

Peteram

See Standard M-100-A for STANDARD SYMBOLS

# STATE DEPARTMENT OF HIGHWAYS DIVISION OF HIGHWAYS - STATE OF COLORADO

## PLAN AND PROFILE OF PROPOSED FEDERAL AID PROJECT NO. RF034-1(15) STATE HIGHWAY NO. 34 WELD COUNTY

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.
VIII	COLORADO	RF 034 - 1(15)	1

UTILITIES, R.O.W. & RE. OBLIGATED UNDER PROJECT NO. RF 034-1(10)

INDEX OF SHEETS

AS CONSTRUCTED  
REVISED DATE  
OCTOBER 28 1975

SHEET NO.

- TITLE PAGE, SKETCH MAP AND TABULATION OF LENGTH AND DESIGN DATA
- TYPICAL SECTION AND GENERAL NOTES
- SUMMARY OF APPROXIMATE QUANTITIES
- SUMMARY OF EARTHWORK QUANTITIES AND TABULATION OF GUARD RAIL
- FENCING REQUIREMENTS AND TABULATION OF DELINEATORS
- BASE COURSE AND SURFACE COURSE PLAN AND SUBBASE PLAN
- PIT SKETCHES
- STRUCTURE QUANTITIES
- DETAILS OF INTERSECTION STA. 171+ AND DETAILS OF MEDIAN OPENINGS STA. 198+, 250+ & 276+
- DETAILS OF INTERSECTION STA. 224+
- ALIGNMENT PLAN AND PROFILE
- STRUCTURE CROSS SECTIONS (NOT PART OF PLANS)
- PIT CROSS SECTIONS

AS CONSTRUCTED PLANS  
RETURN TO DIST. 4 DESIGN

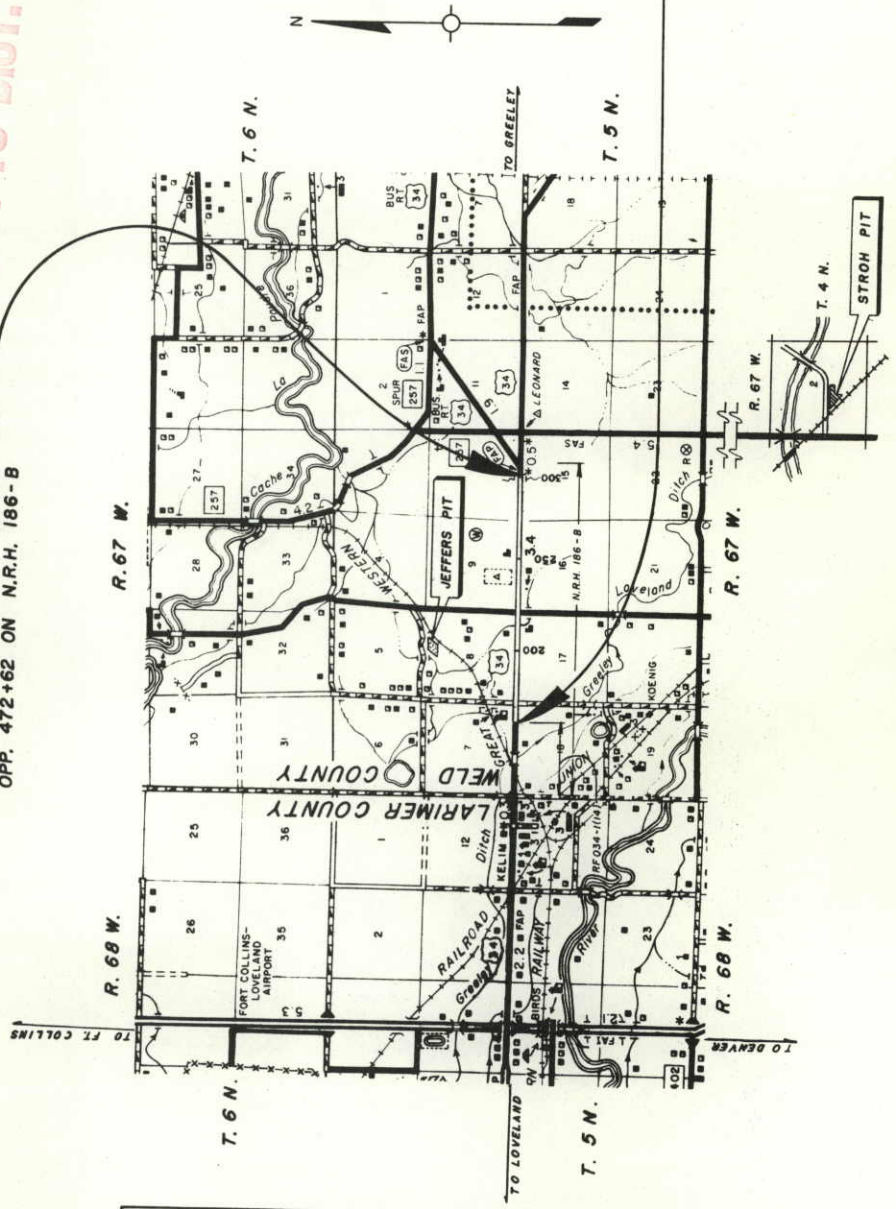
SCALES OF ORIGINAL DRAWINGS

ON PLAN, 1" = 100 FT

ON PROFILE, 1" = 10 FT HORIZONTAL  
1" = 10 FT VERTICAL

GRADE LINE ON PROFILE IS SHOWN AS GRADE OF FINISHED ROAD

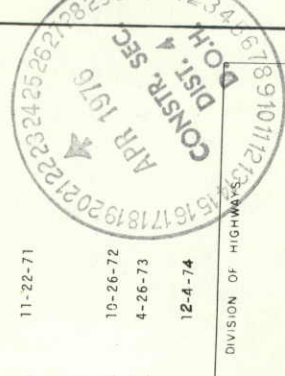
STA. 302+00 END RF 034-1(15)  
OPP. 472+62 ON N.R.H. 186-B



TABULATION OF LENGTH & DESIGN DATA

STATION	48 FT. ROADWAY		24 FT. ROADWAY	
	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.
160+00 BEG. RF 034-1(15) = 160+00 END RF 034-1(14) OPP. 614+65.5 ON N.R.H. 186-B	11,700.0			2,500.0
277+00 END 48 FT. ROADWAY BEG. 24 FT. ROADWAY		11,700.0		2,500.0
302+00 END RF 034-1(15) OPP. 472+62 ON N.R.H. 186-B			11,700.0	2,500.0
TOTAL		11,700.0	11,700.0	2,500.0
SUMMARY		11,700.0	2,216	0.473
TOTAL 48 FT. ROADWAY		11,700.0		
TOTAL 24 FT. ROADWAY		2,500.0		
PROJECT TOTAL (NET & GROSS LENGTH)		14,200.0		2,689
DESIGN DATA				
MAXIMUM DEGREE OF CURVE				TANGENT
MAXIMUM GRADE				2.00%
MINIMUM S.S.D. - HORIZONTAL				> 1300 Ft.
MINIMUM S.S.D. - VERTICAL				860 Ft.
MAXIMUM DESIGN SPEED				70 M.P.H.
1994 DESIGN TRAFFIC VOLUME		11,250 A.D.T.		
		1,360 D.H.V.		

C.K.M.



APPROVED  
E.N. [Signature]  
CHIEF ENGINEER  
DATE 10/28/75

DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION

APPROVED \_\_\_\_\_ DATE \_\_\_\_\_

DIVISION ENGINEER

AS CONSTRUCTED INFORMATION

CONTRACTOR MTN. AGGREGATE INC.  
P.C. ENGINEER K. MAY  
(Project or Resident)

PROJECT STARTED March 10, 1975  
PROJECT COMPLETED October 28, 1975

AS CONSTRUCTED PLANS APPROVED BY [Signature]  
Dist. Const. Eng. 1/13/76 DATE

STA. 160+00 BEG. RF 034-1(15)  
STA. 160+00 END RF 034-1(14)  
OPP. 614+65.5 ON N.R.H. 186-B

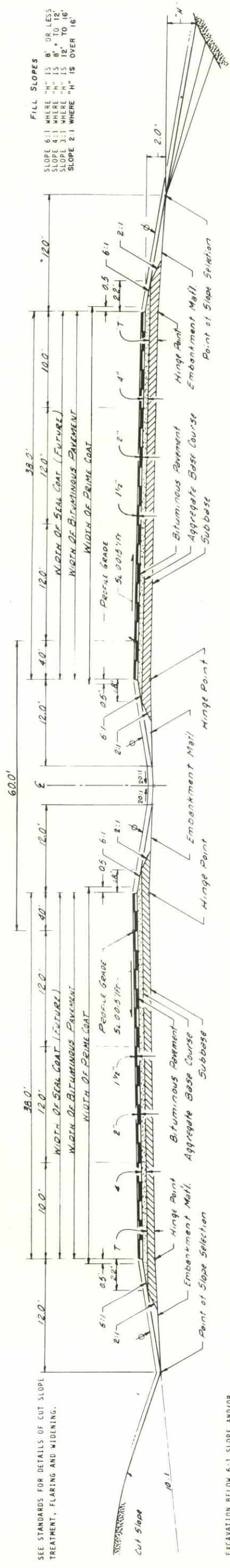
As Constructed No Revisions  
Sheets 2, 11, 12, 16

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
XIII	COLORADO	RF034-1(15)	2	37

(2D) 1-13-75 - C.K.M., General Note

**TYPICAL CROSS SECTIONS**

**AS CONSTRUCTED**  
**NO REVISIONS**  
DATE OCTOBER 28, 1975



**FILL SLOPES**  
SLOPE 6:1 WHERE "H" IS 8' OR LESS  
SLOPE 4:1 WHERE "H" IS 8' TO 12'  
SLOPE 3:1 WHERE "H" IS 12' TO 16'  
SLOPE 2:1 WHERE "H" IS OVER 16'

EXCAVATION BELOW 6:1 SLOPE AND/OR 10:1 SLOPE WILL NOT BE PERMITTED.

