

COLORADO

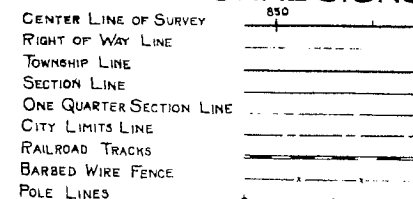
STATE HIGHWAY DEPARTMENT

PLAN AND PROFILE OF PROPOSED FEDERAL AID PROJECT NO. 243-1 STATE HIGHWAY NO. 10 RIO GRANDE COUNTY

INDEX OF SHEETS

1. SKETCH MAP AND TITLE SHEET.
2. TYPICAL CROSS SECTION AND SUMMARY OF QUANTITIES.
- 3,4,5. TABULATION OF STRUCTURES.
6. DETAILS OF BRIDGE, STA. 981+
- 7,8. " " " STA. 1298+ & 1302+
9. " " " DETOUR BRIDGE, STA. 1298+
- 10,11,12. " " " BRIDGE, STA. 1340+
13. CONCRETE BOX CULVERTS M103D
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16. " WIRE CABLE GUARD FENCE M20A
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21. TYPICAL SIDE APPROACH ROADS / ROADWAY CONSTRUCTION TRAFFIC SIGNS M2B
- 22 TO 39. ALIGNMENT PLAN AND PROFILE.
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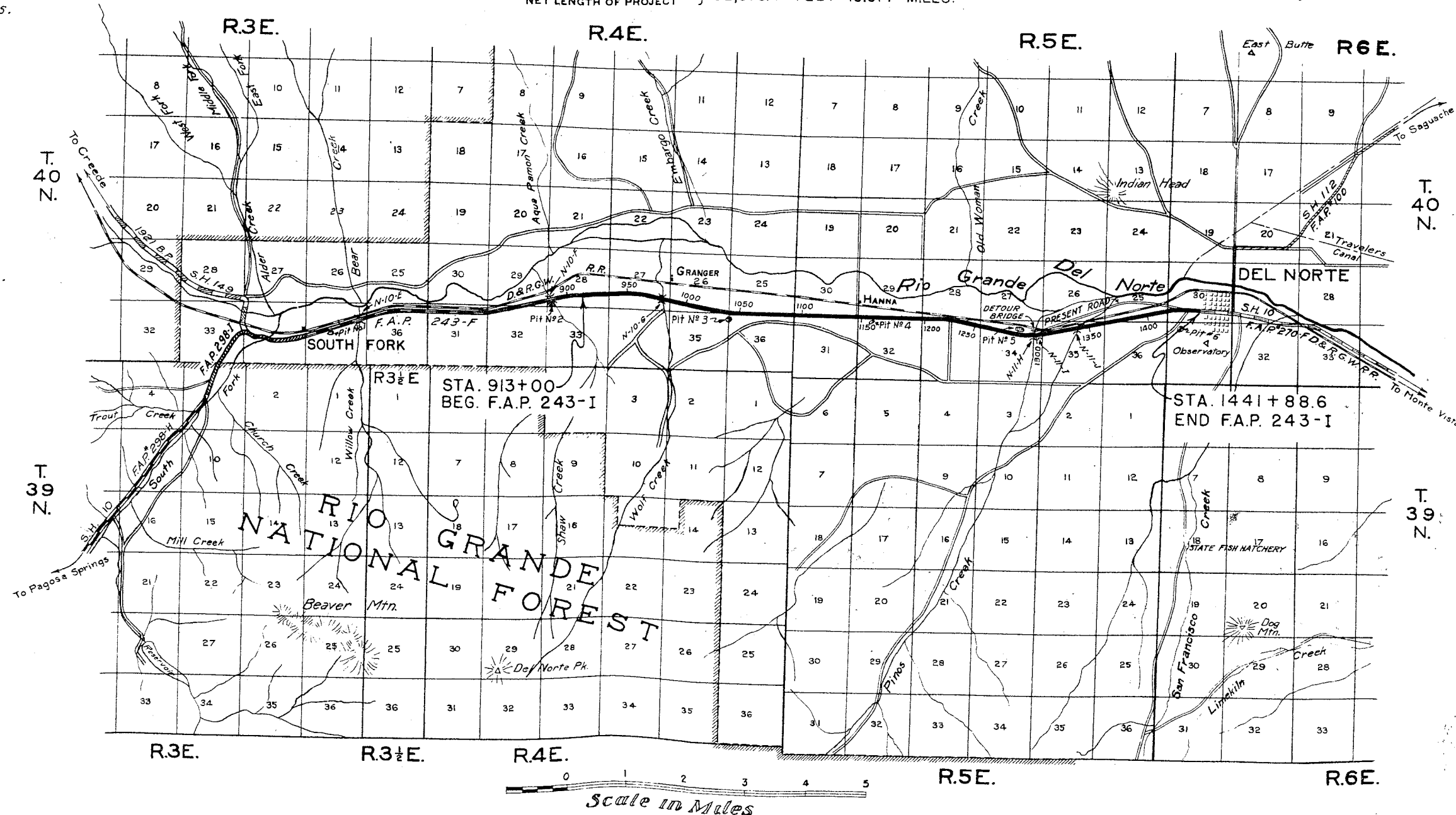
CONVENTIONAL SIGNS



SCALES OF ORIGINAL TRACINGS.

ON PLAN, 1 IN. = 100 FT.
ON PROFILE 1 IN. = 100 FT. HORIZONTAL
1 IN. = 10 FT. VERTICAL
GRADE LINE ON PROFILE IS SHOWN AS GRADE OF FINISHED ROAD
GROSS LENGTH OF PROJECT } 52,876.4 FEET = 10.014 MILES.
NET LENGTH OF PROJECT }

NOTE
It is recommended that bidders on this Project go on the plan details with one of the following field representatives of this department:
J. R. Cheney Division Engineer Durango
J. E. Casey Resident " Del Norte



RECOMMENDED FOR APPROVAL 5/15/36
J. J. Maloney ASSISTANT ENGINEER
APPROVED Chas. D. Bair STATE HIGHWAY ENGINEER
RECOMMENDED FOR APPROVAL
DIST. ENG. BUREAU PUBLIC ROADS
RECOMMENDED FOR APPROVAL
CHIEF ENG. BUREAU PUBLIC ROADS
APPROVED
DIRECTOR BUREAU PUBLIC ROADS

FENCING REQUIREMENTS

STATION	SIDE	REMOVE FENCE LIN. FT.	BUILD FENCE		BUILD GATES		
			BARBED WIRE LIN. FT.	COMB. WIRE LIN. FT.	BARBED WIRE NO.	DRIVE- WAY NO.	WALK NO.
987+30	X	100					
1014+20	X	100					
1040+79	X	91					
1040+00 to 1049+00	R	900					
1049+00 to 1145+88	R&L	13,759					
1146+28 to 1232+00	R&L	16,808					
1242+99	X	100					
1258+50 to 1304+00	R&L	6,239					
1305+86	X	115					
1308+03	X	180					
1308+43	X	133					
1315+00 to 1411+00	L	9,600					
1321+29	X	115					
1322+14	X	110					
1349+34	R&L	365					
1353+52	X	100					
1362+32	X	100					
1375+96	X	100					
1382+36	X	100					
1417+75	X	100					
1417+90	X	100					
1417+88 to 1441+88	L	2,433					
1423+00 to 1441+00	R	1,900					
913+00 to 987+25	R		7,425				
987+25 to 1032+00	R			4,475			
1032+00 to 1083+85	R		5,185				
1083+85 to 1441+80	R			35,735			
987+25 to 1032+00	L			4,475			
032+00 to 1045+40	L		1,340				
045+40 to 1145+90	L			10,050			
146+30 to 1159+70	L		1,340				
159+70 to 1226+30	L			6,660			
231+80 to 1316+00	L			8,520			
410+00 to 1418+50	L			850			
424+00 to 1441+88	L			1,650			
913+00 to 987+25	L		7,425				
1010+00	R					1	
1032+00	L					1	
1054+48	L					1	
1060+60	R				1		
1083+76	R				1		
1083+76	L				1		
1089+00	L					1	
1091+10	R&L					2	
1106+55	R					1	
1112+30	L					1	
1120+00	R					1	
1130+00	L					1	
1131+43	R					1	
1146+10	R					1	
1146+10	L				1		
1159+50	L				1		
1165+20	R					1	
1173+00	R					1	
1185+50	R&L					2	
1207+30	R					1	
1226+30	L					1	
1232+50	R					1	
1243+00	R&L					2	
1287+80	L					1	
1294+50	L					1	
1294+70	R					1	

(TABULATION CONTINUED ON SHEET NO. 4)

TABULATION OF STRUCTURES

STATION	DESCRIPTION	REMOVE	EXCAVATION		STRUCTURAL EXCAV.				CONCRETE		REINF.	COR. METAL CULV. PIPE					DRY RUBBLE	MISCELLANEOUS
		STRUCT.	CU. YDS.		CU. YDS.				CU. YDS.		STEEL	LIN. FT.					SLOPE PAVING	
		No.	EXCAV.	EMB.	*				CL. A	CL. B	LBS.	18"	24"	30"	48"	1.5 FT. THICK		
915 + 85	C.M.P. Cross Culvert & Inlet		5		10													
930 + 30	Remove Culvert	1																
944 + 50	C.M.P. Cross Culvert				1										70			
950 + 25	C.M.P. Cross Culvert & Inlet & Outlet		15		15										60			
964 + 35	C.M.P. Cross Culvert & Outlet		15		20										60			
970 + 00	C.M.P. Cross Culvert		5		10											68		
981+335 to 982+50	C.M.P. Cross Culvert				5										56	56		
986 + 75	Tr. Timber Bridge & Channel change		500		(Quantities in Summary)													
995 + 75	Road Approaches Rt. & Lt.		50															
1001 + 80	C.M.P. Cross Culvert & Outlet		10		2													
1010 + 00	C.M.P. Cross Culvert				2											68		
1012 + 60	C.M.P. Side Drain & Road Appr. Rt.		25		2										30	58		
1019 + 00	C.M.P. Cross Culvert & Outlet		5		10													
1024 + 80	C.M.P. Cross Culvert & Inlet & Outlet		5		5										54	62		
1031 + 80	" " " " & Inlet & Outlet				5													
1032 + 00	" " " " Side Drain & Road Appr. Lt.		5		10										58	56		
1037 + 00	Standard Cattle Guard			50	2										28			
1054 + 48	C.M.P. Cross Culvert & Outlet		10		15										58		Cattle Guard	
1060 + 00	" " " " Side Drain & Road Appr. Lt.			50	1										28			
1060 + 60	" " " " Cross Culvert & Inlet & Outlet		200		60													
1061 + 63	" " " " Side Drain & Road Appr. Rt.		30		2											74		
1067 + 70	Remove Culvert	1													26			
	C.M.P. Cross Culvert				40													
1067+70 to 1200+00	Remove Culvert	1													100			
1071 + 00	Drain ditch Rt.		1200															
1071+00 to 1082+00	C.M.P. Cross Culvert & Inlet & Outlet		10		10											58		
1075 + 50	Irrigation Ditch Lt.		180															
	C.M.P. Cross Culvert				40													
1083 + 76	Remove Culvert	1													100			
	C.M.P. Side Drain Lt.				2													
	" " " " Rt.				3										26			
1083 + 89	Road Approaches Rt. & Lt.			100											26			
	C.M.P. Cross Culvert				15													
1088 + 85	Remove Culvert	1													100			
1088 + 85	C.M.P. Cross Culvert & Inlet & Outlet		10		30													
1089 + 00	Remove Culvert	1													100			
1091 + 31	C.M.P. Side Drain & Road Appr. Lt.			30	2										30			
	" " " " Lt.				2										30			
	" " " " Rt.				3										30			
1092 + 00	Road Approaches Rt. & Lt.			100														
1095 + 00	Dike at duck pond			50														
1096 + 55	C.M.P. Cross Culvert & Outlet		5		10													
	" " " " & Ditch change		10		20										52			
1096+55 to 1140+00	Remove Culvert	1													56			
1106 + 55	Irrigation ditch Lt.		270															
1112 + 30	C.M.P. Side Drain & Road Appr. Rt.			25	2													
	" " " " " " Lt.			25	1										20	28		
1120 + 00	" " " " & Road Appr. Rt.				1													
1130 + 00	" " " " " " Lt.		10		2										26			
1131 + 00	C.M.P. Cross Culvert & Inlet & Outlet			25	2										28			
1131 + 43	C.M.P. Side Drain & Road Appr. Rt.		10		20										26			
1140 + 00	C.M.P. Cross Culvert & Inlet			25	2										60			
1146 + 15	C.M.P. Side Drain Lt.		5		5										26			
	" " " " Rt.				2										60			
1152 + 00	Road Approaches Rt. & Lt.				3										32			
1154 + 00	C.M.P. Cross Culvert & Outlet		50												32			
	" " " " " "		5		2													
	" " " " " "		5		10										58			
1159 + 00	Remove Culvert	1													58			
1159 + 70	C.M.P. Cross Culvert & Outlet		5		5													
1160+00 to 1220+55	C.M.P. Side Drain & Road Appr. Lt.			30	1										56			
1165 + 20	Irrigation Ditch Lt.		350												26			
	C.M.P. Side Drain & Road Appr. Rt.			25	2										30			

(TABULATION CONTINUED ON SHEET NO. 4)

FENCING REQUIREMENTS
(TABULATION CONTINUED FROM SHEET NO.3)

STATION	SIDE	REMOVE FENCE	BUILD FENCE		BUILD GATES	
			BARBED WIRE	COMB. WIRE	BARBED WIRE	DRIVE- WAY
			LIN. FT.	LIN. FT.	NO.	NO.
1304 + 60	R				/	
1311 + 25	R				/	
1321 + 75	R				/	
1333 + 50	R				/	
1349 + 50	R				/	
1353 + 80	R				/	
1362 + 10	R				/	
1376 + 10	R				/	
1400 + 00	R				/	
1415 + 00	R&L				2	
1417 + 70	R&L				2	
1420 + 50	R				/	
1427 + 20	L				/	/
1434 + 80	L				/	/
1435 + 20	L				/	/
1437 + 15	L				/	/
1439 + 40	L				/	/
1440 + 45	L				/	/
TOTALS		59,648	22,715	72,415	4	43
					2	

TABULATION OF STRUCTURES
(TABULATION CONTINUED FROM SHEET NO.3)

STATION	DESCRIPTION	REMOVE STRUCT.	EXCAVATION		STRUCTURAL EXCAV.				CONCRETE		REINF. STEEL	COR. METAL CULV. PIPE				DRY RUBBLE SLOPE PAVING 1.5 ft. thick Sq. Yds.	MISCELLANEOUS
			Cu. Yds.	Cu. Yds.	Cu. Yds.		Cu. Yds.		LIN. FT.								
					No.	EXCAV.	EMB.	*					CL. A	CL. B	LBS.		
1165 + 40	C.M.P. Cross Culvert & Inlet & Outlet Remove Culvert	1	5		15							100					
1172 + 75	C.M.P. Cross Culvert & Inlet & Outlet		10		30								62				
1173 + 00	Cattle Guard & Road Appr. Rt.			50													Cattle Guard
1173+12 to 1220+55	Remove Cattle Guard	1															
	Ditch change Rt.		710														
1185 + 25	C.M.P. Cross Culvert & Inlet & Outlet		50		15								64				
1185 + 50	C.M.P. Side Drain Lt.				1							16	24				
	" " " Rt.				2							16	24				
	Road Approaches Rt. & Lt.			50	2												
	Remove Culvert	1															
1197 + 00	C.M.P. Cross Culvert & Inlet & Outlet		50		10								60				
1207 + 00	" " " " "		5		20								64				
1207 + 30	C.M.P. Side Drain & Road Appr. Rt.			25	1							16	28				
	" " " Rt.				1												
	Remove Culvert	1															
1220 + 55	C.M.P. Cross Culvert & Inlet & Outlet		5		30								100				
1220+55 to 1225+40	Remove Culvert	1															
1220+55 to 1228+00	Drain ditch Rt.		60														
1225 + 65	Ditch change Lt.		125														
	C.M.P. Side Drain & Road Appr. Rt.			50	2								28				
	Remove Culvert	1															
1225+80 to 1276+00	Drain ditch Rt.		800														
1226 + 25	C.M.P. Cross Culvert & Outlet		25		20								60				
1226 + 50	C.M.P. Side Drain & Road Appr. Lt.			50	1							16	30				
	" " " Lt.				1												
	Remove Culvert	1															
1232 + 25	C.M.P. Cross Culvert & Inlet & Outlet		50		15								62				
1232 + 50	C.M.P. Side Drain & Road Appr. Rt.			25	1							16	28				
	" " " Rt.				1												
1233 + 25	Move Log Cabin off R.O.W. (Force Account)																
1240 + 00	6'x3'x44' Concrete Box Culvert & Inlet & Outlet		25		140				46.1		3692						
1243 + 00	C.M.P. Side Drain & Road Appr. Rt.			50	1							20	28				
	" " " Rt.				1								64				
1254 + 00	C.M.P. Cross Culvert & Inlet & Outlet		10		5												
1272 + 25	8'x4'x54' Conc. Box Culv. (Type 8-1) & Inlet & Outlet		40		100				77.4		7215						
	Remove Culvert	1															
1287 + 80	C.M.P. Side Drain & Road Appr. Lt.			100	2							28	70				
1289 + 25	C.M.P. Cross Culvert & Inlet		5		5												
	Remove Culvert	1															
1294 + 50	C.M.P. Side Drain & Road Appr. Lt.			50	1							26	26				
1294 + 70	" " " " " Rt.			50	1												
1294 + 85	C.M.P. Cross Culvert & Ditch change		5		25							100					
	Remove Culvert	1															
1298+47 to 1298+80.17	Concrete Bridge				(Quantities in Summary)												
	Detour Bridge & Detour Roadway			1000													
	Remove Culvert	1															
	" Detour Bridge																
	Channel Improvement		300														100 Tons Surfacing
1302+52 to 1302+85.17	Concrete Bridge				(Quantities in Summary)												
	Channel Improvement		300														3366 bd.ft. Untr. Bridge Timber
	Remove Culvert	1															72 lin.ft. Untr. Timber Piling
1302+70 to 1324+10	Drain ditch Rt.		300														Remove bridge
1304 + 60	C.M.P. Side Drain & Road Appr. Rt.			50	1							28					
1308 + 03	" " " Rt.				1							24					
	" " " Lt.				1							24					
	Road Approaches Rt. & Lt.			100													
1308 + 75	C.M.P. Cross Culvert & Outlet		5		20								60				
1310 + 75	" " " " Inlet		5		15							52					

(TABULATION CONTINUED ON SHEET NO. 5)

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	243- I	4	

Rev 6/19/36 R.M.J.

R. O. W. MARKERS

STATION	SIDE	NO
934 + 44	R	1
934 + 52	L	1
960 + 83	R	1
960 + 87	L	1
987 + 30	L	1
987 + 44	R	1
1014 + 09	L	1
1014 + 28	R	1
1040 + 90	L	1
1041 + 08	R	1
1067 + 62	R & L	2
1094 + 22	R & L	2
1120 + 38	R & L	2
1146 + 49	R & L	2
1173 + 31	R & L	2
1199 + 65	R & L	2
1226 + 02	L	1
1226 + 14	R	1
1254 + 60	L	1
1254 + 87	R	1
1281 + 34	L	1
1281 + 88	R	1
1308 + 13	R	1
1308 + 35	L	1
1335 + 18	R	1
1335 + 39	L	1
1362 + 25	R	1
1362 + 47	L	1
1383 + 81	R	1
1390 + 07	L	1
1417 + 37	R	1
1417 + 61	L	1
1435 + 00	R & L	4
TOTAL		42

WIRE CABLE GUARD FENCE

STATION	SIDE	LIN. FT.
979+53 to 981+31	R	178
979+53 to 981+31	L	178
982+52 to 983+02	R	50
982+52 to 983+02	L	50
1288+00 to 1294+34	L	632
1287+92 to 1294+54	R	664
1294+64 to 1298+45	L	380
1294+84 to 1298+45	R	362
1298+82 to 1302+50	L	367
1298+82 to 1302+50	R	369
1302+87 to 1305+14	L	226
1302+87 to 1304+49	R	162
1339+70 to 1340+36	L	66
1341+04 to 1341+54	L	50
1339+69 to 1340+19	R	50
1340+87 to 1341+53	R	66
TOTAL		3850

PICKET SNOW FENCE

STATION	SIDE	LIN. FT.
918+00 to 925+02	R	702
935+00 to 940+02	R	502
954+00 to 960+02	R	602
972+00 to 975+02	R	302
982+50 to 986+72	R	422
987+00 to 994+52	R	752
998+00 to 1000+52	R	252
1008+00 to 1010+02	R	202
1014+00 to 1017+02	R	302
1085+00 to 1090+02	R	502
1116+00 to 1121+02	R	502
1145+00 to 1149+02	R	402
TOTAL		5444

TABULATION OF STRUCTURES (TABULATION CONTINUED FROM SHEET NO. 4)

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	243-1	5	

Rev. 7/7/36 R.M.J.

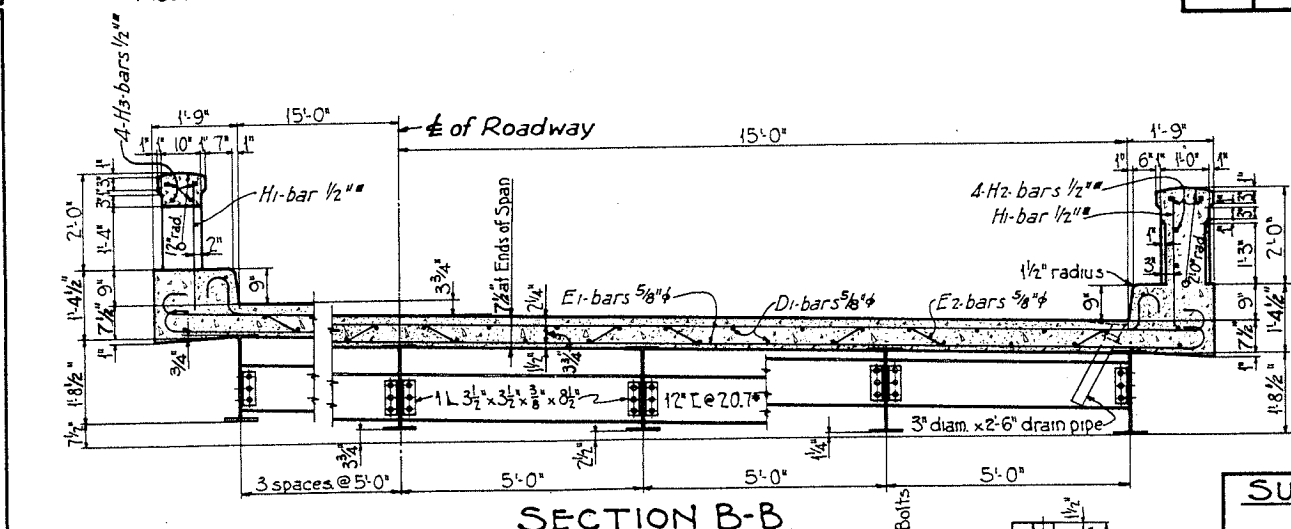
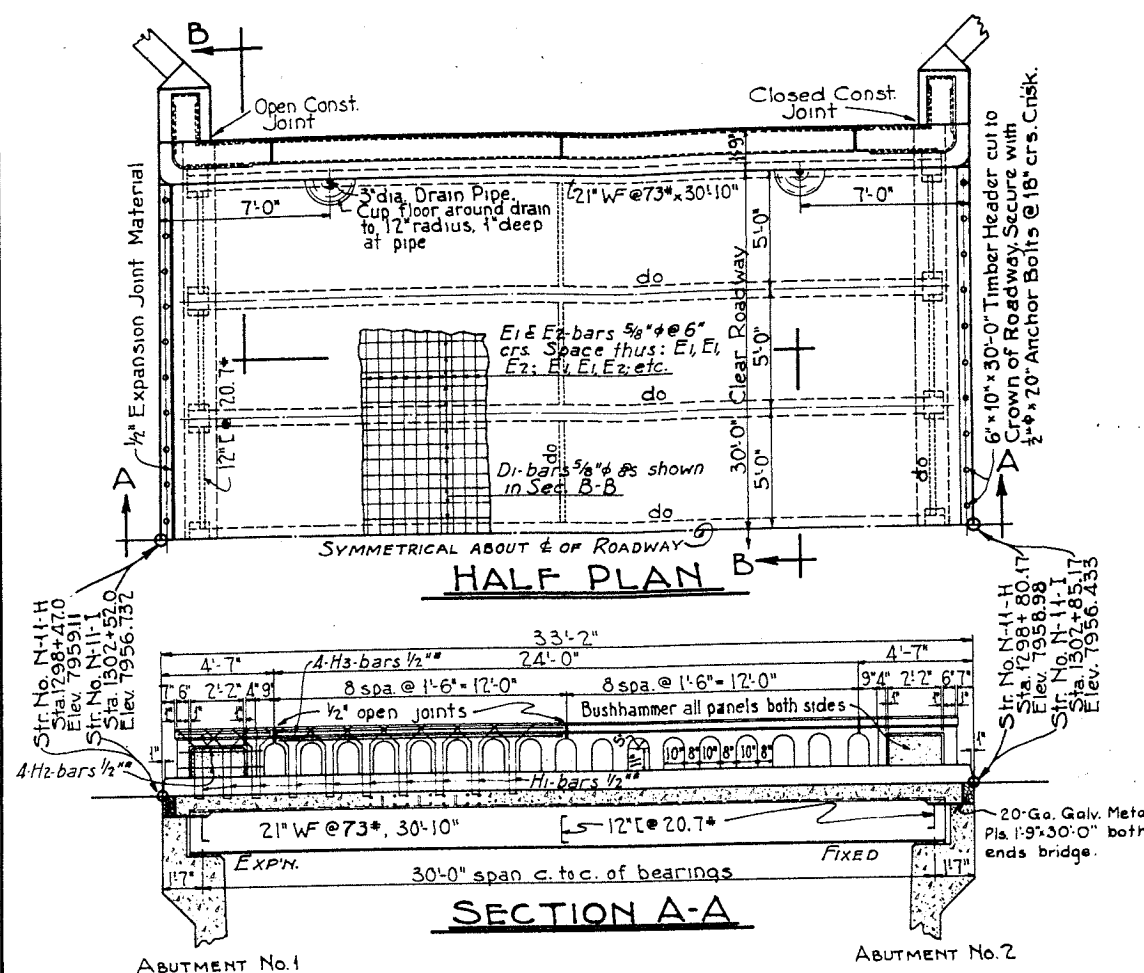
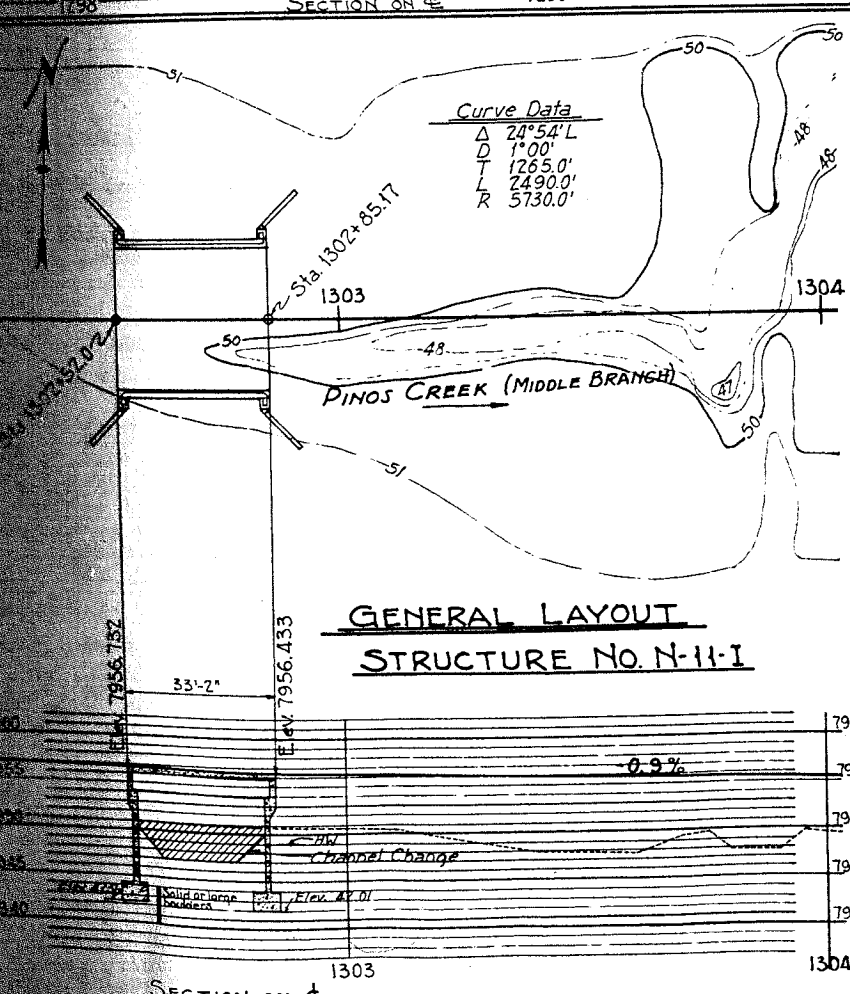
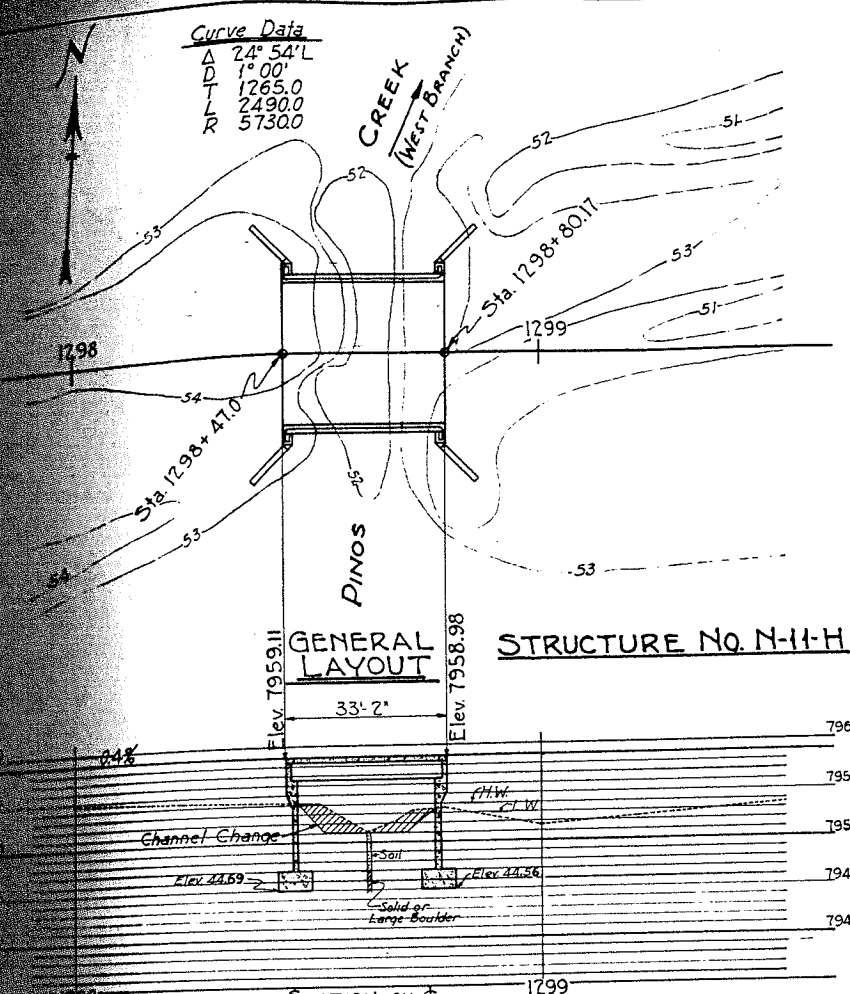
STATION	DESCRIPTION	REMOVE	EXCAVATION		STRUCTURAL EXCAV.				CONCRETE		REINF.	COR. METAL CULV. PIPE					DRY RUBBLE	MISCELLANEOUS	
		STRUCT.	CU. YDS.		CU. YDS.				CU. YDS.		STEEL	LIN. FT.					SLOPE PAVING 1.5 ft. thick Sq. Yds.		
			NO.	EXCAV.	EMB.	*				CL. A		CL. B	LBS.	18"	24"	30"			48"
1311 + 27	C.M.P. Side Drain & Road Appr. Rt.				50	2										26			
1321 + 75	" " " Rt.					1										28			
	" " " Lt.					1										28			
	Road Approaches Rt. & Lt.			125															
1322 + 00	6x7x40 Conc. Box Culv. & Inlet & Outlet		10			70				75.4		4912							
1327 + 95	" " " " Ditch change		5			10								56					
1331 + 85	" " " " Outlet		5			15										62			
1333 + 50	C.M.P. Side Drain Rt.					1										20			
	" " " Lt.					1										20			
1333 + 55	Road Approaches Rt. & Lt.			100															
1340+30 to 1340+93.08	C.M.P. Cross Culvert & Inlet & Outlet Concrete Bridge		15			15										62			
	Channel Improvement		300																
1349 + 50	C.M.P. Side Drain & Road Appr. Rt.			50		1										28			
1353 + 58	Remove Culvert	1																	
1353 + 84	C.M.P. Cross Culvert & Ditch change		5			15										90			
	C.M.P. Side Drain Rt.					1										28			
	" " " Lt.					1										28			
	Road Approaches Rt. & Lt.			100															
1362 + 32	Remove Culvert	1																	
	C.M.P. Side Drain Rt.					1										24			
	" " " Lt.					1										24			
	Road Approaches Rt. & Lt.			75															
1362+32 to 1376+00	Drain ditch Rt.		160																
1372 + 00	C.M.P. Cross Culvert					10										90			
1375 + 90	" " " "					15										90			
1376 + 15	C.M.P. Side Drain Rt.					2										30			
	" " " Lt.					2										30			
	Road Approaches Rt. & Lt.			100															
1376 + 36	C.M.P. Cross Culvert & Inlet & Outlet		25			30											80		
	Timber Headgate																	16	
1382 + 75	Remove Headgate	1				5										92			434 f.b.m. Misc. Treated Timber
1383+00 to 1408+00	C.M.P. Cross Culvert		300																
1400 + 00	Drain ditch Rt.																		
1408 + 00	C.M.P. Side Drain & Road Appr. Rt.			50		1										24			
1408+00 to 1413+50	C.M.P. Cross Culvert & Inlet & Outlet		10			20											92		
1415 + 00	Ditch change Rt.		90																
	C.M.P. Side Drain Rt.					1										24			
	" " " Lt.					1										24			
1417 + 70	Road Approaches Rt. & Lt.			100															
	C.M.P. Side Drain Rt.					1										26			
	" " " Lt.					1										26			
	Road Approaches Rt. & Lt.			100															
	Remove Culvert	1																	
1420 + 48	C.M.P. Side Drain & Road Appr. Rt.			50		1										26			
1427 + 10	Move House off R.O.W. (Force Account)																		
1427 + 22	C.M.P. Side Drain & Road Appr. Lt.			50		2										26			
1430 + 75	" " " " " "			50		2										28			
1431 + 30	Move House off R.O.W. (Force Account)																		
1434 + 80	C.M.P. Side Drain & Road Appr. Lt.			50		2										28			
1435 + 20	" " " " " "			50		2										28			
1436 + 40	6'x4'x60' (45° skew) Conc. Box Culv.					150				65.4		5062							
	Channel change		100																
	Remove Culvert	1																	
1436 + 66	C.M.P. Side Drain Rt.					1										24			
	" " " Lt.					2										24			
	Road Approaches Rt. & Lt.			100															
1437 + 81	4'x2'x44' (skew) Conc. Box Culv.					130				28.3		2633							
	Channel change		20																
	Remove Culvert	1																	
1439 + 40	C.M.P. Side Drain & Road Appr. Lt.			50		2										28			
1440 + 45	" " " " " "			25		2										28			
1441 + 88.6	Approach to Project			250															
	Project Marker																		100 tons surfacing Project Marker
TOTALS		26	5540	3710	1423					292.6		23,514	2784	1886	68	562	16		

* Structural Excavation is estimated to be 80% common and 20% rock; each of which is estimated to be 60% dry and 40% wet.

* Included in profile quantities for payment.

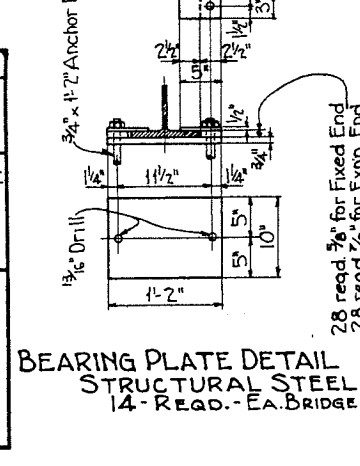
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOT SHE
3	COLO.	243-1	7	

Rev. 127-36 T.M.H. Changed Beam Size, Slab Thickness, Slab Steel, & Grade and Elevations Sta. 1298+47, +80.1 Bar List & Summary - 5-13-36 46r & Galv. Mtl.



