OHIO DEPARTMENT OF TRANSPORTATION

PLAN NO. 7

PROJECT DESCRIPTION

PART	COUNTY	ROUTE	SECTIONS	PROJECT TERMINII		NET LENGTH MILES	CITY	VILLAGE
				BEGIN	END			
PART 1	MAHONING	180	(0.52 - 5.57)	0.52	5.75	5.23		
PART 2	MAHONING	SR11	(15.18 - 15.82)	15.18	16.19	1.01		

FEDERAL PROJECT NO. IM-80-5(51)

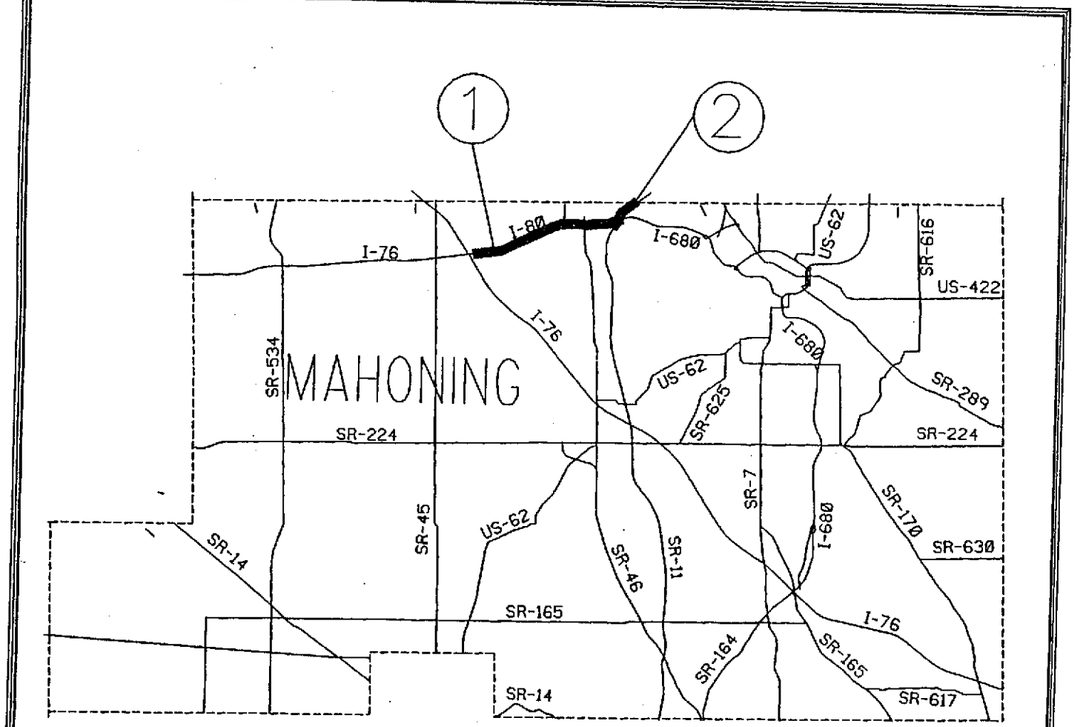
FID NO. 14130

CONSTRUCTION PROJECT NO.

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 4
MAINTENANCE

LOCATION MAP



Sheets 24A, 33A, 33B & 52A have been added.

PORTION TO BE IMPROVED

N

STANDARD DRAWINGS	
BP-31.2-21-92	MT-98.13 6-24-93
GR-1.15-6-91	MT-98.14 6-24-93
GR-1.2 10-30-92	MT-98.15 6-24-93
GR-2.15-6-91	MT-99.10 11-14-86
GR-3A 2-5-82	MT-99.20 4-29-88
GR-3.15-6-91	MT-101.60 7-1-92
GR-3.3 5-6-91	MT-102.20 8-25-89
GR-4.2 5-6-91	MT-105.10 7-1-92
GR-5.110-30-92	MT-105.11 7-1-92
GR-7.110-30-92	TBR-91 4-24-92
GR-8 10-25-90	
HL-30.11 5-1-87	MC-9.2 5-6-91
HL-30.22 5-1-87	
TC-7.65 3-1-79	
TC-35.10 8-29-84	
TC-71.10 9-10-91	
TC-82.10 8-29-84	
TC-83.20 1-20-84	
MT-95.30 10-10-88	
MT-98.12 6-24-93	

SUPPLEMENTAL SPECIFICATIONS	
862 12-16-88	
962 1-23-90	
852 7-30-93	
931 3-18-92	
944 5-2-94	
802 4-13-90	
850 5-31-88	

1993 SPECIFICATIONS

THE STANDARD 1993 SPECIFICATIONS OF THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PLANS AND THE PROPOSAL SHALL GOVERN THES IMPROVEMENTS.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THESE IMPROVEMENTS WILL NOT REQUIRE THE CLOSING OF THE HIGHWAY AND PROVISIONS FOR THE MAINTENANCE AND SAFTETY OF TRAFFIC WILL BE AS INDICATED IN THE PROPOSAL.

APPROVED David R Dreger
DATE 6-21-94 DISTRICT DEPUTY DIRECTOR OF TRANSPORTATION

APPROVED [signature]
DATE 6/16/94 ENGINEER OF BRIDGES

APPROVED [signature]
DATE 9-15-94 ENGINEER OF MAINTENANCE

APPROVED Alexander H. Hyndo
DATE 9-15-94 DEPUTY DIRECTOR OF OPERATIONS

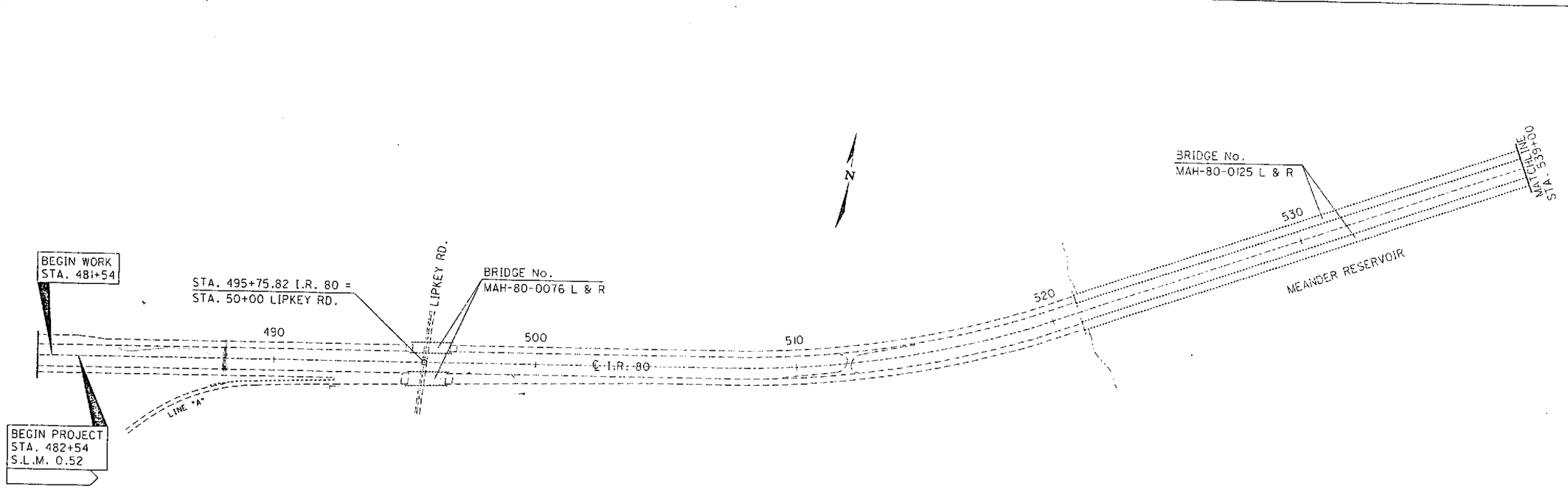
APPROVED Jerry Wray
DATE 9-15-94 DIRECTOR, DEPARTMENT OF TRANSPORTATION

APPROVED _____
DATE _____

TITLE SHEET

IM-80-0.52 14.94

1/73



(STEVE) MAB00502.DGN

SCHEMATIC PLAN

MAH-80-0.52

STA. 620+81.08 I.R. 80 =
STA. 49+35.32 OHLTOWN RD.

STA. 630+82.42 I.R. 80 =
STA. 49+99.76 CONRAIL R.R.

N

600 610 620 630 640

℄ I.R. 80

MATCHLINE STA. 642+00

MATCHLINE STA. 639+00

BRIDGE No.
MAH-80-0313 L & R

OHLTOWN RD.

BRIDGE No.
MAH-80-0332 L & R

SR-46

N

STA. 656+85.29 I.R. 80 =
STA. 50+00 S.R. 46

STATION EQUATION
STA. 675+74.89 (BK.) I.R. 80 =
STA. 376+15.43 (AH.) E.B. & W.B.

RAMP "A"
RAMP "B"
RAMP "C"
RAMP "D"
RAMP "E"
RAMP "G"

650 660 670 380 380 390 390 400

℄ I.R. 80

MATCHLINE STA. 642+00

MATCHLINE STA. 400+00

MATCHLINE STA. 20+00

MATCHLINE STA. 15+00

EASTBOUND

BRIDGE No.
MAH-80-0381

SR-46

0 50 100 200 400 600

(STEVE) MA800502.DGN

STATE

CHECKED

SCHEMATIC PLAN

MAH-80-0.52

3
73

SCHEMATIC PLAN

CALCULATED | CHECKED

RAMP "A"
WESTBOUND
MATCHLINE STA. 870+00
860
410
850
RAMP "B"
MATCHLINE STA. 868+00
410
Ramp "C" 860
850
NORTHBOUND
RAMP "D"
840
830
RAMP "C"
MATCHLINE STA. 15+00
SOUTHBOUND
840
RAMP "E"
830
MATCHLINE STA. 20+00
MATCHLINE STA. 40.00
MATCHLINE STA. 5+00
MATCHLINE STA. 102+00

STA. 818+14.92 S.B. =
STA. 36+17.94 LANTERMAN RD.

820
820

BRIDGE No.
MAH-11-1534

STA. 818+24.78 N.B. =
STA. 36+37.76 LANTERMAN RD.

STA. 811+00 S.B.

STA. 811+00 N.B.

END WORK
STA. 809+40

STA. 896+42.55 I.R. 80 =
STA. 33+34.06 FOUR MILE RUN RD.

BRIDGE No.
MAH-80-0515

STA. 885+63.93 S.B.

MATCHLINE STA. 870+00
WESTBOUND
880
890
900
END WORK
STA. 902+77.55
EASTBOUND
880
MATCHLINE STA. 868+00
70
8
BRIDGE No.
MAH-80-0518

S.T. STA. 883+05.07 N.B. =
STA. 885+63.93 ℄ (AH.)

END PROJECT
STA. 901+77.55
S.L.M. 5.75

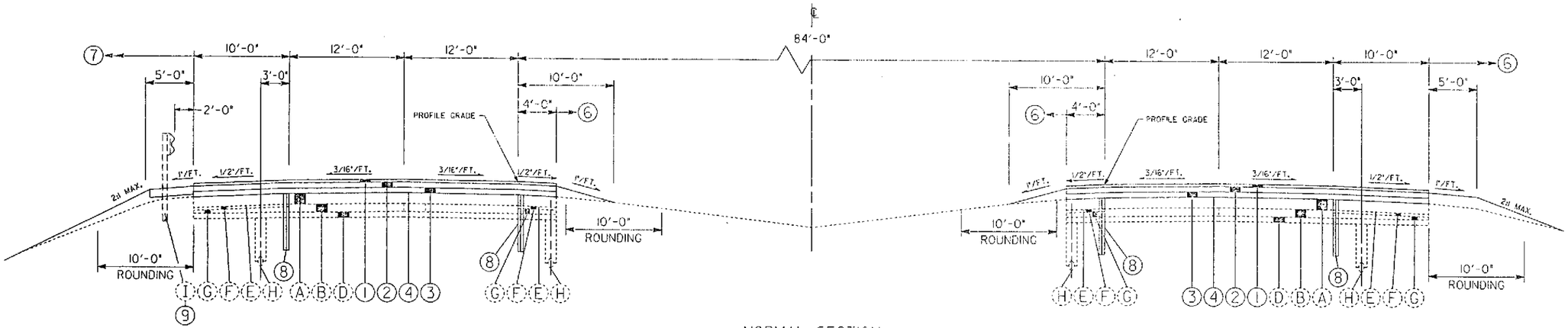
0 50 100 200 400 600

(STEVE) MA800502.DGN

MAH-80-0.52

TYPICAL SECTION

TYPE OPEN GRADED ON 446



NORMAL SECTION

STA. 406+40.58 TO STA. 410+54	E.B. I-80	= 413.42 L.F.
STA. 900+40 TO STA. 901+77.55	E.B. I-80	= 137.55 L.F.
STA. 878+86.86 TO STA. 901+77.55	W.B. I-80	= 2290.69 L.F.
		2841.66 L.F.

FOR LOCATIONS OF PROPOSED SHALLOW UNDERDRAINS, SEE SHEET 28, 29

PROPOSED PAVEMENT LEGEND

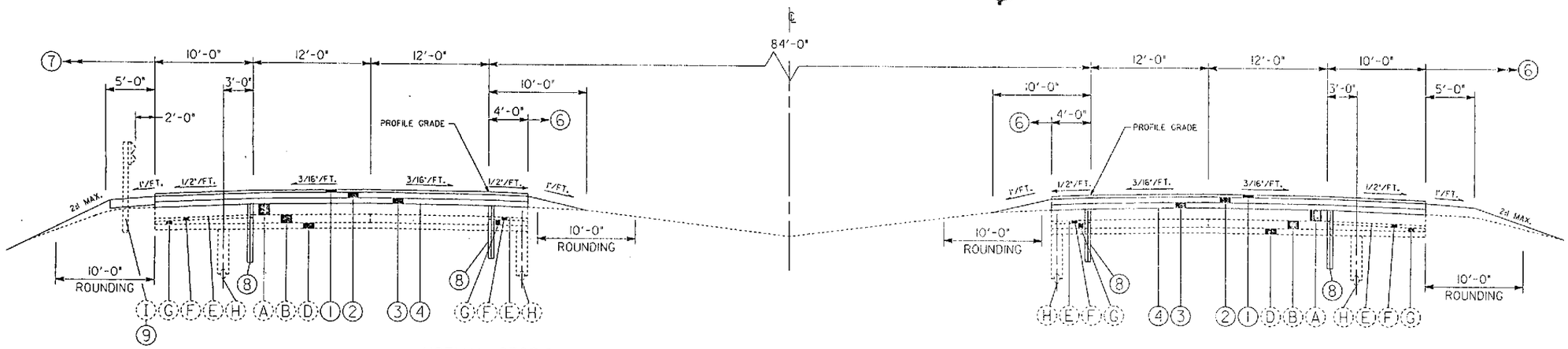
(1)	SPECIAL	3/4" RUBBERIZED OPEN GRADED ASPHALT CONCRETE FRICTION COURSE
(2)	446	1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AC-20
(3)	446	1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, AC-20
(4)	407	TACK COAT
(5)	254	PAVEMENT PLANING, BITUMINOUS 2" DEEP
(6)	203	LINEAR GRADING, METHOD 1
(7)	203	LINEAR GRADING, METHOD 3A
(8)	605	SHALLOW UNDERDRAIN, AS PER PLAN
(9)	606	GUARDRAIL REBUILT, TYPE 5

EXISTING PAVEMENT LEGEND

- (A) EXISTING 4" ASPHALT CONCRETE PAVEMENT
- (B) EXISTING 10" REINFORCED CONCRETE PAVEMENT
- (C) EXISTING 8" REINFORCED CONCRETE PAVEMENT
- (D) EXISTING 6" SUBBASE
- (E) EXISTING BITUMINOUS SURFACE TREATMENT
- (F) EXISTING VARIABLE DEPTH WATERPROOF AGGREGATE BASE
- (G) EXISTING VARIABLE DEPTH AGGREGATE BASE
- (H) EXISTING 6" PIPE UNDERDRAIN
- (I) EXISTING GUARDRAIL
- (J) EXISTING CONCRETE MEDIAN

TYPICAL SECTION

TYPE OPEN GRADED ON 446



NORMAL SECTION

STA. 482+54 TO STA. 495+23.82	I-80	= 1269.82 L.F.
STA. 496+67.32 TO STA. 506+37.02	I-80	= 969.70 L.F.
STA. 520+05.75 TO STA. 521+05.75	I-80	= 100.00 L.F.
STA. 545+82.25 TO STA. 560+08.49 BK.	I-80	= 1426.24 L.F.
STA. 560+11.69 AH. TO STA. 584+72.92	I-80	= 2461.23 L.F.
STA. 586+16.50 TO STA. 593+81.90	I-80	= 765.40 L.F.
STA. 631+64.46 TO STA. 662+40	I-80	= 3075.54 L.F.
STA. 662+40 TO STA. 666+67.33	W.B. I-80	= 427.33 L.F.
*STA. 810+15 TO STA. 814+31.81	S.B. S.R. 11	= 416.81 L.F.
		10912.07 L.F.

BRIDGE LIMITS

STA. 495+23.82 TO STA. 496+67.32	I-80
STA. 521+05.75 TO STA. 545+82.25	I-80
STA. 584+72.92 TO STA. 586+16.50	I-80
STA. 631+42.44 TO STA. 631+64.46	I-80

* REINFORCED CONCRETE PAVEMENT THICKNESS IS 9"
FOR LOCATIONS OF PROPOSED SHALLOW UNDERDRAINS,
SEE SHEETS 28 AND 29.
FOR LEGEND, SEE SHEET 5.

CALCULATED
CHECKED

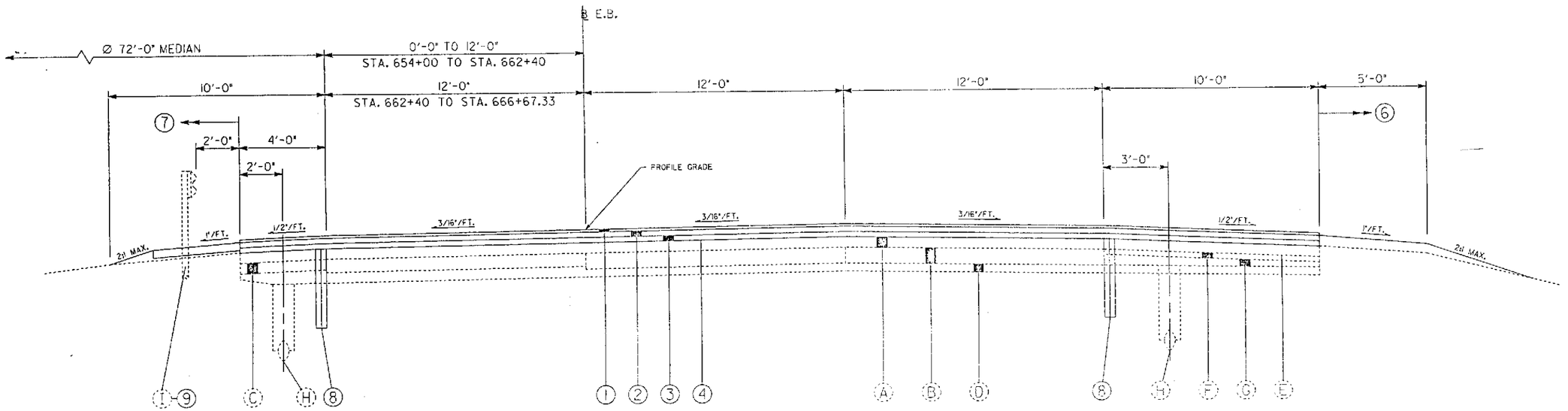
TYPICAL SECTIONS

MAH-80-0.52

6
73

TYPICAL SECTION

TYPE OPEN GRADED ON 446



FOR LOCATIONS OF PROPOSED SHALLOW UNDERDRAINS, SEE SHEET 28.

FOR LEGEND, SEE SHEET 5.

NORMAL SECTION

Ø STA. 654+00 TO STA. 662+40	E.B. I-80	=	840.00 LIN.FT.
Ø STA. 662+40 TO STA. 666+67.33	E.B. I-80	=	427.33 LIN.FT.
			267.33 LIN.FT.

CALCULATED

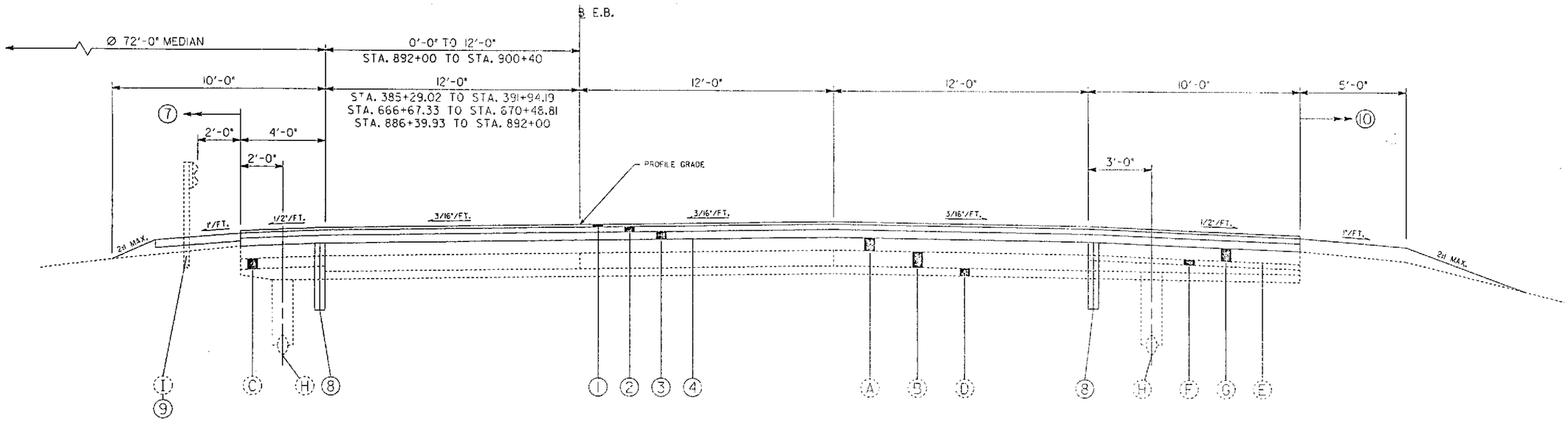
CHECKED

TYPICAL SECTIONS

MAH-80-0.52

TYPICAL SECTION

TYPE OPEN GRADED ON 446



NORMAL SECTION

STA. 385+29.02 TO STA. 391+94.19	E.B. 1-80	=	665.17 LIN.FT.
Ø STA. 886+39.93 TO STA. 900+40	E.B. 1-80	=	400.07 LIN.FT.
			2065.24 LIN.FT.

FOR LOCATIONS OF PROPOSED SHALLOW UNDERDRAINS, SEE SHEET 28.

FOR LEGEND, SEE SHEET 5.

CALCULATED

CHECKED

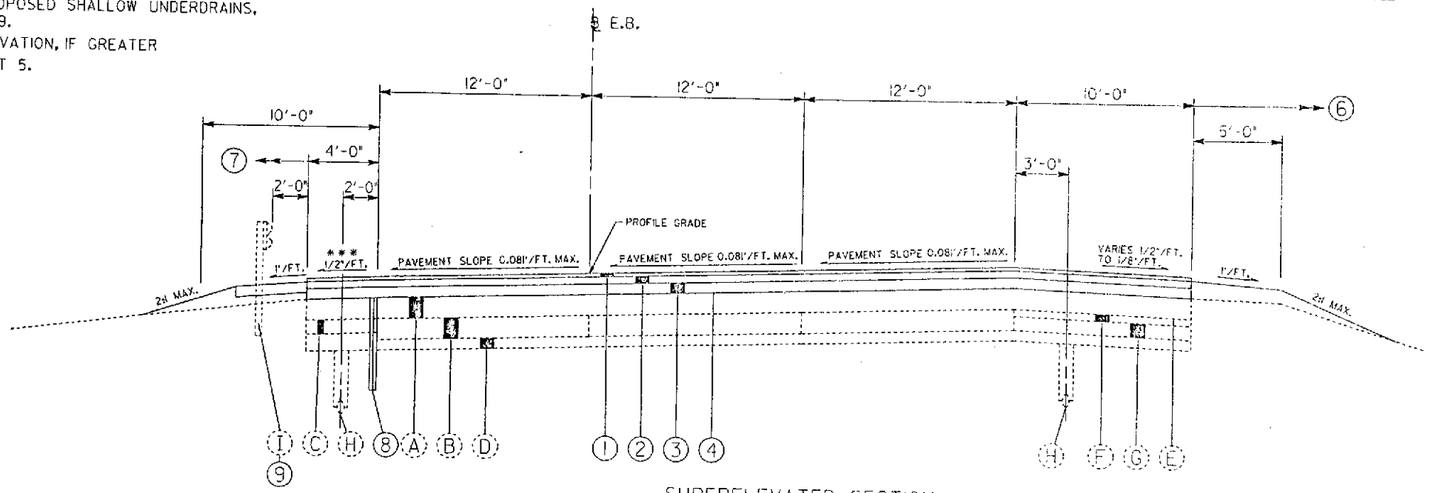
TYPICAL SECTIONS

MAH-80-0.52

TYPICAL SECTIONS

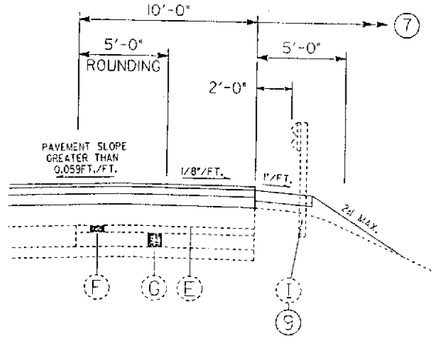
TYPE OPEN GRADED ON 446

FOR LOCATIONS OF PROPOSED SHALLOW UNDERDRAINS, SEE SHEETS 28 AND 29.
*** OR RATE OF SUPERELEVATION, IF GREATER
FOR LEGEND, SEE SHEET 5.

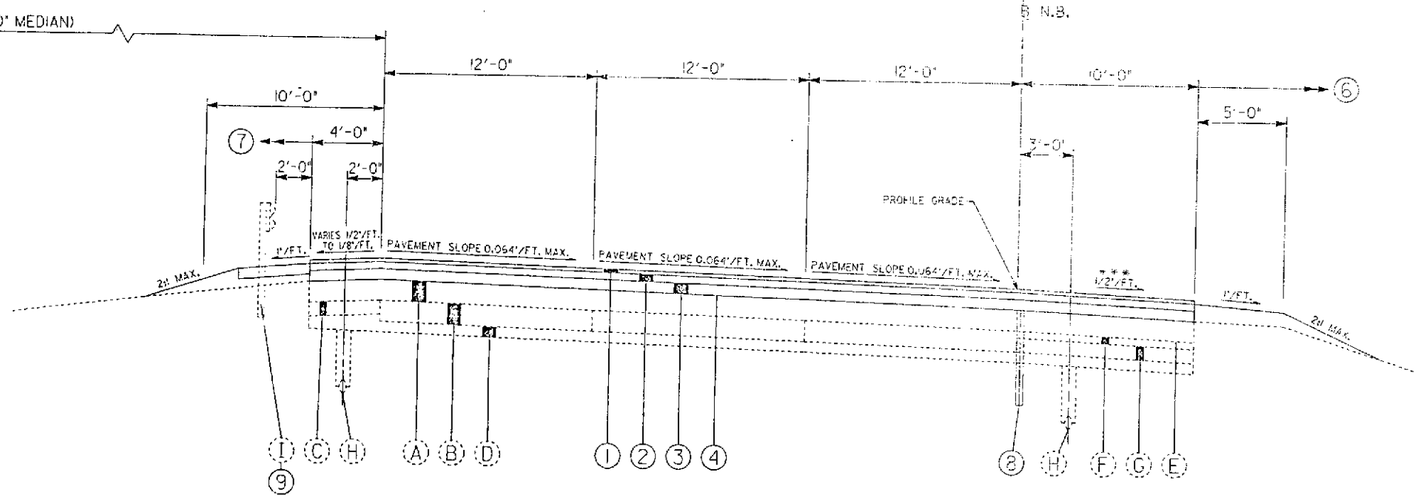


SUPERELEVATED SECTION

STA. 391+94.19 TO STA. 402+54 E.B. I-80 = 1059.81 L.F.



PAVED SHOULDER DETAIL FOR HIGH SIDE OF SUPERELEVATED SECTIONS



SUPERELEVATED SECTION

STA. 865+35.70 TO STA. 869+48.82 N.B. S.R. 11 & E.B. I-80 = 413.12 L.F.
STA. 870+16.37 TO STA. 883+05.07 (BK.) N.B. S.R. 11 & E.B. I-80 = 1288.70 L.F.
Ø STA. 885+63.93 (AH.) TO STA. 886+39.93 N.B. S.R. 11 & E.B. I-80 = 76.00 L.F.
1777.82 L.F.

BRIDGE LIMITS

STA. 869+48.82 TO STA. 870+16.37 N.B. S.R. 11 & E.B. I-80

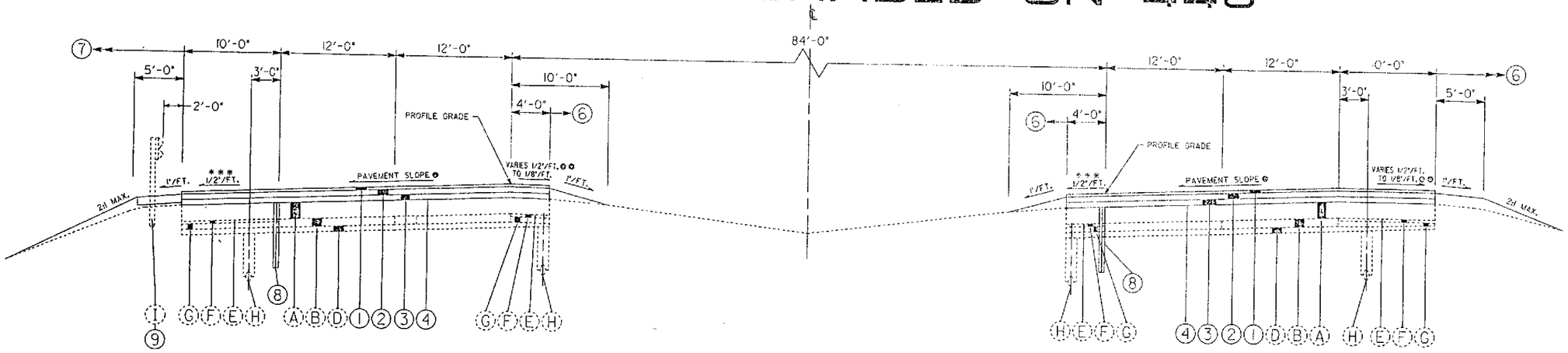
CALCULATED
CHECKED

TYPICAL SECTIONS

MAH-80-0.52

TYPICAL SECTIONS

TYPE OPEN GRADED ON 446



SUPERELEVATED SECTION

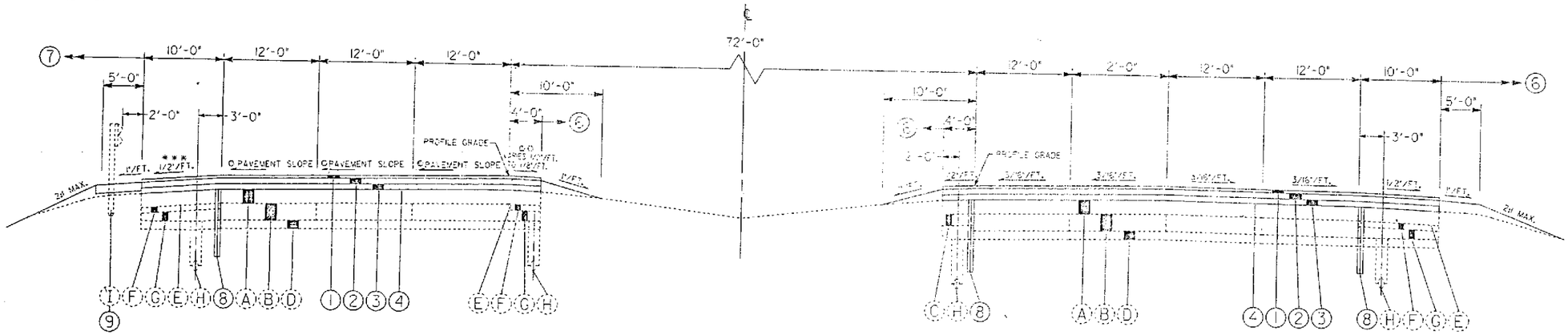
				◦SUPERELEVATION RATE
STA. 392+27.40 TO STA. 400+27.40	W.B. I-80	=	800.00 L.F.	0.032 FT./FT. MAX.
STA. 402+54 TO STA. 406+40.58	E.B. I-80	=	386.58 L.F.	0.081 FT./FT. MAX.
STA. 863+00 TO STA. 871+08.42	S.B. S.R. 11 & W.B. I-80	=	806.42 L.F.	0.040 FT./FT. MAX.
STA. 872+68.97 TO STA. 878+86.86	S.B. S.R. 11 & W.B. I-80	=	617.89 L.F.	0.040 FT./FT. MAX.
			2612.89 L.F.	

FOR LOCATIONS OF PROPOSED SHALLOW UNDERDRAINS, SEE SHEETS 28 AND 29.

*** OR RATE OF SUPERELEVATION, IF GREATER

◦◦ SEE SHEET 9 FOR DETAIL IF SUPERELEVATION RATE > 0.059 FT./FT.

FOR LEGEND, SEE SHEET 5.



SUPERELEVATED/NORMAL SECTION

				◦SUPERELEVATION RATE
STA. 666+67.33 TO STA. 670+48.81	I-80	=	381.48 L.F.	0.032 FT./FT. MAX.
STA. 670+48.81 TO STA. 675+74.89 (BK.)	I-80	=	526.08 L.F.	0.032 FT./FT. MAX.
STA. 376+15.43 (AH.) TO STA. 385+29.02	I-80	=	913.59 L.F.	0.032 FT./FT. MAX.
STA. 385+29.02 TO STA. 392+27.40	W.B. I-80	=	698.38 L.F.	0.032 FT./FT. MAX.
			2519.53 L.F.	

CALCULATED

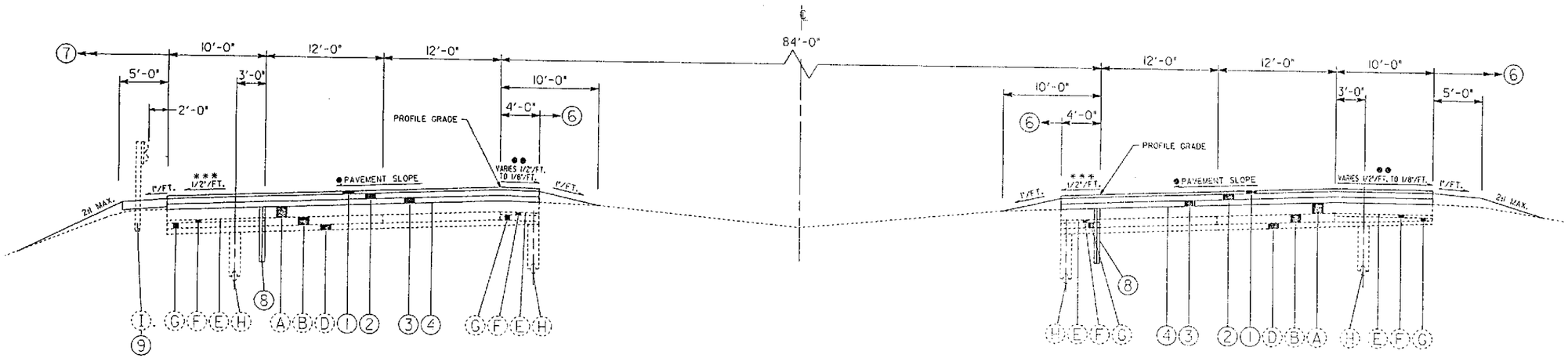
CHECKED

TYPICAL SECTIONS

MAH-80-0.52

TYPICAL SECTION

TYPE OPEN GRADED ON 446



SUPERELEVATED SECTION

				• SUPERELEVATION RATE	BRIDGE LIMITS
STA. 506+37.02 TO STA. 520+05.75	I-80	=	1368.73 L.F.	0.047 FT./FT. MAX.	STA. 620+26.85 TO STA. 621+40.50 I-80
STA. 593+81.90 TO STA. 620+26.85	I-80	=	2644.95 L.F.	0.026 FT./FT. MAX.	STA. 629+97.88 TO STA. 631+42.44 I-80
STA. 621+40.50 TO STA. 629+97.88	I-80	=	857.38 L.F.	0.026 FT./FT. MAX.	
STA. 810+15 TO STA. 829+30.17	N.B. S.R. 11	=	1915.17 L.F.	0.064 FT./FT. MAX.	
STA. 814+31.81 TO STA. 841+19.15	S.B. S.R. 11	=	2687.34 L.F.	0.032 FT./FT. MAX.	
			9473.57 L.F.		

FOR LOCATIONS OF PROPOSED SHALLOW UNDERDRAINS, SEE SHEETS 28 AND 29.

*** OR RATE OF SUPERELEVATION, IF GREATER

•• SEE SHEET 9 FOR DETAIL.

FOR LEGEND, SEE SHEET 5.

CM. DELETED

CM. ADD'

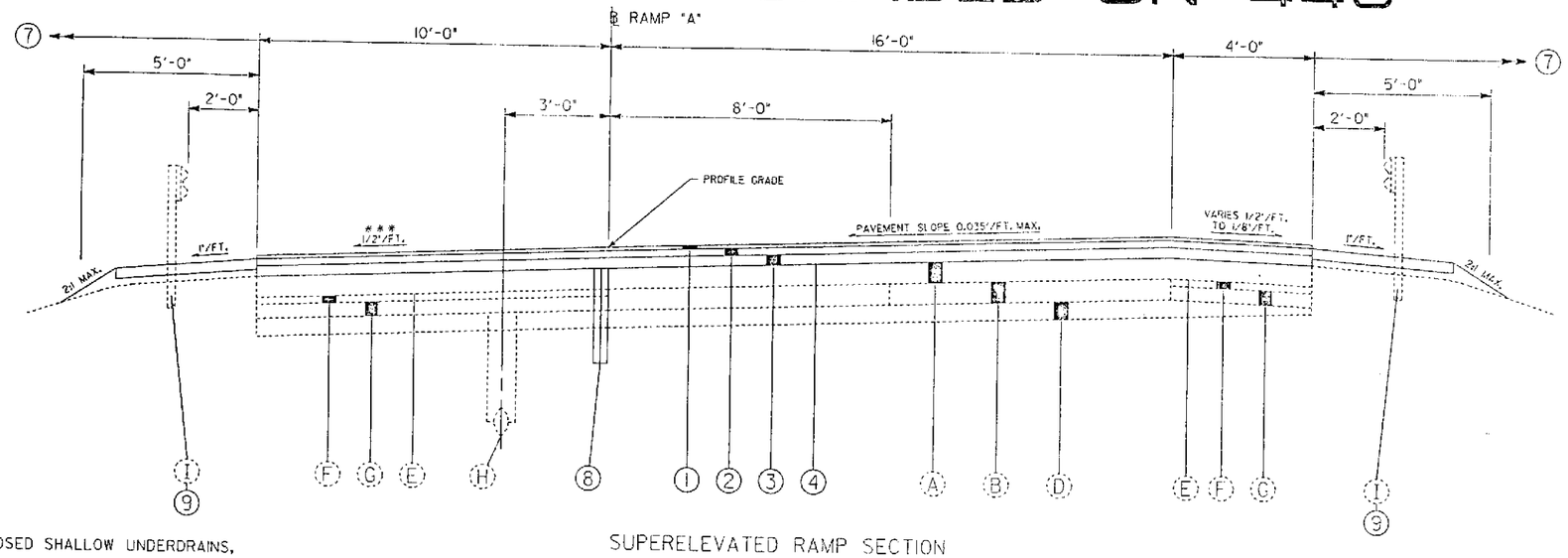
TYPICAL SECTIONS

MAH-80-0.52

11
73

TYPICAL SECTIONS

TYPE OPEN GRADED ON 446



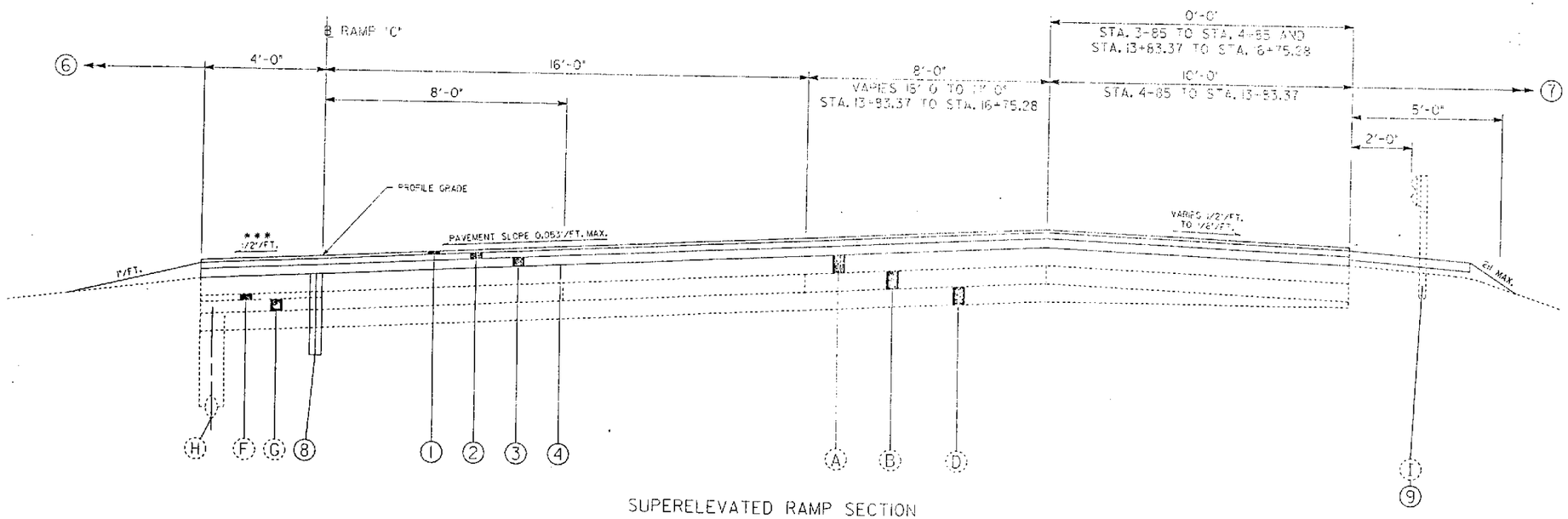
FOR LOCATIONS OF PROPOSED SHALLOW UNDERDRAINS, SEE SHEET 28.

***OR RATE OF SUPERELEVATION, IF GREATER

FOR LEGEND, SEE SHEET 5.

SUPERELEVATED RAMP SECTION

STA. 0+00 TO STA. 17+78 RAMP "A" S.R. 1& I-80 = 1778 LIN.FT.



SUPERELEVATED RAMP SECTION

STA. 3+85 TO STA. 16+75.28 RAMP "C" I-80 = 1290.28 LIN.FT.

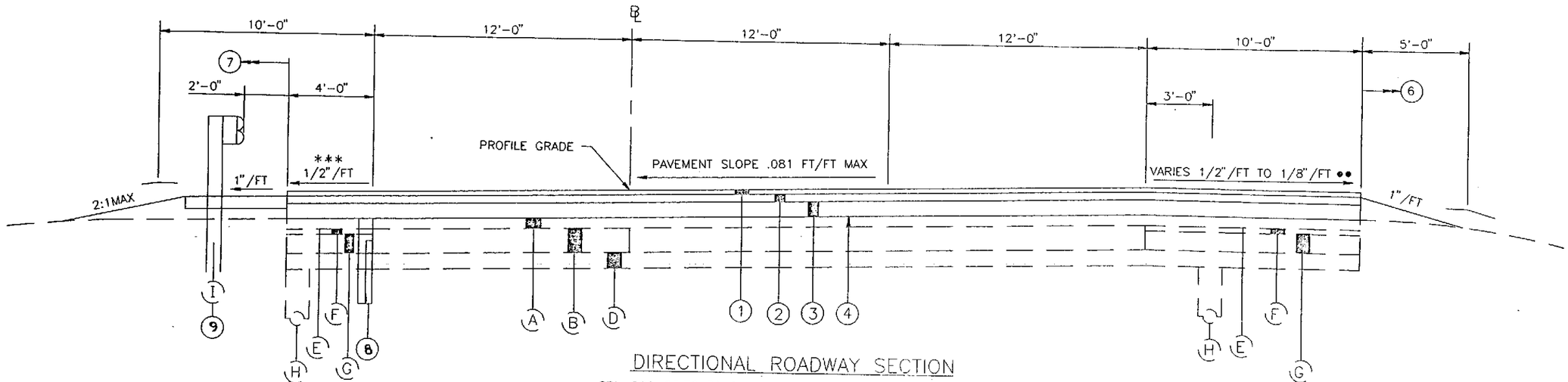
CALCULATED

CHECKED

TYPICAL SECTIONS

MAH-80-0.52

TYPICAL SECTIONS
TYPE OPEN GRADED ON 446



DIRECTIONAL ROADWAY SECTION

STA. 862+95.70 TO STA. 865+35.70 E.B. I-80 = 240.00 L.F.

•• SEE SHEET 9 FOR DETAIL.

••• OR RATE OF SUPERELEVATION, IF GREATER.

FOR LEGEND SEE SHEET 5.

FOR LOCATION OF PROPOSED SHALLOW UNDERDRAINS, SEE SHEET 28,29

\MAH80\052\MA80TS.DWG SHEET 3

CALCULATED

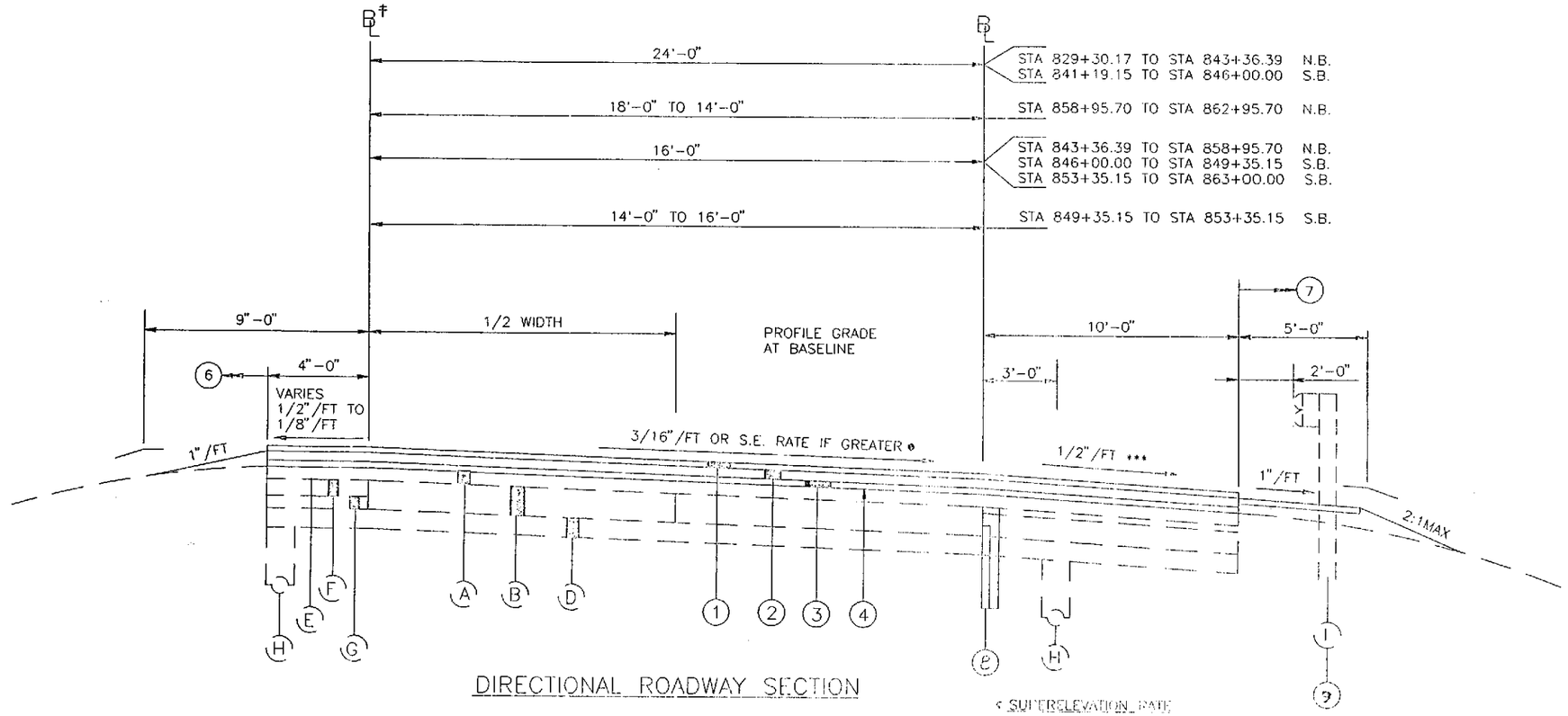
CHECKED

TYPICAL SECTIONS

MAH-80-0.52

13
73

TYPICAL SECTIONS
TYPE OPEN GRADED ON 446



DIRECTIONAL ROADWAY SECTION

				< SUPERELEVATION RATE
* STA 829+30.17 TO STA 853+93.25	N.B. SR-11	=	3365.53 L.F.	
℄ * STA 853+93.25 TO STA 862+95.70	N.B. SR-11	=	902.45 L.F.	
* STA 841+19.15 TO STA 846+08.96	S.B. SR-11	=	489.81 L.F.	.032 FT/FT MAX
* STA 848+76.18 TO STA 855+84.65	S.B. SR-11	=	708.47 L.F.	
* STA 858+15.04 TO STA 863+00.00	S.B. SR-11	=	484.96 L.F.	.040 FT/FT MAX
			5951.22 L.F.	

