New Sheet 4-27-38 WWH
Rev-Constr Div No 1, 2 & 3 Combined 5-25-38
Rev Constr Div No 3 7-25-39 WWH W.W.H.
C.B. Tracing made from original sheet Rev 7-25-39
Rev. 11-1-39 Stand. M-21-B & M-22-B E.A.R.

FED. ROAD DIST. NO.	STATE	U.S.W.P.H. PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	W.P.S.S.-429-A(I)	1	

CONST. DIV. NO. 3

COLORADO
STATE HIGHWAY DEPARTMENT

PLAN AND PROFILE OF PROPOSED
U.S. WORKS PROGRAM HIGHWAY PROJECT NO. W.P.S.S.-429-A (I)
STATE HIGHWAY NO. 119
CLEAR CREEK & GILPIN COUNTIES

INDEX OF SHEETS

CONSTRUCTION DIVISION NO. 1

CONSTRUCTION DIVISION NO. 2

CONSTRUCTION DIVISION NO. 3

CONVENTIONAL SIGNS

- Center Line Of Survey
- Right Of Way Line
- Section Line
- One-Quarter Section Line
- Pole Line
- Railroad

NOTE

It is recommended that bidders on this project go over the plan details with one of the following field representatives of this department.

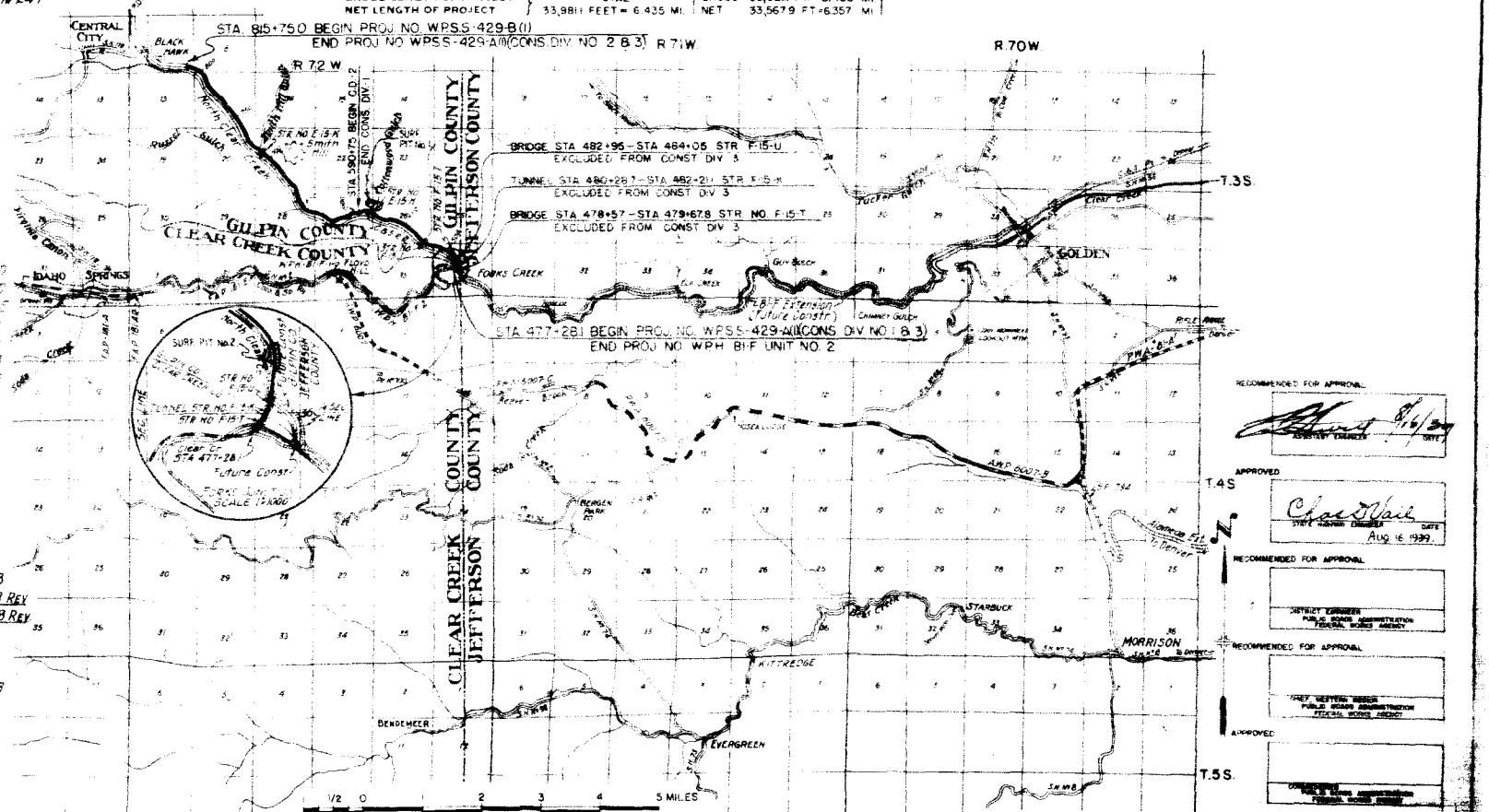
D.W. Ornsbee Construction Engineer Denver, Colo.
E.E. Montgomery Division " " "
F.W. Miller Resident " " "

SCALES ON 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

		CONSTRUCTION DIVISION NO 3
GROSS LENGTH OF PROJECT	TOTAL	GROSS 33,981 FT = 6.435 MI
NET LENGTH OF PROJECT	33,981 FEET = 6.435 MI	NET 33,567.9 FT = 6.357 MI



RECOMMENDED FOR APPROVAL
8/6/39
DISTRICT ENGINEER DATE

APPROVED
Chas D. Vail
STATE HIGHWAY ENGINEER
AUG 16 1939 DATE

RECOMMENDED FOR APPROVAL
DISTRICT ENGINEER
PUBLIC ROADS ADMINISTRATION
FEDERAL WORKS AGENCY

RECOMMENDED FOR APPROVAL
CHIEF, SECTION BRIDGES
PUBLIC ROADS ADMINISTRATION
FEDERAL WORKS AGENCY

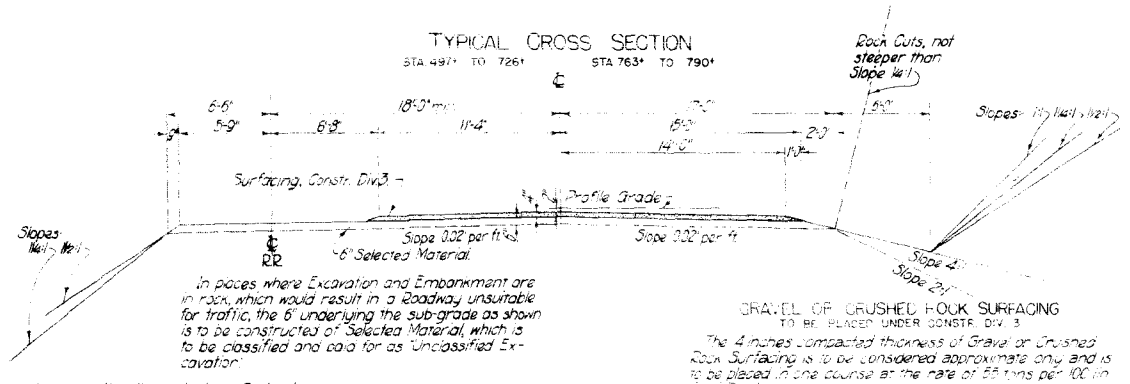
APPROVED
DIVISION ENGINEER
PUBLIC ROADS ADMINISTRATION
FEDERAL WORKS AGENCY

FED. ROAD DIST. NO.	STATE	U.S.W.P.H. PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	W.P.S.S. 429-A(1)	2	

TYPICAL CROSS SECTIONS OF IMPROVEMENTS

TYPICAL CROSS SECTION

STA 497+ TO 726+ STA 763+ TO 790+



In places where Excavation and Embankment are in rock, which would result in a Roadway unsuitable for traffic, the 6" underlying the sub-grade as shown is to be constructed of Selected Material, which is to be classified and paid for as "Unclassified Excavation"

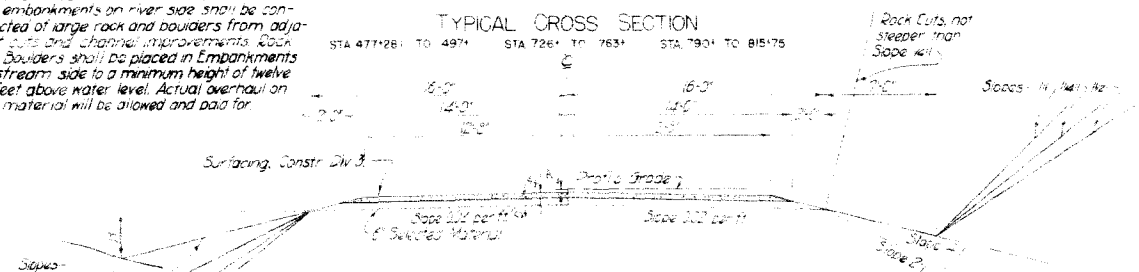
At all places on this Project where Embankments on River side extend into present stream bed, embankments on river side shall be constructed of large rock and boulders from adjacent cuts and Channel improvements. Rock and Boulders shall be placed in Embankments on stream side to a minimum height of twelve (12) feet above water level. Actual overhaul on this material will be allowed and paid for.

GRAVEL OR CRUSHED ROCK SURFACING TO BE PLACED UNDER CONSTR. DIV. 3

The 4 inches compacted thickness of Gravel or Crushed Rock Surfacing is to be considered approximate only and is to be placed in one course at the rate of 55 tons per 100 lin. ft. of Roadway.

TYPICAL CROSS SECTION

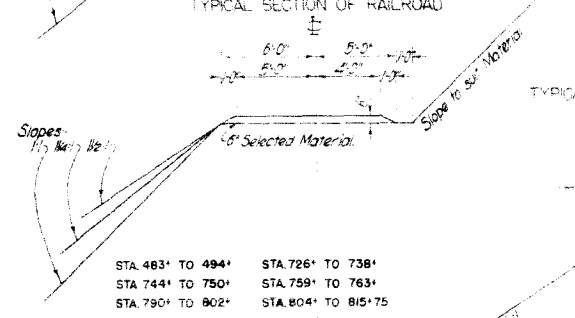
STA 477+28 | TO 497+ STA 726+ TO 763+ STA 790+ TO 815+75



GRAVEL OR CRUSHED ROCK SURFACING TO BE PLACED UNDER CONSTR. DIV. 3

The 4 inches compacted thickness of Gravel or Crushed Rock Surfacing is to be considered approximate only and is to be placed in one course at the rate of 56 tons per 100 lin. ft. of Roadway.

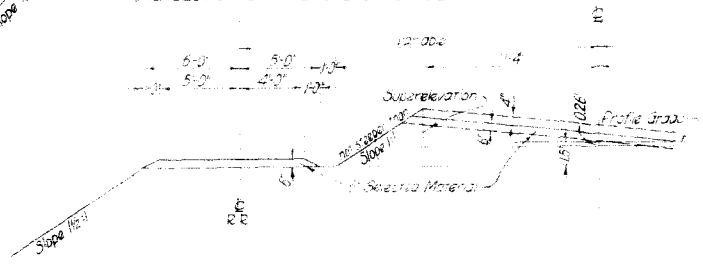
TYPICAL SECTION OF RAILROAD



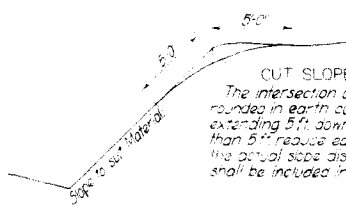
STA. 483+ TO 494+ STA. 726+ TO 738+
STA 744+ TO 750+ STA. 759+ TO 763+
STA. 790+ TO 802+ STA. 804+ TO 815+75

Selected Material is to be placed on Subgrade at the rate of 24 cu yds. per 100 lin. ft. of Railroad Grade and in addition 16 cu. yds. per 100 lin. ft. of Railroad Grade to be used as ballast.

TYPICAL SECTION OF RAILROAD ON OUTSIDE OF SUPERELEVATED CURVES



Rev. 4-27-38 - W.M.
Rev. Index 5-25-38 - W.M.
Rev. Constr. Div. 3, 7-25-39 W.M. - Surfacing.
Rev. 10-1-39 - W.M.



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 stakes and extending 5 ft. down the cut 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 be included in "Unclassified Excavation."

GENERAL NOTES

This Project is to be constructed in accordance with the Standard Specifications of the Colorado State Highway Department adopted June 1, 1937.

All Quantities on Preliminary Plans are to be considered approximate only.

All Roadway Excavation required to construct this Project is to be obtained as indicated on the Plans. Quantities invoiced beyond the limits of the ditch as shown on the Typical Cross Section, either noted on the Profile as "Borrow" or on the 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 Cross Section are subject to change by the Engineer to fit Embankment requirements actually encountered on Construction.

All Curves are to be superelevated and widened as provided for by the Standard Specifications. Plans indicate width.

All Poles encroaching on construction are to be moved by Owners.

All Corrugated Metal Cross Culverts are to be provided with one headwall on the inlet end unless otherwise noted on the Plans.

Payment for Overhaul will be based on measurement along center line of the Project unless otherwise noted on the Plans.

Large rock excavated by the Contractor and lying outside the slope stakes in the stream channel shall not be included in Boulder Excavation, but shall be removed by the Contractor at his expense.

Excavation from Channel Changes shall be used for constructing dikes, filling old channels, in roadway embankments, as directed by the Engineer.

The present traveled Roadway between Sta. 3+ ft. and Sta. 477+ will be used by traffic during Construction of this Project. At all places where new Construction encroaches on present traveled Roadway the requirements of traffic shall be adequately provided for by the Contractor at his expense. Also the Contractor shall at his expense construct and maintain all temporary approaches to and crossings at intersecting roads. For Constr. Div. 3, see note below.

Roadway Embankments at Bridge approaches shall be so constructed that the finished point of Gravel Shoulder is 3:1 outside the curb line of the Bridge. Where widening of the section is necessary to achieve this result, it shall take place uniformly over a distance of 300 ft. This is done to accommodate Guard Fences and Guard Posts at Bridge approaches.

At all places where a portion of foundation for New Concrete Box Culvert is in new fill, the fill under structure shall be composed of rock and/or Selected Material and shall be thoroughly compacted. Approval of foundation shall be secured from the Engineer before construction work on new structure is commenced.

W.P.S.S. No 429-A(1) Constr. Div. 3 is to be combined for contract purposes with W.P.S.S. No 429-A(2).

Construction Div. 1 - Consists of the Construction of Roadway, minor Structures, Tunnel, Bridges, and other Incidental Work outlined on the Plans, Sta 477+28 | to Sta 590+75.

Construction Div. 2. - Consists of the Construction as outlined above Sta 590+75 to Sta 815+75.

Construction Div. 3. - Consists of Surfacing Operations over the Project, the installation of Guard Posts, Guard Fence, and other Incidental Work.

When Paving and Tunnel Portals and Drainage construction operations on W.P.S.S. No 429-A(2) underway at the same time as work under this Project require the closing of road to traffic, the road on portions involved will be closed to traffic on order of the Engineer. After Paving and Tunnel Portals and Drainage operations are completed, the road will then be reopened to traffic on order of the Engineer, and the Contractor shall again adequately provide for traffic at his expense.

Rev. + 2°-38, W.H.M. - Nos. Sheet
Rev. Constr. Div. 3-7-26-39-W.H.M.
Rev. 9-11-39, "Con. Div. 3" A.H.M.

FED. ROAD DIST. NO.	STATE	U.S.W.P.M. PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	W.P.S.S. 429-A(II)	3	

CONSTR. DIV. 1, 2, & 3.

SELECTED MATERIAL

Selected Material shall be placed on the subgrade approximately 6 inches in thickness at the rate of 66 cu.yds. per 100 lin.ft. of Roadway thruout the Entire Project. Selected Material shall be placed on the new Railroad Grade approximately 6 inches loose thickness at the rate of 40 cu.yds. per 100 lin.ft. of Track. The Selected Material shall be classified and paid for as "Unclassified Excavation." Estimated Quantities involved and Sources of Material are shown below.