BAR LIST FOR ONE 30'-0" SPAN OF SUPERSTRUCTURE

MARK	SIZE	No. REQD.	LENGTH	BENDING DIAGRAM	DIMENSIONS TO C OF BAR
E1	5/8" φ	86	34'-3"		
E2	5/8" φ	22	33'-4"		
H1	1/2" #	44	6'-6"		
H2	1/2" #	16	3'-2"		
H3	1/2" #	16	11'-8"		
D1	5/8" φ	48	31'-10"		



SUMMARY OF QUANTITIES FOR STR. NO. N-11-H (Sta. 1298+47.0)

ITEM No.	DESCRIPTION	UNIT	ABUTMENT No. 1	SUPER-STRUCTURE	ABUTMENT No. 2	TOTAL
14a	DRY ROCK STRUCTURAL EXCAVATION	Cu. Yds.	10		10	20
14b	COMMON	"	50		60	110
14c	WET ROCK	"	50		50	100
14d	COMMON	"	125		85	210
42a	UNTREATED BRIDGE TIMBER	M. ft. b. m.	0.150		0.150	0.300
46r	CLASS 'A' CONCRETE H.R. & Posts	Cu. Yds.	0.5	3.0	0.5	4
46a	CLASS 'A' CONCRETE	Cu. Yds.	67.0	30.0	67.0	164
47	REINFORCING STEEL	Lbs.	4720	5940	4720	14380
48	STRUCTURAL STEEL INCL. 1/2" O'RUM	"	30	18630	30	18690
89a	DRAIN PIPE & FLANGE 3"x2'-6"	EACH		4		4
	20 GA. GALV. METAL	Lbs.		171		171
	EXPANSION JOINT MATERIAL 1/2" x 10"	LIN. FT.		30		30

SUMMARY OF QUANTITIES FOR STR. NO. N-11-I (Sta. 1302+52.0)

ITEM No.	DESCRIPTION	UNIT	ABUTMENT No. 1	SUPER-STRUCTURE	ABUTMENT No. 2	TOTAL
14a	DRY ROCK STRUCTURAL EXCAVATION	Cu. Yds.	10		10	20
14b	COMMON	"	60		60	120
14c	WET ROCK	"	45		45	90
14d	COMMON	"	85		85	170
42a	UNTREATED BRIDGE TIMBER	M. ft. b. m.	0.150		0.150	0.300
46r	CLASS 'A' CONCRETE H.R. & Posts	Cu. Yds.	0.5	3.0	0.5	4
46a	CLASS 'A' CONCRETE	Cu. Yds.	67.0	30.0	67.0	164
47	REINFORCING STEEL	Lbs.	4720	5940	4720	14380
48	STRUCTURAL STEEL INCL. 1/2" O'RUM	"	30	18630	30	18690
89a	DRAIN PIPE & FLANGE 3"x2'-6"	EACH		4		4
	20 GA. GALV. METAL	Lbs.		171		171
	EXPANSION JOINT MATERIAL 1/2" x 10"	LIN. FT.		30		30

REFERENCE DRAWINGS
For Abutment Details See Sheet No. 8.
Detour Struct., Sta. 1298+, Sh. No. 9.

SUMMARY OF BAR LIST FOR ONE SPAN

523 - lin. ft. of 1/2" # bars @ 0.850 - lbs. per lin. ft. =	445 - Lbs.
5207 - " " 5/8" φ " " 1.043 " " " " =	5431 - Lbs.
Plus 1% ± for Over run =	64 - Lbs.
TOTAL =	5940 - Lbs.

GENERAL NOTES

ALL WORK SHALL BE DONE ACCORDING TO THE STANDARD SPECIFICATIONS OF THE COLORADO STATE HIGHWAY DEPARTMENT, ADOPTED AUG. 1-1935.

ALL CONCRETE SHALL BE CLASS "A."

FORMS FOR CONCRETE SURFACES EXPOSED IN THE FINISHED WORK SHALL BE CONSTRUCTED OF SHIPLAP OR TONGUE AND GROOVE LUMBER 3/4" UNLESS FACED WITH PANEL BOARD.

CONCRETE GIRDERS, FLOOR SLABS AND CURB SHALL BE POURED MONOLITHICALLY. FOOTINGS IN ROCK SHALL BE POURED OUT TO THE ROCK AND NOT FORMED.

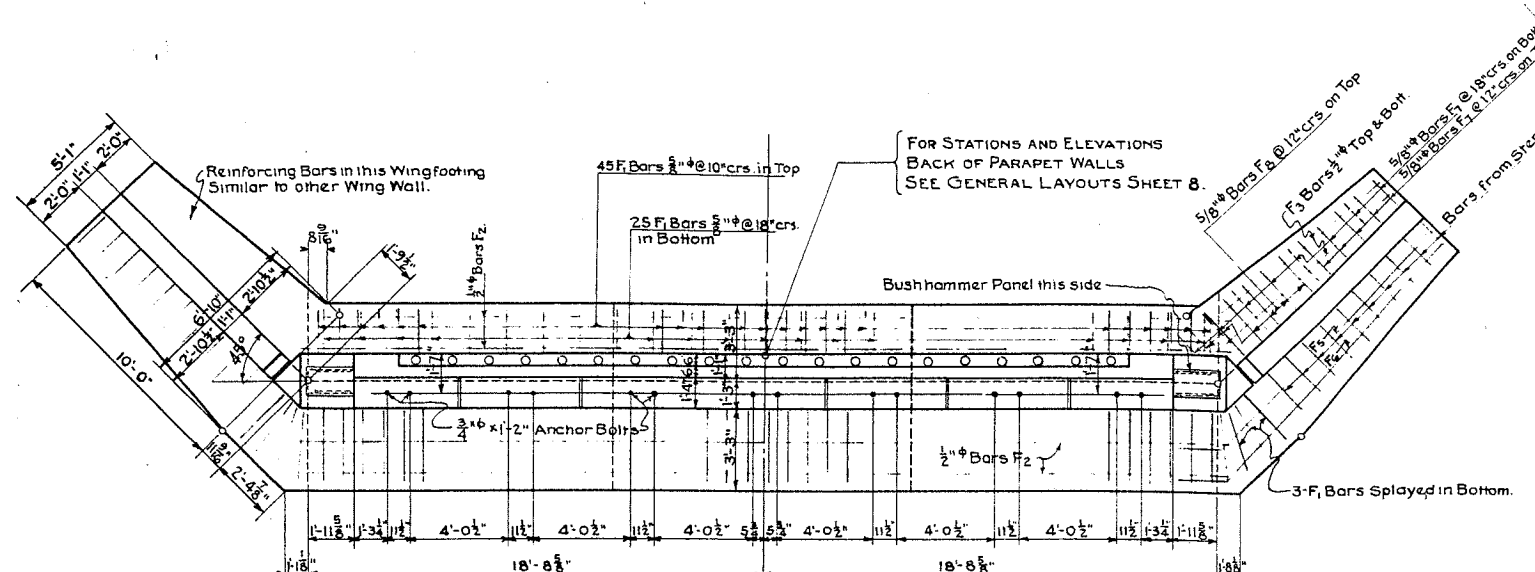
ALL REINFORCING BARS SHALL BE DEFORMED AND TAGGED WITH THE STATION NUMBER AND LETTER DESIGNATION. MAIN BARS SHALL NOT BE SPLICED.

BOUNDINGS AND DEPTH OF FOOTINGS SHOWN ARE ACCORDING TO THE BEST AVAILABLE DATA. IF ESSENTIALLY DIFFERENT CONDITIONS ARE ENCOUNTERED THE BRIDGE ENGINEER WILL INSPECT AND DETERMINE IF REDESIGN IS NECESSARY.

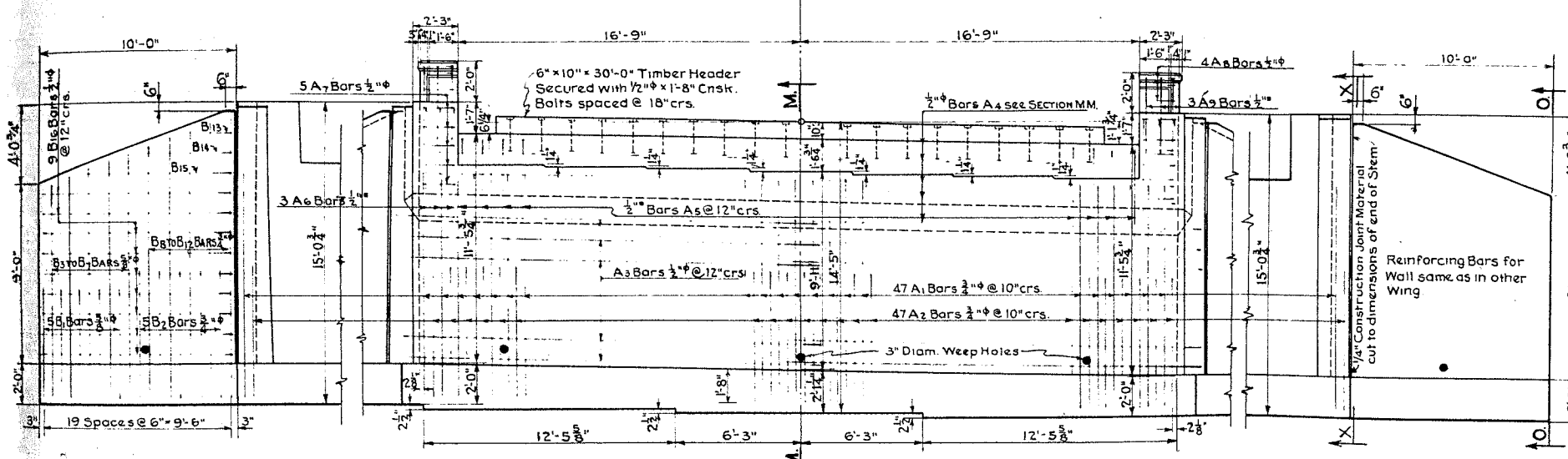
LOADING DATA.
LIVE LOAD--A.A.S.H.O. AUG. 1935 CLASS
DEAD LOAD ASSUMES 15 LBS. PER SQ. F.
ADDITIONAL WEARING SURFACE WHICH INCL. 1/4" IN. CONCRETE MONOLITHIC WEARING SURF.

COLORADO
STATE HIGHWAY DEPARTMENT
SUPERSTRUCTURE-GENERAL LAYOUT-GENERAL NOTES-SUM OF QUANTITIES FOR BRIDGE
Across: WEST BRANCH PINOS C.
Mid. BRANCH PINOS C.
Stas: 1298+47.0 to 1298+80.1
1302+52.0 to 1302+85.1
NEAR DEL NORTE, SEC. 34, T.40N, R.1E
Designed by WWD
Made by t.g.c.
Checked by RA
Check Detail RA
Approved by P.H.
Bridge Engineer
Date: July 30, 1936

STRUCTURE NO. N-11-H & I



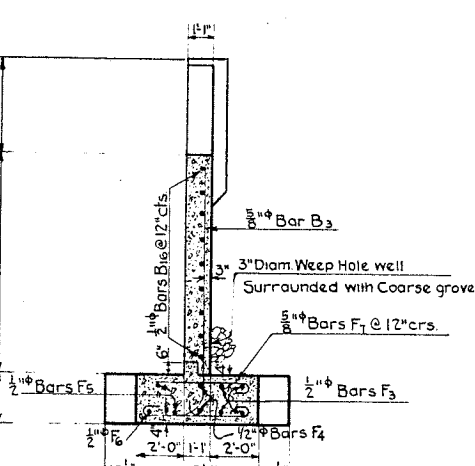
PLAN.
 In Plan View Abutment is Symmetrical about C.



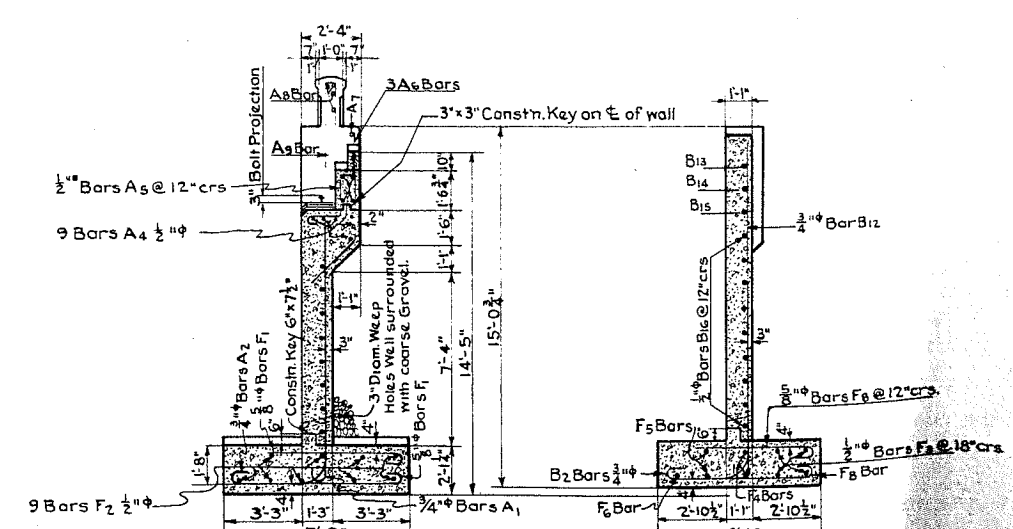
TRUE ELEVATION OF WINGWALL.

ELEVATION.

TRUE ELEVATION OF WINGWALL.



SECTION O-O.



SECTION M-M.

SECTION X-X.

BAR LIST FOR ONE ABUTMENT. (4 REQ'D)

Mark	Size	Req'd	Length	Type	l	m	r	t	BENDING DIAGRAMS
A1	3/4"	47	12'-0"	I	11'-0"	3"		2 1/2"	I.
A2	3/4"	47	10'-9"	II	5'-6"	2'-8"	3"	2 1/2"	
A3	1/2"	16	20'-10"	III	19'-10"	0'-11"			
A4	1/2"	9	37'-4"	—					
A5	1/2"	34	9'-6"	IV					
A6	1/2"	6	7'-1"	IV	4'-5"	2'-8"			II.
A7	1/2"	10	1'-11"	—					
A8	1/2"	8	1'-7"	—					
A9	1/2"	6	9'-0"	V					
F1	5/8"	76	5'-10"	I	5'-0"		2 1/2"	2"	
F2	1/2"	9	38'-0"	—					III.
B1	5/8"	10	8'-2"	II	4'-5"	1'-4"	2 1/2"	2"	
B2	3/4"	10	9'-11"	II	5'-7"	1'-9"	3"	2 1/2"	
B3	5/8"	2 Ea	11'-10"	I	11'-0"		2 1/2"	3"	
T0	5/8"	2 Ea	11'-10"	I	11'-0"		2 1/2"	3"	
B8	3/4"	2 Ea	12'-6"	I	11'-6"		3"	2 1/2"	IV.
T0	3/4"	2 Ea	14'-0"	I	13'-0"		3"	2 1/2"	
B12	1/2"	2	2'-4"	—					
B14	1/2"	2	5'-3"	—					
B15	1/2"	2	8'-2"	—					
B16	1/2"	18	9'-8"	—					V.
F3	1/2"	8	11'-0"	—					
F4	1/2"	4	13'-0"	III	11'-0"	2'-0"			
F5	1/2"	4	14'-0"	III	12'-0"	2'-0"			
F6	1/2"	2	15'-0"	III	13'-0"	2'-0"			
F7	5/8"	26	5'-1"	I	4'-3"		2 1/2"	2"	
F8	5/8"	12	6'-5"	I	5'-7"		2 1/2"	2"	
1475 Lin. Ft. 1/2" bars @ 0.668 lbs. per lin. ft. = 985 Lbs.									
418 Lin. Ft. 1/2" " @ 0.850 " " " = 356 "									
845 Lin. Ft. 5/8" " @ 1.043 " " " = 881 "									
1301 Lin. Ft. 3/4" " @ 1.502 " " " = 1954 "									
Plus 1% for overrun = 44 "									
TOTAL = 4220 Lbs.									

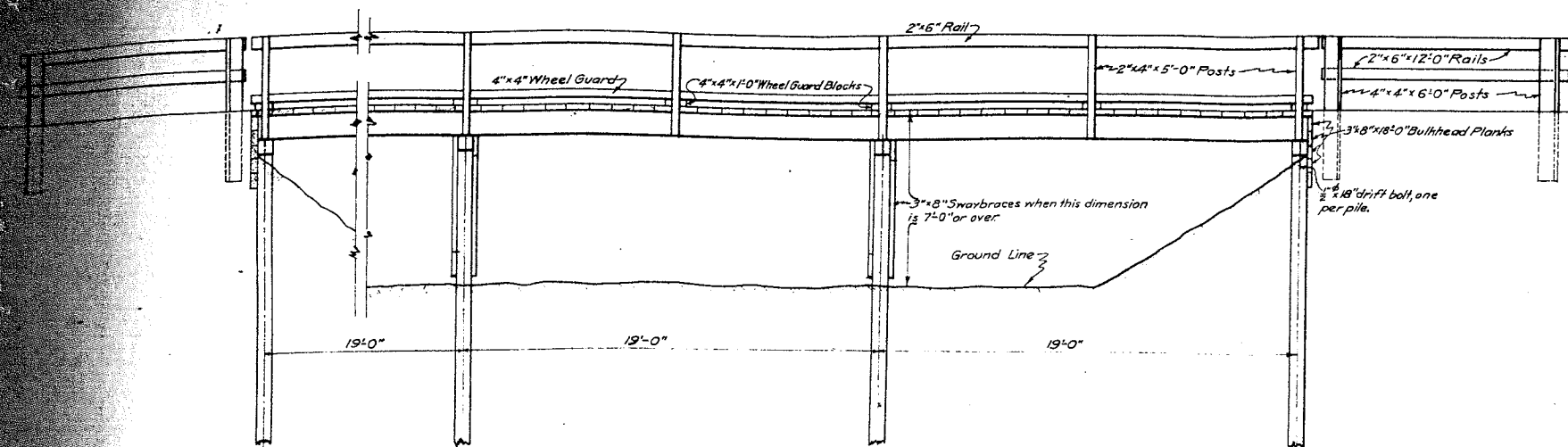
LOADING DATA.
 LIVE LOAD = A. A. S. H. O. AUG. 1935 CLASS A, (H-15)
 DEAD LOAD = ASSUMES 16 LBS. PER SQ. FT. ADDITIONAL WEARING SURFACE, WHICH INCLUDES THE 1/2" IN. CONCRETE MONOLITHIC WEARING SURFACE.

COLORADO
STATE HIGHWAY DEPARTMENT
ABUTMENT DETAILS
FOR BRIDGES.
 West Branch of Pinos Creek
 Across Mid. Branch of Pinos Creek
 Sta. 1298+47.0 to 1298+80.17 & 1302+52.0 to 1302+85.17
 Near Del Norte Sec. 34 T. 40-N. R. 5-E N.M.P.

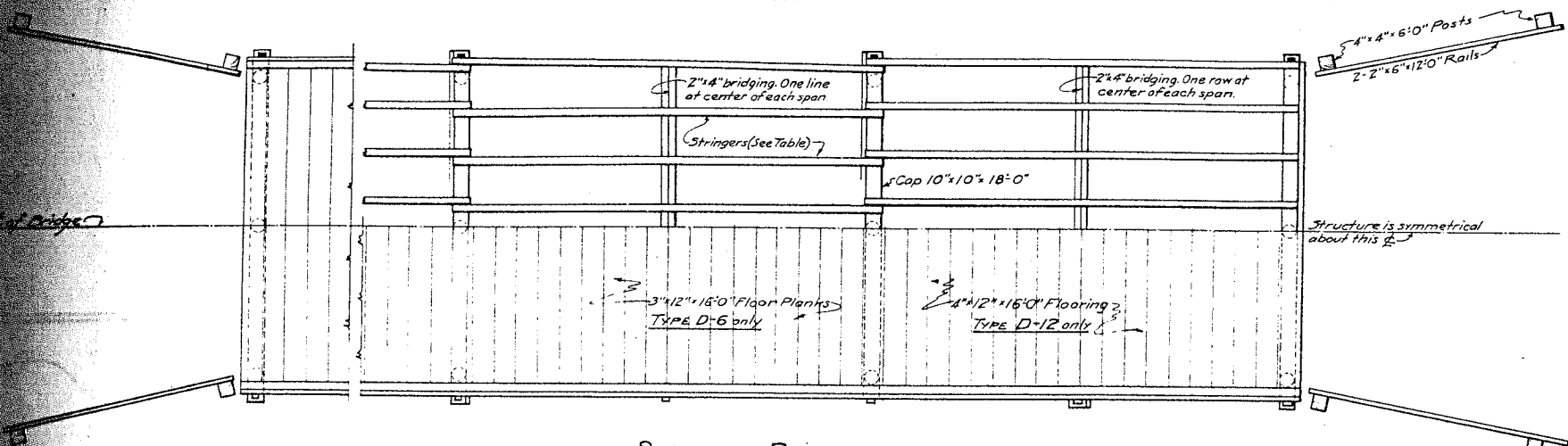
Designed by W.W.D.
 Made by W.W.D.
 Check Design R.A.
 Check Detail R.A.

Approved by *Red Bailey*
 Bridge Engineer
 Date: July 30th, 1935

REFERENCE DRAWINGS
 For Superstructure, General Layout, General Notes & Summary of Quantities see sheet 7



ELEVATION



SECTIONAL PLAN

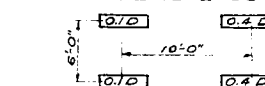
ONE ABUTMENT		
PILING	3 Piles 12 Ft Long	36 Lin. Ft.
STRUCTURAL TIMBER		
CAP	1 Pc. 10" x 10" x 18'-0" Long	150 Bd. Ft.
TOTAL STRUCTURAL TIMBER		
NATIVE TIMBER		
HANDRAIL POSTS	2 Pcs. 2" x 4" x 5'-0" Lpg	7 Bd. Ft.
GUARDRAIL POSTS	4 Pcs. 4" x 4" x 6'-0" do	32 Bd. Ft.
GUARD RAILS	4 Pcs. 2" x 6" x 12'-0" do	48 Bd. Ft.
POST BLOCKING	2 Pcs. 2" x 4" x 0'-8" do	1 Bd. Ft.
WHEEL GUARD BLOCKING	2 Pcs. 4" x 4" x 1'-0" do	3 Bd. Ft.
BULKHEAD PLANKS	5 Pcs. 3" x 8" x 18'-0" do	180 Bd. Ft.
TOTAL NATIVE TIMBER		
PILE SHOES CAST IRON		
SHOES	@ 35 Lbs. Each	SHOES

ONE SPAN OF SUPERSTRUCTURE		
DESCRIPTION	NUMBER	TYPE D-12
STRUCTURAL TIMBER		
STRINGERS	2	11
	SIZE	4" x 6" x 20'-0"
TOTAL STRUCTURAL TIMBER		
NATIVE TIMBER		
HANDRAILS	2	2
	SIZE	2" x 6" x 20'-0"
HANDRAIL POSTS	2	2
	SIZE	2" x 4" x 5'-0"
POST BLOCKS	2	2
	SIZE	2" x 4" x 0'-8"
WHEEL GUARDS	2	2
	SIZE	4" x 4" x 20'-0"
WHEEL GUARD BLOCKING	2	2
	SIZE	4" x 4" x 1'-0"
FLOOR PLANKS	19	19
	SIZE	4" x 12" x 16'-0"
BRIDGING	20	20
	SIZE	2" x 4" x 2'-0"
TOTAL NATIVE TIMBER		
1350 Bd. Ft.		

SUMMARY OF QUANTITIES		
STRUCTURAL TIMBER-UNTREATED (ITEM N° 42a)		
ONE SPANS	@ 1174 Bd. Ft. Each	1174 Bd. Ft.
TWO ABUTMENTS	@ 150 do	300 Bd. Ft.
BENTS	@ 150 do	150 Bd. Ft.
TOTAL 1474 Bd. Ft.		
NATIVE TIMBER-UNTREATED (ITEM N° 42a)		
ONE SPANS	@ 1350 Bd. Ft. Each	1350 Bd. Ft.
TWO ABUTMENTS	@ 271 do	542 Bd. Ft.
BENTS	@ do	do
TOTAL 1892 Bd. Ft.		
PILING-UNTREATED (ITEM N° 60b)		
TWO ABUTMENTS	@ 36 Lin. Ft. Each	72 Lin. Ft.
BENTS	@ do	do
TOTAL 72 Lin. Ft.		
PILE SHOES (ITEM N° 60c)		
ABUTMENTS	@ 35 Lbs. Each	Shoes
BENTS	@ do	Shoes
TOTAL SHOES		
NAILS & DRIFT BOLTS		
DESCRIPTION	DRIFT BOLTS	20d Common
ONE SPANS	Each	Total
TWO ABUTMENTS	3	4
BENTS	3	4
TOTAL Lbs.		
	6	8
		51

NAILS ETC.			
DESCRIPTION	UNIT	TYPE D-6	TYPE D-12
ONE SPAN SUPERSTRUCTURE	20d Common Lbs.	3	4
	60d Common Lbs.	28	33
ONE ABUTMENT	20d Common Lbs.	2	2
	60d Common Lbs.	5	6
ONE BENT	20d Common Lbs.	1	1
	60d Common Lbs.	5	6
DRIFT BOLTS 1" x 18"	One Abutment	3	3
	One Bent	3	3

LOADING DATA
D.L. TIMBER @ 3 1/2 Lbs. per Bd. Ft.
L.L. TYPE D-6 = 12000 Lbs.
TYPE D-12 = 24000 Lbs.



TYPICAL TRUCK
IMPACT - NONE

ONE STRUCTURE REQUIRED	
TYPE OF STRUCTURE D-12	
STA. 1298+65	ONE SPAN @ 19 Ft.
STA.	do
STA.	do
STA.	do
STA.	do

GENERAL NOTES

All work shall be done in accordance with the Standard Specifications of the Colorado State Highway Department adopted Aug. 1-1935.
Caps and Stringers shall be West Coast Douglas Fir or Southern Longleaf Yellow Pine.
Handrails, Handrail posts, handrail blocking, wheel guards, wheel guard blocking, floor planks, bulkhead planks, bridging and swarbraces may be good grade native lumber.
A 1/2" space shall be maintained between floor planks.
Entire structure shall be securely nailed together as per nailing directions.
Piling shall be West Coast Douglas Fir, Dense Southern Yellow Pine, Oak, Southern Cypress or Red Spruce.

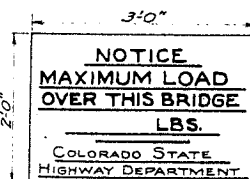
COLORADO

STATE HIGHWAY DEPARTMENT STANDARD TEMPORARY DETOUR TRESTLE

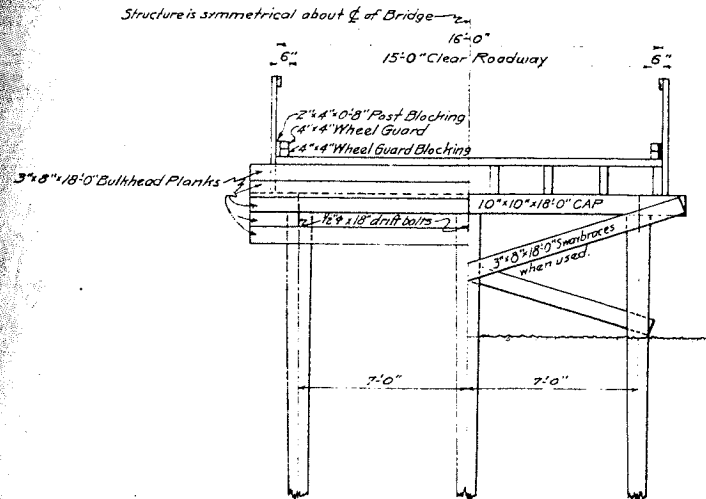
FOR USE DURING CONSTRUCTION OF BRIDGES AT
Across West Branch Pinos Creek
STA. 1298+65
Near Del Norte Sec. 34 T. 40N R. 5E

Designed by *EEB* Approved by *GBB*
Made by *EEB* Bridge Engineer
Checked by *RSB* Date *Oct. 24/1929*

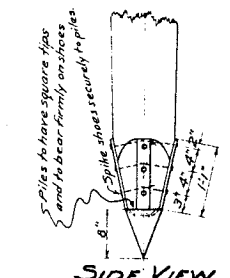
NAILING DIRECTIONS
Rails to Posts - 2-20d nails per rail per post.
Post Blocking to Post - 2-20d nails per block.
Post Blocking to Wheel Guards & Wheel Guard Blocking - 2-20d nails per block.
Wheel Guard Blocks - 2-20d nails per block.
Wheel Guards to Blocking - 2-60d nails per wheel guard per block.
Floor Planks to Stringers - 2-60d nails per plank per stringer.
Posts to Stringers - 2-20d nails per post.
Stringers to Caps - 2-60d nails per stringer per cap.
Bulkhead Planks to Stringers - 2-60d nails per plank per stringer.
Swarbraces to Caps or Piles - 2-60d nails per brace per cap or pile.
Bridging to Stringers - 4-20d nails per piece.



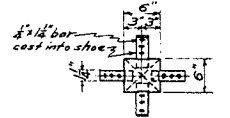
This notice, made of 1" boards, is to be posted conspicuously on bridge at right hand side of each end.



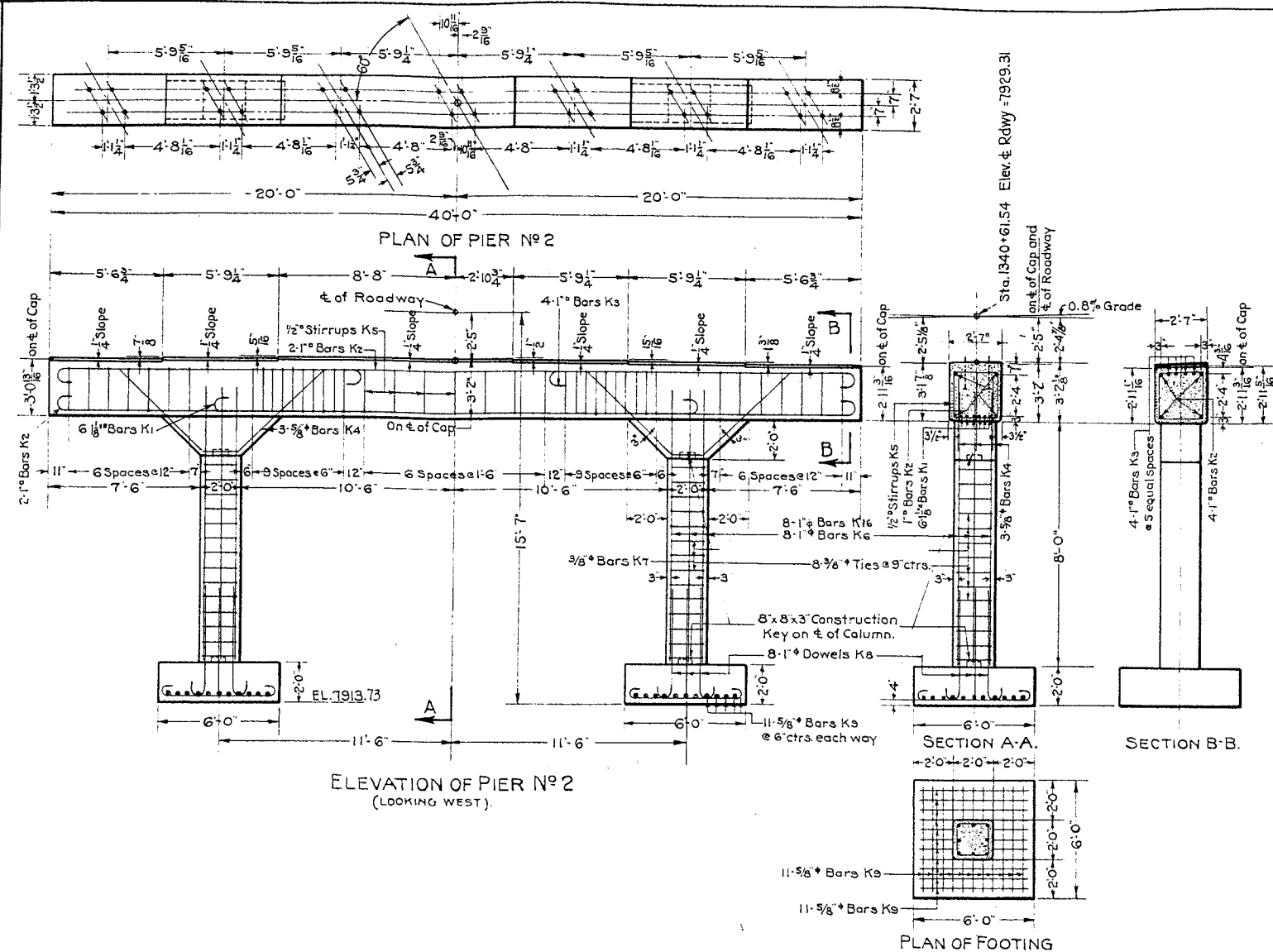
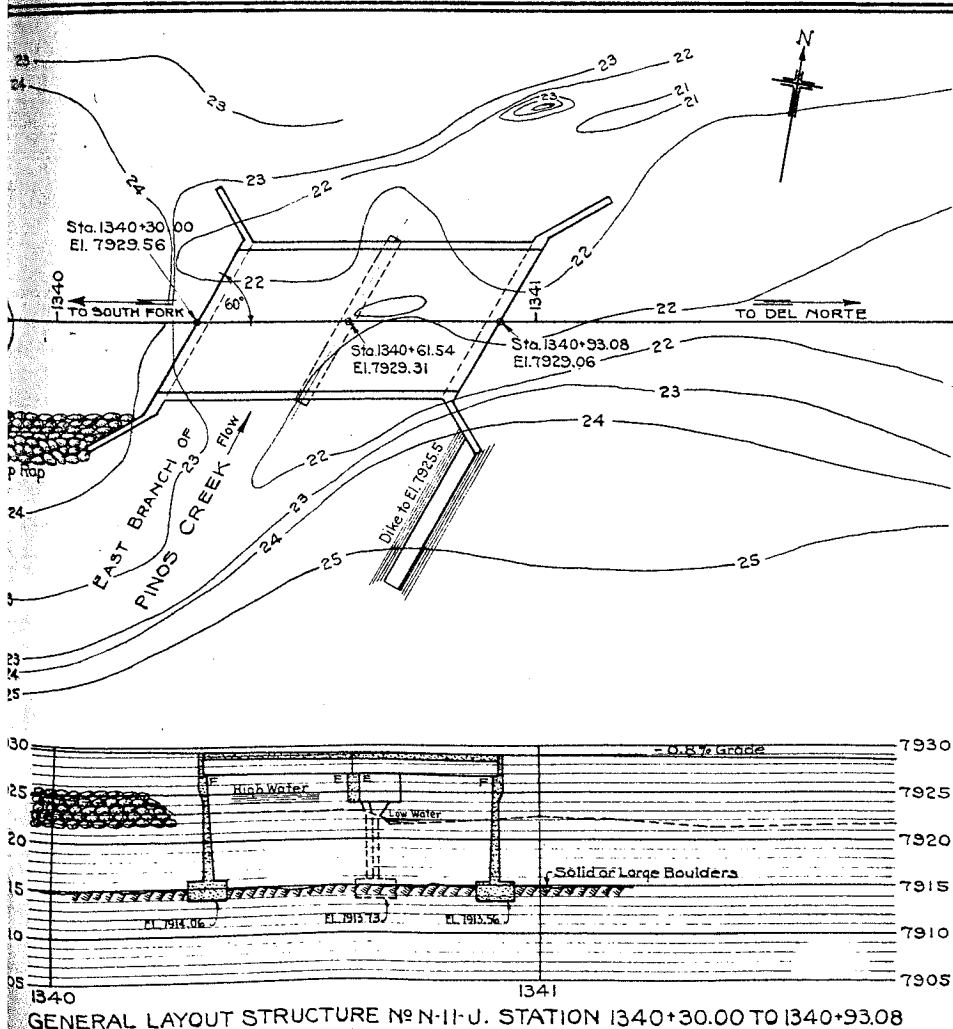
HALF END VIEW HALF SECTION AT BENT



SIDE VIEW



PLAN PILE SHOE
CAST IRON



REFERENCE DRAWINGS

SHEET N-11 DETAILS OF SUPER STRUCTURE FOR STRUCT. N-11-J

SHEET N-12 ABUTMENT DETAILS FOR STRUCTURE N-11-J

SUMMARY OF QUANTITIES FOR ONE BRIDGE

ITEM NO.	DESCRIPTION	UNIT	STRUCTURE N-11-J STATION 1340+30 TO 1340+93.08			
			SUPER-STRUCTURE	ABUTMENTS	ONE PIER	TOTAL
14 a	Dry Rock Structural Excavation	Cu.Yds.	10			10
14 b	Dry Common Structural Excavation	Cu.Yds.	30			30
14 c	Wet Rock Structural Excavation	Cu.Yds.	64		6	70
14 d	Wet Common Structural Excavation	Cu.Yds.	360		35	395
42 a	Untreated Bridge Timber	M.Bd.Ft.	.432			.432
46 a	Class 'A' Concrete	Cu.Yds.	56	167	20	243
47	Reinforcing Steel	Lbs.	11370	12600	3180	27150
48	Structural Steel	Lbs.	37230	75	75	37380
89 a	Galv. Drain Pipe	Pcs.	8			8
46 r	Class 'A' Concrete Handrail & Posts	Cu.Yds.	6	1		7
80 c	Sheet Copper 36 oz. per Sq. Ft.	Lbs.	120			120
	Expansion Joint Material 3/4" x 12"	Lin. Ft.	37			37
	Expansion Joint Material 1/4" Thick	Sq. Ft.				
63 a	Rip Rap 18 inches thick	Cu.Yds.		70		70

* The fabricator is cautioned to check details with approved structural steel shop plans before proceeding with fabrication of sheet copper.
 o Includes 216 lbs. of 20 ga. galv. metal at parapets.

