

DATE REVISED	DATE FILMED	DATE REVISION	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	F-BRF-041-I(6)	1	77
				JOB NO.		3914		
② LITTLE MO. RIVER BRS. & APPRS.								

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT
CONSTRUCTION PLANS FOR STATE HIGHWAY



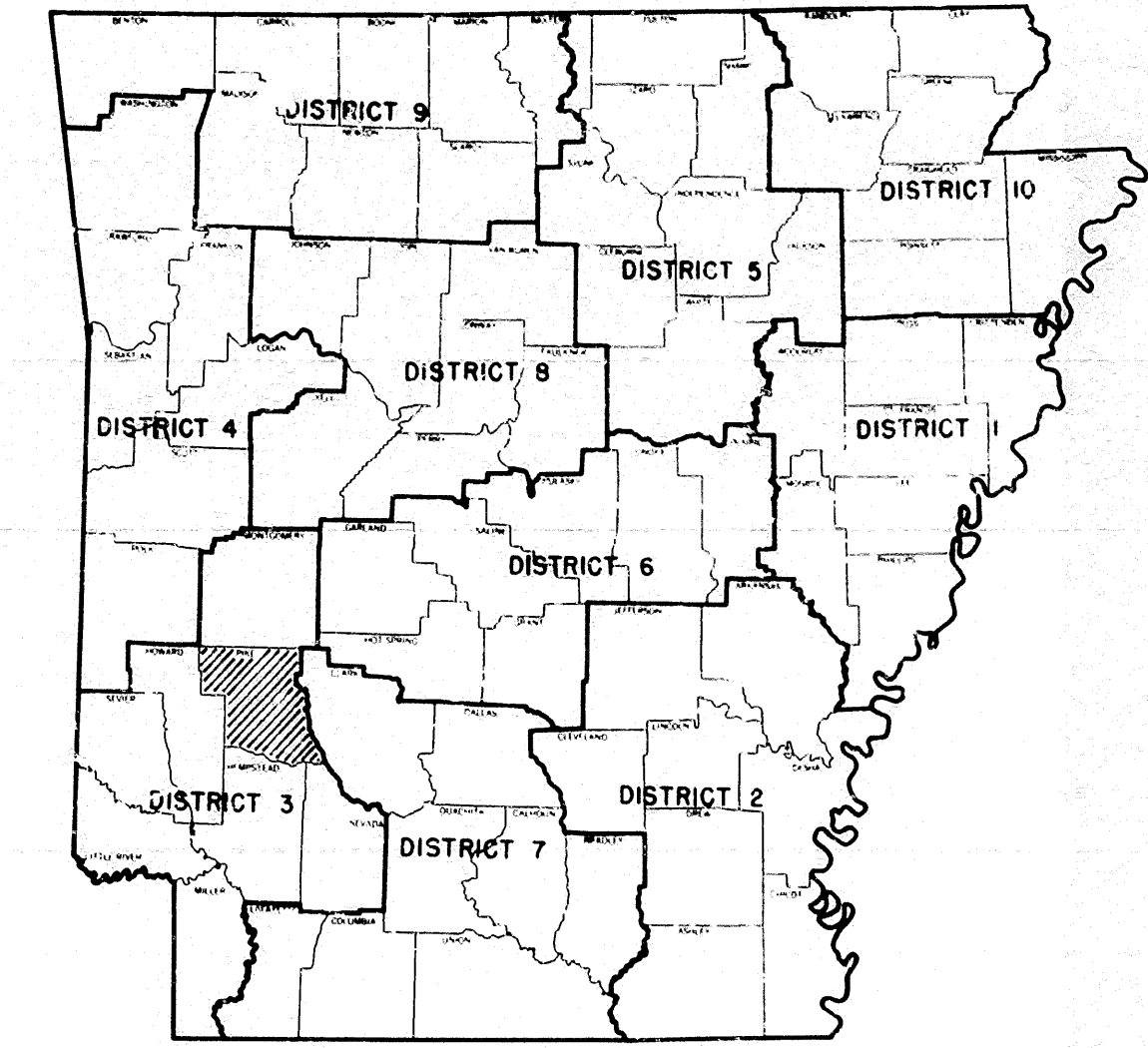
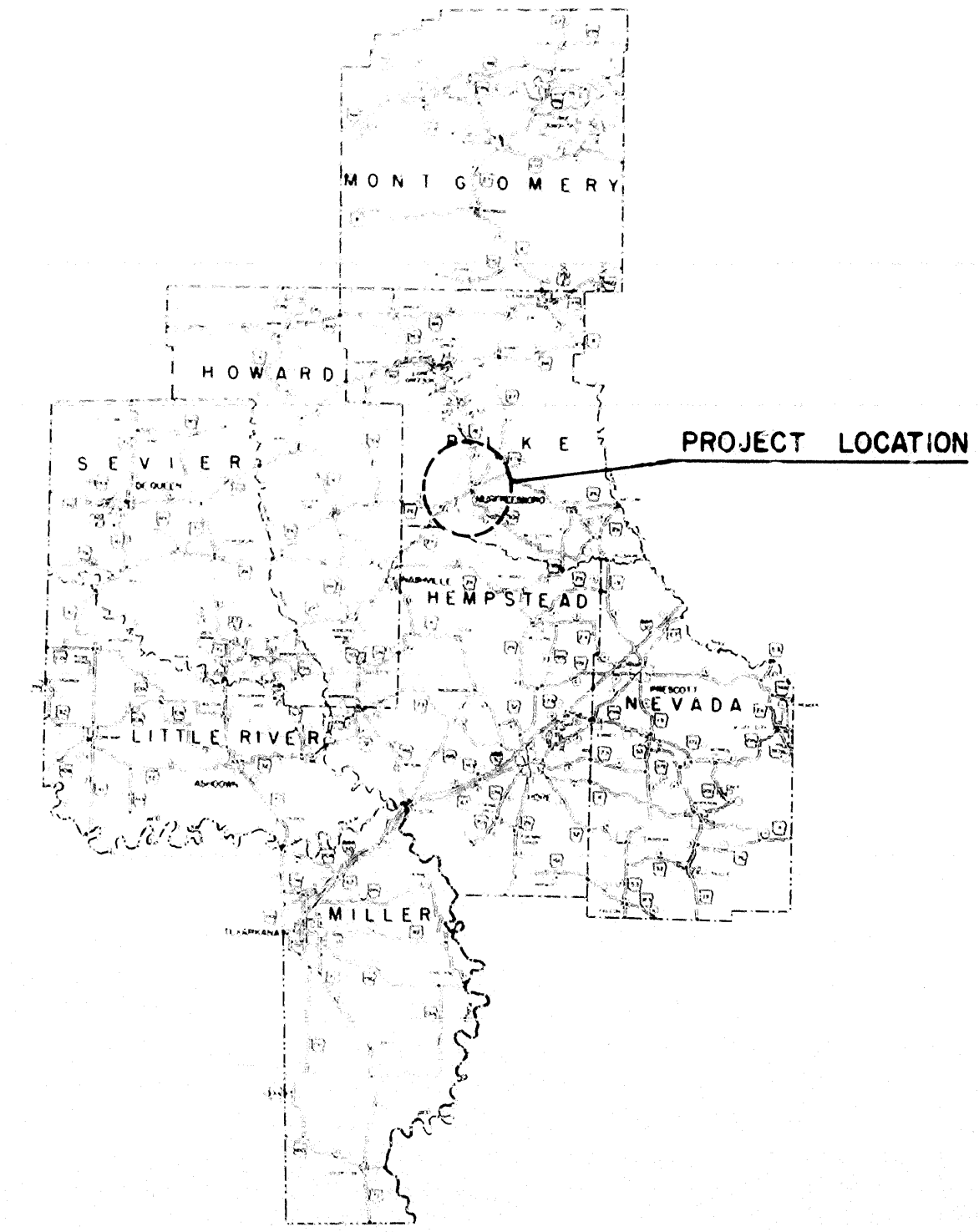
LITTLE MISSOURI RIVER
BRS. & APPRS.

PIKE COUNTY

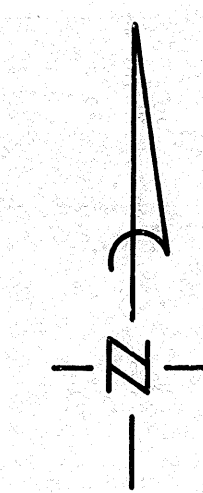
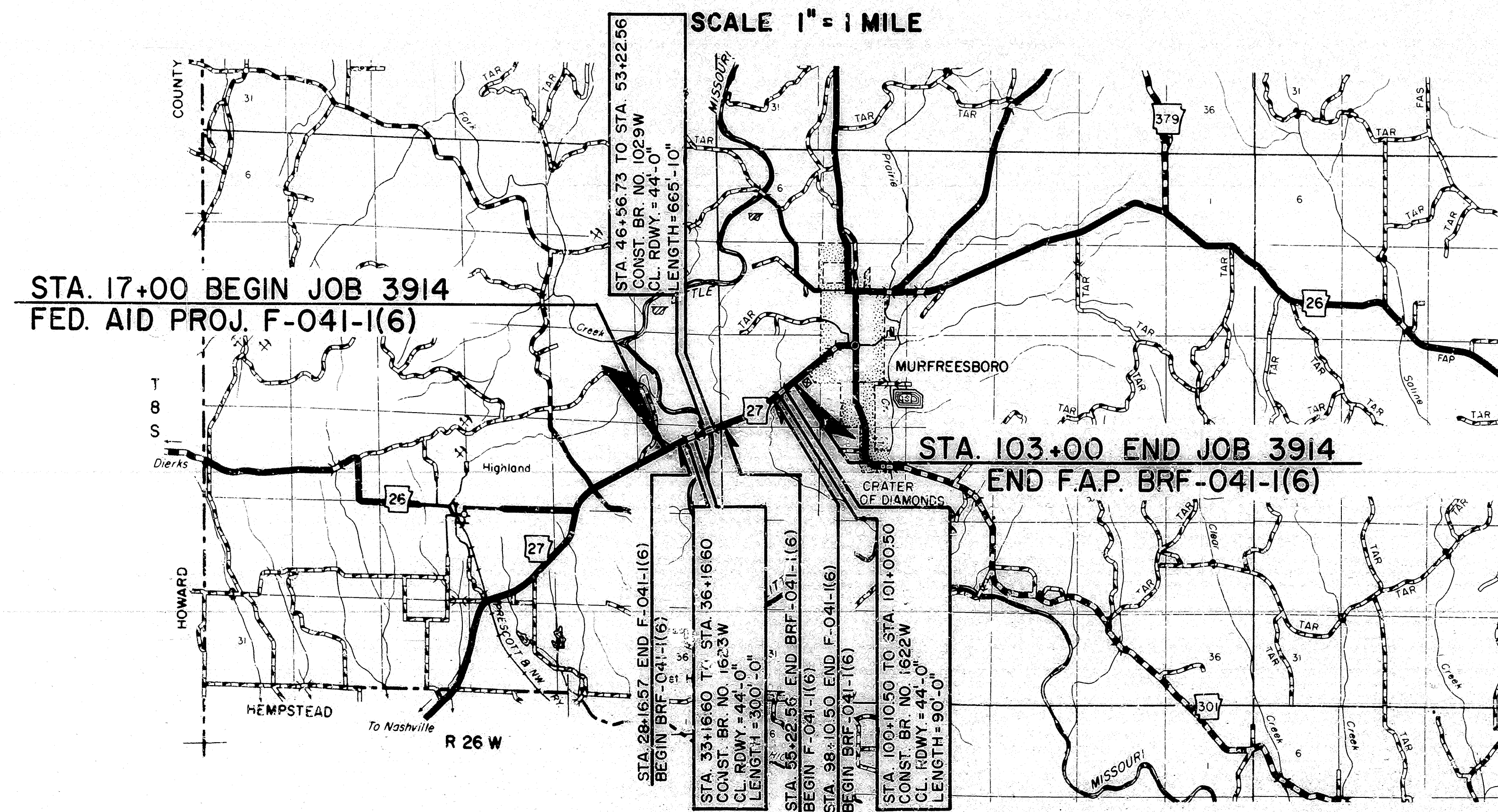
ROUTE 27 SECTION 4

JOB
3914

FED. AID PROJ. - F-BRF-041-I(6)



ARK. HWY. DIST. NO. 3



• DESIGN DATA •

DESIGN YEAR	2002
1982 ADT	2900
2002 ADT	4330
2002 DHV	476
DIRECTIONAL DISTRIBUTION	060
TRUCKS	18.3 % DURING DHV
DESIGN SPEED	60 MPH

"THE CORPS OF ENGINEERS HAS ISSUED A GENERAL SECTION 404 PERMIT FOR THIS PROJECT. SEE SHEET NO. 2 FOR FURTHER INFORMATION"

P.E. JOB 3914
NON PARTICIPATING

RECOMMENDED FOR APPROVAL

BRIDGE DESIGN ENGINEER

ROADWAY DESIGN ENGINEER

DISTRICT ENGINEER

APPROVED

CHIEF ENGINEER

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
RECOMMENDED FOR APPROVAL

APPROVED

DIVISION ENGINEER

DATE

DATE

	F-041-I(6)	BRF-041-I(6)	JOB 3914
GROSS LENGTH OF PROJECT	5404.51 FEET OR 1.024 MILES	3195.49 FEET OR 0.605 MILES	8600.00 FEET OR 1.629 MILES
NET LENGTH OF ROADWAY	5404.51 FEET OR 1.024 MILES	2139.66 FEET OR 0.405 MILES	7544.17 FEET OR 1.429 MILES
NET LENGTH OF BRIDGES	0.00 FEET OR 0.000 MILES	1055.83 FEET OR 0.200 MILES	1055.83 FEET OR 0.200 MILES
NET LENGTH OF PROJECTS	5404.51 FEET OR 1.024 MILES	3195.49 FEET OR 0.605 MILES	8600.00 FEET OR 1.629 MILES

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10/18/82	5-10-82			6	ARK.	F-BRF-041-16		
				JOB NO.		3914	2	77

② INDEX OF SHEETS & SPECIAL PROVISIONS

INDEX OF SHEETS

SHEET NO.	TITLE	DRAWING NUMBER	BRIDGE NUMBER	DATE
1.	TITLE SHEET			
2.	INDEX OF SHEETS, SPECIAL PROVISIONS AND GENERAL NOTES			
3.	TYPICAL SECTION OF IMPROVEMENTS			
4.	TYPICAL SECTION OF IMPROVEMENTS AND SPECIAL DETAILS			
5-7.	QUANTITY SHEETS			
8.	SCHEDULE OF BRIDGE QUANTITIES (ALT. 1)			
9.	SCHEDULE OF BRIDGE QUANTITIES (ALT. 2)			
10.	SUMMARY OF QUANTITIES, REVISIONS			
11-16.	PLAN AND PROFILE SHEETS			
17.	ALT. 1 - LAYOUT OF BRIDGE FOR LITTLE MISSOURI RIVER RELIEF	25221	1623W	
18.	ALT. 1 - DETAILS OF END BENTS 1 & 11	25222	1623W	
19.	ALT. 1 - DETAILS FOR WIDENING INTERIOR BENTS 2 THRU 10	25223	1623W	
20.	ALT. 1 - DETAILS OF 30'-0" R.C. SLAB SPANS	25224	1623W	
21-22.	ALT. 1 - DETAILS FOR WIDENING 30' R.C.D.G. SPANS	25225-25226	1623W	
23.	ALT. 1 - LAYOUT OF BRIDGE OVER LITTLE MISSOURI RIVER	25227	1029W	
24.	ALT. 1 - DETAILS FOR WIDENING OF PILE BENTS	25228	1029W & 1622W	
25.	ALT. 1 - DETAILS FOR WIDENING INTERMEDIATE BENT NO. 5	25229	1029W	
26.	ALT. 1 - DETAILS FOR WIDENING INTERMEDIATE BENTS 6 & 7	25230	1029W	
27.	ALT. 1 - DETAILS FOR WIDENING INTERMEDIATE BENT NO. 8	25231	1029W	
28-29.	ALT. 1 - DETAILS FOR WIDENING 30' R.C.D.G. SPANS	25232-25233	1029W & 1622W	
30-32.	ALT. 1 - DETAILS OF 335'-8" CONT. COMPOSITE PLATE GIRDER UNIT	25234-25236	1029W	
33.	ALT. 1 - DETAILS OF ELASTOMERIC FIXED AND EXPANSION BEARINGS	25237	1029W	
34.	ALT. 1 - GENERAL NOTES	25238	1029W	
35.	ALT. 1 - LAYOUT OF BRIDGE OVER LAKE SLOUGH	25239	1622W	
36.	ALT. 2 - LAYOUT OF BRIDGE FOR LITTLE MISSOURI RIVER RELIEF	25240	1623W	
37.	ALT. 2 - DETAILS OF END BENTS 1 & 11	25241	1623W	
38.	ALT. 2 - DETAILS FOR WIDENING OF PILE BENTS	25242	1622W, 1029W, 1623W	
39-40.	ALT. 2 - DETAILS OF 30' R.C. SLAB SPANS	25243-25244	1622W, 1029W, 1623W	
41.	ALT. 2 - LAYOUT OF BRIDGE OVER LITTLE MISSOURI RIVER	25245	1029W	
42.	ALT. 2 - DETAILS FOR WIDENING INTERMEDIATE BENT NO. 5	25246	1029W	
43.	ALT. 2 - DETAILS FOR WIDENING INTERMEDIATE BENTS 6 & 7	25247	1029W	
44.	ALT. 2 - DETAILS FOR WIDENING INTERMEDIATE BENT NO. 8	25248	1029W	
45-47.	ALT. 2 - DETAILS OF 335'-8" CONT. COMPOSITE PLATE GIRDER UNIT	25249-25251	1029W	
48.	ALT. 2 - DETAILS OF ELASTOMERIC FIXED AND EXPANSION BEARINGS	25252	1029W	
49.	ALT. 2 - GENERAL NOTES	25253	1029W	
50.	ALT. 2 - LAYOUT OF BRIDGE OVER LAKE SLOUGH	25254	1622W	
51.	DETAILS OF PERMISSIBLE TYPE PERMANENT STEEL BRIDGE DECK FORMS	14991		11-19-80
52.	DETAILS OF CONCRETE RIPRAP AND MISC. DETAILS OF STEEL PILING	14995A		5-7-81
53.	DETAILS OF STANDARD PRECAST CONCRETE PILES	2383		9-15-78
54.	DETAILS OF STANDARD TYPE C BRIDGE NAME PLATES	2389A		9-15-78
55.	MISCELLANEOUS EROSION CONTROL DETAILS	1886		10-2-72
56.	EMBANKMENT CONSTRUCTION AT BRIDGE ENDS AND BACKFILL FOR STRUCTURES	1888A		9-15-78
57.	DETAILS FOR DUMPED RIPRAP AND DETAILS FOR COMPUTING EXCAVATION FOR STRS	1891F		4-8-77
58.	DETAILS OF STANDARD TYPE J APPROACH GUTTERS	1898J		9-15-78
59.	PIPE CULVERT FILL HEIGHTS AND BEDDING	FPC-19		9-20-79
60.	GUARD RAIL DETAILS	GR-8		10-1-77
61.	GUARD RAIL DETAILS	GR-8A		5-15-80
62.	GUARD RAIL DETAILS	GR-9		5-15-80
63.	TABLES AND METHOD OF SUPERELEVATION	SE-1		10-2-72
64.	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	TC-1		5-15-80
65.	STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION	TC-2		7-11-80
66.	TEMPORARY EROSION CONTROL DEVICES	TEC-1		8-2-76
67.	WIRE FENCE - TYPE C AND D	WF-4		3-2-81
68-77.	CROSS SECTIONS			

NOTE: CROSS SECTIONS NOT NORMALLY INCLUDED IN PLANS SOLD TO PROSPECTIVE BIDDERS BUT MAY BE HAD ON REQUEST.

CORPS OF ENGINEERS
SECTION 404 PERMIT QUANTITIES
(FOR INFORMATIONAL PURPOSES ONLY)

STATION	STATION	LOCATION	STRUCTURAL EXCAVATION	FILL BELOW ORDINARY HIGH WATER			
				CAST-IN PLACE CONCRETE	BACKFILL FOR PIERS	DISPOSAL OF EXISTING BRIDGE	TEMPORARY WORK RAMP
				CUBIC YARDS			
18+88.73 (BENT 6)	50+00.56 (BENT 7)	LITTLE MISSOURI	375	135	260	200	800
TOTAL			375	135	260	200	800

NOTES:

- THIS PROJECT PERMITTED UNDER A GENERAL SECTION 404 PERMIT. FILL BELOW ORDINARY HIGH WATER BASED ON ELEVATION 320.0. EXCEEDANCE OF AUTHORIZED AMOUNT OF FILL WILL REQUIRE ADDITIONAL REVIEW BY THE CORPS OF ENGINEERS.
- MATERIAL FROM STRUCTURAL EXCAVATION WILL BE DEPOSITED ABOVE THE ORDINARY HIGH WATER ELEVATION. DEBRIS FROM DISPOSAL OF EXISTING BRIDGE WILL BE REMOVED PRIOR TO COMPLETION OF CONSTRUCTION.
- ABOVE QUANTITIES APPLICABLE TO SECTION 404 PERMIT ONLY AND SHALL NOT BE MISCONSTRUED AS TOTAL PLAN QUANTITY NOR BASIS OF PAYMENT.
- FOR ADDITIONAL INFORMATION, CONTACT AHTD'S HYDRAULICS SECTION AT 501-569-2586.

GOVERNING SPECIFICATIONS

ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 1978, AND THE FOLLOWING SPECIAL PROVISIONS:

NUMBER	TITLE
-----	ERRATA FOR THE BOOK OF STANDARD SPECIFICATIONS
PR-1273	REQUIRED CONTRACT PROVISIONS, FEDERAL-AID CONSTRUCTION CONTRACTS
PR-1273	SUPPLEMENT - RECORD OF MATERIALS, SUPPLIES AND LABOR
PR-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - GOALS AND TIMETABLES
PR-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - FEDERAL STANDARDS
PR-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - ON-THE-JOB TRAINING FOR PROJECTS NOT REQUIRING DOL WAGE DECISION
PR-1273	SUPPLEMENT - REVISIONS OF PR-1273 FOR PROJECTS NOT REQUIRING DOL WAGE DECISION
PR-1273	SUPPLEMENT - POSTERS AND NOTICES REQUIRED FOR FEDERAL-AID PROJECTS
100-7	MINORITY BUSINESS ENTERPRISE IN FEDERAL-AID HIGHWAY CONSTRUCTION
100-10	GALVANIZED HARDWARE
104-1	SCOPE OF WORK
105-1	CONTROL OF WORK
106-1	FURNISHING MATERIALS FROM BARS, PITS OR QUARRIES
107-1	ABATEMENT OF WATER POLLUTION
107-2	PLANT PROTECTION AND QUARANTINE PROGRAMS
107-6	EMPLOYMENT OF LABOR
108-1	PROSECUTION AND PROGRESS
109-4	MEASUREMENT AND PAYMENT
202-1	REMOVAL AND DISPOSAL OF STRUCTURES
210-1	EXCAVATION AND EMBANKMENT
300-1	BASES AND GRANULAR SURFACES
408-1	ASPHALTIC CONCRETE HOT MIX SURFACE COURSE
409-2	MATERIALS AND EQUIPMENT FOR HOT MIX BITUMINOUS BINDER AND SURFACE COURSES
410-5	CONSTRUCTION METHODS FOR HOT MIX BITUMINOUS BINDER AND SURFACE COURSES
603-1	MAINTENANCE OF TRAFFIC
606-2	PIPE CULVERTS AND STORM DRAINS
613-1	GUARD RAIL
614-1	FENCES
620-1	SEEDING
782-1	TEMPORARY PAVEMENT MARKINGS
802-5	CONCRETE FOR STRUCTURES
807-5	AWS STRUCTURAL WELDING CODE
807-10	PAINTING STEEL STRUCTURES
808-1	EPOXY ADHESIVES FOR ELASTOMERIC BRIDGE BEARINGS
JOB 3914	NOTIFICATION FOR REMOVAL OF GAUGING STATION
JOB 3914	SAFETY REQUIREMENTS AT BRIDGE CONSTRUCTION
JOB 3914	ARMORED JOINT WITH NEOPRENE STRIP SEAL
JOB 3914	REMODELING, REPAIR AND OVERLAY OF EXISTING CONCRETE BRIDGE FLOORS
JOB 3914	REPAIR, REMODELING AND WIDENING EXISTING BENTS
JOB 3914	REQUIREMENTS OF SECTION 404 PERMIT
JOB 3914	BORROW
PR-1273	SUPPLEMENT - EQUAL EMPLOYMENT OPPORTUNITY - NOTICE TO CONTRACTORS
PR-1273	SUPPLEMENT - SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (23 U.S.C. 140)
JOB 3914	REMOVING AND STOCKPILING GRAVEL BASE COURSE AND BITUMINOUS SURFACING
405-1	ASPHALTIC CONCRETE HOT MIX BINDER COURSE
409-3	MATERIALS AND EQUIPMENT FOR HOT MIX BITUMINOUS BINDER AND SURFACE COURSES
JOB 3914	UTILITY ADJUSTMENTS

GENERAL NOTES

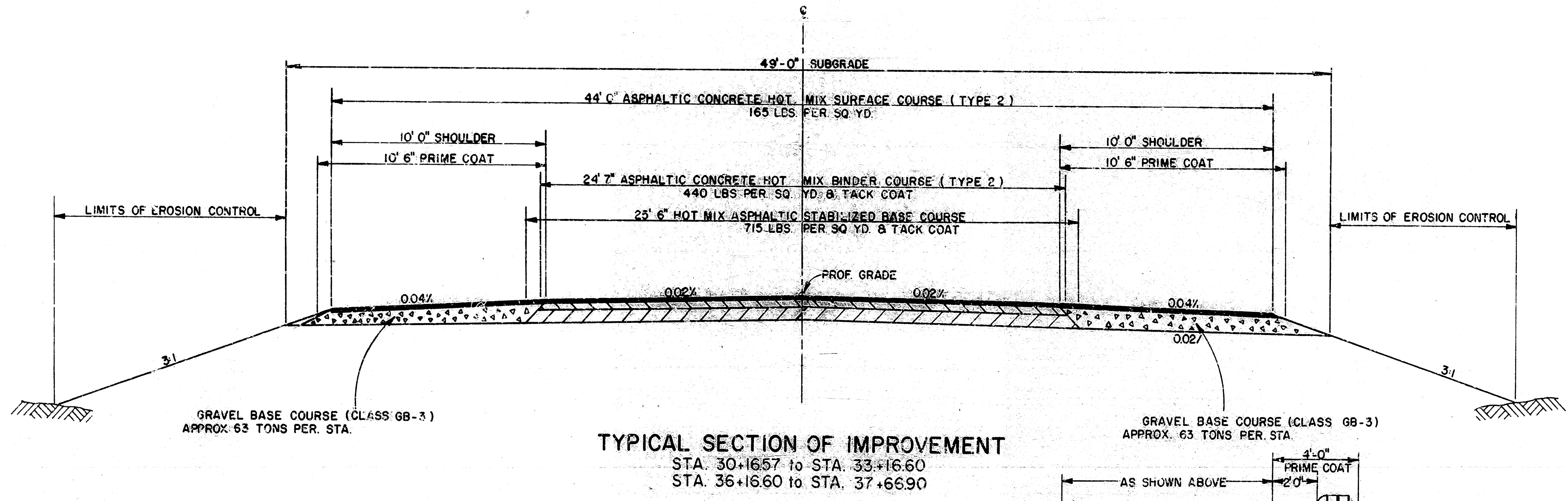
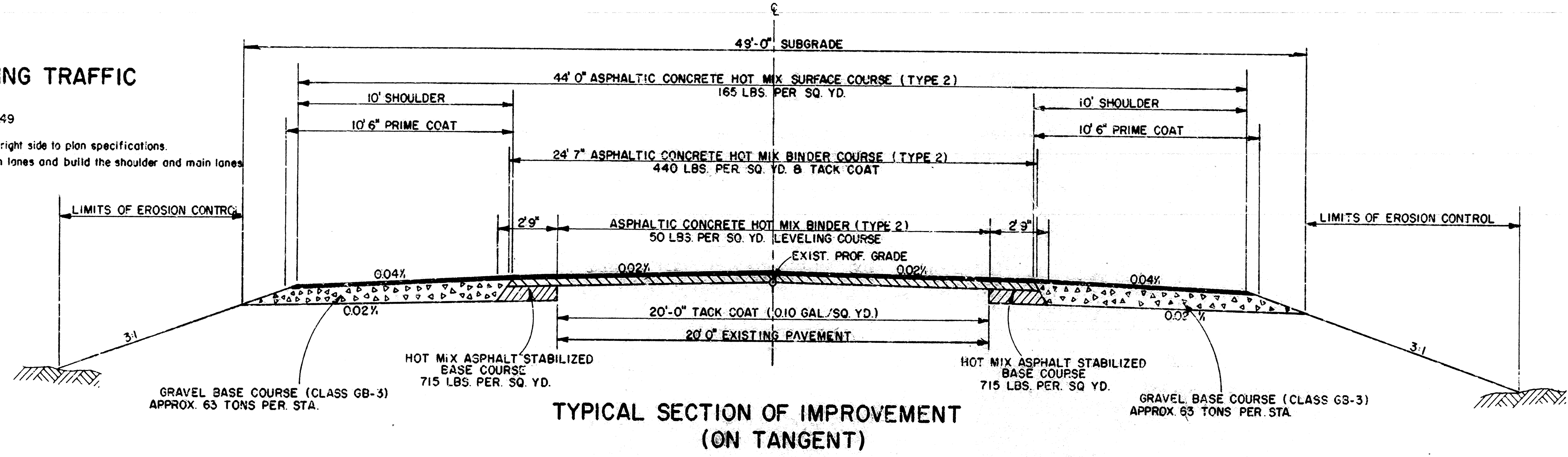
- LEVEL DATUM IS U.S.C. & G.S.
- GRADE LINE DENOTES FINISHED GRADE.
- SUPERELEVATION IS COMPUTED IN ACCORDANCE WITH STD. DWG. NO. SE-1.
- CARE AND DISCRETION SHALL BE EXERCISED SO THAT THE OPERATIONS OF CLEARING AND GRUBBING SPARE, IN-SO-FAR AS PRACTICABLE, TREES SITUATED ALONG THE RIGHT-OF-WAY WHICH MAY BE CLASSED AS USEFUL OR ORNAMENTAL.
- THE CONTRACTOR WILL BE RESPONSIBLE FOR MAINTAINING U.S. MAIL BOXES WITHIN THE PROJECT LIMITS IN SUCH A MANNER THAT CONTINUOUS MAIL SERVICE MAY BE PROVIDED. NO DIRECT PAYMENT WILL BE MADE FOR MAINTAINING U.S. MAIL BOXES BUT REIMBURSEMENT FOR THIS ITEM SHALL BE CONSIDERED TO BE INCLUDED IN THE PAYMENT MADE FOR MAINTENANCE OF TRAFFIC.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A FENCE TO CONTROL LIVESTOCK IN AREAS WHERE PASTURES ARE SEVERED. WIRE FENCE MAY BE CONSTRUCTED INITIALLY OR IN LIEU THEREOF, THE CONTRACTOR, AT HIS OWN EXPENSE MAY ELECT TO PROVIDE TEMPORARY FENCING SUITABLE TO CONTAIN LIVESTOCK.
- ALL PIPE LINES, POWER, TELEPHONE AND TELEGRAPH LINES TO BE MOVED OR LOWERED BY THE RESPECTIVE OWNERS AS PER AGREEMENT WITH OWNERS.
- ALL LAND MONUMENTS LOCATED WITHIN THE CONSTRUCTION AREA SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.12 OF THE STANDARD SPECIFICATIONS.

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				6	ARK.	F-BRF-041-1(6)	3	77
				JOB NO.		3914		
② TYPICAL SECTION ALT-1								

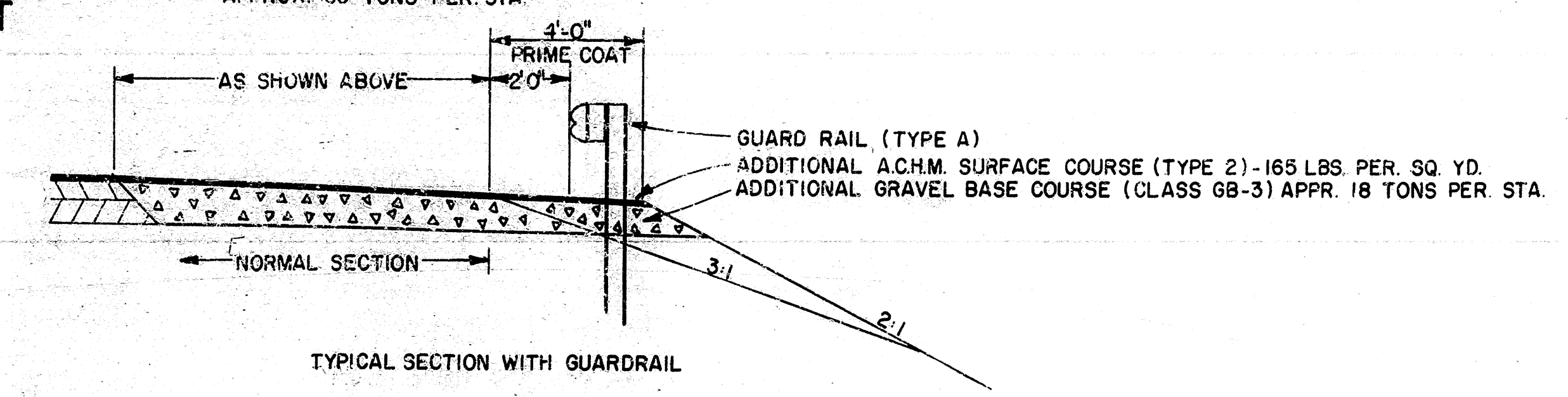
A METHOD OF MAINTAINING TRAFFIC

STA. 16+00 to STA. 23+81.49
STA. 59+18.51 to STA. 92+23.49

- ① Move traffic 2' left and improve the shoulder on the right side to plan specifications.
- ② Transfer traffic to the new shoulder and the old main lanes and build the shoulder and main lanes of the left side.

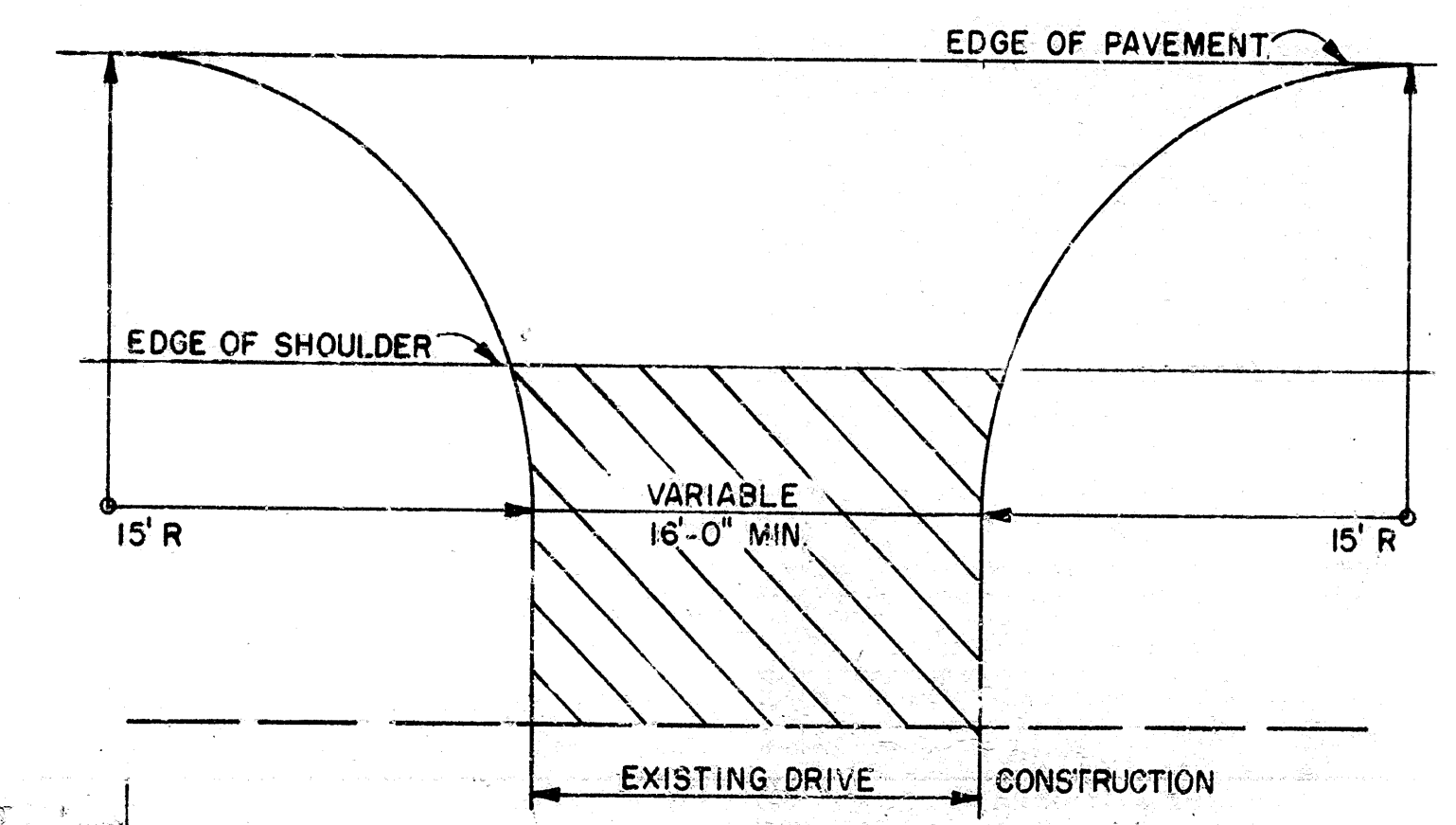
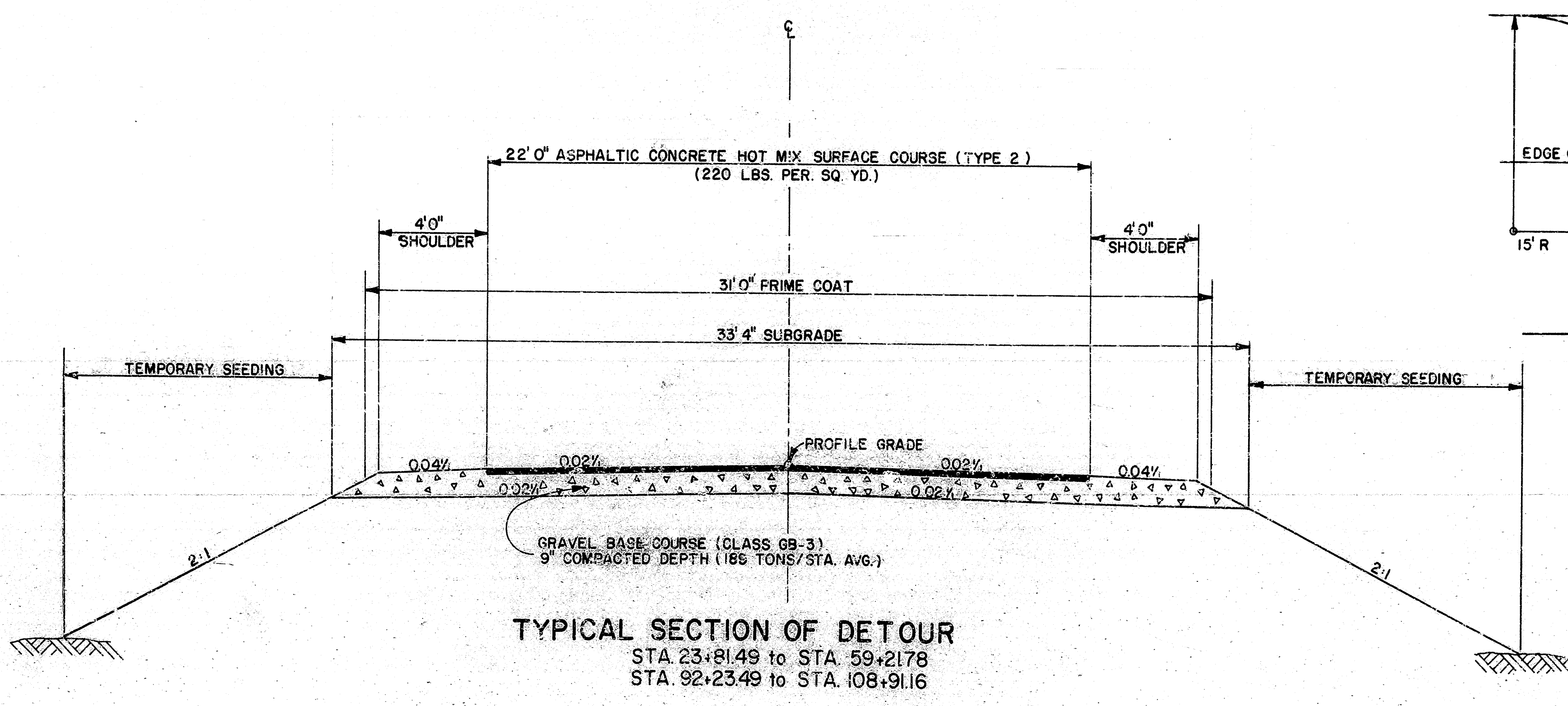
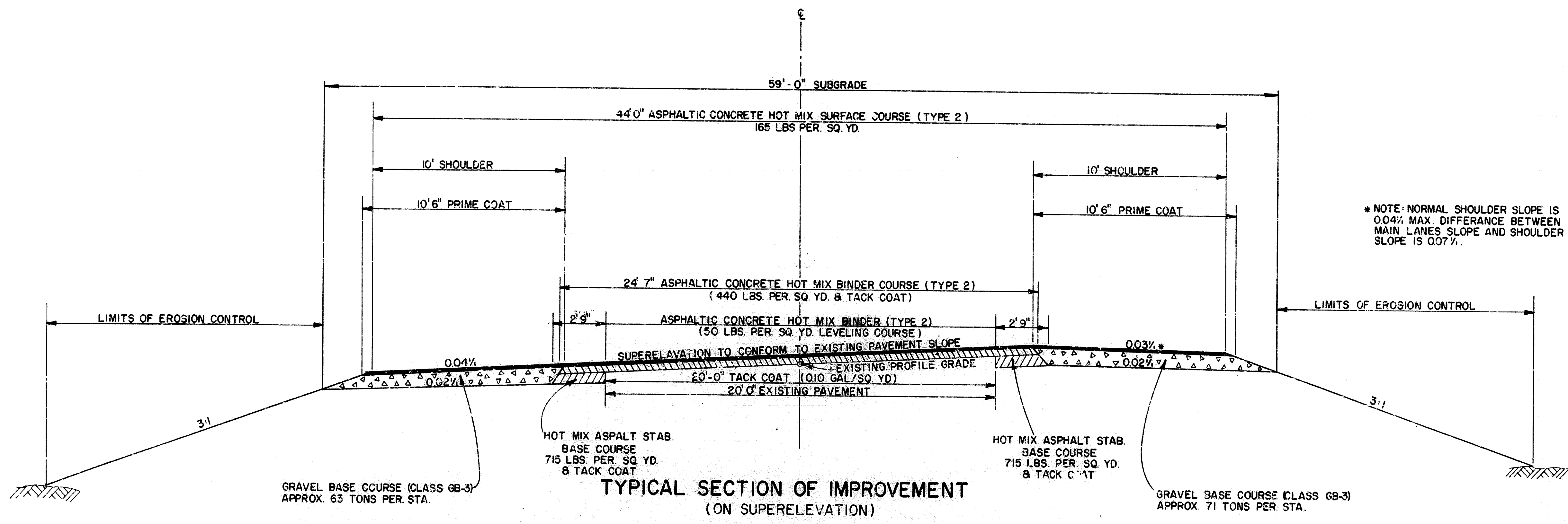


TYPICAL SECTION OF IMPROVEMENT
STA. 30+16.57 to STA. 33+16.60
STA. 36+16.60 to STA. 37+66.90



TYPICAL SECTION WITH GUARDRAIL

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. No.	STATE	FED. RD PROJECT	SHEET No.	TOTAL SHEETS
				6	ARK.	F-BRF-041-116	4	77
				JOB NO.		3914		
② TYPICAL SECTIONS AND SPEC. DET.								



ACHM. SURFACE COURSE (TYPE 2) (165 LBS/SQ. YD.)
AND GRAVEL BASE COURSE (CLASS GB-3) (6" COMP.)
PRIME COAT

**DETAILS OF PRIVATE DRIVES
AND ACCESS ROADS**

GENERAL TOLERANCE
THE THICKNESS OF GRAVEL BASE COURSE SHALL BE
WITHIN PLUS OR MINUS ONE INCH OF THE PLAN THICKNESS
SHOWN. THE CONTRACTOR WILL CORRECT ANY DEFICIENT
THICKNESS THAT DOES NOT MEET THE TOLERANCE INDICATED.
PAYMENT WILL NOT BE MADE FOR MATERIAL PLACED IN
EXCESS OF THE TOLERANCE INDICATED.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	F-BRF-041-1(6)	5	77
				JOB NO.		3914		
② QUANTITY SHEET								

CLEARING & GRUBBING

STATION	STATION	CLEARING	GRUBBING
		STA.	STA.
16+50	19+00	2.5	2.5
TOTAL (F-041-1(6))		2.5	2.5
46+00	47+00	1.0	1.0
52+50	53+50	1.0	1.0
TOTAL (BRF-041-1(6))		2.0	2.0
TOTAL		4.5	4.5

REMOVAL & DISPOSAL OF FENCE

STATION	STATION		LIN. FT.
25+65	28+17		252
55+23	59+50		427
69+00	80+75	R.	1175
81+25	98+10	RT.	1685
TOTAL (F-041-1(6))			3539
28+17	33+90	RT.	573
35+60	42+90	RT.	730
43+30	45+75	RT.	245
53+00	55+23	RT.	223
98+10	103+00	RT.	490
TOTAL (BRF-041-1(6))			2261
TOTAL (ENTIRE JOB)			5800

REMOVAL & DISPOSAL OF PIPE CULVERTS

STATION	STATION	DESCRIPTION	PIPE CULVERTS
80+82	81+22	18" R.C.P. RT. SIDE DRAIN	1
TOTAL (F-041-1(6))			1

EARTHWORK (DETOUR REMOVAL)

STATION	STATION	UNCLASSIFIED EXCAVATION
		CU. YD.
25+00	32+00	5564
34+00	36+16	1669
55+60	58+00	849
94+00	108+00	6421
TOTAL (BRF-041-1(6))		14503

NOTE: UNCLASSIFIED EXCAVATION FROM DETOUR REMOVAL TO BE USED IN SLOPES OF MAIN LANES. SEE NOTE UNDER EARTHWORK BOX.

NOTE: THIS QUANTITY INCLUDES 2148 C.Y. UNCLASSIFIED EXCAVATION FOR REMOVING & STOCKPILING GRAVEL BASE COURSE.

FURNISHING FIELD OFFICES & LABORATORY

LOCATION	FIELD OFFICE	LABORATORY
	BUILDING	BUILDING
AT SITE APPROVED BY ENGINEER	1	
AT SITE APPROVED BY ENGINEER		1
TOTAL (BRF-041-1(6))		1

TEMPORARY PAVEMENT MARKINGS

LOCATION	CENTER LINE
	LIN. FT.
TOTAL (F-041-1(6)) PORTION	625
TOTAL (BRF-041-1(6)) PORTION	375
TOTAL (ENTIRE JOB)	1000

APPROACH GUTTERS

STATION	STATION	APPROACH GUTTERS (TYPE J)	APPROXIMATE QUANTITIES	
			CLASS "S" CONCRETE	REINF. STEEL
		EACH	CU. YD.	POUNDS
33+01.60	33+16.60	1	3.03	231
36+16.60	36+31.60	1	3.03	231
46+41.73	46+56.73	1	3.03	231
53+22.56	53+37.56	1	3.03	231
99+95.50	100+10.50	1	3.03	231
101+00.50	101+15.50	1	3.03	231
TOTAL (BRF-041-1(6))		6		

NOTE: APPROXIMATE QUANTITIES FOR INFORMATIONAL PURPOSES ONLY. EACH UNIT SHALL INCLUDE TWO GUTTERS. GRAVEL BASE COURSE QUANTITIES ARE INCLUDED IN THE ROADWAY QUANTITIES.

WIRE FENCE

STATION	STATION	SIDE	WIRE FENCE TYPE C	14" VEHICULAR GATE
			LIN. FT.	EACH
25+65	28+17	RT.	252	
55+23	59+50	RT.	427	
69+00	80+75	RT.	1175	
81+25	98+10	RT.	1685	2
TOTAL (F-041-1(6))			3539	2
28+17	33+90	RT.	836	2
35+60	42+90	RT.	985	1
43+30	45+75	RT.	245	
53+00	55+23	RT.	223	
98+10	103+00	RT.	490	
TOTAL (BRF-041-1(6))			2779	3
TOTAL (ENTIRE JOB)			6318	5

R/W MARKERS & BENCH MARKS

STATION	LOCATION	R/W MARKERS	BENCH MARKS
	ENTIRE JOB	20	
33+16.60+	TOP OF S.W. WINGWALL		1
100+10.50+	TOP OF S.W. WINGWALL		1
TOTAL		20	2

NOTE: R/W MARKERS AND BENCH MARKS TO BE FURNISHED AND PLACED BY STATE FORCES.

STRUCTURES

STATION	DESCRIPTION	18" PIPE CULVERT
		LIN. FT.
81+02	INSTALL R.C. PIPE CULVERT RT. SIDE DRAIN	40
TOTAL		40

NOTE: REFER TO STANDARD DRAWING F.P.C.-19 USE CLASS 'C' BEDDING FOR ALL PIPE CULVERT INSTALLATIONS.

SOIL LOG

STATION	SIDE	DEPTH	LIQUID LIMIT	PLASTIC INDEX	A.A.S.H.T.O. CLASS.	REMARKS
25+00	6' RT.	0'-4'		N.P.	A-4(0)	BROWN
30+00	7' LT.	0'-4'		N.P.	A-4(0)	BROWN
36+00	6' RT.	0'-4'	24		A-4(3)	BROWN
41+00	75' LT.	0'-4'		N.P.	A-2-4(0)	BROWN
46+00	6' RT.	0'-4'		N.P.	A-4(0)	BROWN
54+00	80' LT.	0'-4'	25	6	A-4(4)	BROWN
57+00	6' RT.	0'-4'	24	6	A-4(2)	BROWN
60+00	50' RT.	0'-4'	39	11	A-6(5)	BROWN
95+00	6' RT.	0'-4'	23	7	A-4(2)	BROWN
100+00	50' RT.	0'-4'	19	4	A-4(0)	BROWN
101+50	6' RT.	0'-4'		N.P.	A-4(0)	BROWN
108+00	75' RT.	0'-4'	24	6	A-4(3)	BROWN

NOTE: SOIL CHARACTERISTICS TABULATED ABOVE ARE REPRESENTATIVE AT THE LOCATION OF THE SAMPLE AND FROM SURFACE INDICATIONS ARE TYPICAL FOR THE LIMITS SHOWN. THESE DATA ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY. THE STATE WILL NOT BE RESPONSIBLE FOR VARIATIONS IN SOIL CHARACTERISTICS AND/OR THE EXTENT OF SAME DIFFERING FROM THE ABOVE TABULATIONS.

EARTHWORK

STATION	STATION	UNCLASSIFIED EXCAVATION			BORROW	SPECIAL COMPACTION OF EARTHWORK
		NORMAL	ADD'L.	TOTAL		
		CU. YDS.				
16+00	20+17	175		175	27,863	28,038
55+23	98+11	510	98	608	31,224	31,734
TOTAL (F-041-1(6))		685	98	783	59,087	59,772
28+17	33+41	32		32	15,184	15,216
35+00	46+81	131	635	766	19,866	19,997
53+00	55+23	28		28	1,300	1,328
98+11	100+35	30		30	2,112	2,142
100+75	104+00	34	135	169	1,313	1,347
TOTAL (BRF-041-1(6))		255	770	1025	39,775	40,030
*DETOUR QUANTITIES						
25+00	46+65				13,368	13,368
51+45	58+00				4,949	4,949
94+00	101+00	58		58	4,274	4,333
101+00	108+00	480		480	3,353	3,833
TOTAL DETOUR (BRF-041-1(6))		539	0	539	25,944	26,483
TOTAL (BRF-041-1(6))		794	770	1564	65,719	66,513
TOTAL (ENTIRE JOB)		1479	868	2347	124,806	126,295

*DETOUR QUANTITIES ARE THE ADDITIONAL QUANTITIES NEEDED TO CONSTRUCT THE DETOUR ROADS AND DO NOT INCLUDE THE QUANTITY WHICH FALLS UNDER THE MAIN LANE SLOPES.

NOTE: USE 14,503 C.Y. UNCLASSIFIED EXC. SALVAGED FROM DETOUR IN LIEU OF BORROW ON LEFT SIDE SLOPES.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	F-BRF-041-1(6)	6	77
				JOB NO.		3914		

② QUANTITY SHEET

BASE AND SURFACING

BASE AND SURFACING																										
STATION	STATION	LENGTH	GRAVEL BASE COURSE		HOT MIX ASPHALT STABILIZED BASE COURSE				A.C.H.M. BINDER COURSE (TYPE 2)				A.C.H.M. SURFACE COURSE (TYPE 2)				TACK COAT (0.1 GAL. PER SQ. YD.)			TACK COAT (0.03 GAL. PER SQ. YD.)			PRIME COAT			
			TONS/ STA.	TONS	AVG. WIDTH	SQ. YD.	LBS./ SQ. YD.	TONS	AVG. WIDTH	SQ. YD.	LBS./ SQ. YD.	TONS	AVG. WIDTH	SQ. YD.	LBS./ SQ. YD.	TONS	AVG. WIDTH	SQ. YD.	GALLONS	AVG. WIDTH	SQ. YD.	GALLONS	AVG. WIDTH	SQ. YD.	GALLONS	
16+00	17+00	100.00	54	54	2'-9"	30.6	715	10.9	24'-7"	273.1	220	30.0	42'-0"	466.7	165	38.5	20'-0"	222.2	22	26'-0"	288.9	9	19'-0"	211.1	84	
17+00	28+16.57	1116.57	125	1396	5'-6"	682.3	715	243.9	24'-7"	3049.9	440	671.0	44'-0"	5458.8	165	450.3	20'-0"	2481.3	248	28'-0"	3473.8	104	21'-0"	2605.3	1042	
55+22.56	98+10.50	4287.94	125	5360	5'-6"	2620.4	715	936.8	24'-7"	11712.4	440	2576.7	44'-0"	20963.3	165	1729.5	20'-0"	9528.8	953	28'-0"	13340.3	400	21'-0"	10005.2	4002	
SUPERELEVATION		426.79	8	34																						
LEVELING		5504.51																								
79+12	ACCESS RD.			27					24'-7"	15035.4	50	375.9														
81+02	DRIVEWAY			41										77.6	165	6.4										
*PATCHING														116.4	165	9.6										
												26														
																							77.6	31		
																							116.4	47		
																						52				
TOTAL (F-041-1(6))				6912				1191.6				3679.6				2234.3		1223			565					
28+16.57	30+16.57	200	125	250	5'-6"	122.2	715	43.7	24'-7"	546.3	440	120.2	44'-0"	977.8	165	80.7	20'-0"	444.4	44	28'-0"	622.2	19	21'-0"	466.7	187	
30+16.57	33+16.60	300.03	125	375	25'-6"	850.1	715	303.9	24'-7"	819.5	440	180.3	44'-0"	1466.8	165	124.0	20'-0"	444.4	44	48'-7"	1619.6	49	21'-0"	700.1	280	
33+16.60	37+66.90	440.30	125	188	25'-6"	425.9	715	152.3	24'-7"	410.5	440	90.3	44'-0"	734.8	165	60.6	20'-0"	444.4	44	48'-7"	811.3	24	21'-0"	350.7	140	
37+66.90	46+55.73	889.83	125	1112	5'-6"	543.8	715	194.4	24'-7"	2430.6	440	534.7	44'-0"	4350.3	165	358.9	20'-0"	1977.4	198	28'-0"	2768.4	83	21'-0"	2076.3	831	
46+55.73	55+22.56	200.00	125	250	5'-6"	122.2	715	43.7	24'-7"	546.3	440	120.2	44'-0"	977.8	165	80.7	20'-0"	444.4	44	28'-0"	622.2	19	21'-0"	466.7	187	
55+22.56	100+10.50	200.00	125	250	5'-6"	122.2	715	43.7	24'-7"	546.3	440	120.2	44'-0"	977.8	165	80.7	20'-0"	444.4	44	28'-0"	622.2	19	21'-0"	466.7	187	
100+10.50	103+00.50	200.00	125	250	5'-6"	122.2	715	43.7	24'-7"	546.3	440	120.2	44'-0"	977.8	165	80.7	20'-0"	444.4	44	28'-0"	622.2	19	21'-0"	466.7	187	
103+00.50	104+00.50	100.00	54	54	2'-9"	30.6	715	10.9	24'-7"	273.1	220	30.0	42'-0"	466.7	165	38.5	20'-0"	222.2	22	26'-0"	288.9	9	19'-0"	211.1	84	
SUPERELEVATION		1048.78	8	84																						
GUARD RAIL		825.00	12	157																						
LEVELING		1789.83							24'-7"	4888.9	50	122.2		366.7	165	30.3										
44+30	ACCESS RD.			49										146.7	165	12.1							4'-0"	366.7	147	
55+50	ACCESS RD.			30										103.0	165	8.5										
97+90	DRIVEWAY			27										54.5	165	4.5										
25+48	57+55	9" COMP.		4874																				146.7	59	
93+90	107+25	DETOUR	9" COMP.	2169																				103.0	41	
105+83	DRIVEWAY			10										22'-0"	6222.2	220	684.4							54.5	22	
29+53	33+50	ACCESS RD.	6" COMP.	117										27.9	165	2.3								31'-0"	8784.4	3514
*PATCHING																								31'-0"	3857.2	1543
												32													27.9	11
TOTAL (BRF-041-1(6))				10246				836.3				1470.3				1943.7		396			305				7420	
TOTAL (ENTIRE JOB)				17158				2027.9				5149.9				4178.0		1619			870				12626	
BASIS OF ESTIMATE: GRAVEL: BASE COURSE: 100% CH. YD. = 1.4 TON VOLUME CONTROL MIN. AGG. ASPHALT																										

BASIS OF ESTIMATE:
GRAVEL BASE COURSE-----1 CU. YD. = 1.4 TON
PRIME COAT-----0.40 GAL. PER SQ. YD.

VOLUME CONTROL
H.M.A.S. BASE COURSE 96.0% 4.0%
A.C.H.M. BINDER 95.1% 4.9%
A.C.H.M. SURFACE 94.0% 6.0%

* PATCHING OF THE DETOUR ROAD AND/OR EXISTING ROAD SHALL BE DONE WHEN AND WHERE THE ENGINEER DIRECTS. PAYMENT FOR PATCHING SHALL BE AT THE UNIT PRICES BID FOR THE ITEMS INVOLVED. ASPHALTIC CONCRETE COLD MIX SURFACE COURSE MEETING THE REQUIREMENTS OF SECTION 411 OF THE STANDARD SPECIFICATIONS, EDITION OF 1978, MAY BE USED IN LIEU OF ACHM WITH THE APPROVAL OF THE ENGINEER. PAYMENT FOR COLD MIX WILL BE AT THE UNIT PRICES BID FOR THE TYPE ACHM DESIGNATED ABOVE AS THE PATCHING MATERIAL AT THE RATE OF 95% MINERAL AGGREGATE AND 5% ASPHALT CEMENT.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	F-BRF-041-II(6)	7	77
				JOB NO.		3914		
② QUANTITY SHEET								

PERMANENT EROSION CONTROL

STATION	STATION	AREA	SEEDING	LIME	MULCH COVER	SECOND SEEDING APPLICATION	WATER FOR GRASS	EROSION CONTROL MATTING
		SQ. FT.	ACRE	TONS	ACRE	ACRE	M. GAL.	SQ. YD.
16+00	28+16.57	119100	2.73	5.46	2.73	2.73	264.3	
55+22.56	98+10.50	211600	4.86	9.72	4.86	4.86	470.4	
ENTIRE PORTION								350
TOTAL (F-041-1(6))			7.59	15.18	7.59	7.59	734.7	350
28+16.57	33+16.60	34614	0.79	1.58	0.79	0.79	76.5	
36+16.60	46+57	75500	1.73	3.46	1.73	1.73	167.5	
53+22.56	55+22.56	8010	0.18	0.36	0.18	0.18	17.4	
98+10.50	100+10.50	12361	0.28	0.56	0.28	0.28	27.1	
101+00.50	104+00.50	12351	0.28	0.56	0.28	0.28	27.1	
ENTIRE PORTION								150
PLANT SITES, EQUIP. STORAGE AREAS & BORROW AREAS			2.00	4.00			96.8	
TOTAL (BRF-041-1(6))			5.26	10.52	3.26	3.26	412.4	150
TOTAL (ENTIRE JOB)			12.85	25.70	10.85	10.85	1147.1	500

BASIS OF ESTIMATE:

SEEDING - TO BE PERFORMED ON ALL SLOPES.
 LIME - 2 TONS PER ACRE
 MULCH COVER - 1 ACRE PER ACRE SEEDING.
 SECOND SEEDING APPLICATION - TO BE PERFORMED ON ALL SLOPES.
 WATER FOR GRASS - 10 GAL. PER SQ. YD. OR 48.4 M. GAL. PER ACRE SEEDING.
 10 GAL. PER SQ. YD. OR 48.4 M. GAL. PER ACRE SECOND SEEDING.
 EROSION CONTROL MATTING - TO BE PERFORMED AS DIRECTED BY THE ENGINEER.

TEMPORARY EROSION CONTROL

STATION	STATION	SIDE	TYPE	TEMPORARY SEEDING	MULCH COVER	WATER FOR GRASS	DIVERSION DITCH	BALED STRAW FILTER BARRIER
				ACRE	ACRE	M. GAL.	LIN. FT.	BALE
17+00	28+16.57	RT.	E-12,E-1				1117	18
55+22.56	98+10.50	RT.	E-12,E-1				4288	66
TOTAL (F-041-1(6))								5405
28+16.57	33+16.60	RT.	E-12,E-1				500	9
36+16.60	46+57	RT.	E-12,E-1				1040	18
53+22.56	55+22.56	RT.	E-12,E-1				200	3
98+10.50	100+10.50	RT.	E-12,E-1				200	3
101+00.50	103+00.50	RT.	E-12,E-1				200	3
ENTIRE JOB				E-1,E-3				380
25+00	46+57	DETOUR		0.94	0.94	45.5		
51+57	58+00	DETOUR		0.30	0.30	14.5		
94+00	100+25	DETOUR		0.29	0.29	14.0		
100+75	108+00	DETOUR		0.26	0.26	12.6		
TOTAL (BRF-041-1(6))				1.79	1.79	86.6	2140	416
TOTAL (ENTIRE JOB)				1.79	1.79	86.6	7545	500

NOTE: LOCATIONS AND QUANTITIES SHOWN ABOVE ARE APPROXIMATE ESTIMATIONS AND ARE SUBJECT TO CHANGE BY THE ENGINEER TO FIT EXISTING ON SITE CONDITIONS DURING THE CONSTRUCTION OF THE PROJECT. ALL BALED STRAW FILTER BARRIERS TO BE USED ON TYPE E-1 INSTALLATIONS WILL BE PAID FOR AS BALED STRAW FILTER BARRIER (TYPE E-1) BY THE BALE. TYPE E-1 INSTALLATIONS ARE AT 200' INTERVALS.

GUARD RAIL (TYPE A)

STATION	STATION	SIDE	LIN. FT.	TERMINAL ANCHOR POSTS
				EACH
31+16.60	33+16.60	RT.	200	1
32+41.60	33+16.60	LT.	75	1
36+16.60	38+16.60	LT.	200	1
36+16.60	36+91.60	RT.	75	1
44+56.73	46+56.73	RT.	200	1
45+81.73	46+56.73	LT.	75	1
53+22.56	55+22.56	LT.	200	1
53+22.56	53+97.56	RT.	75	1
98+10.50	100+10.50	RT.	200	1
99+35.50	100+10.50	LT.	75	1
101+00.50	103+00.50	LT.	200	1
101+00.50	101+75.50	RT.	75	1
TOTAL (BRF-041-1(6))			1650	12

DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
11-8-82	11-8-82			6	ARK.	F-BRF-041-(6)	8	77
				JOB NO.		3914		
① 1622W, 23W, 1029W - QUANT. - 25219								

SCHEDULE OF BRIDGE QUANTITIES - JOB NO. 3914

BRIDGE NO.	CODE NO.	NAME PLATE TITLE	ITEM NO.	801	SP# 802	SP# 802	803	804	SP# 805	SP# 805	805	SP# 807	SP# 807	SP# 808	812	816	603	205	SP JOB 3914	SP JOB 3914	SP JOB 3914	SP JOB 3914		SP JOB 3914	
			UNIT OF STRUCTURE	UNCLASSIFIED EXCAVATION FOR STRUCTURES -BRIDGE	CLASS S CONCRETE	CLASS S(AE) CONCRETE	BOILED LINSEED OIL	REINFORCING STEEL (GRADE 60)	PRECAST CONCRETE PILING (16" OCTAGONAL)	PRECAST CONCRETE PILING (18" OCTAGONAL or 16" SQUARE)	STEEL BEARING PILING (HP 10 x 42)	STRUCTURAL STEEL IN PLATE GIRDER SPANS (A36)	STRUCTURAL STEEL IN PLATE GIRDER SPANS (A572-GR. 50)	ELASTOMERIC BEARINGS	BRIDGE NAME PLATES (TYPE "C")	DUMPED RIPRAP	TEMPORARY BRIDGE STRUCTURES	REMOVAL OF EXISTING BRIDGE STRUCTURES	ARMORED JOINT WITH NEOPRENE STRIP SEAL	REMODELING EXISTING CONCRETE BRIDGE FLOORS	REPAIR, REMODELING AND WIDENING EXISTING BENTS	BRIDGE FLOOR REPAIR		BRIDGE FLOOR OVERLAY	
1623W	X020	LITTLE MISSOURI RIVER RELIEF	END BENTS 1 & 11		23.20			2628		335						1	427	282							
			INT. BENTS 2-10		56.90			8359	1203																
			TWO 30' R.C. SLAB SPANS			161.50	6.8	25707																	
			EIGHT WIDENED 30' R.C.D.G. SPANS			400.70	27.3	67026																	
			TOTALS FOR BRIDGE NO. 1623W		80.10	562.00	34.1	103720	1203	335						1	427	282		0.21		0.36	0.17	26	
1029W	X071	LITTLE MISSOURI RIVER	END BENTS 1 & 15		13.74			1837	285							1	397	286							
			INT. BENTS 2-4 & 9-14		55.26			7980	1280																
			INT. BENT 5	19	20.66			2897			80														
			INT. BENTS 6 & 7	367	225.08			22522																	
			INT. BENT 8	18	17.56			2384			100														
			ELEVEN WIDENED 30' R.C.D.G. SPANS			551.80	37.5	92306																	
			335'-8" CONT. COMP. PL. GIRDER UNIT			432.10	38.1	105034				201650	201140	1.0						88.0					
TOTALS FOR BRIDGE NO. 1029W	404	332.30	983.90	75.6	234960	1565		180	201650	201140	1.0	1	397	286	1.00	0.77	88.0	0.50	0.76	36		715			
1622W	X020	LAKE SLOUGH	END BENTS 1 & 4		13.80			1840	269																
			INT. BENTS 2 & 3		12.30			1780	269																
			THREE WIDENED 30' R.C.D.G. SPANS			151.10	10.2	25280																	
			TOTALS FOR BRIDGE NO. 1622W		26.10	151.10	10.2	28900	538						1	349	278		0.02		0.14	0.07	10		195
TOTALS FOR JOB NO. 3914				404	438.50	1697.00	119.9	367580	3306	335	180	201650	201140	1.0	3	1177	846	1.00	1.00	88.0	1.00	1.00	72		1430

- △ Refers to SP 802-5.
 △ SP 807-5 applies to this item.
 △ See Table.



BRIDGE NO.	PORTION - BRIDGES INCLUDED IN THIS ITEM
1623W	17 R.C.D.G. Spans and 17 Conc. Pile Bents
1029W	3-110' Pony Truss Spans

Note: The Three 110' Pony Truss Spans shall be salvaged for re-erection. All other material shall become the property of the Contractor.

Revised Dumped Riprap Quantities 8 Nov. 82. K.M.G.

ALTERNATE NO. 1

SCHEDULE OF BRIDGE QUANTITIES
LITTLE MISSOURI RIVER BRS. & APPRS.
PIKE COUNTY

ROUTE 27 SEC. 4

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KMG DATE: 26 APR. 82

CHECKED BY: JLS DATE: 6-18-92 SCALE: NONE

DESIGNED BY: DATE:

BRIDGE NO. 1622W, 1029W, 8 1623W DRAWING NO. 25219

JOHN SAGE
DESIGN, SURVEY SUPERVISOR

David Pinkerton
BRIDGE ENGINEER

SCHEDULE OF BRIDGE QUANTITIES - JOB NO. 3914

BRIDGE NO.	CODE NO.	NAME	PLATE TITLE	ITEM NO.	801	SP#802	SP#802	803	804	△ SP#805	△ SP#805	△ 805	SP#807	SP#807	SP#808	812	816	603	△ 205	SP JOB 3914	SP JOB 3914				
				UNIT	CU. YD.	CU. YD.	CU. YD.	GAL.	LB.	LIN. FT.	LIN. FT.	LIN. FT.	LB.	LB.	LUMP SUM	EACH	CU. YD.	LUMP SUM	LUMP SUM	LIN. FT.	LUMP SUM				
1623W	X020	LITTLE MISSOURI RIVER RELIEF		END BENTS 1411		23.15			2580		335						⊙ 227 282								
				INT. BENTS 2-10		70.65			9335	1203															
				TEN 30' R.C. SLAB SPANS			802.00	34.1	128145							1									
				TOTALS FOR BRIDGE NO. 1623W		93.80	802.00	34.1	140060	1203	335					1	⊙ 227 282		0.25		0.17				
1629W	X071	LITTLE MISSOURI RIVER		END BENTS 1415		17.40			2085	285							⊙ 337 286								
				INT. BENTS 2-4 & 9-14		70.65			9286	1280															
				INT. BENT 5	19	22.60			3082			80													
				INT. BENTS 6 & 7	367	225.10			22525																
				INT. BENT 8	18	19.55			2580			100													
				ELEVEN 30' R.C. SLAB SPANS			882.05	37.5	140947							1									
				335' 8" CONT. COMP. PL. GIRDER UNIT			432.05	38.1	105035				201650	201140	1.0					88.0					
				TOTALS FOR BRIDGE NO. 1029W	404	355.30	1314.10	75.6	285540	1565		180	201650	201140	1.0	1	⊙ 337 286	1.00	0.72	88.0	0.76				
1622W	X020	LAKE SLOUGH		END BENTS 144		17.40			2085	269							⊙ 344 278								
				INT. BENTS 2 & 3		15.70			2115	269															
				THREE 30' R.C. SLAB SPANS			241.50	10.2	38550							1									
				TOTALS FOR BRIDGE NO. 1622W		33.10	241.50	10.2	42750	538						1	⊙ 344 278		0.03		0.07				
				TOTALS FOR JOB NO. 3914	404	482.20	2357.60	119.9	468350	3306	335	180	201650	201140	1.0	3	⊙ 1113 846	1.00	△ 1.00	88.0	1.00				

△ Refers to SP 802-5
 △ SP 807-5 applies to this Item
 △ See "Table"

△

BRIDGE NO.	PORTION OF BRIDGES INCLUDED IN THIS ITEM
1623W	25 R.C.D.G. Spans and 17 Conc. Pile Bents
1029W	3-110' Pony Truss Spans and 11 R.C.D.G. Spans
1622W	3 R.C.D.G. Spans

Note: The Three 110' Pony Truss Spans shall be salvaged for re-erection. All other material shall become the property of the Contractor.

⊙ Revised Dumped Riprap Quantities 8 Nov. 82. K.M.G.

JOHN SAGE
 DESIGN SQUAD SUPERVISOR

DRAWN BY: KMG
 CHECKED BY: JAS
 DESIGNED BY: *John Pinkerton*
 BRIDGE ENGINEER

ALTERNATE NO. 2
 SCHEDULE OF BRIDGE QUANTITIES
 LITTLE MISSOURI RIVER BRS. & APPRS.
 PIKE COUNTY
 ROUTE 27 SEC. 4
 ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.
 DRAWN BY: KMG
 CHECKED BY: JAS
 DESIGNED BY: *John Pinkerton*
 BRIDGE NO. 1622W, 1029W, 81623W
 DATE: 6-12-82
 SCALE: NONE
 DRAWING NO. 25220

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
10/18/82	87-10-13	11-6-82	87-11-9-82	6	ARK.	F-BRF-041-1(6)	10	77
				JOB NO.		3914		

② SUMMARY OF QUANTITIES & REVISIONS

REVISIONS

DATE	DESCRIPTION	SHEET NO.
10-18-82	ADDED JOB SPECIAL "UTILITY ADJUSTMENTS"	2 & 10
11-8-82	REVISED DUMPED RIPRAP QUANTITIES AND DETAILS	8,9,10,17, & 36

SUMMARY OF QUANTITIES

ITEM NO.	ITEM	QUANTITIES		TOTAL	UNIT
		F-041-1(6)	BRF-041-1(6)		
201	CLEARING	2.50	2.00	4.50	STATION
201	GRUBBING	2.50	2.00	4.50	STATION
SP-202-1	REMOVAL AND DISPOSAL OF PIPE CULVERTS	1	1	1	EACH
SP-202-1	REMOVAL AND DISPOSAL OF FENCE	3539	2261	5800	LIN. FT.
SP-210	UNCLASSIFIED EXCAVATION	783	16,087	16,870	CU. YD.
SP-210	BORROW	59087	51,216	110,303	CU. YD.
210	SPECIAL COMPACTION OF EARTHWORK	59772	66,513	126,285	CU. YD.
305	GRAVEL BASE COURSE (CLASS GR-3)	6912	10,216	17,128	TON
SP-309	GRAVEL IN HOT MIX ASPHALT STABILIZED BASE COURSE	1144	803	1,947	TON
SP-309	ASPHALT CEMENT IN HOT MIX ASPHALT STABILIZED BASE COURSE	48	33	81	TON
401	PRIME COAT	5206	7420	12,626	GALLON
401	TACK COAT	1788	701	2,489	GALLON
SP-405	MINERAL AGGREGATE IN ASPHALTIC CONCRETE HOT MIX BINDER COURSE (TYPE 2)	3499	1398	4,897	TON
SP-405	ASPHALT CEMENT IN ASPHALTIC CONCRETE HOT MIX BINDER COURSE	180	72	252	TON
SP-408	MINERAL AGGREGATE IN ASPHALTIC CONCRETE HOT MIX SURFACE COURSE (TYPE 2)	2100	1827	3,927	TON
SP-408	ASPHALT CEMENT IN ASPHALTIC CONCRETE HOT MIX SURFACE COURSE	134	117	251	TON
504	APPROACH GUTTERS (TYPE J)		6	6	EACH
601	MOBILIZATION		1.00	1.00	LUMP SUM
602	FURNISHING FIELD OFFICE		1	1	BUILDING
602	FURNISHING FIELD LABORATORY		1	1	BUILDING
SP-603	MAINTENANCE OF TRAFFIC		1.00	1.00	LUMP SUM
606	18" REINFORCED CONCRETE PIPE CULVERTS (CLASS III)	40		40	LIN. FT.
SP-613	GUARD RAIL (TYPE A)		1650	1,650	LIN. FT.
613	TERMINAL ANCHOR POSTS (TYPE A)		12	12	EACH
SP-614	WIRE FENCE (TYPE C)	3539	2779	6,318	LIN. FT.
620	SEEDING	7.59	5.26	12.85	ACRE
620	LIME	15	11	26	TON
620,621	MULCH COVER	7.59	5.05	12.64	ACRE
620,621	WATER FOR GRASS	734.7	459.0	1,193.7	M.G.
SP-623	TEMPORARY SEEDING		1.79	1.79	ACRE
SP-623	SECOND SEEDING APPLICATION	7.59	3.26	10.85	ACRE
625	EROSION CONTROL MATTING	350	150	500	SQ. YD.
SP-107-1	BALED STRAW FILTER BARRIER (TYPE E-1)	84	416	500	BALE
SP-107-1	DIVERSION DITCH (TYPE E-12)	5405	2140	7,545	LIN. FT.
SP-782-1	TEMPORARY PAVEMENT MARKINGS	625	375	1,000	LIN. FT.
614	14' STEEL GATES - ALTERNATE 1	2	3	5	EACH
614	14' ALUMINUM GATES - ALTERNATE 2	2	3	5	EACH
STRUCTURES OVER 20'-0" SPAN		BRF-041-1(6)		ALTERNATE 1	ALTERNATE 2
801	UNCLASSIFIED EXCAVATION FOR STRUCTURES - BRIDGE	404	404	CU. YD.	
SP-802	CLASS S CONCRETE	438.50	482.20	CU. YD.	
SP-802	CLASS S(AE) CONCRETE	1697.00	2357.60	CU. YD.	
803	BOILED LINSEED OIL	119.9	119.9	GALLON	
804	REINFORCING STEEL (GRADE 60)	367580	468350	LB.	
SP-805	PRECAST CONCRETE PILING (16" OCTAGONAL)	3306	3306	LIN. FT.	
SP-805	PRECAST CONCRETE PILING (18" OCTAGONAL OR 16" SQUARE)	335	335	LIN. FT.	
805	STEEL BEARING PILING (HP 10X42)	180	180	LIN. FT.	
SP-807	STRUCTURAL STEEL IN PLATE GIRDER SPANS (A36)	201650	201650	LB.	
SP-807	STRUCTURAL STEEL IN PLATE GIRDER SPANS (A572-GR 50)	201140	201140	LB.	
812	BRIDGE WHEEL ROLLERS (TYPE "B")	1.00	1.00	LUMP SUM	
816	DUMPED RIPRAP	3	3	EACH	
803	TEMPORARY BRIDGE STRUCTURES	Δ 1113.846	Δ 1113.846	CU. YD.	
SP-108-3814	REMOVAL OF EXISTING BRIDGE STRUCTURES	1.00	1.00	LUMP SUM	
SP-108-3814	ARMORED JOINT WITH NEOPRENE STRIP SEAL	1.00	1.00	LL SUM	
SP-108-3814	REPAIR, REMODELING AND WIDENING EXISTING BENTS	88.0	88.0	LIN. FT.	
SP-108-3814	REMODELING EXISTING CONCRETE BRIDGE FLOORS	1.00	1.00	LUMP SUM	
SP-108-3814	BRIDGE FLOOR REPAIR	1.00		LUMP SUM	
SP-108-3814	BRIDGE FLOOR OVERLAY	72		SQ. YD.	
		1430		SQ. YD.	

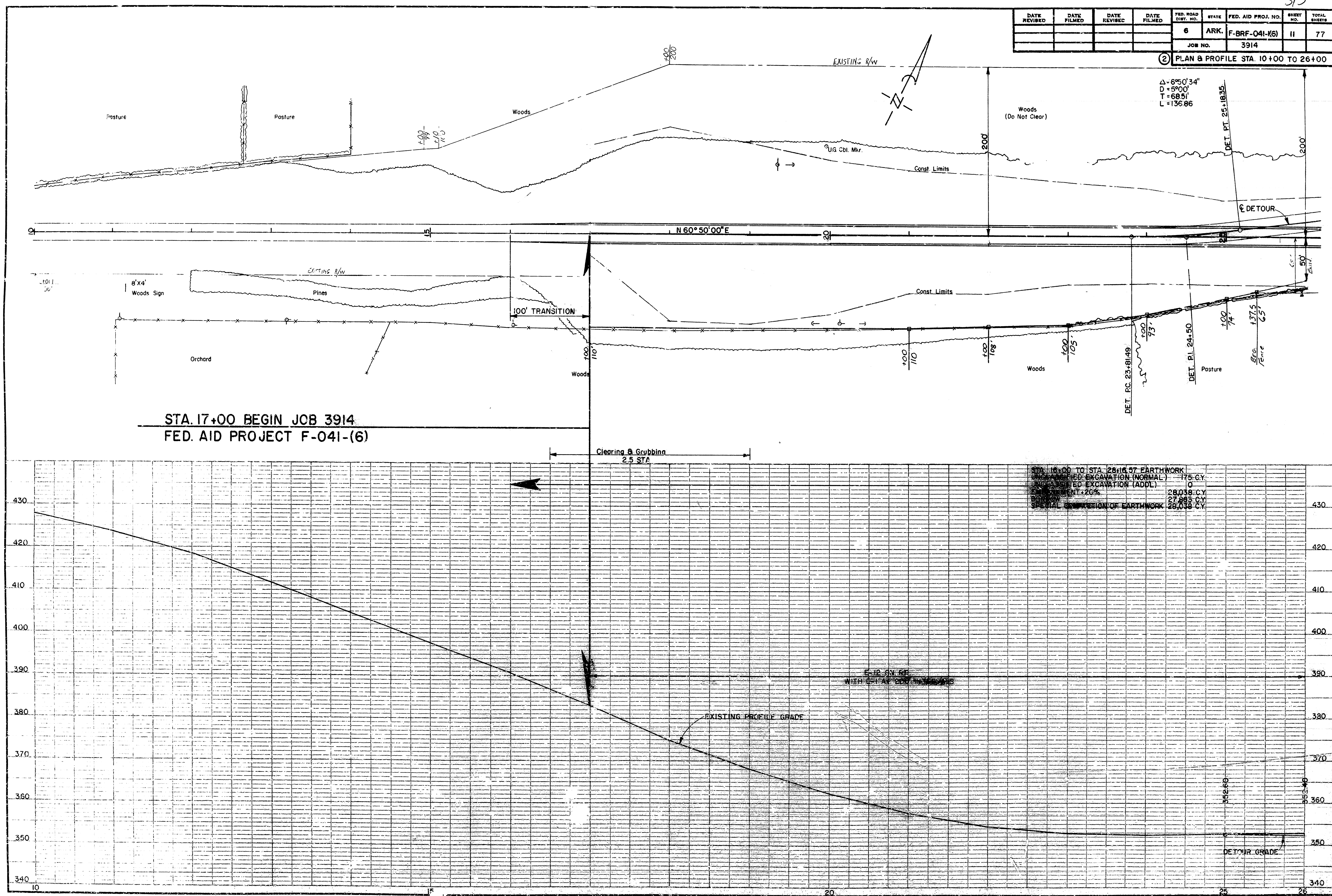
* ALTERNATE BID ITEMS

Δ Revised Dumped Riprap Quantities 8 Nov. 82. KM0

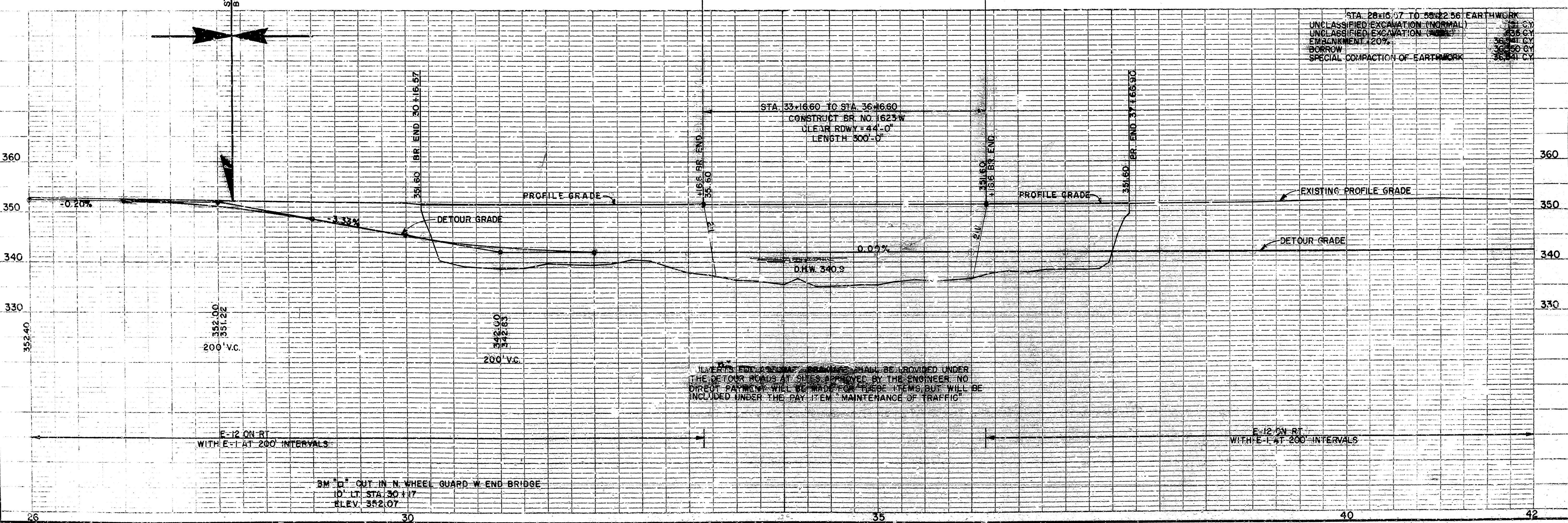
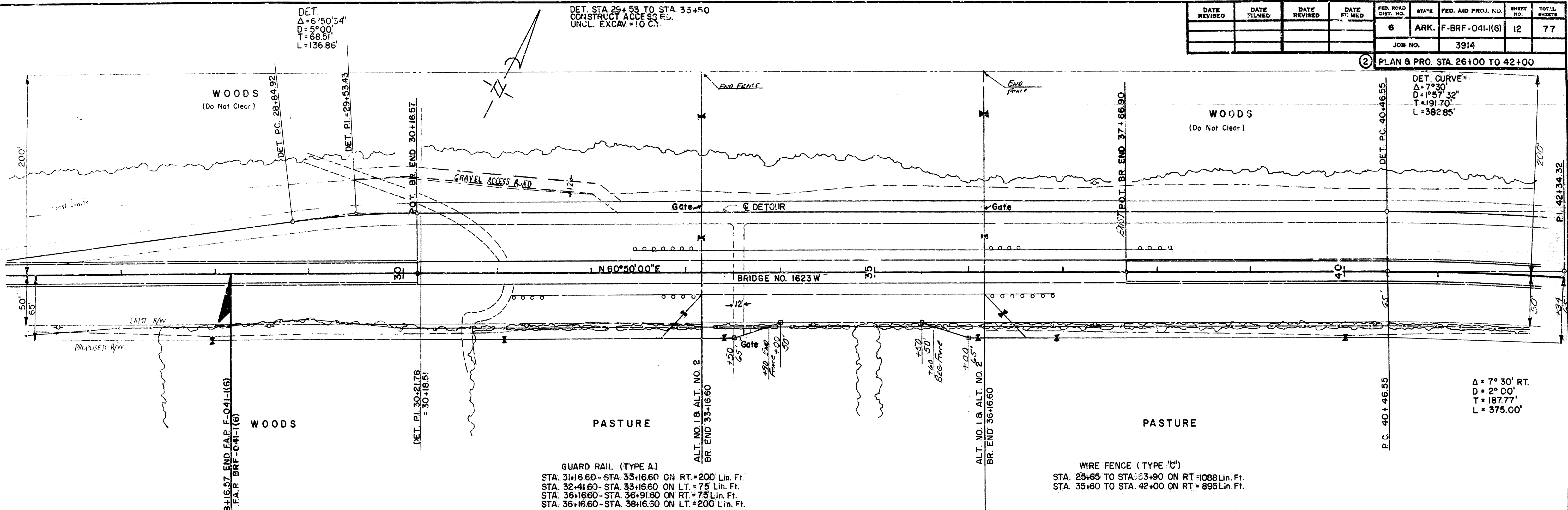
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	F-BRF-041-K6	11	77
				JOB NO.		3914		
② PLAN & PROFILE STA. 10+00 TO 26+00								

PLAN	DATE	BY
NOTED		
PLOTTED		
ALIGNMENT CHECKED		
PT. OF WAY CHECKED		

PROFILE	DATE	BY
NOTED		
GRADES CHECKED		
STRUCTURE LOCATIONS CHECKED		

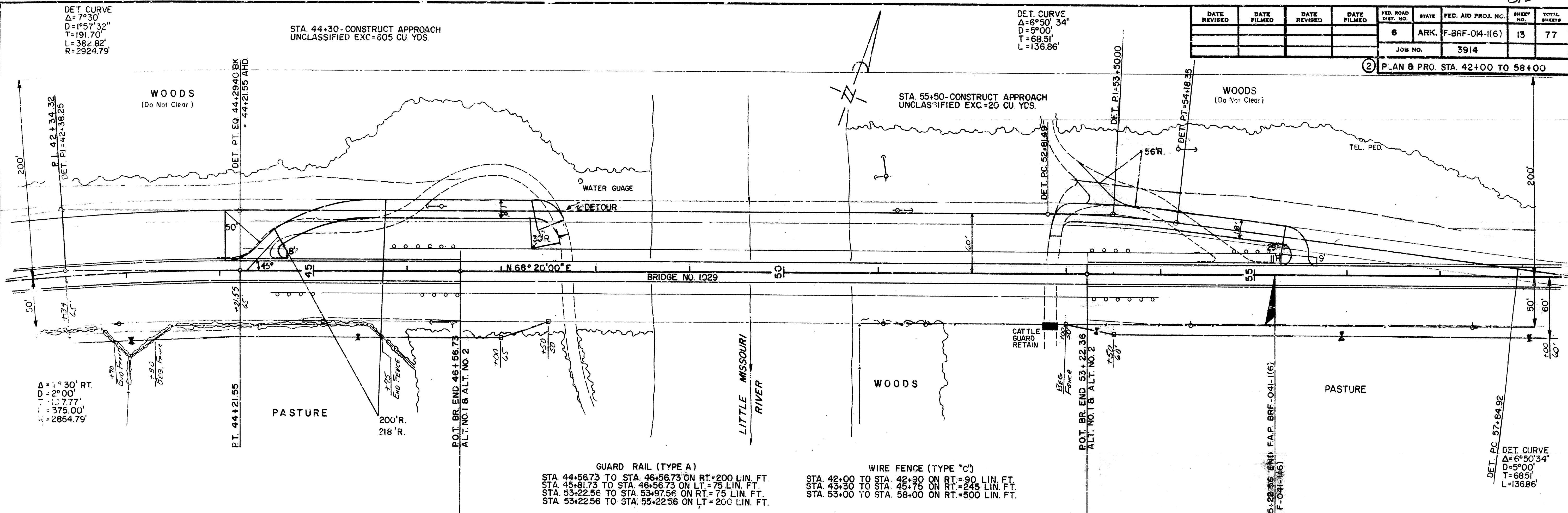


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOT. L. SHEETS
				6	ARK.	F-BRF-041-I(S)	12	77
				JOB NO.		3914		
JOB NO.								

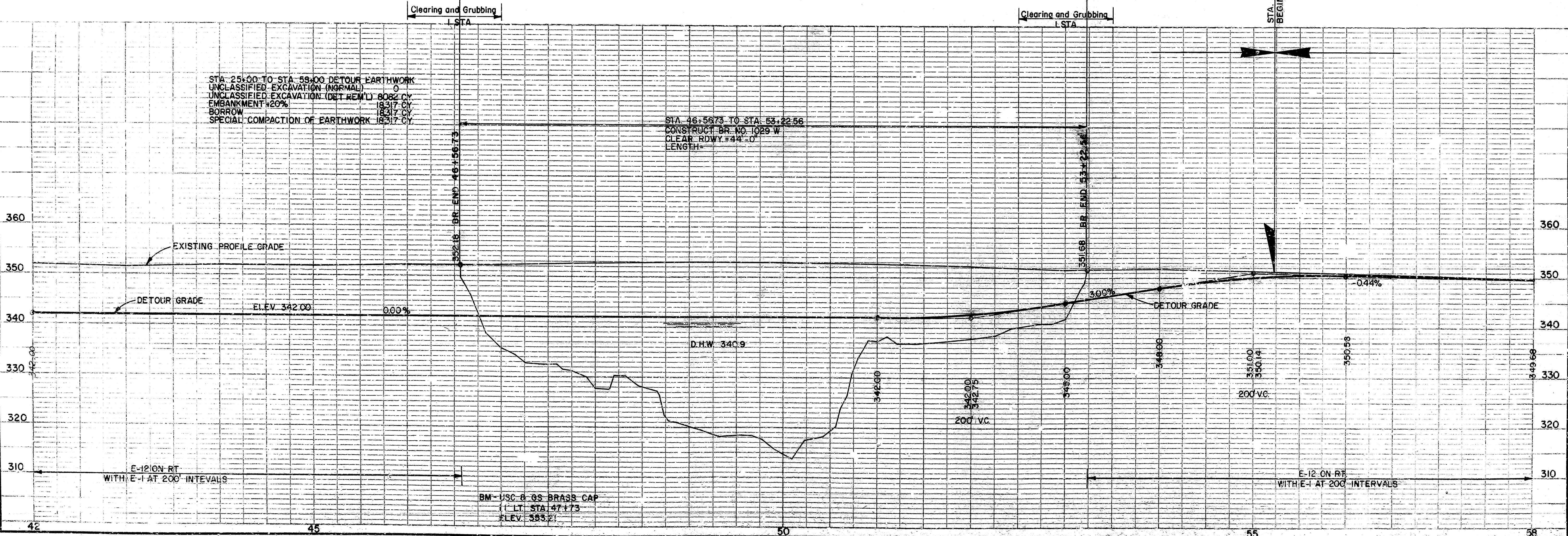


DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		3914		
				② P. AN & PRO. STA. 42+00 TO 58+00				

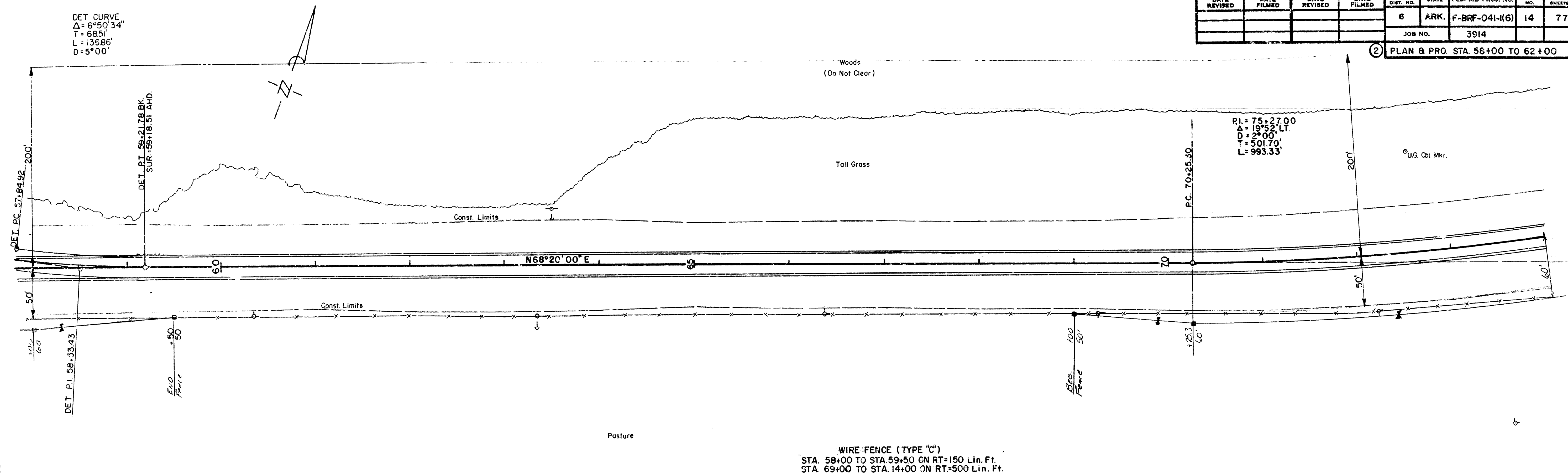
PLAN	DATE	BY
DESIGNED		
PLOTTED		
NOTE BOOK		
RT. OF WAY CHECKED		
NO.		



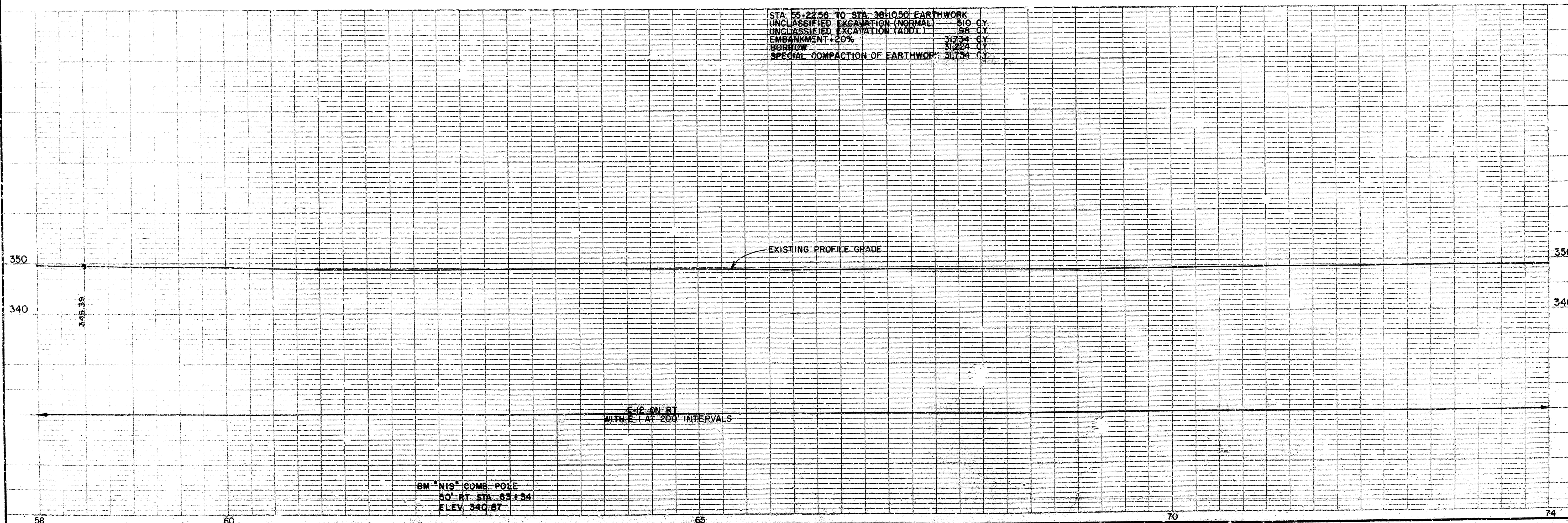
PROFILE	DATE	BY
DESIGNED		
PLOTTED		
NOTE BOOK		
GRADES CHECKED		
NO.		



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	F-BRF-041-I(6)	14	77
				JOB NO.		3914		

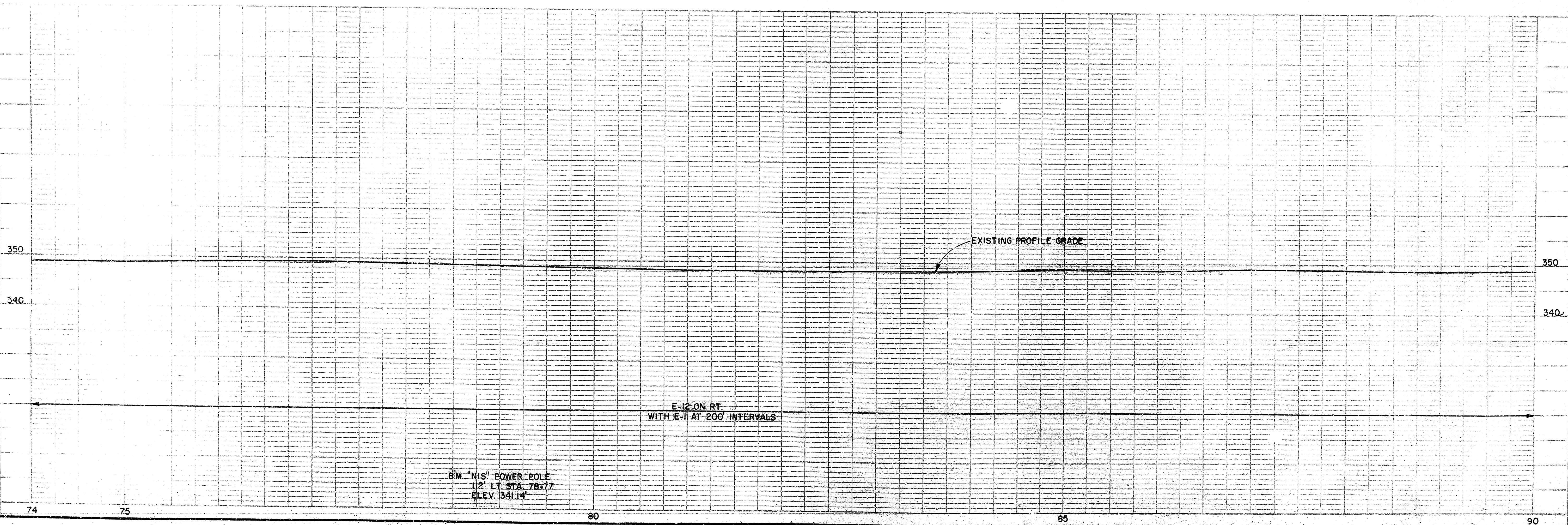
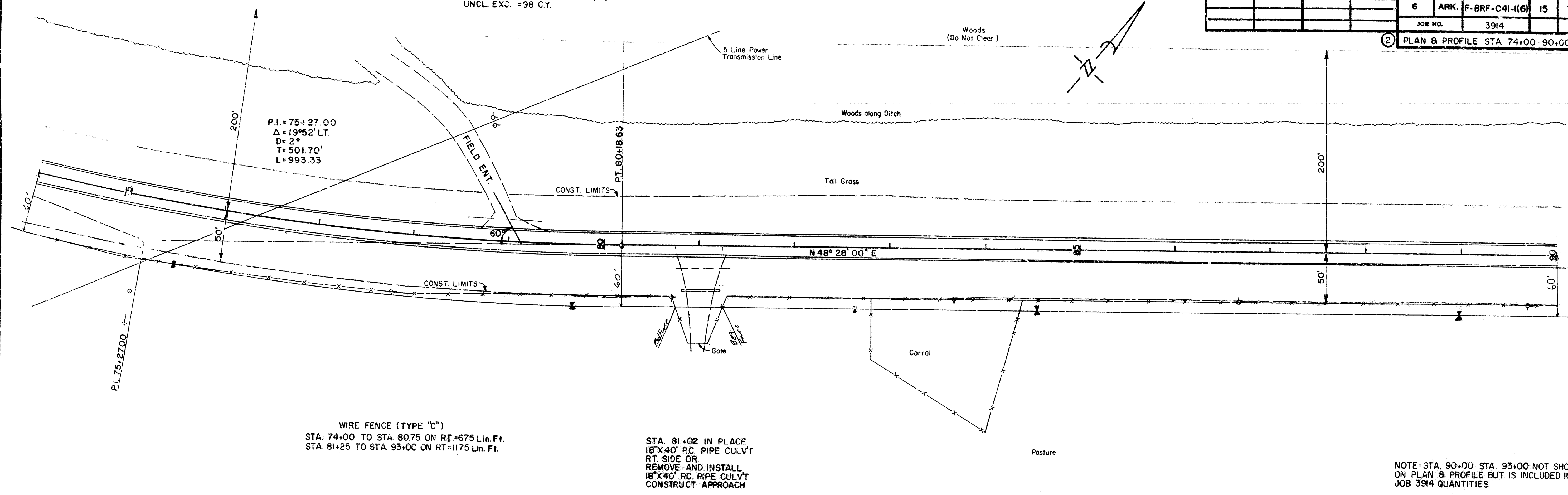


STA 55+22.56 TO STA 38+0.50 EARTHWORK	
UNCLASSIFIED EXCAVATION (NORMAL)	510 C.Y.
UNCLASSIFIED EXCAVATION (ADD'L)	98 C.Y.
EMBANKMENT +20%	31734 C.Y.
BORROW	31224 C.Y.
SPECIAL COMPACTION OF EARTHWORK	31734 C.Y.



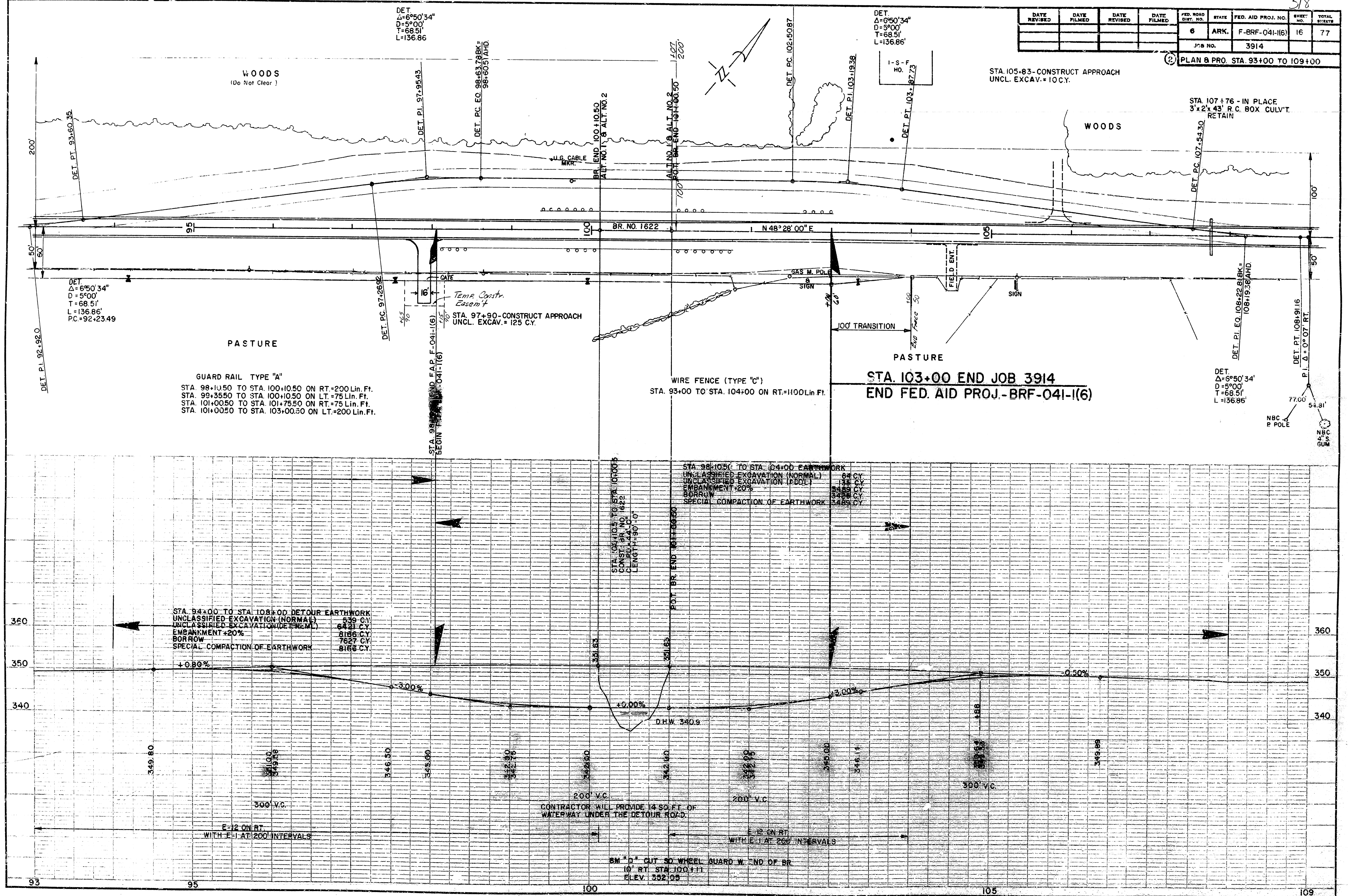
DATE REVISED	DA- FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	F-BRF-041-1(6)	15	77
				JOB NO.		3914		
				PLAN & PROFILE STA 74+00-90+00				

STA. 79+12-CONSTRUCT APPROACH
UNCL. EXC. = 98 C.Y.



PLAN	DATE	BY
DESIGNED		
NOTED		
NOTED		
NO.		

PROFILE	DATE	BY
DESIGNED		
NOTED		
NOTED		
NO.		



GENERAL NOTES

BENCH MARK: "X" CUT IN NORTH WHEEL GUARD OF WEST BRIDGE END IN "T", LEFT OF STA. 30+17. ELEV. 352.07.

DESIGN SPECIFICATIONS FOR NEW WORK: AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 1977 EDITION WITH CURRENT INTERIMS.

CONSTRUCTION SPECIFICATIONS: ARKANSAS STATE HIGHWAY
SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 1978 AND A.
PROVISIONS.

LIVE LOADING: HS 20-44

THE PROPOSED WORK CONSISTS OF REMODELING AND WIDENING EXISTING BRIDGE NO. 1623 FROM A 20' CLEAR ROADWAY TO A 44' CLEAR ROADWAY, AND SHORTENING ITS LENGTHS FROM 750' TO 300'. EIGHT REINFORCED CONCRETE DECK GIRDER SPANS AND NINE PILE BENTS ARE TO BE RETAINED AND WIDENED. TWO NEW R.C. SLAB SPANS AND TWO NEW PILE BENTS ARE TO BE CONSTRUCTED. SEVENTEEN PILE BENTS AND SEVENTEEN R.C.D.G. SPANS ARE TO BE REMOVED.

THE CONTRACTOR SHALL MAKE CHECK MEASUREMENTS AND MAKE ANY ADJUSTMENTS NECESSARY TO FIT THE NEW WORK TO THE EXISTING BRIDGE.

ALL CONCRETE IN THE SUBSTRUCTURE OF THE NEW WORK TO BE CLASS "S". ALL CONCRETE IN THE SUPERSTRUCTURE OF THE NEW WORK TO BE CLASS "SAE)." CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH $f_c = 3500$ PSI. ALL EXPOSED CORNERS TO BE CHAMFERED 3/4" UNLESS OTHERWISE NOTED. ALL CONCRETE TO BE POURED ON THE DRY.

ALL NEW REINFORCING STEEL SHALL CONFORM TO ASTM A615 OR A617, GRADE 60.

STRUCTURAL STEEL IN OPEN PARAPETS SHALL BE A36.

PILING IN BENTS 1 & 2 SHALL BE 18" OCTAGONAL OR 16" SQUARE PRECAST CONCRETE AND SHALL BE DRIVEN WITH AN APPROVED AIR, STEAM, OR DIESEL HAMMER TO A MINIMUM BEARING CAPACITY OF 55 TONS PER PILE.

NEW PILING IN BENTS 2 THRU 10 SHALL BE 16" OCTAGONAL PRECAST CONCRETE AND SHALL BE DRIVEN WITH AN APPROVED AIR, STEAM, OR DIESEL HAMMER TO A MINIMUM BEARING CAPACITY OF 44 TONS PER PILE, AND TO A MINIMUM PENETRATION OF 20' BELOW THE GROUND LINE. LENGTHS OF PILING SHOWN ARE ASSUMED FOR ESTIMATING PURPOSES ONLY. ACTUAL LENGTHS TO BE DETERMINED IN THE FIELD. DRIVE ONE 30" DIA. TEST PILE IN BENTS 2, 3, 8, 11. PILES IN END BENTS TO BE DRIVEN AFTER EMBANKMENT TO BOTTOM OF CAP IS IN PLACE.

THE CONCRETE DECK SHALL BE GIVEN A TINE FINISH AS SPECIFIED FOR FINAL FINISHING IN SUBSECTION 802.23 FOR CLASS 6, ROADWAY SURFACE FINISH.

FOR ADDITIONAL REQUIREMENTS, SEE SPECIAL PROVISIONS.

FOR DETAILS OF BENTS I & II, SEE DWG. NO. 25222

FOR DETAILS OF NEW R.C. SLAB SPANS, SEE DWG. NO. 25224

FOR DETAILS OF WIDENING R.C.D.G. SPANS, SEE DWG. NO. 25225 & 25226

FOR DETAILS OF WIDENING BENTS, SEE DWG. NO. 25223

DETOUR: FOR DETOUR, SEE ROADWAY PLANS.

HALF-SIZE DETAIL SHEETS OF THE EXISTING BRIDGE MAY BE OBTAINED FROM THE ARKANSAS HIGHWAY AND TRANSPORTATION DEPARTMENT UPON REQUEST TO THE BRIDGE ENGINEER.

