

COLORADO STATE HIGHWAY DEPARTMENT

PLAN AND PROFILE OF PROPOSED FEDERAL AID PROJECT NO. 285-H STATE HIGHWAY NO. 81 WELD AND MORGAN COUNTIES

INDEX OF SHEETS

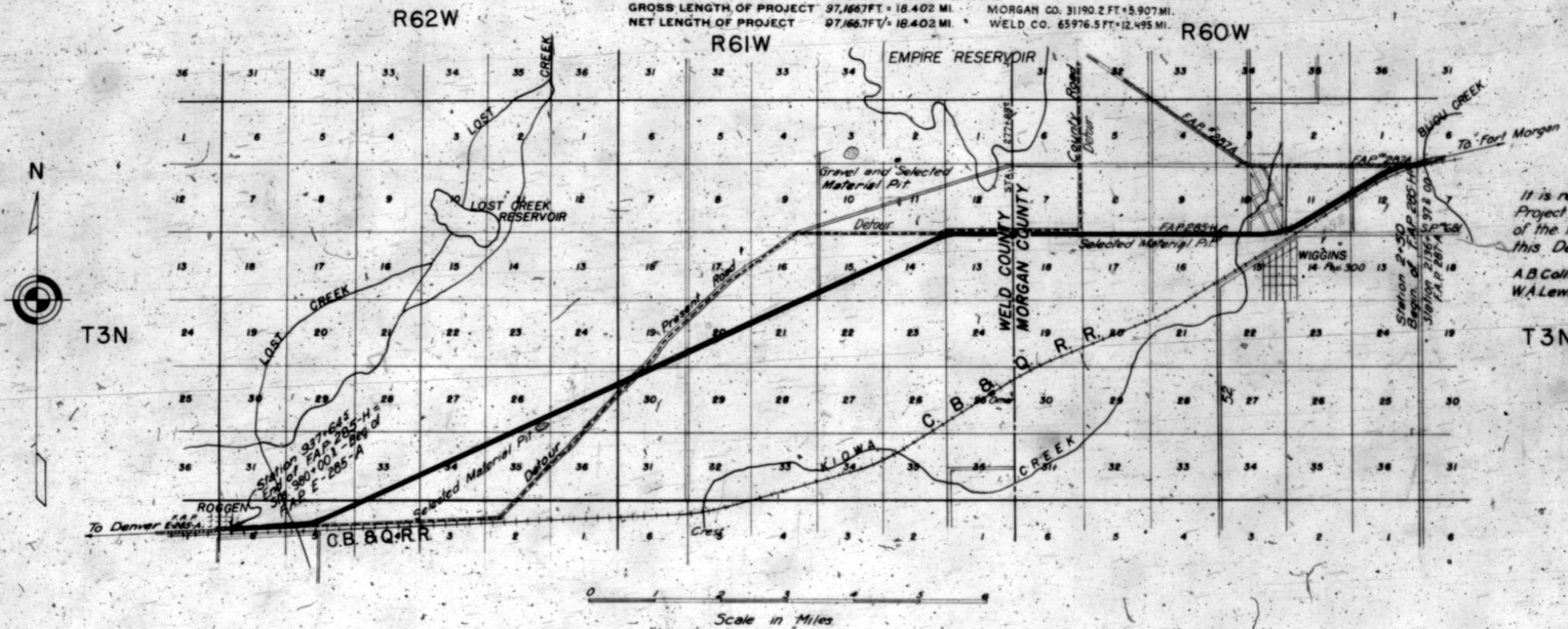
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CONVENTIONAL SIGNS

- Railroads
- Barbed Wire Fence
- Section Line
- Quarter Section Line
- Range Line
- Center Line 500
- ROW Line
- Detour (Title Sheet)

SCALES ON ORIGINAL TRACINGS
ON PLAN, 1 IN. = 100 FT.
ON PROFILE 1 IN. = 100 FT. HORIZONTAL
1 IN. = 10 FT. VERTICAL

GRADE LINE ON PROFILE IS SHOWN AS GRADE OF FINISHED ROAD
GROSS LENGTH OF PROJECT 97,166.7 FT. = 18.402 MI. MORGAN CO. 31190.2 FT. = 5.907 MI.
NET LENGTH OF PROJECT 97,166.7 FT. = 18.402 MI. WELD CO. 65976.5 FT. = 12.495 MI.



NOTE
It is recommended that bidders on this Project go over the plan details with one of the following field representatives of this Department:
A.B. Collins, Division Engineer, Greeley, Colo.
W.A. Lewis, Resident Engineer, Sterling, Colo.

RECOMMENDED FOR APPROVAL 12/3/57
J. J. Williams
ASSISTANT ENGINEER
APPROVED
Chas. D. Vail
STATE HIGHWAY ENGINEER
RECOMMENDED FOR APPROVAL
DIST. ENG. BUREAU PUBLIC ROADS
RECOMMENDED FOR APPROVAL
CHIEF ENGR. BUREAU PUBLIC ROADS
APPROVED
DIRECTOR BUREAU PUBLIC ROADS

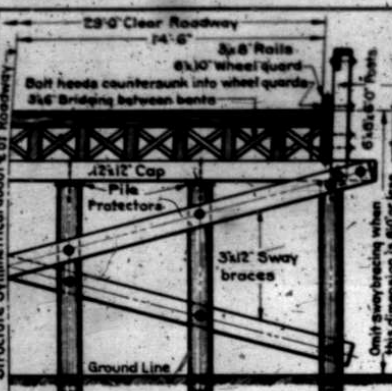
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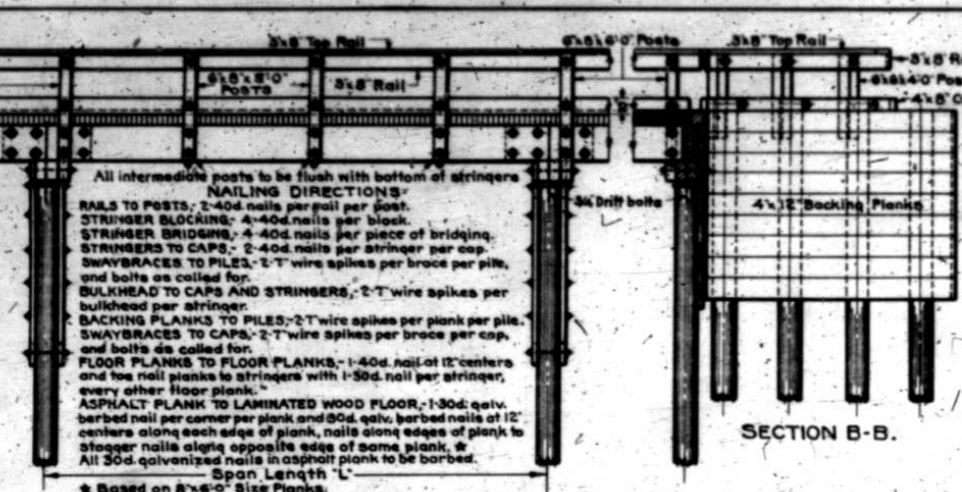
STANDARD P-117-B-H

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3/	COLO.	285-H	3	

Revised Oct 21 1935 A&K Changed to 1935 Specifications
Revised As Constructed 4-22-38 R.A.S.



HALF SECTION A-A
TYPICAL BENT AND SPAN SECTION



All intermediate posts to be flush with bottom of stringers

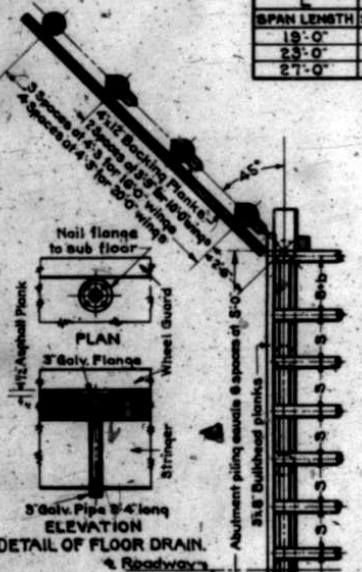
NAILING DIRECTIONS:
RAILS TO POSTS: 2-40d nails per rail per post.
STRINGER BRIDGING: 4-40d nails per block.
STRINGER BRIDGING: 4-40d nails per piece of bridging.
STRINGERS TO CAPS: 2-40d nails per stringer per cap.
SWAYBRACES TO PILES: 2-T wire spikes per brace per pile, and bolts as called for.
BULKHEAD TO CAPS AND STRINGERS: 2-T wire spikes per bulkhead per stringer.
BACKING PLANKS TO PILES: 2-T wire spikes per plank per pile.
SWAYBRACES TO CAPS: 2-T wire spikes per brace per cap, and bolts as called for.
FLOOR PLANKS TO FLOOR PLANKS: 1-40d nail at 12" centers and toe nail planks to stringers with 1-30d nail per stringer, every other floor plank.
ASPHALT PLANK TO LAMINATED WOOD FLOOR: 1-30d galv. barbed nail per corner per plank and 90d galv. barbed nails at 12" centers along each edge of plank, nails along edges of plank to stagger nails along opposite edge of same plank. All 30d galvanized nails in asphalt plank to be barbed.

Span Length L'

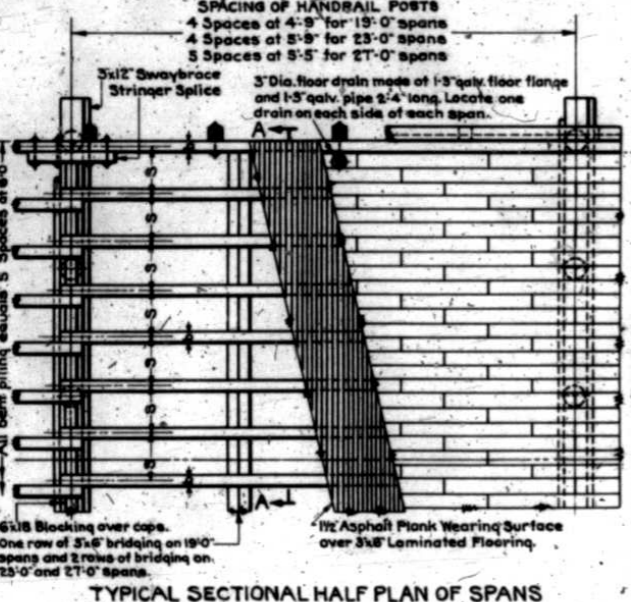
* Based on 8x6-0" Size Planks.

TYPICAL ELEVATION OF SPAN.

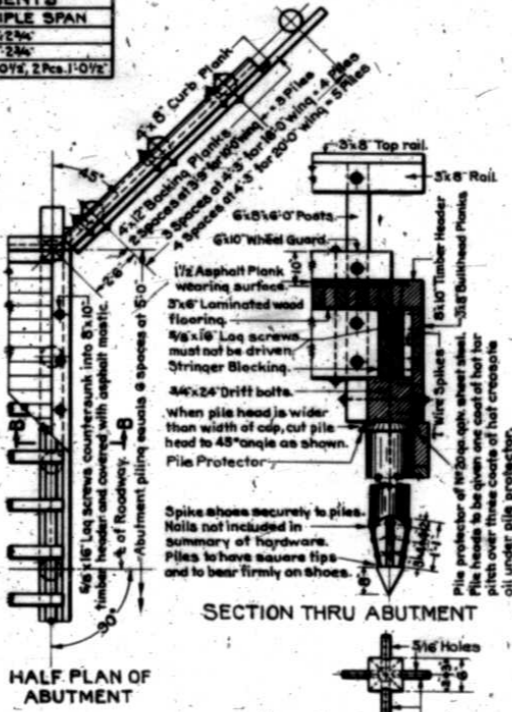
SPAN LENGTH	STRINGER SPACING		NUMBER OF STRINGERS	STRINGER BLOCKING		BENTS
	SINGLE SPAN	MULTIPLE SPAN		SINGLE SPAN	MULTIPLE SPAN	
19'-0"	2'-3 1/4"	2'-2 3/4"	4	13 Pcs. 1'-9 1/4"	12 Pcs. 1'-8 1/4" 1 Pc. 2'-2 3/4"	13 Pcs. 1'-2 3/4"
23'-0"	2'-3 1/4"	2'-2 3/4"	4	13 Pcs. 1'-9 1/4"	12 Pcs. 1'-8 1/4" 1 Pc. 2'-2 3/4"	13 Pcs. 1'-2 3/4"
27'-0"	2'-3 1/4"	2'-2 3/4"	4	13 Pcs. 1'-9 1/4"	12 Pcs. 1'-8 1/4" 1 Pc. 2'-2 3/4"	11 Pcs. 10 1/2" 2 Pcs. 1'-0 1/2"



SECTIONAL HALF PLAN OF ABUTMENT



TYPICAL SECTIONAL HALF PLAN OF SPANS



HALF PLAN OF ABUTMENT

PLAN OF PILE SHOE CAST IRON

GENERAL NOTES

All work shall be done according to the standard specifications of the Colorado State Highway Department, Adopted August 1-1935.

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 west coast douglas fir.

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

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

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

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

All handrailing and posts above the wheel guards shall be painted white and all handrail posts below the top of wheel guards shall be painted black as specified.

All bolts more than 12 inches long must be threaded not less than 4 inches.

Bolts in the finished structure shall not project more than one half inch beyond the nut.

All bolts must have Std. C.I.G.S. or Malleable Cast Washers under each head and nut. Bolt lengths are calculated assuming C.I.G.S. washers will be used.

The contractor is cautioned to check bolt lengths before ordering because of variations in thickness of lumber and piling.

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

Before placing handrailing the contact surfacing shall receive the second coat of paint.

When contractor is permitted to drill holes to facilitate pile driving, these holes must be drilled so piling will stand in vertical position after final driving.

Bid price for asphalt plank shall include galvanized barbed nails.

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

BOLTS AND WASHERS FOR ONE SPAN OF SUPERSTRUCTURE

LOCATION	SIZE	19'-0" SPAN		23'-0" SPAN		27'-0" SPAN	
		NO.	WT. LBS.	NO.	WT. LBS.	NO.	WT. LBS.
POSTS TO RAILS	5/8"	10	1.9	10	1.9	10	1.9
POSTS TO WHEEL GUARDS	5/8"	14	2.7	14	2.7	14	2.7
POSTS TO STRINGERS	5/8"	16	3.1	16	3.1	16	3.1
WHEEL GUARDS TO STRINGERS	5/8"	28	5.5	28	5.5	28	5.5
WASHERS - STD. C.I.G.S.	5/8"	60	11.0	60	11.0	60	11.0
TOTAL WEIGHT			39.0		100.0		135.0

BOLTS AND WASHERS FOR ONE ABUTMENT

LOCATION	ITEM	SIZE	NO.	LENGTH	WT. EACH	TOTAL WT.
POSTS TO RAILS	BOLTS	5/8"	12	10	1.08	12.96
POST TO BULKHEAD TO CAP	BOLTS	5/8"	2	23	1.15	2.30
POSTS TO STRINGERS	BOLTS	5/8"	4	18	1.74	6.96
POSTS TO WHEEL GUARDS	BOLTS	5/8"	2	14	1.41	2.82
WHEEL GUARDS TO STRINGERS	BOLTS	5/8"	2	38	3.40	6.80
TIMBER HEADER TO STRINGERS	LAG SCREWS	5/8"	14	18	1.36	19.08
WASHERS - STD. C.I.G.S.	WASHERS	5/8"	38	0.75	28.5	28.5
CAPS TO PILES	DRIFT BOLTS	3/4"	1	24	3.00	3.00
TOTAL WEIGHT						92.0

BOLTS AND WASHERS FOR ONE WING

LOCATION	ITEM	SIZE	NO.	LENGTH	WT. EACH	TOTAL WT.
POSTS TO RAILS	BOLTS	5/8"	3	11	1.16	3.48
POSTS TO PILES	BOLTS	5/8"	6	20	1.90	11.40
PILES TO CURB PLANK	BOLTS	5/8"	3	18	1.74	5.22
WASHERS - STD. C.I.G.S.	WASHERS	5/8"	24	0.75	18.0	18.0
TOTAL WEIGHT						39.0

BOLTS AND WASHERS FOR ONE BENT

LOCATION	ITEM	SIZE	NO.	LENGTH	WT. EACH	TOTAL WT.
POSTS TO RAILS	BOLTS	5/8"	2	10	1.08	2.16
POSTS TO WHEEL GUARDS	BOLTS	5/8"	2	14	1.41	2.82
POSTS TO CAPS WITHOUT SWAYS	BOLTS	5/8"	2	20	1.90	3.80
WHEEL GUARDS TO STRINGERS	BOLTS	5/8"	2	38	3.40	6.80
POSTS TO STRINGERS TO SPLICES	BOLTS	5/8"	4	24	2.25	9.00
SPICES TO STRINGERS	BOLTS	5/8"	1	11	1.15	1.15
POSTS TO CAP TO SWAYS	BOLTS	5/8"	2	23	2.15	4.30
SWAYS TO CAPS	BOLTS	5/8"	2	17	1.65	3.30
SWAYS TO PILES	BOLTS	5/8"	12	17	1.65	19.80
WASHERS - STD. C.I.G.S. NO SWAYS	WASHERS	5/8"	48	0.75	36.0	36.0
WASHERS - STD. C.I.G.S. WITH SWAYS	WASHERS	5/8"	76	0.75	57.0	57.0
CAPS TO PILES	DRIFT BOLTS	3/4"	6	24	3.00	18.0
TOTAL WEIGHT - WITHOUT SWAYS						96.0
TOTAL WEIGHT - WITH SWAYS						142.0

NAILS

LOCATION	ITEM	UNIT	19'-0" SPAN		23'-0" SPAN		27'-0" SPAN	
			NO.	WT. LBS.	NO.	WT. LBS.	NO.	WT. LBS.
ONE SPAN OF SUPERSTRUCTURE	30d COMMON	18	18	1.8	30	3.0	36	3.6
	30d GALV BARBED	125	125	15.6	150	18.8	175	21.0
ONE ABUTMENT	40d COMMON	18	18	1.8	18	1.8	18	1.8
ONE WING	40d COMMON	1	1	0.1	1	0.1	1	0.1
ONE BENT	40d COMMON	1	1	0.1	1	0.1	1	0.1
	T WIRE SPIKES	24	24	2.4	24	2.4	24	2.4
	T WIRE SPIKES	6	6	0.6	6	0.6	6	0.6
	T WIRE SPIKES	1	1	0.1	1	0.1	1	0.1
	T WIRE SPIKES	1	1	0.1	1	0.1	1	0.1
TOTAL WEIGHT LBS.			25	85	169	72		

SUMMARY FOR HARDWARE

1 SPANS	AT	99.0 LBS. PER SPAN	99.0 LBS.
2 ABUTMENTS	AT	92.0 LBS. PER ABUTMENT	184.0 LBS.
1 BENTS	AT	96.0 LBS. PER BENT	96.0 LBS.
1 WINGS	AT	39.0 LBS. PER WING	39.0 LBS.
1 BENTS WITH SWAYS	AT	142.0 LBS. PER BENT	142.0 LBS.
TOTAL WEIGHT			435.0

SUMMARY OF QUANTITIES STRUCTURAL EXCAVATION

ITEM 14g. DRY ROCK							
ITEM 14b. DRY COMMON							73 CU YDS.
ITEM 14c. WET ROCK							CU YDS.
ITEM 14d. WET COMMON							22 CU YDS.
ITEM 42a UNREATED BRIDGE TIMBER							
1 SPANS	AT	280	80 FT. EACH	=	280	80 FT.	
2 ABUTMENTS	AT	48	80 FT. EACH	=	96	80 FT.	
1 BENTS	AT	48	80 FT. EACH	=	304	80 FT.	
							680
ITEM 42b TREATED BRIDGE TIMBER							
1 SPANS	AT	673	80 FT. EACH	=	673	80 FT.	
2 ABUTMENTS	AT	80	80 FT. EACH	=	80	80 FT.	
4 WINGS	AT	1592	80 FT. EACH	=	3184	80 FT.	
1 BENTS	AT	307	80 FT. EACH	=	1228	80 FT.	
							5165
ITEM 43 ASPHALT PLANK WEARING SURFACE							
1 SPANS	AT	591	80 FT. EACH	=	591	80 FT.	
ITEM 60a PILING - TREATED							
2 ABUTMENTS	AT	188	LIN. FT. EACH	=	376	LIN. FT.	
4 WINGS	AT	78	LIN. FT. EACH	=	312	LIN. FT.	
1 BENTS	AT	1	LIN. FT. EACH	=	1	LIN. FT.	
							689
ITEM 60b METAL PILE SHOES							
2 SHOES	AT	38	LBS. EACH	=	76	LBS.	
ITEM 60c DRAIN PIPE							
2 PIECES 5" DIA. GALV. PIPE 2'-4" LONG WITH ONE 3" GALV. FLANGE ON EACH PIPE	AT	2	COMPLETE PER SPAN	=	2	PIECES	
ITEM 60c PILING CUT-OFF TREATED							
							107.10

ONE SPAN OF SUPERSTRUCTURE

DESCRIPTION	SIZE	19'-0" SPAN		23'-0" SPAN		27'-0" SPAN	
		NO. LENGTH	TOTAL	NO. LENGTH	TOTAL	NO. LENGTH	TOTAL
HANDRAILS S4S	3x8	4	16'-0"	4	16'-0"	4	16'-0"
HANDRAIL POSTS S4S	6x6	6	8'-0"	6	8'-0"	6	8'-0"
TOTAL UNREATED TIMBER			260		80 FT.		384
TREATED TIMBER							
FLOORING S4S	3x8	18	150'-0"	18	150'-0"	18	150'-0"
BRIDGING	3x6	4	16'-0"	4	16'-0"	4	16'-0"
WHEEL GUARDS	6x10	2	20'-0"	2	24'-0"	2	28'-0"
STRINGERS	6x12	2	19'-0"	2	24'-0"	2	28'-0"
OUTSIDE	6x12	2	19'-0"	2	24'-0"	2	28'-0"
INTERMEDIATE SPANS	6x12	2	19'-0"	2	24'-0"	2	28'-0"
OUTSIDE	6x12	2	19'-0"	2	24'-0"	2	28'-0"
END SPANS	6x12	2	19'-0"	2	24'-0"	2	28'-0"
STRINGERS	6x12	2	20'-0"	2	24'-0"	2	28'-0"
INSIDE-INTERMEDIATE AND END SPANS	6x12	2	20'-0"	2	24'-0"	2	28'-0"
STRINGERS	6x12	2	20'-0"	2	24'-0"	2	28'-0"
SINGLE SPAN	6x12	2	20'-0"	2	24'-0"	2	28'-0"
TOTAL TR. TIMBER - SINGLE SPAN			673		80 FT.		558
TOTAL TR. TIMBER - END SPANS			672		80 FT.		552
TOTAL TR. TIMBER - INTER SPANS			673		80 FT.		552
ASPHALT PLANK WEARING SURF.	5x12	2	30 FT.	2	30 FT.	2	30 FT.

ONE ABUTMENT

DESCRIPTION	SIZE	19'-0" LENGTH		20'-0" LENGTH	
		NO. LENGTH	TOTAL	NO. LENGTH	TOTAL
HANDRAIL POSTS S4S	6x6	2	12'-0"	2	12'-0"
TOTAL UNREATED TIMBER			2		24
TREATED TIMBER					
TIMBER HEADER	1 PC.	8x10x50'-0" FINISH TO T.B.	2.0	80 FT.	
CAP	1 PC.	12x12x14'-0"	4.0	80 FT.	
BULKHEAD PLANKS	4 PCS.	3x8x13'-0"	5.2	80 FT.	
BACKING PLANKS	4 PCS.	4x12x13'-0"	5.2	80 FT.	
STRINGER BLOCKING	1 PC.	6x12x24'-0"	2.8	80 FT.	
Cut before treatment	21 SPANS	PK.	6x12x13'-0"	1.8	80 FT.
TOTAL TREATED TIMBER			159		80 FT.
PILING - TREATED			7		PIECES AT 24 LIN. FT. EACH = 168 LIN. FT.

