FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	152 - B	1	

REV. 5-28-35 P.B.R.

1 S.H. 82 - N. (S.H. 24)

COLORADO
STATE HIGHWAY DEPARTMENT

PLAN AND PROFILE OF PROPOSED
FEDERAL AID PROJECT NO. 152-B
STATE HIGHWAY NO. 4
LAKE COUNTY

INDEX OF SHEETS

SHEET No 1	SKETCH MAP AND TITLE SHEET	
" - 2	TYPICAL CROSS SECTION AND SUMMARY OF QUANTITIES	
" - 3	TABULATION OF STRUCTURES	
" 4 TO 5	DETAILS OF BRIDGE, STA. 632+	
" 6 TO 7	" " " STA. 769+	
" 8	STANDARD CONCRETE BOX CULVERTS	M 103 D
" 9	" " " "	M 104 D
" 10	" CATTLE GUARD - 16 FT. ROADWAY	M 16 A
" 11	" WIRE CABLE GUARD FENCE	M 20 G
" 12	" WIRE FENCE (TREATED WOOD POSTS) AND MARKER POSTS	M 24 F (REV.)
" 13	" STRUCTURE NUMBER LETTERING	M 10 A
" 14	" METHODS FOR SUPERELEVATION AND WIDENING OF CURVES	M 1 A
" 15	TYPICAL SIDE APPROACH ROADS / ROADWAY CONSTRUCTION TRAFFIC SIGNS	M 2 B
" 16 TO 29	ALIGNMENT PLAN AND PROFILE	
" 30 TO 123	CROSS SECTION SHEETS	

SCALES OF ORIGINAL TRACINGS

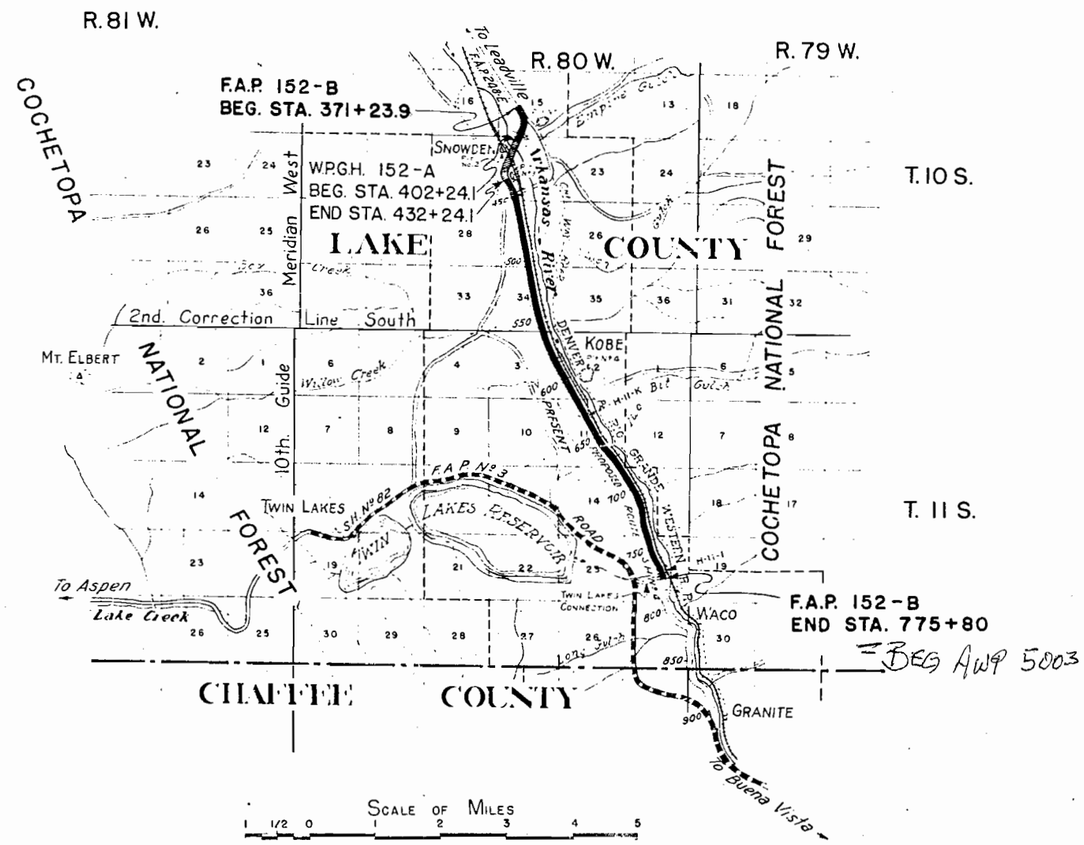
ON PLAN. 1 IN. = 100 FT.
ON PROFILE 1 IN. = 100 FT. HORIZONTAL
1 IN. = 10 FT. VERTICAL

GRADE LINE ON PROFILE IS SHOWN AS GRADE OF FINISHED ROAD

GROSS LENGTH OF PROJECT 40,505.5 FEET = 7.671 MI.
NET LENGTH OF PROJECT 37,505.5 FEET = 7.103 MI

CONVENTIONAL SIGNS

CENTER LINE OF SURVEY 650
RIGHT OF WAY LINES
TOWNSHIP OR RANGE LINES
SECTION LINES
ONE-QUARTER SECTION LINES
RAILROAD TRACKS
BARBED WIRE FENCE
POLE LINES



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:

Ernest Montgomery Div. Eng'r. Colorado Springs
E. W. Oviatt Res. Eng'r. Buena Vista

RECOMMENDED FOR APPROVAL 9/25/36
ASSISTANT ENGINEER
APPROVED
STATE HIGHWAY ENGINEER
RECOMMENDED FOR APPROVAL
DIST. ENG. BUREAU PUBLIC ROADS
RECOMMENDED FOR APPROVAL
CHIEF ENG. BUREAU PUBLIC ROADS
APPROVED
DIRECTOR BUREAU PUBLIC ROADS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	152-B	2	

Fed. Proj. F-0152-(13)
Sta. Proj. C.O.-15-P.S.B.
Rev-7-7-35-K.W.P.

TYPICAL CROSS SECTION OF IMPROVEMENT AND SUMMARY OF QUANTITIES

GENERAL NOTES

This Project is to be constructed in conformity with the Standard Specifications of the Colorado State Highway Department, adopted August 1, 1935.

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

All roadway excavation required to construct the 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 Profile as "Borrow" or on Tabulation 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 as shown, are subject to change by the Engineer to fit Embankment requirements actually met in construction.

All curves are to be superelevated and widened as provided by the Standard Superelevation Sheet.

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

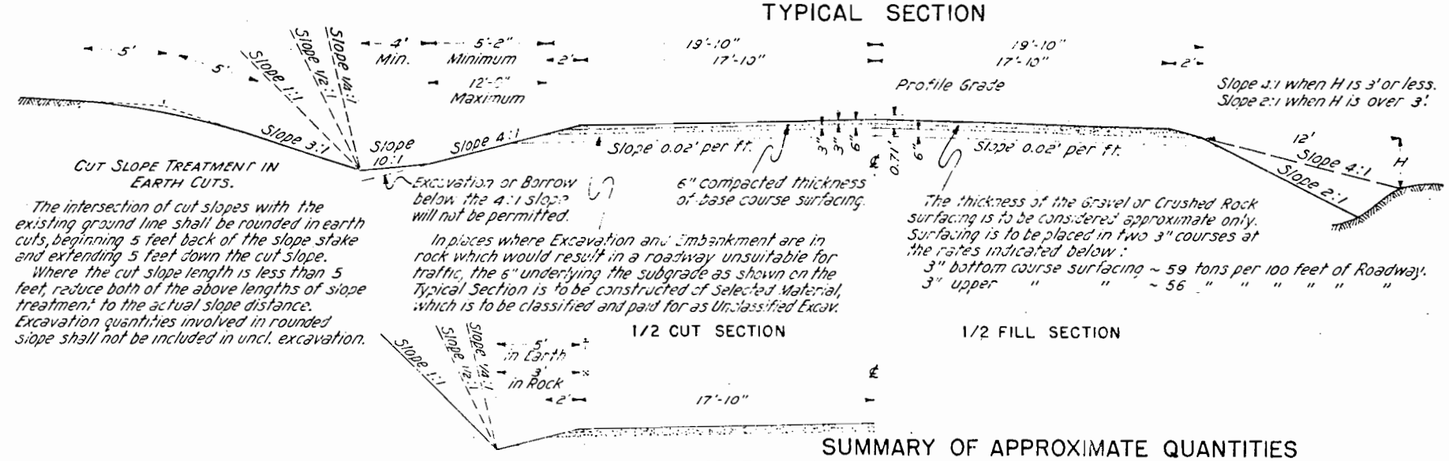
At all places on the Project where the new work lies along the present travelled road, the Contractor shall at his own expense, prosecute construction in such a manner that traffic may readily pass over the road. Also, the Contractor shall maintain in safe condition and at his own expense, all temporary approaches to and crossings of intersecting roads.

Clearing and Grubbing shall be of variable widths and be held to the minimum required for the construction of the road, borrow pits, and channel changes, and to accommodate visibility. Ordinarily the clearing shall not extend more than 8 feet beyond the toes of the fills or the tops of the cut slopes.

Provisions regarding the construction of roads to borrow pits are set forth in the Special Provisions.

Except as noted on plans, overhaul will be paid for as measured along center line of Project.

TYPICAL SECTION



CUT SLOPE TREATMENT IN EARTH CUTS.

The intersection of cut slopes with the existing ground line shall be rounded in earth cuts, beginning 5 feet back of the slope stake and extending 5 feet down the cut slope.

Where the cut slope length is less than 5 feet, reduce both of the above lengths of slope treatment to the actual slope distance. Excavation quantities involved in rounded slope shall not be included in uncl. excavation.

Excavation or Borrow below the 4:1 slope 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 Excav.

6" compacted thickness of base course surfacing.

The thickness of the Gravel or Crushed Rock surfacing is to be considered approximate only. Surfacing is to be placed in two 3" courses at the rates indicated below:

3" bottom course surfacing ~ 59 tons per 100 feet of Roadway.
3" upper " " ~ 56 " " " " " "

1/2 CUT SECTION

1/2 FILL SECTION

BACK SLOPES SHALL BE MODIFIED TO SUIT MATERIAL AT THE FOLLOWING PLACES:

ESTIMATED	1/4 to 1 Slopes	Sta.	665+00 to 677+00
	"	"	738+00 to 741+00
ESTIMATED	1/2 to 1 Slopes	Sta.	661+00 to 665+00
	"	"	750+00 to 765+00
ESTIMATED	1 to 1 Slopes	Sta.	680+00 to 724+00
	"	"	736+00 to 738+00
	"	"	741+00 to 748+00
	"	"	771+00 to 776+00

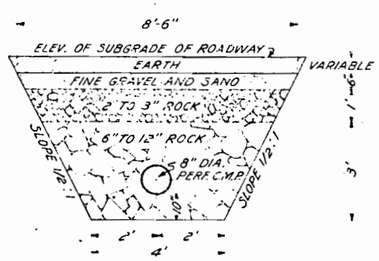
‡ 5 FT. DITCH AS SHOWN:
Sta. 680+00 to 724+00
" 741+00 to 748+00
" 755+00 to 765+00

× 3 FT. DITCH AS SHOWN:
Sta. 668+00 to 677+00
" 739+00 to 741+00
" 750+00 to 755+00

SUMMARY OF APPROXIMATE QUANTITIES

No.	Item	Unit	Roadway	Bridge Sta. 532+	Bridge Sta. 769+	Totals
10a	Clearing and Grubbing Entire Project	Lump Sum	•			•
11b	Removal of 13 Structures	Lump Sum	•			•
12a	Removing Fence	Lin. Ft.	24,500			24,500
12b	Removing and Rebuilding Fence	Lin. Ft.	4,100			4,100
13c	Unclassified Excavation	Cu. Yd.	203,000			203,000
13d	Cut Slope Treatment	Mile	3.7			3.7
14a	Dry Rock Excavation (Structural)	Cu. Yd.	190	10		200
14b	" Common " "	" "	600	135	130	865
14c	Wet Rock " "	" "	70	10	10	90
14d	" Common " "	" "	190	230	930	1,350
18a	Station Yard Overhaul	Sta. Yd.	1,490,000			1,490,000
18b	Yard Mile Overhaul	Yd. Mile	83,800			83,800
26a	Gravel or Crushed Rock Surfacing	Ton	43,040			43,040
46a	Class "A" Concrete	Cu. Yd.	301	82	500	883
47	Reinforcing Steel	Lb.	24,200	10,800	56,700	91,700
53b	18" Corrugated Metal Culvert Pipe	Lin. Ft.	268			268
53c	24" " " " "	" "	194			194
53d	30" " " " "	" "	304			304
53f	42" " " " "	" "	112			112
53x	10" " " " "	" "	70			70
46r	Class "A" Concrete (Handrails)	Cu. Yd.		6	6	12
72x	8" Perforated Corr. Metal Pipe Underdrain	Lin. Ft.	80			80
74	Wire Cable Guard Fence	" "	6,326			6,326
76a	Barbed Wire Fence with Treated Wooden Posts	" "	7,300			7,300
76g	" " Gates	Each	3			3
76h	Driveway Gates	"	3			3
76x	Special Barbed Wire Fence with Treated Wooden Posts	Lin. Ft.	34,700			34,700
81a	Project Marker	Each	1			1
81b	Right of Way Markers	"	27			27
82	Cattle Guard (16 ft. Roadway)	"	1			1
42a	Untreated Bridge Timber	M ft. bm		0.5	0.4	0.9
46b	Class "B" Concrete	Cu. Yd.		207		207
48	Structural Steel	Lb.		27,700	41,400	69,100
80c	Sheet Copper	Lb.		30		30
89a	Drain Pipe (Concrete Floor)	Each		4		4
89x	Special Bridge Drain	"			6	6
	WORK BY FORCE ACCOUNT:					
92	Obliterating Old Road	Lump Sum	•			•
	Removal of 9 Structures, Sta 563+ to 573+	" "	•			•
	FORCE ACCOUNT (Work to be done by owners)					
	Removing and Rebuilding Telegraph Line	Lump Sum	•			•

DETAIL OF PERFORATED C.M.P. UNDERDRAIN (ITEM NO. 72-X) STA. 562+80 TO 563+60



Price bid per foot of pipe complete in place to include rock back fill as shown.

FENCING REQUIREMENTS

Station	Side	Remove Fence Lin. Ft.	Rem. & Rebuild Fence Lin. Ft.	Build B. W. Fence Lin. Ft.	Gates in B.W. Fence Each	Driveway Gates Each	Special 5-Wire 54" Fence Lin. Ft.
371+24 to 379+00	X	1200					
394+98 to 402+40	X	860					
440+10 to 451+80	X	1250					
452+40 to 566+00	R & X	11600					
572+90 to 668+00	R & X	9580					
371+24 to 375+00	L			380			
378+80 to 402+24	L			2350			
660+70 to 769+43	L						10880
769+95 to 772+00	L		200				
772+00 to 775+80	L						380
371+24 to 402+24	R			3100			
432+24 to 440+00	R			760			
440+00 to 672+30	R						23400
704+00 to 722+00	R		1800				
749+00 to 769+43	R		2100				
769+95 to 775+80	R			600			
775+80	X			100			
387+00	L				1		
435+95	R				1		
517+00	R					1	
558+90	R					1	
595+84	R					1	
775+80	R				1		
TOTALS		24,490	4,100	7,290	3	3	34,660

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.
3	COLO.	152-B	3

Rev. 4-11-36 - A.Z. Rev. 7-7-36 - K.M.P.

R. O. W. MARKERS

STATION	SIDE	NO.
452+00	R	1
452+25	L	1
478+18	R	1
478+34	L	1
504+24	R	1
504+40	L	1
531+16	R	1
531+32	L	1
562+30	R	2
562+30	L	1
583+56	L	1
585+16	R	1
589+30	R	2
615+93	R	1
616+34	L	1
645+94	R	1
646+38	L	1
680+54	R	1
681+10	L	1
711+30	R	1
711+80	L	1
738+38	R	1
738+62	L	1
767+70	R	1
768+08	L	1
TOTAL		27

WIRE CABLE GUARD FENCE

STATION	LIN. FT. LEFT SIDE	LIN. FT. RIGHT SIDE
432+24 to 436+32	408	
432+24 to 435+65		360
632+03 to 632+69	66	
632+05 to 632+55		50
633+04 to 633+70		66
633+18 to 633+68	50	
654+88 to 661+68		680
657+00 to 662+39	536	
667+00 to 674+14	712	
709+49 to 715+01	552	
747+14 to 769+40	2226	
764+90 to 769+40		450
769+97 to 771+01	104	
769+97 to 770+63		66
TOTAL	6326	

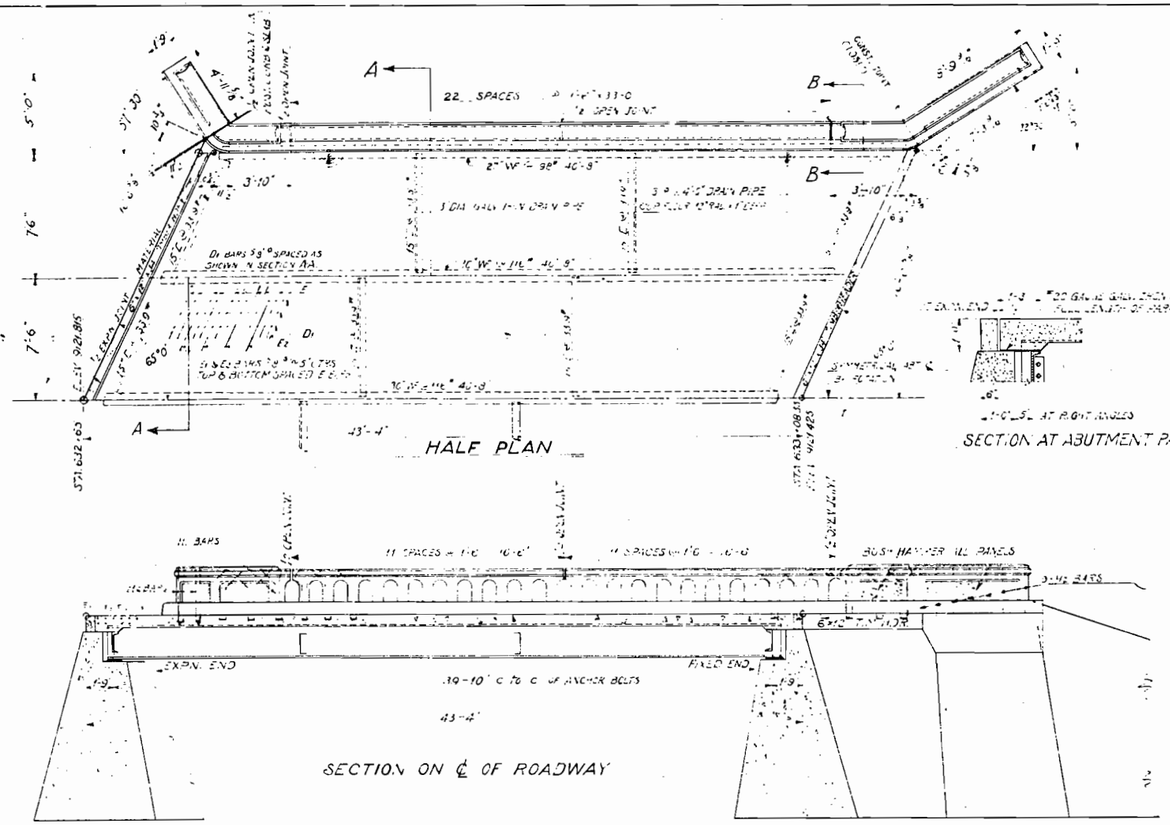
TABULATION OF STRUCTURES

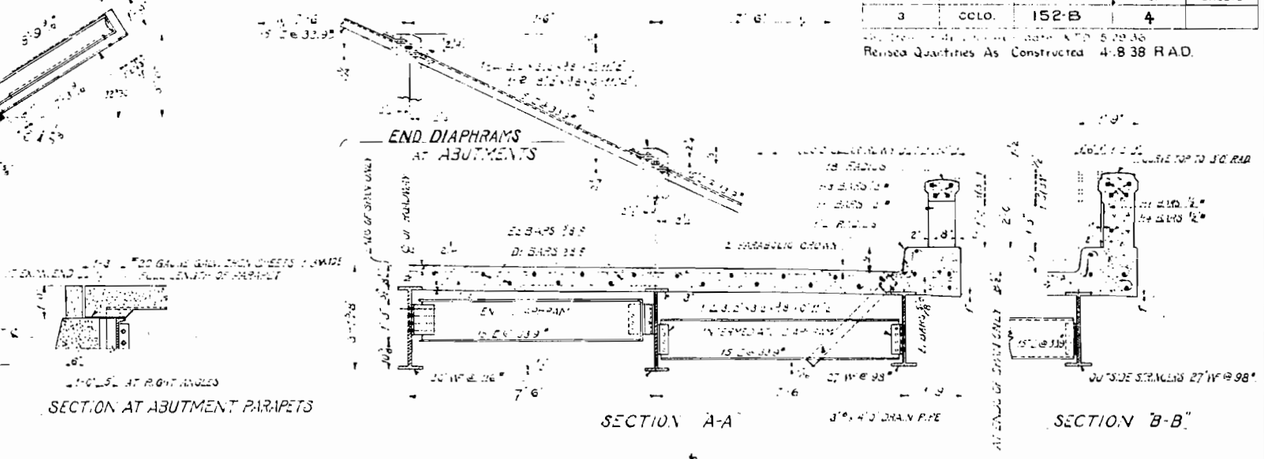
STATION	DESCRIPTION	REMOVE STRUCT. NO.	EXCAVATION CU. YDS. EXCAV.	EXCAVATION CU. YDS. EMB.	STRUCTURAL EXCAVATION CU. YDS.	CONCRETE CU. YDS. CL. A	REINF. STEEL LBS.	CORRUGATED METAL CULVERT PIPE LIN. FT. 10"	18"	24"	30"	42"	MISCELLANEOUS
371+24 to 378+00	Ditch change, Rt.		50										
372+76	C.M.P. Cross Culvert & Inlet & Outlet		25		15					64			
	Remove Culvert	1											
375+00	Road Approach Lt.			100									
387+00	C.M.P. Side Drain & Road Approach Lt.			100	2				26				
388+10	C.M.P. Cross Culvert & Ditch Change		40		5					64			
433+75	6'x3'x54' Conc. Box Culvert (Skew) & Inlet		25		80	53.1	4322						
435+85	C.M.P. Side Drain & Road Approach Rt.			400	5				60				
439+65	Remove Timbers & Rubbish from Cellar & Backfill	1		50									
440+00 to 538+00	Intercepting Ditch Rt.		700										
445+00 to 450+00	Remove Cinders from Roadway & Backfill		300	300									
446+00	" Tim. Base of Water Tank & 3" Standpipe	1											
447+60	Remove Timbers & Fill Well	1		100									
451+00	C.M.P. Cross Culvert				5					66			
517+00	C.M.P. Side Drains & Road Approaches Rt. & Lt.			100	5				{26 26				
518+65	Double C.M.P. Cross Culvert & Inlet		20		10						{74 74		
	Remove Culvert	1											
521+95	" " & Backfill Ditch	1		100									
539+00	C.M.P. Side Drain & Road Approach Rt.			50	2				26				
548+45	C.M.P. Cross Culvert (45° Skew)				25						95		
	Remove Wood Bridge (6'x2'x14')	1											
551+70	" Culvert	1											
558+90	C.M.P. Side Drains & Road Approaches Rt. & Lt.			100	5				{26 26				
561+60	C.M.P. Cross Culvert (45° Skew)				20							112	
	Remove Culvert	1											
562+90 to 563+60	C.M.P. Perforated Pipe & Rock Drain												{30'-8" Perforated C.M.P. Culvert.
	C.M.P. Cross Culvert				10			70					
572+50	6'x7'x46' Concrete Box Culvert				300	81.0	5364						
584+50 to 586+00	Ditch change, Rt.		100										
595+94	C.M.P. Side Drains & Road Approaches, Rt. & Lt.			75	70				{26 26				
626+76	6'x3'x46' Concrete Box Culvert				300	47.5	3918						
	Remove Abutments	1											
632+65 to 633+08.33	Conc. I-Beam Bridge (65° skew)-Channel Improvmt.		300		(Quantities in Summary)								
	Remove Bridge Bents	1											
660+70	8'x8'x56' Concrete Box Culvert-Type 8-1 (Skew)				100	118.8	10631						
	Remove Abutments	1											
665+00 to 685+00	Remove Cinders & Backfill		200	200									
734+90	" Culvert	1											
735+47	C.M.P. Cross Culvert & Inlet & Outlet		25		10						60		
769+42.67 to 769+95	Concrete I-Beam Bridge				(Quantities in Summary)								
775+80	Project Marker												1-Project Marker
435+85	Cattle Guard (16 ft. Roadway)												1-Cattle Guard
566+70 to 572+50	Ditch, Rt.		400										
	WORK TO BE DONE BY WESTERN UNION CO. FORCES												
667+00 to 765+00	Remove & Rebuild Western Union Pole Line												
	FORCE ACCOUNT												
563+50 to 573+00	Remove 9 Structures												
	TOTALS	13	2185	1675	969	300.4	24135	70	268	194	304	112	

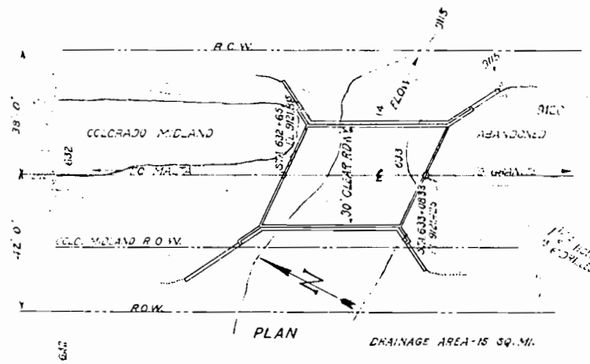
* Structural Excavation is estimated to be 75 % Common and 25 % Rock, each of which is estimated to be 75 % Dry & 25 % Wet.