THE DEPTH AND WIDTH OF THE SIDE DITCH SHALL BE VARIED WHERE NECESSARY IN ORDER TO PROVIDE PROPER DRAINAGE.

TOPSOIL

BREAK POINTS ON SLOPES AND IN BOTTOMS OF DITCHES SHALL BE ROUNDED ON CONSTRUCTION FOR A PLEASING APPEARANCE.

MATERIAL SHALL BE PLACED IN SEPARATE COURSES AT THE FOLLOWING RATES PER 100 LIN. FT. OF ROADWAY:

BITUMINOUS PAVEMENT TOP LAYER	69 TONS
BOTTOM LAYER	92 TONS
AGGREGATE BASE COURSE	178 TONS

\* WIDEN TO 30 FT. FROM DRIVING LANE IN HIGH EMBANKMENT AREA.

**GENERAL NOTES**

THE CONTRACTOR SHALL PROVIDE ON-THE-JOB TRAINING AIMED AT DEVELOPING FULL JOURNEYMAN IN THE TYPE OF TRADE INVOLVED. THE NUMBER OF TRAINEES TO BE TRAINED UNDER THIS CONTRACT WILL BE 2.

DEPTH OF MOISTURE-DENSITY CONTROL FOR THIS PROJECT SHALL BE AS FOLLOWS:  
FULL DEPTH OF ALL EMBANKMENTS  
BASES OF CUTS AND FILLS 6 INCHES

FOR PRELIMINARY PLAN QUANTITIES OF BITUMINOUS MATERIALS THE FOLLOWING RATES OF APPLICATION WERE USED:  
PRIME COAT MC 70 @ 0.30 GALS. PER SQ. YD.  
TACK COAT CSS-1 @ 0.10 GALS. OF MIXTURE PER SQ. YD. (DILUTED 1:1)  
RATES OF APPLICATION SHALL BE AS DETERMINED BY THE ENGINEER AT THE TIME OF APPLICATION.

IT IS ESTIMATED THAT 420 GALLONS OF PAVEMENT MARKING PAINT WILL BE REQUIRED FOR THIS PROJECT. THIS QUANTITY INCLUDES THE FOLLOWING:  
WHITE PAINT GALS. 245  
YELLOW PAINT GALS. 175

WATER SHALL BE USED AS A DUST PALLIATIVE WHERE REQUIRED. LOCATIONS SHALL BE AS ORDERED.

ANY LAYER OF BITUMINOUS PAVEMENT THAT IS TO HAVE A SUCCEEDING LAYER PLACED THEREON SHALL BE COMPLETED FULL WIDTH BEFORE SUCCEEDING LAYER IS PLACED.

A SKI TYPE DEVICE AT LEAST 30 FEET IN LENGTH AND SHORT SKI OR SHOE SHALL BE FURNISHED WITH EACH BITUMINOUS PAPER EQUIPPED WITH AN AUTOMATIC CONTROL SYSTEM.

ROAD APPROACHES WHICH REQUIRE BITUMINOUS PAVEMENT SHALL BE PRIMED AND A 2" THICKNESS OF PAVEMENT PLACED AS FOLLOWS:

PUBLIC APPROACHES AND ENTRANCES TO BUILDINGS OR RESIDENCES SHALL BE PAVED 50 FT. OUT FROM EDGE OF SHOULDER OR TO THE RIGHT OF WAY LINE WHICHEVER IS LESS. FIELD ENTRANCES SHALL BE PAVED 4 FT. OUT FROM EDGE OF SHOULDER.

THE FORCE ACCOUNT ITEM, "CLEARING OF BUILDING SITES, ETC.," SHALL INCLUDE REMOVAL OF ALL FOUNDATIONS, WELLS, BUILDINGS AND OTHER APPURTENANCES NOT REMOVED BY THE OWNER, AND ANY NECESSARY BACKFILLING OF CELLARS, CESSPOOLS, WELLS, ETC., TO PROVIDE NEAT ROADSIDE CONDITIONS. IT IS ESTIMATED THAT THIS ITEM APPLIES AT THE FOLLOWING LOCATIONS:

STA. 223 + To STA. 226 + RT. & LT.

FOR INFORMATION ONLY:  
WORK BY STATE FORCES.

**FINAL**  
**SUMMARY OF APPROXIMATE QUANTITIES**

**AS CONSTRUCTED**  
**REVISED DATE**  
OCTOBER 28, 1975

INDEX BOOK PAGE SHEET	CONTRACT ITEM NO.	CONTRACT ITEM	UNIT	TOTAL 48 Ft. ROADWAY	TOTAL 24 Ft. ROADWAY	TOTAL 24 Ft. ROADWAY	PROJECT TOTALS	PROJECT TOTAL FINAL	OVER RUN	UNDER RUN
10	202	Removal of Structure	Each	4		4	8	13	5	-
6	202	Removal of Fence	Lin. Ft.	5,950		50	6,000	360	-	5,640
10	202	Plug Culvert	Each	1			1	1	-	-
5	203	Unclassified Excavation	Cu. Yd.	181,700		22,300	204,000	204,000	20,010	1,882
5	203	Borrow	Cu. Yd.	58,000			94,000	156,785	62,785	
5	203	Compaction (AASHTO T 99)	Cu. Yd.	142,800		83,200	226,000	284,355	58,355	
5	204	Haul	Yd. Mi.	112,650			235,400	360,195	124,748	
7	204	Haul	Ton Mi.	786,040			884,100	921,941	37,841	
10	206	Structure Excavation	Cu. Yd.	845		155	1,000	1,226	226	
10	206	Structure Backfill (Class 2)	Cu. Yd.	580		150	730	1,155	425	
4	36	Topsoil (Haul)	Cu. Yd.	16,750		3,150	19,900	23,879	3,979	
3	41	Wetting - Ticket Nos. 108601 thru 108713	M. Gal	7,110		3,530	10,640	4,030	-	6,610
3	41	Reset Mailbox Structure	Each	2			2	2	-	-
3	39	Reset End Section C.O.#09906	Each	-		1	1	0	-	1
266	57A	Seeding	Lb	620			0	1,176	1,176	
9	217	Soil Sterilization	Sq. Yd.	69,950			620	509		111
7	304	Aggregate Base Course (Class 1)	Ton	23,987		10,850	80,800	82,153	1,353	
7	304	Aggregate Base Course (Class 6)	Ton	12,450		3,913	27,900	33,344.05	5,444.05	
7	304	Detour Surfacing-Void C.O.#09906	Cu. Yd.	9,250		1,500	14,500	14,500	0	1,500
7	403	Hot Bituminous Pavement (Grading E)	Ton	1,434		2,050	14,500	14,895.30	395.30	
7	403	Hot Bituminous Pavement (Grading EX)	Ton	5,700		1,550	10,800	11,156	356	
7	411	Asphalt Cement (AC-10)(Fortified)	Ton	34,940		236	1,670	1,415.16	-	285.84
9	20	Emulsified Asphalt (CSS-1)	Gal.	7		5,800	11,500	3,771	-	7,729
9	19	Liquid Asphaltic Material (MC-70)	Gal.	34,940		7,560	42,500	37,192	-	5,308
10	507	Concrete Slope and Ditch Paving (Reinforced)	Cu. Yd.	7		-	7	9.9	2.9	-
10	603	18 Inch Reinforced Concrete Pipe	Lin. Ft.	34		-	34	42	8	-
10	603	36 Inch Reinforced Concrete Pipe	Lin. Ft.	134		166	300	446	146	-
10	603	42 Inch Reinforced Concrete Pipe	Lin. Ft.	-		106	106	192	86	-
10	603	48 Inch Reinforced Concrete Pipe	Lin. Ft.	284		-	284	286	2	-
10	603	36 Inch Reinforced Concrete End Section	Each	1		2	3	3	-	-
10	603	42 Inch Reinforced Concrete End Section	Each	-		2	2	2	-	-
10	603	48 Inch Reinforced Concrete End Section	Each	2		-	2	2	-	-
10	603	18 Inch Corrugated Steel Pipe	Lin. Ft.	10		18	28	10	-	18

