HIGHWAY GROUP CHAIRMAN'S FACTUAL REPORT

RAILROAD INTERSECTION AT GRADE COLLISION INVOLVING UNION PACIFIC RAILROAD TRAIN (UPRR) 2ASMAR-2 AND BURLINGTON NORTHERN SANTA FE TRAIN (BNSF) UKCKHKMO-05T FOLLOWED BY DERAILMENT AND IMPACT INTO AND PARTIAL COLLAPSE OF THE MISSOURI HIGHWAY BRIDGE A4376 SPANNING MISSOURI STATE ROUTE M

NEAR CHAFFEE, MISSOURI

MAY 25, 2013 ABOUT 2:30 A.M.

DCA-13-MR-004

ATTACHMENT 1

HIGHWAY AND BRIDGE DESIGN PLANS

(55) PAGES

DESIGN DESIGNATION

A.D.T. - 1982 = 3160
A.D.T. - 2002 = 4070
DHV - 425
D = 60%
T = 6%
V = 60 M.P.H.

PARTIAL LIMITED ACCESS HIGHWAY

THIS SHALL BE A PARTIAL LIMITED ACCESS HIGHWAY, EXCEPT AT LOCATIONS AND AS OTHERWISE SPECIFICALLY SHOWN ON THESE PLANS, NO ABUTTER'S RIGHTS IN, OR OF DIRECT ACCESS TO, FROM OR ACROSS THE HIGHWAY OR ITS RIGHT-OF-WAY SHALL ATTACH OR BELONG TO ANY PROPERTY ABUTTING ON SAID SECTION OF HIGHWAY, OR TO ANY PERSON MERELY BECAUSE OF OWNERSHIP OF SUCH ABUTTING PROPERTY WHERE THE SYMBOL SHOWN BELOW IS SHOWN ON THE RIGHT-OF-WAY LINE.

CONVENTIONAL SIGNS
(USED IN PLANS)

- BUILDINGS AND STRUCTURES
- GUARD RAIL
- CONCRETE RIGHT-OF-WAY MARKER
- STEEL RIGHT-OF-WAY MARKER
- FENCE
  - CHAIN LINK
  - WOVEN WIRE
  - GATE
- UTILITIES
  - TELEPHONE
  - POWER
  - GAS
  - WATER

NOTE: DASHED OR OPEN SYMBOL INDICATES EXISTING FEATURE

TITLE SHEET LEGEND

IDENTIFICATION SIGNS (2 REQUIRED) □

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

PLANS FOR PROPOSED

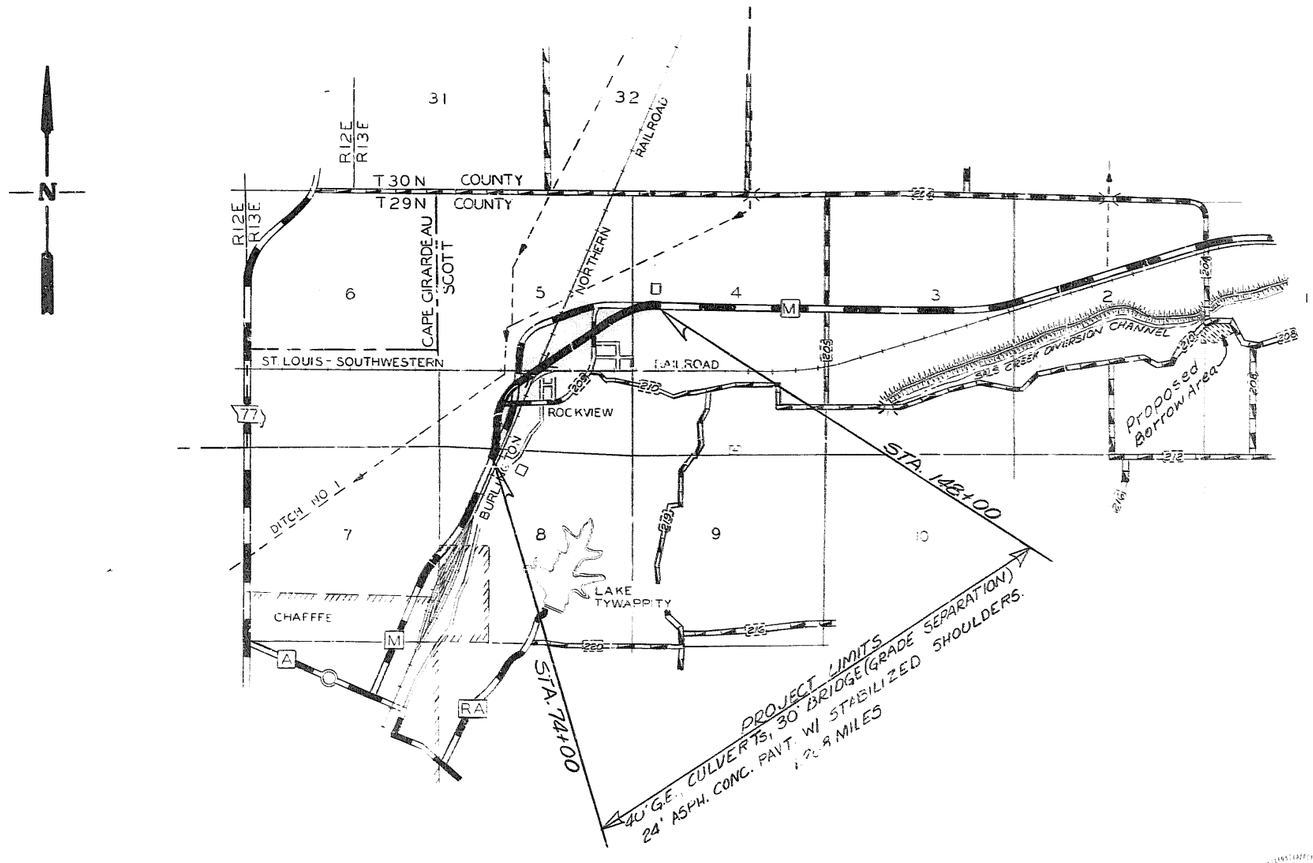
STATE HIGHWAY

FEDERAL AID PROJECT

SCOTT COUNTY

FINAL PLANS

AWARDED
FEB 5 1988
MO. HIGHWAY & TRANSPORTATION DEPT.



COUNTY SCOTT
ROUTE M
PROJECT SRS-RS-[illegible](3)

JOB NO. 10-X-M-358

INDEX OF SHEETS

LENGTH OF PROJECT

END OF PROJECT STA. 148+00.00
BEGINNING OF PROJECT STA. 74+00.00

APPARENT LENGTH 7400.00 FEET

EQUATIONS AND EXCEPTIONS

74+51.58 Bk = 74+84.09 Ahd. - 32.51
140+96.61 Bk = 147+66.95 Ahd. - 670.34

TOTAL CORRECTIONS -702.85 FEET
NET LENGTH OF PROJECT 6697.15 FEET

STATE LENGTH 1.268 MILES

FEDERAL LENGTH 1.268 MILES

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

SUBMITTED

[signature] 12-30-87
CHIEF ENGINEER DATE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED

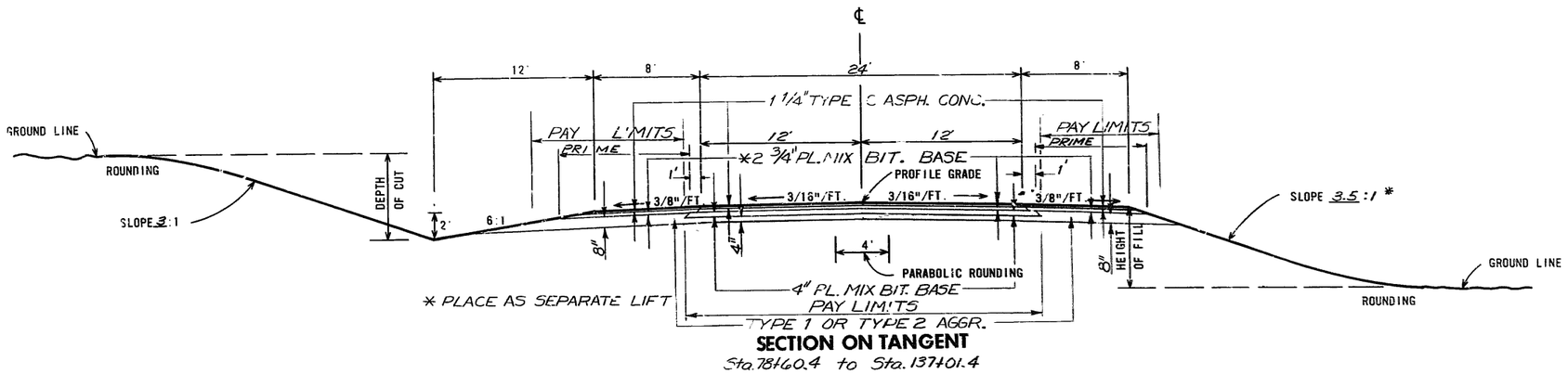
DIVISION ENGINEER DATE

SP-55A

FED. ROAD DIV. NO.	STATE	FEDERAL PROJECT NO. & SEC.	SHEET NO.
5	MO.	RRS-RS-1146(3)	2
SUBD. NO.	COUNTY		TOTAL SHEETS
10	SCOTT		NO.

FINAL PLANS

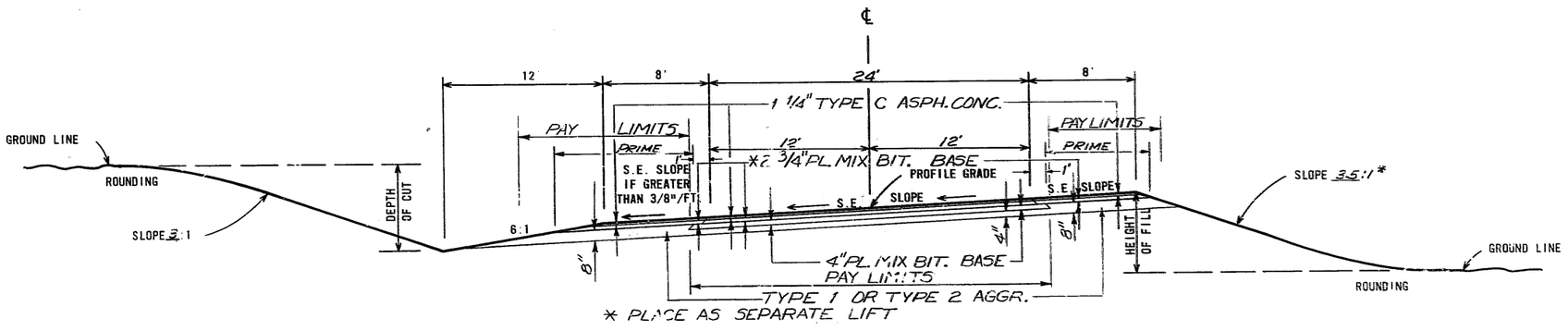
JOB NO. 10-X-M-358



SECTION ON TANGENT

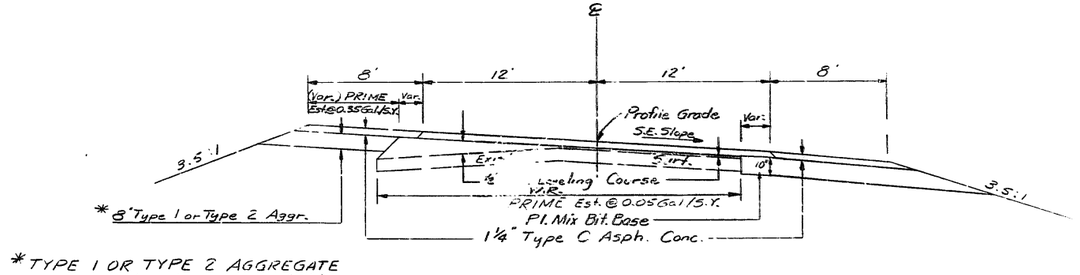
Sta. 78+60.4 to Sta. 137+01.4

WIDEN SHOULDER 2 FEET (IN CUTS OR FILLS)
WHERE GUARD RAIL IS TO BE CONSTRUCTED
(1 IN 20 TRANSITION)



SECTION ON SUPERELEVATED CURVE

*THE OFFSET FROM TOE OF FILL TO THE SHOULDER POINT SHALL BE A MINIMUM OF 12 FEET. THE SLOPE WILL VARY TO MEET THIS REQUIREMENT



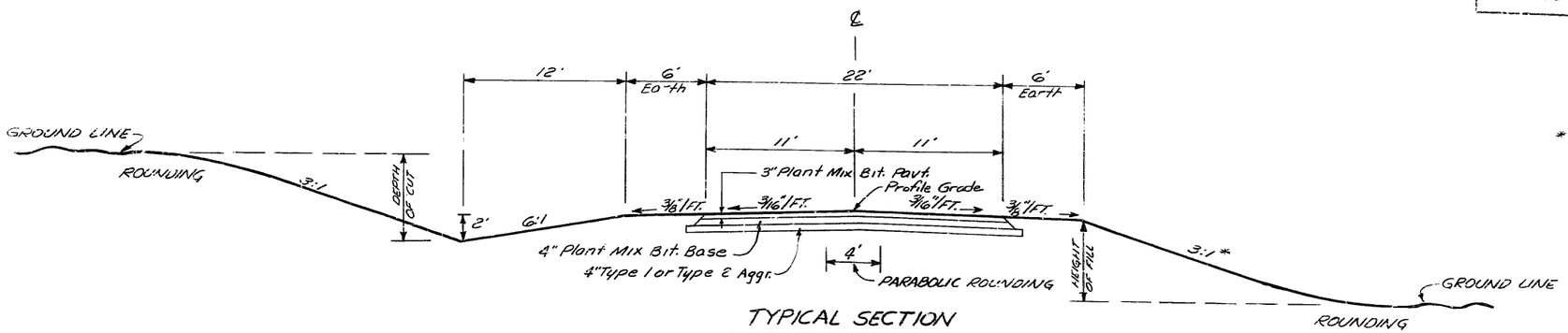
* TYPE 1 OR TYPE 2 AGGREGATE
Sta. 74+00 to Sta. 77+69 (RT.)
Sta. 138+00 to Sta. 148+00 (LT.)

TYPICAL SECTION
STA. 74+00 to STA. 78+60.4
STA. 137+01.4 to STA. 148+00

38-40 FOOT ROADBED, 22-24 FOOT TRAVEL WAY (WITHOUT SAFETY ZONES) A-9-1-75

FED ROAD DIV NO	STATE	JOB NO	SHEET NO
7	MO.	10-X-M-358	2
DIST NO		PROJ. NO ARS-RS-1146(3)	
10		COUNTY SCOTT	

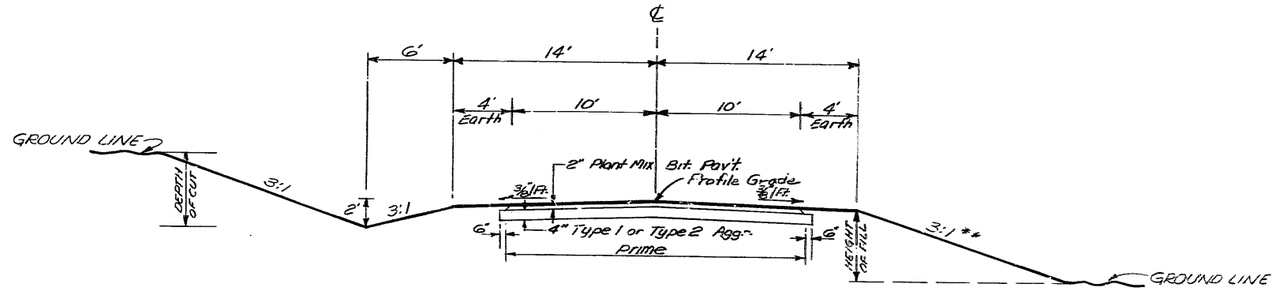
FINAL PLANS



* THE OFFSET FROM TOE OF FILL TO THE SHOULDER POINT SHALL BE A MINIMUM OF 12 FEET. THE SLOPE WILL VARY TO MEET THIS REQUIREMENT.

TYPICAL SECTION

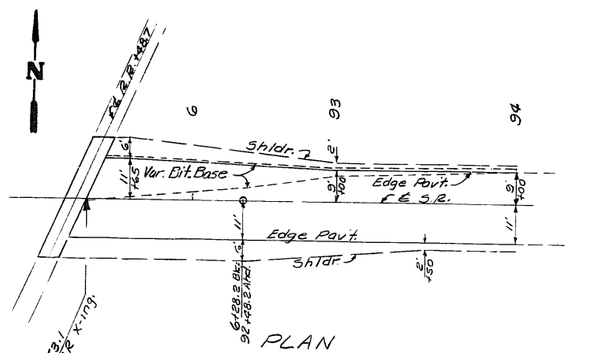
SIDE ROAD RT. STA. 91+33.43 (STA. 0+31.6 to 5+48.7)
SIDE ROAD RT. STA. 121+31.33 (STA. 120+51 to 124+33.22)



** THE OFFSET FROM TOE OF FILL TO THE SHOULDER POINT SHALL BE A MINIMUM OF 6 FEET. THE SLOPE WILL VARY TO MEET THIS REQUIREMENT.

TYPICAL SECTION

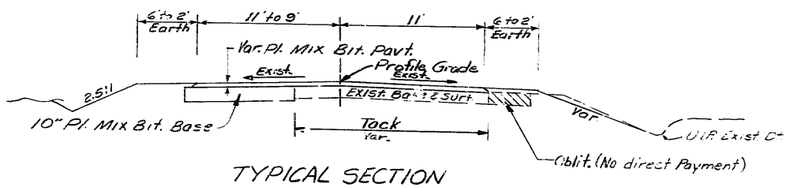
SIDE ROAD LT. STA. 121+31.33



PLAN

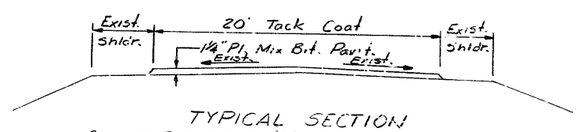
PROFILE

SIDE ROAD RT STA. 91+33.43



TYPICAL SECTION

SIDE ROAD RT. STA. 91+33.43 (STA. 5+48.7 to 94+00)



TYPICAL SECTION

COUNTY ROAD #209 (Sta. 34+00 to Sta. 120+51)

TYPICAL SECTIONS SIDE ROADS

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

SUMMARY OF QUANTITIES

FINAL PLANS

SHEET / OF /

STATE MO.	JOB NO. 10-X-M-358	SHEET NO. 2A
DIST. NO 10	PROJECT NO. RRS-RS-1146 (3)	ROUTE M
	COUNTY SCOTT	

ITEM	DESCRIPTION	UNIT	QUANTITY
202-20.10	REMOVAL OF IMPROVEMENTS	LUMP SUM	1
203-10.00	CLASS A EXCAVATION	CU YD	279,139
203-60.00	COMPACTING EMBANKMENT	CU YD	227,512
203 70.75	COMPACTING IN CUT	STATION	25.7
204-10.10	EMBANKMENT CONTROL STAKES	EACH	17
204-30.10	PORE PRESSURE MEASURING DEVICES	EACH	1
205-10.00	OVERHAUL (STATION)	STA YD	51,213,082
206-30.00	CLASS 3 EXCAVATION	CU YD	796
207-10.00	LINEAR GRADING CLASS 1	STATION	19.1
301-10.11	ASPHALT CEMENT (BITUMINOUS BASE) 60-70 OR AC-20	TON	425.9
301-20.00	MINERAL AGGREGATE (BITUMINOUS BASE)	TON	8822
304-0. .3	TYPE 1 OR TYPE 2 AGGREGATE FOR BASE (4 IN. THICK)	SQ YD	20,050
304-00.83	TYPE 1 OR TYPE 2 AGGREGATE FOR BASE (8 IN. THICK)	SQ YD	11,599
310-50.01	GRAVEL (A) OR CRUSHED STONE (B)	CU YD	43
401-10.11	ASPHALT CEMENT (BITUMINOUS PAVEMENT) 60-70 OR AC-20	TON	58.7
401-20.10	MINERAL AGGREGATE (BITUMINOUS PAVEMENT) GRADE C	TON	1296
403-10.11	ASPHALT CEMENT (ASPHALTIC CONCRETE) 60-70 OR AC-20	TON	139.2
403-80.00	MINERAL AGGREGATE (ASPHALTIC CONCRETE) (TYPE C MIX)	TON	3255
408-10.26	PRIME-EMULSIFIED ASPHALT SS-1	GALLON	2690
601-10.00	FIELD LABORATORIES	LUMP SUM	1
605-10.15	8 IN. CLASS A UNPERFORATED UNDERDRAIN PIPE	LIN FT	374
606-10.10	GUARD RAIL TYPE A	LIN FT	2,800
606-10.40	GUARD RAIL TYPE D	LIN FT	38
606-22.00	BRIDGE ANCHOR SECTION (SAFETY BARRIER CURB)	EACH	4
606-30.00	TERMINAL SECTION	EACH	4
608-10.00	CONCRETE MEDIAN	SQ YD	120.2
609-40.10	DRAIN BASIN	EACH	4
609-70.00	ROCK LINING	CU YD	147
611-60.10	CONCRETE SLOPE PROTECTION	SQ YD	928.9
612-10.30	MOVABLE BARRICADES	EACH	12
616-10.05	CONSTRUCTION SIGNS	SQ FT	498
616-10.46	TYPE II OBJECT MARKER	EACH	16
616-10.50	FLASHING ELECTRIC LIGHT	EACH	12
618-10.00	MOBILIZATION	LUMP SUM	1
621-05.21	TEMPORARY PAVEMENT STRIPING, 4 IN., SOLID YELLOW (TAPE)	100 FT	112
621-10.05	PAVEMENT STRIPE REMOVAL (TAPE)	100 FT	112
622-10.00	TEMPORARY PAVEMENT MARKING	MILE	.2
703-20.01	CLASS B CONCRETE (CULVERTS)	CU YD	99.6

ITEM	DESCRIPTION	UNIT	QUANTITY
706-10.30	REINFORCING STEEL (CULVERTS)	POUND	11,390
725-02.15	15 IN. PIPE CULVERT GROUP II	LIN FT	90
725-02.18	18 IN. PIPE CULVERT GROUP II	LIN FT	34
725-02.24	24 IN. PIPE CULVERT GROUP II	LIN FT	250
725-02.30	30 IN. PIPE CULVERT GROUP II	LIN FT	58
725-02.36	36 IN. PIPE CULVERT GROUP II	LIN FT	34
725-20.06	CORRUGATED METAL PIPE-ARCH TYPE B-6 OR B-6A	LIN FT	56
725-20.11	CORRUGATED METAL PIPE-ARCH TYPE B-11 OR B-11A	LIN FT	202
726-13.24	24 IN. CLASS III REINFORCED CONCRETE PIPE CULVERT	LIN FT	382
726-13.30	30 IN. CLASS III REINFORCED CONCRETE PIPE CULVERT	LIN FT	64
728-10.00	RELAID PIPE	LIN FT	0
732-00.24	24 IN. FLARED END SECTION	EACH	6
732-00.30	30 IN. FLARED END SECTION	EACH	2
802-40.00	TYPE 4 MULCH	ACRE	17.8
805-10.00	SEEDING	ACRE	18.2
903-50.15	TYPE IV OBJECT MARKER	EACH	3
	BRIDGE DWG. NO. A-4376 AT STA. 101+29.48		
206-10.00	CLASS 1 EXCAVATION	CU YD	103
702-11.00	CAST-IN-PLACE CONCRETE PILES	LIN FT	9901
702-40.00	LOADING TESTS	EACH	3
702-60.00	PRE-BORE FOR PILING	LIN FT	591
703-20.03	CLASS B CONCRETE (SUBSTR)	CU YD	146.1
703-42.12	SLAB ON STEEL, SEE SPECIAL PROVISIONS	SQ YD	439
703-42.13	SLAB ON CONCRETE I-GIRDER, SEE SPECIAL PROVISIONS	SQ YD	844
703-42.15	SAFETY BARRIER CURB	LIN FT	775
703-70.30	PLAIN NEOPRENE BEARING PADS	EACH	32
703-71.60	LAMINATED NEOPRENE BEARING PADS (STEEL STRUCTURES)	EACH	8
703-85.40	ELASTOMERIC EXPANSION JOINT SEAL (4.0 IN.)	LIN FT	29
705-21.58	PRESTRESSED CONCRETE I-GIRDER, 58 FT SPAN	EACH	8
705-11.62	PRESTRESSED CONCRETE I-GIRDER, 62 FT SPAN	EACH	8
706-10.60	REINFORCING STEEL (BRIDGES)	POUND	16,730
712-10.20	FAB. STRUCT. CARBON STEEL (PLT GIR)	POUND	92,150
712-11.21	FAB. STRUCT. LOW ALLOY STEEL (PLT GIR) A-572	POUND	31,370
712-36.10	SLAB DRAINS	EACH	34
712-36.50	VERTICAL DRAIN AT END BENTS	EACH	2
712-40.05	PAINTING (SYSTEM C) GREEN	TON	61.8

ITEM	DESCRIPTION	UNIT	QUANTITY
500	CONTINGENT ITEMS		
501.01	GIVE 'EM A BRAKE SIGNS	LUMP SUM	1
501.02	ASPHALT DENSITY SAMPLES	EACH	33

ACCEPTED: NOVEMBER 15, 1989

PREPARED BY: GR Vanderlas

RESIDENT ENGINEER: [signature] DATE:

DISTR OFFICE: John P. Watkins DATE: 1-12-90

MAIN OFFICE: DATE:

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

SUMMARY OF QUANTITIES

FINAL PLANS
Sheet 1 of 3

U.S. ROUTE	STATE	JOB NO.	
7	MO.	10-X-M-358	
	PROJECT NO.	ARS-AS-1146(3)	28
10	COUNTY	SCOTT	IA

SEED & MULCH

SHEET No.	SEED Ac.	TYPE 4 MULCH Ac.	Remarks
3	2.0	2.0	
4	11.9	11.9	
5	2.6	2.6	
6	2.2	1.3	
TOTALS	18.2	17.8	

EMBANKMENT CONTROL STAKES

SHEET No.	STA.	LOC.	NO. Ea.	REMARKS
4	100+75	130' Lt.	1	
	100+75	130' Rt.	1	
	101+25	100.7 Lt.	1	
	101+25	100.7 Rt.	1	
	101+75	71.3' Lt.	1	
	101+75	71.3' Rt.	1	
	102+25	42' Lt.	1	
	102+25	0' Lt.	1	
	102+25	42' Rt.	1	
	104+25	60' Lt.	1	
	104+25	58' Rt.	1	
	104+75	327' Lt.	1	
	104+75	6.1' Rt.	1	
	105+	31	1	
	105+		1	
	105+75		1	
	105+75	127' Rt.	1	
	TOTAL		17	

PORE PRESSURE MEASURING DEVICES

Sheet No.	Sta.	Loc.	Type A Ea.
11	105+20	℄	1
	Total		1

CONCRETE MEDIAN

SHEET No.	STA.	LOC.	S.Y.	REMARKS
6&10	91+33.43	Rt.	21.9	S.R. Rt. (S.E. QUAD.)
6&10	121+31.33	Rt.	98.3	S.R. Rt. (S.E. QUAD.)
	TOTAL		120.2	

OBJECT MARKERS AND GUARD RAIL

SHEET No.	STA.	LOC.	TYPE III OBJECT MARKER Ea.	TYPE D GUARD RAIL L.F.	REMARKS
5	134+30	Lt.	3	37.5	Sta. 140+80 (Exist. Rte. M)
	TOTALS		3	37.5	
				USE 38 L.F.	

REMOVAL OF IMPROVEMENTS

SHEET No.	STA.	LOC.	DESCRIPTION	Remarks
3	77+90	32' Lt.	Exist. 18'x30' CMP	
4	98+50	220' Lt.	Exist. 24"x82' CMP	
4	99+03	320' Lt.	Exist. 4'x4'x58' Conc. Box Culv.	
5	134+57	61' Lt.	Exist. 7'x7'x46' Conc. Box Culv.	
6	92+05	95.5 Rt.	Exist. 15"x12" CMP	S.R. Lt. Sta. 121+
6	57+08	50' Rt.	Exist. 36"x32' CMP (Partial Removal)	S.R. Rt. Sta. 91+

LUMP SUM 1

TEMPORARY PAVEMENT MARKING

SHEET No.	STA.	STA.	LENGTH Mile	REMARKS
3	74+00	78+60	0.1	Begin. Project
5	137+00	148+00	0.1	End Project.
		TOTAL	0.2	

TEMPORARY PAVEMENT STRIPING (TAPE)

SHEET No.	STA.	STA.	4" Solid Yellow L.F.	REMARKS
3	46+00	74+00	5600	Double No Passing
5	148+00	176+00	5600	Double No Passing
		TOTAL	11,200	
			112 (100 FT)	

PAVEMENT STRIPE REMOVAL

SHEET No.	STA.	STA.	TAPE L.F.	Remarks
3	46+00	74+00	5600	Double Yellow (Solid)
5	148+00	176+00	5600	Double Yellow (Solid)
		TOTAL	11,200	
			112 (100 FT.)	

DRAIN MARKERS
(Constructed by Others)

SHEET No.	STA.	LOC.	Dr. Mkr. Ea.	REMARKS
4	101+02	116' Lt.	1	
	101+02	118' Rt.	1	
	105+22.1	98' Lt.	1	
	105+22.1	104' Rt.	1	
	TOTAL		4	

RIGHT-OF-WAY MARKERS
(Constructed by Others)

SHEET No.	STA.		LOC.	Steel Ea.	Conc. Ea.	REMARKS
3	74+84.09	Ahd	62.4' Lt.	1		
	74+84.09	Ahd.	40' Rt.	1		
	75+32.4		60' Lt.		1	
	76+96		55.7' Lt.	1		
	77+08		75' Lt.	1		
	77+34.09		75' Lt.	1		
	77+34.09		48' Lt.	1		
	80+00		78.5 Rt.	1		
	81+56.17		75' Rt.	1		
	81+56.17		75' Lt.	1		
	84+06.17		75' Rt.	1		
	84+06.17		75' Lt.	1		
	86+56.17		75' Rt.	1		
	86+56.17		80' Lt.	1		
	89+20		75' Rt.	1		
	89+20		90' Lt.	1		
	89+80		75' Rt.	1		
4	1+80	SR	70' Rt.	1		S.R. Rt. Sta. 91+33.43
	1+85	SR	65' Lt.	1		" " " "
	2+23.52	SR	70' Rt.	1		" " " "
	2+23.52	SR	65' Lt.	1		" " " "
	2+45	SR	70' Rt.	1		" " " "
	2+45	SR	65' Lt.	1		" " " "
	92+85		75' Rt.	1		
	93+45		75' Rt.	1		
	93+45		90' Lt.	1		
	95+00		105' Lt.	1		
	96+11.62		120' Lt.	1		
	96+11.62		110' Rt.	1		
	98+61.62		201.3' Lt.	1		
	98+61.62		150' Rt.	1		
	99+48.4		150' Rt.	1		
	106+60.6		170' Lt.	1		
	106+60.6		170' Rt.	1		
	113+00		75' Lt.	1		
	113+00		75' Rt.	1		
	119+20		75' Lt.	1		
	119+20		75' Rt.	1		
	119+70		75' Rt.	1		
5	120+65		75' Lt.	1		
	122+19	SR	55' Lt.	1		S.R. Rt. Sta. 121+31.33
	122+19	SR	50' Rt.	1		" " " "
	122+60	SR	55' Lt.	1		" " " "
	123+35	SR	76' Rt.	1		" " " "
	125+35	SR	40' Lt.	1		S.R. Lt. Sta. 121+31.33
	125+95	SR	40' Lt.	1		" " " "
	122+35		75' Rt.	1		
	122+96.5		75' Lt.	1		
	123+45		75' Lt.	1		
	123+45		75' Rt.	1		
	128+83.86		75' Lt.	1		
	128+83.86		75' Rt.	1		
	131+33.86		75' Lt.	1		
	131+33.86		75' Rt.	1		
	133+21.1		75' Lt.	1		
	133+62.3		186.2' Lt.	1		
	138+46.61		66.6' Lt.	1		
	138+46.61		75' Rt.	1		
	147+66.95	Ahd.	75' Rt.	1		
	148+00		60' Lt.	1		
	148+00		75' Rt.	1		
	149+00		60' Rt.	1		
	TOTALS			61	1	

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

SUMMARY OF QUANTITIES

FINAL PLANS

Sheet 2 of 3

ENTRANCE AND SIDEROAD CULVERTS AND APPROACHES

SHEET No.	STA.	TYPE	LOC.	ST'D	% GRADE	GROUP II PIPE 15" L.F.	18" L.F.	24" L.F.	30" L.F.	36" L.F.	Rock Lining C.Y.	Overfill Height Ft.	Cl.3 Exc. C.Y.	REMARKS
3	75+30	PE	Lt.	203.31	–							–		U.I.P. Exist. 24" P
	76+35	PE	Lt.	↓	–							–		U.I.P. Exist. 24" P
	76+70	PE	Lt.	↓	–							–		U.I.P. Exist. 24" P
	77+90	FE	Lt.	203.31	10%		34					2'		
4	103+82 4 Lt. to 105+55 117 Lt.			–				208				16'	34	
5	Exist. ℄ 138+30	FE	Rt.	203.30	8%	36						2'		
	134+05	FE	Rt.	203.31	1.5%							–		No Pipe
	134+05	PE	Lt	↓	3%							–		No Pipe
	134+85	FE	Rt.	↓	2.5%				46			3'		Extend 30"x32' CMP (See Relaid Pipe)
	135+10	FE	Lt.	↓	4%				12			1'		U.I.P. & Extend Exist. 30" P.
	140+90	PE	Lt.	203.31	–							–		U.I.P. Exist. 24" P.
6	91+33.43	S.R.	Rt.	–	–							–		See Sta. 5+08 SR. & Sta. 5+97 SR.
	3+63 SR.	FE	Rt	203.31	3.0%	54						6'		SR. Rt. Sta. 91+33.43
	3+63 SR.	FE	Lt	203.31	3.0%							–		SR. Rt. Sta. 91+33.43 No Pipe
	5+08	SR	℄	–	–					34	11	7'	6	25°LA SR Rt. Sta. 91+33.43
	5+97	SR	℄	–	–			8			4	–	0	20°LA SR Rt. Sta. 91+33.43
	121+31.33	SR	Rt.	–	–							–		See Corr. Metal Arch. Pipe
	121+95 SR	FE	Rt.	203.31	12%							–		SR. Rt. Sta. 121+31.33 No Pipe
	121+31.33	S.R.	Lt.	203.31	–							–		
	129+85 SR.	FE	Lt.	203.30	10%			34				1'		SR. Lt. Sta. 121+31.33
					TOTALS	90	34	250	58	34	15		100	

CLASS III REINFORCED CONCRETE PIPE

SHEET NO.	STA.	LOC.	SKEW	24" L.F.	30" L.F.	Flared End Section 24" Ea.	Flared End Section 30" Ea.	Cl.3 C.Y.	Rock Lining C.Y.	Overfill Height Ft.	Remarks
4	99+00	℄	–	254		2		28	4	30'	
4	116+00	℄	–		64		2	43	0	4'	
5	122+00	℄	–	128		4		32	6	4'	(2 Lines)
			TOTALS	382	64	6	2	163	10		

CONCRETE BOX CULVERTS

SHEET No.	STA.	LOC.	ST'D	WING SLOPE	SIZE	LENGTH L.F.	SKEW	Cl.B Conc. C.Y.	REINF. STEEL lbs.	Cl.3 EXC. C.Y.	ROCK LINING C.Y.	Overfill Height Ft.	REMARKS
3	76+95.2	Rt.	703.21	2:1	6'x3'	7'	3°43' LA	5.3	640	10	42	4'	Rt. Hdwll. Sk. 5°, Straight Wings
5	134+51	℄	703.21	2:1	11'x8'	63'	5°LA	94.3	10,751	300	0	5'	Straight Wings
							TOTALS	99.6	11,390	310	42		

CORRUGATED METAL PIPE-ARCH

SHEET No.	STA.	LOC.	STA.	LOC.	B-11 L.F.	B-6 L.F.	Cl.3 Exc. C.Y.	Rock Lining C.Y.	Overfill Height Ft.	Remarks
4	103+80	2' Rt.	105+48	112' Rt.	202		59	69	11'	
6	121+28 SR.	℄				56	41	11	3'	S.R. Rt. Sta. 121+31.33
				TOTALS	202	56	100	80		

RELAID PIPE

SHEET NO.	STA.	LOC.	CMP 30" L.F.	REMARKS
5	134+85	FE Rt.	0	Relaid from Exist. F.E. Lt. Sta. 134+65 (Incl. FG)
	TOTALS		0	

CLASS A UNPERFORATED UNDERDRAIN PIPE AND DRAIN BASINS

SHEET No.	STA	LOC.	8" L.F.	Cl.3 Exc. C.Y.	DRAIN BASIN Ea.	REMARKS
4	101+02	Lt.	102'	33	1	Incl. 1-10° & 1-20° Bend
4	101+02	Rt.	102'	33	1	Incl. 1-10° & 1-20° Bend
4	105+22.1	Lt.	80'	27	1	Incl. 1-15° & 1-20° Bend
4	105+22.1	Rt.	90'	30	1	Incl. 1-15° & 1-20° Bend
		TOTALS	374	123	4	

TYPE A GUARD RAIL

SHEET No.	STA.	STA.	LOC.	TYPE A G.R. L.F.	TERMINAL SECTION Ea.	BR. ANCHR SECTION Ea.
4	89+69.43	101+19.6	Lt.	1112.5	1	1
4	94+79.56	101+19.6	Rt.	587.5	1	1
4	105+04.5	111+04.5	Lt.	550.0	1	1
4	105+04.5	111+04.5	Rt.	650.0	1	1
			TOTALS	2800.0	4	4

4" CONCRETE SLOPE PROTECTION

SHEET	STA.	STA.	LENGTH	WIDTH	S.Y.	ST'D. REMARKS
4	101+32	101+37	5.0	40.0	22.2	Passive Berm
4	101+37	102+17.7	85.2	40.0	378.7	611.60 Fill Slope @ Br. End
4	103+79.1	104+87.1	113.8	40.0	505.8	611.60 Fill Slope @ Br. End
4	104+87.1	104+92.1	5.0	40.0	22.2	Passive Berm
				TOTAL	328.9	

SUMMARY OF QUANTITIES

FINAL PLANS

STATE	JOB NO. 10-X-M-358	SHEET NO. 2B
DIST.	PROJECT NO. RRS-RS-1146 (3)	ROUTE M
10	COUNTY SCOTT	

Sheet 3 of 3

SIGN	SIZE (INS)	AREA (SQ FT)	QTY	TOTAL AREA (SQ FT)	QTY. RELOC.	TOTAL RELOC. AREA (SQ FT)	DESCRIPTION
WARNING SIGNS							
W01-1Lb	48x48	16.0					TURN (SYMBOL LEFT ARROW)
W01-1Rb	48x48	16.0					TURN (SYMBOL RIGHT ARROW)
W01-2Lb	48x48	16.0					CURVE (SYMBOL LEFT ARROW)
W01-2Rb	48x48	16.0					CURVE (SYMBOL RIGHT ARROW)
W01-3Lb	48x48	16.0					REVERSE TURN (SYMBOL LEFT ARROW)
W01-3Rb	48x48	16.0					REVERSE TURN (SYMBOL RIGHT ARROW)
W01-4Lb	48x48	16.0					REVERSE CURVE (SYMBOL LEFT ARROW)
W01-4Rb	48x48	16.0					REVERSE CURVE (SYMBOL RIGHT ARROW)
W01-5	48x24	8.0					HORIZONTAL ARROW (SYMBOL)
W01-6a	72x36	18.0					HORIZONTAL ARROW (SYMBOL)
W01-7	48x24	8.0					DOUBLE HEAD HORIZONTAL ARROW (SYMBOL)
W01-7a	72x36	18.0					DOUBLE HEAD HORIZONTAL ARROW (SYMBOL)
W01-8	18x24	3.0					CHEVRON (SYMBOL)
W03-1b	48x48	16.0					STOP AHEAD
W03-2b	48x48	16.0					YIELD AHEAD
W03-3b	48x48	16.0					SIGNAL AHEAD (SYMBOL)
W03-4b	48x48	16.0					BE PREPARED TO STOP
W04-1Lb	48x48	16.0					MERGE (SYMBOL FROM LEFT)
W04-1Rb	48x48	16.0					MERGE (SYMBOL FROM RIGHT)
W05-1a	24x48	16.0					ROAD NARROWS
W05-3a	48x48	16.0	0	0.0			ONE LANE BRIDGE
W06-1a	48x48	16.0					DIVIDED HIGHWAY
W06-2b	48x48	16.0					DIVIDED HIGHWAY ENDS
W06-3b	48x48	16.0					TWO WAY TRAFFIC (SYMBOL)
W06-3x	24x18	3.0					TWO WAY TRAFFIC (PLAQUE)
W08-1b	48x48	16.0					BUMP
W08-2b	48x48	16.0					DIP
W08-3	48x48	16.0					PAVEMENT ENDS
W08-4b	48x48	16.0					SOFT SHOULDER
W08-5b	48x48	16.0					SLIPPERY WHEN WET (SYMBOL)
4 W08-6b	48x48	16.0	4	64.0			TRUCK CROSSING
W08-6c	48x48	16.0					TRUCK ENT. (Includes 1000 FT./1500 FT. plate W025-1a)
1 W08-7b	48x48	16.0					LOOSE GRAVEL
W08-9	48x48	16.0	0	0.0			LOW SHOULDER
W09-1R	48x48	16.0					RIGHT LANE ENDS (Includes LEFT/CENTER plate WO25-3c)
W09-2Ra	48x48	16.0					LANE ENDS MERGE RIGHT (Includes LEFT plate WO25-3b)
W10-1a	42 Dia.	9.6					RAILROAD CROSSING
W012-1	24x24	4.0					DOUBLE DOWN ARROW (SYMBOL)
W012-2a	48x48	16.0					LOW CLEARANCE (SYMBOL)
W012-2x	24x18	3.0					LOW CLEARANCE (PLAQUE)
W012-3b	144x24	24.0					OVERHEAD LOW CLEARANCE (FEET AND INCHES)
W013-1a	24x24	4.0					ADVISORY SPEED (PLAQUE)
3 W020-1	48x48	16.0	3	48.0			ROAD CONST. AHEAD (Incl. RAMP/BRIDGE plate WO25-4)
W020-2	48x48	16.0	2	32.0			DETOUR AHEAD (Includes 500 FT./1000 FT. plate WO25-1b)
W020-3	48x48	16.0					RD. CLOSED AHEAD (Incl. 500 FT./1000 FT. plate WO25-1c)
2 W020-4a	48x48	16.0	2	32.0			ONE LN. RD. AHD (Incl. 1000 FT./1500 FT. plate WO25-1a)
W020-5	48x48	16.0					RT. LN. CLOSED AHEAD (Incl. LEFT/CENTER plate WO25-3d)
W020-6a	48x48	16.0					RIGHT LANE CLOSED (Incl. LEFT/CENTER plate WO25-3c)
2 W020-7a	48x48	16.0	2	32.0			FLAGMAN AHEAD (Incl. 500 FT./1000 FT. plate WO25-1b)
2 W020-9c	48x48	16.0	2	32.0			OPEN TRENCH
W021-2a	48x48	16.0					FRESH OIL
1 W021-5b	48x48	16.0	1	16.0			SHOULDER WORK AHEAD
W021-7	36x36	9.0					SAND BLASTING
W022-1	48x48	16.0					BLASTING ZONE XX FT.
W022-2	42x36	10.5					TURN OFF 2-WAY RADIO
W022-3	42x36	10.5					END BLASTING ZONE
W025-1a	26x9						1000 FT./1500 FT. Plate
W025-1b	38x9						500 FT./1000 FT. Plate
W025-1c	34x9						500 FT./1000 FT. Plate
W025-3b	30x9						LEFT Plate
W025-3c	33x9						LEFT/CENTER Plate
W025-3d	22x9						LEFT/CENTER Plate
W025-5	30x12	2.5					1/2 MILE/1 MILE (PLAQUE)
W025-6	28x9						RAMP/BRIDGE Plate

SIGN	SIZE (INS)	AREA (SQ FT)	QTY	TOTAL AREA (SQ FT)	QTY. RELOC.	TOTAL RELOC. AREA (SQ FT)	DESCRIPTION
REGULATORY SIGNS							
R1-1b	48x48	13.25					STOP
R1-2a	48x48x48	6.93					YIELD
R1-2x	36x36	9.0					TO ONCOMING TRAFFIC (PLAQUE)
R1-3	20x9	1.25					4-WAY (PLAQUE)
R1-5	20x9	1.25					3-WAY (PLAQUE)
2 R2-1b	36x48	12.0	2	24.0			SPEED LIMIT XX as 30
2 R2-5	36x48	12.0	2	24.0			REDUCED SPEED AHEAD
R3-1b	36x48	12.0					NO RIGHT TURN
R3-2b	36x48	12.0					NO LEFT TURN
R3-3a	36x36	9.0					NO TURNS
R3-4b	36x48	12.0					NO U-TURN
R3-7L	30x30	6.25					LEFT LANE MUST TURN LEFT
R3-7R	30x30	6.25					RIGHT LANE MUST TURN RIGHT
R4-1b	36x48	12.0					DO NOT PASS
R4-2b	36x48	12.0					PASS WITH CARE
R4-7Lb	36x48	12.0					KEEP LEFT (HORIZONTAL ARROW)
R4-7Rb	36x48	12.0					KEEP RIGHT (HORIZONTAL ARROW)
R4-17L	36x36	9.0					KEEP LEFT
R4-17R	36x36	9.0					KEEP RIGHT
R5-1	30x30	6.25					DO NOT ENTER
R5-1a	36x24	5.0					WRONG WAY
R6-1La	48x18	6.0					ONE WAY ARROW (LEFT)
R6-1Rc	48x18	6.0					ONE WAY ARROW (RIGHT)
R6-2La	24x30	5.0					ONE WAY (LEFT)
R6-2Ra	24x30	5.0					ONE WAY (RIGHT)
c R11-2	48x20	10.0	6	60.0			ROAD CLOSED
R11-3	60x33	12.5					ROAD CLOSED XX MILES AHEAD LOCAL TRAFFIC ONLY
R11-4	60x30	12.5					ROAD CLOSED TO THRU TRAFFIC
GUIDE SIGNS							
GO20-1	60x36	15.0					ROAD CONSTRUCTION NEXT XX MILES
2 GO20-2	60x24	10.0	2	20.0			END CONSTRUCTION
9 MO4-8a	30x15	3.13	9	28.17			DETOUR (PLAQUE)
3 MO4-10L	48x18	6.0	3	18.0			DETOUR (ARROW LEFT)
5 MO4-10R	48x18	6.0	3	18.0			DETOUR (ARROW RIGHT)
M5-1L	21x15	2.19					ADVANCE LEFT TURN ARROW
M5-1R	21x15	2.19					ADVANCE RIGHT TURN ARROW
616-10.05 CONSTRUCTION SIGNS TOTAL				448.17			
616-10.10 RELOCATED SIGNS TOTAL							

ITEM NO.	SIZE	TOTAL QTY.	DESCRIPTION
616-10.20	30x18		DRUM (CHANNELIZER)
616-10.35	8x24		TYPE I BARRICADE (One Rails)
616-10.36	8x24		TYPE II BARRICADE (Two Rails)
616-10.40	36x72		FLASHING ARROW PANEL
616-10.45	18X18		TYPE I OBJECT MARKER
616-10.46	6x12	16	TYPE II OBJECT MARKER
616-10.47	8x24		TYPE III OBJECT MARKER
616-10.50	8	12	FLASHING ELECTRIC LIGHT
616-10.51	---		WARNING LIGHT (Type A)
616-10.52	---		WARNING LIGHT (Type B)
616-10.53	---		WARNING LIGHT (Type C)
616-10.60	---		RAISED PAVEMENT MARKER
612-10.30	72x144	12	MOVABLE BARRICADE (Three Rails)
		1	Give Em Brass Sign

10-X-M-358
7 MO RRS-RS-1146 (3)
10 SCOTT M

UTILITIES
UNION ELECTRIC POWER CO.
CAPE GIRARDEAU, MO.

