

55.02

Rev. 7-5-55 - M.R.H.
Rev. 9-28-55, Index of Sheets & Bidders Notice, J.C.R.

55.02

FED. ROAD DIV. NO.	DIST.	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	S 0055(2)	55.02	

COLORADO
DEPARTMENT OF HIGHWAYS
PLAN AND PROFILE OF PROPOSED
FEDERAL AID PROJECT NO. S 0055 (2)
STATE HIGHWAY NO. 70
ARAPAHOE COUNTY

SHEET NO.	INDEX OF SHEETS
1	SKETCH MAP, TITLE PAGE AND TABULATION OF LENGTH & DESIGN DATA
2	TYPICAL SECTIONS, GENERAL NOTES AND DETAILS OF CURBED MEDIANS & CONCRETE SLOPE PAVING FOR C.M.P. CULVERTS
3	SUMMARY OF APPROXIMATE QUANTITIES
4	TABULATIONS OF CURB & GUTTER, FENCING, TIMBER GUARD POSTS, R.O.W. MARKERS AND SURFACING-PLAN NO. 2
5	PIT LOCATIONS, BORROW AND SURFACING-PLAN NO. 1
6-7	LIST OF STRUCTURES
8-9	DETAILS OF BRIDGE, STA. 293+
10	DETAILS OF BRIDGE, STA. 409+
11	STANDARD METHODS FOR SUPERELEVATION & WIDENING OF CURVES
12	STANDARD METHODS FOR SUPERELEVATING CURVES ON DIVIDED HIGHWAYS
13	STANDARD SIDE APPROACH ROADS, FLARING, CUT SLOPE TREATMENT AND WIDENING AT BRIDGES & AT CREST OF GRADES
14	STANDARD MARKER POSTS
15	STANDARD LETTERS & FIGURES FOR YEAR NUMBERS AND STRUCTURE NUMBERS
16	STANDARD TIMBER GUARD POSTS
17	STANDARD WIRE FENCE WITH METAL POSTS
18A-18B	STANDARD ROADWAY CONSTRUCTION TRAFFIC SIGNS
19	STANDARD CONCRETE INLET FOR MEDIAN DITCH
20	STANDARD HEADWALLS AND APRONS FOR C.M.P. CULVERTS
21	STANDARD TYPES OF DITCHES AND CONSTRUCTION METHODS
22	REINFORCED CONCRETE CULVERT PIPE AND CONCRETE SEWER PIPE
23-25	DETAILS AND PROFILE OF INTERSECTION, STA. 252+
26-33	ALIGNMENT PLAN AND PROFILE
34-36	DETAILS AND PROFILE OF INTERSECTION STA. 458
37	SUMMARY OF EARTHWORK QUANTITIES
38-149	CROSS SECTIONS

M-1-C
M-1-C1
M-2-EM
M-7-C
M-10-B
M-19-D
M-27-C
M-29-A, M-29-B (2-SHEETS)
M-46-A
M-102-H
M-107-C
M-112-E

SCALES OF ORIGINAL DRAWINGS

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	FED AID	NON-FED AID	TOTAL
NET LENGTH OF PROJECT	20,537.1 FT. = 3.890 MILES	28.6 FT. = 0.005 MILES	20,565.7 FT. = 3.895 MILES