**FINAL**  
**SUMMARY OF APPROXIMATE QUANTITIES**  
**AS CONSTRUCTED**  
**REVISED DATE OCTOBER 28, 1973**

REGIONAL MAP REGION NO. VIII  
DIVISION COLORADO  
PROJ. NO. RF 034 - (15)  
SHEET NO. 4  
TOTAL SHEETS 37

INDEX	CONTRACT ITEM NO.	CONTRACT ITEM	UNIT	TOTAL 48 Ft. ROADWAY	TOTAL 24 Ft. ROADWAY	PROJECT TOTALS	PROJECT TOTAL FINAL	OVER RUN	UNDER RUN
10	603	30 Inch Corrugated Steel Pipe	Lin. Ft.	144	-	144	144	-	-
10	603	36 Inch Corrugated Steel Pipe	Lin. Ft.	126	-	126	126	-	-
10	603	42 Inch Corrugated Steel Pipe	Lin. Ft.	144	-	144	140	-	4
10	603	30 Inch Steel End Section	Each	2	-	2	2	-	-
10	603	36 Inch Steel End Section	Each	1	-	1	1	-	-
10	603	42 Inch Steel End Section	Each	2	-	2	2	-	-
10	603	48 Inch Steel End Section	Each	1	-	1	1	-	-
10	604	Inlet Type C (5 Foot)	Each	5	-	5	7	2	-
10	604	Inlet Type D (5 Foot)	Each	1	-	1	1	-	-
6	607	End Post	Each	29	-	29	30	-	6
6	607	Corner and Line Brace Post	Each	24	-	24	23	-	3
6	607	Fence Barbed Wire with Metal Posts	Lin. Ft.	18,450	-	18,450	19,959	-	1,141
6	607	24 Foot Gate Twin Driveway	Each	4	-	4	0	-	4
9	609	Curb and Gutter Type 2 (Section I-M)	Lin. Ft.	723	-	723	661	-	62
9	610	Median Cover Material	Ton	130	-	130	88	-	42
6	612	Delineator (Type I)	Each	12	8	20	12	-	8
6	612	Delineator (Type II)	Each	122	7	129	136	7	-
6	614	Flagging Ticket Nos. 108601 thru 108713	Hour	3,300	700	4,000	2907	-	1093
10	617	18 Inch Culvert Pipe	Lin. Ft.	1,070	83	1,153	1,222	69	-
3 41	620	Field Laboratory	Each	1	-	1	1	-	-
3 41	620	Sanitary Facility	Each	1	-	1	1	-	-
	626	Mobilization	Lump Sum	Prorated	Prorated	•	•	-	-
		<u>FORCE ACCOUNT</u>							
		On the Job Trainee	Each	2	-	2	2	-	-
		Clearing of Building Sites, Etc.	Lump Sum	•	-	•	•	-	-
		<u>STATE FORCES</u>							
		Signing and Striping Entire Project (Non - Federal Aid)	Lump Sum			•	•		
		Seeding (Non - Federal Aid)	Lump Sum			•	•		
		Reset Flashing Yellow Beacon (Non - Federal Aid)	Each			1	1	-	-

C.O.# 08851  
C.O.# 09906  
C.O.# 06634  
C.O.# 08835

**AS CONSTRUCTED**  
**REVISED DATE**  
OCTOBER 26 1975

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
XII	COLORADO	RF 034 - 1(15)	5	37

**SUMMARY OF EARTHWORK QUANTITIES**

INDEX	TOTAL FOR 48 FT. ROADWAY		TOTAL FOR 24 FT. ROADWAY		PROJECT		TOTALS	
	Cu. Yd.	Yd. MI.	Cu. Yd.	Yd. MI.	Cu. Yd.	Yd. MI.	Cu. Yd.	Yd. MI.
<b>UNCLASSIFIED EXCAVATION</b>								
Roadway (From Electronic Computer) CO# 08856	154,472		8,698		163,170		163,896	
Structure Quantities as Excavation SH.10	1,130		40		1,170		240	
Estimated for Cut Slope Treatment	15		10		25		15	
Excavation for Topsoil Ref. BK.4, P.36	470		30		500		23,879	
Stripping (Replacing Overburden)	16,728		3,145		19,873		<del>23,754</del>	
Approach to Project Sub.Exc. Ref. BK.4, P.51	4,300		2,800		7,100		2,990	
<b>TOTAL FOR PAY QUANTITY</b>	<u>181,415</u>		<u>4,704</u>		<u>4,704</u>		<u>2,990</u>	
<i>Exc. Not on Civil Submittal from Top. Plate</i>								
<b>BORROW</b>								
For Roadway Embankment CO# 08851	23,629		8,276		31,905		205,882	
For Embankment to Replace Topsoil	23,419		4,403		27,822		202,870	
Structure Quantities as Embankment	1,500		7,670		9,170		118,224	
Estimated for Shoulder Areas	9,021		1,382		10,403			
For Crossover Sta. 277+			13,941		13,941		98,561	
CO# 08856								
<b>TOTAL FOR PAY QUANTITY</b>	<u>57,569</u>		<u>35,672</u>		<u>93,241</u>		<u>156,785</u>	
<b>COMPACTION (AASHO T99)</b> (Moisture and Density Control)								
Embankment (Net)	89,646		54,852		144,498		233,211	
Base of Cuts and Fills	28,132		6,006		34,138		28,132	
Structure Quantities as Embankment (Net)	1,500		7,670		9,170		3,534	
Embankment to Replace Topsoil (Net) in X Sections	16,728		3,145		19,873			
Shoulder Areas (Net)	6,682		1,024		7,706			
Crossover Sta. 277+ (Net) CO# 08851			10,326		10,326			
Accel. Lane Ref. BK.4 P.46							9527	
Base of Cut & Fill Sta. 277-303 BK.4 P.47							9951	
<b>TOTAL FOR PAY QUANTITY</b>	<u>142,688</u>		<u>83,023</u>		<u>225,711</u>		<u>284,355</u>	
<b>HAUL</b>								
From Mass Diagram	Yd. MI.		Yd. MI.		Yd. MI.		Yd. MI.	
Estimated for Shoulder Areas	62,002		50,036		112,038		353,801	
Estimated for Replacing Topsoil - Incl. in Mass Dia.	14,074		3911		17,985		<del>353,797</del>	
From Structure Quantities	36,534		12,460		48,994			
Estimated for Crossover Sta. 277+	-		20,807		20,807			
Haul to Topsoil Piles BK.4 P.36	-		35,507		35,507		2,394	
<b>TOTAL FOR PAY QUANTITY</b>	<u>112,610</u>		<u>122,721</u>		<u>235,331</u>		<u>360,195</u>	
<b>ROADWAY QUANTITIES BALANCE</b> (For Information Only)								
<b>EXCAVATION</b>								
Unclassified	154,472		8,698		163,170		163,170	
Borrow	23,629		8,276		31,905		31,905	
<b>TOTAL</b>	<u>178,101</u>		<u>16,974</u>		<u>195,075</u>		<u>195,075</u>	
<b>EMBANKMENT NET (Roadway - From Electronic Computer)</b>								
<b>TOTAL</b>	<u>89,646</u>		<u>54,852</u>		<u>144,498</u>		<u>144,498</u>	
<b>EMBANKMENT x FACTOR (Roadway - From Electronic Computer)</b>								
<b>TOTAL</b>	<u>121,024</u>		<u>74,051</u>		<u>195,075</u>		<u>195,075</u>	

**AS CONSTRUCTED**  
**REVISED DATE**  
OCTOBER 28, 1975

FEDERAL ROAD REGION NO. VIII	DIVISION COLORADO	PROJ. NO. RF034-1(15)	SHEET NO. 6	TOTAL SHEETS 37
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TABULATION OF DELINEATORS

STATION TO STATION	SIDE	SPACING	TYPE I		TYPE II	
			PLAN	FINAL	PLAN	FINAL
162+44 to 170+44	Lt.	Acceleration Lane		5	5	5
162+44 to 170+44	Rt.	Deceleration Lane		6	6	6
164+77 to 170+77	Rt.	Deceleration Lane		5	5	5
172+40 to 178+40	Lt.	Deceleration Lane		5	5	5
172+73 to 180+73	Lt.	Deceleration Lane		6	6	6
172+73 to 180+73	Rt.	Acceleration Lane		5	5	5
197+45	Lt.	Median Crossover		1	1	1
199+65	Rt.	Median Crossover		1	1	1
204+01 to 224+55	Lt.	Acceleration Lane		20	20	24
224+	Lt.&Rt.	Islands	12	12		
216+02 to 223+97	Rt.	Deceleration Lane		6	6	6
213+61 to 224+55	Rt.	Deceleration Lane		16	16	15
224+89 to 235+83	Lt.	Deceleration Lane		16	16	15
224+89 to 245+83	Rt.	Acceleration Lane		20	20	17
225+47 to 233+92	Lt.	Deceleration Lane		7	7	7
249+25	Lt.	Median Crossover		1	1	1
251+45	Rt.	Median Crossover		1	1	1
274+90	Lt.	Median Crossover		1	1	1
277+10	Rt.	Median Crossover		1	1	1
277+ to 285+	Rt.&Lt.	Crossover	8	0		
294+80 to 303+60	Lt.	Accel. Lane		6	6	0
A & D LANES & RADII						14
Total 48 Ft. Roadway			12	122	129	136
Total 24 Ft. Roadway			8	7		
PROJECT TOTALS			20	12	129	136

Book 4 Pages 10, 11

STATION TO STATION	SIDE	REMOVE FENCE		BUILD FENCE		GATES			
		LINEAR FOOT		LINEAR FOOT		BARBED WIRE		DRIVE	
		PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL
221+85 - 223+75	Lt.	190	260						
224+38	Lt.	100	100						
225+05 - 255+00	Lt.	3,160	0						
255+00 - 275+00	Lt.	2,050	0						
225+05 - 226+65	Rt.	440	0						
171+90 - 224+40	Lt.			5,310	949				
215+34 - 224+40	Lt.								
225+00 - 255+00	Lt.			3,040	2077				
225+00 - 245+35	Lt.			2,200	2543				
255+00 - 277+00	Lt.								
250+36 - 275+78	Lt.								
171+90 - 224+10	Lt.				4240				
198+00 - 224+40	Rt.			2,770	2767				
225+05 - 255+00	Rt.			3,010					
226+00 - 250+58	Rt.			2,110	2255				
255+00 - 276+00	Rt.				2512				
250+58 - 276+38	Rt.								
198+	Lt.					2	2	1	0
215+	Lt.							1	0
242	Lt.								
246+	Lt.								
250+	Lt.							1	0
275+	Lt.							2	
186	Rt.							1	
198+	Rt.							0	
193	Rt.							0	
211+80	Rt.							0	
226+10H Co. Rd.	Rt.							1	0
250+	Rt.							1	
276+	Rt.							2	2
275+76 - 302+01	Lt.				2616				
277+00 - 302+60	Lt.			2,560					
291+	Lt.					1	1		
302+	Rt.			50	0				
Total 48 Ft. Roadway			5,940			10	4		
Total 24 Ft. Roadway			50			3			
PROJECT TOTALS			5,990	360	19,959	13	4	0	0

It is estimated that 29 End Posts and 24 Corner and Line Brace Posts will be Required on the 48 Ft. Roadway and 7 End Posts and 2 Corner and Line Brace Posts will be Required on the 24 Ft. Roadway. \* For Information Only

