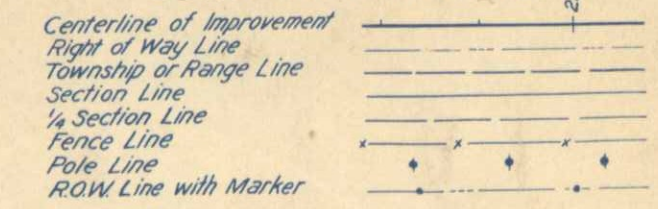


FED. ROAD DIST. NO.	STATE	COMB. FED. AID PROJ. NOS.	SHEET NO.	TOTAL SHEETS
3	COLO.	9-R-7 & 9-F	1	

COLORADO STATE HIGHWAY DEPARTMENT

PLAN AND PROFILE OF PROPOSED COMB. FEDERAL AID PROJECT NO. 9-R-7 & COMB. FEDERAL AID PROJECT NO. 9-F STATE HIGHWAY NO. 16 U.S. 34 LARIMER COUNTY

CONVENTIONAL SIGNS



8

AS CONSTRUCTED PLANS
RETURN TO DIST. 4 DESIGN

9

INDEX OF SHEETS

1.	TITLE SHEET	
2.	TYPICAL SECTION & SUMMARY	
2-A.	TABULATION OF STRUCTURES FENCES & R.O.W. MARKERS	
3-3A.	DETAILS OF BRIDGE, STA. 55+	
4.	STANDARD CONC. BOX CULVERTS	M-103-D
5.	"	M-104-D
6.	" REINF. CONC. CULV. PIPE	M-112-C
7.	" HEADWALLS FOR C.M.P. CULVERTS	M-102-E
8.	" CATTLE GUARD	M-16-A
9.	" WIRE CABLE GUARD FENCE	M-20-A
10.	" WIRE FENCES & MARKER POSTS	M-27-A
10A.	" STRUCTURE NUMBER LETTERING	M-10-A
11.	" SUPERELEVATION SHEET	M-1-A
12.	" TRAFFIC SIGNS & APPROACH ROADS	M-2-B
13-17.	PLAN AND PROFILE	
18-20.	CROSS SECTIONS	

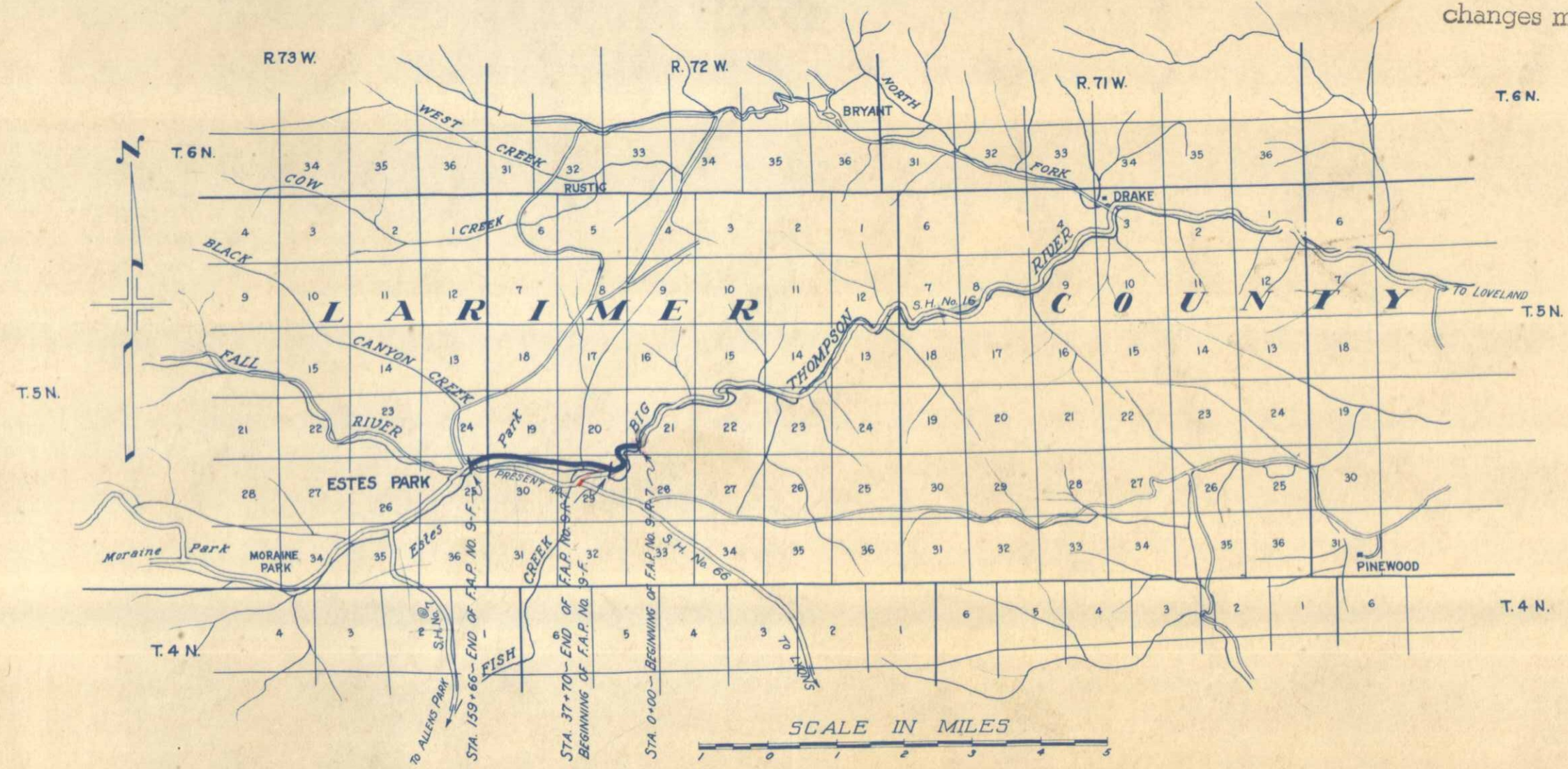
SCALES ON ORIGINAL TRACINGS

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

F.A.P. 9-R-7	GROSS LENGTH OF PROJECT	3770.0 FT. = 0.714 MI.
	NET LENGTH OF PROJECT	
F.A.P. 9-F	GROSS LENGTH OF PROJECT	11,240.8 FT. = 2.128 MI.
	NET LENGTH OF PROJECT	

NOTICE, these plans may not reflect changes made during construction.



