

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	299 F	1	

# COLORADO

## STATE HIGHWAY DEPARTMENT

### PLAN AND PROFILE OF PROPOSED FEDERAL AID PROJECT NO. F.A.P. 299 F STATE HIGHWAY NO. 6 MESA COUNTY

#### INDEX OF SHEETS

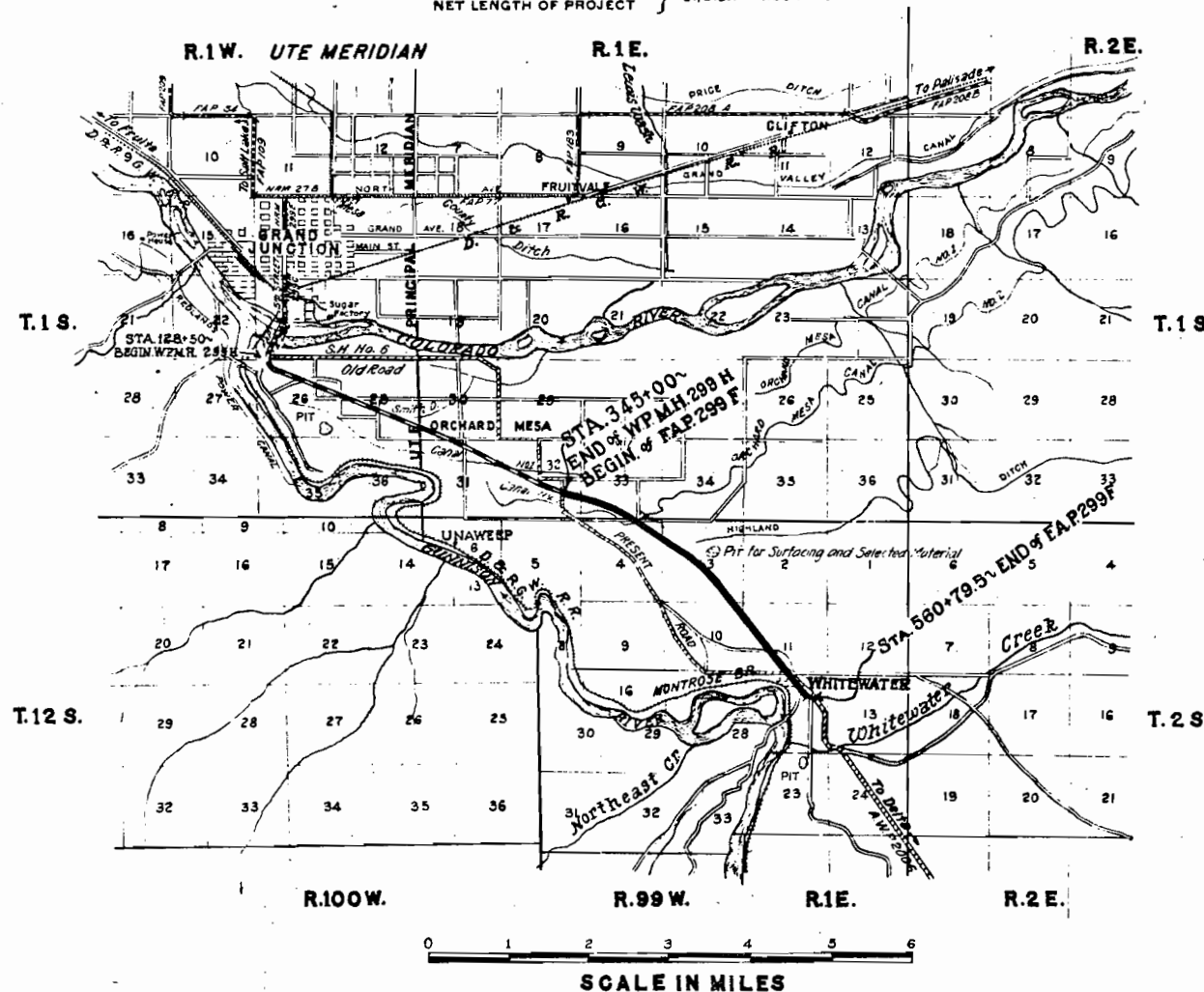
- SHEET 1 TITLE SHEET
- " 2 TYPICAL CROSS SECTION AND SUMMARY OF QUANTITIES
- " 3 STRUCTURE LIST
- " 4 MISCEL. DETAILS STA. 548+
- " 5 BRIDGE AT CALLOW CRK., STA. 548+
- " 6 SPECIAL DETAILS FOR 6'x4' CON BOX CULV., STA. 398+
- " 7 STANDARD CON. BOX CULV., M-103D
- " 8 " HEADWALLS, M-102E
- " 9 " SIPHON, M-123A
- " 10 " WIRE CABLE GUARD FENCE, M-20A
- " 11 " FENCES & MARKER POSTS, M-24 F
- " 12 " STRUCTURE NUMBER LETTERING, M-10A
- " 13 " METHODS OF SUPERELEVAT'N. & WIDEN'G. OF CURVES, M-1A
- " 14 TYPICAL SIDE APPROACH ROADS AND ROADWAY CONST. TRAFFIC SIGNS, M-2B
- " 15-22 PLAN AND PROFILE
- " 23-40 CROSS-SECTIONS

#### CONVENTIONAL SIGNS

- RAILROADS
- CENTERLINE OF IMPROVEMENT
- INTERMEDIATE ROADS
- BARBED WIRE FENCE
- POLE LINES
- SECTION LINES
- QUARTER SECTION LINES

*Note: No R.O.W. plans in staff R.O.W. (Denver)*

**SCALES**  
 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 } 21,619.1' = 4.094 MILES.  
 NET LENGTH OF PROJECT }



**NOTE**  
 It is recommended that Bidders on this Project go over the plan details with one of the following field representatives of this department.  
 J.J. Vandemoer, Division Engineer, Grand Junction, Colo.  
 A.H. Batten, Resident Engineer, Grand Junction, Colo.

RECOMMENDED FOR APPROVAL 6/13/36

*J.E. Williams*  
 ASSISTANT ENGINEER

APPROVED  
*Chas. Hill*  
 STATE HIGHWAY ENGINEER

RECOMMENDED FOR APPROVAL

DIST. ENG. BUREAU PUBLIC ROADS  
 RECOMMENDED FOR APPROVAL

CHIEF ENG. BUREAU PUBLIC ROADS  
 APPROVED

DIRECTOR BUREAU PUBLIC ROADS

Revised: 7/27/36 - M.R.H.

# TYPICAL CROSS SECTION OF IMPROVEMENT AND SUMMARY OF QUANTITIES

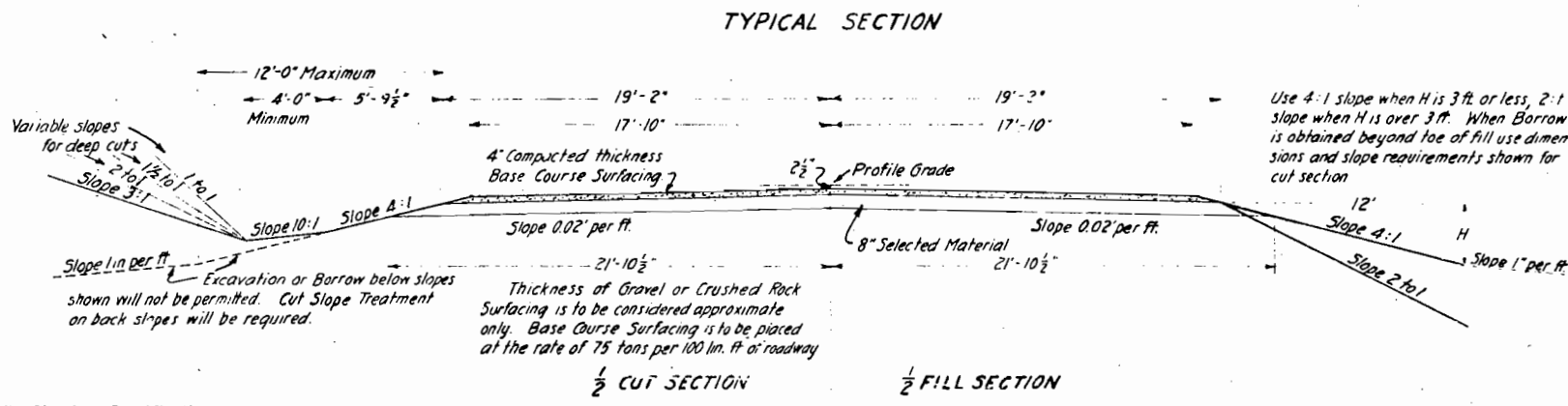
## SELECTED MATERIAL

The 8 inches of material immediately underlying the Gravel or Crushed Rock Surfacing as shown on the Typical Section is to be constructed with Selected Material. This Selected Material is to be classified and paid for as Unclassified Excavation.

The 8 inches of Selected Material underlying the gravel surfacing is to be obtained from pits designated, or from pits furnishing suitable equivalent material and shall be placed on the subgrade at the rate of 110 cu. yds. per Station.

The estimated overhaul on Selected Material is shown in the tabulation below. If the Contractor for his own convenience elects to use pits other than those designated, actual overhaul will be paid, provided however that overhaul in excess of the Departments plan will not be allowed.

Material Required Sta. to Sta.	Quantity cu yds.	Source	Overhaul Sta. Yds.	Yd. Mi.
345+00 - 442+00	11,330	Pit in SW 1/4 NE 4	122,650	9,870
448+00 - 560+79.5	12,460	Sec. 3, T2.S.R1E Ute P.M.	134,990	11,860
<b>Totals</b>	<b>23,790</b>		<b>257,640</b>	<b>21,730</b>



**CUT SLOPE TREATMENT IN EARTH CUTS**  
The intersection of cut slopes with the existing ground line shall be rounded in earth cuts beginning 5 ft. back of the slope stake and extending 5 ft. down the cut slope. Excavation quantities involved in rounded slope shall not be included in "Unclassified Excavation."

Excavation or Borrow below slopes shown will not be permitted. Cut Slope Treatment on back slopes will be required.

Thickness of Gravel or Crushed Rock Surfacing is to be considered approximate only. Base Course Surfacing is to be placed at the rate of 75 tons per 100 lin. ft. of roadway.

### 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 the 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 side ditches as shown on the typical section, either noted as "Borrow" on the plans or as "Embankment" in the list of structures are to be classified and paid for as "Unclassified Excavation". These quantities are to be stated as part of the original excavation, at locations indicated on the plans. Any slope stakes beyond the limits of the typical ditches are subject to change by the Engineer to fit embankment requirements actually encountered during construction.

All curves are to be superelevated in accordance with methods shown on the Standard Superlevation Sheet.

The entire project is to be cleared for the full width of the right of way and the cost thereof is to be included in the lump sum price for "Clearing and Grubbing the Entire Project". Approximate locations and character of clearing and grubbing required are indicated in notes on the plans.

All CMP culverts are to be constructed without headwalls unless otherwise called for on the plans. When but one headwall is called for it is to be placed at the inlet end unless otherwise stated.

Except as otherwise noted on the plans all overhaul will be paid for as measured along the center line of the project.

All pole lines encroaching on construction shall be moved by owners.

The detour for this project lies along the present road as indicated on the Title Sheet. The Contractor will be required to maintain in safe condition and at his own expense all temporary approaches and crossings of intersecting roads.

All side road approaches to the project are to be surfaced with a 4" thickness of Gravel or crushed rock surfacing extending approximately 30 ft. from edge of highway surfacing. It is estimated that 15 approach roads involving 200 tons of surfacing is required.