BRIDGE LIMITS

STA 846+08.96 TO STA 848+76.18	S.B. SR-11
STA 855+84.65 TO STA 858+15.04	S.B. SR=11

FOR LOCATION OF PROPOSED SHALLOW UNDERDRAINS, SEE SHEET 29.

* REINFORCED CONCRETE PAVEMENT THICKNESS IS 9"

*** OR RATE OF SUPERELEVATION, IF GREATER

FOR LEGEND SEE SHEET 5.

CALCULATED | CHECKED

TYPICAL SECTIONS

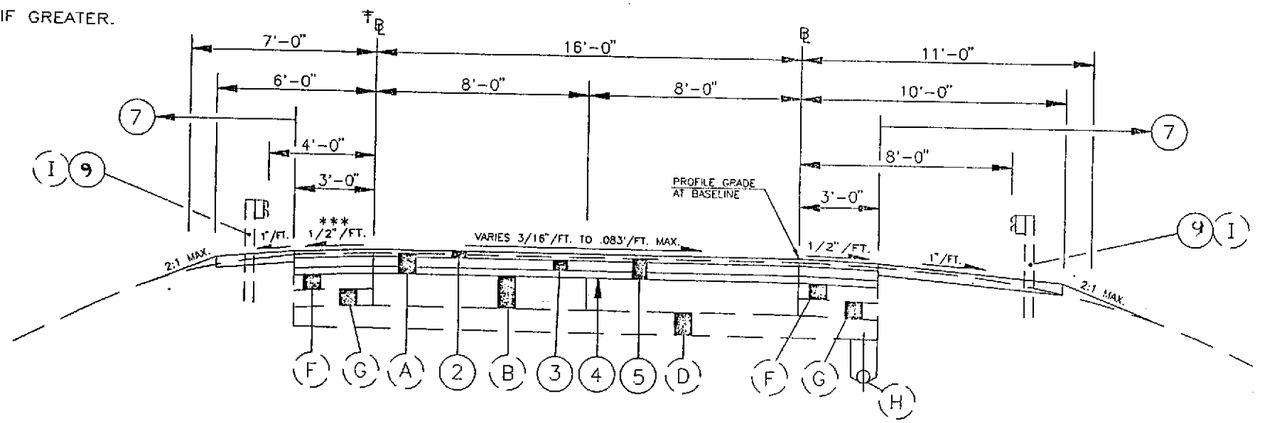
MAH-80-0.52

14/73

\MAHBO\052\MABOTS.DWG SHEET 2

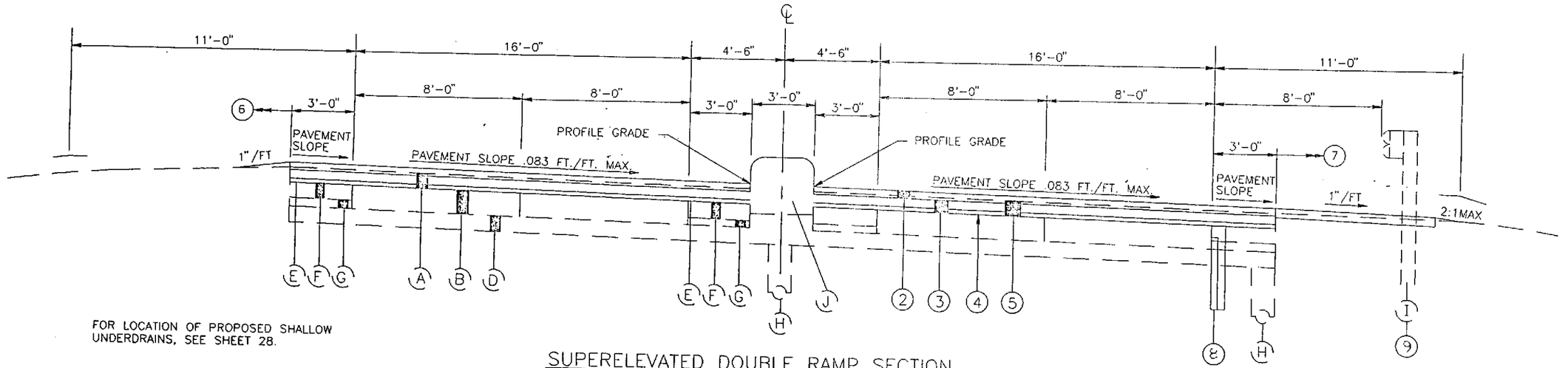
TYPICAL SECTIONS
TYPE 446

*** OR RATE OF SUPERELEVATION, IF GREATER.
FOR LEGEND SEE SHEET 5.



NORMAL RAMP SECTION

STA	0+82.00	TO STA	3+70.01	RAMP "A" S.R. 46 & I-80 =	288.01	L.F.
STA	6+82.20	TO STA	17+12.68	RAMP "A" S.R. 46 & I-80 =	1030.48	L.F.
STA	4+53.07	TO STA	15+67.43	RAMP "B" S.R. 46 & I-80 =	1114.36	L.F.
STA	4+53.07	TO STA	14+02.28	RAMP "C" S.R. 46 & I-80 =	949.21	L.F.
STA	4+03.00	TO STA	17+63.07	RAMP "D" S.R. 46 & I-80 =	1360.04	L.F.
† STA	0+70.00	TO STA	1+74.12	RAMP "D"1 S.R. 46 & I-80 =	104.12	L.F.
STA	4+53.07	TO STA	10+20.48	RAMP "E" S.R. 46 & I-80 =	567.41	L.F.
STA	13+32.67	TO STA	17+40.85	RAMP "E" S.R. 46 & I-80 =	408.18	L.F.
STA	4+58.00	TO STA	22+65.57	RAMP "E" S.R. 11 & I-80 =	1807.57	L.F.
† STA	3+92.00	TO STA	13+84.25	RAMP "G" S.R. 11 & I-80 =	992.25	L.F.
† STA	16+23.21	TO STA	28+65.65	RAMP "G" S.R. 11 & I-80 =	1242.44	L.F.
					9864.07	L.F.



FOR LOCATION OF PROPOSED SHALLOW UNDERDRAINS, SEE SHEET 28.

* REINFORCED CONCRETE PAVEMENT THICKNESS IS 9".

FOR LEGEND SEE SHEET 5.

SUPERELEVATED DOUBLE RAMP SECTION

* STA	3+70.01	TO STA	6+82.20	RAMP A SR-46&I-80 =	312.19 L.F.
* STA	10+20.48	TO STA	13+32.67	RAMP E SR-46&I-80 =	312.19 L.F.

THESE LIMITING STATIONS DESCRIBE THE SAME LOCATION

\MAH80\052\MA80TS.DWG SHEET 1

CALCULATED | CHECKED

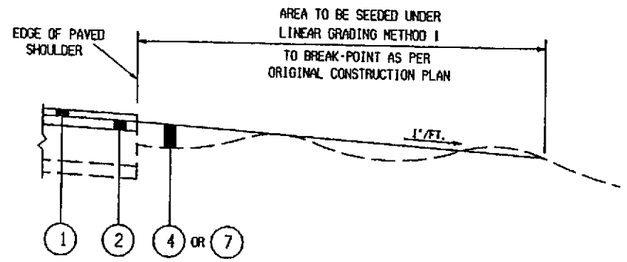
TYPICAL SECTIONS

MAH-80-0.52

15/73

LINEAR GRADING

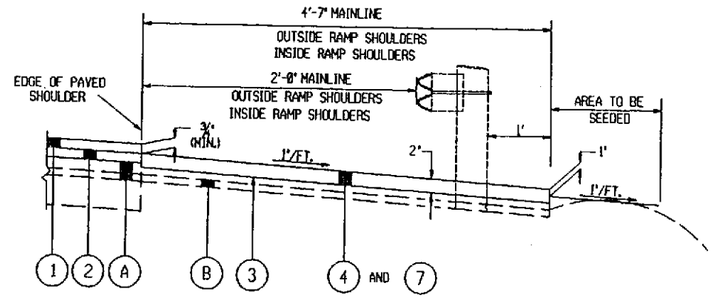
METHOD 1



LEGEND

1	SPECIAL	¾" OPEN GRADED ASPHALT CONCRETE FRICTION COURSE
2	446	ASPHALT CONCRETE, AC-20
3	SPECIAL	HERBICIDE APPLICATION UNDER ASPHALT
4	203	LINEAR GRADING, METHOD 1
5	203	LINEAR GRADING, METHOD 3A
6	448	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I, (UNDER GUARDRAIL) AS PER PLAN
7	203	EMBANKMENT, AS PER PLAN (IF REQUIRED, SEE NOTE THIS SHEET)
A		EXISTING ASPHALT CONCRETE COURSES
B		EXISTING PAVING UNDER GUARDRAIL

METHOD 3A



LINEAR GRADING - METHOD 1

THIS WORK SHALL CONSIST OF REGRADING THE EXISTING SHOULDER IN NON-GUARDRAIL AREAS ON THE MAINLINE OUTSIDE AND INSIDE SHOULDERS AND ON BOTH INSIDE AND OUTSIDE SHOULDERS OF THE RAMPS AS INDICATED IN THE SKETCH. REGRADING WILL BE ACCOMPLISHED BY REMOVING EXCESS TURF BETWEEN THE EDGES OF THE PAVED SHOULDER AND THE BREAK-OVER POINT USING A SLOPE OF APPROXIMATELY 1"/FT. EXCESS MATERIAL SHALL BE WINDROWED ON THE SHOULDER AND REMOVED BY THE CONTRACTOR. ANY VOIDS OR IRREGULARITIES BETWEEN THE EDGE OF PAVED SHOULDER AND BREAK-OVER POINT SHALL BE FILLED AND ADEQUATELY COMPACTED USING EXCESS MATERIAL. EXISTING RUTTED AREAS CAUSED BY SURFACE EROSION SHALL BE SCARIFIED PRIOR TO FILLING. ITEM 203 - EMBANKMENT, AS PER PLAN SHALL BE PROVIDED WHERE WINDROWED MATERIAL IS NOT AVAILABLE. ADEQUATE QUANTITY SHALL BE PROVIDED TO COMPLETE THE TYPICAL SECTION AS SHOWN. A DROP OF ¾ INCHES SHALL BE MAINTAINED BETWEEN THE EDGE OF THE RESURFACD SHOULDER AND THE REGRADED SHOULDER. AFTER GRADING OPERATION IS COMPLETED THE DISTURBED AREA SHALL BE SEEDED AND MULCHED AS PER ITEM 659. ALL COMPACTION SHALL BE AS PER ITEM 203.

THE METHOD OF MEASUREMENT SHALL BE CONSIDERED AS ONE STATION EQUAL TO 100 LIN.FT. MEASURED SEPARATELY FOR EACH SIDE OF EACH DIRECTIONAL LANE AND SHALL INCLUDE ALL WORK REQUIRED AS DESCRIBED ABOVE [redacted]
THERE MAY BE AREAS WHERE LINEAR GRADING MAY NOT BE REQUIRED IN THE FIELD. THE ENGINEER SHALL DETERMINE THESE LOCATIONS AND APPROPRIATE DEDUCTION MADE AS A RESULT OF THIS FIELD INVESTIGATION.

THE COST OF THE ABOVE OPERATION SHALL BE INCLUDED IN THE PRICE BID FOR ITEM 203 - LINEAR GRADING, METHOD 1

NOTE:

ITEM 203 - EMBANKMENT, AS PER PLAN SHALL MEET THE SPECIFICATIONS OF ITEM 203 EXCEPT THAT GRANULAR MATERIAL AS PER 203.02 SHALL BE EXCLUDED. THIS ITEM IS PROVIDED IN CASE WINDROWED MATERIAL IS NOT AVAILABLE NOR SUFFICIENT EMBANKMENT MAY BE OBTAINED FROM WITHIN THE EXISTING R/W AS APPROVED BY THE ENGINEER.

A QUANTITY OF 4800 CU. YDS. OF ITEM 203 EMBANKMENT, AS PER PLAN HAS BEEN PROVIDED AND CARRIED TO THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER, FOR BOTH LINEAR GRADING METHODS 1 AND 2.

PART 1= 3700 CU YD
PART 2 = 1100 CU YD

ESTIMATED QUANTITIES

	PART 1	PART 2	
203 LINEAR GRADING, METHOD 1	= (SEE SHEET NO. 32 FOR LOCATIONS AND QUANTITIES)		
659 SEEDING & MULCHING	39056	10167	SQ YD
659 AGRICULTURAL LIMING	17.58	4.57	TON
659 COMMERCIAL FERTILIZER	3.52	0.91	TON

LINEAR GRADING - METHOD 3A

THIS WORK SHALL CONSIST OF GRADING THE EXISTING OUTSIDE AND INSIDE SHOULDER BETWEEN THE PAVED SHOULDER AND BREAK POINT OF THE SHOULDER IN AREAS WHERE PAVING UNDER GUARDRAIL EXISTS, AND IT SHALL ALSO CONSIST OF REMOVING THE EXISTING PAVING UNDER THE GUARD RAIL AND RESHAPING THE AREA TO PROVIDE A SUITABLE COMPACTED EMBANKMENT FOR THE 2" THICK COURSE OF ITEM 448 AS SHOWN IN THE ABOVE SKETCH.
THIS EXISTING PAVING SHALL BE REMOVED IN SUCH A MANNER AS TO LEAVE A STRAIGHT VERTICAL EDGE AND NOT DAMAGE THE PAVED SHOULDER. ANY DAMAGE TO THE PAVED SHOULDER SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE AS DIRECTED BY THE ENGINEER.
THE EXISTING PAVING SHALL BE REDUCED TO A MAXIMUM OF 1½" INCHES BY MILLING OR OTHER SUITABLE METHOD AND INCORPORATE INTO THE EMBANKMENT. ITEM 203 EMBANKMENT AS PER PLAN HAS BEEN PROVIDED TO BE USED WHERE ADDITIONAL MATERIAL IS NECESSARY TO COMPLETE THE ABOVE DESCRIBED WORK. COMPACTION OF THE EMBANKMENT SHALL BE AS PER ITEM 203.

THE APPLICATION OF A HERBICIDE SUCH AS TREFLAN E.C. OR APPROVED EQUAL SHALL BE MADE ONLY WHEN THE FINAL GRADE IS ESTABLISHED AFTER ADDITIONS OF ANY EMBANKMENT. ALL PLANT MATERIAL SUCH AS RHIZOMES, ROOTS OR OTHER VEGETATIVE PLANT MATERIAL SHALL BE REMOVED PRIOR TO PLACEMENT OF EMBANKMENT. PAVING SHOULD FOLLOW HERBICIDE APPLICATIONS AS SOON AS POSSIBLE. THE CONTRACTOR SHALL BE PROPERLY LICENSED TO APPLY HERBICIDES AND ADHERE STRICTLY TO LABEL INSTRUCTIONS OF ANY HERBICIDE APPROVED FOR THIS USE.

[redacted]

AREAS DISTURBED BEYOND THE 448 LIMIT SHALL BE SEEDED AND MULCHED AS PER 659.
THE METHOD OF MEASUREMENT SHALL BE CONSIDERED AS ONE STATION EQUAL TO 100 LIN. FT. OF GUARDRAIL PAVED UNDER, AND SHALL INCLUDE ALL WORK REQUIRED AS DESCRIBED ABOVE EXCEPT FOR ITEM 448 ASPHALT CONCRETE [redacted] AND 203 EMBANKMENT, AS PER PLAN. THE COST FOR THE ABOVE OPERATION SHALL BE INCLUDED IN THE PRICE BID ITEM 203 LINEAR GRADING, METHOD 3A.

THESE QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ESTIMATED QUANTITIES

	PART 1	PART 2	
203 LINEAR GRADING, METHOD 3A	= (SEE SHEET NO. 32 FOR LOCATIONS AND QUANTITIES)		
448 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I, (UNDER GUARDRAIL), AS PER PLAN	680	265	CU YD
[redacted]			
659 SEEDING AND MULCHING	5289	2067	SQ YD
659 AGRICULTURAL LIMING	2.38	0.93	TON
659 COMMERCIAL FERTILIZER	0.48	0.19	TON

LINEAR GRADING I & 3A

CALCULATED
CHECKED

LINEAR GRADING

MAH-80-0.52

16
73

UTILITY OWNERSHIP:

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

OHIO EDISON
730 SOUTH AVE
YOUNGSTOWN, OHIO 44502
ATTN: ROBERT TEREK-DIV. ENG.
PHONE: 216-747-2071

MAHONING VALLEY SANITARY DIST
PO BOX 4149
YOUNGSTOWN, OHIO 44515
ATTN: JOHN TUCKER-CHIEF ENG.
PHONE: 216-799-6315

AMERITECH
CITY CENTER ONE
PO BOX 1587
YOUNGSTOWN, OHIO 44501
ATTN: LYNN A. KAVAN-ENG. MNG.
PHONE: 216-744-6268

CITY of YOUNGSTOWN
DEPT. of WATER
CITY BUILDING
YOUNGSTOWN, OHIO 44503
ATTN: EUGENE LESEN-CHIEF ENG.
PHONE: 216-742-8755

EAST OHIO GAS
1165 W. RAVEN AVE.
YOUNGSTOWN, OHIO 44502
ATTN: TERRI FLEMING-DIV. ENG.
PHONE: 216-742-8140

MAHONING COUNTY SANITARY ENG.
761 INDUSTRIAL DRIVE
YOUNGSTOWN, OHIO 44509
ATTN: JOE CATULLO
PHONE: 216-793-5514

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

UTILITIES NOTIFICATION:

AT LEAST TWO WORKING DAYS PRIOR TO COMMENCING CONSTRUCTION OPERATIONS IN AN AREA WHICH MAY INVOLVE UNDERGROUND UTILITY FACILITIES, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER, THE REGISTERED UTILITY PROTECTION SERVICE AND THE OWNERS OF EACH UNDERGROUND UTILITY FACILITY SHOWN IN THE PLANS.

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.

ALIGNMENT AND PROFILE:

THE WORK PROPOSED BY THIS PROJECT IS FOR RESURFACING OF EXISTING PAVEMENT. THE ALIGNMENT OF THE EXISTING PAVEMENT WILL NOT BE CHANGED AND THE PROFILE AND SUPERELEVATION OF THE PROPOSED SURFACE WILL BE SIMILAR TO THAT OF THE EXISTING PAVEMENT EXCEPT THAT IT WILL BE RAISED AN AMOUNT EQUAL TO THE THICKNESS OF THE RESURFACING COURSES SPECIFIED IN THESE PLANS.

ITEM 802 BARRIER REFLECTORS:

THE FOLLOWING CONTINGENCY QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER. THESE QUANTITIES ARE PROVIDED FOR USE ON NEW PORTIONS OF CONCRETE BARRIER, NEW ANCHOR ASSEMBLIES AND REPLACEMENT GUARDRAIL ELEMENTS. THEY SHALL ALSO BE USED TO REPLACE DAMAGED OR MISSING REFLECTORS ON EXISTING GUARDRAIL OR BARRIER RUNS. ALL WORK SHALL BE IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 802.

	PART 1	PART2
ITEM 802 BARRIER REFLECTOR, TYPE A	90 EACH	10 EACH
ITEM 802 BARRIER REFLECTOR, TYPE B	90 EACH	10 EACH

PREVIOUS CONSTRUCTION PLANS:

THE FOLLOWING CONSTRUCTION PLANS ARE AVAILABLE FOR REFERENCE BY CONTACTING THE DISTRICT 4 OFFICE IN RAVENNA, OHIO:

ORIGINAL CONSTRUCTION:
MAH-80S-7.01; MAH-80-2.30
MAH-80-3.37
MAH-80-6.30, TRU-80-0.00

MAJOR RESURFACING:
MAH-76-7.01, MAH-80-(0.00)(1.69), TRU-80-0.00
(PROJECT 330-1983)

SAFETY UPGRADING AND PAVEMENT REPAIR:
MAH-76--7.01, MAH-80-0.00, TRU-80-0.00
(PROJECT 270-1987)

MAINTENANCE RESURFACING:
MAH-76-7.00, MAH-80-(0.00-5.05), TRU-80-(0.00-3.03)
(PROJECT 913-1990)
MAH-76-7.01, MAH-80-(0.00-5.57), TRU-80-(0.00-3.45)
(PROJECT 467-1992)

ITEM 606, ANCHOR ASSEMBLY, TYPE E:

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

THE ANCHOR ASSEMBLY SHALL BE PLACED IN ACCORDANCE WITH THE MANUFACTURER'S CURRENT SPECIFICATIONS AND AT THE LOCATIONS SHOWN IN THE PLANS.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE CONTRACT PRICE FOR 606, EACH, ANCHOR ASSEMBLY, TYPE E. PAYMENT SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT THE 25' LONG ANCHOR ASSEMBLY, INCLUDING ALL RELATED HARDWARE, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER TO INSTALL A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY. THIS ITEM SHALL ALSO INCLUDE PAYMENT OVER AND ABOVE THE COST OF STANDARD TYPE 5 GUARDRAIL FOR INSTALLING TYPE 1 BREAKAWAY POSTS PER STANDARD CONSTRUCTION DRAWING GR-1.3 AT THE FOLLOWING LOCATIONS: 1) AT THE POINT WHERE THE ANCHOR ASSEMBLY AND THE GUARDRAIL RUN MEET; AND 2) AT THE NEXT THREE (3) POST LOCATIONS INTO THE GUARDRAIL RUN.

THIS ITEM SHALL ALSO INCLUDE FURNISHING AND INSTALLING A REFLECTIVE COVER, AS MANUFACTURED BY SYRO STEEL, ON THE GUARDRAIL EXTRUDER TERMINAL (SEE GUIDELINES PROVIDED BY SYRO STEEL).

ALL LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK DESCRIBED ABOVE SHALL BE INCLUDED. THE REFLECTIVE COVER SHALL MEET THE APPLICABLE REQUIREMENTS OF SUPPLEMENTAL SPECIFICATION 802.

ITEM 606, GUADRRAIL REBUILT, TYPE 5:

THIS ITEM SHALL BE USED TO REBUILD ALL DESIGNATED GUARDRAIL RUNS AT THE LOCATION AND OFFSET SHOWN IN THE PLANS AND AT THE PROPER HEIGHT AS SHOWN ON STANDARD CONSTRUCTION DRAWINGS GR-1.2 AND GR-2.1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH SECTION 606.06 OF THE CONSTRUCTION AND MATERIALS SPECIFICATIONS.

EXISTING RAIL ELEMENTS FROM THIS PROJECT SHALL BE SALVAGED AND RE-ERECTED.

ALL UNSALVAGEABLE MATERIALS SHALL BE DISPOSED OF IN ACCORDANCE WITH SECTION 202.02 OF THE CONSTRUCTION AND MATERIALS SPECIFICATIONS. EXISTING GUARDRAIL PANELS WHICH, IN THE JUDGEMENT OF THE ENGINEER, CANNOT BE RE-USED SHALL BE DISPOSED OF AND REPLACED. A CONTINGENCY QUANTITY OF ITEM 606 REPLACEMENT GUARD-RAIL ELEMENT HAS BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED TO REPLACE DAMAGED PANELS.

	PART 1	PART2
ITEM 606 GUARDRAIL TYPE 5	400 LIN. FT.	100 LIN. FT.

WHERE DESIGNATED, EXISTING TYPE T ANCHOR ASSEMBLIES SHALL BE SIMILARLY REBUILT AND PAID FOR UNDER THE UNIT PRICE BID FOR ITEM 606, ANCHOR ASSEMBLY REBUILT, TYPE T. SEE SUB-SUMMARY ON SHEET NUMBERS 30 AND 31 FOR ESTIMATED QUANTITIES.

EXISTING BRIDGE TERMINAL ASSEMBLIES WHICH ARE CONNECTED TO TYPE D CONCRETE BARRIER OR SAFETY SHAPED BRIDGE PARAPETS SHALL REMAIN IN PLACE. AT THESE LOCATIONS, REBUILT GUARDRAIL SHALL TAPER FROM ITS EXISTING HEIGHT AT THE BRIDGE TERMINAL ASSEMBLY TO ITS PROPOSED HEIGHT IN 25 FEET.

ITEM 606 RAISING TYPE 5 GUARDRAIL:

THIS ITEM MAY BE USED TO RAISE EXISTING GUARDRAIL PANELS WHICH DO NOT CURRENTLY MEET THE HEIGHT REQUIREMENT ON STANDARD DRAWING GR-2.1. IT SHALL BE USED PRIMARILY AT THE SR 46 INTERCHANGE RAMPS WHERE FINAL ELEVATION OF THE ASPHALT OVERLAY WILL NOT REQUIRE GUARDRAIL TO BE REBUILT. APPROXIMATE LOCATIONS OF GUARDRAIL TO BE RAISED ARE SHOWN IN THE SUB-SUMMARY ON SHEET NUMBERS 30 AND 31.

THE COST OF DISMANTLING THE RAIL ELEMENT, RAISING THE SPACER BLOCK AND RE-ERECTING THE RAIL ELEMENT SHALL BE INCLUDED UNDER THIS ITEM. ALL EQUIPMENT, LABOR, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK SHALL ALSO BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 606 RAISING TYPE 5 GUARDRAIL. ALL WORK SHALL BE DONE IN ACCORDANCE WITH STANDARD DRAWING GR-2.1.

GUARDRAIL STOCKPILE:

A GUARDRAIL STOCKPILE AREA SHALL BE PROVIDED WITHIN THE PROJECT LIMITS AND SHALL REMAIN UNTIL ALL GUARDRAIL WORK HAS BEEN COMPLETED AND ACCEPTED BY THE ENGINEER. THE SITE SHALL BE CLEANED AND RESTORED BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER.

BREAKAWAY POSTS:

AT LOCATIONS WHERE AN ANCHOR ASSEMBLY, TYPE E IS TO BE INSTALLED, THE ADJACENT STANDARD TYPE 5 GUARDRAIL SHALL HAVE TYPE 1 BREAKAWAY POSTS, AS PER STANDARD DRAWING GR-1.3. THE EXTRA COST, OVER AND ABOVE THE COST OF STANDARD TYPE 5 GUARDRAIL, OR TYPE 5 GUARDRAIL REBUILT, FOR FURNISHING AND INSTALLING BREAKAWAY POSTS IS INCLUDED WITH THE COST OF THE TYPE E ANCHOR ASSEMBLY.

LOCATION OF GUARDRAIL:

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

NEW GUARDRAILS AS SHOWN ON THE PLANS MAY BE SHIFTED LONGITUDINALLY SO THAT THE LOCATIONS OF THE NEW POSTS DO NOT COINCIDE WITH THE OLD POST LOCATIONS.

GUARDRAIL RUNS GR-25, GR-26, GR-28, GR-29 AND GR-30 SHALL BE REBUILT AT THEIR CURRENT STATIONS (SHOWN IN THE SUB-SUMMARY) BUT AT THE OFFSET SHOWN IN THE TYPICAL SECTIONS, RATHER THAN THEIR CURRENT OFFSET.

GUARDRAIL REPLACEMENT:

GUARDRAIL OPERATIONS, AS SPECIFIED IN THE SUB-SUMMARY ON SHEETS 30 AND 31, SHALL BE COMPLETED IN A TIMELY MANNER FOLLOWING THE PAVING OPERATION. IN ALL CASES, THE GUARDRAIL WORK MUST BE COMPLETED IN THE SAME CONSTRUCTION SEASON AS THE ADJACENT PAVING WORK.

NO HAZARD SHALL BE LEFT UNPROTECTED EXCEPT FOR THE ACTUAL TIME NECESSARY TO REMOVE, GRADE AND INSTALL GUARDRAIL IN A CONTINUOUS OPERATION. THE REMOVAL OF ALL GUARDRAIL SHALL AT ALL TIMES BE AS DIRECTED BY THE ENGINEER. NO GUARDRAIL SHALL BE REMOVED UNTIL THE REPLACEMENT MATERIAL IS ON THE SITE, READY FOR INSTALLATION. FAILURE TO COMPLY WITH THIS REQUIREMENT SHALL BE DEEMED SUFFICIENT CAUSE TO ORDER WORK SUSPENDED ON THIS PROJECT UNTIL SUCH TIME THAT THE ENGINEER IS ASSURED OF SAID COMPLIANCE.

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

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

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

METHOD A: 1) SET GUARDRAIL POSTS
2) PLACE ITEM 448

METHOD B: 1) PLACE ITEM 448
2) BORE ASPHALT AT POST LOCATIONS (MAY BE OMITTED IF STEEL POSTS ARE USED)
3) SET GUARDRAIL POSTS
4) PATCH AROUND POSTS. THE MATERIALS USED FOR PATCHING SHALL BE A BITUMINOUS CONCRETE APPROVED BY THE ENGINEER. PATCHED AREAS SHALL BE COMPACTED USING EITHER HAND OR MECHANICAL METHODS. FINISHED SURFACES SHALL BE SMOOTH AND SLOPED TO DRAIN AWAY FROM THE POSTS.

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

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

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 .08 GALLONS PER SQUARE YARD OF TACK COAT FOR ESTIMATING PURPOSES ONLY.

ITEM 251 PARTIAL DEPTH PAVEMENT REPAIR, AS PER PLAN:

PAVEMENT AREAS DESIGNATED BY THE ENGINEER WHICH EXHIBIT SURFACE DETERIORATION OF THE EXISTING ASPHALT OVERLAY SHALL BE REMOVED TO A MINIMUM DEPTH OF 3 INCHES AND REPLACED. ALL WORK SHALL BE DONE AT THE DIRECTION OF THE ENGINEER AND IN ACCORDANCE WITH THE REQUIREMENTS OF ITEM 251 EXCEPT THAT THE REPLACEMENT MATERIAL SHALL BE 301 BITUMINUS AGGREGATE BASE. SEE THE TABLE ON THIS SHEET FOR ESTIMATED QUANTITIES AND LOCATIONS.

ITEM 252 FULL DEPTH RIGID PAVEMENT REMOVAL AND FLEXIBLE REPLACEMENT:

AN ESTIMATED QUANTITY OF ITEM 252 FULL DEPTH RIGID PAVEMENT REMOVAL AND FLEXIBLE REPLACEMENT HAS BEEN PROVIDED FOR THE REPAIR OF AREAS EXHIBITING EVIDENCE OF BASE FAILURE IN THE EXISTING PAVEMENT COURSES. PAVEMENT AREAS TO BE REPAIRED WILL BE DESIGNATED BY THE ENGINEER AND SHALL BE REMOVED DOWN TO THE TOP OF THE SUBBASE. FOR THICKNESS AND COMPOSITION OF EXISTING PAVEMENT, SEE TYPICAL SECTIONS ON SHEETS 5 THRU 15. THE REPLACEMENT MATERIAL SHALL BE ITEM 301 BITUMINUS AGGREGATE BASE. ALL WORK WILL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF ITEM 252. SEE THE TABLE ON THIS SHEET FOR ESTIMATED QUANTITIES AND LOCATIONS.

PAVEMENT REPAIR QUANTITIES

LOCATIONS		251	252	252
I-80 E.B. & W.B. (PART 1)		PARTIAL DEPTH PAVEMENT REPAIR, AS PER PLAN	FULL DEPTH RIGID PAVEMENT REMOVAL AND FLEXIBLE REPLACEMENT	FULL DEPTH PAVEMENT SAWING
FROM	TO	SQ. YDS.	SQ. YDS.	LIN. FT.
EASTBOUND LANES				
BEGIN PROJECT	MEANDER RESERVOIR BRIDGE	49	72	216
MEANDER RESERVOIR BRIDGE	TURNER RD. BRIDGE	24	672	720
TURNER RD. BRIDGE	OHLTOWN RD. BRIDGE	22	242	324
OHLTOWN RD. BRIDGE	S.R.46 INTERCHANGE	69	260	432
S.R.46 INTERCHANGE	END PROJECT	27	28	48
	EASTBOUND TOTAL	191	1274	1740
WESTBOUND LANES				
BEGIN PROJECT	MEANDER RESERVOIR BRIDGE	60	104	216
MEANDER RESERVOIR BRIDGE	TURNER RD. BRIDGE	29	332	384
TURNER RD. BRIDGE	OHLTOWN RD. BRIDGE	27	176	288
OHLTOWN RD. BRIDGE	S.R.46 INTERCHANGE	84	376	432
S.R.46 INTERCHANGE	END PROJECT	32	133	216
	WESTBOUND TOTAL	232	1121	1536
	SUBTOTAL	423	2395	3276
	ADDITIONAL CONTINGENCY QUANTITY	27	105	24
	TOTAL TO GENERAL SUMMARY	450	2500	3300

FULL DEPTH PAVEMENT SUBBASE REPAIR:

AFTER REMOVAL OF DETERIORATED PAVEMENT AREAS UNDER ITEM 252, IF THE EXISTING SUBBASE AND/OR SUBGRADE IS FOUND TO BE UNSUITABLE IT SHALL BE REMOVED AND REPLACED. THE EXACT LIMITS OF REMOVAL SHALL BE DETERMINED BY THE ENGINEER WITH THE AVERAGE DEPTH BEING APPROXIMATELY 12 INCHES FOR ESTIMATING PURPOSES. PAYMENT SHALL BE UNDER ITEM 203 EXCAVATION FOR THE ACTUAL NUMBER OF CUBIC YARDS OF UNSUITABLE MATERIAL REMOVED AND DISPOSED OF.

ITEM 304 AGGREGATE BASE SHALL BE USED AS DIRECTED BY THE ENGINEER TO BACKFILL UNDERCUT AREAS. THE MATERIAL SHALL BE PLACED IN ACCORDANCE WITH SECTION 304.03

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER FOR THE ABOVE WORK:

	PART 1	PART 2
ITEM 203 EXCAV. NOT INCL. EMBANK. CONSTRUCTION	80 CU.YDS.	20 CU.YDS.
ITEM 304 AGGREGATE BASE	80 CU.YDS.	20 CU.YDS.
ITEM 605 AGGREGATE DRAIN	120 LIN.FT.	30 LIN.FT.

ITEM 254 PAVEMENT PLANING, BITUMINOUS, VARIABLE:

THIS ITEM SHALL BE USED TO PLANE EXISTING ASPHALT FROM THE BRIDGE DECK SURFACE AND PAVEMENT APPROACHES OF STRUCTURES MAH-80-0075 L & R (OVER LIPKEY RD.) AND MAH-80-0125 L & R (OVER MEANDER RES.). QUANTITIES AND NOTES PERTAINING TO THE PORTION OF PLANING WITHIN THE BRIDGE LIMITS ARE SHOWN ON SHEETS 61 AND 64.

FOR FEATHER DETAILS SHOWING THE LIMITS AND DEPTH OF PLANING ON THE PAVEMENT APPROACHES, SEE SHEETS 45 AND 46. ESTIMATED QUANTITIES FOR PLANING OF THE APPROACHES ARE INCLUDED WITH THE CALCULATIONS ON SHEET NUMBER 33.

ALL WORK SHALL BE DONE IN ACCORDANCE WITH SECTION 254 OF THE CONSTRUCTION AND MATERIALS SPECIFICATIONS.

ITEM 606 BRIDGE TERMINAL ASSEMBLY, TYPE 3:

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING A BRIDGE TERMINAL ASSEMBLY, TYPE 3, IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWING GR-3.3. WORK SHALL ALSO INCLUDE THE REMOVAL OF THE EXISTING BRIDGE TERMINAL ASSEMBLY AND 12.5 LINEAR FEET OF THE EXISTING TYPE 5 GUARDRAIL.

EXISTING RAIL ELEMENTS AND HARDWARE WHICH ARE SALVAGEABLE, IN THE JUDGEMENT OF THE ENGINEER, SHALL BE STOCKPILED AND RE-USED, IF NECESSARY, FOR ITEM 606, GUARDRAIL REBUILT, TYPE 5. UNSALVAGEABLE MATERIALS SHALL BE DISPOSED OF IN ACCORDANCE WITH SECTION 202.02 OF THE CONSTRUCTION AND MATERIALS SPECIFICATIONS.

THE UNIT PRICE BID FOR THIS ITEM SHALL INCLUDE THE ENTIRE COST OF ALL LABOR, EQUIPMENT AND MATERIALS NECESSARY TO INSTALL A COMPLETE BRIDGE TERMINAL, TYPE 3, INCLUDING NEW POSTS, NESTED THRIE BEAM SECTIONS, THRIE BEAM TRANSITION SECTION AND ALL ASSOCIATED HARDWARE. ADDITIONAL PAYMENT WILL BE MADE UNDER ITEM 606, GUARDRAIL, TYPE 5 FOR THE 25'-0" LONG BRIDGE TERMINAL ASSEMBLY AS SHOWN ON STANDARD DRAWING GR-3.3. THE FOLLOWING ITEMS HAVE BEEN CARRIED TO THE GENERAL SUMMARY TO COMPLETE THIS WORK.

		PART 1	PART 2
ITEM 202	GUARDRAIL REMOVED FOR REUSE	525 LIN. FT.	275 LIN. FT.
ITEM 606	GUARDRAIL, TYPE 5	525 LIN. FT.	275 LIN. FT.

GENERAL NOTES

MAH-80-0.52

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

THIS ITEM SHALL BE USED TO CONSTRUCT A MODIFIED VERSION OF THE 14 FOOT LONG TRANSITION SECTION SHOWN ON STANDARD DRAWING GR-8 (10-25-90). (THE EXISTING TRANSITION SECTION SHALL BE REMOVED AND PAID FOR SEPERATELY UNDER ITEM 202 CONCRETE BARRIER REMOVED.) THE NEW TRANSITION SECTION SHALL BE CONSTRUCTED PARALLEL TO THE ADJACENT PAVEMENT. DETAILS FOR THIS TRANSITION SECTION ARE ON SHEETS 49 THRU 51.

SIX (6) ANCHOR HOLES SHALL BE DRILLED INTO THE EXISTING 40" FULL HEIGHT CONCRETE BARRIER AT THE LOCATIONS SHOWN ON SHEET 51 AND IN ACCORDANCE WITH THE PERTINENT REQUIREMENTS OF SUPPLEMENTAL SPECIFICATION 852. SIX (6) #5 EPOXY COATED DEFORMED REBARS THAT ARE 3'-11" IN LENGTH (SEE TYPE Y501 ON SHEET 49) AND MEETING THE REQUIREMENTS OF CMS 509 SHALL BE USED TO DOWEL THE NEW BARRIER TRANSITION SECTION INTO THE EXISTING 40" FULL HEIGHT CONCRETE BARRIER. THE REBARS SHALL BE ANCHORED WITH NON SHRINKING NON METALLIC EPOXY GROUT USED IN ACCORDANCE WITH SUPPLIMENTAL SPECIFICATION 852 AND CMS 705.20 ALL REINFORCING STEEL REQUIRED TO CONSTRUCT THE PROPOSED TRANSITION SECTION SHALL MEET THE REQUIREMENTS OF CMS 509.

THE COST OF FURNISHING AND REPLACING ALL REINFORCING STEEL AND GROUT, CONSTRUCTING THE DOWEL HOLES, AND OTHER EQUIPMENT, LABOR, TOOLS, MATERIALS, AND INCIDENTALS NEEDED OVER AND ABOVE THE COST OF STANDARD CONCRETE BARRIER, TYPE D TO CONSTRUCT THE ABOVE ITEM SHALL BE INCLUDED IN THE UNIT BID OF ITEM 622 CONCRETE BARRIER, TYPE D, AS PER PLAN.

ANY PORTIONS OF THE EXISTING PAVED SHOULDER WHICH ARE DAMAGED DURING CONSTRUCTION OF THE CONCRETE BARRIER SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENCE.

ITEM 630 OVERHEAD SIGN SUPPORT, TYPE TC-7.65 DESIGN 6, LEFT END FRAME

THIS ITEM OF WORK SHALL CONSIST OF THE REMOVAL OF THE EXISTING DAMAGED MEDIAN END FRAME OF THE OVERHEAD SIGN SUPPORT AT STA 379+10 LT. THE MATERIALS REQUIRED BY THIS ITEM SHALL BE: ONE LEFT END FRAME OF AN OVERHEAD SIGN SUPPORT, TYPE TC-7.65, DESIGN 6, AND U-BOLTS, HEX NUTS AND PLAIN WASHERS AS NEEDED TO ERECT THE END FRAME. IT IS DESIRED THAT THE TRUSS PORTION OF THE EXISTING OVERHEAD SIGN SUPPORT BE HELD STATIONARY DURING THE REMOVAL AND REPLACEMENT OF THE EXISTING DAMAGED END FRAME. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL SIGN SUPPORT DESIGN.

PAYMENT FOR THIS WORK SHALL BE AT THE UNIT BID PRICE FOR EACH ITEM 630 OVERHEAD SIGN SUPPORT, MISC.: TYPE TC-7.65, DESIGN 6 AND SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTIALS NECESSARY TO COMPLETE THE WORK AS SPECIFIED.

THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 630 OVERHEAD SIGN SUPPORT, MISC.:	PART 1	PART2
TYPE TC-7.65, DESIGN 6, LEFT END FRAME	1 EACH	0 EACH

EXISTING UNDERDRAIN OUTLETS:

THE FOLLOWING CONTINGENCY QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR THE PURPOSE OF REPAIRING EXISTING CORRUGATED METAL PIPES USED AS OUTLETS FOR UNDERDRAINS. THE ENGINEER SHALL IDENTIFY LOCATIONS WHERE EXISTING UNDERDRAIN OUTLET PIPES HAVE BEEN CRUSHED OR DAMAGED. THE EXISTING PIPE SHALL BE CAREFULLY REMOVED TO THE LIMITS DIRECTED BY THE ENGINEER AND REPLACED WITH A NEW SECTION OF ITEM 603, 6" CONDUIT, TYPE F. A PRECAST REINFORCED CONCRETE OUTLET SHALL ALSO BE FURNISHED AND INSTALLED IN ACCORDANCE WITH THE DETAIL ON SHEET 52.

ALL WORK SHALL BE DONE AT THE DIRECTION OF THE ENGINEER. REMOVAL OF THE EXISTING 6" CONDUIT SHALL BE CONSIDERED INCIDENTAL TO THE NEW ITEM 603 CONDUIT, TYPE F.

	PART 1	PART2
ITEM 603, 6" CONDUIT, TYPE F, 707.17, NON-PERFORATED, ASTM 3034, SDR 35, SS 931 OR SS-944	1000 LIN. FT.	0 LIN. FT.
ITEM SPECIAL PRECAST REINFORCED CONC. OUTLET	100 EACH	0 EACH

ITEM 202 CONCRETE BARRIER REMOVED:

AT AREAS DESIGNED IN THE PLANS, THE EXISTING 40' LONG TAPERED END SECTIONS OF CONCRETE BARRIER SHALL BE REMOVED TO ALLOW FOR CONSTRUCTION OF NEW TRANSITION SECTIONS. CARE SHALL BE TAKEN DURING THE REMOVAL OPERATION SO AS TO NOT DAMAGE THE PORTION OF THE CONCRETE BARRIER WHICH IS TO REMAIN. IF DIRECTED BY THE ENGINEER, THE CONTRACTOR SHALL MAKE A SAWCUT PRIOR TO BEGINNING THE REMOVAL OPERATION IN ORDER TO INSURE A CLEAN JOINT BETWEEN THE EXISTING AND PROPOSED CONCRETE BARRIER SECTIONS.

GENERAL NOTES

MAH-80-0.52

19 73

MAINTENANCE OF TRAFFIC

MAINTENANCE OF TRAFFIC

1) THIS ITEM SHALL CONSIST OF MAINTENANCE OF TRAFFIC ON EXISTING ROADWAYS AND RAMPS IN ACCORDANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, CURRENT EDITION, LATEST REVISIONS, THE SPECIFICATIONS AND THE FOLLOWING.

2) AT LEAST ONE LANE OF TRAFFIC IN EACH DIRECTION SHALL BE OPENED AT ALL TIMES.

3) TWO WAY DIRECTIONAL TRAFFIC SHALL BE MAINTAINED ON THE EXISTING PAVEMENT AT ALL TIMES WITHOUT INTERRUPTION DURING CONSTRUCTION OF THE WORK FROM 2:30 PM TO 7:30 PM, MONDAY THROUGH FRIDAY. IF TWO LANES IN EACH DIRECTION ARE NOT MAINTAINED, LIQUIDATED DAMAGES OF $1000.00 PER HOUR WILL BE ASSESSED TO THE CONTRACTOR. THESE LIQUIDATED DAMAGES SHALL BE ASSESSED ON THE NEXT ESTIMATE FOLLOWING THE DELAY.

4) NO CLASS 'S' PATCHING OR SDC OVERLAYS/REPAIRS INCLUDING HYDRODEMOLITION SHALL BE PERFORMED EXCEPT ON WEEKENDS BETWEEN 7:30 P.M. FRIDAY AND 2:30 P.M. MONDAY. THE CONTRACTOR MAY PERFORM ASPHALT WEARING COURSE REMOVAL NO MORE THAN ONE DAY PRIOR TO THE WEEKEND IN WHICH FULL DEPTH REPAIRS AND OVERLAY WORK WILL BE PERFORMED.

5) NO MORE THAN ONE (1) MILE OF ROADWAY SHALL BE CLOSED TO TRAFFIC IN ONE DAY, EVENING OR WEEKEND. REPAIR AREAS WITHIN THE WORK ZONE SHALL BE COMPLETED AT THE END OF EACH WORK DAY. NO LONGITUDINAL JOINTS SHALL BE LEFT OPEN DURING ROADWAY PAVING. LONGITUDINAL JOINTS NECESSARY DURING THE MEANDER BRIDGE WORK SHALL NOT HAVE A VERTICAL FACE, BY EITHER GRINDING OR USE OF ASPHALT WEDGES. (SEE SHEET 21A). IF THE CONTRACTOR CHOOSES TO PERFORM MORE THAN ONE (1) MILE OF WORK IN A WORK TIME PERIOD, THEY MAY DO SO WITH THE APPROVAL OF THE ENGINEER. (TO BE USED DURING PLANNING AND PAVING OPERATIONS). THE CONTRACTOR SHALL NOT BEGIN WORK WHICH CANNOT BE COMPLETED DUE TO INCLEMENT WEATHER.

6) PRIOR TO OPENING TO TRAFFIC EACH LANE SHALL BE IN A SAFE PASSABLE CONDITION. ALL TRANSVERSE JOINTS SHALL EXTEND ACROSS THE FULL LANE AND SHOULDER.

7) THE CONTRACT SHALL SUBMIT A MAINTENANCE OF TRAFFIC PLAN TO THE DISTRICT CONSTRUCTION ENGINEER, FOR APPROVAL, SEVEN (7) WORKING DAYS PRIOR TO PUTTING ANY MAINTENANCE OF TRAFFIC DEVICES INTO EFFECT.