ASSOCIATED NATURAL GAS CO.
SIKESTON MO.

SOUTHWESTERN BELL TELEPHONE CO.
CAPE GIRARDEAU, MO.

NOTE:
ANY WORK INDICATED ON THE PLANS THAT EXTENDS BEYOND THE PROJECT LIMITS IS CONSIDERED INCIDENTAL TO AND PART OF THE CONSTRUCTION OF THIS PROJECT.

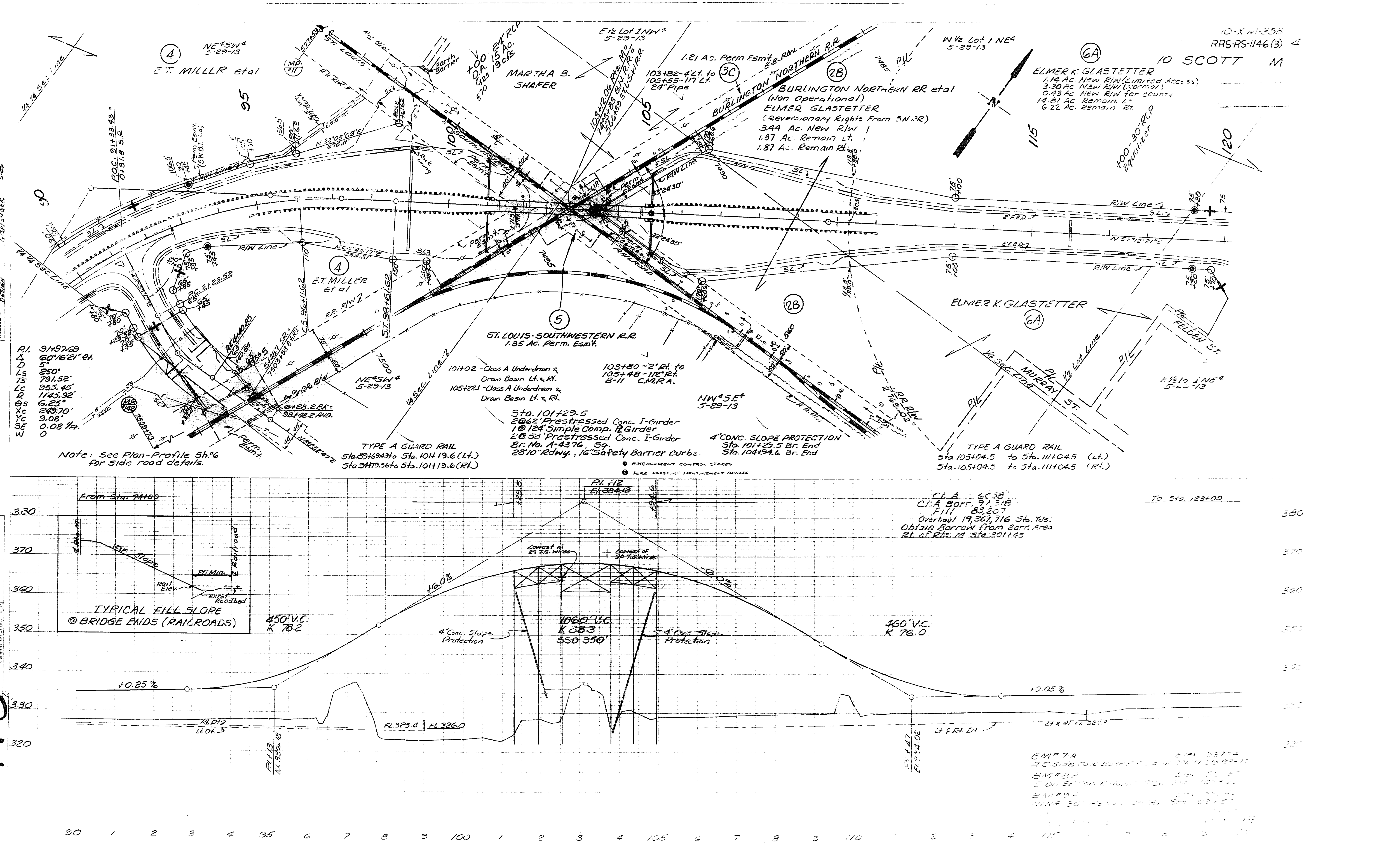
NOTE:
RIGHT-OF-WAY LIMITS FOR THIS PROJECT EXTEND FROM STA. 74+00.0 TO STA. 149+00.0, A DISTANCE OF 1.287 MILES.

NOTE:
NO DIRECT PAYMENT WILL BE MADE FOR CLEARING AND GRUBBING.

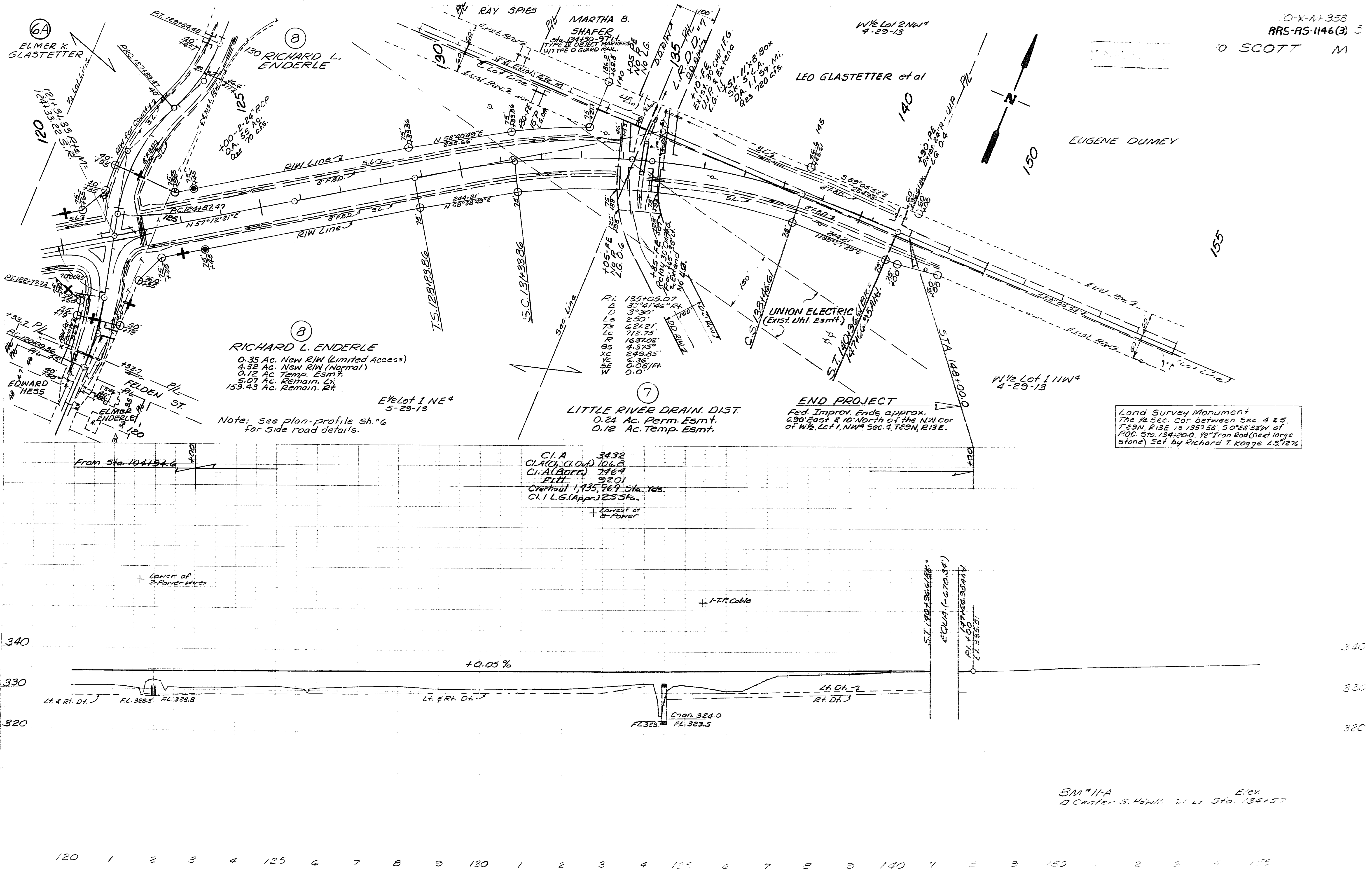
Cl. A 10,391
Cl. A Borr. 140,459
Fill 119,957
Overhaul 30,071,699 Sta. Yds.
Cl. 1 L.G. (Appr.) 1.8
Cl. 1 L.G. (Orif.) 13.7

To Sta. 10+29.5

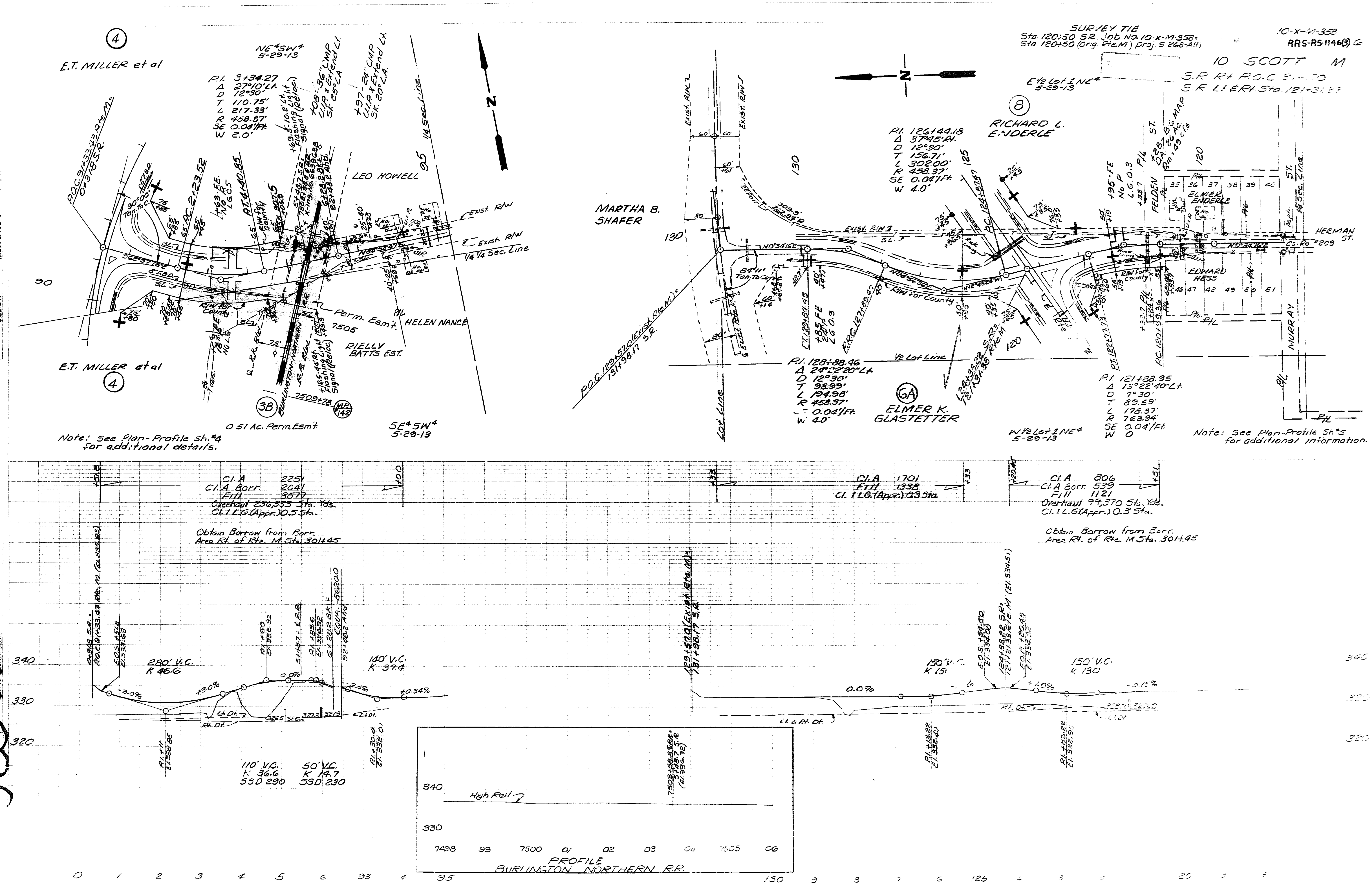
(National Geodetic Vertical Datum)
BM #4-A Elev. 328.60
Bod N. West Side Pnt. TP 39' Rt. Sta. 63+80
BM #5-A Elev. 329.82
□ on NW Cor W. Hdwll. 24 Lt. Sta 76+98



10-X-M-356
RRS-RS-1146(3) 4
10 SCOTT M
NE4SW4 5-29-13
E.T. MILLER etal
MARTHA B. SHAFER
E½ Lot 1 NW4 5-29-13
1.21 Ac. Perm Esmt.
103+82-4'Lt. to 105+55-117'Lt. 24" Pipe
W½ Lot 1 NE4 5-29-13
ELMER K. GLASTETTER
1.14 Ac New R/W (Limited Access)
3.30 Ac New R/W (Normal)
0.43 Ac New R/W for county
14.81 Ac. Remain. Lt.
6.22 Ac. Remain. Rt.
BURLINGTON NORTHERN RR etal
(Non Operational)
ELMER GLASTETTER
(Reversionary Rights From B.N. R.R.)
3.44 Ac. New R/W
1.87 Ac. Remain. Lt.
1.87 Ac. Remain Rt.
BURLINGTON NORTHERN R.R.
ST. LOUIS
+00-30" RCP Equalizer
E.T. MILLER et al
ST. LOUIS-SOUTHWESTERN R.R.
1.35 Ac. Perm. Esmt.
ELMER K. GLASTETTER
FELDEN ST.
MURRAY ST.
¼ Sec. Line
½ Lot Line
E½ Lot 1 NE4 5-29-13
NE4SW4 5-29-13
NW4SE4 5-29-13
101+02 - Class A Underdrain & Drain Basin Lt. & Rt.
105+22.1 - Class A Underdrain & Drain Basin Lt. & Rt.
103+80 - 2' Rt. to 105+48 - 112' Rt. B-11 C.M.P.A.
P.I. 91+97.69
Δ 60°06'21" Rt.
D 5°
Ls 250'
Ts 791.52'
Lc 955.45'
R 1145.92'
θs 6.25°
Xc 249.70'
Yc 9.08'
SE 0.08 '/Ft.
W 0
Note: See Plan-Profile Sh. 6 for side road details.
Sta. 101+29.5
2@62' Prestressed Conc. I-Girder
1@124' Simple Comp. ℞ Girder
2@56' Prestressed Conc. I-Girder
Br. No. A-4376, Sq.
28'10" Rdwy., 16' Safety Barrier Curbs.
TYPE A GUARD RAIL
Sta. 89+69.43 to Sta. 101+19.6 (Lt.)
Sta. 94+79.56 to Sta. 101+19.6 (Rt.)
4" CONC. SLOPE PROTECTION
Sta. 101+29.5 Br. End
Sta. 104+94.6 Br. End
TYPE A GUARD RAIL
Sta. 105+04.5 to Sta. 111+04.5 (Lt.)
Sta. 105+04.5 to Sta. 111+04.5 (Rt.)
● EMBANKMENT CONTROL STAKES
PORE PRESSURE MEASUREMENT DEVICES
From Sta. 74+00
To Sta. 123+00
P.I. 103 El. 384.12
Cl. A 6038
Cl. A Borr. 91,318
Fill 83,207
Overhaul 19,561,716 Sta. Yds.
Obtain Borrow from Borr. Area Rt. of Rte. M Sta. 301+45
TYPICAL FILL SLOPE @ BRIDGE ENDS (RAILROADS)
Var. Slope
20' Min.
Rail Elev.
Exist. Roadbed
450' V.C. K 78.2
1060' V.C. K 383 SSD 350'
460' V.C. K 76.0
4" Conc. Slope Protection
+0.25%
+6.0%
-6.0%
+0.05%
FL 325.4
FL 326.0
P.I. 113 El. 334.02
P.I. 95 El. 330.18
BM# 7-A

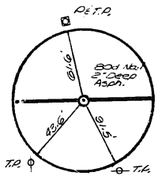


10-X-M-358
RRS-RS-1146(3)
SCOTT
6A
ELMER K. GLASTETTER
8
RICHARD L. ENDERLE
RAY SPIES
MARTHA B. SHAFER
W½ Lot 2 NW¼ 4-29-13
LEO GLASTETTER et al
EUGENE DUMEY
N
R/W Line
N 58°40'49"E
N 57°12'21"E
P.C. 124+87.47
T.S. 128+83.86
S.C. 131+33.86
C.S. 138+46.61
UNION ELECTRIC (Exist. Util. Esmt.)
P.I. 135+05.07
Δ 32°41'46" Rt.
D 3°30'
Ls 250'
Ts 621.21'
Lc 712.75'
R 1637.02'
θs 4.375°
Xc 249.85'
Yc 6.36'
SE 0.08'/Ft.
W 0.0'
RICHARD L. ENDERLE
0.35 Ac. New R/W (Limited Access)
4.32 Ac. New R/W (Normal)
0.12 Ac. Temp. Esmt.
5.07 Ac. Remain. Lt.
159.43 Ac. Remain. Rt.
EDWARD HESS
ELMER ENDERLE
FELDEN ST.
E½ Lot 1 NE¼ 5-29-13
Note: See plan-profile Sh. #6 for Side road details.
7
LITTLE RIVER DRAIN. DIST.
0.24 Ac. Perm. Esmt.
0.12 Ac. Temp. Esmt.
END PROJECT
Fed. Improv. Ends approx. 690' East & 10' North of the N.W. Cor. of W½ Lot 1, NW¼ Sec. 4, T29N, R13E.
STA. 148+00.0
W½ Lot 1 NW¼ 4-29-13
Land Survey Monument
The ¼ Sec. Cor. between Sec. 4 & 5, T29N, R13E is 1357.58' S 0°28'33"W of P.O.C. Sta. 134+20.0. ½" Iron Rod (next large stone) Set by Richard T. Kogge L.S. 1276
From Sta. 104+94.6
Cl. A 3432
Cl. A (Ch. Ch. Out) 10 L.G.
Cl. A (Born) 7764
Fill 9201
Overhaul 1,435,969 Sta. Yds.
Cl. 1 L.G. (Appr.) 25 Sta.
Lowest of 8-Power
Lower of 2-Power Wires
1-T.P. Cable
+0.05 %
Lt. & Rt. Dt.
F.L. 328.5
F.L. 328.8
Lt. & Rt. Dt.
Lt. Dt.
Rt. Dt.
Chan. 324.0
F.L. 323.5
340
330
320
BM #11-A
Elev.
120 1 2 3 4 125 6 7 8 9 130 1 2 3 4 135 6 7 8 9 140 1 2 3 150 1 2 3 4 155

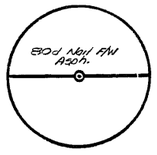

SURVEY TIE
Sta. 120+50 SR Job No. 10-X-M-358=
Sta 120+50 (Orig Rte.M) proj. S-268-A(1)
10-X-M-358
RRS-RS-1146(3)
10 SCOTT M
E.T. MILLER et al
NE¼ SW¼ 5-29-13
P.I. 3+34.27
Δ 27°10' Lt.
D 12°30'
T 110.75'
L 217.33'
R 458.37'
SE 0.04'/Ft.
W 2.0'
LEO HOWELL
Exist. R/W
1/4 1/4 Sec. Line
Perm. Esm't.
HELEN NANCE
RIELLY BATTS EST.
E.T. MILLER et al
BURLINGTON NORTHERN R.R. R/W
0.51 Ac. Perm. Esm't.
SE¼ SW¼ 5-29-13
Note: See Plan-Profile Sh. #4 for additional details.
MARTHA B. SHAFER
RICHARD L. ENDERLE
E½ Lot 1 NE¼ 5-29-13
P.I. 126+44.18
Δ 37°45' Rt.
D 12°30'
T 156.71'
L 302.00'
R 458.37'
SE 0.04'/Ft.
W 4.0'
R/W for County
P.I. 128+88.46
Δ 24°22'20" Lt.
D 12°30'
T 98.99'
L 194.98'
R 458.37'
SE 0.04'/Ft.
W 4.0'
ELMER K. GLASTETTER
W½ Lot 1 NE¼ 5-29-13
P.I. 121+88.95
Δ 13°22'40" Lt.
D 7°30'
T 89.59'
L 178.37'
R 763.94'
SE 0.04'/Ft.
W 0
FELDEN ST.
ELMER ENDERLE
EDWARD HESS
HERMAN ST.
MURRAY
Note: See Plan-Profile Sh. #5 for additional information.
Cl. A 2251
Cl. A Borr. 2041
Fill 3577
Overhaul 236,333 Sta. Yds.
Cl. I LG. (Appr.) 0.5 Sta.
Obtain Borrow from Borr. Area Rt. of Rte. M Sta. 301+45
Cl. A 1701
Fill 1338
Cl. I LG. (Appr.) 0.3 Sta.
Cl. A 806
Cl. A Borr. 539
Fill 1121
Overhaul 99,370 Sta. Yds.
Cl. I LG. (Appr.) 0.3 Sta.
Obtain Borrow from Borr. Area Rt. of Rte. M Sta. 301+45
280' V.C. K 46.6
140' V.C. K 37.4
110' V.C. K 36.6 SSD 290
50' V.C. K 14.7 SSD 230
150' V.C.
150' V.C. K 130
-3.0%
+3.0%
0.0%
-3.4%
+0.34%
0.0%
-1.0%
High Rail
PROFILE BURLINGTON NORTHERN R.R.
340
330
320

FED ROAD DIV NO	STATE	JOB NO 10-X-M-358	SHT NO
7	MO.	PROJ NO RRS-RS-1146(3)	7
DIV NO	COUNTY	ROUTE	NO
10	SCOTT	M	

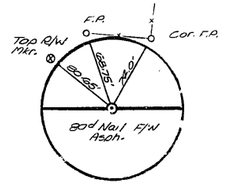
FINAL PLAT



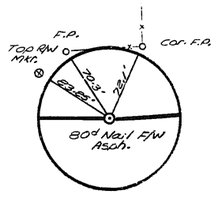
P.O.T. 64+00.0



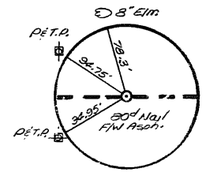
P.O.T. 72+22.65



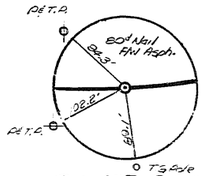
P.O.T. 74+47.65



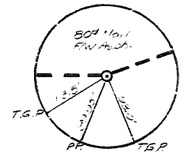
P.S. 74+51.88 Bk. =
74+84.09 Ah.



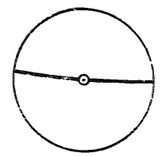
P.O.S.T. 77+29.12

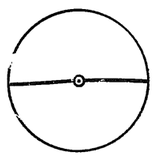


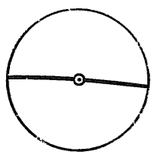
S.C. 77+34.09



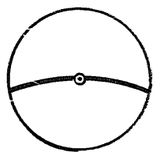
P.I. 79+51.84
Δ 26°53' Lt.

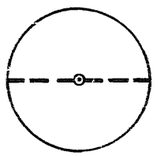


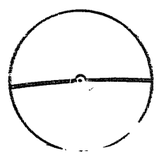


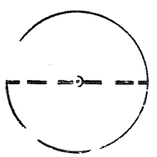


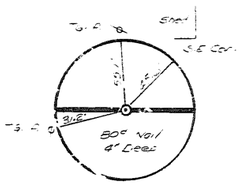
P.I. 91+97.69
Δ 60°16'21" Rt.



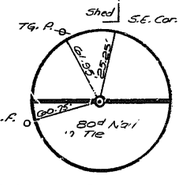




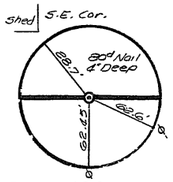




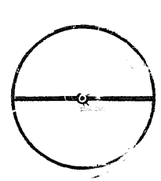
P.O.T. 102+82.59

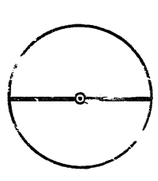


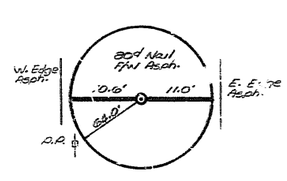
P.O.T. 103+12.06 =
7493+83 B/E N.R.R.
566+39 St. L.S.W. R.R.



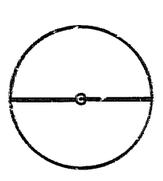
P.O.T. 103+ 3.44

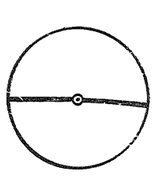


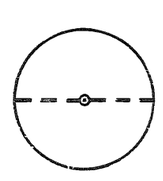


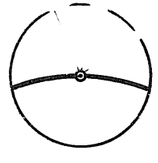


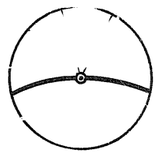
P.O.T. 122+01.54

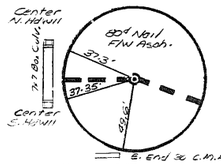




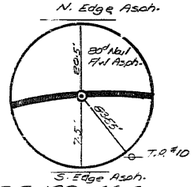




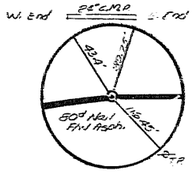




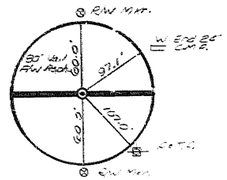
P.I. 135+05.07
Δ 33°41'46" Rt.



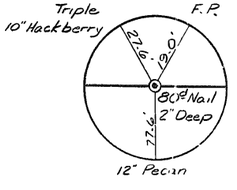
C.S. 138+46.61



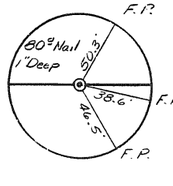
S.T. 140+96.61 Bk. =
147+66.95 Ahd.



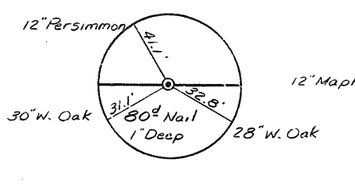
P.O.T. 159+00



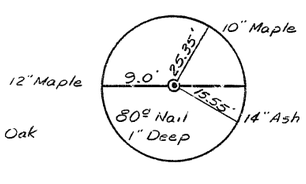
P.O.T. 0+00.0 B/L Borr. =
P.I. 27+73.95 B/L Co. Rd.



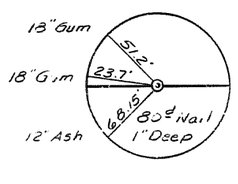
P.O.T. 2+16.94 B/L Borr.



P.O.T. 6+81.67 B/L Borr.



P.O.T. 7+90.0 B/L Borr.



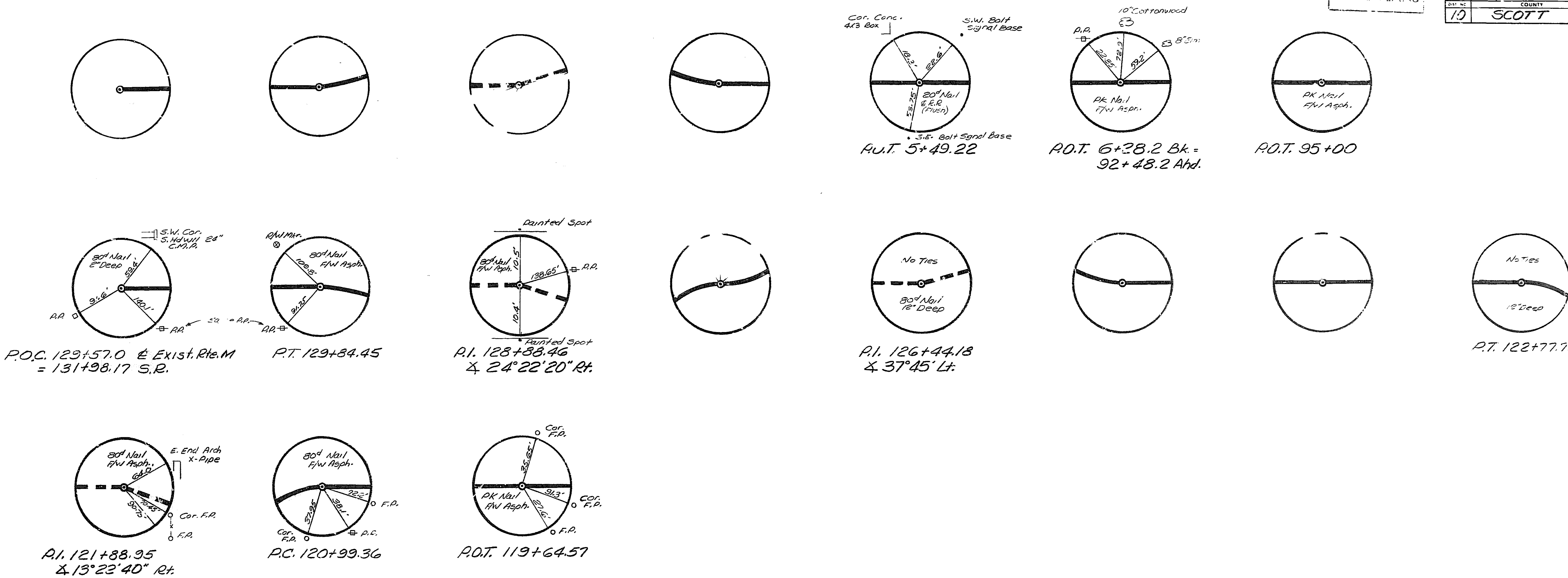
P.O.T. 9+26.5 B/L Borr.

REFERENCED POINTS

Sheet 1 of 2

FED ROAD DIV NO	STATE	JOB NO 10-X-M-358	SHEET NO
7	MO.	PROJ NO BRS-RS-1146(3)	8
DIST NO		COUNTY	ROUTE
10		SCOTT	M

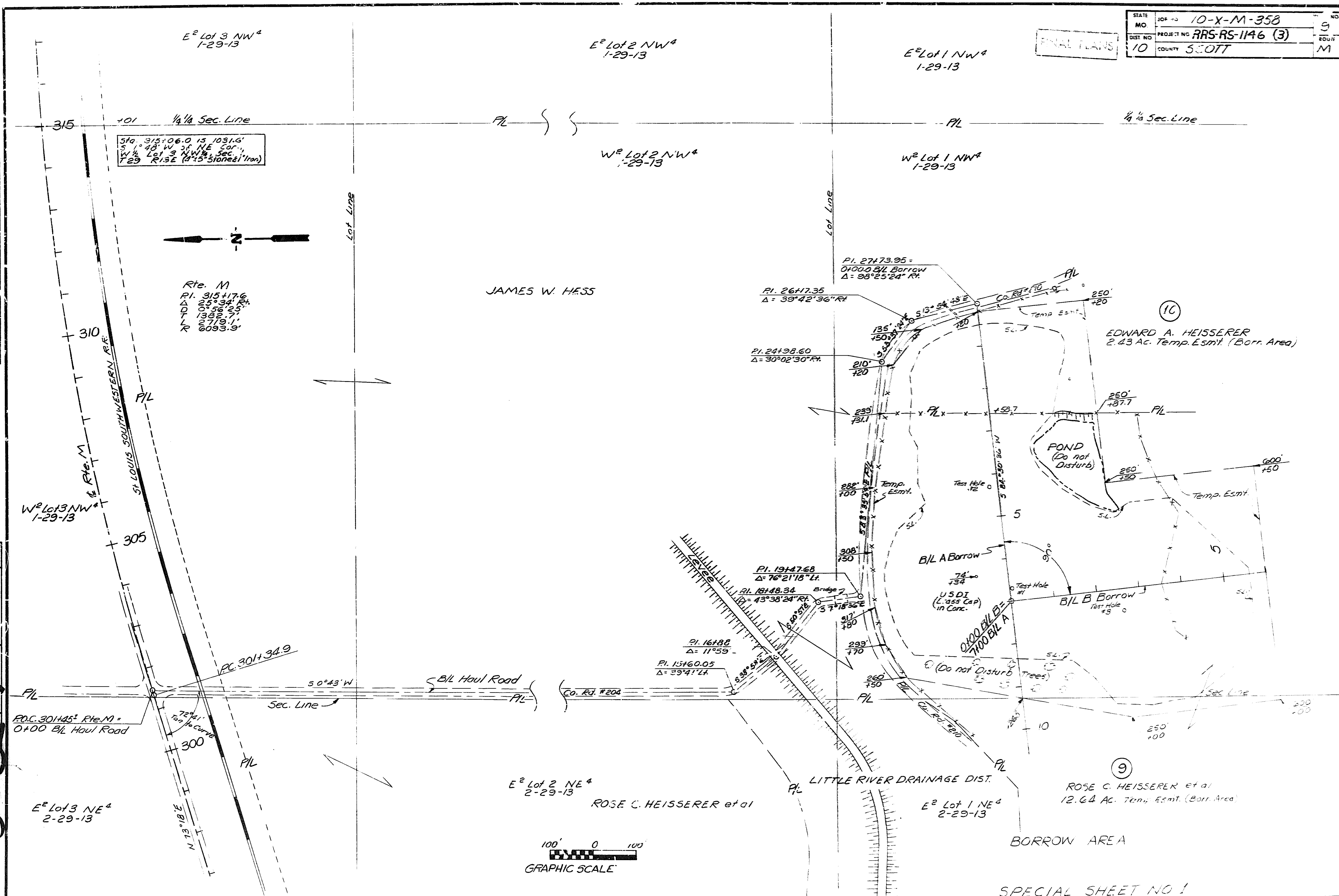
FINAL PLANS



Cor. Conc. 4x3 Box
S.W. Bolt Signal Base
18.3'
22.6'
20d Nail & R.R. (Flush)
55.75'
S.E. Bolt Signal Base
P.O.T. 5+49.22
10" Cottonwood
P.P.
8" Elm
22.85'
72.9'
59.2'
PK Nail F/W Asph.
P.O.T. 6+28.2 Bk. = 92+48.2 Ahd.
PK Nail F/W Asph.
P.O.T. 95+00
S.W. Cor. S. Hdwll 24" C.M.P.
80d Nail 2" Deep
59.8'
91.6'
140.1'
P.P.
P.O.C. 123+57.0 ℄ Exist. Rte. M = 131+98.17 S.R.
R/W Mkr.
80d Nail F/W Asph.
100.8'
91.25'
P.T. 123+84.45
Painted Spot
80d Nail F/W Asph.
10.5'
138.65'
10.4'
Painted Spot
P.I. 128+88.46 ∡ 24°22'20" Rt.
No Ties
80d Nail 12" Deep
P.I. 126+44.18 ∡ 37°45' Lt.
No Ties
12" Deep
P.T. 122+77.73
80d Nail F/W Asph.
64.0'
E. End Arch X-Pipe
70.45'
90.75'
Cor. F.P.
F.P.
P.I. 121+88.95 ∡ 13°23'40" Rt.
80d Nail F/W Asph.
72.2'
57.95'
38.1'
F.P.
Cor. F.P.
P.C.
P.C. 120+99.36
Cor. F.P.
35.65'
PK Nail F/W Asph.
91.3'
27.6'
Cor. F.P.
F.P.
P.O.T. 119+64.57

REFERENCED POINTS

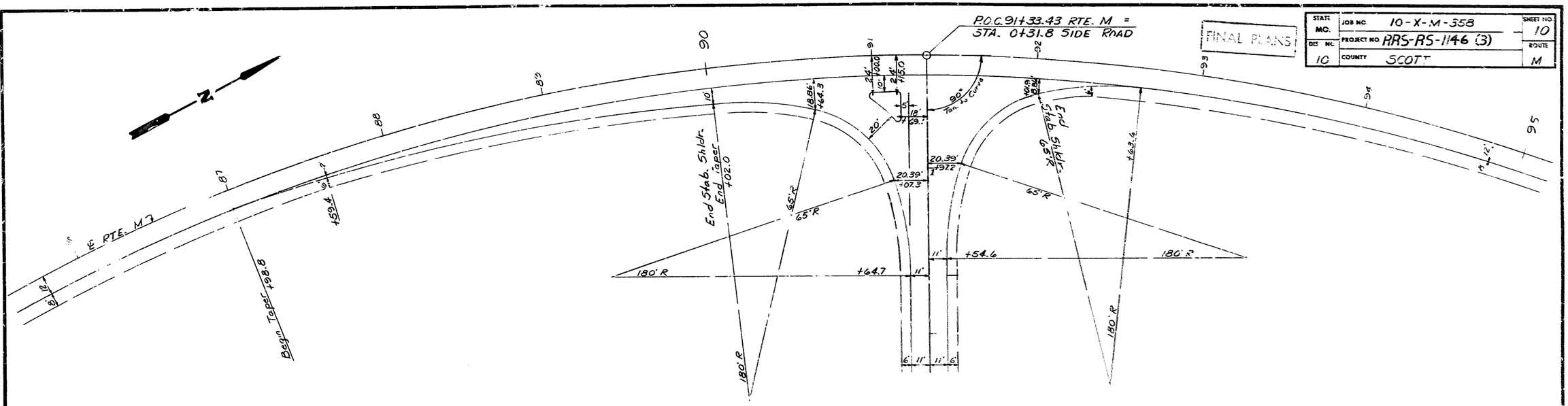
Sheet 2 of 2



STATE MO.
DIST NO 10
JOB NO 10-X-M-358
PROJECT NO RRS-RS-1146 (3)
COUNTY SCOTT
SHEET NO 9
ROUTE M
FINAL PLANS
E² Lot 3 NW⁴ 1-29-13
E² Lot 2 NW⁴ 1-29-13
E² Lot 1 NW⁴ 1-29-13
¼ ¼ Sec. Line
P/L
W² Lot 2 NW⁴ 1-29-13
W² Lot 1 NW⁴ 1-29-13
Sta. 315+06.0 is 1031.6' S 1°48' W of NE Cor., W½ Lot 3 NW¼ Sec. T29 R13E (4"x5" Stone & ½" Iron)
Lot Line
Rte. M
P.I. 315+17.6
Δ 25°34' Rt.
D 0°56'25"
T 1382.7'
L 2719.1'
R 6093.9'
JAMES W. HESS
St LOUIS SOUTHWESTERN R.R.
W² Lot 3 NW⁴ 1-29-13
P.I. 27+73.95 = 0+00.0 B/L Borrow
Δ = 98°25'24" Rt.
P.I. 26+17.35
Δ = 39°42'36" Rt.
P.I. 24+98.60
Δ = 30°02'30" Rt.
Co. Rd. #210
Temp. Esmt.
EDWARD A. HEISSERER
2.43 Ac. Temp. Esmt. (Borr. Area)
POND (Do not Disturb)
Test Hole #2
B/L A Borrow
B/L B Borrow
Test Hole #1
Test Hole #3
USDI (Brass Cap in Conc.)
0+00 B/L B = 7+00 B/L A
P.I. 19+47.68
Δ = 76°21'18" Lt.
P.I. 18+48.34
Δ = 43°38'24" Rt.
Bridge
P.I. 16+88
Δ = 11°59'
P.I. 15+60.05
Δ = 39°41' Lt.
Levee
(Do not Disturb Trees)
P.C. 301+34.9
S 0°43' W
B/L Haul Road
Co. Rd. #204
Sec. Line
P.O.C. 301+45± Rte. M = 0+00 B/L Haul Road
72°41' Tan. to Curve
N 73°18' E
LITTLE RIVER DRAINAGE DIST.
E² Lot 2 NE⁴ 2-29-13
ROSE C. HEISSERER et al
E² Lot 3 NE⁴ 2-29-13
E² Lot 1 NE⁴ 2-29-13
ROSE C. HEISSERER et al
12.64 Ac. Temp. Esmt. (Borr. Area)
BORROW AREA
GRAPHIC SCALE
100' 0 100'
SPECIAL SHEET NO 1

STATE MO.	JOB NO. 10-X-M-358	SHEET NO. 10
DIS. NO. 10	PROJECT NO. RRS-RS-1146 (3)	ROUTE M
	COUNTY SCOTT	

FINAL PLANS

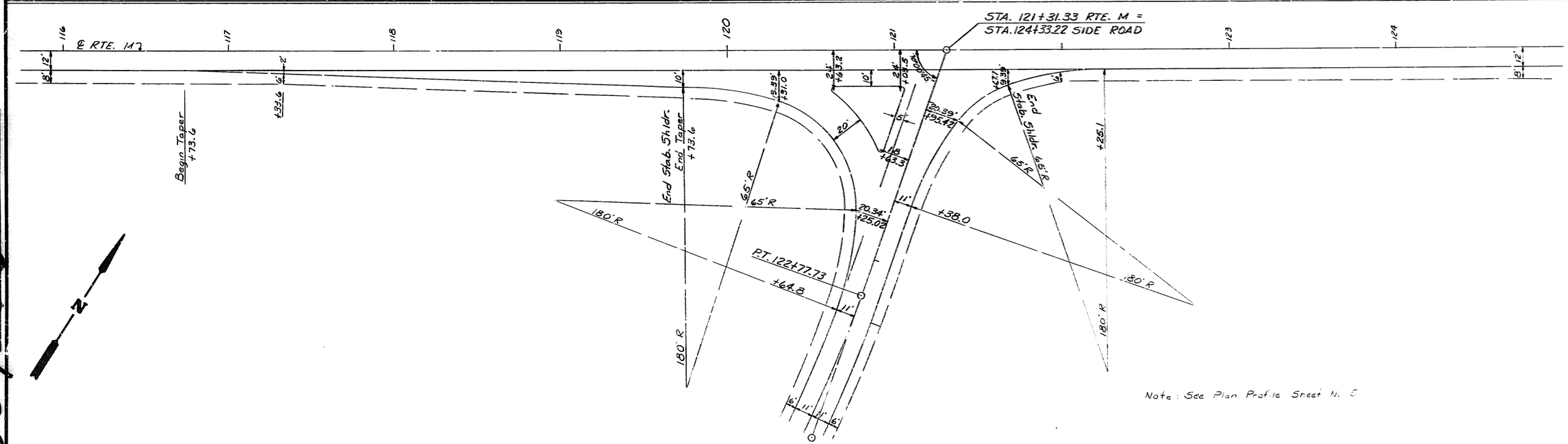


GRAPHIC SCALE IN FEET
-30' 0 30' 60' 90' 120'

SIDE ROAD RT.
STA. 91+33.43

P.I. 91+97.69
Δ 60° 16' 21"
D 5°
Ls 250'
Ts 791.52'
Lc 955.45'
R 1145.92'
θs 6.25°

Note: See Plan Profile Sheet No. 4



GRAPHIC SCALE IN FEET
-30 0 30 60 90 120

SIDE ROAD RT.
STA. 121+31.33

Note: See Plan Profile Sheet No. 5

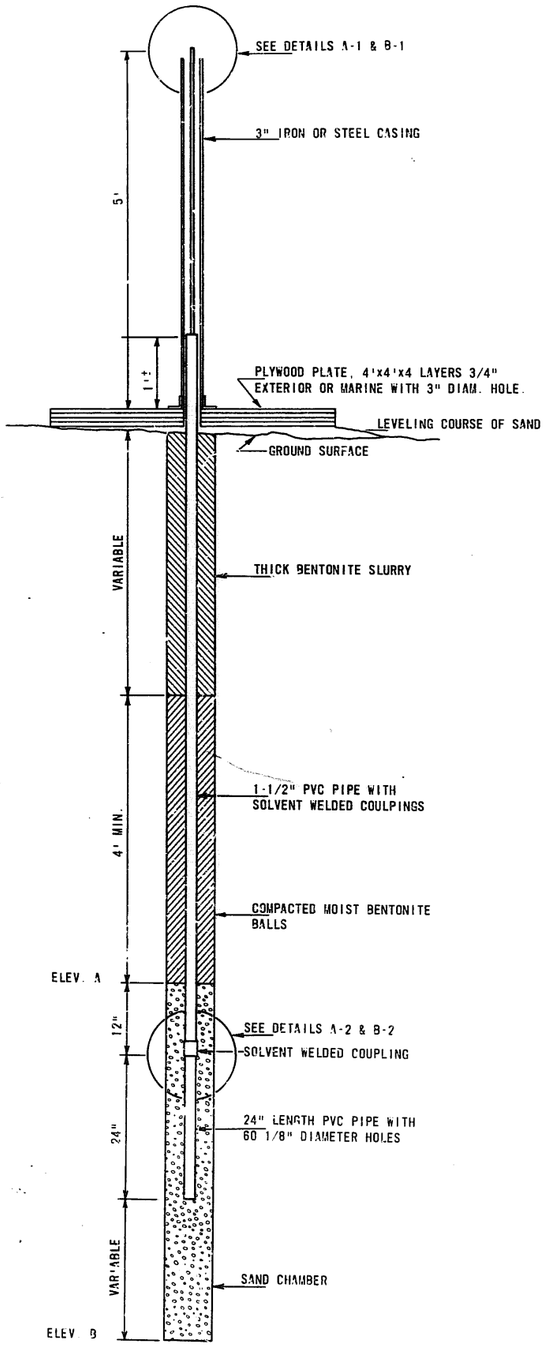
SPECIAL SHEET NO. 2

FED. ROAD DIV. NO.	STATE	FEDERAL PROJECT NO. & SEC	SHEET NO.
5	MO.	RRS-RS-1146(3)	11
DIV. NO.	COUNTY		SCALE
10	SCOTT		N

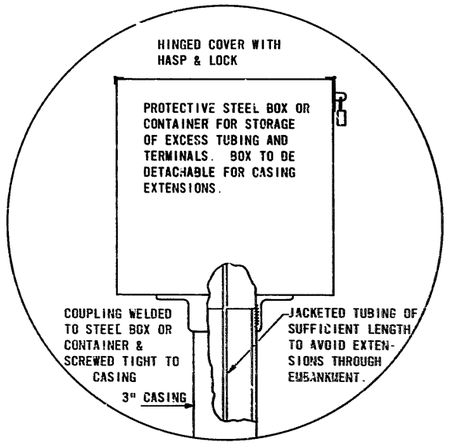
Job No. 10-X-N

FINAL PLANS

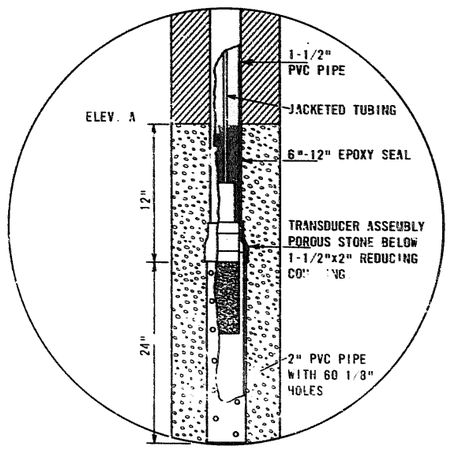
GENERAL



TYPE A

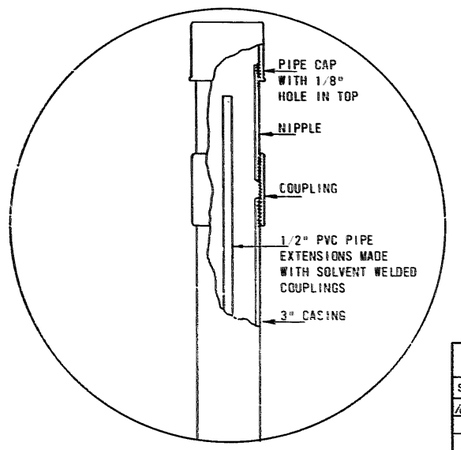


DETAIL A-1

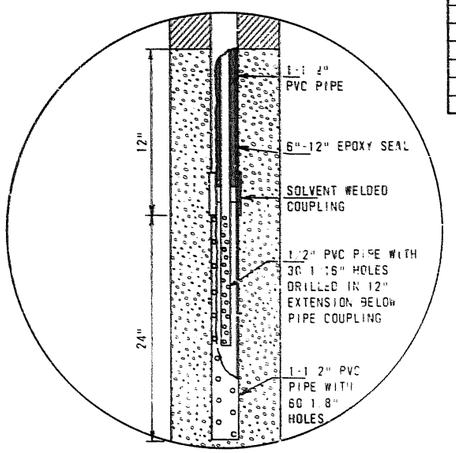


DETAIL A-2

TYPE B



DETAIL B-1



DETAIL B-2

PORE PRESSURE MEASUREMENT DEVICES

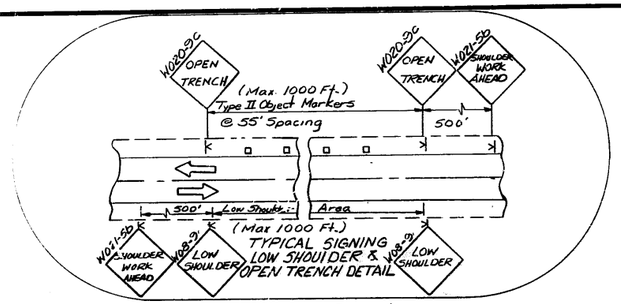
STATION	LOCATION	TYPE	ELEV A	ELEV B	EMBK. CONTROL LIMITS	SEE NOTE
105+20	℄	A	325.0	321.0	Sta. 104+ to Sta. 111+	

SPECIAL SHEET NO. 3

PORE PRESSURE MEASUREMENT DEVICES

STATE	JOB NO. 10-X-M-358	SHEET NO.
MO.	PROJECT NO. ARS-RS-1146(3)	12
DIST NO.	COUNTY SCOTT	ROUTE
10		M

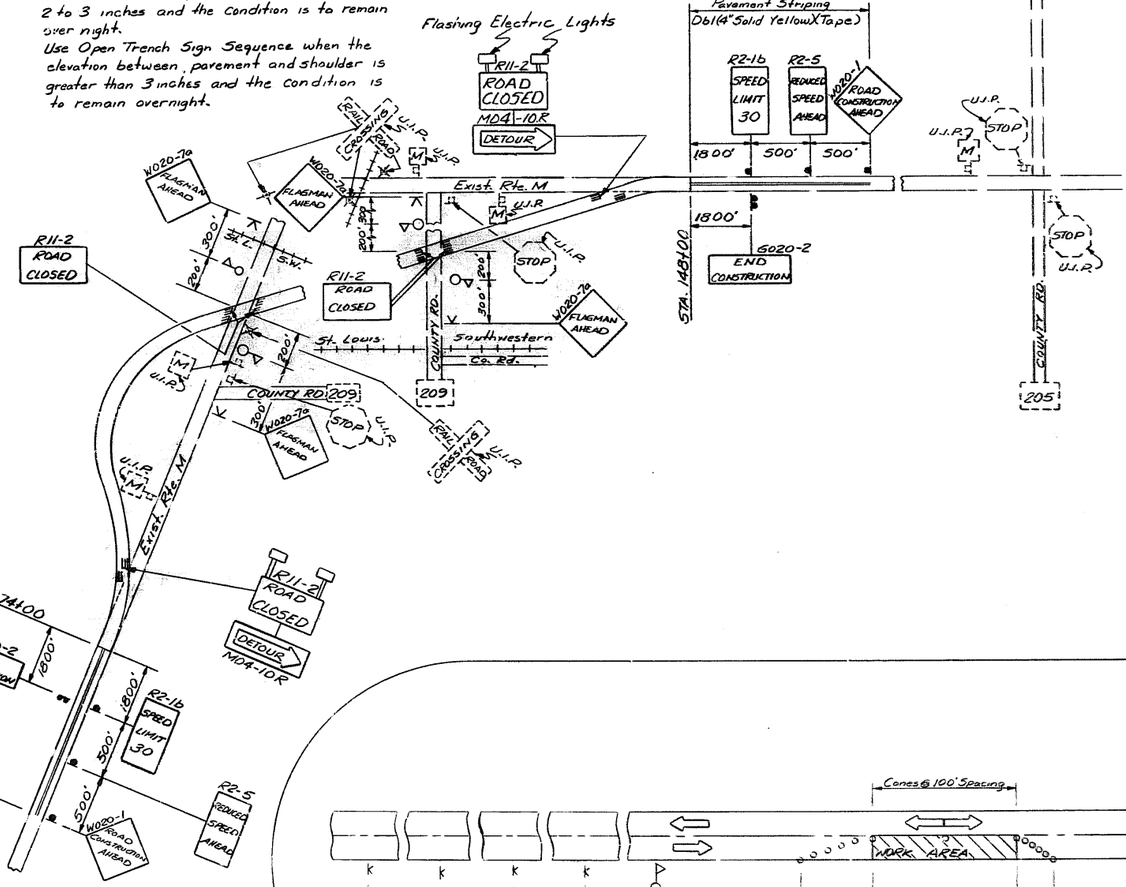
FINAL PLANS

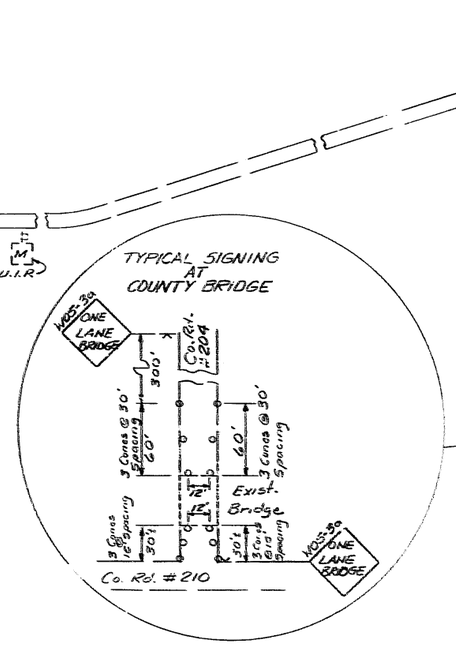


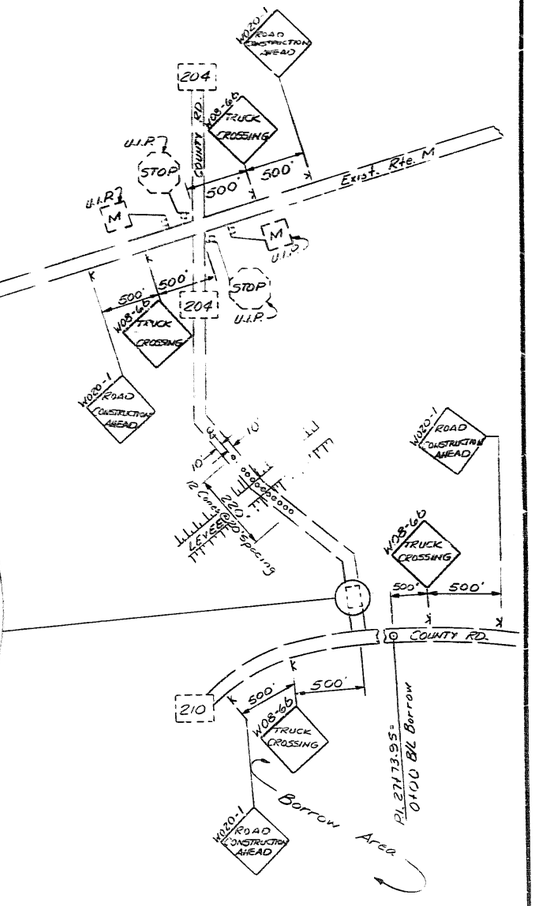
(Low Shoulder & Open Trench Detail)

Note: Use Low Shoulder Sign Sequence when the elevation between pavement and shoulder is 2 to 3 inches and the condition is to remain over night.