GENERAL NOTES

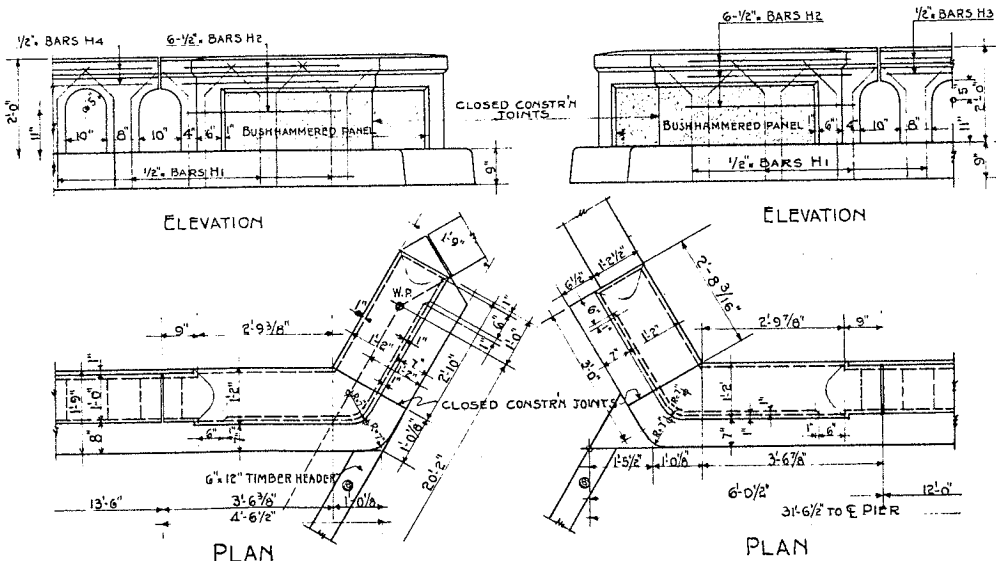
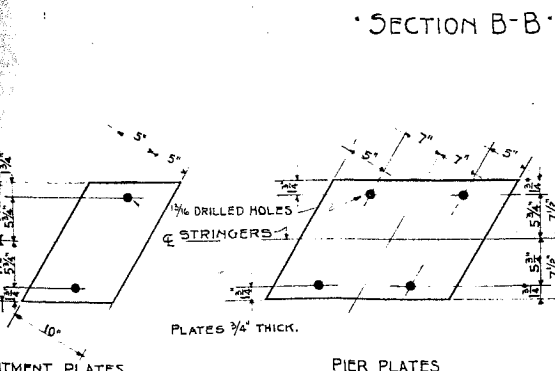
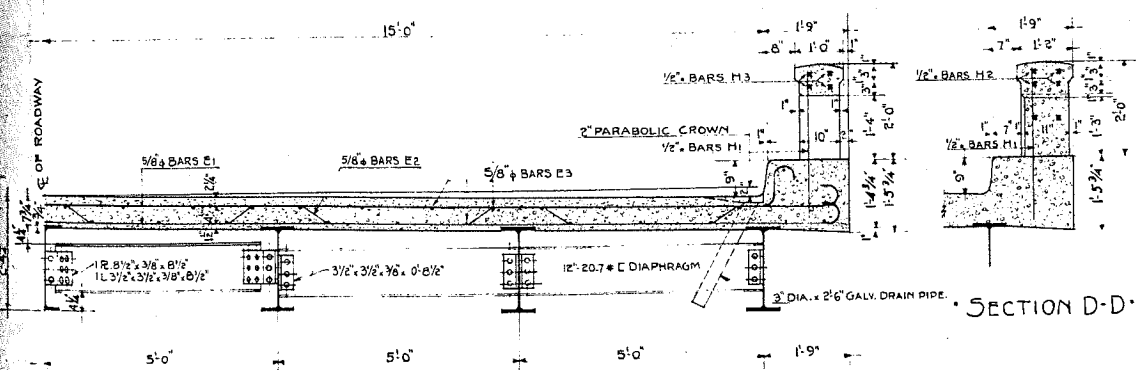
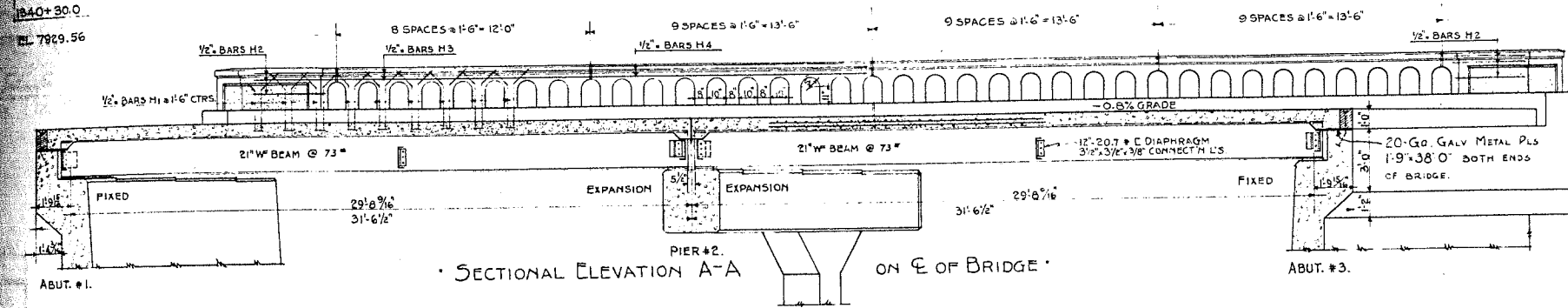
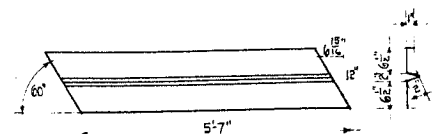
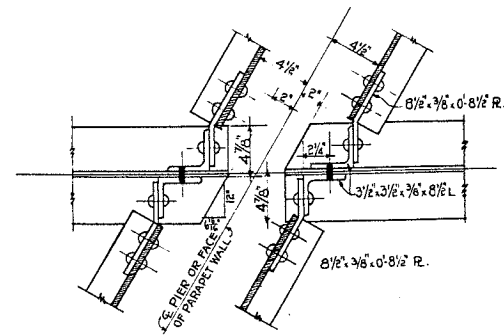
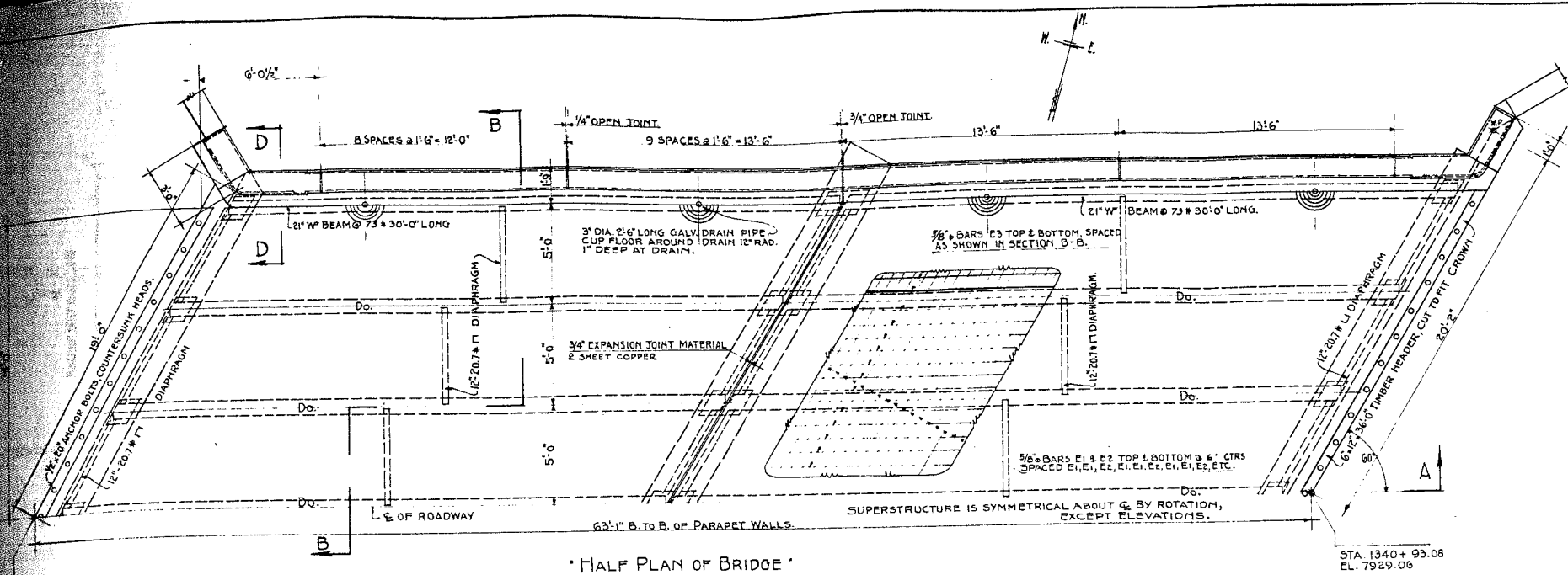
ALL WORK SHALL BE DONE ACCORDING TO THE STANDARD SPECIFICATIONS OF THE COLORADO STATE HIGHWAY DEPARTMENT, ADOPTED AUG. 1, 1935.
 ALL CONCRETE SHALL BE CLASS 'A'.
 FORMS FOR CONCRETE SURFACES EXPOSED IN THE FINISHED WORK SHALL BE CONSTRUCTED OF SHIP LAP OR TONGUE AND GROOVE LUMBER 5/8"
 ALL EXPOSED SURFACES SHALL BE RUBBED FREE OF FORM MARKS.
 ALL EXPOSED CORNERS, EXCEPT ON HANDRAILS, SHALL BE REVELED TO A 2" FACE GIRDERS, FLOOR SLABS AND CURB SHALL BE POURED MONOLITHICALLY.
 ALL CONSTRUCTION JOINTS SHALL BE THOROUGHLY CLEANED BEFORE FRESH CONCRETE IS POURED.
 FOOTINGS IN ROCK SHALL BE POURED OUT TO THE ROCK AND NOT FORMED.
 THICKNESS OF FLOOR SLAB SHOWN INCLUDES 1" CONCRETE WEARING SURFACE.
 ALL REINFORCING BARS SHALL BE DEFORMED AND ROUND OR SQUARE AS SHOWN AND NOTED.
 ALL REINFORCING BARS SHALL BE TAGGED WITH THE STATION NUMBER AND LETTER DESIGNATION.
 SECONDARY BARS WHEN SPLICED SHALL BE GIVEN A LAP OF 50 DIAMETERS.
 MAIN BARS SHALL NOT BE SPLICED.
 SOUNDINGS AND DEPTH OF FOOTINGS SHOWN ARE ACCORDING TO THE BEST AVAILABLE DATA.
 IF ESSENTIALLY DIFFERENT CONDITIONS ARE ENCOUNTERED THE BRIDGE ENGINEER WILL INSPECT AND DETERMINE IF REDESIGN IS NECESSARY.

LOADING DATA.
 LIVE LOAD = A. A. S. H. O. AUG. 1935 CLASS A, H-15
 DEAD LOAD = ASSUMES 1 LBS. PER SQ. FT. ADDITIONAL WEARING SURFACE WHICH INCLUDES THE 1" A. CONCRETE MONOLITHIC WEARING SURFACE.

COLORADO
STATE HIGHWAY DEPARTMENT
 GENERAL LAYOUT, SUMMARY OF QUANTITIES,
 PIER DETAILS FOR CONCRETE T-BEAM
 BRIDGE, 2 SPANS @ 30'-0", 30'-0" ROAD-
 WAY.
 ACROSS EAST BRANCH OF PINOS CREEK.
 STA. 1340+30.00 TO 1340+93.08, SEC. 35
 T. 40N., R. 5E., NEAR DEL NORTE.
 Designed by G.H.D. Approved by P.B. Bailey
 Made by A.G.K. Bridge Engineer
 Checked by A.L.C. Date: July 30, 1935.

Revised 1-27-36 K.T.D. Raised beam seats to fit revised beam and slab Summary Quantities
 Revised 4-17-36 F.W.D. DELETED STR. NO. N-10-E
 Revised 5-12-36 E.W.T. Revised Summary to include item 46r.
 Rev 5-13-36 Galv. Metal item, K.T.D.
 Revised 7-20-36 by L.G. K.T.D. bars, depth of cap, summary of reinforcing steel.

Revised 1-27-36 K.T.D. Beam size.
Thinner slab. Spacing E, E3 bars, Bar List
Rev. 5-13-36 Galv. Metal - K.T.D.
Revised 7-20-36 by lgc, Summary of bar list.



• NORTHEAST & SOUTHWEST ENDPOSTS •
• NORTHWEST & SOUTHEAST ENDPOSTS •

DETAIL OF BEARING PLATES
REQUIRED: 14 ABUTMENT PLATES.
7 PIER PLATES.

DETAIL OF BEAM CLIPS

BAR LIST FOR ENTIRE SUPER STRUCTURE					BENDING DIAGRAM
MARK	SIZE	N ^o	LENGTH		
H1	1/2"	82	6'-6"		STRAIGHT.
H2	1/2"	24	3'-2"		
H3	1/2"	8	11'-8"		
H4	1/2"	24	13'-2"		
E3	3/8"	96	30'-7"		RAD. = 2 1/2'
E1	5/8"	144	39'-5"		
E2	5/8"	36	38'-10"		RAD. = 2 1/2'

1018 LIN. FT. 1/2" BARS @ 0.850 LBS. PER LIN. FT. = 865 LBS.
10010 LIN. FT. 3/8" BARS @ 1.043 LBS. PER LIN. FT. = 10440 LBS.
1% FOR OVERRUN = 65 LBS.
TOTAL = 11370 LBS.

LOADING DATA.
LIVE LOAD = A. A. S. H. O. AUG. 1937 CLASS A, M-151
DEAD LOAD = ASSUMES 18 LBS. PER SQ. FT. ADDITIONAL WEARING SURFACE, WHICH INCLUDES THE 1" IN CONCRETE MONOLITHIC WEARING SURFACE

REFERENCE DRAWINGS

SHEET NO.10 GENERAL LAYOUT, GENERAL NOTES, SUMMARY OF QUANTITIES, DETAILS OF PIER #2.

SHEET NO.12 DETAILS OF ABUTMENT NO.1 & 3
STRUCT. N-11-J, STA. 1340+30 TO 1340+93.08

COLORADO
STATE HIGHWAY DEPARTMENT
DETAILS OF SUPER STRUCTURE
FOR CONCRETE I BEAM BRIDGE
@ 2 SPANS @ 30'-0" 30'-0" ROADWAY.

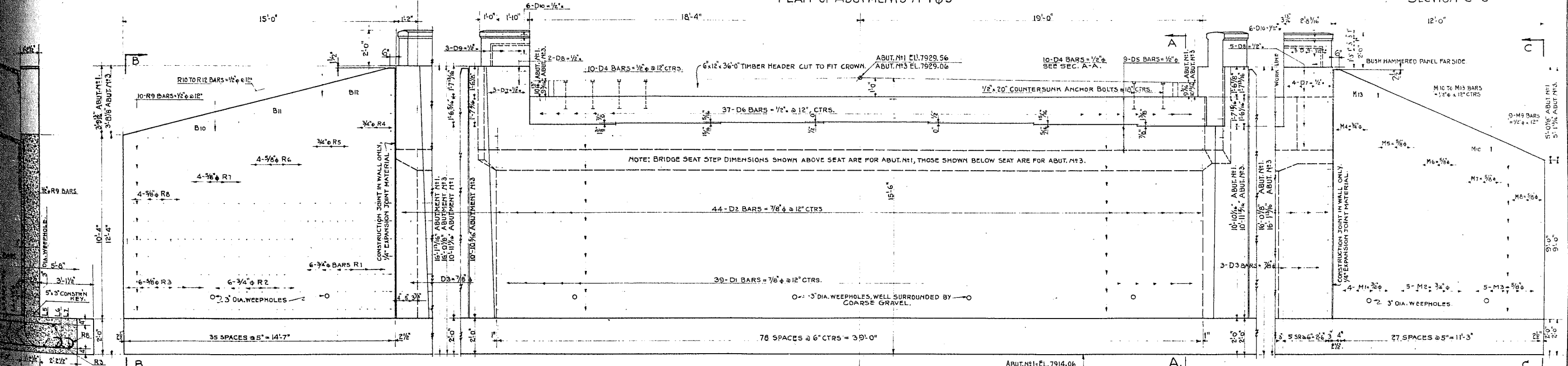
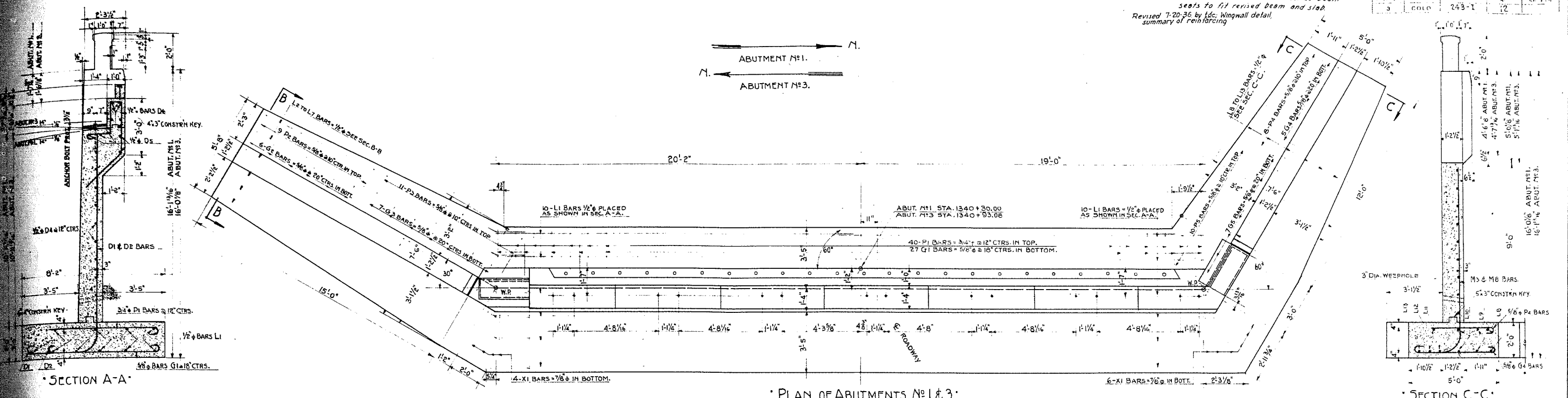
ACROSS EAST BRANCH OF PINOS CREEK
STA. 1340+30.00 TO 1340+93.08, SEC. 35,
T. 40N, R. 5E, NEAR DEL NORTE.

Designed by G.H.D.
Made by G.H.D.
Check Design A.L.C.
Check Detail A.L.C.

Approved by *R. Bailey*
Bridge Engineer
Date: July 30, 1935.

Revised 1-27-34 K.T.D. Raised beam
seats to fit revised beam and slab
Revised 7-20-36 by fdc. Wingwall detail,
summary of reinforcing

STATE	COLO.	FILE NO.	243-1	SHEET	12	TOTAL	13
-------	-------	----------	-------	-------	----	-------	----



SECTION B-B

TRUE ELEVATION OF WING

SECTION A-A

TRUE ELEVATION OF WING

ELEVATION OF ABUTMENTS No. 1 & 3

ABUT. No. 3 - E.L. 7913.56

BAR LIST FOR ONE ABUTMENT

W.W.D.

MARK

SIZE

No.

LENGTH

TYPE

ℓ

m

r

t

L3

1/2"

2

17'-8"

L4

1/2"

2

18'-4"

L5

1/2"

1

19'-0"

L6

1/2"

2

19'-8"

L7

1/2"

1

20'-4"

L8

1/2"

2

15'-4"

L9

1/2"

2

16'-8"

L10

1/2"

2

18'-0"

L11

1/2"

1

19'-4"

L12

1/2"

2

20'-8"

L13

1/2"

1

22'-0"

M1

3/4"

4

10'-11"

I

6'-2"

2'-2"

3"

2 1/2"

M2

3/4"

5

9'-6"

I

5'-2"

1'-9"

3"

2 1/2"

M3

3/4"

5

7'-11"

I

4'-2"

1'-4"

2 1/2"

2"

M4

3/4"

3

17'-9"

I

13'-8"

1'-6"

3"

2 1/2"

M5

3/4"

3

16'-5"

I

12'-8"

1'-4"

2 1/2"

2"

M6

3/4"

3

15'-3"

I

11'-7"

1'-3"

2 1/2"

2"

MARK

SIZE

No.

LENGTH

TYPE

ℓ

m

r

t

M7

3/8"

3

14'-1"

I

10'-7"

1'-1"

2 1/2"

2"

M8

3/8"

3

12'-10"

I

9'-6"

0'-11"

2 1/2"

2"

M9

1/2"

9

11'-8"

M10

1/2"

1

12'-6"

M11

1/2"

1

12'-6"

M12

1/2"

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12'-6"

M13

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M93

1/2"

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12'-6"

M94

1/2"

1

12'-6"

M95

1/2"

1

12'-6"

M96

1/2"

1

12'-6"

M97

1/2"

1

12'-6"

M98

1/2"

1

12'-6"

M99

1/2"

1

12'-6"

M100

1/2"

1

12'-6"

MARK

SIZE

No.

LENGTH

TYPE

ℓ

m

r

t

R8

3/8"

4

14'-4"

I

10'-10"

1'-1"

2 1/2"

2"

R9

1/2"

10

14'-8"

R10

1/2"

10

14'-8"

R11

1/2"

10

14'-8"

R12

1/2"

10

14'-8"

X1

1/2"

10

14'-8"

1922 LIN. FT. 1/2" BARS @ 0.668 LBS. PER LIN. FT. = 1284 LBS.

490 LIN. FT. 1/2" BARS @ 0.855 LBS. PER LIN. FT. = 417 LBS.

920 LIN. FT. 3/8" BARS @ 1.043 LBS. PER LIN. FT. = 969 LBS.

655 LIN. FT. 3/4" BARS @ 1.502 LBS. PER LIN. FT. = 984 LBS.

1281 LIN. FT. 7/8" BARS @ 2.044 LBS. PER LIN. FT. = 2618 LBS.

1% = FOR OVERRUN = 28 LBS.

TOTAL = 6300 LBS.

BENDING DIAGRAMS

TYPE I.

TYPE II.

TYPE III.

TYPE IV.

TYPE V.

REFERENCE DRAWINGS

SHEET No. 10. GENERAL LAYOUT, GENERAL NOTES, SUMMARY OF QUANTITIES, DETAILS OF PIER No. 2.

SHEET No. 11. DETAILS OF SUPER STRUCTURE.

COLORADO

STATE HIGHWAY DEPARTMENT

ABUTMENT DETAILS FOR TWO SPAN @ 30'-0" CONCRETE I BEAM BRIDGE.

30'-0" ROADWAY. 60° SKEW.

Across EAST BRANCH OF PINOS CREEK.

Sta. 1340+30.00 to 1340+93.08

Near DEL NORTE Sec. 35 T. 40N. R. 5E.

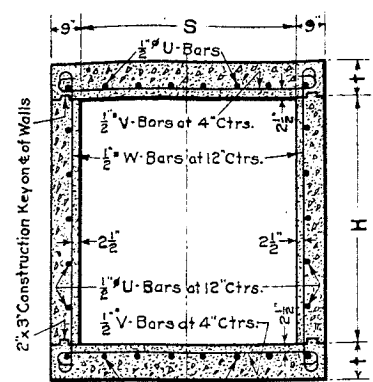
Designed by A.L.C. Made by G.H.D. Check Design W.W.D. Check Detail W.W.D.

Approved by R.D. Bailey Bridge Engineer Date: July 30th 1935.

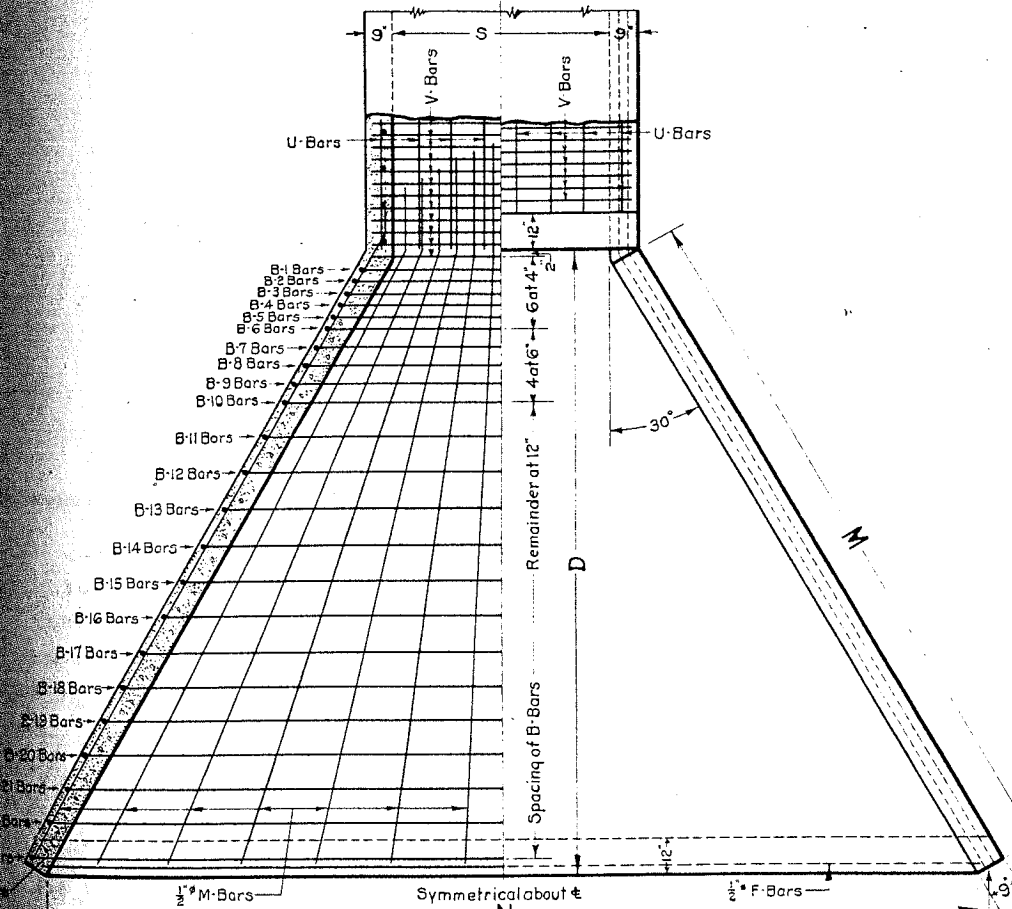
COLORADO
STATE HIGHWAY DEPARTMENT
ABUTMENT DETAILS FOR TWO SPAN
30'-0" CONCRETE I BEAM BRIDGE.
30'-0" ROADWAY. 60° SKEW.
Across EAST BRANCH OF PINOS CREEK.
Sta. 1340+30.00 to 1340+93.08
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Designed by A.L.C.
Made by G.H.D.
Check Design W.W.D.
Check Detail W.W.D.

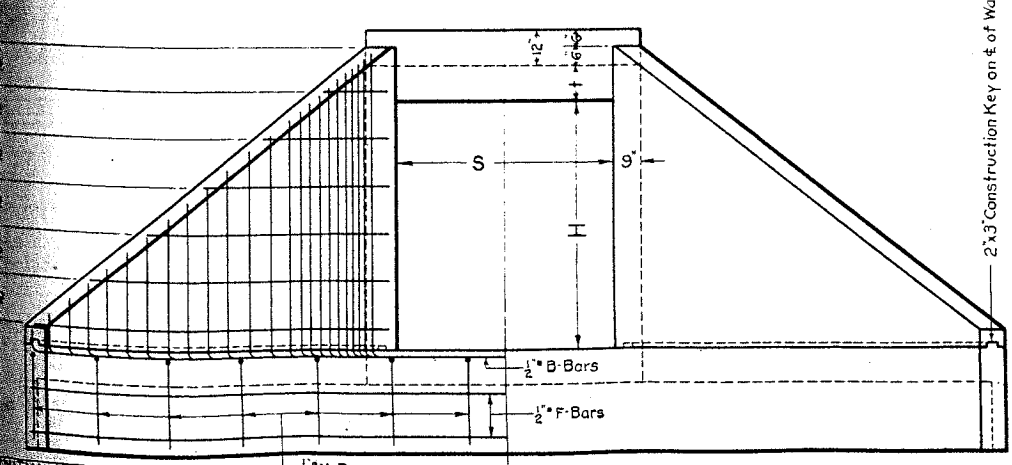
Approved by *Red Bailey*
Bridge Engineer
Date: July 20th 1935.



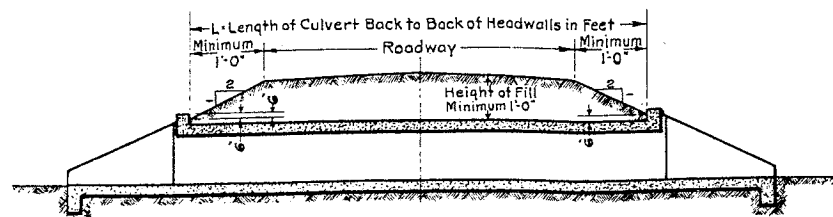
TYPICAL SECTION THRU BOX



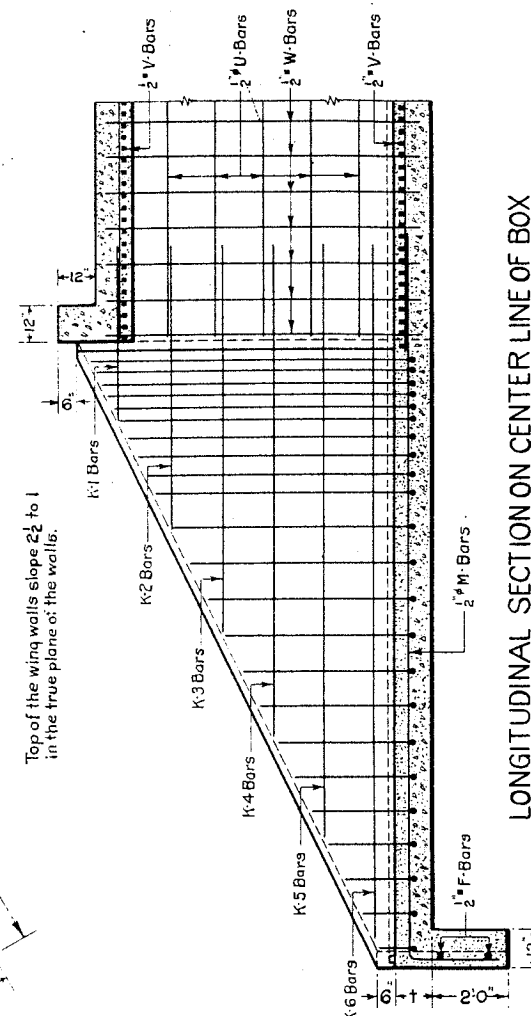
PART PLAN



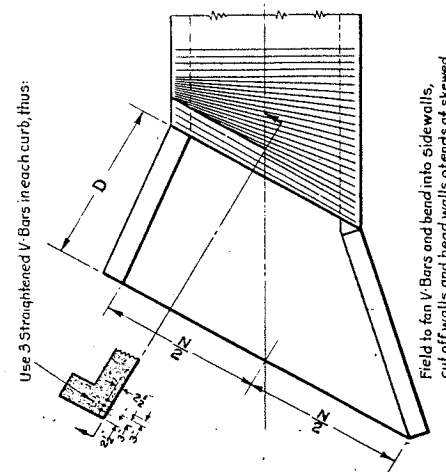
END VIEW



TYPICAL SECTION SHOWING RELATION OF CULVERT TO ROADWAY



LONGITUDINAL SECTION ON CENTER LINE OF BOX



PART PLAN FOR SKEWED HEADWALLS

Revised Nov. 26, 1934 - Headwall Steel, ALC & Co.
REVISED 3-15-35 W.W.D. DEFORMED BARS.
REVISED 9-16-35 H.S.D. (NEW SPECIFICATIONS)

STANDARD M-103-D

FED. ROAD DIST. NO.	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
3	COLO	2431	13	

REINFORCEMENT BAR LIST										W.W.D.
USE BARS FOR	MARK	SIZE	NUMBER	DIMENSION P	DIMENSION Q	TOTAL LENGTH	BENDING DIAGRAM			
ALL SIZES	V	1/2"	(6xL)+14	S+10"		S+2'-2"	ALL DIMENSIONS ARE TO C OF BARS			
"	W	1/2"	(2xL)+6	H+10"		H+2'-2"				
"	F	1/2"	4			N+0'-3"				
"	U	1/2"	4			L+1'-8"				
"	K-1	1/2"	4		3'-4"	5'-4"				
H=2'-0" OR MORE	K-2	1/2"	4		6'-8"	8'-8"				
H=3'-0" "	K-3	1/2"	4		10'-0"	12'-0"				
H=5'-0" "	K-4	1/2"	4		13'-4"	15'-4"				
H=6'-0" "	K-5	1/2"	4		16'-8"	18'-8"				
H=7'-0" "	K-6	1/2"	4		20'-0"	22'-0"				
ALL SIZES	B-1	1/2"	2	S+1'-6"	H+1'-3"		P+(2xQ)-2'	2'-0"	2'-0"	
"	B-2	1/2"	2	S+1'-11"	H+1'-1"					
"	B-3	1/2"	2	S+2'-3"	H+0'-11"					
"	B-4	1/2"	2	S+2'-8"	H+0'-9"					
"	B-5	1/2"	2	S+3'-0"	H+0'-8"					
"	B-6	1/2"	2	S+3'-5"	H+0'-6"					
"	B-7	1/2"	2	S+4'-0"	H+0'-3"					
"	B-8	1/2"	2	S+4'-7"	H+0'-0"					
"	B-9	1/2"	2	S+5'-2"	H-0'-3"					
H=1'-6" OR MORE	B-10	1/2"	2	S+5'-9"	H-0'-5"					
H=2'-0" "	B-11	1/2"	2	S+6'-11"	H-0'-11"					
H=3'-0" "	B-12	1/2"	2	S+8'-1"	H-1'-4"					
H=3'-0" "	B-13	1/2"	2	S+9'-3"	H-1'-10"					
H=3'-0" "	B-14	1/2"	2	S+10'-5"	H-2'-3"					
H=4'-0" "	B-15	1/2"	2	S+11'-7"	H-2'-9"					
H=4'-0" "	B-16	1/2"	2	S+12'-9"	H-3'-3"					
H=5'-0" "	B-17	1/2"	2	S+13'-11"	H-3'-8"					
H=5'-0" "	B-18	1/2"	2	S+15'-1"	H-4'-2"					
H=6'-0" "	B-19	1/2"	2	S+16'-3"	H-4'-7"					
H=6'-0" "	B-20	1/2"	2	S+17'-5"	H-5'-1"					
H=6'-0" "	B-21	1/2"	2	S+18'-7"	H-5'-6"					
H=7'-0" "	B-22	1/2"	2	S+19'-9"	H-6'-0"					
H=7'-0" "	B-23	1/2"	2	S+20'-11"	H-6'-5"					
ALL SIZES	M	1/2"	(5+1)x4	D+3'-0"		D+5'-3"				

