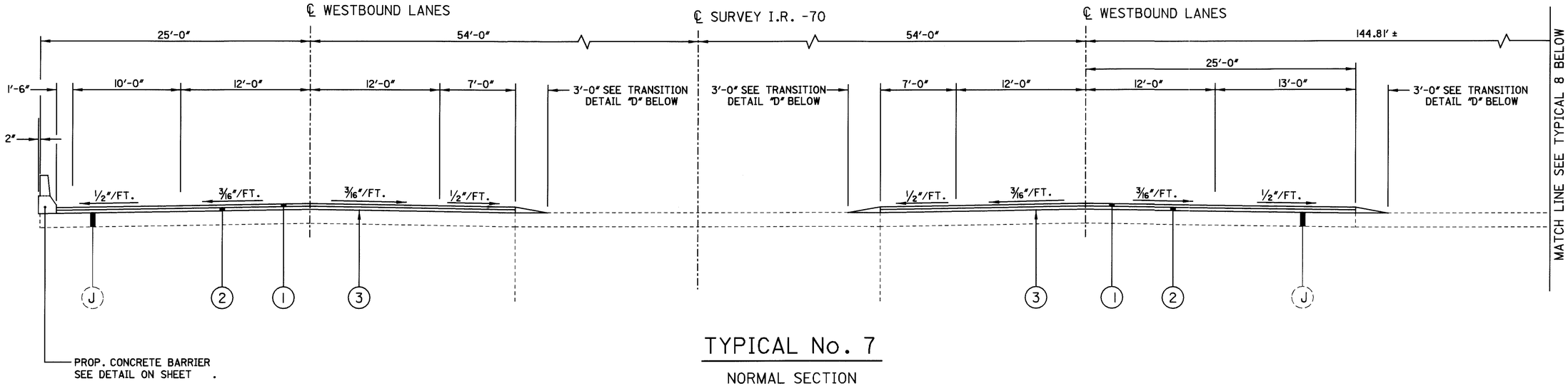


TYPICAL MEDIAN U-TURN

CALCULATED | CHECKED

TYPICAL SECTION FOR MEDIANS

MOT-70-0.00



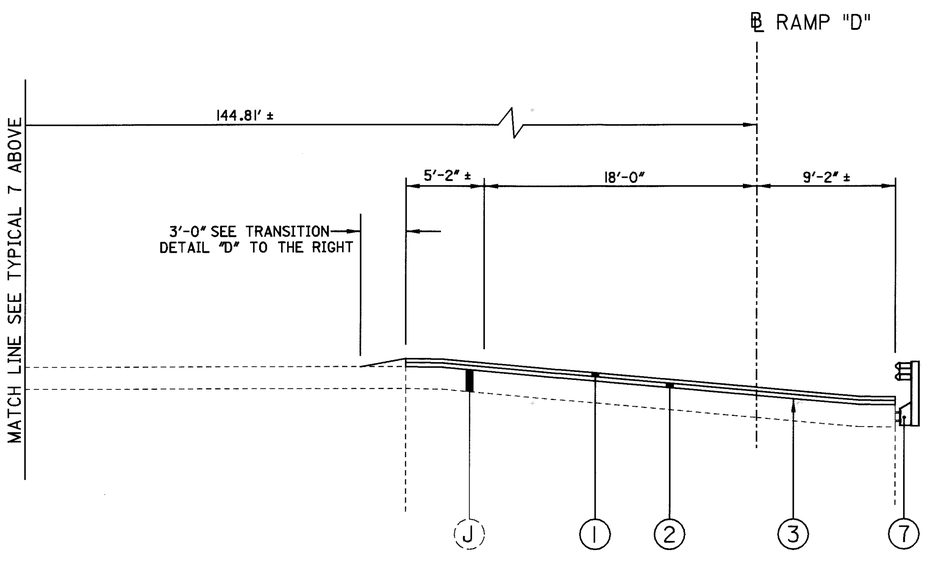
TYPICAL No. 7

NORMAL SECTION

LIMITING STATIONS

STA. 181+15.00 TO STA. 181+85.00 = 70 LIN. FT. (BRIDGE NO. MOT-70-0344 L&R, AND APPROACH SLABS)

FOR PAVEMENT LEGEND SEE SHEET 6.

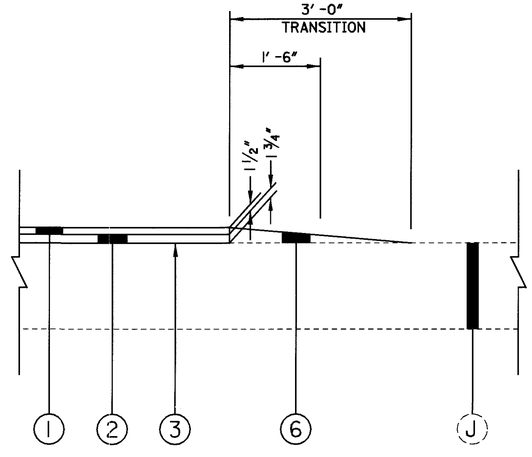


TYPICAL No. 8

NORMAL SECTION

LIMITING STATIONS

STA. 9+55.38 TO STA. 10+25.38 = 70 LIN. FT. (BRIDGE NO. MOT-70-0344 RAMP "D", AND APPROACH SLABS)



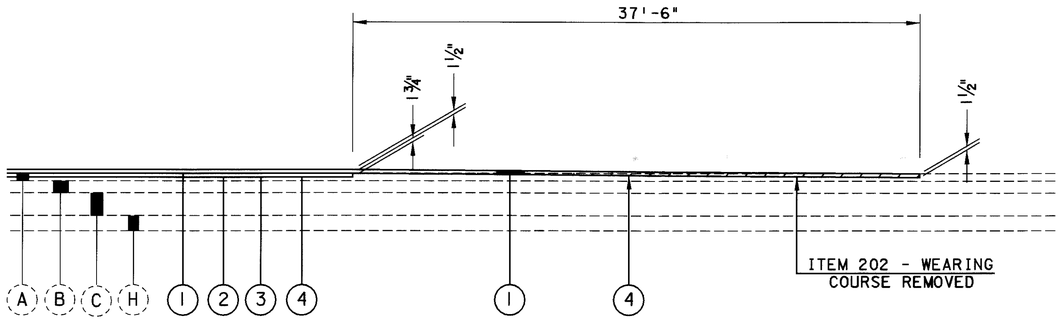
TRANSITION DETAIL "D"

CALCULATED | CHECKED

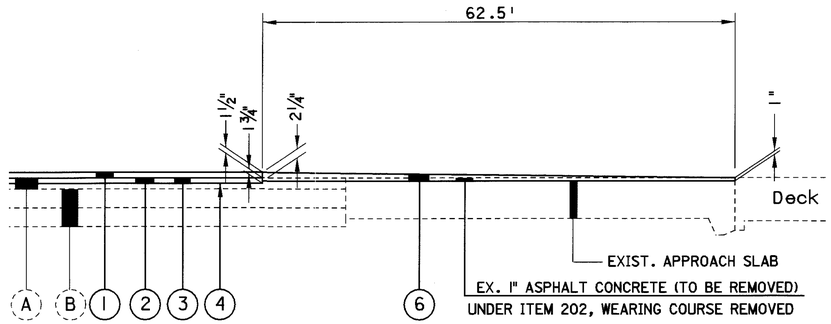
TYPICAL SECTION
MOT-70-0344 L&R AND RAMP "D"

MOT-70-0.00

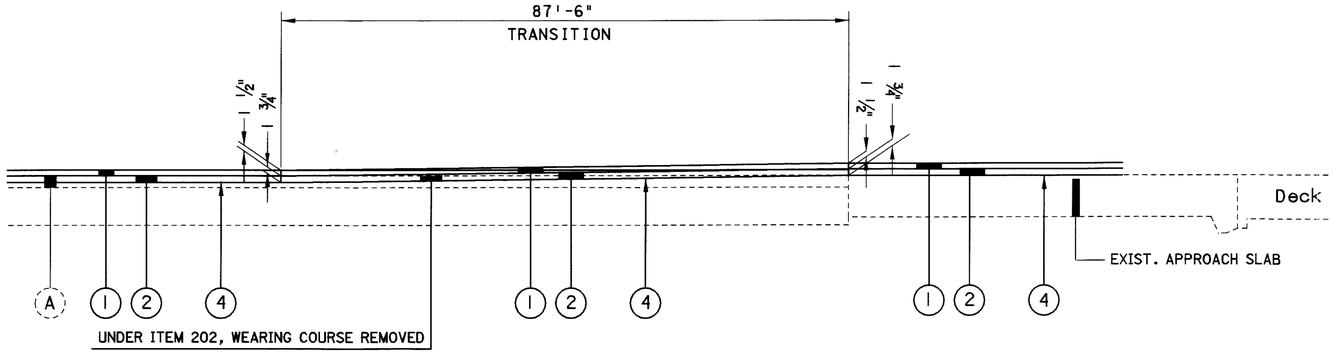
k:\de



TRANSITION DETAIL "A"



TRANSITION DETAIL "B"



TRANSITION DETAIL "C"

FOR PAVEMENT LEGEND SEE SHEET 6.

PAVEMENT SYMBOLS

— TRANSITION AREA (SEE TRANSITION DETAIL)

— 3' TAPER AREA (SEE DETAIL "D" ON SHEET 11.)

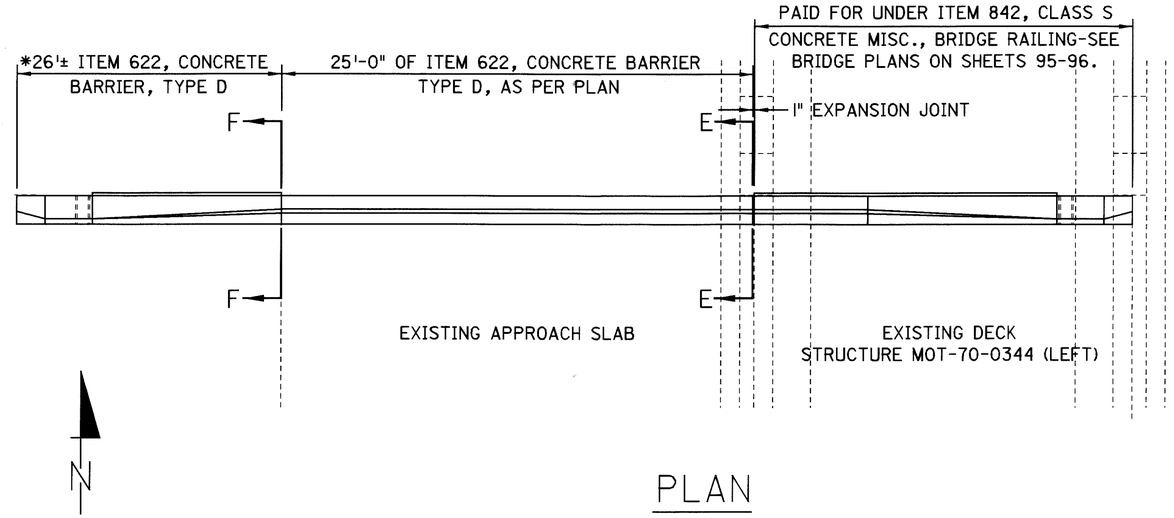
CALCULATED

CHECKED

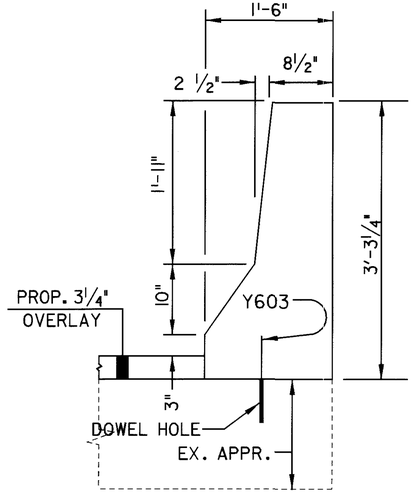
TRANSITION DETAILS AND PAVEMENT SYMBOLS

MOT-70-0.00

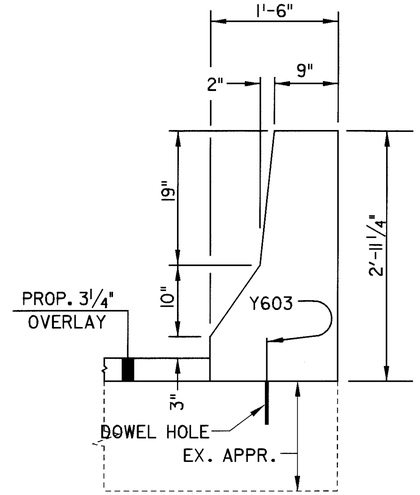
12
112



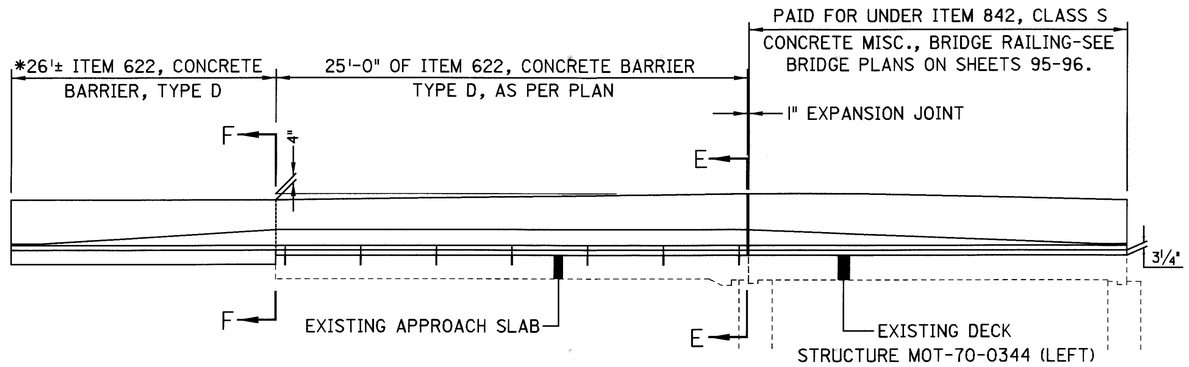
PLAN



E-E



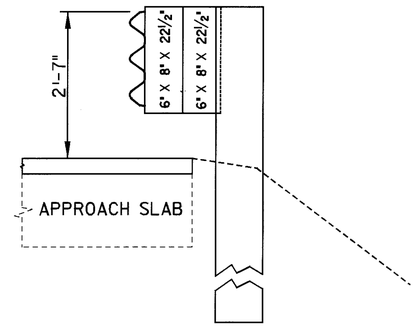
F-F



ELEVATION

NOTE - THE COST OF DOWEL HOLES SHALL BE INCLUDED WITH THE QUANTITY FOR ITEM 622, CONCRETE BARRIER TYPE D, AS PER PLAN, AND SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NEEDED TO PERFORM THIS ITEM OF WORK.

* TO BE FITTED IN FIELD. CONCRETE BARRIER, TYPE D, LENGTH SHALL BE ADJUSTED IN THE FIELD TO ACCEPT EVEN SPACED GUARDRAIL SPACING BETWEEN STRUCTURES MOT-70-0334 AND MOT-70-0344.



GUARDRAIL DETAIL

BRIDGE TERMINAL ASSEMBLY, TYPE I, AS PER PLAN

NOTE: ADD EXTRA BLOCK , TO MOVE POST BACK BEHIND APPROACH SLAB

CALCULATED | CHECKED

CONCRETE BARRIER AND GUARDRAIL DETAILS

MOT-70-0.00

UTILITIES

LISTED BELOW ARE ALL UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNERS:

TELEPHONE

GTE NORTH OHIO OPERATIONS, INC.
ACCESS DESIGN
6464 WESTBROOK ROAD
CLAYTON, OHIO 45315
PH# (937) 833-0467
ROGER FORNEY - SENIOR DESIGNER

CABLE TV

TIME WARNER
4333 DISPLAY LANE
KETTERING, OHIO 45429
PH.# (937) 294-6800
DENNIS RAPP

GAS

DAYTON POWER AND LIGHT COMPANY
REAL ESTATE SERVICES
6500 CLYO ROAD
CENTERVILLE, OHIO 45459
PH.# (937) 331-3599
BOB BAIRD (GAS FACILITIES)

ELECTRIC

DAYTON POWER AND LIGHT COMPANY
REAL ESTATE SERVICES
COURTHOUSE PLAZA. SW, P.O. BOX 1247
DAYTON, OHIO 45401
PH.# (937) 331-4495
JODI TUCKER (ELECTRIC FACILITIES)

OIL

MIDVALLEY PIPELINE COMPANY
P.O. BOX 150
4910 LIMABURG ROAD
BURLINGTON, KENTUCKY 41005
PH.# (606) 371-4469
MIKE DEAHL

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

CONTINGENCY QUANTITIES

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK FOR ITEMS DESIGNATED BY PLAN NOTE TO BE USED "AS DIRECTED BY THE ENGINEER" UNLESS AUTHORIZED BY THE ENGINEER. THE ACTUAL WORK LOCATIONS AND QUANTITIES USED FOR SUCH ITEMS SHALL BE INCORPORATED INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT.

ELEVATION DATUM

ALL ELEVATIONS ARE BASED ON U.S.G.S. DATUM.

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. THE INSTALLATION AND OPERATION OF ALL TEMPORARY TRAFFIC CONTROL AND TEMPORARY TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS SHALL BE PROVIDED BY THE CONTRACTOR WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

REMOVAL OF TREES AND STUMPS

ALL TREES AND STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE CONSTRUCTION LIMITS SHALL BE REMOVED UNDER THE LUMP SUM BID TO ITEM 201, CLEARING AND GRUBBING. THE FOLLOWING IS AN APPROXIMATE ESTIMATE OF THE NUMBER OF TREES OR STUMPS TO BE REMOVED:

SIZES	NO. TREES	NO. STUMPS	TOTAL
18"			
30"			
48"			NONE
60"			

CONVERSION OF STANDARD CONSTRUCTION DRAWINGS

THE METRIC STANDARD DRAWINGS REFERENCED IN THIS PLAN SHALL BE CONVERTED TO ENGLISH UNITS USING THE SI(METRIC) TO ENGLISH CONVERSION FACTORS PROVIDED IN SECTION 109.011 OF THE 1997 CONSTRUCTION AND MATERIALS SPECIFICATIONS. THE APPENDIX OF ASTM E 380 SHALL BE UTILIZED FOR ANY ADDITIONAL CONVERSION FACTORS REQUIRED. CONVERSIONS SHALL BE APPROPRIATELY PRECISE AND SHALL REFLECT STANDARD INDUSTRY VALUES WHERE SUITABLE.

ITEM 407, TACK COAT

THE RATE OF APPLICATION OF THE 407 TACK COAT SHALL BE SUBJECT TO ADJUSTMENT AS DIRECTED BY THE ENGINEER. PLAN QUANTITIES INDICATE AN AVERAGE APPLICATION RATE OF 0.075 GALLON PER SQUARE YARD OF TACK COAT FOR ESTIMATING PURPOSES ONLY.

TEMPORARY SOIL EROSION AND SEDIMENT CONTROL

THE FOLLOWING ESTIMATED QUANTITIES AR TO BE USED AS DIRECTED BY THE ENGINEER FOR TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES:

ITEM 877, TEMPORARY SEEDING AND MULCHING	400 SQ. YD.
ITEM 877, TEMPORARY PERIMETER, DITCH CHECK OR INLET PROTECTION FILTER FABRIC FENCE	500 LIN. FT.
ITEM 870, REPAIR SEEDING AND MULCHING	100 SQ. YD.
ITEM 870, COMMERCIAL FERTILIZER	0.1 TON

ITEM SPECIAL - CONDUIT, FIELD PAVING OF EXISTING PIPE, AS PER PLAN

THIS ITEM OF WORK SHALL INCLUDE: THE REMOVAL OF ALL DIRT AND DEBRIS FROM INSIDE THE STRUCTURE, EQUIPMENT, LABOR, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK AS DETAILED IN THESE PLANS. THE BOTTOM OF THE CONDUIT SHALL BE FIELD PAVED WITH CLASS "C" PORTLAND CEMENT CONCRETE. THE PAVING SHALL BE REINFORCED WITH #4 STEEL BARS AND 6 GAUGE WIRE MESH HAVING OPENINGS OF 6" x 6" (OR COMPARABLE) AS PER 709.10 OR 709.11. THE MESH SHALL BE GALVANIZED AS PER 709.08 AND HAVE A WIDTH 4" LESS THAN THE FINISHED PAVING. THE #4 STEEL BARS ARE TO BE SECURELY WELDED TO THE EXISTING BOLT LINE OR TO THE TOP OF THE CORRUGATION. THE MESH SHALL BE CAREFULLY FASTENED TO THE CONDUIT BY TACK WELDING, OR ANOTHER METHOD APPROVED BY THE ENGINEER. THE MESH SHALL BE CAREFULLY SECURED NEAR EACH EDGE AND AT THE CENTER OF THE MESH POINTS NOT MORE THAN FOUR FEET APART ALONG THE FLOWLINE OF THE CONDUIT.

THE CONCRETE PAVING SHALL BE 3" THICK MEASURED FROM THE TOP OF THE CORRUGATIONS OF THE CONDUIT. AFTER PLACING, THE CONCRETE SHALL BE STRUCK OFF WITH A TEMPLATE TO PRODUCE THE PROPER RADIUS AND FINISHED WITH A FLOAT TO PRODUCE A SMOOTH FINISH. THE CURING OF THE CONCRETE SHALL BE IN ACCORDANCE WITH 451.10.

THE COST OF THE PAVING MATERIAL, WIRE MESH, #4 STEEL BARS, LABOR AND EQUIPMENT NEEDED TO COMPLETE THIS ITEM OF WORK SHALL BE INCLUDED IN THE UNIT PRICE BID MEASURED IN LINEAL FEET FOR ITEM SPECIAL- CONDUIT, FIELD PAVING OF EXISTING PIPE, AS PER PLAN.

STREAM CHANNEL EXCAVATION

THE CONTRACTOR SHALL TAKE ALL PRECAUTION NECESSARY TO PREVENT ANY INCIDENTAL DISCHARGES ASSOCIATED WITH THE EXCAVATION AND HAULING OF MATERIALS FROM THE STREAM CHANNEL. THIS PRETAINS TO ANY EXCAVATION OPERATIONS SUCH AS, FOUNDATION PIER OR ABUTMENT EXCAVATION, CHANNEL PROTECTION, AND REMOVAL OF ANY TEMPORARY FILL ASSOCIATED WITH CONSTRUCTION OPERATIONS.

CONTROL OF SPILLS

SPILLS OF FUELS, OILS, SHEMICALS OR OTHER MATERIAL WHICH COULD POSE A THREAT TO GROUNDWATER SHALL BE CLEANED UP IMMEDIATELY BY THE CONTRACTOR. IF SPILL IS A REPORTABLE AMOUNT THE CONTRACTOR SHOULD CONTACT THE COUNTY SHERIFF'S OFFICE BY DIALING 911. FOR CLEAN UP OF THE SPILL. USE OF SHEMICALS AND REFUELING ACTIVITIES SHALL BE CAREFULLY CONTROLLED TO MINIMIZE THE POTENTIAL FOR SPILLS.

DEMOLITION DEBRIS

THE CONTRACTOR SHALL TAKE PRECAUTIONS TO AVOID AND/OR LIMIT DEMILITION DEBRIS FROM ENTERING THE STREAM. ANY MATERIAL THAT DOES FALL INTO THE STREAM SHALL BE REMOVED AS SOON AS POSSIBLE.

INSTREAM WORK

INSTREAM WORK WILL BE LIMITED WHERE PRACTICABLE AND ONLY CLEAN NON-ERODIBLE MATERIALS WILL BE USED FOR FORDS AND COFFERDAMS. THIS TEMPORARY PLACED MATERIAL WILL BE REMOVED AND THE STREAM BOTTOM RESTORED TO NEAR NATURAL CONDITIONS WHEN THE WORK IS COMPLETED.

ITEM 870, SEEDING AND MULCHING

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER FOR THE REPAIR TO ORIGINAL CONDITION OF THE AREAS DISTURBED BY THE WORK. THE CONTRACTOR SHALL MAKE EVERY EFFORT TO CONFINE THE WORK IN ORDER TO MINIMIZE THE DAMAGED AREAS.

ITEM 870, SEEDING AND MULCHING	2000 SQ. YD.
ITEM 870, COMMERCIAL FERTILIZER	0.3 TON

WATERING PERMANENT SEEDED AREAS

THE FOLLOWING ESTIMATED QUANTITIES ARE TO BE USED, AS DIRECTED BY THE ENGINEER, TO PROMOTE GROWTH AND CARE FOR THE PERMANENT SEEDED AREAS, AS PER 659.09:

ITEM 870, WATER	1 M GAL.

ITEM 202, RAISED PAVEMENT MARKERS REMOVED FOR STORAGE

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE PLANS TO REMOVE RAISED PAVEMENT MARKERS FOR STORAGE. THE MONTGOMERY COUNTY MANAGER SHALL BE CONTACTED FOR INSTRUCTIONS ON WHERE TO DELIVER THE RAISED PAVEMENT MARKERS.

ITEM 202, RAISED PAVEMENT MARKERS REMOVED FOR STORAGE	1097 EACH

PROFILE AND ALIGNMENT FOR RESURFACING PROJECTS

THE PROPOSED PAVEMENT RESURFACING SHALL FOLLOW THE ALIGNMENT AND PROFILE OF THE EXISTING PAVEMENT. THE PROPOSED ASPHALT CONCRETE OVERLAY SHALL HAVE A UNIFORM THICKNESS OF 3 1/4" WITH 1 3/4" PAVEMENT PLANNING OF THE EXISTING ASPHALT CONCRETE AS SHOWN OF THE TYPICAL SECTIONS

THE EXISITNG VERTICAL ALIGNMENT HAS BEEN EXAMINED AND MEETS DESIGN SPEED CRITERIA.

CONSTRUCTION PLANS, SHOWING THE ORIGINAL ALIGNMENT AND PROFILE, ARE AVAILABLE FOR INSPECTION AT THE DISTRICT 7 OFFICE.

PRE 40 - 14.11 / MOT-40 - 0.00 (1962)

MOT-70-2.73 (1962)

ITEM 202, GUARDRAIL REMOVED FOR STORAGE

THE CONTRACTOR SHALL CAREFULLY REMOVE AND STORE GUARDRAIL WITHIN THE RIGHT OF WAY ON THIS PROJECT. THE CONTRACTOR SHALL CONTACT THE MONTGOMERY COUNTY HIGHWAY MANAGER FOR GUARDRAIL TO BE PICKED UP BY STATE FORCES.

ITEM 203, LINEAR GRADING

GRADED SHOULDERS AT LOCATIONS WERE EXISTING GUARDRAIL IS REMOVED, OR WHERE NEW GUARDRAIL IS TO BE ERECTED, SHALL BE RESHAPED AS DIRECTED BY THE ENGINEER TO INSURE A SMOOTH DRAINABLE SURFACE FREE OF ALL IRREGULARITIES. EXCESS EXCAVATION RESULTING FROM RESHAPING SHOULDERS SHALL BE DISPOSED OF AS DIRECTED BY THE ENGINEER. PAYMENT FOR RESHAPING GRADED SHOULDERS AS DESCRIBED SHALL BE INCLUDED IN THE CONTRACT PRICE PER STATION FOR ITEM 203, LINEAR GRADING.

CONNECTION BETWEEN EXISITNG AND PROPOSED GUARDRAIL

WHEN IT IS NECESSARY TO SPLICE PROPOSED GUARDRAIL TO EXISTING GUARDRAIL, ONLY THE EXISTING GUARDRAIL SHALL BE CUT, DRILLED OR PUNCHED. THE CONNECTION SHALL BE MADE USING A "W-BEAM RAIL SPLICE" AS SHOWN ON STANDARD CONSTRUCTION DRAWING GR-1.1. PAYMENT SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE RESPECTIVE GUARDRAIL ITEMS.

ITEM 606, GUARDRAIL, TYPE 5A

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER FOR ANY GUARDRAIL AREA THAT MAY REQUIRE THE USE OF ITEM 606 GUARDRAIL, TYPE 5A (NOT SHOWN ON THIS PLAN).

ITEM 606, GUARDRAIL, TYPE 5A	200 LIN. FT.

ITEM 606, GUARDRAIL POST, 9 FT.

WHERE LESS THAN 2'-0" OF GRADED SHOULDER WIDTH (10:1 OR FLATTER) EXISTS, MEASURED FROM THE FACE OF THE GUARDRAIL, LONGER POST SHALL BE USED SO THAT A MINIMUM OF 5'-5" EMBEDMENT DEPTH IS PROVIDED. PAYMENT FOR THE LONGER POST WILL BE MADE AT THE UNIT PRICE BID PER EACH, ITEM 606 - GUARDRAIL POST, 9 FT.. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER.

ITEM 606, GUARDRAIL POST, 9 FT.	100 EACH

ITEM 606, BRIDGE TERMINAL ASSEMBLY, TYPE 1, AS PER PLAN

THIS ITEM SHALL CONSIST OF THE RECONSTRUCTION OF GUARDRAIL AND GUARD POST, IN ACCORDANCE WITH THESE SPECIFICATIONS AND IN REASONABLE CLOSE CONFORMITY WITH THE LINES AND GRADES SHOWN ON THE PLANS OR ESTABLISHED BY THE ENGINEER. THE RECONSTRUCTION OF THIS GUARDRAIL AND POST SHALL INCLUDE THE LABOR, FURNISHINGS, ASSEMBLING, AND ERECTING OF ALL COMPONENT PARTS AND MATERIALS, NECESSARY TO COMPLETE THE WORK. THE ACCEPTED QUANTITIES WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER EACH FOR THE TYPE SPECIFIED, COMPLETE IN PLACE. PAYMENT WILL BE MADE UNDER: ITEM 606 - BRIDGE TERMINAL ASSEMBLY, TYPE 1, AS PER PLAN. FOR DETAIL DETAIL DRAWING SEE SHEET 13.

CALCULATED | CHECKED

GENERAL NOTES

MOT-70-0.00

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

THIS ITEM SHALL CONSIST OF FURNISHING AND PLACING PORTLAND CEMENT CONCRETE BARRIER ON THE ACCEPTED, PREPARED SUBGRADE, SUBBASE COURSE OR EXISTING PAVEMENT IN ACCORDANCE WITH THESE SPECIFICATIONS AND IN REASONABLE CLOSE OCNFORMITY WITH THE LINES, GRADES AND DIMENSIONS SHOWN ON THE PLANS. THIS ITEM ALSO INCLUDES ALL INSERTS, SLEEVES, FITTINGS, CONNECTORS, REINFORCEMENT, DOWELS, PREFORMED FILLER, EXCAVATION, BACKFILL AND ALL INCIDENTALS NECESSARY TO COMPLETE THE ITEM. PAYMENT WILL BE MADE AT CONTRACT PRICE PER LINEAR FEET FOR: ITEM - 622 - CONCRETE BARRIER, TYPE D, AS PER PLAN.

ITEM 203, EXCAVATION

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER FOR ANY EXCAVATION WORK THAT MAY BE REQUIRED ON THIS PROJECT.

ITEM 203, EXCAVATION	500 CU. YD.

ITEM 203, EMBANKMENT

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER FOR ANY EMBANKMENT WORK THAT MAY BE REQUIRED ON THIS PROJECT.

ITEM 203, EXCAVATION	500 CU. YD.

ITEM 606, ANCHOR ASSEMBLY, TYPE B-98

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING EITHER OF THE FOLLOWING GUARDRAIL END TERMINALS.

1. THE SRT-350, GUARDRAIL END TERMINAL AS MANUFACTURED BY SYRO INC., 1170 N. STATE STREET, GIRARD, OHIO 44420 (TELEPHONE: 330-545-4373).

   THE LENGTH OF THE SRT-350 SYSTEM IS CONSIDERED 37.5', INCLUSIVE OF THREE 12'-6" LONG RAIL ELEMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

DWG #	DRAWING NAME	DWG/REV. DATE	ODOT APPROVAL DATE
SS425M	SLOTTED RAIL TERMINAL SRT-350 POST LAYOUT AND ERECTION DETAILS (12.5, 9 POST)	6/21/97	3/6/98

2. THE FLEAT-350 MANUFACTURED BY ROAD SYSTEMS, INC., 7631 NEW CASTLE DRIVE, FRANKFORT, IL. 60423 (TELEPHONE 815-464-5917)

   THE LENGTH OF THE FLEAT-350 IS CONSIDERED TO BE 37.5', INCLUSIVE OF THREE 12'-6" LONG RAIL ELEMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

DWG #	DRAWING NAME	DWG/REV. DATE	ODOT APPROVAL DATE
FLT-M	FLARED ENERGY ABSORBING TERMINAL (FLEAT-350) ASSEMBLY	4/16/98	7/31/98

GRADING SHALL BE IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWING GR-4.3.

THE FACE OF THE TYPE B-98 IMPACT HEAD SHALL BE COVERED WITH TYPE G REFLECTIVE SHEETING, PER CMS 730.19: APPROXIMATELY 36" W × 12" H FOR THE SRT-350 AND 13 3/4" W × 19 3/4" FOR THE FLEAT.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, ANCHOR ASSEMBLY, TYPE B-98, EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING REFLECTIVE SHEETING, ALL RELATED HARDWARE, ALL EXCAVATION AND EMBANKMENT TO GRADING PLANS AS REQUIRED BY THE STANDARD DRAWING, NOT SEPERATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

ITEM 606, ANCHOR ASSEMBLY, TYPE E-98

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING EITHER OF THE FOLLOWING GUARDRAIL END TERMINALS.

1. THE ET-2000 (1997), MANUFACTURED BY SYRO INC., 1170 N. STATE STREET, GIRARD, OHIO 44420 (TELEPHONE: 330-545-4373).

   THE LENGTH OF THE ET-2000 SYSTEM IS CONSIDERED 50.0', INCLUSIVE OF FOUR 12'-6" LONG RAIL ELEMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

DWG #	DRAWING NAME	DWG/REV. DATE	ODOT APPROVAL DATE
SS265M	ET-2000 (1997) PLAN, ELEVATION & SECTIONS	6/20/97	3/6/98

2. THE SKT-350 MANUFACTURED BY ROAD SYSTEMS, INC., 7631 NEW CASTLE DRIVE, FRANKFORT, IL. 60423 (TELEPHONE 815-464-5917)

   THE LENGTH OF THE SKT-350 SYSTEM IS CONSIDERED TO BE 50.0', INCLUSIVE OF FOUR 12'-6" LONG RAIL ELEMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

DWG #	DRAWING NAME	DWG/REV. DATE	ODOT APPROVAL DATE
SKT-4M	SEQUENTIAL KINKING TERMINAL (SKT-350) ASSEMBLY WITH 4 FOUNDATION TUBES	12/11/97	3/6/98

THE FACE OF THE TYPE E-98 IMPACT HEAD SHALL BE COVERED WITH TYPE G REFLECTIVE SHEETING, PER CMS 730.19: APPROXIMATELY 1'-6" X 1'-6".

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, ANCHOR ASSEMBLY, TYPE E-98, EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING REFLECTIVE SHEETING, ALL RELATED HARDWARE, ALL EXCAVATION AND EMBANKMENT TO GRADING PLAN AS REQUIRED BY THE STANDARD DRAWING, NOT SEPERATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

ITEM 446, ASPHALT CONCRETE INTERMEDIATE COURSE TYPE 2, PG-76-22, AS PER PLAN

FOR THE TYPE 2 MIX, THE COARSE AGGREGATE RETAINED ON THE NO. 4 (4.75 mm) SIEVE SHALL HAVE A MINIMUM OF 65 PERCENT MECHANICALLY CRUSHED PARTICLES. A MECHANICALLY CRUSHED PARTICLE SHALL BE DEFINED AS A PARTICLE HAVING ROUGH ANGULAR EDGES. PARTICLES EXHIBITING MECHANICALLY CRUSHED CHARACTERISTICS WILL BE COUNTED AS MECHANICALLY CRUSHED REGARDLESS OF HOW THE FRACTURE OCCURRED. A MINIMUM OF 50 PERCENT OF THE VIRGIN FINE AGGREGATE SHALL BE SAND MANUFACTURED FROM STONE, GRAVEL OR AIR-COOLED SLAG. IF THE SAND IS MANUFACTURED FROM GRAVEL, IT SHALL BE CRUSHED FROM GRAVEL MATERIAL RETAINED ON THE 3/8" (9.5 mm) SIEVE.

ITEM 252, FULL DEPTH RIGID PAVEMENT REMOVAL AND FLEXIBLE REPLACEMENT

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE PLANS TO REPLACE DETERIORATED AREAS OF PAVEMENT ON THE RAMPS AND MAINLINE ROADWAY WITHIN THE PROJECT LIMITS TO BE USED AS DIRECTED BY THE ENGINEER:

ITEM 252, FULL DEPTH RIGID PAVEMENT REMOVAL AND FLEXIBLE REPLACEMENT	160 CU. YD.
ITEM 255, FULL DEPTH PAVEMENT SAWING	720 LIN. FT.

CALCULATED | CHECKED

GENERAL NOTES

MOT-70-0.00

GENERAL REQUIREMENTS

IT IS THE INTENTION TO PERFORM THE REQUIRED WORK WITHIN THESE PLANS WITH THE LEAST INCONVENIENCE TO AND THE MAXIMUM SAFETY OF THE CONTRACTOR AND THE TRAVELING PUBLIC. THE REQUIREMENTS FOR MAINTAINING TRAFFIC AS SPECIFIED IN THE "OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" (CURRENT EDITION, LATEST REVISION), PERTINENT PROVISIONS OF THE "OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS" (INCLUDING SUPPLEMENTAL SPECIFICATIONS) AND APPLICABLE STANDARD DRAWINGS SHALL APPLY TO THIS PROJECT IN ADDITION TO THE FOLLOWING NOTES AND DETAILS.

ITEM 614, MAINTAINING TRAFFIC

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING SAFE AND EFFECTIVE TRAFFIC CONTROL 24 HOURS A DAY FOR THE DURATION OF THIS PROJECT. THIS WILL INCLUDE PROVIDING, PLACING, MAINTAINING AND SUBSEQUENTLY REMOVING ALL NECESSARY TRAFFIC CONTROL MEASURES FOR ALL PROPOSED CONSTRUCTION OPERATIONS ON IR-70.

BEFORE ANY WORK BEGINS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER THE NAME(S) AND TELEPHONE NUMBER(S) OF A PERSON OR PERSONS WHO CAN BE CONTACTED TWENTY-FOUR (24) HOURS A DAY BY THE OHIO DEPARTMENT OF TRANSPORTATION, THE HIGHWAY PATROL OR ANY OTHER INTERESTED POLICE AGENCY.

THIS PERSON(S) SHALL BE RESPONSIBLE FOR REPAIRING AND/OR REPLACING ALL TRAFFIC CONTROL DEVICES NEEDED TO MAINTAIN THE SAFETY OF THE TRAVELED PAVEMENT FOR THE DURATION OF THIS PROJECT. THIS PERSON(S) SHALL HAVE AVAILABLE ALL MATERIALS, EQUIPMENT AND INCIDENTALS NECESSARY TO PERFORM THE REQUIRED REPAIRS WITHIN A REASONABLE PERIOD OF TIME AS PER C.M.S. 614.04.

THE CONTRACTOR WILL BE REQUIRED TO PROVIDE, ERECT, MAINTAIN (IN PROPER POSITION, CLEAN AND LEGIBLE, AND IN GOOD WORKING CONDITION) AND REMOVE ALL LIGHTS, SIGNS, CONES, DRUMS AND ANY OTHER TRAFFIC CONTROL DEVICES NECESSARY FOR THE MAINTENANCE OF TRAFFIC ACCORDING TO PLAN NOTES AND DETAILS.

THE ORIGINAL LOCATION, PLACEMENT, SPACING AND SUBSEQUENT RELOCATION OR REMOVAL OF ALL TRAFFIC CONTROL DEVICES SHALL BE SUBJECT TO THE ENGINEERS APPROVAL.

THRU TRAFFIC SHALL BE MAINTAINED IN A UNIFORM PATTERN THROUGHOUT THE ENTIRE LENGTH OF THE PROJECT AND SHALL NOT BE SUBJECTED TO CONSTANT LANE SHIFTS.

IT IS INTENDED THAT THE TRAFFIC NOT BE SUBJECTED TO ANY LANE CLOSURE UNLESS ACTIVE WORK IS BEING PERFORMED IN OR IMMEDIATELY ADJACENT TO THE CLOSED LANE. THE ROADWAY SHALL NOT BE RESTRICTED TO ANY LANE CLOSURE DURING PERIODS ON INTERMITTENT OR IRREGULAR WORK, NOR CLOSED SOLELY FOR THE CONVENIENCE OF THE CONTRACTOR. THE ENGINEER SHALL MAKE THE FINAL DETERMINATION AS TO WHAT CONSTITUTES ACTIVE WORK AND WHETHER OR NOT THE LANE CLOSURE IS JUSTIFIED.

IF IN THE OPINION OF THE ENGINEER THE LANE CLOSURE IS NOT JUSTIFIED HE MAY ORDER ALL OR PART OF THE LANE CLOSURE REOPENED TO TRAFFIC UNTIL SUCH TIME THIS CONDITION IS CORRECTED.

THE CONTRACTOR SHALL FURNISH AND INSTALL ADVANCE WARNING "ROAD CONSTRUCTION AHEAD" (OW-128) SIGNS AND "END CONSTRUCTION" (OC-8) SIGNS ON I.R.-70. THE SIGNS SHALL BE DUAL INSTALLATIONS AND THE ACTUAL LOCATION SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER. THE CONTRACTOR SHALL ALSO FURNISH 4 ADDITIONAL SETS OF ADVANCE WARNING "ROAD CONSTRUCTION AHEAD" (OW-128) TO BE USED AS DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL PERFORM ALL CONSTRUCTION OPERATIONS SO AS TO PRECLUDE ANY UNNECESSARY INTERFERENCE TO THE NORMAL FLOW OF TRAFFIC.

TRAFFIC ON IR-70 SHALL BE MAINTAINED AS SHOWN IN THE DETAILS WITHIN THESE PLANS, STANDARD CONSTRUCTION DRAWINGS, OR AS DIRECTED BY THE ENGINEER

VEHICLES AND OTHER EQUIPMENT SHALL NOT BE PERMITTED TO STOP OR TO BE PARKED ALONG THE ROADWAY EXCEPT WITHIN DESIGNATED WORK AREAS AND SHALL NOT ENTER OR LEAVE WORK AREAS IN A MANNER WHICH WILL BE HAZARDOUS TO, OR INTERFERE WITH THE NORMAL FLOW OF TRAFFIC. PERSONAL VEHICLES WILL NOT BE PERMITTED TO PARK WITHIN THE RIGHT-OR-WAY EXCEPT WITHIN SPECIFIC AREAS DESIGNATED BY THE ENGINEER.

THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY INTENDED CHANGES TO ANY EXISTING OR TEMPORARY TRAFFIC CONTROL DEVICES AND SHALL OBTAIN THE ENGINEER'S APPROVAL PRIOR TO MAKING THE CHANGES. THE CONTRACTOR SHALL ALSO NOTIFY THE ENGINEER FORTY-EIGHT (48) HOURS IN ADVANCE OF ANY INTENDED LANE CLOSURES, OR LANE SHIFTS.

ACCESS TO AND FROM ALL RAMPS WITHIN THE LIMITS OF THIS PROJECT SHALL BE MAINTAINED AT ALL TIMES ON EITHER THE EXISTING OR PROPOSED RAMP PAVEMENTS, UNLESS OTHERWISE SHOWN IN THESE PLANS OR OTHERWISE DIRECTED BY THE ENGINEER.

UNLESS OTHERWISE NOTED IN THESE PLANS, THE STANDARD CHANNELIZING DEVICE FOR CLOSING ANY LANES TO TRAFFIC SHALL BE PROPERLY WEIGHTED AND REFLECTORIZED PLASTIC DRUMS LOCATED AND SPACED ACCORDING TO APPLICABLE STANDARD DRAWINGS OR PLAN NOTES AND DETAILS. GRABBER CONES SHALL NOT BE ALLOWED.

ALL PAVEMENT OPERATIONS AND BRIDGE OPERATIONS WHICH INVOLVE CLOSING OF A LANE ASSOCIATED WITH THESE PLANS SHALL BE PERFORMED DURING A NIGHT TIME SHIFT BETWEEN THE HOURS OF 10:00 PM AND 6:00 AM. ALL LANES SHALL BE OPENED TO THE TRAVELING PUBLIC DURING THE DAYTIME OPERATIONS OF THESE PLANS, EXCEPT FOR SHORT PERIODS OF TIME WHEN A SINGLE LANE OF TRAFFIC WILL BE PERMITTED FOR THE INTIAL SET-UP AND TEAR DOWN OF THE MAINTENANCE OF TRAFFIC PLAN, AS SHOWN ON SHEET 18 AND 19, BETWEEN THE THE HOURS OF 9:00 AM AND 2:30 PM MONDAY THROUGH THURSDAY.

NO AREA OF PAVEMENT PLANING SHALL BE OPEN TO THE TRAVELING PUBLIC. IT IS THE INTENT OF THE OHIO DEPARTMENT OF TRANSPORTATION THAT THE PAVEMENT PLANING AND THE ASPHALT CONCRETE, TYPE 2 BE CONSTRUCTED AS ONE OPERATION.

A MINIMUM LANE WIDTH OF 12 FEET SHALL BE PROVIDED FOR THE MAINTENANCE OF TRAFFIC PURPOSES AT ALL TIMES UNLESS OTHERWISE SHOWN IN THESE PLANS OR OTHERWISE DIRECTED BY THE ENGINEER.

THE CONTRACTOR RESPONSIBLE FOR MAINTAINING THE TRAFFIC SIGNALS LOCATED WITHIN THE LIMITS OF THIS PROJECT.

NO WORK SHALL BE PERFORMED AND ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC DURING THE FOLLOWING DESIGNATED HOLIDAYS OR EVENTS:

NEW YEARS	LABOR DAY
MEMORIAL DAY	THANKSGIVING
DAYTON AIR SHOW	CHRISTMAS
FOURTH OF JULY	

THE PERIOD OF TIME THAT THE LANES ARE TO OPEN DEPENDS ON THE DAY OF THE WEEK ON WHICH THE HOLIDAY OR EVENT FALLS. THE FOLLOWING SCHEDULE SHALL BE USED TO DETERMINE THIS PERIOD:

WEEK DAY	TIME ALL LANES MUST BE OPEN TO TRAFFIC
SUNDAY	12:00 NOON FRIDAY THROUGH 12:00 NOON MONDAY
MONDAY	12:00 NOON FRIDAY THROUGH 12:00 NOON TUESDAY
TUESDAY	12:00 NOON MONDAY THROUGH 12:00 NOON WEDNESDAY
WEDNESDAY	12:00 NOON TUESDAY THROUGH 12:00 NOON THURSDAY
THURSDAY	12:00 NOON WEDNESDAY THROUGH 12:00 NOON MONDAY
FRIDAY	12:00 NOON THURSDAY THROUGH 12:00 NOON MONDAY
SATURDAY	12:00 NOON FRIDAY THROUGH 12:00 NOON MONDAY

NO EXTENSIONS OF TIME SHALL BE GRANTED FOR DELAYS IN MATERIAL DELIVERIES, UNLESS SUCH DELAYS ARE INDUSTRY WIDE, OR FOR LABOR STRIKES, UNLESS SUCH STRIKES ARE AREA-WIDE.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY TO USED AS DIRECTED BY THE ENGINEER FOR THE MAINTENANCE OF TRAFFIC:

ITEM 614	BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC	30 CU. YD.

PAYMENT FOR ALL MAINTENANCE OF TRAFFIC EXCEPT FOR ITEMS DESIGNATED AS ITEM 614 BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC, ITEM 614 TEMPORARY PAVEMENT MARKING, ITEM 614 WORK ZONE SPEED LIMIT SIGN, ITEM 616 WATER, ITEM SPECIAL REPLACEMENT SIGNS AND ITEM SPECIAL REPLACEMENT DRUMS SHALL BE INCLUDED IN THE LUMP SUM ITEM 614 MAINTAINING TRAFFIC. ESTIMATED QUANTITIES CARRIED TO THE GENERAL SUMMARY

FOR ADDITIONAL TRAFFIC CONTROL DETAILS APPLICABLE TO THE THE MAINTENANCE OF TRAFFIC ON THIS PROJECT SEE STANDARD CONSTRUCTION DRAWINGS: MT-35.10M, MT-35.11M, MT-95.30M, MT-95.40M, MT-98.12M, MT-98.13M, MT-98.14M, MT-98.15M, MT-98.16M, MT98.17M AND MT-98.18M.

ITEM SPECIAL REPLACEMENT SIGN

FLAT SHEET 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 USED BUT SHALL BE IN GOOD CONDITION AND SHALL BE SUBJECT TO APPROVAL BY THE ENGINEER.

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

THE FOLLOWING ESTIMATED QUANTITY HAD BEEN PROVIDED IN THESE PLANS TO BE USED FOR THE MAINTENANCE OF TRAFFIC:

ITEM SPECIAL	REPLACEMENT SIGN	500 SQ. FT.

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 REQUIREMENTS FOR THE ORIGINAL DRUM.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN PROVIDED IN THESE PLANS TO BE USED FOR THE MAINTENANCE OF TRAFFIC:

ITEM SPECIAL	REPLACEMENT DRUM	400 EACH

ITEM 614, WORK ZONE SPEED LIMIT SIGN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN, COVER DURING SUSPENSION OF WORK, AND SUBSEQUENTLY REMOVE WORK ZONE SPEED LIMIT SIGNS AND SUPPORTS (R-10) (55 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. THE 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 SHALL BE INCLUDED IN THE PAY TIME FOR THE WORK ZONE SPEED LIMIT SIGNS.

THE WORK ZONE SPEED LIMIT SIGNS MAY BE ERECTED OR 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.

A SIGN(S) TO INDICATE THE RESUMPTION OF THE STATURORY SPEED LIMIT SHALL BE ERECTED AT THE END OF ANY REDUCED SPEED ZONE. R-10 SIGNS (55 MPH) SHALL BE USED ON UNDIVIDED ROADWAY. R-10 (65 MPH) AND R-9A SIGNS (55 MPH) SHALL BE USED ON DIVIDED ROADWAYS. WHEN USED THE R-10 AND R-9A SIGNS SHALL BE MOUNTED SIDE-BY-SIDE ON SEPERATE SUPPORTS.

THE CONTRACTOR MAY USE SIGNS AND SUPPORTS IN USED BUT GOOD CONDITION PROVIDED THE SIGNS MEET CURRENT ODOT SPECIFICATIONS. SIGN FACES SHALL BE REFLECTORIZED WITH TYPE G SHEETING COMPLYING WITH THE REQUIREMENTS OF 730.19 AND U.S. DEPARTMENT OF TRANSPORTATION SUPPLEMENTAL SPECIFICATION FOR TYPE III-C SHEETING, FP-85. WORK ZONE SPEED LIMIT SIGNS SHALL BE MOUNTED ON TWO (2) ITEM 630 GROUND MOUNTED SUPPORTS, NO. 3 POSTS.

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

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

ITEM 614,	WORK ZONE SPEED LIMIT SIGN	11 EACH

THE SIGNS WILL BE PLACED AT THE FOLLOWING LOCATIONS:

2 LOCATIONS - AT BEGINNING OF PROJECT ON EASTBOUND I-70
1 LOCATION - RAMP D (ARLINGTON RD.) ENTRANCE ON EASTBOUND I-70
2 LOCATIONS - AT END OF PROJECT ON EASTBOUND I-70

2 LOCATIONS - AT ENDING OF PROJECT ON WESTBOUND I-70
1 LOCATION - RAMP A (BROOKVILLE-SALEM RD.) ENTRANCE ON WESTBOUND I-70
1 LOCATION - RAMP A (ARLINGTON RD.) ENTRANCE ON WESTBOUND I-70
2 LOCATIONS - AT END OF PROJECT ON WESTBOUND I-70

CALCULATED | CHECKED

MAINTENANCE OF TRAFFIC NOTES

MOT-70-0.00

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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" (CURRENT EDITION, LATEST REVISION) SHALL BE PROVIDED BY THE CONTRACTOR WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

EXISTING PAVEMENT MARKINGS

EXISTING PAVEMENT MARKINGS IN CONFLICT WITH THE MAINTENANCE OF TRAFFIC SCHEMES SHALL BE REMOVED BY THE CONTRACTOR. PAYMENT FOR THE REMOVAL OF EXISTING CONFLICTING PAVEMENT MARKINGS SHALL BE INCLUDED IN THE LUMP SUM PRICE FOR ITEM 614, MAINTAINING TRAFFIC.

FLOODLIGHTING

FLOODLIGHTING OF THE WORK SITE FOR OPERATIONS CONDUCTED DURING NIGHT TIME PERIODS SHALL BE ACCOMPLISHED SO THAT THE LIGHTS DO NOT CAUSE GLARE TO THE DRIVERS ON THE ROADWAY. TO ENSURE THE ADEQUACY OF THE FLOODLIGHT PLACEMENT, THE CONTRACTOR AND THE ENGINEER SHALL DRIVE THROUGH THE WORK SITE EACH NIGHT WHEN THE LIGHTING IS IN PLACE AND OPERATIVE PRIOR TO COMMENCING ANY WORK IF GLARE IS DETECTED THE LIGHT PLACEMENT AND SHEILDING SHALL BE ADJUSTED TO THE SATISFACTION OF THE ENGINEER BEFORE WORK PROCEEDS.

PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR MAINTAINING TRAFFIC.

GUARDRAIL REPLACEMENT

NO HAZARD SHALL BE LEFT UNPROTECTED EXCEPT FOR THE ACTUAL TIME NECESSARY TO REMOVE THE EXISTING GUARDRAIL, PREPARE THE SITE, AND INSTALL NEW GUARDRAIL IN A CONTINUOUS OPERATION. THE REMOVAL OF ALL GUARDRAIL SHALL AT ALL TIMES BE AS DIRECTED BY THE ENGINEER. NO GUARDRAIL SHALL BE REMOVE 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 UNTIL SUCH A TIME AS THE ENGINEER IS ASSURED OF COMPLIANCE.

ITEM SPECIAL, CELLULAR PHONE

THE CONTRACTOR SHALL SUPPLY PORTABLE CELLULAR PHONE COMMUNICATIONS FOR STATE PERSONNEL TO COMMUNICATE WITH CONTRACTORS FIELD CREWS OR OFFICE, AND WITH ODOT PERSONNEL OR FACILITIES. THE PHONES AND ALL RELATED COSTS SHALL BE INCLUDED IN THE CONTRACT BID FOR EACH ITEM SPECIAL CELLULAR PHONE. STATE PERSONNEL SHALL RECEIVE THE CELLULAR PHONE ON THE DATE THE PROJECT BEGINS AND RETURNED TO THE CONTRACTOR UPON COMPLETION OF THE PROJECT.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY.

ITEM SPECIAL, CELLULAR PHONE 2 EACH

ITEM 614 - BARRIER REFLECTORS AND/OR OBJECT MARKERS

BARRIER REFLECTORS AND/OR OBJECT MARKERS SHALL BE INSTALLED ON ALL PORTABLE CONCRETE BARRIER USED FOR TRAFFIC CONTROL. BARRIER REFLECTORS, OBJECT MARKERS AND THEIR INSTALLATION SHALL CONFORM TO THE APPROPRIATE PROPOSAL NOTE AND ITEM 626 EXCEPT THAT THE SPACING SHALL BE 25 FEET. AN ESTIMATED QUANTITY HAS BEEN PROVIDED AND CARRIED TO THE GENERAL SUMMARY.

ITEM 614, TEMPORARY IMPACT ATTENUATOR

THIS WORK SHALL CONSIST OF FURNISHING AN IMPACT ATTENUATOR 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 QUADGUARD IMPACT ATTENUATOR SYSTEM THE ATTENUATOR SHALL BE PLACED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND AT THE LOCATIONS SHOWN ON THE PLANS. THE IMPACT ATTENUATOR SHALL BE MANUFACTURED BY THE ENERGY ABSORPTION SYSTEMS, INC., ONE EAST WACKER DRIVE, CHICAGO, ILLINOIS 60601: TELEPHONE (312)467-6750. THE MANUFACTURER SHALL PROVIDE THE MODEL NECESSARY FOR THE CONDITIONS SET FORTH IN THESE PLANS.

THE NOSE COVER OF THE ATTENUATOR SHALL MEET THE REQUIREMENTS OF STANDARD DRAWING MT-95.81.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSPECTING, 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 WIITHIN 24 HOURS OF THE INCIDENT WHICH CAUSED DAMAGED TO THE PROJECT. IN ADDITION TO ANY EXTRA UNITS SUPPLIED FOR THIS PROJECT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING ALL NECESSARY MATERIALS, LABOR AND EQUIPMENT REQUIRED TO PERFORM THE ABOVE DESCRIBED RESTORATION OF THE ATTENUATOR.

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

ITEM 614 - LAW ENFORCEMENT OFFICER (WITH PATROL CAR)

IN ADDITION TO THE REQUIREMENTS OF 614 AND THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (OMUTCD), A UNIFORMED LAW ENFORCEMENT OFFICER (AND OFFICIAL PATROL CAR WITH WORKING TOP MOUNTED EMERGENCY FLASHING LIGHTS) SHALL BE PROVIDED FOR CONTROLLING TRAFFIC FOR THE FOLLOWING TASKS:

FOR LANE CLOSURES: DURING INITIAL SET-UP PERIODS, TEAR DOWN PERIODS, SUBSTANTIAL SHIFTS OF A CLOSURE POINT OR WHEN NEW LANE CLOSURE ARRANGEMENTS ARE INTIATED.

DURING THE ENTIRE ADVANCE PREPARATION AND CLOSURE SEQUENCE WHERE COMPLETE BLOCKAGE OF TRAFFIC IS REQUIRED.

LAW ENFORCEMENT OFFICERS (L.E.O.'S) SHOULD NOT BE USED WHERE THE OMUTCD INTENDS THAT FLAGGERS BE USED. THE LEO'S ARE CONSIDERED TO BE EMPLOYED BY THE CONTRACTOR AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR ACTIONS. ALTHOUGH THEY ARE EMPLOYED BY THE CONTRACTOR, THE PROJECT ENGINEER SHALL HAVE CONTROL OVER THEIR PLACEMENT. THE OFFICAL PATROL CAR SHALL BE A PUBLIC SAFETY VEHICLE AS REQUIRED BY THE OHIO REVISED CODE.

THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR THESE SERVICES WITH: THE OHIO HIGHWAY PATROL, 660 EAST MAIN STREET, COLUMBUS, OHIO PH. (614) 466-2660.