CONVENTIONAL SIGNS

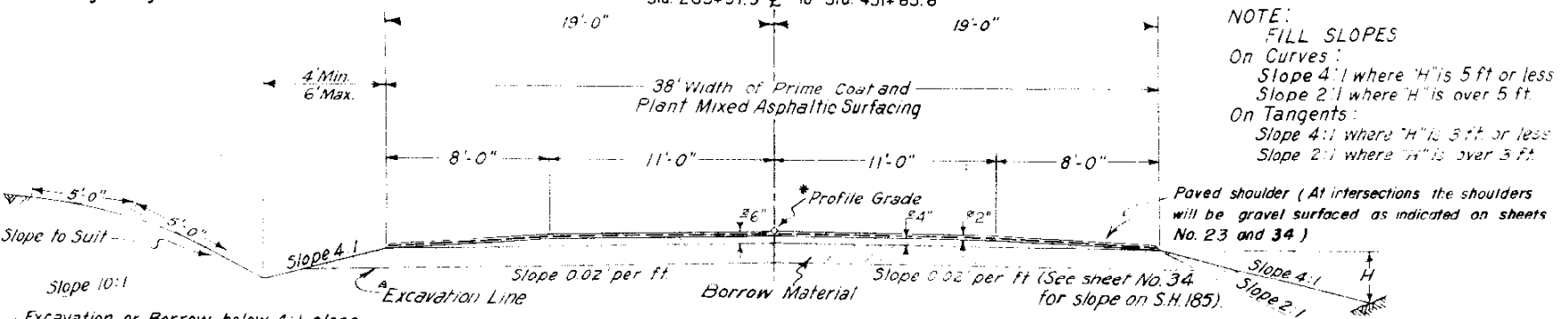
CENTER LINE

TYPICAL CROSS SECTION OF IMPROVEMENT

NOTE:
See Standard M-Z-EM for details of cut slope treatment, flaring and widening for guard fence.

TYPICAL SECTION PLAN NO. 1

Sta. 265+97.5 to Sta. 451+83.8



Excavation or Borrow below 4:1 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 and/or entrance to drainage structures.

The upper portion of the Subgrade is to be constructed of Borrow Material at locations designated in Borrow Material tabulation. Estimated quantities involved in this operation and thickness of material required are tabulated in the Borrow Plan.

Approximate 6" compacted thickness of Gravel or Crushed Rock Surfacing shall be placed in separate courses at the following rates per 100 lin. ft. of roadway:
Plant Mixed Asphaltic Surfacing - 46 Tons
Bottom Course - 67 Tons

NOTE:
FILL SLOPES
On Curves:
Slope 4:1 where "H" is 5 ft or less
Slope 2:1 where "H" is over 5 ft.
On Tangents:
Slope 4:1 where "H" is 5 ft or less
Slope 2:1 where "H" is over 5 ft.

Paved shoulder (At intersections the shoulders will be gravel surfaced as indicated on sheets No. 23 and 34.)

* For Profile Grade through intersections See Cross Sections

Approximate Thickness
Cuts requiring stabilization shall be excavated to the neat lines indicated on Cross Sections.

* Does not include 3% Commercial Filler

GENERAL NOTES

This project is to be constructed in conformity with the Standard Specifications of the Colorado Department of Highways, adopted June 1, 1952.

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

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

For preliminary plan quantities of Asphaltic Road Materials the following rates of application were used.

- PRIME COAT -- MC (BRIDGES) ----- @ 0.10 Gals. per Sq. Yd.
- PRIME COAT -- MC (MEDIANS) ----- @ 0.20 Gals. per Sq. Yd.
- PRIME COAT -- MC (ROADWAY) ----- @ 0.40 Gals. per Sq. Yd.
- PAVING ASPHALT -- (120-150 Penetration) -- @ 7.00 Lbs. per Sq. Yd. per inch

Rate of Application and grade of Asphaltic Material shall be as determined by the Engineer at time of application.

All side approach roads to the project designated by the Engineer shall be primed to approximately 50 feet out from edge of the Asphaltic Surfacing or to the Right of Way line, whichever is less. The following listed approaches shall be primed and asphaltic processed. Sta. 343+ Rt. and Sta

SUMMARY OF APPROXIMATE QUANTITIES

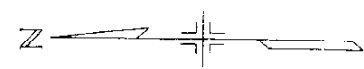
ITEM NO	ITEM	UNIT	ROADWAY PLAN NO. 1	ROADWAY PLAN NO. 2	BRIDGE STA 293+	BRIDGE STA 409+ NON-FED AID	PROJECT TOTALS PLAN NO. 1	PROJECT TOTALS PLAN NO. 2
10 a	Cleaning and Grubbing Entire Project	Lump Sum	•	•			•	•
11 a	Remove and Replace Handrail	"				•	•	
11 b	Removal of Portions of Present Structure, Sta 409+	"				•	•	
11 c	Transporting and Placing Wire Cable Ties	"				•	•	
11 d	Removal of 11 Structures	Each	43	43		•	•	
11 e	Transplanting Trees	"	3	3		•	•	
11 f	Remove and Reset Metal Aprons	"	1	1		•	•	
11 g	" Concrete Flared End Sections	"				•	•	
11 h	Removing Guard Posts	"	2	2		•	•	
11 i	" Marker Posts	"	58	58		•	•	
11 j	" R.O.W. Markers	"	4	4		•	•	
12 a	Removing Fence	Lin. Ft.	28,000	28,000		28,000	28,000	
12 b	" and Rebuilding Fence	"	8,100	8,100		8,100	8,100	
12 c	Line Posts (Metal)	Each	40	40		40	40	
13 c	Unclassified Excavation	Cu. Yd.	239,000	239,000		239,000	239,000	
13 d	" Ditch Excavation	"	400	400		400	400	
13 s	Stripping	"	5,100	5,100		5,100	5,100	
14 a	Dry Rock Excavation (Str.)	"	35	35		40	40	
14 b	" Common Excavation (Str.)	"	495	495		520	520	
14 c	Wet Rock Excavation (Str.)	"	15	15		20	20	
14 d	Wet Common Excavation (Str.)	"	165	165	90	270	270	
16 a	Structure Backfill (Class 1)	"	895	895	25	950	950	
16 c	Mechanical Tamping	Hour	130	130	15	150	150	
17 a	Rolling with Tamping Roller (Two (2) Unit)	"	670	670		670	670	
17 b	" (Four (4) Unit)	"	120	120		120	120	
17 c	" Flat Wheeled Roller (Tandem)	"	305	305		310	310	
17 d	" Rubber Tired Roller (Three (3) Wheel)	"	290	300		290	300	
17 e	" Rubber Tired Roller (One (1) Unit)	"	150	150		150	150	
17 ex	" (Two (2) Unit)	"						