ALTERNATE NO. 1

LAYOUT OF BRIDGE

LITTLE MISSOURI RIVER RELIEF
LITTLE MISSOURI RIVER BRS. & APPRS.
PIKE COUNTY

ROUTE 27 SEC. 4

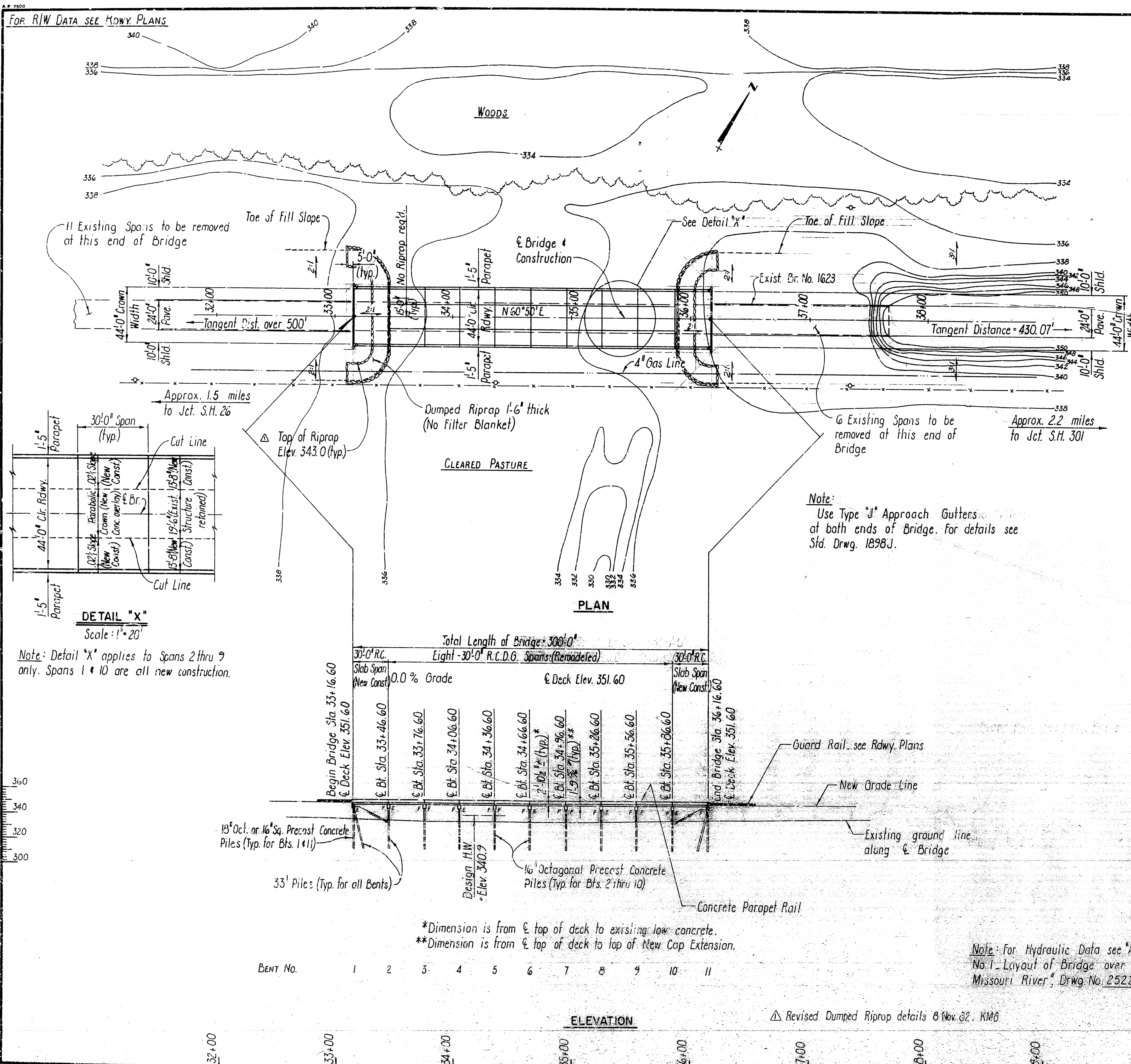
ARKANSAS STATE HIGHWAY COMMISSION

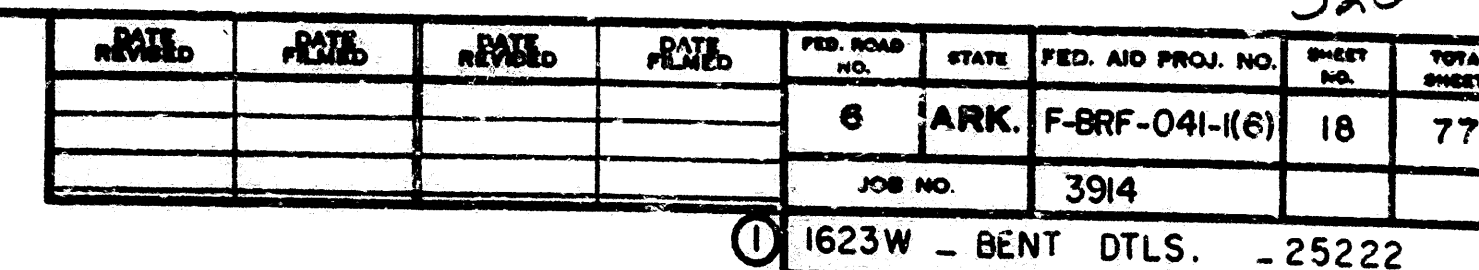
LITTLE ROCK, ARK.

DRAWN BY: K.M.G. DATE: 9 DEC 81
CHECKED BY: CES DATE: 6-10-82 SCALE: 1" = 40' or as shown
DATE: 1/5 DATE: -

BRIDGE NO. 1623W

DRAWING NO. 25221





BAR LIST - EACH BENT

MARK	NO. REQ'D.	LENGTH	PIN DIA.
B401	46	9'-6"	2"
B402	15	6'-4"	2"
B403	4	24'-2"	Str.
B404	*	2'-6"	Str.
B601	5	47'-11"	4 1/2"
B602	6	46'-7"	Str.
W401	16	3'-7"	Str.
W402	8	2'-7"	Str.
W403	12	4'-9"	Str.

Dimensions are out to out of Bars.

GENERAL NOTES

REINFORCING STEEL: REINFORCING STEEL SHALL CONFORM TO ASTM A615 OR A617, GRADE 60 (YIELD STRENGTH = 60,000 PSI).

FRONT ELEVATION
Scale: $\frac{3}{8}'' = 1'-0''$

SECTION A-A
Scale: $\frac{3}{4}'' = 1'-0''$

SECTION B-B
Scale: 3" = 1'-0"

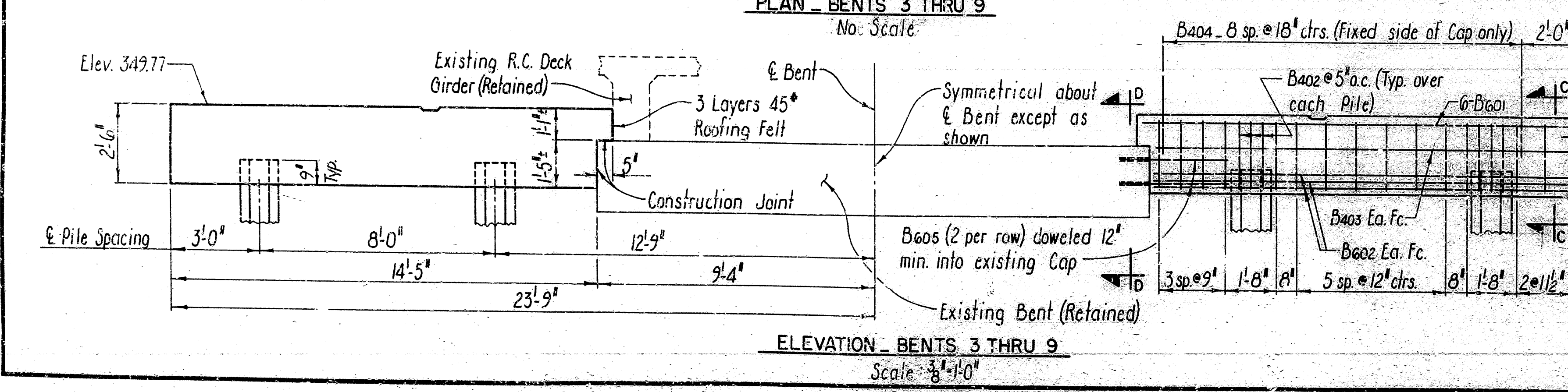
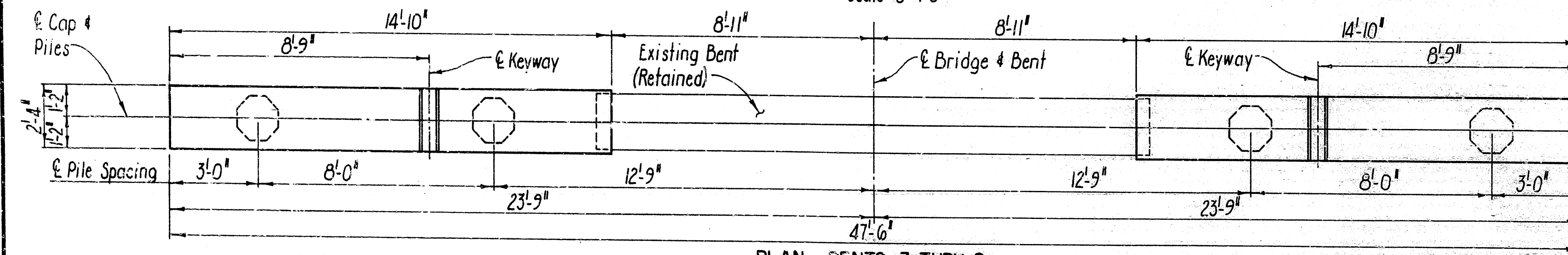
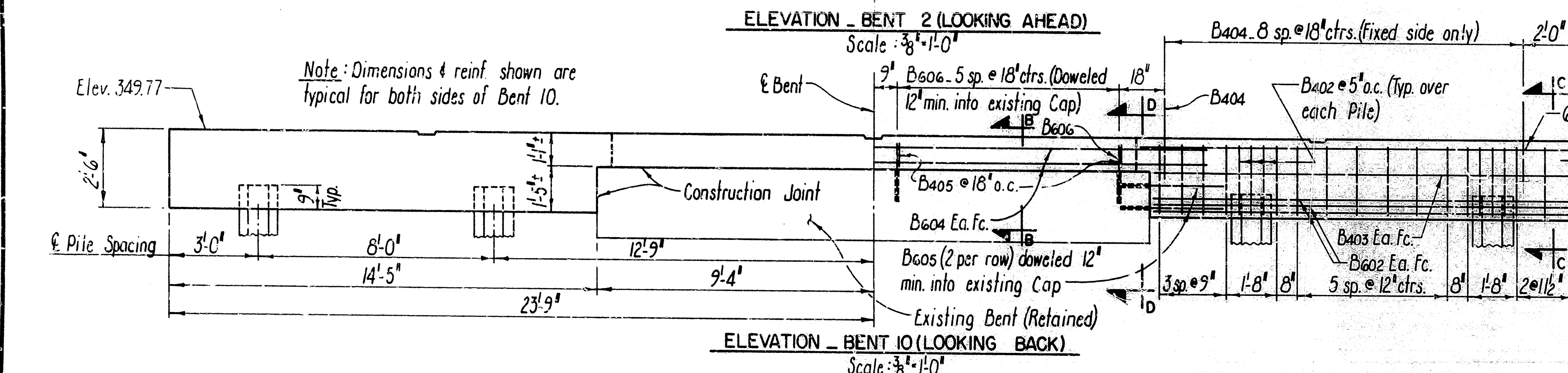
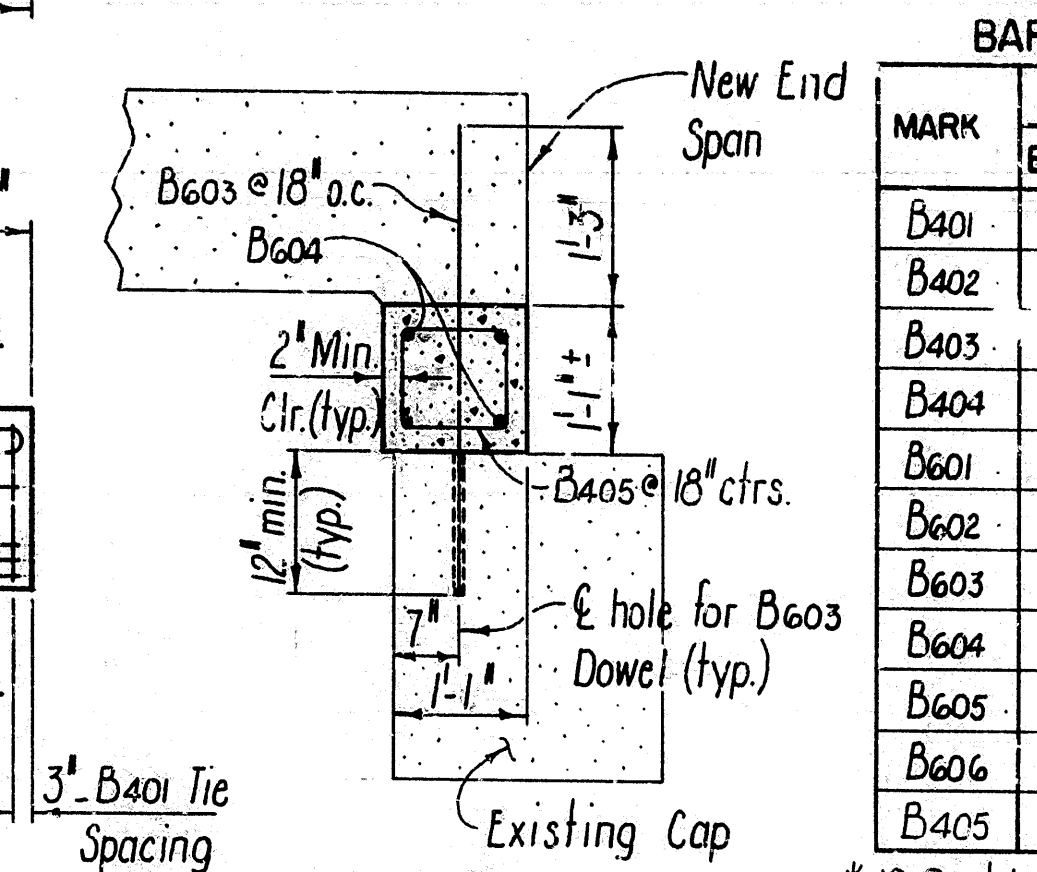
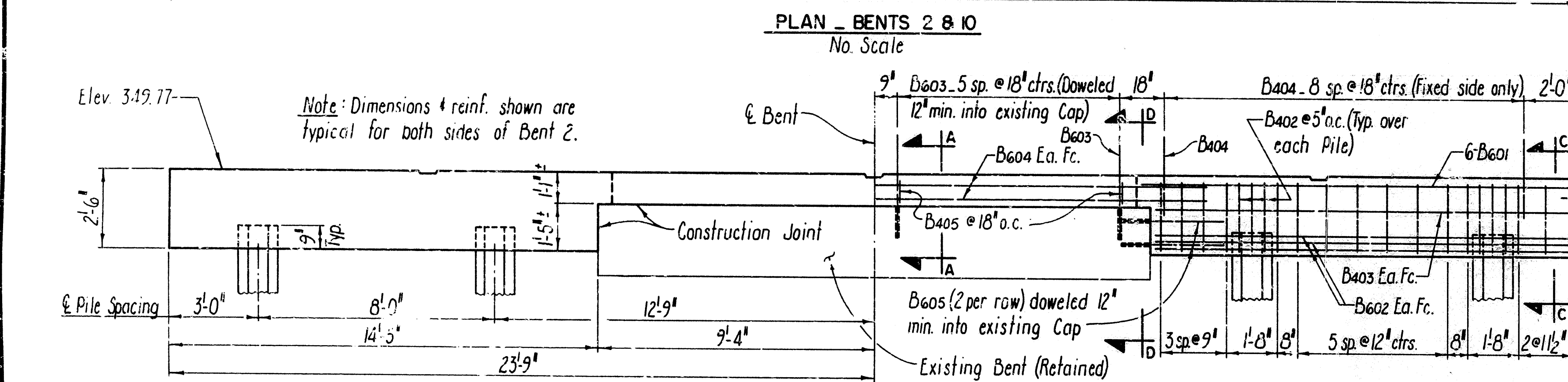
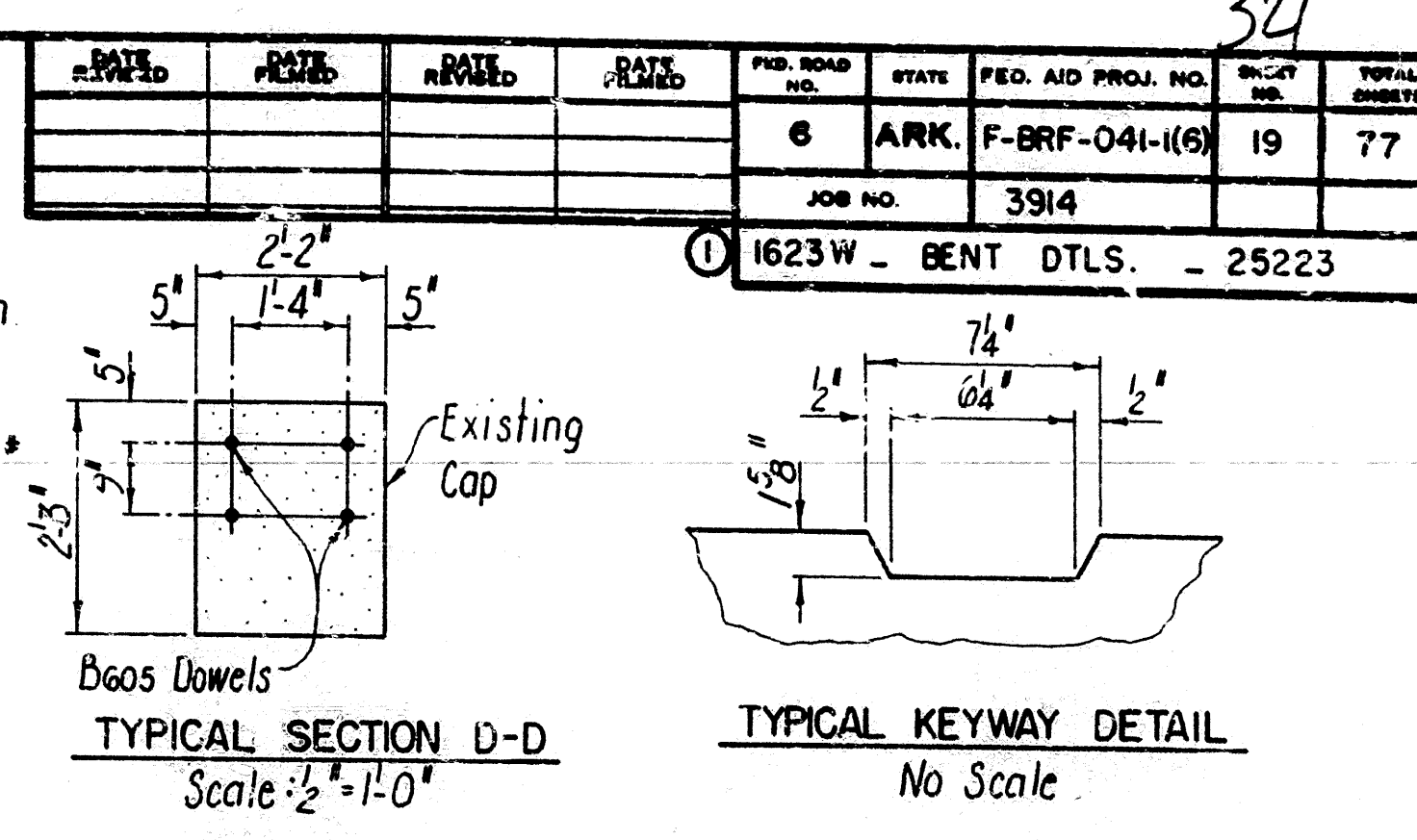
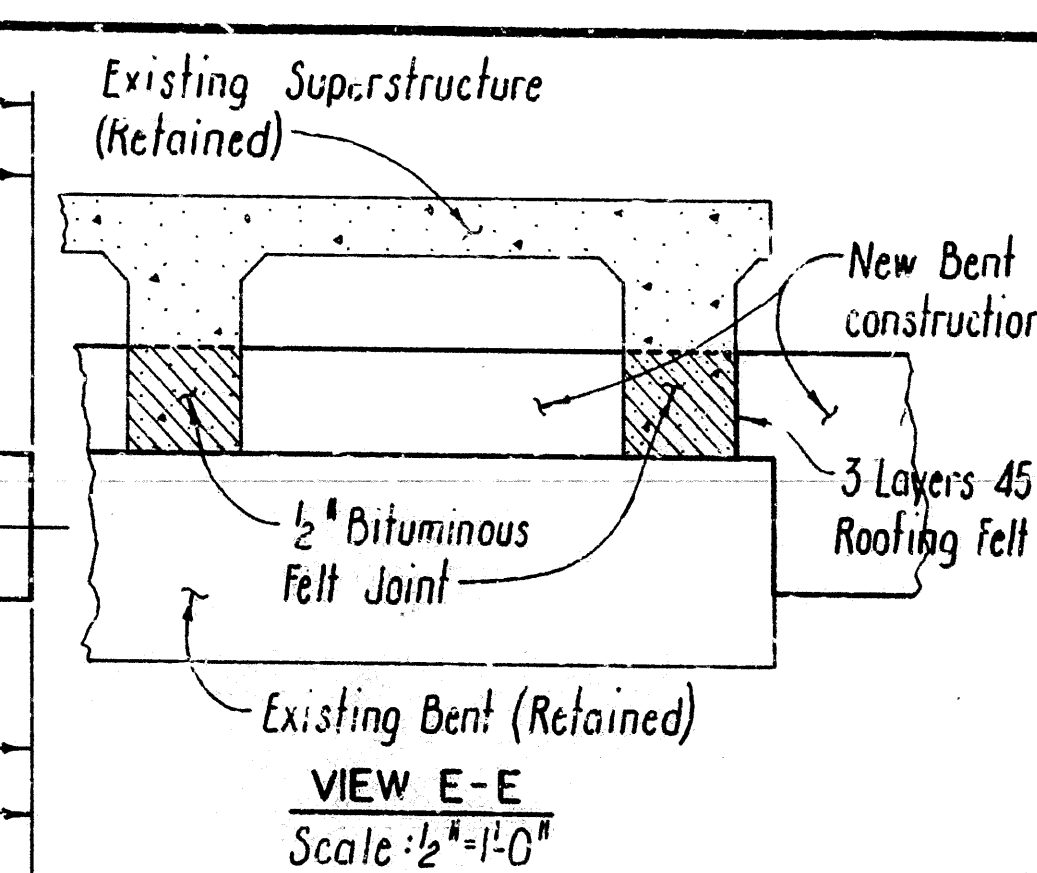
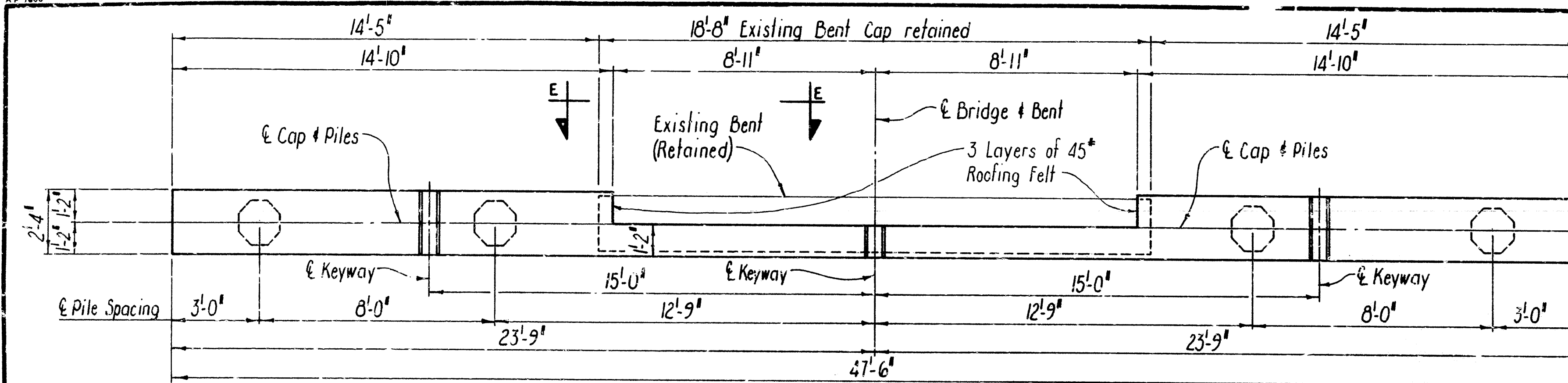
TYPICAL KEYWAY DETAIL
No Scale

DETAILS OF
END BENTS 1 & II
LITTLE MISSOURI RIVER RELIEF
PIKE COUNTY

ROUTE 27 SEC. 4
ARKANSAS STATE HIGHWAY COMMISSION

DRAWN BY: KMG DATE: 26 JAN 82
CHECKED BY: LSA DATE: 6/3/82 SCALE: AS SHOWN

BRIDGE NO. 1623W DRAWING NO. 25222



ALTERNATE NO. 1

DETAILS FOR
WIDENING INT. BENTS 2 THRU 10
LITTLE MISSOURI RIVER RELIEF
PIKE COUNTY

ROUTE 27 SEC. 4

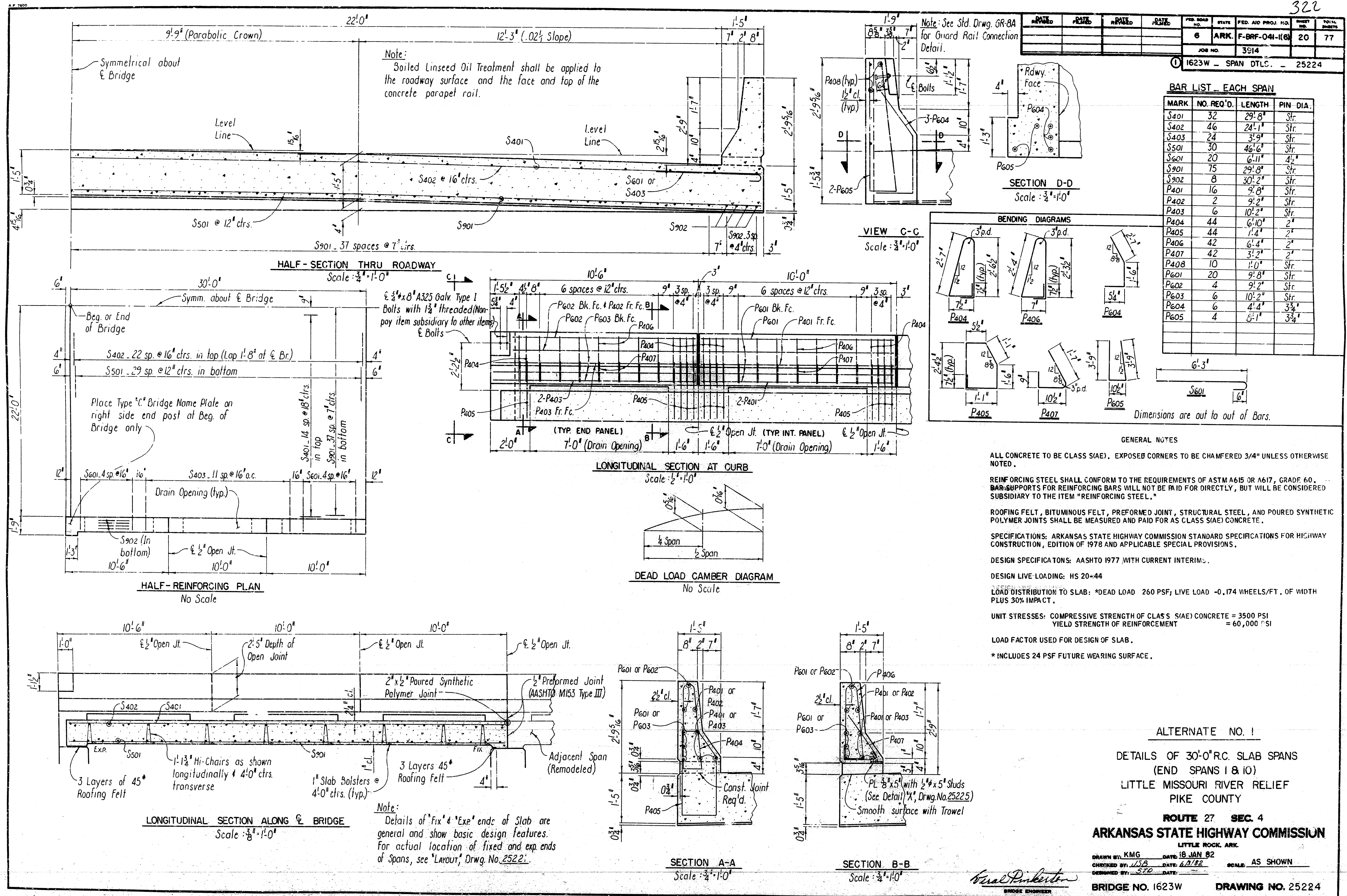
ARKANSAS STATE HIGHWAY COMMISSION

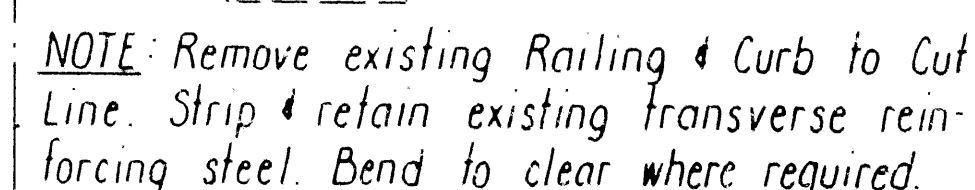
LITTLE ROCK, ARK.

DRAWN BY: KMG DATE: 29 JAN 82
CHECKED BY: LSB DATE: FEB 02
DESIGNED BY: STD DATE: -

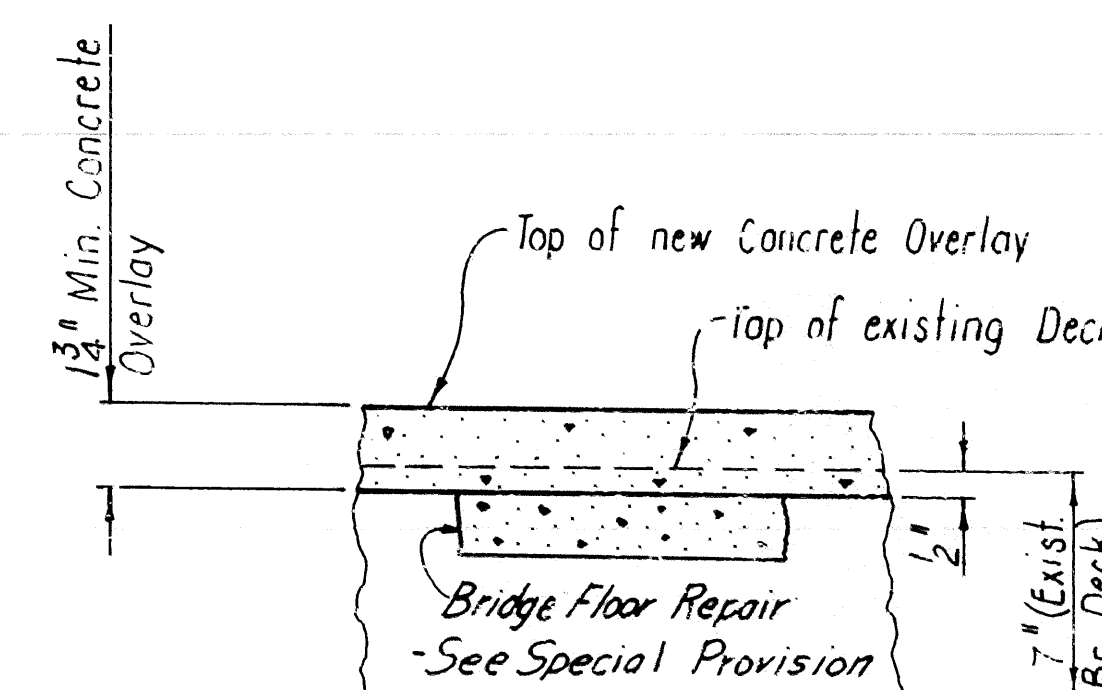
SCALE AS SHOWN

BRIDGE NO. 1623W DRAWING NO. 25223



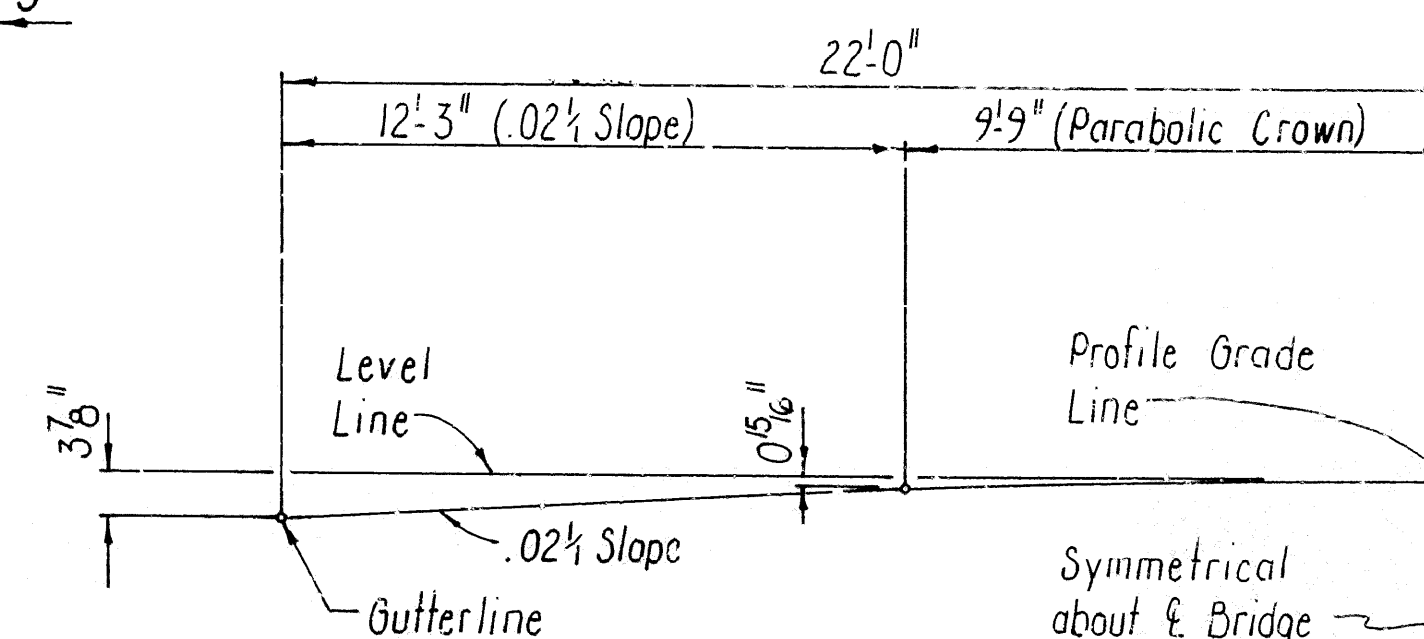


HALF - SECTION THRU ROADWAY
Scale: $\frac{3}{4}'' = 1'-0''$



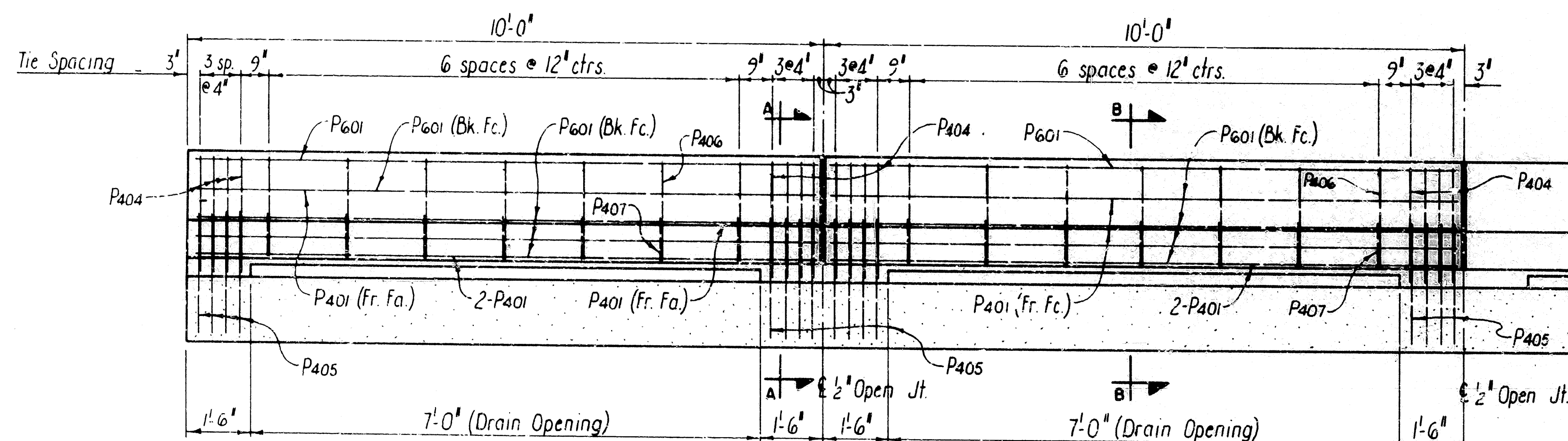
Note: Remove $\frac{1}{2}$ " of existing deck before overlaying with a minimum of $1\frac{3}{4}$ " of new concrete

DETAIL OF BRIDGE FLOOR OVERLAY



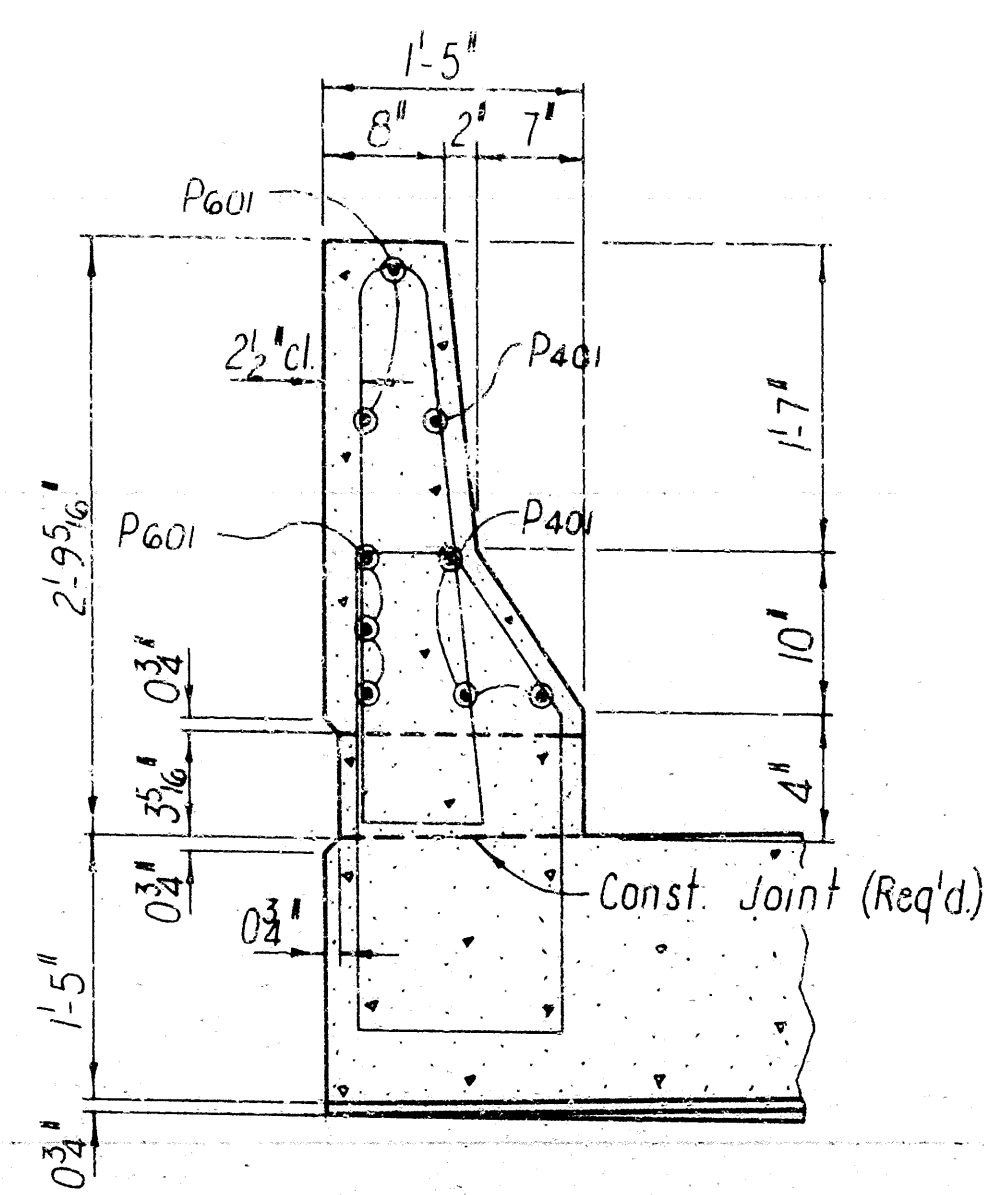
SKETCH OF ROADWAY X-SLOPE

No Scale

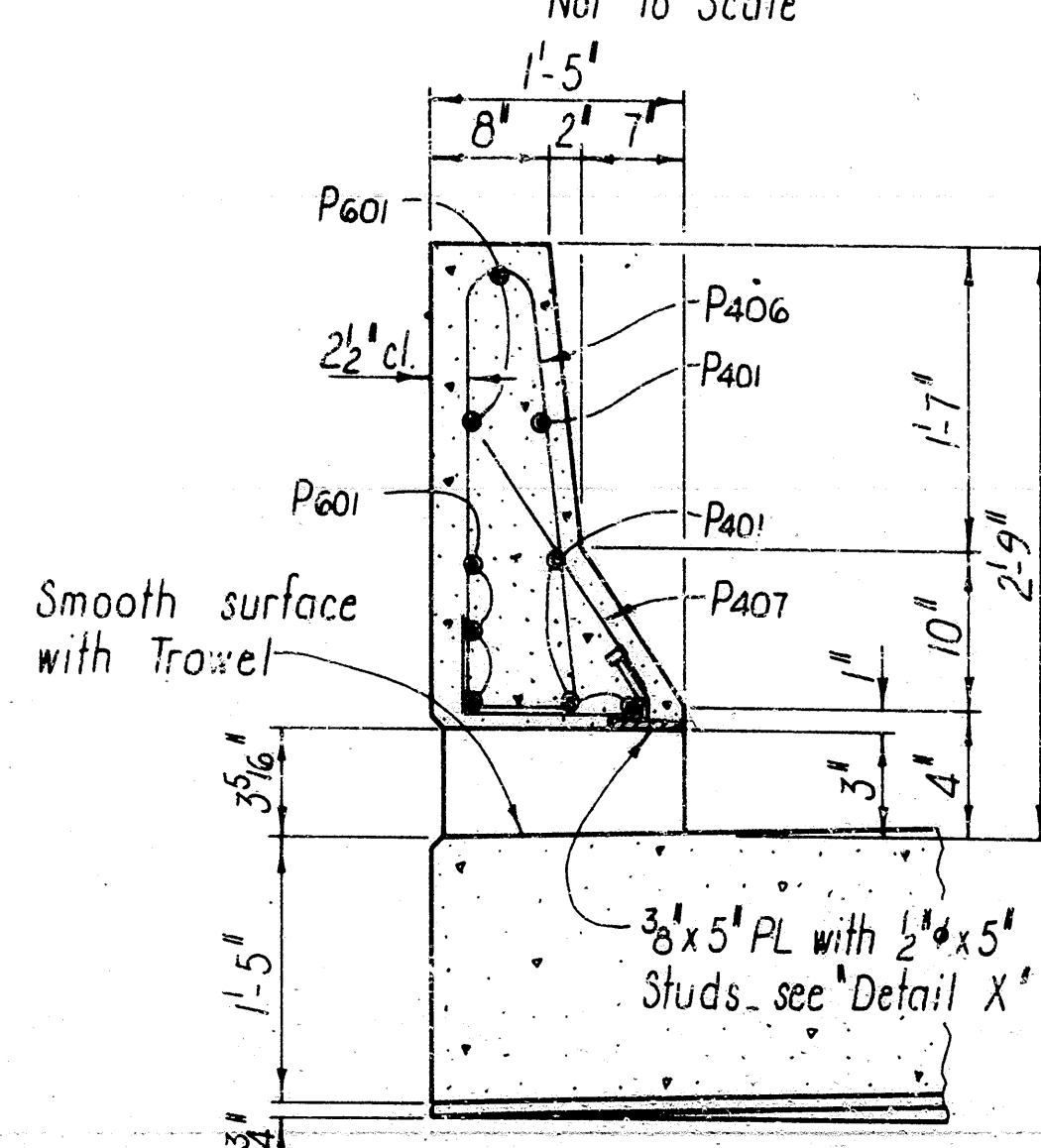


LONGITUDINAL SECTION AT CURB

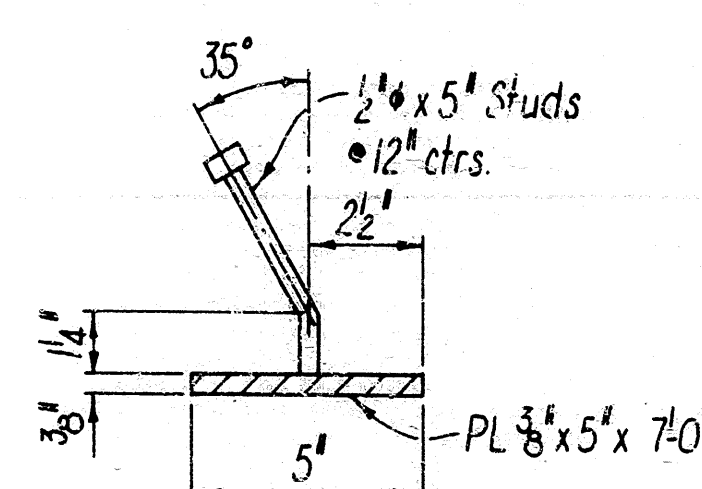
Not To Scale



SECTION A-A
Scale: 1" = 1'-0"



SECTION B-B
Scale: 1" = 1'-0"



DETAIL "X"
No Scale

NOTE: The surfaces of the $\frac{3}{8}$ " plates which will not be in contact with concrete shall receive two coats of paint in the shop. These coats shall be those specified as First Shop Coat and Second Field Coat in sub-section 807.59(a) (c) and SP807-10. Structural Steel shall meet the requirements of Section 807 except as noted.

The $2\frac{1}{2} \times 5$ " Studs shall be granular flux filled, solid fluxed, or equal, and automatically end welded to the $\frac{3}{8}$ " plate in accordance with recommendations of the manufacturer. Studs and plate to be measured and paid for as "Class S(AE) Concrete."

GENERAL NOTES

ALL CONCRETE TO BE CLASS S(AE). EXPOSED CORNERS TO BE CHAMFERED 3/4" UNLESS OTHERWISE NOTED

REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF ASTM A615 OR A617, GRADE 60. BAR SUPPORTS FOR REINFORCING BARS WILL NOT BE PAID FOR DIRECTLY, BUT WILL BE CONSIDERED SUBSIDIARY TO THE ITEM "REINFORCING STEEL."

ROOFING FELT, BITUMINOUS FELT, PREFORMED JOINT, STRUCTURAL STEEL, AND POURED SYNTHETIC POLYMER JOINTS SHALL BE MEASURED AND PAID FOR AS CLASS (SAE) CONCRETE.

SPECIFICATIONS: ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 1978 AND APPLICABLE SPECIAL PROVISIONS.

DESIGN SPECIFICATIONS: AASHTO 1977 WITH CURRENT INTERIMS

DESIGN LIVE LOADING: HS 20-44

LOAD DISTRIBUTION TO SLAB: *DEAD LOAD 260 PSF; LIVE LOAD -0.174 WHEELS/FT. OF WIDTH PLUS 30% IMPACT.

UNIT STRESSES: COMPRESSIVE STRENGTH OF CLASS S(AE) CONCRETE = 3500 PSI.
YIELD STRENGTH OF REINFORCEMENT = 60,000 PSI.

LOAD FACTOR USED FOR DESIGN OF NEW SLAB.

*INCLUDES 24 PSF FUTURE WEARING SURFACE

ALTERNATE NO. 1

SHEET 1 OF 2

DETAILS FOR WIDENING 30'-0" R.C.D.G. SPANS
(INT. SPANS 2 THRU 9)

LITTLE MISSOURI RIVER RELIEF

PIKE COUNTY
ROUTE 27 SEC. 4

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KMG DATE: 6 JAN. 82

CHECKED BY: 156

DATE: FEB 22

DESIGNED BY: ST

DATE: _____

SCALE: AS SHOWN

BRIDGE NO. 1623 W

DRAWING NO. 25225

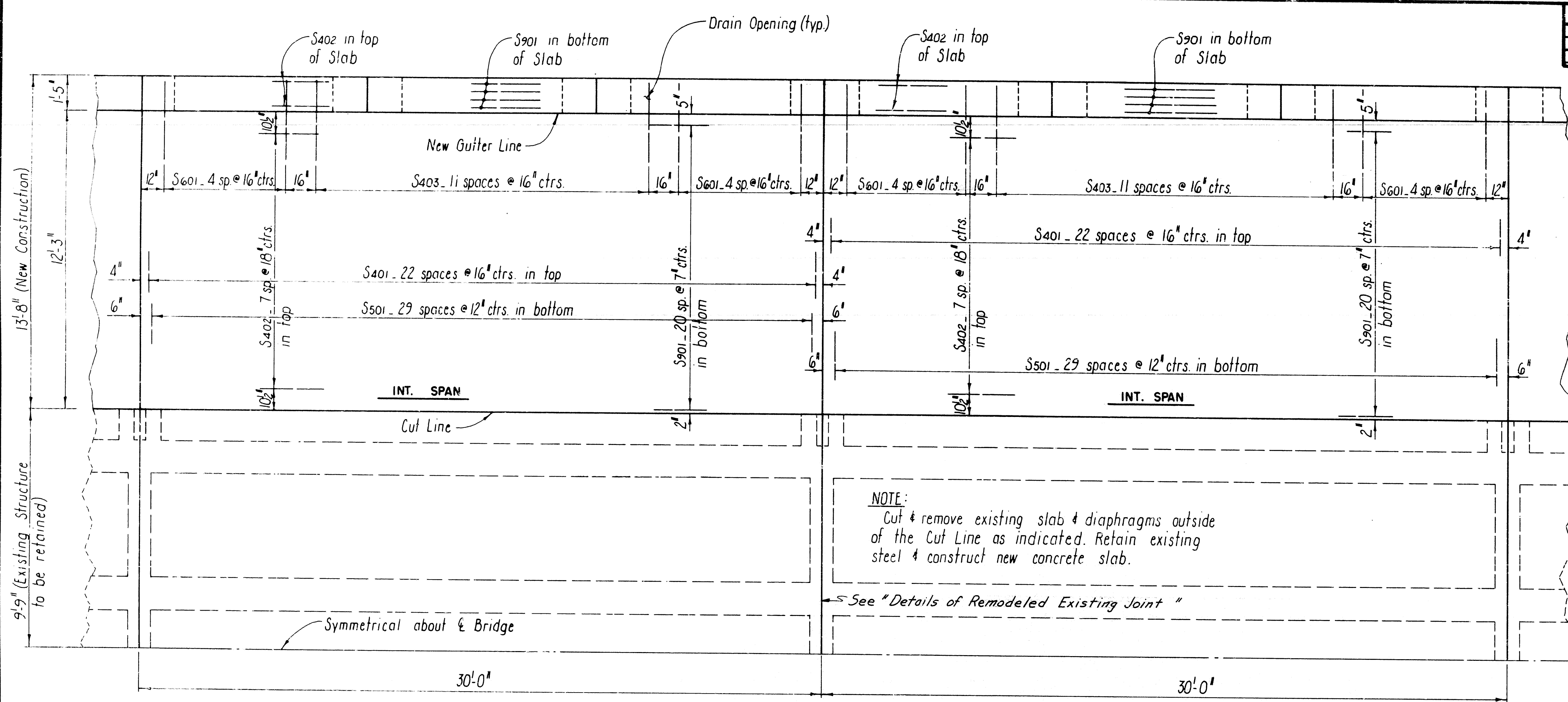
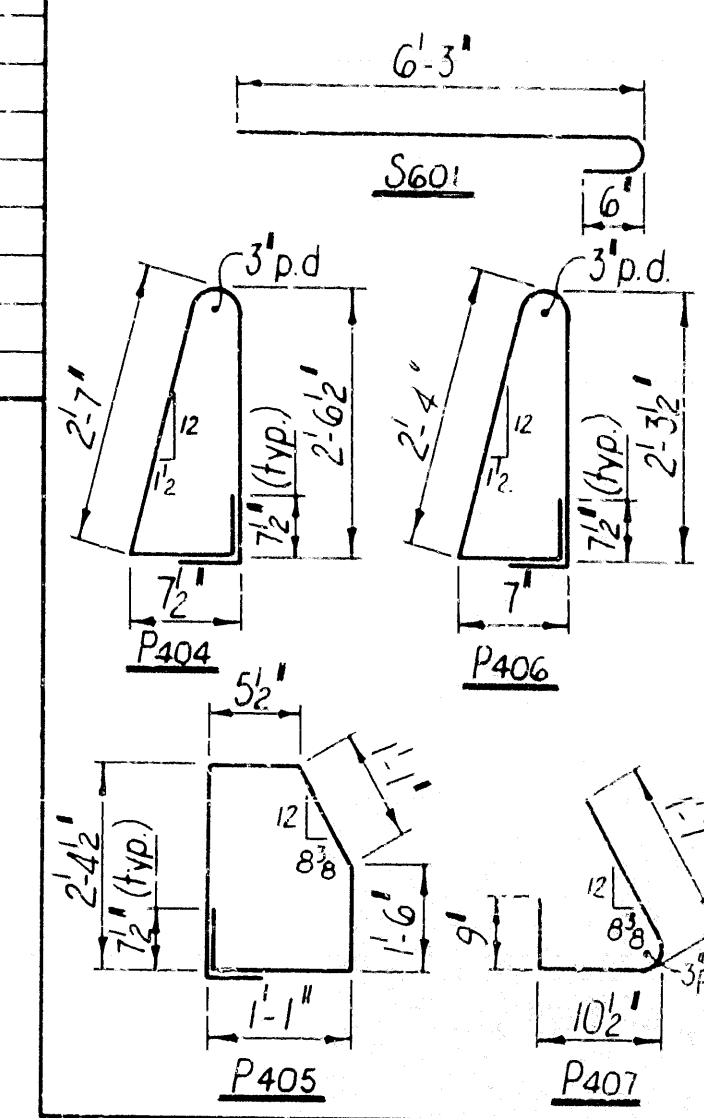
Vera Pinkerton
EDGE ENGINEER

DATE	REV.	DATE	REV.	DES. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	F-BRF-C41-K6	22	77
				JOB NO.	3914			

1623W - SPAN DTLS. - 25226

BAR LIST - EACH SPAN

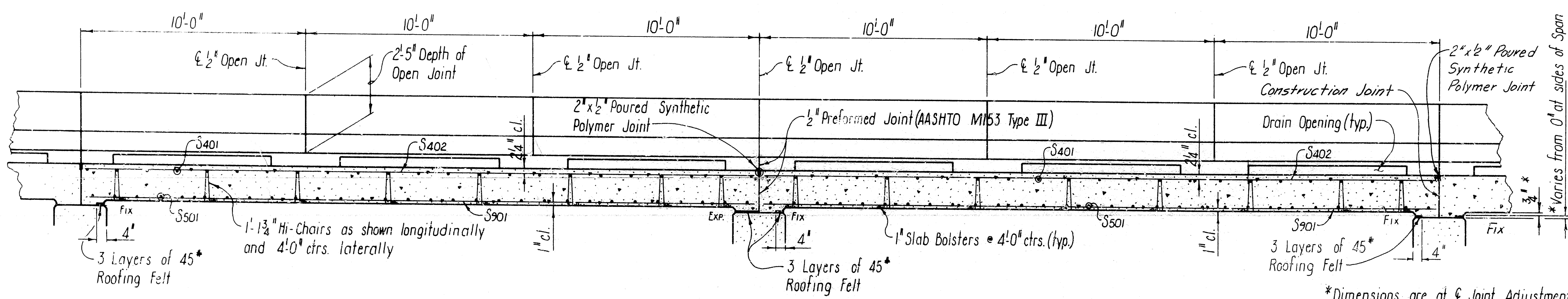
Mark	No. Req'd. (Int. Span only)	Length	Pin Dia.	Bending Diagrams (Dimensions are out to out of Bars)
S401	46	13'-5"	Str.	
S402	22	29'-8"	Str.	
S403	24	3'-9"	Str.	
S501	60	14'-6"	Str.	
S601	20	6'-11"	4 1/2"	
S901	50	29'-8"	Str.	
P401	24	9'-8"	Str.	
P404	48	6'-10"	2"	
P405	48	7'-4"	2"	
P406	42	6'-4"	2"	
P407	42	3'-2"	2"	
P601	30	9'-8"	Str.	



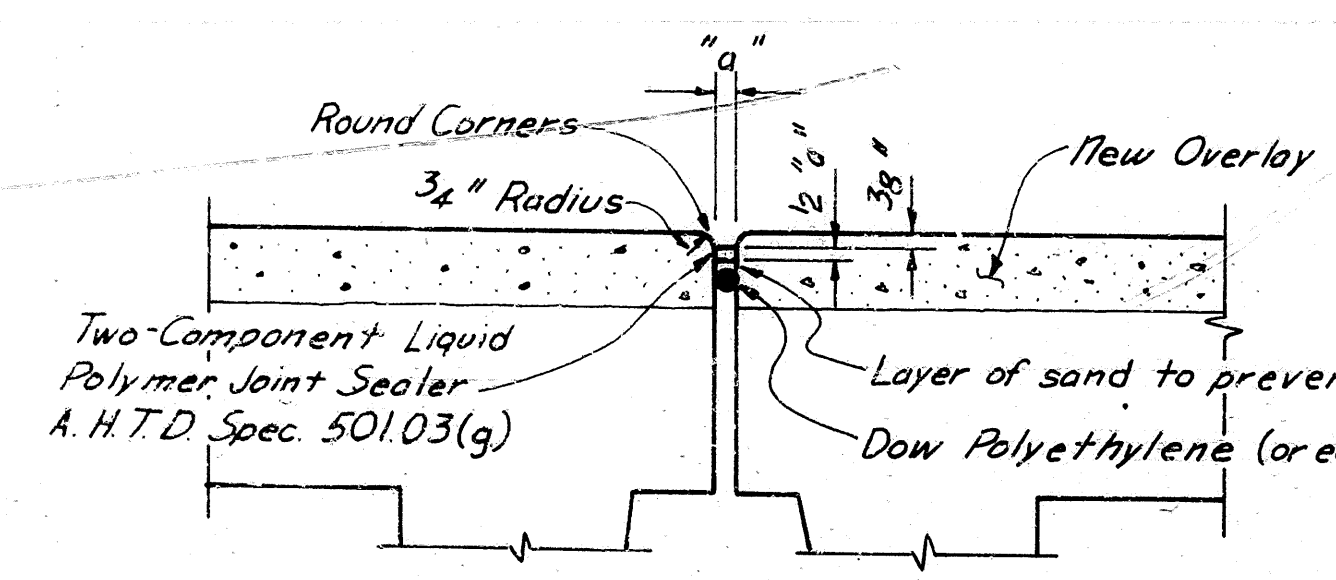
NOTE:
Cut & remove existing slab & diaphragms outside of the Cut Line as indicated. Retain existing steel & construct new concrete slab.

See "Details of Remodeled Existing Joint"

REINFORCING PLAN
Scale: 3/8" = 1'-0"



LONGITUDINAL SECTION THRU NEW SLAB
Scale: 3/8" = 1'-0"



DETAILS OF REMODELED EXISTING JOINT

No Scale

Note: No direct payment shall be made for joint materials and their installation. This work shall be considered subsidiary to Class S(AE) Concrete

*Dimensions are at & Joint. Adjustment shall be made due to Grade where required.

Note: For "General Notes" see Drwg. No. 25225

ALTERNATE NO. 1

SHEET 2 OF 2

DETAILS FOR WIDENING 30'-0" R.C.D.G. SPANS
(INT. SPANS 2 THRU 9)
LITTLE MISSOURI RIVER RELIEF
PIKE COUNTY
ROUTE 27 SEC. 4

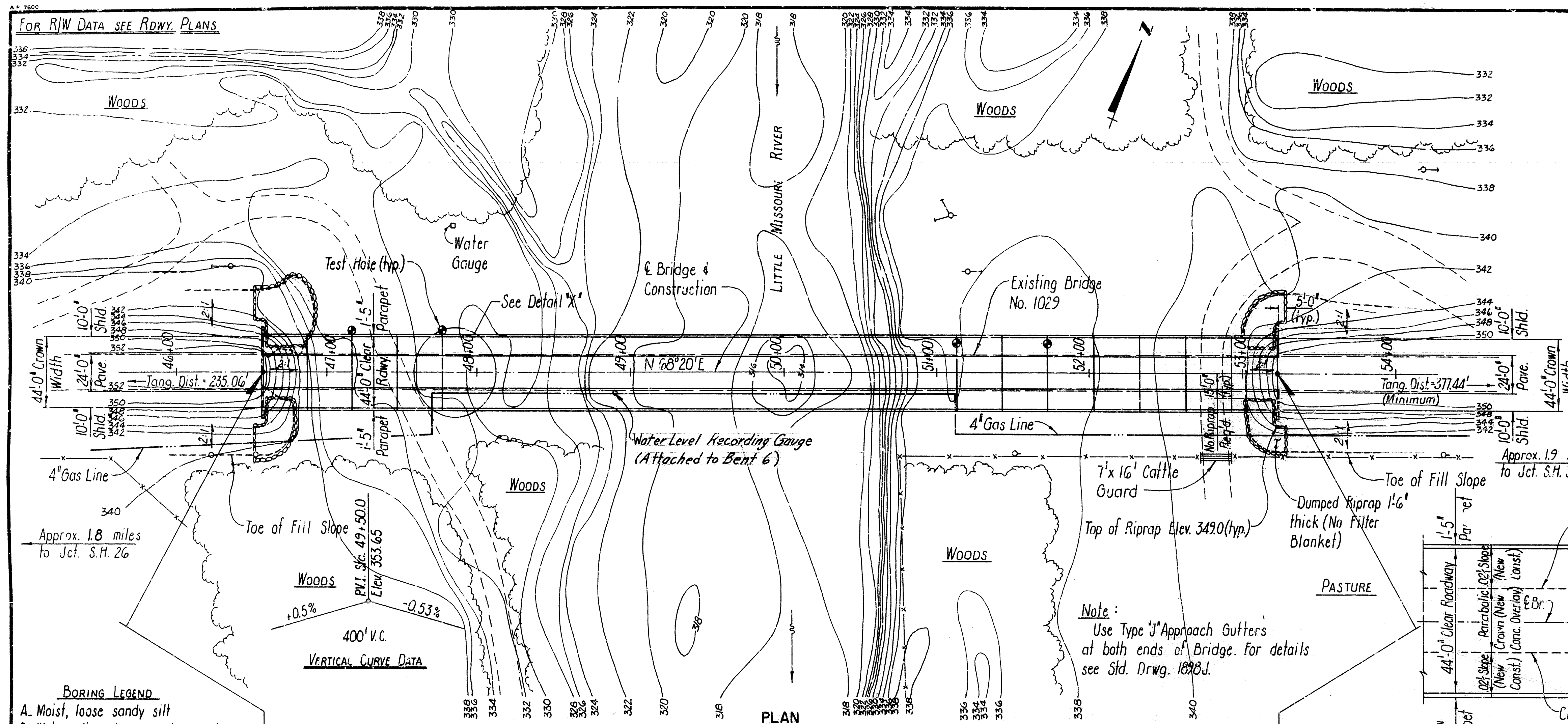
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KMG DATE: 7 JAN. 82
CHECKED BY: LJB DATE: 12 FEB. 82
DESIGNED BY: JTD DATE: 12 FEB. 82

BRIDGE NO. 1623W DRAWING NO. 25226

Gerald Pinkerton
BRIDGE ENGINEER



DATE	BY	DATE	BY	DATE	BY	DATE	BY
6	ARK	F-BRF-041-16	23	77			
JOB NO. 3914				1029W - LAYOUT - 25227			

GENERAL NOTES

BENCH MARK: USGS STD. DISK STP. "G-61-1934" 1FT. LEFT OF STA. 47+73, ELEV. 353.21.

DESIGN SPECIFICATIONS FOR NEW WORK: AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 1977 EDITION WITH CURRENT INTERIMS.

CONSTRUCTION SPECIFICATIONS: ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 1978 AND APPLICABLE SPECIAL PROVISIONS.

LIVE LOADING: HS 20-44

THE PROPOSED WORK CONSISTS OF REMODELING AND WIDENING EXISTING BRIDGE NO. 1029 FROM A 20 FT. CLEAR ROADWAY TO A 44 FT. CLEAR ROADWAY. ALL EXISTING BENTS AND R.C. DECK GIRDER SPANS ARE TO BE RETAINED AND WIDENED. THREE EXISTING PONY TRUSS SPANS ARE TO BE REPLACED WITH A 335'-8" CONT. COMP. PLATE GIRDER UNIT.

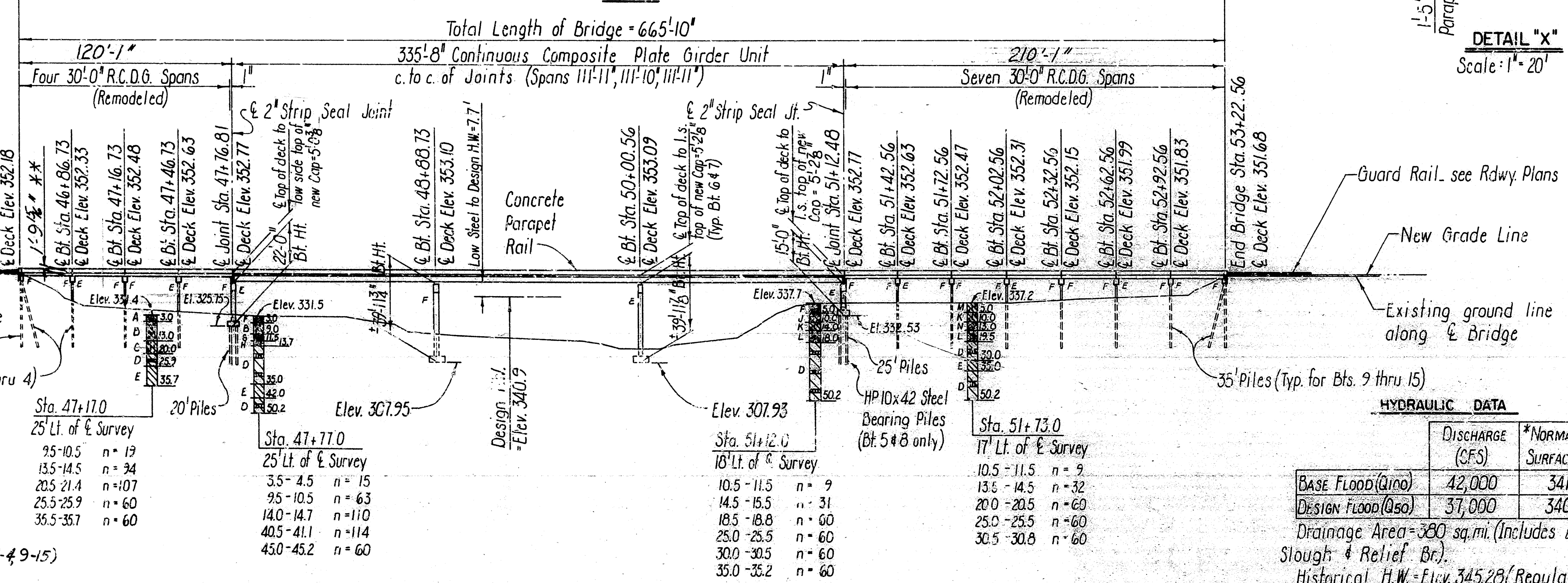
THE CONTRACTOR SHALL MAKE CHECK MEASUREMENTS AND MADE ANY ADJUSTMENTS NECESSARY TO FIT THE NEW WORK TO THE EXISTING BRIDGE.

ALL CONCRETE IN THE SUBSTRUCTURE OF THE NEW WORK TO BE CLASS "S". ALL CONCRETE IN THE SUPERSTRUCTURE OF THE NEW WORK TO BE CLASS "SAE". CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH $f'_c = 3500$ PSI. ALL EXPOSED CORNERS TO BE CHAMFERED 3/4" UNLESS OTHERWISE NOTED. ALL CONCRETE TO BE POURED IN THE DRY.

ALL NEW REINFORCING STEEL SHALL CONFORM TO ASTM A615 OR A617, GRADE 60.

STRUCTURAL STEEL IN OPEN PARAPETS SHALL BE A36.

- BORING LEGEND**
- A. Moist, loose sandy silt
 - B. Wet, medium dense sandy gravel
 - C. Moist, very hard silty clay
 - D. Moist, very hard clay with silt seams
 - E. Moist, very hard clay
 - F. Moist, loose sandy gravel with some clay
 - G. Wet, very dense sandy gravel
 - H. Very hard cemented sand
 - J. Wet, medium stiff sandy clay
 - K. Moist, stiff silty clay
 - L. Wet, dense sandy gravel
 - M. Moist, soft silty clay
 - N. Moist, stiff silty sandy clay



HYDRAULIC DATA

DISCHARGE (CFS)	*NORMAL WATER SURFACE ELEV.
BASE FLOOD (Q100)	42,000
DESIGN FLOOD (Q50)	37,000

Drainage Area = 380 sq. mi. (Includes Lake Slough & Relief Br.)
Historical H.W. Elev. 345.28 (Regulated since Nov. 1945 by construction of Narrows Dam) and occurred in April 1927.
*Backwater insignificant.

NEW PILING IN BENTS 1 THRU 4 AND 9 THRU 15 SHALL BE 16" OCTAGONAL PRECAST CONCRETE AND SHALL BE DRIVEN WITH AN APPROVED AIR, STEAM, OR DIESEL HAMMER TO A MINIMUM BEARING CAPACITY OF 44 TONS PER PILE, AND TO A MINIMUM PENETRATION OF 20 FT. BELOW THE GROUND LINE. LENGTHS OF PILING SHOWN ARE ASSUMED FOR ESTIMATING PURPOSES ONLY. ACTUAL LENGTHS TO BE DETERMINED IN THE FIELD. DRIVE ONE 40 FT. TEST PILE IN BENTS 2, 4, 9, 12 & 15. PILES IN END BENTS TO BE DRIVEN AFTER EMBANKMENT TO BOTTOM OF CAP IS IN PLACE.

PILING IN BENTS 5 AND 8 SHALL BE HPI0X42 AND SHALL BE DRIVEN WITH AN APPROVED AIR, STEAM, OR DIESEL HAMMER TO A MINIMUM BEARING CAPACITY OF 55 TONS PER PILE. ORDER LENGTHS SHOWN, CUT-OFF OR BUILD-UP, IF NECESSARY, SHALL BE PAID FOR IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

FOOTINGS OF BENTS 6 & 7 SHALL BE SET A MINIMUM OF 2 FT. INTO THE MATERIAL DESIGNATED AS VERY HARD CLAY ON THE BORING LOGS, OR EVEN WITH THE EXISTING FOOTING, WHICHEVER IS LOWER. FOUNDATIONS FOR FOOTINGS SHALL BE PREPARED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

THE CONCRETE DECK SHALL BE GIVEN A: FINE FINISH ASSPECIFIED FOR FINAL FINISHING IN SUBSECTION 802.23 FOR CLASS 6, ROADWAY SURFACE FINISH.

FOR ADDITIONAL REQUIREMENTS, SEE SPECIAL PROVISIONS.

FOR DETAILS OF WIDENING BENTS, SEE DWG. NO. 25228 - 25231
FOR DETAILS OF WIDENING R.C.D.G. SPANS, SEE DWG. NOS. 25232 & 25233
FOR DETAILS OF 335 FT. 8 IN. PLATE GIRDER UNIT, SEE DWG. NOS. 25234 - 25238.

SALVAGE OF TRUSS SPANS: THE THREE 111 FT. PONY TRUSS SPANS SHALL BE SALVAGED FOR RE-ERECTION. EACH TRUSS SHALL BE DISMANTLED AT PANEL POINT 5. SEE SECTION 205 OF THE STANDARD SPECIFICATIONS. THE CONTRACTOR SHALL DELIVER THEM TO THE HOWARD COUNTY AREA HEAD-QUARTERS IN NASHVILLE, ARKANSAS, FOR STORAGE.

DETOUR BRIDGE: CONSTRUCT A 500' DETOUR BRIDGE APPROX. 60' UPSTREAM WITH A MINIMUM DECK ELEV. OF 342.0. DETOUR BRIDGE SHALL HAVE A MINIMUM ROADWAY WIDTH OF 20 FT. AND BE DESIGNED FOR A HS LIVE LOADING. SEE SECTION 603 OF THE STANDARD SPECIFICATIONS. FOR ADDITIONAL DETOUR INFORMATION, SEE ROADWAY PLANS.

FOR INFORMATION ABOUT WATER RECORDING GAUGE, SEE SPECIAL PROVISION. JOB NO. 3914, "NOTIFICATION FOR REMOVAL OF GAUGING STATION."

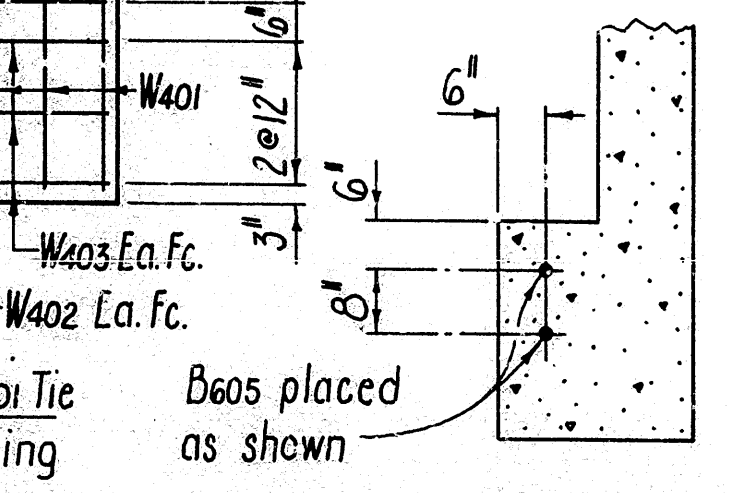
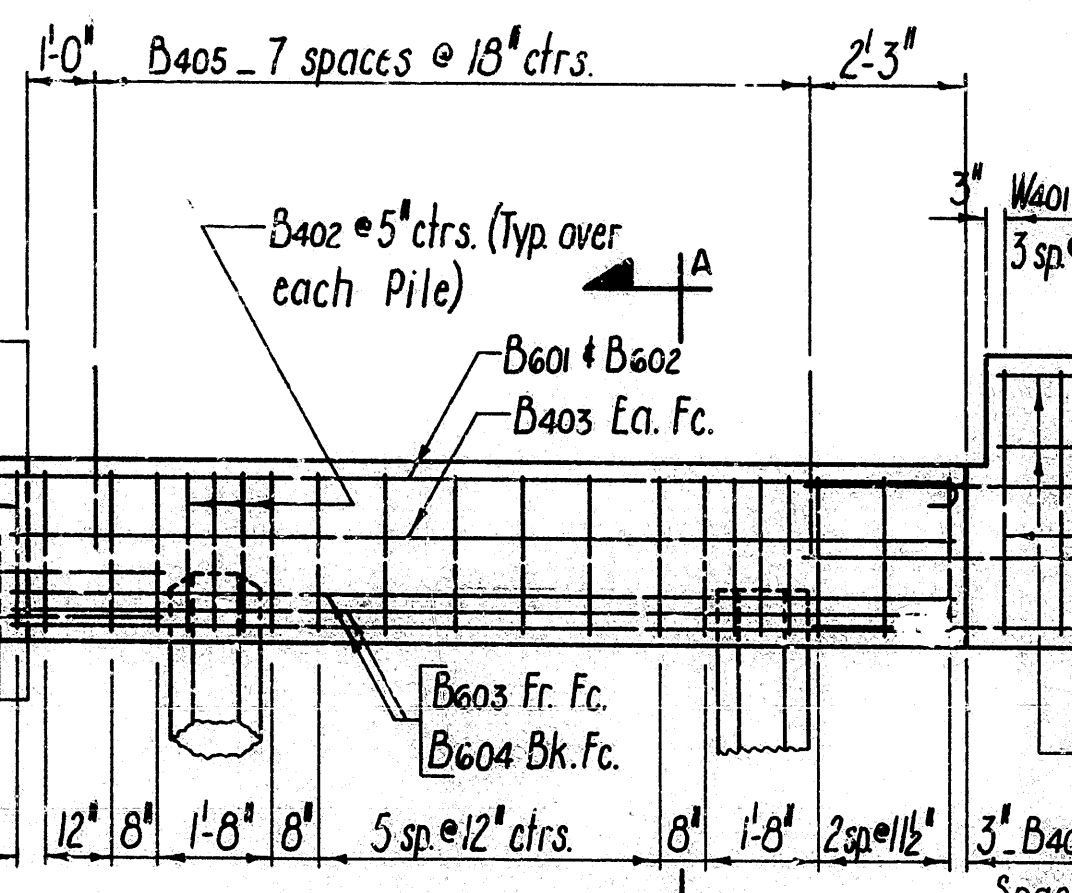
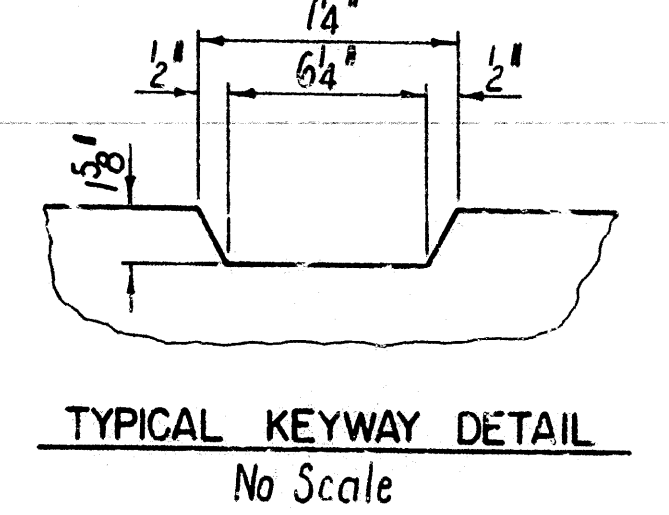
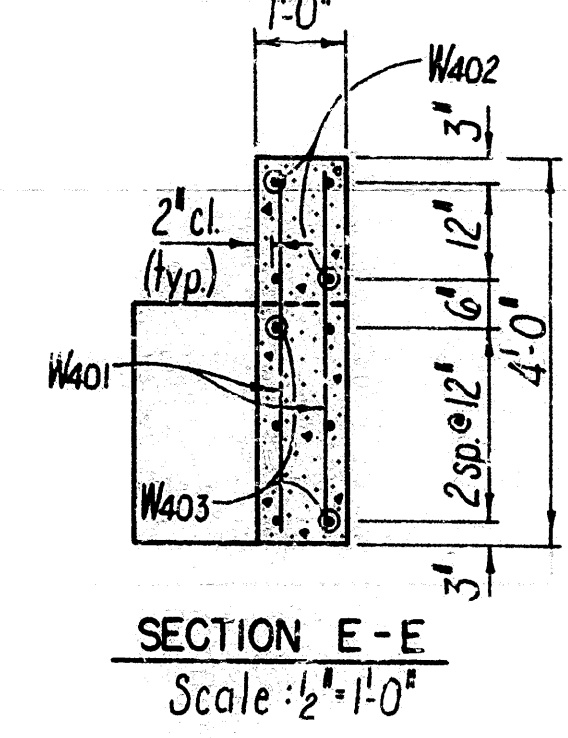
HALF-SIZE PLANS OF THE EXISTING BRIDGE CAN BE OBTAINED FROM AHTD UPON REQUEST TO THE BRIDGE ENGINEER.

ALTERNATE NO. 1

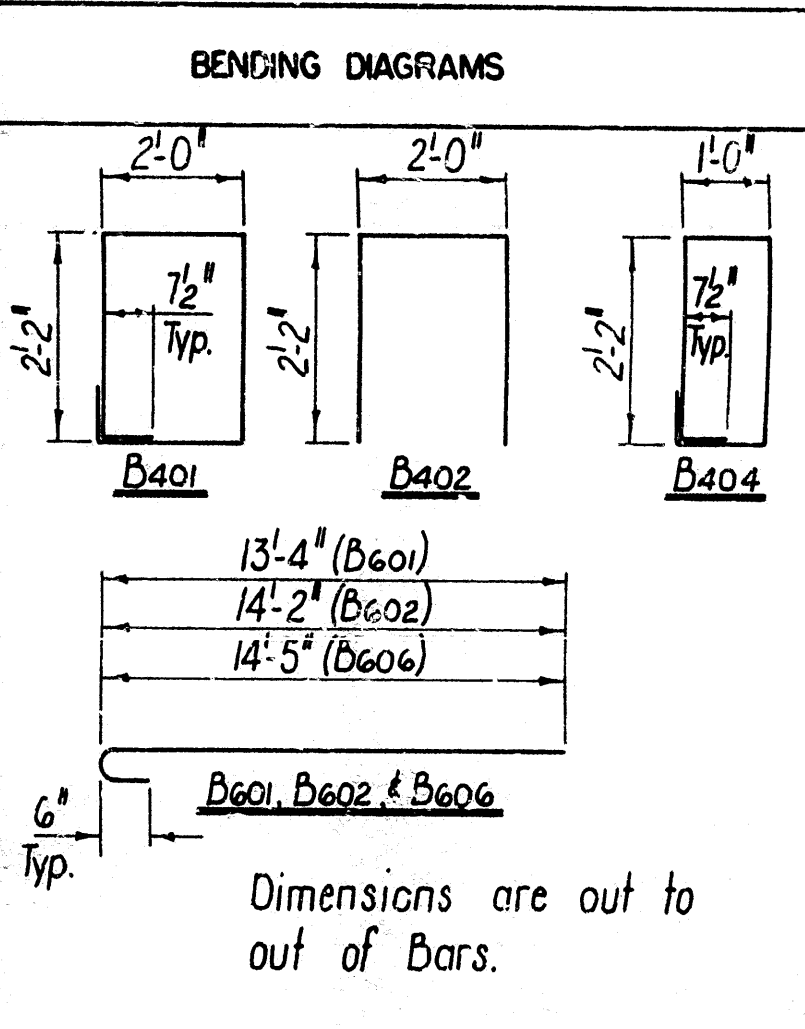
LAYOUT OF
BRIDGE OVER LITTLE MISSOURI RIVER
LITTLE MISSOURI RIVER BRS. & APPRS.
PIKE COUNTY

ROUTE 27 SEC. 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: K.M.G. DATE: 10 DEC. 81
CHECKED BY: CES DATE: 6-10-82
DESIGNED BY: JLS DATE: ---
SCALE: 1" = 40' or as noted
BRIDGE NO. 1029W DRAWING NO. 25227



MARK	NO. REQ'D.		LENGTH	PIN DIA.
	END BT.	INT. BT.		
B401	28	30	9'-2"	2"
B402	12	12	6'-2"	2"
B403	4	-	13'-9"	Str.
B404	2	-	7'-2"	2"
B405	16	*	2'-6"	Str.
B406	-	4	14'-0"	Str.
W401	16	-	3'-7"	Str.
W402	8	-	2'-7"	Str.
W403	12	-	4'-9"	Str.
B601	6	-	14'-0"	4 1/2"
B602	6	-	14'-10"	4 1/2"
B603	6	-	13'-9"	Str.
B604	6	-	13'-7"	Str.
B605	4	-	4'-8"	Str.
B606	-	12	15'-1"	4 1/2"
B607	-	12	14'-0"	Str.
B608	-	8	4'-0"	Str.



* 18 Req'd. for Fix-Exp. Bent
36 Req'd. for Fix-Fix Bent

GENERAL NOTES

ALL CONCRETE TO BE CLASS S AND SHALL BE POURED IN THE DRY. ALL EXPOSED CORNERS TO BE CHAMFERED 3/4" UNLESS OTHERWISE NOTED.

ALL PILING SHALL BE DRIVEN TO A MINIMUM BEARING CAPACITY OF 44 TONS PER PILE. PILING SHALL BE 16" OCTAGONAL PRECAST CONCRETE.

SPECIFICATIONS: ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR
HIGHWAY CONSTRUCTION, EDITION OF 1978 AND APPLICABLE SPECIAL PROVISIONS.

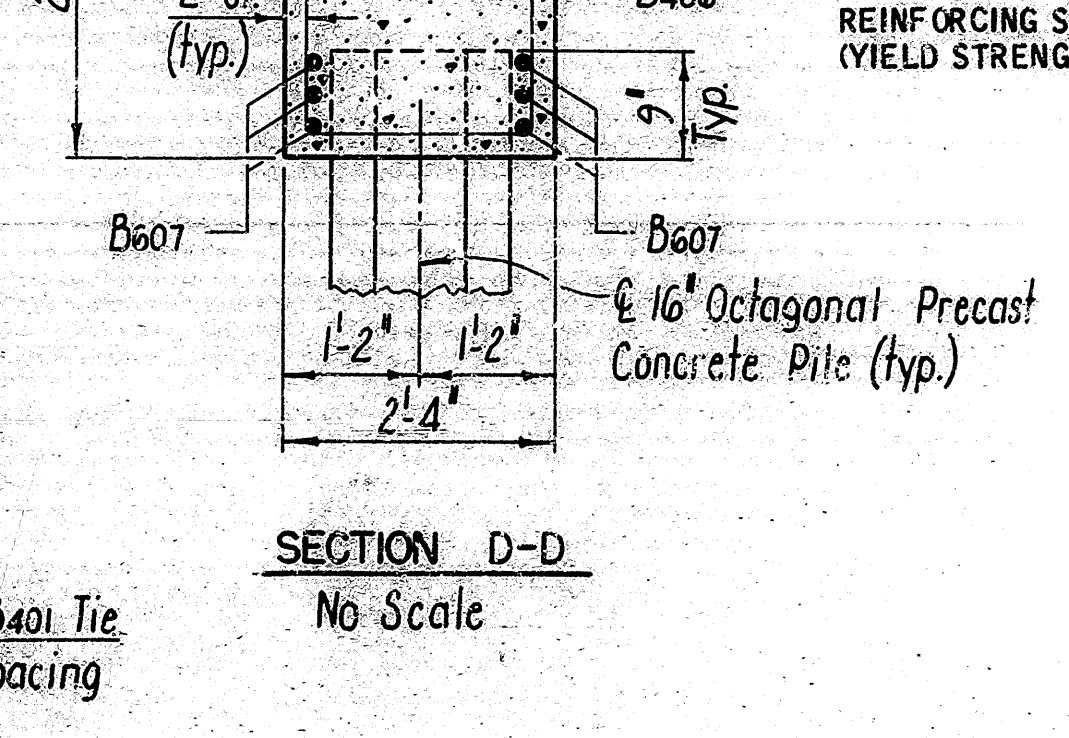
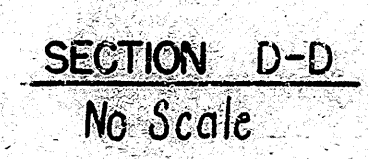
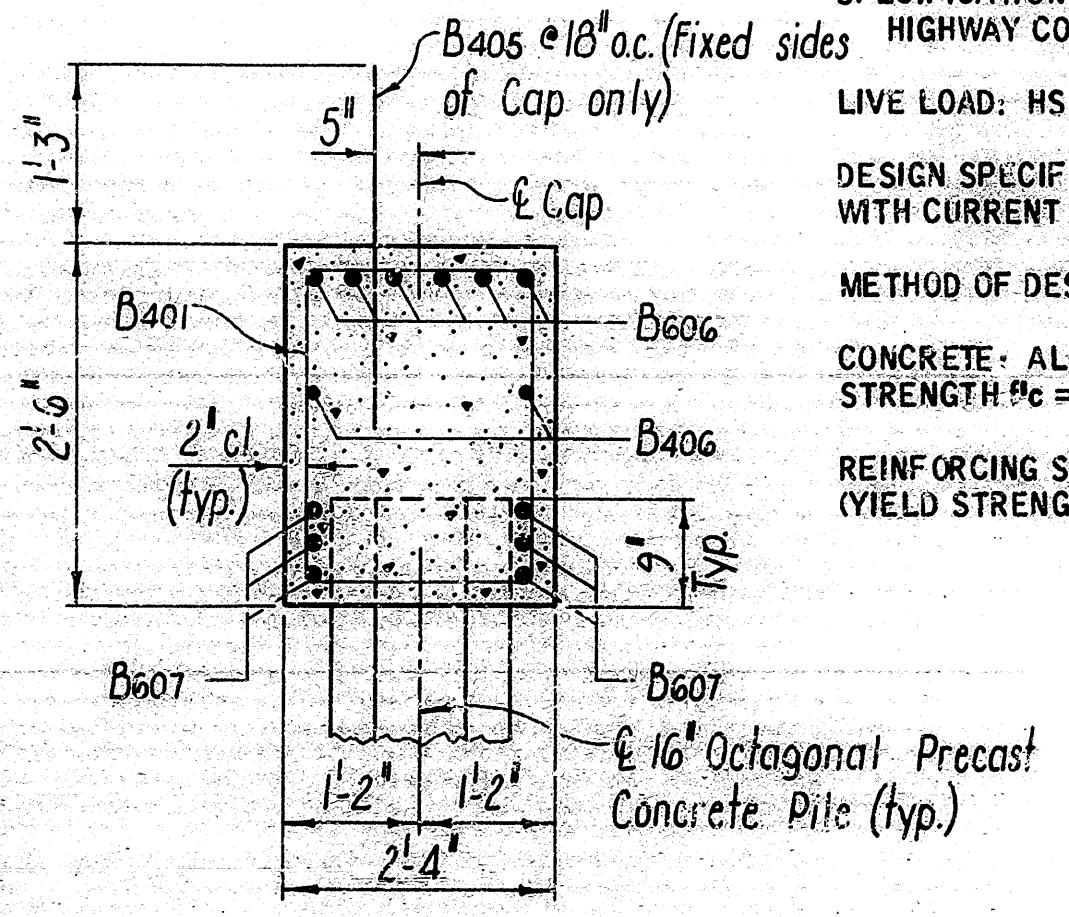
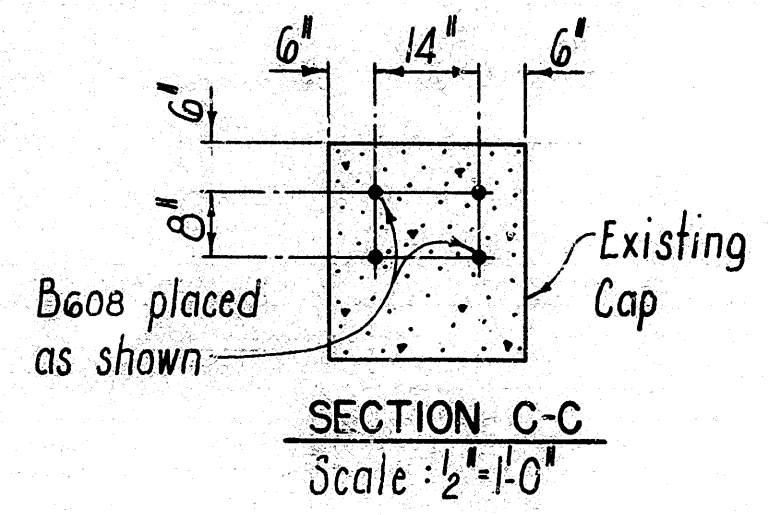
LIVE LOAD: HS 20-44

DESIGN SPECIFICATIONS: AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 1977 WITH CURRENT INTERIMS.

METHOD OF DESIGN: LOAD FACTOR

CONCRETE: ALL CONCRETE SHALL BE CLASS "S" WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH $f'_c = 3500$ PSI.

REINFORCING STEEL: REINFORCING STEEL SHALL CONFORM TO ASTM A615 OR A617, GRADE 60 (YIELD STRENGTH = 60,000 PSI).



ALTERNATE NO. 1

DETAILS FOR
WIDENING OF PILE BENTS
LITTLE MISSOURI RIVER BRS. 8 APPRS.
PIKE COUNTY

ROUTE 27 SEC 4

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

FROM: KMG DATE: 3 FEB 82

CHECKED BY: LSB DATE: FEB 82 SCALE: AS SHOWN

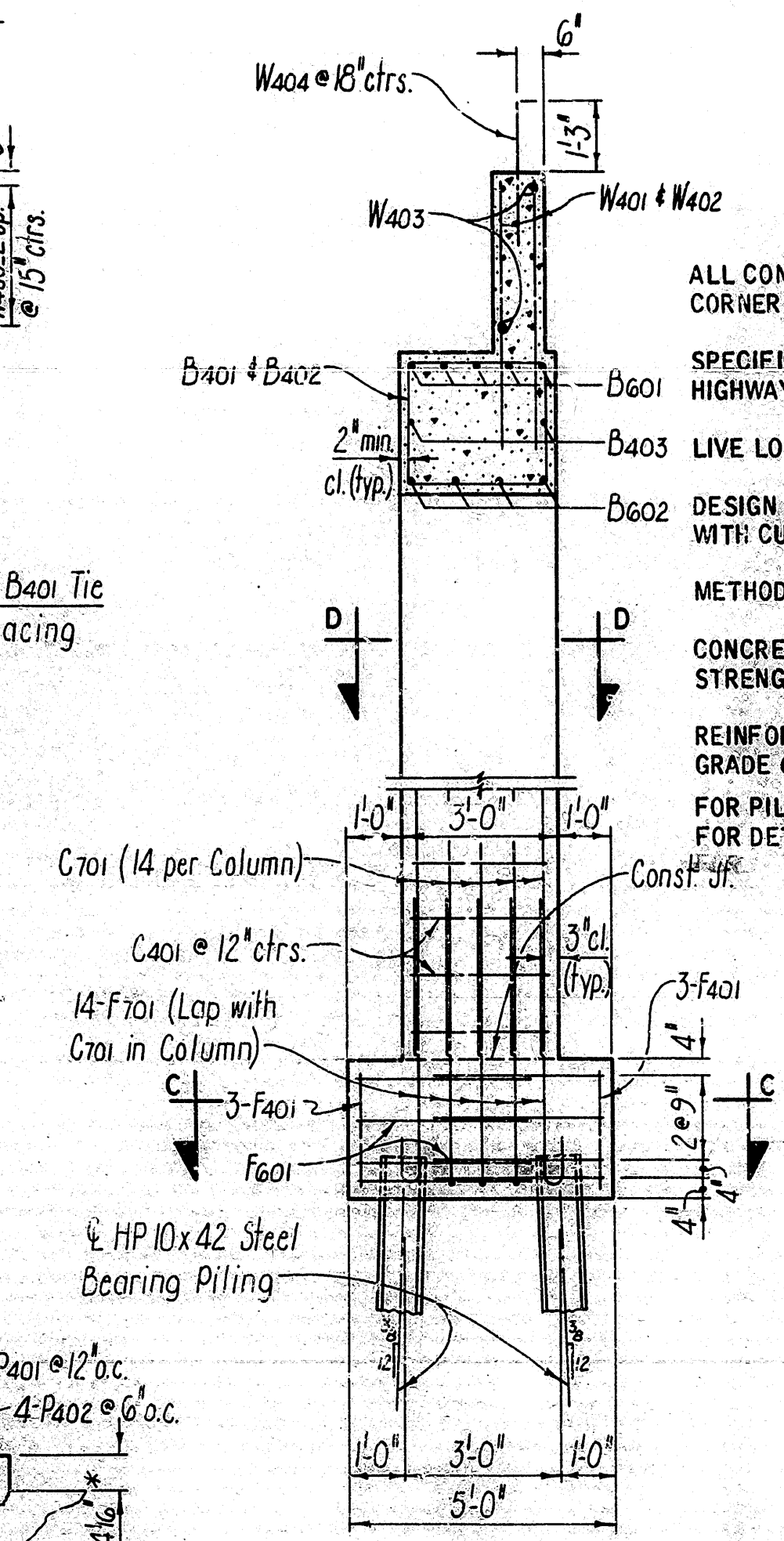
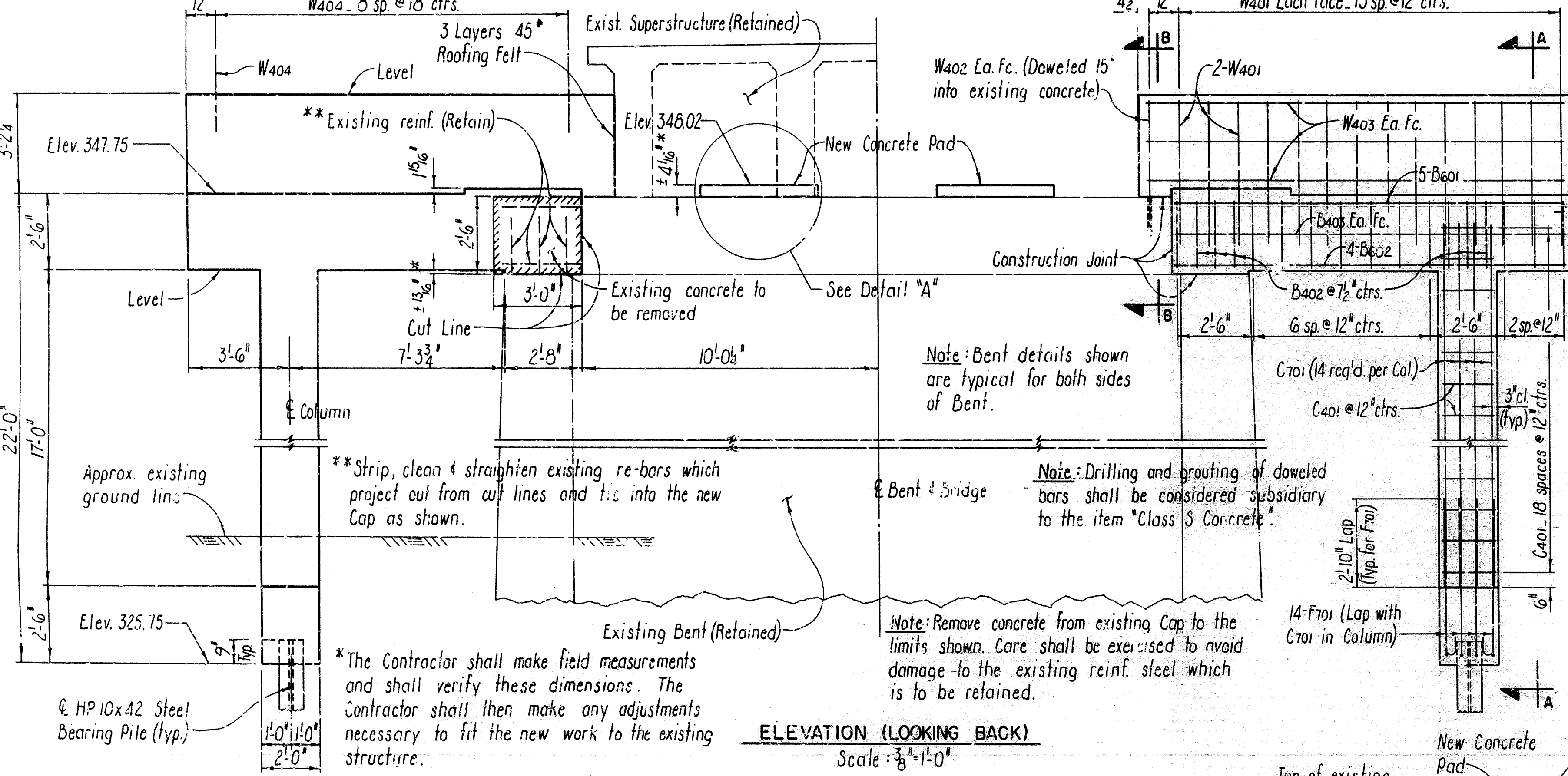
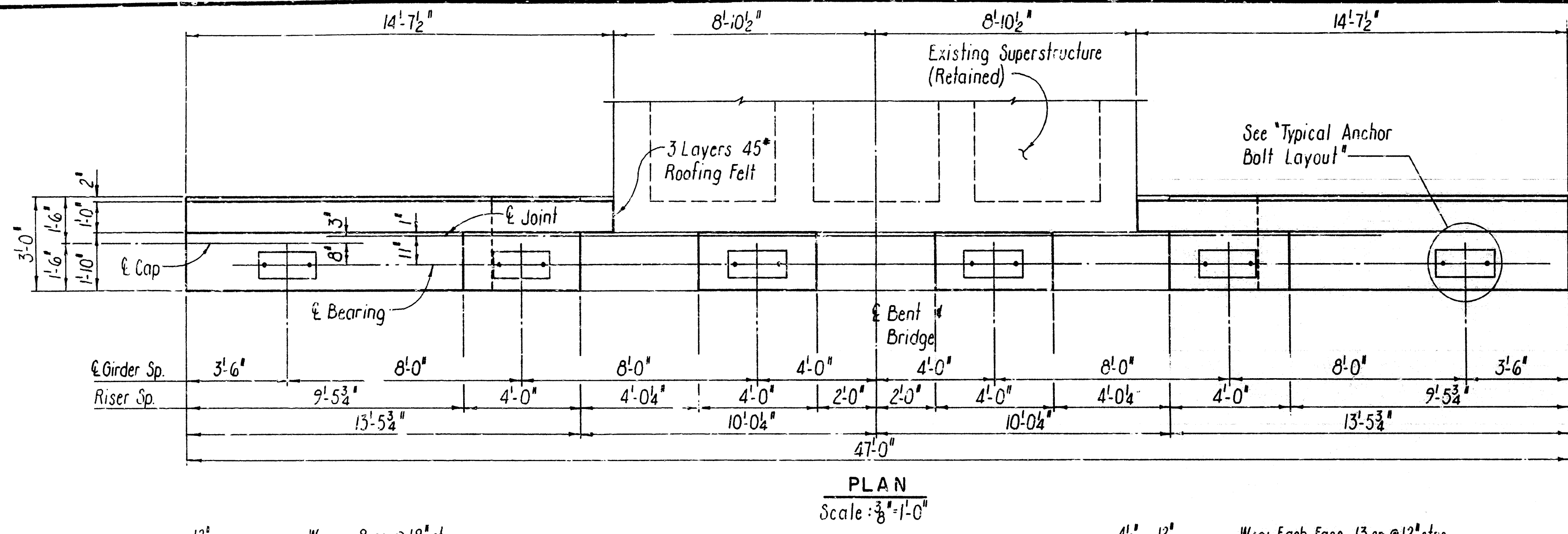
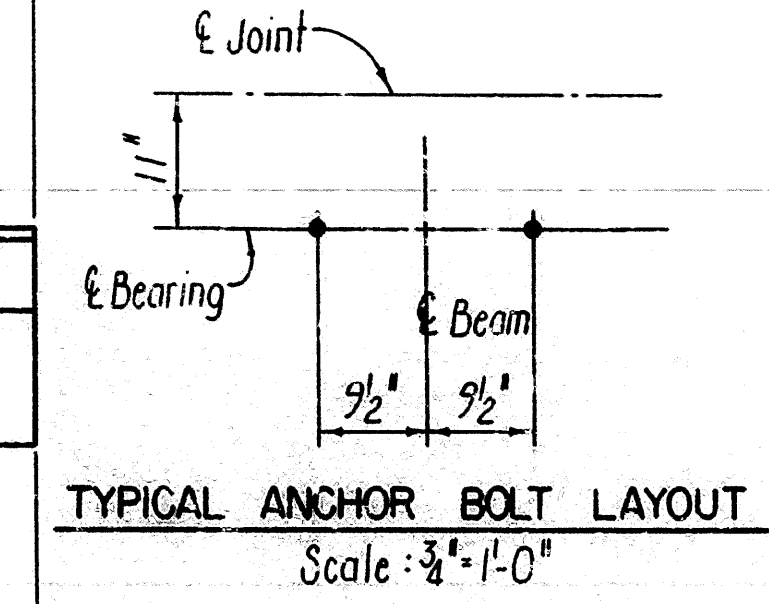
DESIGNED BY: STG DATE:

BRIDGE NO. 1029W 1622W DRAWING NO. 25228

BRIDGE NO. 1025W, 1026W DRAWING NO. 25220

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	F-BRF-041-(16)	25	77
				JOB NO.		3314		
				① 1029W - BENT DTLS. - 25229				

BAR LIST				BENDING DIAGRAMS			
MARK	NO.	REQ'D.	LENGTH	PIN DIA.			
B401	22	10'-6"	2"				
B402	12	6'-10"	2"				
B403	4	13'-1"	Str.				
B601	10	13'-9"	4 1/2"				
B602	8	13'-1"	Str.				
W401	56	4'-10"	Str.				
W402	4	4'-4"	Str.				
W403	12	14'-3"	Str.				
W404	18	2'-6"	Str.				
P401	8	1'-7"	Str.				
P402	8	3'-7"	Str.				
C401	38	9'-2"	2"				
C701	28	10'-9"	Str.				
F401	12	2'-2"	Str.				
F601	16	11'-2"	3 3/4"				
F701	28	5'-10"	5 1/4"				



GENERAL NOTES

ALL CONCRETE SHALL BE CLASS S AND SHALL BE POURED IN THE DRY. ALL EXPOSED CORNERS TO BE CHAMFERED 3/4" UNLESS OTHERWISE NOTED.

SPECIFICATIONS: ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 1978 AND APPLICABLE SPECIAL PROVISIONS.

LIVE LOAD: HS20

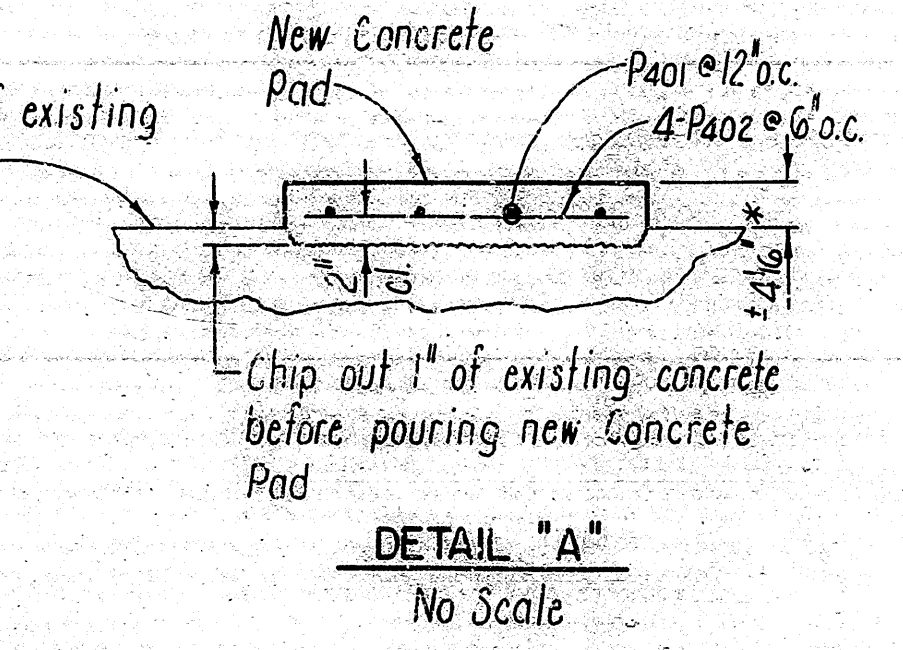
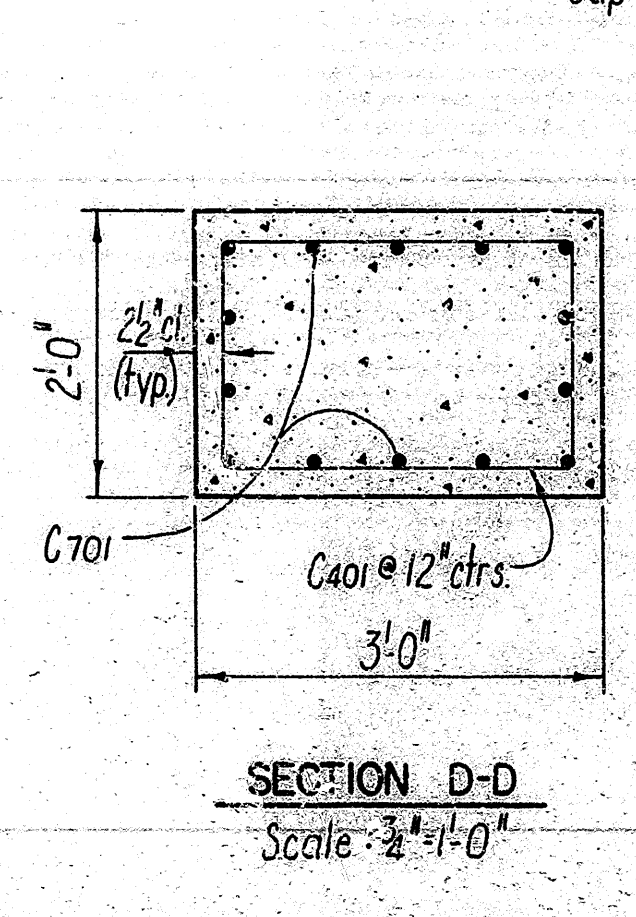
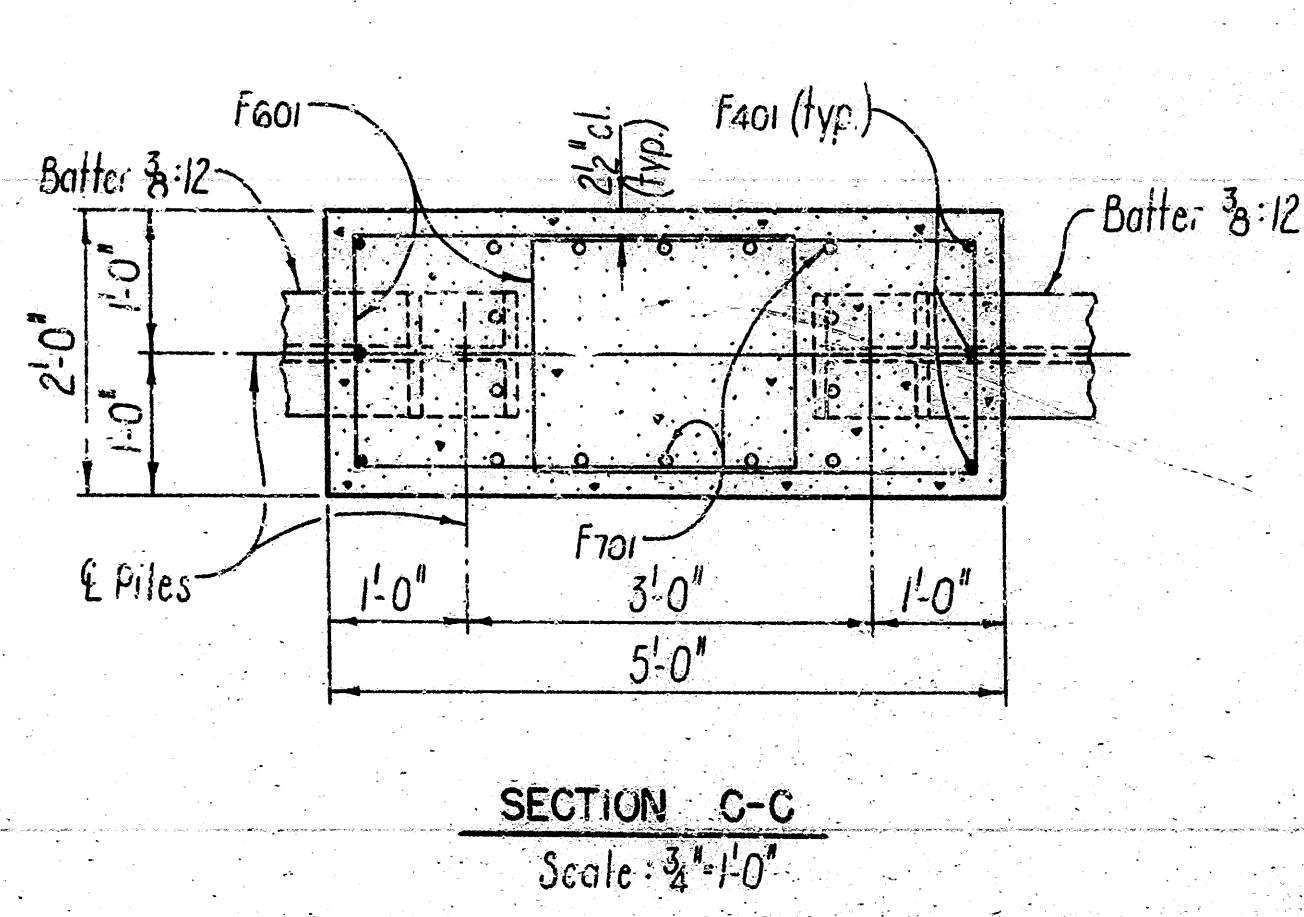
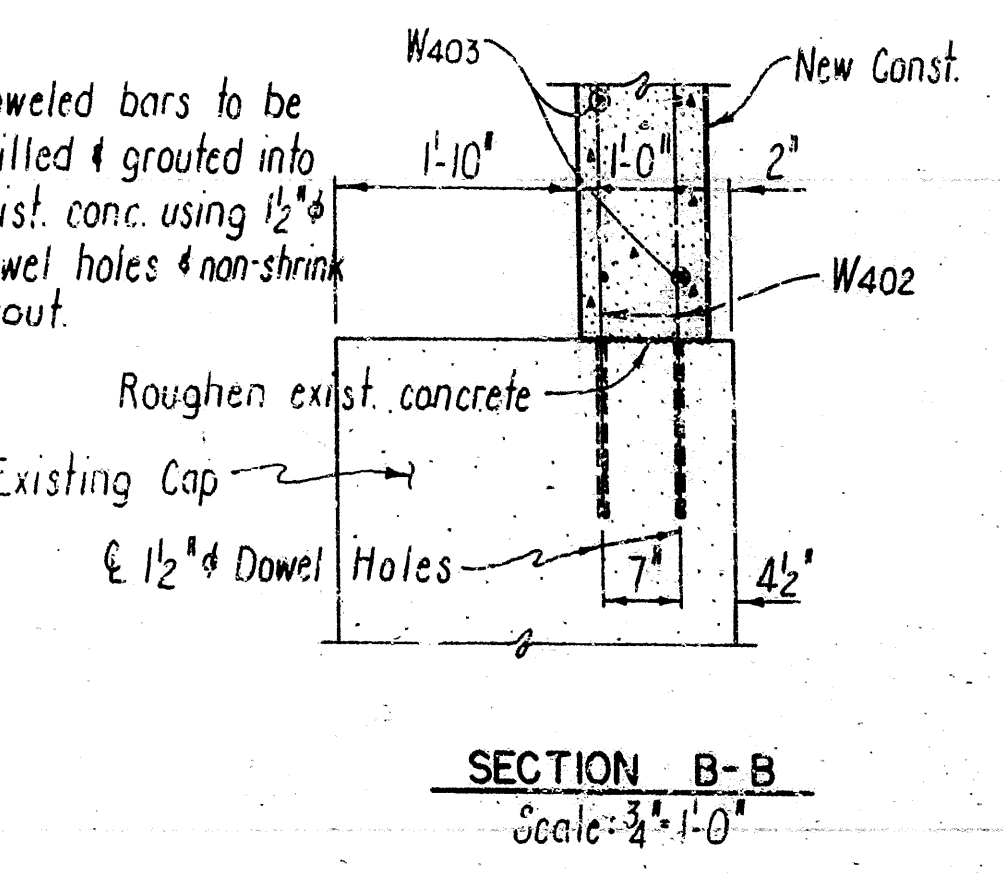
DESIGN SPECIFICATIONS: AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 1977 WITH CURRENT INTERIMS.

METHOD OF DESIGN: LOAD FACTOR

CONCRETE: ALL CONCRETE SHALL BE CLASS S WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH $f'_c = 3500$ PSI.

REINFORCING STEEL: REINFORCING STEEL SHALL CONFORM TO ASTM A615 OR A617, GRADE 60 (YIELD STRENGTH = 60,000 PSI).

