

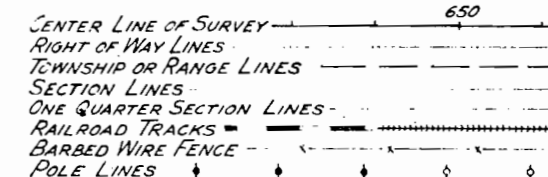
FED. ROAD DIST. NO.	STATE	P. W. A. PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	123 A	1	

Rev 7-9-37 S.A.S.

COLORADO STATE HIGHWAY DEPARTMENT

PLAN AND PROFILE OF PROPOSED P. W. A. DOCKET COLO. 804-D PROJECT NO. 123 A STATE HIGHWAY NO. 4 GARFIELD AND EAGLE COUNTIES

CONVENTIONAL SIGNS



INDEX OF SHEETS

SHEET N ^o 1	SKETCH MAP AND TITLE SHEET	
2	TYPICAL CROSS SECTION AND SUMMARY OF QUANTITIES	
3 TO 5	TABULATION OF STRUCTURES	
6	DETAILS OF BRIDGE STA. 640+	
7	DETAILS OF BRIDGE STA. 720+	
8 & 9	DETAILS OF BRIDGE STA. 754+	
10	STANDARD NAME PLATE	M 6 D
11	STANDARD CONCRETE BOX CULVERTS	M 103 D
12	STANDARD CONCRETE BOX CULVERTS	M 104 D
13	STANDARD HEADWALLS FOR C.M.P. CULVERTS	M 102 E
14	(NOT USED)	
15	STANDARD WIRE CABLE GUARD FENCE	M 20 B
16	STANDARD WIRE FENCES (UNTREATED WOODEN POSTS) & MARKER POSTS	M 24 FX
17	STANDARD STRUCTURE NUMBER LETTERING	M 10 A
18	STANDARD METHODS FOR SUPPERELEVATION AND WIDENING OF CURVES	M 1 B
19	TYPICAL SIDE APPROACH ROADS/ROADWAY CONSTRUCTION TRAFFIC SIGNS (P.W.A.)	M 2 BX
20-30	PLAN AND PROFILE	
31-189	CROSS SECTIONS	

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 }
NET LENGTH OF PROJECT }
CONTRACT NO.1 14,419.5 FT. = 2.731 MILES
CONTRACT NO.2 18,851.2 FT. = 3.570 MILES
TOTAL 33,270.7 FT. = 6.301 MILES

NOTE :

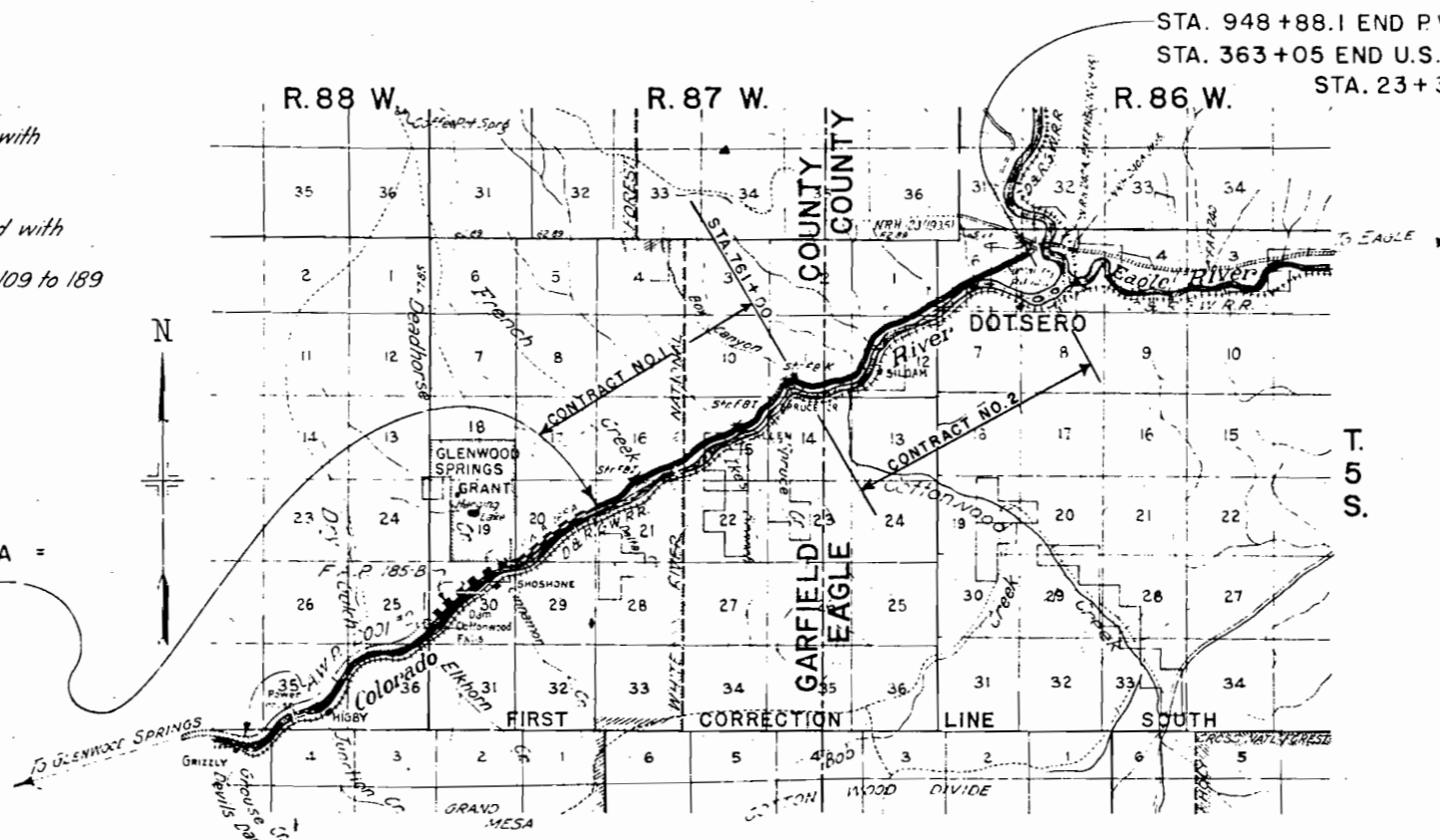
The following sheets are to be included with Plans for CONTRACT N^o 1

Sheets 1 to 24 and 31 to 109

The following sheets are to be included with Plans for CONTRACT N^o 2

Sheets 1 to 5, 12, 13, 15, 16, 18, 19, 24 to 30 and 109 to 189

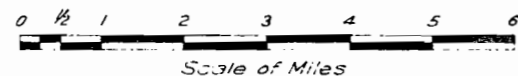
STA. 615 + 50 END OF P. W. A. PROJ. NO. 185 A =
BEGINNING OF P. W. A. PROJ. NO. 123 A



STA. 948 + 88.1 END P. W. A. PROJ. NO. 123 A =
STA. 363 + 05 END U.S.P.W.H. PROJ. N. R. H. 123 (1935) =
STA. 23 + 37 OF ORIGINAL F. A. P. 123

NOTE

It is recommended that the bidders on this Project go over the Plan Details with one of the following field representatives of this department:
H. L. Jenness Div. Engr. Glenwood Springs
A. K. Langridge Res. Engr. Glenwood Springs



RECOMMENDED FOR APPROVAL 6-28-37

William H. ...
ASSISTANT ENGINEER

APPROVED
Charles H. ...
STATE HIGHWAY ENGINEER

RECOMMENDED FOR APPROVAL

DIST. ENG. BUREAU PUBLIC ROADS
RECOMMENDED FOR APPROVAL

CHIEF ENG. BUREAU PUBLIC ROADS
APPROVED

DIRECTOR BUREAU PUBLIC ROADS

Rev. 7-9-37 HSK Rev. Gd. Feb. 8-3-37 HSK
Rev. 5-10-37 h.b.m. Rev. Gd. Fence & Rein. Steel

TYPICAL CROSS SECTION OF IMPROVEMENT AND SUMMARY OF QUANTITIES

CUT SLOPE TREATMENT IN EARTH CUTS

The intersection of cut slopes with the existing ground shall be rounded in earth cuts, beginning 5 ft outside the slope stake and extending 5 ft down the slope. Where the cut slope is less than 5 ft, reduce each of the above widths of slope treatment to the actual slope distance. Quantities involved in Slope Treatment shall not be included in Unclassified Excavation.

PROTECTION OF FILL SLOPES

At all places on this project where toe of embankments, on river side, extend into present stream bed, such toes of embankments shall be constructed of large rocks and boulders from adjacent cuts. Rock and boulders shall be placed in toes of embankments on stream side to a minimum height of eight (8) feet above normal water level. Actual overhaul on this material will be allowed and paid for. Otherwise the cost of this work shall be included in the unit price bid per cubic yard for Unclassified Excavation.

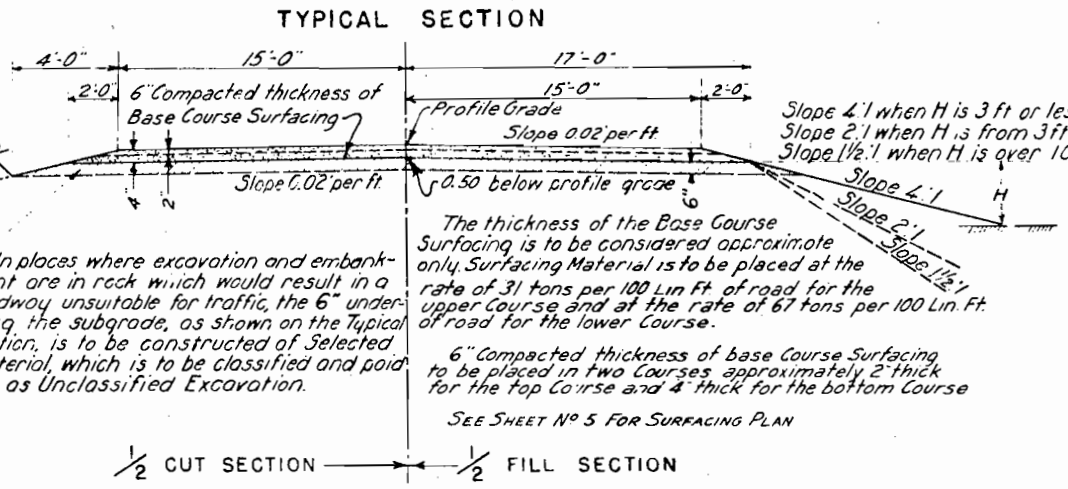
Excavation or borrow below slopes shown will not be permitted

In places where excavation and embankment are in rock which would result in a roadway unsuitable for traffic, the 6" underlying the subgrade, as shown on the Typical Section, is to be constructed of Selected Material, which is to be classified and paid for as Unclassified Excavation.

The thickness of the Base Course Surfacing is to be considered approximate only. Surfacing Material is to be placed at the rate of 31 tons per 100 Lin Ft. of road for the upper course and at the rate of 67 tons per 100 Lin. Ft. of road for the lower course.

6" Compacted thickness of base Course Surfacing to be placed in two courses approximately 2" thick for the top course and 4" thick for the bottom course

SEE SHEET NO 5 FOR SURFACING PLAN



SELECTED MATERIAL

Selected material shall be placed and spread on the subgrade approximately 6 inches in thickness at the rate of 62 cu yds per 100 lin ft of roadway

This selected material shall be classified and paid for as "Unclassified Excavation". It is estimated that the material will be obtained in the vicinity of the pit indicated in tabulation below. The estimated quantities involved in the placing of this selected material are also shown in tabulation below

MATERIAL TO BE PLACED	APPROX. QUANT. REQUIRED	SOURCE OF MATERIAL	ESTIMATED OVERHAUL	
STA. TO STA.	CU. YD.		STA. YD.	YD. MI.
615+50-636+00	1270	Pit Lt Sta 667+50 to 674+00	13970	940
739+50-76+00	1340	Pit Lt Sta 810+00 to 816+00	14740	1190
TOTAL CONTRACT NO. 1	2610		28710	2130
761+00-787+70	1650	Pit Lt Sta 810+00 to 816+00	18150	700
787+70-797+00	570	Pit Lt Sta 810+00 to 816+00	6270	50
797+00-810+00	810	Pit Lt Sta 810+00 to 816+00	7700	
TOTAL CONTRACT NO. 2	3030		32120	750

SUMMARY OF APPROXIMATE QUANTITIES

FENCING REQUIREMENTS

STATION	SIDE	REMOVE FENCE	BULL DOZE BARB WIRE	REMOVE COMB WIRE	SPECIAL BARB WIRE	REPLACE FENCE	RATES PER LIN. FT.	REMARKS
686+50-720+35	L&R					6770		2
706+00	L&R							
TOTAL CONTRACT NO. 1						6770		2
805+00-827+00	L&R					4400		1
805+00	R							
825+30	R&L							
827+00-835+70	L					890		2
835+90-859+00	R&L					4620		2
851+00	R&L							
859+00-890+00	R&L					6200		2
865+00	R&L							
890+00-916+85	R&L					5370		2
899+50	R&L							
903+50	R							
913+00	R							
916+85-919+00	R	290						1
916+85-919+00	R					220		1
916+85-919+00	L					220		1
918+75	R&L							
919+00-924+25	R&L					1050		1
919+10-919+50	L					40		1
924+25-942+38	R					2470		1
924+25-942+38	L					2470		1
924+30-936+00	R					1170		1
930+00	R&L							
936+00	R&L							
940+50	L							
941+00	R							
942+15	R					690		1
TOTAL CONTRACT NO. 2						2190		1

ITEM NO	DESCRIPTION	UNIT	CONTRACT NO. 1			CONTRACT NO. 2			COMBINED
			ROADWAY	BRIDGE STA. 640+	BRIDGE STA. 720+	BRIDGE STA. 754+	TOTAL	TOTAL	
10 a	Clearing & Grubbing - The Entire Project	Lump Sum							
11 b	Removal of 38 Structures	Lin Ft	60						60
11 c	Removal of Timber Cribbing	Each							2
11 d	Removal of Concrete Dips	Each							2
12 a	Removing Fence	Lin Ft							2200
12 c	Removing & Rebuilding Guard Fence	Lin Ft	1732				1732		1732
13 c	Unclassified Excavation	CU. YD.	191,000			200	191,200		190,000
13 d	Cut Slope Treatment	MI.	10				10		19
14 a	Dry Rock Excavation (Structural)	CU. YD.	440			100	540		1050
14 b	Dry Common Excavation (Structural)	CU. YD.	1030	5	245	4100	2420		2430
14 c	Wet Rock Excavation (Structural)	CU. YD.	50			20	70		120
14 d	Wet Common Excavation (Structural)	CU. YD.	115	5	5	60	185		275
18 a	Station Yard Overhaul	Sta Yd.	360,500				360,500		301,500
18 b	Yard Mile Overhaul	Yd. Mi.	3,200				3,200		12,400
26 a	Gravel or Crushed Rock Surfacing	TOP	14,150				14,150		18,850
42 a	Untreated Bridge Timber	M FT BM.		15		0.4	3.4		3.4
42 b	Treated Bridge Timber	M FT BM.		35.0		35.7	70.7		70.7
43	Asphalt Plank Wearing Surface	SQ. FT.		2025		2001	4026		4,026
46 a	Class A Concrete	CU. YD.	264			324	588		646
46 b	Class B Concrete	CU. YD.	52			5	57		86
46 c	Class A Concrete (Handrails)	CU. YD.				5	5		5
47	Reinforcing Steel	LB.	19,400			30,600	49,000		57,300
48	Structural Steel	LB.				16,200	16,200		16,200
53 b	18" Corrugated Metal Culvert Pipe	Lin Ft							130
53 c	24" Corrugated Metal Culvert Pipe	Lin Ft							480
53 d	30" Corrugated Metal Culvert Pipe	Lin Ft							406
53 e	36" Corrugated Metal Culvert Pipe	Lin Ft							810
53 f	48" Corrugated Metal Culvert Pipe	Lin Ft							220
53 g	60" Corrugated Metal Culvert Pipe	Lin Ft							52
53 i	60" Corrugated Metal Culvert Pipe	Lin Ft							230
60 a	Treated Timber Piling	Lin Ft							282
60 e	Metal Pile Shoes	Each							148
65	Dry Rubble Slope and Ditch Paving (18" thick)	SQ. YD.		70		78	148		188
70 x	10" Vitrified Tile Underdrain	Lin Ft							860
74	Wire Cable Guard Fence	Lin Ft	13,991				13,991		22,833
76 b	Barbed Wire Fence With Untreated Wooden Posts	Lin Ft							26,000
76 c	Combination Wire Fence With Untreated Wooden Posts	Lin Ft	6,770				6,770		330
76 g	Barbed Wire Gates	Each							16
76 h	Driveway Gates	Each							3
76 x	Special Barbed Wire Fence With Untreated Wooden Posts	Lin Ft							2,500
81 a	Project Markers	Each							1
81 b	Right of Way Markers	Each							17
89 a	Drain Pipe (Concrete Floor) (3' x 3'-0" long)	Each							2
89 b	Drain Pipe (Timber Floor) (3' x 2'-4" long)	Each							12
26 c	Overhaul of Surfacing	TON MI.	62,500			6	62,500		24,000
	ITEMS NOT RECEIVING FEDERAL FUNDS								
	Move Garage off ROW. Sta 702+ (FORCE ACCT)	Lump Sum							

GENERAL NOTES

This project is to be constructed in conformity with the Standard Specifications of the Colorado State Highway Department, adopted June 1st 1937

All quantities on preliminary plans are to be considered as approximate only.

All roadway excavation required to construct this project is to be obtained as indicated on the plans. Quantities involved beyond the limits of the ditch as shown on the Typical Section, either noted on the Profile as "Borrow" or on List of Structures as "Embankment," are to be classified and paid for as "Unclassified Excavation." These quantities are to be staked as part of the Original Excavation at locations indicated on the plans. Slope stakes beyond the limits of the Typical Section are subject to change by the Engineer to fit Embankment requirements actually encountered on construction.

All curves are to be super-elevated as provided for by the Standard Super-elevation Sheet included with plans.

All poles encroaching on construction are to be moved by owners.

All guard fence noted on plans for removing and rebuilding shall be rebuilt to conform with present Type of Guard Fence.

All corrugated metal pipe cross culverts are to be provided with one headwall on the inlet end unless otherwise noted on the plans.

All side approach roads to the project shall be gravel surfaced with a 4 inch thickness of "Gravel or Crushed Rock Surfacing" extending approximately 30 ft from edge of highway. Estimated tonnage of surfacing material required in this operation is shown in List of Structures.

Overhaul will be paid for as measured along center line of project, except as otherwise noted on plans.

If, after cut slopes are staked, it is found that the material will stand on a steeper slope, rights are reserved to change cut slopes after cuts have been opened up by the contractor.

Clearing and grubbing shall be of variable widths and be held to the minimum required for construction of the road and to accommodate visibility. Ordinarily the Clearing shall not extend more than 8 ft. beyond the toes of the fills or the tops of the cut slopes.

DETOUR PLAN

During construction of this project, local traffic will use the present traveled roadway. At all places on project where construction encroaches on present road, local traffic must be adequately provided for at the contractor's expense and the contractor shall arrange his work in such a manner that local traffic will not be delayed more than twenty-four (24) hours during a period of two days.

Before proceeding with construction, the contractor must obtain from the Engineer written approval of the proposed methods of handling traffic during construction.

Through traffic will be routed over neighboring roads only when construction activities on this project make it necessary to close the present road.

In case of emergency, when so directed by the Engineer, the contractor shall allow traffic to travel through the project. The cost of these requirements shall be covered by the original contract prices for the project.

LIST OF STRUCTURES

FED. ROAD DIST. NO. STATE P.W.A. DIST. NO. SHEET NO. TOTAL SHEETS
 3 COLO. 123 A 3
 Rev. 7-9-37 H.S.K. Rev. Grd. Feb. 8-3-37 Now.
 Rev. 8-10-37 h.b.m. Gd. Fence & Rein. Steel

STATION	DESCRIPTION	REMOVE	EXCAVATION	STRUCTURAL EXCAVATION	CONCRETE	REINF.	CORRUGATED METAL CULVERT PIPE						GUARD FENCE	GR. OR	MISCELLANEOUS				
		STRUCT.	CU. YD.	CU. YD.	CU. YD.	STEEL	LIN. FT.						LIN. FT.	CR. RK. SURF.					
		NO.	UNCL.	EMB.		CL "A"	CL "B"	LB.	18"	24"	30"	36"	48"	60"	BUILD	REMOVE	REBUILD	TONS	
615+50 - 617+90	Remove And rebuild quard fence Rt																		
615+77	Remove structure	1																	
617+90 - 629+98	Guard fence Rt																		
619+80	Gross culvert and ditches & remove str.	1	200		20	300						50							
622+30	Remove structure	1																	
623+00	Gross culvert and ditches		200		40	300						54							
627+00	Remove structure	1																	
627+50	Gross culvert & inlet ditch		20		30	165					66								
629+98 - 635+02	Remove and rebuild guard fence Rt																		
632+00	Remove log crib wall Rt																		
635+77	Guard fence Lt.																		
636+00	Gross culvert & ditches		20		30	165					78								
640+380 - 641+072	3 span @ 22'-6" Treated Timber Bridge (Sk 60') (Details on Sheet No 6) & chmpr & rem str		6000																
641+83	Guard fence Lt.																		
641+01.1	Guard fence Rt																		
645+00	Gross culvert & outlet ditch & Rem str	1	40		20	165					72								
648+90	Gross culvert & ditches		50		30	165					76								
655+00	Gross culvert & ditches		20		40	165					52								
653+15	Remove Structure	1																	
660+50	Gross culvert & ditches		20		30	165					56								
661+50	Gross culvert & ditches		10		30	165					56								
662+50	Gross culvert & ditches		50		5	300						58							
665+86	Remove structure	1																	
670+50	8'x8'x42" C.B.C. (Type 81) & channel improv.		5700		420	1024	9007												
675+28	Gross culvert & ditches and remove structure	1	50		10	165					56								
680+50 - 687+14	Guard fence Rt																		
681+46	Guard fence Lt.																		
684+50	Gross culvert (No headwall) & remove struct.	1			5							64							
687+00	6'x7'x36" C.B.C. & Channel improvement		2600		360	718	4611												
692+50	Gross culvert & ditches & remove structure	1	10		25	165					54								
696+21	Remove structure	1																	
696+28	Gross culvert & ditches		500		110	68	241						52						
697+40 - 703+40	Guard fence Rt																		
697+50 - 705+74	Guard fence Lt																		
700+00	Gross culvert & ditches & Remove structures	2	10		10	300						80							
702+80	Move garage off right of way																		
703+50	Road approach Rt		850																
704+50	6'x7'x48" C.B.C. & ditches & remove str	1	50		80	829	5515												
703+90 - 705+74	Guard fence Lt																		
109+00	Gross culvert & ditches		10		40	165					70								
710+80	Remove structure	1																	
714+00	Gross culvert & ditches		30		10	165					60								
720+00 - 720+70.5	3 span @ 23' Treated Timber Bridge (Details on Sheet No 7) & chmpr & rem structure		1612																
720+73	Guard fence Rt																		
720+	Remove log crib wall Rt																		
723+00	Gross culvert				10	165					74								
729+00	Gross culvert & ditches		5		10	165					68								
731+00	Gross culvert & ditches		300		70	500						50							
735+00 - 744+90	Remove and rebuild guard fence Rt																		
738+90	Gross culvert & ditches		50		40	165					52								
743+86	Gross culvert & ditches		20		60	165					68								
744+90 - 754+64.5	Guard fence Rt																		
745+85	Remove structure	1																	
746+38	Gross culvert & ditches		50		30	165					68								
748+38	Gross culvert & ditches		50		30	300						54							
754+67 - 755+00.3	1 span @ 30 ft Concrete & I Beam Bridge (Details on Sheet 8 & 9) and Channel improvement																		
755+02.8 - 761+00	Guard fence Rt.																		
757+36	Gross culvert & ditches		30		30	165					64								
758+52 - 761+00	Guard fence Lt																		
759+21	Gross culvert & ditches & remove structure	1	10		5	300						80							
763+90 - 770+150	8'x8'x36" C.B.C. (Type 81) & ditches & rem str		100		400	925	8311												
764+50	Guard fence Lt.																		
768+48	8'x8'x36" C.B.C. (Type 81) & ditches		50		220	925	8311												
771+47	Gross culvert & ditches & rem. structure	1	25		10	300						46							
761+00 - 805+04	Guard fence Rt																		
776+89	Gross culvert & ditches		10		50	300						62							
780+12	Gross culvert & ditches		10		20	300						64							
780+82	Remove structure	1																	
783+87	Gross culvert & ditches & remove structure	1	10		50	165					76								
787+88	Gross culvert & ditches		30		70	68	241						58						
791+66	Remove structure	1																	
794+40	Gross culvert & ditches		30		100	68	241						56						
796+90	Gross culvert & ditches		20		30	165					62								
SHEET TOTAL CONTRACT No. 1		17	2527	850	1630	2639	5105	19,374	1090	440	50	52			11368	1732	50		
SHEET TOTAL CONTRACT No. 2		5	285		950	1986	1230	17,104	138	172	114				1,996				

Remove 38 lin. ft. log crib wall



The unit bid price per linear foot for Vitrified Tile Underdrain complete in place shall include all excavation and backfill as shown

LIST OF STRUCTURES

FED. ROAD DIST. NO. 3 STATE COLO. PWA PROJ. NO. 123 A SHEET NO. 4 TOTAL SHEETS

Rev 7-9-37 H.S.K.
 Rev Guard Fence 8-10-37 J.P.K.