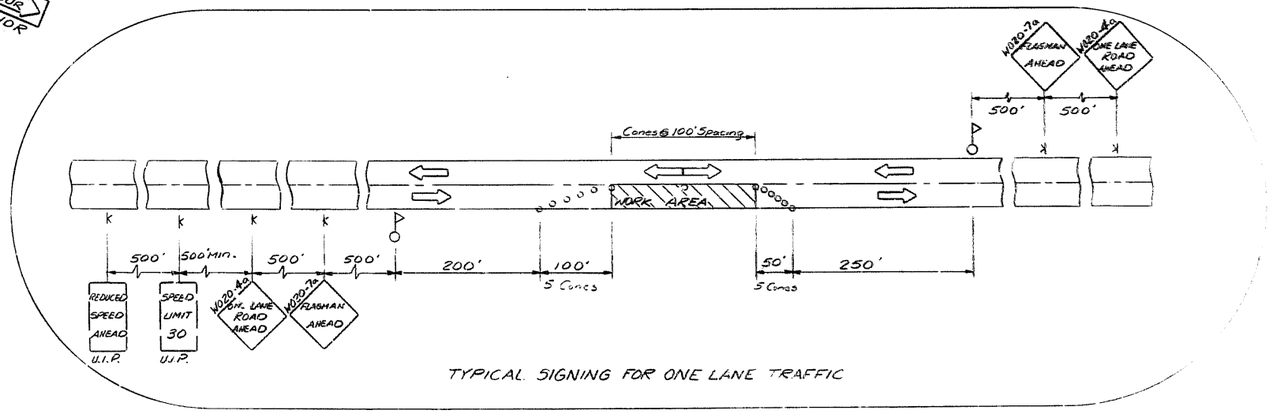
Use Open Trench Sign Sequence when the elevation between pavement and shoulder is greater than 3 inches and the condition is to remain overnight.







TYPICAL SIGNING FOR HAUL ROAD



TYPICAL SIGNING FOR ONE LANE TRAFFIC

LEGEND

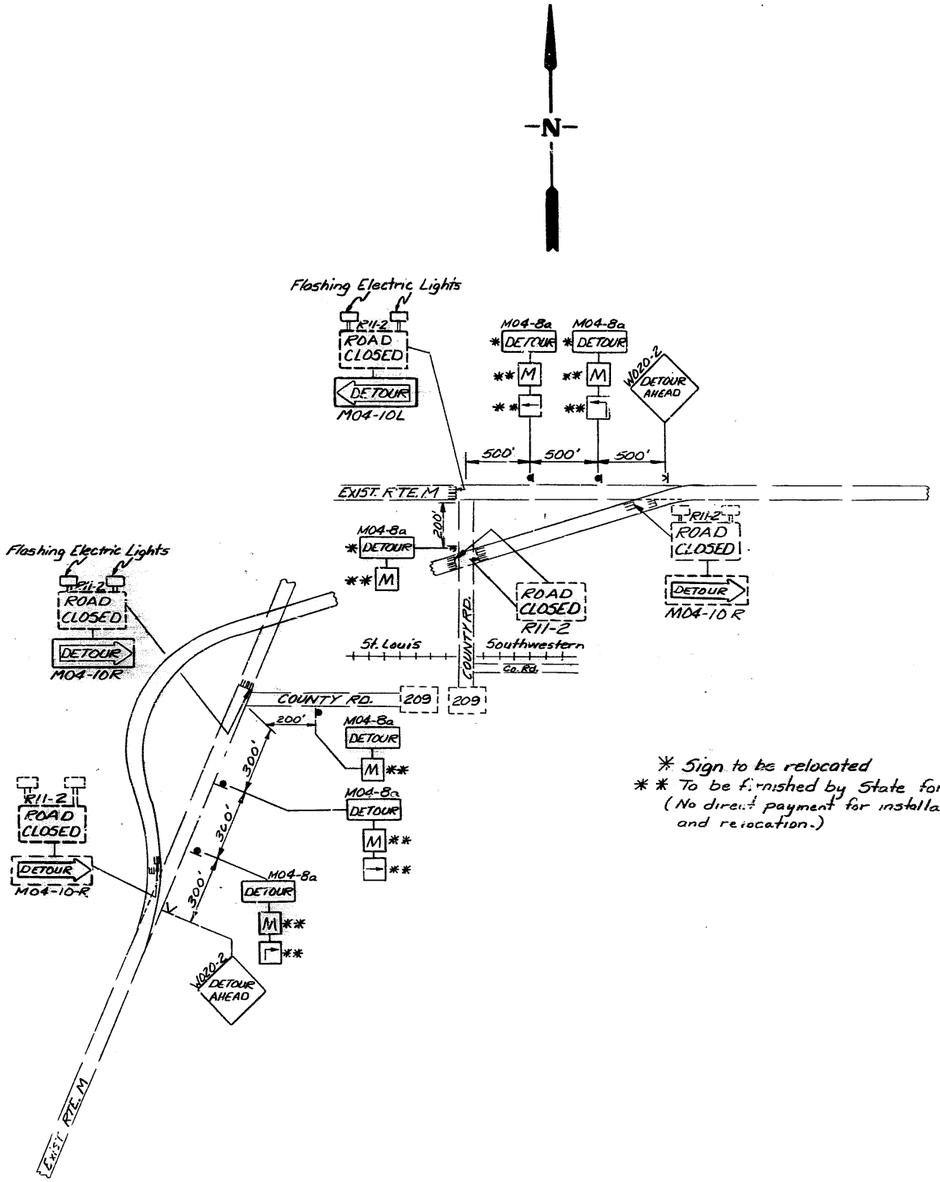
- Portable Mounted Sign
- Semi-Permanent Mounted Sign
- Movable Barricade
- Cone (Daytime Operation Only)
- Flagman
- Type II Object Marker
- Exist. Signs

TRAFFIC CONTROL PLAN - 2 Stage

SPECIAL SHEET NO.

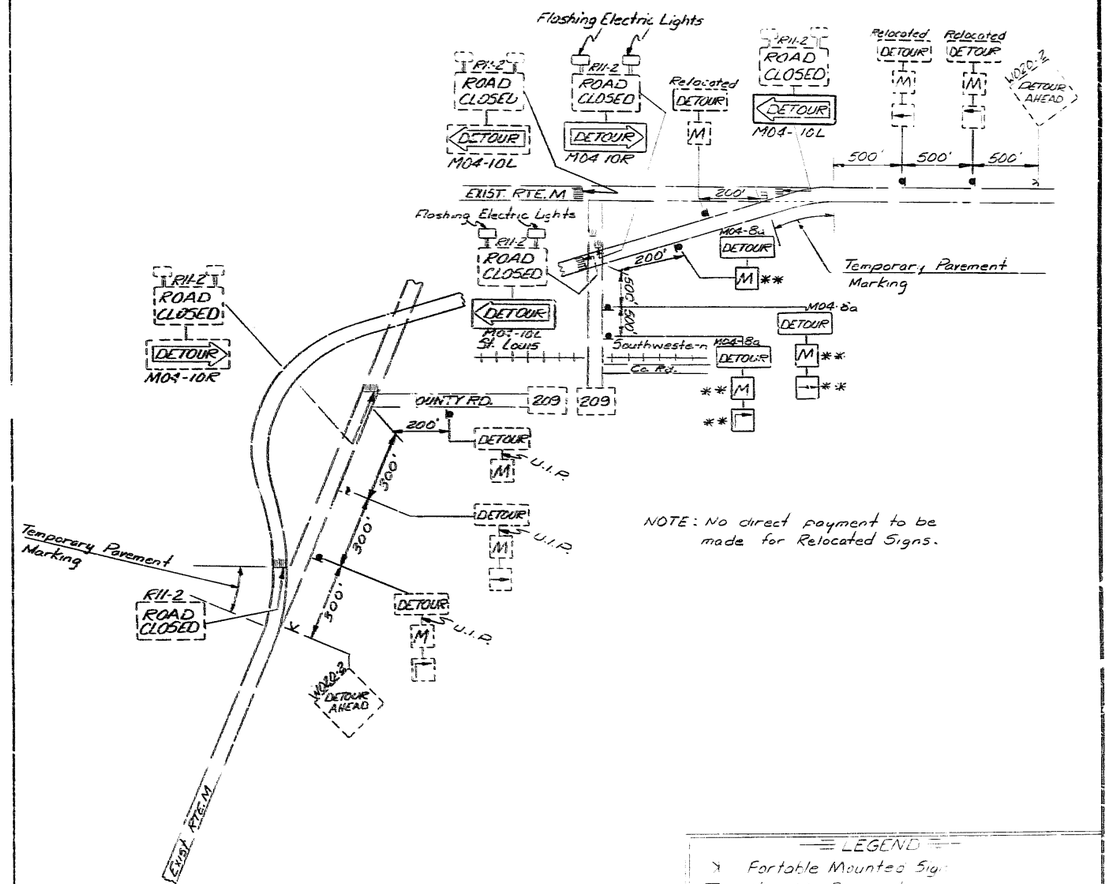
STATE	JOB NO	SHEET NO
MO.	10-X-M-358	13
DIST NO	PROJECT NO	ROUTE
10	ARS-RS-1146 (3)	M
	COUNTY SCOTT	

FINAL PLANS



* Sign to be relocated
** To be furnished by State forces (No direct payment for installation and relocation.)

TRAFFIC CONTROL PLAN
2nd Stage



NOTE: No direct payment to be made for Relocated Signs.

LEGEND
- Portable Mounted Sign
- Movable Barricade
- Temporary Route Marking Sign

Note: See Special Sheet No. 4 for Typical Signing Low Shoulder & Open Trench Typical Signing for One Lane Traffic and Advance Warning Signs

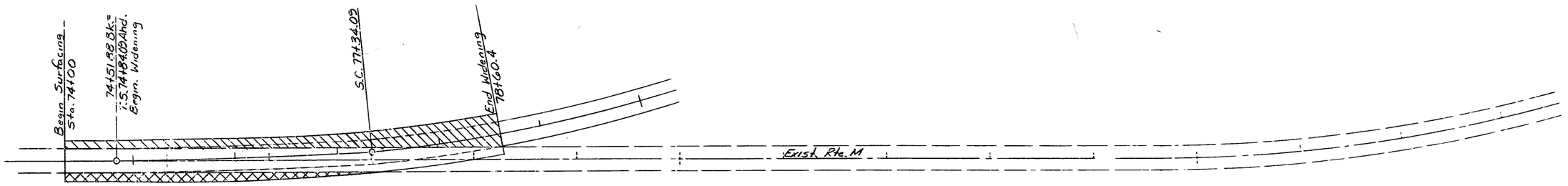
TRAFFIC CONTROL PLAN
3rd Stage

SPECIAL SHEET NO. 5

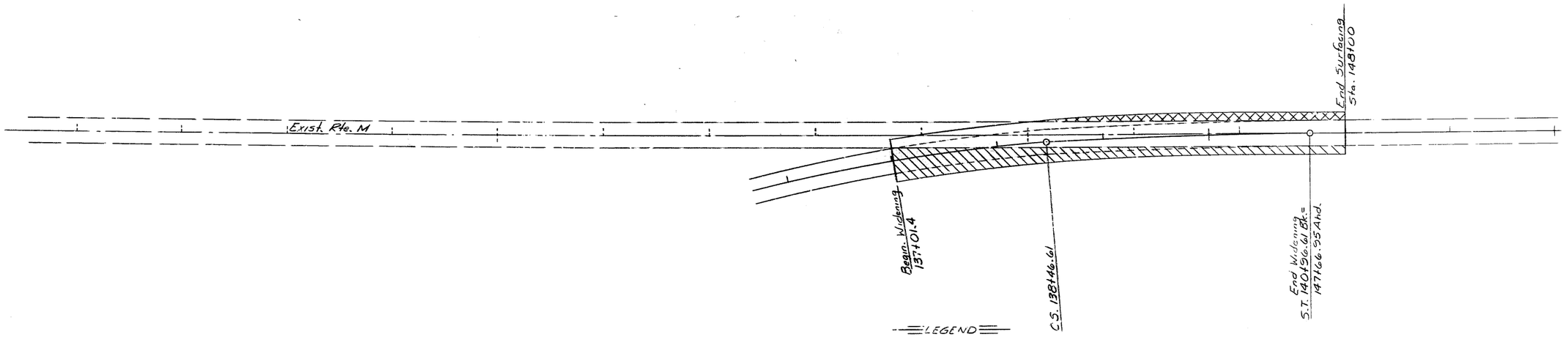
NOTE BOOK | TEMPLATE | AREAS CHECKED | NO

FINAL PLANS

STATE	JOB NO. 10-X-M-358	SHEET NO.
MO.	PROJECT NO. RRS-RS-1146 (3)	14
DIST.	COUNTY SCOTT	ROUTE
10		M



BEGIN PROJECT



LEGEND

Plant Mix Bituminous Base

Type 1 or Type 2 Aggregate

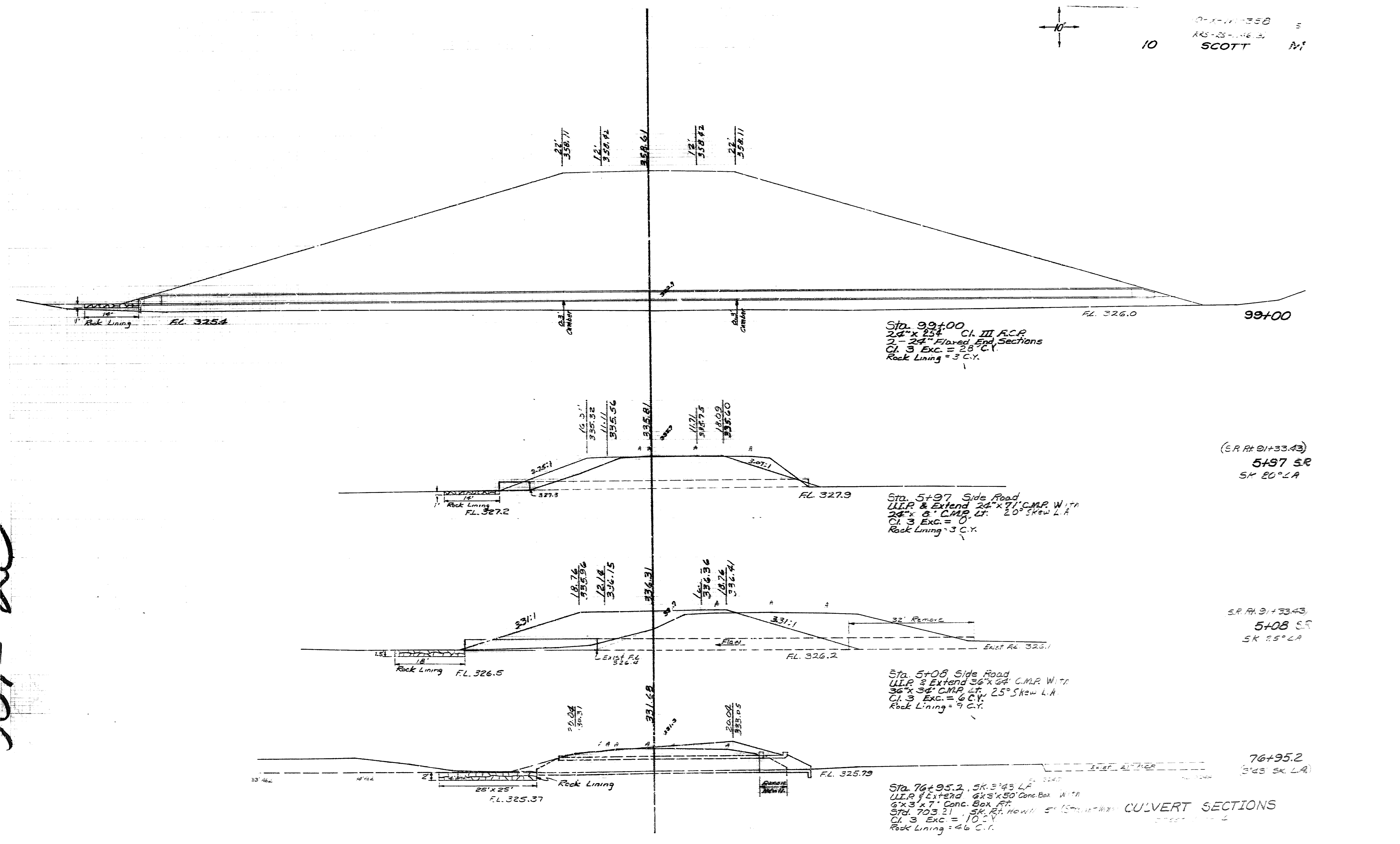
END PROJECT

WIDENING
BEGIN & END PROJECT

SPECIAL SHEET NO. 6

SURVEY
SURVEYED
PLOTTED
NOTE BOOK
TEMPLATE
AREAS
AREAS CHECKED
NO.

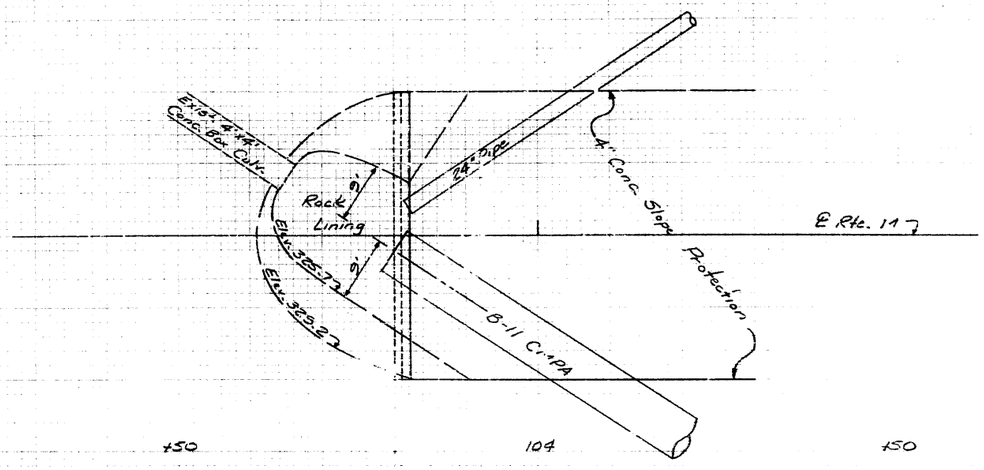
158



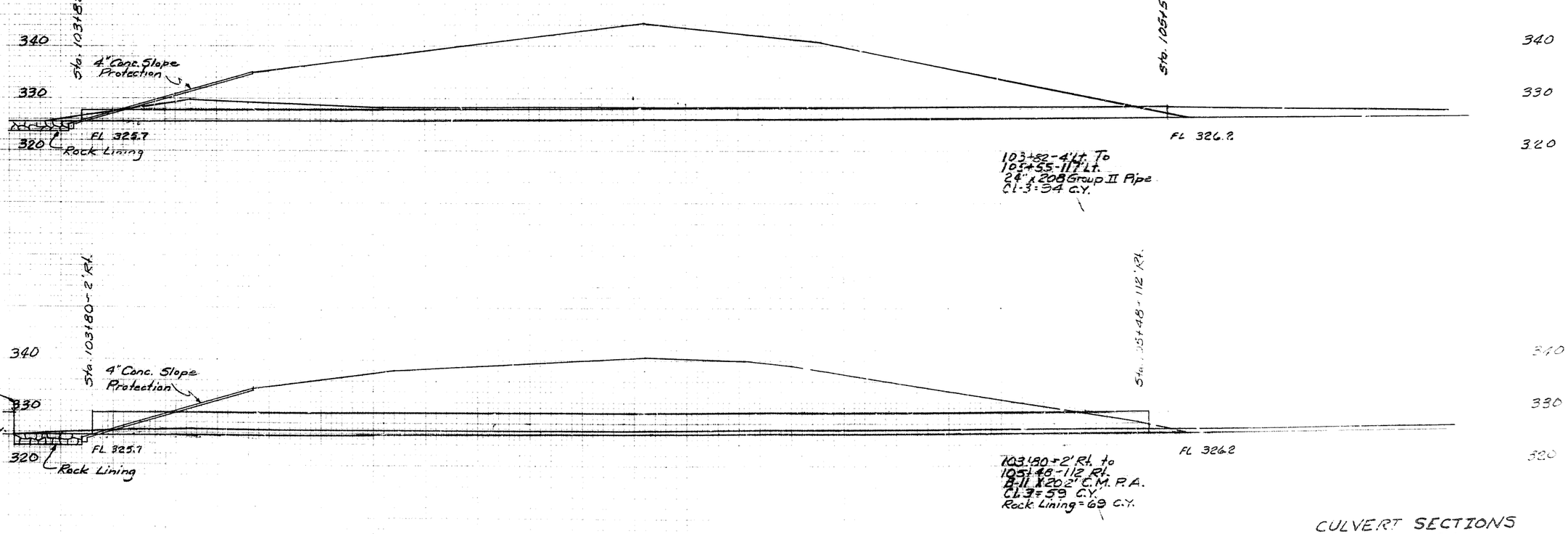
10
SCOTT
22' 358.11
12' 358.42
358.61
12' 358.42
22' 358.11
14'
1" Rock Lining
F.L. 325.4
0.3' Camber
0.3' Camber
F.L. 326.0
99+00
Sta. 99+00
24"x 254' Cl. III R.C.P.
2-24" Flared End Sections
Cl. 3 Exc. = 28 C.Y.
Rock Lining = 3 C.Y.
335.32
11.11 335.56
335.81
11.71
18.09 335.60
2.75:1
3.07:1
327.3
14'
1' Rock Lining
F.L. 327.2
F.L. 327.9
(S.R. Rt. 91+33.43)
5+97 S.R.
SK 20° LA
Sta. 5+97 Side Road
U.I.P. & Extend 24"x 71' C.M.P. With
24"x 8' C.M.P. Lt. 20° Skew L.A.
Cl. 3 Exc. = 0
Rock Lining = 3 C.Y.
18.76 335.96
12.18 336.15
336.31
336.36
18.76 336.41
3.31:1
3.31:1
32' Remove
Flow
1.5'
18'
Rock Lining
F.L. 326.5
Exist F.L. 326.4
F.L. 326.2
Exist F.L. 326.1
S.R. Rt. 91+33.43
5+08 S.R.
SK 25° LA
Sta. 5+08 Side Road
U.I.P. & Extend 36"x 64' C.M.P. With
36"x 34' C.M.P. Lt. 25° Skew L.A.
Cl. 3 Exc. = 6 C.Y.
Rock Lining = 9 C.Y.
331.48
20.02 333.05
2'
25'x 25'
Rock Lining
F.L. 325.37
F.L. 325.79
76+95.2
(3°43' SK. L.A.)
Sta. 76+95.2, SK. 3°43' L.A.
U.I.P. & Extend 6'x3'x50' Conc. Box With
6'x3'x7' Conc. Box Rt.
Std. 703.21
Cl. 3 Exc. = 10 C.Y.
Rock Lining = 46 C.Y.
CULVERT SECTIONS

10-X-M-358
RRS-RS-1196(3)
10 SCOTT

FINAL PLANS



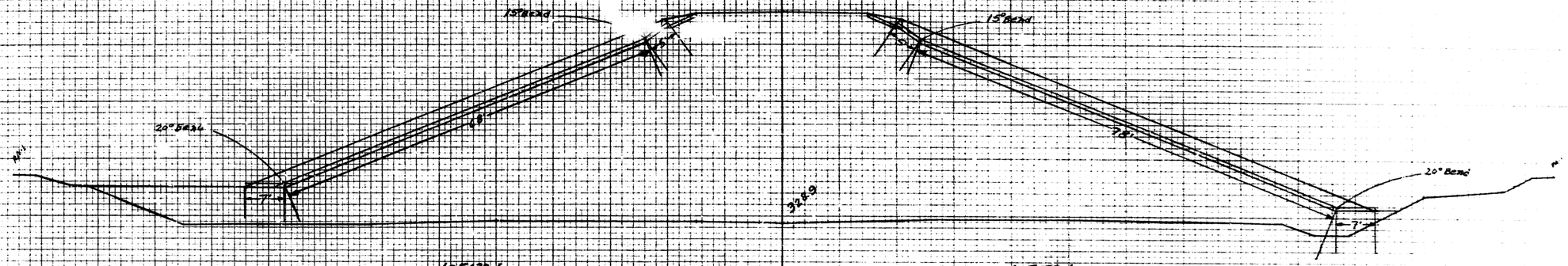
PLAN
Rock Lining Detail



CULVERT SECTIONS
Sheet 2 of 4

10-1-M-358 .7
RRS-RS-1.146(3)
10 SCOTT M

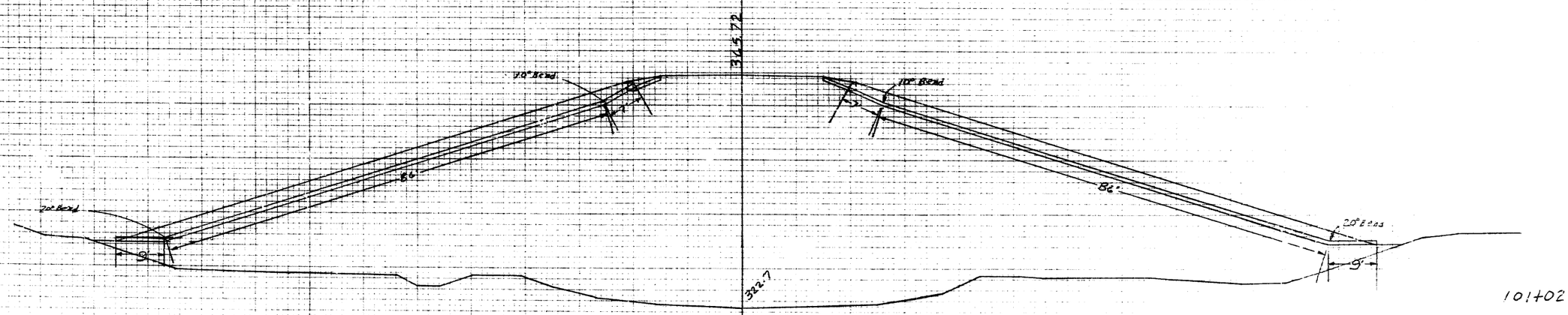
FINAL PLANS



105+22.1
8"x90' Class A Unperforated Underdrain Pipe
Length Incl. 1-15° and 1-20° Bends
Fill Ht = 2'
Cl. 3 = 27 CY.

105+22.1
8"x90' Class A Unperforated Underdrain Pipe
Length Incl. 1-15° and 1-20° Bends
Fill Ht = 2'
Cl. 3 = 30 CY.

105+22.1



101+02
8"x102' Class A Unperforated Underdrain Pipe
Length Incl. 1-10° and 1-20° Bends
Fill Ht = 2'
Cl. 3 = 33 CY.

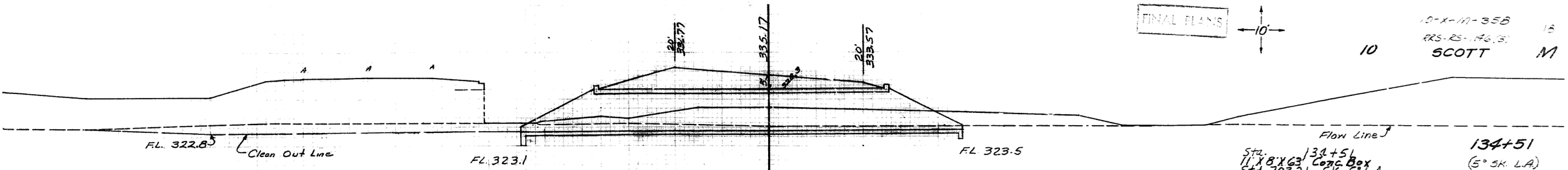
101+02
8"x102' Class A Unperforated Underdrain Pipe
Length Incl. 1-10° and 1-20° Bends
Fill Ht = 2'
Cl. 3 = 33 CY.

101+02

CULVERT SECTIONS
Sheet 3 of 4

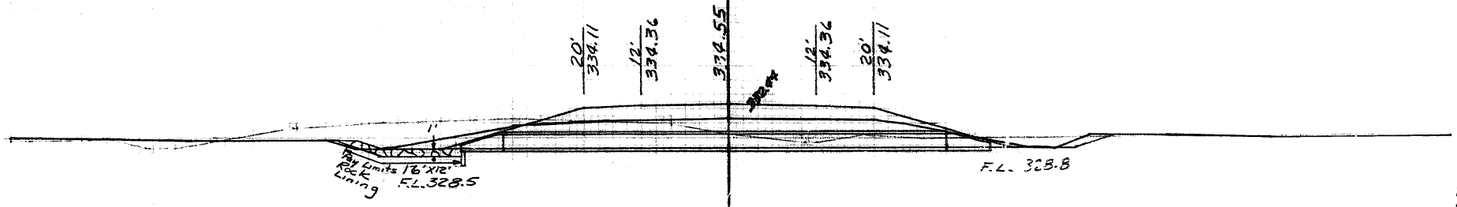
FINAL PLANS

10-X-111-35B
RRS-25-146.3
10 SCOTT M



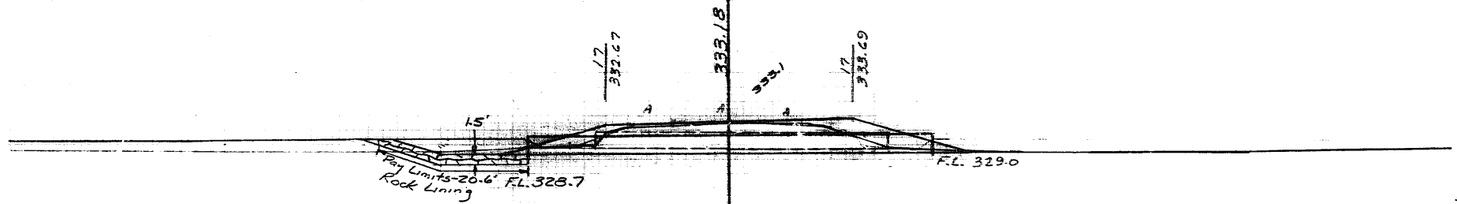
134+51
(5° SK. L.A.)

Sta. 134+51
11'X8'X63' Conc. Box
Std. 703.21 5K 5° L.A.
Straight Wings Left Rt.
Cl. 3 Exc.=300 C.Y.



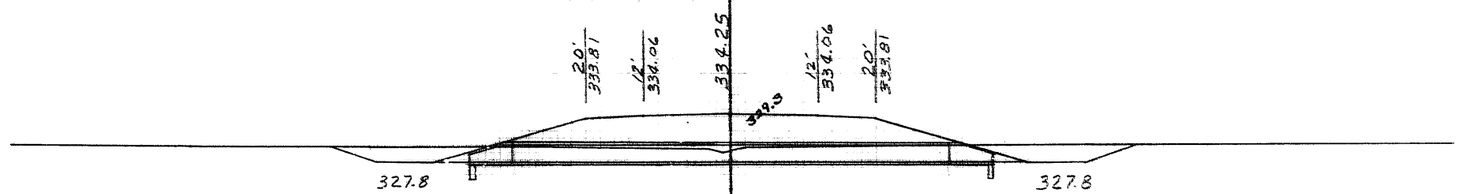
122+00

Sta. 122+00
2-24" X 64' Cl. III RCP
4-24 Flared End Sections
Cl. 3 Exc. = 92
Rock Lining = 7 C.Y.



(S.R. Rt. 121+31.33 Rte. M)
121+28 S.R.

Sta. 121+28 S.R.
30"X56' C.M.A.P.
Cl. 3 Exc. 41 C.Y.
Rock Lining = 10 C.Y.



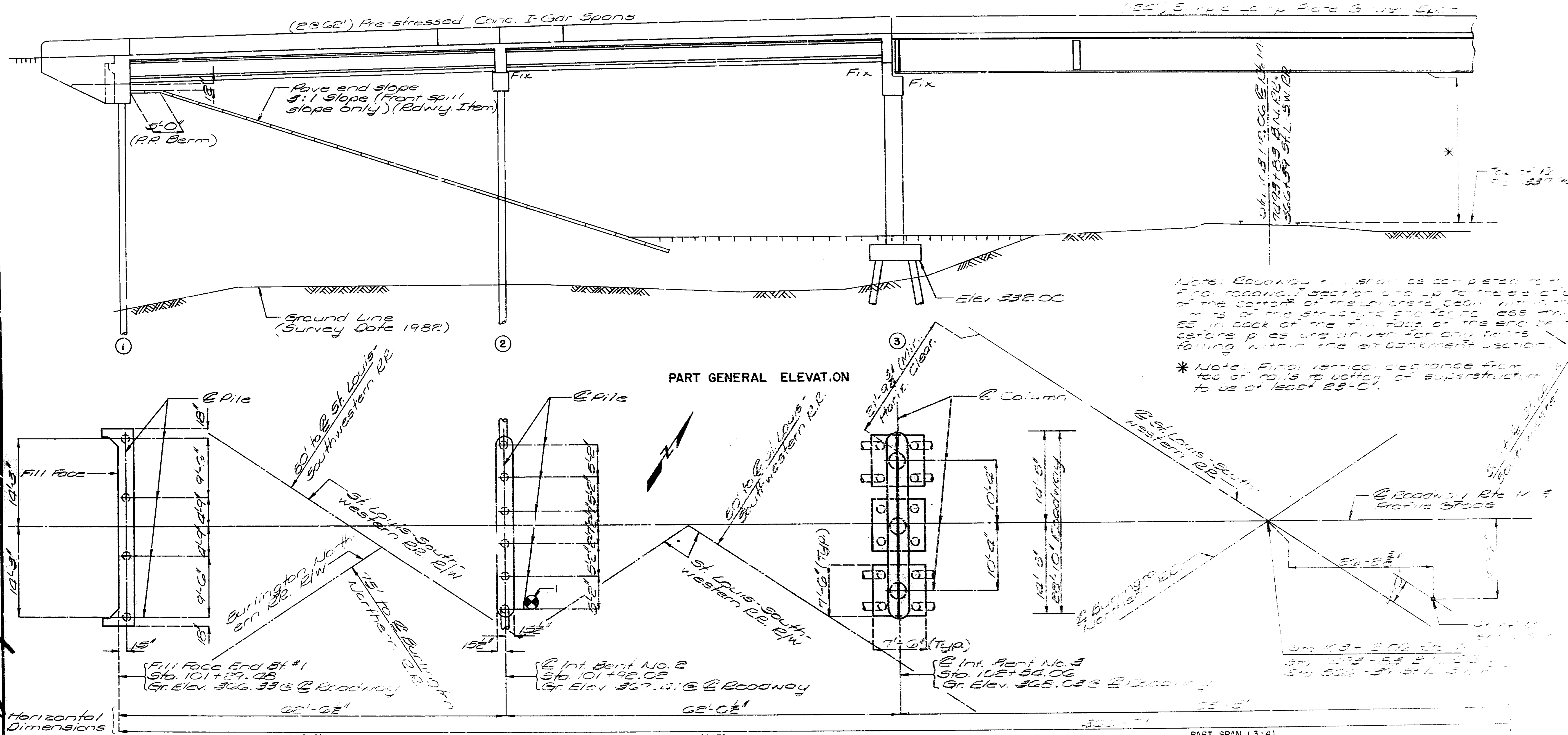
116+00

Sta. 116+00
30"X64' Cl. III RCP
2-30" Flared End Sections
Cl. 3 Exc. = 43 C.Y.

CULVERT SECTIONS
Sheet 4 of 4

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

STATE	PROJ NO	SHEET NO
MO		19
SEC 5	TWP 29N RGE 13E	



PART PLAN

PILE DATA						
BENT NO.	1	2	3	4	5	6
TYPE	Trestle	Trestle	Trestle	Trestle	Trestle	Trestle
KIND	CIP	CIP	CIP	CIP	CIP	CIP
NUMBER	4	6	12	12	6	4
APPROXIMATE LENGTH FT.	67	67	41	66	102	102
DESIGN BEARING TONS	55	56	54	55	52	51
MIN. TIP PENETRATION ELEV.	310.00	310.00	310.00	255.00	258.00	255.00
PILE STANDARD	702.02	702.02	702.02	702.02	702.02	702.02
HAMMER ENERGY REQ'D. FT. LBS.	5000	5000	5000	8000	11,300	11,300

Note: Prebore for piles in Bents No. 1, 2, 5 and 6 to elevation 320 ±.

"⊗" Indicates location of boring. For Boring Data see Sht. No. 3

Loading tests will be req'd on one permanent pile of the interior footing of both Bents No. 3 & 4.

See Special Provisions for loading tests on pile.

B.M.

BRIDGE OVER BURLINGTON NORTHERN R.R. & ST. LOUIS SOUTHWESTERN R.R.

STATE ROAD FROM CHAFFEE TO SCOTT CITY

ABOUT 1.5 MILES NORTHEAST OF CHAFFEE

PROJECT NO. STA 101+29.48

JOB NO. 10-X-M-358 RTE. M

SCOTT COUNTY

STD. 702.02
STD. 706.35
STD. 611.60
A-4376

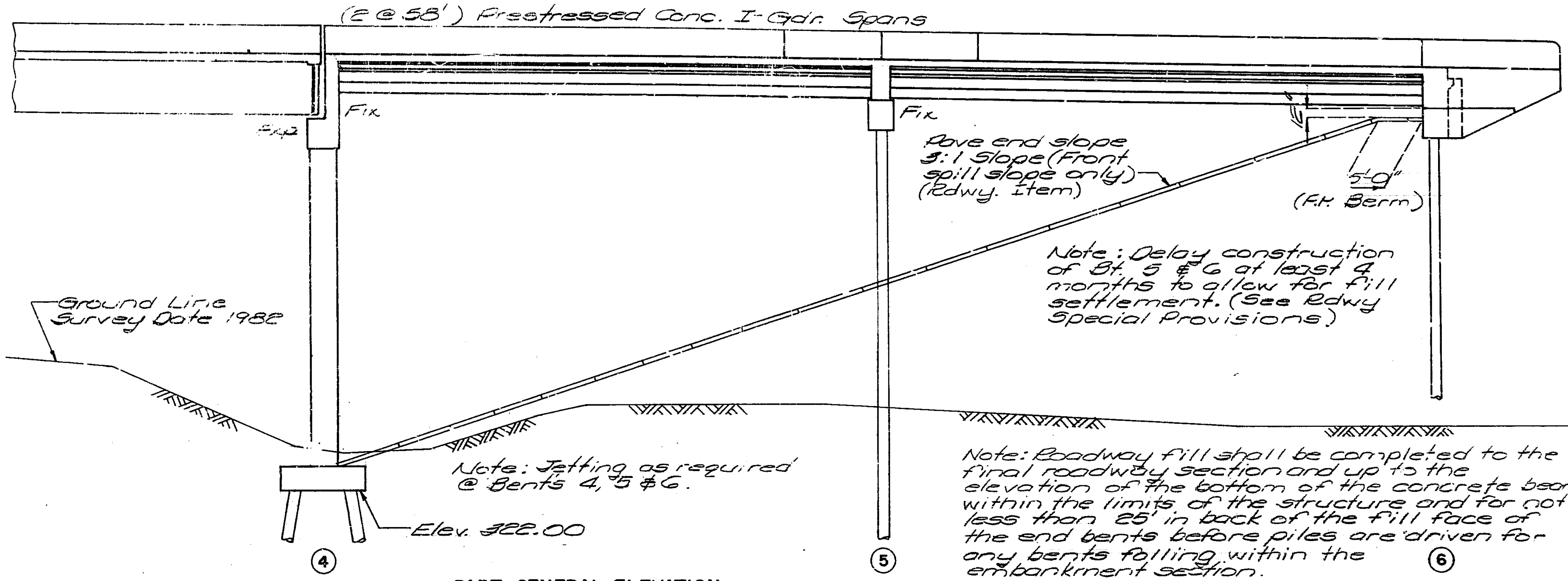
DESIGNED Sept 1986
DETAILED Jan 198
CHECKED Sept 198

Note: This drawing is not to scale. Follow dimensions.