NOTE
It is recommended that bidders on this Project go over the plan details with one of the following field representatives of this Department:
R.J. Randall, Division Eng. located at Greeley.
Clyde Walters, Resident - Loveland.

RECOMMENDED FOR APPROVAL 10/15/66
Richard [Signature]
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

TABULATION OF STRUCTURES

LOCATION	DESCRIPTION	REMOVE	EXCAVATION	STRUCTURAL	CONCRETE	REINF.	CORR. METAL			C.I. APPR.	CAT'L	MISCELLANEOUS		
		STRUCT.	CU.YDS.	EXCAVATION	CU.YDS.	STEEL	CULVERT PIPE			PIPE	ROAD			
		NO.	UNCL.	★	CL.'A'	CL.'B'	LBS.	15"	18"	24"	4" DIA.	16 FT.		
0+29	Remove Gas Pump on Left. (FORCE ACCOUNT)													
0+34	Remove Grease Rack on Left. (FORCE ACCOUNT)													
0+45	Remove Gas Pump on Left. (FORCE ACCOUNT)													
1+12	Remove 2-Sign Posts on Right.													
0+32 - 1+80	Remove 12'x92' CMP & 1'x1'x56' W.B.C. Sd. Dr. on R.	1-Culv.												
4+00	C.M.P. Cross Culvert & Outlet.		20	25		1.10			52					
8+85 - 11+00	Channel Change on Left.		*1600											
13+25	C.M.P. Cross Culvert & Ditches.		15	20		1.65			42					
13+45	Road Approach & Side Drain on Rt.			50	5				24		10			
21+50	C.M.P. Cross Culv. with Intercepting Hdwl.			5	5	1.30			48					
22+10	Remove 15'x28' C.M.P. on Lt.	1-Culv.												
32+00	C.M.P. Cross Culv. & Ditches.		5	10		1.65			62					
33+15	Road Approach & Side Drain on Rt.			20	5			20			10			
33+80	Remove 4'x175' Tile Sewer.										175		Remove 175' Tile Sewer	
33+80	Cast Iron Pipe Sewer.				45								Remove Rock Fence.	
33+85	Remove Rock Fence on Left.													
33+85	Remove Cattle Guard on Left.	1-Cat'l Gd.												
35+00	Road Approach & Side Drain on Right.		5	100	5	1.65		30			10			
37+25	C.M.P. Cross Culvert & Ditches.								44					
37+70	Project Marker.												1-Project Marker	
38+00	Road Approach on Left.			200							20			
40+00	Road Approach & Side Drain on Rt.		75					28			10			
43+15	Remove Cattle Guard on Right.	1-Cat'l Gd.												
43+40	C.M.P. Cross Culvert & Inlet.		5	5		1.65			50					
51+00	C.M.P. Cross Culvert & Inlet.		5	5		1.10			40					
51+40	Road Approaches on Left & Right.			100							20			
55+35 - 55+75	Bridge & Channel Change.			(See Summary-Construction Division #2)										
57+00 - 58+00	Road Approach on Right.			250							10			
63+00	Remove Cattle Guard on Left.	1-Cat'l Gd.												
63+20	Road Approach & Side Drain on Rt.			20	5				40		20			
63+60	Cattle Guard on Right.													
66+00	C.M.P. Cross Culvert & Ditches.		15	10		1.10			44					
89+80	C.M.P. Cross Culvert.			5	5	1.10			50					
103+00	C.M.P. Cross Culvert & Outlet.		5	5		1.65			42					
103+30	Road Approaches on Left & Right.			300							20			
107+00	4'x4'x63' Conc. Box Culv. & Outlet. (Sk. 60° L)		25	50		51.5		4256			20			
109+55	Road Approaches on Left & Right.			450							20			
117+70	C.M.P. Cross Culvert & Inlet.		5	5		1.10			40					
122+87	C.M.P. Culv. with Intercepting Hdwl. & Inlet.		5	10		1.30			42					
130+00 - 131+15	Road Approach on Left.			250							10			
131+15	Road Appr., Side Drain & Inlet on Rt.		5	50	5				26		10			
131+65	Road Appr., Side Drain & Inlet on Rt.		5	35	5				30		10			
131+30 - 132+93	Ditch Change on Left.			35										
131+50 - 132+75	Ditch Change on Left.			40										
142+09	C.M.P. Cross Culvert. (Skew 45° Rt.)		5	10		1.65			70					
142+50	C.M.P. Cross Culvert & Inlet.					1.10			42					
151+00 - 155+60	Ditch Change on Right.		75								10			
151+50	Road Approach on Left.			75										
151+85	C.M.P. Cross Culvert & Ditches.		10	10		1.10			48				Adj. Manhole Ring & Cover	
153+40	Adjust Manhole Ring & Cover.													
153+70	Remove 12'x16' C.M.P. on Left.	1-Culv.									10			
155+50	Remove 8'x15' C.I.P. on Right.	1-Culv.												
155+50	Road Approach on Right.			35										
156+05	Remove 6'x12'x10' Wood Box Culv. on Rt.	1-Culv.												
156+70	C.M.P. Cross Culvert & Inlet.		5	5		1.10			48				Adj. Manhole Ring & Cover	
157+48	Adjust Manhole Ring & Cover.													
157+56	8'x4'x32' C.B. Culv. & Ditches-TYPE 8I (SK 75° R)		50	150		55.1		5015					1-Project Marker.	
159+66	Project Marker.													
TOTALS-F.A.P.-9R-7.		5	45	170	120		7.35		50	124	148	175	30	
TOTALS-F.A.P.-9-F.		5	295	1840	290		106.6	13.95	9271	84	394	162	170	1
PROJECT TOTALS		10	340	2010	410		106.6	21.30	9271	134	518	310	175	200

* Structural Excavation is estimated to be 50% Rock and 50% Common, each of which is estimated to be 75% Dry and 25% Wet.
 * Included for payment in Profile Quantities.