**AS CONSTRUCTED**  
**REVISED DATE**  
OCTOBER 28, 1975

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
XIII	COLORADO	RF 034-1(15)	7	37

**SUBBASE PLAN** \_\_\_\_\_ **BASE COURSE AND SURFACE COURSE PLAN**

STATION TO STATION	SOURCE	THICKNESS INCHES	AGGREGATE BASE COURSE				
			CLASS 1 TONS		HAUL - TON MILE		
			PLAN	FINAL	PLAN	FINAL	
<u>WESTBOUND</u>							
160+00 to 167+00		9 12	2,100		16,413		
167+00 to 193+00		9	5,850		43,893		
193+00 to 212+00		12	5,700		40,338		
212+00 to 225+00		9 9	2,925		19,814		
225+00 to 254+00		12	8,700		55,472		
254+00 to 267+00		9	2,925		17,487		
267+00 to 277+00		12	3,000		17,282		
<u>EASTBOUND</u>							
160+00 to 167+00		12	2,100		16,413		
167+00 to 277+00		9	24,750		166,012		
Intersection Sta. 171+			1,806		13,838		
Intersection Sta. 224+			3,702		24,641		
Est. for Corr. Irreg.			6,356		44,414		
277+00 to 287+00		9 9	2,250		12,535		
287+00 to 292+00		12	1,500		8,144		
292+00 to 302+00		9	2,250		11,896		
Appr. to Proj. Sta. 302+			2,547		12,984		
Crossover Sta. 277+			1,296		7,231		
Est. for Corr. Irreg.			984		5,279		
<b>Total 48 Ft. ROADWAY</b>			<b>69,914</b>		<b>476,017</b>		
<b>Total 24 Ft. ROADWAY</b>			<b>10,827</b>		<b>58,069</b>		
<b>PROJECT TOTALS</b>			<b>80,741</b>	<b>82,153</b>	<b>534,086</b>	<b>526,939</b>	

STATION TO STATION	SOURCE	QUANTITY - TONS						HAUL - TON MILE		
		BASE COURSE		SURFACE COURSE - HOT BITUMINOUS PAVEMENT		SURFACE COURSE - HOT BITUMINOUS PAVEMENT		SURFACE COURSE - HOT BITUMINOUS PAVEMENT		
		AGGR. BASE CLASS 6	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL
160+00 to 277+00		20826	10,764	8,073	875	14,072	72,914	54,685	4,751	2,365
Intersection Sta. 171+		803	443	333	641	6,153	3,394	2,552	4,267	1,118
Intersection Sta. 224+		1,548	854	641	1,150	10,304	5,684	4,267	4,751	2,365
From Structure Quantities		810	351	165	618	5,487	2,378	1,118	4,267	2,365
277+00 to 302+00		2,225	1,150	875	464	12,080	6,244	4,751	4,751	2,365
Approach to Proj. Sta. 302+		1,133	618	464	256	5,776	3,150	2,365	4,751	2,365
Crossover Sta. 277+		471	256	192	6	2,628	1,428	1,071	4,751	2,365
From Structure Quantities		84	6	-	6	465	33	-	4,751	2,365
From Structure Quantities									4,751	2,365
<b>Total 48' ROADWAY</b>		<b>23,987</b>	<b>12,412</b>	<b>9,212</b>	<b>14,442</b>	<b>163,016</b>	<b>84,370</b>	<b>62,622</b>	<b>70,809</b>	<b>73,792</b>
<b>Total 24' ROADWAY</b>		<b>3,913</b>	<b>2,030</b>	<b>1,531</b>	<b>2,030</b>	<b>20,949</b>	<b>10,855</b>	<b>8,187</b>	<b>10,809</b>	<b>11,172</b>
<b>PROJECT TOTALS</b>		<b>27,900</b>	<b>14,442</b>	<b>10,743</b>	<b>14,472</b>	<b>183,965</b>	<b>95,225</b>	<b>70,810</b>	<b>81,618</b>	<b>84,964</b>

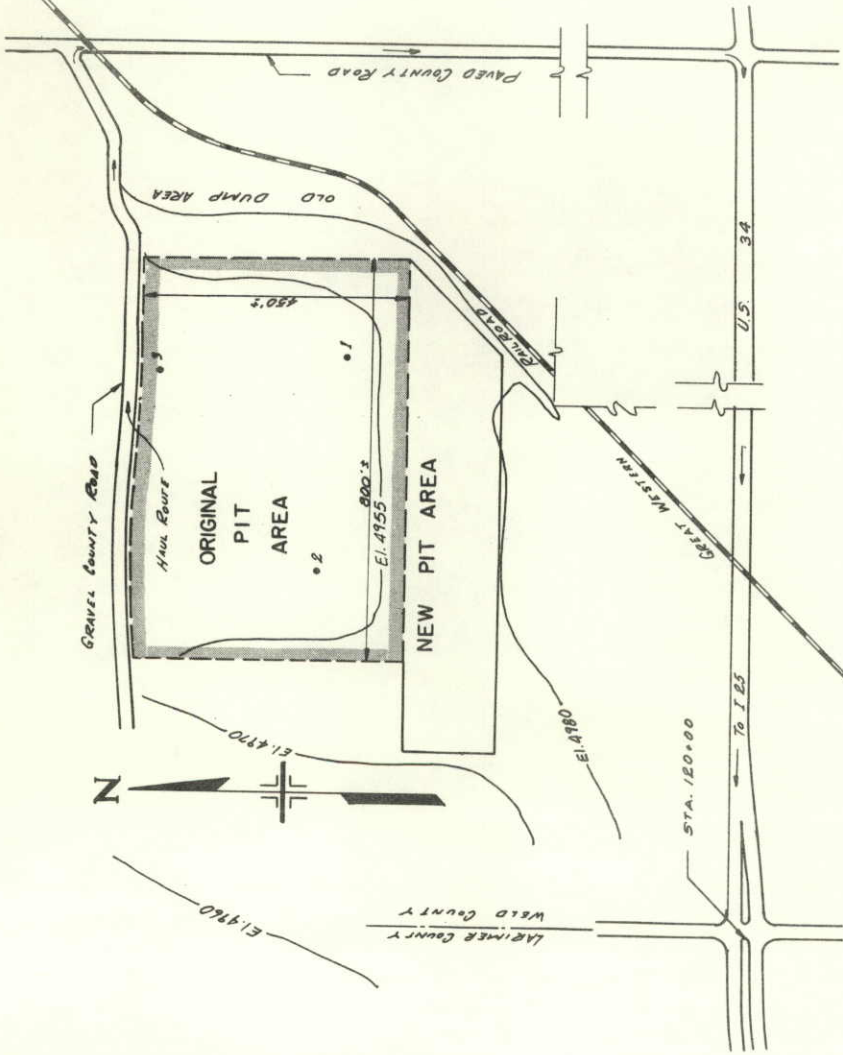
STABILIZATION BASED ON : AC 10 Calculated on spread envelopes documented on 266# 20,23,30,  
32,33,35,44,52,56, & 60.  
18k EDLA = 105  
Regional Factor = 1.5  
Serviceability Index = 2.5  
Total AC 10 = 1415.16 Ton

STRENGTH COEFFICIENTS :  
H.B.P. (Rt. = 100) = 0.44  
A.B.C. (Class 6/IR=82) = 0.12  
A.B.C. (Class 1/IR=78) = 0.12

TON-MILE REF. FORM 724	
HBP Gr. E	102,910
HBP Gr. Ex	73,792
ABC CL. 6	218,300
ABC CL. J	526,939
<b>TOTAL</b>	<b>921,941</b>

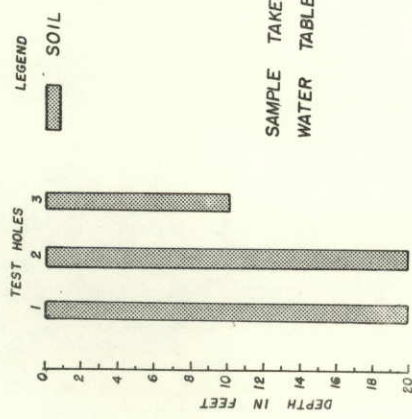
### JEFFERS PIT

**LOCATION:** A Part Of The NE 1/4 Sec. 8, T.5N.; R. 67 W.  
**OWNER:** Gary A. Jeffers  
**QUANTITY AVAILABLE:** 120,000 Cu. Yds. R<sup>2</sup> = 28  
**HAUL DISTANCE:** 1.5 Miles To Sta. 224+72  
**PROPOSED USE:** Borrow  
**STRIPPING:** 4,000 Cu. Yds. Overburden To Be Removed,  
 4,000 Cu. Yds. Overburden To Be Replaced.