FOR PILING NOTES, SEE "LAYOUT", DRAWING NO. 25227 FOR DETAILS OF ELASTOMERIC BEARINGS, SEE DWG. NO. 25237

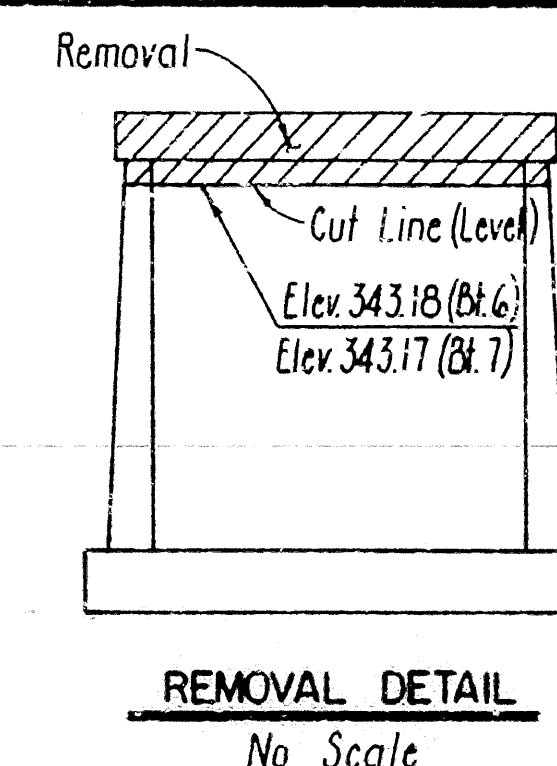


ALTERNATE NO. 1

DETAILS FOR WIDENING
INTERMEDIATE BENT NO. 5
LITTLE MISSOURI RIVER BRIDGE
PIKE COUNTY
ROUTE 27 SEC 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KMG DATE: 29 MAR 82
CHECKED BY: RDH DATE: 14 APR 82
DESIGNED BY: CES DATE: DEC 81

BRIDGE NO. 1029W DRAWING NO. 25229



MARK	NO. REQ'D.	LENGTH	PIN D.
B401	48	14'-6"	2"
B402	12	10'-4"	2"
B403	12	22'-5"	Str.
B501	8	14'-8"	2½"
B801	4	43'-2"	Str.
B802	2	23'-1"	Str.
B1001	4	43'-2"	Str.
B1002	8	17'-4"	Str.
W401	28	33'-6"	Str.
W501	88	7'-3"	Str.
D601	88	3'-0"	Str.
D602	14	2'-6"	Str.
D603	4	2'-8"	Str.
C421	4 cf each	Var. 11'-10"	2"
C429		to 8'-6"	
C430	12	6'-4"	2"
C801	28	36'-0"	Str.
F501	20	4'-10"	2½"
F701	46	13'-6"	Str.
F702	54	11'-6"	Str.
F801	28	7'-6"	6"

GENERAL NOTES

ALL CONCRETE SHALL BE CLASS S AND SHALL BE POURED IN THE DRY. ALL EXPOSED CORNERS TO BE CHAMFERED 3/4" UNLESS OTHERWISE NOTED.

SPECIFICATIONS: ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 1978 AND APPLICABLE SPECIAL PROVISIONS.

LIVE LOAD: HS20

DESIGN SPECIFICATIONS: AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 1977 WITH CURRENT INTERIMS.

METHOD OF DESIGN: LOAD FACTOR

CONCRETE: ALL CONCRETE SHALL BE CLASS S WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH $f'_c = 3500$ PSI.

REINFORCING STEEL: REINFORCING STEEL SHALL CONFORM TO ASTM A615 OR A617, GRADE 60 (YIELD STRENGTH = 60,000 PSI).

FOR DETAILS OF ELASTOMERIC BEARINGS, SEE DWG. NO. 25237

ALTERNATE NO. 1

DETAILS FOR WIDENING
INTERMEDIATE BENTS 6 & 7
LITTLE MISSOURI RIVER BRIDGE
PIKE COUNTY

ROUTE 27 SEC. 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KMG DATE: 10 MAR 82
CHECKED BY: KDH DATE: 14 APR 82 SCALE: AS SHOWN
DESIGNED BY: CES DATE: DEC. 81

BRIDGE NO. 1029W DRAWING NO. 25230

Vera Pinkerton
HOUSE ENGINEER

BRIDGE NO. 1029W DRAWING NO. 25230

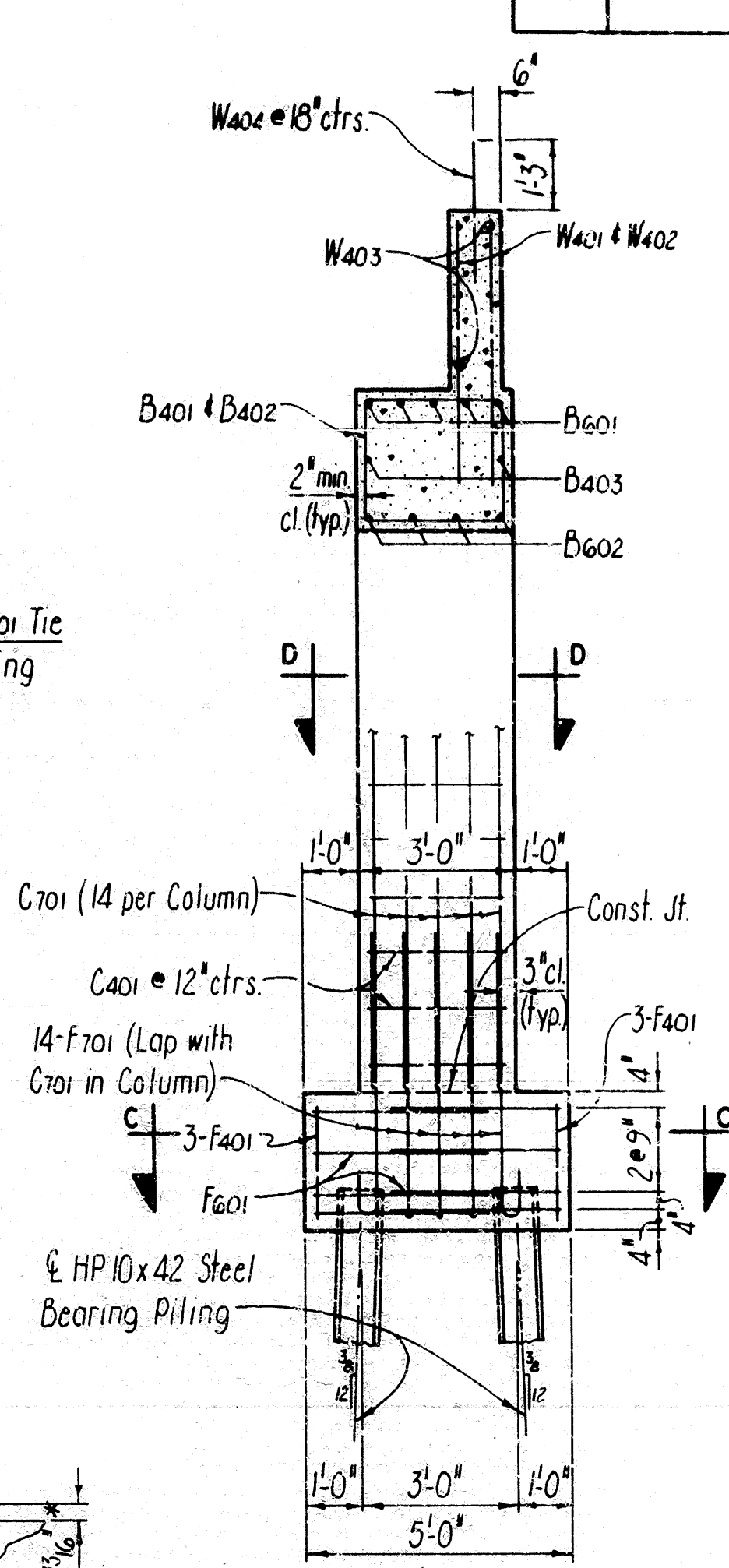
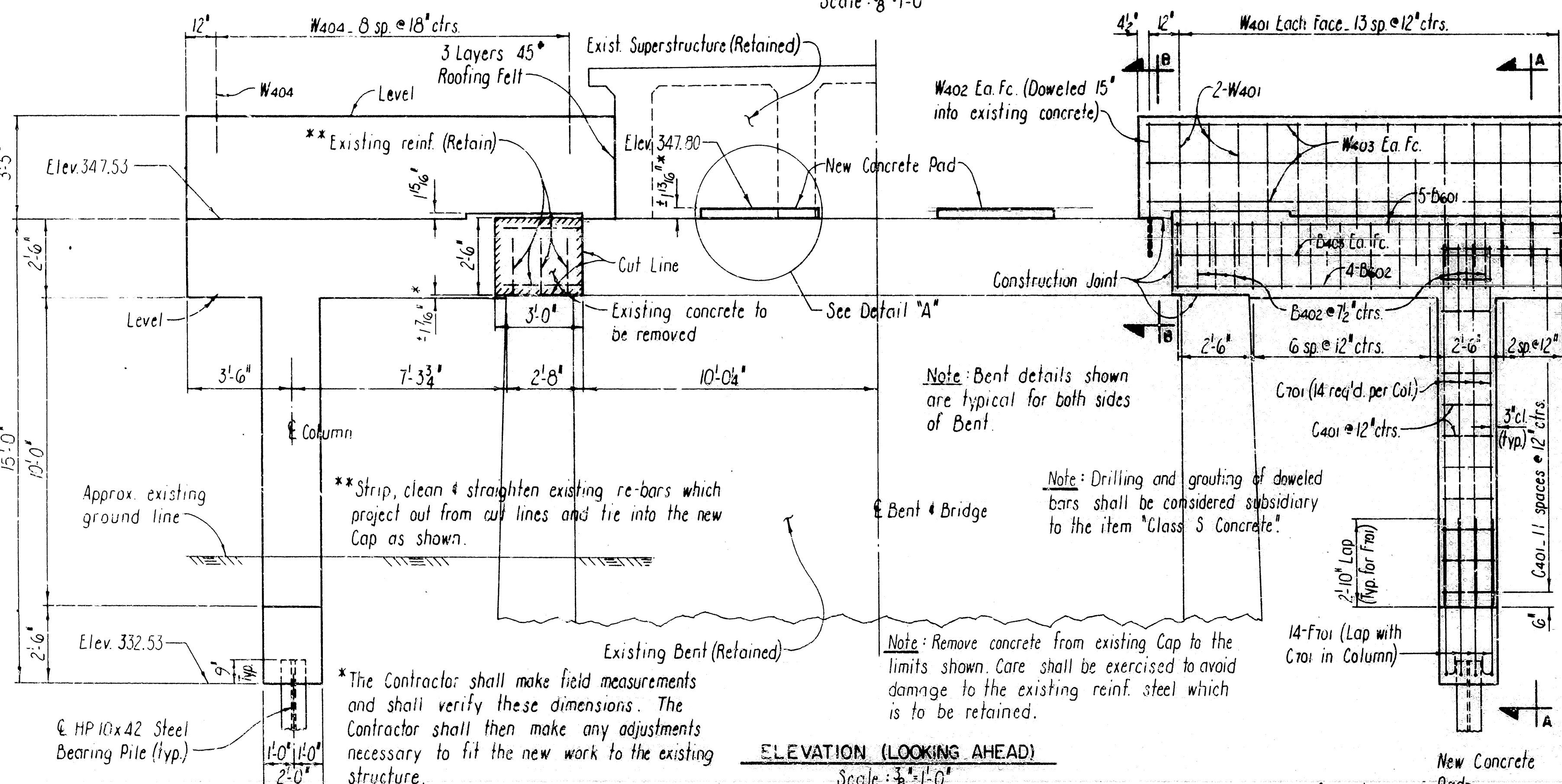
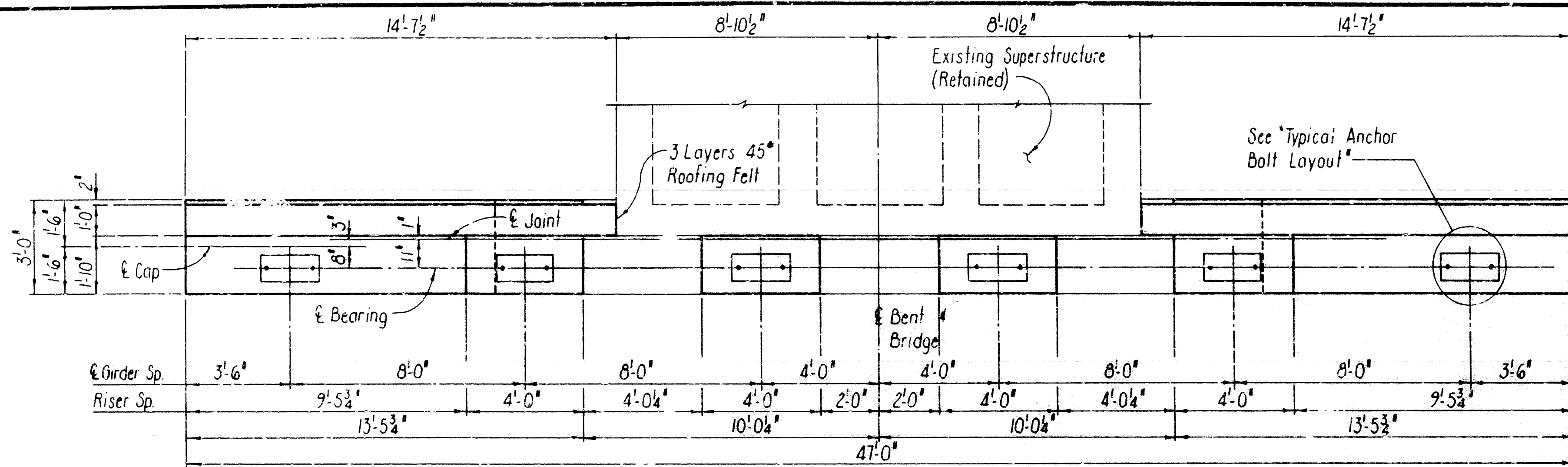
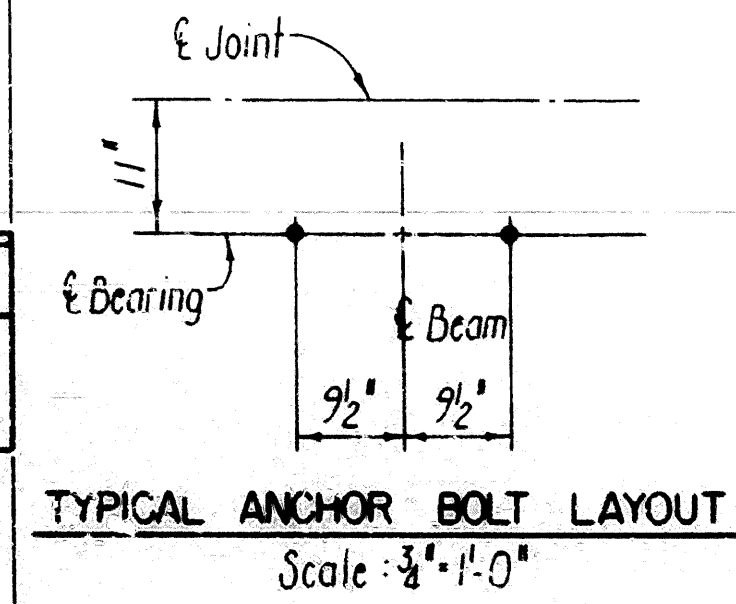
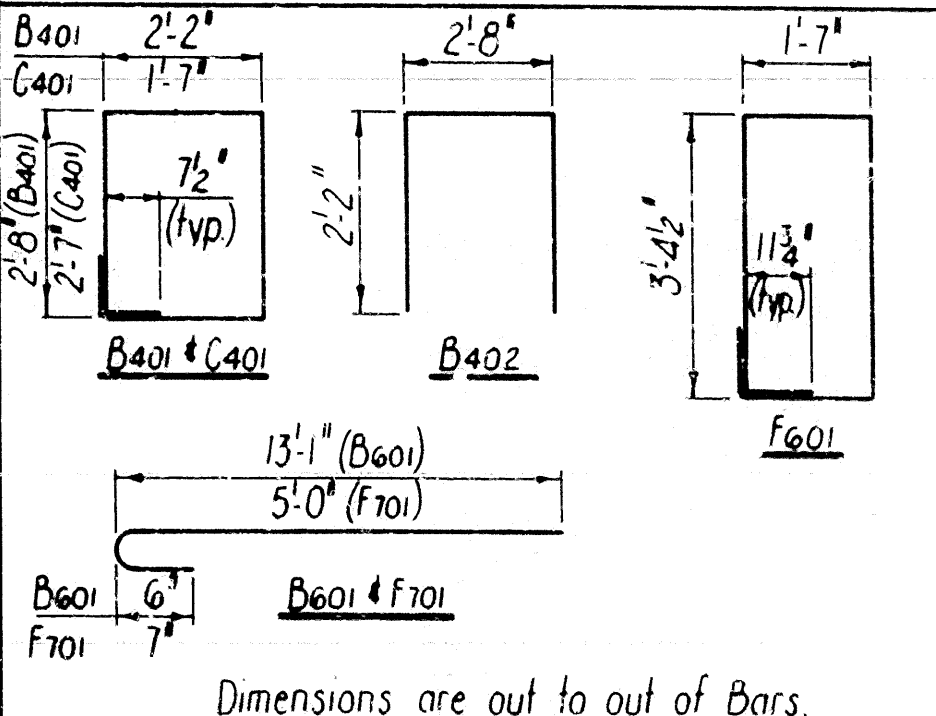
REV.	DATE	BY	CHKD.	APP'D.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
1	10/29/82	W	W	W	ARK.	F-BRF-041-K(6)	27	77
					JOB NO.	3314		

1029W - BENT DTLS. - 25231

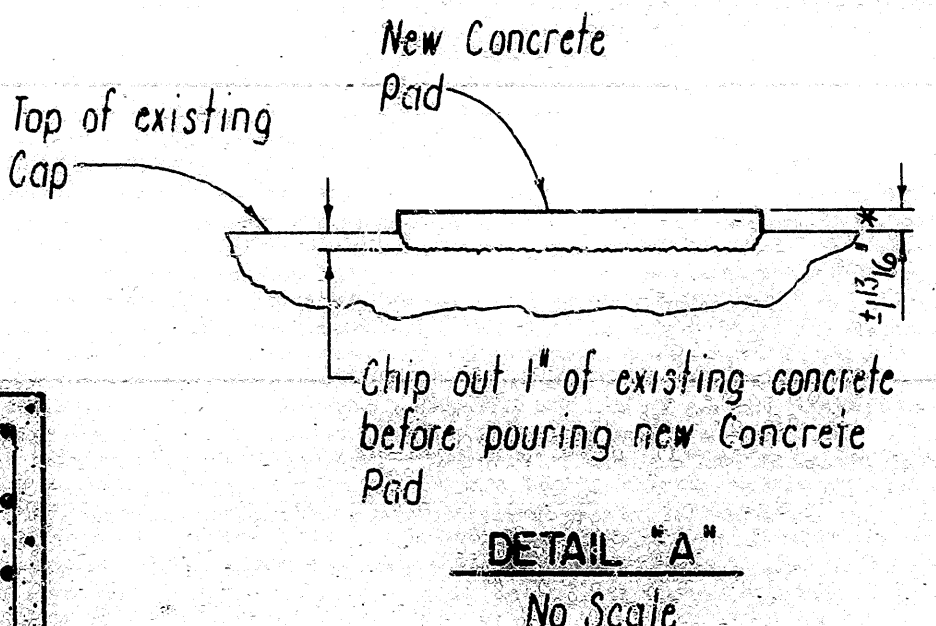
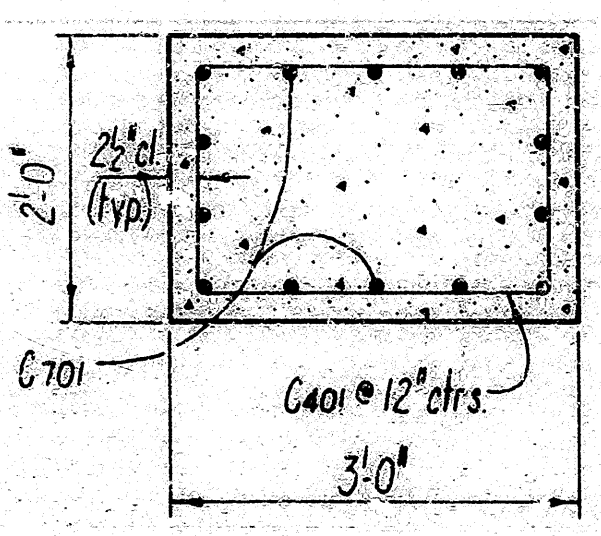
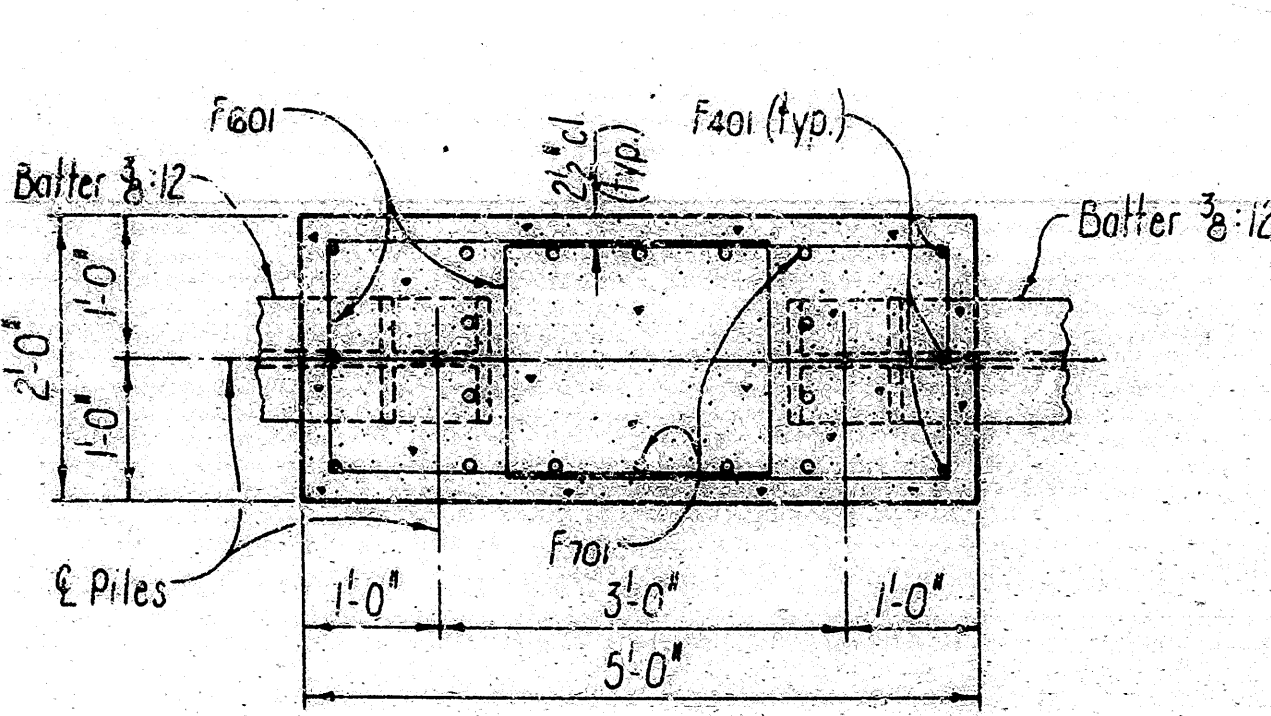
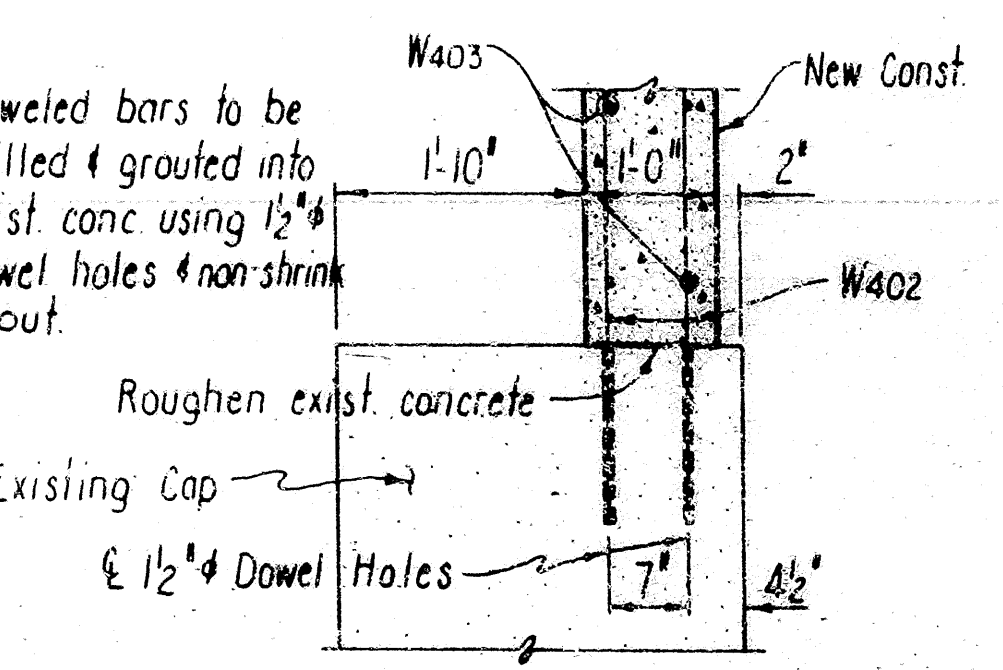
BAR LIST

MARK	NO.	REQ'D.	LENGTH	PIN DIA.
B401	22	10'-6"	2"	
B402	12	6'-10"	2"	
B403	4	13'-1"	Str.	
B601	10	13'-9"	4 1/2"	
B602	8	13'-1"	Str.	
W401	56	4'-10"	Str.	
W402	4	4'-6"	Str.	
W403	12	14'-3"	Str.	
W404	18	2'-6"	Str.	
C401	24	9'-2"	2"	
C701	28	11'-9"	Str.	
F401	12	2'-2"	Str.	
F601	16	11'-2"	3 3/4"	
F701	28	5'-10"	5 1/4"	

BENDING DIAGRAMS

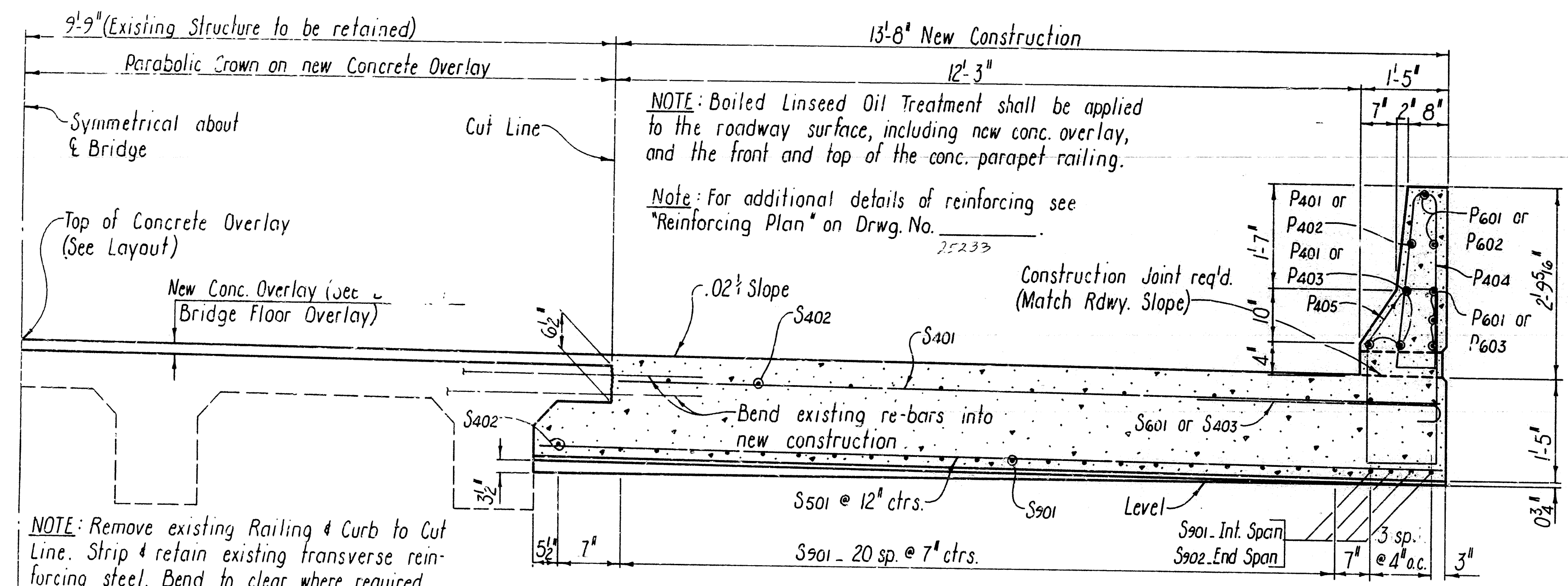


Note: For "General Notes" see Drwg. No. 25229

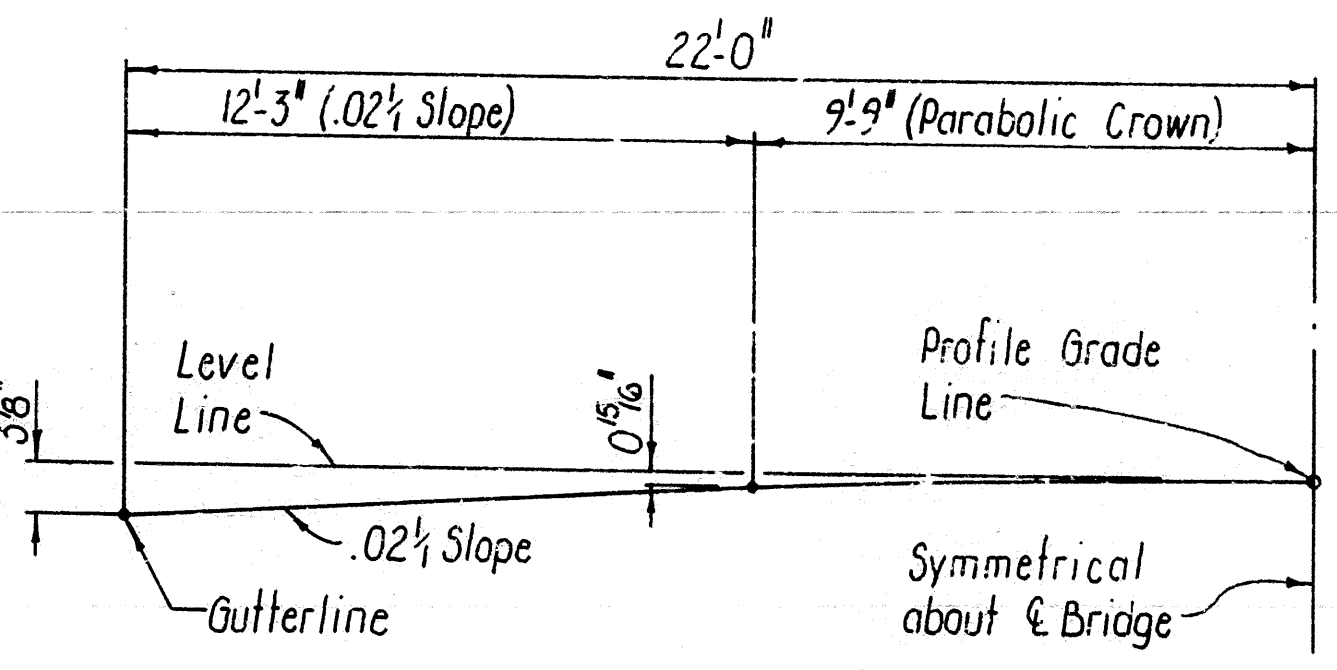


ALTERNATE NO. 1
 DETAILS FOR WIDENING
 INTERMEDIATE BENT NO. 8
 LITTLE MISSOURI RIVER BRIDGE
 PIKE COUNTY
 ROUTE 27 SEC. 4
 ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.
 DRAWN BY: KMG DATE: 30 MAR 82
 CHECKED BY: KDH DATE: 14 APR 82
 DESIGNED BY: CES DATE: DEC 81
 BRIDGE NO. 1029W DRAWING NO. 25231

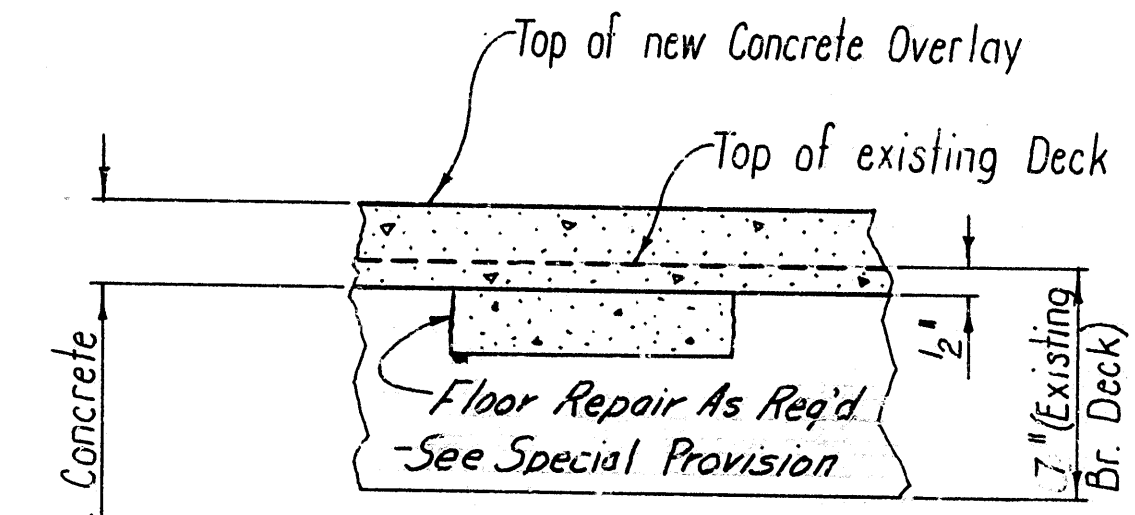
DATE REVISED	DATE FIXED	DATE REVISED	DATE FIXED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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				JOB NO.		3914		
				① 1029W,1622W - SPAN DTLS. - 25232				



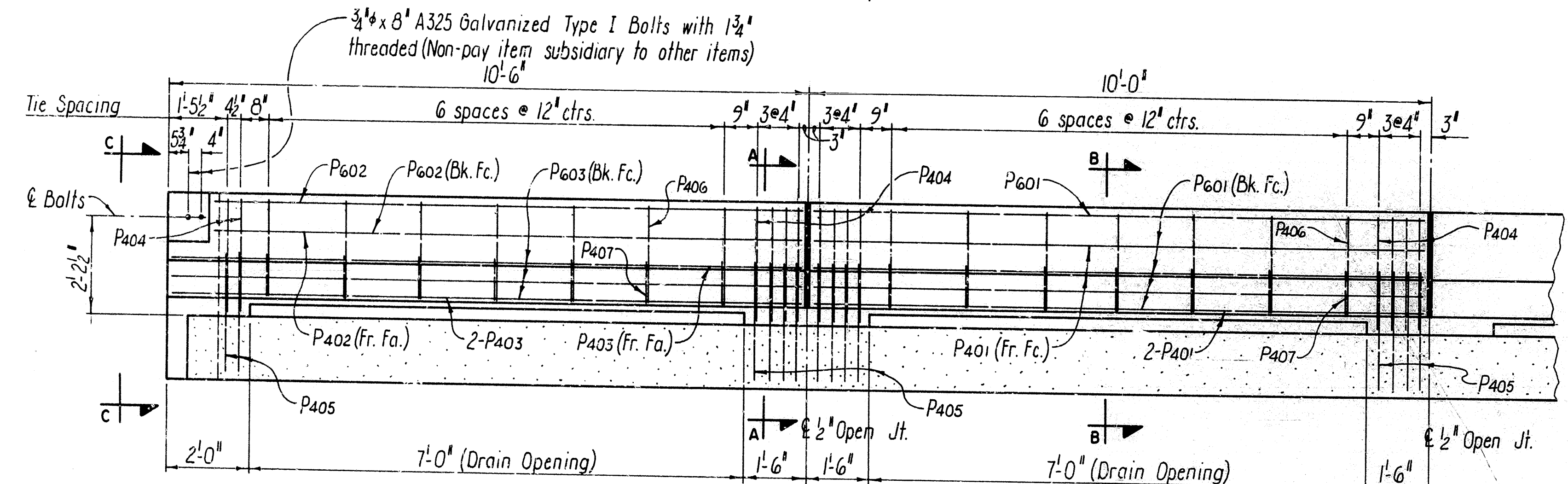
HALF-SECTION THRU ROADWAY
Scale: 3/4" = 1'-0"



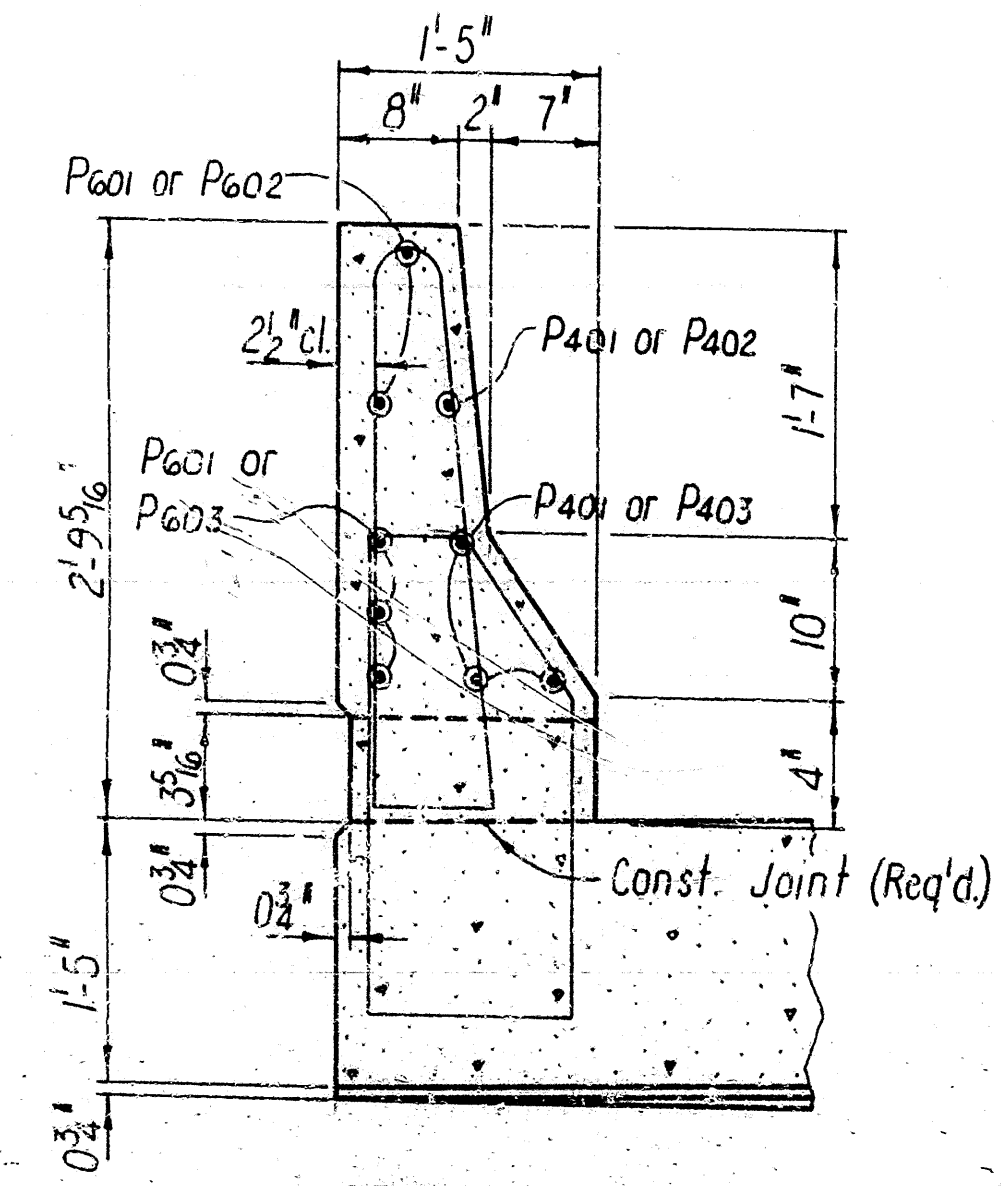
SKETCH OF ROADWAY X-SLOPE
No Scale



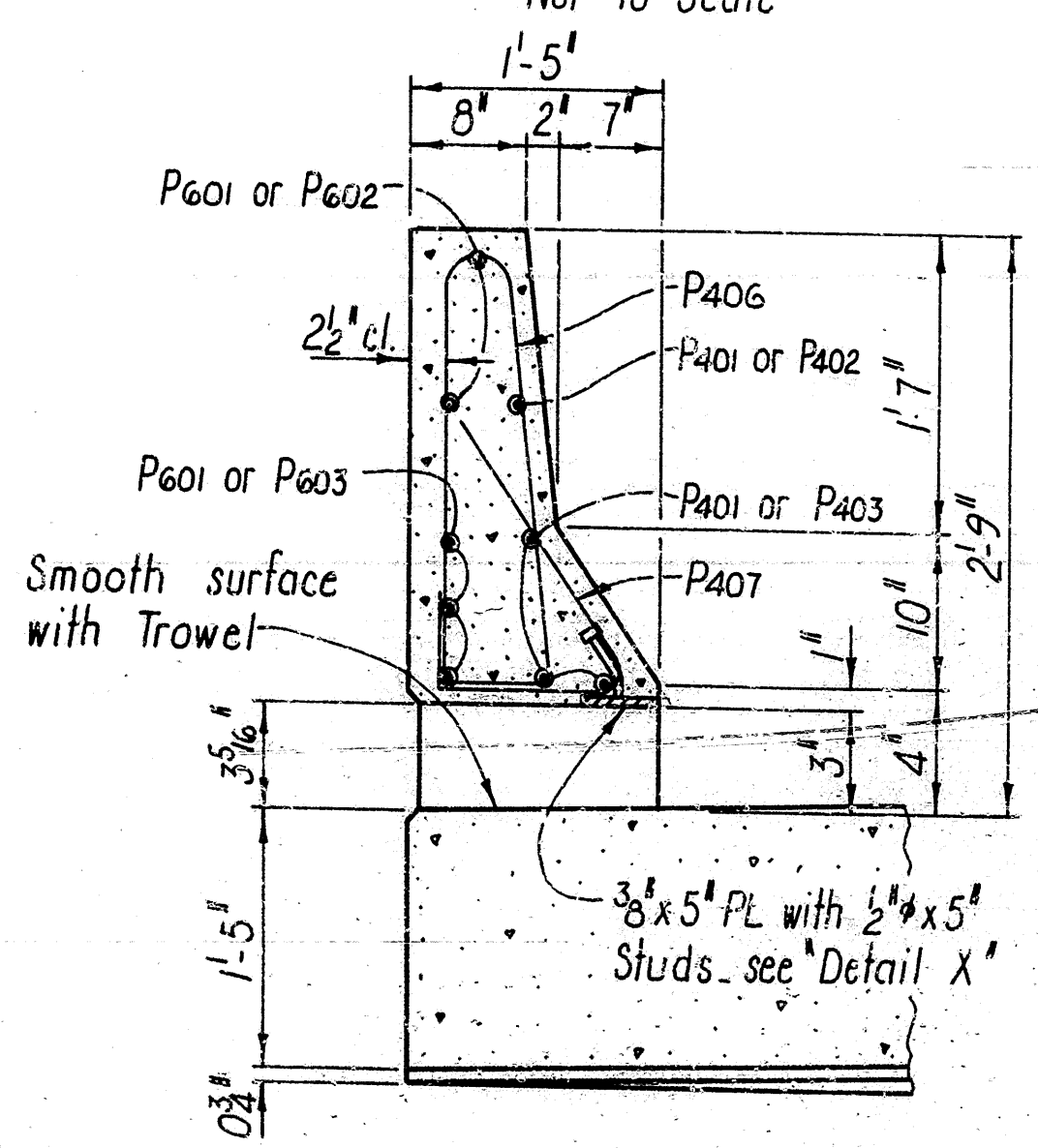
DETAIL OF BRIDGE FLOOR OVERLAY
No Scale



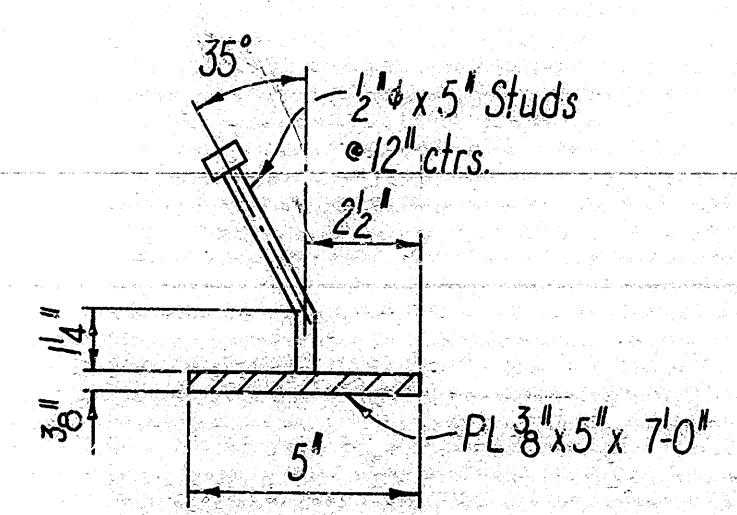
LONGITUDINAL SECTION AT CURB
Not To Scale



SECTION A-A
Scale: 1" = 1'-0"

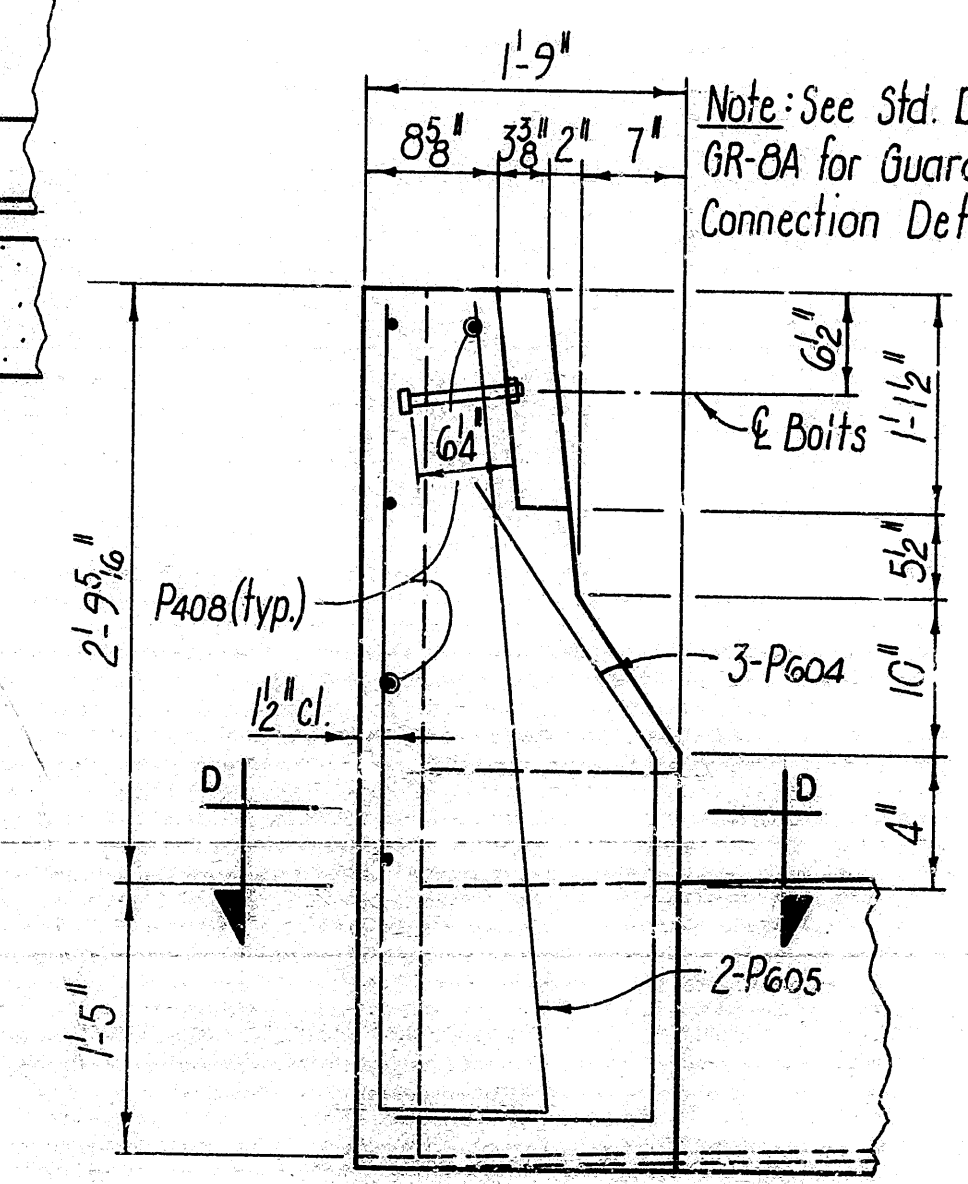


SECTION B-B
Scale: 1" = 1'-0"

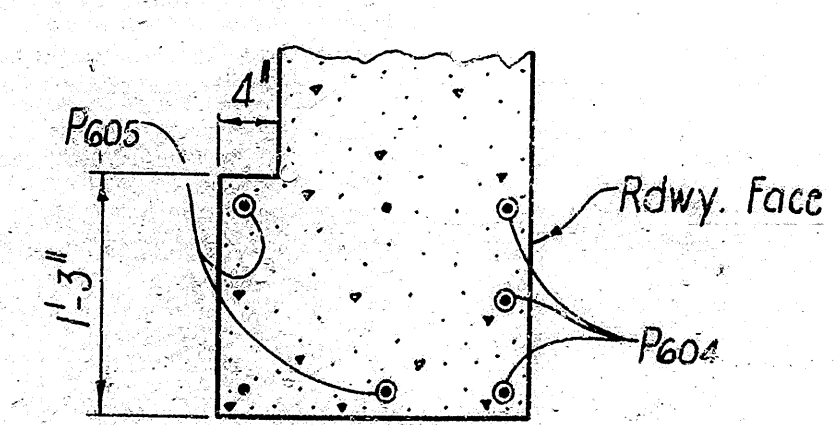


DETAIL "X"
No Scale

NOTE: The surfaces of the 3/8" plates which will not be in contact with concrete shall receive two coats of paint in the shop. These coats shall be those specified as First Shop Coat and Second Field Coat in sub-section 807.39(a) & (c) and SP807-10. Structural Steel shall meet the requirements of Section 807 except as noted. The 1/2" x 5" Studs shall be granular flux filled solid fluxed, or equal, and automatically and welded to the 3/8" plate in accordance with recommendations of the manufacturer. Studs and plate to be measured and paid for as "Class S(AE) Concrete."



VIEW C-C
Scale: 1" = 1'-0"



SECTION D-D
Scale: 1" = 1'-0"

GENERAL NOTES

- ALL CONCRETE TO BE CLASS S(AE). EXPOSED CORNERS TO BE CHAMFERED 3/4" UNLESS OTHERWISE NOTED.
- REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF ASTM A615 OR A617 GRADE 60. BAR SUPPORTS FOR REINFORCING BARS WILL NOT BE PAID FOR DIRECTLY, BUT WILL BE CONSIDERED SUBSIDIARY TO THE ITEM "REINFORCING STEEL."
- ROOFING FELT, BITUMINOUS FELT, PREFORMED JOINT, STRUCTURAL STEEL, AND POURED SYNTHETIC POLYMER JOINTS SHALL BE MEASURED AND PAID FOR AS CLASS S(AE) CONCRETE.
- SPECIFICATIONS: ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 1973 AND APPLICABLE SPECIAL PROVISIONS.
- DESIGN SPECIFICATIONS: AASHTO 1977 WITH CURRENT INTERIMS.
- DESIGN LIVE LOADING: HS 20-44
- LOAD DISTRIBUTION TO SLAB: *DEAD LOAD 260 PSF; LIVE LOAD -0.174 WHEELS/FT. OF WIDTH PLUS 30% IMPACT.
- UNIT STRESSES: COMPRESSIVE STRENGTH OF CLASS S(AE) CONCRETE = 3500 PSI
YIELD STRENGTH OF REINFORCEMENT = 60,000 PSI
- LOAD FACTOR USED FOR DESIGN OF NEW SLAB.
- *INCLUDES 24 PSF FUTURE WEARING SURFACE.

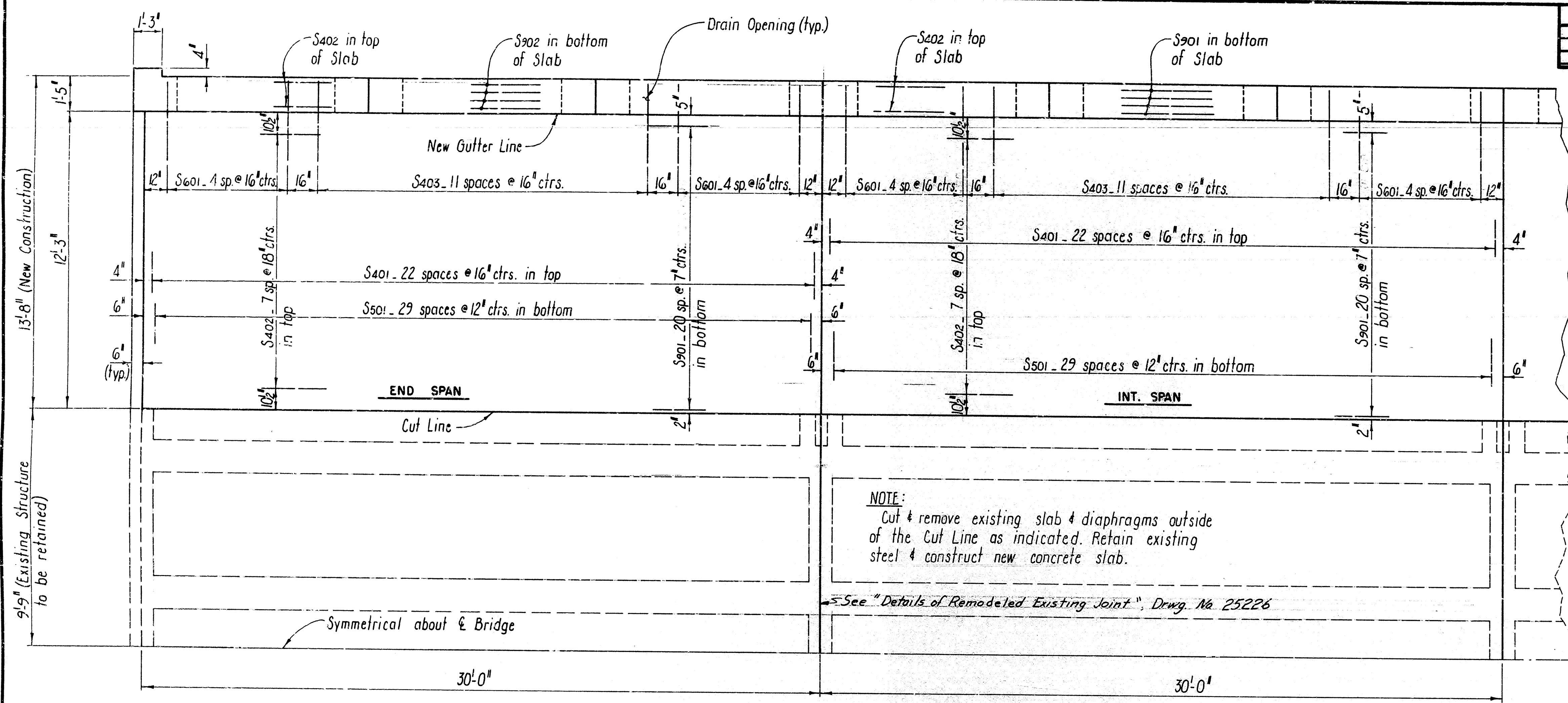
ALTERNATE NO. 1

SHEET 1 OF 2

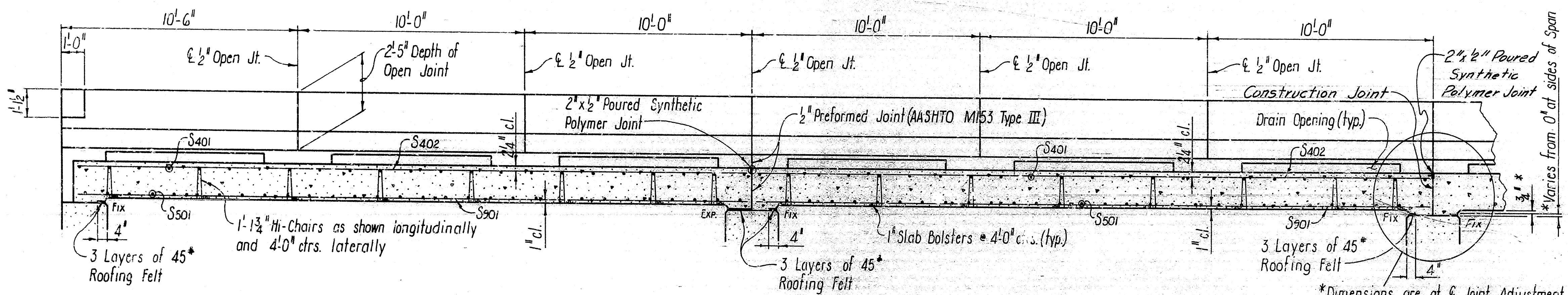
DETAILS FOR WIDENING 30'-0" R.C.D.G. SPANS
LITTLE MISSOURI RIVER BR. & APPRS.
PIKE COUNTY

ROUTE 27 SEC. 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KMG DATE: 5 JAN. 82
CHECKED BY: JLB DATE: Feb 82
DESIGNED BY: STD DATE:
SCALE: AS SHOWN
BRIDGE NO. 1029W, 1622W DRAWING NO. 25232

[illegible]

REINFORCING PLAN
Scale : $\frac{3}{8}'' = 1'-0''$



LONGITUDINAL SECTION THRU NEW SLAB
Scale: $\frac{3}{8}'' = 1'-0''$

Note: Details of "Fix" and "Exp." ends of Spans are general and show basic design features. For actual location of fixed and expansion ends of Spans see "Layout", Drwg. No. 252274 25239.

For details of Joints adjacent
to 335-8" Cont. Plate Girder Unit
on Bridge No. 1029W, see Drwg.
No. 25234

Note: For 'General Notes' see Drwg. No. 25232

ALTERNATE NO. 1

SHEET 2 OF 2

DETAILS FOR WIDENING 30'-0" R.C.D.G. SPANS
LITTLE MISSOURI RIVER BRs. & APPRS.
PIKE COUNTY

ROUTE 27 SEC. 4

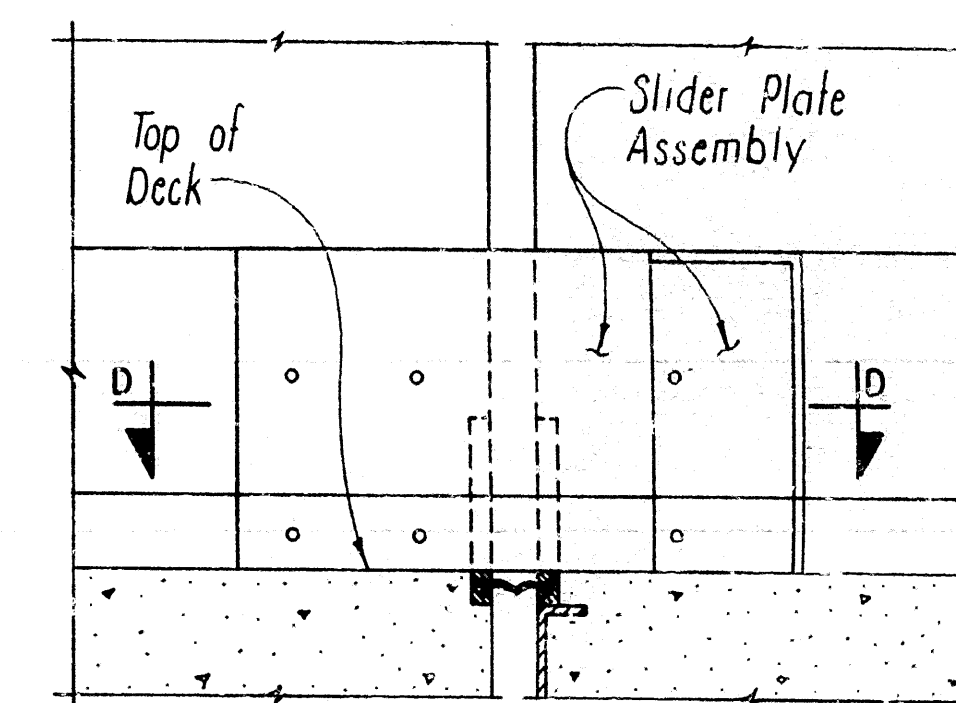
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KMG DATE: 4 JAN. 62
 CHECKED BY: JSB DATE: FEB 12 SCALE: AS SHOWN
 DESIGNED BY: STC DATE:

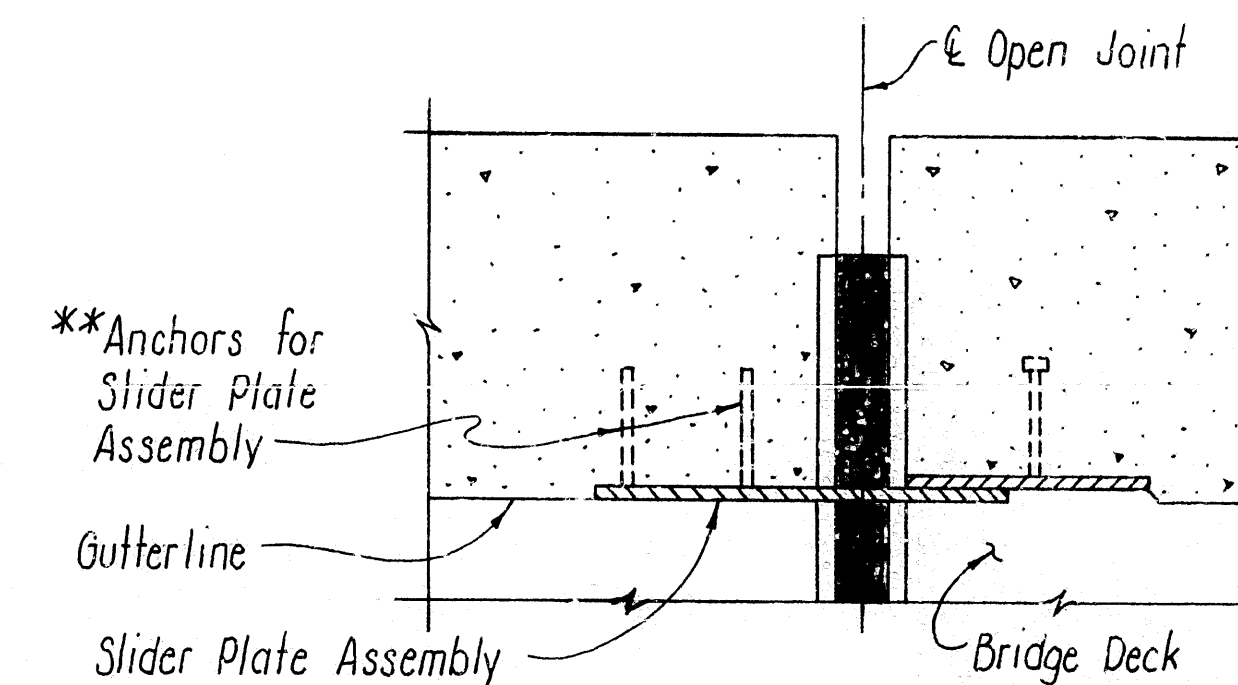
BRIDGE NO. 1029W, R. 27W DRAWING NO. 25233

① 1029 W - SPAN DTLS. - 25234



SECTION C-C

Scale: $1\frac{1}{2}'' = 1'-0''$

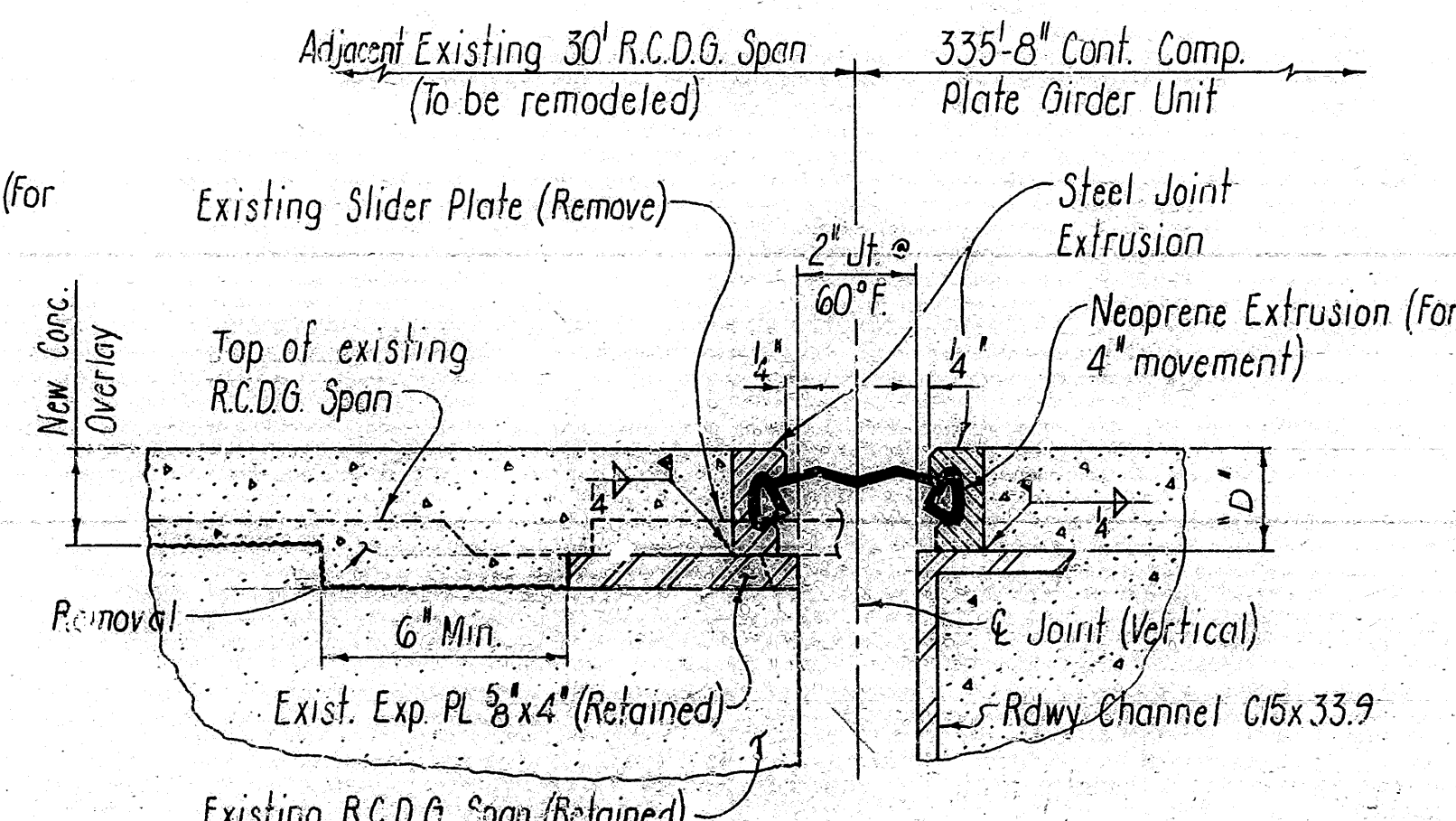


SECTION D-D

about £ Br.

DETAIL "A"

No Scale



SECTION B-B

No Scale

ALTERNATE NO. 1

SHEET 1 OF 3

DETAILS OF 335'-8" CONTINUOUS
COMPOSITE PLATE GIRDER UNIT
BRIDGE OVER LITTLE MISSOURI RIVER
PIKE COUNTY

ROUTE 27 SEC. 4

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK

DRAWN BY: KMG DATE: 1 APR 82
CHECKED BY: DHM DATE: 6/10/82
DESIGNED BY: CES DATE: OCT 81

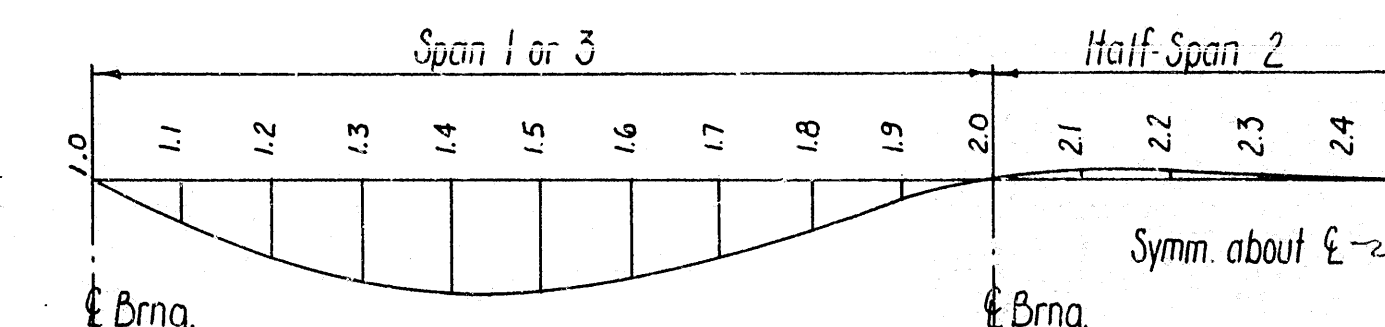
BRIDGE NO. 1029W DRAWING NO. 25234

DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	F-BRF-041-(16)	31	77
				JOB NO.	3914			
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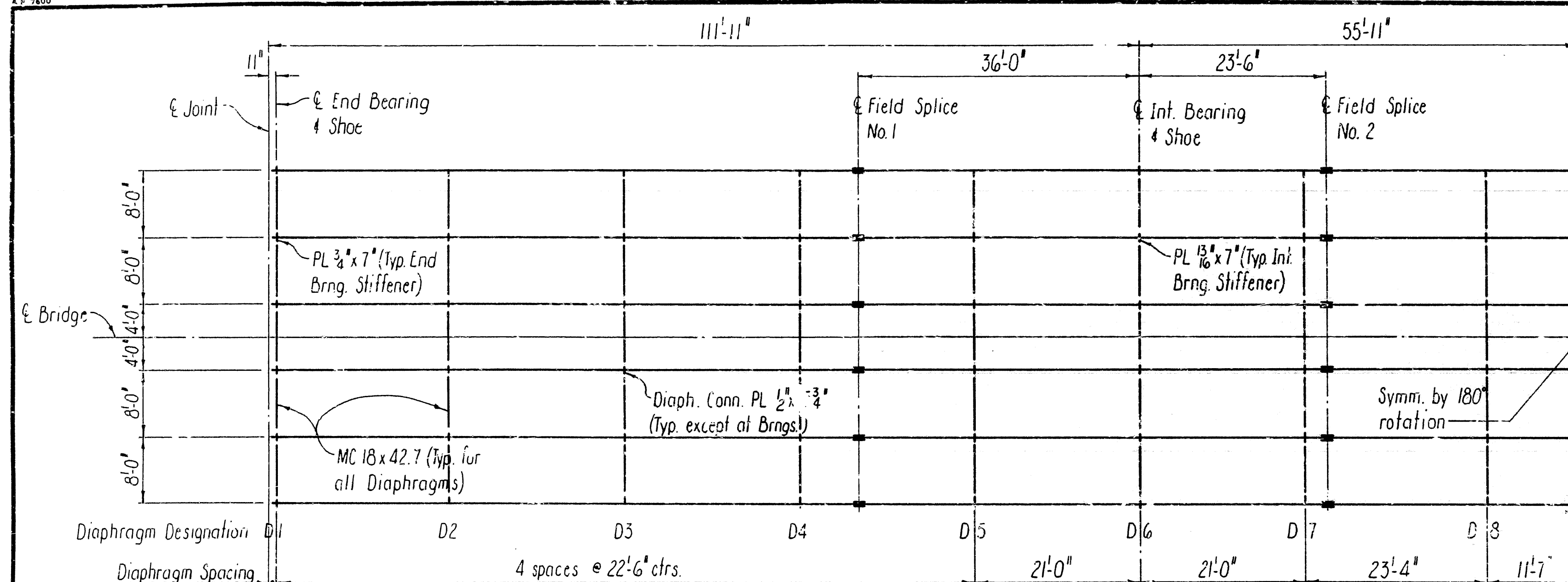
TABLE OF DEFLECTIONS (INCHES)

Span Point	INTERIOR GIRDER			EXTERIOR GIRDER			
	Weight of Girder	Weight of Girder & Slab	Weight of Girder, Slab & Para. Rail	Weight of Girder	Weight of Girder & Slab	Weight of Girder, Slab & Para. Rail	
Span 1 or 3	1.0	0	0	0	0	0	
	1.1	0.253	1.239	1.304	0.242	1.156	1.286
	1.2	0.465	2.265	2.384	0.444	2.112	2.349
	1.3	0.615	2.974	3.129	0.588	2.774	3.084
	1.4	0.691	3.319	3.493	0.661	3.096	3.443
	1.5	0.689	3.279	3.451	0.660	3.060	3.403
	1.6	0.613	2.881	3.032	0.587	2.689	2.992
	1.7	0.476	2.203	2.320	0.456	2.051	2.290
	1.8	0.306	1.389	1.462	0.294	1.297	1.444
	1.9	0.136	0.597	0.627	0.131	0.558	0.618
Half-Span 2	2.0	0	0	0	0	0	
	2.1	- 0.073	- 0.260	- 0.267	- 0.071	- 0.245	- 0.258
	2.2	- 0.098	- 0.278	- 0.276	- 0.096	- 0.263	- 0.259
	2.3	- 0.098	- 0.172	- 0.154	- 0.097	- 0.165	- 0.131
	2.4	- 0.086	- 0.044	- 0.014	- 0.087	- 0.047	0.013
	2.5	- 0.082	0.010	0.044	- 0.083	0.001	0.030

Note: Camber for Dead Load Deflection plus Vertical Curve $\pm 4"$ tolerance. Deflections shown are from a chord from ℓ Bearing to ℓ Bearing. Vertical Curve corrections are not included. Negative sign (-) indicates point above chord.

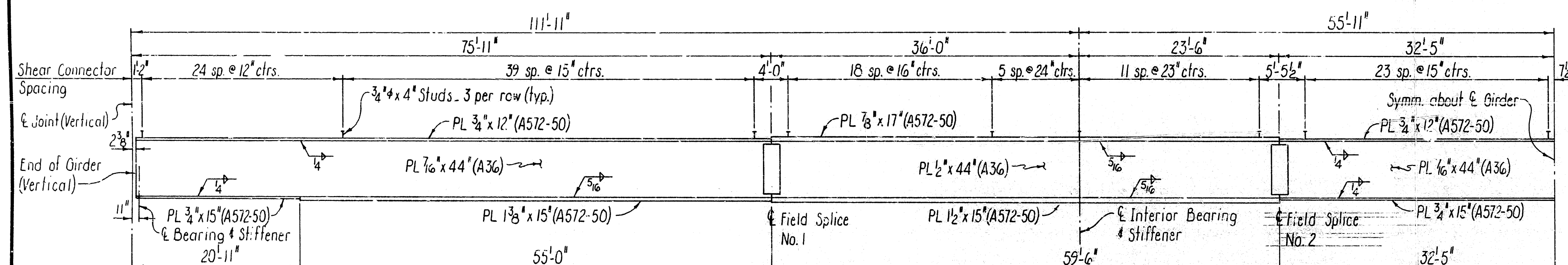


DEAD LOAD DEFLECTIONS
No Scale



HALF FRAMING PLAN

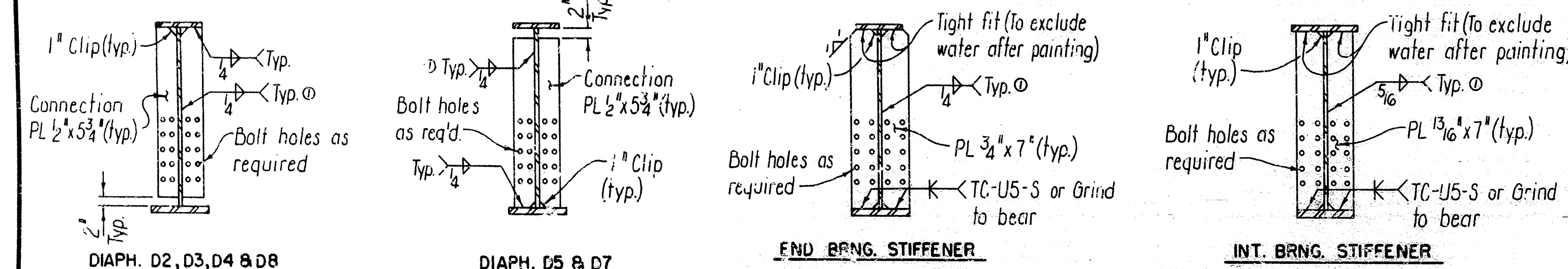
No Scale



Note: Girder web and flanges are considered main load carrying members and shall meet the requirements of the Longitudinal Charpy V-Notch Test as specified in subsection 807.05 of the Standard Specifications.

HALF - GIRDER ELEVATION

No Scale

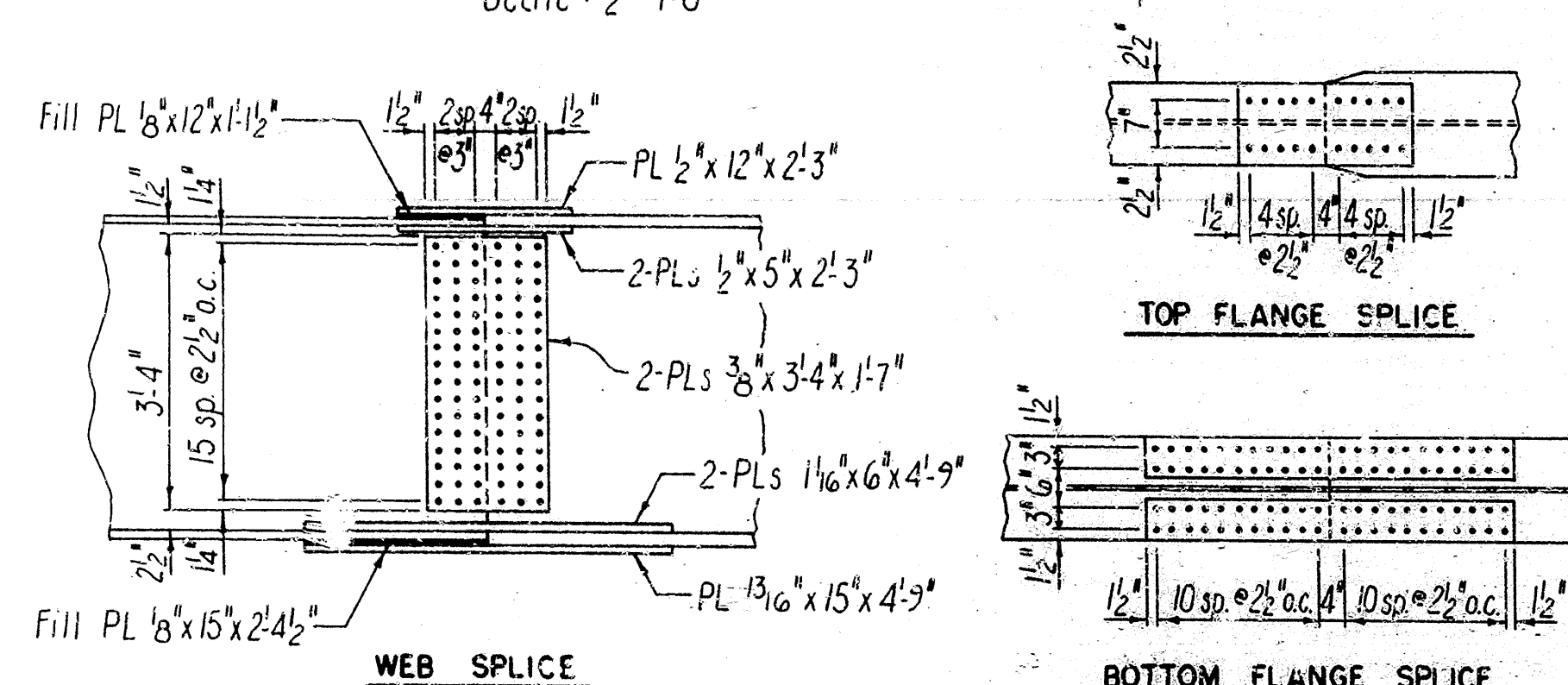


TYP. DIAPHRAGM CONNECTIONS

Scale : $\frac{1}{2}'' = 1'-0''$

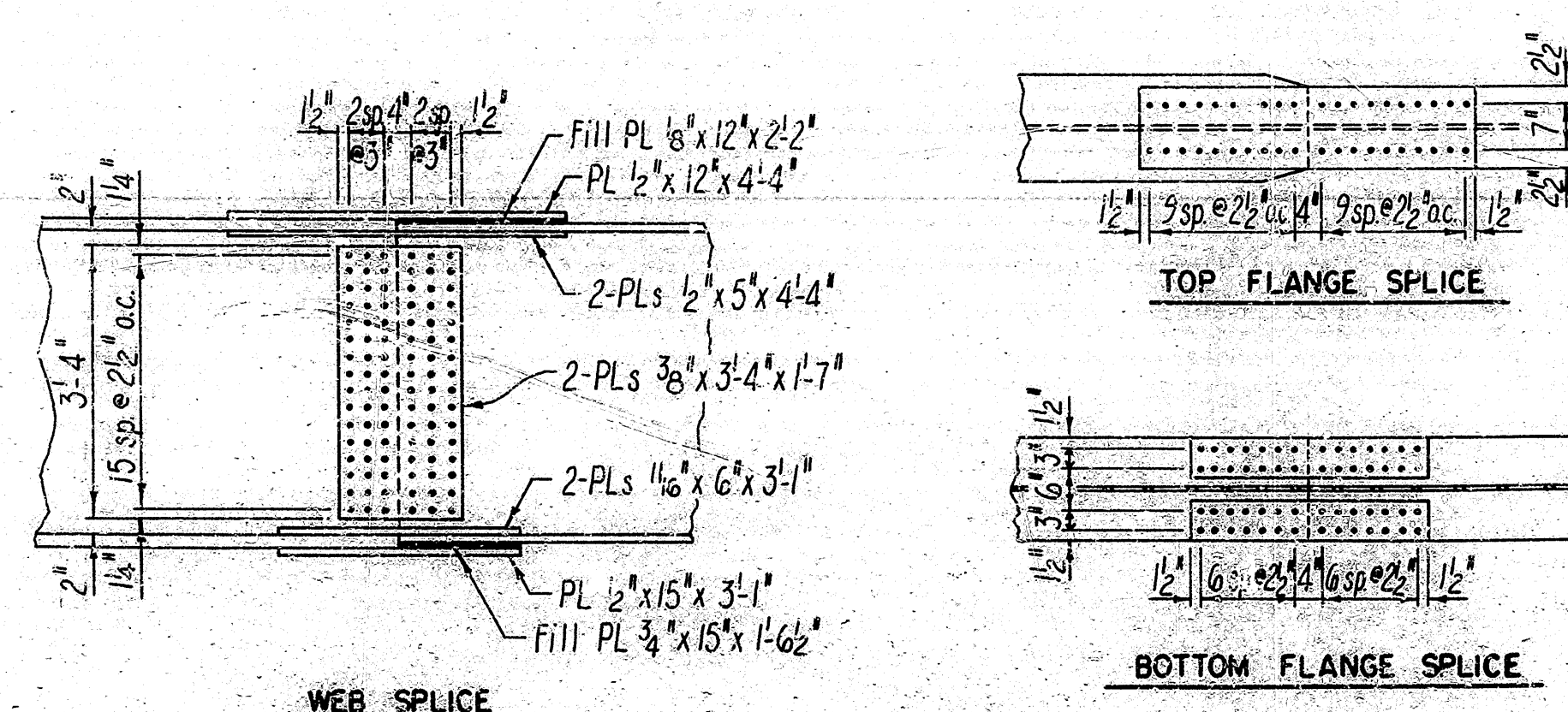
TYP. BEARING STIFFENERS

Scale: $\frac{1}{2}'' = 1'-0''$



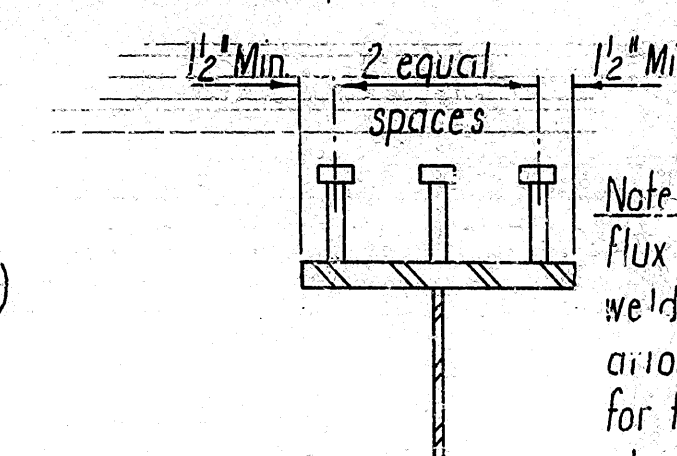
DETAILS OF FIELD SPLICE NO. 1

Scale: $1'' = 10'$



DETAILS OF FIELD SPLICE NO. 2

Scale: $\frac{1}{2}'' = 1'-0''$



SHEAR CONNECTOR DETAIL.

No Scale

Note: Stud shear connectors shall be $\frac{3}{4}" \times 4"$ long, granular flux filled, solid fluxed, or equal, and automatically end welded to girder flanges in accordance with recommendations of the manufacturer. $\frac{3}{8}"$ Studs may be substituted for the $\frac{3}{4}"$ Studs shown at the ratio 0.73 - $\frac{3}{8}"$ Studs in place of 1 - $\frac{3}{4}"$ Stud. The $\frac{3}{4}"$ Studs will be used as the basis of payment at 61.5 pounds per one hundred studs.

Note:
All bolts for Field Splices shall be $\frac{3}{4}$ " H.S. Bolts.
All splice plates shall be ASTM A36 Steel.

ALTERNATE NO. 1

SHEET 2 OF 3

DETAILS OF 335'-8" CONTINUOUS
COMPOSITE PLATE GIRDER UNIT
BRIDGE OVER LITTLE MISSOURI RIVER
PIKE COUNTY

ROUTE 27 SEC. 4

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

KMG 5 APR 82

DRAWN BY: WJG DATE: 5/11/32
CHECKED BY: DHM DATE: 6/10/32 SCALE: AS SHOWN

DESIGNED BY: CES DATE: Oct 81

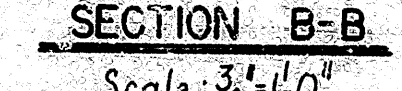
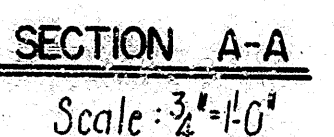
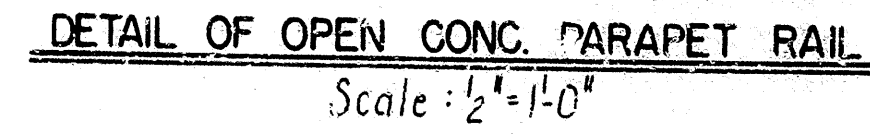
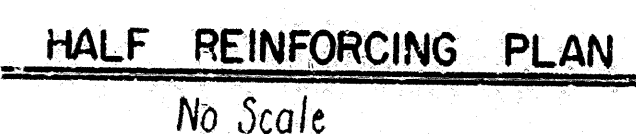
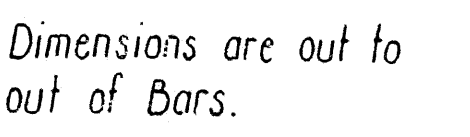
BRIDGE NO. 1000W

BRIDGE NO. 1023 W DRAWING NO. 25235

BRIDGE NO. 1023 W DRAWING NO. 25235

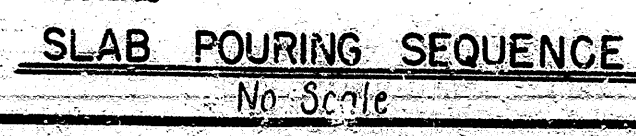
① 1029W - SPAN DTLS. - 25236

BENDING DIAGRAMS



Note: Surfaces of the 3/8" Plates which will not be in contact with concrete shall receive two coats of paint in the Shop. These coats shall be those specified as First Shop Coat and Second Field Coat in subsection 807.59(a) & (c) and SP 807-10.

No Scale



ROUTE 27 SEC. 4
ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.
 DRAWN BY: KMG DATE: 6 APR. 82
 CHECKED BY: DHM DATE: 6/10/82 SCALE: AS SHOWN
 DESIGNED BY: SES DATE: Oct. 81
BRIDGE NO. 1029W **DRAWING NO. 25236**

GENERAL NOTES

DESIGN:

AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 1977 EDITION WITH CURRENT INTERIMS.

CONSTRUCTION:

ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 1978 EDITION, AND DESIGN SPECIAL PROVISIONS.

LIVE LOADING:

HS 20-44

METHOD OF DESIGN:

LOAD FACTOR

MATERIALS:

CONCRETE: ALL CONCRETE SHALL BE CLASS (A) WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH $f'_c = 3500$ PSI.

REINFORCING STEEL: REINFORCING STEEL SHALL CONFORM TO ASTM A615 OR A617, GRADE 60 (YIELD STRENGTH = 60,000 PSI).

STRUCTURAL STEEL: STRUCTURAL STEEL SHALL CONFORM TO ASTM DESIGNATION A36, ($f_y = 36,000$ PSI) OR ASTM DESIGNATION A572, GRADE 50 ($f_y = 50,000$ PSI).

ELASTOMERIC BEARINGS: FOR ELASTOMERIC BEARINGS, SEE DWG. NO. 25237

STRUCTURAL STEEL:

STRUCTURAL SHAPES OF EQUAL OR GREATER STRENGTH MAY BE SUBSTITUTED FOR SHAPES SHOWN IF APPROVAL IS OBTAINED FROM THE BRIDGE ENGINEER. PAYMENT WILL BE MADE ON THE BASIS OF SHAPES SHOWN.

ALL WEB PLATES AND FLANGE PLATES ARE CONSIDERED MAIN LOAD CARRYING MEMBERS AND SHALL MEET THE LONGITUDINAL CHARPY V-NOTCH TEST SPECIFIED IN SUBSECTION 807.05.

GIRDER FLANGE PLATES AND FIELD SPLICE PLATES SHALL BE CUT AND FABRICATED SO THAT THE PRIMARY DIRECTION OF ROLLING IS PARALLEL TO THE DIRECTION OF THE MAIN TENSILE AND/OR COMPRESSIVE STRESSES.

ALL GIRDERS SHALL BE BLOCKED IN THEIR TRUE POSITION, WITH WEBS HORIZONTAL IN THE SHOP, IN GROUPS OF A MINIMUM OF THREE SECTIONS. SEE SECTION 807.16(b), OF THE STANDARD SPECIFICATIONS. THE CAMBER, LENGTH OF SECTIONS, DISTANCE BETWEEN BEARINGS AND OPENINGS OF JOINTS SHALL BE MEASURED WITH THE GIRDERS IN THIS POSITION AND THIS INFORMATION SHALL BECOME A PART OF THE PERMANENT RECORDS OF THIS JOB. THE COMPONENT PARTS SHALL BE MATCH MARKED IN THIS ASSEMBLY AND THESE MARKS SHALL BE SHOWN ON THE ERECTION DIAGRAM. ALL GIRDER DIMENSIONS ARE BASED ON A TEMPERATURE OF 60°F. A TOLERANCE OF $\pm 1/4"$ IS ALLOWED FOR CAMBER.

ANCHOR BOLTS SHALL BE GALVANIZED TO CONFORM TO ASTM SPECIFICATIONS, DESIGNATION A153.

GIRDER WEBS MAY BE MADE BY SHOP SPlicing WITH A MINIMUM LENGTH OF 25'-0" FOR SECTIONS. FLANGE PLATES LONGER THAN 50 FT. MAY BE MADE BY SHOP SPlicing WITH MINIMUM LENGTH OF 25'-0" FOR SECTIONS. NO ADDITIONAL PAYMENT FOR WELDS FOR THESE SECTIONS WILL BE MADE.

BEARINGS SHALL BE FIRMLY SEATED IN ACCORDANCE WITH SECTION 807.51 OF THE STANDARD SPECIFICATIONS. THIS WORK AND MATERIAL ARE TO BE CONSIDERED AS SUBSIDIARY TO THE ITEM "STRUCTURAL STEEL IN PLATE GIRDER SPANS" AND WILL NOT BE PAID FOR DIRECTLY.

FIELD CONNECTIONS TO BE BOLTED WITH HIGH STRENGTH BOLTS. BOLTS: $3/4"$ Ø, OPEN HOLES $13/16"$ EXCEPT WHERE NOTED OTHERWISE. BOLT SPACING SHALL BE 2-1/2" UNLESS OTHERWISE NOTED. MINIMUM EDGE DISTANCE SHALL BE 1-1/4" UNLESS NOTED OTHERWISE. BOLTS SHALL BE PLACED WITH HEADS ON THE OUTSIDE FACE OF THE EXTERIOR BEAMS AND ON BOTTOM OF BEAM FLANGES.HOLES FOR $3/4"$ Ø, HIGH STRENGTH BOLTS IN DIAPHRAGMS MAY BE $15/16"$ Ø, IF A WASHER IS SUPPLIED FOR USE UNDER BOTH THE NUT AND HEAD OF THE BOLT.

DIAPHRAGMS SHALL BE INSTALLED AS GIRDERS ARE ERECTED. DIAPHRAGMS SHALL BE INSTALLED AND COMPLETELY BOLTED PRIOR TO POURING OF FLOOR SLABS.

ALL WELDING THAT IS TO BE DONE DURING FABRICATION OF STRUCTURAL STEEL, INCLUDING TEMPORARY WELDS SHALL BE DETAILED ON THE SHOP DRAWINGS AND SUBMITTED FOR APPROVAL. IF THE CONTRACTOR OR ERECTOR SHOULD WANT TO MAKE ADDITIONAL WELDS, WHETHER TEMPORARY OR PERMANENT, HE SHALL SUBMIT DETAILED DRAWINGS WITH FORMAL REQUEST TO THE BRIDGE DESIGN ENGINEER OF THE ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT FOR APPROVAL. ALL WELDING SHALL CONFORM TO SP 807-5.

DRAWINGS SHOW GENERAL FEATURES OF DESIGN ONLY. SHOP DRAWINGS SHALL BE MADE IN ACCORDANCE WITH THE SPECIFICATIONS, SUBMITTED AND APPROVAL SECURED BEFORE FABRICATION IS BEGUN.

ALL METAL BEARING AND ROADWAY EXPANSION DEVICES TO BE PAID FOR AS "STRUCTURAL STEEL IN PLATE GIRDER SPANS (A36)."

ALL STRUCTURAL STEEL SHALL BE ASTM A36 OR ASTM A572, GRADE 50. ALL STRUCTURAL STEEL SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER POUND BID FOR "STRUCTURAL STEEL IN PLATE GIRDER SPANS A572 - GRADE 50" OR "STRUCTURAL STEEL IN PLATE GIRDER SPANS A36." THE GIRDER FLANGES ARE A572, GRADE 50, AS NOTED ON "GIRDER ELEVATION", DRAWING NO. 25235. ALL OTHER STRUCTURAL STEEL SHALL BE A36.

LOAD DISTRIBUTION TO GIRDERS:

DEAD LOAD

TO INTERIOR GIRDER

TO EXTERIOR GIRDER

(a) TO GIRDER ONLY

750#/FT + WT/FT STRUC. STEEL

695#/FT + WT/FT STRUC. STEEL

(b) TO COMPOSITE GIRDER

264#/FT*

352#/FT

LIVE LOAD TO COMPOSITE GIRDER

1,455 WHEELS + IMPACT

1,333 WHEELS + IMPACT

*INCLUDES 176#/LIN. FT. FUTURE WEARING SURFACE.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	F-BRF-041-II(6)	34	77
						JOB NO.	3914	
						1029W	NOTES	25238

PAINTING:

SHOP PAINT. ALL STRUCTURAL STEEL EXCEPT GALVANIZED MEMBERS, CONTACT SURFACES OF BOLTED CONNECTIONS, SURFACES WITHIN 3 INCHES OF HOLES AND FIELD WELDS, AND SURFACES IN CONTACT WITH CONCRETE SHALL BE GIVEN ONE PRIME COAT AS SPECIFIED IN SUBSECTION 807.59 OF THE STANDARD SPECIFICATIONS.

FIELD PAINT: IN ADDITION TO THE PRIME COAT ALL STRUCTURAL STEEL EXCEPT GALVANIZED MEMBERS SHALL RECEIVE TWO COATS OF PAINT AFTER ERECTION. THE CONTRACTOR SHOULD NOTE THE AMOUNT OF TIME ALLOWED TO ELAPSE BETWEEN COATS BEFORE ADDITIONAL CLEANING IS REQUIRED. SEE SP 807-10 AND THE STANDARD SPECIFICATIONS.

REINFORCING STEEL:

THE REINFORCING STEEL IS TO BE ACCURATELY LOCATED IN THE FORMS AND FIRMLY HELD IN PLACE BY STEEL WIRE SUPPORTS SUFFICIENT IN NUMBER AND SIZE TO PREVENT DISPLACEMENT DURING THE COURSE OF CONSTRUCTION. THE WIRE SUPPORTS WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED SUBSIDIARY TO THE ITEMS OF "REINFORCING STEEL."

CONCRETE:

ALL CONCRETE SHALL BE POURED AND SCREEDED OFF PRIOR TO INITIAL SET. THE CONCRETE BRIDGE DECK SHALL BE GIVEN A FINE FINISH AS SPECIFIED FOR FINAL FINISHING IN SUBSECTION 802.23 FOR CLASS 6, ROADWAY SURFACE FINISH. MOVEMENT OF THE FINISHING MACHINE ACROSS NEW CONCRETE SHALL BE ON PLANKS PLACED ON THE SURFACE AND SHALL BE PROHIBITED FOR 72 HOURS AFTER FINISHING THE POUR. SUFFICIENT CONCRETE MUST BE PLACED AHEAD OF THE STRIKE-OFF TO FULLY LOAD THE GIRDER. IF A LONGITUDINAL STRIKE-OFF IS USED, A VERTICAL CAMBER ADJUSTMENT MUST BE MADE IN THE STRIKE-OFF TO ACCOUNT FOR THE FUTURE DEAD LOAD DEFLECTION DUE TO THE RAILING.

THE CONTRACTOR MAY POUR THE BRIDGE SLAB CONTINUOUS OVER THE ENTIRE UNIT USING RETARDING AGENT TO RETARD SET.

THE BRIDGE SLAB MAY BE POURED AS SHOWN ON THE POURING SEQUENCE DIAGRAM. IF THIS SEQUENCE IS USED, ALL POURS (1) ADJACENT TO POURS (2) MUST BE PLACED BEFORE POURS (2) CAN BE PLACED.

THE CONTRACTOR MUST OBTAIN APPROVAL FROM THE PROJECT ENGINEER IF HE ELECTS TO MAKE POURS OTHER THAN AS SHOWN.

NOTES FOR EXPANSION JOINTS:

- THE EXPANSION JOINT TO BE FABRICATED AND INSTALLED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER.
 - THE CONTRACTOR MUST VERIFY ALL DIMENSIONS PRIOR TO FABRICATION.
 - ALL WELDS SHALL CONFORM TO STANDARD AWS AND AASHTO SPECIFICATIONS FOR HIGHWAY BRIDGES.
 - SPLICES OF STEEL EXTRUSION SHALL DEVELOP FULL STRENGTH.
 - STEEL EXTRUSIONS TO BE ASTM A36 OR EQUAL.
 - NEOPRENE EXTRUSION TO MEET ASTM D2628-69 MODIFIED (RECOVERY TESTS EXCLUDED).
 - THE EXPANSION JOINT SHALL PROVIDE A MOVEMENT OF 4 INCHES.
 - THE EXPANSION JOINT SHALL BE CAPABLE OF SEALING THE DECK SURFACE AND PARAPET AREA TO PREVENT MOISTURE AND OTHER CONTAMINANTS FROM DESCENDING THROUGH THE JOINT.
 - DETAILS OF JOINT EXTENSION INTO THE PARAPET ARE GENERAL AND ARE SHOWN ONLY TO ESTABLISH BASIC DESIGN CONTROLS.
 - THE METHOD OF EXTENSION AND ATTACHMENT OF THE JOINT THROUGH OR INTO THE PARAPET SHALL BE DETERMINED BY THE MANUFACTURER. THE METHOD SELECTED MUST MAINTAIN THE SHAPE OF THE PARAPET SMOOTHLY ACROSS THE JOINT OR PROVIDE A SLIDER PLATE ASSEMBLY OR SIMILAR DEVICE WHICH CONFORMS TO THE SHAPE OF THE PARAPET. IF AN OPENING EXCEEDS 2-1/2", THE PARAPET SHAPE HAS NOT BEEN SMOOTHLY MAINTAINED AND THEREFORE WILL REQUIRE A SLIDER PLATE ASSEMBLY OR SIMILAR DEVICE.
- DETAILS OF PROPOSED JOINT EXTENSION INTO THE PARAPET AND, IF REQUIRED, SLIDER PLATE ASSEMBLY SHALL BE SUBMITTED TO AND APPROVED BY THE BRIDGE ENGINEER PRIOR TO THE FABRICATION OF ANY STRUCTURAL STEEL AT THE EXPANSION DEVICE.
- THE LINEAR FOOT OF JOINT IS MEASURED ALONG THE CENTERLINE OR JOINT BETWEEN THE ROADWAY FACE OF PARAPETS, THAT PART OF THE JOINT OUTSIDE THESE LIMITS WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE PER LINEAR FOOT BID FOR ARMORED JOINT WITH NEOPRENE STRIP SEAL, SEE SP JOB 3914, "ARMORED JOINT WITH NEOPRENE STRIP SEAL."

ALTERNATE NO. 1

GENERAL NOTES FOR 335'-8"
CONTINUOUS COMPOSITE PLATE GIRDER UNIT
BRIDGE OVER LITTLE MISSOURI RIVER
PIKE COUNTY

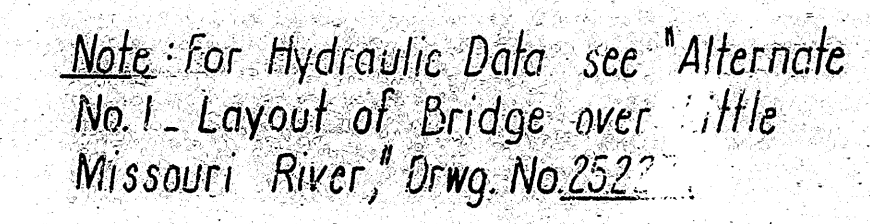
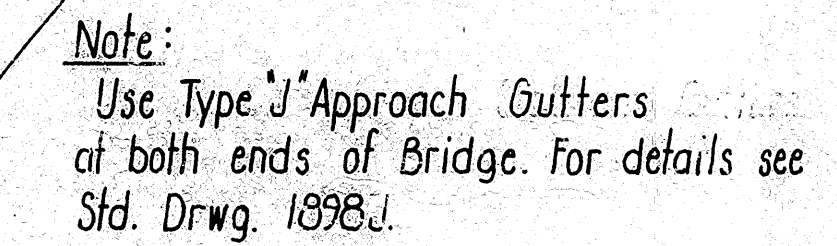
ROUTE 27 SEC. 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: *LSB* DATE: *6/18/88*
CHECKED BY: *LSB* DATE: *6/18/88*
DESIGNED BY: *UAS* DATE: *6/18/88*

BRIDGE NO. 1029W DRAWING NO. 25238

Wendell D. Johnston
BRIDGE ENGINEER

FOR R/W DATA SEE ROWY. PLANS



ALTERNATE NO. 1

LAYOUT OF
BRIDGE OVER LAKE SLOUGH
LITTLE MISSOURI RIVER BRS. & APPRS.
PIKE COUNTY

ROUTE 27 SEC. 4

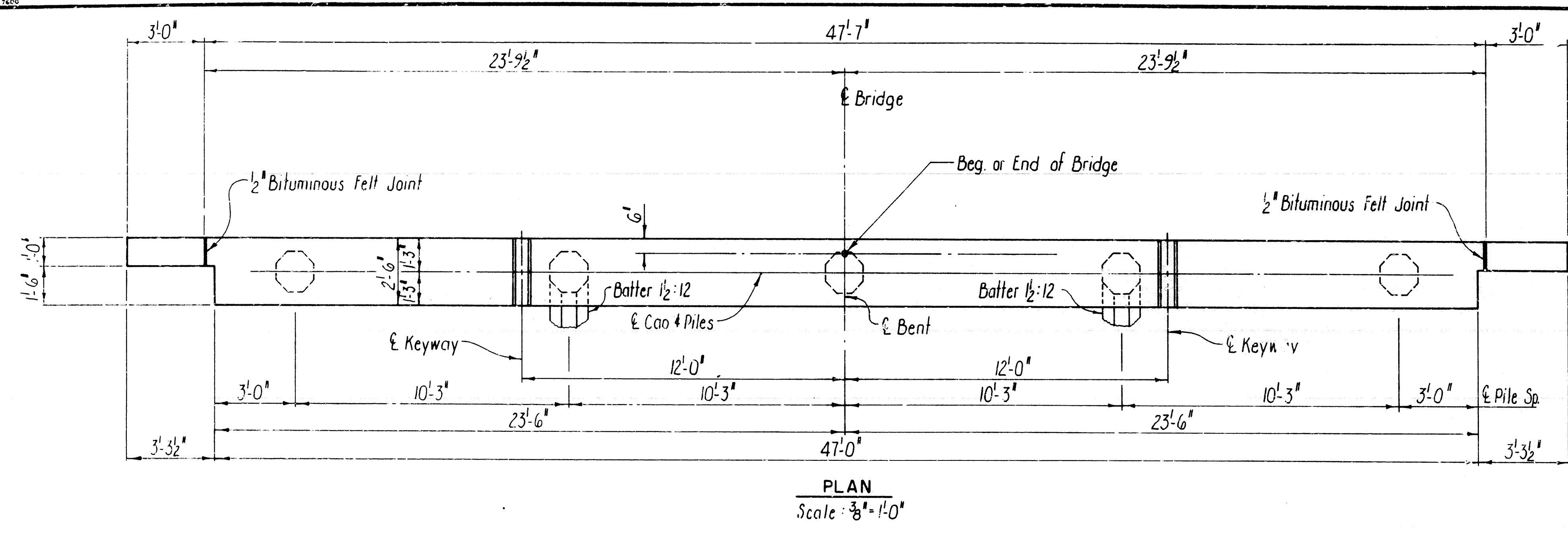
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: K. M. G. DATE: 14 DEC. 81
CHECKED BY: CES DATE: 5-10-82
FORWARDED BY: — DATE: —

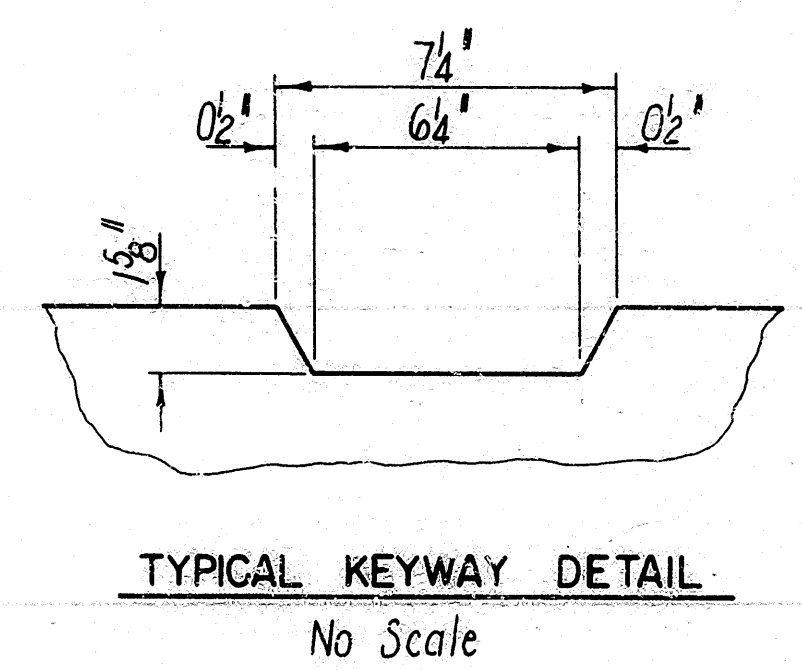
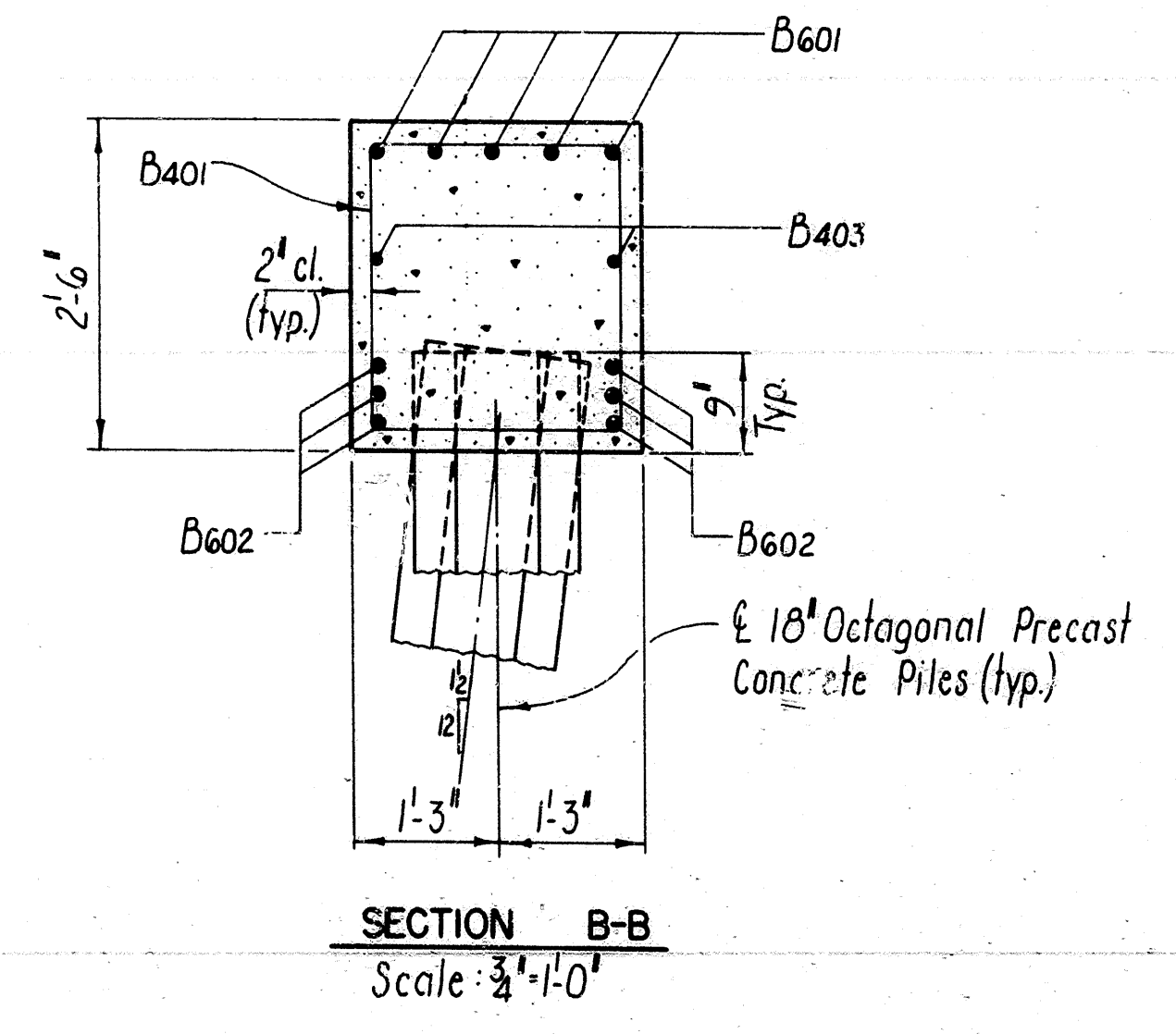
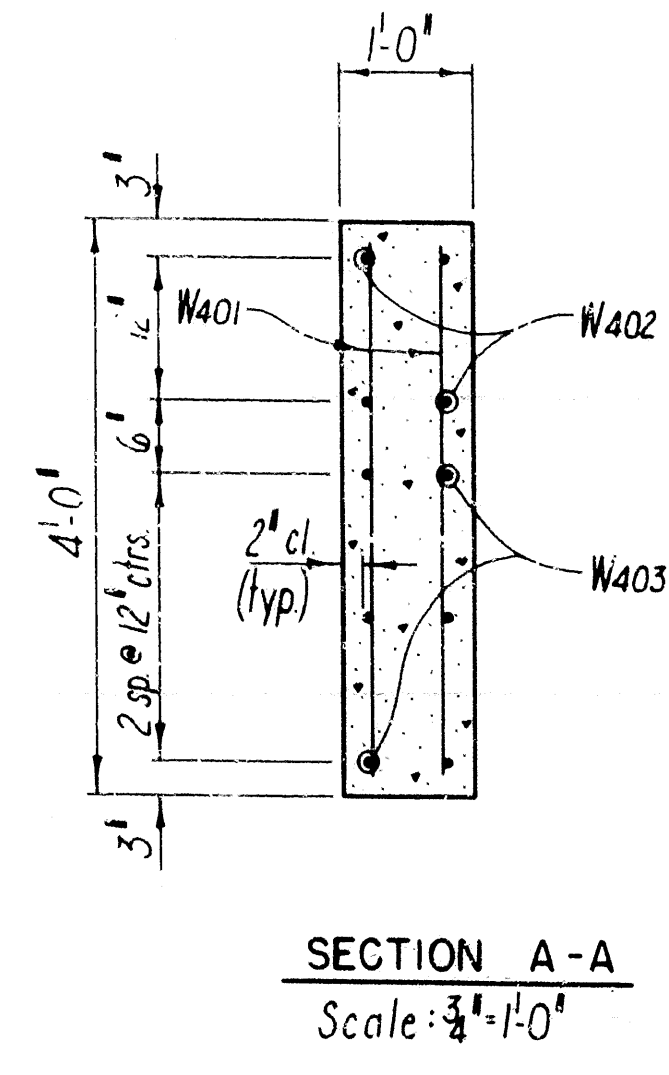
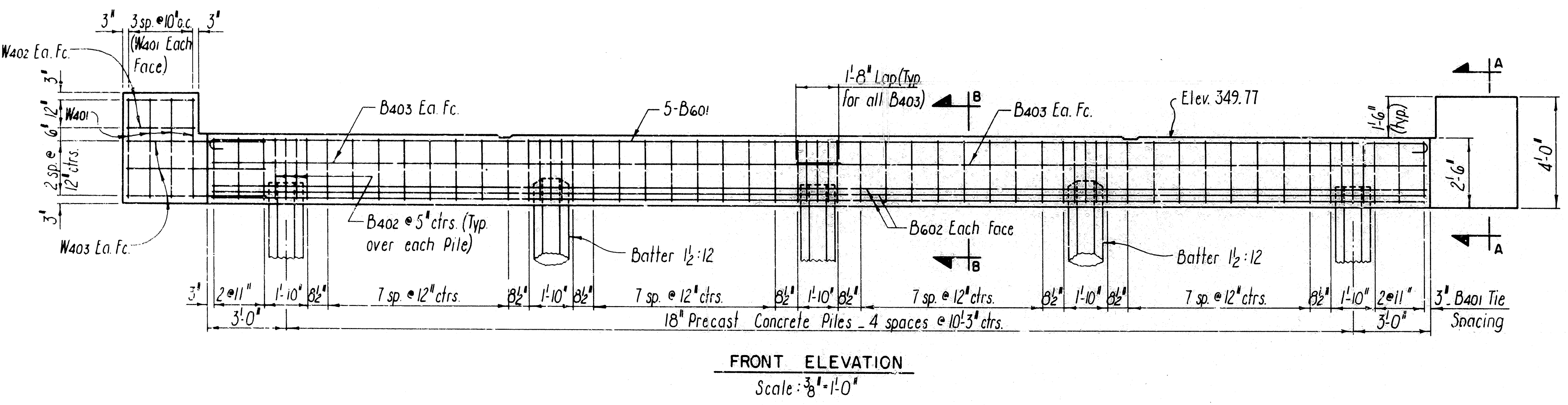
SCALE: 1" = 20'

BRIDGE NO. 1622W DRAWING NO. 25239

DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	F-BRF-041-1(8)	37	77
				JOB NO.		3914		
				① 1623W - BENT DTLS. - 25241				

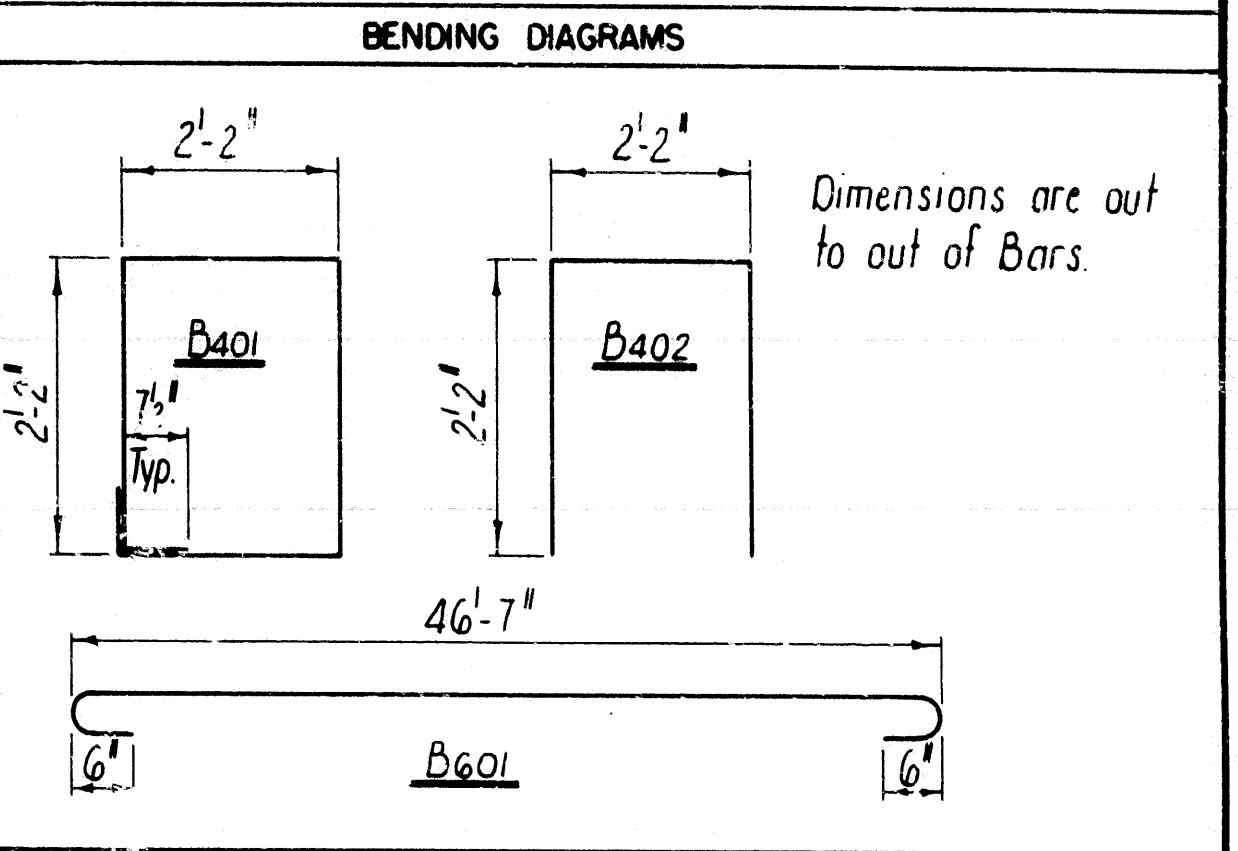


Note: Wingwall reinforcing shown is typical for both wingwalls.