LAW ENFORCEMENT OFFICERS(WITH PATROL CAR) REQUIRED BY THE TRAFFIC MAINTENANCE TASKS ABOVE SHALL BE PAID FOR ON A UNIT PRICE (HOURLY) BASIS UNDER ITEM 614 - LAW ENFORCEMENT OFFICER (WITH PATROL CAR). THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 614 LAW ENFORCEMENT OFFICER 80 HOURS

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

IF CONTRACTORS WISH TO UTILIZE LEO'S FOR FLAGGING AND TRAFFIC CONTROL OTHER THAN FOR THAT REQUIRED IN THESE PLANS, THEY MAY DO SO AT THEIR OWN EXPENSE, PAYMENT FOR THE EXCESS ABOVE THE CONTRACT REQUIREMENTS WILL BE INCLUDED UNDER ITEM 614 MAINTAINING TRAFFIC.

MAINTENANCE OF TRAFFIC TABLE

LOCATION	STATION		ITEM - 614											622
			TEMP. WHITE EDGE LINE, CLASS I	TEMP. YELLOW EDGE LINE, CLASS I	TEMP. WHITE LANE LINE, CLASS I	TEMP. 8" WHITE CHANNELIZING LINE, CLASS I	TEMP. 12" WHITE TRANSVERSE LINE, CLASS I	TEMP. 24" STOP LINE, CLASS I			BARRIER REFLECTOR, TYPE B	TEMPORARY IMPACT ATTENUATOR		PORTABLE CONCRETE BARRIER, 32"
	FROM	TO	MILE	MILE	MILE	LIN. FT.	METER	LIN. FT.			EACH	EACH		LIN. FT.
STRUCTURE MOT-70-0344 (LEFT)	180+85.23	183+94.77									3	1		260
STRUCTURE MOT-70-0344 (RAMP "D")	4+14.96	11+01.37	.13	.04							3	1		280
I.R-70, AND RAMPS TEMPORARY PAVEMENT MARKINGS FOR PAVING OPERATIONS	939+52.18 PREBLE CO.	342+50.00 MONTGOMERY CO.	14.50	14.12	13.34	3872	1106	310						
TOTALS CARRIED TO GENERAL SUMMARY			28.79		13.34	3872	1106	310			6	2		540

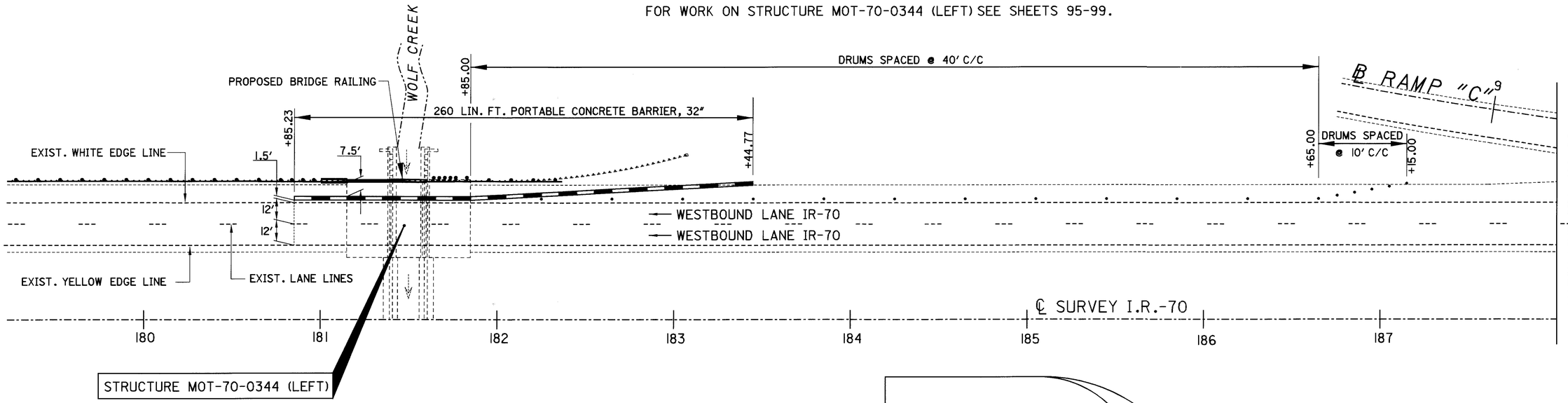
CALCULATED

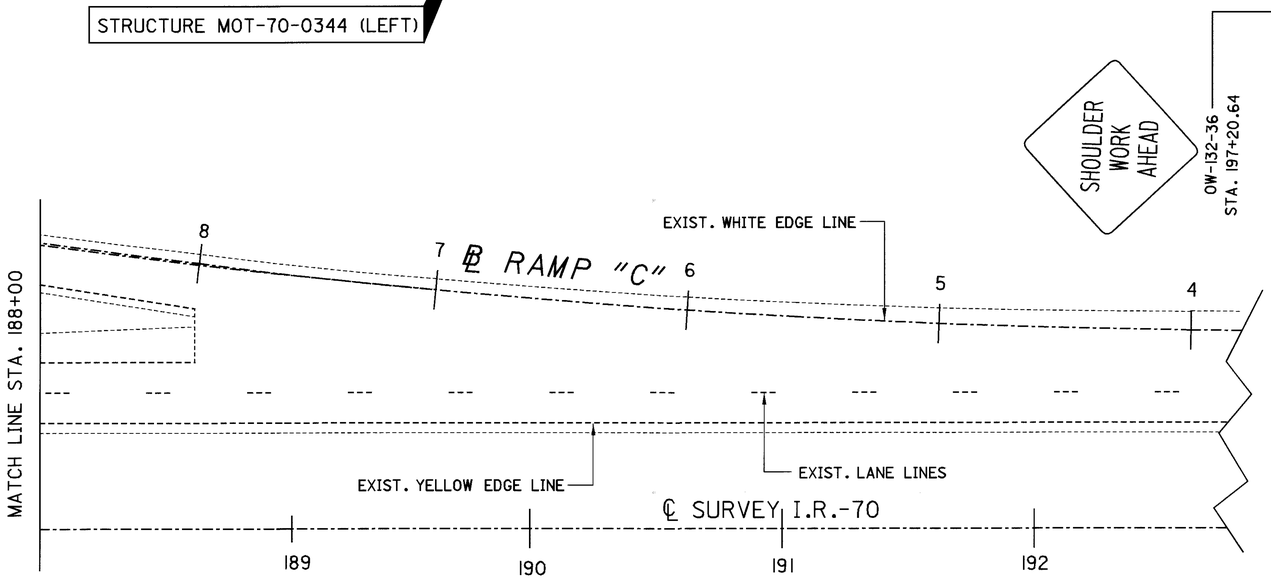
CHECKED

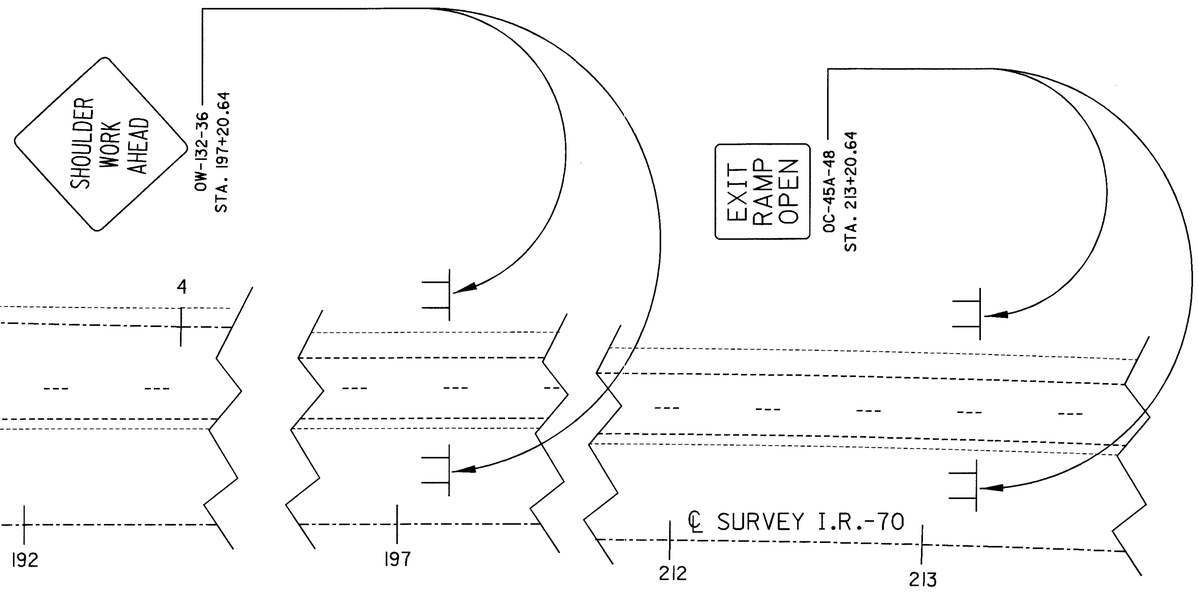
MAINTENANCE OF TRAFFIC NOTES

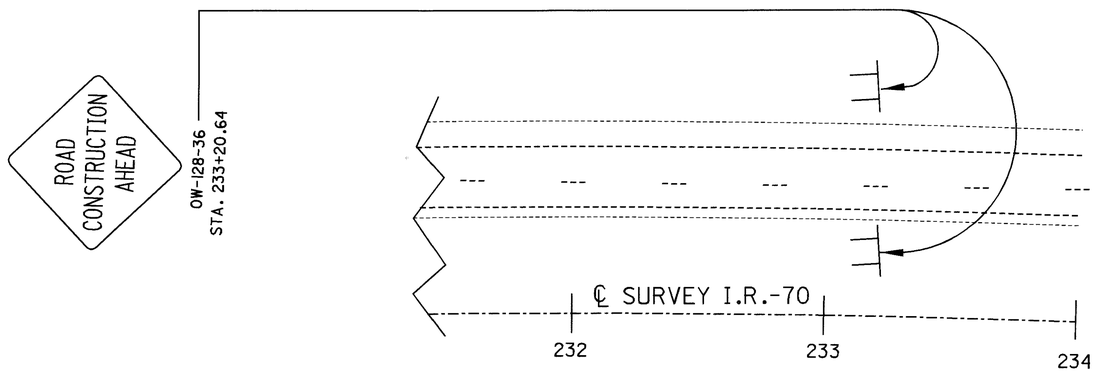
MOT-70-0.00

FOR WORK ON STRUCTURE MOT-70-0344 (LEFT) SEE SHEETS 95-99.









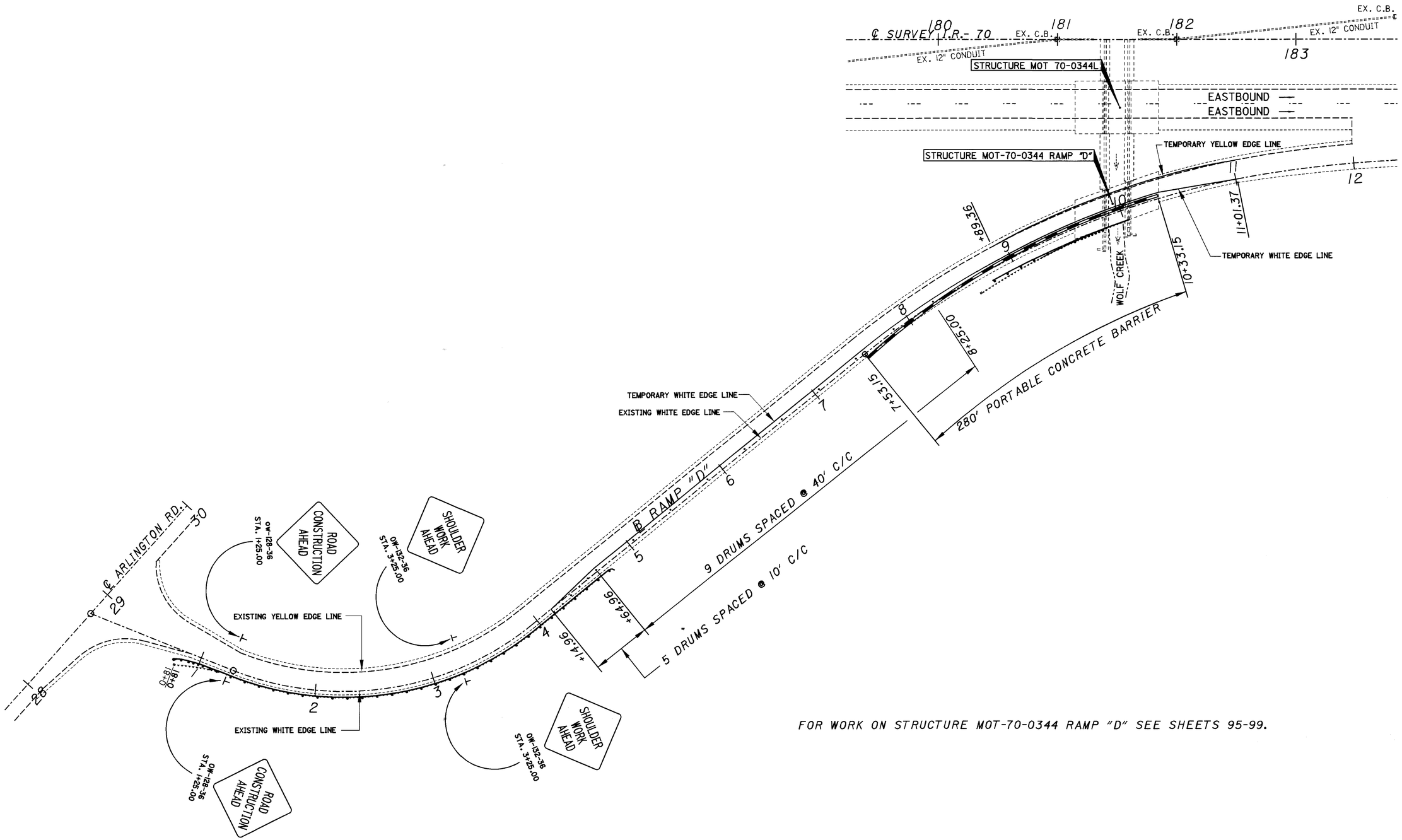
HORIZONTAL SCALE IN FEET

CALCULATED

CHECKED

MAINTENANCE OF TRAFFIC MOT-70-0344L OVER WOLF CREEK

MOT-70-0.00



FOR WORK ON STRUCTURE MOT-70-0344 RAMP "D" SEE SHEETS 95-99.

HORIZONTAL SCALE IN FEET

CALCULATED | CHECKED

MAINTENANCE OF TRAFFIC
MOT-70-0344 RAMP "D" OVER WOLF CREEK

MOT-70-0.00

19
112

SHEET NUMBER											ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
14	15	16	17	22	23	24	25	26	27	28						
															ROADWAY	
LUMP											201	11000	LUMP		CLEARING AND GRUBBING	
				2910		318	2192				202	23500	5420	SQ. YD.	WEARING COURSE REMOVED	
								3000	3987.5		202	38100	6987.5	LIN. FT.	GUARDRAIL REMOVED FOR STORAGE	
								5	5		202	42000	10	EACH	ANCHOR ASSEMBLY REMOVED, TYPE A	
1097											202	54100	1097	EACH	RAISED PAVEMENT MARKERS REMOVED FOR STORAGE	
	500										203	12000	500	CU. YD.	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION	
	500										203	20000	500	CU. YD.	EMBANKMENT	
								51	50		203	60000	101	STATION	LINEAR GRADING	
								4037.5	4360		606	13000	8397.5	LIN. FT.	GUARDRAIL, TYPE 5	
200											606	13050	200	LIN. FT.	GUARDRAIL, TYPE 5A	
100											606	18500	100	EACH	GUARDRAIL POST, 9 FT.	
								4			606	22000	4	EACH	ANCHOR ASSEMBLY, TYPE B-98	
								4	5		606	22010	9	EACH	ANCHOR ASSEMBLY, TYPE E-98	
								3	4		606	26500	7	EACH	ANCHOR ASSEMBLY, TYPE T	
								6	2		606	35000	8	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE I	
								1			606	35001	1	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE I, AS PER PLAN	
								2	1		606	35100	3	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 2	
									2		606	35124	2	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 3 (MODIFIED)	
								26			622	24000	26	LIN. FT.	CONCRETE BARRIER, TYPE D	
								25			622	24001	25	LIN. FT.	CONCRETE BARRIER, TYPE D, AS PER PLAN	
								54	52		626	00100	106	EACH	BARRIER REFLECTOR, TYPE A	
								3			626	00200	3	EACH	BARRIER REFLECTOR, TYPE B	
															PAVEMENT	
	160										252	01002	160	CU. YD.	FULL DEPTH RIGID PAVEMENT REMOVAL AND FLEXIBLE REPLACEMENT	
				153,566	121,872	23,056	13,270				254	01000	311,764	SQ. YD.	PAVEMENT PLANING, BITUMINOUS	
	720										255	20000	720	LIN. FT.	FULL DEPTH PAVEMENT SAWING	
				13045	9140	1896	1160				407	10000	25241	GALLON	TACK COAT	
				7567	5925	1285	666				446	46031	15,443	CU. YD.	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG76-22, AS PER PLAN	
				6552	5078	1053	645				446	50020	13,328	CU. YD.	ASPHALT CONCRETE SURFACE COURSE, TYPE IH, PG76-22 WITH SUPPLEMENT 1059 WARRANTY	
				670	486	140	96				617	10100	1392	CU. YD.	COMPACTED AGGREGATE, TYPE A	
										137,992	618	40100	137,992	LIN. FT.	RUMBLE STRIPS, TYPE 2 (ASPHALT)	
															DRAINAGE	
									117		601	34000	117	CU. YD.	ROCK CHANNEL PROTECTION, TYPE A WITHOUT FILTER	
									190		603	96551	190	LIN. FT.	168" CONDUIT, CORRUGATED STEEL, FIELD PAVING OF EXISTING PIPE, AS PER PLAN	

CALCULATED

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GENERAL SUMMARY

MOT-70-0.00

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SHEET NUMBER											ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
14	15	16	17	22	23	24	25	26	27	28						
															EROSION CONTROL	
2000											870	10000	2000	SQ. YD.	SEEDING AND MULCHING	
100											870	14000	100	SQ. YD.	REPAIR SEEDING AND MULCHING	
0.4											870	20000	0.4	TON	COMMERCIAL FERTILIZER	
1											870	35000	1	M. GAL	WATER	
400											877	10000	100	SQ. YD.	TEMPORARY SEEDING AND MULCHING	
500											877	30000	500	LIN. FT.	TEMPORARY PERIMETER, DITCH CHECK OR INLET PROTECTION FILTER FABRIC FENCE	
															MAINTENANCE OF TRAFFIC	
			80								614	11100	80	HOURS	LAW ENFORCEMENT OFFICER WITH PATROL CAR	
			2								614	12350	2	EACH	TEMPORARY IMPACT ATTENUATOR	
		11									614	12470	11	EACH	WORK ZONE SPEED LIMIT SIGN	
		500									SPECIAL	61412500	500	SQ. FT.	REPLACEMENT SIGNS	
		400									SPECIAL	61412600	400	EACH	REPLACEMENT DRUMS	
		30									614	13000	30	CU. YD.	BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC	
			6								614	13300	6	EACH	BARRIER REFLECTOR. TYPE B	
			13.34								614	20000	13.34	MILE	TEMPORARY LANE LINE, CLASS I	
			28.79								614	22000	28.79	MILE	TEMPORARY EDGE LINE, CLASS I	
			3872								614	23000	3872	LIN. FT.	TEMPORARY CHANNELIZING LINE, CLASS I	
			1106								614	25000	1106	LIN. FT.	TEMPORARY TRANSVERSE LINE, CLASS I	
			310								614	26000	310	LIN. FT.	TEMPORARY STOP LINE, CLASS I	
			540								622	40020	540	LIN. FT.	PORTABLE CONCRETE BARRIER, 32"	
			2								SPECIAL	69086000	2	EACH	CELLULAR PHONE	
											614	11000	LUMP		MAINTAINING TRAFFIC	
											623	10000	LUMP		CONSTRUCTION LAYOUT STAKES	
											624	10000	LUMP		MOBILIZATION	
											806	16010	5	MONTHS	FIELD OFFICE, TYPE B	
															FOR TRAFFIC CONTROL SUMMARY SEE SHEET 56.	
															FOR BRIDGE SUMMARY SEE SHEET 88.	

CALCULATED

CHECKED

GENERAL SUMMARY

MOT-70-0.00

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LOCATION	STATION FROM	STATION TO	DESCRIPTION	SIDE	TYPICAL	LENGTH	AVERAGE WIDTH PAVEMENT & BERM	SURFACE AREA	202 WEARING COURSE REMOVED		254 1¾" PAVEMENT PLANING, BITUMINOUS		407 TACK COAT 0.075 GALLON PER S.Y.		446 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE IH PG76-22, WITH SUPPLEMENT 1059 WARRANTY	446 VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE IH AVERAGE DEPTH	446 VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE IH, PG76-22 WITH SUPPLEMENT 1059 WARANTY		446 1¾" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG76-22, AS PER PLAN		617 COMPACTED AGGREGATE, TYPE A VAR. 1½" TO 0"
								SQ. FT.	SQ. YD.		SQ. YD.		GALLON		CU. YD.	INCHES	CU. YD.		CU. YD.		CU. YD.
I.R.-70	939+52.18	939+89.68	TRANSITION "A"	LT.		37.5'	38.0'	1425	159				11.9		6.6						0.7
I.R.-70	939+52.18	939+89.68	TRANSITION "A"	RT.		37.5'	38.0'	1425	159				11.9		6.6						0.7
STATION EQUATION: STA. 939+89.68 BACK = STA. 0+00.00 AHEAD (PREBLE CO. / MONT. CO. LINE)																					
I.R.-70	0+00.00	97+02.36	PAVEMENT & BERM	LT.	1	9702.36'	38.0'	368690			40966		3702.4		1706.9				1991.4		179.7
I.R.-70	0+00.00	97+02.36	PAVEMENT & BERM	RT.	1	9702.36'	38.0'	368690			40966		3702.4		1706.9				1991.4		179.7
I.R.-70	97+02.36	151+65.52	PAVEMENT & BERM	LT.	2	5463,16'	38.0'	207600			23067		1730.0		961.1				1121.3		101.2
I.R.-70	97+02.36	151+65.52	PAVEMENT & BERM	RT.	2	5463,16'	38.0'	207600			23067		1730.0		961.1				1121.3		101.2
I.R.-70	151+65.52	154+95.14	PAVEMENT & BERM	LT.	3	329.62'	38.0'	12526			1392		104.4		58.0				67.7		6.1
I.R.-70	151+65.52	154+95.14	PAVEMENT & BERM	RT.	3	329.62'	38.0'	12526			1392		104.4		58.0				67.7		6.1
I.R.-70	154+95.14	155+57.64	TRANSITION "B"	LT.		62.5'	39.10'	2446	272				20.4			1.625"	12.3				1.1
I.R.-70	154+95.14	155+57.64	TRANSITION "B"	RT.		62.5'	39.10'	2446	272				20.4			1.625"	12.3				1.1
STA. 155+57.64 TO STA. 157+60.36 STRUCTURE MOT-70-0296 L&R																					
I.R.-70	157+60.36	158+22.86	TRANSITION "B"	LT.		62.5'	40.81'	2551	284				21.3			1.625"	12.8				1.1
I.R.-70	157+60.36	158+22.86	TRANSITION "B"	RT.		62.5'	41.49'	2593	288				21.6			1.625"	13.0				1.1
I.R.-70	158+22.86	161+52.48	PAVEMENT & INSIDE BERM	LT.	3	329.62'	28.0'	9230			1026		76.9		42.7				48.9		3.1
I.R.-70	161+52.48	173+79.00	PAVEMENT & INSIDE BERM	LT.	1	1226.52'	28.0'	34343			3816		286.2		159.0				185.5		11.4
I.R.-70	158+22.86	170+47.42	ACCEL. LANE & OUTSIDE BERM	LT.	1,3	1224.56'	26.73'	32730			3637		272.8		151.5				176.8		11.3
I.R.-70	170+47.42	171+98.77	ACCEL. LANE PAVEMENT	LT.	1	151.35'	34.88'	5278			587		44.0		24.4				28.5		1.4
I.R.-70	170+47.42	171+98.77	OUTSIDE BERM	LT.	1	151.35'	5.5'	832			92.5		6.9		3.9				4.5		1.7
I.R.-70	171+98.77	173+79.00	OUTSIDE BERM	LT.	1	180.23'	10.0'	1803			200.3		15.0		8.4				9.7		1.7
I.R.-70	158+22.86	161+52.48	PAVEMENT & INSIDE BERM	RT.	3	329.62'	28.0'	9230			1026		76.9		42.7				48.9		3.1
I.R.-70	161+52.48	173+79.00	PAVEMENT & INSIDE BERM	RT.	1	1226.52'	28.0'	34343			3816		286.2		159.0				185.5		11.4
I.R.-70	158+22.86	158+81.30	DECEL. LANE & OUTSIDE BERM	RT.	3	68.12'	10.76'	629			70		5.2		2.9				3.4		0.5
I.R.-70	151+81.30	161+27.29	DECEL. LANE & OUTSIDE BERM	RT.	3	245.99'	20.0'	4920			547		41.0		22.8				26.6		2.3
I.R.-70	161+27.29	165+81.30	DECEL. LANE & OUTSIDE BERM	RT.	1,3	454.01'	30.0'	13620			1513		113.5		63.1				73.6		4.2
I.R.-70	165+81.30	166+81.30	OUTSIDE BERM	RT.	1	100.0'	12.0'	1200			134		10.0		5.6				6.5		1.0
I.R.-70	166+81.30	173+79.00	OUTSIDE BERM	RT.	1	697.7'	10.0'	6977			775		58.1		32.3				37.7		6.5
I.R.-70	173+79.00	180+27.50	PAVEMENT & BERM	LT.	3	648.5'	38.0'	24643			2738		205.4		114.1				133.1		12.0
I.R.-70	173+79.00	180+27.50	PAVEMENT & BERM	RT.	3	648.5'	38.0'	24643			2738		205.4		114.1				133.1		12.0
I.R.-70	180+27.50	181+15.00	TRANSITION "C"	LT.		87.5'	38.0'	3325	369				27.7		15.4				18.0		1.6
I.R.-70	180+27.50	181+15.00	TRANSITION "C"	RT.		87.5'	38.0'	3325	369				27.7		15.4				18.0		1.6
I.R.-70	181+15.00	181+85.00	OVERLAY STR. MOT-70-0344	LT.		70'	42.5'	2975					24.8		13.8				16.1		
I.R.-70	181+15.00	181+85.00	OVERLAY STR. MOT-70-0344	RT.		70'	42.5'	2975					24.8		13.8				16.1		
I.R.-70	181+85.00	182+72.50	TRANSITION "C"	LT.		87.5'	38.0'	3325	369				27.7		15.4				18.0		1.6
I.R.-70	181+85.00	182+72.50	TRANSITION "C"	RT.		87.5'	38.0'	3325	369				27.7		15.4				18.0		1.6
SUB-TOTALS									2910		153565.8		13045.0		6500.9		50.4		7567.3		669.8
TOTALS CARRIED TO GENERAL SUMMARY									2910		153566		13045		6552				7567		670

CALCULATED R.E.B.
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PAVEMENT CALCULATIONS

MOT-70-0.00

LOCATION	STATION FROM	STATION TO	DESCRIPTION	SIDE	TYPICAL	LENGTH	AVERAGE WIDTH PAVEMENT & BERM	SURFACE AREA	202 WEARING COURSE REMOVED		254 1¾" PAVEMENT PLANING, BITUMINOUS		407 TACK COAT 0.075 GALLON PER S.Y.		446 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE IH PG76-22, WITH SUPPLEMENT 1059 WARRANTY	446 VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE IH AVERAGE DEPTH	446 VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE IH, PG76-22 WITH SUPPLEMENT 1059 WARANTY		446 1¾" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG76-22, AS PER PLAN		617 COMPACTED AGGREGATE, TYPE A VAR. 1½" TO 0"
								SQ. FT.	SQ. YD.		SQ. YD.		GALLON		CU. YD.	INCHES	CU. YD.		CU. YD.		CU. YD.
I.R.-70	182+72.50	185+36.00	PAVEMENT & BERMS	LT.	3	263.50'	38.0'	10013			1113		83.4		46.4				54.1		4.9
I.R.-70	182+72.50	183+47.04	PAVEMENT & BERMS	RT.	3	74.54'	38.0'	2833			315		23.6		13.1				15.3		1.4
I.R.-70	183+47.04	185+36.00	PAVEMENT & INSIDE BERM	RT.	3	188.96'	28.0'	5291			588		44.1		24.5				28.6		1.8
I.R.-70	185+36.00	187+61.34	PAVEMENT & BERMS	LT.	1	225.34'	38.0'	8563			952		71.4		39.6				46.3		5.6
I.R.-70	187+61.34	195+93.60	PAVEMENT & INSIDE BERM	LT.	1	832.26'	28.0'	23304			2590		194.2		107.9				125.9		7.7
I.R.-70	195+93.60	196+61.34	PAVEMENT & INSIDE BERM	LT.	2	67.74'	28.0'	1897			211		15.8		8.8				10.3		0.6
I.R.-70	187+61.34	188+61.34	OUTSIDE BERM	LT.	1	100.0'	12.0'	1200			134		10.0		5.6				6.5		1.0
I.R.-70	188+61.34	193+15.35	DECEL. LANE & OUTSIDE BERM	LT.	1	454.01'	29.5'	13394			1488		111.6		62.0				72.3		4.2
I.R.-70	193+15.35	195+60.62	DECEL. LANE & OUTSIDE BERM	LT.	1	245.27'	20.0'	4906			545		40.9		22.7				26.5		2.3
I.R.-70	195+60.62	196+61.34	DECEL. LANE & OUTSIDE BERM	LT.	1,2	100.72'	15.0'	1511			168		12.6		7.0				8.2		0.9
I.R.-70	185+36.00	195+93.60	PAVEMENT & INSIDE BERM	RT.	1	1057.6'	28.0'	29613			3290		246.8		137.1				160.0		9.8
I.R.-70	195+93.60	200+02.97	PAVEMENT & INSIDE BERM	RT.	2	409.37'	28.0'	11462			1274		95.5		53.1				61.9		3.8
I.R.-70	183+47.04	185+00.00	ACCEL. LANE & OUTSIDE BERM	RT.	1	152.96'	40.25'	6157			684		51.3		28.5				33.3		1.4
I.R.-70	185+00.00	188+00.00	ACCEL. LANE & OUTSIDE BERM	RT.	1	300.0'	36.25'	10875			1209		90.6		50.4				58.8		2.8
I.R.-70	188+00.00	200+02.97	ACCEL. LANE & OUTSIDE BERM	RT.	1,2	1202.97'	21.5'	25864			2874		215.5		119.8				139.7		11.2
I.R.-70	196+61.34	235+50.00	PAVEMENT & BERMS	LT.	2	3888.66'	38.0'	147769			16419		1231.4		684.1				798.1		72.0
I.R.-70	200+02.97	235+50.00	PAVEMENT & BERMS	RT.	2	3547.03'	38.0'	134787			14976		1123.3		624.0				728.0		65.7
I.R.-70	235+50.00	242+13.00	PAVEMENT & BERMS	LT.	4	663.00'	38.0'	25194			2799		210.0		116.6				136.1		6.2
I.R.-70	235+50.00	242+13.00	PAVEMENT & BERMS	RT.	4	663.00'	38.0'	25194			2799		210.0		116.6				136.1		6.2
I.R.-70	242+13.00	249+16.80	PAVEMENT & BERMS	LT.	2	703.80'	38.0'	26744			2972		222.9		123.8				144.5		13.1
I.R.-70	242+13.00	249+16.80	PAVEMENT & BERMS	RT.	2	703.80'	38.0'	26744			2972		222.9		123.8				144.5		13.1
I.R.-70	249+16.80	296+69.37	PAVEMENT & BERMS	LT.	1	4752.57'	38.0'	180598			20067		1505.0		836.1				975.5		88.0
I.R.-70	249+16.80	298+67.23	PAVEMENT & BERMS	RT.	1	4950.43'	38.0'	188117			20902		1567.6		870.9				1016.1		91.7
I.R.-70	296+69.37	311+61.63	PAVEMENT & INSIDE BERM	LT.	1	1492.26'	28.0'	41784			4643		348.2		193.4				225.7		13.8
I.R.-70	296+69.37	311+61.63	PAVEMENT & INSIDE BERM	RT.	1	1294.40'	28.0'	36243			4027		302.0		167.8				195.8		12.0
I.R.-70	296+69.37	311+61.63	ACCEL. LANE & OUTSIDE BERM	LT.	1	1492.26'	24.5'	36561			4063		304.7		169.3				197.5		13.8
I.R.-70	298+67.23	299+67.95	DECEL. LANE & OUTSIDE BERM	RT.	1	100.72'	15.0'	1511			168		12.6		7.0				8.2		0.9
I.R.-70	299+67.95	302+12.51	DECEL. LANE & OUTSIDE BERM	RT.	1	244.56'	20.0'	4892			544		40.8		22.7				26.4		2.3
I.R.-70	302+12.51	306+66.65	DECEL. LANE & OUTSIDE BERM	RT.	1	454.14'	31.0'	14078			1564		117.3		65.2				76.1		4.2
I.R.-70	306+66.65	307+66.65	OUTSIDE BERM	RT.	1	100.00'	12.0'	1200			134		10.0		5.6				6.5		1.0
I.R.-70	307+66.65	311+61.63	OUTSIDE BERM	RT.	1	394.98'	10.0'	3950			439		32.9		18.3				21.3		3.7
STATION EQUATION: STA. 311+61.63 BACK = STA. 306+10.10 AHEAD																					
I.R.-70	306+10.10	307+84.88	ACCEL. LANE & BERM	LT.	1	174.78'	40.5'	7079			787		59.0		32.8				38.3		1.6
I.R.-70	306+10.10	307+84.88	PAVEMENT & INSIDE BERM	LT.	1	174.78'	28.0'	4894			544		40.8		22.7				26.4		1.6
I.R.-70	306+10.10	311+26.00	PAVEMENT & BERMS	RT.	1	515.90'	38.0'	19604			2178		163.4		90.8				105.9		
I.R.-70	307+84.88	311+26.00	PAVEMENT & BERMS	LT.	1	341.12'	38.0'	12963			1440		108.0		60.0				70.0		9.6
																					6.3
SUB-TOTALS											121872		9140.1		5078.0				5924.7		486.2
TOTALS CARRIED TO GENERAL SUMMARY											121872		9140		5078.0				5925		486

CALCULATED R.E.B.
CHECKED

PAVEMENT CALCULATIONS

MOT-70-0.00

PAVEMENT CALCULATIONS

CALCULATED R.E.B. CHECKED

LOCATION	STATION FROM	STATION TO	DESCRIPTION	SIDE	TYPICAL	LENGTH	AVERAGE WIDTH PAVEMENT & BERM	SURFACE AREA	202 WEARING COURSE REMOVED		254 1¾" PAVEMENT PLANING, BITUMINOUS		407 TACK COAT 0.075 GALLON PER S.Y.		446 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE 1H PG76-22, WITH SUPPLEMENT 1059 WARRANTY	446 VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE 1H AVERAGE DEPTH	446 VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE 1H, PG76-22 WITH SUPPLEMENT 1059 WARANTY		446 1¾" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG76-22, AS PER PLAN		617 COMPACTED AGGREGATE, TYPE A VAR. 1½" TO 0"
								SQ. FT.	SQ. YD.		SQ. YD.		GALLON		CU. YD.	INCHES	CU. YD.		CU. YD.		CU. YD.
I.R.-70	311+26.00	315+74.00	PAVEMENT & BERMS	LT.	3	448.0'	38.0'	17024			1892		141.9		78.8				92.0		8.3
I.R.-70	311+26.00	315+74.00	PAVEMENT & BERMS	RT.	3	448.0'	38.0'	17024			1892		141.9		78.8				92.0		8.3
I.R.-70	315+74.00	328+90.55	PAVEMENT & BERMS	LT.	1	1316.55'	38.0'	50029			5559		416.9		231.6				270.2		24.4
I.R.-70	315+74.00	328+90.55	PAVEMENT & BERMS	RT.	1	1316.55'	38.0'	50029			5559		416.9		231.6				270.2		24.4
I.R.-70	328+90.55	330+45.55	PAVEMENT & BERMS	LT.	3	153.0'	38.0'	5814			646		48.5		26.9				31.4		2.8
I.R.-70	328+90.55	330+43.55	PAVEMENT & BERMS	RT.	3	153.0'	38.0'	5814			646		48.5		26.9				31.4		2.8
STATION EQUATION: STA. 330+43.55 BACK = STA. 334+00.00 AHEAD																					
I.R.-70	334+00.00	334+44.00	PAVEMENT & BERMS	LT.	3	44.0'	38.0'	1672			186		14.0		7.8				91.0		0.8
I.R.-70	334+00.00	334+44.00	PAVEMENT & BERMS	RT.	3	44.0'	38.0'	1672			186		14.0		7.8				91.0		0.8
I.R.-70	334+44.00	342+12.50	PAVEMENT & BERMS	LT.	5	768.50'	38.0'	29203			3245		243.4		135.2				157.8		14.2
I.R.-70	334+44.00	342+12.50	PAVEMENT & BERMS	RT.	5	768.50'	38.0'	29203			3245		243.4		135.2				157.8		14.2
I.R.-70	342+12.50	342+50.00	TRANSITION "A"	LT.		37.5'	38.0'	1425	159				11.9		6.6						0.7
I.R.-70	342+12.50	342+50.00	TRANSITION "A"	RT.		37.5'	38.0'	1425	159				11.9		6.6						0.7
I.R.-70	5+97.15	11+12.85	MEDIAN CROSS-OVER	L&R		515.70'	8.89'	4585					38.2		21.3						9.6
I.R.-70	135+97.71	141+13.77	MEDIAN CROSS-OVER	L&R		516.06'	8.88'	4585					38.2		21.3						9.6
I.R.-70	203+96.03	209+11.82	MEDIAN CROSS-OVER	L&R		515.79'	8.92'	4602					38.4		21.3						9.6
I.R.-70	278+55.52	283+34.48	MEDIAN CROSS-OVER	L&R		478.96'	6.95'	3326					27.7		15.4						8.9
SUB-TOTALS									318		23056		1895.7		1053.1				1284.8		140.1
TOTALS CARRIED TO GENERAL SUMMARY									318		23056		1896		1053				1285		140

MOT-70-0.00

LOCATION	STATION FROM	STATION TO	DESCRIPTION	SIDE	TYPICAL	LENGTH	AVERAGE WIDTH PAVEMENT & BERM	SURFACE AREA	202 WEARING COURSE REMOVED		254 1¾" PAVEMENT PLANING, BITUMINOUS		407 TACK COAT 0.075 GALLON PER S.Y.		446 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE IH PG76-22, WITH SUPPLEMENT 1059 WARRANTY	446 VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE IH AVERAGE DEPTH	446 VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE IH, PG76-22 WITH SUPPLEMENT 1059 WARANTY		446 1¾" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG76-22, AS PER PLAN		617 COMPACTED AGGREGATE, TYPE A VAR. 1½" TO 0"
								SQ. FT.	SQ. YD.		SQ. YD.		GALLON		CU. YD.	INCHES	CU. YD.		CU. YD.		CU. YD.
ARLINGTON ROAD																					
RAMP "A"	0+12.90	0+50.40	TRANSITION "A"	L&R		37.5'	72.53'	2720	303				22.7		12.6						0.7
RAMP "A"	0+50.40	1+28.72	PAVEMENT & BERMS	L&R	6	78.32'	27.40'	2146			238.4		17.9		9.9				11.6		1.5
RAMP "A"	1+28.72	10+91.50	PAVEMENT & BERMS	L&R	6	962.78'	22.0'	21182			2354		176.6		98.1				114.4		17.8
RAMP "B"	7+99.06	15+52.17	PAVEMENT & BERMS	L&R	6	753.11'	22.0'	16569			1841		138.1		76.7				89.5		14.0
RAMP "B"	15+52.17	15+75.33	PAVEMENT & BERMS	L&R	6	23.16'	25.2'	584			64.9		4.9		2.7				3.2		0.5
RAMP "B"	15+75.33	16+12.83	TRANSITION "A"	L&R		37.5'	68.4'	2566	285				21.4		11.9						0.7
RAMP "C"	7+99.06	15+59.65	PAVEMENT & BERMS	L&R	6	760.59	22.0'	16733			1860		139.5		77.5				90.4		14.1
RAMP "C"	15+59.65	15+84.04	PAVEMENT & BERMS	L&R	6	24.39'	25.2'	615			69		5.2		2.9				3.3		0.5
RAMP "C"	15+84.04	16+21.54	TRANSITION "A"	L&R		37.5'	68.56'	2571	286				21.4		11.9						0.7
RAMP "D"	0+12.77	0+50.27	TRANSITION "A"	L&R		37.5'	73.33'	2750	306				23.0		12.8						0.7
RAMP "D"	0+50.27	1+28.78	PAVEMENT & BERMS	L&R	6	78.51'	32.35'	2540			283		21.2		11.8				13.7		1.5
RAMP "D"	1+28.78	8+67.80	PAVEMENT & BERMS	L&R	6	739.02'	22.0'	16258			1806		135.5		75.3				87.8		6.8
RAMP "D"	8+67.80	9+55.38	TRANSITION "C"	L&R		87.5'	22.0'	1925	214				16.0		8.9				10.4		0.8
RAMP "D"	9+55.38	10+25.38	STR.No.MOT-70-0344 RAMP D	L&R		70'	32.02'	2241			249		18.7		10.4				12.1		
RAMP "D"	10+25.38	11+12.88	TRANSITION "C"	L&R		87.5'	22.0'	1925	214				16.0		8.9				10.4		0.8
RAMP "D"	11+12.88	11+99.57	PAVEMENT & BERMS	L&R	6	86.69	22.0'	1734			193		14.5		8.0				9.4		0.8
BROOKVILLE - SALEM ROAD																					
RAMP "A"	0+12.77	0+50.27	TRANSITION "A"	L&R		37.5'	70.13'	2630	293				21.9		12.2						0.7
RAMP "A"	0+50.27	1+28.72	PAVEMENT & BERMS	L&R	6	78.45'	27.41'	2151			239		18.0		10.0				11.6		1.5
RAMP "A"	1+28.72	10+60.18	PAVEMENT & BERMS	L&R	6	931.46'	22.0'	20492			2277		170.8		94.9				110.7		17.3
RAMP "B"	7+99.05	15+06.57	PAVEMENT & BERMS	L&R	6	707.52'	22.0'	15566			1730		129.7		72.1				84.1		13.1
RAMP "B"	15+06.57	15+30.83	PAVEMENT & BERMS	L&R	6	24.26'	24.07'	584			65		4.9		2.7				3.2		0.5
RAMP "B"	15+30.83	15+68.33	TRANSITION "A"	L&R		37.5'	69.65'	2612	291				21.8		12.1						0.7
SUB-TOTALS									2192		13269.3		1159.7		644.3				665.8		95.7
TOTALS CARRIED TO GENERAL SUMMARY									2192		13270		1160		645				666		96

CALCULATED R.E.B.
CHECKED

PAVEMENT CALCULATIONS

MOT-70-0.00

REFERENCE NO.	SHEET NO.	STATION TO STATION FROM	STATION TO STATION TO	SIDE		202 GUARDRAIL REMOVED FOR STORAGE	202 ANCHOR ASSEMBLY REMOVED, TYPE A		203 LINEAR GRADING		601 ROCK CHANNEL PROTECTION TYPE A, WITHOUT FILTER	603 168" CONDUIT, CORRUGATED STEEL PIPE ARCH, FIELD PAVING OF EXISITNG PIPE, AS PER PLAN		606 GUARDRAIL, TYPE 5	606 GUARDRAIL, TYPE 5A		606 ANCHOR ASSEMBLY, TYPE B-98	606 ANCHOR ASSEMBLY, TYPE E-98	606 ANCHOR ASSEMBLY, TYPE T		606 BRIDGE TERMINAL ASSEMBLY, TYPE I	606 BRIDGE TERMINAL ASSEMBLY, TYPE I, AS PER PLAN (SEE DETAIL ON SHEET 13.)	606 BRIDGE TERMINAL ASSEMBLY, TYPE 2	606 BRIDGE TERMINAL ASSEMBLY, TYPE 3, MODIFIED		622 CONCRETE BARRIER, TYPE D, AS PER PLAN (SEE DETAIL ON SHEET 13.)	622 CONCRETE BARRIER, TYPE D		626 BARRIER REFLECTOR, TYPE A	626 BARRIER REFLECTOR, TYPE B
						L.F.	EA.		STA.		CU. YD.	L.F.		L.F.	L.F.		EA.	EA.	EA.		EA.	EA.	EA.	EA.		L.F.	L.F.		EA.	EA.
R-1	40	148+84.50	155+72.00	RT.		687.5	1																							
R-2	40	147+23.00	155+23.00	LT.		800																								
R-3	40	152+84.00	155+59.00	MED.		275	1																							
R-4	40	157+59.29	160+34.29	MED.		275	1																							
GR-1	39-40	145+48.13	155+73.13	RT.					11					975				1			1								11	
GR-2	40	147+86.15	155+23.65	LT.					8					725					1				1					8	
GR-3	40	151+59.80	155+59.80	MED.					5					362.5			1				1							5	
GR-4	40-41	157+58.20	161+58.20	MED.					5					362.5			1				1							5	
R-5	42	178+25.00	181+37.50	LT.		312.5																								
R-6	42	181+62.50	183+12.50	LT.		150	1																							
GR-5	42	178+25.58±	181+40.00	LT.					4					262.5							1		1			25	26		4	3
GR-6	42	181+57.90	184+70.40	LT.					4					262.5				1				1							4	
R-7	46	237+01.21	238+51.21	RT.		150																								
GR-7	46	232+88.71	238+51.21±	RT.					6					512.5				1			1								6	
GR-8	46	232+07.90	235+20.40	RT.					3					262.5			1		1									4	
R-8	50	289+87.05	291+87.05	RT.		200																								
GR-9	50	288+62.05	291+87.05	RT.					4					275.0				1			1								4	
R-9	51	302+80.00	304+30.00	RT.		150	1																							
GR-10	51	303+29.00	304+16.50	RT.					1					37.5			1		1									3	
TOTALS CARRIED TO GENERAL SUMMARY						3000	5		51					4037.5			4	4	3		6	1	2			25	26		54	3

CALCULATED

CHECKED

ESTIMATED QUANTITIES

MOT-70-6.49

REFERENCE NO.	SHEET NO.	STATION TO STATION FROM	STATION TO STATION TO	SIDE		202 GUARDRAIL REMOVED FOR STORAGE	202 ANCHOR ASSEMBLY REMOVED, TYPE A		203 LINEAR GRADING		601 ROCK CHANNEL PROTECTION TYPE A, WITHOUT FILTER	603 18" CONDUIT, CORRUGATED STEEL PIPE ARCH, FIELD PAVING OF EXISITNG PIPE, AS PER PLAN		606 GUARDRAIL, TYPE 5	606 GUARDRAIL, TYPE 5A		606 ANCHOR ASSEMBLY, TYPE B-98	606 ANCHOR ASSEMBLY, TYPE E-98	606 ANCHOR ASSEMBLY, TYPE T		606 BRIDGE TERMINAL ASSEMBLY, TYPE I	606 BRIDGE TERMINAL ASSEMBLY, TYPE I, AS PER PLAN	606 BRIDGE TERMINAL ASSEMBLY, TYPE 2	606 BRIDGE TERMINAL ASSEMBLY, TYPE 3, MODIFIED		622 CONCRETE BARRIER, TYPE D, AS PER PLAN	622 CONCRETE BARRIER, TYPE D		626 BARRIER REFLECTOR, TYPE A	626 BARRIER REFLECTOR, TYPE B
						L.F.	EA.		STA.		CU. YD.	L.F.		L.F.	L.F.		EA.	EA.	EA.		EA.	EA.	EA.	EA.		L.F.	L.F.		EA.	EA.
BROOKVILLE - SALEM RD.																															
RAMP "A"																															
R-10	52	72+41.00 (B-S)	3+93.00± (A)	RT.		625	1																								
GR-11	52	72+41.00 (B-S)	3+94.21 (A)	RT.					7					562.5				1	1											7	
ARLINGTON RD.																															
RAMP "A"																															
R-11	55	43+34.00 (ARL)	5+34.00 (A)	RT.		675	1																								
GR-12	55	43+34.00 (ARL)	5+30.55 (A)	RT.					7					612.5				1	1											7	
R-12	40-41	14+08.48 (A)	25+44.07 (A)	RT.		1137.5	1																								
GR-13	40-41	9+56.57 (A)	25+44.07 (A)	RT.					16					1537.5				1				1								16	
RAMP "B"																															
R-13	40-41	0+15.21 (B)	10+02.71 (B)	RT.		987.5																									
GR-14	40-41	0+13.97 (B)	11+51.47 (B)	RT.					12					1125					1				1						12	
RAMP "D"																															
R-14	55	0+81.00 (D)	4+68.50 (D)	RT.		387.5	1																								
GR-15	55	0+81.00 (D)	4+68.50 (D)	RT.					4					337.5				1				1								4	
R-15	42	8+15.13 (D)	9+77.63 (D)	RT.		162.5	1																								
GR-16	42	7+80.13 (D)	9+99.63 (D)	RT.					3					147.5				1							1					3	
R-16	42	10+02.63 (D)	10+15.13 (D)	RT.		12.5																									
GR-17	42	10+02.63 (D)	10+52.63 (D)	RT.					1					37.5					1						1					3	
D-1	55	41+35 (ARLINGTON RD.)		L&R							117	190																			
TOTALS CARRIED TO GENERAL SUMMARY						3987.5	5		50		117	190		4360				5	4		2		1	2					52	

CALCULATED

CHECKED

ESTIMATED QUANTITIES

MOT-70-6.49

SHEET NO.	REFERENCE NO.	STATION FROM	STATION TO	SIDE	618 RUMBLE STRIPS, TYPE 2
					LIN. FT.
* = STA. EQUATION: Sta. 939+89.68 BACK = Sta. 0+00 Ahead					
TP01	RS-1	939+52.18	7+00.00	LT.	737.5
TP01	RS-2	939+52.18	7+00.00	LT.	737.5
TP01	RS-3	939+52.18	7+00.00	RT.	737.5
TP01	RS-4	939+52.18	7+00.00	RT.	737.5
TP02	RS-5	700+00.00	21+00.00	LT.	1400.0
TP02	RS-6	700+00.00	21+00.00	LT.	1400.0
TP02	RS-7	700+00.00	21+00.00	RT.	1400.0
TP02	RS-8	700+00.00	21+00.00	RT.	1400.0
TP03	RS-9	21+00.00	35+00.00	LT.	1400.0
TP03	RS-10	21+00.00	35+00.00	LT.	1400.0
TP03	RS-11	21+00.00	35+00.00	RT.	1400.0
TP03	RS-12	21+00.00	35+00.00	RT.	1400.0
TP04	RS-13	35+00.00	49+00.00	LT.	1400.0
TP04	RS-14	35+00.00	49+00.00	LT.	1400.0
TP04	RS-15	35+00.00	49+00.00	RT.	1400.0
TP04	RS-16	35+00.00	49+00.00	RT.	1400.0
TP05	RS-17	49+00.00	63+00.00	LT.	1400.0
TP05	RS-18	49+00.00	63+00.00	LT.	1400.0
TP05	RS-19	49+00.00	63+00.00	RT.	1400.0
TP05	RS-20	49+00.00	63+00.00	RT.	1400.0
TP06	RS-21	63+00.00	77+00.00	LT.	1400.0
TP06	RS-22	63+00.00	77+00.00	LT.	1400.0
TP06	RS-23	63+00.00	77+00.00	RT.	1400.0
TP06	RS-24	63+00.00	77+00.00	RT.	1400.0
TP07	RS-25	77+00.00	91+0.00	LT.	1400.0
TP07	RS-26	77+00.00	91+0.00	LT.	1400.0
TP07	RS-27	77+00.00	91+0.00	RT.	1400.0
TP07	RS-28	77+00.00	91+0.00	RT.	1400.0
TP08	RS-29	91+00.00	105+00.00	LT.	1400.0
TP08	RS-30	91+00.00	105+00.00	LT.	1400.0
TP08	RS-31	91+00.00	105+00.00	RT.	1400.0
TP08	RS-32	91+00.00	105+00.00	RT.	1400.0
TP09	RS-33	105+00.00	119+00.00	LT.	1400.0
TP09	RS-34	105+00.00	119+00.00	LT.	1400.0
TP09	RS-35	105+00.00	119+00.00	RT.	1400.0
TP09	RS-36	105+00.00	119+00.00	RT.	1400.0
TP10	RS-37	119+00.00	133+00.00	LT.	1400.0
TP10	RS-38	119+00.00	133+00.00	LT.	1400.0
TP10	RS-39	119+00.00	133+00.00	RT.	1400.0
TP10	RS-40	119+00.00	133+00.00	RT.	1400.0
TP11	RS-41	133+00.00	147+00.00	LT.	1400.0
TP11	RS-42	133+00.00	147+00.00	LT.	1400.0
TP11	RS-43	133+00.00	147+00.00	RT.	1400.0
TP11	RS-44	133+00.00	147+00.00	RT.	1400.0
SUB-TOTAL CARRIED FORWARD					60350.0

SHEET NO.	REFERENCE NO.	STATION FROM	STATION TO	SIDE	618 RUMBLE STRIPS, TYPE 2
					LIN. FT.
TOTAL BROUGHT FORWARD					60350.0
TP12	RS-45	147+00.00	155+32.60	LT.	832.6
TP12	RS-46	157+64.40	161+00.00	LT.	335.6
TP12	RS-47	147+00.00	155+18.30	LT.	818.3
TP12	RS-48	157+73.20	161+00.00	LT.	326.8
TP12	RS-49	147+00.00	155+43.80	RT.	843.8
TP12	RS-50	158+03.40	161+00.00	RT.	296.6
TP12	RS-51	147+00.00	155+52.60	RT.	852.6
TP12	RS-52	158+10.30	161+00.00	RT.	289.7
TP13	RS-53	161+00.00	166+49.00	LT.	549.0
TP13	RS-54	166+49.00	175+00.00	LT.	851.0
TP13	RS-55	161+00.00	175+00.00	LT.	1400.0
TP13	RS-56	161+00.00	175+00.00	RT.	1400.0
TP13	RS-57	161+00.00	164+82.90	RT.	382.9
TP13	RS-58	164+82.90	175+00.00	RT.	1017.1
TP14	RS-59	175+00.00	181+05.00	LT.	630.5
TP14&15	RS-60	181+95.00	189+59.70	LT.	764.7
TP14	RS-61	175+00.00	181+05.00	LT.	605.0
TP14	RS-62	181+95.00	189+00.00	LT.	705.0
TP14	RS-63	175+00.00	181+05.00	RT.	605.0
TP14	RS-64	181+95.00	189+00.00	RT.	705.0
TP14	RS-65	175+00.00	181+05.00	RT.	605.0
TP14	RS-66	181+95.00	188+98.40	RT.	703.4
TP15	RS-67	189+59.74	203+00.00	LT.	1340.3
TP15	RS-68	189+00.00	203+00.00	LT.	1400.0
TP14&15	RS-69	188+98.40	203+00.00	RT.	1401.6
TP15	RS-70	189+00.00	203+00.00	RT.	1400.0
TP16	RS-71	203+00.00	217+00.00	LT.	1400.0
TP16	RS-72	203+00.00	217+00.00	LT.	1400.0
TP16	RS-73	203+00.00	217+00.00	RT.	1400.0
TP16	RS-74	203+00.00	217+00.00	RT.	1400.0
TP17	RS-75	217+00.00	231+00.00	LT.	1400.0
TP17	RS-76	217+00.00	231+00.00	LT.	1400.0
TP17	RS-77	217+00.00	231+00.00	RT.	1400.0
TP17	RS-78	217+00.00	231+00.00	RT.	1400.0
TP18	RS-79	231+00.00	245+00.00	LT.	1400.0
TP18	RS-80	231+00.00	245+00.00	LT.	1400.0
TP18	RS-81	231+00.00	245+00.00	RT.	1400.0
TP18	RS-82	231+00.00	245+00.00	RT.	1400.0
TP19	RS-83	245+00.00	259+00.00	LT.	1400.0
TP19	RS-84	245+00.00	259+00.00	LT.	1400.0
TP19	RS-85	245+00.00	259+00.00	RT.	1400.0
TP19	RS-86	245+00.00	259+00.00	RT.	1400.0
TP20	RS-87	259+00.00	273+00.00	LT.	1400.0
TP20	RS-88	259+00.00	273+00.00	LT.	1400.0
TP20	RS-89	259+00.00	273+00.00	RT.	1400.0
TP20	RS-90	259+00.00	273+00.00	RT.	1400.0
SUB-TOTAL CARRIED FORWARD					109411.5