STATION	DESCRIPTION	REMOVE STRUCT NO	EXCAVATION CU YD UNCL EMB	STRUCTURAL EXCAVATION CU YD	CONCRETE CU YD		REINF. STEEL LB.	CORRUGATED METAL CULVERT PIPE LIN. FT.						GUARD FENCE L.N. FT.	GR. OR CR RK. SURF. TONS	10" VIT CLAY PIPE LIN FT	MISCELLANEOUS
					CL. "A"	CL. "B"		18"	24"	30"	36"	48"	60"				
801+88 805+00 806+50 808+40 - 812+60	Gross culvert & ditches & remove structure Road approach Rt Gross culvert & ditches Intercepting ditch Lt	1	10 20 500 100	20				72							30		
808+65 - 821+53 810+48 812+00 819+80 821+87	Guard fence Rt Gross culvert & ditches Road approach Lt Intercepting ditch Lt 8'x8'x40' C.B.C. (Type BT) & ditches		5 270 100 4400*	40		300		96					1289		30		
823+50 - 827+50 825+06 825+30 826+11 827+50 - 830+55	Intercepting ditch Lt Gross culvert & ditches Road approaches Rt & Lt Remove structure Intercepting ditch Lt	1	130 10 10 110	20		165		48							30		
829+60 - 833+15 830+55 831+64 833+00 - 837+30 833+15 - 838+00	Gross culvert & ditches Intercepting ditch Lt Gross culvert & ditches Guard fence Rt Intercepting ditch Lt		15 85 100 145	50		165		50		60			504				
833+34 835+20 838+00 - 845+80 838+48 840+48	Remove structure Gross culvert & ditches Intercepting ditch Lt Gross culvert & ditches Gross culvert & ditches	1	20 240 20 20	50		300		46									
841+43 842+00 845+80 849+75	Remove structure Gross culvert & ditches Intercepting ditch Lt Remove structure Gross culvert & ditches	1	5 165 25	15		300		50									
851+10 - 854+30 852+50 854+35 857+50 858+00	Intercepting ditch Lt Gross culvert & ditches Remove structure Gross culvert & ditches Channel improvement	1	90 100 30 1000	25		165		46									
862+50 865+00 867+40 - 870+70 869+00 871+50	Gross culvert & ditches Road approaches Rt & Lt Intercepting ditch Lt Gross culvert & ditches 10' Vitrified Tile Underdrain (Skew 60°) & ditches		250 100 100 10 10	80		300		50							30		
871+50 - 877+10 873+30 875+10 877+80 - 879+60 877+50	Underdrain 5' Lt & 3-6" Ells & ditches 10' Vitrified Tile Underdrain (Skew 60°) & ditches 10' Vitrified Tile Underdrain (Skew 50°) & ditches Intercepting ditch Lt Gross Culvert & ditches		10 30 10 110 10	15		675	482			58					100 560 100 100	3-6" Ells included in bid price for underdrain	
879+60 - 883+30 881+50 883+30 - 886+65 885+00 886+65 - 889+80	Intercepting ditch Lt Gross culvert & ditches Intercepting ditch Lt Gross culvert & ditches Intercepting ditch Lt		115 15 100 10 100	40		165		82									
888+00 - 901+40 895+80 897+50 900+50 901+40 - 908+20	8'x8'x36' C.B.C. (Type B1) & ditches Intercepting ditch Lt Gross culvert & ditches Gross culvert & ditches Intercepting ditch Lt Road approach Lt & side drain Lt Remove structure Gross culvert & ditches Intercepting ditch Lt Gross culvert & ditches	1	8500* 150 5 10300* 180	500		951	8543			62	58					15	
903+75 905+22 905+50 908+20 - 913+60 910+50	Road approach Lt & side drain Lt Remove structure Gross culvert & ditches Intercepting ditch Lt Gross culvert & ditches		20 155 5	10		300		64									
913+00 913+60 - 917+50 913+80 - 919+00 913+82 916+00	Road approach Rt Intercepting ditch Lt Guard fence Rt 8'x8'x36' C.B.C. (Type B1) & ditches Remove structure		110 200	400		92.5	8311						520			15	
916+57 917+50 - 920+80 918+50 918+76 919+20	Gross culvert & ditches Intercepting ditch Lt Road approach Lt & side drain Lt 10'x10'x46' C.B.C. (Type 10II) & ditches & rem str Road approach Rt & side drain Rt	1	15 80 75 200	20		225		106								15	
919+50 - 923+54 920+80 - 923+45 922+50 923+45 - 926+10	Guard fence Rt Intercepting ditch Lt Gross culvert & ditches Intercepting ditch Lt		80 10 80	10		225		74					304			15	
SHEET TOTAL CONTRACT NO 2		9	5300 566	2770 4472 5815 40063	90	342 336 566 106 116	3216	180	860								

R.O.W. MARKERS

STATION	SIDE	NO
696+92	R	1
697+05	R	1
697+40	L	1
697+80	L	1
702+00	R	1
702+30	R	1
709+00	L	1
710+30	L	1
710+60	L	1
710+80	R	1
711+45	L	1
711+85	L	1
747+68	L	1
750+80	L	1
188+25	L	1
807+10	R	1
807+75	L	1
817+60	R	1
849+12	R	1
849+34	R	1
850+00	L	1
850+00	L	1
855+00	R/L	2
855+30	R/L	2
862+12	L	1
864+20	R	1
870+00	L	1
870+52	L	1
882+24	R	1
882+43	R	1
885+50	R	1
886+25	L	1
890+00	L	1
890+50	L	1
900+00	R/L	2
900+70	R/L	2
905+00	L	1
905+65	L	1
914+00	L	1
914+70	L	1
643+34	L	1
651+50	L	1
691+85	L	1
TOTAL CONTRACT #1 17		
TOTAL CONTRACT #2 30		

LIST OF STRUCTURES CONTINUED ON SHEET NO. 5

LIST OF STRUCTURES.

STATE PWA
 COLO 123 A 5
 Rev 7-9-37 HSK Rev. Grd. Feb. 8-3-37 How.
 Rev Guard Fence 8-10-37 J.P.K.

STATION	DESCRIPTION	REMOVE	EXCAVATION	STRUCTURAL EXCAVATION	CONCRETE		REINF.	CORRUGATED METAL CULVERT PIPE						GUARD FENCE	GR. OR	10" VIT	MISCELLANEOUS	
		STRUCT.	CU. YD.	CU. YD.	CU. YD.	CL "A"	CL "B"	STEEL	LIN. FT.						LIN. FT.	CR. RK.		CLAY
		NO.	UNCL.	EMB.			LB.	18"	24"	30"	36"	48"	60"	BUILD	REMOVE	TONS	LIN. FT.	
CONTRACT NO. 2 (CONTD)	924+38 - 930+40			5		40	300											
	926+10			140														
	927+44			15		50	225											
	927+50				50													
	931+00															15		
	930+40 - 937+50				210													
	933+00 - 935+50																	
	933+50				5		5	500										
	934+95																	
	936+00				250	200											30	
	937+50 - 943+20				170													
	939+57					50												
	940+50					350												
	941+00					50			40									
	941+50																	
941+76																		
948+88.1				100														
809+60 - 811+76																		
812+25 - 815+21																		
761+00 - 762+20																		
TOTALS CONTRACT NO. 2		18	6,530	1,260		38,55	645,80	85,70	57,167	130	480	406	810	220	230	138,12	305	860
CONTRACT NO. 1 (CONTD)	70+00																	
	754+75			250														
	635+02.4 - 640+29.4																	
	706+25	714+65																
706+25	718+81																	
734+29																		
TOTALS CONTRACT NO. 1		20	2,927	1,100		1,657	263,9	51,05	19,374	1,090	440	50	52		13,991	1732	80	

* Structural excavation is estimated to be 30% Rock & 70% Common, each of which is estimated to be 10% Wet & 90% Dry
 • Included for Payment in Profile Quantities
 • 4878 cu yd shown as borrow in profile for payment;
 1,122 cu yd to be used for dyke.

ITEM NO. 26 c OVERHAUL OF SURFACING

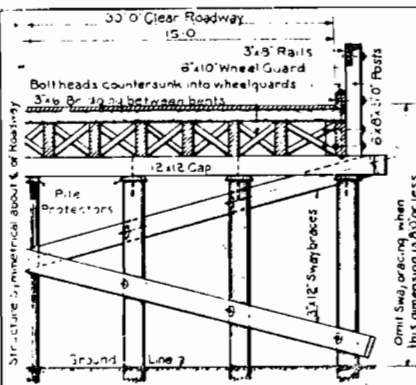
It is estimated that Gravel or Crushed Rock Surfacing for this Project is available from vicinity of pits shown in the following table. If for his own convenience, the contractor elects to use a plan other than that shown below, overhaul in excess of that shown by the Department's plan will not be allowed. Estimated quantities involved in the operation are as follows.

MATERIAL TO BE PLACED	APPROXIMATE QUANTITY REQUIRED	SOURCE	TON MILE OVERHAUL
STA TO STA	TCNS		
615+50 - 617+02.2	150	Pit located in the SW 1/4 Sec. 5	870
617+03.7 - 649+45.6	3180	T.S. R 86 W, on the north	17280
650+03.8 - 720+99.3	6960	Bank of the Colorado River	31060
721+70.1 - 761+00	3960	being 3500' Southerly from Sta	13160
TOTAL CONTRACT NO 1	14,150	940+50	62,310
935+47.8 - 920+70	9360	It is estimated that 40000 tons of acceptable Surfacing Material are available from this source	6750
920+70 - 940+50	1940		
940+50 - 948+88.1	830		
761+00 - 802+36.5	4050		10,710
802+46.5 - 836+20.9	3310		6400
TOTAL CONTRACT NO 2	18,490		23,860

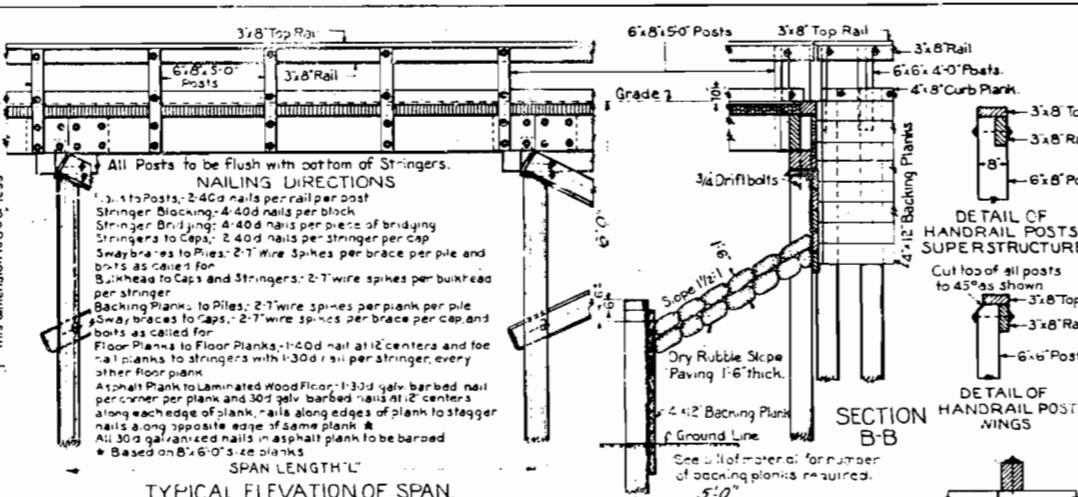
STANDARD P-117 BH-60D

FED. ROAD DIST. NO.	STATE	PWA	SHEET NO.	TOTAL SHEETS
3	COLO.	134	6	

Rev. 11-10-36 F.W.D. End Posts Flush with Outside Stringers
Rev. 11-17-26 F.W.D. American Clips on Outside Stringers



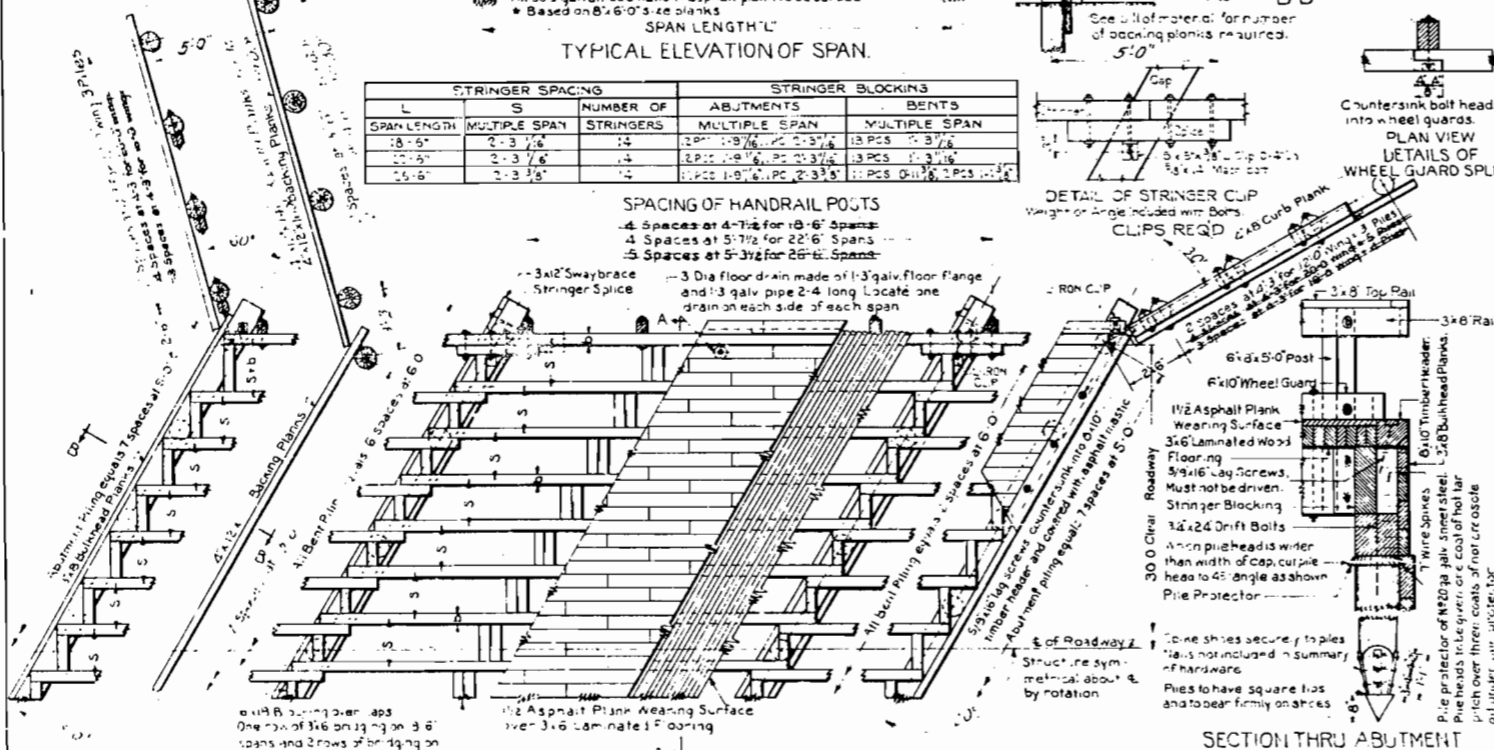
HALF SECTION A-A
TYPICAL BENT AND SPAN SECTION



TYPICAL ELEVATION OF SPAN

STRINGER SPACING			STRINGER BLOCKING		
SPAN LENGTH	MULTIPLE SPAN	NUMBER OF STRINGERS	MULTIPLE SPAN	MULTIPLE SPAN	BENTS
18'-6"	2-3 7/8"	14	2PCS 18" W/ 1PC 24" S	13 PCS 18" W/ 1PC 24" S	13 PCS 18" W/ 1PC 24" S
22'-6"	2-3 7/8"	14	2PCS 18" W/ 1PC 24" S	13 PCS 18" W/ 1PC 24" S	13 PCS 18" W/ 1PC 24" S
26'-6"	2-3 7/8"	14	2PCS 18" W/ 1PC 24" S	13 PCS 18" W/ 1PC 24" S	13 PCS 18" W/ 1PC 24" S

SPACING OF HANDRAIL POSTS
 4 Spaces at 4'-7 1/2" for 18'-6" Spans
 4 Spaces at 5'-7 1/2" for 22'-6" Spans
 4 Spaces at 5'-3 1/2" for 26'-6" Spans



TYPICAL SECTIONAL HALF PLAN OF SPANS AND ABUTMENTS

GENERAL NOTES

- All work shall be done according to the standard specifications of the Colorado State Highway Department, Adopted June 1, 1937.
- All iron and piping to be treated and treated as shown in the specifications of material.
- All caps shall be edge finished before treatment. The ends of all stringers shall be lapped on a level surface before treatment. Do not use an even butt cover caps.
- Cap surfaces or bare iron in treated timber trunks shall be thoroughly saturated with hot creosote oil.
- All piping supporting caps shall be covered with galvanized pipe protectors as specified, and other piping shall be saturated with hot creosote oil and covered with a thick layer of heavy asphalt.
- Joints in top handrail must be staggered with joints in side rail.
- Asphalt planks shall be laid on a level surface and shall be saturated with hot creosote oil.
- Posts more than 2 inches long must be treated with not less than 4 holes.
- As the finished structure is completed, project more than 1/2 inch on the end of all posts.
- All posts shall have 3/4" x 3/4" or 1/2" x 1/2" or 3/8" x 3/8" cast washers in the end of each post and 30d nails in the end of each post.
- The contractor shall meet with the check cap fittings before ordering because of variations in thickness of cap and pipe.
- The entire exterior surface of all piping shall be painted on both sides as specified immediately after the material is delivered to the project.
- Before laying handrail, the contact surface shall receive the special coat of paint and a contractor is permitted to use 1/2" x 1/2" x 1/2" galv. pipe during these holes must be in 1/2" x 1/2" x 1/2" galv. pipe in position after final driving.
- 1/2" x 1/2" x 1/2" galv. pipe shall be used for galvanized red leaded nails.
- All hardware to be galvanized and weight of hardware as shown in the bill of material.
- Access to the structure shall be provided by means of a wooden plank.

HALF END ELEVATION

BOLTS AND WASHERS FOR ONE SPAN OF SUPERSTRUCTURE

LOCATION	ITEM	18'-6" SPAN			22'-6" SPAN			26'-6" SPAN		
		NO.	LENGTH	WT EACH	NO.	LENGTH	WT EACH	NO.	LENGTH	WT EACH
POSTS TO RAILS	BOLTS 5/8"	10	10"	1.0	10	10"	1.0	10	10"	1.0
POSTS TO WHEEL GUARDS	BOLTS 3/4"	14	12"	1.2	14	12"	1.2	14	12"	1.2
POSTS TO STRINGERS	BOLTS 3/4"	14	12"	1.2	14	12"	1.2	14	12"	1.2
WHEEL GUARDS TO STRINGERS	BOLTS 3/4"	14	12"	1.2	14	12"	1.2	14	12"	1.2
WASHERS STD. C.T.O.G.	WASHERS 5/8" x 3/4"	28		2.8	28		2.8	28		2.8
TOTAL WEIGHT				146.0			141.2			140.0

BOLTS AND WASHERS FOR ONE ABUTMENT

LOCATION	ITEM	SIZE	NO.	LENGTH	WT EACH	TOTAL WT
POSTS TO RAILS	BOLTS	5/8"	2	10"	1.0	2.0
ANGLE CLIP TO STRINGER & CAP	BOLTS	5/8"	2	10"	1.0	2.0
POSTS TO STRINGERS	BOLTS	3/4"	14	12"	1.2	16.8
POSTS TO WHEEL GUARDS	BOLTS	3/4"	14	12"	1.2	16.8
WHEEL GUARDS TO STRINGERS	BOLTS	3/4"	14	12"	1.2	16.8
TIMBER HEADER TO STRINGERS	LAG SCREWS	5/8" x 14"	14		1.36	19.0
WASHERS STD. C.T.O.G.	WASHERS	5/8" x 3/4"	28		2.8	32.0
CAPS TO PILES	DRIFT BOLTS	3/4"	8	12"	1.3	24.0
TOTAL WEIGHT						116.0

BOLTS AND WASHERS FOR ONE WING

LOCATION	ITEM	SIZE	NO.	LENGTH	WT EACH	TOTAL WT
POSTS TO RAILS	BOLTS	5/8"	3	10"	1.0	3.0
POSTS TO PILES	BOLTS	3/4"	8	12"	1.2	9.6
PILES TO CURB PLANK	BOLTS	5/8"	3	8"	1.74	5.2
WASHERS STD. C.T.O.G.	WASHERS	5/8" x 3/4"	12		1.25	15.0
TOTAL WEIGHT						50.0

BOLTS AND WASHERS FOR ONE BENT

LOCATION	ITEM	SIZE	NO.	LENGTH	WT EACH	TOTAL WT
POSTS TO RAILS	BOLTS	5/8"	2	10"	1.0	2.0
POSTS TO WHEEL GUARDS	BOLTS	3/4"	14	12"	1.2	16.8
ANGLE CLIP TO CAP	BOLTS	5/8"	2	10"	1.0	2.0
WHEEL GUARDS TO STRINGERS	BOLTS	3/4"	14	12"	1.2	16.8
POSTS TO STRINGERS	BOLTS	3/4"	14	12"	1.2	16.8
SP. BRACE TO STRINGERS	BOLTS	3/4"	12	12"	1.2	14.4
SWAY BRACE TO CAPS	BOLTS	5/8"	2	10"	1.0	2.0
POSTS TO PILES	BOLTS	3/4"	8	12"	1.2	9.6
SWAY TO PILE TO SWAY	BOLTS	5/8"	2	10"	1.0	2.0
WASHERS STD. C.T.O.G. NO. SWAYS	WASHERS	5/8" x 3/4"	12		1.25	15.0
WASHERS STD. C.T.O.G. SWAYS	WASHERS	5/8" x 3/4"	12		1.25	15.0
LAPS TO PILES	DRIFT BOLTS	3/4"	8	12"	1.3	24.0
TOTAL WEIGHT WITHOUT SWAYBRACES						122.0
TOTAL WEIGHT WITH SWAYBRACES						170.0

NAILS

LOCATION	ITEM	18'-6" SPAN	22'-6" SPAN	26'-6" SPAN
ONE SPAN OF SUPERSTRUCTURE	300 COMMON	125 LBS	150 LBS	180 LBS
ONE ABUTMENT	300 COMMON	125 LBS	150 LBS	180 LBS
ONE WING	400 COMMON	5 LBS	5 LBS	5 LBS
ONE SUB-ABUTMENT	7 WIRE SPIKES	1.85	2.3	1.85
ONE BENT	400 COMMON	1.85	2.3	1.85
ONE BENT	7 WIRE SPIKES	1.85	2.3	1.85

SUMMARY FOR HARDWARE

LOCATION	UNIT	300 COMMON	300 GALV.	400 COMMON	7 WIRE SPIKES
3 SPANS	AT	147	180	210	14
2 ABUTMENTS	AT	118	150	180	14
4 WINGS	AT	50	50	50	14
2 BENTS WITH SWAYS	AT	18	23	18	14
2 BENTS WITHOUT SWAYS	AT	170	210	250	14
TOTAL WEIGHT		500	613	750	70

SUMMARY OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	PRICE	TOTAL
1	DRY ROCK	CU YD	5	1.00	5.00
2	DRY COMMON	CU YD	45	1.00	45.00
3	WET ROCK	CU YD	1	1.00	1.00
4	WET COMMON	CU YD	1	1.00	1.00
5	UNTREATED BRIDGE TIMBER	BO FT	332	1.00	332.00
6	TREATED BRIDGE TIMBER	BO FT	332	1.00	332.00
7	ASPHALT PLANK WEARING SURFACE	SQ FT	672	1.00	672.00
8	PLANK TREATED	SQ FT	2025	1.00	2025.00
9	TREATED BRIDGE TIMBER	BO FT	480	1.00	480.00
10	TREATED BRIDGE TIMBER	BO FT	300	1.00	300.00
11	TREATED BRIDGE TIMBER	BO FT	84	1.00	84.00
12	TREATED BRIDGE TIMBER	BO FT	420	1.00	420.00
13	TREATED BRIDGE TIMBER	BO FT	210	1.00	210.00
14	TREATED BRIDGE TIMBER	BO FT	3485	1.00	3485.00
15	TREATED BRIDGE TIMBER	BO FT	1088	1.00	1088.00
16	TREATED BRIDGE TIMBER	BO FT	3485	1.00	3485.00
17	TREATED BRIDGE TIMBER	BO FT	10	1.00	10.00
18	TREATED BRIDGE TIMBER	BO FT	70	1.00	70.00
19	TREATED BRIDGE TIMBER	BO FT	88	1.00	88.00
20	TREATED BRIDGE TIMBER	BO FT	70	1.00	70.00
21	TREATED BRIDGE TIMBER	BO FT	88	1.00	88.00
22	TREATED BRIDGE TIMBER	BO FT	70	1.00	70.00
23	TREATED BRIDGE TIMBER	BO FT	88	1.00	88.00
24	TREATED BRIDGE TIMBER	BO FT	70	1.00	70.00
25	TREATED BRIDGE TIMBER	BO FT	88	1.00	88.00
26	TREATED BRIDGE TIMBER	BO FT	70	1.00	70.00
27	TREATED BRIDGE TIMBER	BO FT	88	1.00	88.00
28	TREATED BRIDGE TIMBER	BO FT	70	1.00	70.00
29	TREATED BRIDGE TIMBER	BO FT	88	1.00	88.00
30	TREATED BRIDGE TIMBER	BO FT	70	1.00	70.00
31	TREATED BRIDGE TIMBER	BO FT	88	1.00	88.00
32	TREATED BRIDGE TIMBER	BO FT	70	1.00	70.00
33	TREATED BRIDGE TIMBER	BO FT	88	1.00	88.00
34	TREATED BRIDGE TIMBER	BO FT	70	1.00	70.00
35	TREATED BRIDGE TIMBER	BO FT	88	1.00	88.00
36	TREATED BRIDGE TIMBER	BO FT	70	1.00	70.00
37	TREATED BRIDGE TIMBER	BO FT	88	1.00	88.00
38	TREATED BRIDGE TIMBER	BO FT	70	1.00	70.00
39	TREATED BRIDGE TIMBER	BO FT	88	1.00	88.00
40	TREATED BRIDGE TIMBER	BO FT	70	1.00	70.00
41	TREATED BRIDGE TIMBER	BO FT	88	1.00	88.00
42	TREATED BRIDGE TIMBER	BO FT	70	1.00	70.00
43	TREATED BRIDGE TIMBER	BO FT	88	1.00	88.00
44	TREATED BRIDGE TIMBER	BO FT	70	1.00	70.00
45	TREATED BRIDGE TIMBER	BO FT	88	1.00	88.00
46	TREATED BRIDGE TIMBER	BO FT	70	1.00	70.00
47	TREATED BRIDGE TIMBER	BO FT	88	1.00	88.00
48	TREATED BRIDGE TIMBER	BO FT	70	1.00	70.00
49	TREATED BRIDGE TIMBER	BO FT	88	1.00	88.00
50	TREATED BRIDGE TIMBER	BO FT	70	1.00	70.00