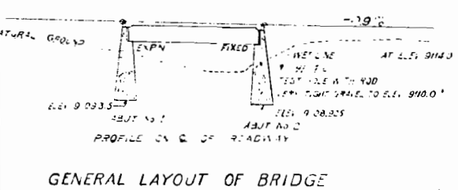
FED. ROAD DIST. NO.	STATE	F.A.P.	SHEET NO.	TOTAL SHEETS
3	COLO.	152-B	4	

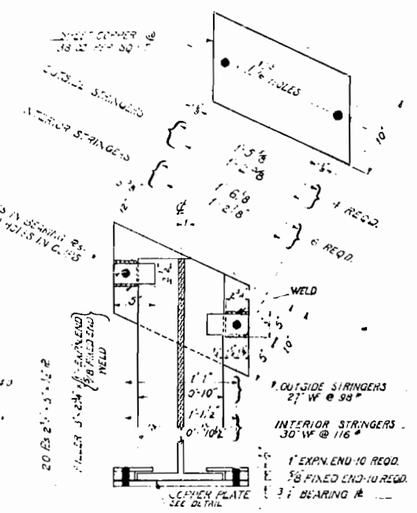
Revised Quantities As Constructed 4-8-38 R.A.D.











BEARING PLATES AND BEAM CLIPS

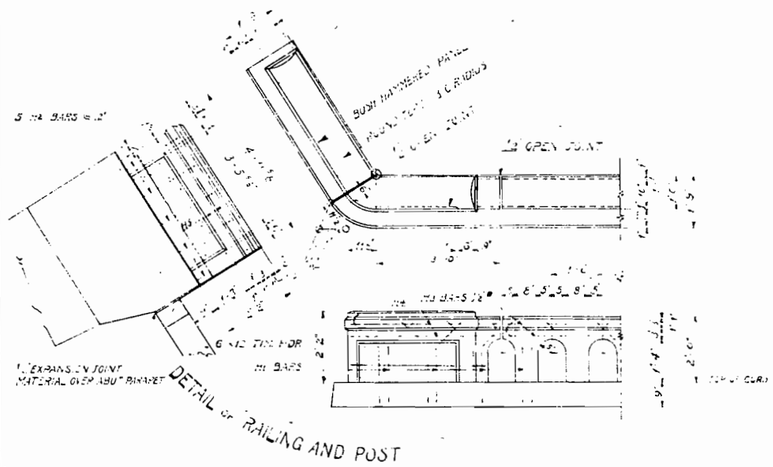
FURNISH 20 ANCHOR BOLTS 3/4" x 1'-2"

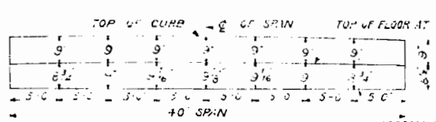
NOTE:
ALL RIVETS TO BE 3/4" ϕ UNLESS OTHERWISE SHOWN.
ALL RIVETS TO BE SHOP DRIVEN.

SUMMARY OF QUANTITIES FOR ENTIRE BRIDGE

ITEM NO.	ITEM	UNIT	SUPER-STRUCTURE	ABUT. NO. 1	ABUT. NO. 2	TOTAL
14-a	DRY ROCK EXCAVATION (MTR)	CU.YD.				—
14-b	DRY COMMON "	CU.YD.		575	533	1108
14-c	WET ROCK "	CU.YD.				—
14-d	WET COMMON "	CU.YD.		1160	1130	2290
42-G	UNTREATED BALGE TIMBER	B.M.		204	204	408
46-a	CLASS "A" CONCRETE	CU.YD.	443	136	136	715
46-b	CLASS "B" CONCRETE	CU.YD.		108	99	207
47	REINFORCING STEEL INCL. 1/2" FOR DIAPHRAGMS	LB.	8760	975	875	10,610
48	STRUCTURAL STEEL INCL. [illegible]	LB.	27503	46	46	27595
80-C	SHEET COPPER @ .38 oz PER SQ. FT.	LB.		15	15	30
89-a	DRAIN PIPE 3" CAST IRON WITH COLLAR AND STRAINER AS SHOWN	EACH	4			4
46-f	[illegible]	CU.YD.	—			—
	GALV. IRON SHEETS-20 GA. AT ABUT. PARAPETS	SQ.FT.		45	45	90
	1/2" EXPANSION JOINT MATERIAL 1/2 x 20 x 2'-12	SQ.FT.		97	97	194
		LIN.FT.		36		36

* WET LINE AT ELEV. 9114.0
* MOULDS 20 GA. GALV. IRON SHEETS AT ABUTMENT PARAPETS.





CAMBER DIAGRAM

GENERAL LAYOUT OF BRIDGE

LOADING DATA.
LIVE LOAD A.A.S.H.O. 1935 CLASS A H-15
DEAD LOAD ASSUMES 14 LBS. PER SQ. FT. ADDITIONAL WEARING SURFACE WHICH INCLUDES THE 1" IN CONCRETE MONOLITHIC WEARING SURFACE SHOWN

MAXIMUM TOE PRESSURE 4800 LBS./□'

GENERAL NOTES

[illegible]

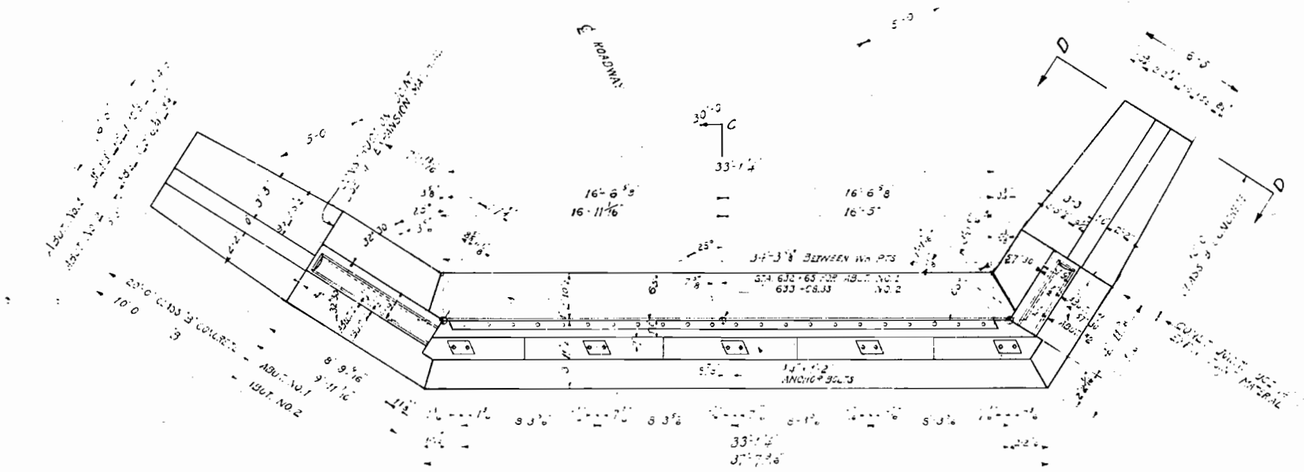
REFERENCE DRAWING For Abutment Details and Bar Lists, see sheet No. 5

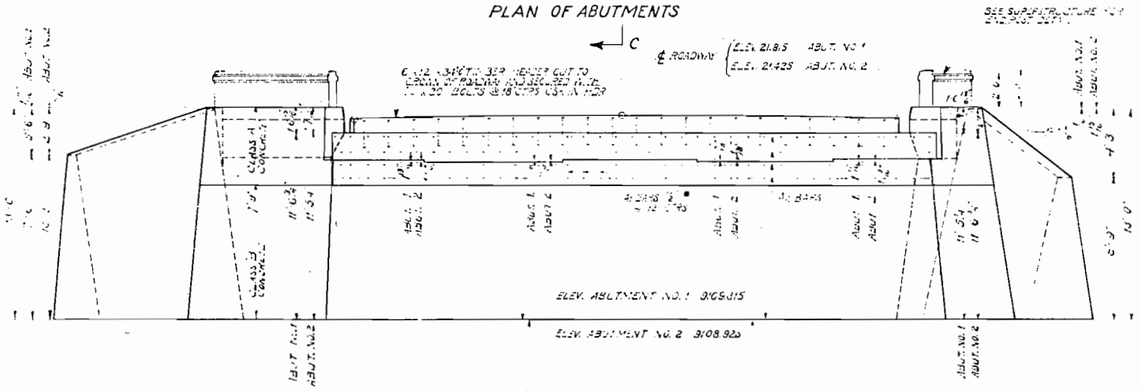
COLORADO
STATE HIGHWAY DEPARTMENT
1-40 FT. I-BEAM AND CONCRETE SPAN
30 FT. CLEAR ROADWAY 65° SKEW
SUPERSTRUCTURE
Across
Sta. 632+65 to Sta. 633+08.33
Near KOBE, COLO. Sec. 11 T. 11 S. R. 80-W
GRANITE, COLO.

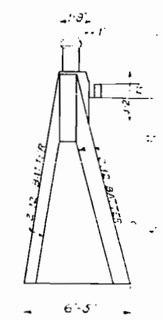
Designed by C.G.D.	Approved by P. S. Bailey
Made by GCD	Bridge Engineer
Check Design EJM	Date: FEB 20-1936
Check Detail ADN	

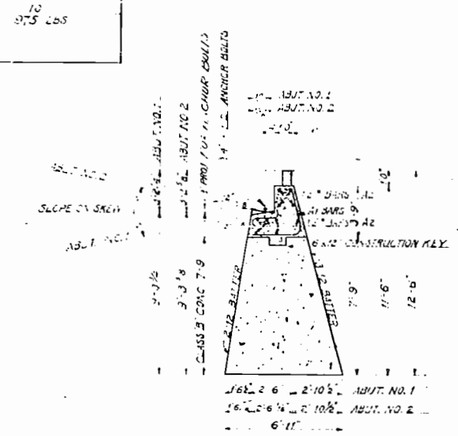
STRUCTURE NO. H-11-K

FED. ROAD DIST. NO.	STATE	F.A.P.	SHEET NO.	TOTAL SHEETS
3	COLO.	152-B	5	









BAR LIST FOR ONE ABUTMENT (2 REQ'D.)

MARK	SIZE	NO. REQ'D	LENGTH	BENDING DIAGRAM
A1	1/2"	3	11'-2"	3" 1'-3" 9" 18" 24" R=3'-6" 2'-5"
A2	1/2"	10	36'-0"	STRAIGHT BARS
H5	1/2"	10	4'-4"	STRAIGHT BARS
H2	1/2"	28	8'-6"	1'-7" 4'-1"
H6	1/2"	10	8'-0"	STRAIGHT BARS

SUMMARY

1,035 LIN. FT. 1/2" BAR STEEL @ 0.85 PER FT. = 905 LBS.
+ 1% OVERRUN
TOTAL 913 LBS.

BAR LIST FOR SUPERSTRUCTURE

MARK	SIZE	NO. REQ'D	LENGTH	BENDING DIAGRAM
E1	5/8"	124	37'-9"	36'-1"
E2	5/8"	30	37'-0"	
D1	5/8"	88	22'-3"	STRAIGHT
H4	1/2"	56	6'-6"	2'-1" 12" 12"
H3	1/2"	16	16'-0"	STRAIGHT
H4	1/2"	20	3'-9"	

SUMMARY

7,750 LIN. FT. 5/8" BAR STEEL @ 1.043 PER FT. = 8080 LBS.
695 " " 1/2" " @ 0.85 " " " = 591 "
+ 1% OVERRUN = 89 "
TOTAL = 8,760 LBS.

Max. De Pressure = 4800 #/□'

LOADING DATA.
LIVE LOAD A.A.S.H.O. 1935 CLASS A. H-15
DEAD LOAD ASSUMES 15 LBS PER SQ. FT.
ADDITIONAL WEARING SURFACE WHICH INCLUDES THE 1½" IN CONCRETE MONOLITHIC WEARING SURFACE SHOWN.

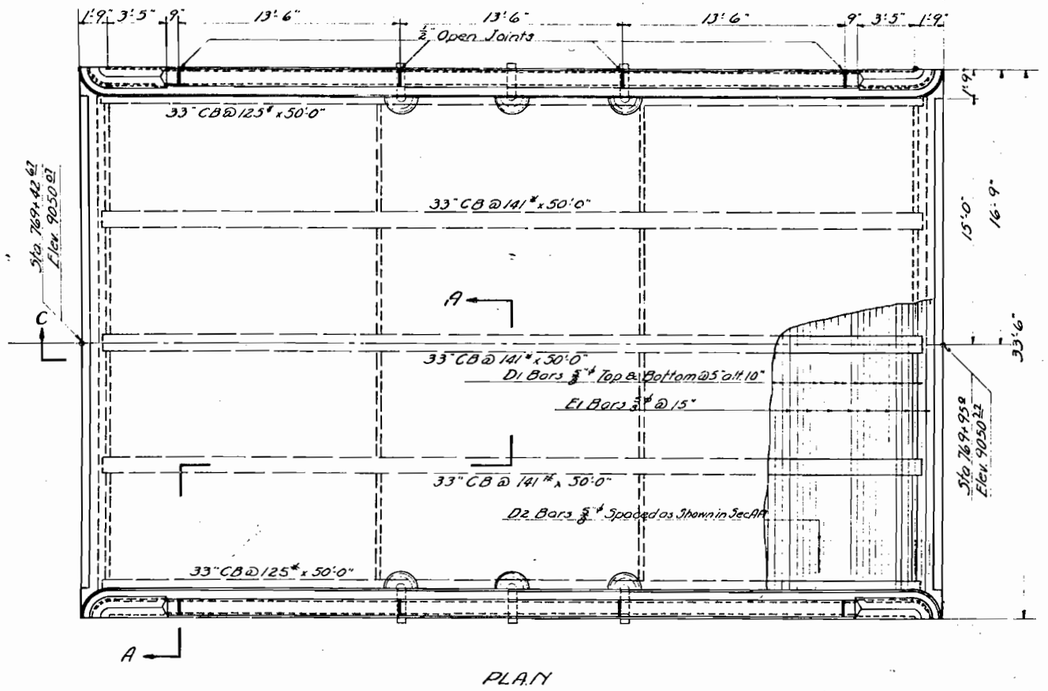
REFERENCE DRAWING: For Details of Superstructure, General Layout and Summary of Quantities, see sheet No. 4

COLORADO
STATE HIGHWAY DEPARTMENT
1-40 FT. I-BEAM AND CONCRETE SPAN
ABUTMENTS NO. 1 AND 2
Across
Sta. 632+65 to Sta. 633+08.33
Near KOBE, COLO. Sec. 11 T. 11-S R. 80-W
GRAND CO., COLO.

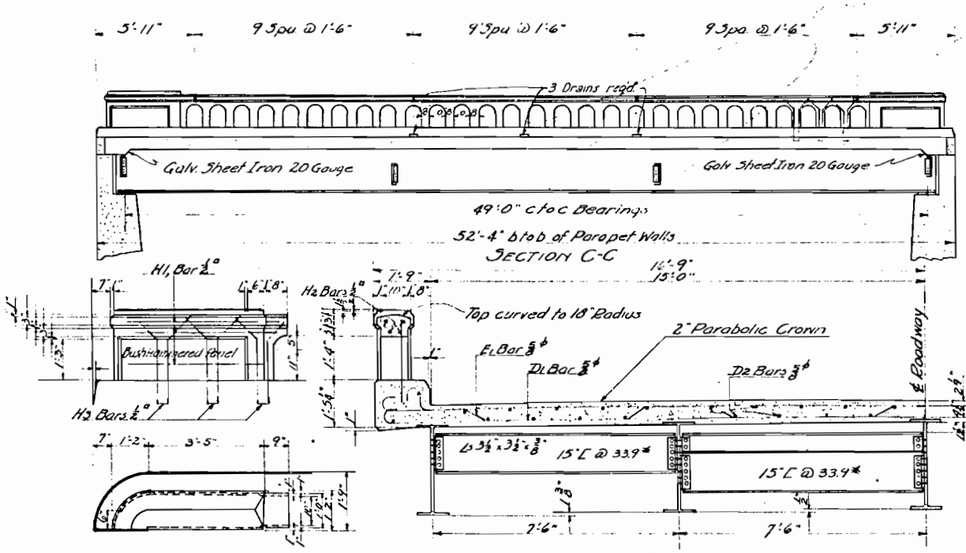
Designed by M.G.D.
Made by G.G.D.
Check Design E.D.W.
Check Detail E.D.W.
Approved by P. J. Bailey
Bridge Engineer
Date: FEB. 23, 1936

STRUCTURE NO. H-11-K

FED. ROAD DIST. NO.	STATE	F.A.P.	SHEET NO.	TOTAL SHEETS
3	COLO.	152-B	6	



PLAN



SECTION A-A

BAR LIST FOR SUPERSTRUCTURE

ADN

MK	TYPE	SIZE	NO.	LENGTH	l	m	r	t	BENDING DIAGRAM
D1	VIII	⅝"	164	34'-3"	32-7		2½"	2"	Type VIII
E1	IX	⅝"	41	34-8			2½"	2"	
D2	II	⅝"	80	26'-10"	Straight				
H1	II	½"	20	4'-6"	"				
H2	II	½"	24	13-0	"				
H3	X	½"	66	6'-4"					
				Summary					
	9233 Lin Ft ⅝" @ 1.043 #/' =					9651 #			
	820 " ½" " 0.85 " =					697 #			
	±1%					102 #			
				Total		10450 #			

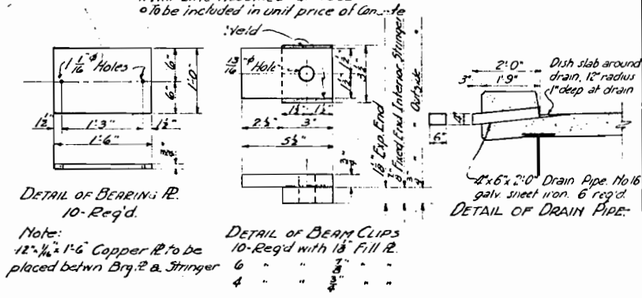
Type IX

Type X

SUMMARY OF QUANTITIES

	ITEM	DESCRIPTION	UNIT	SUB STRUC.	SUB STRUCT.	TOTALS
	46a	Class "A" Concrete	Cu Yd.	55	454	509
	47	Reinforcing Steel (Inc 1% ±)	lb	10450	46 600	57050
	48	Structural Steel (Inc 1½% ±)	lb	35500		35500
*	14c	Structural Exc. Wet Rock	Cu Yds		10	10
*	14d	" " Wet Com.	"		930	930
	14b	" " Dry "	"		130	130
	89x	Drain Pipe 4"x6"x2'-0"	Each	6		6
	42a	Untreated Bridge Timber	M.B.M.		0.360	0.360
	80c	Sheet Copper (Brg. R.) 12"x 1/16"x1'-6"	lb			36
		Expansion Joint Mat'l. ½"x12"	Lin ft.		50.2	50.2
		" " " ½" x (0 to 2:1)	Lin ft.		50.5	50.5
°		Gal. Sheet Iron 20 Gauge	lb	140		140

* Wet Line Assumed at 9032
° To be included in unit price of Con.

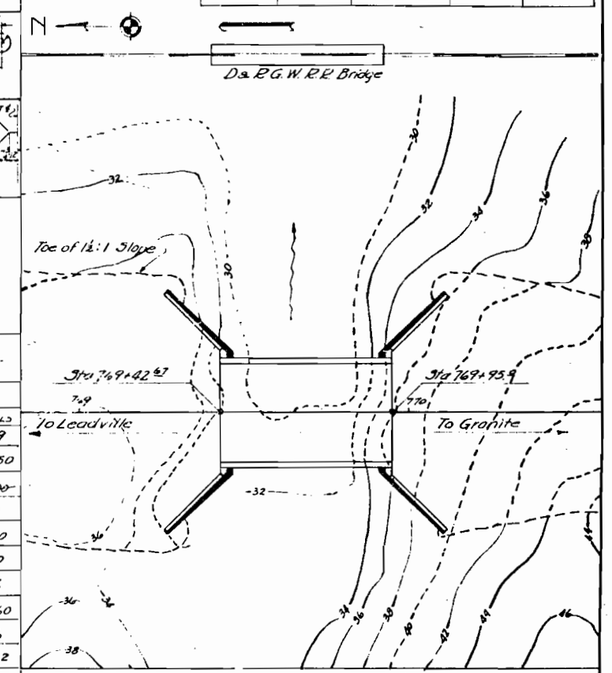


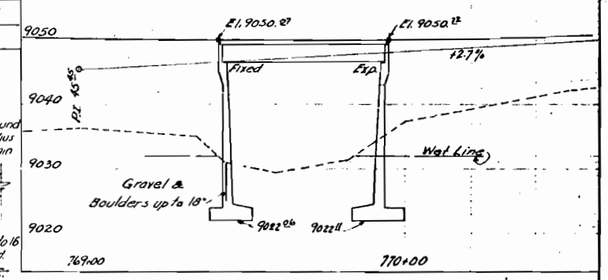
Detail of Bearing Pl. 10-Req'd.