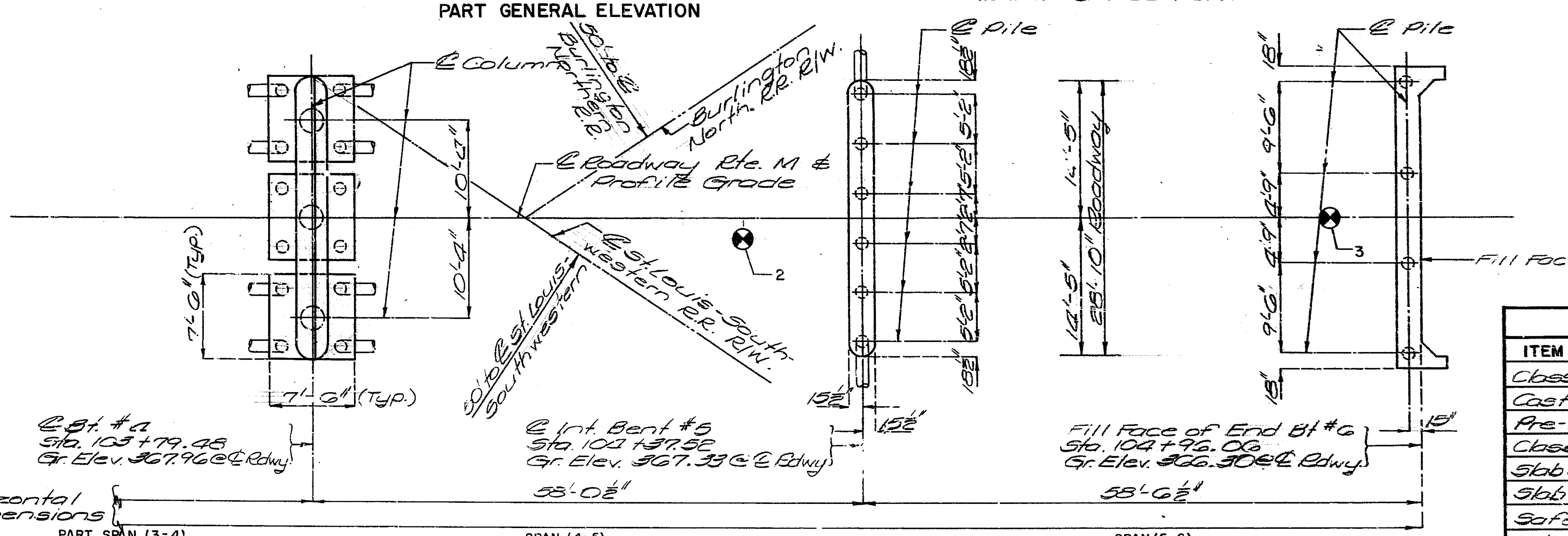
Sheet No. 1 of 28

DATE

STATE	PROJ NO	SHEET NO
		20



PART GENERAL ELEVATION



PART PLAN

Note: The rate of fill placement on the east side of the railroad should be governed by a pore pressure measuring device. Embankment control stakes should be placed on both sides of the railroad between the railroad and the toe of the roadway fill in the areas where side slopes are steeper than 3½:1. The stakes should be placed after the fill in this area is up to elevation 335 ±.

Paving at the east bridge end and the construction of bridge Bts 5 & 6 should be delayed for at least 4 months after the fill is up to grade. This delay should minimize drag loads and residual settlement.

Note: All concrete between the upper and lower construction joints in end bents is included in the estimated superstructure quantities for Slab on Concrete 'I' Girder, See Special Provisions.

The prestressed panels quantities are not included in the table of estimated quan for alternate slabs.

Cost of ¾"Φ coil tie rods placed in diaphragms is included in contract unit price for P/S members.

For "Estimated Quantities for Alternate Slabs" see Sht. #3

For Boring Data see Sht. #3

"⊗" Indicates location of boring.

All reinforcement in the End Bents is included with superstructure quantities.

GENERAL NOTES

Design Specifications: A.A.S.H.T.O. - 1983 and Interims 1984, 1985 & 1986 Load Factor Design

Design Loading: HS20-44 35#/sq. Future Wearing Surface. Earth 120 #/cu. ft., Equivalent Fluid Pressure 45 #/cu. ft. Fatigue Stress Case II
Superstructure (excluding Span 3-4) Simply supported non-composite for Dead Load. Continuous composite for Live Load.

Design Unit Stresses:
Class B Concrete (Substructure) f'c = 3,000 psi.
Class B2 Concrete (Superstructure except Prestressed Girders and Safety Barrier Curb) f'c = 4,000 psi.
Class B1 Concrete (Safety Barrier Curb) f'c = 4000 psi.
Reinforcing Steel (Grade 60) fy = 60,000 psi.
Structural Carbon Steel fy = 36,000 psi.
Structural Steel (A.S.T.M. A572) Grade 50 fy = 50,000 psi.

Note: For Pre-stressed Girder Stresses, see Shts No. 10 & 11
Bearings shall be 60 durometer Neoprene Pads.
The cost of furnishing, fabricating and installing Neoprene Bearing Pads complete in place, will be paid for at the contract unit price for Plain Neoprene Bearing Pads per each.
Field connections, High Strength Bolts ¾"Φ, holes 13/16"Φ except as noted.

All joint filler shall meet the requirement of Std. Spec. 1057.2.4, except as noted.
Minimum clearance to reinforcing steel shall be 1½", unless otherwise shown.
Paint: System C by contractor in accordance with Std. Spec. 712.12.

A minimum vertical clearance of ① from top of rails and a minimum lateral clearance of ② from the centerline of track to nearest temporary construction falsework shall be maintained during construction.
All reinforcing bars in tops of substructure beams or caps of Int. Bents No. 3 & 4 shall be spaced to clear anchor bolts for bearings by at least 1½".

	Burlington Northern	St. Louis S.W.
①	21'-6"	22'-0"
②	8'-6"	14'-0"

ESTIMATED QUANTITIES				
ITEM		SUB.	SUPER.	TOTAL
Class I Excavation	Cu. Yds.	70		70
Cast-In-Place Concrete Piles	Lin. Ft.	2974		2974
Pre-Bore for Piling	Lin. Ft.	591		591
Class B Concrete (Substr.)	Cu. Yds.	146.1		146.1
Slab on Conc. I-Girder, See Spec. Prov.	Sq. Yds.		544	544
Slab on Steel (See Special Provisions)	Sq. Yds.		439	439
Safety Barrier Curb	Lin. Ft.		775	775
Plain Neoprene Bearing Pads	Each		32	32
Lam. Neop. Brg. Pads (Steel Structures)	Each		8	8
Elastomeric Exp. Jt. Seal (4.0 Inch)	Lin. Ft.		29	29
Pre-Stressed Conc. I-Gdr. (62 Ft. Span)	Each		8	8
Pre-Stressed Conc. I-Gdr. (58 Ft. Span)	Each		8	8
Reinforcing Steel (Bridges)	Lbs.	16,730		16,730
Fab. Structural Carbon Steel (P. Gdr.)	Lbs.		91,900	91,900
Fab. Struct. Low Alloy Steel (P. Gdr.) A-572	Lbs.		31,520	31,520
Slab Drains	Each		34	34
Painting (System C) Green	Ton		61.8	61.8
Loading Tests	Each	2		2
Vertical Drain at End Bents	Each	2		2

DETAILED Jan 1987
CHECKED Sept 1987

Note: This drawing is not to scale. Follow dimensions.

SCOTT COUNTY

A-4376

STATE	PROJ NO	SHEET NO
MO		2!

ESTIMATED QUANTITIES FOR ALTERNATE SLABS						
TYPE OF SLABS	SLAB ON STEEL			SLAB ON CONC. I-GIRDER		
	REINF. (lbs.)		CONC.	REINF. (lbs.)		CONC.
	EPOXY	PLAIN	CU. YDS.	EPOXY	PLAIN	CU. YDS.
Cast-In-Place Conventional Forms	24,070	-	107.5	50,340	5810	255.0
Precast Panel Forms	14,920	-	80.8	38,870	5810	210.9***
Stay-In-Place Forms	24,070**	-	102.3*			

Note: The table of Estimated Quantities for Alternate Slabs represents the quantities used by the state in preparing the cost estimate for concrete slabs. Variations may be encountered in these estimated quantities but these variations cannot be used for an adjustment in the Contract Unit Price per square yard of Alternate Slab used.
See Special Provisions for alternate methods of forming slabs.
* Does not include concrete required to fill corrugation of S.I.P. forms.
** Does not include reinforcing bars used as bar supports.

*** Based on minimum top flange thickness and minimum joint filler thickness.

Standard Penetration Test

DEPTH	BLOWS/6"
5'	2/2/2
10'	2/2/2
15'	2/4/4
20'	11/10/10
25'	9/8/10
30'	9/11/23
35'	11/12/17
40'	11/15/15
45	16/15/22
50'	11/11/12
55'	9/18/24
60'	12/12/16
70'	34/54/46 in 5"

Elev. 328.40
Gray silty clay w/small brown sand pockets.

Elev. 318.00
Blue clayey silt mottled brown.

Elev. 312.90
Gray sand med.

Elev. 308.40
Gravelly sand w/ small clay pockets.

Elev. 300.40
Med. to fine sand w/lt. gravel layers.

Elev. 258.90

① (CORE)

Standard Penetration Test

DEPTH	BLOWS/6"
5'	2/3/9
10'	3/3/6
15'	3/3/4
20'	2/2/3
25'	2/7/13
30'	6/15/17
35'	20/100 in 6"
40'	37-79-21 in 1"
50'	9/7/11
55'	13/12/17
60'	7/9/13
65'	10/10/13
70'	10/18/55
75'	17/100 in 4½"
80'	8/22/78 in 4"
90'	11/29/42

Elev. 330.70
Gray clay w/some sand grains.

Elev. 316.70
Layers of gray silt, silty sand and very fine sand.

Elev. 309.20±
Mostly medium graded sand with coarser particles and a fine sand layer @ 40'.

Elev. 290.70±
Gray silty clay and sandy layers.

Elev. 268.20±
Sand

Elev. 268.20

② (CORE)

Standard Penetration Test

DEPTH	BLOWS/6"
5'	3/5/7
10'	2/2/4
15'	1/2/2
20'	7/13/17
25'	9/15/18
30'	10/16/17
35'	12/19/17
40'	8/10/14
45'	14/17/17
50'	16/17/15
52.5'	12/17/20
55'	11/19/20
57.5'	12/18/34
60'	7/27/35
65'	25 25/35
70'	15/20/30

Elev. 328.90
Brown and gray mottled silty clay to clay

Elev. 320.90
Gray silty sandy clay

Elev. 309.90
Gray fine to coarse grained sand; with traces of fine gravel.

③ (CORE)

DETAILED Aug 1987
CHECKED Sept 1987

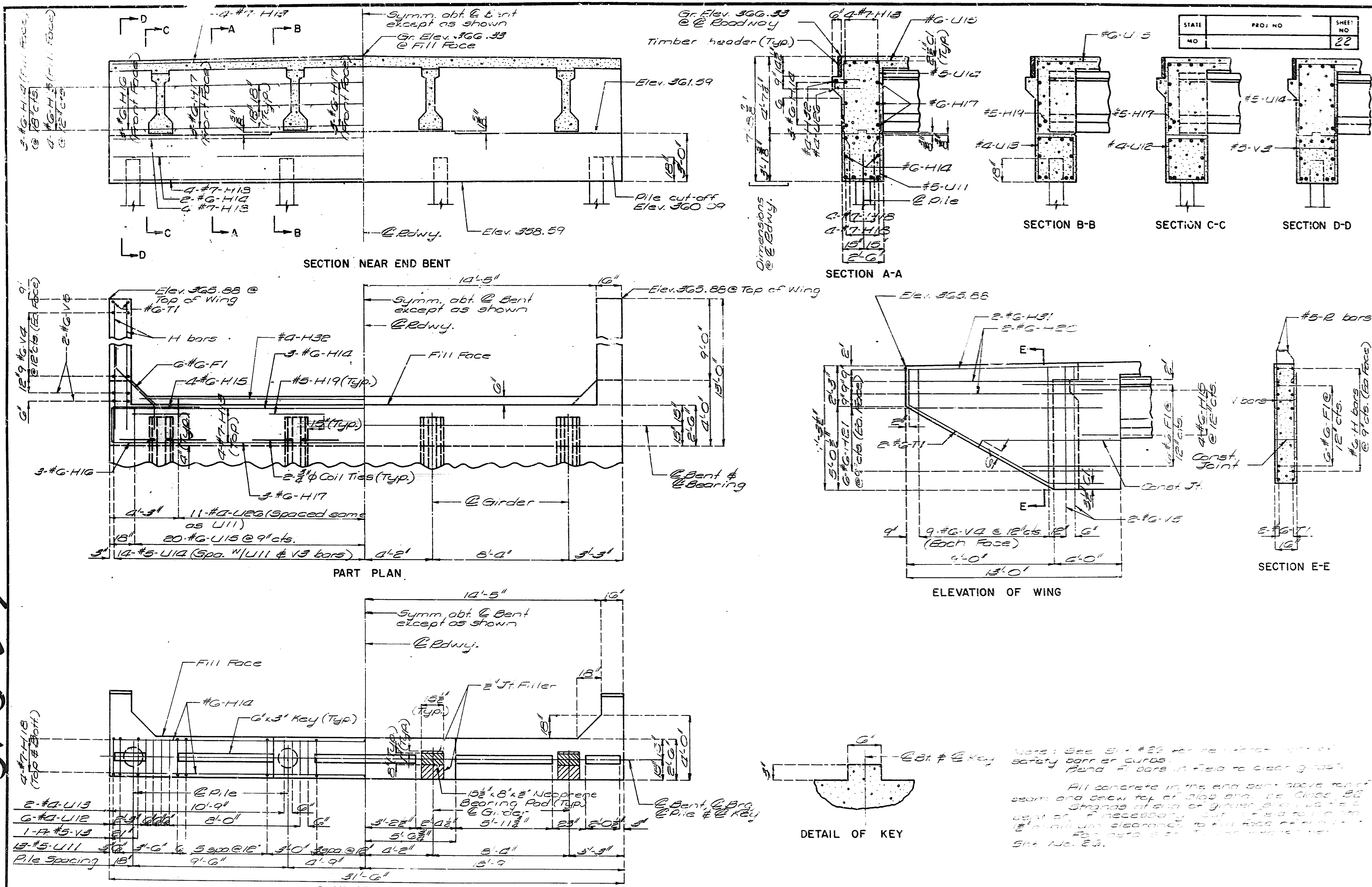
Note: This drawing is not to scale. Follow dimensions.

BORING DATA

Sheet No. 3 of 28

SCOTT COUNTY

A-4376


STATE
PROJ NO
SHEET NO
MO
22
SECTION NEAR END BENT
Symm. abt. ℄ Bent except as shown
Gr. Elev. 366.33 @ Fill Face
Elev. 361.59
Pile cut-off Elev. 360.09
℄ Rdwy.
Elev. 358.59
4-#7-H13
2-#6-H14
4-#7-H13
SECTION A-A
Gr. Elev. 366.33 @ ℄ Roadway
Timber header (Typ.)
Dimensions @ ℄ Rdwy.
#6-U15
#5-U12
#6-H17
#6-H14
#5-U11
℄ Pile
SECTION B-B
SECTION C-C
SECTION D-D
#5-H14
#4-U13
#5-H17
#4-U12
#5-U14
#5-V3
PART PLAN
Elev. 365.88 @ Top of Wing
#6-T1
H bars
#4-H32
6-#6-F1
3-#6-H14
4-#6-H15
#5-H19 (Typ.)
Fill Face
3-#6-H16
2-3/4"φ Coil Ties (Typ.)
3-#6-H17
11-#4-U26 (Spaced same as U11)
20-#6-U15 @ 9" cts.
14-#5-U14 (Spa. w/U11 & V3 bars)
℄ Girder
℄ Bent & ℄ Bearing
14'-5"
8'-4"
3'-3"
ELEVATION OF WING
Elev. 365.88
2-#6-H31
2-#6-H20
2-#6-T1
Const. Jt.
2-#6-V5
9-#6-V4 @ 12" cts. (Each Face)
13'-0"
SECTION E-E
#5-R bars
V bars
6-#6-F1 @ 12" cts.
#6-H bars @ 9" cts. (Ea. Face)
Const. Joint
2-#6-T1
PLAN OF BEAM
(BELOW LOWER CONST. JOINT)
Fill Face
#6-H14
6"x3" Key (Typ.)
2" Jt. Filler
15½"x8"x2" Neoprene Bearing Pad (Typ.)
℄ Girder
℄ Pile
℄ Bent, ℄ Brg. ℄ Pile & ℄ Key
2-#4-U13
6-#4-U12
1-Pr. #5-V3
13-#5-U11
Pile Spacing
31'-6"
DETAIL OF KEY
℄ Bt. & ℄ Key

DETAILED Mar 1987
CHECKED Sept 1987

Note: This drawing is not to scale. Follow dimensions.

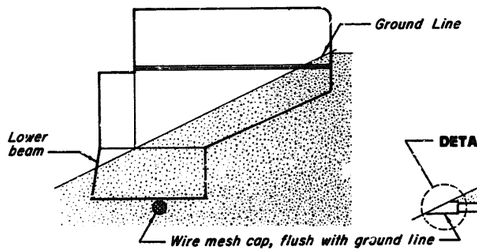
DETAILS OF END BENT NO. 1

Sheet No. 4 of 28

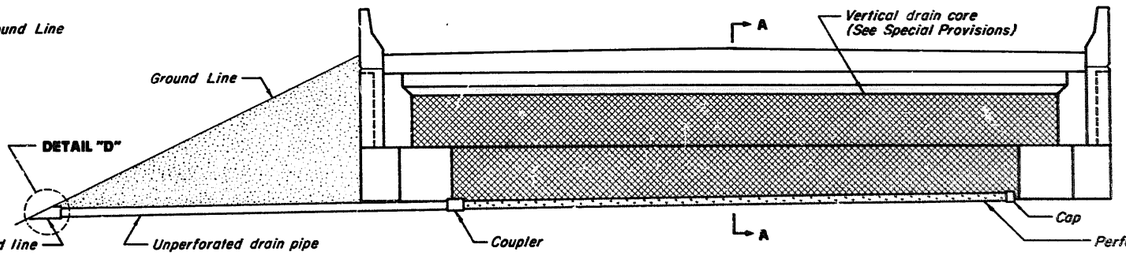
SCOTT COUNTY

A-4376

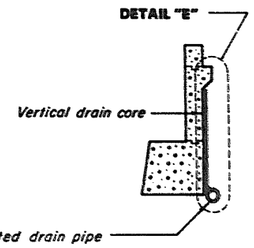
STATE	PROJ NO	SHEET NO
MO		23



ELEVATION OF WING



ELEVATION AT END BENT
(NON-INTEGRAL END BENT)



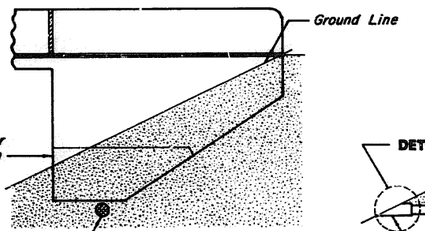
SECTION A-A

GENERAL NOTES:

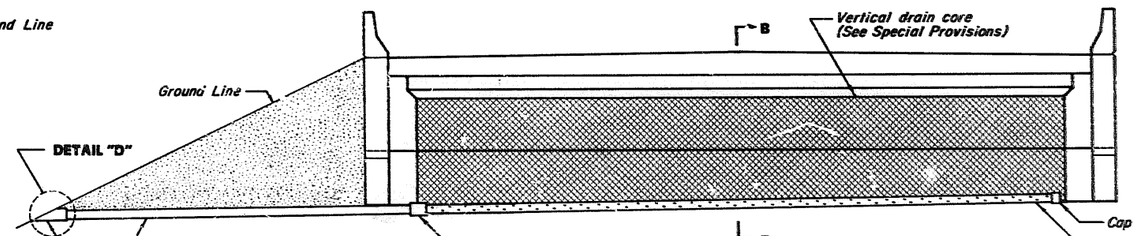
DRAIN PIPE MAY BE EITHER 6" DIAMETER CORRUGATED METALLIC COATED STEEL PIPE UNDERDRAIN, 4" DIAMETER CORRUGATED POLY VINYL CHLORIDE (PVC) DRAIN PIPE, OR 4" DIAMETER CORRUGATED POLYETHYLENE (PE) DRAIN PIPE.

PLACE DRAIN PIPE AT FILL FACE OF END BENT AND SLOPE TO LOWEST GRADE OF GROUND LINE, ALSO MISSING THE LOWER BEAM OF END BENT BY 1½".
(SEE ELEVATION AT END BENT)

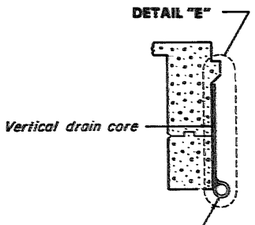
PERFORATED PIPE SHALL BE PLACED AT FILL FACE SIDE AT THE BOTTOM OF END BENT AND PLAIN PIPE SHALL BE USED WHERE THE VERTICAL DRAIN ENDS TO THE EXIT AT GROUND LINE.



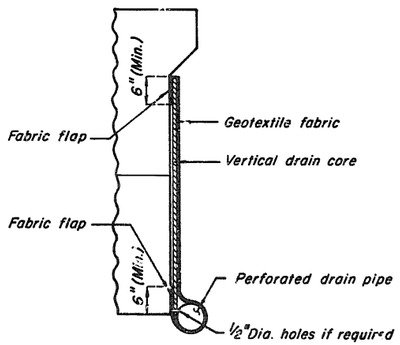
ELEVATION OF WING



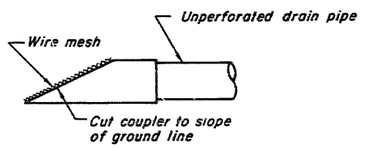
ELEVATION AT END BENT
(INTEGRAL END BENT)



SECTION B-B



DETAIL "E"



DETAIL "D"

VERTICAL DRAIN AT END BENTS

28
577

Vert Drain	Revised
MARCH 1986	MAR 1987

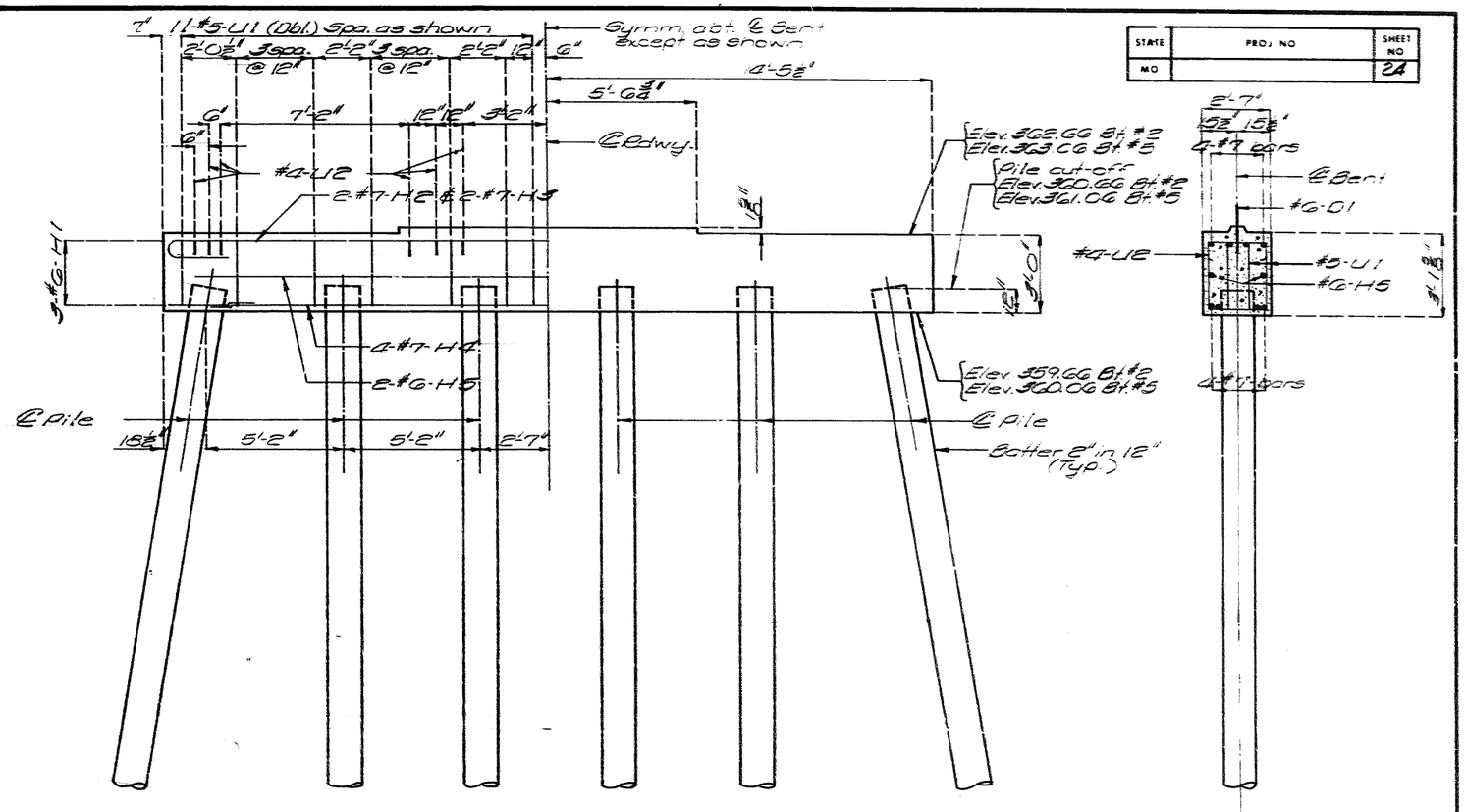
DETAILED Sept 19 87
CHECKED Sept 19 87

Note: This drawing is not to scale. Follow dimensions.

SCOTT COUNTY

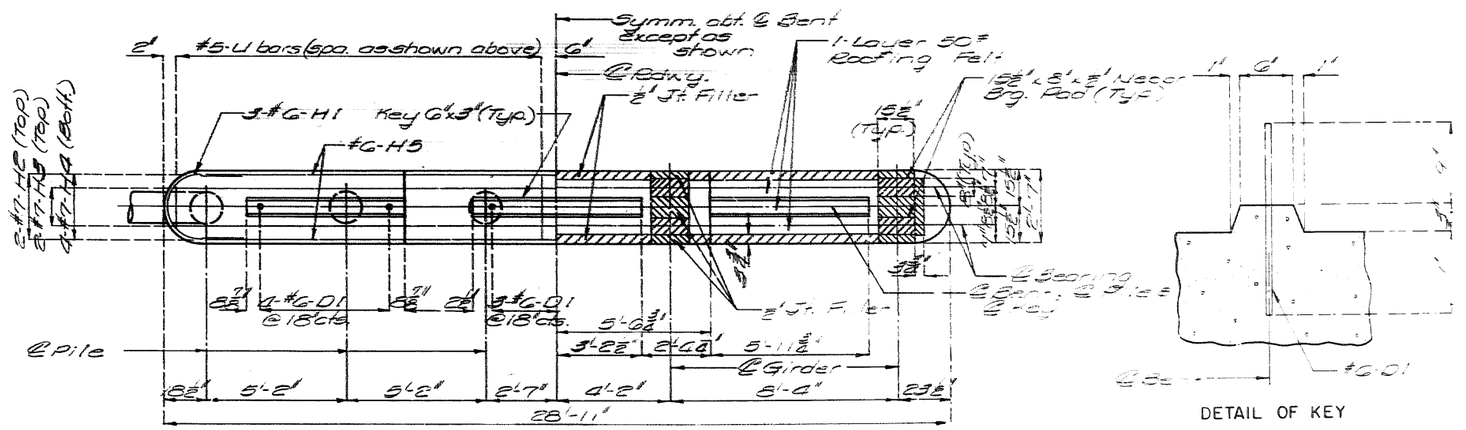
A-4376

STATE	PROJ. NO	SHEET NO
MO		24



ELEVATION

SECTION AT ℄ BENT



PLAN

DETAIL OF KEY

DETAILS OF INT. BENTS NO. 2 & 5

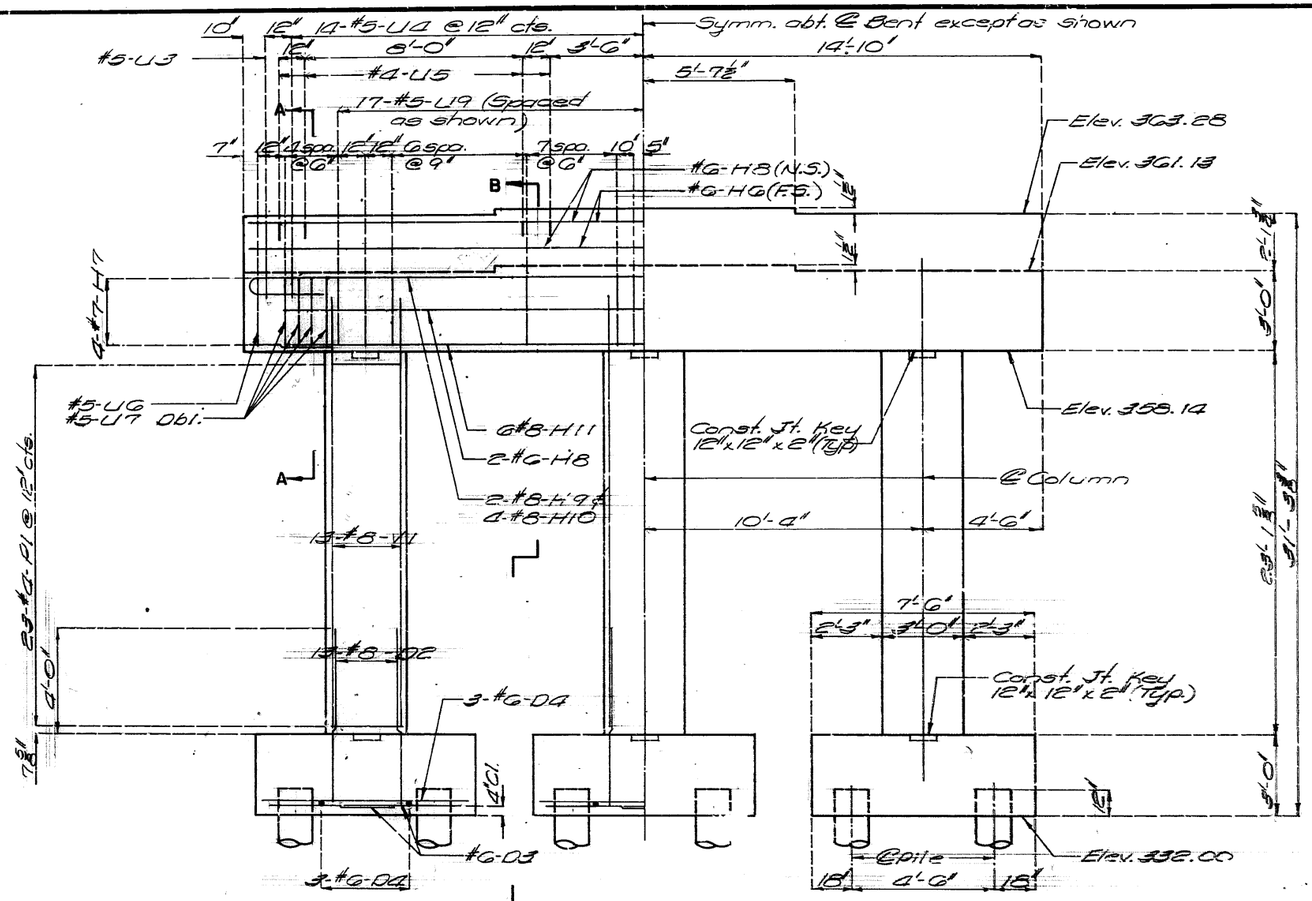
DETAILED Dec. 1936
CHECKED Sept. 1987

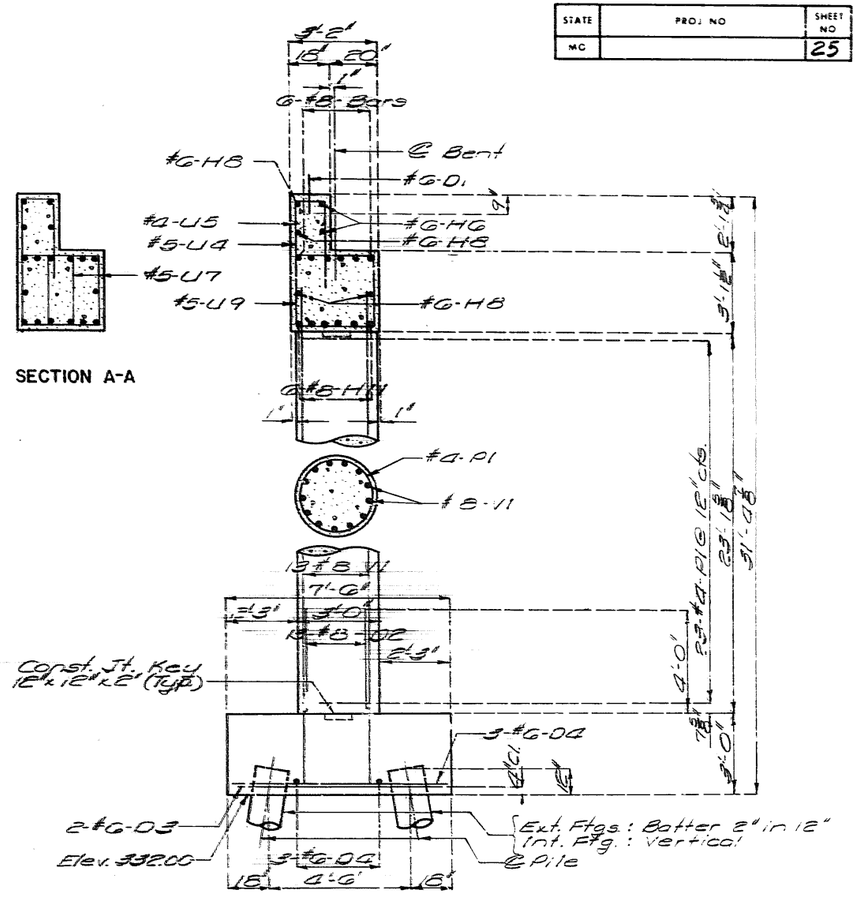
Note. This drawing is not to scale. Follow dimensions.

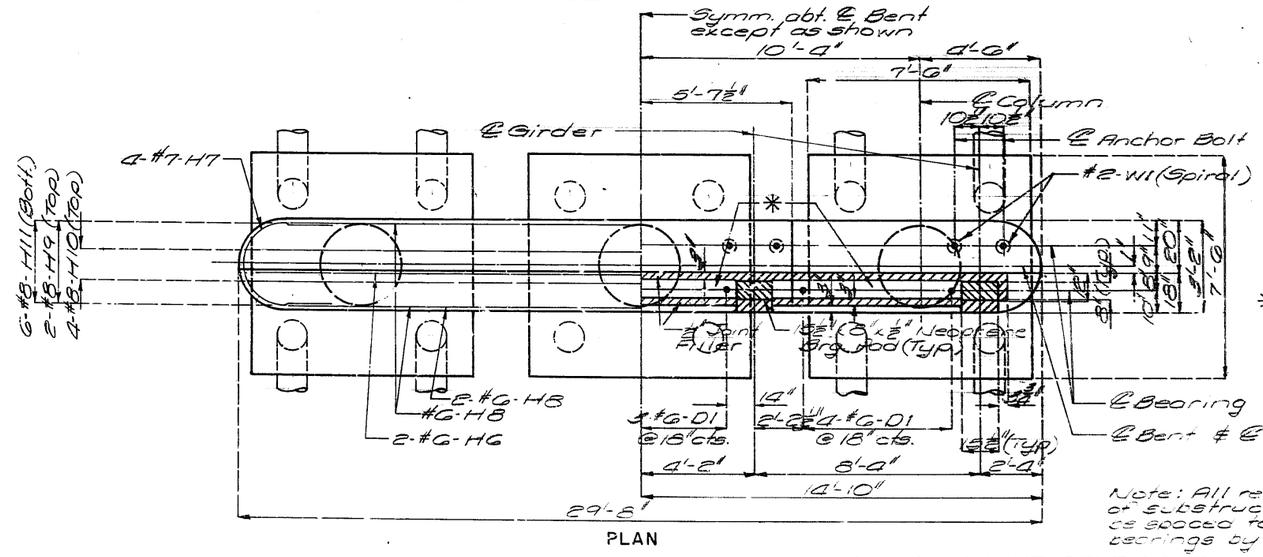
SCOTT COUNTY

A-4376

STATE	PROJ. NO	SHEET NO
MC		25

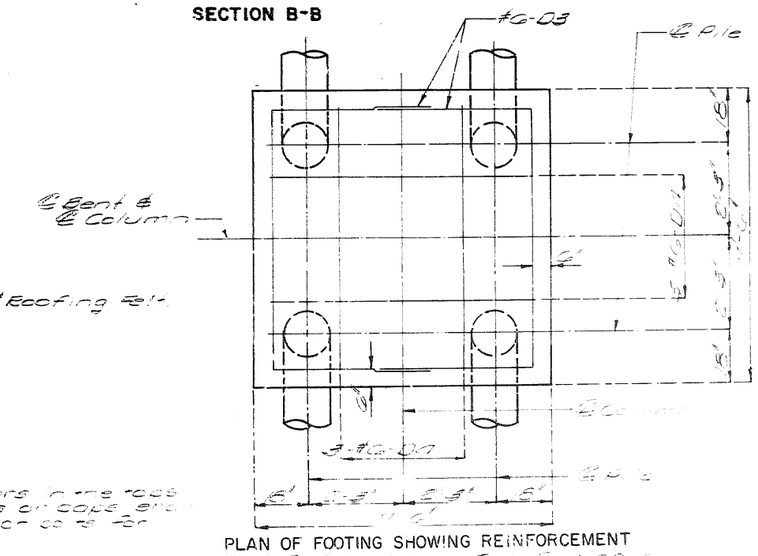






* 1-Layer 50# Roofing Felt

Note: All reinforcing bars in the top of substructure pedestals or caps shall be spaced to clear anchor bolts for bearings by at least 2".



DETAILED Mar 1987
CHECKED Sept 1987

DETAILS OF INT. BENT NO. 3

Note: This drawing is not to scale. Follow dimensions.

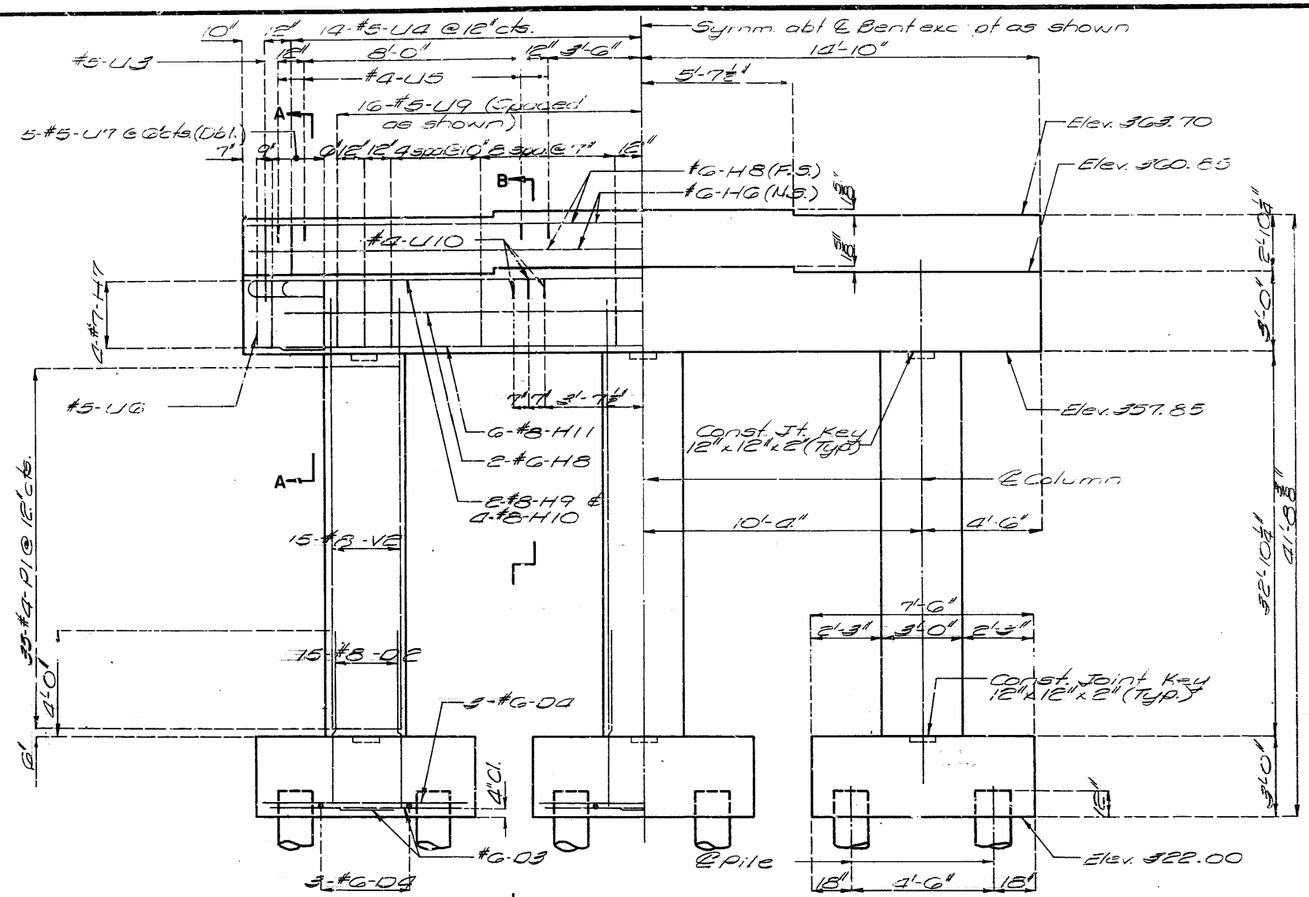
Sheet No. 7 of 28

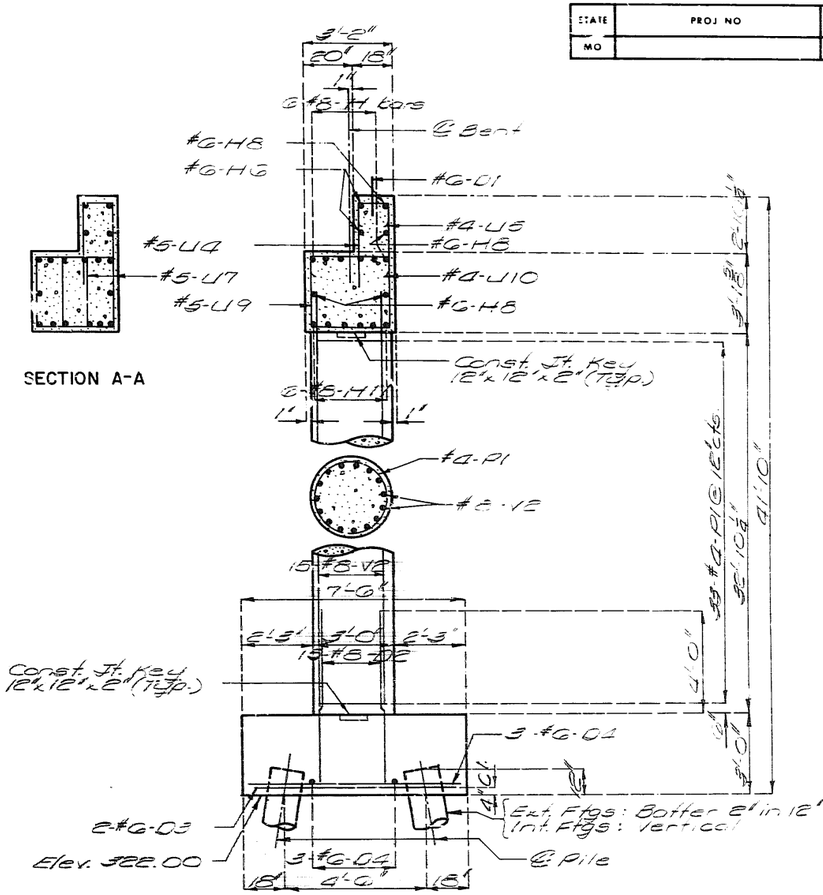
SCOTT COUNTY

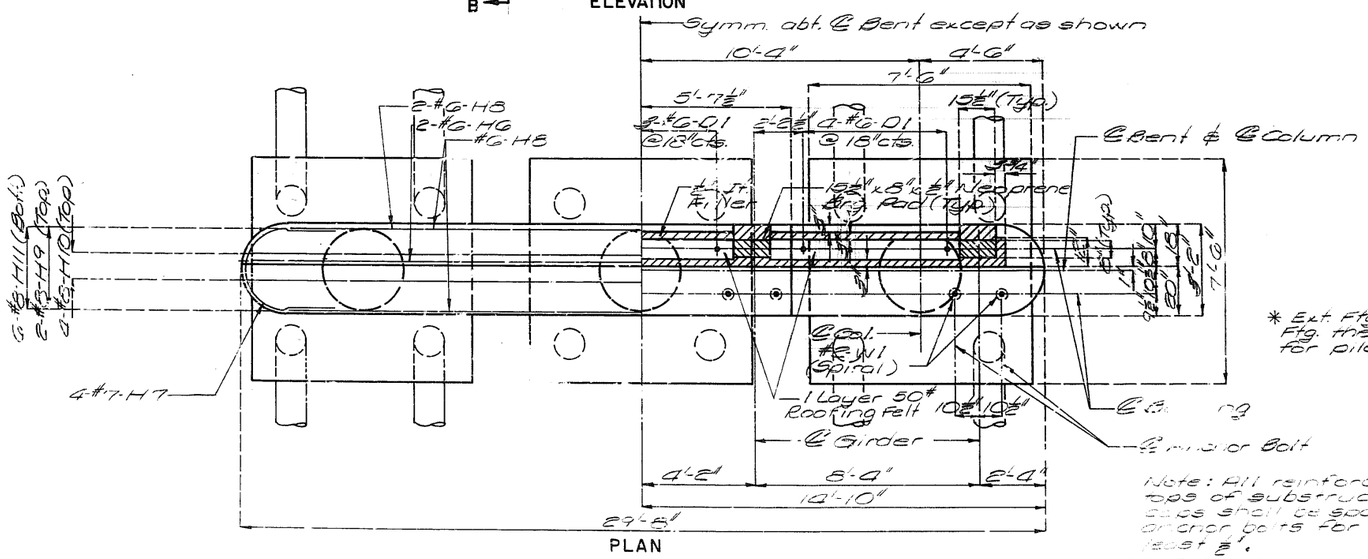
A-4376

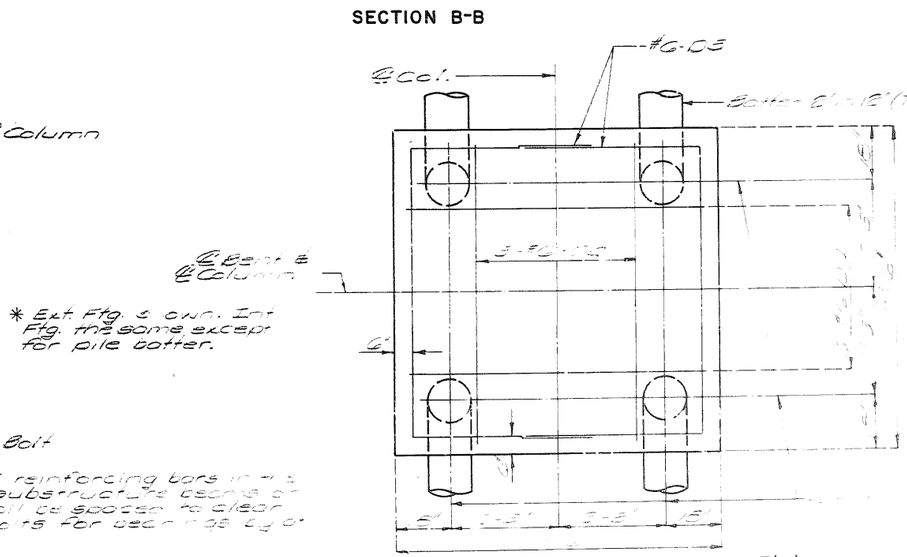
54-30

STATE	PROJ NO	SHEET NO
MO		26









* Ext. Fig. is opp. Int. Fig. the same except for pile batter.

Note: All reinforcing bars in the tops of substructure bents or piers shall be spotted to clear anchor bolts for beam nuts by at least 2".