* See Table of Dimensions and Quantities

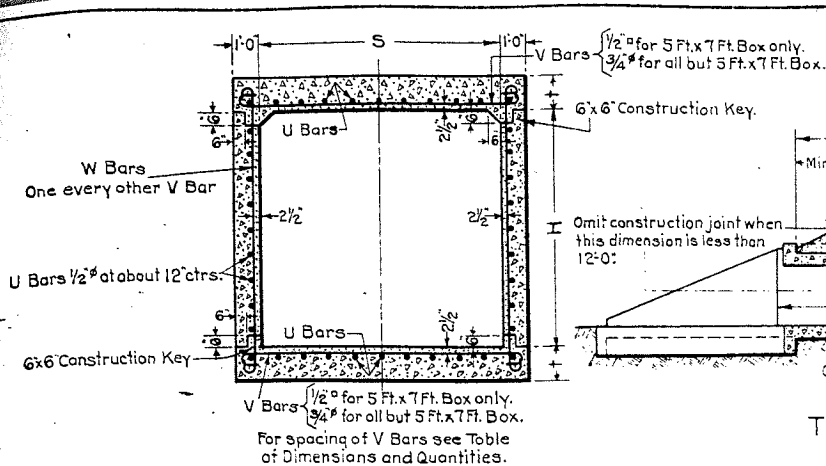
TABLE OF DIMENSIONS AND QUANTITIES														W.W.D.
STEEL QUANTITIES GIVEN BELOW INCLUDE ALLOWANCE FOR OVERRUN OF 1%														
TOTAL QUANTITIES FOR ONE BOX EQUALS THE QUANTITY FOR TWO HEADWALLS PLUS (L x QUANTITY FOR ONE LINEAL FT. OF BOX)														
SPAN S	HEIGHT H	HEIGHT OF FILL ALLOWED	DIMENSION M	DIMENSION N	DIMENSION D	THICKNESS OF SLAB T	NUMBER OF U-BARS PER BOX	QUANTITIES FOR ONE LINEAL FT. OF BOX	QUANTITIES FOR TWO HEADWALLS	QUANTITIES FOR TWO CUT-OFF WALLS	STRUCTURAL EXCAVATION			
								CONCRETE CU.YDS.	STEEL LBS.	CONCRETE CU.YDS.	STEEL LBS.	HEADWALLS SQ.FT.	CUT-OFF WALLS CU.YDS.	
1'-6"	1'-6"	29'-6"	5'-6 1/4"	7'-2 1/2"	5'-1 1/8"	8 1/2"	8	0.241	30.6	4.5	320	116.91	4.40	
2'-0"	2'-0"	22'-6"	6'-9 1/4"	8'-11 1/8"	6'-2 1/8"	8 1/2"	8	0.295	34.0	6.1	430	153.44	5.18	
3'-0"	1'-0"	19'-0"	4'-7"	7'-9 3/8"	4'-4 1/8"	10"	8	0.332	37.5	5.0	360	116.50	4.65	
3'-0"	2'-0"	19'-0"	7'-1"	10'-3 3/8"	6'-6 1/8"	10"	10	0.388	40.5	7.7	495	178.11	5.76	
3'-0"	3'-0"	19'-0"	9'-7"	12'-9 3/8"	8'-8 1/8"	10"	12	0.444	43.6	11.0	680	250.88	6.87	
4'-0"	2'-0"	15'-0"	7'-1"	11'-3 3/8"	6'-6 1/8"	10"	12	0.450	47.0	8.5	565	195.13	6.19	
4'-0"	3'-0"	15'-0"	9'-7"	13'-9 3/8"	8'-8 1/8"	10"	14	0.506	50.0	12.0	755	272.24	7.31	
4'-0"	4'-0"	15'-0"	12'-1"	16'-3 3/8"	10'-10 1/8"	10"	16	0.562	53.1	16.0	910	359.71	8.42	
5'-0"	3'-0"	11'-6"	9'-7"	14'-9 3/8"	8'-8 1/8"	10"	16	0.567	56.6	12.8	835	293.60	7.76	
5'-0"	4'-0"	11'-6"	12'-1"	17'-3 3/8"	10'-10 1/8"	10"	18	0.623	59.6	17.1	995	385.43	8.87	
5'-0"	5'-0"	11'-6"	14'-7"	19'-9 3/8"	13'-0"	10"	20	0.679	62.7	21.9	1220	488.07	9.98	
6'-0"	2'-0"	10'-0"	7'-4 1/2"	13'-7 1/8"	6'-9 3/8"	11 1/2"	16	0.645	60.0	11.3	705	239.30	7.23	
6'-0"	3'-0"	10'-0"	9'-10 3/8"	16'-1 1/8"	8'-11 1/8"	11 1/2"	18	0.699	63.0	15.3	920	325.95	8.34	
6'-0"	4'-0"	10'-0"	12'-4 1/2"	18'-7 1/8"	11'-1 1/8"	11 1/2"	20	0.755	66.2	20.1	1090	423.57	9.45	
6'-0"	5'-0"	10'-0"	14'-10 3/8"	21'-1 1/8"	13'-3 1/8"	11 1/2"	22	0.810	69.2	25.6	1320	532.02	10.56	
6'-0"	6'-0"	10'-0"	17'-4 1/2"	23'-7 1/8"	15'-5 1/8"	11 1/2"	24	0.866	72.3	31.7	1620	651.48	11.67	
6'-0"	7'-0"	10'-0"	19'-10 3/8"	26'-1 1/8"	17'-7 1/8"	11 1/2"	26	0.923	75.3	38.5	1900	781.58	12.79	

GENERAL NOTES

ALL WORK SHALL BE DONE ACCORDING TO THE STANDARD SPECIFICATIONS OF THE COLORADO STATE HIGHWAY DEPARTMENT ADOPTED AUG. 1, 1935.
ALL CONCRETE SHALL BE CLASS "A".
ALL EXPOSED SURFACES SHALL BE RUBBED FREE OF FORM MARKS.
ALL WALLS SHALL HAVE FORMS ON BOTH SIDES.
MINIMUM DISTANCE BETWEEN CENTER LINE OF BAR AND EDGE OF CONCRETE TO BE 2 1/2".
ALL CONSTRUCTION JOINTS SHALL BE THOROUGHLY CLEANED BEFORE FRESH CONCRETE IS POURED.
FOOTINGS IN ROCK SHALL BE POURED OUT TO THE ROCK AND NOT FORMED.
FOR CULVERTS REQUIRED AND GOVERNING DIMENSIONS SEE SHEET NO. 2.
ALL REINFORCING BARS SHALL BE DEFORMED.
ALL REINFORCING BARS SHALL BE TAGGED WITH THE STATION NUMBER AND LETTER DESIGNATION.
SECONDARY BARS WHEN SPLICED SHALL BE GIVEN A LAP OF 50 DIAMETERS.
MAIN BARS SHALL NOT BE SPLICED.
SOUNDINGS AND DEPTH OF FOOTINGS SHOWN ARE ACCORDING TO THE BEST AVAILABLE DATA. IF ESSENTIALLY DIFFERENT CONDITIONS ARE ENCOUNTERED, THE ENGINEER WILL INSPECT AND DETERMINE IF REDESIGN IS NECESSARY.
FOUR WING FOOTINGS MONOLITHICALLY WITH FLOOR OF BOX.
THE USE OF ADDITIONAL CONSTRUCTION JOINTS UNDESIRABLE. SHOULD FIELD CONDITIONS REQUIRE, CONSTRUCTION JOINTS MAY BE MADE ON A VERTICAL PLANE PERPENDICULAR TO CENTERLINE OF CULVERT AND SHALL HAVE A 2'x3' KEY.
THIS DESIGN NOT TO BE USED WHEN HEIGHT OF FILL EXCEEDS THE ALLOWABLE TABULATED.
SUPPORTING SOILS FOR ALL CULVERTS MUST BE COMPOSED OF FIRM AND UNIFORM MATERIAL THROUGHOUT.
ALL BACKFILLING IN APPROACHES, TO AND OVER CULVERTS, SHALL BE LAID IN LAYERS NOT EXCEEDING 6" IN DEPTH AND EACH LAYER SHALL BE ROLLED OR HAND TAMPED WHERE INACCESSIBLE TO ROLLER, ALSO MOISTENED WHEN NECESSARY.

LOADING DATA
LL-A.A.S.H.O. AUG. 1928 CLASS "A" (H-15)

COLORADO
STATE HIGHWAY DEPARTMENT
CONCRETE BOX CULVERTS
1 1/2 x 1 1/2 4' x 2' 5' x 4' 6' x 4'
2' x 2' 4' x 3' 5' x 5' 6' x 5'
3' x 1' 4' x 4' 6' x 2' 6' x 6'
3' x 2' 5' x 3' 6' x 3' 6' x 7'
3' x 3'
Designed by A.G.K. Approved by P. J. Bailey
Made by A.G.K. Bridge Engineer
Checked by W.W.D. Date: Nov. 6th, 1931.



TYPICAL SECTION SHOWING RELATION OF CULVERT TO ROADWAY

Field to fan V Bars as shown, placing alternate bars to bearing on outside walls at ends of skewed boxes.

STANDARD M-104-D

FED. ROAD DIST. No.	STATE	PROJ. No.	SHEET No.	TOTAL SHEETS
3	COLORADO	2431	14	

REVISED 3-16-35 W.W.D. DEFORMED BARS. Revised 7-14-33 A.G.K. Changed Length of Band E Bars.

USE BARS FOR	MARK	SIZE	NUMBER	DIMENSION	TOTAL LENGTH	BENDING DIAGRAM
All Boxes but 5' x 7'	V	$\frac{3}{4}$ "	24 (L+2)	S+14"	P+2'-0"	
5' x 7' Box Only	V	$\frac{1}{2}$ "	divided by Spacing	S+14"	P+2'-0"	
All Sizes	W	$\frac{1}{2}$ "	4	H+10"	P+2'-0"	
All Sizes	U	$\frac{1}{2}$ "	4	L+1'-8"	M+2'-0"	
All Sizes	D	$\frac{1}{2}$ "	36			
All Sizes	E	$\frac{1}{2}$ "	4			
All Sizes	E2	$\frac{1}{2}$ "	4			
All Sizes	E3	$\frac{1}{2}$ "	4			
All Sizes	E4	$\frac{1}{2}$ "	4			
All Sizes	E5	$\frac{1}{2}$ "	4			
All Sizes	E6	$\frac{1}{2}$ "	4			
All Sizes	E7	$\frac{1}{2}$ "	4			
All Sizes	E8	$\frac{1}{2}$ "	4			
H=5 Ft. and over	E9	$\frac{1}{2}$ "	4			
H=6 Ft. and over	E10	$\frac{1}{2}$ "	4			
H=7 Ft. and over	E11	$\frac{1}{2}$ "	4			
H=8 Ft. and over	E12	$\frac{1}{2}$ "	4			
H=9 Ft. and over	E13	$\frac{1}{2}$ "	4			
H=10 Ft.	E14	$\frac{1}{2}$ "	4			
All Sizes	F1	$\frac{1}{2}$ "	4			
All Sizes	F2	$\frac{1}{2}$ "	4			
All Sizes	F3	$\frac{1}{2}$ "	4			
All Sizes	F4	$\frac{1}{2}$ "	4			
H=5 Ft. and over	F5	$\frac{1}{2}$ "	4			
H=6 Ft. and over	F6	$\frac{1}{2}$ "	4			
H=7 Ft. and over	F7	$\frac{1}{2}$ "	4			
H=8 Ft. and over	F8	$\frac{1}{2}$ "	4			
H=9 Ft. and over	F9	$\frac{1}{2}$ "	4			
H=10 Ft.	F10	$\frac{1}{2}$ "	4			
All Sizes	K1	$\frac{1}{2}$ "	4			
All Sizes	K2	$\frac{1}{2}$ "	4			
All Sizes	K3	$\frac{1}{2}$ "	4			
All Sizes	K4	$\frac{1}{2}$ "	4			
All Sizes	K5	$\frac{1}{2}$ "	4			
H=5 Ft. and over	K6	$\frac{1}{2}$ "	4			
H=6 Ft. and over	K7	$\frac{1}{2}$ "	4			
H=7 Ft. and over	K8	$\frac{1}{2}$ "	4			
H=8 Ft. and over	K9	$\frac{1}{2}$ "	4			
H=9 Ft. and over	K10	$\frac{1}{2}$ "	4			
H=10 Ft.	K11	$\frac{1}{2}$ "	4			
All Sizes	B1	$\frac{1}{2}$ "	8	P+1'-0" Q+1'-2"	2'-11"	
All Sizes	B2	$\frac{1}{2}$ "	8	P+1'-0" Q+1'-2"	2'-11"	
All Sizes	B3	$\frac{1}{2}$ "	8	P+1'-1" Q+1'-10"	3'-8"	
All Sizes	B4	$\frac{1}{2}$ "	8	P+1'-3" Q+2'-6"	4'-9"	
All Sizes	B5	$\frac{1}{2}$ "	8	P+1'-3" Q+2'-6"	4'-9"	
All Sizes	B6	$\frac{1}{2}$ "	8	P+1'-4" Q+3'-10"	5'-11"	
All Sizes	B7	$\frac{1}{2}$ "	8	P+1'-5" Q+4'-6"	6'-8"	
H=5 Ft. and over	B8	$\frac{1}{2}$ "	8	P+1'-5" Q+5'-2"	7'-4"	
H=5 Ft. and over	B9	$\frac{1}{2}$ "	8	P+1'-6" Q+5'-10"	8'-1"	
H=6 Ft. and over	B10	$\frac{1}{2}$ "	8	P+1'-7" Q+6'-6"	8'-10"	
H=7 Ft. and over	B11	$\frac{1}{2}$ "	8	P+1'-8" Q+7'-2"	9'-7"	
H=7 Ft. and over	B12	$\frac{1}{2}$ "	8	P+1'-9" Q+7'-10"	10'-4"	
H=8 Ft. and over	B13	$\frac{1}{2}$ "	8	P+1'-10" Q+8'-6"	11'-1"	
H=8 Ft. and over	B14	$\frac{1}{2}$ "	8	P+1'-11" Q+9'-2"	11'-10"	
H=10 Ft.	B15	$\frac{1}{2}$ "	8	P+1'-11" Q+9'-10"	12'-6"	
H=10 Ft.	B16	$\frac{1}{2}$ "	8	P+2'-0" Q+10'-6"	13'-3"	
All Sizes	C1	$\frac{3}{4}$ "	8	P+2'-8" Q+1'-10"	5'-4"	
All Sizes	C2	$\frac{3}{4}$ "	8	P+2'-11" Q+1'-10"	5'-7"	
All Sizes	C3	$\frac{3}{4}$ "	8	P+3'-1" Q+1'-10"	5'-9"	
All Sizes	C4	$\frac{3}{4}$ "	8	P+3'-4" Q+1'-10"	6'-0"	
All Sizes	C5	$\frac{3}{4}$ "	8	P+3'-7" Q+1'-10"	6'-3"	
All Sizes	C6	$\frac{3}{4}$ "	8	P+3'-9" Q+1'-10"	6'-5"	
All Sizes	C7	$\frac{3}{4}$ "	8	P+4'-0" Q+1'-10"	6'-8"	
H=5 Ft. and over	C8	$\frac{3}{4}$ "	8	P+4'-2" Q+1'-10"	6'-10"	
H=5 Ft. and over	C9	$\frac{3}{4}$ "	8	P+4'-5" Q+1'-10"	7'-1"	
H=6 Ft. and over	C10	$\frac{3}{4}$ "	8	P+4'-8" Q+1'-10"	7'-4"	
H=7 Ft. and over	C11	$\frac{3}{4}$ "	8	P+4'-10" Q+1'-10"	7'-6"	
H=7 Ft. and over	C12	$\frac{3}{4}$ "	8	P+5'-1" Q+1'-10"	7'-9"	
H=8 Ft. and over	C13	$\frac{3}{4}$ "	8	P+5'-4" Q+1'-10"	8'-0"	
H=8 Ft. and over	C14	$\frac{3}{4}$ "	8	P+5'-6" Q+1'-10"	8'-2"	
H=10 Ft.	C15	$\frac{3}{4}$ "	8	P+5'-9" Q+1'-10"	8'-5"	
H=10 Ft.	C16	$\frac{3}{4}$ "	8	P+6'-0" Q+1'-10"	8'-8"	

NOTE FOR 'E' BARS ONLY. Where $t=10$ thick slabs use lengths as shown.

Where $t=10$ thick slabs use Q lengths & total lengths as shown.

Where $t=10$ thick slabs use Q lengths & total lengths as shown.

★ SEE TABLE OF DIMENSIONS AND QUANTITIES.

GENERAL NOTES

ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS OF THE COLORADO STATE HIGHWAY DEPARTMENT, ADOPTED AUG. 1, 1935.

ALL CONCRETE SHALL BE CLASS A.

ALL WALLS SHALL HAVE FORMS ON BOTH SIDES.

ALL CONSTRUCTION JOINTS SHALL BE THOROUGHLY CLEANED BEFORE FRESH CONCRETE IS POURED.

ALL BARS SHALL BE DEFORMED.

MINIMUM DISTANCE FROM CENTERLINE OF BARS TO EDGE OF CONCRETE TO BE 2 1/2".

LONG BARS WHEN SPICED SHALL BE LAPPED TWO FEET.

FOR CULVERTS REQUIRED AND GOVERNING DIMENSIONS SEE SHEET M-2.

ALL REINFORCING BARS SHALL BE TAGGED WITH THE STATION NUMBER AND LETTER DESIGNATION.

THIS DESIGN NOT TO BE USED WHEN HEIGHT OF FILL OVER BOX EXCEEDS THAT TABULATED AS ALLOWABLE.

FOUR WING FOOTINGS MONOLITHICALLY WITH FLOOR OF BOX.

THE USE OF ADDITIONAL CONSTRUCTION JOINTS UNLESS SPECIFIED SHOULD FIELD CONDITIONS REQUIRE. CONSTRUCTION JOINTS MAY BE MADE ON A VERTICAL PLANE PERPENDICULAR TO CENTERLINE OF CULVERT, AND SHALL HAVE KEYS AS SHOWN. SUPPORTING SOILS FOR ALL CULVERTS MUST BE COMPOSED OF FIRM AND UNIFORM MATERIAL THROUGHOUT.

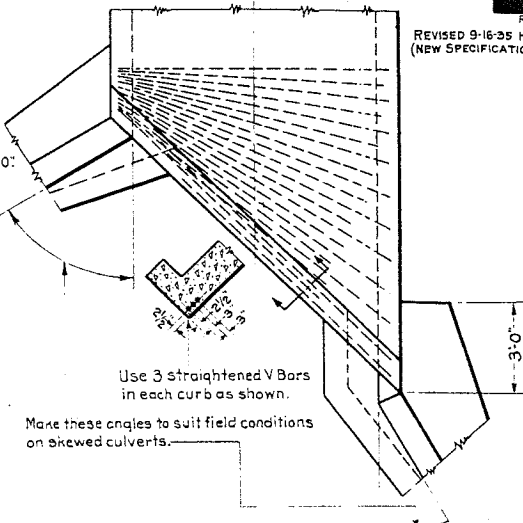
ALL BACKFILLING TO AND OVER CULVERTS SHALL BE LAID IN LAYERS NOT EXCEEDING SIX INCHES IN DEPTH AND EACH LAYER SHALL BE ROLLED OR HAND TAMPED WHERE INACCESSIBLE TO ROLLER, ALSO MOISTENED WHEN NECESSARY.

LOADING DATA
L.L. A.A.S.H.O. Aug. 1928 Class "A" (H-15)

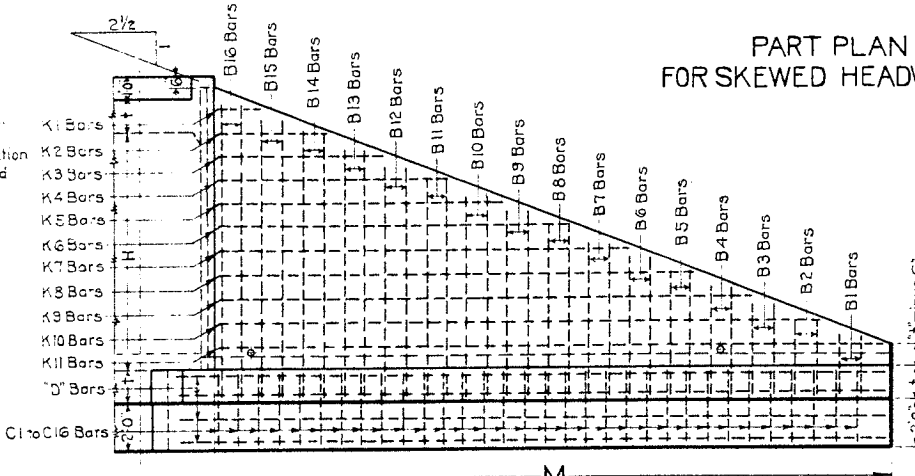
COLORADO
STATE HIGHWAY DEPARTMENT
STANDARD
CONCRETE BOX CULVERT

8 FT. x 4 FT. 5 FT. x 7 FT. 10 FT. x 6 FT.
8 FT. x 5 FT. 8 FT. x 8 FT. 10 FT. x 8 FT.
8 FT. x 6 FT. 10 FT. x 4 FT. 10 FT. x 10 FT.

Designed by A.G.K. Approved by *Ed Bailey*
Made by A.G.K. Bridge Engineer
Checked by A.L.C. Date: 7-20-1932



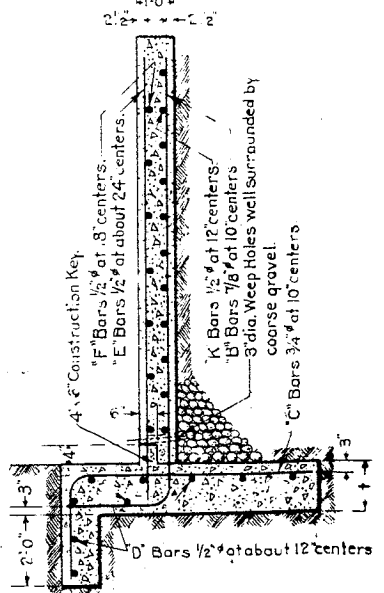
PART PLAN FOR SKEWED HEADWALLS



TRUE SIDE ELEVATION OF WINGWALL

TABLE OF DIMENSIONS AND QUANTITIES STEEL QUANTITIES GIVEN BELOW INCLUDE ALLOWANCE OF 1% FOR OVERRUN. TOTAL QUANTITIES FOR ONE BOX EQUALS THE QUANTITY FOR TWO HEADWALLS PLUS (L x QUANTITY FOR ONE LIN. FT. BOX)

HEIGHT OF FILL ALLOWED	TYPE	SPAN S	HEIGHT H	THICKNESS OF SLAB	SPACING OF BARS	SIZE OF BARS	NUMBER OF BARS	LENGTH OF BARS	QUANTITIES FOR ONE LIN. FT. OF BOX	QUANTITIES FOR TWO HEADWALLS
11'-6"		5'-0"	7'-0"	10"	4"	$\frac{1}{2}$ "	24	20'-0"	10'	C.U.YDS. LBS.
7'-0"	8 I	8'-0"	4'-0"	11 1/2"	5 1/2"	$\frac{1}{2}$ "	24	12'-6"	7'	1.016 100
			5'-0"	11 1/2"	5 1/2"	$\frac{1}{2}$ "	26	15'-0"	8'	1.090 103
			6'-0"	11 1/2"	5 1/2"	$\frac{1}{2}$ "	28	17'-6"	9'	1.164 106
			8'-0"	11 1/2"	5 1/2"	$\frac{1}{2}$ "	32	22'-6"	1'-0"	1.312 116
			4'-0"	12 1/2"	5"	$\frac{1}{2}$ "	24	12'-6"	7'	1.078 109
			5'-0"	12 1/2"	5"	$\frac{1}{2}$ "	26	15'-0"	8'	1.152 112
			6'-0"	12 1/2"	5"	$\frac{1}{2}$ "	28	17'-6"	9'	1.226 115
			8'-0"	12 1/2"	5"	$\frac{1}{2}$ "	32	22'-6"	1'-0"	1.374 126
			4'-0"	13 1/2"	4 1/2"	$\frac{1}{2}$ "	24	12'-6"	7'	1.140 120
			5'-0"	13 1/2"	4 1/2"	$\frac{1}{2}$ "	26	15'-0"	8'	1.214 122
			6'-0"	13 1/2"	4 1/2"	$\frac{1}{2}$ "	28	17'-6"	9'	1.288 126
			8'-0"	13 1/2"	4 1/2"	$\frac{1}{2}$ "	32	22'-6"	1'-0"	1.436 137
			4'-0"	13 1/2"	5"	$\frac{1}{2}$ "	28	12'-6"	7'	1.269 126
			5'-0"	13 1/2"	5"	$\frac{1}{2}$ "	30	15'-0"	8'	1.343 138
			6'-0"	13 1/2"	5"	$\frac{1}{2}$ "	32	17'-6"	9'	1.417 141
			8'-0"	13 1/2"	5"	$\frac{1}{2}$ "	36	22'-6"	1'-0"	1.566 158
			10'-0"	13 1/2"	5"	$\frac{1}{2}$ "	40	27'-6"	1'-2"	1.714 156
			4'-0"	14"	4 1/2"	$\frac{1}{2}$ "	28	12'-6"	7'	1.343 138
			5'-0"	14"	4 1/2"	$\frac{1}{2}$ "	30	15'-0"	8'	1.417 141
			6'-0"	14"	4 1/2"	$\frac{1}{2}$ "	32	17'-6"	9'	1.491 144
			8'-0"	14"	4 1/2"	$\frac{1}{2}$ "	36	22'-6"	1'-0"	1.640 151
			10'-0"	14"	4 1/2"	$\frac{1}{2}$ "	40	27'-6"	1'-2"	1.788 157
			4'-0"	15 1/2"	4"	$\frac{1}{2}$ "	28	12'-6"	7'	1.454 153
			5'-0"	15 1/2"	4"	$\frac{1}{2}$ "	30	15'-0"	8'	1.528 156
			6'-0"	15 1/2"	4"	$\frac{1}{2}$ "	32	17'-6"	9'	1.603 160
			8'-0"	15 1/2"	4"	$\frac{1}{2}$ "	36	22'-6"	1'-0"	1.751 166
			10'-0"	15 1/2"	4"	$\frac{1}{2}$ "	40	27'-6"	1'-2"	1.899 188
			4'-0"	17"	3 1/2"	$\frac{1}{2}$ "	28	12'-6"	7'	1.566 172
			5'-0"	17"	3 1/2"	$\frac{1}{2}$ "	30	15'-0"	8'	1.640 175
			6'-0"	17"	3 1/2"	$\frac{1}{2}$ "	32	17'-6"	9'	1.714 179
			8'-0"	17"	3 1/2"	$\frac{1}{2}$ "	36	22'-6"	1'-0"	1.862 194
			10'-0"	17"	3 1/2"	$\frac{1}{2}$ "	40	27'-6"	1'-2"	2.010 232



TYPICAL SECTION THRU WINGWALL

PART PLAN

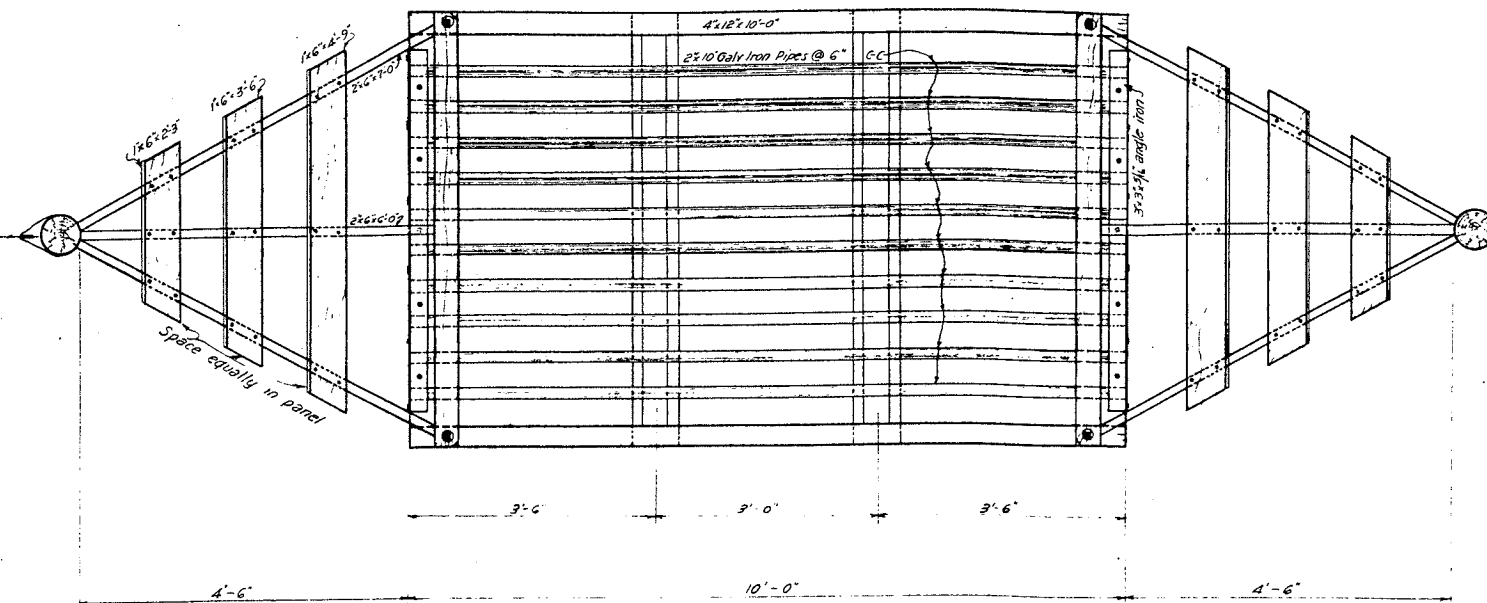
END VIEW

STANDARD~CATTLE~GUARD

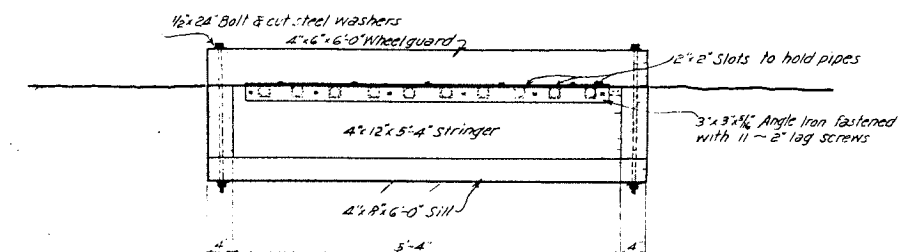
STANDARD M-15-B

FED. ROAD DIST. No.	STATE	PROJ. No.	SHEET No.	TOTAL SHEETS
3	COLO.	2431	15	

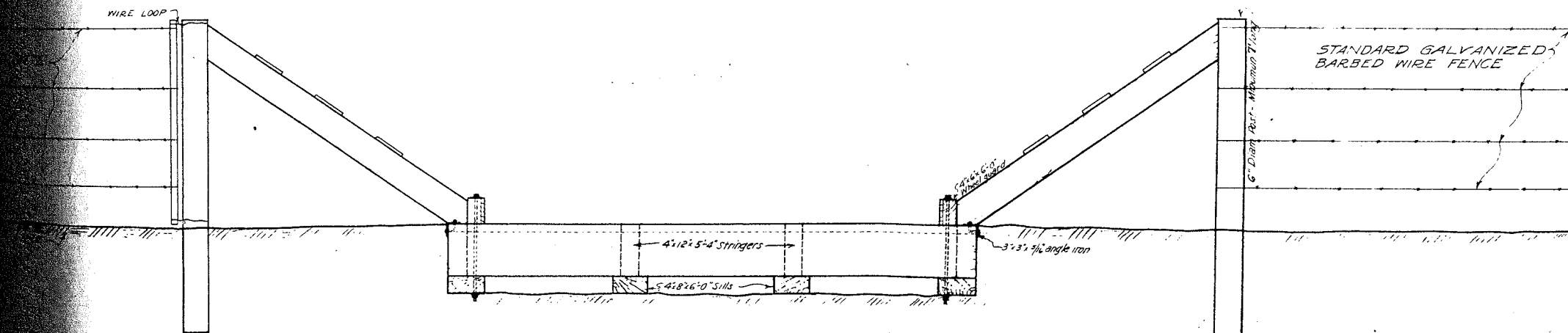
Revised 9-16-35 H.S.D. (New Specifications)



~ PLAN ~



~ END VIEW ~



~ ELEVATION ~

GENERAL NOTES

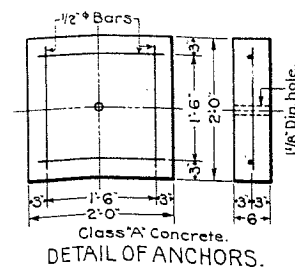
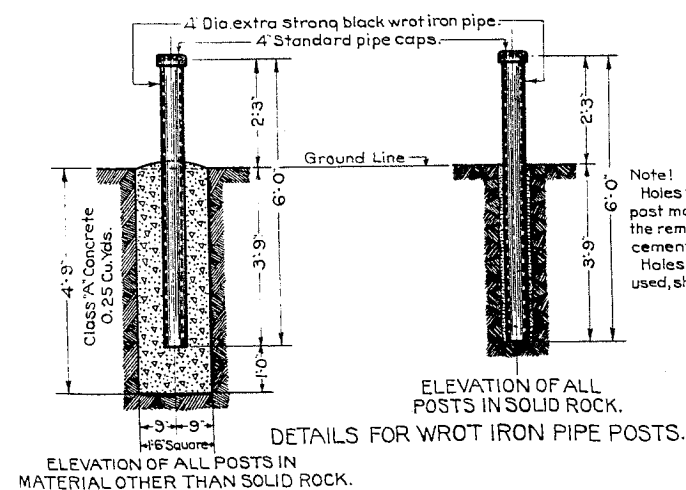
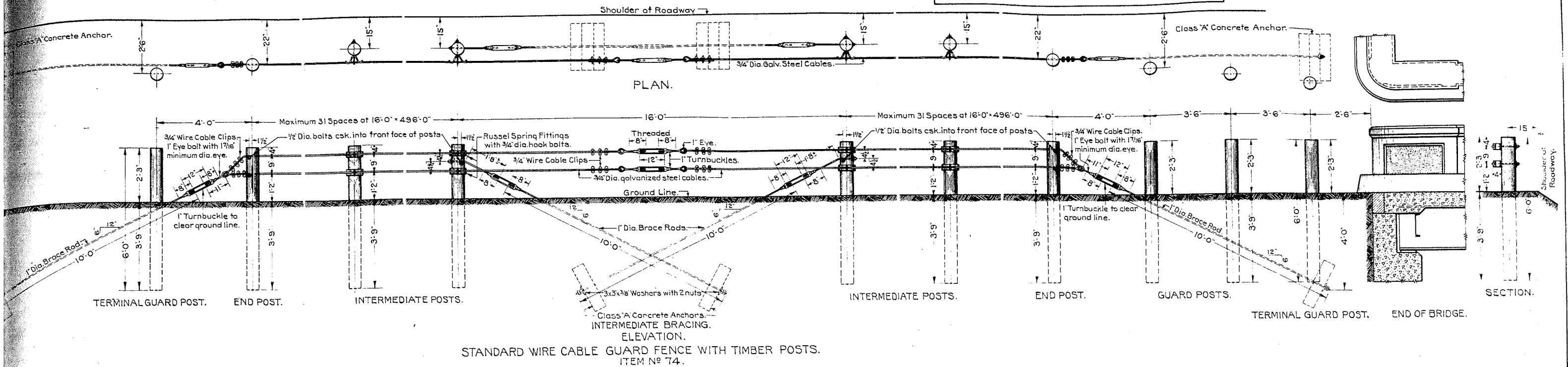
- All work shall be done in accordance with standard specifications of the COLORADO STATE HIGHWAY DEPARTMENT adopted on Aug. 1, 1935.
- All quantities are to be considered approximate only.
- All timber shall fulfill the specifications for Item 4.4 - TIMBER STRUCTURES EXCEPT BRIDGES, and shall be treated.
- All hardware to be galvanized except angle irons, which shall be painted 2 coats "field coat-dark" as per Specifications Item 41.
- Holes for lag screws shall be subdrilled to 3/8" diameter.

COLORADO
STATE HIGHWAY DEPARTMENT
STANDARD
CATTLE GUARD

Designed by *REL*
Made by *REL*
Checked by *REL*
Approved by *REL*
Bridge Engineer
Date: 193

STANDARD M-20-A

FED. ROAD DIST. NO.	STATE	F.A.P.	SHEET NO.	TOTAL SHEETS
3	COLO.	2431	16	



GENERAL NOTES.