8) THE CONTRACTOR SHALL INFORM THE DISTRICT TRAFFIC ENGINEER, (216) 297-0801, EXT. 339, EIGHTEEN (18) DAYS PRIOR TO BEGINNING WORK.

NOTIFICATION OF THE DATE WORK WILL BEGIN AND A TENTATIVE WORK SCHEDULE SHALL BE GIVEN TO THE ODOT COMMUNICATIONS DEPARTMENT, (216) 297-0801, EXT. 209 OR 211, AT THE PRECONSTRUCTION MEETING.

9) THE CONTRACTOR SHALL DESIGNATE AN INDIVIDUAL, OTHER THAN THE SUPERINTENDENT AND SUBJECT TO THE APPROVAL OF THE ENGINEER, TO CONTINUOUSLY INSPECT ALL TRAFFIC CONTROL DEVICES WHENEVER CONSTRUCTION WORK IS BEING PERFORMED WITHIN THE WORK LIMITS OF THE PROJECT. THE DESIGNATED INDIVIDUAL SHALL ALSO INSPECT ALL TRAFFIC CONTROL DEVICES AT THE BEGINNING AND END OF EACH WORK DAY. THE DESIGNATED INDIVIDUAL OR A QUALIFIED REPRESENTATIVE, SHALL ALSO BE AVAILABLE ON AN AROUND THE CLOCK BASIS TO REPAIR AND/OR REPLACE DAMAGED OR MISSING TRAFFIC CONTROL DEVICES. THESE INDIVIDUAL'S NAMES AND PHONE NUMBERS SHALL BE GIVEN TO THE PROJECT ENGINEER AT THE PRECONSTRUCTION MEETING. THE DESIGNATED INDIVIDUAL SHALL HAVE NO OTHER CONSTRUCTION RELATED DUTIES. THESE INDIVIDUALS SHALL BE EQUIPPED WITH CELLULAR PHONES IN THEIR VEHICLES. THE CONTRACTOR SHALL ALSO SUPPLY TWO (2) PORTABLE CELLULAR PHONES FOR ODOT PROJECT USE. THE PHONES AND ALL RELATED COSTS SHALL BE PAID FOR UNDER THE LUMP SUM PRICE BID FOR ITEM 614 MAINTAINING TRAFFIC.

10) CONES SHALL NOT BE ACCEPTABLE TRAFFIC CONTROL DEVICES FOR LANE RESTRICTION OR LANE REDUCTION FOR OPERATIONS WORK MORE THAN ONE-HALF HOUR AFTER SUNSET AND ONE-HALF HOUR BEFORE SUNRISE. ALL NIGHTTIME LANE RESTRICTIONS OR LANE REDUCTIONS SHALL REQUIRE DRUMS OR BARRICADES AT A MAXIMUM SPACING OF FORTY (40) FEET.

11) THE REQUIRED LIGHTING OF THE WORK AREA SHALL BE APPROVED BY THE CONSTRUCTION ENGINEER PRIOR TO BEGINNING WORK. THE WORK AREA SHALL BE LIGHTED FOR ALL OPERATIONS WORK MORE THAN ONE-HALF HOUR AFTER SUNSET AND ONE-HALF HOUR BEFORE SUNRISE. ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTAL ITEMS NEEDED TO PERFORM THE LIGHTING OF THE WORK AREA SHALL BE INCIDENTAL TO THE COST OF THE PROJECT.

12) A FLASHING ARROW BOARD (TC-35.10) SHALL BE USED FOR TRAFFIC CONTROL WHENEVER THERE IS A LANE REDUCTION, LANE RESTRICTION, OR LANE SHIFT OF ALL THROUGH TRAFFIC.

13) NO BRIDGE WORK SHALL BE PERFORMED OVER AN OPEN LANE OF TRAFFIC. A SAFETY NET OR PLATFORM OF SUITABLE STRENGTH ON THE UNDERSIDE OF THE DECK SHALL BE REQUIRED TO PROTECT THE ROAD WAY, RAILROAD OR STREAM DURING THE REMOVAL OF THE EXISTING CONCRETE. THE DESIGN OF THE NET OR PLATFORM SHALL CONFORM WITH OSHA REQUIREMENTS AND THE APPROVAL OF THE ENGINEER AND SHALL REMAIN IN PLACE UNTIL THE WORK HAS BEEN COMPLETED AND ACCEPTED OR AS DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL SUBMIT A SAFETY NET OR PLATFORM DESIGN 10 DAYS PRIOR TO COMMENCING WORK FOR APPROVAL BY THE ENGINEER. THE SUBMITTAL SHALL BE IN WRITING TO DISTRICT CONSTRUCTION ENGINEER WITH A COPY TO THE PROJECT ENGINEER.

14) UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR BE PERMITTED TO HAVE WORK ZONES THAT ALTERNATELY CLOSE BOTH THE PASSING LANE AND THE DRIVING LANE UNLESS THE DISTANCE BETWEEN DRUMS, OR BARRICADES EXCEED ONE(1) MILE.

15) IN ADDITION TO THE REQUIREMENTS OF 614 WORK ZONE PAVEMENT MARKINGS (MT-99.10), AT THE END OF EACH DAY OF WORK THE CONTRACTOR SHALL REPLACE, (WITH TEMPORARY MARKINGS) ALL LANE LINES, AND EDGE LINES THAT WERE REMOVED OR COVERED DURING PAVEMENT REMOVAL AND/OR PAVING OPERATIONS, PRIOR TO OPENING THE LANE TO TRAFFIC.

16) THE CONTRACTOR SHALL FURNISH AND MAINTAIN ALL FLAGS, FLAGGERS, WATCHMEN, BARRICADES, SIGNS, SIGN SUPPORTS, AND INCIDENTALS RELATED THERETO. THE ABOVE ITEMS SHALL BE UTILIZED IN CONFORMANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITION, LATEST REVISIONS. ALL BARRICADES AND SIGNS TO BE UTILIZED SHALL BE NEW OR LIKE NEW AT THE BEGINNING OF THE PROJECT, SUBJECT TO THE APPROVAL OF THE ENGINEER.

17) A QUANTITY OF 600 CU. YDS. OF 404 BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC SHALL BE PROVIDED FOR USE IN MAINTAINING BRIDGE DECKS, PAVEMENT, SHOULDERS AND OTHER LOCATIONS PRIOR TO RESURFACING, AS DIRECTED BY THE ENGINEER. PART 1 = 450 CU.YD. PART 2 = 150 CU.YD.

18) IN ADDITION TO THE STANDARD CONSTRUCTION DRAWING MT-99.10 'MAINTAIN PRESENT LANE' AND 'UNEVEN PAVEMENT' SIGNS SHALL BE SUPPLIED AND USED AS DIRECTED BY THE ENGINEER. THESE ITEMS SHALL BE PAID FOR AS ITEM 614 EACH WORK ZONE MARKING SIGNS.

19) FLAT SHEET SIGNS FURNISHED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENT OF THE PLAN, SPECIFICATIONS, AND PROPOSAL WHICH ARE NEEDED FOR REASONS BEYOND THE CONTROL OF THE CONTRACTOR SHALL BE FURNISHED WHEN ORDERED BY THE ENGINEER.

PAYMENT FOR THE NEW SIGNS SHALL BE MADE AT THE BID PRICE FOR SQUARE FOOT FOR ITEM SPECIAL WORK ZONE MARKING SIGN AND SHALL INCLUDE THE COST OF PROVIDING NECESSARY HARDWARE, SUPPORTS, SIGNS, LABOR, AND INCIDENTALS NEEDED TO ERECT THE SIGNS.

AS ESTIMATED QUANTITY FOR ITEM SPECIAL WORK ZONE MARKING SIGNS HAS BEEN CARRIED TO THE GENERAL SUMMARY:
ITEM SPECIAL - WORK ZONE MARKING SIGNS 200 SQ.FT.

20) THE CONTRACTOR SHALL BE ADVISED THAT OTHER PROJECTS MAY BE ONGOING IN THE AREAS IMMEDIATELY ADJACENT TO AND WITHIN THE PROJECT LIMITS OF THIS PROJECT. THE CONTRACTORS SHALL SCHEDULE THEIR WORK SO AS TO CAUSE A MINIMUM OF DELAY OR CONFLICT WITH THE OTHER PROJECT OR PROJECTS. IN ACCORDANCE WITH 105.07 THE CONTRACTOR SHALL ARRANGE WITH THE OTHER CONTRACTORS, A MUTUALLY ACCEPTABLE WORK SCHEDULE SUBJECT TO THE APPROVAL OF THE ENGINEER, PRIOR TO COMMENCING ANY OPERATIONS. ANY CONFLICTS BETWEEN CONTRACTORS INVOLVING WORK SCHEDULES, WORK AREA OR COOPERATION SHALL BE RESOLVED BY THE ENGINEER. COMPENSATION FOR THE ABOVE COOPERATION SHALL BE INCIDENTAL TO THE VARIOUS PAY ITEMS WITHIN THIS PROJECT.

21) THE SHOULDERS, SHALL BE RECONSTRUCTED STARTING FROM 150 FT. BEFORE MAH-11-1604 TO 150 FT. PAST MAH-11-1615 INCLUDING ALL SHOULDERS IN BETWEEN THE TWO BRIDGES, AND 150 FT. BEFORE AND 150 FT. PAST MAH-11-1605, THE PROPOSED SECTION FOR RECONSTRUCTION WILL BE 6 IN. OF ITEM 301 PRIOR TO MOVING TRAFFIC OVER FOR BRIDGE WORK. THIS ITEM SHALL INCLUDE THE REMOVAL OF 6 IN. OF MATERIAL PRIOR TO REPLACING IT WITH 6 IN. OF ITEM 301.

ALSO, 525 FT. OF SHOULDER ON SR. 46 RAMP ONTO I-80 WESTBOUND, 12 IN. THICK, SHALL BE BUILT PRIOR TO PAVEMENT WORK ON THE RAMP, WITH ITEM 301 FOR MAINTAINING TRAFFIC. THIS ITEM SHALL INCLUDE THE REMOVAL OF 12 IN. OF MATERIAL, ANY EMBANKMENT REQUIRED AND REPLACING IT WITH 12 IN. OF ITEM 301.

SEE PLAN PAGE 22 FOR DETAILS.

ITEM 301 BITUMINOUS AGGREGATE BASE, AS PER PLAN 500 CU.YDS, HAS BEEN INCLUDED IN THE GENERAL SUMMARY FOR THIS PURPOSE, AND AS DIRECTED BY THE ENGINEER. PART 1 = 117 CU.YD. PART 2 = 383 CU.YD.

22) THE RAMPS IN THE MAH 11 INTERCHANGE ALONG WITH THE FOLLOWING BRIDGES SHALL BE COMPLETED FROM 7:30PM FRIDAY TO 2:30 PM MONDAY (WITH THE HOLIDAY RESTRICTIONS IN THE HOLIDAY NOTE):

MAH. 80-0076
MAH. 11-1605
MAH. 11-1604
MAH. 11-1615

SEE PLAN PAGES 23 & 24 FOR DETAILS.

MAH-80-0076 L/R AND MAH-80-0125 L/R SHALL NOT BE CLOSED TO TRAFFIC AT THE SAME TIME.

MAINTENANCE OF TRAFFIC

23) HOLIDAY WORK LIMITATIONS

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

MEMORIAL DAY — FOURTH OF JULY
LABOR DAY — CANFIELD FAIR (SR. 11 AREA ONLY)
SEPT. 1 - 5, 1994
AUG. 31 - SEPT. 4, 1995

IF THE DAY OF THE WEEK WHEN THE HOLIDAY FALLS IS:	THAN TIMES ALL LANES MUST BE OPEN TO TRAFFIC IS:	
SUNDAY	12:00N FRIDAY THROUGH	12:00N MONDAY
MONDAY	12:00N FRIDAY THROUGH	12:00N TUESDAY
TUESDAY	12:00N MONDAY THROUGH	12:00N WEDNESDAY
WEDNESDAY	12:00N TUESDAY THROUGH	12:00N THURSDAY
THURSDAY	12:00N WEDNESDAY THROUGH	12:00N MONDAY
FRIDAY	12:00N THURSDAY THROUGH	12:00N MONDAY
SATURDAY	12:00N FRIDAY THROUGH	12:00N MONDAY

THERE SHALL NOT BE ANY EXTENSIONS DUE TO WEATHER OR MATERIAL DELAYS WHATSOEVER.

SHALL THE CONTRACTOR FAIL TO MEET ANY OF THESE REQUIREMENTS, THE CONTRACTOR SHALL BE ASSESSED LIQUIDATED DAMAGES IN ACCORDANCE WITH 108.07 OF THE CONSTRUCTION AND MATERIALS SPECIFICATIONS.

24) ITEM 631 PORTABLE CHANGEABLE MESSAGE SIGN, UNLIMITED MESSAGE, AS PER PLAN

THE CONTRACTOR SHALL FURNISH, INSTALL, OPERATE, AND MAINTAIN A CHANGEABLE MESSAGE SIGN AS DESCRIBED IN ITEMS 631 AND 731 AND AS MODIFIED IN THIS NOTE, OR AS DIRECTED BY THE ENGINEER.

THE SIGN SHALL BE CAPABLE OF BEING PROGRAMMED IN THE FIELD TO DISPLAY ANY LEGEND THAT MAY BE NECESSARY. THE SIGN SHALL BE ABLE TO DISPLAY THREE LINES OF LEGEND WITH A MINIMUM OF EIGHT (8) CHARACTERS PER LINE OF LEGEND.

THE SIGN, WHEN ERECTED WITH OUTRIGGERS IN PLACE, SHALL BE CAPABLE OF WITHSTANDING WIND GUSTS OF 80 MPH.

THE SIGN SHALL BE CAPABLE OF BEING POWERED BE EITHER AN ELECTRICAL SERVICE DROP FROM THE LOCAL UTILITY COMPANY OR A TRAILER MOUNTED, PUSH-BUTTON ELECTRICAL START, DIESEL POWERED ELECTRICAL GENERATOR. THE GENERATOR SHALL BE CAPABLE OF AT LEAST THREE DAYS OF CONTINUOUS OPERATION WITHOUT REFILLING EITHER THE FUEL TANK OR OIL RESERVOIR.

THE SIGN SHALL BE MOUNTED ON A TRAILER OF SUFFICIENT SIZE AND STRENGTH.

THE SIGN AND TRAILER SHALL BE ABLE TO WITHSTAND TEMPERATURE RANGES FROM -40 F TO +140 F AND RELATIVE HUMIDITY RANGES FROM 20% TO 100%.

EACH CHARACTER IN EACH LINE OF LEGEND SHALL BE CLEARLY VISIBLE AND LEGIBLE FROM 800 FEET DURING BOTH DAYLIGHT AND NIGHT TIME CONDITIONS.

THE LEGEND SHALL BE CAPABLE OF BEING CHANGED IN THE FIELD USING A TYPEWRITER TYPE KEYBOARD WITH A DISPLAY TO SHOW THE PROPOSED CONDITIONS.

PAYMENT FOR THE ABOVE ITEM OF WORK SHALL BE AT THE CONTRACT UNIT PRICE BID FOR EACH ITEM 631 PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN AND SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, SOFTWARE AND INCIDENTALS TO PERFORM THE ABOVE DESCRIBED WORK.

ITEM 631 PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN 6 EACH

25) ITEM SPECIAL-LAW ENFORCEMENT OFFICER (WITH PATROL CAR)

IN ADDITION TO THE REQUIREMENTS OF 614 AND THE LATEST EDITION OF 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 INITIATED.

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 OFFICIAL CAR SHALL BE A PUBLIC SAFETY VEHICLE AS REQUIRED BY THE OHIO REVISED CODE.

THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR THESE SERVICES WITH:

OHIO HIGHWAY PATROL
660 EAST MAIN STREET
COLUMBUS, OHIO 44215
614-466-2300

IF AFTER CONTACTING THE OHIO HIGHWAY PATROL, IT IS DETERMINED THAT THEY CANNOT SUPPLY THE L.E.O., THEN AN AUTHORIZED MUNICIPAL OR COUNTY POLICE OFFICER EQUIPPED WITH A MARKED AND FLASHER-LIGHT EQUIPPED OFFICAL POLICE OR PATROL CAR SHALL BE PROVIDED.

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 SPECIAL-LAW ENFORCEMENT OFFICER (WITH PATROL CAR). THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM SPECIAL, LAW ENFORCEMENT OFFICER WITH PATROL CAR 1500 HOURS

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

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

26) TEMPORARY WORK ZONE MARKINGS AND SIGNS

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER FOR TEMPORARY WORK ZONE PAVEMENT MARKINGS AND SIGNS PER THE REQUIREMENTS OF THE STANDARD CONSTRUCTION DRAWINGS:

	PART 1	PART 2
ITEM 614 - TEMPORARY LANE LINE, CLASS I	42 MI.	4 MI.
ITEM 614 - TEMPORARY EDGE LINE, CLASS I	89 MI.	11 MI.
ITEM 614 - TEMPORARY STOP LINE, CLASS II	280 LIN. FT.	0 LIN. FT.

27 METHOD OF PAYMENT

PAYMENT FOR THE MAINTENANCE OF TRAFFIC ITEMS, UNLESS SPECIFIED SEPARATELY, SHALL BE AT THE LUMP SUM PRICE BID FOR ITEM 614 MAINTAINING TRAFFIC, WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT AND INCIDENTALS TO COMPLETE THE WORK AS DETAILED IN THE PLANS.

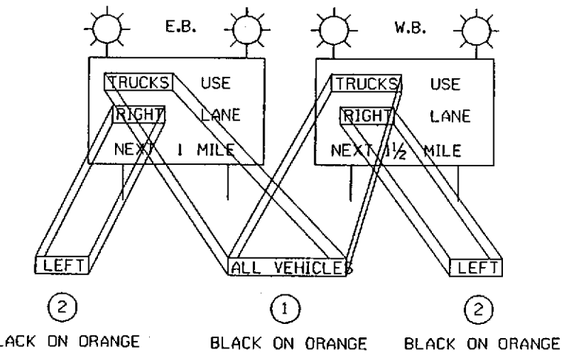
28) ALTERNATE MAINTENANCE OF TRAFFIC

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

29) COVERING OF SIGNS

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

WHEN WORKING ON THE DRIVING LANE USE OVERLAYS 1 & 2 (SEE BELOW). WHEN OPENING TO TRAFFIC PRIOR TO THE COMPLETION OF THE DRIVING LANE REMOVE OVERLAY 1 ONLY, LEAVE OVERLAY 2.



CALCULATED
CHECKED

MAINTENANCE OF TRAFFIC

MAH-80-0.52

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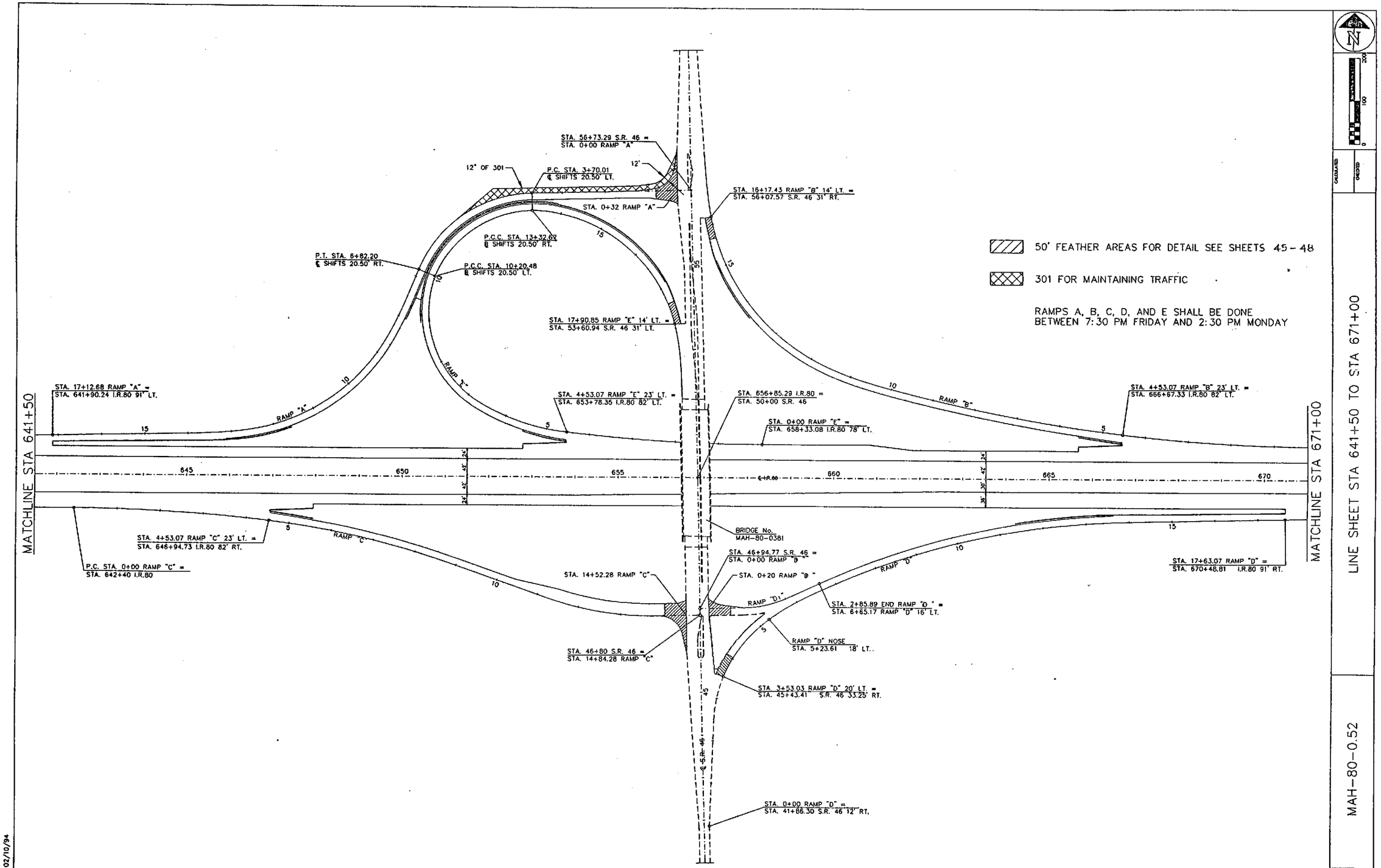

JFP/TONY 02/10/94

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LINE SHEET STA 641+50 TO STA 671+00

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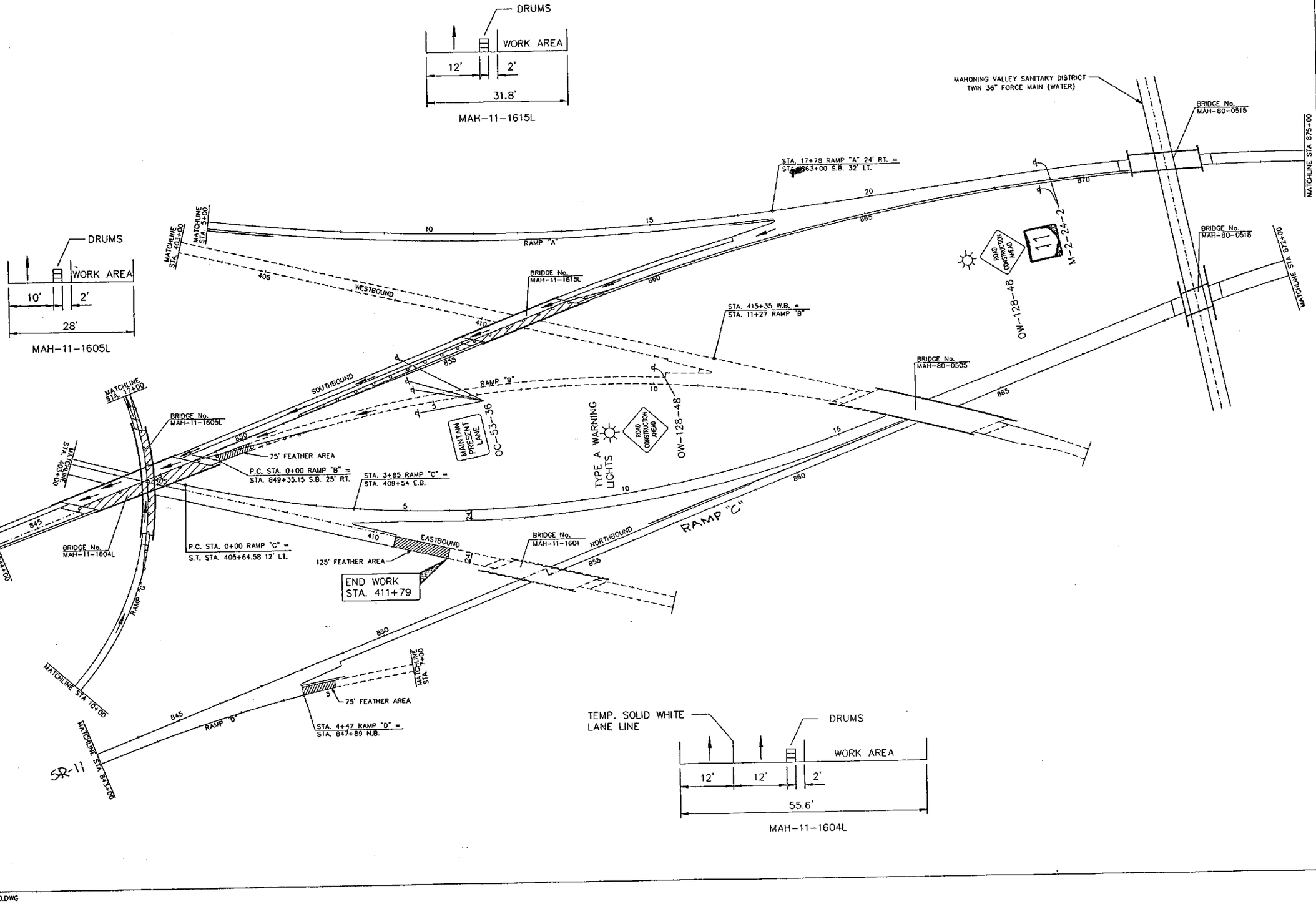

LINE SHEET STA 844+00 TO STA 875+00

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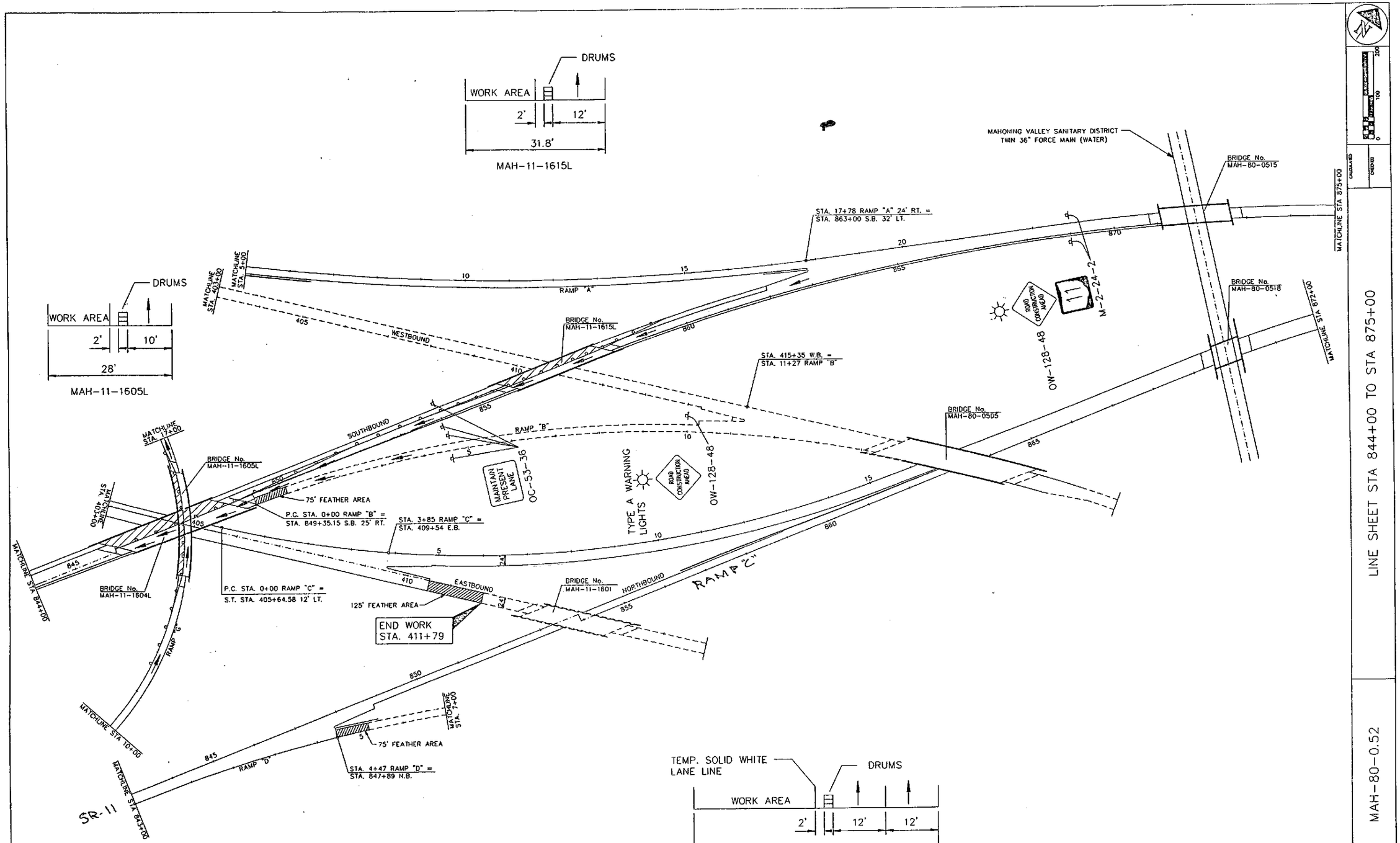

DRUMS
WORK AREA
2'
12'
31.8'
MAH-11-1615L
DRUMS
WORK AREA
2'
10'
28'
MAH-11-1605L
MAHONING VALLEY SANITARY DISTRICT
TWIN 36" FORCE MAIN (WATER)
BRIDGE No.
MAH-80-0515
MATCHLINE STA 875+00
STA. 17+78 RAMP "A" 24' RT. =
STA. 863+00 S.B. 32' LT.
MATCHLINE STA 403+00
MATCHLINE STA 5+00
RAMP "A"
WESTBOUND
BRIDGE No.
MAH-11-1615L
BRIDGE No.
MAH-80-0518
MATCHLINE STA 872+00
M-2-24-2
OW-128-48
ROAD CONSTRUCTION AHEAD
STA. 415+35 W.B. =
STA. 11+27 RAMP "B"
SOUTHBOUND
RAMP "B"
BRIDGE No.
MAH-80-0505
MATCHLINE STA 17+00
BRIDGE No.
MAH-11-1605L
MAINTAIN PRESENT LANE
OC-53-36
TYPE A WARNING LIGHTS
OW-128-48
ROAD CONSTRUCTION AHEAD
75' FEATHER AREA
P.C. STA. 0+00 RAMP "B" =
STA. 849+35.15 S.B. 25' RT.
STA. 3+85 RAMP "C" =
STA. 409+54 E.B.
MATCHLINE STA 10+00
MATCHLINE STA 844+00
BRIDGE No.
MAH-11-1604L
P.C. STA. 0+00 RAMP "C" =
S.T. STA. 405+64.58 12' LT.
125' FEATHER AREA
EASTBOUND
BRIDGE No.
MAH-11-1601
NORTHBOUND
RAMP "C"
END WORK
STA. 411+79
RAMP "G"
MATCHLINE STA 10+00
MATCHLINE STA 7+00
75' FEATHER AREA
RAMP "D"
STA. 4+47 RAMP "D" =
STA. 847+89 N.B.
MATCHLINE STA 843+00
SR-11
TEMP. SOLID WHITE LANE LINE
DRUMS
WORK AREA
2'
12'
12'
55.6'
MAH-11-1604L
LINE SHEET STA 844+00 TO STA 875+00
MAH-80-0.52
24
73
JFP/TONY 02/10/94
MA7680.DWG

GENERAL NOTES

1. IT IS INTENDED THAT THIS DRAWING BE USED FOR TREATMENT OF DROP-OFFS THAT DEVELOP DURING CONSTRUCTION OPERATIONS, AND THAT ARE NOT OTHERWISE PROVIDED FOR IN THE CONSTRUCTION PLANS. WHERE THE PLANS DO NOT PROVIDE SPECIFIC ITEMS FOR LABOR, EQUIPMENT, OR MATERIALS TO IMPLEMENT THE DROP-OFF TREATMENTS SPECIFIED HEREON, THEY SHALL BE INCLUDED FOR PAYMENT IN THE LUMP SUM BID FOR ITEM 614 MAINTAINING TRAFFIC.

2. WHILE THE NEED FOR CERTAIN ADVISORY SIGNING IS NOTED HEREON, IT IS NOT INTENDED THAT THIS BE INDICATIVE OF ALL SIGNING THAT MAY BE REQUIRED TO ADVISE OR WARN MOTORISTS, AND ALL REQUIREMENTS OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (OMUTCD) MUST BE FULFILLED.

3. IN URBAN OR OTHERWISE HEAVILY DEVELOPED AREAS WHERE PEDESTRIANS AND/OR BICYCLISTS MAY BE PRESENT IN SIGNIFICANT NUMBERS, ADDITIONAL SIGNING AND PROTECTIVE MEASURES OTHER THAN THOSE SHOWN HEREON MAY BE REQUIRED.

4. THE DROP-OFF TREATMENT SELECTED FOR USE AT ANY GIVEN LOCATION SHALL BE AS APPROPRIATE FOR THE PREVAILING CONDITIONS AT THE SITE.

5. WHERE CONCRETE BARRIER IS SPECIFIED, IT SHALL BE IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWING MC-9.2 AND ITEM 622.

6. WHEN DRUMS ARE SPECIFIED FOR A DROPOFF CONDITION, A MINIMUM NUMBER OF FOUR DRUMS SHALL BE USED. SPACING SHALL BE AS INDICATED IN THE PLANS OR AS SPECIFIED IN THE OMUTCD.

7. WHEN OW-151 (LOW SHOULDER) SIGNS OR OW-171 (UNEVEN LANES) AND OWP-171 SIGNS ARE REQUIRED, THEY SHALL BE PLACED 750' IN ADVANCE OF THE CONDITION, ON ALL INTERSECTING ENTRANCE RAMPS WITHIN THE LIMITS OF THE CONDITION AND IMMEDIATELY BEYOND ALL INTERSECTING ROADWAYS WITHIN THE LIMITS OF THE CONDITION. WHEN THE DROPOFF CONDITION EXTENDS MORE THAN ONE-HALF MILE, ADDITIONAL SIGNS SHOULD BE ERECTED AT INTERVALS OFF ONE MILE OR LESS.

8. FOR LOCATIONS, SUCH AS AT RAMPS, LANE SHIFTS, LANE CLOSURES ETC., WHERE TRAFFIC IS REQUIRED TO NEGOTIATE ANY DIFFERENCE IN ELEVATION BETWEEN PAVEMENTS, A 3:1 SLOPE TREATMENT SIMILAR TO THE OPTIONAL WEDGE TREATMENT SHALL BE PROVIDED.

9. PORTABLE CONCRETE BARRIER SHALL BE PLACED ON THE SAME LEVEL AS THE TRAFFIC SURFACE AND SHALL NOT ENCROACH ON LANE WIDTH(S) DESIGNATED AS THE MINIMUM REQUIRED FOR TRAFFIC USE. WHERE DRUMS ARE USED, AND THEIR PRESENCE WOULD REDUCE TRAVELED LANE WIDTHS TO LESS THAN 10', DRUMS MAY BE PLACED ON THE OPPOSITE LEVEL FROM THAT OF TRAFFIC PROVIDED THE DROP-OFF DEPTH DOES NOT EXCEED 5" AND APPROVAL IS GRANTED BY THE PROJECT ENGINEER.

10. PAVEMENT REPAIRS (OR SIMILAR WORK):

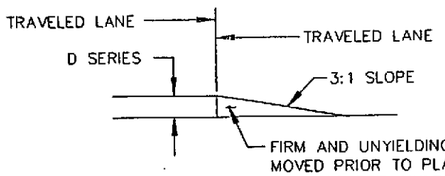
A. LENGTH GREATER THAN 60 FEET – UTILIZE APPROPRIATE TREATMENT FROM CONDITION I.

B. LENGTHS OF 60 FEET OR LESS – REPAIRS SHALL BE EFFECTED IN ACCORDANCE WITH 255.08. DRUMS MAY BE USED AS A SEPARATOR ADJACENT TO THE TRAVELED LANE.

OPTIONAL WEDGE TREATMENT

(MILLING OR RESURFACING)

1. THIS TREATMENT MAY BE USED WHEN PERMITTED FOR CONDITION I ONLY.
2. OW-171 AND OWP-171 SIGNS REQUIRED.



TONY 02/24/94

MT-7.DWG

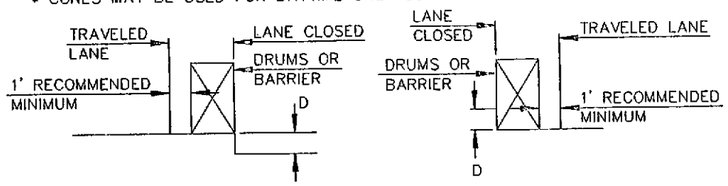
CONDITION I

DROPOFFS BETWEEN TRAVELED LANES

1. THESE TREATMENTS ARE TO BE USED FOR RESURFACING, PAVEMENT PLANING, EXCAVATION, ETC. BETWEEN OR WITHIN TRAVELED LANES.

D (IN.)	TREATMENT
≤ 1 1/2	ERECT OW-171 AND OWP-171 SIGNS.
> 1 1/2-3	1) LANE CLOSURE UTILIZING DRUMS* AS SHOWN BELOW OR 2) OPTIONAL WEDGE TREATMENT
> 3-5	LANE CLOSURE UTILIZING DRUMS AS SHOWN BELOW
> 5	LANE CLOSURE UTILIZING PORTABLE CONCRETE BARRIER AS SHOWN BELOW

* CONES MAY BE USED FOR DAYTIME ONLY CONDITIONS.S.



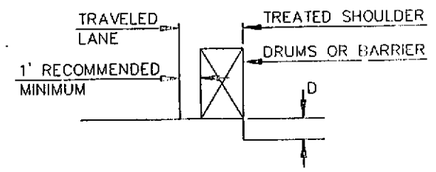
CONDITION II

DROPOFFS WITHIN GRADED SHOULDER AREA

1. THE TREATMENTS INDICATED BELOW ARE FOR USE IN CONJUNCTION WITH RESURFACING, PLANING OR EXCAVATIONS WITHIN THE GRADED SHOULDER AREA.

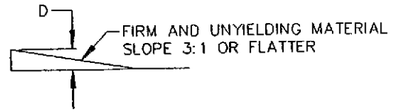
2. THE GRADED SHOULDER AREA IS THAT FLAT OR GRADUALLY SLOPING AREA BETWEEN THE EDGE A NORMALLY TRAVELED LANE AND THE MORE STEEPLY SLOPING DITCH FORESLOPE OR EMBANKMENT SLOPE. ITS SURFACE MAY BE SOIL OR TURF, AND/OR IT MAY BE INCLUSIVE OF A "TREATED" AREA (IMPROVED WITH AGGREGATES, ASPHALTIC MATERIALS, OR CONCRETE). FOR THE PURPOSES HEREIN, ITS MAXIMUM WIDTH SHALL BE CONSIDERED TO BE TWELVE (12) FEET.

D (IN.)	TREATMENT
≤ 1 1/2	1) IF EDGELINES ARE PRESENT, NO TREATMENT NECESSARY OR 2) ERECT OW-171 AND OWP-171 SIGNS.
> 1 1/2-5	1) IF MIN. LANE WIDTH* REQUIREMENTS CAN BE MET, MAINTAIN LANES UTILIZING DRUMS AS SHOWN BELOW OR 2) IF MIN. LANE WIDTH* REQUIREMENTS CANNOT BE MET, CLOSE ADJACENT LANE UTILIZING DRUMS OR 3) OPTIONAL SHOULDER TREATMENT.
> 5-12 DAYLIGHT ONLY	IF MIN. LANE WIDTH* REQUIREMENTS CAN BE MET, MAINTAIN LANES UTILIZING DRUMS AS SHOWN BELOW
>5-24	1) IF MIN. LANE WIDTH* REQUIREMENTS CAN BE MET, MAINTAIN LANES UTILIZING PORTABLE CONCRETE BARRIER AS SHOWN BELOW OR 2) IF MIN. LANE WIDTH* REQUIREMENTS CANNOT BE MET, CLOSE ADJACENT LANE UTILIZING DRUMS
> 24	LANE CLOSURE UTILIZING PORTABLE CONCRETE BARRIER AS SHOWN BELOW.



OPTIONAL SHOULDER TREATMENT

1. THIS TREATMENT MAY NOT BE USED WITHIN A BITUMINOUS SHOULDER WHERE A HOT LONGITUDINAL JOINT PER 401.15 IS REQUIRED.
2. OW-151 SIGN REQUIRED.



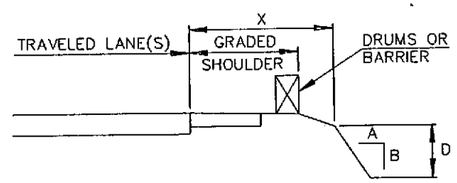
CONDITION III

DROPOFFS BEYOND GRADED SHOULDER OR BACK OF CURB

1. SEE NOTE 2 UNDER CONDITION II.
2. USE CHART A OR B BELOW, AS APPLICABLE.

CHART A

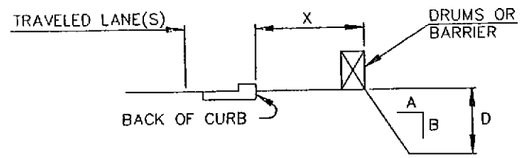
USED FOR: 1. UNCURBED FACILITIES
2. CURBED FACILITIES WHERE:
A. CURBS ARE LESS THAN 6" IN HEIGHT.
B. CURBS ARE 6" OR GREATER IN HEIGHT AND THE LEGAL SPEED IS GREATER THAN 40 MPH.



X (FT)	D (IN)	A/B	TREATMENT REQUIRED DAY	TREATMENT REQUIRED NIGHT
0-4	ANY	3:1 OR FLATTER	(A)	(A)
4-30	ANY	STEEPER THAN 3:1	NONE	NONE
4-12	≤3	STEEPER THAN 3:1	NONE	NONE
4-12	>3-≤12	STEEPER THAN 3:1	DRUMS	DRUMS
4-12	>12	STEEPER THAN 3:1	DRUMS	DRUMS
>12-20	≤12	STEEPER THAN 3:1	NONE	NONE
>12-20	>12-≤24	STEEPER THAN 3:1	DRUMS	DRUMS
>12-20	>24	STEEPER THAN 3:1	DRUMS	DRUMS
>20-30	≤24	STEEPER THAN 3:1	NONE	NONE
>20-30	>24	STEEPER THAN 3:1	DRUMS	DRUMS
>30	ANY	ANY	NONE	NONE
(A) USE TREATMENT SPECIFIED UNDER CONDITION II.				

CHART B

USED FOR: CURBED FACILITIES, WHERE THE CURB IS 6" OR GREATER IN HEIGHT AND THE LEGAL SPEED IS 40 MPH OR LESS.