TYPICAL CROSS SECTION OF INTERCEPTING DITCH

### R.O.W. MARKERS

Station	Lt.	Rt.
357+35		1
360+00	1	
400+00	2	2
439+78.4	1	1
464+90.9	1	1
493+80		2
495+15	2	
560+79.5		
<b>TOTAL</b>		<b>16</b>

### FENCING REQUIREMENTS

Sta. to Sta.	Remove Fence		Barbed Fence		Comb Fence		Gates	
	Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	Lt.	Rt.
345+85								
357+40			120					
360+00			290					
345+60	358+80				1320			
360+00	400+00				4050			
346+10	400+00					5440		
362+40								1
370+00								1
373+80					110			
393+1								1
377+65					110			
378+65					110			
379+55					110			
400+00	430+00				3000	3000		
430+00	456+30				2630			
430+00	453+70					2370		
456+80	462+00				520			
454+20	465+00					1120		
462+50	480+00				1750			
465+50	480+00					1450		
480+00	510+00				3080	3010		
527+20					190			
538+65					260			
538+20	541+10				340			
510+00	527+00					1700		
510+00	526+20					1620		
527+40	537+60					1020		
526+60	539+80					1320		
538+20	540+50						230	
540+50	545+90				540			
540+20	543+00					280		
543+50					300			
543+00	544+90						190	
546+70	560+00				1330			
545+60	558+70					1310		
546+20	547+90				330			
400+00								1
522+00								1
554+00 and 560+00					420			
<b>TOTAL</b>					<b>2690</b>	<b>41860</b>	<b>420</b>	<b>9</b>

### SUMMARY OF APPROXIMATE QUANTITIES

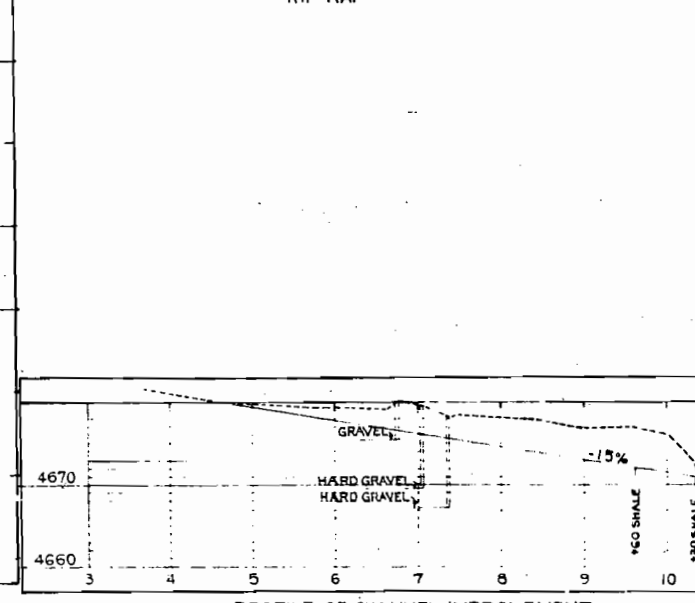
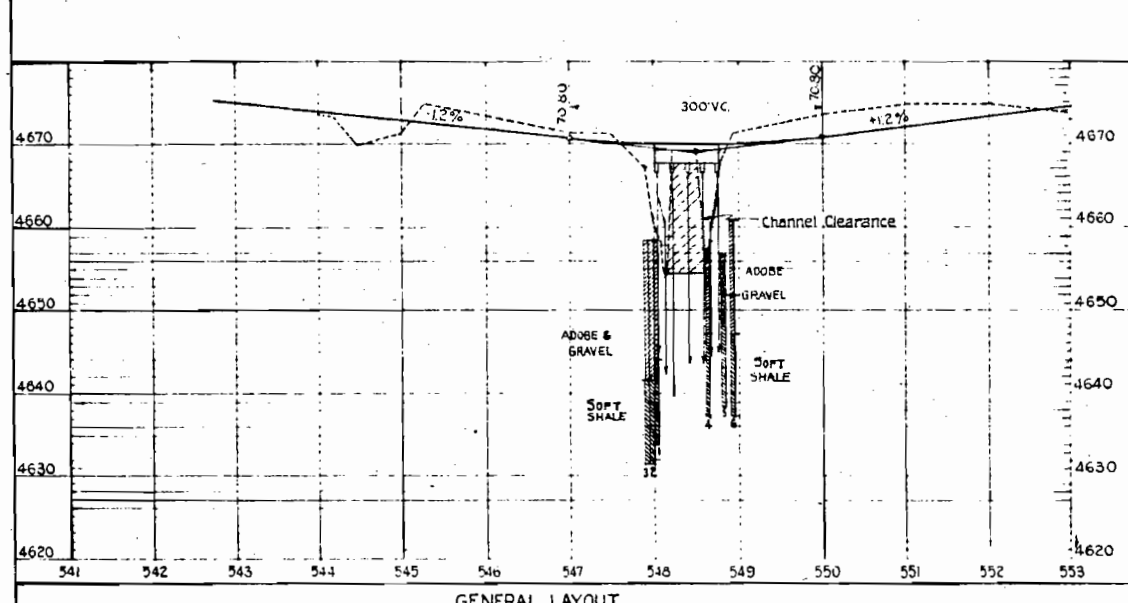
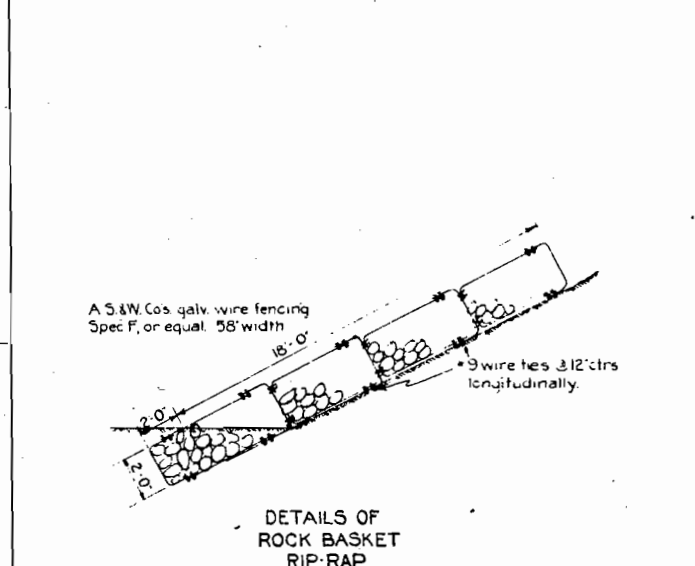
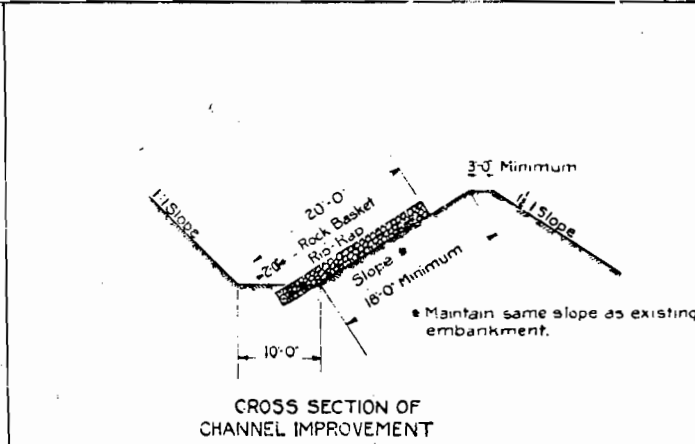
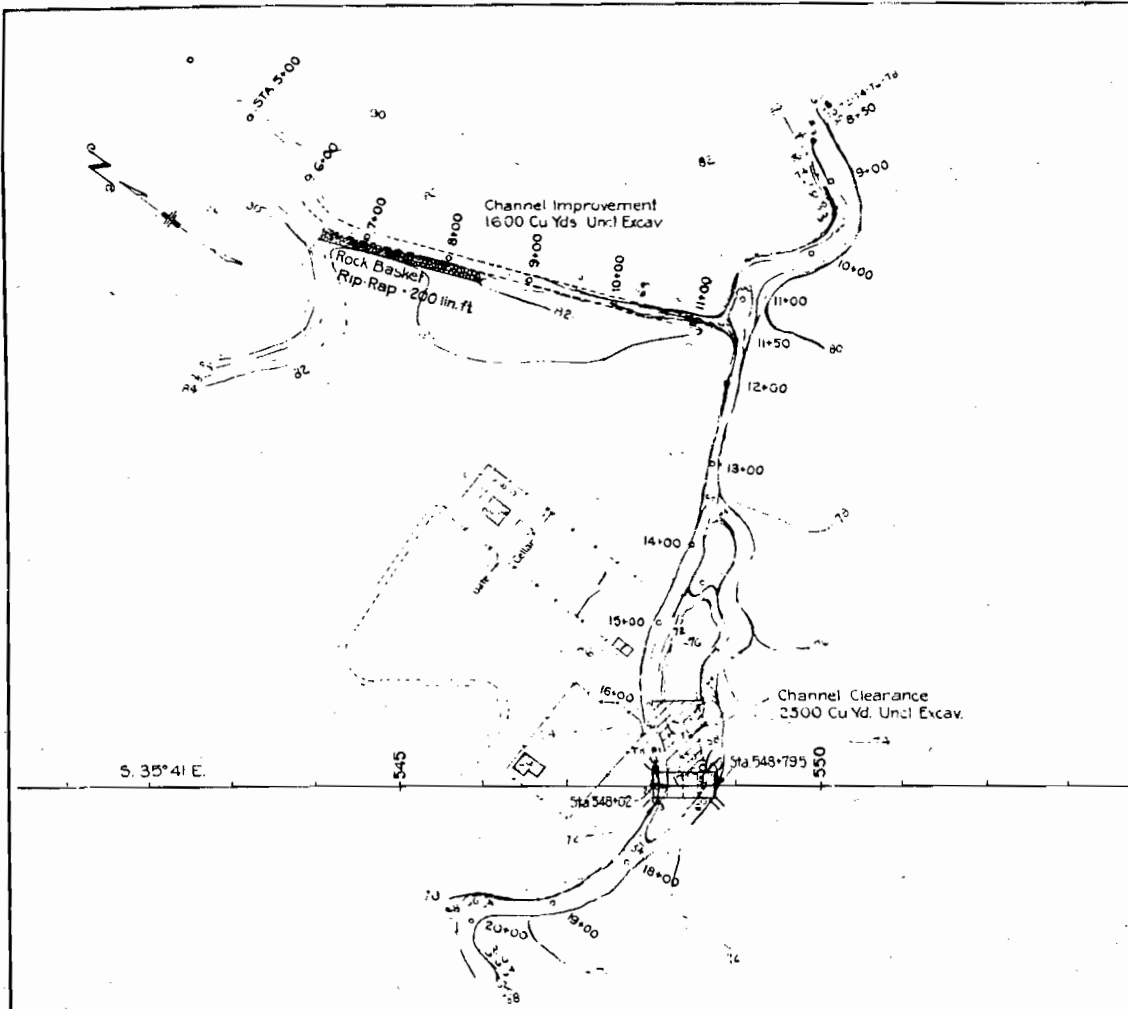
No	ITEM	UNIT	QUANTITIES		
			ROADWAY	BRIDGE	TOTALS
10a	Clearing & Grubbing entire project	Lump Sum			
11b	Removing Structures				
12a	Remove Fence	Lin. Ft.	2,700		2,700
13c	Unclassified Excavation	Cu. Yd.	191,000	1147	192,147
14a	Dry Back Excav. (Str.)		100	5	105
14b	Common Excav. (Str.)		700	475	1,175
14c	Wet Rock		100		100
14d	Common		700	5	705
18a	Station Yard Overhaul	Sta. Yds.	545,000		545,000
18b	1/2 Mile Overhaul	Yd. Mi.	25,000		25,000
20a	Gravel or Crushed Rock Surfacing	Ton	16,400		16,400
42a	Untreated Bridge Timber	Mt. b.m.		1,676	1.7
42b	Treated			37,604	39.7
43	Asphalt Plant Wearing Surface	Sq. Ft.		2204	2,204
46a	Class A Concrete	Cu. Yd.	207		207
46b	" " " "		14		14
47	Reinforcing Steel	lb.	15,500		15,500
53a	15" Corr. Metal Culvert Pipe	Lin. Ft.	30		30
53b	18"		2,226		2,226
53c	24"		368		368
53e	36"		528		528
53g	48"		150		150
53b	18"		96		96
60a	Treated Timber Piling			1,941	2,436
60c	Treated Piling Cut-off			454	10
60e	Metal Pile Shoes	Each		80	80
65	Dry Rubble Slope Paving - 6" thick	Sq. Yd.		1,840	190
67a	Rock Basket Rip Rap		400		400
74	Wire Cable Guard Fence	Lin. Ft.	1408		1,408
76a	Barbed Wire Fence with Treated Wdn. Posts		41,900		41,900
76d	Comb		500		500
76g	Barbed Wire Gates	Each	9		9
81a	Project Marker			16	16
81b	Right-of-way Markers			2	2
83b	Trash Guards for 18" Siphon			8	8
83c	Drain Pipe - Timber Floor				
13d	Cut Slope Treatment	Mile	5		5
	MATERIALS TO BE FURNISHED & WORK TO BE DONE BY FORCE ACCOUNT				
	Moving Corral Sta 378+ & House Sta 546	Lump Sum			