	MATERIAL TO BE PLACED STA. TO STA.	APPROXIMATE QUANTITIES CU. YDS.	SOURCE OF MATERIAL ON RIGHT OF WAY	ESTIMATED OVERHAUL STA. YDS.	ESTIMATED OVERHAUL YD. MI.
CON. DIV. 1.	ROADWAY				
	477+28 to 478+57	90		990	30
	479+78 to 480+50	60		660	20
	482+00 to 482+95	70	Sta. 501+00 to 510+00	770	10
	484+05 to 486+80	310		3410	20
	489+03 to 520+00	2030		8400	10
	520+00 to 530+70	750		5390	
	530+93 to 545+00	910	Sta. 531+00 to 536+00 Lt.	1800	
	545+00 to 564+00	1240	Sta. 559+00 to 560+25	3250	
	564+00 to 576+00	770	Sta. 567+00 to 571+00	220	
	576+00 to 590+75	1000	Sta. 582+00 to 584+00	950	
	TOTALS	7200		23840	90
CON. DIV. 2.	590+75 to 631+00	2610	Sta. 594+00 to 634+00	27000	690
	631+00 to 702+00	4640	Sta. 680+00 to 689+00	33130	770
	702+00 to 715+12	860	Sta. 715+00 to 720+00	4310	100
	715+38 to 737+00	1400		7710	270
	737+00 to 815+75	5180	Sta. 753+50 to 758+75	42150	1230
	TOTALS	14640		114300	2360
CON. DIV. 1.	TUNNEL				
	480+00 to 482+00	110	Sta. 501+00 to 510+00	880	20
	OVER DRAINAGE STRUCTURES				
	485+00 to 489+03	20	Sta. 501+00 to 510+00	200	10
	530+70 to 530+93	20	Sta. 531+00 to 536+00		
	582+23 to 582+69	30	Sta. 582+00 to 584+00		
	TOTALS	70		200	10
CON. DIV. 2.	715+38 to 715+58	30	Sta. 715+00 to 720+00		
	TOTALS	30			
CON. DIV. 1.	RAILROAD				
	483+00 to 521+00	490	Sta. 501+00 to 510+00	7850	40
	521+00 to 545+00	1040	Sta. 531+00 to 536+00	3200	
	545+00 to 564+30	770	Sta. 559+00 to 560+25	2000	
	564+30 to 576+00	490	Sta. 567+00 to 571+00	150	
	576+00 to 590+75	530	Sta. 582+25 to 584+75	620	
	*Temporary Tracks	3950	Various	14900	
	TOTALS	8370		28720	40
CON. DIV. 2.	590+75 to 631+00	1610	Sta. 581+25 to 582+25	16600	440
	631+00 to 702+00	2870	Sta. 680+00 to 689+00	20420	490
	702+00 to 738+50	1470	Sta. 715+00 to 720+00	7750	40
	744+50 to 750+50	250		1000	
	759+50 to 802+50	1740	Sta. 753+50 to 758+75	5120	370
	804+50 to 815+00	440		4770	320
	*Temporary Tracks	3950	Various	27200	500
	TOTALS	12330		93860	2160
	CON. DIV. 1 TOTALS	15750		53990	160
	CON. DIV. 2 TOTALS	27000		207620	4880

*Sel. Materials required for temp. track work to be placed by Contractor as directed by the Engineer.

SUMMARY OF APPROXIMATE QUANTITIES

NO.	ITEM	UNIT	CONSTRUCTION DIV. 1. STA. 477+28.1 TO STA. 590+75								CONSTRUCTION DIV. 2. STA. 590+75 TO STA. 815+75			PROJECT TOTALS
			ROADWAY	TUNNEL STA. 480+	BRIDGES STA. 478+	BRIDGES STA. 482+	DOUBLE C.B.C. STA. 488+	DOUBLE C.B.C. STA. 530+	TRIPLE C.B.C. STA. 582+	TOTALS	ROADWAY	TRIPLE C.B.C. STA. 715+	TOTALS	
10 a	Clearing & Grubbing Entire Project	Lump Sum	•							•	•		•	•
11 b	Removal of 5 Structures	" "	•							•				•
11 c	" " Structure, Sta. 530+	" "						•		•				•
11 d	" " " Sta. 715+	" "										•	•	•
11 e	" " 6 Structures	" "									•		•	•
12 a	Removing Fence	Lin. Ft.									500		500	500
12 c	" & Reblocking Board Fence, Sta. 581+	Lump Sum	•							•				•
13 c	Unclassified Excavation	Cu. Yd.	48900	200		500	1200	1730	500	53000	271400	1600	273000	426000
13 a	Tunnel Excavation	" "		3500						3500				3500
13 e	" Enlargement Excavation	" "		200						200				200
13 z	Boulder Excavation	" "	100							100	200		200	300
14 a	Dry Rock Excavation (Structural)	" "	935		65	50	400	480	310	2200	1820	350	2200	4400
14 b	" Com. " "	" "	990		480	140	400	480	310	2900	2520	380	2900	5800
14 c	Wet Rock " "	" "	130		220	50				500	320		320	820	
14 d	" Com. " "	" "	160		880	660				1700	500		500	2200
18 a	Station Yard Overhaul	Sta. Yd.	391000	38700			300			430000	440000		440000	870000
18 c	Yard Mile Overhaul	Yd. M.	7000	990			10			8000	7000		7000	15000
42 a	Untreated Bridge Timber	Fbm.			36	66				12				12
42 a	Treated	"												
42 x	Untreated Timber Tunnel Lining	"		29						29				29
46 a	Class "A" Concrete	Cu. Yd.	350		813	420	490	845	374	2436	1111	374	285	3720
46 b	" "B" "	"	52			75				127	90		92	219
46 "	" "A" " (Monarchs)	"			12	12				24				24
46 "	" "A" " (Tunnel)	"		240						240				240
46 x	Bonite Coating	"		30						30				30
46 L	Cement for Grouting	Bbl.		15						15				15
46 "	"	"		"						"				"
47	Reinforcing Steel	Lb.	3600	16000	59200	42500	20600	28100	41800	235700	76000	41800	117800	352500
49	Structural "	"			101800	101100				202900				202900
53 c	24" Corrugated Metal Culvert Pipe	Lin. Ft.	278							278	698		698	1076
53 e	36"	"	568							568	920		920	1488
53 g	48"	"	194							194	496		496	690
53 h	Metal Pipe Rap	Cu. Yd.						100		100	20		20	120
65	Dry Rubble Stone Paving (8" thick)	Sq. Yd.									75		75	75
80 c	Bronze Name Plates	Each			1	1				2				2
81 a	Project Markers	"	1							1	1		1	2
84 a	Drain Pipe (Concrete Floor) (6"x4")	"			4					4				4
84 c	" " " (8"x6")	"				2				2				2
89 c	Guard Posts, 2"x2"x6'-6"	"												
89 x	Ground Posts, 2"x2"x5'-6"	"		10						10				10

FORCE ACCOUNT ITEMS. WORK BY RAILROAD CO. FORCES

	Moving, Leveling & Realigning C & S Track & Temp. Track from Sta. 483+ to 590+	Lump Sum	•							•				•
	Sta. 590+ to 738+ & Sta. 744+ to 815+	" "									•		•	•
	Moving & Lowering Electric & Telegraph Line, Sta. 483+ to 590+	" "	•							•	•		•	•
	" " " " " Sta. 590+ to 815+	" "									•		•	•
	Construct Grade Crossing, Sta. 496+	" "	•							•	•		•	•
	Moving & Resetting Water Tank & Pipe Line, Sta. 714+	" "									•		•	•

FORCE ACCOUNT ITEMS — NOT RECEIVING FEDERAL AID.

	Move House off R.O.W., Sta. 503+	Lump Sum	•							•				•
	Move 2 Sheds off R.O.W., Sta. 532+ to 535+	" "	•							•				•
	Move 2 Buildings off R.O.W., Sta. 741+	" "									•		•	•
	Move 4 " " " " Sta. 753+ to 758+	" "									•		•	•
	Move 2 " " & Scale Pit off R.O.W., Sta. 814+ to 815+	" "									•		•	•
	Move Section House off R.O.W., Sta. 761+ to 717+	" "		WORK BY RAILROAD CO. FORCES.										

CONSTRUCTION DIV. 3. STA. 477+28.1 TO STA. 815+75

26 a	Gravel or Crushed Rock Surfacing	Ton	19880				20	20	40			40		20000
26 c	Overhaul of Surfacing	Ton M.	20920					10				70		21000
74 x	Timber Guard Posts	Each	787											787
75 x	Meta. Plate Guard Fence	Lin. Ft.	6130					23	46			46		5245
120	Blading & Grading Roadway	Mile	64											64

FED. ROAD DIST. NO.	STATE	USWPH PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO	WPSS 429-A(1)	6	

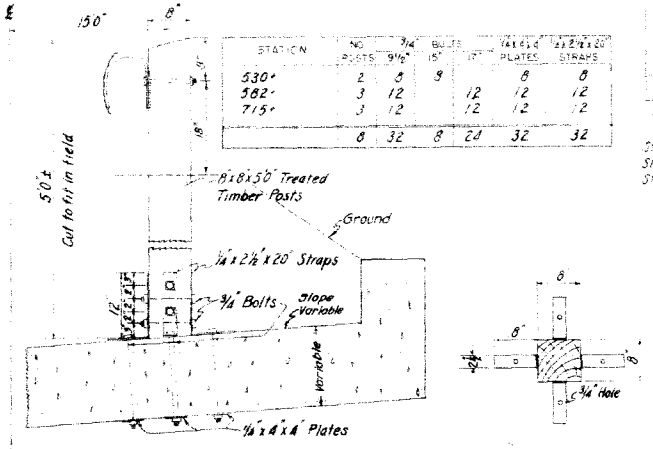
Constr. Div 1, 2 & 3
Revised 4-27-38 H.J.S.
Rev. 7-25-34 for Const. Div "3" T.T.
Rev. 10-11-39 Gd. Fence & Posts W.H.M.
Rev. 10-11-39 Surfacing Plan T.T.

TEMPORARY RAILROAD TRACK WORK

It is estimated in the Department's plan of handling Railroad operations during construction that temporary Railroad Grades will have to be constructed by the Contractor between Stations listed in the tabulation below. Track work will be done by Railroad Co. forces. The approximate quantities involved in work to be done by Contractor are listed below.

	STATION	APPROXIMATE QUANTITIES EXCAVATION CU YDS	EMBANKMENT # CU YDS	REM. EMBANK. # CU YDS	ESTIMATED OVERHAUL STA. YDS.	YD. MI.
CONSTR. DIV. NO. 1	490+50 - 509+50	700				
	512+00 - 519+00	300				
	522+00 - 528+50		1200		2700	60
	530+00 - 541+50		3300		6500	200
	544+50 - 549+50		600		1050	10
	552+50 - 583+00	200	8500		16000	400
	586+00 - 590+75		2200		5000	110
	586+50 - 590+75			1800	3200	70
CONSTR. DIV. NO. 2	666+50 - 674+50	300				
	685+50 - 692+00	600				
	694+50 - 717+00	300	6500		13500	260
	704+00 - 713+50			1200	2000	40
	720+00 - 726+50		1800		3500	140
	780+00 - 784+00		1000		1800	30
	590+75 - 601+00	700	1100		2500	50
	590+75 - 594+00			700	1300	30
	TOTAL C.D. NO. 1	1200	15800	1800	34450	850
	TOTAL C.D. NO. 2	1900	10400	1900	24600	550
	TOTALS	3100	26200	3700	59050	1400

* Embankment Material encroaching on Creek Channel to be removed after R.R. tracks are in operation on final location.
* Embankment Material for temporary Railroad Grades to be obtained from Channel Improvements, Roadway Excavation or Borrow Pits as staked by the Engineer.
Selected Material Requirements tabulated on Sheet "3"



STATION	NO. POSTS	¾" BOLTS	BOLTS 15"	BOLTS 17"	¼"x4"x4" PLATES	¼"x2½"x20" STRAPS
530+	2	8	9		8	8
582+	3	12		12	12	12
715+	3	12		12	12	12
	8	32	8	24	32	32

DETAIL OF GUARD FENCE POST CONNECTIONS
ON C.B.C.'s STA. 530+, 582+, & 715+

METAL PLATE GUARD FENCE

TO BE PLACED UNDER CONSTR. DIV. NO. 3

LOCATION STA. TO STA.	SIDE	METAL PLATE GD. FENCE LIN. FT.
ROADWAY		
477+375 - 478+375	L	100
477+281 - 478+731	R	145
479+877 - 480+252	R	37.5
483+909 - 484+409	R	50
484+242 - 484+742	L	50
499+82 - 500+19.5	R	37.5
502+12 - 502+49.5	R	37.5
507+67 - 508+04.5	R	37.5
519+20 - 522+70	L	350
526+25 - 529+06.4	L	350
530+605 - 531+10.5	R	50 *
537+62 - 537+99.5	R	37.5
552+17 - 552+54.5	R	37.5
559+68 - 560+05.5	R	37.5
581+71 - 583+21	R	150 *
599+07 - 600+37	R	100
517+20 - 522+70	L	550
537+62 - 537+99.5	R	37.5
543+45 - 543+120	L	375
553+05 - 557+55	L	450
561+55 - 565+55	L	400
547+65 - 565+15	R	50
572+50 - 576+80	L	250
701+20 - 701+59.5	R	375
706+50 - 709+50	L	300
714+85 - 715+97.5	R	112.5 *
724+00 - 740+00	L	1600
756+75 - 757+25	L & R	100
804+00 - 806+00	L	200
814+50 - 814+87.5	R	37.5
575+49 - 575+86.5	R	37.5
TOTAL		6245.0

* Guard Fence within limits of and charged to Bridges.
Sta. 530+70 - 530+93 Rt 23 Lin Ft
Sta. 582+23 - 582+69 Rt 46 Lin Ft
Sta. 715+12 - 715+58 Rt 46 Lin Ft

Note: The end of post shall be cut on bevel to fit slope of concrete, holes for connection bored, and the end of post treated with three coats of hot creosote oil and then given a thick application of hot pitch or asphalt. Cost of special posts and fittings as shown hereon shall be included in the original contract price per linear foot for "Metal Plate Guard Fence"

TIMBER GUARD POSTS

TO BE PLACED UNDER CONSTR. DIV. NO. 3

LOCATION STA. TO STA.	SIDE	SPAC.	NO.
ROADWAY			
485+30 - 488+80	R	50	8
489+10 - 494+50	R	20	28
497+340 - 504+60	L	50	15
505+00 - 510+10	L	30	18
510+40 - 519+40	L	50	19
523+00 - 526+00	L	50	7
529+325 Abt. 568+60	L	50	75
566+90 - 573+30	L	20	33
573+70 - 590+684	L	50	37
590+90 - 597+10	L	20	32
597+30 - 602+30	L	50	11
602+50 - 606+70	L	20	22
607+00 - 608+40	L	30	7
608+10	R	Culvt.	1
609+00 - 613+20	L	20	22
613+40 - 617+00	L	30	13
622+90 - 627+952	L	50	25
628+25 - 648+25	L	50	31
631+00	R	Culvt.	1
634+70	R	Culvt.	1
547+40 - 552+85.5	L	50	12
651+25	R	Culvt.	1
657+75 - 661+35.4	L	50	13
389+75	R	Culvt.	1
665+75 - 674+25	L	50	18
676+45	R	Culvt.	1
677+00 - 680+00	L	50	7
680+20 - 684+40	L	20	22

LOCATION STA. TO STA.	SIDE	SPAC.	NO.
ROADWAY			
684+65 - 688+65	L	50	9
688+90 - 692+30	L	20	18
692+60 - 698+10	L	50	12
698+30 - 701+10	L	20	15
701+30 - 705+30	L	50	9
709+60 - 722+10	L	50	26
710+90	R	Culvt.	1
722+40 - 723+80	L	20	8
742+50	R	Culvt.	3
744+00 (534+...)	L	50	21
754+00	R	Culvt.	3
758+00 - 764+50	L	50	1
765+10 - 767+50	L	20	13
767+70 - 779+78	L	50	25
776+90	R	Culvt.	1
780+00 - 782+00	L	20	11
782+20 - 783+20	L	50	10
806+00	R	Culvt.	1
806+10 - 815+10	L	30	31
480+18² - 480+25²	L	Tun.Rail	4
482+24' - 482+35'	L & R	Tun.Rail	10
522+85 - 523+45	R	20	4
542+00	R	Culvt.	1
548+15	R	Culvt.	1
571+00	R	Culvt.	1
641+00 - 644+60	R	20	4
706+75	R	Culvt.	1
789+55 - 802+094	L	30	43
TOTAL			787

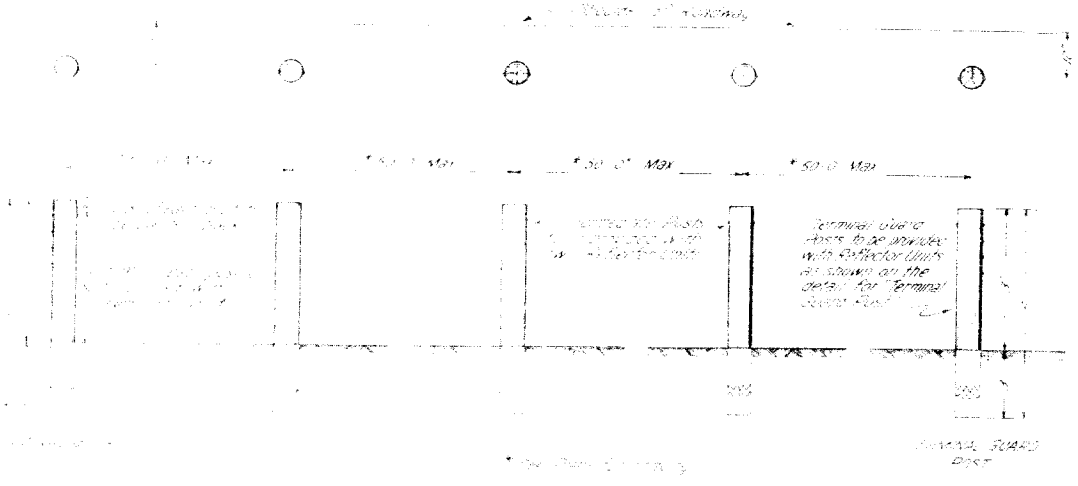
SURFACING PLAN.