X (FT)	D (IN)	A/B	TREATMENT REQUIRED DAY	TREATMENT REQUIRED NIGHT
0-10	<12	ANY	NONE	NONE
0-10	>12	ANY	DRUMS	DRUMS
>10	ANY	ANY	NONE	NONE

CHECKED

CHECKED

DROPOFFS IN WORK ZONES

MAH-80-0.52

24A
73

PART 1	FROM SHT #		PART 2	FROM SHT #							ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION
4252	33		2020	33A							202	23500	6272	SQ YD	WEARING COURSE REMOVED
720	31		360	31							202	30700	1080	LIN FT	CONCRETE BARRIER REMOVED
19	31		6	31							202	42000	25	EACH	ANCHOR ASSEMBLY REMOVED, TYPE A
17650	18,31		6562.5	18,31							202	38200	24212.5	LIN.FT.	GUARDRAIL REMOVED FOR REUSE
80	18		20	18							203	12000	100	CU YD	EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
3700	16		1100	16							203	20001	4800	CU YD	EMBANKMENT, AS PER PLAN
713	32		183	32							203	60200	896	STATION	LINEAR GRADING, METHOD 1
238	32		93	32							203	60000	331	STATION	LINEAR GRADING, METHOD 3A
80	18		20	18							304	20000	100	CU.YD.	AGGREGATE BASE
1937.5	17,18,31		881.25	17,18,31							606	13000	2318.75	LIN FT	GUARDRAIL, TYPE 5
17125	31		6287.5	31							606	16500	23412.5	LIN FT	GUARDRAIL REBUILT, TYPE 5
2075	31										606	17000	2075	LIN FT	RAISING TYPE 5 GUARDRAIL
37	31		15	31							606	26100	52	EACH	ANCHOR ASSEMBLY, TYPE E
15	31		7	31							606	27900	22	EACH	ANCHOR ASSEMBLY REBUILT, TYPE T
18	31		9	31							606	35000	27	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1
21	31		11	31							606	35120	32	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 3
4	31										606	98100	4	EACH	GUARDRAIL, MISC.: BRIDGE TERMINAL ASSEMBLY, AS PER PLAN
252	31		126	31							622	24001	378	LIN FT	CONCRETE BARRIER, TYPE D, AS PER PLAN
90	17		10	17							802	00100	100	EACH	BARRIER REFLECTOR, TYPE A
90	17		10	17							802	00200	100	EACH	BARRIER REFLECTOR, TYPE B
2729	19, 28		611	19, 29							603	01500	3340	LIN FT	6" CONDUIT, TYPE F, 707.17, NON-PERFORATED, ASTM 3034, SDR 35, SS 931 OR SS-944
147	19, 28, 29		20	19, 28, 29							SPECIAL	60436600	167	EACH	PRECAST REINFORCED CONCRETE OUTLET
28971	28		13,135	29							605	05101	42,105	LIN FT	4" SHALLOW PIPE UNDERDRAIN, AS PER PLAN
120	18		30	18							605	31100	150	LIN FT	AGGREGATE DRAIN
44345	16		12,234	16							659	10000	56,579	SQ.YD	SEEDING AND MULCHING
4.00	16		1.10	16							659	20000	5.10	TON	COMMERCIAL FERTILIZER
19.96	16		5.50	16							659	30000	25.46	TON	AGRICULTURAL LIMING
450	18										251	01001	450	SQ YD	PARTIAL DEPTH PAVEMENT REPAIR, AS PER PLAN
2500	18										252	01000	2500	SQ YD	FULL DEPTH RIGID PAVEMENT REMOVAL AND FLEXIBLE REPLACEMENT
3300	18										252	01500	3300	LIN FT	FULL DEPTH PAVEMENT SAWING
9318	33		7152	33A							254	01000	16470	SQ YD	PAVEMENT PLANING, BITUMINOUS, (3¾" DEPTH)
19291	33										254	01000	19291	SQ YD	PAVEMENT PLANING, BITUMINOUS, (2" (AVG.) DEPTH)
9428	33										254	01000	9428	SQ YD	PAVEMENT PLANING, BITUMINOUS, (⅝" (AVG.) DEPTH)
22596	33,61										254	01000	22596	SQ YD	PAVEMENT PLANING, BITUMINOUS, VARIABLE
2450	61										254	01000	2450	SQ YD	PAVEMENT PLANING, BITUMINOUS, (¾" DEPTH)
21,613	33, 33B		4566	33A, 33B							407	10000	26179	GALLON	TACK COAT
6096	33, 33B,	61	1254	33A, 33B,	61						SPECIAL	40445000	7350	CU YD	RUBBERIZED OPEN GRADED ASPHALT CONCRETE FRICTION COURSE
10708	33, 33B		2777	33A, 33B							446	01200	13485	CU YD	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, AC-20
11617	33, 33B		2128	33A, 33B							446	01400	13745	CU YD.	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, AC-20
680	16		265	16							448	14101	945	CU YD.	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1 (UNDER GUARDRAIL), AS PER PLAN

CHECKED CJT
DESIGNED DES

GENERAL SUMMARY

MAH-80-0.52

PART 1	FROM SHT #		PART 2	FROM SHT #						ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION
LUMP	62									202	11200	LUMP	LUMP	PORTIONS OF STRUCTURE REMOVED
17955	61									202	23501	17955	SQ YD	WEARING COURSE REMOVED, AS PER PLAN
LUMP	61									202	98000	LUMP	LUMP	REMOVAL MISCELLANEOUS: ABUTMENT BEAM SEAT CLEANING
420	61		224	61						202	98200	644	LIN FT	REMOVAL MISCELLANEOUS: VERTICAL EXTENSIONS
893	21, 61		128	61						448	14000	1021	CU YD	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I, AC-20
1347	61		231	61						407	13900	1578	GALLON	TACK COAT USING SS 924
0.50	62									511	34400	0.50	CU YD	CLASS S CONCRETE, SUPERSTRUCTURE
204	61									511	34450	204	CU YD	CLASS S CONCRETE MISC.: CURB REPAIR
			26	61						511	34450	26	CU YD	CLASS S CONCRETE MISC.: VARIABLE DEPTH PREPLACED
17955	61		3076	61						SPECIAL	51267030	21031	SQ YD	MEMBRANE WATERPROOFING (SHEET TYPE 3)
420	61		224	61						516	11800	644	LIN FT	VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINT
LUMP	62									516	14800	LUMP	LUMP	STRUCTURAL JOINT OR JOINT SEALER, MISCELLANEOUS: STRUCTURAL EXPANSION JOINT REPAIR
420	61									516	31000	420	LIN FT	JOINT SEALER, 705.04
20	61									SPECIAL	51646800	20	EACH	REFURBISH AND RESEAT BEARING
										516	46200	2	EACH	BEARING DEVICE, ROCKER
12695	62		1614	62						517	76300	14309	LIN FT	RAILING, MISCELLANEOUS: BRIDGE RETROFIT RAILING
950	61									519	11100	950	SQ FT	PATCHING CONCRETE STRUCTURE
			400	61						520	11100	400	SQ FT	PNEUMATICALLY PLACED MORTAR
17955	61									850	14000	17955	SQ YD	SUPERPLASTICIZED DENSE CONCRETE OVERLAY (2" THICK OVERLAY) USING HYDRODEMOLITION
598	61									850	20000	598	CU YD	SUPERPLASTICIZED DENSE CONCRETE OVERLAY (VARIABLE THICKNESS) USING HYDRODEMOLITION
22	61									850	30000	22	CU YD	FULL DEPTH REPAIR
17955	61									850	40500	17955	SQ. YD.	SURFACE PREPARATION USING HYDRODEMOLITION
LUMP	62									850	40000	LUMP	LUMP	TEST SLAB
LUMP			LUMP							614	11000	LUMP	LUMP	MAINTAINING TRAFFIC
LUMP			LUMP							619	15010	LUMP	LUMP	FIELD OFFICE, TYPE B
110	66									622	40020	110	LIN FT	PORTABLE CONCRETE BARRIER, 32"
LUMP			LUMP							623	10000	LUMP	LUMP	CONSTRUCTION LAYOUT STAKES
LUMP			LUMP							624	10000	LUMP	LUMP	MOBILIZATION

DESIGNED CJT
DETAILED DES

GENERAL SUMMARY

MAH-80-0.52

PART 1	FROM SHT #		PART 2	FROM SHT #						ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION
117	20		383	20						301	10003	500	CU YD.	BITUMINOUS AGGREGATE BASE, AC-20, AS PER PLAN
450	20		150	20						404	35000	600	CU YD.	BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC
10	20		6	20						614	12460	16	EACH	WORK ZONE MARKING SIGN
42	21		4	21						614	20000	46	MILE	TEMPORARY LANE LINE, CLASS I
89	21		11	21						614	22000	100	MILE	TEMPORARY EDGE LINE: CLASS I
280	21									614	26000	280	LIN FT	TEMPORARY STOP LINE, CLASS I
4	21		2	21						631	90401	6	EACH	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN
1000	21		500	21						SPECIAL	614111100	1500	HOUR	LAW ENFORCEMENT OFFICER, WITH PATROL CAR
200	20									SPECIAL	614B010	200	SQ FT	MAINTAINING TRAFFIC ITEM, MISC.: WORK ZONE MARKING SIGN
320	60									603	00400	320	LIN FT	4" CONDUIT, TYPE E
8.75	60									608	10000	8.75	SQ FT	4" CONCRETE WALK
50	60									625	25500	50	LIN FT	3" CONDUIT, 713.04
95	60									625	25900	95	LIN FT	CONDUIT, JACKED AND DRILLED UNDER PAVEMENT, SIZE: 3"
50	60									625	29000	50	LIN FT	TRENCH
4	60									625	30700	4	EACH	PULL BOX, 713.08, 18"
1	60									625	32000	1	EACH	GROUND ROD
1	19									630	74500	1	EACH	OVERHEAD SIGN SUPPORT, MISC.: TYPE TC-7.65, DESIGN G, LEFT END FRAME
300	60									632	27500	300	LIN FT	LOOP DETECTOR PAVEMENT CUTTING
1500	60									632	64900	1500	LIN FT	LOOP DETECTOR WIRE, TYPE E
760	60									632	65200	760	LIN FT	LOOP DETECTOR LEAD-IN CABLE
1	60									632	72000	1	CU YD	CONCRETE FOR ANCHOR BASE FOUNDATION
1	60									632	89800	1	EACH	PEDESTAL, 3', TRANSFORMER BASE
4	60									632	27300	4	EACH	PIEZOCABLE CLASS II, AXLE SENSOR
1	60									633	65001	1	EACH	CABINET, WITHOUT CONTROLLER, AS PER PLAN, PREWIRED, PEDESTAL MOUNTING, TYPE G.
380	60									632	90500	380	LIN. FT.	SIGNALIZATION, MISC.: RG 58 COAXIAL LEAD-IN CABLE
13.49	54		2.20	54						644	00100	15.69	MILE	EDGE LINE
26.26	54		5.90	54						644	00200	32.16	MILE	LANE LINE
6089	55									644	00400	6089	LIN FT	CHANNELIZING LINE
70	55									644	00500	70	LIN FT	STOP LINE
2804	55									644	00700	2804	LIN FT	TRANSVERSE LINE
1500	55									644	01514	1500	LIN FT	DOTTED LINE, 8"
1	55									644	01410	1	EACH	WORD ON PAVEMENT, 96" (ONLY)
2	55									644	01300	2	EACH	LANE ARROW
1231	53									862	00200	1231	EACH	RAISED PAVEMENT MARKER, INSTALLATION ONLY

CALCULATED CJT
CHECKED DES

GENERAL SUMMARY

MAH-80-0.52

27/73

605 - SHALLOW UNDERDRAIN, AS PER PLAN, DRAINAGE QUANTITIES

EASTBOUND LANE I-80 STATION FROM	TO	OUTLET STATION	OUTLET INTO EXISTING CATCH BASIN STATION	PART	603 6" CONDUIT, TYPE F, 707.17 NON-PERFORATED ASTM 3034 SDR 35 OR SS 831 LIN. FT.	605 4" SHALLOW UNDERDRAIN, AS PER PLAN LIN. FT.	SPECIAL PRECAST REINFORCED CONCRETE OUTLET EACH	STANDARD TEE FITTING EACH	STANDARD END CAP EACH	BENDS AND BRANCHES 90° BEND	45° BEND
(OUTSIDE RIGHT)											
482+54	486+00	486+00		1	20	346	1	1			
486+00	492+30		492+30	1	10	630				1	
670+49	675+74.84 BK	670+49		1	20	526	1			1	
376+15.43 AH	381+00	376+15.43AH		1	20	485	1	1			
381+00	384+50	381+00		1	20	350	1	1			
384+50	389+89	389+89		1	25	539	1			1	
SEE RAMP E											
390+89	393+00		393+00	1	30	211			1	1	
MEDIAN SIDE (LEFT)											
482+54	486+00	486+00		1	25	346	1	1			
486+00	492+00		492+00	1	42	600				1	
666+67	670+49	666+67		1	25	382	1			1	
670+49	675+74.89 BK	670+49		1	25	526	1	1			
376+15.43 AH	381+00	376+15.43AH		1	25	485	1	1			
381+00	384+50	381+00		1	25	350	1	1			
384+50	389+00	389+75@20'		1	78	450	1	1			1
389+00	393+00		393+00	1	15	400		1			
393+00	398+00	398+00		1	25	500	1	1			
398+00	408+64		403+00	1	30	1064		1			
408+64 E.B. I-80 - 3+00											
(OUTSIDE LEFT)											
		482+55		1			1			1	
SEE LINE B1 OHIO TURNPIKE											
666+67	671+67	66+67		1	70	500	1				1
671+67	675+74.89 BK	671+67		1	20	408	1	1			
376+15.43 AH	381+00	376+15.43AH		1	20	485	1	1			
381+00	386+00	381+00		1	20	500	1	1			
386+00	392+00	386+00		1	25	600	1	1			
392+00	398+51.40	398+51.40		1	25	651	1	1			
SEE RAMP A											
MEDIAN SIDE (RIGHT)											
482+54	486+00	486+00		1	25	346	1				
486+00	492+00		492+00	1	42	600				1	
666+67	671+67	666+67		1	30	500	1			1	
671+67	675+74.89 BK	671+67		1	25	408	1	1	1		
866+00	869+45	866+00		/	56	345	1	1	1		1
870+20	876+00	870+20		/	25	580	1				1
876+00	881+00	876+00		/	20	500	1	1			
881+00	883+05.07 BK			/		205					
885+63.93 AH	889+00	881+00 BK		/		336	1	1			
889+00	895+00	895+00		/	105	600	1	1			1
895+00	901+27	901+27		/	30	627	1				1
MEDIAN SIDE (LEFT)											
16+75.28 - 862+95.70 N.B. S.R. 11											
862+95.70	864+00		14+80	/		104			1		
885+75	891+00	885+75		/	20	525	1			1	
891+00	894+00	891+00		/	20	300	1	1			
894+00	898+00	898+00		/	25	400	1	1			
898+00	901+27	901+27		/	30	327	1			1	
863+00	868+00	868+00		/	25	500	1	1			
868+00	871+00			/	20	300	1			1	
872+80	886+00	878+00		/	60	1320	1		1		1
886+00	891+00		886+00	/	25	500	1	1			
891+00	896+00	891+00		/	56	500	1	1			1
896+00	901+27	901+27		/	30	527	1				1
878+00	883+00	878+00		/	20	500	1			1	
883+00	888+00	883+00		/	20	500	1	1			
888+00	892+00	888+00		/	20	400	1	1			
892+00	897+00	897+00		/	105	500	1	1			1
897+00	901+27	901+27		/	30	427	1				1

180 STATION FROM	TO	OUTLET STATION	OUTLET INTO EXISTING CATCH BASIN STATION	PART	603 6" CONDUIT, TYPE F, 707.17 NON-PERFORATED ASTM 3034 SDR 35 OR SS 831 LIN. FT.	605 4" SHALLOW UNDERDRAIN, AS PER PLAN LIN. FT.	SPECIAL PRECAST REINFORCED CONCRETE OUTLET EACH	STANDARD TEE FITTING EACH	STANDARD END CAP EACH	BENDS AND BRANCHES 90° BEND	45° BEND
RAMP A											
LEFT											
398+51.40 W.B. I-80 - 0+00 RAMP A											
0+00	10+00	6+50		1	20	1000	1	1			
10+00	14+00	10+00		1	20	400	1	1			
14+00	17+75	17+78		1	20	378	1			1	
LEFT											
408+64 E.B. I-80 - 3+00											
3+00	9+60		9+60	1	25	660		1			
9+60	14+80		14+80	1	25	520		1			
14+80	16+75.28					195					
RAMP E											
RIGHT											
389+89 E.B. I-80 - 4+58 RAMP E											
4+58	12+00		7+00	1	25	742		1			
12+00	17+43	12+00		1	55	543	1	1			1
17+43	22+65		17+43	1	35	522		1	1		
TOTAL TO GENERAL SUMMARY PART 1					1729	28971	47	36	6	14	12

UNDERDRAIN QUANTITIES

MAH-80-0.52

28/73

REV. 6/30/94

605 - SHALLOW UNDERDRAIN, AS PER PLAN, DRAINAGE QUANTITIES

NORTHBOUND LANE S.R.11 STATION FROM	TO	OUTLET STATION	OUTLET INTO EXISTING CATCH BASIN STATION	PART	603 6" CONDUIT, TYPE F, 707.17 NON-PERFORATED ASTM 3034 SDR 35 OR SS 931 LIN. FT.	605 4" SHALLOW UNDERDRAIN, AS PER PLAN LIN. FT.	SPECIAL PRECAST REINFORCED CONCRETE OUTLET EACH	STANDARD TEE FITTING EACH	STANDARD END CAP EACH	BENDS AND BRANCHES 90° BEND	45° BEND
(OUTSIDE RIGHT)											
810+15	816+00	816+00		2	25	585	1	1	1		
816+00	821+00	821+00		2	56	500	1	1			1
821+00	826+00	826+00		2	25	500	1	1			
826+00	831+00	831+00		2	25	500	1	1			
831+00	836+00	836+00		2	20	500	1	1			
836+00	842+00	842+00		2	25	600	1	1			
842+00	847+89	847+89		2	25	589	1	1			
848+89	853+60		853+60	2	45	471		1			
853+60	856+10		856+10	2	40	250		1			
856+10	866+00	861+00		2	30	990	1	1			
RAMP G											
LEFT											
0+00	2+30	2+30		2	20	230	1	1	1		
2+30	10+00	4+70		2	15	770	1	1			
10+00	13+70	10+00		2	15	370	1	1	1		
16+40	22+00	22+00		2	15	560	1	1	1		
22+00	26+75	26+75		2	15	475	1			1	

SOUTHBOUND LANE S.R.11 STATION FROM	TO	OUTLET STATION	OUTLET INTO EXISTING CATCH BASIN STATION	PART	603 6" CONDUIT, TYPE F, 707.17 NON-PERFORATED ASTM 3034 SDR 35 OR SS 931 LIN. FT.	605 4" SHALLOW UNDERDRAIN, AS PER PLAN LIN. FT.	SPECIAL PRECAST REINFORCED CONCRETE OUTLET EACH	STANDARD TEE FITTING EACH	STANDARD END CAP EACH	BENDS AND BRANCHES 90° BEND	45° BEND
(OUTSIDE LEFT)											
810+15	816+00		816+00	2	30	585			1	1	
MEDIAN SIDE (RIGHT)											
810+15	816+00		816+00	2	25	595		1	1		
816+00	820+00			2	25	400	1				
820+00	823+30		823+30	2	20	330	1	1			
823+30	829+25	829+25		2	20	595	1	1			
829+25	834+30	834+30		2	20	505	1	1			
834+30	845+85	839+00		2	20	1155	1	1	1		
849+40	854+00	849+40		2	5	460				1	
854+00	855+60	855+60		2	25	160	1			1	
858+40	863+00	863+00		2	25	460	1	1	1		
TOTAL TO GENERAL SUMMARY PART 2					611	13135	20	20	8	4	1

REV. 6/30/94

GUARDRAIL QUANTITIES

MARK	SHEET NO.	STATION FROM	STATION TO	SIDE	PART	202 ANCHOR ASSEMBLY REMOVED, TYPE A	202 CONCRETE BARRIER REMOVED	202 GUARDRAIL REMOVED, FOR REUSE	606 GUARDRAIL REBUILT, TYPE 5	606 GUARDRAIL TYPE 5	622 CONCRETE BARRIER, TYPE D, AS PER PLAN	606 BRIDGE TERMINAL, TYPE 1	606 ANCHOR ASSEMBLY, TYPE E	606 ANCHOR ASSEMBLY REBUILT, TYPE T	606 RAISING TYPE 5 GUARDRAIL	606 BRIDGE TERMINAL ASSEMBLY, TYPE 3
						EACH	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH	EACH	LIN. FT.	EACH
GR-1	34	485+05	495+05	RT.	1	1		950	950				1			1
GR-2	34	493+84.5	495+22	LT.	1			100	100					1		1
GR-3	34	496+84	509+96.5	LT.	1	1		1262.5	1262.5				1			
GR-4	37	567+88	568+83.25	LT.	1		40			56.25	14	1	1			
GR-5	37	582+90	584+40	RT.	1	1		100	100				1			1
GR-6	37	586+50	590+00	LT.	1	1		300	300				1			1
GR-7	37	588+62.5	592+62.5	RT.	1	1		375	375				1			
GR-8	38	592+44.75	593+40	RT. MD.	1		40			56.25	14	1	1			
GR-9	38	603+12.5	613+00	LT	1	1		950	950				1	1		
GR-10	38	617+98	619+85.5	LT.	1			150	150					1		1
GR-11	38	618+61	620+48.5	RT.	1	1		137.5	137.5				1			1
GR-12	39	621+18.5	630+68.5	LT.	1			900	900							2
GR-13	39	621+79	629+29	RT.	1			700	700							2
GR-14	39	630+95	637+32.5	RT.	1			612.5	612.5							
GR-15	39	632+37.5	643+00	LT.	1			1037.5	1037.5							
GR-15A	40	5+25	16+00	RAMP A, SR 46	1	1							1		1050	
GR-16	39	639+12.5	644+37.5	RT.	1			525	525							
GR-17	40	643+94.75	644+90	RT. MD.	1		40			56.25	14	1	1			
GR-18	40	3+77.5	14+02.5	RAMP C, SR 46	1										1025	
GR-19	40	654+69.75	655+65	RT.	1		40			56.25	14	1	1			
GR-20	40	658+00	658+95.25	LT.	1		40			56.25	14	1	1			
GR-21	40	669+27	670+22.25	LT.	1		40			56.25	14	1	1			
GR-22	40	669+35	670+30.25	LT.MD.	1		40			56.25	14	1	1			
GR-23	41	672+95	378+72.5	LT.	1			525	525					1		
GR-24	41	379+95	380+90.25	LT.MD.	1		40			56.25	14	1	1			
GR-25	41	378+75	380+25	RT,MD.	1	1		112.5	112.5				1	1		
GR-26	41	378+75	380+25	RT.	1	1		112.5	112.5				1	1		
GR-27	41	380+42.5	385+80	LT.	1	1		512.5	512.5				1			
GR-28	41	386+18	387+68	RT.	1	1		112.5	112.5				1	1		
GR-29	41	386+18	387+68	RT.MD.	1	1		112.5	112.5				1	1		
GR-30	41	397+75	399+25	RT.MD.	1	1		112.5	112.5				1	1		
GR-31	41	397+24.75	398+20	RT.	1		40			56.25	14	1	1			
GR-32	41	16+36.5	24+86.5	RAMP G, LT.	2			812.5	812.5					1		1
GR-33	41	16+24	24+86.5	RAMP G, RT.	2			825	825					1		1
GR-34	41	396+85	397+80.25	LT.MD.	1		40			56.25	14	1	1			
GR-35	41	396+85	397+80.25	LT.	1		40			56.25	14	1	1			
GR-36	42	401+94.75	402+90	RT.	1		40			56.25	14	1	1			
GR-37	42	402+65.75	403+61	RT.MD.	1		40			56.25	14	1	1			
GR-38	42	405+87.5	408+37.5	RT.MD.	1			250	250					1		
GR-39	42	405+47.5	411+47.5	RT.	1			600	600							
GR-40	42	6+53.5	13+66	RAMP G, RT.	2	1		662.5	662.5				1			1
GR-41	42	836+62.5	13+66	RAMP G, LT.	2			987.5	987.5							1
GR-42	42	844+40	845+40	SB. SR. 11	2			62.5	62.5					1		1
GR-43	42	848+73	855+23	SB. SR. 11.	2			600	600							2
GR-44	42	854+53	855+78	SB. SR. 11	2			100	100					1		1
TOTAL PART 1						14	520	10550	10550	731.25	182	13	27	10	2075	10
TOTAL PART 2						1	0	4050	4050	0	0	0	1	4	0	8

CALCULATED | CHECKED

GUARDRAIL QUANTITIES

MAH-80-0.52

GUARDRAIL QUANTITIES

MARK	SHEET NO.	STATION FROM	STATION TO	SIDE	PART	202 ANCHOR ASSEMBLY REMOVED, TYPE A	202 CONCRETE BARRIER REMOVED	202 GUARDRAIL REMOVED FOR REUSE	606 GUARDRAIL REBUILT, TYPE 5	606 GUARDRAIL TYPE 5	622 CONCRETE BARRIER TYPE D AS PER PLAN	606 BRIDGE TERMINAL TYPE 1	606 ANCHOR ASSEMBLY TYPE E	606 ANCHOR ASSEMBLY REBUILT TYPE T	606 RAISING TYPE 5 GUARDRAIL	606 BRIDGE TERMINAL ASSEMBLY, TYPE 3	606 BRIDGE TERMINAL ASSEMBLY, AS PER PLAN
						EACH	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EACH	EACH	EACH	LIN. FT.	EACH	EACH
GR-45	42	4+87.5	8+62.5	RAMP A, LT	1			362.5	362.5					1			
GR-46	42	10+40	15+02.5	RAMP A, LT.	1			462.5	462.5								
GR-47	42	857+90	861+65	SB. SR. 11	2	1		325	325				1			1	
GR-48	42	858+44	860+44	SB. SR. 11	2	1		150	150				1			1	
GR-49	42	8+35	13+35	, LT.	1	1		462.5	462.5				1	1			
GR-50	42	851+44.75	852+40	NB. SR. 11	2		40			56.25	14	1	1				
GR-51	42	852+04.75	853+00	NB. SR. 11	2		40			56.25	14	1	1				
GR-52	42	845+04.75	846+00	NB. SR.11	2		40			56.25	14	1	1				
GR-53	42	845+04.75	846+00	NB. SR. 11	2		40			56.25	14	1	1				
GR-54	42	864+85	865+80.25	LT.MD.	2		40			56.25	14	1	1				
GR-55	42	860+44.75	861+40	RT.MD.	1		40			56.25	14	1	1				
GR-56	42	861+39.75	862+35	RT.	2		40			56.25	14	1	1				
GR-57	42	869+80	871+05	LT.MD.	1			87.5	87.5					1			
GR-58	42	868+15.5	869+40.5	RT.MD.	1	1		100	100				1				
GR-59	42	867+58.5	869+46	RT.	1	1		137.5	137.5				1			1	
GR-60	44	872+62.5	889+62.5	LT.	1			1675	1675							1	
GR-61	44	872+69.5	874+72.5	LT.MD.	1	1		150	150				1				
GR-62	44	870+33.5	872+58.5	RT. MD.	1			212.5	212.5					1			
GR-63	44	870+16	890+87.5	RT.	1			1775	1775					1		1	
GR-64	44	878+28.5	890+62.5	RT.MD.	1	1		950	950				1				
GR-65	44	890+90	891+85.25	LT.	1		40			56.25	14	1	1				
GR-66	44	890+85	891+80.25	LT.MD.	1		40			56.25	14	1	1				
GR-67	44	894+14.75	895+10	RT.	1		40			56.25	14	1	1				
GR-68	44	897+70	898+65.25	LT.	1		40			56.25	14	1	1				
GR-69	43	836+62.5	841+75	NB. SR. 11	2			500	500					1			
GR-70	43	831+12.5	834+87.5	NB. SR. 11	2	1		350	350				1				
GR-71	43	829+67.5	834+92.5	NB. SR. 11	2			525	525								
GR-72	43	827+49.75	828+45	NB. SR. 11	2		40			56.25	14	1	1				
GR-73	43	819+15	820+10.25	SB. SR. 11	2		40			56.25	14	1	1				
GR-74	43	817+75	819+50	SB. SR. 11	2	1		137.5	137.5				1	1			
GR-75	43	816+00	818+62.5	NB. SR. 11	2	1		225	225				1	1			
GR-76	43	815+19.75	816+15	NB. SR. 11	2		40			56.25	14	1	1				
GR-77	34	494+58	495+08	RT. MD.	1			25	25							1	
GR-78	34	496+80	497+30	LT. MD.	1			25	25							1	
GR-79	35	520+75.75	521+07	RT. MD.	1												1
GR-80	35	520+75.75	521+07	RT.	1												1
GR-81	36	545+82	546+13.25	LT.	1												1
GR-82	36	545+82	546+13.25	LT. MD.	1												1
GR-83	37	584+02	584+52	RT. MD.	1			25	25							1	
GR-84	37	586+38	586+88	LT. MD.	1			25	25							1	
GR-85	39	619+82	620+32	RT. MD.	1			25	25							1	
GR-86	39	621+35	621+85	LT. MD.	1			25	25							1	
GR-87	39	629+15	629+65	RT. MD.	1			25	25							1	
GR-88	39	631+97	632+47	LT. MD.	1			25	25							1	
GR-89	42	0+17	0+67	RAMP B RT	2			25	25							1	
TOTALS THIS SHEET PART 1						5	200	6575	6575	281.25	70	5	10	5	0	11	4
TOTALS THIS SHEET PART 2						5	360	2237.5	2237.5	506.25	126	9	14	3	0	3	0
TOTALS TO GEN. SUMMARY PART 1						19	720	17125	17125	1012.5	252	18	37	15	2075	21	4
TOTALS TO GEN. SUMMARY PART 2						6	360	6287.5	6287.5	506.25	126	9	15	7	0	11	0

CALCULATED

CHECKED

GUARDRAIL QUANTITIES

MAH-80-0.52

STATION FROM	STATION TO	SIDE	PART	203 LINEAR GRADING METHOD 1 OUTSIDE SHLDR STA.	203 LINEAR GRADING METHOD 1 INSIDE SHLDR STA.
481+54	488+42	E/B RT.	1	6.88	
562+98	582+90	E/B RT.	1	19.92	
586+31.50	588+62.50	E/B RT.	1	2.31	
594+25	618+61	E/B RT.	1	24.36	
674+94.73	654+70	E/B RT.	1	6.75	
657+40	665+49	E/B RT.	1	8.09	
670+48.81	675+74.89(BK)	E/B RT.	1	5.26	
376+15.43(AHD)	378+75	E/B RT.	1	2.60	
380+25	386+18	E/B RT.	1	5.93	
387+68	389+89	E/B RT.	1	2.21	
390+89	397+25	E/B RT.	1	6.36	
481+54	494+83	E/B LT.	1		13.29
496+80	520+80	E/B LT.	1		24.00
545+97	584+27	E/B LT.	1		38.30
586+31.50	592+44.75	E/B LT.	1		6.13
594+25	620+07	E/B LT.	1		25.82
621+75	629+40	E/B LT.	1		7.65
631+60	643+95	E/B LT.	1		12.35
646+05	675+74.89(BK)	E/B LT.	1		29.70
376+15.43(AHD)	402+66	E/B LT.	1		26.51
408+30	409+54	E/B LT.	1		1.04
410+54	411+54	E/B LT.	1		1.00
481+54	495+08	W/B RT.	1		13.54
496+75	520+95	W/B RT.	1		24.20
545+82.30	584+70	W/B RT.	1		38.88
586+63	619+85	W/B RT.	1		33.22
621+60	630+20	W/B RT.	1		8.60
632+22	668+25	W/B RT.	1		36.03
670+30	675+74.89(BK)	W/B RT.	1		5.45
376+15.43(AHD)	378+85	W/B RT.	1		2.70
380+90	391+81.72	W/B RT.	1		10.92
394+50	395+75	W/B RT.	1		1.25
397+80	399+51.40	W/B RT.	1		1.71
481+54	493+84.50	W/B LT.	1	12.31	
509+96.50	517+51	W/B LT.	1	7.55	
568+83.25	578+02	W/B LT.	1	9.19	
590+00	603+12.50	W/B LT.	1	13.13	
613+00	617+98	W/B LT.	1	4.98	
646+40.24	652+78.35	W/B LT.	1	6.38	
653+78.35	656+20	W/B LT.	1	2.42	
658+95	665+67.33	W/B LT.	1	6.72	
666+67.33	668+25	W/B LT.	1	1.58	
670+22	672+95	W/B LT.	1	2.73	
385+50	395+75	W/B LT.	1	10.25	
397+80	398+51.40	W/B LT.	1	.71	
809+40	815+20	N/B RT.	2	5.80	
818+75	831+12.50	N/B RT.	2	12.38	
841+75	845+05	N/B RT.	2	3.30	
847+21	847+89	N/B RT.	2	.68	
848+89	852+05	N/B RT.	2	3.16	
854+50	861+40	N/B RT.	2	6.90	
864+28.5	867+59	N/B RT.	2	3.31	
890+87	894+15	N/B RT.	2	3.28	
896+60	902+77.55	N/B RT.	2	6.18	
809+40	816+00	N/B LT.	2		6.60
818+62.50	827+50	N/B LT.	2		8.88
838+28	845+05	N/B LT.	2		6.77
847+12	851+45	N/B LT.	2		4.33
853+93	858+95.70	N/B LT.	2		5.03
863+20	868+15	N/B LT.	1		4.95
872+58.50	878+28.50	N/B LT.	1		5.70
890+75	902+77.55	N/B LT.	1		12.03
809+40	817+75	S/B RT.	2		8.35
819+50	846+00	S/B RT.	2		26.50
851+20	854+53	S/B RT.	2		3.33
860+44	863+75	S/B RT.	2		3.31
865+80	869+80	S/B RT.	1		4.00
874+72.50	883-05.07(BK)	S/B RT.	1		8.33
885+63.93(AHD)	889+75	S/B RT.	1		4.11
891+80	902+77.55	S/B RT.	1		10.98
809+40	817+70	S/B LT.	2	8.30	
820+10	829+07.37	S/B LT.	2	8.97	
831+85	844+52.50	S/B LT.	2	12.68	
861+65	862+00	S/B LT.	2	.35	

STATION FROM	STATION TO	SIDE	PART	203 LINEAR GRADING METHOD 1 OUTSIDE SHLDR STA.	203 LINEAR GRADING METHOD 1 INSIDE SHLDR STA.
891+85	896+25	S/B LT.	1	4.40	
898+65	902+77.55	S/B LT.	1	4.13	
0+82	5+25	46 RAMP A RT.	1		4.43
0+82	3+10	46 RAMP A LT.	1	2.28	
7+50	14+12.68	46 RAMP A LT.	1	6.63	
4+53.07	16+17.43	46 RAMP B RT.	1	11.64	
5+53.07	15+17.43	46 RAMP B LT.	1		9.64
4+53.07	14+52.28	46 RAMP C RT.	1	9.99	
5+53.07	14+02.28	46 RAMP C LT.	1		8.49
6+09.60	17+63.07	46 RAMP D RT.	1	11.53	
3+70	5+10	46 RAMP D LT.	1		1.40
7+13.80	14+63.07	46 RAMP D LT.	1		7.49
0+25	1+30	46 RAMP DI RT.	1	1.05	
4+53.07	17+90.85	46 RAMP E RT.	1		13.38
5+53.07	9+60	46 RAMP E LT.	1	4.07	
4+00	16+78	W/B RAMP A RT.	1		12.78
0+00	4+87.50	W/B RAMP A LT.	1	4.88	
4+85	8+35	E/B RAMP C RT.	1	3.50	
3+85	14+24.58	E/B RAMP C LT.	1		10.40
4+47	5+47	W/B RAMP D RT.	2	1.00	
4+58	22+65.57	E/B RAMP E RT.	2		18.08
5+58	19+65.57	E/B RAMP E LT.	2	14.08	
4+92	6+53.50	W/B RAMP G RT.	2	1.62	
TOTAL TO GENERAL SUMMARY				PART 1 773.12	PART 2 183.17

STATION FROM	STATION TO	SIDE	PART	203 LINEAR GRADING METHOD 3A OUTSIDE SHLDR STA.	203 LINEAR GRADING METHOD 3A INSIDE SHLDR STA.
491+32.45	495+05	RAMP LINE A RT.	1	3.73	
582+90	584+40	E/B RT.	1	1.50	
588+62.50	594+25	E/B RT.	1	5.63	
618+61	620+48	E/B RT.	1	1.87	
621+82	629+26	E/B RT.	1	7.44	
630+95	646+94.73	E/B RT.	1	16.00	
654+70	657+40	E/B RT.	1	2.70	
378+75	380+25	E/B RT.	1	1.50	
386+18	387+68	E/B RT.	1	1.50	
397+25	411+54	E/B RT.	1	14.29	
494+83	495+08	E/B LT.	1		.25
584+27	584+52	E/B LT.	1		.25
592+44.75	594+25	E/B LT.	1		1.80
620+07	620+32	E/B LT.	1		.25
629+40	629+65	E/B LT.	1		.25
643+95	646+05	E/B LT.	1		2.10
402+66	408+50	E/B LT.	1		5.84
496+50	496+75	W/B RT.	1		.25
586+38	586+63	W/B RT.	1		.25
621+35	621+60	W/B RT.	1		.25
631+97	632+22	W/B RT.	1		.25
668+25	670+30	W/B RT.	1		2.05
378+85	380+90	W/B RT.	1		2.05
395+75	397+80	W/B RT.	1		2.05
493+84.50	495+22	W/B LT.	1	1.38	
496+84	509+96.50	W/B LT.	1	13.13	
568+02	568+83.25	W/B LT.	1	.81	
586+50	590+00	W/B LT.	1	3.50	
603+12.50	613+00	W/B LT.	1	9.88	
617+98	619+85.50	W/B LT.	1	1.86	
621+18.50	630+68	W/B LT.	1	9.50	
632+37	641+90.24	W/B LT.	1	9.53	
656+20	658+95	W/B LT.	1	2.75	
668+25	670+22	W/B LT.	1	1.97	
672+95	675+74.89 (BK)	W/B LT.	1	2.80	
376+15.43 (AHD)	385+50	W/B LT.	1	9.35	
395+75	397+80	W/B LT.	1	2.05	
815+20	818+75	N/B RT.	2	3.55	
831+12.50	841+75	N/B RT.	2	10.63	
845+05	847+21	N/B RT.	2	2.16	
852+05	854+50	N/B RT.	2	2.45	
861+40	864+28.50	N/B RT.	2	2.89	
867+59	869+46	N/B RT.	1	1.87	
870+16	883-05.07 (BK)	N/B RT.	1	12.89	
885+63.93 (AHD)	890+87	N/B RT.	1	5.23	
894+15	896+60	N/B RT.	1	2.45	
816+00	818+62.50	N/B LT.	2		2.63
827+50	837+28	N/B LT.	2		9.78
845+05	847+12	N/B LT.	2		2.10
851+45	853+93	N/B LT.	2		2.48
868+15	869+53	N/B LT.	1		1.38
870+21	872+58.50	N/B LT.	1		2.38
878+28.50	883-05.07 (BK)	N/B LT.	1		4.77
885+63.93 (AHD)	890+75	N/B LT.	1		5.11
817+75	819+50	S/B RT.	2		1.75
854+53	855+72	S/B RT.	2		1.19
858+50	860+44	S/B RT.	2		1.94
863+75	865+80	S/B RT.	2		2.05
869+80	871+00	S/B RT.	1		1.20
872+72.50	874+72.50	S/B RT.	1		2.00
889+75	891+80	S/B RT.	1		2.05
817+70	820+10	S/B LT.	2	2.40	
844+52.50	845+27.50	S/B LT.	2	.75	
848+72	854+98	S/B LT.	2	6.26	
857+90	861+65	S/B LT.	2	3.75	
872+65	883-05.07 (BK)	S/B LT.	1	10.40	
885+63.93 (AHD)	891+85	S/B LT.	1	6.21	
896+25	898+65	S/B LT.	1	2.40	
5+25	17+12.68	46 RAMP A RT.	1	11.88	
3+53.03	6+09.60	46 RAMP D RT.	1	2.57	
6+65.17	7+13.80	46 RAMP D LT.	1		.49
0+20	2+85.89	46 RAMP DI LT.	1		2.66
4+87.50	15+00	W/B RAMP A LT.	1	10.13	
0+00	1+00	S/B RAMP B RT.	2		1.00

STATION FROM	STATION TO	SIDE	PART	203 LINEAR GRADING METHOD 3A OUTSIDE SHLDR STA.	203 LINEAR GRADING METHOD 3A INSIDE SHLDR STA.
8+35	13+35	EB ... RT	1	5.00	
860+45	863+20	E/B RAMP G LT.	1		2.75
6+53.50	13+53.50	W/B RAMP G RT.	2	7.00	
16+36.50	24+74	W/B RAMP G RT.	2	8.38	
3+92	13+50	W/B RAMP G LT.	2		9.58
16+36.50	24+74	W/B RAMP G LT.	2		8.38
TOTAL TO GENERAL SUMMARY				PART 1 238.4	PART 2 93.1

LINEAR GRADING QUANTITIES

MAH-80-0.52

ASPHALT CONCRETE

** SEE LINE SHEETS (PAGES 34-44) **

PAVEMENT DATA

PART	ROUTE 180	LOG POINT TO LOG POINT	LENGTH MILES	LENGTH LIN. FT.	WP FEET AVG.	* TYPICAL	EXISTING TYPE PAVEMENT	PAVEMENT AREA SQ. YDS.	PROPOSED PAVEMENT 407 TACK COAT @ 0.08 gal./s.y. GALLON	ASPHALT CONCRETE ITEM 446 THICK INCHES AVG.	ITEM 446 ½" ASPHALT CONCRETE INTERMEDIATE COURSE TYPE II, AC-20 CU.YD.	ITEM 446 THICK INCHES AVG.	ITEM 446 ½" ASPHALT CONCRETE SURFACE COURSE, TYPE I, AC-20 CU.YD.	ITEM SPEC. THICK INCHES AVG.	ITEM SPEC. RUBBERIZED OPEN GRADED ASPHALT FRICTION COURSE CU.YD.	254 PAVEMENT PLANING BITUMINOUS (3¾" DEPTH) SQ.YD.	254 PAVEMENT PLANING BITUMINOUS (2" (AVG.) DEPTH) SQ.YD.	254 PAVEMENT PLANING BITUMINOUS (5/8" (AVG.) DEPTH) SQ.YD.	254 PAVEMENT PLANING BITUMINOUS (VARIABLE DEPTH) SQ.YD.	202 WEARING COURSE REMOVED, VARIES SQ.YD.
1	EB & WB	0.52-0.76	0.24	1267	24/24			6757	541	1.25	235	1.75	328	0.75	141				2541	
1	EB & WB	0.79-1.25	0.46	2429	24/24			12955	1036	1.25	450	1.75	630	0.75	270					
1	EB & WB	1.71-2.47	0.76	4013	24/24			21403	1712	1.25	743	1.75	1040	0.75	446			3091	2100	
1	EB & WB	2.50-3.13	0.63	3326	24/24			17739	1419	1.25	616	1.75	862	0.75	370			5141		
1	EB & WB	3.15-3.32	0.17	898	24/24			4789	383	1.25	166	1.75	233	0.75	100					
1	EB & WB	3.35-3.93	0.58	3062	24/24			16331	1306	1.25	567	1.75	794	0.75	340					
1	EB & WB	3.93-4.01	0.08	422	24/36			2813	225	1.25	98	1.75	137	0.75	59					
1	EB & WB	4.01-4.08	0.07	370	36/36			2960	237	1.25	103	1.75	144	0.75	62					
1	EB & WB	4.08-4.35	0.27	1426	36/48			13309	1065	1.25	462	1.75	647	0.75	277					
1	EB & WB	4.35-4.49	0.14	739	36/36			5912	473	1.25	205	1.75	287	0.75	123					
1	EB & WB	4.49-4.60	0.11	581	36/24			3873	310	1.25	134	1.75	188	0.75	81					
1	EB	4.60-4.68	0.08	422	36			1688	135	1.25	59	1.75	82	0.75	35					
1	EB	4.68-4.81	0.13	686	24			1829	146	1.25	64	1.75	89	0.75	38					
1	EB	4.81-5.05	0.24	1267	24			3379	270	1.25	117	1.75	164	0.75	70					
1	EB	5.05-5.18	0.13	686	36			2744	220	1.25	95	1.75	133	0.75	57					
1	EB	5.19-5.75	0.56	2957	36			11828	946	1.25	411	1.75	575	0.75	246					
1	(RAMP E) EB			(1707)	16			3035	243	1.25	105	1.75	148	0.75	63					
1	(RAMP A) WB	(4.60-5.02)	(0.42)	(2218)	16			3943	315	1.25	137	1.75	192	0.75	82					
1	WB	(5.02-5.15)	(0.13)	(686)	24			1829	146	1.25	64	1.75	89	0.75	38					
1	WB	(5.18-5.75)	(0.57)	(3010)	24			8027	642	1.25	279	1.75	390	0.75	167					
1		BRIDGES	0.58	3062			SEE SHEETS 61 & 62 FOR QUANTITIES													
	SR 46 RAMPS																			
1	RAMP A			(1710)	15.25			2898	232	1.25	101	1.75	141	0.75	60		2898			
1	RAMP B			(1100)	16.25			1986	159	1.25	69	1.75	97	0.75	41		1986			
1	RAMP C			(925)	20.50			2107	169	1.25	73	1.75	102	0.75	44		2107			
1	RAMP D			(1350)	16			2400	192	1.25	83	1.75	117	0.75	50		2400			
1	RAMP DI			(200)	14			311	25	1.25	11	1.75	15	0.75	6		311			
1	RAMP E			(1275)	16			2267	181	1.25	79	1.75	110	0.75	47		2267			
	EXTRA AREAS	(LANE TAPERS, GORES, ETC						12533	1003	1.25	435	1.75	609	0.75	261					
	FEATHERS							3049	244	1.25	106	1.75	148	0.75	64					4252
	TOTAL PART 1		5.23	27613				174694	13975		6067		8491		3638	9318	19291	9428	4641	4252

NEED
Variable
Thickness
Pavement Planing
(In Computer?)

CALCULATED / CHECKED

PLAN NO.

ASPHALT CONCRETE

M0800530.DGN

ASPHALT CONCRETE

** SEE LINE SHEETS (PAGES 34-44) **

PAVEMENT DATA

PART	ROUTE	LOG POINT TO LOG POINT	LENGTH MILES	LENGTH LIN. FT.	WP FEET AVG.	* TYPICAL	EXISTING TYPE PAVEMENT	PAVEMENT AREA SQ. YDS.	PROPOSED PAVEMENT 407 TACK COAT @ 0.08 gal./s.y. GALLON	ASPHALT CONCRETE ITEM 446 THICK INCHES AVG. 1.25"	½" ASPHALT CONCRETE SURFACE COURSE, TYPE I, AC-20 CU.YD.	ITEM 446 THICK INCHES AVG. 1.75"	½" ASPHALT CONCRETE INTERMEDIATE COURSE TYPE II, AC-20 CU.YD.	ITEM SPEC. THICK INCHES AVG.	RUBBERIZED OPEN GRADED ASPHALT FRICTION COURSE CU.YD.	254 PAVEMENT PLANING BITUMINOUS (3¾" DEPTH) SQ.YD.	254 PAVEMENT PLANING BITUMINOUS (2" (AVG.) DEPTH) SQ.YD.	254 PAVEMENT PLANING BITUMINOUS (5/8" (AVG.) DEPTH) SQ.YD.	254 PAVEMENT PLANING BITUMINOUS (VARIABLE DEPTH) SQ.YD.	202 WEARING COURSE REMOVED, VARIES SQ.YD.
		N BOUND																		
2	SR II	15.18 - 15.82	0.64	3379				9011	721		313		438	0.75	188	1668				
		15.82 - 16.19	0.37	1954				3474	278		121		169		72	1422				
		S BOUND																		
		(15.18 - 15.84)	(0.66)	(3485)				9293	743		323		452		194	1668				
		(15.84 - 16.04)	(0.20)	(1056)				1877	150		65		91		39	2394				
		(16.09 - 16.28)	(0.19)	(1003)				1783	143		62		87		37					
		RAMPS @ SR 80																		
		RAMP G		(2234)				3972	318		138		193		83					
		EXTRA LANES, TAPERS, ETC.						7068	565		245		344		147					
		FEATHERS						2205	176		77		107		46					2020
		TOTAL PART 2	1.01	5333				38683	3094		1344		1881		806	7152				2020

PLAN NO.

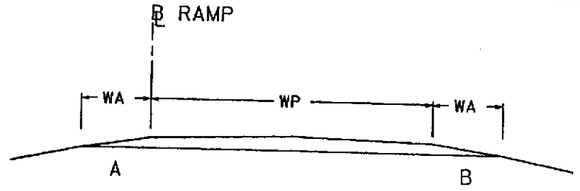
CONCRETE

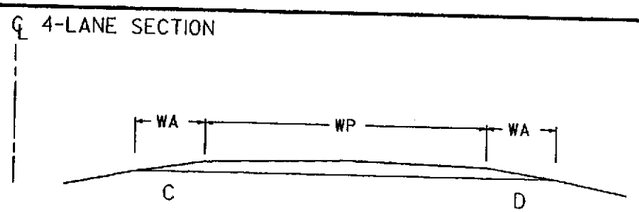
ASPHALT CONCRETE

CALCULATED

CHECKED

M0800533.DGN





PLAN NO.

NOTE: ONE STATION EQUALS 100 LINEAR FEET. STATIONS SHALL BE MEASURED ALONG EACH EDGE OF PAVEMENT. NO EXTRA PAYMENT WILL BE MADE FOR EXCAVATING ADJACENT APPROACHES.

CALCULATED / CHECKED

PAVED SHOULDERS

PAVED SHOULDER DATA

PART	ROUTE	LOG POINT TO LOG POINT	LENGTH MILES	LENGTH LIN.FT.	TYPICAL	PROPOSED WIDTH (FT.) A	B	C	D	SHOULDER AREA SQ.YDS.	203 LINEAR GRADING STATIONS	STATIONS	STATIONS	407 TACK COAT @ 0.08 gal./s.y. GALS.	ASPHALT CONCRETE 448 SURFACE COURSE, TYPE 1 THICK INCHES AVG.	AC-20 CU.YDS.	446 INTERMEDIATE COURSE, TYPE 2 THICK INCHES AVG.	AC-20 CU.YDS.	SPECIAL RUBBERIZED OPEN GRADED FRICTION COURSE THICK INCHES AVG.	FRICTION COURSE CU.YDS.
	IR-80																			
1	EB&WB	0.52-0.76	0.24	1267		10	4	4	10	3941.8										
1	EB&WB	0.79-1.25	0.46	2429		10	4	4	10	7556.9				315	1.25	137	1.75	192	0.75	82
1	EB&WB	1.71-2.47	0.76	4013		10	4	4	10	12484.9				605	1.25	262	1.75	367	0.75	157
1	EB&WB	2.50-3.13	0.63	3326		10	4	4	10	10347.6				999	1.25	434	1.75	607	0.75	260
1	EB&WB	3.15-3.32	0.17	898		10	4	4	10	2793.8				828	1.25	359	1.75	503	0.75	216
1	EB&WB	3.35-3.93	0.58	3062		10	4	4	10	9526.2				224	1.25	97	1.75	136	0.75	58
1	EB&WB	3.93-4.01	0.08	422		10	4	4	10	1312.9				762	1.25	331	1.75	463	0.75	198
1	EB&WB	4.01-4.08	0.07	370		10	4	4	10	1151.1				105	1.25	46	1.75	64	0.75	27
1	EB&WB	4.08-4.35	0.27	1426		10	4	4	10	4436.4				92	1.25	40	1.75	56	0.75	24
1	EB&WB	4.35-4.49	0.14	739		10	4	4	10	2299.1				355	1.25	154	1.75	216	0.75	92
1	EB&WB	4.49-4.60	0.11	581		10	4	4	10	1807.6				184	1.25	80	1.75	112	0.75	48
1	EB	4.60-4.68	0.08	422		10	4	4	10	1312.9				145	1.25	63	1.75	88	0.75	38
1	EB	4.68-4.81	0.13	686		10	4	4	10	2134.2				105	1.25	46	1.75	64	0.75	27
1	EB	4.81-5.05	0.24	1267		10	4			1970.9				171	1.25	74	1.75	104	0.75	44
1	EB	5.05-5.18	0.13	686		10	4	4	10	2134.2				158	1.25	68	1.75	96	0.75	41
1	EB	5.19-5.75	0.56	2957		10	4	4	10	9199.6				171	1.25	74	1.75	104	0.75	44
1		BRIDGES	0.58	3062										736	1.25	319	1.75	447	0.75	192
1	WB (RAMP A)	(4.60-5.02)	(0.42)	(2218)		10	4	4	10	3450.2	SEE SHEETS 61 & 62 FOR QUANTITIES									
1	WB	(5.02-5.15)	(0.13)	(686)		10	4	4	10	2134.2				276	1.25	120	1.75	168	0.75	72
1	WB	(5.18-5.75)	(0.57)	(3010)		10	4			9364.4				171	1.25	74	1.75	104	0.75	44
1	EB (RAMP E)			(1707)		3	3			1138.0				749	1.25	325	1.75	455	0.75	195
	SR 46 RAMPS													91	1.25	40	1.75	55	0.75	24
1	RAMP A			(1710)		3	6			1710.0										
1	RAMP B			(1100)		3	3			733.3				137	1.25	59	1.75	83	0.75	36
1	RAMP C			(925)		3	3			616.7				59	1.25	25	1.75	36	0.75	15
1	RAMP D			(1350)		3	3			900.0				49	1.25	21	1.75	30	0.75	13
1	RAMP D 1			(200)		3	3			133.3				72	1.25	31	1.75	44	0.75	19
1	RAMP E			(1275)		3	3			850.0				11	1.25	5	1.75	6	0.75	3
		TOTAL PART 1	5.23	27613						95440.2				68	1.25	30	1.75	41	0.75	18
		NOTHBOUND												7638		3314		4641		1987
2	SR-11	15.18-15.82	0.64	3379		10	4			5256.2										
2	SR-11	15.82-16.19	0.37	1954		10	4			3039.6				420	1.25	182	1.75	256	0.75	110
		SOUTHBOUND												243	1.25	106	1.75	148	0.75	63
2	SR-11	(15.18-15.84)	(0.66)	(3485)		10	4			5421.1										
2	SR-11	(15.84-16.04)	(0.20)	(1056)		10	4			1642.7				434	1.25	188	1.75	264	0.75	113
2	SR-11	(16.09-16.28)	(0.19)	(1003)		10	4			1560.2				131	1.25	57	1.75	80	0.75	34
		RAMPS@ IR 80												125	1.25	54	1.75	76	0.75	33
2	SR-11	RAMP G		(2234)		3	3			1489.3										
2	SR-11	TOTAL PART 2	1.01	5333						18409.1				119	1.25	52	1.75	72	0.75	31
														1472		639		896		384

P261023I.DGN

BEGIN TAPER
STA. 482+54.46 78' LT.