ONE SPAN OF SUPERSTRUCTURE

DESCRIPTION	SIZE	18'6" SPAN		22'6" SPAN		26'6" SPAN	
		NO.	LENGTH	NO.	LENGTH	NO.	LENGTH
HANDRAILS S4S	3x8	4	120.0	4	120.0	4	120.0
HANDRAIL POSTS S4S	6x8	2	50.0	2	50.0	2	50.0
TOTAL UNTREATED TIMBER			290.0		290.0		290.0

TREATED TIMBER

DESCRIPTION	SIZE	18'6" SPAN	22'6" SPAN	26'6" SPAN
FLOORING S4S	3x6	120.0	120.0	120.0
BRIDGING	3x6	120.0	120.0	120.0
WHEEL GUARDS	6x10	240.0	240.0	240.0
STRINGERS	6x10	341.0	341.0	341.0
OUTSIDE	6x10	22.6	150.0	22.6
END SPANS	6x10	22.6	150.0	22.6
STRINGERS	6x10	22.6	150.0	22.6
INSIDE INTERMEDIATE	6x10	10.24	290.0	10.24
AND END SPANS	6x10	10.24	290.0	10.24
TOTAL TRIMMER- END SPANS		6856	8634	11395
TOTAL TRIMMER- INTER SPANS		6438	8625	11386
ASPHALT PLANK WEARING SURF		672	2025	795

ONE ABUTMENT

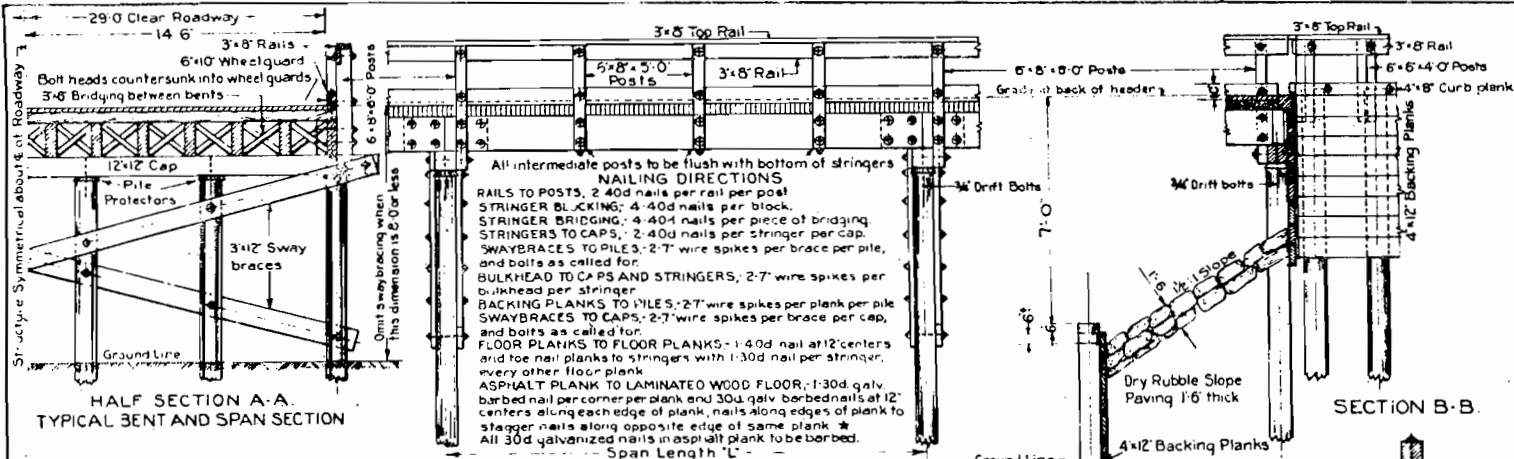
DESCRIPTION	SIZE	18'6" SPAN	22'6" SPAN	26'6" SPAN
HANDRAIL POSTS S4S	6x8	2	50.0	2
TOTAL UNTREATED TIMBER			40	40

TREATED TIMBER

DESCRIPTION	SIZE	18'6" SPAN	22'6" SPAN	26'6" SPAN
TIMBER HEADER	1PC 8"x12"x12"	2.00	8.00	2.00
CAP	1PC 2"x4"x12"	1.00	1.00	1.00
BULKHEAD PLANKS	4PCS 3"x4"x12"	4.00	4.00	4.00
BACKING PLANKS	3PCS 4"x12"x12"	3.00	3.00	

STANDARD P-117-BH-D

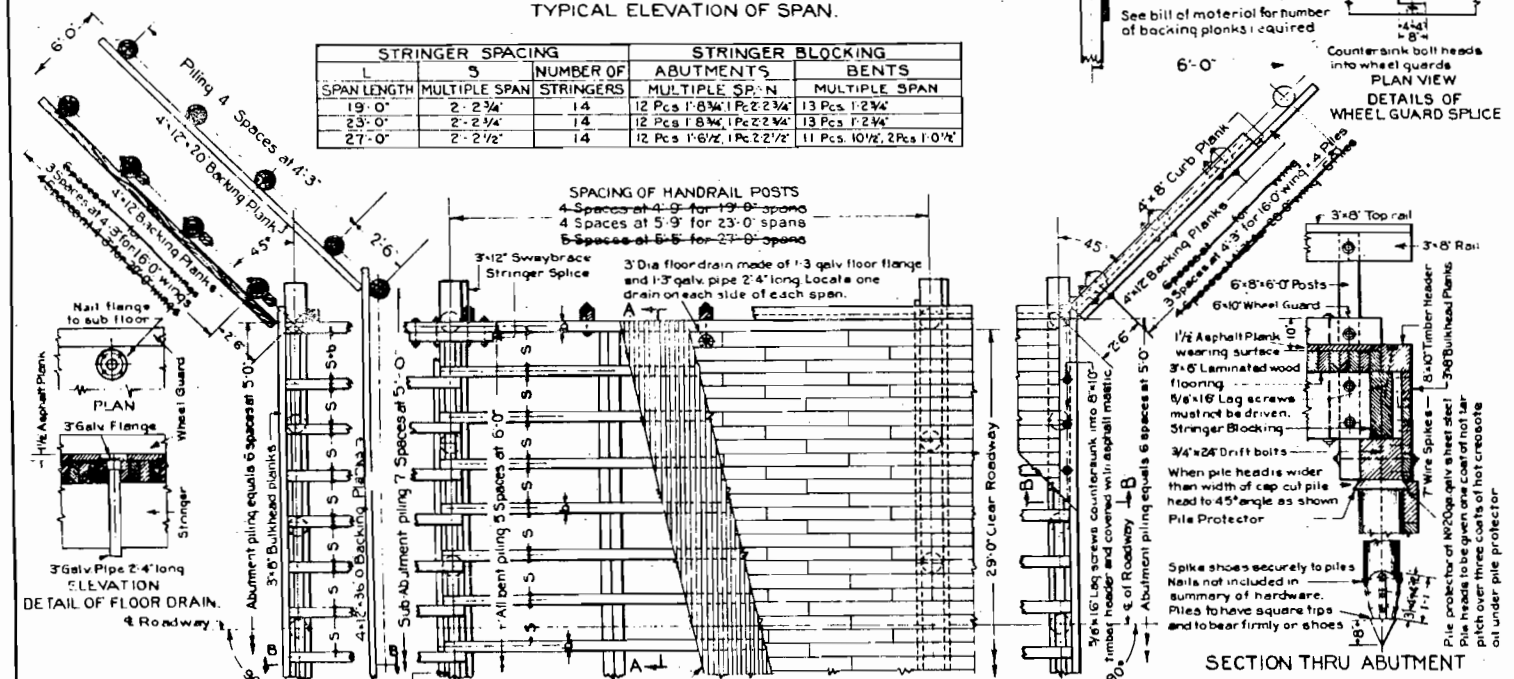
FED. ROAD DIST. NO.	STATE	P.W.A.	SHEET NO.	TOTAL SHEETS
3	COLO.	123 A	7	



NAILING DIRECTIONS
 RAILS TO POSTS: 2 40d nails per rail per post
 STRINGER BLOCKING: 4 40d nails per piece of blocking
 STRINGERS TO BRIDGING: 4 40d nails per piece of bridging
 STRINGERS TO CAPS: 2 40d nails per stringer per cap
 SWAYBRACES TO PILES: 2 7 wire spikes per brace per pile, and bolts as called for
 BULKHEAD TO CAPS AND STRINGERS: 2 7 wire spikes per bulkhead per stringer
 BACKING PLANKS TO PILES: 2 7 wire spikes per plank per pile
 FLOOR PLANKS TO STRINGERS: 2 7 wire spikes per brace per cap, and bolts as called for
 ASPHALT PLANK TO LAMINATED WOOD FLOOR: 1 30d galv. barbed nail per corner per plank and 30d galv. barbed nails at 12" centers along each edge of plank, nails along edges of plank to stagger nails along opposite edge of same plank
 All 30d galvanized nails in asphalt plank to be barbed.
 * Span Length 'L'
 * Based on 8'6" 0" Size Planks.

TYPICAL ELEVATION OF SPAN.

STRINGER SPACING			STRINGER BLOCKING		
L	S	NUMBER OF	ABUTMENTS	BENTS	
SPAN LENGTH	MULTIPLE SPAN	STRINGERS	MULTIPLE SPAN	MULTIPLE SPAN	
19'-0"	2'-2 3/4"	14	12 Pcs 1 8x4 1/2 Pcs 2 3/4"	13 Pcs 1 2 3/4"	
23'-0"	2'-2 1/4"	14	12 Pcs 1 8x4 1/2 Pcs 2 3/4"	13 Pcs 1 2 3/4"	
27'-0"	2'-2 1/2"	14	12 Pcs 1 6x2 1/2 Pcs 2 2 1/2"	11 Pcs 10 1/2, 2 Pcs 1 0 1/2"	



GENERAL NOTES

All work shall be done according to the standard specifications of the Colorado State Highway Department, Adopted June 1, 1937.
 All timber and piling to be treated or untreated as shown in bills of material.
 All timber and piling shall be dense southern yellow pine or west coast douglas fir.
 All caps shall be edged to an even depth before treatment. The ends of all stringers shall be dapped on one edge before treatment, to obtain an even depth over caps.
 All cut surfaces or bored holes in treated timber or piles shall be thoroughly saturated with hot creosote oil.
 All piling supporting caps shall be covered with galvanized pile protectors as specified, all other piling tops shall be saturated with hot creosote oil and covered with a thick layer of heavy asphalt or tar.
 Joints in top handrail must be staggered with joints in side rail.
 All handrailing and posts above the wheelguards shall be painted white and all handrail posts below the top of wheel guards shall be painted black as specified.
 All bolts more than 12 inches long must be threaded not less than 4 inches.
 Bolts in the finished structure shall not project more than one half inch beyond the nut.
 All bolts must have Std. C.I.O.G. or Malleable Cast Washers under each head and nut.
 Bolt lengths are calculated assuming C.I.O.G. washers will be used.
 The contractor is cautioned to check bolt lengths before ordering because of variations in thickness of lumber and piling.
 The entire exposed surface of all untreated timber shall be painted one coat as specified immediately after the material is delivered to the project.
 Before placing handrailing the contact surfacing shall receive the second coat of paint.
 When contractor is permitted to drill holes to facilitate pile driving, these holes must be drilled so piling will stand in vertical position after final driving.
 Bed pipe for asphalt plank shall include galvanized barbed nails.
 All hardware to be galvanized. Weights of hardware as shown are for ungalvanized material.
 All necessary blocking for swaybracing shall be treated timber.

BOLTS AND WASHERS FOR ONE SPAN OF SUPERSTRUCTURE

LOCATION	SIZE	19'-0" SPAN			23'-0" SPAN			27'-0" SPAN		
		NO	LENGTH	LBS	NO	LENGTH	LBS	NO	LENGTH	LBS
POSTS TO RAILS	3/8"	6	10"	7.0	6	10"	7.0	6	10"	7.0
POSTS TO WHEEL GUARDS	3/4"	6	14"	12.7	6	14"	12.7	6	14"	12.7
POSTS TO STRINGERS	3/4"	12	16"	26.3	12	16"	26.3	12	16"	26.3
WHEEL GUARD TO STRINGERS	3/4"	8	29"	6.38	8	29"	6.38	8	29"	6.38
WASHERS - STD. C.I.O.G.	3/4"	12	7/8"	69.0	12	7/8"	69.0	12	7/8"	69.0
TOTAL WEIGHT				146.0			147.0			200.0

BOLTS AND WASHERS FOR ONE ABUTMENT

LOCATION	ITEM	SIZE	NO	LENGTH	WT. EACH	TOTAL WT.
POSTS TO RAILS	BOLTS	5/8"	2	10"	1.08 LBS	2.2 LBS
POST TO BULKHEAD TO CAP	BOLTS	5/8"	2	2 1/2"	2.15 LBS	4.3 LBS
POSTS TO STRINGERS	BOLTS	3/4"	4	16"	2.60 LBS	10.4 LBS
POSTS TO WHEEL GUARDS	BOLTS	3/4"	2	14"	2.12 LBS	4.3 LBS
WHEEL GUARDS TO STRINGERS	BOLTS	3/4"	2	36"	5.00 LBS	10.0 LBS
MEMBER HEADER TO STRINGERS	LAG SCREWS	5/8"	14	16"	1.36 LBS	19.1 LBS
WASHERS - STD. C.I.O.G.	WASHERS	5/8"	22	1 1/2"	1.25 LBS	27.5 LBS
CAPS TO PILES	DRIFT BOLTS	3/4"	7	24"	3.00 LBS	21.0 LBS
TOTAL WEIGHT						108.0 LBS

BOLTS AND WASHERS FOR ONE WING

LOCATION	ITEM	SIZE	NO	LENGTH	WT. EACH	TOTAL WT.
POSTS TO RAILS	BOLTS	5/8"	3	11"	1.16 LBS	3.4 LBS
POSTS TO PILES	BOLTS	3/4"	6	20"	2.64 LBS	17.0 LBS
PILES TO CURB PLANK	BOLTS	3/8"	3	16"	1.74 LBS	5.2 LBS
WASHERS - STD. C.I.O.G.	WASHERS	5/8"	12	1 1/2"	1.25 LBS	24.4 LBS
TOTAL WEIGHT						50.0 LBS

BOLTS AND WASHERS FOR ONE BENT

LOCATION	ITEM	SIZE	NO	LENGTH	WT. EACH	TOTAL WT.
POSTS TO RAILS	BOLTS	5/8"	2	10"	1.08 LBS	2.2 LBS
POSTS TO WHEEL GUARDS	BOLTS	3/4"	2	14"	2.12 LBS	4.3 LBS
POSTS TO CAPS WITHOUT SWAYS	BOLTS	3/8"	2	20"	1.90 LBS	3.8 LBS
WHEEL GUARDS TO STRINGERS	BOLTS	3/4"	2	36"	5.00 LBS	10.0 LBS
POSTS TO STRINGERS TO SPLICES	BOLTS	3/4"	4	24"	3.32 LBS	13.3 LBS
SPLICES TO STRINGERS	BOLTS	3/8"	12	16"	1.74 LBS	20.9 LBS
POSTS TO CAPS TO SWAYS	BOLTS	3/4"	2	36"	5.00 LBS	10.0 LBS
SWAYS TO CAPS	BOLTS	5/8"	2	17"	1.66 LBS	3.3 LBS
SWAYS TO PILES	BOLTS	5/8"	12	17"	1.66 LBS	19.9 LBS
WASHERS - STD. C.I.O.G. NO SWAYS	WASHERS	5/8"	32	1 1/2"	1.25 LBS	44.5 LBS
WASHERS - STD. C.I.O.G. WITH SWAYS	WASHERS	5/8"	60	1 1/2"	1.25 LBS	75.0 LBS
CAPS TO PILES	DRIFT BOLTS	3/4"	6	24"	3.00 LBS	18.0 LBS
TOTAL WEIGHT WITHOUT SWAYS						115.0 LBS
TOTAL WEIGHT WITH SWAYS						159.0 LBS

NAILS

LOCATION	ITEM	19'-0" SPAN	23'-0" SPAN	27'-0" SPAN
ONE SPAN OF SUPERSTRUCTURE	300 COMMON	25 LBS	30 LBS	35 LBS
	300 GALV BARBED	125 LBS	150 LBS	175 LBS
	wearing surface	155 LBS	195 LBS	225 LBS
ONE ABUTMENT	400 COMMON	5 LBS	5 LBS	5 LBS
	7 WIRE SPIKES	1 LBS	2 LBS	1 LBS
ONE WING	400 COMMON	1 LBS	1 LBS	1 LBS
	7 WIRE SPIKES	1 LBS	7 LBS	1 LBS
ONE SUB ABUTMENT	400 COMMON	7 LBS	7 LBS	7 LBS
	7 WIRE SPIKES	1 LBS	4 LBS	1 LBS
ONE BENT	400 COMMON	7 LBS	7 LBS	7 LBS
	7 WIRE SPIKES	1 LBS	4 LBS	1 LBS

SUMMARY FOR HARDWARE

ITEM	UNIT	30' COMMON	30' GALV	400 COMMON	7 WIRE SPIKES
3 SPANS	AT	147 LBS PER SPAN		441 LBS	
2 ABUTMENTS	AT	108 LBS PER ABUTMENT		216 LBS	
4 WINGS	AT	50 LBS PER WING		200 LBS	
2 BENTS	AT	117 LBS PER BENT		234 LBS	
2 BENTS WITH SWAYS	AT	159 LBS PER BENT		318 LBS	
TOTAL WEIGHT				1175 LBS	

SUMMARY OF QUANTITIES

ITEM	UNIT	QUANTITY	REMARKS
ITEM 14 a	DRY ROCK	CU YDS	
ITEM 14 b	DRY COMMON	245 CU YDS	
ITEM 14 c	WET ROCK	CU YDS	
ITEM 14 d	WET COMMON	5 CU YDS	
ITEM 42 a	UNTREATED BRIDGE TIMBER		
3 SPANS	AT	312 BD FT EACH	936 BD FT
2 ABUTMENTS	AT	48 BD FT EACH	96 BD FT
4 WINGS	AT	81 BD FT EACH	324 BD FT
2 BENTS	AT	48 BD FT EACH	96 BD FT
TOTAL			1464 BD FT
ITEM 42 b	TREATED BRIDGE TIMBER		
2 SPANS	AT	852 BD FT EACH	1704 BD FT
1 SPAN	AT	852 BD FT EACH	852 BD FT
2 ABUTMENTS	AT	104 BD FT EACH	208 BD FT
4 WINGS	AT	116 BD FT EACH	464 BD FT
2 SUB ABUTMENTS	AT	1624 BD FT EACH	3248 BD FT
2 BENTS	AT	858 BD FT EACH	1716 BD FT
TOTAL			3560 BD FT
ITEM 43	ASPHALT PLANK WEARING SURFACE		
3 SPANS	AT	6675 SQ FT EACH	20025 SQ FT
2 ABUTMENTS	AT	1116 SQ FT EACH	2232 SQ FT
4 WINGS	AT	210 LIN FT EACH	840 LIN FT
2 SUB ABUTMENTS	AT	126 LIN FT EACH	504 LIN FT
2 BENTS	AT	180 LIN FT EACH	360 LIN FT
TOTAL			22284 LIN FT
ITEM 60 c	TREATED PILING CUT-OFF		
78 SHOES	AT	35 LBS EACH	2730 LBS
ITEM 65	DRY RUBBLE SLOPE PAVING 1 1/2" THICK		
2 PIECES 3" DIA GALV PIPE 2 1/2" LONG WITH ONE 3" GALV FLANGE ON EACH PIPE			6 PIECES
3 SPANS	AT	2 COMPLETE PER SPAN	6 PIECES

ONE SPAN OF SUPERSTRUCTURE

DESCRIPTION	SIZE	19'-0" SPAN			23'-0" SPAN			27'-0" SPAN		
		NO	LENGTH	TOTAL	NO	LENGTH	TOTAL	NO	LENGTH	TOTAL
HANDRAIL POSTS 3 1/2"	3-6"	4	20'-0"	160 BD FT	4	24'-0"	192 BD FT	4	30'-0"	224 BD FT
HANDRAIL POSTS 3 1/2"	6-8"	6	5'-0"	120 BD FT	6	5'-0"	120 BD FT	6	5'-0"	150 BD FT
TOTAL UNTREATED TIMBER				280 BD FT			312 BD FT			364 BD FT

TREATED TIMBER										
FLOORING 3 1/2"	3-6"	87	30'-0"	3915 BD FT	80	30'-0"	4770 BD FT	124	30'-0"	5580 BD FT
BRIDGING	3-6"	4	16'-0"	96 BD FT	4	16'-0"	96 BD FT	4	16'-0"	96 BD FT
WHEEL GUARDS	6-10"	2	20'-0"	200 BD FT	2	24'-0"	240 BD FT	2	26'-0"	280 BD FT
STRINGERS	6-18"	2	19'-0"	342 BD FT						
INTERMEDIATE SPANS	6-20"				2	23'-0"	460 BD FT			
STRINGERS	6-18"	2	19'-0"	351 BD FT						
OUTSIDE	6-20"				2	23'-0"	470 BD FT			
END SPANS	6-20"				2	23'-0"	470 BD FT			
STRINGERS	6-18"	2	20'-0"	2160 BD FT						
INSIDE INTERMEDIATE AND END SPANS	6-20"				2	24'-0"	2940 BD FT			
TOTAL TR. TIMBER - END SPANS				6722 BD FT			8552 BD FT			11266 BD FT
TOTAL TR. TIMBER - INTER SPANS				6713 BD FT			8542 BD FT			11252 BD FT
ASPHALT PLANK WEARING SURF				551 SQ FT			6675 SQ FT			7635 SQ FT

ONE ABUTMENT

UNTREATED TIMBER			
HANDRAIL POSTS 3 1/2"	2 PCS	6'-8" x 6'-0"	48 BD FT
TOTAL UNTREATED TIMBER			48 BD FT

TREATED TIMBER			
TIMBER HEADER	1 PC	8'-0" x 30'-0" FINISH TO 7'-9"	200 BD FT
BULKHEAD PLANKS	4 PCS	3'-8" x 32'-0"	400 BD FT
BACKING PLANKS	3 PCS	4'-12" x 32'-0"	384 BD FT
STRINGER BLOCKING	1 PC	6'-18" x 24'-0"	216 BD FT
Curb before treatment			1464 BD FT
TOTAL TREATED TIMBER			1464 BD FT
PILING - TREATED		7 PIECES AT 30' LIN FT EACH	210 LIN FT

ONE WING

UNTREATED TIMBER				
HANDRAILS 3 1/2"	3-6"	1	12'-0"	24
HANDRAIL POSTS 3 1/2"	3-8"	1	12'-0"	24
TOTAL UNTREATED TIMBER				84

TREATED TIMBER			
CURB PLANKS	1 PC	12'-0" x 32'-0"	384 BD FT
BACKING PLANKS	4 PC	6'-18" x 20'-0"	576 BD FT
TOTAL TREATED TIMBER			960 BD FT
PILING - TREATED		4 PIECES AT 32' LIN FT EACH	128 LIN FT

ONE SUB-ABUTMENT AND WINGS

TREATED TIMBER			
BACKING PLANKS	6 PCS	4'-12" x 36'-0"	864 BD FT
BACKING PLANKS	12 PCS	4'-12" x 20'-0"	960 BD FT
BACKING PLANKS	1 PC	4'-12" x 36'-0"	384 BD FT
BACKING PLANKS	1 PC	4'-12" x 36'-0"	384 BD FT
TOTAL TREATED TIMBER			1824 BD FT
PILING TREATED		18 PIECES AT 26' LIN FT EACH	468 LIN FT

ONE BENT

UNTREATED TIMBER			
HANDRAIL POSTS 3 1/2"	2 PCS	11'-8" x 3'-0"	48 BD FT
TOTAL UNTREATED TIMBER			48 BD FT

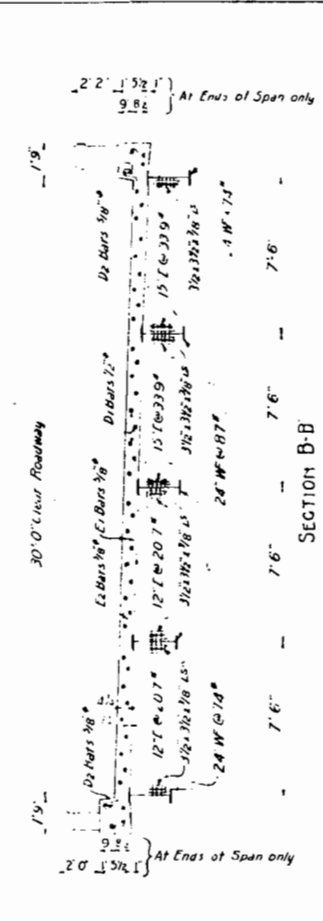
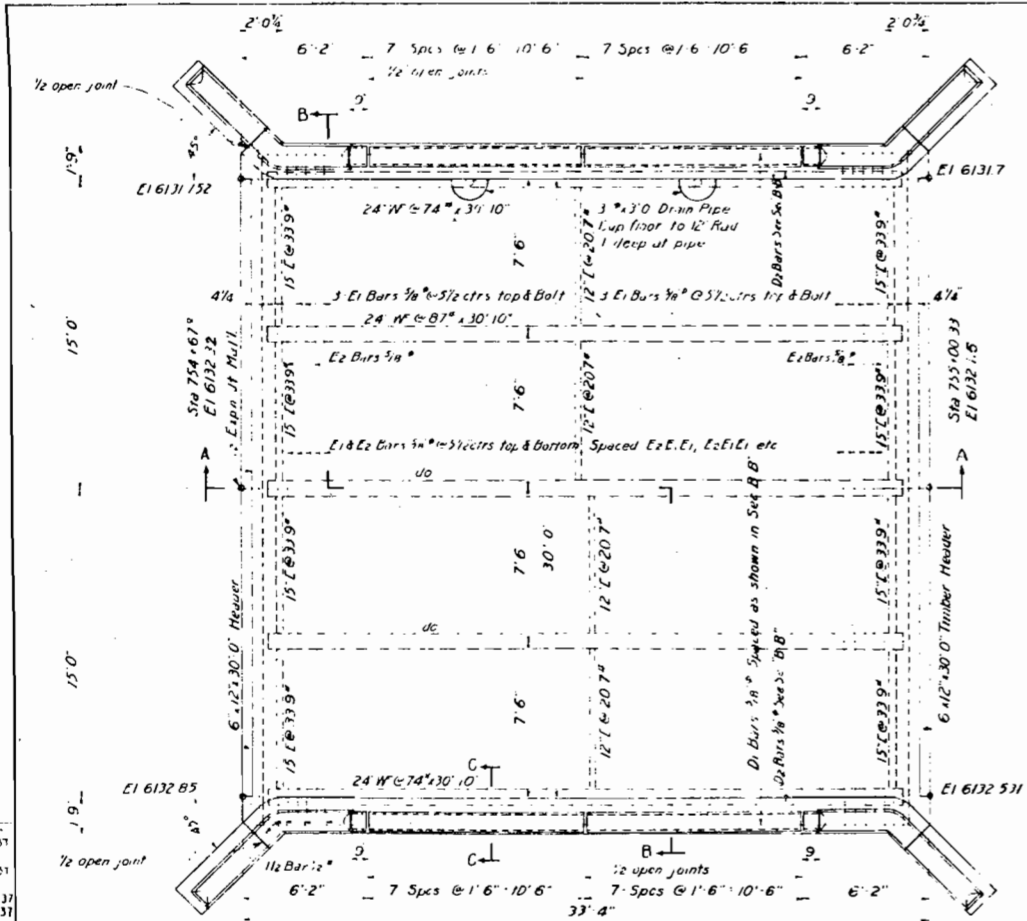
TREATED TIMBER			
STRINGER SPLICES	2 PC	6'-18" x 4'-0"	72 BD FT
CAP	1 PC	12'-12" x 34'-0"	408 BD FT
SWAYBRACES	2 PC	3'-12" x 36'-0"	216 BD FT
STRINGER BLOCKING	1 PC	6'-18" x 18'-0"	162 BD FT
SHIMS	14 PCS	2'-3" x 1'-0"	42 BD FT
TOTAL TREATED TIMBER			858 BD FT
PILING - TREATED		6 PIECES AT 30' LIN FT EACH	180 LIN FT