TO BE PLACED UNDER CONSTR. DIV. NO. 3

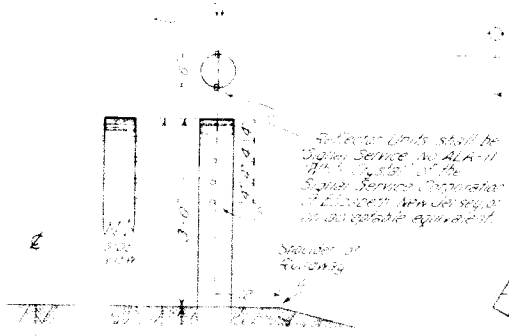
MATERIAL TO BE PLACED STA. TO STA.	APPROXIMATE QUANTITIES TONS	ESTIMATED OVERHAUL TON MI.	SOURCE OF MATERIAL
ROADWAY			
477+00 - 478+00	80	F.H.	Div. No. 2, L & R Sta. 492+00 SE¼, NW¼, Sec. 36 T. 3 S. R. 72 W.
484+05 - 486+80	280	F.H.	
489+03 - 500+00	600	F.H.	
500+00 - 530+93	1755	880	Div. No. 2, L & R Sta. 500+00 to 530+93
530+93 - 582+23	2850	40	NE¼ NE¼ NW¼ Sec. 1 & NW¼ NW¼ Sec. 6 T. 3 S. R. 72 W.
582+69 - 715+12	7400	3900	
715+58 - 815+75	5600	14500	
GRADE WIDENING			
516+45² - 530+70	150	40	
585+95 - 715+12	550	350	
796+36 - 815+75	150	500	
APPROACHES			
583+	20	F.H.	
716+00	20	40	
814+80	20	60	
TOTAL	19470	20250	
BRIDGES			
486+80 - 489+03	20	F.H.	
530+70 - 530+93	20	10	
582+23 - 582+69	40	F.H.	
715+12 - 715+58	40	70	
TOTAL	120	80	
PROJECT TOTAL	19590	20330	

STANDARD M-19-B

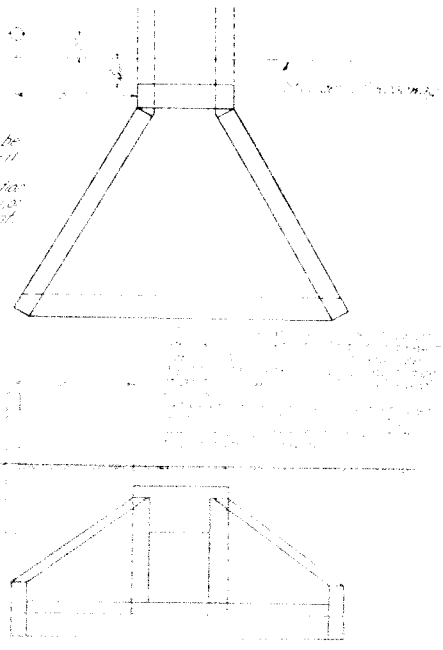
STATE COLO. WPSS 429A(1) 28



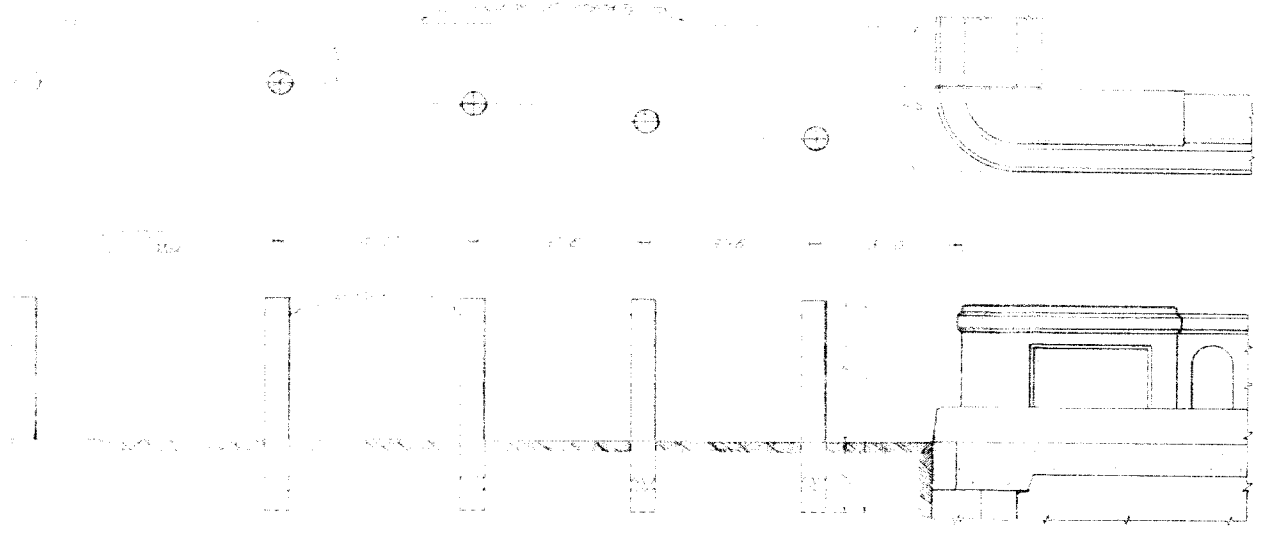
SHOWING PLACEMENT ON NORMAL ROADWAY FILLS



TERMINAL GUARD POST



SHOWING PLACEMENT AT MINOR STRUCTURES



SHOWING PLACEMENT AT BRIDGE APPROACHES

Intermediate Guard Posts at Bridges to be provided with Reflector Units as shown that is one Unit each on the three Posts nearest the bridge end and two Units on the fourth Post

GENERAL NOTES

A. Work shall be done in accordance with the Standard Specifications of the Colorado State Highway Department adopted July 1, 1937.

B. Wood posts shall be made from sawed or hewn Pine or West Coast Douglas Fir.

C. All posts shall be cut to the lengths specified, and shall be framed, bored and shaved thereon as required and dry with square tops. Posts shall not be treated.

D. Wood guard posts shall be set and backfilled in prepared holes to the lines and grades as directed by the Engineer.

E. Reflector Units on all posts shall be placed in such position that the units will be visible at a distance of 500 feet.

F. Where tangents the reflector units shall be placed at an angle of approximately five degrees to a line parallel to the center line of the highway.

G. In all instances a test shall be made to assure the position of the reflector units to be the most effective position.

H. The density of holes drilled in the posts shall be such that approximately one sixteenth inch, but not less than one quarter inch, of the signal button base. In all instances the hole shall be brought undersize that the button when driven into the post shall have complete bond with the post and be securely locked in correct position.

COLORADO
STATE HIGHWAY DEPARTMENT

STANDARD
TIMBER GUARD POSTS

Designed by S.E.
Made by
Checked by

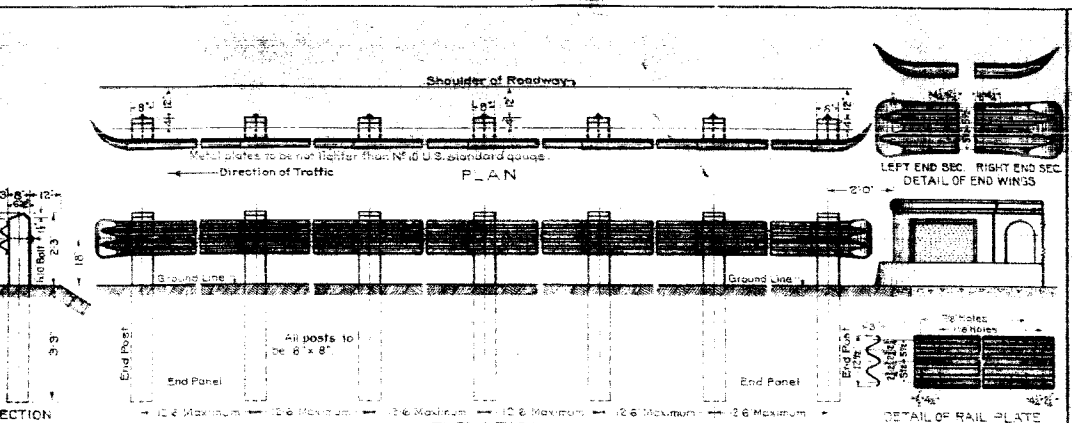
Approved by [illegible]
Chief Engineer
Date 2 - 4 - 1939

REVISIONS

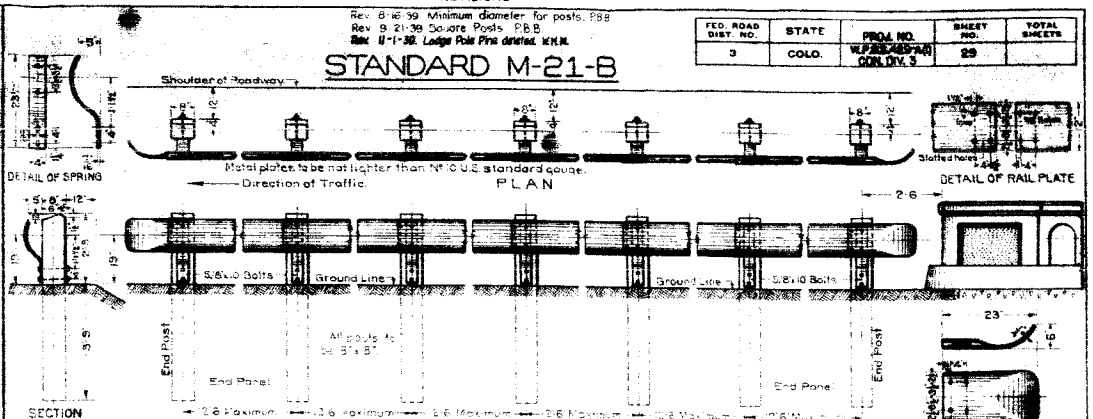
Rev. 6-16-39 Minimum diameter for posts, PBB
Rev. 9-21-39 Square Posts PBB
Rev. 11-1-39 Lodge Pole Pine deleted. W.H.M.

FED. ROAD DIST. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	[illegible] CON. DIV. 3	29	

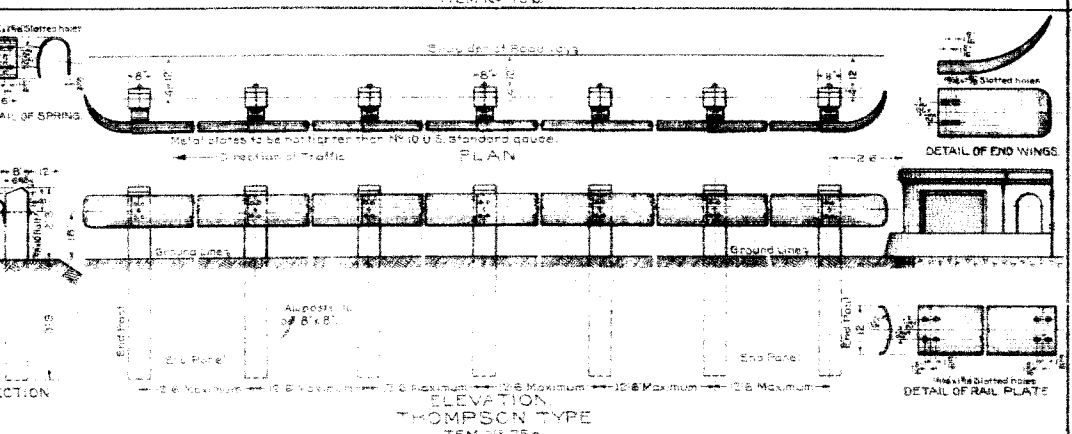
STANDARD M-21-B



ELEVATION
FLEXBEAM TYPE
ITEM No. 75 b.



ELEVATION
TUTHILL TYPE
ITEM No. 75 b.



ELEVATION
THOMPSON TYPE
ITEM No. 75 b.

GENERAL NOTES

All work shall be done in accordance with the Standard Specifications of the Colorado State Highway Department, Adopted June 1937.

Only one type of metal plate guard fence or posts may be used on a project. Any of the metal plate guard fence types as shown on this sheet or other equivalent beam types of metal plate guard fence approved by the department and complying with the specifications, may be used.

All wood posts shall be made from seasoned, straight, square Douglas Fir, Southern Yellow Pine or Lodge Pole Pine of the Rocky Mountain Region.

All wood posts shall be full sawn as specified and shown.

All wood posts shall be thoroughly seasoned and dry, with bark removed and with all knots trimmed flush. Other than the ends of the posts, after treatment is complete.

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 into tamped earth, plumb and firm, to the lines and grades as directed by the engineer.

All metal connecting devices, hardware and supports shall be hot dip galvanized, except that offset spring fittings may be electro-plated. Metal plates shall not be galvanized, but shall be painted as provided for in the specifications.

Metal plates shall not be lighter than that shown on this sheet for each type and in no case to be lighter than No. 12 U.S. Standard gauge.

The length of guard fence to be paid for and designated on plans shall be measured from center to center of end posts.

Standard galvanized cast iron washers or galvanized malleable cast washers shall be used under all bolt heads and nuts coming in contact with wood posts.

Where sidewalks are constructed adjacent to the lane for traffic, guard fence shall be placed in such manner that the fence ties on the line between the sidewalk and one foot from the normal roadway shoulder.

Where guard fences are constructed on the approaches to bridges with sidewalks, the fence at bridge shall be placed in line with the face of the curbing on the bridge.

COLORADO
STATE HIGHWAY DEPARTMENT

STANDARD
METAL PLATE GUARD FENCE
BEAM TYPES

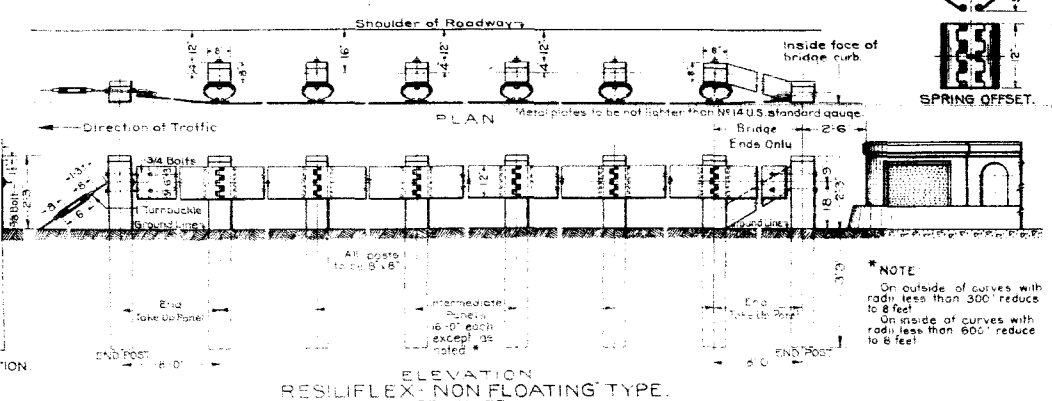
Designed by A.S.K.	Approved by
Made by A.S.K.	Bridge Engineer
Checked by	Date

REVISIONS

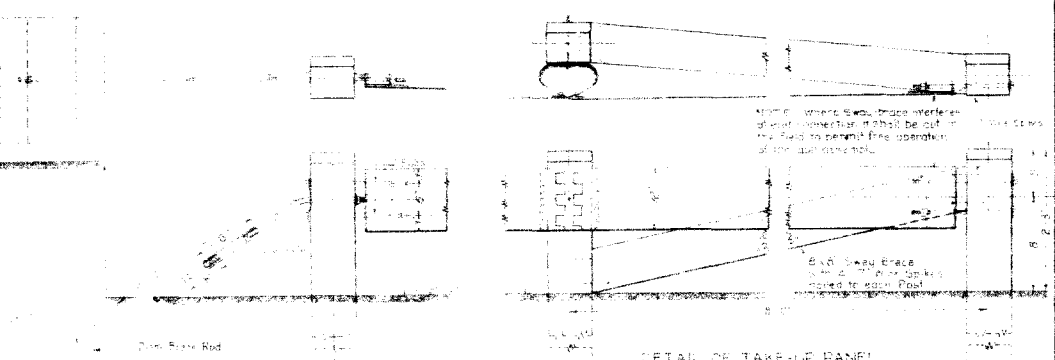
Rev. 6-24-38 P.B.B. End Panels, Spacing, etc.
Rev. 9-21-39 P.B.B. Square Posts.
Rev. 11-1-40 A.N.M. Ledge Rail Post Altered

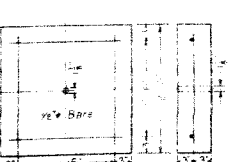
STANDARD M-22-B

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



ELEVATION
RESILIFLEX - NON FLOATING TYPE.
ITEM No. 75a.





GENERAL NOTES.

All work shall be done in accordance with the Standard Specifications of the Colorado State Highway Department, Adopted July 1, 1937.

Only one type of metal plate guard fence, on posts may be used on a project.

In lieu of the metal plate guard fence types as shown on this drawing, other equivalent types and designs of metal plate guard fence, approved by the department and complying with the specifications may be used.

Where posts are spaced eight (8) feet on centers, every alternate bracket may be a full floating bracket except those on "End Take Up Panels".

All wood posts shall be made from seasoned, straight, sound, Dense Southern Yellow Pine or Douglas Fir of the Coast Region.

All wood posts shall be full sawn as specified and shown.

All wood posts shall be thoroughly seasoned and dry, with tops sawed and holes drilled no larger than diameter of bolt or rod before treatment is applied.

All wood posts shall be given a preservative treatment 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 as directed by the engineer.

All metal connecting devices, hardware and supports shall be hot dip galvanized, except that offset spring fittings may be electro-plated. Metal plates shall not be galvanized, but shall be painted as provided for in the Specifications.