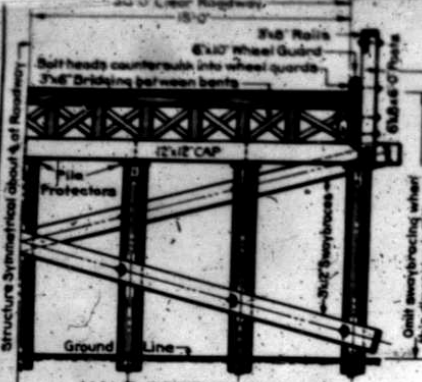
ONE WING

DESCRIPTION	SIZE	19'-0" LENGTH		20'-0" LENGTH	
		NO. LENGTH	TOTAL</		

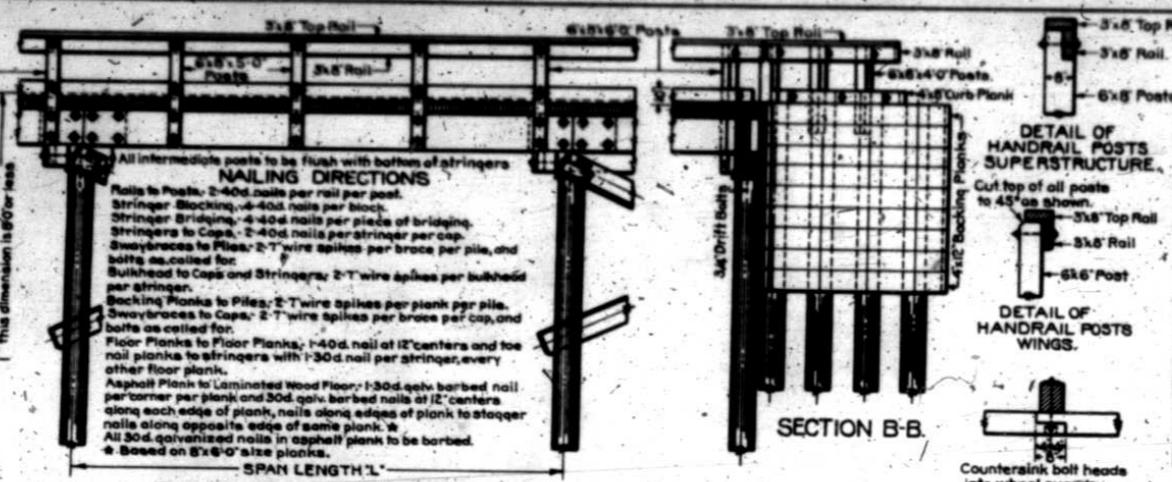
STANDARD P-117-B-H 60

FED. ROAD DIST. NO.	STATE	FED AID	SHEET NO.	TOTAL SHEETS
3	COLO.	265-H	6	

Revised Oct 21 1935 A.S.K. Changed to 1935 Specifications.

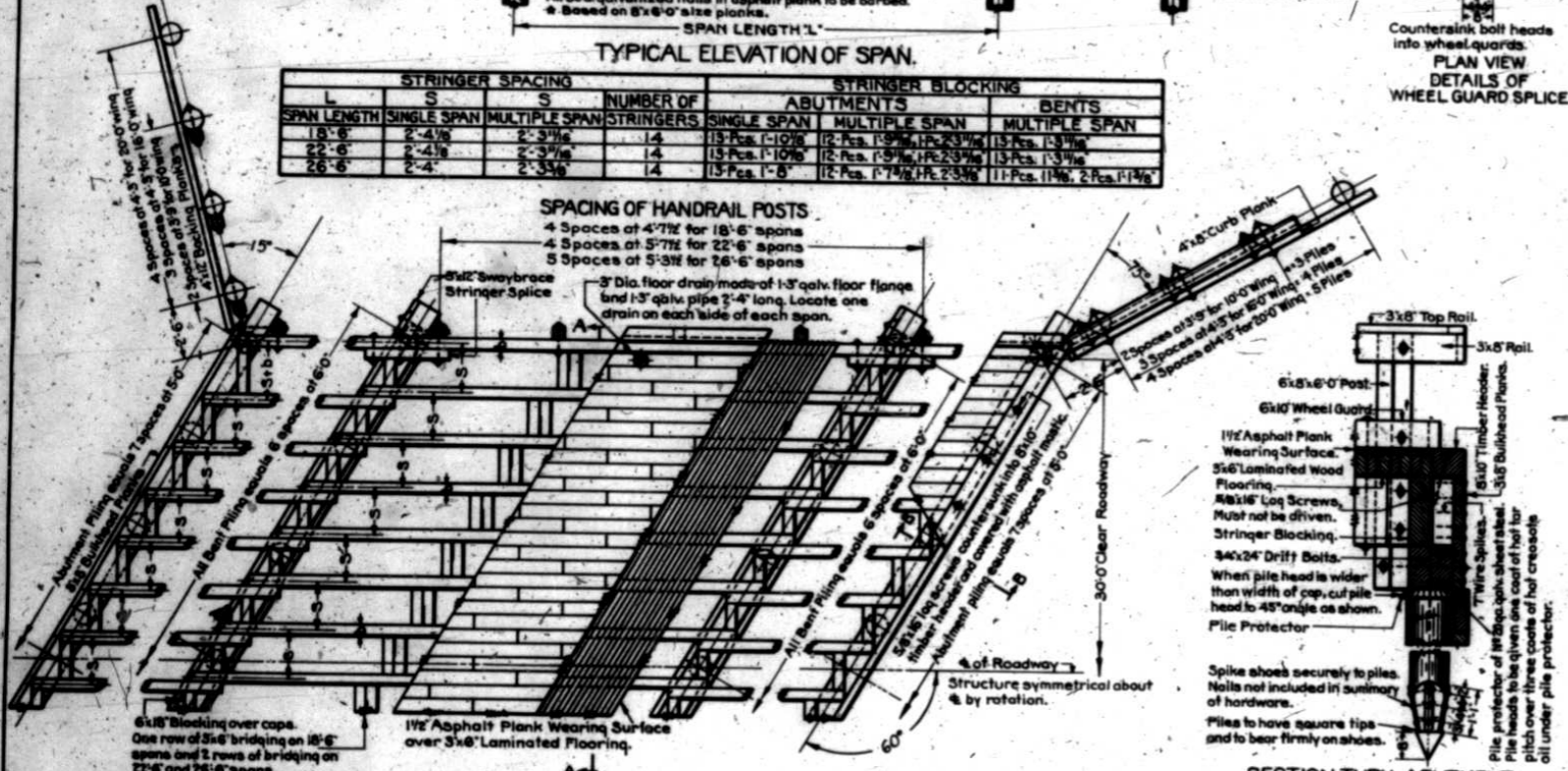


HALF SECTION A-A
TYPICAL BENT AND SPAN SECTION.

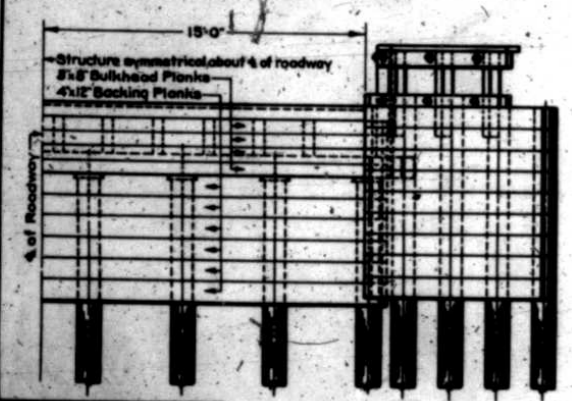


TYPICAL ELEVATION OF SPAN.

STRINGER SPACING		STRINGER BLOCKING		
L	S	NUMBER OF	ABUTMENTS	
SPAN LENGTH	SINGLE SPAN	MULTIPLE SPAN	SINGLE SPAN	MULTIPLE SPAN
18'-6"	2'-4 1/2"	2'-3 1/2"	14	15 Pcs. 1'-10 1/2"
22'-6"	2'-4 1/2"	2'-3 1/2"	14	15 Pcs. 1'-10 1/2"
26'-6"	2'-4 1/2"	2'-3 1/2"	14	15 Pcs. 1'-10 1/2"



TYPICAL SECTIONAL HALF PLAN OF SPANS AND ABUTMENTS.



HALF END ELEVATION.

INITIAL	DATE
DESIGNED BY N.W.C.	10-25-35
CHECKED BY G.H.B.	10-24-35
APPROVED BY N.W.C.	10-24-35
CHECKED BY E.W.T.	11-15-35

STANDARD P-117-BH-60

GENERAL NOTES.

All work shall be done according to the standard specifications of the Colorado State Highway Department, Adopted August 1-1935.

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

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

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

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

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

All handrailing and posts above the wheel guards shall be painted white and all handrail posts below the top of wheel guards shall be painted black as specified.

All bolts more than 12 inches long must be threaded not less than 4 inches.

Bolts in the finished structure shall not project more than one half inch beyond the nut.

All bolts must have std. C.I.O.G. or malleable cast washers under each head and nut. Bolt lengths are calculated assuming C.I.O.G. washers will be used.

The contractor is cautioned to check bolt lengths before ordering because of variations in thickness of lumber and piling.

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

Before placing handrailing the contact surfacing shall receive the second coat of paint.

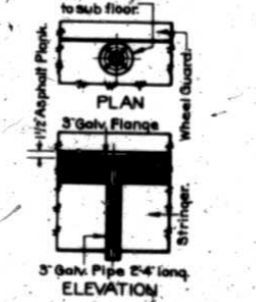
When contractor is permitted to drill holes to facilitate pile driving, these holes must be drilled so piling will stand in vertical position after final driving.

Bid price for asphalt plank shall include galvanized barbed nails.

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



PLAN OF PILE SHOE CAST IRON.



DETAIL OF FLOOR DRAIN.

BOLTS AND WASHERS FOR ONE SPAN OF SUPERSTRUCTURE

LOCATION	ITEM	18'-6" SPAN	22'-6" SPAN	26'-6" SPAN
POSTS TO RAILS	BOLTS	5/8" 10'	7/8" 8'	1" 10'
	WASHERS	5/8" 10'	7/8" 8'	1" 10'
POSTS TO WHEEL GUARDS	BOLTS	5/8" 14'	7/8" 12'	1" 14'
	WASHERS	5/8" 14'	7/8" 12'	1" 14'
POSTS TO STRINGERS	BOLTS	5/8" 18'	7/8" 16'	1" 18'
	WASHERS	5/8" 18'	7/8" 16'	1" 18'
WHEEL GUARDS TO STRINGERS	BOLTS	5/8" 2'	7/8" 2'	1" 2'
	WASHERS	5/8" 2'	7/8" 2'	1" 2'
WASHERS - STD. C.I.O.G.	WASHERS	5/8" 38'	7/8" 38'	1" 38'
	DRIFT BOLTS	3/4" 8'	7/8" 8'	1" 8'
TOTAL WEIGHT		393.0	1000	135.0

BOLTS AND WASHERS FOR ONE ABUTMENT

LOCATION	ITEM	18'-6" SPAN	22'-6" SPAN	26'-6" SPAN
POSTS TO RAILS	BOLTS	5/8" 2'	7/8" 2'	1" 2'
	WASHERS	5/8" 2'	7/8" 2'	1" 2'
POSTS TO BULKHEAD TO CAP	BOLTS	5/8" 2'	7/8" 2'	1" 2'
	WASHERS	5/8" 2'	7/8" 2'	1" 2'
POSTS TO WHEEL GUARDS	BOLTS	5/8" 2'	7/8" 2'	1" 2'
	WASHERS	5/8" 2'	7/8" 2'	1" 2'
POSTS TO STRINGERS	BOLTS	5/8" 2'	7/8" 2'	1" 2'
	WASHERS	5/8" 2'	7/8" 2'	1" 2'
WHEEL GUARDS TO STRINGERS	BOLTS	5/8" 2'	7/8" 2'	1" 2'
	WASHERS	5/8" 2'	7/8" 2'	1" 2'
TIMBER HEADER TO STRINGERS	LAG SCREWS	5/8" 14'	7/8" 14'	1" 14'
	WASHERS	5/8" 38'	7/8" 38'	1" 38'
CAPS TO PILES	WASHERS	5/8" 38'	7/8" 38'	1" 38'
	DRIFT BOLTS	3/4" 8'	7/8" 8'	1" 8'
TOTAL WEIGHT		56.0	164.0	24.0

BOLTS AND WASHERS FOR ONE WING

LOCATION	ITEM	18'-6" SPAN	22'-6" SPAN	26'-6" SPAN
POSTS TO RAILS	BOLTS	5/8" 3'	7/8" 3'	1" 3'
	WASHERS	5/8" 3'	7/8" 3'	1" 3'
POSTS TO PILES	BOLTS	5/8" 6'	7/8" 6'	1" 6'
	WASHERS	5/8" 6'	7/8" 6'	1" 6'
PILES TO CURB PLANK	BOLTS	5/8" 3'	7/8" 3'	1" 3'
	WASHERS	5/8" 3'	7/8" 3'	1" 3'
WASHERS - STD. C.I.O.G.	WASHERS	5/8" 24'	7/8" 24'	1" 24'
	DRIFT BOLTS	3/4" 8'	7/8" 8'	1" 8'
TOTAL WEIGHT		36.0	102.0	18.0

BOLTS AND WASHERS FOR ONE BENT

LOCATION	ITEM	18'-6" SPAN	22'-6" SPAN	26'-6" SPAN
POSTS TO RAILS	BOLTS	5/8" 2'	7/8" 2'	1" 2'
	WASHERS	5/8" 2'	7/8" 2'	1" 2'
POSTS TO WHEEL GUARDS	BOLTS	5/8" 2'	7/8" 2'	1" 2'
	WASHERS	5/8" 2'	7/8" 2'	1" 2'
POSTS TO CAPS WITHOUT SWAYS	BOLTS	5/8" 2'	7/8" 2'	1" 2'
	WASHERS	5/8" 2'	7/8" 2'	1" 2'
POSTS TO STRINGERS	BOLTS	5/8" 2'	7/8" 2'	1" 2'
	WASHERS	5/8" 2'	7/8" 2'	1" 2'
SPICES TO STRINGERS	BOLTS	5/8" 12'	7/8" 12'	1" 12'
	WASHERS	5/8" 12'	7/8" 12'	1" 12'
POSTS TO CAP TO SWAYBRACES	BOLTS	5/8" 2'	7/8" 2'	1" 2'
	WASHERS	5/8" 2'	7/8" 2'	1" 2'
SWAYBRACES TO PILES	BOLTS	5/8" 2'	7/8" 2'	1" 2'
	WASHERS	5/8" 2'	7/8" 2'	1" 2'
SWAYBRACES TO CAPS	BOLTS	5/8" 2'	7/8" 2'	1" 2'
	WASHERS	5/8" 2'	7/8" 2'	1" 2'
SWAYBRACES TO STRINGERS	BOLTS	5/8" 2'	7/8" 2'	1" 2'
	WASHERS	5/8" 2'	7/8" 2'	1" 2'
SWAYBRACES TO PILES	BOLTS	5/8" 2'	7/8" 2'	1" 2'
	WASHERS	5/8" 2'	7/8" 2'	1" 2'
SWAYBRACES TO CAPS	BOLTS	5/8" 2'	7/8" 2'	1" 2'
	WASHERS	5/8" 2'	7/8" 2'	1" 2'
WASHERS - STD. C.I.O.G. WITH SWAYS	WASHERS	5/8" 48'	7/8" 48'	1" 48'
	DRIFT BOLTS	3/4" 7'	7/8" 7'	1" 7'
CAPS TO PILES	WASHERS	5/8" 38'	7/8" 38'	1" 38'
	DRIFT BOLTS	3/4" 8'	7/8" 8'	1" 8'
TOTAL WEIGHT - WITHOUT SWAYBRACES		102.0	310.0	18.0
TOTAL WEIGHT - WITH SWAYBRACES		102.0	310.0	18.0

NAILS

LOCATION	ITEM	18'-6" SPAN	22'-6" SPAN	26'-6" SPAN
ONE SPAN OF SUPERSTRUCTURE	30d COMMON	25 LBS	30 LBS	33 LBS
	50d GALV BARRED	128 LBS	150 LBS	180 LBS
ONE ABUTMENT	40d COMMON	180 LBS	158 LBS	230 LBS
	45d COMMON	8 LBS	8 LBS	8 LBS
ONE WING	40d COMMON	1 LBS	1 LBS	1 LBS
	45d COMMON	1 LBS	1 LBS	1 LBS
ONE BENT	40d COMMON	7 LBS	7 LBS	7 LBS
	45d COMMON	1 LBS	1 LBS	1 LBS

SUMMARY FOR HARDWARE

ITEM	UNIT	18'-6" SPAN	22'-6" SPAN	26'-6" SPAN
3 SPANS	AT	100 LBS PER SPAN	500 LBS	500 LBS
4 ABUTMENTS	AT	48.0 LBS PER ABUTMENT	192 LBS	192 LBS
4 WINGS	AT	4.0 LBS PER WING	16 LBS	16 LBS
4 BENTS WITHOUT SWAYS	AT	10.0 LBS PER BENT	40 LBS	40 LBS
4 BENTS WITH SWAYS	AT	180.0 LBS PER BENT	720 LBS	720 LBS
TOTAL WEIGHT			1252 LBS	1252 LBS

SUMMARY OF QUANTITIES STRUCTURAL EXCAVATION

ITEM	UNIT	18'-6" SPAN	22'-6" SPAN	26'-6" SPAN
ITEM 14a DRY ROCK	CU YD			
ITEM 14b DRY COMMON	CU YD			
ITEM 14c WET ROCK	CU YD			
ITEM 14d WET COMMON	CU YD			
TOTAL			55.9	50.0

ITEM 42a UNTREATED BRIDGE TIMBER

ITEM	UNIT	18'-6" SPAN	22'-6" SPAN	26'-6" SPAN
5 SPANS	AT	312.00 FT EACH	1560	1560
2 ABUTMENTS	AT	48.00 FT EACH	96	96
4 WINGS	AT	24.00 FT EACH	96	96
4 BENTS	AT	48.00 FT EACH	192	192
TOTAL			2144	2144

ITEM 42b TREATED BRIDGE TIMBER

ITEM	UNIT	18'-6" SPAN	22'-6" SPAN	26'-6" SPAN
5 SPANS	AT	2634.00 FT EACH	13170	13170
2 ABUTMENTS	AT	2625.00 FT EACH	5250	5250
4 WINGS	AT	2170.00 FT EACH	8680	8680
4 BENTS	AT	606.00 FT EACH	2424	2424
TOTAL			29524	29524

ITEM 43 ASPHALT PLANK WEARING SURFACE

ITEM	UNIT	18'-6" SPAN	22'-6" SPAN	26'-6" SPAN
5 SPANS	AT	675.00 FT EACH	3375	3375
TOTAL			3375	3375

ITEM 60a PILING - TREATED

ITEM	UNIT	18'-6" SPAN	22'-6" SPAN	26'-6" SPAN
2 ABUTMENTS	AT	192 LIN FT EACH	384	384
4 WINGS	AT	112 LIN FT EACH	448	448
4 BENTS	AT	168 LIN FT EACH	672	672
TOTAL			1504	1504

ITEM 60b METAL PILE SHOES

ITEM	UNIT	18'-6" SPAN	22'-6" SPAN	26'-6" SPAN
2 ABUTMENTS	AT	38 LBS EACH	76	76
4 WINGS	AT	19 LBS EACH	76	76
4 BENTS	AT	38 LBS EACH	152	152
TOTAL			304	304

ITEM 60c DRAIN PIPE

ITEM	UNIT	18'-6" SPAN	22'-6" SPAN	26'-6" SPAN
2 ABUTMENTS	AT	192 LIN FT EACH	384	384
4 WINGS	AT	112 LIN FT EACH	448	448
4 BENTS	AT	168 LIN FT EACH	672	672
TOTAL			1504	1504

ITEM 60d PILING CUT-OFF TREATED

ITEM	UNIT	18'-6" SPAN	22'-6" SPAN	26'-6" SPAN
5 SPANS	AT	2 COMPLETE PER SPAN	10	10
TOTAL			10	10

ONE SPAN OF SUPERSTRUCTURE

DESCRIPTION	SIZE	18'-6" SPAN	22'-6" SPAN	26'-6" SPAN
HANDRAILS S4S	3x6	4 1/2 x 0' 140	4 1/2 x 0' 130	4 1/2 x 0' 120
HANDRAIL POSTS S4S	6x6	2 1/2 x 0' 120	2 1/2 x 0' 110	2 1/2 x 0' 100
TOTAL UNTREATED TIMBER		280	240	220

TREATED TIMBER

DESCRIPTION	SIZE	18'-6" SPAN	22'-6" SPAN	26'-6" SPAN
ALGHRING S4S	3x6	15 1/2 x 0' 420	15 1/2 x 0' 390	15 1/2 x 0' 360
BRIDGING	3x6	1 1/2 x 0' 108	1 1/2 x 0' 100	1 1/2 x 0' 92
WHEEL GUARDS	6x10	2 1/2 x 0' 200	2 1/2 x 0' 180	2 1/2 x 0' 160
SYRINGERS	3x6	2 1/2 x 0' 330	2 1/2 x 0' 300	2 1/2 x 0' 270
OUTSIDE INTERMEDIATE SPANS	6x10	2 1/2 x 0' 450	2 1/2 x 0' 400	2 1/2 x 0' 350
SYRINGERS	3x6	2 1/2 x 0' 341	2 1/2 x 0' 300	2 1/2 x 0' 260
OUTSIDE END SPANS	6x10	2 1/2 x 0' 450	2 1/2 x 0' 400	2 1/2 x 0' 350
SYRINGERS	3x6	2 1/2 x 0' 341	2 1/2 x 0' 300	2 1/2 x 0' 260
INSIDE INTERMEDIATE AND END SPANS	6x10	12 20' 0' 1180	12 24' 0' 1080	12 28' 0' 980
SYRINGERS SINGLE SPAN	3x6	14 19' 4' 2456		
TOTAL TR TIMBER - SINGLE SPAN		6781		
TOTAL TR TIMBER - END SPANS			8634	11256
TOTAL TR TIMBER - INTER SPANS			8634	11355
ASPHALT PLANK WEARING SURF	555	54 FT	675	795