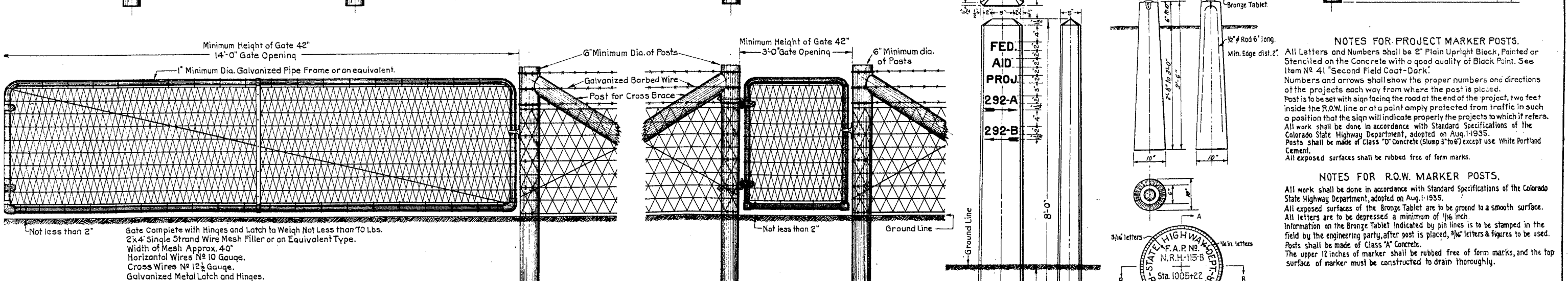
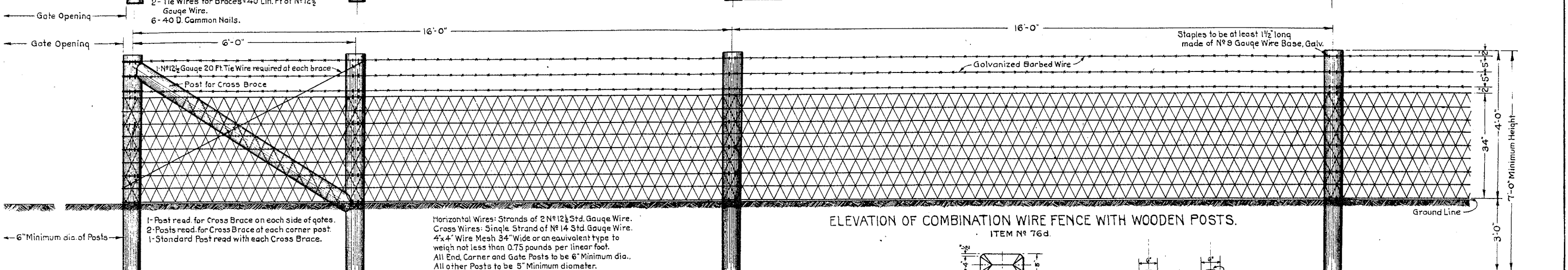
- All work shall be done in accordance with the Standard Specifications of The Colorado State Highway Department, adopted August 1-1935.
- The length of guard fence to be paid for and designated on plans shall be measured from terminal guard post to terminal guard post.
- When continuous wire cable fence is more than 500 ft. in length it shall have intermediate bracing complete with turnbuckles.
- All wood posts shall be made from seasoned, straight, sound Lodge Pole Pine, Southern Yellow Pine or West Coast Douglas Fir.
- No section of wood posts shall be less than 6" diameter.
- All wood posts shall be entirely peeled and shaved, thoroly seasoned and dry, with square tops and all holes to be drilled 1/32" larger than diameter of bolt or rod before treatment is applied.
- All wood posts shall be pressure treated with creosote for the full length of posts, as provided for in the specifications.
- All wood posts shall be set and tamped in plumb and firm, to the lines and grades directed by the engineer.
- All fittings, cables and hardware shall be hot dip galvanized steel with sizes as noted and located as shown.
- Eye bolts shall be welded or drop forged.
- Standard galvanized cast iron 0.6 or galvanized malleable cast washers shall be under all bolt heads and nuts coming in contact with wood posts.
- Wedge lock fittings or other fittings equivalent to those shown on plans and approved by the engineer may be used in lieu of offset fittings, turnbuckles, eye bolts and clips as shown.
- Only one style of offset fittings, turnbuckles, eye bolts and clips may be used on a project.

COLORADO
STATE HIGHWAY DEPARTMENT

STANDARD
WIRE CABLE GUARD FENCE

Designed by A.G.K.
Made by A.G.K.
Check Design
Check Detail

Approved by P. Bailey
Bridge Engineer
Date: March 30, 1936



GENERAL NOTES FOR WIRE FENCES.

shall be done in accordance with the Standard Specifications of the Department of Transportation, State of Maryland, 1995 Edition.

All work shall be done in accordance with the Standard Specifications of the Colorado State Highway Department, Adopted August 1-1935.

Barbed Wire shall be of Standard Make, not lighter than No 12½ Gauge, Galvanized and with Two Point Barbs spaced not more than 5' apart.

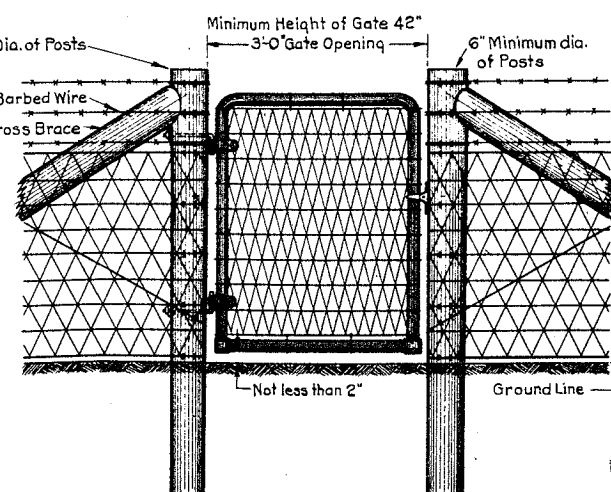
Wire Mesh must be galvanized and not lighter than shown and noted on this plan.

Wire Mesh used in Driveway Gates shall be painted with an approved waterproof asphalt or mineral paint

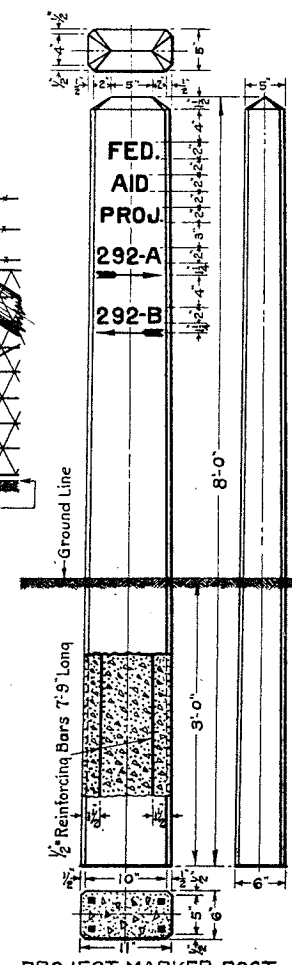
Staples shall be at least 1½ long, made of No 9 Gauge Wire Base Galv., 8 staples read. per post for barbed wire fence and 14 Staples per post for Combination Wire Fence.

All wooden posts shall be made from seasoned, straight, sound Lodgepole or Southern Yellow Pine, peeled, and tops sawed off square before pressure treatment, as provided in the Specifications.

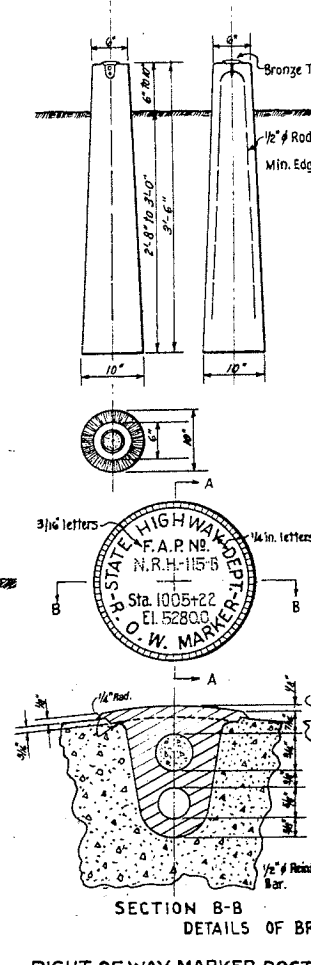
Cross Braces, Brace Posts and Tie Wires are to be used at all places where intersecting fences are encountered.



3/4" Minimum Dia. galvanized pipe frame or an equivalent.
Gate Complete with Hinges and Latch to Weigh Not Less than 19 Lbs.
2"x4" Single Strand Wire Mesh Filler or an Equivalent Type.
Width of Mesh Approx. 40"
Horizontal Wires No 10 Gauge.
Cross Wires No 12 1/2 Gauge.
Galvanized Metal Latch and Hinges.



PROJECT MARKER POST.
ITEM No 8!g.



RIGHT OF WAY MARKER POST.
ITEM N° 81b.

NOTES FOR PROJECT MARKER POSTS.

1. All Letters and Numbers shall be 2" Plain Upright Block, Painted or Stenciled on the Concrete with a good quality of Black Paint. See Item No 41 "Second Field Coat-Dark".
2. Numbers and arrows shall show the proper numbers and directions of the projects each way from where the post is placed.
3. Post is to be set with sign facing the road at the end of the project, two feet inside the R.O.W. line or at a point amply protected from traffic in such a position that the sign will indicate properly the projects to which it refers.
4. All work shall be done in accordance with Standard Specifications of the Colorado State Highway Department, adopted on Aug. 1-1935.
5. Posts shall be made of Class "D" Concrete (Slump 3 to 6") except use White Portland Cement.
6. All exposed surfaces shall be rubbed free of form marks.

NOTES FOR R.Q.W. MARKER POSTS.

All work shall be done in accordance with Standard Specifications of the Colorado State Highway Department, adopted on Aug. 1-1935.

All exposed surfaces of the Bronze Tablet are to be ground to a smooth surface.

All letters are to be depressed a minimum of $\frac{1}{16}$ inch.

Information on the Bronze Tablet Indicated by pin lines is to be stamped in the field by the engineering party, after post is placed, $\frac{3}{16}$ " letters & figures to be used.

Posts shall be made of Class "A" Concrete.

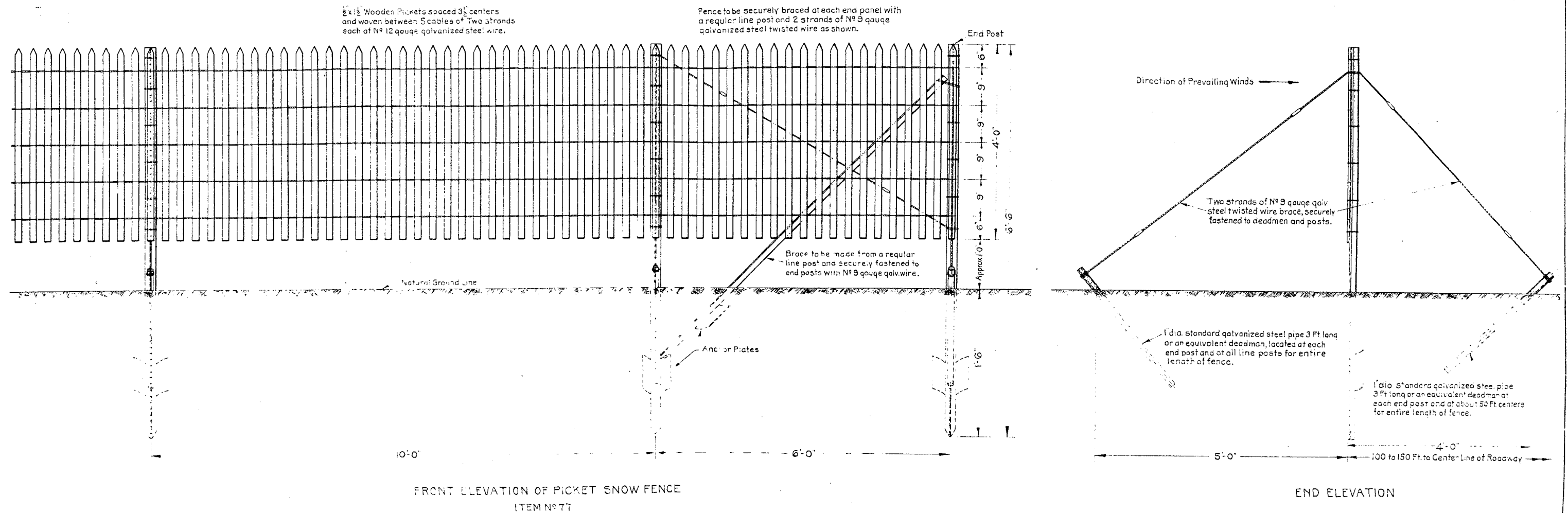
The upper 12 inches of marker shall be rubbed free of form marks, and the top surface of marker must be constructed to drain thoroughly.

COLORADO
STATE HIGHWAY DEPARTMENT
STANDARD
WIRE FENCES
AND
MARKER POSTS

Designed by AGK	Approved by <i>P. J. Bailey</i>
Made by AGK	Bridge Engineer
Checked by GHD	Date: Feb. 1, 1982

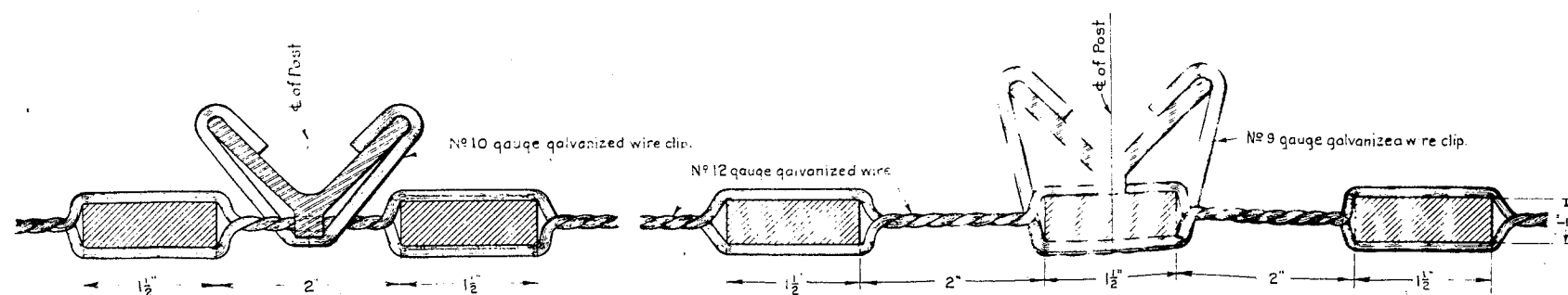
FED. ROAD DIST. No.	STATE	PROJ. No.	SHEET No.	TOTAL SHEETS
3	COLO.	2431	16	

Revised 1-15-33 A.G.K. Changed Length of Posts & General Notes
Revised 9-16-35 H.S.D. (New Specifications)



GENERAL NOTES

All work shall be done in accordance with the Standard Specifications of The Colorado State Highway Department, Adopted Aug. 1, 1935.
Picket Fence is to be stretched tight and securely fastened to all posts with galvanized clips or No. 9 galvanized steel wire.
All pickets shall be painted with a mineral preservative or brush treated with creosote oil as specified in item No. 42 of the specifications.
All fence posts to be hot dip galvanized and to be manufacturer's heavy section type with anchor plates to weigh not less than 2 Lbs. per lin. Ft. Fence posts may be painted with an approved waterproof asphalt or mineral paint in lieu of hot dip galvanized.
Suitable anchor plates shall be securely riveted or welded to each line post.



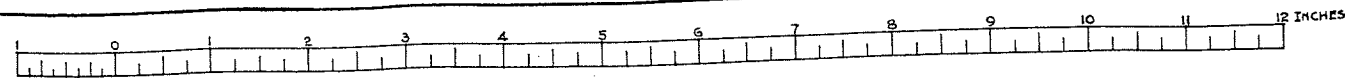
TYPICAL SECTIONS THROUGH SNOW FENCE POST AND PICKETS

Note:
Other sections of steel posts having equal weight and equivalent strength may be used in lieu of this section

COLORADO
STATE HIGHWAY DEPARTMENT
STANDARD
PICKET SNOW FENCE
WITH STEEL POSTS

Designed by A.G.K. Approved by P.D. Bailey
Made by A.G.K. Bridge Engineer
Checked by Date: Dec 3rd 1935.

STRUCTURE NO.

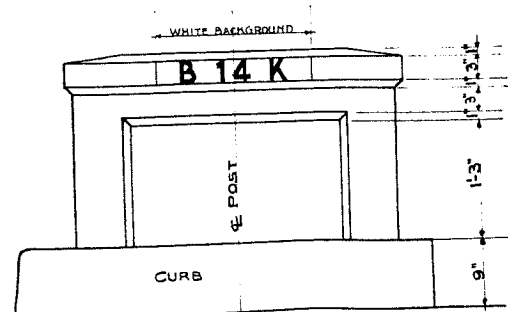


SCALE OF LETTERING

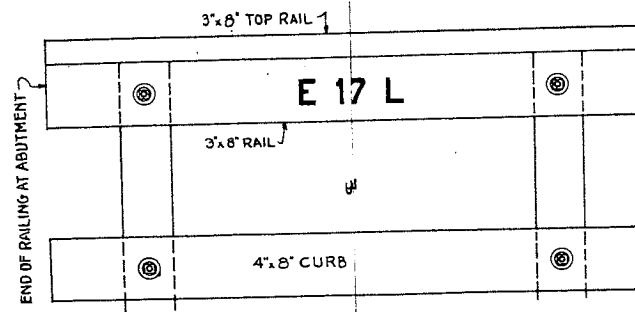
STANDARD M-10-A

FED. ROAD DIST. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	2431	19	

Revised 3-11-1936 A.G.K. Changed to 1935 Specifications.



TYPICAL CONCRETE ENDPOST.



TYPICAL TIMBER WING

GENERAL NOTES

ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS OF THE COLORADO STATE HIGHWAY DEPARTMENT, ADOPTED AUGUST 1-1935.

THE STRUCTURE NUMBER SHALL BE STENCILED ON THE RIGHT HAND SIDE OF EACH BRIDGE END AS SHOWN ON THIS STANDARD AND AS SPECIFIED.

THE CORRECT NUMBER FOR EACH BRIDGE IS SHOWN IN THE LOWER RIGHT HAND CORNER OF THE DETAIL SHEETS FOR THAT PARTICULAR BRIDGE.

THE SIZE, SHAPE AND SPACING OF THE LETTERS AND FIGURES SHALL BE IDENTICAL WITH THE FULL SIZE SHOWN ON THIS SHEET. ADDITIONAL COPIES OF THIS FULL SIZE SHEET CAN BE OBTAINED FROM THE DEPARTMENT WITHOUT CHARGE.

BEFORE STENCILING THE NUMBER ON THE BRIDGE, THE SURFACE MUST BE THOROUGHLY CLEANED. A PROPER WHITE BACKGROUND SHALL BE PAINTED ON CONCRETE SURFACES. ON TIMBER HANDRAILS THE WHITE PAINT USED ON THE BRIDGE WILL BE SATISFACTORY. ON CONCRETE ENDPOSTS THE DRY CONCRETE SURFACE SHALL BE PROPERLY SIZED BEFORE PLACING THE WHITE RECTANGLE, UNLESS AN APPROVED WHITE CONCRETE PAINT IS USED.

TWO COATS OF ACCEPTABLE WHITE PAINT SHALL BE APPLIED TO THE CONCRETE IN A NEAT RECTANGULAR SHAPE AND EXTEND THREE INCHES BEYOND THE LIMITS OF THE STRUCTURE NUMBER.

AFTER THIS WHITE BACKGROUND HAS DRIED SUFFICIENTLY, THE CORRECT STRUCTURE NUMBER SHALL BE CAREFULLY STENCILED ON IT WITH TWO COATS OF STANDARD "C" SECOND FIELD COAT DARK AS SPECIFIED UNDER ITEM 41 STEEL BRIDGES. THE BRACES OF THE STENCILED LETTERS AND FIGURES SHALL BE CAREFULLY FILLED IN BY HAND, TO MAKE SOLID FIGURES. SUFFICIENT TIME BETWEEN SUCCESSIVE COATS SHALL BE ALLOWED TO PERMIT THE PRECEDING COAT TO DRY.

THIS WORK WILL NOT BE PAID FOR AS A SEPARATE ITEM. COMPENSATION SHALL BE INCLUDED IN THE ORIGINAL CONTRACT ITEMS.

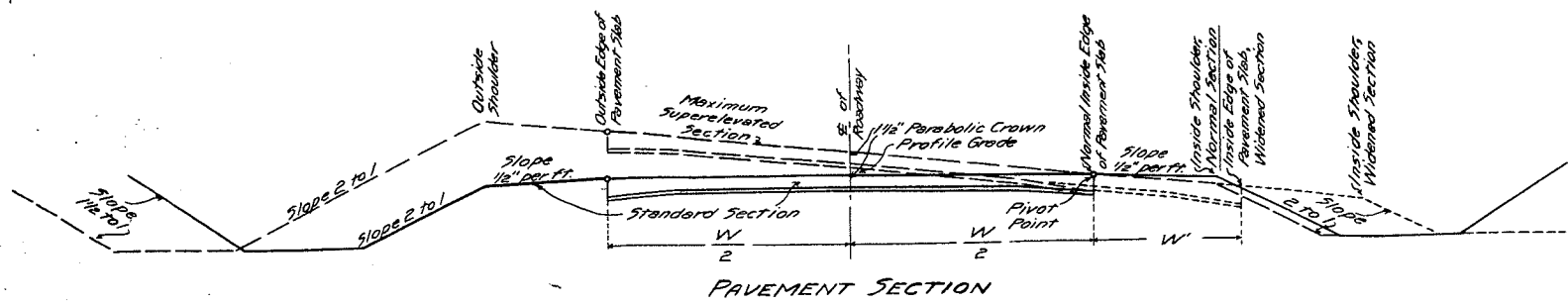
COLORADO			
STATE HIGHWAY DEPARTMENT			
STANDARD STRUCTURE			
NUMBER LETTERING.			
Across	Sta.	Sec.	T. R.
Near			
Designed by G.H.D.	Approved by <i>Ped. Bailey</i>		
Made by G.H.D.	Bridge Engineer		
Check Design	Date: Feb. 6th 1935.		
Check Detail			

STRUCTURE NO.

STANDARD M-I-A

FED. ROAD DIST. No.	STATE	PROJ. No.	SHEET No.	TOTAL SHEETS
3	COLO.	2431	20	

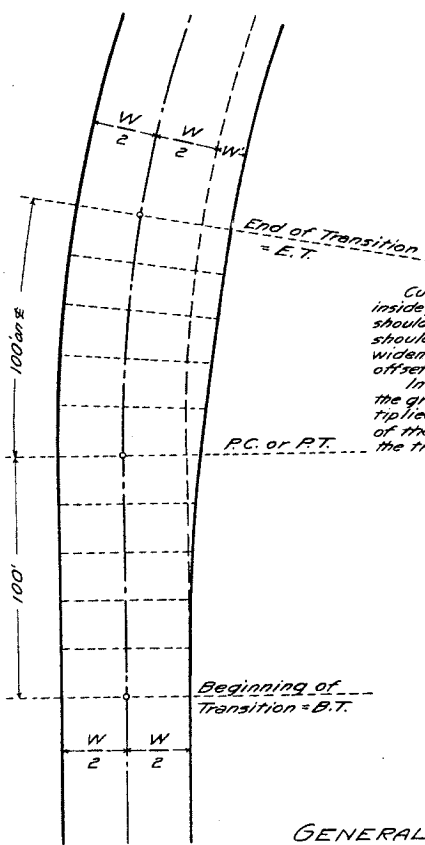
Revised 8-17-32 S.B.L. (200' Length)
 Revised 8-31-32 S.B.L.
 Revised 2-7-34 S.B.L.
 Revised 8-24-34 S.B.L. (Special Cases)
 Revised 3-11-36 A.G.X. (1935 Specifications)



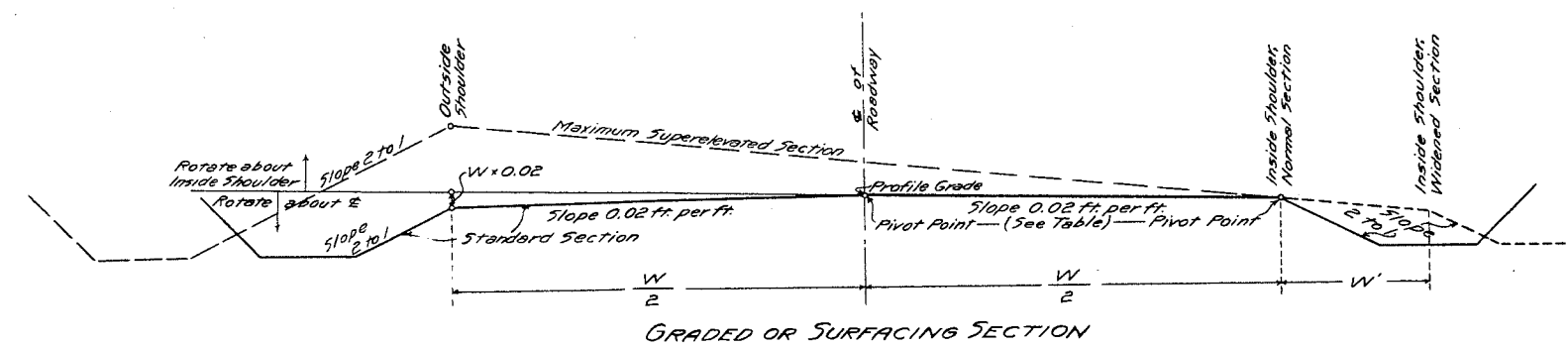
SUPERELEVATION AND WIDENING NOTES FOR PAVEMENT SECTION
 The slope of the shoulders shall conform to the rate per foot width of roadway required except that the inside shoulder shall maintain the standard slope of 0.047 ft per foot width until the super-elevation rate exceeds this standard slope.
 The outside ditch along a super-elevated section is to be modified from the standard where a deeper ditch is required to provide drainage. Details of plans for super-elevating and widening are shown on the General Plan for Widening and the Graph of Super-elevation Factors.
 The subgrade for future pavement is to be constructed to conform to the super-elevation and widening requirements for the pavement section.

SUPERELEVATION FACTORS AND OFFSETS FOR WIDENING FOR PAVEMENT SECTION

Distance from B.T.	20 Ft.	40 Ft.	60 Ft.	80 Ft.	100 Ft.-P.C.	120 Ft.	140 Ft.	160 Ft.	180 Ft.	200 Ft.-E.T.	On Curve
Factor	0.02	0.08	0.18	0.32	0.50	0.68	0.82	0.92	0.98	1.00	1.00
Degree of Curve	Rate of Super-elevation (in Feet) per Foot Width of Roadway										
2° and Under	0.0004	0.0017	0.0038	0.0067	0.0105	0.0143	0.0172	0.0193	0.0206	0.0210	0.0210
3°	0.0006	0.0025	0.0057	0.0101	0.0158	0.0214	0.0258	0.0290	0.0309	0.0315	0.0315
4°	0.0008	0.0034	0.0076	0.0134	0.0210	0.0286	0.0344	0.0386	0.0412	0.0420	0.0420
5°	0.0010	0.0042	0.0094	0.0168	0.0262	0.0357	0.0430	0.0483	0.0514	0.0525	0.0525
6°	0.0013	0.0050	0.0113	0.0202	0.0315	0.0428	0.0517	0.0580	0.0617	0.0630	0.0630
7°	0.0015	0.0059	0.0132	0.0235	0.0368	0.0500	0.0603	0.0676	0.0720	0.0735	0.0735
8°	0.0017	0.0067	0.0151	0.0269	0.0420	0.0571	0.0699	0.0773	0.0823	0.0840	0.0840
9°	0.0019	0.0076	0.0170	0.0302	0.0472	0.0643	0.0775	0.0869	0.0926	0.0945	0.0945
10° and Over	0.0020	0.0080	0.0180	0.0320	0.0500	0.0680	0.0820	0.0920	0.0980	0.1000	0.1000
Offsets for Widening-W' (in Feet)											
Over 10° - Under 12°	0.06	0.24	0.54	0.96	1.50	2.04	2.46	2.76	2.94	3.00	3.00
12° - " 15°	0.08	0.32	0.72	1.28	2.00	2.72	3.28	3.68	3.92	4.00	4.00
15° - " 20°	0.10	0.40	0.90	1.60	2.50	3.40	4.10	4.60	4.90	5.00	5.00
Over 20°	0.12	0.48	1.08	1.92	3.00	4.08	4.92	5.52	5.88	6.00	6.00



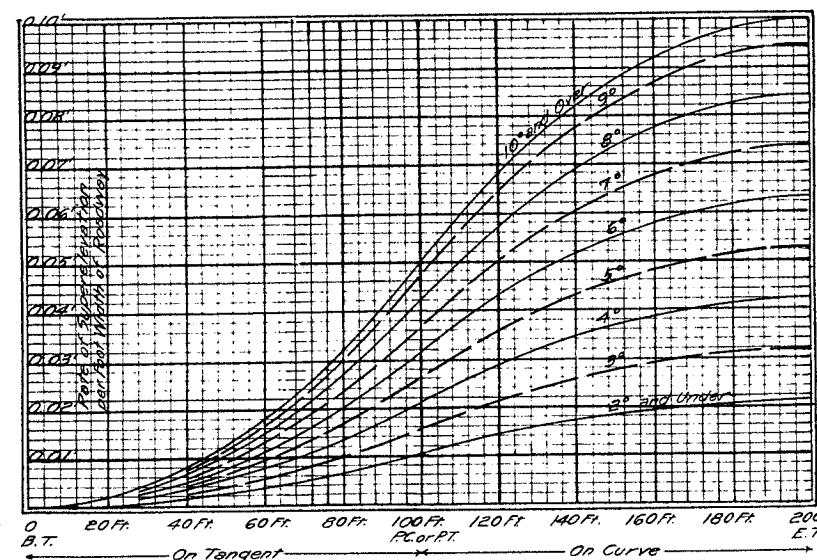
Curves of over 10° are to have the inside portion of the pavement slab and shoulder, or the inside portion and shoulder in a graded or surfacing section, widened in accordance with the plan, offsets for widening, and cross sections. In the graph below the values for the graph labeled "10° and Over", multiplied by 1.000 gives the percentage of the total widening at any point on the transition.



SUPERELEVATION AND WIDENING NOTES FOR GRADED OR SURFACING SECTIONS
 The center line pivot point is to be used as long as the super-elevation does not exceed 0.02 feet per foot width of roadway. The normal inside shoulder pivot point is to be used for a super-elevation rate in excess of 0.02 ft per foot width of roadway.
 When the degree of curvature exceeds 10° the inside shoulder is to be widened from the normal inside shoulder line as shown by the table and cross section. Curves of 10° and less are not to be widened. Details of plans for super-elevation and widening are shown on the General Plan for Widening and the Graph of Super-elevation Factors.

SUPERELEVATION FACTORS AND OFFSETS FOR WIDENING FOR GRADED OR SURFACING SECTIONS

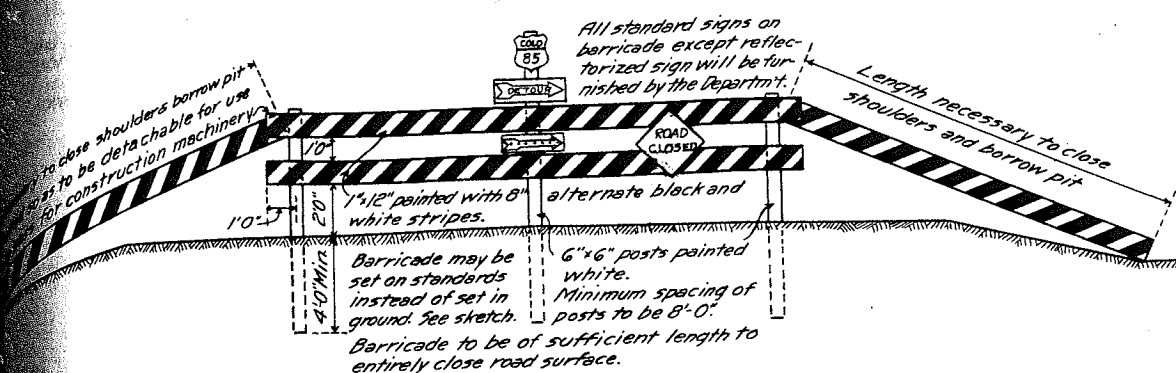
Distance from B.T.	20 Ft.	40 Ft.	60 Ft.	80 Ft.	100 Ft.-P.C.	120 Ft.	140 Ft.	160 Ft.	180 Ft.	200 Ft.-E.T.	On Curve
Factor	0.02	0.08	0.18	0.32	0.50	0.68	0.82	0.92	0.98	1.00	1.00
Degree of Curve	Rate of Super-elevation (in Feet) per Foot Width of Roadway										
2° and Under	0.0004	0.0017	0.0038	0.0067	0.0105	0.0143	0.0172	0.0193	0.0206	0.0210	0.0210
3°	0.0006	0.0025	0.0057	0.0101	0.0158	0.0214	0.0258	0.0290	0.0309	0.0315	0.0315
4°	0.0008	0.0034	0.0076	0.0134	0.0210	0.0286	0.0344	0.0386	0.0412	0.0420	0.0420
5°	0.0010	0.0042	0.0094	0.0168	0.0262	0.0357	0.0430	0.0483	0.0514	0.0525	0.0525
6°	0.0013	0.0050	0.0113	0.0202	0.0315	0.0428	0.0517	0.0580	0.0617	0.0630	0.0630
7°	0.0015	0.0059	0.0132	0.0235	0.0368	0.0500	0.0603	0.0676	0.0720	0.0735	0.0735
8°	0.0017	0.0067	0.0151	0.0269	0.0420	0.0571	0.0699	0.0773	0.0823	0.0840	0.0840
9°	0.0019	0.0076	0.0170	0.0302	0.0472	0.0643	0.0775	0.0869	0.0926	0.0945	0.0945
10° and Over	0.0020	0.0080	0.0180	0.0320	0.0500	0.0680	0.0820	0.0920	0.0980	0.1000	0.1000
Offsets for Widening-W' (in Feet)											
Over 10° - Under 12°	0.06	0.24	0.54	0.96	1.50	2.04	2.46	2.76	2.94	3.00	3.00
12° - " 15°	0.08	0.32	0.72	1.28	2.00	2.72	3.28	3.68	3.92	4.00	4.00
15° - " 20°	0.10	0.40	0.90	1.60	2.50	3.40	4.10	4.60	4.90	5.00	5.00
Over 20°	0.12	0.48	1.08	1.92	3.00	4.08	4.92	5.52	5.88	6.00	6.00



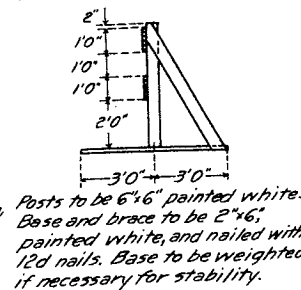
The rate of super-elevation per foot width of roadway to be applied at the outside edge of the pavement slab, and at the outside shoulder of the roadway, is computed as follows:
 The full super-elevation per foot width of roadway rate for a given degree of curvature is 0.0105 ft x Degree of Curvature.
 The maximum super-elevation of 0.10 ft per foot width, applying to curves of 10° and over, is not to be exceeded.
 The above graph has been prepared from the rates of super-elevation shown in the tabulations.
 SPECIAL CASES: When the roadway alignment does not permit the use of the 200 ft transition lengths, the segment lengths may be proportionately shortened. A minimum distance of 200 ft. between the points of full super-elevation shall be used.

COLORADO
 STATE HIGHWAY DEPARTMENT
 STANDARD METHODS
 FOR SUPERELEVATION AND
 WIDENING OF CURVES
 Designed by S.B.L. Approved by
 Made by S.B.L.
 Checked by S.B.L. Date: Aug. 17, 1932.

DETAILS OF PERMANENT BARRICADE



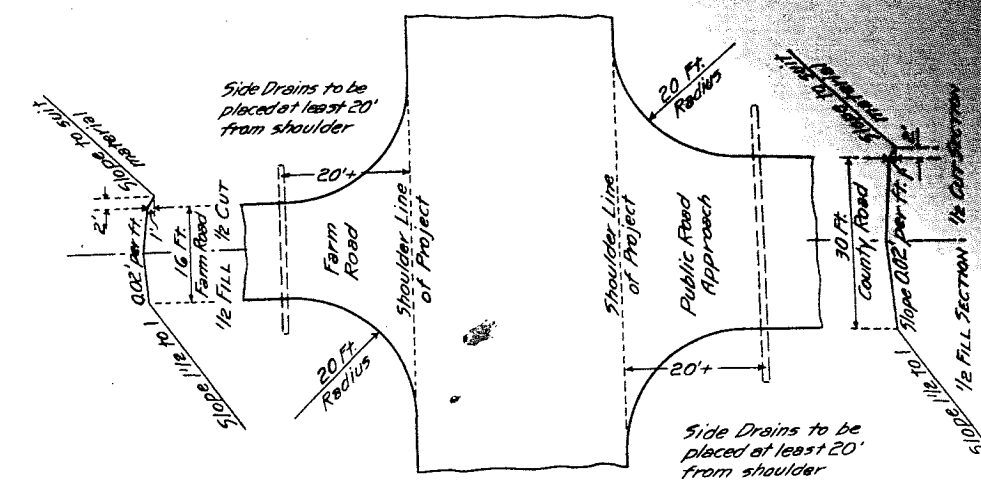
END VIEW OF PORTABLE BARRICADE



STANDARD M-2-B

FED. ROAD DIST. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	2432	21	

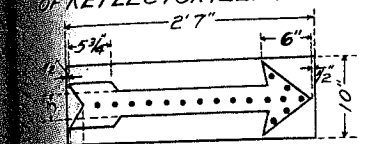
TYPICAL PLAN FOR SIDE APPROACH ROADS



POSITION OF SIGNS RELATIVE ROAD BED

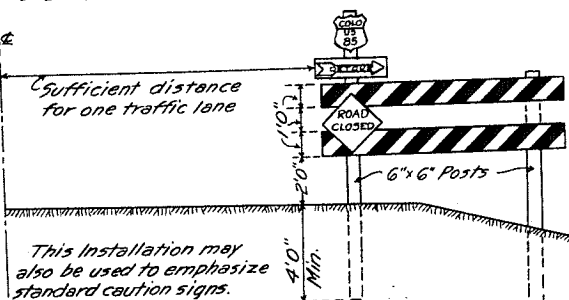
Signs to be governed by the day and night visibility which may be affected by grade, curvature, interference of local signs, shrubbery, fences, etc. Location is to be staked by the contractor in no case shall it be more than 10' from the travelled zone.