Note: 12"x 1/16"x 1'-6" Copper Pl. to be placed betwn Brg. Pl. & Stringer

Detail of Beam Clips 10-Req'd with 18" Fill Pl.
6 " " ⅜" " "
4 " " ⅝" " "

Detail of Drain Pipe





LOADING DATA.
LIVE LOAD A.A.S.H.O. 1935 CLASS A. (H-18)
DEAD LOAD ASSUMES 15 LBS. PER SQ. FT. ADDITIONAL WEARING SURFACE WHICH INCLUDES THE ¾ IN. CONCRETE MONOLITHIC WEARING SURFACE SHOWN.

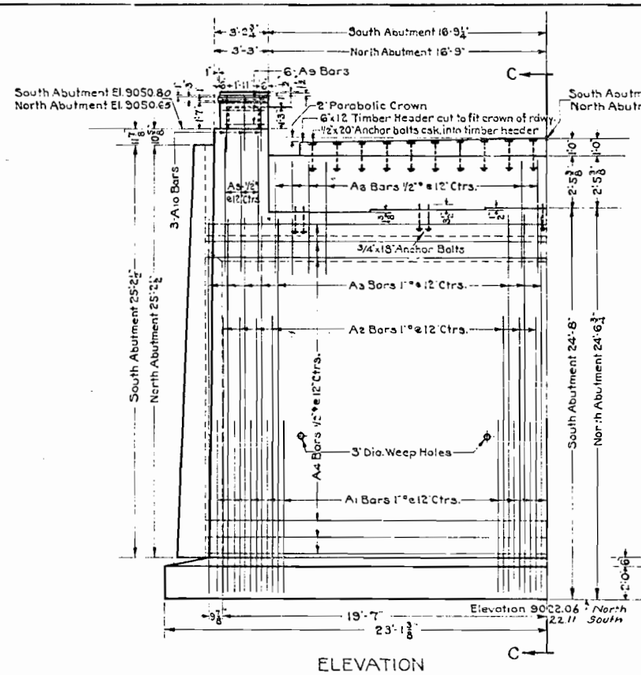
REFERENCE DRAWINGS
FOR DETAILS OF ABUTMENT SEE SHEET No 7.
" GENERAL NOTES SEE SHEET No. 4.
Max toe pressure 3900 #/□'

COLORADO
STATE HIGHWAY DEPARTMENT
GENERAL LAYOUT AND SUMMARY
Across TWIN LAKES CREEK
Sta. 769+42.67 TO 769+95.0
Near YALE on GRANITE Sec. 24 T. 11 S R. 80 W

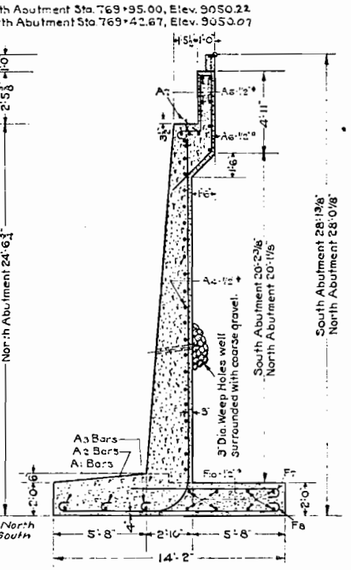
Designed by F.D.W.	Approved by Red Bailey
Made by A.D.N.	Bridge Engineer
Check Design A.D.N.	Date: March 21st 1936
Check Detail A.D.N.	

STRUCTURE NO. H-11-I

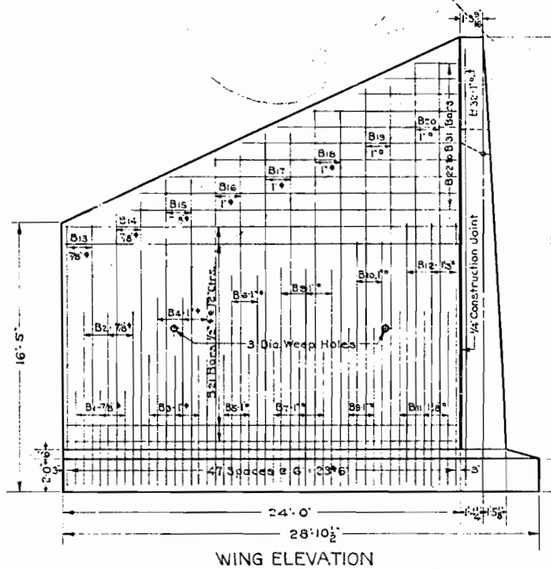
FED. ROAD DIST. NO.	STATE		SHEET NO.	TOTAL SHEETS
3	COLO.	F.A.P. 152-B	7	



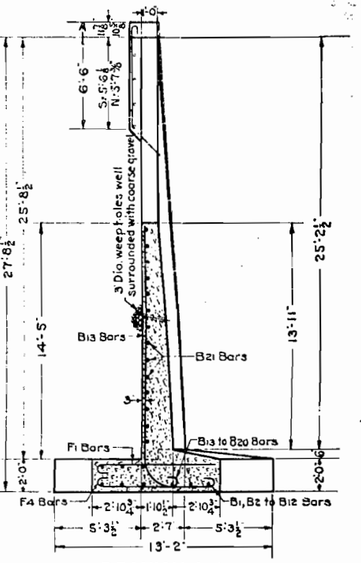
ELEVATION



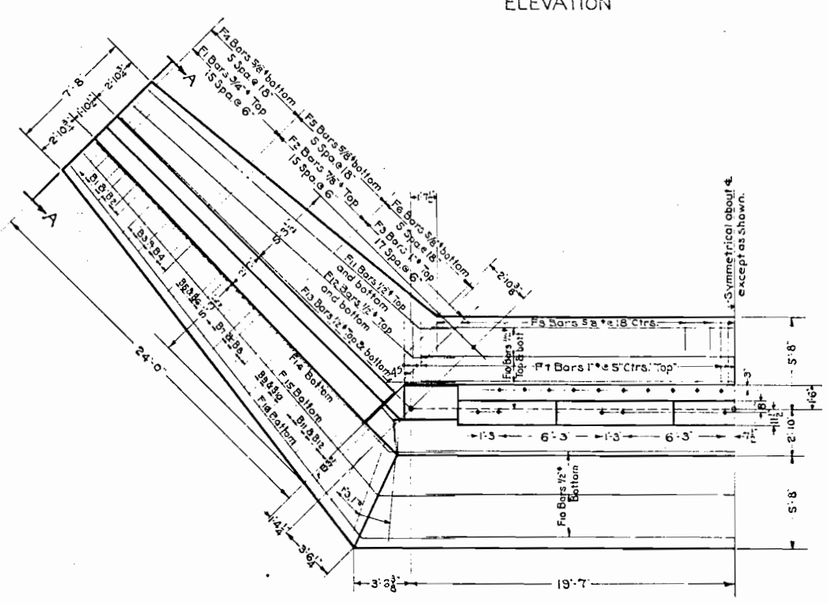
SECTION C-C.



WING ELEVATION



SECTION A-A.

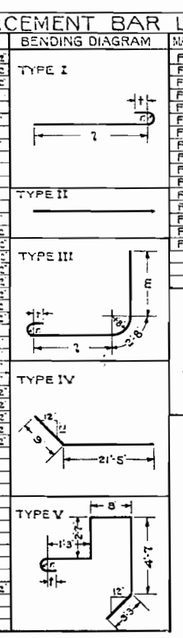


PLAN
SOUTH ABUTMENT & WINGWALLS
NORTH ABUTMENT & WINGWALLS
North Abutment same except as shown.

REINFORCEMENT BAR LIST FOR ONE ABUTMENT

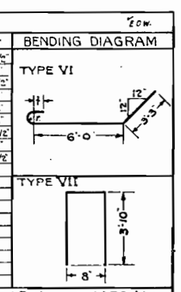
MARK	TYPE	SIZE	No REQD.	LENGTH	l	m	r	t
A 1	III	1" ●	41	18'-10"	5'-11"	8'-11"	4"	3½"
A 2	III	1" ●	41	22'-11"	3'-9"	15'-2"	4"	3½"
A 3	III	1" ●	41	27'-1"	11"	22'-2"	4"	3½"
A 4	IV	½" ●	44	25'-2"				
A 5	II	½" ●	4	39'-6"				
A 6	V	½" ●	34	13'-0"			2"	2"
A 7	II	½" ●	5	33'-3"				
A 8	VI	½" ●	6	9'-11"			2"	2"
A 9	II	½" ●	12	2'-7"				
A10	VII	½" ●	6	8'-4"				
B 1	III	⅞" ●	6	10'-3"	2'-3"	4'-2"	3½"	3
B 2	III	⅞" ●	6	15'-0"	2'-3"	8'-11"	3½"	3
B 3	III	1" ●	6	15'-2"	2'-10"	6'-4"	4"	3½"
B 4	III	1" ●	6	16'-8"	2'-10"	9'-10"	4"	3½"
B 5	III	1" ●	4	13'-10"	3'-8"	6'-4"	4"	3½"
B 6	III	1" ●	4	18'-9"	3'-6"	11'-3"	4"	3½"
B 7	III	1" ●	6	14'-5"	3'-10"	6'-7"	4"	3½"
B 8	III	1" ●	6	19'-4"	3'-10"	11'-6"	4"	3½"
B 9	III	1" ●	4	16'-4"	4'-5"	7'-11"	4"	3½"
B10	III	1" ●	4	21'-5"	4'-5"	13'-0"	4"	3½"
B11	III	1⅛" ●	6	17'-10"	4'-9"	8'-11"	4½"	4
B12	III	1⅛" ●	6	23'-1"	4'-9"	14'-2"	4½"	4
B13	III	⅞" ●	4	18'-0"		14'-2"	3½"	3
B14	III	⅞" ●	4	19'-6"		15'-8"	3½"	3
B15	III	⅞" ●	4	20'-10"		17'-0"	3½"	3
B16	III	1" ●	4	22'-6"		18'-6"	4"	3½"
B17	III	1" ●	4	23'-10"		19'-10"	4"	3½"
B18	III	1" ●	4	25'-4"		21'-4"	4"	3½"
B19	III	1" ●	4	26'-8"		22'-8"	4"	3½"
B20	III	1" ●	4	28'-0"		24'-0"	4"	3½"
B21	II	½" ●	28	23'-7"				
B22	II	½" ●	2	20'-7"				
B23	II	½" ●	2	19'-1"				
B24	II	½" ●	2	17'-7"				
B25	II	½" ●	2	14'-7"				
B26	II	½" ●	2	11'-7"				
B27	II	½" ●	2	10'-1"				
B28	II	½" ●	2	8'-7"				
B29	II	½" ●	2	5'-7"				
B30	II	½" ●	2	4'-1"				
B31	II	½" ●	2	2'-7"				
B32	III	1" ●	2	34'-3"	5'-3"	25'-0"	4"	3½"

BENDING DIAGRAM



MARK	TYPE	SIZE	No REQD.	LENGTH	l	m	r	t
F 1	I	¾" ●	32	7'-4"	6'-4"		3"	2½"
F 2	I	⅞" ●	30	8'-5"	7'-3"		3½"	3
F 3	I	1" ●	34	10'-1"	8'-9"		4"	3½"
F 4	I	5/8" ●	12	6'-9"	5'-11"		2½"	2
F 5	I	5/8" ●	10	7'-7"	6'-9"		2½"	2
F 6	I	5/8" ●	10	8'-5"	7'-7"		2½"	2
F 7	I	1" ●	97	10'-6"	9'-2"		4"	3½"
F 8	I	5/8" ●	27	8'-7"	7'-9"		2½"	2
F 9	I	1" ●	6	11'-2"	9'-10"		4"	3½"
F10	II	½" ●	22	20'-0"				
F11	II	½" ●	4	24'-1"	Field Bend			
F12	II	½" ●	4	25'-7"	-		-	
F13	II	½" ●	4	29'-1"	-		-	
F14	II	½" ●	2	30'-3"	-		-	
F15	II	½" ●	2	32'-3"	-		-	
F16	II	½" ●	2	34'-5"	-		-	

BENDING DIAGRAM



246	Lineal Ft.	1⅛" ● Bars at 4.303 Lbs. per Lineal Foot =			1059 Lbs.
3586	" "	1" ● " " 3.400 " " " " "			12193
1902	" "	1" ● " " 2.670 " " " " "			5079
638	" "	⅞" ● " " 2.044 " " " " "			1304
235	" "	¾" ● " " 1.502 " " " " "			353
473	" "	5/8" ● " " 1.043 " " " " "			493
3135	" "	½" ● " " 0.668 " " " " "			2095
583	" "	½" ● " " 0.850 " " " " "			496
		Plus 1% additional for overrun "			228
		TOTAL WEIGHT FOR ONE ABUTMENT =			23300 LBS.

Reference Drawings
For General Layout, Summary of Quantities, & Superstructure Sheet No 6

LOADING DATA.
LIVE LOAD A.A.S.H.O. AUG. 1935 CLASS A. (H-18)
DEAD LOAD ASSUMES 16 LBS. PER SQ. FT. ADDITIONAL WEARING SURFACE WHICH INCLUDES THE ¾ IN. CONCRETE MONOLITHIC WEARING SURFACE SHOWN.

COLORADO
STATE HIGHWAY DEPARTMENT
DETAIL OF ABUTMENTS

Across Twin Lakes Creek
Sta. 769+42.67 to 769+95.00
Near Granite Sec. 24 T. 11 S. R. 80 W.

Designed by E.D.W.
Made by A.G.K.
Check Design
Check Detail A.D.A.

Approved by Hal Bailey
Bridge Engineer.
Date: March 24, 1936

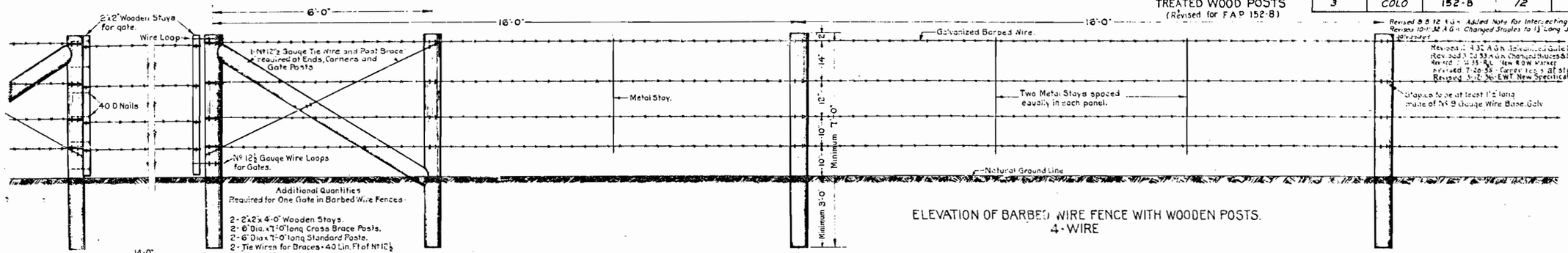
STRUCTURE NO. H-11-T

STANDARD M-24-F

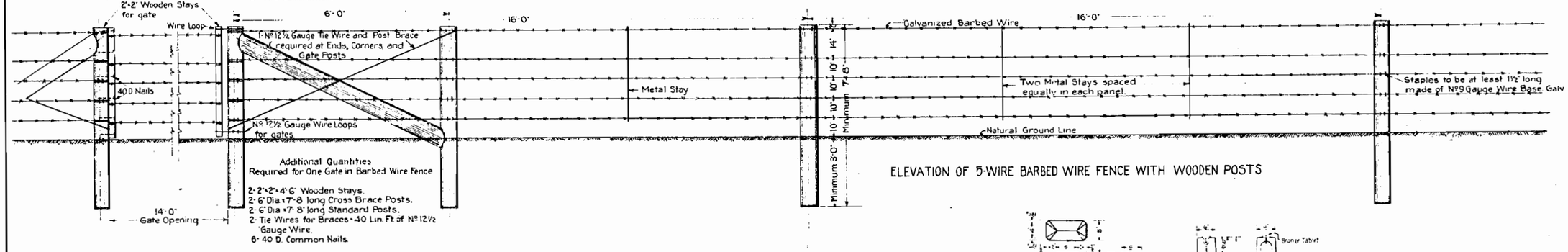
TREATED WOOD POSTS
(Revised for F.A.P. 152-B)

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	SHEET No.	TOTAL SHEETS
3	COLO	152-B	12	

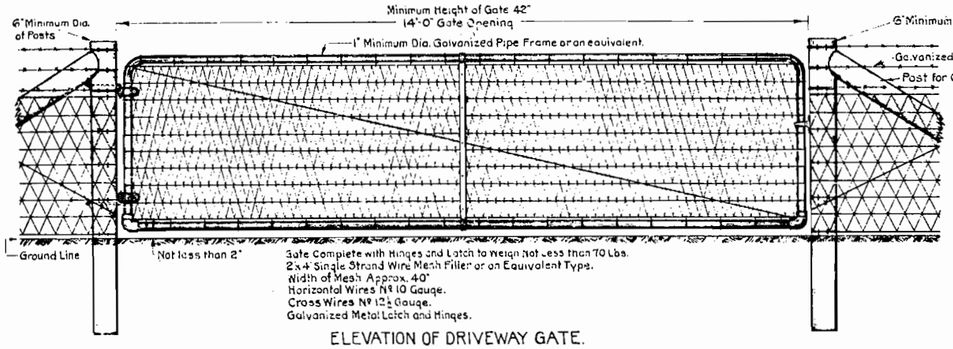
Revised 8-8-12 A.G.H. Added Note for Intersecting Fences
Revised 10-11-32 A.G.H. Changed Staples to 1½" Long and to be galvanized
Revised 4-30-33 A.G.H. Galvanized Gate Frames.
Revised 3-20-33 A.G.H. Changed Braces & Post Lengths.
Revised 3-15-35 New R.O.W. Marker
Revised 7-20-35 Corrections at structs.
Revised 3-12-36 EWT New Specifications 5-Wire added



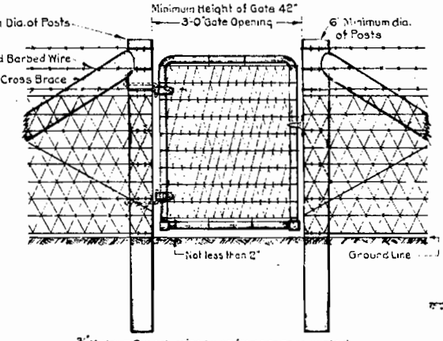
ELEVATION OF BARBED WIRE FENCE WITH WOODEN POSTS.
4-WIRE



ELEVATION OF 5-WIRE BARBED WIRE FENCE WITH WOODEN POSTS



ELEVATION OF DRIVEWAY GATE.



ELEVATION OF WALK GATE.

GENERAL NOTES FOR WIRE FENCES.

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

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

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

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

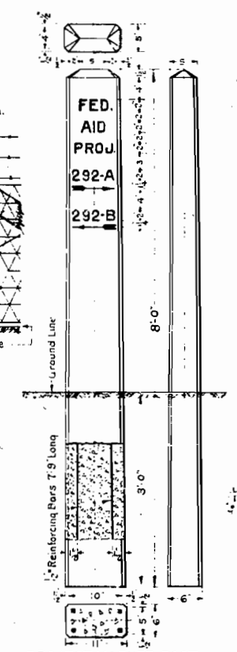
Staples shall be at least 1½" long, made of №9 Gauge Wire Base Galv., 8 staples read. per post for barbed wire fence and 4 Staples per post for Combination Wire Fence.

All Wooden Posts shall be made from dense heart, straight, sound Jackpole or Yellow Pine, peeled, and tops sawed off square before pressure treatment as provided in the Specifications.

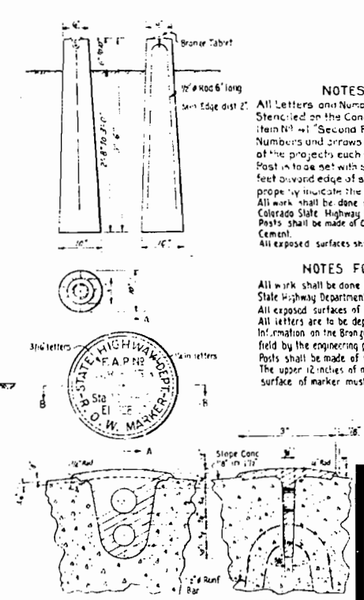
Four Corner Posts (with Brace and supplemental Posts) and four Endposts shall be used at each Structure over 4'x4' in size and fence turned in and ended at Wings.

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

	INITIAL	DATE
ORIGINAL BY	E.W.T.	3-11-36
CHECKED BY		
VANDYKE BY	E.W.T.	3-12-36
CHECKED BY		



PROJECT MARKER POST.



DETAILS OF BRONZE TABLET.

RIGHT OF WAY MARKER POST.

NOTES FOR PROJECT MARKER POSTS.

All Letters and Numbers shall be 2" Plain Upright Block, Painted or Stenciled on the Concrete with a good quality of Black Paint. See Item №41 "Second Field Coat-Dark."

Numbers and arrows shall show the proper numbers and directions of the projects each way from where the post is placed.

Post is to be set with sign facing the road at the end of the project. Five feet outside edge of shoulder in such a position that the sign will properly indicate the projects to which it refers.

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

Posts shall be made of Class "A" Concrete except use White Portland Cement.

All exposed surfaces shall be rubbed free of form marks.

NOTES FOR R.O.W. MARKER POSTS.

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

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

All letters are to be depressed a minimum of 1/16 inch

Information on the Bronze Tablet indicated by pin lines is to be stamped in the field by the engineering party, after post is placed. 3/16" letters & figures to be used

Posts shall be made of Class "A" Concrete.