STRUCTURES REQUIRED

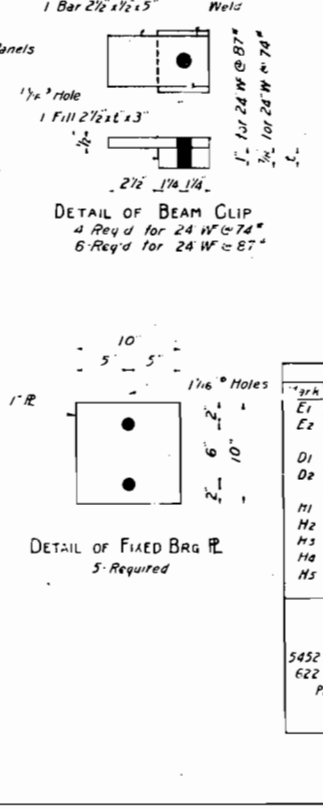
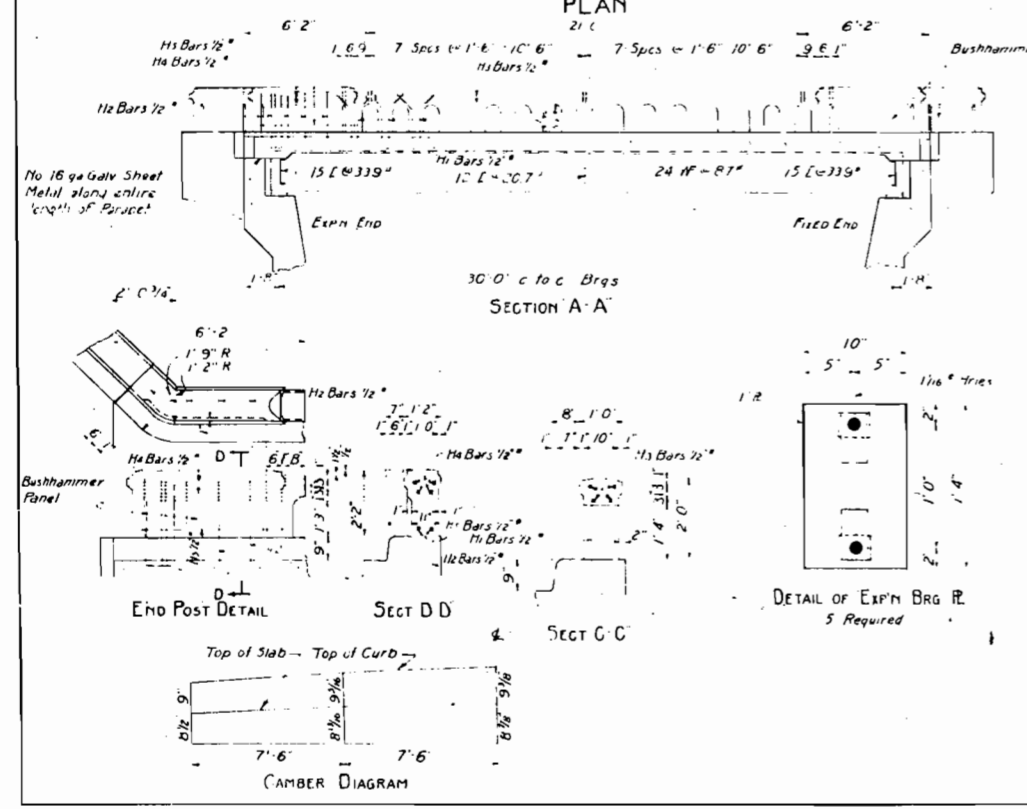
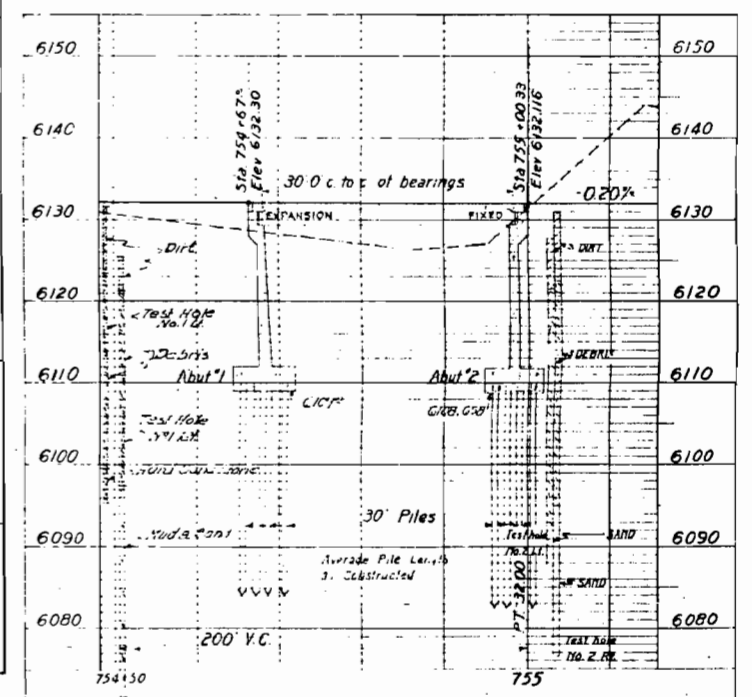
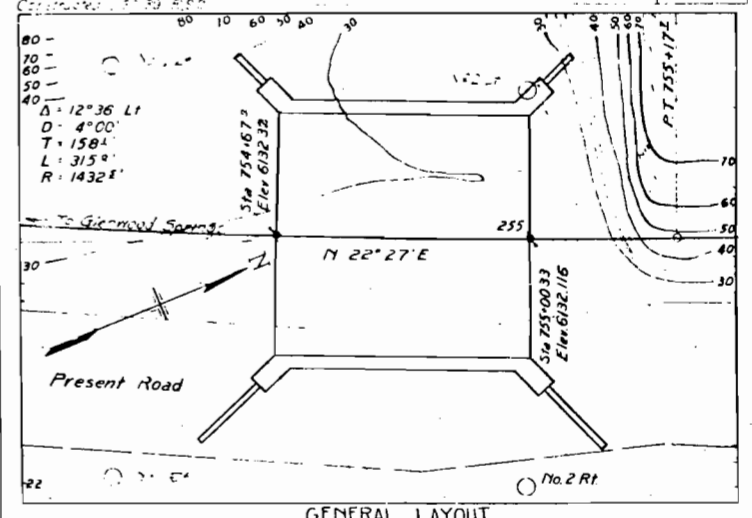
3 SPANS AT 23' 0"

LOADING DATA

LIVE LOAD A 5.5 MD. HIGH CLASS A. THIS LOAD ASSUMES 15 LBS PER SQ FT. ADDITIONAL WEARING SURFACE. THIS INCLUDES THE 1 1/2" ASPHALT PLANK WEARING SURFACE.

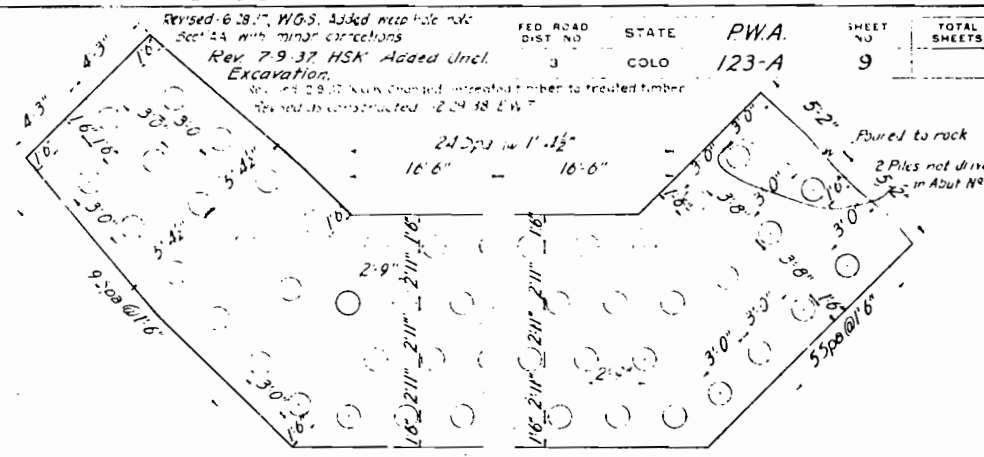


BAR LIST FOR ABUTMENT NO 1. Table with columns: Mark, Size, No. Req'd, Length, Type, E, m, r, f, Bending Diagrams. Includes a summary at the bottom.



BAR LIST FOR SUPERSTRUCTURE. Table with columns: Mark, Size, No. Req'd, Length, Type, Bending Diagrams. Includes a summary at the bottom.

GENERAL NOTES, COLORADO STATE HIGHWAY DEPARTMENT, BAR LIST FOR ABUTMENT NO 1 GENERAL LAYOUT, and project information including date and designer.



PILE SPACING DIAGRAM
 ABUTMENT NO. 1
 OPPOSITE HAND ABUTMENT NO. 2
 74 Piles 30'-0" Long Reg'd Excl. Abutment

SUMMARY OF QUANTITIES

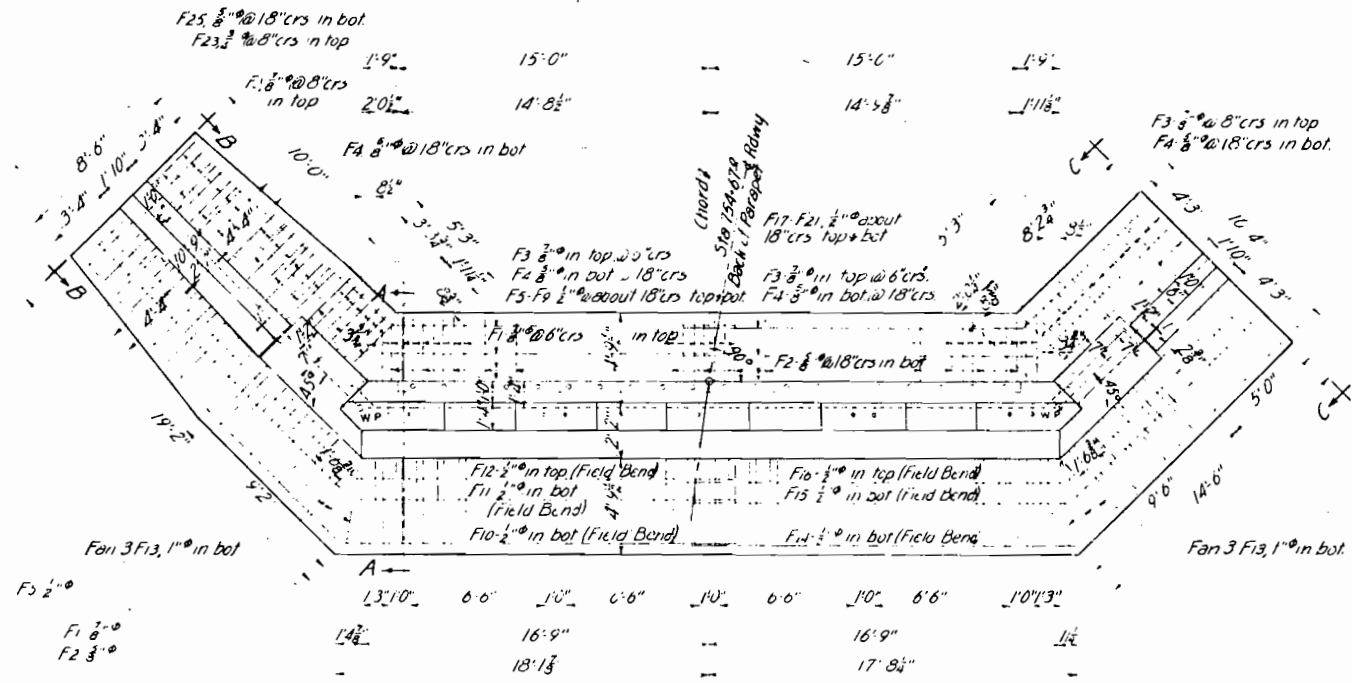
No.	Item	Unit	Abut No 1 Superstruct.	Abut No 2	Total
14a	Dry Rock Exc. Struct	Cu Yd			
14b	Dry Con.	"	431.2	466.1	897.2
14c	Wet Rock "	"			
14d	Con.	"	291	374	665
42b	Treated Dry Tim	11" x 2m	0.100	0.180	0.300
30a	Class "A" Conc.	Cu Yd	140.24	3.11	317.35
4c	Class "A" Conc. (Hand-placed)	"	0.7	0.7	5.0
47	Reinf. Steel incl 1/2" over	Lb	11715	2120	30145
48	Struct. Steel incl 1/2" over	"	2.5	2.5	12.50
60a	Treat. Timber Piling	Lin Ft	1754.6	1954.1	3708.7
60c	Piling Cut-off Treated	Lin Ft	405.4	213.9	619.3
13c	Unclass. Excavation	Cu Yd			1074
59b	Drain Pipe Concr. 1/2" x 3/4"	Each	2		2
	16 Ga Galv. Sheet Metal	Lb	225		225
	2-1/2 Exp. Jt. Mat'l	Sq Ft	65	31	130

* Wet line assumed to be of El. 6110.00
 • to be included in unit price bid for Class "A" Conc.
 ▲ SW & NW Wings poured to rock
 ■ Due to wings being poured to rock, less reinforcing was required
 The excess was transferred to Maint. Div

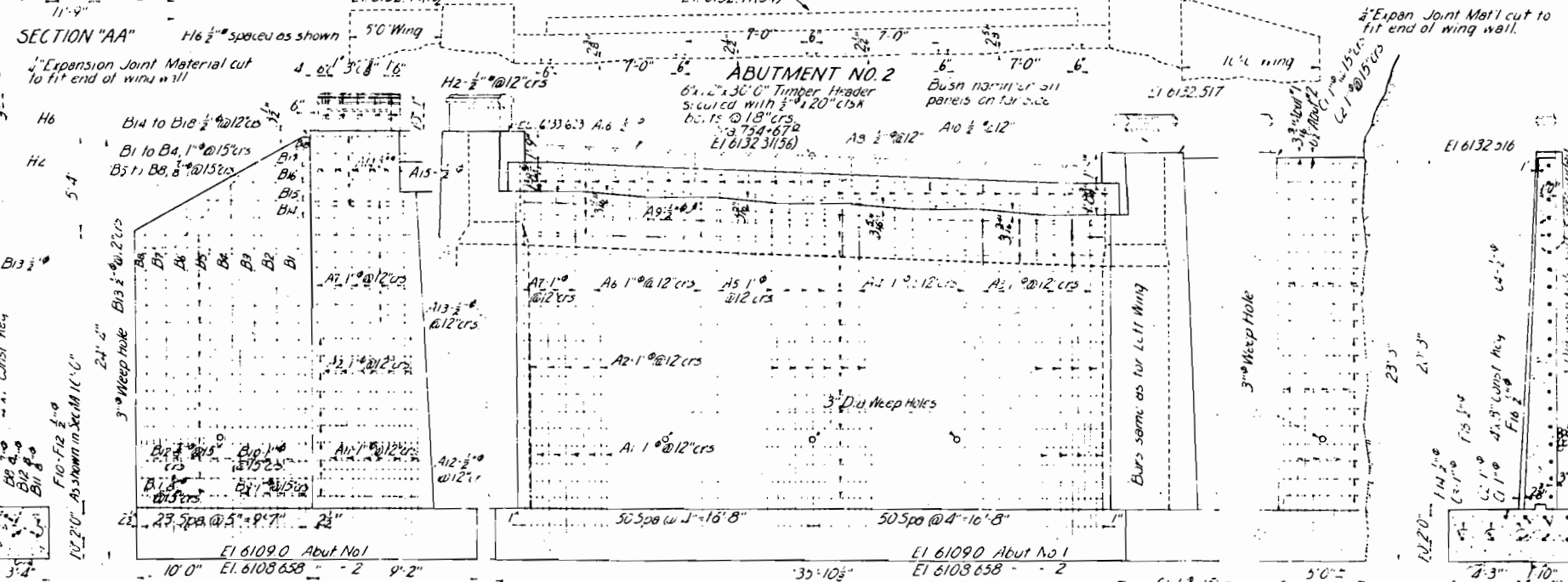
NOTE: REFERENCE DRAWINGS
 For Superstructure, Bar Lists and General Layout
 see sheet No. 8

Max. Pile load 30,000#
 LOADING DATA
 DESIGNING DATA
 STRESSES

COLORADO
 STATE HIGHWAY DEPARTMENT
 30 FT. CONCRETE BERM WITH
 30 FT. CLEAR ROADWAY
 DETAILS OF ABUTMENTS NO. 1 & NO. 2
 SUMMARY OF QUANTITIES
 Box Canyon
 54+61.2 to 755+00.23
 Glenwood Springs, 11 55 R 87 W
 W.G.S. R. J. Baulby
 A.C. Date June 25, 1937

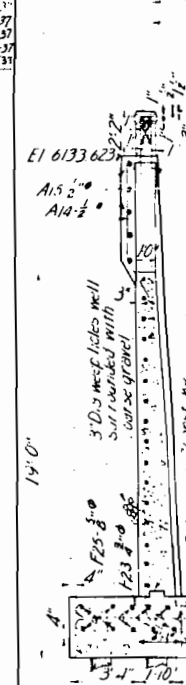


PLAN ABUTMENT NO. 1
 EXPANSION END
 Sta. 755+00.33
 El. 6132.11(5-4)



SECTION "AA"
 Expansion Joint Material cut to fit end of wing wall

ELEVATION ABUTMENT NO. 1
 Abutment No 2 Opposite Hand Except as Noted



SECTION "BB"
 F5 to F9 as shown in Sec. A-A

TRUE ELEVATION OF LEFT WING
 SW & NW Wings poured to rock

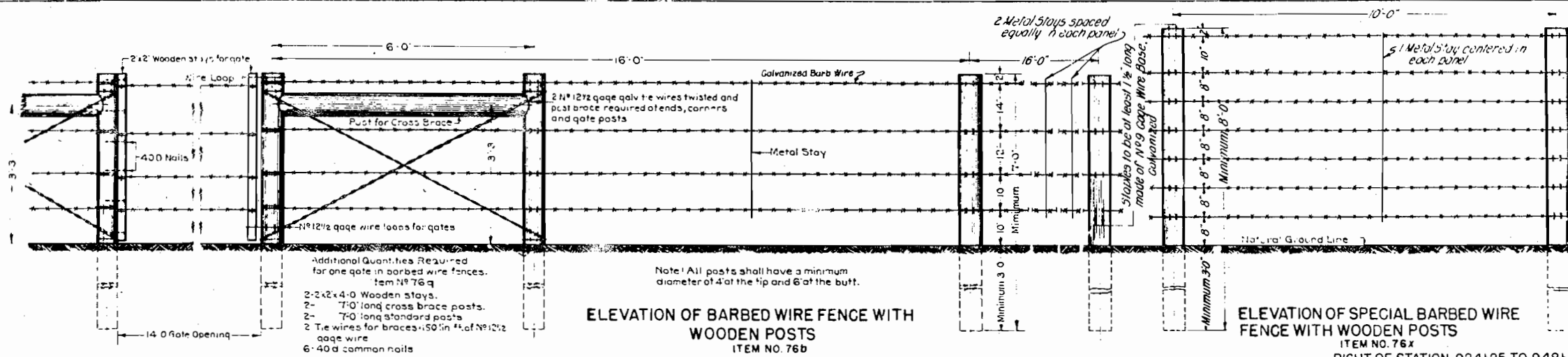
SECTION "CC"
 TRUE ELEVATION OF RIGHT WING

Designed By: W.G.S. 6/10/37
 Checked By: A.C. 6/10/37
 Drawn By: W.G.S. 6/10/37
 Traced By: A.C. 6/10/37
 Checked By: W.G.S. 6/10/37

FED. ROAD DIST. NO.	STATE	P. W. A. PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	123 A	16	

**STANDARD M-24-FX
UNTREATED WOOD POSTS
REVISED FOR SPECIAL FENCE
ITEM NO. 76x**

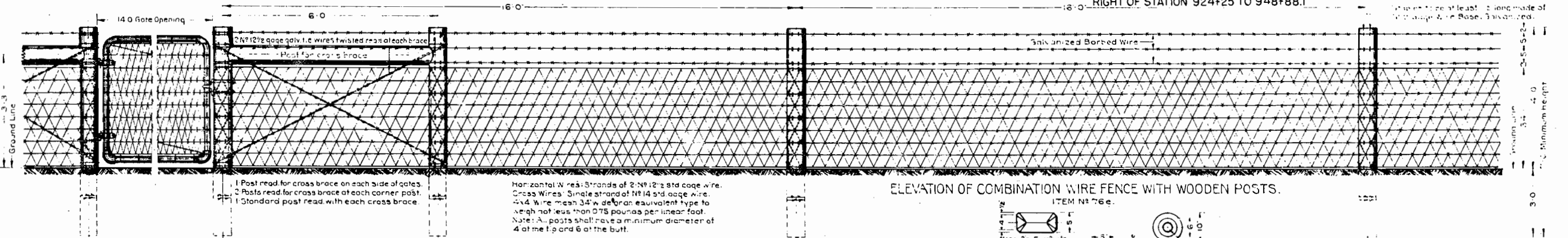
NOTE: Specifications governing construction of Standard Barbed Wire Fence shall apply to the construction of the Special Barbed Wire Fence as shown, except that the posts shall be 8 ft long, that they shall be spaced 10 ft on centers, and that 7 wires spaced as shown shall be used.



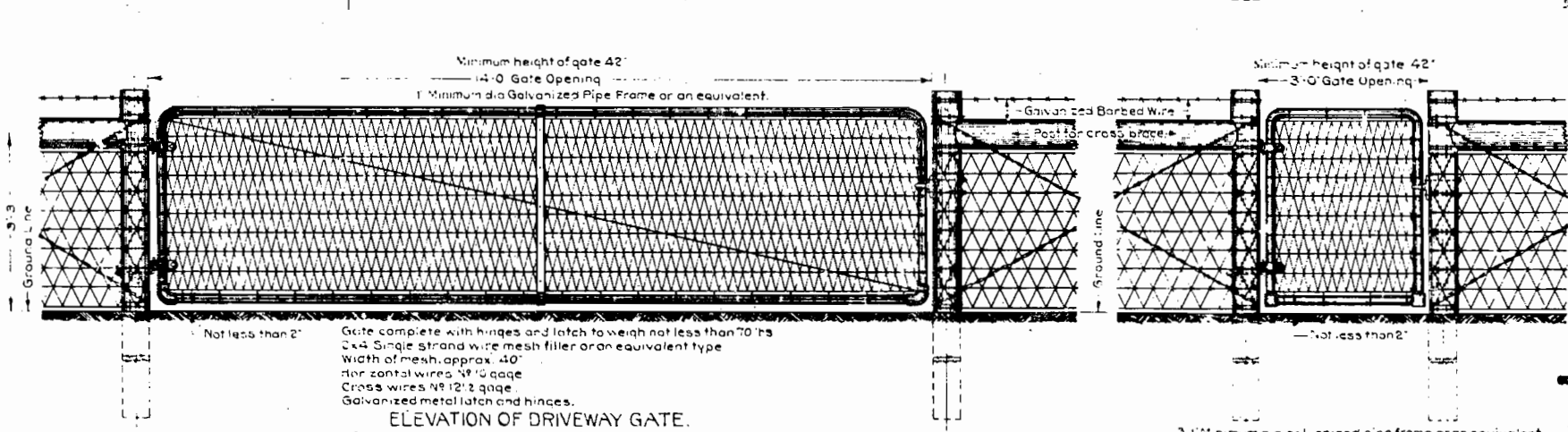
**ELEVATION OF BARBED WIRE FENCE WITH WOODEN POSTS
ITEM NO. 76b**

**ELEVATION OF SPECIAL BARBED WIRE FENCE WITH WOODEN POSTS
ITEM NO. 76x**

NOTE: Section of gate openings and angles in special fence shall conform to the standard as shown on this sheet for Item No. 76b, except that post for cross brace shall be 4' 3" above the ground.