SUGGESTED DETAIL OF REFLECTORIZED ARROW

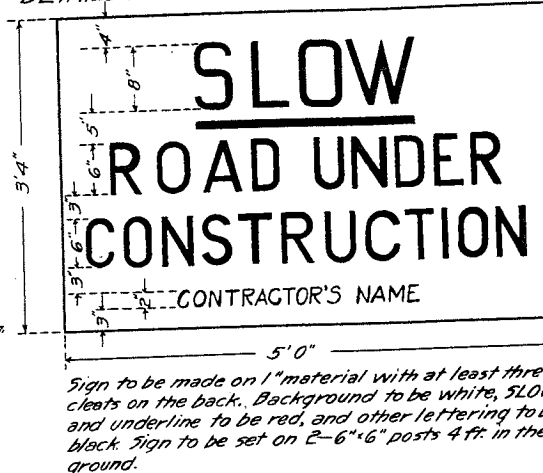


Contractor shall be required to have at least two such arrows for use on barricades at the ends of each project. Reflector Buttons shall be of a type and size, and the sign shall be subject to Department approval.

DETAILS OF PARTIAL BARRICADE

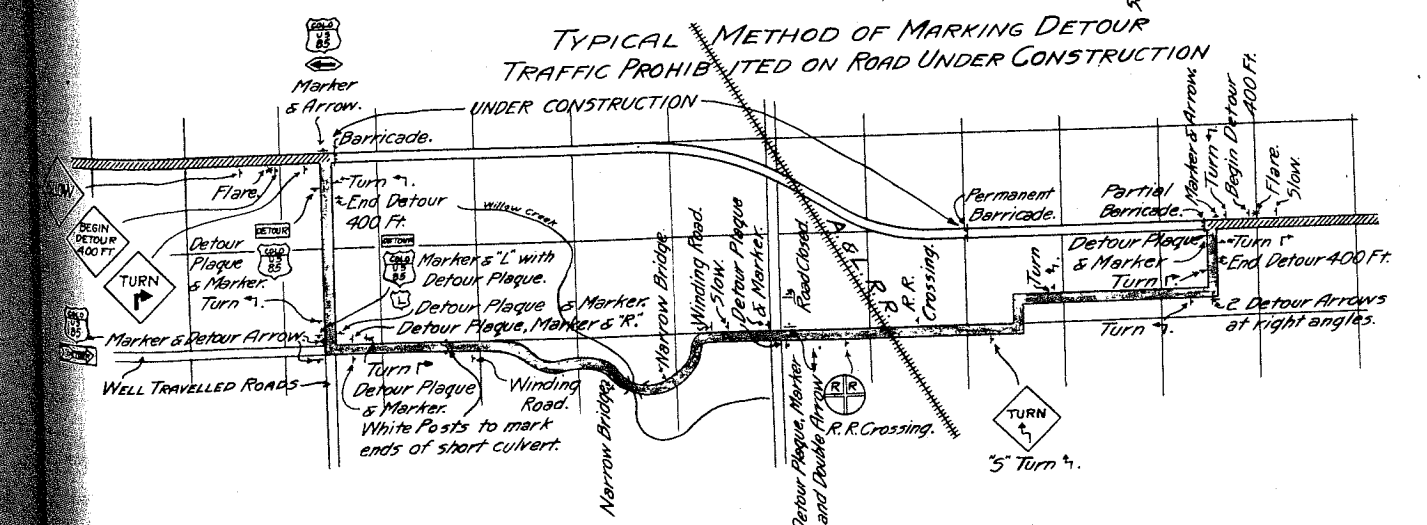
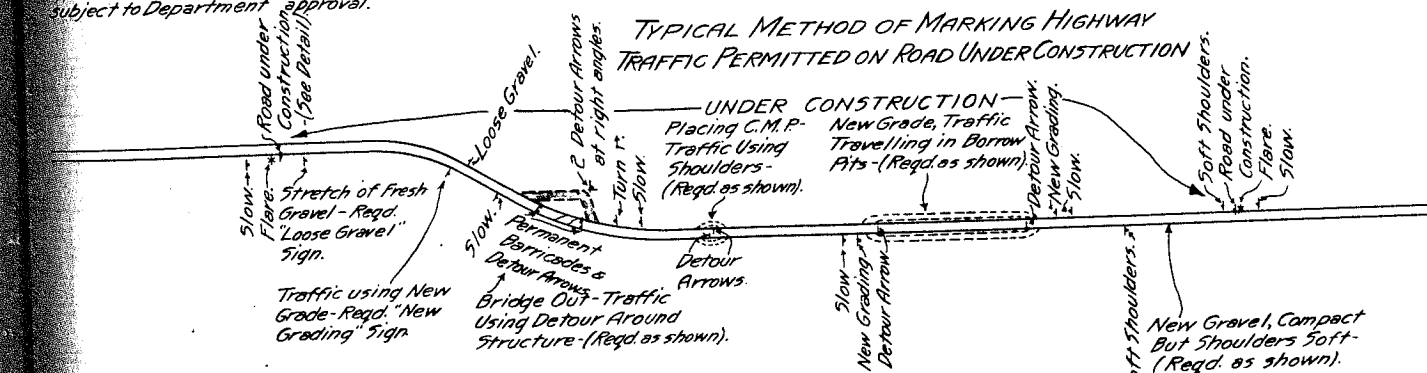
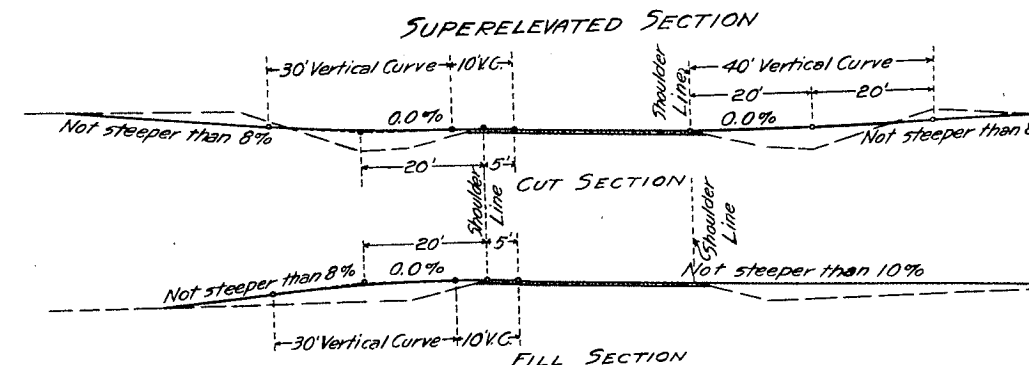
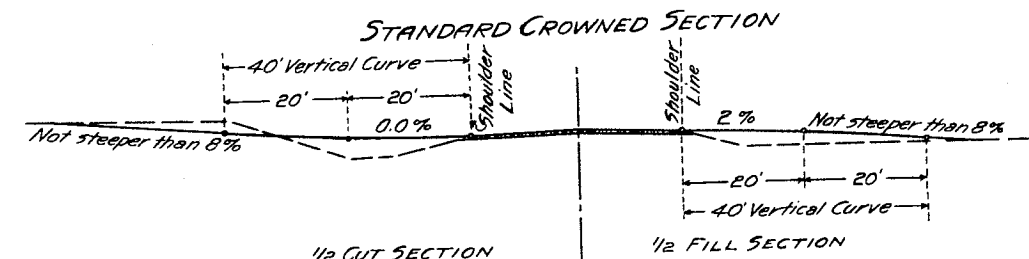


DETAILS OF ROAD UNDER CONSTRUCTION SIGN



GENERAL NOTES ON APPROACHES

The maximum grades shown are to be the limiting grades for all except extreme cases. When the length of the approach as determined by the intersection of these grades with the natural ground is such as to damage the property so served, or cause unreasonable conditions, the grades may be modified. In such cases, methods used, and maximum grades, shall be as indicated on the plans, or provided by work order.



GENERAL NOTES FOR ROADWAY CONSTRUCTION TRAFFIC SIGNS

All Work shall be done in accordance with the Standard Specifications of the Colorado State Highway Department adopted August 1, 1935. Whenever traffic is permitted on a road while under construction, the Contractor shall at all times adequately and appropriately mark any and all hazards on the Project with well painted, well maintained barricades, and standard caution and warning signs. The Contractor shall also mark with standard directional signs any places where the direction of the flow of traffic is not plain. Whenever traffic is prohibited from a Project under construction, the Detour will be marked by the Department and the barricades at either end of the Project shall be erected and maintained by the Contractor. All signs and barricades shall be immediately moved, added to, removed, or changed to appropriately mark hazards, or conditions altered, corrected, or changed by construction progress. The Contractor shall furnish: (1) All barricade material. It shall always be well painted, as per sketch, and well maintained. (2) A reflectorized arrow of an approved type for each barricade at the ends of the Project, and at other barricades required where traffic is permitted on road under construction. (3) "SLOW-ROAD UNDER CONSTRUCTION" signs as required. (4) Any special signs the Department may deem necessary for the protection of traffic over the Project. (5) At least three (3) flares or torches for each barricade, and other flares to illuminate such signs as are called for on these plans, or as the Department may direct. Flares or torches shall be placed between 3 and 5 feet ahead of the sign or object to be illuminated, and shall be kept burning from sunset to sunrise. Costs of all of the foregoing materials and work by the Contractor shall be included in the original contract prices for the Project. The Highway Department will furnish all standard signs not required to be furnished by the Contractor.

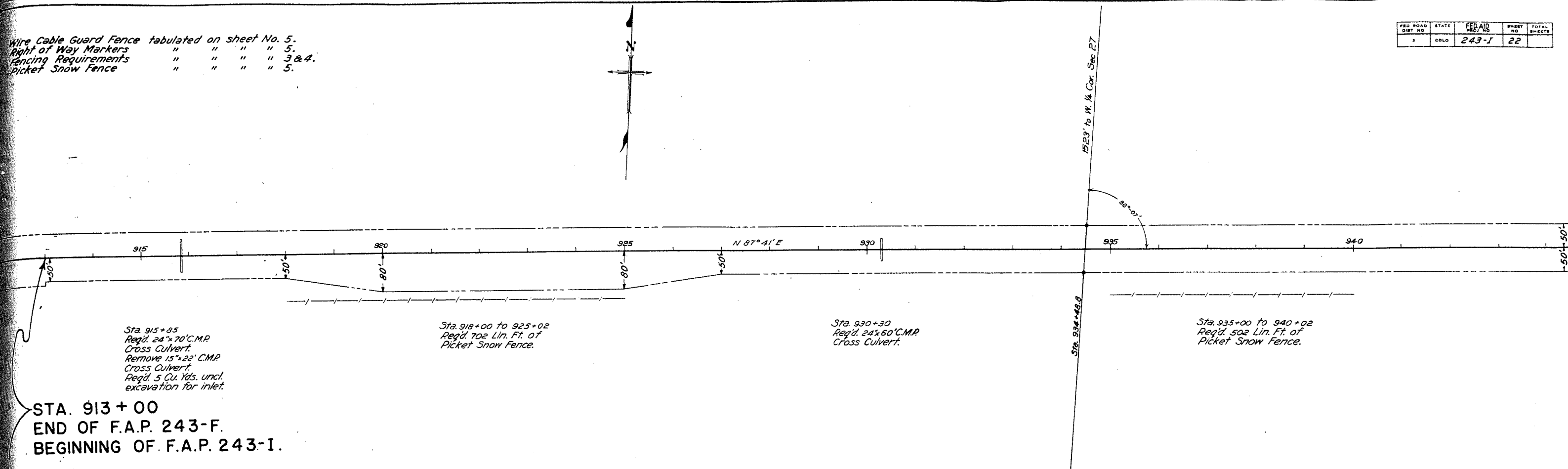
COLORADO
STATE HIGHWAY DEPARTMENT
TYPICAL
SIDE APPROACH ROADS
ROADWAY CONSTRUCTION
TRAFFIC SIGNS

Designed by J.E.C.
Made by S.H.L.
Check J.E.C.
Check K.A.K.

Approved by J.E.C.
Date: Aug. 20, 1935

Wire Cable Guard Fence tabulated on sheet No. 5.
 Right of Way Markers " " " " 5.
 Fencing Requirements " " " " 3 & 4.
 Picket Snow Fence " " " " 5.

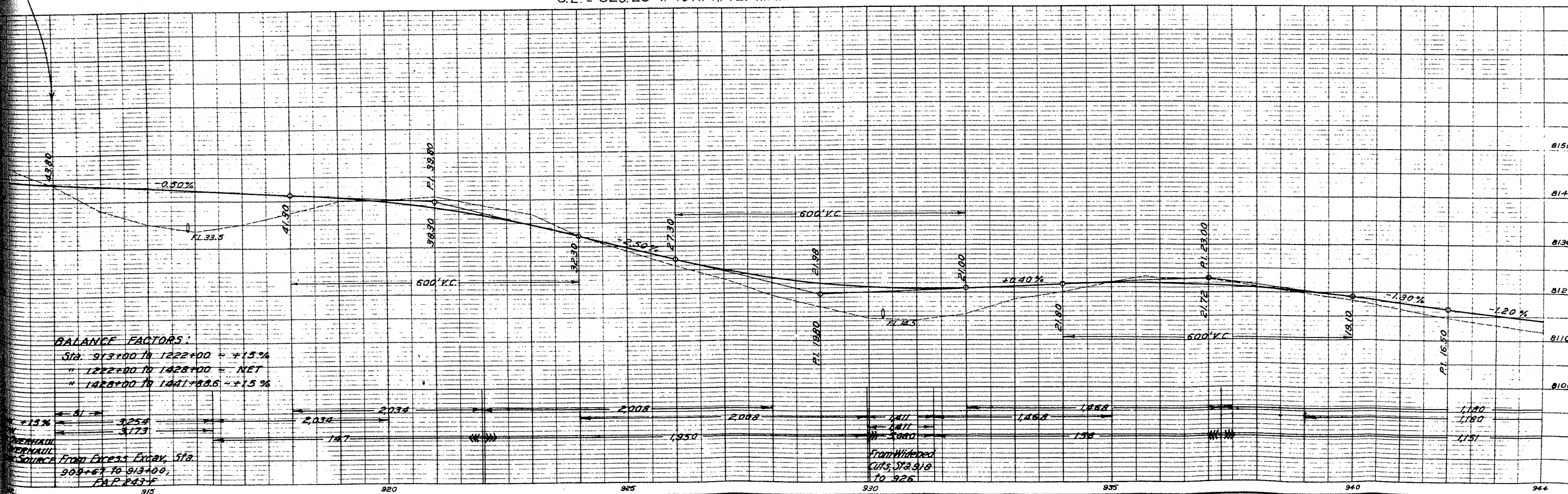
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	243-I	22	

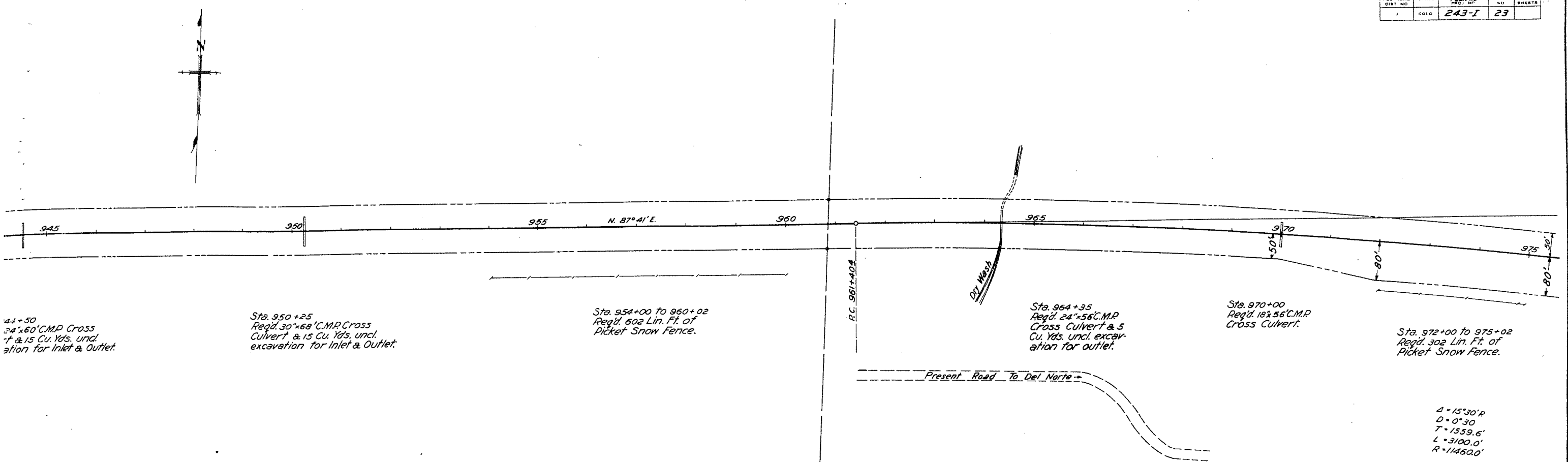


STA. 913+00
 END OF F.A.P. 243-F.
 BEGINNING OF F.A.P. 243-I.

S.E. 1/4 SEC. 28 T. 40 N. R. 4 E. N.M.P.M.

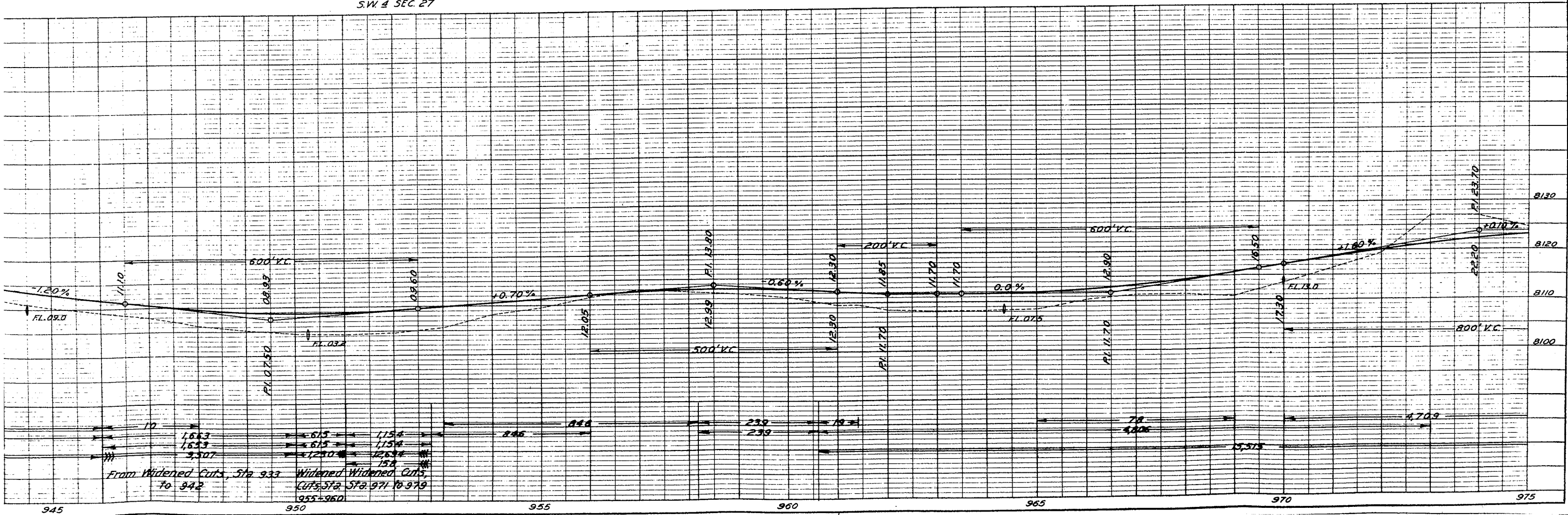
S.W. 1/4 SEC. 27 T. 40 N. R. 4 E.

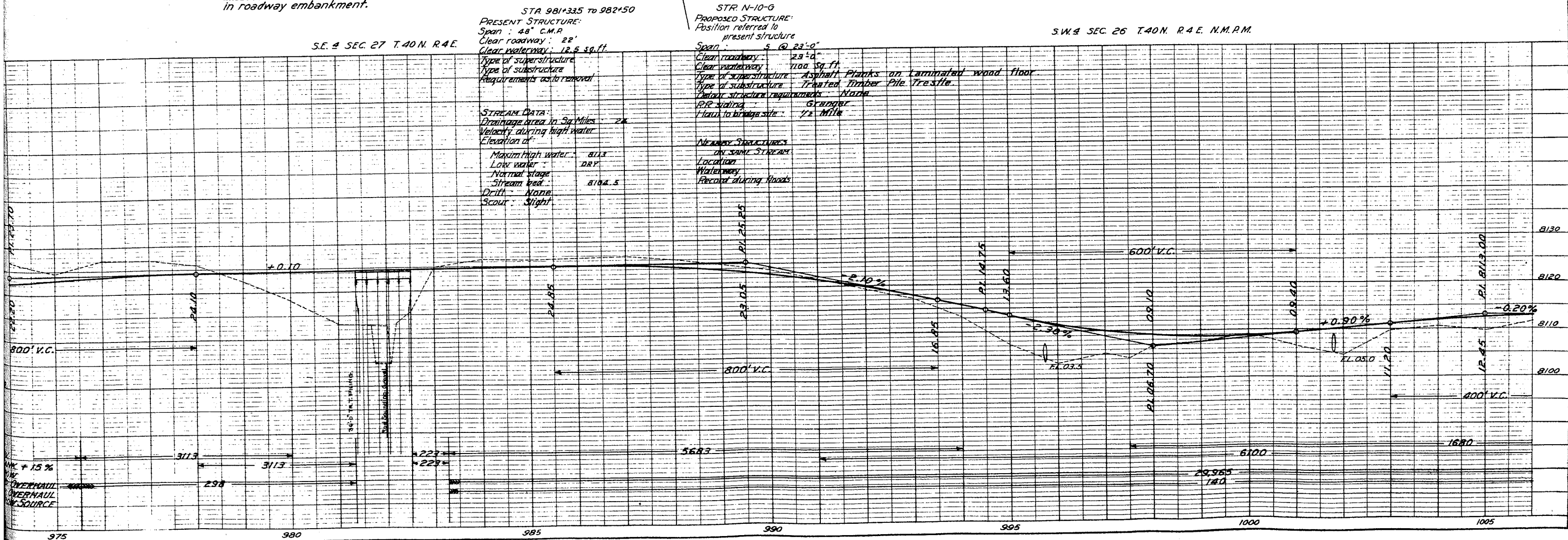
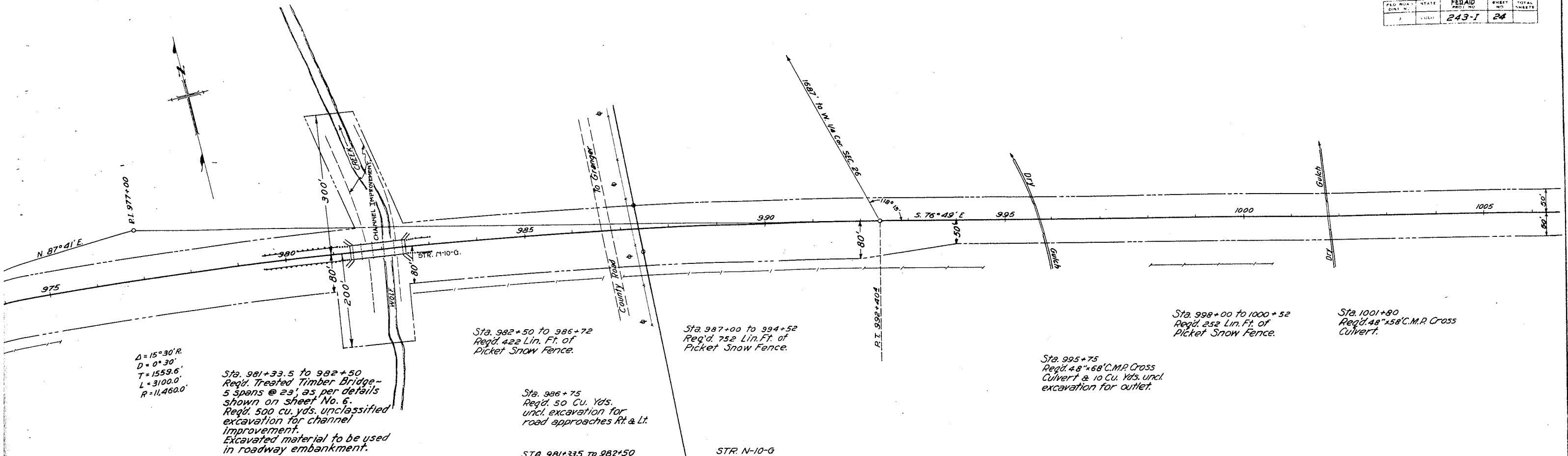




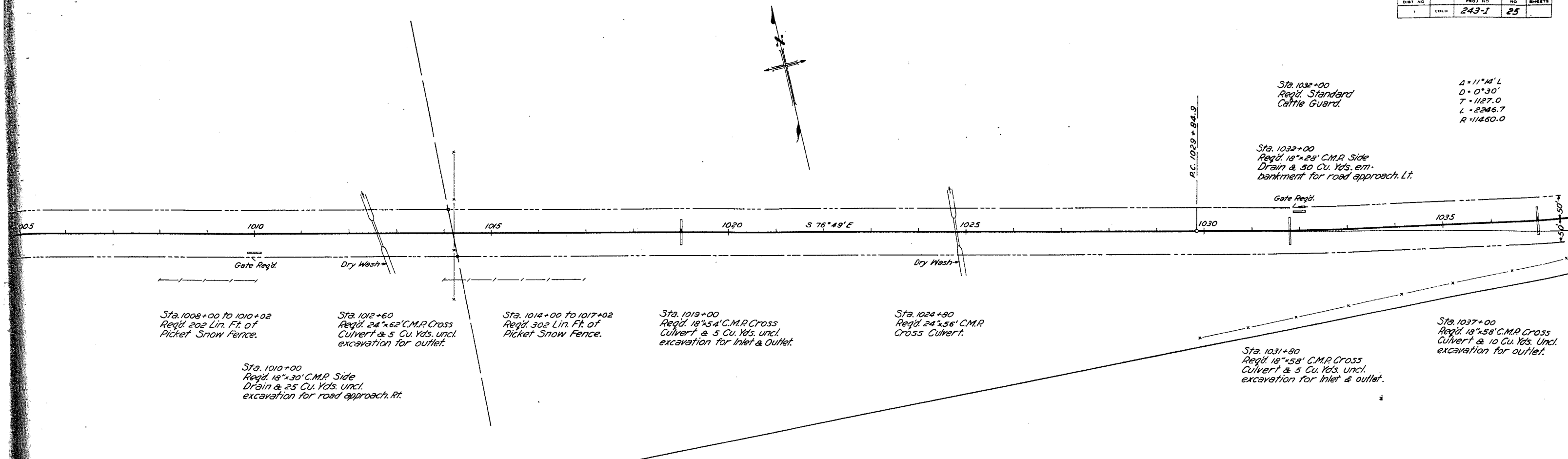
S.W. 4 SEC. 27

S.E. 4 SEC. 27 T. 40 N. R. 4 E. N.M.P.M.





FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
1	COLORADO	243-1	25	



$\Delta = 11^\circ 14' L$
 $D = 0^\circ 30'$
 $T = 1127.0$
 $L = 2246.7$
 $R = 11460.0$

Sta. 1032+00
 Reg'd. Standard
 Cattle Guard.

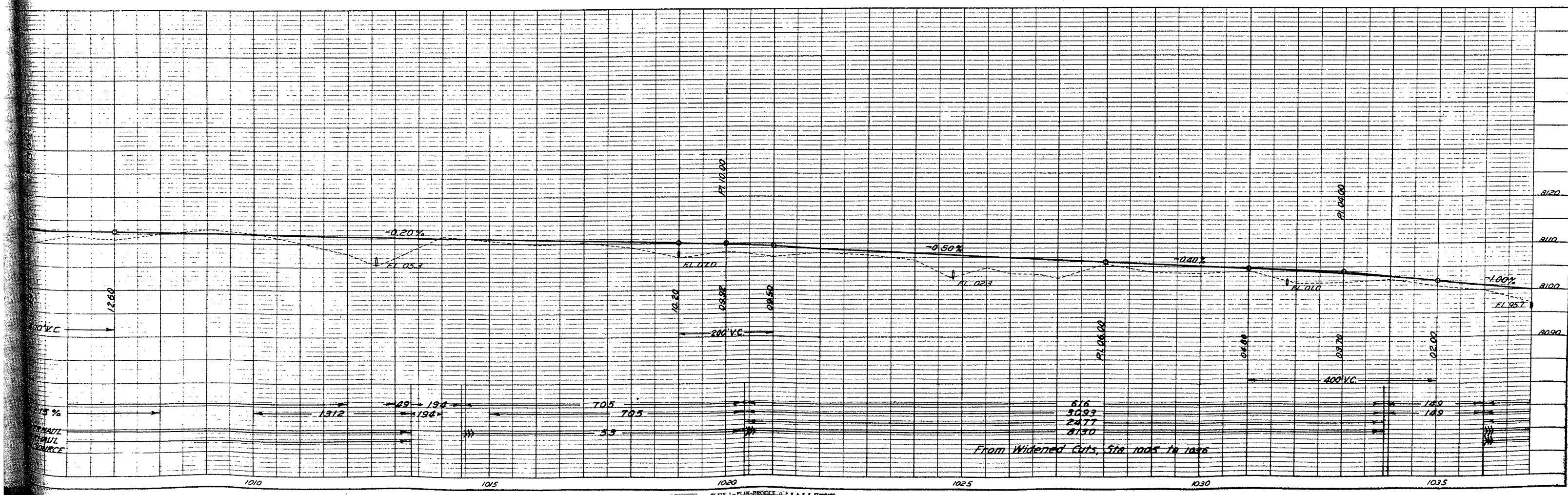
Sta. 1032+00
 Reg'd. 18"x28" C.M.P. Side
 Drain & 50 Cu. Yds. em-
 bankment for road approach. Lt.

Gate Reg'd.

Sta. 1037+00
 Reg'd. 18"x58" C.M.P. Cross
 Culvert & 10 Cu. Yds. Uncl.
 excavation for outlet.

Sta. 1031+80
 Reg'd. 18"x58" C.M.P. Cross
 Culvert & 5 Cu. Yds. uncl.
 excavation for Inlet & outlet.

N.E. 1/4 Sec. 35



S.E. 1/4 Sec. 26

S.W. 1/4 Sec. 25, T.40N, R.4E, N.M.P.M.

FED. ROAD DIST. NO.	STATE	FED. AID DIST. NO.	SHEET NO.	TOTAL SHEETS
1	CUL.	243-1	26	

Δ = 11° 14' L
D = 0° 30'
T = 1127.0
L = 2246.7
R = 11460.0



Sta. 1054+49
Req'd. 18"x26" C.M.P. Side Drain
& 50 Cu. Yds. embankment
for road approach. Lt.

P.T. 1052+31.6

Gate Reg'd.

S 88° 03' E

Present Road

Gate Reg'd.

Sta. 1060+00
Req'd. 48"x74" C.M.P. Cross
Culvert & 200 Cu. Yds. uncl.
excavation for inlet & outlet.

Sta. 1061+53
Remove 30"x24" C.M.P.
Cross Culvert.

Sta. 1067+70
Req'd. 24"x100" C.M.P. Cross
Culvert.
Remove 18"x20" C.M.P.

Sta. 1060+60
Req'd. 18"x26" C.M.P. Side Drain
& 30 Cu. Yds. uncl. excavation
for road approach. Rt.

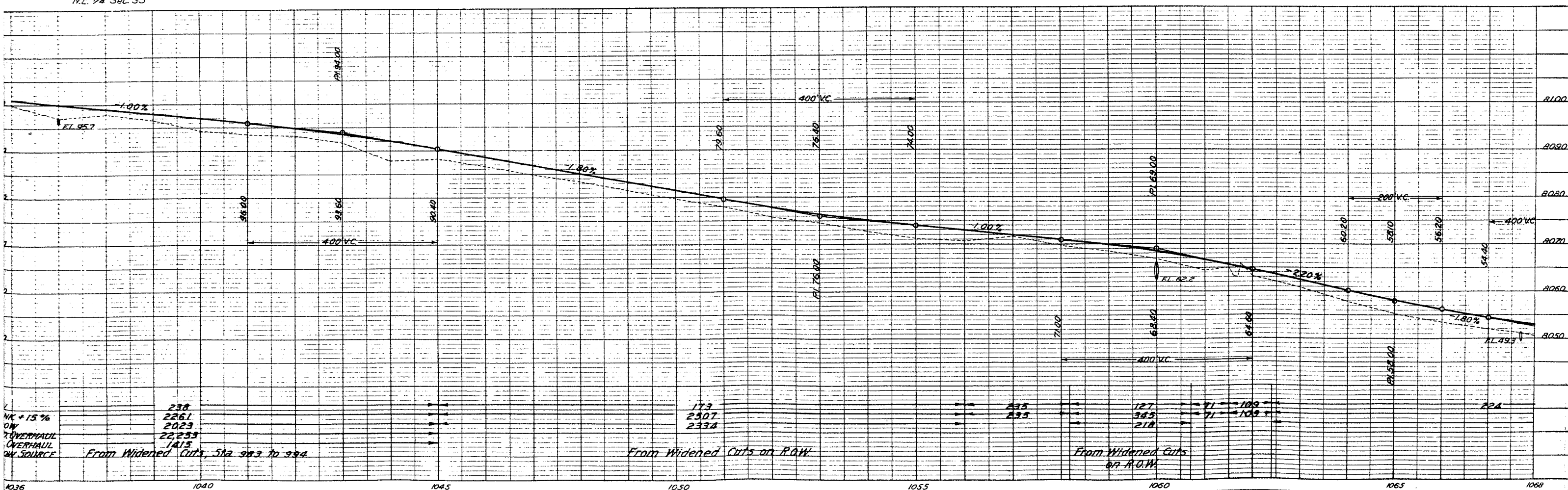
Borrow pits to drain into
canal at Sta. 1060+00

Pit No. 3
Available Surfacing
Material

P.I. 1041+11.9

N.E. 1/4 Sec. 35

N.W. 1/4 Sec. 36



S.E. 1/4 SEC. 25 T. 40 N. R. 4 E.

Sta. 1071 + 00 to 1082 + 00
Req'd. 180 Cu. Yds. excavation
for irrigation ditch Lt.

Sta. 1089+00
Reg'd. 18"x30' C.M.P. Side
Drain & 30 Cu. Yds. em-
bankment for road
approach. Lt.

Sta. 1092+00
Req'd. 50 cu. yds.
embankment for
dike at Duck Pond.

FED ROAD DIST NO	STATE	FED AID PROJ NO	SHEET NO.	TOT SHEETS
3	COLO.	249-1	27	

S.W. 1/4 SEC. 30 T. 40N. R. 5E.

T. 40 N. R. 4 E.

Sta. 1071+00
Req'd. 24"x58' C.M.P.
Cross Culvert & 10
Cu. Yds. uncl. excav. for
Inlet & Outlet.

Sta. 1075 + 50
Repl'd. 18"x100' C.M.P. Cross Culvert.
Remove 18"x26' " " "

Sta. 1083+76
Reg'd. 2-18"x26" C.M.P. Side
Drains @ 100 Cu. Yds. em-
bankment for road ap-
proaches Rt. & Lt.

Sta. 1085+00 to 1090+02
Req'd. 502 Lin. Ft. of
Picket Snow Fence.

Sta. 1091 +31
Req'd. 2-18" x 30' C.M.P. Side Drains
& 100 Cu. Yds. embankment for
road approaches Rt. & Lt.