FENCING REQUIREMENTS

STATION	SIDE	REMOVE	BUILD FENCE		GATES	
		FENCE	LIN. FT.	B.WIRE	COMB.	B.W. DRIVE
10+50-11+00	R.	50				
19+60-23+00	L.&R.	760				
3+80-8+28	L.		475			
9+00-33+10	R.		2440			
21+00-33+10	L.		1340			
32+95-35+24	L.&R.			485		
35+24-37+70	L.&R.		530			
13+45	R.					
33+15	R.					
35+00	R.					
37+45	L.					
38+30-64+00	L.&R.	2300				
78+70	X.	140				
130+30	X.	300				
154+80	X.	290				
158+20	X.	130				
37+70-45+00	L.&R.		1370			
45+00-158+20	L.&R.		20900			
40+00	R.				1	
43+15	L.					1
51+40	L.&R.				2	
57+00	R.				1	
63+50	R.				1	
103+30	L.&R.				2	
109+55	L.&R.				2	
129+20	L.					1
131+00	R.				1	
132+05	R.					1
151+40	L.					1
156+30	R.					1
TOTALS-F.A.P.-9R-7		810	4785	485	1	3
TOTALS-F.A.P.-9-F		3160	22270		10	5
TOTALS		3970	27055	485	11	8

R.O.W. MARKERS

LOCATION	SIDE	NO.
0+00	L.&R.	2
2+04	L.&R.	4
4+44	L.&R.	4
8+74	R.	1
20+14	R.	1
22+19 1/2	R.	2
23+00	L.	2
28+47 1/2	R.	2
32+89	R.	1
32+96	R.	1
33+20	L.	1
33+28	L.	1
35+61 1/2	R.	2
39+00	L.	2
43+64 1/2 B=	R.	2
44+28 1/2 A.	R.	2
56+50	R.	2
56+96	L.	1
57+50	R.	2
58+72	R.	1
61+57	R.	1
63+76	L.	1
78+34	L.	1
79+00	R.	1
106+70	L.&R.	2
144+98	L.	1
145+96	R.	1
146+78	L.&R.	2
159+66	L.&R.	2
TOTAL-F.A.P.-9R-7		24
TOTAL-F.A.P.-9-F		22
PROJECT TOTAL		46

GUARD FENCE

LOCATION	LEFT	RIGHT
8+26-11+04	278	
11+12-15+20	408	
15+28-19+36	408	
19+44-23+52	408	
7+00-11+08		408
11+16-12+36		120
28+24-32+32	408	
28+70-31+82		312
32+40-32+96	56	
33+60-37+68	408	
38+90-40+10	120	
43+00-45+00	200	
53+89 1/2-55+32 1/2	143	
54+69 1/2-55+32 1/2		63
55+80 1/2-58+03 1/2	223	223
88+50-92+26	376	
89+20-90+88		168
106+65-109+45		280
106+80-109+92	312	
129+00-132+76	376	
TOTAL-F.A.P.-9R-7		2374
TOTAL-F.A.P.-9-F		840
TOTAL-F.A.P.-9-F		1750
PROJECT TOTAL		5698

FED. ROAD DIST. NO. 3
 STATE COLO.
 PROJ. NO. F.A.P.-9R-7 & 9-F
 SHEET NO. 2-A
 TOTAL SHEETS

STA. 0+29 - Remove Gas Pump on Lt. (FORCE ACCT)
 " 0+34 - " Grease Rock on Lt. (")
 " 0+45 - " Gas Pump on Lt. (")

STA. 1+12 - Remove 2 Sign Posts on Rt.

T. 5 N. R. 72 W.

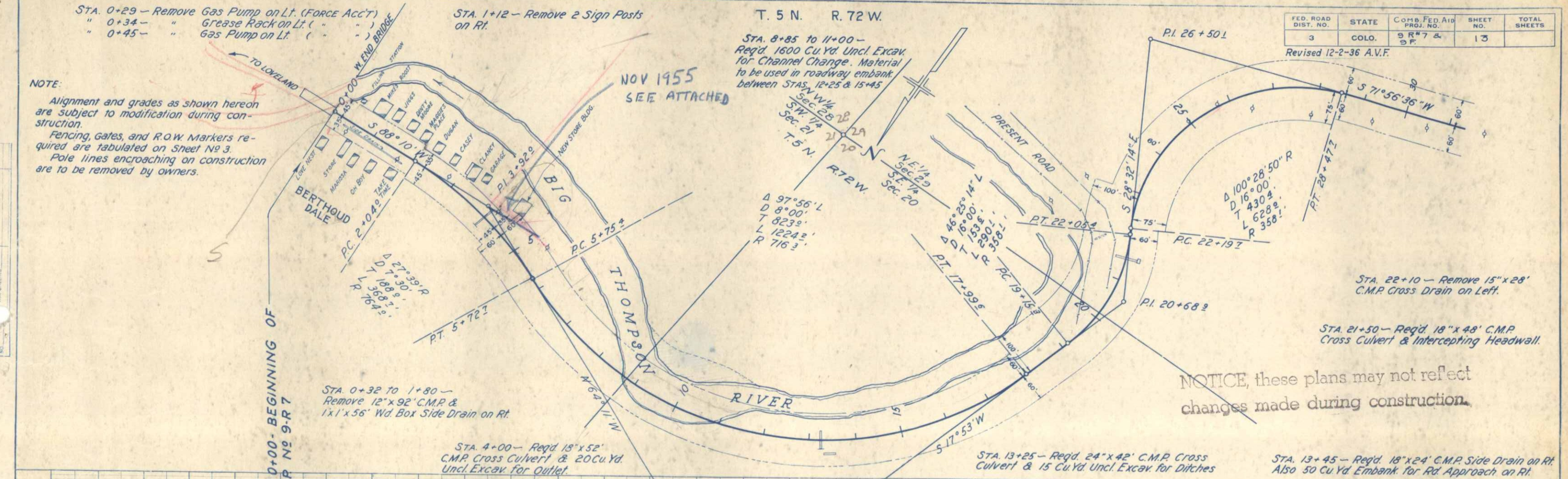
FED. ROAD DIST. NO.	STATE	COMB. FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	9 R#7 & 9 F.	13	