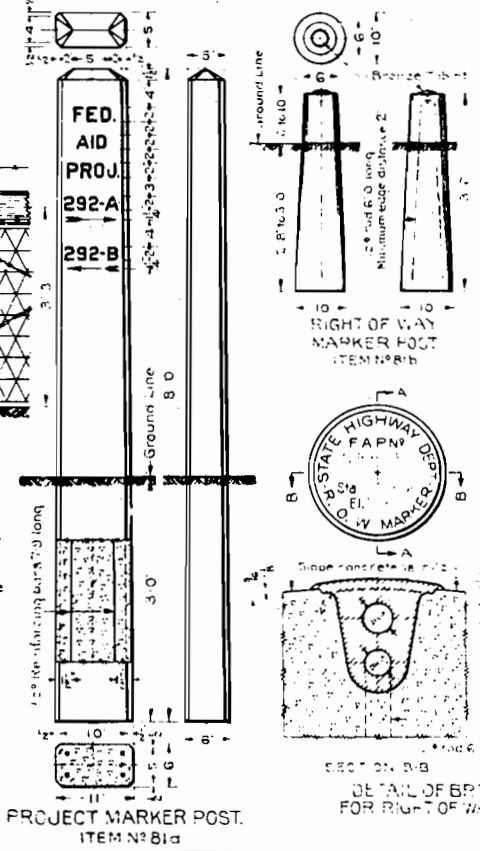
**ELEVATION OF COMBINATION WIRE FENCE WITH WOODEN POSTS.
ITEM NO. 76e.**



**ELEVATION OF DRIVEWAY GATE.
ITEM NO. 76h.**

**ELEVATION OF WALK GATE
ITEM NO. 76i.**

GENERAL NOTES FOR WIRE FENCES.
All work shall be done in accordance with the Standard Specifications of the Colorado State Highway Department, Adopted June 1, 1937.
Barbed wire shall be of standard make, not lighter than #12 1/2 gage, galvanized, and with two point barbs spaced not more than five inches 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 water-proof or lead or mineral paint.
Staples shall be at least 1 1/2 long, made of #9 gage wire base galvanized, 8 staples per post for barbed wire fence and 4 staples per post for combination wire fence.
All wooden posts shall be made from seasoned, straight, sound Native Cedar, peeled.
Cross braces, brace posts and tie wires are to be used at all places where intersecting fences are encountered.
Round corner posts with brace and supplemental posts and four end posts shall be used at each structure over 4 ft x 4 ft in size and fence turned in and ended at wings.
Cross braces to be securely nailed with 4-40d nails at each post.



NOTES FOR PROJECT MARKER POSTS
1. A project marker post shall be placed at the center of the right of way line at all points where the right of way line crosses a highway, stream, or other natural or artificial barrier.
2. The project marker post shall be made of galvanized pipe, 4 inches in diameter, and shall be painted with a white paint.
3. The project marker post shall be placed at the center of the right of way line at all points where the right of way line crosses a highway, stream, or other natural or artificial barrier.
4. The project marker post shall be placed at the center of the right of way line at all points where the right of way line crosses a highway, stream, or other natural or artificial barrier.

NOTES FOR R.O.W. MARKER POSTS
1. A right of way marker post shall be placed at the center of the right of way line at all points where the right of way line crosses a highway, stream, or other natural or artificial barrier.
2. The right of way marker post shall be made of galvanized pipe, 4 inches in diameter, and shall be painted with a white paint.
3. The right of way marker post shall be placed at the center of the right of way line at all points where the right of way line crosses a highway, stream, or other natural or artificial barrier.
4. The right of way marker post shall be placed at the center of the right of way line at all points where the right of way line crosses a highway, stream, or other natural or artificial barrier.

COLORADO STATE HIGHWAY DEPARTMENT
STANDARD WIRE FENCES
UNTREATED WOOD POSTS
AND
MARKER POSTS

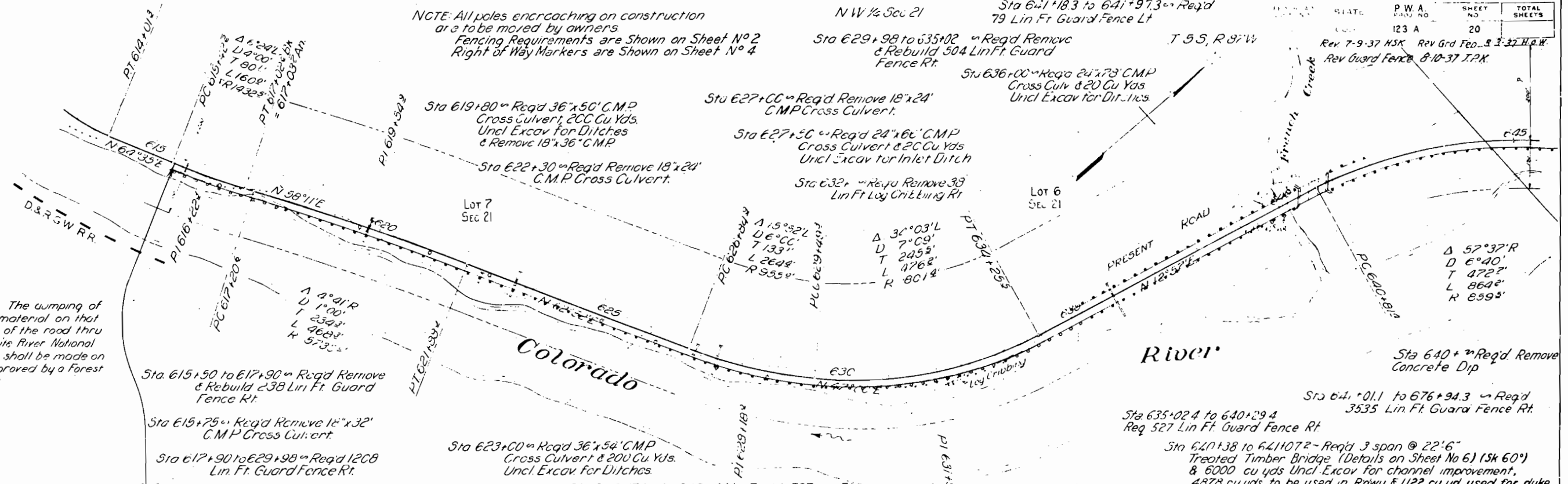
Designed by [Signature]
Made by [Signature]
Checked Design [Signature]
Check Details [Signature]

Approved by [Signature]
Bridge Engineer
Date: [Date] 1936

ORIGINAL BY	INITIAL	DATE
CHECKED BY		
WANDY BY		
CHECKED BY		

NOTE: All poles encroaching on construction are to be moved by owners.
 Fencing Requirements are Shown on Sheet No 2
 Right of Way Markers are Shown on Sheet No 4

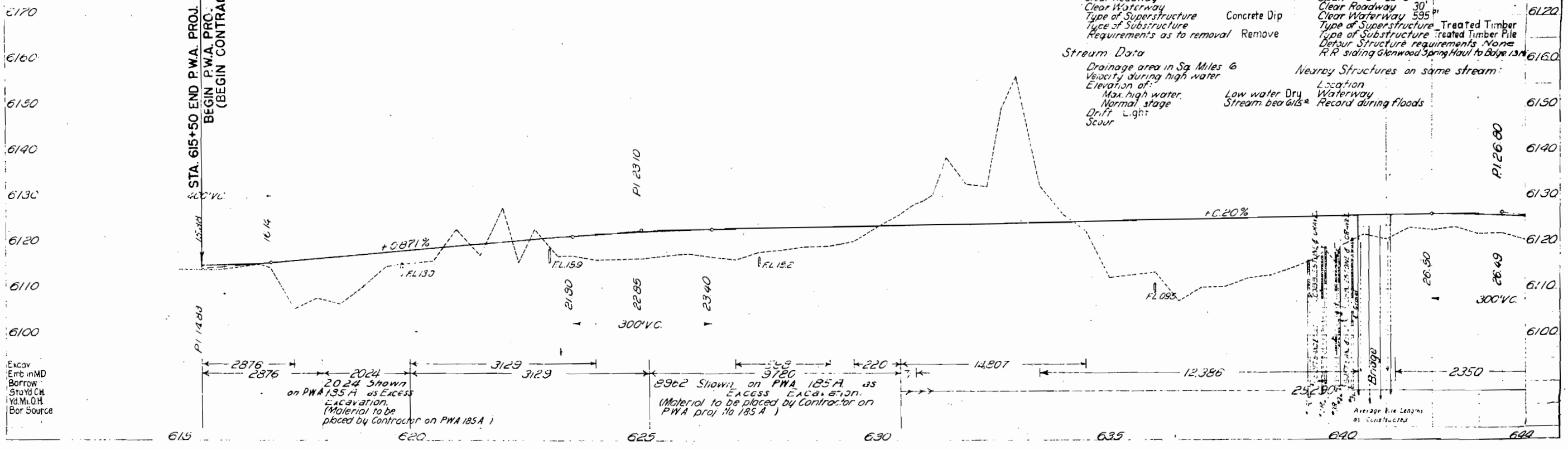
NW 1/4 Sec 21
 Sta 641+183 to 641+97.3 Req'd 79 Lin Ft Guard Fence Lt
 Sta 629+98 to 635+02 Req'd Remove & Rebuild 504 Lin Ft. Guard Fence Rt.
 Sta 636+00 Req'd 24'x78' C.M.P. Cross Culv. & 20 Cu Yds Uncl. Excav for Ditch.



NOTE: The dumping of waste material on that portion of the road thru the White River National Forest, shall be made on site approved by a Forest Officer

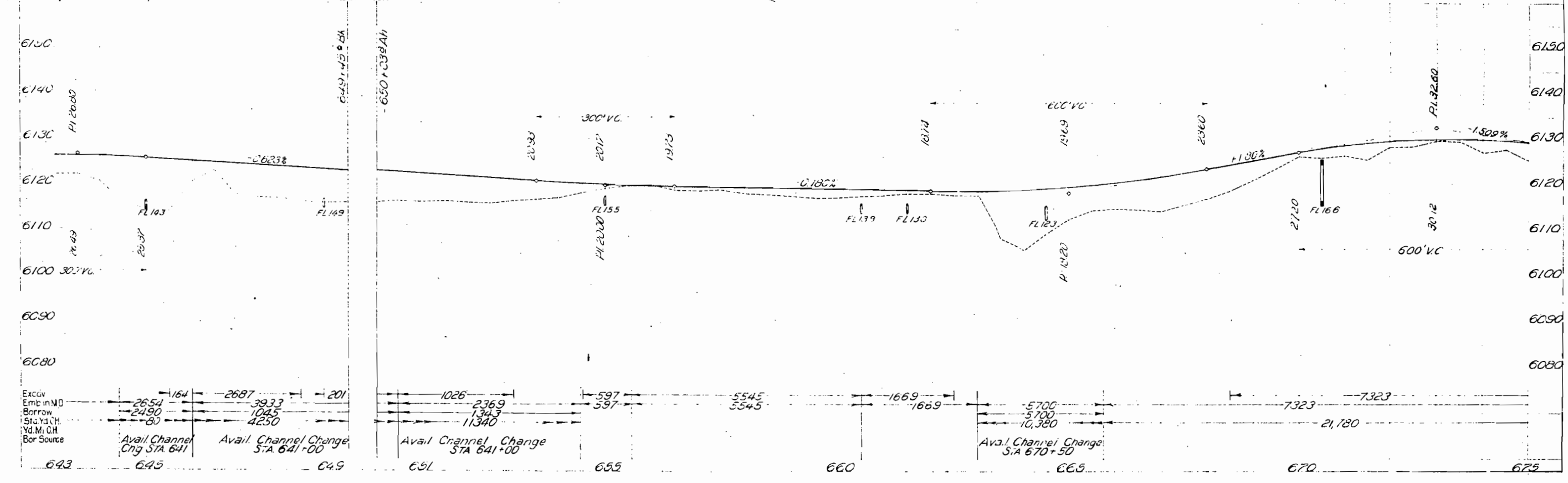
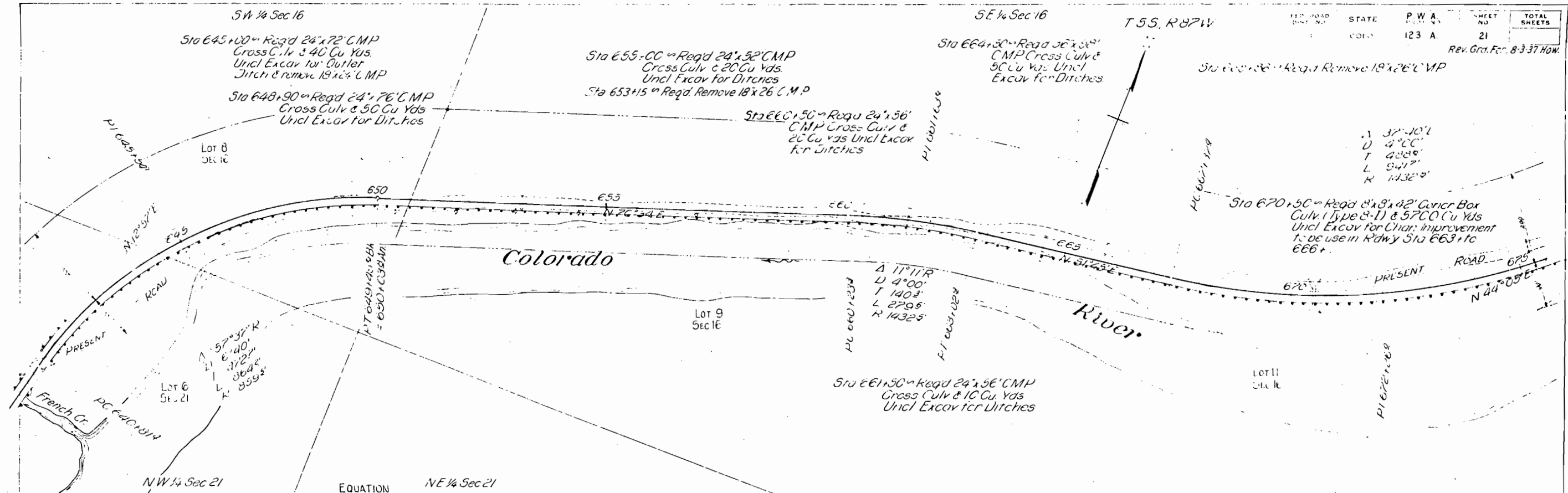
STRUCTURE NOTES FOR BRIDGE STA. 640+38 - 641+07.2 STRUCT. NO. F-8-J

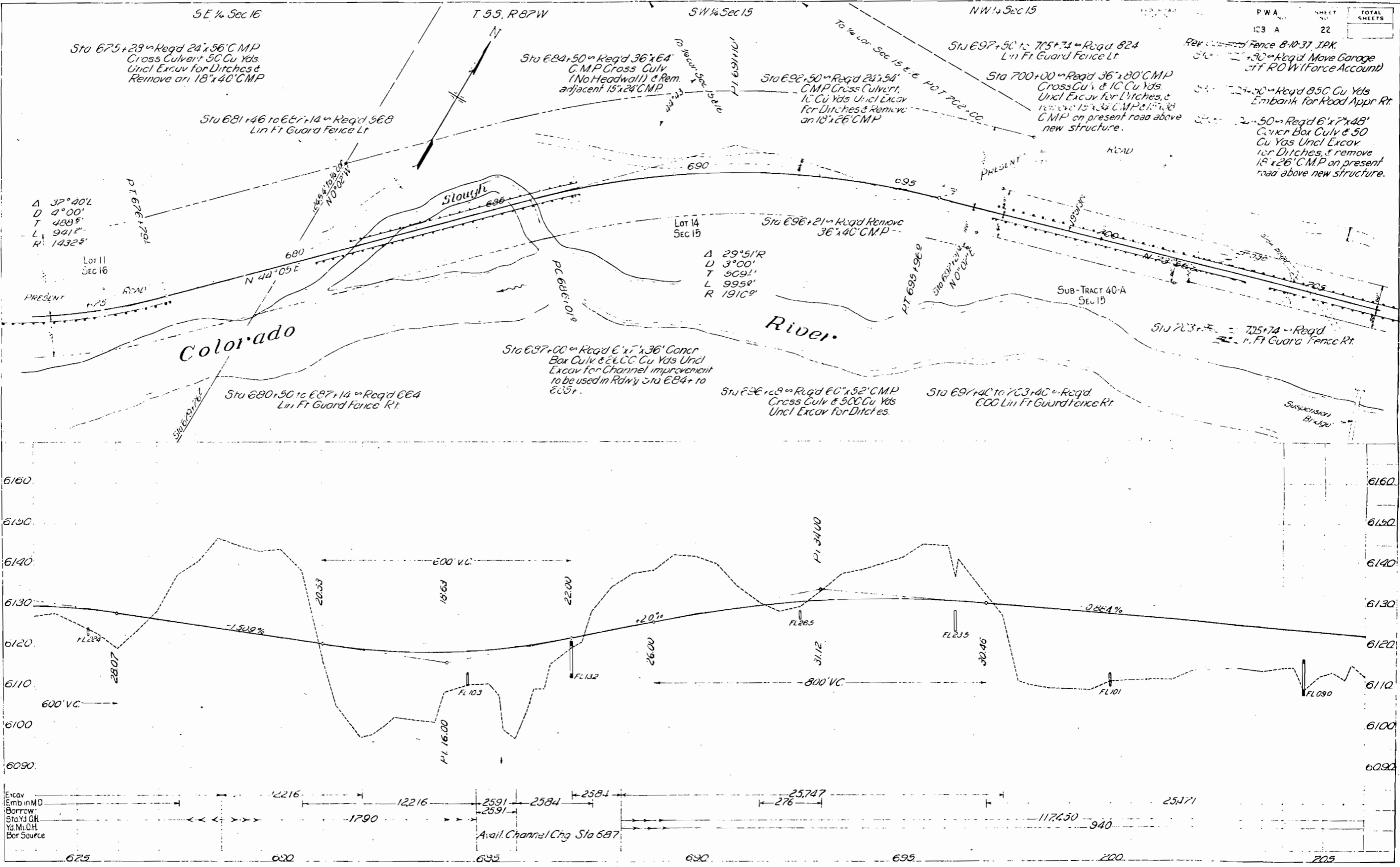
Present Structure	Proposed Structure
Span	Position ref. to present st.uct.
Clear Roadway	Span 3 @ 22'-6"
Clear Waterway	Clear Roadway 30'
Type of Superstructure	Clear Waterway 595'
Type of Substructure	Type of Superstructure Treated Timber
Requirements as to removal	Type of Substructure Treated Timber Pile
Remove	Detour Structure requirements None
	R.R. siding Glenwood Spring Haul to Bayne 131'
Stream Data	Nearby Structures on same stream:
Drainage area in Sq. Miles @	Location
Velocity during high water	Waterway
Elevation of:	Stream bed 615' Record during floods
Max. high water	
Normal stage	
Drift Light	
Scour	



Excav
 Emb in MD
 Borrow
 Strayd Ch
 Yd. M. O.H.
 Bor Source

2876
 2876
 2024
 2024 Shown on PWA 185 A as Excess Excavation. (Material to be placed by Contractor on PWA 185 A)
 3129
 3129
 2130
 2285
 2340
 300' VC.
 8962 Shown on PWA 185 A as Excess Excavation. (Material to be placed by Contractor on PWA 185 A)
 3120
 220
 14,907
 12,386
 2350
 25' Span
 300' VC.
 Average Rise Lengths as Constructed





Rev. ~~10-31~~ J.P.K.
 Sta 675+30 Req'd Move Garage off ROW (Force Account)

Sta 675+50 Req'd 850 Cu Yds Embank for Road Appr Rt.

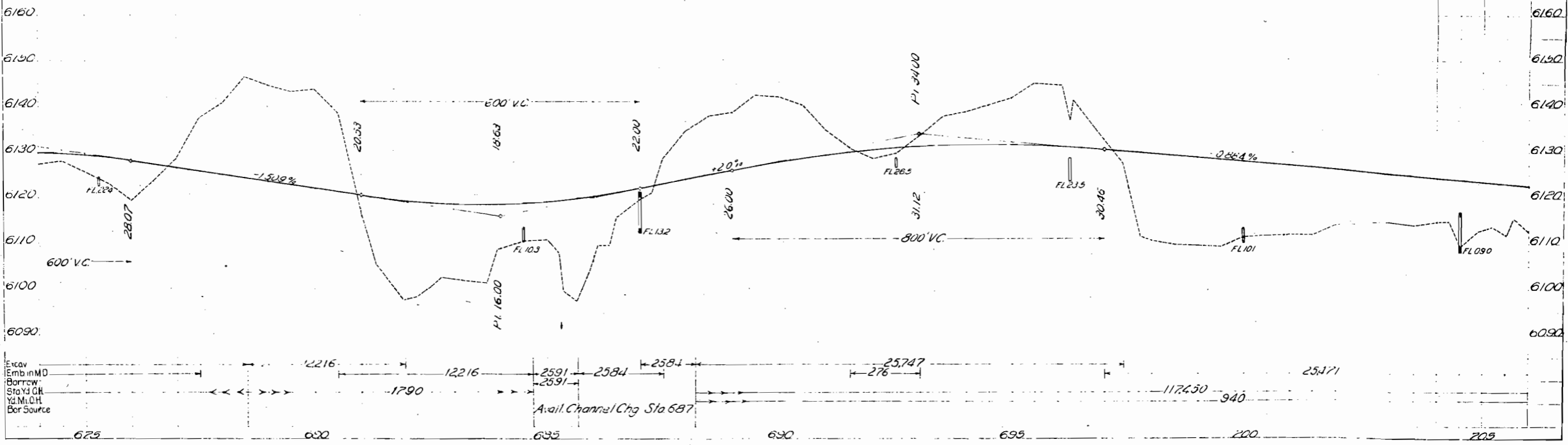
Sta 675+50 Req'd 6'x7'x48' Concr Box Culvert & 50 Cu Yds Uncl Excav for Ditches, & remove 18'x26' CMP on present road above new structure.

Sub-TRACT 40-A Sec 15

Suspension Bridge

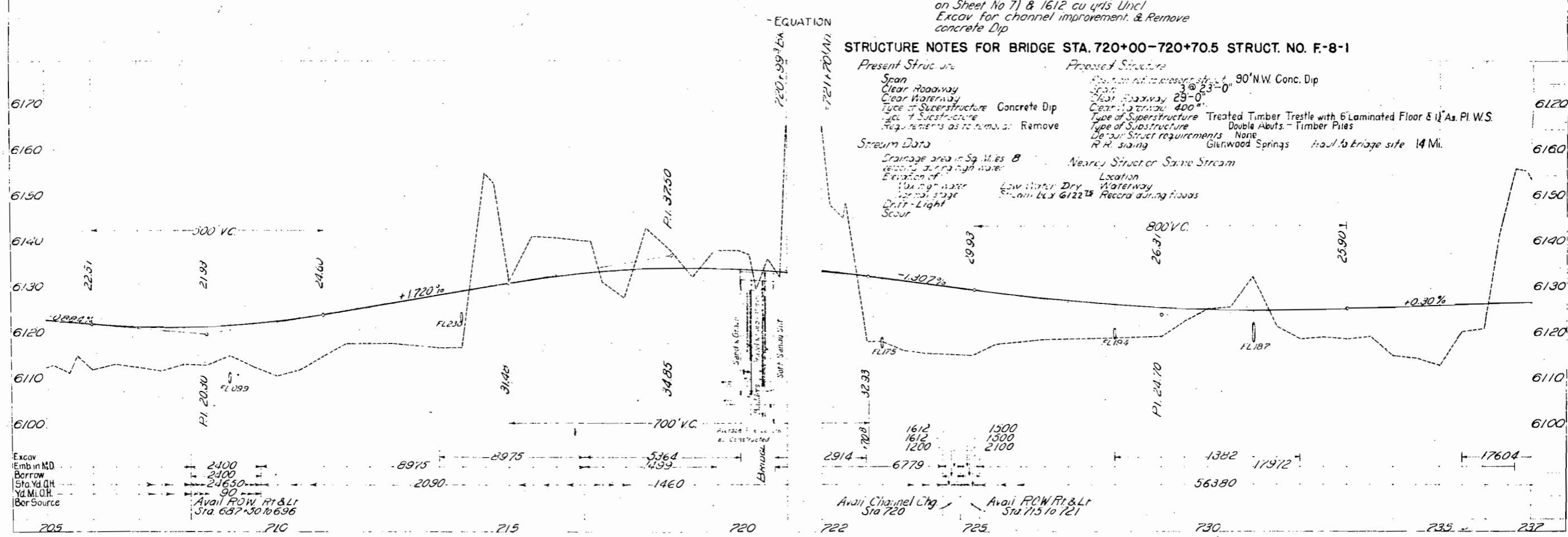
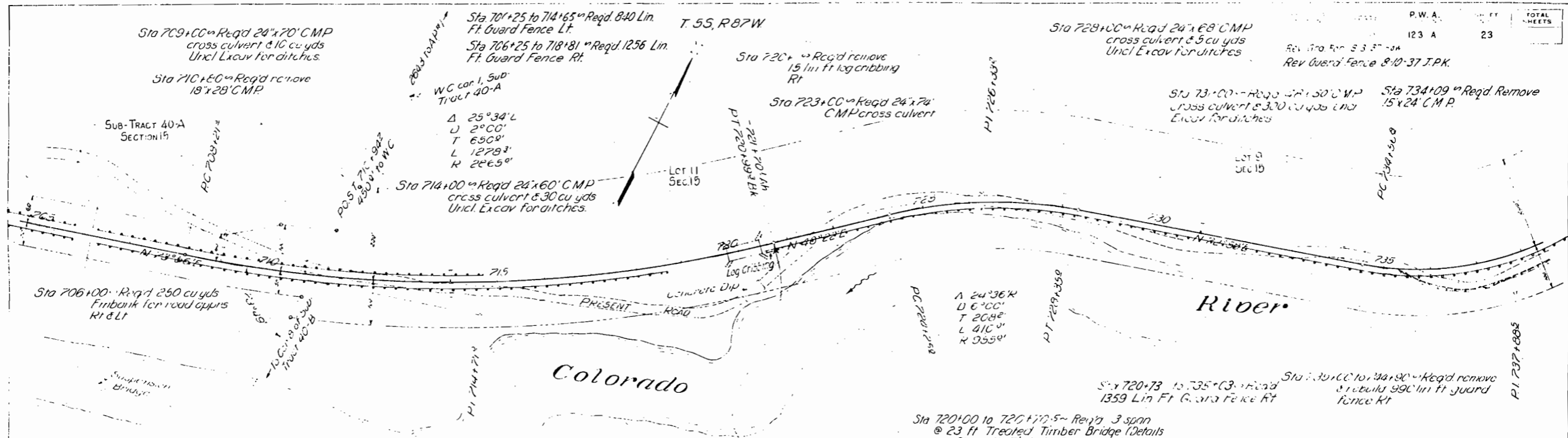
Δ 37°40'L
 D 0°00'
 T 4885'
 L 9412'
 R 14325'