TABULATION OF CONCRETE COMB. CURB & GUTTER

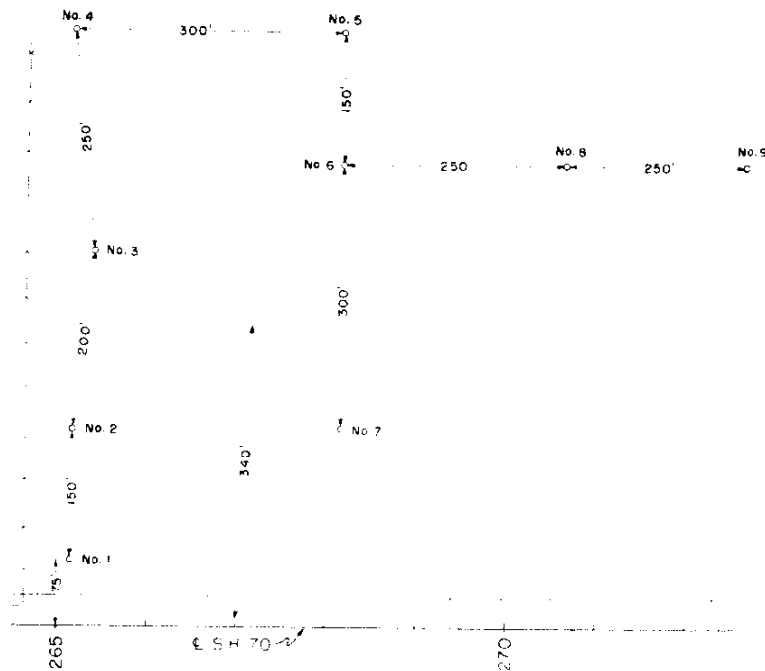
STATION	LIN. FT.
S.H. 70	
245+06.1 to 251+18.1	1,232
253+92.3 to 259+07.5	1,038
S.H. 83	
262+89.7 to 268+59.7	1,147
271+25.5 to 276+52.2	1,061
S.H. 185	
199+92 to 204+45	916
205+68 to 212+71	1,416
TOTAL	6,810

FENCING REQUIREMENTS

STATION	SIDE	REMOVE FENCE	REMOVE & REBUILD FENCE	BUILD FENCE		GATES	
		LIN. FT.	LIN. FT.	BARBED WIRE	COMB.	BARBED WIRE	DRIVE
251+00 to 274+00 (Parker Road)	Lt	30	475				
255+30 to 264+76.5	Lt	1515					
264+76.5 to 275+35	Lt	15	1,060				
275+35 to 291+29	Lt	1,760					
319+70 to 321+80	Lt	230					
341+50 to 363+89	Lt	2,290					
364+48 to 404+10	Lt	4,040					
404+10 to 409+48	Lt		530				
409+77 to 417+29	Lt	10	785				
417+29 to 455+28	Lt	3,870					
462+13 to 465+70	Lt	30	370				
250+25	Lt						
269+87 (Parker Road)	Lt						
264+68	Lt						
278+00 (Parker Road) to 264+76.5	Lt			1,510			
275+35 to 293+70	Lt			1,865			
290+50	Lt						
294+94.9 to 363+89	Lt			7,010			
306+00	Lt						
316+96	Lt						