Revised 12-2-36 A.V.F.

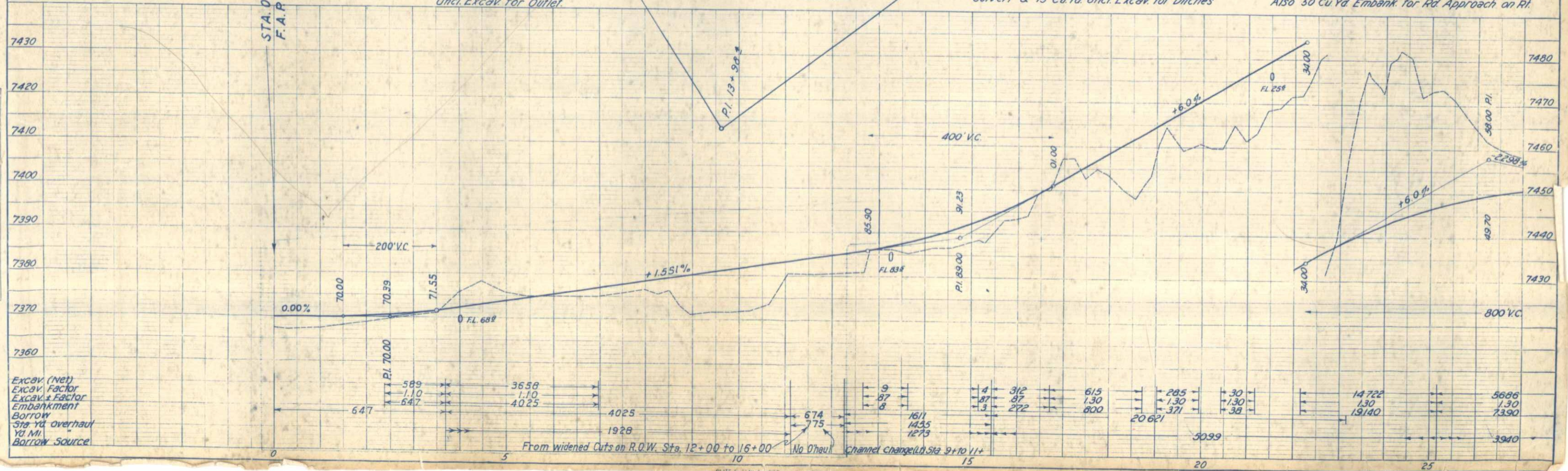
NOTE:
 Alignment and grades as shown hereon are subject to modification during construction.
 Fencing, Gates, and R.O.W. Markers required are tabulated on Sheet No 3.
 Pole lines encroaching on construction are to be removed by owners.

NOV 1955
 SEE ATTACHED

STA. 8+85 to 11+00 -
 Req'd. 1600 Cu. Yd. Uncl. Excav. for Channel Change. Material to be used in roadway embank. between STAs. 12+25 & 15+45



NOTICE, these plans may not reflect changes made during construction.



STA. 32+00 - Req'd. 24" x 62' C.M.P. Culv. & 5 Cu.Yd. Uncl. Excav. for Ditches.

Proj. 9R#7 & 9F
Sheet 14

STA. 37+25 - Req'd. 24" x 44' C.M.P. Culv. & 5 Cu.Yd. Excav. for Ditches.

FED. ROAD DIST. NO.	STATE	COMB. FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	9R#7 & 9F.	14	

STA. 33+15 - Req'd. 15" x 20' C.M.P. Side Drain & 20 Cu.Yd. Embank. for Rd. Approach on Lt.

STA. 37+70 - Req'd. Project Marker on Rt.

STA. 40+00 - Req'd. 15" x 28' C.M.P. Side Drain & 75 Cu.Yd. Uncl. Excav. for Road Approach on Rt.