# TABULATION OF STRUCTURES

STATION	DESCRIPTION	Remove Struct. No. and Unit	Excavation Cu Yds	Struct. Excav. Cu Yds	Concrete Cu Yds	R. in Steel lbs.	Corr. Metal Culvert Pipe Linear Feet				Miscellaneous	Miscellaneous Quantify Unit
							1.5"	1.8"	2.4"	3.6"		
3461.50	C.M.P. Culvert, ditches		150	5			74					
3461.50 to 3591.00	Ditch change left		270	60	35	255						
3541.00	18x18 C.M.P. Siphon 14-6-512 frasn guards		50									96 2 Frasn Guards @ 30 lbs. ea.
3541.00 to 3561.12	Intercepting ditch Rt.		10									100 1/2" C. P. Siphon
3561.12	C.M.P. Culvert, ditches		300	20			66					
3561.50 to 3711.00	Intercepting ditch Rt.		10	500			74					
3591.60	C.M.P. Culvert 63" Siphon, ditches, road appr. Rt., removal.		5				64					
3651.15	C.M.P. Culvert, ditch		50				58					
3681.50 to 3711.00	Ditch change left		10	25			64					
3711.00	C.M.P. Culvert, ditches		40	10			60					
3711.00 to 3731.00	Ditch change Rt.		15	20			68					
3731.62	C.M.P. Culvert, ditch change.		20				60					
3741.50	C.M.P. Culvert, ditch change.		250									
3781.00	Remove wood corral (Force Account)		10									
3791.00 to 3921.00	Intercepting ditch Rt.		10									
3811.00	C.M.P. Culvert, ditch change.		15				60					
3871.50	C.M.P. Culvert, ditch		30	50	3.0	3370						
3921.95	C.M.P. Culvert, (sidewall), channel improvement		50									
3931.00	Rd Approaches L1 & Rt											
3941.60 to 3981.00	Ditch change Lt, Remix headgate & drop		10									
3981.06	6x4x44 Conc. Box Culvert, Hd. Street		10									
3991.00	C.M.P. Culvert, ditch		100									
4011.00 to 4061.00	Intercepting ditch Lt.		50									
4071.50	C.M.P. Culvert, ditches, 14x14		330									
4071.50 to 4231.00	Intercepting ditch Lt.		10									
4101.00	C.M.P. Culvert, (sidewall), ditch.		10									
4121.80	C.M.P. Culvert, (sidewall), ditch.		10									
4171.25	C.M.P. Culvert, (sidewall), ditch		25	25	1.7		74					
4201.00	C.M.P. Culvert, (sidewall), ditch.		20	20	1.1		64					
4281.75	C.M.P. Culvert, ditch.		25	30			144					
4311.75	C.M.P. Culvert, ditch.		20	50			130					
4371.12	C.M.P. Culvert, ditch.		200	100			120					
4371.50 to 4581.00	Intercepting ditch		430									
4401.50	C.M.P. Culvert, ditch.		30	30			74					
4431.00	C.M.P. Culvert, (sidewall), ditch.		10	20			62					
4491.65	C.M.P. Culvert, ditch.		15	40			88					
4521.00	C.M.P. Culvert		10	15			94					
4551.15	C.M.P. Culvert, ditch.		10	15			126					
4631.00	Road Approach			30								
4681.25	C.M.P. Culvert, ditch change.		40	40								
4711.35	C.M.P. Culvert, channel change.		30	35			94					
4711.35 to 4881.00	Intercepting ditch Lt.		200									
4801.15	C.M.P. Culvert, ditch.		25	30								
4851.00	C.M.P. Culvert, (sidewall), ditch.		10	15								
4931.00 to 5001.00	Intercepting ditch Lt.		80									
4961.50	C.M.P. Culvert, ditch.		30	10								
5001.00 to 5061.00	Channel change Lt.		150									
5011.40	C.M.P. Culvert, ditches.		100	80								
5061.97	6x6x18 Conc. Box Culvert, ditches.		100	125	993	7280						
5081.50	C.M.P. Culvert, ditches.		50	40								
5111.00	C.M.P. Culvert, channel change.		100	20								
5181.00 to 5231.50	Intercepting ditch Rt.		80									
5201.50 to 5231.60	Channel change Lt.		50									
5231.60	C.M.P. Culvert, channel change		60	40	61.3	4365						
5251.50	Rd Appr. Rt & Lt		10	50								
5261.90	C.M.P. Culvert, channel removal.		1700									
5281.75	Intercepting ditch Lt.		80									
5321.00	C.M.P. Culvert.		20	40								
5361.00	Intercepting ditch Lt.		50	10								
5381.00 to 5411.50	Rd Appr. Rt & Lt		100	300								
5391.90	C.M.P. Culvert, ditches.		20	40								
5401.75	C.M.P. Culvert, ditch.		450	10								
5421.50	Channel diversion 100' Lt.		20	20								
5431.00	C.M.P. Culvert, ditch		20	10								
5441.75	C.M.P. Culvert, ditch		100	40								
5451.75	Rd Appr. Rt & Lt		100	30								
5461.50	Remove house (Force Account)		100									
5481.21 to 5481.29	bridge and channel improvement.		100									
5551.50	C.M.P. Culvert, ditch.		10	10								
5581.75	C.M.P. Culvert.		500									
5601.79.5	Project Marker. appr. to project.											
4471.47 to 4541.27	Wire Cable Guardrail on Left											
4471.47 to 4541.75	Wire Cable Guardrail on Right											
	<b>PROJECT TOTALS</b>	4 Siphon	1,430	1,470	206.1	13.3	15,450	30	2226,568	528,150	96	680 128

\* Struct. Excav. is estimated to be 95% Common and 5% Road, each of which is estimated to be 30% dry & 50% Wet.

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3	COLO.	299-F	4	



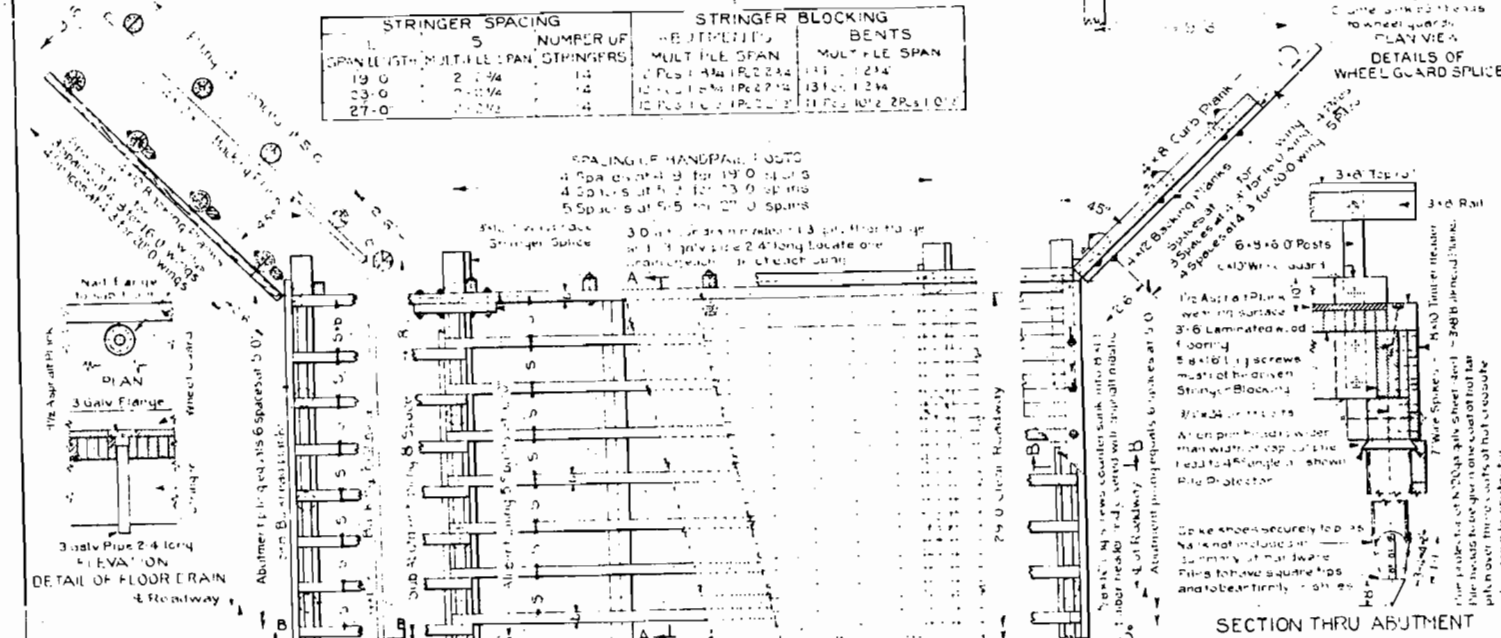
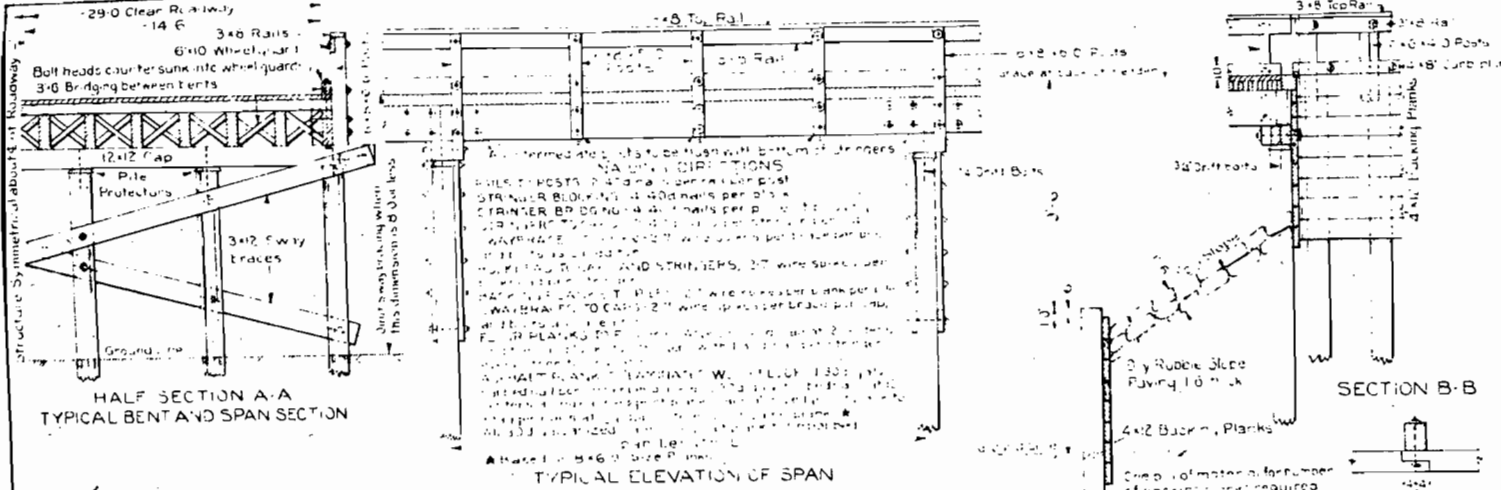
REFERENCE DRAWINGS  
Sheet No 5 Standard No. P-117-BH-D

**COLORADO**  
STATE HIGHWAY DEPARTMENT  
GENERAL LAYOUT  
&  
MISCELLANEOUS DETAILS  
Across CALLOW CREEK  
Sta. 548+02 to 548+79.5  
Near Whitewater Sec. 14 T. 2S. R. 1E.

Designed by  
Made by E.W.T.  
Check Design  
Check Detail

Approved by P. Bailey  
Bridge Engineer  
Date: June 2, 1936

# STANDARD P-117-BH-D



### BOLTS AND WASHERS FOR ONE SPAN OF SUPERSTRUCTURE

LOCATION	ITEM	19'0" SPAN	23'0" SPAN	27'0" SPAN
POSTS TO RAILS	BOLTS	8	10	12
	WASHERS	8	10	12
	DRIFT BOLTS	4	4	4
	DRIFT BOLTS	4	4	4
POSTS TO CURB PLANK	BOLTS	3	3	3
	WASHERS	3	3	3
FILES TO CURB PLANK	BOLTS	3	3	3
	WASHERS	3	3	3
WASHERS STD. CTS.	BOLTS	3	3	3
	WASHERS	3	3	3
TOTAL WEIGHT		108.0 LBS	138.0 LBS	168.0 LBS

### BOLTS AND WASHERS FOR ONE ABUTMENT

LOCATION	ITEM	19'0" SPAN	23'0" SPAN	27'0" SPAN
POSTS TO RAILS	BOLTS	8	10	12
	WASHERS	8	10	12
	DRIFT BOLTS	4	4	4
	DRIFT BOLTS	4	4	4
POSTS TO CURB PLANK	BOLTS	3	3	3
	WASHERS	3	3	3
FILES TO CURB PLANK	BOLTS	3	3	3
	WASHERS	3	3	3
WASHERS STD. CTS.	BOLTS	3	3	3
	WASHERS	3	3	3
TOTAL WEIGHT		115.0 LBS	145.0 LBS	175.0 LBS

### BOLTS AND WASHERS FOR ONE WING

LOCATION	ITEM	19'0" SPAN	23'0" SPAN	27'0" SPAN
POSTS TO RAILS	BOLTS	8	10	12
	WASHERS	8	10	12
	DRIFT BOLTS	4	4	4
	DRIFT BOLTS	4	4	4
POSTS TO CURB PLANK	BOLTS	3	3	3
	WASHERS	3	3	3
FILES TO CURB PLANK	BOLTS	3	3	3
	WASHERS	3	3	3
WASHERS STD. CTS.	BOLTS	3	3	3
	WASHERS	3	3	3
TOTAL WEIGHT		115.0 LBS	145.0 LBS	175.0 LBS

### BOLTS AND WASHERS FOR ONE BENT

LOCATION	ITEM	19'0" SPAN	23'0" SPAN	27'0" SPAN
POSTS TO RAILS	BOLTS	8	10	12
	WASHERS	8	10	12
	DRIFT BOLTS	4	4	4
	DRIFT BOLTS	4	4	4
POSTS TO CURB PLANK	BOLTS	3	3	3
	WASHERS	3	3	3
FILES TO CURB PLANK	BOLTS	3	3	3
	WASHERS	3	3	3
WASHERS STD. CTS.	BOLTS	3	3	3
	WASHERS	3	3	3
TOTAL WEIGHT		115.0 LBS	145.0 LBS	175.0 LBS

### NAILS

LOCATION	ITEM	19'0" SPAN	23'0" SPAN	27'0" SPAN
ONE SPAN OF SUPERSTRUCTURE	300 COMMON	150	150	150
	300 GALV BARBED	150	150	150
ONE ABUTMENT	400 COMMON	150	150	150
	400 COMMON	150	150	150
ONE WING	400 COMMON	150	150	150
	400 COMMON	150	150	150
ONE BENT	400 COMMON	150	150	150
	400 COMMON	150	150	150
TOTAL WEIGHT		1150.0 LBS	1450.0 LBS	1750.0 LBS

### SUMMARY FOR HARDWARE

LOCATION	ITEM	19'0" SPAN	23'0" SPAN	27'0" SPAN
SPAN	AT	184 LBS PER SPAN	184 LBS PER SPAN	184 LBS PER SPAN
	ABUTMENT	115 LBS PER ABUTMENT	115 LBS PER ABUTMENT	115 LBS PER ABUTMENT
WING	AT	115 LBS PER WING	115 LBS PER WING	115 LBS PER WING
	BENT	115 LBS PER BENT	115 LBS PER BENT	115 LBS PER BENT
TOTAL WEIGHT		477 LBS	477 LBS	477 LBS