ONE ABUTMENT

DESCRIPTION	SIZE	18'-6" SPAN	22'-6" SPAN	26'-6" SPAN
HANDRAIL POSTS S4S	2 PCS	6' 6" x 6' 0"		
TOTAL UNTREATED TIMBER		48		

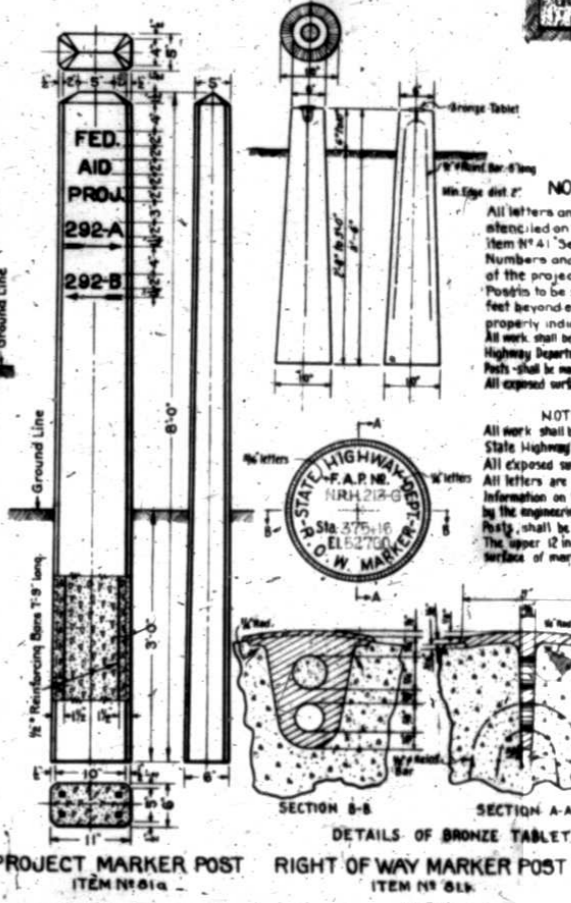
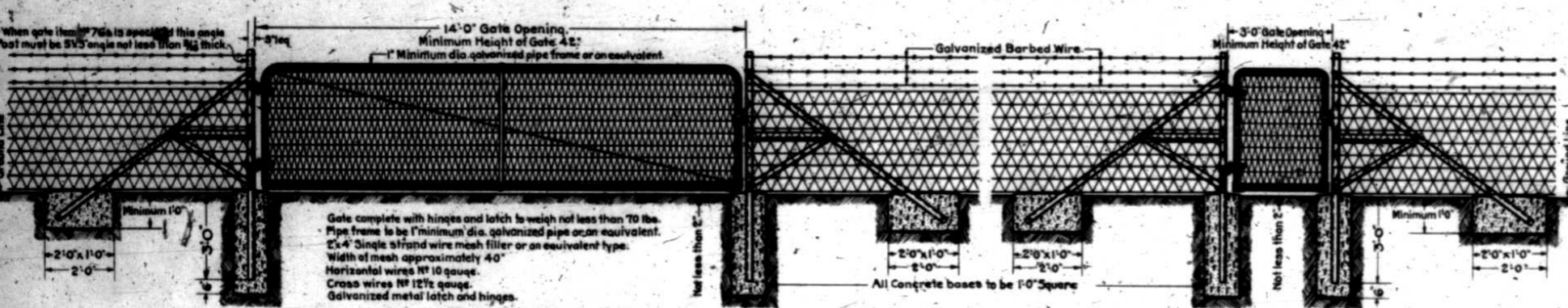
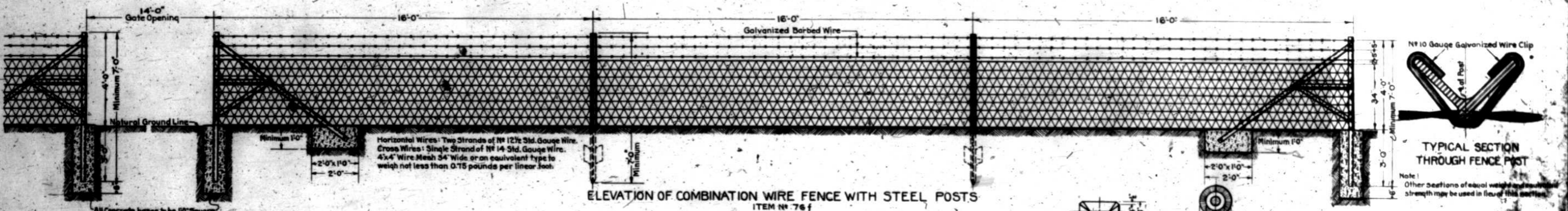
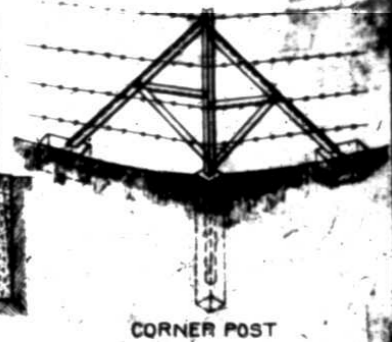
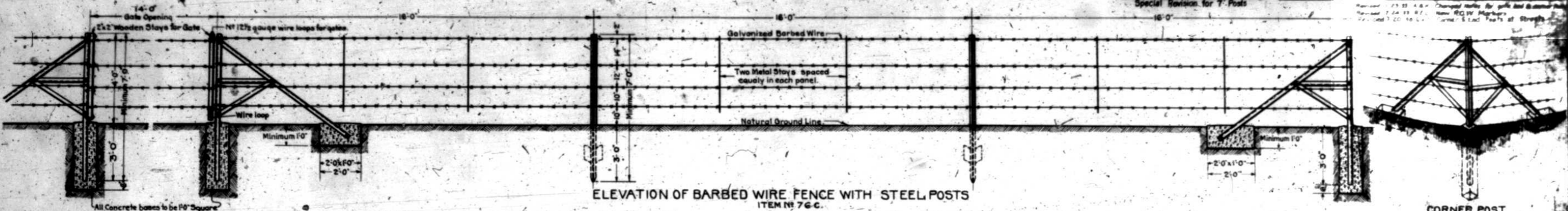
TREATED TIMBER

DESCRIPTION	SIZE	18'-6" SPAN	22'-6" SPAN	26'-6" SPAN
TIMBER HEADER	1 PC	8' 0" x 6' 0" FINISH TO 1/8"	240	
CAP	1 PC	12' 0" x 4' 0"	480	
BULKHEAD PLANKS	4 PCS	3' 0" x 3' 0"	304	
BACKING PLANKS	6 PCS	4' 0" x 3' 0"	712	
STRINGER BLOCKING	18' 6" & 22' 6" SPANS	1 PC	6' 0" x 18' 0"	108
Cut before treatment	26' 6" SPANS	1 PC	6' 0" x 18' 0"	108
TOTAL TREATED TIMBER			2170	
PILING - TREATED		8 PIECES AT 24 LIN FT EACH	192	

ONE WING

DESCRIPTION	SIZE	18'-6" SPAN	22'-6" SPAN	26'-6" SPAN
HANDRAILS S4S	3x6	1 1/2 x 0' 20	1 1/2 x 0' 18	1 1/2 x 0' 16
HANDRAIL POSTS S4S	6x6	3 1/2 x 0' 36	3 1/2 x 0' 32	3 1/2 x 0' 28
TOTAL UNTREATED TIMBER - BD FT				

Special provision for T-Posts



NOTES FOR PROJECT MARKER POSTS

All letters and numbers shall be 2" plain upright black, rounded or stenciled on the concrete with a good quality of black paint. See Item No 41 Second Field Coat-Black.

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

Posts to be set with sign facing the road at the end of the project, five feet beyond 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.

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 no lines is to be stamped in the field by the engineering party, after post is placed. No letters & figures to be used.

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

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 No 12 1/2 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. Four Corner Posts and four Endposts shall be used at each structure over 4x4 in size and fence turned in and ended at wings.

All line posts to be structural steel to weigh not less than 200 lbs. per lineal foot.

Suitable anchor plates shall be securely riveted or welded to each line post.

All line posts to be painted with an approved water-proof asphalt or mineral paint or hot dip galv.

All corner, end and gate posts including braces are to be structural steel 2x2x1/2 angles to weigh not less than 3.15 lbs. per lineal foot, and to be painted with an approved water-proof asphalt or mineral paint or hot dip galvanized, except post supporting driveway gate item No 76h.

At all places where intersecting fences are encountered an end post is to be placed with the angle arm at right angles to the line of fence.

All footings or bases shall be of class A concrete with crowned tops and shall be included in the price bid per lineal foot of fence with metal posts.

If knee braces are omitted from end, corner and gate posts the vertical post must be at least 2 1/2 x 2 1/2 x 1/4.

ELEVATION OF WALK GATE
ITEM No 76i

Gate complete with hinges and latch to weigh not less than 18 lbs. Pipe frame to be minimum dia. galvanized pipe or an equivalent 2x4 single strand wire mesh filler or an equivalent type. Width of mesh approximately 40". Horizontal wires No 10 gauge. Cross wires No 12 1/2 gauge. Galvanized metal latch and hinges.

COLORADO STATE HIGHWAY DEPARTMENT

STANDARD WIRE FENCES WITH STEEL POSTS AND MARKER POSTS

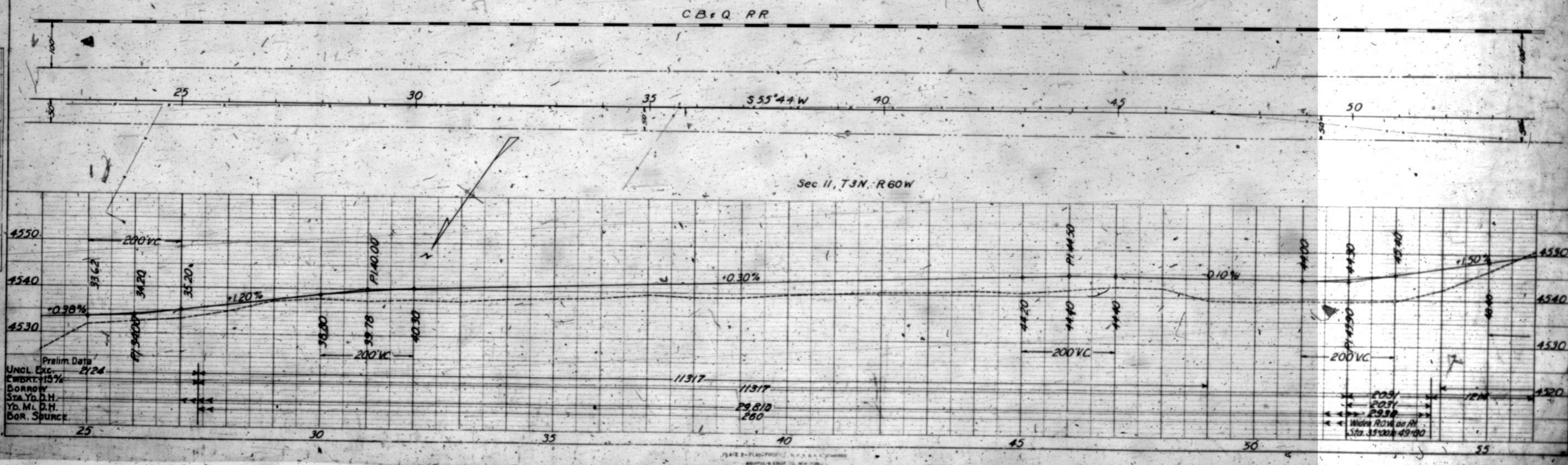
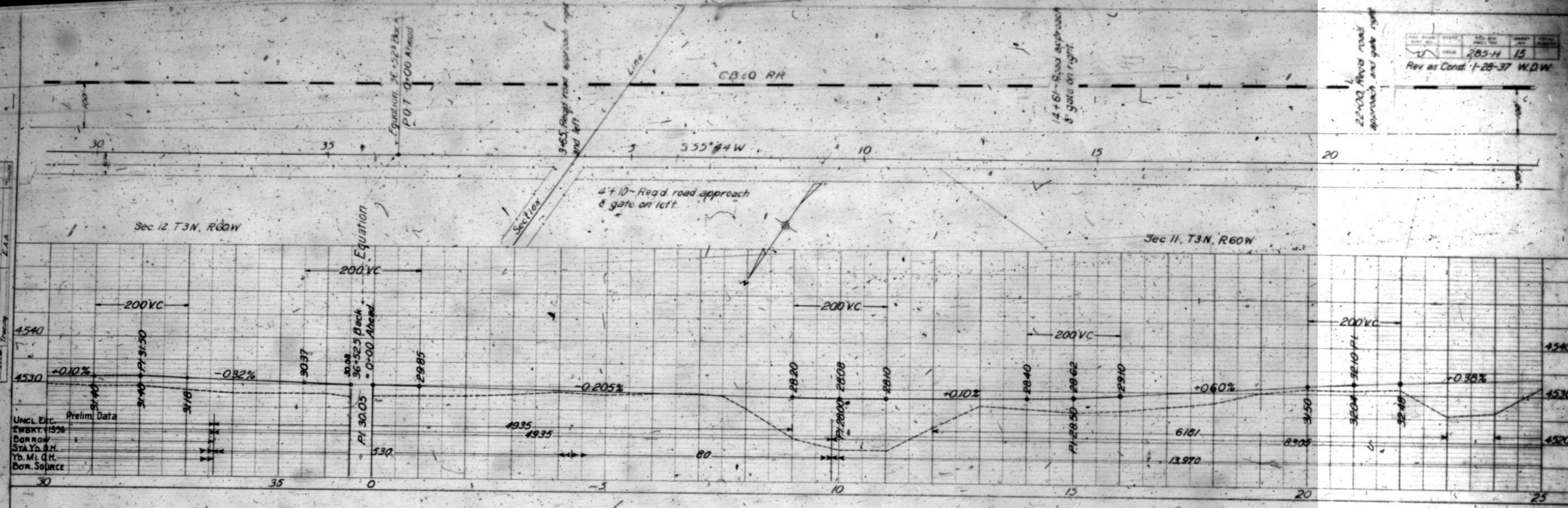
Designed by A.G.K. Approved by [Signature]

Made by A.G.K. Bridge Engineer

Checked by [Signature] Date: 2-26-36

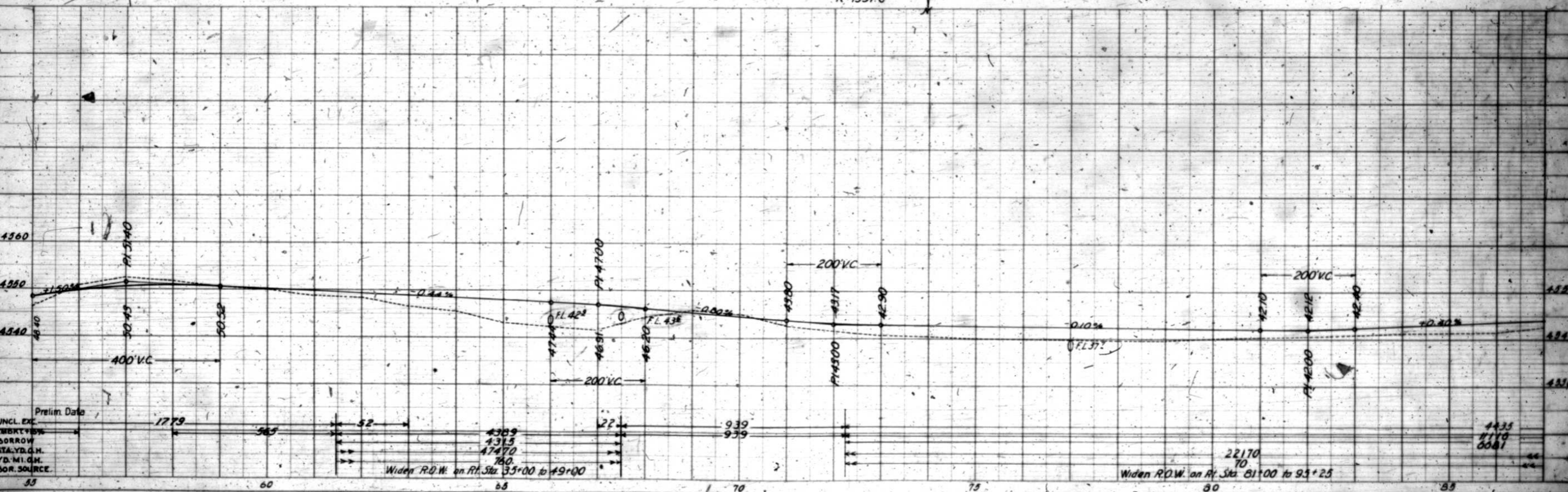
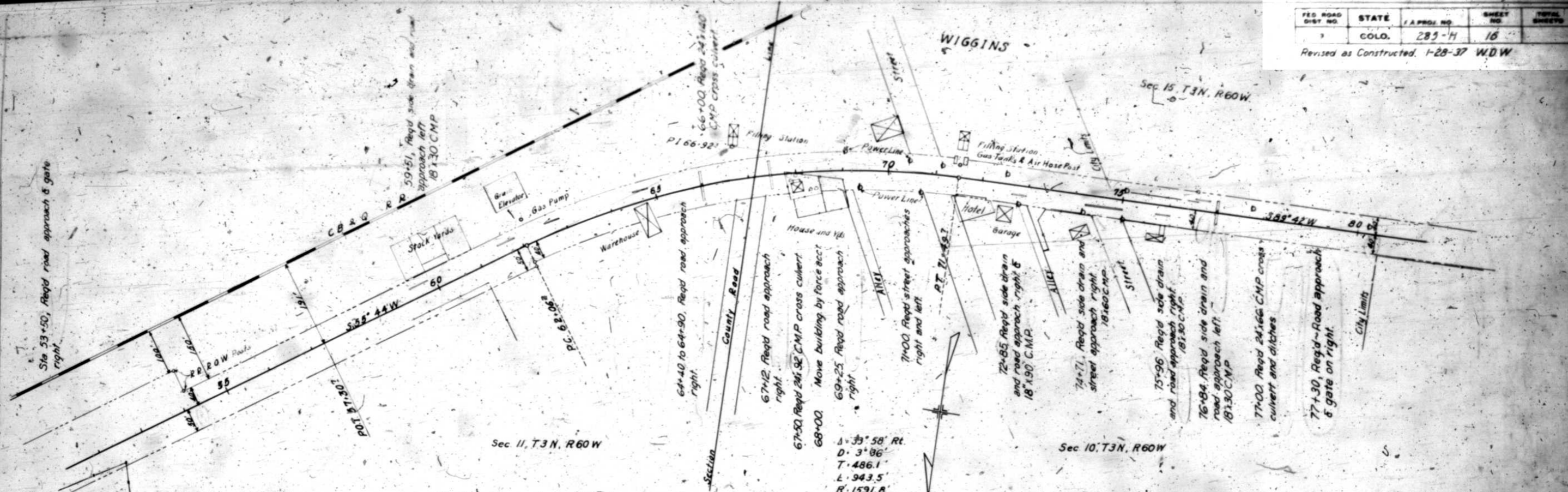
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 PLOTTED
 CHECKED
 NO. 4729
 DATE 1-28-37

PROFILE
 SURVEYED
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 PLOTTED
 CHECKED
 NO. 3980
 DATE 1-28-37



FED. ROAD DIST. NO.	STATE	F.A. PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLORADO	285-H	16	

Revised as Constructed. 1-28-37 WDW



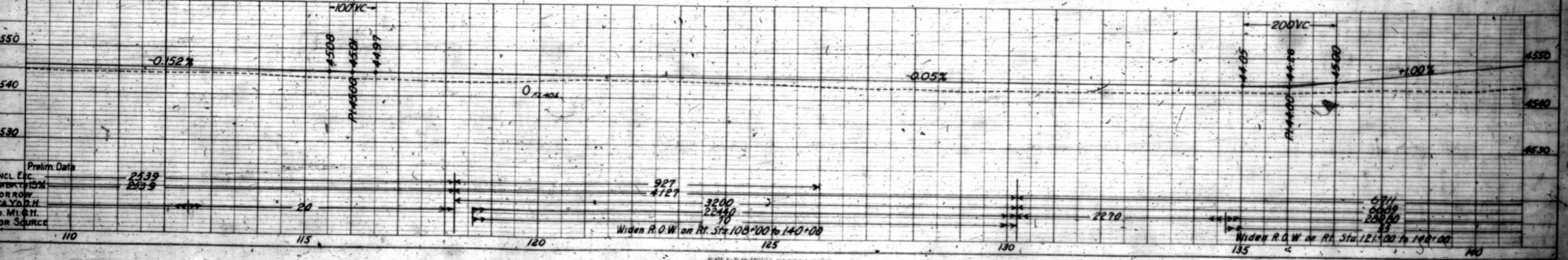
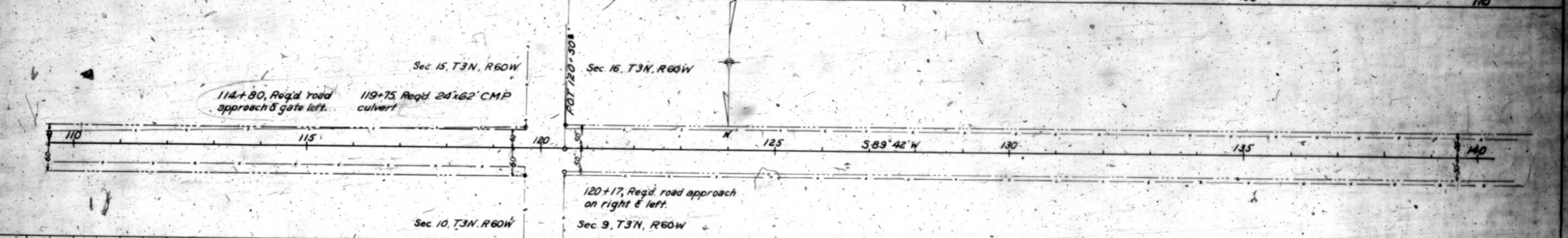
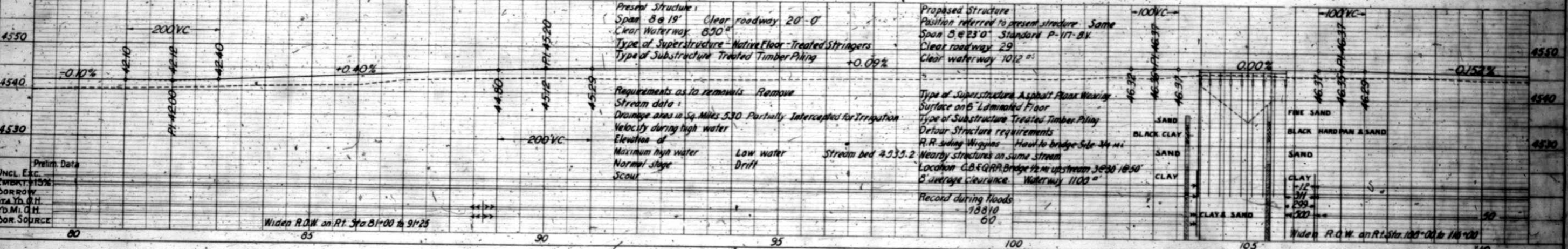
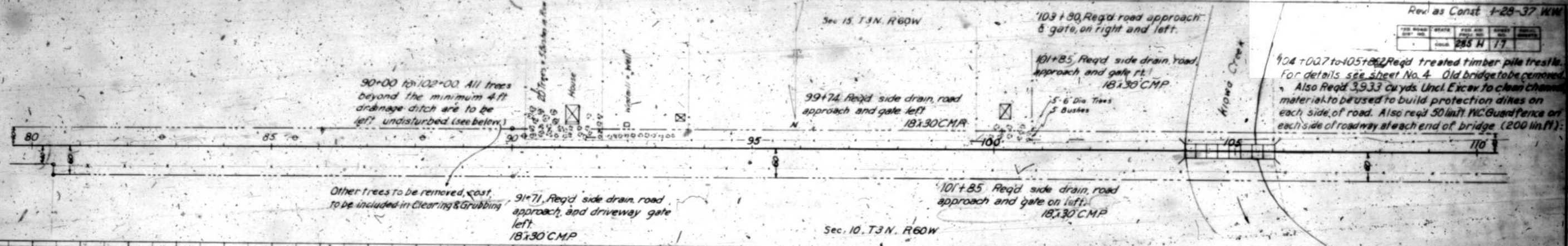
CLASS - PLAN (PROFILE) OF ROAD STRADDLING THE PRESENTED PORTION OF SECTION

THE ROAD DIST. NO.	DATE	PREP. BY	CHECKED BY	SCALE
285 H 17				

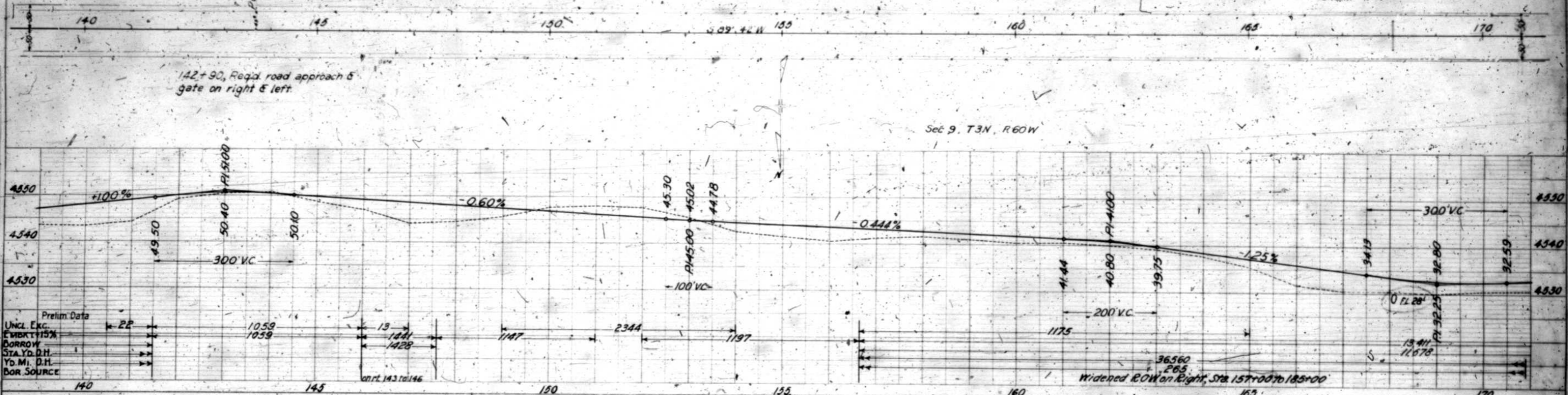
104+00.7 to 105+82.2 Req'd treated timber pile trestle. For details see sheet No. 4. Old bridge to be removed. Also req'd 3,933 cu yds. Uncl. Excav. to clean channel material to be used to build protection dikes on each side of road. Also req'd 50 lin ft. W.C. Guard fence on each side of roadway at each end of bridge (200 lin ft.).