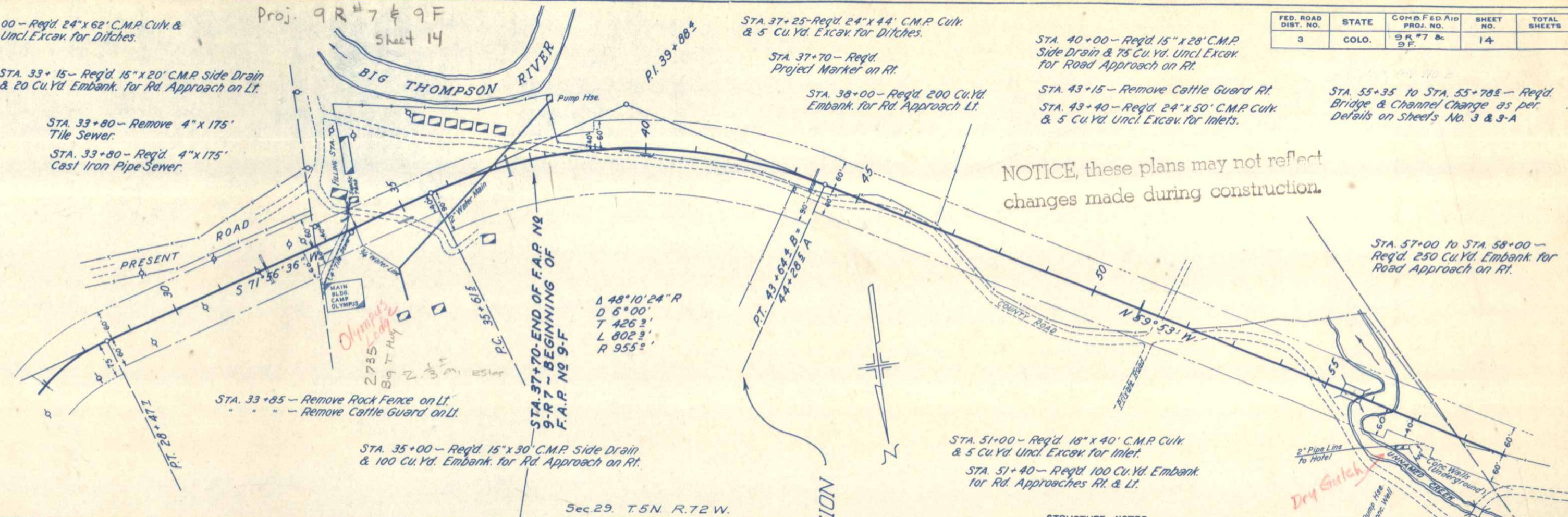
STA. 33+80 - Remove 4" x 175' Tile Sewer.

STA. 38+00 - Req'd. 200 Cu.Yd. Embank. for Rd. Approach Lt.

STA. 43+15 - Remove Cattle Guard Rt.
STA. 43+40 - Req'd. 24" x 50' C.M.P. Culv. & 5 Cu.Yd. Uncl. Excav. for Inlets.

STA. 55+35 to STA. 55+78.5 - Req'd. Bridge & Channel Change as per Details on Sheets No. 3 & 3-A

NOTICE, these plans may not reflect changes made during construction.



PL.	REVISED	DATE

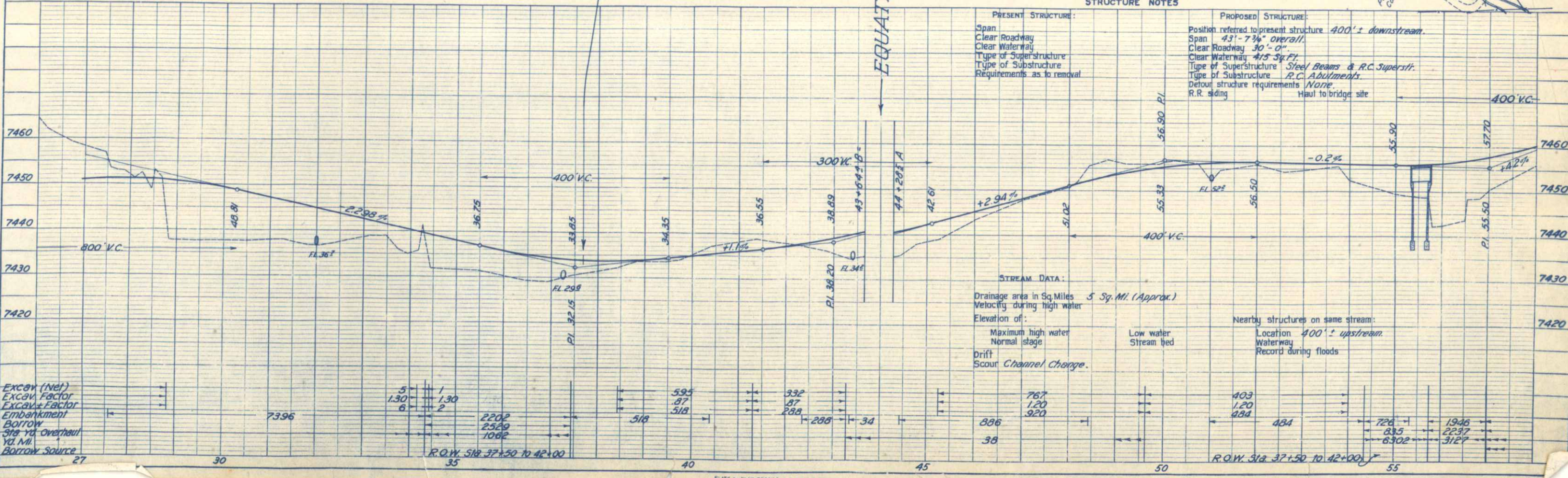
PROFILE	REVISIONS

Sec. 29. T. 5N. R. 72W.

EQUATION

STRUCTURE NOTES

PRESENT STRUCTURE:	PROPOSED STRUCTURE:
Span	Position referred to present structure 400' ± downstream.
Clear Roadway	Span 43'-7 3/4" overall.
Clear Waterway	Clear Roadway 30'-0"
Type of Superstructure	Clear Waterway 415 Sq. Ft.
Type of Substructure	Type of Superstructure Steel Beams & R.C. Superstr.
Requirements as to removal	Type of Substructure R.C. Abutments
	Detour structure requirements None
	R.R. siding
	Haul to bridge site



STREAM DATA:

Drainage area in Sq. Miles	5 Sq. Mi. (Approx.)
Velocity during high water	
Elevation of:	
Maximum high water	Low water
Normal stage	Stream bed
Drift	
Scour	Channel Change.