PIT NO. 1 BORROW



NOTE:
Distance from Center of Pit over haul
route is approximately 340 ft. to Sta. 267+00

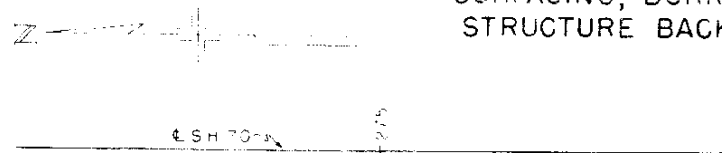
LOCATION - N.W. 1/4, N.W. 1/4, NW 1/4, SEC. 35, T.4S., R.67W.
OWNER - ROBERT SARE
AVAILABLE - 140,000 CU. YDS.

SAMPLE NO. 1326

TEST NO.	DEPTH	DESCRIPTION OF TEST HOLE MATERIAL
1	0.0'-2.0'	Dirty Sand
1A	2.0'-8.0'	Sand
1B	8.0'-10.0'	Sandy Clay - No Sample
2	0.0'-2.0'	Dirty Sand - Similar to No. 1
2A	2.0'-9.0'	Sand - Similar to No. 1A
2B	9.0'-10.0'	Clay - No Sample
3	0.0'-2.0'	Dirty Sand - Similar to No. 1
3A	2.0'-7.0'	Sand - Similar to No. 1A
3B	7.0'+	Clay
4	0.0'-2.0'	Dirty Sand - Similar to No. 1
4A	2.0'-9.0'	Sand - Similar to No. 1A
4B	9.0'+	Clay
5	0.0'-2.0'	Dirty Sand - Similar to No. 1
5A	2.0'-13.0'	Sand - Similar to No. 1A
5B	13'+	Clay
6	0.0'-2.0'	Dirty Sand - Similar to No. 1
6A	2.0'-9.0'	Sand - Similar to No. 1A
6B	9'+	Clay
7	0.0'-1.5'	Dirty Sand - Similar to No. 1
7A	1.5'-11.0'	Sand - Similar to No. 1A
7B	11.0'+	Clay
8	3.0'-2.0'	Dirty Sand
8A	2.0'-1.0'	Sand
8B	1.0'+	Clay
9	0.0'-2.0'	Dirty Sand - Similar to No. 6
9A	2.0'-11.0'	Sand - Similar to No. 8A
9B	11.0'+	Clay

Estimated 1,800 Cu Yds Stripping Required

PIT NO. 2 SURFACING, BORROW & STRUCTURE BACKFILL



NOTE:
Distance from Center of Pit
over haul route is approximately
500 ft. to Sta. 275+00.

LIST OF STRUCTURE QUANTITIES

Rev 9-28-55, J.C.R.

FED. ROAD DIVISION NO.	DISTRICT	PROJECT NO.	SHEET NO.	TOTAL SHEETS
5	COLO.	50055 (2)	6	

SHEET NO.	LOCATION	REMOVE STRUCTURE NO.	EXCAVATION			STRUCTURAL EXCAVATION CUBIC YARDS	STRUCTURE BACKFILL CUBIC YARDS	MECH. TAMPING HOURS	GRAVEL OR CRUSHED ROCK SURFACING		CONCRETE CUBIC YARDS	REINFORCING STEEL LBS.	CORRUGATED METAL CULVERT PIPE						RELAYING PIPE LIN. FT.	C.M.P. ARCH CULVERTS LIN. FT.	METAL APRONS FOR C.M.P. CULVERTS		MISCELLANEOUS						
			CUBIC YARDS	DITCH	DITCH				BASE COURSE TONS	PLANT MIXED TONS			LINEAR FEET								NO.	NO.							
													10"	18"	24"	48"	60"	84"	18"	30"	29" x 18"	24"							
24	S.H.# 83 (PARKER ROAD) 258 + 50 262+ to 268+ 265 + 00 269 + 87 266 + 70 267 + 92 269 + 00 270 + 50 271+ to 276+ 273 + 50 277 + 85 274 + 10 280 + 20 281 + 35 280 + 50 S.H.# 70 240 + 00 245+ to 251+ 250 + 00 250 + 25 251 + 25 252 + 10 255 + 30 253+ to 259+ 260 + 33 264 + 68 262+ to 280+ 274 + 00 284 + 50 290 + 50 293+70.0 to 294+94.9 297+20 to 297+70 306 + 00 309 + 50 311 + 98 311 + 98 315 + 00 316 + 30 316 + 96 318+ to 320+ 319 + 76 325+ to 326+ 340 + 00 341 + 70 343 + 37 344 + 09 351 + 30 359 + 50 360 + 44 361 + 00 364 + 20 365 + 94 367 + 45 373 + 33																												