90+00 to 102+00 All trees beyond the minimum 4 ft drainage ditch are to be left undisturbed (see below)

Other trees to be removed, cost to be included in Clearing & Grubbing

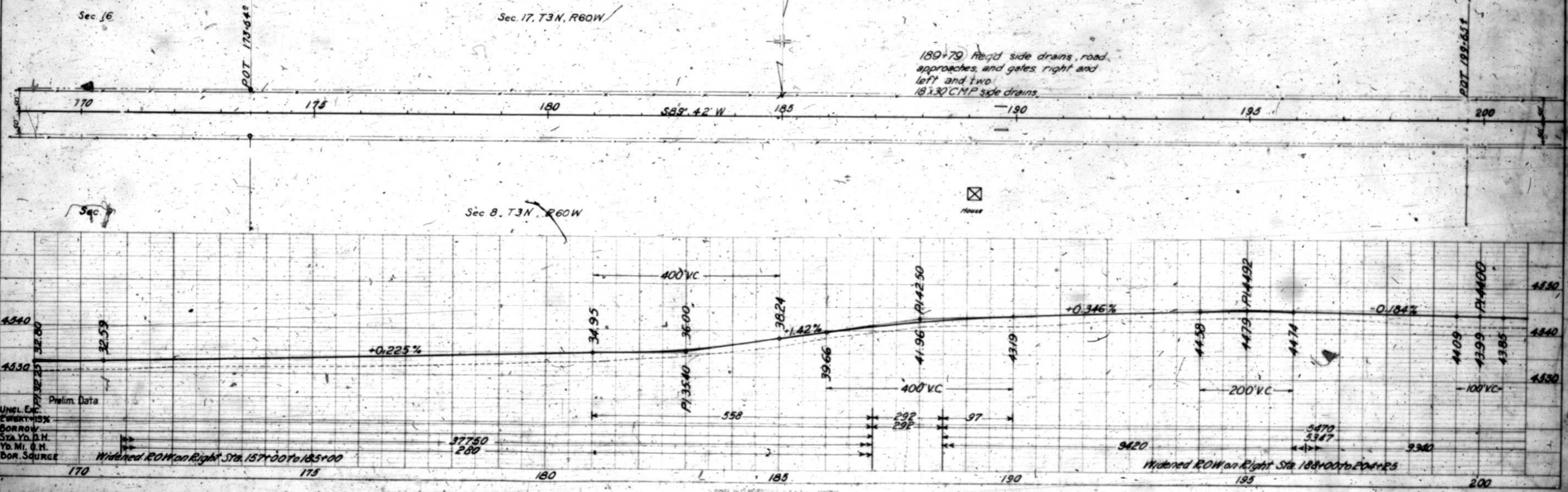


168+10 Reqd 24x64 CMP
culvert



Prelim Data

UNCL. E.C.	22'
E.W.B.K.T. 15%	1059
BORROW	13
Sta. Yd. D.H.	1441
Yd. M. D.H.	1428
BOR. SOURCE	1147



Prelim Data

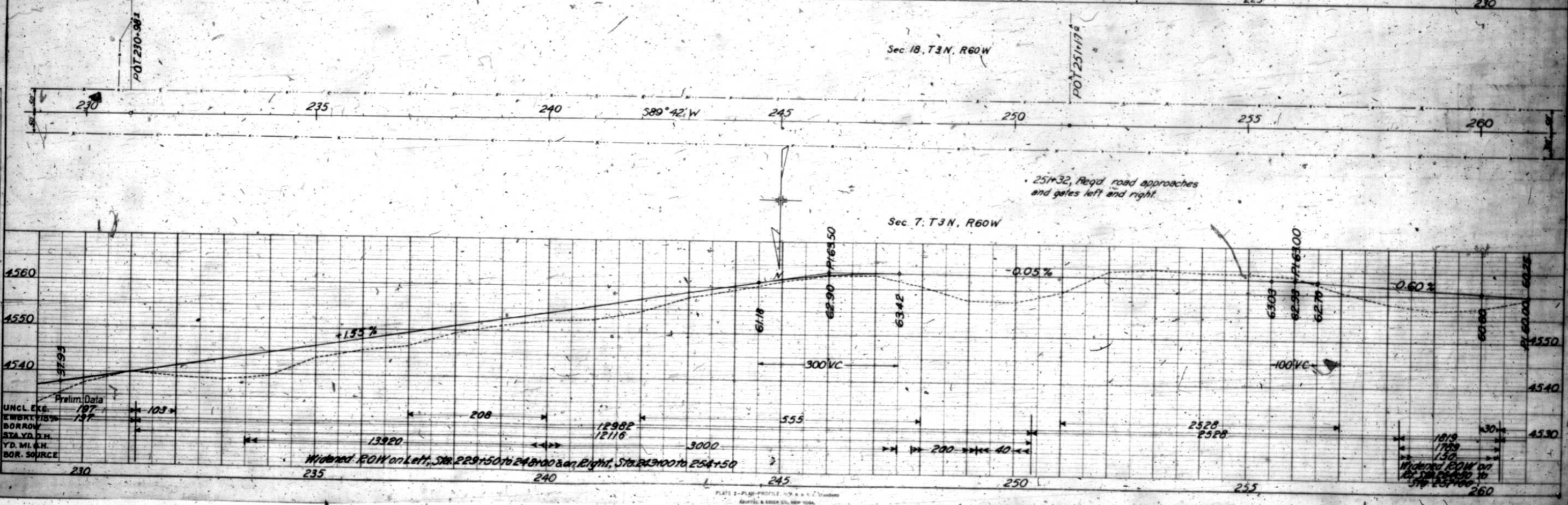
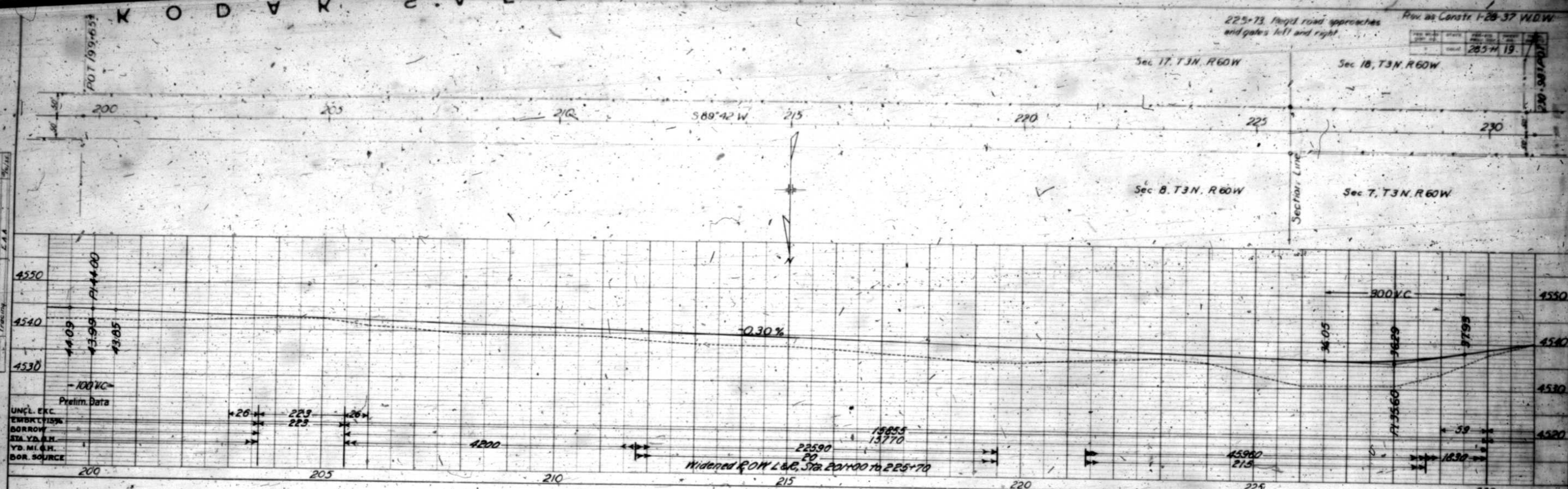
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E.W.B.K.T. 15%	280
BORROW	558
Sta. Yd. D.H.	292
Yd. M. D.H.	292
BOR. SOURCE	97

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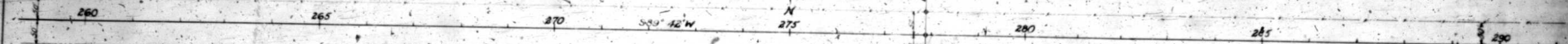
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 L.A.A.

PROFILE
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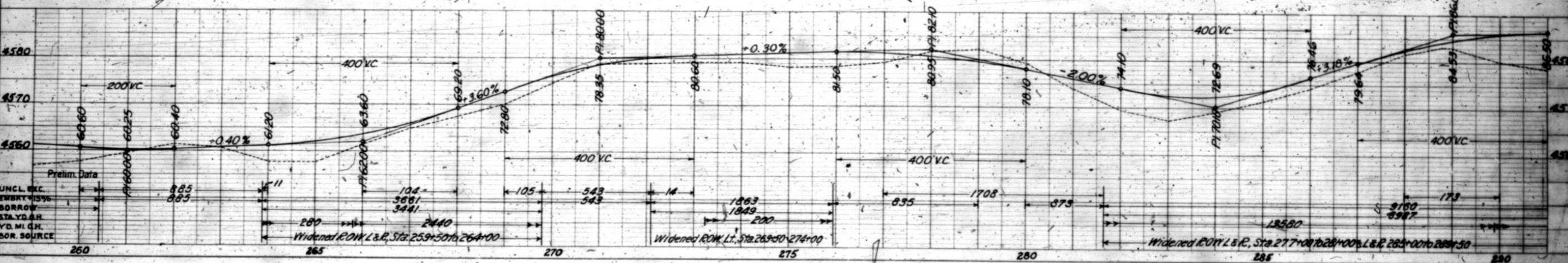
Sec 18, T.3N, R.60W

Sec 13, T.3N, R.61W



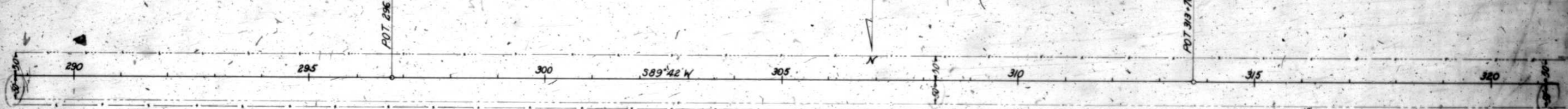
Sec 7, T.3N, R.60W

Sec 12, T.3N, R.61W

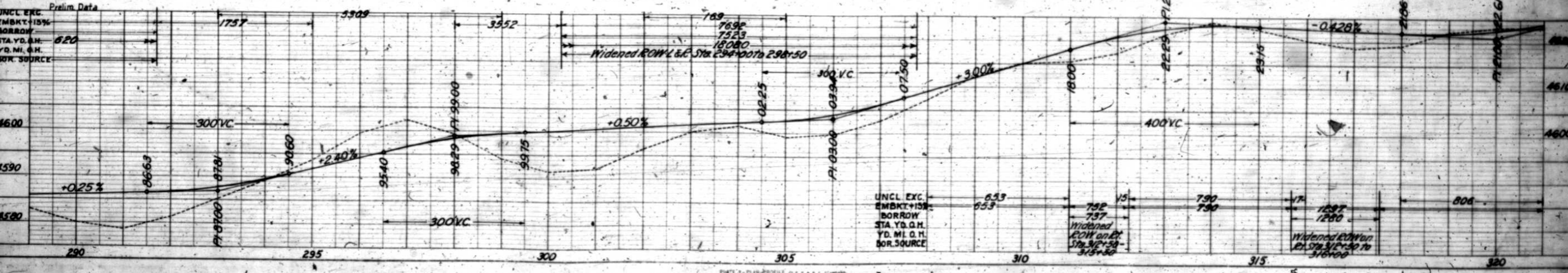


Sec 13, T.3N, R.61W

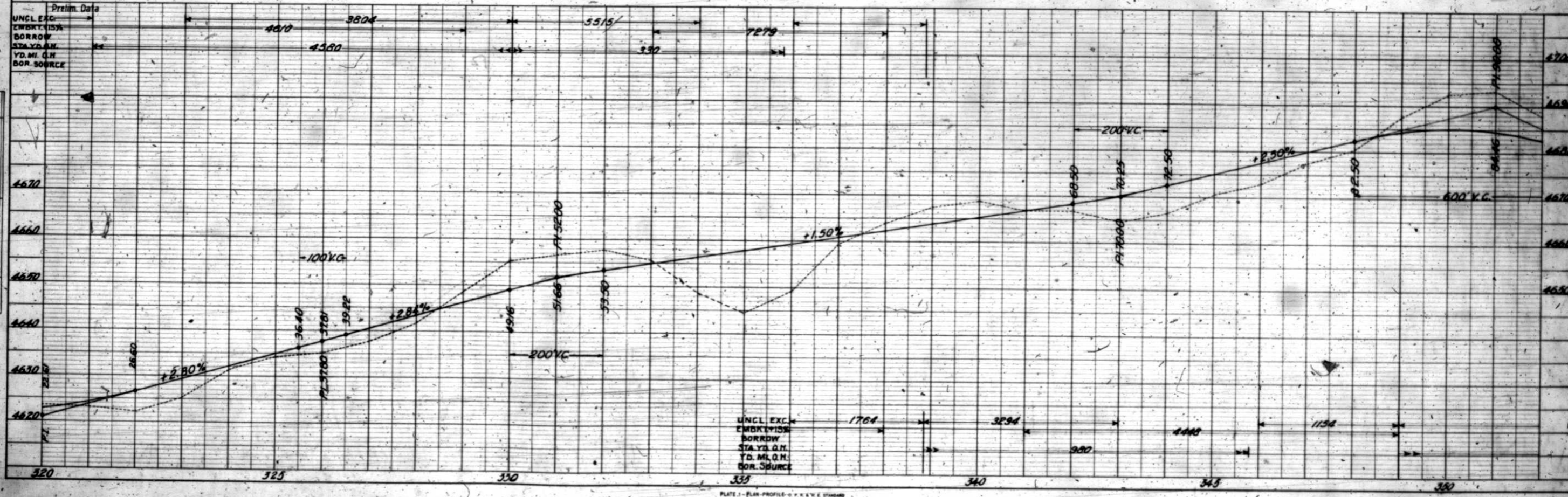
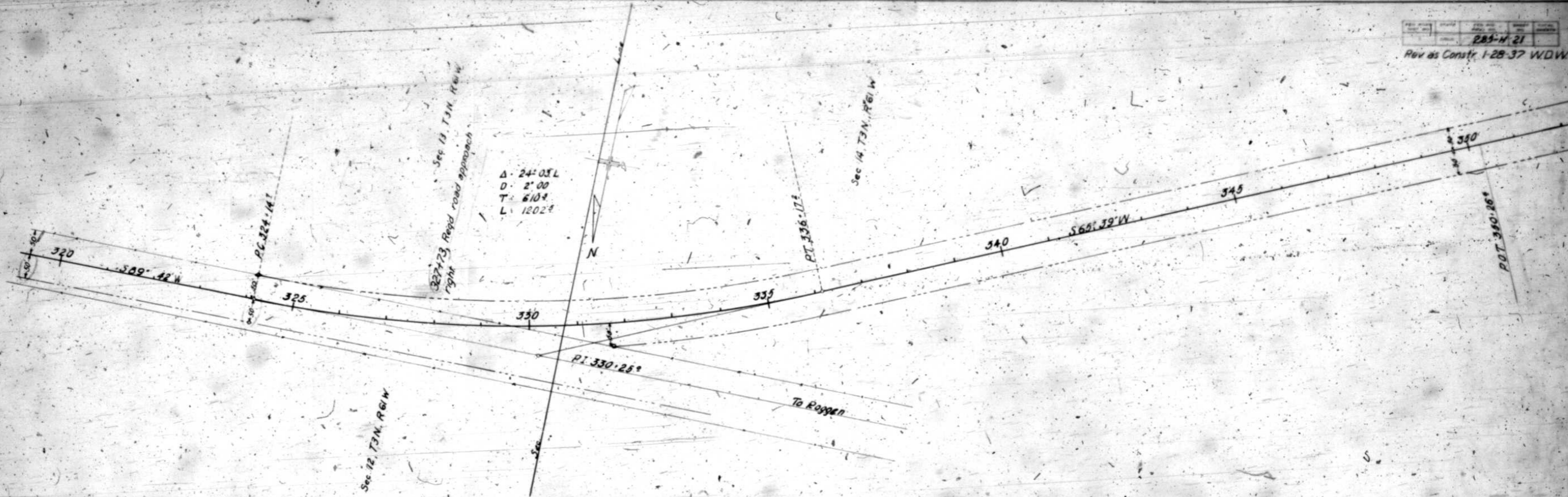
Sec 12, T.3N, R.61W



Sec 12, T.3N, R.61W



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 DATE
 PLOTTED
 ALIGNED CHECKED
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 NO. OF SHEETS 12
 SHEET NO. 11



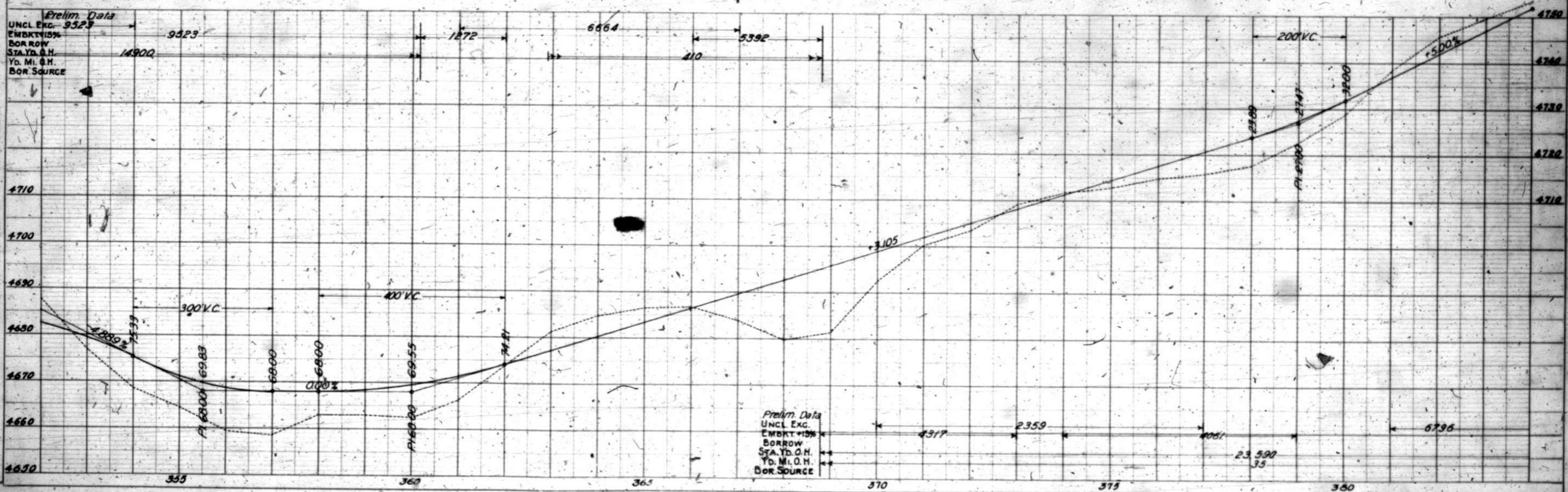
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 NO. OF SHEETS 12
 SHEET NO. 11

REG. ROAD DIST. NO.	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
	COLO.	283-H	22	

Revised as Constructed 1-28-37 W.D.W.

361+00, Reg'd road approach
S gate on left.