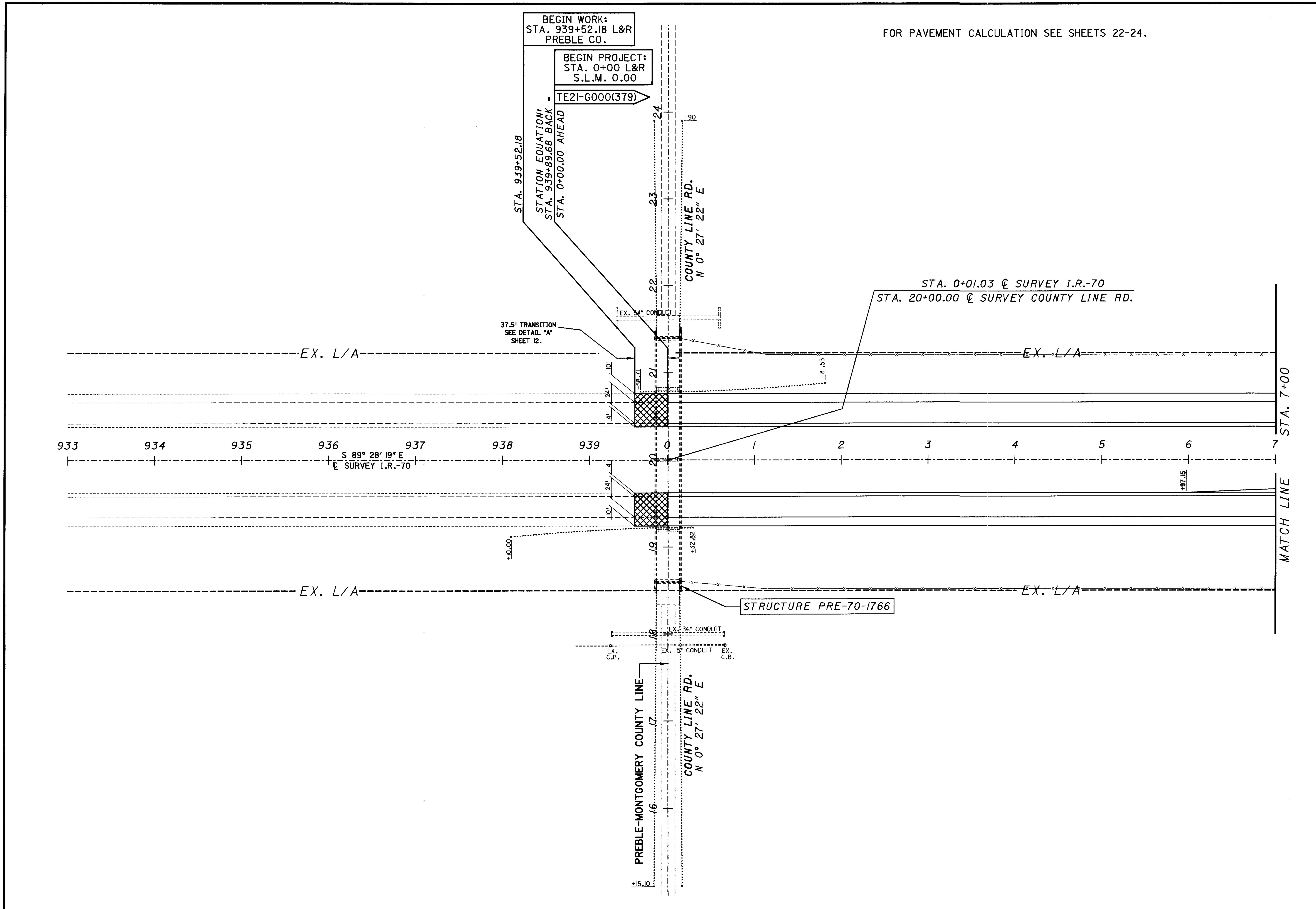
SHEET NO.	REFERENCE NO.	STATION FROM	STATION TO	SIDE	618 RUMBLE STRIPS, TYPE 2
					LIN. FT.
TOTAL BROUGHT FORWARD					109411.5
TP21	RS-91	273+00.00	287+00.00	LT.	1400.0
TP21	RS-92	273+00.00	287+00.00	LT.	1400.0
TP21	RS-93	273+00.00	287+00.00	RT.	1400.0
TP21	RS-94	273+00.00	287+00.00	RT.	1400.0
TP22	RS-95	287+00.00	301+00.00	LT.	1400.0
TP22	RS-96	287+00.00	301+00.00	LT.	1400.0
TP22	RS-97	287+00.00	301+00.00	RT.	1400.0
TP22	RS-98	287+00.00	301+00.00	RT.	1400.0
* = STA. EQUATION: Sta. 311+61.63 Back = Sta. 306+10.10 Ahead					
TP23	RS-99	301+00.00	307+71.50	LT.	671.5
TP23	RS-100	307+71.50	*311+61.63	LT.	390.1
		*306+10.10	309+00.00	LT.	289.9
TP23	RS-101	301+00.00	311+61.63	LT.	1061.6
		306+10.10	309+00.00	LT.	289.9
TP23	RS-102	301+00.00	*311+61.63	RT.	1061.6
		*306+10.10	309+00.00	RT.	289.9
TP23	RS-103	301+00.00	305+68.20	RT.	468.2
TP23	RS-104	305+68.22	*311+61.63	RT.	593.4
		*306+10.10	309+00.00	RT.	289.9
TP24	RS-105	309+00.00	323+00.00	LT.	1400.0
TP24	RS-106	309+00.00	323+00.00	LT.	1400.0
TP24	RS-107	309+00.00	323+00.00	RT.	1400.0
TP24	RS-108	309+00.00	323+00.00	RT.	1400.0
* = STA. EQUATION: Sta. 330+43.55 Back = Sta. 334+00.00 Ahead					
TP25	RS-109	323+00.00	*330+43.55	LT.	743.6
		*334+00.00	340+00.00	LT.	600.0
TP25	RS-110	323+00.00	*330+43.55	LT.	743.6
		*334+00.00	340+00.00	LT.	600.0
TP25	RS-111	323+00.00	*330+43.55	RT.	743.6
		*334+00.00	340+00.00	RT.	600.0
TP25	RS-112	323+00.00	*330+43.55	RT.	743.6
		*334+00.00	340+00.00	RT.	600.0
TP26	RS-113	340+00.00	342+50.00	LT.	250.0
TP26	RS-114	340+00.00	342+50.00	LT.	250.0
TP26	RS-115	340+00.00	342+50.00	RT.	250.0
TP26	RS-116	340+00.00	342+50.00	RT.	250.0
TOTALS CARRIED TO GENERAL SUMMARY					137,992

CALCULATED

CHECKED

ESTIMATED QUANTITIES

MOT-70-0.00

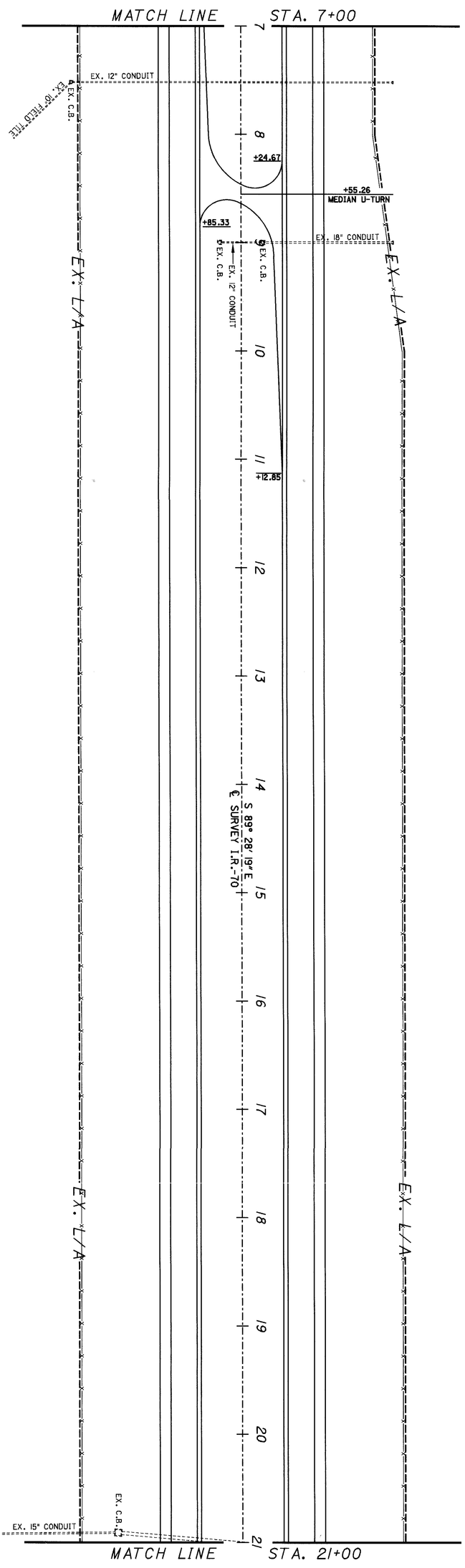


HORIZONTAL SCALE IN FEET (0, 25, 50, 100)

CALCULATED | CHECKED

PLAN SHEET - I.R.-70
STA. 932+90.00 TO STA. 7+00.00

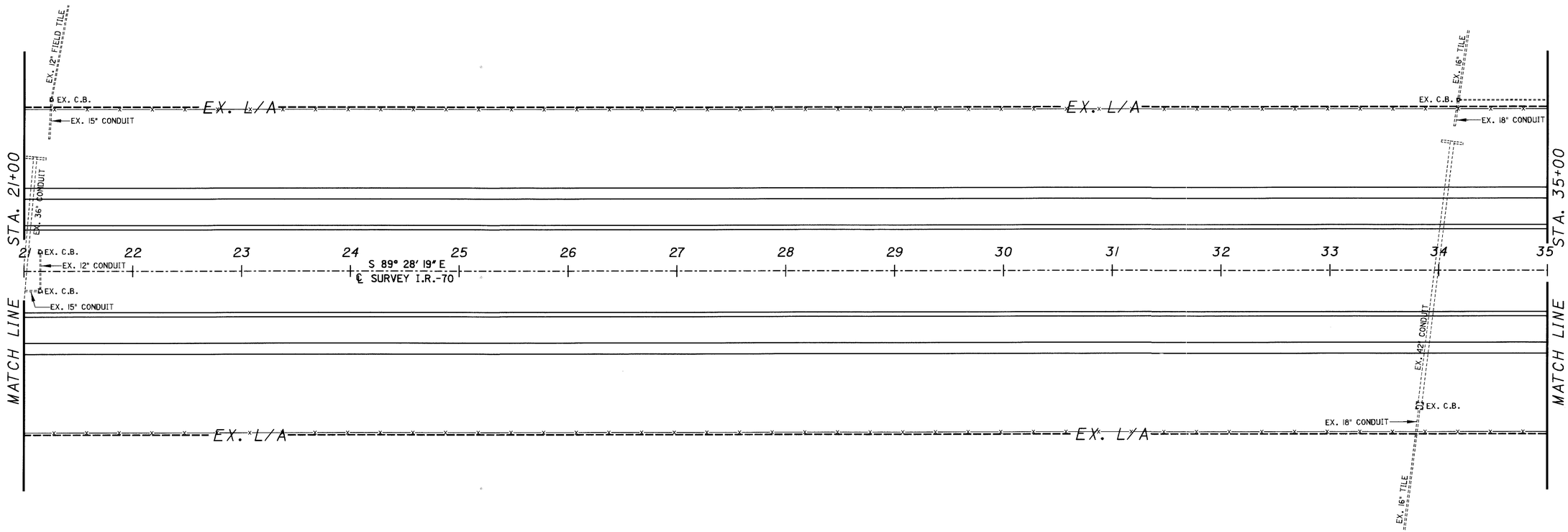
MOT-70-0.00



FOR PAVEMENT CALCULATIONS SEE SHEETS 22-24.
FOR MEDIAN U-TURN DETAILS SEE SHEET 10.

30/112	MOT-70-0.00	PLAN SHEET - I.R.-70 STA. 7+00.00 TO STA. 21+00.00	CALCULATED CHECKED	0 50 25 100 HORIZONTAL SCALE IN FEET

FOR PAVEMENT CALCULATIONS SEE SHEETS 22-24.



N

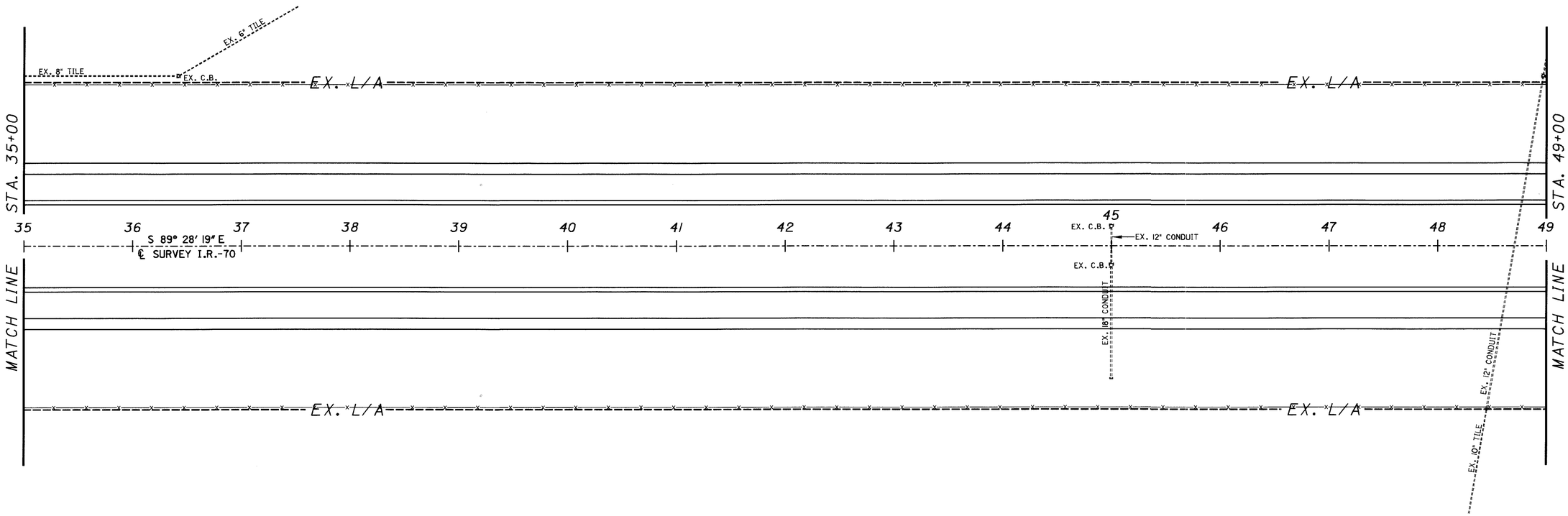
HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED | CHECKED

PLAN SHEET - I.R.-70
STA. 21+00.00 TO STA. 35+00.00

MOT-70-0.00

FOR PAVEMENT CALCULATIONS SEE SHEETS 22-24.



HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED | CHECKED

PLAN SHEET - I.R.-70
STA. 35+00.00 TO STA. 49+00.00

MOT-70-0.00

FOR PAVEMENT CALCULATIONS SEE SHEETS 22-24.
FOR WORK ON STRUCTURE MOT-70-0106 SEE SHEETS 89-91.

EX. 10" TILE
EX. 3" GAS LINE IN 12" CASING (ABANDONED)
EX. 20" HIGH PRESSURE OIL LINE
NUMBER NINE RD.
N 3° 33' 42" W
EX. 36" CONDUIT
EX. L/A
EXISTING CONCRETE BARRIER
EXISTING GUARDRAIL
STA. 49+00
STA. 63+00
49 50 51 52 53 54 55 56 57 58 59 60 61 62 63
S 89° 28' 19" E
℄ SURVEY I.R.-70
EX. C.B.
EX. 12" CONDUIT
EX. 36" CONDUIT
EX. C.B.
EX. 15" CONDUIT
STRUCTURE MOT-70-0106
MATCH LINE
MATCH LINE
EXISTING CONCRETE BARRIER
EXISTING GUARDRAIL
+63 TYPE T
EX. L/A
EX. L/A
EX. 24" CONDUIT
MIDVALLEY PIPELINE COMPANY
NUMBER NINE RD.
+36 TYPE A
+21 TYPE A
STA. 56+22.95 ℄ SURVEY I.R.-70
STA. 20+00.00 ℄ SURVEY NUMBER NINE RD.

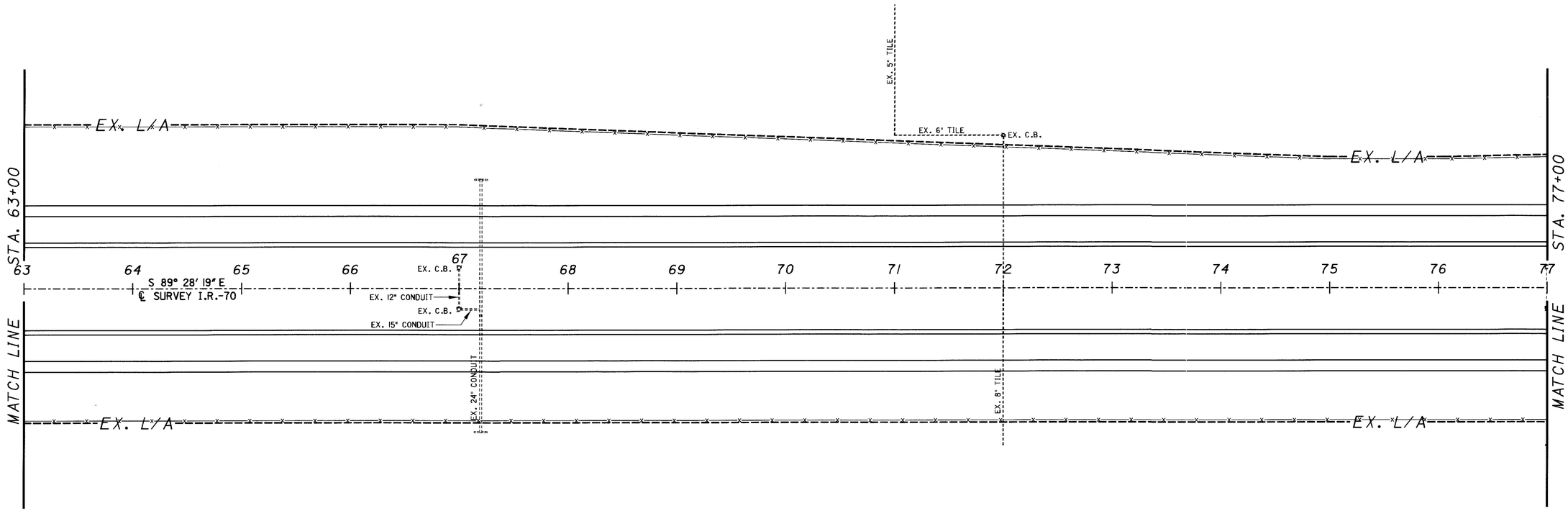
HORIZONTAL SCALE IN FEET
0 25 50 100
CALCULATED
CHECKED

PLAN SHEET - I.R.-70
STA. 49+00.00 TO STA. 63+00.00

MOT-70-0.00

33
112

FOR PAVEMENT CALCULATIONS SEE SHEETS 22-24.



HORIZONTAL SCALE IN FEET
0 25 50 100

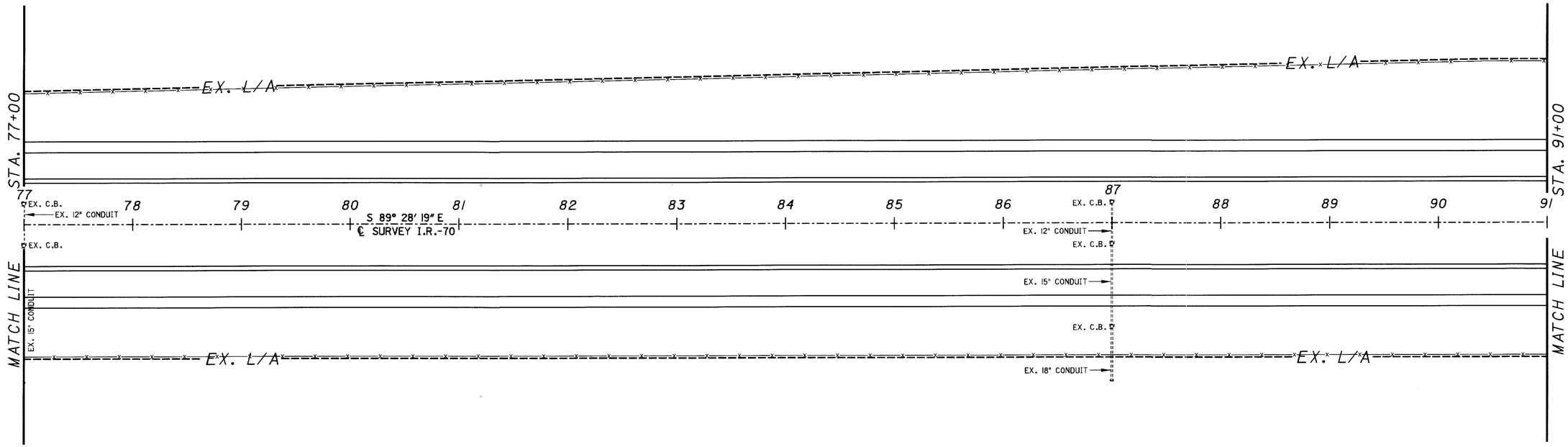
CALCULATED | CHECKED

PLAN SHEET - I.R.-70
STA. 63+00.00 TO STA. 77+00.00

MOT-70-0.00

34
112

FOR PAVEMENT CALCULATIONS SEE SHEETS 22-24.

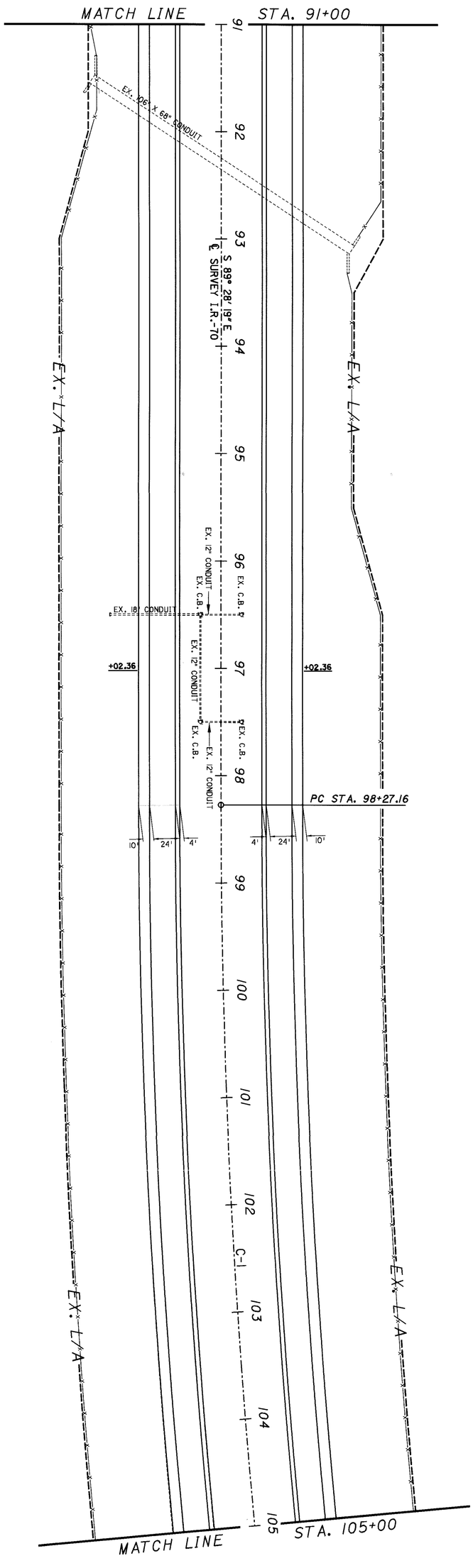


HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED | CHECKED

PLAN SHEET - I.R.-70
STA. 77+00.00 TO STA. 91+00.00

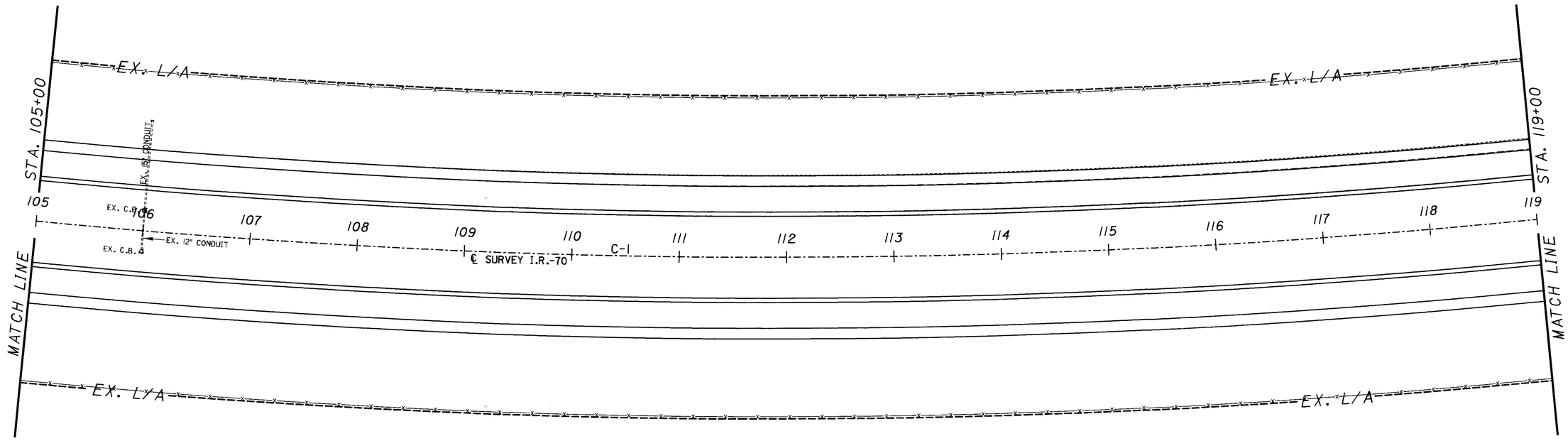
MOT-70-0.00



FOR PAVEMENT CALCULATIONS SEE SHEETS 22-24.
FOR CURVE DATA SEE SHEETS 2-5.

36/112	MOT-70-0.00	PLAN SHEET - I.R.-70 STA. 91+00.00 TO STA. 105+00.00	CALCULATED CHECKED	0 50 25 100 HORIZONTAL SCALE IN FEET

FOR PAVEMENT CALCULATIONS SEE SHEETS 22-24.
FOR CURVE DATA SEE SHEETS 2-5.



N

HORIZONTAL SCALE IN FEET
0 25 50 100

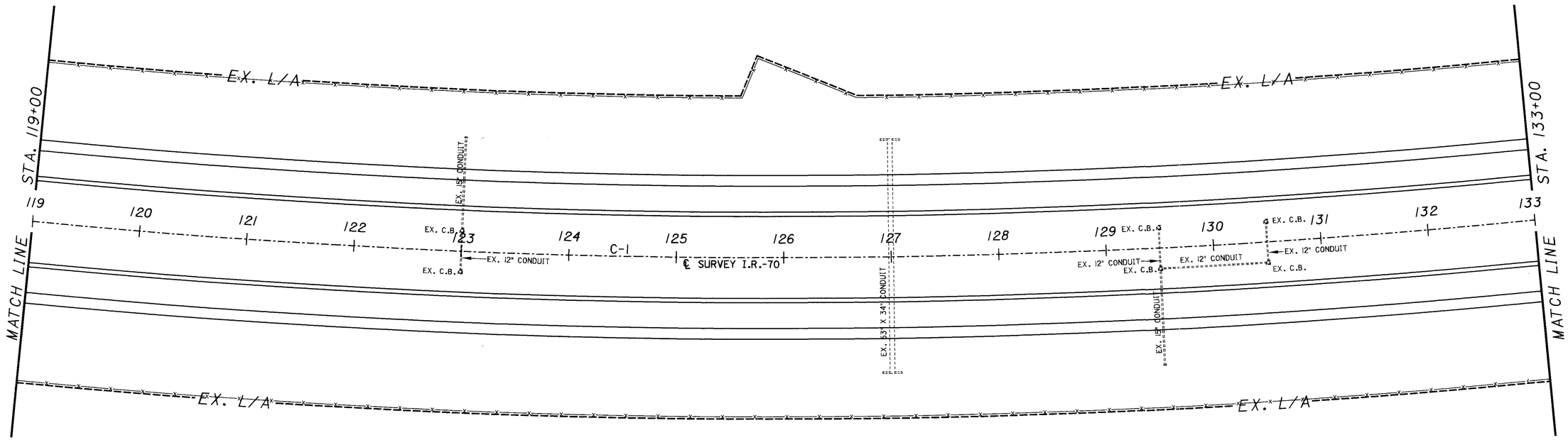
CALCULATED | CHECKED

PLAN SHEET - I.R.-70
STA. 105+00.00 TO STA. 119+00.00

MOT-70-0.00

37
112

FOR PAVEMENT CALCULATIONS SEE SHEETS 22-24.
FOR CURVE DATA SEE SHEETS 2-5.



HORIZONTAL SCALE IN FEET
0 25 50 100

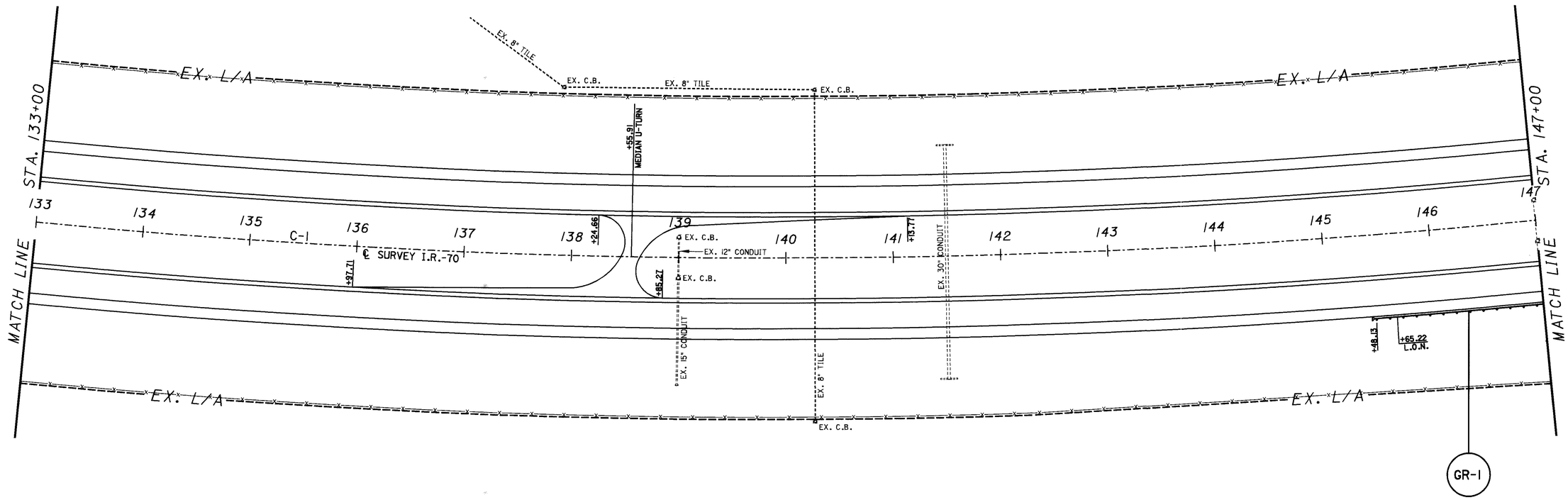
CALCULATED | CHECKED

PLAN SHEET - I.R.-70
STA. 119+00.00 TO STA. 133+00.00

MOT-70-0.00

38
112

FOR PAVEMENT CALCULATIONS SEE SHEETS 22-24.
FOR BALLOONED QUANTITIES SEE SHEETS 26,27.
FOR CURVE DATA SEE SHEETS 2-5.
FOR MEDIAN U-TURN DETAILS SEE SHEET 10.



HORIZONTAL SCALE IN FEET
0 25 50 100

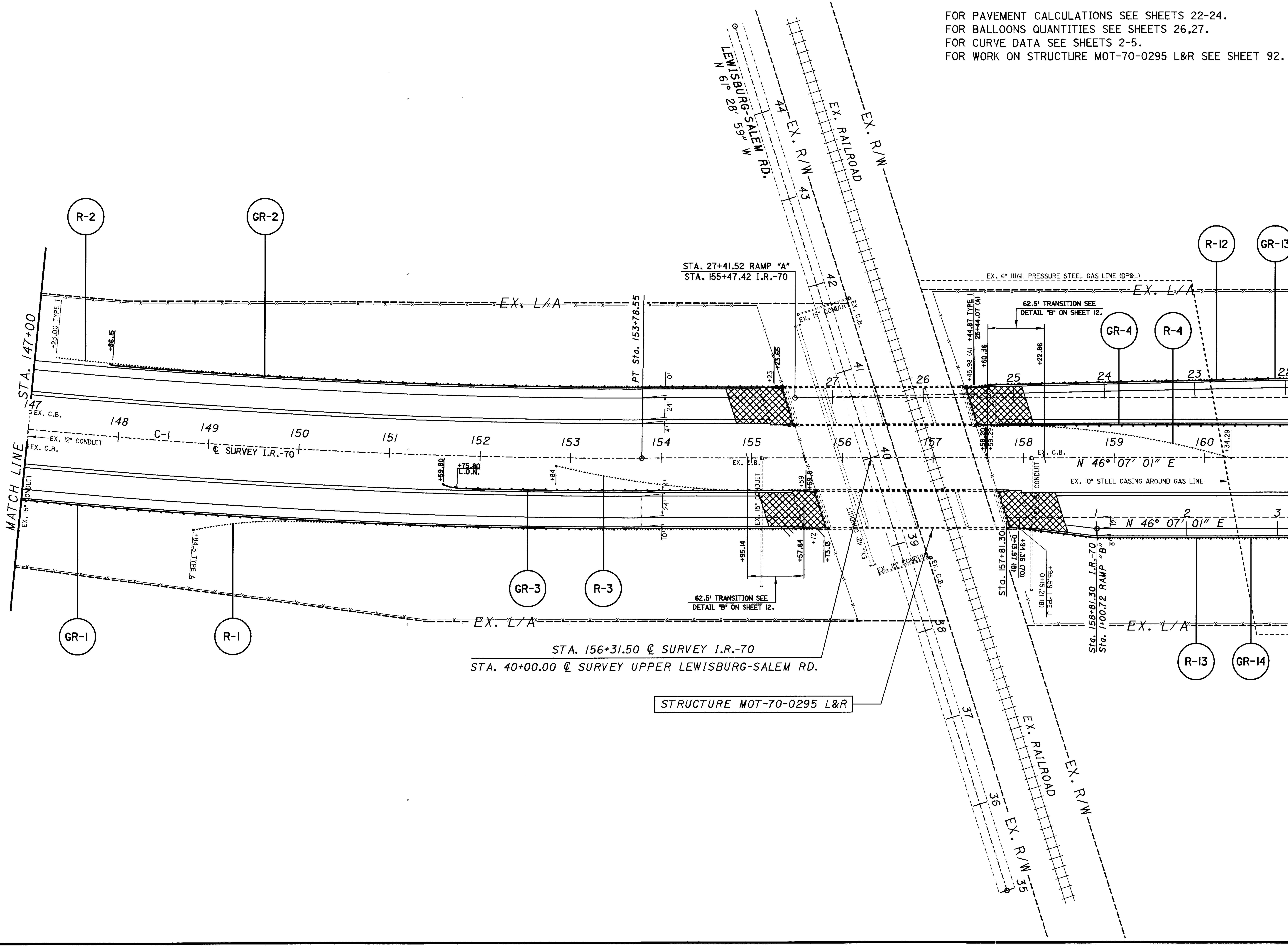
CALCULATED | CHECKED

PLAN SHEET - I.R.-70
STA. 133+00.00 TO STA. 147+00.00

MOT-70-0.00

39
112

FOR PAVEMENT CALCULATIONS SEE SHEETS 22-24.
FOR BALLOONS QUANTITIES SEE SHEETS 26,27.
FOR CURVE DATA SEE SHEETS 2-5.
FOR WORK ON STRUCTURE MOT-70-0295 L&R SEE SHEET 92.

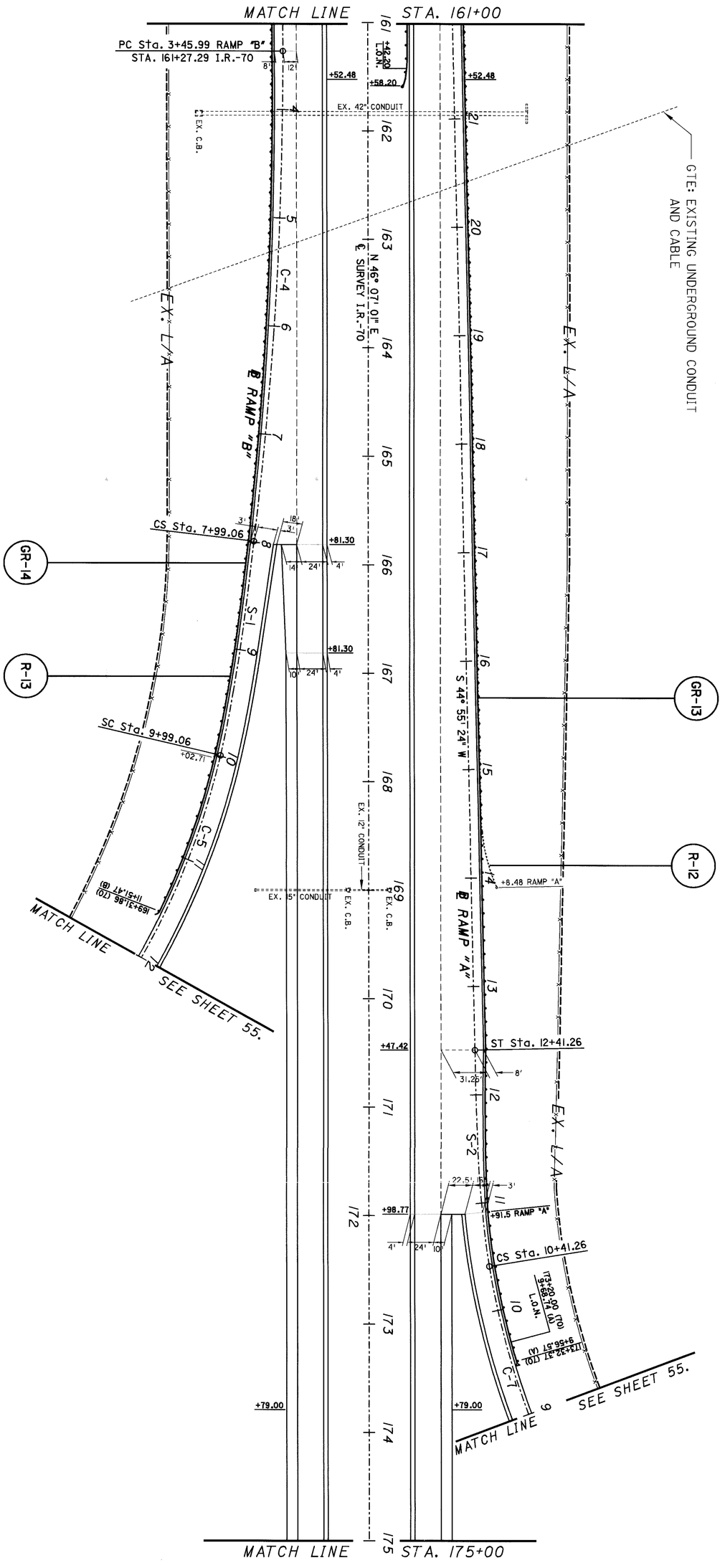


HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED
CHECKED

PLAN SHEET - I.R.-70
STA. 147+00.00 TO STA. 161+00.00

MOT-70-0.00

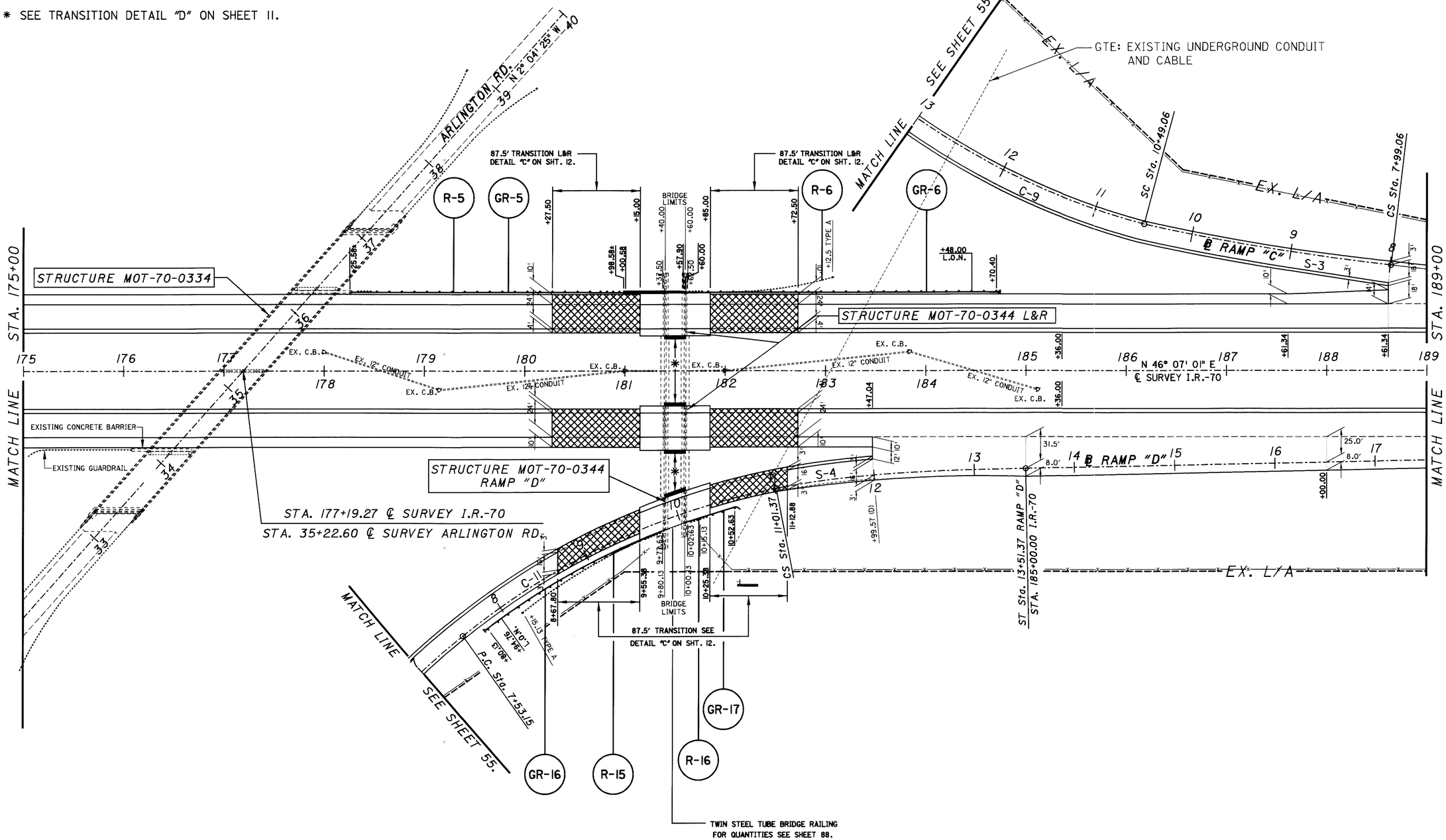


FOR PAVEMENT CALCULATIONS SEE SHEETS 22-24.
FOR BALLOONED QUATITIES SEE SHEETS 26,27.
FOR CURVE DATA SEE SHEETS 2-5.

41 / 112	MOT-70-0.00	PLAN SHEET - I.R.-70 STA. 161+00.00 TO STA. 175+00.00	CALCULATED CHECKED	0 50 25 100 HORIZONTAL SCALE IN FEET

FOR PAVEMENT CALCULATIONS SEE SHEETS 22-24.
FOR BALLOONED QUANTITIES SEE SHEETS 26,27.
FOR CURVE DATA SEE SHEETS 2-5.
FOR CONCRETE BARRIER, TYPE D AND CONCRETE BARRIER, TYPE D, AS PER PLAN SEE SHEET 13.
FOR BRIDGE TERMINAL ASSEMBLY, TYPE 1, AS PER PLAN SEE SHEET 13.
FOR WORK ON STRUCTURE MOT-70-0334 SEE SHEETS 93,94.
FOR WORK ON STRUCTURE MOT-70-0344 AND RAMP "D" SEE SHEETS 95-99.

* SEE TRANSITION DETAIL "D" ON SHEET 11.



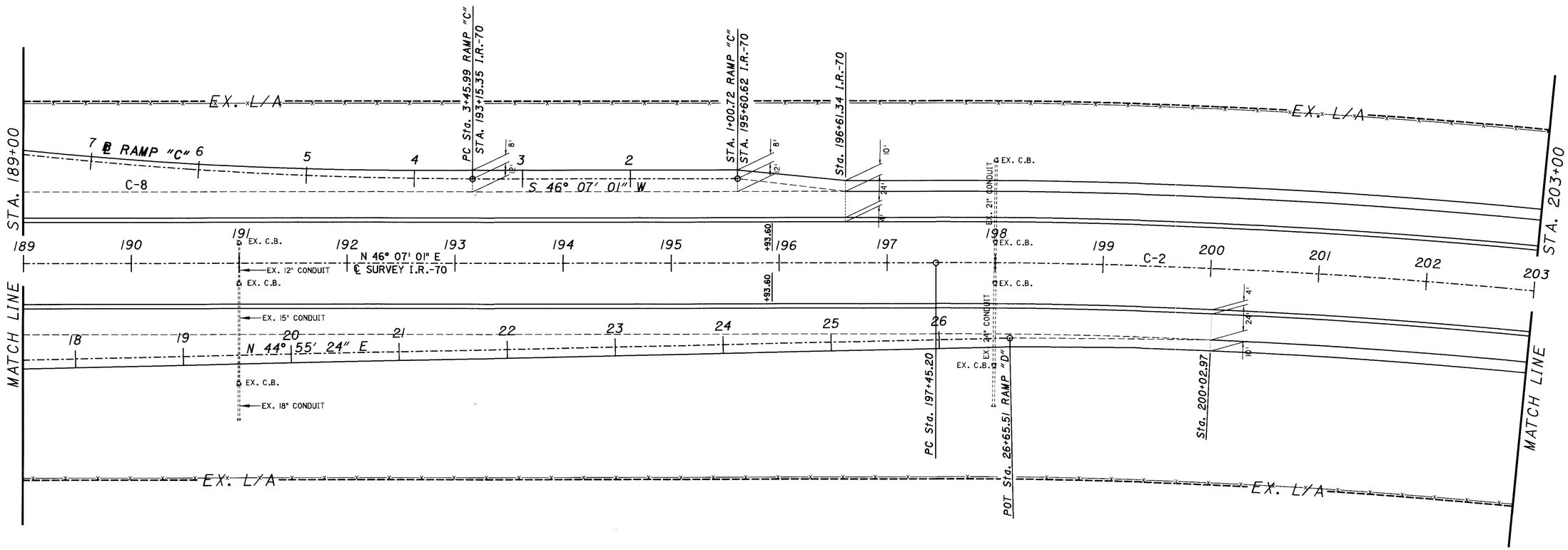
HORIZONTAL SCALE IN FEET
0 25 50 100
CALCULATED
CHECKED

PLAN SHEET - I.R.-70
STA. 175+00.00 TO STA. 189+00.00

MOT-70-0.00

42
112

FOR PAVEMENT CALCULATIONS SEE SHEETS 22-24.
FOR CURVE DATA SEE SHEETS 2-5.



HORIZONTAL SCALE IN FEET
0 25 50 100

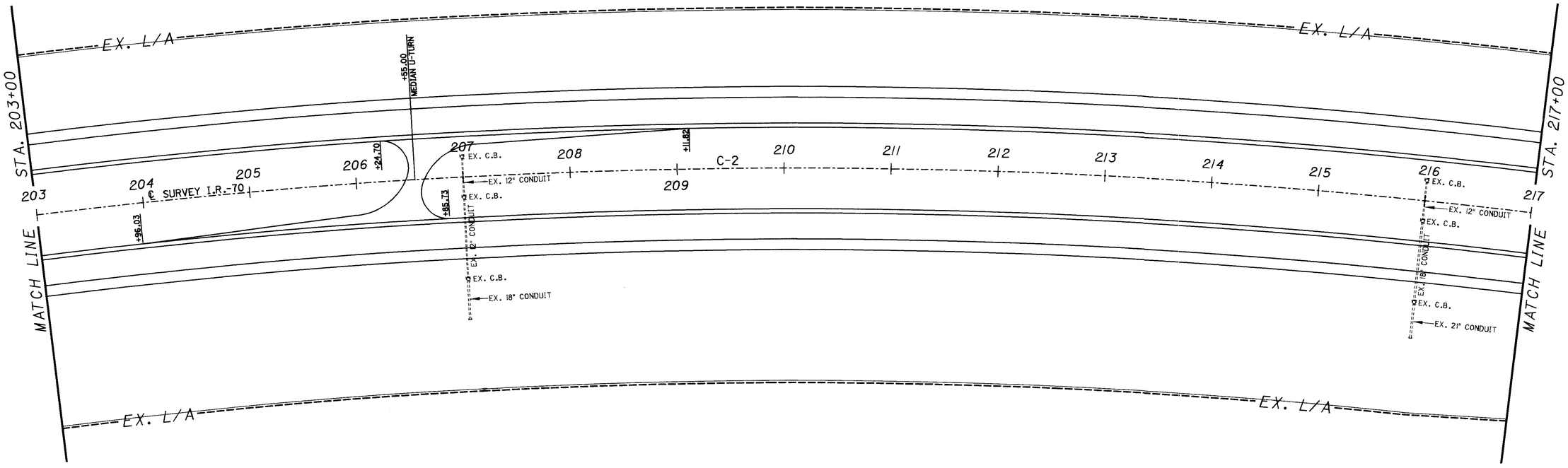
CALCULATED | CHECKED

PLAN SHEET - I.R.-70
STA. 189+00.00 TO STA. 203+00.00

MOT-70-0.00

43
112

FOR PAVEMENT CALCULATIONS SEE SHEETS 22-24.
FOR CURVE DATA SE SHEETS 2-5.
FOR MEDIAN U-TURN DETAILS SEE SHEET 10.



HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED
CHECKED

PLAN SHEET - I.R.-70
STA. 203+00.00 TO STA. 217+00.00

MOT-70-0.00

44
112

FOR PAVEMENT CALCULATIONS SEE SHEETS 22-24.
FOR CURVE DATA SEE SHEETS 2-5.

N

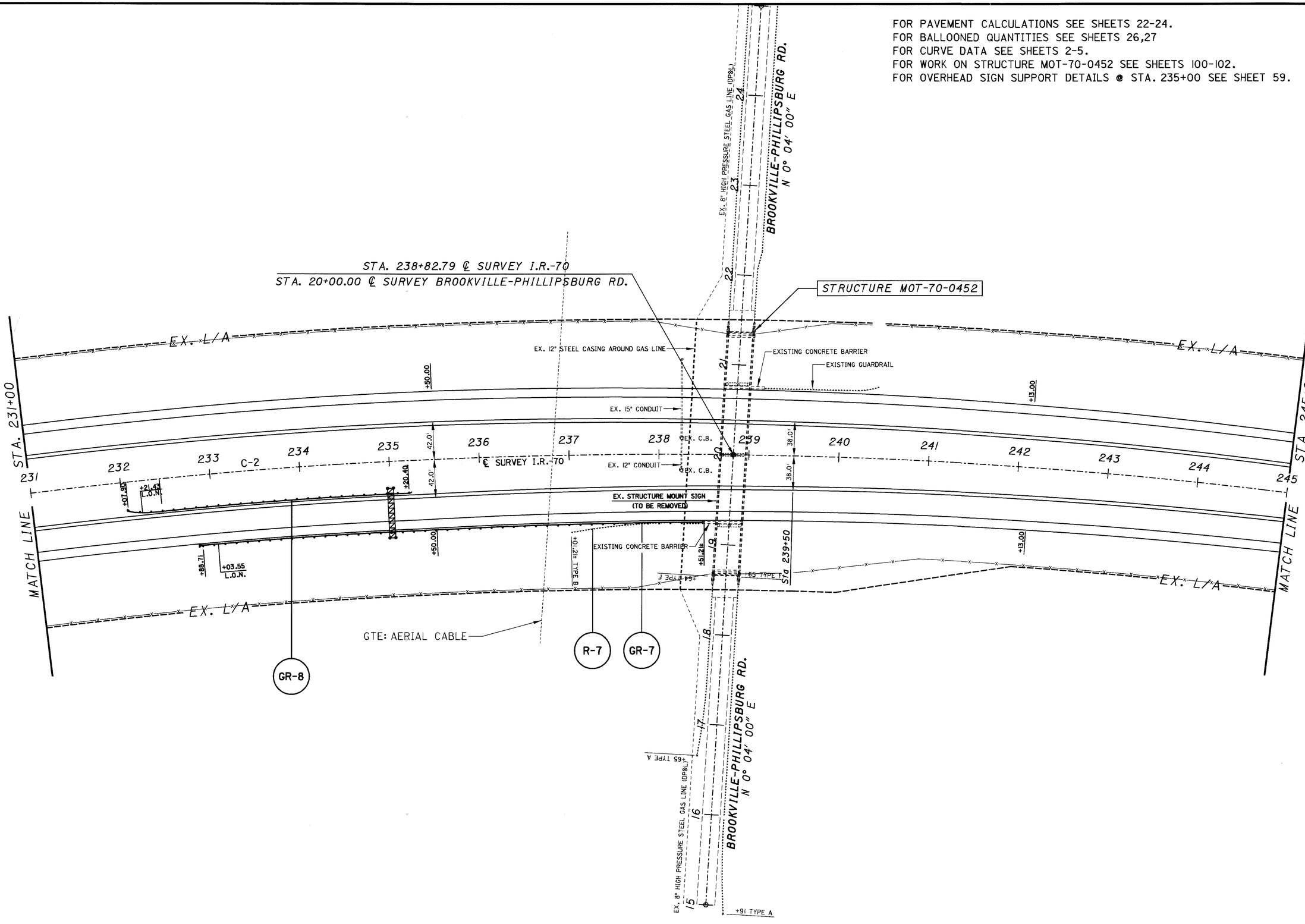
0 25 50 100
HORIZONTAL SCALE IN FEET

CALCULATED | CHECKED

PLAN SHEET - I.R.-70
STA. 217+00.00 TO STA. 231+00.00

MOT-70-0.00

FOR PAVEMENT CALCULATIONS SEE SHEETS 22-24.
FOR BALLOONED QUANTITIES SEE SHEETS 26,27
FOR CURVE DATA SEE SHEETS 2-5.
FOR WORK ON STRUCTURE MOT-70-0452 SEE SHEETS 100-102.
FOR OVERHEAD SIGN SUPPORT DETAILS @ STA. 235+00 SEE SHEET 59.



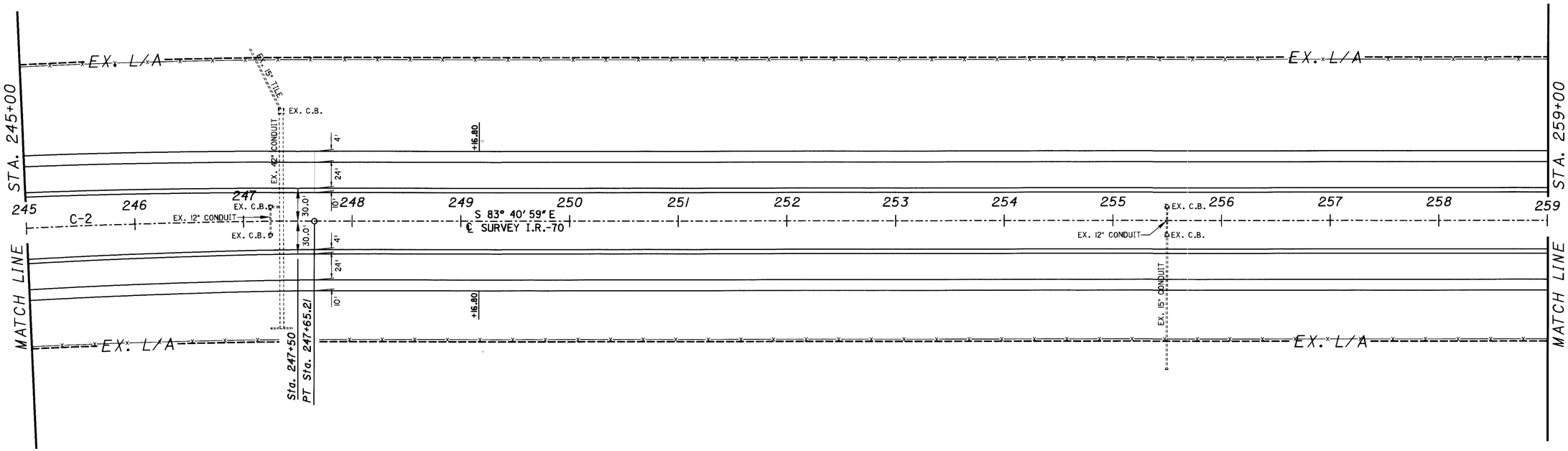
HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED | CHECKED

PLAN SHEET - I.R.-70
STA. 231+00.00 TO STA. 245+00.00

MOT-70-0.00

FOR PAVEMENT CALCULATIONS SEE SHEETS 22-24.
FOR CURVE DATA SEE SHEETS 2-5.



HORIZONTAL SCALE IN FEET
0 25 50 100

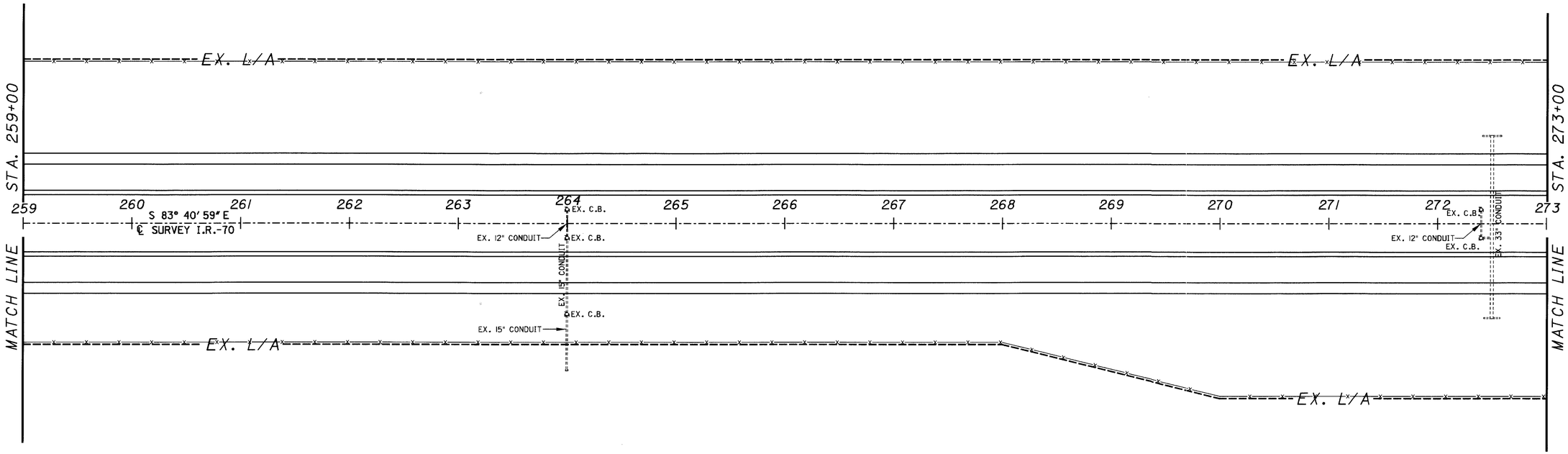
CALCULATED | CHECKED

PLAN SHEET - I.R.-70
STA. 245+00.00 TO STA. 259+00.00

MOT-70-0.00

47
112

FOR PAVEMENT CALCULATIONS SEE SHEETS 22-24.