STANDARD SIDE APPROACH ROADS, FLARING, CUT SLOPE TREATMENT & WIDENING AT BRIDGES AND AT CREST OF GRADES

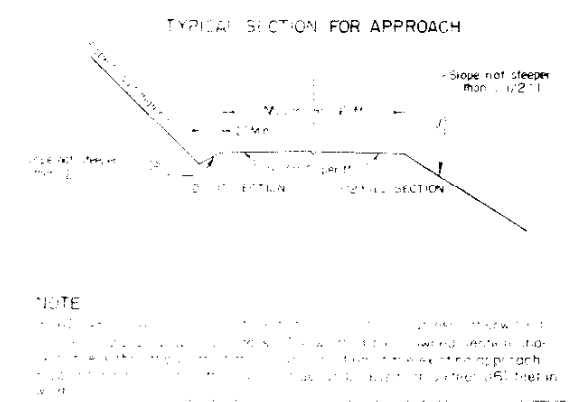
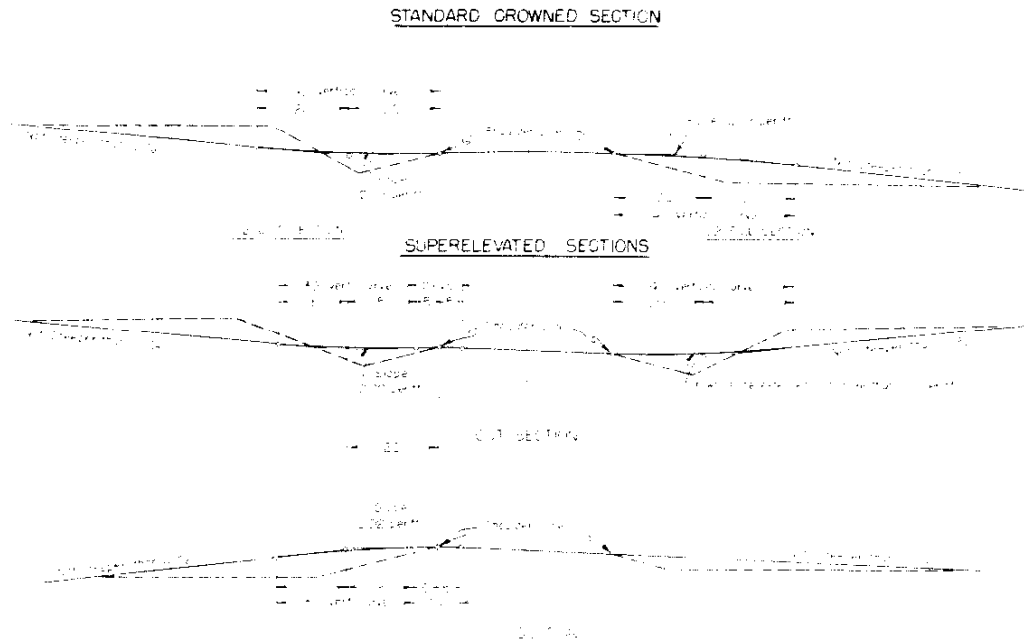
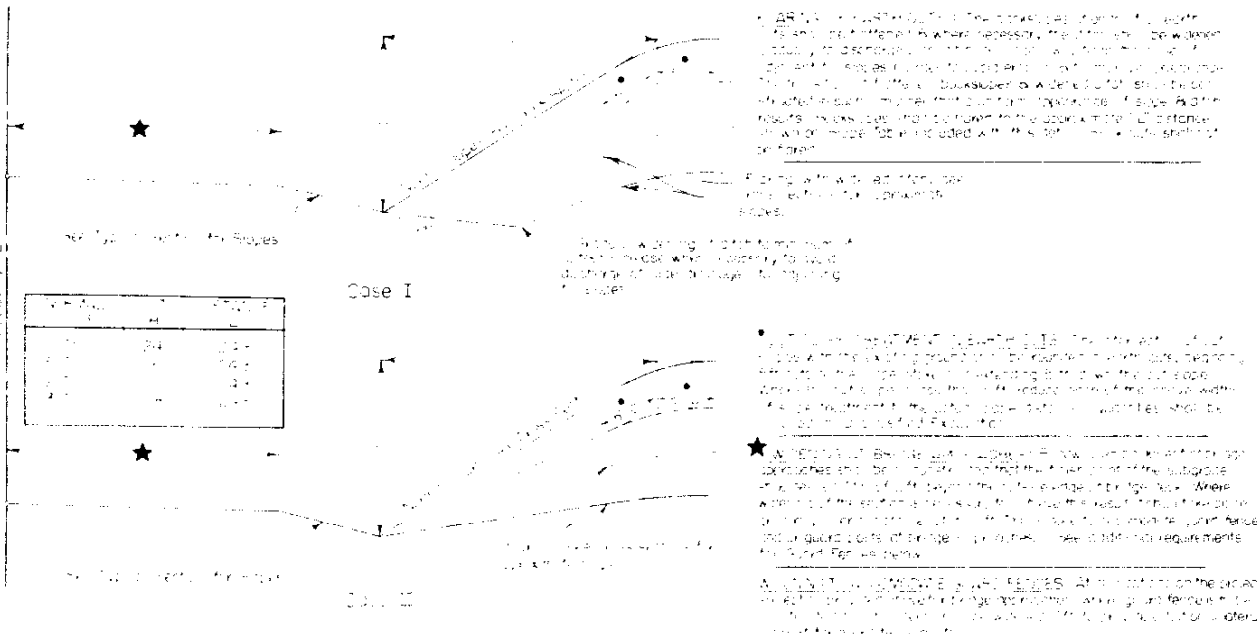
STANDARD M-2-EM