Sec 14, T3N, R6W

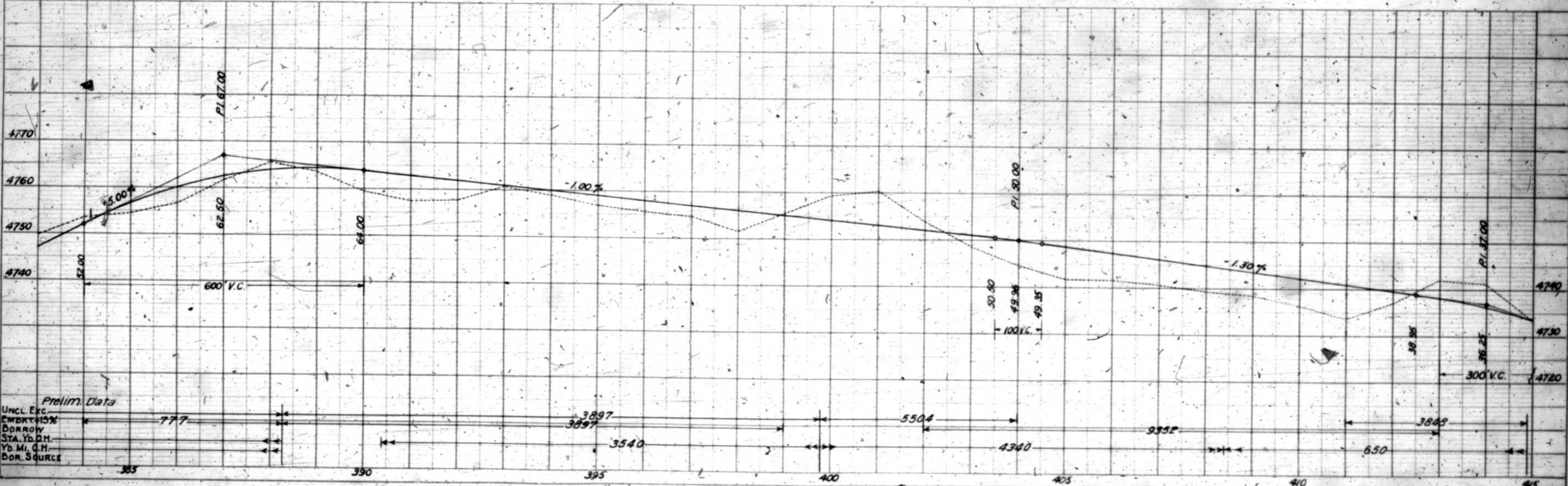
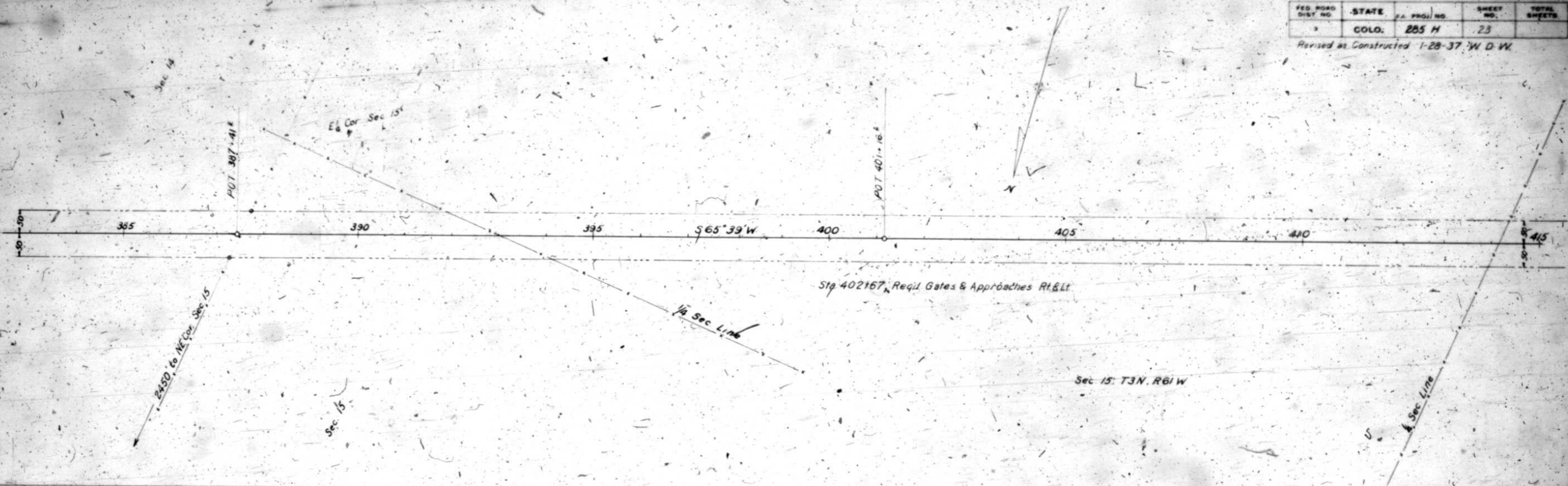


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APPROVED

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DATE
BY
CHECKED
APPROVED

FED. ROAD DIST. NO.	STATE	P.A. PROJ. NO.	SHEET NO.	TOTAL SHEETS
	COLORADO	285 H	23	

Revised as Constructed 1-28-37 W.D.W.



Prelim. Data
 UNCL. E.C.
 EMBKT. 15%
 BORROW
 STA. Y.D. D.H.
 Y.D. MI. C.H.
 DOR. SOURCE

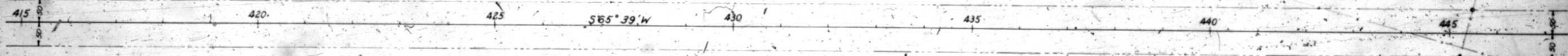
PLAN
 SHEET NO. 23
 TOTAL SHEETS 23

PROFILE
 SHEET NO. 23
 TOTAL SHEETS 23

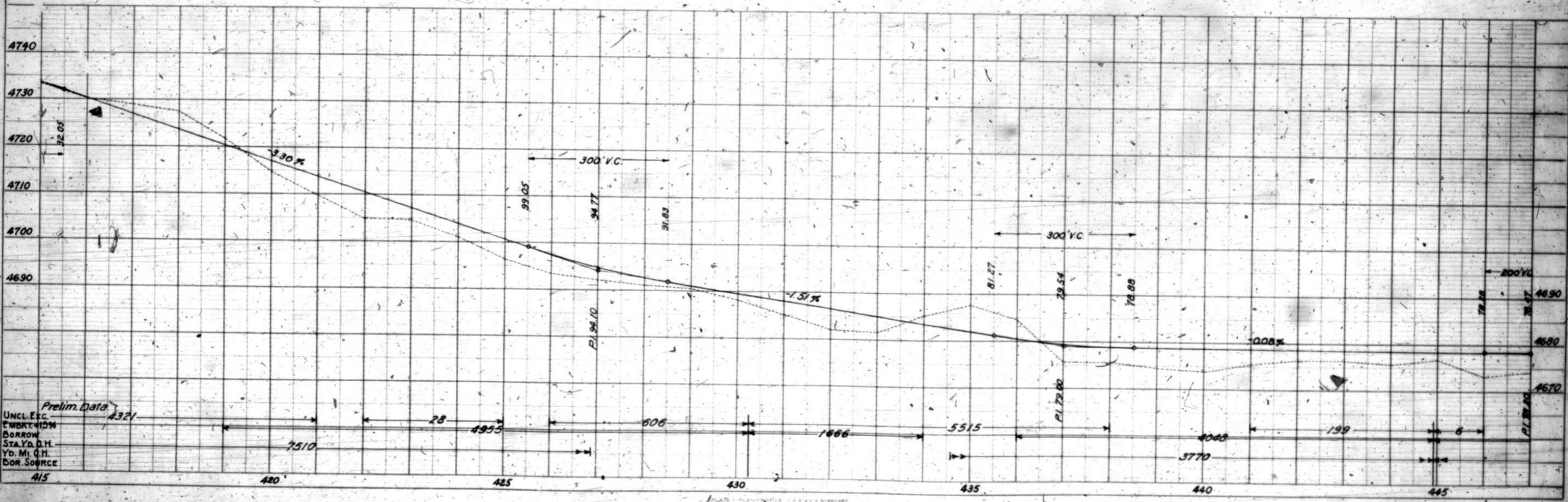
FED. ROAD DIST. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
	COLO.	285-H	24	

Rev as Constr 1-28-37 WDW

445+00, Reg'd road open to gate on right & left.



Sec 15, T3N, R6W



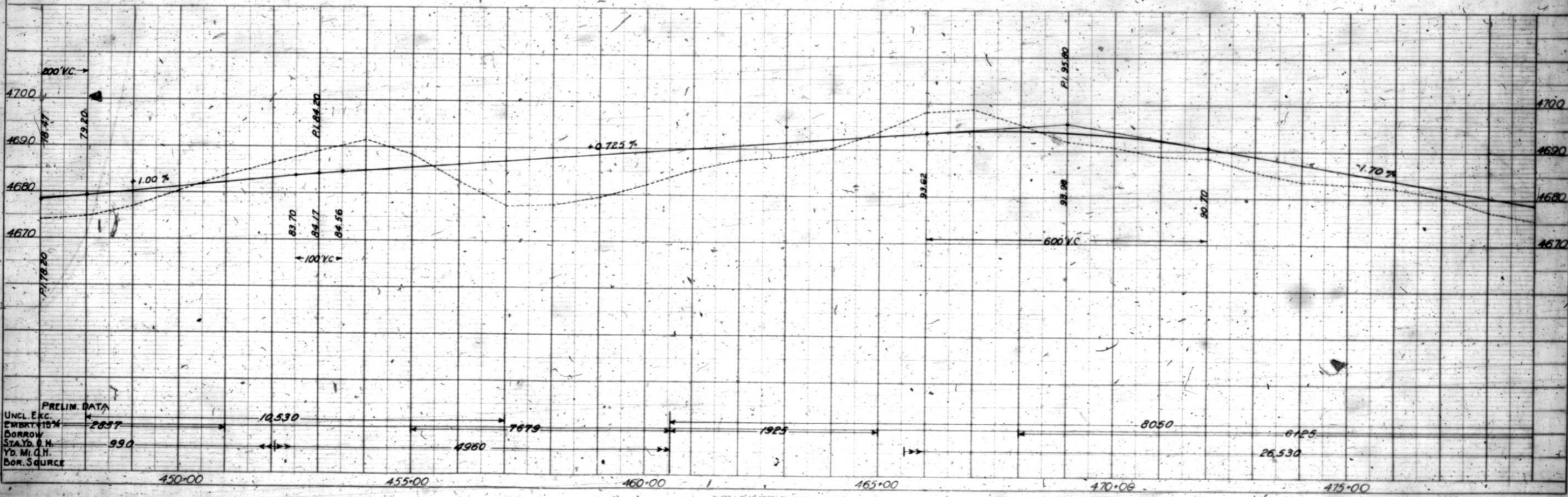
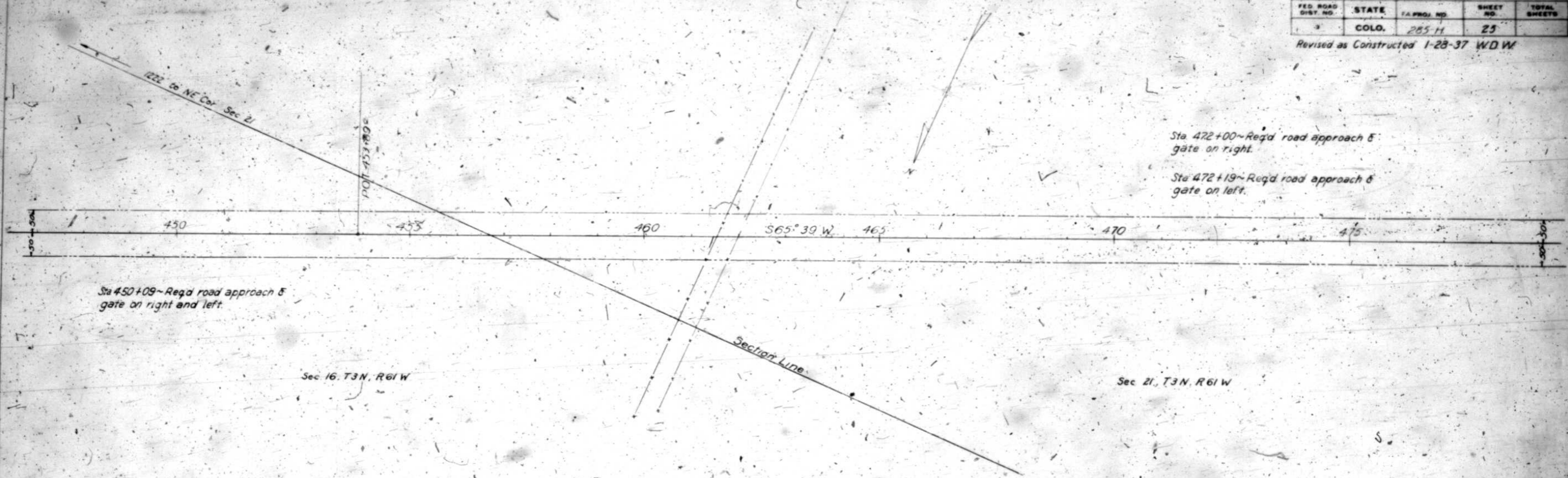
UNCL. EXC.
EMBKT. 415M
BORROW
STA. YD. D.H.
YD. MI. C.H.
DOR. SOURCE

PLAN
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PLotted
NOTE BOOK
No. 4700
Tres. 49

PROFILE
NOTED
PLotted
NOTE BOOK
No. 4687

FED. ROAD DIST. NO.	STATE	F.A. PROJ. NO.	SHEET NO.	TOTAL SHEETS
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Revised as Constructed 1-23-37 W.D.W.

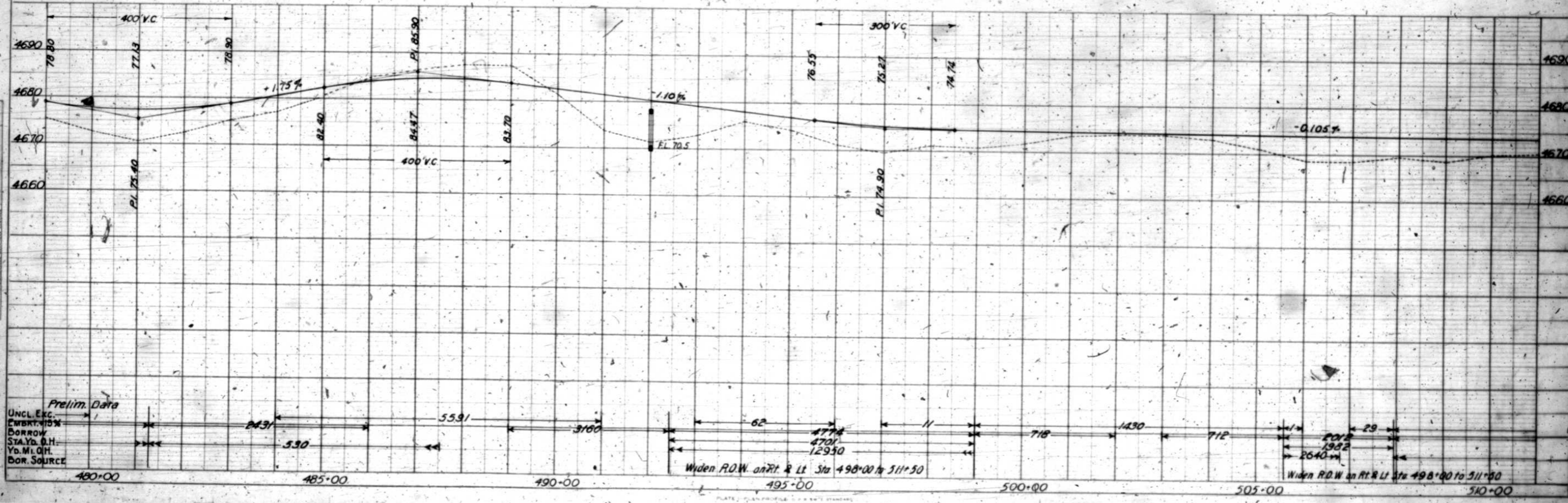
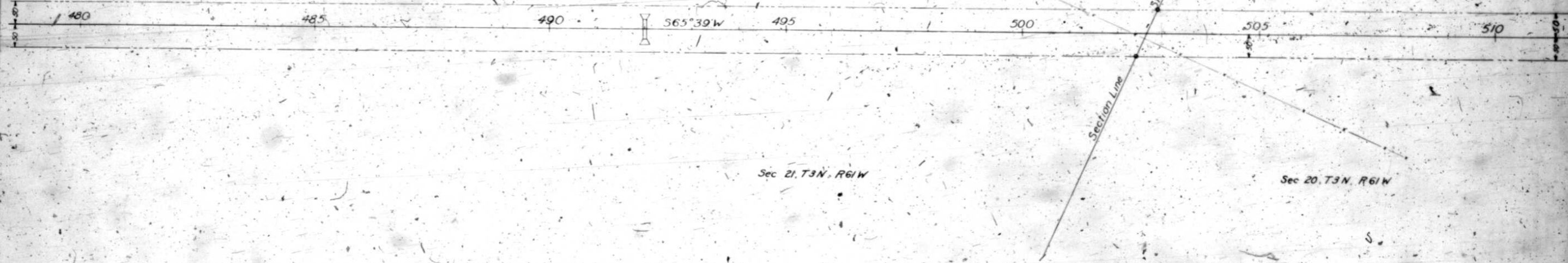


V E L A V E I T W

FED. ROAD DIST. NO.	STATE	LA. PROJ. NO.	SHEET NO.	TOTAL SHEETS
	COLO.	285 H	26	

Revised as Constructed - 1-28-37 ELS

Sta 492+00 Req'd 6x 7x42 C.B.C.
Cattle pass



Prelim. Data

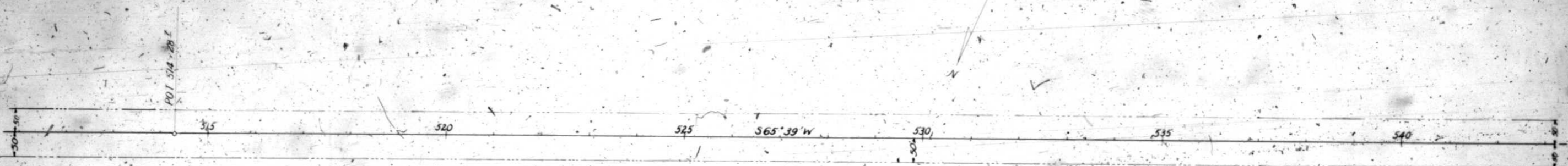
UNCL. E.C.C.	EMBKT. 10%	BORROW	STA. YD. O.H.	YD. M.I. O.H.	BOR. SOURCE
2431	550	5591	3160	62	11
				718	1430
				712	29
				2012	1982
				2640	

Widen R.O.W. on Rt. & Lt. Sta 498+00 to 511+50

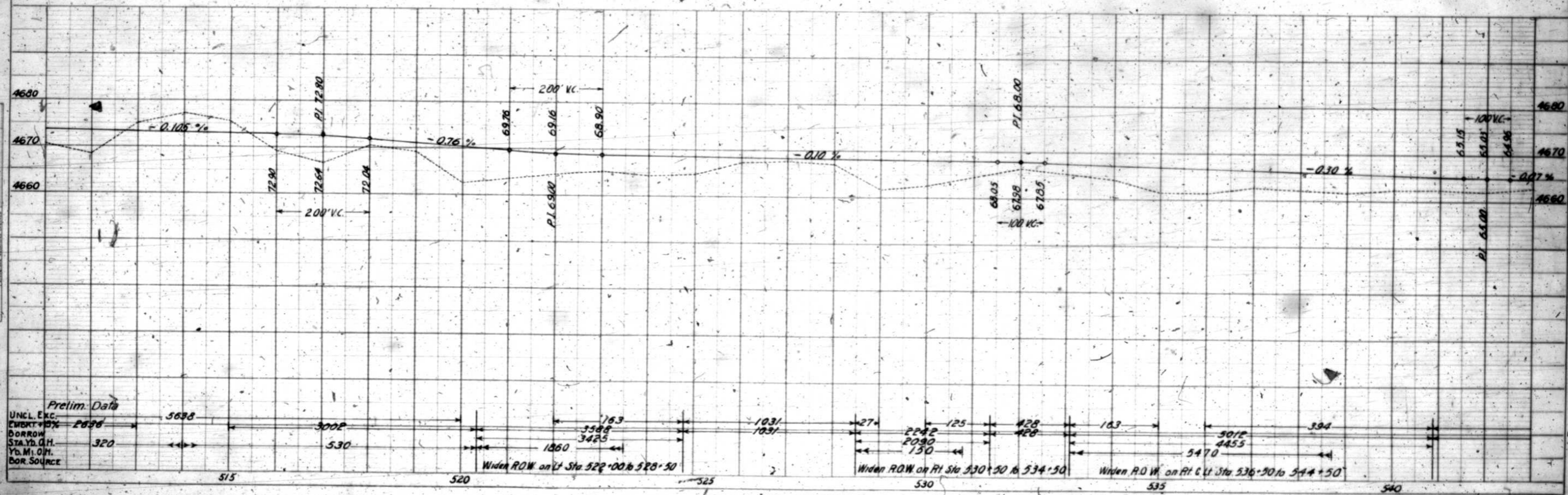
Widen R.O.W. on Rt. & Lt. Sta 498+00 to 511+00

PLATE: PLAN PROFILE 1/4" = 10' HORIZ. 1" = 10' VERT.