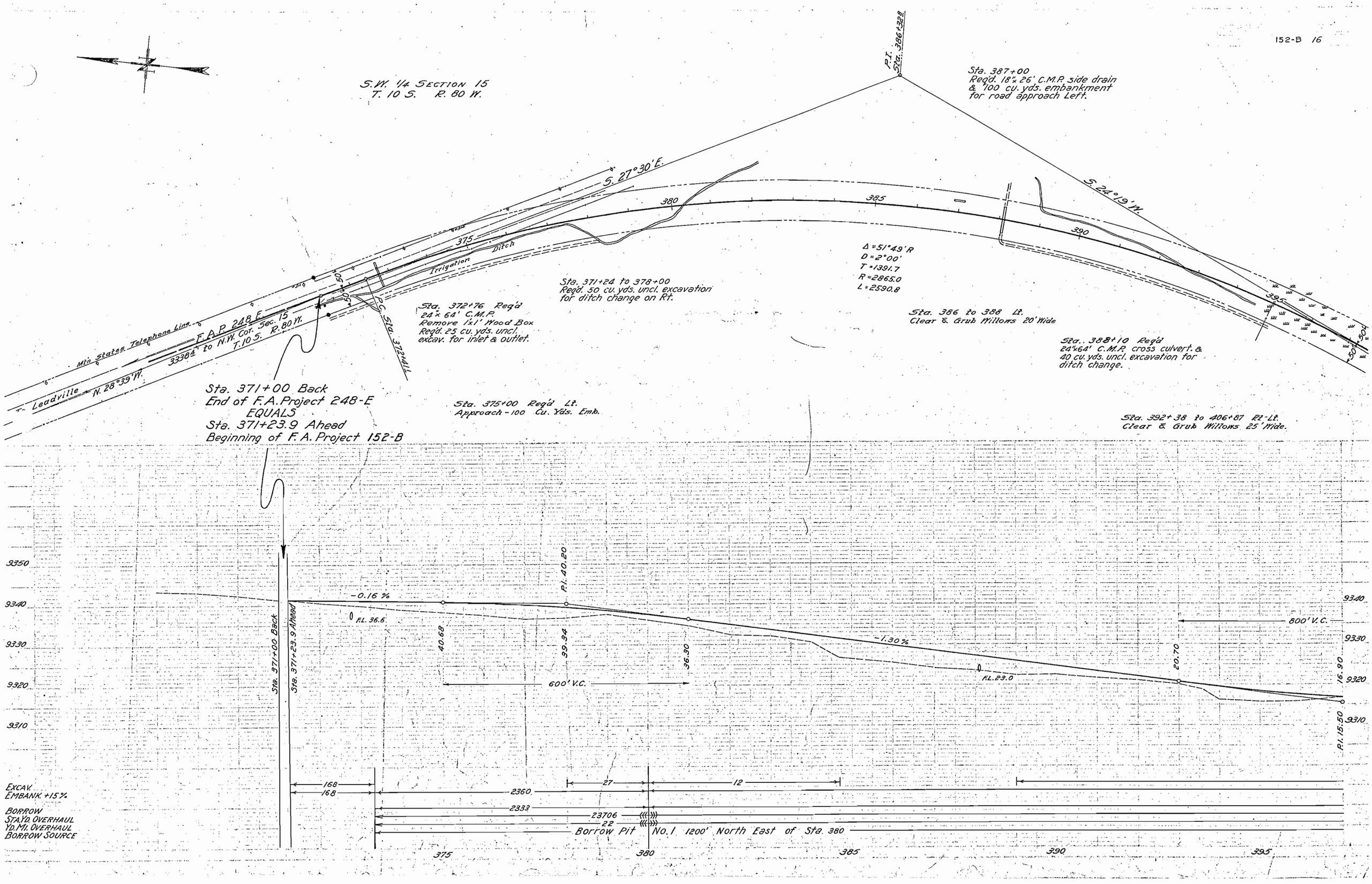
The upper 12-inches of marker shall be rubbed free of form marks, and the top surface of marker must be constructed to drain thoroughly.

COLORADO
STATE HIGHWAY DEPARTMENT
STANDARD
WIRE FENCES
AND
MARKER POSTS

Designed by AGK	Approved by Pd Bailey
Made by AGK	Bridge Engineer
Checked by GHO	Date: Feb. 1, 1932.

M-24-F

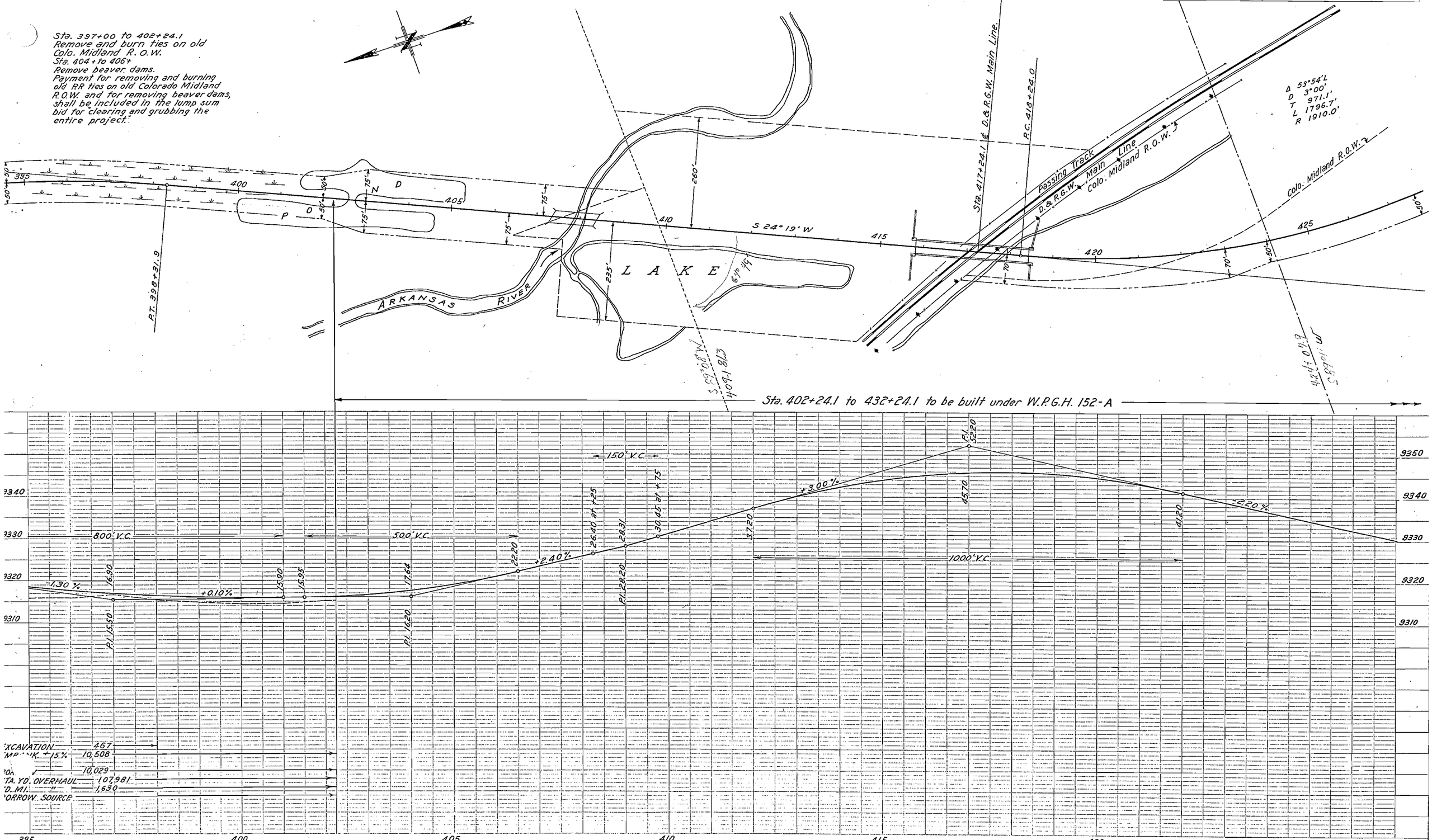
STRUCTURE NO. _____

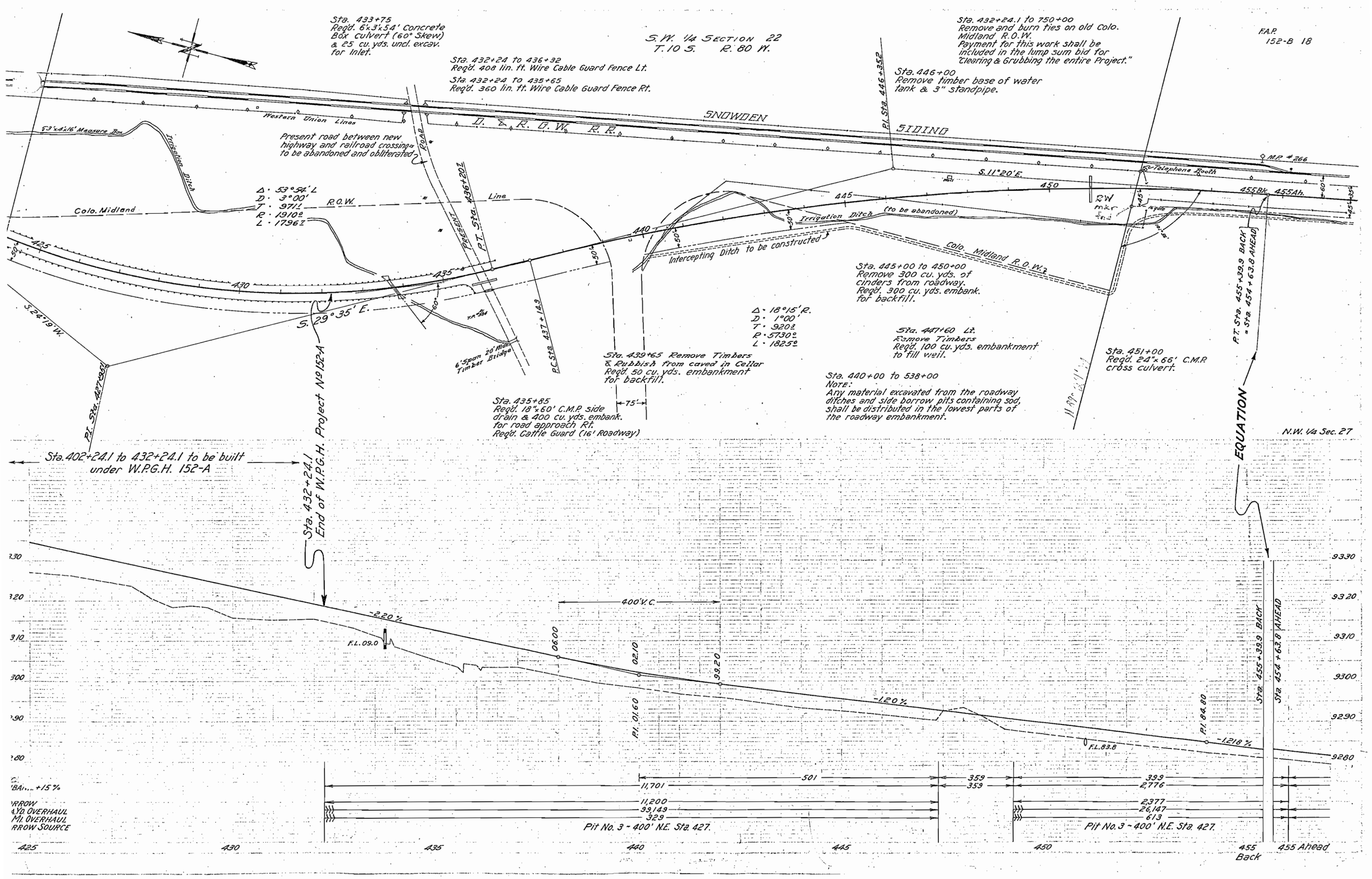

S.W. 1/4 SECTION 15
T. 10 S. R. 80 W.
P.I. Sta. 386+32.8
Sta. 387+00
Reqd. 18" x 26' C.M.P. side drain
& 100 cu. yds. embankment
for road approach Left.
S. 27°30' E.
S. 24°19' W.
380
385
390
395
375
Irrigation Ditch
Δ = 51°49' R
D = 2°00'
T = 1391.7
R = 2865.0
L = 2590.8
Sta. 371+24 to 378+00
Reqd. 50 cu. yds. uncl. excavation
for ditch change on Rt.
Sta. 372+76 Req'd
24" x 64' C.M.P.
Remove 1'x1' Wood Box
Reqd. 25 cu. yds. uncl.
excav. for inlet & outlet.
P.C. Sta. 372+41
Min States Telephone Line
F.A.P. 248 E
33384' to N.W. Cor. Sec. 15
T. 10 S. R. 80 W.
Leadville N. 28°39' W.
Sta. 386 to 388 Lt.
Clear & Grub Willows 20' Wide
Sta. 388+10 Req'd
24"x64' C.M.P. cross culvert. &
40 cu. yds. uncl. excavation for
ditch change.
Sta. 371+00 Back
End of F.A. Project 248-E
EQUALS
Sta. 371+23.9 Ahead
Beginning of F.A. Project 152-B
Sta. 375+00 Req'd Lt.
Approach - 100 Cu. Yds. Emb.
Sta. 392+38 to 406+87 Rt.-Lt.
Clear & Grub Willows 25' Wide.
9350
9340
9330
9320
9310
-0.16 %
F.L. 36.6
P.I. 40.20
40.68
39.54
36.30
Sta. 371+00 Back
Sta. 371+23.9 Ahead
600' V.C.
-1.30 %
F.L. 23.0
20.70
800' V.C.
16.90
P.I. 15.50
EXCAV.
EMBANK. +15%
168
168
2360
27
12
BORROW
STA. YD. OVERHAUL
YD. MI. OVERHAUL
BORROW SOURCE
2333
23706
22
Borrow Pit No. 1 1200' North East of Sta. 380
375
380
385
390
395

FED. ROAD DIST. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	F.A.P. 152-B	17	

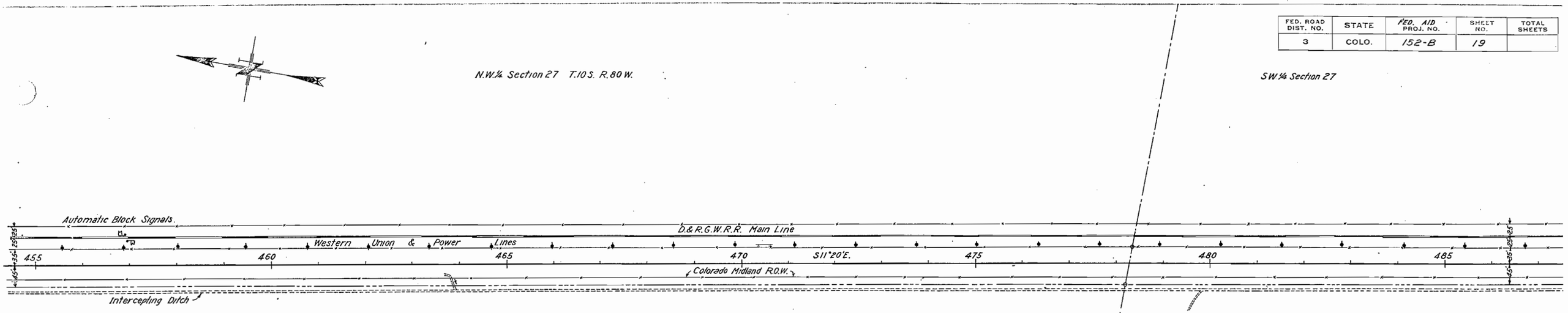
N.W. 1/4 SEC. 22
T. 10 S., R. 80 W.

Sta. 397+00 to 402+24.1
Remove and burn ties on old
Colo. Midland R. O. W.
Sta. 404+ to 406+
Remove beaver dams.
Payment for removing and burning
old RR ties on old Colorado Midland
R.O.W. and for removing beaver dams,
shall be included in the lump sum
bid for clearing and grubbing the
entire project."




F.A.P. 152-B 18
S.W. 1/4 SECTION 22
T. 10 S. R. 80 W.
Sta. 433+75
Req'd. 6'x3'x54' Concrete Box culvert (60° Skew) & 25 cu. yds. uncl. excav. for Inlet.
Sta. 432+24 to 436+32
Req'd. 408 lin. ft. Wire Cable Guard Fence Lt.
Sta. 432+24 to 435+65
Req'd. 360 lin. ft. Wire Cable Guard Fence Rt.
Sta. 432+24.1 to 750+00
Remove and burn ties on old Colo. Midland R.O.W.
Payment for this work shall be included in the lump sum bid for "Clearing & Grubbing the entire Project."
Sta. 446+00
Remove timber base of water tank & 3" standpipe.
Western Union Lines
D. & R. G. W. R.R.
SNOWDEN SIDING
Pl. Sta. 446+352
53'x4'x16' Measure Box
Irrigation Ditch
Present road between new highway and railroad crossing to be abandoned and obliterated
ROAD
PRESENT
P.T. Sta. 436+202
Colo. Midland R.O.W. Line
Δ · 53°54' L
D · 3°00'
T · 971.1
R · 1910.0
L · 1796.2
S.11°20'E.
450
445
440
435
430
425
M.P. #266
Telephone Booth
456 Bk. 455 Ah.
RW mkr
Irrigation Ditch (to be abandoned)
Intercepting Ditch to be constructed
Colo. Midland R.O.W.
Sta. 445+00 to 450+00
Remove 300 cu. yds. of cinders from roadway.
Req'd. 300 cu. yds. embank. for backfill.
Δ · 18°15' R.
D · 1°00'
T · 920.3
R · 5730.0
L · 1825.0
Sta. 447+60 Lt.
Remove Timbers
Req'd. 100 cu. yds. embankment to fill well.
Sta. 451+00
Req'd. 24"x 66' C.M.P. cross culvert.
P.T. Sta. 455+39.9 BACK = Sta. 454+63.8 AHEAD
EQUATION
N.W. 1/4 Sec. 27
S.24°19'W.
S.29°35'E.
6'Span 20' Wide Timber Bridge
P.C. Sta. 437+14.9
Sta. 439+65 Remove Timbers & Rubbish from caved in Cellar
Req'd. 50 cu. yds. embankment for backfill.
Sta. 435+85
Req'd. 18"x 60' C.M.P. side drain & 400 cu. yds. embank. for road approach Rt.
Req'd. Cattle Guard (16' Roadway)
75'
Sta. 440+00 to 538+00
NOTE:
Any material excavated from the roadway ditches and side borrow pits containing sod, shall be distributed in the lowest parts of the roadway embankment.
P.T. Sta. 427+96.0
Sta. 402+24.1 to 432+24.1 to be built under W.P.G.H. 152-A
Sta. 432+24.1 End of W.P.G.H. Project No. 152-A
400' V.C.
-2.20 %
F.L. 09.0
06.00
02.10
99.20
P.I. 01.60
-1.20 %
F.L. 83.8
P.I. 84.80
-1.218 %
Sta. 455+39.9 BACK
Sta. 454+63.8 AHEAD
9330
9320
9310
9300
9290
9280
+15 %
ARROW
YD. OVERHAUL
MI. OVERHAUL
ARROW SOURCE
501
359
359
399
2,776
11,701
11,200
99,149
329
2,377
26,147
613
Pit No. 3 ~ 400' N.E. Sta. 427.
Pit No. 3 ~ 400' N.E. Sta. 427.
425
430
435
440
445
450
455 Back
455 Ahead

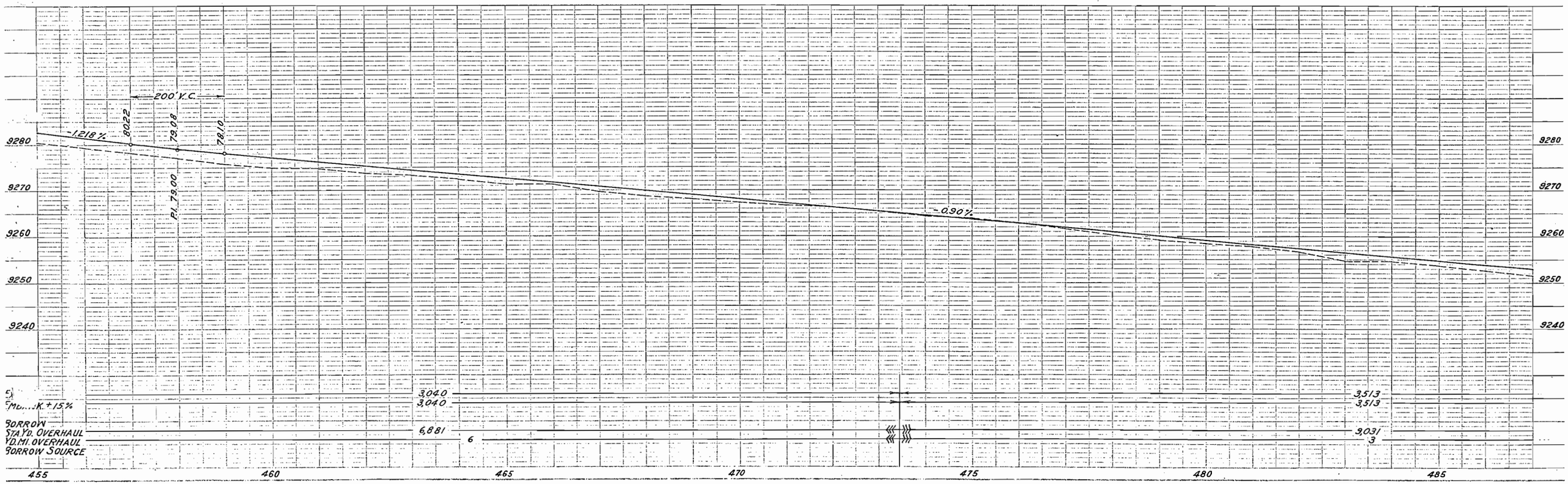
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	152-B	19	