Lot 14 Sec 15
 Δ 29°51'R
 D 3°00'
 T 5091'
 L 9958'
 R 19109'



Excav
 Emb in MD
 Borrow
 Sta Yd CH
 Yd. Mt. CH
 Bor Source

Avail Channel Chg Sta 687



STRUCTURE NOTES FOR BRIDGE STA. 720+00-720+70.5 STRUCT. NO. F-8-1

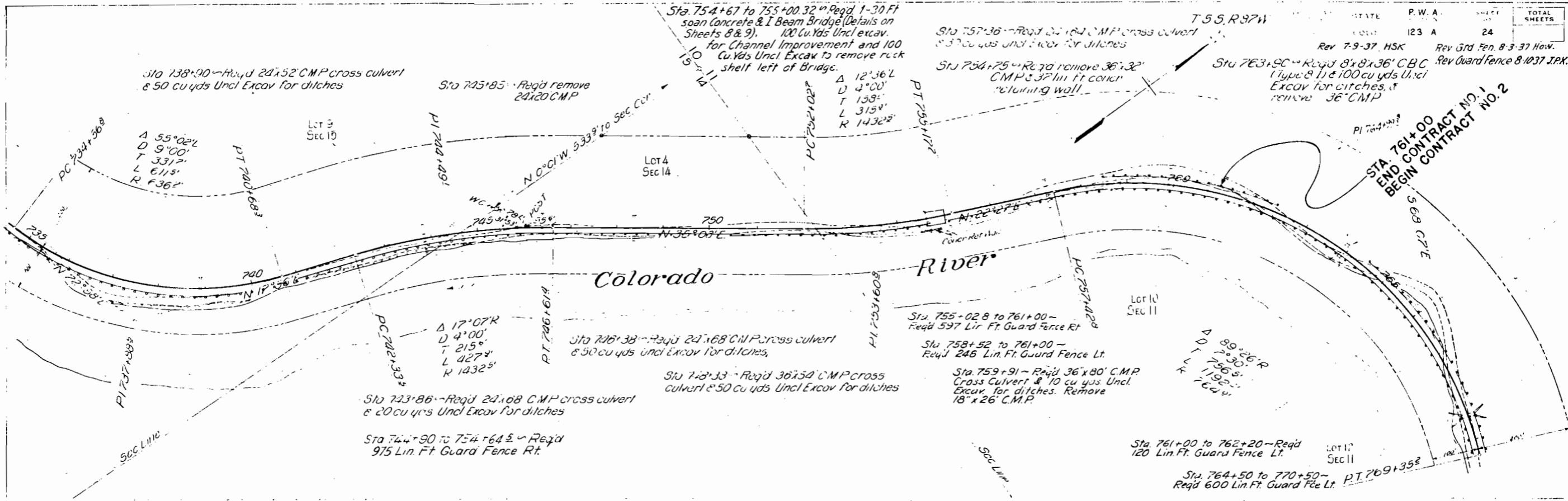
Present Structure	Proposed Structure
Span	3 @ 23'-0" 90' NW Conc. Dip
Clear Roadway	29'-0"
Clear Waterway	40'-0"
Type of Superstructure	Concrete Dip
Type of Substructure	Treated Timber Trestle with 6" Laminated Floor & 1 1/2" As. Pl. W.S.
Requirements as to removal	Remove
Design Structure requirements	None
R.R. siding	Double Abuts. - Timber Piles
	Glenwood Springs Road to bridge site 14 Mi.

Stream Data
 Drainage area in Sq. Miles 8
 Location of structure
 Low water Dry
 High water Recora during floods
 Scour
 Nearby Structure Same Stream

Excav
 Emb in M.D.
 Borrow
 Sta. Yd. Q.H.
 Yd. M.O.H.
 Bor Source

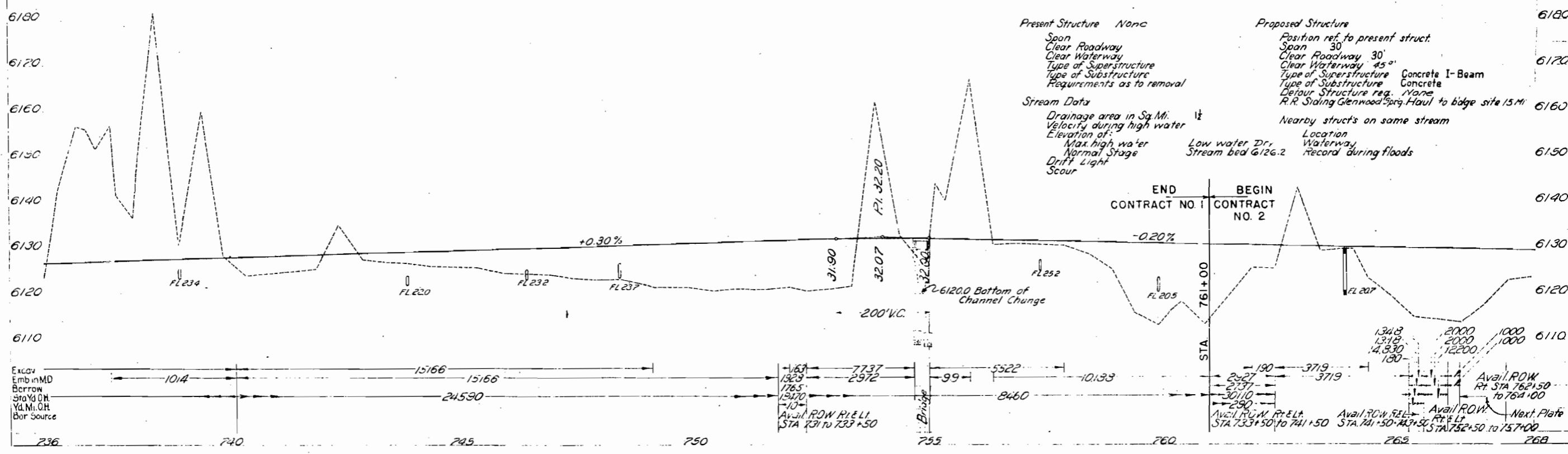
2400
 2400
 24650
 90
 Avail ROW Rt & Lt
 Sta. 637+50 to 696

Avail Channel Chg
 Sta 720
 Avail ROW Rt & Lt
 Sta 715 to 721



STRUCTURE NOTES FOR BRIDGE STA. 754+67-755+00.33 STRUCT. NO. F 8 K

Present Structure	None	Proposed Structure	
Span		Position ref. to present struct.	
Clear Roadway		Span	30'
Clear Waterway		Clear Roadway	30'
Type of Superstructure		Clear Waterway	45'
Requirements as to removal		Type of Superstructure	Concrete I-Beam
		Type of Substructure	Concrete
		Defour Structure req.	None
		R.R. Sliding Glenwood Spig. Haul to bidge site 15 Mi.	
Stream Data		Nearby struct's on same stream	
Drainage area in Sq. Mi.	1 1/2	Location	
Velocity during high water		Waterway	
Elevation of:		Stream bed	G126.2
Max. high water		Record during floods	
Normal Stage			
Drift			
Light			
Scour			



Rev Guard Fence 8-10-37 I.P.K.

Sta 796+90 Req'd 24x62' CMP cross culvert & 20 cu yds. Uncl Excav for ditches.

Sta 787+88 Req'd 60x58' CMP cross culvert & 30 cu yds. Uncl Excav for ditches

Sta 780+82 Req'd remove 18'x2' CMP

Sta 783+87 Req'd 24x76' CMP cross culvert & 10 cu yds Uncl Excav for ditches & remove 18'x36' CMP

Sta 776+89 Req'd 36x62' CMP cross culvert & 10 cu yds Uncl Excav for ditches

Sta 771+47 Req'd 36x46' CMP cross culvert & 25 cu yds. Uncl Excav for ditches, & Remove adjacent 18'x40' CMP.

Lot 9 Sec II

Lot 14 Sec II

Lot 12 Sec II

PC 772+18.32
 Δ 43°03' L
 D 12°00' T
 T 1893' L
 L 3588' R
 R 4773'

A 11°24' R
 D 3°00' L
 T 196' L
 L 391' R
 R 1910'

River

Colorado

Sta 768+48 Req'd 24x36' CBC (Type B-1) & 50 cu yds Uncl Excav for ditches.

Sta 761+00 to 305+64 Req'd 4394 Lin Ft Guard Fence Rt

Sta 780+12 Req'd 36x64' CMP cross culvert & 10 cu yds Uncl Excav for ditches

Sta 794+40 Req'd 20x56' CMP cross culvert & 30 cu yds Uncl Excav for ditches

GARFIELD CO
EAGLE CO

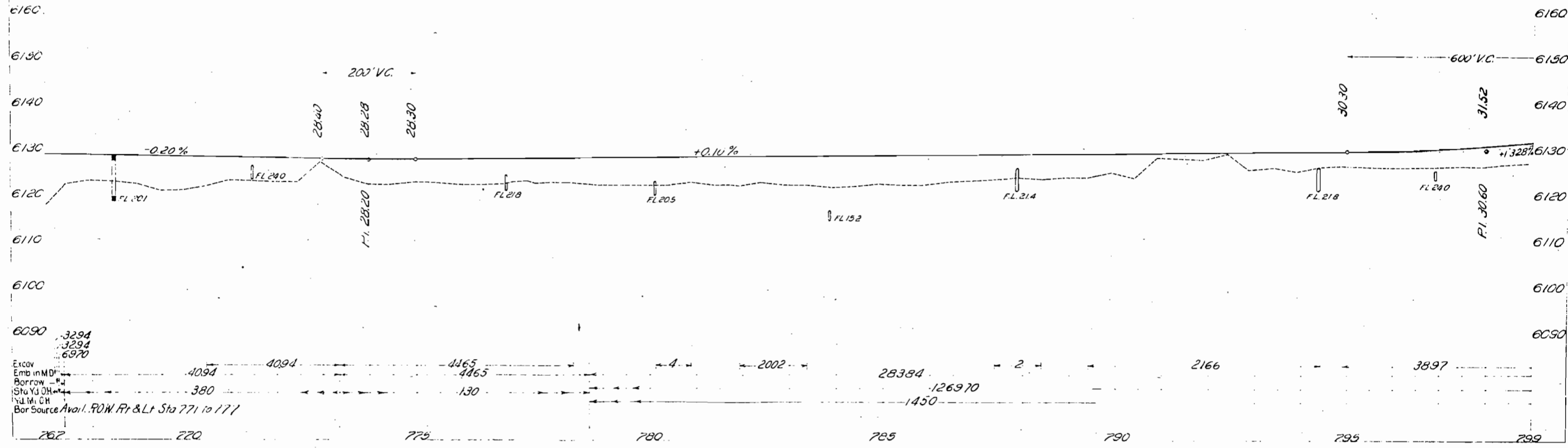
M.C. 2100
Line North

M 1788+27.1

P.T. 790+22.8

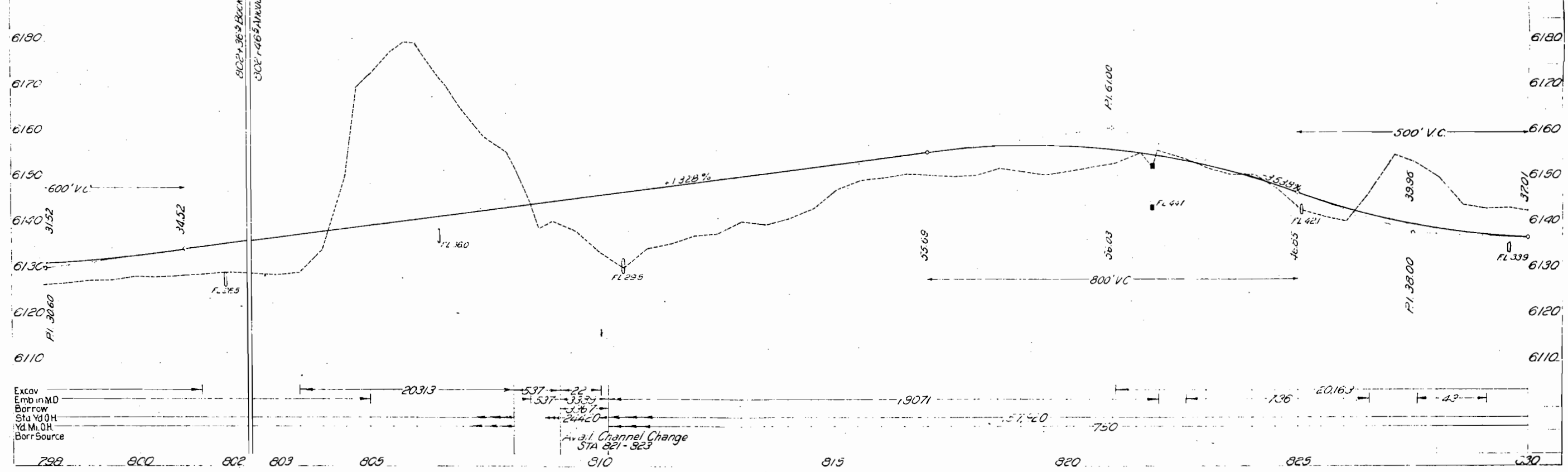
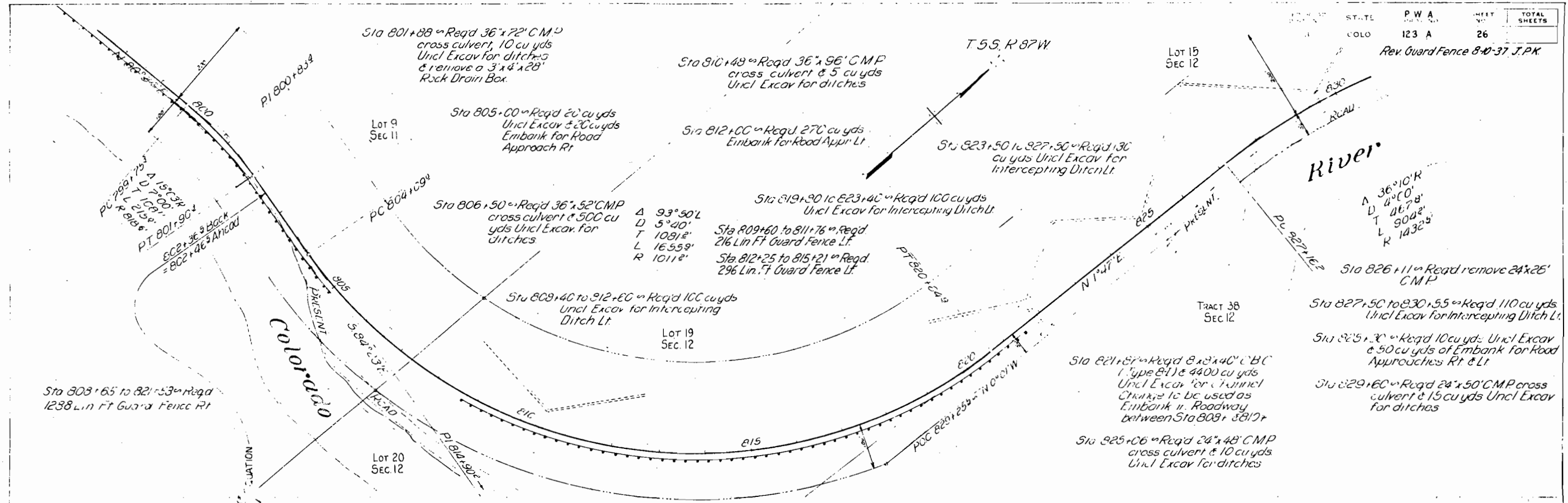
M 1761+71.0

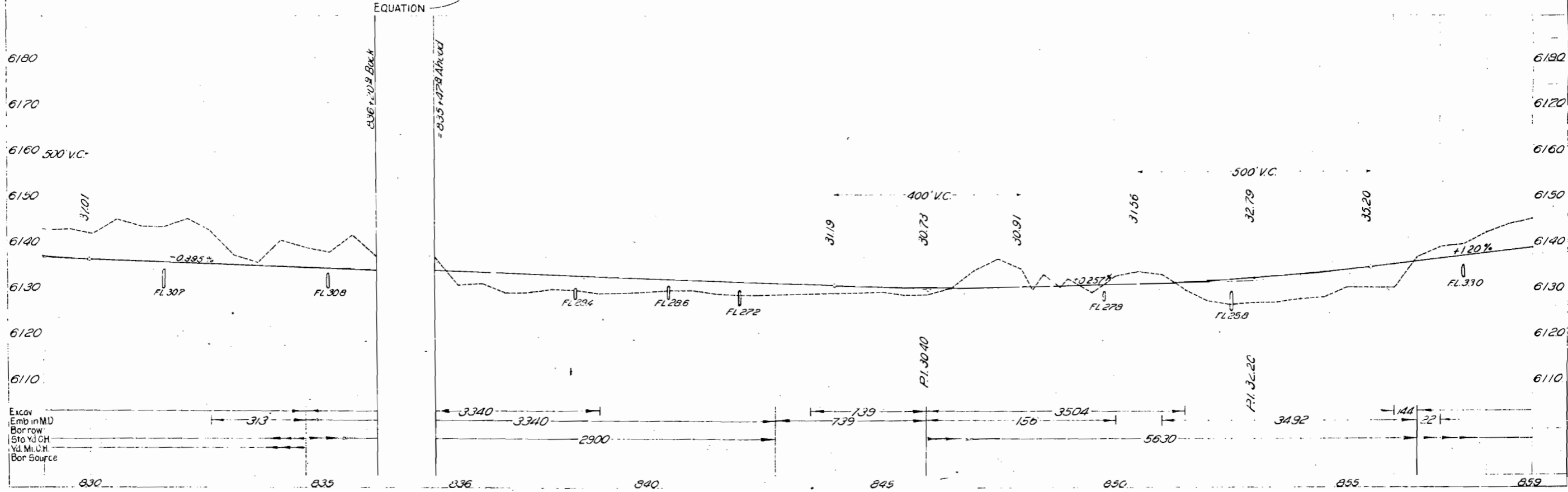
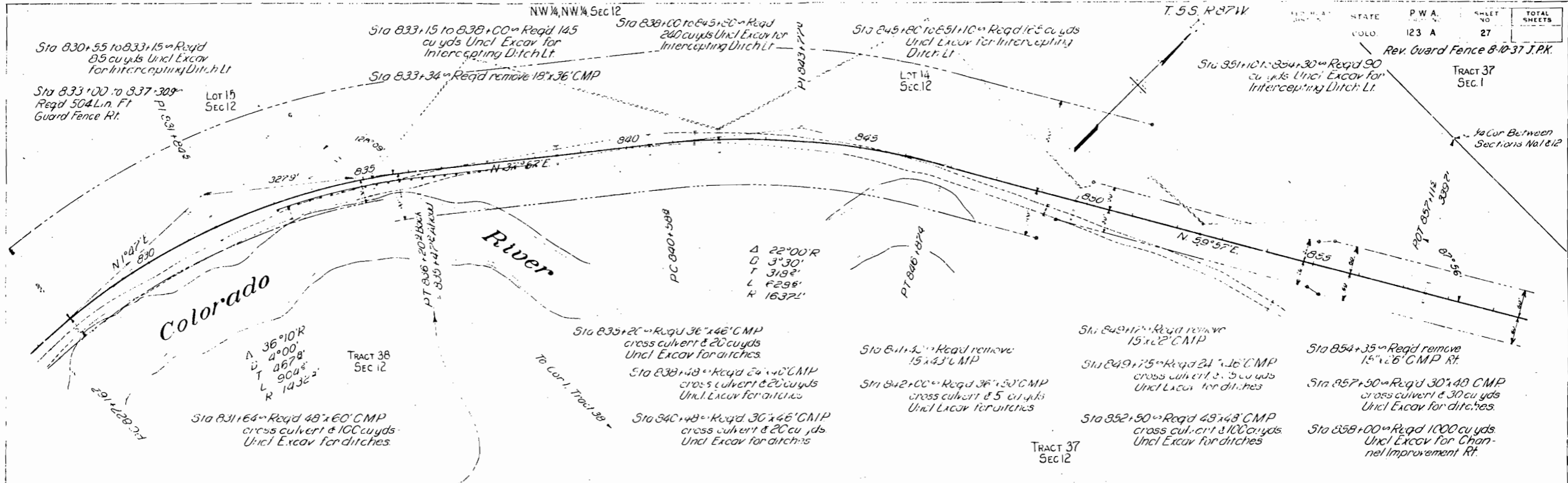
T.55 R.87W.



Excav
 Emb in MD
 Borrow
 Sta Yd OH
 Yd M CH
 Bor Source Avail. ROW Prt & Lt Sta 771 to 777

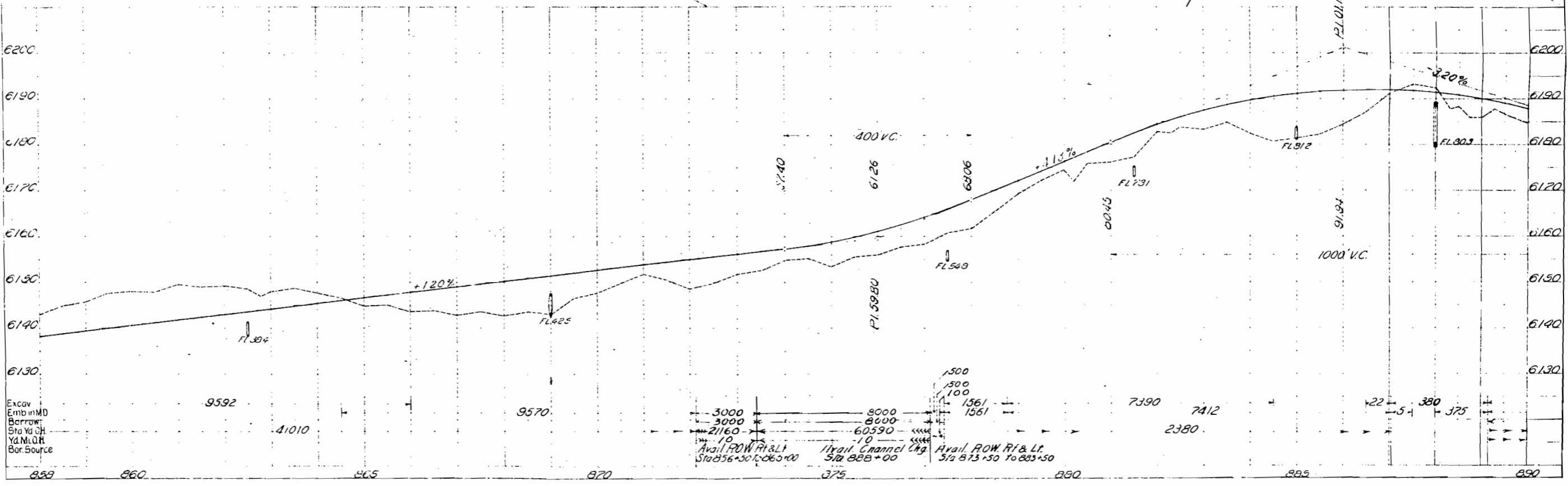
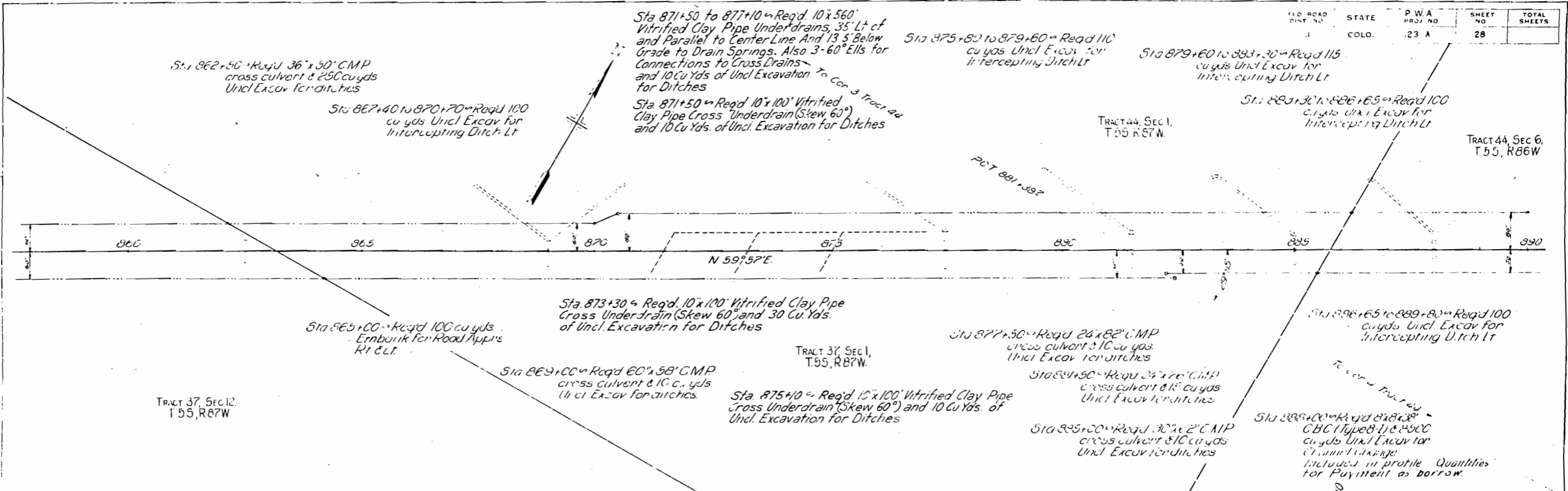
3294	4094	4094	4465	4	2002	28384	2	2166	3897
3294	380	130	4465	4	2002	126970	2	2166	3897
6970	380	130	4465	4	2002	1450	2	2166	3897





Excav
 Emb in M/D
 Borrow
 Sta Yd CH
 Yd. M. C.H.
 Bor Source

FED. ROAD DIST. NO.	STATE	P. W. A. PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	23 A	28	



Rev. Guard Fence 8-10-37 J.P.K.