### LOG OF THE PIT

SAMPLE NO. 1112

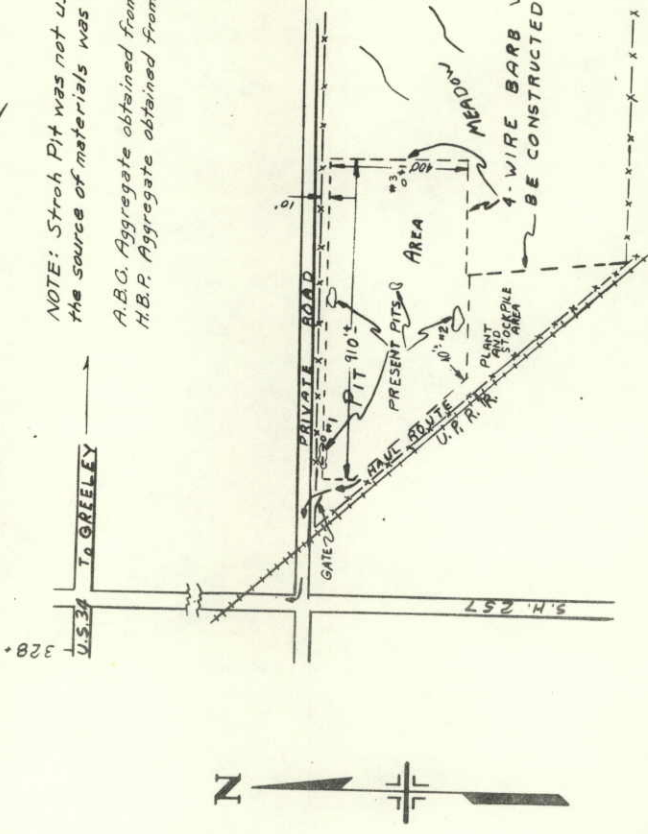


SAMPLE TAKEN June 26, 1973  
 WATER TABLE DEPTH UNKNOWN

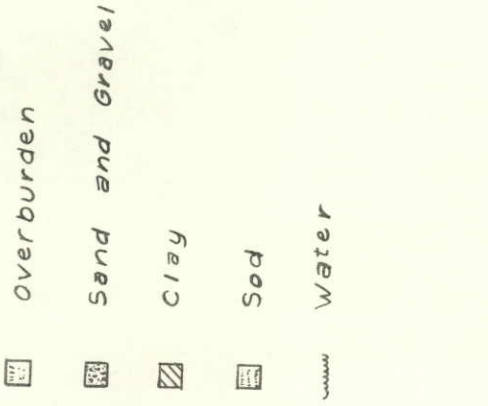
### STROH PIT

**LOCATION:** A portion of SW 1/4 and W 1/4 N.W. 1/4 S.E. 1/4  
 Sec. 2 T. 4N. R. 67 W.  
**OWNER:** Elmer Stroh and Helen D. Stroh  
**QUANTITY AVAILABLE:** 80,000 Cu. Yds.  
**PROPOSED USE:** Subbase, Surfacing & Hot Bituminous Pavement.  
**HAUL DISTANCE:** 5.192 Mi to Sta. 302+00  
**OVERBURDEN:** 15,500 Cu. Yds.  
**STRIPPING:** 3,100 Cu. Yd. Remove  
 3,100 Cu. Yd. Replace

NOTE: Stroh Pit was not used. By C.O. 08857,  
 the source of materials was as follows:  
 A.B.C. Aggregate obtained from Swift Pit.  
 H.B.P. Aggregate obtained from Flatiron of Greeley.



### LOG OF TESTS



Sample No. 1693  
 Date: November 19, 1973  
 Water Table: Average

CONTRACTOR WILL BE PROHIBITED  
 FROM WORKING THE PIT BETWEEN  
 THE HOURS OF 10 P.M. AND  
 6 A.M.

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	RF034-1(15)	8	37

(E-7) 12-30-74 - C.E.M., CHANGED QUANTITY.

**AS CONSTRUCTED**  
**REVISED**  
**DATE**  
 OCTOBER 28, 1973



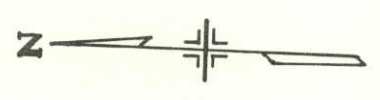


**AS CONSTRUCTED**  
**NO REVISIONS**

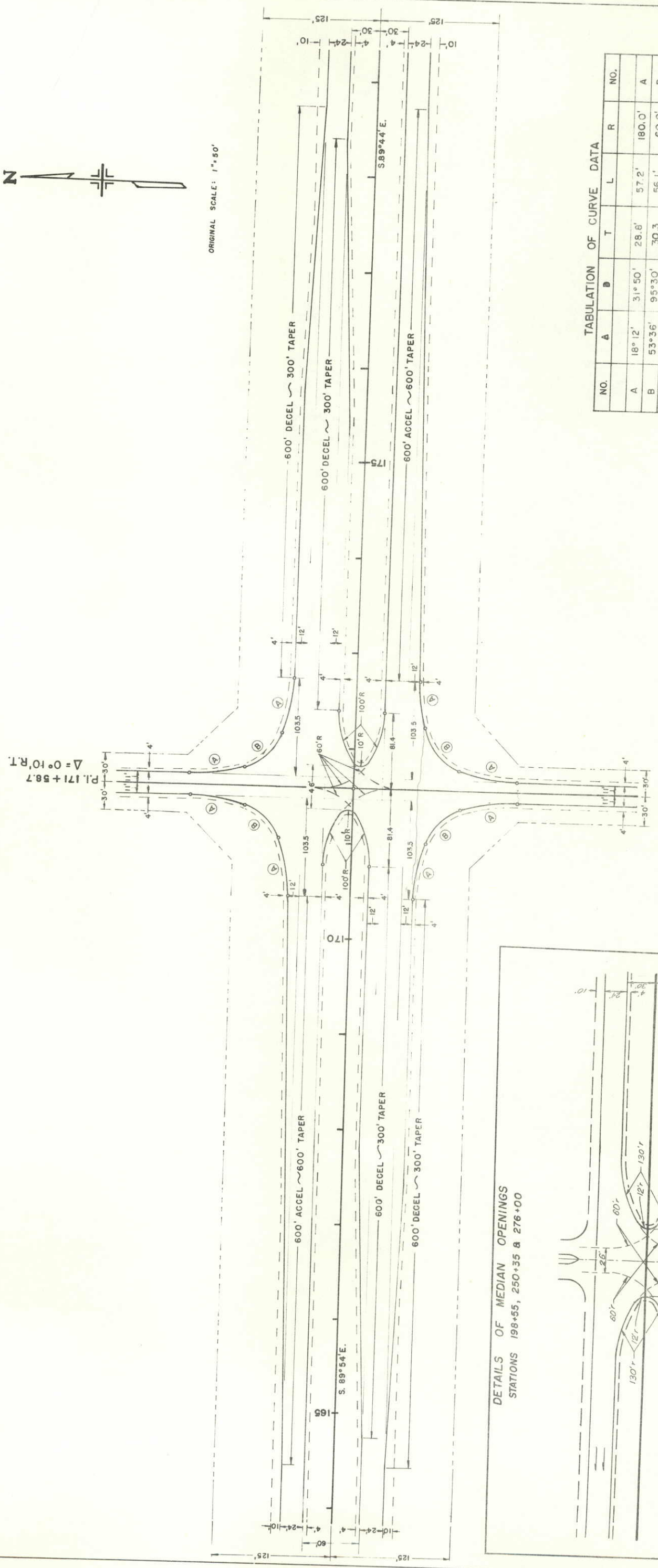
FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	RF 034-1(15)	11	37

DATE OCT. 28, 1965

DETAILS OF INTERSECTION  
 STA. 171+58.7

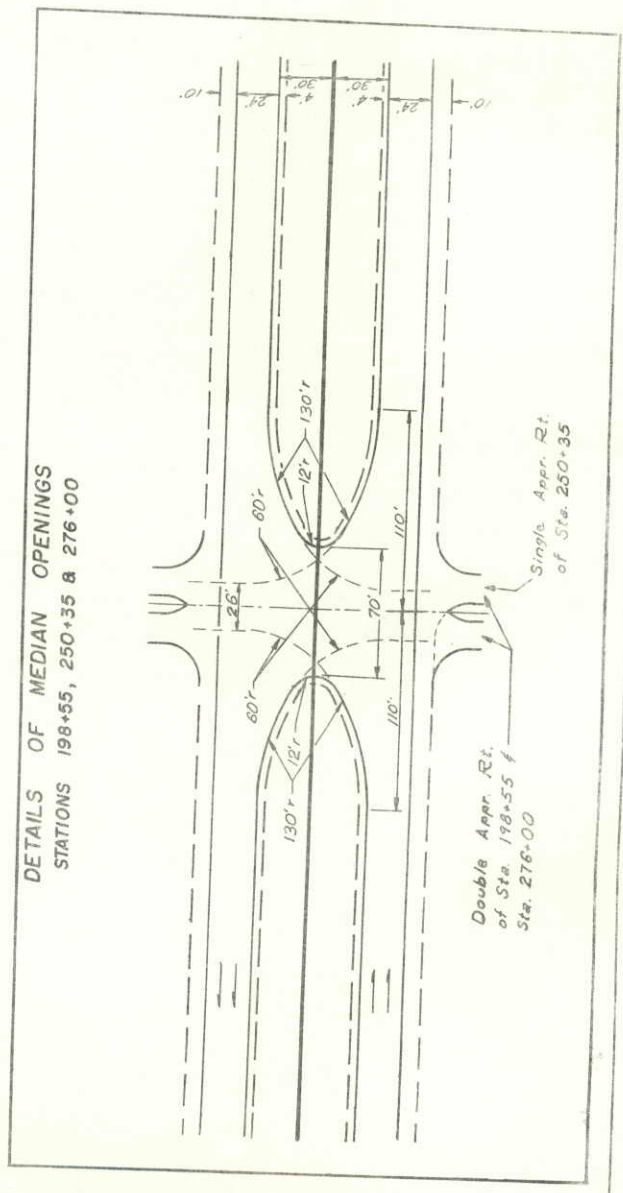


ORIGINAL SCALE: 1"=50'