### SUMMARY OF QUANTITIES

ITEM	UNIT	QUANTITY	REMARKS
ITEM 4a DRY ROCK	CU YDS	7	STRUCTURE EXCAVATION
ITEM 14a DRY COMMON	CU YDS	175	WET COMMON
ITEM 14c WET COMMON	CU YDS	3	WET COMMON
ITEM 14d WET COMMON	CU YDS	3	WET COMMON
ITEM 42a UNTREATED BRIDGE TIMBER			
2 SPANS	AT	280 BD FT EACH	560 BD FT
2 ABUTMENTS	AT	48 BD FT EACH	96 BD FT
2 WINGS	AT	48 BD FT EACH	96 BD FT
3 BENTS	AT	48 BD FT EACH	144 BD FT
TOTAL			1696 BD FT
ITEM 42b TREATED BRIDGE TIMBER			
2 SPANS	AT	672 BD FT EACH	1344 BD FT
2 ABUTMENTS	AT	672 BD FT EACH	1344 BD FT
2 WINGS	AT	672 BD FT EACH	1344 BD FT
3 BENTS	AT	672 BD FT EACH	2016 BD FT
TOTAL			5672 BD FT
ITEM 43 ASPHALT PLANK WEARING SURFACE			
2 SPANS	AT	55'0" FT EACH	110'0" FT
2 ABUTMENTS	AT	21'0" FT EACH	42'0" FT
2 WINGS	AT	21'0" FT EACH	42'0" FT
3 BENTS	AT	21'0" FT EACH	63'0" FT
TOTAL			246'0" FT
ITEM 60 METAL PILE SHOES			
2 SPANS	AT	1'0" EACH	2'0" FT
2 ABUTMENTS	AT	1'0" EACH	2'0" FT
2 WINGS	AT	1'0" EACH	2'0" FT
3 BENTS	AT	1'0" EACH	3'0" FT
TOTAL			9'0" FT
ITEM 65 DRY RABLE SLOPE PAVING TO TRUCK			
2 SPANS	AT	100'0" FT EACH	200'0" FT
2 ABUTMENTS	AT	100'0" FT EACH	200'0" FT
2 WINGS	AT	100'0" FT EACH	200'0" FT
3 BENTS	AT	100'0" FT EACH	300'0" FT
TOTAL			900'0" FT

### ONE SPAN OF SUPERSTRUCTURE

DESCRIPTION	SIZE	19'0" SPAN	23'0" SPAN	27'0" SPAN
UNTREATED TIMBER	2x4	100 BD FT	100 BD FT	100 BD FT
	2x6	100 BD FT	100 BD FT	100 BD FT
TREATED TIMBER	2x4	100 BD FT	100 BD FT	100 BD FT
	2x6	100 BD FT	100 BD FT	100 BD FT

### ONE ABUTMENT

DESCRIPTION	SIZE	19'0" SPAN	23'0" SPAN	27'0" SPAN
UNTREATED TIMBER	2x4	100 BD FT	100 BD FT	100 BD FT
	2x6	100 BD FT	100 BD FT	100 BD FT
TREATED TIMBER	2x4	100 BD FT	100 BD FT	100 BD FT
	2x6	100 BD FT	100 BD FT	100 BD FT

### ONE WING

DESCRIPTION	SIZE	19'0" SPAN	23'0" SPAN	27'0" SPAN
UNTREATED TIMBER	2x4	100 BD FT	100 BD FT	100 BD FT
	2x6	100 BD FT	100 BD FT	100 BD FT
TREATED TIMBER	2x4	100 BD FT	100 BD FT	100 BD FT
	2x6	100 BD FT	100 BD FT	100 BD FT

### ONE SUB-ABUTMENT AND WINGS

DESCRIPTION	SIZE	19'0" SPAN	23'0" SPAN	27'0" SPAN
UNTREATED TIMBER	2x4	100 BD FT	100 BD FT	100 BD FT
	2x6	100 BD FT	100 BD FT	100 BD FT
TREATED TIMBER	2x4	100 BD FT	100 BD FT	100 BD FT
	2x6	100 BD FT	100 BD FT	100 BD FT

### ONE BENT

DESCRIPTION	SIZE	19'0" SPAN	23'0" SPAN	27'0" SPAN
UNTREATED TIMBER	2x4	100 BD FT	100 BD FT	100 BD FT
	2x6	100 BD FT	100 BD FT	100 BD FT
TREATED TIMBER	2x4	100 BD FT	100 BD FT	100 BD FT
	2x6	100 BD FT	100 BD FT	100 BD FT

### GENERAL NOTES

All work shall be done according to the standard specifications of the Colorado State Highway Department, Adopted August, 1935.

All timber and piling to be treated or untreated as shown in bills of material.

All timber and piling shall be dense southern yellow pine or western yellow pine.

All caps shall be edged to an even depth and treatment. The ends of all stringers shall be dapped on one edge before treatment to obtain an even depth over caps.

All cut surfaces or bored holes in treated timber or piling shall be thoroughly saturated with hot creosote oil.

All piling supporting caps shall be covered with galvanized pile protectors as specified, all other piling tops shall be saturated with hot creosote oil and covered with a thick layer of heavy asphalt or tar.

Joints in top handrail must be staggered with joints in side rail.

All handrails and posts above the wheel guards shall be painted black and all small posts below the top of wheel guards shall be painted black as specified.

Adhesive more than 12 inches long must be fire rated not less than 4 inches.

All bolts in this structure shall not project more than one-half inch and the nut shall be flush with the surface of the member.

All bolts must be Std. 300 G. Malleable Cast Washers under each head and nut.

Bolt lengths are calculated assuming 100 washers will be used.

The contractor is cautioned to check bolt lengths before under the heads of variations in the thickness of lumber and piling.

The entire exposed surface of all untreated timber shall be painted one coat as specified immediately after the material is delivered to the project.

Before painting handrails the contact surface shall receive the second coat of paint.

When the tractor is permitted to haul material to rail, the final driving, these piles must be driven to a plumb with standard cut positions after final driving.

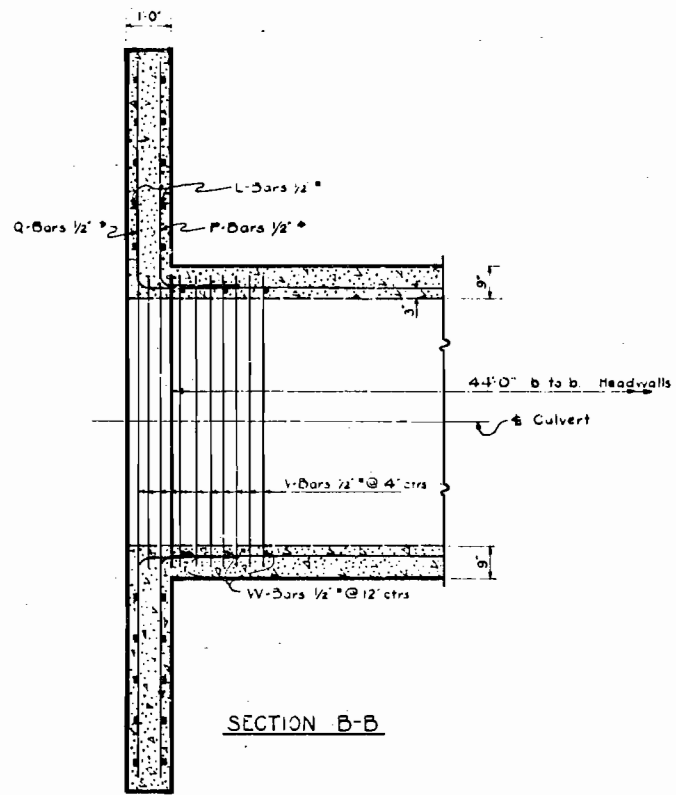
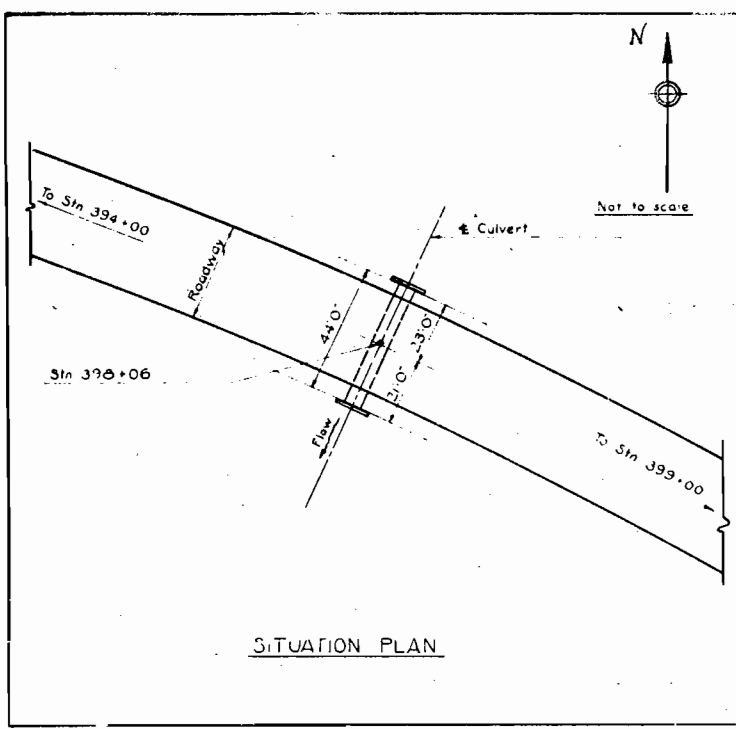
Edge piece for asphalt plank shall include galvanized barbed nails.

All hardware to be galvanized. Weights of hardware as shown are for galvanized material.

All necessary piling for slope paving shall be treated timber.

ORIGINAL BY	DATE
CHECKED BY: VANDYKE A.G.K.	8-26-36
CHECKED BY:	

**COLORADO STATE HIGHWAY DEPARTMENT**  
 TREATED TIMBER PILE RESTLE WITH GALVANIZED FLOOR AND 1/2" ASPHALT PLANK WEARING SURFACE DOUBLE ABUTMENTS 29 FT ROADWAY ACROSS CREEK  
 Near Highway 29, Sec. 14 T. 23 N. R. 15 E.  
 Designed by F.W.T. Made by F.W.T. Approved by P.D. Buckley, Bridge Engineer. Date: March 20, 1936.

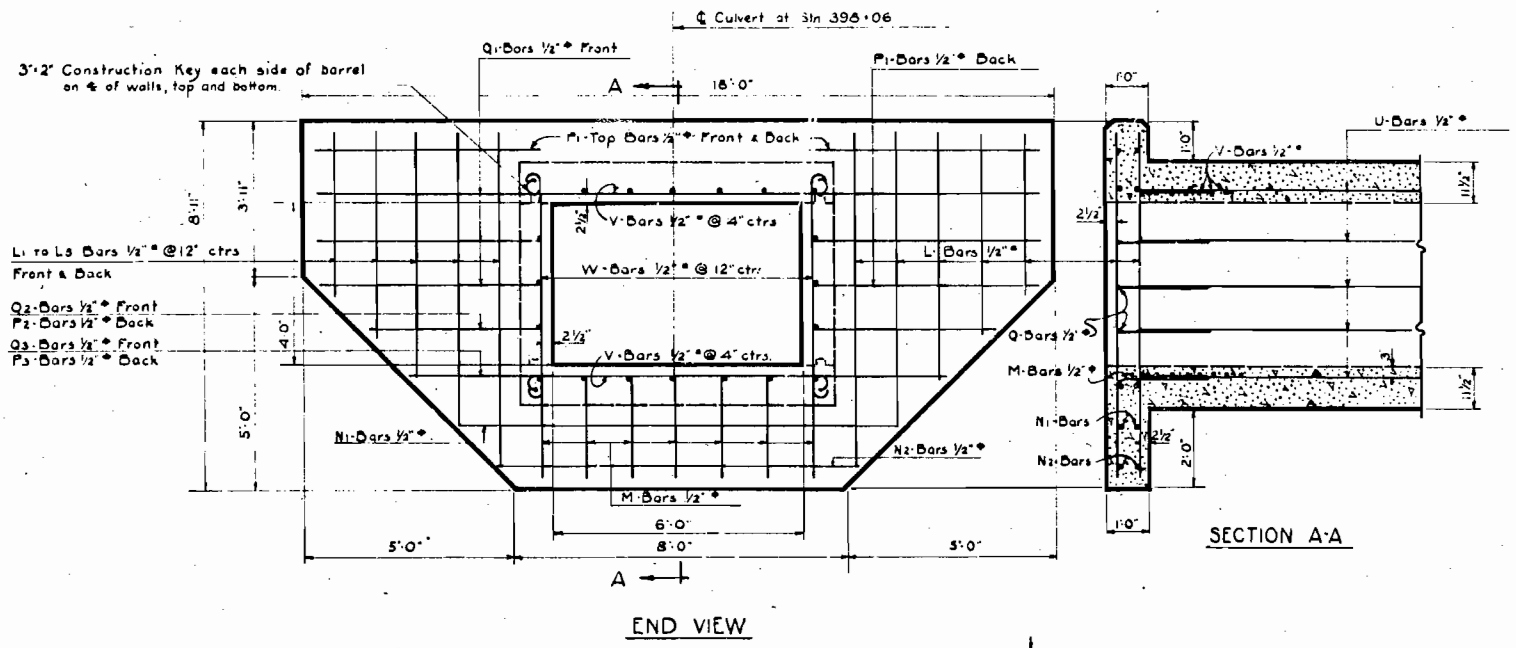


### BAR LIST

Mark	Size	No Reqd	Length	m	n	Bending Diagrams
L1	1/2"	Each	4'-0" to			Straight Bars
T0			8'-0" by			
L5	1/2"		1'-0"			
N1	1/2"	4	10'-7"			
N2	1/2"	4	8'-7"			
U	1/2"	40	23'-5"			
P1	1/2"	20	5'-0"			
P2	1/2"	4	4'-0"			
P3	1/2"	4	3'-0"			
Q1	1/2"	12	7'-9"	5'-3"	2'-3"	
Q2	1/2"	4	6'-9"	4'-3"	2'-3"	
Q3	1/2"	4	5'-9"	3'-3"	2'-3"	
M	1/2"	14	5'-0"	2'-0"	2'-3"	
V	1/2"	276	8'-2"	6'-10"		
W	1/2"	94	6'-2"	4'-10"		

### SUMMARY

3091 LIN FT 1/2" @ 0.850 LBS PER FOOT	=	2627*
1354 " 1/2" @ 0.668 "	=	905
Over-run 1 1/2 % ±	=	38
<b>TOTAL</b>		<b>3570 LBS.</b>



### SUMMARY OF QUANTITIES COMPLETE

ITEM No	DESCRIPTION	UNIT	QUANTITY
14-b	Dry Common Structural Excavation	Cu. Yds.	40
14-d	Wet	" "	15
46-a	Class 'A' Concrete	" "	42
47	Reinforcing Steel	Lbs	3570

**GENERAL NOTES**

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

All concrete shall be class "A".