Metal plates shall not be lighter than that shown on this sheet for each type and shall be of U.S. standard gauge.

The length of guard fence to be paid for and designated on plans shall be measured from center to center of end posts.

Standard galvanized cast iron or galvanized malleable cast washers shall be used on all bolt heads coming in contact with wood posts.

Where sidewalks are constructed adjacent to the lane for traffic, guard fence shall be placed in such manner that the fence lies on the line between the sidewalk area and the normal roadway shoulder.

Where guard fences are constructed on the approaches to bridges with sidewalks, the fence at bridge shall be placed in line with the face of the curbing on the bridge.

COLORADO STATE HIGHWAY DEPARTMENT

STANDARD
METAL PLATE GUARD FENCE
FLOATING & NON-FLOATING
TYPES

Designed by A.S.S.	Approved by
Made by A.S.K.	Bridge Engineer
Checked by	Date:

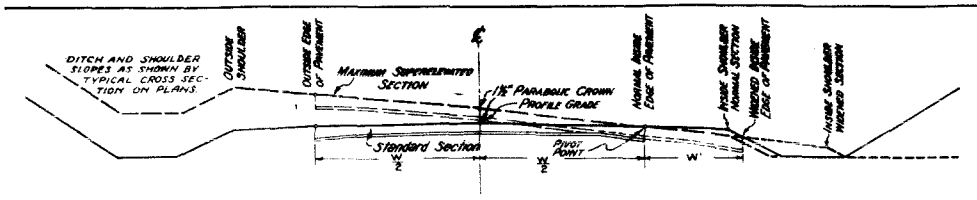
NDARD M 22 B.

REVISIONS

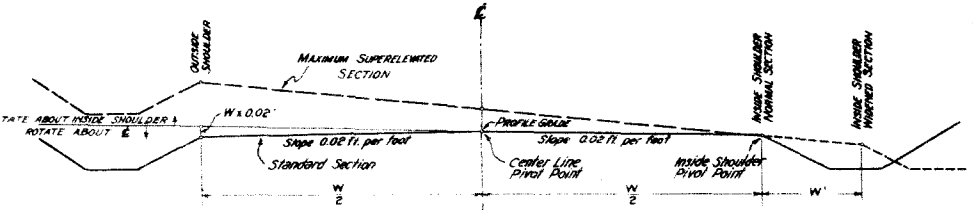
STANDARD M-I-B

FED. ROAD DIST. NO.	STATE	SHEET NO.	TOTAL SHEETS
3	COLO.	29A(2)	32

Rev. 11-2-38 P.R.B. Widening Information



PAVEMENT SECTION

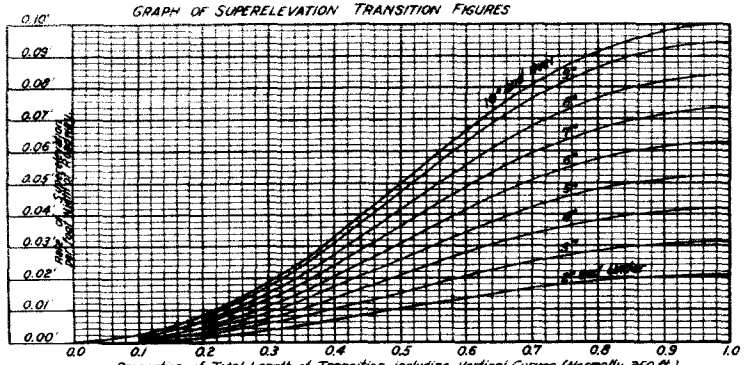


GRADES OR SURFACED SECTION

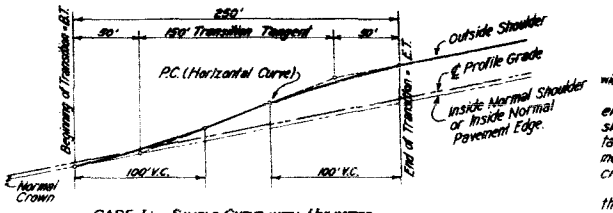
SUPERELEVATION AND WIDENING TABLES

"RUNOFF" FROM B.T. (PROPORTION)	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	MIN. 1.0
Degree of Curvature	RATE OF SUPERELEVATION (IN FEET) PER FOOT WIDTH OF ROADWAY									
2° and Under	0.00084	0.00175	0.00394	0.00700	0.01050	0.01400	0.01706	0.01925	0.02056	0.02100
3°	0.00066	0.00263	0.00591	0.01050	0.01575	0.02100	0.02559	0.02888	0.03084	0.03150
4°	0.00088	0.00350	0.00788	0.01400	0.02100	0.02800	0.03413	0.03850	0.04113	0.04200
5°	0.00109	0.00438	0.00984	0.01750	0.02625	0.03500	0.04266	0.04813	0.05141	0.05250
6°	0.00131	0.00525	0.01181	0.02100	0.03150	0.04200	0.05119	0.05775	0.06169	0.06300
7°	0.00153	0.00613	0.01378	0.02450	0.03675	0.04900	0.05972	0.06738	0.07197	0.07350
8°	0.00175	0.00700	0.01575	0.02800	0.04200	0.05600	0.06825	0.07700	0.08225	0.08400
9°	0.00197	0.00788	0.01772	0.03150	0.04725	0.06300	0.07678	0.08663	0.09253	0.09450
10° and Over	0.00208	0.00833	0.01875	0.03333	0.05000	0.06667	0.08125	0.09166	0.09792	0.10000
	OFFSETS FOR WIDENING - W' - (IN FEET)									
Over 10° - Under 12°	0.03	0.12	0.27	0.48	0.75	1.08	1.47	1.92	2.43	3.00
" 12° - " 15°	0.04	0.16	0.36	0.64	1.00	1.44	1.96	2.56	3.24	4.00
" 15° - " 20°	0.05	0.20	0.45	0.80	1.25	1.80	2.45	3.20	4.05	5.00
" 20°	0.06	0.24	0.54	0.96	1.50	2.16	2.94	3.84	4.86	6.00

GRAPH OF SUPERELEVATION TRANSITION FIGURES



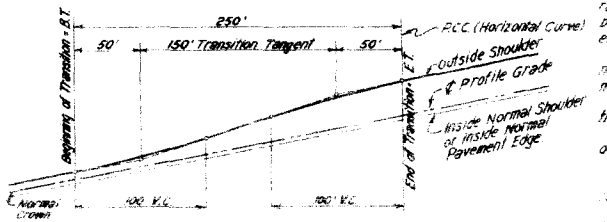
Proportion of Total Length of Transition including Vertical Curves (Normally 250 ft.)



CASE I: SIMPLE CURVE WITH UNLIMITED TANGENT APPROACH

NOTE: CASE I

The transition in this case, from crowned section to superelevated section, shall proceed uniformly by raising the outside shoulder, over a distance of 250 ft. as shown, beginning at a point on the tangent 150 ft. from the end of the curve and acquiring full superelevation at a point 100 ft. inside the curve.



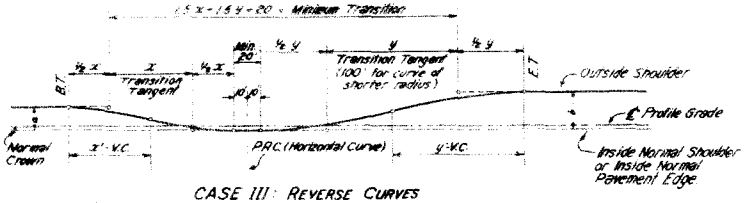
CASE II: COMPOUND CURVE

NOTE: CASE II

Superelevation transitions at the outside ends of compound curves shall be constructed in accordance with rules given under CASE I.

Superelevation transition between the arcs of different radii shall be made as in CASE I, except that the entire transition shall lie within the limits of the curve of the longer radius.

In cases where curves in the same direction have a tangent distance of less than 300 ft. between points of curve, the intervening tangent shall be superelevated an amount equal to that of the curve of greater radius and the transition shall be made as in the case of a true compound curve.



CASE III: REVERSE CURVES

NOTE: CASE III

Transitions between true reverse curves shall be accomplished as shown on the above diagram.

Transition tangents shall be directly proportional to the amount of superelevation of the respective curves.

EXAMPLE: Let a represent the amount of superelevation on 1st curve;
" b " " " " " 2nd " ;
" x " " " " transition tangent on 1st " ;
" y " " " " " 2nd " ;
then, a : b = x : y.

The transition tangent of the curve having the shorter radius shall be set at 100 ft.

A normal crowned section 20 ft. long, 10 ft. on each side of the P.R.C. shall be used.

In cases where curves in opposite directions are in such proximity that a standard transition can not be had, the practice outlined for true reversing curves shall be used.

The total distance between the P.T. of the first curve and the P.C. of the succeeding curve shall be prorated into the transition distance of the respective curves until a maximum of 150 ft. of transition tangent for each curve is achieved.

GENERAL NOTES

Curves on projects using the Sections shown are to be superelevated and widened as indicated in the accompanying drawings and tables.

The normal inside edge of the Pavement slab is to remain at the standard elevation of 0.125 ft. below the profile grade, and the outside edge of the slab is to be superelevated at the rate per foot width of roadway given in the table. The Section is to be rotated about the normal inside edge of the Pavement, with a 1½" parabolic crown for curves of 10° and under, and a flat crown for widened Sections.

The normal inside edge of the Graded or Surfaced Section is to remain at the standard elevation of 0.02 ft. per foot width of roadway below the profile grade, or as shown on the Typical Section for the Project. Also, the centerline pivot point is to be used until the superelevation equals 0.02 ft. per foot width of roadway, but when this elevation is exceeded the normal inside shoulder pivot point is to be used.

When the degree of curvature exceeds 10°, the inside edge of the Pavement slab or the inside shoulder of the Graded or Surfaced Section is to be widened from the normal inside edge or shoulder, respectively, as shown by the table and plan or by cross-sections. Curves of 10° or less are not to be widened.

The slope of the shoulders and widened sections shall conform to the rate per foot width of roadway required, except that the inside shoulder of paved sections shall maintain the Typical Section slope until this slope is exceeded by the required superelevation slope.

The outside ditch on superelevated Sections is to be modified, where necessary, to provide drainage. Otherwise, this ditch shall conform to normal ditch section shown for Project.

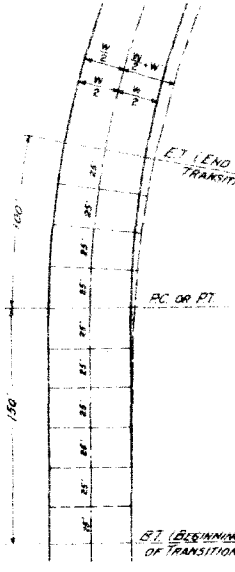
The rate of superelevation per foot width of roadway, to be applied at the outside shoulder of the roadway, is computed as follows:

The full superelevation per foot width of roadway, rate for a given degree of curvature is

0.0105 ft. x Degree of Curvature.

The maximum superelevation of 0.10 ft. per foot width, applying to curves of 10° and over, is not to be exceeded.

Special transition problems not covered by this standard sheet shall be covered by appropriate notes included with curve data on plans.



GENERAL PLAN OF WIDENING

COLORADO STATE HIGHWAY DEPARTMENT

STANDARD METHODS FOR SUPERELEVATION & WIDENING OF CURVES

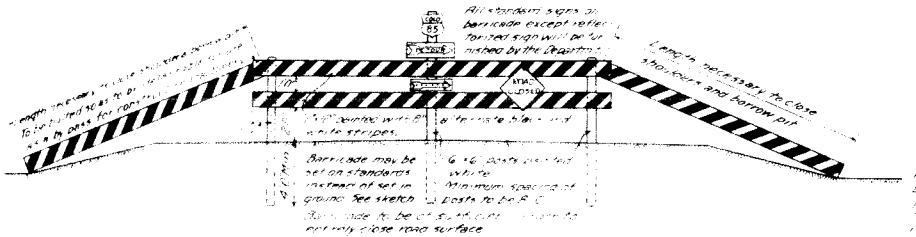
Designed by R.E.T. | Approved by [signature]
Made by P.B.B.
Checked by P.B.B. | Date FEB 23RD 1937

STANDARD M-2-B

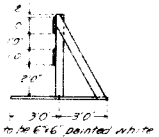
FED ROAD DIST NO	STATE	PROJ NO	SHEET NO	TOTAL SHEETS
9	COLO	4290 A	33	

Revised 6-8-39 - A.E. - Changed side slope note.
Revised 5-1-38 - STARK Changed to 1937 Specifications

Details of Permanent Barricade

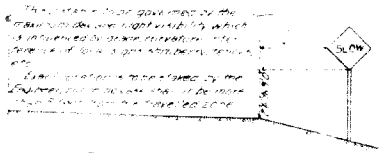


End View of Portable Barricade



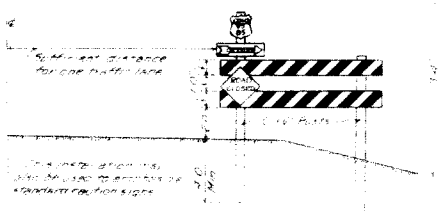
Posts to be 6"x6" painted white. Bars and brace to be 2"x6" painted white, and nailed with 20d nails. Base to be weighted if necessary for stability.

Position of Signs Relative Road Bed

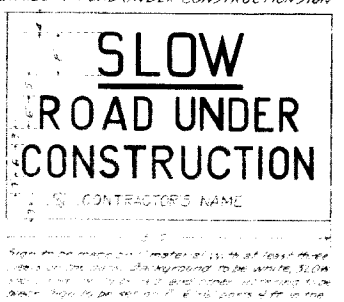


Barricades to be placed as construction conditions require

Details of Partial Barricade

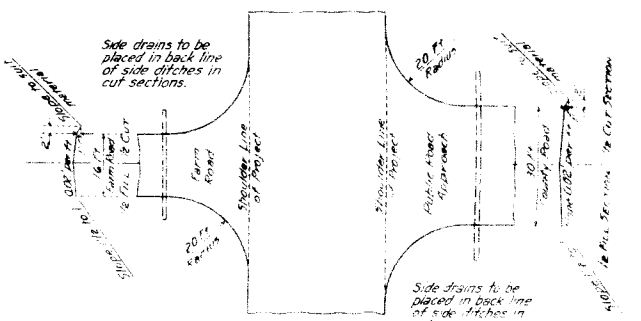


Details of Road Under Construction Sign

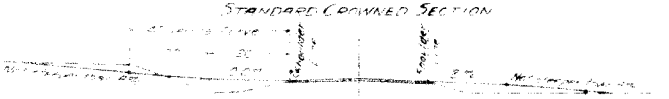


Sign to be made of metal 3/16" thick at least three feet on the side. Background to be white, SLOW and ROAD UNDER CONSTRUCTION in black letters. Name of contractor to be set on 6"x6" posts off to the side.

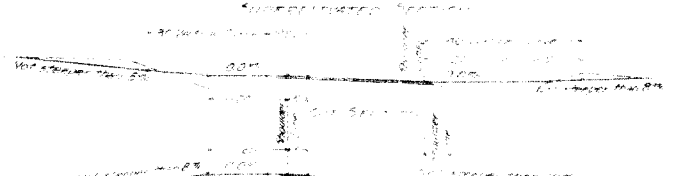
Typical Plan for Side Approach Roads



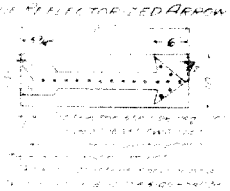
Standard Crowned Section



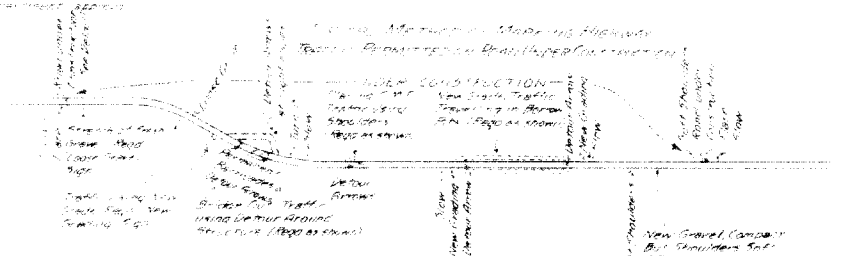
Superelevated Section



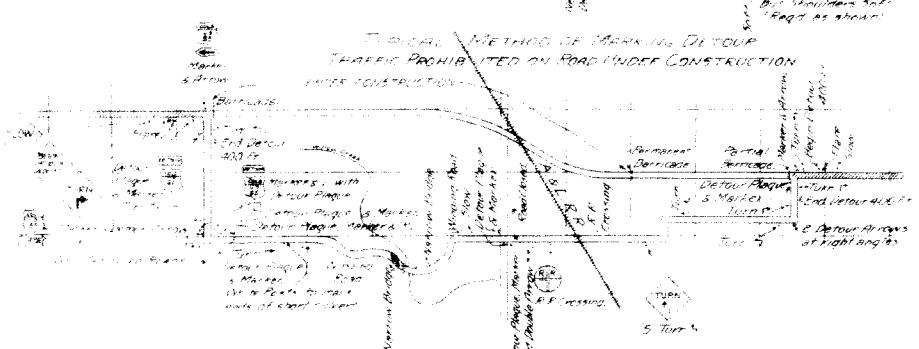
Indication Detail of Reflector Red Arrow



Typical Method of Marking Highway Traffic Prohibited on Road Under Construction



Typical Method of Marking Detour Traffic Prohibited on Road Under Construction



General Notes on Barricades

The maximum grades around barricades are to be the following grades: For all paved or gravel surfaced roads 8%.