BAR LIST - EACH BENT

MARK	NO. REQ'D.	LENGTH	PIN DIA.
B401	46	9'-6"	2"
B402	15	6'-4"	2"
B403	4	24'-2"	Str.
B601	5	47'-11"	4 1/2"
B602	6	46'-7"	Str.
W401	16	3'-7"	Str.
W402	8	2'-7"	Str.
W403	12	4'-9"	Str.



GENERAL NOTES

ALL CONCRETE TO BE CLASS S AND SHALL BE POURED IN THE DRY. ALL EXPOSED CORNERS TO BE CHAMFERED 3/4" UNLESS OTHERWISE NOTED.

ALL PILING SHALL BE DRIVEN TO A MINIMUM BEARING CAPACITY OF 55 TONS PER PILE. PILING SHALL BE 18" OCTAGONAL OR 16" SQUARE PRECAST CONCRETE.

SPECIFICATIONS: ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 1978 AND APPLICABLE SPECIAL PROVISIONS.

LIVE LOAD: HS 20-44

DESIGN SPECIFICATIONS: AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 1977 WITH CURRENT INTERIMS.

METHOD OF DESIGN: LOAD FACTOR

CONCRETE: ALL CONCRETE SHALL BE CLASS "S" WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH $f'_c = 3500$ PSI.

REINFORCING STEEL: REINFORCING STEEL SHALL CONFORM TO ASTM A615 OR A617, GRADE 60, (YIELD STRENGTH = 60,000 PSI).

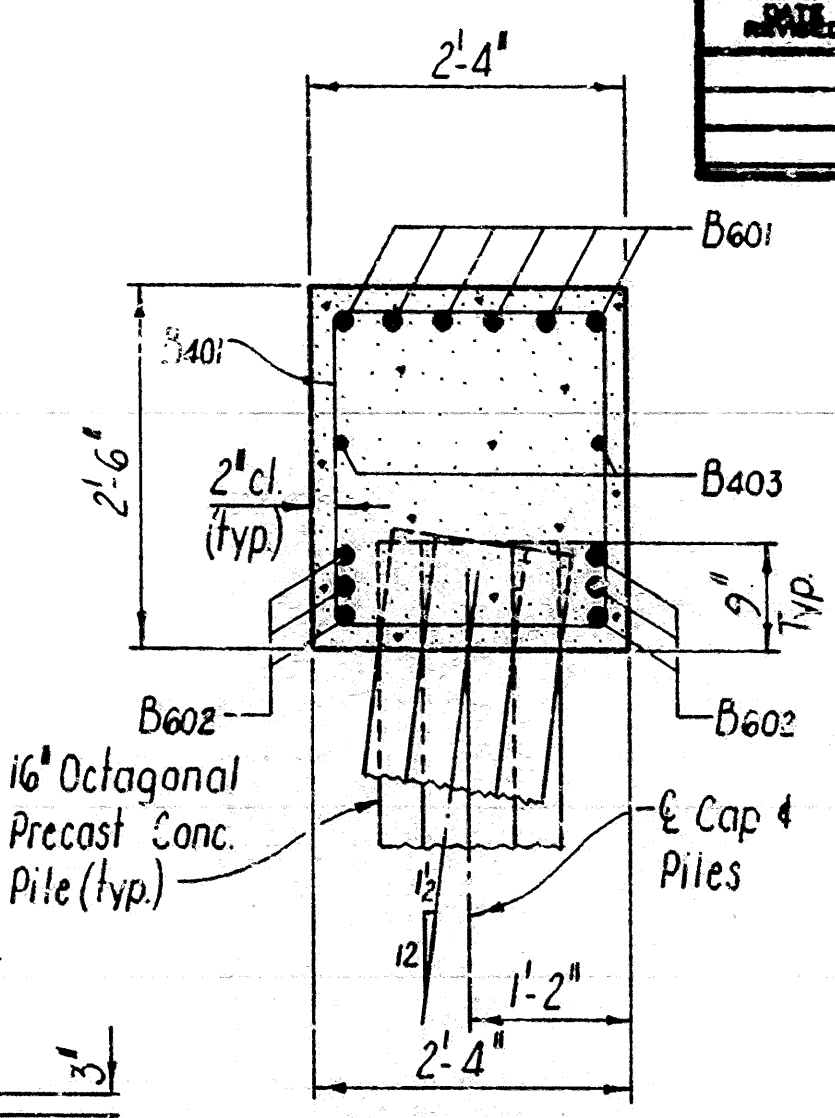
ALTERNATE NO. 2

DETAILS OF
END BENTS I & II
LITTLE MISSOURI RIVER RELIEF
PIKE COUNTY

ROUTE 27 SEC. 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KMG DATE: 25 JAN 82
CHECKED BY: LBS DATE: 24 82
DESIGNED BY: STD DATE: -

BRIDGE NO. 1623W DRAWING NO. 25241



SECTION D-D
Scale: $\frac{3}{4}'' = 1'-0''$

MARK	NO. REQ'D		LENGTH	PIN DIA.
	END BT.	INT. BT.		
B401	30	30	9'2"	2"
B402	12	12	6'2"	
B403	4	-	13'9"	Str.
B404	12	24	3'3"	2"
B405	4	4	16'9"	Str.
B406	-	4	14'0"	Str.
B407	-	**	2'6"	Str.
W401	16	-	3'8"	Str.
W402	8	-	2'8"	Str.
W403	12	-	4'9"	Str.
B601	12	12	17'5"	4½"
B602	12	-	13'9"	Str.
B603	8	8	4'0"	Str.
B604	-	12	14'0"	Str.

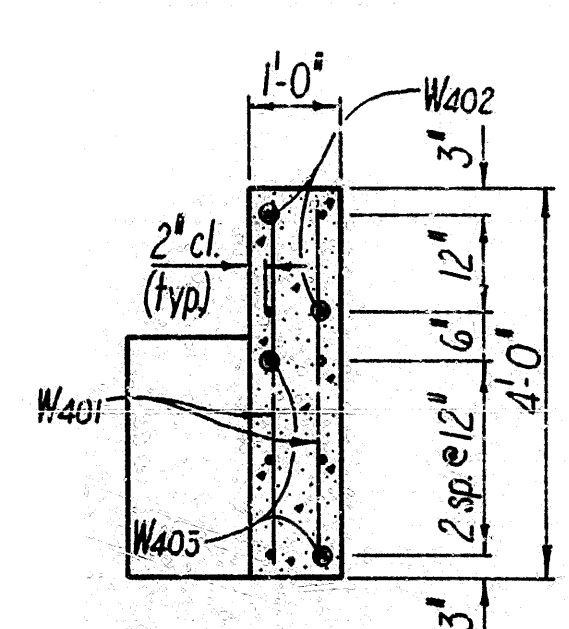
BENDING DIAGRAMS

The diagrams show the following dimensions:

- B401:** Total length 2'0", U-bend depth 2'2", hook length 7½" Typ.
- B402:** Total length 2'0", U-bend depth 2'2".
- B601:** Total length 16'9", hook length 6".
- B604:** Total length 1'9", hook length 1'7".

Dimensions are out to out of Bars.

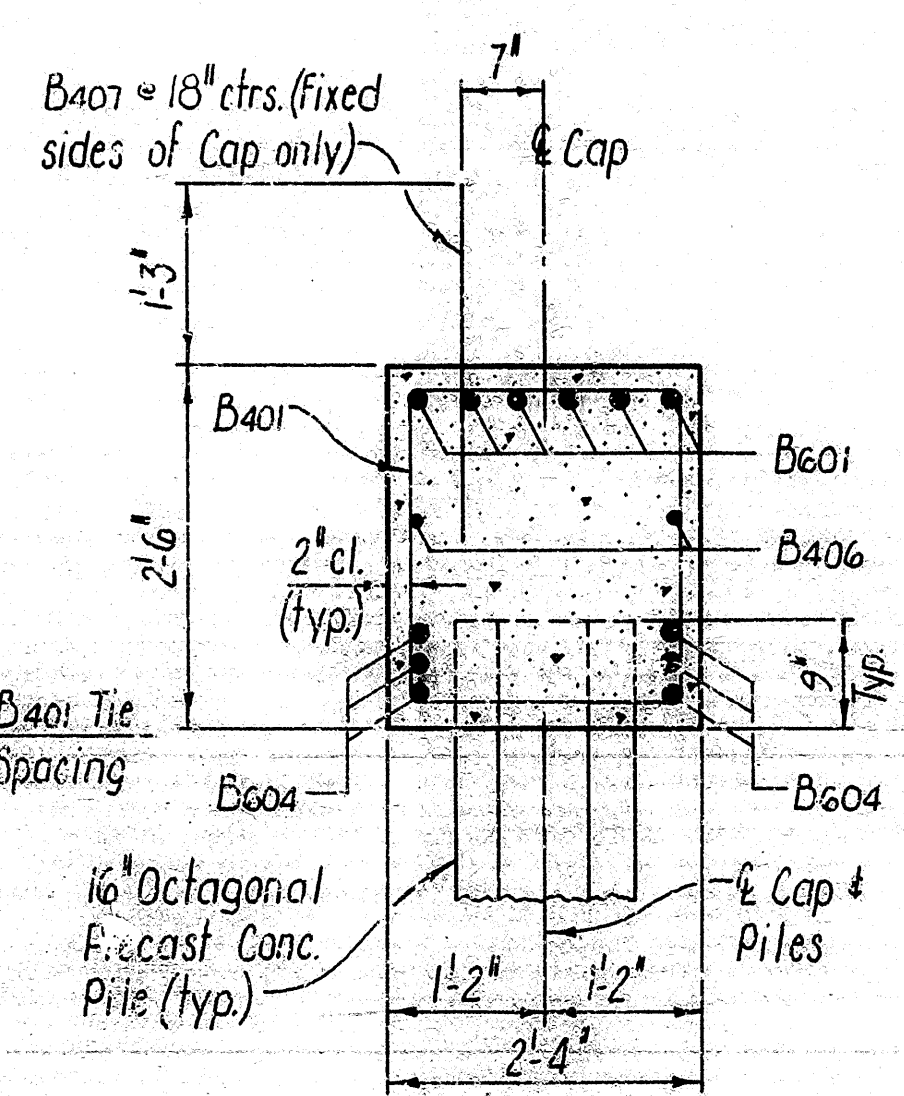
Dimensions are out to out of Bars.



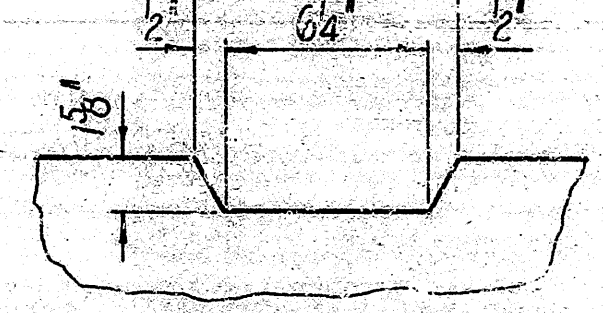
SECTION E-E
Scale: $\frac{1}{2}'' = 1'-0''$

BENT NO.	ELEVATION
1	350.23
2	350.38
3	350.53
4	350.68
9	350.68
10	350.52
11	350.36
12	350.20
13	350.04
14	349.88
15	349.73

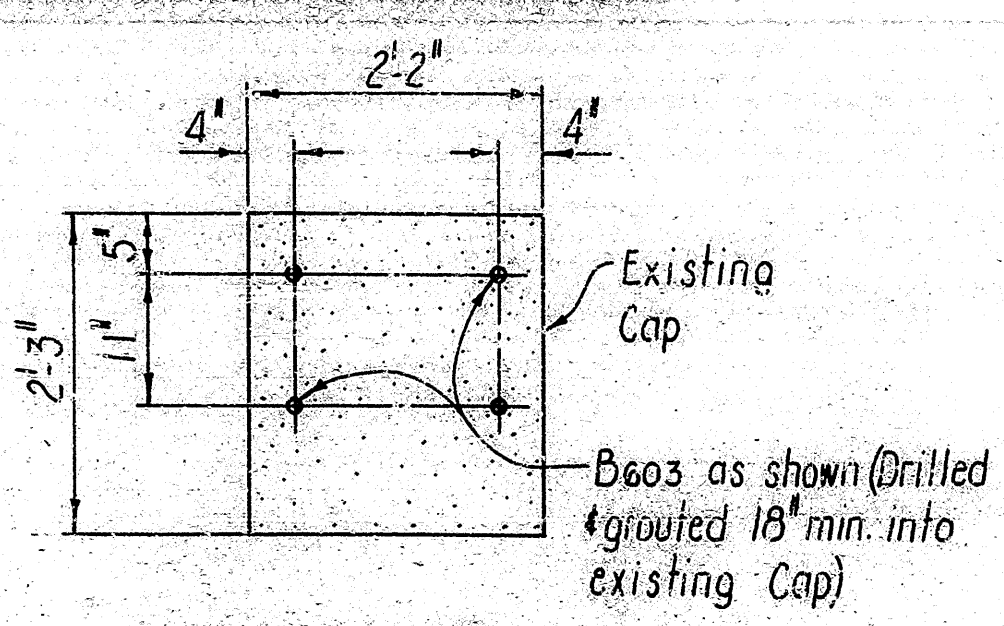
REINFORCING STEEL: REINFORCING STEEL SHALL CONFORM TO ASTM A615 OR A617, GRADE 60 (YIELD STRENGTH = 60,000 PSI).



SECTION F-F
Scale: $3/4" = 1'-0"$



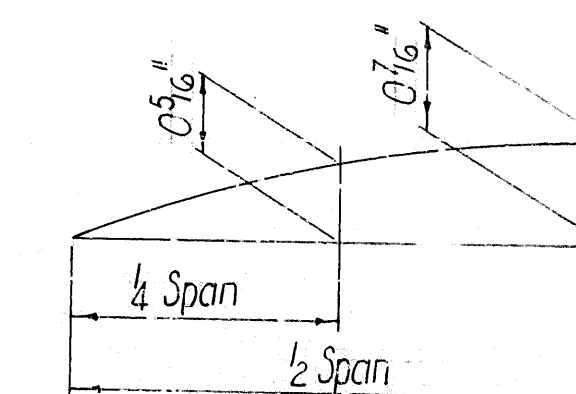
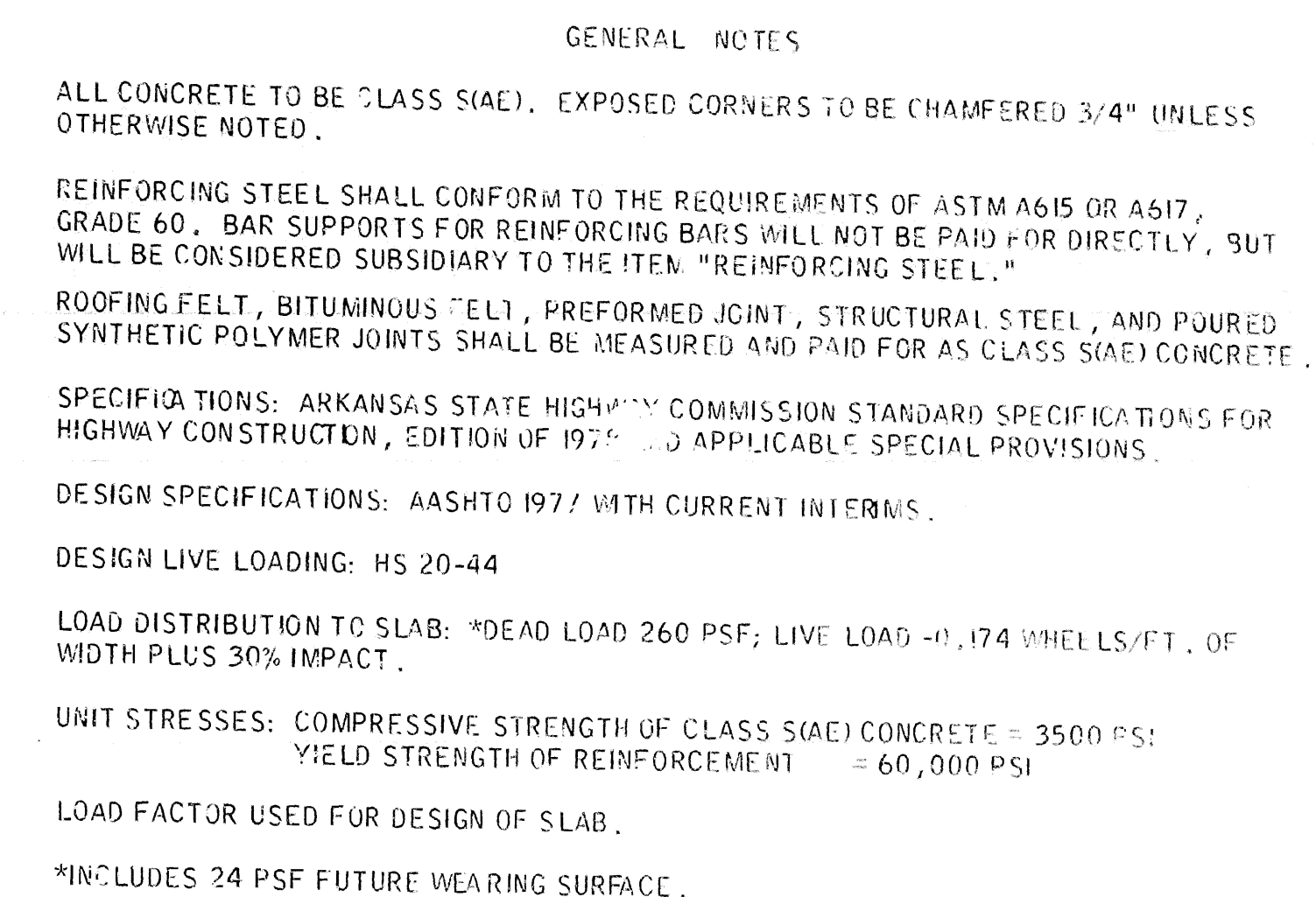
(INT. BENTS TYP. FOR BR NOS. 1623W, 1029W, & 1622W)



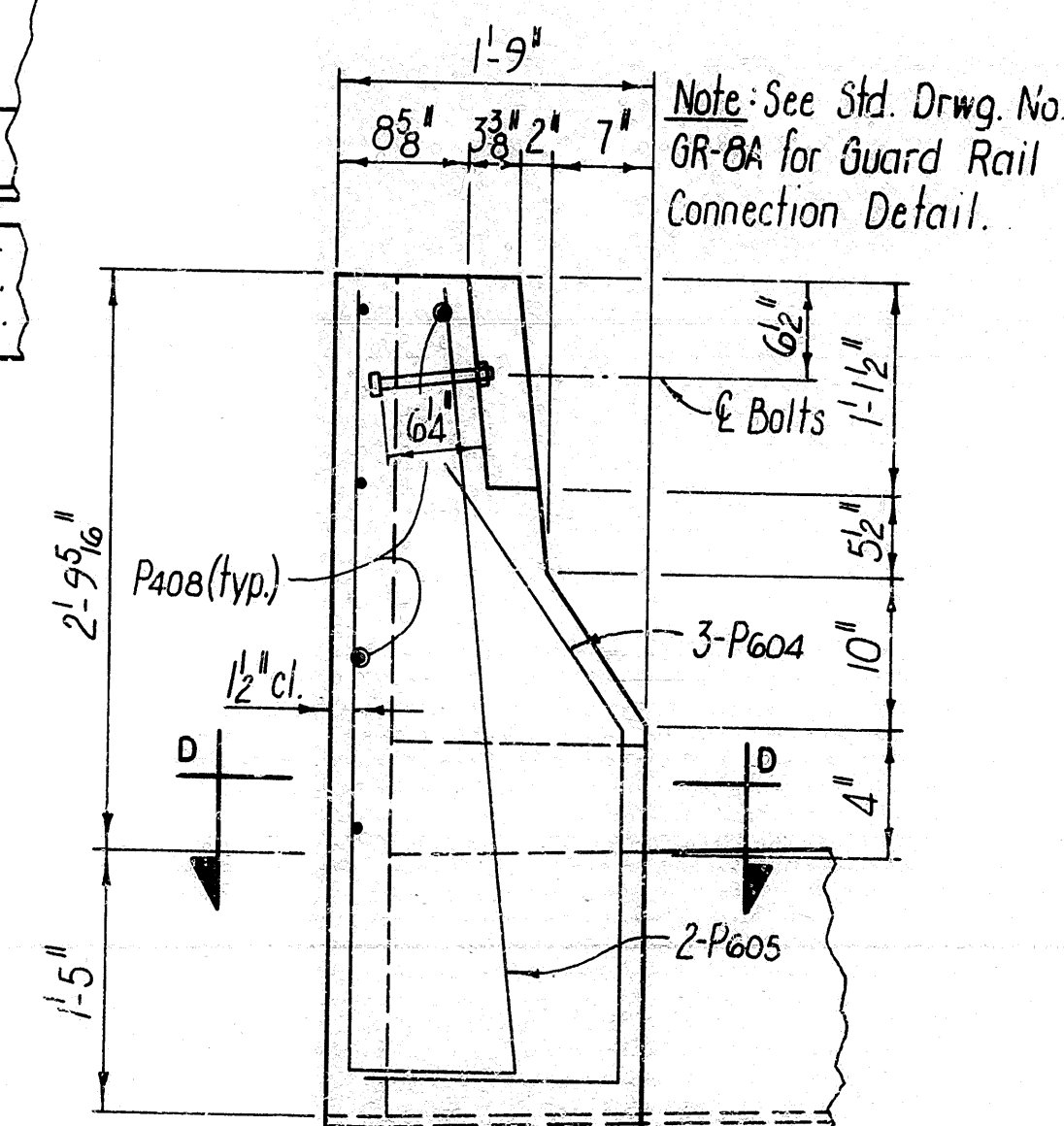
TYPICAL SECTION C-C
Scale: $\frac{3}{4}$ " = 1'-0"

ROUTE 27 SEC. 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: KMG DATE: 25 FEB 82
CHECKED BY: JAB DATE: MAR 12
DESIGNED BY: SDA DATE: —
BRIDGE NO. 1622W, 1623W
81029W DRAWING NO. 25242

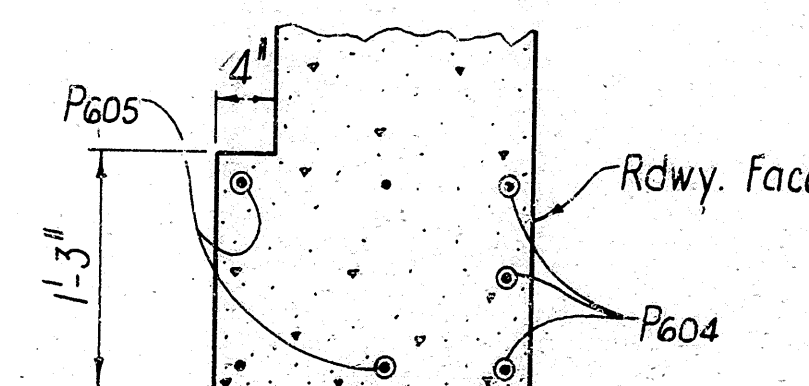
Beryl Pinkerton
BIOGRAPHICAL SKETCH



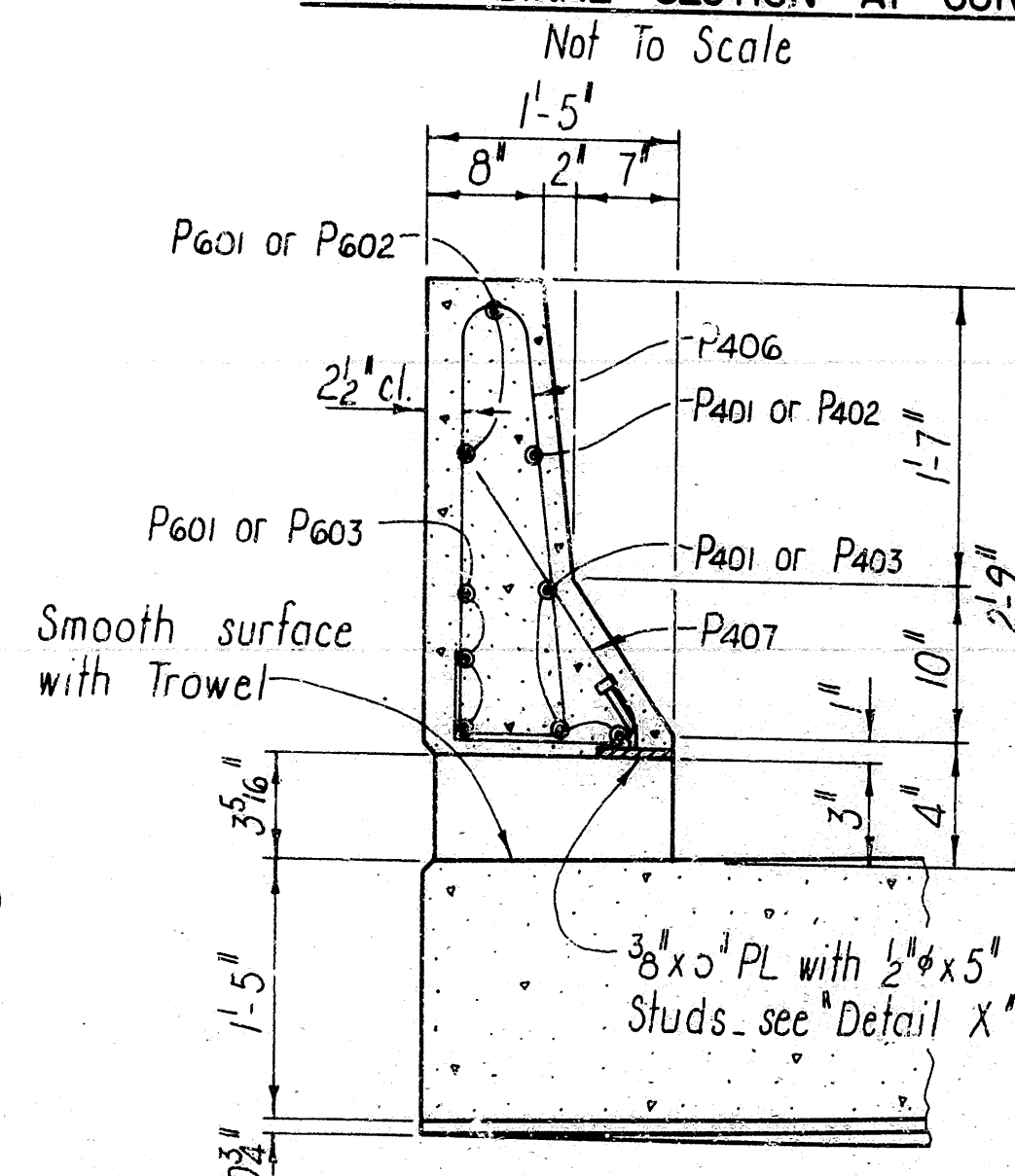
DEAD LOAD CAMBER
No Scale



VIEW C-C
Scale: 1" = 1'-0"

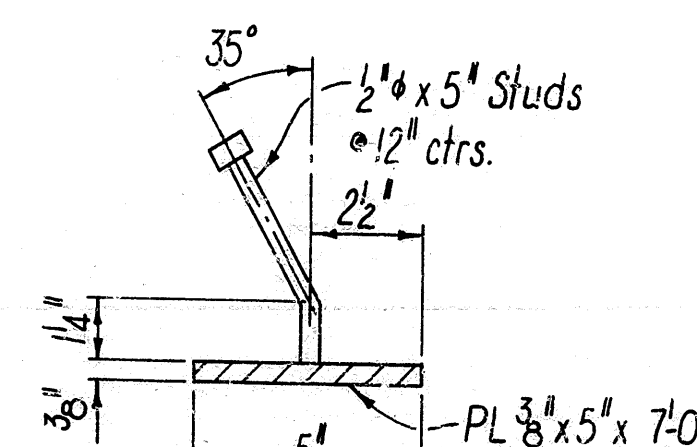


SECTION D-1
Scale: 1"=1'-0"



SECTION A-A
Scale: 1" = 1'-0"

SECTION B-B
Scale: 1" = 1'-0"



DETAIL "X"
No Scale

NOTE: The surfaces of the $\frac{3}{8}$ " plates which will not be in contact with concrete shall receive two coats of paint in the shop. These coats shall be those specified as First Shop Coat and Second Field Coat in sub-section 807.59(a)(c) and SP807-10. Structural Steel shall meet the requirements of Section 807 except as noted.

The $\frac{1}{2}$ " x 5" Studs shall be granular flux filled, solid fluxed, or equal, and automatically end welded to the $\frac{3}{8}$ " plate in accordance with recommendations of the manufacturer. Studs and plate to be measured and paid for as "Class S(AE) Concrete".

ALTERNATE NO. 2

SHEET 1 OF 2

DETAILS OF 30'-0" R.C. SLAB SPANS
LITTLE MISSOURI RIVER BRS. & APPRS.
PIKE COUNTY

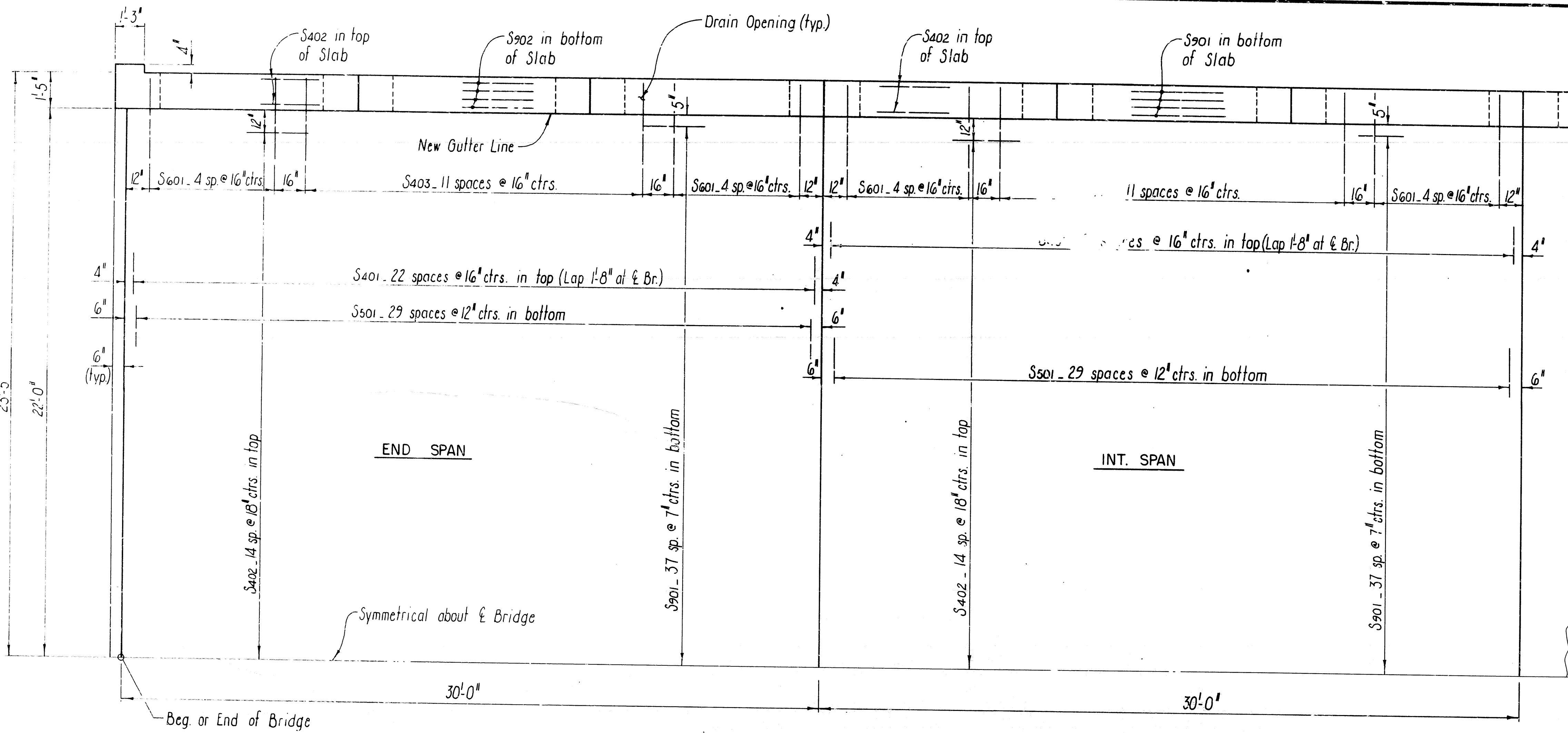
ROUTE 27 SEC. 4

ARKANSAS STATE HIGHWAY COMMISSION

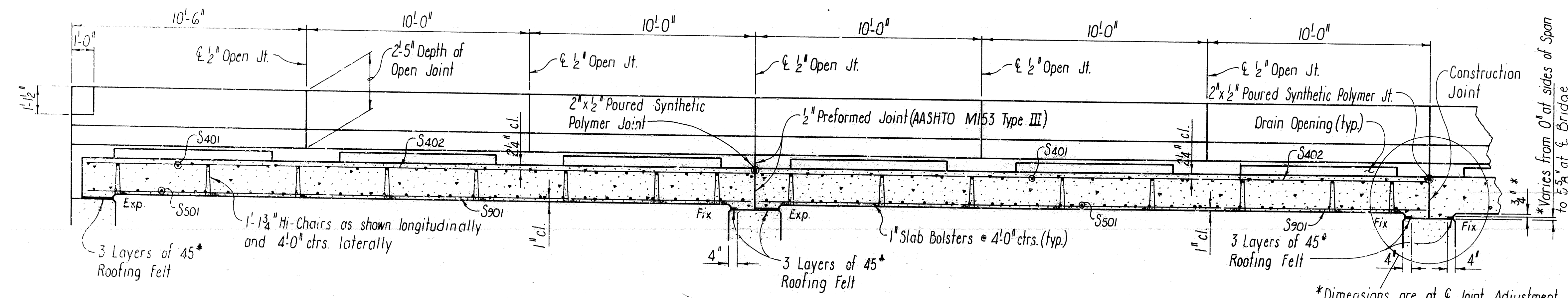
LITTLE ROCK, ARK.

DRAWN BY: KMG DATE: 23 JAN 82
CHECKED BY: LSB DATE: 24 82
DESIGNED BY: STD DATE: - SCALE: AS SHOWN

BRIDGE NO. 1622W, 1623W
1029W **DRAWING NO. 25243**



REINFORCING PLAN
Scale: 3/8" = 1'-0"



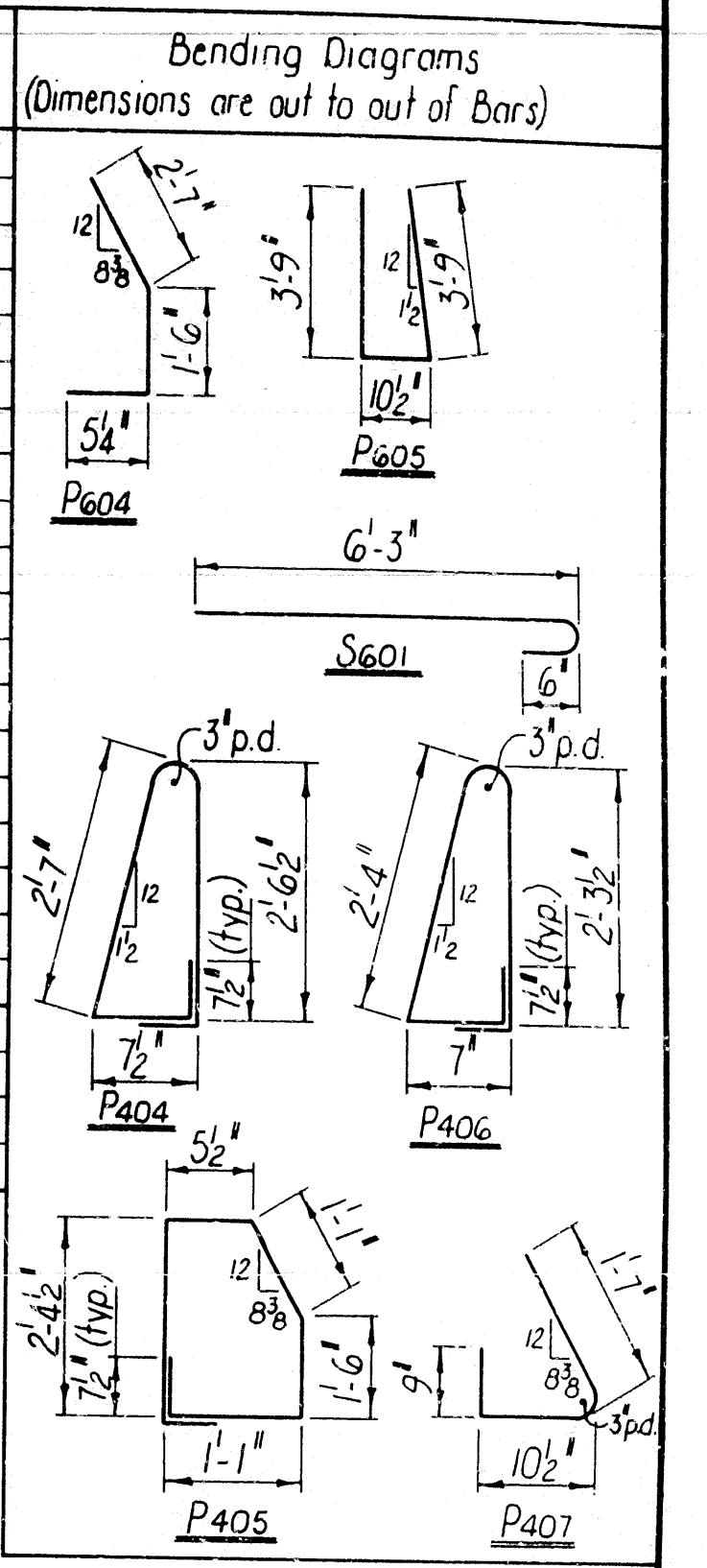
LONGITUDINAL SECTION THRU NEW SLAB
Scale: 3/8" = 1'-0"

For details of Joints adjacent to 335'-8" Cont. Plate Girder Unit on Bridge No. 1029W, see Drwg. No. 25249

DATE	REVISION	DATE	REVISION	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	F-BRF-041-116	40	77
				JOB NO.		3914		
				1622W, 23W, 1029W - SPANS - 25244				

BAR LIST - EACH SPAN

Mark	No. Req'd./Span	Length	Pin Dia.
S401	46	24'-1"	Str.
S402	33	29'-8"	Str.
S403	24	3'-9"	Str.
S501	30	46'-6"	Str.
S601	20	6'-11"	4 1/2"
S901	75	29'-8"	Str.
S902	8	30'-2"	Str.
P401	16	9'-8"	Str.
P402	2	9'-2"	Str.
P403	6	10'-2"	Str.
P404	44	6'-10"	2"
P405	44	7'-4"	2"
P406	42	6'-4"	2"
P407	42	3'-2"	2"
P408	10	1'-0"	Str.
P601	20	9'-8"	Str.
P602	4	9'-2"	Str.
P603	6	10'-2"	Str.
P604	6	4'-4"	3 1/2"
P605	4	8'-1"	3 1/2"



Note: For "General Notes" see Drwg. No. 25243

ALTERNATE NO. 2

SHEET 2 OF 2

DETAILS OF 30'-0" R.C. SLAB SPANS
LITTLE MISSOURI RIVER BRS. & APPRS.
PIKE COUNTY

ROUTE 27 SEC. 4

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: KMG DATE: 25 JAN 82
CHECKED BY: JLB DATE: Feb 82
DESIGNED BY: JTB DATE: Feb 82

BRIDGE NO. 1622W, 1623W, 1029W DRAWING NO. 25244

Handwritten signature
BRIDGE ENGINEER

343

DATE	REV.	BY	CHKD.	APP'D.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
					6	ARK. F-BRF-04H(6)	41	77
					JOB NO.	3914		
						1029W - LAYOUT	25245	

GENERAL NOTES:

BENCH MARK: USGS STD. DISK STP. "G-41-1934" 11 FT. LEFT OF STA. 47+73, ELEV. 353.21.

DESIGN SPECIFICATIONS FOR NEW WORK: AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 1977 EDITION WITH CURRENT INTERIMS.

CONSTRUCTION SPECIFICATIONS: ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 1975 AND APPLICABLE SPECIAL PROVISIONS.

LIVE LOADING: HS 20-44

THE PROPOSED WORK CONSISTS OF REMODELING AND WIDENING EXISTING BRIDGE NO. 1029 FROM A 20 FT. CLEAR ROADWAY TO A 44 FT. CLEAR ROADWAY. ALL EXISTING BENTS ARE TO BE RETAINED AND WIDENED. THE ENTIRE SUPERSTRUCTURE, CONSISTING OF R.C. DECK GIRDER SPANS AND STEEL TRUSS SPANS, IS TO BE REPLACED.

THE CONTRACTOR SHALL MAKE CHECK MEASUREMENTS AND MAKE ANY ADJUSTMENTS NECESSARY TO FIT THE NEW WORK TO THE EXISTING BRIDGE.

ALL CONCRETE IN THE SUBSTRUCTURE OF THE NEW WORK TO BE CLASS "S". ALL CONCRETE IN THE SUPERSTRUCTURE OF THE NEW WORK TO BE CLASS "S(AE)". CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH $f_c = 3500$ PSI. ALL EXPOSED CORNERS TO BE CHAMFERED $3/4"$ UNLESS OTHERWISE NOTED. ALL CONCRETE TO BE POURED IN THE DRY.

ALL NEW REINFORCING STEEL SHALL CONFORM TO ASTM A615 OR A617, GRADE 60. STRUCTURAL STEEL IN OPEN PARAPETS SHALL BE A36.

NEW PILING IN BENTS 1 THRU 4 AND 9 THRU 15 SHALL BE 16" OCTAGONAL PRECAST CONCRETE AND SHALL BE DRIVEN WITH AN APPROVED AIR, STEAM, OR DIESEL HAMMER TO A MINIMUM BEARING CAPACITY OF 44 TONS PER PILE, AND TO A MINIMUM PENETRATION OF 20 FT. BELOW THE GROUND LINE. LENGTHS OF PILING SHOWN ARE ASSUMED FOR ESTIMATING PURPOSES ONLY. ACTUAL LENGTHS TO BE DETERMINED IN THE FIELD. DRIVE ONE 40 FT. TEST PILE IN BENTS 2, 4, 9, 12 & 15. PILES IN END BENTS TO BE DRIVEN AFTER EMBANKMENT TO BOTTOM OF CAP IS IN PLACE.

PILING IN BENTS 5 AND 8 SHALL BE HP10X42 AND SHALL BE DRIVEN WITH AN APPROVED AIR, STEAM, OR DIESEL HAMMER TO A MINIMUM BEARING CAPACITY OF 55 TONS PER PILE. ORDER LENGTHS SHOWN; CUT-OFF OR BUILD-UP, IF NECESSARY, SHALL BE PAID FOR IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

FOOTINGS OF BENTS 6 & 7 SHALL BE SET A MINIMUM OF 2 FT. INTO THE MATERIAL DESIGNATED AS VERY HARD CLAY ON THE BORING LOGS, OR EVEN WITH THE EXISTING FOOTING, WHICHEVER IS LOWER. FOUNDATIONS FOR FOOTINGS SHALL BE PREPARED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

THE CONCRETE DECK SHALL BE GIVEN A FINE FINISH AS SPECIFIED FOR FINAL FINISHING IN SUBSECTION 802.23 FOR CLASS 6, ROADWAY SURFACE FINISH. FOR ADDITIONAL REQUIREMENTS, SEE SPECIAL PROVISIONS.

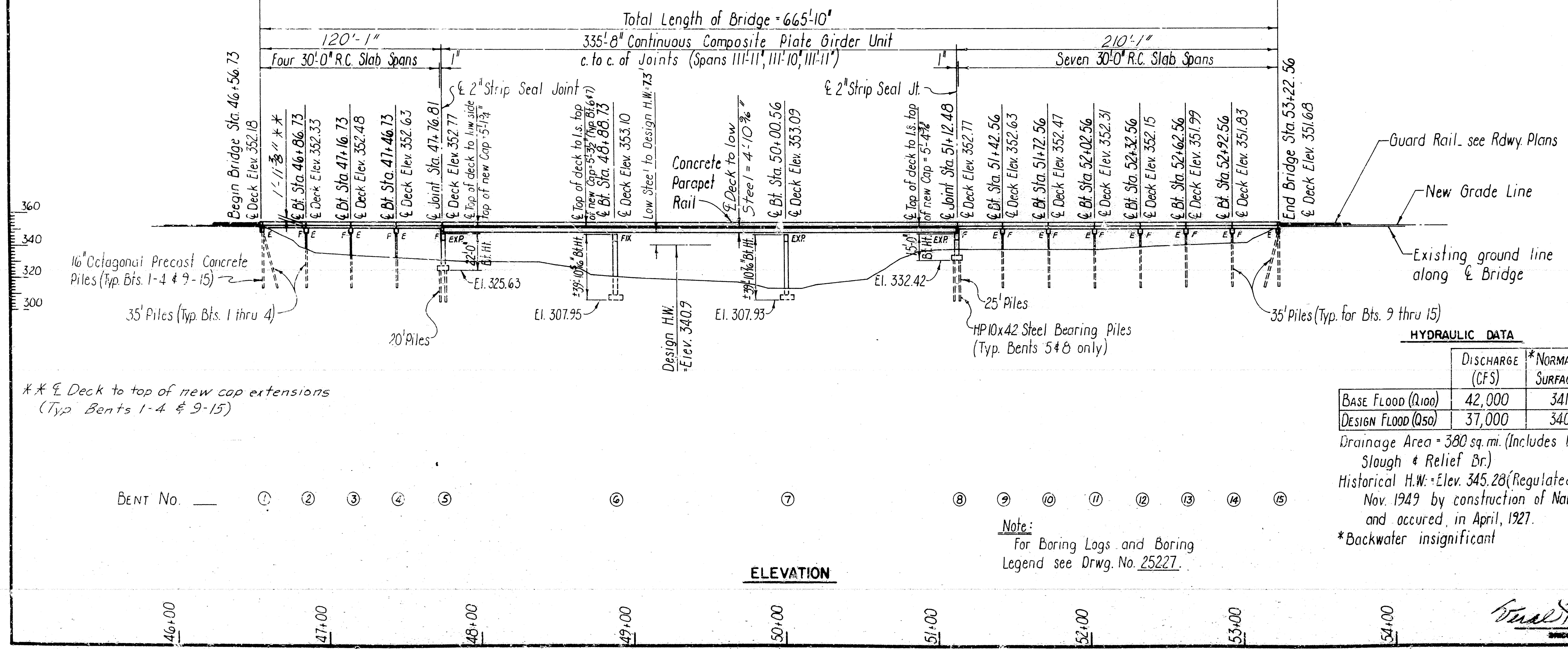
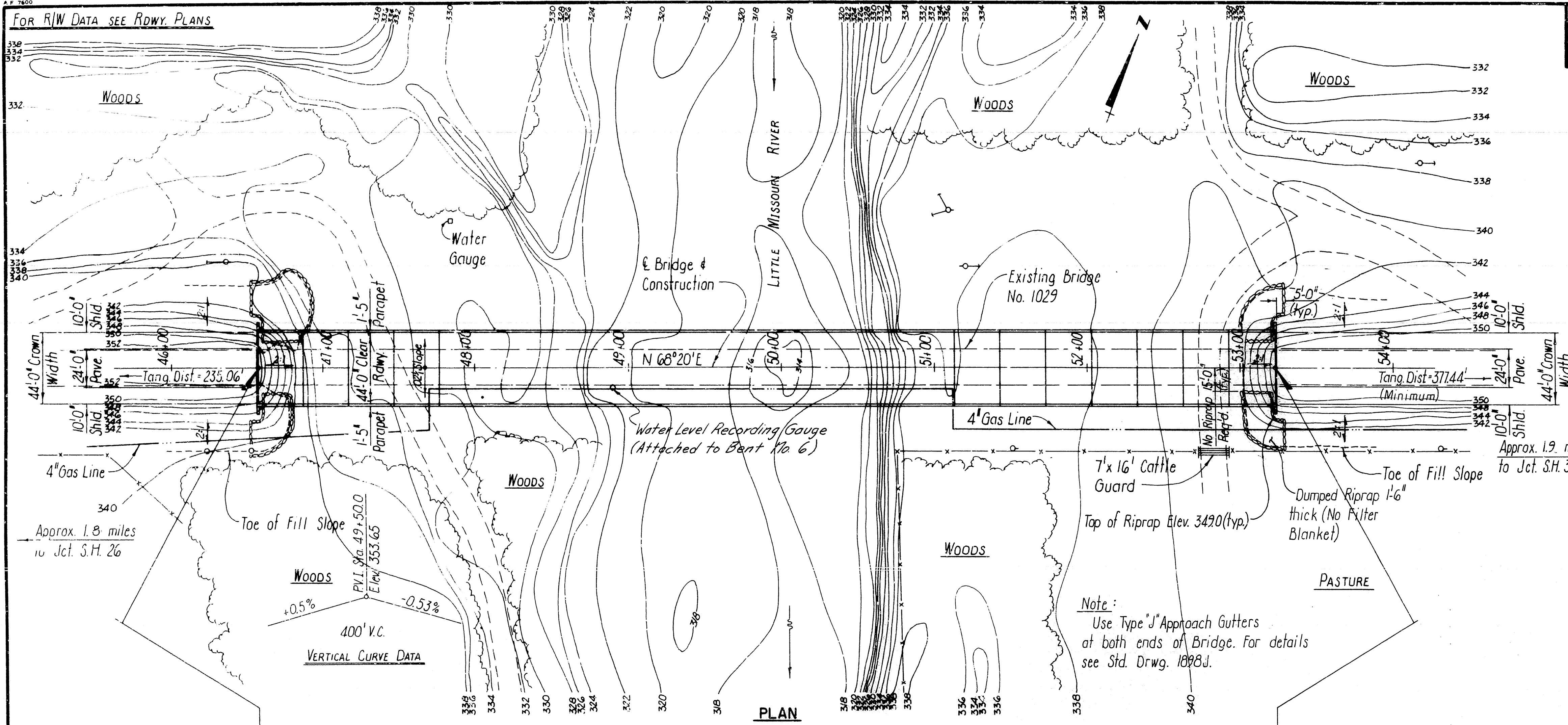
FOR DETAILS OF WIDENING BENTS, SEE DWG. NO. 25242 & 25246 - 25248 FOR DETAILS OF R.C. SLAB SPANS, SEE DWG. NO. 25243 & 25244 FOR DETAILS OF 335 FT. 8 IN. PLATE GIRDER UNIT, SEE DWG. NOS. 25249 - 25253

SALVAGE OF TRUSS SPANS: THE THREE 111 FT. PONY TRUSS SPANSHALL BE SALVAGED FOR RE-ERECTION. EACH TRUSS SHALL BE DISMANTLED AT PANEL POINT 5. SEE SECTION 205 OF THE STANDARD SPECIFICATIONS. THE CONTRACTOR SHALL DELIVER THEM TO THE HOWARD COUNTY AREA HEADQUARTERS IN NASHVILLE, ARK., FOR STORAGE.

DETOUR BRIDGE: CONSTRUCT A 500' DETOUR BRIDGE APPROX. 60' UPSTREAM WITH A MINIMUM DECK ELEV. OF 342.0'. DETOUR BRIDGE SHALL HAVE A MINIMUM ROADWAY WIDTH OF 20 FT. AND BE DESIGNED FOR A 115 LIVE LOADING. SEE SECTION 603 OF THE STANDARD SPECIFICATIONS. FOR ADDITIONAL DETOUR INFORMATION, SEE ROADWAY PLANS.

FOR INFORMATION ABOUT WATER RECORDING GAUGE, SEE SPECIAL PROVISION JOB NO. 3914, "NOTIFICATION FOR REMOVAL OF GAUGING STATION."

HALF-SIZE PLANS OF THE EXISTING BRIDGE CAN BE OBTAINED FROM AHTD UPON REQUEST TO THE BRIDGE ENGINEER.



HYDRAULIC DATA		
	DISCHARGE (CFS)	*NORMAL WATER SURFACE ELEV.
BASE FLOOD (Q100)	42,000	341.4
DESIGN FLOOD (Q50)	37,000	340.9

Drainage Area = 380 sq. mi. (Includes Lake Slough & Relief Br.)
Historical H.W. = Elev. 345.28 (Regulated since Nov. 1949 by construction of Narrows Dam) and occurred in April, 1927.
*Backwater insignificant

ALTERNATE NO. 2

LAYOUT OF
BRIDGE OVER LITTLE MISSOURI RIVER
LITTLE MISSOURI RIVER BRS. & APPRS.
PIKE COUNTY

ROUTE 27 SEC. 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

BRIDGE NO. 1029W DRAWING NO. 25245

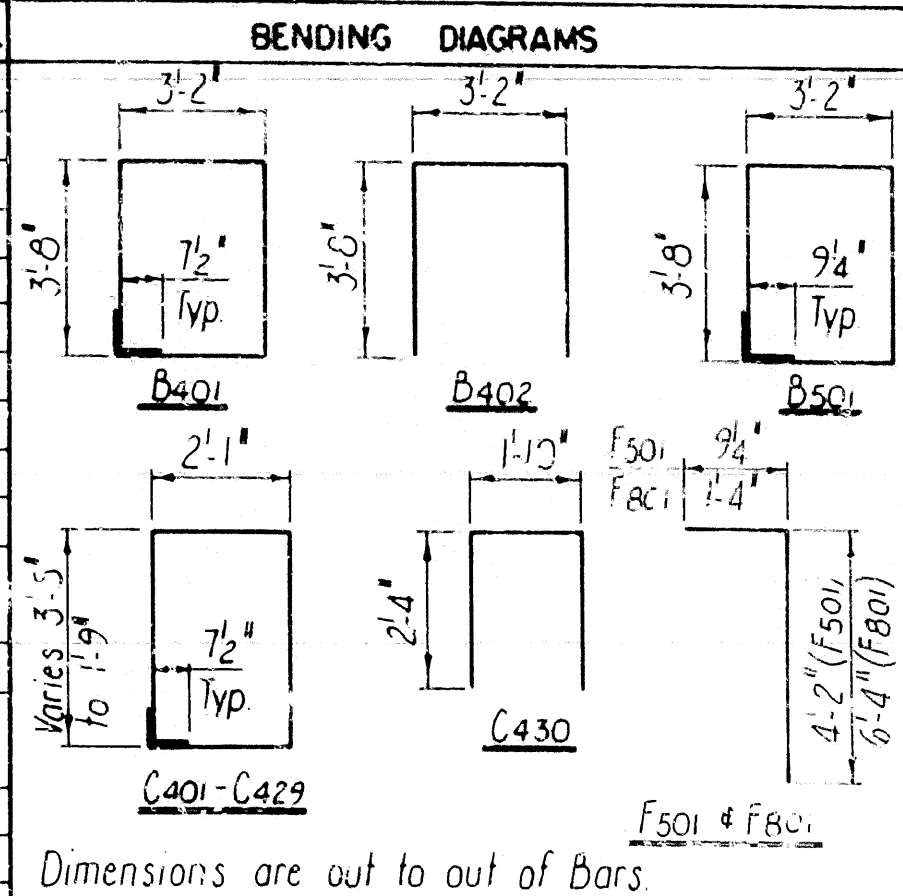
** E Deck to top of new cap extensions (Typ. Bents 1-4 & 9-15)

Note:
For Boring Logs and Boring Legend see Drwg. No. 25227.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	F-BRF-041-(6)	43	77
				JOB NO.		3914		
				① 1029W - INT. BENTS - 25247				

BAR LIST - PER BENT

MARK	NO. REQ'D.	LENGTH	PIN DIA.
B401	48	14'-6"	2"
B402	12	10'-4"	2"
B403	12	22'-5"	Str.
B501	8	14'-8"	2 1/2"
B601	4	43'-2"	Str.
B602	2	23'-1"	Str.
B1001	4	43'-2"	Str.
B1002	8	17'-4"	Str.
W401	28	33'-6"	Str.
W501	88	7'-3"	Str.
D601	88	3'-0"	Str.
D602	14	2'-6"	Str.
D603	4	2'-8"	Str.
C401 - C429	4 of each	Var. 11'-10" to 8'-6"	2"
C430	12	6'-4"	2"
F501	20	4'-10"	2 1/2"
F701	46	13'-6"	Str.
F702	54	11'-6"	Str.
F801	28	7'-6"	6"



GENERAL NOTES

ALL CONCRETE SHALL BE CLASS S AND SHALL BE POURED IN THE DRY. ALL EXPOSED CORNERS TO BE CHAMFERED 3/4" UNLESS OTHERWISE NOTED.

SPECIFICATIONS: ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 1978 AND APPLICABLE SPECIAL PROVISIONS.

LIVE LOAD: HS20

DESIGN SPECIFICATIONS: AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 1977 WITH CURRENT INTERIMS.

METHOD OF DESIGN: LOAD FACTOR

CONCRETE: ALL CONCRETE SHALL BE CLASS S WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH $f'_c = 3500$ PSI.

REINFORCING STEEL: REINFORCING STEEL SHALL CONFORM TO ASTM A615 OR A617, GRADE 60 (YIELD STRENGTH = 60,000 PSI).

FOR DETAILS OF ELASTOMERIC BEARINGS, SEE B.W.G. NO. 25252

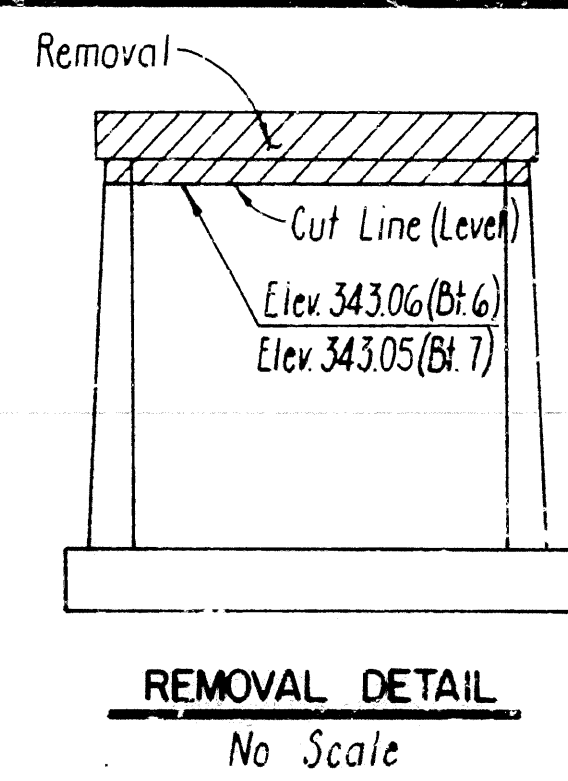
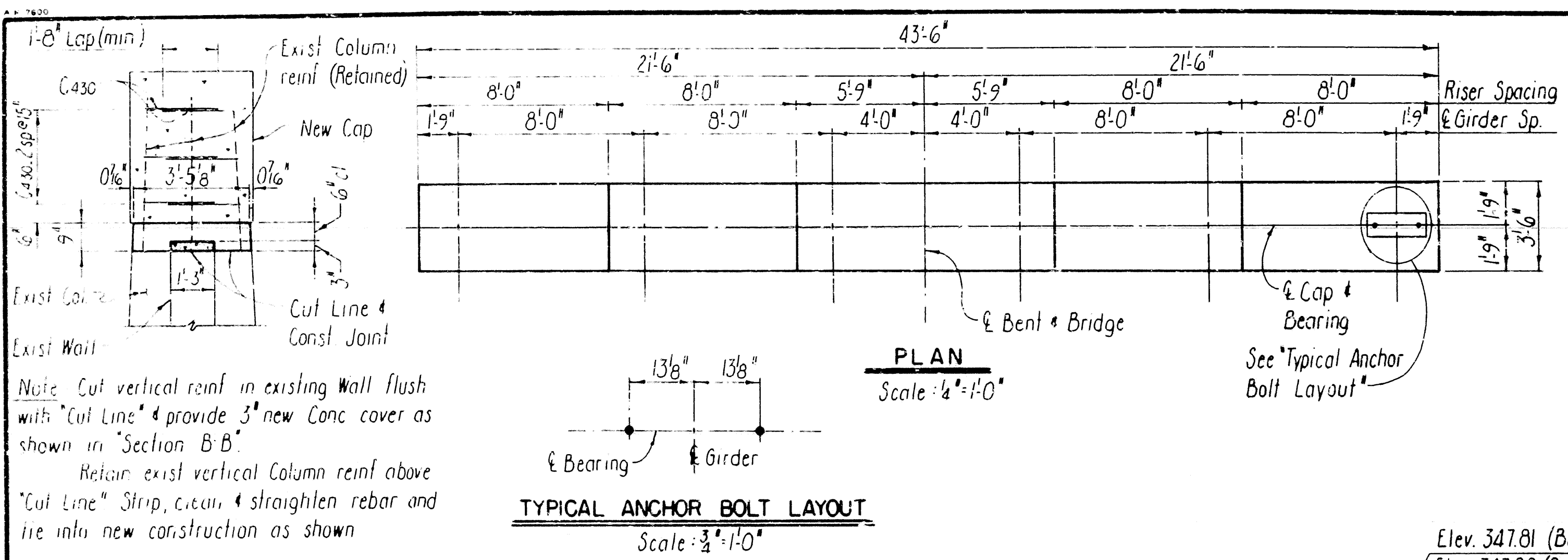
ALTERNATE NO. 2

DETAILS FOR WIDENING
INTERMEDIATE BENTS 6 & 7
LITTLE MISSOURI RIVER BRIDGE
PIKE COUNTY

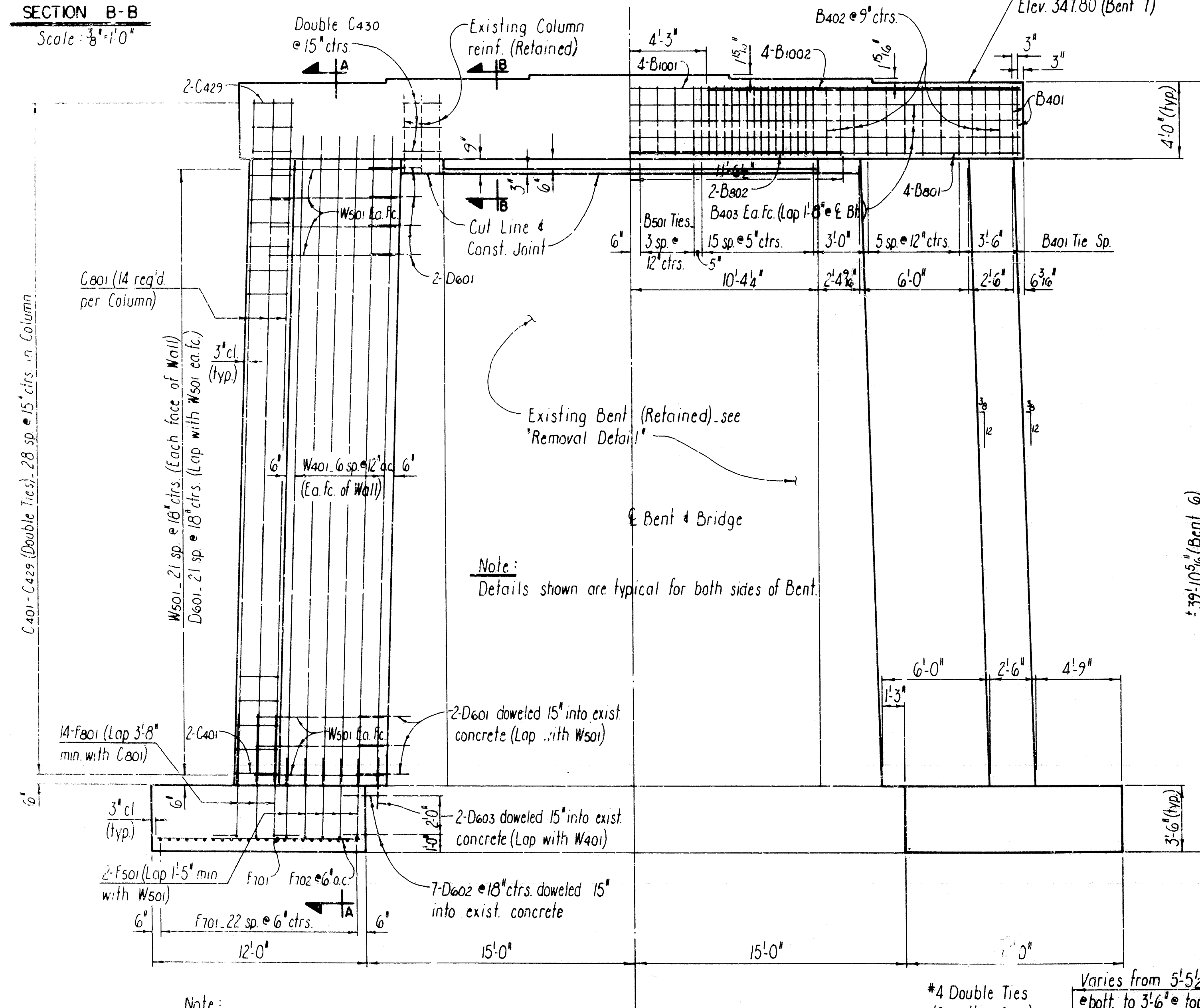
ROUTE 27 SEC. 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: KMG DATE: 26 MAR 82
CHECKED BY: KDH DATE: 14 APR 82
DESIGNED BY: CES DATE: DEC 81

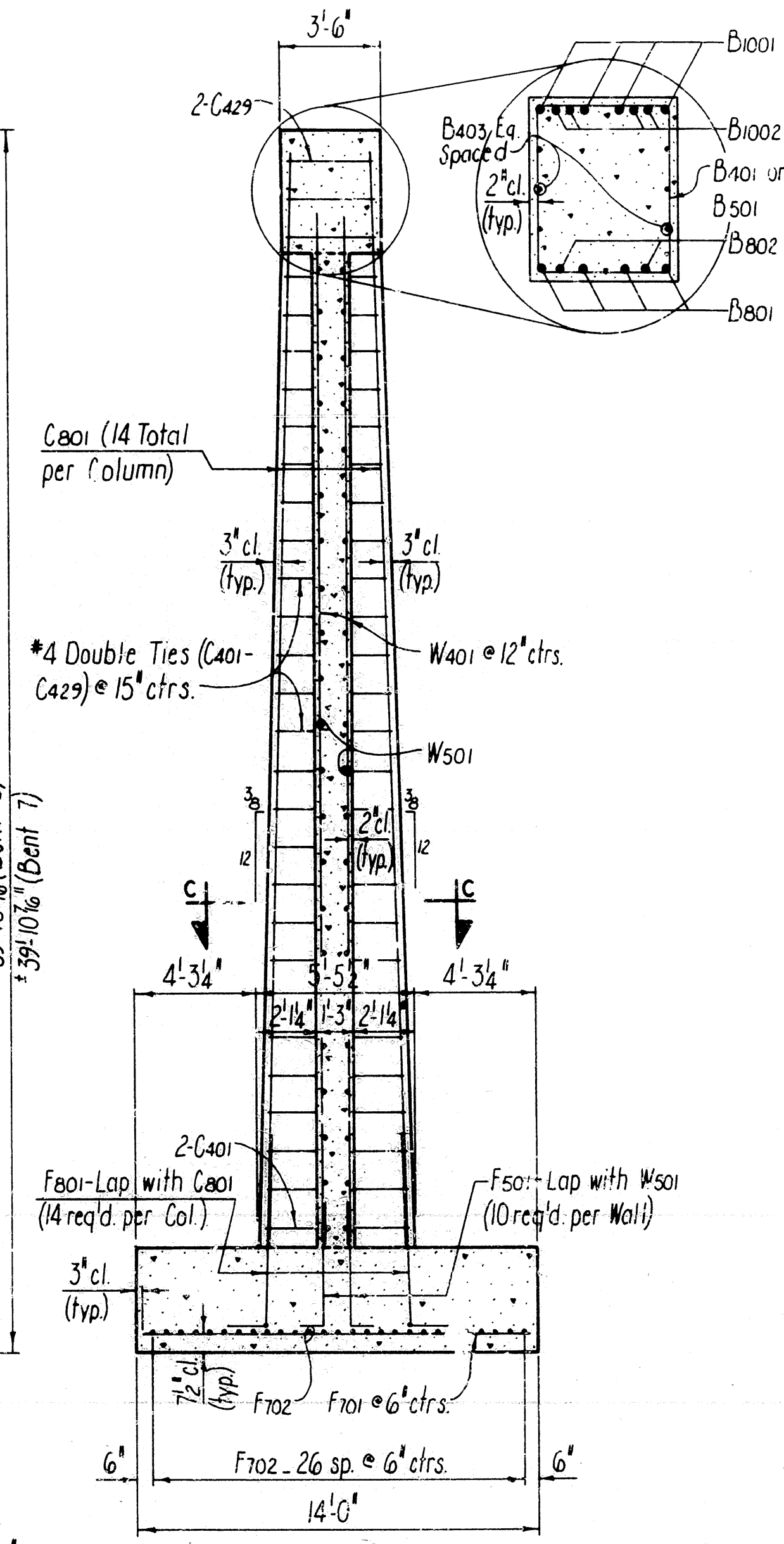
BRIDGE NO. 1029W DRAWING NO. 25247



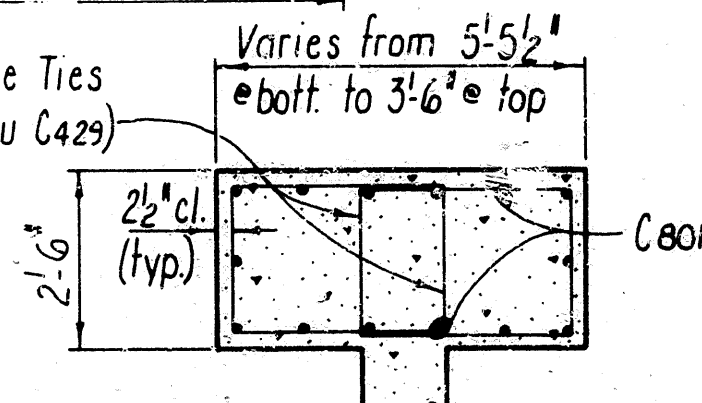
SECTION B-B
Scale: 3/8"=1'-0"



ELEVATION
Scale: 3/8"=1'-0"



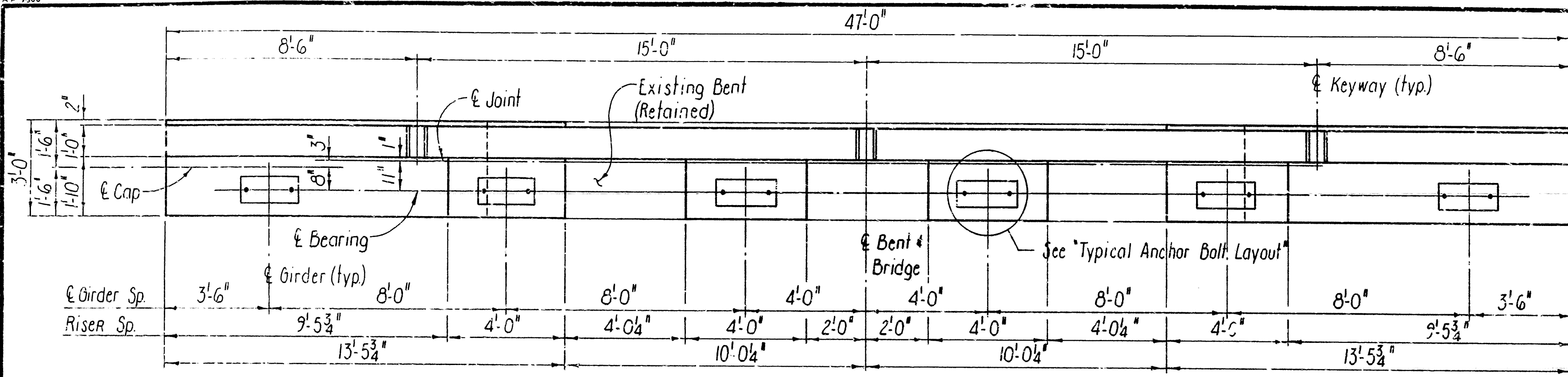
SECTION A-A
Scale: 3/8"=1'-0"



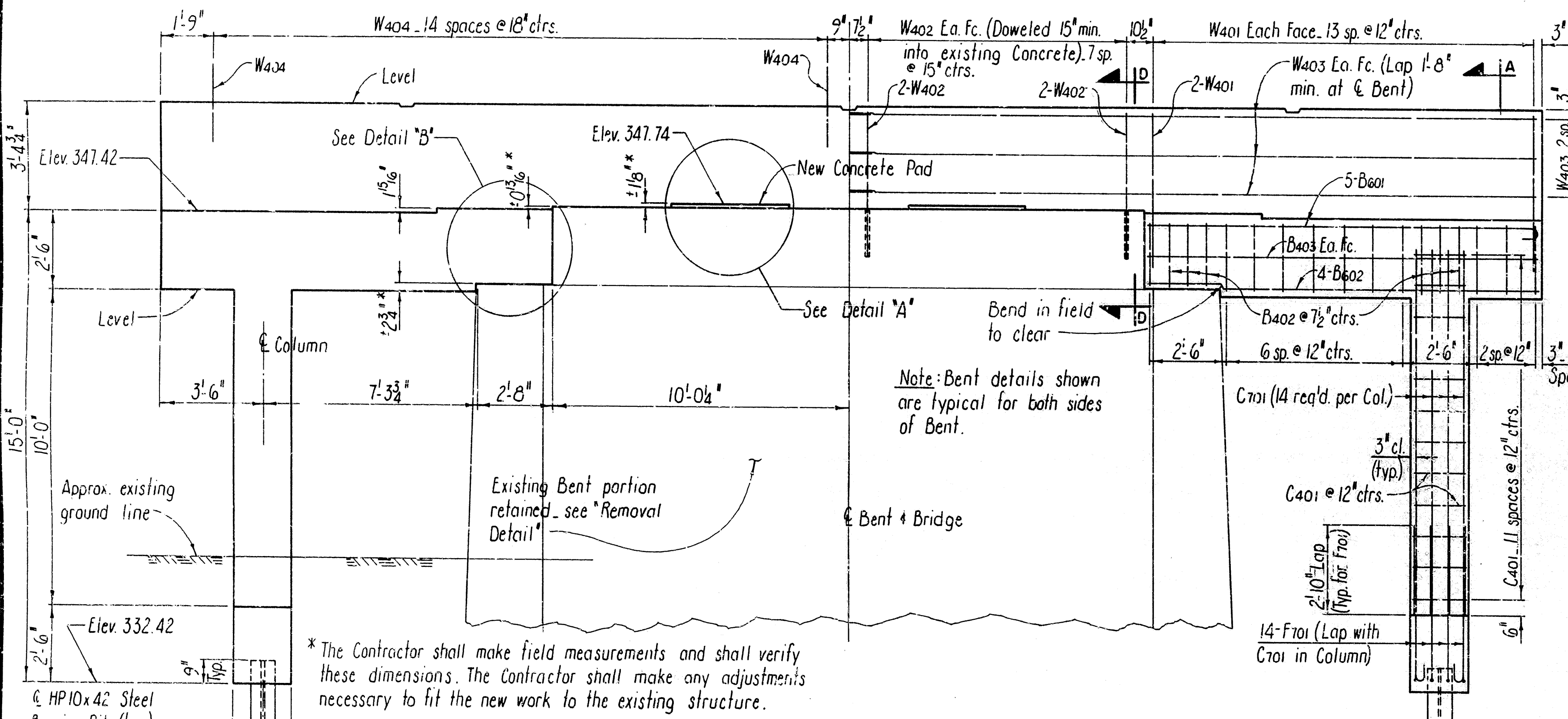
SECTION C-C
Scale: 3/8"=1'-0"

Note:
All doweled bars shall be drilled and grouted into existing concrete using non-shrink grout. All drilled holes to be 2" holes. Drilling and grouting of doweled bars shall be considered subsidiary to the item "Class S Concrete."

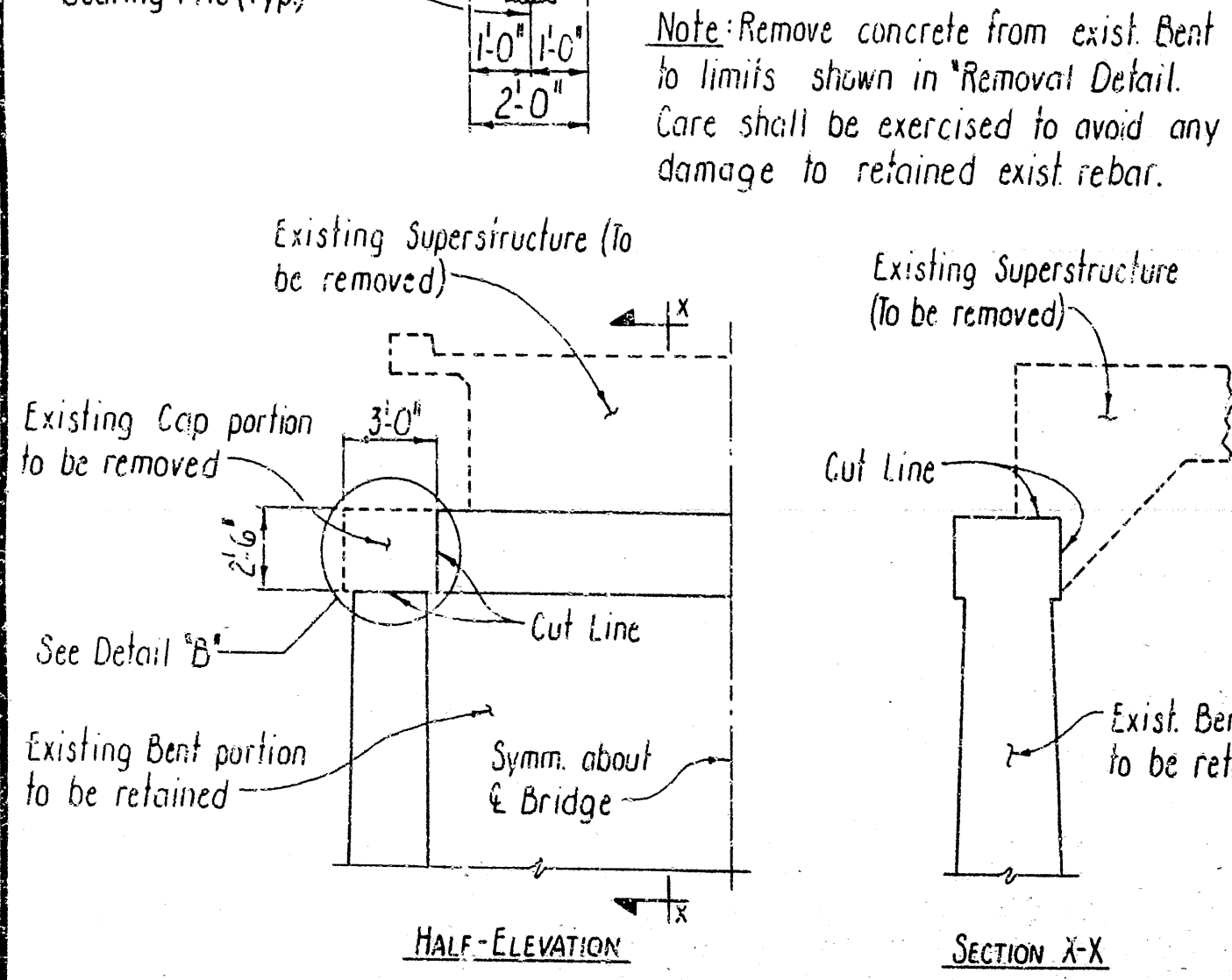
DATE	REVISED	DATE	REVISED	DATE	REVISED	DATE	REVISED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
								6	ARK.	F-BRF-041-1(6)	44	77
JOB NO. 394										1029W - BENT DTLS. - 25248		



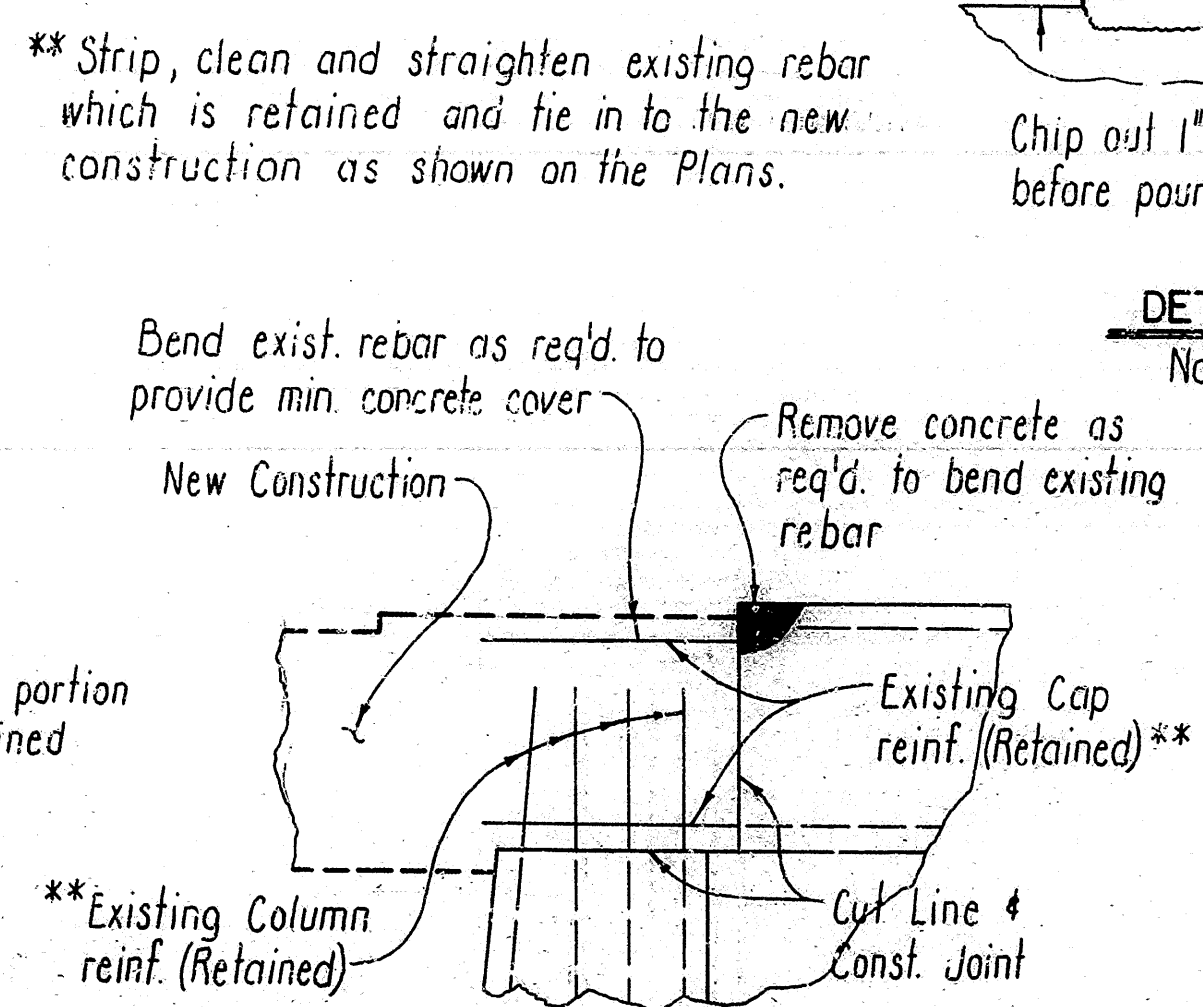
PLAN
Scale: 3/8"=1'-0"



ELEVATION (LOOKING AHEAD)
Scale: 3/8"=1'-0"

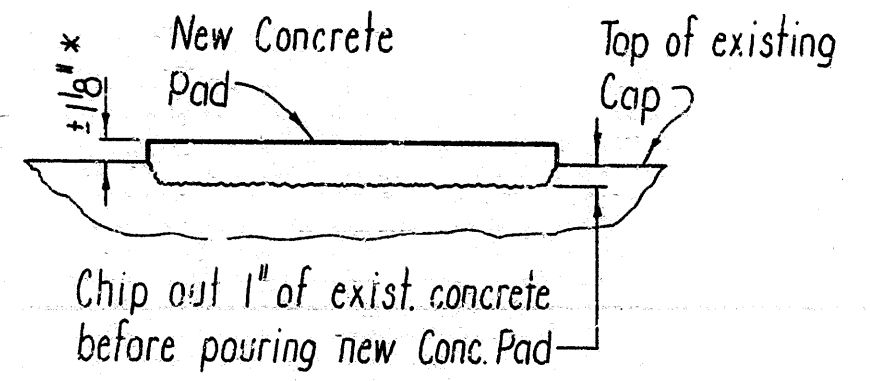


REMOVAL DETAIL
No Scale

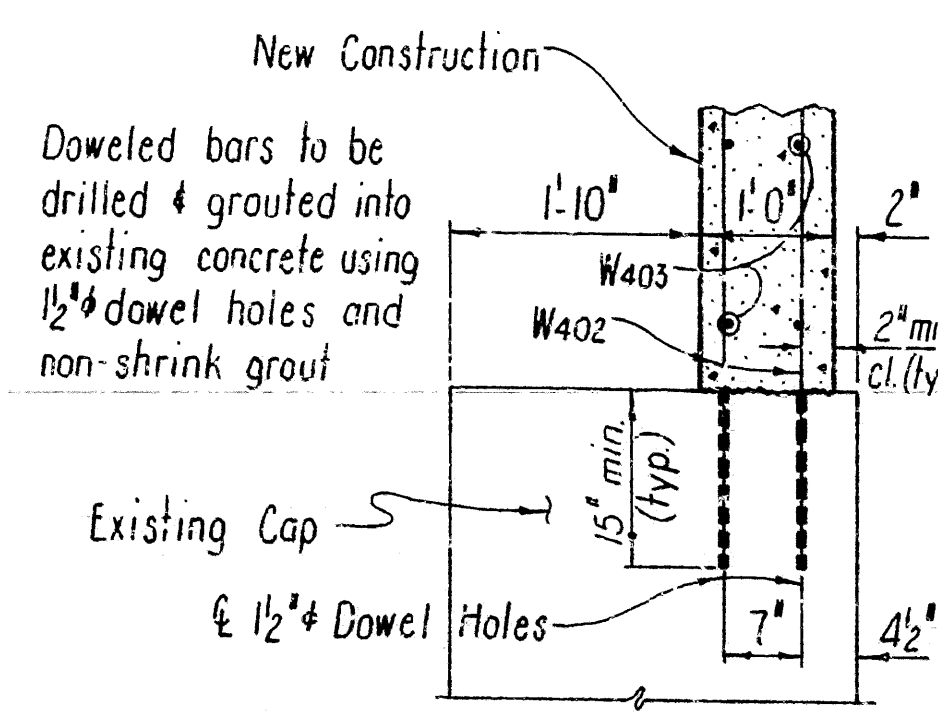


DETAIL "A"
No Scale

DETAIL "B"
Scale: 1/2"=1'-0"



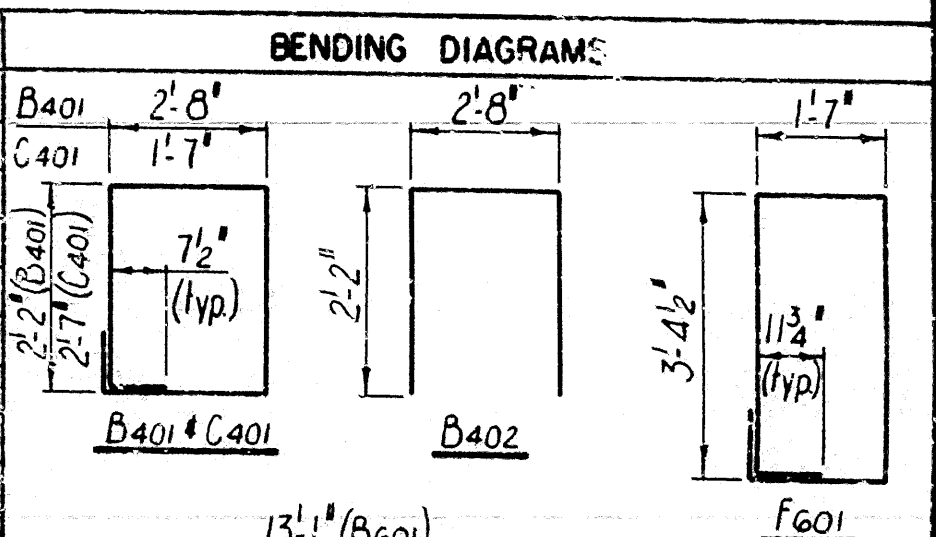
SECTION B-B
Scale: 3/4"=1'-0"



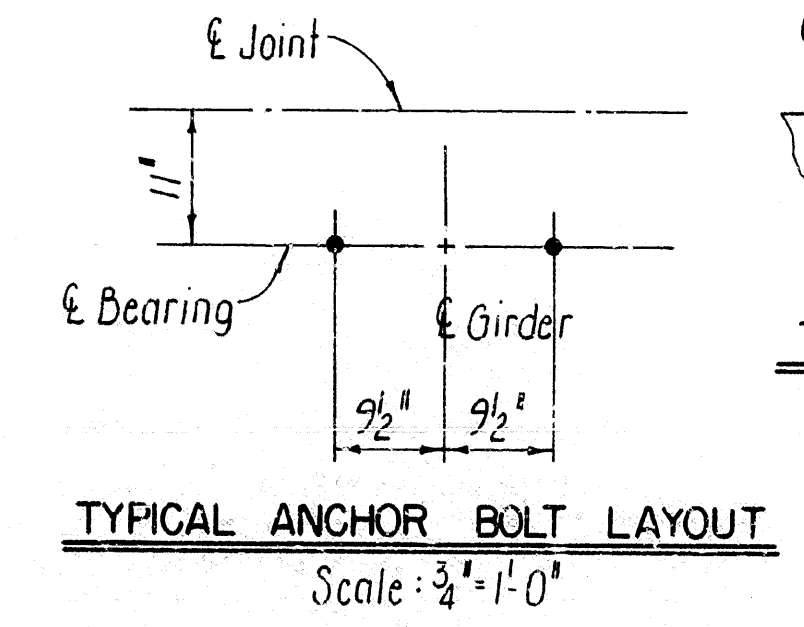
SECTION D-D

Note: Drilling and grouting of dowel bars shall be considered subsidiary to the item "Class S Concrete."

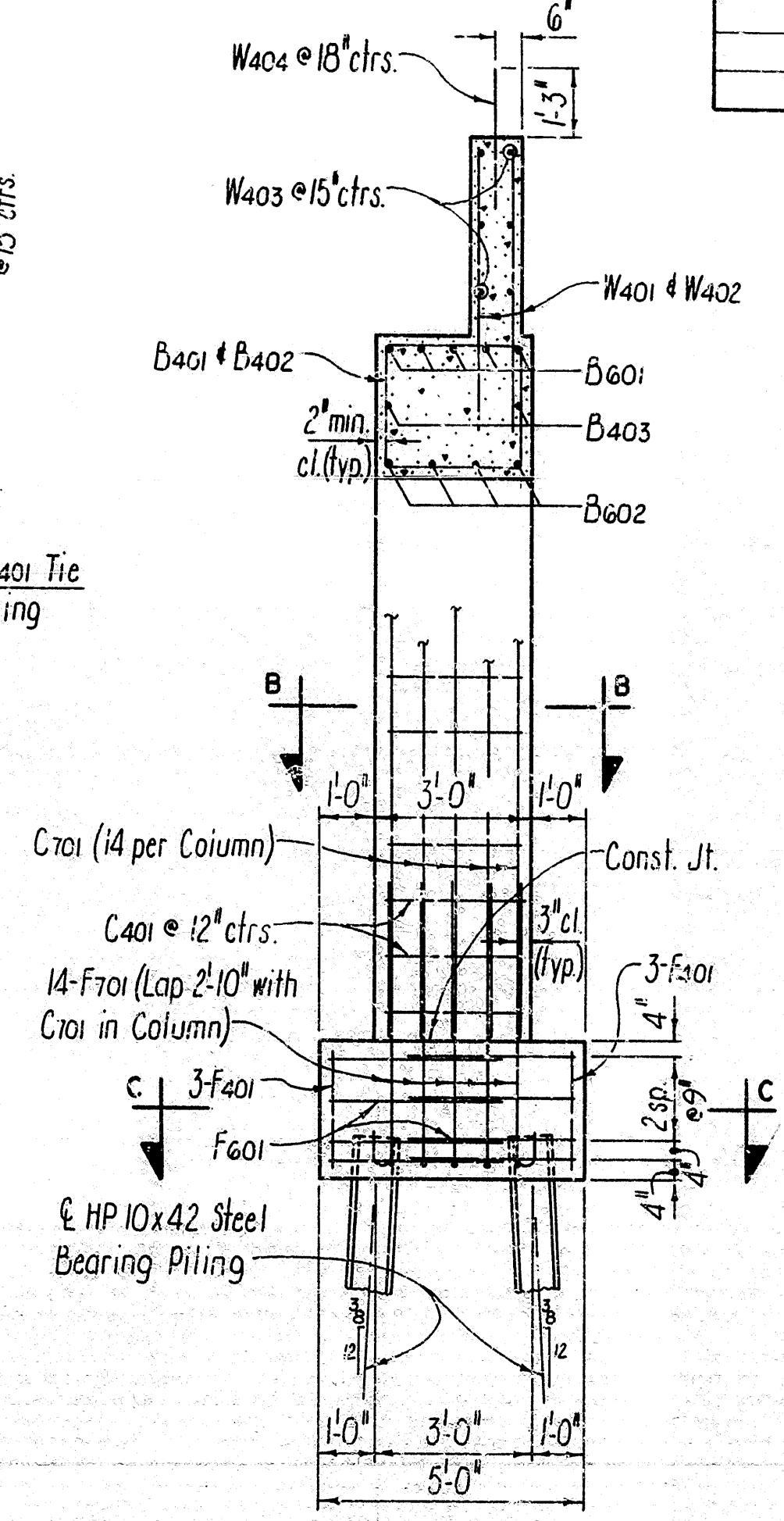
MARK	NO.	REQ'D.	LENGTH	PIN DIA.
B401	22	10'-6"	2"	
B402	12	6'-10"	2"	
B403	4	13'-1"	Str.	
B601	10	13'-9"	4 1/2"	
B602	8	13'-1"	Str.	
W401	56	5'-2"	Str.	
W402	32	4'-6"	Str.	
W403	12	24'-2"	Str.	
W404	30	2'-6"	Str.	
C401	24	9'-2"	2"	
C701	28	11'-9"	3"	
F401	12	2'-2"	Str.	
F601	16	11'-2"	3 3/4"	
F701	28	5'-10"	5 1/4"	



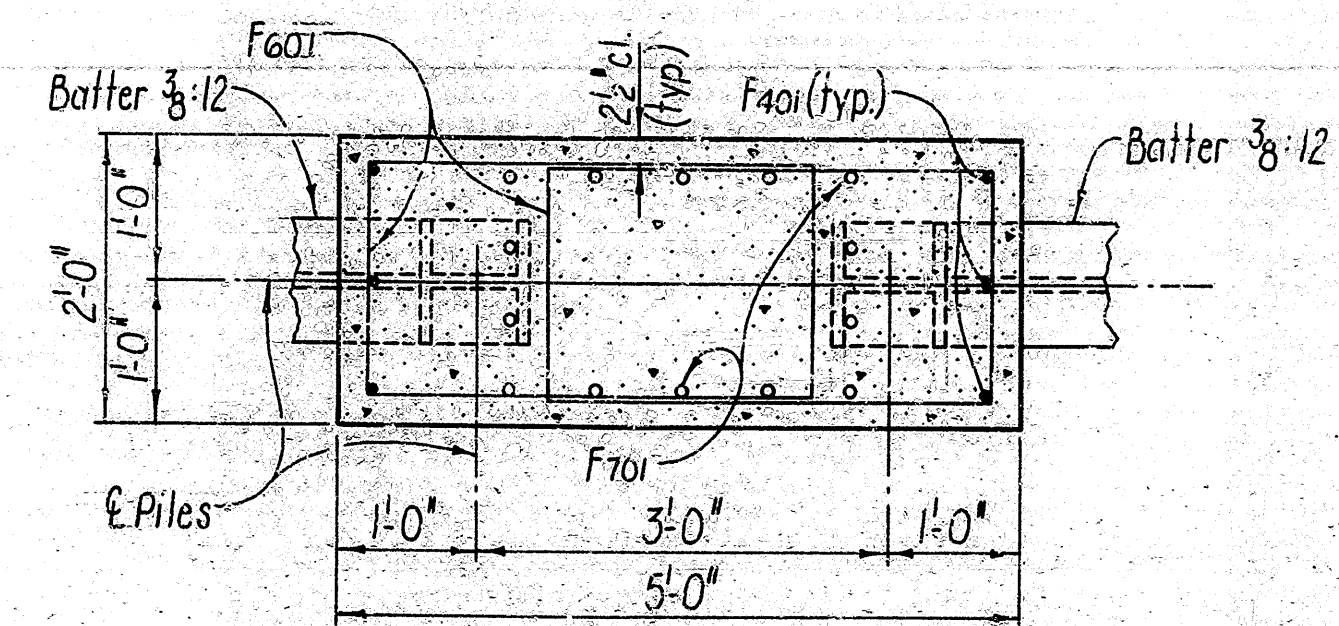
Dimensions are out to out of Bars.



TYPICAL KEYWAY DETAIL
No Scale



SECTION A-A
Scale: 3/8"=1'-0"



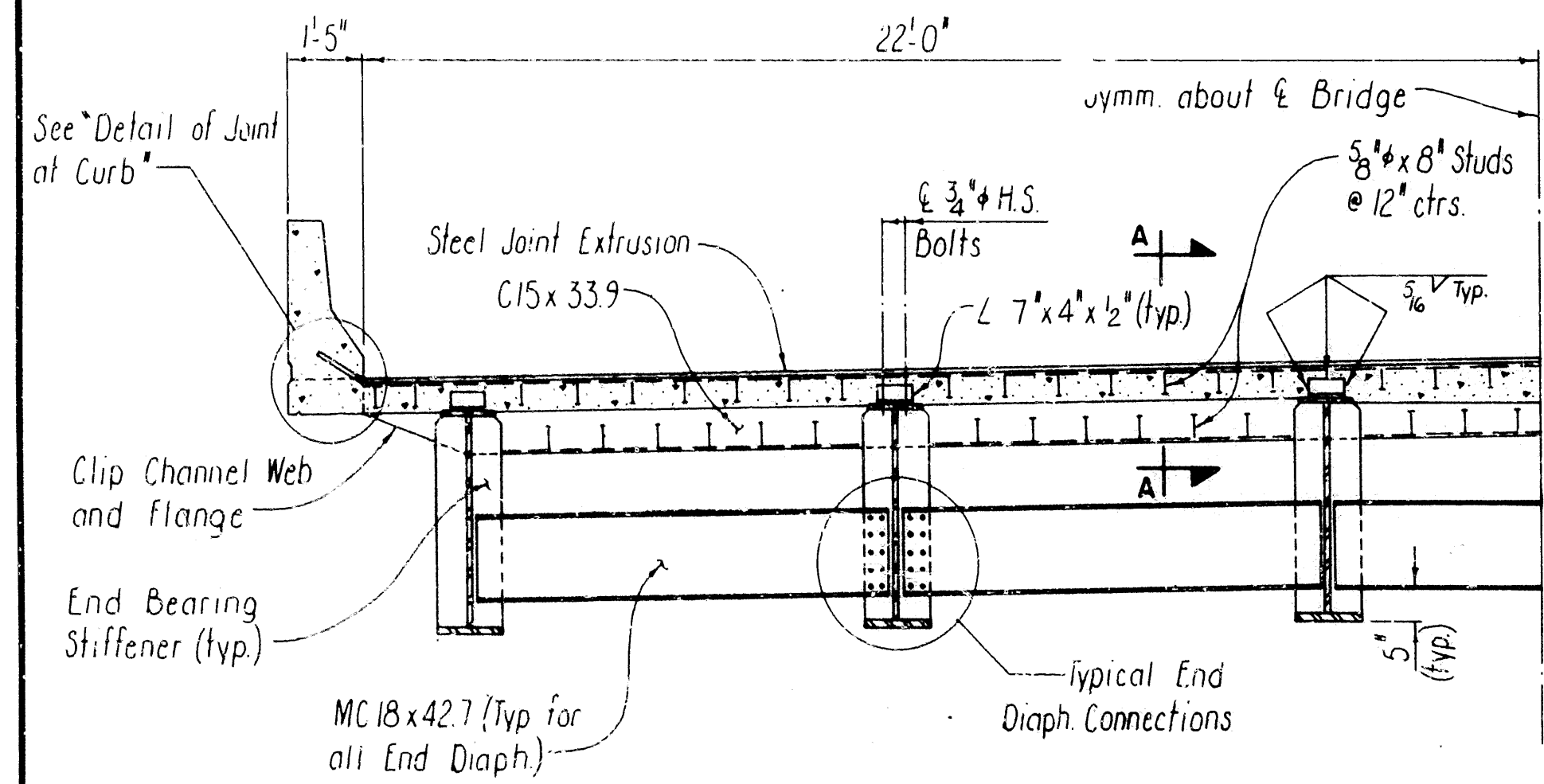
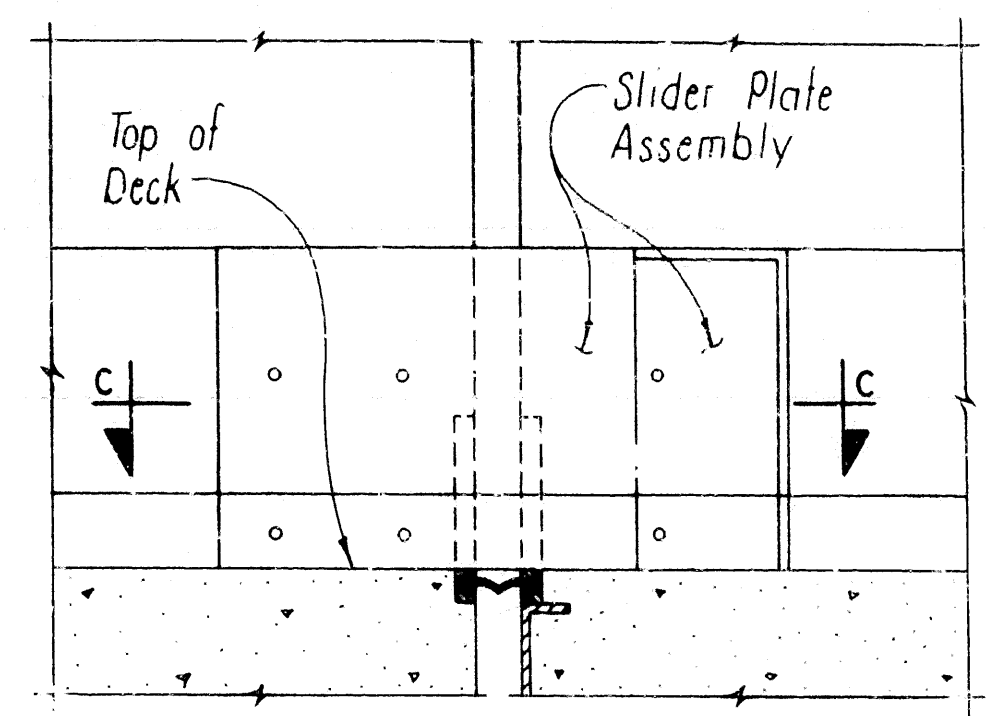
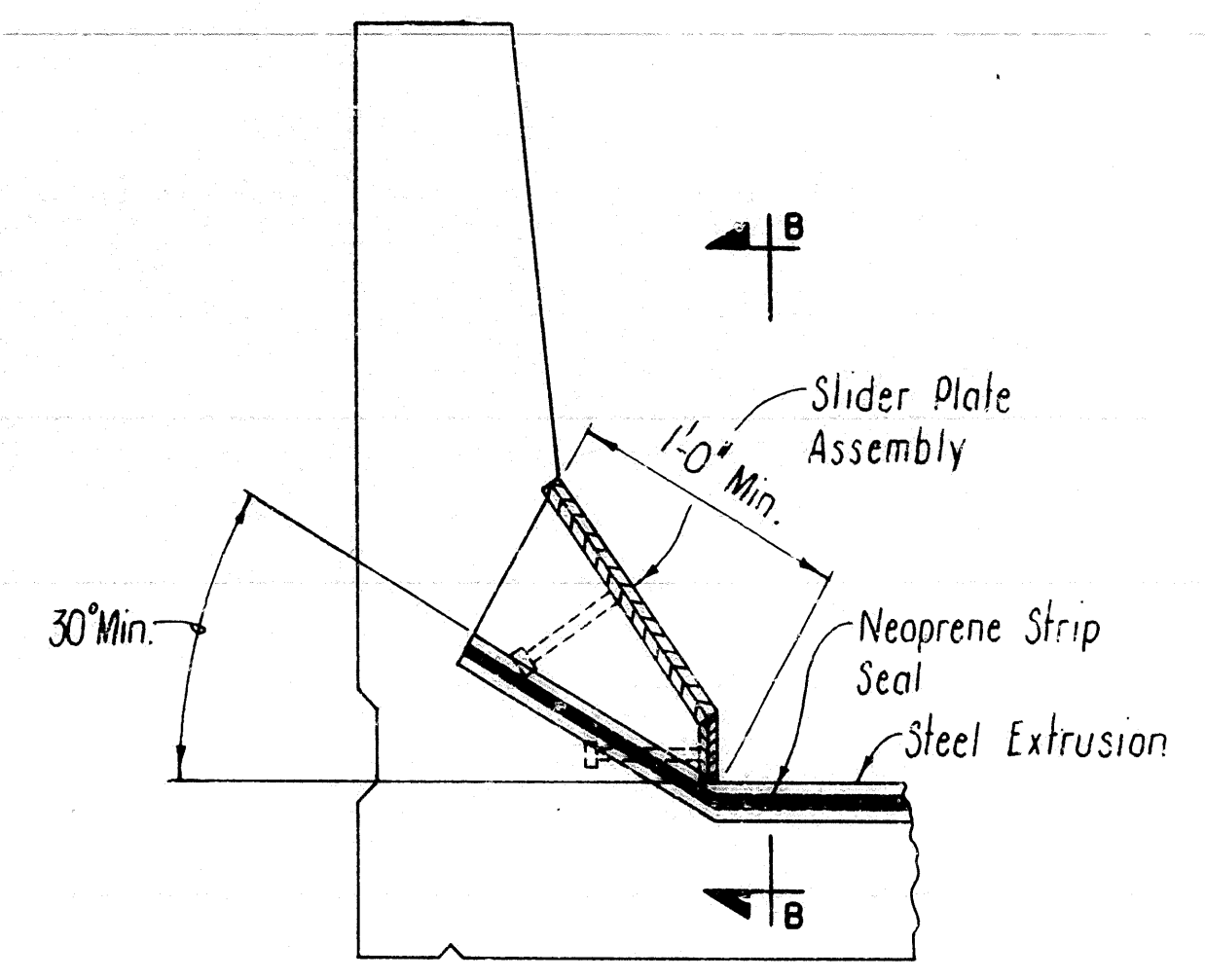
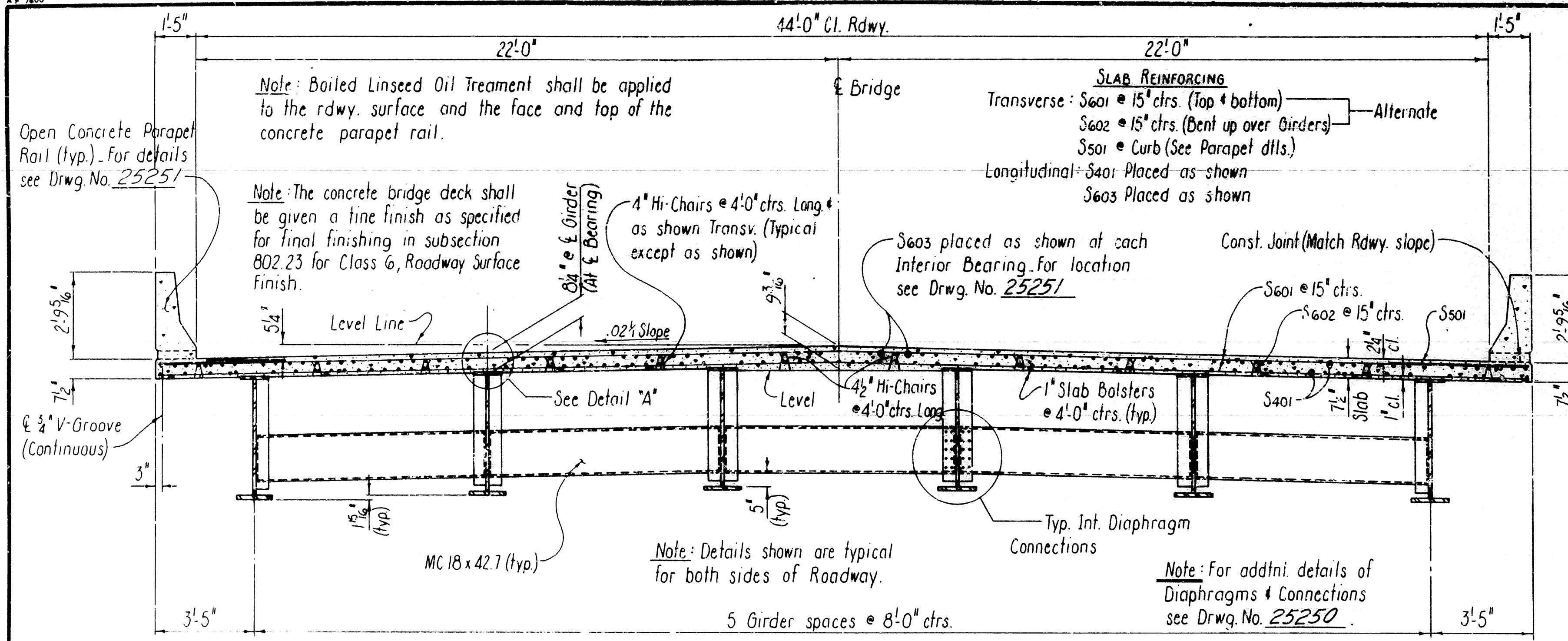
SECTION C-C
Scale: 3/4"=1'-0"

Note: For "General Notes" see Drwg. No. 25246.