All exposed surfaces shall be rubbed free of form marks.

All walls shall have forms on both sides.

Minimum distance between 1/4" of bar and face of concrete to be 2 1/2".

Construction joints shall be thoroughly cleaned before fresh concrete is poured.

All reinforcing bars shall be round or square deformed as shown.

Secondary bars when spliced shall be lapped 50 diameters.

Main bars shall not be spliced.

Four wing footings monolithically with floor of box.

All backfilling approaches to and over culvert shall be laid in layers not exceeding 6" in depth and each layer shall be rolled or hand tamped where inaccessible to roller, also moistened when necessary.

**LOADING DATA**  
 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 1/4" IN CONCRETE MONOLITHIC WEARING SURFACE SHOWN.  
 \* CONCRETE AS PER 1928 SPECS.

**COLORADO**  
**STATE HIGHWAY DEPARTMENT**  
**6'-4'-44'-0" CONCRETE**  
**BOX CULVERT**  
 IN ORCHARD MESA DITCH CO. CANAL

Sta. 396+06  
 Near Grand Junction Sec. 4 T. 45 N. 2 E

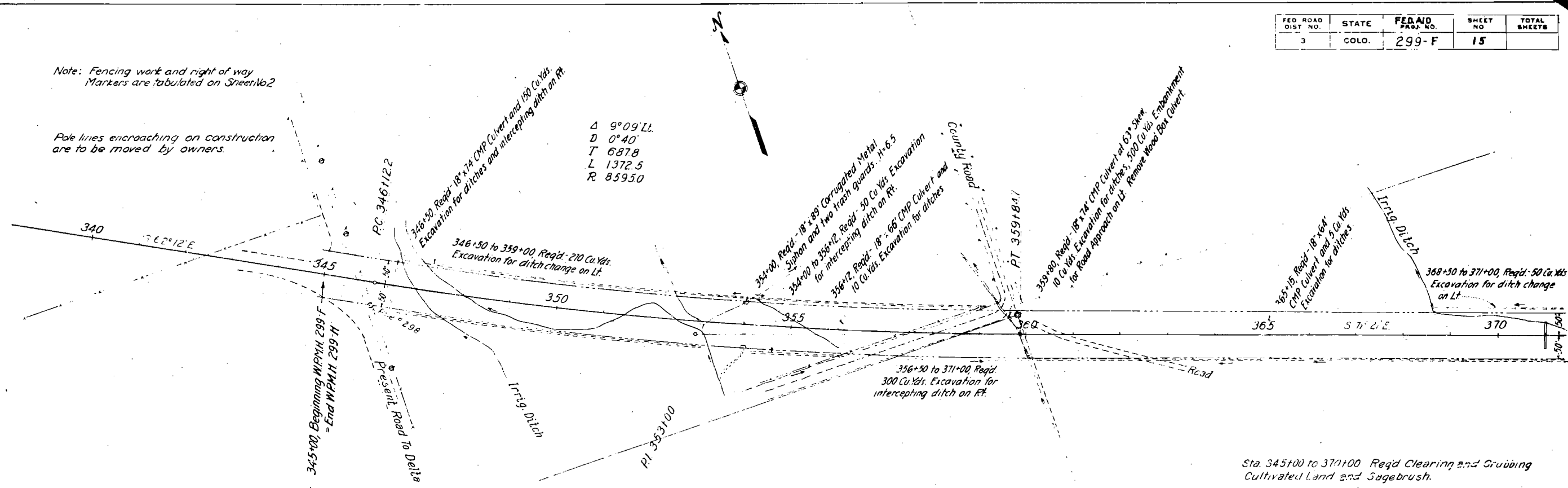
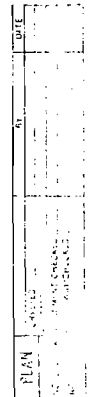
Designed by T.G. Made by KTD  
 Check Design Bridge Engineer  
 Check Detail KTD Date: June 20, 1936

Approved by *Red Bailey*  
 Bridge Engineer

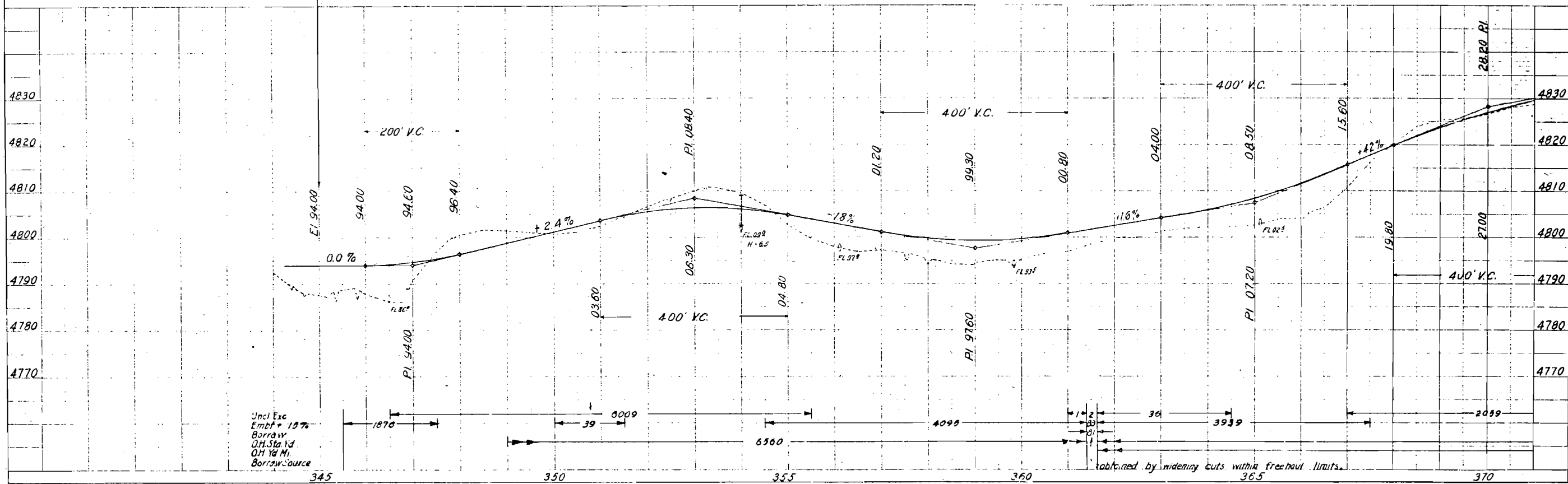
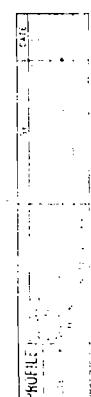
Note: Fencing work and right of way markers are tabulated on Sheet No 2

Pole lines encroaching on construction are to be moved by owners.

Δ 9°09' Lt.  
D 0°40'  
T 6878  
L 1372.5  
R 85950



Sta. 345+00 to 370+00 Req'd Clearing and Grubbing Cultivated Land and Sagebrush.



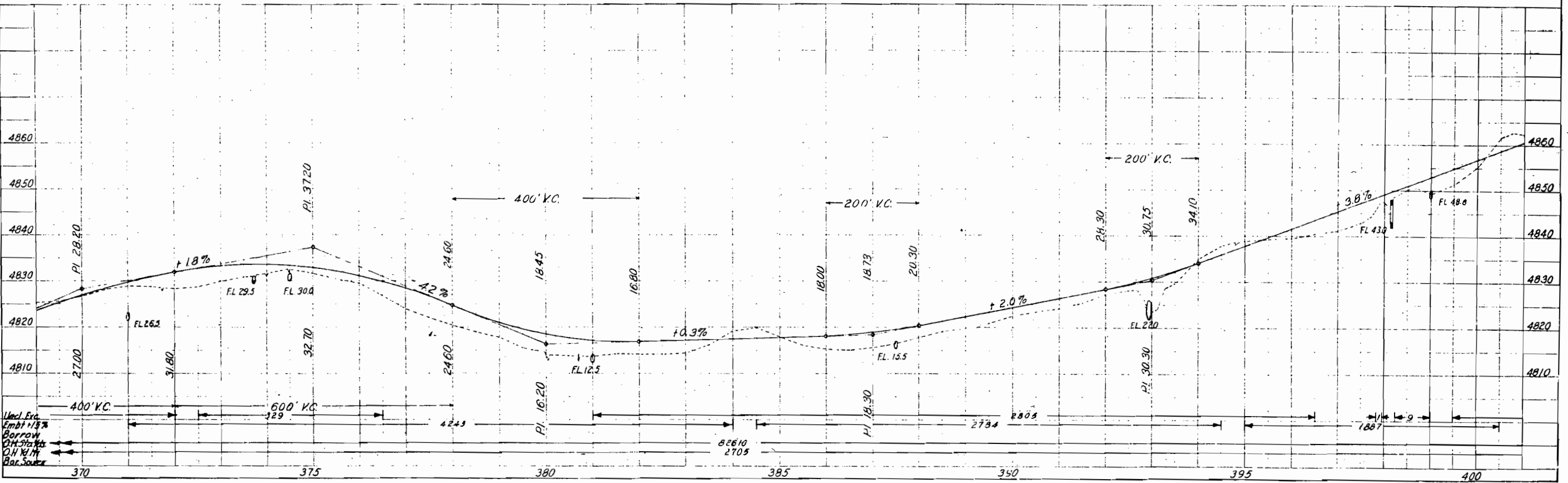
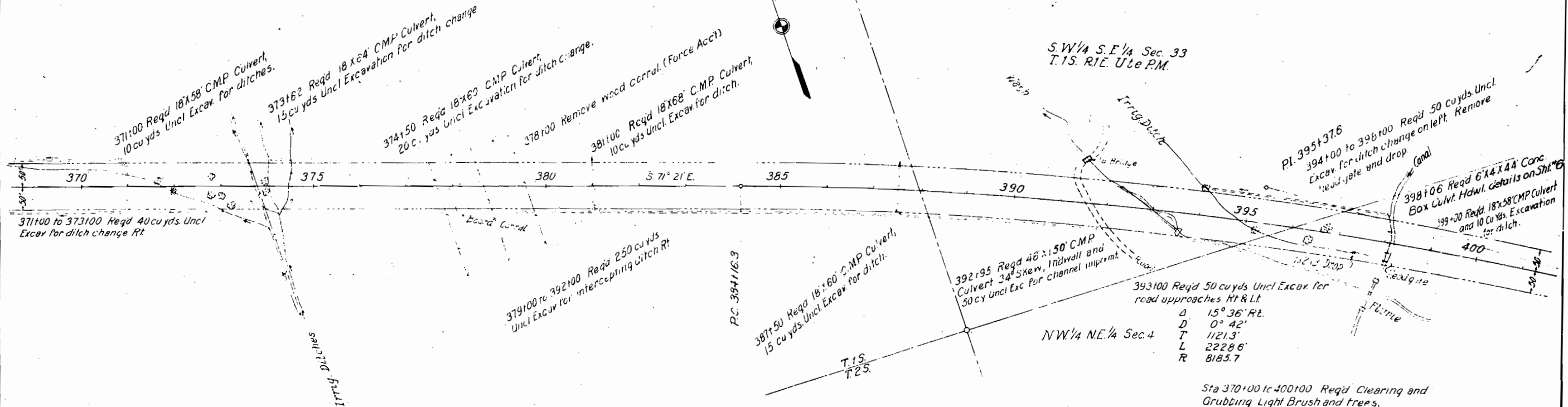
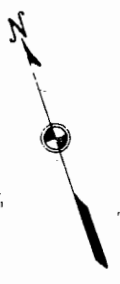
Uncl Exc Embt = 12%  
Borrow  
Q.M. Std. 0.1 Yd. M.  
Borrow Source

obtained by widening cuts within freehaul limits.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	299-F	16	