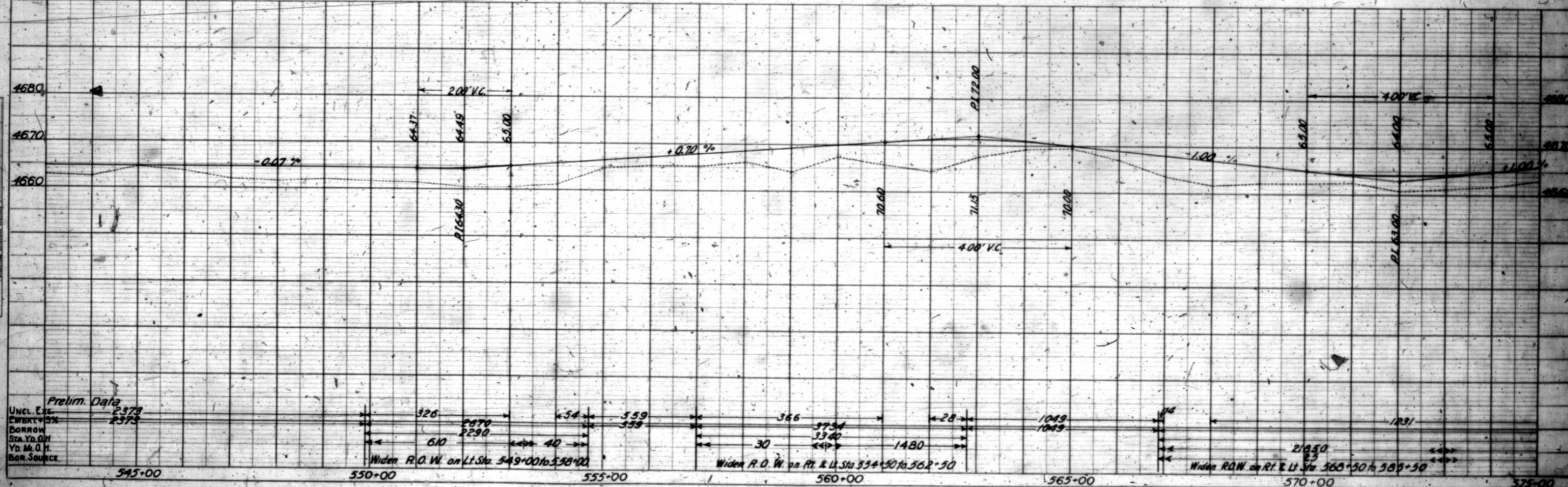
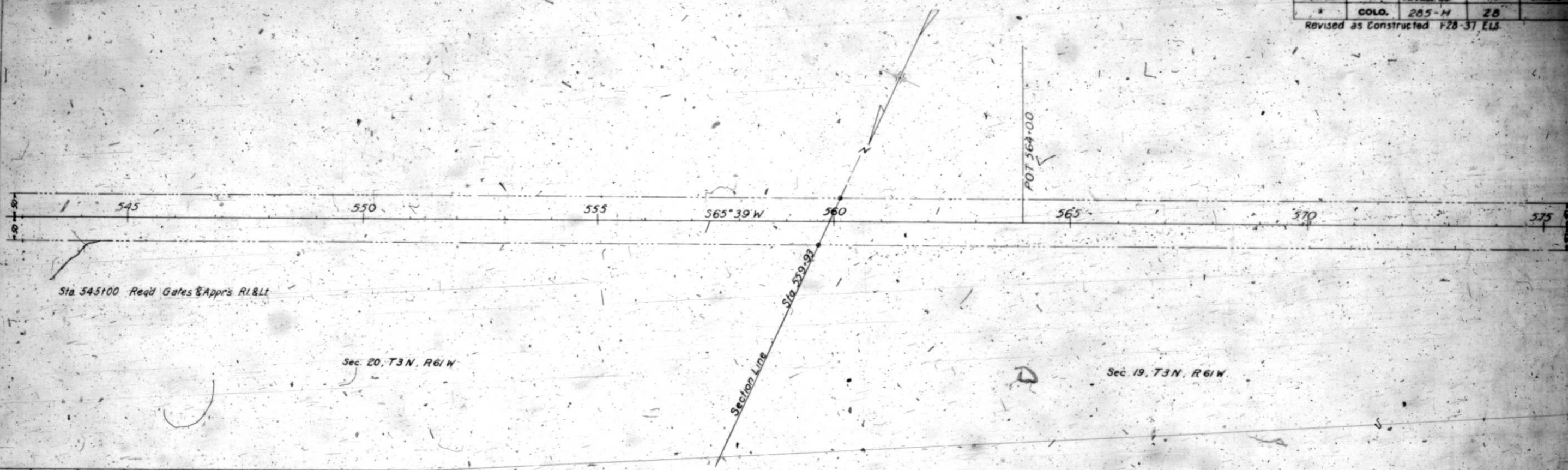
PLAN
 DATE: 11/15/50
 DRAWN BY: J. W. HARRIS
 CHECKED BY: J. W. HARRIS
 NO. 4786



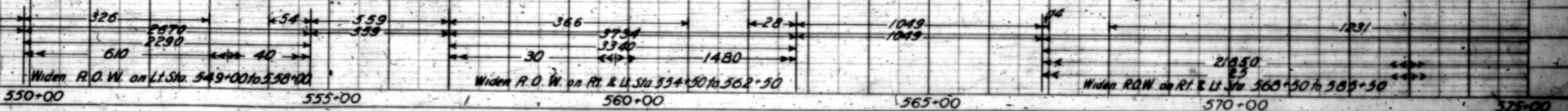
Sec 20, T.3 N., R.6 W



Revised as Constructed F28-37 ELS



Prelim. Data
 UNCL. Exc. 2373
 EMBRT 5% 2373
 BORROW
 STA. Yd. DIM.
 Yd. M. O. H.
 BOR. SOURCE



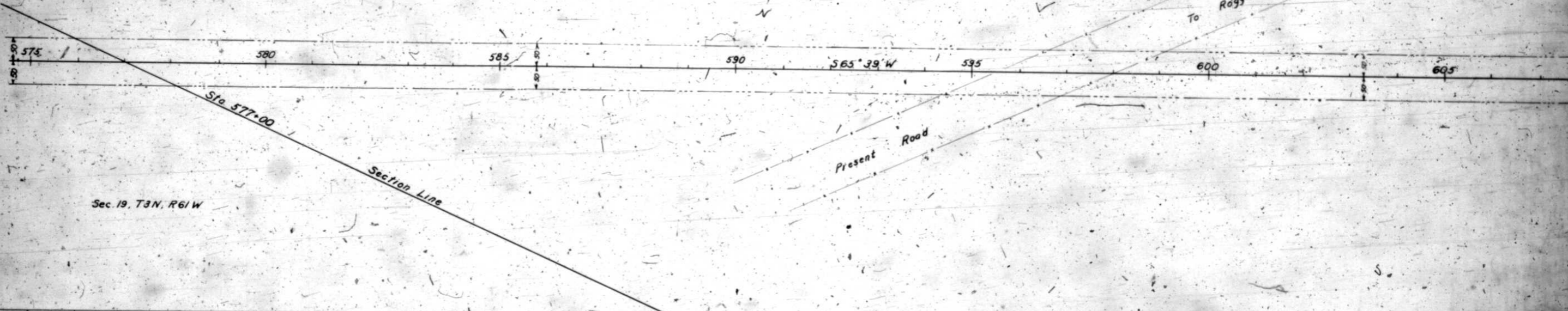
FED. ROAD DIST. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
	COLO.	285 H	29	

Revised as Constructed - 1-28-37, ELSHAW

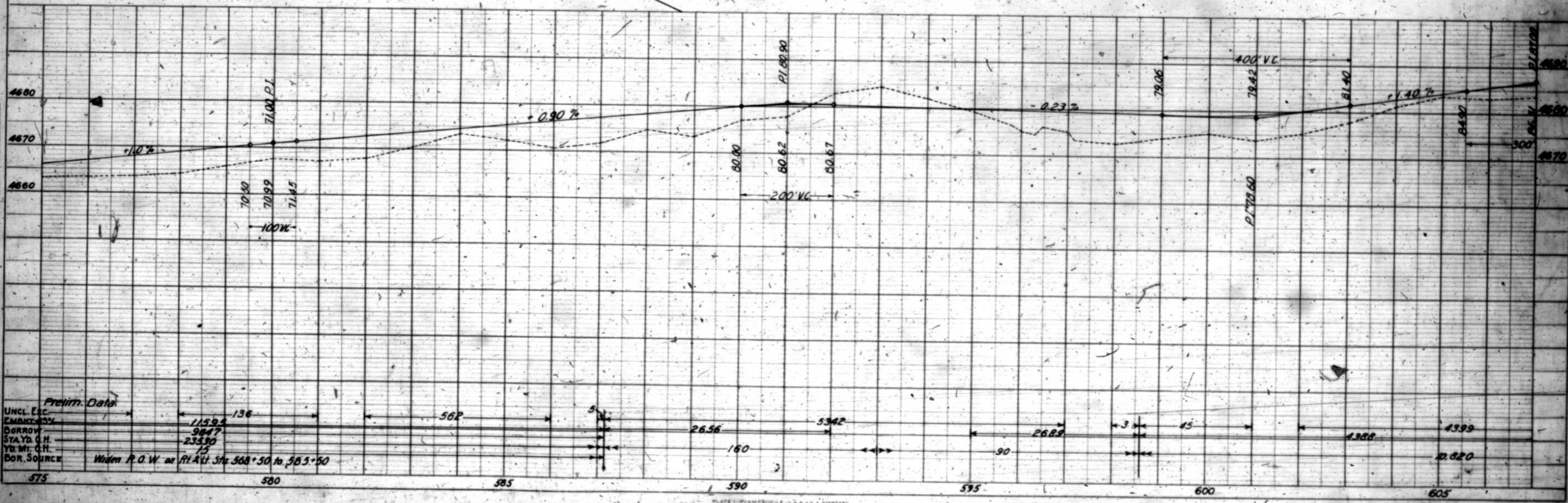
Sec. 30, T3N, R61W

597100 Road approaches r.l.t.

To Roggen



Sec. 19, T3N, R61W

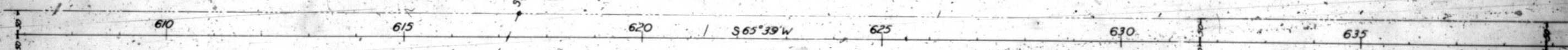


Prelim. Data

UNCL. E.C.	11594
EMAKT. 45%	9847
BORROW	23530
STA. YD. C.H.	15
YD. W. C.H.	
BOR. SOURCE	Widen P.O.W. on PI Alt Sta 568+50 to 585+50

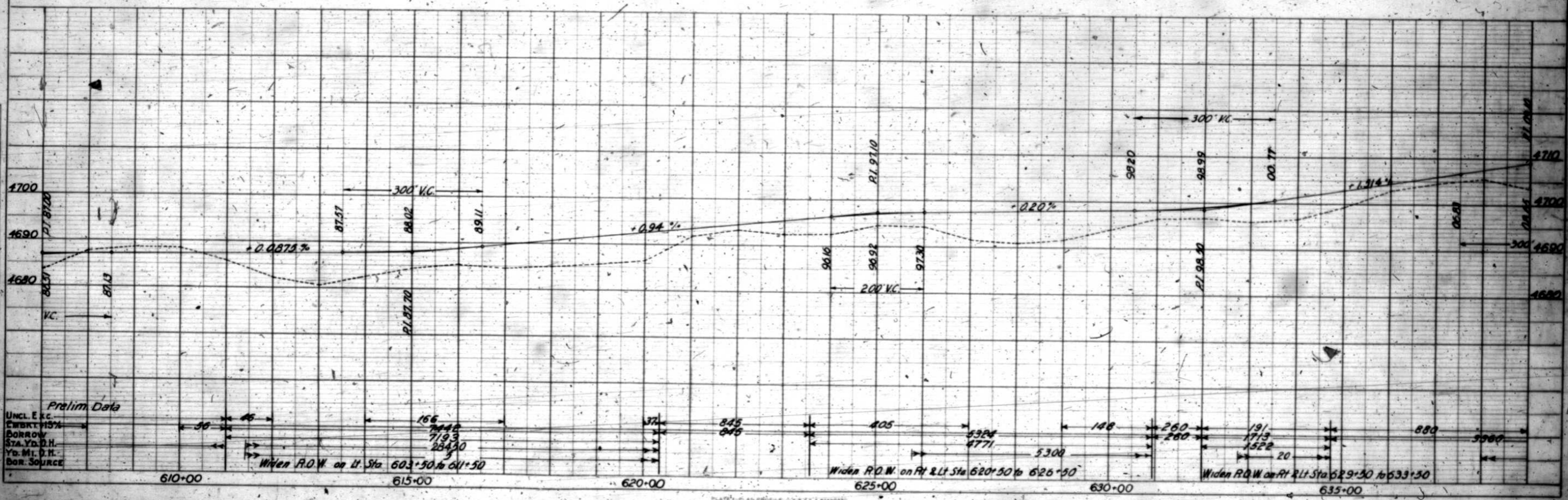
FED. ROAD DIST. NO.	STATE	LA PROJ. NO.	SHEET NO.	TOTAL SHEETS
	COLO.	285-H	30	

Revised as Constructed 1-28-37 E.L.S.



Sta. 621+82 Req'd Gates & Apprs. Rt & Lt.

Sec 30 T3N R61W
 378 617+19
 Reg'd Line
 R61W / R62W
 E of Sec 25 T3N R62W

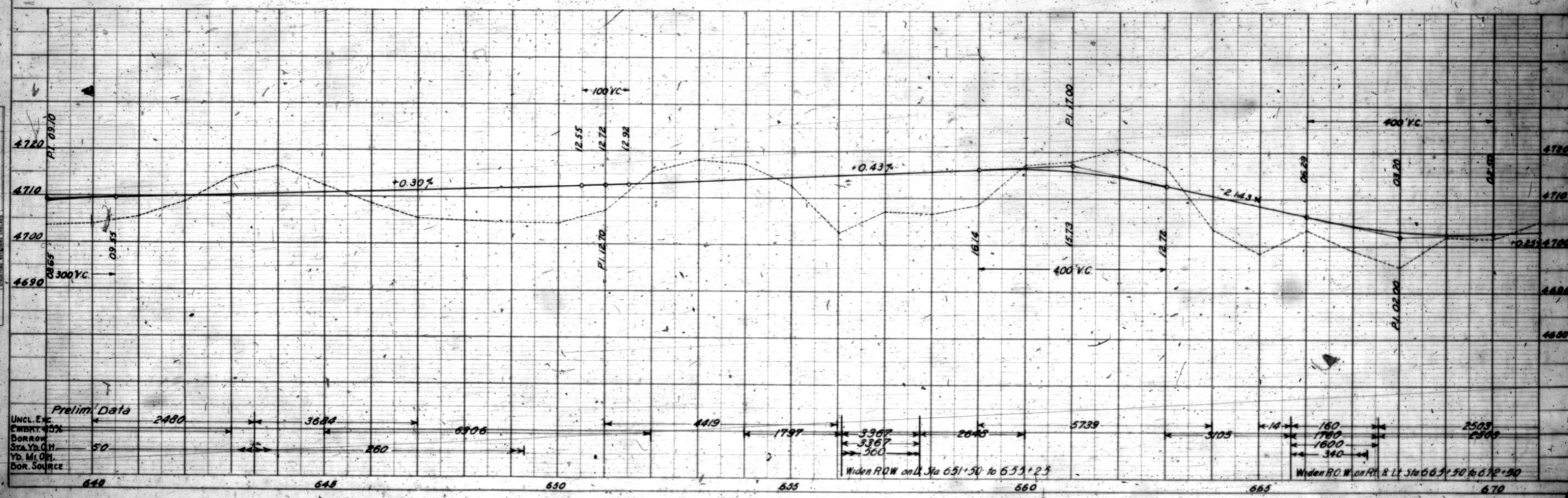
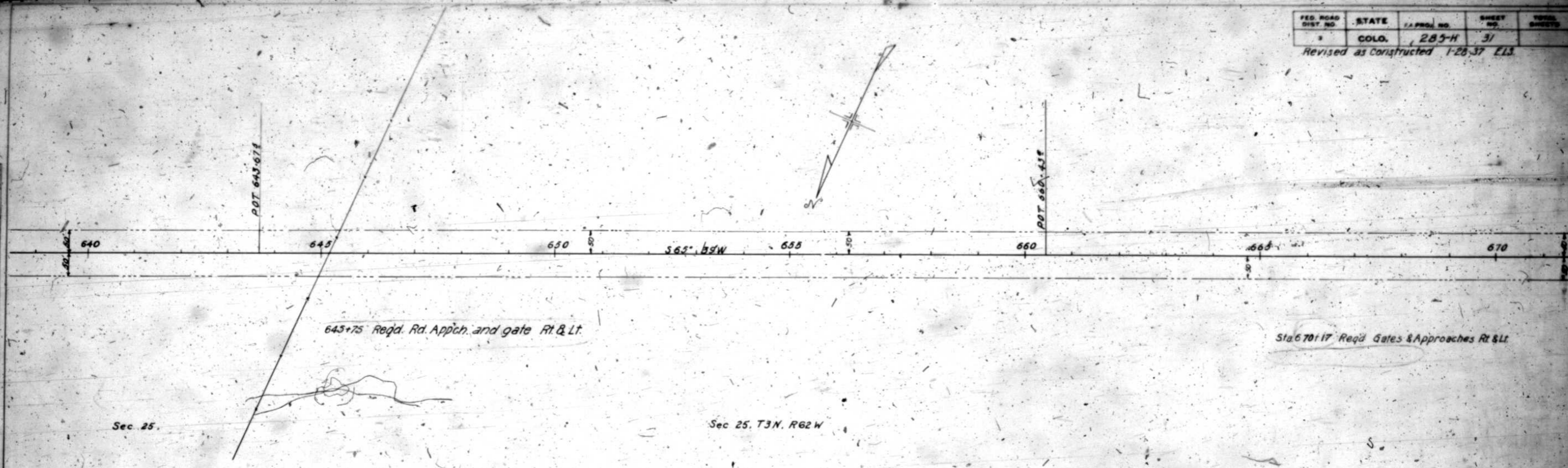


PLAN
 DATE
 DRAWN BY
 CHECKED BY
 IN CHARGE

PROFILE
 DATE
 DRAWN BY
 CHECKED BY
 IN CHARGE

PLAN
DATE
BY
CHECKED
APPROVED

PROFILE
DATE
BY
CHECKED
APPROVED



FED. ROAD DIST. NO.	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
	COLD.	285-H	32	
Revised as Constructed 1-28-37 E.L.S.				

Sec 35, T3N, R62W

Section Line Sta 691+26

665°39'W

675 680 685 690 695 700

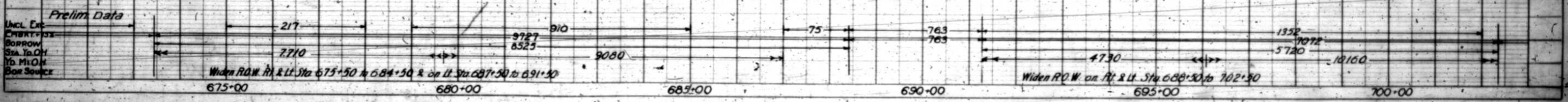
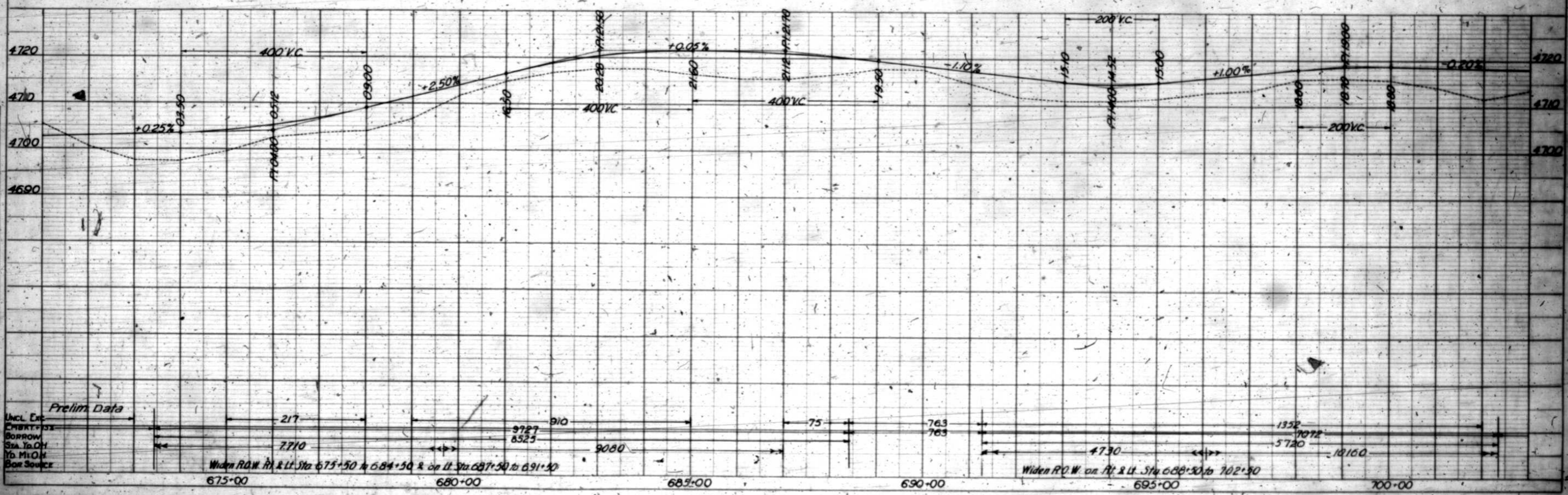
Sec 25

Sec 26, T3N, R62W

Sta 696+80 Reqd Gates & Approaches Rt & Lt

PLAN	DATE	BY
DESIGNED		
CHECKED		
APPROVED		
DATE		

PROFILE	DATE	BY
DESIGNED		
CHECKED		
APPROVED		
DATE		

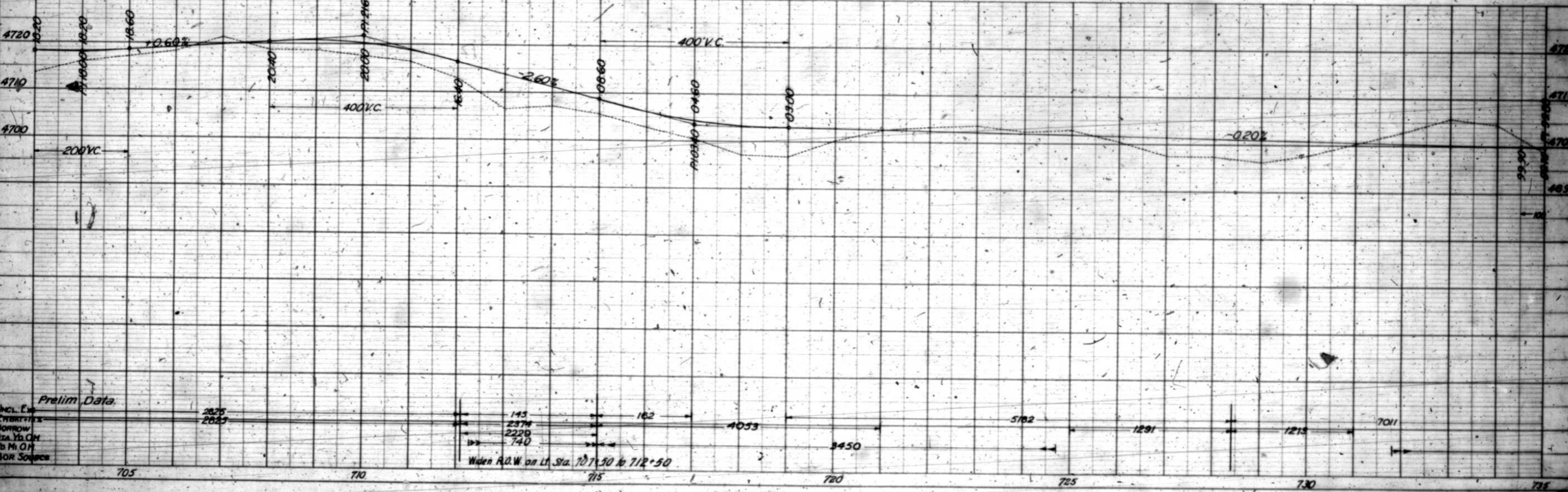
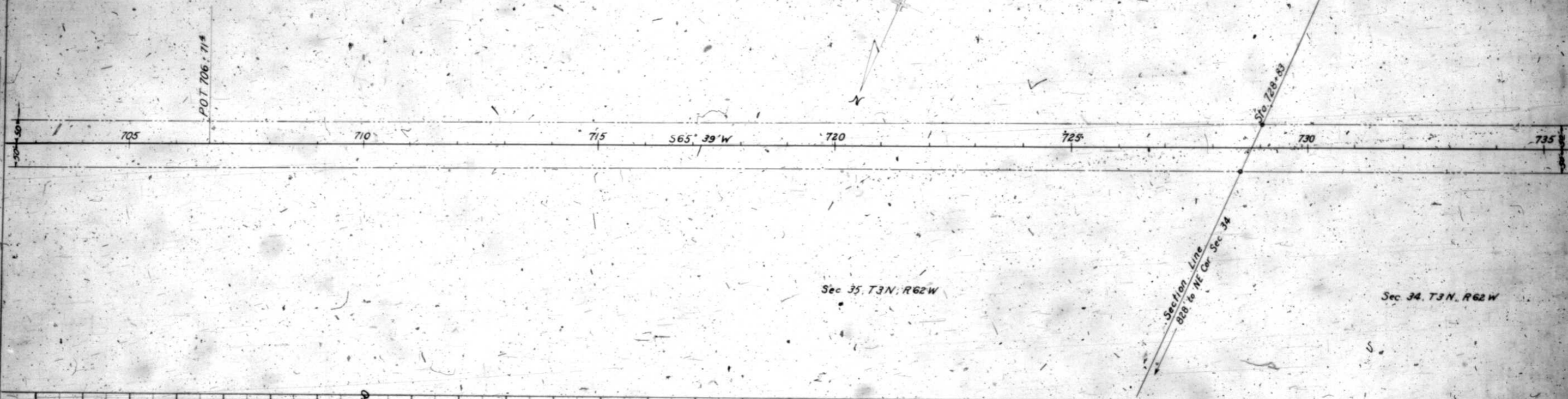


PLANNING PROFILE OF ROADWAY
THE ENGINEERS PORT CO., CHICAGO

FED. ROAD DIST. NO.	STATE	F.A. PROJ. NO.	SHEET NO.	TOTAL SHEETS
	COLO.	285 H	33	

PLAN	DATE	BY	CHKD.
DESIGNED			
CHECKED			
APPROVED			

PROFILE	DATE	BY	CHKD.
DESIGNED			
CHECKED			
APPROVED			



Prelim Data.