Sta 916+00 - Req'd remove 24'x24' CMP

Sta 916+57 - Req'd 30'x106' CMP cross culvert & 15 cu yds uncl excav for ditches.

Lot 23, Sec 6, T55, R86W

Lot 25, Sec 6, T55, R86W

Lot 23, Sec 6, T55, R86W

Lot 23, Sec 6, T55, R86W

Lot 23, Sec 6, T55, R86W

Lot 23, Sec 6, T55, R86W

Lot 23, Sec 6, T55, R86W

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Lot 23, Sec 6, T55, R86W

Lot 23, Sec 6, T55, R86W

Lot 23, Sec 6, T55, R86W

Sta 875+80 to 901+40 - Req'd 150 cu yds uncl excav for intercepting ditch Lt

Sta 900+50 - Req'd 60'x58' C.M.P cross culvert & 10,300 cu yds uncl excav for channel change. (Included profile quantities for payment as borrow)

Sta 901+40 to 908+20 - Req'd 180 cu yds uncl excav for intercepting ditch Lt

Sta 905+22 - Req'd remove 24'x24' CMP

Sta 905+50 - Req'd 36'x64' C.M.P cross culvert & 20 cu yds uncl excav for ditches

Sta 910+50 - Req'd 36'x74' C.M.P cross culvert & 5 cu yds uncl excav for ditches

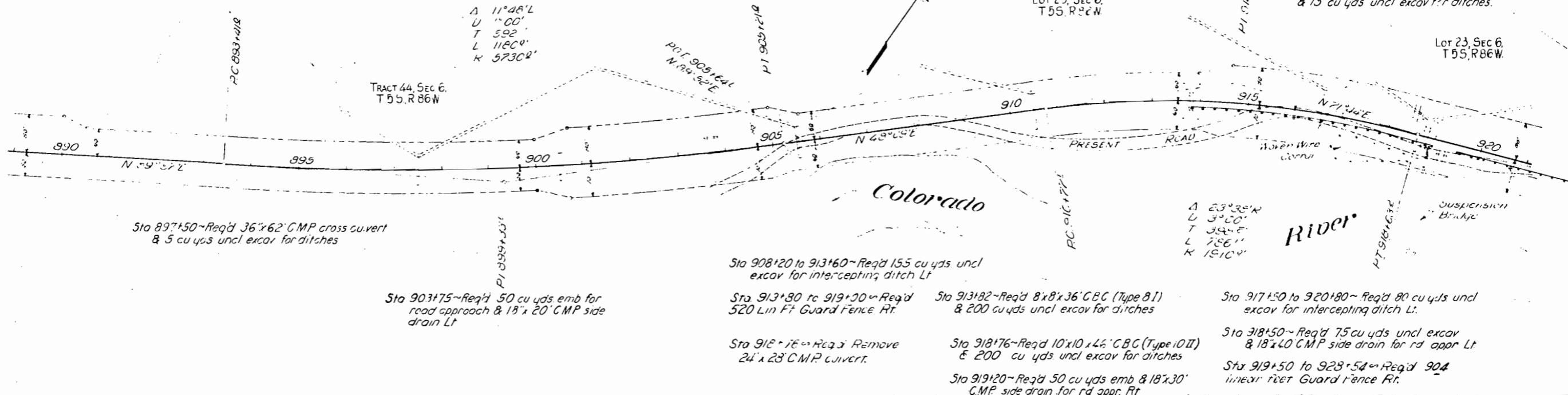
Sta 913+00 - Req'd 20 cu yds emb for road appr Rt

Sta 913+60 to 917+50 - Req'd 110 cu yds uncl excav for intercepting ditch Lt

Δ 11°48' L
U 1'00'
T 592'
L 1180'
K 5730'

LOT 25, SEC 6, T55, R86W

Lot 23, Sec 6, T55, R86W



Sta 897+50 - Req'd 36'x62' C.M.P cross culvert & 5 cu yds uncl excav for ditches

Sta 903+75 - Req'd 50 cu yds emb for road approach & 18'x20' C.M.P side drain Lt

Sta 908+20 to 913+60 - Req'd 155 cu yds uncl excav for intercepting ditch Lt

Sta 913+80 to 919+30 - Req'd 520 Lin Ft Guard Fence Rt

Sta 918+16 - Req'd Remove 24'x28' C.M.P culvert.

Sta 913+82 - Req'd 8'x8'x36' C.B.C (Type B1) & 200 cu yds uncl excav for ditches

Sta 918+76 - Req'd 10'x10'x46' C.B.C (Type DII) & 200 cu yds uncl excav for ditches

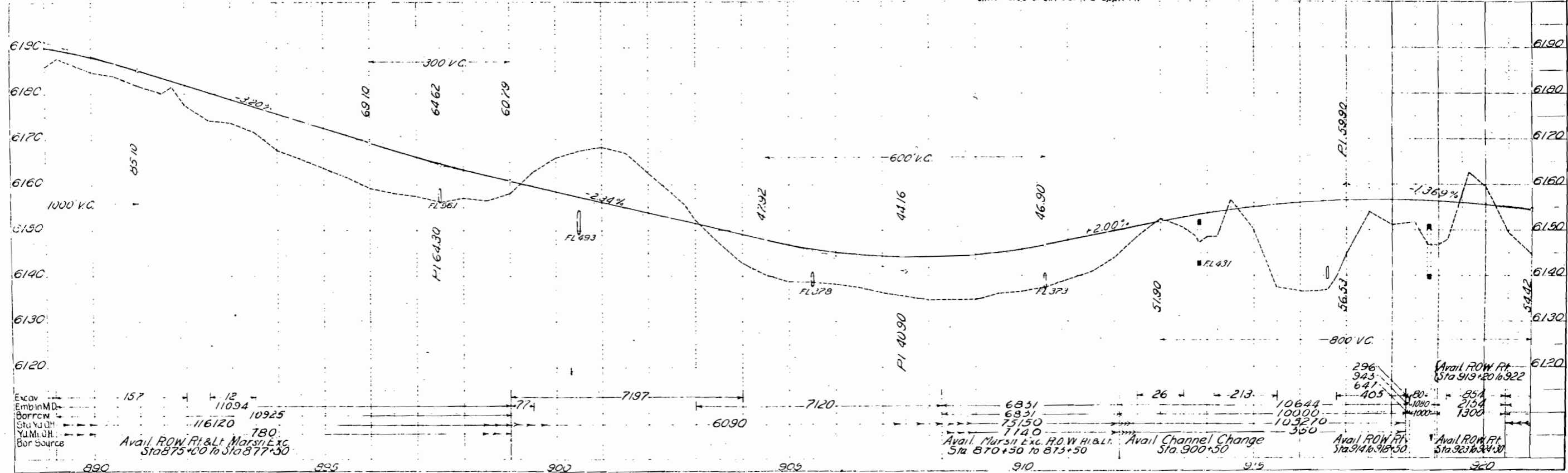
Sta 919+20 - Req'd 50 cu yds emb & 18'x30' C.M.P side drain for rd appr Rt

Sta 917+50 to 920+80 - Req'd 80 cu yds uncl excav for intercepting ditch Lt

Sta 918+50 - Req'd 75 cu yds uncl excav & 18'x40' C.M.P side drain for rd appr Lt

Sta 919+50 to 928+54 - Req'd 904 linear feet Guard Fence Rt

Δ 23°35' R
U 3'00'
T 394'
L 786'
K 1810'



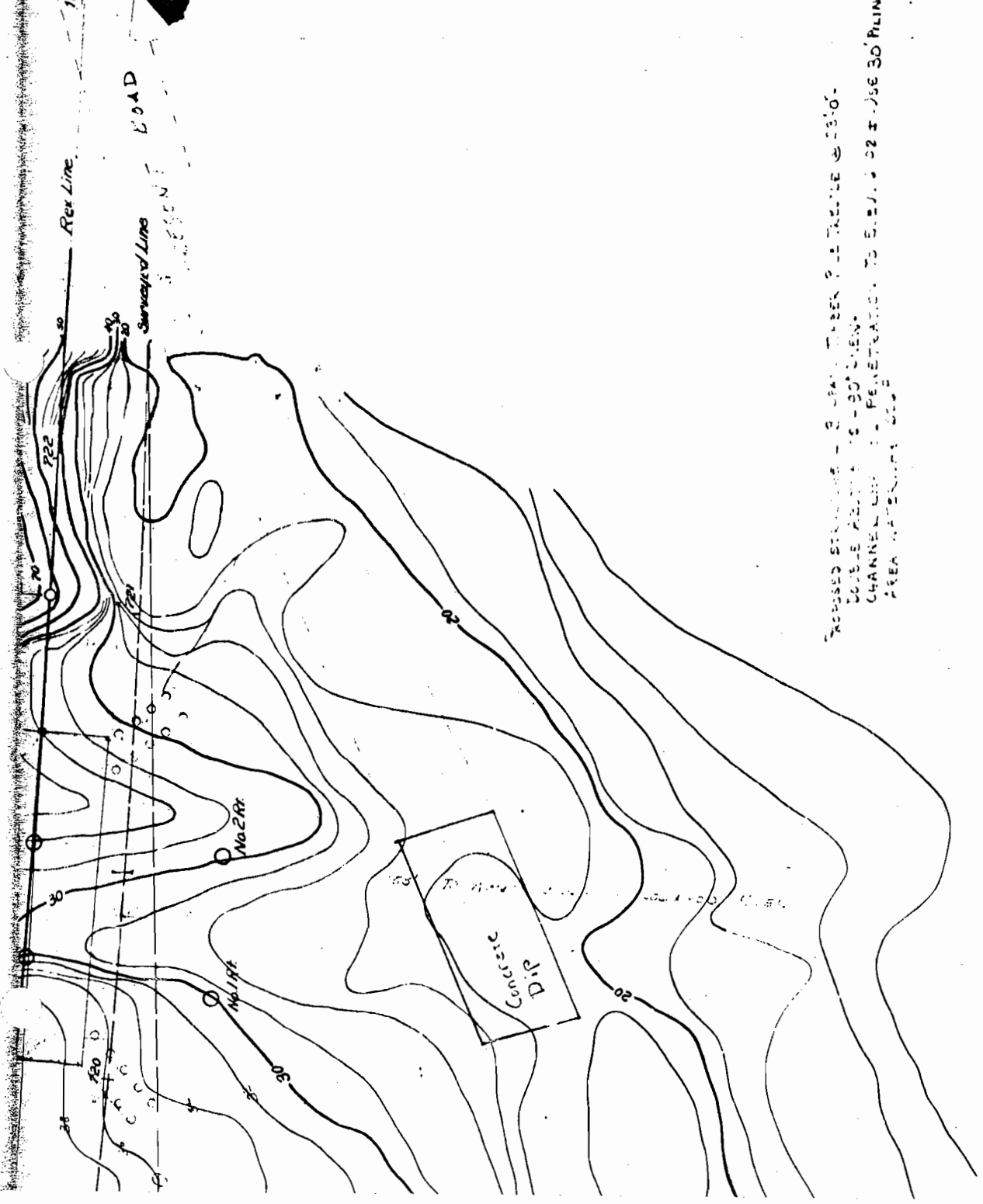
Avail. ROW Rt. & Lt. Mars Hill Exc. Sta 875+00 to Sta 877+30

Avail. Mars Hill Exc. ROW Rt. & Lt. Sta 870+50 to 873+50

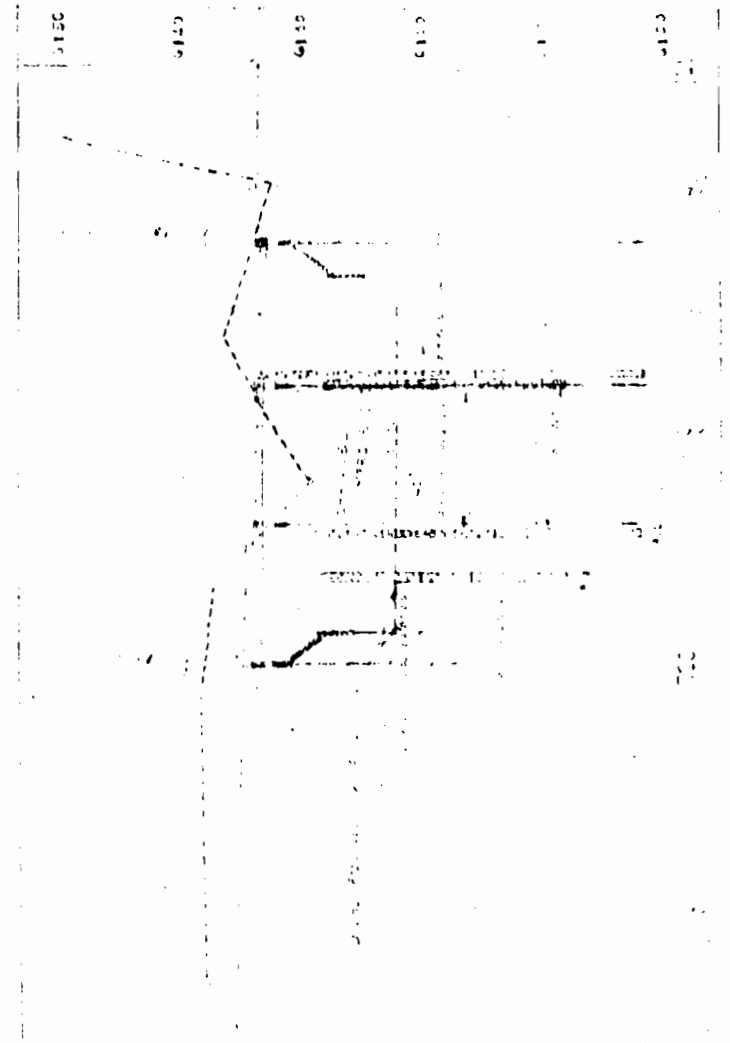
Avail Channel Change Sta 900+50

Avail ROW Rt. Sta 919+20 to 922

Avail ROW Rt. Sta 923+00 to 924+00



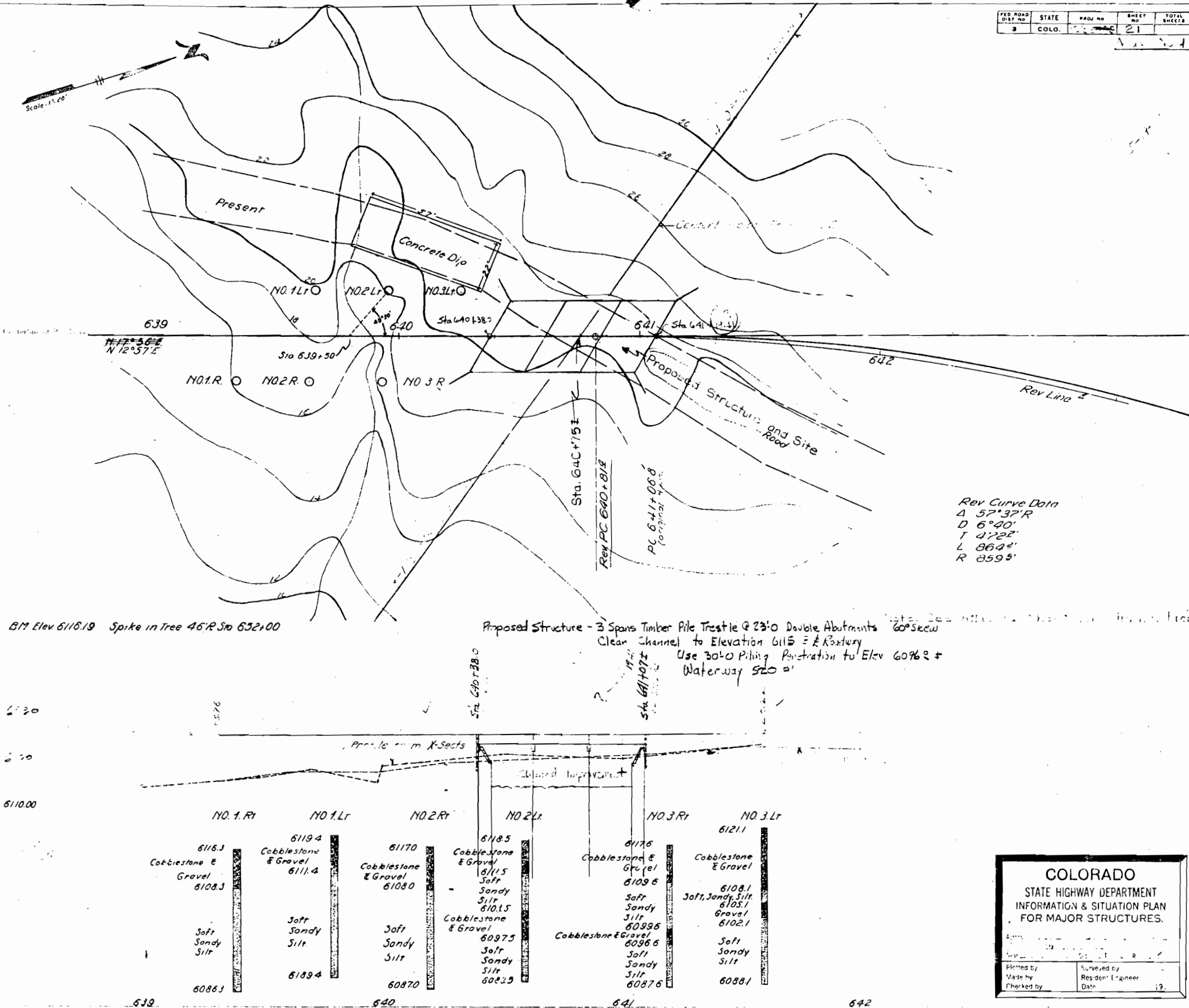
CROSSED STREAMS - 2 FEET DEEP 2 IN. DIAMETER @ 25' 0"
 COULD ABOUT 15-30 FEET
 CHANNELS WITH 1-2 FEET PENETRATION TO 5' 0" & 22 IN. USE 30' PLUM
 AREA W/ PENETRATION 5' 0"



DATA REQUIRED TO ACCOMPANY SITUATION PLAN.

- I. GENERAL REMARKS.
Fill out all blanks with care, giving information on all points listed, and supplementary remarks on features not listed. High water and foundation conditions are especially important and should be thoroughly investigated.
- II. PROFILE.
Plot profile of centerline of roadway. Use natural scale, preferably 1" = 10', or multiple of 10'. At proper locations show section of test pits, noting material encountered, if available at time of survey. Show present, and if possible, proposed finished grade noting elevations and gradients.
- III. MAP.
Show present and proposed alignment of bridge and all approaches, as far as affected. Extend cross sections at least 100-ft. each side of C. L., giving location and elevation of points so that at least 2-foot contours may be accurately plotted. Show edge of water, islands, shoals, other obstructions, and direction of current at high water and at low water. Plot location of test pits, position and pointing of camera for each photo, all buildings, fences, and other features affected. Establish bench marks and give location of same. Reference C. L. and show North point. Give a C. L. profile of stream-bed for 500' up-stream and 500' feet down-stream from center line of survey. Plot proposed structure in soft pencil only. Do not ink.
- IV. REPORT OF EXAMINATION OF BRIDGE-SITE.
Div. _____ County _____ Route _____ Sec. _____ Sta. _____
Date of survey _____ To be built by _____
1. Bridge Site
Location _____
Sec. _____ Twp. _____ Range _____ Local name _____
Over _____ River _____ Creek _____
Distance from nearest shipping point _____
2. Source of materials
Sand _____ Length of haul to site _____ miles _____
Gravel _____
Stone _____
Falsework Timber _____
Piling _____
3. Cost Data.
Cost of following materials at site
Portland Cement _____ Per Bbl. _____
Sand, coarse and clean _____ " Cu. Yd. _____
Gravel _____
Stone _____
Falsework Timber _____ " Ft. B. M. _____
Piling _____ " Lin. Ft. _____
Cost per ton-mile for hauling _____
4. Waterway.
Drainage area in Sq. Miles approximate _____
Character of watershed _____ Date _____
Elevation of Highest water _____
Source of information on water elevation _____
Elevation of ordinary high water _____
Elevation of low water _____
Elevation of permanent ground-water _____
Is stream ever dry? _____ During what months? _____
Will all flood water pass through recommended structure? _____
Can channel be cleaned to afford more waterway? _____
Is stream-bed cutting or silting up? _____
Is stream stable in its banks? _____ Depth of scour? _____
Does stream carry light, medium, or heavy drift? _____
What clearance above high water should be allowed? _____
Is channel change necessary? _____
If channel change is necessary, illustrate location on sketch map.
5. Foundation Data.
Character of material _____
Distance from stream-bed to solid foundation _____
Recommended depth of footings _____
Should piles be used? _____ What length? _____ Pile Shoes? _____
6. Old Bridge.
If there is no bridge at the present location include here data on nearest bridge over same stream. If possible show location of such bridge or bridges on the map. Photographs if available.
Type _____ Roadway Width _____ Number and length of spans _____
Area of waterway provided under old structure _____ Sq. Ft., Elev. of Underclearance _____
Has this area proved sufficient at flood times? _____ Skew Angle _____
Is it too large? _____ Disposition of Existing Structure _____
7. Give foundation data on bridges in vicinity. When possible, get pile driving data, logs of borings, etc., for adjoining structures, and where considered advantageous procure plans.
Sketch profile of Rail Road Crossing if within 1000 ft. of Highway. Show X section of entire waterway.
Elevation of base of Rail _____ Elevation of Rail Road Underclearance _____
Remarks _____
8. Recommendations for New Structure.
Type _____ Width curb to curb _____ Number and length of spans _____
What is the least clear span permissible? _____
Are sidewalks desired? _____ Lighting conduit? _____ Light standards? _____
Angle of Skew recommended _____
Will approaches be desired, or will same be filled? _____
Approximate cost per Cu. Yd. of approach-filling at bridge site? _____
Is it necessary to maintain traffic alongside old structure? _____
If so, how shall it be done? _____
R. R. Siding _____ Haul to Bridge Site _____ Mi. _____
Remarks _____ Submitted by _____ Engineer _____

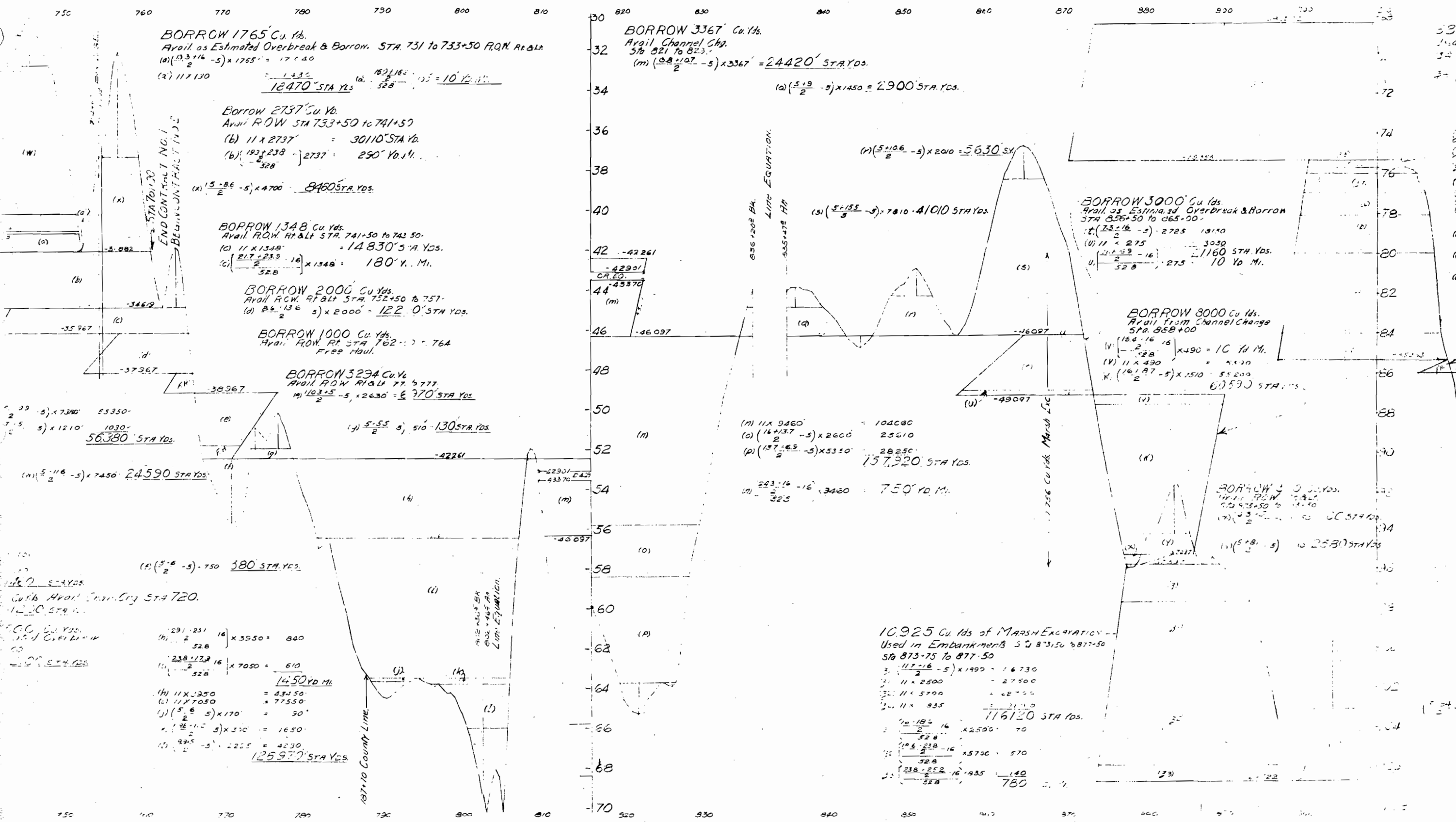
NOTE. When bridge is recommended to be left in place, complete structural details shall be procured from the bridge itself or from existing plans of the structure. When possible these plans shall be forwarded with the plans of the project.