Where the length of the grade which is determined by the intersection of these grades with the natural ground is such as to damage the property so served, or cause unreasonable construction, the grades may be increased.

In such cases, methods used and maximum grades shall be as directed on the plans or provided by work orders.

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 June 1937.

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 constructed non-glare barricades and prepared caution and warning signs. The Contractor shall use such barricades, signs and lights 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 relocated to approximate any new 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 reflector red 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	
Made by	KBT
Check	J.S.M.
Check	R.A.A.

Approved by C.H. Marshall
Date Aug. 20, 1938

M-2-B

W.P.S.S. 429-A(2)

STA. 479-678 TO STA. 482+95

Sta 479+67.8 - 479+97.8 - Req'd. Reinf. Conc. Bridge Slab (Details Sht. # 7.)
Sta 479+67.8 - Req'd - Rem. 6"×12"×40' Timber Header.
Sta 479+97.8 - 480+28.7 - Req'd. 100 Sq. Yds. Conc. Pavement. (Details Sht. # 7)
Sta 479+67.8 - 480+28.7 - Req'd - 40 Cu. Yds. Sel. Material for shoulders Rt. & Lt.
Sta 480+28.7 - 480+38.7 - Req'd. - Tunnel Portal (Details on Snts # 4 & 6)
Sta 480+28.7 - 482+21.1 - Req'd. - 480 Sq. Yds. Concrete Pavement. (Details on Sht. # 3)
Sta 480+28.7 - 482+21.1 - Req'd - 395 Lin. Ft. Comb. Recessed Reflector Curb & Gutter Rt. & Lt. (Details on Sht. # 3)
Sta 480+28.7 - 482+21.1 - Req'd - 1000 Sq. Ft. Conc. Sidewalks Rt. & Lt. & 50 Cu. Yds. Selected Material to fill under sidewalks. (Details on Sht # 3)
Sta 482+16.4 - 482+21.1 - Req'd - Tunnel Portal (Details on Snts # 5 & 6)
Sta. 482+21.1 - 482+65 - Req'd - 140 Sq. Yds. Conc. Pavement. (Details on Sht. # 7)
Sta 482+65 - 482+95 - Req'd - Reinf. Conc. Bridge Approach (Details on Sht. # 7)
Sta 482+21.1 - 482+95 - Req'd - 45 Cu. Yds. Sel. Material for shoulders Rt. & Lt.
Sta 482+95 - Req'd. Rem. 6"×12"×40' Timber Header.

Selected Material for above locations is estimated to be available from Pit Rt. & Lt. 492+00 & is to be classified and paid for as "Unclassified Excavation."

Estimated overhaul involved:
Sta 479+ - 480+ - 400 Sta Yds Overhaul
Sta 480+ - 482+ - 450 Sta Yds Overhaul
Sta 482+ - 750 Sta Yds Overhaul

Sta 477+ to 590+ - Req'd 100 cu yds Boulder Excavation. This excavation will be required at various locations on the Project to to be designated by the Engineer during construction. This quantity may be materially increased or decreased during construction to meet actual construction requirements.

Revised 4-27-39 H.J.S
Revised Index 5-25-39 H.J.S
Rev Abut No 1, F-15-U 4-27-39 R.A.D
Rev W.P.S.S. 429-A(1) C.O. # 3 - 7-25-39 H.J.S
Rev W.P.S.S. 429-A(2) - 8-5-39 H.J.S
Rev W.P.S.S. 429-A(1) C.O. # 3 & 429-A(2) 10-11-39 T.T.

STA. 477+28.1 END W.P.H. PROJECT NO. 81-F UNIT NO. 2
BEGIN W.P.S.S. PROJECT NO. 429-A(1)
CONSTRUCTION (I.V. NO. 1183)

Pt. 475+66.2

Sta 477+28.1 Reqd Project Marker.

STA 477+28.1 END W.P.H. PROJ. NO. 81-F UNIT-2
BEGIN W.P.S.S. PROJ. NO. 429-A (1)
CONSTRUCTION (I.V. NO. 1183)

Note: Alignment and grades as staked thereon are subject to adjustment during construction after approval from Denver Office.

Sign, Fence & Guard Posts to be placed under Constr. Div. # 3 are tabulated on Sheet # 6

Sta 482+16.4 - 482+21.1 Reqd. 50' Tunnel Portal (Detail on Sheet # 7)

Excavation from channel changes shall be used for constructing dikes, filling old channels, or in roadway embankments, as directed by the Engineer.

Sta 479+97.8 - 480+28.7 Reqd. 1 Span @ 54' Conc. & I Beam Bridge (Details on Shts # 15 to 18)

Sta 482+95 - 484+05 - Reqd. 1 Span @ 51' Conc. & I Beam Bridge (Details on Shts # 15 to 18) & 600 Cu. Yds. Uncl. Excav. for Channel Improvement.

NOTES ON STRUCTURE NO. F-15-T

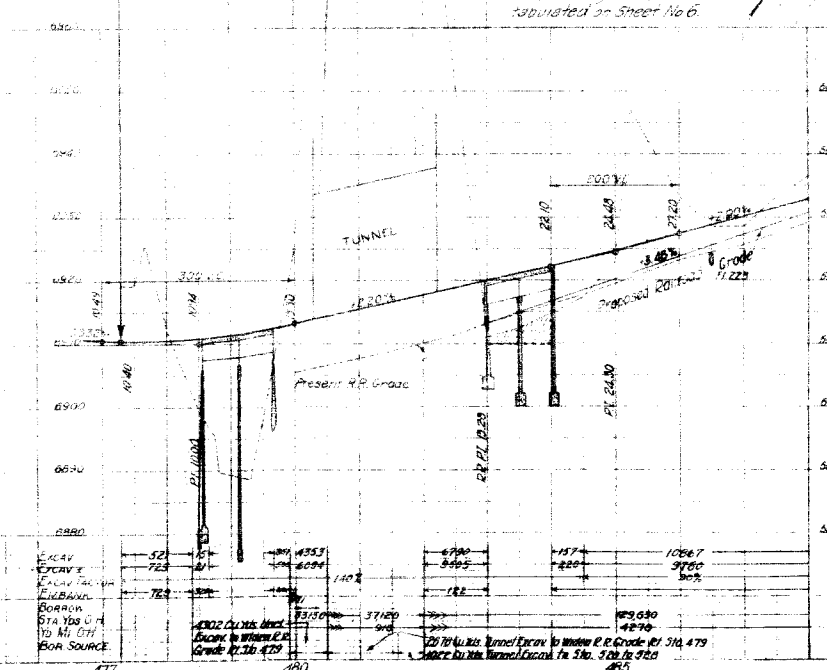
PRESENT STRUCTURE	PROPOSED STRUCTURE
Span	Position referred to present structure
Clear Roadway	Span 2 @ 54'
Clear Waterway	Clear Roadway
Type of Superstructure	Clear Waterway
Type of Substructure	Type of Superstructure Conc. & I Beam
Requirements as to removal	Type of Substructure Conc. Abuts. & Pier
STREAM DATA:	Detour Structure requirements None
Drainage Area in Sq. Mi. 2.90	U.P. Siding Forks Creek road to Bridge Site 1/4 Mi.
Velocity during high water	Nearby structures on same stream
ELEVATION OF:	Location
Maximum high water Low water	Waterway
Normal Stage Stream Bed 6853.5	Record during floods
Drift Scour	

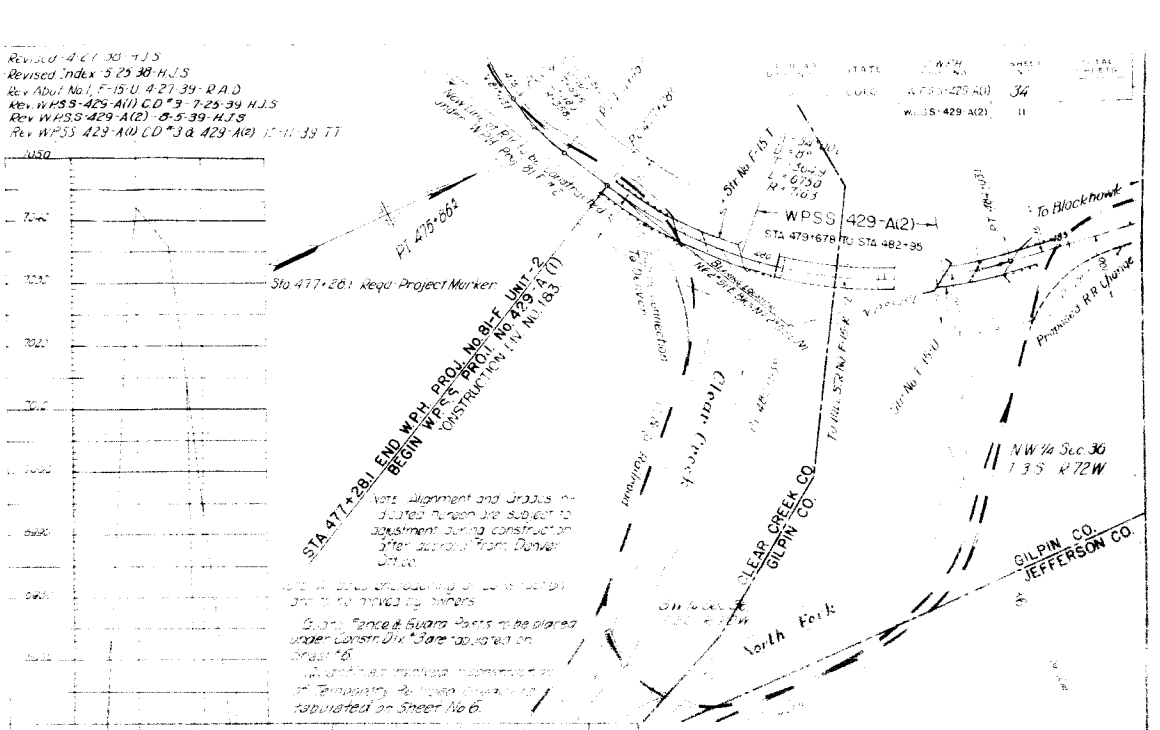
New Alignment

NOTES ON STRUCTURE NO. F-15-U

PRESENT STRUCTURE	PROPOSED STRUCTURE
Span	Position referred to present structure
Clear Roadway	Span 2 @ 51'-0"
Clear Waterway	Clear Roadway 30'-0"
Type of Superstructure	Clear Waterway 645 Sq. Ft.
Type of Substructure	Type of Superstructure Conc. & I Beam
Requirements as to removal	Type of Substructure Abut. # 1 Cantilever, Pier # 2 Conc. Abut # 3 Cantilever
STREAM DATA:	Detour structure requirements None
Drainage Area in Sq. Mi. 62	U.P. Siding Forks Creek, road to bridge site 500 Ft.
Velocity during high water	Nearby structures on same stream
ELEVATION OF:	Location
Maximum high water Low water	Waterway
Normal Stage 6910.0 Stream Bed 6910.0	Record during floods
Drift Scour	

New Alignment



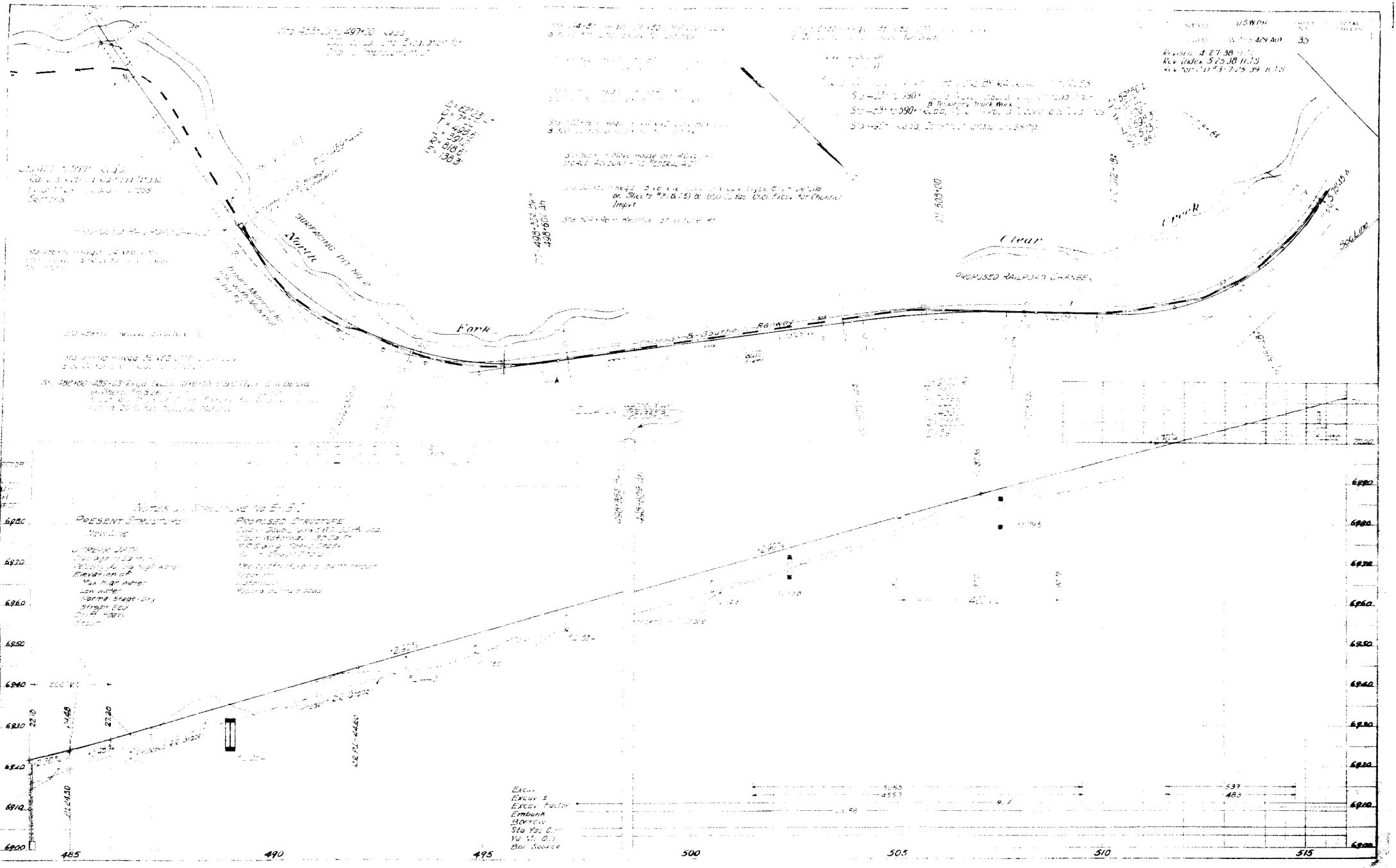


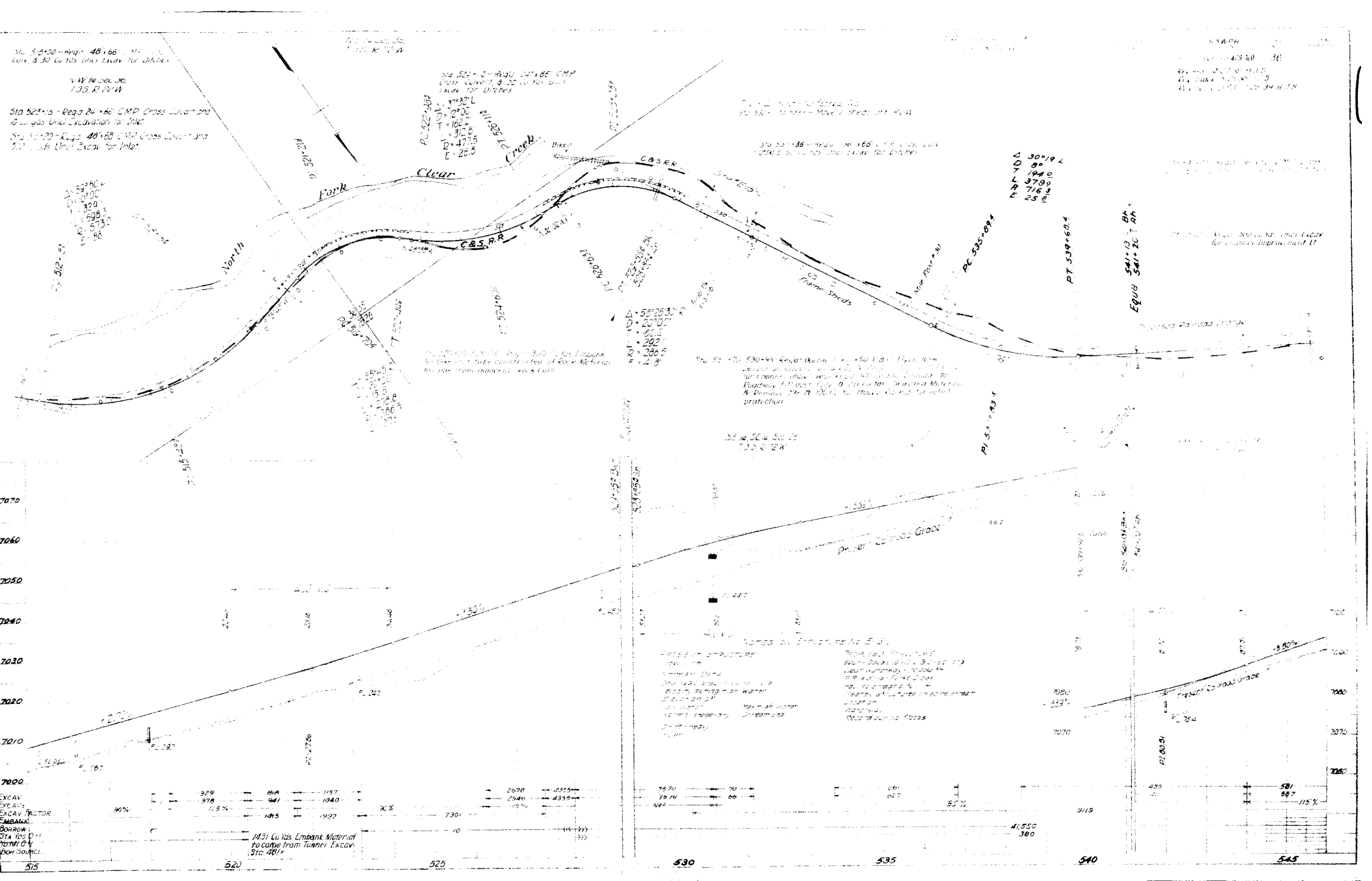
W.P.S.S. 429-A(1)