Uncl. Exp.	2825
EMBR/77X	2827
BORROW	
Sta. Yd. CM	
Yd. M. CM	
BOR SOURCE	

Widen R.O.W. on Lt. Sta. 707+50 to 712+50

145	162	4053	5182	1291	1215	7011
237						
222						
740						

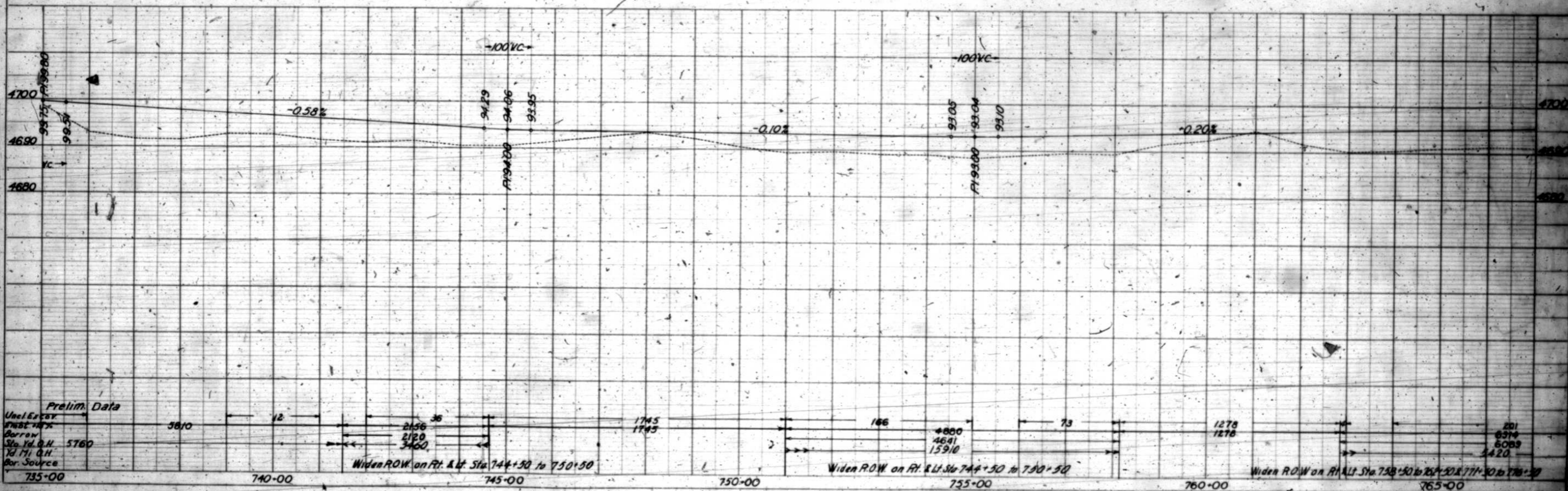
FED. ROAD DIST. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
	COLO.	285-H	34	
Revised as Constructed 1-28-37 E.L.S.				

735 740 745 750 755 760 765

S65°39'W / 750

Sta 745+40 Req'd Gates & Apprs RI<

Sec 34, T3N, R62W



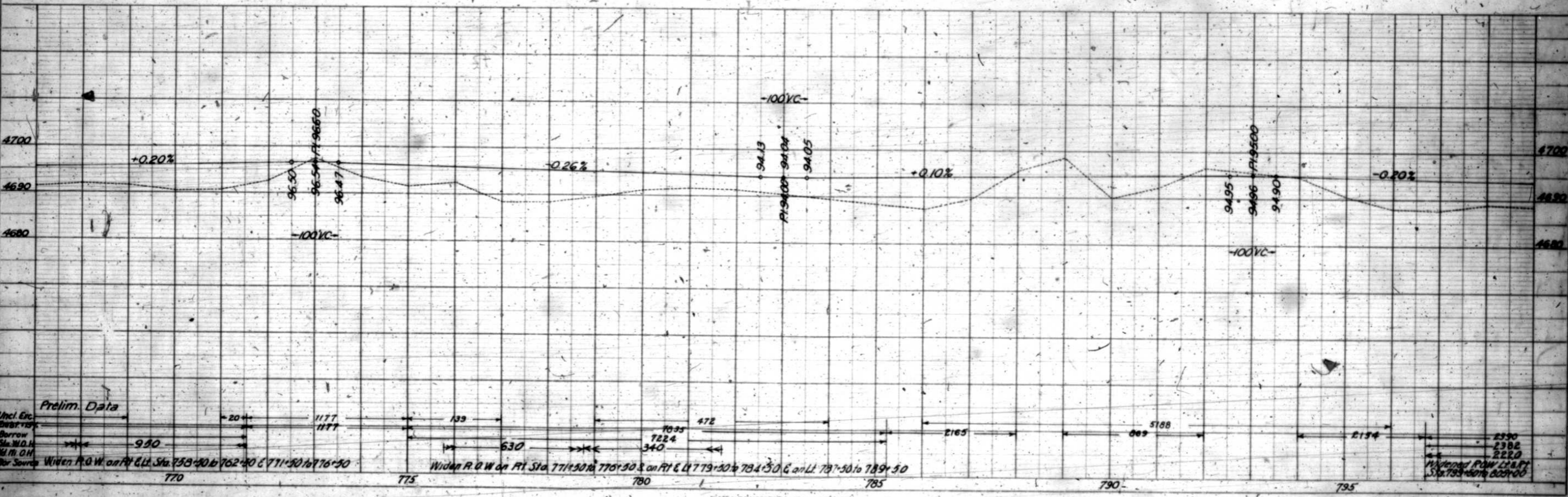
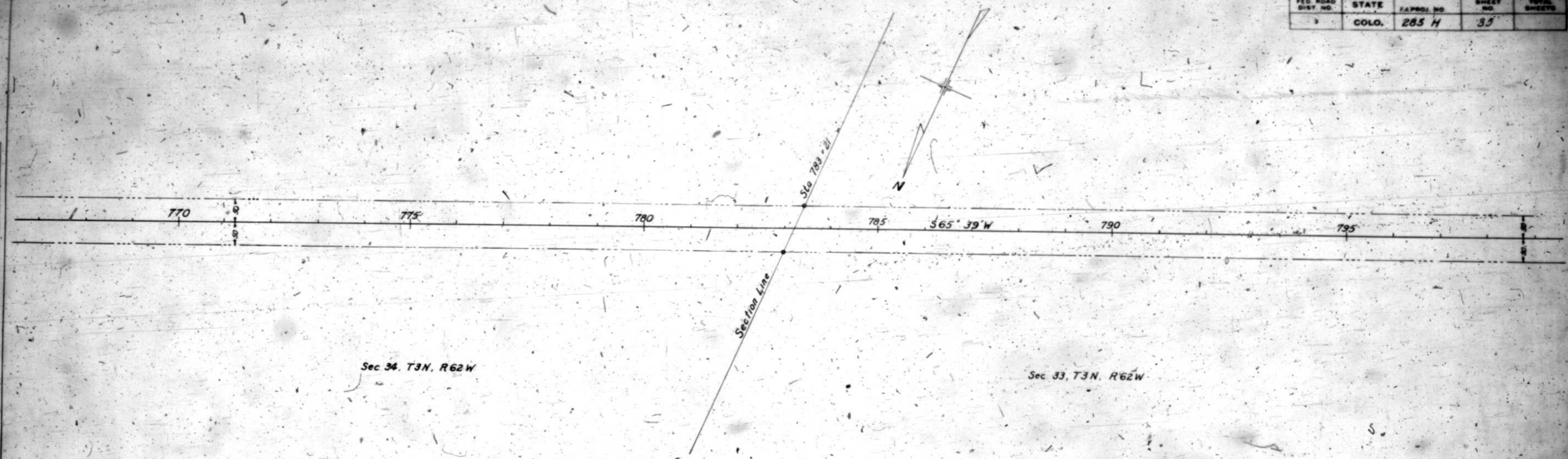
PLAN
DATE: 1-28-37
BY: E.A.A.

PROFILE
DATE: 1-28-37
BY: E.A.A.

FED. ROAD DIST. NO.	STATE	FAPROJ. NO.	SHEET NO.	TOTAL SHEETS
	COLO.	285 H	35	

PLAN
 DATE: 11/1/58
 DRAWN BY: J. W. B.

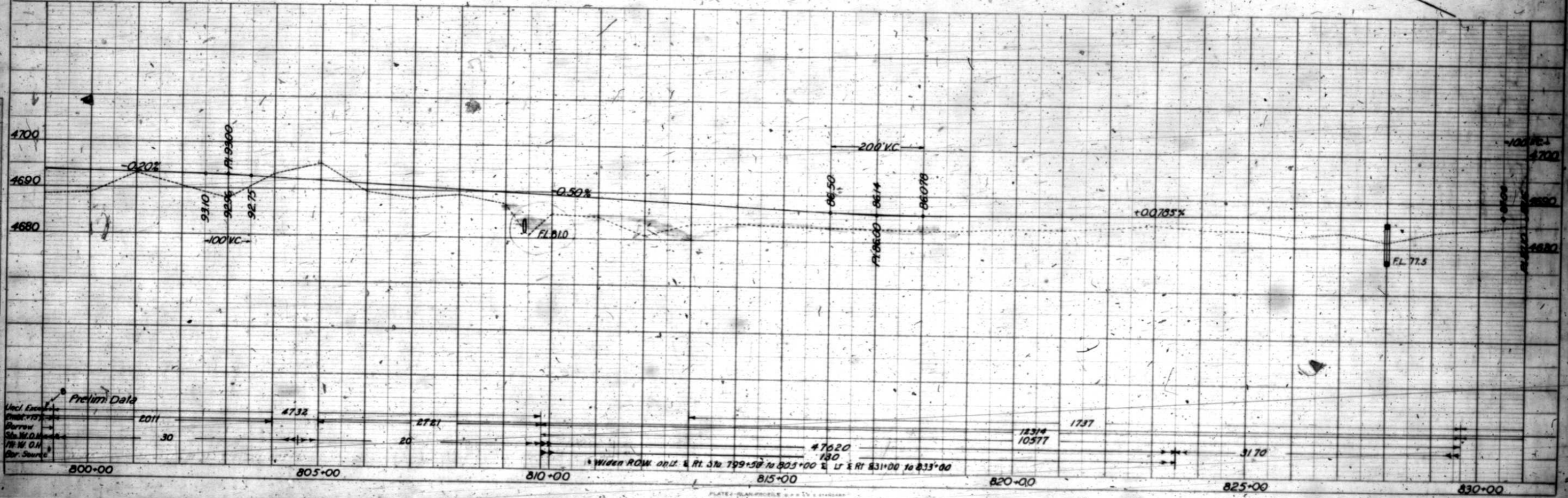
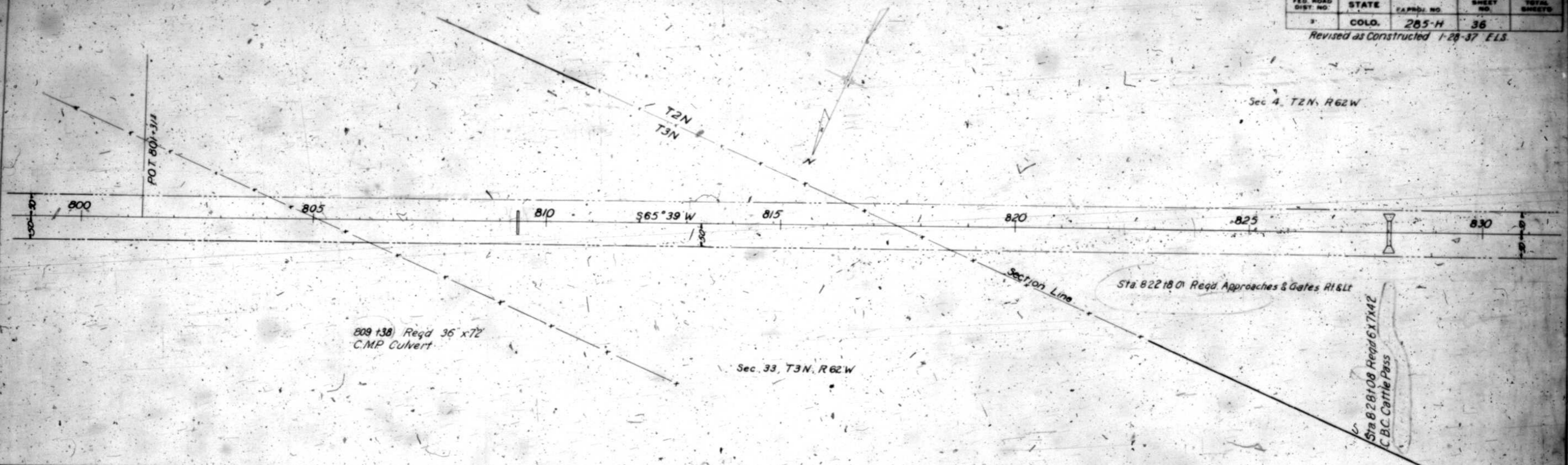
PROFILE
 DATE: 11/1/58
 DRAWN BY: J. W. B.



2390
 2382
 2220
 11' 0" Road P.O.W. L&L
 Sta. 783+21 to 789+50

FED. ROAD DIST. NO.	STATE	F.A.P.D. NO.	SHEET NO.	TOTAL SHEETS
	COLO.	285-H	36	

Revised as Constructed 1-28-37 E.L.S.



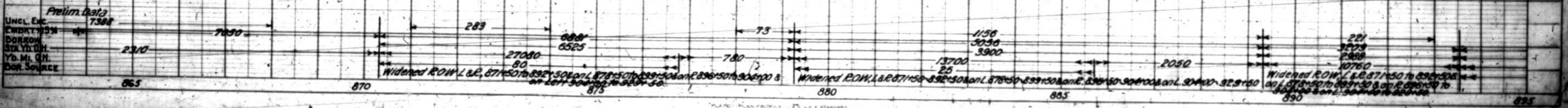
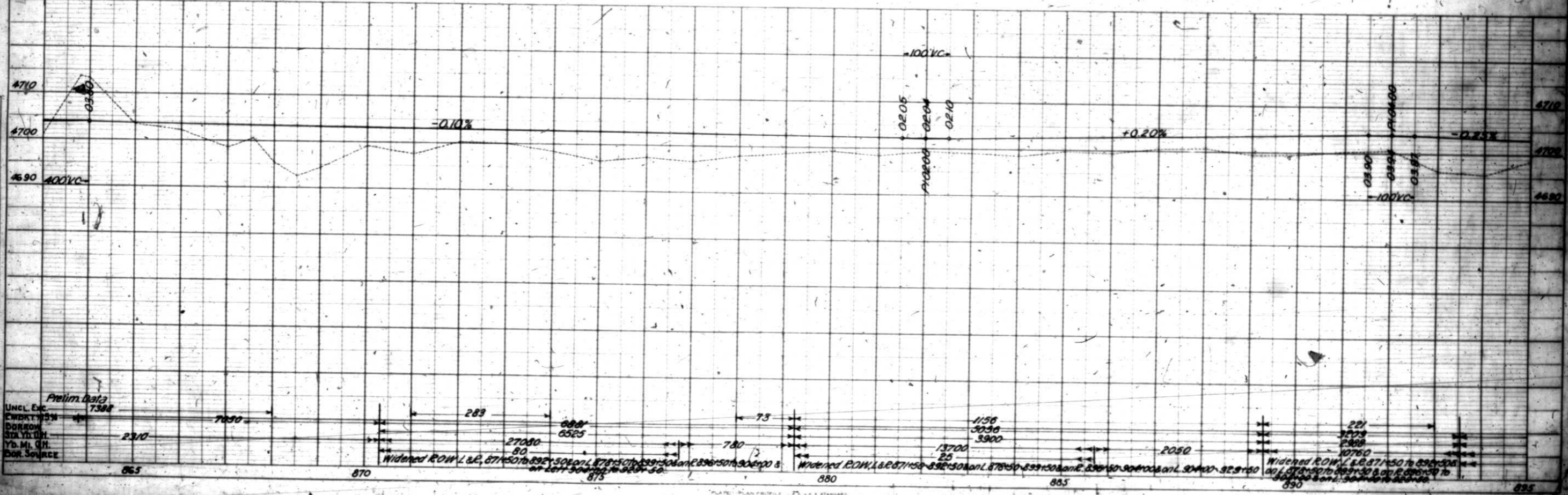
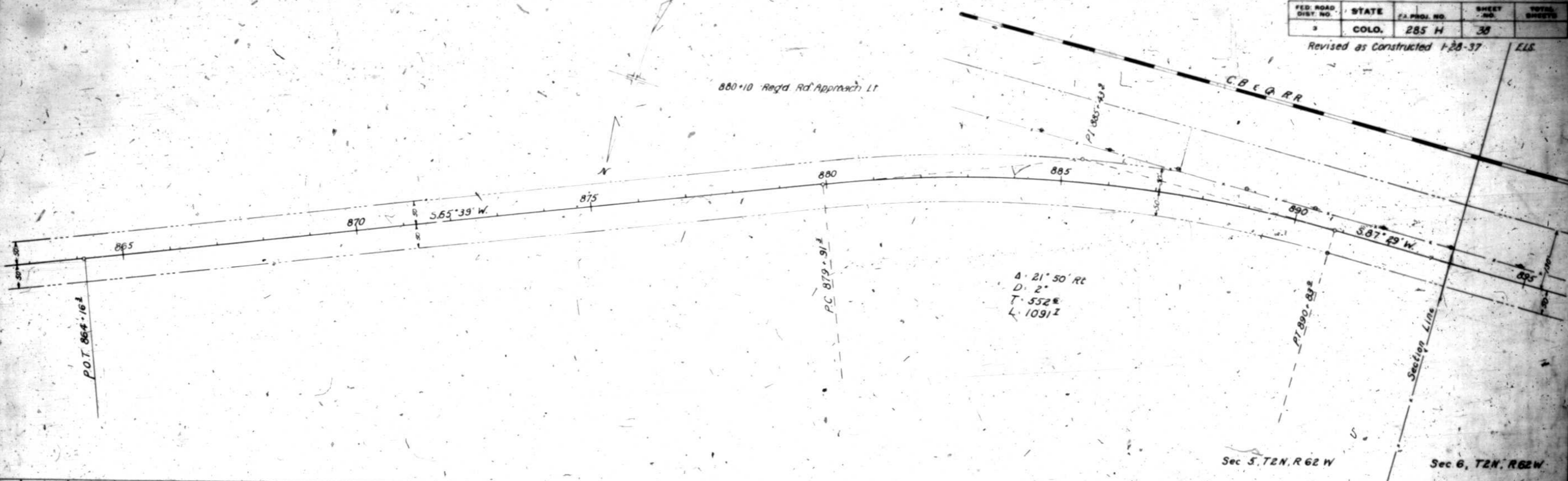
PLAN
 DRAWN BY
 CHECKED BY
 DATE
 PROJECT NO.

PROFILE
 DRAWN BY
 CHECKED BY
 DATE
 PROJECT NO.

FED. ROAD DIST. NO.	STATE	F.A. PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	285 H	38	ELS

Revised as Constructed 1-28-37

880+10 Reg'd Rd Approach LI

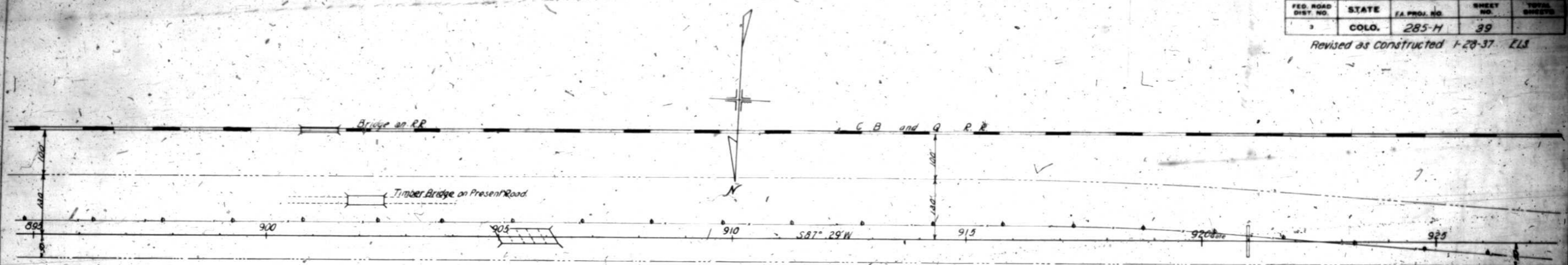


PLAN
DATE: 1937
BY: A.W.B.

PROFILE
DATE: 1937
BY: A.W.B.