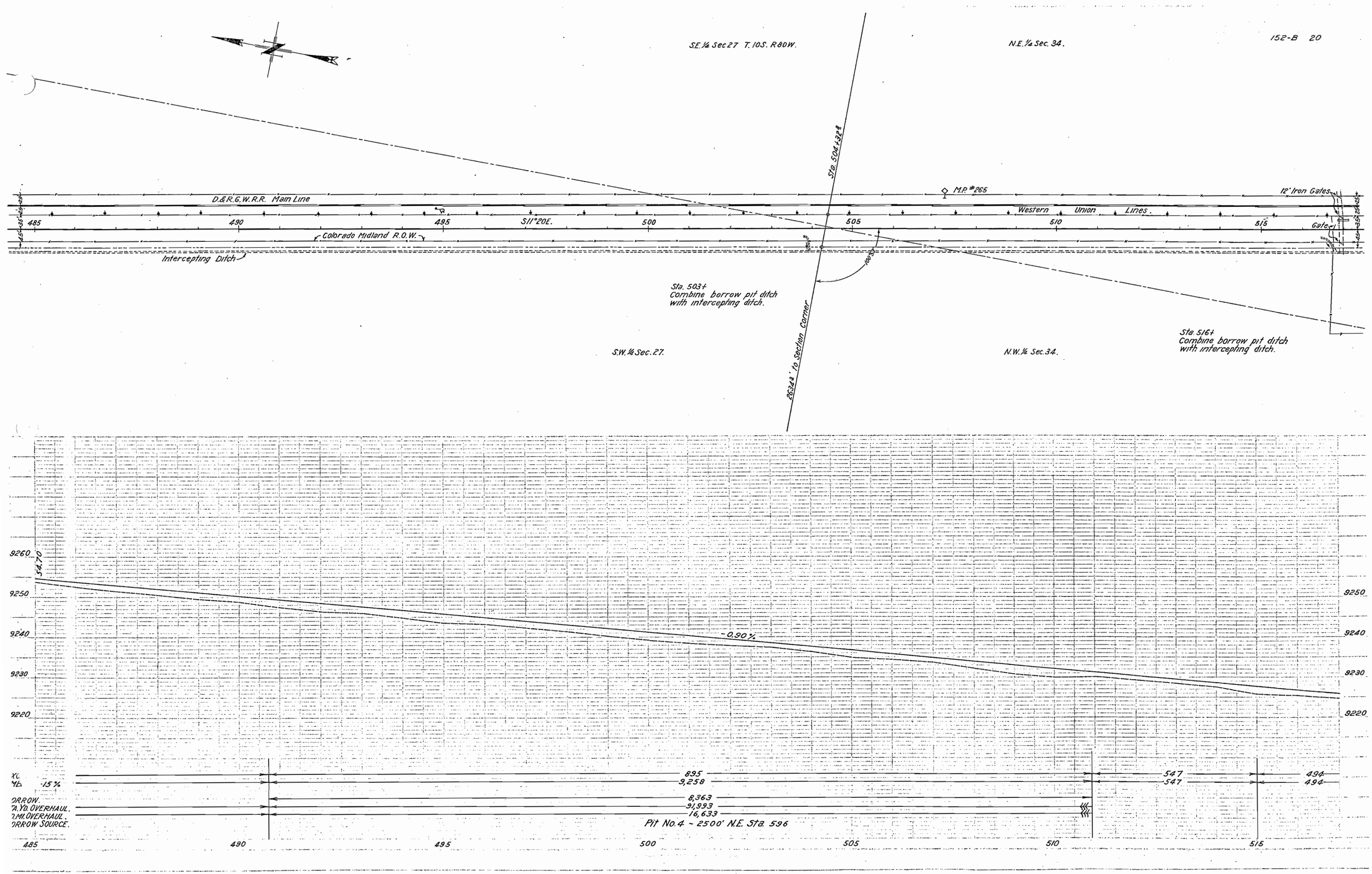


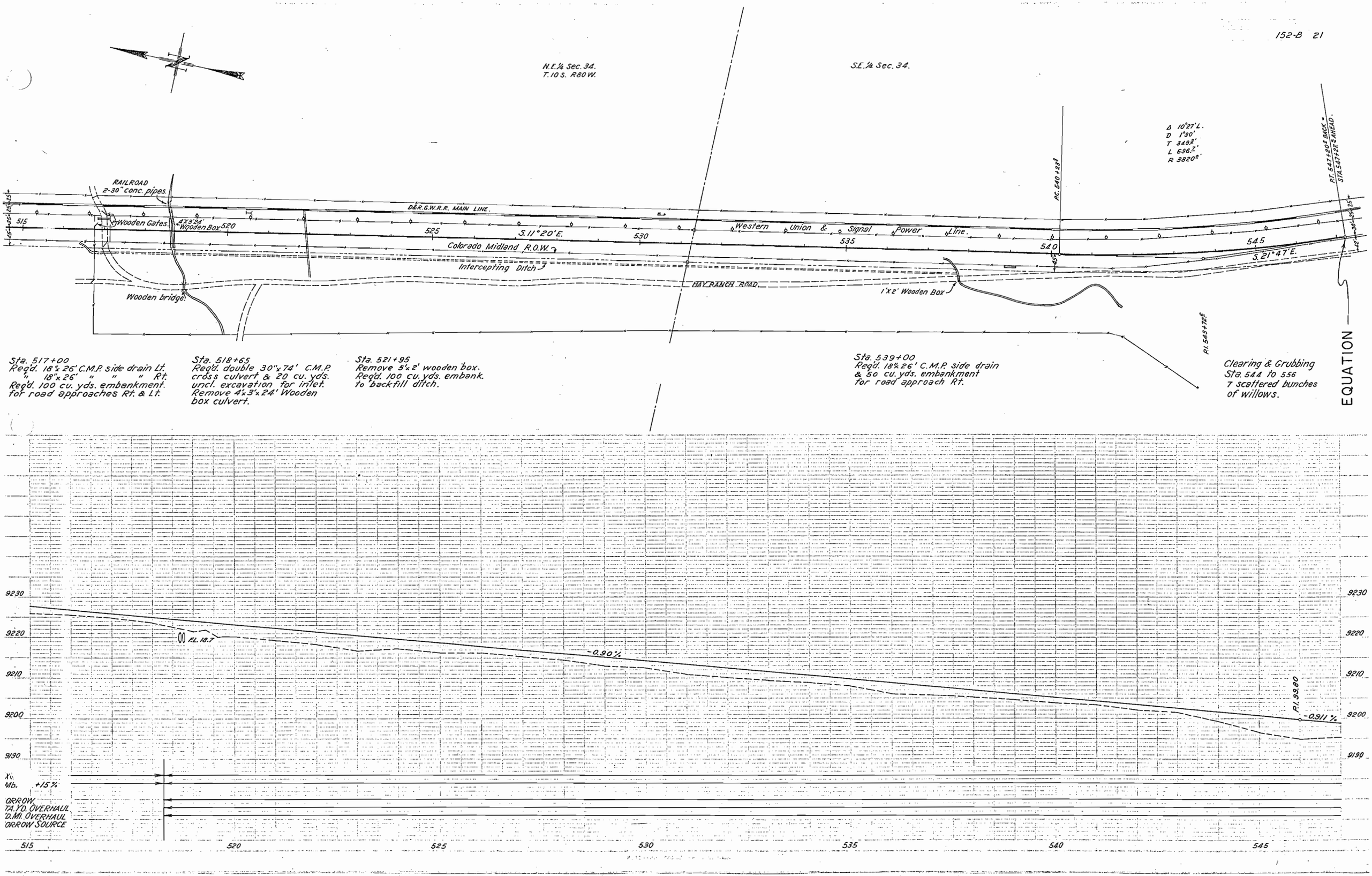
Sta. 463+
Combine borrow pit ditch
with intercepting ditch.

Sta. 465+50 to 537+00
Clear & grub willows 35' wide.

Sta. 440+00 to 538+00
Reqd. 700 cu.yds. uncl. excavation
for intercepting ditch.
Excavated material shall be used
for building a continuous dike on
the East side of the ditch.




SE.¼ Sec 27 T. 10S. R 80W.
N.E.¼ Sec. 34.
Sta. 504+32.8
M.P. #265
12' Iron Gates
D.&R.G.W.R.R. Main Line
Western Union Lines.
485
490
495
S 11°20E.
500
505
510
515
Gate
Colorado Midland R.O.W.
Intercepting Ditch
100.53
Sta. 503+
Combine borrow pit ditch
with intercepting ditch.
S.W.¼ Sec. 27.
2632.8' to Section Corner
N.W.¼ Sec. 34.
Sta. 516+
Combine borrow pit ditch
with intercepting ditch.
9260
9250
9240
9230
9220
34.70
-0.90%
-15%
895
9,258
547
547
494
494
8,363
91,993
16,633
Pit No. 4 ~ 2500' N.E. Sta. 596


N.E.¼ Sec. 34.
T. 10 S. R 80 W.
S.E.¼ Sec. 34.
Δ 10°27' L.
D 1°30'
T 348.3'
L 696.2'
R 3820.0'
P.C. 540+23.3
P.T. 547+20.4 BACK =
STA. 547+22.5 AHEAD.
RAILROAD
2-30" conc. pipes.
Wooden Gates
4'x3'24' Wooden Box
D&R.G.W.R.R. MAIN LINE.
Western Union & Signal Power Line.
S. 11°20' E.
Colorado Midland R.O.W.
Intercepting Ditch
HAY RANCH ROAD
Wooden bridge.
1'x2' Wooden Box
S. 21°47' E.
515
520
525
530
535
540
545
P.I. 543+72.6
Sta. 517+00
Req'd. 18"x 26' C.M.P. side drain Lt.
" 18"x 26' " " " Rt.
Req'd. 100 cu. yds. embankment.
for road approaches Rt. & Lt.
Sta. 518+65
Req'd. double 30"x 74' C.M.P.
cross culvert & 20 cu. yds.
uncl. excavation for inlet.
Remove 4'x 3'x 24' Wooden
box culvert.
Sta. 521+95
Remove 5'x 2' wooden box.
Req'd. 100 cu. yds. embank.
to backfill ditch.
Sta. 539+00
Req'd. 18"x 26' C.M.P. side drain
& 50 cu. yds. embankment
for road approach Rt.
Clearing & Grubbing
Sta. 544 to 556
7 scattered bunches
of willows.
EQUATION
9230
9220
9210
9200
9190
F.L. 18.7
-0.90%
P.I. 99.80
-0.911%
Xs
Mb. +15%
ORROW
TA. YD. OVERHAUL
D. MI. OVERHAUL
ORROW SOURCE
515
520
525
530
535
540
545

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(Revised 4-11-36 ~ A.Z.)

P.T. 547+20.0 BACK EQUALS
STA. 547+22.5 AHEAD

Sta. 558+90
Req'd. 18"x 26' C.M.P. side drain Lt.
" 18"x 26' " " " Rt.
Req'd. 100 cu. yds. embankment for road approaches Rt. & Lt.

2nd Correction Line South
Sta. 559+01.3
10429 to N.E. Corner 3

N.E. 1/4 SECTION 3
T. 11 S. R. 80 W.

Sta. 561+60
Req'd. 42"x 112' C.M.P. cross culvert. (45° skew)
Remove 4'x 2 1/2'x 30' wood box.

P.C. Sta. 574+04.9

30" Conc. Pipe
42" Conc. Pipe
D. & R. G. W. R.R.
Western Union & Signal & Power Lines
Colorado Midland Right-of-Way
6'x 2'x 14' Wood Bridge
Irrigation Ditch
New Ditch Req'd.
Garden Plot
Road
Garden Plot
Hydrant
Porch House
Pump
Picket Fence
Power Ditch
Spring
Pump House
Water Piped
Chicken Pens
Horse Pits
New location of pump house
5' Woven Wire Fence
Board Fence
Rock Wall
Mill Race
Chute
Cow Barn
Ditch Req'd.
Corrals
Rock
Shed
Rail Fences
Stock Barn
Log-Hay Roof
Hay Barn
R.R. 6'x 4 1/2' Conc. Box as Cattlepass
(To be removed) 4'x 2 1/2'x 1'2" Division Box
Venturi Flume & Gage Box (to be removed)
Colo. Midland R.O.W.
545 550 555 560 565 570 575

EQUATION

Sta. 548+45
Req'd. 30"x 96' C.M.P. cross culvert (45° Skew).
Remove 6'x 2'x 14' wood bridge.

Sta. 551+70
Remove 1'x 1'x 14' wood box.

S.E. 1/4 SECTION 34
T. 10 S. R. 80 W.

Township 10 South
Township 11 South

Sta. 562+80 to 563+60
Req'd. 80 lin. ft. 8" perforated C.M.P. with rock drain as shown on sheet No. 2.
Req'd. 70 lin. ft. 10" C.M.P. leading from perforated pipe to pump house.

FORCE ACCOUNT:
Sta. 563+50 to 573+00
Move 3 Chicken Houses, Pens, Corrals, Frame Chute, Pump House, Venturi Flume and Timber Division Box.

Sta. 572+50
Req'd. 6'x 7'x 46' Concrete Box Culvert.

Sta. 566+70 to 572+50
Req'd. 400 cu. yds. uncl. excavation for ditch on Rt. Elevation of ditch to be approximately 9166.

TYPICAL SECTION OF DITCH
STA. 566+70 to 572+50
Slope 1 1/2 to 1
Slope 1 1/2 to 1
6'

P.I. 577+34.4

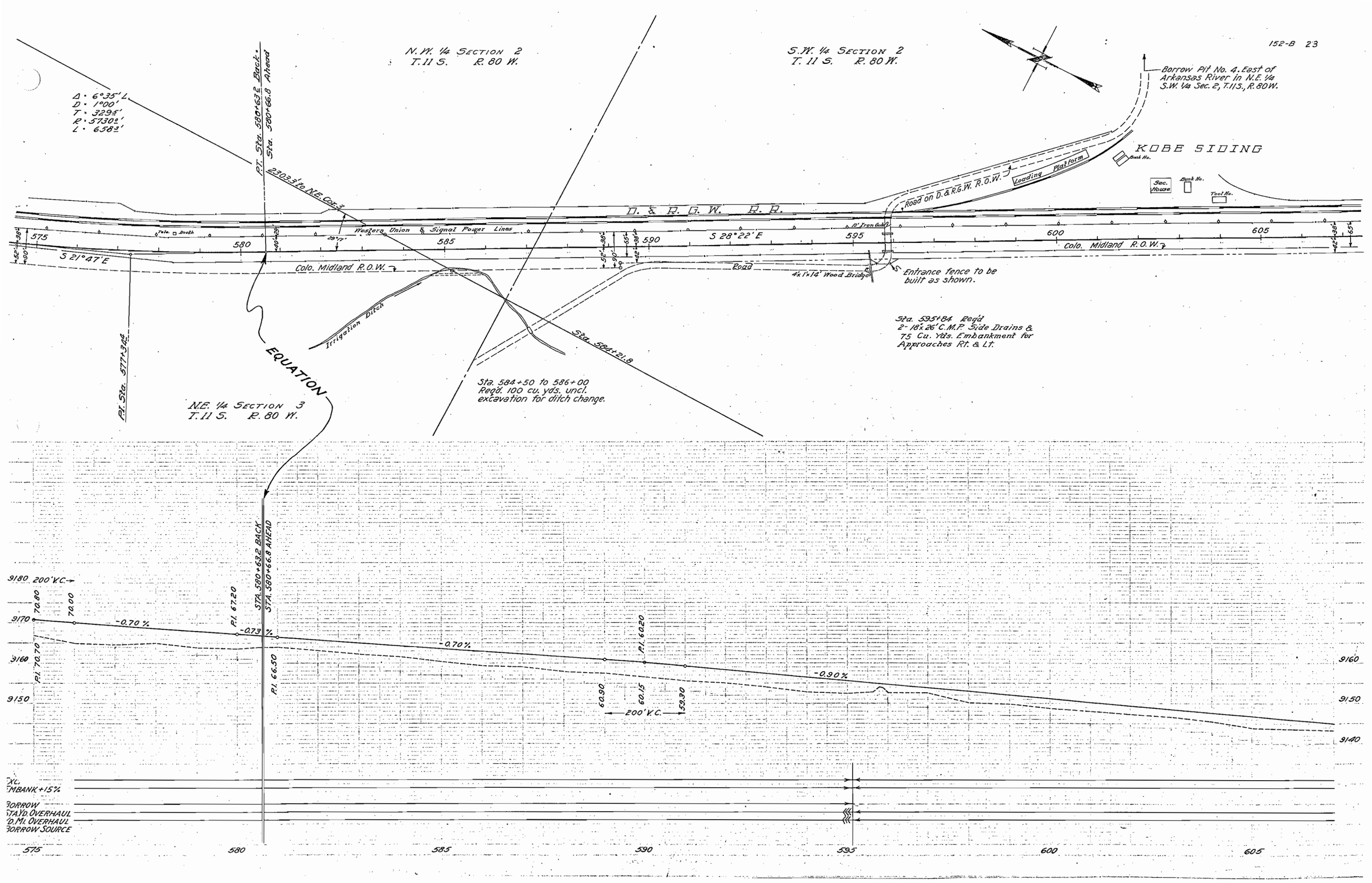
P.T. 547+20.0 BACK
STA. 547+22.5 AHEAD

P.I. 99.80
-0.30%
-0.911%
P.I. 98.00
F.L. 92.4
-0.90%
P.I. 87.20
88.10
87.15
86.10
200' V.C.
F.L. 78.8
-1.10%
200' V.C.
71.80
70.80
70.00
-0.70%
F.L. 63.2
P.I. 70.70

9200 9190 9180 9170 9160 9150

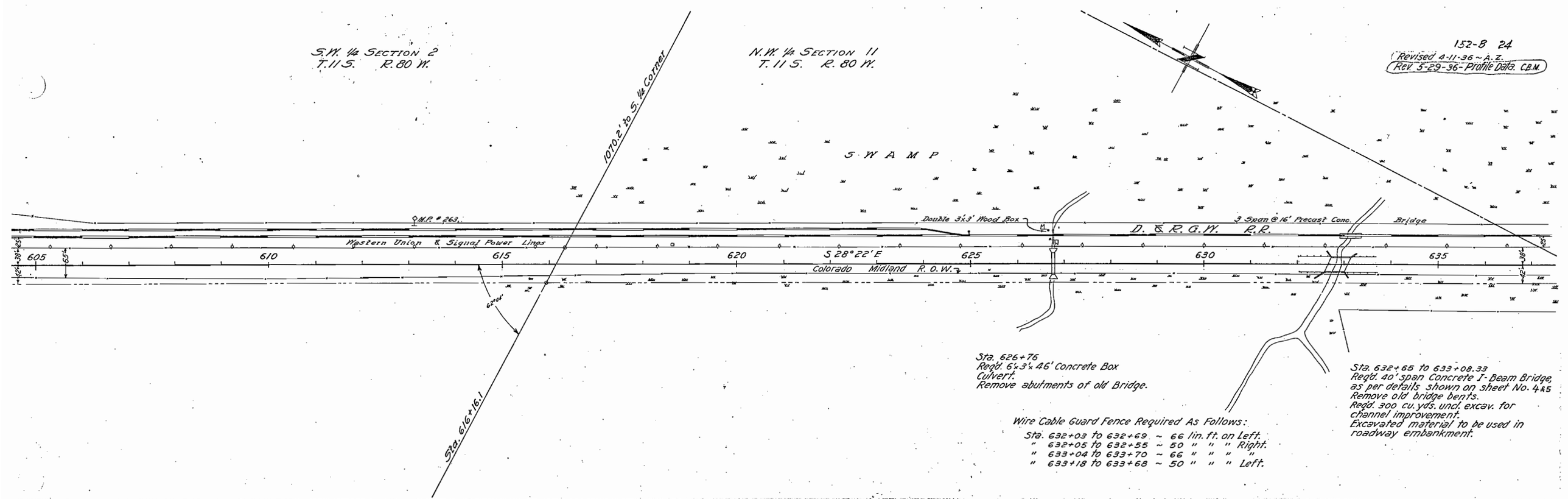
Ex.	2960
EMBANK. +15%	43,871
BORROW	40,911
STA. YD. OVERHAUL	450,021
YD. MI. OVERHAUL	34,684
BORROW SOURCE	Pit No. 4 2500' N.E. Sta. 596

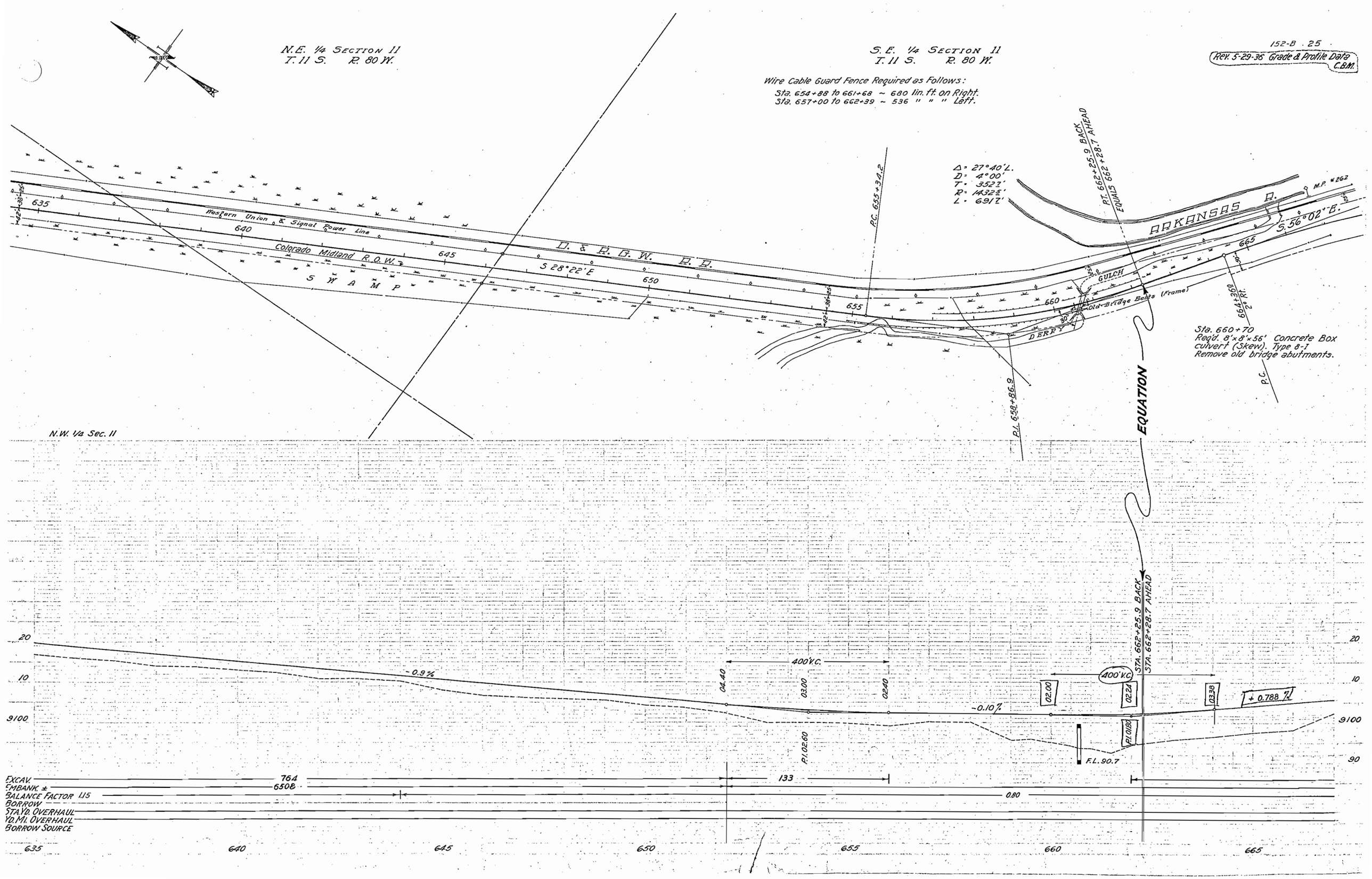
545 550 555 560 565 570 575

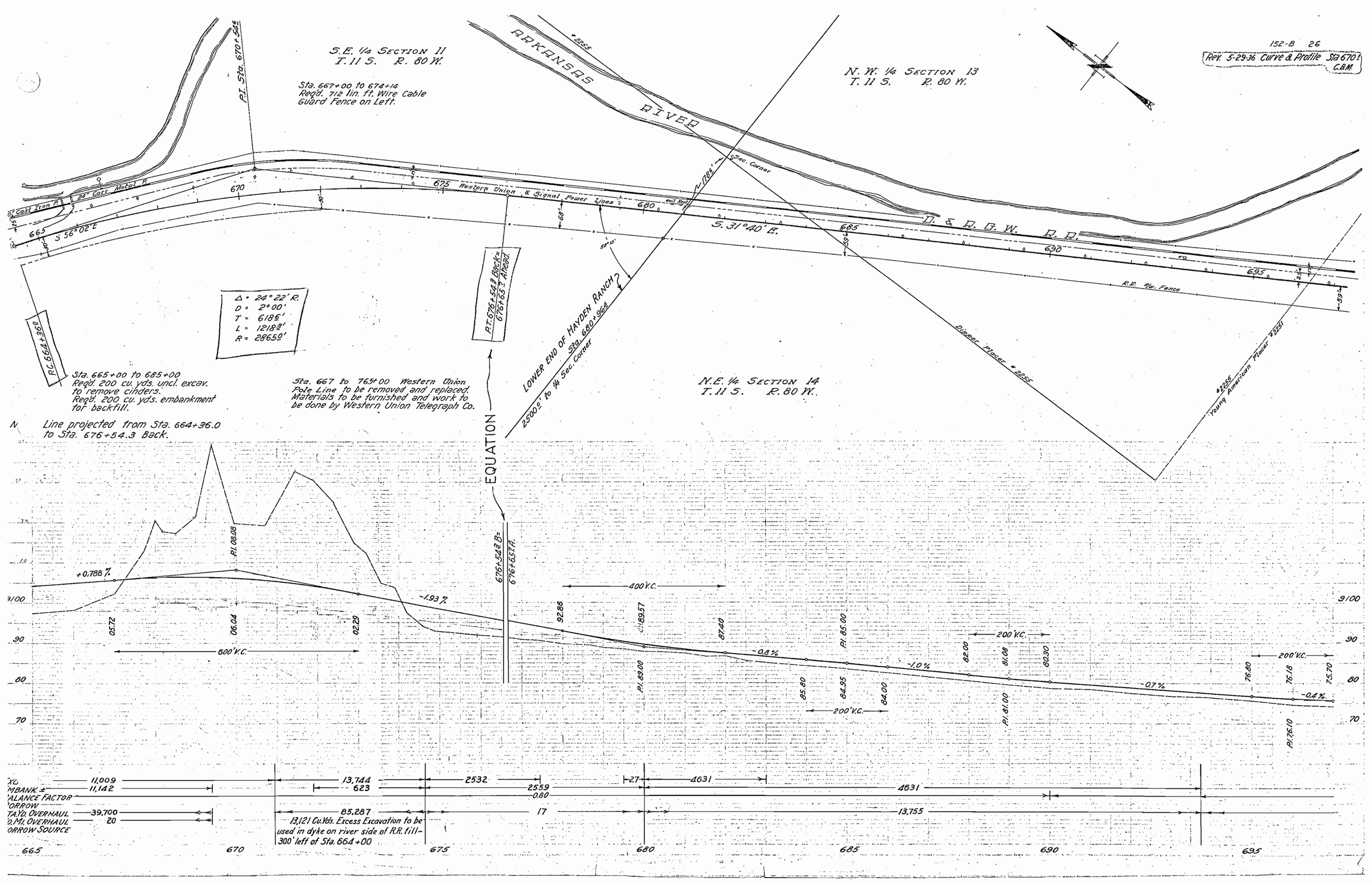

N.W. 1/4 SECTION 2
T. 11 S. R. 80 W.
S.W. 1/4 SECTION 2
T. 11 S. R. 80 W.
N.E. 1/4 SECTION 3
T. 11 S. R. 80 W.
Δ: 6°35' L
D: 1°00'
T: 329.9'
R: 5730.0'
L: 658.2'
PT. Sta. 580+63.2 Back.
Sta. 580+66.8 Ahead
2303.3' to N.E. Cor. 3
D. & R.G.W. R.R.
Western Union & Signal Power Lines
Tele. Booth
S 21°47' E
S 28°22' E
Colo. Midland R.O.W.
Road
4x1x14' Wood Bridge
12' Iron Gate
Entrance fence to be built as shown.
Road on D.&R.G.W. R.O.W.
Loading Platform
KOBE SIDING
Bunk No.
Sec. House
Tool No.
Borrow Pit No. 4. East of Arkansas River in N.E. 1/4 S.W. 1/4 Sec. 2, T.11S., R.80W.
Irrigation Ditch
EQUATION
PT. Sta. 577+34.4
Sta. 584+21.8
Sta. 584+50 to 586+00
Reqd. 100 cu. yds. uncl. excavation for ditch change.
Sta. 595+84 Reqd
2-18"x26' C.M.P. Side Drains &
75 Cu. Yds. Embankment for
Approaches Rt. & Lt.
575
580
585
590
595
600
605
STA. 580+63.2 BACK
STA. 580+66.8 AHEAD
9180
9170
9160
9150
9140
200' V.C.
70.80
70.00
P.I. 70.70
P.I. 67.20
P.I. 66.50
P.I. 60.20
60.90
60.15
59.30
-0.70%
-0.73%
-0.90%
EXC.
EMBANK+15%
BORROW
STA.YD. OVERHAUL
YD.MI. OVERHAUL
BORROW SOURCE