END TAPER
STA. 483+54.46 66' LT.

100' FEATHER

BEGIN SHEET
STA. 481+00

485

I.R. 80

N 83°06'30" E

490

24'
42'
42'
24'

MATCHLINE
STA. 494+00
SLM 0.74

BEGIN PROJECT
STA. 482+54
S.L.M. 0.52

490

100' FEATHER

STA. 492+32.45 91' RT.
SLM 0.57

LINE "A"

485

STA. 484+00

100' FEATHER AREA FOR DETAIL, SEE SHEET

LIPKEY RD.

STA. 495+75.82 I.R. 80 =
STA. 50+00 LIPKEY RD.

MATCHLINE
STA. 494+00 SLM 0.74

495

500

I.R. 80

N 83°06'30" E

505

P.C. STA. 507+37.00

24'
42'
42'
24'

MATCHLINE
STA. 508+00 SLM 1.00

BRIDGE No.
MAH-80-0076 L & R

END TAPER
STA. 504+32.45

CURVE DATA
P.C. STA. 507+37.00
P.I. STA. 513+25.78
P.T. STA. 519+05.77
Δ = 17°08'31"
Dc = 1°28'
R = 3906.53'
T = 588.78'
E = 44.12'
Lc = 1168.77'

0 25 50 100 150

LINE SHEET STA. 482+00 TO STA. 508+00

MAH-80-0.52

34
73

CURVE DATA
P.C. STA. 507+37.00
P.I. STA. 513+25.78
P.T. STA. 519+05.77
Δ = 17^08'32"
Dc = 1^28'
R = 3906.53'
T = 588.78'
E = 44.12'
Lc = 1168.77'

MATCHLINE STA. 508+00 SLM 1.00

MEDIAN CROSSOVER STA. 512+00

P.T. STA. 519+05.77

MATCHLINE STA. 522+00 SLM 1.27

510 515 LR. 80 520 N 65°57'59" E

24' 42' 42' 24'

GR 79 GR 80

MATCHLINE STA. 522+0 SLM 1.27

BRIDGE No. MAH-80-0125 L & R

525 LR. 80 530 N 65°57'59" E 535

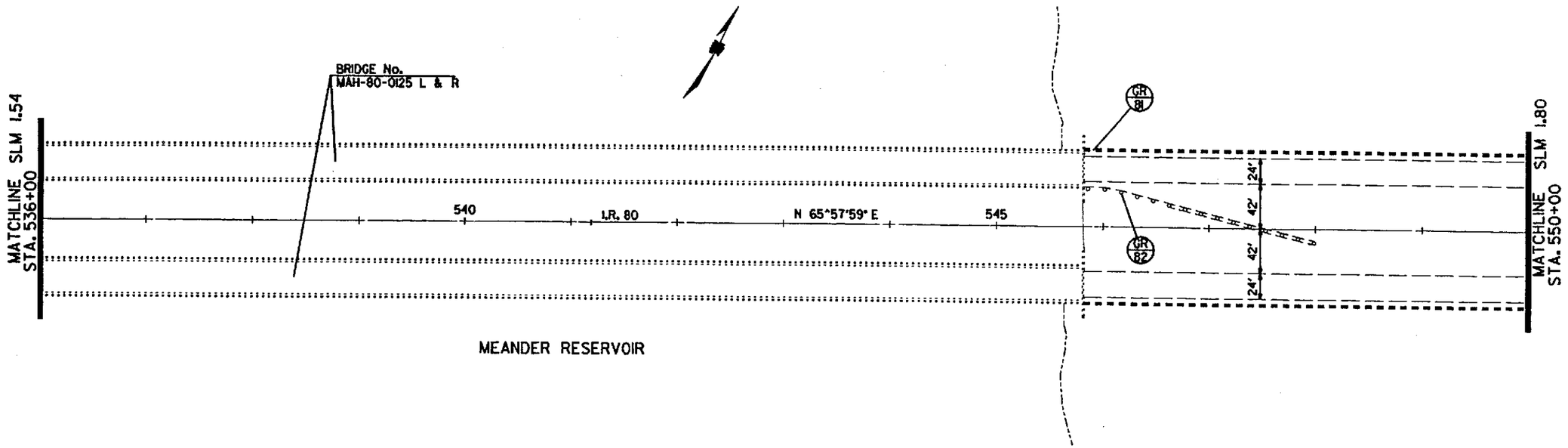
MATCHLINE STA. 536+00 SLM 1.54

MEANDER RESERVOIR

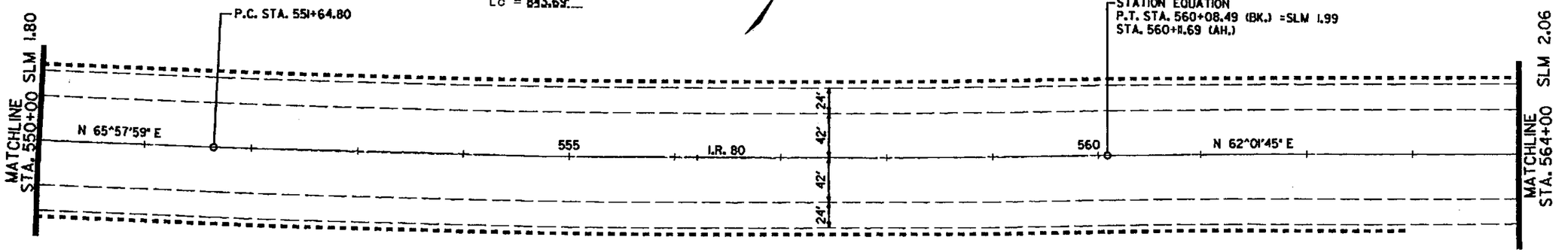
0 25 50 100 150

LINE SHEET STA. 508+00 TO STA. 536+00

MAH-80-0.52



CURVE DATA
P.C. STA. 551±64.80
P.I. STA. 555±86.81
P.T. STA. 560+08.49 (BK.)
Δ = 3°56'14"
Dc = 0°28'
R = 12277.67'
T = 422.01'
E = 7.25'
Lc = 843.69'

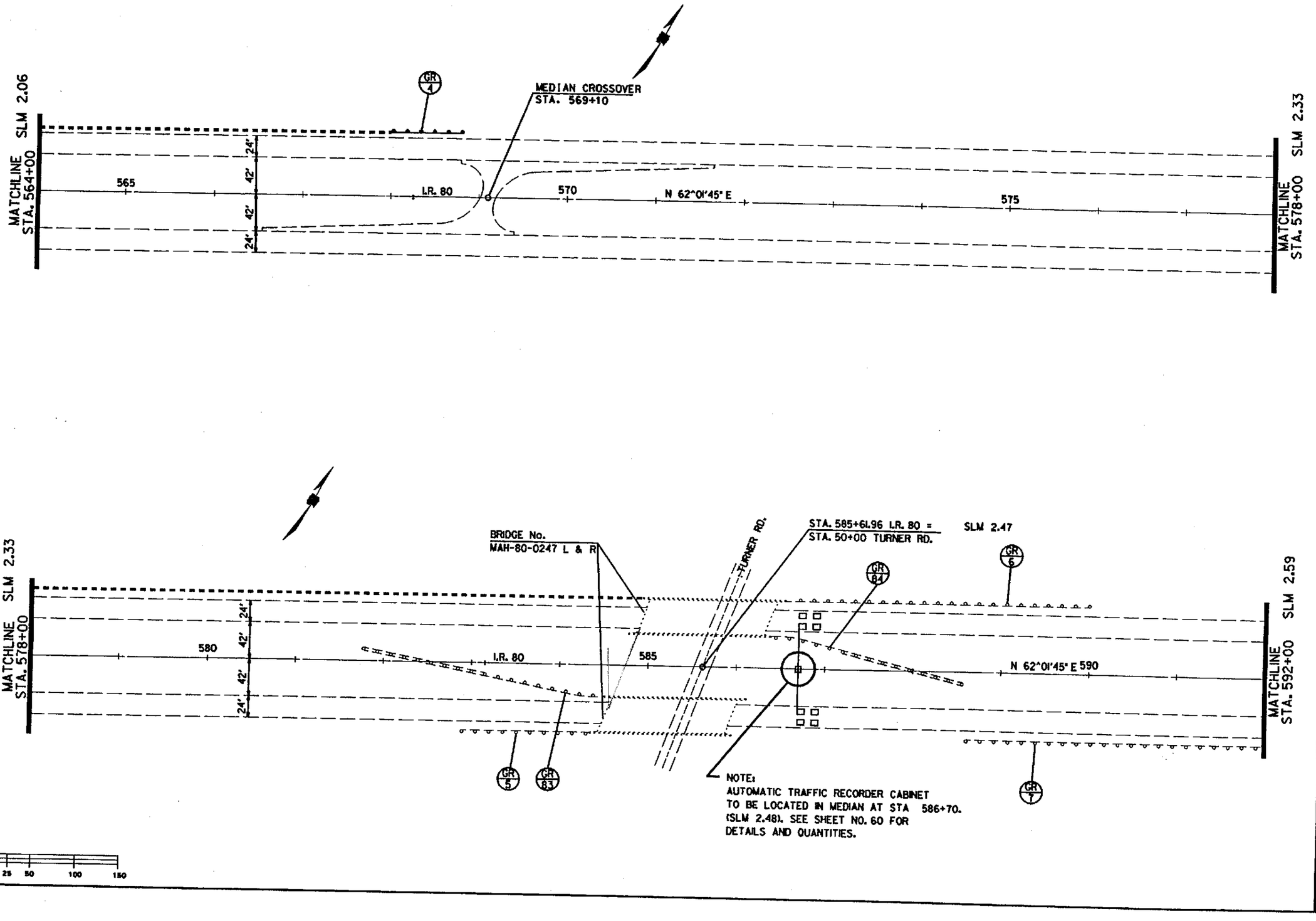


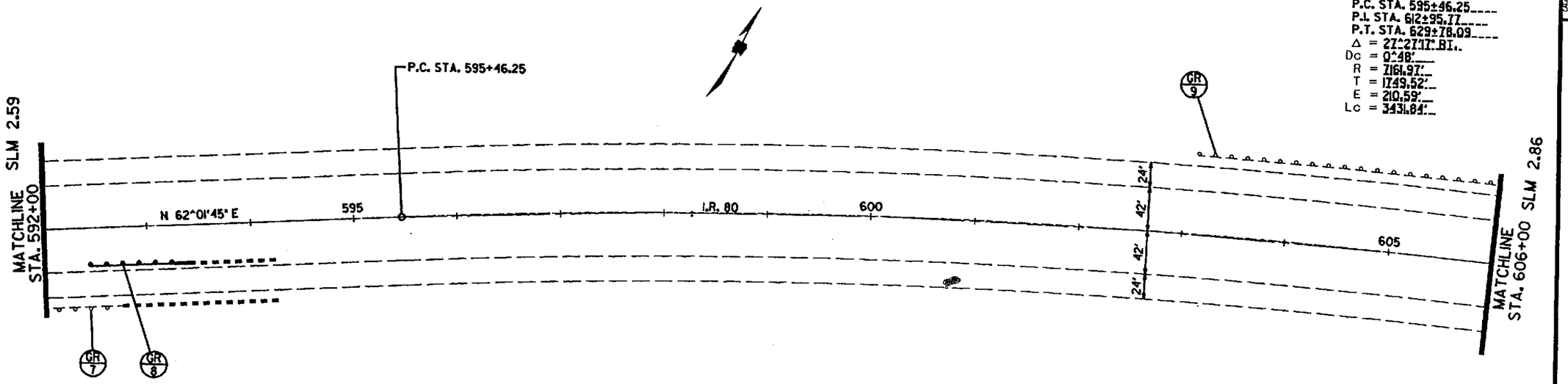
0 25 50 100 150

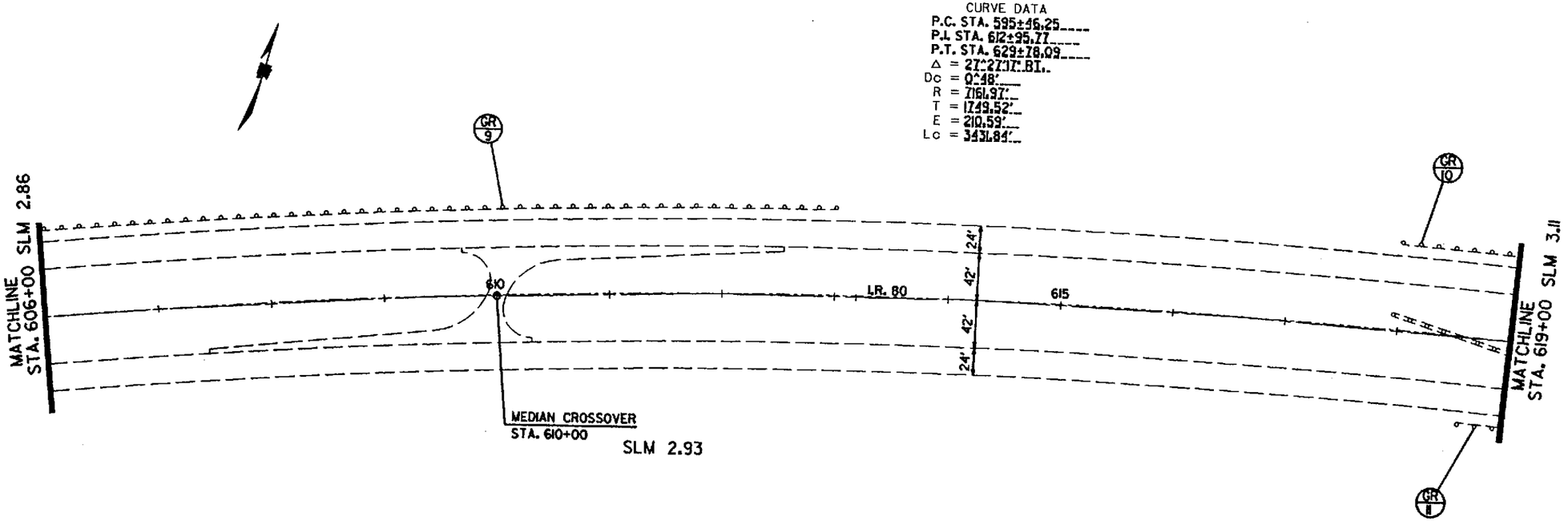
LINE SHEET STA. 536+00 TO STA. 564+00

MAH-80-0.52

36
73


MATCHLINE
STA. 564+00
SLM 2.06
565
24'
42'
42'
24'
I.R. 80
GR
4
MEDIAN CROSSOVER
STA. 569+10
570
N 62°01'45" E
575
MATCHLINE
STA. 578+00
SLM 2.33
MATCHLINE
STA. 578+00
SLM 2.33
580
24'
42'
42'
24'
I.R. 80
585
BRIDGE No.
MAH-80-0247 L & R
TURNER RD.
STA. 585+61.96 I.R. 80 =
STA. 50+00 TURNER RD.
SLM 2.47
GR
6
GR
84
N 62°01'45" E 590
MATCHLINE
STA. 592+00
SLM 2.59
GR
5
GR
83
GR
7
NOTE:
AUTOMATIC TRAFFIC RECORDER CABINET
TO BE LOCATED IN MEDIAN AT STA 586+70.
(SLM 2.48). SEE SHEET NO. 60 FOR
DETAILS AND QUANTITIES.
0 25 50 100 150
LINE SHEET STA. 564+00 TO STA. 592+00
MAH-80-0.52
37
73





LINE SHEET STA. 592+00 TO STA. 619+00

MAH-80-0.52

38
73

CURVE DATA
P.C. STA. 595±46.25
P.I. STA. 612±95.77
P.T. STA. 629±78.09
Δ = 27°27'17" Rt.
Dc = 0°48'
R = 7164.93'
T = 1749.52'
E = 210.59'
Lc = 343.84'

BRIDGE No.
MAH-80-0313 L & R

GR 10
GR 86
GR 12
GR 11
GR 85
GR 13
GR 87
GR 14
GR 88
GR 15
GR 16

MATCHLINE SLM 3.11
STA. 619+00

620
LR. 80
625
630
24'
42'
42'
24'

ONETOWN RD.

P.T. STA. 629+78.09

END RAMP "A" TAPER
STA. 629+90.24 66' LT.

BRIDGE No.
MAH-80-0332 L & R

N 89°29'02" E

MATCHLINE
STA. 633+00
SLM 3.37

STA. 620+81.08 I.R. 80 =
STA. 49+35.32 OHLTOWN RD.

STA. 630+82.42 I.R. 80 =
STA. 49+99.76 CONRAIL R.R.

MATCHLINE SLM 3.37
STA. 633+00

635
I.R. 80
N 89°29'02" E
640

MATCHLINE
STA. 642+00
SLM 3.54

RAMP "A" B STA. 17+12.68 =
STA. 641+90.24 : I.R. 80 91' RT.

BEGIN TAPER
STA. 638+94.73 66' RT.

END TAPER
STA. 639+94.73 78' RT.
SLM 3.50

0 25 50 100 150

LINE SHEET STA. 619+00 TO STA. 642+00

MAH-80-0.52

39
73

SR-46

STA. 56+73.29 S.R. 46 =
STA. 0+00 RAMP 'A'

STA. 0+32 RAMP 'A'

STA. 16+17.43 RAMP 'B' 14' LT. =
STA. 56+07.57 S.R. 46 31' RT.

GR 15A

STA. 17+90.85 RAMP 'E' 14' LT. =
STA. 53+60.94 S.R. 46 31' LT.

RAMP 'E'

STA. 4+53.07 RAMP 'E' 23' LT. =
STA. 653+78.35 LR. 80 82' LT.

GR 15

RAMP 'A'

STA. 656+85.29 LR. 80 =
STA. 50+00 S.R. 46

GR 20

STA. 0+00 RAMP 'E' =
STA. 658+33.08 LR. 80 78' LT.

RAMP 'B'

STA. 4+53.07 RAMP 'B' 23' LT. =
STA. 666+67.33 LR. 80 82' LT.

GR 21

MATCHLINE
STA. 642+00
SLM 3.54

645 LR. 80 650 N 89°29'02" E 655 660 665

MATCHLINE
STA. 670+00
SLM 4.07

GR 16

GR 17

GR 18

GR 19

BRIDGE No.
MAH-80-0381

GR 22

P.C. STA. 0+00 RAMP 'C' =
STA. 642+40 LR. 80

STA. 4+53.07 RAMP 'C' 23' LT. =
STA. 646+94.73 LR. 80 82' RT.

RAMP 'C'

STA. 14+52.28 RAMP 'C'

STA. 46+94.77 S.R. 46 =
STA. 0+00 RAMP 'D1'

STA. 0+20 RAMP 'D1'

RAMP 'D1'

RAMP 'D'

STA. 2+85.89 END RAMP 'D1' =
STA. 6+65.17 RAMP 'D' 16' LT.

RAMP 'D' NOSE
STA. 5+23.61 18' LT.

STA. 46+80 S.R. 46 =
STA. 14+84.28 RAMP 'C'

STA. 3+53.03 RAMP 'D' 20' LT. =
STA. 45+43.41 S.R. 46 33.25' RT.

50' FEATHER AREA FOR DETAIL, SEE SHEET

0 50 100 200 300

STA. 0+00 RAMP 'D' =
STA. 41+86.30 S.R. 46 12' RT.

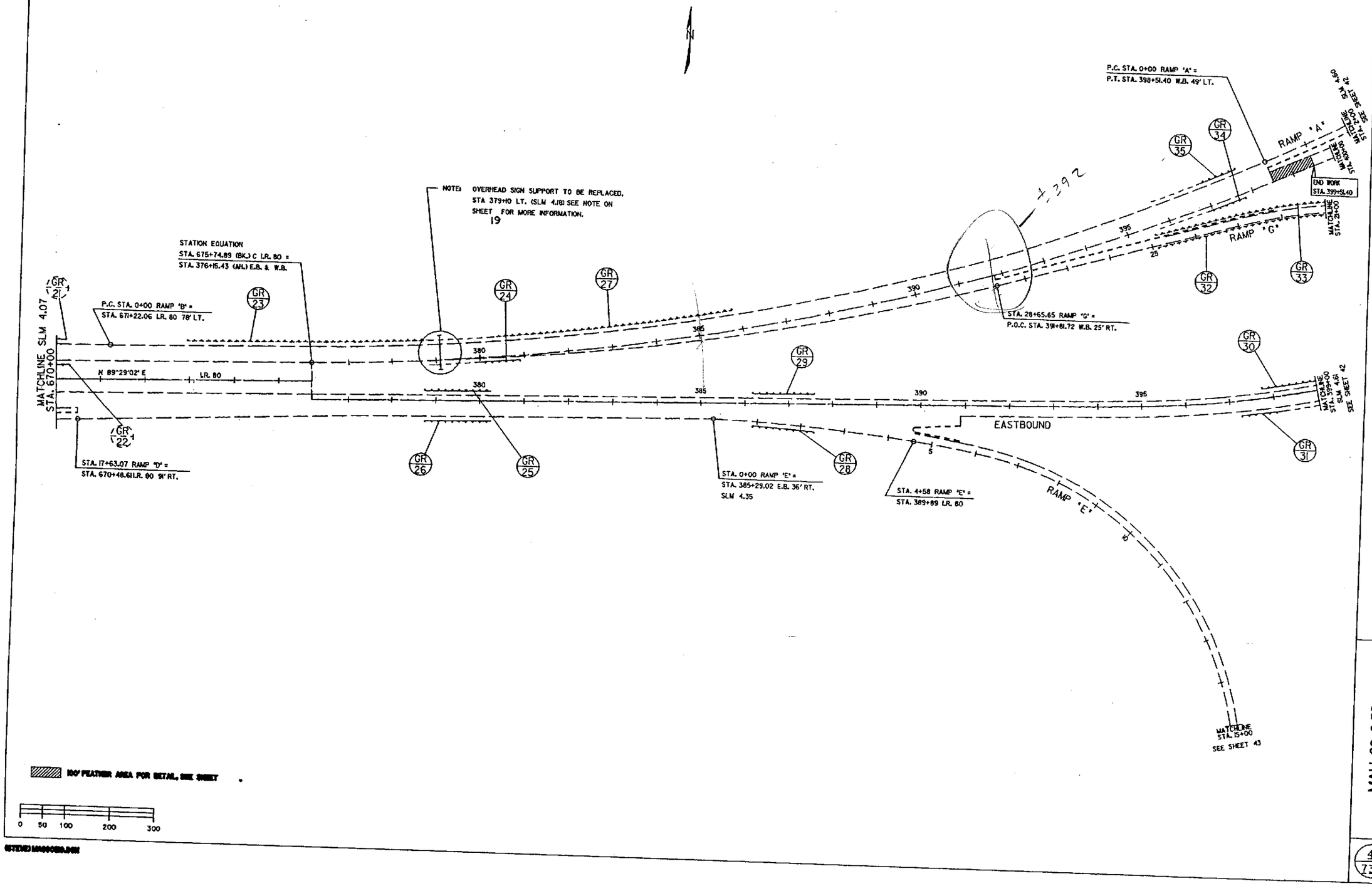
SR-46

CALCULATED
DRAWN

LINE SHEET STA. 642+00 TO STA. 670+00

MAH-80-0.52

40
73



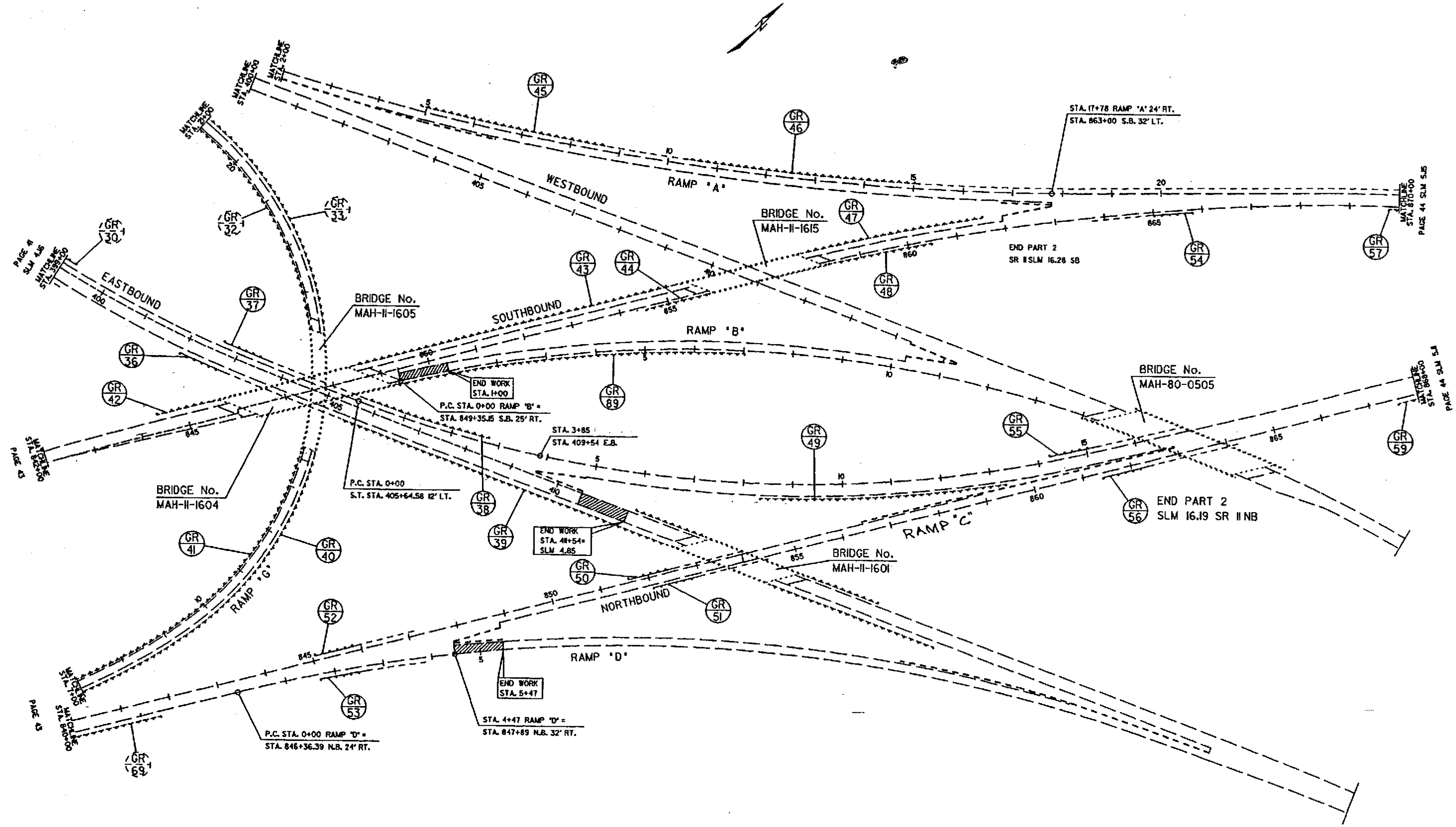
CALCULATED

DRAWN

LINE SHEET

MAH-80-0.52

41
73


MATCHLINE STA. 400+00
MATCHLINE STA. 2+00
MATCHLINE STA. 25+00
RAMP "A"
WESTBOUND
EASTBOUND
SOUTHBOUND
NORTHBOUND
RAMP "B"
RAMP "C"
RAMP "D"
RAMP "G"
STA. 17+78 RAMP "A" 24' RT.
STA. 863+00 S.B. 32' LT.
BRIDGE No. MAH-11-1615
BRIDGE No. MAH-11-1605
BRIDGE No. MAH-11-1604
BRIDGE No. MAH-80-0505
BRIDGE No. MAH-11-1601
END PART 2
SR 11 SLM 16.26 SB
END PART 2
SLM 16.19 SR 11 NB
END WORK
STA. 1+00
P.C. STA. 0+00 RAMP "B" =
STA. 849+35.15 S.B. 25' RT.
STA. 3+85 =
STA. 409+54 E.B.
P.C. STA. 0+00
S.T. STA. 405+64.58 12' LT.
END WORK
STA. 411+54=
SLM 4.85
END WORK
STA. 5+47
STA. 4+47 RAMP "D" =
STA. 847+89 N.B. 32' RT.
P.C. STA. 0+00 RAMP "D" =
STA. 845+36.39 N.B. 24' RT.
GR 30
GR 32
GR 33
GR 36
GR 37
GR 38
GR 39
GR 40
GR 41
GR 42
GR 43
GR 44
GR 45
GR 46
GR 47
GR 48
GR 49
GR 50
GR 51
GR 52
GR 53
GR 54
GR 55
GR 56
GR 57
GR 59
GR 69
GR 89
PAGE 41 SLM 4.16
PAGE 43
PAGE 44 SLM 5.15
PAGE 44 SLM 5.8

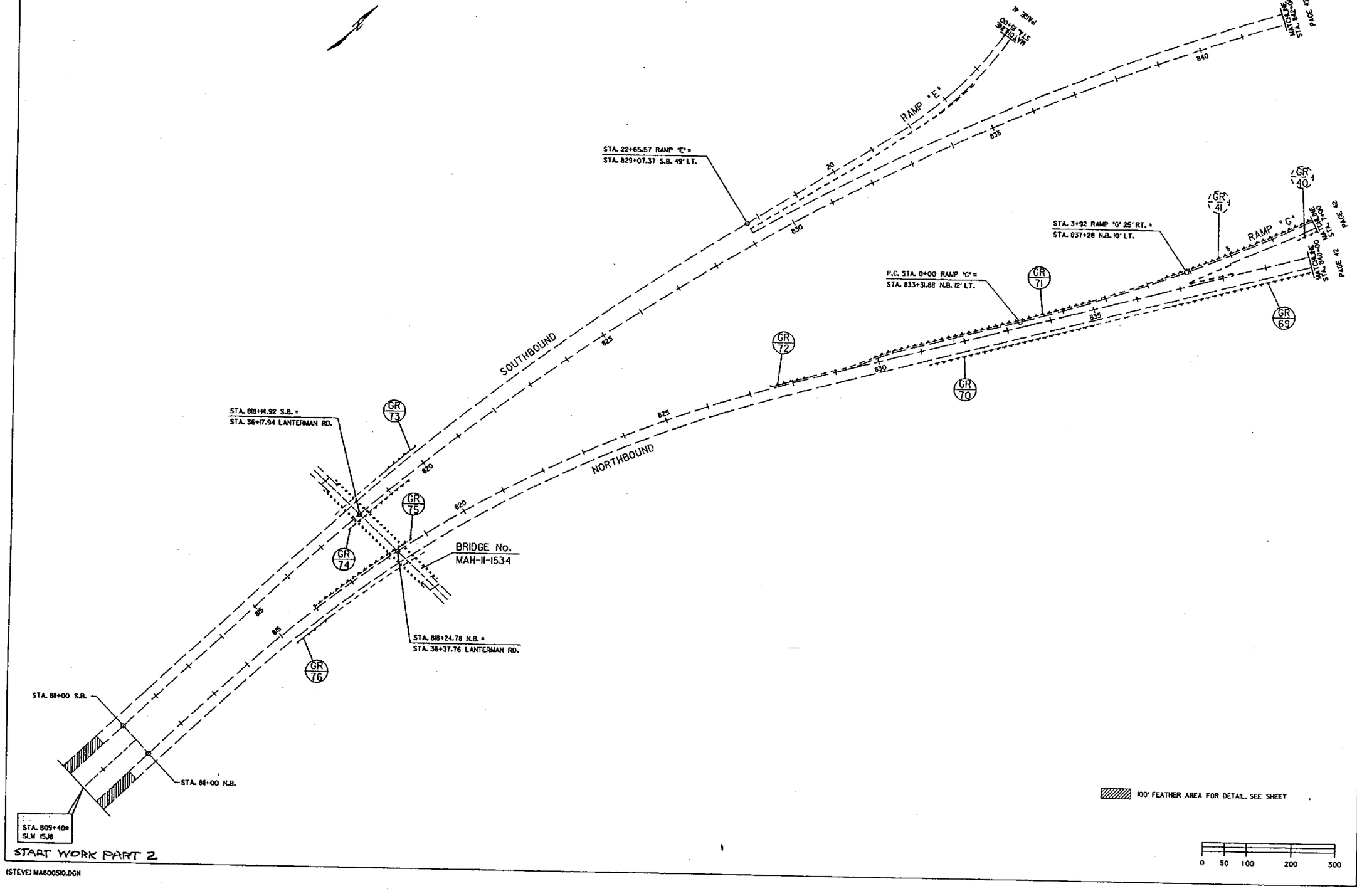
100' FEATHER AREA FOR DETAIL, SEE SHEET

0 50 100 200 300

CALCULATED
CHECKED

LINE SHEET

MAH-80-0.52



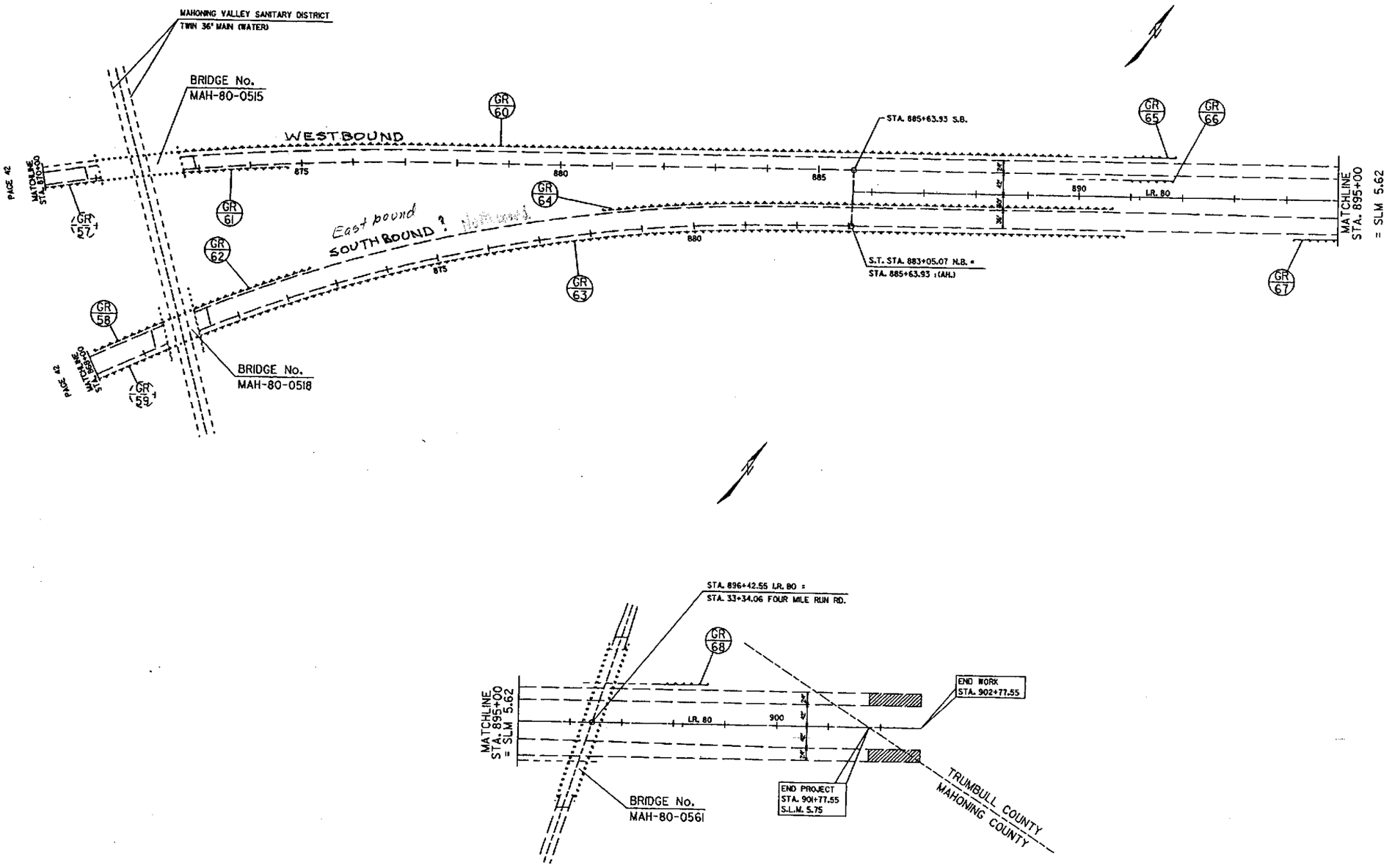
CALCULATED
DRAWN
CHECKED

LINE SHEET PART 2 SR 11

MAH-80-0.52

43
73

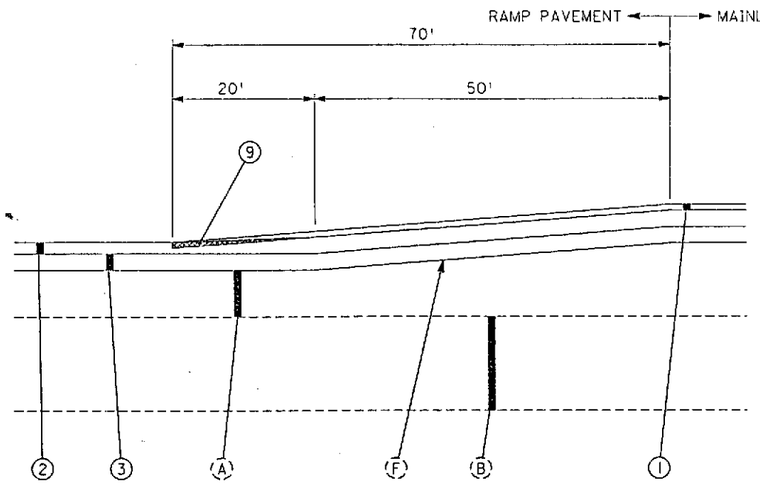
(STEVE) MA80GS10.DGN



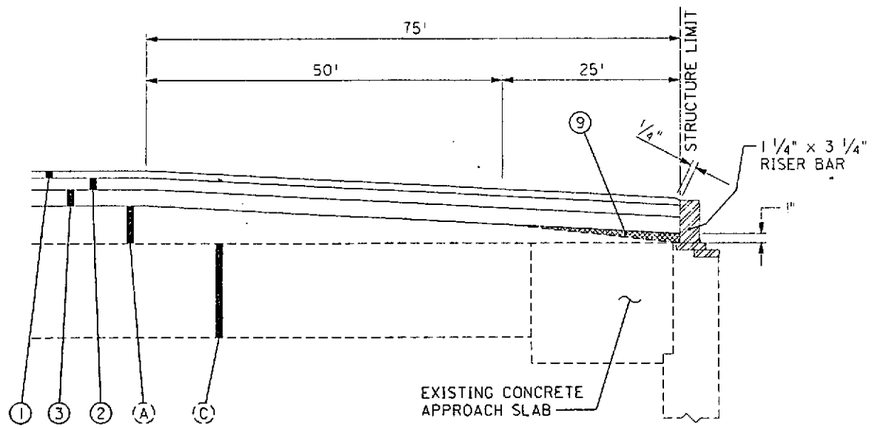
CALCULATED
CHECKED

LINE SHEET PART 2 SR 11

MAH-80-0.52

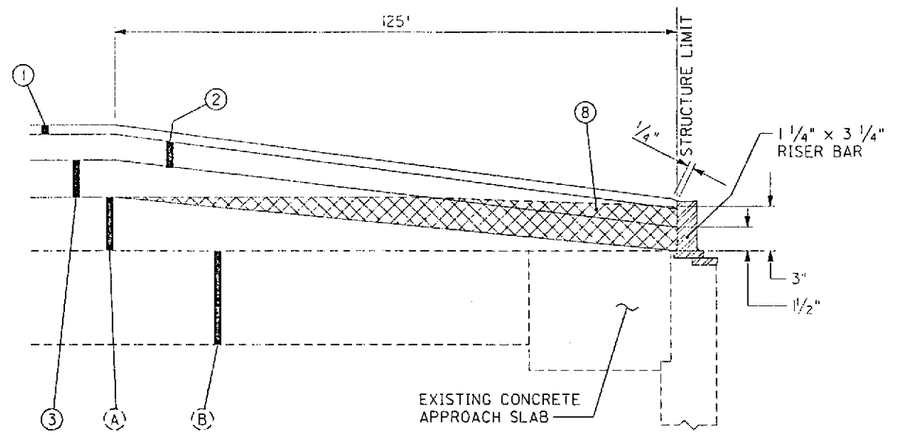


PAVEMENT FEATHER FOR RAMPS E, & G ON S.R. II



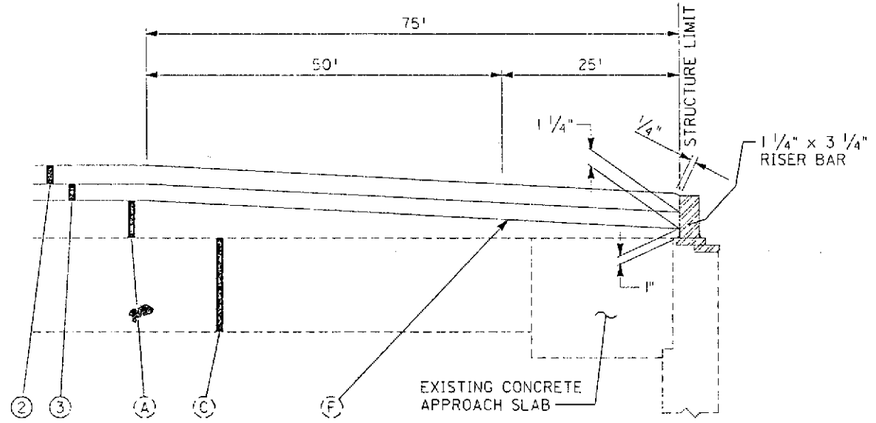
PAVEMENT FEATHER AT BRIDGE APPROACH

BRIDEGE No.: MAH-11-1604L
MAH-11-1615L



PAVEMENT FEATHER AT BRIDGE APPROACH

BRIDEGE No.: MAH-80-0125 L & R



PAVEMENT FEATHER AT BRIDGE APPROACH

BRIDEGE No.: MAH-11-1605L

EXISTING LEGEND

- (A) EXISTING ASPHALT OVERLAY
- (B) EXISTING 10" REINFORCED CONCRETE PAVEMENT
- (C) EXISTING 9" REINFORCED CONCRETE PAVEMENT
- (D) EXISTING 6" SUBBASE
- (E) EXISTING 8" AGGREGATE BASE
- (F) EXISTING FEATHER

NOT TO SCALE.