FED. ROAD DIST. NO.	STATE	F.A. PROJ. NO.	SHEET NO.	TOTAL SHEETS
	COLO.	285-H	39	

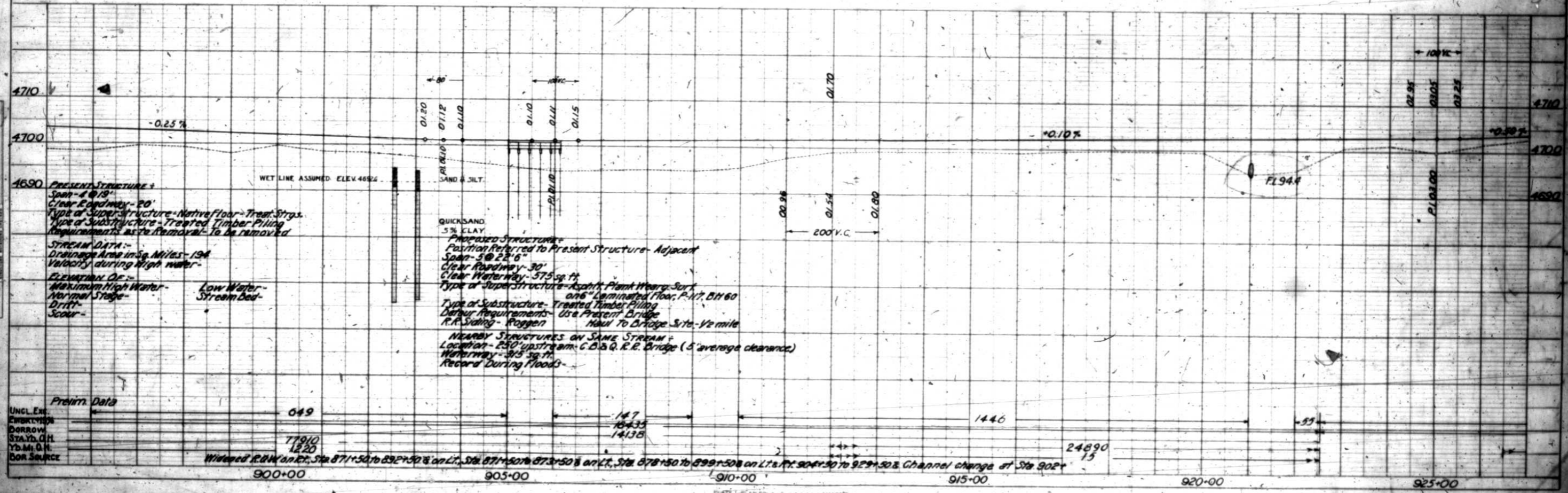
Revised as Constructed 1-28-37 ZLS



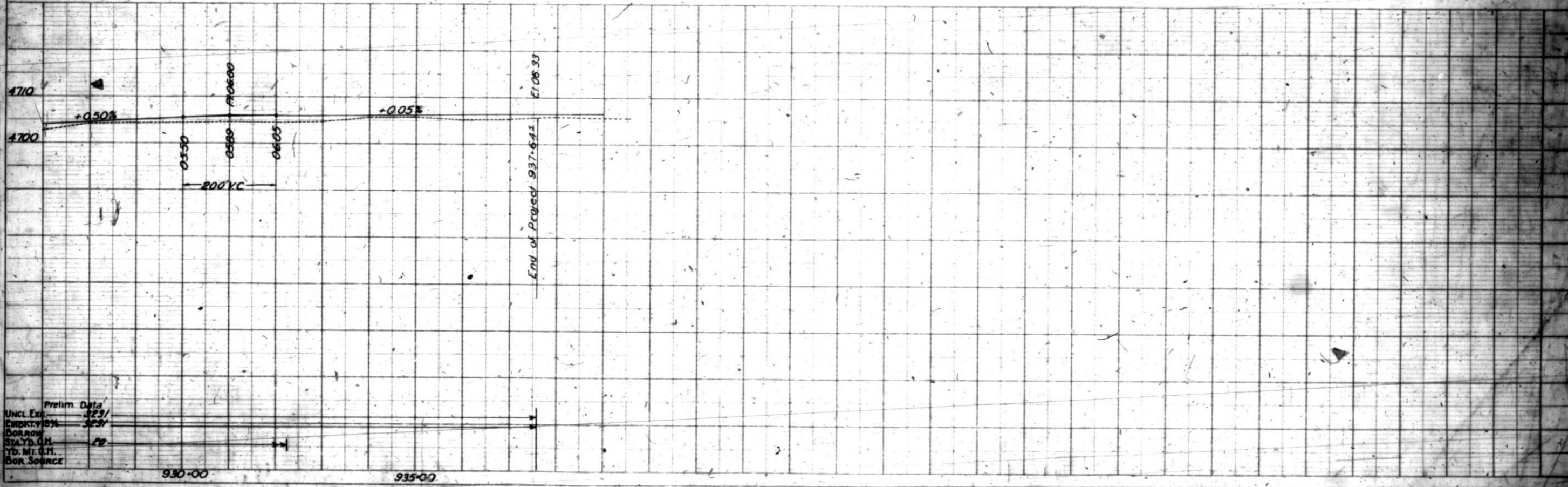
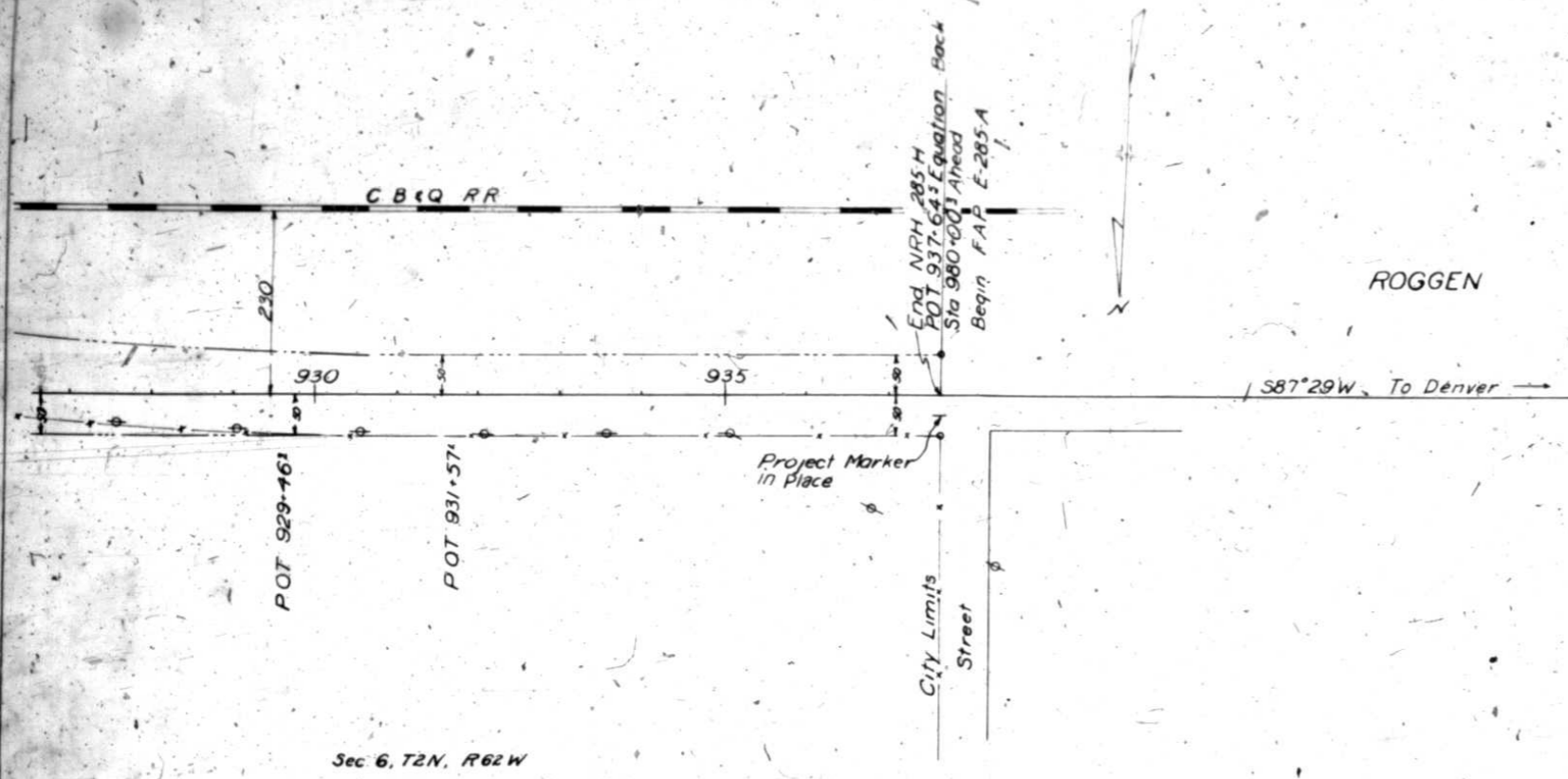
904+991 to 906+13.4 Req'd treated timber pile trestle.
 For details see sheet No. 6 Also req'd 50 cu yds. Uncl. Excav. for channel improvement, material to be used in roadway embankment.
 Old bridge to be removed after it is no longer needed for detour.
 Req'd 50 lin ft. W.C. Guard Fence on each side of roadway at each end of bridge (200 lin ft.).

Sec. 6, T.2N., R.62W

920+05 Req'd Standard 16' roadway cattle guard for road approach right. Move gate to new location on R.O.W. line.
 921+00 Req'd 36" 168' C.M.P. culvert



FED. ROAD DIST. NO.	STATE	FAPROJ. NO.	SHEET NO.	TOTAL SHEETS
2	COLO.	285-H	40	



LIST OF STRUCTURES

FED. ROAD DIST. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	FAP 285 H	3	

LOCATION OF STRUCTURE	DESCRIPTION	REMOVE STRUCT. NO.	EXCAVATION UNCL. CU. YD.	STRUCT. EXCAV. CU. YD.	CONC. CLASS A CU. YD.	REINF. STEEL LBS.	CORR. METAL PIPE LIN. FT.				BARB WIRE	DRIVE WAY GATES	WC GRD FENCE LIN. FT.	MISCELLANEOUS
							15	18	24	30				
2+30	Proj. Marker												1 Proj. Marker	
3+75	Rd Appr. RT & LT		50											
14+85 LD	Rd Appr. & Gate RT		50											
22+00	Rd Appr. & Gate RT		25											
53+85 90	Rd Appr. RT		75											
59+50 S	S.D. & Rd Appr. LT		25					30						
61+77	S.D. & Rd Appr. LT		25					30						
62+85	S.D. & Rd Appr. LT		30					30						
64+25 to 64+80	Rd Appr. RT		60											
64+30	17000 Bldg. (Force Act)													
64+25	S.D. & Rd Appr. LT		60					30						
66+00	CMP Culv.			10										
67+42	Rd Appr. RT		60											
67+30	CMP Culv.			30										
68+00	17000 Bldg. (Force Act)													
69+25	Rd Appr. RT		15											
71+00	SP Appr. RT & LT		40											
72+30	S.D. & Rd Appr. RT		20											
74+50	S.D. & St Appr. RT		25											
75+85 76	S.D. & Rd Appr. RT		20											
76+00	S.D. & Rd Appr. RT		20											
77+00	CMP Culv. & Ditches		15	40										
91+25 71	S.D., Rd Appr. & Drivay Gate		25											
99+77 76	S.D., Rd Appr. & Gate LT		20											
100+30	S.D., Rd Appr. & Gate LT		20											
101+30 EC	S.D., Rd Appr. & Gate RT		30											
103+37 A 405-253	Bridge-Ram Br. - Chas. Inlay - Blue	3000										200		
113+75	CMP Culv.	5		40										
128+05 143+10	Rd Appr. & Gate RT		75											
168+10	CMP Culv. & Ditches	5		40										
183+00 50	S.D., Rd Appr. & Gates RT & LT		85											
225+71	Rd Appr. & Gates RT & LT		175											
251+20	Rd Appr. & Gates RT & LT		135											
278+00	Rd Appr. & Gates RT & LT		40											
320+00	Rd Appr. RT	300												
338+80 361+70	Rd Appr. & Gates RT & LT		30											
402+50			50											
464+25			300											
492+00	C.B.C. 6' x 7' - 42" Cattle Pass			120	77.3	506.3								
502+50	Rd Appr. & Gates RT & LT		100											
545+00			100											
584+00			200											
597+00	Rd Appr. RT & LT		400											
622+00	Rd Appr. & Gates RT & LT		200											
680+00 70+15			100											
680+00 76+15			200											
700+00 74+15			100											
812+00	CMP Culv.			40										
822+00 832+50	Rd Appr. & Gates RT & LT		200											
828+00 832	C.B.C. 6' x 7' - 42" Cattle Pass	200		480	77.3	506.3								
842+30 to 843+105	Bridge			20										
854+00 853+50	Rd Appr. & Gates RT & LT		300											
902+20 to 903+342	Br. - Chas. Chy. Rem. Old Bridge													
985+00	Rd Appr. LT		300											
920+00	Rd Appr. RT		75											
921+00	Cattle Guard - 17000 Gate													
	CMP Culv. & Ditches	5		10										
TOTALS			3570	3845	840	154.6	1012.6							

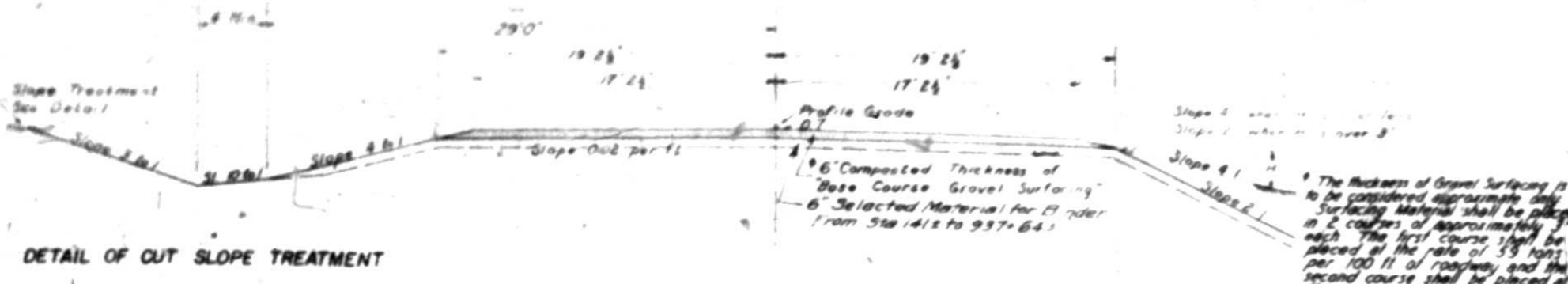
TABULATION OF BORROW SOURCE

LOCATION AVAILABLE	AMT. RECD.	EST. SOURCE	EST. AMT.
STA. TO STA.	CU YDS	SIDE	CU YDS
1+00 to 3+25	392	LI	415
3+00 to 15+00	9152	LI	2400
15+00 to 30+00		RI	6800
35+00 to 48+00	2031	RI	6400
	4815		
81+00 to 95+25	6681	RI	6700
108+00 to 116+00	299	L & R	308
108+00 to 119+00	3200	RI	3200
119+00 to 140+00	6689	RI	6689
143+00 to 146+00	1488	RI	1475
157+00 to 185+00	11678	RI	12000
188+00 to 204+25	5347	RI	5400
204+25 to 225+70	15770	RI	7930
201+00 to 225+70		LI	7947
229+30 to 248+00	18116	LI	8500
243+00 to 254+50		RI	3950
254+50 to 257+00	1789	RI	1850
259+50 to 263+50	3441	LI	1740
260+50 to 264+50		RI	1900
269+50 to 274+00	1849	RI	1975
277+00 to 281+00	8987	L & R	6000
285+00 to 289+50		L & R	3088
294+00 to 298+50	7523	L & R	7720
312+50 to 318+00	2017	RI	2200
500+00 to 511+50	4701	LI	3735
498+00 to 504+50	1982	RI	3130
522+00 to 528+50	3458	LI	3450
530+50 to 534+50	2090	RI	2170
536+50 to 544+50	4455	L & R	4600
549+00 to 558+00	2290	LI	2400
554+50 to 562+50	3340	RI	3375
568+50 to 585+50	9647	LI	10152
603+50 to 611+50	7193	LI	7450
620+50 to 626+50	4771	L & R	4840
629+50 to 633+50	1522	L & R	1700
651+50 to 655+25	3367	LI	3575
665+00 to 672+50	1600	RI	1700
675+50 to 684+50	8525	L & R	7525
687+50 to 691+50		LI	1172
692+50 to 702+50	5720	LI	3320
688+50 to 700+50		RI	2484
707+50 to 712+50	2229	LI	2300
744+50 to 750+50	2120	LI	6850
	4641	RI	
758+50 to 762+50	6089	L & R	3876
771+50 to 776+50		LI	2300
771+50 to 776+50		RI	2975
779+50 to 784+50	7224	RI	2175
780+50 to 784+50		LI	1280
781+50 to 789+50		LI	1000
799+50 to 805+00	2382	L & R	9800
831+00 to 833+00	10577	L & R	3331
833+00 to 838+00	1343	LI	1500
840+00 to 854+50	6893	RI	6910
871+50 to 892+50		RI	5925
871+50 to 873+50		LI	620
878+50 to 899+50	27551	LI	3300
902+00 to 903+00		Channel	2500
904+50 to 929+50		L & R	14612
TOTALS			245229

* Structural Excavation is estimated to be 35% Common and 6% Rock

TYPICAL CROSS SECTION OF IMPROVEMENT AND SUMMARY OF QUANTITIES

FED. ROAD DIST. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
2	COLO.	283-44	7	



DETAIL OF CUT SLOPE TREATMENT

The intersection of cut slopes with existing ground line shall be rounded beginning 5 ft back of the slope and extending 5 ft down the slope, in earth cuts. Where cut slope length is less than 5 ft, reduce both of above lengths of cut slope treatment to actual slope distance. Excavation quantities involved in the rounded slopes shall not be included in Unclassified Excavation.

SELECTED BINDER MATERIAL FOR COVERING SANDY PORTION OF PROJECT

Between Station 141+00 and Station 937+64.5 6" loose thickness of "Selected Binder Material" shall be placed and spread on the roadway and fill slopes at the average rate of 113 Cu Yds per 100 ft of roadway. This material shall be placed prior to the placing of the Gravel or Crushed Rock Surfacing. The Selected Binder Material used in this operation shall be classified and paid for as "Unclassified Excavation". It is estimated that the material will be obtained in the vicinity of the pits indicated on the Title Sheet. The quantities involved in the operation are estimated to be as follows -

Material to be placed	Approx. Qty. Yds	Source Material	Estimated Overhaul
Sta. to Sta.	Cu Yds	Sta. Yds. Yd. M.	Yd. M.
141 - 540	4,500	Sta. 116-124	185,000
540 - 805	30,000	Sta. 330-338	1,800,000
805 - 937+64.5	10,000	Sta. 330-338	600,000
Totals	44,500		2,685,000

GENERAL NOTES

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

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

All roadway excavation required to construct this project is to be obtained as indicated on the Plans. Quantities involved beyond the limits of the ditch, as shown on the Typical Section, either noted on the Plans as "Borrow" or on the List of Structures as "Embankment" are to be classified and paid for as "Unclassified Excavation". These quantities are to be staked as part of the original excavation at location 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 in construction.

All curves are to be super-elevated and widened in accordance with the Standard Super-elevation sheet included with the Plans, unless otherwise noted on the Plans. The entire project is to be cleared for the full width of the right-of-way.

From Station 225+00 to Station 330+00 it is required to construct a detour along the north side of the present road. The approximate quantities involved in this construction are shown in the tabulation of Detour Quantities (on Sheet 2).

From Station 330+00 north approximately 3 miles to State Highway No. 2, it is required to place on the County Road which is to be used as a detour approximately 4000 tons of Gravel Surfacing as shown in the tabulation of

Detour Quantities (on Sheet 2)

From Station 330+00 to 890+00 the present traveled road is to be used as a detour and the contractor shall, at his own expense, maintain crossings of present road in such condition that traffic can, at all times during construction, safely and readily pass over the road.

From Station 890+00 to 937+64.5 on the project where the new work is on the present traveled roadway, the contractor shall, at his own expense, so prosecute construction that traffic can readily pass over the road. Also, the contractor shall maintain in safe condition and at his own expense, all temporary approaches and crossings of intersecting highways.

DETOUR QUANTITIES

LOCATION	UNCL. EXC. Cubic Yards	SELECT MATL. Class. Ft. as Uncl. Exc. Cubic Yards	GRAVEL SURFACING TONS
Sta. 225+00 north on County road			4000
Sta. 225+00 to Sta. 330+00	1000	4000	3000
Totals	1000	4000	7000

* Selected Binder Material is estimated to be available in pit R & L of Sta. 116-124. It is estimated that approximately 44,000 Sta. Yds and 24,000 Yd. M. Overhaul will be required in placing this material on the detour.

The thickness of Gravel Surfacing is to be considered approximate only. Surfacing Material shall be placed in 2 courses of approximately 3" each. The first course shall be placed at the rate of 55 tons per 100 ft of roadway and the second course shall be placed at the rate of 56 tons per 100 ft of roadway.

Sta. to Sta.	Remove		Build		Station	ROW M.
	Sd.	Lin Ft.	Sd.	Lin Ft.		
2+50 to 30+00			R	2700	2+50	1
7+50 - 30+00			L	2250	7+50	1
10+70 - 30+00	R	1930			10+70	1
30+00 - 36+25	R	660	L	1320	36+25	2
0700 - 52+40	L	5440			0700	1
0+00 - 3+15			R	315	0+00	1
3+70 - 52+40			R	4870	3+70	1
52+40 - 59+40			L	750	52+40	1
52+40 - 61+00			R	870	52+40	1
55+10 - 61+00	R	190			55+10	1
73+40 - 74+00	R	100	R	140	73+40	2
75+00 - 76+60	L	340			75+00	1
75+00 - 119+70			L	4490	75+00	1
75+00 - 119+70			R	4510	75+00	1
80+50 - 119+70	R	3940			80+50	1
90+20 - 119+70	L	3070			90+20	1
120+50 - 199+70	R	7820			120+50	1
120+50 - 328+15			R	20370	120+50	1
120+50 - 333+70	L	21120	L	21120	120+50	1
228+00 - 328+15	R	9815			228+00	1
330+70 - 595+50			L	1452760	330+70	1
387+50	X	110			387+50	1
393+00	X	250			393+00	1
414+15	X	110			414+15	1
444+00	X	395			444+00	1
445+40	X	105			445+40	1
461+55	X	110			461+55	1
462+00	X	110			462+00	1
502+30	X	240			502+30	1
595+50	X	250			595+50	1
598+00	X	250			598+00	1
598+00 - 887+40			L	1495780	598+00	1
645+15	X	110			645+15	1
678+40	X	110			678+40	1
805+40	X	240			805+40	1
817+50	X	250			817+50	1
831+85	X	100			831+85	1
837+55	X	110			837+55	1
856+15	X	100			856+15	1
887+40 - 922+50	L	3510			887+40	1
887+40 - 937+64.5			R	5030	887+40	1
922+50 - 937+64.5	R	1520			922+50	1
TOTALS		62303		184665		

NO.	ITEM	UNIT	QUANTITY	UNIT PRICE	TOTAL	TO TALS
10a	Clearing & Grubbing (Entire Project)	Lump Sum				
11a	Removal of Bridge Sta 103	Lump Sum				
11b	Removal of Bridge Sta 902	L.S.				
12a	Removing Fence	Lin Ft.	18050	42550		62600
12b	Remove and Replace Gate	Each	1			1
13c	Unclassified Excavation	Cu Yd	439000	158000		397000
13d	Cut Slope Treatment	Yd	14	6		20
14a	Dry Rock Excavation (Str.)	Cu Yd	30	10		40
14b	Dry Common Exc (Str.)	Cu Yd	560	140	150	935
14c	Wet Rock Excavation (Str.)	Cu Yd	7	3		10
14d	Wet Common Exc (Str.)	Cu Yd	160	40		200
15a	Station Yard Overhaul	Sta Yd	1368600	609400		1978000
15b	Yard Mile Overhaul	Yd M.	409900	29100		439000
26a	Gravel or Crushed Rock Surf.	Ton	77240	41160		118400
42a	Untreated Bridge Timber	MFBM	112		34	22
42b	Treated Bridge Timber	MFBM	112		779	328
43	Asphalt Plant Wearing Surface	Sq Ft	551		5386	3375
46a	Class. A Concrete	Cu Yd	155			155
47	Reinforcing Steel	Lb	10200			10200
53b	18" Corr. Metal Culvert Pipe	Lin Ft.		450		450
53c	24" Corr. Metal Culvert Pipe	Lin Ft.		318		318
59a	36" Corr. Metal Culvert Pipe	Lin Ft.	140			140
60a	Treated Timber Piling	Lin Ft.	648		1864	1804
60c	Piling Cut-Off Treated	Lin Ft.	10		50	30
61a	Treated Sheet Piling	Lin Ft.			2560	2560
74	Wire Cable Guard Fence	Lin Ft.	400		200	600
76c	Barbed Wire Fence 7' High	Lin Ft.	125700	58980		184700
76g	Barbed Wire Gates	Each	26		12	38
76h	Driveway Gates	Each	1			1
81a	Project Marker	Each	1			1
81b	Right of Way Marker	Each	22		22	49
82	Cattle Guard	Each	1			1
89a	Drain Pipe (Tuber Floor)	Each	2		16	28
	Work to be done by parties account					
	Moving Bluff Sta 64+68	Lump Sum				
	Obliterating Old Road	L.S.				