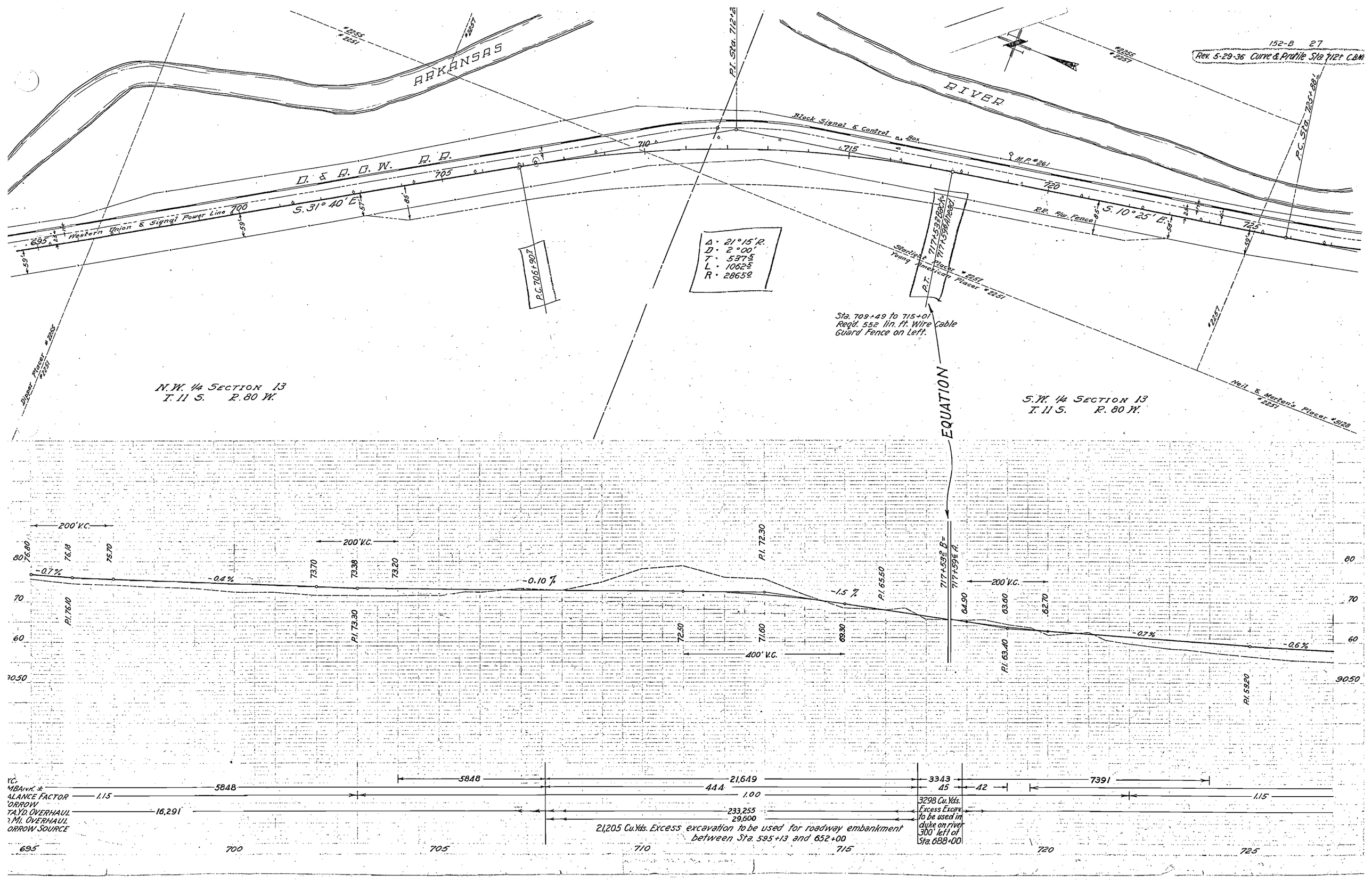
152-B 24

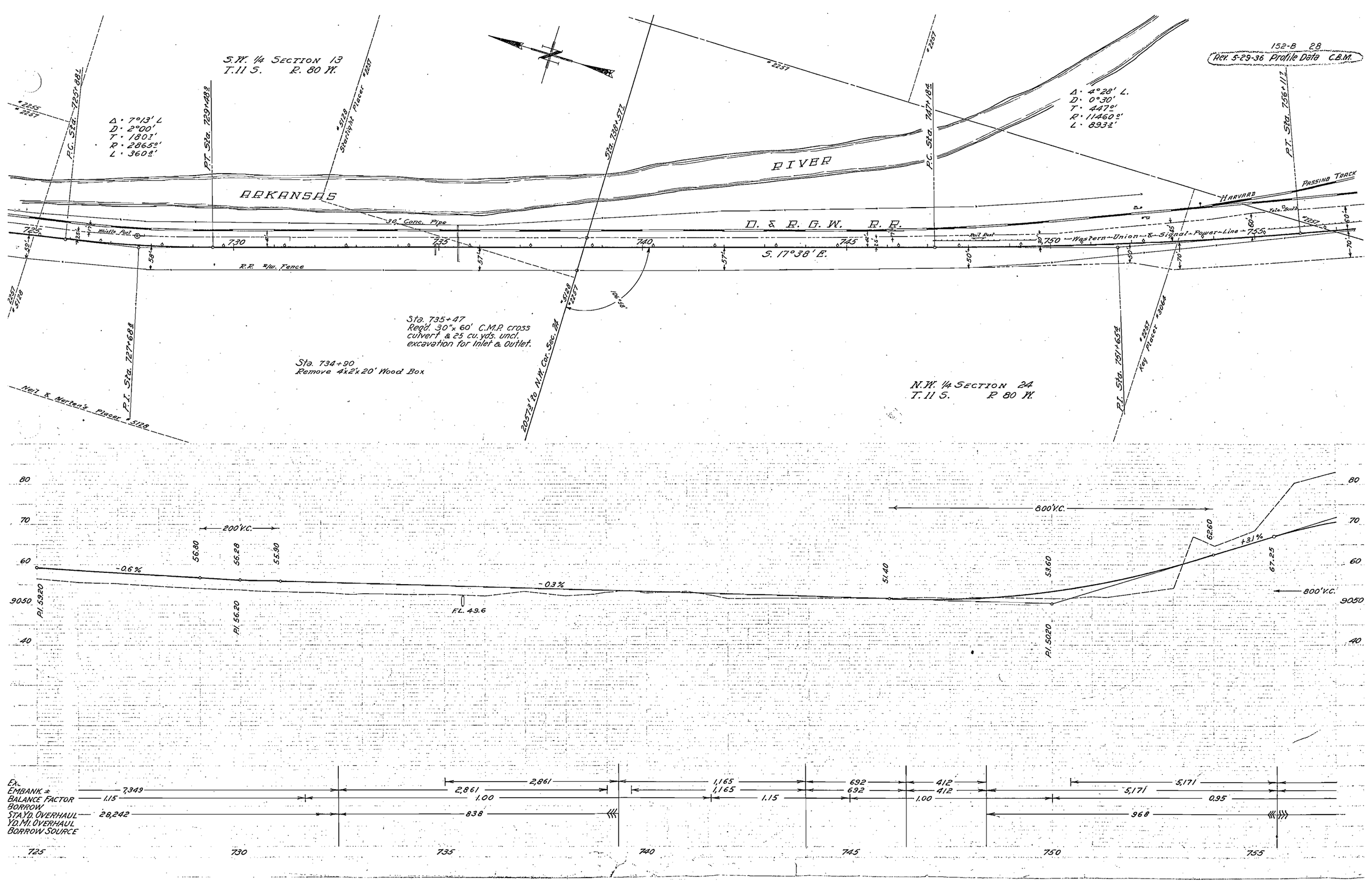
Revised 4-11-36 ~ A.Z.
Rev. 5-29-36 - Profile Data. C.B.M.

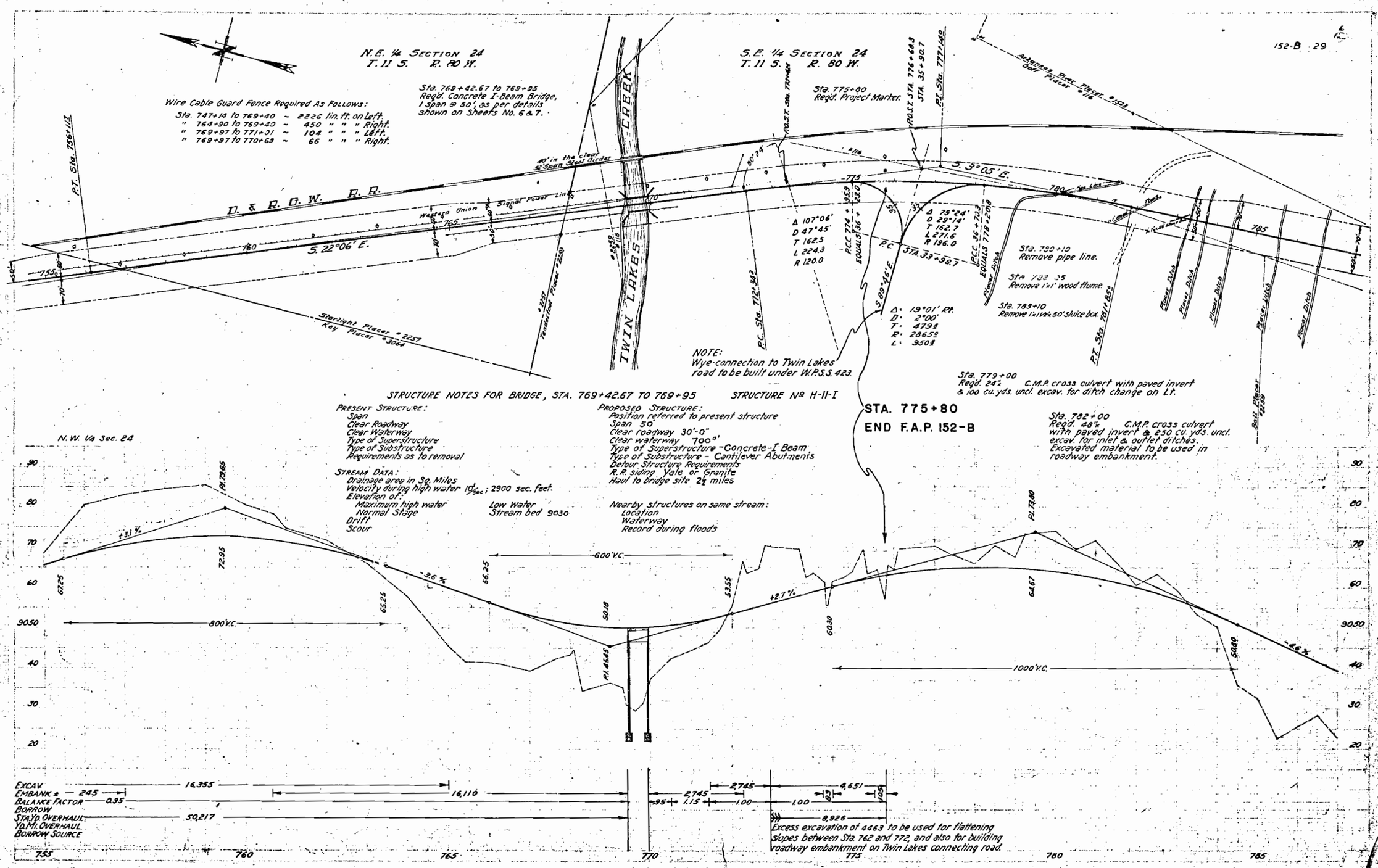



N.E. 1/4 SECTION 11
T. 11 S. R. 80 W.
S.E. 1/4 SECTION 11
T. 11 S. R. 80 W.
Wire Cable Guard Fence Required as Follows:
Sta. 654+88 to 661+68 ~ 680 lin. ft. on Right.
Sta. 657+00 to 662+39 ~ 536 " " " Left.
Western Union & Signal Power Line
Colorado Midland R.O.W.
D. & R. G. W. R.R.
S 28°22'E
S W A M P
P.C. 655+34.2
Δ = 27°40'L.
D = 4°00'
T = 352.2'
R = 1432.5'
L = 691.2'
PT. 662+25.9 BACK
EQUALS 662+28.7 AHEAD
ARKANSAS R.
M.P. #262
S.56°02'E.
GULCH
Old Bridge Bents (Frame)
DERBY
P.C. 658+86.9
EQUATION
Sta. 660+70
Reqd. 8'x8'x56' Concrete Box
culvert (Skew). Type 8-I
Remove old bridge abutments.
P.C.
N.W. 1/4 Sec. 11
635
640
645
650
655
660
665
20
10
9100
90
-0.9%
-0.10%
+0.788%
400' V.C.
04.40
03.00
02.40
P.I. 02.60
02.00
02.24
03.38
P.I. 01.80
F.L. 90.7
STA. 662+25.9 BACK
STA. 662+28.7 AHEAD
EXCAV 764
EMBANK ± 650
BALANCE FACTOR 1.15
BORROW
STA. YD. OVERHAUL
YD. MI. OVERHAUL
BORROW SOURCE
133
0.80

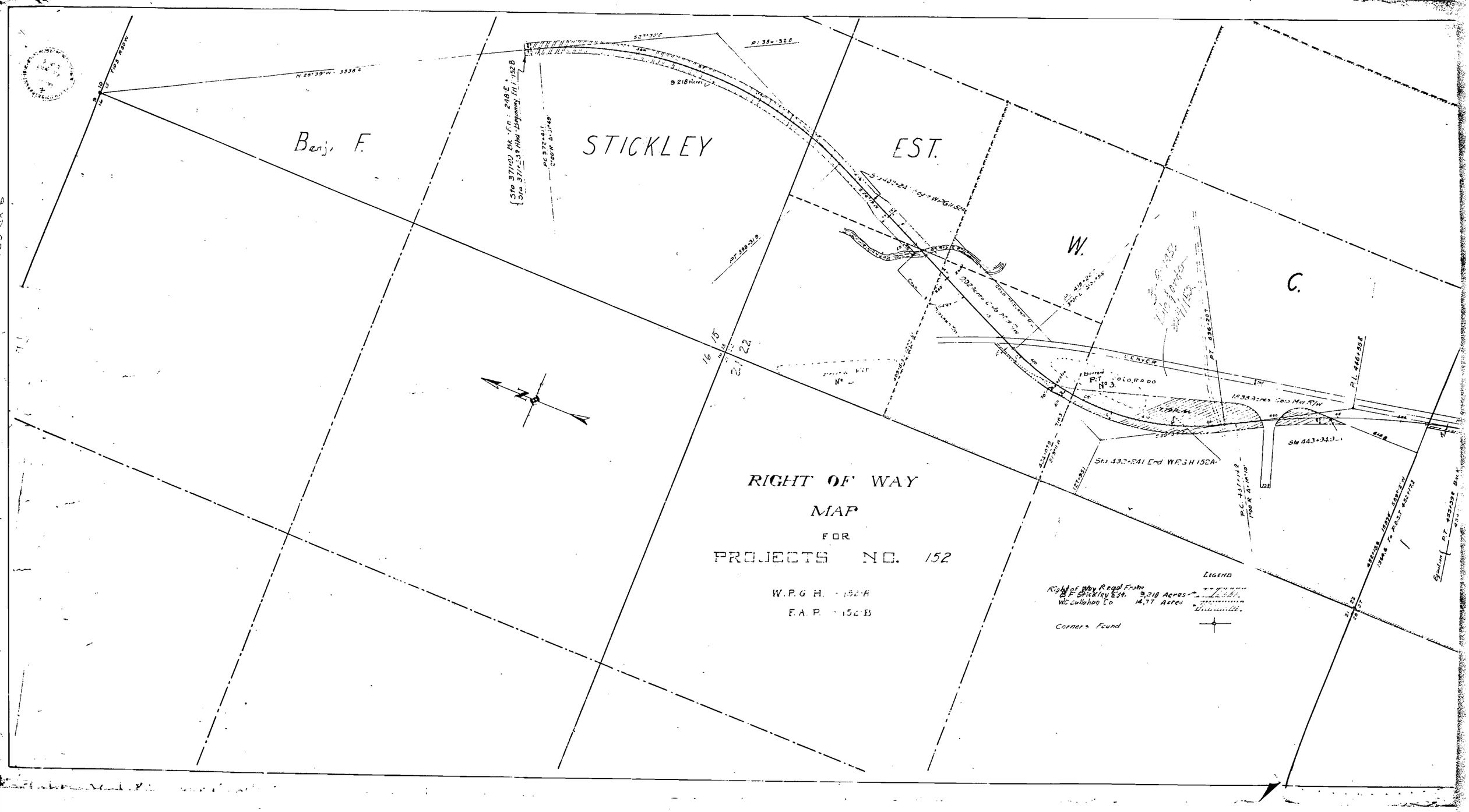

152-B 26
Rev. 5-29-36 Curve & Profile Sta 670± C.A.M.
S.E. 1/4 SECTION 11
T. 11 S. R. 80 W.
N.W. 1/4 SECTION 13
T. 11 S. R. 80 W.
N.E. 1/4 SECTION 14
T. 11 S. R. 80 W.
ARKANSAS RIVER
#2255
P.I. Sta. 670+54.5
Sta. 667+00 to 674+14
Reqd. 712 lin. ft. Wire Cable
Guard Fence on Left.
24" Corr. Metal P.
Cast Iron P.
Western Union & Signal Power Lines
Sec. Corner
D. & R. G. W. R.R.
R.R. R/W. Fence
S 56°02' E
S. 31°40' E.
Δ = 24°22' R.
D = 2°00'
T = 618.8'
L = 1218.2'
R = 2865.0'
P.C. 664+36.8
P.T. 676+54.3 Back = 676+65.1 Ahead.
LOWER END OF HAYDEN RANCH
Sta. 680+96.4
2500.0' to 1/4 Sec. Corner
Pioneer Placer #2255
#2256 Young American Placer #2251
Sta. 665+00 to 685+00
Reqd. 200 cu. yds. uncl. excav.
to remove cinders.
Reqd. 200 cu. yds. embankment
for backfill.
Sta. 667 to 765+00 Western Union
Pole Line to be removed and replaced.
Materials to be furnished and work to
be done by Western Union Telegraph Co.
N Line projected from Sta. 664+36.0
to Sta. 676+54.3 Back.
EQUATION
676+54.3 B=
676+65.1 A.
+0.788 %
-1.93 %
-0.8 %
-1.0 %
-0.7 %
-0.4 %
600' V.C.
400' V.C.
200' V.C.
P.I. 08.08
05.72
06.04
02.29
92.86
89.57
87.40
P.I. 85.00
P.I. 89.00
85.80
84.95
84.00
82.00
81.08
80.30
P.I. 81.00
78.80
76.18
75.70
P.I. 76.10
EXC. 11,009 13,744 2532 27 4631 4631
EMBANK. ± 11,142 623 2559
BALANCE FACTOR -0.80
BORROW
STA. YD. OVERHAUL 39,700 85,287 17 13,755
STD. MI. OVERHAUL 20
BORROW SOURCE
13,121 Cu. Yds. Excess Excavation to be used in dyke on river side of R.R. fill - 300' left of Sta. 664+00
665 670 675 680 685 690 695
100 90 80 70