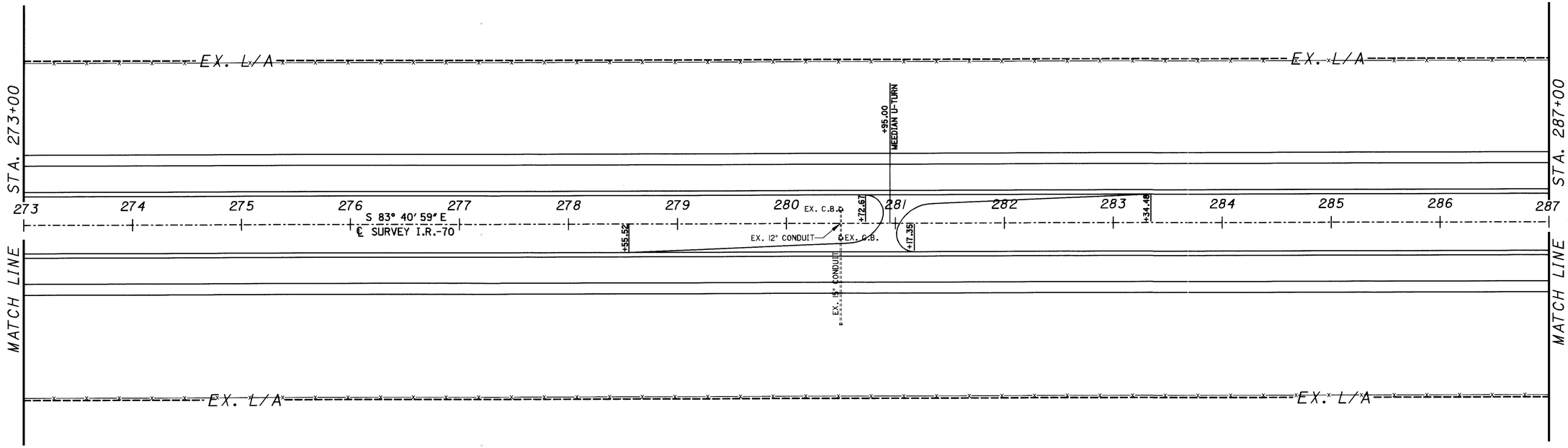
HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED | CHECKED

PLAN SHEET - I.R.-70
STA. 259+00.00 TO STA. 273+00.00

MOT-70-0.00

FOR PAVEMENT CALCULATIONS SEE SHEETS 22-24.
FOR MEDIAN U-TURN DETAILS SEE SHT. 10.



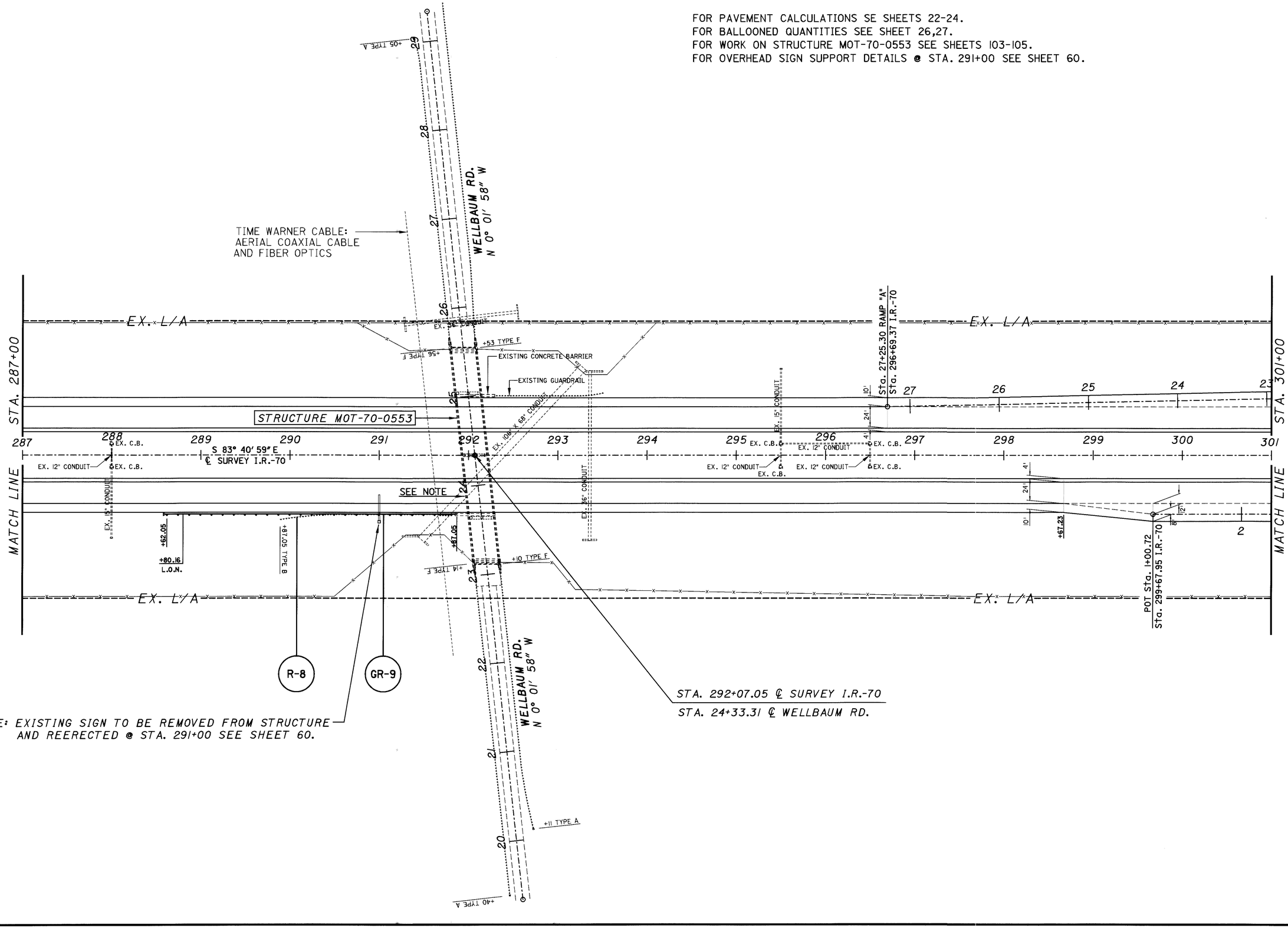
HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED
CHECKED

PLAN
STA. 273+00.00 TO STA. 287+00.00

MOT-70-0.00

FOR PAVEMENT CALCULATIONS SE SHEETS 22-24.
FOR BALLOONED QUANTITIES SEE SHEET 26,27.
FOR WORK ON STRUCTURE MOT-70-0553 SEE SHEETS 103-105.
FOR OVERHEAD SIGN SUPPORT DETAILS @ STA. 291+00 SEE SHEET 60.



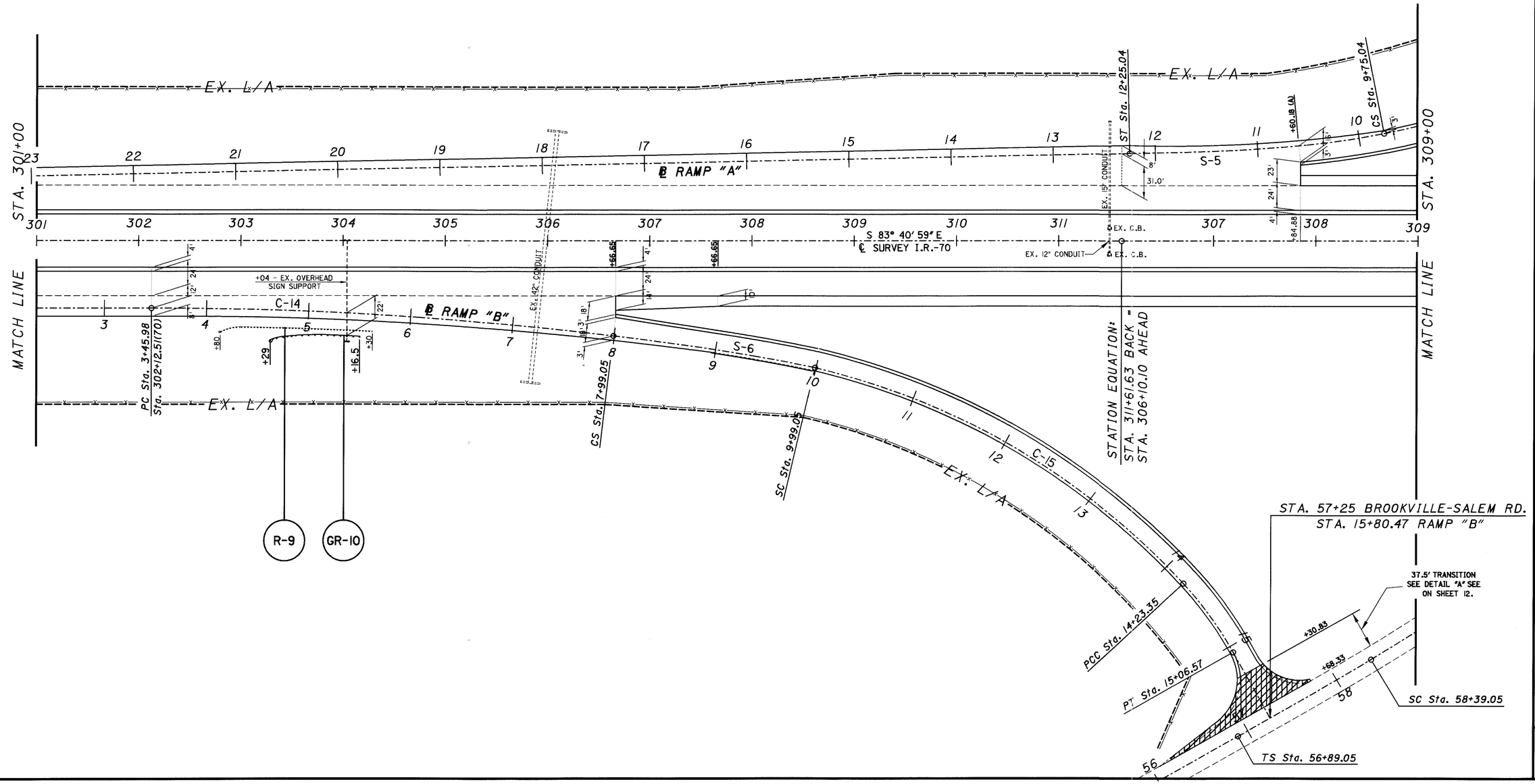
HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED | CHECKED

PLAN SHEET - I.R.-70
STA. 287+00.00 TO STA. 301+00.00

MOT-70-0.00

FOR PAVEMENT CALCULATIONS SEE SHEETS 22-24.
FOR BALLOONED QUANTITIES SEE SHEETS 26,27.
FOR CURVE DATA SEE SHEETS 2-5.

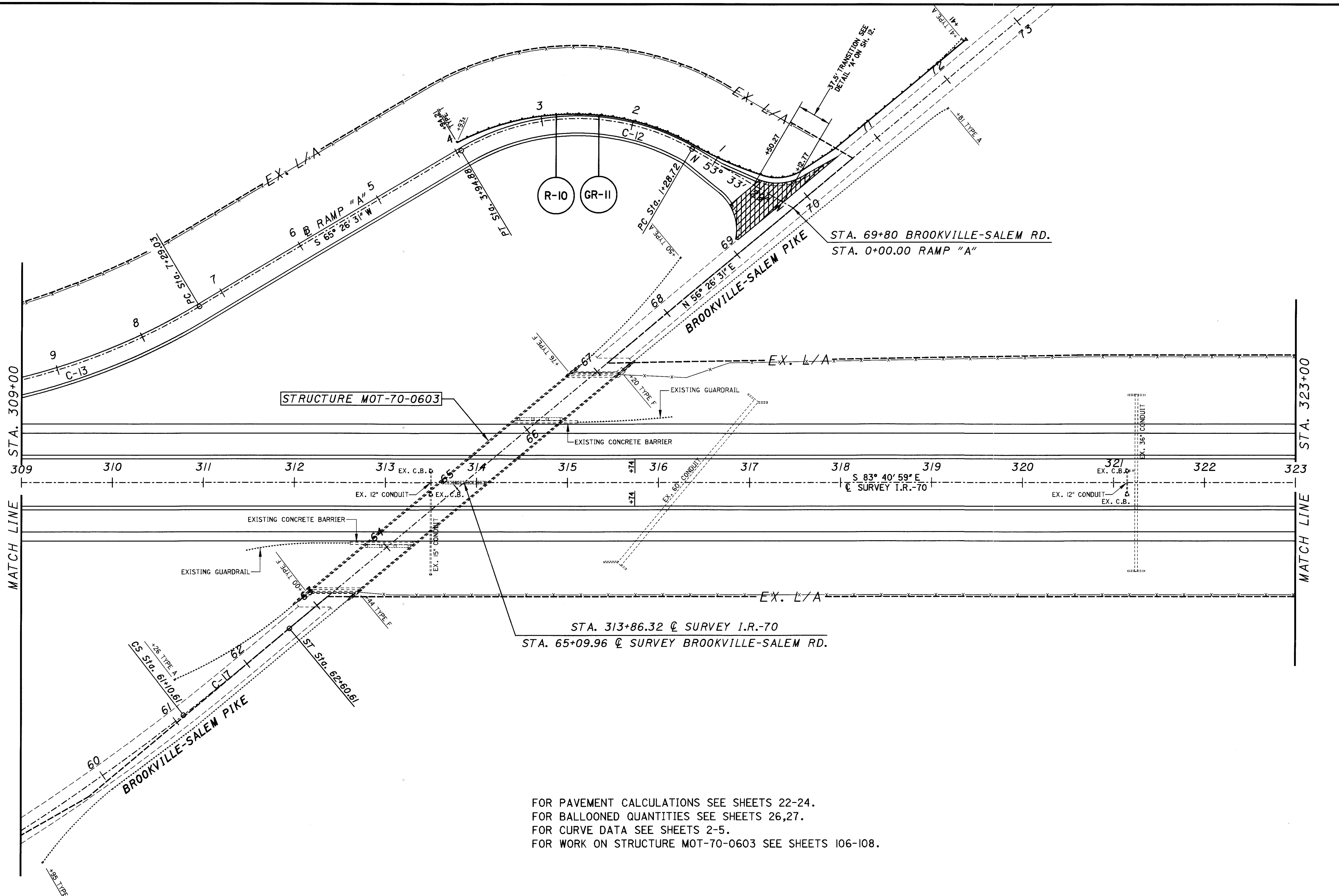


HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED | CHECKED

PLAN SHEET - I.R.-70
STA. 301+00.00 TO STA. 309+00.00

MOT-70-0.00



FOR PAVEMENT CALCULATIONS SEE SHEETS 22-24.
FOR BALLOONED QUANTITIES SEE SHEETS 26,27.
FOR CURVE DATA SEE SHEETS 2-5.
FOR WORK ON STRUCTURE MOT-70-0603 SEE SHEETS 106-108.

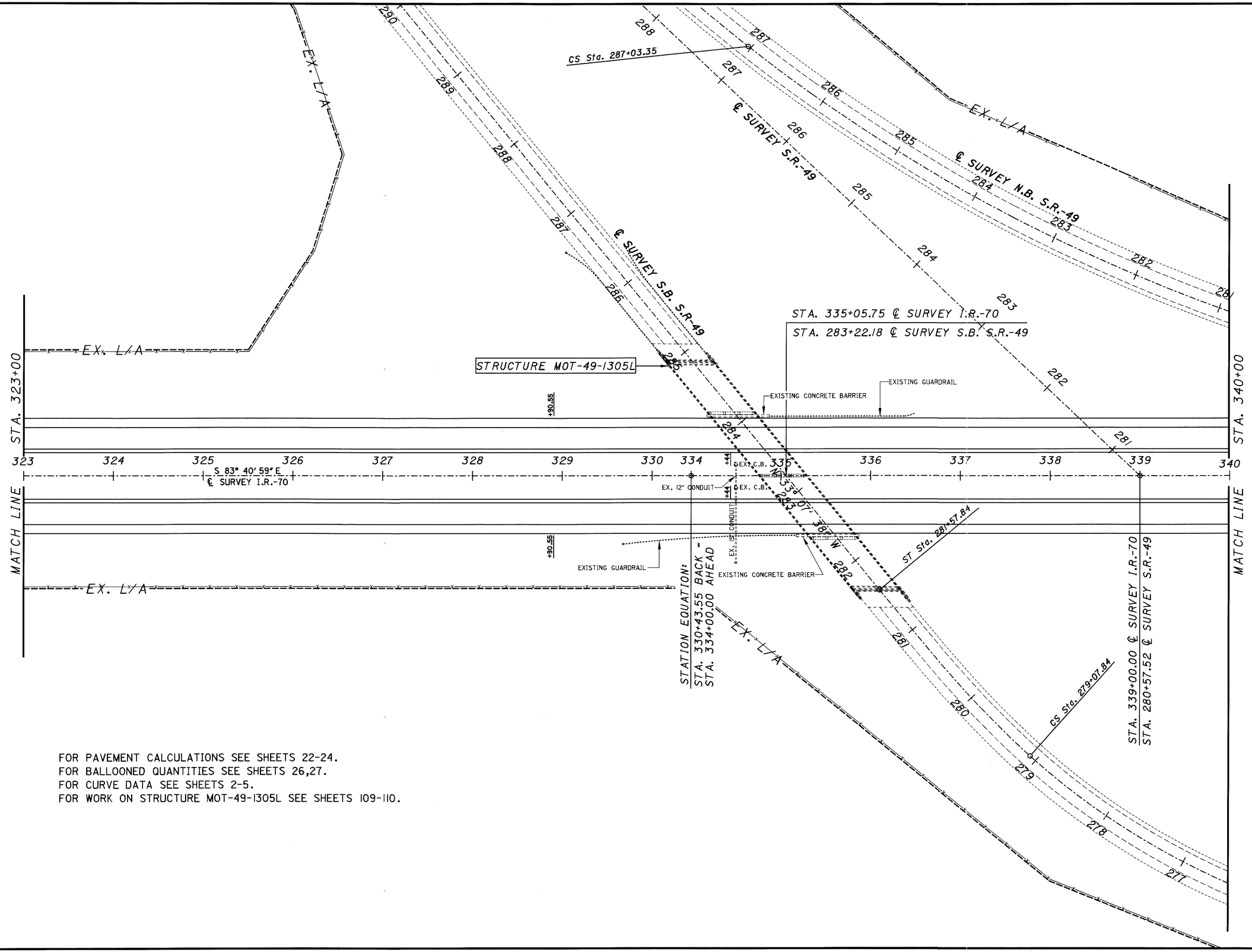
HORIZONTAL SCALE IN FEET

CALCULATED | CHECKED

PLAN SHEET - I.R.-70

STA. 309+00.00 TO STA. 323+00.00

MOT-70-0.00



FOR PAVEMENT CALCULATIONS SEE SHEETS 22-24.
FOR BALLOONED QUANTITIES SEE SHEETS 26,27.
FOR CURVE DATA SEE SHEETS 2-5.
FOR WORK ON STRUCTURE MOT-49-1305L SEE SHEETS 109-110.

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED
CHECKED

PLAN SHEET - I.R.-70
STA. 323+00.00 TO STA. 340+00.00

MOT-70-0.00

53
112

FOR PAVEMENT CALCULATIONS SEE SHEETS 22-24.

END WORK:
STA. 342+50

END PROJECT:
STA. 342+12.50
S.L.M. 6.48

TE21-G000(379)

MATCH LINE

STA. 340+00

EX. L/A

℄ SURVEY N.B. S.R.-49

℄ SURVEY S.B. S.R-49

℄ SURVEY I.R.-70

S 83° 40' 59" E

DIAMOND MILL RD.
N 0° 19' 11" E

SC Sta. 276+38.40

TS Sta. 272+88.40

TS Sta. 268+14.67

SC Sta. 270+64.67

ST Sta. 265+98.35

CS Sta. 263+98.35

S 70° 20' 55" W

EX. 12" CONDUIT

EX. C.B.

+12.50

+50.00

10'

24'

4'

37.5' SEE TRANSITION DETAIL "A" ON SHEET 12.

STA. 347+48.69 ℄ SURVEY I.R.-70
STA. 53+00.12 ℄ SURVEY DIAMOND MILL RD.

STRUCTURE MOT-70-664 L&R

STRUCTURE MOT-70-0655

STRUCTURE MOT-49-1213

STRUCTURE MOT-49-1224

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED

CHECKED

PLAN SHEET - I.R.-70
STA. 340+00.00 TO STA. 354+00.00

MOT-70-0.00

54
112

FOR PAVEMENT CALCULATIONS SEE SHEETS 22-24.
FOR BALLOONED QUANTITIES SEE SHEETS 26,27.
FOR CURVE DATA SEE SHEETS 2-5.
FOR WORK ON STRUCTURE MOT-70-0334 SEE SHEETS 93,94.

MATCH LINE SEE SHEET 41.

℄ SURVEY I.R.-70

℄ ARLINGTON RD.

℄ RAMP "A"

℄ RAMP "B"

℄ RAMP "C"

℄ RAMP "D"

EX. L/A

C-5 C-6 C-7 C-9 C-10

R-11 GR-12 R-14 GR-15 D-1

P.T. STA. 13+55.49

P.C. STA. 6+00.97

P.T. STA. 3+59.90

P.C. STA. 1+28.72

P.C. STA. 1+28.78

P.T. Sta. 3+94.33

P.T. STA. 13+85.17

STA. 28+79.30 ARLINGTON RD.
STA. 16+26.00 RAMP "B"
STA. 0+00.00 RAMP "D"

STA. 177+19.27 ℄ SURVEY IR-70
STA. 35+22.60 ℄ SURVEY ARLINGTON RD.

STA. 41+53.00 ARLINGTON RD.
STA. 0+00.00 RAMP "A"
STA. 16+33.54 RAMP "C"

STRUCTURE MOT-70-0334

STA. 15+75.33
STA. 16+12.83
37.5' TRANSITION SEE DETAIL "A" ON SHEET 12.

STA. 0+12.77
STA. 0+50.27
37.5' TRANSITION SEE DETAIL "A" ON SHEET 12.
EX. 24" CONDUIT

STA. 0+50.40
STA. 0+12.90
37.5' TRANSITION SEE DETAIL "A" ON SHEET 12.
EX. 14'-0" CONDUIT

STA. 16+21.54
STA. 15+84.04
37.5' TRANSITION SEE DETAIL "A" ON SHEET 12.
EX. 21" CONDUIT

EX. 36" CONDUIT

EX. 36" CONDUIT

PROPOSED ROCK CHANNEL PROTECTION, TYPE A, WITHOUT FILTER
30'(LONG) X 35'(WIDE) X 3'(THICK) / 27 = 117 CU. YD.

MATCH LINE SEE SHEET 42.

MATCH LINE THIS SHEET

MATCH LINE THIS SHEET

MATCH LINE SEE SHEET 42.

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED
CHECKED

PLAN SHEET - I.R.-70 ARLINGTON RD. RAMPS

MOT-70-0.00

SHEET NUMBER								PARTICIPATION			ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
	57		58		59		60									
			712								621	00200	712	EACH	RAISED PAVEMENT MARKER, INSTALLATION ONLY	
					1		1				625	32000	2	EACH	GROUND ROD	
							1				630	21000	1	EACH	OVERHEAD SIGN SUPPORT, TYPE TC-12.30, DESIGN 10	
					1						630	35500	1	EACH	OVERHEAD SIGN SUPPORT, TYPE TC-7.65, DESIGN 6	
					2		1				630	84510	3	EACH	RIGID OVERHEAD SIGN SUPPORT FOUNDATION	
					4		2				630	86320	6	EACH	REMOVAL OF STRUCTURE MOUNTED SIGN AND REERECTION	
					2		1				630	97700	3	EACH	SIGNING, MISC. : REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL, TYPE TC-18.26, AS PER PLAN	
	28.62										644	00100	28.62	MILE	EDGE LINE	
	13.34										644	00200	13.34	MILE	LANE LINE	
	1936										644	00400	1936	LIN. FT.	CHANNELIZING LINE	
	155										644	00500	155	LIN. FT.	STOP LINE	
	553										644	00700	553	LIN. FT.	TRANSVERSE LINE	

CALCULATED R.E.B. CHECKED

TRAFFIC CONTROL SUMMARY

MOT-70-0.00

56
112

k:\de

LOCATION	STATION FROM	STATION TO	SIDE	644 WHITE EDGE LINE LIN. FT.	644 YELLOW EDGE LINE LIN. FT.	644 WHITE LANE LINE LIN. FT.	644 WHITE CHANNELIZING LINE LIN. FT.	644 WHITE TRANSVERES LINE LIN. FT.	644 STOP LINE LIN. FT.
I.R.-70	939+52.18	939+89.68	LT.	37.5					
	939+52.18	939+89.68	RT.	37.5					
	939+52.18	939+89.68	LT.		37.5				
	939+52.18	939+89.68	RT.		37.5				
	939+52.18	939+89.68	LT.			37.5			
	939+52.18	939+89.68	RT.			37.5			
	STA. EQUATION: Sta. 939+89.68 BACK = Sta. 0+00.00 AHEAD								
	0+00.00	311+61.63	LT.		31161.63				
	0+00.00	311+61.63	RT.		31161.63				
	0+00.00	311+61.63	LT.			31161.63			
	0+00.00	311+61.63	RT.			31161.63			
	0+00.00	155+47.42	LT.	15547.42					
	0+00.00	157+81.30	RT.	15781.30					
	165+98.92	188+61.34	LT.	2262.42					
	165+81.30	188+00.00	RT.	2218.70					
	196+61.34	296+69.37	LT.	10008.03					
	200+02.97	298+67.23	RT.	9864.26					
	307+20.99	311+61.63	LT.	440.64					
	306+66.65	311+61.63	RT.	494.98					
	STA. EQUATION: Sta. 311+61.63 BACK = Sta. 306+10.10 AHEAD								
	306+10.10	330+43.55	LT.	2433.45					
	306+10.10	330+43.55	RT.	2433.45					
	306+10.10	330+43.55	LT.		2433.45				
	306+10.10	330+43.55	RT.		2433.45				
	306+10.10	330+43.55	LT.			2433.45			
	306+10.10	330+43.55	RT.			2433.45			
	STA. EQUATION: Sta. 330+43.55 BACK = Sta. 334+00.00 AHEAD								
	334+00.00	342+50.00	LT.	850					
	334+00.00	342+50.00	RT.	850					
	334+00.00	342+50.00	LT.		850				
	334+00.00	342+50.00	RT.		850				
	334+00.00	342+50.00	LT.			850			
I.R.-70	334+00.00	342+50.00	RT.			850			
NOTE: * = STATION ON ARLINGTON RD.									
ARLINGTON ROAD									
RAMP "A"	42+35.88*	27+41.52	RT.	2799.93					
	40+82.51*	15+41.27	LT.		1529.24				
	15+41.27	16+89.90	LT.				148.63		
	16+89.90	19+73.29	LT.			283.39			
TOTALS CARRIED TO NEXT COLUMN				66059.58	70494.40	69248.55	148.63		

LOCATION	STATION FROM	STATION TO	SIDE	644 WHITE EDGE LINE LIN. FT.	644 YELLOW EDGE LINE LIN. FT.	644 WHITE LANE LINE LIN. FT.	644 WHITE CHANNELIZING LINE LIN. FT.	644 WHITE TRANSVERES LINE LIN. FT.	644 STOP LINE LIN. FT.
NOTE: * = STATION ON ARLINGTON RD.									
ARLINGTON ROAD									
RAMP "B"	1+00.72	27+75.57 *	RT.	1576.63					
	7+99.06	29+28.48 *	LT.		834.43				
	2+81.55	5+55.94	LT.			274.39			
(2 LINES)	5+55.94	7+99.06	LT.				498.01		
	5+55.94	7+99.06	LT.					182.94	
	16+00.00		LT./RT.						52.91
RAMP "C"	0+00.50	42+56.73 *	RT.	1686.40					
	3+25.59	5+51.25	LT.			225.66			
(2 LINES)	5+51.25	7+99.06	LT.				499.51		
	5+51.25	7+99.06	LT.					183.06	
	7+99.06	41+03.52 *	LT.		835.78				
	16+05.54		LT./RT.						50.69
RAMP "D"	27+96.42 *	28+51.70	RT.	2848.84					
	29+50.40 *	1635.45	LT.		84.09				
	16+51.36	18+10.17	LT.				158.81		
	18+10.17	19+61.44	LT.			151.27			
NOTE: # = STATION ON BROOKVILLE-SALEM RD.									
BROOKVILLE - SALEM RD.									
RAMP "A"	70+53.80 #	27+25.30	RT.	2774.63					
	69+11.38 #	15+24.53	LT.		1507.40				
	15+24.53	16+73.46	LT.				148.93		
	16+73.46	19+56.95	LT.			283.49			
RAMP "B"	0+00.72	56+21.22 #	RT.	1633.24					
	7+99.05	57+77.39 #	LT.		784.33				
	3+30.33	5+60.06	LT.			229.73			
(2 LINES)	5+60.06	7+99.05	LT.				481.28		
	5+60.06	7+99.05	LT.					186.19	
	15+52.27								51.15
TOTALS FROM THIS COLUMN				10519.74	4046.03	1164.54	1786.54	552.19	154.75
TOTALS FROM PREVIOUS COLUMN				66059.58	70494.40	69248.55	148.63		
SUB-TOTALS				76579.32	74540.43	70413.09	1935.17	552.19	154.75
TOTALS CARRIED TO TRAFFIC CONTROL SUMMARY				28.62 MI.		13.34 MI.	1936	553	155

CALCULATED

CHECKED

PAVEMENT MARKING SUBSUMMARY

MOT-70-0.00

ITEM 621 RAISED PAVEMENT MARKERS

LOCATION	STATION FROM	STATION TO	SIDE	SPACING		ONE-WAY WHITE	TWO-WAY WHITE/RED	TWO-WAY YELLOW/RED
	FROM	TO		FEET		EACH	EACH	EACH
I-70	0+00.00	342+50.00	L	120		285		
I-70	0+00.00	342+50.00	R	120		285		
ARLINGTON ROAD								
RAMP A	0+21.27	15+41.27	R	80				19
RAMP A	15+41.27	16+89.90	R	40			4	
RAMP B	5+55.94	7+99.06	L	40			13	
RAMP B	7+99.06	15+99.06	L	80				10
RAMP C	5+51.25	7+99.06	L	40			13	
RAMP C	7+99.06	15+99.06	L	80				10
RAMP D	0+51.36	16+51.36	L	80				20
RAMP D	16+51.36	18+10.17	L	40			7	
BROOKVILLE - SALEM ROAD								
RAMP A	0+04.53	15+24.53	L	80				19
RAMP A	15+41.27	16+89.90	L	40			4	
RAMP B	5+60.06	7+99.05	L	40			13	
RAMP B	7+99.06	15+06.57	L	80				10
SUB-TOTALS						570	54	88
TOTALS CARRIED TO TRAFFIC CONTROL SUMMARY						712		

CALCULATED

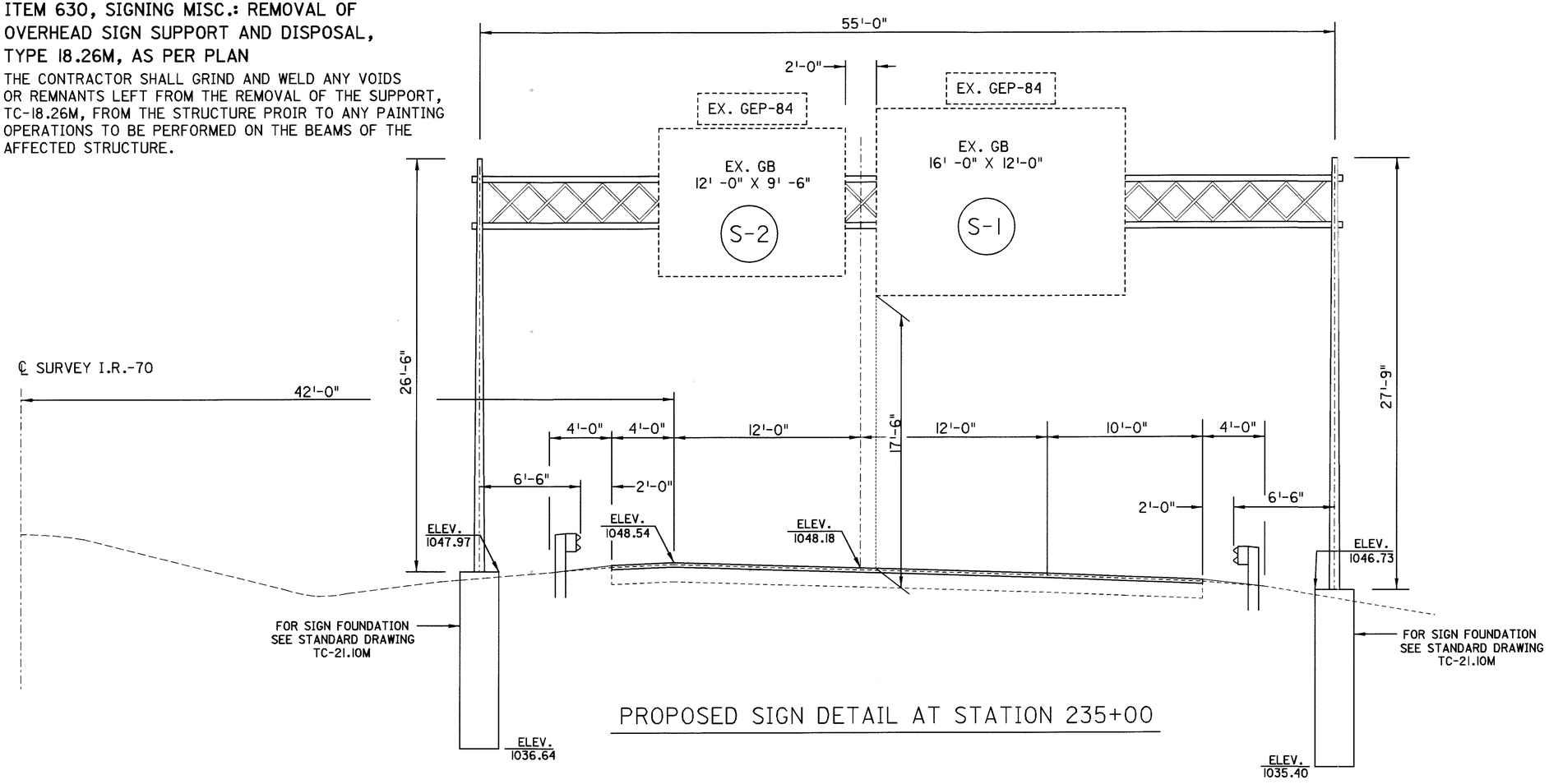
CHECKED

RAISED PAVEMENT MARKERS

MOT-70-0.00

NOTE: ITEM 630, SIGNING MISC.: REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL, TYPE 18.26M, AS PER PLAN

THE CONTRACTOR SHALL GRIND AND WELD ANY VOIDS OR REMNANTS LEFT FROM THE REMOVAL OF THE SUPPORT, TC-18.26M, FROM THE STRUCTURE PROIR TO ANY PAINTING OPERATIONS TO BE PERFORMED ON THE BEAMS OF THE AFFECTED STRUCTURE.



PROPOSED SIGN DETAIL AT STATION 235+00

SHEET NO.	REFERENCE NO.	LOCATION	STATION	SIDE	CODE	SIZE (INCHES)		625		630	630		630		630					
								GROUND ROD		RIGID OVERHEAD SIGN SUPPORT FOUNDATION	OVERHEAD SIGN SUPPORT, TYPE TC-7.65, DESIGN -6		REMOVAL OF STRUCTURE MOUNTED SIGN AND REERECTION		SIGNING, MISC.: REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL, TYPE TC-18.26M, AS PER PLAN					
								EACH		EACH	EACH		EACH		EACH					
78	S-1	EASTBOUND I.R.-70	235+00	RT.	GB	168" X 144"		1		2	1		1		1					
				RT.	GEP	84" X 24"							1							
78	S-2	EASTBOUND I.R.-70	235+00	RT.	GB	144" X 114"							1		1					
				RT.	GEP	84" X 24"							1							
TOTALS CARRIED TO TRAFFIC CONTROL SUMMARY								1		2	1		4		2					

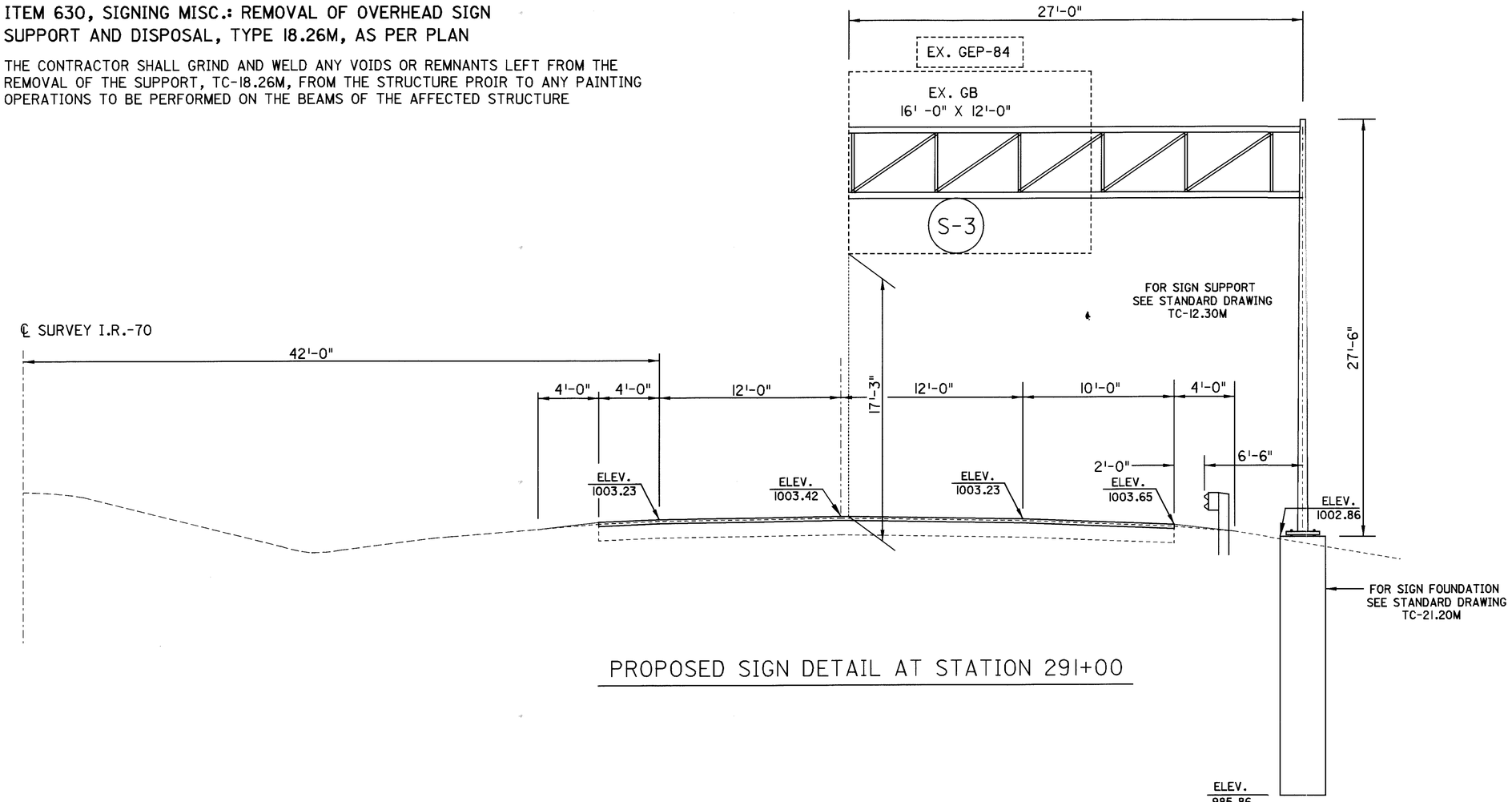
CALCULATED | CHECKED

SIGNING SUB SUMMARY AND SIGN DETAIL

MOT-70-0.00

NOTE: ITEM 630, SIGNING MISC.: REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL, TYPE 18.26M, AS PER PLAN

THE CONTRACTOR SHALL GRIND AND WELD ANY VOIDS OR REMNANTS LEFT FROM THE REMOVAL OF THE SUPPORT, TC-18.26M, FROM THE STRUCTURE PROIR TO ANY PAINTING OPERATIONS TO BE PERFORMED ON THE BEAMS OF THE AFFECTED STRUCTURE



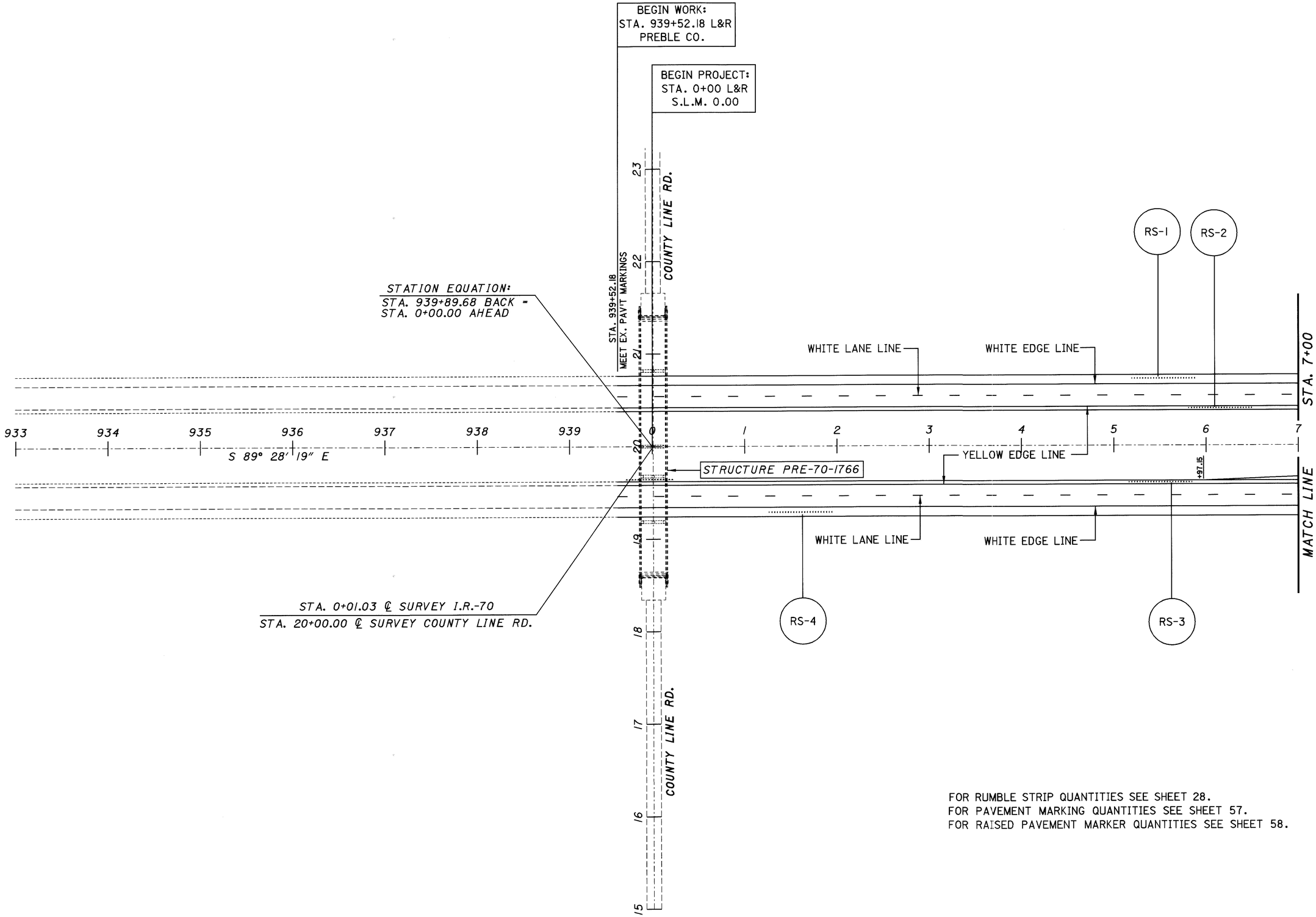
PROPOSED SIGN DETAIL AT STATION 291+00

SHEET NO.	REFERENCE NO.	LOCATION	STATION	SIDE	CODE	SIZE (INCHES)		625 GROUND ROD EACH		630 RIGID OVERHEAD SIGN SUPPORT FOUNDATION EACH	630 OVERHEAD SIGN SUPPORT, TYPE TC-12.30, DESIGN -10 EACH		630 REMOVAL OF STRUCTURE MOUNTED SIGN AND REERECTION EACH		630 SIGNING, MISC.: REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL, TYPE TC-18.26M, AS PER PLAN EACH					
82	S-3	EASTBOUND I.R.-70	291+00	RT.	GB	168" X 144"		1		1	1		1		1					
				RT.	GEP	84" X 24"							1							
TOTALS CARRIED TO TRAFFIC CONTROL SUMMARY								1		1	1		2		1					

CALCULATED
CHECKED

SIGNING SUB SUMMARY AND SIGN DETAIL

MOT-70-0.00



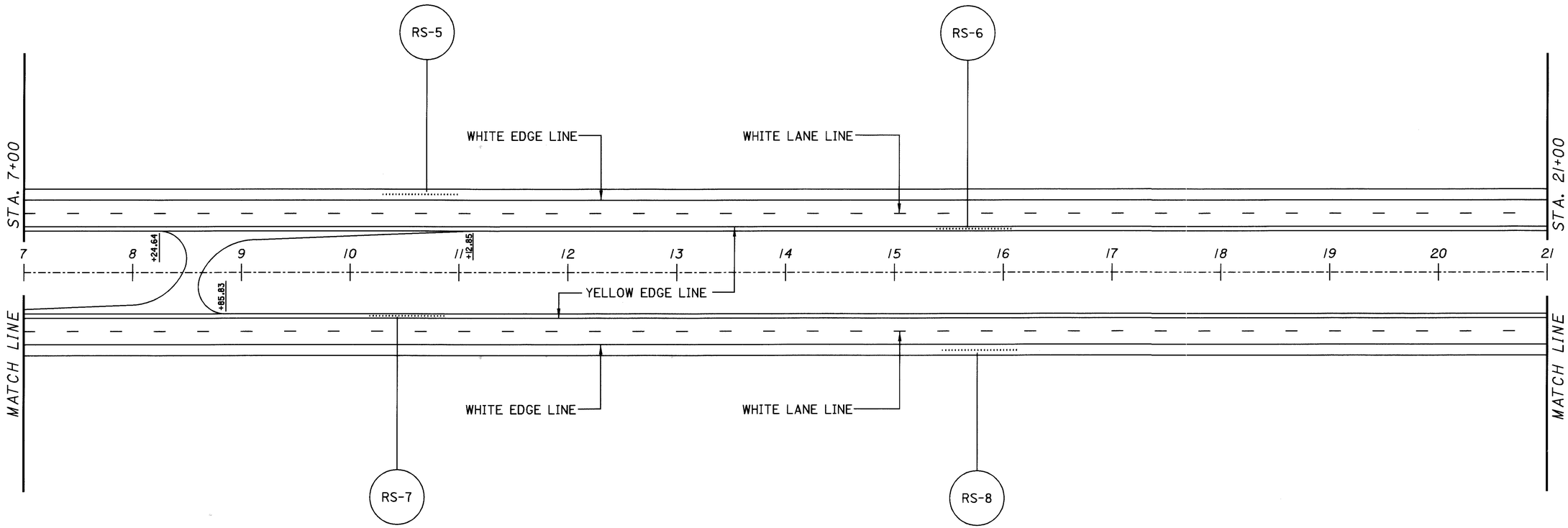
FOR RUMBLE STRIP QUANTITIES SEE SHEET 28.
FOR PAVEMENT MARKING QUANTITIES SEE SHEET 57.
FOR RAISED PAVEMENT MARKER QUANTITIES SEE SHEET 58.

HORIZONTAL SCALE IN FEET
0

CALCULATED
CHECKED

PAVEMENT MARKINGS - I.R.-70
STA. 932+90.00 TO STA. 7+00.00

MOT-70-0.00



FOR RUMBLE STRIP QUANTITIES SEE SHEET 28.
FOR PAVEMENT MARKING QUANTITIES SEE SHEET 57.
FOR RAISED PAVEMENT MARKER QUANTITIES SEE SHEET 58.

N

HORIZONTAL SCALE IN FEET
0

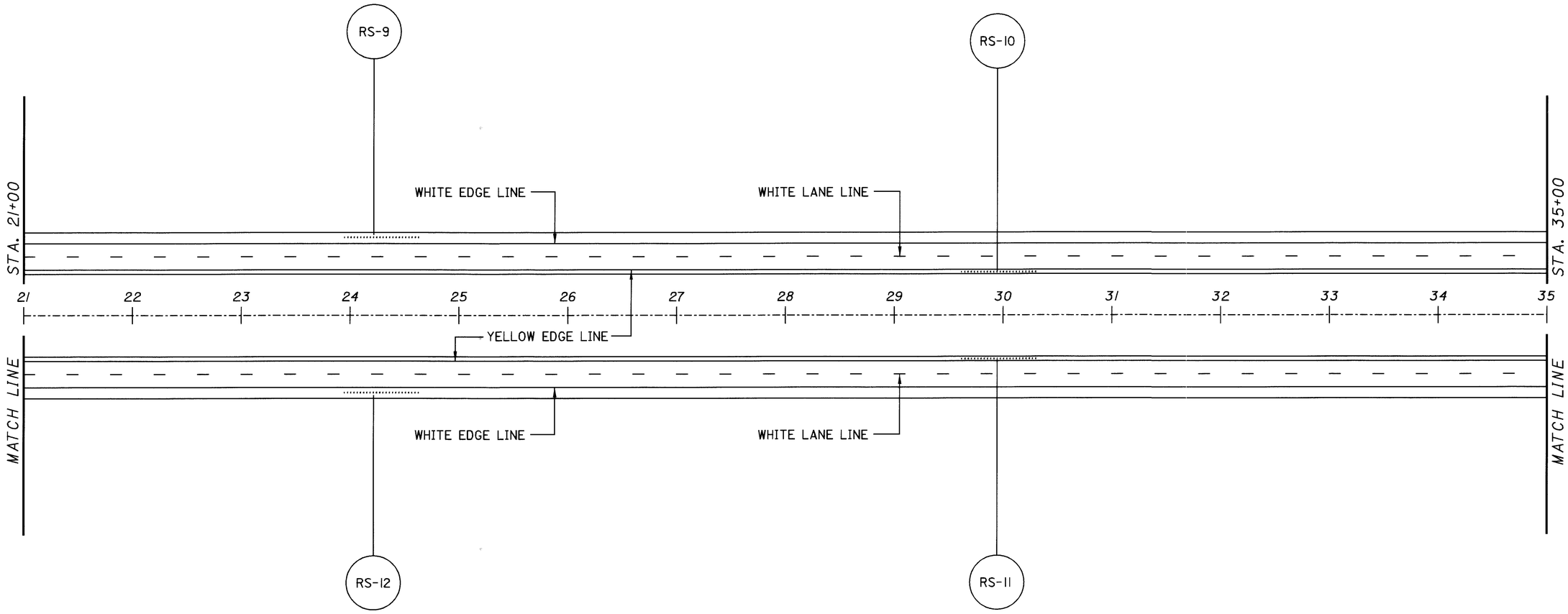
CALCULATED | CHECKED

PAVEMENT MARKINGS - I.R.-70
STA. 7+00.00 TO STA. 21+00.00

MOT-70-0.00

62
112

FOR RUMBLE STRIP QUANTITIES SEE SHEET 28.
FOR PAVEMENT MARKING QUANTITIES SEE SHEET 57.
FOR RAISED PAVEMENT MARKER QUANTITIES SEE SHEET 58.



HORIZONTAL SCALE IN FEET
0

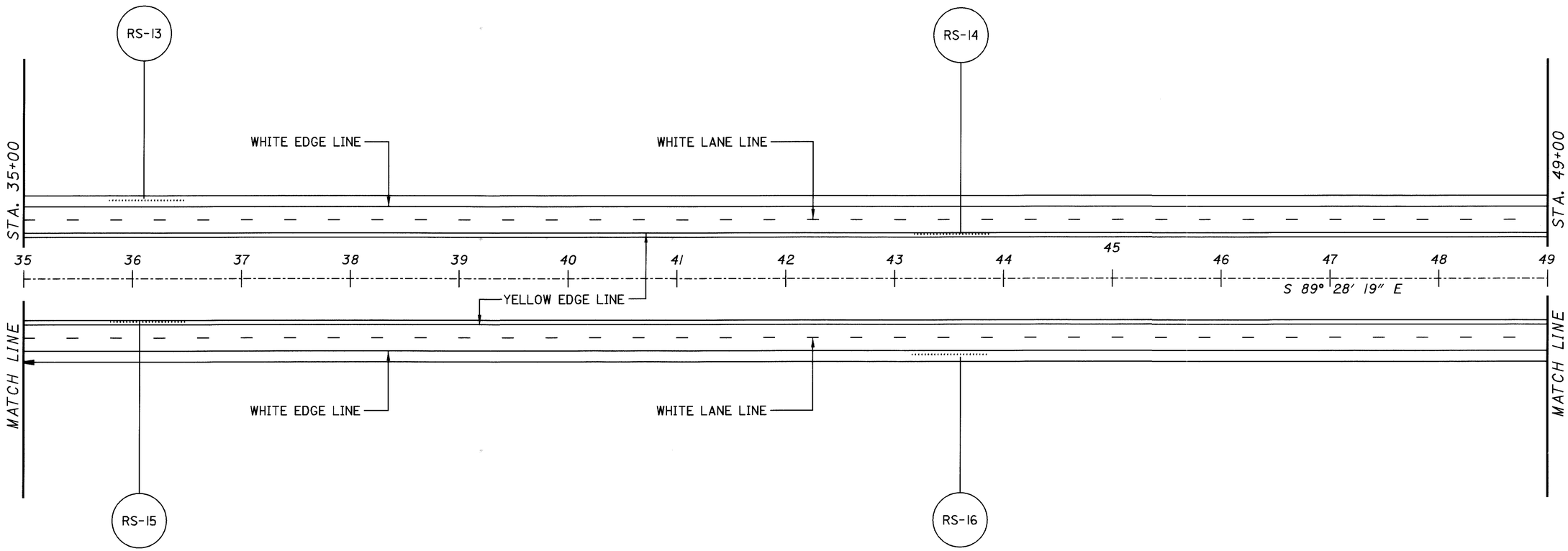
CALCULATED | CHECKED

PAVEMENT MARKINGS - I.R.-70
STA. 21+00.00 TO STA. 35+00.00

MOT-70-0.00

63
112

FOR RUMBLE STRIP QUANTITIES SEE SHEET 28.
FOR PAVEMENT MARKING QUANTITIES SEE SHEET 57.
FOR RAISED PAVEMENT MARKER QUANTITIES SEE SHEET 58.



HORIZONTAL SCALE IN FEET
0

CALCULATED | CHECKED

PAVEMENT MARKINGS - I.R.-70
STA. 35+00.00 TO STA. 49+00.00

MOT-70-0.00

FOR RUMBLE STRIP QUANTITIES SEE SHEET 28.
FOR PAVEMENT MARKING QUANTITIES SEE SHEET 57.
FOR RAISED PAVEMENT MARKER QUANTITIES SEE SHEET 58.

RS-17

RS-18

STA. 49+00

STA. 63+00

STA. 56+22.95 ℄ SURVEY I.R.-70
STA. 20+00.00 ℄ SURVEY NUMBER NINE RD.

WHITE EDGE LINE

WHITE LANE LINE

49 50 51 52 53 54 55 56 57 58 59 60 61 62 63

YELLOW EDGE LINE

STRUCTURE MOT-70-0106

EX. 3" GAS LINE IN 12" CASING
EX. 20" HIGH PRESSURE OIL LINE

NUMBER NINE RD.
N 3° 33' 42" W

25 24 23 22 21 20 19 18 17 16 15

NUMBER NINE RD.

MIDVALLEY PIPELINE COMPANY

MATCH LINE

MATCH LINE

RS-19

RS-20

HORIZONTAL SCALE IN FEET
0

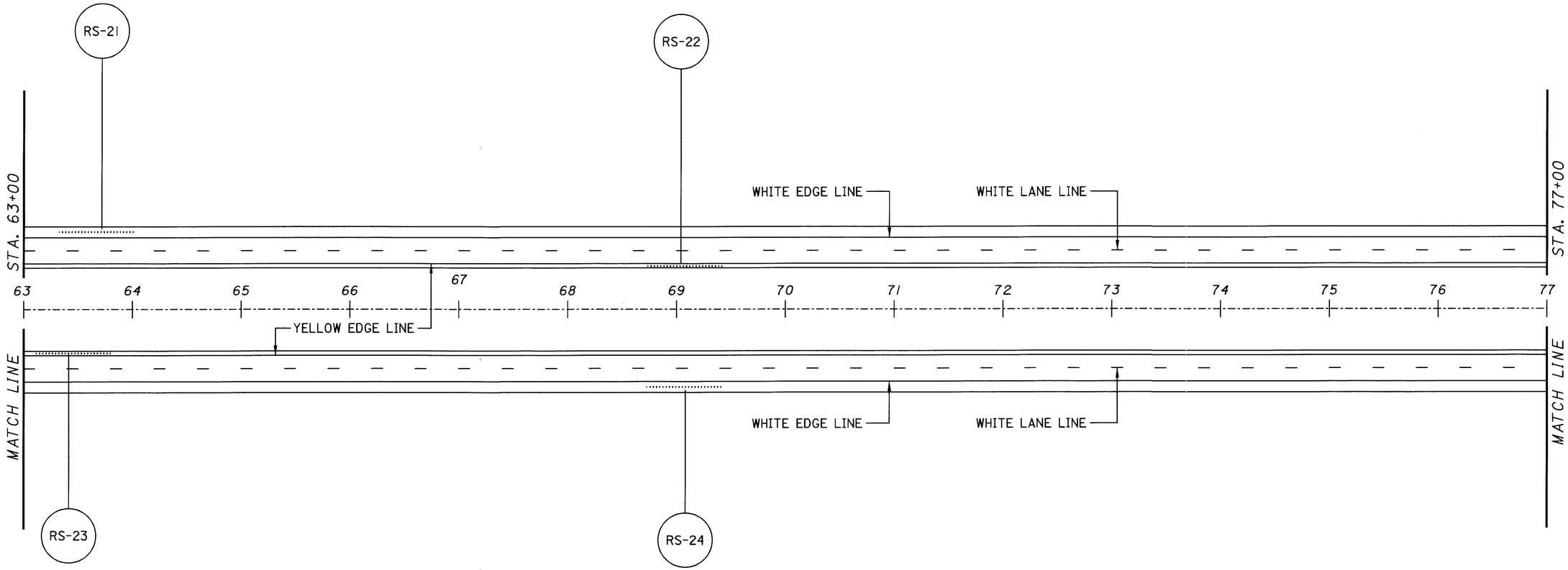
CALCULATED

CHECKED

PAVEMENT MARKINGS - I.R.-70
STA. 49+00.00 TO STA. 63+00.00

MOT-70-0.00

FOR RUMBLE STRIP QUANTITIES SEE SHEET 28.
FOR PAVEMENT MARKING QUANTITIES SEE SHEET 57.
FOR RAISED PAVEMENT MARKER QUANTITIES SEE SHEET 58.