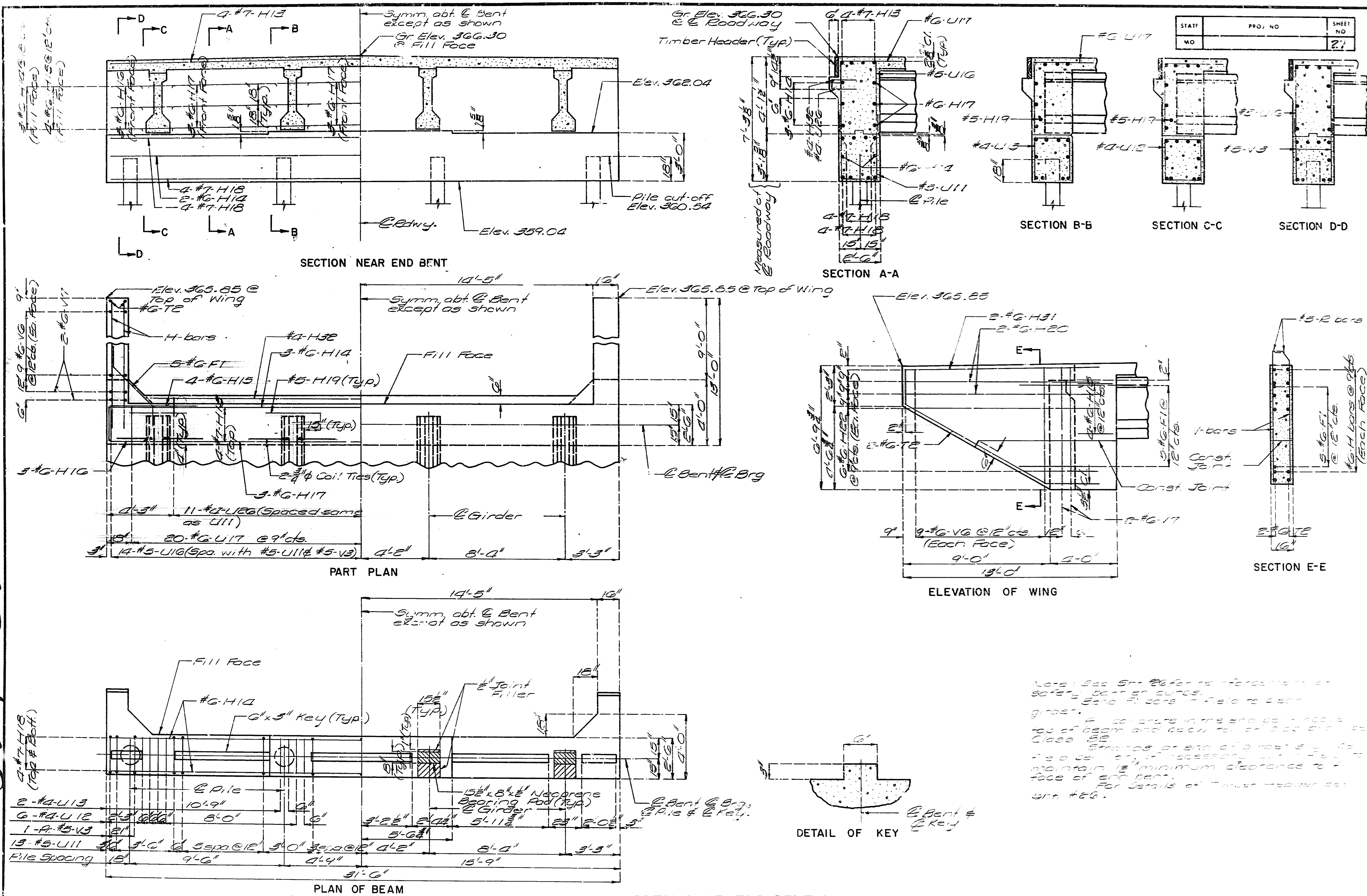
DETAILS OF INT. BENT NO. 4

DETAILED Dec. 1986
CHECKED Sept. 1987

Note: This drawing is not to scale. Follow dimensions.

SCOTT COUNTY

A-4376


SECTION NEAR END BENT
SECTION A-A
SECTION B-B
SECTION C-C
SECTION D-D
PART PLAN
ELEVATION OF WING
SECTION E-E
PLAN OF BEAM
(BELOW LOWER CONST. JOINT)
DETAIL OF KEY
Symm. abt. ℄ Bent except as shown
Gr. Elev. 366.30 @ Fill Face
Elev. 362.04
Pile cut-off Elev. 360.54
Elev. 359.04
℄ Rdwy.
Timber Header (Typ.)
Measured at ℄ Roadway
Elev. 365.85 @ Top of Wing
Fill Face
℄ Bent & ℄ Brg.
℄ Girder
2¾"ϕ Coil Ties (Typ.)
6"x3" Key (Typ.)
½" Joint Filler
15½"x8¼"x2" Neoprene Bearing Pad (Typ.)
℄ Bent, ℄ Brg., ℄ Pile & ℄ Key.
℄ Pile
Pile Spacing
31'-6"
14'-5"
13'-0"
9'-0"
STATE
PROJ. NO.
SHEET NO.
MO.

DETAILED MAR 1987
CHECKED Sept 1987

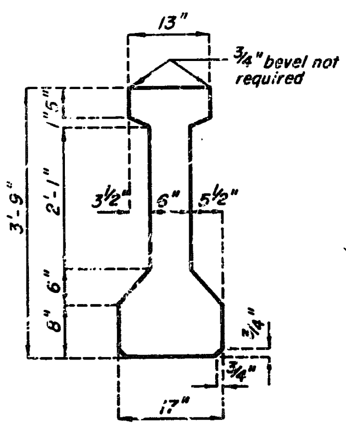
DETAILS OF END BENT NO. 6

Note: This drawing is not to scale. Follow dimensions.

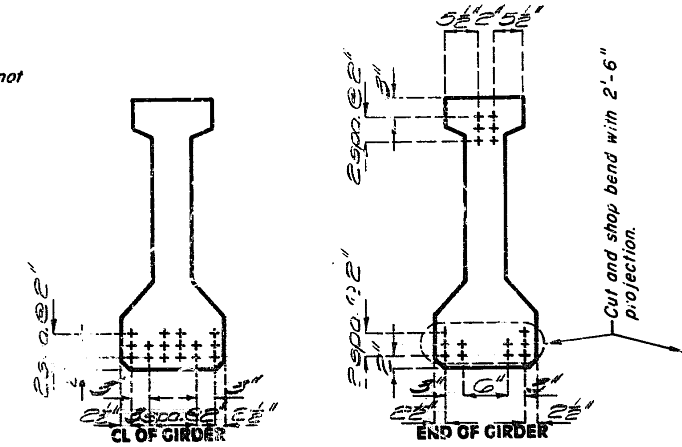
Sheet No. 9 of 28

SCOTT COUNTY

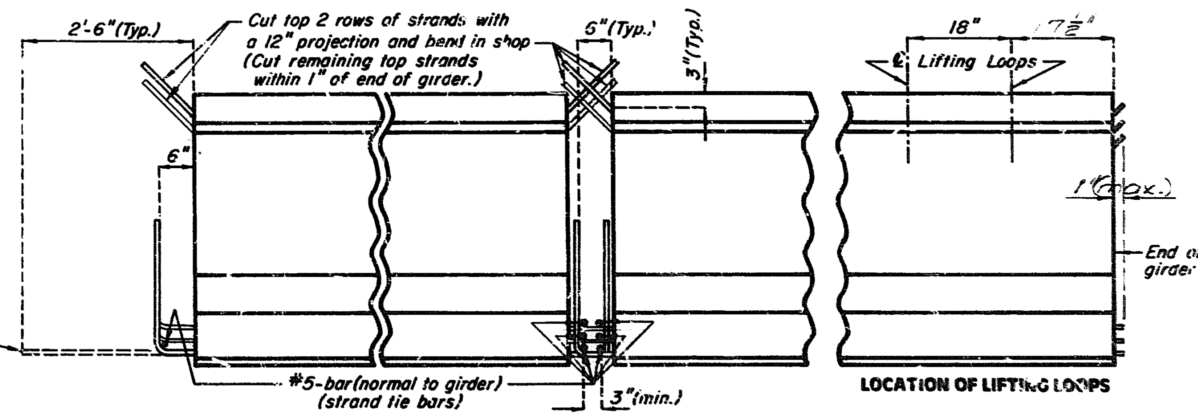
A-4376



GIRDER DIMENSIONS



STRAND ARRANGEMENTS



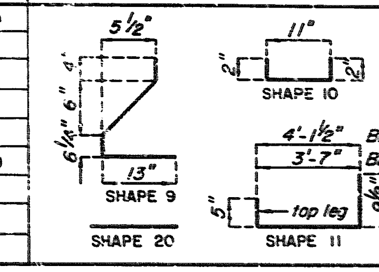
STRAND DETAILS AT GIRDER ENDS

STATE	PROJ NO	SHEET NO
MO		20

BILL OF REINFORCING STEEL - EACH GIRDER

NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE
4	5-A1	31'-7"	20
162	4-B1	5'-2"	11
8	5-B2	4'-7"	11
81	4C1	13"	10
162	4D1	2'-8"	9

BENDING DIAGRAMS



NOTE:

ALL DIMENSIONS ARE OUT TO OUT.

HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES STIRRUP AND TIE DIMENSIONS.

ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.

MINIMUM CLEARANCE TO REINFORCING SHALL BE 1"

ALL REINFORCEMENT SHALL BE GRADE 60.

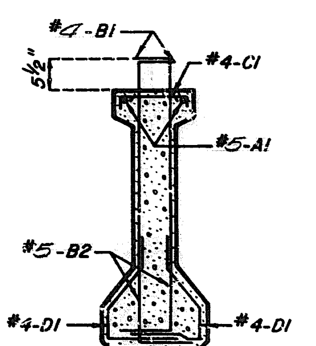
THE TWO D1 BARS MAY BE FURNISHED AS ONE BAR AT THE FABRICATOR'S OPTION.

NOTE:

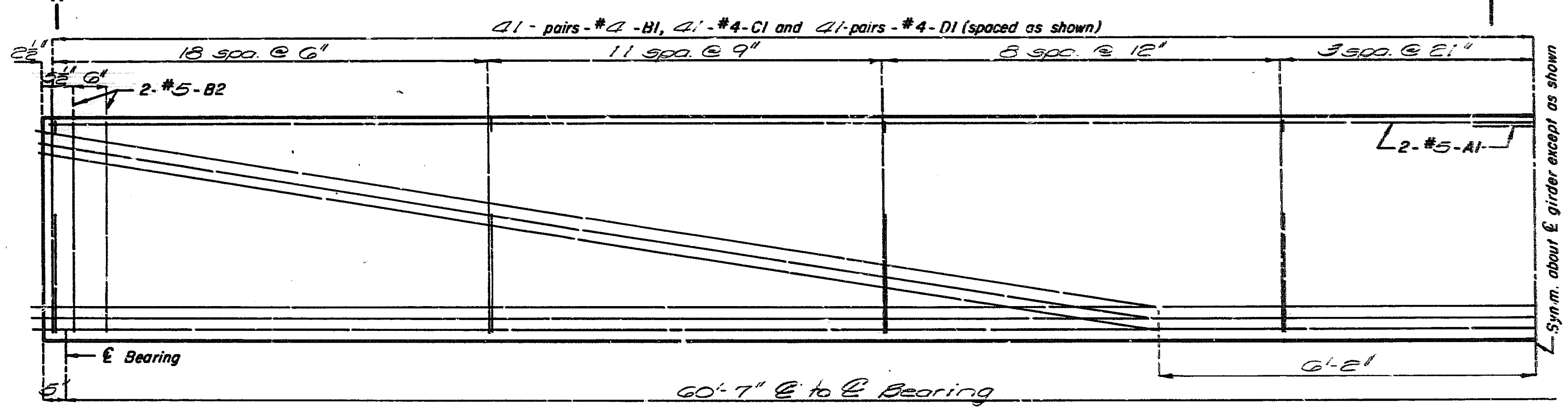
CONCRETE FOR PRESTRESSED GIRDERS SHALL BE CLASS A1 WITH f'c = 5,000 PSI. (+) INDICATES PRESTRESSED STRAND.

USE 16 STRANDS WITH AN INITIAL PRESTRESS FORCE OF 496 KIPS.

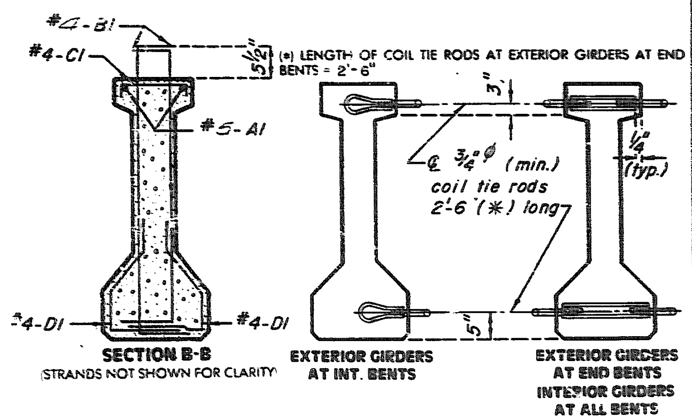
PRESTRESSING TENDONS SHALL BE UNCOATED SEVEN-WIRE LOW RELAXATION STRANDS. 1/2 INCH DIAMETER CONFORMING TO A.A.S.H.T.O. M203, Grade 270.



SECTION A-A
(STRANDS NOT SHOWN FOR CLARITY)



PART ELEVATION OF GIRDER SPAN (1-2) & (2-3)
(NOTE. EXTERIOR AND INTERIOR GIRDERS ARE THE SAME EXCEPT FOR COIL TIES.)

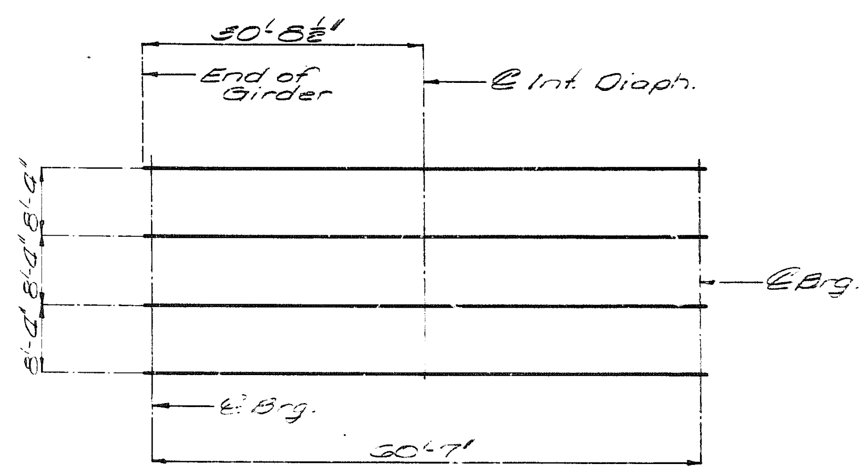


DETAILS OF COIL TIES

NOTE:

COST OF 3/4"φ COIL TIE RODS PLACED IN DIAPHRAGMS IS INCLUDED IN CONTRACT UNIT PRICE FOR PRESTRESSED CONCRETE MEMBERS.

COIL TIES SHALL BE HELD IN PLACE IN THE FORMS BY SLOTTED WIRE-SETTING-STUDS PROJECTING THRU FORMS. STUDS ARE TO BE LEFT IN PLACE OR REPLACED WITH TEMPORARY PLUGS UNTIL GIRDERS ARE ERECTED AND THEN REPLACED BY COIL TIE RODS.



SPAN (1-2) & (2-3)

PLAN SHOWING INT. DIAPH. LOCATION

Note: For details of Int. Diaph. see Sht. #17. The 12"φ holes shall be cast in girders for Steel Intermediate Diaphs. Drilling is not allowed.

SPS 55.4.6	REVISED
APR. 1973	AUG. 1986

DETAILED Nov. 1986
CHECKED Sept 1987

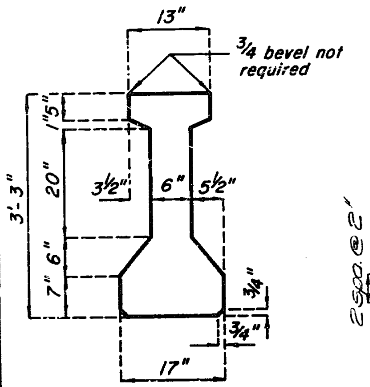
Note. This drawing is not to scale. Follow dimensions.

Sheet No. 10 of 28

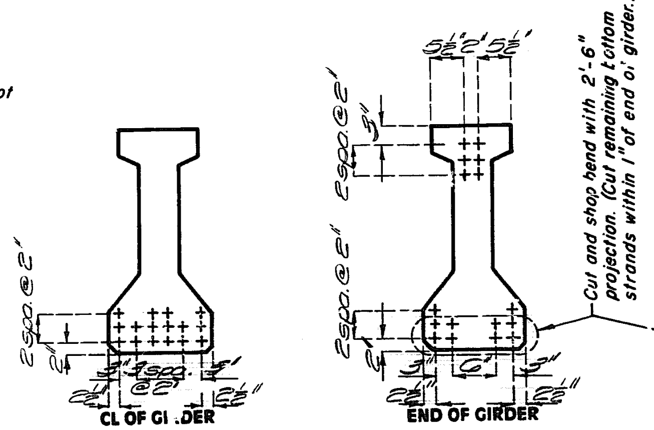
SCOTT COUNTY

A-4376

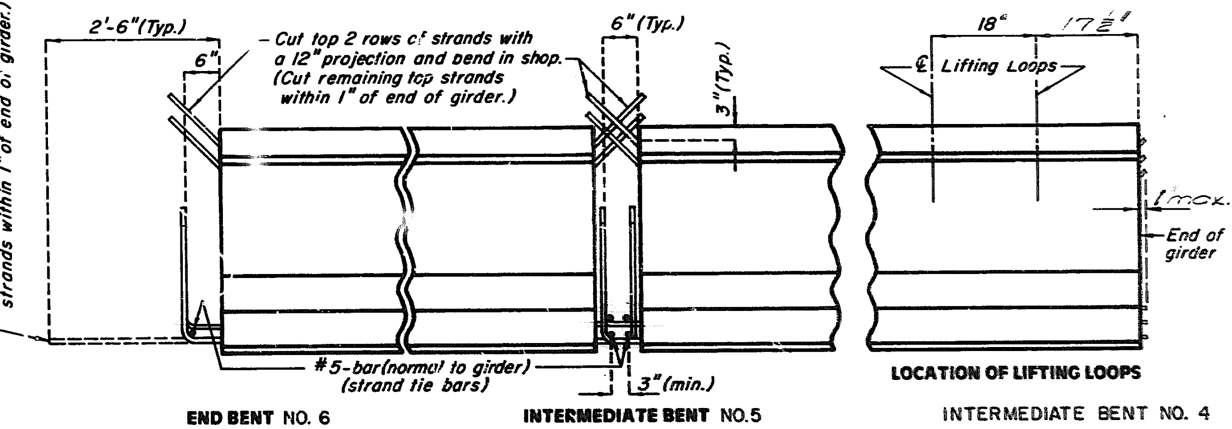
STATE	PROJ NO	SHEET NO
MO		29



GIRDER DIMENSIONS



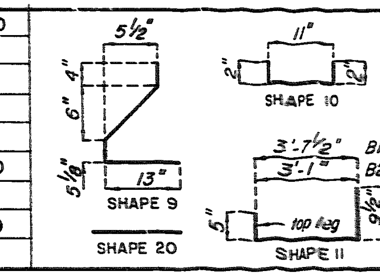
STRAND ARRANGEMENTS



STRAND DETAILS AT GIRDER ENDS

BILL OF REINFORCING STEEL - EACH GIRDER			
NO.	SIZE & MARK	ACTUAL LENGTH	SHAPE
4	5 A1	29'-7"	20
162	4 B1	4'-8"	11
8	5 B2	4'-1"	11
81	4 C1	13"	10
162	4 D1	2'-5"	9

BENDING DIAGRAMS



NOTE:

ALL DIMENSIONS ARE OUT TO OUT.

HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE CRSI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES STIRRUP AND TIE DIMENSIONS.

ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.

MINIMUM CLEARANCE TO REINFORCING SHALL BE 1".

ALL REINFORCEMENT SHALL BE GRADE 60.

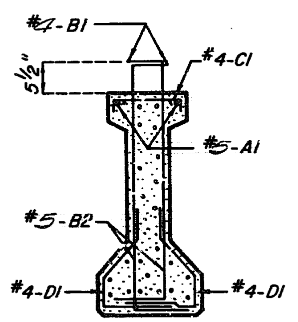
THE TWO D1 BARS MAY BE FURNISHED AS ONE BAR AT THE FABRICATOR'S OPTION.

NOTE:

CONCRETE FOR PRESTRESSED GIRDERS SHALL BE CLASS A1 WITH f'c = 5,000 PSI. (+) INDICATES PRESTRESSED STRAND.

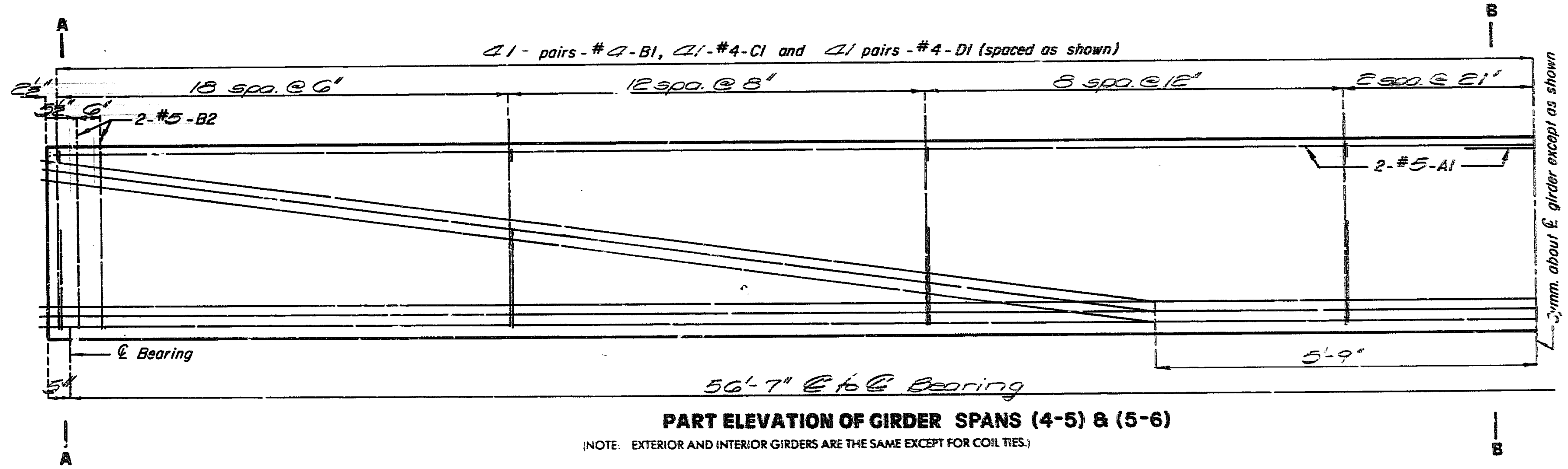
USE 16 STRANDS WITH AN INITIAL PRESTRESS FORCE OF 496 KIPS.

PRESTRESSING TENDONS SHALL BE UNCOATED SEVEN-WIRE LOW RELAXATION STRANDS. ½ INCH DIAMETER CONFORMING TO A.A.S.H.T.O. M203, Grade 270.



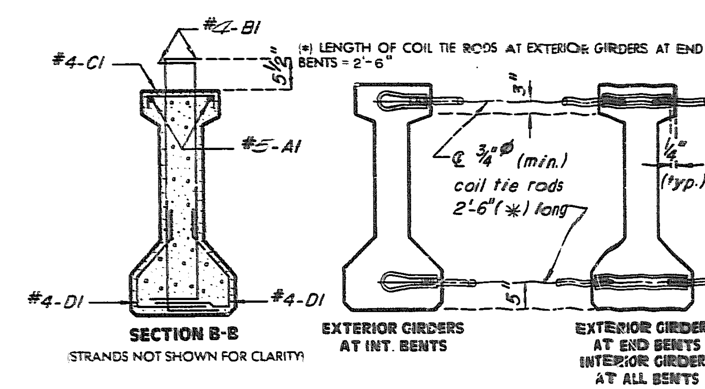
SECTION A-A

(STRANDS NOT SHOWN FOR CLARITY)



PART ELEVATION OF GIRDER SPANS (4-5) & (5-6)

(NOTE: EXTERIOR AND INTERIOR GIRDERS ARE THE SAME EXCEPT FOR COIL TIES.)



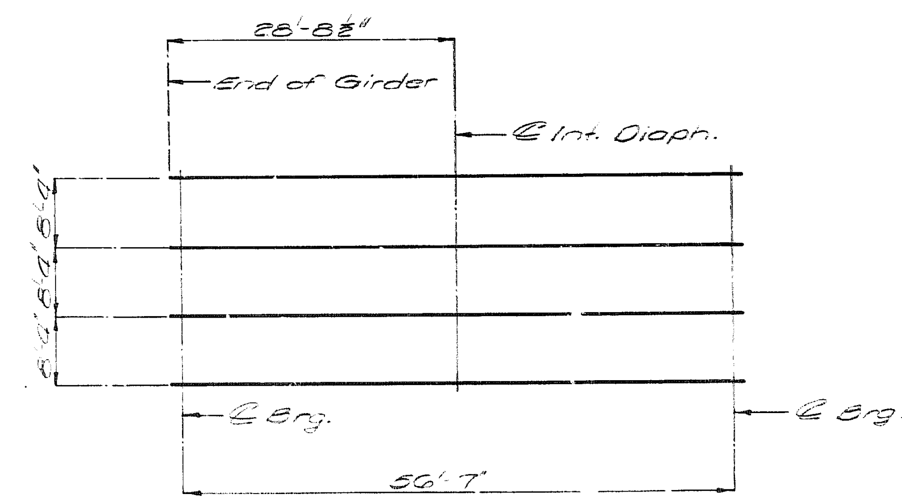
DETAILS OF COIL TIES

NOTE:

COST OF 3/4"ø COIL TIE RODS PLACED IN DIAPHRAGMS IS INCLUDED IN CONTRACT UNIT PRICE FOR PRESTRESSED CONCRETE MEMBERS.

COIL TIES SHALL BE HELD IN PLACE IN THE FORMS BY SLOTTED WIRE-SETTING-STUDS PROJECTING THRU FORMS. STUDS ARE TO BE LEFT IN PLACE OR REPLACED WITH TEMPORARY PLUGS UNTIL GIRDERS ARE ERECTED AND THEN REPLACED BY COIL TIE RODS.

Note: For details of walls to be cast on end of girder at Bt #4, see Sht. No. 16



PLAN SHOWING LOCATION OF INT. DIAPH.

Note: For details of Int. Diaph., see Sht. #17. The Int. Diaph. shall be cast in place. For Steel Int. Diaph., drilling is not allowed.

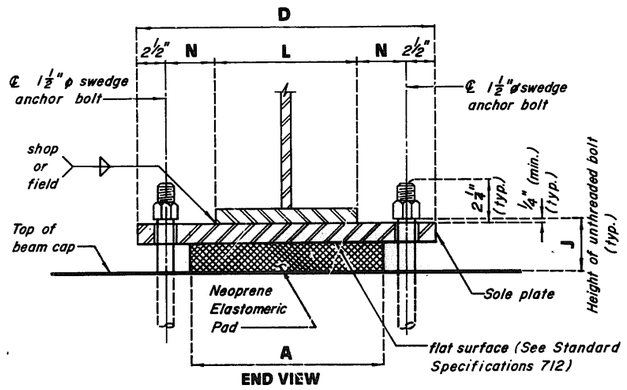
SPS 55.3.6 APR 1973 | REVISED AUG. 1986

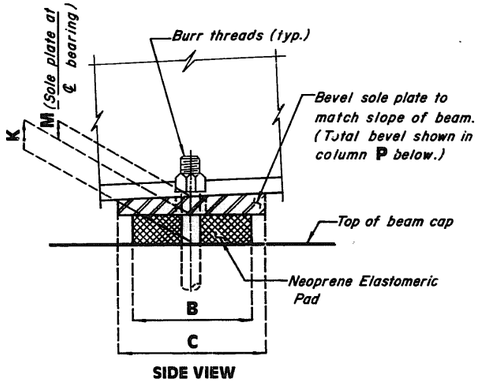
DETAILED Nov. 1986
CHECKED Sept 1987

Note: This drawing is not to scale. Follow dimensions.

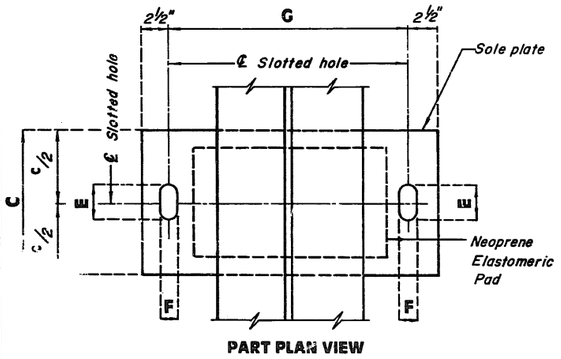
SCOTT COUNTY

A-4376

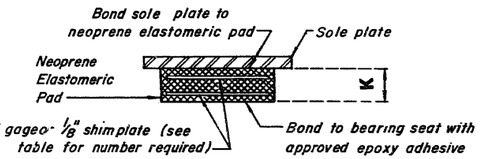




Note: The location of anchor bolts in relation to the slotted holes in the sole plate shall correspond with the temperature at the time of erection. At 60° F. the slotted holes should center on the anchor bolts.



PART PLAN VIEW



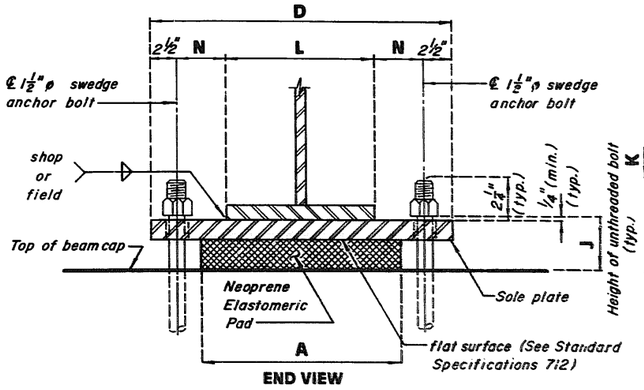
NEOPRENE ELASTOMERIC PAD

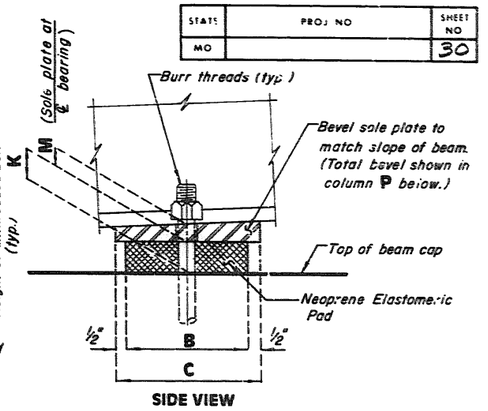
EXPANSION BEARINGS

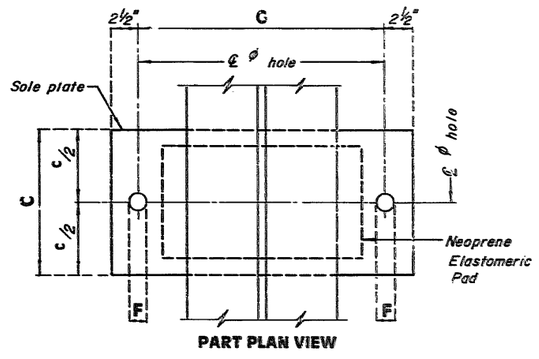
NUMBER REQUIRED = 4

BENT NO.	A	B	C	D	E	F	G	J	K	L	M	N	P	NUMBER OF SHIM PLATES (*)
4	18"	12"	13"	20"	5"	1 5/16"	21"	5 3/16"	9 3/8"	11"	1½"	5"	½"	5

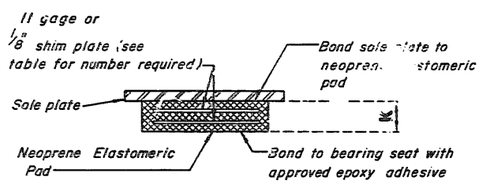
*) THE REQUIRED SHIM PLATE SHALL BE PLACED BETWEEN EQUAL LAYERS OF ELASTOMER AND MOLDED TOGETHER TO FORM AN INTEGRAL UNIT







PART PLAN VIEW



NEOPRENE ELASTOMERIC PAD

FIXED BEARINGS

NUMBER REQUIRED = 4

BENT NO.	A	B	C	D	F	G	J	K	L	M	N	P	NUMBER OF SHIM PLATES (*)
3	18"	12"	13"	20"	1 5/16"	21"	2 3/16"	13"	11"	1½"	5"	½"	4

(*) THE REQUIRED SHIM PLATE SHALL BE PLACED BETWEEN EQUAL LAYERS OF ELASTOMER AND MOLDED TOGETHER TO FORM AN INTEGRAL UNIT

GENERAL NOTES:

ANCHOR BOLTS SHALL BE 1½" DIA. SWEDGED BOLTS AND SHALL EXTEND 15" INTO CONCRETE WITH HEXAGON NUTS. (SWEDGING SHALL BE 1" LESS THAN EXTENSION INTO CONCRETE.)

WEIGHT OF ANCHOR BOLTS AND HEXAGON NUTS FOR BEARINGS SHALL BE INCLUDED IN WEIGHT OF FABRICATED STRUCTURAL STEEL.

NEOPRENE ELASTOMERIC PADS SHALL BE 50 DUROMETER.

THE SOLE PLATE SHALL BE FURNISHED WITH THE BEARING AND FIELD OR SHOP WELDED TO THE STRINGERS OR GIRDERS.

STRUCTURAL STEEL FOR SOLE PLATE SHALL BE A-36.

PAYMENT FOR THE SOLE PLATE WILL BE INCLUDED IN THE COST OF THE BEARING ASSEMBLY. SEE SPECIAL PROVISIONS.

ALL ANCHOR BOLTS SHALL BE A-588 STEEL WITH A-563 DH3 OR A563 C3 (HEAT TREATED) HEXAGON NUTS.

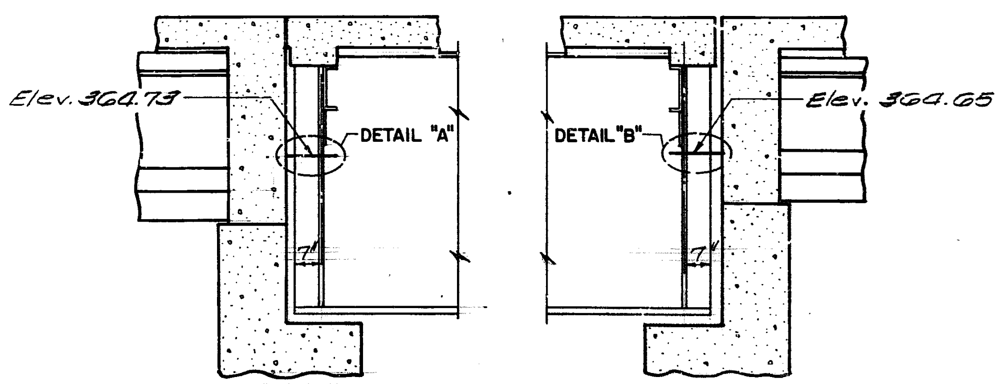
THE ACCEPTED QUANTITY OF ELASTOMERIC BEARING ASSEMBLIES, COMPLETE IN PLACE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR LAMINATED NEOPRENE BEARING PADS (STEEL STRUCTURES), EACH.

ALL STRUCTURAL STEEL FOR SOLE PLATES, ANCHOR BOLTS AND HEXAGON NUTS SHALL BE PAINTED WITH 2 COATS (5 MILS MINIMUM) OF INORGANIC ZINC. WELD AREAS TO BE TOUCHED UP AFTER ASSEMBLY.

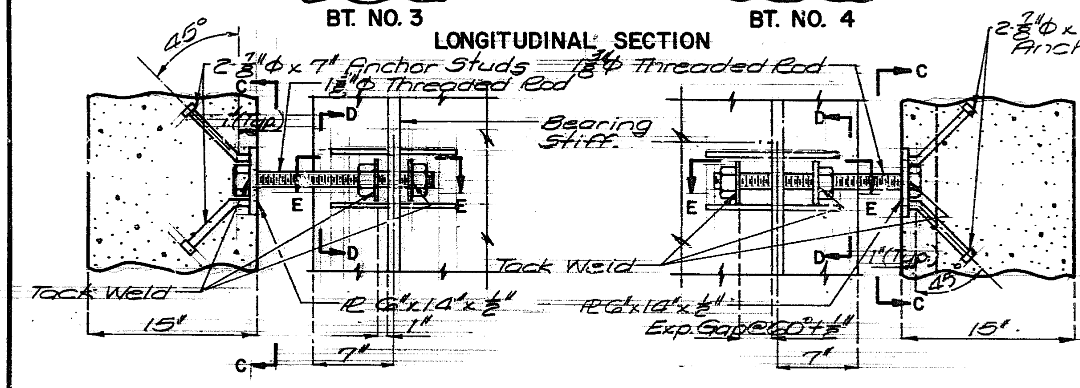
REVISED	JAN. 1987.
LAM. NEOP. BRGS.	MARCH 1979

DETAILED Sept. 1987
CHECKED Sept. 1987

DETAILS OF LAMINATED NEOPRENE BEARINGS (STEEL STRUCTURES)

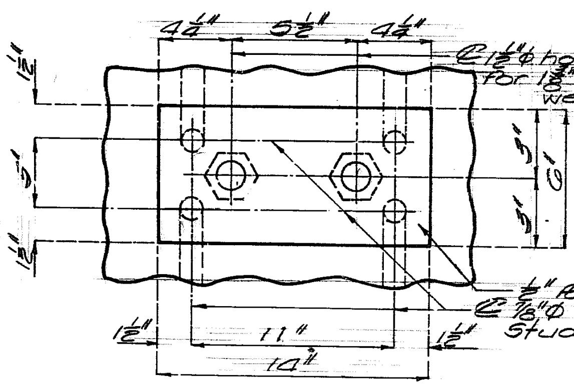


LONGITUDINAL SECTION

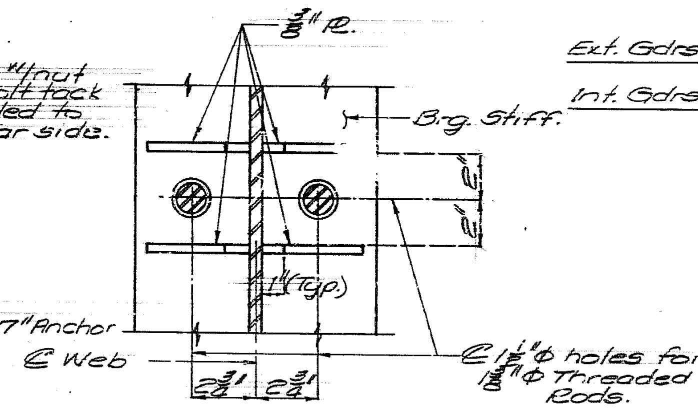


DETAIL "A"

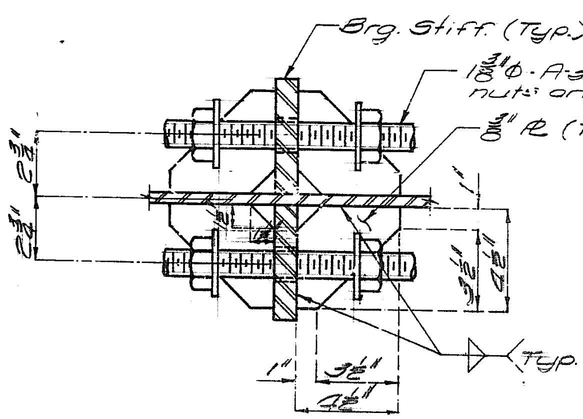
DETAIL "B"



ELEV. C-C



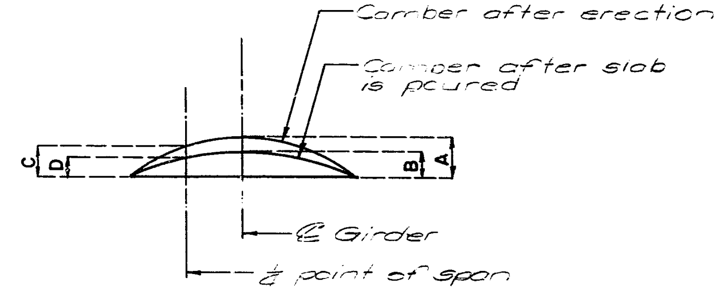
SECTION D-D



SECTION E-E

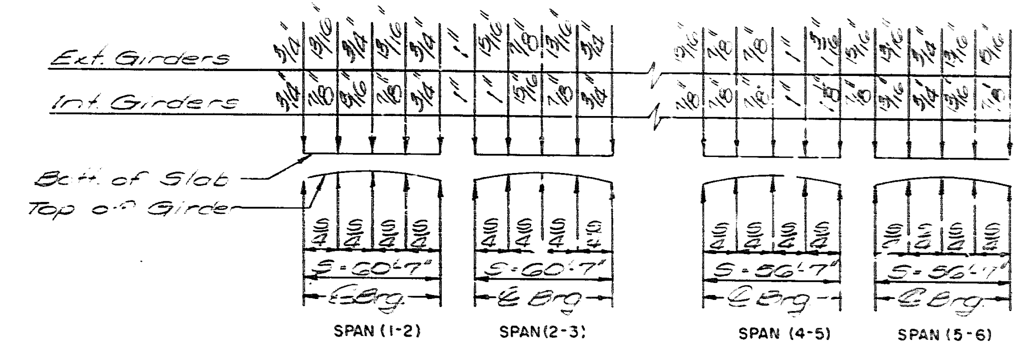
Note: Weight of threaded rods, nuts, washers, plates and anchors is included in Fabricated Structural Carbon Steel (Plate Girder).
Omit 1 3/8"Φ Rod on the outside of the exterior girders.
PL 14"x6"x1/2" w/ 7/8"Φ x 7" anchors and nuts for 1 3/8"Φ Rod shall be galvanized.
4 Earthquake Restrainer assemblies required at each Int. Bent No. 3 & No. 4.

EARTHQUAKE RESTRAINER DETAILS



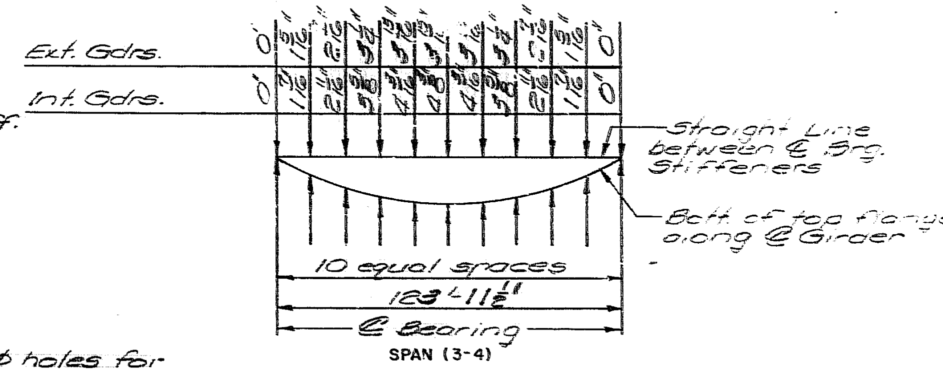
SPAN	EXT. GDR.				INT. GDR.			
	A	B	C	D	A	B	C	D
1-2	1 1/4"	11/16"	7/8"	1/2"	1 1/4"	5/8"	7/8"	7/16"
2-3	1 1/4"	11/16"	7/8"	1/2"	1 1/4"	5/8"	7/8"	7/16"
4-5	1 1/2"	13/16"	1 1/16"	9/16"	1 1/2"	11/16"	1 1/16"	1/2"
5-6	1 1/2"	13/16"	1 1/16"	9/16"	1 1/2"	11/16"	1 1/16"	1/2"

PRESTRESSED GIRDER CAMBER DIAGRAM



THEORETICAL SLAB HAUNCHING DIAGRAM
PRESTRESSED GIRDER SPANS
(CIP OPTION)

Note: If girder camber is different from that shown in the Camber Diagram, it shall be necessary to adjust the slab haunches, increase the slab thickness or to raise the grade uniformly throughout the structure. No payment will be made for additional labor or materials required for variation in haunching, slab thickness or grade adjustment.



DEAD LOAD DEFLECTIONS

Note: 20% of dead load deflection due to weight of structural steel.

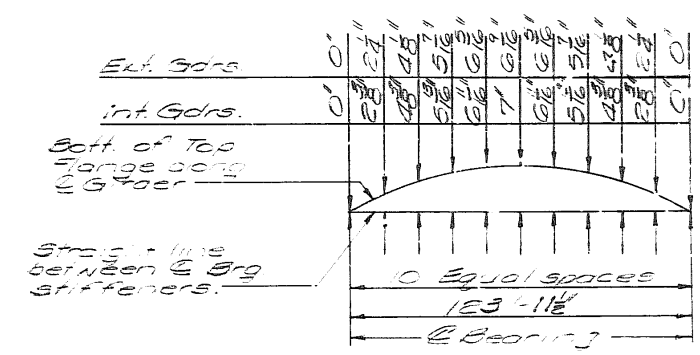
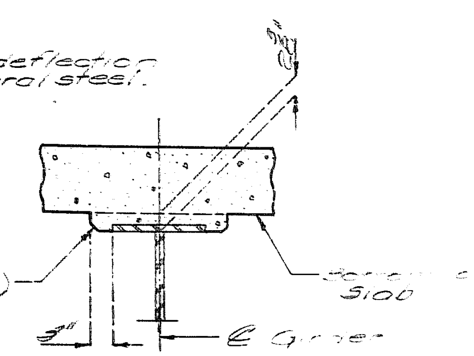


PLATE GIRDER CAMBER DIAGRAM

Note: 2 3/8" Dimension may vary if girder camber after erection differs from plan camber by more than the % of D.L. deflection due to weight of structural steel. No payment will be made for additional [illegible] required for [illegible] haunching.
Camber [illegible] for vertical curve [illegible] deflection due to [illegible] slab, curb and structural steel.



THEORETICAL
SLAB HAUNCH
(STEEL GDR. SPAN)
(C.I.P. OPTION)

DETAILED Nov. 1986
CHECKED Aug. 1987

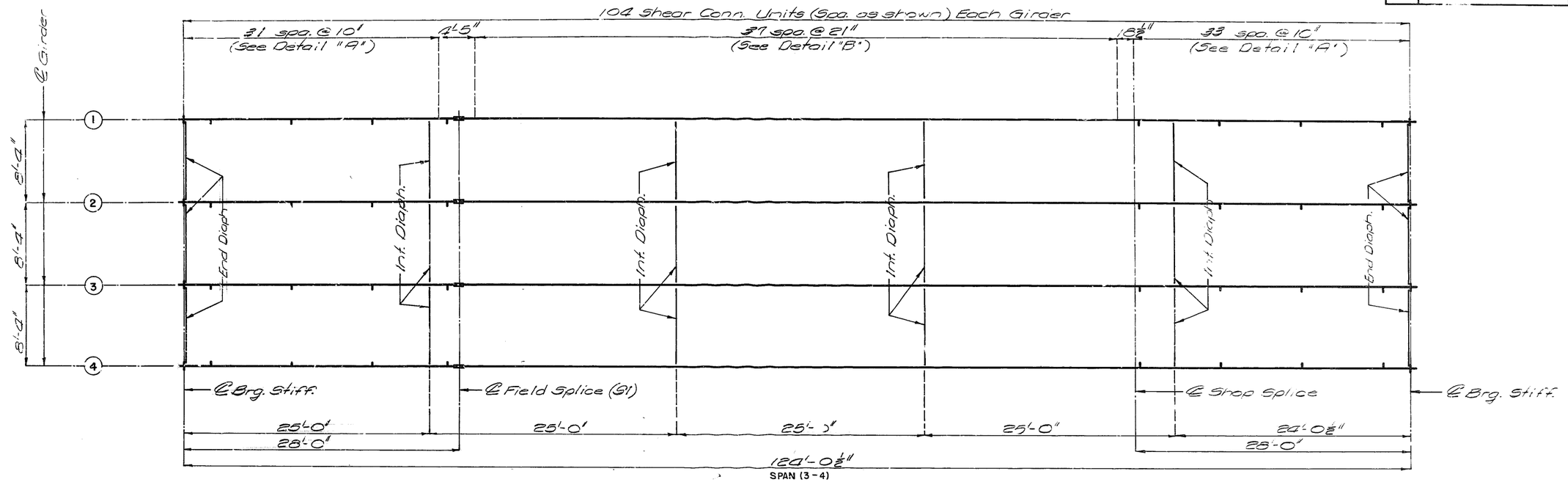
Note: This drawing is not to scale. Follow dimensions.