Nearby structures on same stream:
Location 400' ± upstream
Waterway
Record during floods

Excav (Net)	
Excav Factor	
Excav + Factor	
Embankment	
Borrow	
Sta Yd. Overhaul	
Yd. Mi.	
Borrow Source	

7396

5
1.30
6

1
1.30
2

2202
2569
1082

R.O.W. Sta 37+50 to 42+00

518

595
.87
518

332
.87
288

288

34

886

767
1.20
920

38

403

1.20
484

484

726

835

1946

2237

6302

3127

R.O.W. Sta 37+50 to 42+00

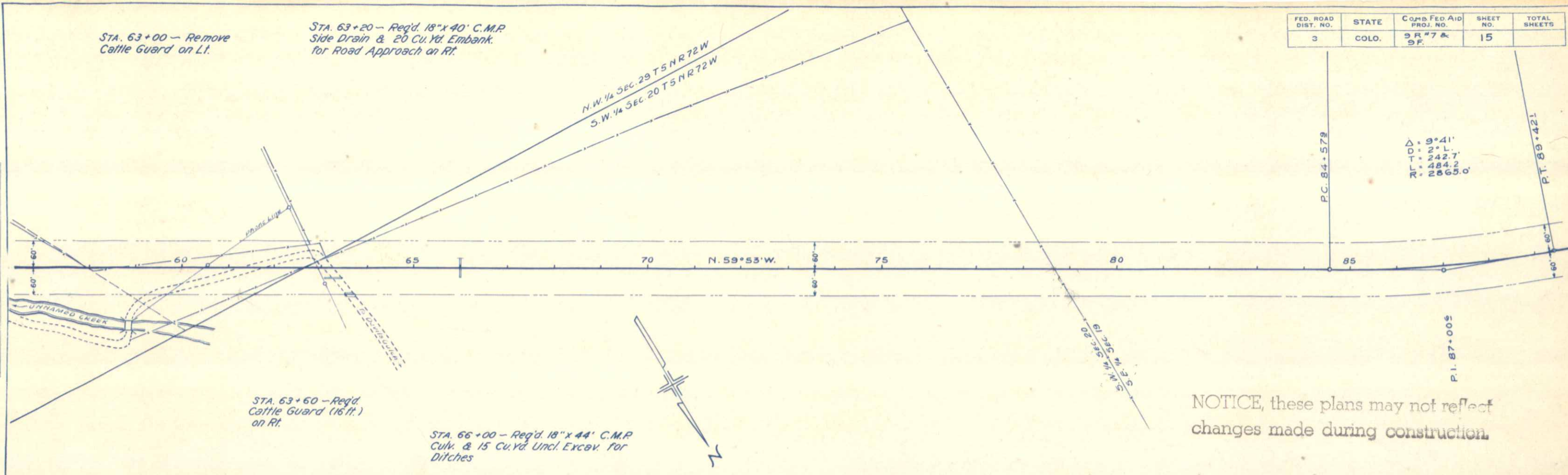
FED. ROAD DIST. NO.	STATE	Comp. Fed. Aid Proj. No.	SHEET NO.	TOTAL SHEETS
3	COLO.	9 R #7 & 9 F.	15	

STA. 63+00 - Remove Cattle Guard on Lt.

STA. 63+20 - Req'd. 18"x40' C.M.P. Side Drain & 20 Cu. Yd. Embank. for Road Approach on Rt.

N.W. 1/4 SEC. 29 T5 N R72 W
S.W. 1/4 SEC. 20 T5 N R72 W

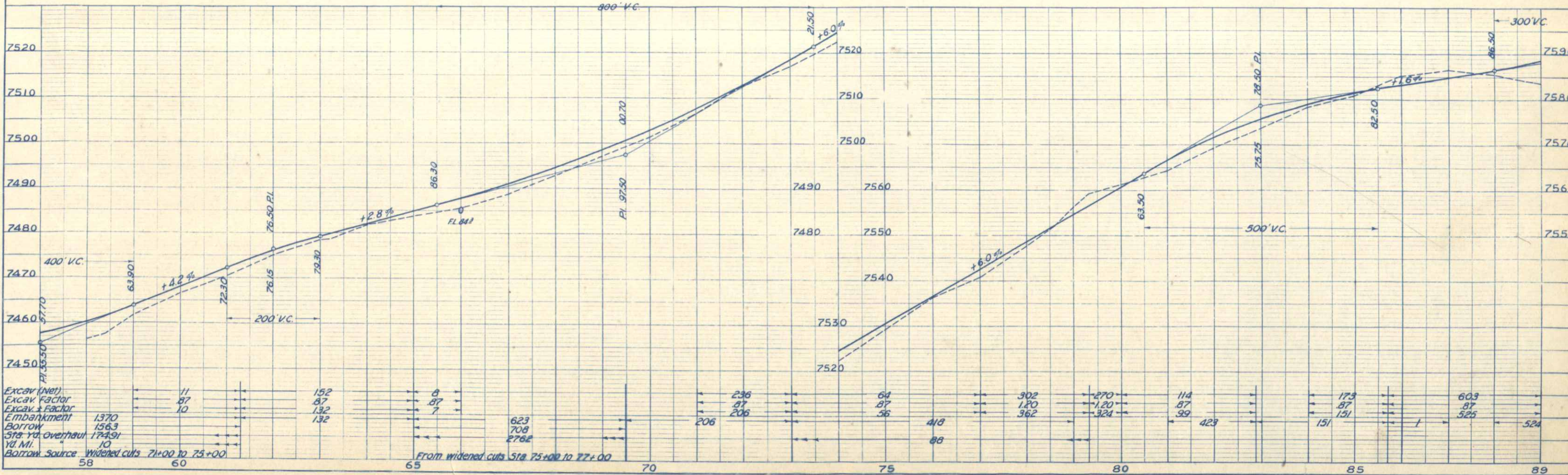
$\Delta = 9^{\circ}41'$
 $D = 2^{\circ}1'$
 $T = 242.7'$
 $R = 484.2'$
 $R = 2865.0'$



STA. 63+60 - Req'd. Cattle Guard (16 ft.) on Rt.