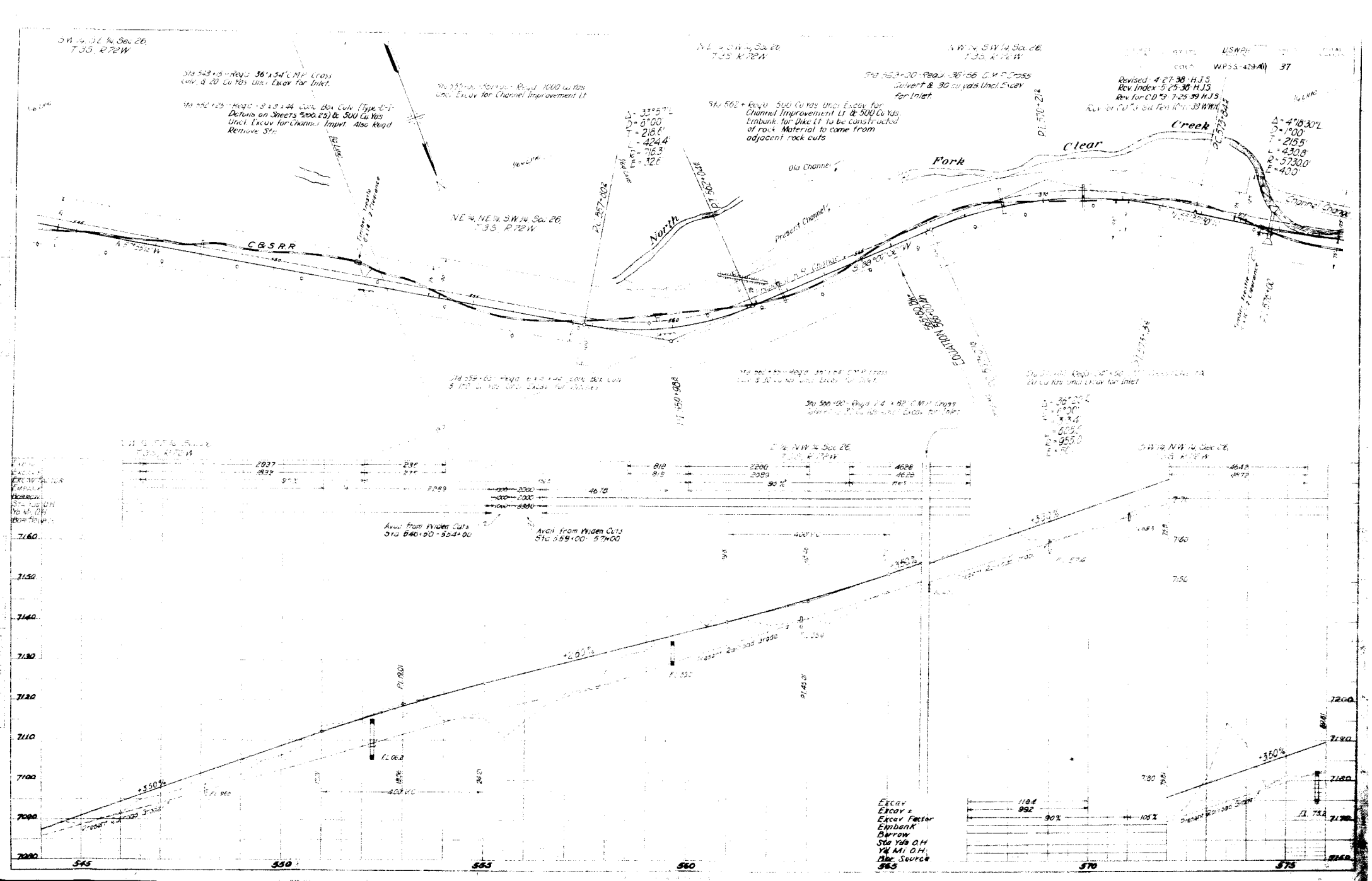
Construction Div. # 3 consists of Blading and Grading Roadway, Placing Surfacing Material, Guard Fences & Posts on the Project.

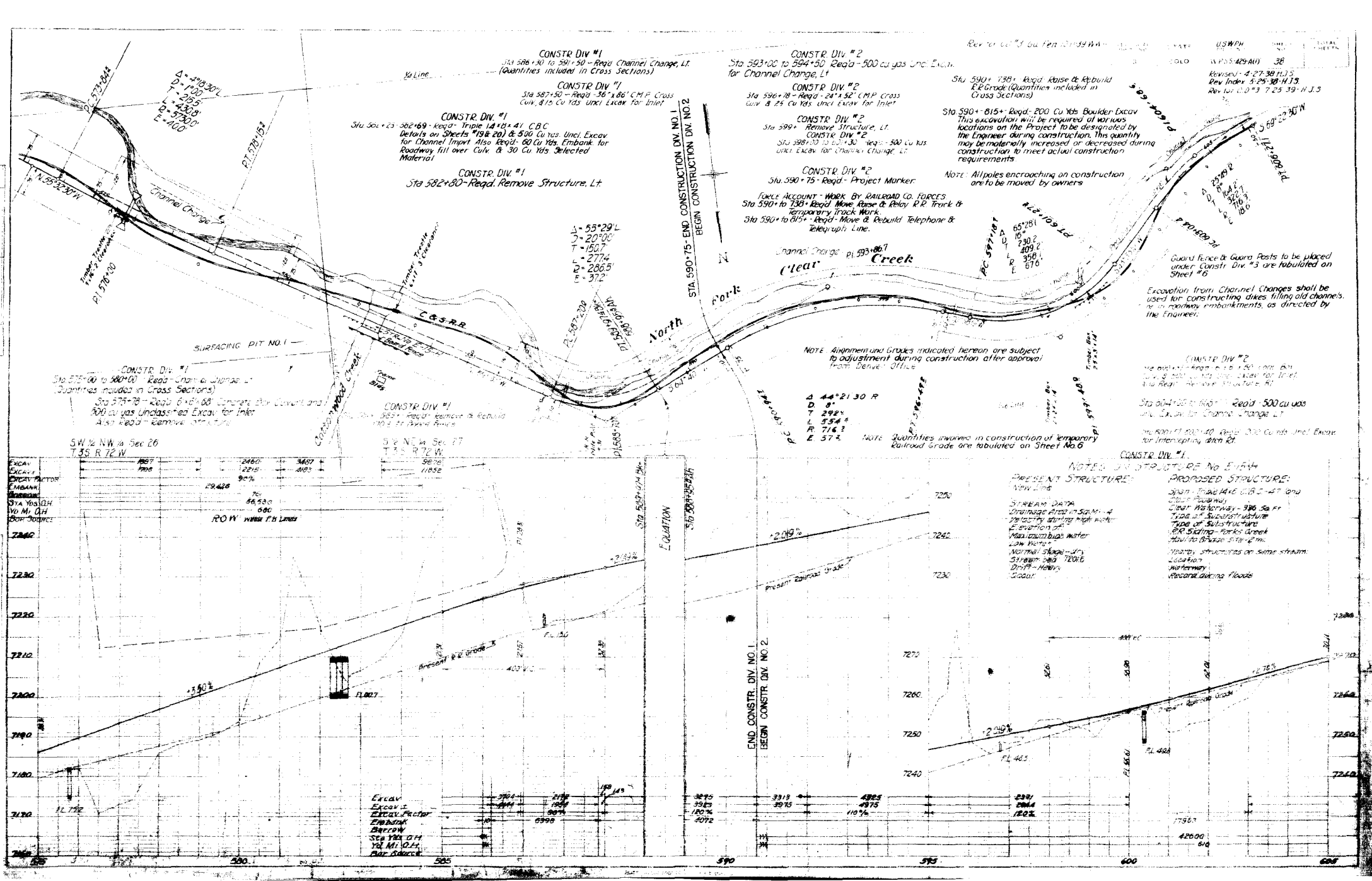
Surfacing Plan on Sht. No. 6 of Plans
Guard Fencing Reqd. on Sht. No. 6 of Plans.
Guard Posts Reqd. on Sht. No. 6 of Plans

Sta 477+28.1 - 815+75 Reqd. 6.4 Miles Blading & Grading Roadway.


Fork
Clear
PROPOSED RAILROAD CHANGE
Notes on Structure No E-3.
PRESENT STRUCTURE
PROPOSED STRUCTURE
485
490
495
500
505
510
515


Clear Fork Creek
North Fork
C&S R.R.
Frame Sheds
PC 535+69.4
PT 539+68.4
Equa 541+13 = Ba
541+26.7 Ah
Pioneer Co Road Grade
Present Co Road Grade
EXCAV
EXCAV.
EXCAV. FACTOR
EMBANK.
BORROW
Sta 105 Cu Yds
from B.Y.
BOR SOURCE
1431 Cu Yds. Embank. Material to come from Tunnel Excav Sta. 481+
515
520
525
530
535
540
545

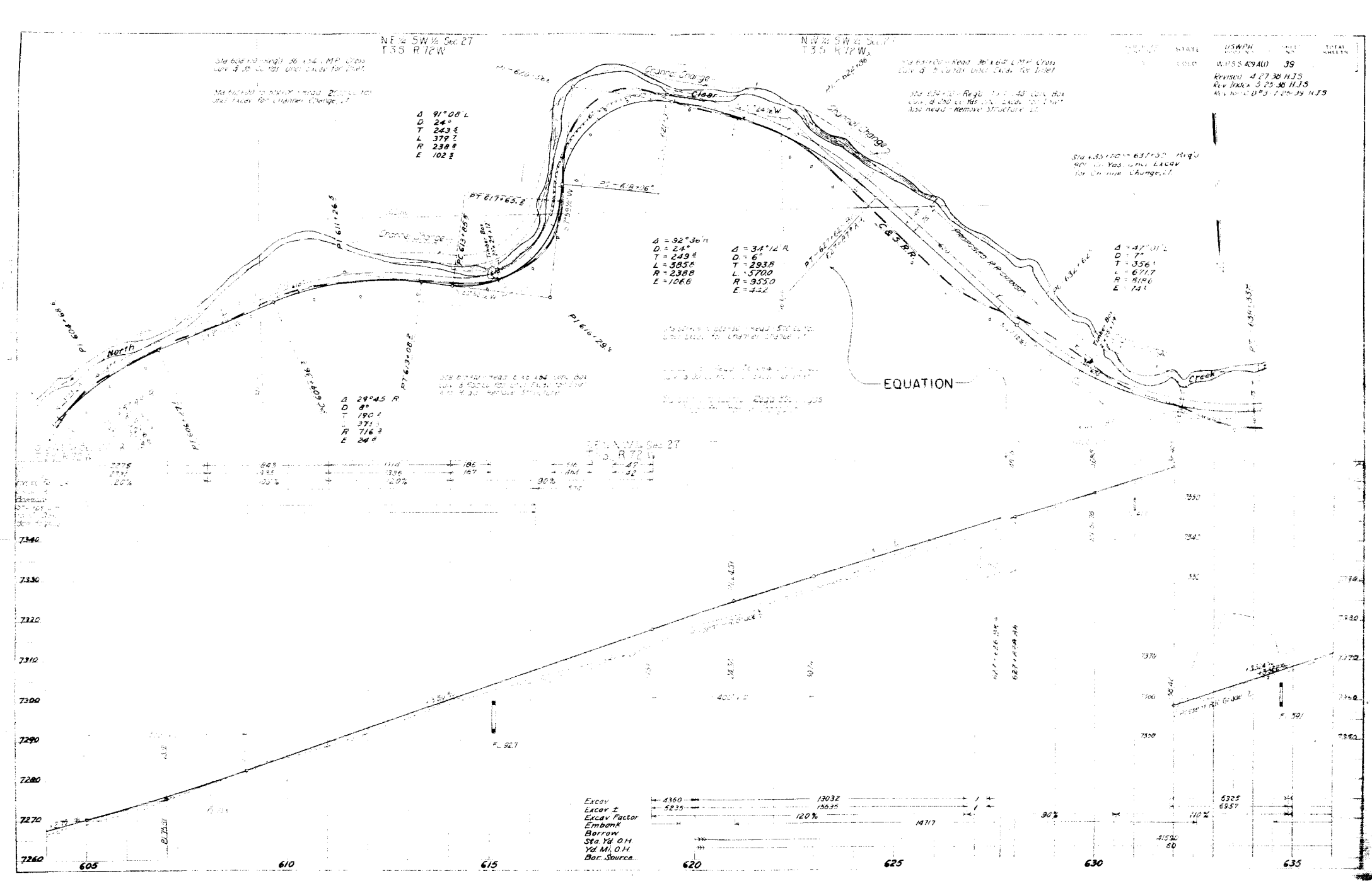

SW¼ SE¼ Sec 26, T 35, R 72 W
NE¼ NE¼ SW¼ Sec 26, T 35, R 72 W
NW¼ SW¼ Sec 26, T 35, R 72 W
Sta 543+15 - Reqd 36"x54" C M P Cross Culv. & 20 Cu Yds Unc'l Excav for Inlet.
Sta 552+25 - Reqd 3 @ 3'x3'-44 Conc Box Culv (Type C-1 Details on Sheets 220a,25) & 300 Cu Yds Unc'l Excav for Channel Imprvt. Also Reqd Remove Str.
Sta 555+00 - Reqd 1000 Cu Yds Unc'l Excav for Channel Improvement Lt.
Sta 560 + Reqd 500 Cu Yds Unc'l Excav for Channel Improvement Lt & 500 Cu Yds Embank for Dike Lt to be constructed of rock Material to come from adjacent rock cuts
Sta 563+30 - Reqd 36"x66" C M P Cross Culvert & 30 cu yds Unc'l Excav for Inlet
Revised - 4-27-38 - H J S
Rev Index - 5-25-38 - H J S
Rev for C D's 7-25-39 H J S
WPSS-429(A)) 37
Clear Creek
Fork
North
Channel Change
C & S R R
Old Channel
Present Channel
Former Location & Alignment
Elevation 566.90 Sta 564+00
Sta 559+65 - Reqd 6 @ 3'x3'-44 Conc Box Culv & 180 Cu Yds Unc'l Excav for Inlet
Sta 564+50 - Reqd 36"x66" C M P Cross Culvert & 30 Cu Yds Unc'l Excav for Inlet
Sta 566+00 - Reqd 18"x52" C M P Cross Culvert & 20 Cu Yds Unc'l Excav for Inlet
Sta 567+00 - Reqd 18"x52" C M P Cross Culvert & 20 Cu Yds Unc'l Excav for Inlet
Avail from Widen Cuts Sta 540+90 - 554+60
Avail from Widen Cuts Sta 559+00 - 577+00
Excav
Excav s
Excav Factor
Embank
Borrow
Sta Yds O.H.
Yd Mi O.H.
Misc Source
90%
105%
+3.50%
+6.00%
+3.50%
+3.50%
Sta 545
Sta 550
Sta 555
Sta 560
Sta 565
Sta 570
Sta 575