SCOTT COUNTY

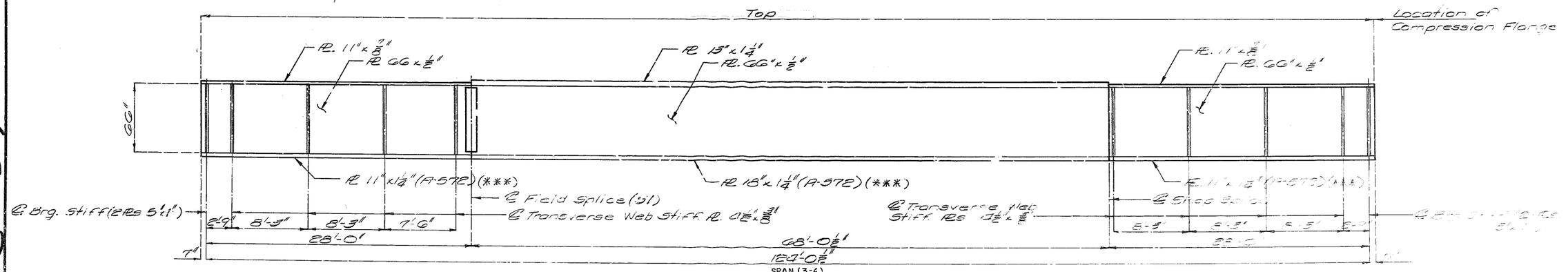
A-4376

5536

STATE	PROJ NO	SHEET NO
MO		32



PLAN OF STRUCTURAL STEEL



ELEVATION OF GIRDER

Note: By approval of the engineer, the contractor may omit any shop flange splice, if desired, by extending the heavier flange plate and providing approved modifications of details at field flange splices and elsewhere as required. All costs of any required design, plan revisions or rechecking of shop drawings shall be borne by the contractor. Payweight in any case will be based on material shown on design plans

Note: Plate girders shall be fabricated in conform to the Camber Diagram shown on Sheet No. 13.
Transverse web stiffeners shall be located as shown in plan of structural steel.
(***) indicates Flange Plates subject to notch toughness requirements.
All web plates, web splice plates and flange splice plates shall be subject to notch toughness requirements. Fabricated structural steel shall be A36 except as noted.
Longitudinal dimensions are parallel to grade at top of web.

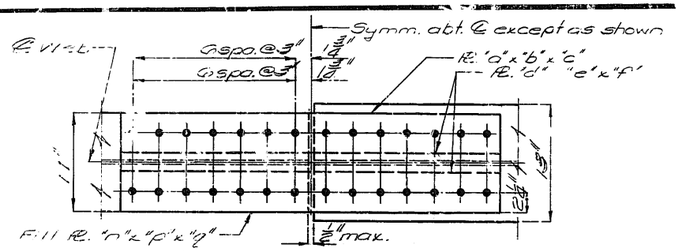
Note: For Detail 'A' & 'B' see Sheet No. 15.

DETAILED Mar 1987
CHECKED Sept 1987

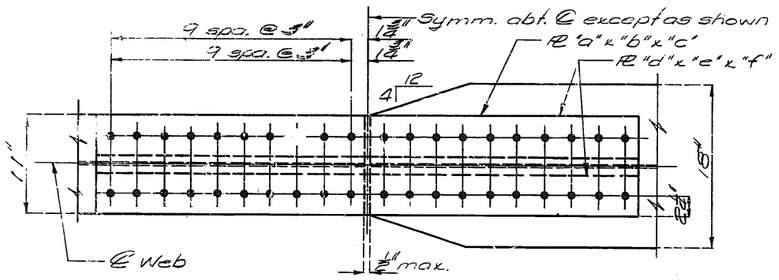
Note: This drawing is not to scale. Follow dimensions.

SCOTT COUNTY A-4376

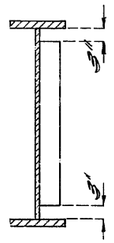
STATE	PROJ NO	SHEET NO
MO		33



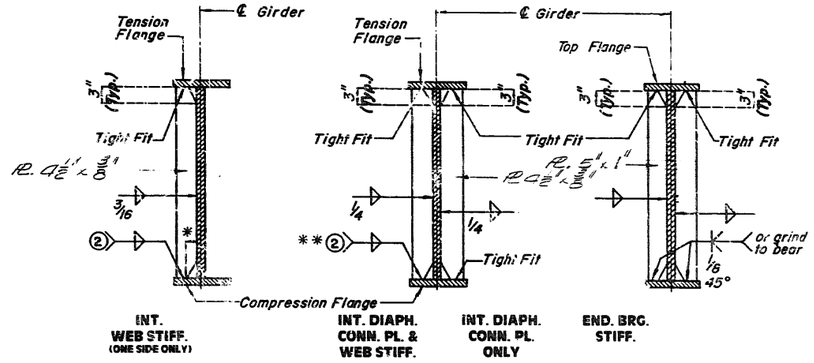
PLAN OF FLANGE SPLICE SI TOP



PLAN OF FLANGE SPLICE SI BOTTOM

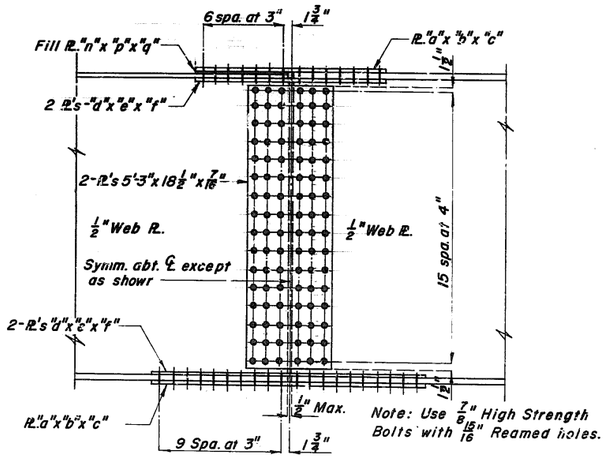


Note : When web stiffener plates interfere with flange splice plates and bolts, clip stiffener plates as shown.



② Weld to compression flange as located on ELEVATION OF GIRDER.
* 1½" typical for all Int. Web Stiff., Int. Diaph. Conn. Pl. and Brg. Stiff.,
** Weld may be omitted on interior girders, and Tight Fit used when Int. Diaph. Conn. Pl. is required on both sides.

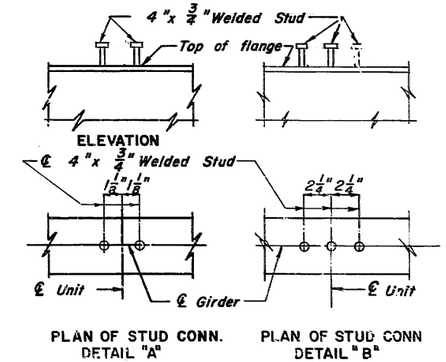
WELDING DETAILS



BOLTED FIELD SPLICE

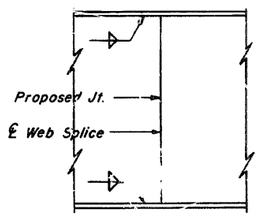
SPLICE LOCATION	TABLE OF DIMENSIONS — FIELD SPLICE								
	a	b	c	d	e	f	n	p	q
SI (Top)	11"	3/8"	3'-6½"	4½"	3/8"	3'-6½"	11"	3/8"	21"
SI (Bottom)	11"	1"	5'-0½"	4½"	1"	5'-0½"	-	-	-

DETAILS OF FIELD SPLICE

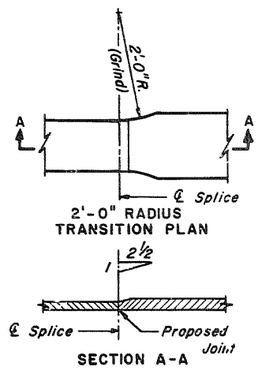


DETAILS OF SHEAR CONNECTORS

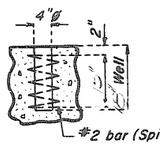
Note : For location of Details "A" & "B" see Sheet No. 14.
Weight of 620 lbs. of shear connectors is included in the weight of fabricated Structural Carbon Steel.



SHOP WEB SPLICE



WELDED SHOP FLANGE SPLICE



DETAIL OF ANCHOR BOLT WELLS

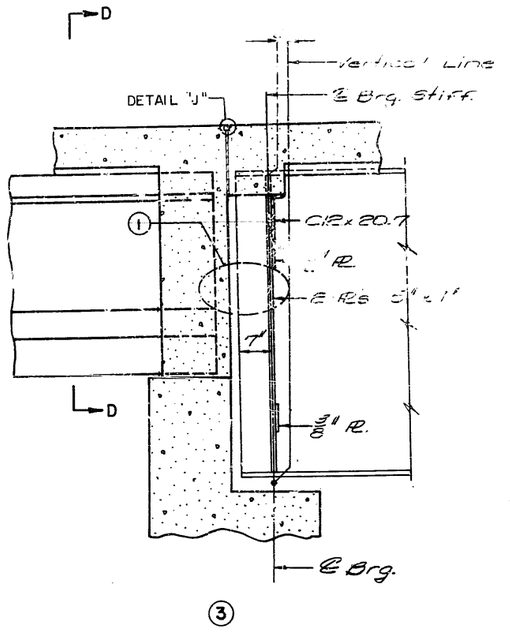
DETAILED Nov. 19 86
CHECKED Sept 19 87

Note: This drawing is not to scale. Follow dimensions.

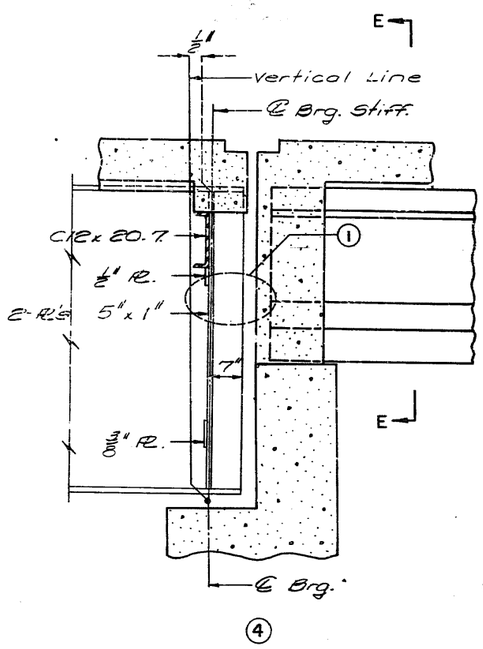
SCOTT COUNTY

A-4376

STATE	PROJ. NO.	SHEET NO.
MO.		34

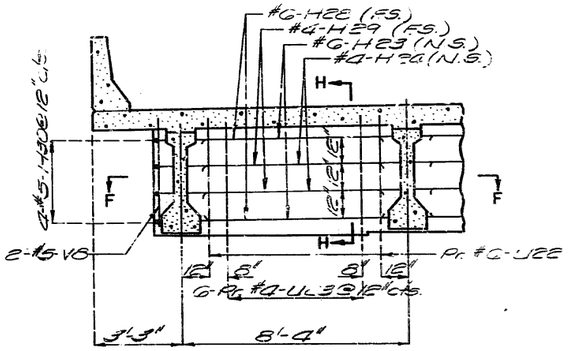


③

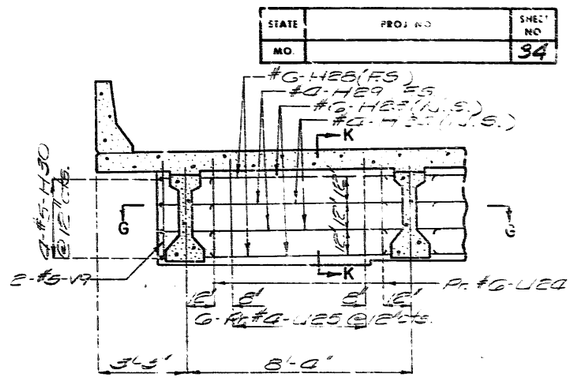


④

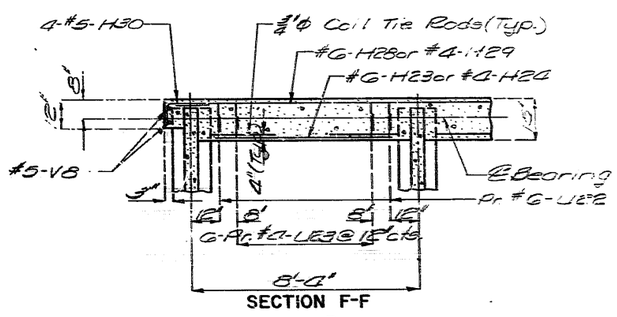
PART LONGITUDINAL SECTION



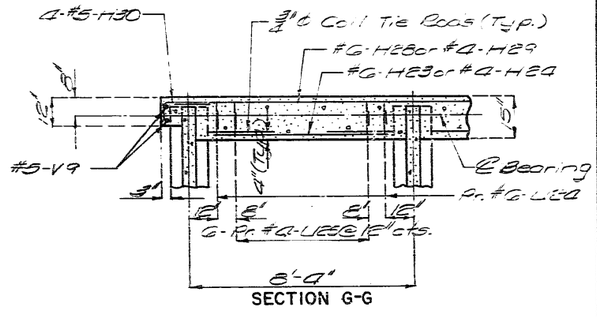
PART SECTION D-D



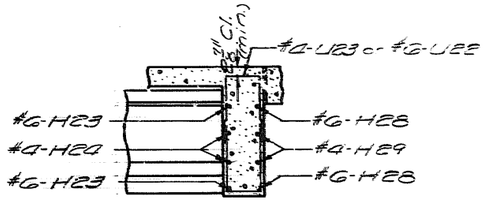
PART SECTION E-E



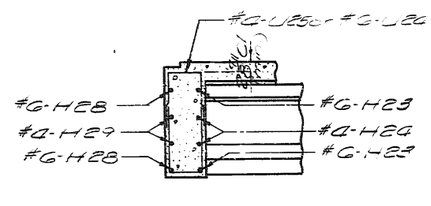
SECTION F-F



SECTION G-G

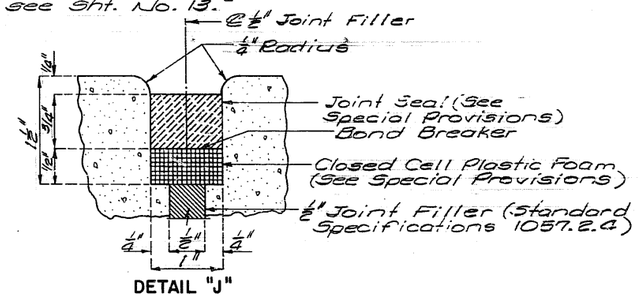


SECTION H-H

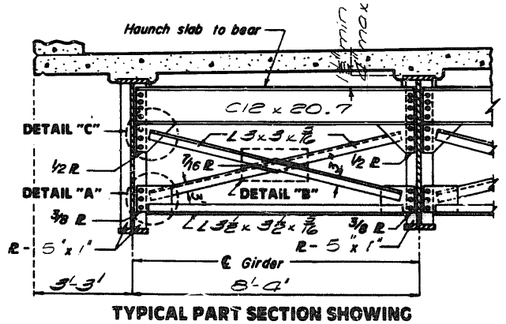


SECTION K-K

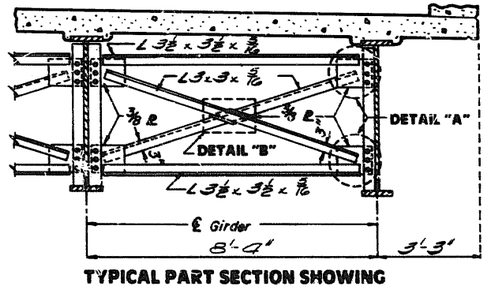
① Note: For Earthquake Restrainer details see Sht. No. 13.



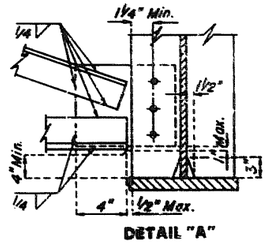
DETAIL "J"



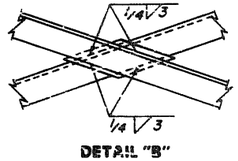
TYPICAL PART SECTION SHOWING END DIAPHRAGMS



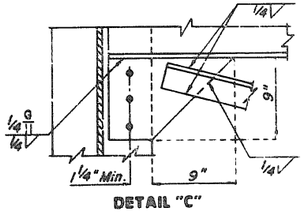
TYPICAL PART SECTION SHOWING INTERMEDIATE DIAPHRAGMS



DETAIL "A"



DETAIL "B"



DETAIL "C"

37
528

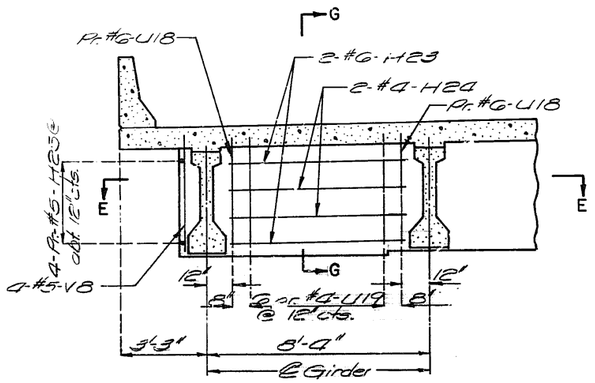
DETAILED Nov 19 86
CHECKED Sept. 19 87

Note: This drawing is not to scale. Follow dimensions.

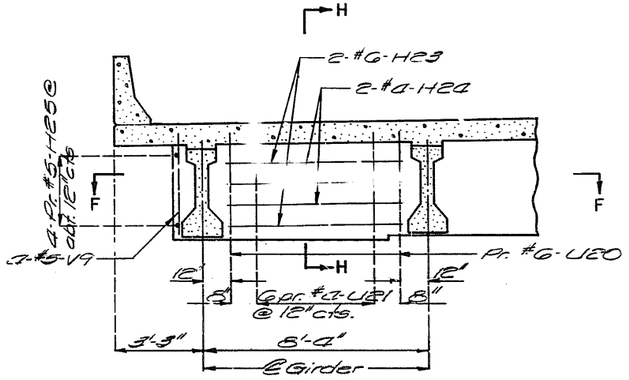
SCOTT COUNTY

A-4376

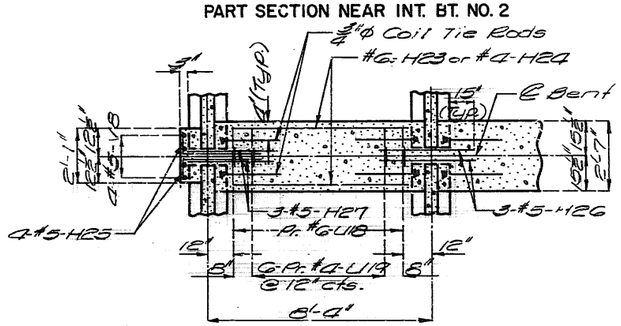
STATE	PROJ NO	SHEET NO
MO		35



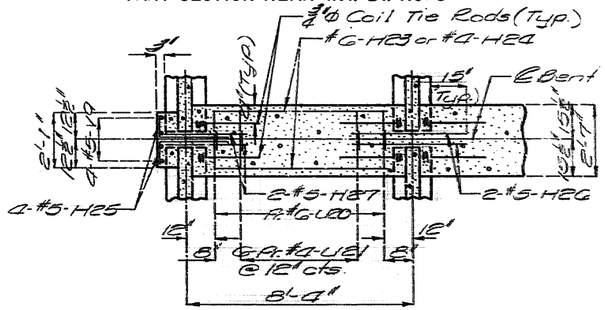
PART SECTION NEAR INT. BT. NO. 2



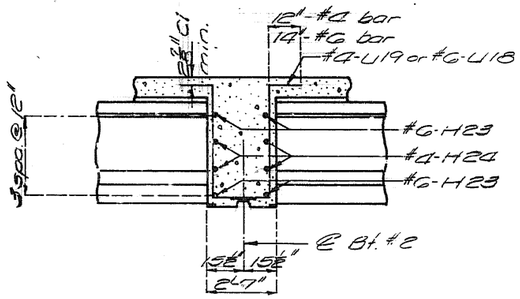
PART SECTION NEAR INT. BT. NO. 5



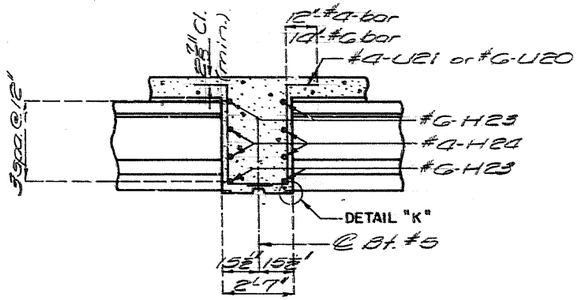
PART SECTION E-E



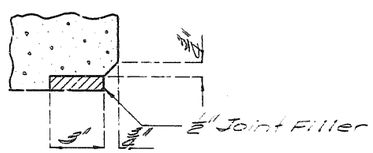
PART SECTION F-F



SECTION G-G

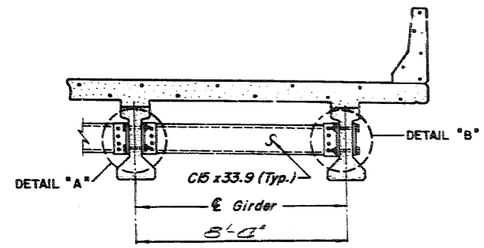


SECTION H-H

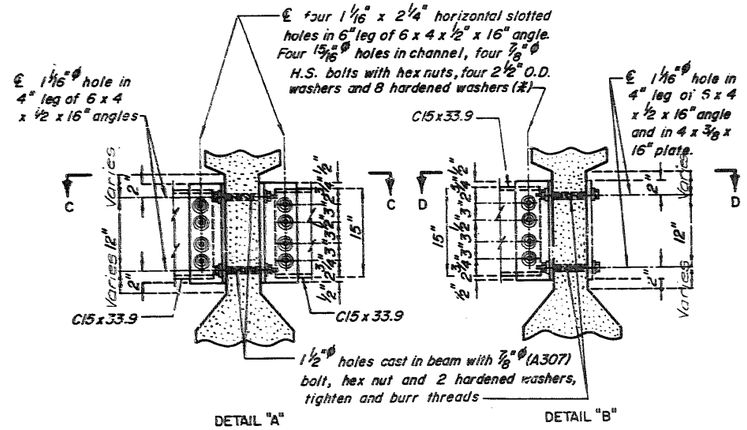


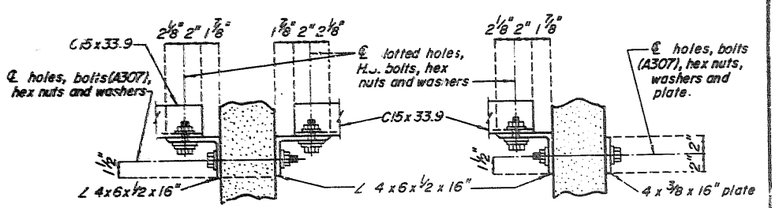
DETAIL "K"

Note: Diaphragm at intermediate Bents shall be built vertical.



PART SECTION SHOWING INTERMEDIATE DIAPHRAGMS





SECTION C-C SECTION D-D

STEEL DIAPHRAGM NOTES:

(*) IN LIEU OF 2 ½" O.D. WASHERS, CONTRACTOR MAY SUBSTITUTE A 3/16" MIN. THICKNESS PLATE WITH FOUR 15/16"ϕ HOLES AND 1 HARDENED WASHER PER BOLT.

ALL H.S. BOLTS MAY BE TENSIONED BY TURN-OF-NUT METHOD.

ALL DIAPHRAGM MATERIALS INCLUDING BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED.

FABRICATED STRUCTURAL STEEL SHALL BE A36 EXCEPT AS NOTED.

PAYMENT FOR FURNISHING AND INSTALLING STEEL INTERMEDIATE DIAPHRAGMS SHALL BE INCLUDED IN CONTRACT UNIT PRICE FOR PRESTRESSED CONCRETE I-GIRDERS.

SHOP DRAWINGS WILL NOT BE REQUIRED FOR STEEL INTERMEDIATE DIAPHRAGMS AND ANGLE CONNECTIONS.

P/S - INT. DIA. (STR.)	Revised MAY 1986
AUGUST 1983	

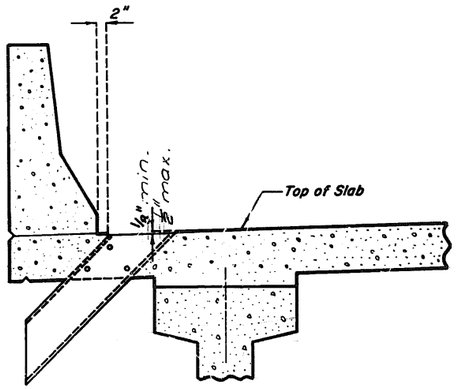
DETAILED NOV 1986
CHECKED Sept 1987

Note: This drawing is not a scale. Follow dimensions.

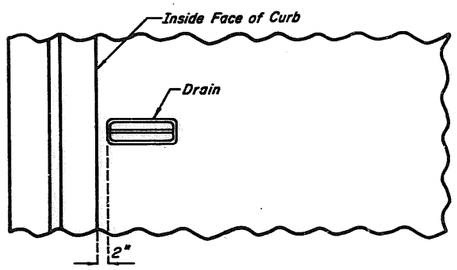
SCOTT COUNTY

A-4376

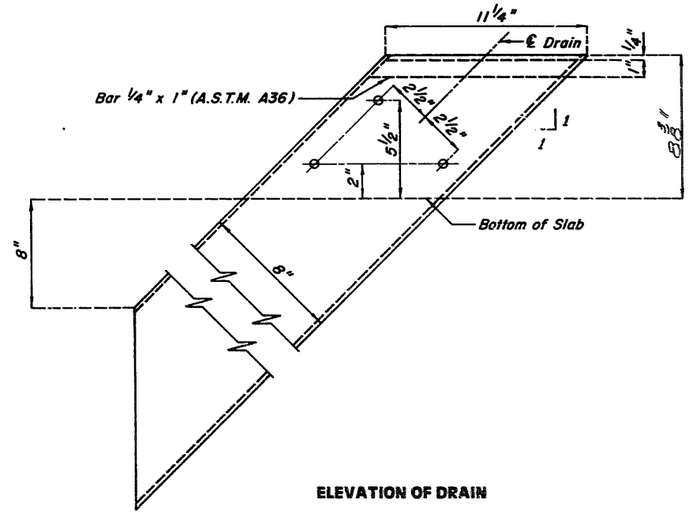
STATE	PROJ NO	SHEET NO
MO		36



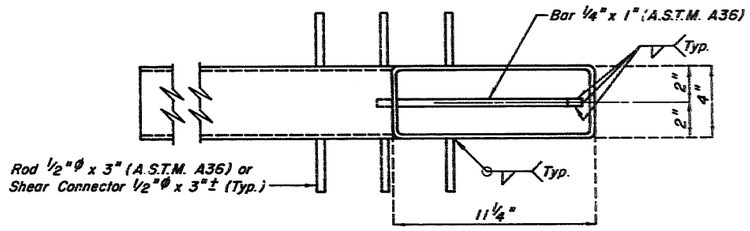
PART ELEVATION OF SLAB AT DRAIN



PART PLAN OF SLAB AT DRAIN

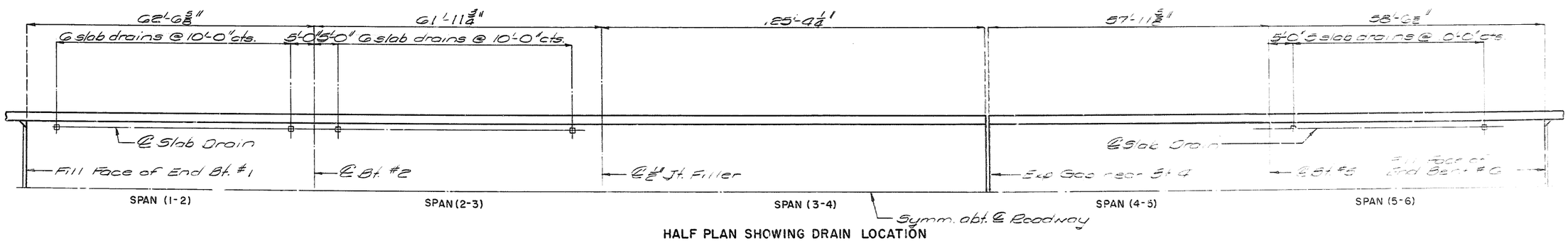


ELEVATION OF DRAIN



PLAN OF DRAIN

SLAB DRAIN DETAILS



HALF PLAN SHOWING DRAIN LOCATION

GENERAL NOTES:

SLAB DRAINS MAY BE FABRICATED OF EITHER ¼" WELDED SHEETS OF A.S.T.M. A36 STEEL OR FROM ¼" STRUCTURAL STEEL TUBING A.S.T.M. A500 OR A501

OUTSIDE DIMENSIONS OF DRAINS ARE 8" x 4"

LOCATE DRAINS IN THE SLAB BY DIMENSIONS SHOWN IN THE PART ELEVATION.

SHIFT REINFORCING STEEL IN FIELD WHERE NECESSARY TO CLEAR DRAINS.

THE DRAINS SHALL BE GALVANIZED IN ACCORDANCE WITH A.S.T.M. A123

SHOP DRAWINGS WILL NOT BE REQUIRED FOR THE SLAB DRAINS.

41

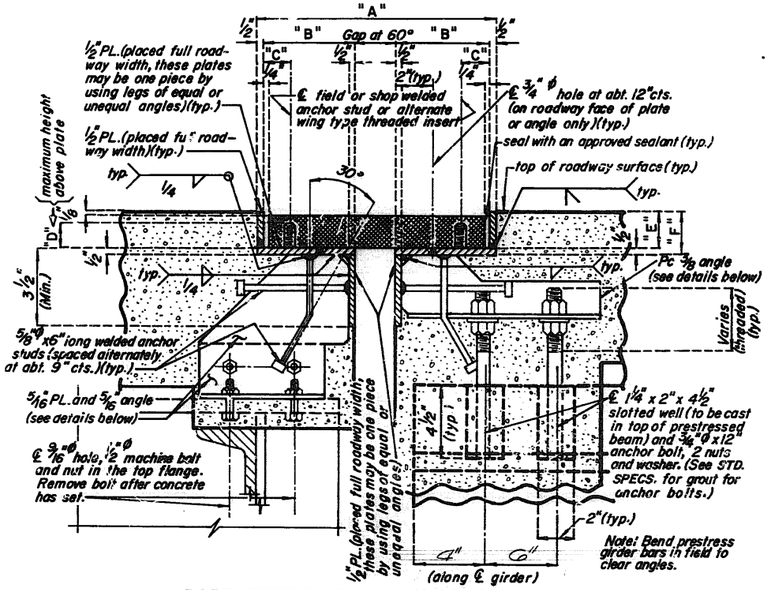
Gdr. Depth Less Than 48"	REVISED	MAR. 1978
SPS-S.D.(N.W.S.)		
FEB. 1975		

DETAILED Nov. 1986
CHECKED Sept. 1987

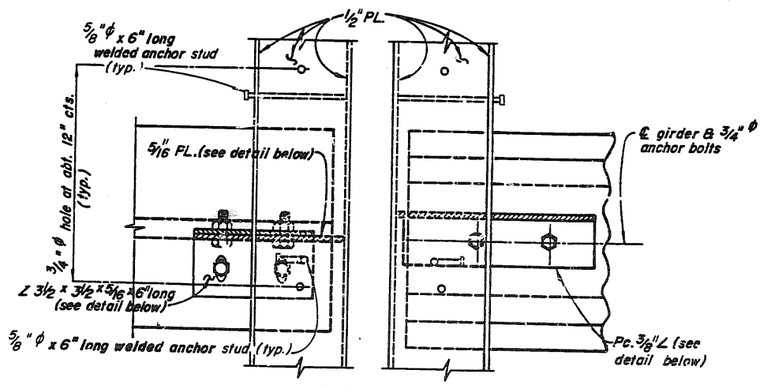
Note: This drawing is not to scale. Follow dimensions.

SCOTT COUNTY

A-4376



PART SECTION THRU ARMORED JOINT



PART PLAN

TABLE OF DIMENSIONS

LOCATION	ACCEPTABLE ALTERNATE TYPES	EXP. GAP AT 60°	"A" AT 60°	"B"	"C"	"D"	"E"	"F"	ANCHOR STUDS SIZE	ANCHOR STUDS SPA.	ANCHOR STUDS "G"
Bt. #4	On-Flex 45	2 3/4"	11 3/4"	4 1/2"	1 3/4"	1 1/2"	2 3/4"	3 1/2"	3/4"	12"	65
	Wabo Bendoflex 450	2 3/4"	12"	4 1/2"	1 3/4"	1 1/2"	2 3/4"	3 1/2"	3/4"	12"	50
	Fel-Span T40A CS	2 3/4"	12 1/4"	4 1/2"	1 3/4"	1 1/2"	2 3/4"	3 1/2"	3/4"	12"	50
	Acme Trojan TR400	2 3/4"	12"	4 1/2"	1 3/4"	1 1/2"	1 3/4"	2 1/4"	3/4"	12"	40
	Delastiflex LM400	2 3/4"	12 5/8"	4 1/16"	2 1/16"	2"	2 3/4"	2 3/4"	3/4"	9"	45
	Gen-Strip CCL 4"	2 3/4"	12"	4 1/2"	1 3/4"	1 1/2"	1 3/4"	2 1/4"	3/4"	12"	65

NOTE: ALL DIMENSIONS ARE AT RIGHT ANGLES.
EXPANSION GAP AND DIMENSION "A" SHALL BE INCREASED 3/16" FOR EACH 10° FALL IN TEMPERATURE AND DECREASED 3/16" FOR EACH 10° RISE IN TEMPERATURE.

GENERAL NOTES:

THE CERTIFIED NUTS AND BOLTS FOR THE ANCHOR STUDS OR WING TYPE THREADED INSERTS SHALL BE TIGHTENED TO THE FOOT POUNDS "G" SPECIFIED IN THE TABLE OF DIMENSIONS. RETIGHTEN TO "G" FOOT POUNDS A MINIMUM OF 30 MINUTES AFTER INITIAL TIGHTENING. THE WELDED ANCHOR STUDS SHALL BE THE REDUCED BASE TYPE.

MATERIAL FOR THE ARMORED JOINT SHALL BE A36 STRUCTURAL GRADE STEEL. ANCHORS FOR THE ARMORED JOINT SHALL BE APPROVED STUD WELDED ANCHORS (C1010 THRU C1020).

SEE SPECIAL PROVISIONS FOR PAINTING.

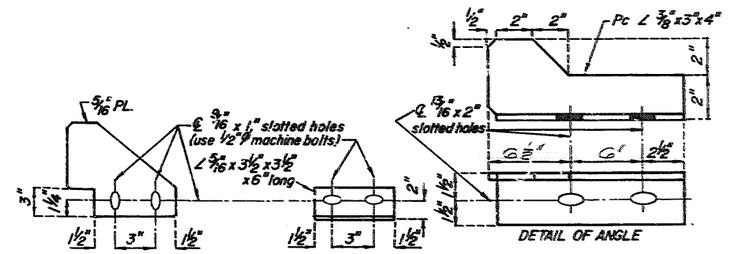
ANCHOR BOLTS IN THE BARRIER CURB SHALL BE CAST-IN-PLACE, GROUTED OR CONE- EXPANSION TYPE. HOLES IN THE BARRIER CURB FOR ANCHORS SHALL NOT BE DRILLED UNTIL THE CONCRETE IS AT LEAST 7 DAYS OLD.

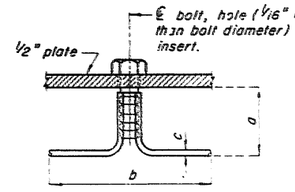
PLAN DIMENSIONS ARE BASED ON INSTALLATION AT 60°F. THE EXPANSION GAP AND OTHER DIMENSIONS SHALL BE ADJUSTED DURING INSTALLATION FOR COMPLIANCE WITH ANY TEMPERATURE CHANGE.

CONTACT SURFACE OF STEEL TO ALUMINUM SHALL BE INSULATED WITH THE MATERIAL SPECIFIED ON THE SHOP DRAWINGS.

FURNISHING, PAINTING AND INSTALLING THE STRUCTURAL STEEL ARMORED JOINT AND CURB PLATES SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR EXPANSION JOINT SEAL.

BOLT CAVITIES TO BE FILLED WITH APPROVED SEALANT IN COMPLIANCE WITH MANUFACTURER'S CERTIFICATION.

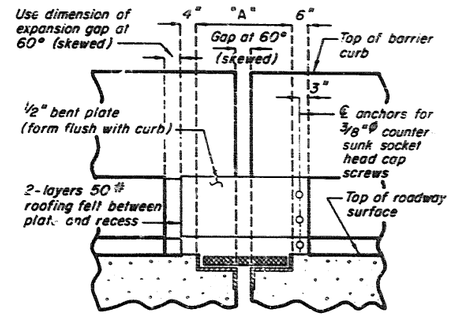




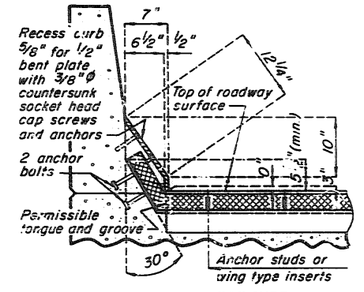
BOLT DIAMETER	SAFE LOAD TENSION (LBS.) (MIN.)	APPROX. ULT. CAP. TENSION (LBS.) (MIN.)	DIMENSIONS a (MIN.)	b	c
1/2"	800	8,000	1-5/8"	5"	.218"
5/8"	1,300	9,200	1-5/8"	5"	.218"
3/4"	1,800	13,200	2-1/4"	6"	.252"
7/8"	2,000	16,200	2-1/2"	6-1/2"	.306"
1"	2,000	16,200	2-1/2"	6-1/2"	.306"

DETAILS OF ALTERNATE WING TYPE THREADED INSERT

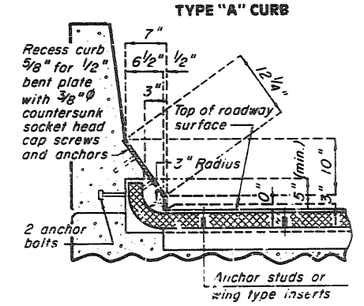
MACHINE BOLTS NEED ONLY BE USED TO SECURE THE WING TYPE THREADED INSERTS TO THE STEEL PLATE UNTIL THE CONCRETE HAS ATTAINED 3,000 psi.



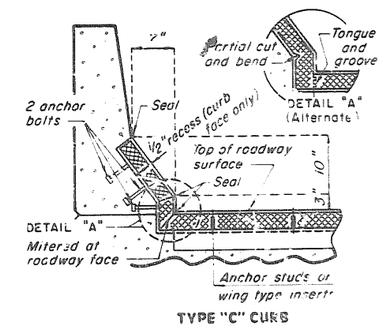
PART ELEVATION OF BARRIER CURB



TYPE "A" CURB



TYPE "B" CURB



TYPE "C" CURB

ALTERNATE CURB TREATMENTS

DETAILS OF ELASTOMERIC EXPANSION JOINT SEAL AT BENT NO. 4

Elastomeric Expansion Jt. Seal	
SPS-INT. BT.	REVISED
FEB. 1978	APRIL 1985

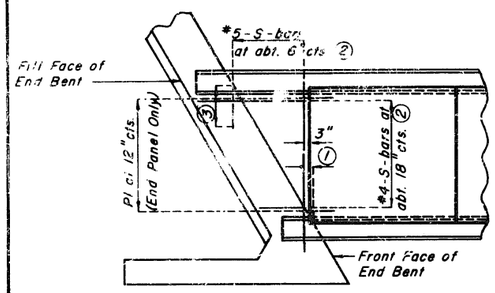
DETAILED Nov. 19 86
CHECKED Sept. 19 87

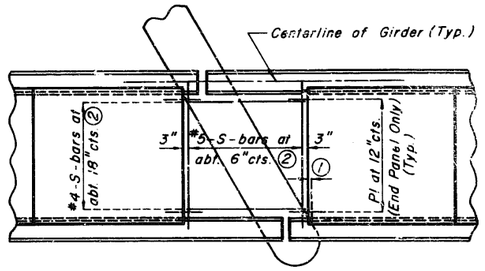
Note: This drawing is not to scale. Follow dimensions.

SCOTT COUNTY

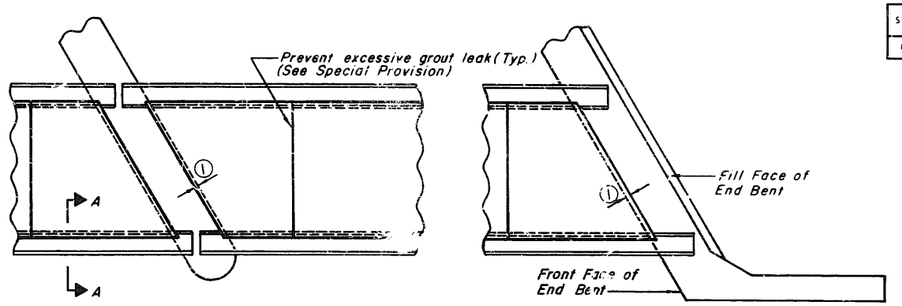
A-4376

STATE	PROJ NO	SHEET NO
MO		38



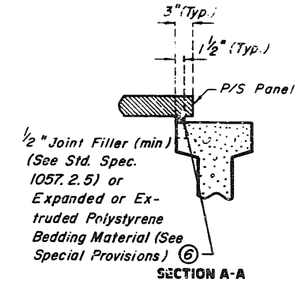


PANELS - SQUARED ENDS

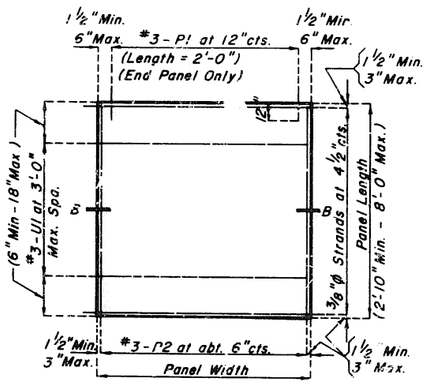


PANELS - SKEWED ENDS

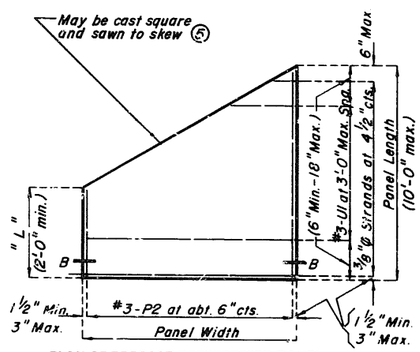
PLAN OF PRECAST PRESTRESSED PANELS PLACEMENT



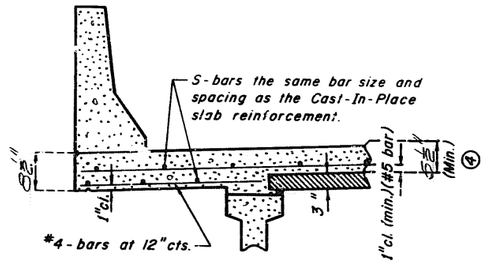
SECTION A-A



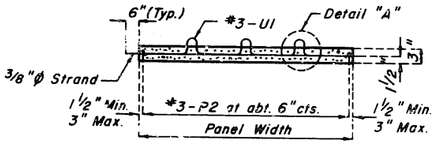
PLAN OF PRECAST PRESTRESSED PANEL



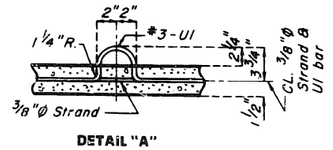
PLAN OF PRECAST PRESTRESSED PANEL
(SKEWED END-OPTIONAL)



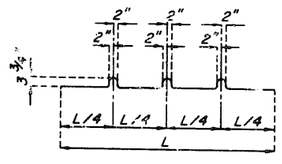
SECTION THRU CANTILEVER



SECTION B-B

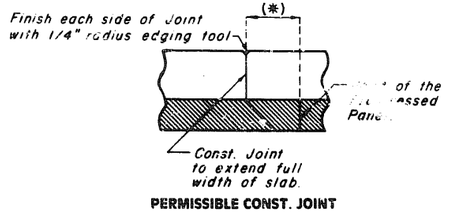


DETAIL "A"



BENDING DIAGRAM FOR U1 BAR

#3-U1 BARS MAY BE ORIENTED AT RIGHT ANGLES TO LOCATION AND SPACING SHOWN. U1 BARS SHALL BE PLACED BETWEEN P1 BARS.



PERMISSIBLE CONST. JOINT

(*) ADJUST THE PERMISSIBLE CONST. JOINT TO A CLEARANCE OF 6 INCHES MIN. FROM THE JOINTS OF THE PRESTRESSED PANELS.

NOTE:

① END PANELS TO BE DIMENSIONED 1½ INCHES FROM THE INSIDE FACE OF DIAPHRAGM.

② S-BARS SHOWN ARE BOTTOM STEEL IN SLAB BETWEEN PANELS AND USED WITH SQUARED END PANELS ONLY.

COST OF S-BARS SHALL BE INCLUDED IN THE PRICE BID FOR SLAB PER SQ. YD.

S-BARS ARE NOT LISTED IN BILL OF REINFORCING.

SUPPORT FROM DIAPHRAGM FORMS IS REQUIRED UNDER THE OPTIONAL SKEWED END UNTIL CAST-IN-PLACE CONCRETE HAS REACHED 3,000 PSI. COMPRESSIVE STRENGTH.

③ EXTEND S-BARS 18 INCHES BEYOND THE FRONT FACE OF END BENT ONLY.

SLAB EXTERIOR GIRDER HAUNCH SHALL BE THE SAME AS CAST-IN-PLACE.

SLAB THICKNESS OVER PRESTRESSED PANELS VARIES DUE TO GIRDER CAMBER.

④ IN ORDER TO MAINTAIN MINIMUM SLAB THICKNESS IT MAY BE NECESSARY TO RAISE THE GRADE UNIFORMLY THROUGHOUT THE STRUCTURE. NO PAYMENT WILL BE MADE FOR ADDITIONAL LABOR OR MATERIALS REQUIRED FOR NECESSARY GRADE ADJUSTMENT.

⑤ ANY STRAND 2'-0" OR SHORTER SHALL HAVE A #4 REINFORCING BAR ON EACH SIDE OF IT, CENTERED BETWEEN STRANDS. STRANDS 2'-0" OR SHORTER MAY THEN BE DEBONDED AT THE FABRICATORS OPTION.

⑥ ALL PANEL SUPPORT PADS SHALL BE GLUED TO THE GIRDER. WHEN SUPPORT THICKNESS EXCEEDS 1½ INCHES, THE PADS SHALL BE GLUED TOP AND BOTTOM. THE GLUE USED SHALL BE THE TYPE RECOMMENDED BY THE PANEL SUPPORT PADS MANUFACTURER.

NOTE:

USE SLAB HAUNCHING DIAGRAM ON SHEET NO. 13 FOR DETERMINING THICKNESS OF JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL WITHIN THE LIMITS NOTED BELOW.

GENERAL NOTES:

PRESTRESSED PANELS:

CONCRETE FOR PRESTRESSED PANELS SHALL BE CLASS A1 WITH f'_c = 5,000 PSI, f'_{ci} = 3,500 PSI.

THE TOP SURFACE OF ALL PANELS SHALL RECEIVE A SCORED FINISH WITH A DEPTH OF SCORING OF ⅛ INCH PERPENDICULAR TO THE PRESTRESSING STRANDS IN THE PANELS (SEE SPECIAL PROVISIONS).