Sta. 1095+00
Req'd. 24"x52' C.M.R. Cross
Culvert & 5 Cu. Yds. uncl.
excavation for outlet

Sta. 1096 + 5.5
Reqd. 18' x 56' C.M.P. Cross Culvert
& 10 Cu. Yds. und. excavation for
ditch change.
Remove 18' x 24' C.M.P. Cross Culvert.

Cultivated Field

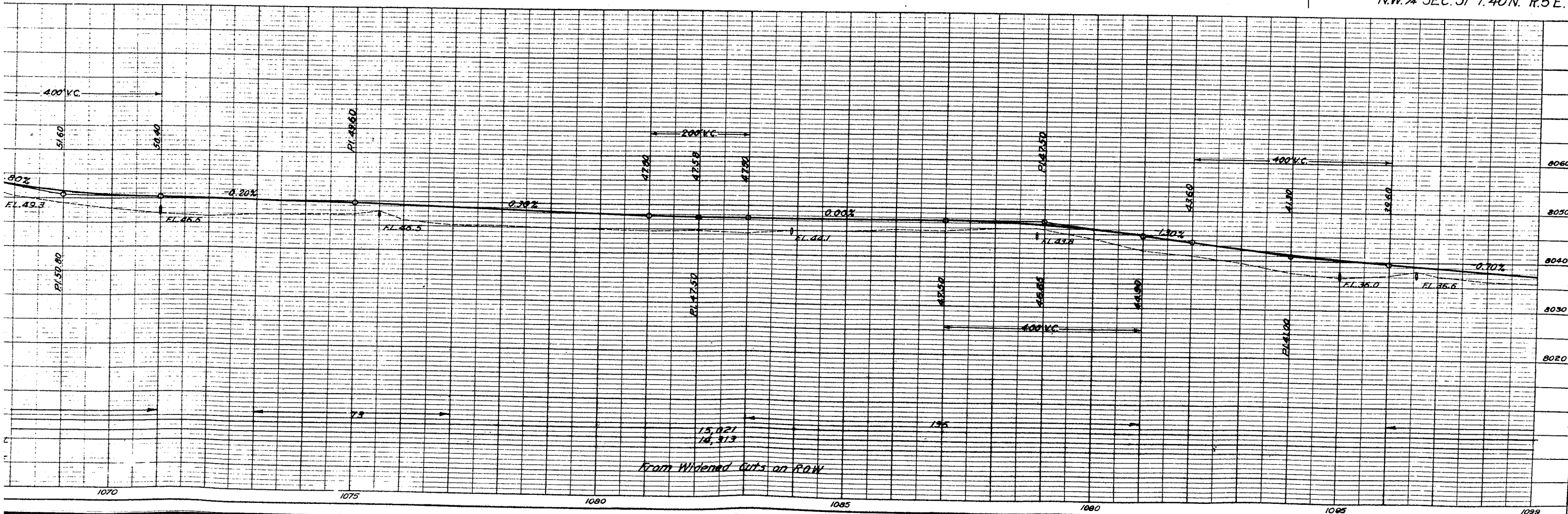
Sta. 1083+89
Reg'd. 18"x100' C.M.P.
Cross Culvert.
Remove 18"x24' C.M.P.

Sta. 1067+70 to 1200+00
Req'd. 1200 Cu. Yds. uncl. excavation
for drain ditch. Rt.

Sta. 1088+85
Reg'd. 18" x 100' C.M.P. Cross
Culvert & 10 Cu. Yds. uncl.
excavation for Inlet & Outlet.
Remove 18" x 24' C.M.P.

N.E. 1/4 SEC. 36 T. 40 N. R. 4 E. N.M.P.M.

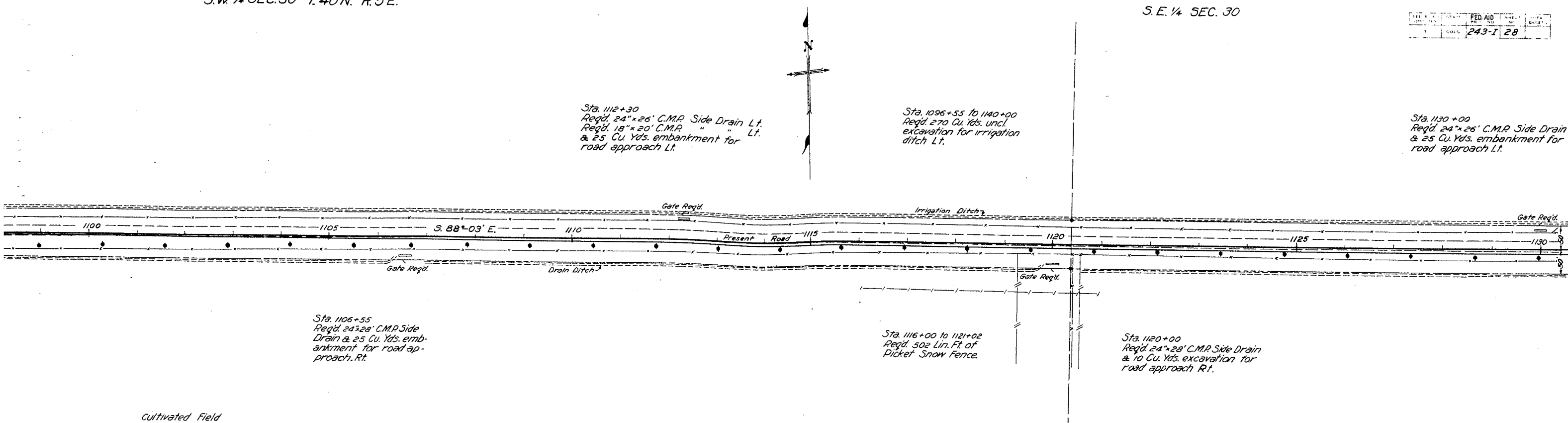
N.W. ¼ SEC. 31 T. 40 N. R. 5 E.



S.W. 1/4 SEC. 30 T. 40 N. R. 5 E.

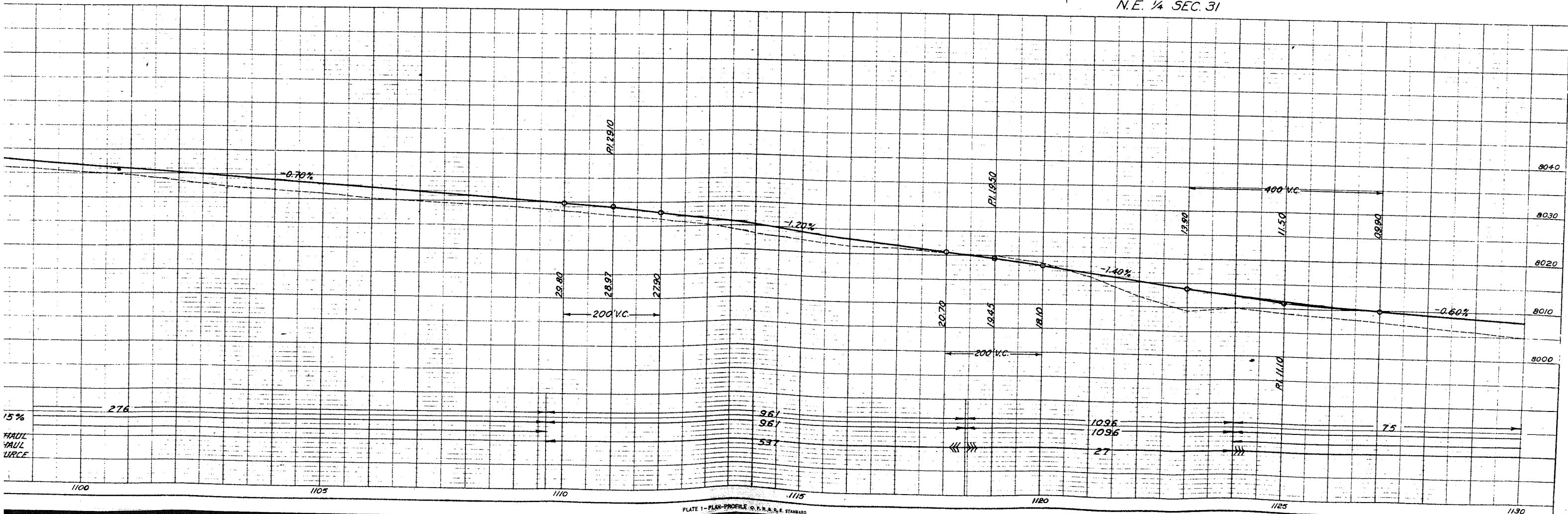
S.E. 1/4 SEC. 30

FED. AID	243-1	28
DATE		
BY		
CHECKED		
APPROVED		

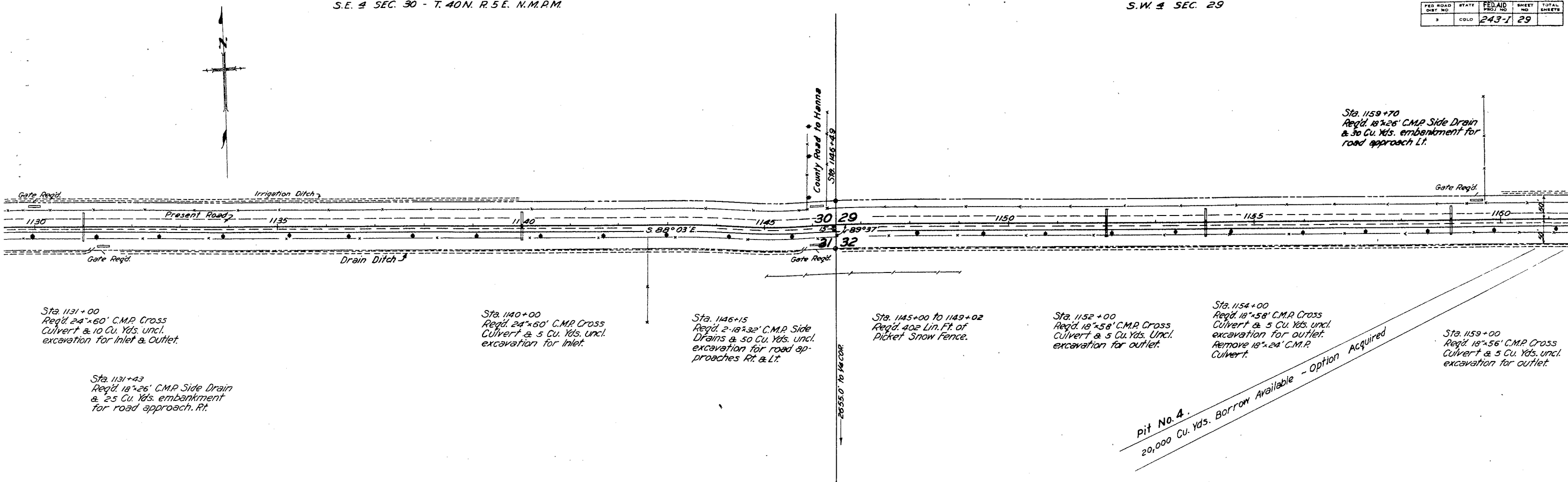


N.W. 1/4 SEC. 31 T. 40 N. R. 5 E. N.M.P.M.

N.E. 1/4 SEC. 31

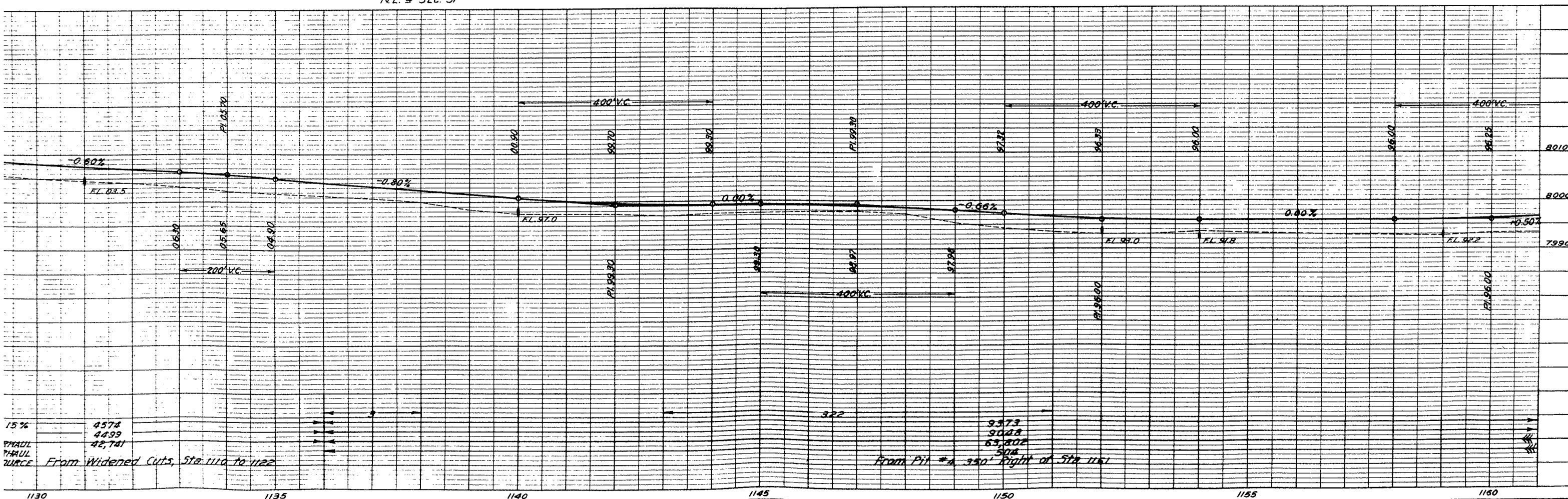


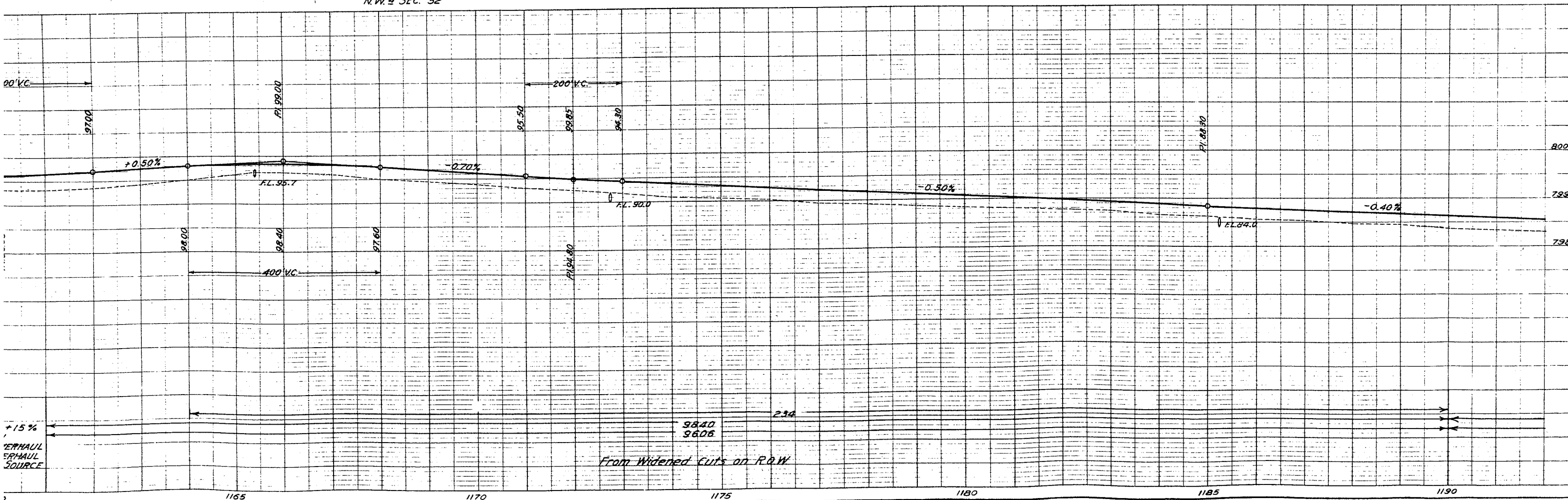
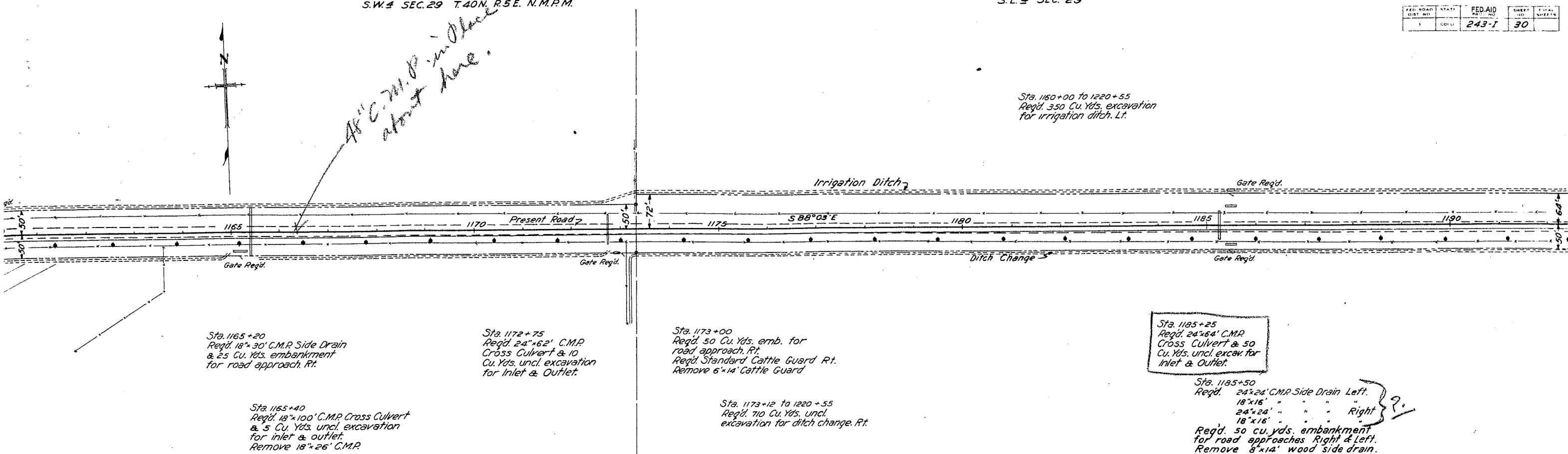
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
5	COLORADO	243-J	29	

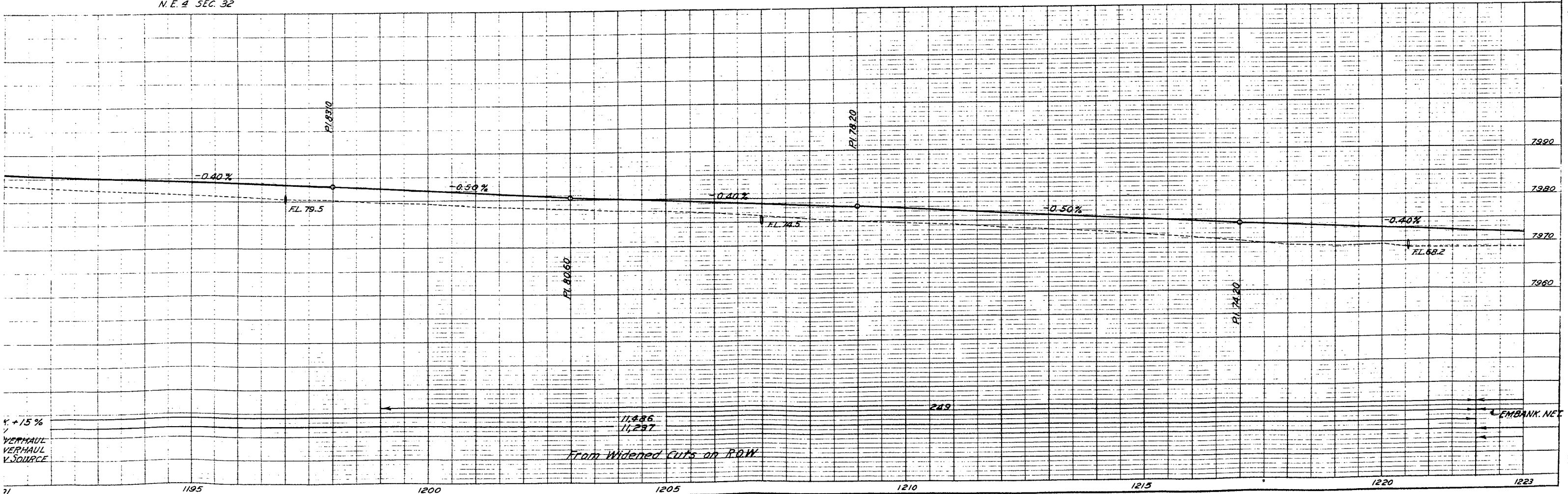
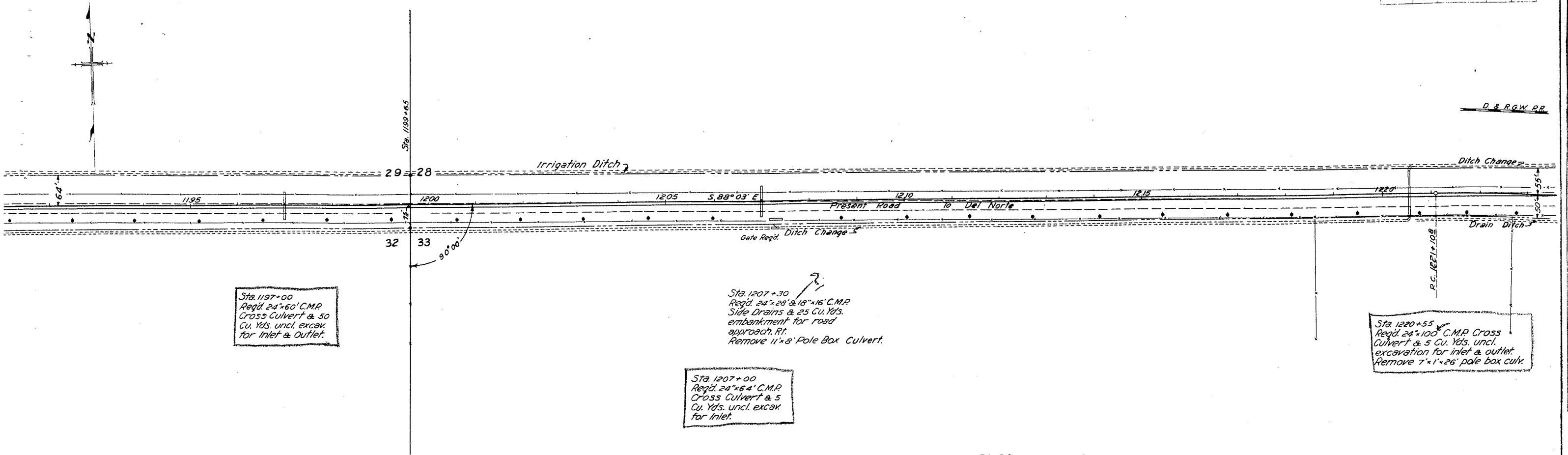


N.E. 4 SEC. 31

N.W. 4 SEC. 32







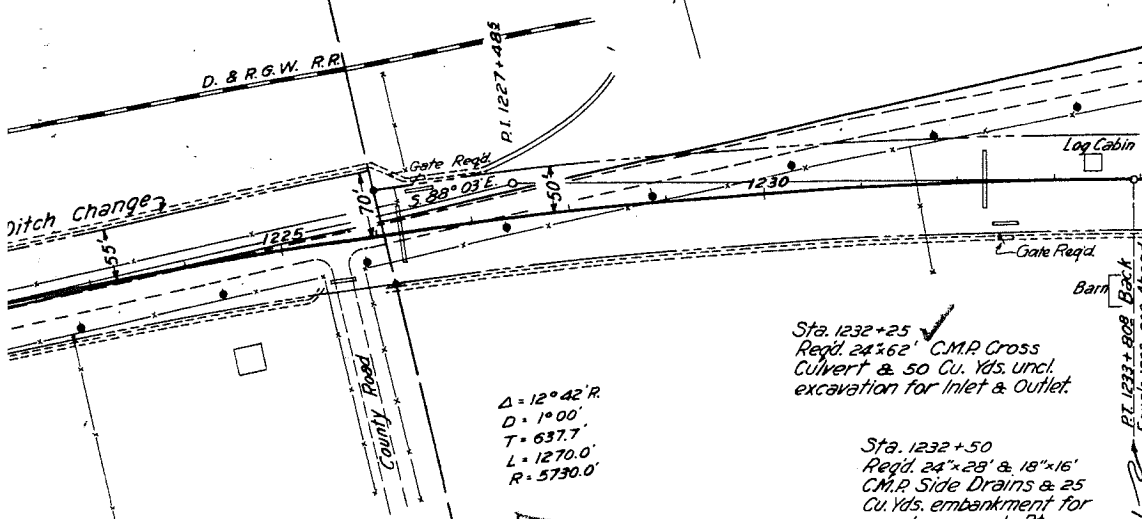
SW 4 SEC. 28

S.E. 4 SEC. 28

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
1	ILL.	243-1	32	

Sta. 1220+55 to 1228+00
Reqd. 125 Cu. Yds. uncl.
excavation for ditch change Lt.

Sta. 1226+50
Reqd. 24'x30' & 18'x16'
C.M.P. Side Drains & 50
Cu. Yds. embankment for
road approach Lt.
Remove 2'x4'x20' timber box Culv.



Sta. 1220+55 to 1225+40
Reqd. 60 Cu. Yds. uncl. excavation
for drain ditch Rt.

Sta. 1225+65
Reqd. 24'x28' C.M.P. Side Drain
& 50 Cu. Yds. embankment for
road approach Rt.
Remove 16'x8' timber box culvert.

Sta. 1226+25
Reqd. 24'x60' C.M.P.
Cross Culvert and
25 cu yds. uncl. excav. for outlet.

Sta. 1232+25
Reqd. 24'x62' C.M.P. Cross
Culvert & 50 Cu. Yds. uncl.
excavation for Inlet & Outlet.

Sta. 1232+50
Reqd. 24'x28' & 18'x16'
C.M.P. Side Drains & 25
Cu. Yds. embankment for
road approach Rt.

Sta. 1233+25
FORCE ACCOUNT.
Move log cabin off
Right of way.

Sta. 1240+00
Reqd. 6'x3'x44' Conc. Box
Culvert & 25 Cu. Yds. uncl.
excavation for Inlet & Outlet.

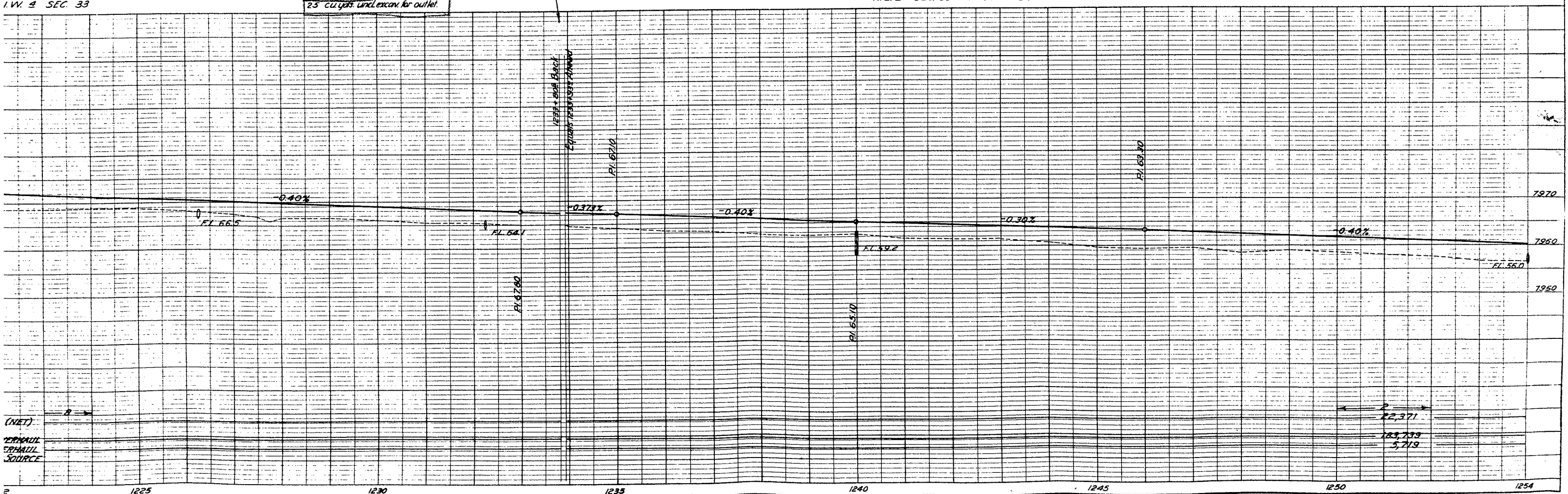
Sta. 1243+00
Reqd. 24'x28' C.M.P. Side Drain Rt.
Reqd. 18'x20' " " " "
& 50 Cu. Yds. embankment for
road approach Rt.

Sta. 1225+80 to 1226+00
Reqd. 800 Cu. Yds. uncl.
excavation for drain ditch Rt.

Sta. 1254+00
Reqd. 24'x64' C.M.P. Cross
Culvert & 10 Cu. Yds. uncl.
excavation for Inlet & Outlet.

N.W. 4 SEC. 33

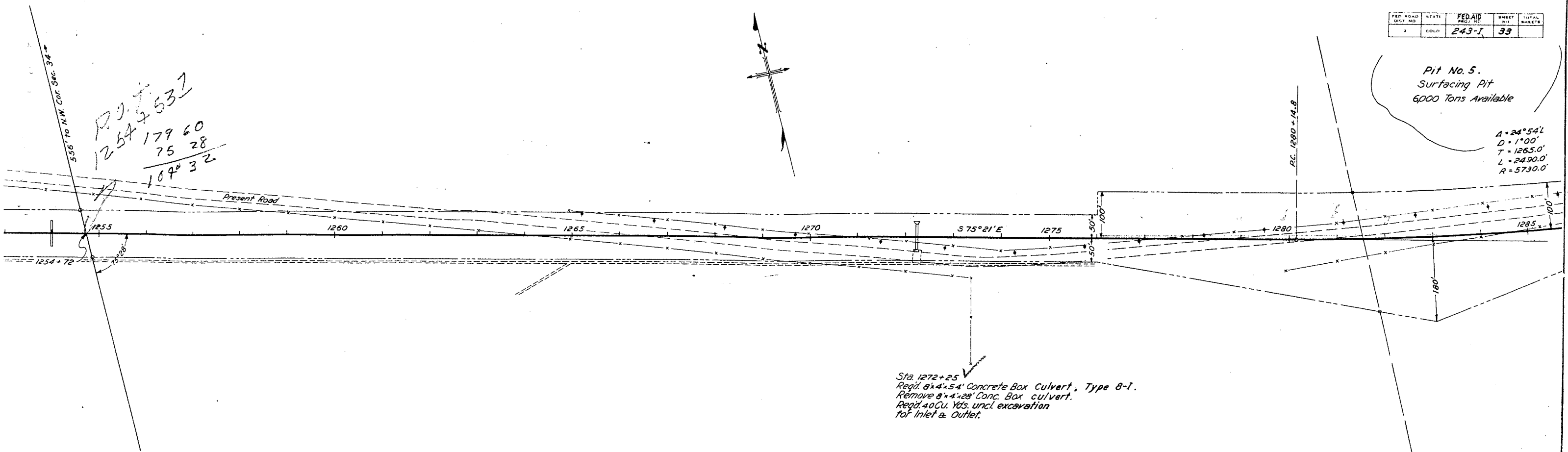
N.E. 4 SEC. 33 T.40N. R.5E. N.M.P.M.



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLORADO	243-1	33	

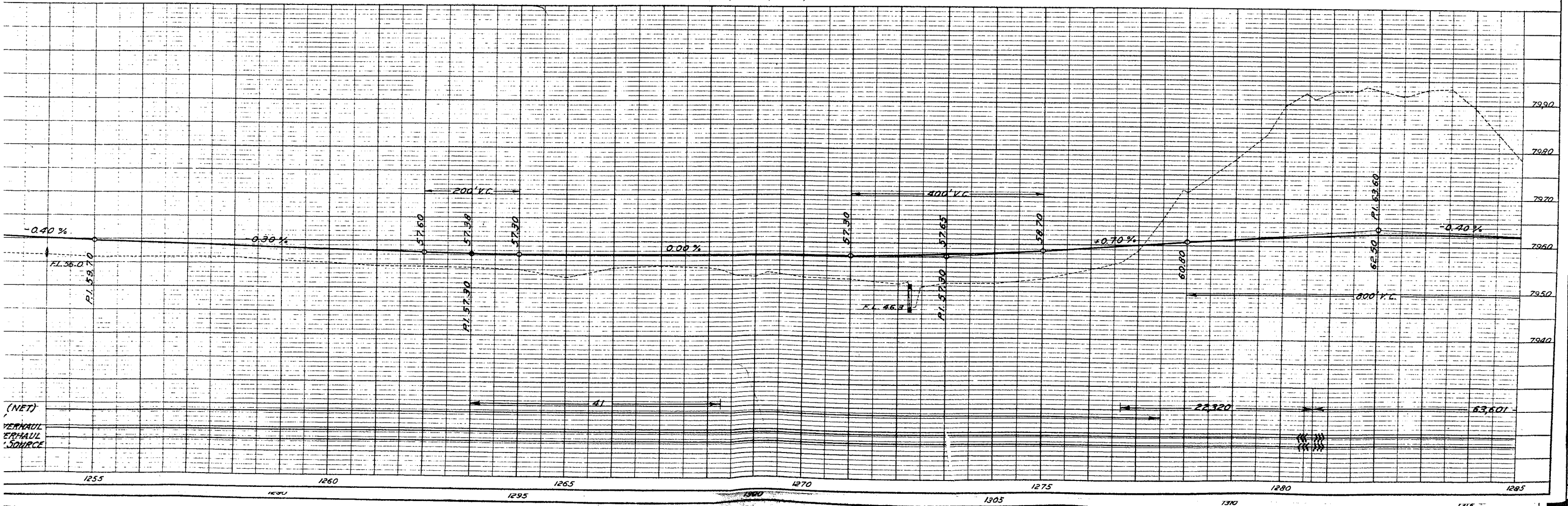
Pit No. 5.
Surfacing Pit
6000 Tons Available

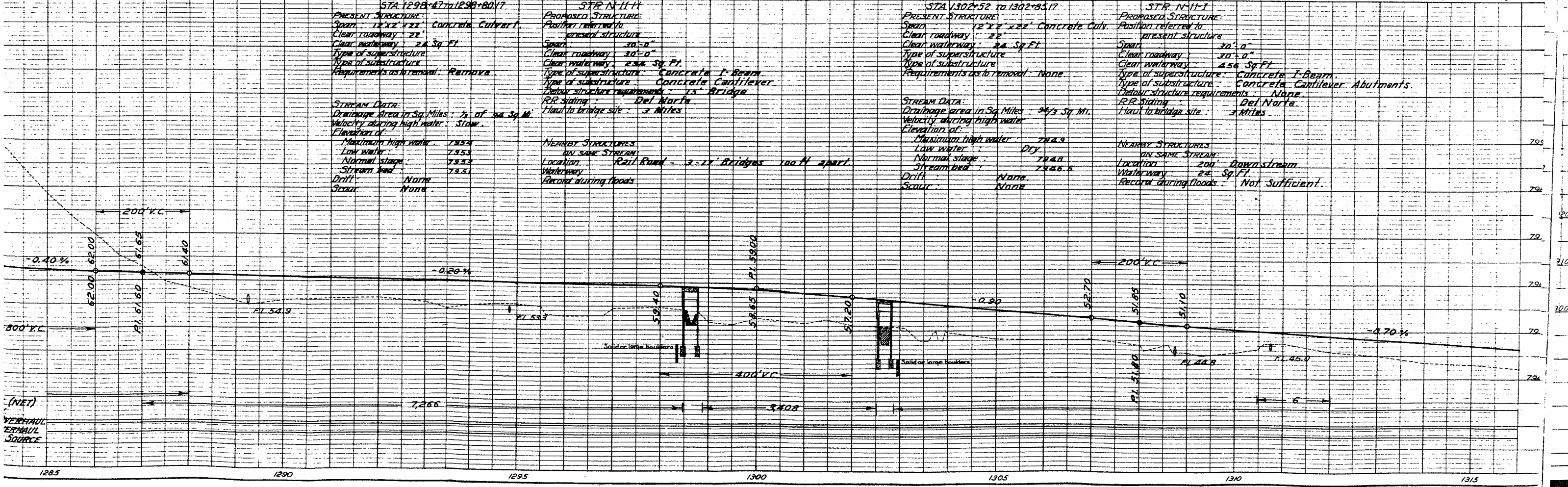
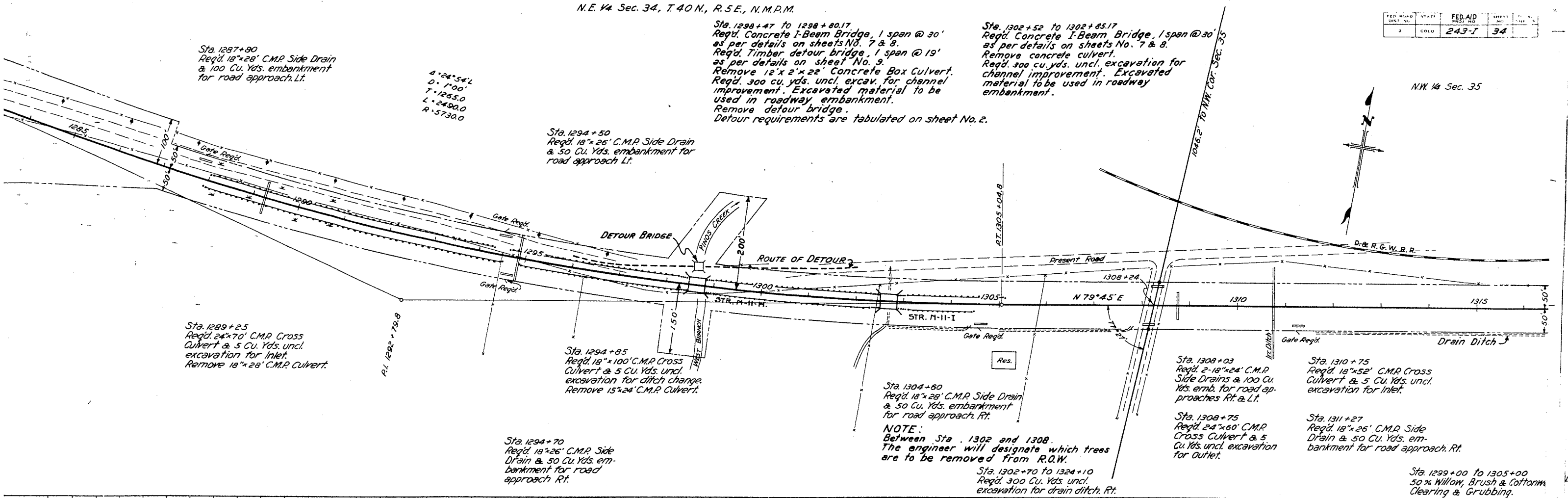
$\Delta = 24^\circ 54'$
 $D = 1^\circ 00'$
 $T = 1265.0'$
 $L = 2490.0'$
 $R = 5730.0'$



E. 1/4 Sec. 33

NW 1/4 Sec. 34, T.40N, R.5E, N.M.P.M.