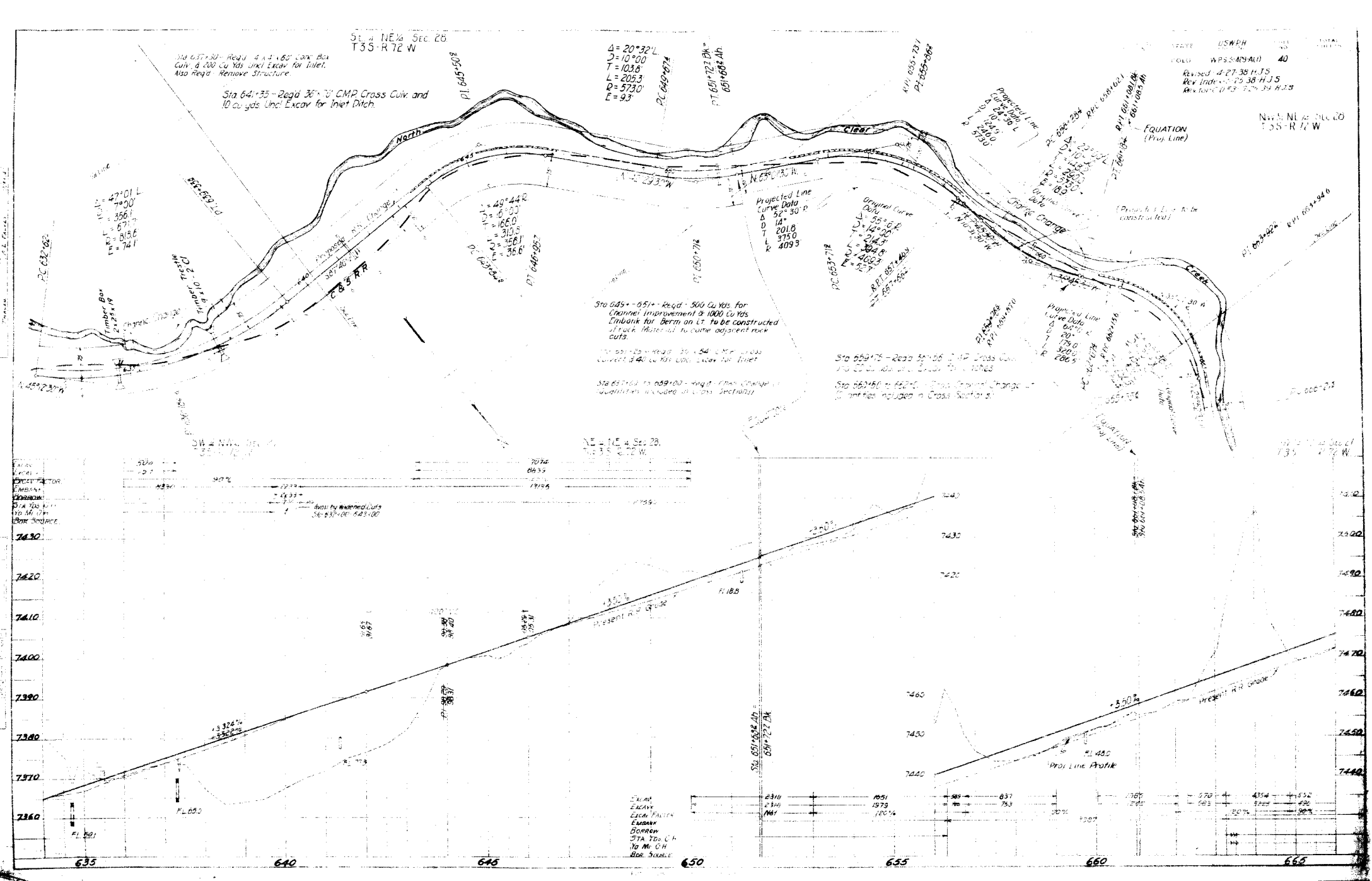


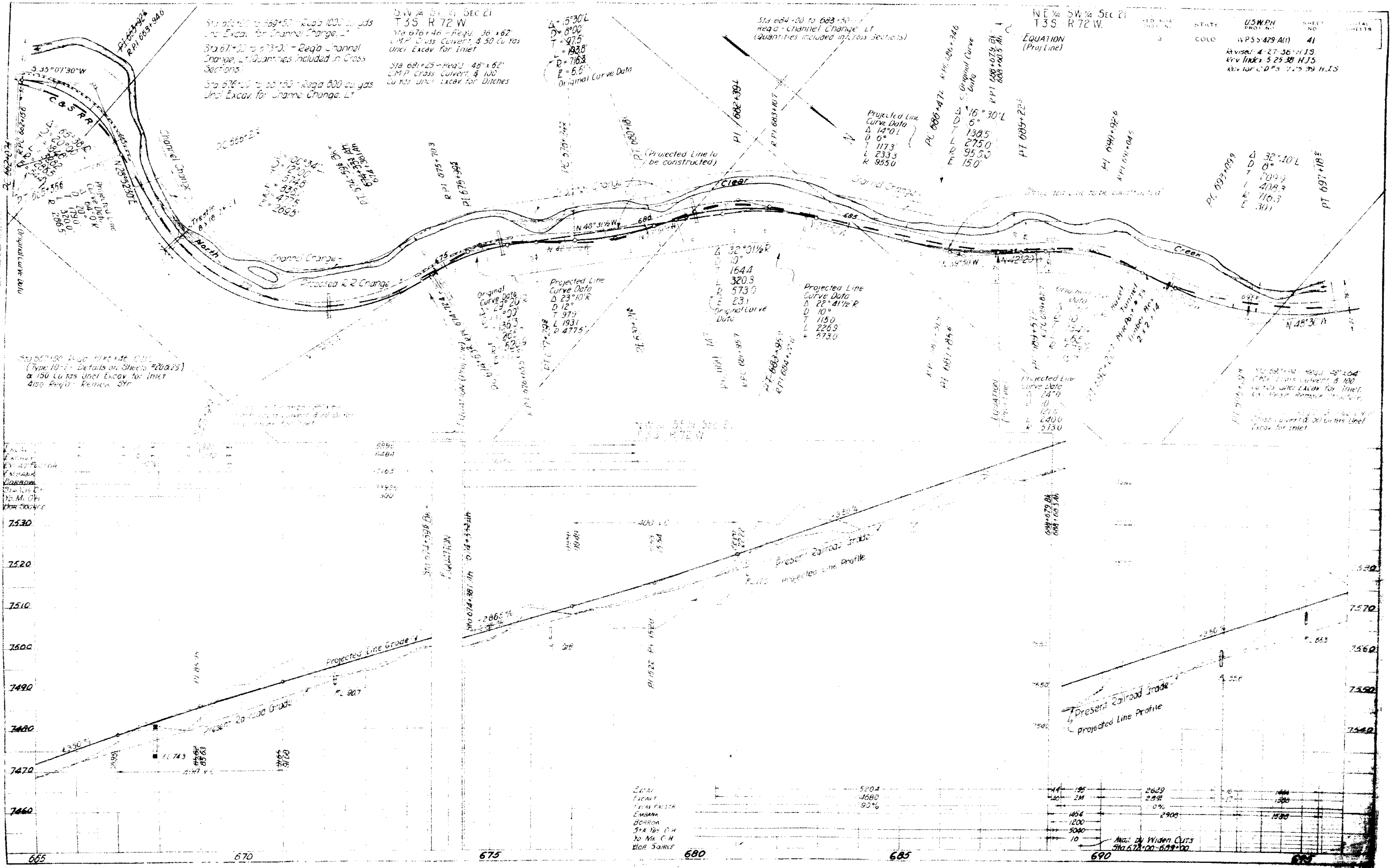
Rev. to Cul. #3 Culvert Only 9-4-39 W.A.

STATE	U.S.W.P.H.	SHEET NO.	TOTAL SHEETS
COLO.	W.P.H.S. 429 A(1)	38	

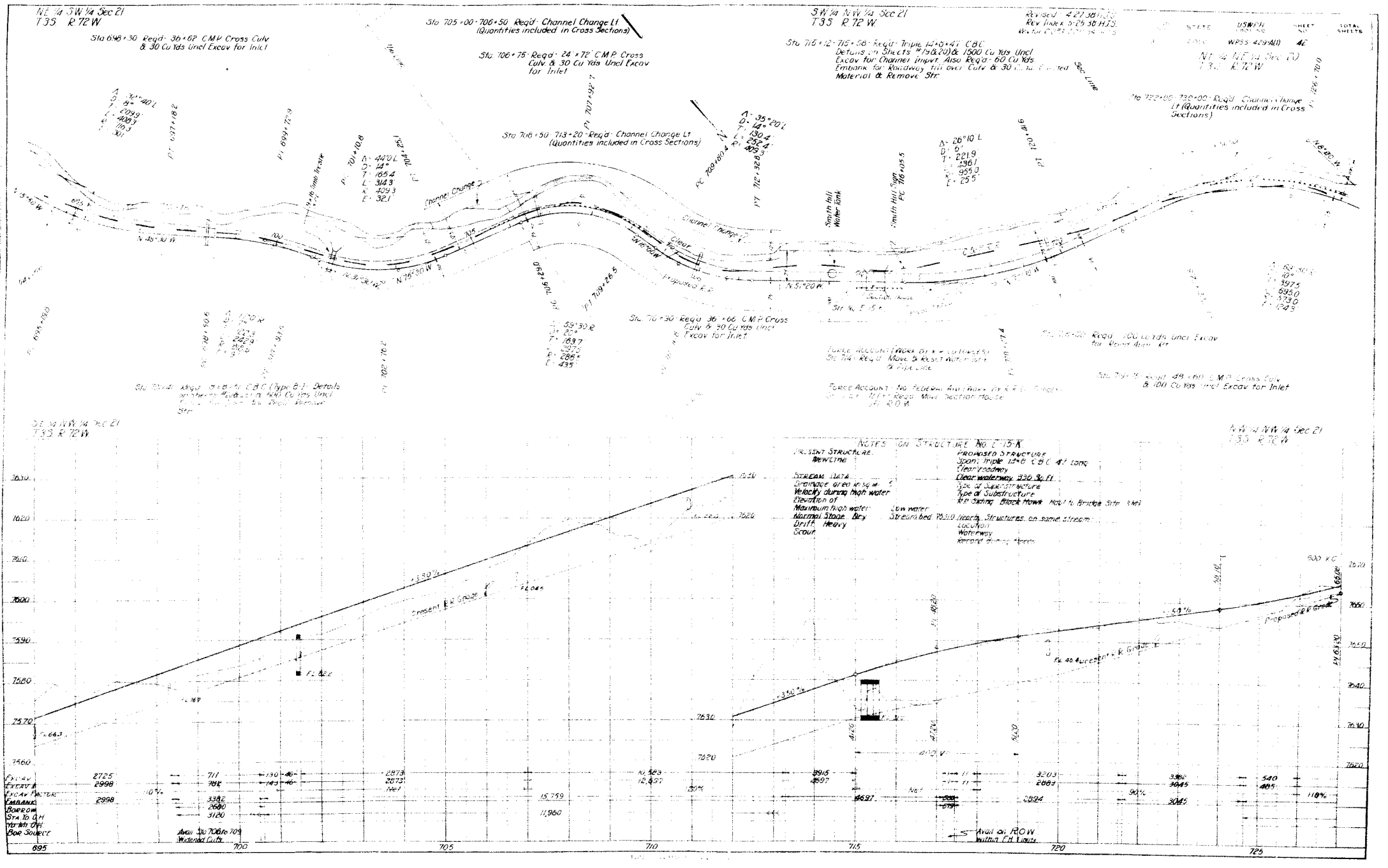
Revised - 4-27-38 H.J.S.
Rev. Index 5-25-38 H.J.S.
Rev. for C.D. #3 7-25-39 H.J.S.

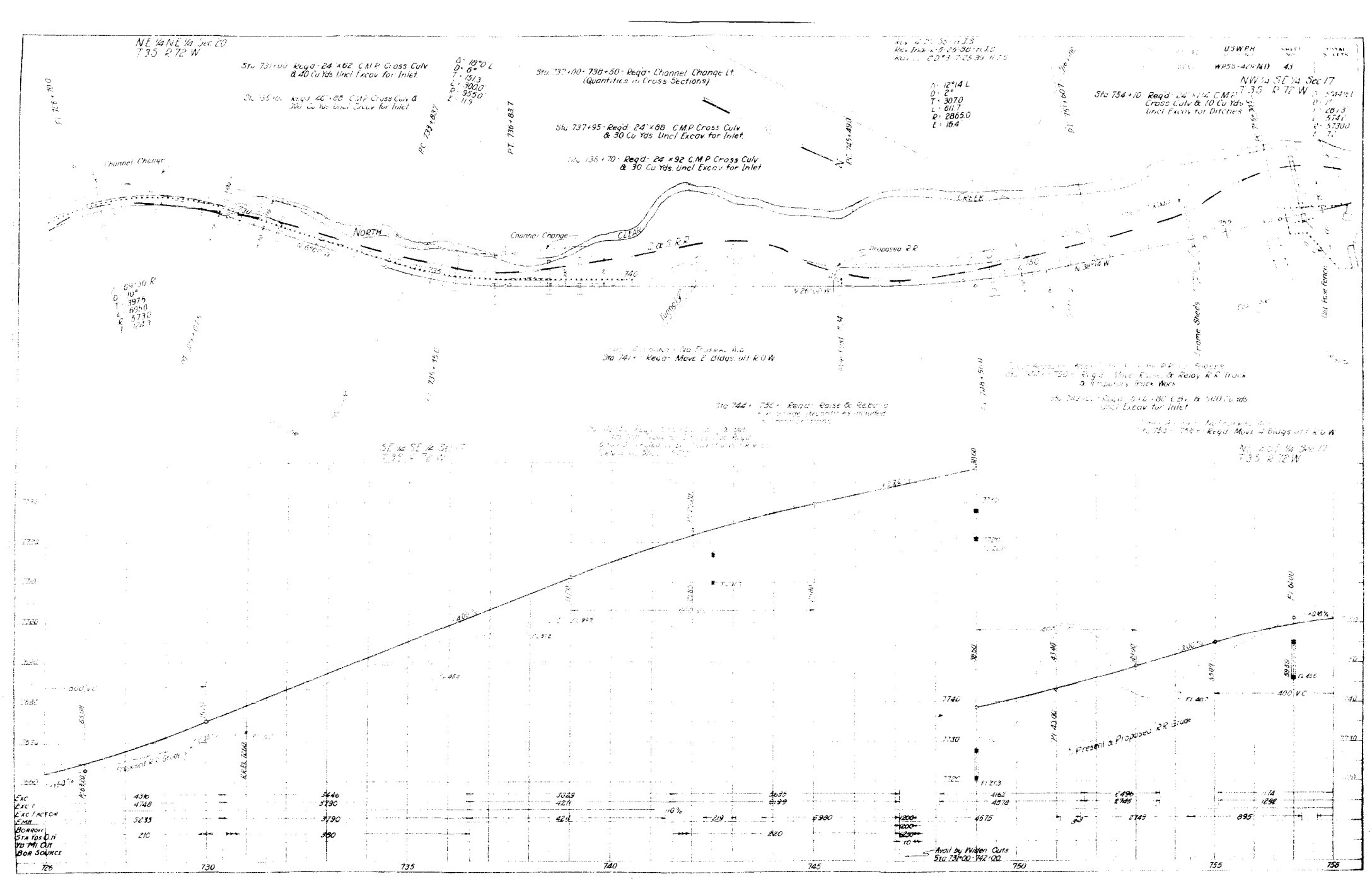

NE ¼ SW ¼ Sec 27
T 3 S R 72 W
NW ¼ SW ¼ Sec 27
T 3 S R 72 W
STATE
USNPH
SHEET NO.
TOTAL SHEETS
COLO
W.P.S.S. 609A(1)
39
Revised 4 27 38 H.J.S
Rev Index 5 25 38 H.J.S
Rev Index 8 23 38 7 26 38 H.J.S
Grand Change
Clear
Channel Change
Proposed P.P. Change
EQUATION
North
Creek
Timber Box
Excav
Excav ±
Excav Factor
Embank
Borrow
Sta. Yd. O.H.
Yd. Mi. O.H.
Bor. Source
120%
90%
110%
605
610
615
620
625
630
635
7340
7330
7320
7310
7300
7290
7280
7270
7260