PRESTRESSING TENDON'S SHALL BE HIGH-TENSILE STRENGTH UNCOATED SEVEN-WIRE (7), LOW RELAXATION STRANDS FOR PRESTRESSED CONCRETE CONFORMING TO AASHTO M203, EXCEPT THAT NOMINAL DIAMETER OF STRAND = ⅜ INCH AND NOMINAL AREA = 0.085 SQ. IN. AND MINIMUM ULTIMATE STRENGTH = 23,000 LBS. (270 KSI). LARGER STRANDS MAY BE USED WITH THE SAME SPACING AND INITIAL TENSION.

INITIAL-PRESTRESSING FORCE = 17.2 KIPS/STRAND.

THE METHOD AND SEQUENCE OF RELEASING THE STRANDS SHALL BE SHOWN ON THE SHOP DRAWINGS.

SUITABLE ANCHORAGE DEVICES FOR LIFTING PANELS MAY BE CAST IN PANELS, PROVIDED THEY ARE SHOWN ON THE SHOP DRAWINGS AND APPROVED BY THE ENGINEER. PANEL LENGTHS SHALL BE DETERMINED BY THE CONTRACTOR AND SHOWN ON THE SHOP DRAWINGS.

WHEN SQUARE END PANELS ARE USED AT SKEWED BENTS, IT IS REQUIRED THAT THE SKEWED PORTION BE CAST FULL DEPTH. NO SEPARATE PAYMENT WILL BE MADE FOR THE ADDITIONAL CONCRETE AND REINFORCING REQUIRED.

MINIMUM JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL THICKNESS SHALL BE ½ INCH. THICKER JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL MAY BE USED ON ONE OR BOTH SIDES OF THE GIRDER TO REDUCE CAST-IN-PLACE CONCRETE THICKNESS, WITHIN TOLERANCES. NO MORE THAN 2 INCHES TOTAL THICKNESS OF JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL SHALL BE USED.

THE SAME THICKNESS OF JOINT FILLER MATERIAL SHALL BE USED UNDER ANY ONE EDGE OF ANY PANEL AND THE MAXIMUM CHANGE IN THICKNESS BETWEEN ADJACENT PANELS SHALL BE ½ INCH. THE POLYSTYRENE BEDDING MATERIAL MAY BE CUT TO MATCH HAUNCH HEIGHT ABOVE TOP OF FLANGE.

AT THE CONTRACTORS OPTION THE VARIATION IN SLAB THICKNESS OVER PRESTRESSED PANELS MAY BE ELIMINATED OR REDUCED BY INCREASING AND VARYING THE GIRDER TOP FLANGE THICKNESS. DIMENSIONS SHALL BE SHOWN ON THE SHOP DRAWINGS.

REINFORCING STEEL:

ALL DIMENSIONS ARE OUT TO OUT.

MINIMUM CLEARANCE TO REINFORCING STEEL SHALL BE 1½ INCH UNLESS OTHERWISE SHOWN.

HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE C.R.S.I. MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES, STIRRUP AND TIE DIMENSIONS

ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE OF BAR TO THE NEAREST INCH.

THE PRESTRESSED PANEL QUANTITIES ARE NOT INCLUDED IN THE TABLE OF ESTIMATED QUANTITIES FOR ALTERNATE SLABS.

IF U1 BARS INTERFERE WITH PLACEMENT OF SLAB STEEL, U1 LOOPS MAY BE BENT OVER, AS NECESSARY, TO CLEAR SLAB STEEL.

WELDED WIRE FABRIC OR WELDED DEFORMED BAR MATS PROVIDING A MINIMUM AREA OF REINFORCING PERPENDICULAR TO STRANDS OF 0.22 SQ. IN./FT. WITH SPACING PARALLEL TO STRANDS SUFFICIENT TO INSURE PROPER HANDLING, MAY BE USED IN LIEU OF THE #3-P2 BARS SHOWN. WIRE OR BAR DIAMETER SHALL NOT BE LARGER THAN 0.375 INCHES.

PC-P/S PANEL (3") | REVISED MAY 1987 | AUG. 1984

DETAILED Aug 19 87
CHECKED Sept 19 87

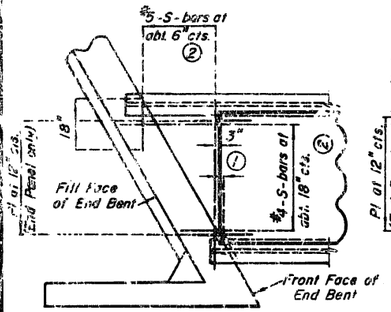
DETAILS OF PRECAST PRESTRESSED PANELS

Note: This drawing is not to scale. Follow dimensions.

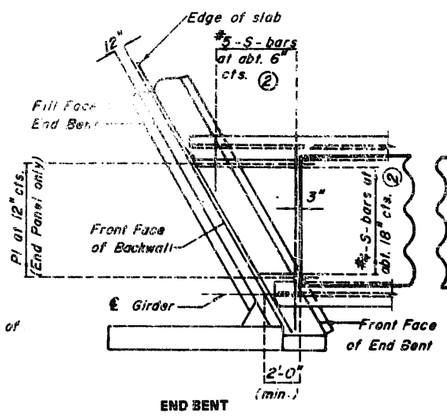
SCOTT COUNTY

A-4376

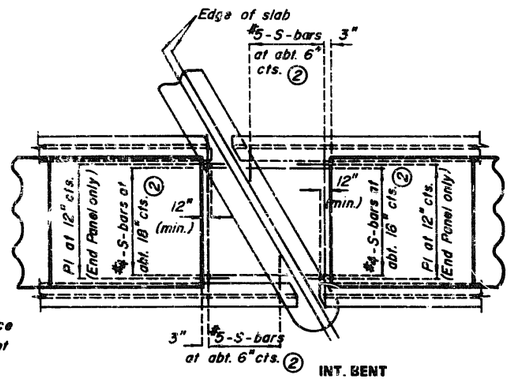
STATE	PROJ NO	SHEET NO
MO		39



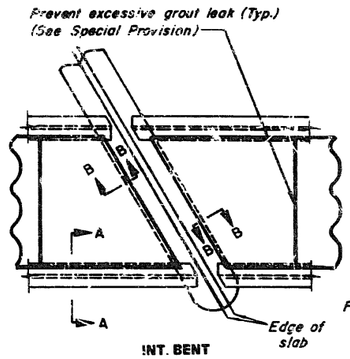
END BENT (INTEGRAL)



END BENT

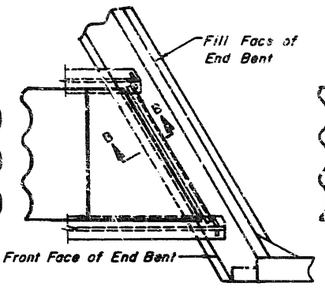


INT. BENT (EXP. GAP)

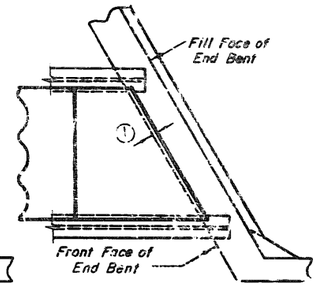


INT. BENT (EXP. GAP)

PANELS - SQUARED ENDS



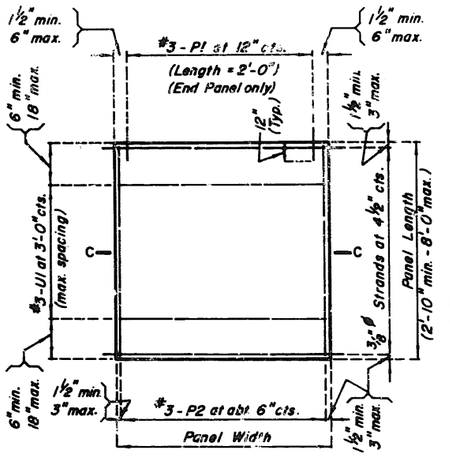
END BENT



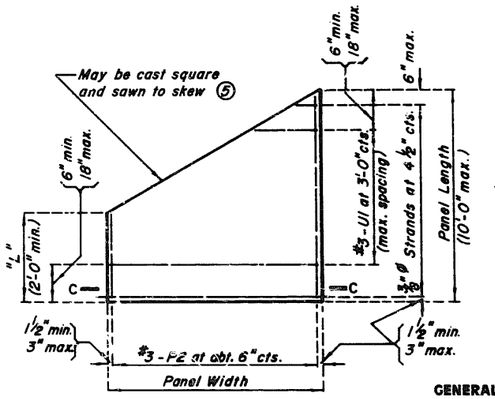
END BENT (INTEGRAL)

PANELS - SKEWED ENDS

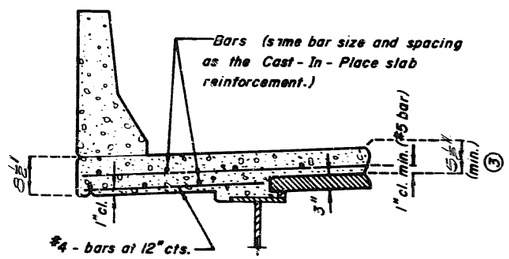
PLAN OF PRECAST PRESTRESSED PANELS PLACEMENT



PLAN OF PRECAST PRESTRESSED PANEL

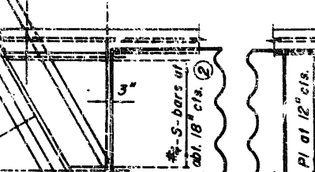


PLAN OF PRECAST PRESTRESSED PANEL (SKEWED END-OPTIONAL)



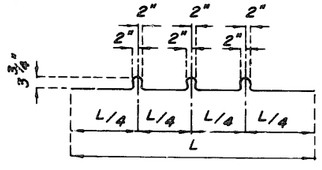
SECTION THRU CANTILEVER

SECTION C-C



DETAIL "A"

(***) Prestressing strands to extend 6" or to within 1" of adjacent panel.



BENDING DIAGRAM FOR U1 BAR

REINFORCING STEEL:

ALL DIMENSIONS ARE OUT TO OUT.

MINIMUM CLEARANCE TO REINFORCING STEEL SHALL BE 1½ INCH, UNLESS OTHERWISE SHOWN.

HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE C.R.S.I. MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES, STIRRUP AND TIE DIMENSIONS.

ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE OF BAR TO THE NEAREST INCH.

THE PRESTRESSED PANEL QUANTITIES ARE NOT INCLUDED IN THE TABLE OF ESTIMATED QUANTITIES FOR ALTERNATE SLABS.

IF U1 BARS INTERFERE WITH PLACEMENT OF SLAB STEEL, U1 LOOPS MAY BE BENT OVER, AS NECESSARY, TO CLEAR SLAB STEEL.

WELDED WIRE FABRIC OR WELDED DEFORMED BAR MATS PROVIDING A MINIMUM AREA OF REINFORCING PERPENDICULAR TO STRANDS OF 0.22 SQ. IN./FT. WITH SPACING PARALLEL TO STRANDS SUFFICIENT TO INSURE PROPER HANDLING, MAY BE USED IN LIEU OF THE #3-P2 BARS SHOWN. WIRE OR BAR DIAMETER SHALL NOT BE LARGER THAN 0.375 INCHES. #3-U1 BARS MAY BE ORIENTED AT RIGHT ANGLES TO LOCATION AND SPACING SHOWN. U1 BARS SHALL BE PLACED BETWEEN PI BARS.

GENERAL NOTES:

PRESTRESSED PANEL:

CONCRETE FOR PRESTRESSED PANELS SHALL BE CLASS A1 WITH F'c = 5,000 PSI, F'ci = 3,500 PSI.

THE TOP SURFACE OF ALL PANELS SHALL RECEIVE A SCORED FINISH WITH A DEPTH OF SCORING OF ⅛ INCH PERPENDICULAR TO THE PRESTRESSING STRANDS IN THE PANELS (SEE SPECIAL PROVISIONS).

PRESTRESSING TENDONS SHALL BE HIGH-TENSILE STRENGTH UNCOATED SEVEN-WIRE (7), LOW RELAXATION STRANDS FOR PRESTRESSED CONCRETE CONFORMING TO AASHTO M203, EXCEPT THAT NOMINAL DIAMETER OF STRAND = ⅜ INCH AND NOMINAL AREA = 0.085 SQ. IN. AND MINIMUM ULTIMATE STRENGTH = 23,000 LBS. (270 KSI). LARGER STRANDS MAY BE USED WITH THE SAME SPACING AND INITIAL TENSION.

INITIAL PRESTRESSING FORCE = 17.2 KIPS/STRAND.

THE METHOD AND SEQUENCE OF RELEASING THE STRANDS SHALL BE SHOWN ON THE SHOP DRAWINGS

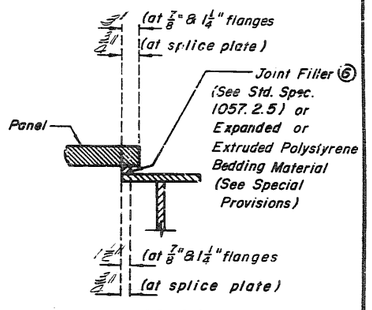
SUITABLE ANCHORAGE DEVICES FOR LIFTING PANELS MAY BE CAST IN PANELS, PROVIDED THEY ARE SHOWN ON THE SHOP DRAWINGS AND APPROVED BY THE ENGINEER. PANEL LENGTHS SHALL BE DETERMINED BY THE CONTRACTOR AND SHOWN ON THE SHOP DRAWINGS.

WHEN SQUARE END PANELS ARE USED AT SKEWED BENTS, IT IS REQUIRED THAT THE SKEWED PORTION BE CAST FULL DEPTH. NO SEPARATE PAYMENT WILL BE MADE FOR THE ADDITIONAL CONCRETE AND REINFORCING REQUIRED.

MINIMUM JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL THICKNESS SHALL BE ½ INCH, EXCEPT OVER SPLICE PLATES WHERE MINIMUM THICKNESS SHALL BE ¼ INCH. WHEN JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL IS LESS THAN ½" THICK OVER SPLICE PLATE, MAKE THE WIDTH OF MATERIAL AT SPLICE THE SAME WIDTH AS PANEL ON SPLICE. THICKER MATERIAL MAY BE USED ON ONE OR BOTH SIDES OF THE GIRDER TO REDUCE CAST-IN-PLACE CONCRETE THICKNESS, WITHIN TOLERANCES. NO MORE THAN 2 INCHES TOTAL THICKNESS OF JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL SHALL BE USED.

THE SAME THICKNESS OF JOINT FILLER MATERIAL SHALL BE USED ON ANY ONE EDGE OF ANY PANEL EXCEPT AT SPLICES, AND THE MAXIMUM [illegible] IN THICKNESS BETWEEN ADJACENT PANELS SHALL BE ¼ INCH TO CC [illegible] VARIATIONS FROM GIRDER CAMBER DIAGRAM. THE POLYSTYRENE BEDDING MATERIAL MAY BE CUT TO MATCH HAUNCH HEIGHT ABOVE TOP OF FLANGE.

SUPPORT FROM DIAPHRAGM FORMS IS REQUIRED UNDER THE OPTIONAL SKEWED END UNTIL CAST-IN-PLACE CONCRETE HAS REACHED 3,000 PSI COMPRESSIVE STRENGTH.



SECTION A-A

NOTE:

USE SLAB HAUNCHING DIAGRAM ON SHEET NO. 13 FOR DETERMINING THICKNESS OF JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL WITHIN THE LIMITS NOTED BELOW.

NOTES:

(1) END PANELS TO BE DIMENSIONED 1½ INCHES FROM THE INSIDE FACE OF DIAPHRAGM.

(2) S-BARS SHOWN ARE BOTTOM STEEL IN SLAB BETWEEN PANELS AND USED WITH SQUARED END PANELS ONLY.

(3) ADJUSTMENT IN THE SLAB THICKNESS, JOINT FILLER OR POLYSTYRENE BEDDING MATERIAL THICKNESS, OR GRADE, WILL BE NECESSARY IF THE GIRDER CAMBER AFTER ERECTION DIFFERS FROM PLAN CAMBER BY MORE THAN THE % OF DEAD LOAD DEFLECTION DUE TO THE WEIGHT OF STRUCTURAL STEEL. NO PAYMENT WILL BE MADE FOR ADDITIONAL LABOR OR MATERIALS FOR THE ADJUSTMENT.

(4) S-BARS SHOWN ARE USED WITH SKEWED END PANELS, OR SQUARE END [illegible] OF SQUARE STRUCTURES ONLY. #5 S-BARS SHALL EXTEND THE WIDTH OF SLAB (2) INCHES LAP (IF NECESSARY) OR TO WITHIN 3 INCHES OF EXPANSION DEVICE ASSEMBLIES.

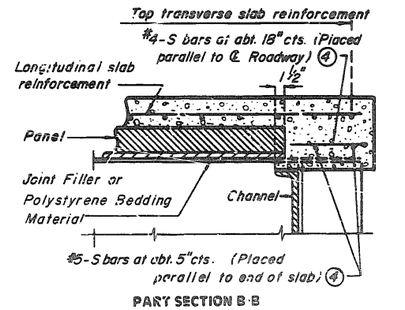
COST OF S-BARS SHALL BE INCLUDED IN PRICE BID FOR SLAB PER SQUARE YARD.

S-BARS ARE NOT LISTED IN BILL OF REINFORCING.

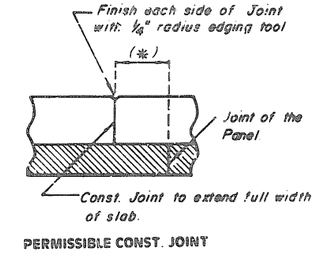
SLAB EXTERIOR GIRDER HAUNCH SHALL BE THE SAME AS CAST-IN-PLACE.

(5) ANY STRAND 2'-0" OR SHORTER SHALL HAVE A #4 REINFORCING BAR ON EACH SIDE OF IT CENTERED BETWEEN STRANDS. STRANDS 2'-0" OR SHORTER MAY THEN BE DEBONDED AT FABRICATORS OPTION.

(6) ALL PANEL SUPPORT PADS SHALL BE GLUED TO THE GIRDER. WHEN SUPPORT THICKNESS EXCEEDS 1½ INCHES, THE PADS SHALL BE GLUED TOP AND BOTTOM. THE GLUE USED SHALL BE THE TYPE RECOMMENDED BY THE PANEL SUPPORT PADS MANUFACTURER.



PART SECTION B-B



PERMISSIBLE CONST. JOINT

(*) ADJUST THE PERMISSIBLE CONSTRUCTION JOINT TO A CLEARANCE OF 6 INCHES MINIMUM FROM THE JOINTS OF THE PANELS.

STEEL

P/C-P/S PANEL (3")	REVISED
MAY 1985	MAY 1987

DETAILED Aug. 1987
CHECKED Sept 1987

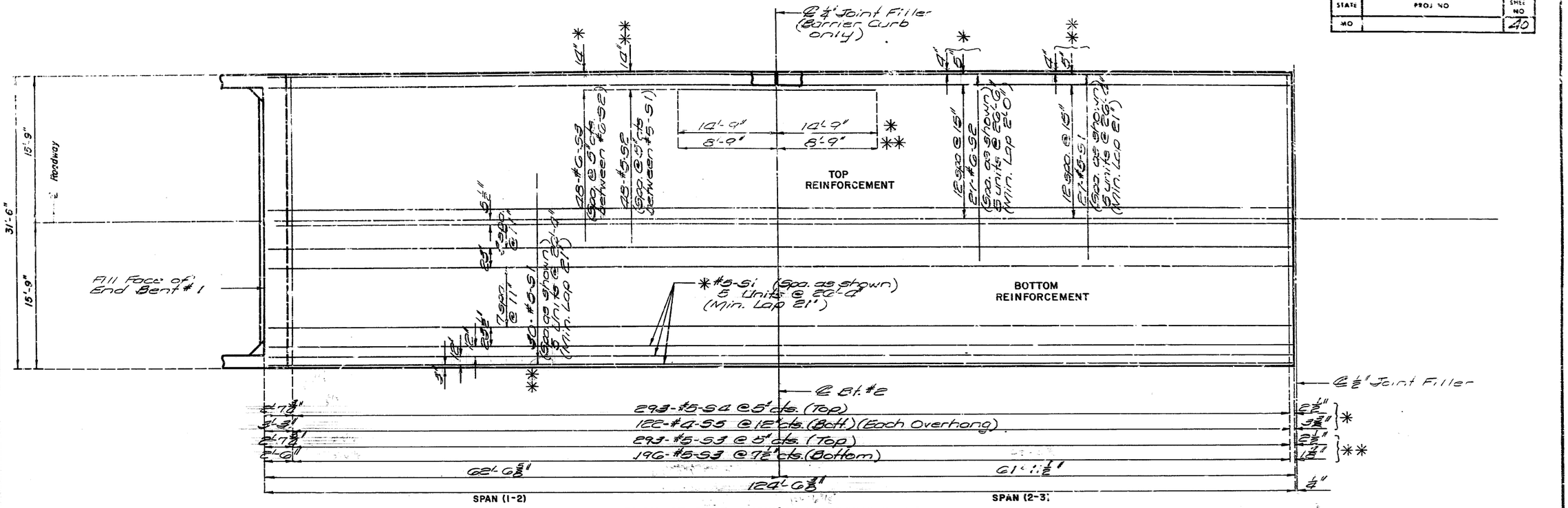
Note. This drawing is not to scale. Follow dimensions.

DETAILS OF PRECAST PRESTRESSED PANELS

SCOTT COUNTY

A-4376

STATE	PROJ NO	SHEET NO
MO		40

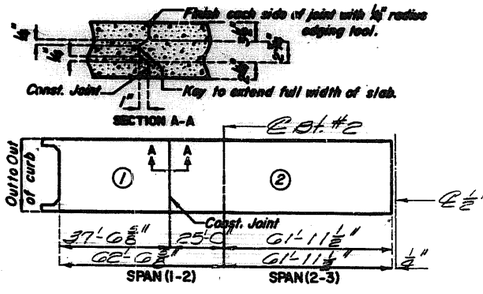


PLAN OF SLAB SHOWING REINFORCEMENT

✳ = Precast Panel Form Option

✳✳ = Cast-in-Place Conventional Form

Note: Longitudinal dimensions are parallel to grade & top of slab.

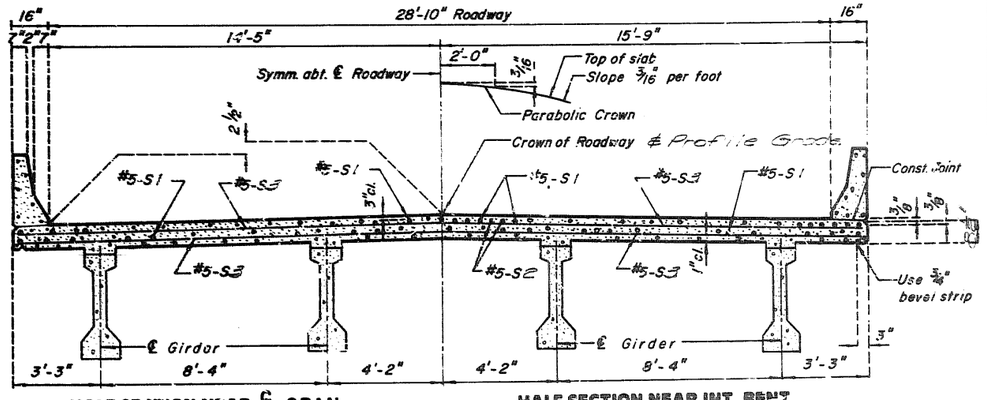


	Sequence of Pours		Minimum Rate of Pour (cubic yards per hour)
	Direction		With Retarder
Basic Sequence	1	2	25
	End to 2	1 to End	
Alternate pours to the basic sequence are subject to the approval of the engineer in accordance with section 703.3.12.4 of Missouri Standard Specifications.			
Alternate "A" Pours	1 & 2		31
	End to End		

The contractor shall furnish an approved retarder to retard the set of the concrete to 2.5 hours and shall pour and satisfactorily finish the slab pours at the rate given above.

SLAB POURING SEQUENCE

Note: The concrete diaphragm at the intermediate bents and integral end bents shall be poured a minimum of 30 minutes and a maximum of 2 hours before the slab is poured.



HALF SECTION NEAR ℄ SPAN

HALF SECTION NEAR INT. BENT

Note: For details and reinforcement of safety barrier curb not shown see sheet No. 25 & 26

DETAILED Dec. 1986

CHECKED Sept. 1987

Note: This drawing is not to scale. Follow dimensions.

SCOTT COUNTY

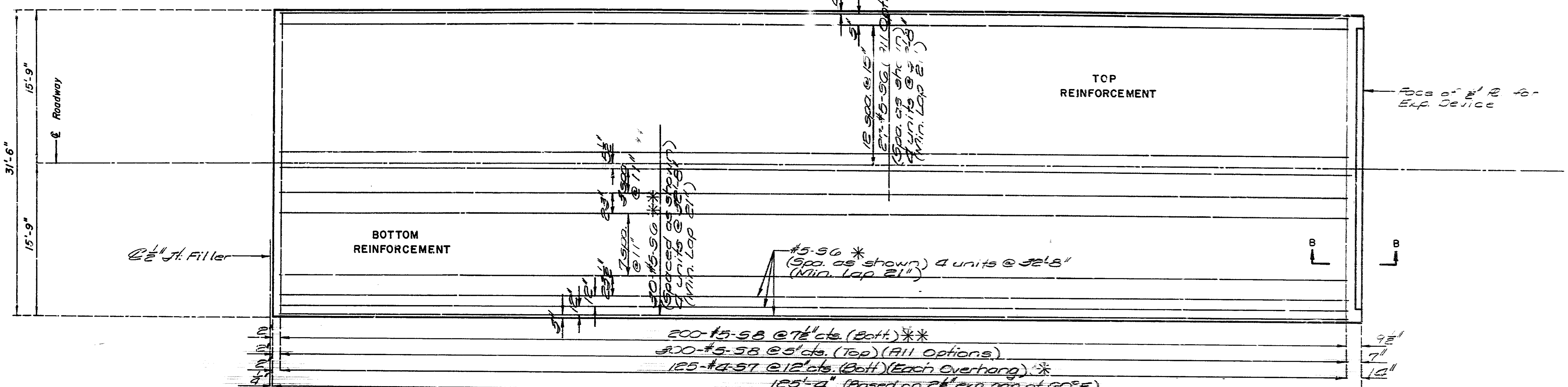
A-4376

534 45

STD. 28-10(4)(16) MAY 1986 REVISED

STATE	PROJ NO	SHEET NO
MO		41

Note: Longitudinal dimensions are parallel to grade of top of slab



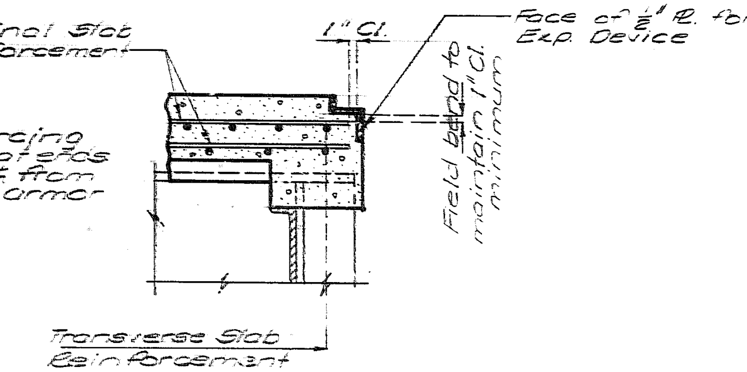
PLAN OF SLAB SHOWING REINFORCEMENT SPAN (3-4)

* = Precast Panel Form Option

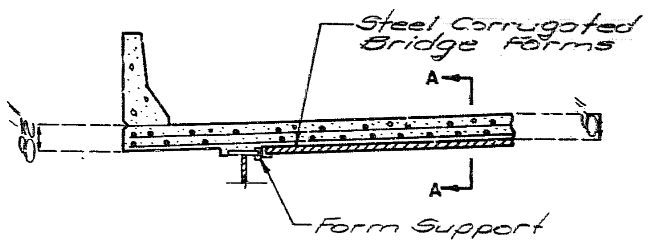
** = Cast-In-Place Conventional Form Option & S.I.P. Form Option.

Note: The contractor shall pour and satisfactorily finish the roadway slab at a rate of not less than 25 cubic yards per hour.

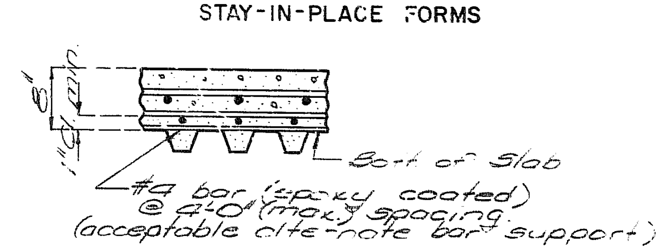
Note: Longitudinal reinforcing steel shall be placed so that ends shall not be more than 1" ± from lower vertical leg of joint armor of expansion device.



PART SECTION B-B

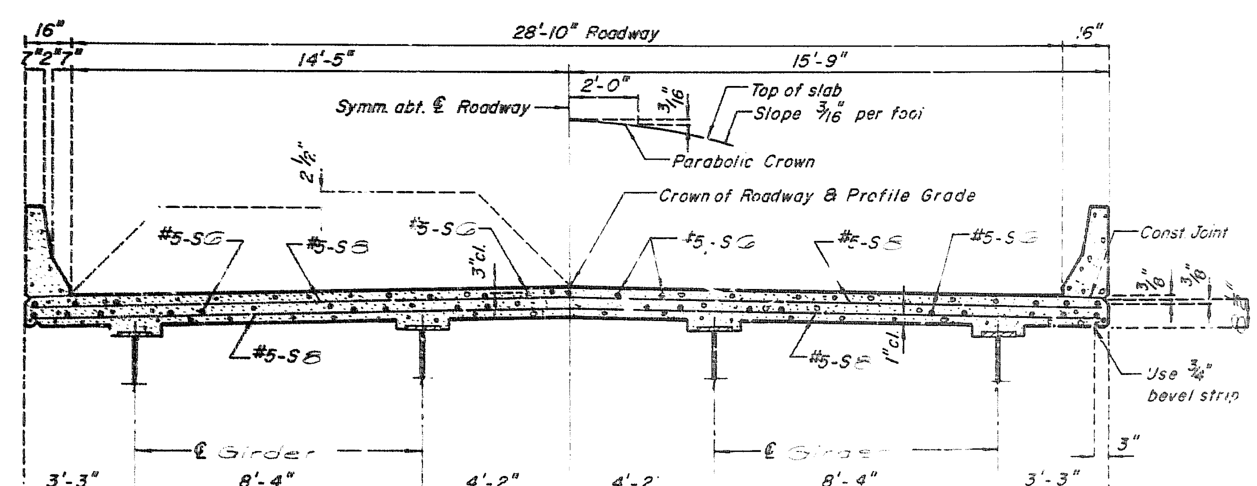


STAY-IN-PLACE FORMS



SECTION A-A

Note: To determine the haunch for the stay-in-place alternate, add 2" to the haunch for the cast-in-place alternate.
The corrugation valleys of forms shall match the bottom transverse reinforcing steel spacing.



SECTION THRU ROADWAY

Note: For details and reinforcement of safety barrier curb not shown see sheet No. 25 & 26.

STD. 23-10(4)(16) MAY 1986 | REVISED

DETAILED Dec. 1986
CHECKED Sept. 1987

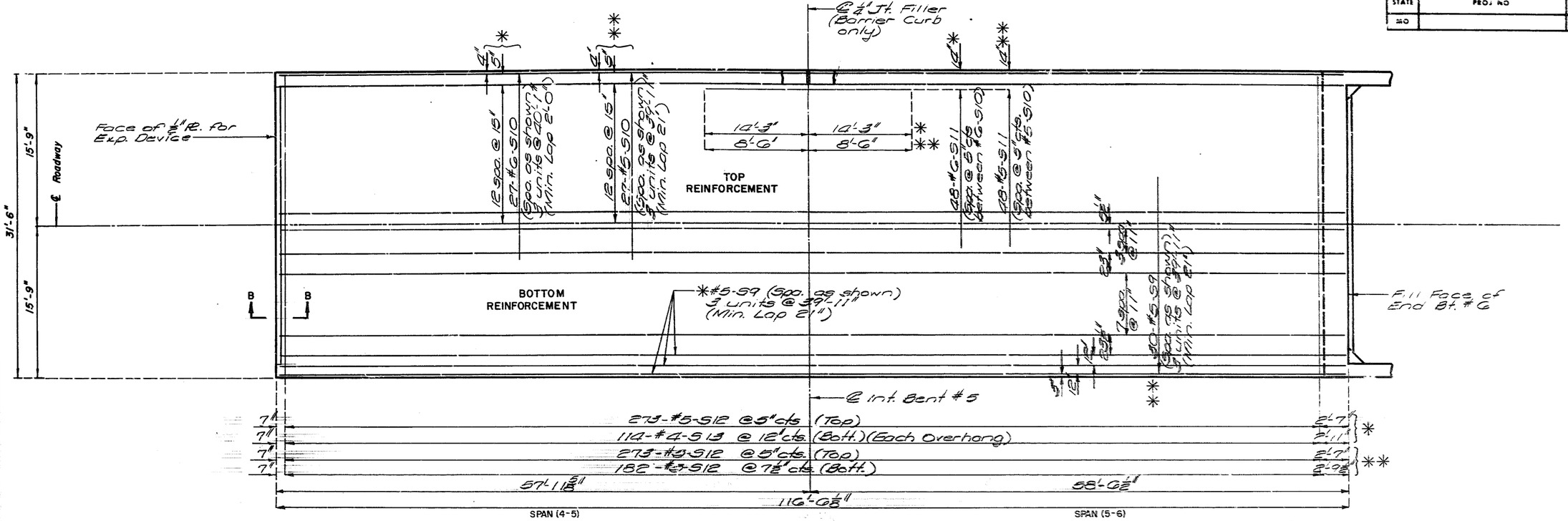
Note: This drawing is not to scale. Follow dimensions.

Sheet No. 23 of 28

SCOTT COUNTY

A-4376

STATE	PROJ. NO	SHEET NO
MO		4c



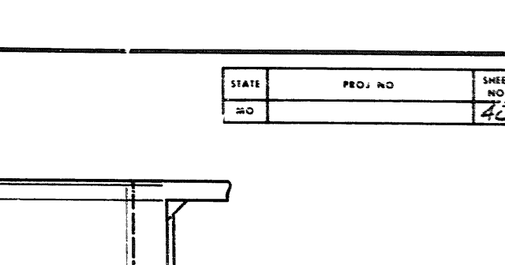
Note: Longitudinal dimensions are parallel to grade along top of slab

PLAN OF SLAB SHOWING REINFORCEMENT

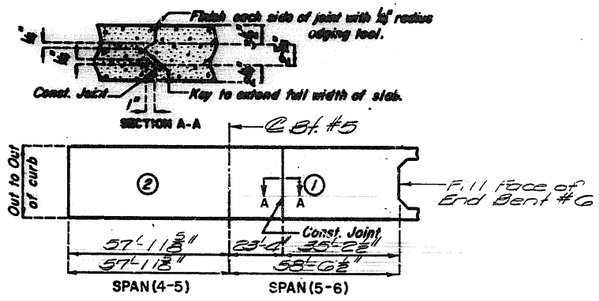
✳ = Precast Panel Form Option

✳✳ = Cast In Place Conventional Forms

Note: The concrete diaphragm of the intermediate bents and integral end bents shall be poured a minimum of 30 minutes and a maximum of 2 hours before the slab is poured.
Longitudinal reinforcing steel shall be placed so that ends shall not be more than 1" ± from lower vertical leg of joint armor at expansion device.



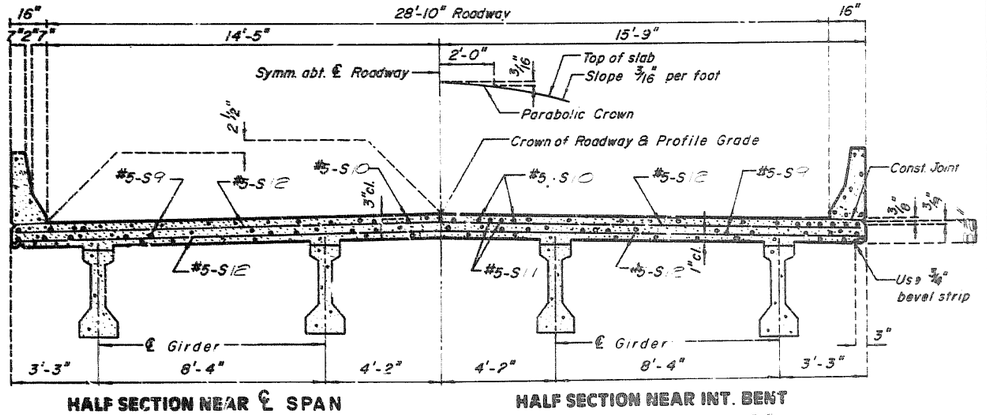
SECTION B - B



	Sequence of Pours		Minimum Rate of Pour (cubic yards per hour)
	Direction		With Retarder
Basic Sequence	1 End to 2	2 1 to End	25
Alternate pours to the basic sequence are subject to the approval of the engineer in accordance with section 703.3.12.4 of Missouri Standard Specifications.			
Alternate "A" Pours	1 & 2 End to End		29

The contractor shall furnish an approved retarder to retard the set of the concrete to 2.5 hours and shall pour and satisfactorily finish the slab pours at the rate given above.

SLAB POURING SEQUENCE



HALF SECTION NEAR ℄ SPAN **HALF SECTION NEAR INT. BENT**

Note: For details and reinforcement of safety barrier curb not shown see sheet No. 25 & 26

DETAILED Nov. 1986
CHECKED Sept 1987

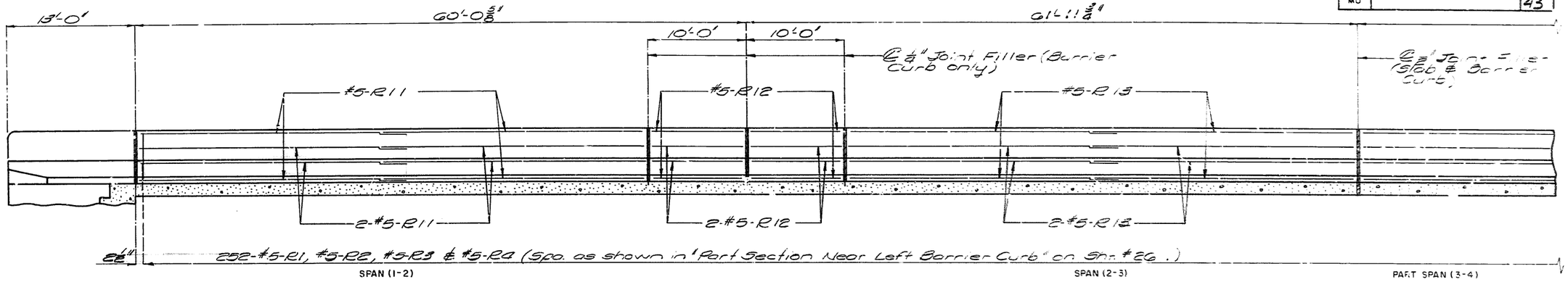
Note: This drawing is not to scale. Follow dimensions.

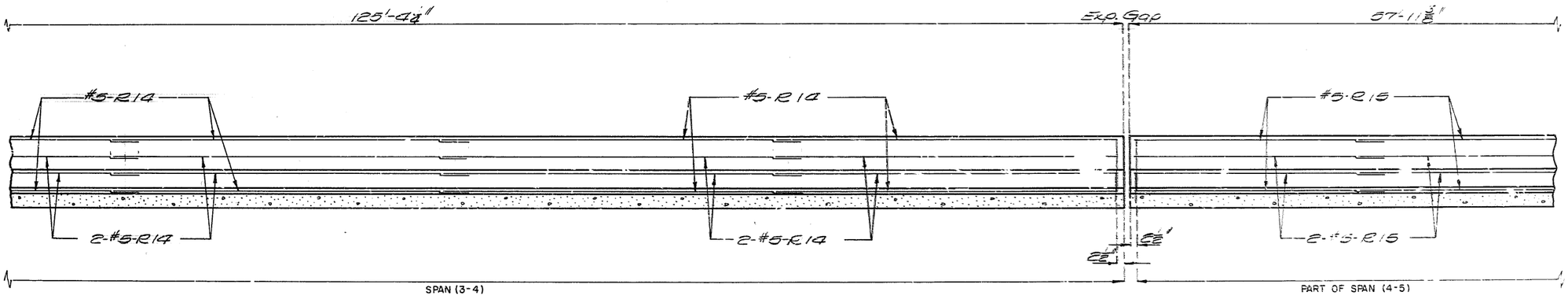
SCOTT COUNTY

A-4376

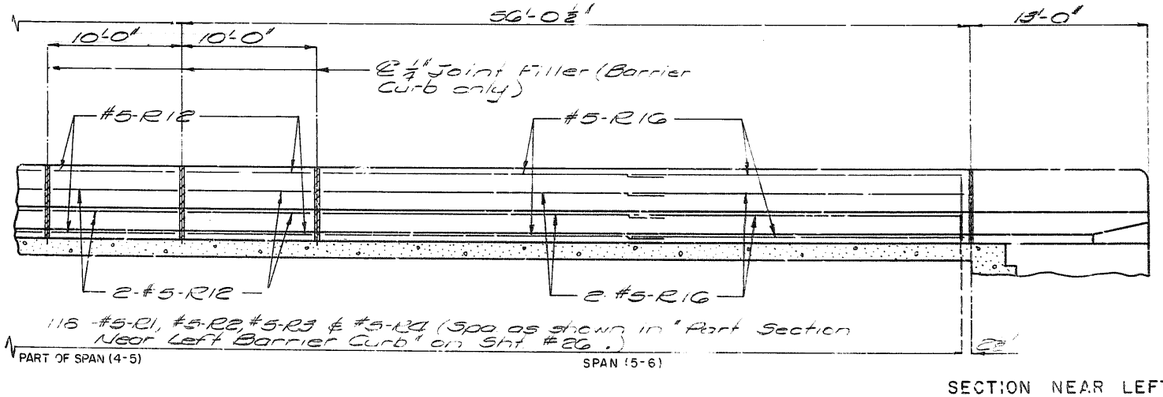
STD. 28-10(4)(16) REVISED MAY 1986

STATE	PROJ. NO	SHEET NO
MO		43





Note: For details of barrier curb not shown see Sht #20. Min. Lap for #5 bars in barrier curb to be 17".



SECTION NEAR LEFT BARRIER CURB
(RIGHT CURB SIMILAR)

537 48

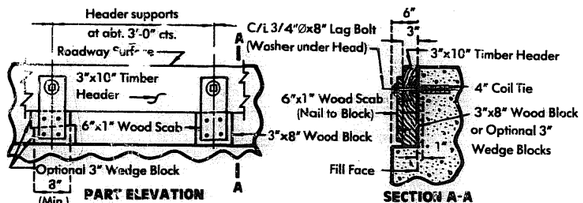
DETAILED Dec 1986
CHECKED Sept 1987

Note: This drawing is not to scale. Follow dimensions.

SCOTT COUNTY

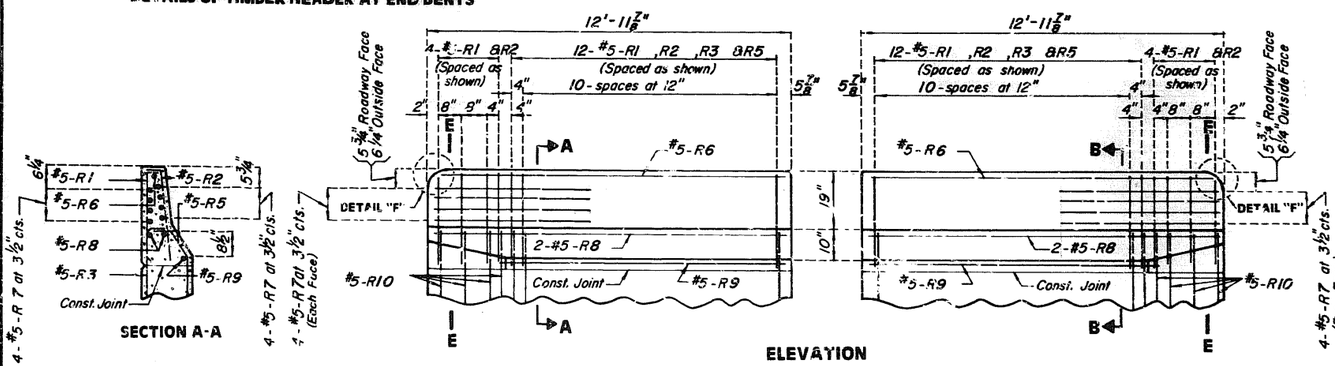
A-4376

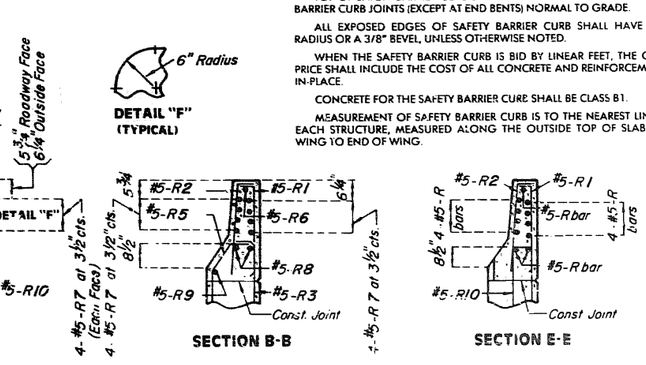
STATE	PROJ NO	SHEET NO
MO		44

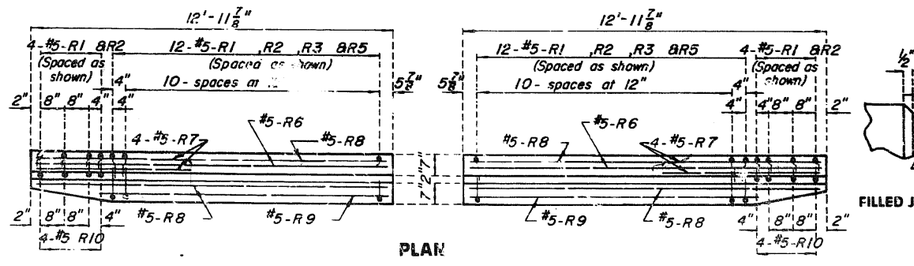


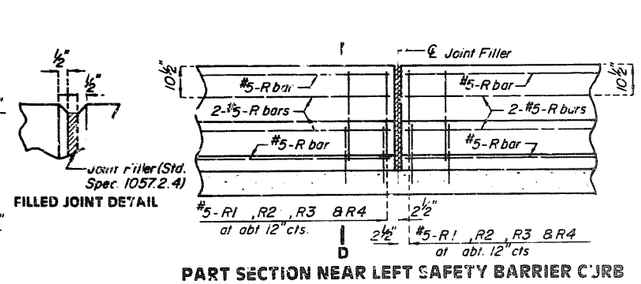
NOTE: Cost of Timber Headers complete in place to be included in contract unit price for concrete.

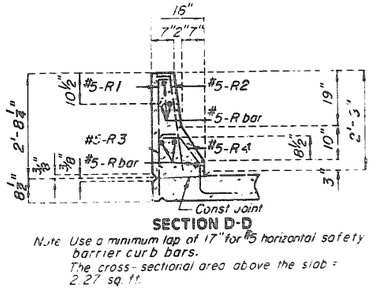
DETAILS OF TIMBER HEADER AT END BENTS











Note: Use a minimum lap of 17" for #5 horizontal safety barrier curb bars.
The cross-sectional area above the slab = 2.27 sq. ft.

NOTE:

TOP OF SAFETY BARRIER CURB SHALL BE BUILT PARALLEL TO GRADE WITH SAFETY BARRIER CURB JOINTS (EXCEPT AT END BENTS) NORMAL TO GRADE.

ALL EXPOSED EDGES OF SAFETY BARRIER CURB SHALL HAVE EITHER A 1/2" RADIUS OR A 3/8" BEVEL, UNLESS OTHERWISE NOTED.

WHEN THE SAFETY BARRIER CURB IS BID BY LINEAR FEET, THE CONTRACT UNIT PRICE SHALL INCLUDE THE COST OF ALL CONCRETE AND REINFORCEMENT, COMPLETE IN-PLACE.

CONCRETE FOR THE SAFETY BARRIER CURB SHALL BE CLASS B1.