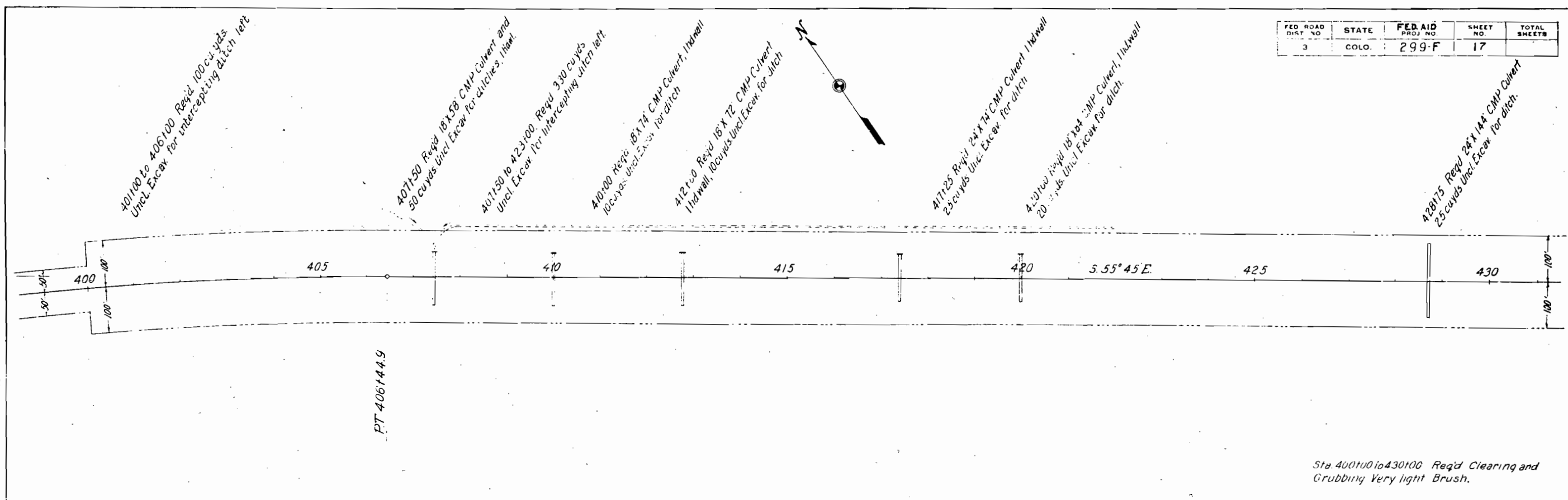
S.W. 1/4 S.E. 1/4 Sec. 33

S.W. 1/4 S.E. 1/4 Sec. 33  
T. 1 S. R. 1 E. Ute P.M.

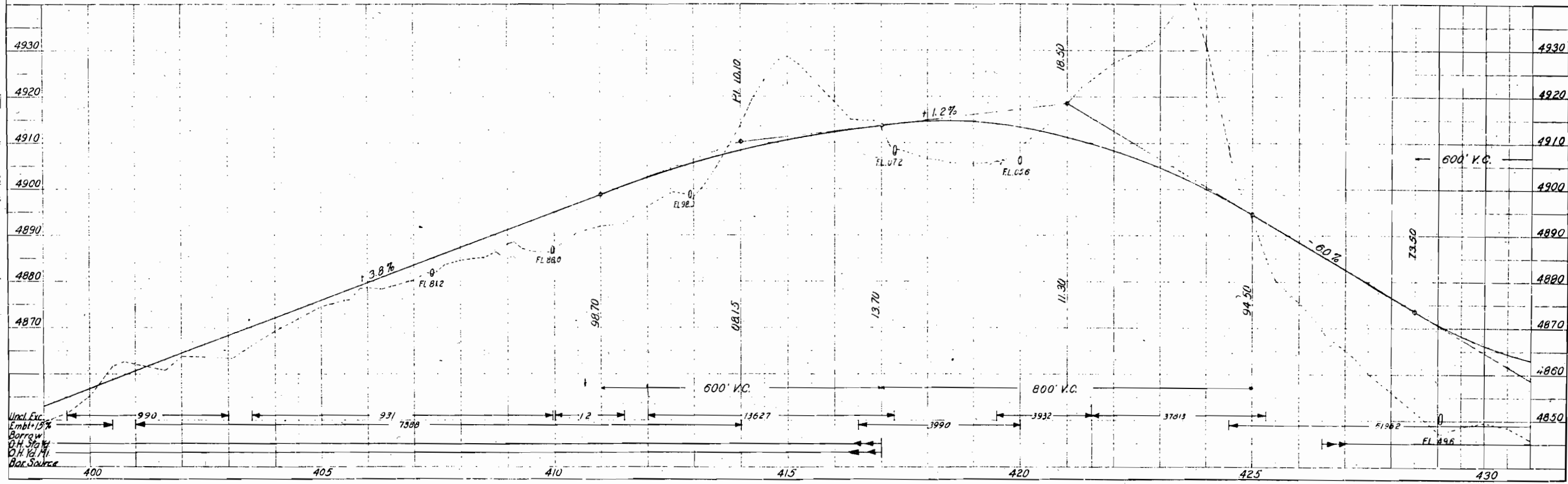


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	299-F	17	

PLAN

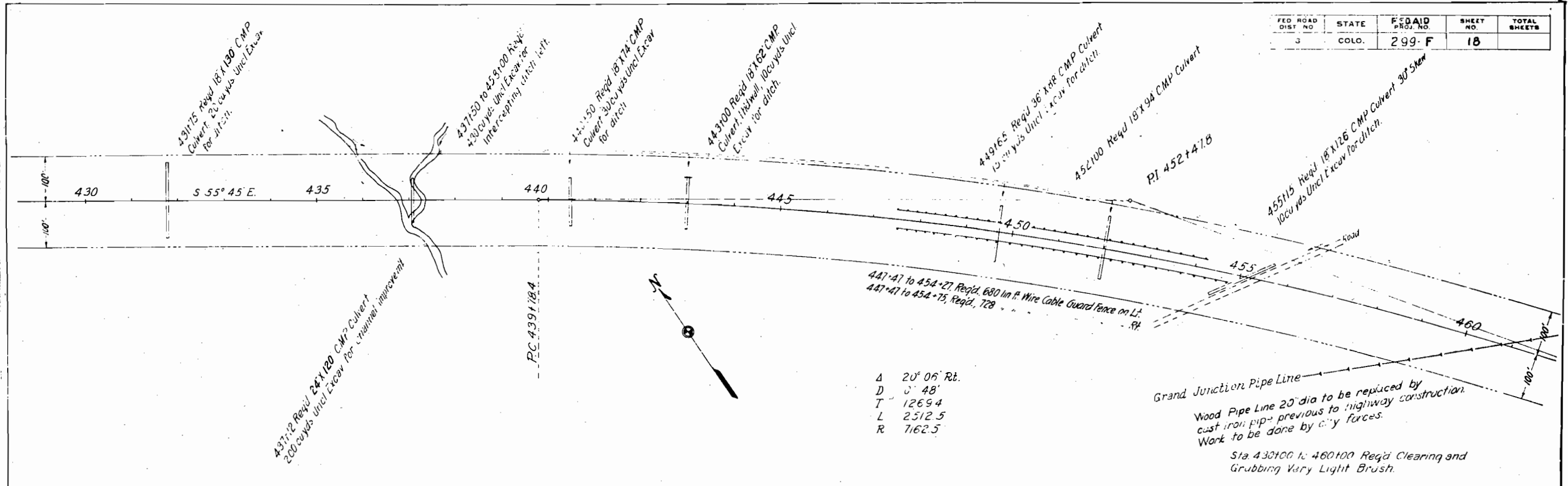


PROFILE

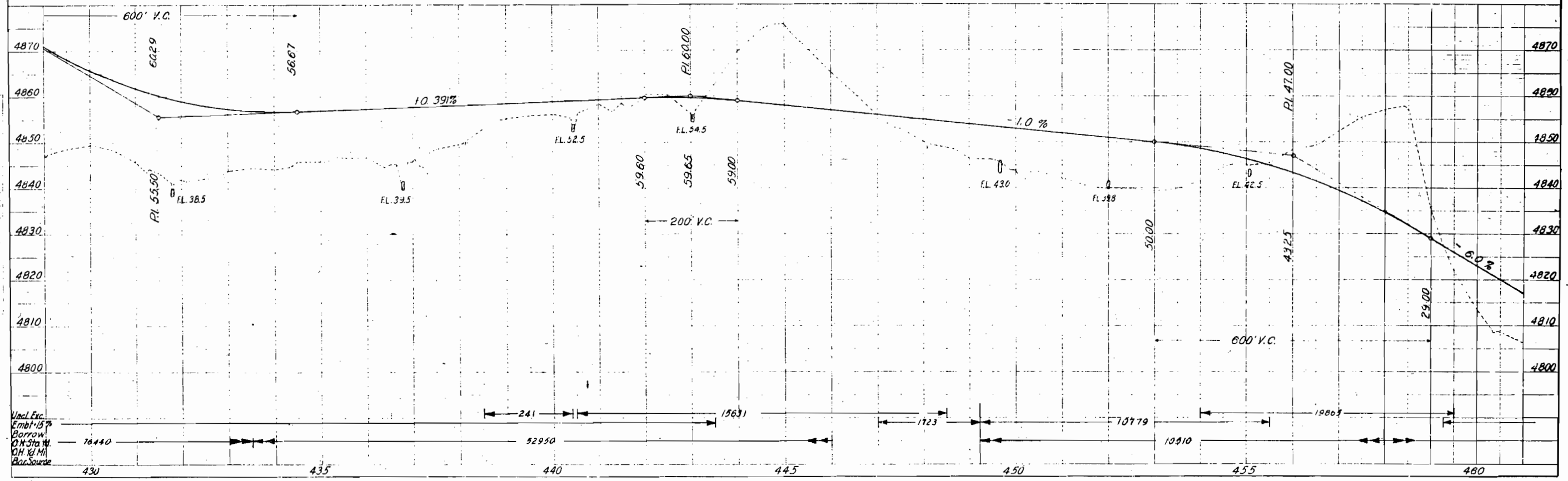


FED. ROAD DIST. NO.	STATE	F. ROAD PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	299-F	18	

PLAN



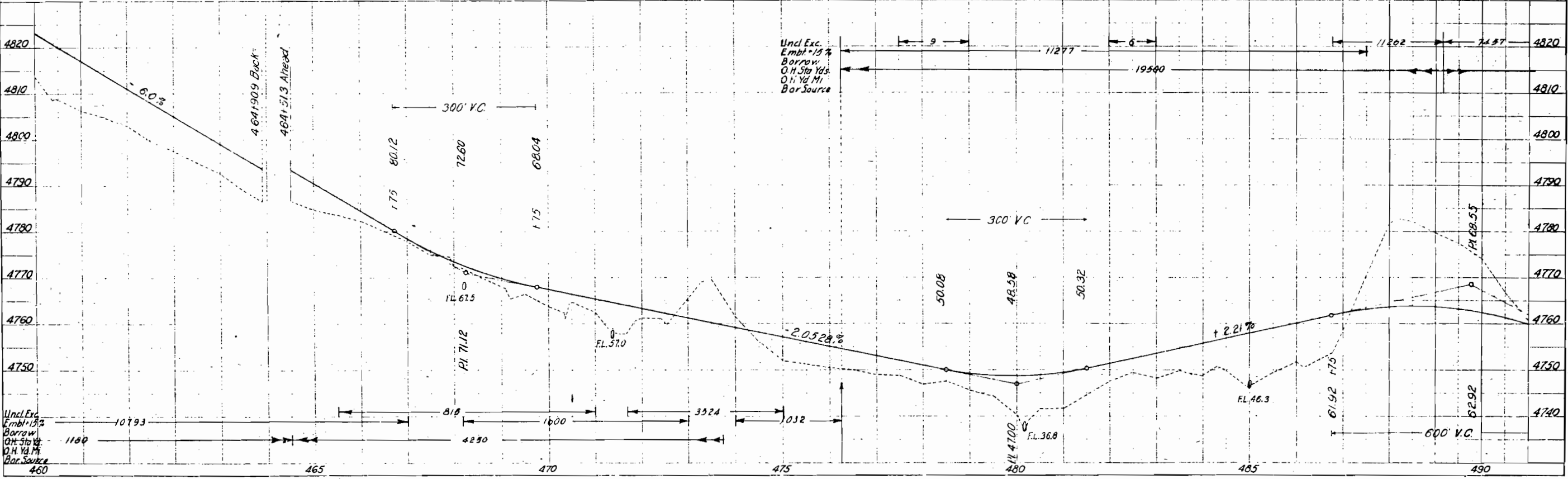
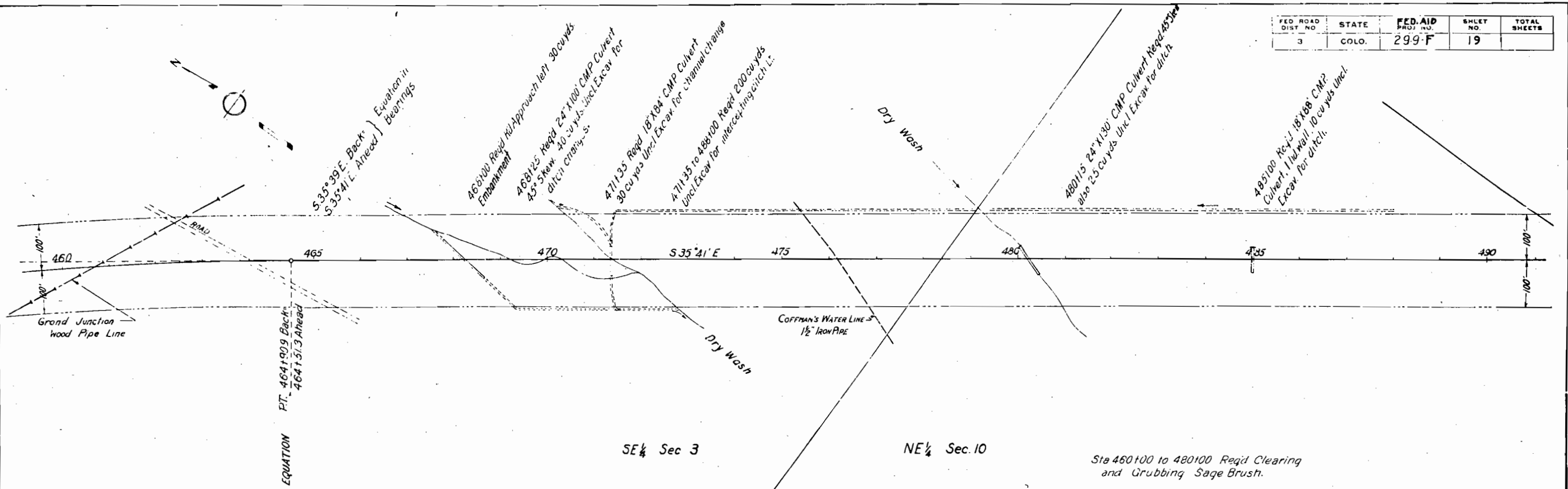
PROFILE