STA. 66+00 - Req'd. 18"x44' C.M.P. Culv. & 15 Cu. Yd. Uncl. Excav. for Ditches

NOTICE, these plans may not reflect changes made during construction.



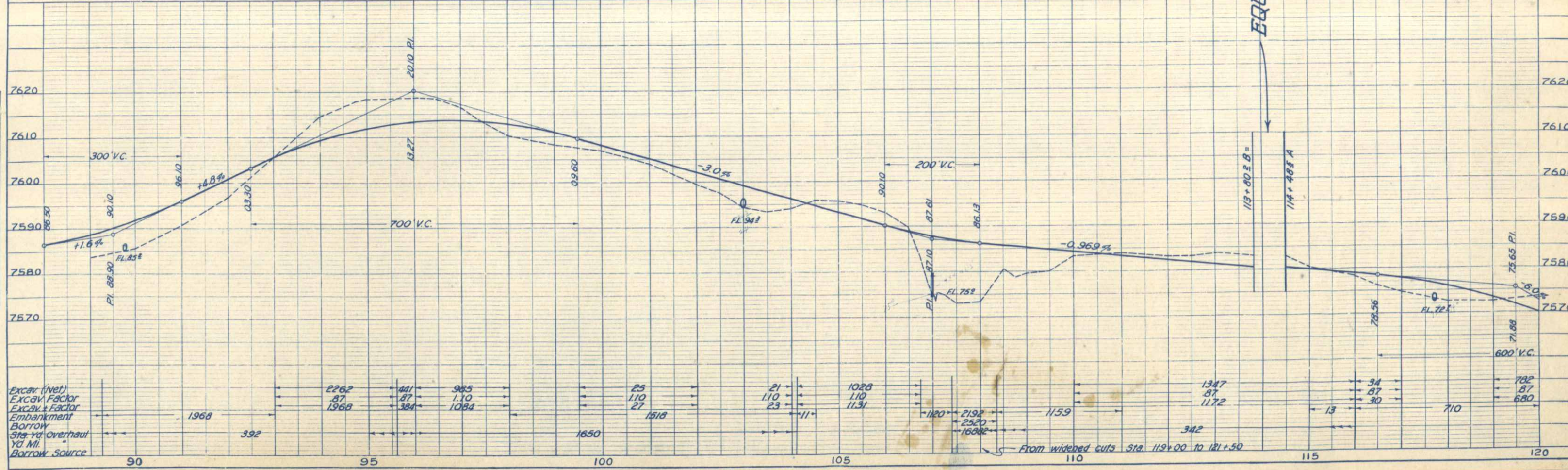
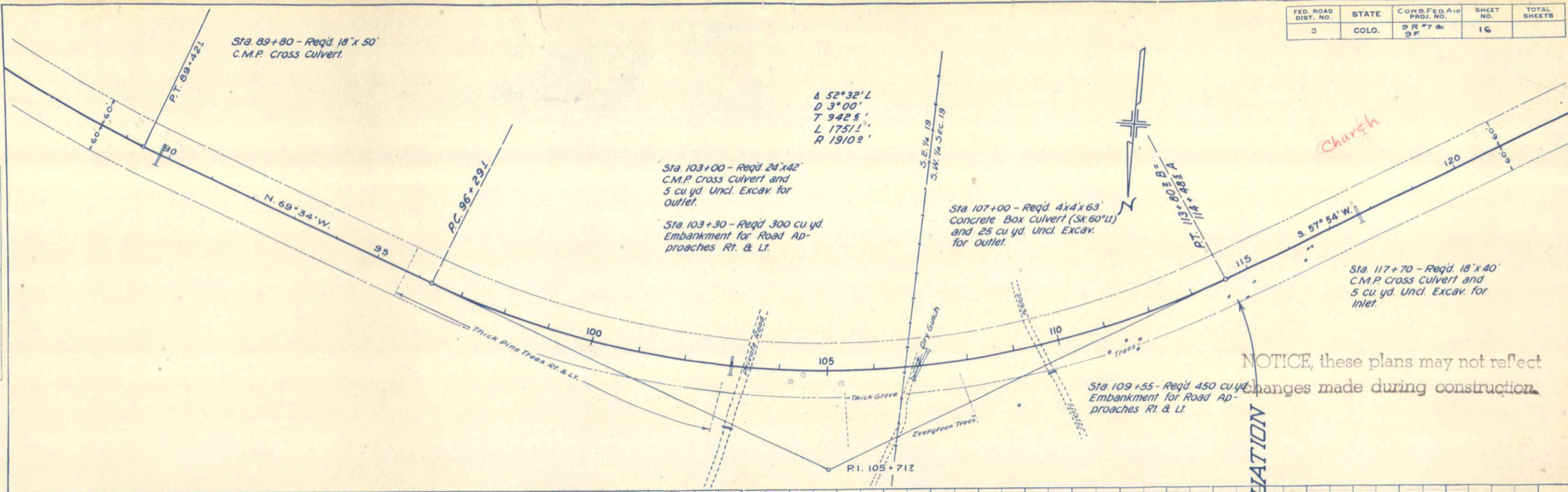
PL. NO. DATE
BY
CHECKED
DATE

PROFILE SURVEYED BY
PLANNED BY
NOTE BOOK NO.
DATE
STRUCTURE NOTED BY CHAS.

FED. ROAD DIST. NO.	STATE	CONB. FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	SR 7 & 9 F	16	

PLAN
 CHECKED BY
 DATE
 NO.

PROFILE
 CHECKED BY
 DATE
 NO.



STA. 122+87 - Req'd. 18" x 42" C.M.P. Culk & Intersecting Headwall & 5 Cu. Yd. Uncl. Excav. for Inlet.

STA. 130+00 to 131+15 - Req'd. 250 Cu. Yd. Embank. for Rd. Approach on Lt.