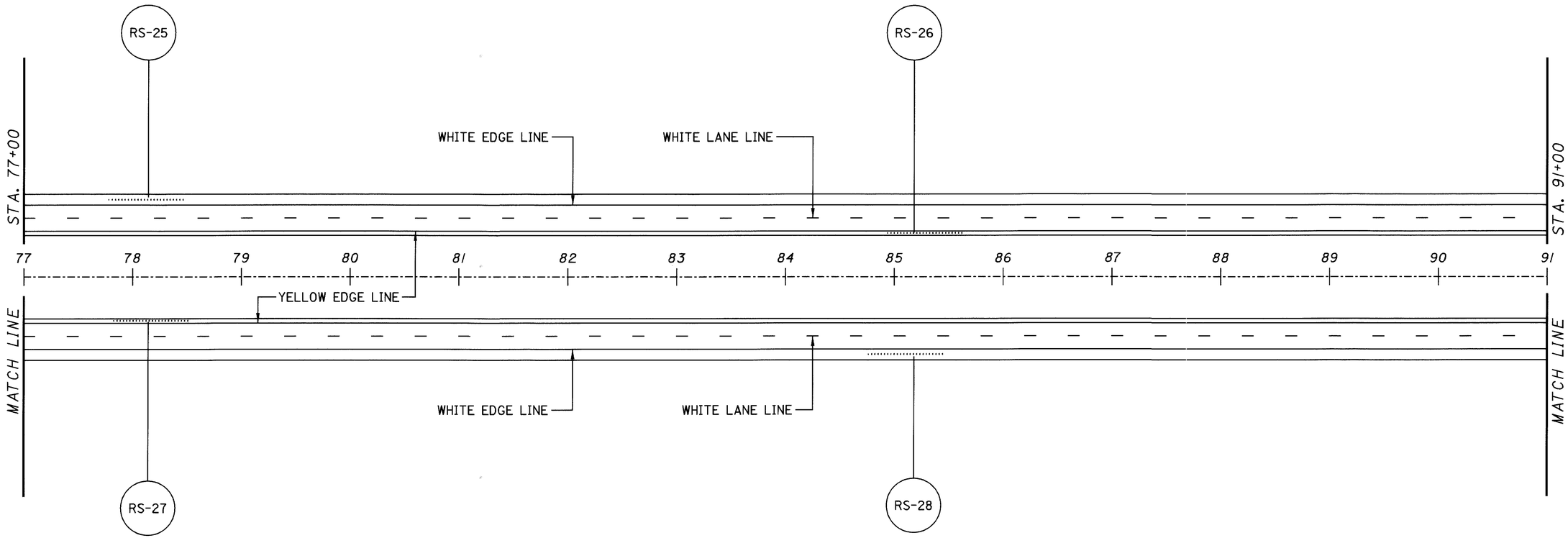


HORIZONTAL SCALE IN FEET
0
CALCULATED
CHECKED

PAVEMENT MARKINGS - I.R.-70
STA. 63+00.00 TO STA. 77+00.00

MOT-70-0.00

FOR RUMBLE STRIP QUANTITIES SEE SHEET 28.
FOR PAVEMENT MARKING QUANTITIES SEE SHEET 57.
FOR RAISED PAVEMENT MARKER QUANTITIES SEE SHEET 58.



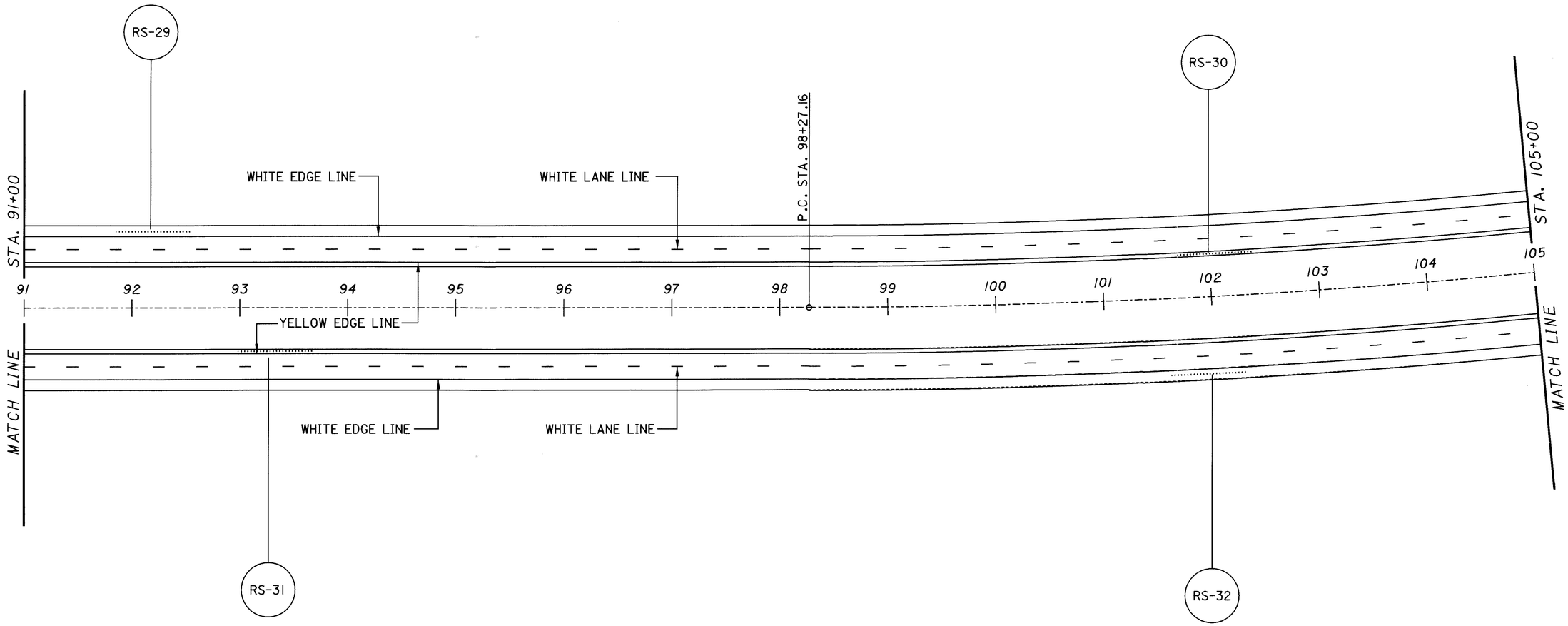
HORIZONTAL SCALE IN FEET
0

CALCULATED | CHECKED

PAVEMENT MARKINGS - I.R.-70
STA. 77+00.00 TO STA. 91+00.00

MOT-70-0.00

FOR RUMBLE STRIP QUANTITIES SEE SHEET 28.
FOR PAVEMENT MARKING QUANTITIES SEE SHEET 57.
FOR RAISED PAVEMENT MARKER QUANTITIES SEE SHEET 58.



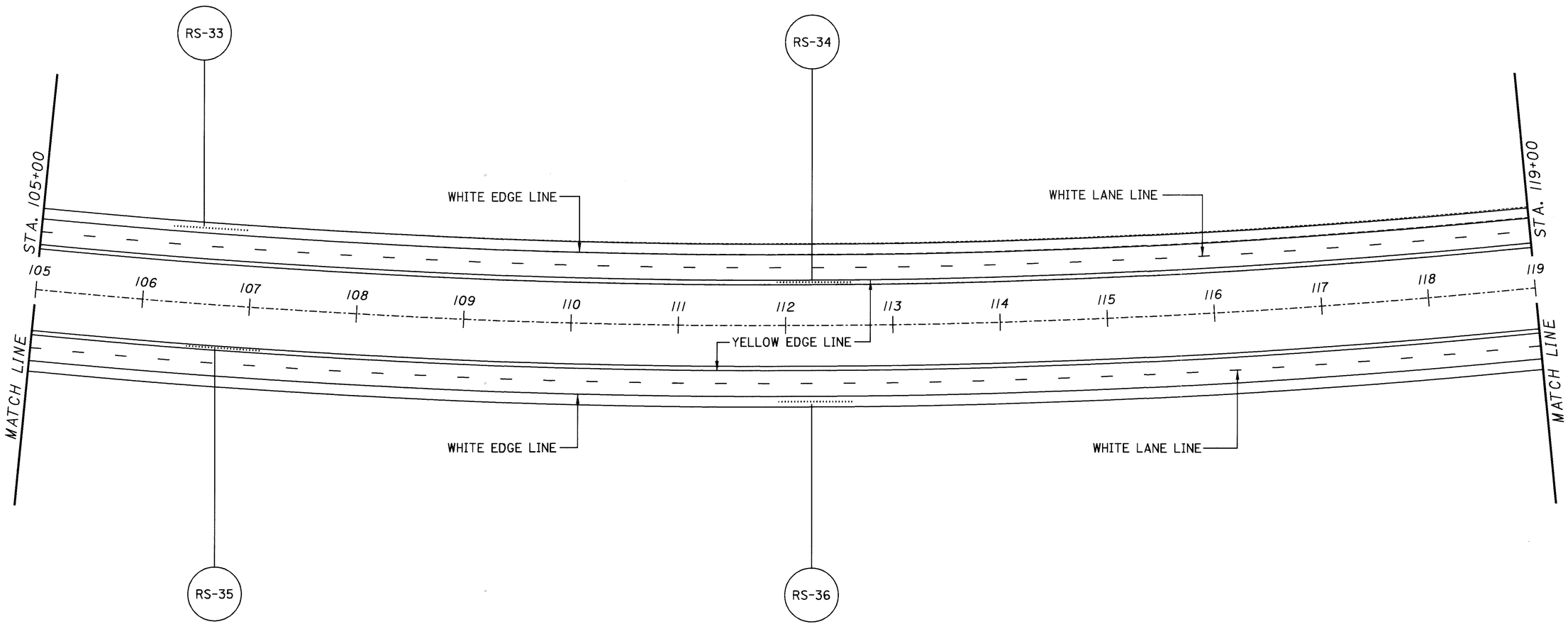
HORIZONTAL SCALE IN FEET
0

CALCULATED | CHECKED

PAVEMENT MARKINGS - I.R.-70
STA. 91+00.00 TO STA. 105+00.00

MOT-70-0.00

FOR RUMBLE STRIP QUANTITIES SEE SHEET 28.
FOR PAVEMENT MARKING QUANTITIES SEE SHEET 57.
FOR RAISED PAVEMENT MARKER QUANTITIES SEE SHEET 58.



HORIZONTAL SCALE IN FEET
0

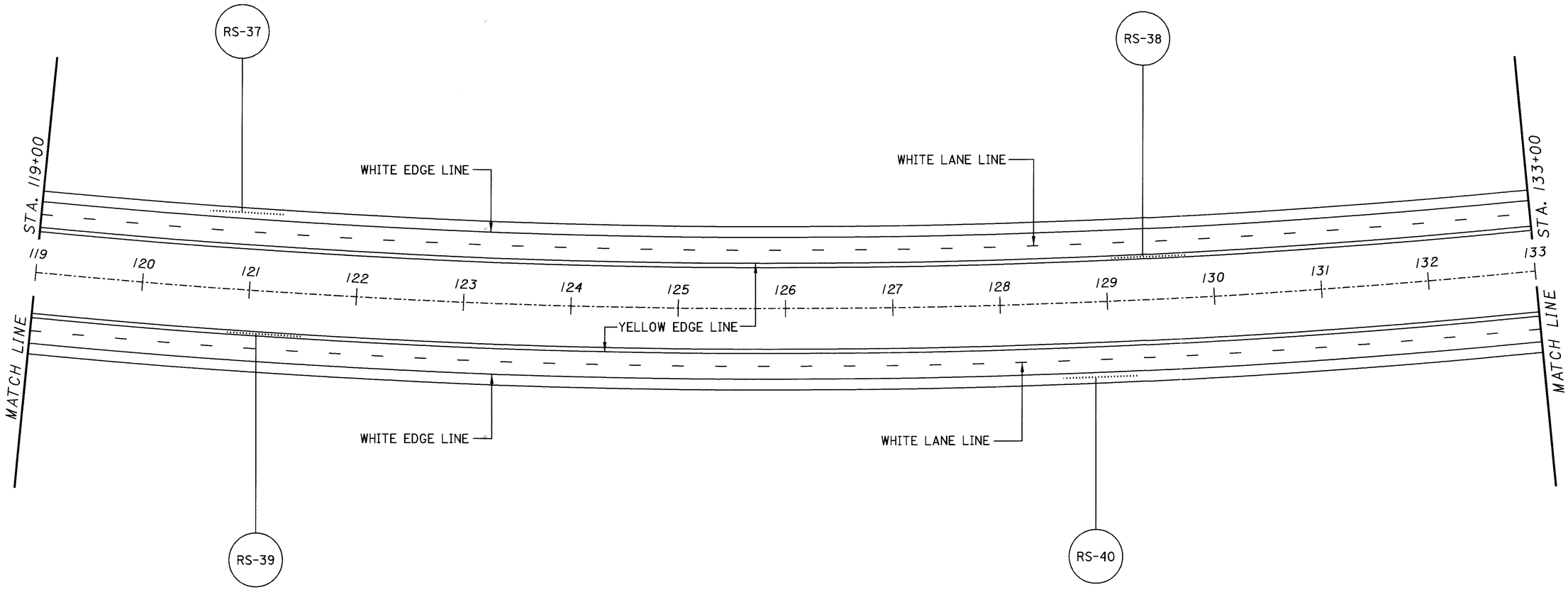
CALCULATED | CHECKED

PAVEMENT MARKINGS - I.R.-70
STA. 105+00.00 TO STA. 119+00.00

MOT-70-0.00

69
112

FOR RUMBLE STRIP QUANTITIES SEE SHEET 28.
FOR PAVEMENT MARKING QUANTITIES SEE SHEET 57.
FOR RAISED PAVEMENT MARKER QUANTITIES SEE SHEET 58.



N

0 HORIZONTAL SCALE IN FEET

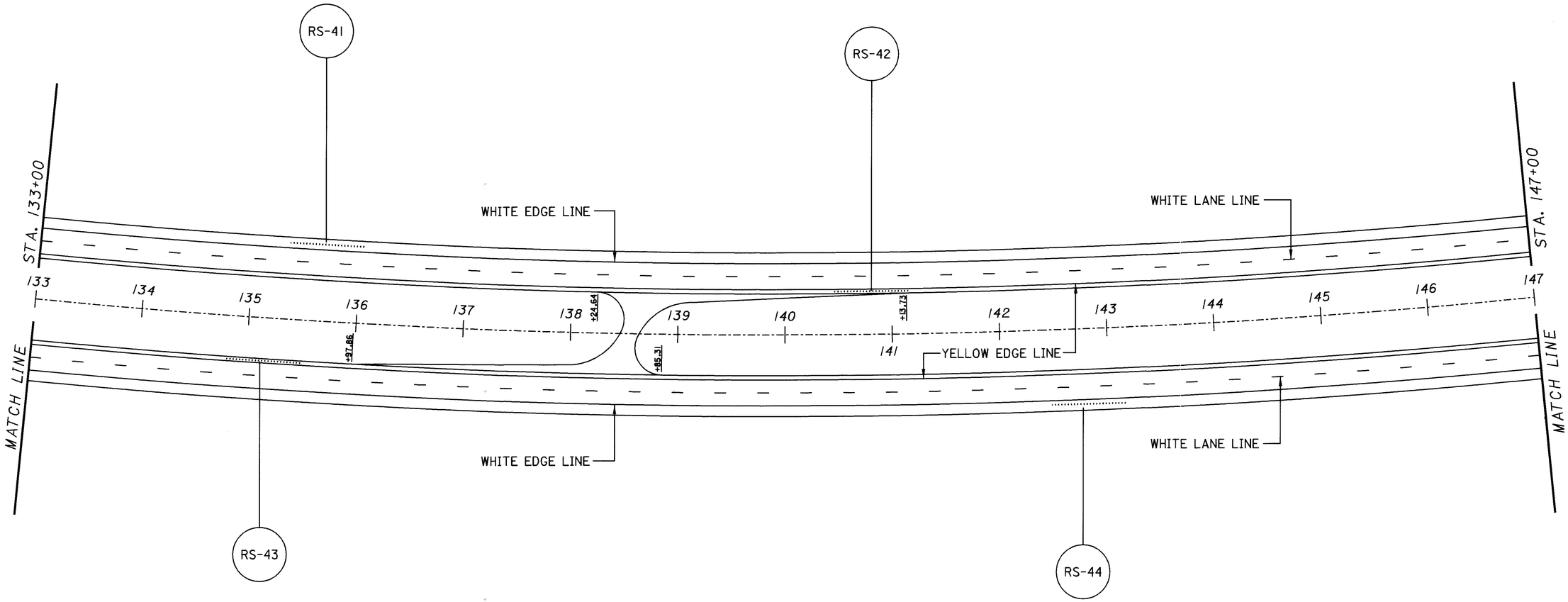
CALCULATED | CHECKED

PAVEMENT MARKINGS - I.R.-70
STA. 119+00.00 TO STA. 133+00.00

MOT-70-0.00

70
112

FOR RUMBLE STRIP QUANTITIES SEE SHEET 28.
FOR PAVEMENT MARKING QUANTITIES SEE SHEET 57.
FOR RAISED PAVEMENT MARKER QUANTITIES SEE SHEET 58.



HORIZONTAL SCALE IN FEET
0

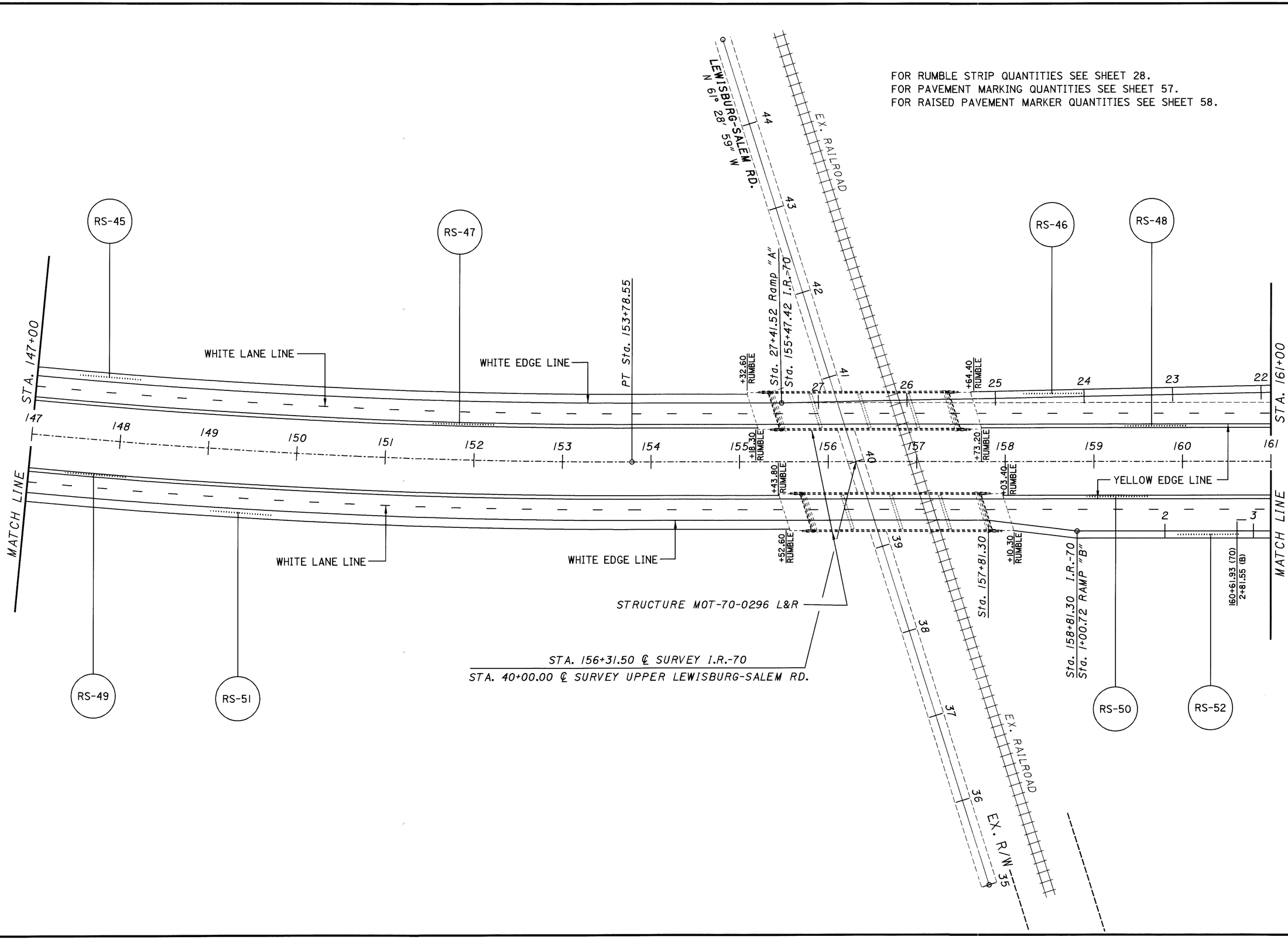
CALCULATED | CHECKED

PAVEMENT MARKINGS - I.R.-70
STA. 133+00.00 TO STA. 147+00.00

MOT-70-0.00

71
112

FOR RUMBLE STRIP QUANTITIES SEE SHEET 28.
FOR PAVEMENT MARKING QUANTITIES SEE SHEET 57.
FOR RAISED PAVEMENT MARKER QUANTITIES SEE SHEET 58.



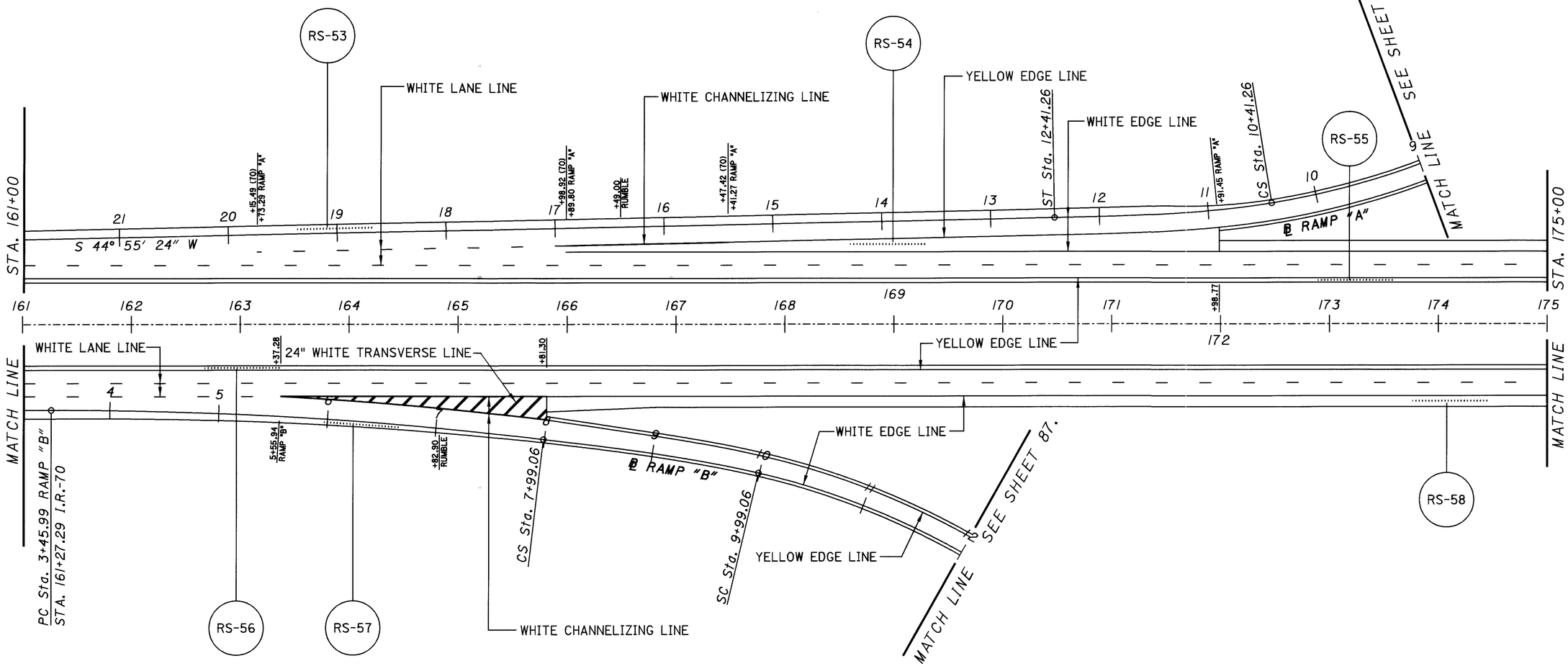
HORIZONTAL SCALE IN FEET

CALCULATED | CHECKED

PAVEMENT MARKINGS - I.R.-70
STA. 147+00.00 TO STA. 161+00.00

MOT-70-0.00

FOR RUMBLE STRIP QUANTITIES SEE SHEET 28.
FOR PAVEMENT MARKING QUANTITIES SEE SHEET 57.
FOR RAISED PAVEMENT MARKER QUANTITIES SEE SHEET 58.



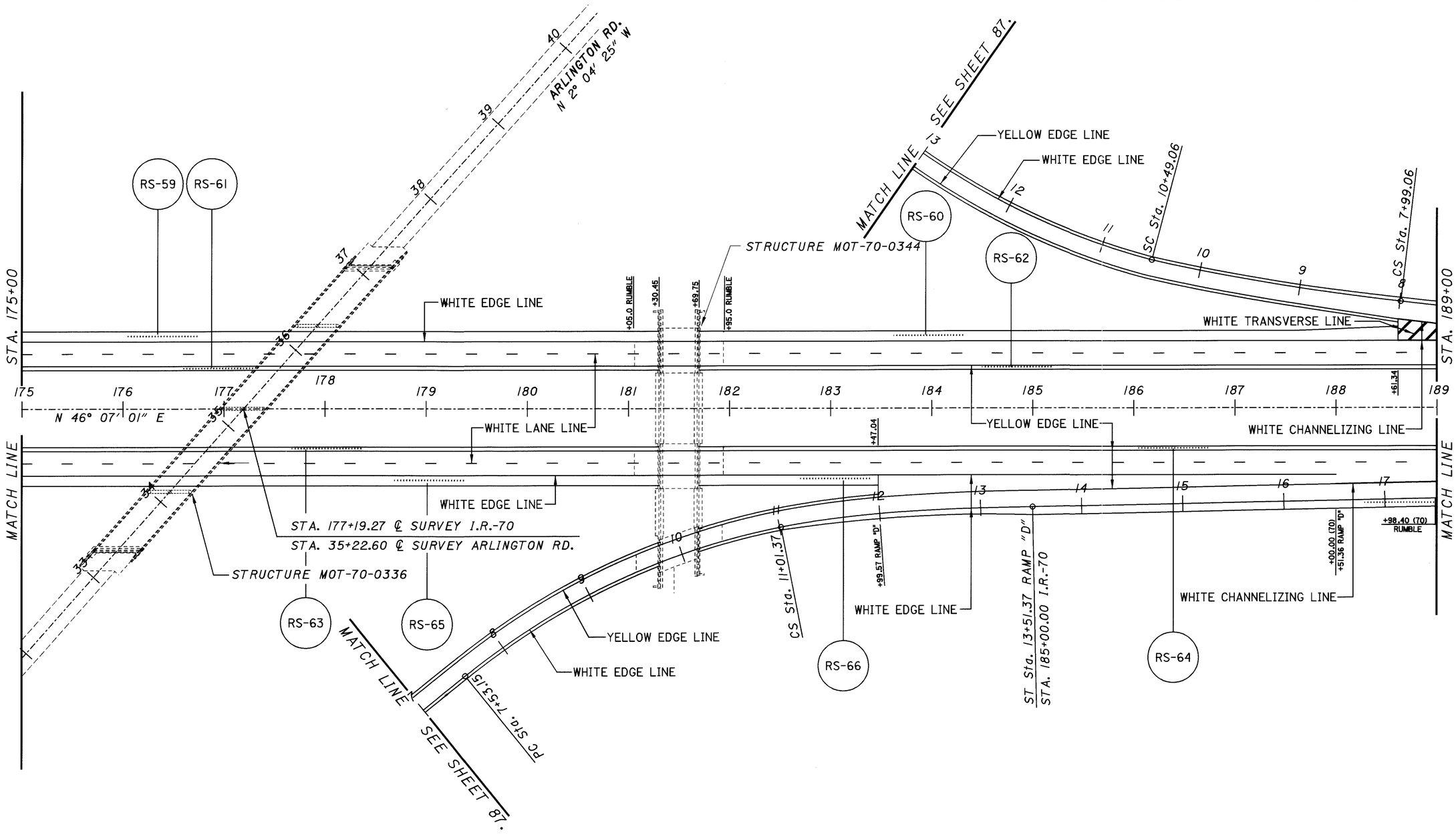
HORIZONTAL SCALE IN FEET

CALCULATED | CHECKED

PAVEMENT MARKINGS - I.R.-70
STA. 161+00.00 TO STA. 175+00.00

MOT-70-0.00

FOR RUMBLE STRIP QUANTITIES SEE SHEET 28.
FOR PAVEMENT MARKING QUANTITIES SEE SHEET 57.
FOR RAISED PAVEMENT MARKER QUANTITIES SEE SHEET 58.



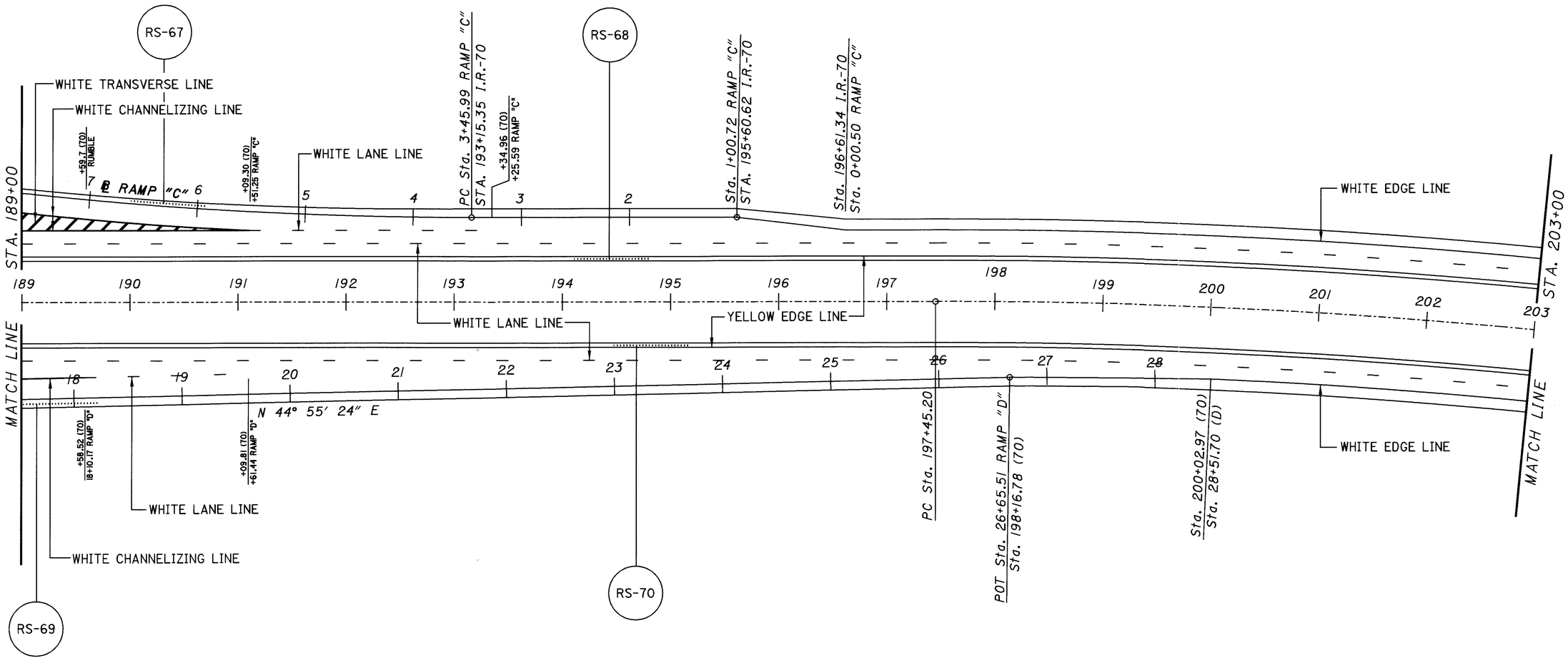
HORIZONTAL SCALE IN FEET
0

CALCULATED
CHECKED

PAVEMENT MARKINGS - I.R.-70
STA. 175+00.00 TO STA. 189+00.00

MOT-70-0.00

FOR RUMBLE STRIP QJANTITIES SEE SHEET 28.
FOR PAVEMENT MARKING QUANTITIES SEE SHEET 57.
FOR RAISED PAVEMENT MARKER QUANTITIES SEE SHEET 58.



HORIZONTAL SCALE IN FEET
0

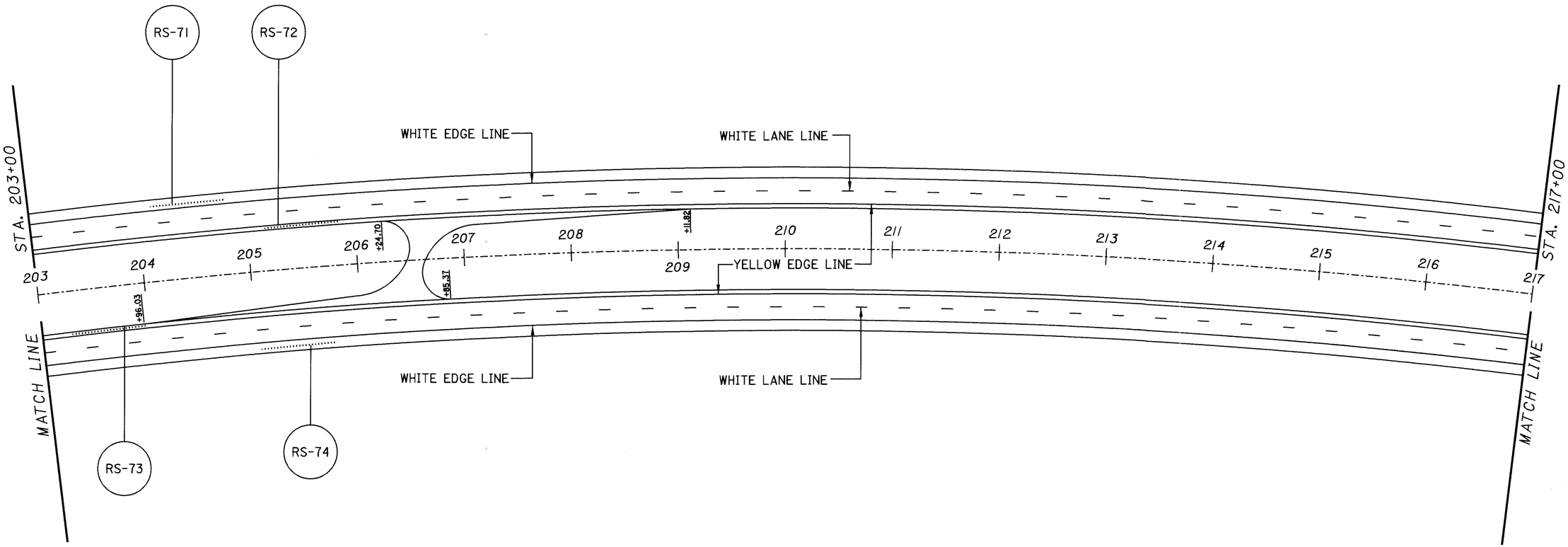
CALCULATED | CHECKED

PAVEMENT MARKINGS - I.R.-70
STA. 189+00.00 TO STA. 203+00.00

MOT-70-0.00

75
112

FOR RUMBLE STRIP QUANTITIES SEE SHEET 28.
FOR PAVEMENT MARKING QUANTITIES SEE SHEET 57.
FOR RAISED PAVEMENT MARKER QUANTITIES SEE SHEET 58.



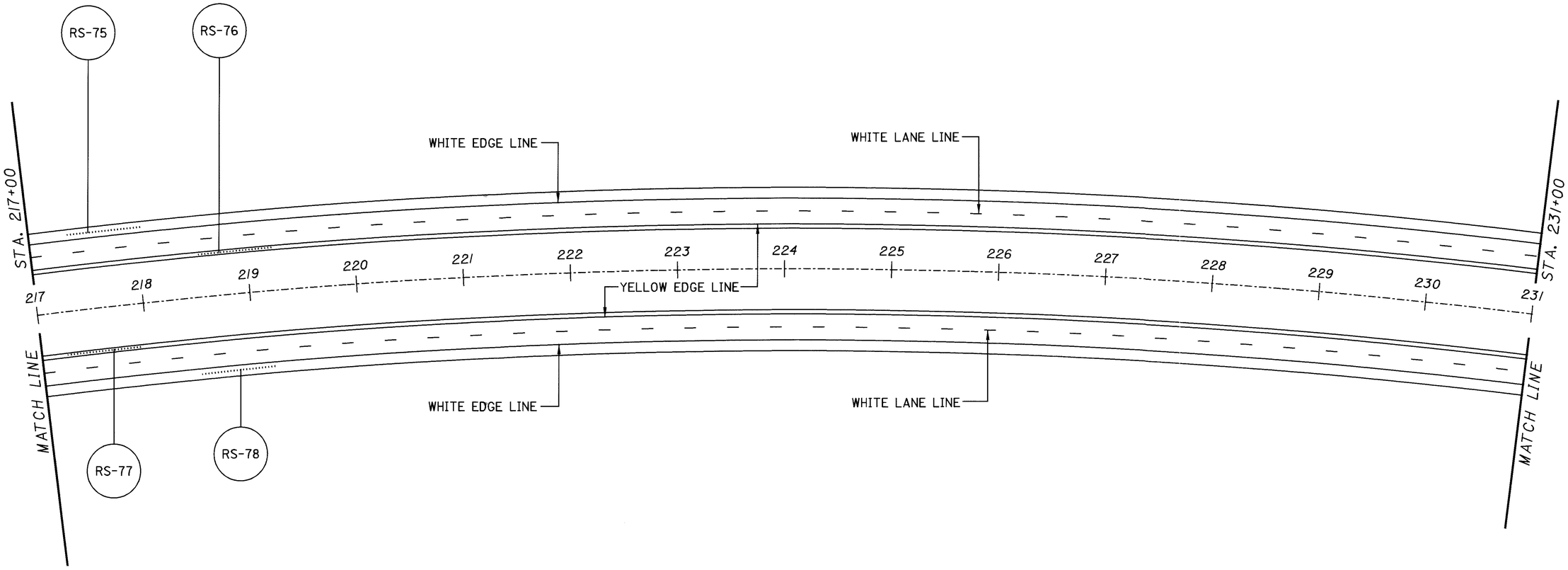
HORIZONTAL SCALE IN FEET
0

CALCULATED | CHECKED

PAVEMENT MARKINGS -I.R.-70
STA. 203+00.00 TO STA. 217+00.00

MOT-70-0.00

FOR RUMBLE STRIP QUANTITIES SEE SHEET 28.
FOR PAVEMENT MARKING QUANTITIES SEE SHEET 57.
FOR RAISED PAVEMENT MARKER QUANTITIES SEE SHEET 58.

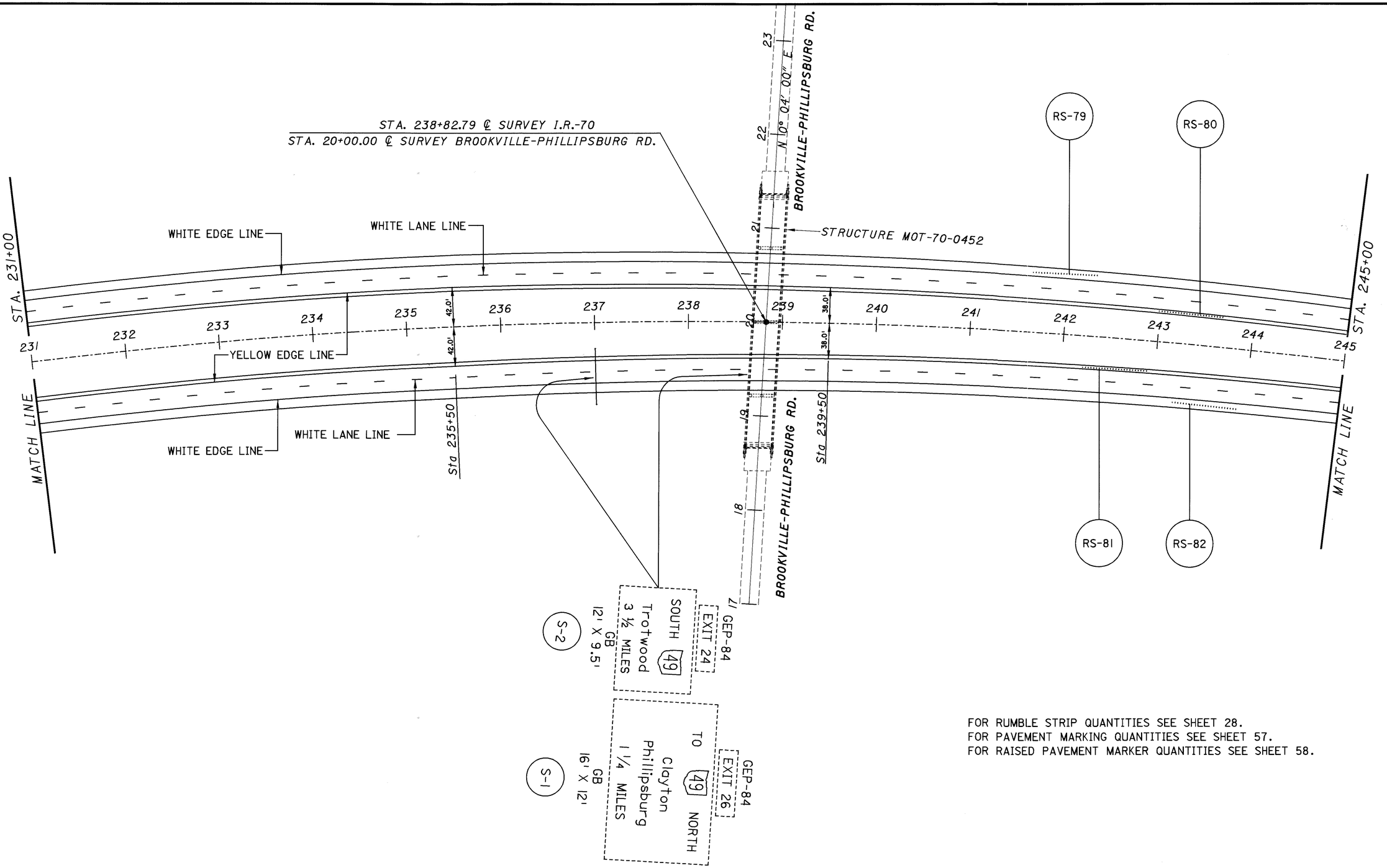


HORIZONTAL SCALE IN FEET
0

CALCULATED | CHECKED

PAVEMENT MARKINGS - I.R.-70
STA. 217+00.00 TO STA. 231+00.00

MOT-70-0.00



STA. 238+62.00 REMOVE FROM BRIDGE AND RE-ERECT EXISTING SIGN ON NEW SUPPORT AT STA. 237+00.00 (REMOVE EXISTING SUPPORTS ON STRUCTURE)
FOR SIGNING SUB-SUMMARY AND DETAIL SEE SHEET 59.

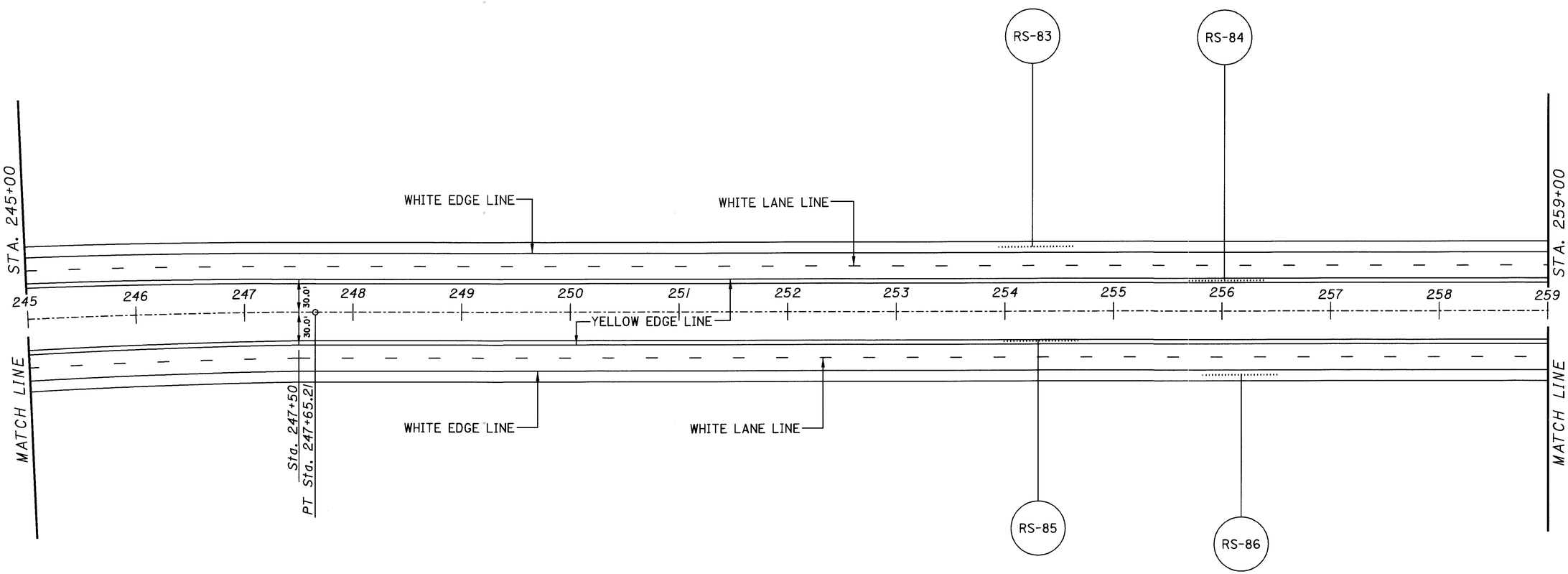
FOR RUMBLE STRIP QUANTITIES SEE SHEET 28.
FOR PAVEMENT MARKING QUANTITIES SEE SHEET 57.
FOR RAISED PAVEMENT MARKER QUANTITIES SEE SHEET 58.

HORIZONTAL SCALE IN FEET
0
CALCULATED
CHECKED

PAVEMENT MARKINGS - I.R.-70
STA. 231+00.00 TO STA. 245+00.00

MOT-70-0.00

FOR RUMBLE STRIP QUANTITIES SEE SHEET 28.
FOR PAVEMENT MARKING QUANTITIES SEE SHEET 57.
FOR RAISED PAVEMENT MARKER QUANTITIES SEE SHEET 58.



HORIZONTAL SCALE IN FEET
0

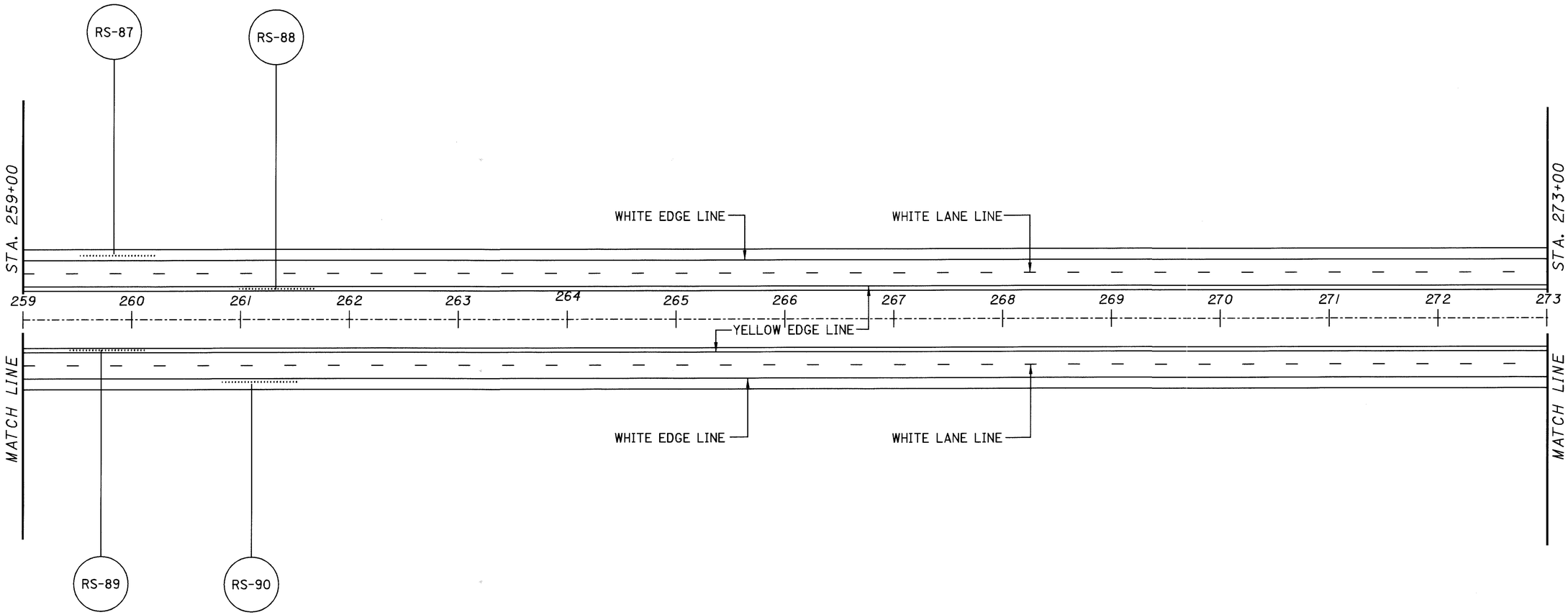
CALCULATED
CHECKED

PAVEMENT MARKINGS - I.R.-70
STA. 245+00.00 TO STA. 259+00.00

MOT-70-0.00

79
112

FOR RUMBLE STRIP QUANTITIES SEE SHEET 28.
FOR PAVEMENT MARKING QUANTITIES SEE SHEET 57.
FOR RAISED PAVEMENT MARKER QUANTITIES SEE SHEET 58.



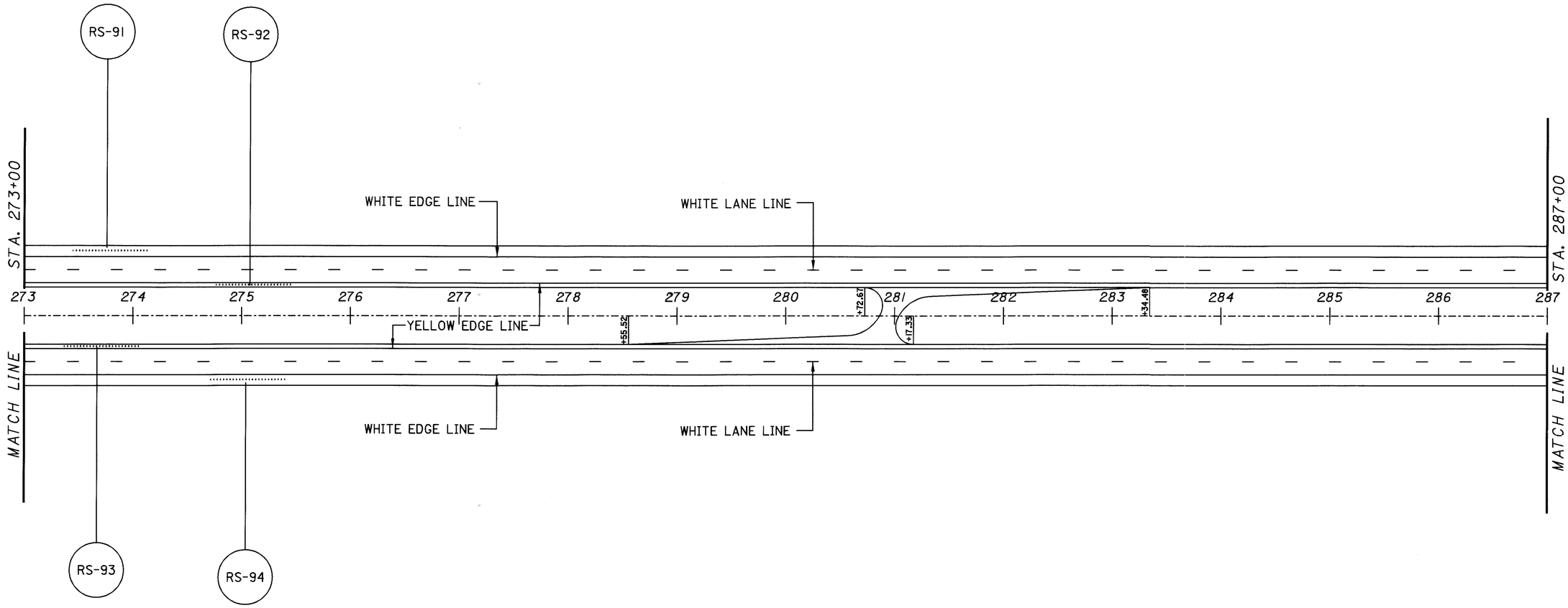
HORIZONTAL SCALE IN FEET
0

CALCULATED | CHECKED

PAVEMENT MARKINGS - I.R.-70
STA. 259+00.00 TO STA. 273+00.00

MOT-70-0.00

FOR RUMBLE STRIP QUANTITIES SEE SHEET 28.
FOR PAVEMENT MARKING QUANTITIES SEE SHEET 57.
FOR RAISED PAVEMENT MARKER QUANTITIES SEE SHEET 58.



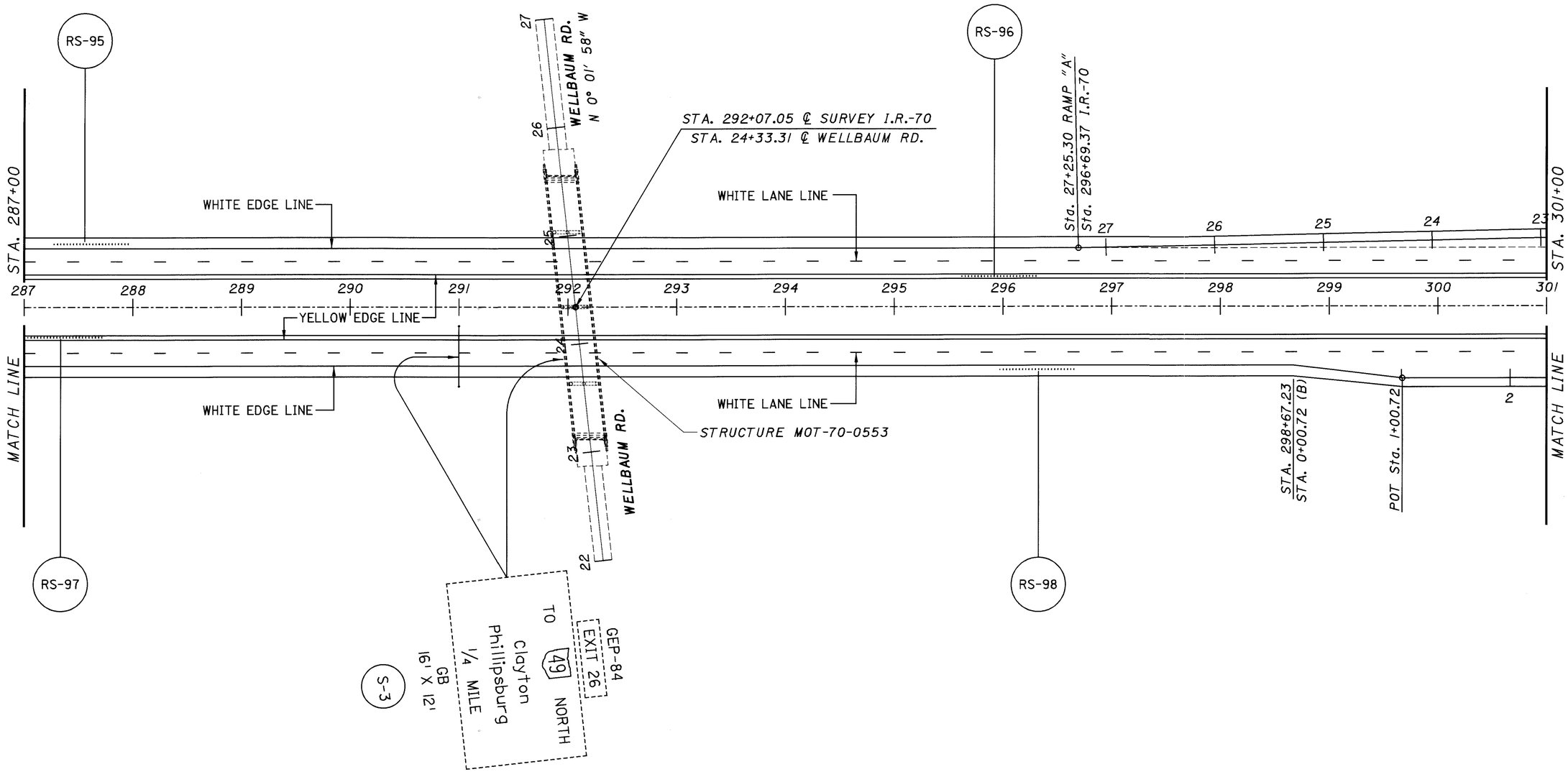
HORIZONTAL SCALE IN FEET
0

CALCULATED | CHECKED

PAVEMENT MARKINGS - I.R.-70
STA. 273+00.00 TO STA. 287+00.00

MOT-70-0.00

FOR RUMBLE STRIP QUANTITIES SEE SHEET 28.
FOR PAVEMENT MARKING QUANTITIES SEE SHEET 57.
FOR RAISED PAVEMENT MARKER QUANTITIES SEE SHEET 58.