STA 1298+47 to 1298+80.17

PRES. STRUCTURE	12'x22'x22' Concrete Culvert
Clear roadway	22'
Clear waterway	24' Sq. Ft.
Type of superstructure	Concrete
Type of substructure	Concrete
Requirements as to removal	Remove

STREAM DATA:

Drainage Area in Sq. Miles	1/2 of 34 Sq. Mi.
Velocity during high water	Slow
Elevation of:	
Maximum high water	7854
Low water	7853
Normal stage	7853
Stream bed	7853
Drift	None
Scour	None

STR N-11-I

PRES. STRUCTURE	Position referred to present structure
Clear roadway	30'-0"
Clear waterway	30'-0"
Type of superstructure	Concrete I-Beam
Type of substructure	Concrete Cantilever
Detour structure requirements	15' Bridge
R.R. siding	Del Norte
Haul to bridge site	2 Miles

NEARBY STRUCTURES

Location	2-12' Bridges 100 ft apart
Waterway	
Record during floods	

STA 1302+52 to 1302+65.17

PRES. STRUCTURE	12'x22'x22' Concrete Culv.
Clear roadway	22'
Clear waterway	24' Sq. Ft.
Type of superstructure	Concrete
Type of substructure	Concrete
Requirements as to removal	None

STREAM DATA:

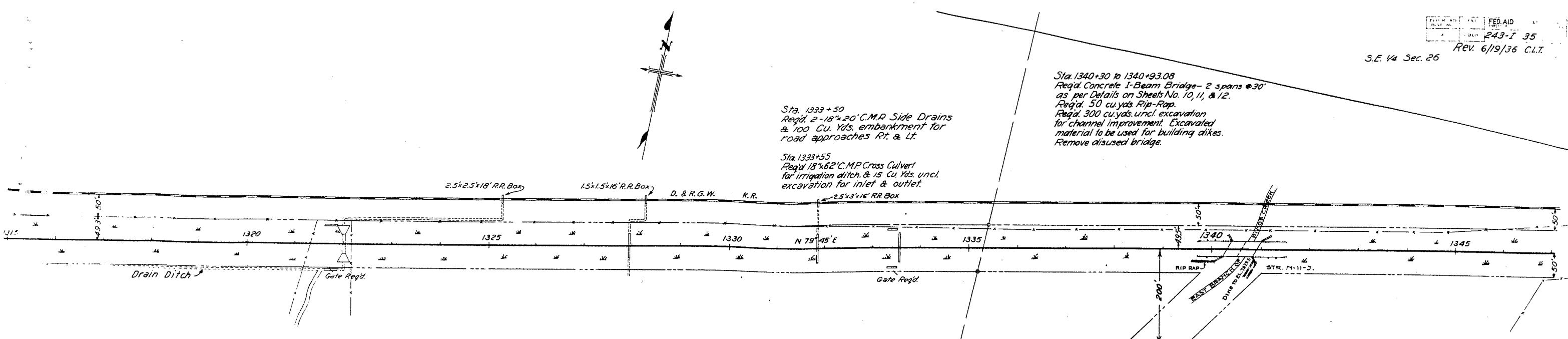
Drainage area in Sq. Miles	34 2/3 Sq. Mi.
Velocity during high water	
Elevation of:	
Maximum high water	7849
Low water	Dry
Normal stage	7848
Stream bed	7846.5
Drift	None
Scour	None

STR N-11-I

PRES. STRUCTURE	Position referred to present structure
Clear roadway	30'-0"
Clear waterway	30'-0"
Type of superstructure	Concrete I-Beam
Type of substructure	Concrete Cantilever Abutments
Detour structure requirements	None
R.R. siding	Del Norte
Haul to bridge site	2 Miles

NEARBY STRUCTURES

Location	200' downstream
Waterway	24' Sq. Ft.
Record during floods	Not Sufficient



Sta. 1321+75
 Reg'd. 2-18"x28" C.M.P. Side
 Drains & 125 Cu. Yds. emb.
 for road approaches
 Rt. & Lt.

Sta. 1322+00
 Reg'd. 6'x7'x40' Conc. Box
 Culvert & 10 Cu. Yds. uncl.
 excavation for Inlet & Outlet.

Sta. 1327+95
 Reg'd. 24"x56" C.M.P. Cross
 Culvert & 5 Cu. Yds. uncl.
 excavation for ditch change.

Sta. 1331+85
 Reg'd. 48"x62" C.M.P.
 Cross Culvert & 5 Cu.
 Yds. uncl. excavation
 for Outlet.

Sta. 1340+30 to 1340+93.08
 Reg'd. Concrete I-Beam Bridge- 2 spans @ 30'
 as per Details on Sheets No. 10, 11, & 12.
 Reg'd. 50 cu.yds. Rip-Rap.
 Reg'd. 300 cu.yds. uncl. excavation
 for channel improvement. Excavated
 material to be used for building dikes.
 Remove disused bridge.

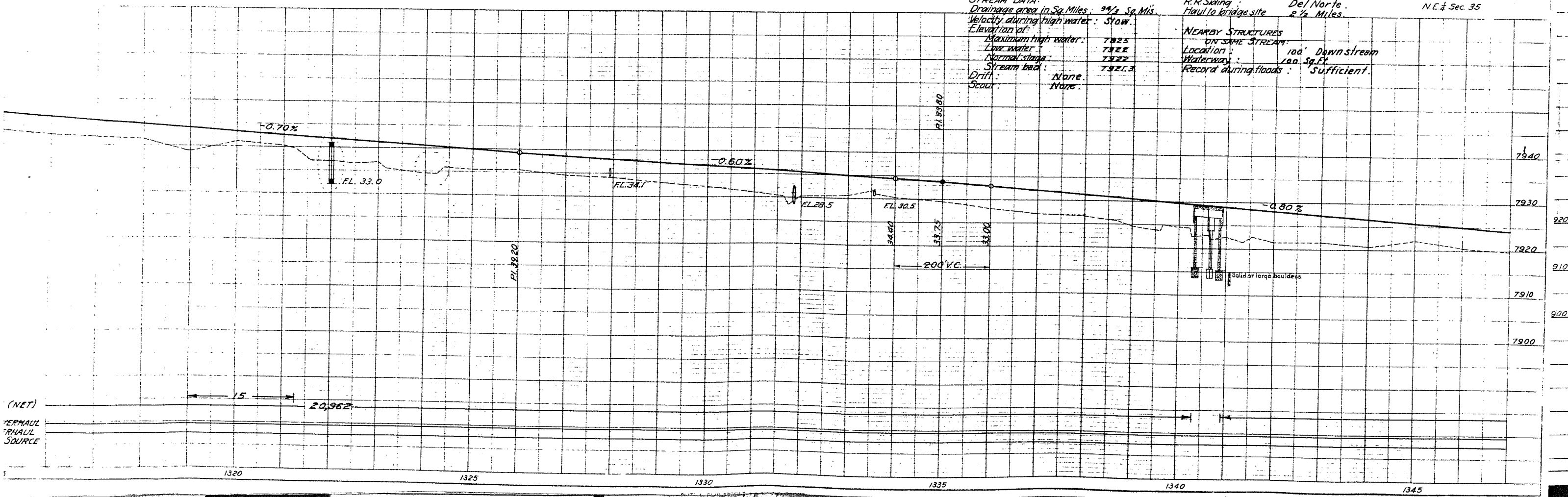
N.W. 1/4 SEC. 35, T. 40N., R. 5E., N.M.P.M.

STA 1340+30 TO 1340+93.08
 PRESENT STRUCTURE:
 Span: 10'x10' Timber Trestle.
 Clear roadway: 100 Sq. Ft.
 Clear waterway: 100 Sq. Ft.
 Type of superstructure:
 Type of substructure:
 Requirements as to removal: None.

STR. N-11-J
 PROPOSED STRUCTURE:
 Position referred to present structure
 Span: 2 @ 30'-0"
 Clear roadway: 30'-0"
 Clear waterway: 260 Sq. Ft.
 Type of superstructure: Concrete I-Beam.
 Type of substructure: Reinforced Conc. Cantilever Abutments.
 Detour structure requirements: None.
 R.R. Siding: Del Norte.
 Haul to bridge site: 2 1/2 Miles.

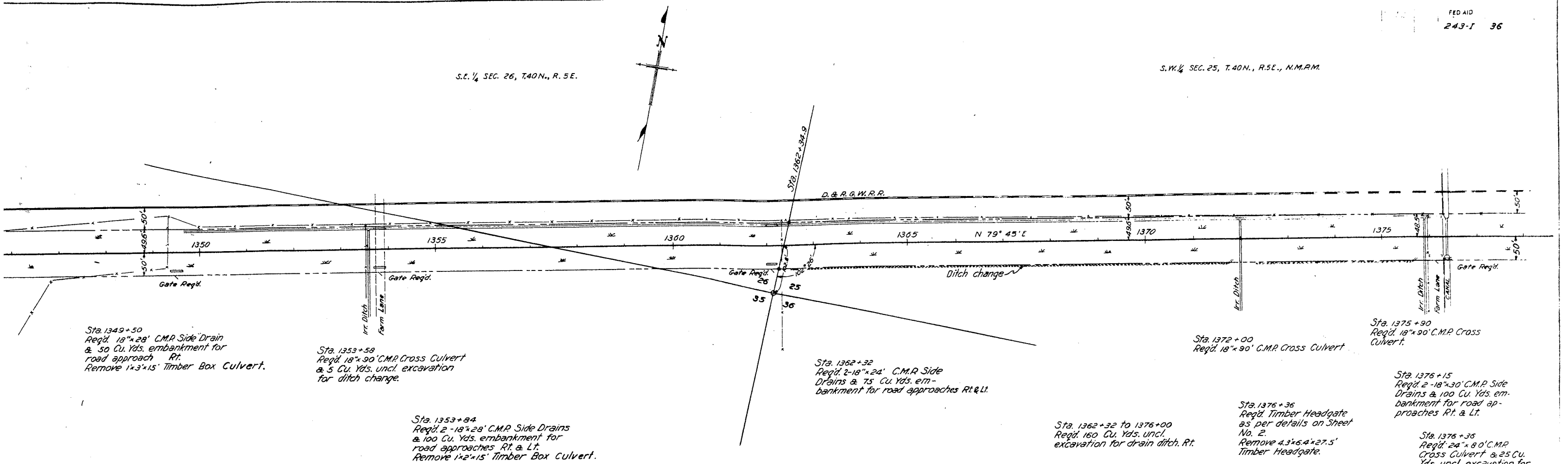
STREAM DATA:
 Drainage area in Sq. Miles: 9 1/2 Sq. Miles.
 Velocity during high water: Slow.
 Elevation of:
 Maximum high water: 7925
 Low water: 7922
 Normal stage: 7922
 Stream bed: 7921.3
 Drift: None.
 Scour: None.

NEARBY STRUCTURES
 ON SAME STREAM:
 Location: 100' Downstream
 Waterway: 100 Sq. Ft.
 Record during floods: Sufficient.



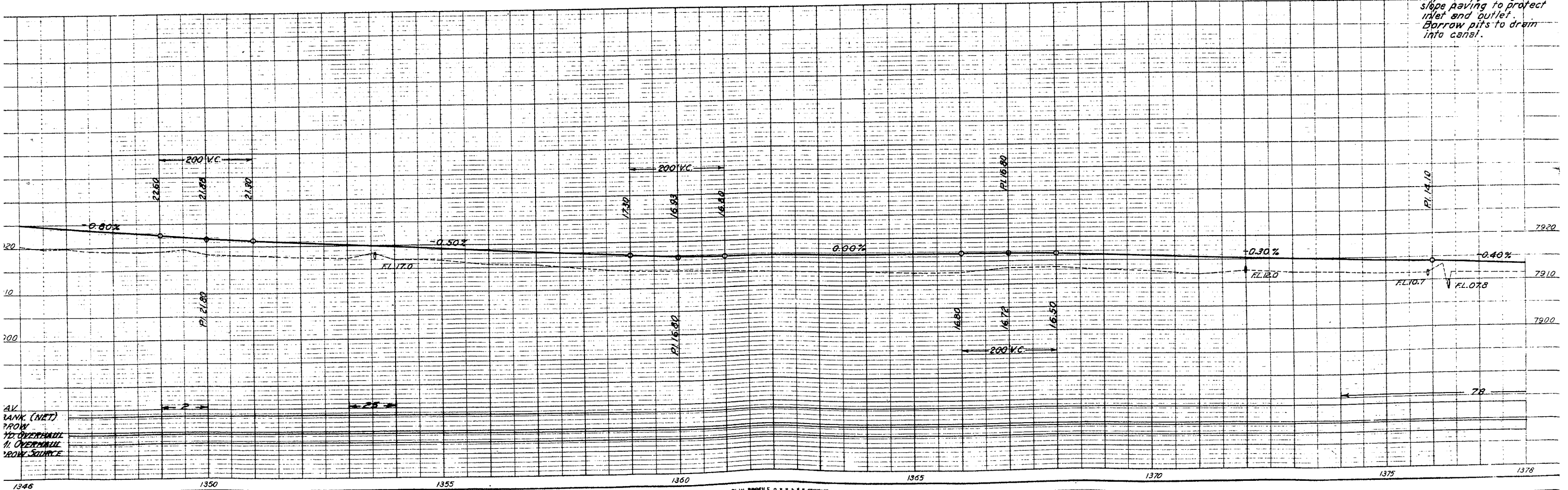
S.E. 1/4 SEC. 26, T.40N., R. 5E.

S.W. 1/4 SEC. 25, T.40N., R.5E., N.M.P.M.



N.E. 1/4 SEC. 35, T.40N., R. 5E.

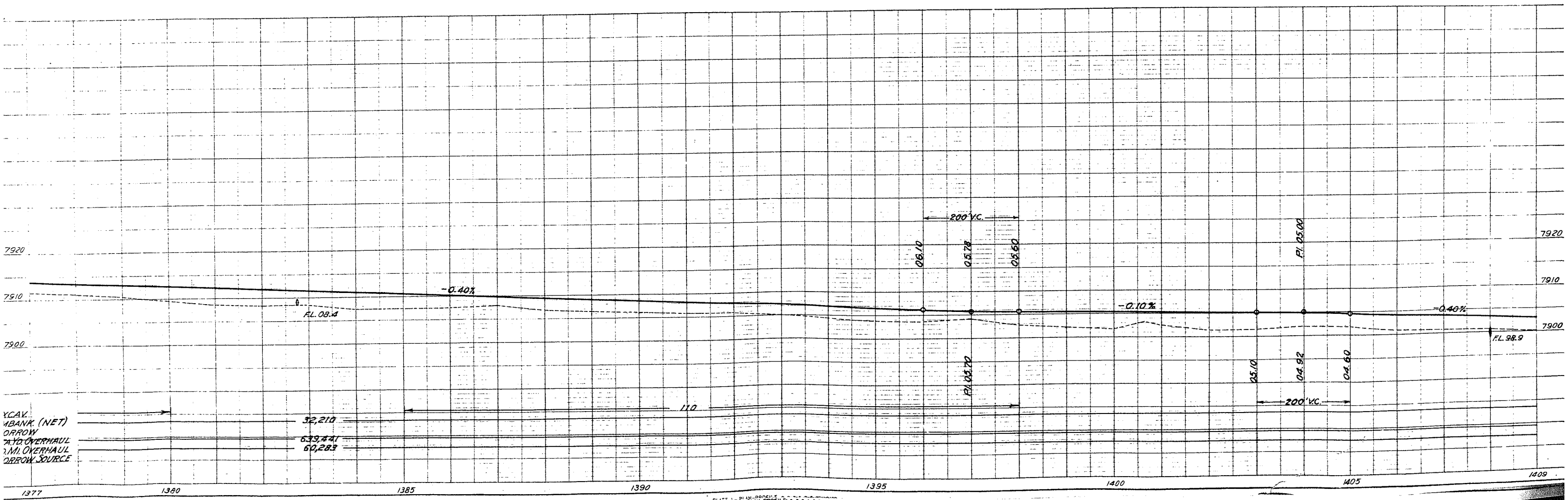
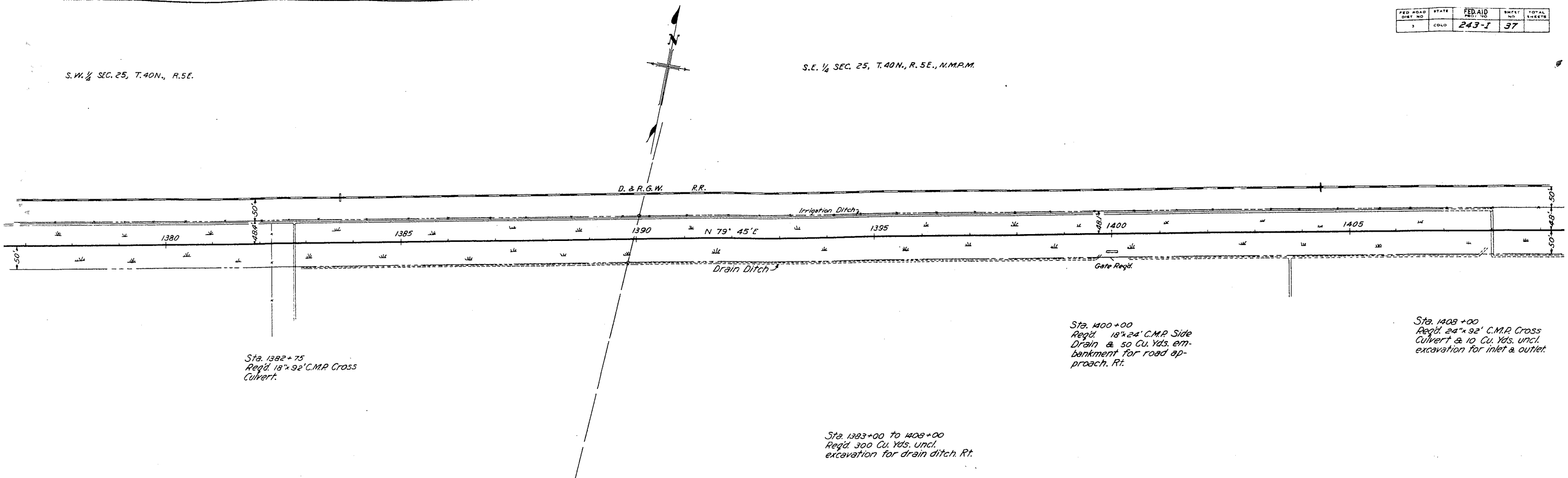
N.W. 1/4 SEC. 36, T.40N., R.5E.

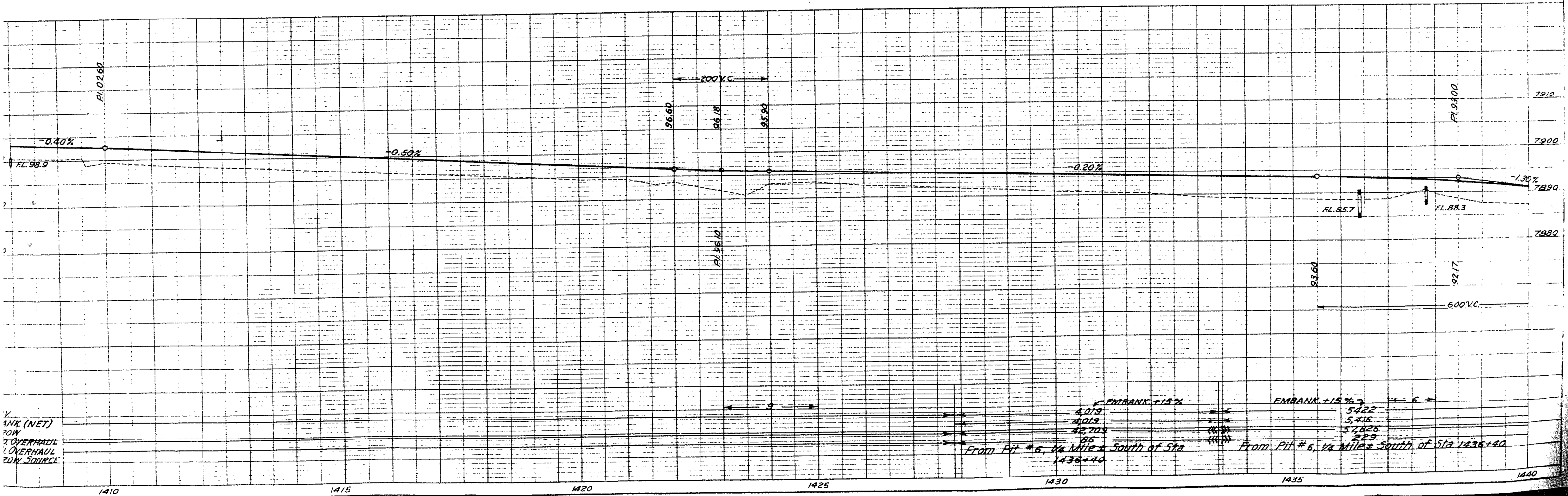
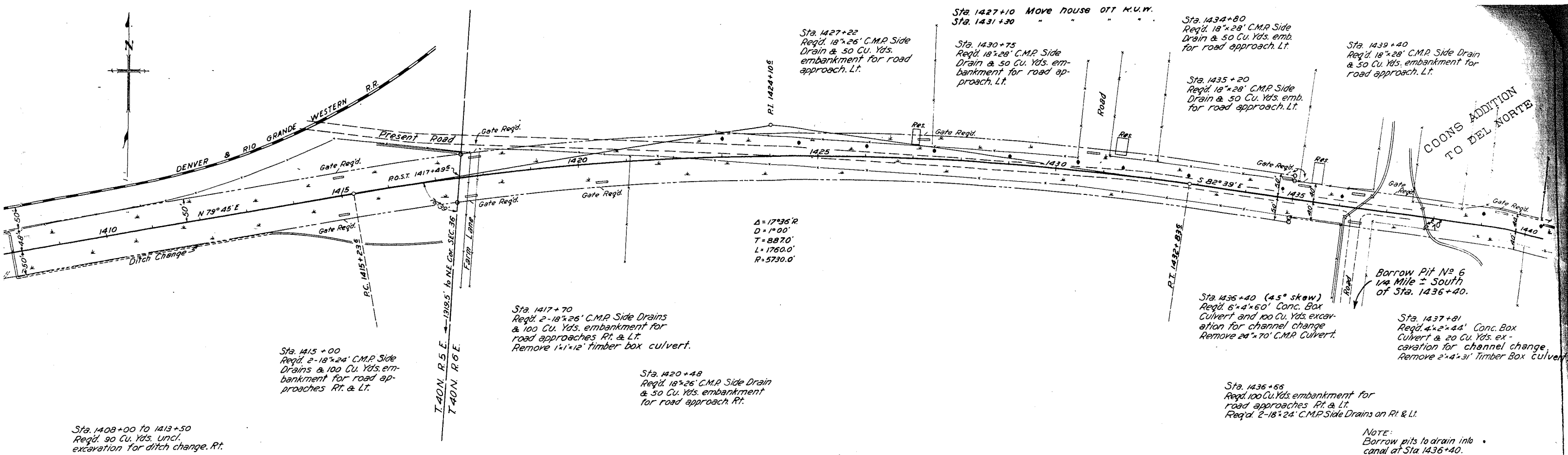


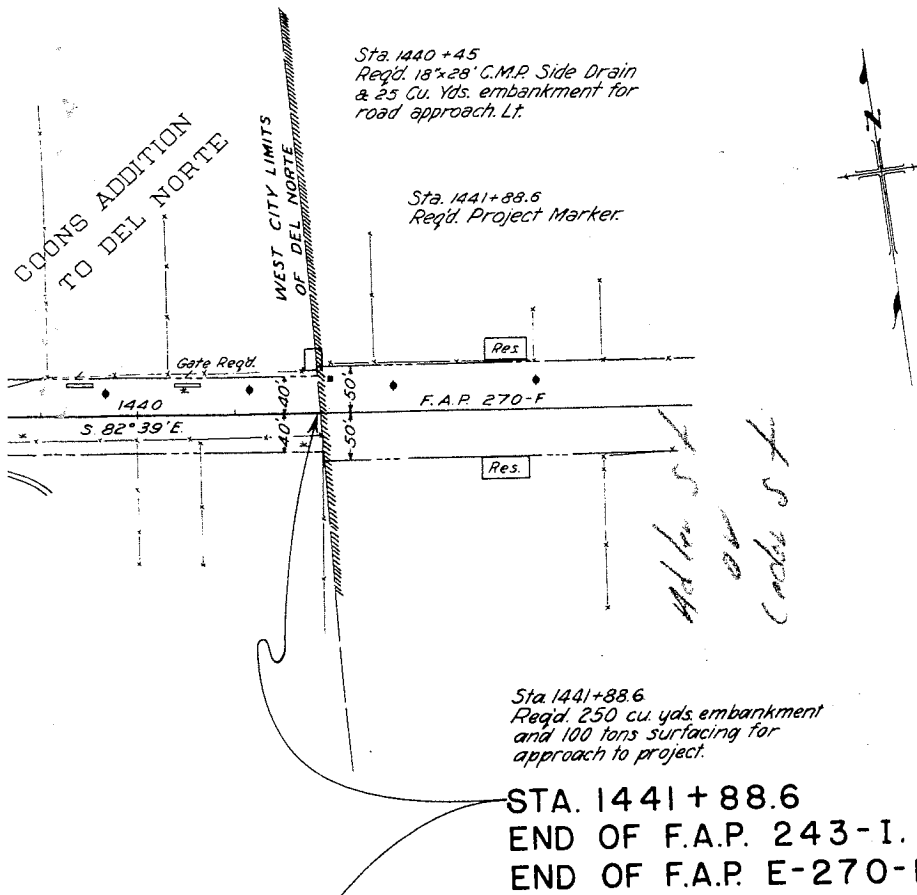
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
5	COLO.	243-1	37	

S.W. 1/4 SEC. 25, T.40N., R.5E.

S.E. 1/4 SEC. 25, T.40N., R.5E., N.M.P.M.







Rev. 7/7/36. R.M.J.

WIRE CABLE GUARD FENCE

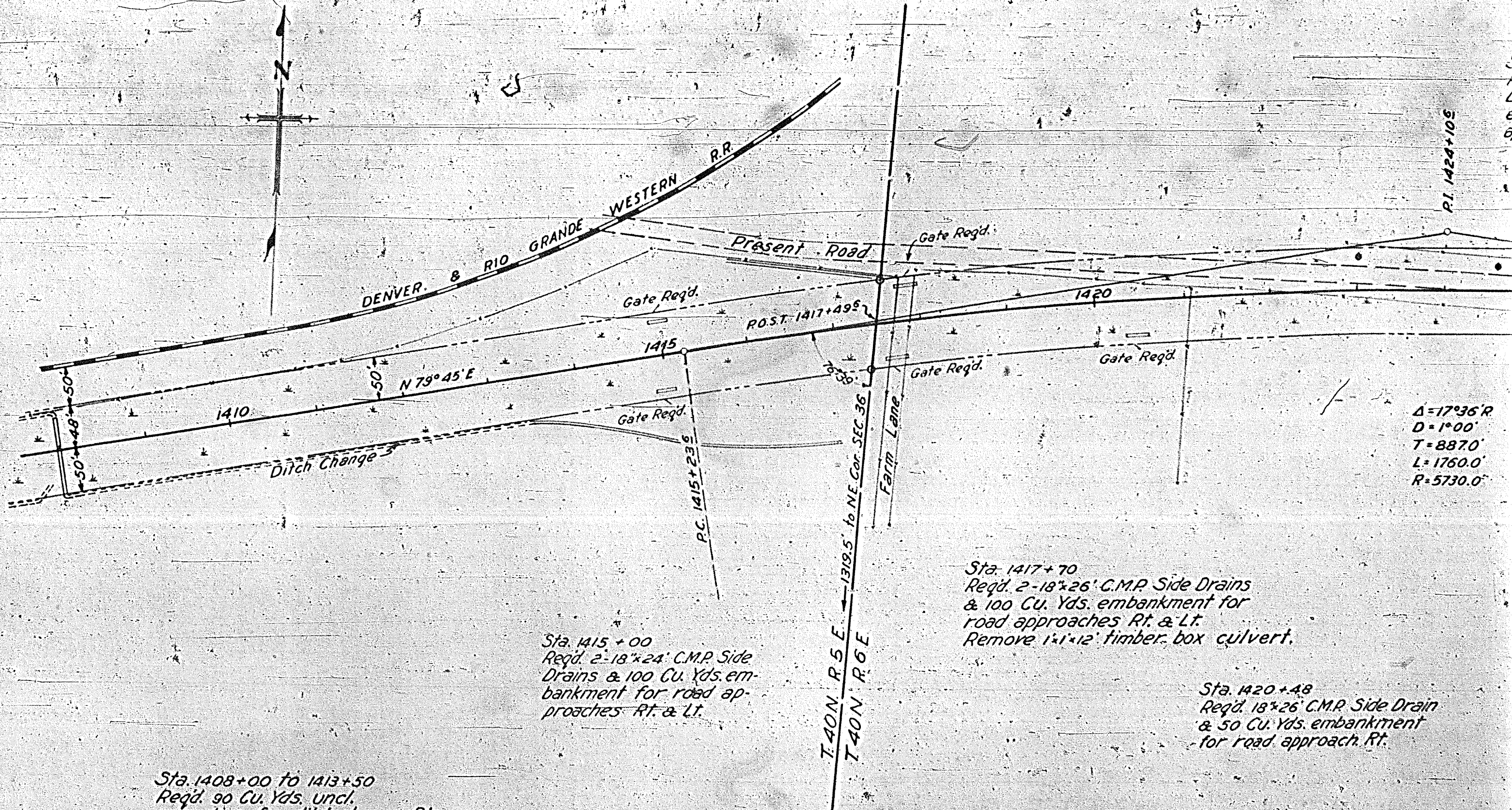
STATION	SIDE	LIN. FT.
979+53 to 981+31	R	178
979+53 to 981+31	L	178
982+52 to 983+02	R	50
982+52 to 983+02	L	50
1288+00 to 1294+34	L	632
1287+92 to 1294+54	R	664
1294+64 to 1298+45	L	380
1294+84 to 1298+45	R	362
1298+82 to 1302+50	L	367
1298+82 to 1302+50	R	369
1302+87 to 1305+14	L	226
1302+87 to 1304+49	R	162
1339+70 to 1340+36	L	66
1341+04 to 1341+54	L	50
1339+69 to 1340+19	R	50
1340+87 to 1341+53	R	66
TOTAL		3850

PICKET SNOW FENCE

STATION	SIDE	LIN. FT
918+00 to 925+02	R	702
935+00 to 940+02	R	502
954+00 to 960+02	R	602
972+00 to 975+02	R	302
982+50 to 986+75	R	422
987+00 to 994+52	R	752
998+00 to 1000+52	R	252
1008+00 to 1010+02	R	202
1014+00 to 1017+02	R	302
1085+00 to 1090+02	R	502
1116+00 to 1121+02	R	502
1145+00 to 1149+02	R	402
TOTAL		5444

[illegible]

S.E. 4 SEC. 25, T. 40 N., R. 5 E.



Sta. 1408+00 to 1413+50
Reqd. 90 Cu. Yds. uncl.
excavation for ditch change. Rt.

Sta. 1415+00
Reqd. 2-18" x 24' C.M.P. Side
Drains & 100 Cu. Yds. em-
bankment for road ap-
proaches Rt. & Lt.

Sta. 1417+70
Reqd. 2-18" x 26' C.M.P. Side Drains
& 100 Cu. Yds. embankment for
road approaches Rt. & Lt.
Remove 12' x 12' timber box culvert.

Sta. 1420+48
Reqd. 18" x 26' C.M.P. Side Drain
& 50 Cu. Yds. embankment
for road approach. Rt.

$\Delta = 17^{\circ}36'R$
 $D = 1^{\circ}00'$
 $T = 887.0'$
 $L = 1760.0'$
 $R = 5730.0'$

194

FED WELD JURY NO	STATE	FED AID PROJ NO	SHEET NO	TOTAL SHEETS
5	COLD	243-1	38	

FORCE ACCOUNT.

Sta. 1427+10 Move house off R.O.W.
Sta. 1431+30 " " " " " "

Sta. 1427+22
Reqd. 18' x 26' C.M.P. Side
Drain & 50 Cu. Yds.
embankment for road
approach. Lt.

Sta. 1430+75 -
Req'd. 18'x28' C.M.P. Side
Drain & 50 Cu. Yds. em-
bankment for road ap-
proach. Lt.

Sta. 1434+80
Req'd. 18"x28" C.M.P. Side
Drain @ 50 Cu. Yds. emb.
for road approach. Lt

Sta. 1439 + 40
Req'd. 18" x 28" C.M.P. Side Drain
& 50 Cu. Yds. embankment for
road approach. Lt.

Sta. 1435 + 20
Reg'd. 18" x 28" C.M.P. Side
Drain & 50 Cu. Yds. emb.
for road approach. Lt.

$$\begin{aligned}\Delta &= 17^{\circ}36'R \\ D &= 1^{\circ}00' \\ T &= 887.0' \\ L &= 1760.0' \\ R &= 5730.0'\end{aligned}$$

COONS ADDITION
TO DEL NORTE

Sta. 1436 + 40 (45° skew)
Reqd. 6' x 4' x 60' Conc. Box
Culvert and 100 Cu. Yds. excav-
ation for channel change
Remove 24' x 70' C.M.P. Culvert.

Borrow Pit No. 6
1/4 Mile ± South
of Sta. 1436+40.

Sta. 1437+81
Reqd. 4'x2'x44' Conc. Box
Culvert & 20 Cu. Yds. ex-
cavation for channel change.
Remove 2'x4'x31' Timber Box culvert.

Sta. 1436+66
Req'd. 100 Cu. Yds. embankment for
road approaches Rt. & Lt.
Req'd. 2-18" x 24" C.M.P. Side Drains on Rt. & Lt.

NOTE:
Borrow pits to drain into
canal at Sta 1436+40.

Drain
ment

S.W. 4 SEC. 30

S.E. 4 SEC. 30 T40 N., R. 6 E., N.M.P.M.

Sta. 1440+45
Reqd. 18"x28" C.M.P. Side Drain
& 25 Cu. Yds. embankment for
road approach. Lt.

Sta. 1441+88.6
Reqd. Project Marker.

DEL NORTE

Gate Req'd.

Res.

F.A.P. 270-F

Res.

Sta. 1441+88.6
Reqd. 250 cu. yds embankment
and 100 tons surfacing for
approach to project.

STA. 1441+88.6
END OF F.A.P. 243-I.
END OF F.A.P. E-270-F. (STA. 744+55⁰)