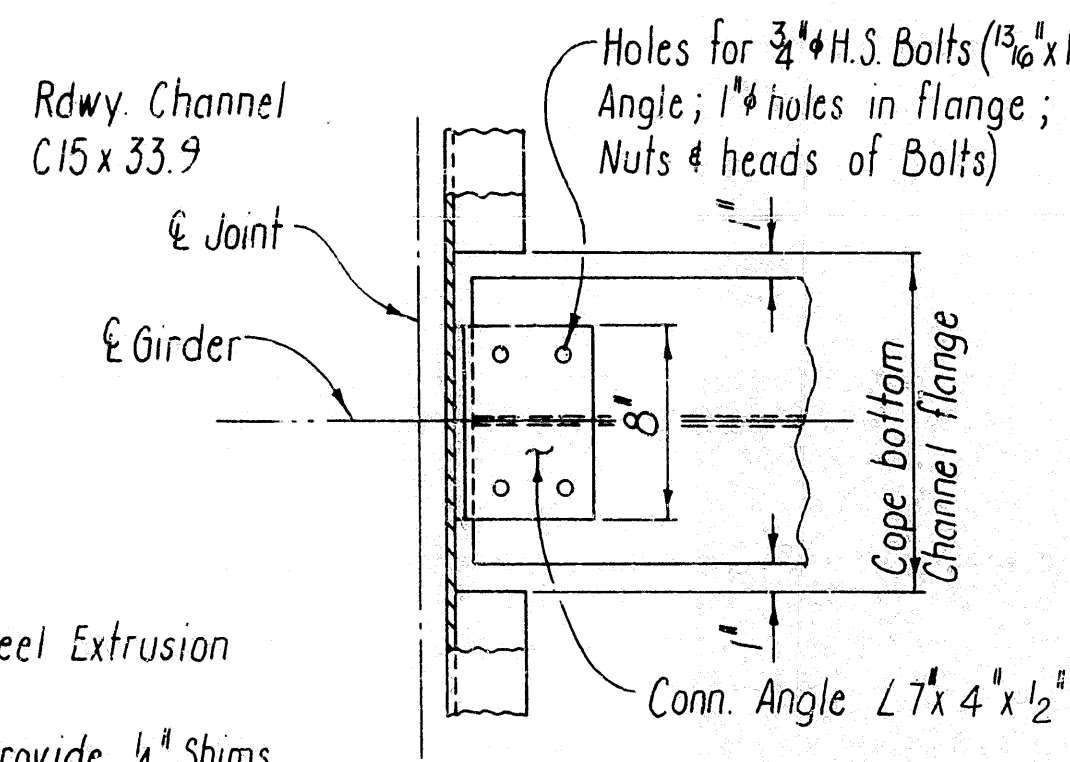
ALTERNATE NO. 2
DETAILS FOR WIDENING
INTERMEDIATE BENT NO. 8
LITTLE MISSOURI RIVER BRIDGE
PIKE COUNTY

ROUTE 27 SEC. 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: KMG DATE: 31 MAR 82
CHECKED BY: RDH DATE: 14 APR 82
DESIGNED BY: CES DATE: DEC 81
BRIDGE NO. 1029W DRAWING NO. 25248

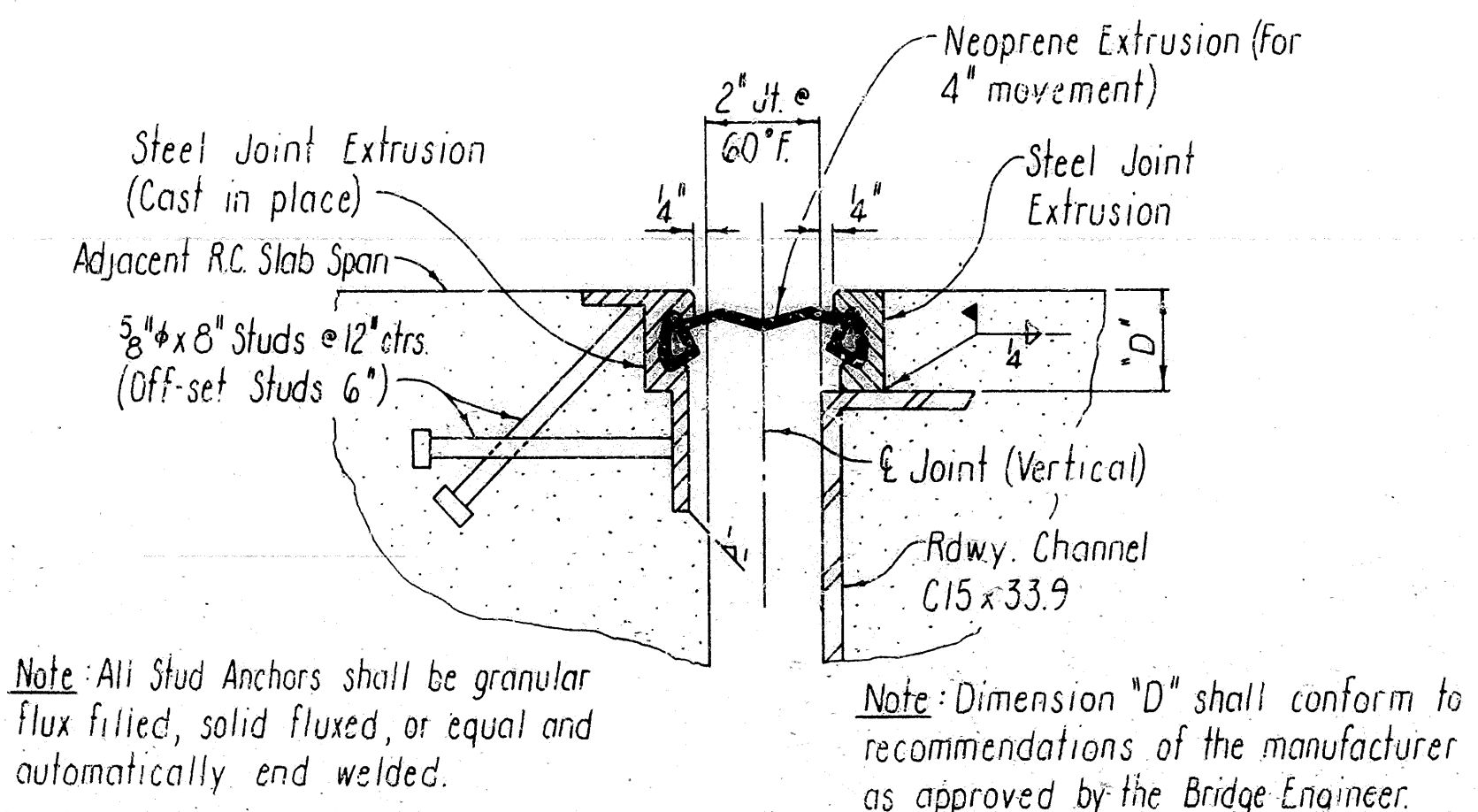
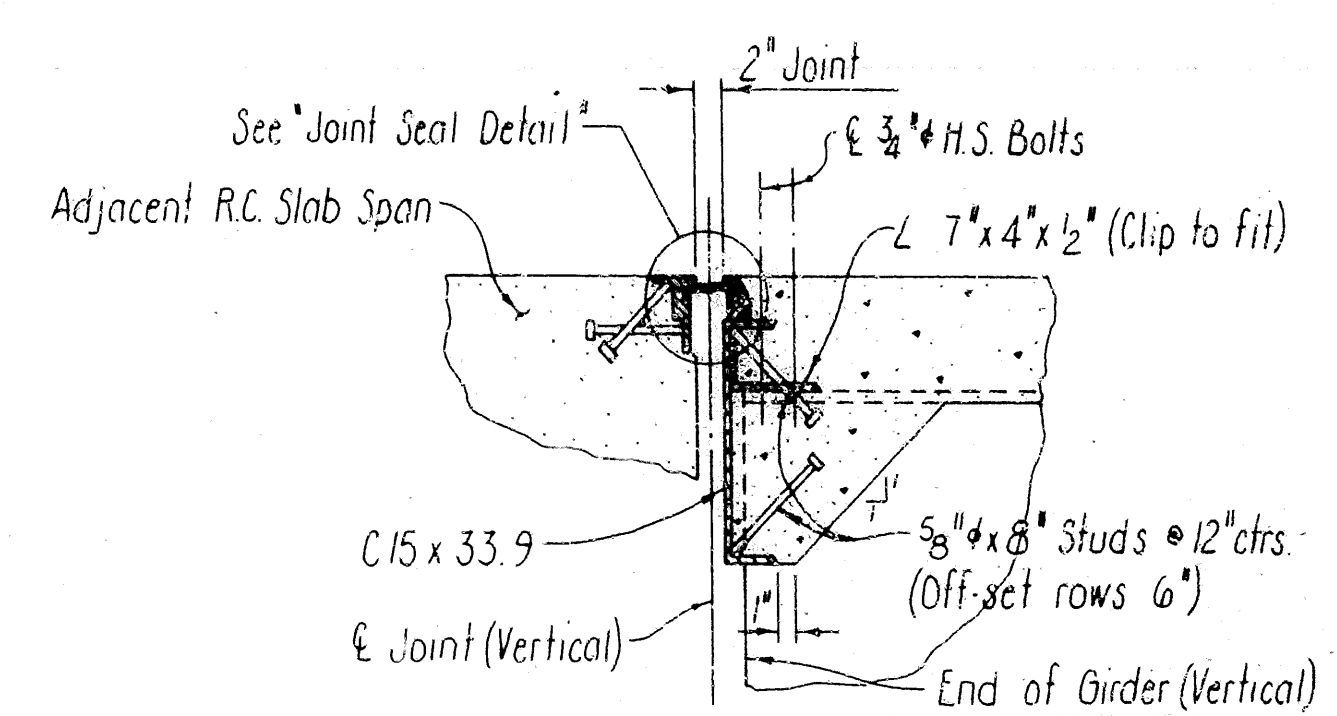
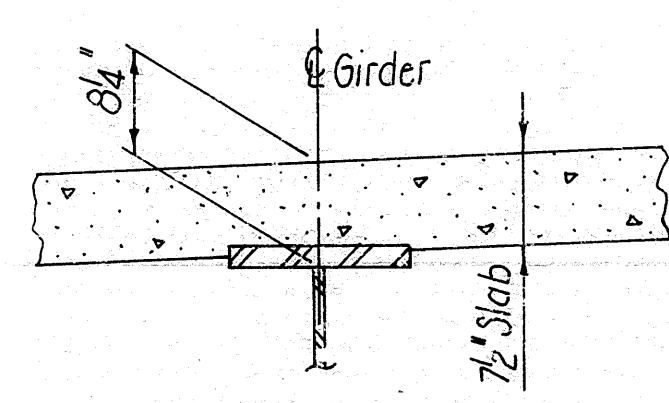
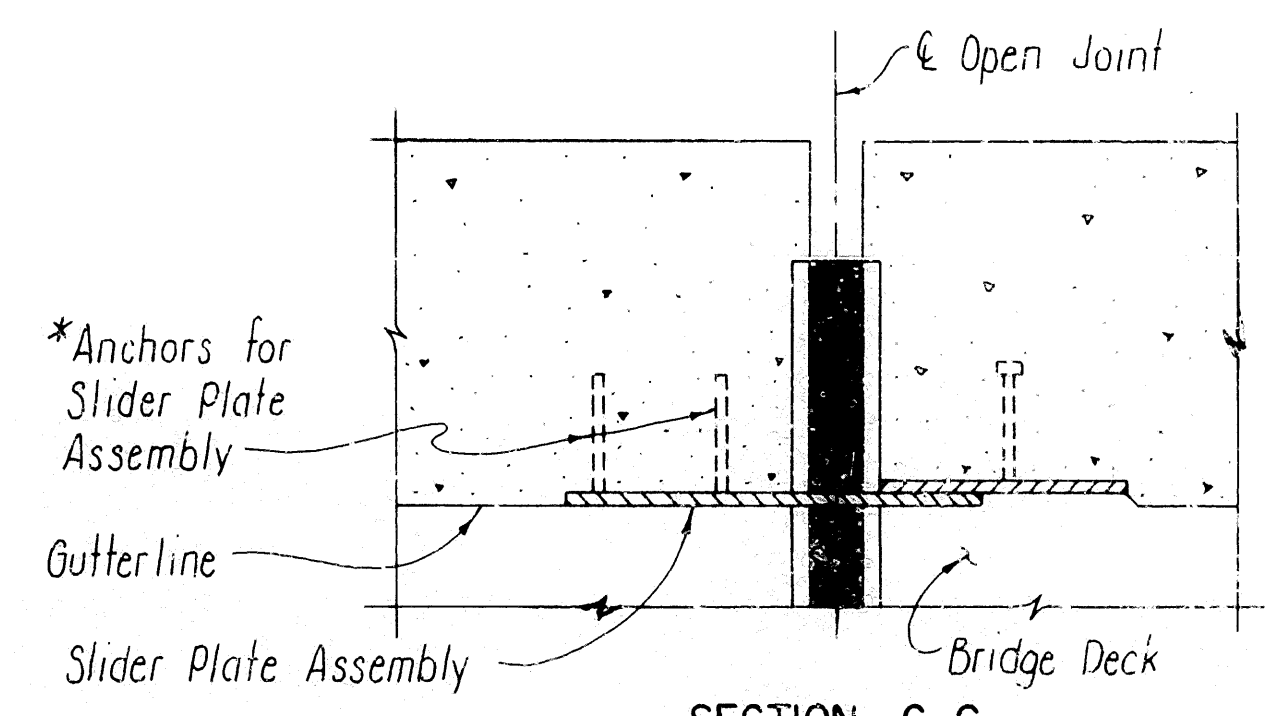
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	PER. HEAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	F-BRF-041-(6)	45	77
				JOB NO.		3914		
① 1029W - SPAN DTLS. - 25249								



EXPANSION DEVICE
Rdwy. Channel C15x33.9
Connection Angles L7x4x1/2"
Neoprene Extrusion supported by Steel Extrusion
5/8"x8" Studs @12" ctrs. top & bottom
Note: Detail device 8" high and provide 1/4" Shims using 1-8" PL & 2-1/8" PL's.



*The method of attachment of the Slider Plate Assembly or similar device must be such that it may be removed in order to provide for future replacement of the Neoprene Strip Seal.



For "General Notes" see Drwg. No. 25253

ALTERNATE NO. 2
SHEET 1 OF 3
DETAILS OF 335'-8" CONTINUOUS
COMPOSITE PLATE GIRDER UNIT
BRIDGE OVER LITTLE MISSOURI RIVER
PIKE COUNTY

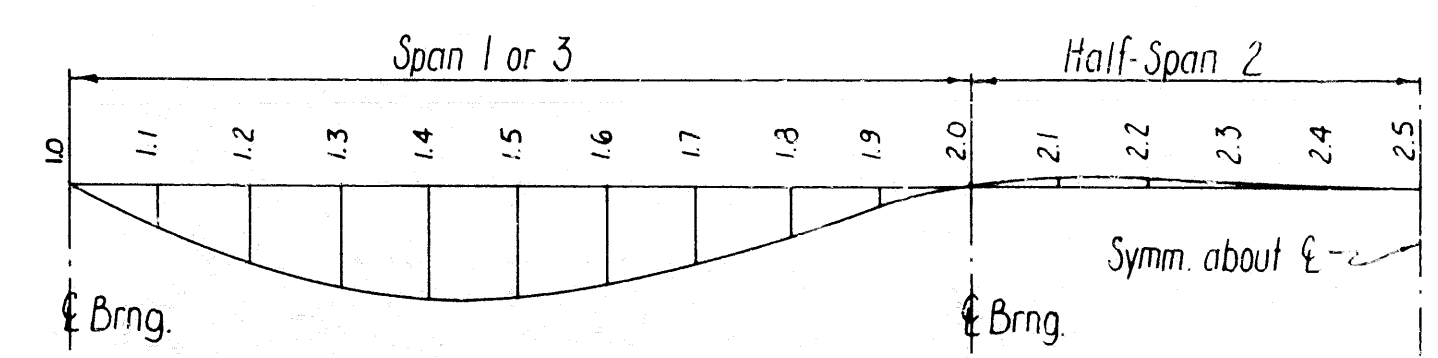
ROUTE 27 SEC. 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: KMG DATE: 7 APR 82
CHECKED BY: DHM DATE: 6/10/82
DESIGNED BY: CES DATE: Oct 81
BRIDGE NO. 1029W DRAWING NO. 25249

FILE	FILE	FILE	FILE	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	F-BRF-041-1(6)	46	77
				JOB NO.		3914		
				1029W - SPAN DTLS.				25250

TABLE OF DEFLECTIONS (INCHES)

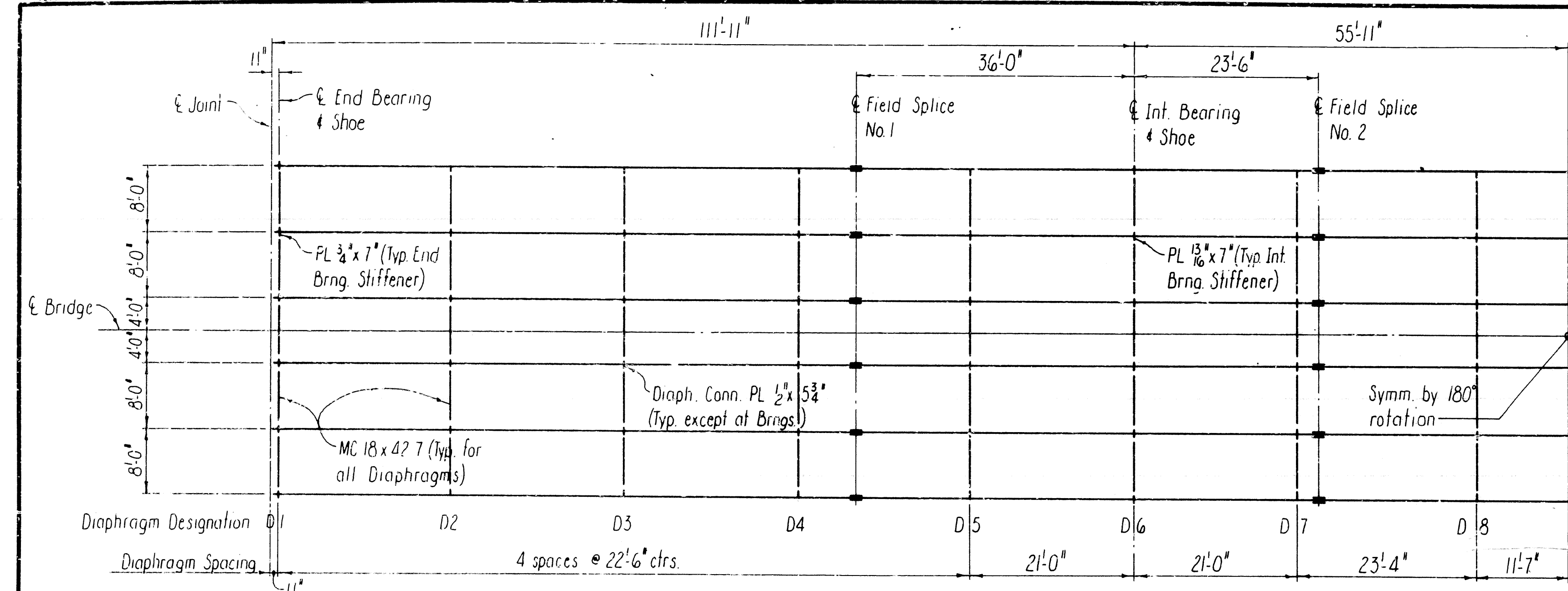
Span Point	INTERIOR GIRDER			EXTERIOR GIRDER		
	Weight of Girder	Weight of Girder & Slab	Weight of Girder, Slab & Para. Rail	Weight of Girder & Slab	Weight of Girder, Slab & Para. Rail	Weight of Girder, Slab & Para. Rail
1.0	0	0	0	0	0	0
1.1	0.253	1.239	1.492	0.156	1.265	1.421
1.2	0.465	2.265	2.730	0.112	2.349	2.461
1.3	0.615	2.974	3.589	0.066	2.774	3.084
1.4	0.691	3.319	3.493	0.060	3.096	3.443
1.5	0.689	3.279	3.451	0.060	3.060	3.403
1.6	0.613	2.881	3.032	0.587	2.689	2.992
1.7	0.476	2.203	2.320	0.456	2.057	2.290
1.8	0.306	1.389	1.462	0.294	1.297	1.444
1.9	0.136	0.597	0.627	0.131	0.558	0.618
2.0	0	0	0	0	0	0
2.1	-0.073	-0.260	-0.267	-0.071	-0.245	-0.258
2.2	-0.098	-0.278	-0.276	-0.096	-0.263	-0.259
2.3	-0.098	-0.172	-0.154	-0.097	-0.165	-0.131
2.4	-0.086	-0.044	-0.014	-0.087	-0.047	-0.013
2.5	-0.082	0.010	0.044	-0.083	0.001	0.070

Note: Camber for Dead Load Deflection plus Vertical Curve $\pm \frac{1}{4}$ " tolerance. Deflections shown are from a chord from \bar{E} Bearing to \bar{E} Bearing. Vertical Curve corrections are not included. Negative sign (-) indicates point above chord.



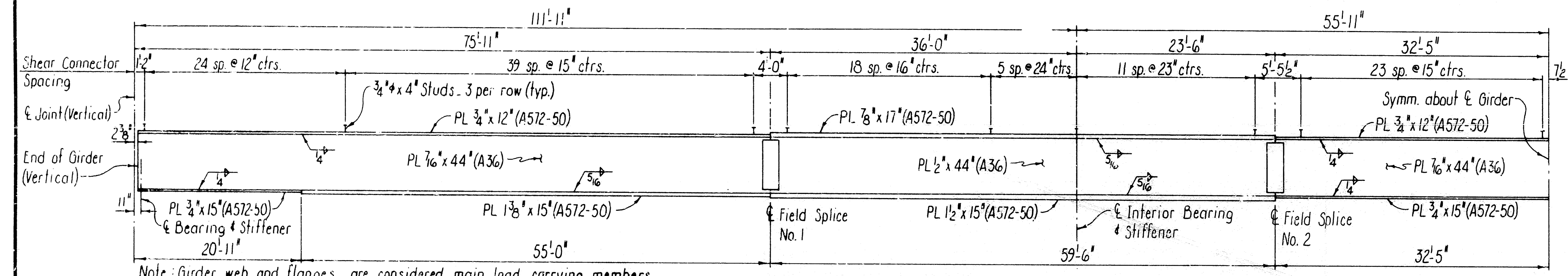
DEAD LOAD DEFLECTIONS

No Scale



HALF FRAMING PLAN

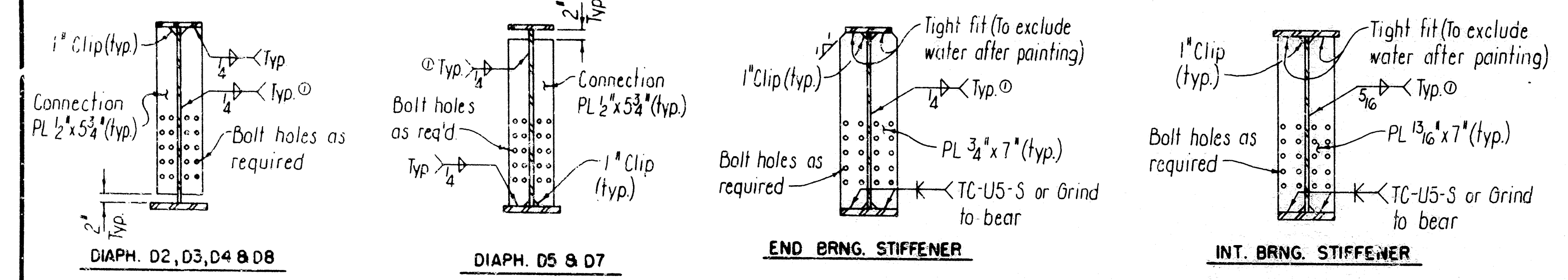
No Scale



HALF-GIRDER ELEVATION

No Scale

Note: Girder web and flanges are considered main load carrying members and shall meet the requirements of the Longitudinal Charpy V-Notch Test as specified in subsection 807.05 of the Standard Specifications.



TYP. DIAPHRAGM CONNECTIONS

Scale: $\frac{1}{2}$ " = 1'-0"

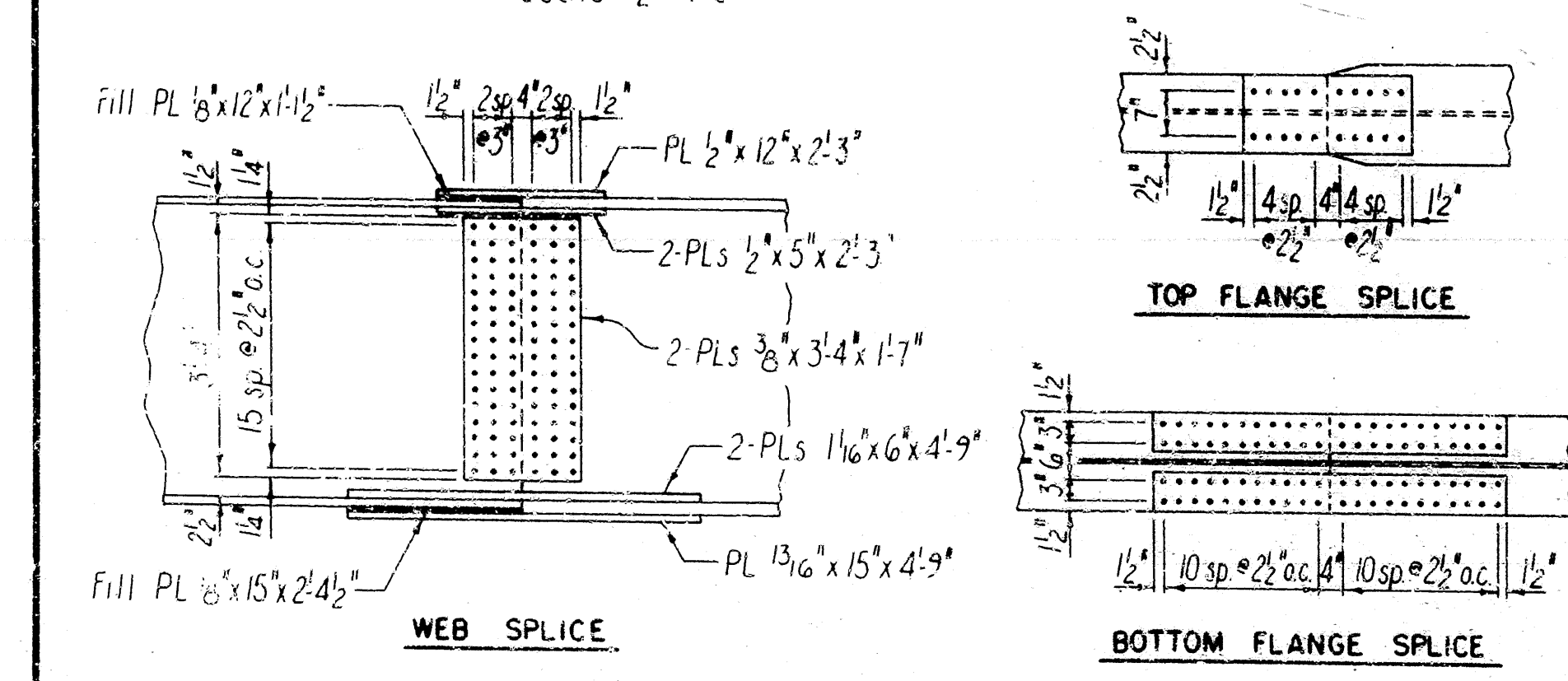
TYP. BEARING STIFFENERS

Scale: $\frac{1}{2}$ " = 1'-0"

SHEAR CONNECTOR DETAIL

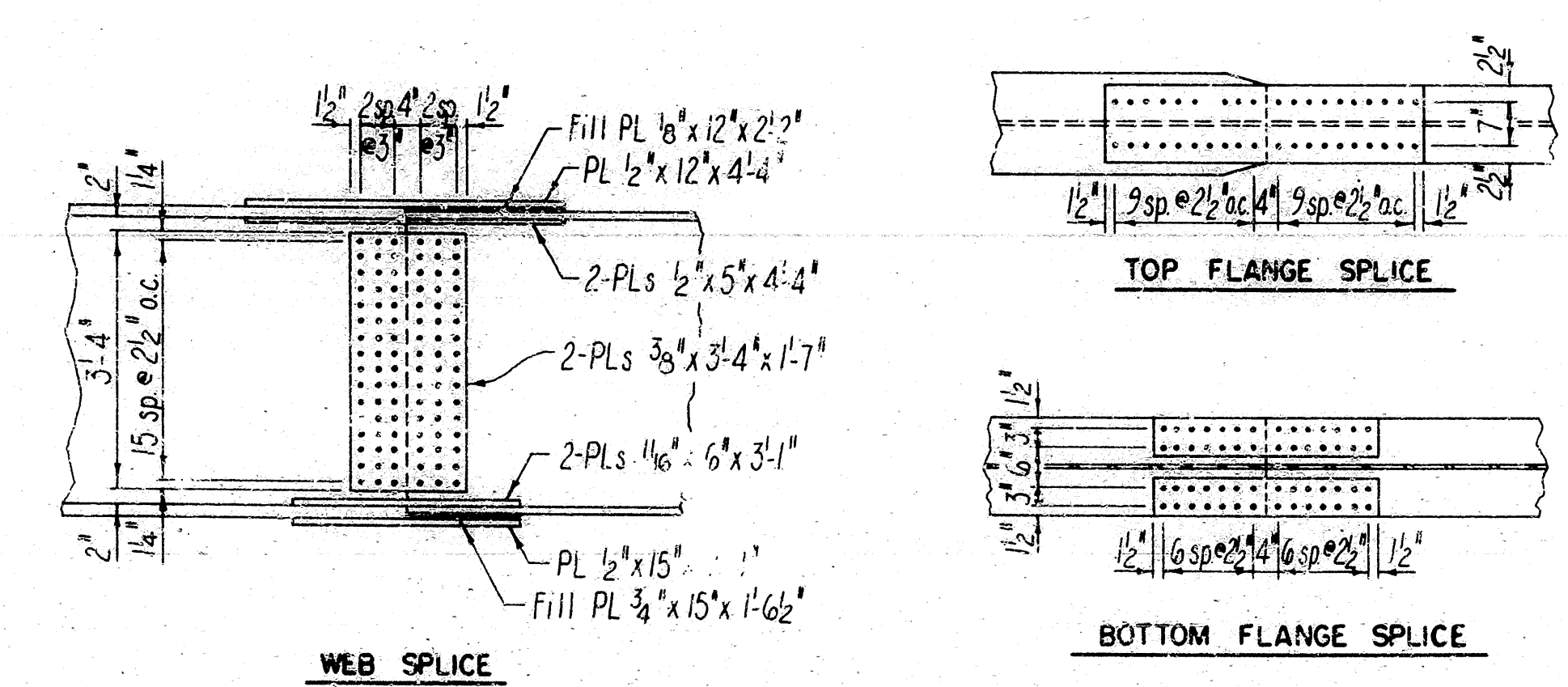
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Note: Stud shear connectors shall be $\frac{3}{4}$ " x 4" long, granular flux filled, solid fluxed, or equal, and automatically end welded to girder flanges in accordance with recommendations of the manufacturer. $\frac{3}{8}$ " Studs may be substituted for the $\frac{3}{4}$ " Studs shown at the ratio 0.73 - $\frac{3}{8}$ " Studs in place of 1 - $\frac{3}{4}$ " Stud. The $\frac{3}{4}$ " Studs will be used as the basis of payment at 61.5 pounds per one hundred studs.



DETAILS OF FIELD SPLICE NO. 1

Scale: $\frac{1}{2}$ " = 1'-0"



DETAILS OF FIELD SPLICE NO. 2

Scale: $\frac{1}{2}$ " = 1'-0"

Note: All bolts for Field Splices shall be $\frac{3}{4}$ " H.S. Bolts. All splice plates shall be ASTM A36 Steel.

ALTERNATE NO. 2

SHEET 2 OF 3

DETAILS OF 335'-8" CONTINUOUS COMPOSITE PLATE GIRDER UNIT BRIDGE OVER LITTLE MISSOURI RIVER PIKE COUNTY

ROUTE 27 SEC. 4

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

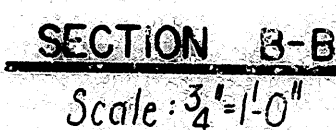
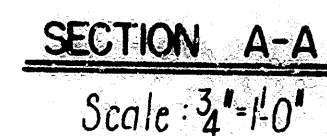
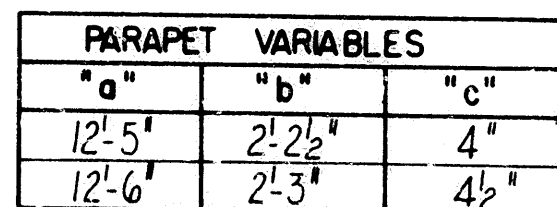
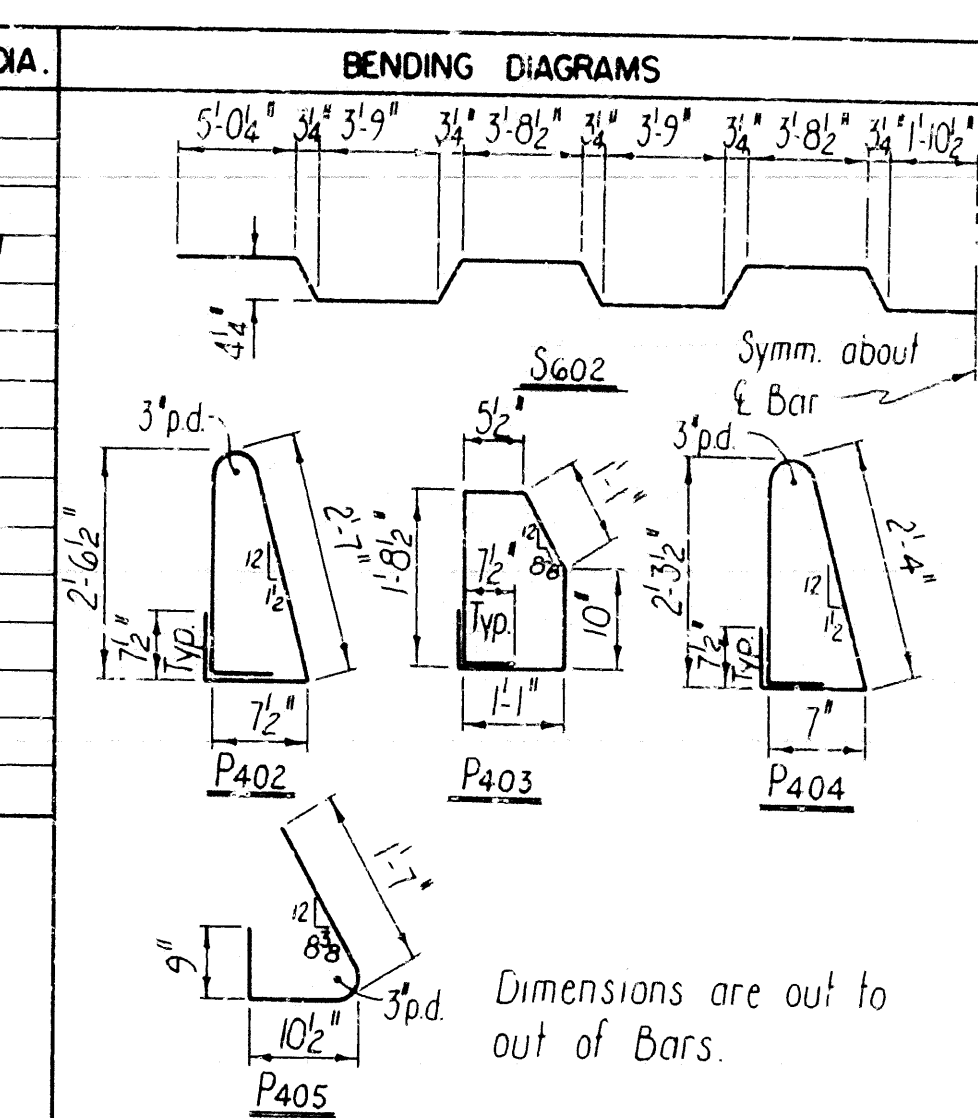
DRAWN BY: KMG DATE: 9 APR. 82
CHECKED BY: DHM DATE: 6/10/82
DESIGNED BY: CES DATE: Oct. '81

BRIDGE NO. 1029W DRAWING NO. 25250

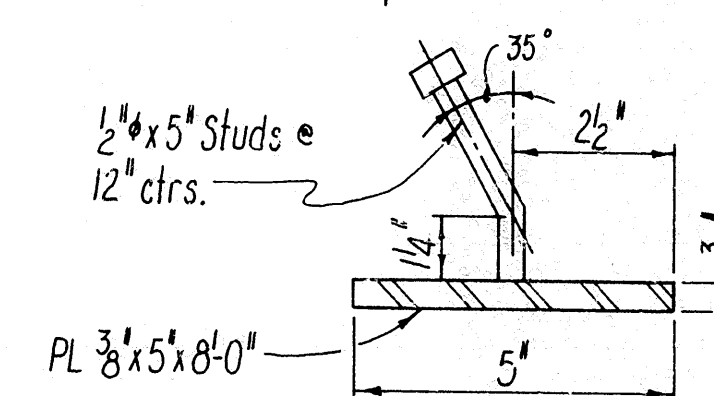
①	1029W_SPAN DTLS. -	25251
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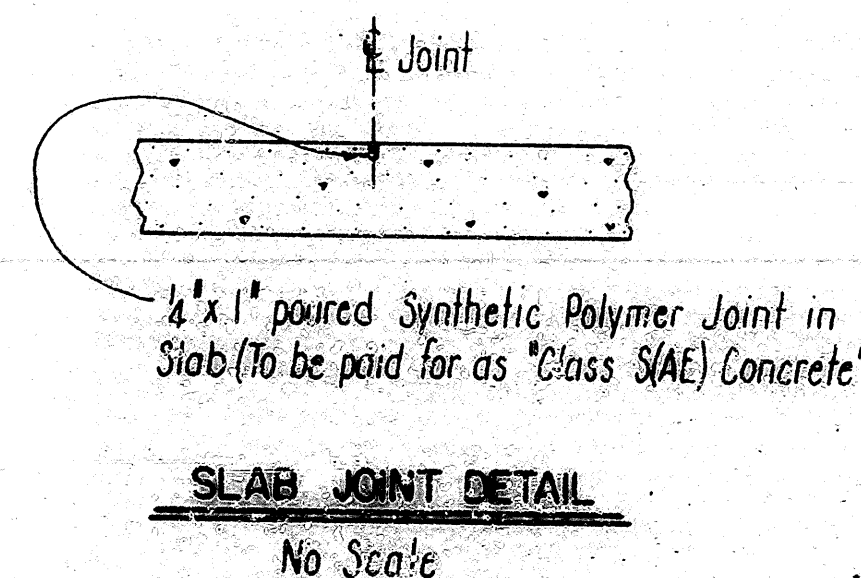
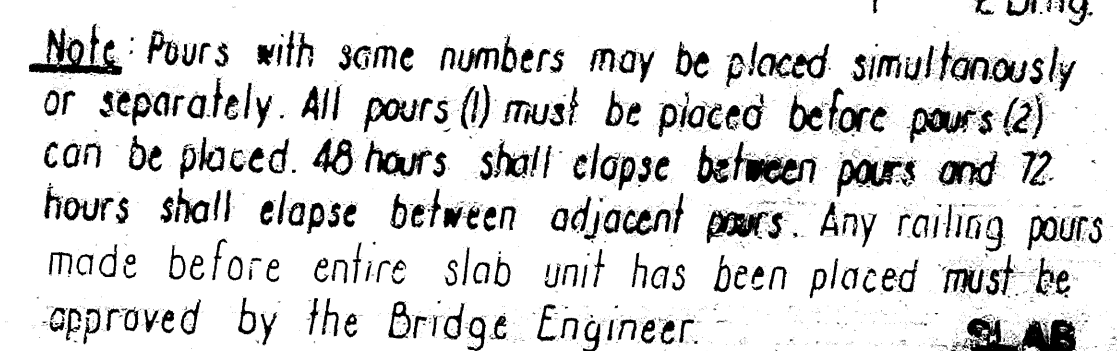
MARK	NO. REQ'D.	LENGTH	PIN C
S401	981	38'-10"	Str
S501	336	4'-7"	Str
S601	538	46'-4"	Str
S602	268	47'-5"	3/4
S603	96	58'-0"	Str
P401	216	12'-1"	Str
P402	432	6'-10"	2"
P403	432	6'-0"	2"
P404	432	6'-4"	2"
P405	432	3'-2"	2"
P601	270	12'-1"	Str



Note: 1/2" x 5" Studs shall be granular flux filled, solid fluxed, or equal, and automatically end welded to the plate.



Note: Surfaces of the 3" Plates which will not be in contact with concrete shall receive two coats of paint in the Shop. These coats shall be those specified as First Shop Coat and Second Field Coat in subsection 807.59 (4) (c) and SP 807-10.



ALTERNATE NO. 2

SHEET 3 OF 3

DETAILS OF 335'-8" CONTINUOUS
COMPOSITE PLATE GIRDER UNIT
BRIDGE OVER LITTLE MISSOURI RIVER
PIKE COUNTY

ROUTE 27 SEC. 4

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK

KMG 12 APR. 82

DRAWN BY: DMH DATE: 6/10/82
 CHECKED BY: DMH DATE: 6/10/82 SCALE: AS SHOWN
 PREPARED BY: CES DATE: OCT '81

CLASSIFIED BY: CES DATE: OCT '81

BRIDGE NO. 1029W

DRAWING NO. 25251

GENERAL NOTES

DESIGN:

AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 1977 EDITION WITH CURRENT INTERIMS.

CONSTRUCTION:

ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 1978 EDITION AND DESIGN SPECIAL PROVISIONS.

LIVE LOADING:

HS 20-44

METHOD OF DESIGN:

LOAD FACTOR

MATERIALS:

CONCRETE: ALL CONCRETE SHALL BE CLASS S(AE) WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH, $f'_c = 3500$ PSI.

REINFORCING STEEL: REINFORCING STEEL SHALL CONFORM TO ASTM A615 OR A617, GRADE 60, (YIELD STRENGTH = 60,000 PSI).

STRUCTURAL STEEL: STRUCTURAL STEEL SHALL CONFORM TO ASTM DESIGNATION A36, ($f_y = 36,000$ PSI) OR ASTM DESIGNATION A572, GRADE 50 ($f_y = 50,000$ PSI).

ELASTOMERIC BEARINGS: FOR ELASTOMERIC BEARINGS, SEE DWG. NO. 25252

STRUCTURAL STEEL:

STRUCTURAL SHAPES OF EQUAL OR GREATER STRENGTH MAY BE SUBSTITUTED FOR SHAPES SHOWN IF APPROVAL IS OBTAINED FROM THE BRIDGE ENGINEER. PAYMENT WILL BE MADE ON THE BASIS OF SHAPES SHOWN.

ALL WEB PLATES AND FLANGE PLATES ARE CONSIDERED MAIN LOAD CARRYING MEMBERS AND SHALL MEET THE LONGITUDINAL CHARPY V-NOTCH TEST SPECIFIED IN SUBSECTION 807.05.

GIRDER FLANGE PLATES AND FIELD SPLICE PLATES SHALL BE CUT AND FABRICATED SO THAT THE PRIMARY DIRECTION OF ROLLING IS PARALLEL TO THE DIRECTION OF THE MAIN TENSILE AND/OR COMPRESSIVE STRESSES.

ALL GIRDERS SHALL BE BLOCKED IN THEIR TRUE POSITION, WITH WEBS HORIZONTAL IN THE SHOP, IN GROUPS OF A MINIMUM OF THREE SECTIONS. SEE SECTION 807.16(b) OF THE STANDARD SPECIFICATIONS. THE CAMBER, LENGTH OF SECTIONS, DISTANCE BETWEEN BEARINGS AND OPENINGS OF JOINTS SHALL BE MEASURED WITH THE GIRDERS IN THIS POSITION AND THIS INFORMATION SHALL BECOME A PART OF THE PERMANENT RECORDS OF THIS JOB. THE COMPONENT PARTS SHALL BE MATCH MARKED IN THIS ASSEMBLY AND THESE MARKS SHALL BE SHOWN ON THE ERECTION DIAGRAM. ALL GIRDER DIMENSIONS ARE BASED ON A TEMPERATURE OF 60°F. A TOLERANCE OF $\pm 1/4"$ IS ALLOWED FOR CAMBER.

ANCHOR BOLTS SHALL BE GALVANIZED TO CONFORM TO ASTM SPECIFICATIONS, DESIGNATION A153.

GIRDER WEBS MAY BE MADE BY SHOP SPLICING WITH A MINIMUM LENGTH OF 25'-0" FOR SECTIONS. FLANGE PLATES LONGER THAN 50 FT. MAY BE MADE BY SHOP SPLICING WITH MINIMUM LENGTH OF 25'-0" FOR SECTIONS. NO ADDITIONAL PAYMENT FOR WELDS FOR THESE SECTIONS WILL BE MADE.

BEARINGS SHALL BE FIRMLY SEATED IN ACCORDANCE WITH SECTION 807.51 OF THE STANDARD SPECIFICATIONS. THIS WORK AND MATERIAL ARE TO BE CONSIDERED AS SUBSIDIARY TO THE ITEM "STRUCTURAL STEEL IN PLATE GIRDER SPANS" AND WILL NOT BE PAID FOR DIRECTLY.

FIELD CONNECTIONS TO BE BOLTED WITH HIGH STRENGTH BOLTS. BOLTS: $3/4"$ Ø, OPEN HOLES $1\ 3/16"$ EXCEPT WHERE NOTED OTHERWISE. BOLT SPACING SHALL BE 2-1/2" UNLESS OTHERWISE NOTED. MINIMUM EDGE DISTANCE SHALL BE 1-1/4" UNLESS NOTED OTHERWISE. BOLTS SHALL BE PLACED WITH HEADS ON THE OUTSIDE FACE OF THE EXTERIOR BEAMS AND ON BOTTOM OF BEAM FLANGES.

HOLES FOR $3/4"$ Ø, HIGH STRENGTH BOLTS IN DIAPHRAGMS MAY BE $1\ 5/16"$ Ø IF A WASHER IS SUPPLIED FOR USE UNDER BOTH THE NUT AND HEAD OF THE BOLT.

DIAPHRAGMS SHALL BE INSTALLED AS GIRDERS ARE ERECTED. DIAPHRAGMS SHALL BE INSTALLED AND COMPLETELY BOLTED PRIOR TO POURING OF FLOOR SLABS.

ALL WELDING THAT IS TO BE DONE DURING FABRICATION OF STRUCTURAL STEEL, INCLUDING TEMPORARY WELDS SHALL BE DETAILED ON THE SHOP DRAWINGS AND SUBMITTED FOR APPROVAL. IF THE CONTRACTOR OR ERECTOR SHOULD WANT TO MAKE ADDITIONAL WELDS, WHETHER TEMPORARY OR PERMANENT, HE SHALL SUBMIT DETAILED DRAWINGS WITH FORMAL REQUEST TO THE BRIDGE DESIGN ENGINEER OF THE ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT FOR APPROVAL. ALL WELDING SHALL CONFORM TO SP 807-5.

DRAWINGS SHOW GENERAL FEATURES OF DESIGN ONLY. SHOP DRAWINGS SHALL BE MADE IN ACCORDANCE WITH THE SPECIFICATIONS, SUBMITTED AND APPROVAL SECURED BEFORE FABRICATION IS BEGUN.

ALL METAL BEARING AND ROADWAY EXPANSION DEVICES TO BE PAID FOR AS "STRUCTURAL STEEL IN PLATE GIRDER SPANS (A36)."

ALL STRUCTURAL STEEL SHALL BE ASTM A36 OR ASTM A572 GRADE 50. ALL STRUCTURAL STEEL SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER POUND BID FOR "STRUCTURAL STEEL IN PLATE GIRDER SPANS A572 - GRADE 50" OR "STRUCTURAL STEEL IN PLATE GIRDER SPANS A36." THE GIRDER FLANGES ARE A572, GRADE 50, AS NOTED ON "GIRDER ELEVATION", DRAWING NO. 25250. ALL OTHER STRUCTURAL STEEL SHALL BE A36.

LOAD DISTRIBUTION TO GIRDERS

DEAD LOAD

(a) TO GIRDER ONLY

TO INTERIOR GIRDER

750#/FT + WT/FT STRUC. STEEL

TO EXTERIOR GIRDER

695#/FT + WT/FT STRUC. STEEL

(b) TO COMPOSITE GIRDER

2600#/FT*

352#/FT

LIVE LOAD TO COMPOSITE GIRDER

1.455 WHEELS + IMPACT

1.333 WHEELS + IMPACT

*INCLUDES 176#/LIN. FT.

DATE MAILED	DATE PAID	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				8	ARK.	F-BRF-041-(6)	49	77
				JOB NO.		3914		
				1029W		NOTES	25253	

PAINTING:

SHOP PAINT. ALL STRUCTURAL STEEL EXCEPT GALVANIZED MEMBERS, CONTACT SURFACES OF BOLTED CONNECTIONS, SURFACES WITHIN 3 INCHES OF HOLES AND FIELD WELDS, AND SURFACES IN CONTACT WITH CONCRETE SHALL BE GIVEN ONE PRIME COAT AS SPECIFIED IN SUBSECTION 807.59 OF THE STANDARD SPECIFICATIONS.

FIELD PAINT: IN ADDITION TO THE PRIME COAT ALL STRUCTURAL STEEL EXCEPT GALVANIZED MEMBERS SHALL RECEIVE TWO COATS OF PAINT AFTER ERECTION. THE CONTRACTOR SHOULD NOTE THE AMOUNT OF TIME ALLOWED TO ELAPSE BETWEEN COATS BEFORE ADDITIONAL CLEANING IS REQUIRED. SEE SP 807-10 AND THE STANDARD SPECIFICATIONS.

REINFORCING STEEL:

THE REINFORCING STEEL IS TO BE ACCURATELY LOCATED IN THE FORMS AND FIRMLY HELD IN PLACE BY STEEL WIRE SUPPORTS SUFFICIENT IN NUMBER AND SIZE TO PREVENT DISPLACEMENT DURING THE COURSE OF CONSTRUCTION. THE WIRE SUPPORTS WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED SUBSIDIARY TO THE ITEMS OF "REINFORCING STEEL."

CONCRETE:

ALL CONCRETE SHALL BE POURED AND SCREEDED OFF PRIOR TO INITIAL SET. THE CONCRETE BRIDGE DECK SHALL BE GIVEN A TINE FINISH AS SPECIFIED FOR FINAL FINISHING IN SUBSECTION 802.23 FOR CLASS 6, ROADWAY SURFACE FINISH. MOVEMENT OF THE FINISHING MACHINE ACROSS NEW CONCRETE SHALL BE ON PLANKS PLACED ON THE SURFACE AND SHALL BE PROHIBITED FOR 72 HOURS AFTER FINISHING THE POUR. SUFFICIENT CONCRETE MUST BE PLACED AHEAD OF THE STRIKE-OFF TO FULLY LOAD THE GIRDER. IF A LONGITUDINAL STRIKE-OFF IS USED, A VERTICAL CAMBER ADJUSTMENT MUST BE MADE IN THE STRIKE-OFF TO ACCOUNT FOR THE FUTURE DEAD LOAD DEFLECTION DUE TO THE RAILING.

THE CONTRACTOR MAY POUR THE BRIDGE SLAB CONTINUOUS OVER THE ENTIRE UNIT USING RETARDING AGENT TO RETARD SET.

THE BRIDGE SLAB MAY BE POURED AS SHOWN ON THE POURING SEQUENCE DIAGRAM. IF THIS SEQUENCE IS USED, ALL POURS (1) ADJACENT TO POURS (2) MUST BE PLACED BEFORE POURS(2) CAN BE PLACED.

THE CONTRACTOR MUST OBTAIN APPROVAL FROM THE PROJECT ENGINEER IF HE ELECTS TO MAKE POURS OTHER THAN AS SHOWN.

NOTES FOR EXPANSION JOINTS:

1. THE EXPANSION JOINT TO BE FABRICATED AND INSTALLED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER.
2. THE CONTRACTOR MUST VERIFY ALL DIMENSIONS PRIOR TO FABRICATION.
3. ALL WELDS SHALL CONFORM TO STANDARD AWS AND AASHTO SPECIFICATIONS FOR HIGHWAY BRIDGES.
4. SPLICES OF STEEL EXTRUSION SHALL DEVELOP FULL STRENGTH.
5. STEEL EXTRUSIONS TO BE ASTM A36 OR EQUAL.
6. NEOPRENE EXTRUSION TO MEET ASTM D2628-69 MODIFIED (RECOVERY TESTS EXCLUDED).
7. THE EXPANSION JOINT SHALL PROVIDE A MOVEMENT OF 4 INCHES.
8. THE EXPANSION JOINT SHALL BE CAPABLE OF SEALING THE DECK SURFACE AND PARAPET AREA TO PREVENT MOISTURE AND OTHER CONTAMINANTS FROM DESCENDING THROUGH THE JOINT.
9. DETAILS OF JOINT EXTENSION INTO THE PARAPET ARE GENERAL AND ARE SHOWN ONLY TO ESTABLISH BASIC DESIGN CONTROLS.
10. THE METHOD OF EXTENSION AND ATTACHMENT OF THE JOINT THROUGH OR INTO THE PARAPET SHALL BE DETERMINED BY THE MANUFACTURER. THE METHOD SELECTED MUST MAINTAIN THE SHAPE OF THE PARAPET SMOOTHLY ACROSS THE JOINT OR PROVIDE A SLIDER PLATE ASSEMBLY OR SIMILAR DEVICE WHICH CONFORMS TO THE SHAPE OF THE PARAPET. IF AN OPENING EXCEEDS 2-1/2", THE PARAPET SHAPE HAS NOT BEEN SMOOTHLY MAINTAINED AND THEREFORE WILL REQUIRE A SLIDER PLATE ASSEMBLY OR SIMILAR DEVICE.
11. THE LINEAR FOOT OF JOINT IS MEASURED ALONG THE CENTER LINE OF JOINT BETWEEN THE ROADWAY FACE OF PARAPETS. THAT PART OF THE JOINT OUTSIDE THESE LIMITS WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE PER LINEAR FOOT BID FOR ARMORED JOINT WITH NEOPRENE STRIP SEAL. SEE SP JOB 3914, "ARMORED JOINT WITH NEOPRENE STRIP SEAL."

ALTERNATE NO. 2

GENERAL NOTES FOR 335'-8"

CONTINUOUS COMPOSITE PLATE GIRDER UNIT
BRIDGE OVER LITTLE MISSOURI RIVER
PIKE COUNTY

ROUTE 27 SEC. 4

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

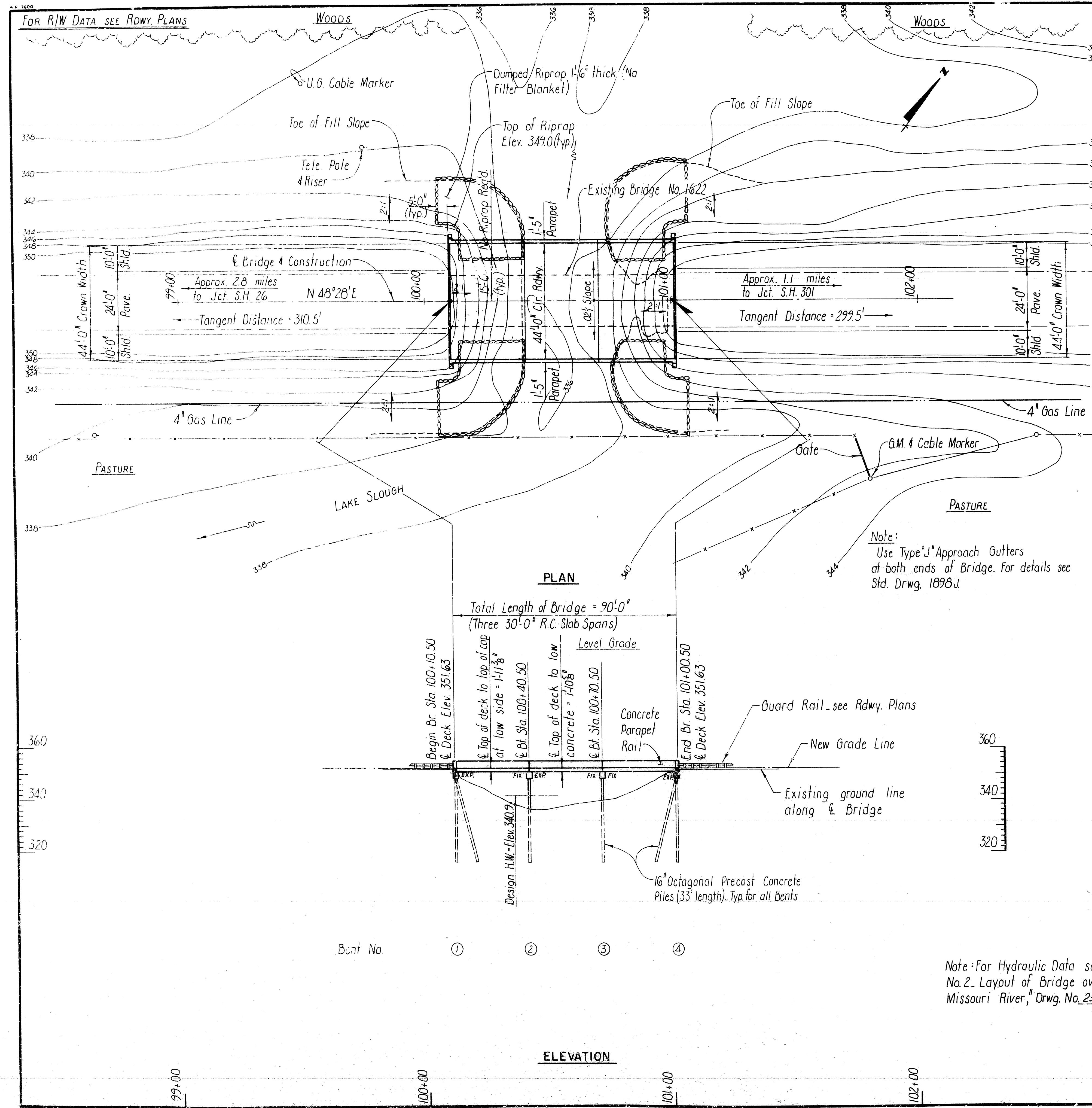
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CHECKED BY: WLB DATE: 6/18/82
DESIGNED BY: WLB DATE: 6/18/82

SCALE: _____

Shal P. Ricketts
BRIDGE ENGINEER

BRIDGE NO. 1029W

DRAWING NO. 25253



DATE	BY	DATE	BY	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.	F-BRF-041-(6)	50	77
							JOB NO. 3914	
							1622W - LAYOUT	25254

GENERAL NOTES

- BENCH MARK: "D" CUT IN SOUTH WHEEL GUARD OF WEST BRIDGE END 10 FT. RIGHT OF STA. 100+10. ELEV. 352.05.
- DESIGN SPECIFICATIONS FOR NEW WORK: AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 1977 EDITION WITH CURRENT INTERIMS.
- CONSTRUCTION SPECIFICATIONS: ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 1978 AND APPLICABLE SPECIAL PROVISIONS.
- LIVE LOADING: HS 20-44
- THE PROPOSED WORK CONSISTS OF REMODELING AND WIDENING EXISTING BRIDGE NO. 1622 FROM A 20 FT. CLEAR ROADWAY TO A 44 FT. CLEAR ROADWAY. PILE BENTS ARE TO BE RETAINED AND WIDENED. R.C. DECK GIRDER SPANS ARE TO BE REPLACED USING R.C. SLAB SPANS.
- THE CONTRACTOR SHALL MAKE CHECK MEASUREMENTS AND MAKE ANY ADJUSTMENTS NECESSARY TO FIT THE NEW WORK TO THE EXISTING BRIDGE.
- ALL CONCRETE IN THE SUBSTRUCTURE OF THE NEW WORK TO BE CLASS "S". ALL CONCRETE IN THE SUPERSTRUCTURE OF THE NEW WORK TO BE CLASS "S(AE)". CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH $f'_c = 3500$ PSI. ALL EXPOSED CORNERS TO BE CHAMFERED $3/4"$ UNLESS OTHERWISE NOTED. ALL CONCRETE TO BE POURED IN THE DRY.
- ALL NEW REINFORCING STEEL SHALL CONFORM TO ASTM A615 OR A617, GRADE 60.
- STRUCTURAL STEEL IN OPEN PARAPETS SHALL BE A36.
- NEW PILING IN BENTS 1 THRU 4 SHALL BE 16" OCTAGONAL PRECAST CONCRETE AND SHALL BE DRIVEN WITH AN APPROVED AIR, STEAM, OR DIESEL HAMMER TO A MINIMUM BEARING CAPACITY OF 44 TONS PER PILE, AND TO A MINIMUM PENETRATION OF 20' BELOW THE GROUND LINE. LENGTHS OF PILING SHOWN ARE ASSUMED FOR ESTIMATING PURPOSES ONLY. ACTUAL LENGTHS TO BE DETERMINED IN THE FIELD. DRIVE ONE 38 FT. TEST PILE IN BENT NOS. 2 & 4. PILES IN END BENTS TO BE DRIVEN AFTER EMBANKMENT TO BOTTOM OF CAP IS IN PLACE.
- THE CONCRETE DECK SHALL BE GIVEN A TIME FINISH AS SPECIFIED FOR FINAL FINISHING IN SUBSECTION 802.23 FOR CLASS 6, ROADWAY SURFACE FINISH.
- FOR ADDITIONAL REQUIREMENTS, SEE SPECIAL PROVISION, "REPAIR, REMODELING AND WIDENING EXISTING BENTS."
- FOR DETAILS OF WIDENING BENTS, SEE DMC. NO. 25242
- FOR DETAILS OF 30 FT. R.C. SLAB SPANS, SEE DMC. NOS. 25243 & 25244
- DETOUR: FOR DETOUR, SEE ROADWAY PLANS.
- HALF-SIZE DETAIL SHEETS OF THE EXISTING BRIDGE CAN BE OBTAINED FROM THE ARKANSAS HIGHWAY AND TRANSPORTATION DEPARTMENT UPON REQUEST TO THE BRIDGE ENGINEER.

Note:
Use Type "J" Approach Gutters
at both ends of Bridge. For details see
Std. Drwg. 1898J.

ALTERNATE NO. 2

LAYOUT OF
BRIDGE OVER LAKE SLOUGH
LITTLE MISSOURI RIVER BRS. & APPRS.
PIKE COUNTY

ROUTE 27 SEC. 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

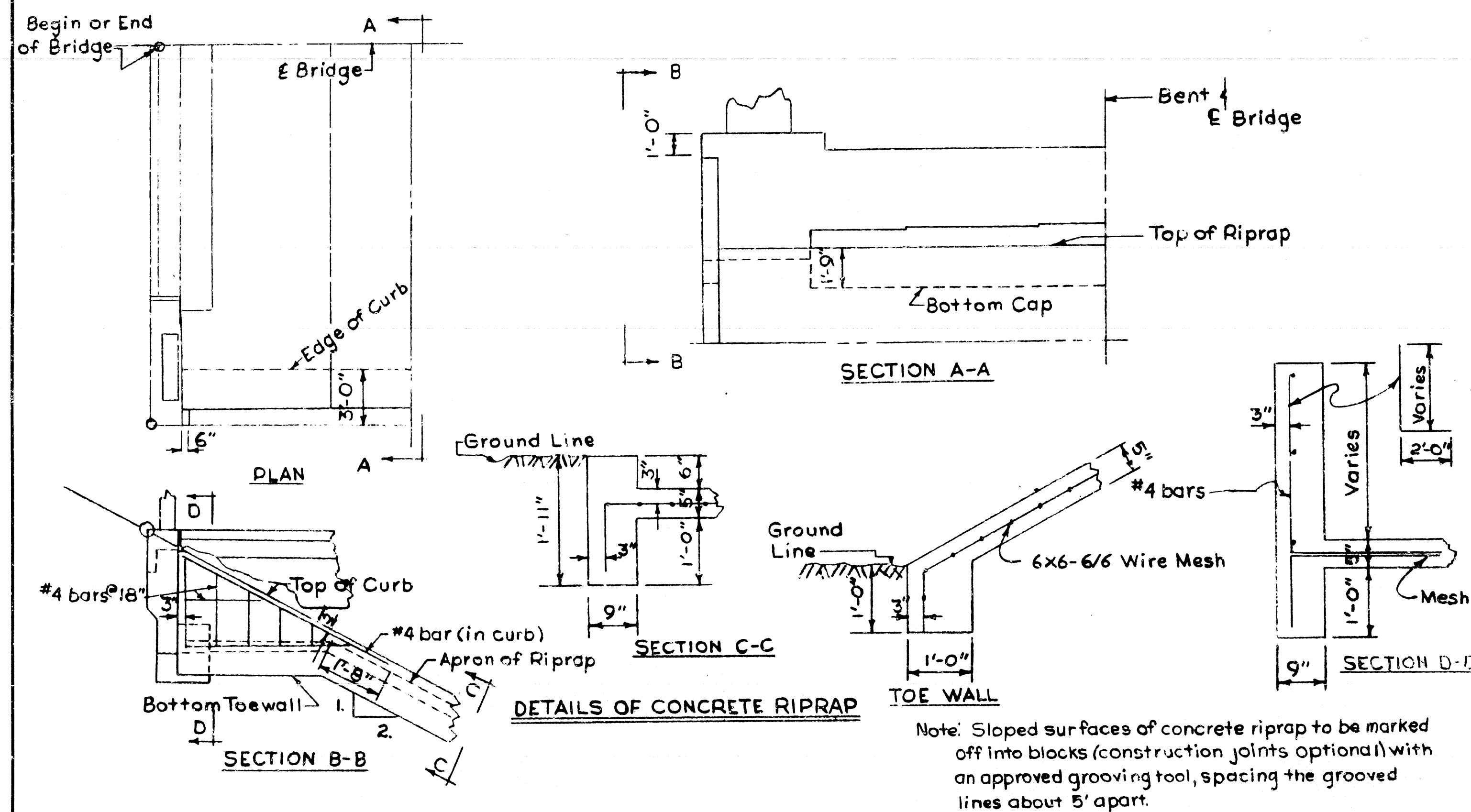
DRAWN BY: K.M.G. DATE: 14 DEC. 81
CHECKED BY: CES DATE: 6-9-82
DESIGNED BY: JAS DATE: -

SCALE: 1" = 20'

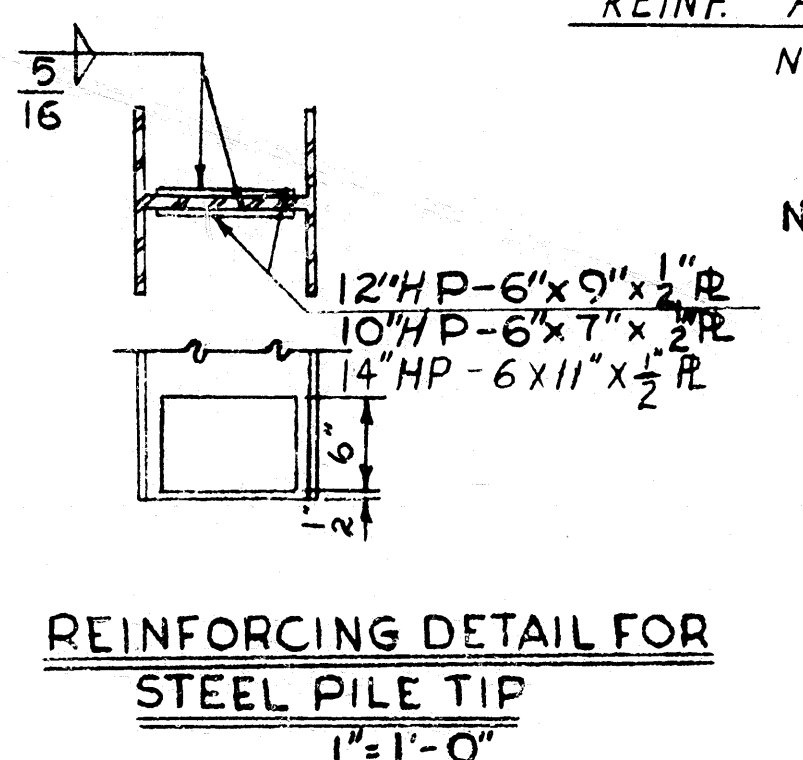
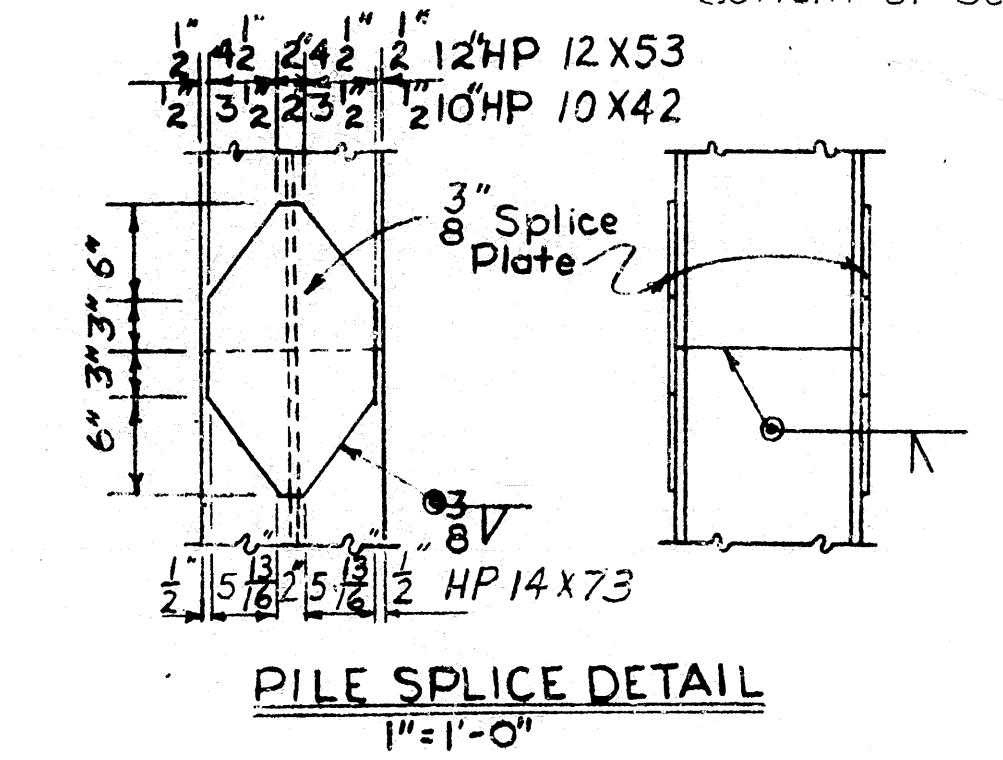
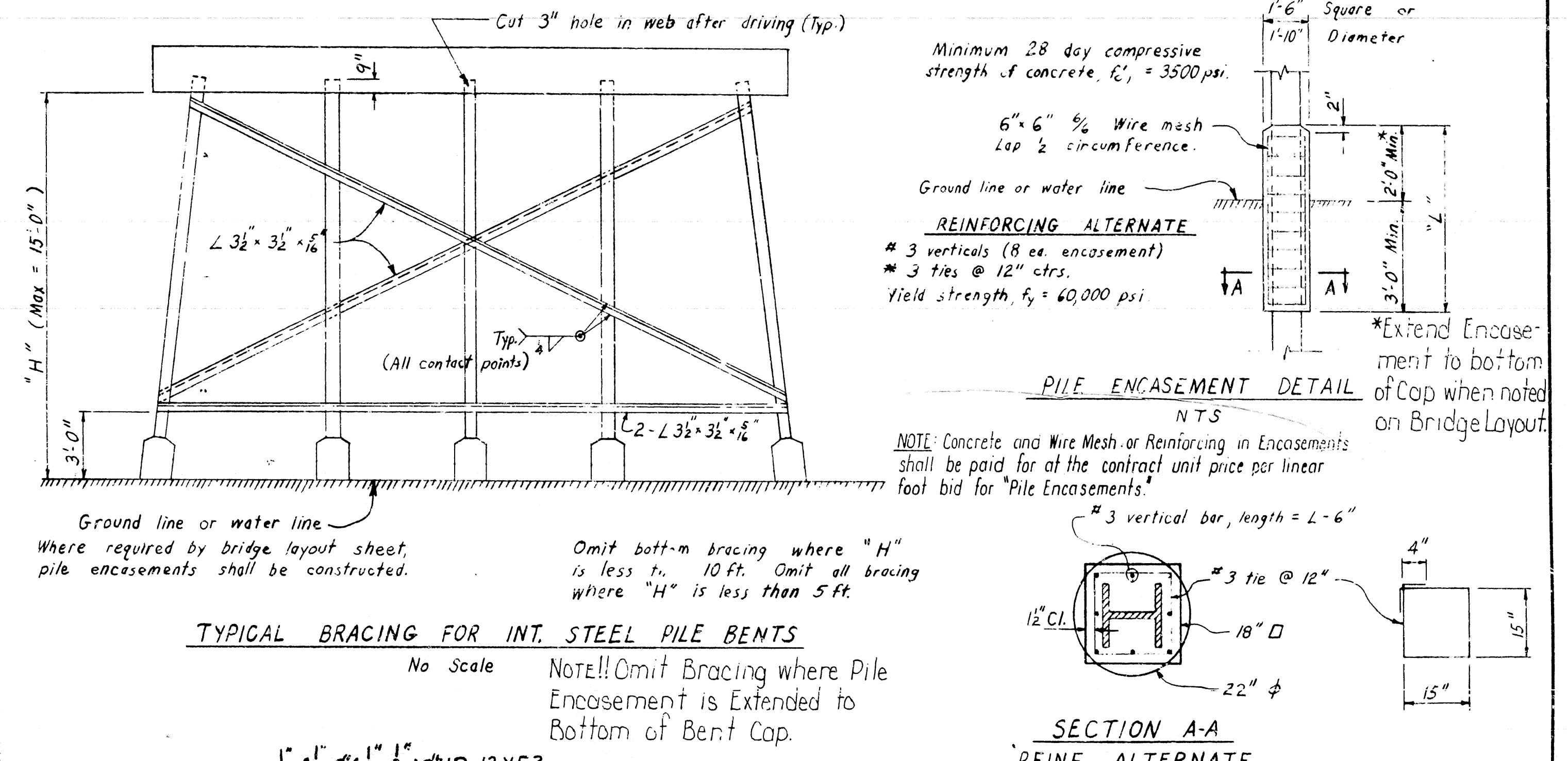
BRIDGE NO. 1622W **DRAWING NO. 25254**

Note: For Hydraulic Data see "Alternate No. 2. Layout of Bridge over Little Missouri River," Drwg. No. 25245.

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
2-16-72	504-2-04-72	12-5-77	500-12-5-77	6	ARK.				
4-21-76	860-4-21-76	5-7-81	1074-5-7-81						
9-19-77	109-10-6-77	2-22-82	567-2-22-82					52	

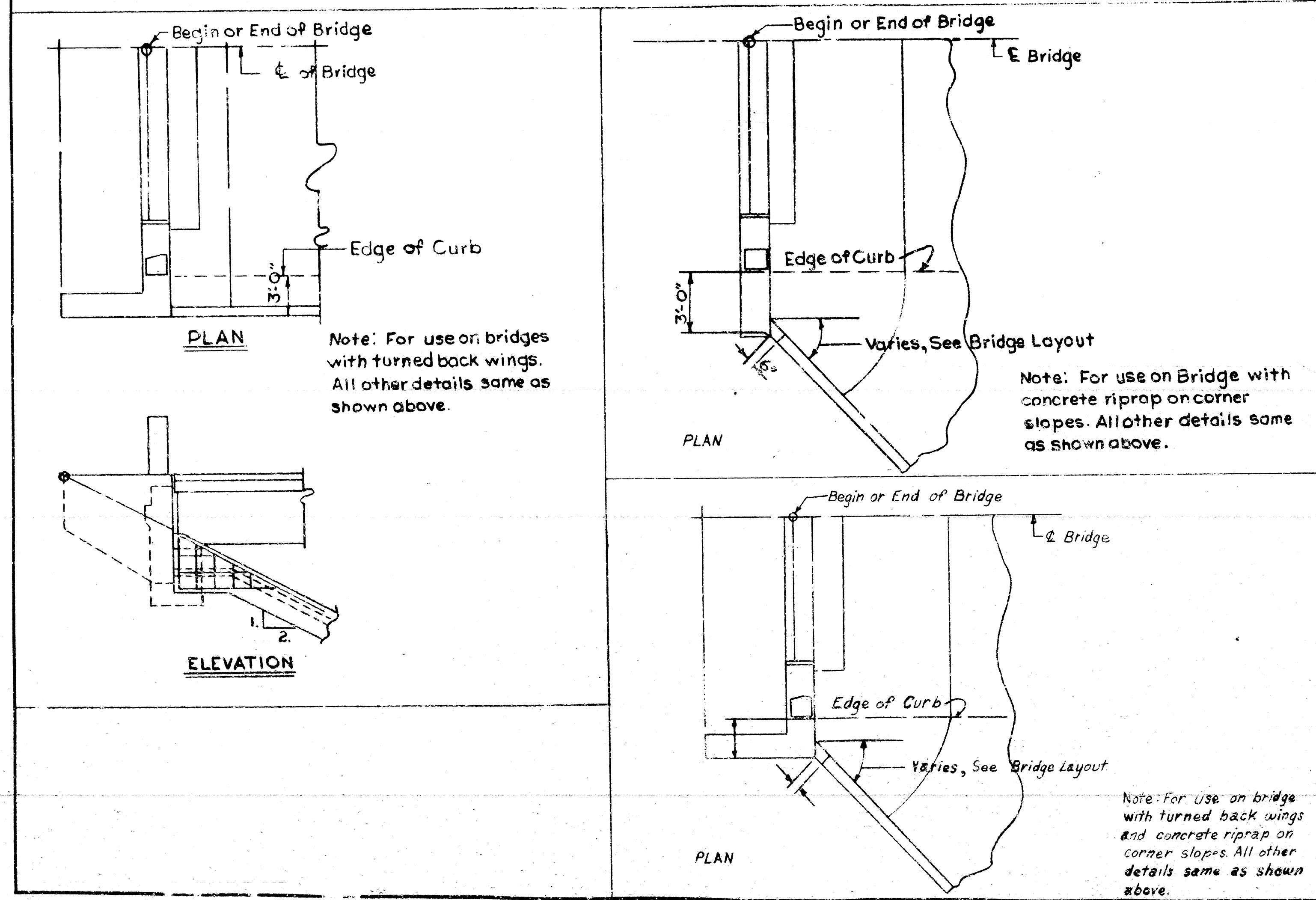


All bracing shall be cut and welded in the field. Each brace shall be furnished in one piece. Payment shall be made under item 807.



The Contractor may for his convenience and at his own expense provide as many as three splices per pile for steel bearing piling. Minimum spacing between splices shall be 5 feet.

NOTE: Drawing Adapted From Drawing No. 14995, With Detail Drawing Concrete Riprap on Corner Slopes. L.E.G. 2/16/72

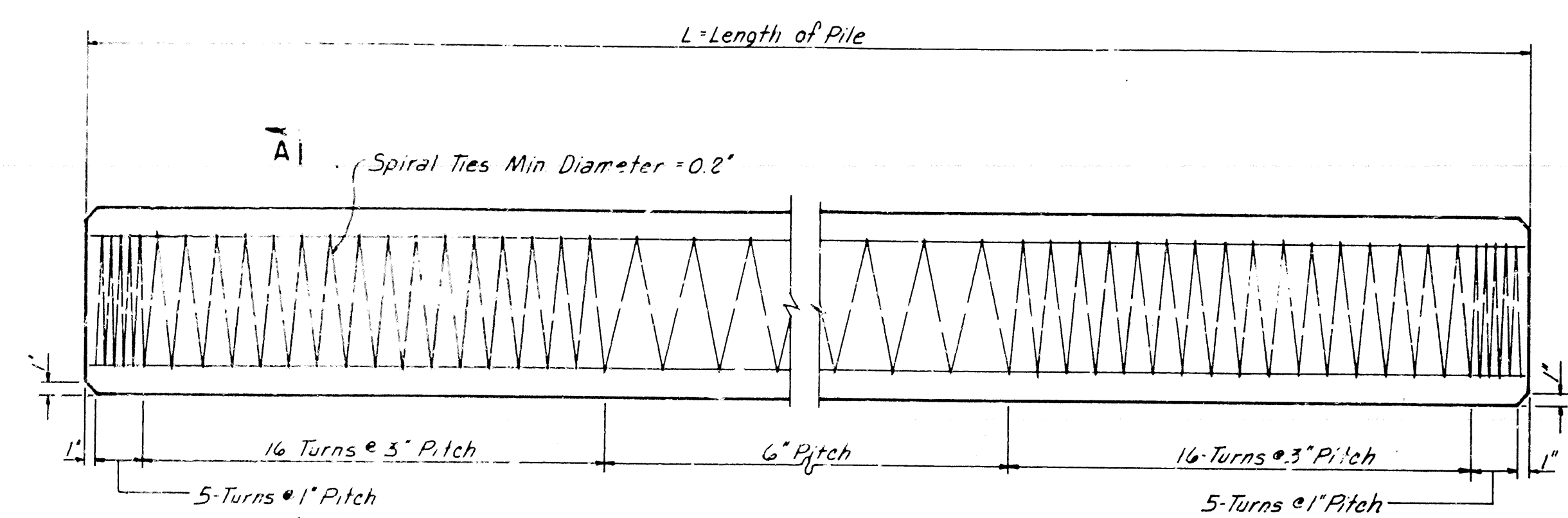


DETAILS OF CONCRETE RIPRAP AND MISC. DETAILS OF STEEL PILING
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: DATE: 6-6-68
TRACED BY: DATE: 6-24-68
CHECKED: FMH DATE: 6-24-68
BRIDGE NO. NO SCALE
DRAWING NO. 14995A

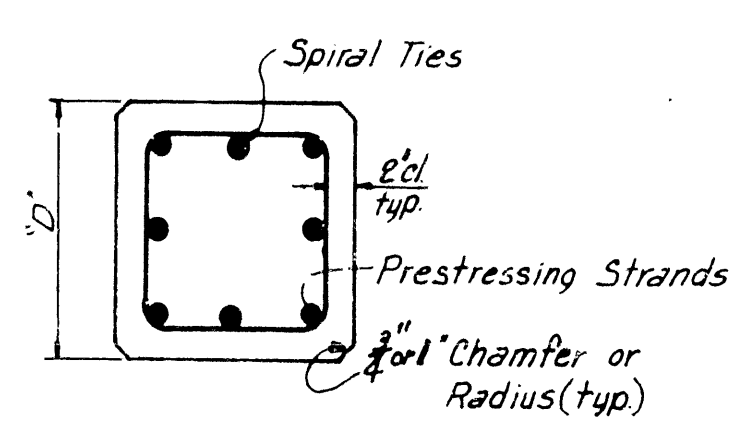
Revised 4-21-76 Added HP 14X73 Pile. GVA
Revised bracing detail, added encasement details 7-29-77 MEC
Revised encasement dimensions for 12" piles 12-5-77 MEC
Added Encasement & Bracing Notes 7 May 81 Kdh
Revised Pile Encasement payment Note 22 Feb 82 KMG

DATE REVISED	REVISION	DATE REVISED	REVISION	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
7-24-75	687-8-4-75	9-15-78	811-7-8-78	6	ARK.			
12-2-77	681-12-5-77							
				JOB NO.				

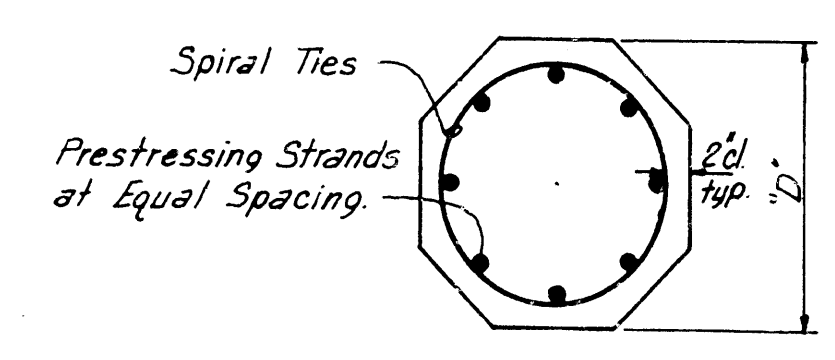


PLAN OF PILE SHOWING SPIRAL TIE SPACING

NOTE: Strand location shall be symmetrical about the Axis of the pile with no more than one strand difference between any two adjacent sides.



SECTION A-A
SQUARE PILE



SECTION A-A
OCTAGONAL PILE

		*NUMBER OF STRANDS PER PILE SIZE "D"						MINIMUM ULTIMATE TENSILE STRENGTH PER STRAND (LBS)	INITIAL PRESTRESSING FORCE PER STRAND (LBS)
GRADE	STRAND DIAMETER	16" OCT.	18" OCT.	14" SQ.	16" SQ.	18" SQ.			
250	1/2"	14	18	14	16	22		20,000	14,000
	7/16"	11	13	10	12	16		27,000	18,900
	1/2"	8	10	8	10	12		34,000	25,200
270	3/8"	12	15	12	14	18		23,000	16,100
	7/16"	9	11	8	12	14		31,000	21,700
	1/2"	7	9	6	8	10		41,300	28,900

*Number Based on initial Prestress Force of 0.7 x Ultimate Tensile Stress, Prestress Losses, and Min. 700 psi Unit Prestress on concrete after Losses.

GENERAL NOTES

CONSTRUCTION SPECIFICATIONS: ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 1978, AND APPLICABLE SPECIAL PROVISIONS.

DESIGN SPECIFICATIONS: AASHTO 1977 WITH 1978 INTERIMS

CONCRETE: CONCRETE IN THE PRECAST PRESTRESSED PILES SHALL BE CLASS (A) AND SHALL HAVE A MINIMUM COMPRESSIVE CYLINDER STRENGTH (f_c) OF 5000 PSI AT 28 DAYS. COMPRESSIVE CYLINDER STRENGTH AT TRANSFER OF THE PRESTRESSING FORCE SHALL BE NOT LESS THAN 4000 PSI.

CONCRETE IN BUILD-UPS SHALL HAVE A MINIMUM COMPRESSIVE CYLINDER STRENGTH (f_c) OF 3500 PSI.

PRESTRESSING REINFORCEMENT: SEVEN WIRE STRESS RELIEVED STRAND SHALL CONFORM TO THE GENERAL REQUIREMENTS OF ASTM A416. BROKEN WIRES WITHIN INDIVIDUAL STRANDS WILL BE PERMITTED UP TO 2% OF THE TOTAL NUMBER OF WIRES IN EACH PILE, PROVIDING THAT THERE IS NOT MORE THAN ONE BROKEN WIRE PER STRAND. TWO OR MORE BROKEN WIRES PER STRAND WILL BE CAUSE FOR REPLACEMENT OF THE STRAND, EVEN THOUGH THE TWO BROKEN WIRES ARE WITHIN THE 2% LIMITATION.

BUILD-UPS: TO PROVIDE FOR BUILD-UPS OF PILES WHERE AUTHORIZED BY THE ENGINEER, CONCRETE SHALL BE CUT BACK TO EXPOSE THE STRANDS FOR A DISTANCE SUFFICIENT TO PROVIDE A LAP OF 40 DIAMETERS OF THE REINFORCING BARS REQUIRED FOR BUILD-UP. REINFORCING FOR BUILD-UPS SHALL HAVE A MINIMUM AREA EQUAL TO 1-1/2% OF THE GROSS SECTION OF PILE. PLACEMENT OF BARS SHALL BE IN A SYMMETRICAL PATTERN OF NOT LESS THAN FOUR BARS. SEE SECTION 805.14 OF THE STANDARD SPECIFICATIONS.

FORMS: FOR FORMING EXTERIOR OF PILES, THE USE OF STEEL FORMS ON CONCRETE FOUNDED CASTING BEDS IS REQUIRED, UNLESS OTHERWISE APPROVED BY THE ENGINEER. SIDE FORMS MAY HAVE A MAXIMUM DRAFT ON EACH SIDE NOT EXCEEDING 1/4" PER FOOT.

TOLERANCES: PILE ENDS SHALL BE PLANE SURFACES AND PERPENDICULAR TO AXIS OF PILE WITH A MAXIMUM TOLERANCE OF 1/8" PER FOOT TRANSVERSELY.

THE MAXIMUM SWEPT DEVIATION FROM STRAIGHTNESS MEASURED ALONG TWO PERPENDICULAR FACES OF THE PILE, WHILE NOT SUBJECT TO BENDING FORCES, SHALL NOT EXCEED 1/8" IN 10' OF ITS LENGTH.

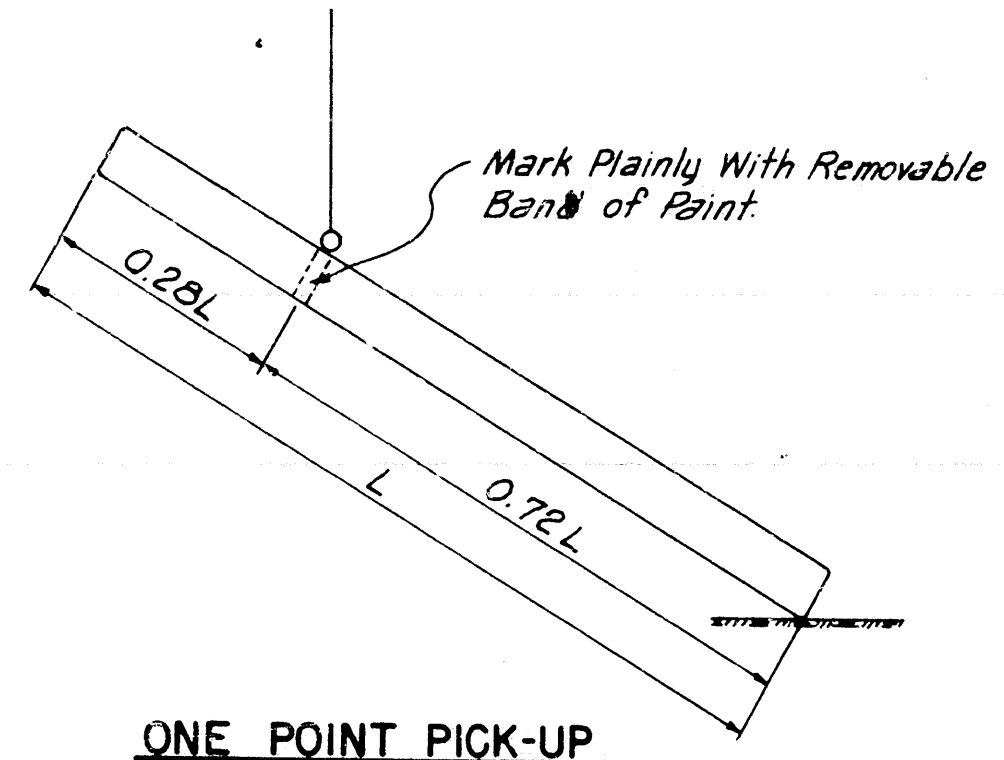
GENERAL: SHIPMENT OF PILES FROM THE PLANT SITE OR PILE DRIVING WILL NOT BE PERMITTED UNTIL THE REQUIRED MINIMUM CYLINDER STRENGTH IS REACHED, AND IN NO CASE LESS THAN 10 DAYS AFTER POURING THE CONCRETE. PILES MAY BE REMOVED FROM CASTING BED TO A NEARBY STORAGE ANY TIME AFTER TRANSFER OF STRESS.

SPIRAL REINFORCING: SPIRAL REINFORCING SHALL BE STEEL WIRE MEETING THE REQUIREMENTS OF ASTM A82 WITH A MINIMUM DIAMETER OF 0.2" OR SHALL BE PLAIN ROUND STEEL BARS MEETING THE REQUIREMENTS OF ASTM A615 WITH A MINIMUM DIAMETER OF 0.25".

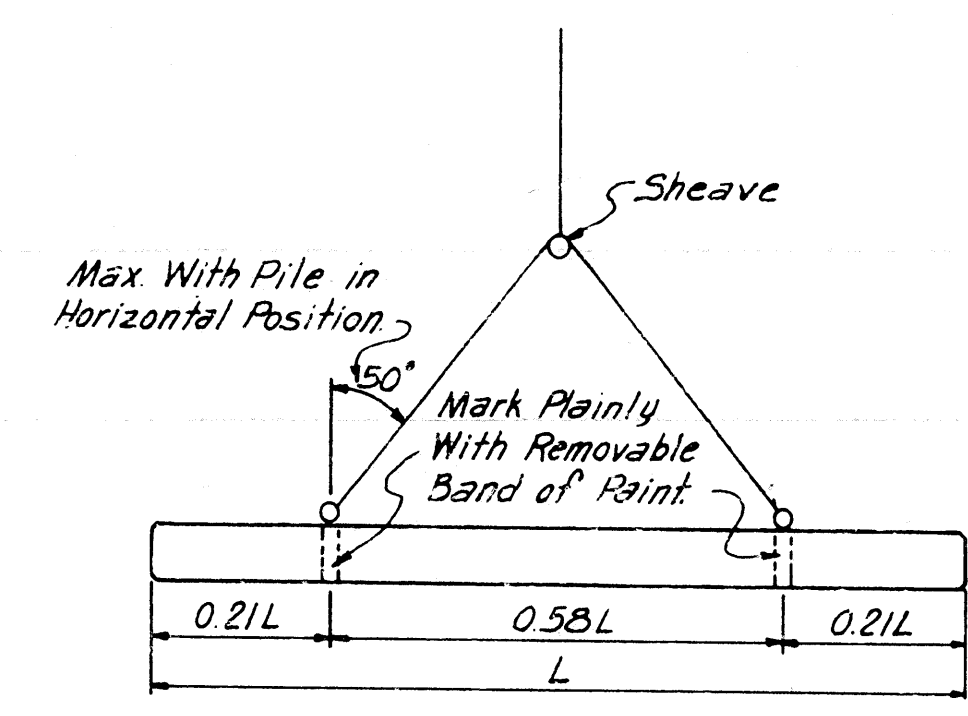
MANUFACTURE, TRANSPORTATION AND STORAGE: SEE SECTION 802 "CONCRETE FOR STRUCTURES" OF THE STANDARD SPECIFICATIONS.

INSTALLATION, MEASUREMENT AND PAYMENT: SEE SECTION 805 "BEARING PILING" OF THE STANDARD SPECIFICATIONS. PRECAST PRESTRESSED CONCRETE PILING WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER LINEAR FOOT BID FOR "PRECAST CONCRETE PILING".

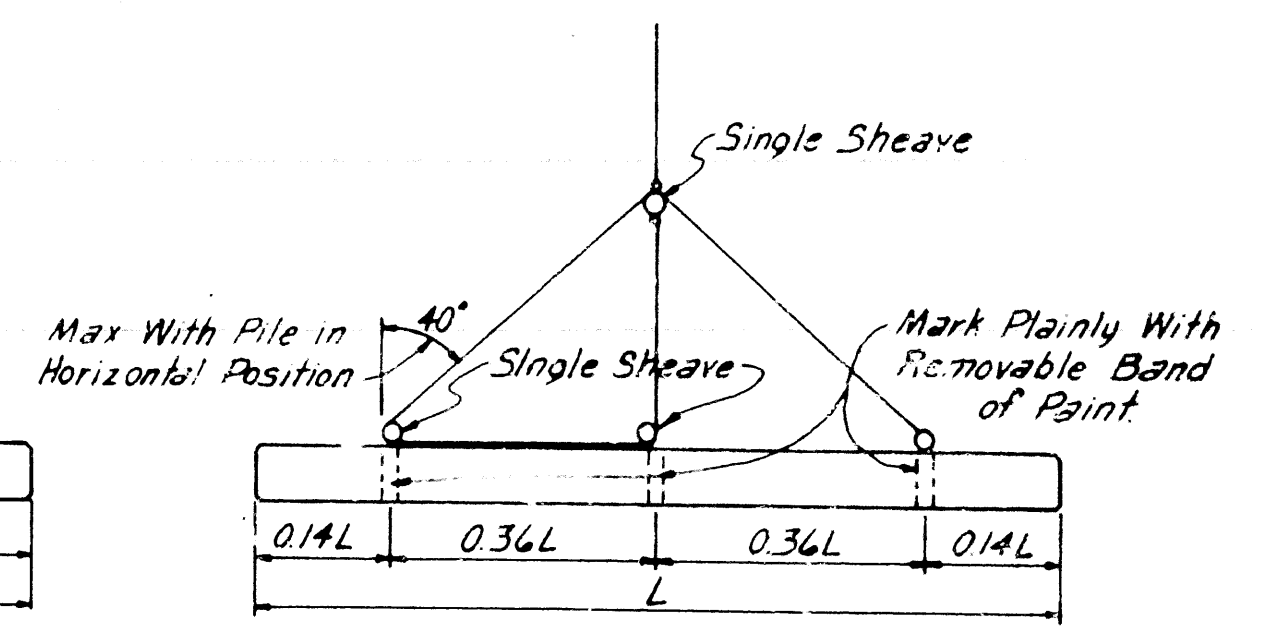
MAXIMUM PICKUP LENGTHS L									
TYPE OF PICK-UP	PRESTRESSED		PRECAST		PRESTRESSED		PRECAST		
	16" OCT.	18" OCT.	16" or 18" OCT.	14" SQ.	16" SQ.	18" SQ.	14" SQ.	16" SQ.	18" SQ.
ONE-POINT	52'	55'	46'	55'	59'	63'	52'	51'	55'
TWO-POINT	75'	80'	67'	79'	84'	90'	75'	74'	79'
THREE-POINT	105'	112'	93'	110'	117'	126'	104'	103'	111'



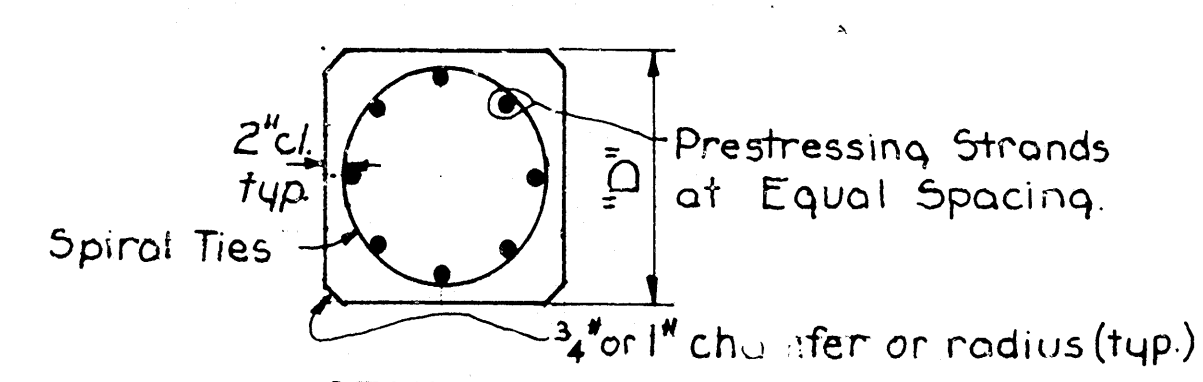
ONE POINT PICK-UP



TWO POINT PICK-UP

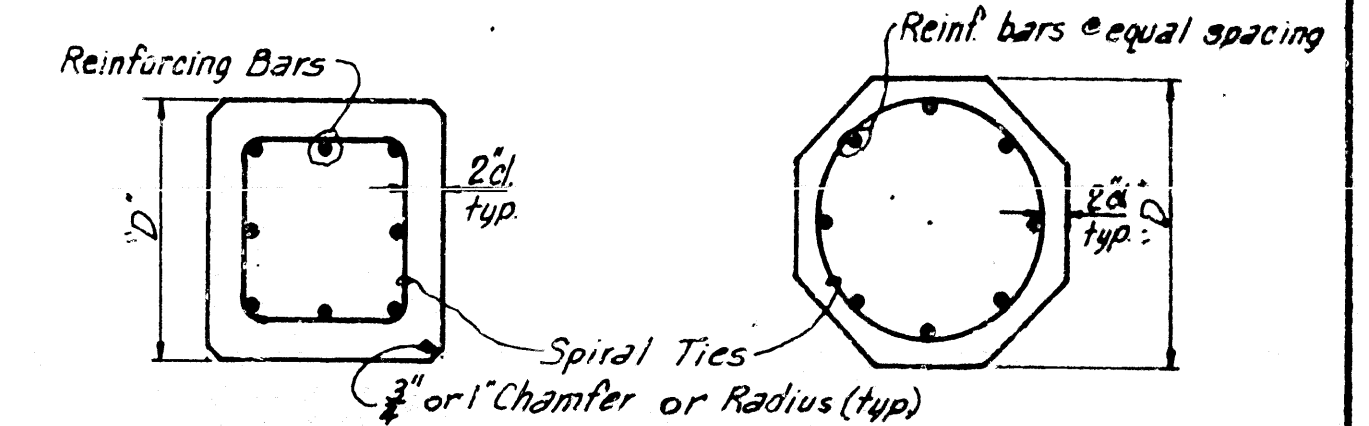


THREE POINT PICK-UP



SECTION A-A
SQUARE PILE

PRECAST PILE REINFORCING		
PILE SIZE	NO. REQD.	BAR SIZE
16" OCT.	8	#7
18" OCT.	8	#7
14" SQ.	8	#7
16" SQ.	8	#7
18" SQ.	8	#8



SECTION A-A
SQUARE PILE

SECTION A-A
OCTAGONAL PILE

PRECAST CONCRETE PILES

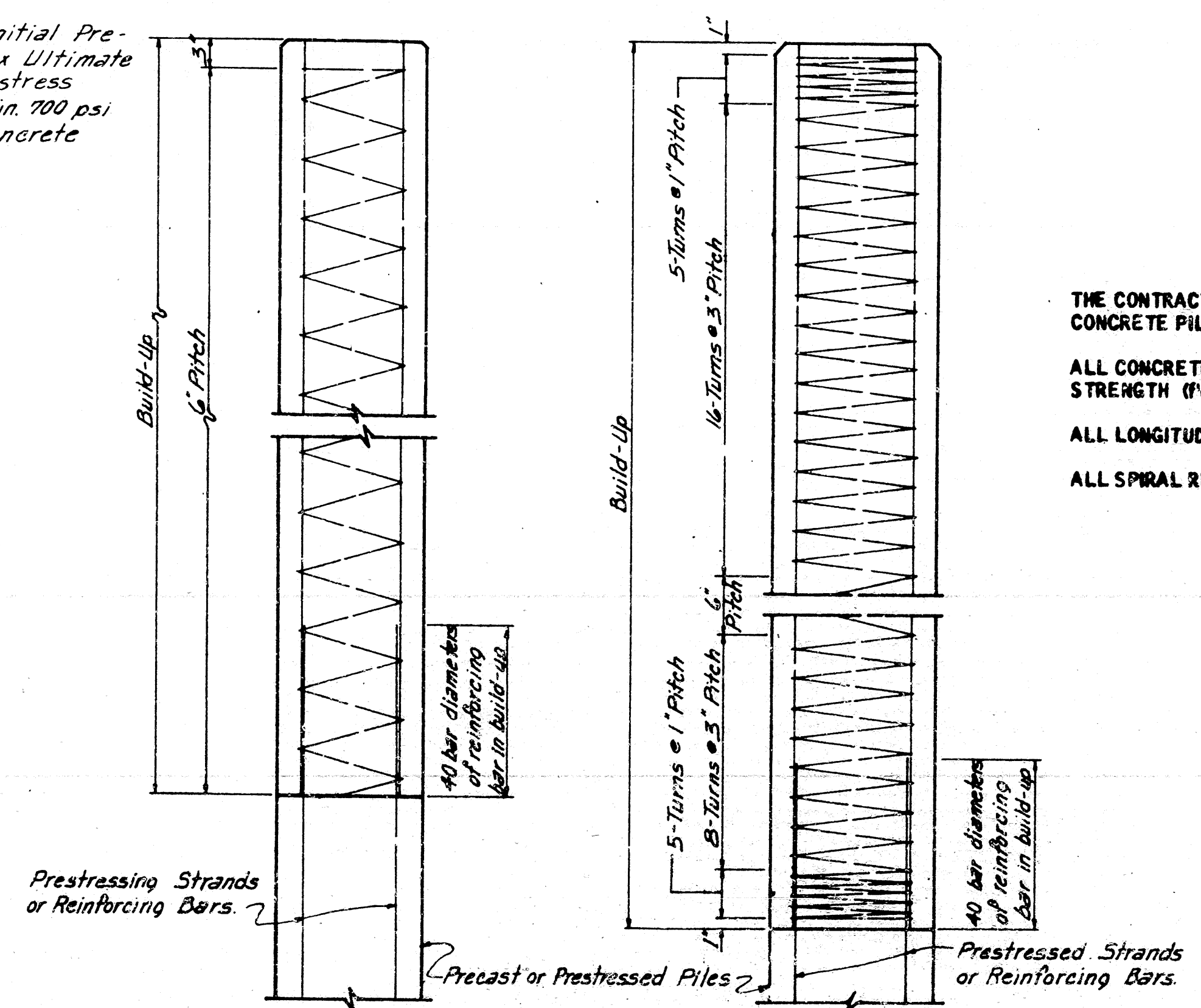
ALTERNATE PRECAST CONCRETE PILES

THE CONTRACTOR MAY ELECT TO USE A PRECAST CONCRETE PILE IN LIEU OF THE PRESTRESSED CONCRETE PILE. THE FOLLOWING NOTES APPLY TO PRECAST CONCRETE PILES.

ALL CONCRETE SHALL BE CLASS (A) AND SHALL HAVE A MINIMUM COMPRESSIVE CYLINDER STRENGTH (f_c) OF 3500 PSI AT 28 DAYS.

ALL LONGITUDINAL REINFORCING BARS SHALL BE DEFORMED BARS OF ASTM A615 OR A617.

ALL SPIRAL REINFORCING SHALL BE THE SAME AS THAT SHOWN FOR PRESTRESSED CONCRETE.



BUILD-UP
WITHOUT DRIVING

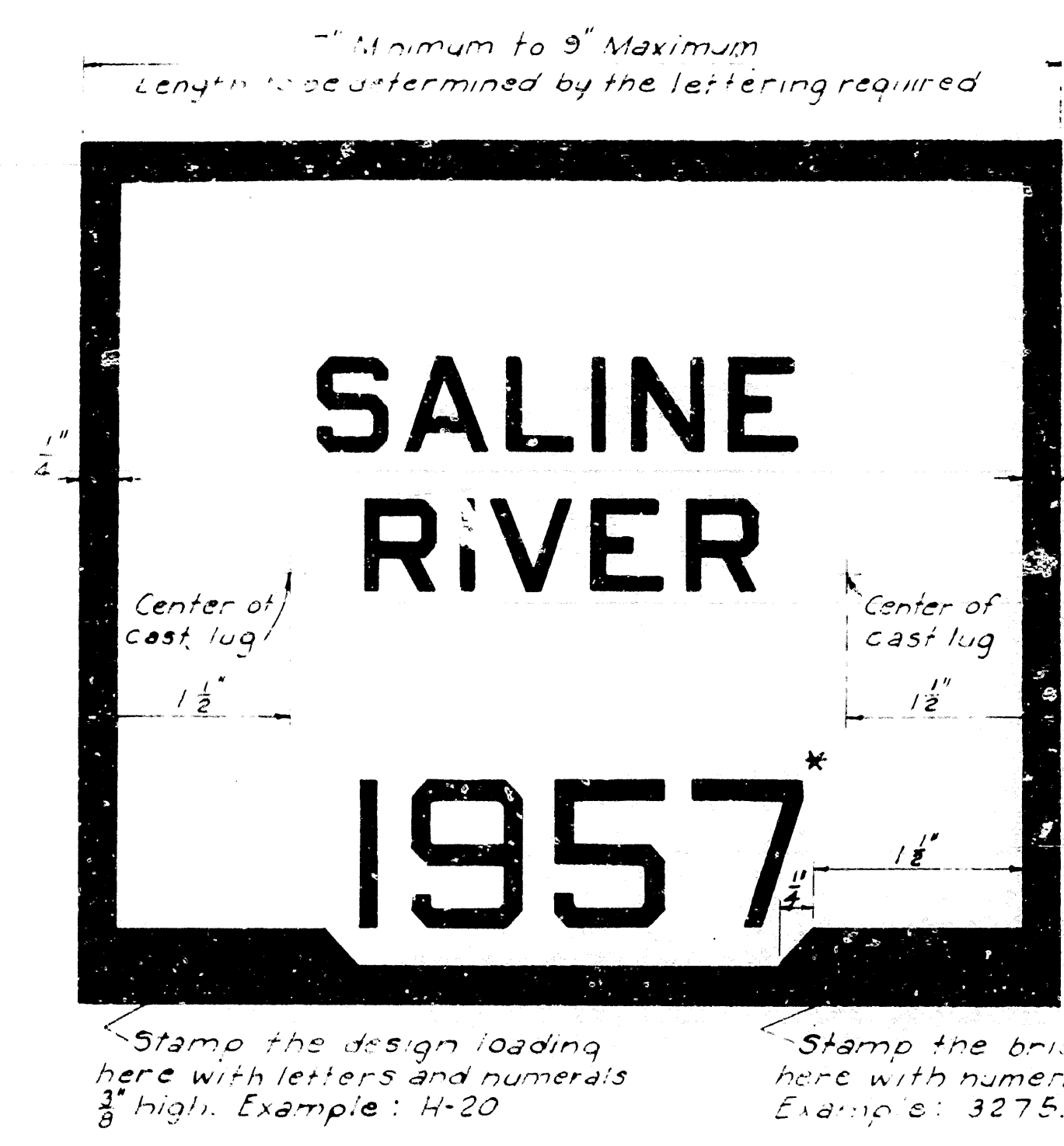
BUILD-UP
WITH DRIVING

DETAILS OF STANDARD
CONCRETE PILES

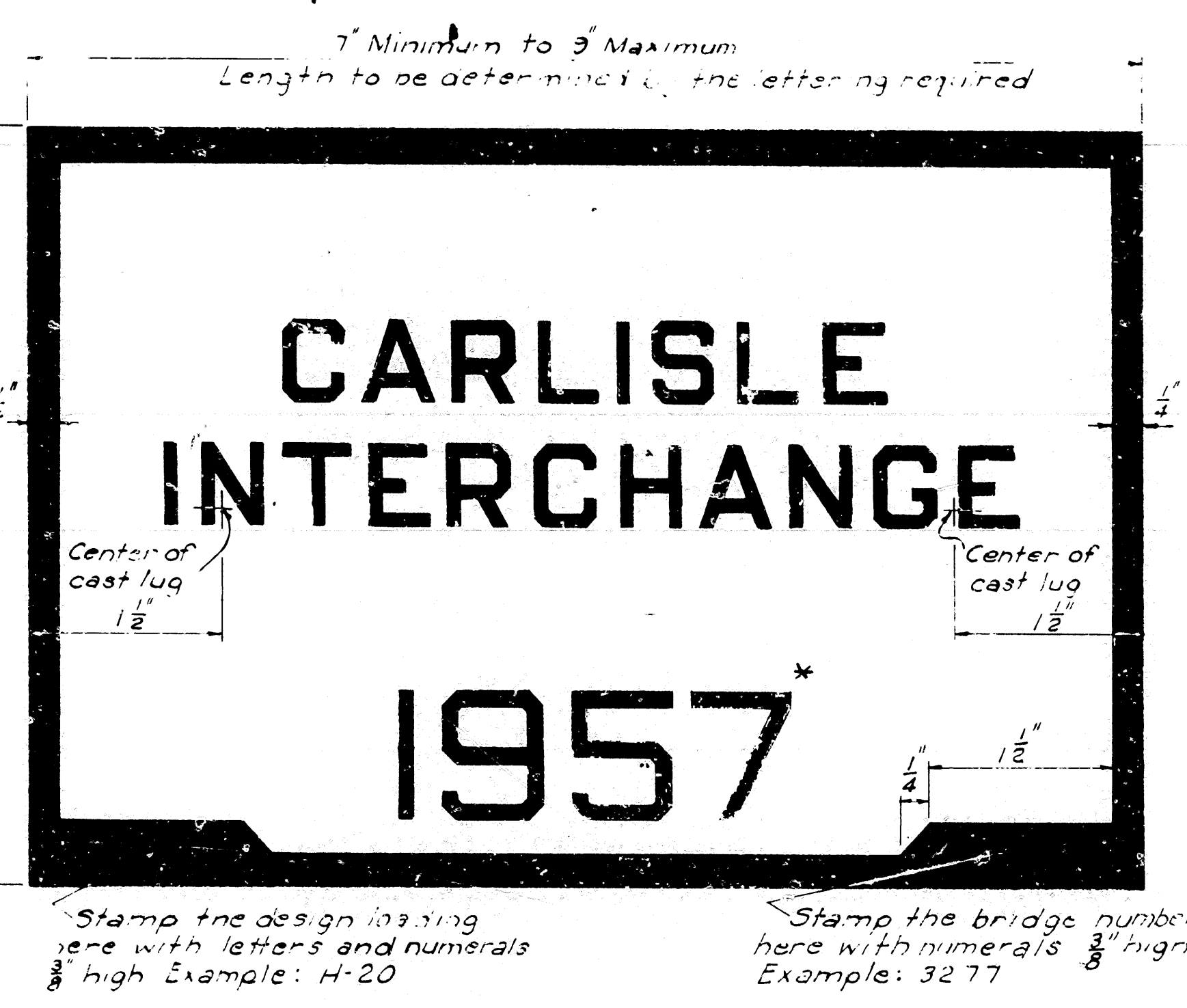
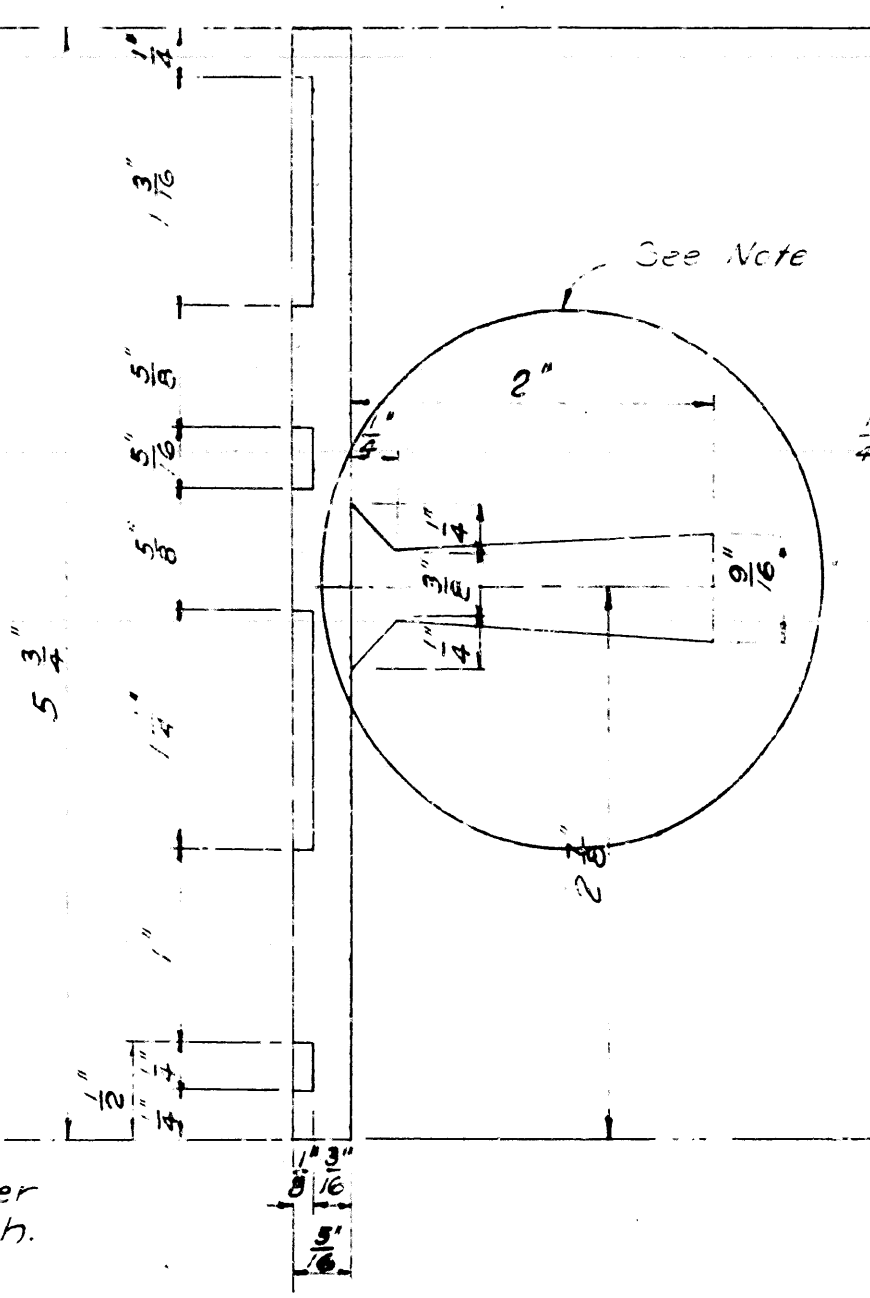
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

Revised for 1978 Specs. 9-15-78 K.D.N.
Revised 12-2-77, Added 3" chamfer. Removed time before prestressing.
Revised 7-24-75: Redrawn to include Square Piles

DRAWN BY: J.W.W. DATE: 7-24-75
CHECKED BY: G.L. DATE: 7-31-75
DESIGNED BY: D.E. DATE: 7-24-75
SCALE: 1"=10'
BRIDGE NO. DRAWING NO. 2383



TYPICAL BRIDGE NAME PLATE-STYLE 1-FULL SIZE
STREAM CROSSINGS



TYPICAL BRIDGE NAME PLATE-STYLE 3-FULL SIZE
GRADE SEPARATION STRUCTURES

5-31-60	W.C.H.	6-5-72
8-8-12	W.C.H.	8-8-12
9-20-68	W.C.H.	9-5-78

General Notes

Name plates shall be either Bronze or Aluminum. Body of plate shall be $\frac{3}{16}$ " thick, and include two tapering cone lugs $\frac{3}{8}$ " to $\frac{7}{8}$ " x 2" long.