STA. 291+96.00 REMOVE SIGN FROM BRIDGE AND RE-ERECT
EXISTING SIGN ON NEW SUPPORT AT STA. 291+00.00
(REMOVE EXISTING SUPPORTS ON STRUCTURE)
FOR SIGNING SUB-SUMMARY AND DETAIL SEE SHEET 60.

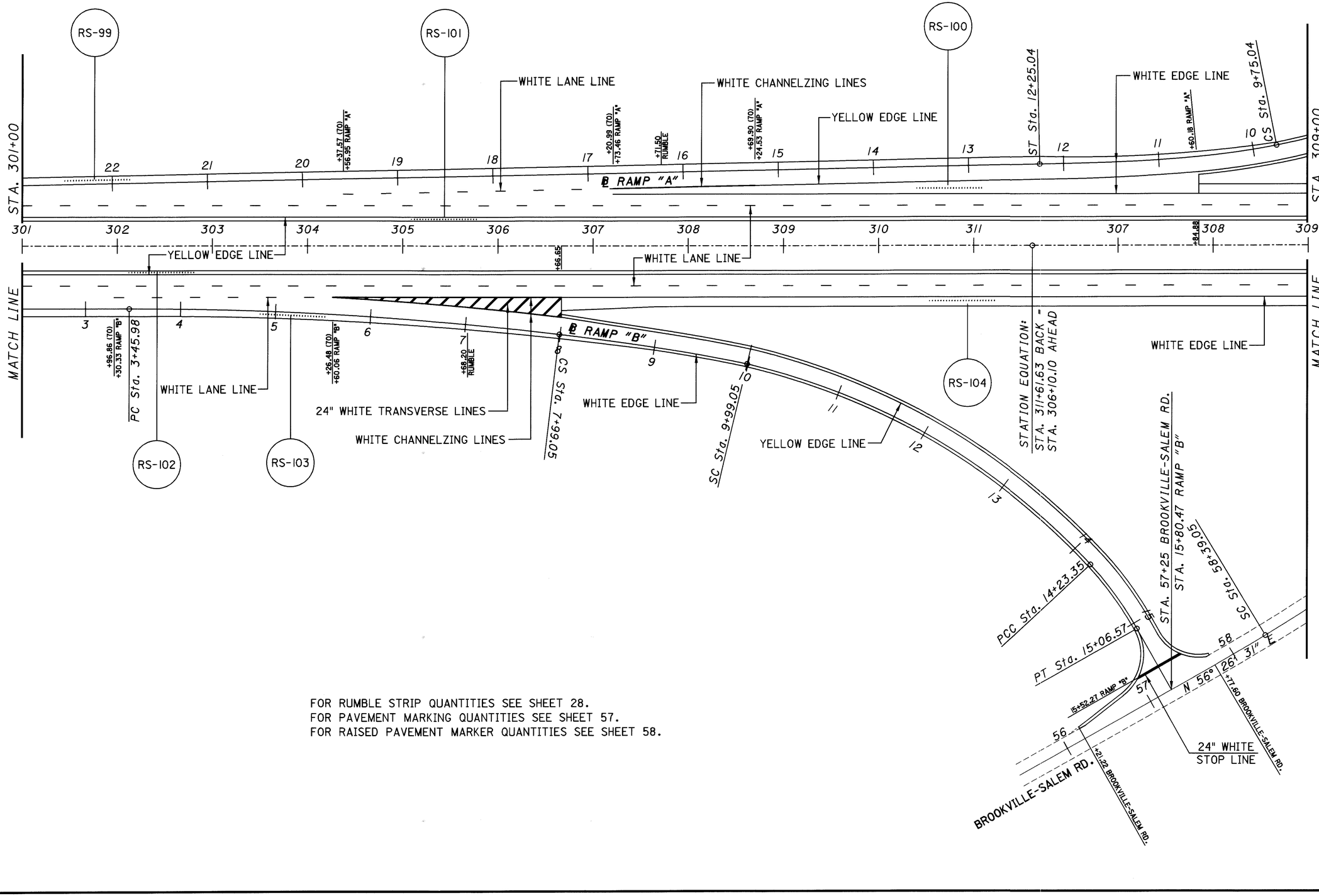
HORIZONTAL SCALE IN FEET
0

CALCULATED
CHECKED

PAVEMENT MARKINGS - I.R.-70
STA. 287+00.00 TO STA. 301+00.00

MOT-70-0.00

82
112



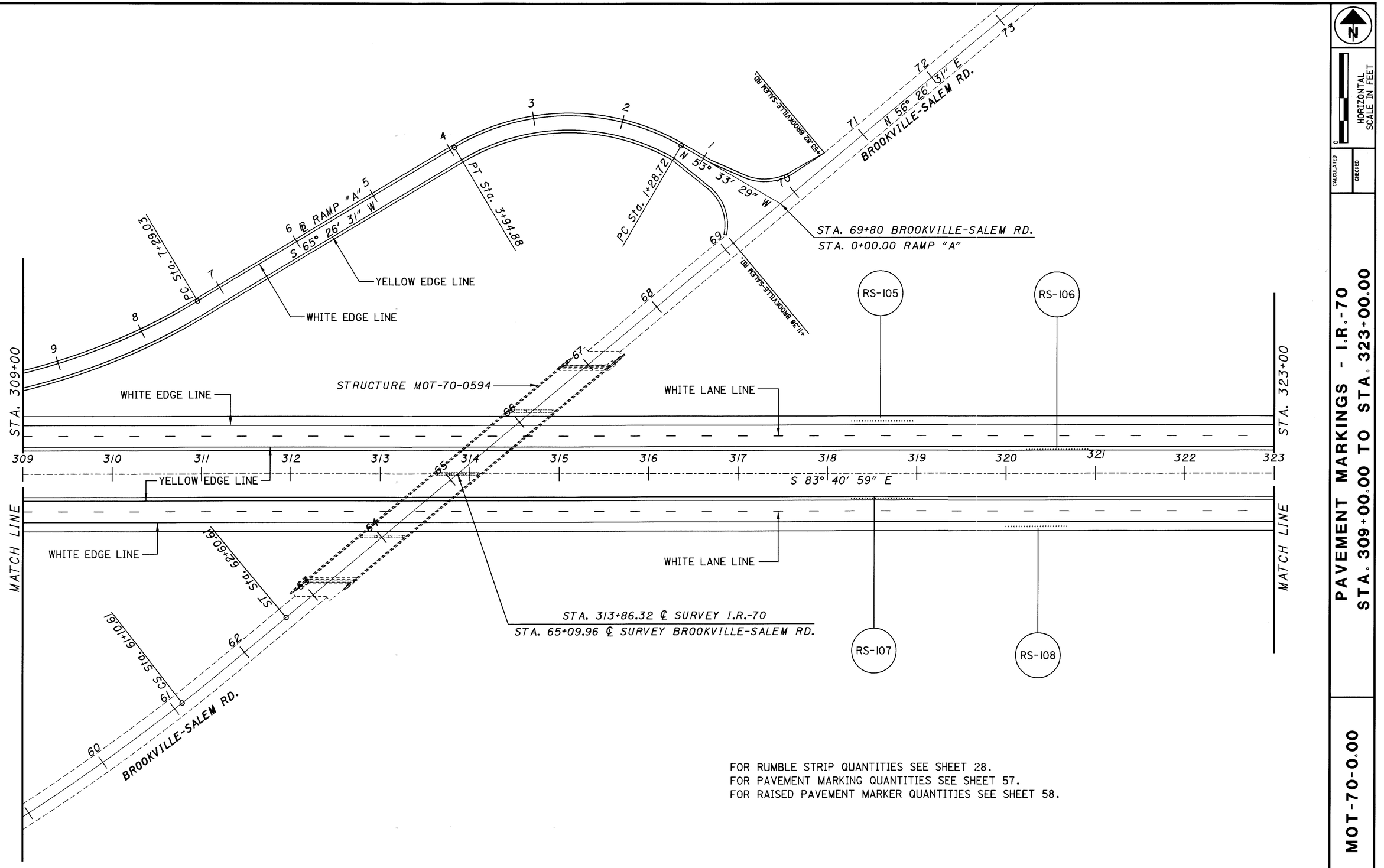
FOR RUMBLE STRIP QUANTITIES SEE SHEET 28.
FOR PAVEMENT MARKING QUANTITIES SEE SHEET 57.
FOR RAISED PAVEMENT MARKER QUANTITIES SEE SHEET 58.

HORIZONTAL SCALE IN FEET
0

CALCULATED | CHECKED

PAVEMENT MARKINGS - I.R.-70
STA. 301+00.00 TO STA. 309+00.00

MOT-70-0.00



FOR RUMBLE STRIP QUANTITIES SEE SHEET 28.
FOR PAVEMENT MARKING QUANTITIES SEE SHEET 57.
FOR RAISED PAVEMENT MARKER QUANTITIES SEE SHEET 58.

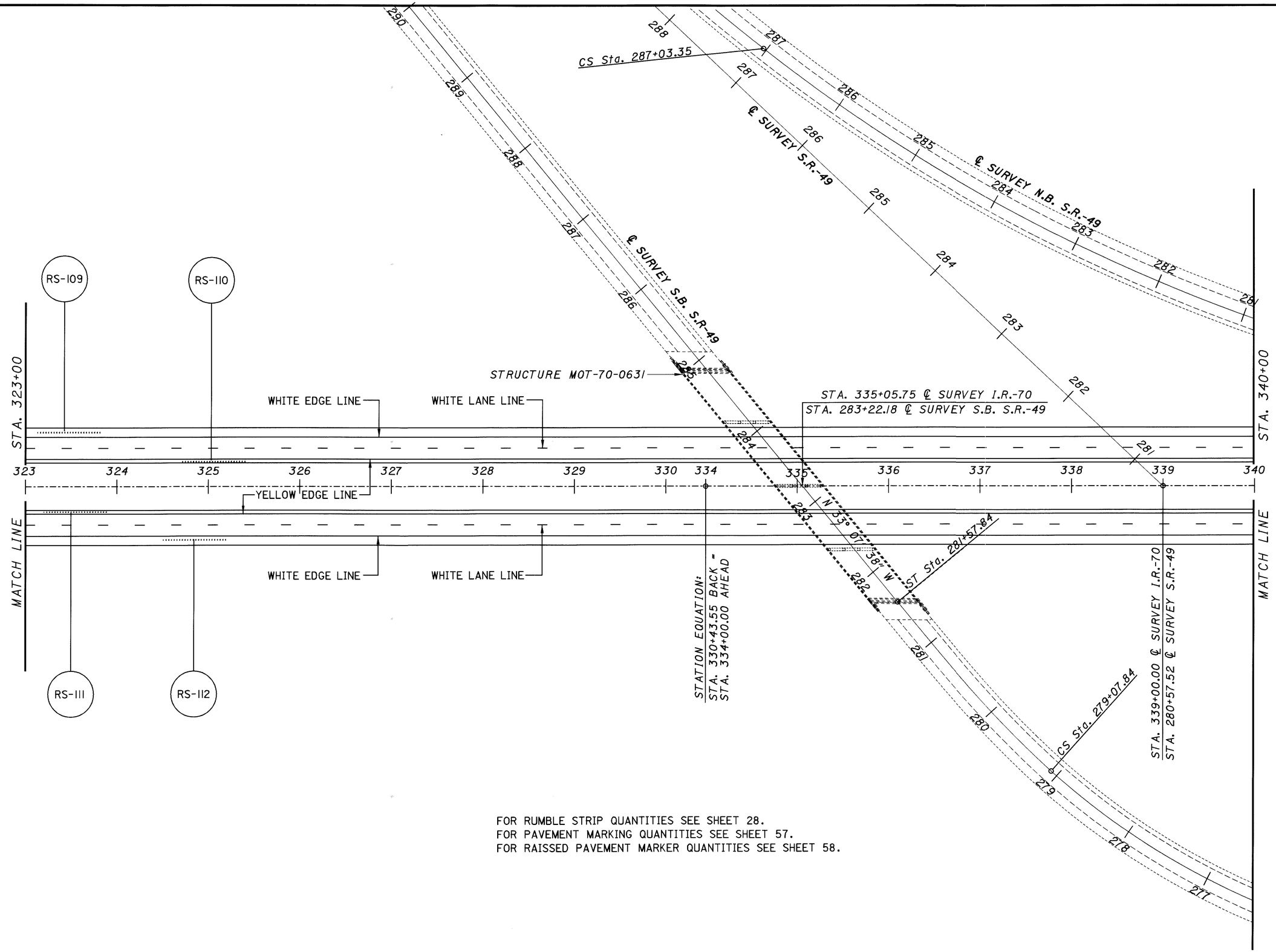
HORIZONTAL SCALE IN FEET

CALCULATED | CHECKED

PAVEMENT MARKINGS - I.R.-70
STA. 309+00.00 TO STA. 323+00.00

MOT-70-0.00

84
112



FOR RUMBLE STRIP QUANTITIES SEE SHEET 28.
FOR PAVEMENT MARKING QUANTITIES SEE SHEET 57.
FOR RAISSED PAVEMENT MARKER QUANTITIES SEE SHEET 58.

HORIZONTAL SCALE IN FEET
0

CALCULATED
CHECKED

PAVEMENT MARKINGS - I.R.-70
STA. 323+00.00 TO STA. 340+00.00

MOT-70-0.00

END WORK:
STA. 342+50

END PROJECT:
STA. 342+12.50
S.L.M. 6.48

IM-70-0(1)

FOR RUMBLE STRIP QUANTITIES SEE SHEET 28.
FOR PAVEMENT MARKING QUANTITIES SEE SHEET 57.
FOR RAISED PAVEMENT MARKER QUANTITIES SEE SHEET 58.

RS-113
RS-114
RS-115
RS-116

STA. 340+00

MATCH LINE

WHITE EDGE LINE
WHITE LANE LINE
YELLOW EDGE LINE

℄ SURVEY N.B. S.R.-49

SC Sta. 276+38.40

TS Sta. 272+88.40

DIAMOND MILL RD.
N 0° 19' 11" E

S 83° 40' 59" E

STA. 347+48.69 ℄ SURVEY I.R.-70
STA. 53+00.12 ℄ SURVEY DIAMOND MILL RD.

STRUCTURE MOT-70-0655

STRUCTURE MOT-70-664 L&R

STRUCTURE MOT-49-1213

STRUCTURE MOT-49-1224

N 0° 19' 11" E

TS Sta. 268+14.67

S 70° 20' 55" W

ST Sta. 265+98.35

CS Sta. 263+98.35

SC Sta. 270+64.67

℄ SURVEY S.B. S.R-49

340 341 342 343 344 345 346 347 348 349 350 351 352 353

48 49 50 51 52 53 54 55 56 57

260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280

HORIZONTAL SCALE IN FEET

CALCULATED

CHECKED

PAVEMENT MARKINGS - I.R.-70
STA. 340+00.00 TO STA. 354+00.00

MOT-70-0.00

FOR PAVEMENT MARKING QUANTITIES SEE SHEET 57.
FOR RAISED PAVEMENT MARKER QUANTITIES SEE SHEET 58.

MATCH LINE SEE SHEET 73.

MATCH LINE SEE SHEET 73.

℄ SURVEY I.R.-70

YELLOW EDGE LINE

P.T. STA. 13+55.49

WHITE EDGE LINE

℄ RAMP "B"

STA. 28+79.30 ARLINGTON RD.
STA. 16+26.00 RAMP "B"
STA. 0+00.00 RAMP "D"

+52.17

24" WHITE STOP LINE

16+00.00 RAMP "B"

+75.57 ARLINGTON RD.

+28.48 ARLINGTON RD.

℄ ARLINGTON RD.

+96.42 ARLINGTON RD.

+50.40 ARLINGTON RD.

P.C. STA. 1+28.78

WHITE EDGE LINE

P.I. Sta. 3+94.33

YELLOW EDGE LINE

℄ RAMP "D"

MATCH LINE SEE SHEET 74.

P.C. STA. 6+00.97

YELLOW EDGE LINE

℄ RAMP "A"

P.T. STA. 3+59.90

WHITE EDGE LINE

P.C. STA. 1+28.72

+82.51 ARLINGTON RD.

+35.88 ARLINGTON RD.

℄ ARLINGTON RD.

+03.52 ARLINGTON RD.

16+05.54 RAMP "C"

+59.68

+56.73 ARLINGTON RD.

STA. 41+53.00 ARLINGTON RD.
STA. 0+00.00 RAMP "A"
STA. 16+33.54 RAMP "C"

24" WHITE STOP LINE

YELLOW EDGE LINE

℄ RAMP "C"

P.T. STA. 13+85.17

WHITE EDGE LINE

MATCH LINE SEE SHEET 74.

HORIZONTAL SCALE IN FEET

CALCULATED

CHECKED

PAVEMENT MARKINGS I.R.-70 ARLINGTON RD. RAMPS

MOT-70-0.00

87
112

SHEET NUMBER											ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
91	92		94	96		104	107	110	112							
MOT-70-0106	MOT-70-0295L	MOT-70-0295R	MOT-70-0334	MOT-70-0344L	MOT-70-0344 RAMP "D"	MOT-70-0452	MOT-70-0553	MOT-70-0603	MOT-70-1305L							
				25	25						202	38500		LIN. FT.	BRIDGE RAILING REMOVED	
									644		202	98200		LIN. FT.	REMOVAL MISC.: VANDAL FENCE REMOVED, AS PER PLAN	
770	525	525	1070	180	287	732	686	1054	1012		SPECIAL	51267502		SQ. YD.	SEALING OF CONCRETE SURFACES (EPOXY)	
															(LIGHT NEUTRAL, FEDERAL COLOR NO. 17778) (SEE PROPOSAL NOTE)	
8						8	8	10			516	45305		EACH	REFURBISH BEARING DEVICES, AS PER PLAN (SEE BRIDGE NOTE)	
LUMP						LUMP	LUMP	LUMP			516	47001			JACKING AND TEMPORARY SUPPORT OF STRUCTURE, AS PER PLAN (SEE BRIDGE NOTE)	
						16	12	12			518	12901		EACH	SCUPPER LENGTHENING, AS PER PLAN	
			30					20			519	11100		SQ. FT.	PATCHING CONCRETE STRUCTURE (BACKWALLS)	
50						50	50	50			519	11100		SQ. FT.	PATCHING CONCRETE STRUCTURE (BERM PIER COLUMNS)	
	10										519	11100		SQ. FT.	PATCHING CONCRETE STRUCTURE (PARAPET)	
	20										SPECIAL	51912600		LIN. FT.	CONCRETE REPAIR BY EPOXY INJECTION	
620			764			650	707	679	834		SPECIAL	53000600		SQ. FT.	STRUCTURE MISC.: COMPOSITE FIBER WRAP SYSTEM, PIER COLUMNS	
				3	3						626	00200		EACH	BARRIER REFLECTOR, TYPE B	
11,490						11,350	9,985	28,652			815	00050		SQ. FT.	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU	
11,490						11,350	9,985	28,652			815	00056		SQ. FT.	FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU	
11,490						11,350	9,985	28,652			815	00060		SQ. FT.	FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COURSE, SYSTEM OZEU	
11,490						11,350	9,985	28,652			815	00066		SQ. FT.	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU	
270						266	238	369			815	00500		LIN. FT.	CAULKING	
40						40	40	60			815	00504		MAN HOUR	GRINDING FINS, TEARS, SLIVERS	
768						768	768	768			815	00508		LIN. FT.	GRINDING FLANGE EDGES	
				2.8	2.7						842	34450		CU. YD.	CLASS S CONCRETE MISC.: BRIDGE RAILING	

CALCULATED

CHECKED

BRIDGE GENERAL SUMMARY

MOT-70-0.00

88
112

It\de

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 102.05, 105.02 AND 513.02.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

EXISTING BRIDGE PLANS

EXISTING BRIDGE PLANS MAY BE INSPECTED AT THE BUREAU OF BRIDGES AND STRUCTURAL DESIGN IN COLUMBUS, OHIO OR IN THE DISTRICT 7 OFFICE IN SIDNEY, OHIO.

ITEM 516 - REFURBISHING BEARING DEVICES, AS PER PLAN

THIS ITEM SHALL INCLUDE ALL WORK NECESSARY TO PROPERLY ALIGN BRIDGE BEARINGS AS WELL AS THEIR CLEANING AND PAINTING AT BOTH ABUTMENTS ON BRIDGE MOT-70-0106 THIS WORK SHALL INCLUDE THE DISASSEMBLY OF THE BEARINGS, SANDBLASTING, REPLACEMENT OF ANY DAMAGED SHEET LEAD (711.19), INSTALLATION OF ANY NECESSARY STEEL SHIMS OF THE SAME SIZE AS THE BEARINGS TO PROVIDE A SNUG FIT, REALIGNMENT OF THE UPPER BEARING PLATE BY REMOVING EXISTING WELDS AND REWELDING SO THAT THE BEARINGS ARE VERTICALLY ALIGNED AT 60 DEGREES F, LUBRICATING SLIDING SURFACES, AND REASSEMBLY OF THE BEARINGS.

THE CONTRACTOR SHALL BE SURE THAT ALL BEARINGS ARE SHIMMED ADEQUATELY AND THAT NO BEAMS AND/OR BEARING DEVICES ARE FLOATING. AT THE OPTION OF THE CONTRACTOR AND AT NO ADDITIONAL COST TO THE STATE, NEW BEARINGS OF THE SAME TYPE AS THE EXISTING MAY BE INSTALLED IN LIEU OF REFURBISHING THE BEARINGS. ALL WORK SHALL BE PERFORMED TO THE SATISFACTION OF THE ENGINEER.

PAYMENT FOR ALL THE ABOVE DESCRIBED, LABOR AND MATERIALS WILL BE MADE AT THE CONTRACT PRICE BID FOR ITEM 516, REFURBISH BEARINGS DEVICES, AS PER PLAN.

THE FOLLOWING QUANTITY HAS BEEN ADDED TO THE ESTIMATED QUANTITIES:

ITEM 516	REFURBISH BEARING DEVICES, AS PER PLAN	8 EACH

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

THIS ITEM SHALL CONSIST OF FURNISHING ALL NECESSARY LABOR, MATERIALS, AND EQUIPMENT TO RAISE OR REPOSITION THE EXISTING STRUCTURES FOR THE PURPOSES DEFINED IN THE PROJECT PLANS.

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 IN THE PROJECT PLANS. THREE (3) SETS OF JACKING PLANS, WHICH INCLUDE THE INFORMATION INCLUDED 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 PROFESSIONAL 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 WITH 3 WAY RETRACTOR VALVE, PRESSURE GAGES, FLOW CONTROL VALVES, ETC. IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. ALL JACKS FOR EACH ABUTMENT OR PIER SHALL BE CONNECTED TOGETHER. ALL JACKS AT EACH ABUTMENT OR PIER SHALL BE THE SAME SIZE.
5. ANALYSIS AND CALCULATIONS OF THE STRESSES INDUCED OR CREATED IN THE STRUCTURE AND ANY TEMPORARY OR PERMANENT SUPPORTS. DESIGN CALCULATIONS FOR ANY TEMPORARY OF PERMANENT SUPPORTS.
6. PHYSICAL DIMENSIONS, MATERIALS,AND FABRICATION DETAILS OF ANY TEMPORARY OR PERMANENT SUPPORT. HORIZONTAL AND VERTICAL MOVEMENT RESTRAINT SHALL BE PROVIDED.
7. A STEP BY STEP PROCEDURE DETAILING ALL STEPS IN THE JACKING PLAN
8. METHOD OF ATTACHMENT OF STRUCTURAL MEMBERS. WELDING TO TENSION ARES WILL NOT BE PERMITTED.

THE ENTIRE SYSTEM INCLUDING JACKS SHALL HAVE 20% MORE CAPACITY THAN REQUIRED BASED ON CLACULATED LOADS.

FOR LIFTS GREATER THAN 1", JACKS SHALL HAVE LOCKING NUTS TO POSITIVELY LOCK AND SUPPORT THE STRUCTURE DURING THE LIFT.

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.

SINGLE ACTING RAMS WITH NO OVER-TRAVEL PROTECTION SHALL NOT BE USED.

SPARE EQUIPMENT SHALL BE AVAILABLE ON SITE FOR THE REQUIRED STRUCTURE RAISING TO PROCEED IN THE EVENT OF A BREAKDOWN. A LIST OF SPARE EQUIPMENT SHALL BE PROVIDED TO THE ENGINEER.

AT A MINIMUM, A JACKING OPERATION SHALL LIFT ALL BEAMS AT ANY ONE ABUTMENT OR PIER SIMULTANEOUSLY. THE ONLY EXCEPTION IS WHEN THE FOLLOWING ARE MET: THE WORK INVOLVES REPLACING OR REHABILITATING INDIVIDUAL BEARINGS, NO PERMANENT SHIMMING IS REQUIRED, AND THE HEIGHT OF THE LIFT SHALL NOT EXCEED ONE QUATER OF AN INCH (1/4").

MAXIMUM DIFFERENTIAL JACKING HEIGHT BETWEEN ANY ADJACENT ABUTMENTS OR PIERS SHALL BE ONE INCH (1") OR LESS

IF DURING THE JACKING OPERATIONS, CRACKING OF THE CONCRETE SUPERSTRUCTURE, SEPERATION 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 SHALL BE INSTALLED. THE CONTRACTOR SHALL THEN ANALYZE THE DAMAGE SUBMIT A METHOD OF CORRECTION TO THE ENGINEER FOR APPROVAL. ANY BEAMS THAT SEPERATE FRON THE DECK SHALL BE EPOXY INJECTED FOR THE DISTANCE OF SEPRATION 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 MEANS OR REPAIR, SUBJECT TO THE APPROVAL OF THE ENGINEER, WILL BE REQUIRED AT THE CONTRACTOR'S EXPENSE.

THE JACKING OPERATION SHALL BE DIRECTED BY A PROFESSIONAL ENGINEER EMPLOYED BY THE CONTRACTOR. FAILURE TO HAVE A PROFESSIONAL ENGINEER PRESENT SHALL BE CAUSE FOR CEASING JACKING OPERATIONS.

PAYMENT SHALL BE MADE AT THE LUMP SUM PRICE BID FOR ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN AND SHALL INCLUDE ALL NECESSARY TOOLS, LABOR, EQUIPMENT AND MATERIALS NECESSARY TO COMPLETE THIS ITEM OF WORK.

ITEM SPECIAL, SEALING OF CONCRETE SURFACES (EPOXY) (SEE PROPOSAL NOTE)

THE FOLLOWING EXPOSED CONCRETE SURFACES SHALL BE SEALED USING AN EPOXY SEALER:

1. PIERS FROM GROUND LINE TO BOTTOM OF PIER CAP (CENTER PIER ONLY)
2. PIER CAPS BOTTOM AND BOTH SIDES OF PIER CAP (ALL PIER CAPS)
3. ABUTMENTS AND BACKWALLS FROM TOP TO BACKWALL TO BRIDGE SEAT, THE BRIDGE SEAT, AND FROM BRIDGE SEAT TO THE GROUND LINE.
4. FROM 9" ON BRIDGE DECK, FRONT, FACE, TOP, AND BACKSIDES OF BRIDGE RAILING INCLUDING THE FASCIA FROM THE BRIDGE DECK SURFACE TO A 6" UNDERDECK RETURN ON THE BRIDGE DECK.
5. BRIDGE TRANSITION PARAPETS FROM EDGE OF PAVEMENT FRONT, FACE, TOP, AND BACKSIDES OF PARAPET TO THE GROUND LINE.

PRIOR TO APPLICATION OF THE SURFACE SEALER, THE ENGINEER SHALL INSURE THAT ALL FOREIGN MATERIAL, INCLUDING GRAFFITI HAS BEEN REMOVED BY THE SURFACE PREPARATION PROCESS.

FIELD PAINTING OF EXISTING STEEL, SYSTEM OZEU

THE SURFACE AREA PAY QUANTITY IS BASED ON THE SURFACE AREA OF THE MAIN MEMBERS INCREASED BY A PERCENT TO ACCOUNT FOR THE AREA OF CROSSFRAMES, BEARINGS, AND OTHER STRUCTURAL STEEL INCIDENTALS TO BE CLEANED AND PAINTED - SEE CHART ON SHEET 91.

THE COLOR OF THE FINISH COAT FOR MOT-70-0106 SHALL BE DARK NEUTRAL (FEDERAL COLOR NO. 10324).

SEE THE PROPOSAL NOTE FOR THE SURFACE PREPARATION REQUIREMENTS, APPLICATION RATES, MATERIAL REQUIREMENTS AND APPLICATION PROCEDURES.

ALL PAINTING OPERATIONS WHICH INVOLVE THE CLOSING OF ONE LANE OF TRAFFIC ON I.R.-70 SHALL BE PERFORMED BETWEEN THE HOURS OF 10:00 PM AND 6:00 AM. BETWEEN THE HOURS OF 6:00 AM AND 10:00 PM ALL LANES OF TRAFFIC SHALL BE OPEN.

DESIGN AGENCY
OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 7

DESIGNED J.B.S. CHECKED
DRAWN J.B.S. REVISED
REVIEWED DATE
STRUCTURE FILE NUMBER

BRIDGE GENERAL NOTES
BRIDGE NO. MOT-70-0106
NUMBER NINE RD. OVER I.R.-70

MOT-70-0.00

1 / 3

89
112

c68 0664.dgn

ITEM SPECIAL - STRUCTURE, MISC.: COMPOSITE FIBER WRAP SYSTEM, PIER COLUMNS

DESCRIPTION

1.01 THIS WORK SHALL CONSIST OF PROVIDING A FIBER WRAP CASING SYSTEM USING HIGH STRENGTH, HYRID FIBER/EPOXY COMPOSITES FIELD APPLIED TO THE SURFACE OF THE BERM PIER COLUMNS. THE COLUMN IS TO BE CLEANED AND PREPARED AS TO THE MANUFACTURER'S RECOMMENDATIONS.

DESIGN

2.01 THE SUPPLIER SHALL DETAIL THE NUMBER OF LAYERS OF FABRIC NEEDED AND SHALL SUBMIT DETAILED CALCULATIONS. NOTES, THERE MAY BE A DIFFERENT NUMBER OF WRAPS NEEDED AT DIFFERENT LOCATIONS ON THE SAME COLUMN.

MATERIALS

3.01 ALL MATERIALS AND INSTALLATION DIRECTIONS SHALL BE SUPPLIED BY THE MANUFACTURER. THE SUGGESTED MANUFACTURE IS R.J. WATSON, INC. P.O. BOX 85, EAST AMHERST, NEW YORK 14051 (PH. 716-741-2166) OR APPROVED EQUAL.

ALL SUPPLIERS AND APPLICATORS MUST HAVE FIELD EXPERIENCE WITH A MINIMUM OF 10 INSTALLATIONS AND FURNISH CERTIFIED TEST REPORTS INCLUDING 3,000 HOUR DURABILITY TESTS AT 140° F FOR WATER, SALT WATER, ALKALINE SOIL, OZONE, EFFERVESCENCE AND OTHER FACTORS (REFER TO PARAGRAPH 3.04). FIBER COMPOSITE SUPPLIER SHALL ALSO HAVE CONDUCTED LABORATORY RESEARCH ON DELAMINATED COLUMNS DEMOSTRATING THAT THE REPAIRED COLUMN EXCEEDS THE ORGINAL DESIGN IN AXIAL STRENGTH AND DUCILITY.

3.02 THE FABRIC FOR THE COMPOSITE CASING SYSTEM SHALL BE CONTINUOUS FILAMENT WOVEN FABRIC. PRIMARY FIBERS FOR THE FABRIC SHALL BE ELECTRICAL (E) GLASS FIBERS (SEH-51) OR CARBON (SCH-41).

3.03 THE EPOXY SHALL BE SUPPLIED BY THE MANUFACTURER TO MEET THE COMPOSITE STRENGTH GIVEN IN 3.04. POLYESTER RESIN SHALL NOT BE ALLOWED AS A SUBSTITUTE FOR EPOXY RESIN.

3.04 THE COMPOSTIE OF THE FIBER WRAPPED COLUMN CASING SYSTEM SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

PROPERTY	REQUIREMENT SEH-51/TYFO®	REQUIREMENT SCH-41/TYFO®	ASTM TEST METHOD
ULTIMATE TENSILE STRENGTH, PSI IN PRIMARY FIBER DIRECTIONS	60,000 PSI	110,000 PSI	D 3039
PERCENT TENSILE STRENGTH RETAINED 7 DAYS EXPOSURE AT: 100% HUMIDITY 3000 HOURS EXPOSURE TO OZONE 3000 HOURS EXPOSURE TO ALKALI 3000 HOURS EXPOSURE TO SALT WATER 3000 HOURS EXPOSURE AT 140°	 100% 90% 90% 90% 90%	 100% 90% 90% 90% 90%	
ELONGATION PERCENT, MIN. PERCENT, MAX.	 1.7% 4.0%	 0.8% 1.5%	
TENSILE MODULUS, PSI MIN. BASED ON CROSS SECTIONAL AREA OF PRIMARY FIBERS	3×10^6	8×10^6	
ULTIMATE TENSILE STRENGTH AT 90°F TO PRIMARY FIBERS, PSI, MIN.	5,500 PSI	225 PSI	
VISUAL DEFECTS	ACCEPTANCE LEVEL III	ACCEPTANCE LEVEL III	D 2563
COEFFICENT OF THERMAL EXPANSION IN PRIMARY DIF.	4.3 X 10° PPM/DEG. F (+15%)	1.0 X 10° PPM/DEG. F (+15%)	E 1142

COLUMN PREPARATION

4.01.1 THE SURFACE SHALL BE FREE FROM FINS, SHARP EDGES, AND PROTRUSIONS THAT WILL CAUSE VOIDS BEHIND THE CASING OR THAT, IN THE OPINION OF THE ENGINEER, WILL DAMAGE FIBER.

4.01.2 THE SURFACES TO RECEIVE THE COMPOSITE WRAP SHALL BE SMOOTH AND FREE OF VOIDS OR UNDULATIONS THAT WOULD PREVENT FULL CONTACT BETWEEN THE CONCRETE AND THE WRAP.

4.01.3 THE CONTACT SURFACES SHALL BE COMPLETELY DRY AT THE TIME OF APPLICATION OF THE COMPOSITE. NEWLY REPAIRED OR PATCHED SURFACES THAT HAVE SET, BUT NOT CURED A MINIMUM OF 7 DAYS, SHALL BE COATED WITH WATER-BASED EPOXY PAINT OR OTHER APPROVED SEALER.

COMPOSITE APPLICATION

4.02.1 THE AMBIENT TEMPERATURE AND THE TEMPERATURE OF THE EPOXY RESIN COMPONENTS SHALL BE BETWEEN 55°F AND 95°F AT THE TIME OF MIXING. THE COMPOSITE SHALL BE APPLIED WHEN THE RELATIVE HUMIDITY IS LESS THAN 85% AND THE SURFACE TEMPERATURE IS MORE THAN 5%F ABOVE THE DEW POINT. APPLICATIONS SHALL BEGIN WITHIN ONE HOUR AFTER THE BATCH HAS BEEN MIXED.

4.02.2 THE COMPONENTS OF THE EPOXY RESIN SHALL BE MIXED WITH A MECHANICAL MIXER FOR A MINIMUM OF 5 MINUTES AND APPLIED UNIFORMLY TO THE FIBER AT A RATE THAT SHALL INSURE COMPLETE SATURATION OF THE FABRIC.

4.02.3 A PRIMER OF EPOXY SHALL BE APPLIED TO THE SURFACE OF THE CONCRETE.

4.02.4 THE FABRIC/EPOXY COMPOSITE SHALL BE APPLIED TO THE PREPARED SURFACE BY WRAPPING USING METHODS THAT PRODUCE A UNIFORM FORCE THAT IS DISTRIBUTED ACROSS THE ENTIRE WIDTH OF THE FABRIC. THE PRIMARY FIBERS OF THE FABRIC SHALL NOT DEVIATE FROM A HORIZONTAL LINE MORE THAN $\frac{1}{2}$INCH PER FOOT, AND THE TRANSVERSE FIBERS SHALL BE PERPENDICULAR TO THE PRIMARY. ENTRAPPED AIR SHALL BE RELEASED OR ROLLED OVER BEFORE THE EPOXY SETS.

4.02.5 SUCCESSIVE LAYERS OF COMPOSITE MATERIALS SHALL BE PLACED BEFORE POLYMERIZATION OF THE PREVIOUS LAYER OF EPOXY IS TOO COMPLETE TO ACHIEVE COMPLETE BOND BETWEEN LAYERS. IF POLYMERIZATION DOES OCCUR BETWEEN LAYERS THE SURFACE MUST BE ROUGHENED USING A LIGHT ABRASIVE THAT WILL NOT DAMAGE THE FIBER.

4.02.6 A FINAL LAYER OF EPOXY SHALL BE APPLED TO THE FINAL LAYER, WITH CARE TAKEN TO INSURE COATING OF ALL EDGES AND SEAMS.

COATING SYSTEM APPLICATION

4.03.1 A FINAL COATING IS REQUIRED TO PROTECT THE FIBERS FROM THE ELEMENTS, SPECIFICALLY UV RADIATION AND TO GIVE THE FINAL AESTHETIC EFFECT.

4.03.2 (AFTER 96 HOURS FROM FINAL APPLICATION OF EPOXY) IF THE FINAL EPOXY COAT IS COMPLETELY POLYMERIZED THE EXTERIOR SURFACE OF THE COMPOSITE WRAP SHALL BE CLEANED AND ROUGHENED BY A LIGHT ABRASIVE. CARE SHOULD BE TAKEN DURING THE ROUGHENING PROCESS SO THAT THE FIBERS ARE NOT DAMAGED. ALL CLEANED AND ROUGHENED SURFACES SHALL BE DRY BEFORE PAINTING.

4.03.2 THE AREA TO BE PAINTED SHALL BE A TOTAL DRY FILM THICKNESS OF NOT LESS THAN 4 MILS.

MEASUREMENT AND PAYMENT

5.01 THIS ITEM WILL BE PAYED FOR BY SQUARE FOOTAGE COVERED AND SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK

DESIGN AGENCY
OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 7

DESIGNED J.B.S. | DRAWN J.B.S. | CHECKED | REVISED | REVIEWED | DATE | STRUCTURE FILE NUMBER

BRIDGE GENERAL NOTES
BRIDGE NO. MOT-70-0106
NUMBER NINE RD. OVER I.R.-70

MOT-70-0.00

2 / 3

90
112

c68 0664.dgn

ESTIMATED QUANTITIES (MOT-70-0106)

ITEM		QUANTITY	UNIT	DESCRIPTION
SPECIAL		770	SQ. YD.	SEALING OF CONCRETE SURFACES (EPOXY)
				(LIGHT NEUTRAL, FEDERAL COLOR NO. 17778) (SEE PROPOSAL NOTE)
516		8	EACH	REFURBISH BEARING DEVICES, AS PER PLAN (SEE NOTE)
516		LUMP	LUMP	JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN (SEE NOTE)
519		50	SQ. FT.	PATCHING CONCRETE STRUCTURE (BERM PIER COLUMNS)
SPECIAL		620	SQ. FT.	STRUCTURE MISC.: COMPOSITE FIBER WRAP SYSTEM, PIER COLUMNS
815		11,490	SQ. FT.	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU
815		11,490	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU
815		11,490	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COURSE, SYSTEM OZEU
815		11,490	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU
815		270	LIN. FT.	CAULKING
815		40	MAN HOUR	GRINDING FINS, TEARS, SLIVERS
815		768	LIN. FT.	GRINDING FLANGE EDGES

* ESTIMATED QUANTITIES CARRIED TO BRIDGE SUMMARY ON SHEET 88.

ESTIMATED QUANTITIES FOR ITEM SPECIAL, SEALING OF CONCRETE SURFACES (EPOXY)

BRIDGE NO.	LOCATION	RAILINGS (INCLUDING PARAPET TRANSITIONS)	FORWARD ABUTMENT	REAR ABUTMENT	PIER NO. 1 (PIER CAP ONLY)	PIER NO. 2 (PIER COLUMNS & PIER CAP)	PIER NO. 3 (PIER CAP ONLY)	TOTAL CARRIED TO ESTIMATED QUANTITIES
		SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.
MOT-70-0106	NUMBER NINE RD. OVER I-70	594	31	31	29	56	29	770

ESTIMATED QUANTITIES FOR FIELD PAINTING OF EXISTING STEEL, SYSTEM OZEU

BRIDGE NO.	LOCATION	ITEM 815							
		PERCENT INCREASE FOR INCIDENTALS	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU	FIELD PAINTING OF EXISTING STEEL PRIME COAT, SYSTEM OZEU	FIELD PAINTING OF EXISTING STEEL INTERMEDIATE COAT, SYSTEM OZEU	FIELD PAINTING OF EXISTING STEEL FINISH COAT, SYSTEM OZEU	GRINDING FINS, TEARS, SLIVERS	GRINDING FLANGE EDGES	CAULKING
			SQ. FT.	SQ. FT.	SQ. FT.	SQ. FT.	MAN HOURS	LIN. FT.	LIN. FT.
MOT-70-0106	NUMBER NINE RD. OVER I-70	16%	11,490	11,490	11,490	11,490	40	768	270
TOTALS CARRIED TO ESTIMATED QUANTITIES			11,490	11,490	11,490	11,490	40	768	270

DESIGN AGENCY
OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 7

DESIGNED J.B.S. | DRAWN J.B.S. | CHECKED | REVIEWED | DATE | REVISED | STRUCTURE FILE NUMBER

ESTIMATED QUANTITIES
BRIDGE NO. MOT-70-0106
NUMBER NINE RD. OVER I.R.-70

MOT-70-0.00

3 / 3

91
112

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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 102.05, 105.02 AND 513.02.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

EXISTING BRIDGE PLANS

EXISTING BRIDGE PLANS MAY BE INSPECTED AT THE BUREAU OF BRIDGES AND STRUCTURAL DESIGN IN COLUMBUS, OHIO OR IN THE DISTRICT 7 OFFICE IN SIDNEY, OHIO.

ITEM SPECIAL, SEALING OF CONCRETE SURFACES (EPOXY) (SEE PROPOSAL NOTE)

THE FOLLOWING EXPOSED CONCRETE SURFACES SHALL BE SEALED USING AN EPOXY SEALER:

1. ABUTMENTS AND BACKWALLS FROM TOP TO BACKWALL TO BRIDGE SEAT, THE BRIDGE SEAT, AND FROM BRIDGE SEAT TO THE GROUND LINE.
2. FROM 9" ON BRIDGE DECK, FRONT, FACE, TOP, AND BACKSIDES OF BRIDGE RAILING INCLUDING THE FASCIA FROM THE BRIDGE DECK SURFACE TO A 6" UNDERDECK RETURN ON THE BRIDGE DECK.
3. BRIDGE TRANSITION PARAPETS FROM EDGE OF PAVEMENT FRONT, FACE, TOP, AND BACKSIDES OF PARAPET TO THE GROUND LINE.

PRIOR TO APPLICATION OF THE SURFACE SEALER, THE ENGINEER SHALL INSURE THAT ALL FOREIGN MATERIAL, INCLUDING GRAFFITI HAS BEEN REMOVED BY THE SURFACE PREPARATION PROCESS.

ESTIMATED QUANTITIES (MOT-70-0295 L)

ITEM		QUANTITY	UNIT	DESCRIPTION
SPECIAL		525	SQ. YD.	SEALING OF CONCRETE SURFACES (EPOXY)
				(LIGHT NEUTRAL, FEDERAL COLOR NO. 17778) (SEE PROPOSAL NOTE)
519		10	SQ. FT.	PATCHING CONCRETE STRUCTURE (PARAPET ON MOT-70-0295L)
SPECIAL		20	LIN. FT.	CONCRETE REPAIR BY EPOXY INJECTION (PARAPET ON MOT-70-0295L)

* ESTIMATED QUANTITIES CARRIED TO BRIDGE SUMMARY ON SHEET 88.

ESTIMATED QUANTITIES (MOT-70-0295 R)

ITEM		QUANTITY	UNIT	DESCRIPTION
SPECIAL		525	SQ. YD.	SEALING OF CONCRETE SURFACES (EPOXY)
				(LIGHT NEUTRAL, FEDERAL COLOR NO. 17778) (SEE PROPOSAL NOTE)

* ESTIMATED QUANTITIES CARRIED TO BRIDGE SUMMARY ON SHEET 88.

ESTIMATED QUANTITIES FOR ITEM SPECIAL, SEALING OF CONCRETE SURFACES (EPOXY)

BRIDGE NO.	LOCATION	RAILINGS (INCLUDING PARAPET TRANSITIONS)	FORWARD ABUTMENT	REAR ABUTMENT			TOTAL PER STRUCTURE
		SQ. YD.	SQ. YD.	SQ. YD.			SQ. YD.
MOT-70-0295L	I-70 OVER C-22 R.R./LEW SALK RD.	449	38	38			525
MOT-70-0295R	I-70 OVER C-22 R.R./LEW SALK RD.	449	38	38			525
TOTAL CARRIED TO ESTIMATED QUANTITY TABLE							1050

DESIGN AGENCY
OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 7

DESIGNED J.B.S. | DRAWN J.B.S. | CHECKED | REVISED | REVIEWED | DATE | STRUCTURE FILE NUMBER

BRIDGE GENERAL NOTES
BRIDGE NO. MOT-70-0295 L&R
I.R.-70 OVER C-22 R.R. AND LEW SALK RD.

MOT-70-0.00

1 / 1

92
112

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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 102.05, 105.02 AND 513.02.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

EXISTING BRIDGE PLANS

EXISTING BRIDGE PLANS MAY BE INSPECTED AT THE BUREAU OF BRIDGES AND STRUCTURAL DESIGN IN COLUMBUS, OHIO OR IN THE DISTRICT 7 OFFICE IN SIDNEY, OHIO.

ITEM SPECIAL, SEALING OF CONCRETE SURFACES (EPOXY) (SEE PROPOSAL NOTE)

THE FOLLOWING EXPOSED CONCRETE SURFACES SHALL BE SEALED USING AN EPOXY SEALER:

1. PIERS FROM GROUND LINE TO BOTTOM OF PIER CAP (CENTER PIER ONLY)
2. PIER CAPS BOTTOM AND BOTH SIDES OF PIER CAP (ALL PIER CAPS)
3. ABUTMENTS AND BACKWALLS FROM TOP TO BACKWALL TO BRIDGE SEAT, THE BRIDGE SEAT, AND FROM BRIDGE SEAT TO THE GROUND LINE.
4. FROM 9" ON BRIDGE DECK, FRONT, FACE, TOP, AND BACKSIDES OF BRIDGE RAILING INCLUDING THE FASCIA FROM THE BRIDGE DECK SURFACE TO A 6" UNDERDECK RETURN ON THE BRIDGE DECK.
5. BRIDGE TRANSITION PARAPETS FROM EDGE OF PAVEMENT FRONT, FACE, TOP, AND BACKSIDES OF PARAPET TO THE GROUND LINE.

PRIOR TO APPLICATION OF THE SURFACE SEALER, THE ENGINEER SHALL INSURE THAT ALL FOREIGN MATERIAL, INCLUDING GRAFFITI HAS BEEN REMOVED BY THE SURFACE PREPARATION PROCESS.

ITEM SPECIAL - STRUCTURE, MISC.: COMPOSITE FIBER WRAP SYSTEM, PIER COLUMNS

DESCRIPTION

1.01 THIS WORK SHALL CONSIST OF PROVIDING A FIBER WRAP CASING SYSTEM USING HIGH STRENGTH, HYRID FIBER/EPOXY COMPOSITES FIELD APPLIED TO THE SURFACE OF THE BERM PIER COLUMNS. THE COLUMN IS TO BE CLEANED AND PREPARED AS TO THE MANUFACTURER'S RECOMMENDATIONS.

DESIGN

2.01 THE SUPPLIER SHALL DETAIL THE NUMBER OF LAYERS OF FABRIC NEEDED AND SHALL SUBMIT DETAILED CALCULATIONS. NOTES, THERE MAY BE A DIFFERENT NUMBER OF WRAPS NEEDED AT DIFFERENT LOCATIONS ON THE SAME COLUMN.

MATERIALS

3.01 ALL MATERIALS AND INSTALLATION DIRECTIONS SHALL BE SUPPLIED BY THE MANUFACTURER. THE SUGGESTED MANUFACTURE IS R.J. WATSON, INC. P.O. BOX 85, EAST AMHERST, NEW YORK 14051 (PH. 716-741-2166) OR APPROVED EQUAL.

ALL SUPPLIERS AND APPLICATORS MUST HAVE FIELD EXPERIENCE WITH A MINIMUM OF 10 INSTALLATIONS AND FURNISH CERTIFIED TEST REPORTS INCLUDING 3,000 HOUR DURABILITY TESTS AT 140° F FOR WATER, SALT WATER, ALKALINE SOIL, OZONE, EFFERVESCENCE AND OTHER FACTORS (REFER TO PARAGRAPH 3.04). FIBER COMPOSITE SUPPLIER SHALL ALSO HAVE CONDUCTED LABORATORY RESEARCH ON DELAMINATED COLUMNS DEMOSTRATING THAT THE REPAIRED COLUMN EXCEEDS THE ORGINAL DESIGN IN AXIAL STRENGTH AND DUCILITY.

3.02 THE FABRIC FOR THE COMPOSITE CASING SYSTEM SHALL BE CONTINUOUS FILAMENT WOVEN FABRIC. PRIMARY FIBERS FOR THE FABRIC SHALL BE ELECTRICAL (E) GLASS FIBERS (SEH-51) OR CARBON (SCH-41).

3.03 THE EPOXY SHALL BE SUPPLIED BY THE MANUFACTURER TO MEET THE COMPOSITE STRENGTH GIVEN IN 3.04. POLYESTER RESIN SHALL NOT BE ALLOWED AS A SUBSTITUTE FOR EPOXY RESIN.

3.04 THE COMPOSTIE OF THE FIBER WRAPPED COLUMN CASING SYSTEM SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

PROPERTY	REQUIREMENT SEH-51/TYFO®	REQUIREMENT SCH-41/TYFO®	ASTM TEST METHOD
ULTIMATE TENSILE STRENGTH, PSI IN PRIMARY FIBER DIRECTIONS	60,000 PSI	110,000 PSI	D 3039
PERCENT TENSILE STRENGTH RETAINED 7 DAYS EXPOSURE AT: 100% HUMIDITY 3000 HOURS EXPOSURE TO OZONE 3000 HOURS EXPOSURE TO ALKALI 3000 HOURS EXPOSURE TO SALT WATER 3000 HOURS EXPOSURE AT 140° -	 100% 90% 90% 90% 90%	 100% 90% 90% 90% 90%	
ELONGATION PERCENT, MIN. PERCENT, MAX.	.7% 4.0%	0.8% 1.5%	
TENSILE MODULUS, PSI MIN. BASED ON CROSS SECTIONAL AREA OF PRIMARY FIBERS	3×10^6	8×10^6	
ULTIMATE TENSILE STRENGTH AT 90°F TO PRIMARY FIBERS, PSI, MIN.	5,500 PSI	225 PSI	
VISUAL DEFECTS	ACCEPTANCE LEVEL III	ACCEPTANCE LEVEL III	D 2563
COEFFICENT OF THERMAL EXPANSION IN PRIMARY DIF.	4.3 X 10° PPM/DEG. F (+15%)	1.0 X 10° PPM/DEG. F (+15%)	E 1142

COLUMN PREPARATION

4.01.1 THE SURFACE SHALL BE FREE FROM FINS, SHARP EDGES, AND PROTRUSIONS THAT WILL CAUSE VOIDS BEHIND THE CASING OR THAT, IN THE OPINION OF THE ENGINEER, WILL DAMAGE FIBER.

4.01.2 THE SURFACES TO RECEIVE THE COMPOSITE WRAP SHALL BE SMOOTH AND FREE OF VOIDS OR UNDULATIONS THAT WOULD PREVENT FULL CONTACT BETWEEN THE CONCRETE AND THE WRAP.

4.01.3 THE CONTACT SURFACES SHALL BE COMPLETELY DRY AT THE TIME OF APPLICATION OF THE COMPOSITE. NEWLY REPAIRED OR PATCHED SURFACES THAT HAVE SET, BUT NOT CURED A MINIMUM OF 7 DAYS, SHALL BE COATED WITH WATER-BASED EPOXY PAINT OR OTHER APPROVED SEALER.

COMPOSITE APPLICATION

4.02.1 THE AMBIENT TEMPERATURE AND THE TEMPERATURE OF THE EPOXY RESIN COMPONENTS SHALL BE BETWEEN 55°F AND 95°F AT THE TIME OF MIXING. THE COMPOSITE SHALL BE APPLIED WHEN THE RELATIVE HUMIDITY IS LESS THAN 85% AND THE SURFACE TEMPERATURE IS MORE THAN 5%F ABOVE THE DEW POINT. APPLICATIONS SHALL BEGIN WITHIN ONE HOUR AFTER THE BATCH HAS BEEN MIXED.

4.02.2 THE COMPONENTS OF THE EPOXY RESIN SHALL BE MIXED WITH A MECHANICAL MIXER FOR A MINIMUM OF 5 MINUTES AND APPLIED UNIFORMLY TO THE FIBER AT A RATE THAT SHALL INSURE COMPLETE SATURATION OF THE FABRIC.

4.02.3 A PRIMER OF EPOXY SHALL BE APPLIED TO THE SURFACE OF THE CONCRETE.

4.02.4 THE FABRIC/EPOXY COMPOSITE SHALL BE APPLIED TO THE PREPARED SURFACE BY WRAPPING USING METHODS THAT PRODUCE A UNIFORM FORCE THAT IS DISTRIBUTED ACROSS THE ENTIRE WIDTH OF THE FABRIC. THE PRIMARY FIBERS OF THE FABRIC SHALL NOT DEVIATE FROM A HORIZONTAL LINE MORE THAN $\frac{1}{2}$INCH PER FOOT, AND THE TRANSVERSE FIBERS SHALL BE PERPENDICULAR TO THE PRIMARY. ENTRAPPED AIR SHALL BE RELEASED OR ROLLED OVER BEFORE THE EPOXY SETS.

4.02.5 SUCCESSIVE LAYERS OF COMPOSITE MATERIALS SHALL BE PLACED BEFORE POLYMERIZATION OF THE PREVIOUS LAYER OF EPOXY IS TOO COMPLETE TO ACHIEVE COMPLETE BOND BETWEEN LAYERS. IF POLYMERIZATION DOES OCCUR BETWEEN LAYERS THE SURFACE MUST BE ROUGHENED USING A LIGHT ABRASIVE THAT WILL NOT DAMAGE THE FIBER.

4.02.6 A FINAL LAYER OF EPOXY SHALL BE APPLED TO THE FINAL LAYER, WITH CARE TAKEN TO INSURE COATING OF ALL EDGES AND SEAMS.

COATING SYSTEM APPLICATION

4.03.1 A FINAL COATING IS REQUIRED TO PROTECT THE FIBERS FROM THE ELEMENTS, SPECIFICALLY UV RADIATION AND TO GIVE THE FINAL AESTHETIC EFFECT.

4.03.2 (AFTER 96 HOURS FROM FINAL APPLICATION OF EPOXY) IF THE FINAL EPOXY COAT IS COMPLETELY POLYMERIZED THE EXTERIOR SURFACE OF THE COMPOSITE WRAP SHALL BE CLEANED AND ROUGHENED BY A LIGHT ABRASIVE. CARE SHOULD BE TAKEN DURING THE ROUGHENING PROCESS SO THAT THE FIBERS ARE NOT DAMAGED. ALL CLEANED AND ROUGHENED SURFACES SHALL BE DRY BEFORE PAINTING.

4.03.2 THE AREA TO BE PAINTED SHALL BE A TOTAL DRY FILM THICKNESS OF NOT LESS THAN 4 MILS.

MEASUREMENT AND PAYMENT

5.01 THIS ITEM WILL BE PAYED FOR BY SQUARE FOOTAGE COVERED AND SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK

DESIGN AGENCY
OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 7

DESIGNED J.B.S. CHECKED
DRAWN J.B.S. REVISED
REVIEWED DATE
STRUCTURE FILE NUMBER

BRIDGE GENERAL NOTES
BRIDGE NO. MOT-70-0334
ARLINGTON PIKE OVER I.R.-70

MOT-70-0.00

c68 0664.dgn

ESTIMATED QUANTITIES (MOT-70-0334)

ITEM		QUANTITY	UNIT	DESCRIPTION
SPECIAL		1070	SQ. YD.	SEALING OF CONCRETE SURFACES (EPOXY)
				(LIGHT NEUTRAL, FEDERAL COLOR NO. 17778) (SEE PROPOSAL NOTE)
519		30	SQ. FT.	PATCHING CONCRETE STRUCTURE (BACKWALLS)
SPECIAL		764	SQ. FT.	STRUCTURE MISC.: COMPOSITE FIBER WRAP SYSTEM, BERM PIER COLUMNS

* ESTIMATED QUANTITIES CARRIED TO BRIDGE SUMMARY ON SHEET 88.