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	299-F	19	

DATE	BY	REVISION

DATE	BY	REVISION



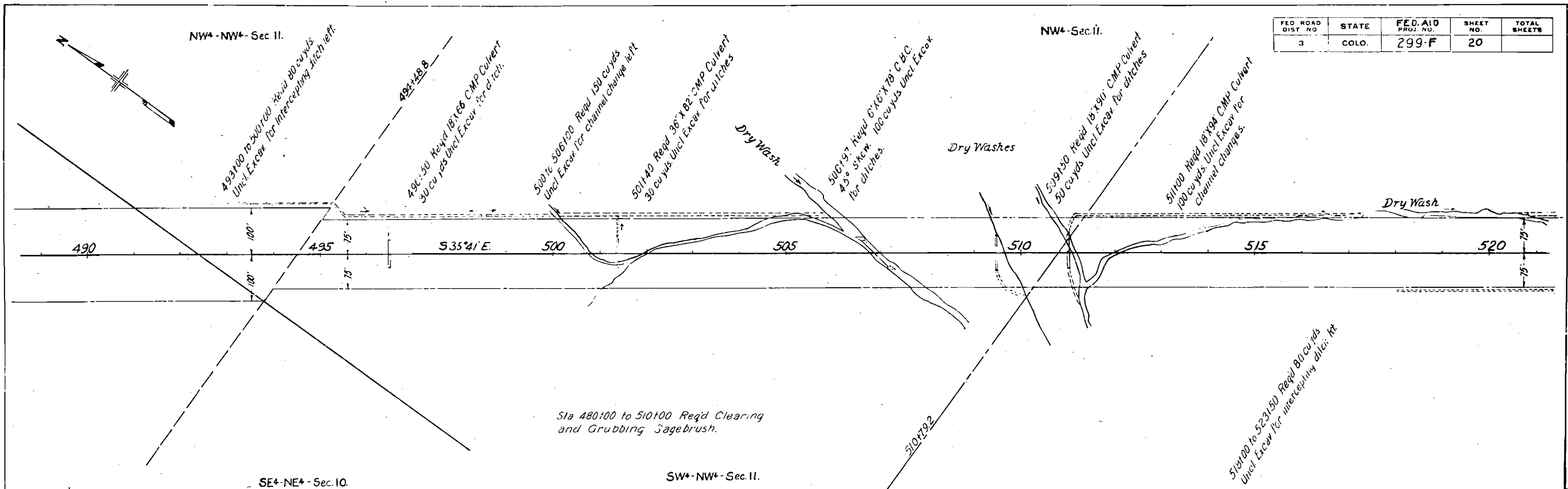
Sta 460+00 to 480+00 Req'd Clearing and Grubbing Sage Brush.

SE 1/4 Sec 3

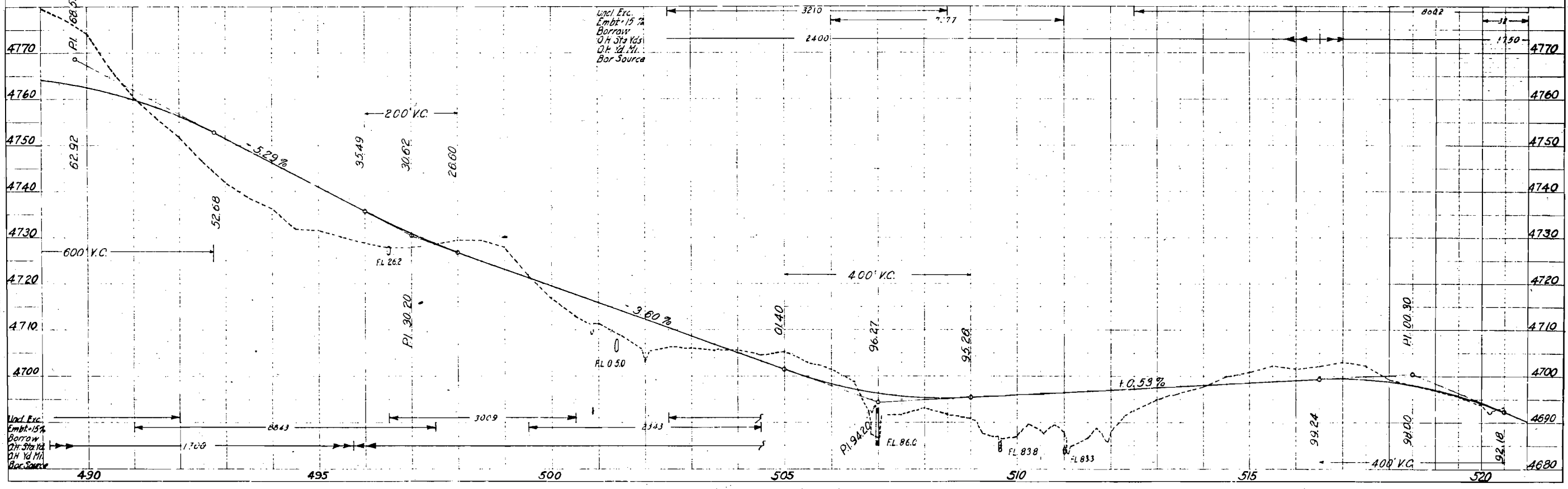
NE 1/4 Sec 10

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	299-F	20	

PLAN



PROFILE



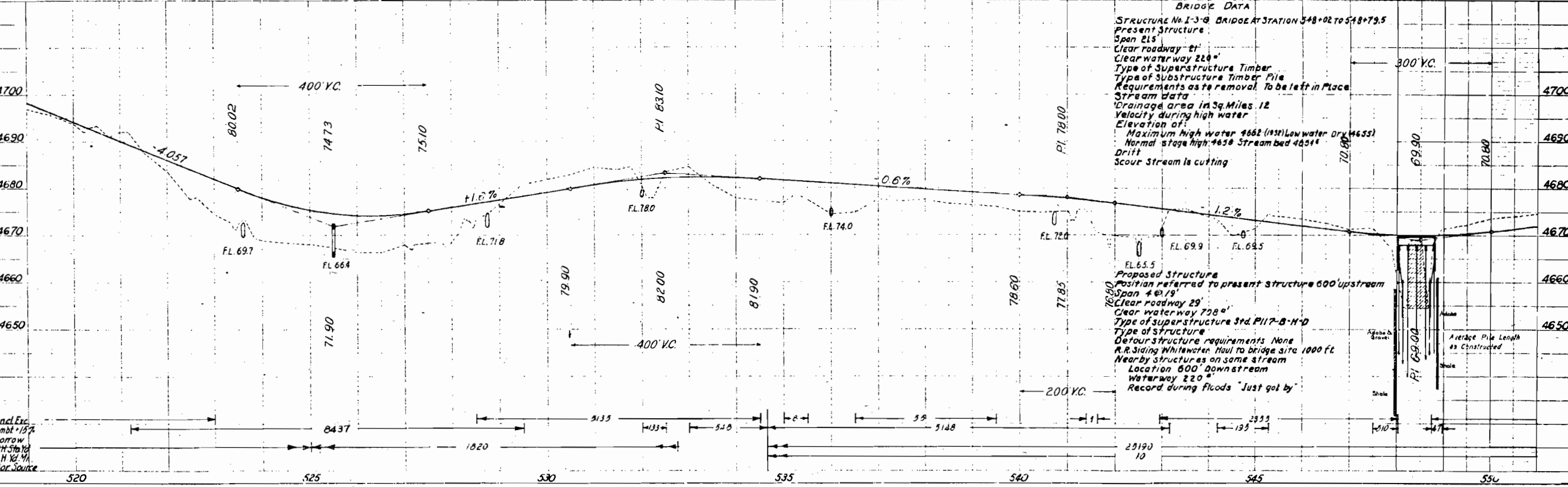
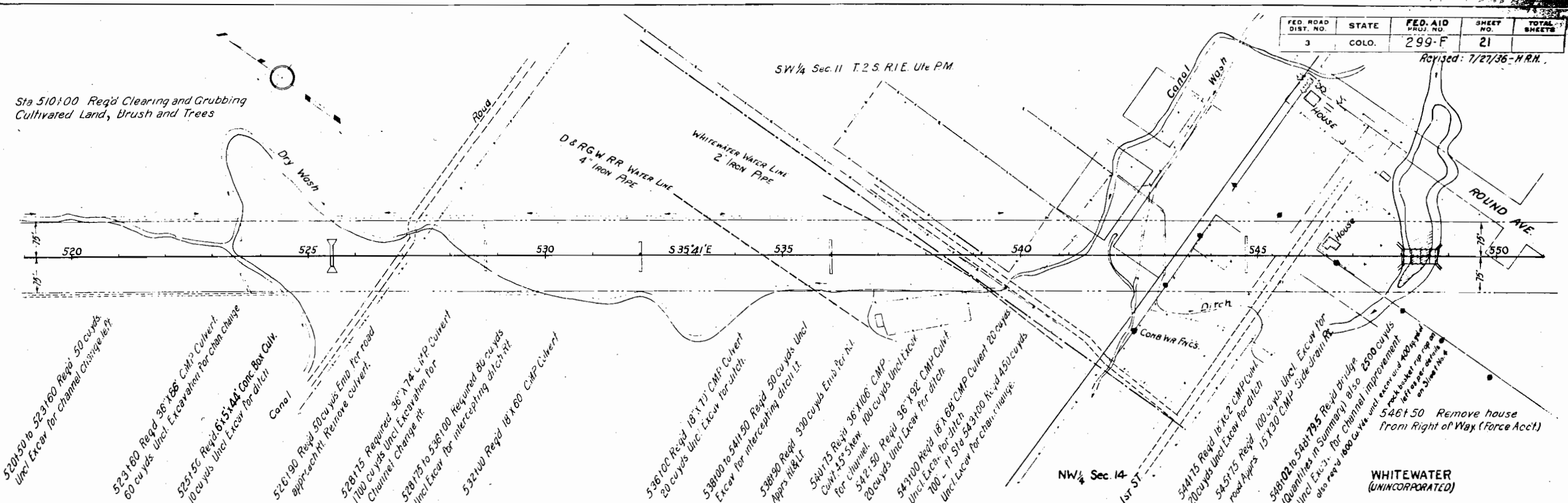
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	299-F	21	

Revised: 7/27/36-N.R.R.

SW 1/4 Sec. 11 T.2 S. R.1 E. Ute P.M.