Bronze: U.S. Government Specifications for Statuary Bronze.

Aluminum: Current A.S.T.M. Specifications, Serial Designation B26, Alloy 356.0, Condition T6.

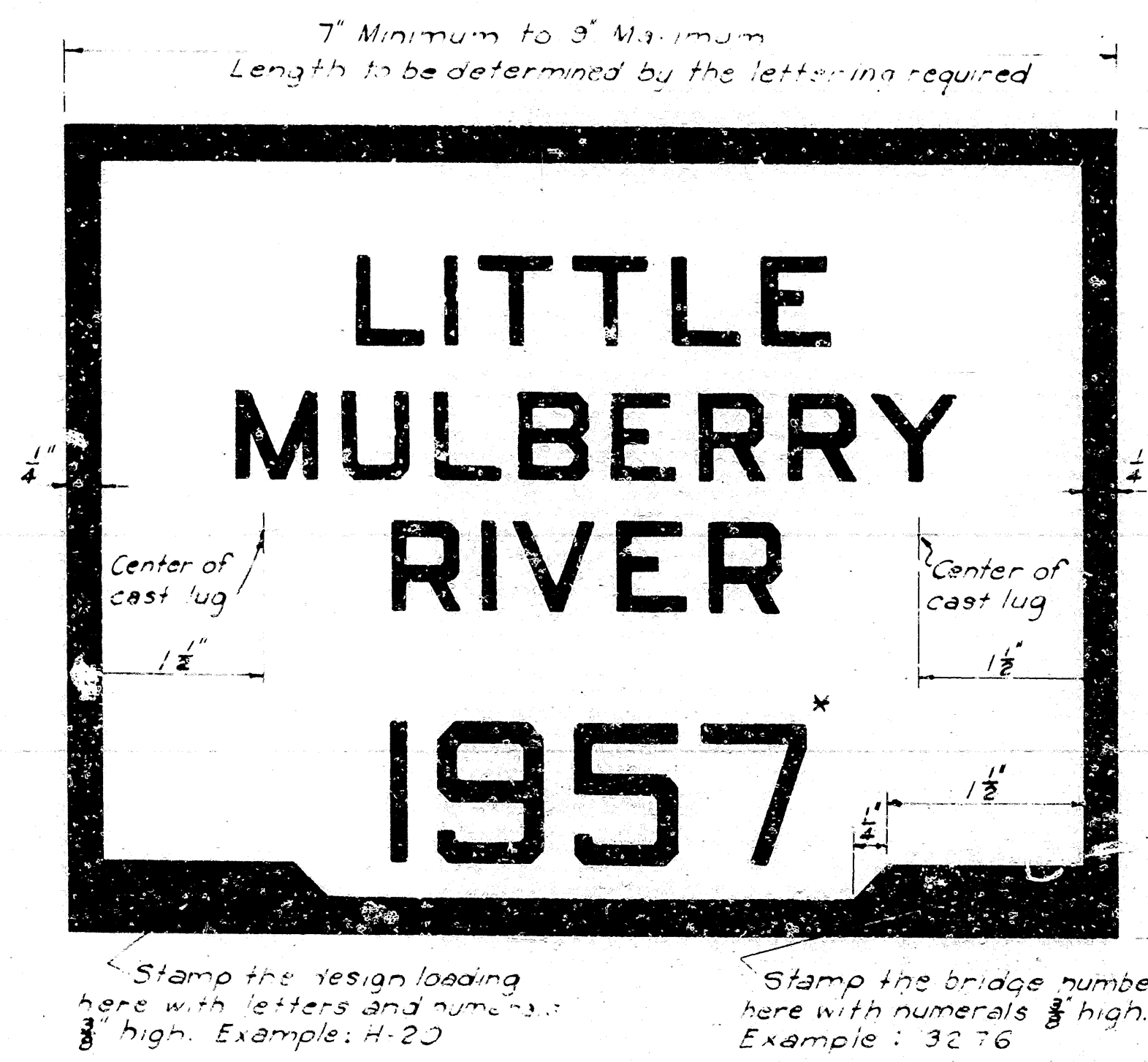
The border and all lettering shall be raised $\frac{1}{8}$ " above face of plate. Top surface of raised border and lettering to be polished.

All lettering to be plain Gothic, square cut and not tapered. The number of plates required and the location shall be as shown on the plans.

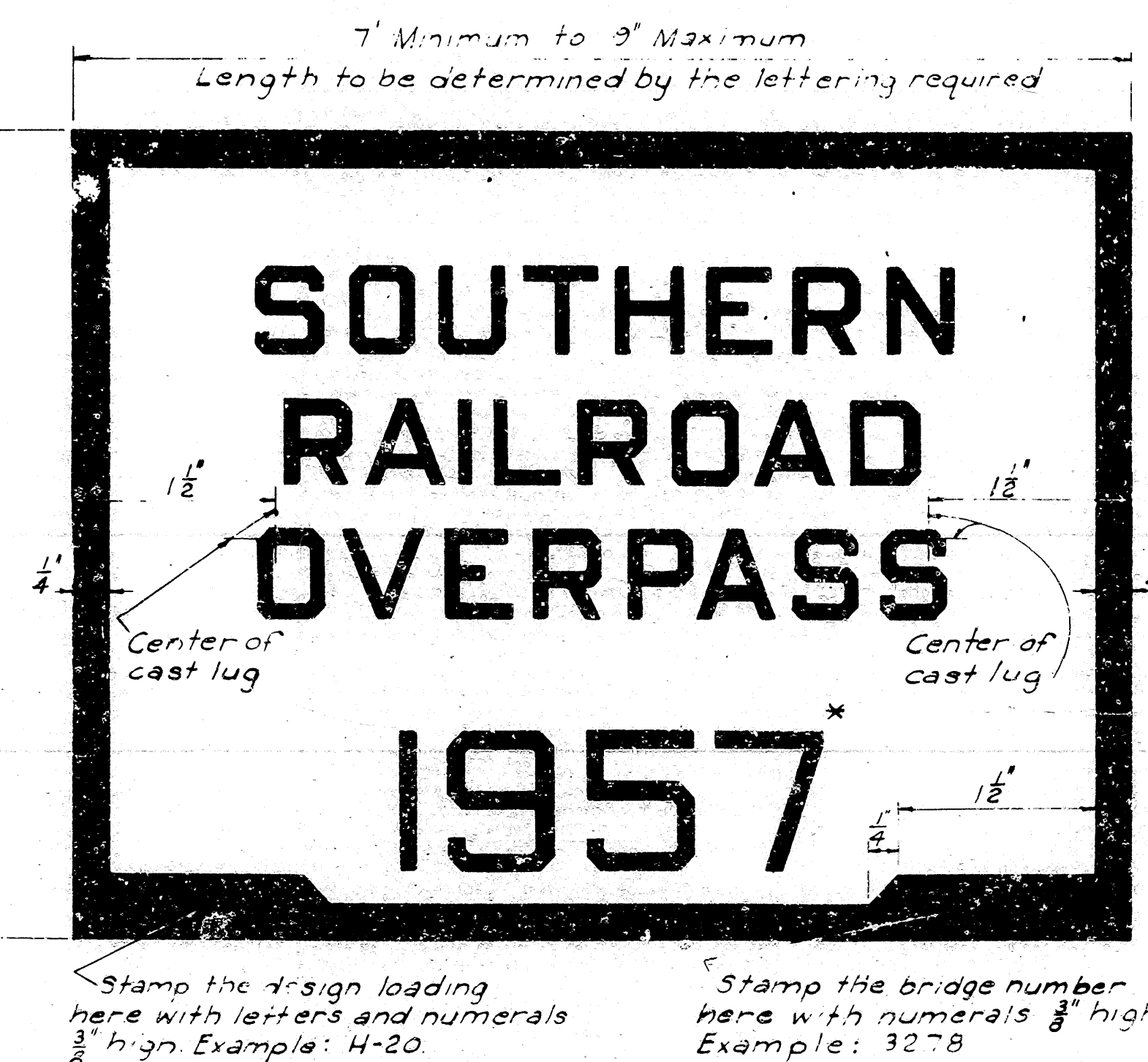
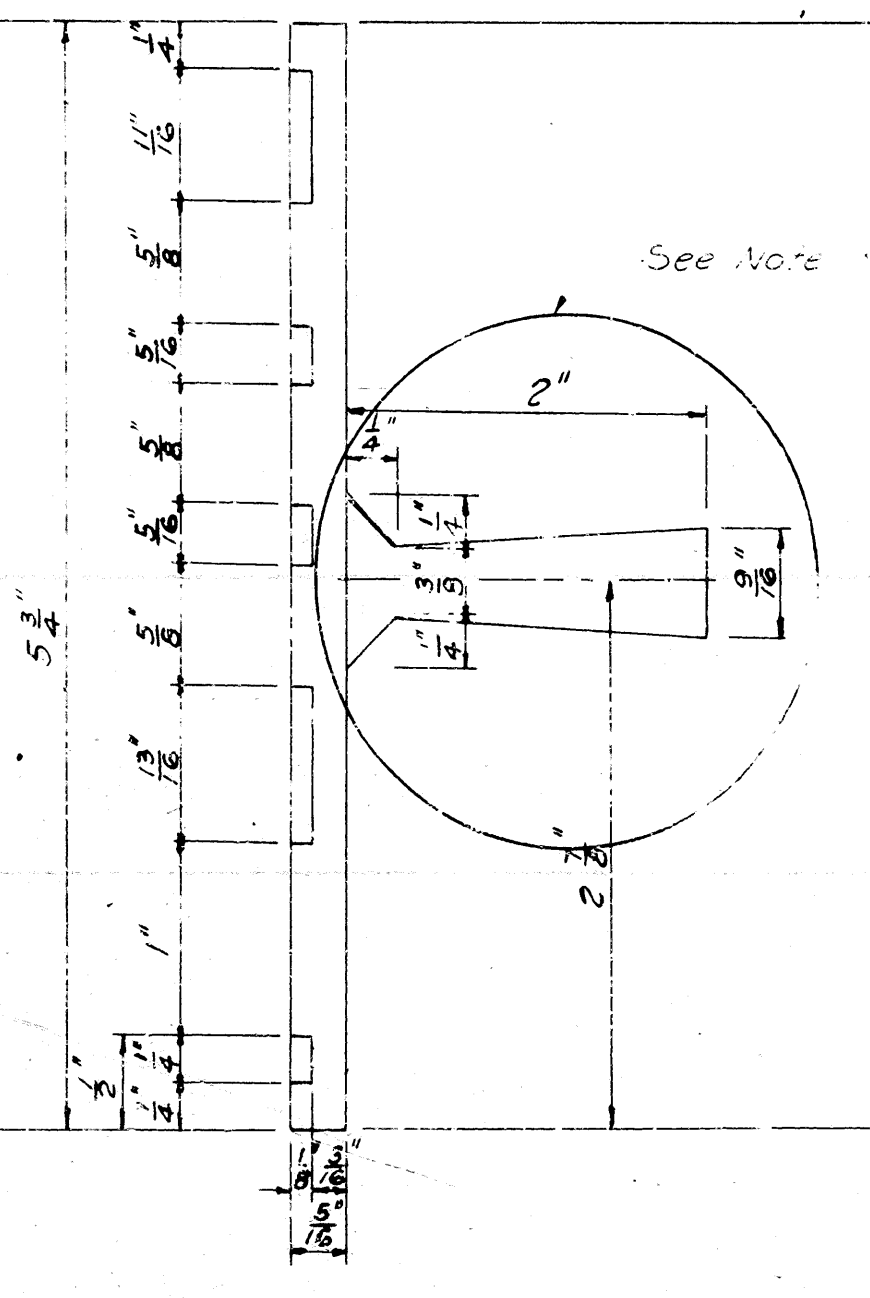
Name on plate to be such as to suit each bridge, as shown on the plans.

Shop drawings of Bridge Name Plates shall be submitted and approval secured before fabrication is begun.

Specifications: Arkansas State Highway Commission Standard Specifications for Highway Construction, Edition of 1978 and applicable Special Provisions.



TYPICAL BRIDGE NAME PLATE-STYLE 2-FULL SIZE
STREAM CROSSINGS



TYPICAL BRIDGE NAME PLATE-STYLE 4-FULL SIZE
GRADE SEPARATION STRUCTURES

* Year in which contract was made

Revised Standard Specifications for Highway Construction, Edition of 1978 and applicable Special Provisions.

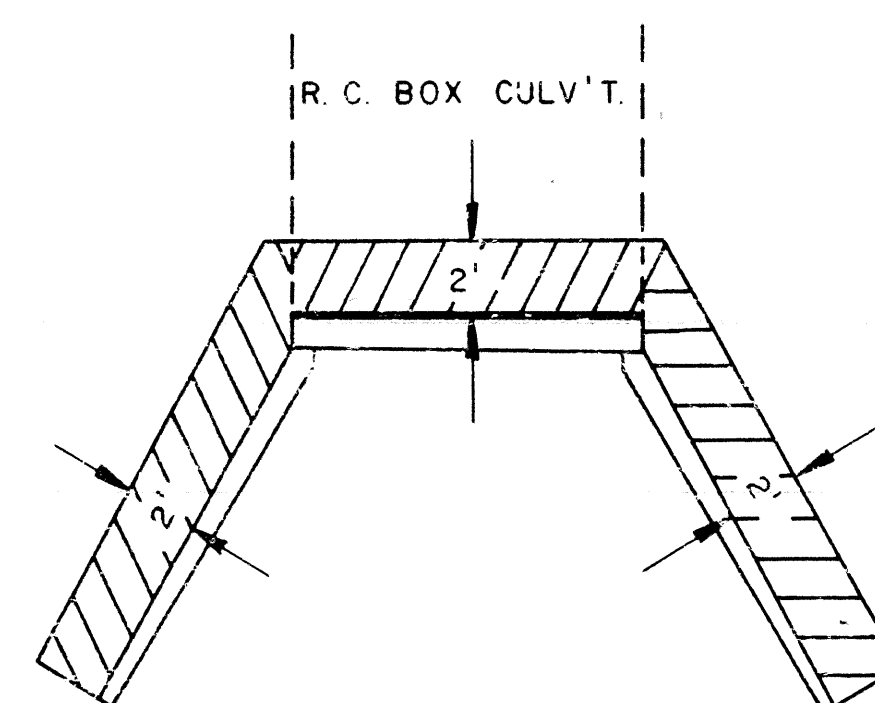
DETAILS OF STANDARD
TYPE C BRIDGE NAME PLATES

ROUTE	SEC.
ARKANSAS STATE HIGHWAY COMMISSION	LITTLE ROCK, ARK.

DRAWN BY: H.D. DATE: 5-24-57
 TRACED BY: DATE: SCALE: Full Size
 CHECKED BY: J.H.K. DATE: 6-6-57
 BRIDGE NO. DRAWING NO. 2389A

BRIDGE DESIGN ENGINEER

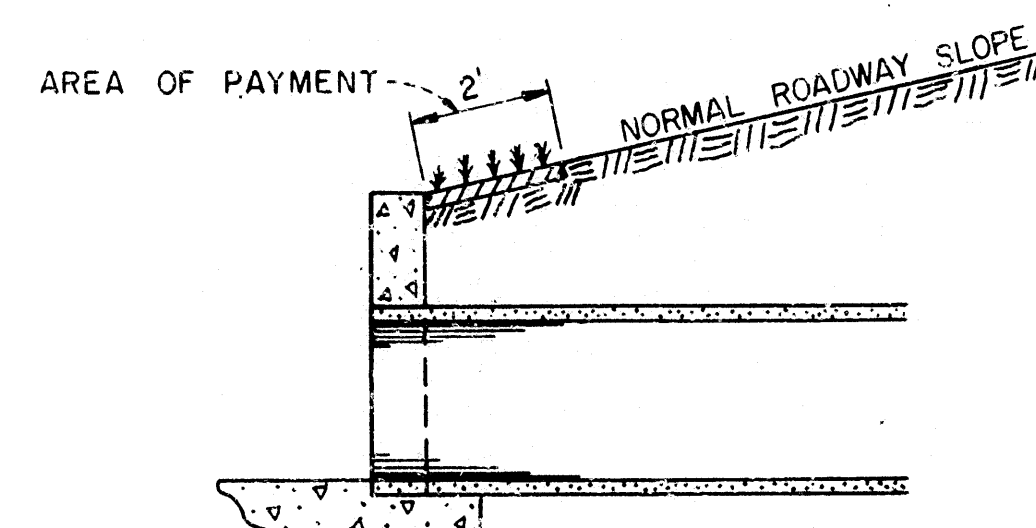
SOLID SODDING



PLAN

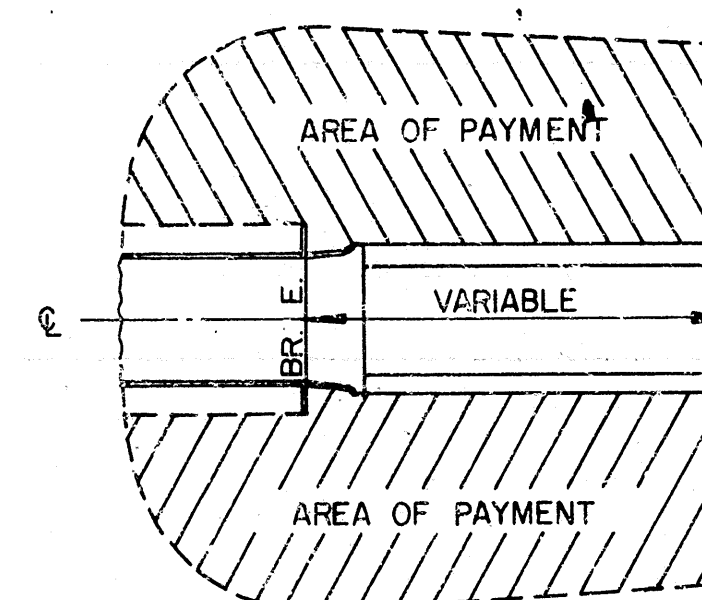
PARTIAL SECTION SHOWING SOLID SODDING AT HEADWALLS AND WING WALLS

NOTE: LENGTH MEASURED ALONG THE CENTER OF 2' STRIP OF SOLID SODDING.



SECTION SHOWING SOLID SODDING AT PIPE CULVERT HEADWALLS

NOTE: 2' STRIP TO BE PLACED ALONG ENTIRE LENGTH OF THE HEADWALL.

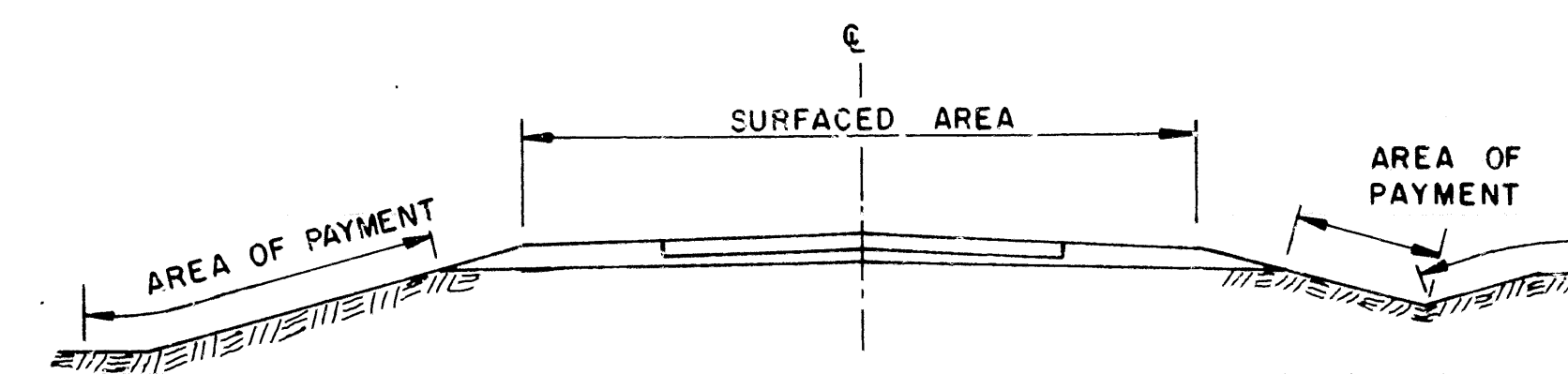


PLAN

SECTION SHOWING SOLID SODDING AT BRIDGE END

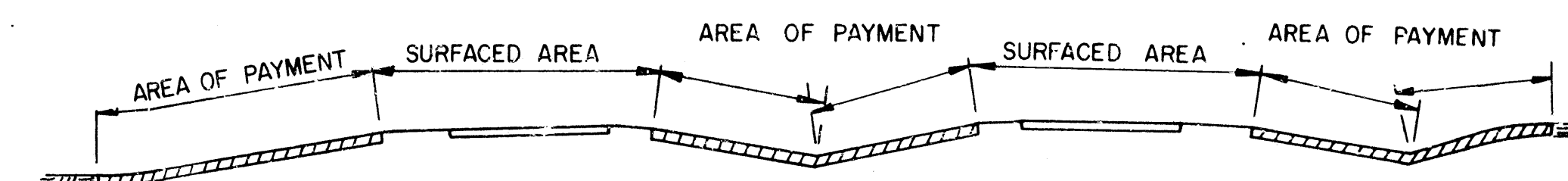
NOTE: HATCHED AREA DENOTES SLOPES RECEIVING SOLID SODDING.

SEEDING



TYPICAL SECTION OF AREA TO BE SEEDED

SOD MULCH



TYPICAL SECTION OF AREA TO BE SOD MULCHED

NOTE: SOD MULCH TO BE APPLIED AT THE RATE OF 85 SQ. FT. FOR ONE CUBIC YARD.

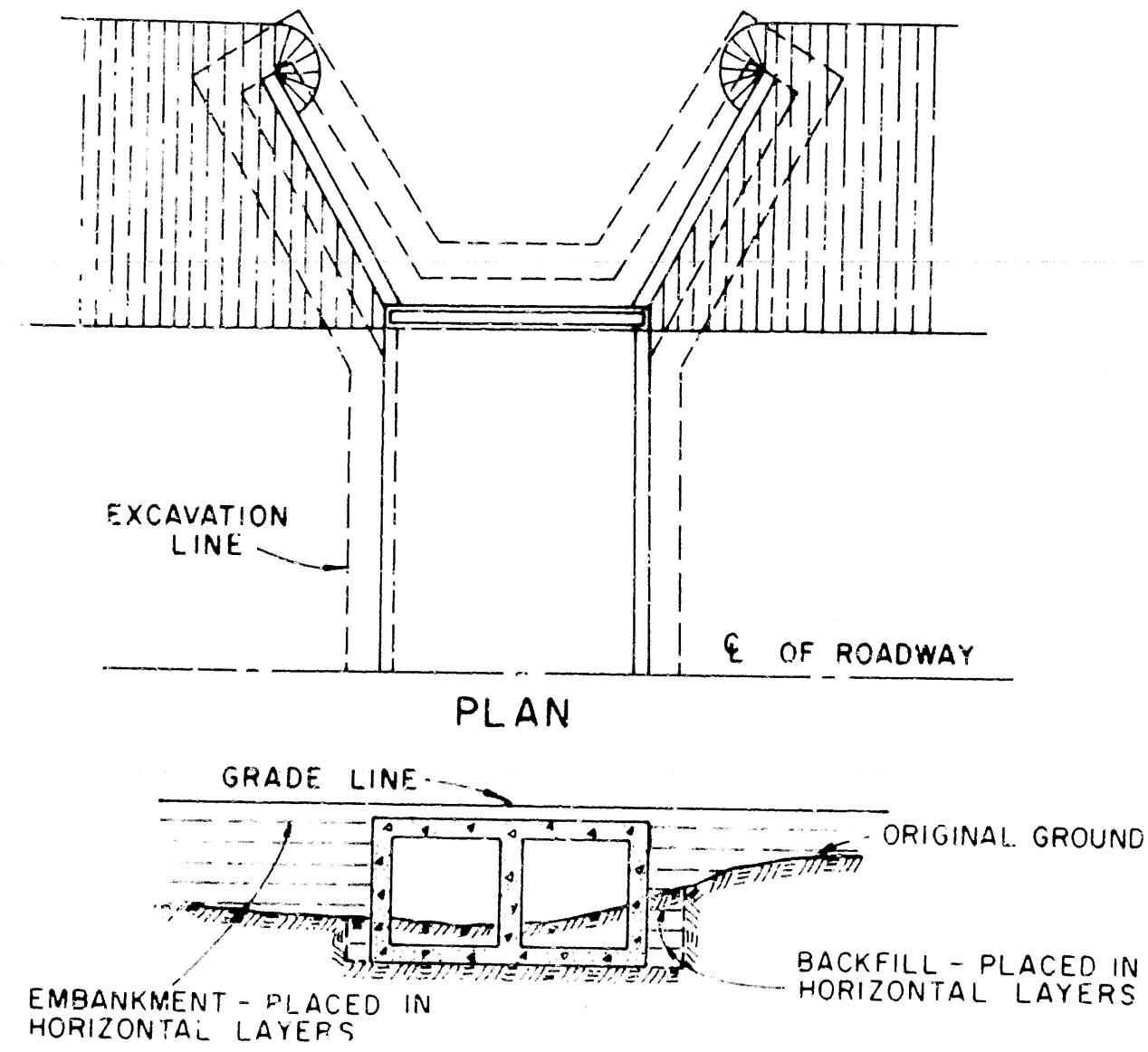
ARKANSAS STATE HIGHWAY COMMISSION

MISCELLANEOUS
EROSION CONTROL DETAILS

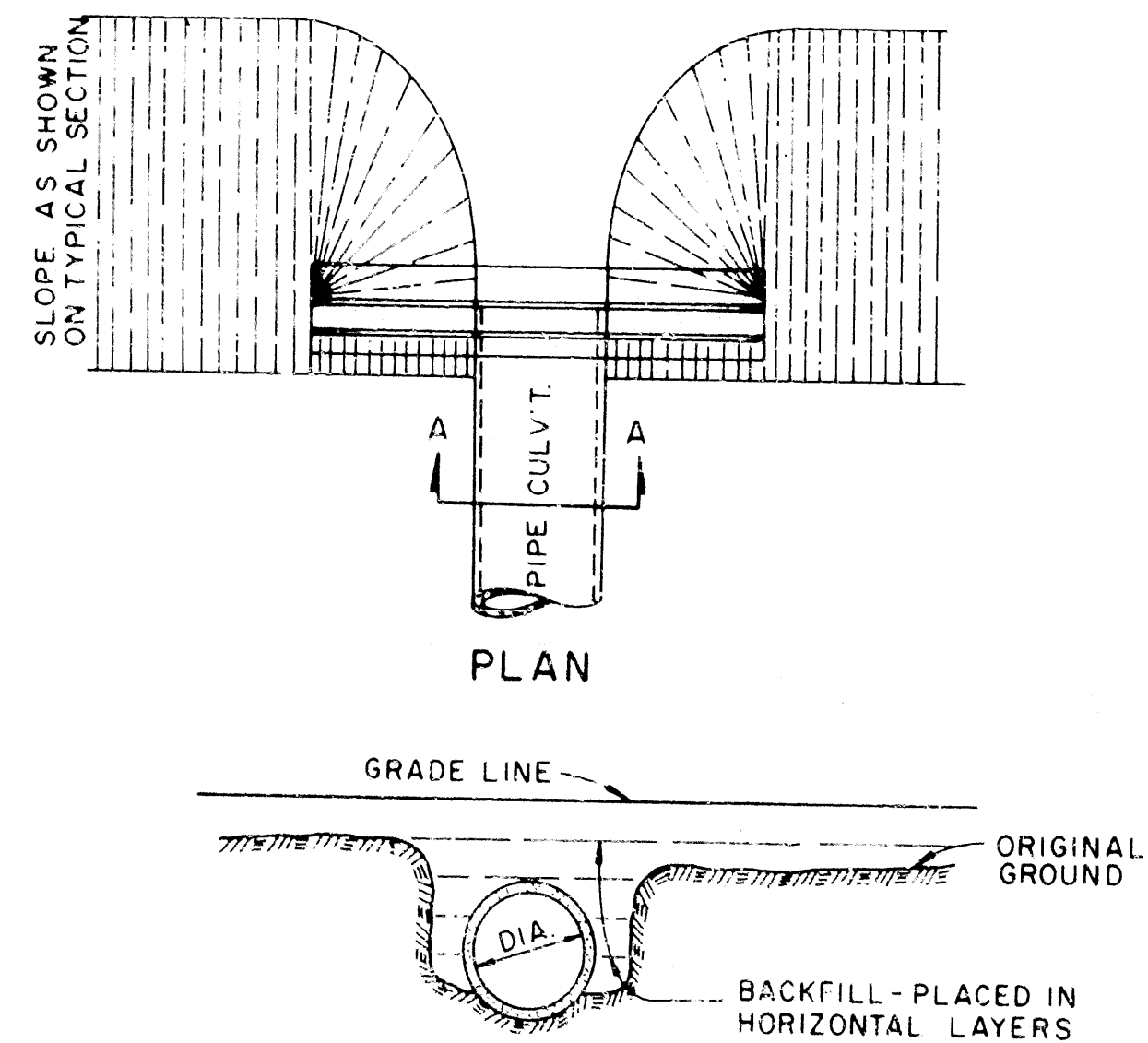
STANDARD DRAWING

1886

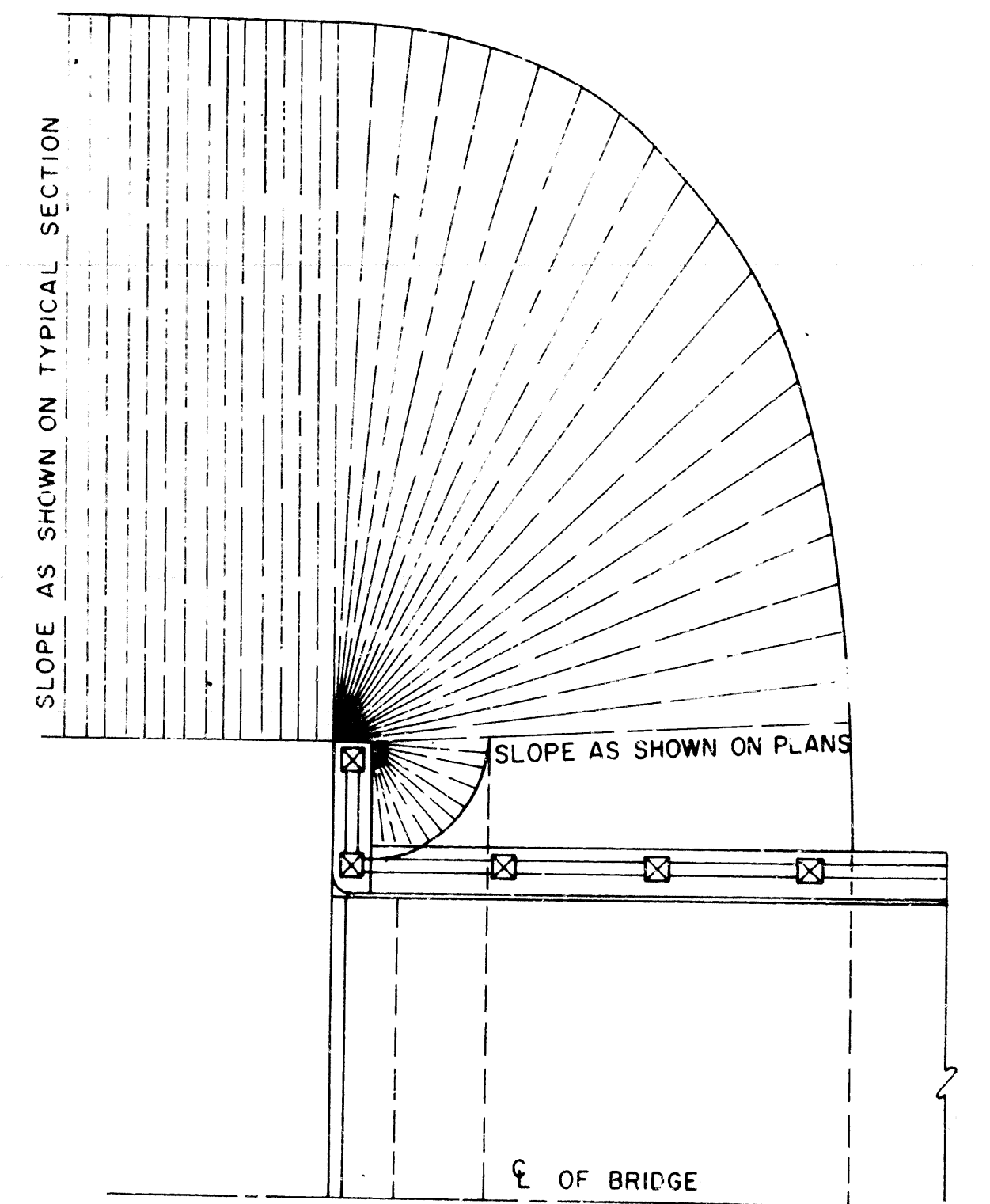
10-2-72
DATE
REVISED & REDRAWN
REVISION
10-10-72
DATE



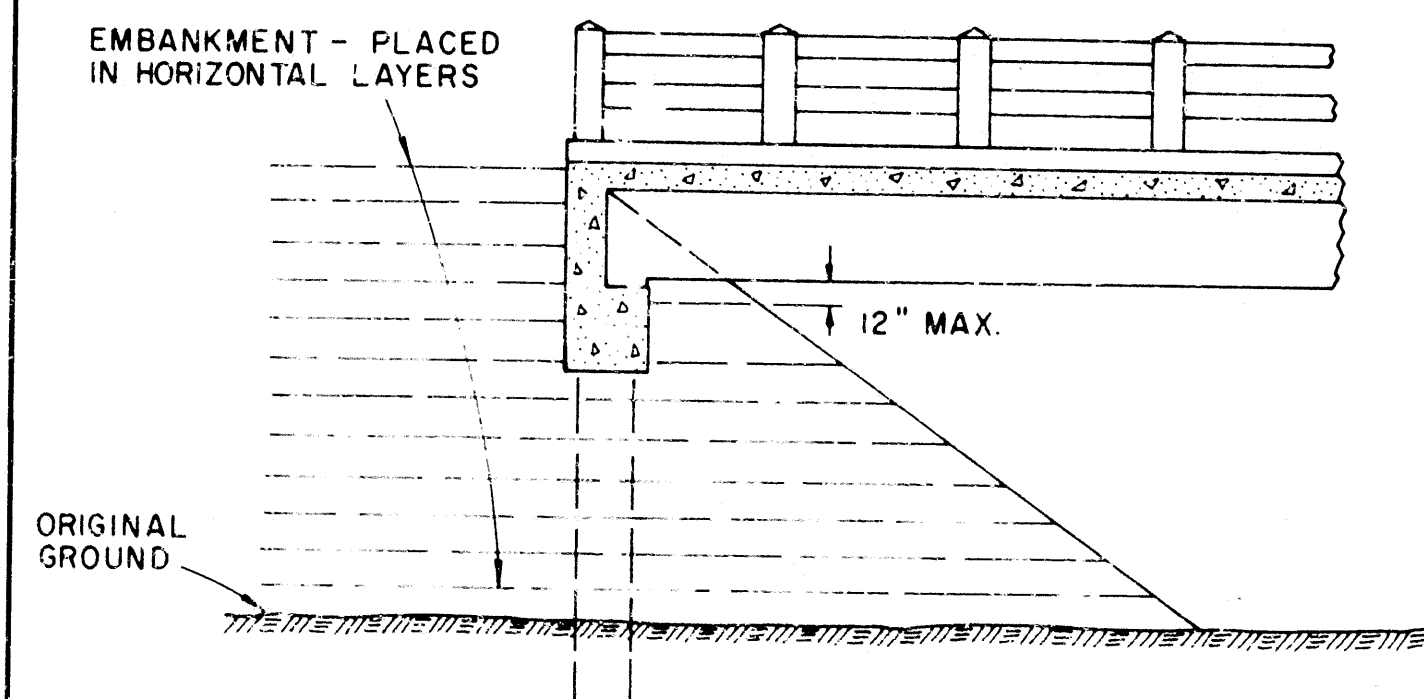
LONGITUDINAL SECTION
BOX CULVERT



SECTION A-A
PIPE CULVERT



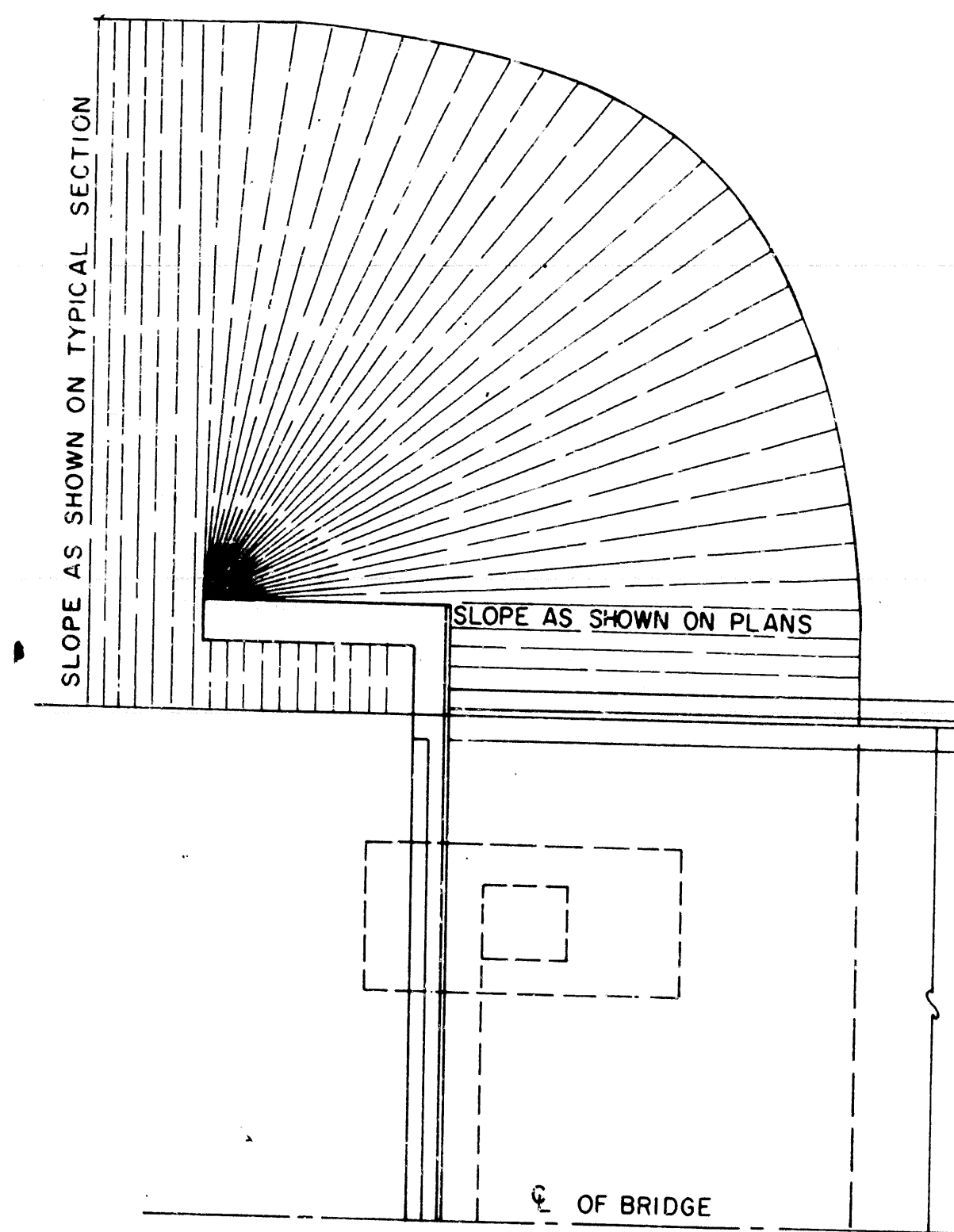
HALF PLAN



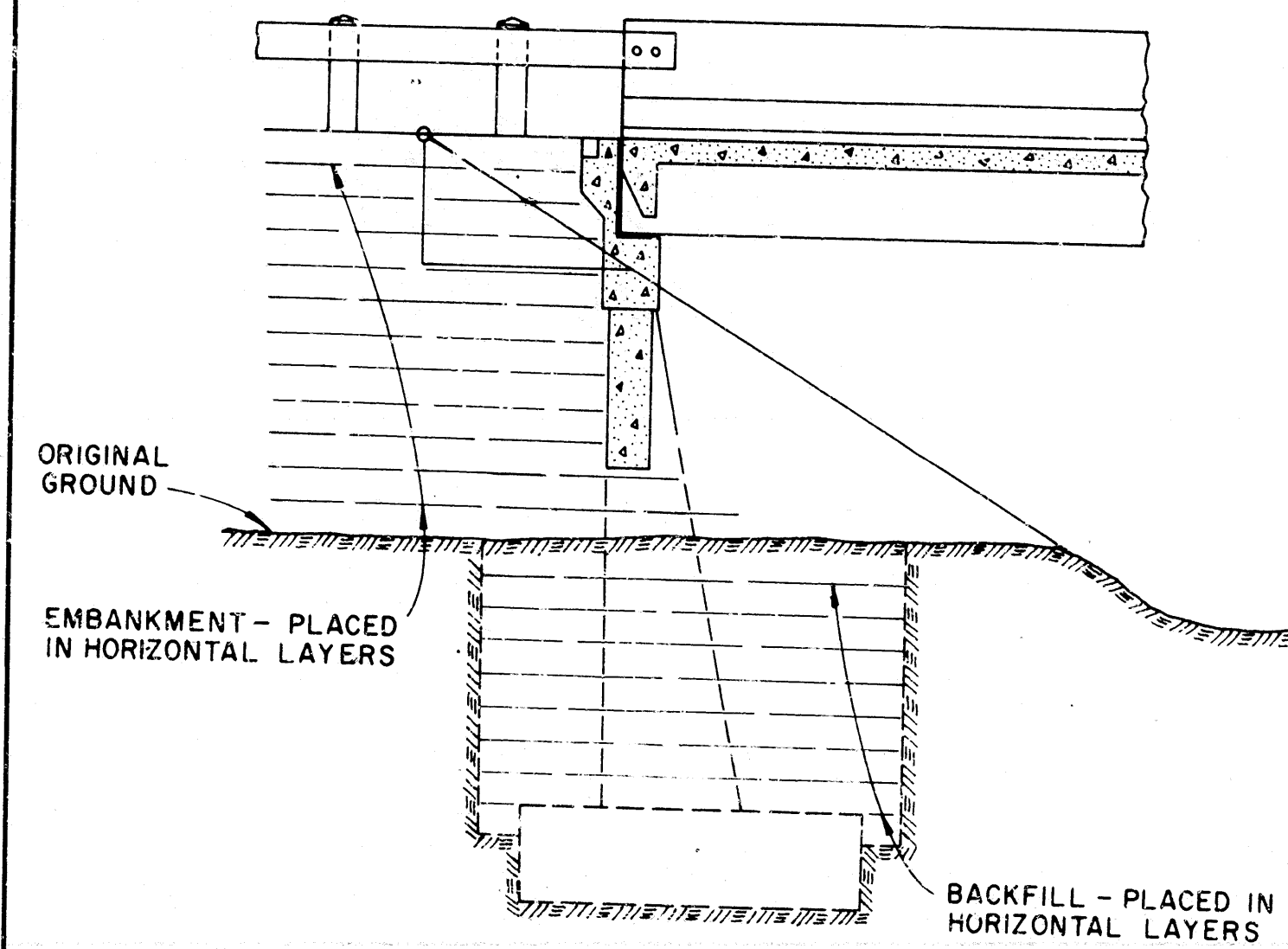
LONGITUDINAL SECTION

OPEN END ABUTMENT

CONSTRUCTION OF THE BRIDGE END EMBANKMENT
THE BRIDGE END EMBANKMENT SHALL BE DEFINED AS NOT LESS THAN 20 FEET OF EMBANKMENT ADJACENT TO THE END OF THE BRIDGE TOGETHER WITH THE SIDE SLOPES AND SLOPES UNDER THE BRIDGE END AND AROUND THE END OF WINGWALLS.
REFER TO SUB-SECTIONS 210.08 AND 210.09 OF THE SPECIFICATIONS FOR CONSTRUCTION REQUIREMENTS.



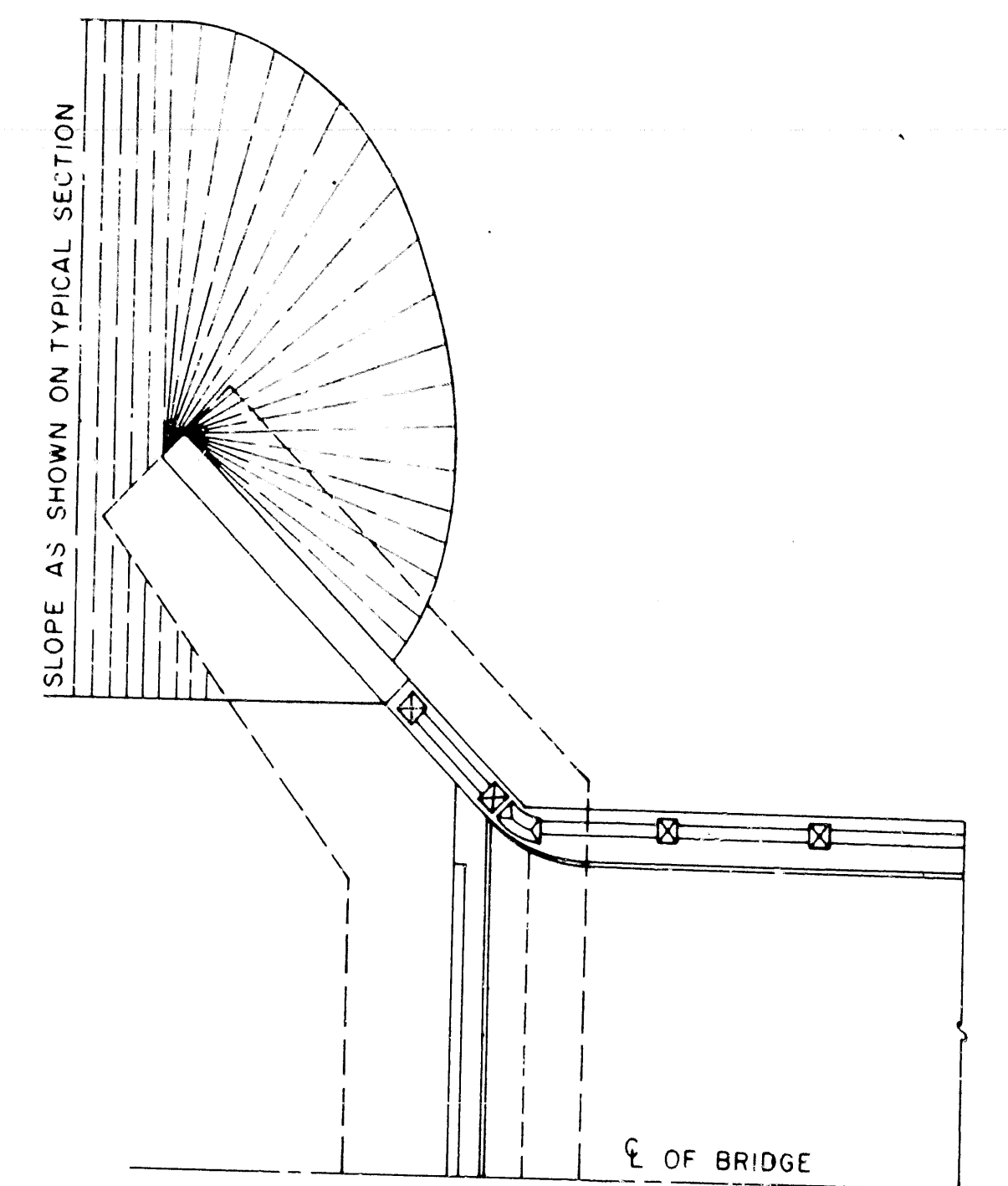
HALF PLAN



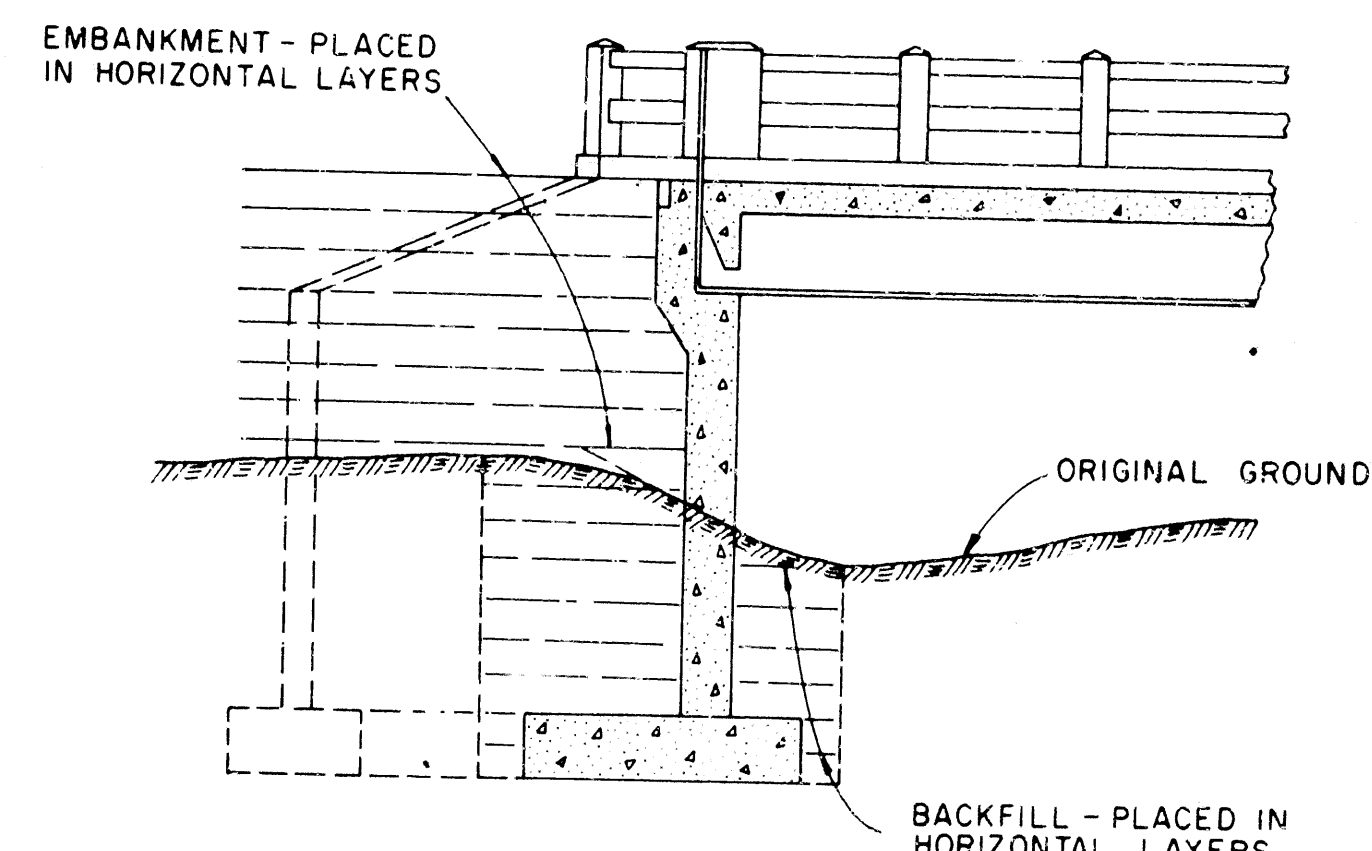
LONGITUDINAL SECTION

SEMI-STUB ABUTMENT AND
TURN BACK WING PILE BENT

BACKFILLING EXCAVATION
IN SO FAR AS PRACTICABLE, ABUTMENT EXCAVATIONS SHALL BE CUT TO THE SIZE SHOWN ON THE PLANS WITH ALLOWANCE OF 3 FEET ON ALL SIDES.
OVERSIZED AND FLARED CUTS TO AVOID THE USE OF SHEETING SHALL NOT BE PERMITTED.
BACKFILL AROUND THE WALL OR COLUMNS SHALL BE COMPACTED IN ACCORDANCE WITH SUB-SECTION 801.08 OF THE SPECIFICATIONS.



HALF PLAN



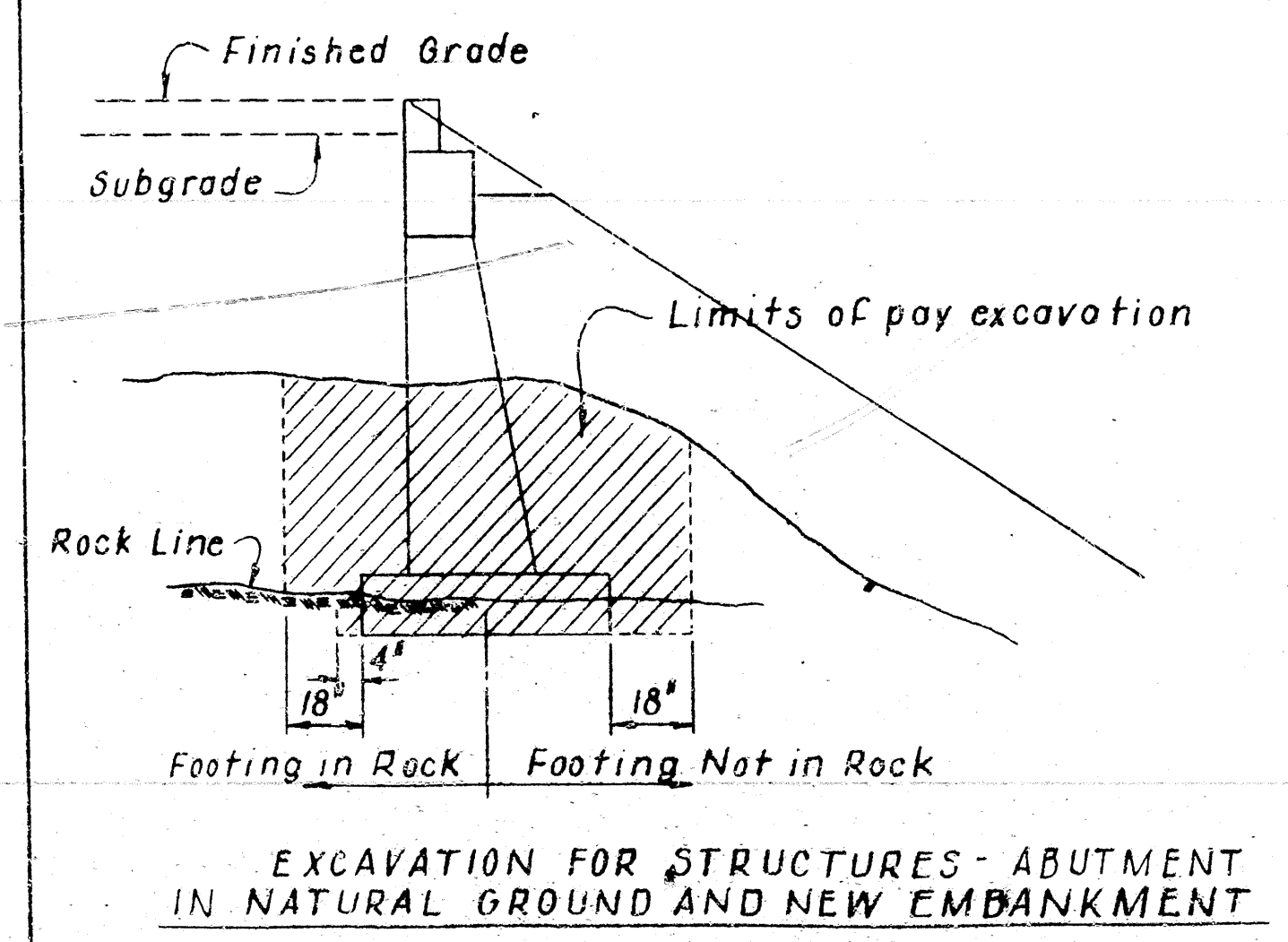
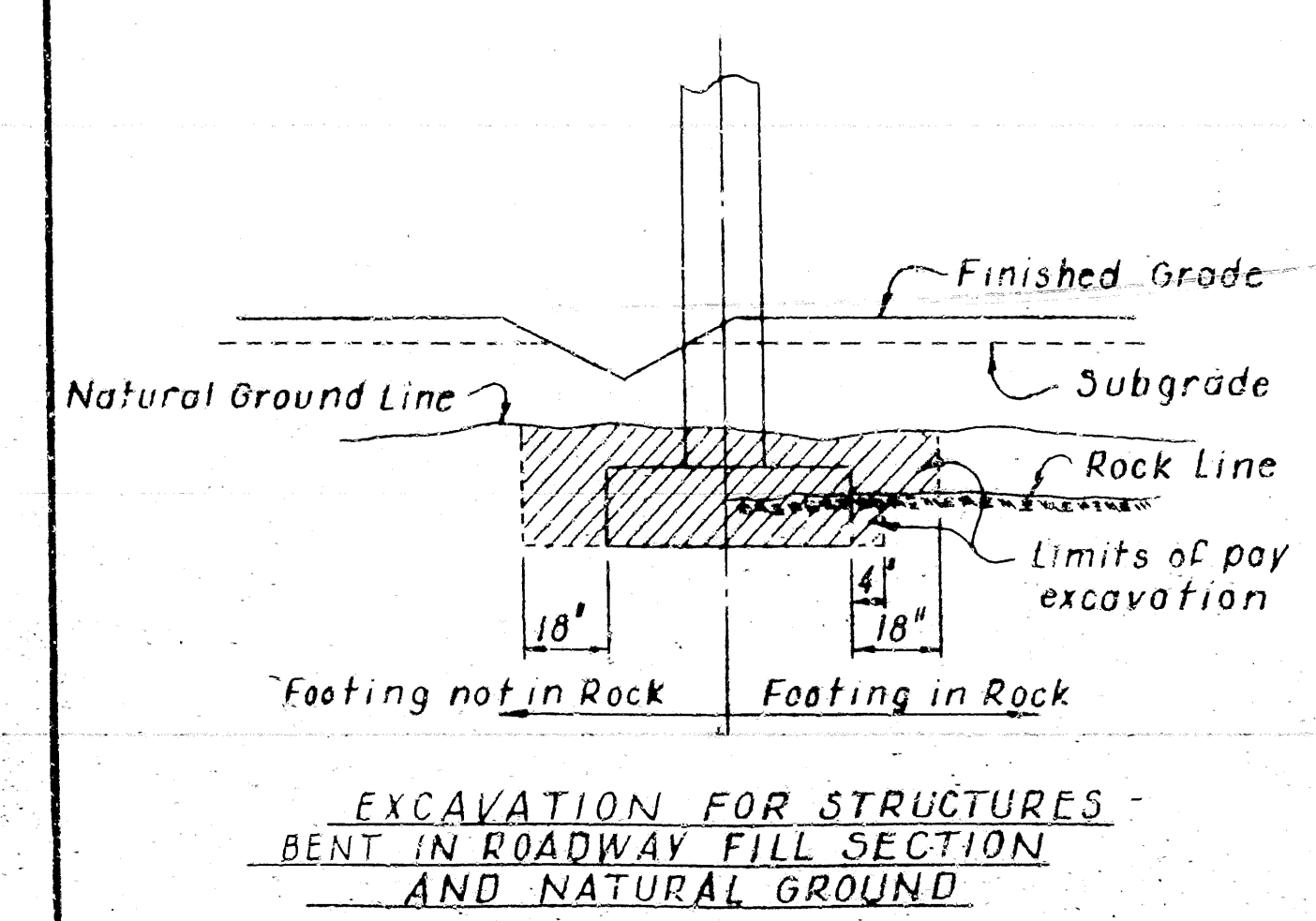
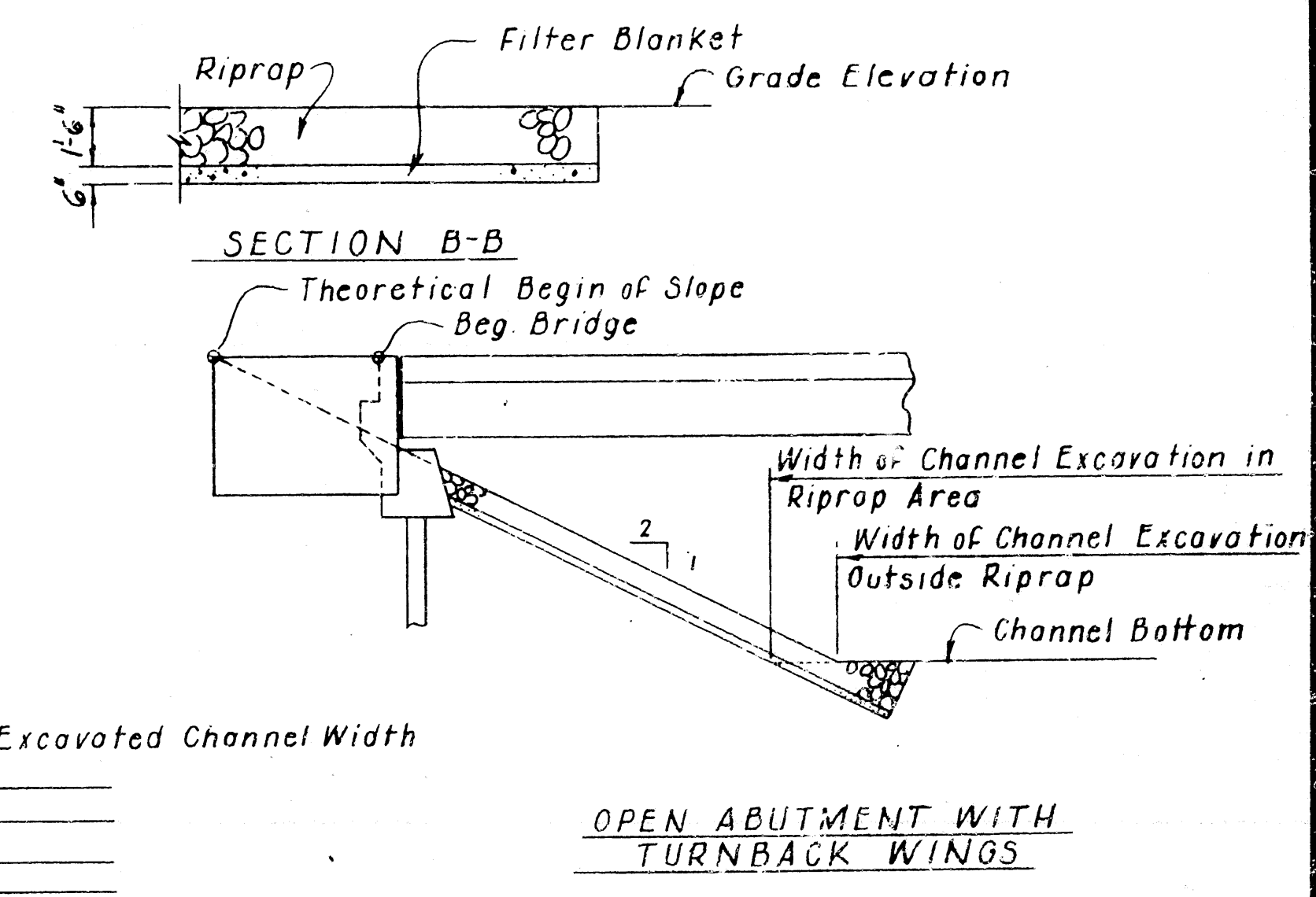
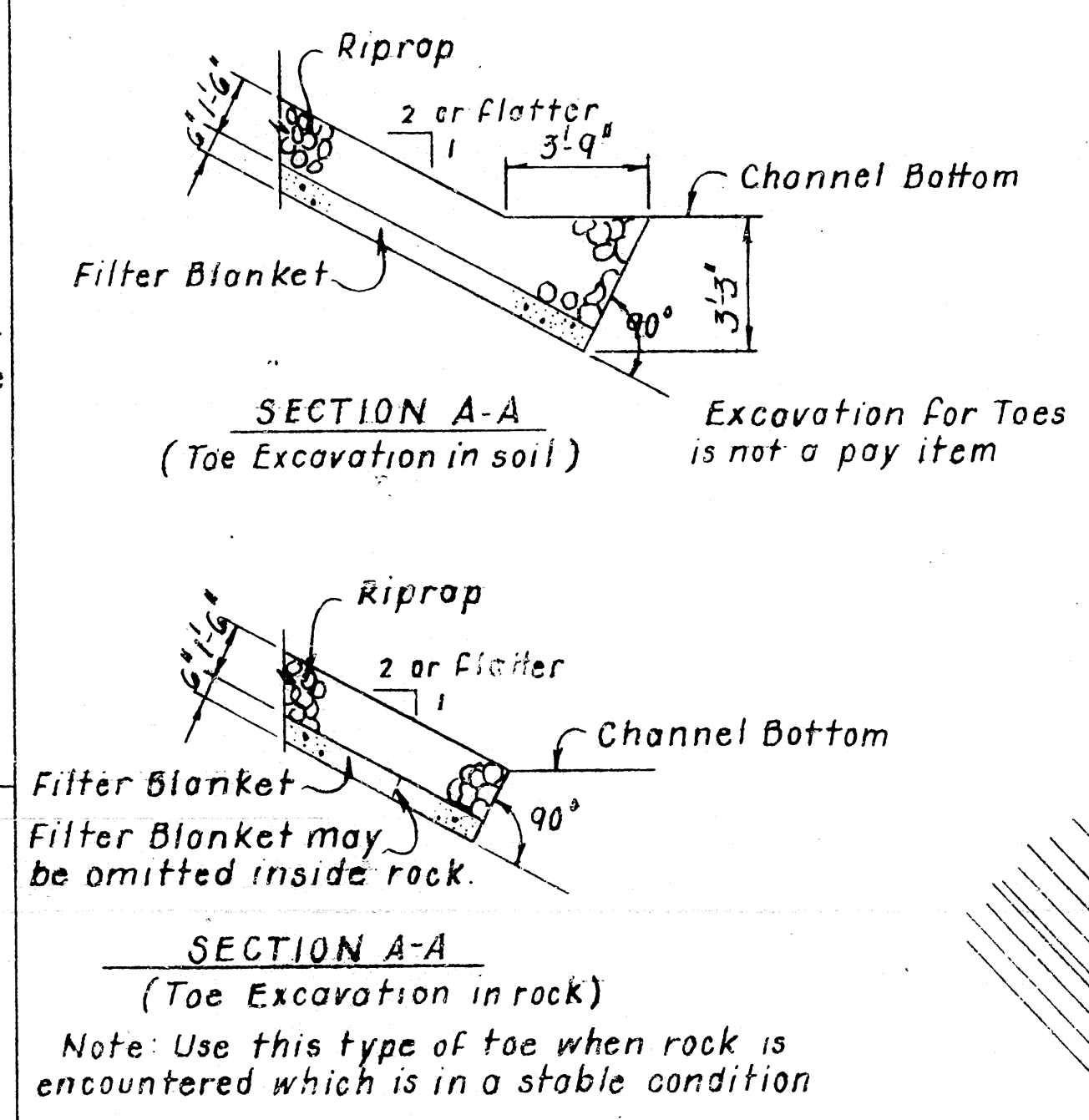
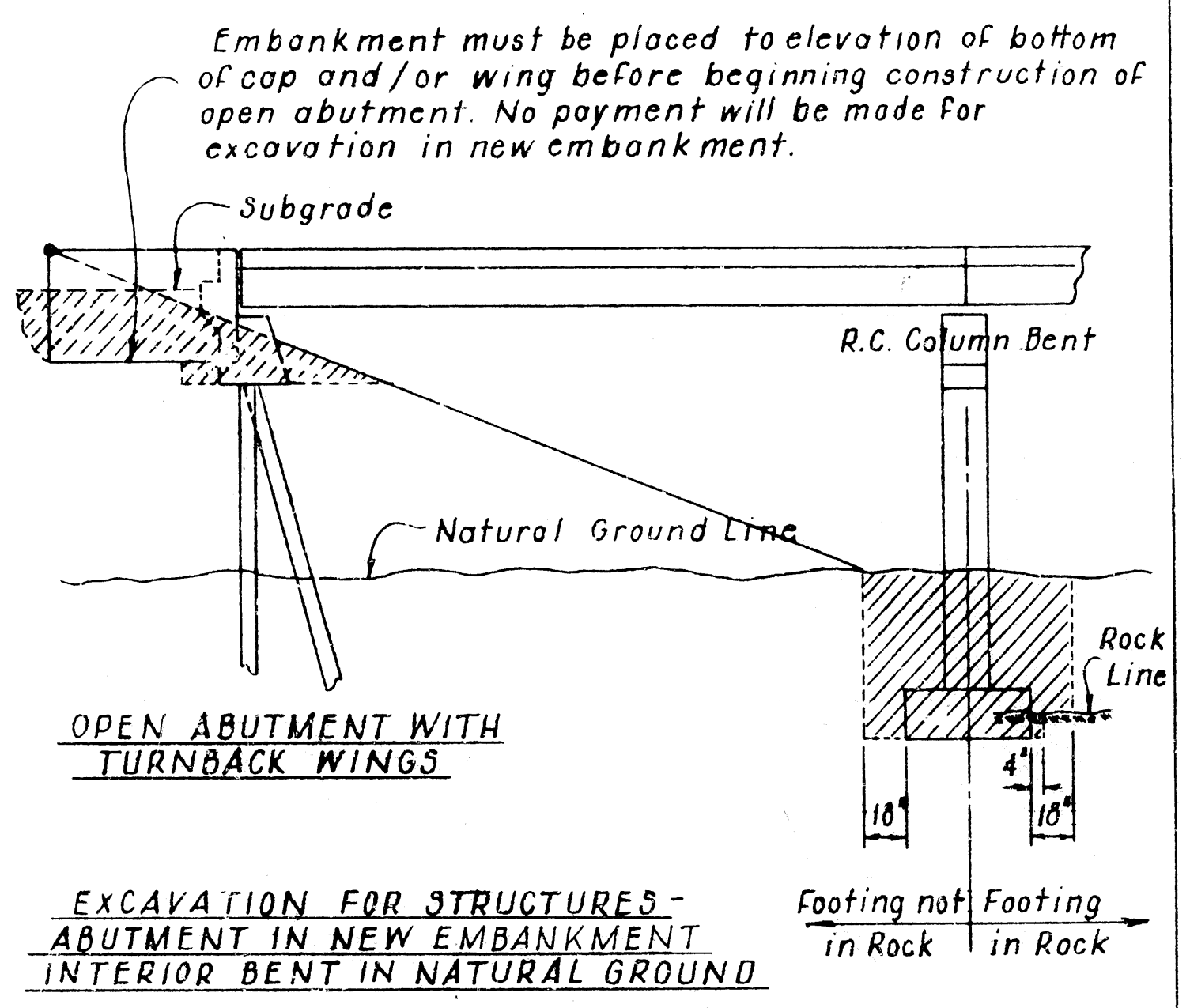
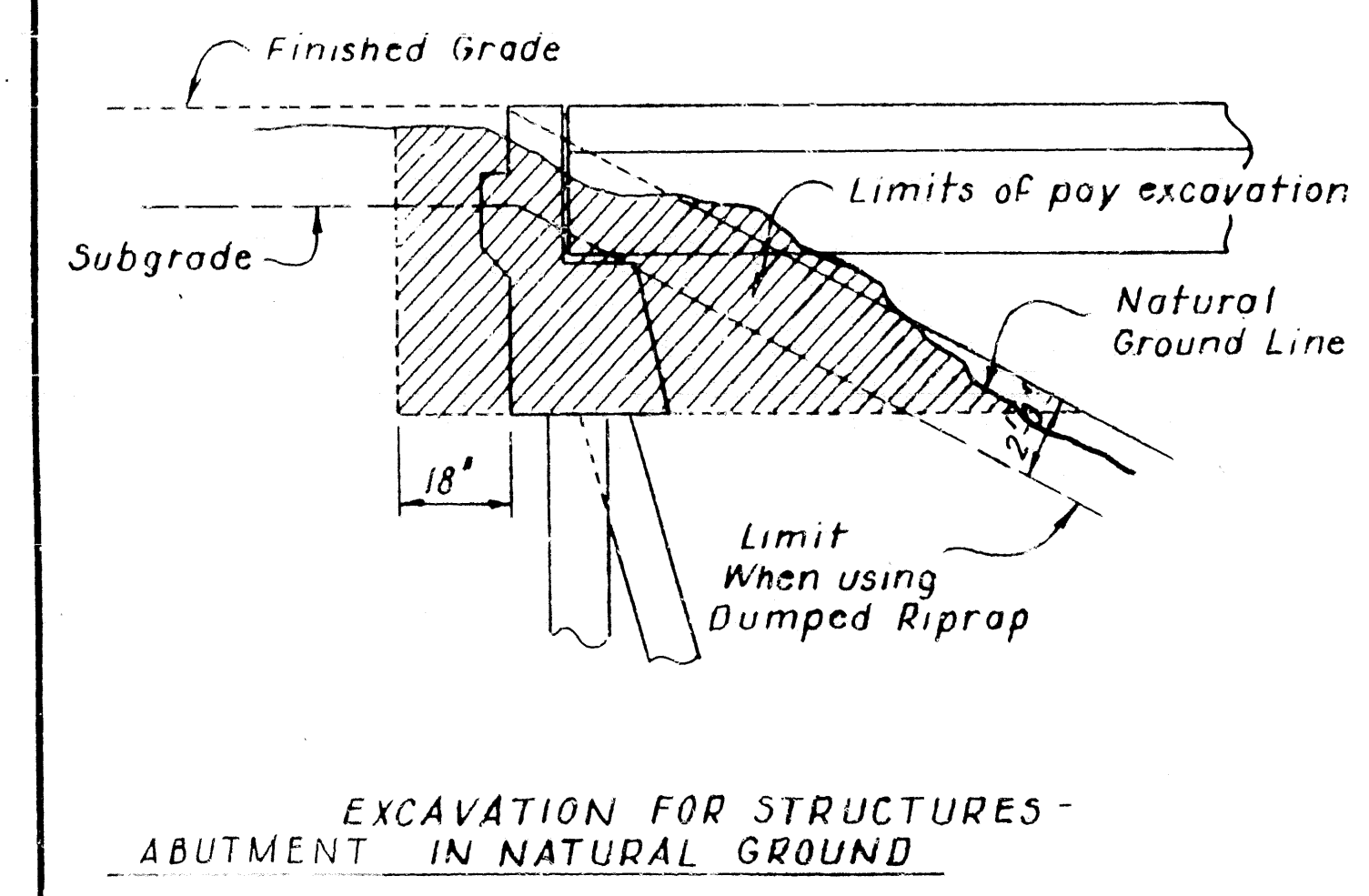
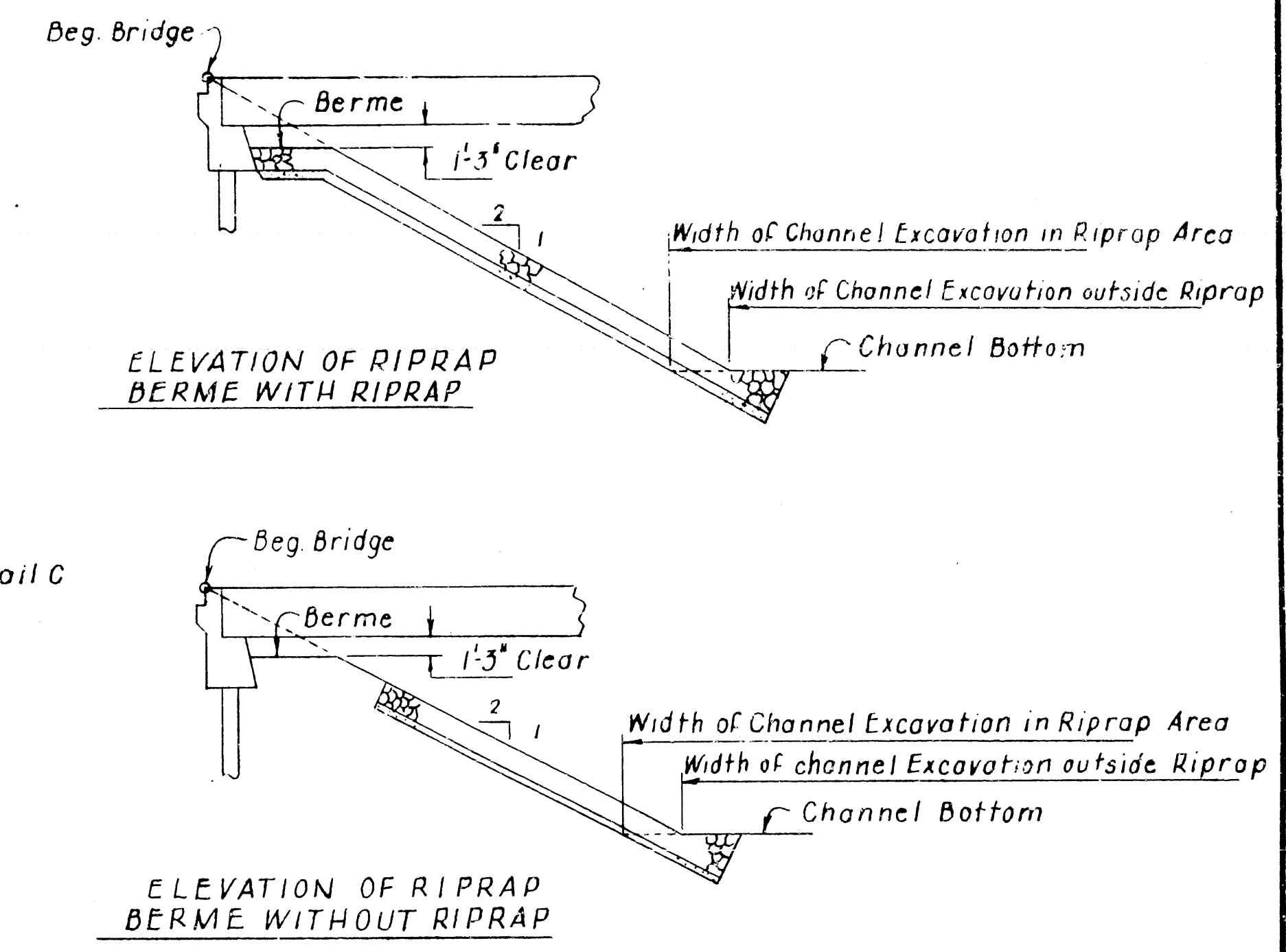
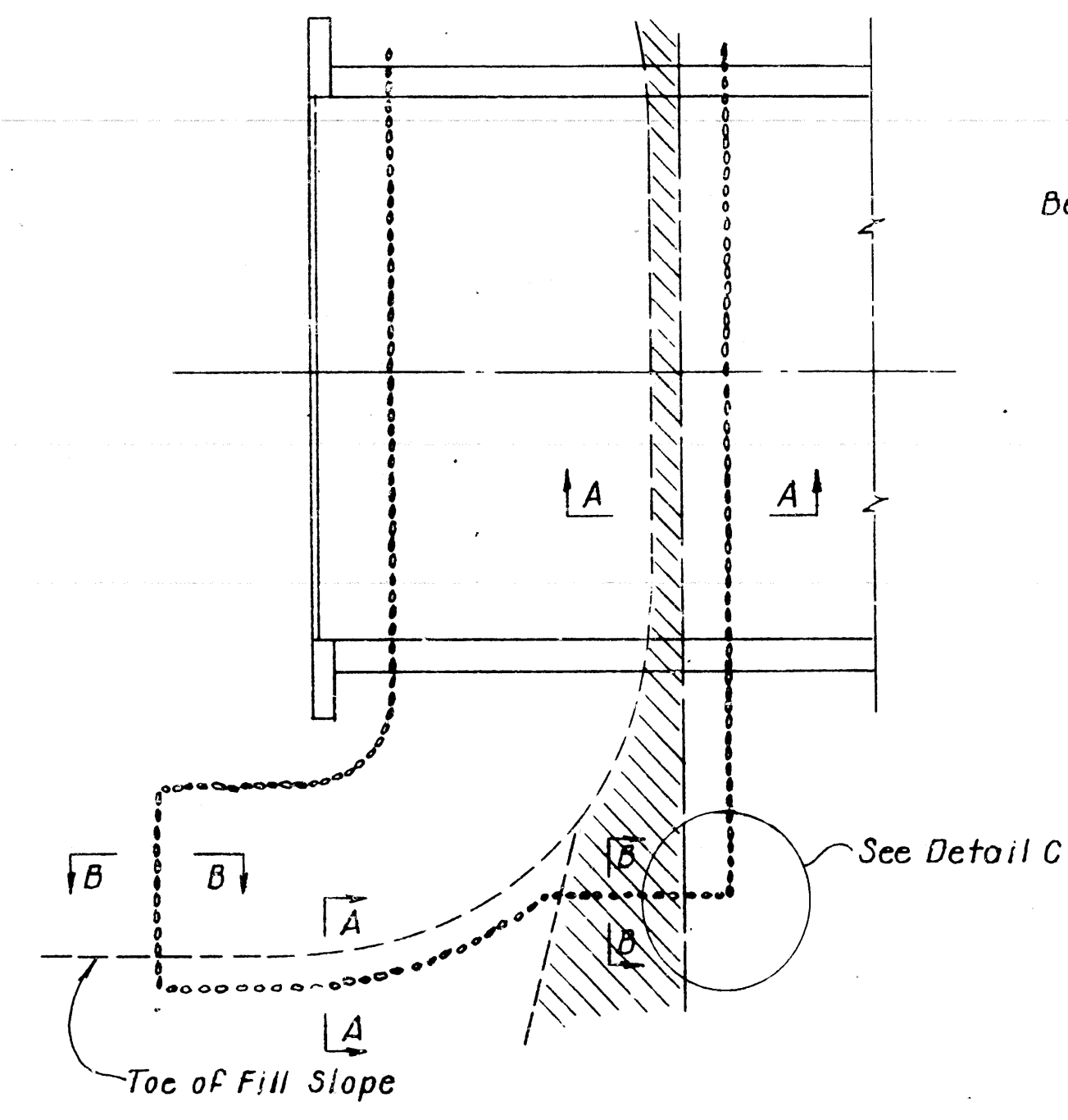
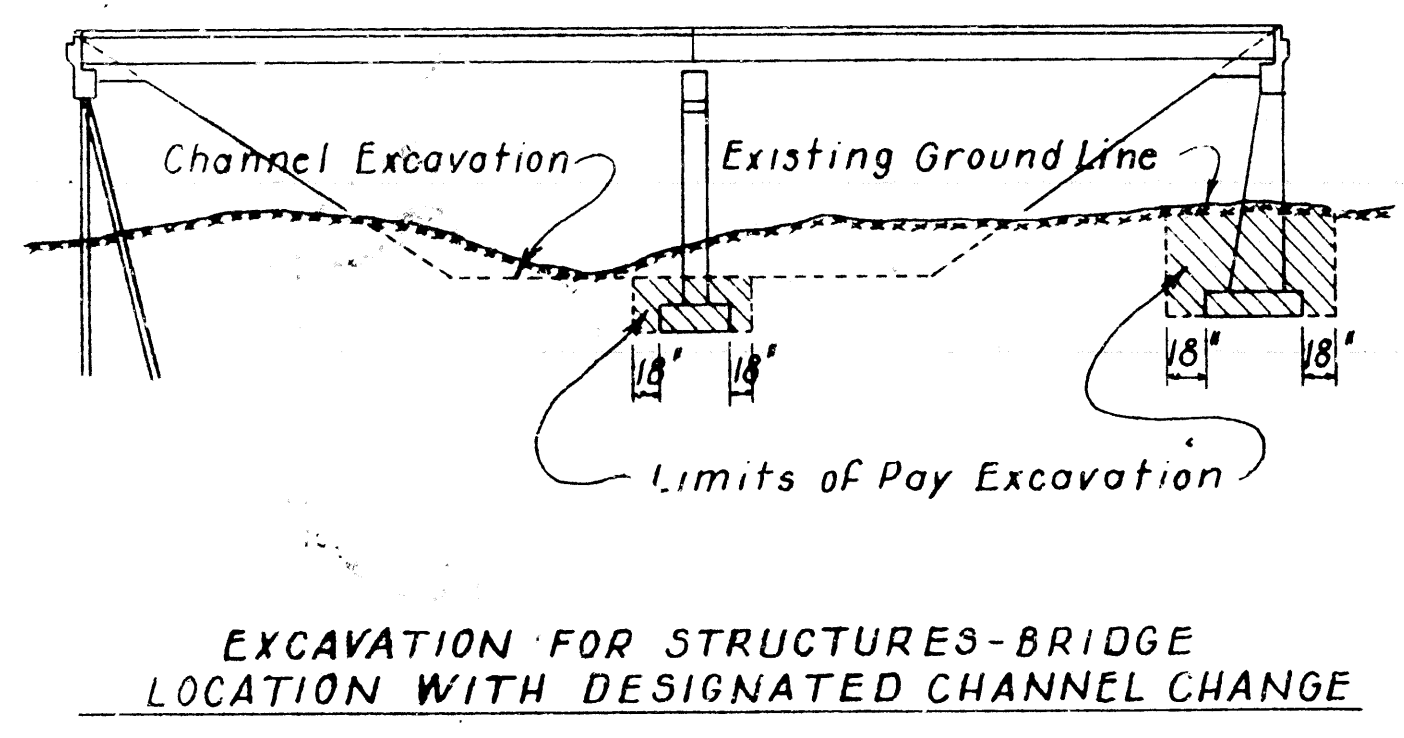
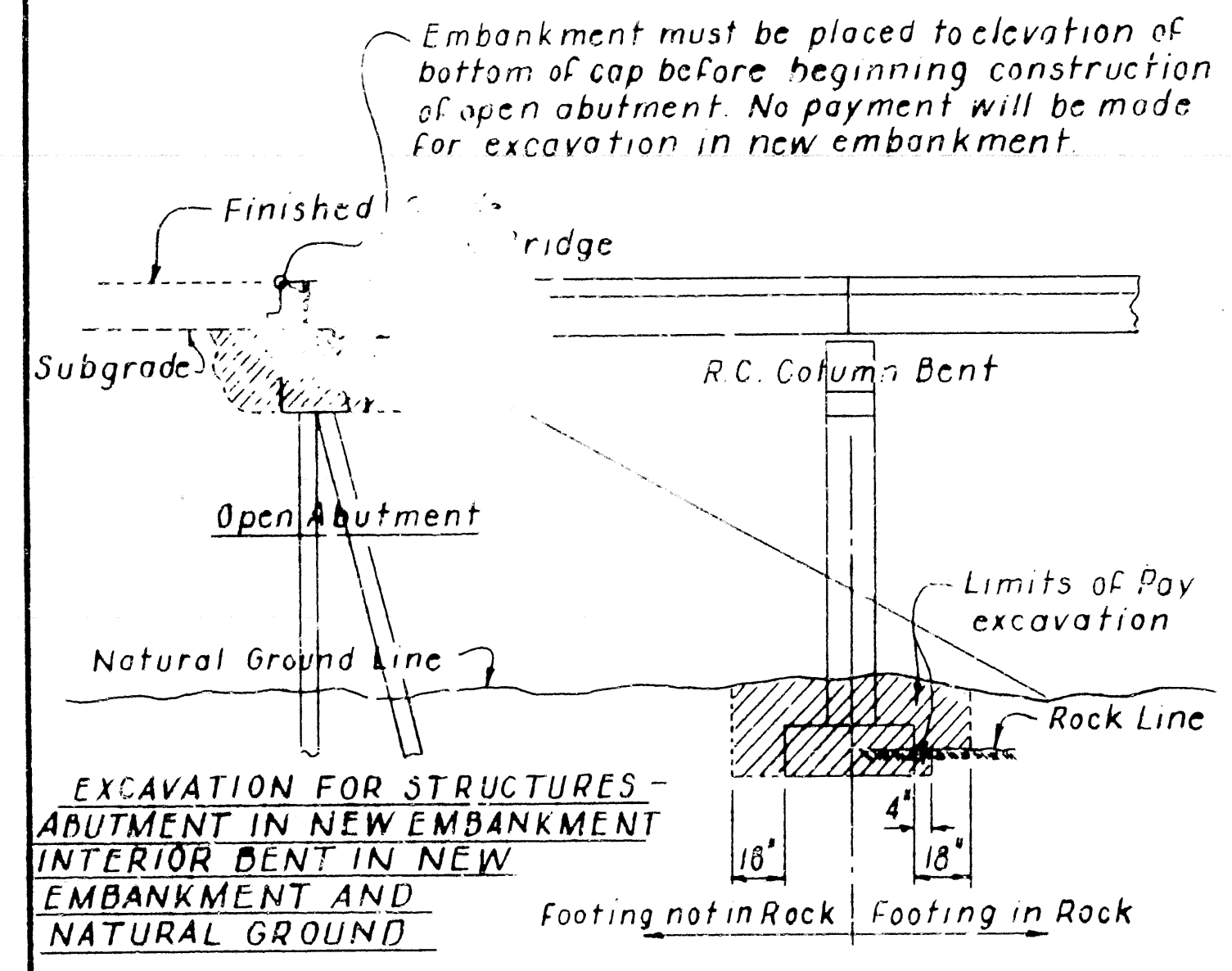
LONGITUDINAL SECTION

WINGWALL ABUTMENT

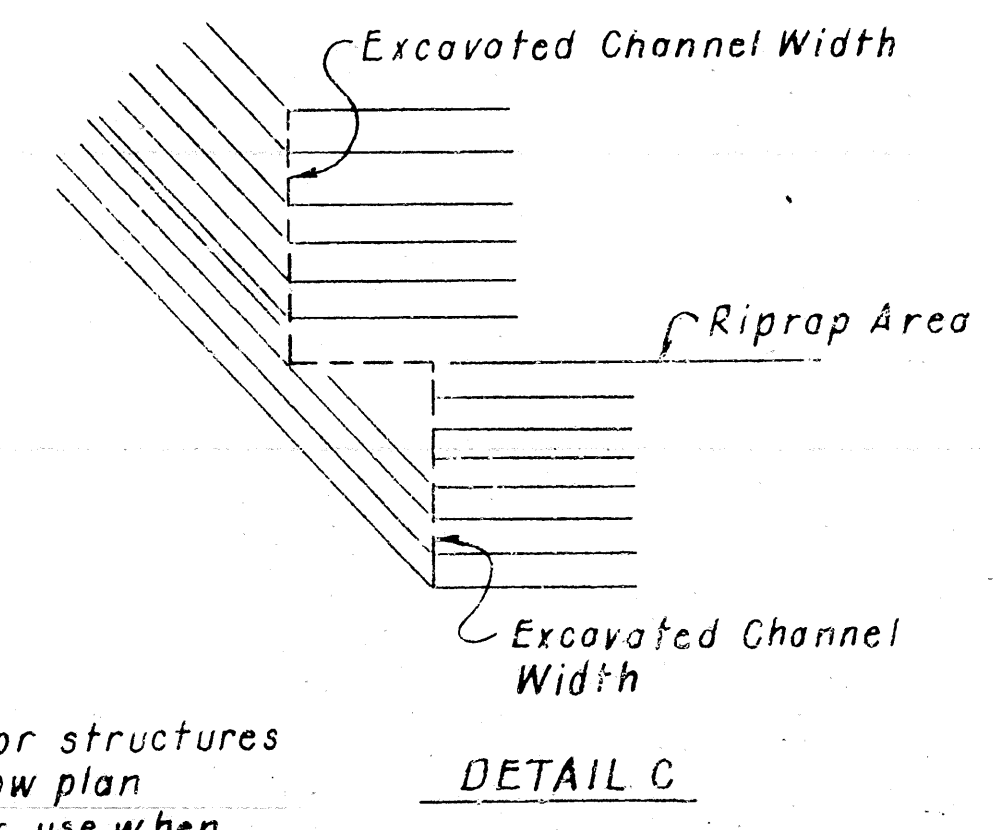
GENERAL NOTE:
BACKFILL AND EMBANKMENT ADJACENT TO STRUCTURES TO BE CONSTRUCTED IN 4 INCH HORIZONTAL LAYERS (LOOSE MEASURE) AND COMPACTED TO THE SATISFACTION OF THE ENGINEER BY USE OF MECHANICAL EQUIPMENT.

ARKANSAS STATE HIGHWAY COMMISSION		
EMBANKMENT CONSTRUCTION AT BRIDGE ENDS AND BACKFILL FOR STRUCTURES		
STANDARD DRAWING		
1888A		
9-15-78	Revised	5-24-9-22-78
9-15-78	SECTION 202 TO 210	5-24-9-22-78
10-2-72	REVISED & REDRAWN	5-20-10-2-72
DATE	REVISION	DATE FILMED

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		77	
Riprap Details & Excavation 1891 F								



Note: Details for computing excavation for structures are included for information as to how plan quantities were calculated and for use when adjusting quantities when changing footing elevation.



DETAILS FOR DUMPED RIPRAP AND FILTER BLANKET AND DETAILS FOR COMPUTING EXCAVATION FOR STRUCTURES

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: LM DATE: 4-8-77

CHECKED BY: FH DATE: 4-11-77

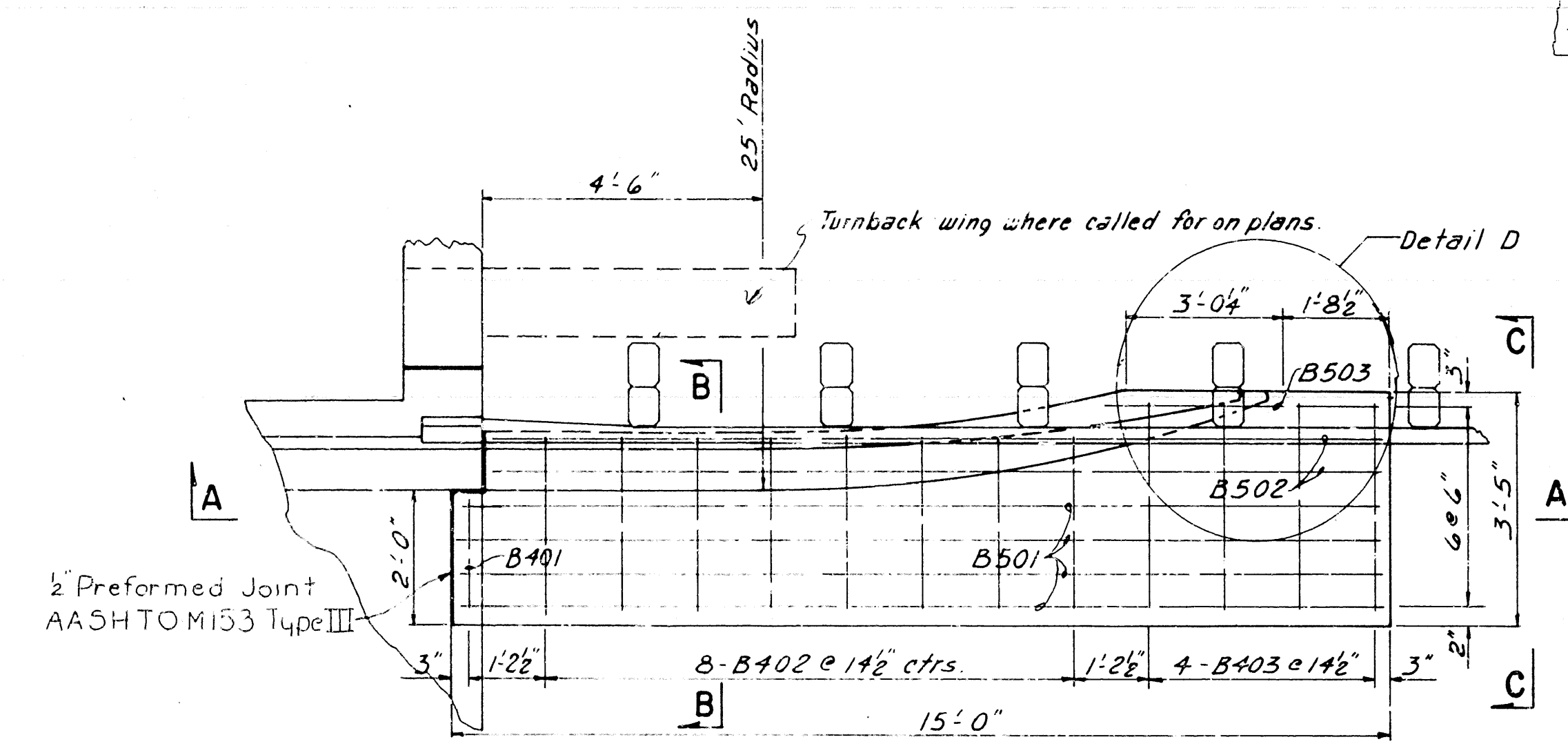
DESIGNED BY: DATE:

BRIDGE NO.

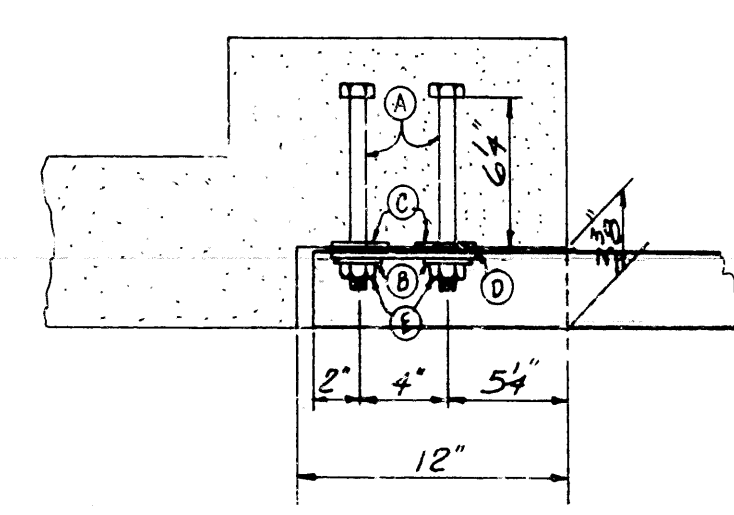
DRAWING NO. 1891 F

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
9-15-78	8-15-78			6	ARK.				
				JOB NO.					
				① Type J Gutters 1898J					

- ④ (2) x 8" A-325 High Strength Bolts with 1 1/4" Threads. (Type I, Galv.)
- ⑧ (2) Clipped Hardened Washers.
- ⑨ (2) Full Hardened Washers.
- ⑩ (1) 2 1/2" x 1/4" x 1" Double Washer.
- ⑪ (2) Nuts.

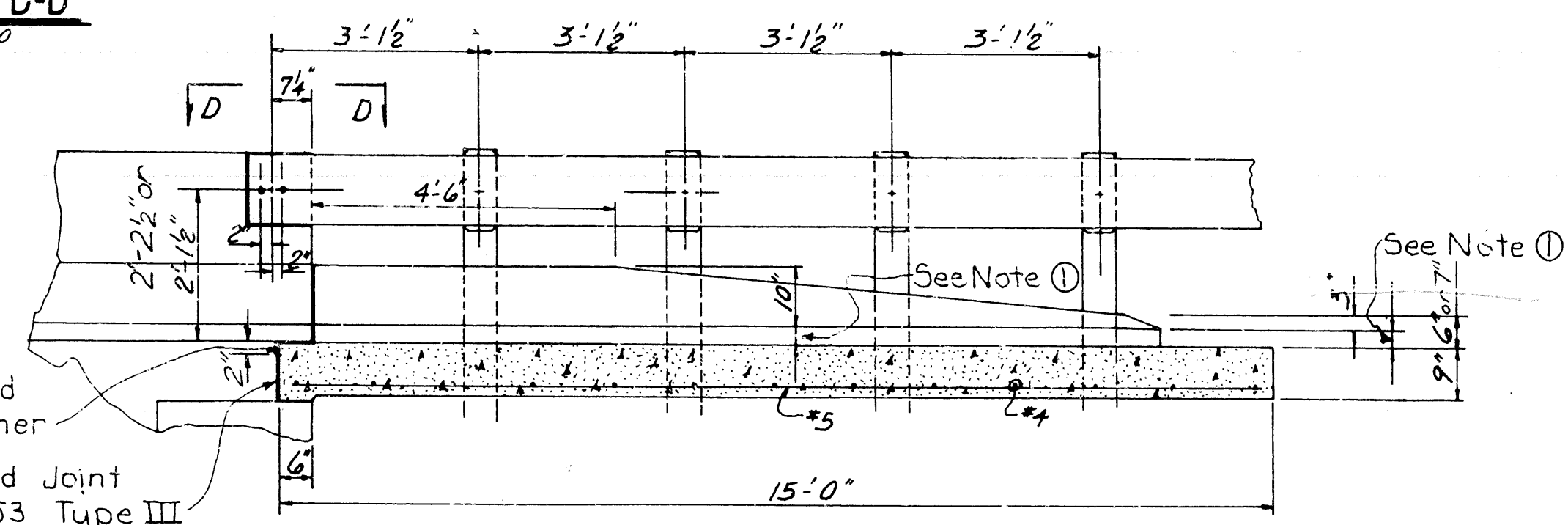


HALF PLAN OF APPROACH GUTTER FOR SQUARE BRIDGE



VIEW D-D
1/2" = 1'-0"

2" x 1/2" Poured Synthetic Polymer
2" Preformed Joint AA5HTO M153 Type III



SECTION A-A

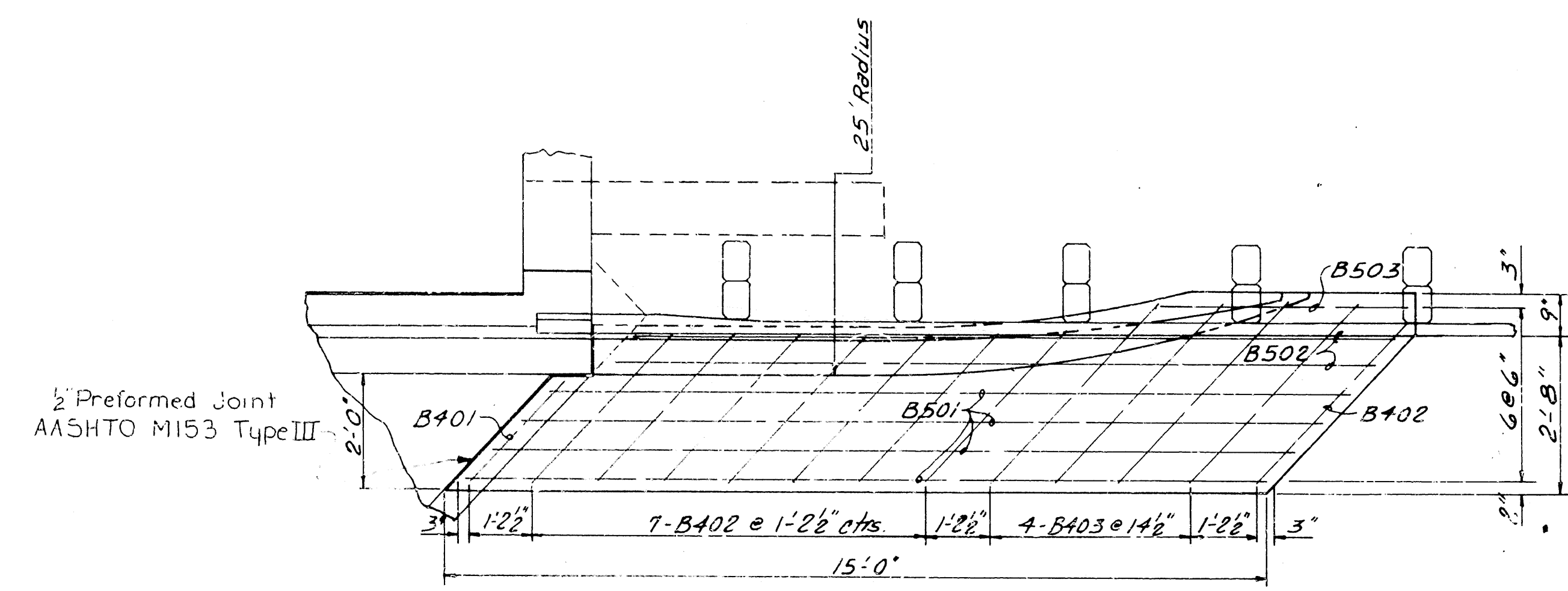
BAR LIST FOR ONE APPROACH (TWO GUTTERS)

MARK	NO.	REQD.	LENGTH
*B401	2	1'-6"	
*B402	16	2'-4"	
*B403	8	3'-0"	
B501	8	14'-6"	
B502	4	14'-0"	
B503	2	4'-3"	

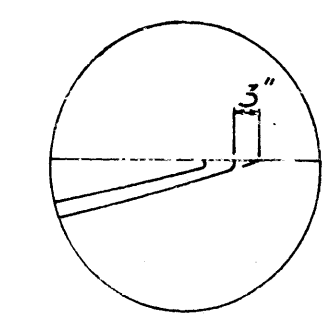
*As shown for Square Bridge, x Sec. of angle for Skewed Bridge.

FOR INFORMATION ONLY
APPROX. QUANTITIES- SQUARE BRIDGE
TWO GUTTERS

CONCRETE 3.03 cu. yd.
REINFORCING STEEL 231 Lb.

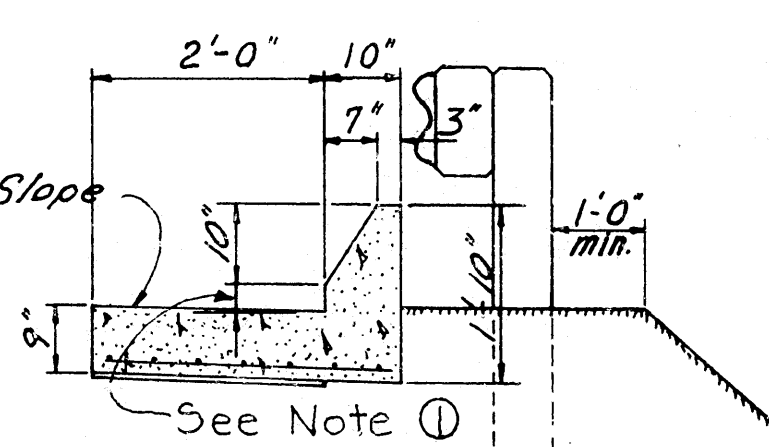


HALF PLAN OF APPROACH GUTTER FOR LEFT FORWARD SKEW BRIDGE



DETAIL D

Match Bridge Deck Slope



SECTION B-B
No Scale

APPROACH SLAB NOTES

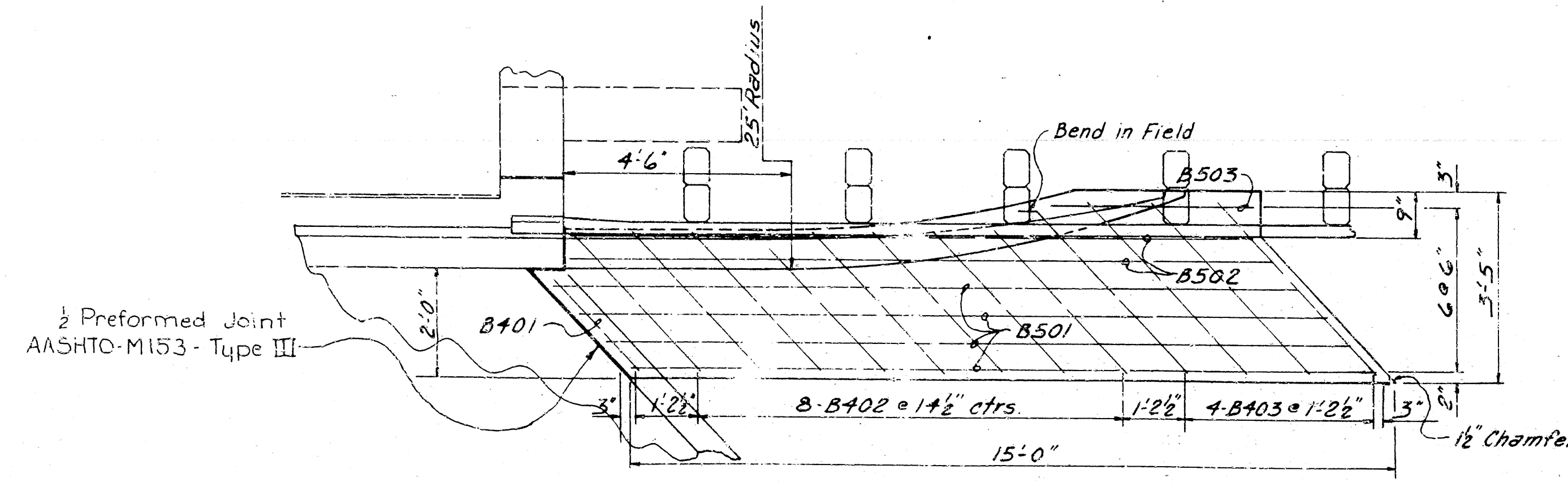
CONCRETE IN APPROACH SLABS TO BE CLASS S, 5%AE OR PAVEMENT MIXTURE.

REINFORCING STEEL TO BE ASTM A615 OR A617

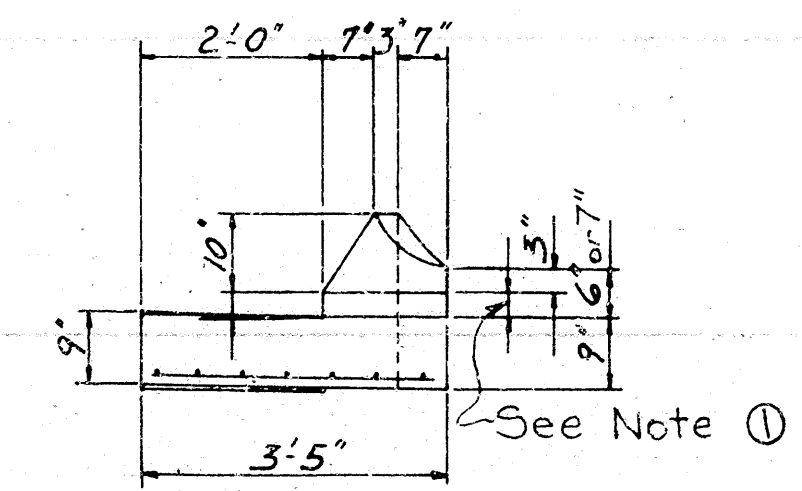
APPROACH GUTTERS SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE BID FOR "APPROACH GUTTERS, TYPE J.". THE PRICE BID SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIALS, INCLUDING REINFORCING STEEL, CONCRETE, EXCAVATION AND FORMS AND LABOR TO COMPLETE GUTTERS.

FOR DETAILS OF POSTS, GUARD FENCE AND ATTACHMENT OF GUARD FENCE TO POSTS SEE JOB DETAILS PERTAINING TO THESE ITEMS.

TYPE J APPROACH GUTTERS USED IN CONJUNCTION WITH TYPE L APPROACH SLABS SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE EACH BID FOR "APPROACH SLABS AND GUTTERS, TYPE L J" WHICH PRICE SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIALS, INCLUDING REINFORCING STEEL, CONCRETE, EXCAVATION AND FORMS AND LABOR TO COMPLETE THE SLABS AND GUTTERS.