ESTIMATED QUANTITIES FOR ITEM SPECIAL, SEALING OF CONCRETE SURFACES (EPOXY)

BRIDGE NO.	LOCATION	RAILINGS (INCLUDING PARAPET TRANSITIONS)	FORWARD ABUTMENT	REAR ABUTMENT	PIER NO. 1 (PIER CAP ONLY)	PIER NO. 2 (PIER COLUMNS & PIER CAP)	PIER NO. 3 (PIER CAP ONLY)	TOTAL CARRIED TO ESTIMATED QUANTITIES
		SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.
MOT-70-0334	ARLINGTON PIKE OVER I-70	800	56	56	41	76	41	1070

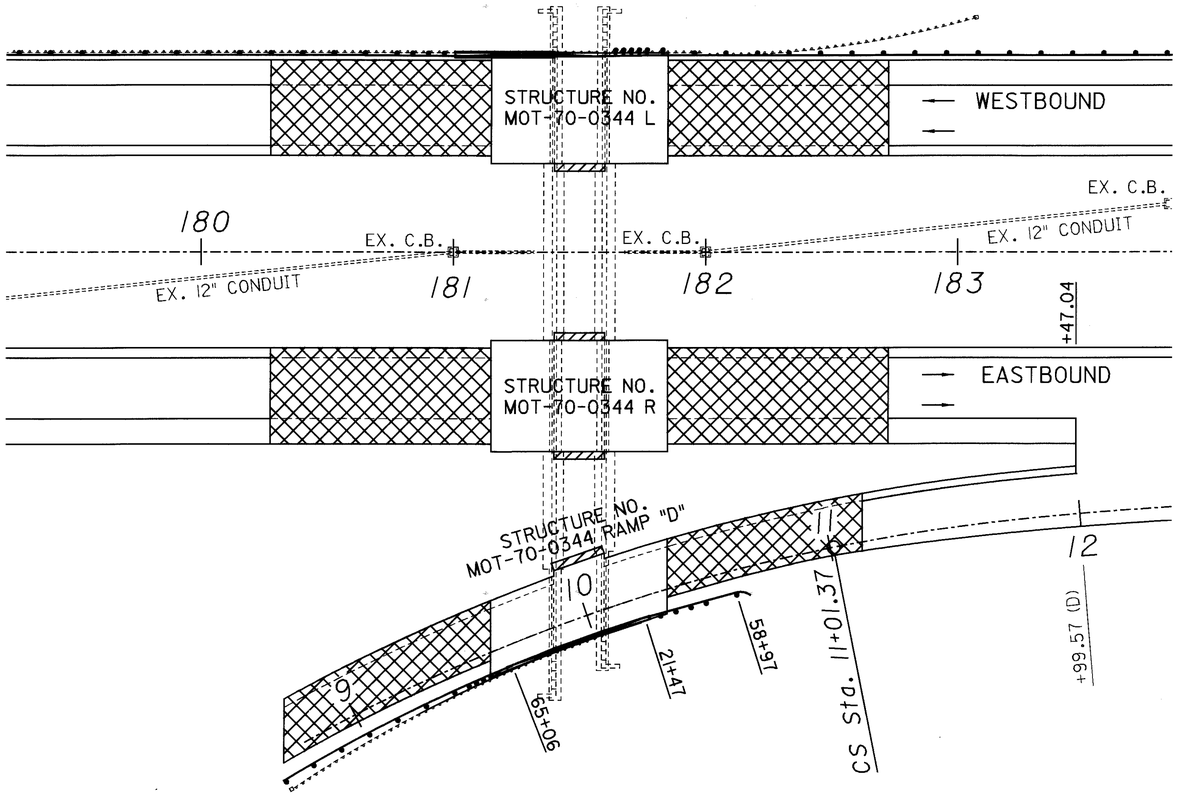
DESIGN AGENCY
OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 7

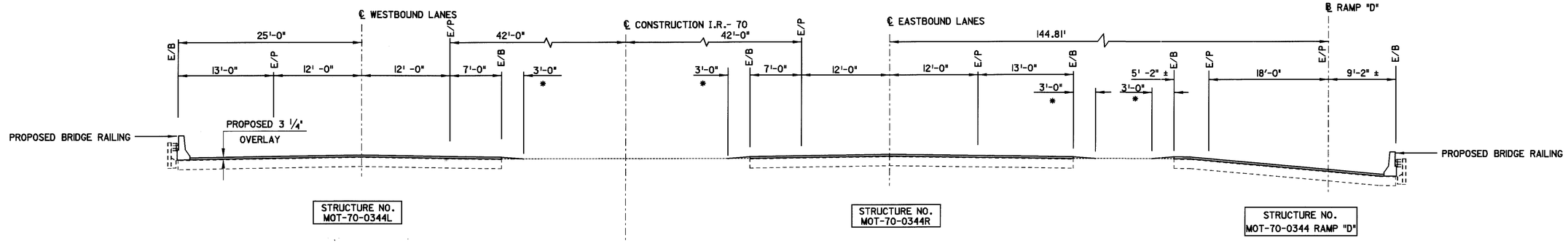
DESIGNED	DRAWN	REVIEWED	DATE
J.B.S.	J.B.S.		
CHECKED	REVISED	STRUCTURE FILE NUMBER	

BRIDGE GENERAL NOTES
BRIDGE NO. MOT-70-0334
ARLINGTON PIKE OVER I.R.-70

MOT-70-0.00

c68 0664.dgn





* FOR TRANSITION DETAIL SEE SHEET II.

EXISITNG STRUCTURES

MOT-70-0344 (L&R) AND RAMP "D"

TYPE: I - SPAN REINFORCED CONCRETE SLAB BRIDGES

SPAN: 18'-0" FOR I.R.-70 LEFT AND RIGHT
19'-1 1/4" FOR RAMP "D"

ROADWAY: 42'-0" F/F CONCRETE PARAPETS FOR I.R. -70 LEFT AND RIGHT
28'-1 3/4" F/F CONCRETE PARAPETS FOR RAMP "D"

LOAD FREQUENCY: S-20-46

SKEW: 0° 00' 00" FOR I.R. -70 LEFT AND RIGHT
19° 35' 50" L.F. FOR RAMP "D"

WEARING SURFACE: 1 1/4" LATEX MODIFIED CONCRETE

APPROACH SLABS: AS-1-54 (25' LONG)

ALIGNMENT: TANGENT

DESIGN AGENCY

REVIEWED DATE STRUCTURE FILE NUMBER

DRAWN R.E.B. REVISED

DESIGNED R.E.B. CHECKED

SITE PLAN
BRIDGE NO. MOT-70-0344 L&R AND RAMP "D"
OVER WOLF CREEK

MOT-70-0.00

1/7

95/112

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 102.05, 105.02 AND 513.02.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

EXISTING BRIDGE PLANS

EXISTING BRIDGE PLANS MAY BE INSPECTED AT THE BUREAU OF BRIDGES AND STRUCTURAL DESIGN IN COLUMBUS, OHIO OR IN THE DISTRICT 7 OFFICE IN SIDNEY, OHIO.

ITEM SPECIAL, SEALING OF CONCRETE SURFACES (EPOXY) (SEE PROPOSAL NOTE)

THE FOLLOWING EXPOSED CONCRETE SURFACES SHALL BE SEALED USING AN EPOXY SEALER:

1. BRIDGE RAILING FROM PROPOSED OVERLAY TO TOP, AND BACKSIDE DOWN TO INCLUDE EDGE OF DECK TO 6" UNDER THE DECK.

PRIOR TO APPLICATION OF THE SURFACE SEALER, THE ENGINEER SHALL INSURE THAT ALL FOREIGN MATERIAL, INCLUDING GRAFFITI HAS BEEN REMOVED BY THE SURFACE PREPARATION PROCESS.

ESTIMATED QUANTITIES (MOT-70-0344L)

ITEM		QUANTITY	UNIT	DESCRIPTION
202		25	LIN. FT.	BRIDGE RAIL REMOVED
SPECIAL		180	SQ. YD.	SEALING OF CONCRETE SURFACES (EPOXY)
				(LIGHT NEUTRAL, FEDERAL COLOR NO. 17778) (SEE PROPOSAL NOTE)
626		3	EACH	BARRIER REFLECTOR, TYPE B
842		2.8	CU. YD.	CLASS S CONCRETE MISC., BRIDGE RAILING (MOT-70-0344 LEFT ONLY)

* ESTIMATED QUANTITIES CARRIED TO BRIDGE SUMMARY ON SHEET 88.

ESTIMATED QUANTITIES (MOT-70-0344 RAMP "D")

ITEM		QUANTITY	UNIT	DESCRIPTION
202		25	LIN. FT.	BRIDGE RAIL REMOVED
SPECIAL		287	SQ. YD.	SEALING OF CONCRETE SURFACES (EPOXY)
				(LIGHT NEUTRAL, FEDERAL COLOR NO. 17778) (SEE PROPOSAL NOTE)
626		3	EACH	BARRIER REFLECTOR, TYPE B
842		2.7	CU. YD.	CLASS S CONCRETE MISC., BRIDGE RAILING

* ESTIMATED QUANTITIES CARRIED TO BRIDGE SUMMARY ON SHEET 88.

ESTIMATED QUANTITIES FOR ITEM SPECIAL, SEALING OF CONCRETE SURFACES (EPOXY)

BRIDGE NO.	LOCATION	RAILINGS INCLUDING EDGE OF BRIDGE DECK AND 6" UNDER DECK						TOTAL CARRIED TO ESTIMATED QUANTITIES
		SQ. YD.						SQ. YD.
MOT-70-0344	I.R.-70 OVER WOLF CREEK	180						180
MOT-70-0344	RAMP "D" OVER WOLF CREEK	287						287
TOTALS CARRIED TO ESTIMATED QUANTITIES								467

OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 7

DESIGNED J.B.S. | DRAWN J.B.S. | REVIEWED | DATE

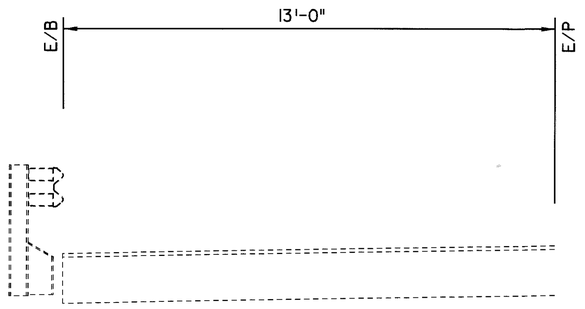
CHECKED | REVISED | STRUCTURE FILE NUMBER

BRIDGE GENERAL NOTES
BRIDGE NO. MOT-70-0344
WOLF CREEK @ I.R.-70 AND RAMP "D"

MOT-70-0.00

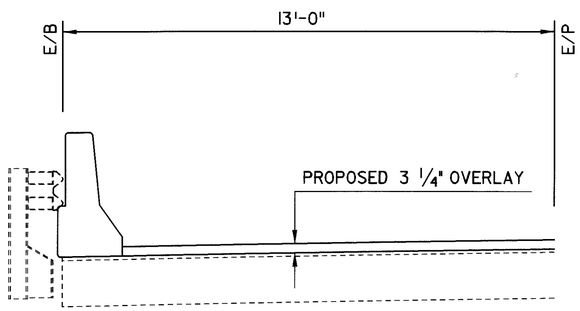
c68 0664.dgn

MOT-70-0344 L



EXISTING

25' EXISTING GUARDRAIL TO BE REMOVED AND REPLACED
WITH BRIDGE RAILING DEFLECTOR PARAPET TYPE, AS PER PLAN

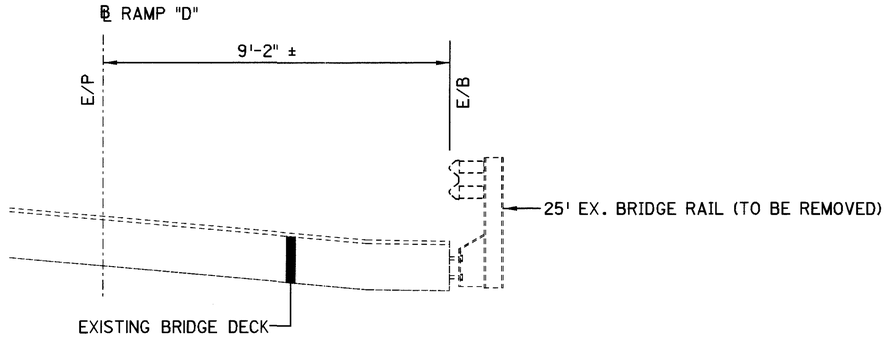


PROPOSED

FOR PROPOSED BRIDGE RAILING DETAILS SEE SHEETS 98-99.

FOR BRIDGE RAILING QUANTITIES SEE SHEET 96.

MOT-70-0344 RAMP "D"



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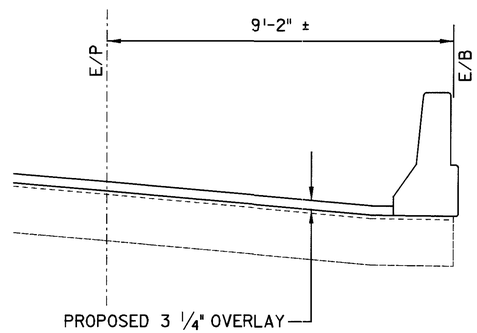


PROPOSED

FOR PROPOSED BRIDGE RAILING DETAILS SEE SHEETS 100-101

FOR BRIDGE RAILING QUANTITIES SEE SHEET 96.

DESIGN AGENCY

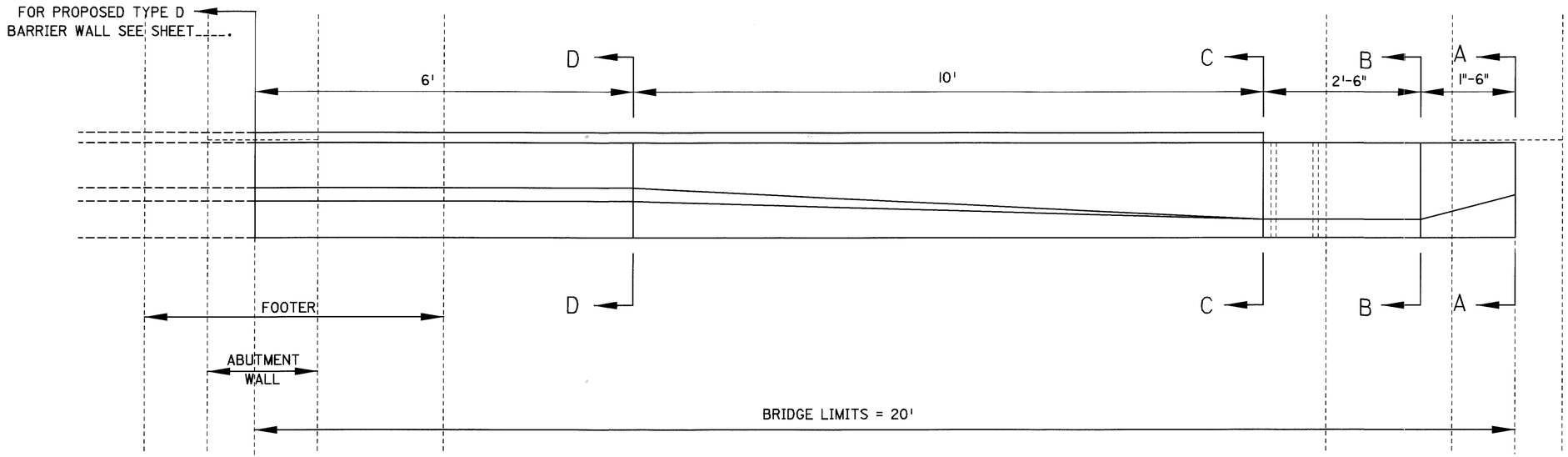
DESIGNED R.E.B.	DRAWN R.E.B.	REVIEWED	DATE
CHECKED	REVISED		STRUCTURE FILE NUMBER

EXISTING BRIDGE RAIL DETAILS
BRIDGE NO. MOT-70-0344L AND RAMP "D"

MOT-70-0.00

3/7

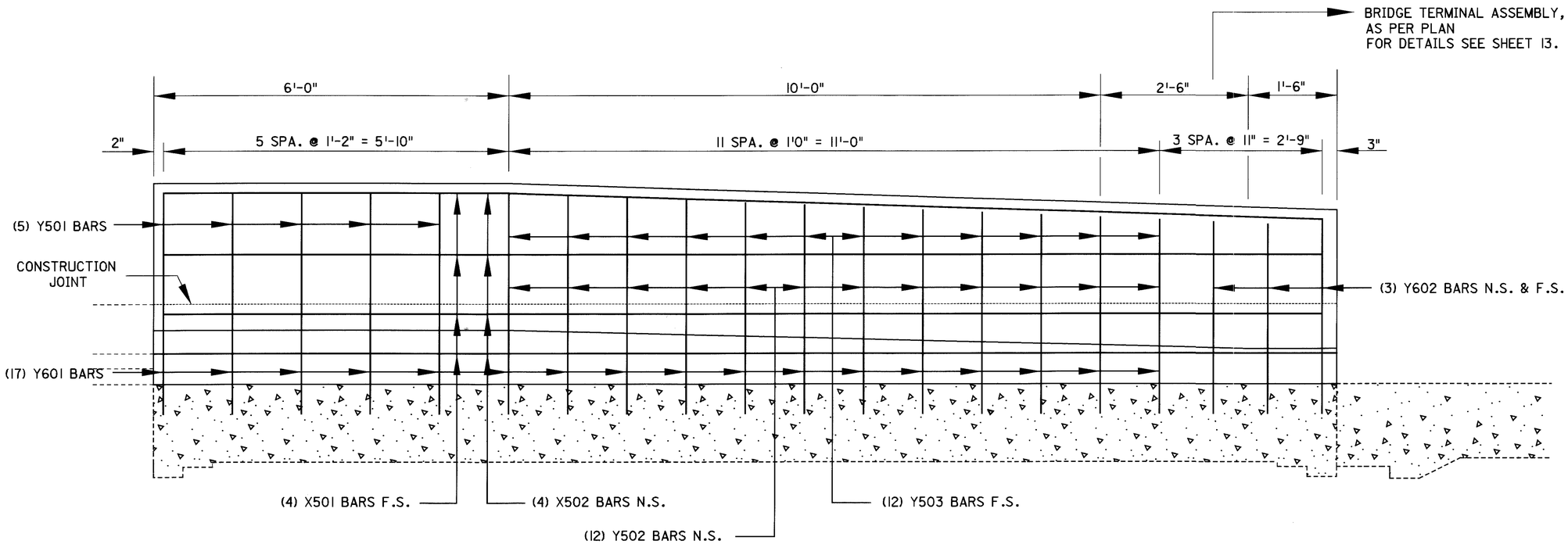
97/112



FOR SECTIONS SEE SHEET 99.

BRIDGE RAILING PLAN

MOT-70-0344 OVER WOLF CREEK



BRIDGE RAILING ELEVATION

MOT-70-0344 OVER WOLF CREEK

NOTE:

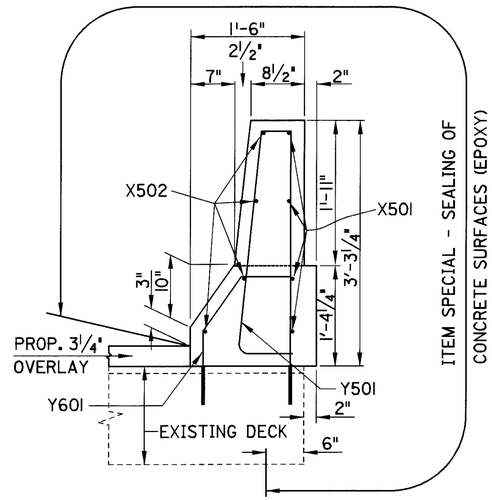
THE COST OF DOWEL HOLES SHALL BE INCLUDED WITH QUANTITY FOR ITEM 842, CONCRETE CLASS "S", AND SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NEEDED TO PERFORM THIS ITEM OF WORK.

DESIGN AGENCY

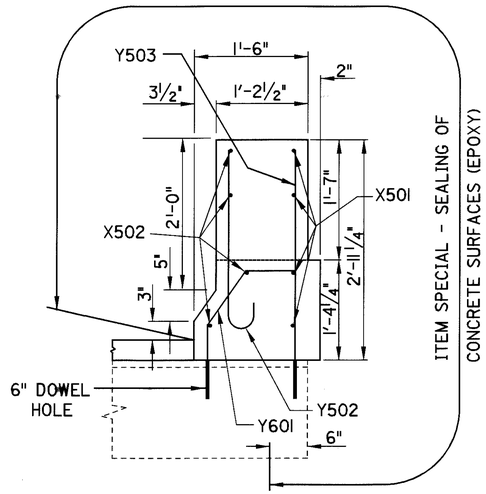
DESIGNED	DRAWN	REVIEWED	DATE
R.E.B.	R.E.B.		
CHECKED	REVISED		STRUCTURE FILE NUMBER

PROPOSED BRIDGE RAILING
BRIDGE NO. MOT-70-0344

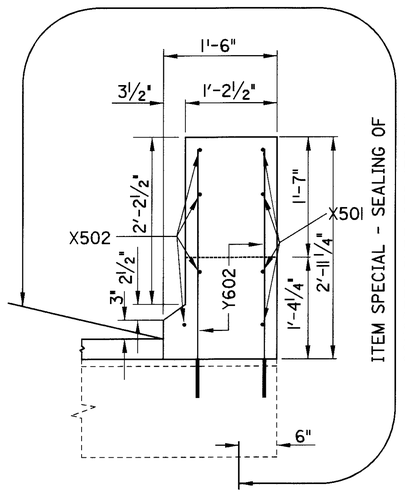
MOT-70-0.00



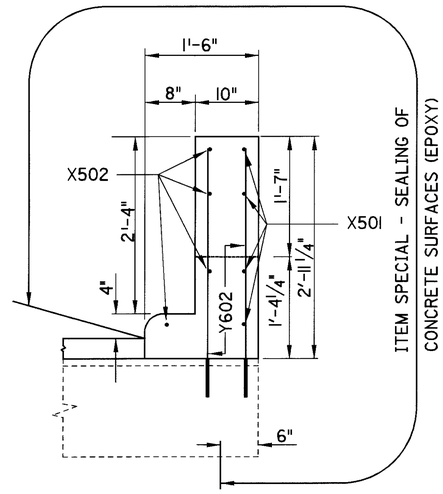
SECTION D-D



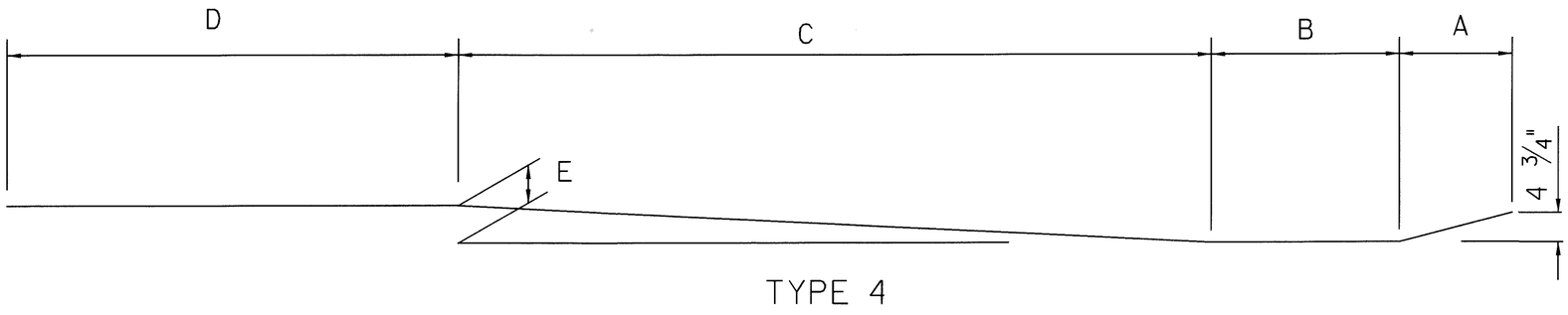
SECTION C-C



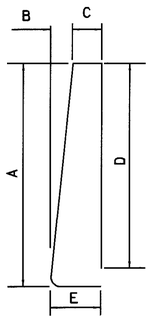
SECTION B-B



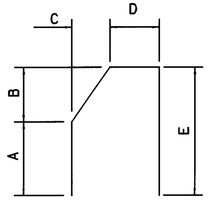
SECTION A-A



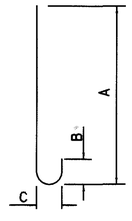
TYPE 4



TYPE 1



TYPE 2



TYPE 3

REINFORCING STEEL LIST

ALL REINFORCING STEEL IN THIS TABLE SHALL BE EPOXY COATED AND INCLUDED IN THE COST FOR ITEM 511, CLASS S CONCRETE, SUPERSTRUCTURE

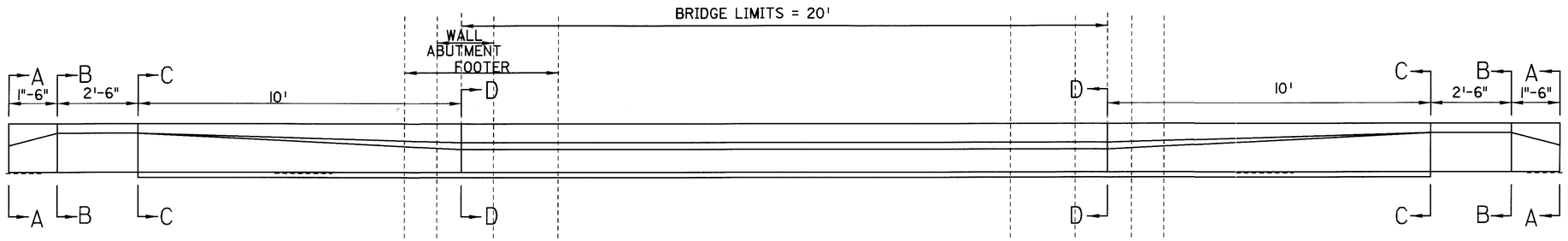
BAR NO.	NUMBER OF BARS	BAR LENGTH	SHAPE	TYPE	A	B	C	D	E		INCR.	DESCRIPTION
X501	4	20'	STR									
X502	4	20'	BENT	4	6'	10'	2'-6"	1'-6"	0'-6"			NEAR SIDE BARS
Y501	5	6'-6"	BENT	1	2'-11¼"	3½"	4½"	2'-8¼"	8"			TOP BARS
Y502	12	2'-10½"	BENT	3	2'-4¼"	4"	4"					NEAR SIDE BARS
Y503	12	2'-4"	STR									
Y601	17	4'-1¼"	BENT	2	11¾"	8½"	6"	7¾"	1'-8¼"			BOTTOM BARS
Y602	3	3'-3¾"	STR									

DESIGN AGENCY

DESIGNED	DRAWN	REVIEWED	DATE
R.E.B.	R.E.B.		
CHECKED	REVISED		STRUCTURE FILE NUMBER

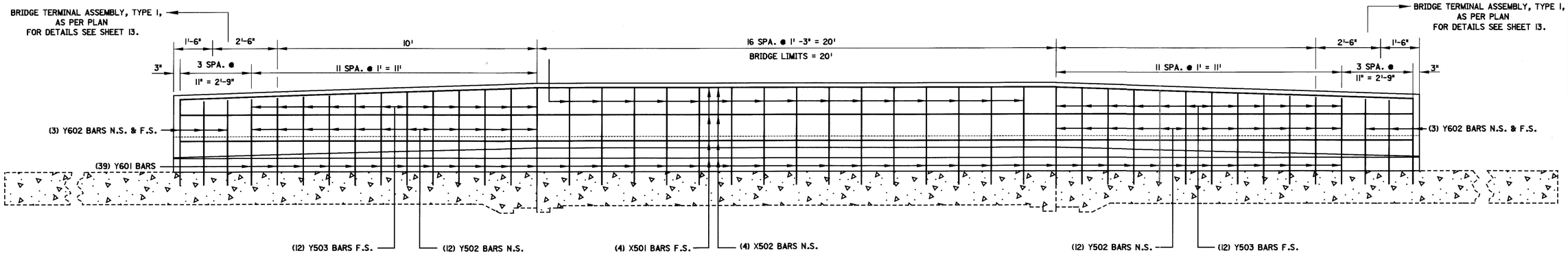
EXISTING ABUTMENT REMOVAL
BRIDGE NO. MOT-70-0344

MOT-70-0.00



BRIDGE RAILING ELEVATION

MOT-70-0344 @ RAMP "D" OVER WOLF CREEK



BRIDGE RAILING ELEVATION

MOT-70-0344 @ RAMP "D" OVER WOLF CREEK

NOTE:

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DESIGN AGENCY

REVIEWED DATE

STRUCTURE FILE NUMBER

DRAWN R.E.B.

REVISED

DESIGNED R.E.B.

CHECKED

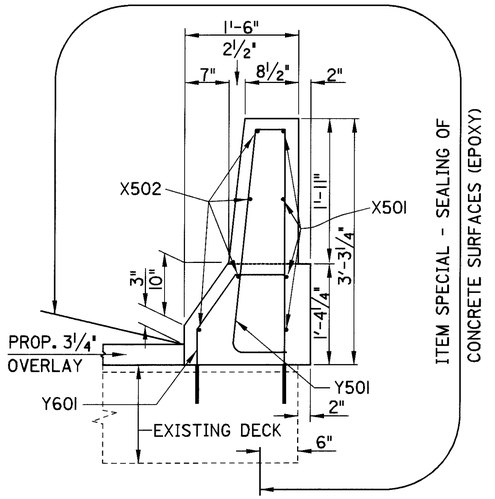
PROPOSED BRIDGE RAILING

BRIDGE NO. MOT-70-0344 RAMP "D"

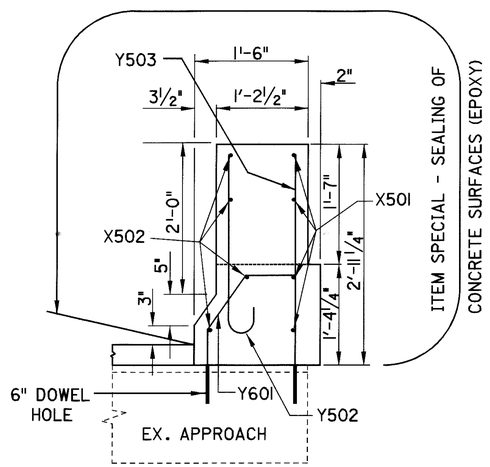
MOT-70-0.00

6 / 7

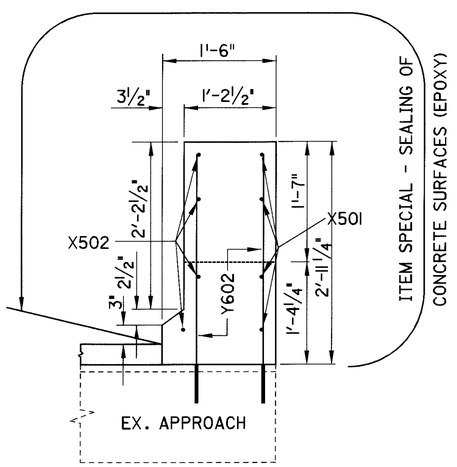
100 / 112



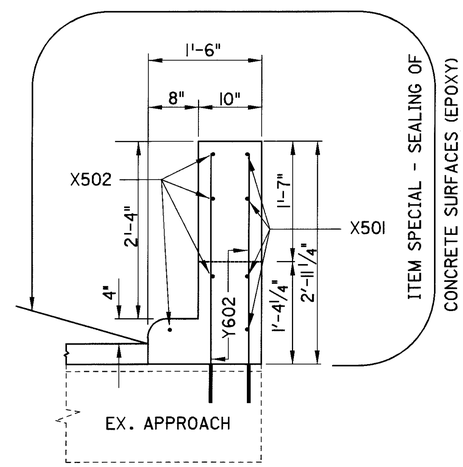
SECTION D-D



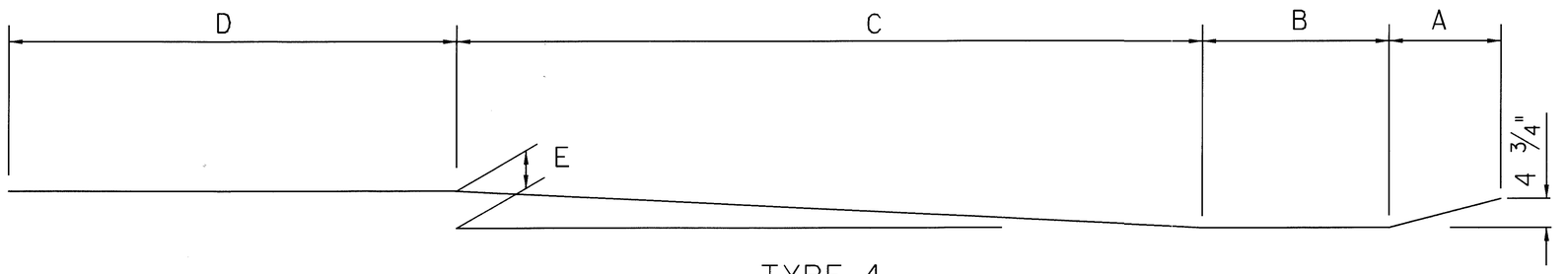
SECTION C-C



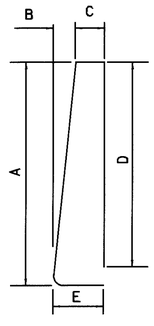
SECTION B-B



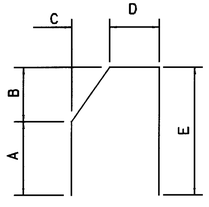
SECTION A-A



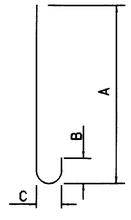
TYPE 4



TYPE 1



TYPE 2



TYPE 3

REINFORCING STEEL LIST

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BAR NO.	NUMBER OF BARS	BAR LENGTH	SHAPE	TYPE	A	B	C	D	E		INCR.	DESCRIPTION
X501	4	20'	STR									
X502	4	20'	BENT	4	20'	10'	2'-6"	1'-6"	0'-6"			NEAR SIDE BARS
Y501	5	6'-6"	BENT	1	2'-11¼"	3½"	4½"	2'-8¼"	8"			TOP BARS
Y502	12	2'-10½"	BENT	3	2'-4¼"	4"	4"					NEAR SIDE BARS
Y503	12	2'-4"	STR									
Y601	17	4'-1¼"	BENT	2	11¾"	8½"	6"	7¾"	1'-8¼"			BOTTOM BARS
Y602	3	3'-3¾"	STR									

DESIGN AGENCY

DESIGNED	DRAWN	REVIEWED	DATE
R.E.B.	R.E.B.		
CHECKED	REVISED	STRUCTURE FILE NUMBER	

EXISTING ABUTMENT REMOVAL
BRIDGE NO. MOT-70-0344 RAMP "D"

MOT-70-0.00

7 / 7

101
112

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 102.05, 105.02 AND 513.02.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

EXISTING BRIDGE PLANS

EXISTING BRIDGE PLANS MAY BE INSPECTED AT THE BUREAU OF BRIDGES AND STRUCTURAL DESIGN IN COLUMBUS, OHIO OR IN THE DISTRICT 7 OFFICE IN SIDNEY, OHIO.

ITEM 516 - REFURBISHING BEARING DEVICES, AS PER PLAN

THIS ITEM SHALL INCLUDE ALL WORK NECESSARY TO PROPERLY ALIGN BRIDGE BEARINGS AS WELL AS THEIR CLEANING AND PAINTING AT BOTH ABUTMENTS ON BRIDGE MOT-70-0106 THIS WORK SHALL INCLUDE THE DISASSEMBLY OF THE BEARINGS, SANDBLASTING, REPLACEMENT OF ANY DAMAGED SHEET LEAD (711.19), INSTALLATION OF ANY NECESSARY STEEL SHIMS OF THE SAME SIZE AS THE BEARINGS TO PROVIDE A SNUG FIT, REALIGNMENT OF THE UPPER BEARING PLATE BY REMOVING EXISTING WELDS AND REWELDING SO THAT THE BEARINGS ARE VERTICALLY ALIGNED AT 60 DEGREES F, LUBRICATING SLIDING SURFACES, AND REASSEMBLY OF THE BEARINGS.

THE CONTRACTOR SHALL BE SURE THAT ALL BEARINGS ARE SHIMMED ADEQUATELY AND THAT NO BEAMS AND/OR BEARING DEVICES ARE FLOATING. AT THE OPTION OF THE CONTRACTOR AND AT NO ADDITIONAL COST TO THE STATE, NEW BEARINGS OF THE SAME TYPE AS THE EXISTING MAY BE INSTALLED IN LIEU OF REFURBISHING THE BEARINGS. ALL WORK SHALL BE PERFORMED TO THE SATISFACTION OF THE ENGINEER.

PAYMENT FOR ALL THE ABOVE DESCRIBED, LABOR AND MATERIALS WILL BE MADE AT THE CONTRACT PRICE BID FOR ITEM 516, REFURBISH BEARINGS DEVICES, AS PER PLAN.

THE FOLLOWING QUANTITY HAS BEEN ADDED TO THE ESTIMATED QUANTITIES:

ITEM 516	REFURBISH BEARING DEVICES, AS PER PLAN	8 EACH

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

THIS ITEM SHALL CONSIST OF FURNISHING ALL NECESSARY LABOR, MATERIALS, AND EQUIPMENT TO RAISE OR REPOSITION THE EXISTING STRUCTURES FOR THE PURPOSES DEFINED IN THE PROJECT PLANS.

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 IN THE PROJECT PLANS. THREE (3) SETS OF JACKING PLANS, WHICH INCLUDE THE INFORMATION INCLUDED 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 PROFESSIONAL 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 WITH 3 WAY RETRACTOR VALVE, PRESSURE GAGES, FLOW CONTROL VALVES, ETC. IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. ALL JACKS FOR EACH ABUTMENT OR PIER SHALL BE CONNECTED TOGETHER. ALL JACKS AT EACH ABUTMENT OR PIER SHALL BE THE SAME SIZE.
5. ANALYSIS AND CALCULATIONS OF THE STRESSES INDUCED OR CREATED IN THE STRUCTURE AND ANY TEMPORARY OR PERMANENT SUPPORTS. DESIGN CALCULATIONS FOR ANY TEMPORARY OF PERMANENT SUPPORTS.
6. PHYSICAL DIMENSIONS, MATERIALS,AND FABRICATION DETAILS OF ANY TEMPORARY OR PERMANENT SUPPORT. HORIZONTAL AND VERTICAL MOVEMENT RESTRAINT SHALL BE PROVIDED.
7. A STEP BY STEP PROCEDURE DETAILING ALL STEPS IN THE JACKING PLAN
8. METHOD OF ATTACHMENT OF STRUCTURAL MEMBERS. WELDING TO TENSION ARES WILL NOT BE PERMITTED.

THE ENTIRE SYSTEM INCLUDING JACKS SHALL HAVE 20% MORE CAPACITY THAN REQUIRED BASED ON CLACULATED LOADS.

FOR LIFTS GREATER THAN 1", JACKS SHALL HAVE LOCKING NUTS TO POSITIVELY LOCK AND SUPPORT THE STRUCTURE DURING THE LIFT.

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.

SINGLE ACTING RAMS WITH NO OVER-TRAVEL PROTECTION SHALL NOT BE USED.

SPARE EQUIPMENT SHALL BE AVAILABLE ON SITE FOR THE REQUIRED STRUCTURE RAISING TO PROCEED IN THE EVENT OF A BREAKDOWN. A LIST OF SPARE EQUIPMENT SHALL BE PROVIDED TO THE ENGINEER.

AT A MINIMUM, A JACKING OPERATION SHALL LIFT ALL BEAMS AT ANY ONE ABUTMENT OR PIER SIMULTANEOUSLY. THE ONLY EXCEPTION IS WHEN THE FOLLOWING ARE MET: THE WORK INVOLVES REPLACING OR REHABILITATING INDIVIDUAL BEARINGS, NO PERMANENT SHIMMING IS REQUIRED, AND THE HEIGHT OF THE LIFT SHALL NOT EXCEED ONE QUATER OF AN INCH (1/4").

MAXIMUM DIFFERENTIAL JACKING HEIGHT BETWEEN ANY ADJACENT ABUTMENTS OR PIERS SHALL BE ONE INCH (1") OR LESS

IF DURING THE JACKING OPERATIONS, CRACKING OF THE CONCRETE SUPERSTRUCTURE, SEPERATION 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 SHALL BE INSTALLED. THE CONTRACTOR SHALL THEN ANALYZE THE DAMAGE SUBMIT A METHOD OF CORRECTION TO THE ENGINEER FOR APPROVAL. ANY BEAMS THAT SEPERATE FRON THE DECK SHALL BE EPOXY INJECTED FOR THE DISTANCE OF SEPRATION 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 MEANS OR REPAIR, SUBJECT TO THE APPROVAL OF THE ENGINEER, WILL BE REQUIRED AT THE CONTRACTOR'S EXPENSE.

THE JACKING OPERATION SHALL BE DIRECTED BY A PROFESSIONAL ENGINEER EMPLOYED BY THE CONTRACTOR. FAILURE TO HAVE A PROFESSIONAL ENGINEER PRESENT SHALL BE CAUSE FOR CEASING JACKING OPERATIONS.

PAYMENT SHALL BE MADE AT THE LUMP SUM PRICE BID FOR ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN AND SHALL INCLUDE ALL NECESSARY TOOLS, LABOR, EQUIPMENT AND MATERIALS NECESSARY TO COMPLETE THIS ITEM OF WORK.

ITEM SPECIAL, SEALING OF CONCRETE SURFACES (EPOXY) (SEE PROPOSAL NOTE)

THE FOLLOWING EXPOSED CONCRETE SURFACES SHALL BE SEALED USING AN EPOXY SEALER:

1. PIERS FROM GROUND LINE TO BOTTOM OF PIER CAP (CENTER PIER ONLY)
2. PIER CAPS BOTTOM AND BOTH SIDES OF PIER CAP (ALL PIER CAPS)
3. ABUTMENTS AND BACKWALLS FROM TOP TO BACKWALL TO BRIDGE SEAT, THE BRIDGE SEAT, AND FROM BRIDGE SEAT TO THE GROUND LINE.
4. FROM 9" ON BRIDGE DECK, FRONT, FACE, TOP, AND BACKSIDES OF BRIDGE RAILING INCLUDING THE FASCIA FROM THE BRIDGE DECK SURFACE TO A 6" UNDERDECK RETURN ON THE BRIDGE DECK.
5. BRIDGE TRANSITION PARAPETS FROM EDGE OF PAVEMENT FRONT, FACE, TOP, AND BACKSIDES OF PARAPET TO THE GROUND LINE.

PRIOR TO APPLICATION OF THE SURFACE SEALER, THE ENGINEER SHALL INSURE THAT ALL FOREIGN MATERIAL, INCLUDING GRAFFITI HAS BEEN REMOVED BY THE SURFACE PREPARATION PROCESS.

FIELD PAINTING OF EXISTING STEEL, SYSTEM OZEU

THE SURFACE AREA PAY QUANTITY IS BASED ON THE SURFACE AREA OF THE MAIN MEMBERS INCREASED BY A PERCENT TO ACCOUNT FOR THE AREA OF CROSSFRAMES, BEARINGS, AND OTHER STRUCTURAL STEEL INCIDENTALS TO BE CLEANED AND PAINTED - SEE CHART ON SHEET 102.

THE COLOR OF THE FINISH COAT FOR MOT-70-0106 SHALL BE BLUE (FEDERAL COLOR NO. 15526).

SEE THE PROPOSAL NOTE FOR THE SURFACE PREPARATION REQUIREMENTS, APPLICATION RATES, MATERIAL REQUIREMENTS AND APPLICATION PROCEDURES.

ALL PAINTING OPERATIONS WHICH INVOLVE THE CLOSING OF ONE LANE OF TRAFFIC ON I.R.-70 SHALL BE PERFORMED BETWEEN THE HOURS OF 10:00 PM AND 6:00 AM. BETWEEN THE HOURS OF 6:00 AM AND 10:00 PM ALL LANES OF TRAFFIC SHALL BE OPEN.

DESIGN AGENCY
OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 7

DESIGNED	DRAWN	REVIEWED	DATE
J.B.S.	J.B.S.		
CHECKED	REVISED		STRUCTURE FILE NUMBER

BRIDGE GENERAL NOTES
BRIDGE NO. MOT-70-0452
BROOKVILLE-PHILLIPSBURG PIKE OVER I.R.-70

MOT-70-0.00

1 / 3

102
112

c68 0664.dgn

ITEM SPECIAL - STRUCTURE, MISC.: COMPOSITE FIBER WRAP SYSTEM, PIER COLUMNS

DESCRIPTION

1.01 THIS WORK SHALL CONSIST OF PROVIDING A FIBER WRAP CASING SYSTEM USING HIGH STRENGTH, HYRID FIBER/EPOXY COMPOSITES FIELD APPLIED TO THE SURFACE OF THE BERM PIER COLUMNS. THE COLUMN IS TO BE CLEANED AND PREPARED AS TO THE MANUFACTURER'S RECOMMENDATIONS.

DESIGN

2.01 THE SUPPLIER SHALL DETAIL THE NUMBER OF LAYERS OF FABRIC NEEDED AND SHALL SUBMIT DETAILED CALCULATIONS. NOTES, THERE MAY BE A DIFFERENT NUMBER OF WRAPS NEEDED AT DIFFERENT LOCATIONS ON THE SAME COLUMN.

MATERIALS

3.01 ALL MATERIALS AND INSTALLATION DIRECTIONS SHALL BE SUPPLIED BY THE MANUFACTURER. THE SUGGESTED MANUFACTURE IS R.J. WATSON, INC. P.O. BOX 85, EAST AMHERST, NEW YORK 14051 (PH. 716-741-2166) OR APPROVED EQUAL.

ALL SUPPLIERS AND APPLICATORS MUST HAVE FIELD EXPERIENCE WITH A MINIMUM OF 10 INSTALLATIONS AND FURNISH CERTIFIED TEST REPORTS INCLUDING 3,000 HOUR DURABILITY TESTS AT 140° F FOR WATER, SALT WATER, ALKALINE SOIL, OZONE, EFFERVESCENCE AND OTHER FACTORS (REFER TO PARAGRAPH 3.04). FIBER COMPOSITE SUPPLIER SHALL ALSO HAVE CONDUCTED LABORATORY RESEARCH ON DELAMINATED COLUMNS DEMOSTRATING THAT THE REPAIRED COLUMN EXCEEDS THE ORGINAL DESIGN IN AXIAL STRENGTH AND DUCILITY.

3.02 THE FABRIC FOR THE COMPOSITE CASING SYSTEM SHALL BE CONTINUOUS FILAMENT WOVEN FABRIC. PRIMARY FIBERS FOR THE FABRIC SHALL BE ELECTRICAL (E) GLASS FIBERS (SEH-51) OR CARBON (SCH-41).

3.03 THE EPOXY SHALL BE SUPPLIED BY THE MANUFACTURER TO MEET THE COMPOSITE STRENGTH GIVEN IN 3.04. POLYESTER RESIN SHALL NOT BE ALLOWED AS A SUBSTITUTE FOR EPOXY RESIN.

3.04 THE COMPOSTIE OF THE FIBER WRAPPED COLUMN CASING SYSTEM SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

PROPERTY	REQUIREMENT SEH-51/TYFO®	REQUIREMENT SCH-41/TYFO®	ASTM TEST METHOD
ULTIMATE TENSILE STRENGTH, PSI IN PRIMARY FIBER DIRECTIONS	60,000 PSI	110,000 PSI	D 3039
PERCENT TENSILE STRENGTH RETAINED 7 DAYS EXPOSURE AT:			
100% HUMIDITY	100%	100%	
3000 HOURS EXPOSURE TO OZONE	90%	90%	
3000 HOURS EXPOSURE TO ALKALI	90%	90%	
3000 HOURS EXPOSURE TO SALT WATER	90%	90%	
3000 HOURS EXPOSURE AT 140°	90%	90%	
ELONGATION			
PERCENT, MIN.	1.7%	0.8%	
PERCENT, MAX.	4.0%	1.5%	
TENSILE MODULUS, PSI MIN. BASED ON CROSS SECTIONAL AREA OF PRIMARY FIBERS	3 X 10^6	8 X 10^6	
ULTIMATE TENSILE STRENGTH AT 90°F TO PRIMARY FIBERS, PSI, MIN.	5,500 PSI	225 PSI	
VISUAL DEFECTS	ACCEPTANCE LEVEL III	ACCEPTANCE LEVEL III	D 2563
COEFFICENT OF THERMAL EXPANSION IN PRIMARY DIF.	4.3 X 10° PPM/DEG. F (+15%)	1.0 X 10° PPM/DEG. F (+15%)	E 1142

COLUMN PREPARATION

4.01.1 THE SURFACE SHALL BE FREE FROM FINS, SHARP EDGES, AND PROTRUSIONS THAT WILL CAUSE VOIDS BEHIND THE CASING OR THAT, IN THE OPINION OF THE ENGINEER, WILL DAMAGE FIBER.

4.01.2 THE SURFACES TO RECEIVE THE COMPOSITE WRAP SHALL BE SMOOTH AND FREE OF VOIDS OR UNDULATIONS THAT WOULD PREVENT FULL CONTACT BETWEEN THE CONCRETE AND THE WRAP.

4.01.3 THE CONTACT SURFACES SHALL BE COMPLETELY DRY AT THE TIME OF APPLICATION OF THE COMPOSITE. NEWLY REPAIRED OR PATCHED SURFACES THAT HAVE SET, BUT NOT CURED A MINIMUM OF 7 DAYS, SHALL BE COATED WITH WATER-BASED EPOXY PAINT OR OTHER APPROVED SEALER.

COMPOSITE APPLICATION

4.02.1 THE AMBIENT TEMPERATURE AND THE TEMPERATURE OF THE EPOXY RESIN COMPONENTS SHALL BE BETWEEN 55°F AND 95°F AT THE TIME OF MIXING. THE COMPOSITE SHALL BE APPLIED WHEN THE RELATIVE HUMIDITY IS LESS THAN 85% AND THE SURFACE TEMPERATURE IS MORE THAN 5%F ABOVE THE DEW POINT. APPLICATIONS SHALL BEGIN WITHIN ONE HOUR AFTER THE BATCH HAS BEEN MIXED.

4.02.2 THE COMPONENTS OF THE EPOXY RESIN SHALL BE MIXED WITH A MECHANICAL MIXER FOR A MINIMUM OF 5 MINUTES AND APPLIED UNIFORMLY TO THE FIBER AT A RATE THAT SHALL INSURE COMPLETE SATURATION OF THE FABRIC.

4.02.3 A PRIMER OF EPOXY SHALL BE APPLIED TO THE SURFACE OF THE CONCRETE.

4.02.4 THE FABRIC/EPOXY COMPOSITE SHALL BE APPLIED TO THE PREPARED SURFACE BY WRAPPING USING METHODS THAT PRODUCE A UNIFORM FORCE THAT IS DISTRIBUTED ACROSS THE ENTIRE WIDTH OF THE FABRIC. THE PRIMARY FIBERS OF THE FABRIC SHALL NOT DEVIATE FROM A HORIZONTAL LINE MORE THAN $\frac{1}{2}$INCH PER FOOT, AND THE TRANSVERSE FIBERS SHALL BE PERPENDICULAR TO THE PRIMARY. ENTRAPPED AIR SHALL BE RELEASED OR ROLLED OVER BEFORE THE EPOXY SETS.

4.02.5 SUCCESSIVE LAYERS OF COMPOSITE MATERIALS SHALL BE PLACED BEFORE POLYMERIZATION OF THE PREVIOUS LAYER OF EPOXY IS TOO COMPLETE TO ACHIEVE COMPLETE BOND BETWEEN LAYERS. IF POLYMERIZATION DOES OCCUR BETWEEN LAYERS THE SURFACE MUST BE ROUGHENED USING A LIGHT ABRASIVE THAT WILL NOT DAMAGE THE FIBER.

4.02.6 A FINAL LAYER OF EPOXY SHALL BE APPLED TO THE FINAL LAYER, WITH CARE TAKEN TO INSURE COATING OF ALL EDGES AND SEAMS.

COATING SYSTEM APPLICATION

4.03.1 A FINAL COATING IS REQUIRED TO PROTECT THE FIBERS FROM THE ELEMENTS, SPECIFICALLY UV RADIATION AND TO GIVE THE FINAL AESTHETIC EFFECT.

4.03.2 (AFTER 96 HOURS FROM FINAL APPLICATION OF EPOXY) IF THE FINAL EPOXY COAT IS COMPLETELY POLYMERIZED THE EXTERIOR SURFACE OF THE COMPOSITE WRAP SHALL BE CLEANED AND ROUGHENED BY A LIGHT ABRASIVE. CARE SHOULD BE TAKEN DURING THE ROUGHENING PROCESS SO THAT THE FIBERS ARE NOT DAMAGED. ALL CLEANED AND ROUGHENED SURFACES SHALL BE DRY BEFORE PAINTING.

4.03.2 THE AREA TO BE PAINTED SHALL BE A TOTAL DRY FILM THICKNESS OF NOT LESS THAN 4 MILS.

MEASUREMENT AND PAYMENT

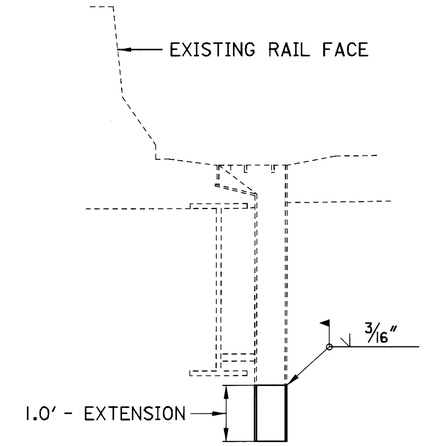
5.01 THIS ITEM WILL BE PAYED FOR BY SQUARE FOOTAGE COVERED AND SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK

ITEM 518, SCUPPER LENGTHENING, AS PER PLAN

THIS ITEM SHALL CONSIST OF EXTENDING THE BOTTOM DOWNSPOUT OF THE EXISTING SCUPPERS ONE FOOT AS SHOWN ON THE DETAIL BELOW.

PAYMENT FOR ALL MATERIALS, LABOR, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK AS DESCRIBED IN THE NOTES AND DETAILS SHALL BE INCLUDED WITH ITEM 518, SCUPPER LENGTHENING, AS PER PLAN.

BRIDGE NO.	LOCATION	518
		SCUPPER LENGTHENING, AS PER PLAN
		EACH
MOT-70-0452	BROOKVILLE-PHILLIPSBURG PIKE	16
TOTAL CARRIED TO ESTIMATED QUANTITIES		16



SCUPPER LENGTHENING, AS PER PLAN

DESIGN AGENCY
OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 7

DESIGNED J.B.S. CHECKED
DRAWN J.B.S. REVISED
REVIEWED DATE
STRUCTURE FILE NUMBER

BRIDGE GENERAL NOTES
BRIDGE NO. MOT-70-0452
BROOKVILLE-PHILLIPSBURG PIKE OVER I.R.-70

MOT-70-0.00

2 / 3

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ESTIMATED QUANTITIES (MOT-70-0452)

ITEM		QUANTITY	UNIT	DESCRIPTION
SPECIAL		732	SQ. YD.	SEALING OF CONCRETE SURFACES (EPOXY)
				(LIGHT NEUTRAL, FEDERAL COLOR NO. 17778) (SEE PROPOSAL NOTE)
516		8	EACH	REFURBISH BEARING DEVICES, AS PER PLAN (SEE NOTE)
516		LUMP	LUMP	JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN (SEE NOTE)
518		16	EACH	SCUPPER LENGTHENING, AS PER PLAN
519		50	SQ. FT.	PATCHING CONCRETE STRUCTURE (BERM PIER COLUMNS)
SPECIAL		650	SQ. FT.	STRUCTURE MISC.: COMPOSITE FIBER WRAP SYSTEM, PIER COLUMNS
815		11,350	SQ. FT.	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU
815		11,350	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU
815		11,350	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COURSE, SYSTEM OZEU
815		11,350	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU
815		266	LIN. FT.	CAULKING
815		40	MAN HOUR	GRINDING FINS, TEARS, SLIVERS
815		768	LIN. FT.	GRINDING FLANGE EDGES

* ESTIMATED QUANTITIES CARRIED TO BRIDGE SUMMARY ON SHEET 88.

ESTIMATED QUANTITIES FOR ITEM SPECIAL, SEALING OF CONCRETE SURFACES (EPOXY)

BRIDGE NO.	LOCATION	RAILINGS (INCLUDING PARAPET TRANSITIONS)	FORWARD ABUTMENT	REAR ABUTMENT	PIER NO. 1 (PIER CAP ONLY)	PIER NO. 2 (PIER COLUMNS & PIER CAP)	PIER NO. 3 (PIER CAP ONLY)	TOTAL CARRIED TO ESTIMATED QUANTITIES
		SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.
MOT-70-0452	BROOKVILLE-PHILLIPSBURG PIKE OVER I-70	574	27	27	25	54	25	732

ESTIMATED QUANTITIES FOR FIELD PAINTING OF EXISTING STEEL, SYSTEM OZEU

BRIDGE NO.	LOCATION	ITEM 815							
		PERCENT INCREASE FOR INCIDENTALS	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU	FIELD PAINTING OF EXISTING STEEL PRIME COAT, SYSTEM OZEU	FIELD PAINTING OF EXISTING STEEL INTERMEDIATE COAT, SYSTEM OZEU	FIELD PAINTING OF EXISTING STEEL FINISH COAT, SYSTEM OZEU	GRINDING FINS, TEARS, SLIVERS	GRINDING FLANGE EDGES	CAULKING
			SQ. FT.	SQ. FT.	SQ. FT.	SQ. FT.	MAN HOURS	LIN. FT.	LIN. FT.
MOT-70-0452	BROOKVILLE-PHILLIPSBURG PIKE OVER I-70	16%	11,350	11,350	11,350	11,350	40	768	266
TOTALS CARRIED TO ESTIMATED QUANTITIES			11,350	11,350	11,350	11,350	40	768	266

DESIGN AGENCY
OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 7

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ESTIMATED QUANTITIES
BRIDGE NO. MOT-70-0452
BROOKVILLE-PHILLIPSBURG PIKE OVER I.R.-70

MOT-70-0.00

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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 102.05, 105.02 AND 513.02.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

EXISTING BRIDGE PLANS

EXISTING BRIDGE PLANS MAY BE INSPECTED AT THE BUREAU OF BRIDGES AND STRUCTURAL DESIGN IN COLUMBUS, OHIO OR IN THE DISTRICT 7 OFFICE IN SIDNEY, OHIO.

ITEM 516 - REFURBISHING BEARING DEVICES, AS PER PLAN

THIS ITEM SHALL INCLUDE ALL WORK NECESSARY TO PROPERLY ALIGN BRIDGE BEARINGS AS WELL AS THEIR CLEANING AND PAINTING AT BOTH ABUTMENTS ON BRIDGE MOT-70-0106 THIS WORK SHALL INCLUDE THE DISASSEMBLY OF THE BEARINGS, SANDBLASTING, REPLACEMENT OF ANY DAMAGED SHEET LEAD (711.19), INSTALLATION OF ANY NECESSARY STEEL SHIMS OF THE SAME SIZE AS THE BEARINGS TO PROVIDE A SNUG FIT, REALIGNMENT OF THE UPPER BEARING PLATE BY REMOVING EXISTING WELDS AND REWELDING SO THAT THE BEARINGS ARE VERTICALLY ALIGNED AT 60 DEGREES F, LUBRICATING SLIDING SURFACES, AND REASSEMBLY OF THE BEARINGS.