MEASUREMENT OF SAFETY BARRIER CURB IS TO THE NEAREST LINEAR FOOT FOR EACH STRUCTURE, MEASURED ALONG THE OUTSIDE TOP OF SLAB FROM END OF WING TO END OF WING.

SPS 17.781(1) AUG. 1978 — REVISED MAY 1987

DETAILED AUG 19 87
CHECKED Sept. 19 87

DETAILS OF SAFETY BARRIER CURB AT END BENTS

Note: This drawing is not to scale. Follow dimensions.

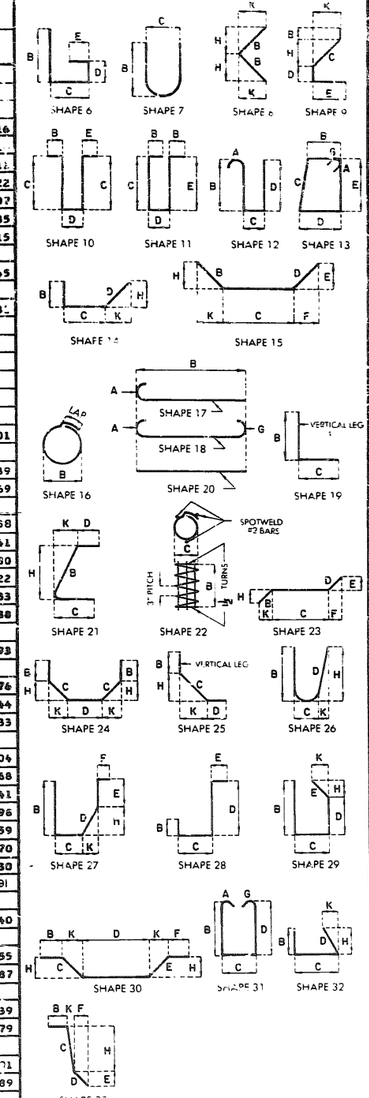
SCOTT COUNTY A-4376

COMPLETE BILL OF REINFORCING STEEL

NO. REQD.	MARK NO. SIZE	MARK NO. MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B	C	D	E	F	H	K	NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
										FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	LBS.
			SUBSTRUCTURE																
			INT BENT NO 2&5																
26	01		BEAM		20		X			21.000							21	21	68
12	02		BEAM		7		X			3 2.000	2 2.750						7 6	7 6	135
4	03		BEAM		20		X			26 4.000							26 4	26 4	215
2	04		BEAM		18		X			28 5.000							30 1	30 1	246
8	04		BEAM		20		X			26 4.000							26 4	26 4	431
4	6M5		BEAM		20		X			26 4.000							26 4	26 4	158
88	5U1		BEAM		13	S	X			19.000	2 9.000	19.000	2 9.000				9 7	9 3	849
24	4U2		BEAM		10	S	X				6.000	2 4.000					3 4	3 2	51
			INT BENT NO 3																
13	6D1		BEAM		20		X			21.000							21	21	34
39	8D2		FTG & COLUMN		20		X			6 8.000							6 8	6 8	694
6	6D3		FOOTING		10	S	X				4 3.000	5 6.000					15 0	14 8	132
18	6D4		FOOTING		20		X			7 3.000							7 3	7 3	196
2	6H6		BEAM		20		X			29 5.000							29 5	29 5	88
8	7H7		BEAM		7		X			3 10.875	2 9.750						9 4	9 4	153
4	6H8		BEAM		20		X			26 6.000							26 6	26 6	159
2	8H9		BEAM		18		X			26 6.000							28 4	28 4	151
4	8H10		BEAM		18		X			29 3.000							31 1	31 1	332
6	8H11		BEAM		20		X			26 6.000							26 6	26 6	425
69	4P1		COLUMN		16		X			2 9.000							9 6	9 6	438
2	5U3		BEAM		10	S	X				3 3.000	14.500					7 9	7 6	16
27	5U4		BEAM		10	S	X				3 3.000	15.000					7 9	7 7	214
8	4U5		BEAM		10	S	X				6.000	15.000					2 3	2 1	11
2	5U6		BEAM		13	S	X			2 2.000	2 9.000	2 2.000	2 9.000				10 9	10 5	22
16	5U7		BEAM		13	S	X			23.000	2 9.000	23.000	2 9.000				10 3	9 11	165
33	5U9		BEAM		13	S	X			2 11.000	2 9.000	2 11.000	2 9.000				12 3	11 11	410
39	8V1		COLUMN		20		X			25 7.000							25 7	25 7	2664
8	2W1		A B WELL		22		X			15.000	9.125						23 0	23 0	31
			INT BENT NO.4																
13	6D1		BEAM		20		X			21.000							21	21	34
45	8D2		COLUMN & FTG.		20		X			6 8.000							6 8	6 8	801
6	6D3		FOOTING		10	S	X				4 3.000	6 6.000					15 0	14 8	132
18	6D4		FOOTING		20		X			7 3.000							7 3	7 3	196
2	6H6		BEAM		20		X			29 5.000							29 5	29 5	88
8	7H7		BEAM		7		X			3 10.875	2 9.750						9 4	9 4	153
4	6H8		BEAM		20		X			26 6.000							26 6	26 6	159
2	8H9		BEAM		18		X			26 6.000							28 4	28 4	151
4	8H10		BEAM		18		X			29 3.000							31 1	31 1	332
6	8H11		BEAM		20		X			26 6.000							26 6	26 6	425
99	4P1		Column		16		X			2 9.000							9 6	9 6	628

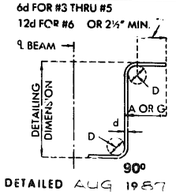
COMPLETE BILL OF REINFORCING STEEL

NO. REQD.	MARK NO. SIZE	MARK NO. MARK	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B	C	D	E	F	H	K	NOMINAL LENGTH	ACTUAL LENGTH	WEIGHT
										FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	FT. IN.	LBS.
2	5U3		BEAM		10	S	X				3 3.000	14.500					7 9	7 6	16
27	5U4		BEAM		10	S	X				3 3.000	15.000					7 9	7 7	21
8	4U5		BEAM		10	S	X				6.000	15.000					2 3	2 1	11
2	5U6		BEAM		13	S	X			2 2.000	2 9.000	2 2.000	2 9.000				10 9	10 5	22
20	5U7		BEAM		13	S	X			23.000	2 9.000	23.000	2 9.000				10 3	9 11	207
31	5U9		BEAM		13	S	X			2 11.000	2 9.000	2 11.000	2 9.000				12 3	11 11	345
6	4U10		BEAM		10	S	X				6.000	2 11.000					3 11	3 9	15
45	8V2		COLUMN		20		X			35 4.000							35 4	35 4	4245
8	2W1		A B WELL		22		X			15.000	9.125						23 0	23 0	31
			SUPERSTRUCTURE																
			END BENTS																
22	6F1		WING BRACE		23	S				14.00	3 10.000	14.000	9.875	9.875	9.875	9.875	6 2	6 1	201
10	7H13		DIAPH	E	20					31 3.000							31 3	31 3	639
10	6H14		DIAPH & BEAM		20					31 3.00							31 3	31 3	469
16	6H15		DIAPH.		19	S				5 0.000	2 2.250						7 2	7 0	168
12	6H16		DIAPH.		20					2 3.000							2 3	2 3	41
18	6H17		DIAPH.		20					6 8.000							6 8	6 8	160
16	7H18		BEAM		20					31 3.000							31 3	31 3	1022
8	5H19		BM (STRAND TIE)		20					4 0.000							4 0	4 0	33
16	6H20		WING		20					12 0.000							12 0	12 0	288
24	6N21		WING BT 1		20			V	4	11 6.000							11 6	11 6	
			INCR = 16.250 IN							4 9.000							4 9	4 9	293
24	6N22		WING BT 6		20			V	4	4 0.000							4 0	4 0	
			INCR = 17.625 IN							11 4.000							11 4	11 4	276
8	6H31		WINGS	E	20					12 0.000							12 0	12 0	144
2	4H32		APP. HAUNCH		20					25 0.000							25 0	25 0	33
50	5U11		BEAM		10	S					4 9.000	2 3.000					11 9	11 7	604
24	4U12		BEAM		13	S				2 3.000	2 9.000	2 3.000	2 9.000				10 9	10 6	168
8	4U13		BEAM		10	S					2 9.000	2 3.000					7 9	7 7	41
27	5U14		DIAPH BT 1	E	10	S					4 3.000	2 3.000					10 9	10 7	296
39	6U15		DIAPH BT 1	E	19	S				4 3.000	3 9.000						8 0	7 10	459
27	5U16		DIAPH BT 6	E	10	S					3 9.000	2 3.000					9 9	9 7	270
39	6U17		DIAPH BT 6	E	19	S				3 9.000	3 9.000						7 6	7 4	430
42	4U26		APP. HAUNCH		10	S					17.500	6.000					3 5	3 3	91
8	5V3		BEAM		20					4 9.000							4 9	4 9	40
36	6V4		WING BT 1		20			V	4	2 5.000							2 5	2 5	
			INCR = 6.875 IN							7 0.000							7 0	7 0	255
8	6V5		WING BT 1		20					7 3.000							7 3	7 3	87
36	6V6		WING BT 6		20			V	4	2 4.000							2 4	2 4	
			INCR = 6.250 IN							6 6.000							6 6	6 6	239
8	6V7		WING BT 6		20					6 7.000							6 7	6 7	79
4	6T1		WING BT 1		25	S				2 0.875	9 10.250	3 3.000				4 10.000	8 7.000	15 2	15 1	71
4	6T2		WING BT 6		25	S				2 0.375	9 6.875	3 3.625				4 4.000	8 6.375	14 11	14 10	89

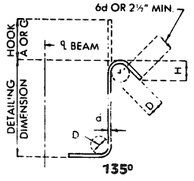


BENDING DIAGRAMS

6d FOR #3 THRU #5
12d FOR #6 OR 2½" MIN.



6d OR 2½" MIN.



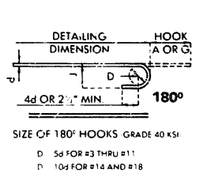
DETAILED AUG 1987
CHECKED Sept. 1987

STIRRUP HOOK DIMENSIONS

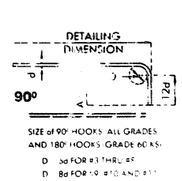
GRADES 40-50-60 KSI

BAR SIZE	D (IN.)	90° HOOK A OR G	135° HOOK A OR G	135° HOOK APPROX H
#3	1½"	4"	4"	2½"
#4	2"	4½"	4½"	3"
#5	2½"	6"	5½"	3¾"
#6	4½"	12"	7¾"	4½"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.



SIZE OF 180° HOOKS GRADE 40 KSI
D 5d FOR #3 THRU #11
D 10d FOR #14 AND #18



SIZE of 90° HOOKS ALL GRADES AND 180° HOOKS GRADE 60 KSI
D 5d FOR #3 THRU #8
D 8d FOR #9 #10 AND #11
D 10d FOR #14 AND #18

END HOOK DIMENSIONS

BAR SIZE	D (IN.)	180° HOOKS ALL GRADES A OR G	180° HOOKS ALL GRADES J	90° HOOKS ALL GRADES A OR G
#3	2½"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3¾"	7"	5"	10"
#6	4½"	8"	6"	12"
#7	5¼"	10"	7"	14
#8	6"	11"	8"	16"
#9	9½"	15"	1'-1¾"	19"
#10	10¾""	17"	1'-3¼"	22"
#11	12"	19"	1'-4¾"	2'-0"
#14	18½"	2'-3"	2'-1¾"	2'-7"

NOTES:

ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS.

HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.

E - EFOXY COATED REINFORCEMENT
S - STIRRUP
X - BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V - BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LIN.
NO EA. - NUMBER OF BARS OF EACH LENGTH
NOMINAL LENGTHS - ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE (NEAREST INCH)
ACTUAL LENGTHS - ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS

MAY 1974 JUNE 1986

Note: This drawing is not to scale. Follow dimensions.

SCOTT COUNTY

A-4376

COMPLETE BILL OF REINFORCING STEEL

NO. REQD	MARK NO. SIZE	MARK NO. MARK	LOCATION	EPOXY (E)	SHAPE NO	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS A FT	A IN.	C FT	C IN.	D FT	D IN.	E FT	E IN.	F FT	F IN.	H FT	H IN.	K FT	K IN.	NOMINAL LENGTH FT	NOMINAL LENGTH IN.	ACTUAL LENGTH FT	ACTUAL LENGTH IN.	WEIGHT LBS.
36	6	M23	DIAPH @ 2+3+4+5		20				6	8.000														6	8	6	8	360
36	4	M24	DIAPH @ 2+3+4+5		20				6	8.000														6	8	6	8	160
32	5	M25	DIAPH CAP BT 2&5		19	S			2	1.000		9.000												2	10	2	9	92
20	5	M26	STRAND TIE BARS		20				4															4	0	4	0	83
20	5	M27	STRAND TIE BARS		20				2	8.000														2	8	2	8	56
4	6	M28	DIAPH BT 3 & 4		20				20	8.000														26	8	26	8	160
4	5	M29	DIAPH BT 3 & 4		20				26	8.000														26	8	26	8	71
16	5	M30	DIAPH BT 3 & 4		19	S				19.000		9.000												2	4	2	3	38
12	6	U18	DIAPH BT 2	E	28	S						20.000		4	0.000	14.000								6	10	6	6	117
36	4	U19	DIAPH BT 2	E	28	S						20.000		4	0.000	12.000								6	8	6	6	156
12	6	U20	DIAPH BT 5	E	28	S						20.000		3	6.000	14.000								6	4	6	0	108
36	4	U21	DIAPH BT 5	E	28	S						20.000		3	6.000	12.000								6	2	6	0	144
12	6	U22	DIAPH BT 3	E	10	S					3	0.000		12.000										7	0	6	8	120
36	4	U23	DIAPH BT 3	E	10	S					2	10.000		12.000										6	8	6	6	156
12	6	U24	DIAPH BT 4	E	10	S					2	9.000		12.000										6	6	6	3	111
38	4	U25	DIAPH BT 4	E	10	S					2	7.000		12.000										6	2	6	3	152
12	5	V8	DIAPH BT 2 & 3	E	20					4	0.000													4	0	4	0	50
12	5	V9	DIAPH BT 4 & 5	E	20					3	6.000													3	6	3	6	44
			SLAB SPAN 1 & 2																									
30	5	S1	PRECAST PAN OPT.	E	20					26	4.000													26	4	26	4	824
135	6	S2	PRECAST PAN OPT.	E	20					26	6.000													26	6	26	6	5373
48	6	S3	PRECAST PAN OPT.	E	20					29	6.000													29	6	29	6	2127
293	5	S4	PRECAST PAN OPT.	E	20					31	3.000													31	3	31	3	9550
244	4	S5	PRECAST PAN OPT.	E	20					3	3.000													3	3	3	3	530
285	5	S1	CIP FORM OPTION	E	20					26	4.000													26	4	26	4	7828
48	5	S2	CIP FORM OPTION	E	20					17	6.000													17	6	17	6	876
489	5	S3	CIP FORM OPTION	E	20					31	3.000													31	3	31	3	15938
			SLAB-SPAN 3																									
132	5	S6	PRECAST PAN OPT	E	20					32	8.000													32	8	32	8	4497
250	4	S7	PRECAST PAN OPT	E	20					3	3.000													3	3	3	3	543
300	5	S8	PRECAST PAN OPT	E	20					31	3.000													31	3	31	3	9778
228	5	S6	CIP & SIP OPTION	E	20					32	8.000													32	8	32	8	7768
500	5	S8	CIP & SIP OPTION	E	20					31	3.000													31	3	31	3	16297

COMPLETE BILL OF REINFORCING STEEL

NO. REQD	MARK NO. SIZE	MARK NO. MARK	LOCATION	EPOXY (E)	SHAPE NO	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS B FT	B IN.	C FT	C IN.	D FT	D IN.	E FT	E IN.	F FT	F IN.	H FT	H IN.	K FT	K IN.	NOMINAL LENGTH FT	NOMINAL LENGTH IN.	ACTUAL LENGTH FT	ACTUAL LENGTH IN.	WEIGHT LBS
			SLAB-SPAN 4 & 5																									
18	5	S9	PRECAST PAN OPT.	E	20					39	11.000													39	11	39	11	749
81	6	S10	PRECAST PAN OPT.	E	20					40	1.000													40	1	40	1	4877
48	6	S11	PRECAST PAN OPT.	E	20					29	6.000													28	6	28	6	2055
273	5	S12	PRECAST PAN OPT.	E	20					31	3.000													31	3	31	3	8898
228	4	S13	PRECAST PAN OPT.	E	20					3	3.000													3	3	3	3	495
90	5	S9	CIP FORM OPTION	E	20					39	11.000													39	11	39	11	3767
81	5	S10	CIP FORM OPTION	E	20					39	11.000													39	11	39	11	3372
48	5	S11	CIP FORM OPTION	E	20					17	6.000													17	0	17	0	851
455	5	S12	CIP FORM OPTION	E	20					31	3.000													31	3	31	3	14830
804	5	R1	BARRIER CURB	E	19	S				2	6.000		3.500											2	10	2	8	2236
804	5	R2	BARRIER CURB	E	15	S				2	6.125		3.500									2	6.000	3.000	2	10	2	9	2306
788	5	R3	BARRIER CURB	E	19	S					17.000		6.000											23		22		1507
740	5	R4	BARRIER CURB	E	27	S							6.000		11.125		7.000		12.000		9.125		6.375	3	0	2	10	2187
48	5	R5	BARRIER CURB	E	27	S							6.000		11.125	2	0.000				9.125		6.375	3	5	3	4	167
4	5	R6	BARRIER CURB	E	20					12	6.000													12	6	12	6	52
32	5	R7	BARRIER CURB	E	20					5	0.000													5	0	5	0	167
8	5	R8	BARRIER CURB	E	20					12	9.000													12	9	12	9	106
6	5	R9	BARRIER CURB	E	20					11	3.000													11	3	11	3	70
16	5	R10	BARRIER CURB	E	10	S						2	3.000		6.000									5	0	4	10	81
24	5	R11	BARRIER CURB	E	20					25	7.000													25	7	25	7	649
48	5	R12	BARRIER CURB	E	20					9	9.000													9	9	9	9	488
24	5	R13	BARRIER CURB	E	20					26	8.000													26	8	26	8	663
48	5	R14	BARRIER CURB	E	20					32	5.000													32	5	32	5	1623
24	5	R15	BARRIER CURB	E	20					24	7.000													24	7	24	7	615
24	5	R16	BARRIER CURB	E	20					23	7.000													23	7	23	7	590
			NOTE- 2 EXTRA NO.4-U25, NO.5-R9, NO.6-H31S NO.7-H13 HAVE BEEN ADDED TO THE BAR LIST FOR TESTING PURPOSES. END OF BAR LIST																									

STATE MO | PROJECT NO | SHEET NO 46

SHAPE 6 SHAPE 7 SHAPE 8 SHAPE 9

SHAPE 10 SHAPE 11 SHAPE 12 SHAPE 13

SHAPE 14 SHAPE 15

SHAPE 16 SHAPE 17 SHAPE 18 SHAPE 20 SHAPE 19

SHAPE 21 SHAPE 22 SHAPE 23

SHAPE 24 SHAPE 25 SHAPE 26

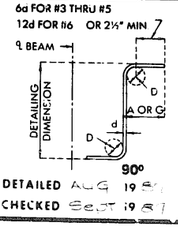
SHAPE 27 SHAPE 28 SHAPE 29

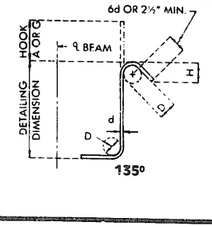
SHAPE 30 SHAPE 31 SHAPE 32

SHAPE 33

BENDING DIAGRAMS

6d FOR #3 THRU #5
12d FOR #6 OR 2½" MIN

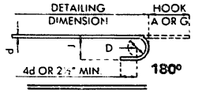




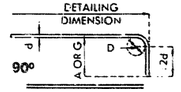
DETAILED AUG 19 87
CHECKED Sept 19 87

STIRRUP HOOK DIMENSIONS				
GRADES 40-50-60 KSI				
BAR SIZE	D (IN.)	90° HOOK HOOK A OR G	135° HOOK HOOK A OR G	135° HOOK APPROX H
#3	1½"	4"	4"	2½"
#4	2"	4½"	4½"	3"
#5	2½"	6"	5½"	3¾"
#6	4½"	12"	7¾"	4½"

NOTE: UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL BENDS AND HOOKS ON A BAR.



SIZE OF 180° HOOKS GRADE 40 KSI
D 5d FOR #3 THRU #11
D 10d FOR #14 AND #18



SIZE OF 90° HOOKS ALL GRADES AND 180° HOOKS GRADE 60 KSI
D 6d FOR #3 THRU #8
D 8d FOR #9 #10 AND #11
D 10d FOR #14 AND #18

END HOOK DIMENSIONS					
BAR SIZE	D (IN.)	180° HOOKS ALL GRADES A OR G	180° HOOKS ALL GRADES J	90° HOOKS ALL GRADES A OR G
#3	2½"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3¾"	7"	5"	10"
#6	4½"	8"	6"	12"
#7	5¼"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9⅜"	15"	11¾"	19"
#10	10¾"	17"	13¼"	22"
#11	12"	19"	14¾"	2'-0"
#14	18¼"	2'-3"	2'-6"	2'-7"

NOTES:

ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG TO BE BENT WITH SAME PROCEDURE AS FOR 90 DEG STD HOOKS

HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET

E EPOXY COATED REINFORCEMENT
S STIRRUP
X BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES
V BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE
NO EA NUMBER OF BARS OF EACH LENGTH
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRICATORS USE NEAREST INCH
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS

STD. 90.8 | REVISED
MAY 1974 | JUNE 1986

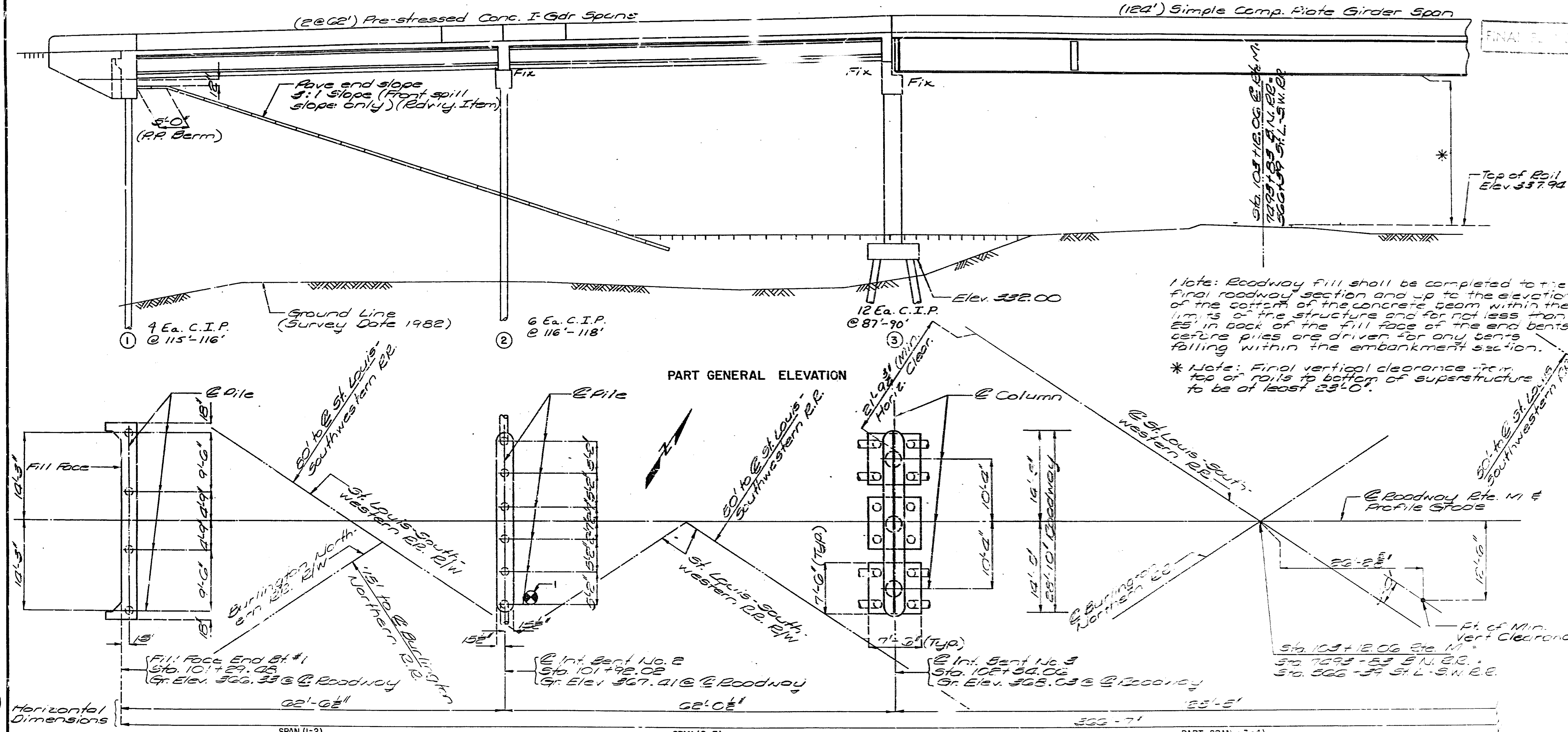
Sheet No. 28 of 28

SCOTT COUNTY

A-4376

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

STATE	PROJ. NO.	SHEET NO.
MO.	RRS-RS-1146(3)	19
SEC. 5	TWP. 29N RGE. 13E	



PART PLAN

PILE DATA						
BENT NO.	1	2	3	4	5	6
TYPE	Trestle	Trestle	Trestle	Trestle	Trestle	Trestle
KIND	CIP	CIP	CIP	CIP	CIP	CIP
NUMBER	4	6	12	12	6	4
MIN/MAX LENGTH FT.	115-116'	116-118'	87-90'	80-82'	119-120'	118'
DESIGN BEARING TONS	55	56	54	58	52	51
MIN. TIP PENETRATION ELEV.	244.75'	244.75'	244.75	242.57'	242.57'	242.57'
PILE STANDARD	702.02	702.02	702.02	702.02	702.02	702.02
HAMMER ENERGY REQ'D. FT. LBS.	8000	8000	8000	8000	11300	11300

Note: Minimum energy requirement of hammer is based on plan length of piles.

All piles shall be driven to the minimum penetrations and to not less than the design bearings noted.

Note: This drawing is not to scale. Follow dimensions.

Note: Prebore for piles of Bents No. 1, 2, 5 and 6 to elevation 360±.

"⊗" Indicates location of boring. For Boring Data see Sht. No. 3

Loading tests will be req'd. on one permanent pile of the interior footing of both Bents No. 3 & 4.

See Special Provisions for loading tests on pile.

B.M. Elev. 368.69 USGS Standard tablet on top of Barrier Curb 15' Lt. Sta. 101+33

B.M. 8A Elev. 351.57 D on S.E. Cor. E. Towill 7' Lt. Sta. 103+62

BRIDGE OVER BURLINGTON NORTHERN R.R. & ST. LOUIS SOUTHWESTERN R.R.

STATE ROAD FROM CHAFFEE TO SCOTT CITY

ABOUT 1.5 MILES NORTHEAST OF CHAFFEE

PROJECT NO. RRS-RS-1146(3) STA. 101+29.48

JOB NO. 10-X-M-358 RTE. M

SCOTT COUNTY

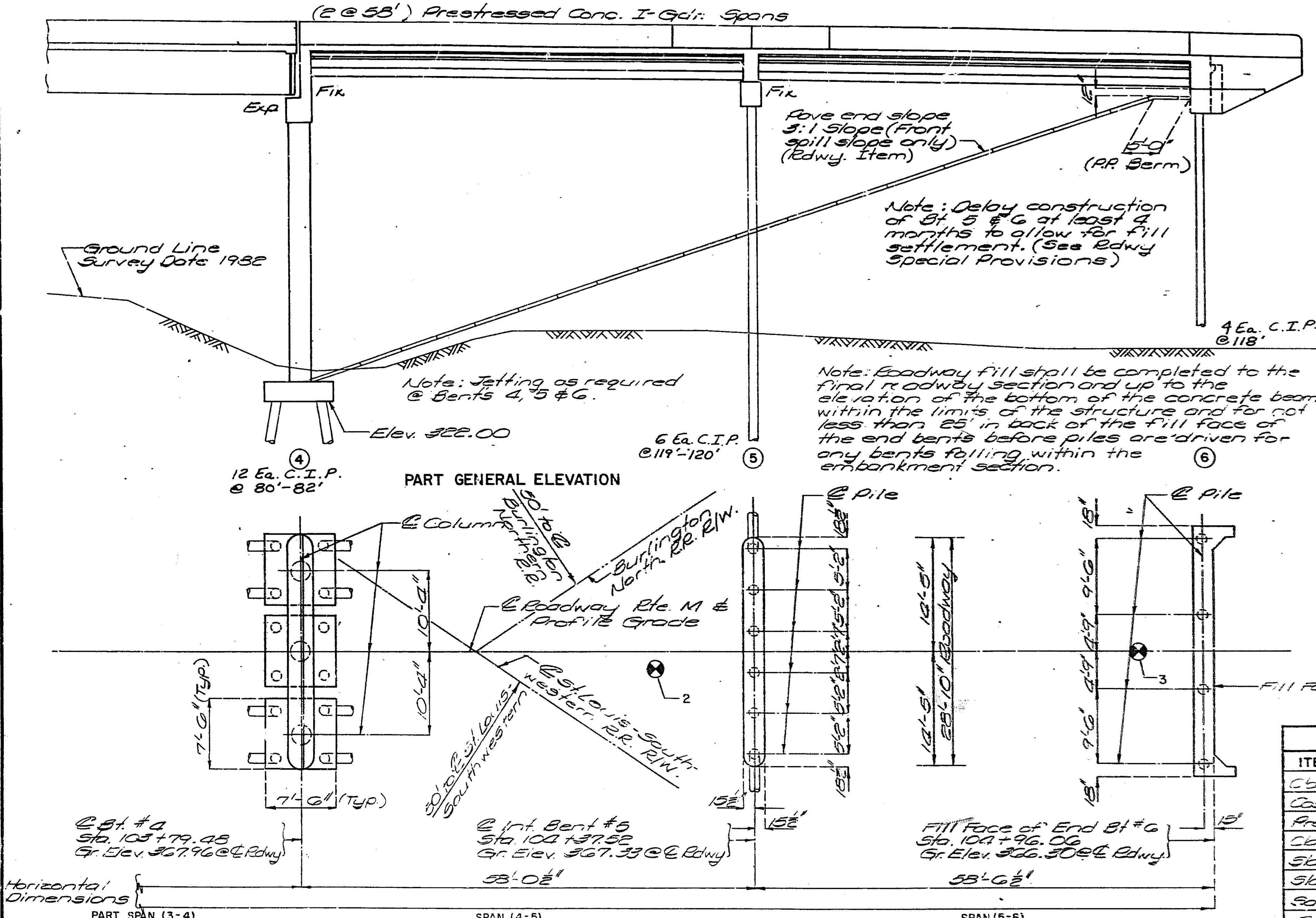
DESIGNED Sept 1986
DETAILED Jan 1987
CHECKED Sept 1987

Sheet No. 1A of 28 DATE 11-24-87

STD. 702.02
STD. 706.35
STD. 611.60
A-4376

FINAL PLANS

STATE	PROJ NO	SHEET NO
MO	RRS-RS-1146(3)	20



PART PLAN

Note: The rate of fill placement on the east side of the railroad should be governed by a pore pressure measuring device. Embankment control stakes should be placed on both sides of the railroad between the railroad and the toe of the roadway fill in the areas where side slopes are steeper than 3:1. The stakes should be placed after the fill in this area is up to elevation 335 ±.

Paving at the east bridge end and the construction of bridge Bts 5 & 6 should be delayed for at least 4 months after the fill is up to grade. This delay should minimize drag loads and residual settlement.

Note: All concrete between the upper and lower construction joints in end bents is included in the estimated superstructure quantities for Slab on Concrete I Girder, See Special Provisions.

The prestressed panels quantities are not included in the table of estimated quantities for alternate slabs.

Cost of 3/4"⌀ coil tie rods placed in diaphragms is included in contract unit price for P/S members.

For "Estimated Quantities for Alternate Slabs" see Sht. #3

For Boring Data see Sht. #3

"⊗" indicates location of boring.

All reinforcement in the End Bents is included with superstructure quantities.

GENERAL NOTES

Design Specifications: A.A.S.H.T.O. - 1983 and Interims 1984, 1985 & 1986 Load Factor Design

Design Loading: HS20-44 35#/sq. ft. Future Wearing Surface. Earth 120 #/cu. ft., Equivalent Fluid Pressure 45 #/cu. ft. Fatigue Stress Case II. Superstructure (excluding Span 3-4) Simply supported non-composite for Dead Load. Continuous composite for Live Load.

Design Unit Stresses:

- Class B Concrete (Substructure) f'c = 3,000 psi.
- Class B2 Concrete (Superstructure except Prestressed Girders and Safety Barrier Curb) f'c = 4,000 psi.
- Class B1 Concrete (Safety Barrier Curb) f'c = 4000 psi.
- Reinforcing Steel (Grade 60) fy = 60,000 psi.
- Structural Carbon Steel fy = 36,000 psi.
- Structural Steel (A.S.T.M. A572) Grade 50 fy = 50,000 psi.

Note: For Pre-stressed Girder Stresses, see Shts No. 10 & 11

Bearings shall be 60 durometer Neoprene Pads.

The cost of furnishing, fabricating and installing Neoprene Bearing Pads complete in place, will be paid for at the contract unit price for Plain Neoprene Bearing Pads per each.

Field connections, High Strength Bolts 3/4"⌀, holes 13/16"⌀ except as noted.

All joint filler shall meet the requirement of Std. Spec. 1057.2.4, except as noted.

Minimum clearance to reinforcing steel shall be 1 1/2", unless otherwise shown.

Paint: System C by contractor in accordance with Std. Spec. 712.12.

A minimum vertical clearance of ① from top of rails and a minimum lateral clearance of ② from the centerline of track to nearest temporary constructuction falsework shall be maintained during construction.

All reinforcing bars in tops of substructure beams or caps of Int. Bents No. 3 & 4 shall be spaced to clear anchor bolts for bearings by at least 1/2".

	Burlington Northern	St. Louis S.W.
①	21'-6"	22'-0"
②	8'-0"	14'-0"

FINAL QUANTITIES

ITEM		SUB.	SUPER.	TOTAL
Class I Excavation	Cu. Yds.	103.0		103.0
Cast-In-Place Concrete Piles	Lin. Ft.	4401		4401
Pre-Bore for Piling	Lin. Ft.	591		591
Class B Concrete (Substr.)	Cu. Yds.	122.1		122.1
Slab on Conc. I-Girder. See Spec. Prov.	Sq. Yds.		844	844
Slab on Steel (See Special Provisions)	Sq. Yds.		439	439
Safety Barrier Curb	Lin. Ft.		775	775
Plain Neoprene Bearing Pads	Each		32	32
Lam. Neop. Brg. Pads (Steel Structures)	Each		8	8
Elastomeric Exp. Jt. Seal (4.0 Inch)	Lin. Ft.		29	29
Pre-Stressed Conc. I Gdr. (62 Ft. Span)	Each		8	8
Pre-Stressed Conc. I-Gdr. (58 Ft. Span)	Each		8	8
Reinforcing Steel (Bridges)	Lbs.	16730		16730
Fab. Structural Carbon Steel (B. Gdr.)	Lbs		9,150	9,150
Fab. Struct. Low Alloy Steel (B. Gdr.) A-572	Lbs		[illegible]	[illegible]
Slab Drains	Each		34	34
Painting (System C) Green	Ton		61.8	61.8
Loading Tests	Each	3		3
Vertical Drain at End Bents	Each	2		2

DETAILED Jan 1987
CHECKED Sept 1987

Note: This drawing is not to scale. Follow dimensions.

SCOTT COUNTY

A-4376

FINAL PLANS

STATE MO.	JOB NO. 10-X-M-358	SHEET NO. 47
DIST. NO. 10	PROJECT NO. RRS-RS-1146 (3)	ROUTE M
	COUNTY SCOTT	

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

STANDARD PLANS

✓	NO.	DESCRIPTION
✓	203.00E	EXCAVATION & EMBANKMENT
✓	203.02C	UNDERGRADING
	203.10A	TABULATED EARTHWORK & SECTION DATA
✓	203.20B	SUPERELEVATION SPIRALS & WIDENING (UNDIVIDED)
	203.21B	SUPERELEVATION SPIRALS & WIDENING (DIVIDED)
	203.30A	ENTRANCES & APPROACHES (LESS THAN 400 ADT)
✓	203.31B	ENTRANCES & APPROACHES (GREATER THAN 400 ADT - NO SAFETY ZONE)
	203.32D	ENTRANCES & APPROACHES (GREATER THAN 400 ADT - SAFETY ZONE)
	203.35A	MAILBOX TURNOUTS
	203.40E	TYPICAL DETAILS-RAMPS FOR INTERCHANGES (OTHER THAN 6:1 FORESLOPE)
	203.41E	TYPICAL DETAILS-RAMPS FOR INTERCHANGES (6:1 FORESLOPE)
	203.50J	TYPICAL CROSS-OVERS (DIVIDED HIGHWAYS)
✓	204.00D	EMBANKMENT CONTROL MEASURING DEVICES
	502.00M	CONCRETE PAVEMENT & BASE APPURTENANCES
	502.10E	DOWEL SUPPORTING UNITS
	503.00J	CONCRETE APPROACH SLABS TO BRIDGES (ALSO INCLUDE 502.00)
✓	602.00A	RIGHT-OF-WAY & DRAIN MARKERS
	604.05A	PIPE CULVERT HEADWALLS - TYPE S
	604.10B	HEADWALL-WITH ENERGY DISSIPATOR - 18"
	604.11B	HEADWALL-WITH ENERGY DISSIPATOR - 24"
	604.12B	HEADWALL-WITH ENERGY DISSIPATOR - 30"
	604.13B	HEADWALL-WITH ENERGY DISSIPATOR - 36"
	604.14B	HEADWALL-WITH ENERGY DISSIPATOR - 42"
	604.15B	HEADWALL-WITH ENERGY DISSIPATOR - 48"
	604.20B	DROP INLET - TYPE B
	604.21B	DROP INLET - TYPE C
	604.22B	DROP INLET - TYPE D
	604.23B	DROP INLET - TYPE E
	604.24B	DROP INLET - TYPE EE
	604.25B	DROP INLET - TYPE F
	604.26C	DROP INLET - TYPE G
	604.27C	DROP INLET - TYPE S (3 SHEETS)
	604.28D	DROP INLET - TYPE T (ALSO INCLUDE 614.30)
	604.29C	DROP INLET - TYPE X
	604.30F	CONCRETE MANHOLES (ALSO INCLUDE 614.30)
	604.40E	PIPE COLLARS
	605.10A	CLASS A UNDERDRAINS
✓	606.00T	GUARD RAIL (2 SHEETS)
	606.20G	BRIDGE ANCHOR SECTION (BRUSH CURB) (ALSO INCLUDE 606.00)
	606.21F	BRIDGE ANCHOR SECTION - CURB TYPE (ALSO INCLUDE 606.00)
✓	606.22D	BRIDGE ANCHOR SECTION (SAFETY BARRIER CURB) (ALSO INCLUDE 606.00)
✓	606.30E	TERMINAL SECTION (ALSO INCLUDE 606.00)
	606.40A	GUARD CABLE
	607.10Q	CHAIN LINK FENCE
	607.11B	CHAIN LINK FENCE FOR RETAINING WALLS
	607.20F	WOVEN WIRE FENCE (ALSO INCLUDE 607.10)

✓	NO.	DESCRIPTION
	608.00C	PAVED APPROACHES
	608.10G	CONCRETE SIDEWALK & WHEELCHAIR RAMPS
	608.20C	CONCRETE STEPS
	609.00G	CONCRETE CURB - CURB & GUTTER - GUTTER
	609.15A	PAVED DITCHES
✓	609.40D	DRAIN BASIN, SHOULDER PAVING & FILL SLOPE AT BRIDGE ENDS
	609.60A	DITCH LINER
✓	609.70C	ROCK LINING FOR CULVERT OUTLETS
	610.20E	BRICK MANHOLES (ALSO INCLUDE 614.30)
✓	611.60L	CONCRETE SLOPE PROTECTION
	612.10K	BARRICADES AND FLASHER SIGNS
	613.00	PAVEMENT REPAIR
	614.10N	CURB PILETS, GRATES & BEARING PLATES
	614.30D	MANHOLE FRAMES & COVERS
	615.00A	OFFICE FOR ENGINEER
✓	616.10H	TRAFFIC CONTROL DEVICES (3 SHEETS) (ALSO INCLUDE 903.01)
	617.00V	CONCRETE TRAFFIC BARRIER (3 SHEETS)
	702.01E	16" CONCRETE PILES (APPROVED TYPES) (2 SHEETS)
✓	702.02B	CAST-IN-PLACE CONCRETE PILES (APPROVED TYPES)
	703.15D	CONCRETE BOX CULVERTS, H15 LOADING (3 SHEETS) (INCL. 706.35)
	703.16D	CONCRETE BOX CULVERTS, H15 LOADING (3 SHEETS) (FLARED WINGS) (INCL. 706.35)
	703.20D	CONCRETE BOX CULVERTS, H20 LOADING (3 SHEETS) (INCL. 706.35)
✓	703.21D	CONCRETE BOX CULVERTS, H20 LOADING (3 SHEETS) (FLARED WINGS) (INCL. 706.35)
	703.24D	CONCRETE BOX CULVERTS, SKEW DATA (703.15, 703.20, 703.30) (INCL. 706.35)
✓	703.25C	CONCRETE BOX CULVERTS, SKEW DATA (703.16 & 703.21) (3 SHEETS) (FLARED WINGS) (INCL. 706.35)
	703.30D	CONCRETE BOX CULVERTS, 4' SPANS & LESS - ALL LOADING (INCL. 706.35)
✓	703.35B	CONCRETE BOX CULVERTS, CUTTING DETAILS (STRAIGHT WINGS) (INCL. 706.35)
	703.36A	CONCRETE BOX CULVERTS, CUTTING DETAILS (FLARED WINGS) (INCL. 706.35)
	703.50F	CONCRETE DOUBLE BOX STRUCTURE - SQUARE (INCL. 706.35)
	703.51E	CONCRETE DOUBLE BOX STRUCTURE - SKEWED (INCL. 706.35)
	703.52B	CONCRETE DOUBLE BOX STRUCTURE - CUT SECTIONS (INCL. 706.35)
	703.53D	DOUBLE BOX STRUCTURE REINFORCEMENT - H15 LOADING (8 SHEETS)
	703.54D	DOUBLE BOX STRUCTURE REINFORCEMENT - H20 OR HS20 LOADING (8 SHEETS)
	703.55C	CONCRETE DOUBLE BOX STRUCTURE (FLARED WINGS) SQUARE (INCL. 706.35)
	703.56C	CONCRETE DOUBLE BOX STRUCTURE (FLARED WINGS) SKEWED (INCL. 706.35)
	703.60C	CONCRETE BOX STRUCTURE - PIPE INLET
	703.70B	CONCRETE TRIPLE BOX STRUCTURE - SQUARE (2 SHEETS) (INCL. 706.35)
	703.71B	CONCRETE TRIPLE BOX STRUCTURE - SKEWED (2 SHEETS) (INCL. 706.35)
	703.72B	CONCRETE TRIPLE BOX STRUCTURE - (FLARED WINGS) (SQUARE) (2 SHEETS) (INCL. 706.35)
	703.73B	CONCRETE TRIPLE BOX STRUCTURE - (FLARED WINGS) (SKEWED) (2 SHEETS) (INCL. 706.35)
	703.74B	CONCRETE TRIPLE BOX STRUCTURE - CUT SECTIONS (INCL. 706.35)
	703.75	CONCRETE TRIPLE BOX STRUCTURE REINFORCEMENT - H15 LOADING (5 SHEETS)
	703.76B	CONCRETE TRIPLE BOX STRUCTURE REINFORCEMENT - H20 OR HS20 LOADING (5 SHEETS)
	706.30E	REINFORCING BAR SUPPORTS
✓	706.35E	BAR SUPPORTS FOR CONCRETE REINFORCEMENT
	712.40E	STEEL DAMS FOR BRIDGES (6" CHANNEL)
	725.61C	METAL CURTAIN WALL AND METAL INLETS
✓	726.30C	CULVERT INSTALLATION METHODS
	731.00Q	PRECAST MANHOLES (ALSO INCL. 614.30)
	731.10G	PRECAST DROP INLETS (4 SHEETS) (ALSO INCLUDE 614.30 & 614.40)
✓	732.00L	FLARED END SECTION (2 SHEETS)
	806.02A	STAPLE PLACEMENT FOR PLASTIC NETTING

✓	NO.	DESCRIPTION
		HIGHWAY LIGHTING
	901.00N	POLES & APPURTENANCES - 30' (3 SHEETS)
	901.01T	POLES & APPURTENANCES - 45' (3 SHEETS)
	901.05A	CONTROL PANEL CABINET DETAILS (2 SHEETS) (NOTE BELOW)
	901.12C	POLE MOUNT. CONT. STA. - SECONDARY SERV. - 480 V MULTI. CIR. (NOT METERED)
	901.15E	POLE MOUNT. CONT. STA. - SEC. SERV. - 120, 240 & 480 V MULTI. CIR.
	901.16D	POLE MOUNT. CONT. STA. - SEC. SERV. - 480 V MULTI. CIR. (METERED)
	901.18D	POLE MOUNT. CONT. STA. - SEC. SERV. 120/240 V MULTI. CIR.
	901.19D	POLE MOUNT. CONT. STA. - SEC. SERV. - 240 V MULTI CIR. (NOT METERED)
	901.20D	POLE MOUNT. CONT. STA. - SEC. SERV. - 120/240 V MULTI. CIR. (SIG. METERED)
	901.22E	POLE MOUNT. CONT. STA. - SEC. SERV. - 120/240 & 480 V MULTI. CIR. (BOTH METERED)
	901.23E	POLE MOUNT. CONT. STA. — SEC. SERV. - 240 V MULTI. CIR. (METERED)
	901.24D	POLE MOUNT. CONT. STA. - SEC. SERV. - 240 V MULTI. CIR. (LT'S & SIGS-BOTH METERED)
	901.25D	BASE MOUNT. CONT. STA. - SEC. SERV. - 120/240 V MULTI. CIR.
		NOTE: ALSO INCLUDE 901.05 WITH 901.12 THROUGH 901.25 EXCEPT 901.18
		TRAFFIC SIGNALS
	902.00E	SIGNAL HEADS, LENSES AND MOUNTING
	902.10J	PULL BOXES, CONTROLLERS, COND. LOCATION
	902.15D	POWER SUPPLY ASSEMBLY
	902.21B	TELEPHONE INTERCONNECT
	902.30G	CONCRETE BASES
	902.40G	TUBULAR STEEL POST
	902.50E	DETECTORS
	902.60E	SPAN WIRE DETAILS - STEEL POST
	902.70B	SPAN WIRE DETAILS - WOOD POLE
	902.80A	TRAFFIC SIGNAL SYMBOLS
		HIGHWAY SIGNING
✓	903.01C	ALPHABETS (2 SHEETS)
	903.02W	HIGHWAY SIGNING (7 SHEETS)
	903.03AJ	SIGN MOUNTING DETAILS (5 SHEETS)
	903.04D	WEIGH STATION SIGNING
	903.05C	TUBULAR SPAN SUPPORT - ONE TUBE, TYPE S
	903.06C	TUBULAR SPAN SUPPORT - TWO TUBE, TYPE S
	903.07C	TUBULAR CANTILEVER SUPPORTS, TYPE C
	903.08C	TUBULAR BUTTERFLY SUPPORTS, TYPE B
	903.09C	LIGHTING SUPPORT BRACKET
	903.10T	SIGN TRUSSES - OVERHEAD ALUMINUM (8 SHEETS) INCL. 903.03
	903.12N	SIGN TRUSSES - BUTTERFLY & CANTILEVER - STEEL (7 SHEETS) (INCL. 903.03)
	903.60S	SIGN TRUSSES - OVERHEAD STEEL (7 SHEETS) (INCL. 903.03)

NOTES Plans for this project were developed using Drawings from this index

SP-2