Sta 510+00 Req'd Clearing and Grubbing Cultivated Land, brush and trees

PLAN



**BRIDGE DATA**

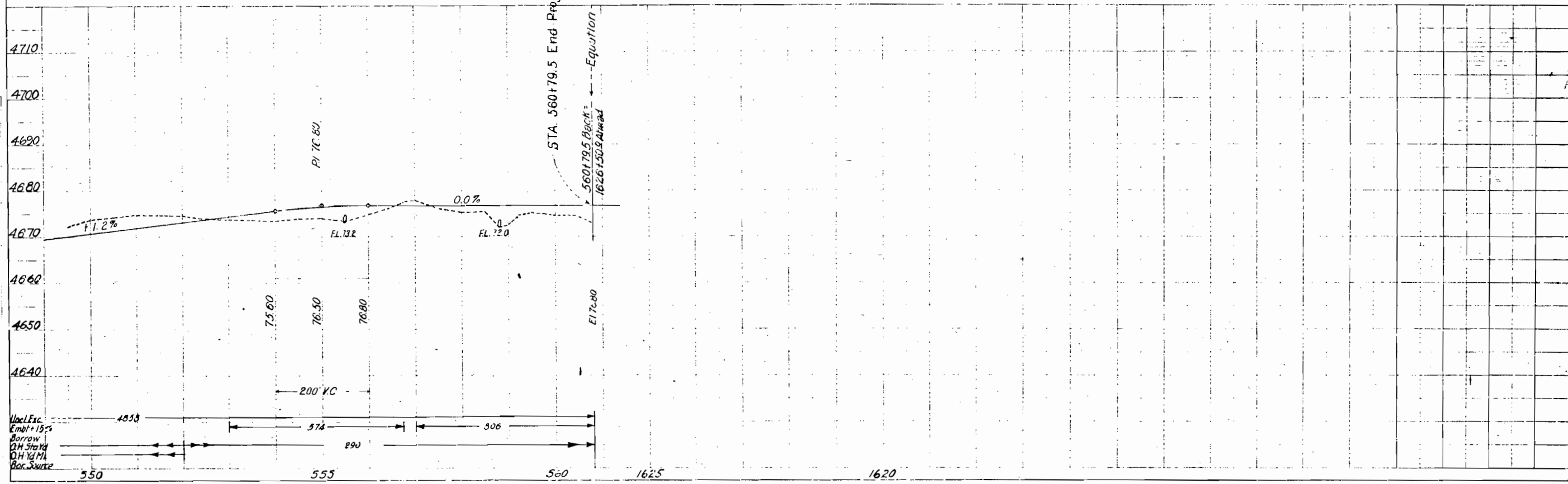
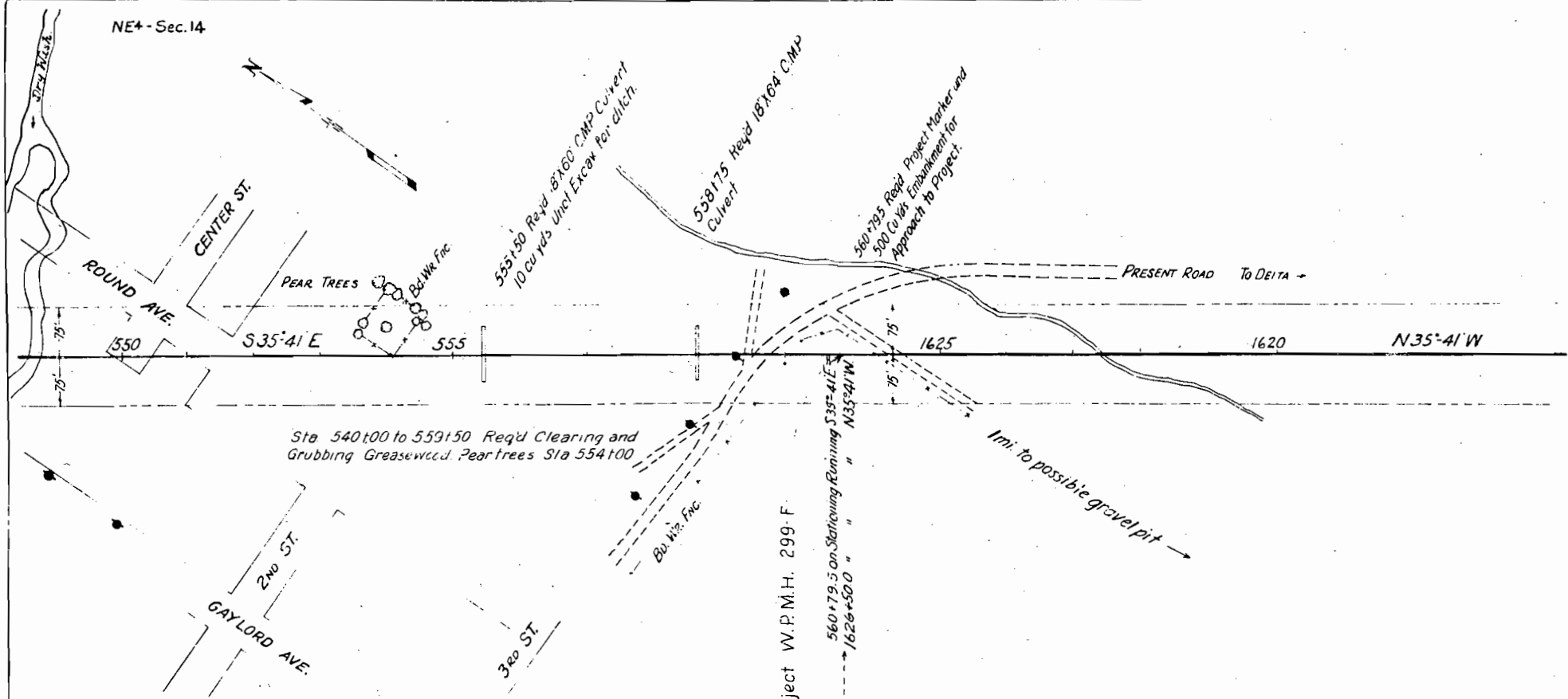
STRUCTURE No. 1-3-B BRIDGE AT STATION 548+02 TO 548+79.5  
 Present Structure  
 Span 215'  
 Clear roadway 21'  
 Clear waterway 228'  
 Type of Superstructure Timber  
 Type of Substructure Timber Pile  
 Requirements as to removal to be left in place  
 Stream data  
 Drainage area in Sq. Miles 12  
 Velocity during high water  
 Elevation of:  
 Maximum high water 4662 (1930) Low water Dry (4655)  
 Normal stage high 4658 Stream bed 4654  
 Drift  
 Scour Stream is cutting

FL. 65.5  
 Proposed Structure  
 Position referred to present structure 600' upstream  
 Span 4 @ 19'  
 Clear roadway 29'  
 Clear waterway 728'  
 Type of superstructure Std. P117-B-H-D  
 Type of structure  
 Detour structure requirements None  
 R.R. siding Whitewater haul to bridge site 1000 ft  
 Nearby structures on same stream  
 Location 600' downstream  
 Waterway 220'  
 Record during floods "Just got by"

Average Pile Length as Constructed

Und. Exc. Embt. 1/2' Borrow On Site 1/2' On 1/2' 1/4' Bar Source

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	299-F	22	



PROJECT NO. 4-27-54  
C. G. Gabelman

PROJECT NO. 4-27-54  
C. G. Gabelman

# ROW MARKERS

STATION	SIDE	NO.
356 + 10	Rt.	1
359 + 88	Lt.	1
400 + 00	Rt.	2
400 + 00	Lt.	2
439 + 78.4	Rt.	1
439 + 78.4	Lt.	1
464 + 90.9	Rt.	1
464 + 90.9	Lt.	1
493 + 77	Rt.	1
493 + 94.9	Rt.	1
494 + 428	ε Tie	
495 + 02.7	Lt.	1
495 + 20.6	Lt.	1
560 + 79.5	Rt.	1
560 + 79.5	Lt.	1
Total		16

# FENCE

STATION	SIDE	BARBED WIRE FENCE Lin. Ft.	COMB. WIRE FENCE Lin. Ft.
345 + 57 - 358 + 82	Lt.	1335	
345 + 95 - 399 + 98	Rt.	5403	
356 + 14	Rt.	6	
359 + 88 - 399 + 98	Lt.	4027	
392 + 00 - 392 + 40	Lt.	80	
399 + 98	Rt.	50	
399 + 98	Lt.	50	
399 + 98 - 430 + 00	Rt.	3022	
399 + 98 - 430 + 00	Lt.	3050	
430 + 00 - 453 + 70	Rt.	2366	
430 + 00 - 456 + 30	Lt.	2661	
453 + 70 - 465 + 50	Rt.	1200	
456 + 30 - 462 + 00	Lt.	587	
462 + 00 - 480 + 00	Lt.	1855	
465 + 50 - 493 + 75	Rt.	2829	
480 + 00 - 495 + 19	Lt.	1524	
493 + 75 - 493 + 93	Rt.	30	
493 + 93 - 539 + 66	Rt.	4585	
495 + 05 - 537 + 65	Lt.	4290	
495 + 19 - 495 + 05	Lt.	30	
504 + 80 - 505 + 12	Lt.	64	
506 + 23 - 506 + 16	Lt.	46	
507 + 92 - 508 + 19	Rt.	54	
526 + 70	Rt.	6	
538 + 20 - 543 + 20	Lt.		511
547 + 74	Lt.	16	
547 + 74	Rt.	19	
548 + 20 - 558 + 82	Rt.	1062	
548 + 82 - 548 + 82	Lt.	10	
548 + 82	Rt.	20	
549 + 00 - 559 + 42	Lt.	1042	
559 + 40 - 560 + 84	Rt.	144	
559 + 65 - 559 + 65	Rt.	6	
559 + 72 - 560 + 84	Lt.	112	
560 + 79.5 *	Rt.	293	
* Note: Placed around Snyder's house.			
Sub total		41874	511
Less Lin. Ft. in Gates		296	
Total		41578	511

# SUMMARY OF QUANTITIES

NO.	ITEM	UNIT	QUANTITIES		
			ROADWAY	BRIDGE	TOTALS
10a	Clearing & Grubbing entire project	Lump Sum	.		
11b	Removing 4 Structures	Lump Sum	.		
12a	Remove Fence (See Sheet No. 2 For Detail)	Lin. Ft.	2690.0		2690.0
13c	Unclassified Excavation	Cu. Yd.	199757.9	1378.8	201136.7
13d	Cut Slope Treatment	Mile	3.3		3.3
14b	Dry Common Excavation (Structural)	Cu. Yd.	1351.4	400.4	1751.8
14d	Wet Common Excavation "	Cu. Yd.	22.3		22.3
18a	Station Yard Overhaul	Sta. Yds.	687837.0		687837.0
18b	Yard Mile Overhaul	Yd. Mi.	29817.7		29817.7
26a	Gravel or Crushed Rock Surfacing	Ton	16476.14		16476.14
42a	Untreated Bridge Timber	M. Ft. b. m.		1,696	1,696
42b	Treated Bridge Timber	M. Ft. b. m.		39,604	39,604
43	Asphalt Plank Wearing Surface	Sq. Ft.		2204.0	2204.0
46a	Class "A" Concrete	Cu. Yd.	206.1		206.1
46b	Class "B" Concrete	Cu. Yd.	13.3		13.3
47	Reinforcing Steel	Lb.	15450		15450
53a	15" Corr. Metal Culvert Pipe	Lin. Ft.	30		30
53b	18" Corr. Metal Culvert Pipe	Lin. Ft.	2152		2152
53c	24" Corr. Metal Culvert Pipe	Lin. Ft.	488		488
53e	36" Corr. Metal Culvert Pipe	Lin. Ft.	558		558
53g	48" Corr. Metal Culvert Pipe	Lin. Ft.	150		150
53h	18" Corr. Metal Siphon Pipe	Lin. Ft.	96		96
60a	Treated Timber Piling	Lin. Ft.		1942.9	1942.9
60c	Treated Timber Piling Cut-off	Lin. Ft.		540.5	540.5
60e	Metal Pile Shoes	Each		90	90
65	Dry Rubble Slope Paving 1'-6" Thick	Sq. Yd.		190	190
67x	Rock Basket Rip Rap	Sq. Yd.	449.7		449.7
74	Wire Cable Guard Fence	Lin. Ft.	1408		1408
76a	Barbed Wire Fence with Treated Wood Posts	Lin. Ft.	41578		41578
76d	Comb. Wire Fence with Treated Wood Posts	Lin. Ft.	511		511
78g	Barbed Wire Gates	Each	18		18
81a	Project Marker	Each	1		1
81b	Right of Way Markers	Each	16		16
85b	Trash Guards For 18" Siphon	Each	2		2
89b	Drain Pipe - Timber Floor	Each		8	8
Materials Furnished & Work Done By FORCE ACCOUNT:					
Moving House Sta. 546 + 50		Lump Sum	.		
Building Cattle Guard Sta. 526 + 40 (State Forces) See W. O. No. 1298					
Note: Corral at Sta. 378+ was moved by Owner at no expense to State Sprinkling Road - See W. O. No. 1299 (State Forces)					

# GATES

STATION	SIDE	NO.	B.W. Lin. Ft.
356 + 29	Rt.	1	16
379 + 65	Lt.	1	16
393 + 18	Rt.	1	16
398 + 56	Lt.	1	16
421 + 95	Lt.	1	20
441 + 35	Rt.	1	16
454 + 58	Rt.	1	16
460 + 78	Lt.	1	16
468 + 25	Lt.	1	16
476 + 85	Rt.	1	16
506 + 92	Rt.	1	16
525 + 85	Lt.	1	20
526 + 25	Rt.	1	16
528 + 40	Lt.	1	16
530 + 12	Rt.	1	20
533 + 08	Rt.	1	16
534 + 75	Rt.	1	16
* 560 + 79.5	Rt.	1	12
* Snyder's Gate			
Total		18	296

STATION	SIDE	NO.	B.W. Lin. Ft.
345 + 00			
356 + 32			
359 + 65			
379 + 71			
393 + 23			
398 + 53			
441 + 98			
455 + 34			
468 + 40			
476 + 87			
507 + 08			
526 + 40			
528 + 76			
533 + 07			
538 + 50			
539 + 39			
543 + 50			
545 + 50			
547 + 50			
549 + 00			
559 + 40			
559 + 50			
Total			325.520

# ROADWAY GRAVEL

BOOK NO.	SERIES	TONS
1	102901 - 102950	1000.875
2	102951 - 103000	1053.650
3	103001 - 103050	1027.825
4	102751 - 102800	1034.325
5	102801 - 102850	1022.675
6	102851 - 102900	1015.125
7	103051 - 103100	999.805
8	103101 - 103150	1010.625
9	103151 - 103200	1032.650
10	103201 - 103250	1019.100
11	103251 - 103300	1012.400
12	103301 - 103350	1021.575
13	103351 - 103400	1043.325
14	103401 - 103450	1025.025
15	103451 - 103500	1069.825
16	103501 - 103550	1052.060
17	103551 - 103600	35.275
Sub total		16476.140
Less Amount in Rd. App's		325.520
Total Amount placed bet. Sta. 345 - 560 + 79.5		16150.620