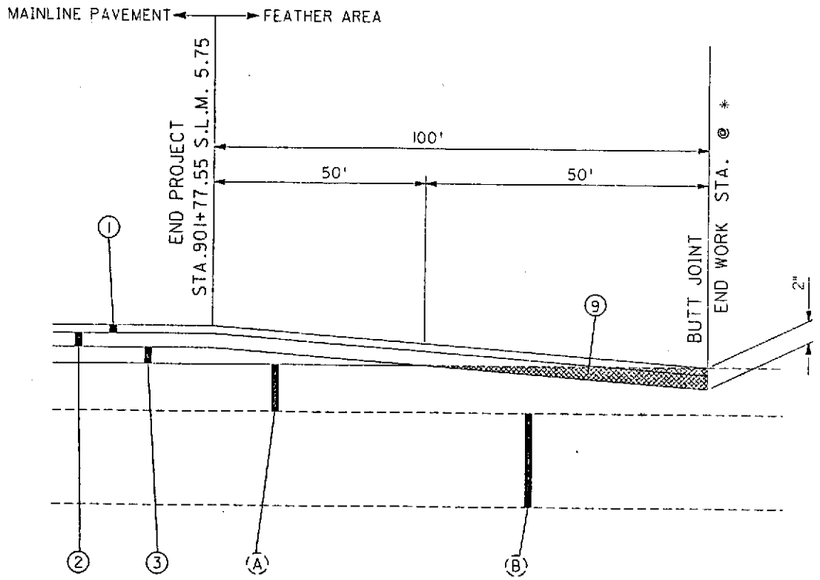
PROPOSED LEGEND

(1)	SPECIAL	3/4" RUBBERIZED OPEN GRADED ASPHALT CONCRETE FRICTION COURSE
(2)	446	1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1
(3)	446	1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2
(4)	254	PAVEMENT PLANING, BITUMINOUS, 0" TO 1 1/4" (5/8" AVG.)
(5)	254	PAVEMENT PLANING, BITUMINOUS, DEPTH 3 3/4"
(6)	254	PAVEMENT PLANING, BITUMINOUS, DEPTH 2"
(7)	254	PAVEMENT PLANING, BITUMINOUS, DEPTH 3/4"
(8)	254	PAVEMENT PLANING, BITUMINOUS, VARIABLE
(9)	202	VARIES, WEARING COURSE REMOVED

CALCULATED | CHECKED

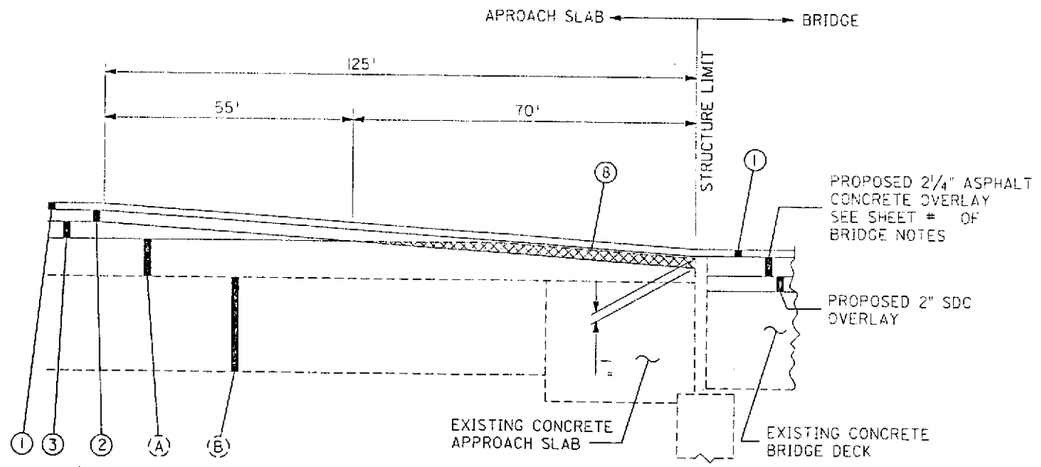
FEATHER DETAILS

MAH-80-0.52



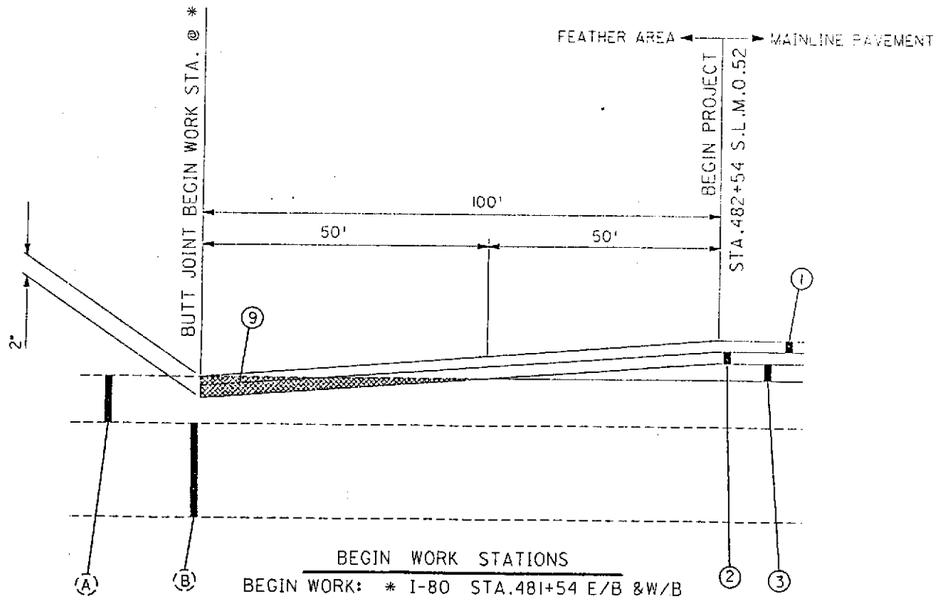
END WORK STATIONS

END WORK: * I-80 E/B &W/B STA.902+77.55 (MAINLINE)
* I-80 E.B. STA.411+54.00 (TO I-680 S/B)
* I-80 W.B. STA.399+51.40 (TO I-680 N/B)
* S.R.11 N/B & S/B STA.809+40.00
* RAMP B S.R.11 S/B STA.1+00
* RAMP D S.R.11 N/B STA.5+47



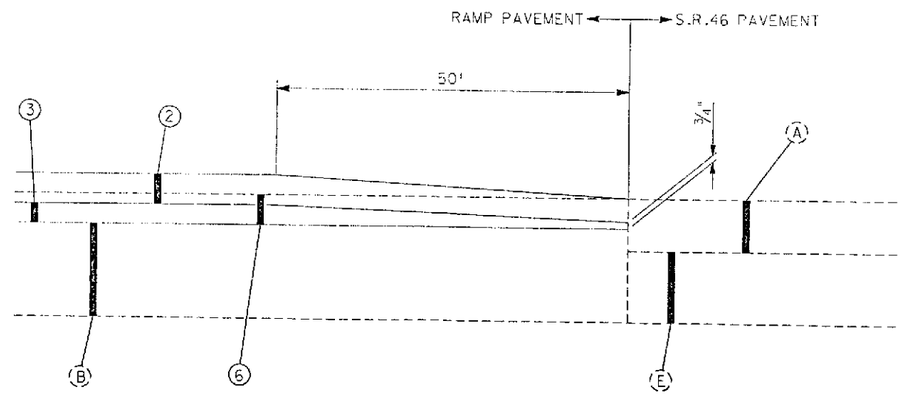
PAVEMENT FEATHER AT BRIDGE APPROACH

BRIDEGE No.: MAH-80-0076 L&R



BEGIN WORK STATIONS

BEGIN WORK: * I-80 STA.481+54 E/B &W/B
* OHIO TURNPIKE RAMP LINE A STA.491+32.45



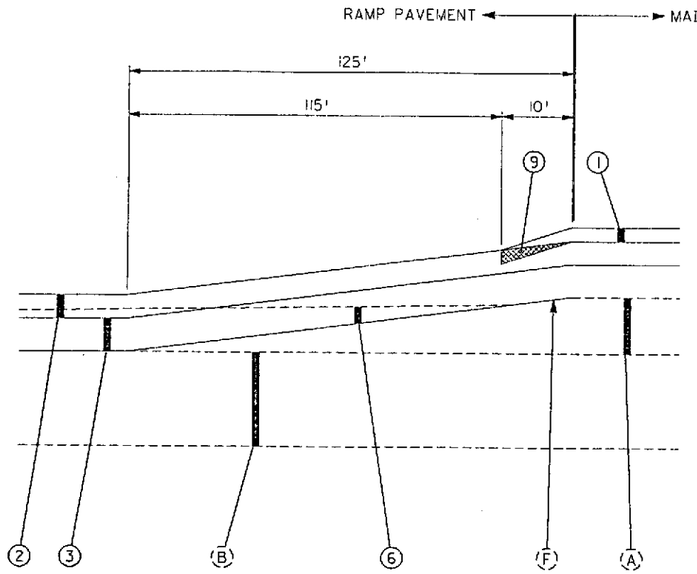
PAVEMENT FEATHERS ON RAMPS B,C,D1,&E @ S.R.46

NOT TO SCALE.
SEE SHEET No. 45 FOR LEGEND.

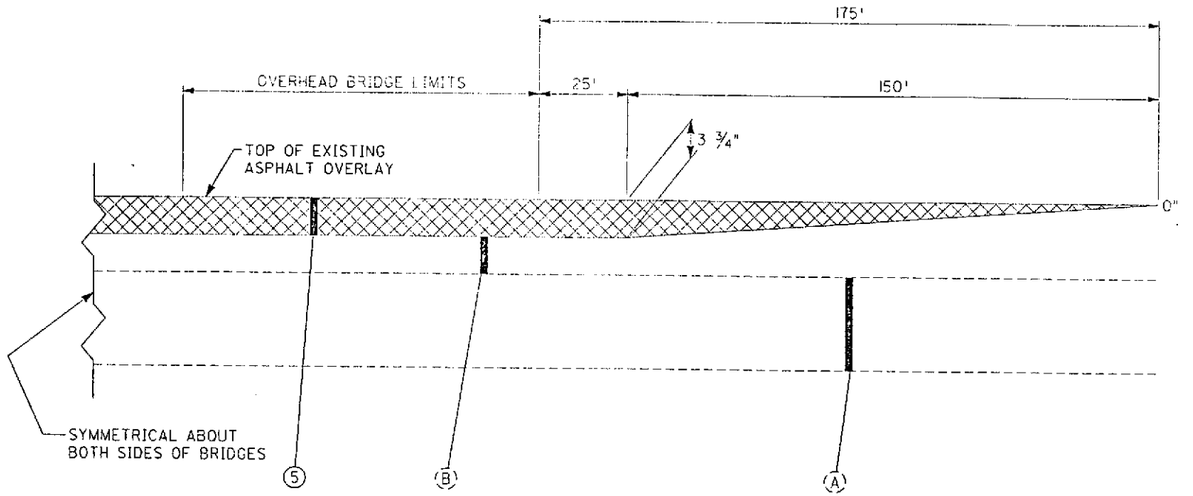
CALCULATED
CHECKED

FEATHER DETAILS

MAH-80-0.52

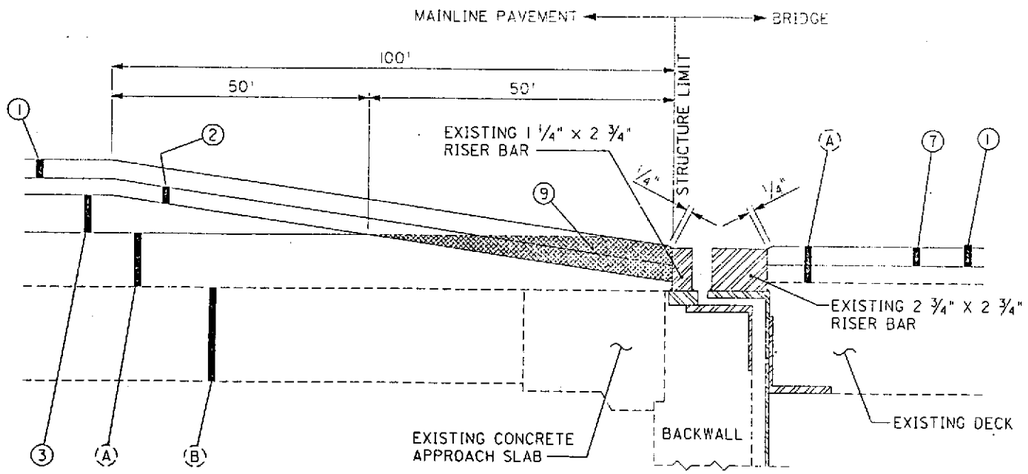


PAVEMENT FEATHER AT RAMPS A, B, C, D, E, ON S.R. 46



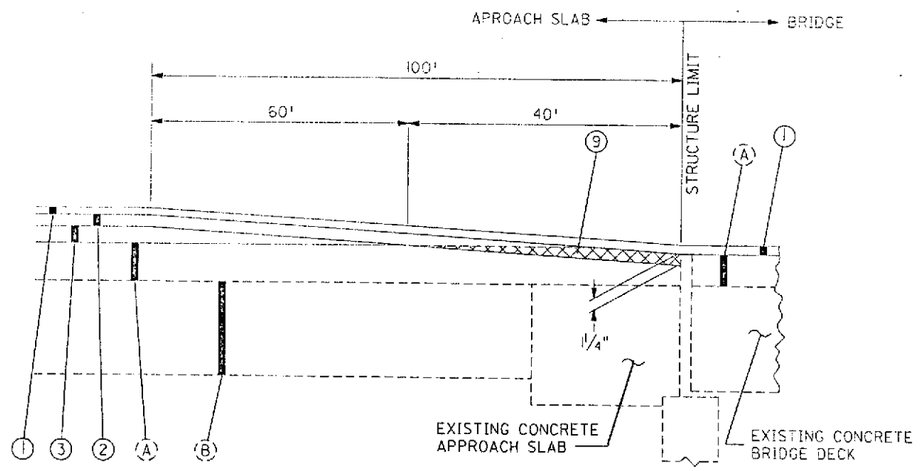
PAVEMENT PLANNING, BITUMINOUS

BRIDGE No.:	MAH-80-0331	℄ STA. 656+85.29 I.R. 80)
	MAH-11-1604 L	℄ STA. 847+57.86 S.R. 11 S.B.)
	MAH-80-1601	℄ STA. 853+93.25 S.R. 11 N.B.)
	MAH-80-0505	℄ STA. 863+31.40 S.R. 11 N.B.)
	MAH-80-0561	℄ STA. 896+42.55 I.R. 80)
	MAH-11-1534	℄ STA. 818+24.78 S.R. 11 N.B & ℄ STA. 818+14.92 S.R. 11 S.B.)



PAVEMENT FEATHER AT BRIDGE APPROACH

BRIDGE No.: MAH-80-0332 L & R
MAH-80-0515 L
MAH-80-0518 R



PAVEMENT FEATHER AT BRIDGE APPROACH

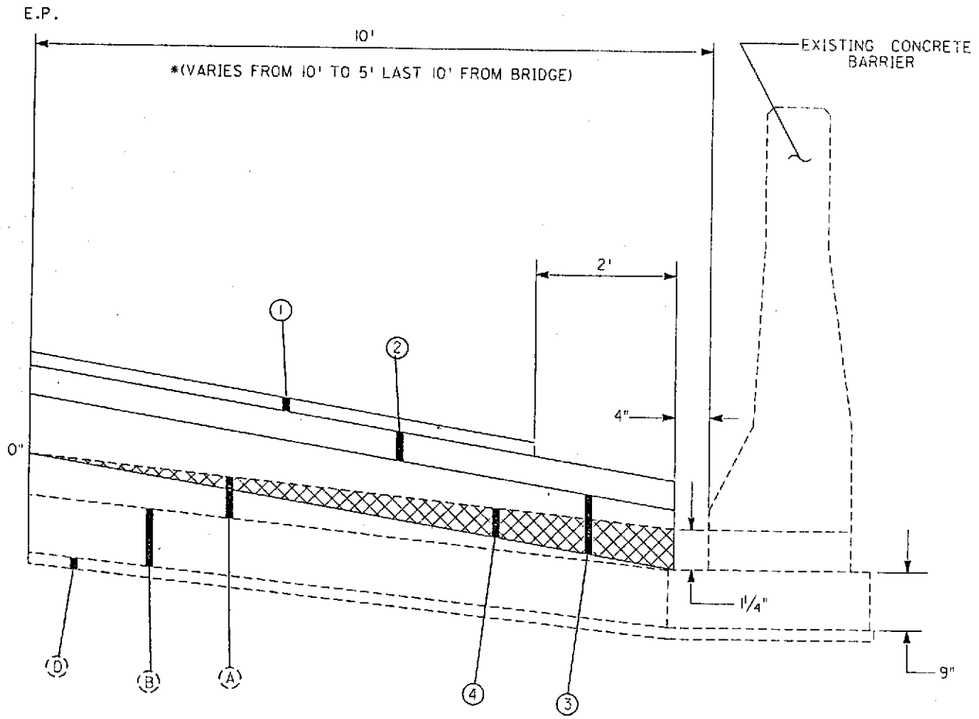
BRIDEGE No.: MAH-80-0247L&R
MAH-80-0313L&R

NOT TO SCALE.
SEE SHEET No. 45 FOR LEGEND.

CALCULATED
CHECKED

FEATHER DETAILS

MAH-80-0.52



FEATHER ALONG I-80 E/B & W/B CONCRETE BARRIER WALLS

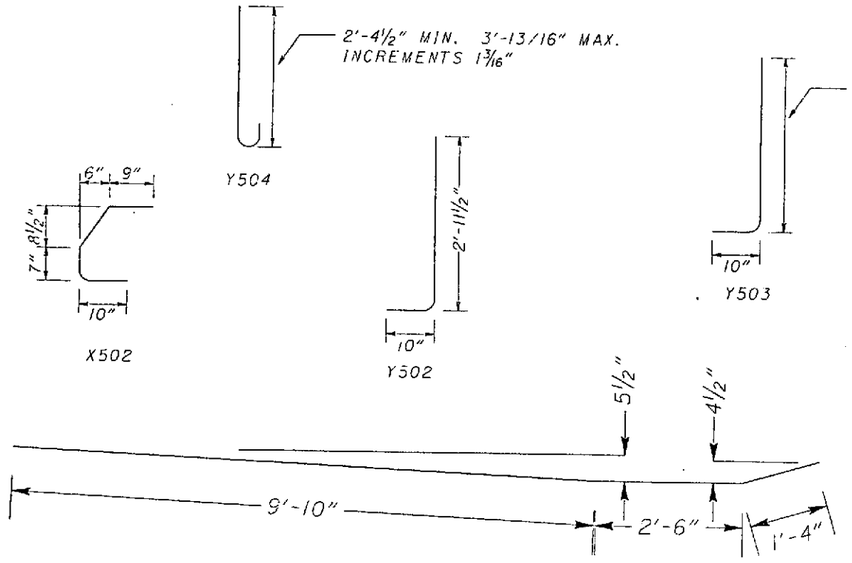
I-80 E/B STA.496+67 TO STA.521+05
I-80 E/B STA.545+83 TO STA.562+98
I-80 W/B STA.517+51 TO STA.521+05
I-80 W/B STA.545+83 TO STA.568+02
I-80 W/B STA.578+02 TO STA.584+89
I-80 W/B RAMP A STA.15+00 TO STA.671+00 I-80 W/B

NOT TO SCALE.
SEE SHEET No. 45 FOR LEGEND.

CALCULATED | CHECKED

FEATHER DETAILS

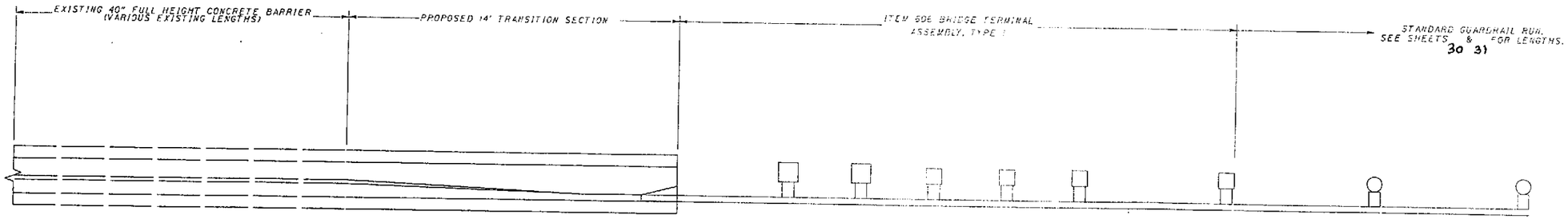
MAH-80-0.52



MARK	SHAPE	LENGTH	INCREMENT	NO.
X502	BENT	2'-10"		8
Y501	STRAIGHT	3'-11"		6
Y502	BENT	2'-11½"		4
Y503	BENT	MIN 2'-11½"	1 3/16"	8
Y504	BENT	MIN 2'-4½"	1 3/16"	8
Y505	STRAIGHT	13'-8"		4
Y506	BENT	13'-8"		2
Y507	STRAIGHT	13'-8"		2

NOTE: ALL REINFORCING BARS SHALL BE EPOXY COATED.

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

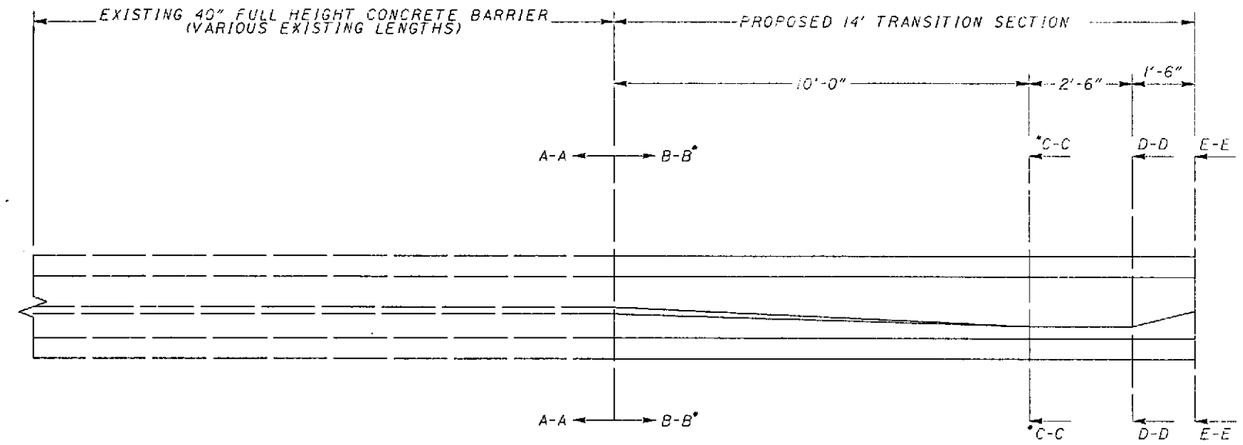


CALCULATED
CHECKED

CONCRETE BARRIER DETAILS

MAH-80-0.52

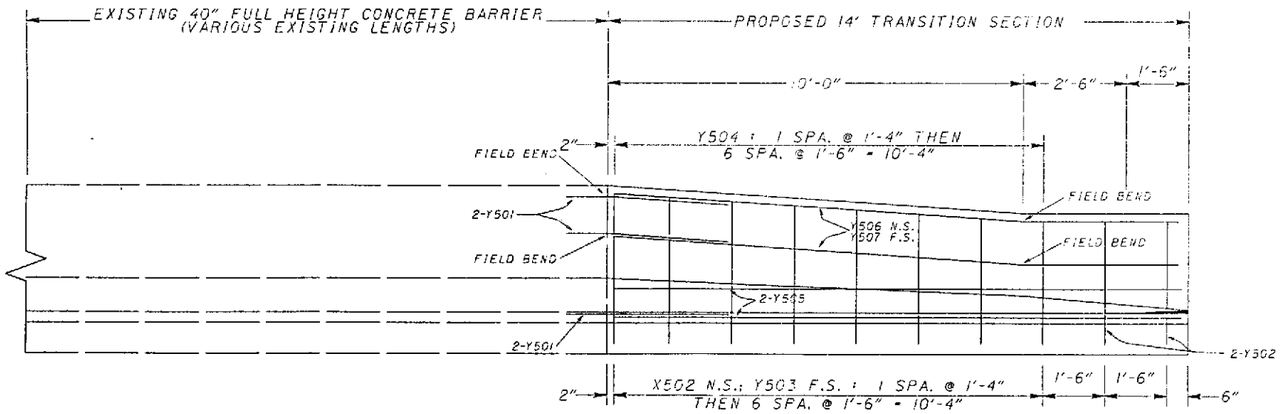
PLAN VIEW



* NOTE: THERE IS AN EIGHT (8) INCH HEIGHT DIFFERENCE BETWEEN SECTION B-B AND SECTION C-C. DURING THE CONSTRUCTION PHASE, THIS HEIGHT DIFFERENTIAL SHALL BE COMPENSATED FOR WITHIN THE FIRST TEN (10) FEET OF THE PROPOSED TRANSITION SECTION AS SHOWN. A CONSTANT SLOPE OF 0.8"/FT SHALL BE USED TO MAKE THE TRANSITION FROM FORTY (40) INCH HIGH CONCRETE BARRIER TO THE STANDARD THIRTYTWO (32) INCH HIGH CONCRETE BARRIER.

NOTE: SEE SHEET 49 FOR TYPICAL INSTALLATION.
SEE SHEET 51 FOR SECTIONS A-A THRU E-E.

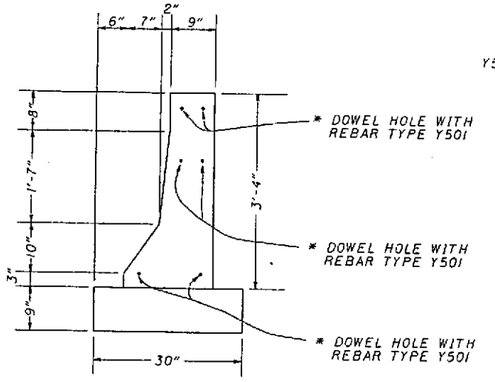
PROFILE VIEW



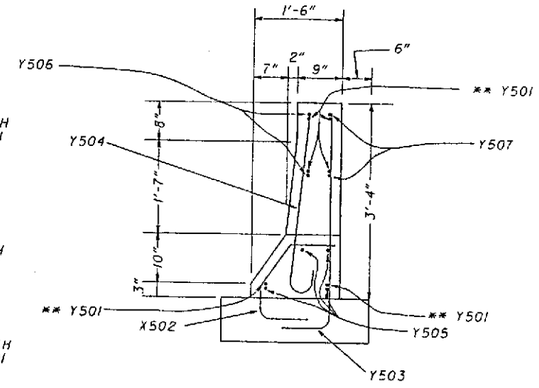
CALCULATED
CHECKED

CONCRETE BARRIER DETAILS

MAH-80-0.52



EXISTING 40" FULL HEIGHT CONCRETE BARRIER
SECTION A-A

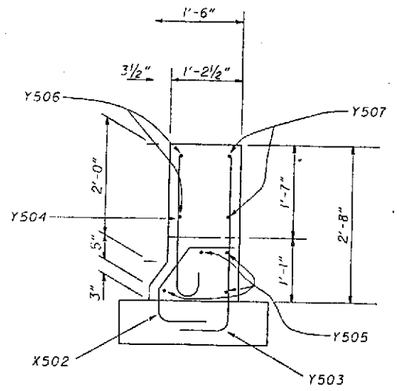


SECTION B-B

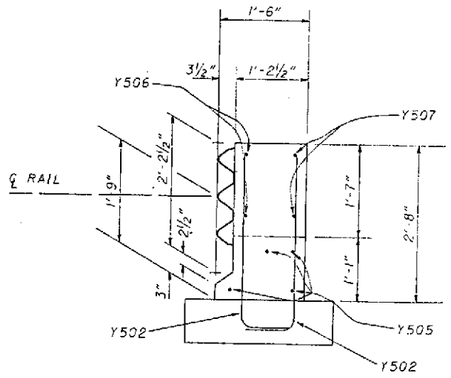
* NOTE: SIX (6) DOWEL HOLES SHALL BE DRILLED INTO THE EXISTING 40" FULL HEIGHT CONCRETE BARRIER, SEE SECTION A-A FOR APPROXIMATE LOCATIONS. THE DOWEL HOLES SHALL BE A MINIMUM OF 12¼" IN DEPTH. SUPPLEMENTAL SPECIFICATION 852 SHALL BE ADHERED TO FOR THE CONSTRUCTION OF THE DOWEL HOLES. SIX (6) #5 DEFORMED EPOXY COATED REBARS 3'-11" IN LENGTH, TYPE Y501, SHALL BE FORCED INTO THE HOLES AND HELD IN PLACE WITH NON SHRINK, NON METALLIC GROUT ACCORDING TO CMS 705.20 AND SUPPLEMENTAL SPECIFICATION 852. FOR MORE INFORMATION SEE GENERAL NOTES SHEET 19.

** NOTE: THE SIX (6) #5 EPOXY COATED REBARS, TYPE Y501, SHALL HAVE A MINIMUM LAP LENGTH OF 2'-9" AS REQUIRED BY CMS 509.08.

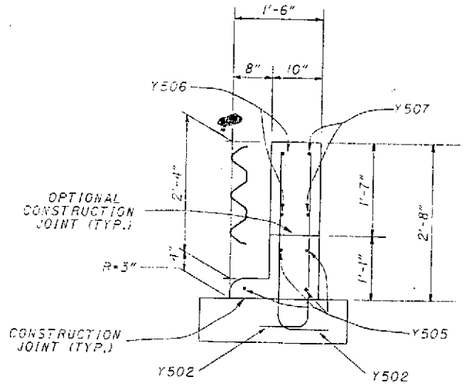
NOTE: FOR DETAILS OF REBARS SEE SHEET 49.



SECTION C-C



SECTION D-D



SECTION E-E

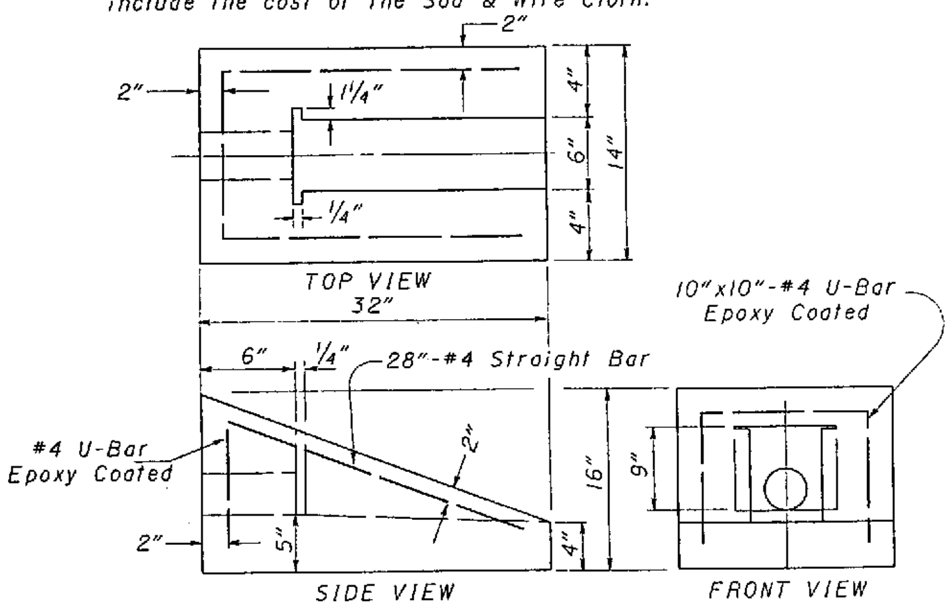
CALCULATED | CHECKED

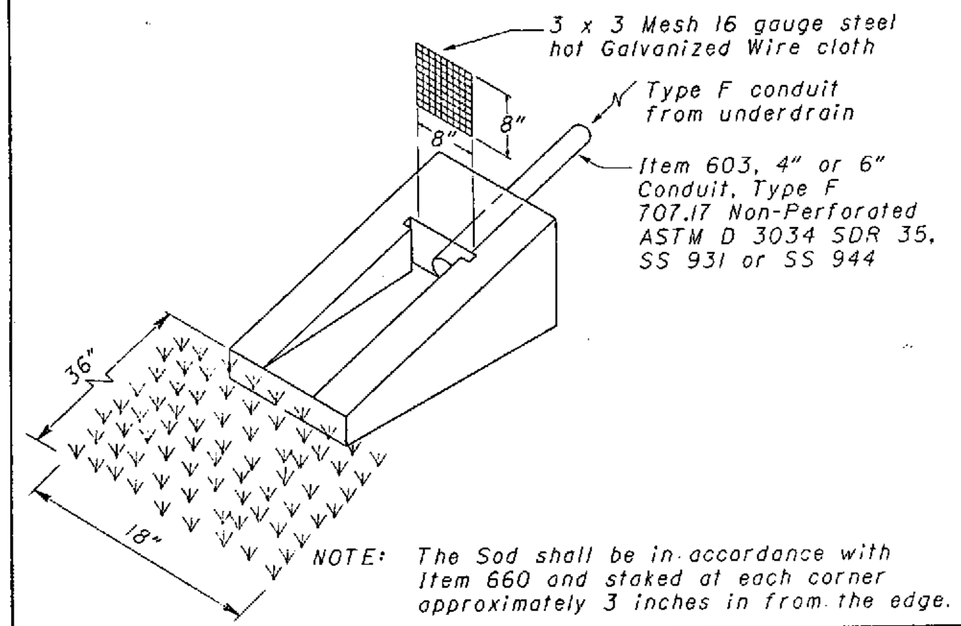
CONCRETE BARRIER DETAILS

MAH-80-0.52

ITEM SPECIAL - PRECAST REINFORCED CONCRETE OUTLET

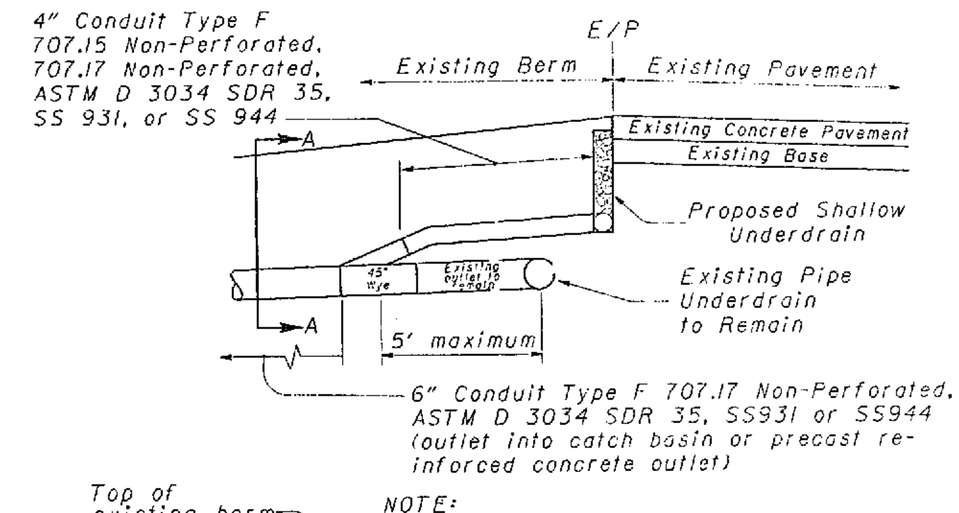
The Concrete outlet shall meet the requirements of Item 604 in the Construction & Materials Specifications. Payment shall be made on an Each basis. Payment shall include the cost of the Sod & Wire Cloth.



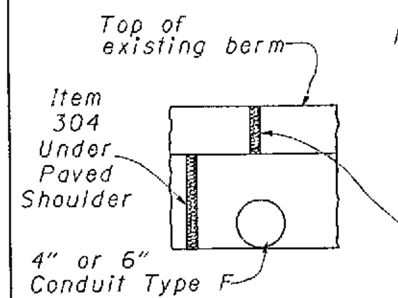


NOTE: The Sod shall be in accordance with Item 660 and staked at each corner approximately 3 inches in from the edge.

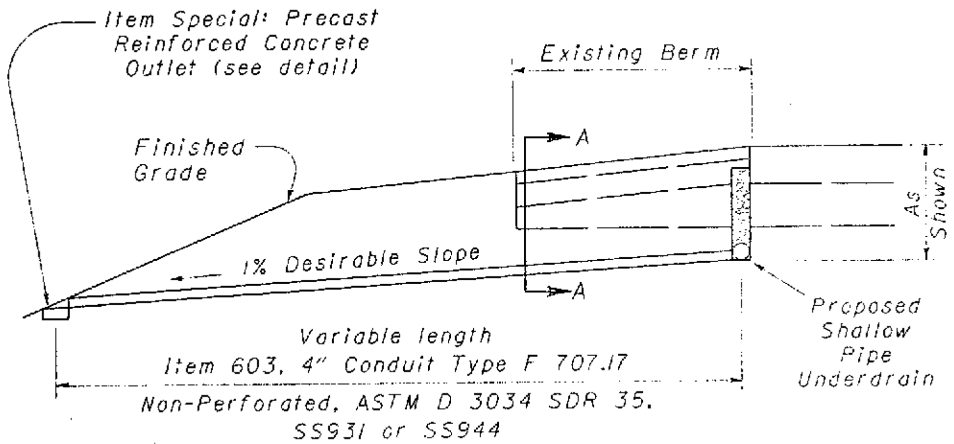
OUTLET DETAILS



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

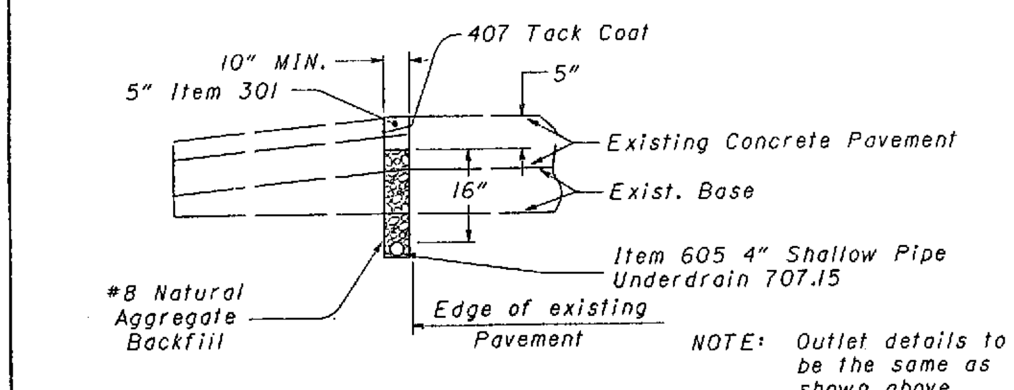


SECTION A-A



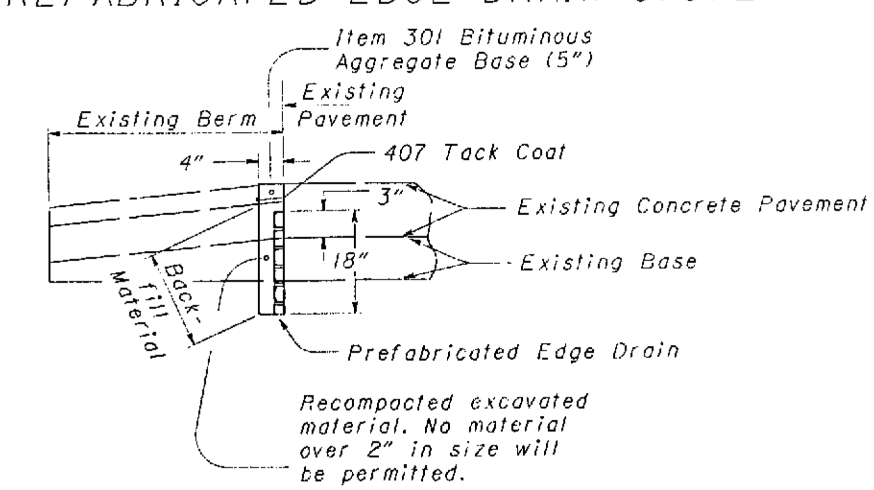
NOTE: For underdrain outlets into catch basins the above Type F Conduit shall be used between the underdrain & catch basin.

PIPE UNDERDRAIN SYSTEM



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

PREFABRICATED EDGE DRAIN SYSTEM



DESCRIPTION : THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING A PIPE UNDERDRAIN SYSTEM OR PREFABRICATED EDGE DRAIN SYSTEM IN ACCORDANCE WITH THE SPECIFICATIONS, DETAILS AS SHOWN ON THE PLANS, AND AS DIRECTED BY THE ENGINEER.

MATERIALS : THE UNDERDRAIN SHALL BE A PIPE UNDERDRAIN SYSTEM PER ITEM 605 OR A PREFABRICATED EDGE DRAIN SYSTEM MEETING THE FOLLOWING REQUIREMENTS. THE PREFABRICATED EDGE DRAIN SHALL CONSIST OF A POLYMERIC CORE WITH A MINIMUM THICKNESS OF ONE INCH WRAPPED IN FABRIC MEETING 712.09 TYPE A. THE DRAIN CORE MATERIAL SHALL BE RESISTANT TO PETROLEUM BASED CHEMICALS, NATURAL OCCURING SOIL CHEMICALS, AND ROAD DE-ICING AGENTS.

THE CORE SHALL PROVIDE A MINIMUM OF 100 SQUARE INCHES UNOBSTRUCTED (ONE SIDE ONLY) DRAINAGE AREA PER FOOT OF WIDTH. SIDE WALLS OF THE CORE SHALL PROVIDE AT LEAST 5% OPEN AREA TO PERMIT UNOBSTRUCTED FLOW THROUGH THE FILTER AND WALL TO THE CORE.

THE PREFABRICATED EDGE DRAIN SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 6000 LBS PER SQUARE FOOT WITH A MAXIMUM 20% COMPRESSION IN A PARALLEL PLATE COMPRESSION TEST (ASTM-D 695). THE MINIMUM (SINGLE SIDE) CORE FLOW CAPACITY SHALL BE 10 GALLONS PER MINUTE PER FOOT OF WIDTH FOR A 0.1 GRADIENT AT 10 LBS PER SQUARE INCH BLADDER LOAD PER ASTM D 4716.

CONSTRUCTION : THE PREFABRICATED EDGE DRAIN SHALL BE INSTALLED IN A TRENCH AS SHOWN ON THE PLANS AND IN ACCORDANCE WITH THE MANUFACTURER'S RECOMENDATIONS. THE CONTRACTOR HAS THE OPTION TO BACKFILL THE TRENCH WITH THE EXCAVATED MATERIAL OR NO. 8 NATURAL AGGREGATE. IF THE EXCAVATED MATERIAL IS USED FOR THE BACKFILL IT SHALL BE PLACED IN THREE (3) LIFTS MINIMUM WITH EACH LIFT OF UNCOMPACTED MATERIAL NOT EXCEEDING 8" IN THICKNESS. EACH LIFT SHALL BE COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY AASHTO T99. IF NO. 8 NATURAL AGGREGATE IS USED IT SHALL BE PLACED IN ONE (1) OR MORE LIFTS WITH A VIBRATORY COMPACTOR RUN OVER THE FINAL LIFT TO CONSOLIDATE THE AGGREGATE PRIOR TO PLACING THE ASPHALT PLUG. THE FIRST LAYER OF THE BACKFILL MATERIAL SHALL BE PLACED SIMULTANEOUSLY WITH THE TRENCHING OPERATION TO HOLD THE EDGE DRAIN FLUSH AGAINST THE TRENCH WALL.

THE PREFABRICATED EDGE DRAIN SHALL BE SPLICED AS REQUIRED PRIOR TO PLACEMENT IN THE TRENCH, USING MATERIAL FURNISHED BY THE MANUFACTURER AND IN ACCORDANCE WITH THE MANUFACTURER'S DIRECTIONS. ALL MATERIAL REQUIRED FOR THE SPLICES WILL BE SUPPLIED BY THE MANUFACTURER, BUT ANY EQUIPMENT REQUIRED SHALL BE FURNISHED BY THE CONTRACTOR. SPLICES SHALL PREVENT SEPERATION OF ADJOINING SECTIONS OF THE PREFABRICATED EDGE DRAIN PANELS.

THE UNDERDRAIN OUTLETS SHALL BE PLACED IN ACCORDANCE WITH ITEM 603 USING OUTLET FITTINGS. THE MANUFACTURER SHALL SUPPLY OUTLET FITTINGS WHICH WILL MAKE THE TRANSITION BETWEEN THE PREFABRICATED EDGE DRAIN AND THE OUTLET PIPE.

THE OUTLETS FOR THE UNDERDRAIN SYSTEM SHALL BE CONSTRUCTED AS SOON AS POSSIBLE AFTER PLACEMENT OF THE UNDERDRAIN. THE OUTLETS ON CRACK AND SEAT PROJECTS SHALL BE IN PLACE AND FUNCTIONAL PRIOR TO CRACKING AND SEATING THE EXISTING PAVEMENT.

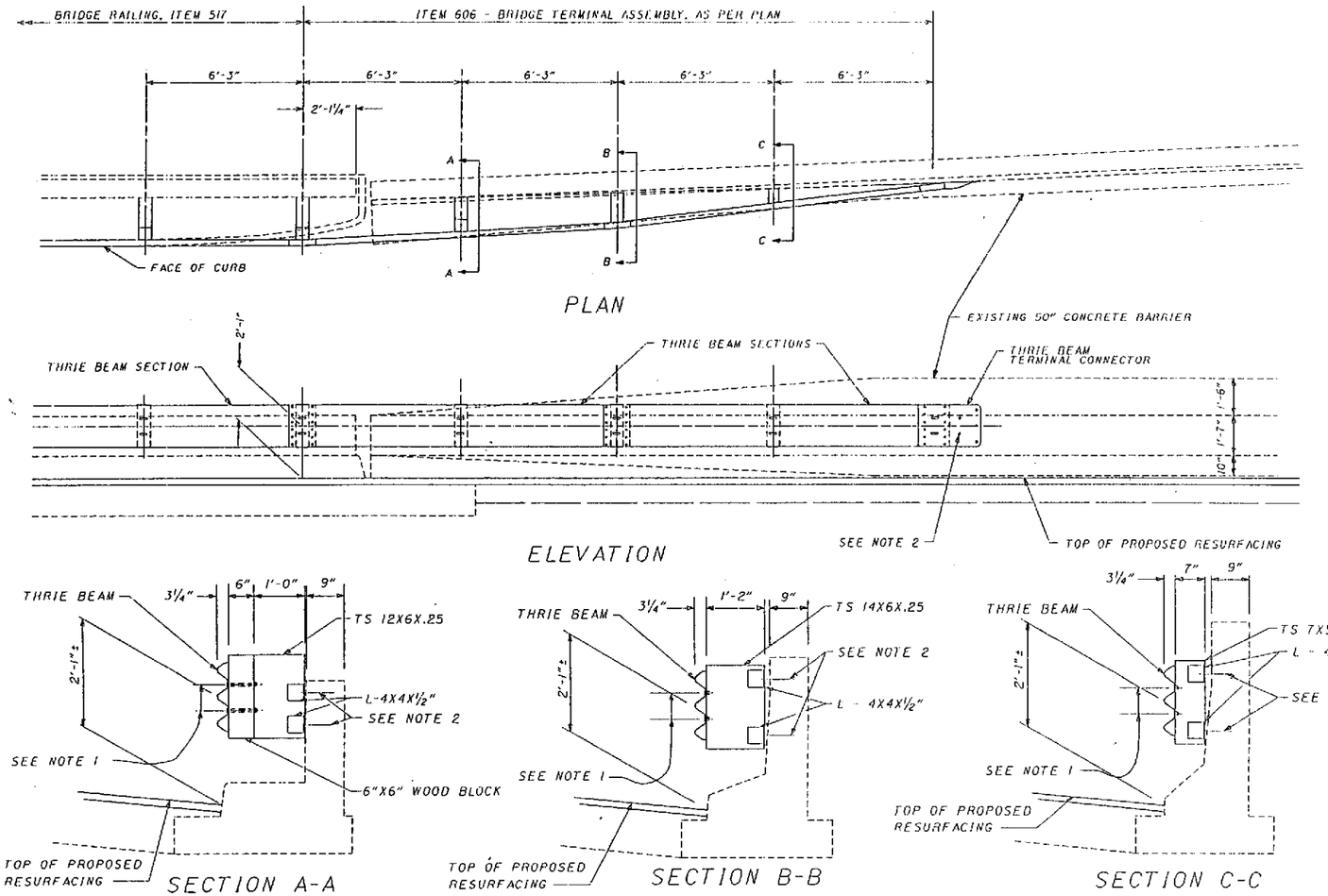
METHOD OF MEASUREMENT : COMPLETED AND ACCEPTED UNDERDRAINS WILL BE MEASURED BY THE LINEAR FOOT.

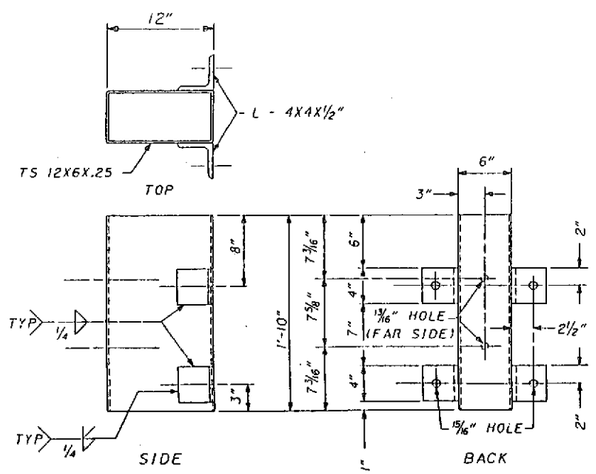
BASIS OF PAYMENT : WORK COMPLETED AND ACCEPTED UNDER THIS ITEM AND MEASURED WILL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER LINEAR FOOT FOR ITEM 605 - SHALLOW PIPE UNDERDRAIN, AS PER PLAN, WHICH PRICE SHALL BE FULL COMPENSATION FOR EXCAVATION AND BACKFILL; REMOVING AND DISPOSING ALL SURPLUS EXCAVATION IN ACCORDANCE WITH 203; FOR FURNISHING MATERIALS, INCLUDING MATERIAL FOR SPLICES; OUTLET FITTINGS AND ITEM 301; FOR ALL LABOR, TOOLS, EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.

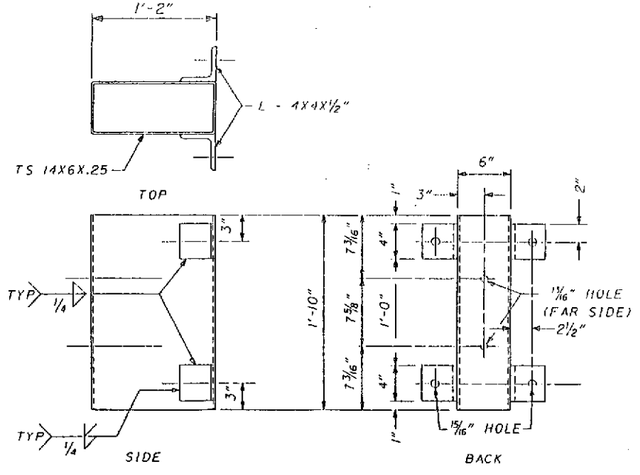
CALCULATED
CHECKED
2-5-93

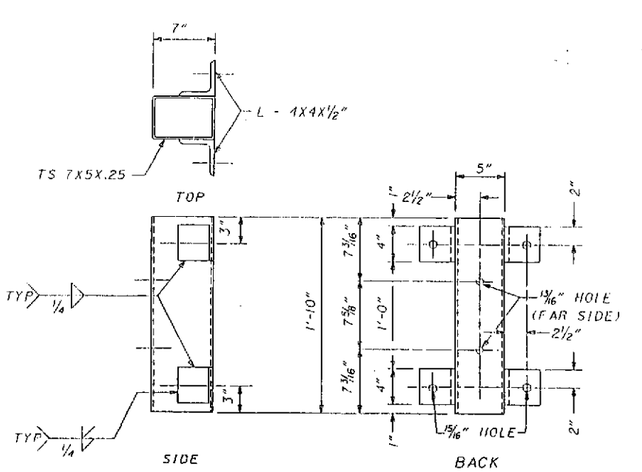
ITEM 605 - SHALLOW UNDERDRAIN, AS PER PLAN

MAH-80-0.52









GUARDRAIL SUPPORT BRACKET ASSEMBLY #1 GUARDRAIL SUPPORT BRACKET ASSEMBLY #2 GUARDRAIL SUPPORT BRACKET ASSEMBLY #3

ITEM 606 BRIDGE TERMINAL ASSEMBLY, AS PER PLAN

THIS ITEM SHALL BE USED TO TERMINATE THE APPROACH ENDS OF THRIE-BEAM BRIDGE RAILING BY ATTACHMENT TO EXISTING CONCRETE BARRIER WALL. IT SHALL INCLUDE THE COST OF ALL LABOR, EQUIPMENT, TOOLS, MATERIALS AND INCIDENTALS NECESSARY TO INSTALL A COMPLETE BRIDGE TERMINAL ASSEMBLY AS DETAILED ON THIS SHEET.