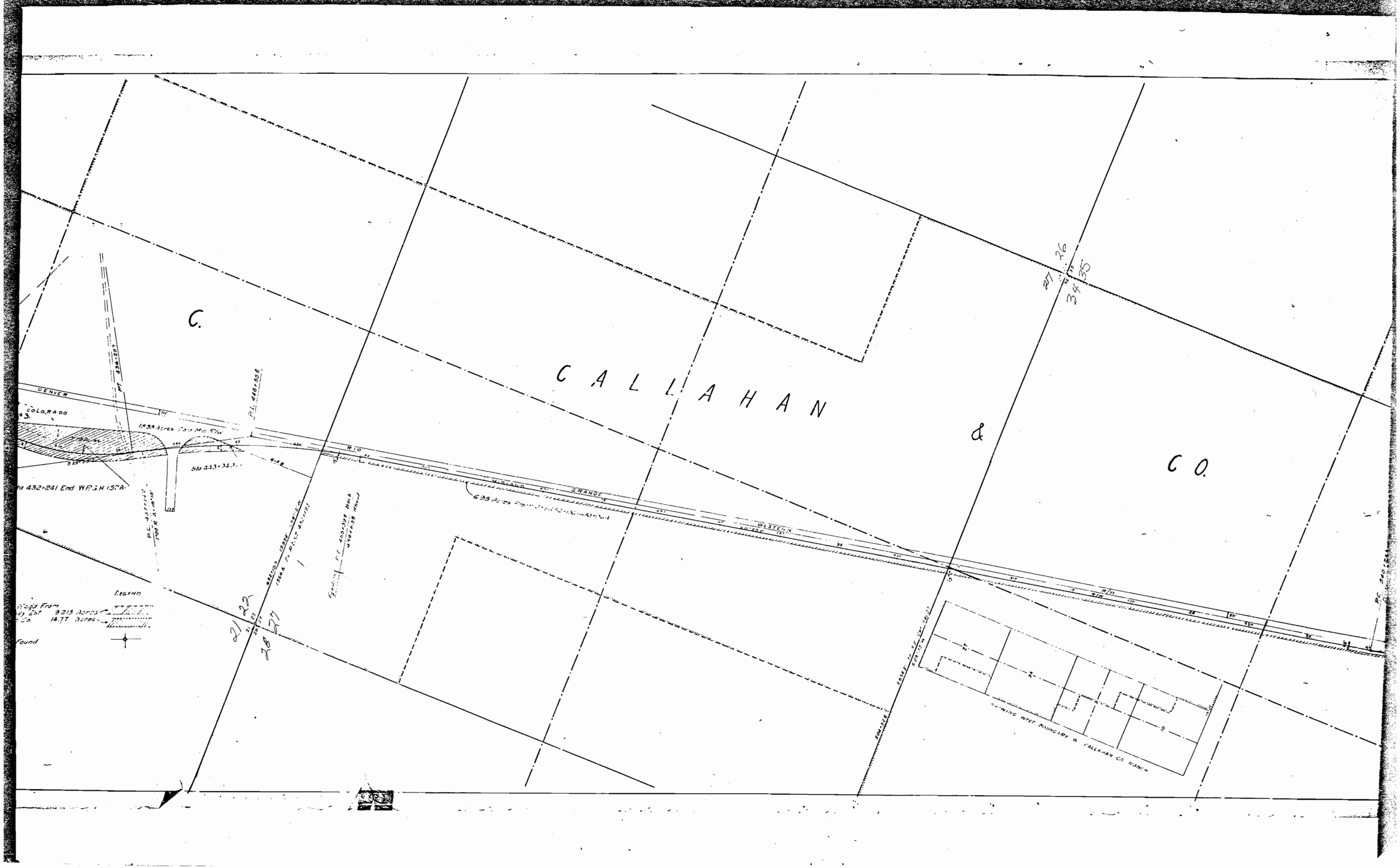

152-B 27
Rev. 5-29-36 Curve & Profile Sta 712+ CBM
ARKANSAS
RIVER
P.I. Sta. 712+2
P.C. Sta. 723+88
Block Signal & Control Box
D. & R. G. W. R. R.
M.P. #261
Western Union & Signal Power Line
S. 31° 40' E.
S. 10° 25' E.
R.R. Hw. Fence
P.C. 706+90
Δ = 21°15' R.
D = 2°00'
T = 537.5
L = 1062.5
R = 2865.9
Stardight Placer #2257
Young American Placer #2251
P.T. 717+532.8
717+596.1
Sta. 709+49 to 715+01
Reqd. 552 lin. ft. Wire Cable
Guard Fence on Left.
EQUATION
Dipper Placer #2255
#2251
#2257
Neil & Morten's Placer #5128
N.W. 1/4 SECTION 13
T. 11 S. R. 80 W.
S.W. 1/4 SECTION 13
T. 11 S. R. 80 W.
200' V.C.
400' V.C.
-0.7%
-0.4%
-0.10%
-1.5%
-0.7%
-0.6%
P.I. 76.10
P.I. 73.30
P.I. 72.30
P.I. 65.50
P.I. 63.10
P.I. 59.20
717+532 B=
717+596 A.
76.80
76.18
75.70
73.70
73.38
73.20
72.50
71.60
69.30
64.90
63.60
62.70
80
70
60
90.50
YC.
MBANK. ±
ALANCE FACTOR
ORROW
TA.YD. OVERHAUL
Mi. OVERHAUL
ORROW SOURCE
5848
1.15
16,291
5848
21,649
444
1.00
233,255
29,600
3343
45
42
7391
1.15
3298 Cu. Yds. Excess Excav. to be used in dyke on river 300' left of Sta. 688+00
21,205 Cu. Yds. Excess excavation to be used for roadway embankment between Sta. 595+13 and 652+00
695
700
705
710
715
720
725

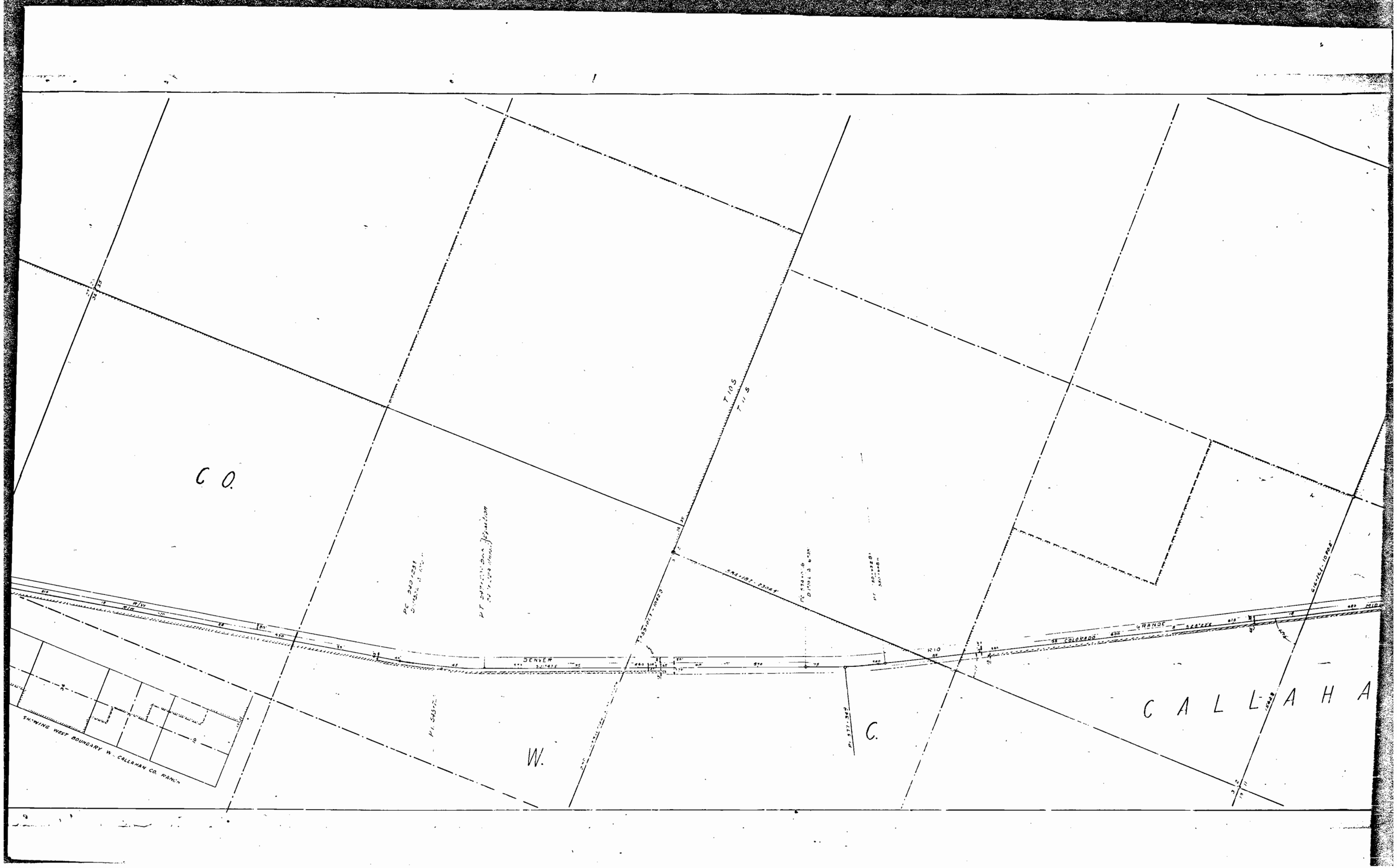

152-B 28
Rev. 5-29-36 Profile Data C.B.M.
S.W. 1/4 SECTION 13
T.11 S. R. 80 W.
Δ · 7°13' L
D · 2°00'
T · 180.7'
R · 2865.9'
L · 360.2'
P.C. Sta. 725+88.1
P.T. Sta. 729+48.9
Sta. 730+57.1
P.C. Sta. 747+18.4
P.T. Sta. 756+11.7
Δ · 4°28' L.
D · 0°30'
T · 447.2'
R · 11460.9'
L · 893.3'
ARKANSAS RIVER
30" Conc. Pipe
D. & R. G. W. R. R.
Whistle Post
Rail Post
Western Union & Signal Power Line
HARVARD
PASSING TRACK
Tele. Pole
R.R. R/W. Fence
S. 17°38' E.
106°58'
Sta. 735+47
Reqd. 30"x 60' C.M.P. cross culvert & 25 cu. yds. uncl. excavation for Inlet & Outlet.
Sta. 734+90
Remove 4'x2'x20' Wood Box
2057.3' to N.W. Cor. Sec. 24
Nelz & Nerten's Placer #5128
Sightly Placer #2257
Key Placer #3064
P.T. Sta. 727+68.8
P.T. Sta. 751+65.4
N.W. 1/4 SECTION 24
T.11 S. R. 80 W.
725
730
735
740
745
750
755
200' V.C.
800' V.C.
-0.6%
-0.3%
+3.1%
56.80
56.28
55.30
51.40
53.60
62.60
67.25
P.I. 53.20
P.I. 56.20
P.I. 50.20
F.L. 49.6
80
70
60
9050
40
Ex.
Embank. ±
Balance Factor
Borrow
Sta. Yd. Overhaul
Yd. Mi. Overhaul
Borrow Source
7,349
1.15
28,242
2,861
1.00
838
1,165
1.15
692
412
1.00
5,171
0.95
968

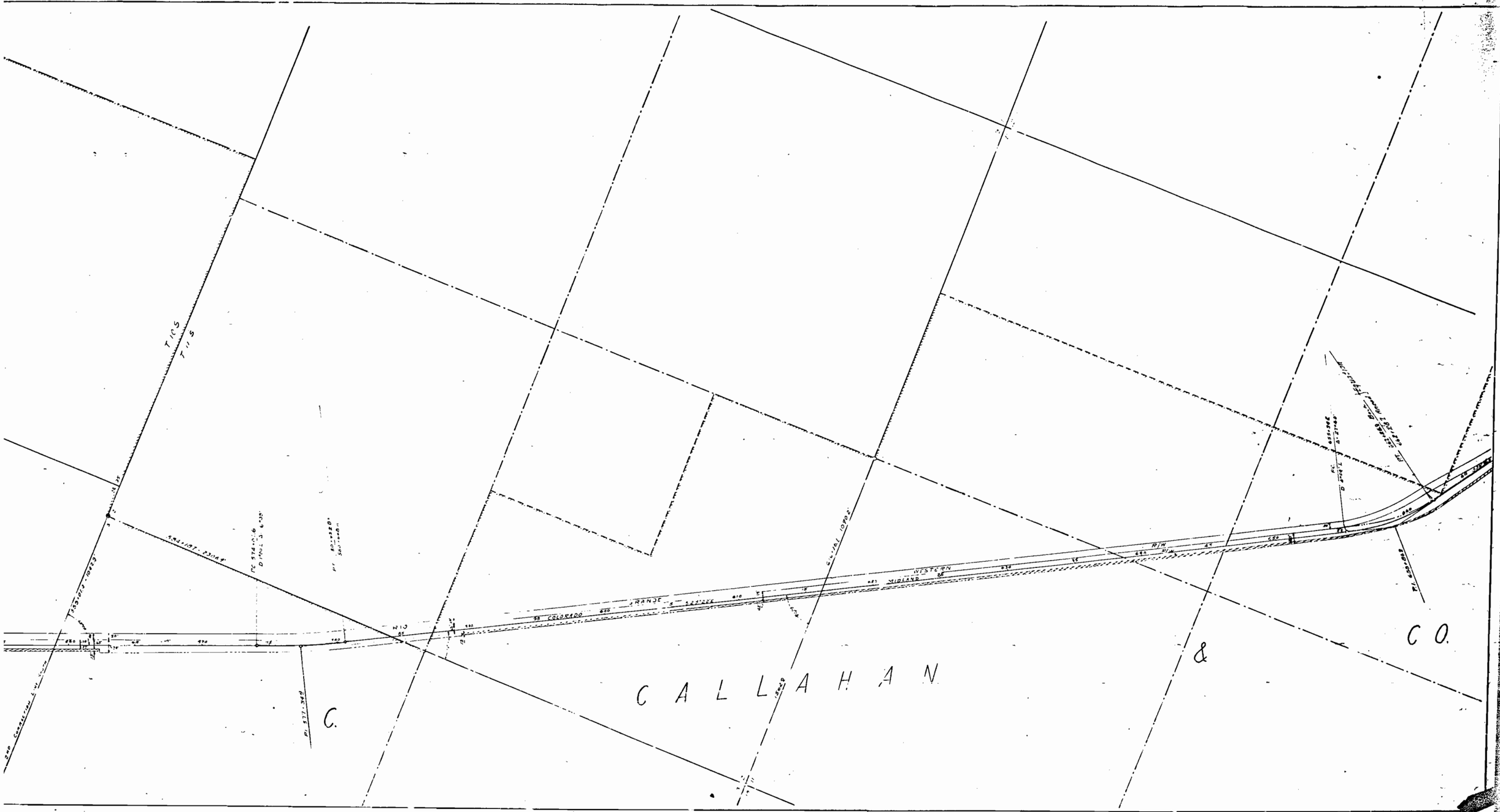

N.E. 1/4 SECTION 24
T. 11 S. R. 80 W.
S.E. 1/4 SECTION 24
T. 11 S. R. 80 W.
152-B 29
Wire Cable Guard Fence Required As Follows:
Sta. 747+14 to 769+40 ~ 2226 lin. ft. on Left.
" 764+90 to 769+40 ~ 450 " " " Right.
" 769+97 to 771+01 ~ 104 " " " Left.
" 769+97 to 770+63 ~ 66 " " " Right.
Sta. 769+42.67 to 769+95
Reqd. Concrete I-Beam Bridge,
1 Span @ 50', as per details
shown on Sheets No. 6 & 7.
Sta. 775+80
Reqd. Project Marker.
P.T. Sta. 756+112
40' in the clear
52' Span Steel Girder
D. & R. G. W. R. R.
Western Union Signal Power Line
S. 22°06' E.
S. 3°05' E.
TWIN LAKES CREEK
Sunlight Placer #2257
Key Placer #3064
Tenderfoot Placer #2250
Arkansas River Placer #1533
Golf Placer #116
Placer Ditch
Δ 107°06'
D 47°45'
T 162.5
L 224.3
R 120.0
Δ 75°24'
D 29°14'
T 162.7
L 271.6
R 196.0
PC STA. 33+98.7
Δ 19°01' Rt.
D 2°00'
T 47.98
R 286.52
L 95.08
Sta. 750+10
Remove pipe line.
Sta. 782+35
Remove 1'x1' wood flume.
Sta. 783+10
Remove 1'x1'x4'x50' sluice box.
P.T. Sta. 781+80
NOTE:
Wye-connection to Twin Lakes
road to be built under W.P.S.S. 423.
Sta. 779+00
Reqd. 24" C.M.P. cross culvert with paved invert
& 100 cu. yds. uncl. excav. for ditch change on Lt.
STA. 775+80
END F.A.P. 152-B
Sta. 782+00
Reqd. 48" C.M.P. cross culvert
with paved invert & 250 cu. yds. uncl.
excav. for inlet & outlet ditches.
Excavated material to be used in
roadway embankment.
STRUCTURE NOTES FOR BRIDGE, STA. 769+42.67 TO 769+95 STRUCTURE No. H-11-I
PRESENT STRUCTURE:
Span
Clear Roadway
Clear Waterway
Type of Superstructure
Type of Substructure
Requirements as to removal
STREAM DATA:
Drainage area in Sq. Miles
Velocity during high water 10'/sec ; 2900 sec. feet.
Elevation of:
Maximum high water
Normal Stage
Drift
Scour
Low Water
Stream bed 9030
PROPOSED STRUCTURE:
Position referred to present structure
Span 50'
Clear roadway 30'-0"
Clear waterway 700 sq'
Type of Superstructure - Concrete - I Beam
Type of Substructure - Cantilever Abutments
Detour Structure Requirements
R.R. siding Yale or Granite
Haul to bridge site 2½ miles
Nearby structures on same stream:
Location
Waterway
Record during floods
N.W. 1/4 Sec. 24
+3.1 %
-3.6 %
+2.7 %
-4.6 %
600' V.C.
800' V.C.
1000' V.C.
61.25
72.95
65.25
56.25
50.10
53.55
60.30
64.67
50.40
P.I. 72.65
P.I. 45.45
P.I. 72.80
EXCAV.
EMBANK.
BALANCE FACTOR
BORROW
STA. YD. OVERHAUL
YD. MI. OVERHAUL
BORROW SOURCE
16,355
245
0.95
16,110
50,217
2,745
2,745
4,651
.95
1.15
1.00
1.00
.83
1.05
8,926
Excess excavation of 4463 to be used for flattening
slopes between Sta. 762 and 772, and also for building
roadway embankment on Twin Lakes connecting road.
755
760
765
770
775
780
785

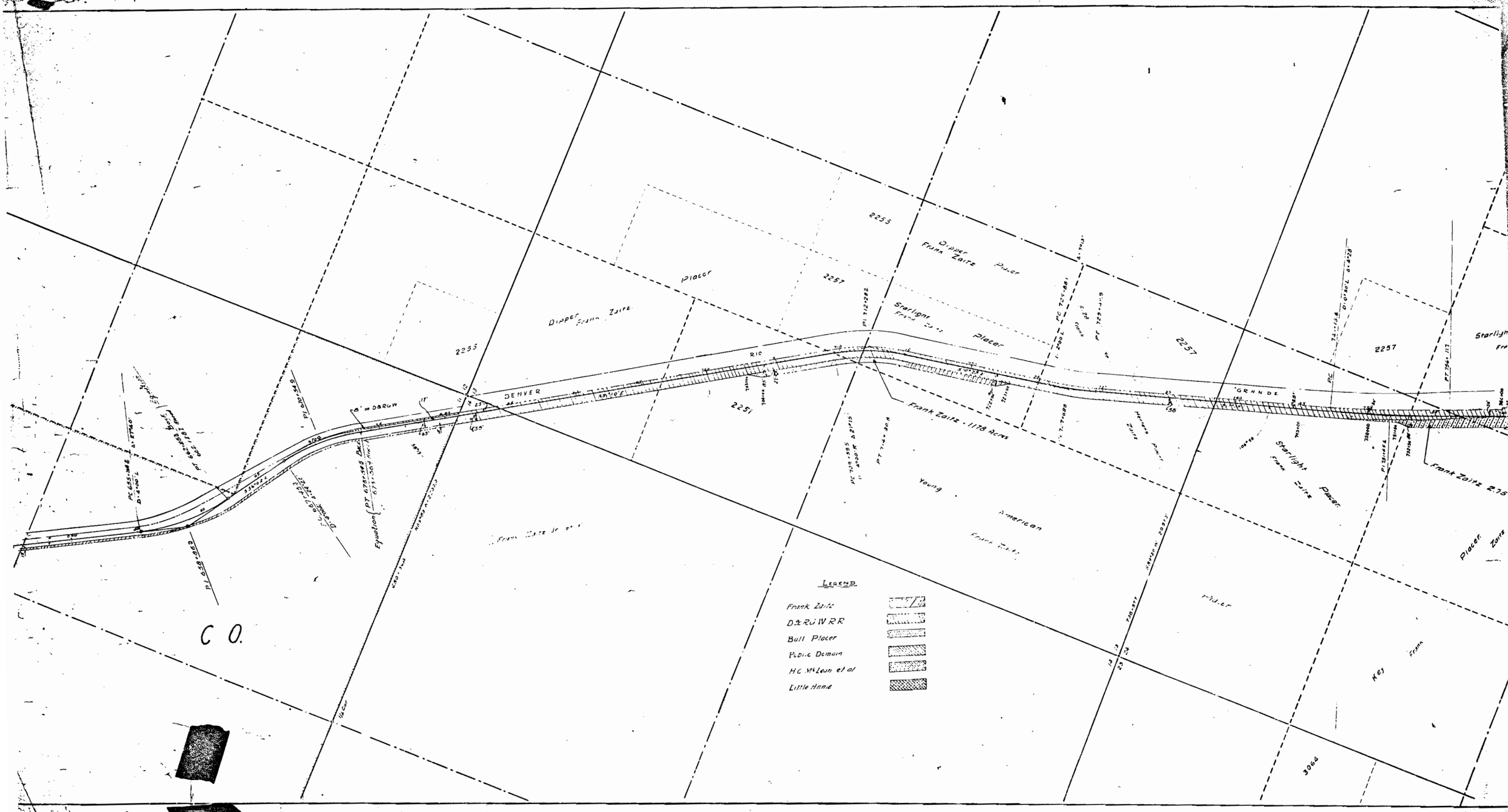
1936

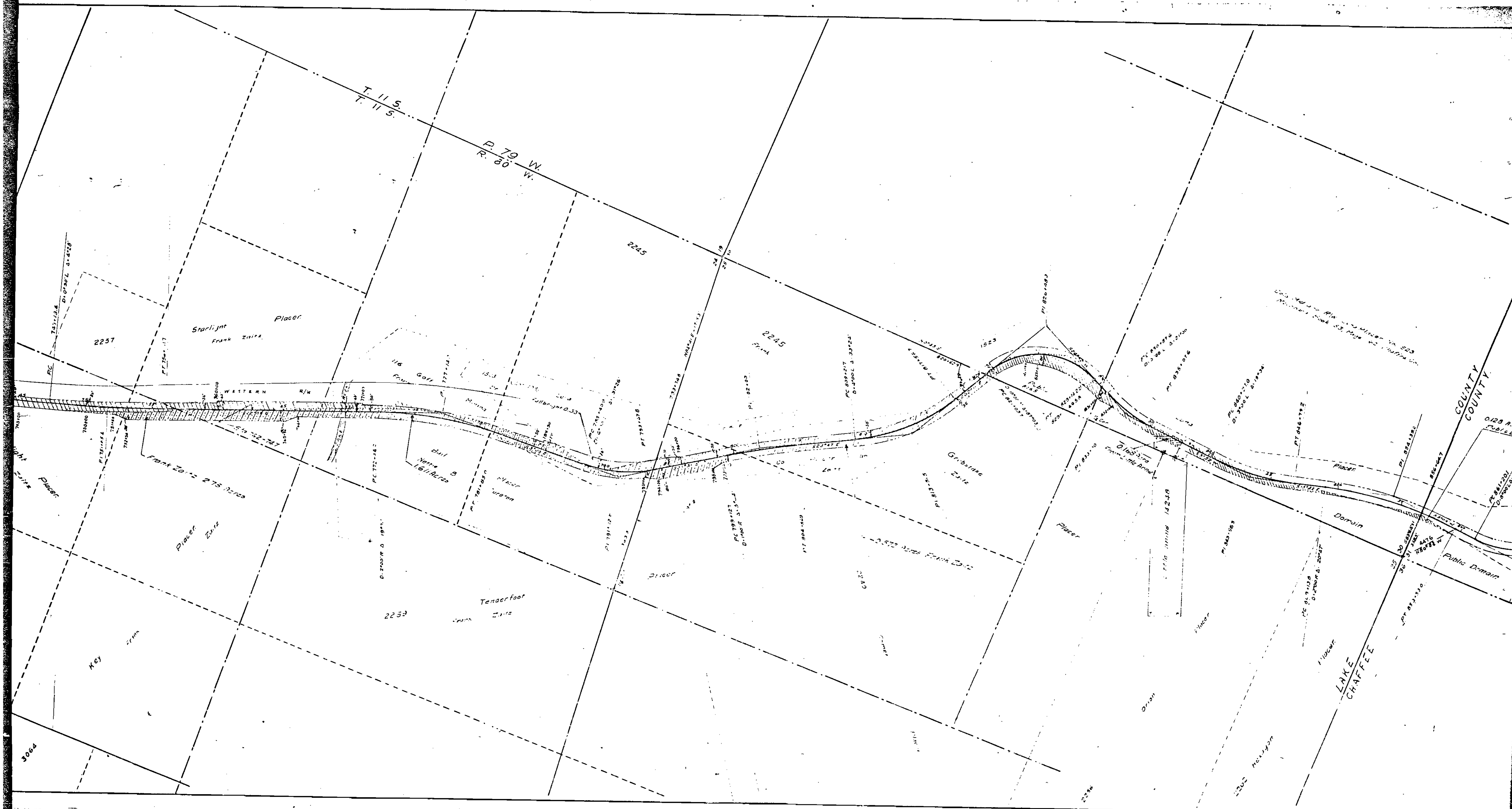

Benj. F.
STICKLEY
EST.
W.
C.
RIGHT OF WAY
MAP
FOR
PROJECTS NO. 152
W.P.G.H. - 152-A
F.A.P. - 152-B
N 28°39' W. 3338.4
Sta 371+00 Bk. Fin. 218-E
Sta 371+38 Ahd. Beginning Hi 1.152B
PC 372+41
200' R. 31°49'
PT 388.31.9
PI 384+32.8
9 218 Acres
S 41°03'24" E of W.P.G.H. 152A
Right of Way Road From
B F Stickley Est. 9.218 Acres
W.C. Callahan Co 14.77 Acres
Corners Found
LEGEND
DENVER
COLORADO
Pit No 3.
18.33 Acres Gold Mar R/W
Sta 443+34.3
Sta 443+241 End W.P.G.H 152A
P.C. 437+43.3
100' R. 41°14'10"
P.I. 446+35.8
P.T. 436+20.7
Equation P.T. 457+39.8 Bk.
457+08.8 Ahd.
1394.8 Ft. P.O.T. 455+73.3
N