TABULATION OF CURVE DATA

NO.	A	B	T	L	R	NO.
A	18°12'	31°50'	28.6'	57.2'	180.0'	A
B	53°36'	95°30'	30.3	56.1'	60.0'	B





**AS CONSTRUCTED**  
**REVISED DATE**  
OCTOBER 28, 1975

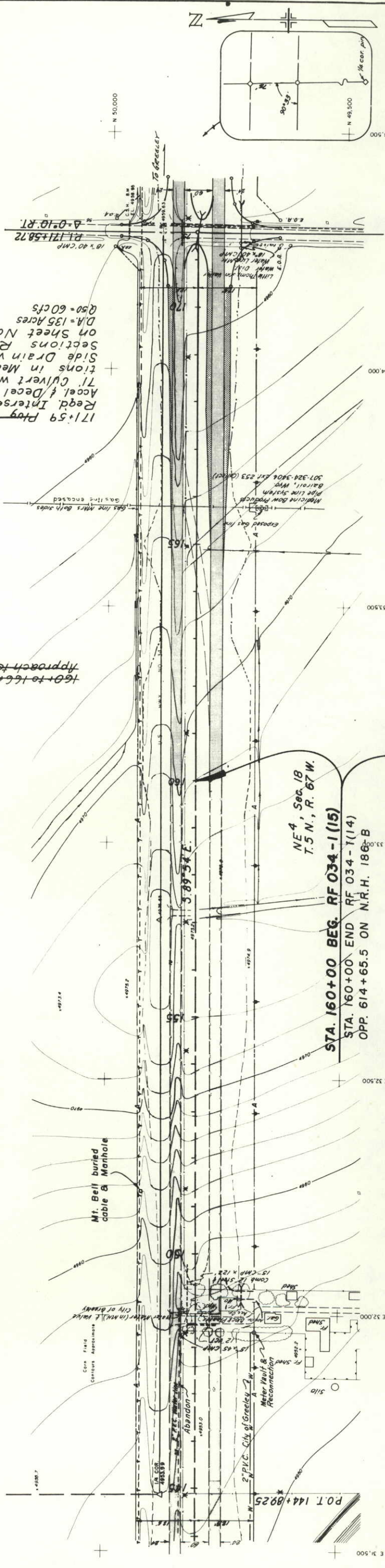
FEDERAL ROAD REGION NO.	III	COLORADO	PROJ. NO.	RF 034-1(15)	SHEET NO.	13	TOTAL SHEETS	37
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12-30-A - C.K.M. CHANGED FACTOR

SE 4, Sec. 7  
T. 5 N., R. 67 W.

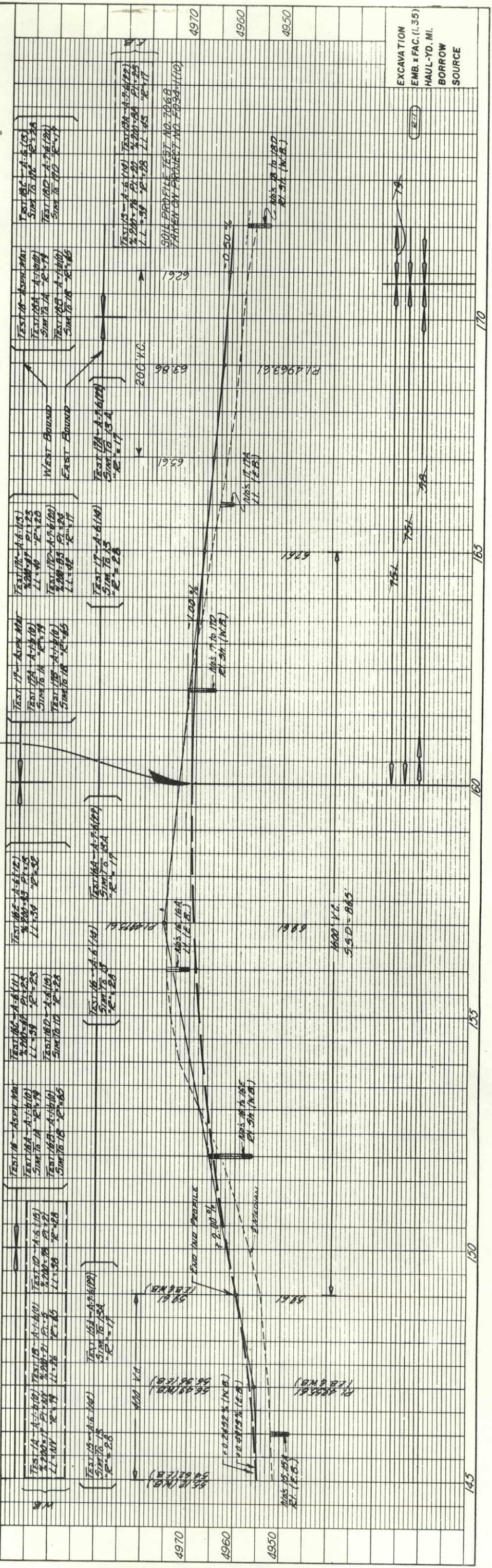
160+ to 166 - Remove  
Approach to Project

171.59 Pkg 18-C.S.F.Lt.  
Reqd. Intersection with  
Accl. & Decel Lanes, 18 x  
71' Culvert with End Sec-  
tions in Median, 18' x 71'  
Side Drain with End  
Sections Rt. (Details  
on Sheet No. 11)  
DIA = 135 Acres  
Q50 = 60 cfs



NE 4, Sec. 18  
T. 5 N., R. 67 W.  
STA. 160+00 BEG. RF 034-1(15)  
STA. 160+00 END RF 034-1(14)  
OPP. 614+65.5 ON N.R.H. 186-B

DATE		BY	
VERIFIED			
NOTED			
PLANNED			
NO. 2722			
NOTE BOOK			
RT. OF WAY CHECKED			
NO. 2722			



DATE		BY	
VERIFIED			
NOTED			
PLANNED			
NO. 2722			
NOTE BOOK			
GRADES CHECKED			
NO. 2722			

EXCAVATION  
EMB. x FAC. (1.35)  
HAUL-YD. MI.  
BORROW  
SOURCE

145 150 155 160 165 170

FEDERAL ROAD REGION NO.	III
DIVISION	COLORADO
PROJ. NO.	RFO34-1(15)
SHEET NO.	14
TOTAL SHEETS	37

12-30-74 - C.K.M., CHANGED FACTOR

AS CONSTRUCTED  
 REVISED DATE  
 OCTOBER 28, 1975

SW 4, Sec. 8  
 T. 5 N., R. 67 W.

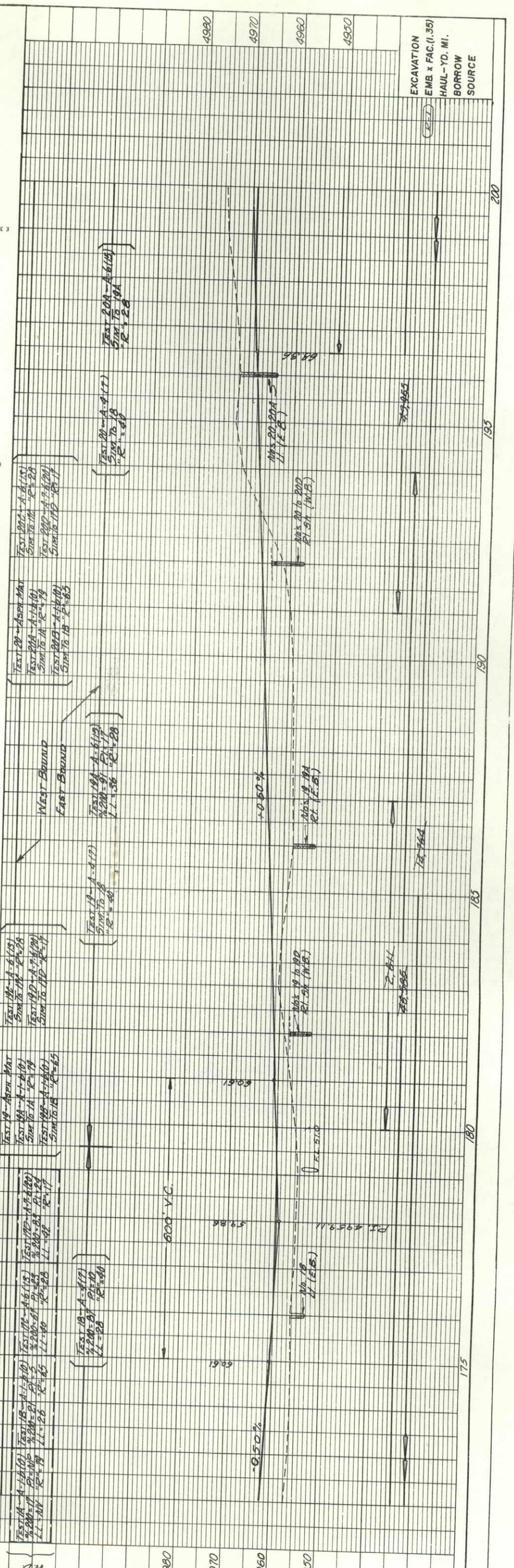
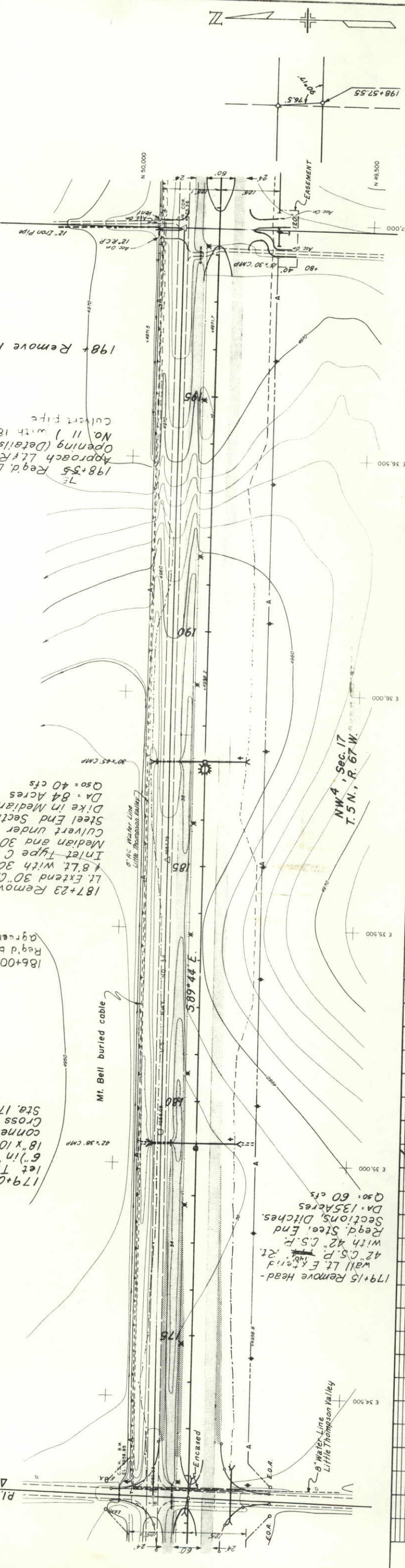
NW 4, Sec. 17  
 T. 5 N., R. 67 W.