THE THRIE-BEAM RAIL ELEMENTS AND TERMINAL CONNECTOR SHALL CONFORM TO STANDARD CONSTRUCTION DRAWINGS GR-1.1 AND GR-1.2 AS WELL AS SECTION 710.06 OF THE C.M.S. STRUCTURAL STEEL ANGLES SHALL CONFORM TO ASTM A36 AND STRUCTURAL TUBING SHALL CONFORM TO THE PROVISIONS OF 707.10 EXCEPT THAT THE "DROP WEIGHT TEAR TEST" AS PER ASTM E436 NEED NOT BE PERFORMED. ALL GUARDRAIL SUPPORT BRACKET ASSEMBLIES, HARDWARE AND ACCESSORIES SHALL BE GALVANIZED IN ACCORDANCE WITH 711.02. WOOD SPACER BLOCKS SHALL CONFORM TO SECTION 710.14 OF THE C.M.S.

WHEN NECESSARY, THE CONTRACTOR SHALL USE AN APPROVED MEANS OF SHIMMING GUARDRAIL SUPPORT BRACKET ASSEMBLIES SO THAT THE RESULTING FACE OF THRIE-BEAM RAIL IS NEARLY VERTICAL.

SEE SHEET NUMBER 31 FOR LOCATIONS WHERE BRIDGE TERMINAL ASSEMBLIES, AS PER PLAN ARE TO BE INSTALLED.

NOTE 1: ⅝" DIA. BUTTON HEAD BOLT (ASTM A307) WITH PLATE WASHER UNDER HEAD AND STANDARD WASHER UNDER THE NUT.

NOTE 2: ¾" DIA. HIGH STRENGTH THREADED ANCHORS, BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM A325. ANCHORS SHALL BE EMBEDDED A MINIMUM OF 7" INTO THE EXISTING CONCRETE BARRIER WALL AND ANCHORED IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATIONS 852 AND 952.

CALCULATED
CHECKED

BRIDGE TERMINAL ASSEMBLY, AS PER PLAN

MAH-80-0.52

52A
73

MATERIALS SUPPLIED BY THE DEPARTMENT

All materials are to be Contractor furnished, except that the Department shall supply to the Contractor RPM materials in the quantities shown herein. Pay items for Department supplied materials shall be indicated as "installation only". The quantity and type of the Department supplied materials are shown elsewhere in the plan.

The Contractor will be informed at the pre–construction conference of the location in Columbus of the Department supplied RPM materials. When specified, additional RPM materials will be stored within the District for use on this project. The Contractor shall pick–up Department supplied RPM materials at the specified location(s) for transport to the work site or the Contractor's storage facility. An authorization for pick up form will be furnished by the District Construction Engineer to the Contractor at the pre–construction conference. The Contractor shall notify the District and/or the parties listed on the authorization form (dependant on storage locations of the materials) in writing at least 5 calender days prior to pick–up of Department supplied materials. He shall store them without damage or contamination with foreign matter. A deduction, in the amount of the actual cost to the Department shall be made for the materials damaged by the Contractor or for castings received by the Contractor which were not installed and were not returned to the Department.

MATERIALS SUPPLIED BY THE DEPARTMENT CONT.

RAISED PAVEMENT MARKER, INSTALLATION ONLY, AS PER PLAN
RAISED PAVEMENT MARKER CASTING INSTALLATION ONLY, AS PER PLAN

In addition to the specification, the following requirements are added to each of the above pay items:

All castings shall be placed the same working day that the RPM slots are cut into the pavement. The Engineer may allow RPM placement for recently resurfaced roadway to begin as soon as the permanent pavement marking for that section is completed and dry.

RPMs shall not be installed when the ambient air temperature and the pavement surface temperature are less than 40° F. Both parts A and B of the RPM casting epoxy shall be heated to 100°± 10°F. during installation between 40° and 50° F. RPMs installed when temperatures are below 50°F. shall be protected from traffic a minimun of 60 minutes.

DETAIL	DESCRIPTION
1	TYPICAL SPACING
2	TAPERED ACCELERATION LANE
3	DECELERATION LANE
4	PARALLEL ACCELERATION LANE
5	MULTILANE DIVIDED/EXPRESSWAY
6	STOP APPROACH
7	ONE LANE APPROACH W/LT TURN LANE
8	THRU APPROACH
9	TWO LANE APPROACH W/LT TURN LANE
10	4 LANE DIVIDED TO 2 LANE TRANSITION
11	4 LANE UNDIVIDED TO 2 LANE TRANSITION
12	TWO LANE NARROW BRIDGE
13	TWO WAY LEFT TURN
14	ONE LANE BRIDGE
15	HORIZONTAL CURVE
16	HORIZONTAL CURVE ALTERNATE
17	STOP APPROACH ALTERNATE
GAP	CENTERLINE AT 80 FT. TYPICAL

RPM REPLACEMENT

SUPLEMENTAL SPECIFICATION		STANDARD CONSTRUCTION DWG	
862	12-16-88	TC65.10 2-1-90	TC65.12 2-1-90
962	1-23-90	TC65.11 2-1-90	TC65.13 2-1-90

LOCATION					DETAIL	202	Installation Only		Prismatic Retro-Reflectors			
		TRU LOG				RPM Removed For Storage	RPM with Yellow/ Yellow Reflector	RPM Casting	One-Way		Two-Way	
COUNTY	ROUTE	FROM	TO	REMARKS					White	Yellow	Yellow/ Yellow	White/ Red
MAH	80	0.52	5.73	0.23 MILE WEST OF LIPKEY RD. BRIDGE	1			913	873			40
				TO TRU. CO LINE (SOLID LANE LINE @ 40' SPACING)	1							
MAH	80	0.72		I-80 EB ON RAMP FROM TURNPIKE	2			12	10	2		
MAH	80	3.47		I-80 WB ON RAMP FROM SR 46	2			20	18	2		
MAH	80	3.63		I-80 EB OFF RAMP TO SR 46	3			35	33	2		
MAH	80	3.75		I-80 WB OFF RAMP TO SB SR 46	3			33	31	2		
MAH	80	3.97		I-80 WB OFF RAMP TO NB SR 46	3			27	25	2		
MAH	80	0.72		I-80 EB ON RAMP FROM SR 46	2			16	14	2		
MAH	80	4.57		I-80 WB FROM WB I-680 & NB SR 11	2,4			43	43			
MAH	80	4.44		I-80 EB OFF RAMP TO SB SR 11	3			33	31	2		
MAH	80	4.80		I-80 EB @ BEGIN EB I-680	3			18	16	2		
MAH	80	4.97		I-80 WB TO SB SR 11	3			57	55	2		
MAH	80	5.00		I-80 EB ON RAMP FROM NB SR 11	2			12	10	2		
MAH	80	5.45		I-80 EB WITH SR 11 NB MERGE	2			12	10	2		
TOTAL								1231	1169	22		40

NOTE TO INSPECTOR: PLEASE REVISE AND SEND "AS BUILT" TO DISTRICT 4 TRAFFIC

CALCULATED CK CHECKED DAY

MARKER SUB-SUMMARY

RAISED PAVEMENT MA

MAH-80-0.52

MAH80 1/31/94 DAY

GENERAL SPEC 640	STANDARD CONSTRUCTION DWG.			
MATERIAL TYPE	TC 35.10	8-29-84	MT 97.10	4-29-88
	TC 72.20	2-26-82	MT 98.13	8-25-89
	MT 95.30	10-10-88	MT 98.14	8-25-89
	MT 95.31	10-10-88	MT 98.15	8-25-89
	MT 95.32	8-25-89	MT 99.20	4-29-88

CALCULATED | CHECKED

PAVEMENT MARKING SUB-SUMMARY

LANE LINE

CO.	ROUTE	TRU LOG	FROM	TRU LOG	TO	TOTAL MILES	4' LANE LINE DASHED	4' LANE LINE SOLID	COMMENTS
MAH	80	0.52	0.23 MILE WEST OF BRIDGE OVER LIPKEY RD	1.21	0.03 MILE WEST OF MEANDER RESERVOIR BRIDGE	1.42*	1.42*		* INCLUDES RAMPS
MAH	80	1.21	0.03 MILE WEST OF MEANDER RESERVOIR BRIDGE	1.73	0.02 MILE EAST OF MEANDER RESERVOIR BRIDGE	2.08		2.08	
MAH	80	1.73	0.02 MILE EAST OF MEANDER RESERVOIR BRIDGE	3.75	BEGIN WB 3 LANE SECTION	4.12*	4.12		* INCLUDES RAMPS
MAH	80	3.75	BEGIN WB 3 LANE SECTION	3.90	BEGIN EB 3 LANE SECTION	0.45	0.45		
MAH	80	3.90	BEGIN EB 3 LANE SECTION	4.09	BEGIN EB 4 LANE SECTION	0.76	0.76		
MAH	80	4.09	BEGIN EB 4 LANE SECTION	4.44	END EB 4 LANE SECTION	1.75	1.75		
MAH	80	4.44	END EB 4 LANE SECTION	4.57	END WB 3 LANE SECTION	0.52	0.52		
MAH	80	4.57	END WB 3 LANE SECTION	4.80	END EB 3 LANE SECTION	0.46	0.46		EASTBOUND ONLY
MAH	80	4.80	END EB 3 LANE SECTION	5.00	JCT SR 11 NB ON RAMP	0.20	0.20		EASTBOUND ONLY
MAH	80	5.00	JCT SR 11 NB ON RAMP	5.18	EAST END BRIDGE WB LANE, WEST OF SR 11 SB OFF RAMP	0.36	0.36		EASTBOUND ONLY
MAH	80	5.18	EAST END BRIDGE WB LANE, WEST OF SR 11 SB OFF RAMP	5.45	BEGIN EB LANE TRANSITION	0.81	0.81		
MAH	80	5.45	BEGIN EB LANE TRANSITION	5.73	TRUMBULL COUNTY LANE	0.56	0.56	0.28	
	TOTAL	PART 1				13.49	11.13	2.36	
MAH	11	15.18	0.16 MILE SOUTH OF LANTERMAN RD BRIDGE	16.28	I 80	2.20	2.20		
	TOTAL	PART 2				2.20	2.20		
TOTAL:									

EDGE LINE

CO.	ROUTE	TRU LOG	FROM	TRU LOG	TO	WHITE EDGE LINE TOTAL MILES	WHITE EDGE LINE HIGH-WAY	WHITE EDGE LINE RAMP	YELLOW EDGE LINE TOTAL MILES	YELLOW EDGE LINE HIGH-WAY	YELLOW EDGE LINE RAMP	COMMENTS
MAH	80	0.52	0.23 MILE WEST OF BRIDGE OVER LIPKEY RD	5.73	TRUMBULL COUNTY LINE	13.36	9.91	3.45	12.90	10.42	2.48	
	TOTAL	PART 1				13.36	9.91	3.45	12.90	10.42	2.48	
MAH	SR 11	15.18	0.16 MILE SOUTH OF LANTERMAN RD BRIDGE	16.28	I 80	2.95	2.20	0.75	2.95	2.20	0.75	
	TOTAL	PART 2				2.95	2.20	0.75	2.95	2.20	0.75	
TOTAL:												

M0800561.DGN

AUXILIARY

GENERAL SPEC 640
MATERIAL TYPE 644

CALCULATED CK
CHECKED DAY

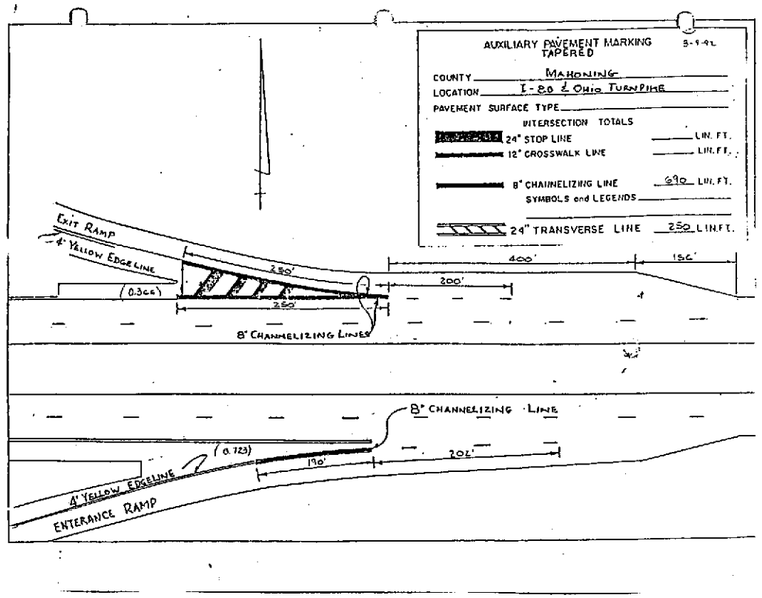
COUNTY	ROUTE LOCATION	TRU LOG	8" CHANNEL LINE	24" STOP LINE	24" TRANSVERSE LINES		12" CROSS-WALK LINES	WORD ON PAVEMENT ONLY		LANE ARROWS				SYMBOL MARKINGS			ISLAND MARK-INGS	DOTTED LINES
					LIN.FT.			72"	96"	TURN EACH		THRU	COMB.	RXR	SCHOOL			
			LIN. FT.	LIN.FT.	WHITE	YELLOW	LIN.FT.	EACH	EACH	LEFT	RIGHT	EACH	EACH	EACH	72" EACH	96" EACH	SQ.FT.	LIN.FT.
MAH	I-80 EB ON RAMP FROM TURNPIKE	0.72	190															
MAH	I-80 WB ON RAMP FROM SR 46	3.47	302															
MAH	I-80 EB OFF RAMP TO SR 46	3.63	935*	70	335				1	2								
MAH	I-80 WB OFF RAMP TO SB SR 46	3.75	580		366													
MAH	I-80 EB LANE CHANGE 0.01 MILE EAST OF SR 46 BRIDGE	3.82																840
MAH	I-80 WB OFF RAMP TO NB SR 46	3.97	490		255													
MAH	I-80 EB ON RAMP FROM SR 46	4.09	217															
MAH	I-80 WB FROM WB I-680 & NB SR 11	4.57	905		574													660
MAH	I-80 EB OFF RAMP TO SB SR 11	4.44	570		345													
MAH	I-80 EB @ BEGIN EB I-680	4.80	260		90													
MAH	I-80 WB TO SB SR 11	4.97	1510		489													
MAH	I-80 EB ON RAMP FROM NB SR 11	5.00	130		350													
MAH	I-80 EB WITH SR 11 NB MERGE	5.45																
	* INCLUDES CHANNELIZING LINES ON RAMP																	
TOTAL			6089	70	2804				1	2								1500

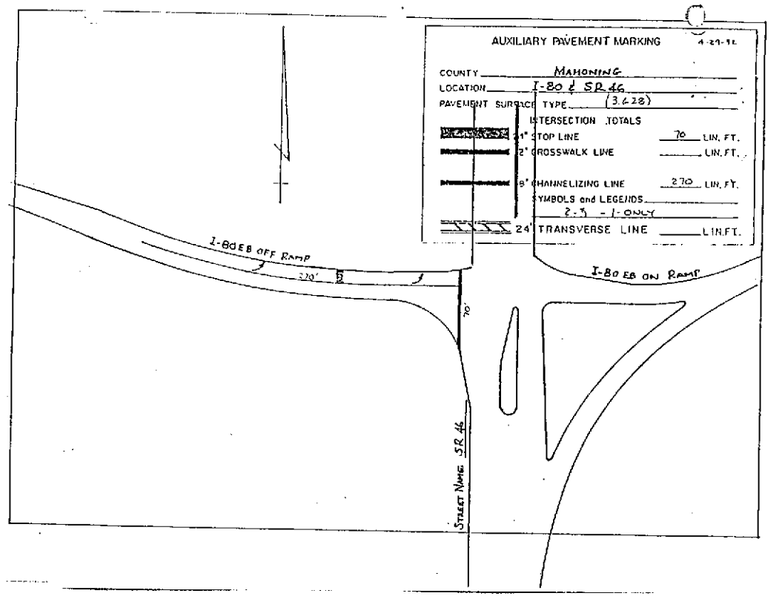
PAVEMENT MARKING SUB-SUMMARY

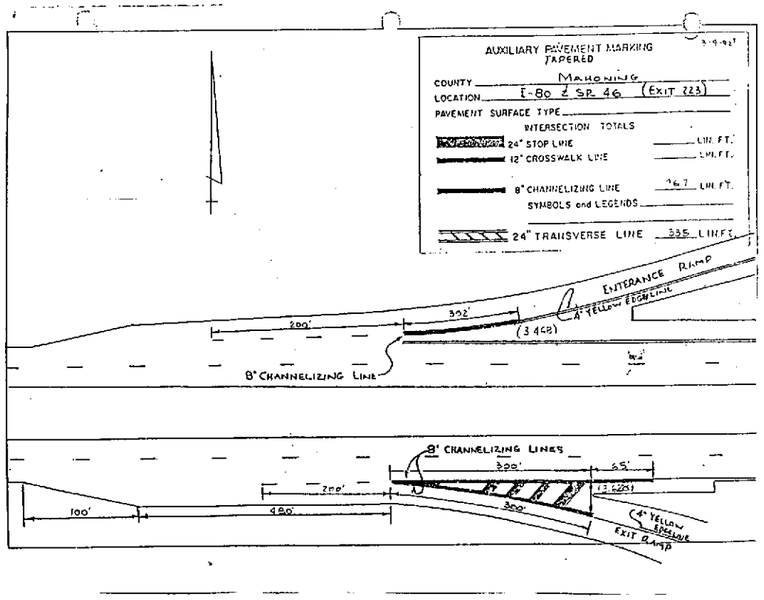
MAH-80-0.52

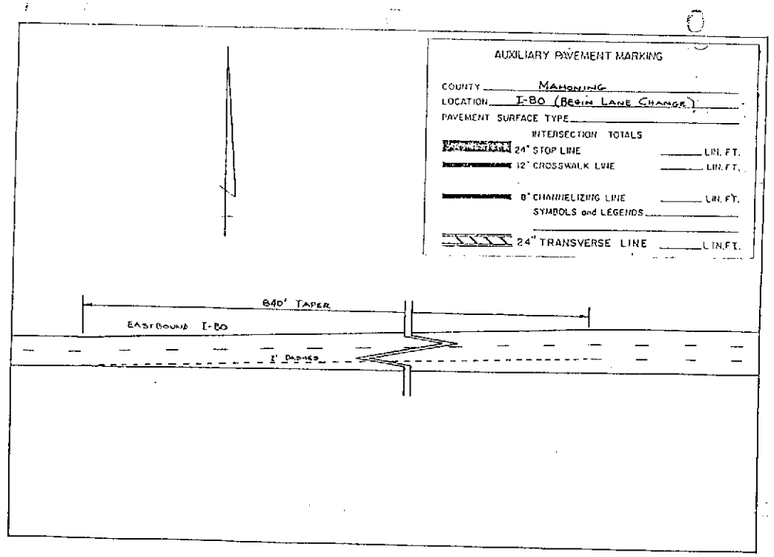
55
73

PMAUXSSR







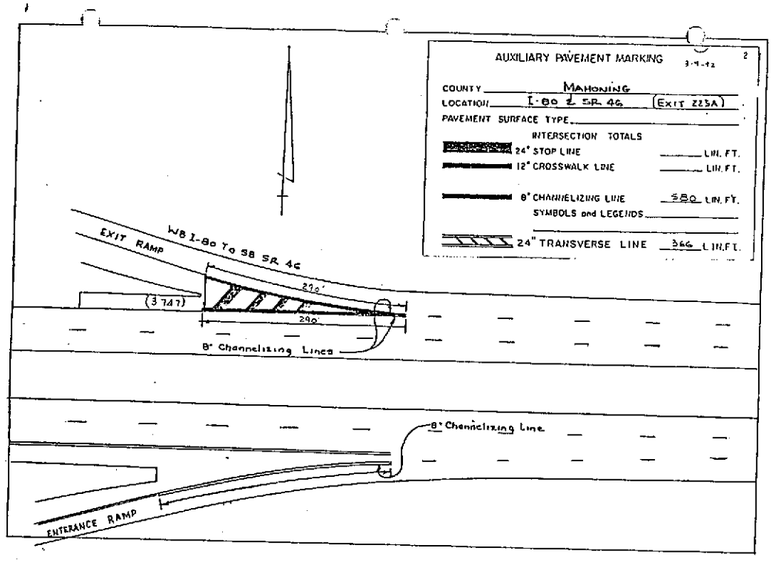


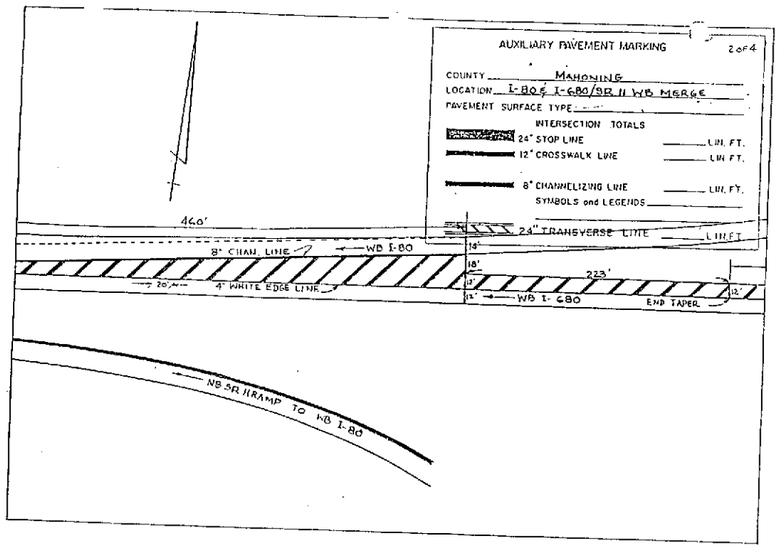
CALCULATED

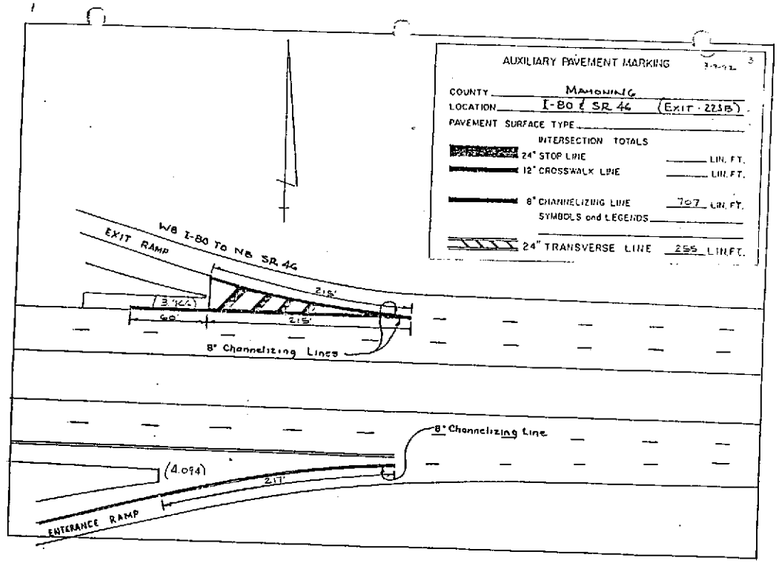
DRAWN

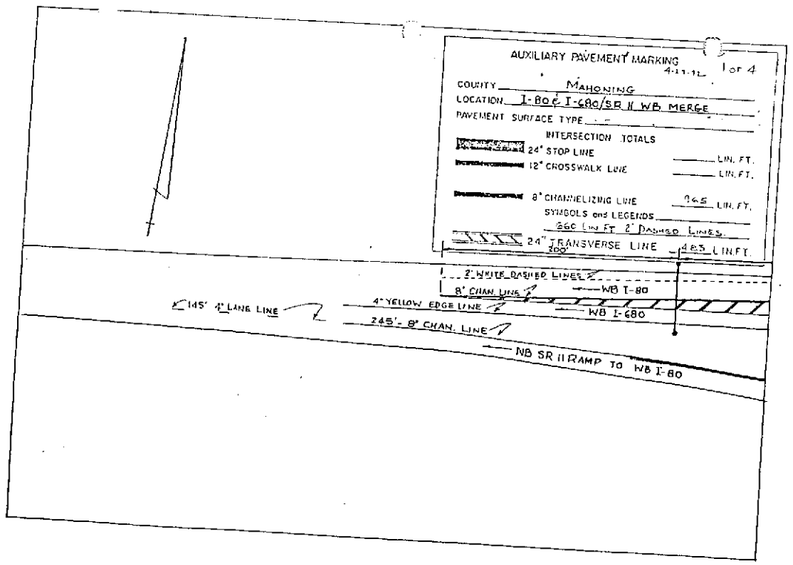
AUXILARY PAVEMENT MARKING

MAH-80-0.52









CALCULATED
CHECKED

AUXILARY PAVEMENT MARKING

MAH-80-0.52

57
73

AUXILIARY PAVEMENT MARKING

1 OF 3

4-23-12

COUNTY MAHONING

LOCATION I-80 & SR 11 NB MERGE

PAVEMENT SURFACE TYPE

INTERSECTION TOTALS

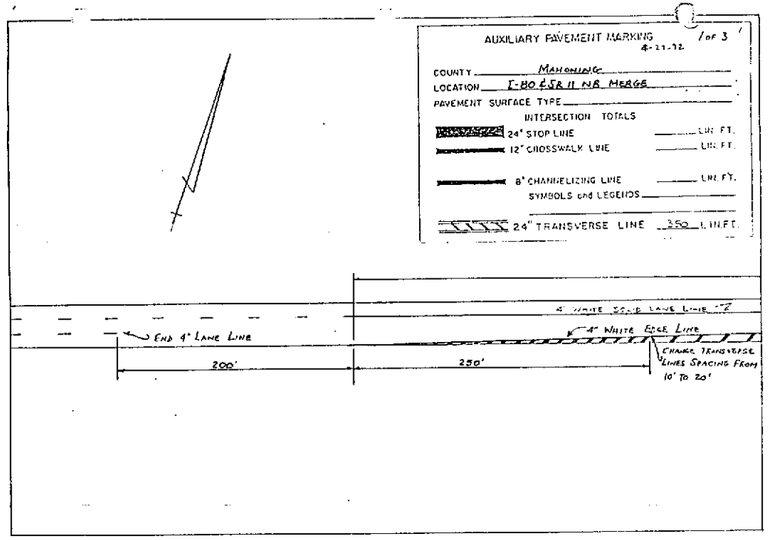
24" STOP LINE ____ LIN. FT.

12" CROSSWALK LINE ____ LIN. FT.

8" CHANNELIZING LINE ____ LIN. FT.

SYMBOLS and LEGENDS

24" TRANSVERSE LINE 350 LIN. FT.



AUXILIARY PAVEMENT MARKING

2 OF 3

COUNTY MAHONING

LOCATION I-80 & SR 11 NB MERGE

PAVEMENT SURFACE TYPE

INTERSECTION TOTALS

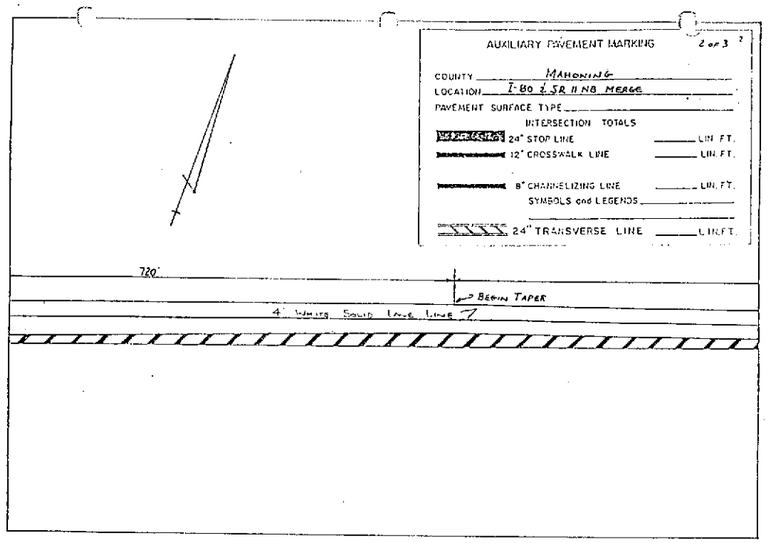
24" STOP LINE ____ LIN. FT.

12" CROSSWALK LINE ____ LIN. FT.

8" CHANNELIZING LINE ____ LIN. FT.

SYMBOLS and LEGENDS

24" TRANSVERSE LINE ____ LIN. FT.



AUXILIARY PAVEMENT MARKING

3 OF 3

COUNTY MAHONING

LOCATION I-80 & SR 11 NB MERGE

PAVEMENT SURFACE TYPE

INTERSECTION TOTALS

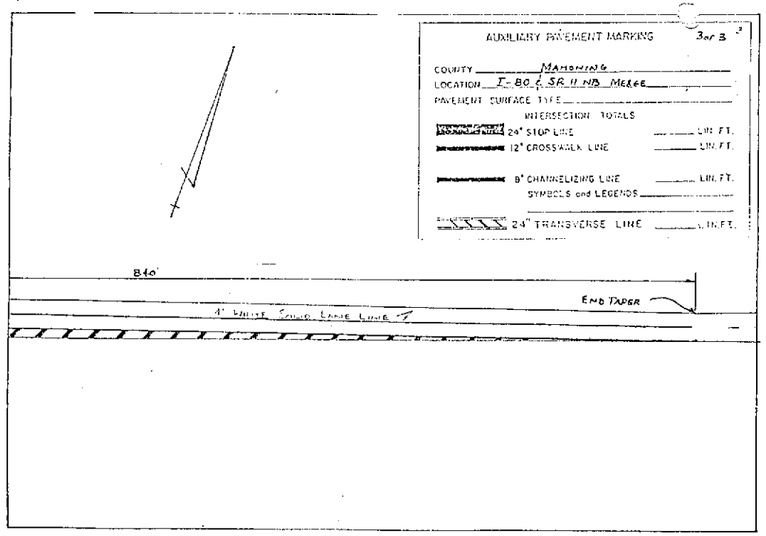
24" STOP LINE ____ LIN. FT.

12" CROSSWALK LINE ____ LIN. FT.

8" CHANNELIZING LINE ____ LIN. FT.

SYMBOLS and LEGENDS

24" TRANSVERSE LINE ____ LIN. FT.



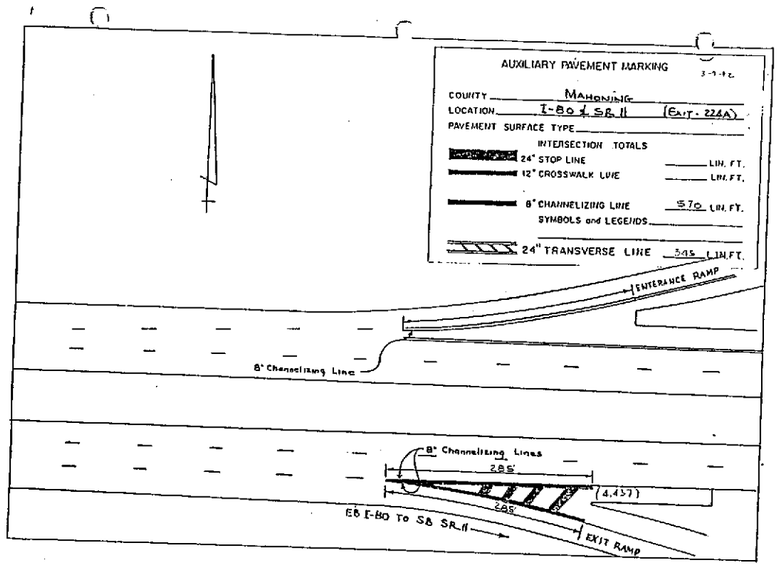
CALCULATED

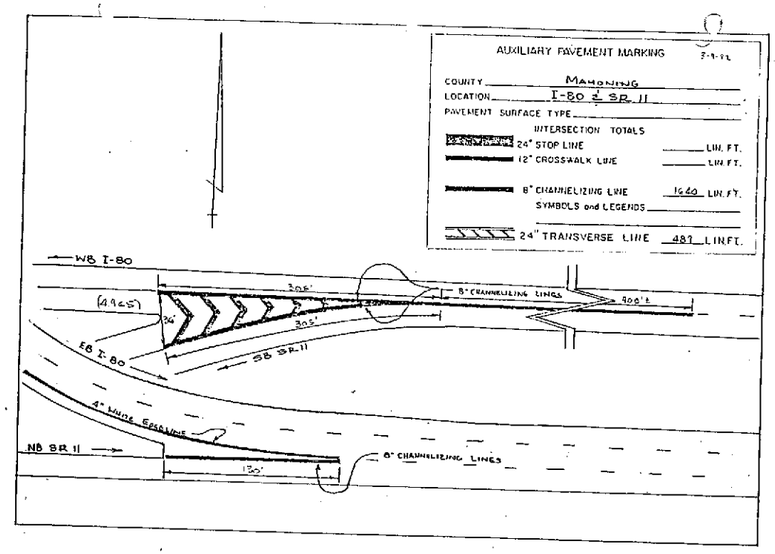
CHECKED

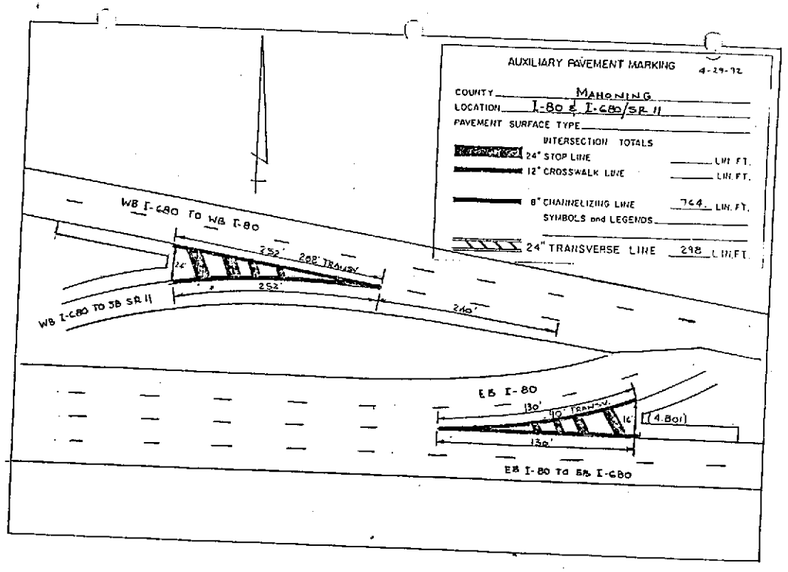
AUXILIARY PAVEMENT MARKING

MAH-80-0.52

58
73







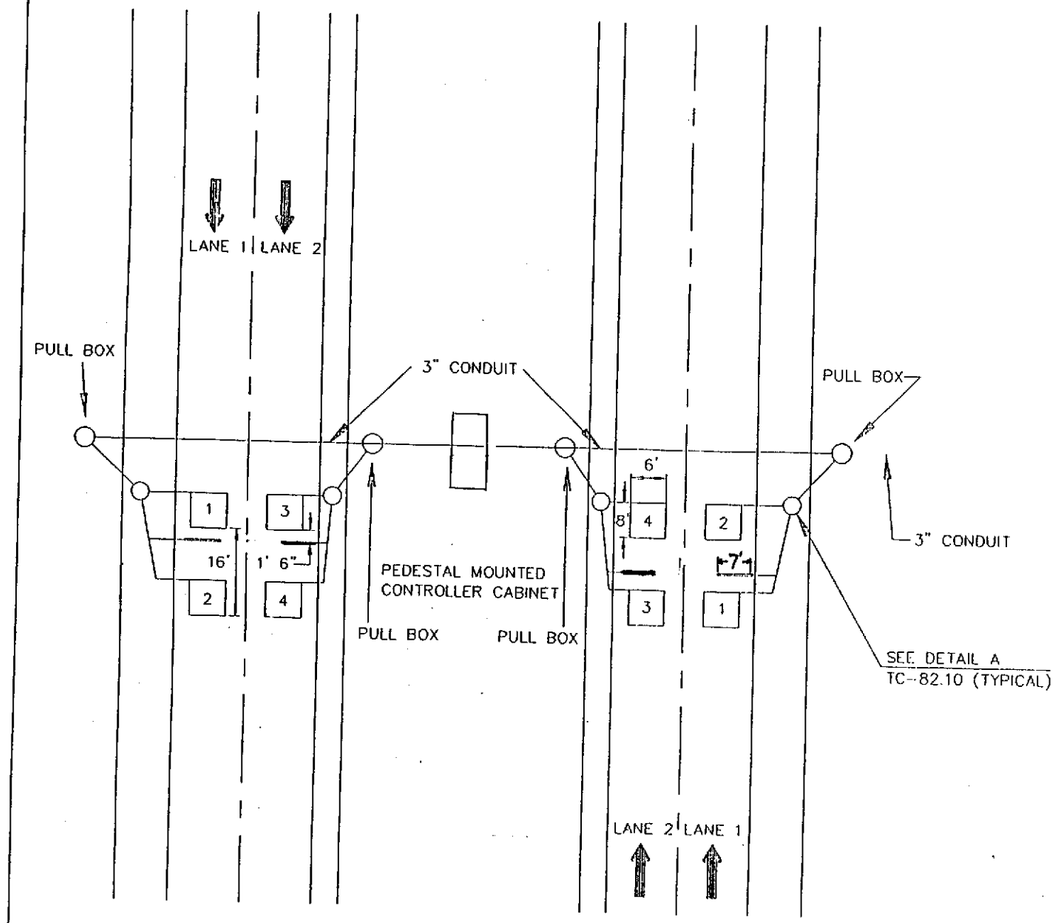
CALCULATED

DRAWN

AUXILARY PAVEMENT MARKING

MAH-80-0.52

59
73



AUTOMATIC TRAFFIC RECORDER INSTALLATION
4 LANE SECTION

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION
603	00400	320	LIN. FT.	4" CONDUIT, TYPE E
608	10000	8.75	SQ. FT.	4" CONCRETE WALK
625	25500	50	LIN. FT	3" CONDUIT, 713.04
625	25900	95	LIN. FT.	3" CONDUIT, JACKED AND DRILLED UNDER PAVEMENT
625	29000	50	LIN. FT.	TRENCH
625	30700	2	EACH	PULL BOX, 713.08, 18"
625	32000	1	EACH	GROUND ROD
632	27500	300	LIN. FT	LOOP DETECTOR PAVMENT CUTTING
632	64900	1500	LIN. FT.	LOOP DETECTOR WIRE, TYPE E
632	65200	760	LIN. FT.	LOOP DETECTOR LEAD-IN CABLE
632	72000	1	CU. YD.	CONCRETE FOR ANCHOR BASE FOUNDATION
632	89800	1	EACH	PEDESTAL, 3', TRANSFORMER BASE
632	90400	4	EACH	PIEZOCABLE CLASS II AXLE SENSOR
632	90500	380	LIN. FT.	SIGNALIZATION, MISC.: RG 58 COAXIAL LEAD-IN CABLE
633	65001	1	EACH	CABINET, WITHOUT CONTROLLER, AS PER PLAN, PREWIRED, PEDESTAL MOUNTING, TYPE G.

TDW 02/18/94
MAB00534.DWG

NOTES

1. ALL LOOPS SHALL BE 6' X 8'. LOOPS SHALL BE SPACED 16' 0" FROM LEADING EDGE. INSTALLATION OF LOOPS SHALL CONFORM TO TC-82.10.

2. THE PIEZOCABLE CLASS II AXLE SENSOR SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S DIRECTION. THE END OF A PIEZOCABLE CLASS II AXLE SENSOR SHALL NOT BE INSTALLED WITHIN SIX (6) INCHES OF A LONGITUDINAL JOINT. PAYMENT WILL BE AT THE CONTRACT UNIT PRICE BID PER EACH FOR ITEM 632 PIEZOCABLE CLASS II AXLE SENSOR AND SHALL INCLUDE ALL MATERIAL, LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY FOR EACH INSTALLATION, IN PLACE COMPLETE AND ACCEPTED.

3. THE CABINET SHALL BE CLEAN CUT IN DESIGN AND APPEARANCE AND SHALL CONFORM TO THE FOLLOWING:

A. IT SHALL BE MADE OF ACCEPTABLE STRENGTH ALUMINUM (NATURAL FINISH).

B. THE MINIMUM USEABLE INSIDE DIMENSIONS SHALL BE: HEIGHT 30", WIDTH 19", AND DEPTH 13".

C. HINGED DOOR SHALL BE PROVIDED ON THE FRONT OF THE CABINET WHICH SHALL INCLUDE SUBSTANTIALLY THE FULL AREA OF THE FRONT OF THE CABINET.

D. THE DOOR SHALL BE FULLY GASKETED SO THAT WHEN CLOSED IT SHALL FIT CLOSELY TO THE GASKETING MATERIAL, MAKING THE CABINET WEATHER RESISTANT. A ONE POINT LATCH SHALL BE PROVIDED FOR THIS PURPOSE.

E. THE DOOR SHALL BE PROVIDED WITH AN ACCEPTABLE STRONG LOCK WITH PERMANENT LUBRICATION AND A WEATHERPROOF TAB AND FURNISHED WITH TWO KEYS.

F. THE DOOR PINS SHALL BE GREASE-LUBRICATED AND OF A NON-CORRODING STEEL MATERIAL.

G. THE CABINET SHALL CONTAIN ONE SHELF FOR SUPPORT OF TRAFFIC COUNTING EQUIPMENT. SHELF TO BE CENTERED AT 15" FROM THE TOP OF THE CABINET.

H. THE CABINET SHALL INCLUDE A VENT.

I. THREE EACH 12 WIRE TERMINAL BLOCKS 6 INCHES FROM BOTTOM OF CABINET CENTERED ON BACK PANEL (PENN UNION # 6012 OR APPROVED EQUAL).

J. MOUNTING FACILITIES SHALL INCLUDE ONE BACK PANEL WITH 5 HOLES (ALUMINUM).

ALL PIECES SHALL BE SMOOTH AND FREE FROM FLAWS, CRACKS, BLOWHOLES AND OTHER IMPERFECTIONS. THE CABINET SHALL BE ORIENTED SO THAT THE DOOR OPENS TOWARD THE ROADWAY.

4. CABLE AND WIRE SHALL BE IDENTIFIED IN ACCORDANCE WITH 632.04. IDENTIFICATION SHALL INCLUDE THE DIRECTION OF TRAVEL (IE., NB, WB) AND THE LOOP NUMBER AS SHOWN. EACH CABLE AND WIRE SHALL HAVE 5' 0" COILED IN THE CONTROLLER CABINET FOR CONNECTION BY OTHERS.

5. ADJACENT LOOPS (TRANSVERSE AND LONGITUDINAL) SHALL BE INSTALLED IN OPPOSITE DIRECTIONS, ie., LANE 1, LOOP 1 AND LANE 2, LOOP 4 CLOCKWISE; LANE 1, LOOP 2, AND LANE 2, LOOP 3 COUNTERCLOCKWISE.

6. REFERENCE IS MADE TO STANDARD DRAWING HL-30.11 FOR DETAILS OF DRAINING PULLBOXES. UNDERDRAINS FOR PULLBOXES SHALL BE USED AS DIRECTED BY THE ENGINEER AND SHALL BE PROVIDED WHERE THE LENGTH REQUIRED FOR A SATISFACTORY OUTLET DOES NOT EXCEED APPROXIMATELY 40 FEET. AN ESTIMATED QUANTITY OF 320 LINEAR FEET OF ITEM 603, 4" CONDUIT TYPE E IS INCLUDED IN THE GENERAL SUMMARY FOR THIS PURPOSE.

7. FIVE (5) WORKING DAYS PRIOR TO THE SCHEDULED INSTALLATION, THE CONTRACTOR SHALL CONTACT MR. JAMES ROBSON AT (614) 466-3727.

8. ALL ITEMS SHALL CONFORM TO C & M SPECIFICATIONS 625, 713, 632, 732, 633 AND 733, UNLESS OTHERWISE SPECIFIED.

9. ON AN EIGHT LANE SECTION, LANES 1 AND 2 SHALL BE SAWED TO ONE SIDE OF THE ROADWAY AND LANES 3 AND 4 SHALL BE SAWED TO THE OTHER.

10. USE RG 58 COAXIAL LEAD-IN CABLE FROM PULL BOX TO CABINET FOR EACH PIEZOCABLE SENSOR.

CALCULATED JP
CHECKED DES

TRAFFIC CONTROL
AUTOMATIC TRAFFIC RECORDER INSTALLATION - 4

AUTOMATIC

MAH-80-0.52

60
73

BRIDGE DECK TREATMENT

F.H.W.A. REGION	STATE	PROJECT NO.	FUNDS
5	OHIO		

61/73

BRIDGE DECK DATA

	COUNTY, ROUTE AND BRIDGE NO.	LENGTH (BRIDGE LIMITS)	WIDTH	BRIDGE DECK AREA	254	BRIDGE DECK OVERLAYS AND REPAIRS			202	202	202	254	ASPHALT CONCRETE		407	SPECIAL	PATCHING CONCRETE STRUCTURES		511	511	SPECIAL	516	516	516	520
					PAVEMENT PLANING BITUMINOUS VARIABLE	☑ SS-850 SUPER PLASTICIZED DENSE CONCRETE OVERLAY USING HYDRODEMOLITION 2" THICK OVERLAY	VARIABLE THICKNESS	FULL DEPTH REPAIR	REMOVAL MISCELLANEOUS: ABUTMENT BEAM SEAT CLEANING	WEARING COURSE REMOVED, AS PER PLAN	REMOVAL MISC.: VERTICAL EXTENSIONS	PAVEMENT PLANING BITUMINOUS 0.75"	THICKNESS IN INCHES	ITEM 448 INTERM. COURSE	TACK COAT USING SS-924 0.075 GAL/S.Y.	RUBBERIZED OPEN GRADED FRICTION COURSE, 3/4" THICK	ITEM	SQ.FT.	CLASS S CONCRETE MISC.: CURB REPAIR	CLASS S CONCRETE MISC.: VARIBLE DEPTH PREPLACED	MEMBRANE WATERPROOFING TYPE 3	JOINT SEALER, 705.04	VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINTS	RESET BEARING	PNEUMATICALLY PLACED MORTAR
		UN.FT.	UN.FT.	SQ.YDS.	SQ.YDS.	SQ.YDS.	CU.YDS.	CU.YDS.	LUMP	SQ.YDS.	UN.FT.	SQ.YDS.		CU.YDS.	GALLONS	CU.YDS.			CU.YDS.	CU.YDS.	SQ.YDS.	UN.FT.	UN.FT.	EACH	SQ.FT.
PART 1	MAH-80-0075L	143.5	39	622	622	622	21	1		622			2.25	39	47	13									
	MAH-80-0075R	143.5	51.6	823	823	823	27	1		823			2.25	52	62	17					639				
	MAH-80-0125L	2476.5	30	8255	8255	8255	275	10	LUMP	8255	210		1.75	401	619	172	519	475	102		846				
	MAH-80-0125R	2476.5	30	8255	8255	8255	275	10	LUMP	8255	210		1.75	401	619	172	519	475	102		8255	210	210	10	
	MAH-80-0247L	143.6	38	606												13					8255	210	210	10	
	MAH-80-0247R	143.6	38	606												13									
	MAH-80-0313L	113.7	38	480												10									
	MAH-80-0313R	113.7	38	480												10									
	MAH-80-0332L	166.6	41.4	766								766				16									
	MAH-80-0332R	166.6	38	703								703				15									
	MAH-80-0515L	160.6	38	678								678				14									
	MAH-80-0515R	67.6	40.4	303								303				6									
PART 2	MAH-11-1604L	262.2	53.8	1567							108		1.50	65	118	33				13	1567		108		
	MAH-11-1605L	239	26	690							52		1.50	29	52	14				6	690		52		
	MAH-11-1615L	230.4	32	819							64		1.50	34	61	17				7	819		64		400
	SUB-TOTAL PART 1				17955	17955	598	22	LUMP	17955	420	2450		893	1347	471	950	204			17955	420	420	20	
	SUB-TOTAL PART 2										224			128	231	64				26	3076		224		400
	TOTAL				17955	17955	598	22	LUMP	17955	644	2450		1021	1578	535	950	204		26	21071	420	644	20	400

ITEM 520 – PNEUMATICALLY PLACED MORTAR

A QUANTITY OF ___400___S.F. OF ITEM 520, PNEUMATICALLY PLACED MORTAR STRUCTURES, HAS BEEN PROVIDED TO BE USED, AS DIRECTED, BY THE PROJECT ENGINEER/SUPERVISOR. THIS ITEM MAY BE USED TO PATCH CURBS, PARAPETS, COLUMNS, MEDIANS, WINGWALLS, BACKWALLS, ABUTMENTS, AND BEAM SEATS.