HALF PLAN OF APPROACH GUTTER FOR RIGHT FORWARD SKEW BRIDGE



VIEW C-C

① 3" or 4" to match bridge, - See Bridge Details

1. Revised for 1978 Specs 9-15-78 K.D.H.

DETAILS OF STANDARD
TYPE J

APPROACH GUTTERS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: W.W.W. DATE: 2-18-71
TRACED BY: DATE:
CHECKED BY: FMH DATE: 2-23-71

BRIDGE NO. DRAWING NO. 1898J

BRIDGE ENGINEER

CORRUGATED STEEL PIPE-(ROUND) H-20 LOADING

PIPE DIAMETER (INCHES)	MINIMUM COVER TOP OF PIPE TO TOP OF SUBGRADE (INCHES)	MAXIMUM FILL HEIGHT ABOVE TOP OF PIPE IN FEET							
		METAL THICKNESS IN INCHES							
		0.064	0.079	0.109	0.138	0.168			
		2 1/2 INCH BY 1/2 INCH CORRUGATION RIVETED, WELDED, OR HELICAL							
12	12	84	91						
15	12	67	73						
18	12	56	61						
24	12	42	46	59					
30	12	34	36	47					
36	12		30	39	41				
42	12		43	46	67	48	70	50	73
48	12		37	45	58	46	61	47	64
		3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, HELICAL, OR BOLTED							
54	12	32	40	52	59	55	71	59	79
60	12	29	36	49	53	51	64	54	71
66	12	26	33	47		49	53	51	64
72	12	24	30	44		47	53	49	59
78	12		28	41		46	49	47	54
84	12		26	38		45		46	51
90	12		24	35		43		45	
96	12		22	33		40		44	
102	24			31		38		42	
108	24			30		35		39	
114	24			28		34		37	
120	24			27		32		35	

* MAXIMUM FILL CAN BE INCREASED IN THESE DIAMETER PIPES BY USING THE NEXT LARGER CORRUGATION. REFER TO "CORRUGATED METAL PIPE", REVISED 1970, PUBLISHED BY U.S. DEPARTMENT OF TRANSPORTATION, F.H.W.A., B.P.R.

CORRUGATED ALUMINUM PIPE (ROUND) H-20 LOADING

PIPE DIAMETER (INCHES)	MINIMUM COVER TOP OF PIPE TO TOP OF SUBGRADE (INCHES)	MAX. FILL HEIGHT ABOVE TOP OF PIPE (FEET)			
		METAL THICKNESS IN INCHES			
		0.060	0.075	0.105	0.164
		2 1/2 INCH BY 1/2 INCH CORRUGATION RIVETED			
12	12	45	45		
18	12	30	30	52	
24	12	22	22	39	41
30	12		18	31	32
36	12		15	26	27
42	12			43	43
48	12			40	41
54	12			35	37
60	12				33
66	12				30
72	12				29

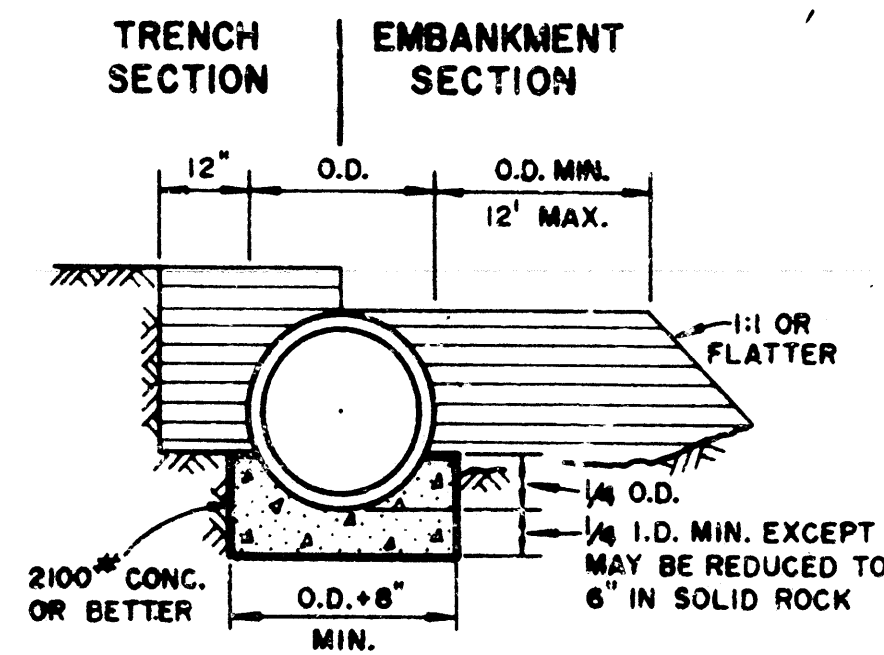
EQUIVALENT METAL THICKNESSES AND GAGES

METAL THICKNESS IN INCHES			GAGE NUMBER
STEEL		ALUMINUM	
ZINC COATED	UNCOATED		
0.064	0.0598	0.060	16
0.079	0.0747	0.075	14
0.109	0.1046	0.105	12
0.136	0.1345	0.135	10
0.168	0.1644	0.164	8
0.188	0.1838		7
0.218	0.2145		5
0.249	0.2451		3
0.280	0.2758		1

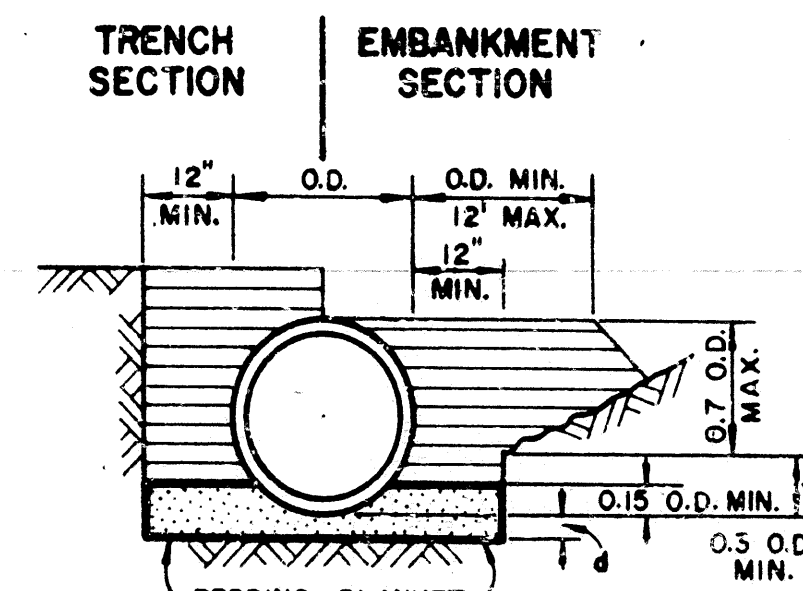
CORRUGATED METAL PIPE ARCHES (H-20 LOADING)

EQU. DIA. (INCHES)	PIPE DIMENSION SPAN X RISE (INCHES)	MINIMUM CORNER RADIUS (INCHES)	MIN. COVER TOP OF PIPE TO TOP OF SUBGRADE FOR 2 TONS PER SQ. FT. (INCHES)	STEEL			ALUMINUM		
				MINIMUM THICKNESS REQUIRED (INCHES)	MAX. FILL HEIGHTS ABOVE TOP OF PIPE (IN FT.) FOR THE FOLLOWING CORNER BEARING PRESSURE IN TONS PER SQ. FT.		MINIMUM THICKNESS REQUIRED (INCHES)	MAX. FILL HEIGHTS ABOVE TOP OF PIPE (IN FT.) FOR THE FOLLOWING CORNER BEARING PRESSURE IN TONS PER SQ. FT.	
					2 TONS	3 TONS ¹		2 TONS	3 TONS ¹
				2 1/2 INCH BY 1/2 INCH CORRUGATION RIVETED, WELDED, OR HELICAL			2 1/2 INCH BY 1/2 INCH CORRUGATION RIVETED		
15	17x13	3	18	0.064	13	15+	0.060	15	
18	21x15	3	18	0.064	12	15+	0.060	14	
21	24x18	3	18	0.064	10	15+	0.060	12	15+
24	28x20	3	18	0.064	10	15	0.060	10	15+
30	35x24	3	18	0.079	9	14	0.075	9	14
36	42x29	3 1/2	18	0.079	9	13	0.075	9	13
42	49x33	4	18	0.079	8	12	0.105	8	12
48	57x38	5	18	0.109	8	12	0.135	8	12
54	64x43	6	18	0.109	8	12	0.135	8	12
60	71x47	7	18	0.138	8	12	0.164	8	12
66	77x52	8	18	0.168	8	12			
72	83x57	9	18	0.168	9	13			
				3 INCH BY 1 INCH OR 5 INCH BY 1 INCH CORRUGATION RIVETED, WELDED, OR HELICAL					
72	81x59	14	18	0.079	15				
78	87x63	14	18	0.079	14	15+			
84	95x67	16	18	0.109	13	15+			
90	103x71	16	24	0.109	12	15+			
96	112x75	18	24	0.109	11	15+			
102	117x79	18	24	0.109	10	15			
108	128x83	18	24	0.138	9	14			

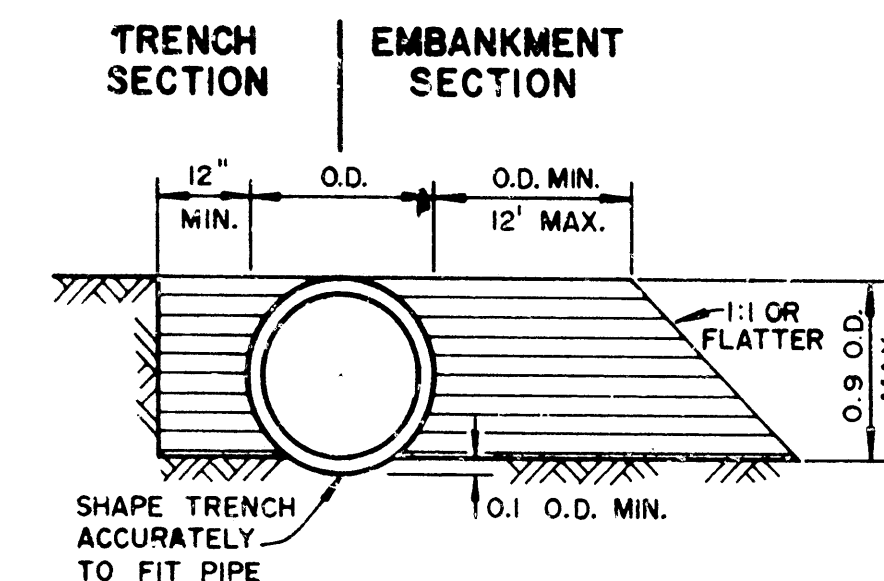
¹ WHERE BEARING PRESSURE EXCEEDING 2 TONS PER SQUARE FOOT IS REQUIRED FOR GIVEN FILL HEIGHTS, THE FOUNDATION MATERIAL SHALL BE INVESTIGATED TO DETERMINE THE BEARING CAPACITY.



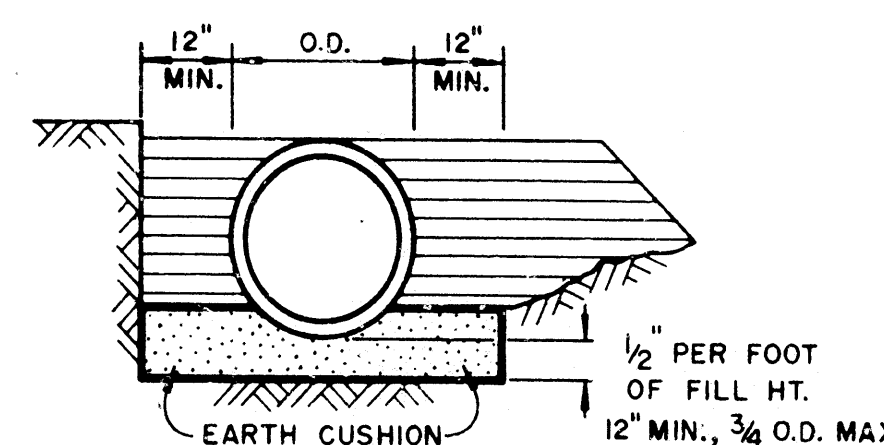
CLASS A
(RIGID PIPE ONLY)



CLASS B

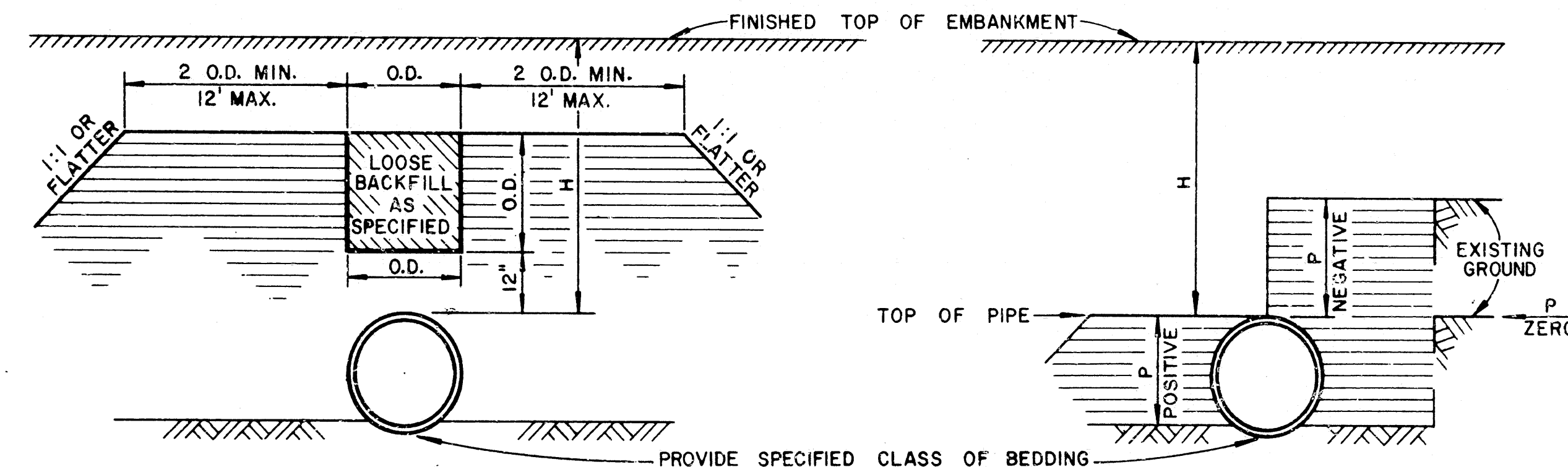


CLASS C



CLASS B OR CLASS C IN ROCK

EARTH CUSHION SHALL CONSIST OF SILTY LOAM, LOAM, CONCRETE SAND, OR OTHER SIMILAR MATERIAL FREE FROM LUMPS, CLODS, OR ROCKS, AND MEETING THE APPROVAL OF THE ENGINEER.



IMPERFECT TRENCH INSTALLATION

DETAIL OF PROJECTION RATIO (P)

REINFORCED CONCRETE ARCH PIPE DIMENSIONS

EQUIV. DIA.	*SPAN		*RISE	
	ASTM C 506	AHD NOMINAL	ASTM C 506	AHD NOMINAL
INCHES	INCHES			
15	18	18	11	11
18	22	22	13 1/2	14
21	26	26	15 1/2	16
24	28 1/2	29	18	18
30	36 1/4	36	22 1/2	23
36	43 3/4	44	26 5/8	27
42	51 1/2	51	31 5/8	31
48	58 1/2	59	36	36
54	65	65	40	40
60	73	73	45	45
72	88	88	54	54
84	102	102	62	62
90	115	115	72	72
96	122	122	77 1/4	77
108	138	138	87 1/8	87
120	154	154	96 7/8	97
132	168 3/4	169	106 1/2	107

* THE MEASURED SPAN AND RISE SHALL NOT VARY MORE THAN ± 2 PER CENT FROM THE VALUES SPECIFIED BY ASTM C 506.

NOTES:

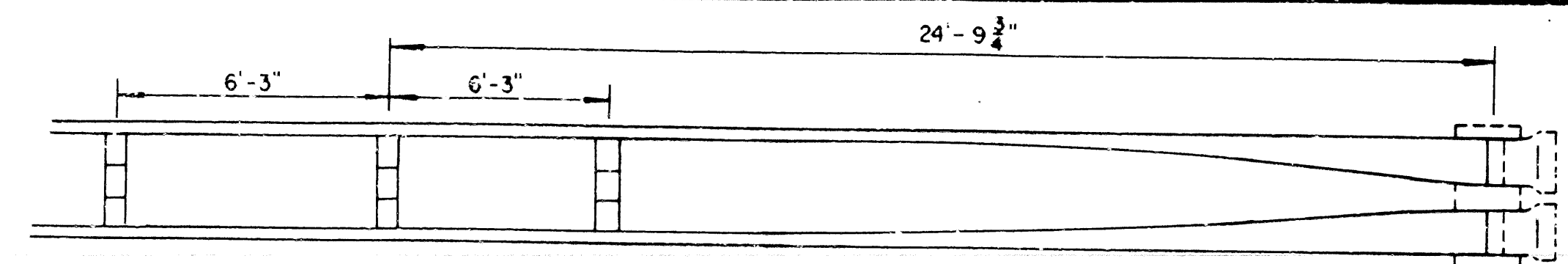
ALL PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY A COVER SUFFICIENT TO PREVENT DAMAGE FROM PASSAGE OF EQUIPMENT. THE MINIMUM TRENCH WIDTH SHALL BE THE OUTSIDE DIAMETER OF THE PIPE PLUS 24 INCHES. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE THE MINIMUM WIDTH PRACTICABLE FOR WORKING CONDITIONS. MULTIPLE PIPE CULVERTS SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 24 INCHES BETWEEN STRINGS OF PIPE. REFER TO STD. DWG. FES-2 FOR MINIMUM CLEARANCE WHERE FLARED END SECTIONS ARE USED. CURTAIN WALLS, COLLARS, OR IMPERVIOUS MATERIAL SHOULD BE PLACED AT THE ENDS OF THE CULVERT AND AT INTERVALS ALONG THE CULVERT BARREL TO PREVENT LOSS OF BEDDING AND SIDE FILL MATERIAL TO FLOW OF WATER WHEN PERVIOUS MATERIAL IS USED FOR CULVERT BEDDING AND/OR BACKFILL.

--LEGEND--

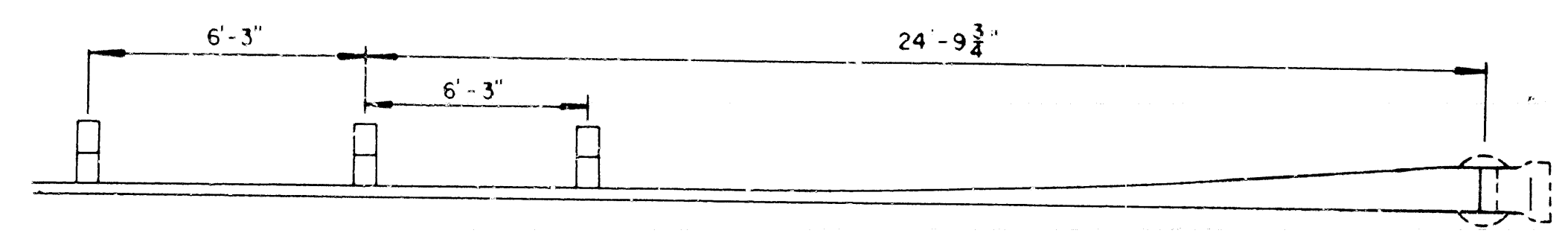
H = SAFE FILL COVER HEIGHT OVER PIPE
P = PROJECTION RATIO = THE RATIO OF THE DISTANCE OF THE EXISTING GROUND SURFACE BELOW THE EXTERIOR PIPE TOP TO THE OUTSIDE DIAMETER OF THE PIPE.
I.D. = NOMINAL INSIDE DIAMETER OF PIPE (SPAN FOR PIPE ARCH)
O.D. = OUTSIDE DIAMETER OF PIPE
MAX. = MAXIMUM
MIN. = MINIMUM
IMP. TRENCH = IMPERFECT TRENCH
SUITABLE BACKFILL MATERIAL COMPACTED IN ACCORDANCE WITH SPECIFICATIONS
UNDISTURBED SOIL
ELONG. = ELONGATED
EQUIV. DIA. = EQUIVALENT DIAMETER

DATE	REVISION
9/20/79	ADDED 5'x1' CORRUGATION AS ACCEPTABLE
7/14/78	C.M. ARCH SIZES TO CONFORM WITH AASHTO SIZES
8/22/75	ADDED NOTE FOR MINIMUM CLEARANCE FOR F.E.S.
10/16/72	REV. C.M. PIPE ARCHES
10/2/72	DRAWN
	FILED

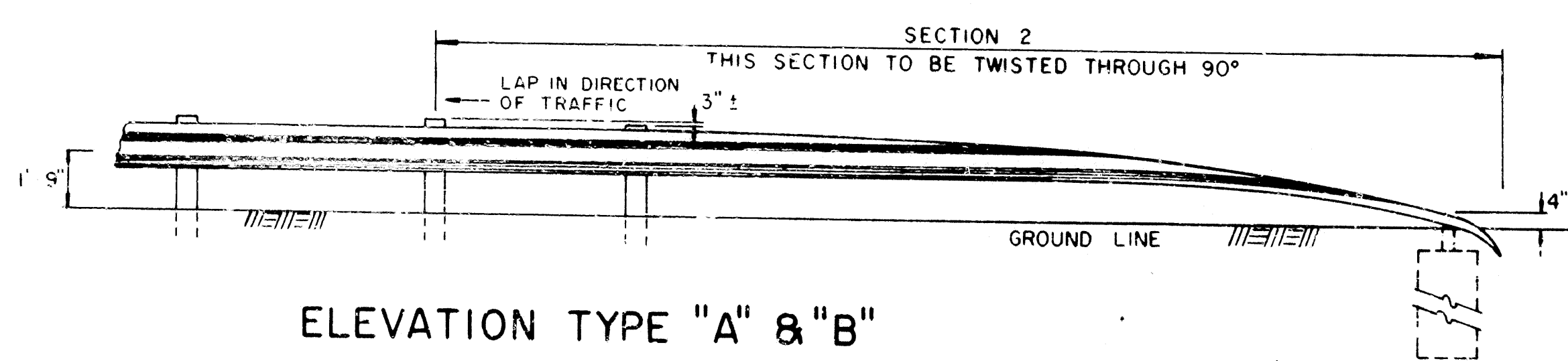
ARKANSAS STATE HIGHWAY COMMISSION
PIPE CULVERT
FILL HEIGHTS & BEDDING
STANDARD DRAWING FPC-19



PLAN - TYPE "B"

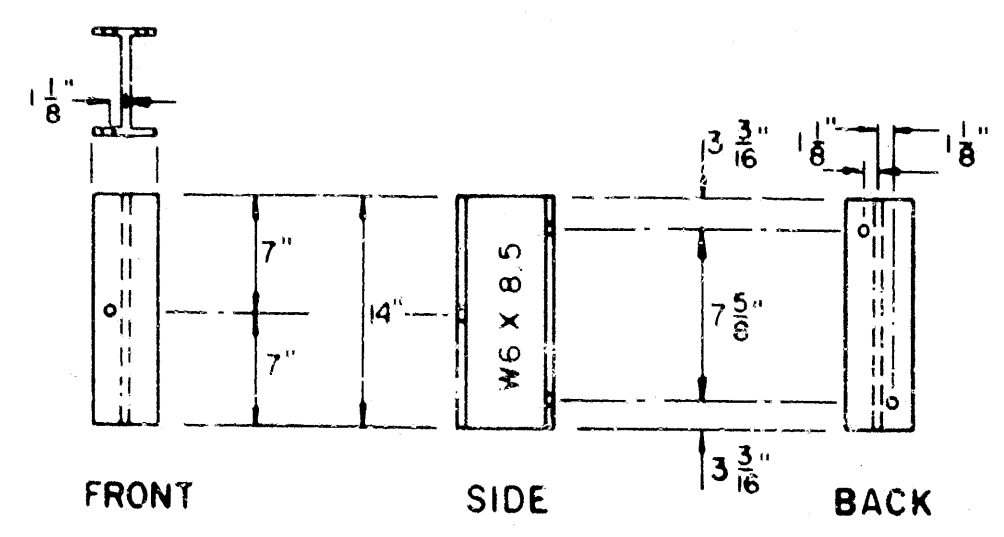


PLAN - TYPE "A"

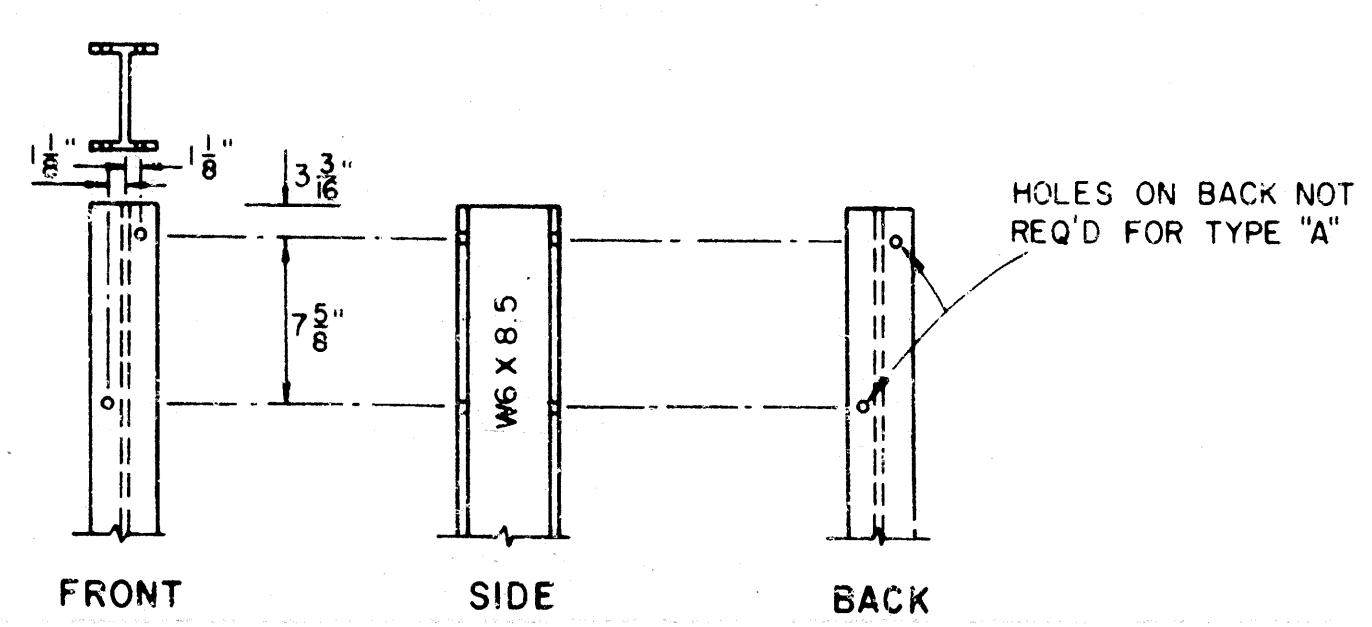


ELEVATION TYPE "A" & "B"

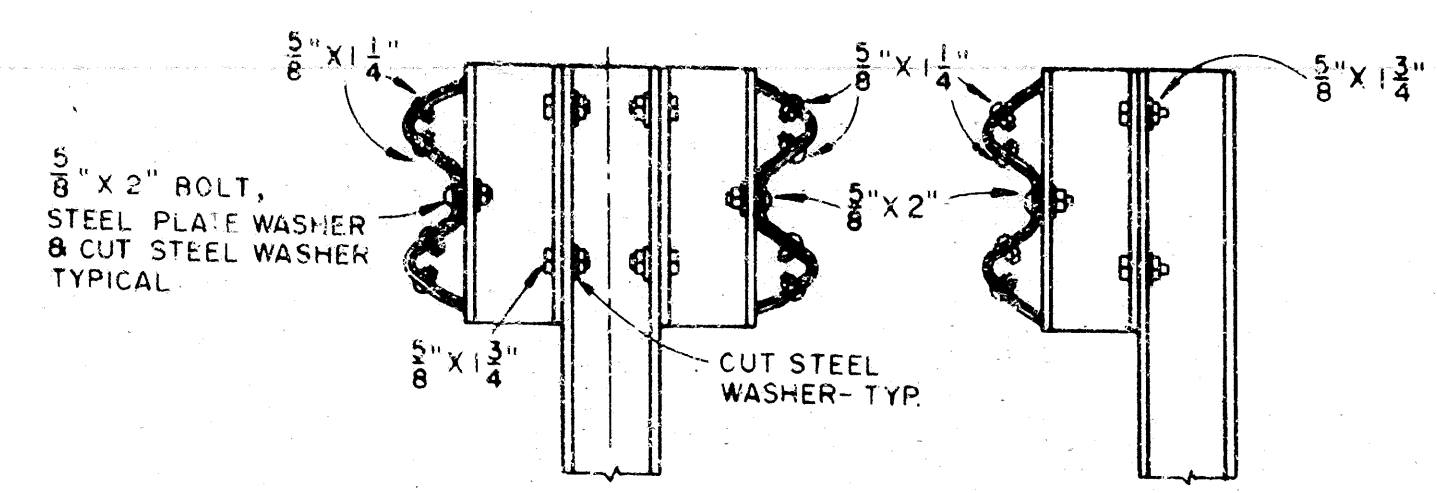
GENERAL NOTE (TYPE "A" & "B")
ALL DETAILS AND NOTES SHOWN ON STD. DWG. NO GR-8 SHALL BE APPLICABLE. TERMINAL ANCHORS SHALL BE USED AT ALL POINTS WHERE GUARD RAIL IS TERMINATED UNLESS OTHER PROVISIONS ARE MADE FOR ANCHORING.



STEEL SPACER BLOCK

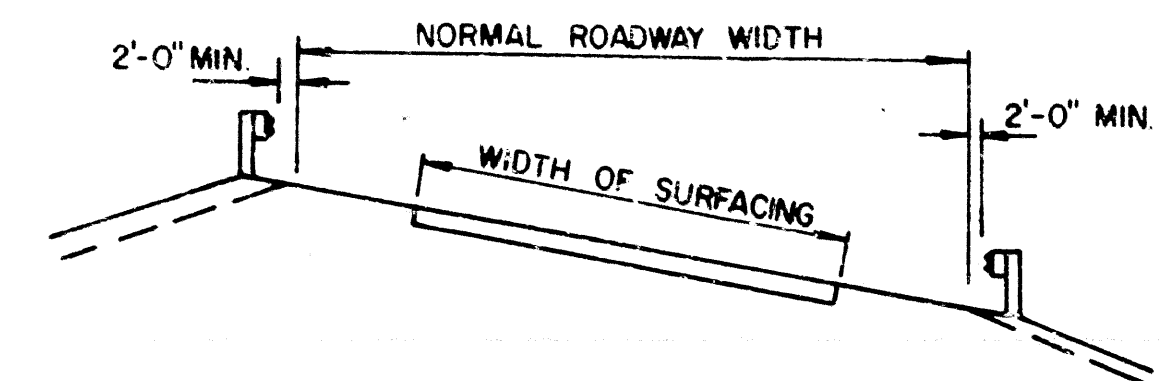


STEEL POST

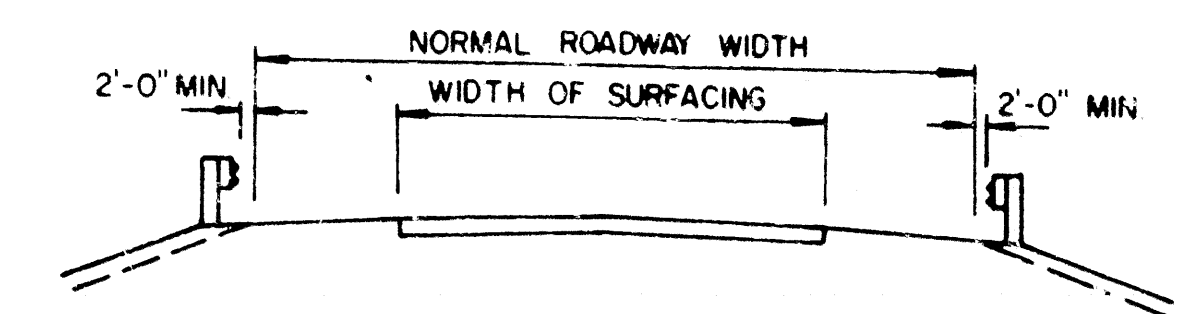


TYPE "B" TYPE "A"

DETAILS OF STEEL LINE POST CONNECTIONS

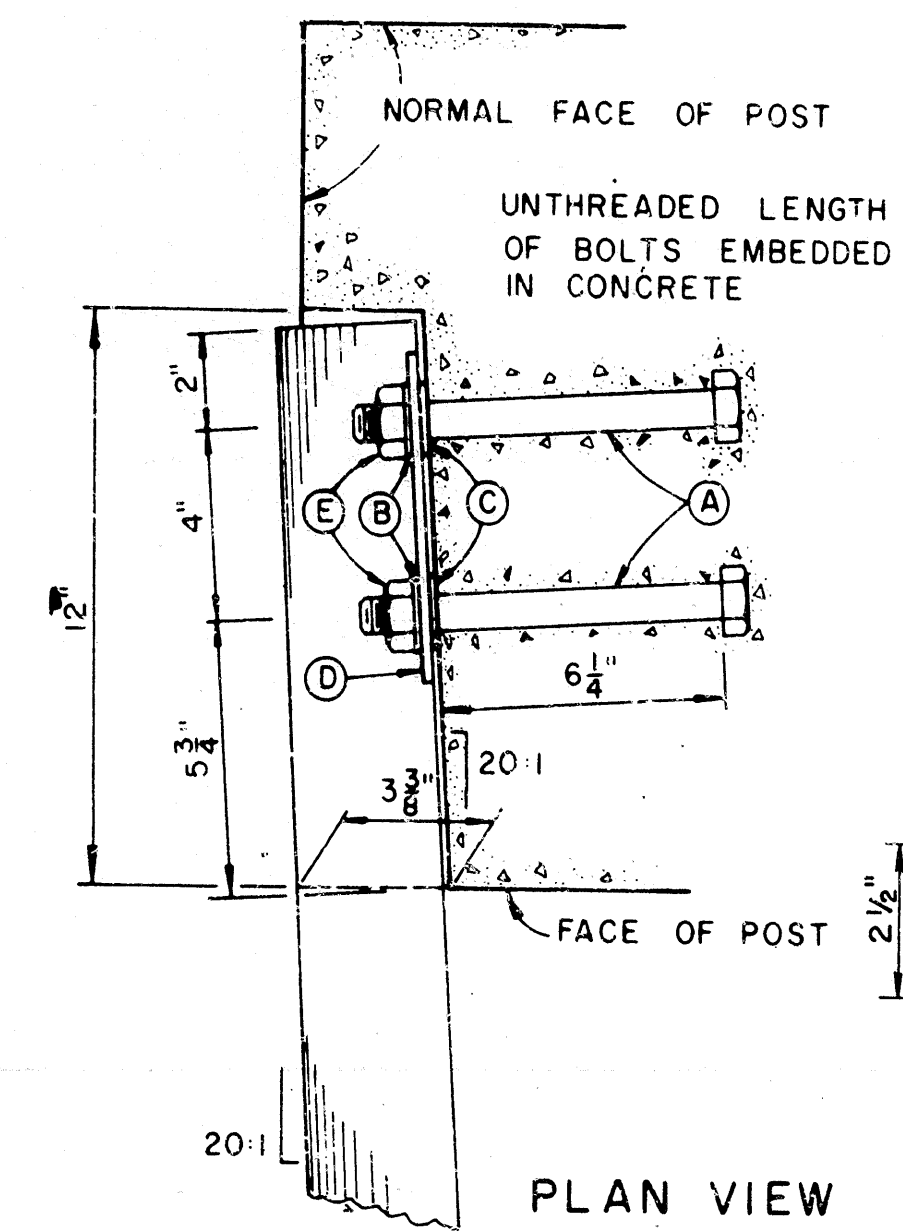


SECTION ON CURVE

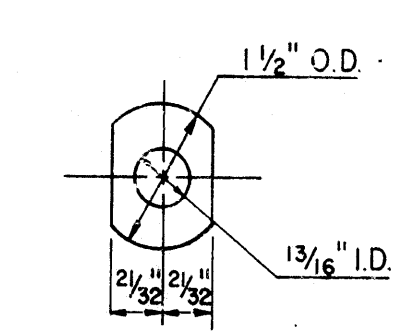


SECTION ON TANGENT

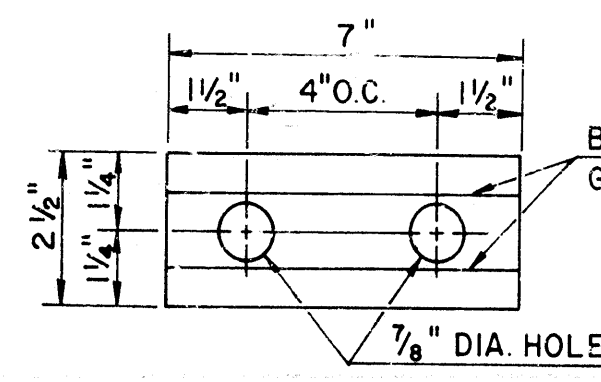
DETAILS SHOWING POSITION OF GUARD RAIL ON HIGHWAY



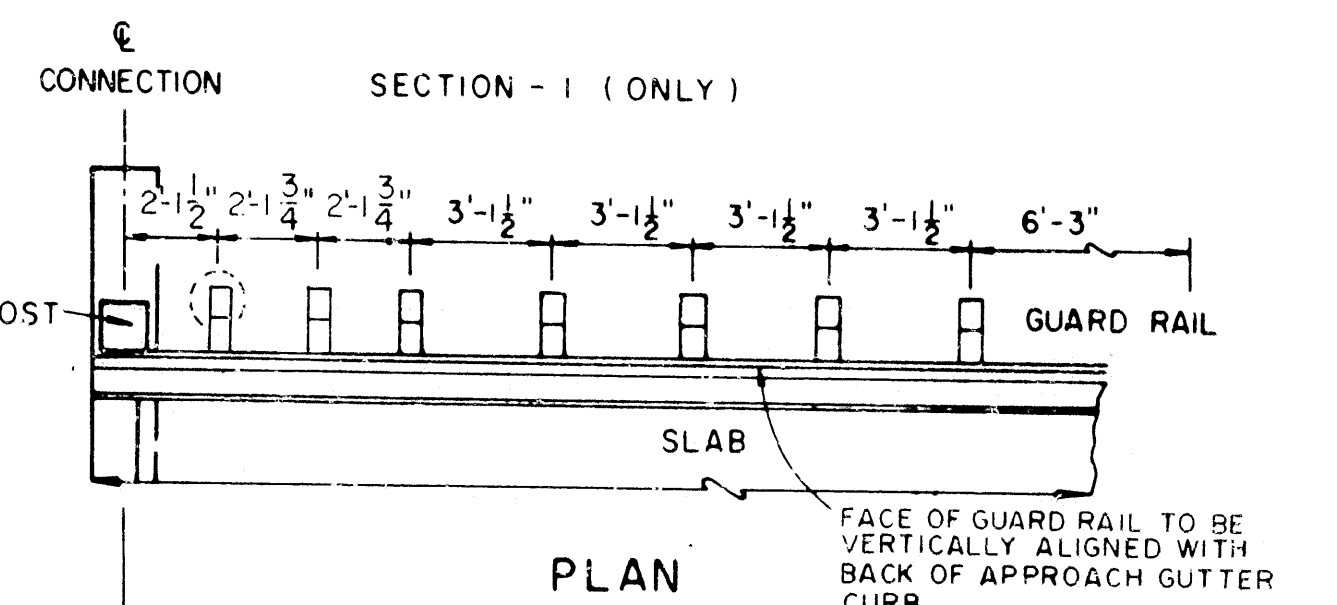
PLAN VIEW



CLIPPED STEEL WASHER

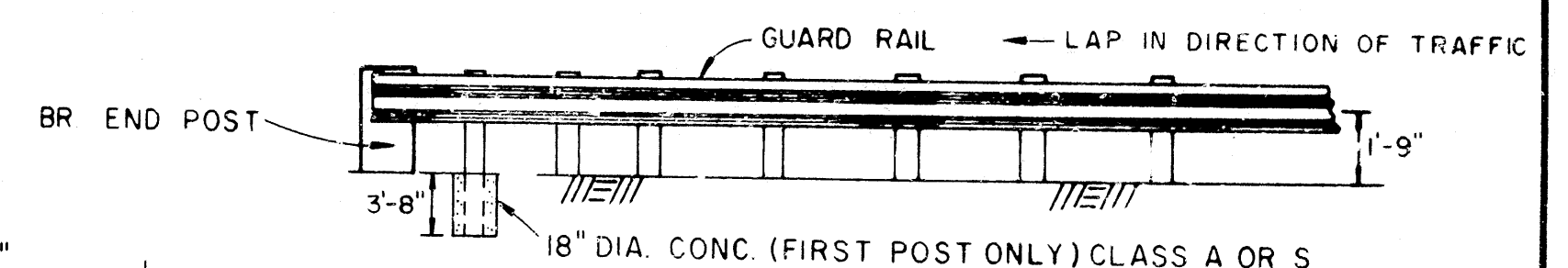


DOUBLE WASHER



PLAN

GUARD RAIL HEIGHT AT BRIDGE END MAY BE GREATER THAN 1'-9". SEE BRIDGE DETAILS FOR DIMENSION.



ELEVATION

NOTE: NO DIRECT PAYMENT WILL BE MADE FOR CONCRETE. PAYMENT WILL BE CONSIDERED AS INCLUDED IN THE PRICE BID FOR GUARD RAIL.

DETAILS OF GUARD RAIL AT BRIDGE ENDS USING BRIDGE END POSTS

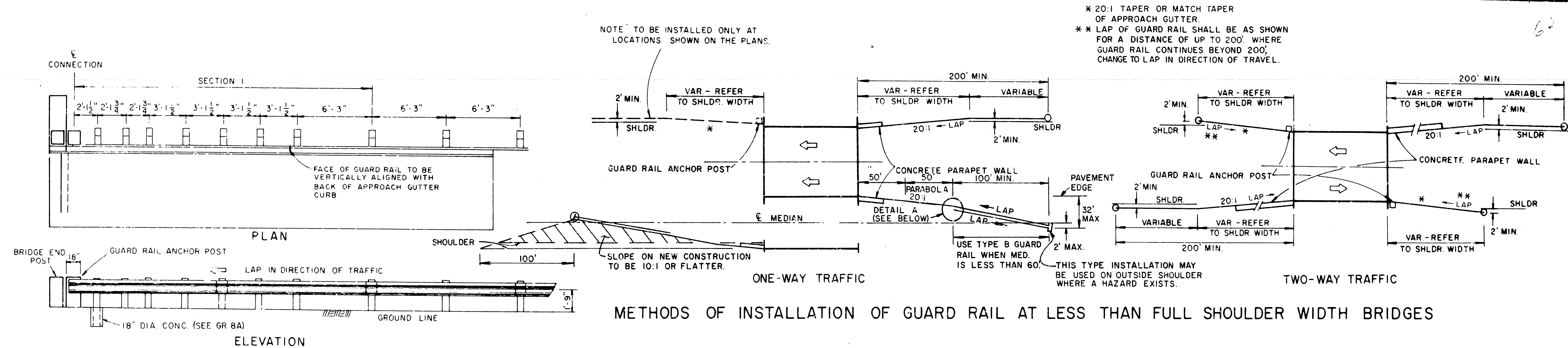
- Ⓐ - (2) 3/4" X 8" A 325 HIGH STRENGTH BOLTS WITH 1 1/4" THREADS
- Ⓑ - (2) CLIPPED STEEL WASHER
- Ⓒ - (2) CUT STEEL WASHERS
- Ⓓ - (1) 2 1/2" X 3/16" X 7" DOUBLE WASHER
- Ⓔ - (2) NUTS

THESE ITEMS WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED SUBSIDIARY TO OTHER ITEMS OF THE CONTRACT.

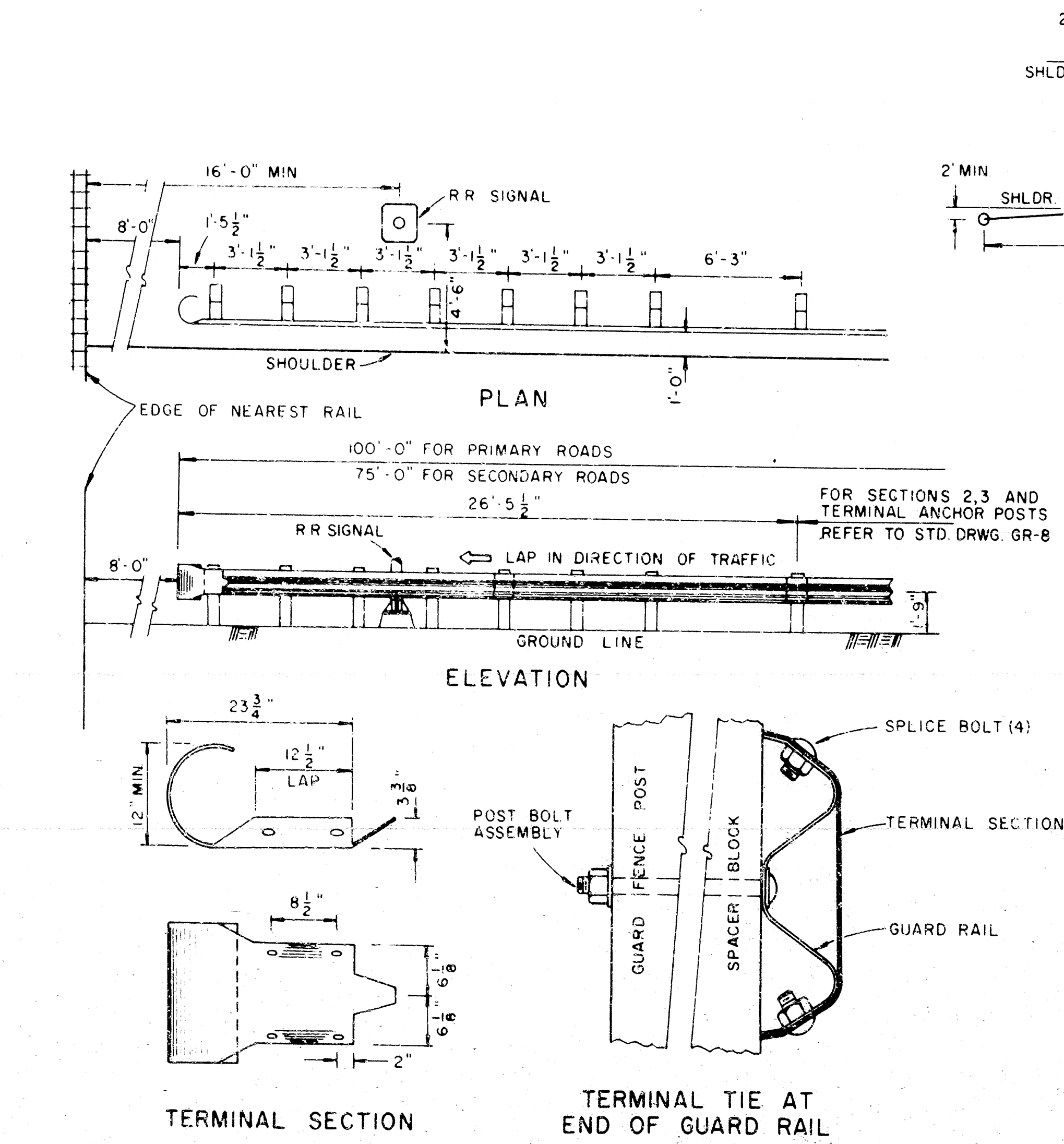
SEE GR-8 FOR HARDWARE DETAILS.

DETAILS OF CONNECTION

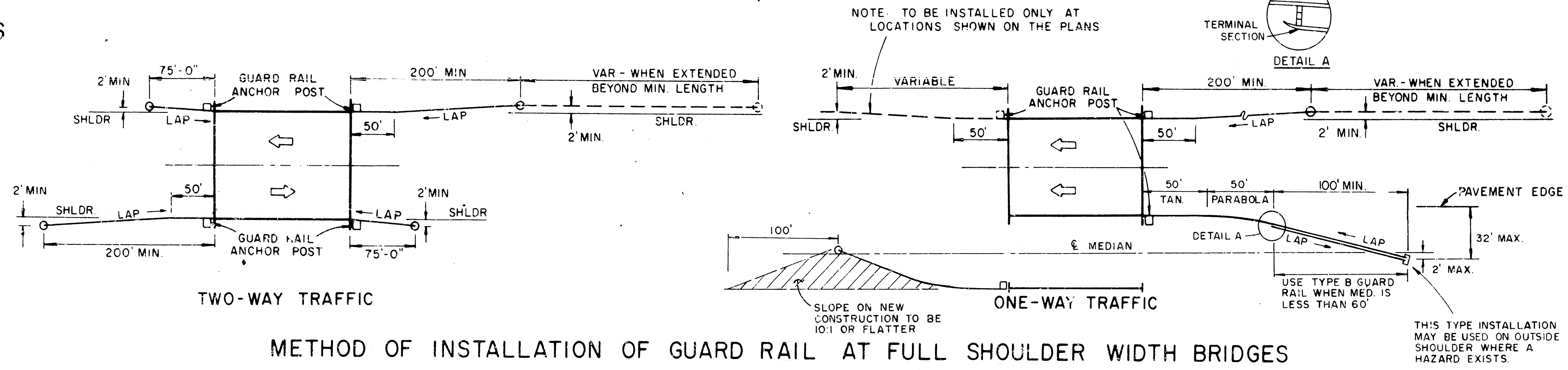
ARKANSAS STATE HIGHWAY COMMISSION			
GUARD RAIL DETAILS			
STANDARD DRAWING			
GR-8 A			
5-15-80	SPELLING OF APPLICABLE	665-5/15-80	
10-1-77	POST SPACING AT BRIDGE	724-10-1-77	
4-23-75	ADD PAY NOTE, WASHER DETAIL	861-4-23-75	
10-2-72	REVISED & REDRAWN	523-10-2-72	
DATE	REVISION	DATE FILMED	



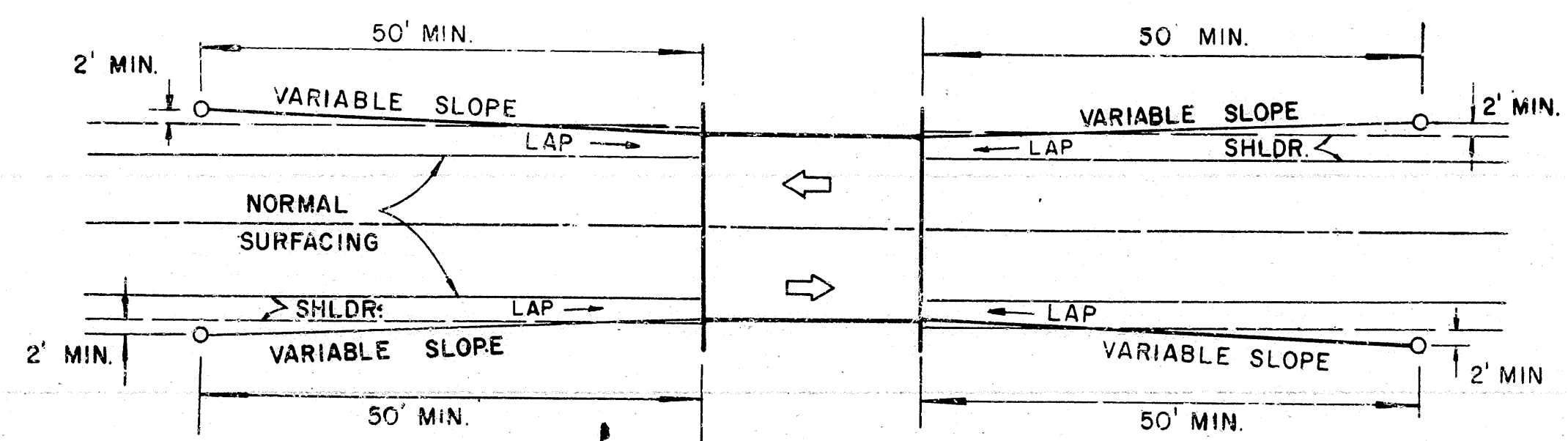
DETAILS OF GUARD RAIL AT BRIDGE ENDS USING GUARD RAIL ANCHOR POSTS



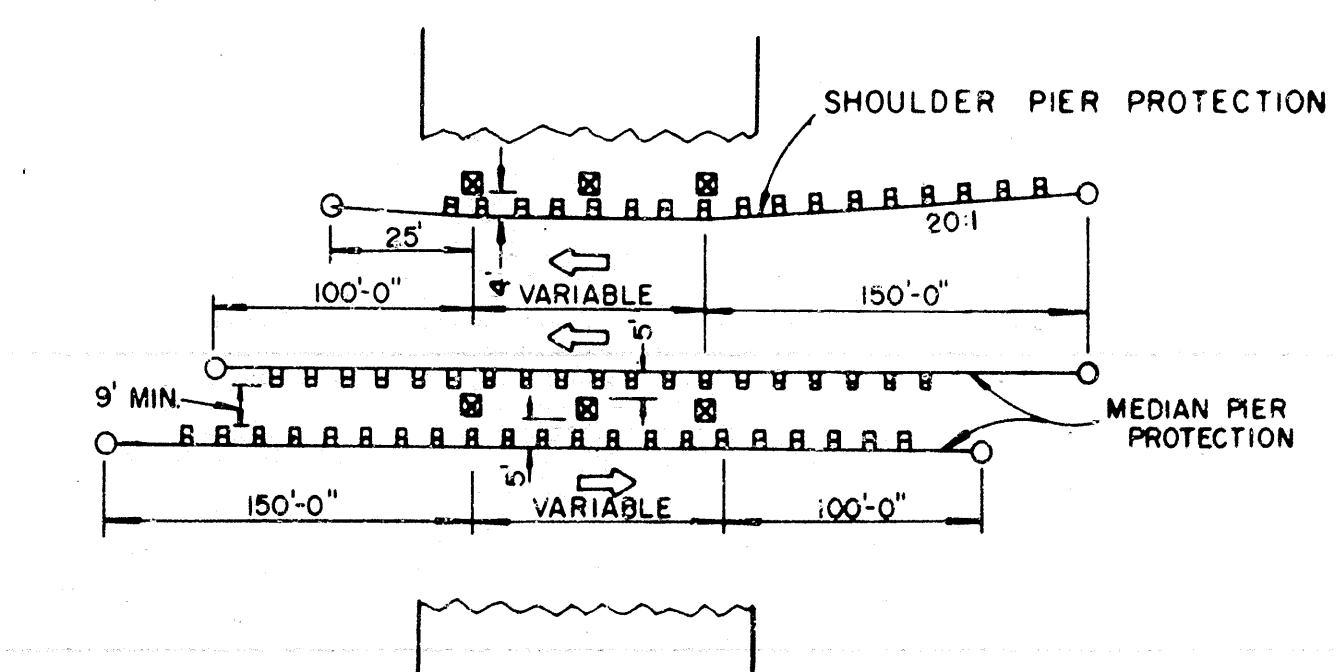
INSTALLATION OF GUARD RAIL AT RAILROAD-HIGHWAY GRADE CROSSINGS



METHOD OF INSTALLATION OF GUARD RAIL AT FULL SHOULDER WIDTH BRIDGES



METHOD OF INSTALLATION OF GUARD RAIL (SECONDARY ROADS)

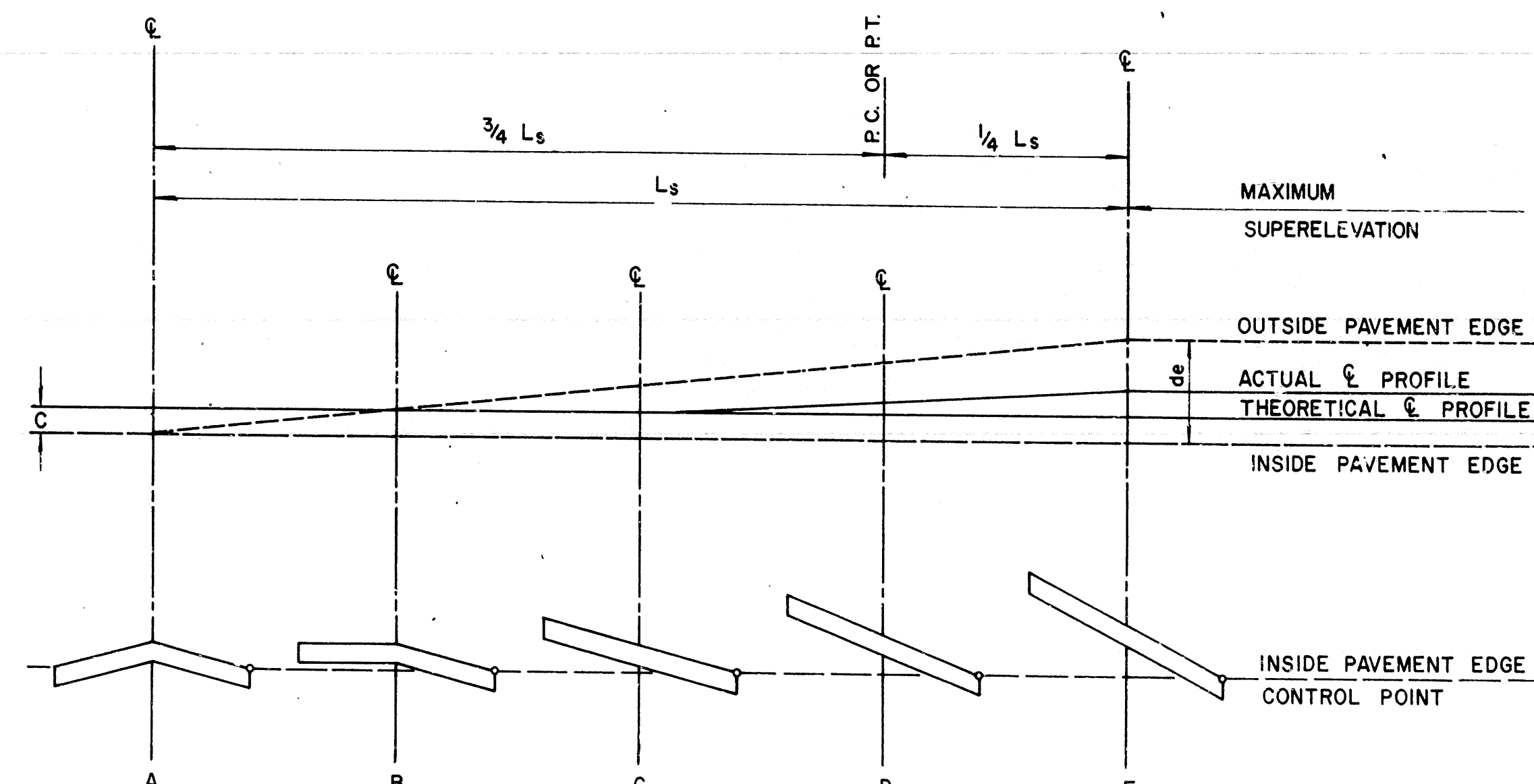


METHOD OF INSTALLATION OF GUARD RAIL FOR PIER PROTECTION

ARKANSAS STATE HIGHWAY COMMISSION			
GUARD RAIL DETAILS			
STANDARD DRAWING			
GR-9			
DATE	REVISION	DATE FILMED	
5-15-80	NOTE RE LAP, ADDED DETAIL	666-5-15-80	
8-24-79	REVISED DIST. AT R.R. XING	581-8-24-79	
4-20-79	REVISED PIER PROTECTION	615-4-20-79	
	8 FULL SHLDR. BR. DETAIL		
10-1-77	POST SPACING AT B.E. CONN., INSTALL DETAIL FOR FULL SHLDR. WIDTH BR. SEC. RDS.	925-10-1-77	
5-24-73	ADD DETAILS RE SEC. ROADS	621-5-24-73	
10-2-72	REVISED & REDRAWN	524-10-2-72	

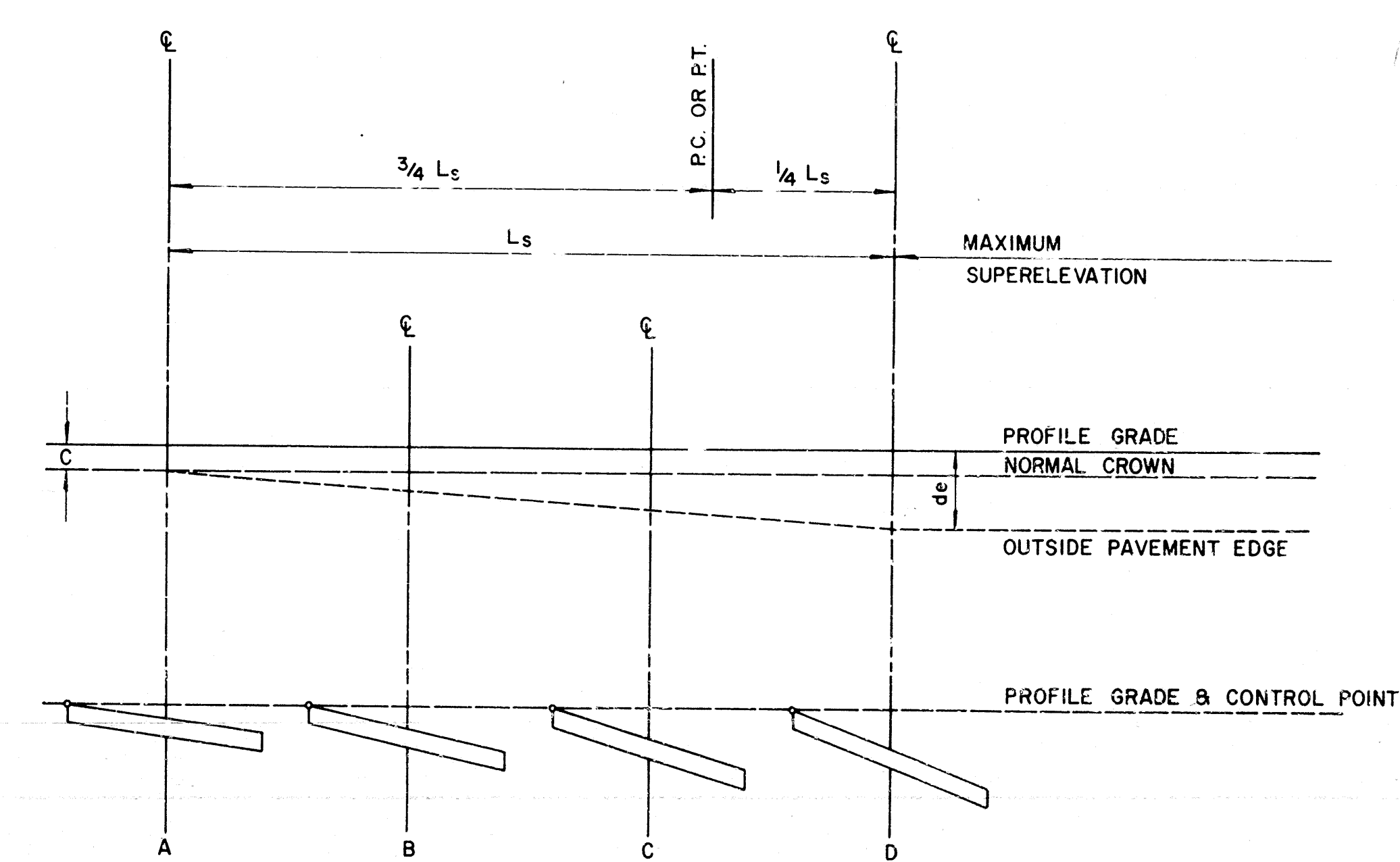
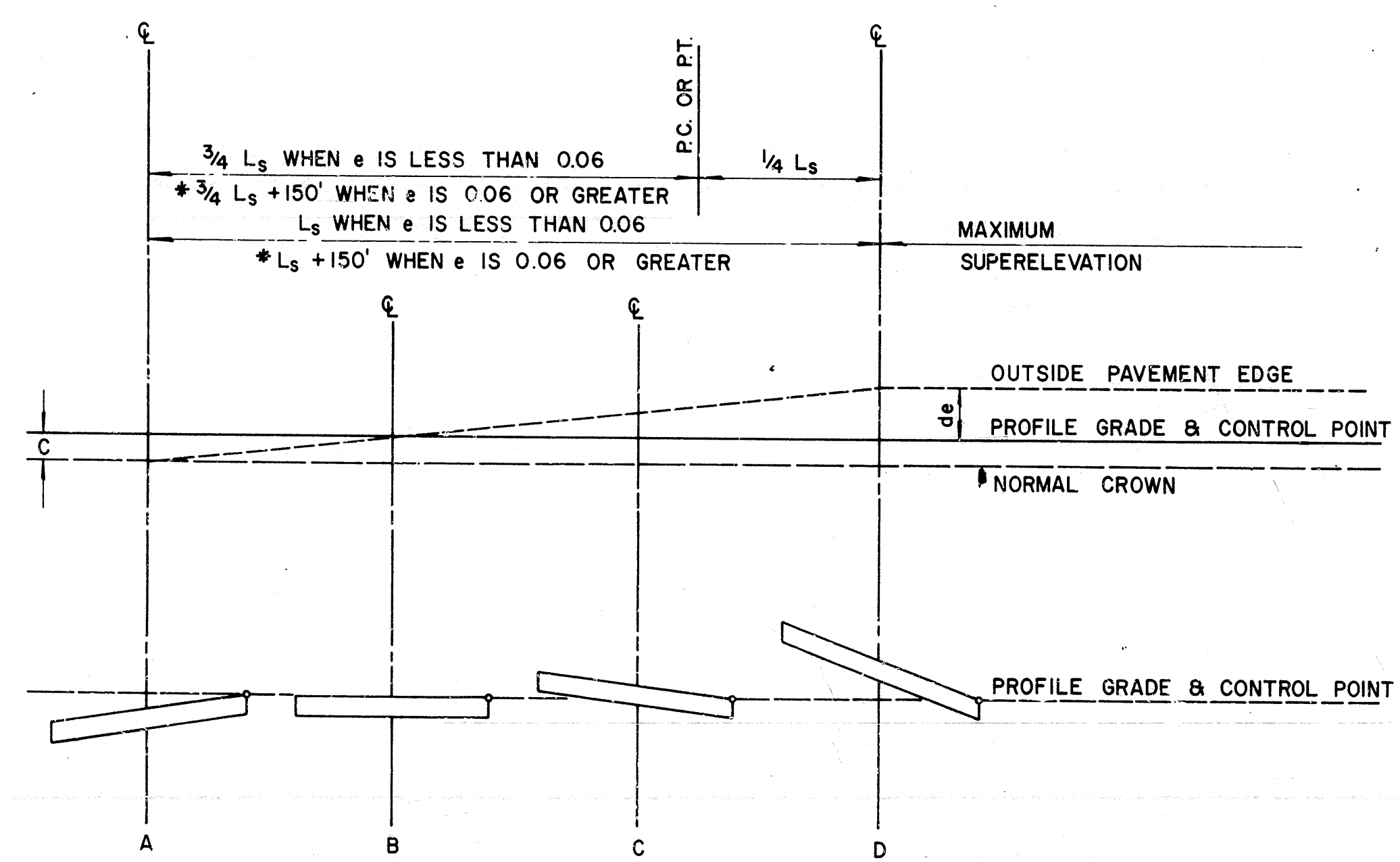
SUPERELEVATION VALUES

DEGREE OF CURVE	30 M.P.H.		40 M.P.H.		50 M.P.H.		60 M.P.H.		70 M.P.H.		80 M.P.H.	
	e	L _s	e	L _s	e	L _s	e	L _s	e	L _s	e	L _s
0° 15'	N.C.		N.C.		N.C.			300'	0.015	300'	0.015	300'
0° 30'	N.C.		N.C.		N.C.			300'	0.021	300'	0.023	300'
0° 45'	N.C.		N.C.		0.020	200'		300'	0.026	300'	0.030	300'
1° 00'	N.C.		0.020	200'	0.023	200'		300'	0.032	300'	0.038	300'
1° 15'	N.C.		0.022	200'	0.025	200'		300'	0.038	300'	0.046	300'
1° 30'	0.020	100'	0.023	200'	0.028	200'	0.035	300'	0.043	300'	0.054	300'
1° 45'	0.020	100'	0.025	200'	0.030	200'	0.039	300'	0.049	300'	0.061	300'
2° 00'	0.020	100'	0.026	200'	0.033	200'	0.043	300'	0.055	300'	0.069	300'
2° 15'	0.021	100'	0.028	200'	0.035	200'	0.047	300'	0.060	300'	0.077	400'
2° 30'	0.022	100'	0.030	200'	0.038	200'	0.051	300'	0.066	300'	0.085	400'
2° 45'	0.023	100'	0.032	200'	0.041	200'	0.055	300'	0.072	300'	0.092	400'
3° 00'	0.023	100'	0.033	200'	0.043	200'	0.060	300'	0.077	300'	0.100	400'
3° 15'	0.024	100'	0.035	200'	0.045	200'	0.064	300'	0.083	300'		
3° 30'	0.025	100'	0.036	200'	0.048	200'	0.068	300'	0.089	400'		
3° 45'	0.026	100'	0.038	200'	0.051	200'	0.072	300'	0.094	400'		
4° 00'	0.027	100'	0.039	200'	0.054	200'	0.076	300'	0.100	400'		
4° 30'	0.028	100'	0.042	200'	0.059	200'	0.084	300'				
5° 00'	0.030	100'	0.046	200'	0.064	200'	0.092	300'				
5° 30'	0.032	100'	0.049	200'	0.069	300'	0.100	300'				
6° 00'	0.034	100'	0.052	200'	0.074	300'						
6° 30'	0.035	100'	0.055	200'	0.080	300'						
7° 00'	0.037	100'	0.058	200'	0.085	300'						
7° 30'	0.039	100'	0.062	200'	0.090	300'						
8° 00'	0.041	100'	0.065	200'	0.095	300'						
8° 30'	0.042	100'	0.068	200'	0.100	300'						
9° 00'	0.044	100'	0.071	200'								
10° 00'	0.048	100'	0.078	200'								
11° 00'	0.051	100'	0.084	200'								
12° 00'	0.055	150'	0.090	200'								
13° 00'	0.058	150'	0.097	200'								
13° 30'	0.060	150'	0.100	200'								
14° 00'	0.062	150'										
15° 00'	0.065	150'										
16° 00'	0.069	150'										
17° 00'	0.072	150'										
18° 00'	0.076	150'										
19° 00'	0.080	150'										
20° 00'	0.083	150'										
21° 00'	0.086	200'										
22° 00'	0.090	200'										
23° 00'	0.093	200'										
24° 00'	0.097	200'										
25° 00'	0.100	200'										



NOTE: MAINTAIN NORMAL CROWN ON INSIDE UNTIL SUPERELEVATION EXCEEDS 2C.

TWO-WAY TRAFFIC
$$\text{SUPERELEVATION} = \frac{L \cdot de}{L_s}$$



GENERAL NOTE
FOUR LANE UNDIVIDED PAVEMENTS SHALL HAVE 50% ADDITIONAL TRANSITION LENGTH (L_s).
ON PAVEMENT WITH TWO-WAY TRAFFIC THE SUPERELEVATION SHALL BE REVOLVED ON THE INSIDE EDGE OF PAVEMENT. ON PAVEMENT WITH ONE-WAY TRAFFIC THE SUPERELEVATION SHALL BE REVOLVED ON THE PROFILE GRADE POINT.
SUPERELEVATION VALUES SHOWN ON CROSS SECTIONS ARE VALUES (+) OR (-) TO BE ADDED OR SUBTRACTED FROM THE POINT OF CONTROL.


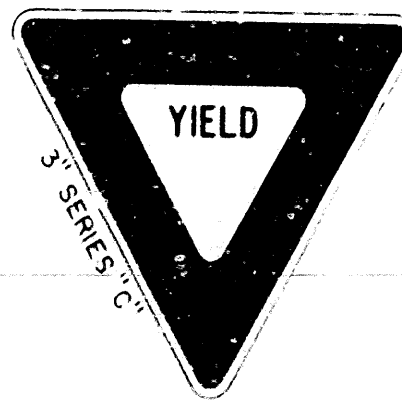
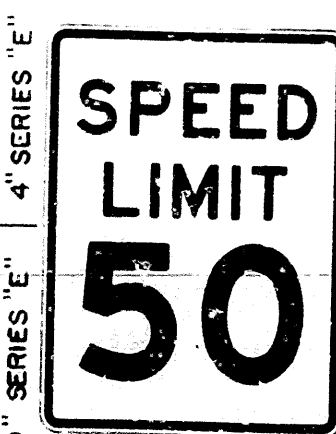
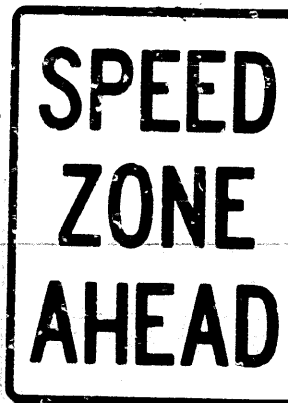
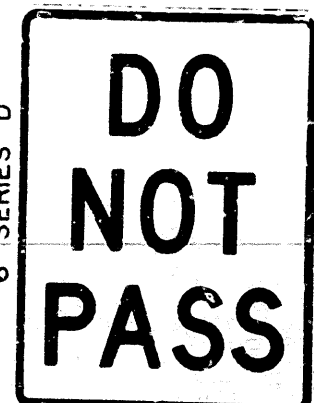

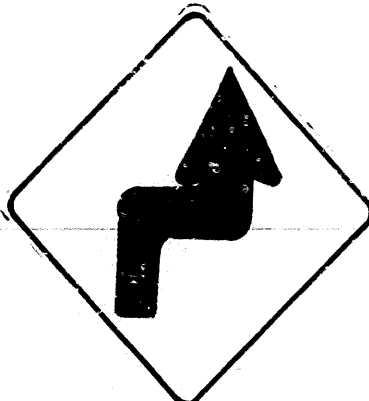
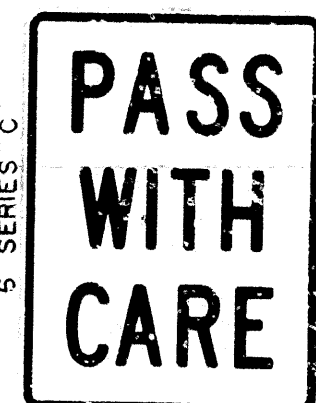

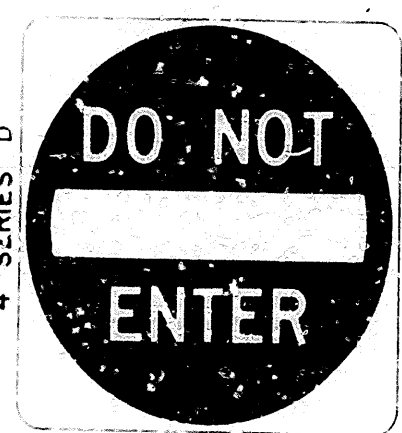
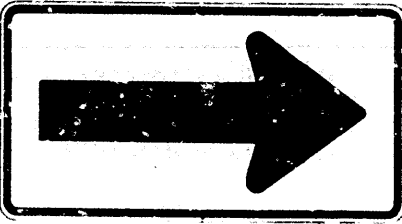

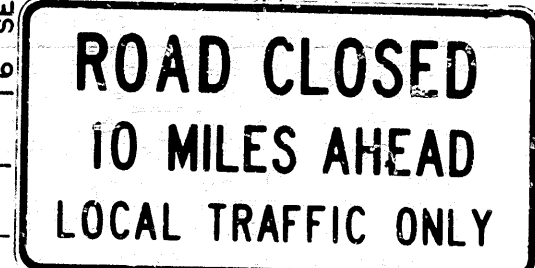

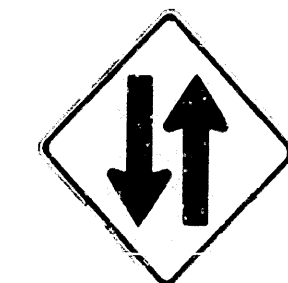

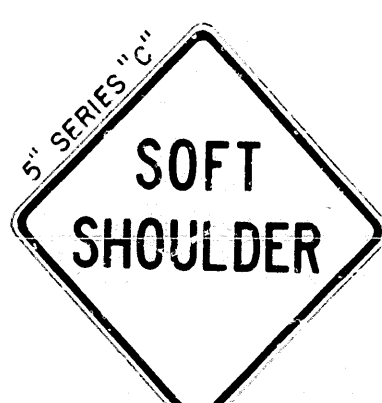



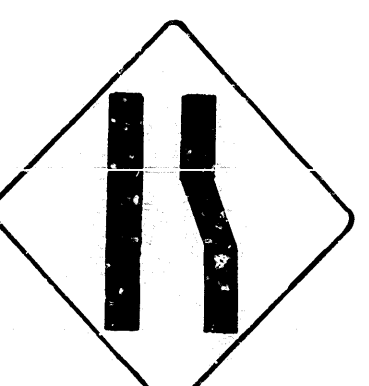
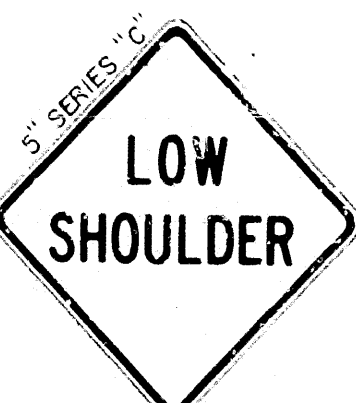


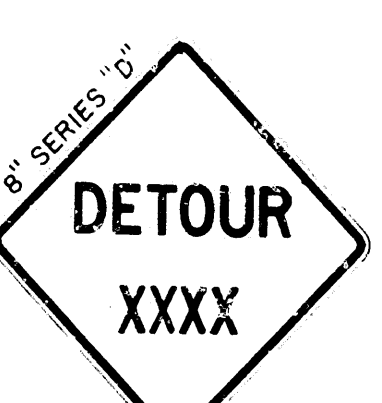
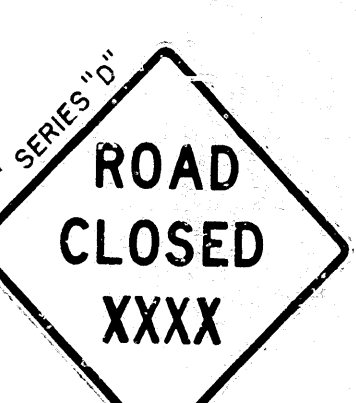



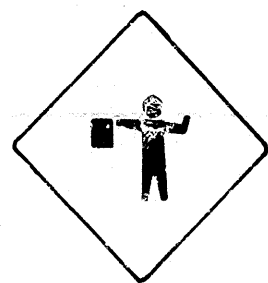

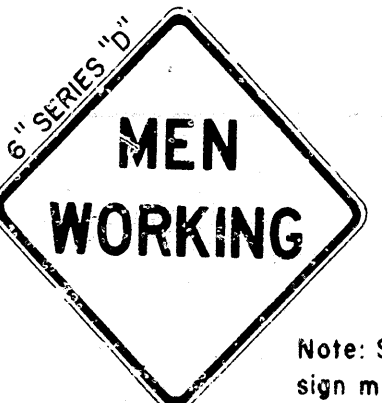

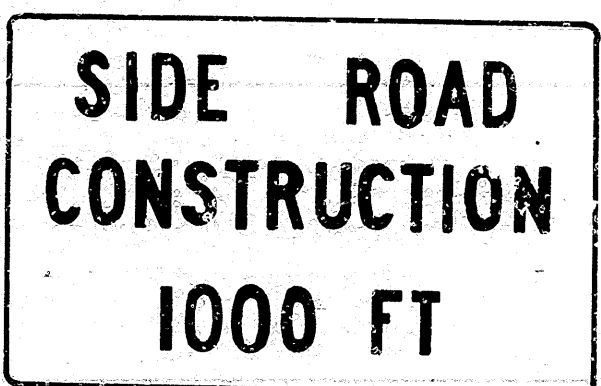


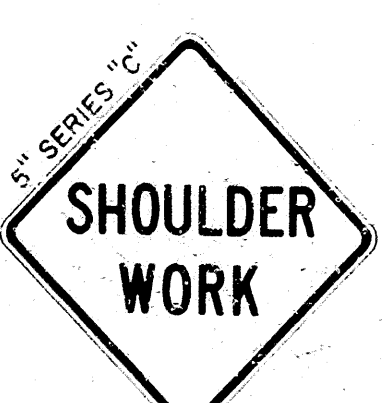
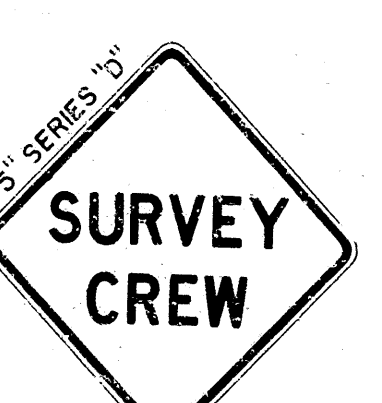
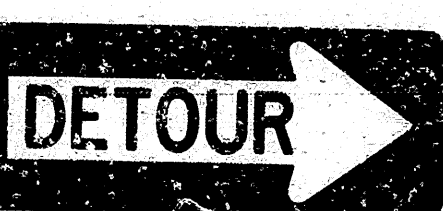
* APPLIES TO DESIGN SPEEDS OF 60 M.P.H. OR MORE. FOR DESIGN SPEEDS OF LESS THAN 60 M.P.H., USE L_s AS SHOWN IN TABLE.

**ONE-WAY TRAFFIC
OUTSIDE LANE**
$$\text{SUPERELEVATION} = \frac{L \cdot (de + C)}{L_s} - C$$

**ONE-WAY TRAFFIC
INSIDE LANE**
$$\text{SUPERELEVATION} = - \frac{L \cdot (de - C)}{L_s} - C$$

- ABBREVIATIONS**
N.C. = NORMAL CROWN
L_s = LENGTH OF SUPERELEVATION TRANSITION
C = NORMAL CROWN IN FEET
d = WIDTH OF PAVEMENT
e = MAXIMUM SUPERELEVATION PER FOOT OF WIDTH
L = DISTANCE FROM BEGINNING OF TRANSITION TO ANY POINT

10-2-72	REVISED AND REDRAWN	5/4-10-2-72
DATE	REVISION	DATE FILMED

<div>R1-1</div> <div></div> <div>30" x 30"</div>	<div>R1-2</div> <div></div> <div>36" x 36" x 36"</div>	<div>R2-1</div> <div></div> <div>24" x 30"</div>	<div>R2-3c</div> <div></div> <div>24" x 30"</div>	<div>R4-1</div> <div></div> <div>24" x 30"</div>	<div>R11-2</div> <div></div> <div>48" x 30"</div>	<div>W1-3</div> <div></div> <div>30" x 30"</div>
<div>R4-2</div> <div></div> <div>24" x 30"</div>	<div>R4-7a</div> <div></div> <div>24" x 30"</div>	<div>R5-1</div> <div></div> <div>30" x 30"</div>	<div>W1-6</div> <div></div> <div>48" x 24"</div>	<div>W5-1</div> <div></div> <div>36" x 36"</div>	<div>R11-3</div> <div></div> <div>60" x 30"</div>	<div>W1-4</div> <div></div> <div>30" x 30"</div>
<div>W6-3</div> <div></div> <div>48" x 48"</div>	<div>W8-3</div> <div></div> <div>30" x 30"</div>	<div>W8-4</div> <div></div> <div>30" x 30"</div>	<div>W8-6</div> <div></div> <div>30" x 30"</div>	<div>W8-7</div> <div></div> <div>30" x 30"</div>	<div>G20-1</div> <div></div> <div>60" x 36"</div>	<div>W4-2</div> <div></div> <div>36" x 36"</div>
<div>W8-9</div> <div></div> <div>30" x 30"</div>	<div>W13-1</div> <div></div> <div>18" x 18" 24" x 24"</div>	<div>W20-1</div> <div></div> <div>48" x 48"</div>	<div>W20-2</div> <div></div> <div>48" x 48"</div>	<div>W20-3</div> <div></div> <div>48" x 48"</div>	<div>G20-2</div> <div></div> <div>60" x 24"</div>	
<div>W20-4</div> <div></div> <div>48" x 48"</div>	<div>W20-5</div> <div></div> <div>48" x 48"</div>	<div>W20-7a</div> <div>  Note: Legend sign may be used.</div> <div>36" x 36" 24" x 18"</div>	<div>W21-1</div> <div> Note: Symbol sign may be used.</div> <div>36" x 36"</div>	<div>W21-2</div> <div></div> <div>30" x 30"</div>	<div>G20-3</div> <div></div> <div>60" x 36"</div>	
<div>W21-3</div> <div></div> <div>36" x 36"</div>	<div>W21-4</div> <div></div> <div>36" x 36"</div>	<div>W21-5</div> <div></div> <div>30" x 30"</div>	<div>W21-6</div> <div></div> <div>30" x 30"</div>	<div>M4-10</div> <div></div> <div>48" x 18"</div>		

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		64	
				JOB NO.				

ADVANCE DISTANCES
(XXXX)

500 FT	1/2 MILE
1000 FT	1 MILE
1500 FT	AHEAD

GENERAL NOTES:

ALL TRAFFIC CONTROL DEVICES USED ON ROAD CONSTRUCTION SHALL CONFORM TO THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS", EDITION OF 1978 AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION AND AS NOTED ON THIS DRAWING.

TRAFFIC CONTROL DEVICES SHALL BE SET UP PRIOR TO THE START OF CONSTRUCTION OPERATIONS AND SHALL BE PROPERLY MAINTAINED DURING THE TIME SUCH CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS NEEDED AND IMMEDIATELY REMOVED THEREAFTER.

SIGNS SHALL BE KEPT IN PROPER POSITION, CLEAN AND LEGIBLE AT ALL TIMES. SIGNS THAT DO NOT APPLY TO EXISTING CONDITIONS SHALL BE REMOVED. DAMAGED, DEFACED OR DIRTY SIGNS SHALL BE CLEANED, REPAIRED OR REPLACED.

SIGNS ARE USUALLY MOUNTED ON A SINGLE POST, ALTHOUGH THOSE WIDER THAN 36" OR LARGER THAN 10 S.F. SHALL BE MOUNTED ON TWO POSTS OR ABOVE A TYPE III OR WING BARRICADE.

ALL SIGNS AND BARRICADES SHALL BE CONSTRUCTED WITH TYPE I REFLECTIVE SHEETING OR AS SPECIFIED OTHERWISE. SIGN MATERIAL SHALL BE 14 GAGE GALVANIZED STEEL, 0.085 THICKNESS ALUMINUM OR EXTERIOR GRADE PLASTIC FACED PLYWOOD OF 5/8" THICKNESS. LETTERS, BORDERS AND SPACINGS FOR SIGNS SHALL CONFORM TO REQUIREMENTS IN THE "HIGHWAY SIGN MANUAL."

ALL SIGN AND BARRICADE POSTS SHALL BE 4"x4" WOOD, BE PAINTED WHITE, BE NEATLY CONSTRUCTED, BE CLEANED OR REPAINTED AS NEEDED AND KEPT IN GOOD REPAIR FOR THE DURATION OF THE JOB. A 2 LB. CHANNEL POST ASSEMBLY MAY BE USED IN LIEU OF THE 4"x4" POST.

POST MOUNTED SIGNS SHALL BE CONSTRUCTED WITH THE NEAR EDGE OF THE SIGN FROM 6 TO 12 FEET FROM THE PAVEMENT EDGE. BARRICADE MOUNTED SIGNS SHALL BE MOUNTED NEAR THE CENTER OF THE BARRICADE WITH THE END OF THE BARRICADE A MINIMUM OF 2 FEET FROM THE PAVEMENT EDGE.

ALL POST AND BARRICADE MOUNTED SIGNS SHALL BE MOUNTED A MINIMUM DISTANCE OF 5 FEET FROM THE BOTTOM OF THE SIGN TO THE ROADWAY SURFACE, EXCEPT A MINIMUM OF 4 FEET SHALL BE USED WHEN MOUNTING AN ADVISORY SIGN BELOW A WARNING SIGN.

ADVANCE WARNING SIGNS SHOULD BE PLACED 1500' IN ADVANCE OF THE WORK. WHEN USING A SERIES OF ADVANCE WARNING SIGNS, THE NEAREST SIGN TO THE WORK WILL BE 500' WITH ADDITIONAL SIGNS AT 500' INTERVALS. WHERE SPEEDS ARE LOW, SIGNS MAY BE PLACED AT 300' INTERVALS OR LESS. WHERE SPEEDS ARE HIGH, THE ADVANCE WARNING DISTANCE IS TO BE INCREASED TO ONE HALF MILE OR MORE.

WARNING SIGNS SHALL HAVE BLACK LEGEND AND BORDER ON ORANGE REFLECTORIZED BACKGROUND.

REGULATORY SIGNS SHALL HAVE BLACK LEGEND AND BORDER ON WHITE REFLECTORIZED BACKGROUND.

GUIDE SIGNS SHALL HAVE A WHITE LEGEND ON A GREEN REFLECTORIZED BACKGROUND.

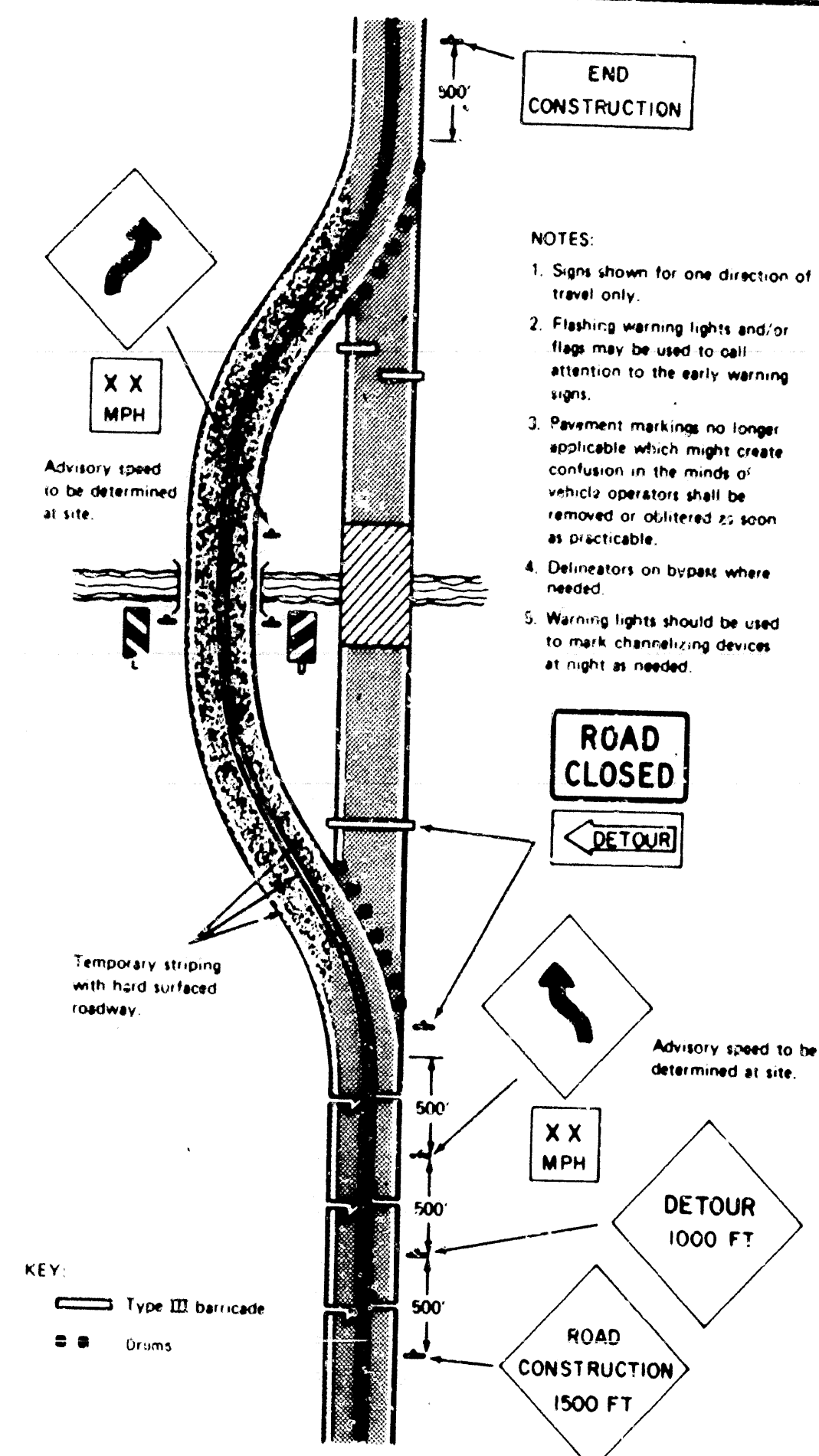
BARRICADE RAILS AND VERTICAL PANELS SHALL HAVE ALTERNATE ORANGE AND WHITE MARKINGS.

FLAGMEN SHALL USE REFLECTORIZED STOP-SLOW SIGN PADDLES.

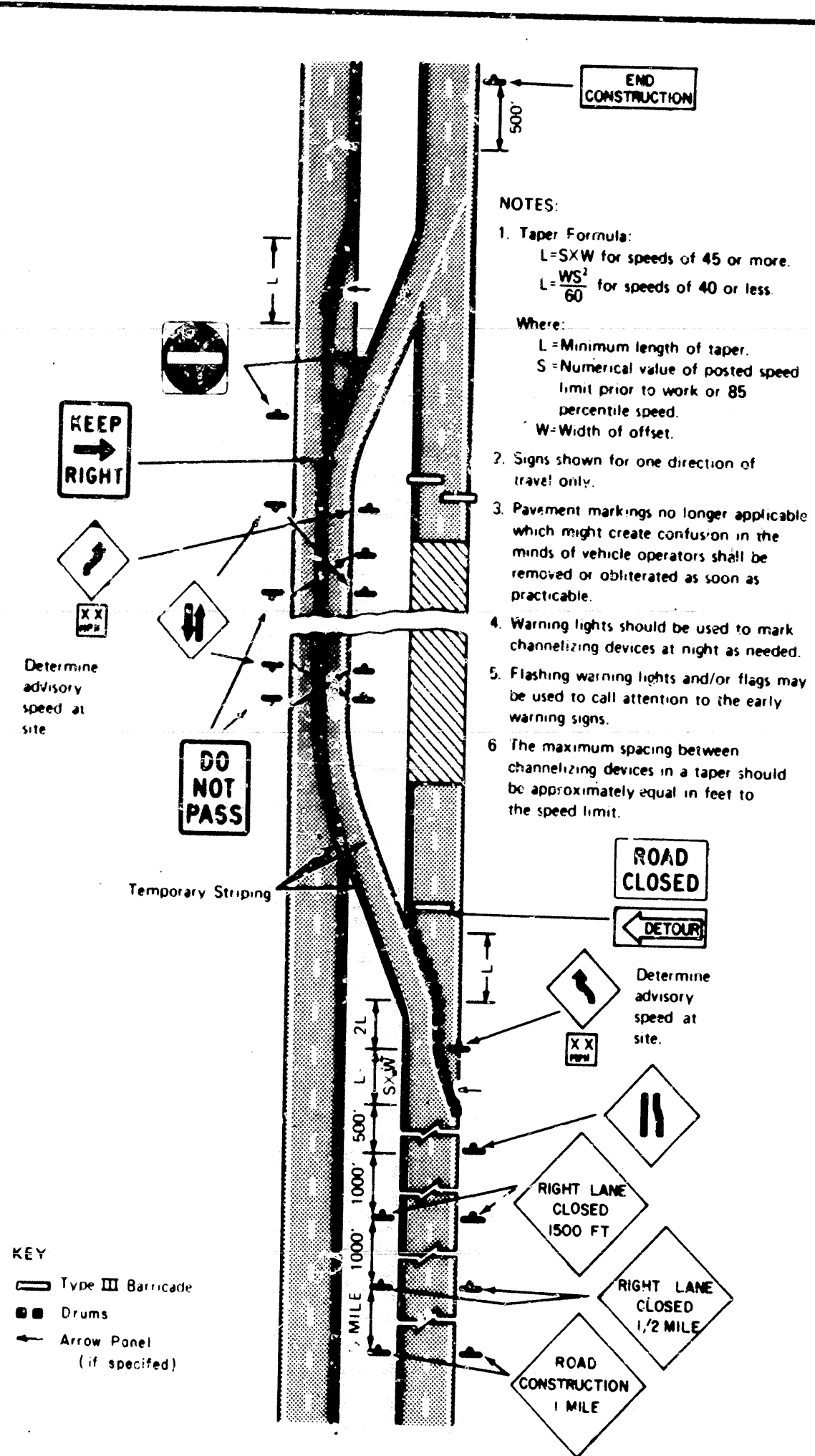
MARKINGS ON DRUMS SHALL BE HORIZONTAL, CIRCUMFERENTIAL, ORANGE AND WHITE REFLECTORIZED STRIPES. THERE SHALL BE AT LEAST TWO ORANGE AND TWO WHITE STRIPES ON EACH DRUM. ANY NONREFLECTORIZED SPACES BETWEEN THE HORIZONTAL ORANGE AND WHITE STRIPES SHALL BE NO MORE THAN 2" WIDE AND MAY BE PAINTED BLACK OR ANOTHER SUITABLE COLOR.

ARKANSAS STATE HIGHWAY COMMISSION STANDARD TRAFFIC CONTROLS FOR HIGHWAY CONSTRUCTION STD. DWG. NO. TC-1		
5-15-80	CHANGE IN GEN. NOTES	669-5-1580
5-24-79	DRAWN & PLACED IN USE	669-5-2479
DATE	REVISION	FILMED

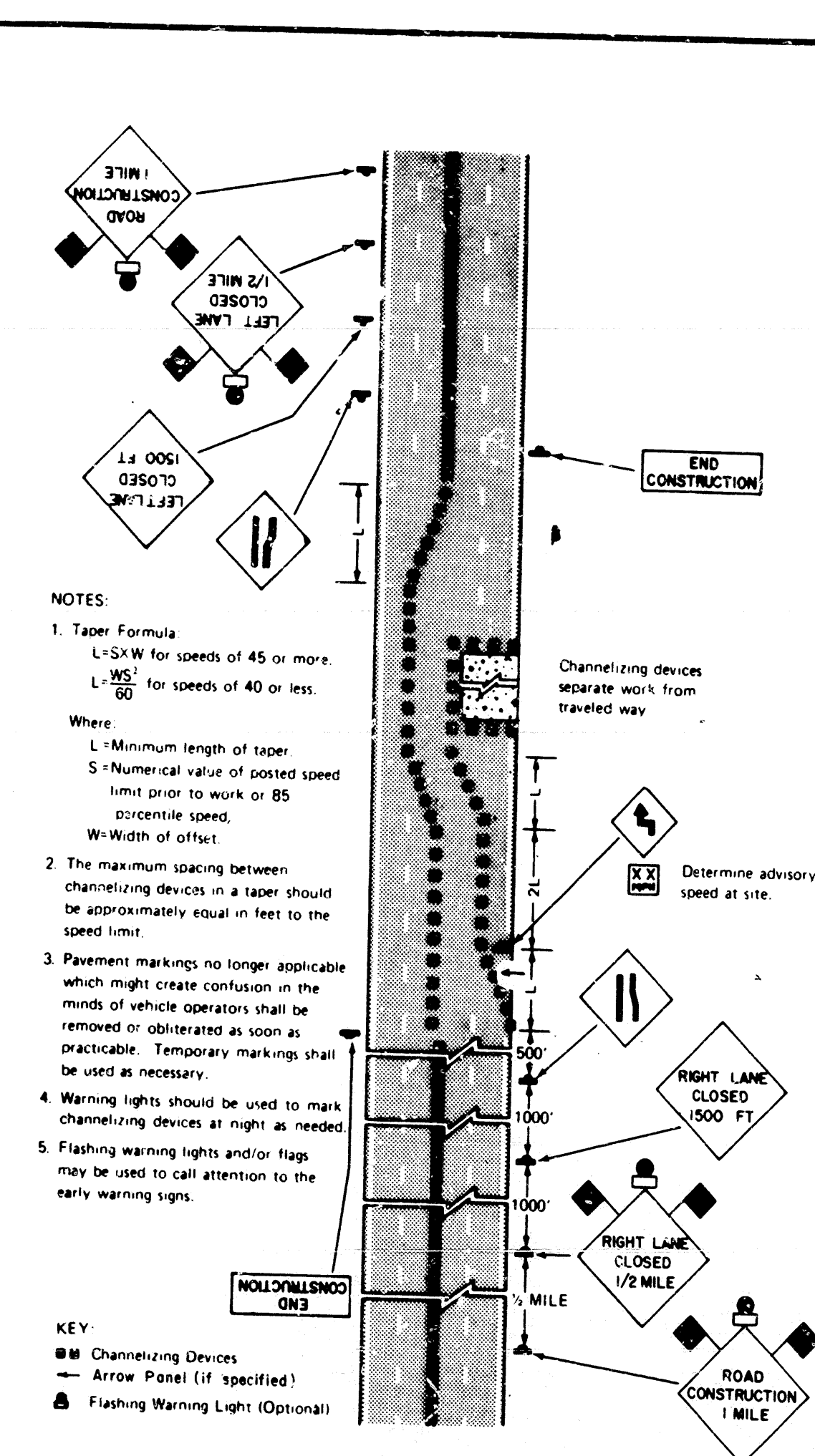
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.		6	
				JOB NO.				



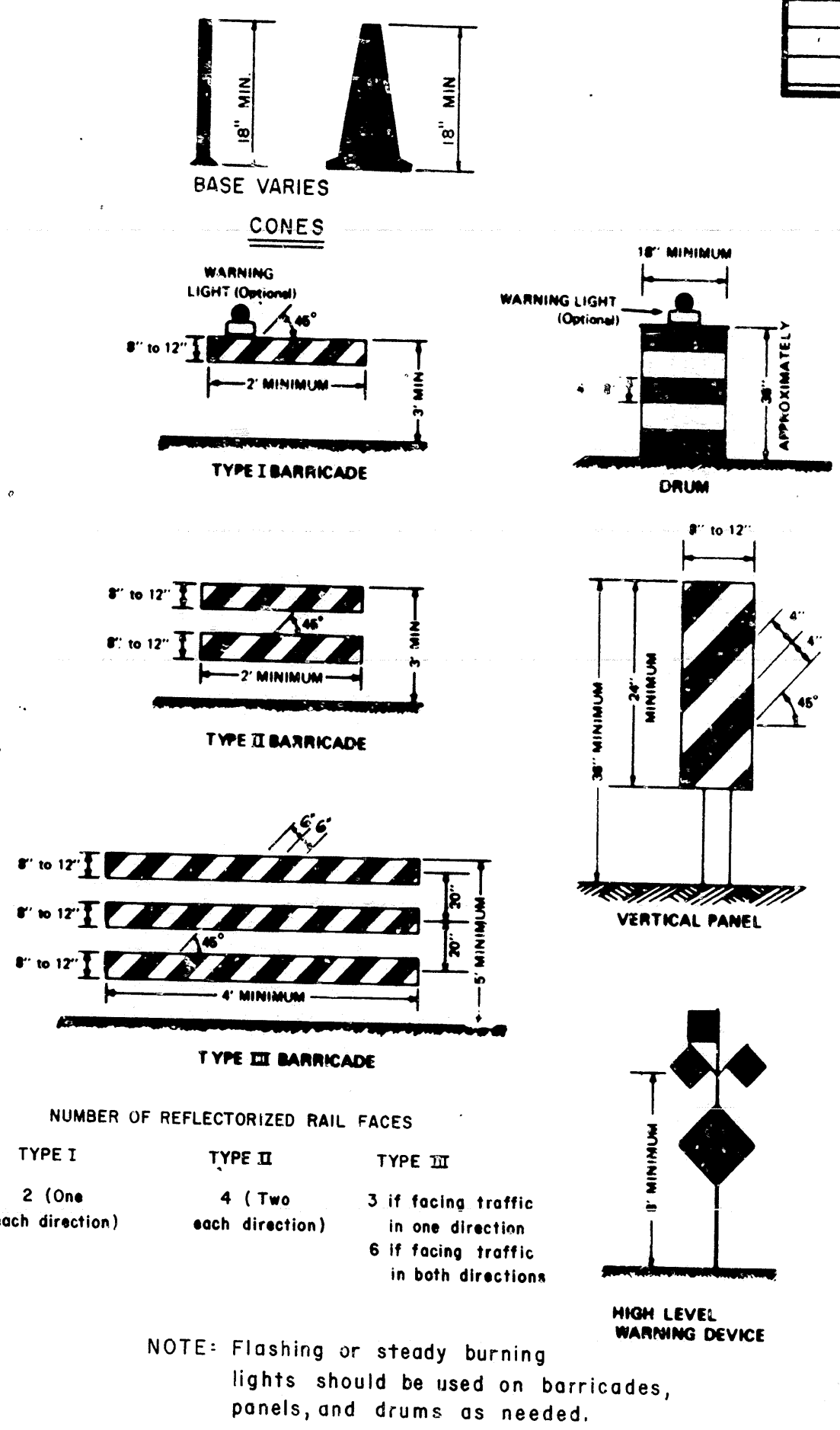
Typical applications of traffic control devices on a 2-lane highway where the entire roadway is closed and a bypass detour is provided.



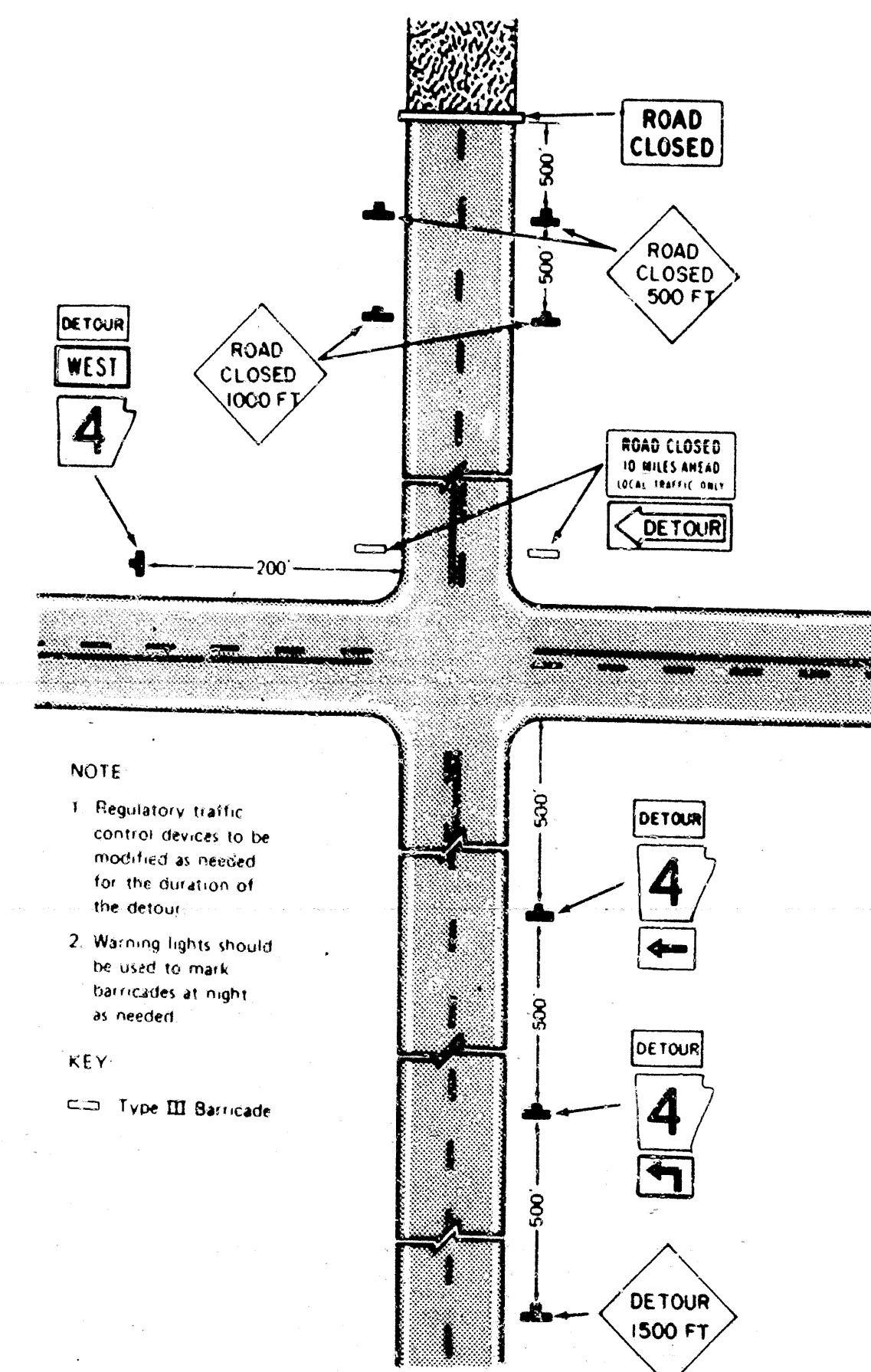
Typical application—4-lane divided roadway where one roadway is closed.



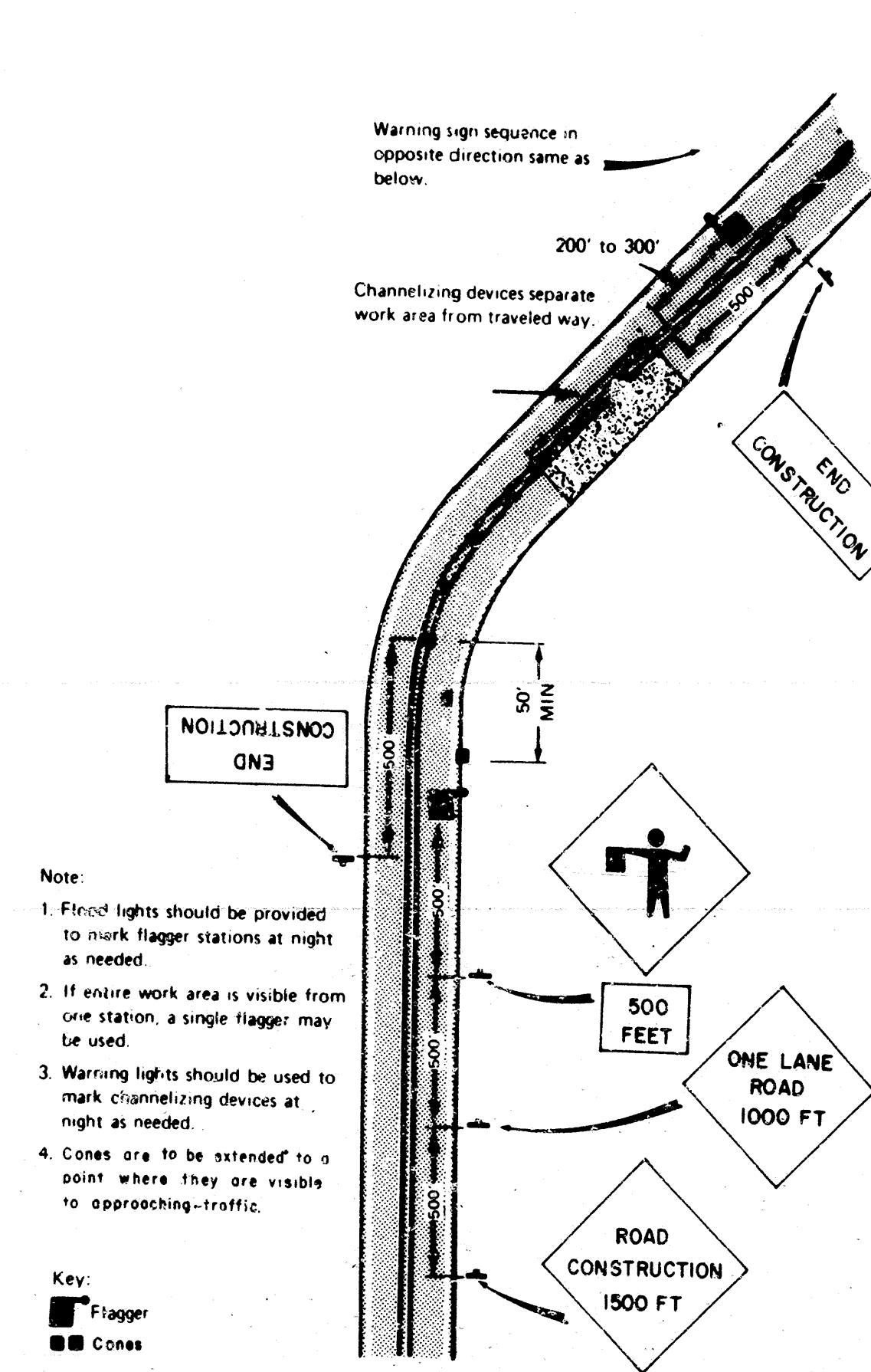
Typical application—4-lane undivided roadway where half the roadway is closed.



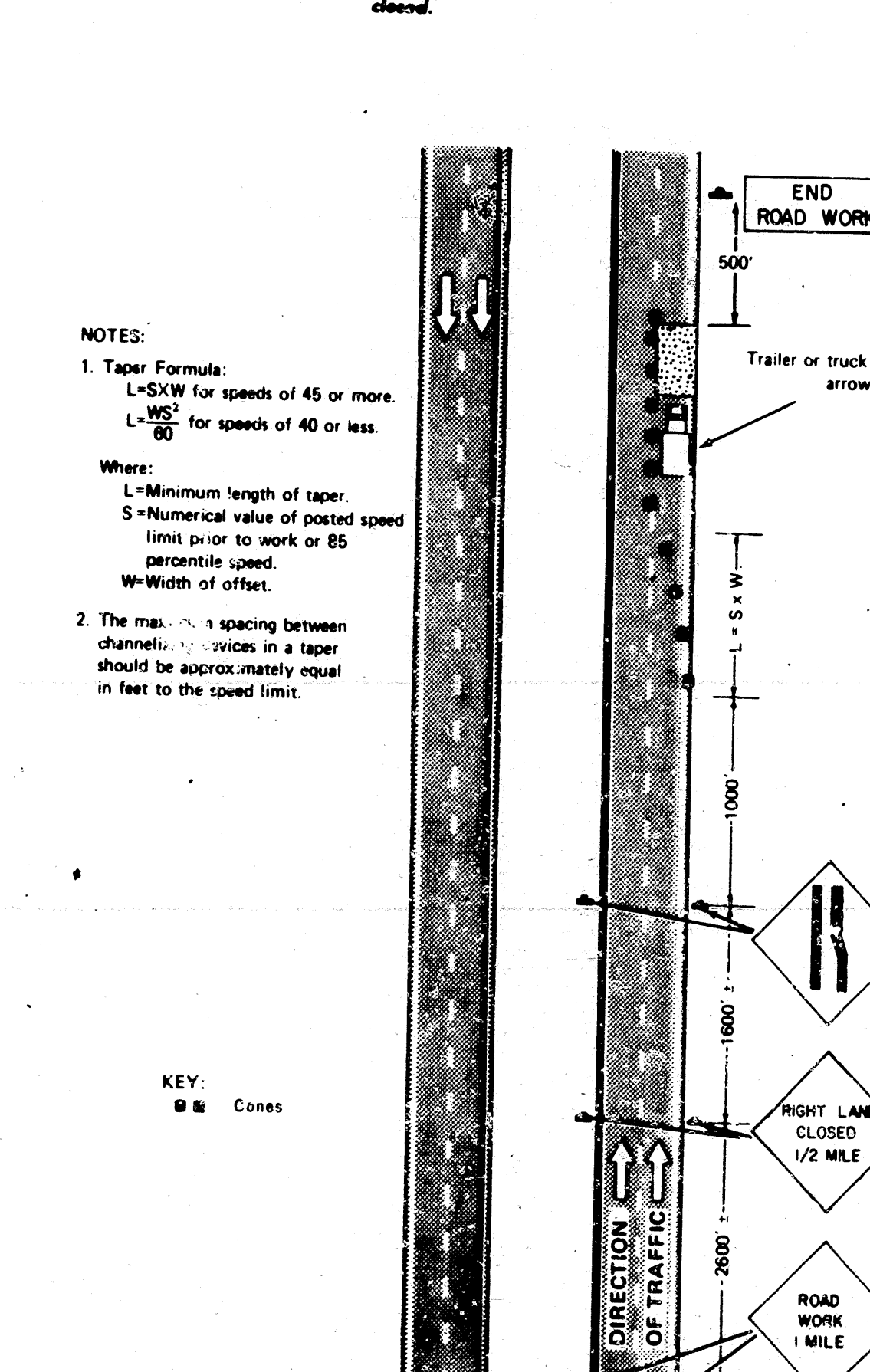
Channelizing devices and high level warning devices.