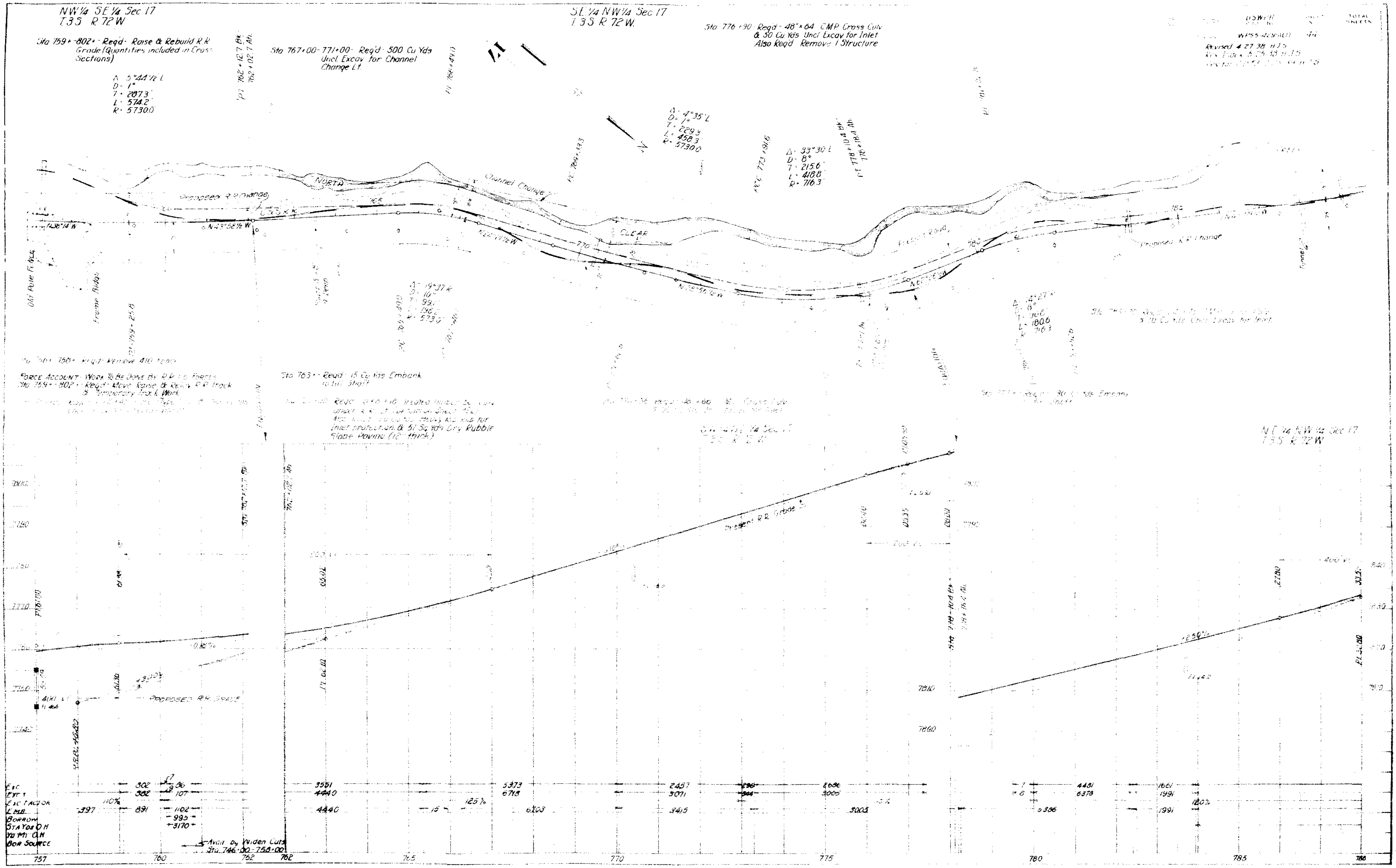

Sta 637+30 - Reqd 4 A.P. (60" Conc Box Culv. & 200 Cu Yds Unkl Excav for Inlet. Also Reqd - Remove Structure.
Sta 641+35 - Reqd 36" - 0" CMP Cross Culv. and 10 cu yds Unc! Excav for Inlet Ditch.
Sta 645+ - 651+ - Reqd - 500 Cu Yds for Channel Improvement & 1000 Cu Yds Embankk for Berm on Lt. to be constructed of rock Material to come adjacent rock cuts.
Sta 659+75 - Reqd 36" - 0" CMP Cross Culv. and 10 cu yds Unc! Excav for Inlet
Sta 651+00 to 659+00 - Reqd - Finish Changes in Quantities Included in Cross Sections
Sta 661+50 to 662+50 - Finish Channel Changes - Quantities Included in Cross Sections
Sec 4 NE¼ Sec. 28 T35-R 12 W
N½ NE¼ Sec 28 T35-R 12 W
Δ = 20°32' L
D = 10°00
T = 103.8
L = 205.3
R = 573.0'
E = 9.3'
Projected Line Curve Data
Δ 52° 30' R
D 14°
T 201.8
L 375.0
R 409.3
EQUATION (Proj. Line)
Revised 4-27-38 H.J.S.
Rev. Index 5-25-38 H.J.S.
Rev. for C.B.S.R. 7-25-38 H.J.S.
North Clear Creek
Proj. Line Profile
Present R.R. Grade
+3.50%
+3.324%
+3.52%
+2.00%
EL 650
EL 661
EL 488
EL 1885
Sta 651+00 Ah 661+85 Ah
Sta 651+00 Ah 661+27 Bk
635
640
645
650
655
660
665



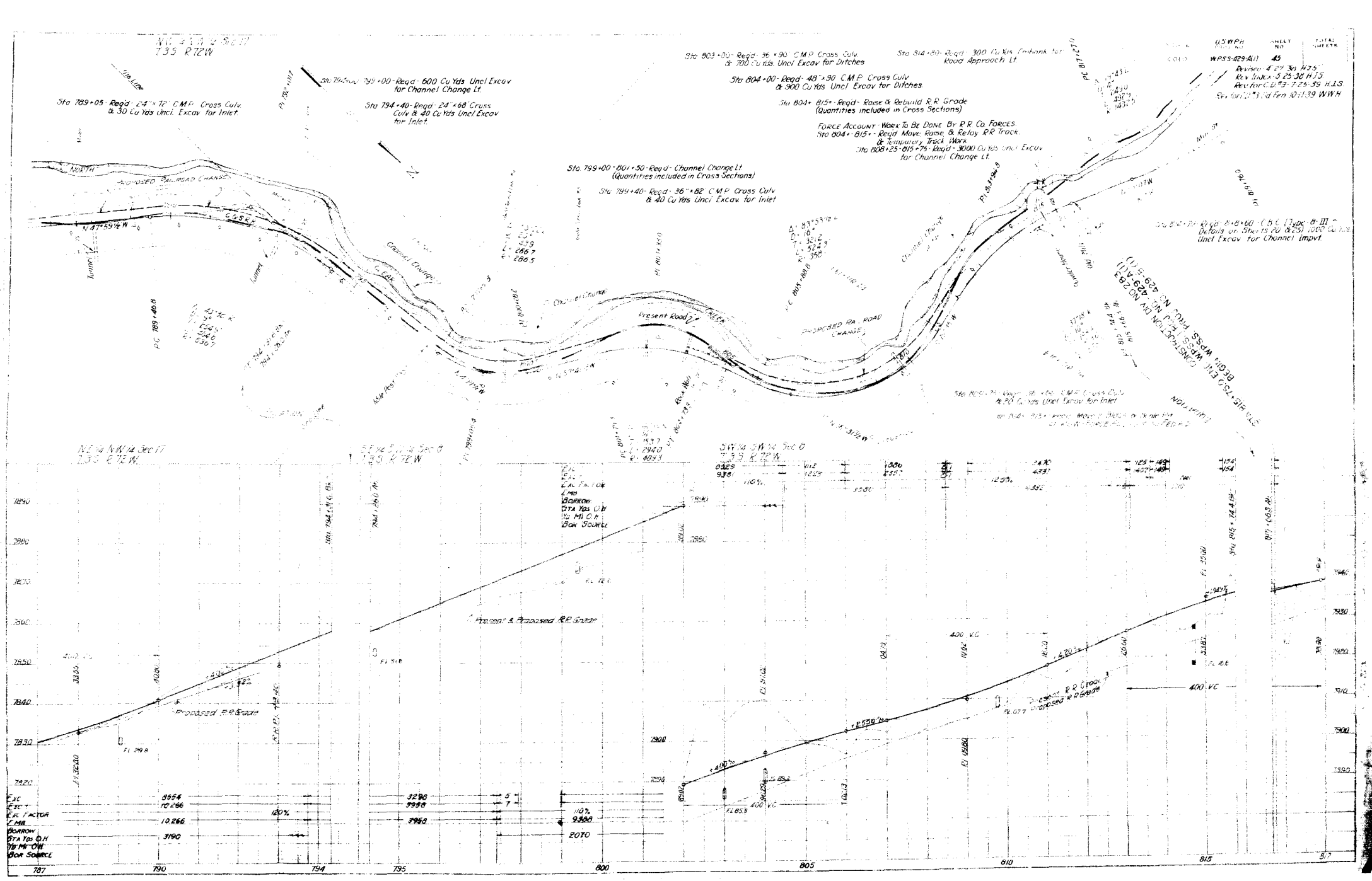
N E ¼ S W ¼ Sec 21
T 3 S R 72 W
EQUATION
(Proj Line)
STATE COLO
U.S.W.P.H. PROJ. NO. WPSS 429 A(1)
SHEET NO. 41
Revised 4-27-36 H.J.S.
Rev Index 5-25-38 H.J.S.
Rev for C.D #5 7-25-39 H.J.S.
S.W. ¼ SW ¼ Sec 21
T 3 S R 72 W
Sta 676+46 - Req'd 36" x 62" C.M.P. Cross Culvert & 50 Cu Yds Uncl Excav for Inlet
Sta 681+25 - Req'd 48" x 62" C.M.P. Cross Culvert & 100 Cu Yds Uncl Excav for Ditches
Sta 671+00 to 673+00 - Req'd Channel Change, Lt (Quantities included in Cross Sections)
Sta 676+00 to 681+50 - Req'd 800 Cu yds Uncl Excav for Channel Change Lt
Sta 684+00 to 688+50 - Req'd Channel Change Lt (Quantities included in Cross Sections)
Original Curve Data
Projected Line Curve Data
Δ 14°01' L
D 6°
T 117.3
L 233.3
R 955.0
Δ 16°30' L
D 6°
T 138.5
L 275.0
R 955.0
E 15.0
Δ 32°40' L
D 6°
T 209.9
L 408.3
R 716.3
E 30.1
Δ 32°01½' R
D 10°
T 164.4
L 320.3
R 573.0
E 23.1
Projected Line Curve Data
Δ 22°41½' R
D 10°
T 115.0
L 226.9
R 573.0
Projected Line Curve Data
Δ 23°10' R
D 12°
T 97.9
L 193.1
R 477.5
C & S R.R.
North
Clear
Creek
Channel Change
Proposed R.R. Change
Trestle
(Projected Line to be constructed)
Projected Line to be constructed
N 48°31½' W
N 59°50' W
N 42°20' W
N 48°30' W
S 35°07'30" W
N 29°52'30" E
Present Railroad Grade
Projected Line Profile
Projected Line Grade
+3.50%
+4.350%
+2.865%
400' V.C.
7530
7520
7510
7500
7490
7480
7470
7460
7570
7560
7550
7540
665
670
675
680
685
690
Avail by Widen Cuts Sta 674+00 - 689+00
Excav
Embank
Borrow
Sta Yds O.H.
Yd. Mi. O.H.
Borr. Source


NE ¼ SW ¼ Sec 21
T 33 R 72 W
SW ¼ NW ¼ Sec 21
T 33 R 72 W
NE ¼ NE ¼ Sec 20
T 33 R 72 W
Sta 696+30 Reqd: 36"x62' CMP Cross Culv & 30 Cu Yds Uncl Excav for Inlet
Sta 705+00-706+50 Reqd: Channel Change Lt (Quantities included in Cross Sections)
Sta 706+75 Reqd: 24"x72' CMP Cross Culv & 30 Cu Yds Uncl Excav for Inlet
Sta 715+12-715+56 Reqd: Triple 12'x6'x47' CBC Details on Sheets #19&20) & 1500 Cu Yds Uncl Excav for Channel Impvt. Also Reqd: 60 Cu Yds Embank for Roadway Fill over Culv & 30 Cu Yds Structural Material & Remove Str.
Sta 716+50-713+20 Reqd: Channel Change Lt (Quantities included in Cross Sections)
Sta 732+05-730+00 Reqd: Channel Change Lt (Quantities included in Cross Sections)
Channel Change 'L'
Channel Change 'R'
Clear
Proposed R/W
Section Line
South Hill Water Tank
Smith Hill Sign
Sta 706+30 Reqd: 36"x66' CMP Cross Culv & 30 Cu Yds Uncl Excav for Inlet
Sta 732+00 Reqd: 100 Cu Yds Uncl Excav for Paved Apron Str
Sta 730+30 Reqd: 48"x80' CMP Cross Culv & 100 Cu Yds Uncl Excav for Inlet
FORCE ACCOUNT: Work of Removing Existing Str. & Pipe Line
FORCE ACCOUNT: No Federal Aid Work for Relocating Existing Water Main
Str No. E-15-K
Present R/W Grade
Proposed R/W Grade
NOTES ON STRUCTURE NO. E-15-K
PRESENT STRUCTURE
Waterline
STREAM DATA
Drainage area in sq. mi.
Velocity during high water
Elevation of
Maximum high water
Normal Stage
Drift
Scour
Low water
Streambed
PROPOSED STRUCTURE
3span; Triple 12'x6' CBC 47' long
Clear roadway
Clear waterway 330 Sq. Ft.
Type of Superstructure
Type of Substructure
Rip Rap Stone Block Work
Haul to Bridge Site
Hearby Structures on same stream
Location
Waterway
Record during flood
Excav
Excav B
Excav Factor
Embank
Borrow
Sta to Sta
Form Out
Bor Source
Avail Sta 706 to 709
Widened Cuts
Avail Sta ROW
within F.H. Limits
695
700
705
710
715
720
725


NE ¼ NE ¼ Sec 20 T 35 R 12 W
Sta 731+00 Reqd - 24 x 62 C.M.P. Cross Culv & 40 Cu Yds Uncl Excav for Inlet
Sta 735+10 Reqd - 40 x 88 C.M.P. Cross Culv & 300 Cu Yds Uncl Excav for Inlet
Sta 737+00 - 738+50 - Reqd - Channel Change Lt. (Quantities in Cross Sections)
Sta 737+95 - Reqd - 24 x 88 C.M.P. Cross Culv & 30 Cu Yds Uncl Excav for Inlet
Sta 738+70 - Reqd - 24 x 92 C.M.P. Cross Culv & 30 Cu Yds Uncl Excav for Inlet
Sta 741+ - Reqd - Move 2 Bldgs. off R.O.W.
Sta 744 + 750 - Reqd - Raise & Relocate
Sta 754+10 Reqd - 24 x 142 C.M.P. Cross Culv & 10 Cu Yds Uncl Excav for Ditches
NW ¼ SE ¼ Sec 17 T 35 R 12 W
Sta 758+ - Reqd - Move 2 Bldgs off R.O.W.
SE ¼ SE ¼ Sec 17 T 35 R 12 W
NE ¼ SE ¼ Sec 20 T 35 R 12 W
USWPH
WP55-326(N1) 43
Channel Change
NORTH
CREEK
Proposed R.R.
Present & Proposed R.R. Grade
Excav
Excav Factor
Emb.
Borrow
Sta Yds O.H.
Yds Mtl. Out
Bor. Source
Avail. by Widen Cuts Sta 731+00 - 742+00



NW¼ SE¼ Sec 17
T 3 S R 72 W
Sta 759+ -802+ - Req'd - Raise & Rebuild R.R. Grade (Quantities included in Cross Sections)
Δ - 5°44½' L
D - 1°
T - 287.3
L - 574.2
R - 5730.0
Sta 767+00-771+00 - Req'd - 500 Cu Yds Uncl Excav for Channel Change Lt
SE¼ NW¼ Sec 17
T 3 S R 72 W.
Sta 776+90 - Req'd - 48" x 64 CMP Cross Culv & 50 Cu Yds Uncl Excav for Inlet
Also Req'd Remove 1 Structure
Revised 4-27-38
Δ - 4°35' L
D - 1°
T - 229.3
L - 458.3
R - 5730.0
Δ - 33°30' L
D - 8°
T - 215.6
L - 418.8
R - 716.3
Δ - 19°37' R
D - 10°
T - 99.7
L - 196.2
R - 573.0
NORTA
Channel Change
Proposed R.R. Change
Proposed R.R. Change
CLEAR
N 43°58' W
N 24°11½' W
N 58°56½' W
Old Pole R Row
Frame Bldgs
Sta 763+ - Req'd - 15 Cu Yds Embank to fill Shaft
Force Account - Work To Be Done By R.R. Co. Forces
Sta 759+ -802+ - Req'd - Move Raise & Relay R.R. Track & Temporary Track Work
NE¼ NW¼ Sec 17
T 3 S R 72 W
Present R.R. Grade
Proposed R.R. Grade
-0.82%
+3.00%
+2.50%
Exc
Exc Factor
Emb
Borrow
Sta Yds O.H.
Yd Mi O.H.
Bor Source
Avail by Widen Cuts Sta 746+00-758+00
757
760
762
762
765
770
775
780
785
786


NE¼ NW¼ Sec 17 T35 R12W
Sta 789+05 - Reqd - 24" x 72' C.M.P. Cross Culv & 30 Cu Yds Uncl. Excav for Inlet
Sta 794+40 - Reqd - 24" x 68' Cross Culv & 40 Cu Yds Uncl Excav for Inlet
Sta 799+00 - Reqd - 600 Cu Yds Uncl Excav for Channel Change Lt
Sta 799+00 - 801+50 - Reqd - Channel Change Lt (Quantities included in Cross Sections)
Sta 799+40 - Reqd - 36" x 82' C.M.P. Cross Culv & 40 Cu Yds Uncl. Excav for Inlet
Sta 803+00 - Reqd - 36" x 90' C.M.P. Cross Culv & 700 Cu Yds. Uncl Excav for Ditches
Sta 804+00 - Reqd - 48" x 90' C.M.P. Cross Culv & 900 Cu Yds Uncl Excav for Ditches
Sta 804+ 815+ - Reqd - Raise & Rebuild R.R. Grade (Quantities included in Cross Sections)
FORCE ACCOUNT - WORK TO BE DONE BY R.R. CO. FORCES
Sta 804+ - 815+ - Reqd Move, Raise & Relay R.R. Track & Temporary Track Work
Sta 808+25 - 815+75 - Reqd - 3000 Cu Yds Uncl Excav for Channel Change Lt
Sta 814+80 - Reqd - 300 Cu Yds Fairbank for Road Approach Lt
U.S.W.P.H. SHEET NO. 45 TOTAL SHEETS
WPSS-429-4(1)
Revised 4-27-39 H.J.S.
Rev Index 5-25-38 H.J.S.
Rev for C.D. 3-7-25-39 H.J.S.
Sta for C.D. 3 Old Fen 10+11.39 W.W.H.
PROPOSED RAILROAD CHANGE
Present Road
PROPOSED RR CHANGE
CONSTRUCTION ON NO 283 WPSS-429-1(1) NO 429-1(1)
BEGIN WPSS PROJ. NO 429-1(1)
Present & Proposed R.R. Grade
Proposed R.R. Grade
Present R.R. Grade
EXC
EMB
EXC. FACTOR
CMB
BORROW
STA YDS O.H.
1/2 MI O.H.
BOR SOURCE
787
790
794
795
800
805
810
815