STA. 131+15 - Req'd. 15" x 26" C.M.P. Side Drain & 5 Cu. Yd. Uncl. Excav. for Inlet. Also, 50 Cu. Yd. Embank. for Rd. Approach on Rt.

STA. 131+30 to 132+93.8 B - Req'd. 35 Cu. Yd. Embank. for Ditch Change Lt.

STA. 131+50 to 132+75 - Req'd. 40 Cu. Yd. Embank. for Ditch Change Lt.

STA. 151+00 to 155+60 - Req'd. 75 Cu. Yd. Uncl. Excav. for Ditch Change on Rt.

STA. 151+85 - Req'd. 18" x 48" C.M.P. Culk & 10 Cu. Yd. Uncl. Excav. for Ditches (Irrig.)

STA. 151+50 - Req'd. 75 Cu. Yd. Embank. for Rd. Approach on Lt. Also, Remove 8" x 15" C.I. Pipe Rt.

STA. 156+05 - Remove 6" x 12" x 10' Wd. Box Culk

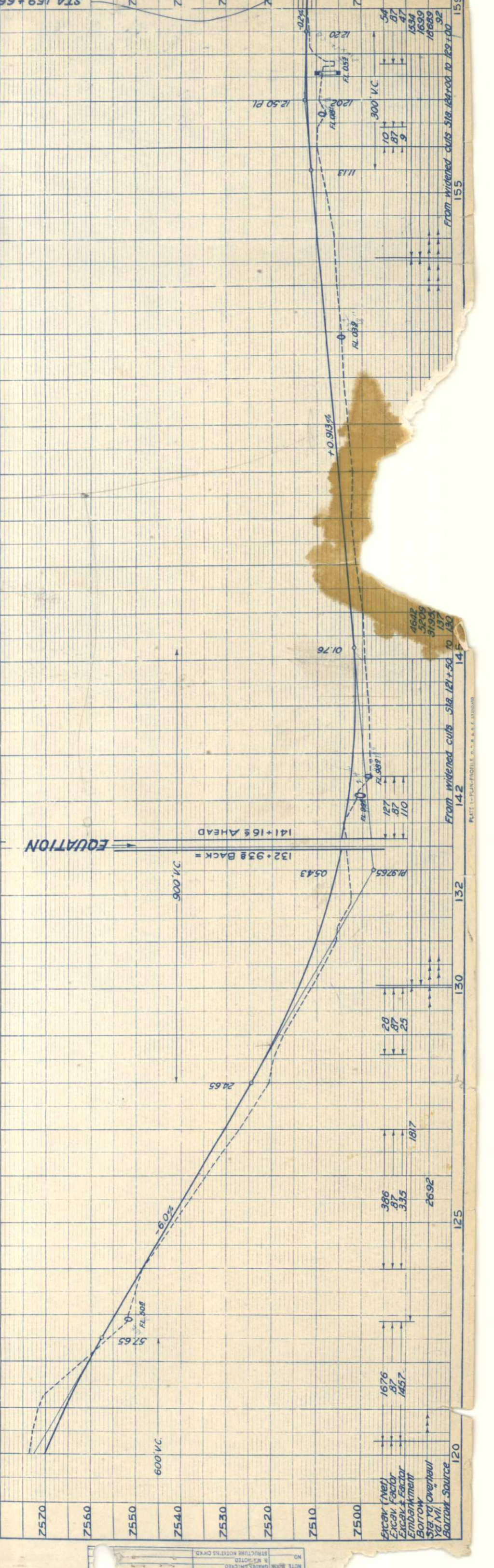
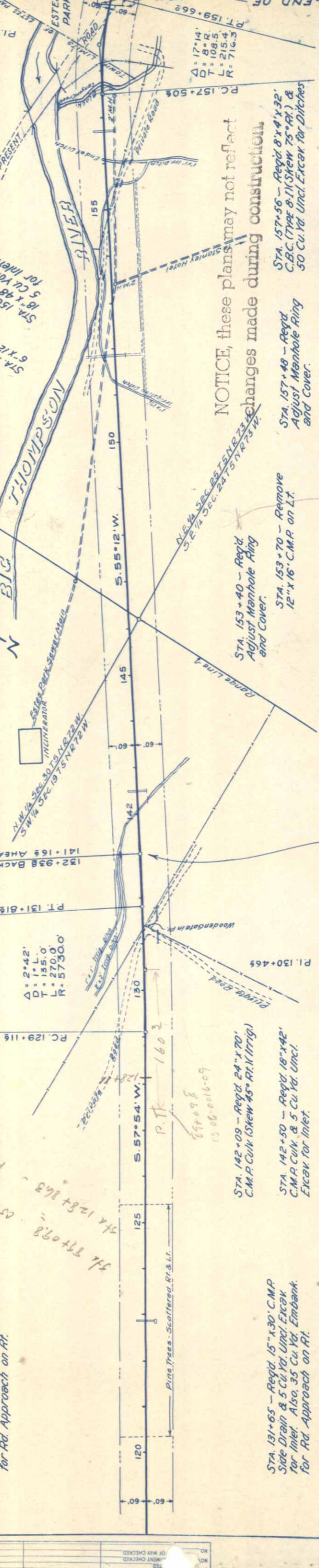
STA. 156+70 - Req'd. 18" x 48" C.M.P. Culk & 5 Cu. Yd. Uncl. Excav. for Inlet.

STA. 157+56 - Req'd. 8" x 4" x 32" C.B.C. (Type B-1) (Slew 75° Rt.) & 50 Cu. Yd. Uncl. Excav. for Ditches

STA. 157+48 - Req'd. Adjust Manhole Ring and Cover.

STA. 153+40 - Req'd. Adjust Manhole Ring and Cover.

STA. 153+70 - Remove 12" x 16" C.M.P. on Lt.



NO.	DATE	BY	NOTE

NO.	DATE	BY	NOTE