179+02 Reg'd. In-let Type C (H=2.6') in Median with 18" x 10" C.S.P. Culvert connected to 42" x 36" CMP Sta. 179+15 Road Approach Reg'd by ROW Agreements

187+23 Remove Headwall Lt. Extend 30" C.S.P. 52 Rt. Inlet Type C (H=5.0') in Median and 30" x 84" C.S.P. Culvert under E.B. Lane, Steel End Section Rt. Lt. Dike in Median. DA = 84 Acres Q50 = 40 cfs

198+55 Reg'd. Double Road Approach Lt. Rt. Median No. 11 with 18" x 36" Culvert pipe

198+ Remove 15" C.S.P. Lt.



DATE	
BY	
SURVEYED	
PLOTTED	
NOTES	
NO. 1173	
NO. 1174	
NO. 1175	

DATE	
BY	
SURVEYED	
PLOTTED	
NOTES	
NO. 833	
NO. 834	
NO. 835	



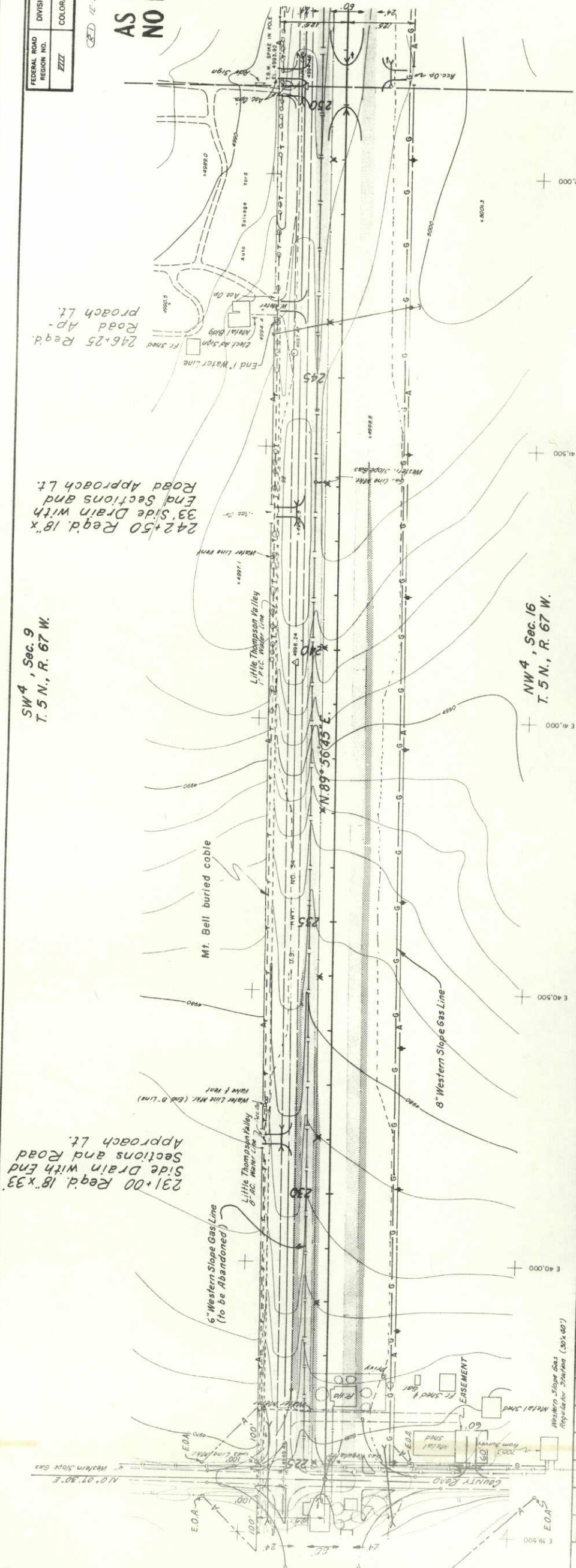
FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
ZZZ	COLORADO	AF034-115	16	37

10-30-75 C.A.M., CHANGED FACTOR

**AS CONSTRUCTED**  
**NO REVISIONS**  
 DATE OCTOBER 26, 1975

SW 4, Sec. 9  
 T. 5 N., R. 67 W.

NW 4, Sec. 16  
 T. 5 N., R. 67 W.



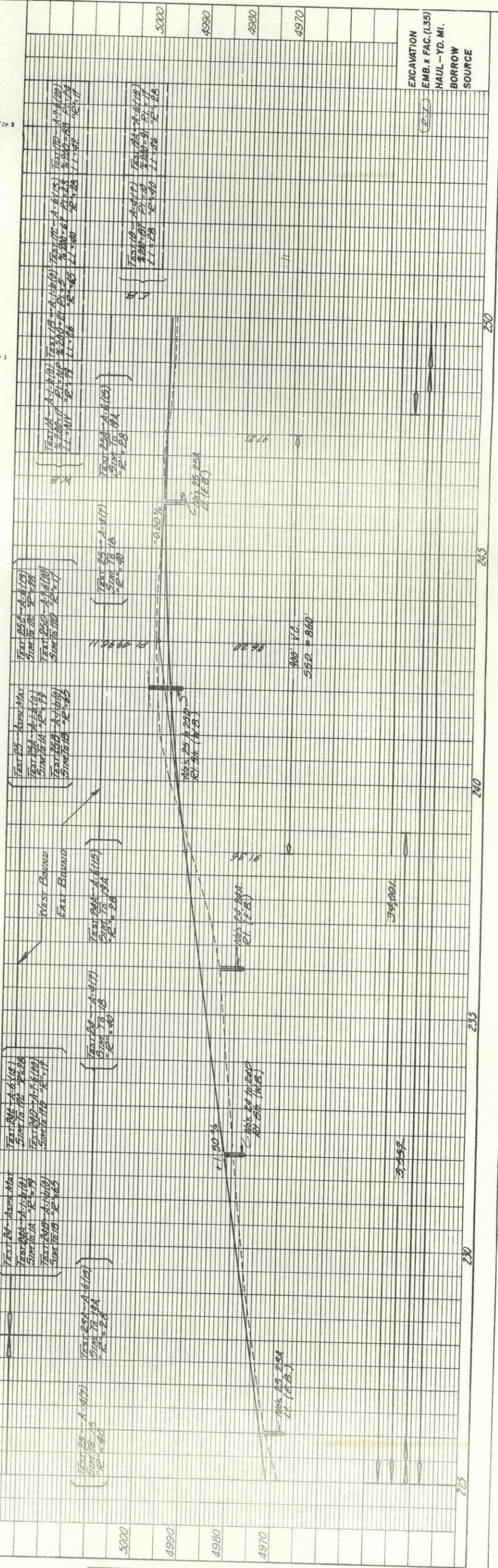
231+00 Reg'd. 18"x33"  
 Side Drain with Road  
 Approach Lt.

242+50 Reg'd. 18"x  
 33" Side Drain with  
 Road Approach Lt.

246+25 Reg'd.  
 Road Ap-  
 Proach Lt.

DATE	BY	NOTE
		PLM
		NOTED
		RT. OF WAY CHECKED
		NO. 3173

DATE	BY	NOTE
		PROFILE
		SURVEYED
		GRADES CHECKED
		AS NOTED
		FORM 653



EXCAVATION  
 EMB. x FAC. (L35)  
 HAUL - YD. MT.  
 BORROW  
 SOURCE

225

230

235

240

245

250

SE 4, Sec. 9  
T. 5 N., R. 67 W.

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
3333	COLORADO	RF034-1(15)	17	37

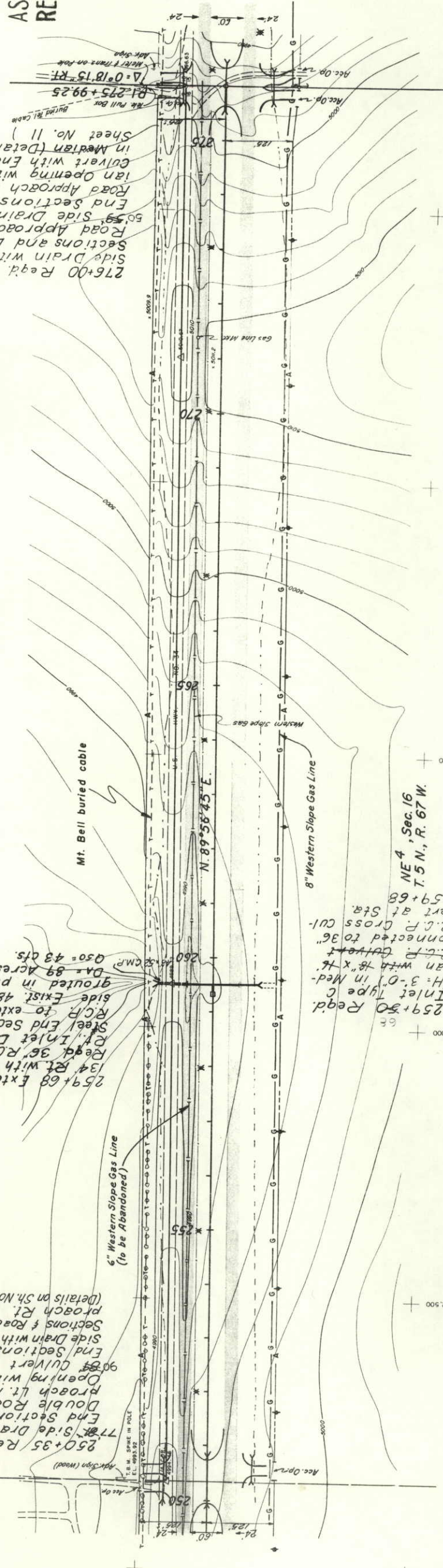
AS CONSTRUCTED  
REVISED DATE  
OCTOBER 26, 1975