C.
CALLAHAN
&
CO.
DENVER
COLORADO
RIO
GRANDE
WESTERN
21 22
28 27
34 35
26
TWING WEST BOUNDARY W. CALLAHAN CO. RANCH

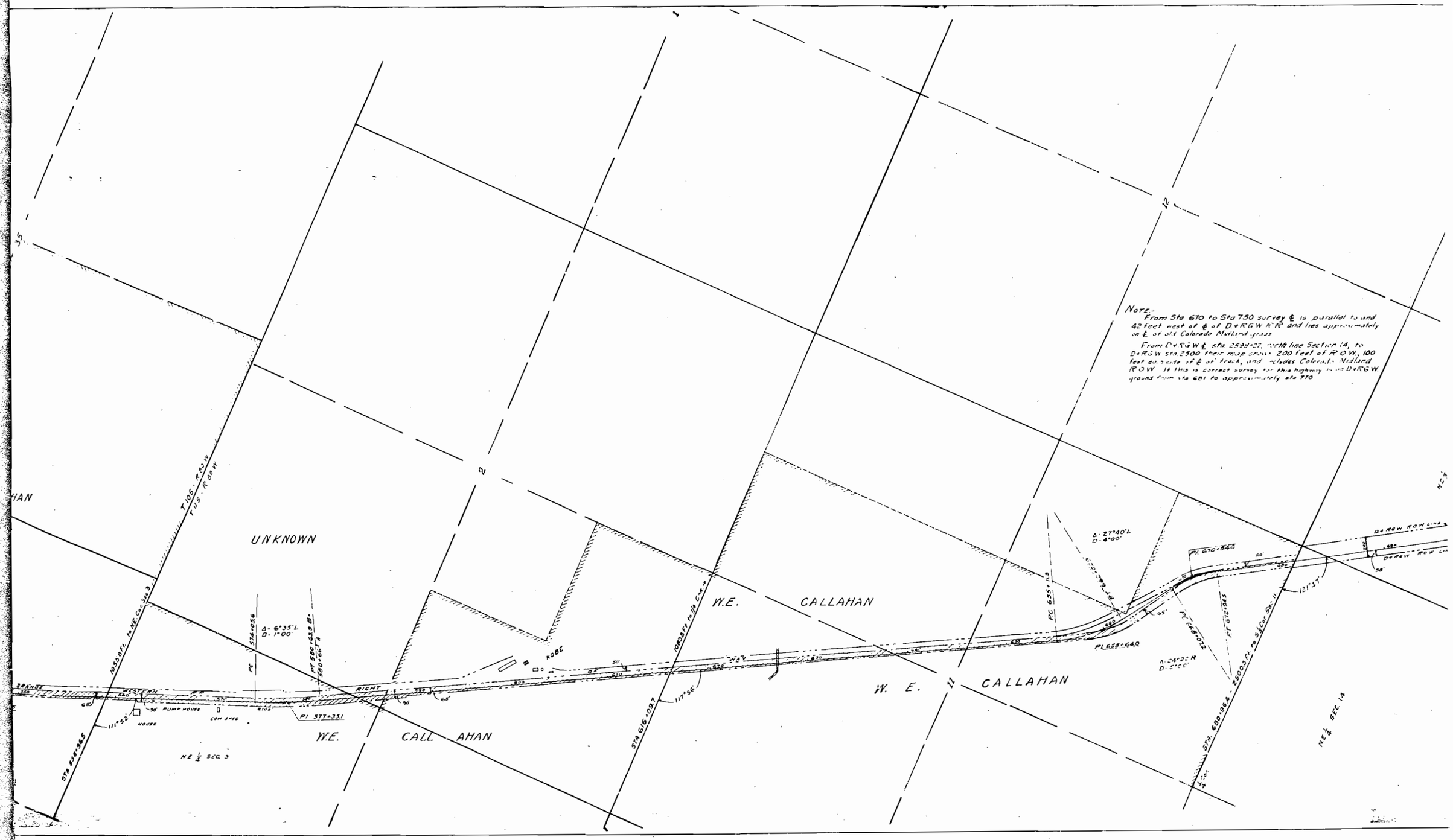

C O.
T 10 S
T 11 S
DENVER
RIO
GRANDE
COLORADO
W.
C.
C A L L A H A
SHOWING WEST BOUNDARY W. CALLAHAN CO. RANCH

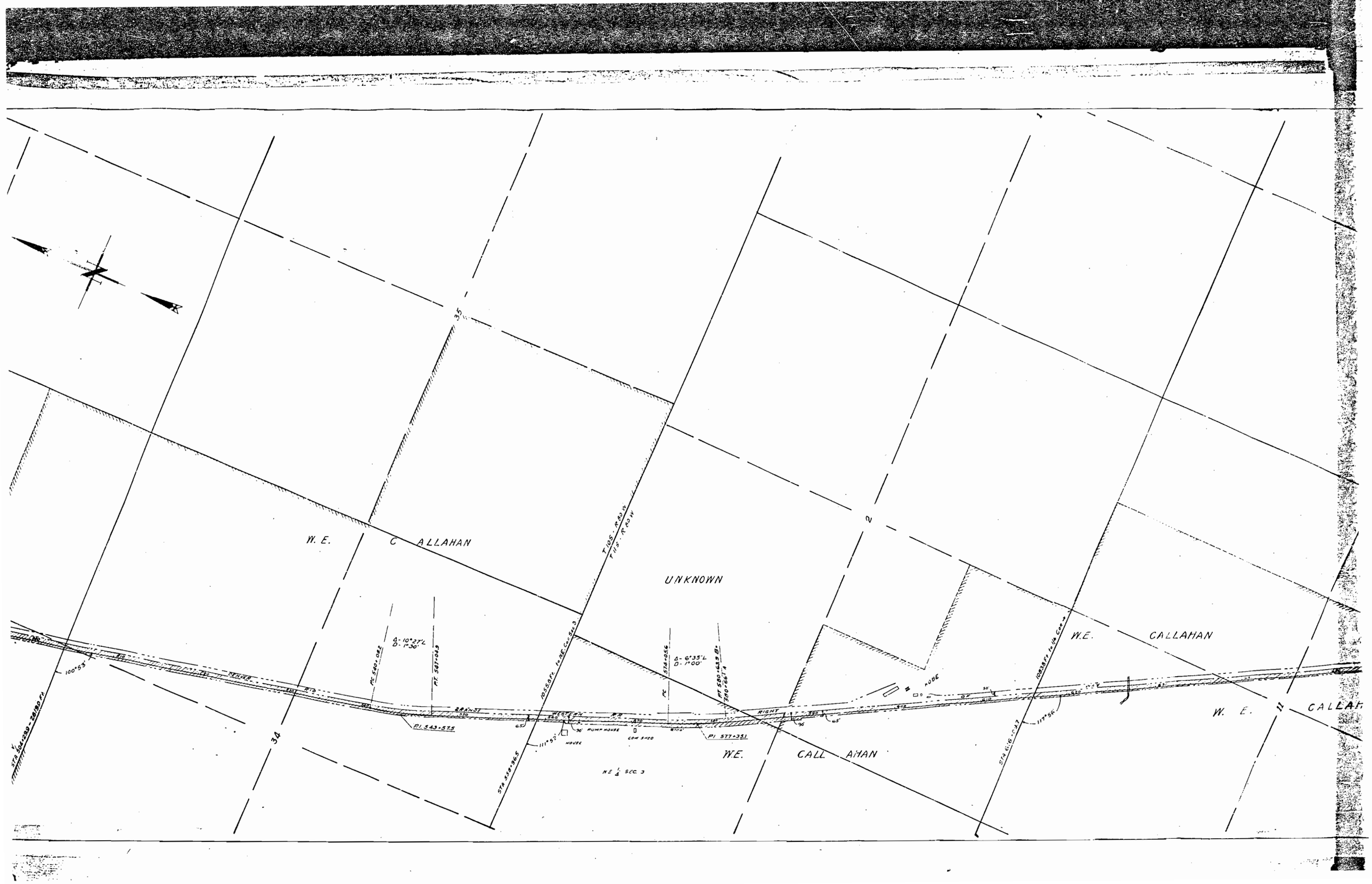

T 16 S
T 17 S
C.
C A L L A H A N
&
C O.
COLORADO
ORANGE
MIDLAND
WESTERN
R/W

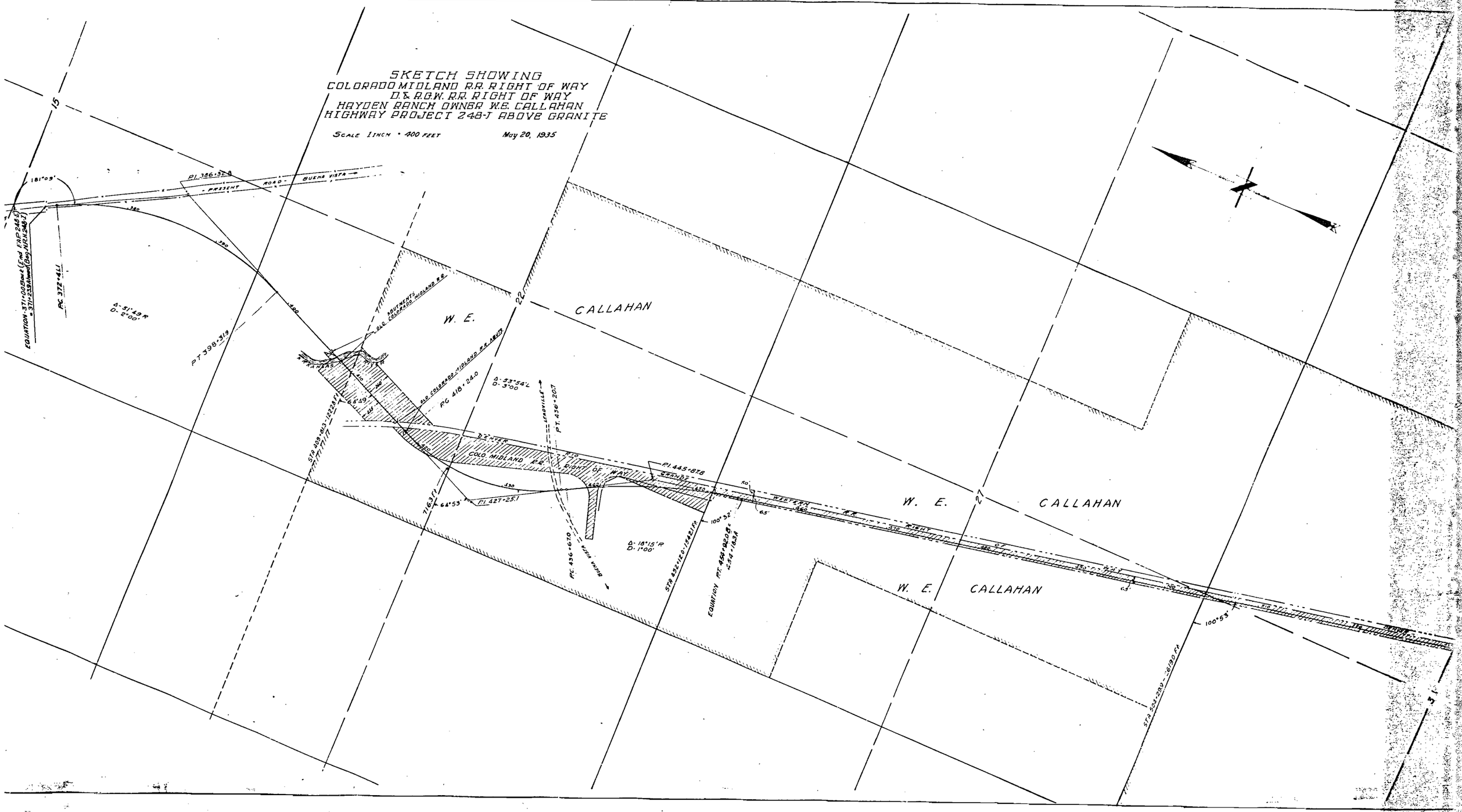

Legend
Frank Zaitz
D&RGW R.R.
Bull Placer
Public Domain
H.C. McLean et al
Little Annie
DENVER
RIO
GRANDE
Frank Zaitz - 1178 Acres
Frank Zaitz 2.75
Dipper Frank Zaitz Placer
Starlight Frank Zaitz Placer
Young American
Placer
2253
2255
2257
2251
3064
C O.


T. 11 S.
T. 11 S.
R. 79 W.
R. 80 W.
2245
2245
2237
Starlight Placer
Frank Zaitz
Placer
Western R/W
Frank Zaitz 2.75 Acres
Bull
Nettie B
1.611 Acres
Fullbright 0.33
Tenderfoot
2259
Zaitz
Key
3064
Placer
Grubstake
Zaitz
0.572 Acres Frank Zaitz
Public
0.168 Acre
Placer
Domain
Public Domain
0.128 Acre
Public Domain
COUNTY
COUNTY
LAKE
CHAFFEE
Placer
Orion
2256
1523
PI 820+483
PT 835+076
PT 846+792
PI 854+332
856+647
PC 861+201
PT 853+330
PC 809+217
PC 799+127
PT 793+378
PC 772+342
PT 751+454

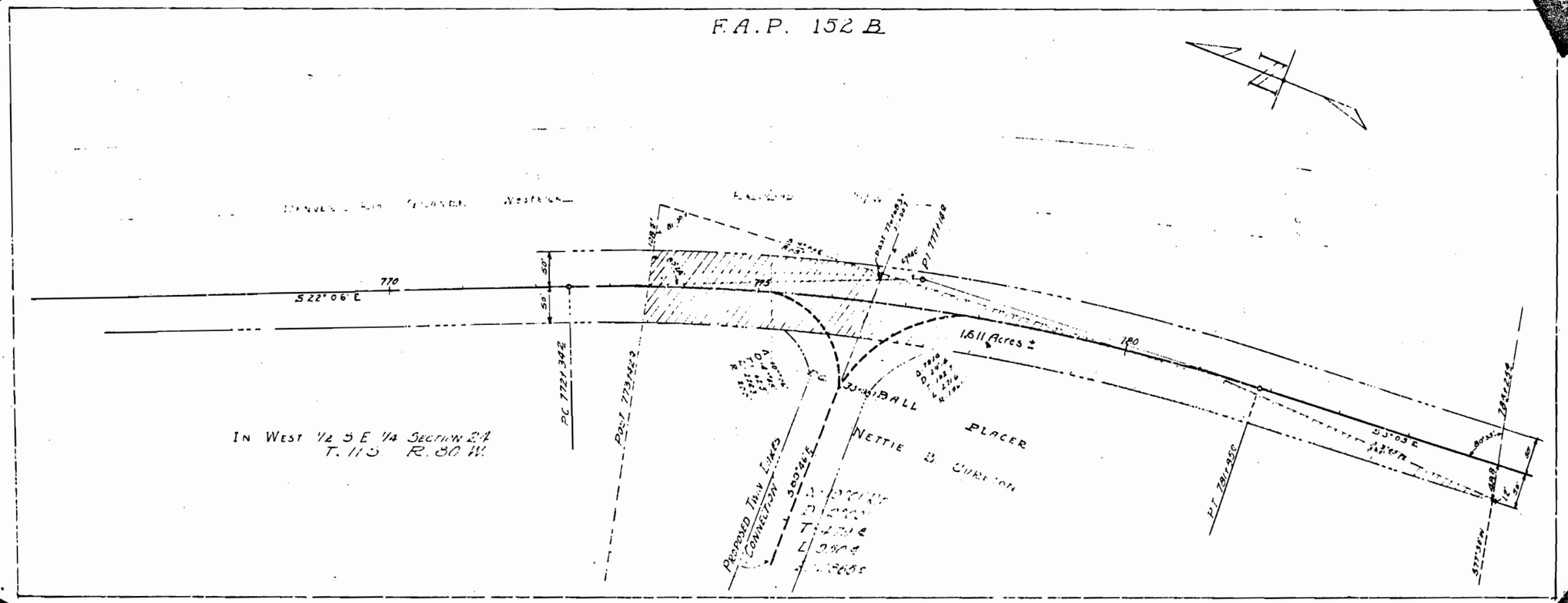
R 79 W
R 79 W
T 15 S
LAKE
CHAFFEE
COUNTY
COUNTY
Placer
Dump
Morgan & Co.
WD to Cals Mining
for 14 Acres of 39.35
Gulch
Mead
Orion
Holdgin
Liner
114 Cor.
Rolling Dump
Dump
Placer


NOTE-
From Sta 670 to Sta 750 survey ℄ is parallel to and 42 feet west of ℄ of D&RGW RR and lies approximately on ℄ of old Colorado Midland grade
From D&RGW ℄ sta 2599+07, north line Section 14, to D&RGW sta 2500 their map shows 200 feet of R O W, 100 feet each side of ℄ of track, and includes Colorado Midland R O W. If this is correct survey for this highway is on D&RGW ground from sta 681 to approximately sta 770
UNKNOWN
W.E. CALLAHAN
W. E. CALLAHAN
W.E. CALL AHAN
T 10 S - R 60 W
T 11 S - R 60 W
10353.0 Ft. to NE Cor Sec 3
10838 Ft. to 1/4 Cor
STA 616+09.7
STA 680+96.4 - 250.03 Ft. to S 1/4 Cor Sec 11
STA 558+96.5
PI 577+351
PI 670+346
PI 659+64.0
PC 655+11.3
PT 680+12
PC 668+07.2
PT 679+65.3
Δ - 6°35'L
D - 1°00'
PC 574+056
PT 580+63.9 B
700+66.7 A
Δ - 27°40'L
D - 4°00'
Δ - 24°22' R
D - 5°00'
D&RGW ROW LINE
BRANCH
WEST
RIGHT
HOUSE
PUMP HOUSE
COW SHED
KOBE
111°52'
117°56'
121°37'
NE ¼ SEC 3
NE ¼ SEC. 14
2
11
14
15


35
W. E. CALLAHAN
T.10S - R.20W
T.11S - R.20W
UNKNOWN
2
W.E. CALLAHAN
34
11
W. E. CALLAH
W.E. CALLAHAN
NE 1/4 SEC 3
PUMP HOUSE
COW SHED
HOUSE
ADOBE
PI 543+575
PI 577+351
STA 544+590 = 28180 FT.
STA 558+965
STA 616+037
100°55'
111°52'
117°56'
Δ- 10°27'L
D- 1°30'
Δ- 6°35'L
D- 1°00'
PC 540+082
PT 547+043
PC 574+056
PT 580+629.8
580+667.4
10,558 FT. 1 to NE. Cor. Sec. 3
10,838 FT. to N. Cor. 11
NEVADA
WESTERN
RIGHT
OF
WAY


SKETCH SHOWING
COLORADO MIDLAND R.R. RIGHT OF WAY
D.& R.G.W. R.R. RIGHT OF WAY
HAYDEN RANCH OWNBA W.E. CALLAHAN
HIGHWAY PROJECT 248-J ABOVE GRANITE
SCALE 1 INCH = 400 FEET
May 20, 1935
15
22
27
CALLAHAN
W. E.
W. E.
CALLAHAN
W. E.
CALLAHAN
PI 386+32.8
PRESENT ROAD
BUENA VISTA
181°09'
EQUATION 371+00 Back (Grd FAP 248-5)
= 371+23.9 Ahead (Proj NR H 248-J)
PC 372+41.1
Δ- 51°49' R
D- 2°00'
PT 398+31.9
ABUTMENTS
OLD COLORADO MIDLAND R.R.
RIVER
Δ- 53°54' L
D- 3°00'
PC 418+24.0
LEADVILLE
PT 436+20.7
STA 419+03-(2228 Ft)
COLO. MIDLAND R.R.
RIGHT OF WAY
PI 445+87.8
BRANDS
WESTERN
RIGHT OF WAY
PI 427+25.1
64°53'
71.63 Ft
100°52'
65'
PC 436+67.0
BUENA VISTA
Δ- 18°15' R
D- 1°00'
STA 452+14.0-(1421 Ft)
EQUATION PT 458+82.08
= 34+18.3 R
100°53'
STA 503+29.9-(2190 Ft)

F.A.P. 152 B


770
S 22° 06' E
50'
50'
PC 7721.34
PCL 7723.42
PI 7771.48
1.611 Acres ±
780
BALL
PLACER
NETTIE B. CURRIER
PROPOSED TRUE LINES
CONNECTION
S 33° 05' E
PT 7811.55
STATION
IN WEST 1/2 S E 1/4 SECTION 24
T. 11 S. R. 80 W.