THE CONTRACTOR SHALL BE SURE THAT ALL BEARINGS ARE SHIMMED ADEQUATELY AND THAT NO BEAMS AND/OR BEARING DEVICES ARE FLOATING. AT THE OPTION OF THE CONTRACTOR AND AT NO ADDITIONAL COST TO THE STATE, NEW BEARINGS OF THE SAME TYPE AS THE EXISTING MAY BE INSTALLED IN LIEU OF REFURBISHING THE BEARINGS. ALL WORK SHALL BE PERFORMED TO THE SATISFACTION OF THE ENGINEER.

PAYMENT FOR ALL THE ABOVE DESCRIBED, LABOR AND MATERIALS WILL BE MADE AT THE CONTRACT PRICE BID FOR ITEM 516, REFURBISH BEARINGS DEVICES, AS PER PLAN.

THE FOLLOWING QUANTITY HAS BEEN ADDED TO THE ESTIMATED QUANTITIES:

ITEM 516	REFURBISH BEARING DEVICES, AS PER PLAN	8 EACH

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

THIS ITEM SHALL CONSIST OF FURNISHING ALL NECESSARY LABOR, MATERIALS, AND EQUIPMENT TO RAISE OR REPOSITION THE EXISTING STRUCTURES FOR THE PURPOSES DEFINED IN THE PROJECT PLANS.

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 IN THE PROJECT PLANS. THREE (3) SETS OF JACKING PLANS, WHICH INCLUDE THE INFORMATION INCLUDED 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 PROFESSIONAL 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 WITH 3 WAY RETRACTOR VALVE, PRESSURE GAGES, FLOW CONTROL VALVES, ETC. IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. ALL JACKS FOR EACH ABUTMENT OR PIER SHALL BE CONNECTED TOGETHER. ALL JACKS AT EACH ABUTMENT OR PIER SHALL BE THE SAME SIZE.
5. ANALYSIS AND CALCULATIONS OF THE STRESSES INDUCED OR CREATED IN THE STRUCTURE AND ANY TEMPORARY OR PERMANENT SUPPORTS. DESIGN CALCULATIONS FOR ANY TEMPORARY OF PERMANENT SUPPORTS.
6. PHYSICAL DIMENSIONS, MATERIALS,AND FABRICATION DETAILS OF ANY TEMPORARY OR PERMANENT SUPPORT. HORIZONTAL AND VERTICAL MOVEMENT RESTRAINT SHALL BE PROVIDED.
7. A STEP BY STEP PROCEDURE DETAILING ALL STEPS IN THE JACKING PLAN
8. METHOD OF ATTACHMENT OF STRUCTURAL MEMBERS. WELDING TO TENSION ARES WILL NOT BE PERMITTED.

THE ENTIRE SYSTEM INCLUDING JACKS SHALL HAVE 20% MORE CAPACITY THAN REQUIRED BASED ON CLACULATED LOADS.

FOR LIFTS GREATER THAN 1", JACKS SHALL HAVE LOCKING NUTS TO POSITIVELY LOCK AND SUPPORT THE STRUCTURE DURING THE LIFT.

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.

SINGLE ACTING RAMS WITH NO OVER-TRAVEL PROTECTION SHALL NOT BE USED.

SPARE EQUIPMENT SHALL BE AVAILABLE ON SITE FOR THE REQUIRED STRUCTURE RAISING TO PROCEED IN THE EVENT OF A BREAKDOWN. A LIST OF SPARE EQUIPMENT SHALL BE PROVIDED TO THE ENGINEER.

AT A MINIMUM, A JACKING OPERATION SHALL LIFT ALL BEAMS AT ANY ONE ABUTMENT OR PIER SIMULTANEOUSLY. THE ONLY EXCEPTION IS WHEN THE FOLLOWING ARE MET: THE WORK INVOLVES REPLACING OR REHABILITATING INDIVIDUAL BEARINGS, NO PERMANENT SHIMMING IS REQUIRED, AND THE HEIGHT OF THE LIFT SHALL NOT EXCEED ONE QUATER OF AN INCH (1/4").

MAXIMUM DIFFERENTIAL JACKING HEIGHT BETWEEN ANY ADJACENT ABUTMENTS OR PIERS SHALL BE ONE INCH (1") OR LESS

IF DURING THE JACKING OPERATIONS, CRACKING OF THE CONCRETE SUPERSTRUCTURE, SEPERATION 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 SHALL BE INSTALLED. THE CONTRACTOR SHALL THEN ANALYZE THE DAMAGE SUBMIT A METHOD OF CORRECTION TO THE ENGINEER FOR APPROVAL. ANY BEAMS THAT SEPERATE FRON THE DECK SHALL BE EPOXY INJECTED FOR THE DISTANCE OF SEPRATION 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 MEANS OR REPAIR, SUBJECT TO THE APPROVAL OF THE ENGINEER, WILL BE REQUIRED AT THE CONTRACTOR'S EXPENSE.

THE JACKING OPERATION SHALL BE DIRECTED BY A PROFESSIONAL ENGINEER EMPLOYED BY THE CONTRACTOR. FAILURE TO HAVE A PROFESSIONAL ENGINEER PRESENT SHALL BE CAUSE FOR CEASING JACKING OPERATIONS.

PAYMENT SHALL BE MADE AT THE LUMP SUM PRICE BID FOR ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN AND SHALL INCLUDE ALL NECESSARY TOOLS, LABOR, EQUIPMENT AND MATERIALS NECESSARY TO COMPLETE THIS ITEM OF WORK.

ITEM SPECIAL, SEALING OF CONCRETE SURFACES (EPOXY) (SEE PROPOSAL NOTE)

THE FOLLOWING EXPOSED CONCRETE SURFACES SHALL BE SEALED USING AN EPOXY SEALER:

1. PIERS FROM GROUND LINE TO BOTTOM OF PIER CAP (CENTER PIER ONLY)
2. PIER CAPS BOTTOM AND BOTH SIDES OF PIER CAP (ALL PIER CAPS)
3. ABUTMENTS AND BACKWALLS FROM TOP TO BACKWALL TO BRIDGE SEAT, THE BRIDGE SEAT, AND FROM BRIDGE SEAT TO THE GROUND LINE.
4. FROM 9" ON BRIDGE DECK, FRONT, FACE, TOP, AND BACKSIDES OF BRIDGE RAILING INCLUDING THE FASCIA FROM THE BRIDGE DECK SURFACE TO A 6" UNDERDECK RETURN ON THE BRIDGE DECK.
5. BRIDGE TRANSITION PARAPETS FROM EDGE OF PAVEMENT FRONT, FACE, TOP, AND BACKSIDES OF PARAPET TO THE GROUND LINE.

PRIOR TO APPLICATION OF THE SURFACE SEALER, THE ENGINEER SHALL INSURE THAT ALL FOREIGN MATERIAL, INCLUDING GRAFFITI HAS BEEN REMOVED BY THE SURFACE PREPARATION PROCESS.

FIELD PAINTING OF EXISTING STEEL, SYSTEM OZEU

THE SURFACE AREA PAY QUANTITY IS BASED ON THE SURFACE AREA OF THE MAIN MEMBERS INCREASED BY A PERCENT TO ACCOUNT FOR THE AREA OF CROSSFRAMES, BEARINGS, AND OTHER STRUCTURAL STEEL INCIDENTALS TO BE CLEANED AND PAINTED - SEE CHART ON SHEET 105.

THE COLOR OF THE FINISH COAT FOR MOT-70-0106 SHALL BE GREEN (FEDERAL COLOR NO. 14277).

SEE THE PROPOSAL NOTE FOR THE SURFACE PREPARATION REQUIREMENTS, APPLICATION RATES, MATERIAL REQUIREMENTS AND APPLICATION PROCEDURES.

ALL PAINTING OPERATIONS WHICH INVOLVE THE CLOSING OF ONE LANE OF TRAFFIC ON I.R.-70 SHALL BE PERFORMED BETWEEN THE HOURS OF 10:00 PM AND 6:00 AM. BETWEEN THE HOURS OF 6:00 AM AND 10:00 PM ALL LANES OF TRAFFIC SHALL BE OPEN.

DESIGN AGENCY
OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 7

DESIGNED J.B.S. CHECKED
DRAWN J.B.S. REVISED
REVIEWED DATE
STRUCTURE FILE NUMBER

BRIDGE GENERAL NOTES
BRIDGE NO. MOT-70-0553
WELLBAUM RD. OVER I.R.-70

MOT-70-0.00

c68 0664.dgn

ITEM SPECIAL - STRUCTURE, MISC.: COMPOSITE FIBER WRAP SYSTEM, PIER COLUMNS

DESCRIPTION

1.01 THIS WORK SHALL CONSIST OF PROVIDING A FIBER WRAP CASING SYSTEM USING HIGH STRENGTH, HYRID FIBER/EPOXY COMPOSITES FIELD APPLIED TO THE SURFACE OF THE BERM PIER COLUMNS. THE COLUMN IS TO BE CLEANED AND PREPARED AS TO THE MANUFACTURER'S RECOMMENDATIONS.

DESIGN

2.01 THE SUPPLIER SHALL DETAIL THE NUMBER OF LAYERS OF FABRIC NEEDED AND SHALL SUBMIT DETAILED CALCULATIONS. NOTES, THERE MAY BE A DIFFERENT NUMBER OF WRAPS NEEDED AT DIFFERENT LOCATIONS ON THE SAME COLUMN.

MATERIALS

3.01 ALL MATERIALS AND INSTALLATION DIRECTIONS SHALL BE SUPPLIED BY THE MANUFACTURER. THE SUGGESTED MANUFACTURE IS R.J. WATSON, INC. P.O. BOX 85, EAST AMHERST, NEW YORK 14051 (PH. 716-741-2166) OR APPROVED EQUAL.

ALL SUPPLIERS AND APPLICATORS MUST HAVE FIELD EXPERIENCE WITH A MINIMUM OF 10 INSTALLATIONS AND FURNISH CERTIFIED TEST REPORTS INCLUDING 3,000 HOUR DURABILITY TESTS AT 140° F FOR WATER, SALT WATER, ALKALINE SOIL, OZONE, EFFERVESCENCE AND OTHER FACTORS (REFER TO PARAGRAPH 3.04). FIBER COMPOSITE SUPPLIER SHALL ALSO HAVE CONDUCTED LABORATORY RESEARCH ON DELAMINATED COLUMNS DEMOSTRATING THAT THE REPAIRED COLUMN EXCEEDS THE ORGINAL DESIGN IN AXIAL STRENGTH AND DUCILITY.

3.02 THE FABRIC FOR THE COMPOSITE CASING SYSTEM SHALL BE CONTINUOUS FILAMENT WOVEN FABRIC. PRIMARY FIBERS FOR THE FABRIC SHALL BE ELECTRICAL (E) GLASS FIBERS (SEH-51) OR CARBON (SCH-41).

3.03 THE EPOXY SHALL BE SUPPLIED BY THE MANUFACTURER TO MEET THE COMPOSITE STRENGTH GIVEN IN 3.04. POLYESTER RESIN SHALL NOT BE ALLOWED AS A SUBSTITUTE FOR EPOXY RESIN.

3.04 THE COMPOSTIE OF THE FIBER WRAPPED COLUMN CASING SYSTEM SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

PROPERTY	REQUIREMENT SEH-51/TYFO®	REQUIREMENT SCH-41/TYFO®	ASTM TEST METHOD
ULTIMATE TENSILE STRENGTH, PSI IN PRIMARY FIBER DIRECTIONS	60,000 PSI	110,000 PSI	D 3039
PERCENT TENSILE STRENGTH RETAINED 7 DAYS EXPOSURE AT: 100% HUMIDITY 3000 HOURS EXPOSURE TO OZONE 3000 HOURS EXPOSURE TO ALKALI 3000 HOURS EXPOSURE TO SALT WATER 3000 HOURS EXPOSURE AT 140°	 100% 90% 90% 90% 90%	 100% 90% 90% 90% 90%	
ELONGATION PERCENT, MIN. PERCENT, MAX.	 1.7% 4.0%	 0.8% 1.5%	
TENSILE MODULUS, PSI MIN. BASED ON CROSS SECTIONAL AREA OF PRIMARY FIBERS	3×10^6	8×10^6	
ULTIMATE TENSILE STRENGTH AT 90°F TO PRIMARY FIBERS, PSI, MIN.	5,500 PSI	225 PSI	
VISUAL DEFECTS	ACCEPTANCE LEVEL III	ACCEPTANCE LEVEL III	D 2563
COEFFICENT OF THERMAL EXPANSION IN PRIMARY DIF.	4.3 X 10° PPM/DEG. F (+15%)	1.0 X 10° PPM/DEG. F (+15%)	E 1142

COLUMN PREPARATION

4.01.1 THE SURFACE SHALL BE FREE FROM FINS, SHARP EDGES, AND PROTRUSIONS THAT WILL CAUSE VOIDS BEHIND THE CASING OR THAT, IN THE OPINION OF THE ENGINEER, WILL DAMAGE FIBER.

4.01.2 THE SURFACES TO RECEIVE THE COMPOSITE WRAP SHALL BE SMOOTH AND FREE OF VOIDS OR UNDULATIONS THAT WOULD PREVENT FULL CONTACT BETWEEN THE CONCRETE AND THE WRAP.

4.01.3 THE CONTACT SURFACES SHALL BE COMPLETELY DRY AT THE TIME OF APPLICATION OF THE COMPOSITE. NEWLY REPAIRED OR PATCHED SURFACES THAT HAVE SET, BUT NOT CURED A MINIMUM OF 7 DAYS, SHALL BE COATED WITH WATER-BASED EPOXY PAINT OR OTHER APPROVED SEALER.

COMPOSITE APPLICATION

4.02.1 THE AMBIENT TEMPERATURE AND THE TEMPERATURE OF THE EPOXY RESIN COMPONENTS SHALL BE BETWEEN 55°F AND 95°F AT THE TIME OF MIXING. THE COMPOSITE SHALL BE APPLIED WHEN THE RELATIVE HUMIDITY IS LESS THAN 85% AND THE SURFACE TEMPERATURE IS MORE THAN 5%F ABOVE THE DEW POINT. APPLICATIONS SHALL BEGIN WITHIN ONE HOUR AFTER THE BATCH HAS BEEN MIXED.

4.02.2 THE COMPONENTS OF THE EPOXY RESIN SHALL BE MIXED WITH A MECHANICAL MIXER FOR A MINIMUM OF 5 MINUTES AND APPLIED UNIFORMLY TO THE FIBER AT A RATE THAT SHALL INSURE COMPLETE SATURATION OF THE FABRIC.

4.02.3 A PRIMER OF EPOXY SHALL BE APPLIED TO THE SURFACE OF THE CONCRETE.

4.02.4 THE FABRIC/EPOXY COMPOSITE SHALL BE APPLIED TO THE PREPARED SURFACE BY WRAPPING USING METHODS THAT PRODUCE A UNIFORM FORCE THAT IS DISTRIBUTED ACROSS THE ENTIRE WIDTH OF THE FABRIC. THE PRIMARY FIBERS OF THE FABRIC SHALL NOT DEVIATE FROM A HORIZONTAL LINE MORE THAN $\frac{1}{2}$INCH PER FOOT, AND THE TRANSVERSE FIBERS SHALL BE PERPENDICULAR TO THE PRIMARY. ENTRAPPED AIR SHALL BE RELEASED OR ROLLED OVER BEFORE THE EPOXY SETS.

4.02.5 SUCCESSIVE LAYERS OF COMPOSITE MATERIALS SHALL BE PLACED BEFORE POLYMERIZATION OF THE PREVIOUS LAYER OF EPOXY IS TOO COMPLETE TO ACHIEVE COMPLETE BOND BETWEEN LAYERS. IF POLYMERIZATION DOES OCCUR BETWEEN LAYERS THE SURFACE MUST BE ROUGHENED USING A LIGHT ABRASIVE THAT WILL NOT DAMAGE THE FIBER.

4.02.6 A FINAL LAYER OF EPOXY SHALL BE APPLED TO THE FINAL LAYER, WITH CARE TAKEN TO INSURE COATING OF ALL EDGES AND SEAMS.

COATING SYSTEM APPLICATION

4.03.1 A FINAL COATING IS REQUIRED TO PROTECT THE FIBERS FROM THE ELEMENTS, SPECIFICALLY UV RADIATION AND TO GIVE THE FINAL AESTHETIC EFFECT.

4.03.2 (AFTER 96 HOURS FROM FINAL APPLICATION OF EPOXY) IF THE FINAL EPOXY COAT IS COMPLETELY POLYMERIZED THE EXTERIOR SURFACE OF THE COMPOSITE WRAP SHALL BE CLEANED AND ROUGHENED BY A LIGHT ABRASIVE. CARE SHOULD BE TAKEN DURING THE ROUGHENING PROCESS SO THAT THE FIBERS ARE NOT DAMAGED. ALL CLEANED AND ROUGHENED SURFACES SHALL BE DRY BEFORE PAINTING.

4.03.2 THE AREA TO BE PAINTED SHALL BE A TOTAL DRY FILM THICKNESS OF NOT LESS THAN 4 MILS.

MEASUREMENT AND PAYMENT

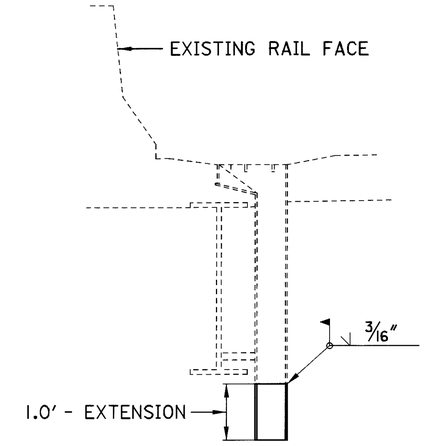
5.01 THIS ITEM WILL BE PAYED FOR BY SQUARE FOOTAGE COVERED AND SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK

ITEM 518, SCUPPER LENGTHENING, AS PER PLAN

THIS ITEM SHALL CONSIST OF EXTENDING THE BOTTOM DOWNSPOUT OF THE EXISTING SCUPPERS ONE FOOT AS SHOWN ON THE DETAIL BELOW.

PAYMENT FOR ALL MATERIALS, LABOR, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK AS DESCRIBED IN THE NOTES AND DETAILS SHALL BE INCLUDED WITH ITEM 518, SCUPPER LENGTHENING, AS PER PLAN.

BRIDGE NO.	LOCATION	518 SCUPPER LENGTHENING, AS PER PLAN
		EACH
MOT-70-0553	WELLBAUM RD. OVER I.R.-70	12
TOTAL CARRIED TO ESTIMATED QUANTITIES		12



SCUPPER LENGTHENING, AS PER PLAN

DESIGN AGENCY
OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 7

DESIGNED J.B.S. DRAWN J.B.S. CHECKED REVIEWED DATE REVISED STRUCTURE FILE NUMBER

BRIDGE GENERAL NOTES
BRIDGE NO. MOT-70-0553
WELLBAUM RD. OVER I.R.-70

MOT-70-0.00

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ESTIMATED QUANTITIES (MOT-70-0553)

ITEM		QUANTITY	UNIT	DESCRIPTION
SPECIAL		686	SQ. YD.	SEALING OF CONCRETE SURFACES (EPOXY)
				(LIGHT NEUTRAL, FEDERAL COLOR NO. 17778) (SEE PROPOSAL NOTE)
516		8	EACH	REFURBISH BEARING DEVICES, AS PER PLAN (SEE NOTE)
516		LUMP	LUMP	JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN (SEE NOTE)
518		12	EACH	SCUPPER LENGTHENING, AS PER PLAN
519		50	SQ. FT.	PATCHING CONCRETE STRUCTURE (BERM PIER COLUMNS)
SPECIAL		707	SQ. FT.	STRUCTURE MISC.: COMPOSITE FIBER WRAP SYSTEM, PIER COLUMNS
815		9,985	SQ. FT.	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU
815		9,985	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU
815		9,985	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COURSE, SYSTEM OZEU
815		9,985	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU
815		238	LIN. FT.	CAULKING
815		40	MAN HOUR	GRINDING FINS, TEARS, SLIVERS
815		768	LIN. FT.	GRINDING FLANGE EDGES

* ESTIMATED QUANTITIES CARRIED TO BRIDGE SUMMARY ON SHEET 88.

ESTIMATED QUANTITIES FOR ITEM SPECIAL, SEALING OF CONCRETE SURFACES (EPOXY)

BRIDGE NO.	LOCATION	RAILINGS (INCLUDING PARAPET TRANSITIONS)	FORWARD ABUTMENT	REAR ABUTMENT	PIER NO. 1 (PIER CAP ONLY)	PIER NO. 2 (PIER COLUMNS & PIER CAP)	PIER NO. 3 (PIER CAP ONLY)	TOTAL CARRIED TO ESTIMATED QUANTITIES
		SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.
MOT-70-0553	WELLBAUM RD. OVER I-70	517	25	25	28	63	28	686

ESTIMATED QUANTITIES FOR FIELD PAINTING OF EXISTING STEEL, SYSTEM OZEU

BRIDGE NO.	LOCATION	ITEM 815							
		PERCENT INCREASE FOR INCIDENTALS	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU	FIELD PAINTING OF EXISTING STEEL PRIME COAT, SYSTEM OZEU	FIELD PAINTING OF EXISTING STEEL INTERMEDIATE COAT, SYSTEM OZEU	FIELD PAINTING OF EXISTING STEEL FINISH COAT, SYSTEM OZEU	GRINDING FINS, TEARS, SLIVERS	GRINDING FLANGE EDGES	CAULKING
			SQ. FT.	SQ. FT.	SQ. FT.	SQ. FT.	MAN HOURS	LIN. FT.	LIN. FT.
MOT-70-0553	WELLBAUM RD. OVER I-70	16%	9,985	9,985	9,985	9,985	40	768	238
TOTALS CARRIED TO ESTIMATED QUANTITIES			9,985	9,985	9,985	9,985	40	768	238

DESIGN AGENCY
OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 7

DESIGNED	DRAWN	REVIEWED	DATE
J.B.S.	J.B.S.		
CHECKED	REVISED	STRUCTURE FILE NUMBER	

ESTIMATED QUANTITIES
BRIDGE NO. MOT-70-0553
WELLBAUM RD. OVER I.R.-70

MOT-70-0.00

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107
112

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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 102.05, 105.02 AND 513.02.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

EXISTING BRIDGE PLANS

EXISTING BRIDGE PLANS MAY BE INSPECTED AT THE BUREAU OF BRIDGES AND STRUCTURAL DESIGN IN COLUMBUS, OHIO OR IN THE DISTRICT 7 OFFICE IN SIDNEY, OHIO.

ITEM 516 - REFURBISHING BEARING DEVICES, AS PER PLAN

THIS ITEM SHALL INCLUDE ALL WORK NECESSARY TO PROPERLY ALIGN BRIDGE BEARINGS AS WELL AS THEIR CLEANING AND PAINTING AT BOTH ABUTMENTS ON BRIDGE MOT-70-0106 THIS WORK SHALL INCLUDE THE DISASSEMBLY OF THE BEARINGS, SANDBLASTING, REPLACEMENT OF ANY DAMAGED SHEET LEAD (711.19), INSTALLATION OF ANY NECESSARY STEEL SHIMS OF THE SAME SIZE AS THE BEARINGS TO PROVIDE A SNUG FIT, REALIGNMENT OF THE UPPER BEARING PLATE BY REMOVING EXISTING WELDS AND REWELDING SO THAT THE BEARINGS ARE VERTICALLY ALIGNED AT 60 DEGREES F, LUBRICATING SLIDING SURFACES, AND REASSEMBLY OF THE BEARINGS.

THE CONTRACTOR SHALL BE SURE THAT ALL BEARINGS ARE SHIMMED ADEQUATELY AND THAT NO BEAMS AND/OR BEARING DEVICES ARE FLOATING. AT THE OPTION OF THE CONTRACTOR AND AT NO ADDITIONAL COST TO THE STATE, NEW BEARINGS OF THE SAME TYPE AS THE EXISTING MAY BE INSTALLED IN LIEU OF REFURBISHING THE BEARINGS. ALL WORK SHALL BE PERFORMED TO THE SATISFACTION OF THE ENGINEER.

PAYMENT FOR ALL THE ABOVE DESCRIBED, LABOR AND MATERIALS WILL BE MADE AT THE CONTRACT PRICE BID FOR ITEM 516, REFURBISH BEARINGS DEVICES, AS PER PLAN.

THE FOLLOWING QUANTITY HAS BEEN ADDED TO THE ESTIMATED QUANTITIES:

ITEM 516	REFURBISH BEARING DEVICES, AS PER PLAN	10 EACH

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

THIS ITEM SHALL CONSIST OF FURNISHING ALL NECESSARY LABOR, MATERIALS, AND EQUIPMENT TO RAISE OR REPOSITION THE EXISTING STRUCTURES FOR THE PURPOSES DEFINED IN THE PROJECT PLANS.

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 IN THE PROJECT PLANS. THREE (3) SETS OF JACKING PLANS, WHICH INCLUDE THE INFORMATION INCLUDED 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 PROFESSIONAL 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 WITH 3 WAY RETRACTOR VALVE, PRESSURE GAGES, FLOW CONTROL VALVES, ETC. IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. ALL JACKS FOR EACH ABUTMENT OR PIER SHALL BE CONNECTED TOGETHER. ALL JACKS AT EACH ABUTMENT OR PIER SHALL BE THE SAME SIZE.
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 SUPPORT. HORIZONTAL AND VERTICAL MOVEMENT RESTRAINT SHALL BE PROVIDED.
7. A STEP BY STEP PROCEDURE DETAILING ALL STEPS IN THE JACKING PLAN
8. METHOD OF ATTACHMENT OF STRUCTURAL MEMBERS. WELDING TO TENSION ARES WILL NOT BE PERMITTED.

THE ENTIRE SYSTEM INCLUDING JACKS SHALL HAVE 20% MORE CAPACITY THAN REQUIRED BASED ON CLACULATED LOADS.

FOR LIFTS GREATER THAN 1", JACKS SHALL HAVE LOCKING NUTS TO POSITIVELY LOCK AND SUPPORT THE STRUCTURE DURING THE LIFT.

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.

SINGLE ACTING RAMS WITH NO OVER-TRAVEL PROTECTION SHALL NOT BE USED.

SPARE EQUIPMENT SHALL BE AVAILABLE ON SITE FOR THE REQUIRED STRUCTURE RAISING TO PROCEED IN THE EVENT OF A BREAKDOWN. A LIST OF SPARE EQUIPMENT SHALL BE PROVIDED TO THE ENGINEER.

AT A MINIMUM, A JACKING OPERATION SHALL LIFT ALL BEAMS AT ANY ONE ABUTMENT OR PIER SIMULTANEOUSLY. THE ONLY EXCEPTION IS WHEN THE FOLLOWING ARE MET: THE WORK INVOLVES REPLACING OR REHABILITATING INDIVIDUAL BEARINGS, NO PERMANENT SHIMMING IS REQUIRED, AND THE HEIGHT OF THE LIFT SHALL NOT EXCEED ONE QUATER OF AN INCH (1/4").

MAXIMUM DIFFERENTIAL JACKING HEIGHT BETWEEN ANY ADJACENT ABUTMENTS OR PIERS SHALL BE ONE INCH (1") OR LESS

IF DURING THE JACKING OPERATIONS, CRACKING OF THE CONCRETE SUPERSTRUCTURE, SEPERATION 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 SHALL BE INSTALLED. THE CONTRACTOR SHALL THEN ANALYZE THE DAMAGE SUBMIT A METHOD OF CORRECTION TO THE ENGINEER FOR APPROVAL. ANY BEAMS THAT SEPERATE FRON THE DECK SHALL BE EPOXY INJECTED FOR THE DISTANCE OF SEPRATION 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 MEANS OR REPAIR, SUBJECT TO THE APPROVAL OF THE ENGINEER, WILL BE REQUIRED AT THE CONTRACTOR'S EXPENSE.

THE JACKING OPERATION SHALL BE DIRECTED BY A PROFESSIONAL ENGINEER EMPLOYED BY THE CONTRACTOR. FAILURE TO HAVE A PROFESSIONAL ENGINEER PRESENT SHALL BE CAUSE FOR CEASING JACKING OPERATIONS.

PAYMENT SHALL BE MADE AT THE LUMP SUM PRICE BID FOR ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN AND SHALL INCLUDE ALL NECESSARY TOOLS, LABOR, EQUIPMENT AND MATERIALS NECESSARY TO COMPLETE THIS ITEM OF WORK.

ITEM SPECIAL, SEALING OF CONCRETE SURFACES (EPOXY) (SEE PROPOSAL NOTE)

THE FOLLOWING EXPOSED CONCRETE SURFACES SHALL BE SEALED USING AN EPOXY SEALER:

1. PIERS FROM GROUND LINE TO BOTTOM OF PIER CAP (CENTER PIER ONLY)
2. PIER CAPS BOTTOM AND BOTH SIDES OF PIER CAP (ALL PIER CAPS)
3. ABUTMENTS AND BACKWALLS FROM TOP TO BACKWALL TO BRIDGE SEAT, THE BRIDGE SEAT, AND FROM BRIDGE SEAT TO THE GROUND LINE.
4. FROM 9" ON BRIDGE DECK, FRONT, FACE, TOP, AND BACKSIDES OF BRIDGE RAILING INCLUDING THE FASCIA FROM THE BRIDGE DECK SURFACE TO A 6" UNDERDECK RETURN ON THE BRIDGE DECK.
5. BRIDGE TRANSITION PARAPETS FROM EDGE OF PAVEMENT FRONT, FACE, TOP, AND BACKSIDES OF PARAPET TO THE GROUND LINE.

PRIOR TO APPLICATION OF THE SURFACE SEALER, THE ENGINEER SHALL INSURE THAT ALL FOREIGN MATERIAL, INCLUDING GRAFFITI HAS BEEN REMOVED BY THE SURFACE PREPARATION PROCESS.

FIELD PAINTING OF EXISTING STEEL, SYSTEM OZEU

THE SURFACE AREA PAY QUANTITY IS BASED ON THE SURFACE AREA OF THE MAIN MEMBERS INCREASED BY A PERCENT TO ACCOUNT FOR THE AREA OF CROSSFRAMES, BEARINGS, AND OTHER STRUCTURAL STEEL INCIDENTALS TO BE CLEANED AND PAINTED - SEE CHART ON SHEET 108.

THE COLOR OF THE FINISH COAT FOR MOT-70-0106 SHALL BE DARK NEUTRAL (FEDERAL COLOR NO. 10324).

SEE THE PROPOSAL NOTE FOR THE SURFACE PREPARATION REQUIREMENTS, APPLICATION RATES, MATERIAL REQUIREMENTS AND APPLICATION PROCEDURES.

ALL PAINTING OPERATIONS WHICH INVOLVE THE CLOSING OF ONE LANE OF TRAFFIC ON I.R.-70 SHALL BE PERFORMED BETWEEN THE HOURS OF 10:00 PM AND 6:00 AM. BETWEEN THE HOURS OF 6:00 AM AND 10:00 PM ALL LANES OF TRAFFIC SHALL BE OPEN.

DESIGN AGENCY
OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 7

DESIGNED	DRAWN	REVIEWED	DATE
J.B.S.	J.B.S.		
CHECKED	REVISED		STRUCTURE FILE NUMBER

BRIDGE GENERAL NOTES
BRIDGE NO. MOT-70-0603
BROOKVILLE-SALEM PIKE OVER I.R.-70

MOT-70-0.00

c68 0664.dgn

ITEM SPECIAL - STRUCTURE, MISC.: COMPOSITE FIBER WRAP SYSTEM, PIER COLUMNS

DESCRIPTION

1.01 THIS WORK SHALL CONSIST OF PROVIDING A FIBER WRAP CASING SYSTEM USING HIGH STRENGTH, HYRID FIBER/EPOXY COMPOSITES FIELD APPLIED TO THE SURFACE OF THE BERM PIER COLUMNS. THE COLUMN IS TO BE CLEANED AND PREPARED AS TO THE MANUFACTURER'S RECOMMENDATIONS.

DESIGN

2.01 THE SUPPLIER SHALL DETAIL THE NUMBER OF LAYERS OF FABRIC NEEDED AND SHALL SUBMIT DETAILED CALCULATIONS. NOTES, THERE MAY BE A DIFFERENT NUMBER OF WRAPS NEEDED AT DIFFERENT LOCATIONS ON THE SAME COLUMN.

MATERIALS

3.01 ALL MATERIALS AND INSTALLATION DIRECTIONS SHALL BE SUPPLIED BY THE MANUFACTURER. THE SUGGESTED MANUFACTURE IS R.J. WATSON, INC. P.O. BOX 85, EAST AMHERST, NEW YORK 14051 (PH. 716-741-2166) OR APPROVED EQUAL.

ALL SUPPLIERS AND APPLICATORS MUST HAVE FIELD EXPERIENCE WITH A MINIMUM OF 10 INSTALLATIONS AND FURNISH CERTIFIED TEST REPORTS INCLUDING 3,000 HOUR DURABILITY TESTS AT 140° F FOR WATER, SALT WATER, ALKALINE SOIL, OZONE, EFFERVESCENCE AND OTHER FACTORS (REFER TO PARAGRAPH 3.04). FIBER COMPOSITE SUPPLIER SHALL ALSO HAVE CONDUCTED LABORATORY RESEARCH ON DELAMINATED COLUMNS DEMOSTRATING THAT THE REPAIRED COLUMN EXCEEDS THE ORGINAL DESIGN IN AXIAL STRENGTH AND DUCILITY.

3.02 THE FABRIC FOR THE COMPOSITE CASING SYSTEM SHALL BE CONTINUOUS FILAMENT WOVEN FABRIC. PRIMARY FIBERS FOR THE FABRIC SHALL BE ELECTRICAL (E) GLASS FIBERS (SEH-51) OR CARBON (SCH-41).

3.03 THE EPOXY SHALL BE SUPPLIED BY THE MANUFACTURER TO MEET THE COMPOSITE STRENGTH GIVEN IN 3.04. POLYESTER RESIN SHALL NOT BE ALLOWED AS A SUBSTITUTE FOR EPOXY RESIN.

3.04 THE COMPOSTIE OF THE FIBER WRAPPED COLUMN CASING SYSTEM SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

PROPERTY	REQUIREMENT SEH-51/TYFO®	REQUIREMENT SCH-41/TYFO®	ASTM TEST METHOD
ULTIMATE TENSILE STRENGTH, PSI IN PRIMARY FIBER DIRECTIONS	60,000 PSI	110,000 PSI	D 3039
PERCENT TENSILE STRENGTH RETAINED 7 DAYS EXPOSURE AT:			
100% HUMIDITY	100%	100%	
3000 HOURS EXPOSURE TO OZONE	90%	90%	
3000 HOURS EXPOSURE TO ALKALI	90%	90%	
3000 HOURS EXPOSURE TO SALT WATER	90%	90%	
3000 HOURS EXPOSURE AT 140°	90%	90%	
ELONGATION			
PERCENT, MIN.	1.7%	0.8%	
PERCENT, MAX.	4.0%	1.5%	
TENSILE MODULUS, PSI MIN. BASED ON CROSS SECTIONAL AREA OF PRIMARY FIBERS	3 X 10^6	8 X 10^6	
ULTIMATE TENSILE STRENGTH AT 90°F TO PRIMARY FIBERS, PSI, MIN.	5,500 PSI	225 PSI	
VISUAL DEFECTS	ACCEPTANCE LEVEL III	ACCEPTANCE LEVEL III	D 2563
COEFFICENT OF THERMAL EXPANSION IN PRIMARY DIF.	4.3 X 10° PPM/DEG. F (+15%)	1.0 X 10° PPM/DEG. F (+15%)	E 1142

COLUMN PREPARATION

4.01.1 THE SURFACE SHALL BE FREE FROM FINS, SHARP EDGES, AND PROTRUSIONS THAT WILL CAUSE VOIDS BEHIND THE CASING OR THAT, IN THE OPINION OF THE ENGINEER, WILL DAMAGE FIBER.

4.01.2 THE SURFACES TO RECEIVE THE COMPOSITE WRAP SHALL BE SMOOTH AND FREE OF VOIDS OR UNDULATIONS THAT WOULD PREVENT FULL CONTACT BETWEEN THE CONCRETE AND THE WRAP.

4.01.3 THE CONTACT SURFACES SHALL BE COMPLETELY DRY AT THE TIME OF APPLICATION OF THE COMPOSITE. NEWLY REPAIRED OR PATCHED SURFACES THAT HAVE SET, BUT NOT CURED A MINIMUM OF 7 DAYS, SHALL BE COATED WITH WATER-BASED EPOXY PAINT OR OTHER APPROVED SEALER.

COMPOSITE APPLICATION

4.02.1 THE AMBIENT TEMPERATURE AND THE TEMPERATURE OF THE EPOXY RESIN COMPONENTS SHALL BE BETWEEN 55°F AND 95°F AT THE TIME OF MIXING. THE COMPOSITE SHALL BE APPLIED WHEN THE RELATIVE HUMIDITY IS LESS THAN 85% AND THE SURFACE TEMPERATURE IS MORE THAN 5%F ABOVE THE DEW POINT. APPLICATIONS SHALL BEGIN WITHIN ONE HOUR AFTER THE BATCH HAS BEEN MIXED.

4.02.2 THE COMPONENTS OF THE EPOXY RESIN SHALL BE MIXED WITH A MECHANICAL MIXER FOR A MINIMUM OF 5 MINUTES AND APPLIED UNIFORMLY TO THE FIBER AT A RATE THAT SHALL INSURE COMPLETE SATURATION OF THE FABRIC.

4.02.3 A PRIMER OF EPOXY SHALL BE APPLIED TO THE SURFACE OF THE CONCRETE.

4.02.4 THE FABRIC/EPOXY COMPOSITE SHALL BE APPLIED TO THE PREPARED SURFACE BY WRAPPING USING METHODS THAT PRODUCE A UNIFORM FORCE THAT IS DISTRIBUTED ACROSS THE ENTIRE WIDTH OF THE FABRIC. THE PRIMARY FIBERS OF THE FABRIC SHALL NOT DEVIATE FROM A HORIZONTAL LINE MORE THAN $\frac{1}{2}$INCH PER FOOT, AND THE TRANSVERSE FIBERS SHALL BE PERPENDICULAR TO THE PRIMARY. ENTRAPPED AIR SHALL BE RELEASED OR ROLLED OVER BEFORE THE EPOXY SETS.

4.02.5 SUCCESSIVE LAYERS OF COMPOSITE MATERIALS SHALL BE PLACED BEFORE POLYMERIZATION OF THE PREVIOUS LAYER OF EPOXY IS TOO COMPLETE TO ACHIEVE COMPLETE BOND BETWEEN LAYERS. IF POLYMERIZATION DOES OCCUR BETWEEN LAYERS THE SURFACE MUST BE ROUGHENED USING A LIGHT ABRASIVE THAT WILL NOT DAMAGE THE FIBER.

4.02.6 A FINAL LAYER OF EPOXY SHALL BE APPLED TO THE FINAL LAYER, WITH CARE TAKEN TO INSURE COATING OF ALL EDGES AND SEAMS.

COATING SYSTEM APPLICATION

4.03.1 A FINAL COATING IS REQUIRED TO PROTECT THE FIBERS FROM THE ELEMENTS, SPECIFICALLY UV RADIATION AND TO GIVE THE FINAL AESTHETIC EFFECT.

4.03.2 (AFTER 96 HOURS FROM FINAL APPLICATION OF EPOXY) IF THE FINAL EPOXY COAT IS COMPLETELY POLYMERIZED THE EXTERIOR SURFACE OF THE COMPOSITE WRAP SHALL BE CLEANED AND ROUGHENED BY A LIGHT ABRASIVE. CARE SHOULD BE TAKEN DURING THE ROUGHENING PROCESS SO THAT THE FIBERS ARE NOT DAMAGED. ALL CLEANED AND ROUGHENED SURFACES SHALL BE DRY BEFORE PAINTING.

4.03.2 THE AREA TO BE PAINTED SHALL BE A TOTAL DRY FILM THICKNESS OF NOT LESS THAN 4 MILS.

MEASUREMENT AND PAYMENT

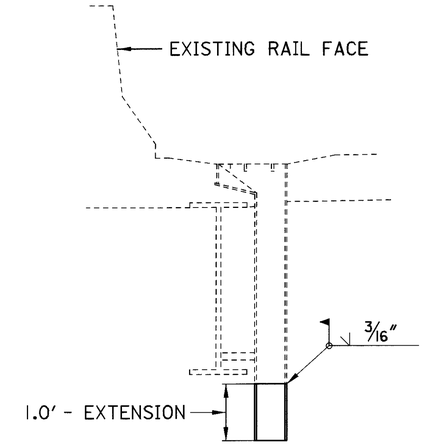
5.01 THIS ITEM WILL BE PAYED FOR BY SQUARE FOOTAGE COVERED AND SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK

ITEM 518, SCUPPER LENGTHENING, AS PER PLAN

THIS ITEM SHALL CONSIST OF EXTENDING THE BOTTOM DOWNSPOUT OF THE EXISTING SCUPPERS ONE FOOT AS SHOWN ON THE DETAIL BELOW.

PAYMENT FOR ALL MATERIALS, LABOR, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK AS DESCRIBED IN THE NOTES AND DETAILS SHALL BE INCLUDED WITH ITEM 518, SCUPPER LENGTHENING, AS PER PLAN.

BRIDGE NO.	LOCATION	518 SCUPPER LENGTHENING, AS PER PLAN
		EACH
MOT-70-0603	BROOKVILLE-SALEM PIKE OVER I.R.-70	12
TOTAL CARRIED TO ESTIMATED QUANTITIES		12



SCUPPER LENGTHENING, AS PER PLAN

DESIGN AGENCY
OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 7

DESIGNED J.B.S. | DRAWN J.B.S. | CHECKED | REVIEWED | DATE | REVISED | STRUCTURE FILE NUMBER

BRIDGE GENERAL NOTES
BRIDGE NO. MOT-70-0603
BROOKVILLE-SALEM PIKE OVER I.R.-70

MOT-70-0.00

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ESTIMATED QUANTITIES (MOT-70-0603)

ITEM		QUANTITY	UNIT	DESCRIPTION
SPECIAL		1054	SQ. YD.	SEALING OF CONCRETE SURFACES (EPOXY)
				(LIGHT NEUTRAL, FEDERAL COLOR NO. 17778) (SEE PROPOSAL NOTE)
516		10	EACH	REFURBISH BEARING DEVICES, AS PER PLAN (SEE NOTE)
516		LUMP	LUMP	JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN (SEE NOTE)
518		12	EACH	SCUPPER LENGTHENING, AS PER PLAN
519		20	SQ. FT.	PATCHING CONCRETE STRUCTURE (BACK WALLS)
519		50	SQ. FT.	PATCHING CONCRETE STRUCTURE (BERM PIER COLUMNS)
SPECIAL		679	SQ. FT.	STRUCTURE MISC.: COMPOSITE FIBER WRAP SYSTEM, PIER COLUMNS
815		28,652	SQ. FT.	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU
815		28,652	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, PRIME COAT, SYSTEM OZEU
815		28,652	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, INTERMEDIATE COURSE, SYSTEM OZEU
815		28,652	SQ. FT.	FIELD PAINTING OF EXISTING STEEL, FINISH COAT, SYSTEM OZEU
815		369	LIN. FT.	CAULKING
815		60	MAN HOUR	GRINDING FINS, TEARS, SLIVERS
815		768	LIN. FT.	GRINDING FLANGE EDGES

* ESTIMATED QUANTITIES CARRIED TO BRIDGE SUMMARY ON SHEET 88.

ESTIMATED QUANTITIES FOR ITEM SPECIAL, SEALING OF CONCRETE SURFACES (EPOXY)

BRIDGE NO.	LOCATION	RAILINGS (INCLUDING PARAPET TRANSITIONS)	FORWARD ABUTMENT	REAR ABUTMENT	PIER NO. 1 (PIER CAP ONLY)	PIER NO. 2 (PIER COLUMNS & PIER CAP)	PIER NO. 3 (PIER CAP ONLY)	TOTAL CARRIED TO ESTIMATED QUANTITIES
		SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.
MOT-70-0603	BROOKVILLE-SALEM PIKE OVER I-70	799	59	59	35	67	35	1054

ESTIMATED QUANTITIES FOR FIELD PAINTING OF EXISTING STEEL, SYSTEM OZEU

BRIDGE NO.	LOCATION	ITEM 815							
		PERCENT INCREASE FOR INCIDENTALS	SURFACE PREPARATION OF EXISTING STEEL, SYSTEM OZEU	FIELD PAINTING OF EXISTING STEEL PRIME COAT, SYSTEM OZEU	FIELD PAINTING OF EXISTING STEEL INTERMEDIATE COAT, SYSTEM OZEU	FIELD PAINTING OF EXISTING STEEL FINISH COAT, SYSTEM OZEU	GRINDING FINS, TEARS, SLIVERS	GRINDING FLANGE EDGES	CAULKING
			SQ. FT.	SQ. FT.	SQ. FT.	SQ. FT.	MAN HOURS	LIN. FT.	LIN. FT.
MOT-70-0603	BROOKVILLE-SALEM PIKE OVER I-70	26%	28,652	28,652	28,652	28,652	60	768	369
TOTALS CARRIED TO ESTIMATED QUANTITIES			28,652	28,652	28,652	28,652	60	768	369

DESIGN AGENCY
OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 7

DESIGNED	DRAWN	REVIEWED	DATE
J.B.S.	J.B.S.		
CHECKED	REVISED	STRUCTURE FILE NUMBER	

ESTIMATED QUANTITIES
BRIDGE NO. MOT-70-0603
BROOKVILLE-SALEM PIKE OVER I.R.-70

MOT-70-0.00

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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 102.05, 105.02 AND 513.02.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

EXISTING BRIDGE PLANS

EXISTING BRIDGE PLANS MAY BE INSPECTED AT THE BUREAU OF BRIDGES AND STRUCTURAL DESIGN IN COLUMBUS, OHIO OR IN THE DISTRICT 7 OFFICE IN SIDNEY, OHIO.

ITEM SPECIAL, SEALING OF CONCRETE SURFACES (EPOXY) (SEE PROPOSAL NOTE)

THE FOLLOWING EXPOSED CONCRETE SURFACES SHALL BE SEALED USING AN EPOXY SEALER:

1. PIERS FROM GROUND LINE TO BOTTOM OF PIER CAP (CENTER PIER ONLY)
2. PIER CAPS BOTTOM AND BOTH SIDES OF PIER CAP (ALL PIER CAPS)
3. ABUTMENTS AND BACKWALLS FROM TOP TO BACKWALL TO BRIDGE SEAT, THE BRIDGE SEAT, AND FROM BRIDGE SEAT TO THE GROUND LINE.
4. FROM 9" ON BRIDGE DECK, FRONT, FACE, TOP, AND BACKSIDES OF BRIDGE RAILING INCLUDING THE FASCIA FROM THE BRIDGE DECK SURFACE TO A 6" UNDERDECK RETURN ON THE BRIDGE DECK.
5. BRIDGE TRANSITION PARAPETS FROM EDGE OF PAVEMENT FRONT, FACE, TOP, AND BACKSIDES OF PARAPET TO THE GROUND LINE.

PRIOR TO APPLICATION OF THE SURFACE SEALER, THE ENGINEER SHALL INSURE THAT ALL FOREIGN MATERIAL, INCLUDING GRAFFITI HAS BEEN REMOVED BY THE SURFACE PREPARATION PROCESS.

ITEM 202 - REMOVAL MISC.: VANDAL FENCE REMOVED, AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF PROVIDING ALL EQUIPMENT, LABOR AND INCIDENTALS NECESSARY TO REMOVE AND DISPOSE OF ALL VANDAL FENCE LOCATED ON STRUCTURE MOT-49-1305L.

MEASUREMENT FOR PAYMENT PURPOSES WILL BE A LINEAR FOOT BASIS.

PAYMENT FOR ACCEPTED QUANTITIES WILL BE MADE AT THE CONTRACT PRICE FOR ITEM 202, REMOVAL MISC.: VANDAL FENCE REMOVED, AS PER PLAN

ITEM SPECIAL - STRUCTURE, MISC.: COMPOSITE FIBER WRAP SYSTEM, PIER COLUMNS

DESCRIPTION

1.01 THIS WORK SHALL CONSIST OF PROVIDING A FIBER WRAP CASING SYSTEM USING HIGH STRENGTH, HYRID FIBER/EPOXY COMPOSITES FIELD APPLIED TO THE SURFACE OF THE BERM PIER COLUMNS. THE COLUMN IS TO BE CLEANED AND PREPARED AS TO THE MANUFACTURER'S RECOMMENDATIONS.

DESIGN

2.01 THE SUPPLIER SHALL DETAIL THE NUMBER OF LAYERS OF FABRIC NEEDED AND SHALL SUBMIT DETAILED CALCULATIONS. NOTES, THERE MAY BE A DIFFERENT NUMBER OF WRAPS NEEDED AT DIFFERENT LOCATIONS ON THE SAME COLUMN.

MATERIALS

3.01 ALL MATERIALS AND INSTALLATION DIRECTIONS SHALL BE SUPPLIED BY THE MANUFACTURER. THE SUGGESTED MANUFACTURE IS R.J. WATSON, INC. P.O. BOX 85, EAST AMHERST, NEW YORK 14051 (PH. 716-741-2166) OR APPROVED EQUAL.

ALL SUPPLIERS AND APPLICATORS MUST HAVE FIELD EXPERIENCE WITH A MINIMUM OF 10 INSTALLATIONS AND FURNISH CERTIFIED TEST REPORTS INCLUDING 3,000 HOUR DURABILITY TESTS AT 140° F FOR WATER, SALT WATER, ALKALINE SOIL, OZONE, EFFERVESCENCE AND OTHER FACTORS (REFER TO PARAGRAPH 3.04). FIBER COMPOSITE SUPPLIER SHALL ALSO HAVE CONDUCTED LABORATORY RESEARCH ON DELAMINATED COLUMNS DEMOSTRATING THAT THE REPAIRED COLUMN EXCEEDS THE ORGINAL DESIGN IN AXIAL STRENGTH AND DUCILITY.

3.02 THE FABRIC FOR THE COMPOSITE CASING SYSTEM SHALL BE CONTINUOUS FILAMENT WOVEN FABRIC. PRIMARY FIBERS FOR THE FABRIC SHALL BE ELECTRICAL (E) GLASS FIBERS (SEH-51) OR CARBON (SCH-41).

3.03 THE EPOXY SHALL BE SUPPLIED BY THE MANUFACTURER TO MEET THE COMPOSITE STRENGTH GIVEN IN 3.04. POLYESTER RESIN SHALL NOT BE ALLOWED AS A SUBSTITUTE FOR EPOXY RESIN.

3.04 THE COMPOSTIE OF THE FIBER WRAPPED COLUMN CASING SYSTEM SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

PROPERTY	REQUIREMENT SEH-51/TYFO®	REQUIREMENT SCH-41/TYFO®	ASTM TEST METHOD
ULTIMATE TENSILE STRENGTH, PSI IN PRIMARY FIBER DIRECTIONS	60,000 PSI	110,000 PSI	D 3039
PERCENT TENSILE STRENGTH RETAINED 7 DAYS EXPOSURE AT: 100% HUMIDITY 3000 HOURS EXPOSURE TO OZONE 3000 HOURS EXPOSURE TO ALKALI 3000 HOURS EXPOSURE TO SALT WATER 3000 HOURS EXPOSURE AT 140°	 100% 90% 90% 90% 90%	 100% 90% 90% 90% 90%	
ELONGATION PERCENT, MIN. PERCENT, MAX.	 1.7% 4.0%	 0.8% 1.5%	
TENSILE MODULUS, PSI MIN. BASED ON CROSS SECTIONAL AREA OF PRIMARY FIBERS	3×10^6	8×10^6	
ULTIMATE TENSILE STRENGTH AT 90°F TO PRIMARY FIBERS, PSI, MIN.	5,500 PSI	225 PSI	
VISUAL DEFECTS	ACCEPTANCE LEVEL III	ACCEPTANCE LEVEL III	D 2563
COEFFICENT OF THERMAL EXPANSION IN PRIMARY DIF.	4.3 X 10° PPM/DEG. F (+15%)	1.0 X 10° PPM/DEG. F (+15%)	E 1142

COLUMN PREPARATION

4.01.1 THE SURFACE SHALL BE FREE FROM FINS, SHARP EDGES, AND PROTRUSIONS THAT WILL CAUSE VOIDS BEHIND THE CASING OR THAT, IN THE OPINION OF THE ENGINEER, WILL DAMAGE FIBER.

4.01.2 THE SURFACES TO RECEIVE THE COMPOSITE WRAP SHALL BE SMOOTH AND FREE OF VOIDS OR UNDULATIONS THAT WOULD PREVENT FULL CONTACT BETWEEN THE CONCRETE AND THE WRAP.

4.01.3 THE CONTACT SURFACES SHALL BE COMPLETELY DRY AT THE TIME OF APPLICATION OF THE COMPOSITE. NEWLY REPAIRED OR PATCHED SURFACES THAT HAVE SET, BUT NOT CURED A MINIMUM OF 7 DAYS, SHALL BE COATED WITH WATER-BASED EPOXY PAINT OR OTHER APPROVED SEALER.

COMPOSITE APPLICATION

4.02.1 THE AMBIENT TEMPERATURE AND THE TEMPERATURE OF THE EPOXY RESIN COMPONENTS SHALL BE BETWEEN 55°F AND 95°F AT THE TIME OF MIXING. THE COMPOSITE SHALL BE APPLIED WHEN THE RELATIVE HUMIDITY IS LESS THAN 85% AND THE SURFACE TEMPERATURE IS MORE THAN 5%F ABOVE THE DEW POINT. APPLICATIONS SHALL BEGIN WITHIN ONE HOUR AFTER THE BATCH HAS BEEN MIXED.

4.02.2 THE COMPONENTS OF THE EPOXY RESIN SHALL BE MIXED WITH A MECHANICAL MIXER FOR A MINIMUM OF 5 MINUTES AND APPLIED UNIFORMLY TO THE FIBER AT A RATE THAT SHALL INSURE COMPLETE SATURATION OF THE FABRIC.

4.02.3 A PRIMER OF EPOXY SHALL BE APPLIED TO THE SURFACE OF THE CONCRETE.

4.02.4 THE FABRIC/EPOXY COMPOSITE SHALL BE APPLIED TO THE PREPARED SURFACE BY WRAPPING USING METHODS THAT PRODUCE A UNIFORM FORCE THAT IS DISTRIBUTED ACROSS THE ENTIRE WIDTH OF THE FABRIC. THE PRIMARY FIBERS OF THE FABRIC SHALL NOT DEVIATE FROM A HORIZONTAL LINE MORE THAN $\frac{1}{2}$INCH PER FOOT, AND THE TRANSVERSE FIBERS SHALL BE PERPENDICULAR TO THE PRIMARY. ENTRAPPED AIR SHALL BE RELEASED OR ROLLED OVER BEFORE THE EPOXY SETS.

4.02.5 SUCCESSIVE LAYERS OF COMPOSITE MATERIALS SHALL BE PLACED BEFORE POLYMERIZATION OF THE PREVIOUS LAYER OF EPOXY IS TOO COMPLETE TO ACHIEVE COMPLETE BOND BETWEEN LAYERS. IF POLYMERIZATION DOES OCCUR BETWEEN LAYERS THE SURFACE MUST BE ROUGHENED USING A LIGHT ABRASIVE THAT WILL NOT DAMAGE THE FIBER.

4.02.6 A FINAL LAYER OF EPOXY SHALL BE APPLED TO THE FINAL LAYER, WITH CARE TAKEN TO INSURE COATING OF ALL EDGES AND SEAMS.

COATING SYSTEM APPLICATION

4.03.1 A FINAL COATING IS REQUIRED TO PROTECT THE FIBERS FROM THE ELEMENTS, SPECIFICALLY UV RADIATION AND TO GIVE THE FINAL AESTHETIC EFFECT.

4.03.2 (AFTER 96 HOURS FROM FINAL APPLICATION OF EPOXY) IF THE FINAL EPOXY COAT IS COMPLETELY POLYMERIZED THE EXTERIOR SURFACE OF THE COMPOSITE WRAP SHALL BE CLEANED AND ROUGHENED BY A LIGHT ABRASIVE. CARE SHOULD BE TAKEN DURING THE ROUGHENING PROCESS SO THAT THE FIBERS ARE NOT DAMAGED. ALL CLEANED AND ROUGHENED SURFACES SHALL BE DRY BEFORE PAINTING.

4.03.2 THE AREA TO BE PAINTED SHALL BE A TOTAL DRY FILM THICKNESS OF NOT LESS THAN 4 MILS.

MEASUREMENT AND PAYMENT

5.01 THIS ITEM WILL BE PAYED FOR BY SQUARE FOOTAGE COVERED AND SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK

DESIGN AGENCY
OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 7

DESIGNED J.B.S. CHECKED
DRAWN J.B.S. REVISED
REVIEWED DATE
STRUCTURE FILE NUMBER

BRIDGE GENERAL NOTES
BRIDGE NO. MOT-49-1305L
SOUTHBOUND S.R.-49 OVER I.R.-70

MOT-70-0.00

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ESTIMATED QUANTITIES (MOT-49-1305L)

ITEM		QUANTITY	UNIT	DESCRIPTION
202		644	LIN. FT.	REMOVAL MISC.: VANDAL FENCE REMOVED, AS PER PLAN
SPECIAL		1012	SQ. YD.	SEALING OF CONCRETE SURFACES (EPOXY)
				(LIGHT NEUTRAL, FEDERAL COLOR NO. 17778) (SEE PROPOSAL NOTE)
SPECIAL		834	SQ. FT.	STRUCTURE MISC.: COMPOSITE FIBER WRAP SYSTEM, PIER COLUMNS

* ESTIMATED QUANTITIES CARRIED TO BRIDGE SUMMARY ON SHEET 88.

ESTIMATED QUANTITIES FOR ITEM SPECIAL, SEALING OF CONCRETE SURFACES (EPOXY)

BRIDGE NO.	LOCATION	RAILINGS (INCLUDING PARAPET TRANSITIONS)	FORWARD ABUTMENT	REAR ABUTMENT	PIER NO. 1 (PIER CAP ONLY)	PIER NO. 2 (PIER COLUMNS & & PIER CAP)	PIER NO. 3 (PIER CAP ONLY)	TOTAL CARRIED TO ESTIMATED QUANTITIES
		SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.	SQ. YD.
MOT-49-1305L	SOUTHBOUND S.R.-49 OVER I.R.-70	713	59	59	46	89	46	1012

DESIGN AGENCY
OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 7

DESIGNED J.B.S. | DRAWN J.B.S. | REVIEWED | DATE | CHECKED | REVISED | STRUCTURE FILE NUMBER

ESTIMATED QUANTITIES
BRIDGE NO. MOT-70-1305L
SOUTHBOUND S.R.-49 OVER I.R.-70

MOT-70-0.00

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