BY: C.K.M. CHANGED FACTOR

276+00 Req'd. 18" x 54" Side Drain with End Sections and Double Road Approach Lt. 18" x 50" Side Drain with End Sections & Double Road Approach Rt. Median Opening with 18" x 25% Road Approach Rt. Median (Details on Sheet No. 11)

259+50 Req'd. Inlet Type C (H. 3'-0") in Median with 18" x 48" R.C.P. Culvert connected to 36" R.C.P. Cross Culvert at Sta. 259+68

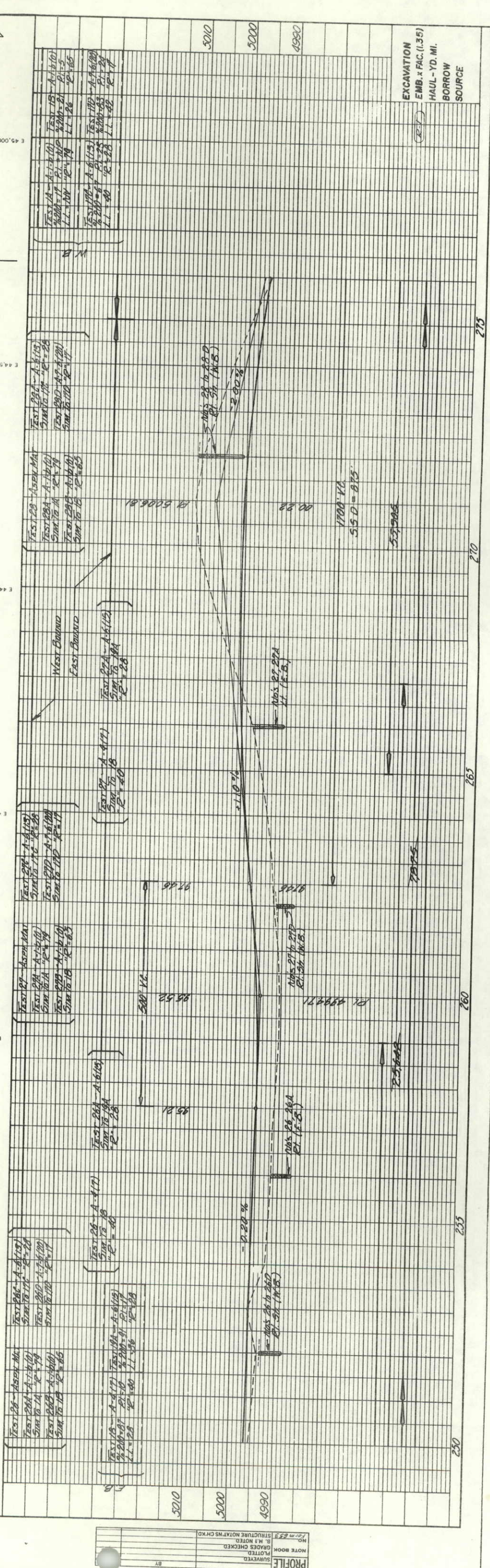
250+35 Req'd. 18" x 77" Side Drain with End Sections & Double Road Approach Lt. Median Opening with 18" x 90" Culvert with End Sections & Road Approach Rt. (Details on Sh. No. 11)



PLAN

DATE	BY

NOTE BOOK NO. 31772  
RT. OF WAY CHECKED  
ALIGNED CHECKED



PROFILE

DATE	BY

NOTE BOOK NO. 31772  
GRADES CHECKED  
STRUCTURE NOTATIONS CHECKED

EXCAVATION  
EMB. x FAC. (1.35)  
HAUL - YD. MI.  
BORROW  
SOURCE

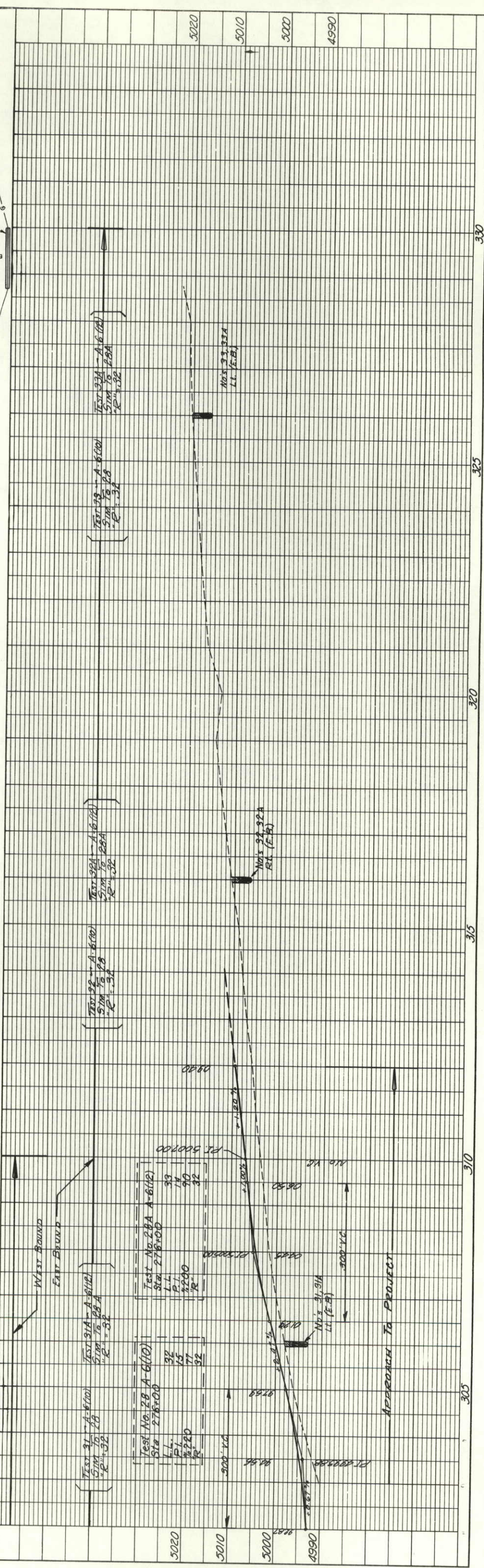
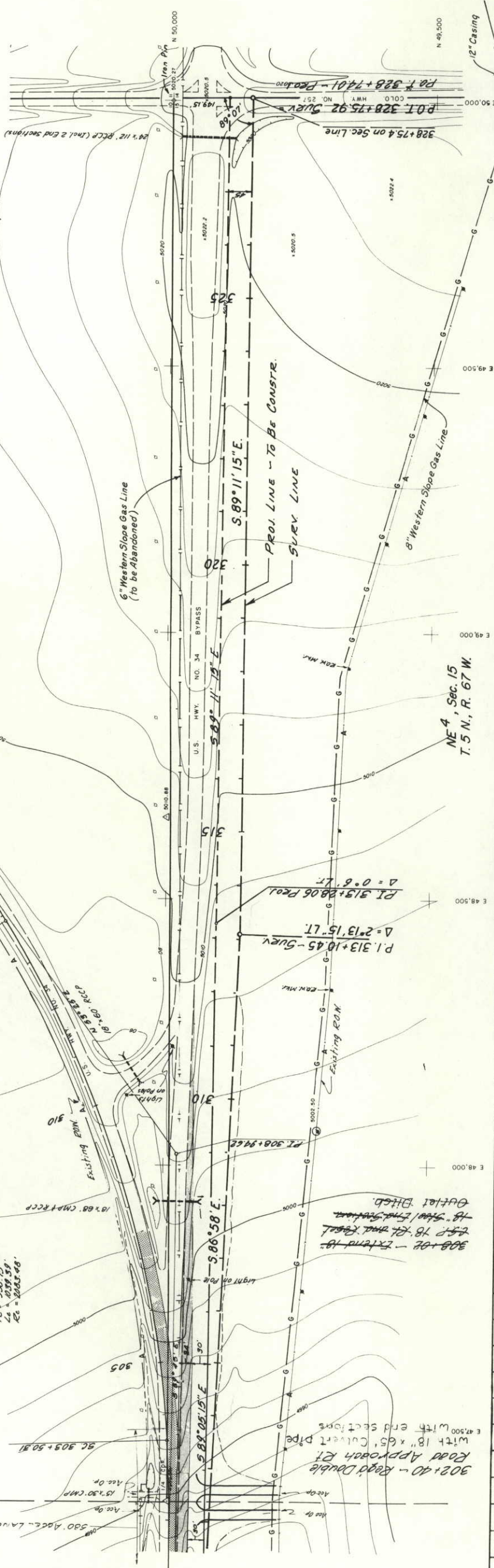


FEDERAL ROAD REGION NO.	ZZZZ	DIVISION	COLORADO	PROJ. NO.	RF034-1(15)	SHEET NO.	19	TOTAL SHEETS	37
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**AS CONSTRUCTED**  
**REVISED DATE** OCTOBER 28, 1975

SE 4, Sec. 10  
T. 5 N., R. 67 W.

$\Delta_1 = 4^\circ 7' 30''$   
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PLAN

DATE	
BY	
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