COLORADO
 STATE HIGHWAY DEPARTMENT
 INFORMATION & SITUATION PLAN
 FOR MAJOR STRUCTURES.

Filed by _____
 Made by _____
 Checked by _____

Surveyed by _____
 Resident Engineer _____
 Date _____



BORROW 1765 Cu. Yds.
 Avail. as Estimated Overbreak & Borrow. STA. 731 to 733+50 R.O.M. R. & L.
 (a) $(\frac{13.3+16}{2} - 5) \times 1765 = 17,140$
 (2) $11 \times 130 = 1,430$
18,570 STA. YDS.

BORROW 2737 Cu. Yds.
 Avail. R.O.W. STA. 733+50 to 741+50
 (b) $11 \times 2737 = 30,110$ STA. YDS.
 (b) $(\frac{193+238}{2} - 5) \times 2737 = 290$ YD. MI.

(x) $(\frac{5+8.6}{2} - 5) \times 4700 = 8,450$ STA. YDS.

BORROW 1348 Cu. Yds.
 Avail. R.O.W. R. & L. STA. 741+50 to 743+50.
 (c) $11 \times 1348 = 14,830$ STA. YDS.
 (c) $(\frac{21.7+23.5}{2} - 16) \times 1348 = 180$ Y. MI.

BORROW 2000 Cu. Yds.
 Avail. R.O.W. R. & L. STA. 752+50 to 757.
 (d) $(\frac{8.6+13.6}{2} - 5) \times 2000 = 122.0$ STA. YDS.

BORROW 1000 Cu. Yds.
 Avail. R.O.W. R. & L. STA. 762+50 to 764
 Free Haul.

BORROW 3294 Cu. Yds.
 Avail. R.O.W. R. & L. STA. 777 to 777.
 (e) $(\frac{103+5}{2} - 5) \times 2630 = 6,770$ STA. YDS.
 (e) $(\frac{5+5.5}{2} - 5) \times 510 = 130$ STA. YDS.

(f) $(\frac{5+11.6}{2} - 5) \times 7450 = 24,590$ STA. YDS.
 (f) $(\frac{5+11.6}{2} - 5) \times 7450 = 24,590$ STA. YDS.
 (f) $(\frac{5+11.6}{2} - 5) \times 7450 = 24,590$ STA. YDS.

(g) $(\frac{5+6}{2} - 5) \times 750 = 380$ STA. YDS.

Cutb Avail. from Cr. Sta. 720.
 12.0 STA. YDS.

700 Cu. Yds.
 (h) $(\frac{231+251}{2} - 16) \times 3550 = 840$
 (h) $(\frac{238+273}{2} - 16) \times 7050 = 610$
1450 YD. MI.
 (i) $11 \times 3350 = 36,850$
 (i) $11 \times 7050 = 77,550$
 (j) $(\frac{5+6}{2} - 5) \times 170 = 30$
 (j) $(\frac{16+15}{2} - 5) \times 330 = 1650$
 (k) $(\frac{27+5}{2} - 5) \times 225 = 4230$
126,977 STA. YDS.

BORROW 3367 Cu. Yds.
 Avail. Channel Chg. Sta. 821 to 823.
 (m) $(\frac{10.8+10.7}{2} - 5) \times 3367 = 2,4420$ STA. YDS.

(n) $(\frac{5+9}{2} - 5) \times 1450 = 2,900$ STA. YDS.

(o) $(\frac{5+10.6}{2} - 5) \times 2010 = 5,630$ STA. YDS.

(s) $(\frac{5+15.5}{2} - 5) \times 7810 = 4,1010$ STA. YDS.

BORROW 3000 Cu. Yds.
 Avail. as Estimated Overbreak & Borrow STA. 856+50 to 865+50.
 (t) $(\frac{23+16}{2} - 5) \times 2725 = 19,130$
 (u) $11 \times 275 = 3,030$
 (u) $(\frac{21.2+23}{2} - 16) \times 275 = 1,160$ STA. YDS.
 (u) $(\frac{21.2+23}{2} - 16) \times 275 = 1,160$ STA. YDS.

BORROW 8000 Cu. Yds.
 Avail. from Channel Change Sta. 858+00
 (v) $(\frac{18.4+16}{2} - 16) \times 490 = 10$ YD. MI.
 (v) $11 \times 490 = 5,390$
 (v) $(\frac{16+17}{2} - 5) \times 7510 = 55,200$
60,590 STA. YDS.

(m) $11 \times 9460 = 104,060$
 (o) $(\frac{16+13.7}{2} - 5) \times 2600 = 25,610$
 (p) $(\frac{15.7+6.2}{2} - 5) \times 5330 = 28,250$
157,920 STA. YDS.

(n) $(\frac{24.3+16}{2} - 16) \times 3480 = 750$ YD. MI.

10,925 Cu. Yds of MARSH EXCAVATION
 Used in Embankments Sta. 873+50 to 877+50
 (z) $(\frac{11.7+16}{2} - 5) \times 1990 = 1,6730$
 (z) $11 \times 2500 = 27,500$
 (z) $11 \times 5700 = 62,700$
 (z) $11 \times 935 = 10,285$
116,120 STA. YDS.
 (z) $(\frac{10+18.5}{2} - 16) \times 2500 = 70$
 (z) $(\frac{10.6+23.8}{2} - 16) \times 5700 = 570$
 (z) $(\frac{23.8+25.2}{2} - 16) \times 935 = 140$
780 STA. YDS.

BORROW 2000 Cu. Yds.
 Avail. R.O.W. STA. 873+50 to 877+50
 (w) $(\frac{5+6}{2} - 5) \times 2530 = 2530$ STA. YDS.

PROV 3367 Cu Yds
 Channel Sta.
 521 to 523
 10A 107 5) 15367 = 24420 STA YDS.

(a) $\frac{15.23}{2} \times 1450 = 2900$ STA YDS.

(n) $\frac{5.196}{2} \times 2010 = 5630$ ST

(s) $\frac{5.155}{2} \times 7810 = 41010$ STA YDS

(u) $11 \times 9460 = 104080$
 (v) $\frac{16.37}{2} \times 2600 = 25610$
 (p) $\frac{137.59}{2} \times 5350 = 28250$
 157,920 STA YDS.

$\frac{223.16}{2} \times 16 = 3460$ 7.50 YD MI.

10925 Cu Yds of MARSH EXCAVATION
 Used in Embankments Sta 873.50 to 877.50
 Sta 873.75 to 877.50

$\frac{117.16}{2} \times 1900 = 16730$
 $11 \times 2100 = 27500$
 $11 \times 5100 = 27000$
 $11 \times 835 = 9190$
 16120 STA YDS.

$\frac{10.14}{2} \times 2500 = 12500$
 $\frac{18.6}{2} \times 1500 = 15700$
 $\frac{23.8}{2} \times 16 = 140$
 780

BORROW 3000 Cu Yds.
 Avail. as Estimated Overbreak & Borrow.
 STA 856+50 to 865+00

(t) $\frac{73.16}{2} \times 2725 = 18130$
 (u) $11 \times 275 = 3030$
 $\frac{16.63}{2} \times 16 = 2160$ STA YDS.
 (v) $\frac{16.87}{2} \times 275 = 10$ YD MI.

BORROW 8000 Cu Yds.
 Avail. From Channel Change
 Sta. 888+00.

(w) $\frac{16.16}{2} \times 490 = 10$ YD MI.
 (v) $11 \times 490 = 5390$
 (w) $\frac{16.87}{2} \times 7510 = 55200$
 60590 STA YDS

BORROW 500 Cu Yds.
 Avail. ROW Pt. & Lt.
 Sta. 873+50 to 883+50

(x) $\frac{6.3}{2} \times 150 = 100$ STA YDS.
 (y) $\frac{5.81}{2} \times 1530 = 2380$ STA YDS.

6831 Cu Yds. of MARSH EXCAVATION
 Used in Embankments Sta 870+50 to 873+50

(54) $11 \times 6831 = 75150$ STA YDS.
 (54) $\frac{34.4 + 11.4 - 10}{52.8} \times 6831 = 7740$ YD MI.

BORROW 10,000 Cu Yds.
 Avail. from Channel Change Sta 900+50

(35) $\frac{11.5 + 12.2 - 5}{2} \times 375 = 2570$
 (36) $\frac{12.2 + 12.6 - 5}{2} \times 300 = 2370$
 (37) $\frac{13.6 + 15 - 5}{2} \times 1000 = 9300$
 (a) $\frac{15 + 10 - 5}{2} \times 1100 = 11550$
 (b) $11 \times 1900 = 20900$
 (c) $11 \times 4000 = 44000$
 (d) $11 \times 132.5 = 14580$
 105,270 STA YDS.

(b) $\frac{16.173}{2} \times 1900 = 30$
 (c) $\frac{12.3 + 12.8 - 16}{52.8} \times 4000 = 200$
 (d) $\frac{19.8 + 21.2 - 16}{52.8} \times 1325 = 120$ YD MI.

BORROW 647 Cu Yds.
 Avail. ROW Pt. Sta 314 to 318+50
 Free Haul

BORROW 1000 Cu Yds.
 Avail. ROW Pt. Sta. 319+20 to 322
 Free Haul.

BORROW 1300 Cu Yds.
 Avail. ROW Pt. Sta 323 to 324+30
 Free Haul.

BORROW 6400 Cu Yds.
 Avail. ROW Pt. Sta 324+50 to 333

(z) $\frac{12.4 + 15 - 5}{2} \times 4060 = 15030$ STA YDS.

BORROW 6331 Cu Yds.
 Avail. ROW Pt. & Lt.
 Sta 336 to 340+50

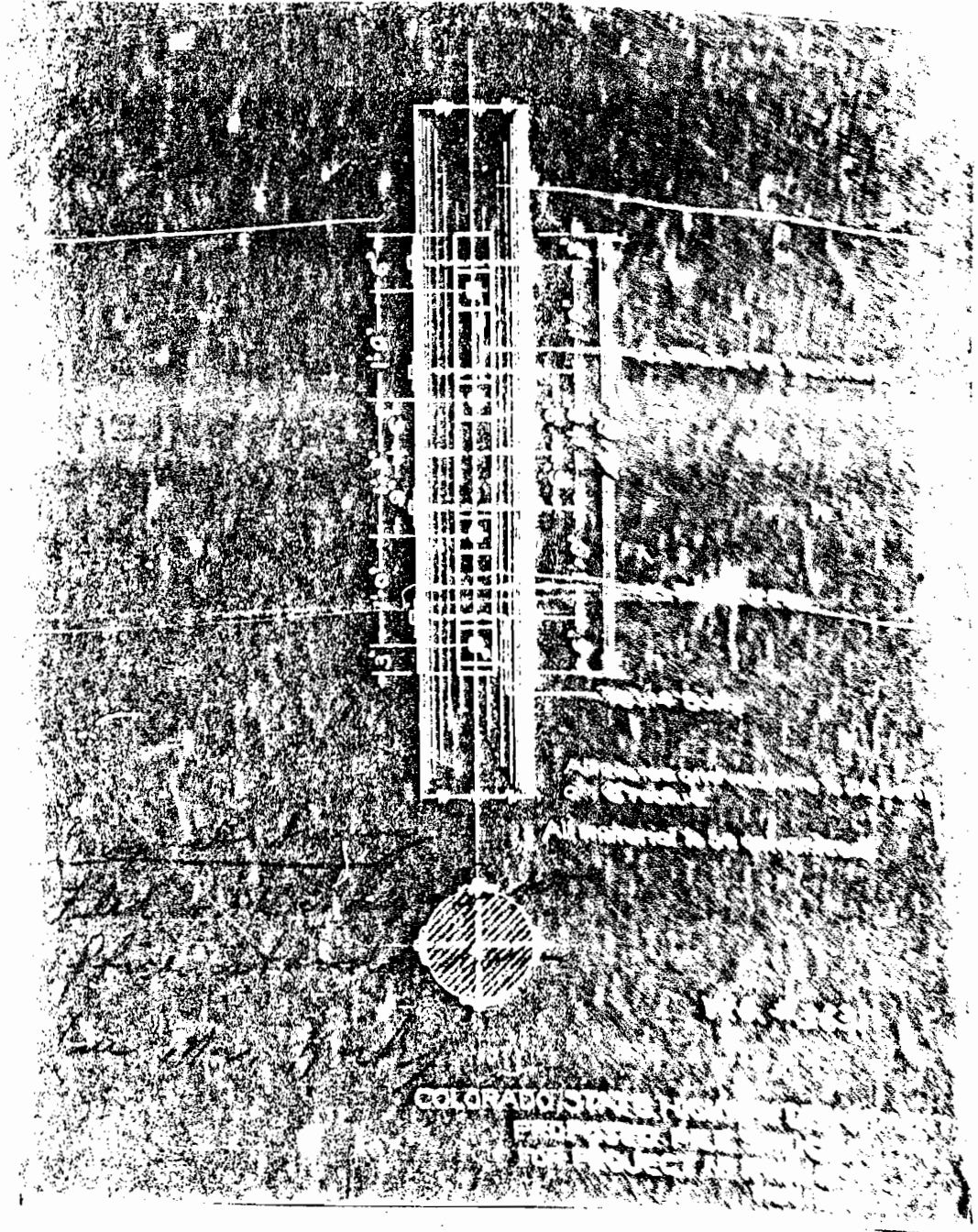
(1) $11 \times 780 = 8580$
 (2) $\frac{16.15}{2} \times 5551 = 30510$
 39090 STA YDS.

(3) $\frac{17.16 - 16}{52.8} \times 5551 = 60$ YD MI.

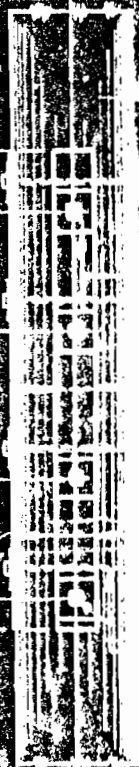
PROJECT TOTALS
 FWA 123 A

	CONTRACT	CONTRACT
EXCAVATION		
FROM X-SECTIONS	1462.6 Cu Yds.	1257.9 Cu Yds.
BORROW	14791 Cu Yds.	47974 Cu Yds.
SLIDES AND OVERBREAK IN MD	5865 Cu Yds.	3.00 Cu Yds.
BORROW FROM PWA 185 A	10936 Cu Yds.	
TOTAL	177643 Cu Yds.	47183 Cu Yds.
EMBANKMENT		
NET	184731 Cu Yds.	106111 Cu Yds.
USED IN MASS DIAGRAM	177643 Cu Yds.	170163 Cu Yds.
STA. YD. O.H.	531700	308470
YD. MI. O.H.	1040	11620

END PWA 123 A
 STA 345+861



101



ENGINEERING

COLORADO STATE UNIVERSITY
ENGINEERING DEPARTMENT
101

MS W.B. 123A

May 3, 1937

LIST OF DEPARTMENT STANDARDS

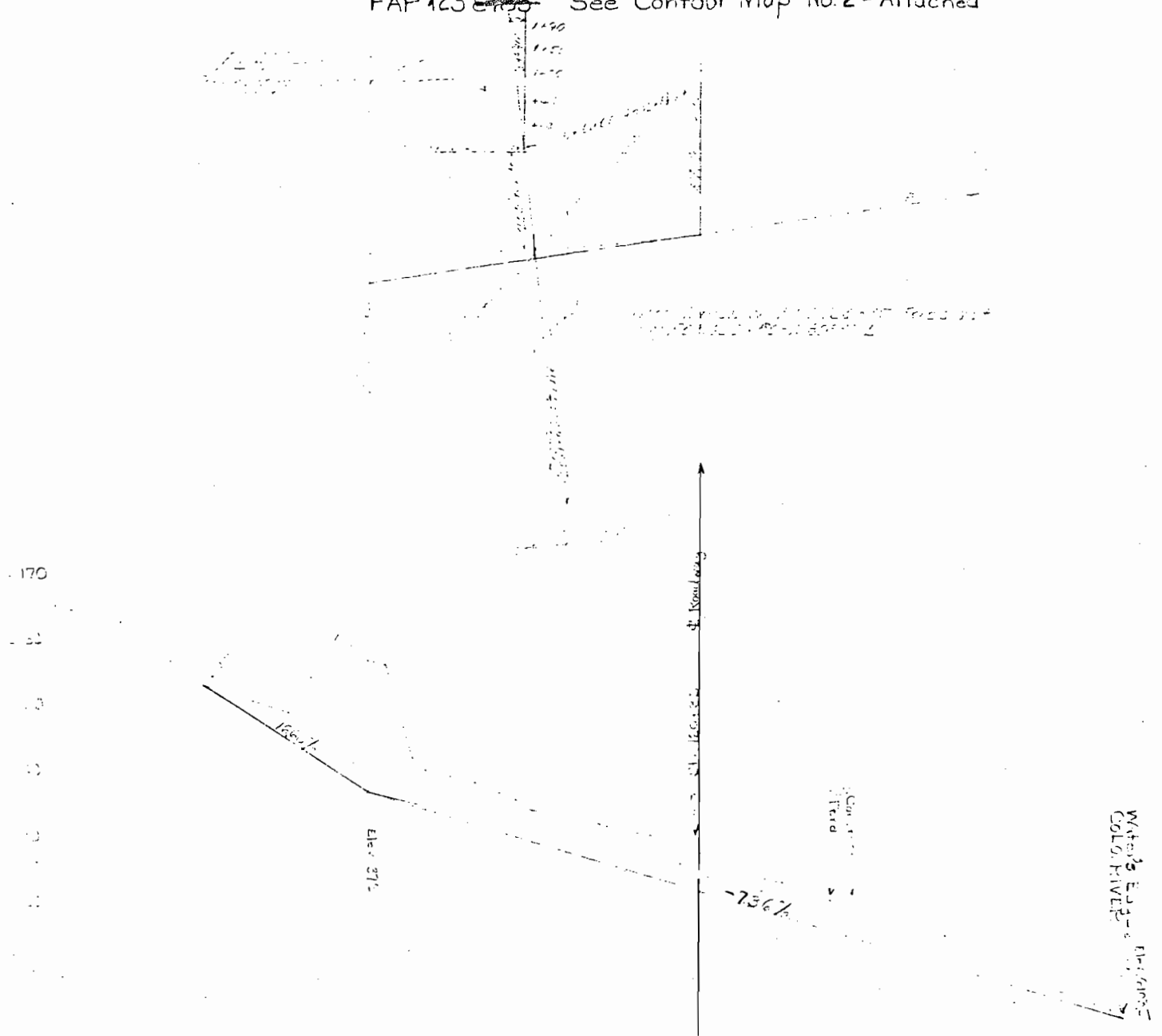
P.O.A. PROJECT NO. FOR 123A

Sheet No.	Standard	Code
10	Standard Road Sections	MLC
	Standard Name Plate	M4AD ✓
	Standard Concrete Pavement Sections and Details For Supplements	MLD
	Standard Gravel Surface Sections and Details For Supplements	MLD
	Concrete Box Culverts	M104D ✓
	Concrete Box Culvert	M104D ✓
	Double Concrete Box Culvert	M106B
	Double Concrete Box Culvert	M108B
	Triple Concrete Box Culvert-10 Foot Span	M111A
	Reinforced Concrete Culvert Pipe	M112B
Reinforced Concrete Culvert Pipe	M112C	
Reinforced Concrete Culvert Pipe	M115A	
Interlocking Concrete Culvert	M107A	
Special Box Culvert For Limited Headroom	M2A	
Standard Concrete Pavement Joint Details	M8A	
13	Standard Types of Concrete Pavement Reinforcing	M2B
	Standard Headwalls for C.M.P. Culverts	M102E ✓
	Standard Syphons with Inclined Risers	M121A
	Standard Siphon Corrugated Galvanized Iron Pipe with Concrete Inlet and Outlet Boxes	M125A
	Standard Syphon Square with Vertical Risers	M125A
	Standard Manholes, Inlets & Pipe Joints on Sewers	M12B
	Standard Cattle Guard	M15B
	Standard Cattle Guard-16 Ft. Roadway	M16A
	Standard Reinforced Concrete Faving Drain	M11B
	Standard Timber Guard Posts	M19A
	Standard Wire Cable Guard Fence	M204B ✓
	Standard Semi-rigid Metal Plate Guard Fence	M11A
	Standard Flexible Metal Plate Guard Fence	M12A
6	Standard Wire Fence (Treated Wood Posts) and Marker Posts	M10P
	Standard Wire Fences (Untreated Wood Posts) and Marker Posts	M10PX
	Standard Wire Fences with Steel Posts and Marker Posts	M27A
	Chain Link Wire Mesh (School) Fence	M27A
	Standard Picket Snow Fence with Steel Posts	M29B
	Standard Structure Number Lettering	M1CA
17	Standard Methods for Super-elevation and Widening of Curves	M1B ✓
	Typical Side Approach Roads/Roadway Construction Traffic Signs	M2B
19	Typical Side Approach Roads/Roadway Construction Traffic Signs (P.O.A.)	M2BX ✓

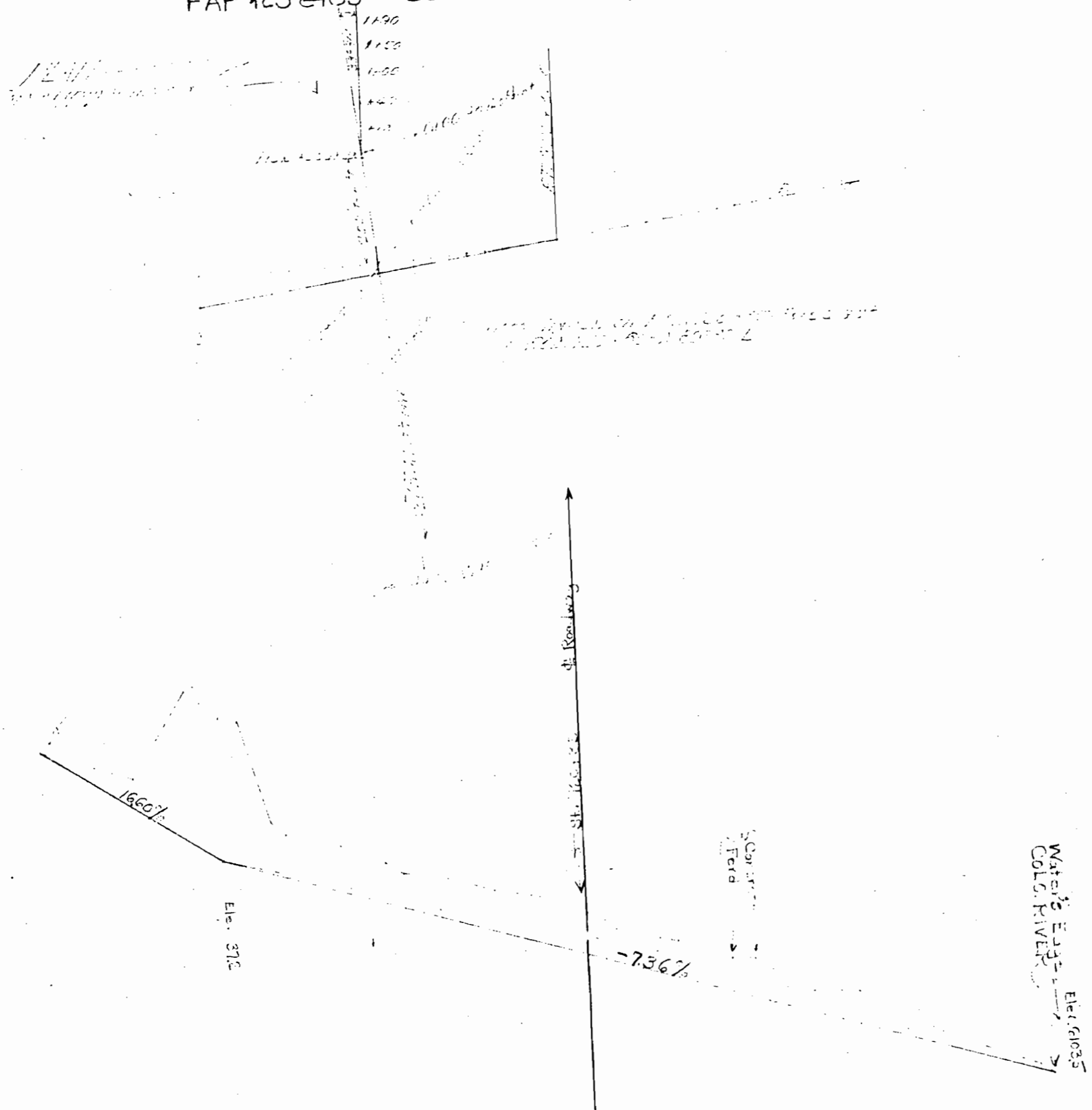
Sheet No. 1.	Yatchep a, Title	
2.	Typical Section & Summary of	
3 to 5.	List of Structures	
6	Details of Bridge Sta. 100+00	
7	Details of Bridge Sta. 112+00	
8-9	Details of Bridge Sta. 115+00	
10	Standard Details	1-100
11	Concrete Box Culverts	A-103
12	Concrete Box Culverts	B-104
13	Standard Details for	C-105
14	Standard Wire Cable Guard Ropes	D-106
15	Standard Wire Cable Guard Ropes	E-107
16	Standard Wire Cables (Unbraced) - (Marker Posts)	F-108
17	Standard Structure (Marker Posts)	G-109
18	Standard Structure (Marker Posts) of Curves	H-110
19	Typical Section of Arch Bridge on Traffic Signs (A, B, C)	I-111
20	Profile	
21-189	Standard Sections	

*16-18 included
 in 16-18*

PROFILE OF CHANNEL - Sta. 720+35
FAP 123 ~~6700~~ See Contour Map No. 2 - Attached



PROFILE OF CHANNEL - Sta. 720+35
 FAP 123 ~~2135~~ See Contour Map No. 2 - Attached



Water's Edge
 COLC RIVER
 Ele. 610.35

Contour
 Field

7.36%

Ele. 312

1660'

St. 720+35

Down Channel

1241'

1490
 1480
 1470
 1460
 1450
 1440
 1430
 1420
 1410
 1400

PROFILE OF CHANNEL - Sta. 720+35
FAP 123 ~~875~~ See Contour Map No. 2 - Attached