ITEM 519 – PATCHING CONCRETE STRUCTURES

A QUANTITY OF ___950___S.F. OF ITEM 519, PATCHING CONCRETE STRUCTURES, HAS BEEN PROVIDED TO BE USED, AS DIRECTED, BY THE PROJECT ENGINEER/SUPERVISOR. THIS ITEM MAY BE USED TO PATCH CURBS, PARAPETS, COLUMNS, MEDIANS, WINGWALLS, BACKWALLS, ABUTMENTS, AND BEAM SEATS.

PROTECTIVE COURSE FOR MEMBRANE WATERPROOFING:

MEMBRANE WATERPROOFING TYPE 3: A MINIMUM OF 1-1/2" INCHES OF 448 ASPHALT CONCRETE SHALL BE PLACED OVER THE MEMBRANE. ON CONCRETE SLAB DECKS WATERPROOFING SHALL EXTEND 2 FEET BEYOND DECK ONTO EACH APPROACH SLAB.

MH8011

BRIDGE DECK TREATMENT

F.H.W.A. REGION	STATE	PROJECT NO.	FUNDS
5	OHIO		

62/73

BRIDGE DECK DATA

	COUNTY, ROUTE AND BRIDGE NO.	LENGTH (BRIDGE LIMITS) LIN.FT.	WIDTH LIN.FT.	BRIDGE DECK AREA SQ.YDS.	202 PORTIONS OF STRUCTURES REMOVED LUMP	LUMP CLASS S CONCRETE SUPERSTRUCTURE LUMP	516 STRUCTURAL JOINT OR JOINT SEALER, MISC: STRUCTURAL EXPANSION JOINT REPAIR LUMP	517 RAILING MISCELLANEOUS:, BRIDGE RETROFIT RAILING LIN. FT.	850 TEST SLAB LUMP
PART 1	MAH-80-0075L	143.5	39	622				312	LUMP
	MAH-80-0075R	143.5	51.6	823				312	LUMP
	MAH-80-0125L	2476.5	30	8255				4954	LUMP
	MAH-80-0125R	2476.5	30	8255	LUMP	0.50	LUMP	4954	LUMP
	MAH-80-0247L	143.6	38	606				312	
	MAH-80-0247R	143.6	38	606				312	
	MAH-80-0313L	113.7	38	480				251	
	MAH-80-0313R	113.7	38	480				251	
	MAH-80-0332L	166.6	41.4	766				331	
	MAH-80-0332R	166.6	38	703				328	
	MAH-80-0515L	160.6	38	678				314	
	MAH-80-0515R	67.6	40.4	303				64	
PART 2	MAH-11-1604L	262.2	53.8	1567				590	
	MAH-11-1605L	239	26	690				513	
	MAH-11-1615L	230.4	32	819				511	
	SUB-TOTAL PART 1				LUMP	0.50	LUMP	12695	LUMP
	SUB-TOTAL PART 2							1614	
	TOTAL				LUMP	0.50	LUMP	14309	LUMP

SCOPE OF WORK ON STRUCTURES

F.H.W.A. REGION	STATE	PROJECT NO.	FUNDS
5	OHIO		

63/73

(ALL PLAN NOTES AND MAINTENANCE OF TRAFFIC REQUIREMENTS SHALL GOVERN SCHEDULING OF PLAN WORK.)

ABUTMENT BEARINGS RESET ON STRUCTURES MAH-8Ø-Ø125 L/R

REMOVE VERTICAL EXTENSIONS ON STRUCTURES DESIGNATED.

REMOVE BITUMINOUS ASPHALT WEARING COURSE AS PER PAVEMENT PLANING BITUMINOUS ON STRUCTURES DESIGNATED.

REMOVE CONCRETE WEARING COURSE ON STRUCTURES AS DESIGNATED.

PERFORM HYDRODEMOLITION ON STRUCTURES WHICH WILL BE OVERLAID.

PERFORM ANY FULL DEPTH REPAIR ON STRUCTURES IF REQUIRED.

REPAIR DAMAGED STRUCTURAL EXPANSION JOINTS.

PLACE SUPERPLASTICIZED DENSE CONCRETE OVERLAY AND VARIABLE THICKNESS ON DESIGNATED STRUCTURES.

REPAIR CONCRETE CURB ON STRUCTURES MAH-8Ø-Ø125 L/R.

PERFORM CLASS S VARIABLE DEPTH PREPLACED ON DESIGNATED STRUCTURES

PERFORM VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINTS ON DESIGNATED STRUCTURES.

PLACE MEMBRANE WATERPROOFING TYPE 3.

PLACE 448 INTERMEDIATE COURSE OVER STRUCTURES PREVIOUSLY WATERPROOFED.

PLACE RUBBERIZED OPEN GRADED FRICTION COURSE OVER ALL PLAN STRUCTURES.

REPAIR DAMAGED CONCRETE PARAPET WALL ON STRUCTURE MAH-8Ø-Ø125 R.

PERFORM PATCHING OF CONCRETE STRUCTURES ON DESIGNATED BRIDGES.

RETROFIT, ALL DESIGNATED STRUCTURES, RAILING WITH THRIE BEAM BRIDGE RAILING.

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DISTRICT FOUR OPERATIONS
BRIDGE SECTION

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
	KR		FM	9-93	

GENERAL NOTES

FHWA REGION	STATE	PROJECT NO.	FUNDS
5	OHIO		

64/73

ITEM 202 - WEARING COURSE REMOVED, AS PER PLAN

THE INTENT OF THIS ITEM IS FOR THE CONTRACTOR TO GRIND 1" OF THE EXISTING CONCRETE OVERLAY AFTER ALL BITUMINOUS PLANING HAS BEEN COMPLETED. THE REMAINING UNSOUND CONCRETE SHALL BE REMOVED BY HYDRODEMOLITION.

MAH-80-0075 L/R
MAH-80-0125 L/R

ITEM 202 - REMOVAL MISCELLANEOUS: ABUTMENT BEAM SEAT CLEANING

THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL ACCUMULATED DEBRIS ON THE ABUTMENT BEAM SEATS FOR STRUCTURES MAH-80-0125 L/R. ~~ACCUMULATION IS DEFINED AS ANY THICKNESS CAPABLE OF RETAINING MOISTURE.~~ ALL ACCUMLATION SHALL BE PROPERLY DIPOSED OF SO THAT NO DEBRIS ENTERS MEANDER CREEK RESERVOIR. ALL CLEANING SHALL BE COMPLETED PRIOR TO BEARINGS HAVING BEEN RESET. AS PER ITEM 516 - RESET BEARING.

ITEM 254 - PAVEMENT PLANING BITUMINOUS

THE INTENT OF THIS ITEM IS TO REMOVE THE BITUMINOUS ASPHALT AND THE WATERPROOFING (IF PRESENT) TO THE SURFACE OF THE CONCRETE WEARING SURFACE, VARIABLE THICKNESS, BY MECHANICAL GRINDING.

ITEM 254 - PAVEMENT PLANING BITUMINOUS - .75"

THE INTENT OF THIS ITEM IS TO REMOVE .75" OF THE EXISTING BITUMINOUS ASPHALT WEARING COURSE, BY MECHANICAL GRINDING.

ITEM 516 - RESET BEARING

THIS ITEM SHALL INCLUDE ALL WORK NECESSARY TO PROPERLY ALIGN BEARINGS AS WELL AS THEIR CLEANING AND PAINTING AT THE ABUTMENTS ONLY. INCLUDED SHALL BE THE REQUIRED JACKING AND TEMPORARY SUPPORT OF THE SUPERSTRUCTURE, DISASSEMBLY OF THE BEARINGS, HAND TOOL CLEANING (GRINDING IF NECESSARY), 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 EXITING WELDS AND REWELDING SO THAT THE BEARINGS ARE VERTICALLY ALIGNED AT 60 DEGREES F, REASSEMBLY OF THE BEARINGS AND REMOVAL OF THE JACKS. ALL WORK SHALL BE TO THE SATISFACTION OF THE ENGINEER. THE CONTRACTOR SHALL SUBMIT HIS METHOD OF JACKING THE BEAMS TO THE DIRECTOR FOR PRIOR APPROVAL BEFORE COMMENCING THE JACKING OPERATION. THE CONDITION OF THE EXISTING BEARINGS SHALL BE FIELD VERIFIED BY THE PROJECT ENGINEER TO ENSURE THAT THEY CAN BE INCORPORATED INTO THE REHABILITATED STRUCTURE, IF THEY ARE FOUND TO BE NOT SALVAGEABLE THE CONTRACTOR SHALL REPLACE THOSE BEARINGS.* [redacted] THE CONTRACTOR DOES HAVE THE OPTION OF REPLACING THE BEARINGS IN LIEU OF PERFORMING THE REFURBISHING AS DESCRIBED. ANY ADDITIONAL COSTS IN PERFORMING THIS REPLACEMENT SHALL BE AT NO COST TO THE STATE. PRIOR TO PERFORMING THE ABOVE WORK THE PROJECT ENGINEER SHALL CONDUCT A VISUAL INSPECTION OF THE BEARING DEVICES AND INDICATE TO THE CONTRACTOR WHICH ONES ARE TO BE REFURBISHED. ANY EXTRA QUANTITY SHALL BE NON-PERFORMED.

ITEM 511 - CLASS S CONCRETE MISC.: VARIABLE DEPTH PREPLACED

THE INTENT OF THIS ITEM IS FOR THE CONTRACTOR TO PRE-PLACE VARIABLE THICKNESS CLASS S CONCRETE USING NO. 8 SIZE COURSE AGGREGATE PRIOR TO THE STRUCTURE BEING WATERPROOFED AND PAVED WITH ASPHALT CONCRETE. AFTER THE WEARING COURSE HAS BEEN REMOVED THE CONTRACTOR SHALL SOUND THE DECK AND OUTLINE OTHER AREAS OF LOOSE AND UNSOUND CONCRETE FOR REMOVAL SUBJECT TO THE APPROVAL OF THE ENGINEER. AEROSOL SPRAY PAINT FOR OUTLINING SHALL BE PROVIDED BY THE CONTRACTOR.

WHERE THE BOND BETWEEN THE CONCRETE AND ANY REINFORCING STEEL HAS BEEN DESTROYED, OR WHERE MORE THAN ONE HALF OF THE PERIPHERY OF THE STEEL HAS BEEN EXPOSED, THE ADJACENT CONCRETE SHALL BE REMOVED TO THE DEPTH THAT WILL PROVIDED A MINIMUM 3/4" CLEARANCE AROUND THE STEEL EXCEPT WHERE OTHER REINFORCING STEEL MAKES THIS IMPRACTICABLE. REINFORCEMENT WHICH HAS BECOME LOOSE SHALL BE ADEQUATELY SUPPORTED AND TIED BACK INTO PLACE. REINFORCEMNET THAT IS DAMAGED BY ANY OF THE CONTRACTOR'S OPERATIONS SHALL BE REMOVED AND REPLACED AT NO COST TO THE DEPARTMENT. WHERE THE DECK IS SOUND FOR LESS THAN ONE HALF OF ITS ORIGINAL DEPTH, THE CONCRETE SHALL BE REMOVED FULL DEPTH EXCEPT FOR LIMITED AREAS AS DESIGNATED BY THE ENGINEER. AFTER COMPLETION OF EACH REMOVAL OPERATION, THE CONTRACTOR WILL AGAIN SOUND AND RE-OUTLINE UNSOUND AREAS OF THE DECK SUBJECT TO APPROVAL OF THE ENGINEER TO ENSURE THAT ONLY SOUND CONCRETE REMAINS. FINAL SOUNDING OF THE DECK SHALL BE DONE BY THE ENGINEER AND SHALL NOT BE PERFORMED WITHIN 24 HOURS AFTER A RAIN. IN NO CASE SHALL THE FINAL SOUNDING BE MADE UNLESS THE DECK IS DRY. FINAL SOUNDING SHALL CONSIST OF AS MANY SUCCESSIVE RE-SOUNDINGS AS REQUIRED TO ENSURE THAT ALL DETERIORATED AND FRACTURED CONCRETE HAS BEEN REMOVED.

CONCRETE SHALL BE REMOVED BY CHIPPING, CHIPPING HAMMERS SHALL NOT BE HEAVIER THAN THE NOMINAL 35-POUND CLASS AND SHALL BE OPERATED AT AN ANGLE OF LESS THAN 45 DEGREES WITH RESPECT TO THE SURFACE OF DECK. CONCRETE SHALL REMOVED IN A MANNER THAT PREVENTS CUTTING, ELONGATING OR DAMAGING REINFORCING STEEL. CONTAMINATION OF THE DECK BY CONSTRUCTION EQUIPMENT OR FROM ANY OTHER SOURCE SHALL BE PREVENTED.

NOT MORE THAN 24 HOURS PRIOR TO PLACING THE VARIABLE DEPTH CLASS S CONCRETE, ALL SURFACES TO WHICH THE CONCRETE IS TO BOND SHALL BE CLEANED BY ABRASIVE BLASTING OR AN APPROVED METHOD OF WATER BLASTING WITH 7000 PSI MINIMUM PRESSURE. THE SURFACES SHALL BE MADE FREE OF SPALLS, LAITANCE AND ALL CONTAMINENTS DETRIMENTAL TO ACHIEVING AN ADEQUATE BOND.

PRIOR TO ANY REMOVAL, THE PERIMETER OF ALL REMOVAL AREAS SHALL BE SAWED TO A DEPTH OF 1" MINIMUM. THE COST OF THIS ITEM IS INCIDENTAL TO THE COST OF THE ITEM 511 - CLASS S CONCRETE MISC.: VARIABLE DEPTH PREPLACED AND THEREFORE SHALL BE INCLUDED FOR PAYMENT WITH THIS ITEM.

* A contingency item of two (2) bearing devises has been set up to be used if necessary. Payment shall be made under Item 516, Each, Bearing Derise, Rocker

STATE OF OHIO
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GENERAL NOTES

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GENERAL NOTES

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SPECIAL - SUPERPLASTICIZED DENSE CONCRETE OVERLAY USING HYDRO-DEMOLITION

PRIOR TO THE LANE CLOSURE, EXPLORATORY WORK WILL BE PERFORMED. A LANE CLOSURE CAN BEGIN AT 7:30 P.M. THE NIGHT BEFORE PERFORMING HYDRODEMOLITION, WITHIN THIS LANE CLOSURE THE ASPHALT WEARING COURSE SHALL BE REMOVED WITH A MECHANICAL GRINDER. THE CONTRACTOR SHALL ALSO REMOVE THE EXISTING RISER BARS IN THE AREAS OF THE STRUCTURE WHERE THE ASPHALT WEARING COURSE HAS BEEN REMOVED. ENTRANCE AND EXIT APPROACHES WILL BE PLANED SO THAT AN ACCEPTABLE TRANSITION CAN BE MAINTAINED. TEMPORARY ASPHALT WEDGES AT THE CENTERLINE AND ANY ASPHALT DECK PATCHES NEEDED SHALL BE PROVIDED BEFORE THE LANE IS OPENED TO TRAFFIC. ADDITIONAL SIGNS SHALL BE PROVIDED TO WARN MOTORISTS OF THE BUMPS IN THESE ISOLATED AREAS. THE ASPHALT OVERLAY WILL NOT BE REMOVED UNLESS THE CONCRETE OVERLAY CAN BE PLACED IN THE FOLLOWING TWO DAYS.

AFTER 1" OF THE EXISTING CONCRETE OVERLAY HAS BEEN REMOVED BY MECHANICAL GRINDING, HYDRODEMOLITION SHALL BE USED TO REMOVE 1" OF THE DECK AND ALL VARIABLE THICKNESS CONCRETE AFTER WHICH A 2" SUPERPLASTICIZED DENSE CONCRETE OVERLAY SHALL BE PLACED. IN LIEU OF THE CURING REQUIREMENTS NOTED IN SS850 THE CONTRACTOR WILL BE PERMITTED TO OPEN THE NEW OVERLAY TO TRAFFIC WHEN THE AVERAGE MODULUS OF RUPTURE FOR TWO TESTS IS NOT LESS THAN 500 PSI. THE OVERLAY WILL BE A FINISHED TEXTURE DECK. THE FINISHED GRADE WILL BE 1" ABOVE THE EXISTING CONCRETE EXCEPT AT THE EXPANSION JOINTS. AT THE EXPANSION JOINTS THE CONTRACTOR SHALL FEATHER THE OVERLAY DOWN SO THAT IT MEETS THE GRADE OF THE ORIGINAL EXPANSION JOINT STEEL. VERTICAL EXTENSION OF THE EXPANSION JOINTS SHALL BE PERFORMED PRIOR TO THE PLACEMENT OF THE ASPHALT WEARING COURSE.

CONTRACTOR NOTE

MAH-80-0125 L.T

THE CONTRACTOR SHALL BE ADVISED THAT FROM PRIOR PROJECTS THE WESTBOUND CONCRETE WEARING SURFACE HAS 15-25% OF ITS DECK AREA PATCHED WITH ASPHALT BELOW THE TOP REINFORCING STEEL. IF THE EXISTING TACK COAT AND ASPHALT IS NOT COMPLETELY REMOVED WITH THE HYDRODEMOLITION, ADDITIONAL REMOVING WILL BE REQUIRED BY SOME MEANS TO COMPLETELY REMOVE ANY TRACES OF TACK OR ASPHALT.

IN ADDITION TO THE REQUIREMENTS OF PROPOSAL NOTE 106-93, THE CONTRACTOR MUST BE VERY CAREFUL THAT NO WATER OR DEBRIS IS ALLOWED TO FALL INTO MEANDER CREEK RESERVOIR. PRIOR TO START OF HYDRODEMOLITION THE CONTRACTOR IS REQUIRED TO SUBMIT A COMPLETE CONTAINMENT PLAN TO THE DISTRICT CONSTRUCTION ENGINEER FOR APPROVAL.

ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER, MISC.; STRUCTURAL EXPANSION JOINT REPAIR

THE INTENT OF THIS ITEM IS FOR THE CONTRACTOR TO REPAIR THE EXPANSION JOINT ON THE REAR ABUTMENT, IN THE DRIVING LANE, ON STRUCTURE MAH-80-0125 R. THE CONTRACTOR SHALL REMOVE AND REPLACE THE DAMAGED SECTION OF THE EXISTING EXPANSION JOINT. THE CONTRACTOR SHALL PERFORM AN ON SITE INSPECTION WITH THE PROJECT ENGINEER BEFORE ANY WORK BEGINS AND/OR MATERIALS ARE ORDERED. THE CONTRACTOR'S METHOD OF REPAIR MUST BE SUBMITTED TO THE DISTRICT CONSTRUCTION ENGINEER FOR APPROVAL. SHOP DRAWING REQUIRED BY ITEM 501.05 OF THE C.M.S. (CONSTRUCTION AND MATERIAL SPECIFICATIONS) IS WAIVED.

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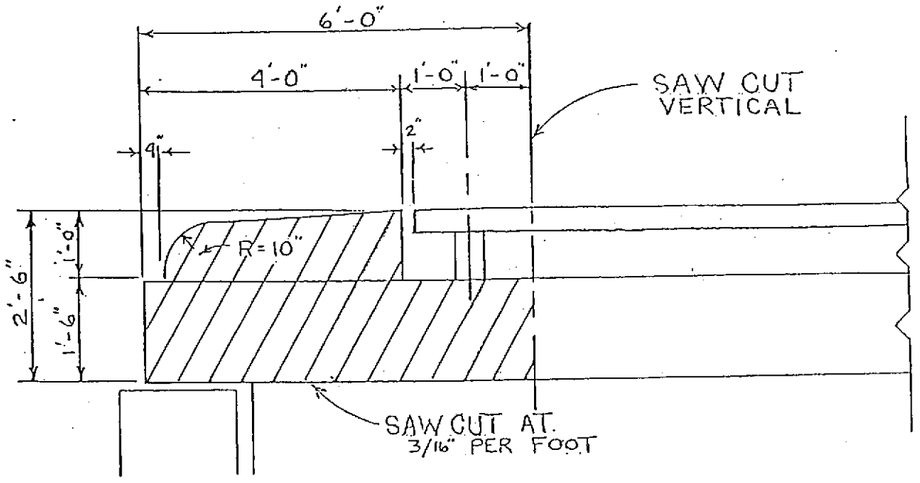
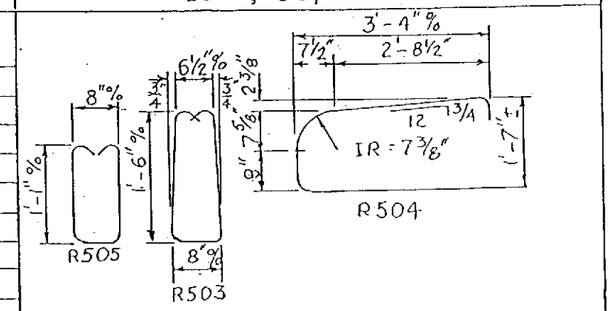
REMOVAL OF EXISTING PARAPET & PROPOSED REINFORCING STEEL DETAILS

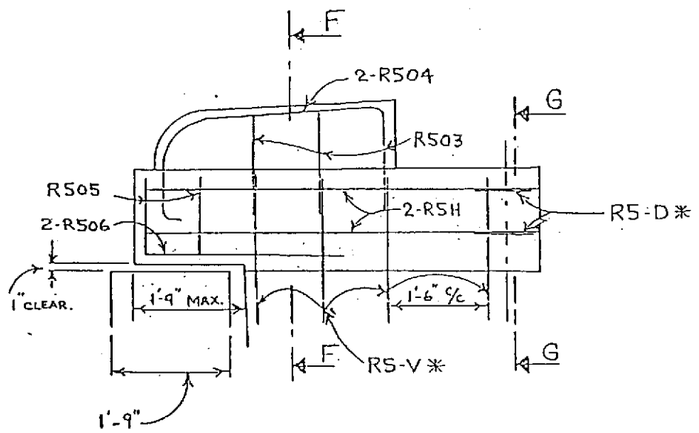


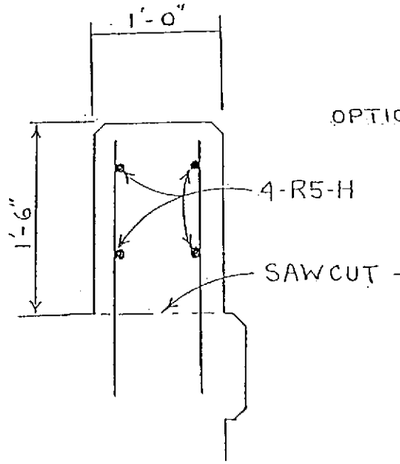
LEGEND

▨ - REMOVE

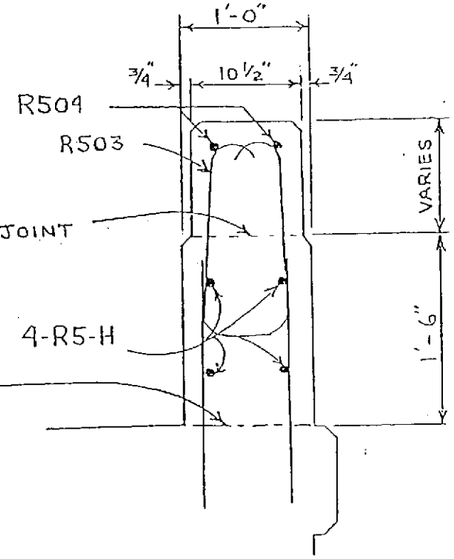
RAILING REINFORCING STEEL				
Mark	Length	Total	Shape	Bending Diagrams
R503	4'-2"	3	B1	
R504	5'-4"	2	B1	
R505	3'-5"	4	B1	
R506	3'-0"	2	S1	
R5-H	5'-10"	4	St	
R5-V	2'-0"	8	St	
R5-D	2'-1"	4	St	







SECTION G-G



SECTION F-F

* R5 - D DOWEL TO BE GROUTED INTO EXISTING CONCRETE, USE NON-SHRINKING EPOXY GROUT, DEPTH 6 INCHES

* R5 - V REBAR TO BE GROUTED INTO EXISTING CONCRETE, USE NON-SHRINKING EPOXY GROUT, DEPTH 8 INCHES

PORTABLE CONCRETE BARRIER, 32" SHALL BE USED AS DIRECTED BY THE PROJECT ENGINEER DURING THE REMOVAL AND REPLACEMENT OF PARAPET. A QUANTITY OF 110 LIN.FT. OF ITEM 622 - PORTABLE CONCRETE BARRIER, 32" HAS BEEN CARRIED TO THE GENERAL SUMMARY.

STATE OF OHIO
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MAH-80-0125R

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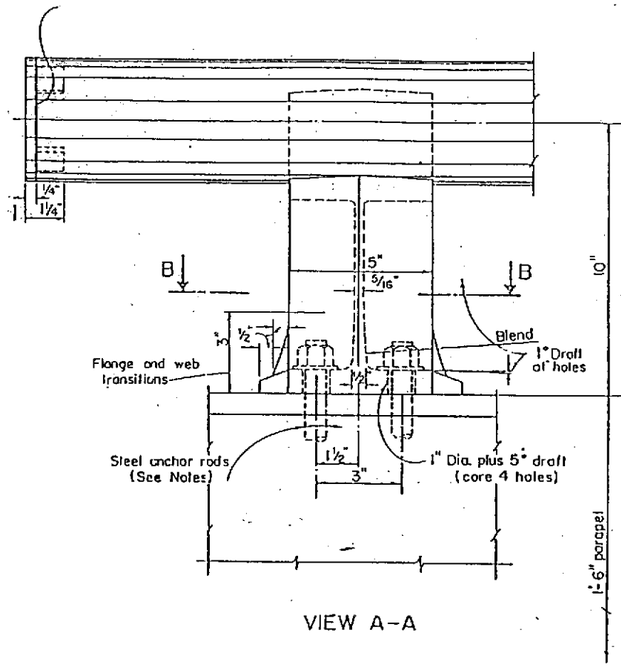
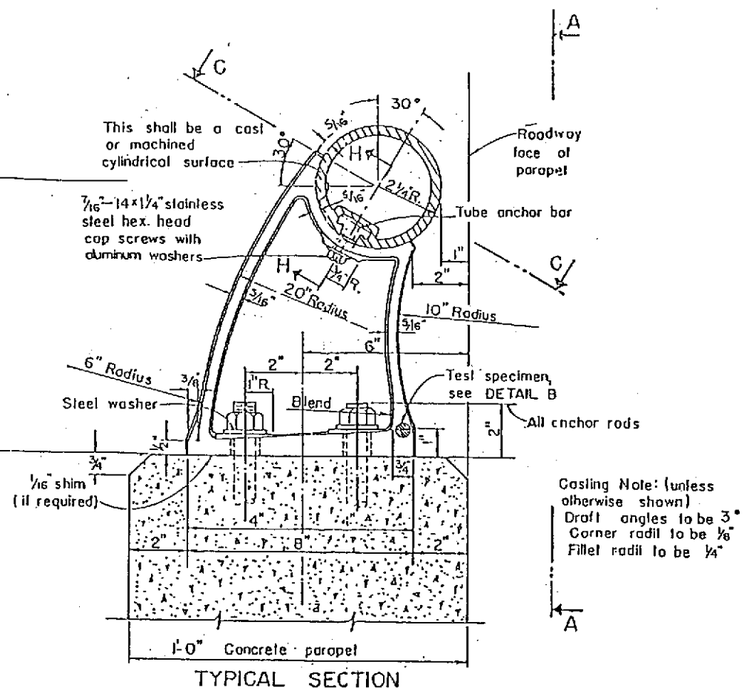


VIEW A-A



TYPICAL SECTION

Casting Note: (unless otherwise shown)
Draft angles to be 3°
Corner radii to be 1/8"
Fillet radii to be 1/4"

MATERIAL

THE CAST POST SHALL CONFORM TO ALUMINUM ALLOY A344-T4 AND TO THE OTHER REQUIREMENTS OF THE ALUMINUM ASSOC. SPEC. FOR "CAST ALUMINUM BRIDGE RAILING POSTS",ADOPTED APRIL, 1964. RAILING TUBE, INTERNAL SLEEVE AND TUBE ANCHOR BAR SHALL BE ALUMINUM ALLOY 6061-T6 OR 6062-T6. ALL ALUMINUM PRODUCTS EXCEPT CAST POSTS SHALL CONFORM IN ALL OTHER RESPECTS TO OHIO SPEC. SECTION M-7.19.

SHIMS

SHIMS SHALL BE PROVIDED UNDER RAILING POST, WHERE NECESSARY, TO PROVIDE FOR THE VERTICAL ADJUSTMENT OF THE POST. SHIMS SHALL BE OF ALUMINUM ALLOY, 1/16" THICK, CUT AS SHOWN. WHERE MORE ADJUSTMENT OF THE POST IS REQUIRED, FOR PLUMB ALIGNMENT, THAN CAN BE CORRECTED BY ONE SHIM, THE POST SHALL BE REMOVED AND THE CONCRETE SURFACE CORRECTED BY GRINDING.

ANCHORS

POST ANCHOR RODS, HEXAGONAL NUTS AND FLAT WASHERS SHALL BE GALVANIZED STEEL, WITH ALL GALVANIZING, EXCEPT ON THE LOWER 6" OF THE ANCHOR RODS, MEETING THE REQUIREMENTS OF OHIO SPECIFICATION SECTION M-74 (D). ANCHOR RODS, AS FABRICATED, SHALL HAVE THE FOLLOWING MINIMUM DIMENSIONS AND MECHANICAL PROPERTIES.

DIAMETER AT ROOT OF THREADS	0.620"
STRAIGHT PORTION OF ROD	1'-0" LONG
HOOK AT BOTTOM	2-1/2"-90 DEG. BEND
ANCHOR TENSILE STRENGTH	21,000 LBS.

HEXAGONAL NUT SHALL DEVELOPE THE TENSILE STRENGTH OF THE ANCHOR ROD.
CAP SCREWS SHALL BE STAINLESS STEEL, ASTM A276, TYPE 410 WITH A MINIMUM YIELD STRENGTH OF 80,000 PSI.

FINISH

THE OUTSIDE SURFACE OF THE POST FLANGES AND THE TUBE CAPS SHALL BE GIVEN A 40 GRIT FINISH.

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DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
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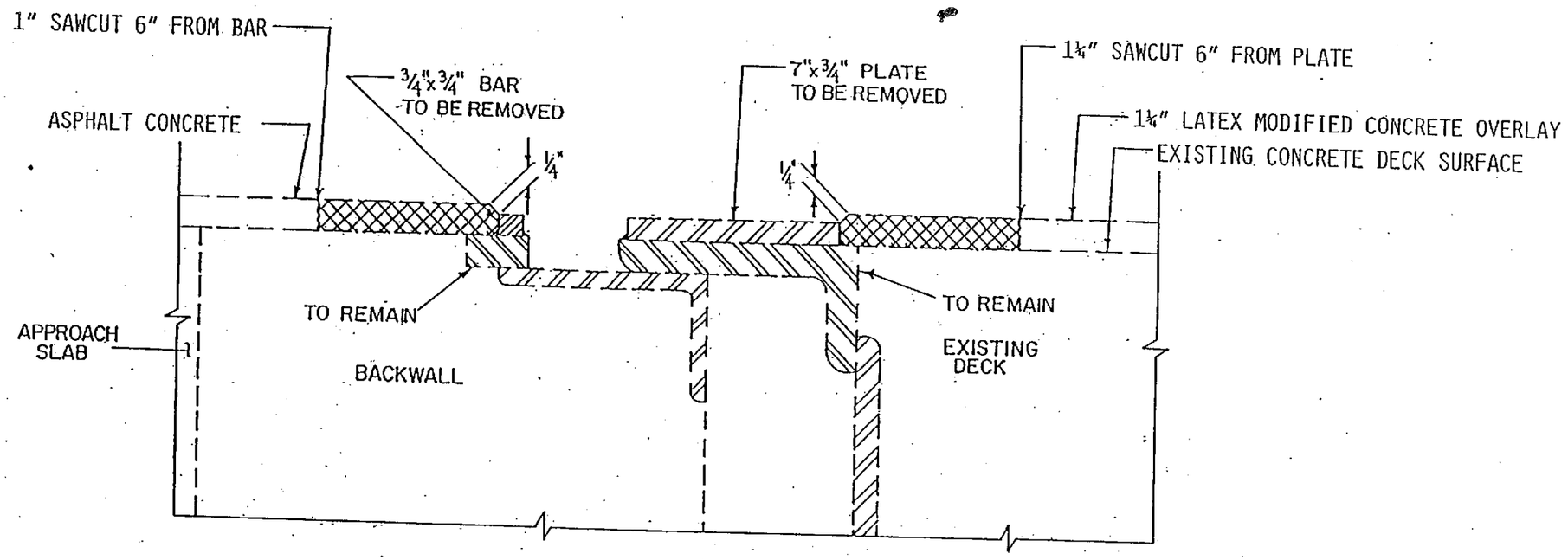
REMOVAL MISC., VERTICAL EXTENSIONS



EXISTING EXPANSION JOINT (ABUTMENT)

MAH-11-1604L
MAH-11-1605L
MAH-11-1615L

— TO BE REMOVED

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
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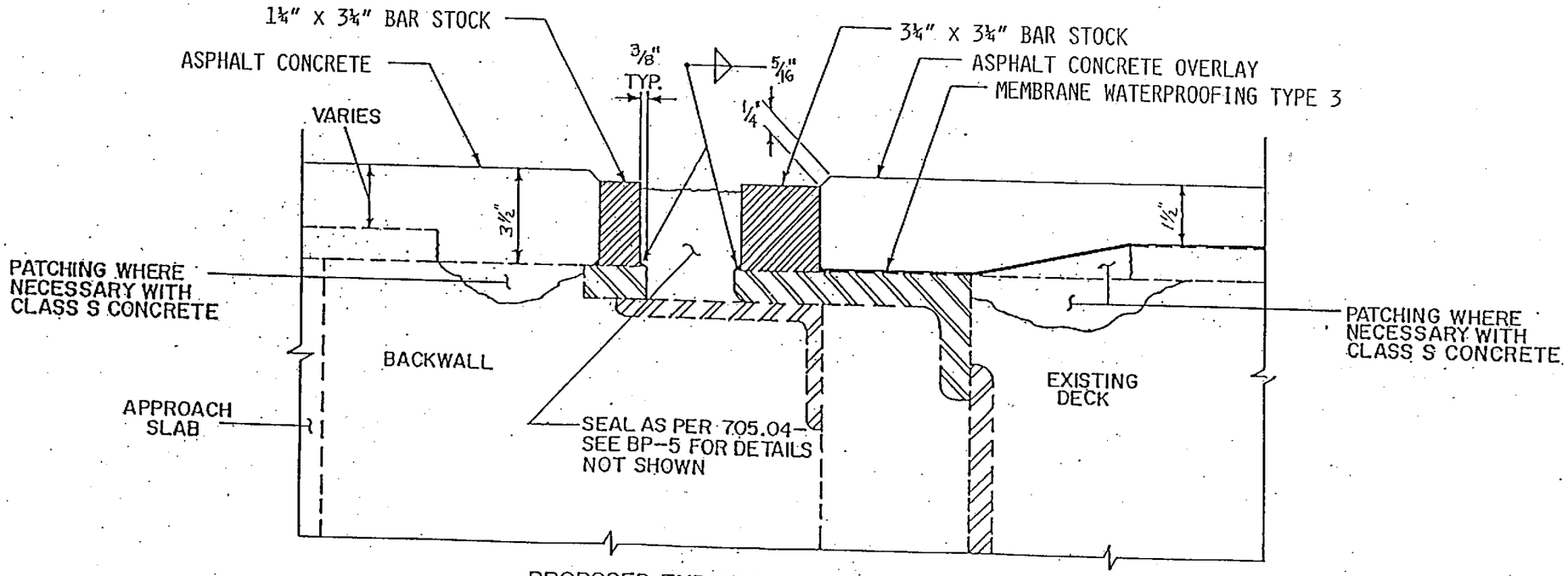
REMOVAL MISC., VERTICAL EXTENSIONS

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
KAE	KAE		[illegible]	9-93	

VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINTS



PROPOSED EXPANSION JOINT (ABUTMENT)

MAH-11-1604L
MAH-11-1605L
MAH-11-1615L

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VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINTS

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
KAE	KAE		[illegible]	8-93	

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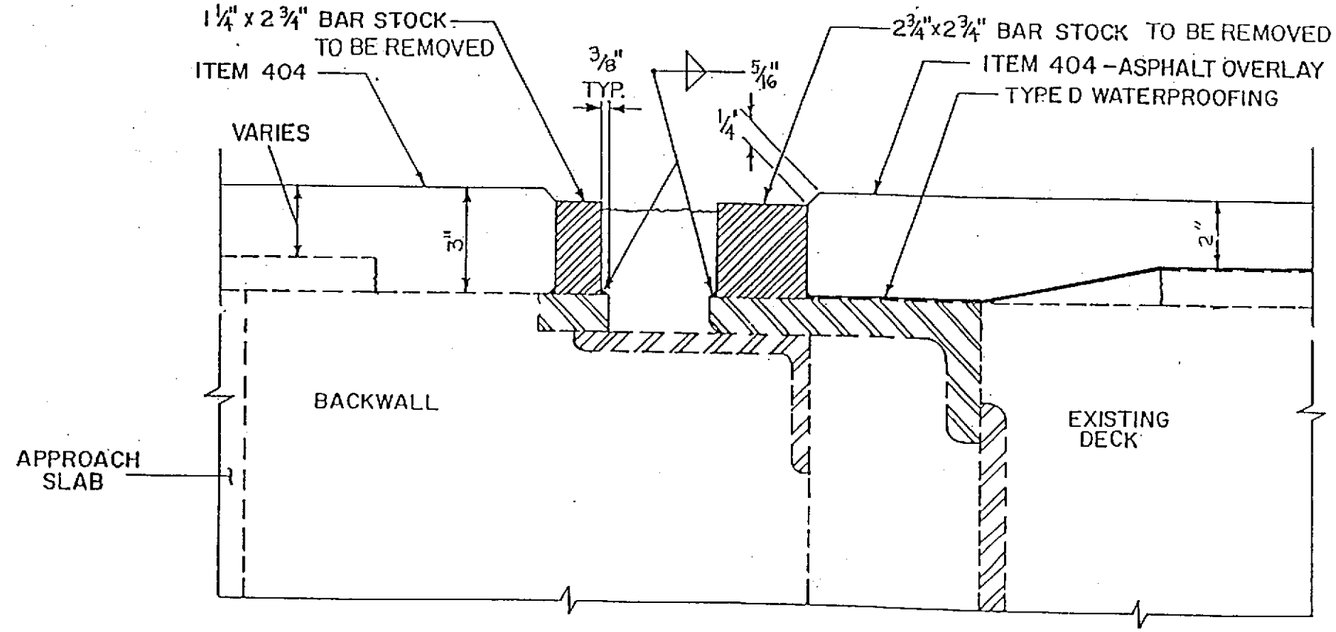
REMOVAL MISC., VERTICAL EXTENSIONS

EXISTING EXPANSION JOINT (ABUTMENT)



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ABUTMENT EXPANSION JOINT
MAH-80-0125 L&R

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
	KA		FM	9-93	

F.H.W.A. REGION	STATE	PROJECT NO.	FUNDS
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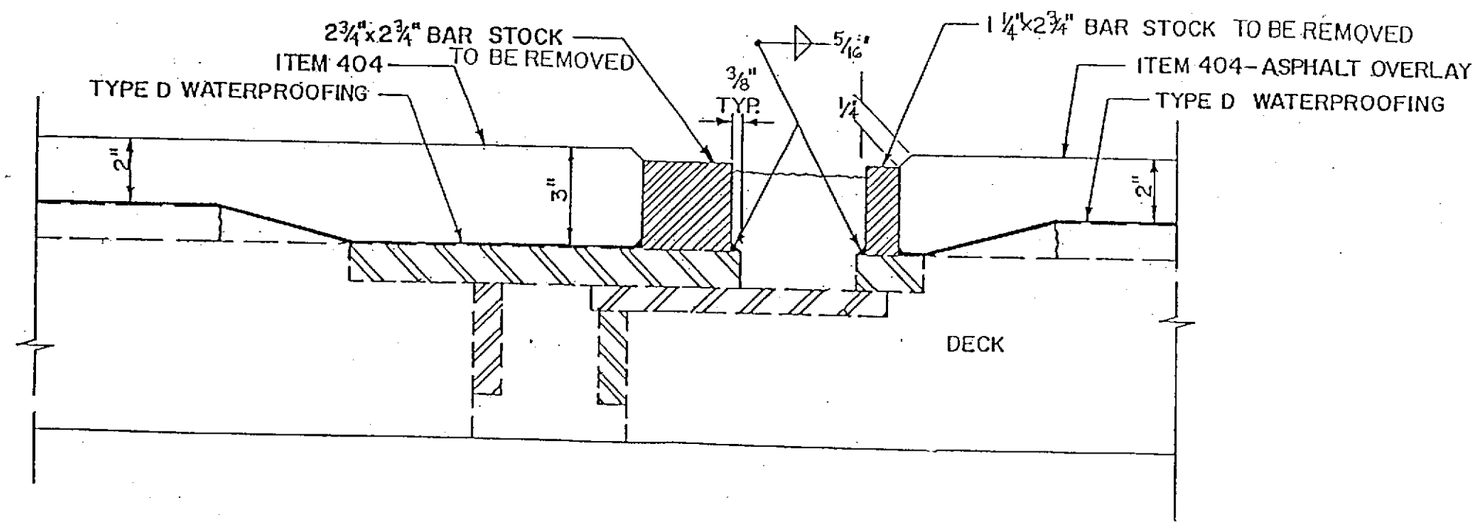
REMOVAL MISC., VERTICAL EXTENSIONS

EXISTING EXPANSION JOINT (INTERMEDIATE)



STATE OF OHIO
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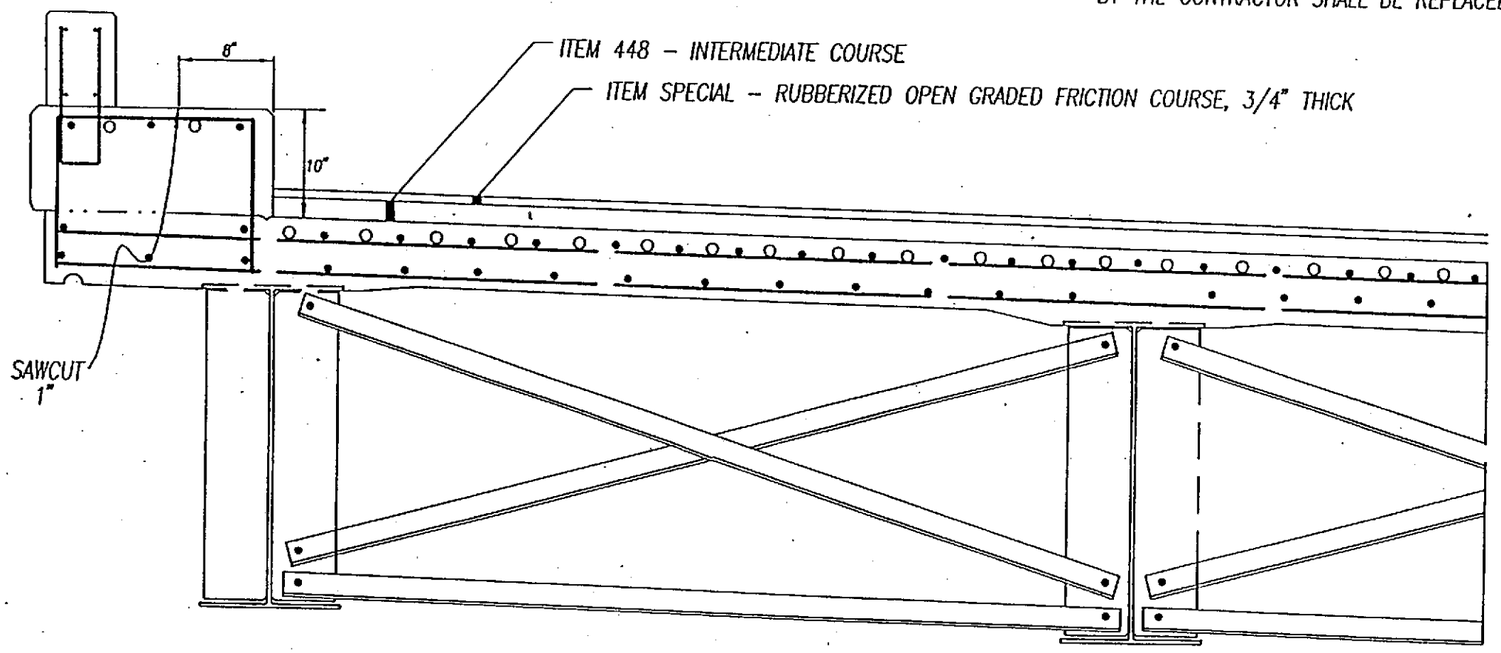
BRIDGE SECTION

INTERMEDIATE EXPANSION JOINTS
MAH-80-0125 L&R

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE	REVISED
	KAC		FM	443	

F.H.W.A. REGION	STATE	PROJECT NO.	FUNDS
5	OHIO		

NOTE : ALL EXISTING REINFORCING STEEL
IS TO BE SALVAGED. ALL REINFORCING STEEL DAMAGED
BY THE CONTRACTOR SHALL BE REPLACED AT HIS EXPENSE.



ITEM 511 - CLASS S CONCRETE, MISC.: CURB REPAIR

THIS ITEM SHALL CONSIST OF THE FOLLOWING WORK. SAWCUT THE HORIZONTAL SURFACE OF CURBS AS A CONSTANT DEPTH WITHOUT CUTTING REINFORCING STEEL AND LEAVE A SQUARE OR PREFERABLY SLIGHTLY UNDERCUT SHOULDER. REMOVE AND DISPOSE OF CONCRETE TO THE LIMITS SHOWN ON THIS PLAN. THOROUGHLY CLEAN THE SURFACE OF THE AREA EXPOSED AFTER CONCRETE REMOVAL AND EXPOSED REINFORCING STEEL OF ALL DIRT, DUST, OR OTHER FOREIGN MATERIALS. THOROUGHLY DRENCH THE SURFACE WITH CLEAN WATER. BEFORE PLACING THE CONCRETE THE SURFACE SHALL BE ALLOWED TO DRY TO A DAMP CONDITION. CONCRETE FOR CURB REPAIR SHALL BE PLACED PRIOR TO THE ASPHALT CONCRETE OVERLAY. COST FOR FURNISHING ALL MATERIALS, LABOR AND EQUIPMENT NECESSARY TO COMPLETE THIS ITEM SHALL BE PAID FOR AT THE CONTRACT PRICE BID UNDER:

ITEM	UNIT	DESCRIPTION
511	CU.YD.	CLASS S CONCRETE, MISC.: CURB REPAIR

SEQUENCE OF OPERATIONS

ALL CURB REMOVAL ITEMS SHALL BE PERFORMED PRIOR TO PLACEMENT OF THE ASPHALT CONCRETE OVERLAY.
CLASS S CONCRETE, MISC.: CURB REPAIR IS TO BE COMPLETED PRIOR TO THE ASPHALT CONCRETE OVERLAY.

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CLASS "S" CONCRETE,
MISC.: CURB REPAIR
MAH-80-0125 L&R

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KAR				9-93	