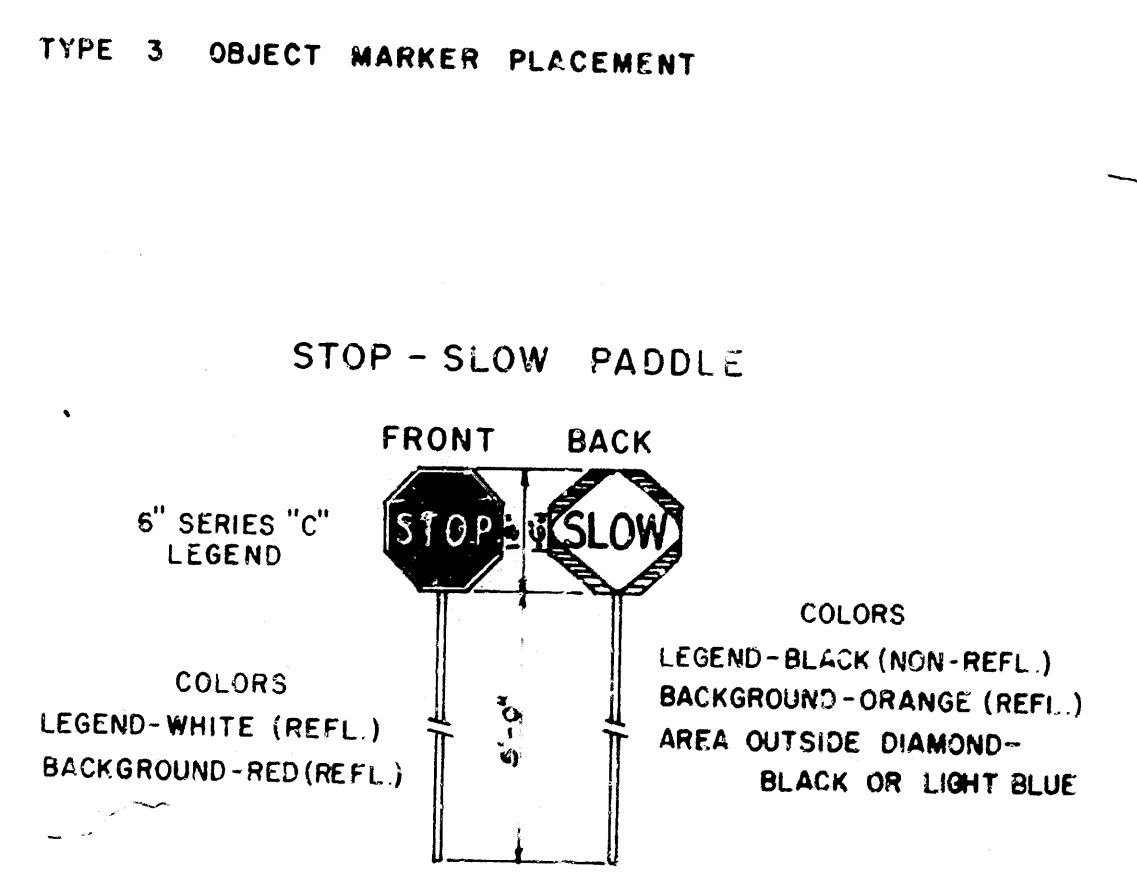
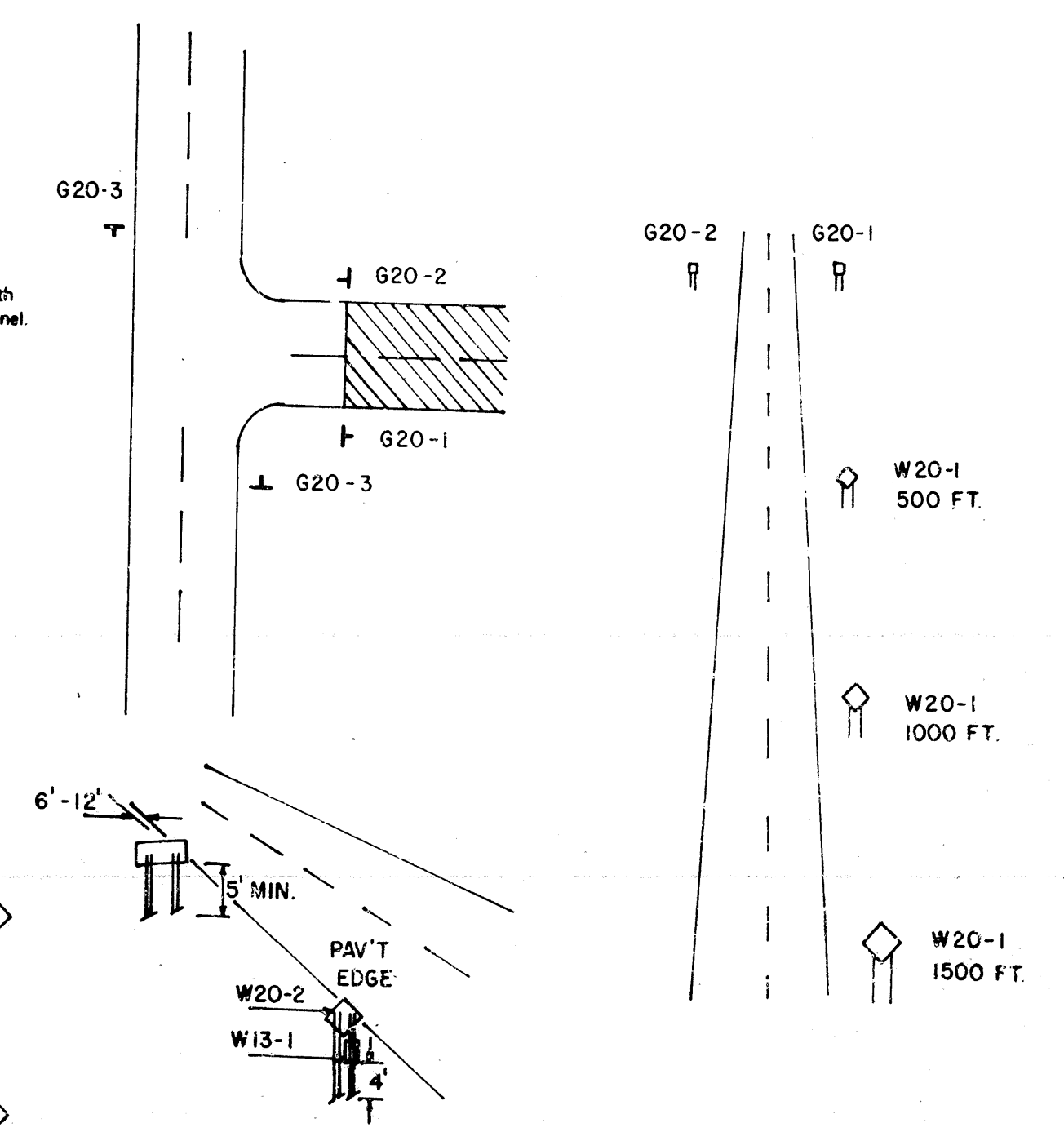
Typical application—roadway closed beyond detour point.



Typical applications of traffic control devices on 2-lane highway where one lane is closed and flagging is provided.

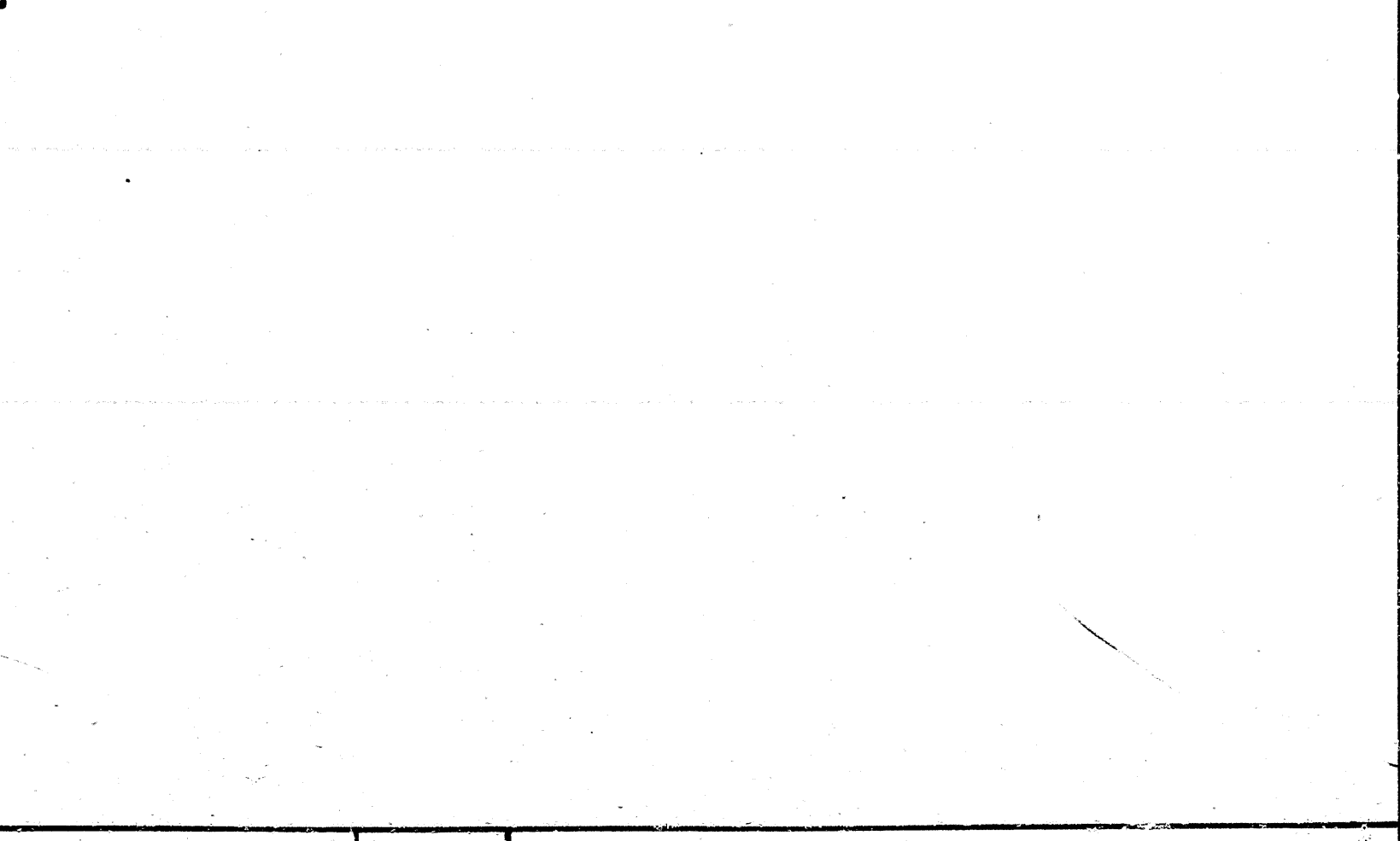
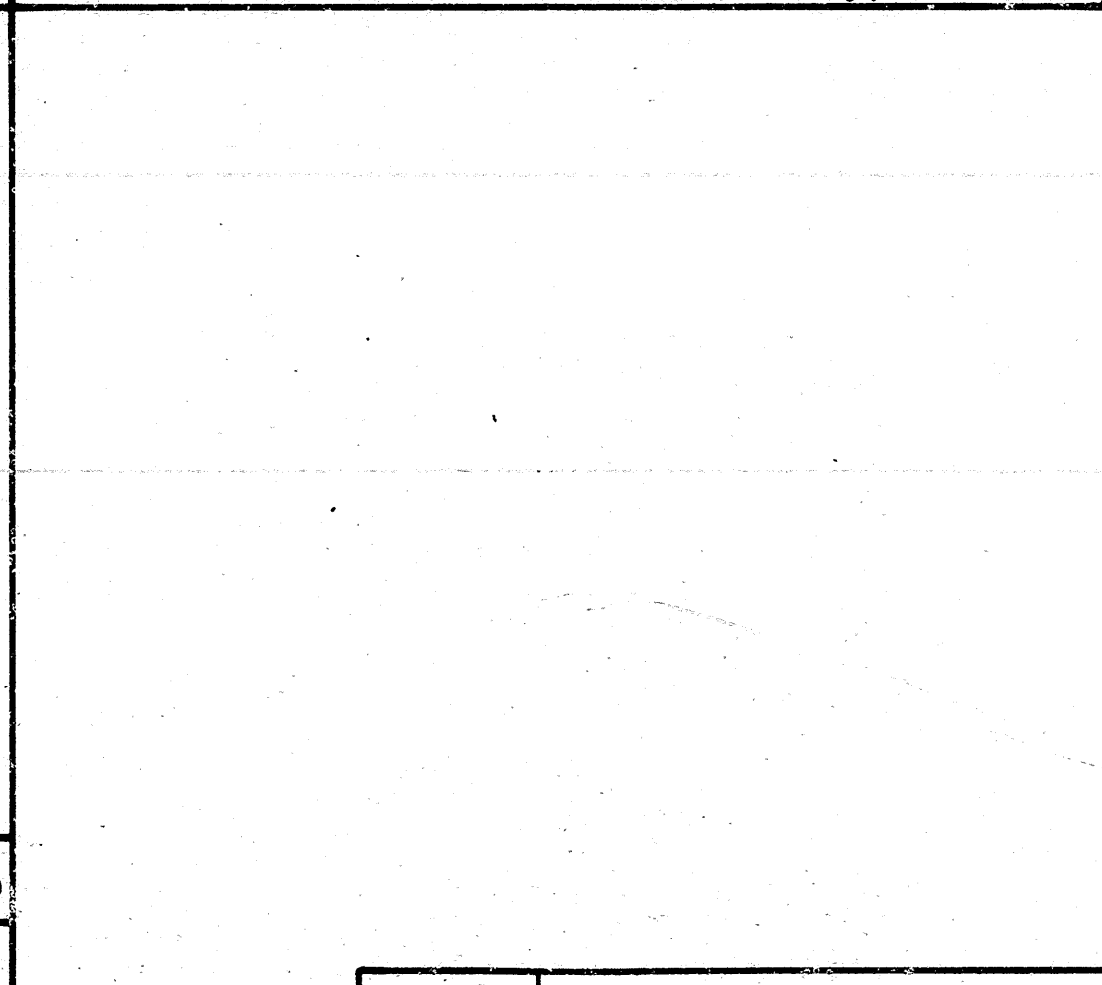
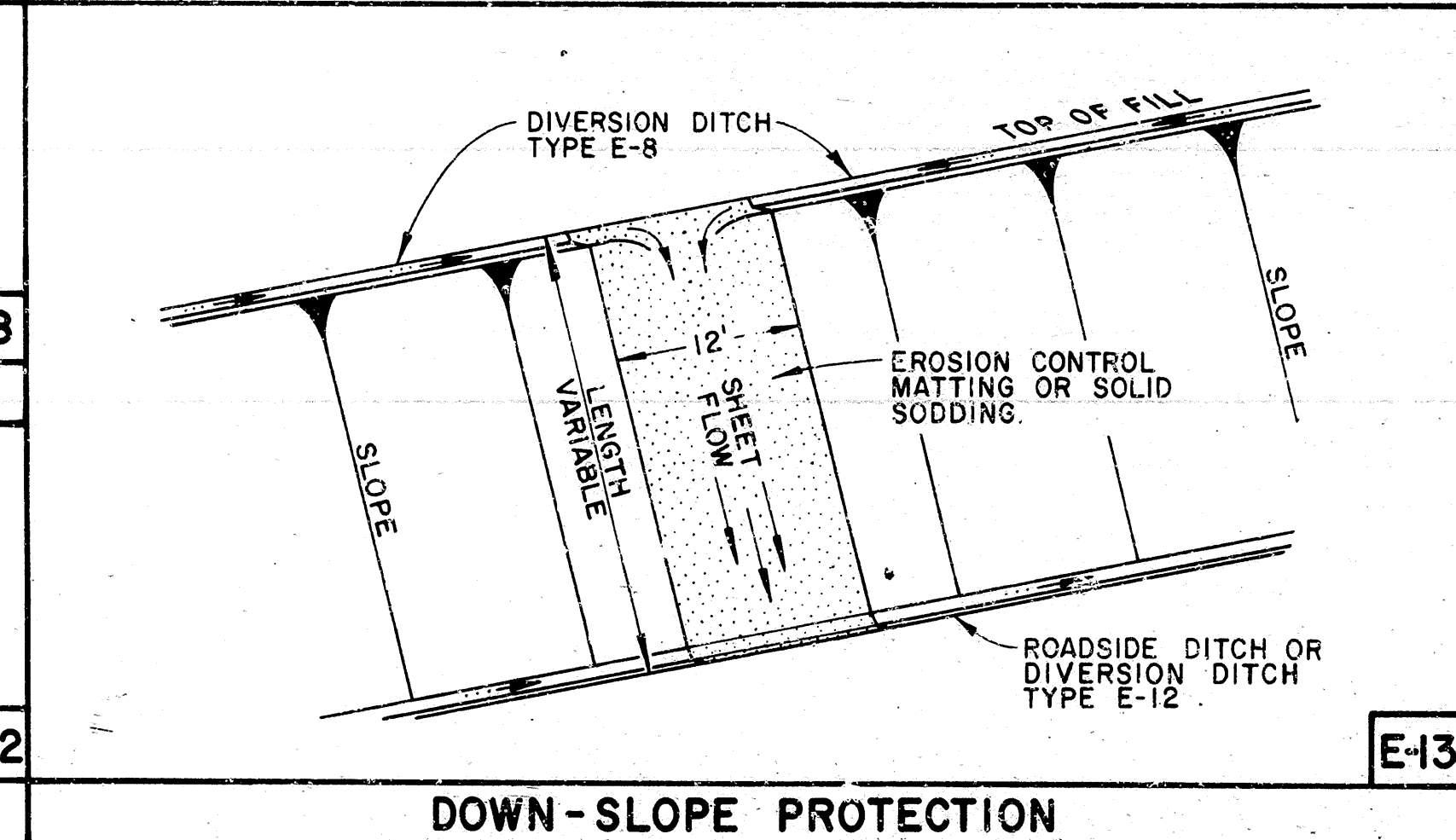
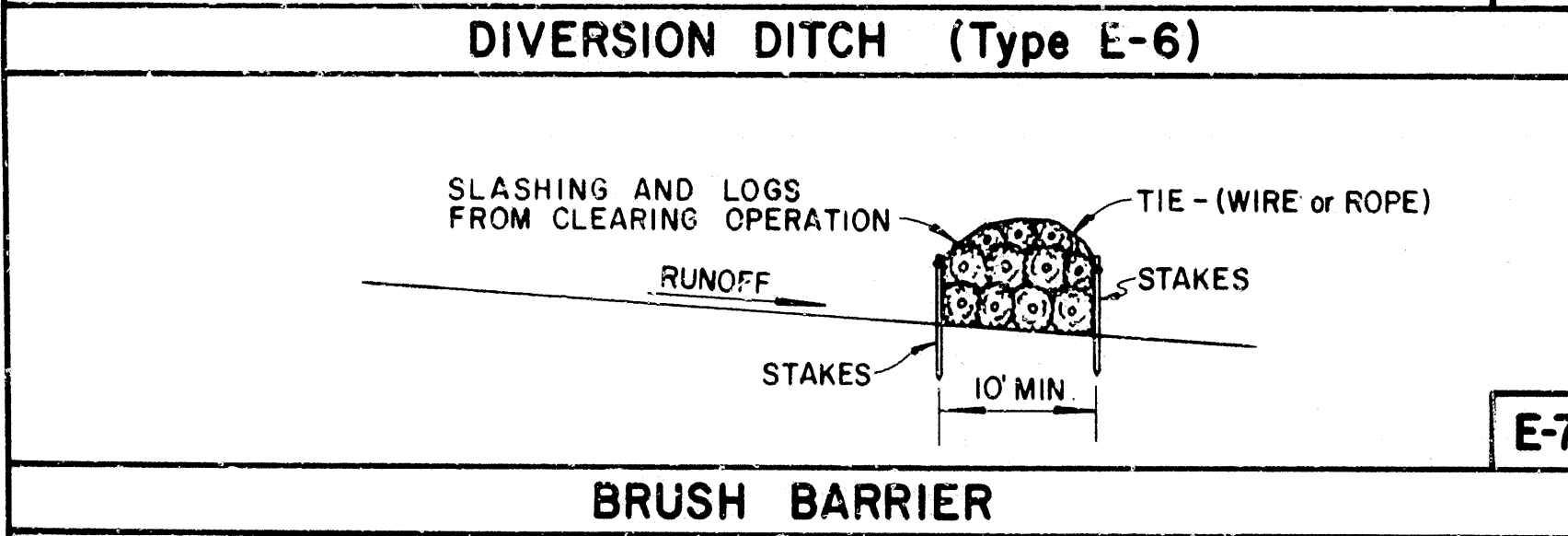
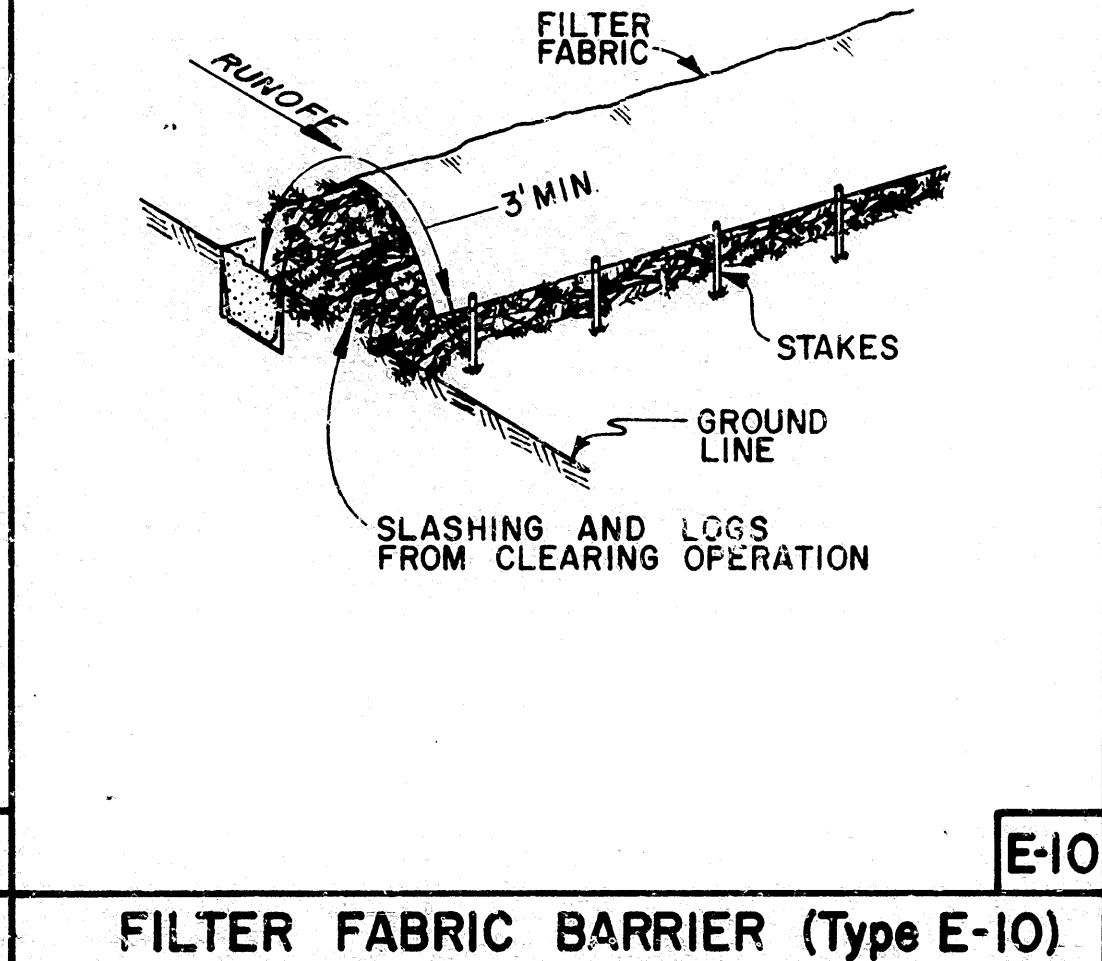
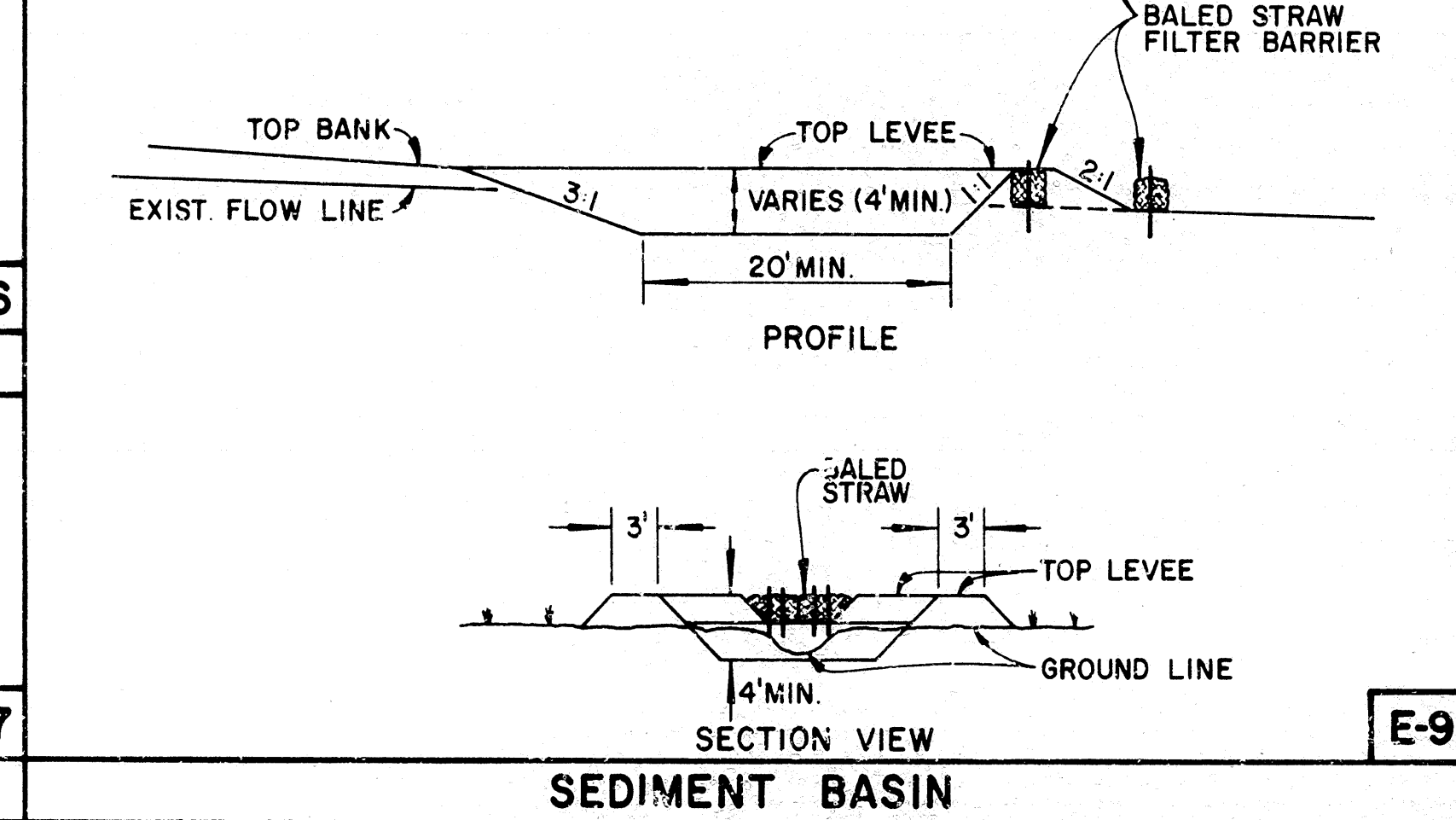
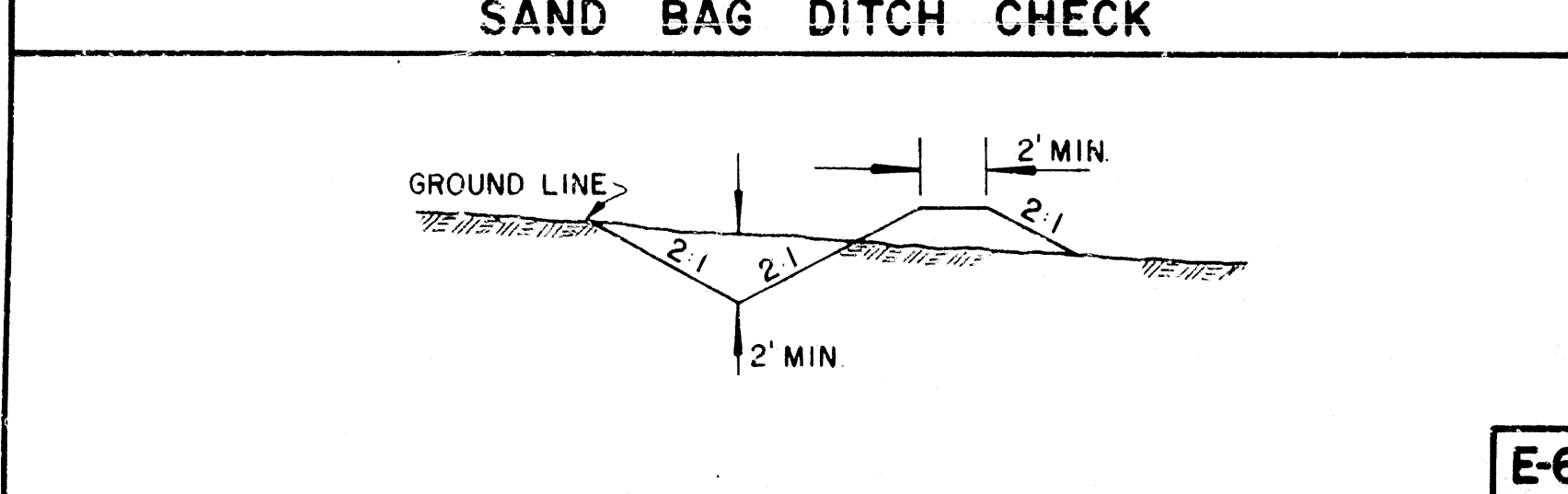
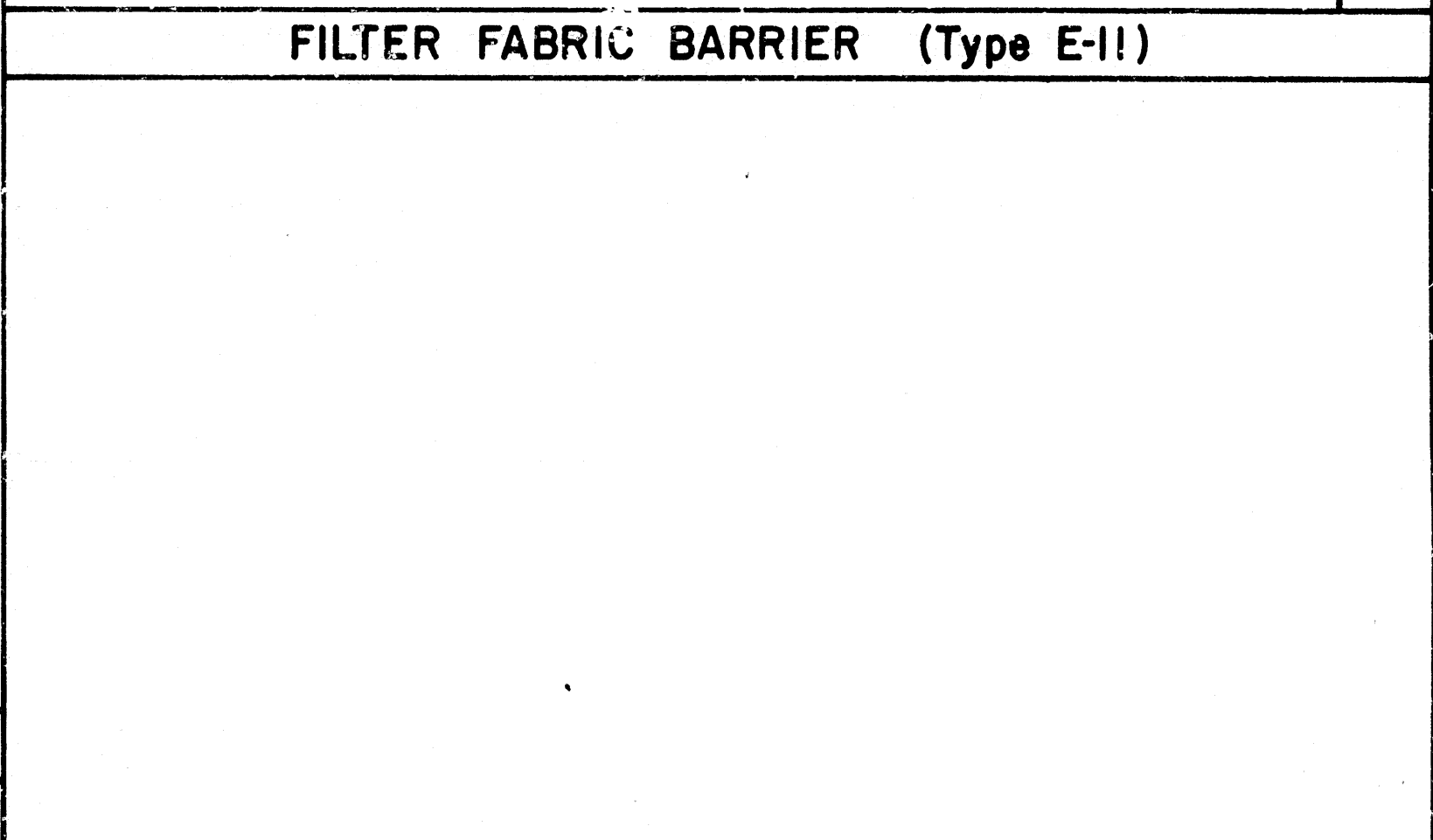
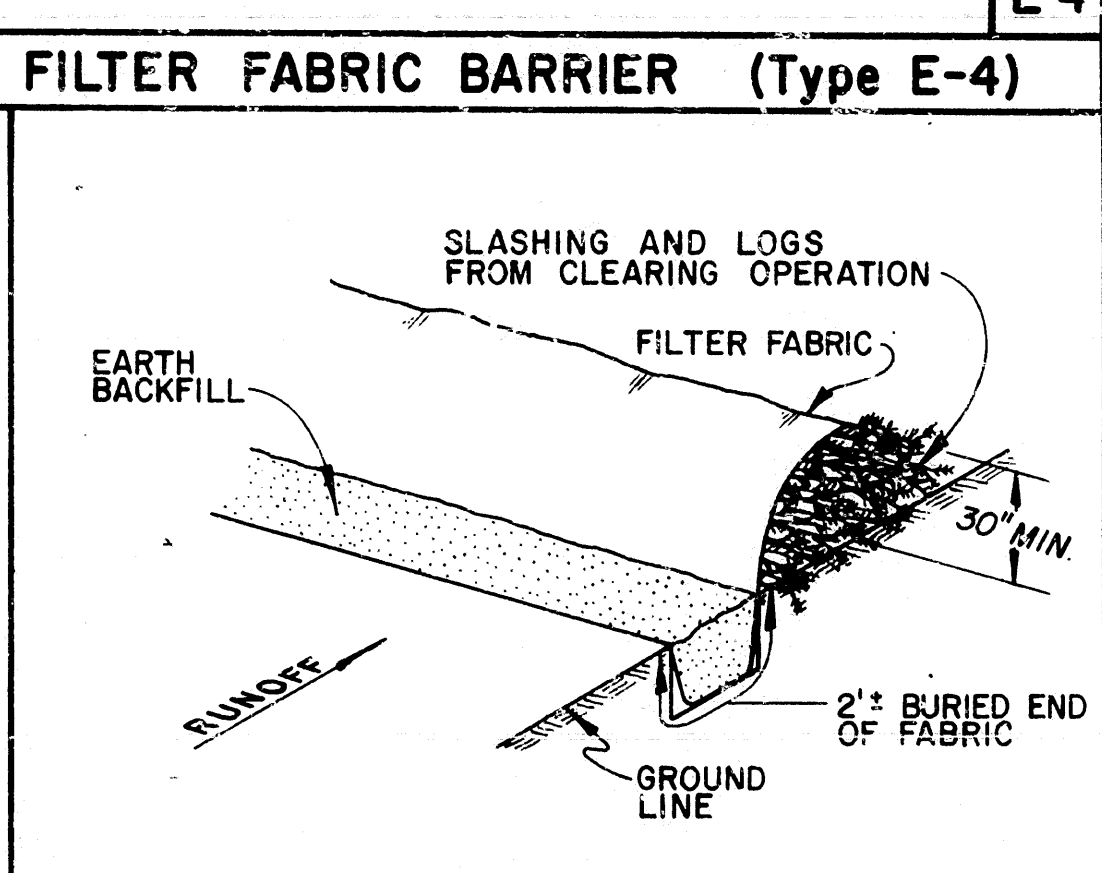
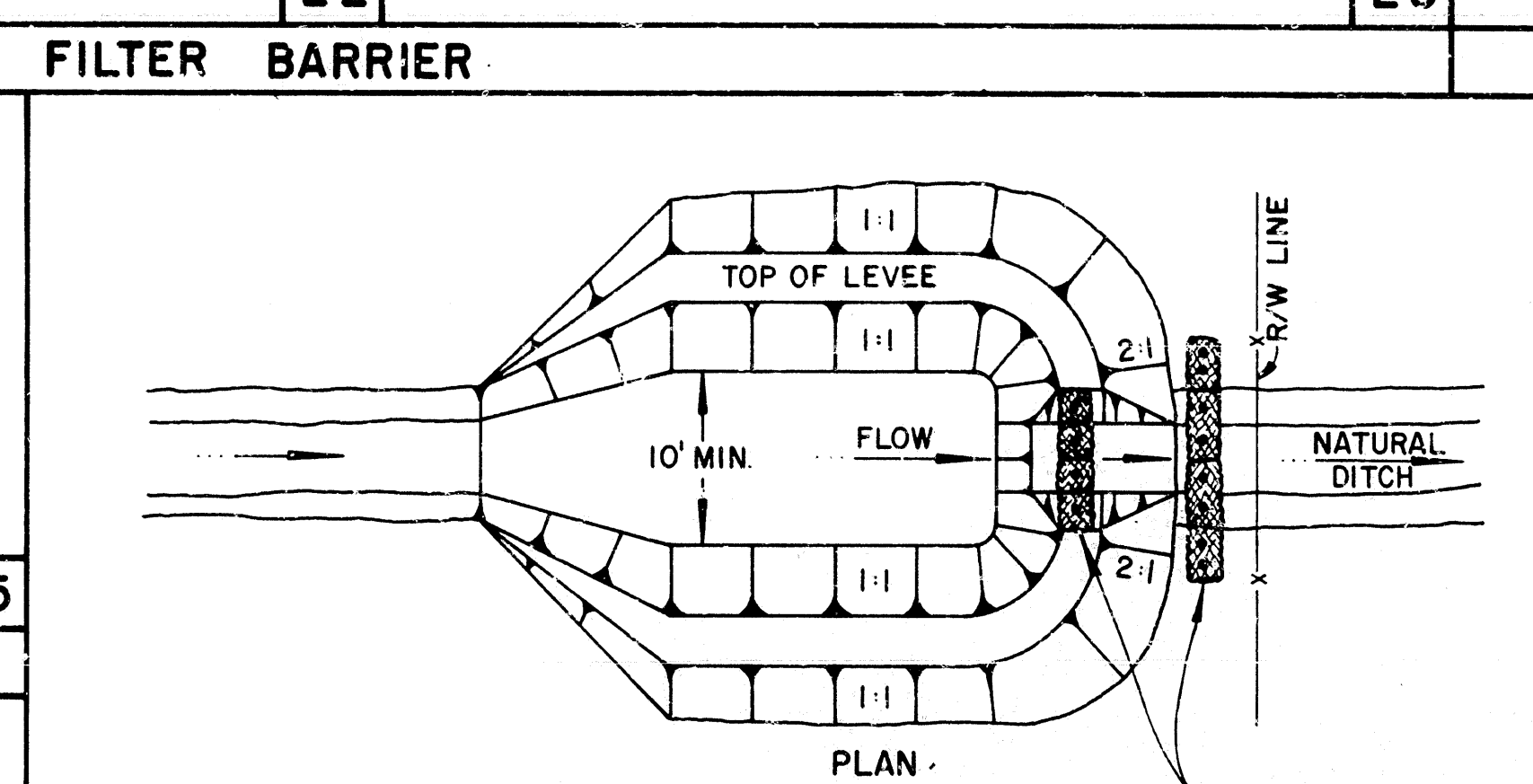
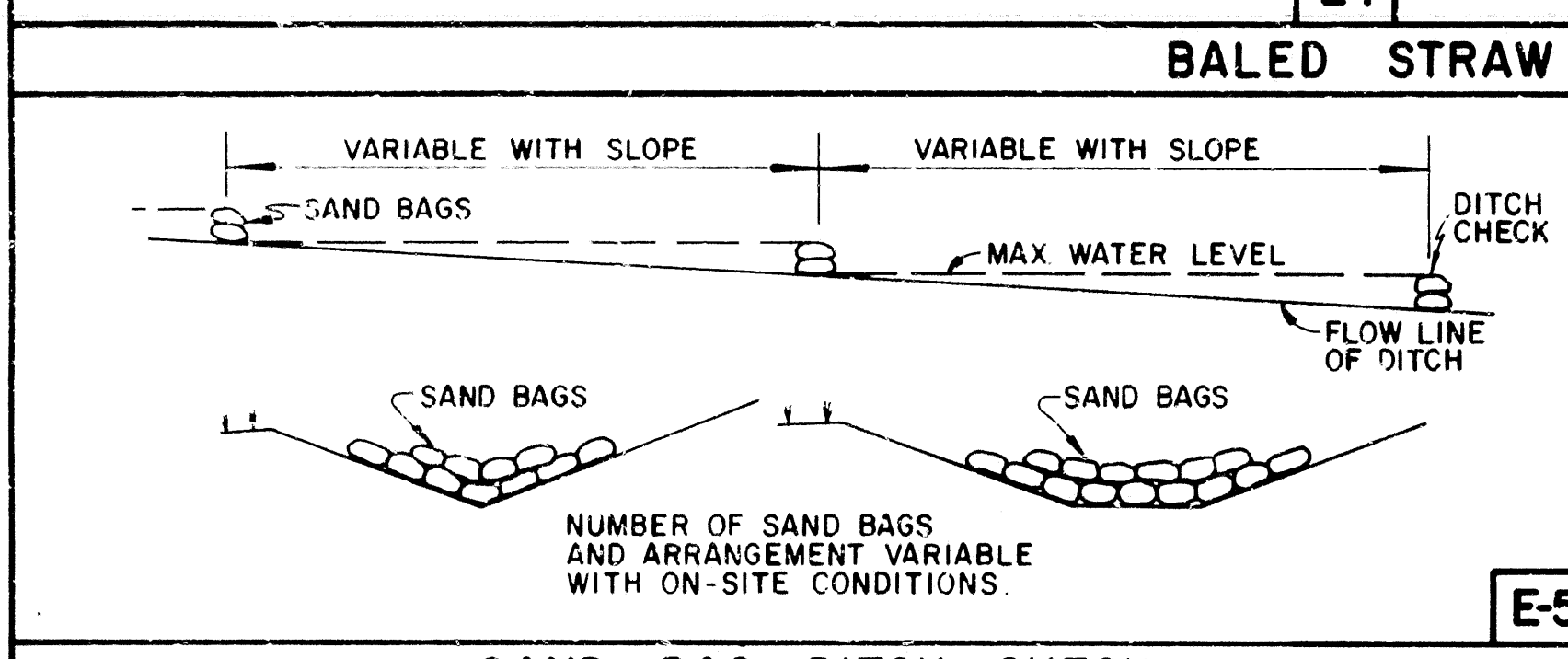
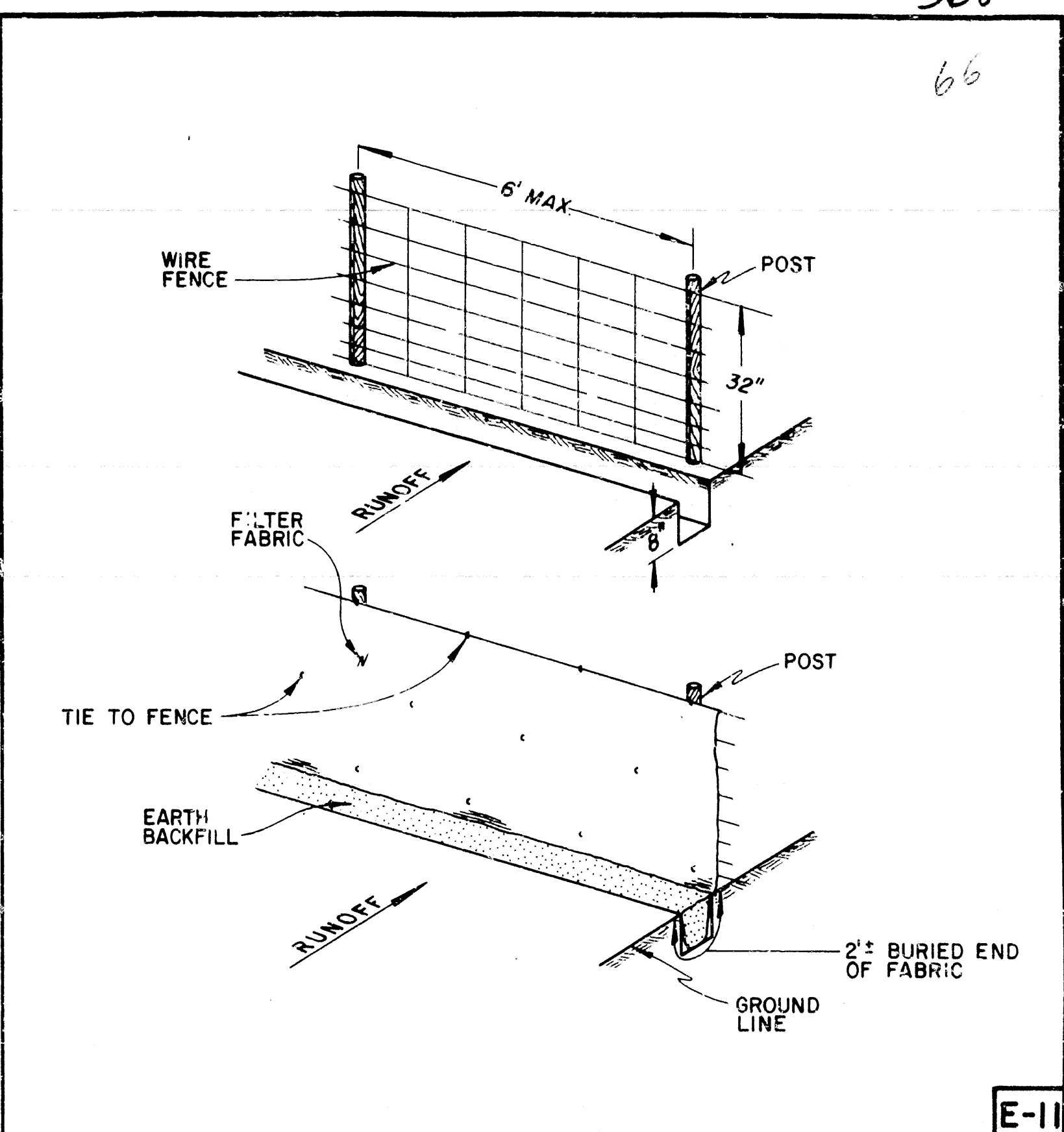
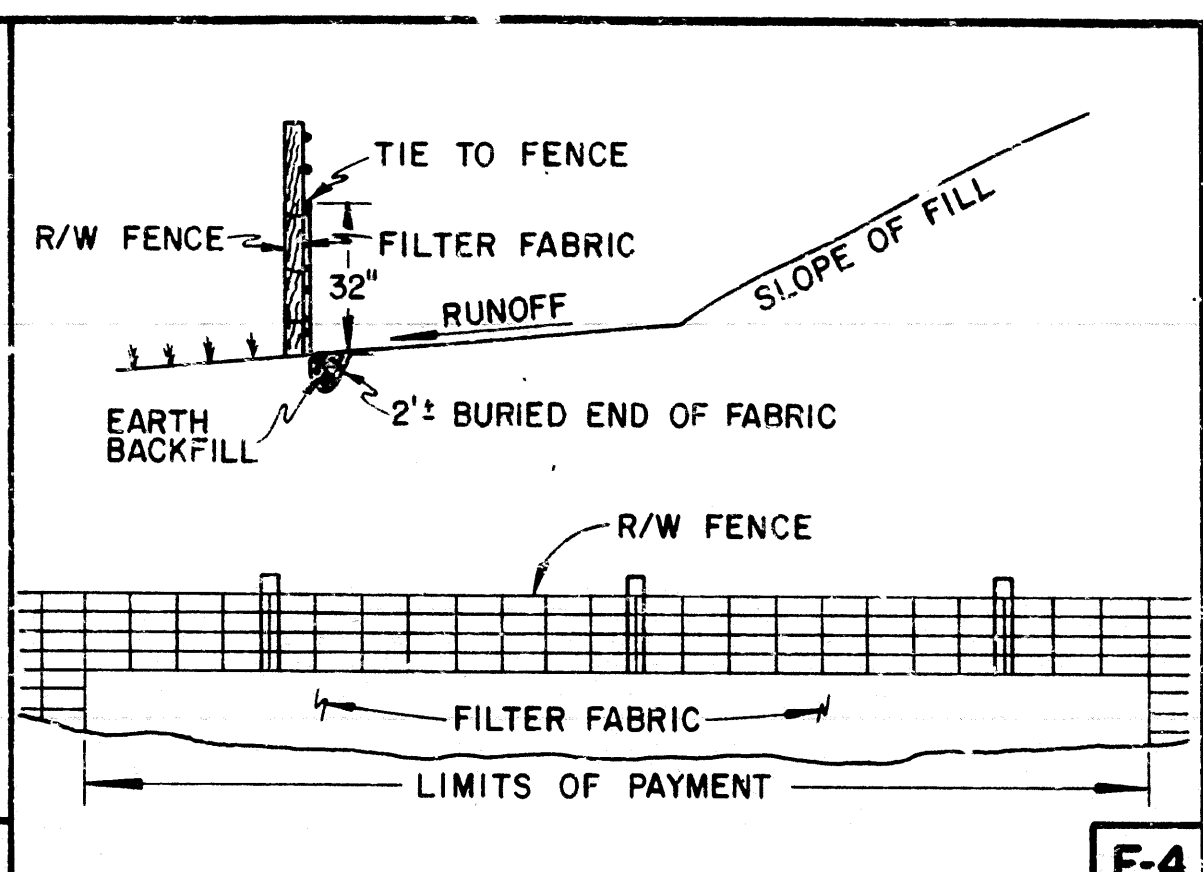
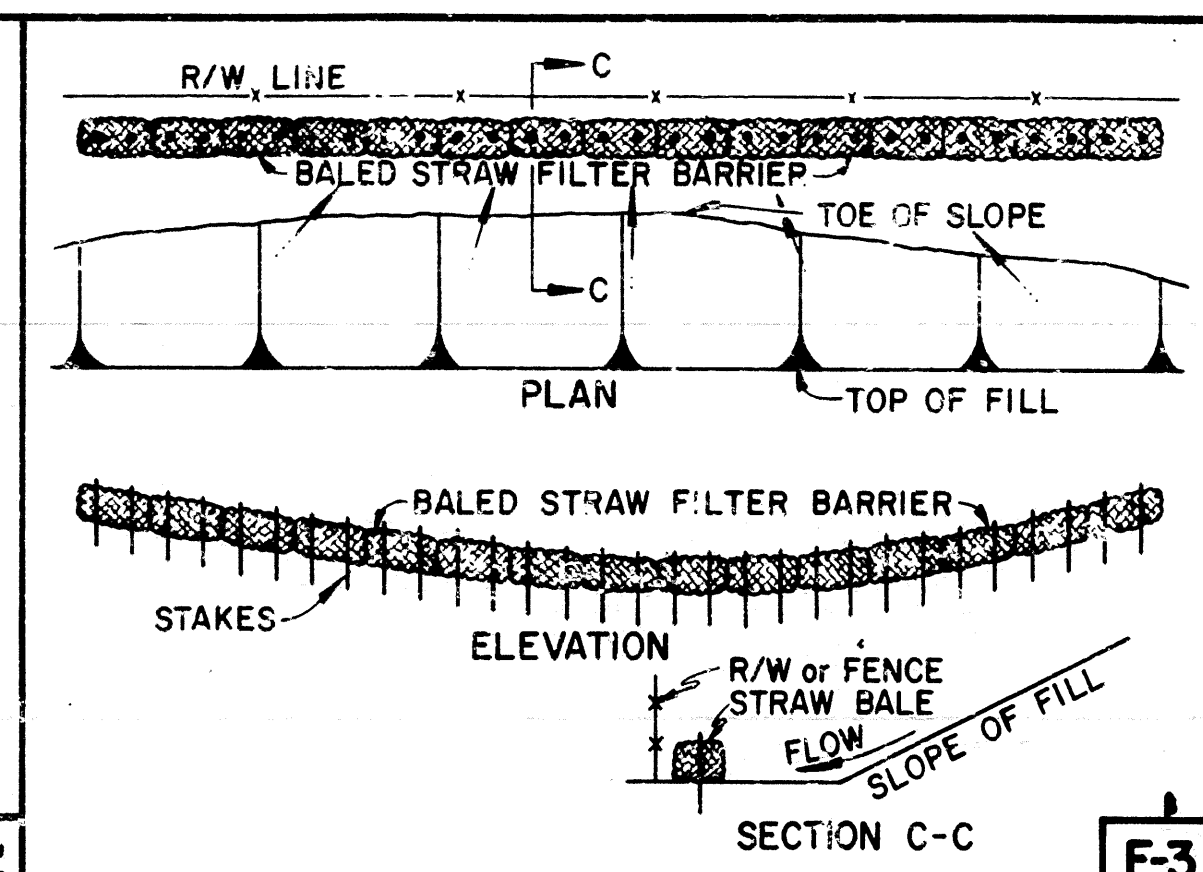
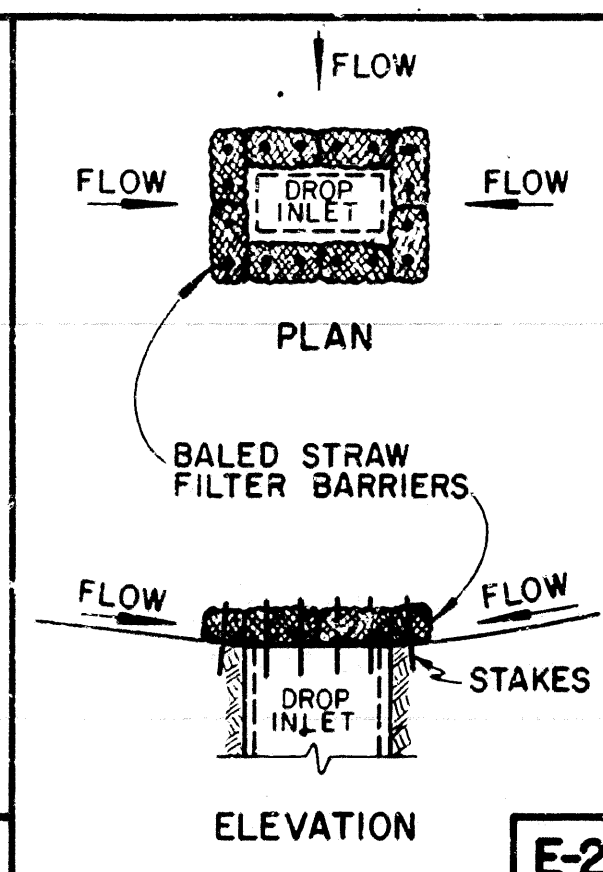
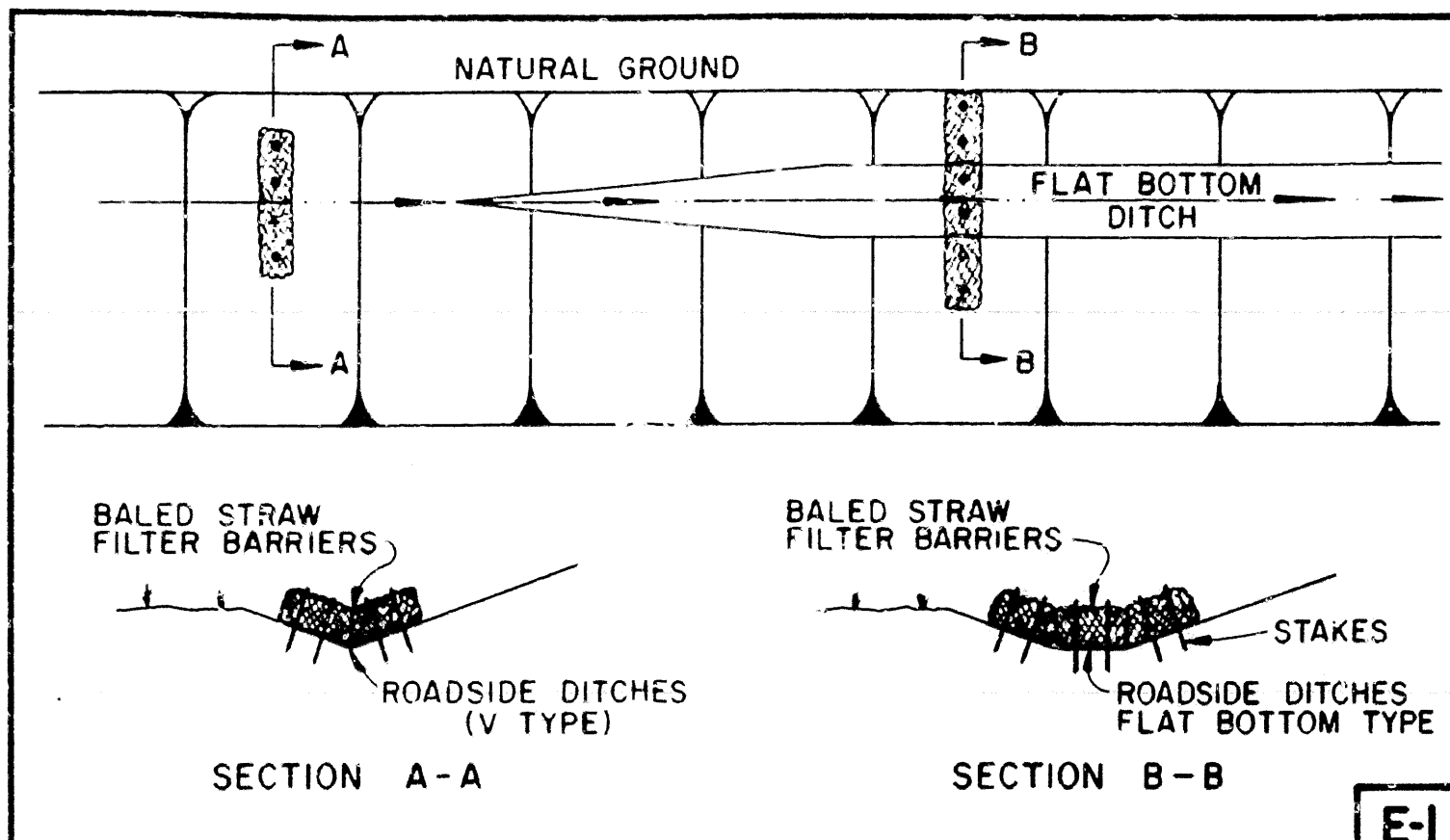


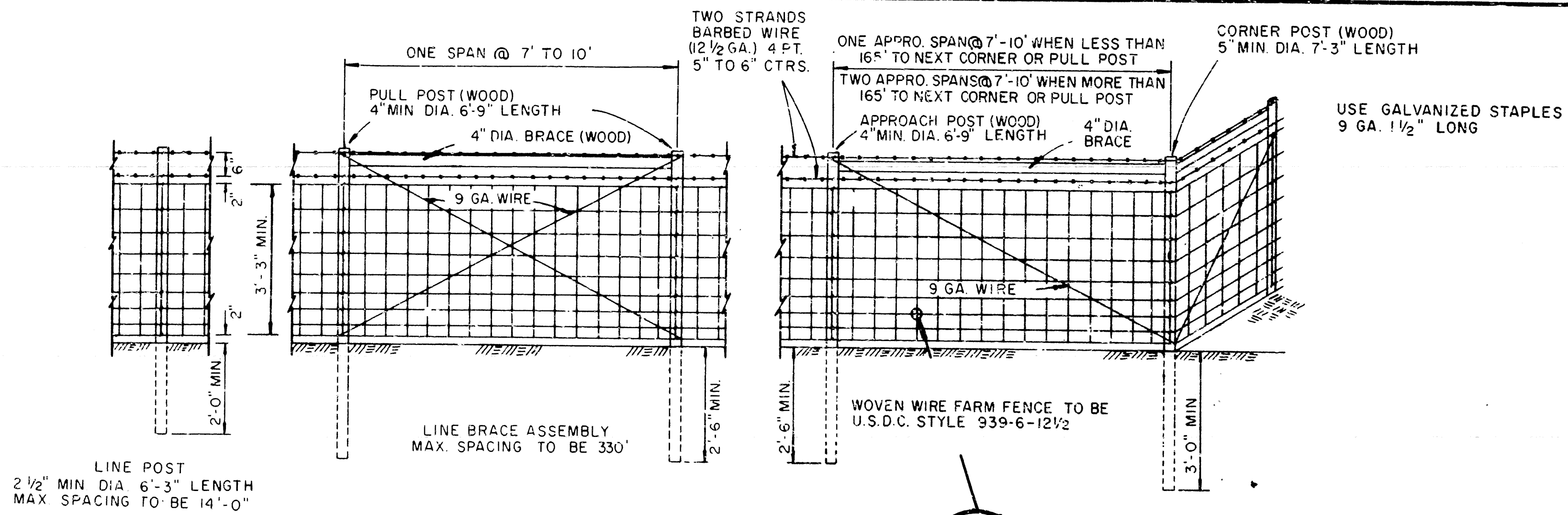
Typical application—daytime construction operations of short duration on a 4-lane divided roadway where half of the roadway is closed.



7-11-80	DELETE FLASHER	657-7-11-80
5-15-80	DELETE TYPE 3 BARRICADE ON SIGNS	670-5-15-80
5-15-80	ADD - TYPE 3 OBJ. MRK. DETAIL	
5-24-79	DRAWN & PLACED IN USE	320-5-24-79
DATE	REVISION	FILMED

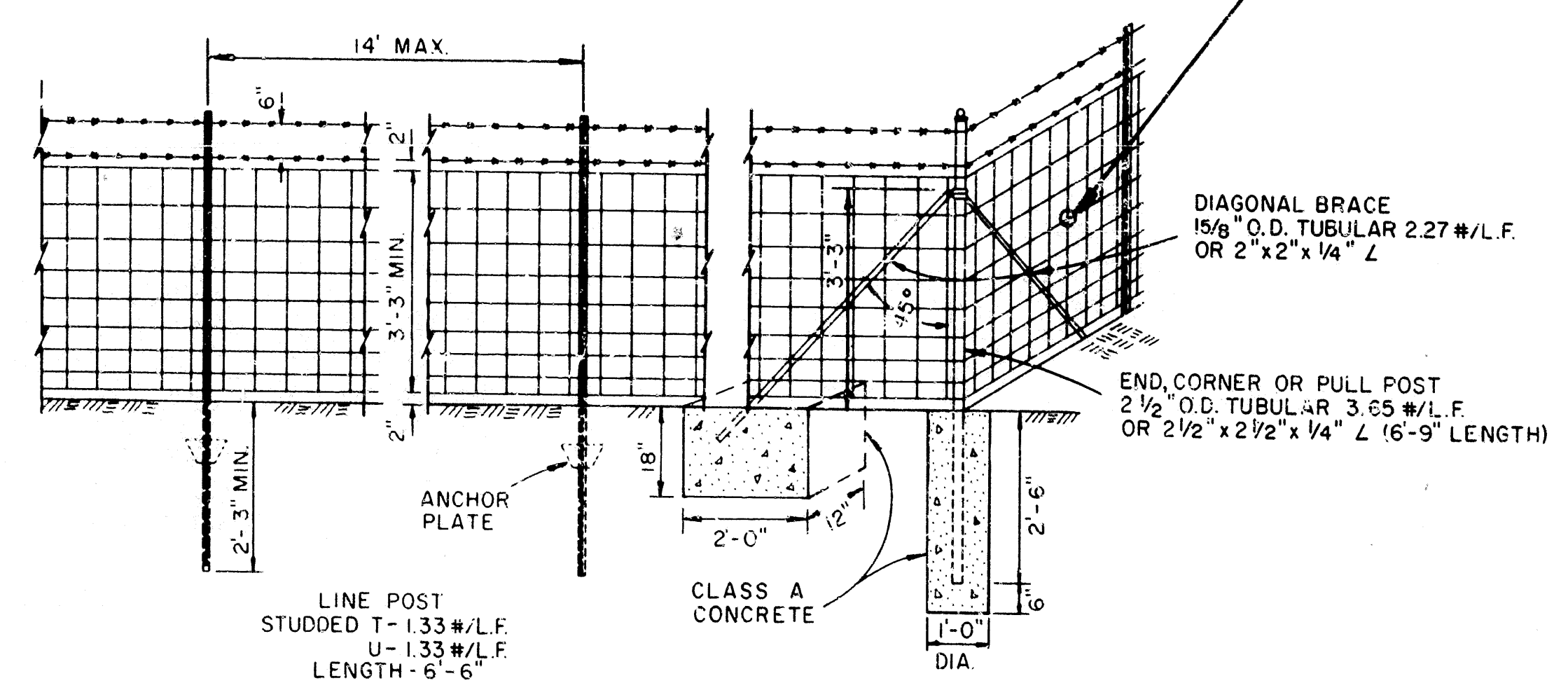
ARKANSAS STATE HIGHWAY COMMISSION
STANDARD TRAFFIC CONTROLS
FOR HIGHWAY CONSTRUCTION
STD. DWG. NO. TC-2



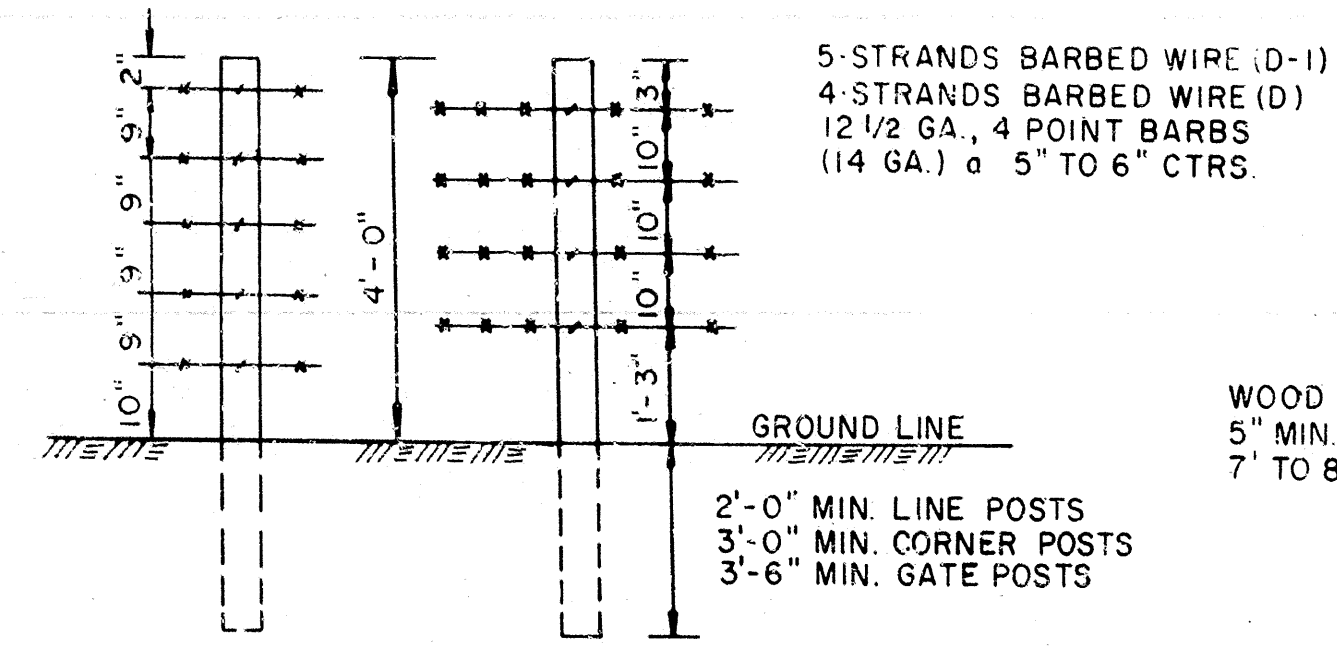


TYPE C FENCE (WOOD POSTS)

OTHER APPROVED TIES WILL BE PERMITTED.

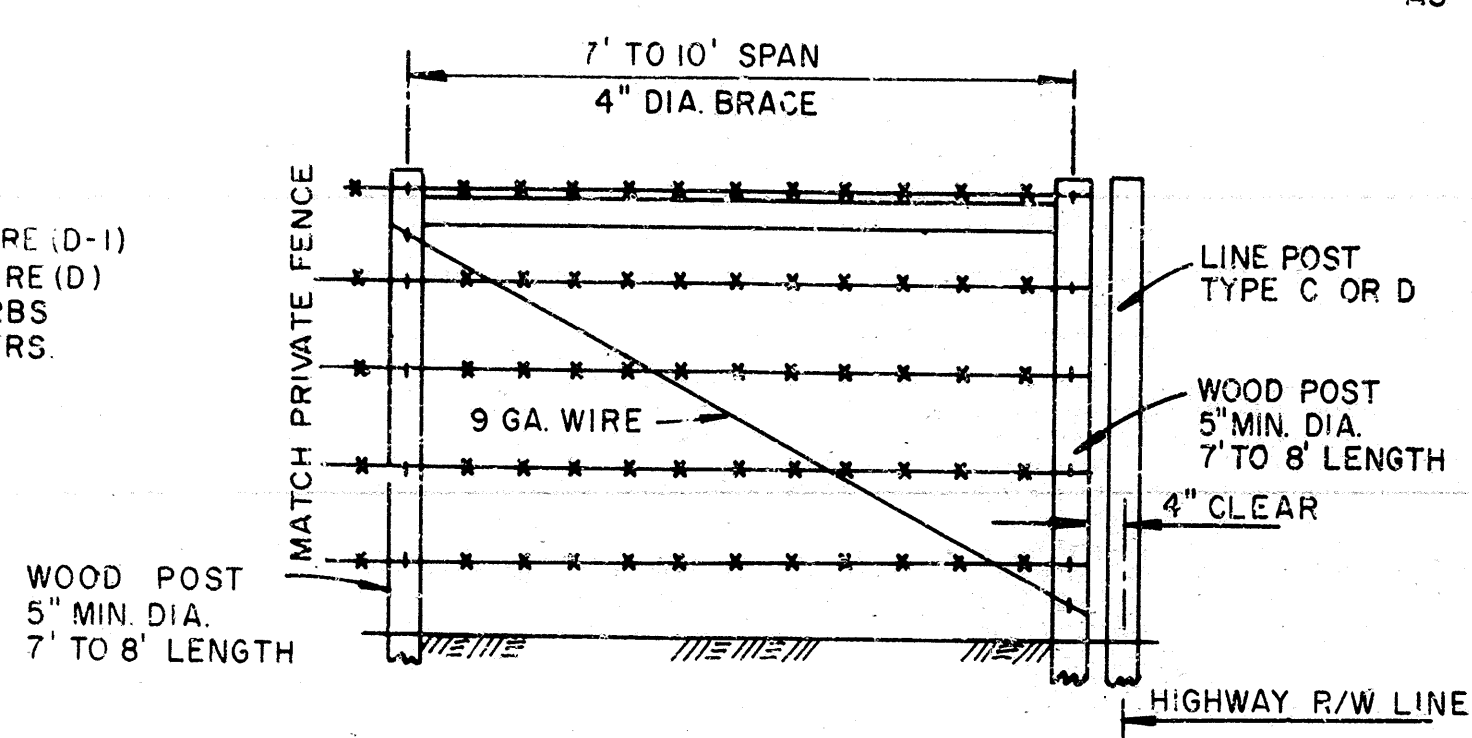


TYPE C FENCE (STEEL POSTS)



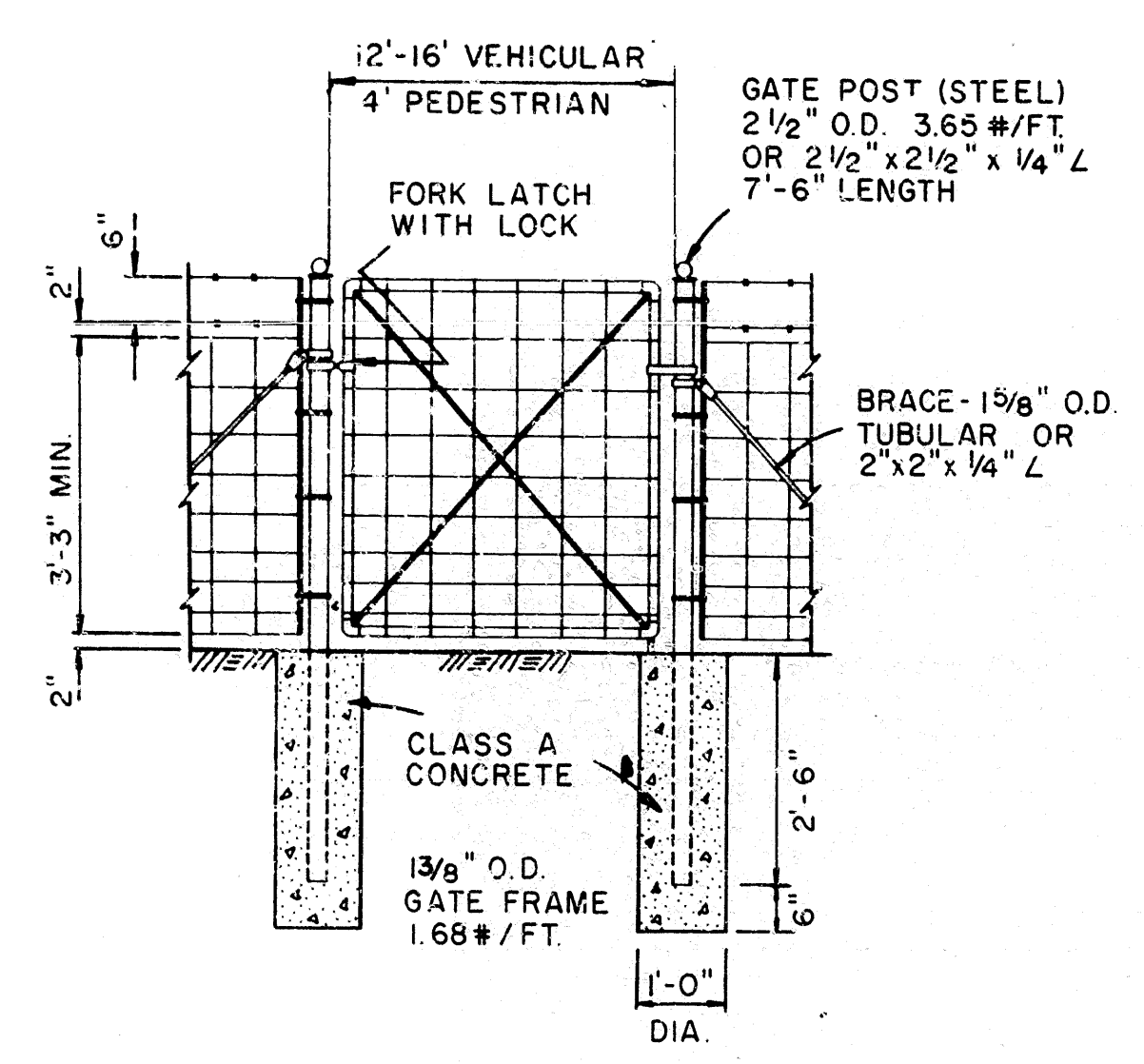
TYPE D-I FENCE
TYPE D FENCE

NOTE: SPACING & SIZE OF POSTS (EXCEPT LENGTH), APPROACH SPANS, PULL POST ASSEMBLIES AND CORNER BRACING FOR TYPE D FENCE SHALL CONFORM TO TYPE C FENCE. USE GALVANIZED STAPLES, 9 GA. 1 1/2" LONG, ON WOOD POSTS, AND APPROVED FASTENERS ON STEEL POSTS.



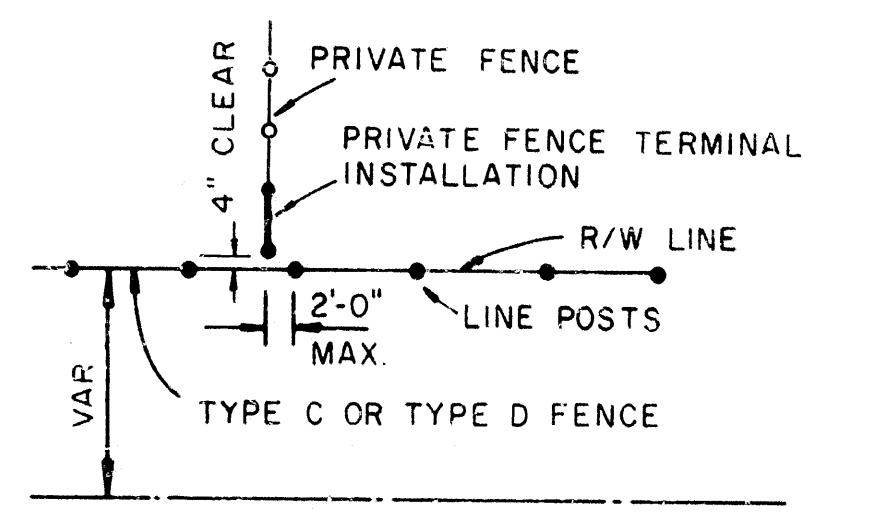
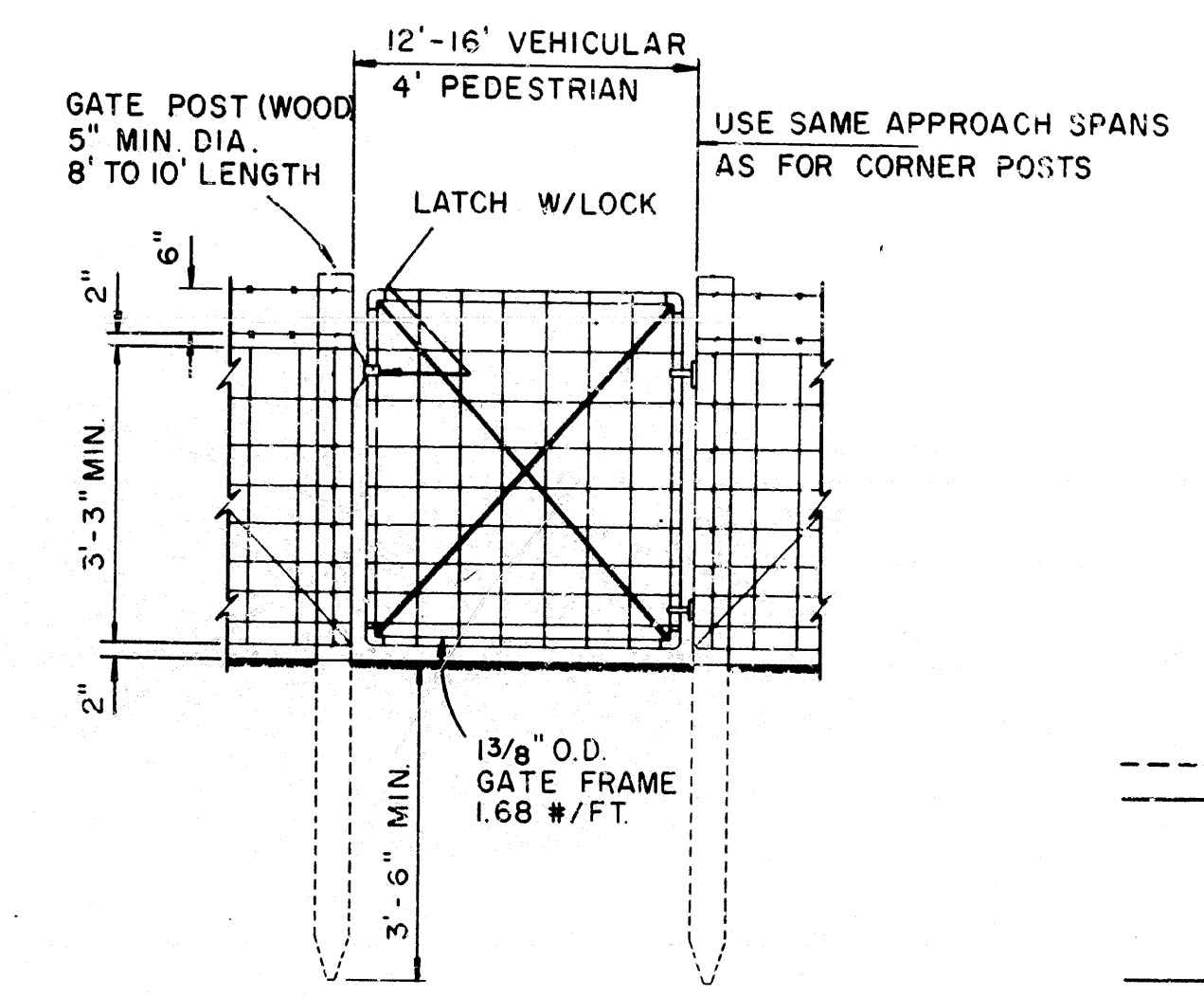
PRIVATE FENCE TERMINAL INSTALLATION

WHERE EXISTING FENCE CONSISTS OF STEEL POSTS, USE END POST ASSEMBLY AS SHOWN IN TYPE C FENCE OR OTHER END POST ASSEMBLY AS APPROVED BY THE ENGINEER.

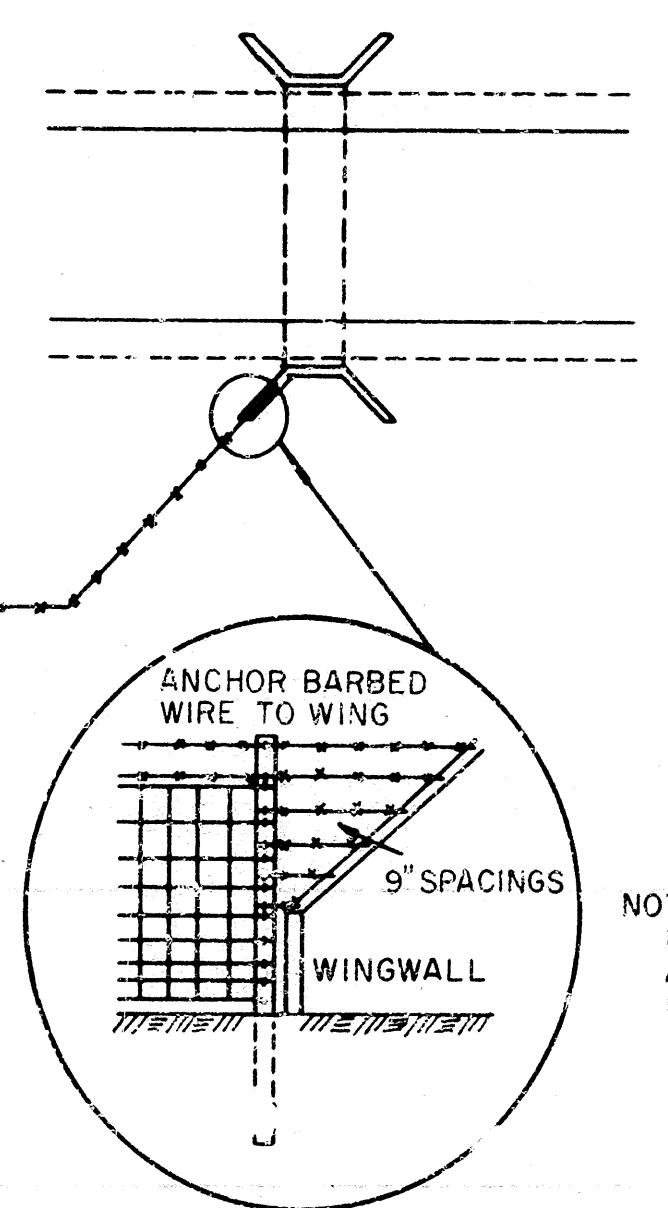


TYPICAL VEHICULAR GATES (ALTERNATE TYPE)

OTHER STYLE VEHICULAR GATES MAY BE USED WITH THE APPROVAL OF THE ENGINEER. THE METHOD OF SECURING GATE (LATCH AND/OR LOCK) SHALL MEET THE APPROVAL OF THE ENGINEER.



TYPICAL FENCE INSTALLATION



DETAIL OF FENCE CONSTRUCTION AT LARGE CULVERTS (5' IN HEIGHT AND OVER)

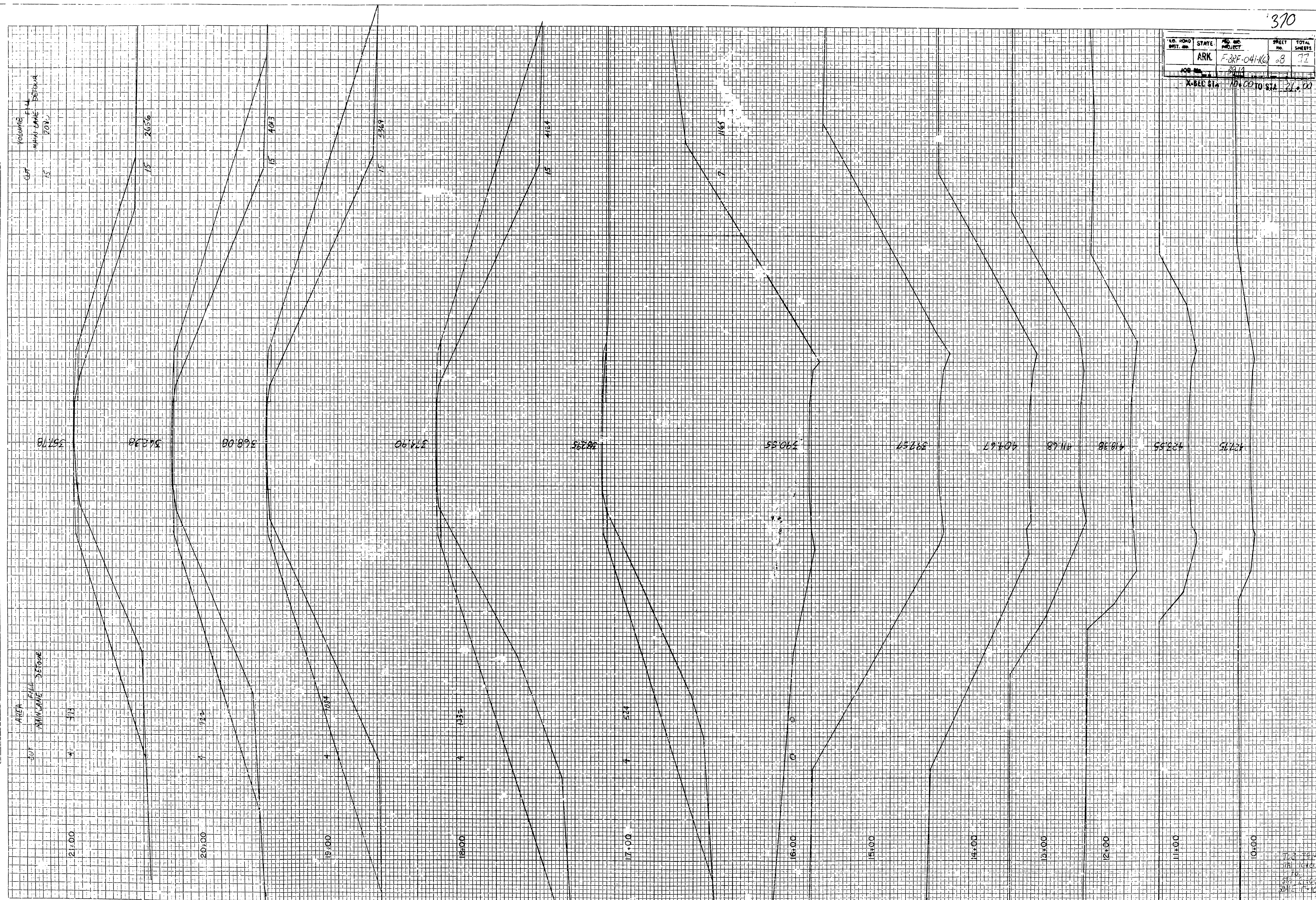
GENERAL NOTES:
THE CONTRACTOR SHALL FURNISH AT LEAST 25% OF TIMBER LINE POSTS OF 7 FOOT LENGTHS IN ORDER TO PROVIDE SUFFICIENT SET IN SOFT GROUND OR SMALL DEPRESSIONS.
DRIVEWAY GATES, EITHER SINGLE 12' TO 16' OR DOUBLE 6' TO 8' OPENING OF THE SAME TYPE AS THE PEDESTRIAN GATE, SHALL BE INSTALLED ON THE RIGHT SIDE OF EACH THROUGH LANE ROAD AT LARGE CULVERTS OR BRIDGE CROSS FENCE, FOR USE OF MAINTENANCE EQUIPMENT. LOCATION OF GATES TO BE SHOWN ON PLANS OR AS DESIGNATED BY THE ENGINEER.
AT STREAM CROSSINGS, THE FENCE SHALL NOT BE CONSTRUCTED ACROSS LARGE STREAMS. WHERE CLEARANCE IS SUFFICIENT FROM THE TOP OF BANK TO THE BRIDGE STRUCTURE A CROSS CONNECTION SHALL BE CONSTRUCTED BETWEEN THE FENCE ON EACH SIDE OF THE ROAD. WHERE THE CLEARANCE IS NOT SUFFICIENT, THE FENCE SHALL BE TERMINATED WITH CROSS CONNECTIONS AND END POSTS ADJACENT TO BRIDGE ABUTMENTS OR CULVERT WINGWALLS.
AN ACCEPTABLE TOLERANCE IN LENGTH OF POSTS AS SHOWN SHALL BE -1" TO +2".

ARKANSAS STATE HIGHWAY COMMISSION		
WIRE FENCE TYPE C AND D		
STANDARD DRAWING		
WF-4		
3-2-81	TOLERANCE FOR POST LENGTH	72'-3'-31'
12-1-72	ADDED D-1 & FENCE INSTALL.	564-12-172
10-2-72	REVISED & REDRAWN	540-10-272
DATE	REVISION	DATE FILMD

LD. ROAD DIST. 400	STATE	NO. PROJECT	SHEET NO.	TOTAL SHEETS
	ARK.	F-3RF-041-KC	38	77
JOB NO. 5919		DATE 11-1-60		
X-BED STA. 10+00 TO STA. 31+00				

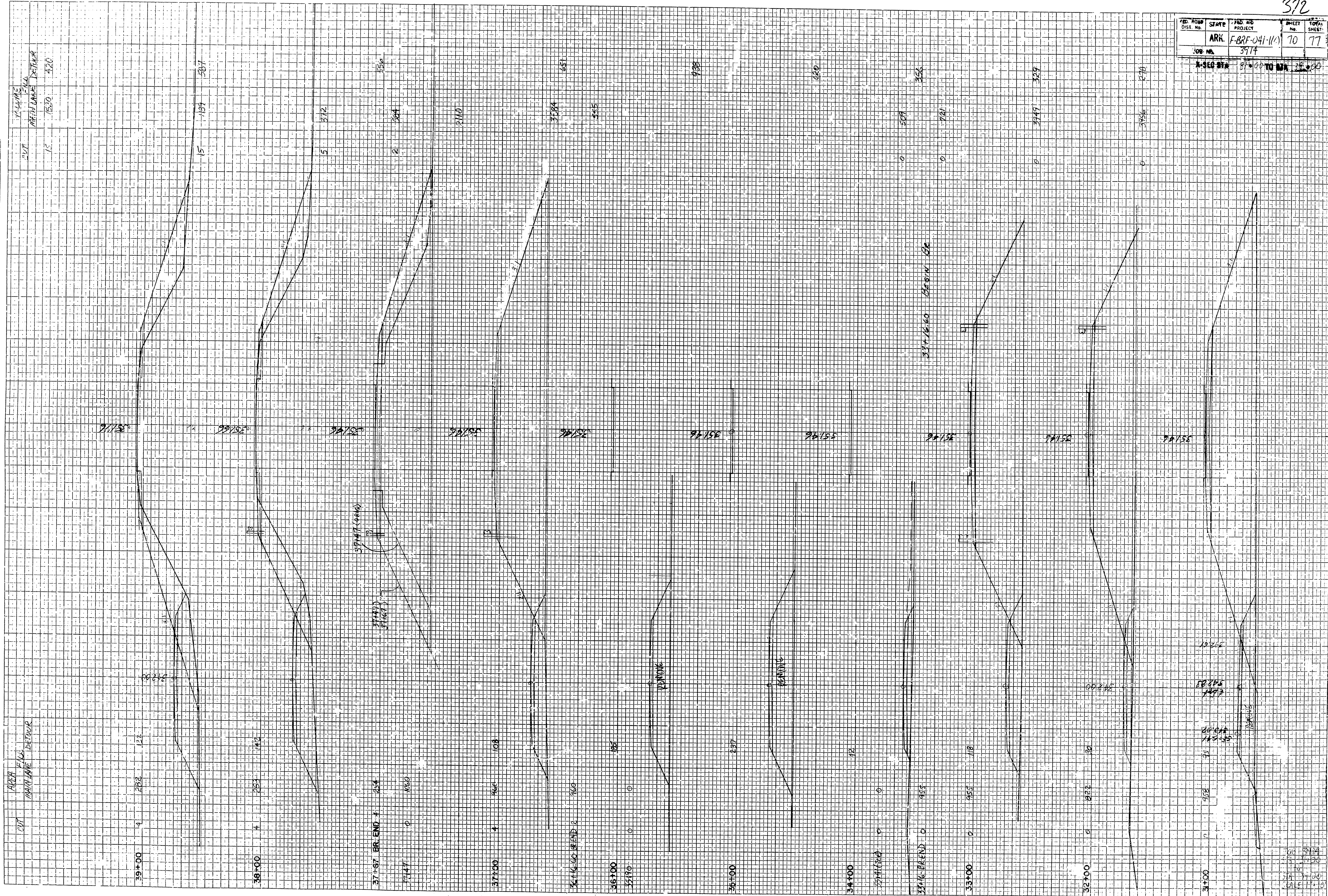
FINAL SURVEY	NO. 1	DATE	BY
NOTE BOOK			
NO.			

ORIGINAL SURVEY	NO. 1	DATE	BY
NOTE BOOK			
NO.			



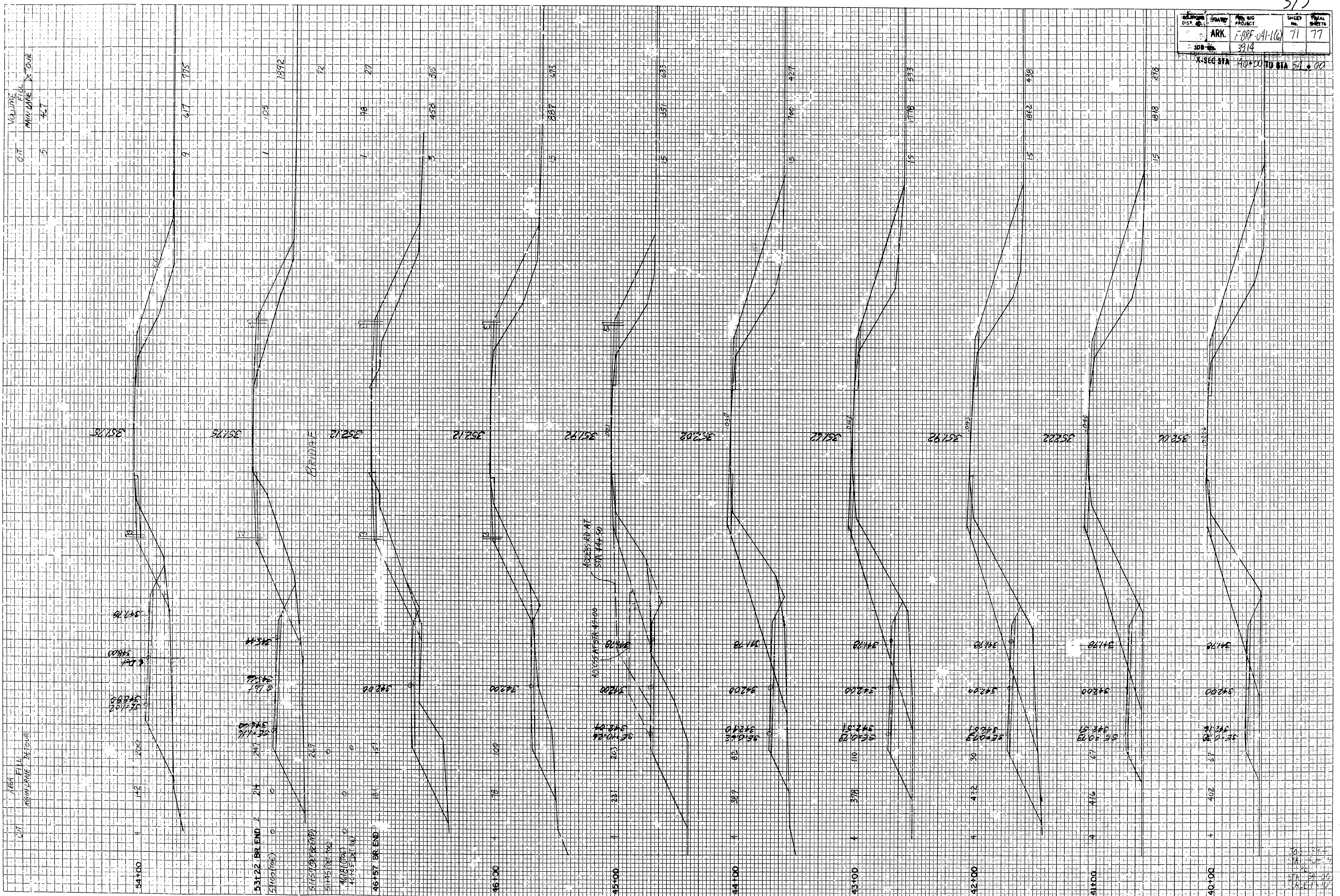
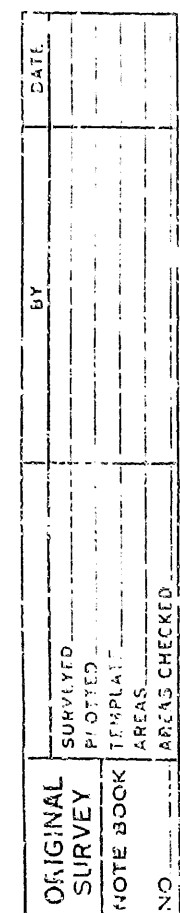
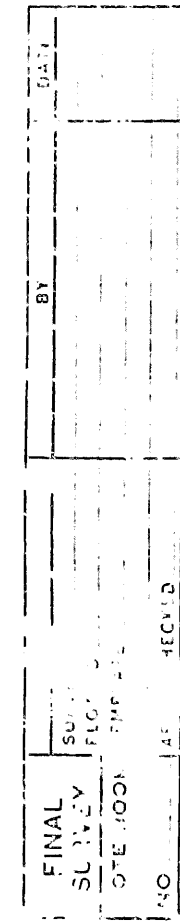
ORIGINAL SURVEY	DATE
NOTED	
NO.	

FINAL SURVEY	DATE
NOTED	
NO.	



ADDRESS DISP. NO.	SPARE NO.	PROJ PROJECT	SHEET NO.	TOTAL SHEETS
	ARK.	F-BRF-041-16)	71	77
108- 2		3914		

X-SEG STA 40+00 TO STA 54+00



REG. ROAD DIST. NO.	STAGE	REG. AID PROJECT	SHEET NO.	TOTAL SHEETS
	ARK.	F-BRF-041-1(6)	72	77
		3914		
K-SEC STA		55+00 TO STA	61+00	

FINAL SURVEY	DATE	BY	DATE
NOTE BOOK	NO.		

ORIGINAL SURVEY	DATE	BY	DATE
NOTE BOOK	NO.		

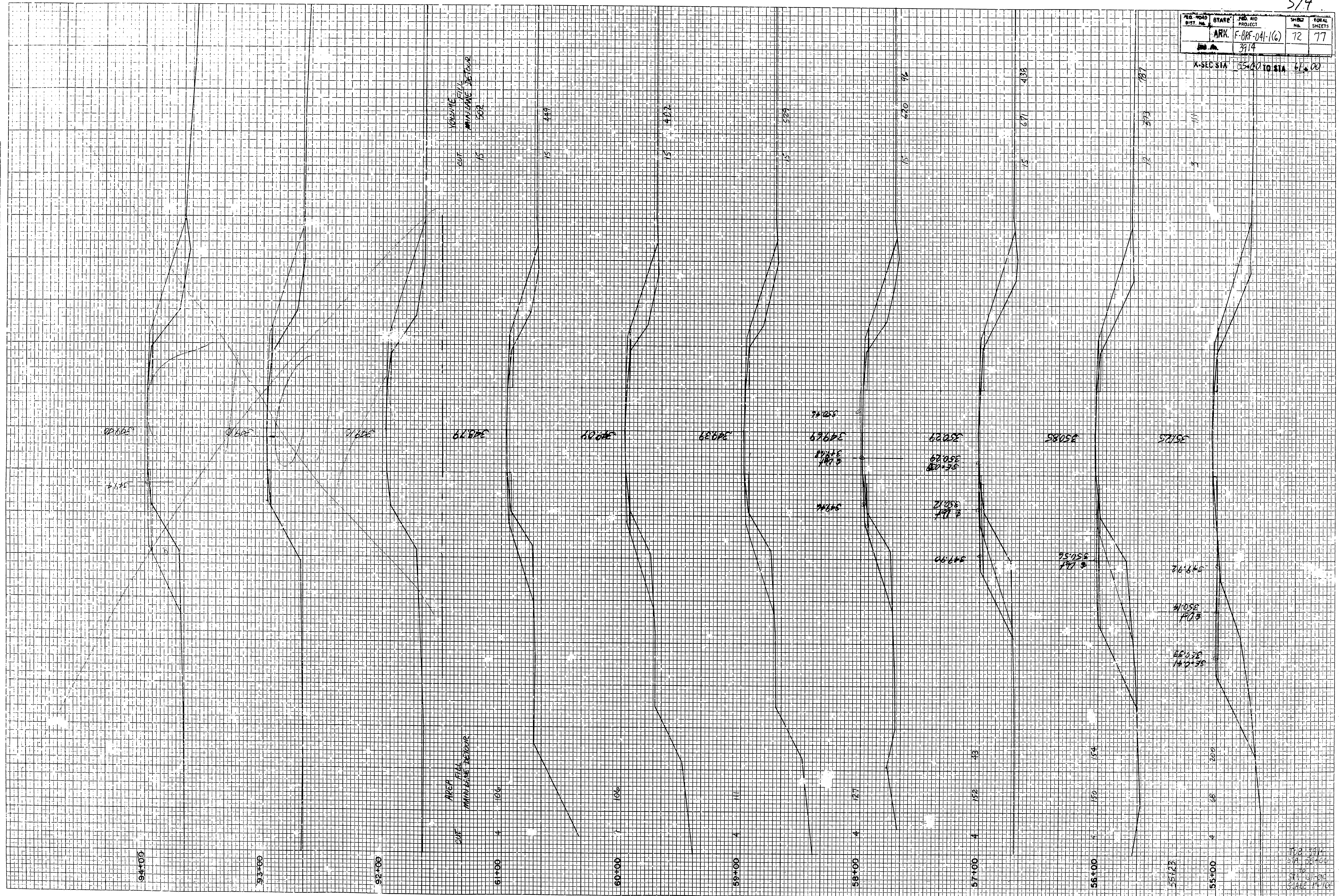
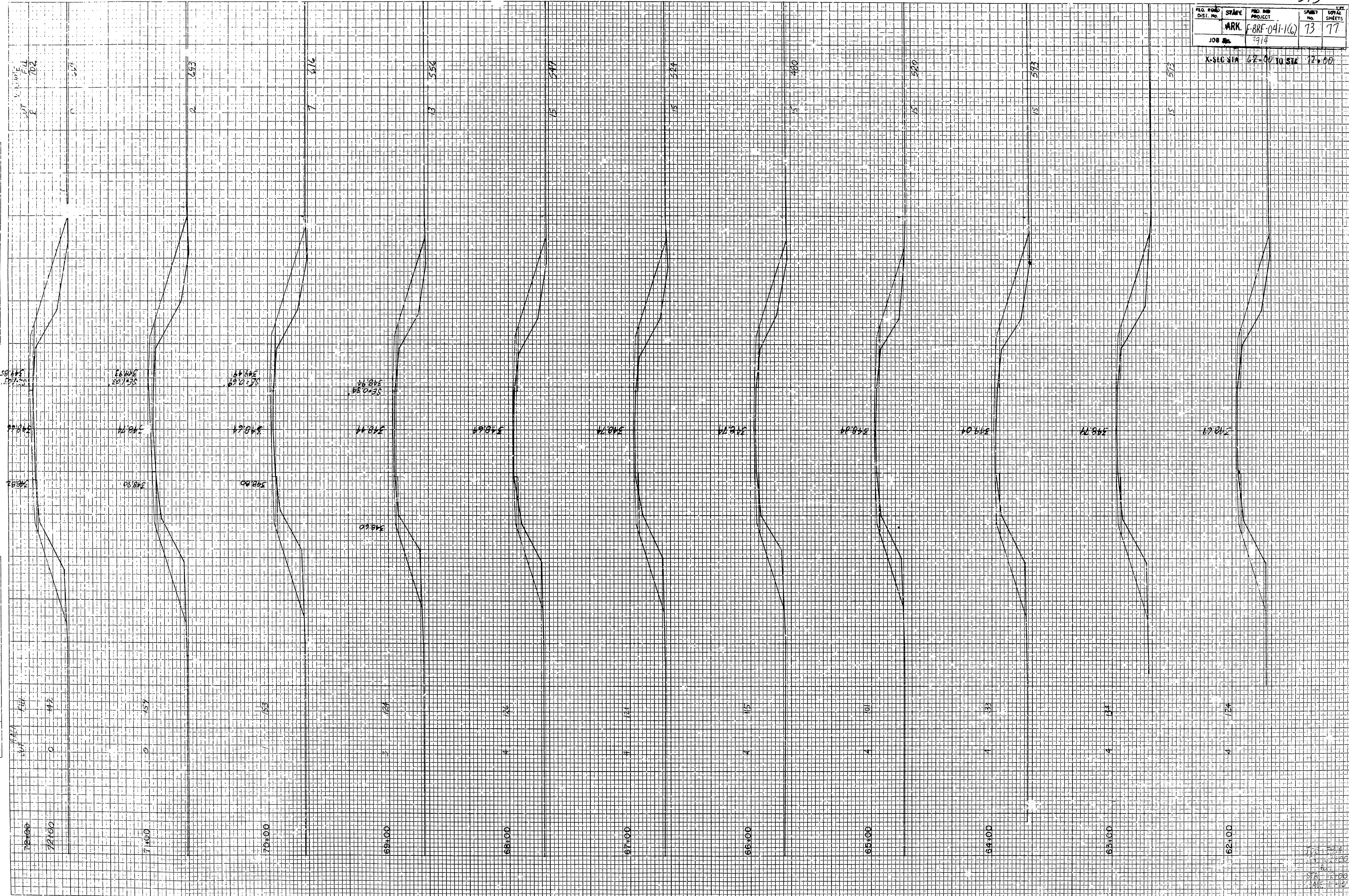


PLATE 3 CROSS SECTION O. P. & R. F. STANDARD
DIETZEN CORPORATION

FINAL SURVEY	DATE	BY	DATE
	NO.	NO.	NO.
NOTE BOOK	NO.	NO.	NO.
	NO.	NO.	NO.

ORIGINAL SURVEY	DATE	BY	DATE
	NO.	NO.	NO.
NOTE BOOK	NO.	NO.	NO.
	NO.	NO.	NO.



FILE NO.	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
375	ARK.	F-8RF-041-1(6)	73	77
JOB NO. 1914				
X-SEC. STA. 62+00 TO STA. 72+00				

SEC. AND DIST. NO.	STATE	SEC. AND PROJECT	SHEET NO.	TOTAL SHEETS
	ARK.	F-BRF-041-1(6)	76	77
		3914		
		11-00	102	00
	X-SEC STA	11-00	102	00

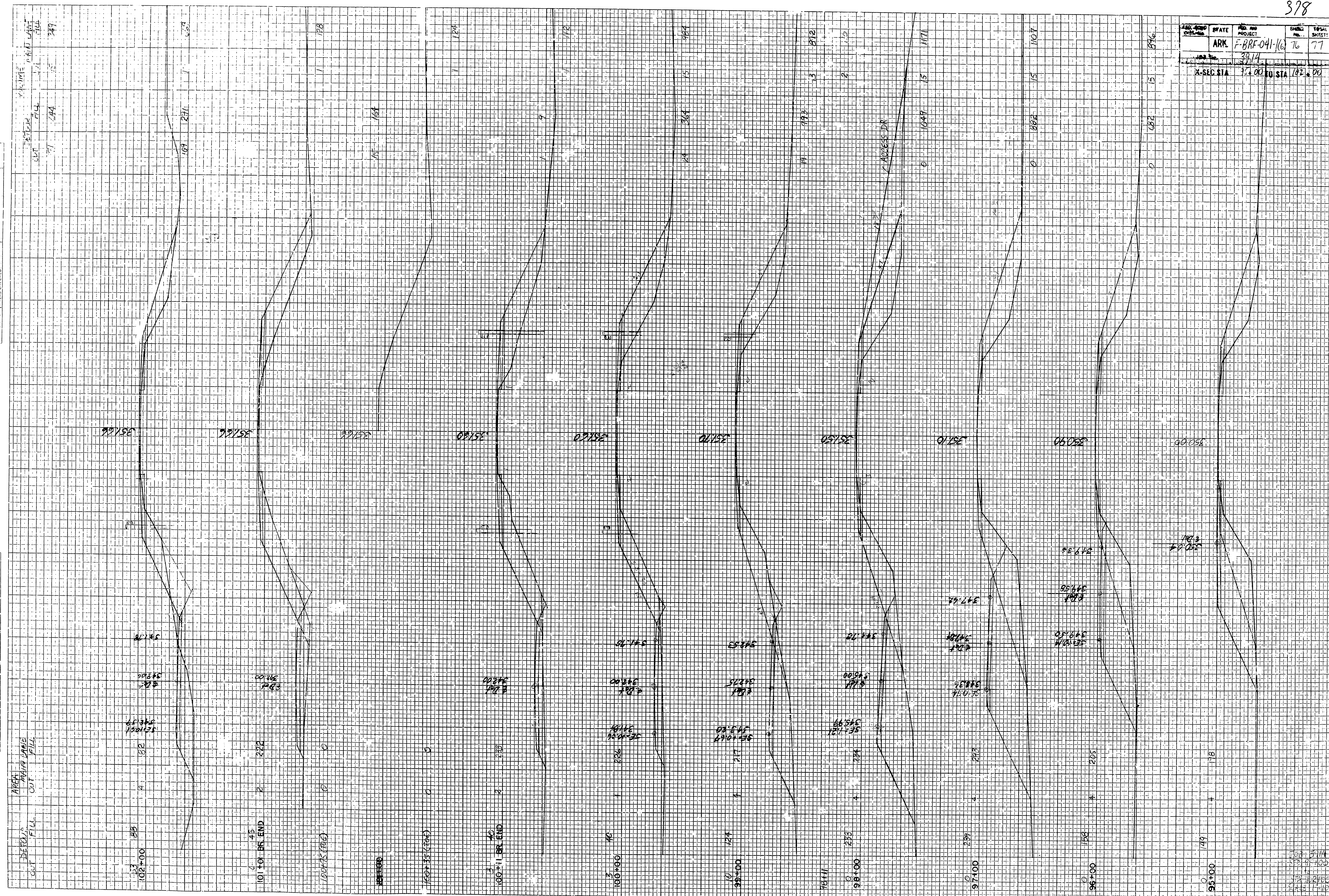
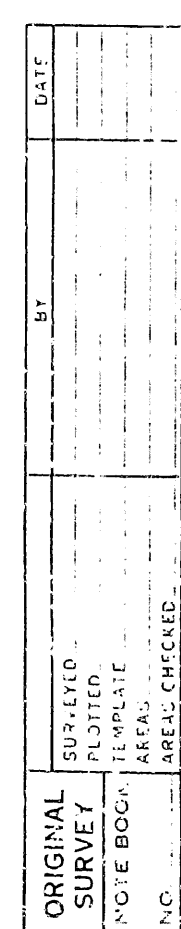
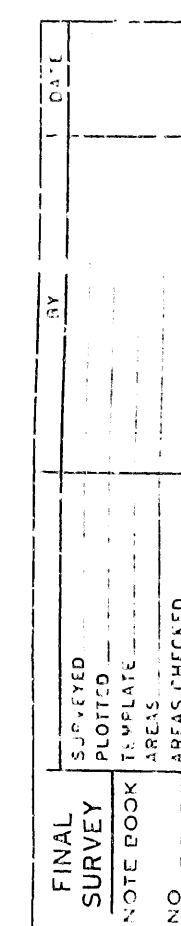


PLATE 3 CROSS SECTION O. P. R. & R. E. STANDARD
DIETZGEN CORPORATION

ED. ROAD DIST. NO.	STATE	FED. AID PROJECT	SHEET No.	TOTAL SHEETS
	ARK.	F-BRF-041-116)	77	77
JOB No.		3914		

X-SAC SIA 103.70 TO SIA 109.00

FINAL SURVEY	Dr	Date
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS SURVEYED		

ORIGINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
ADPAS.		
AREAS CHECKED		

[illegible]