FED. ROAD DISTRICT 500 SHEET NO. 13 TOTAL SHEETS 55(2) 13
Rev. 12-9-53, Details of Road Approaches, J.G.R.

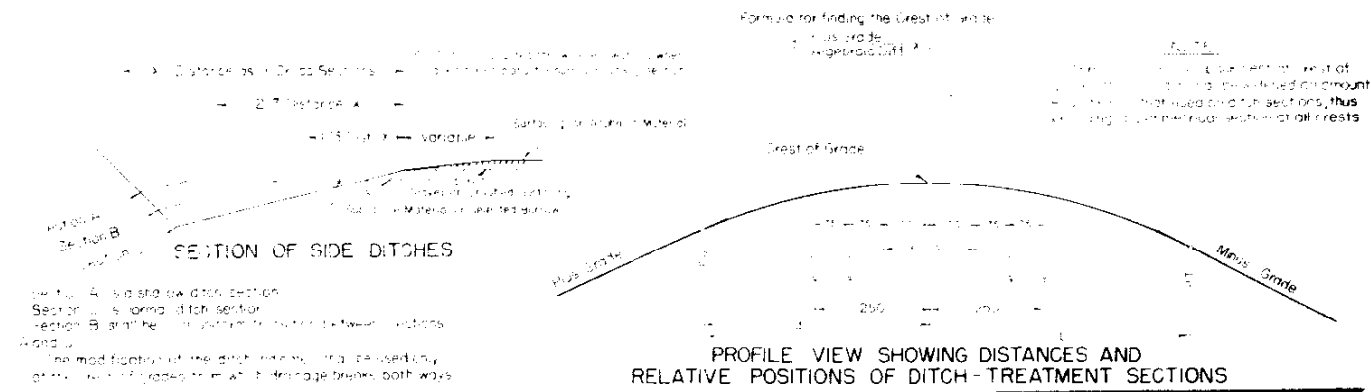
GENERAL DETAILS FOR FLARING OF EARTH CUTS, CUT SLOPE TREATMENT & WIDENING AT BRIDGES

TYPICAL PLANS FOR SIDE APPROACH ROADS

NOTE: GRADES to be placed at greatest feasible distance from the roadway shoulder consistent with good practice. A minimum of 20 ft. from shoulder should be adhered to, wherever possible.
80 Feet to be used on all intersecting roads except private approaches. Road may be varied to suit local conditions.
80 Feet to be used on private road approaches.



DETAILS FOR DITCH & WIDENED SHOULDERS AT CREST OF GRADES



GENERAL NOTES

Working on existing roadways with the Standard Open to Traffic on the approach, the following details are to be observed:
1. The approach to the bridge should be graded to the existing grade of the approach.
2. The approach to the bridge should be graded to the existing grade of the approach.
3. The approach to the bridge should be graded to the existing grade of the approach.

COLORADO DEPARTMENT OF HIGHWAYS
STANDARD SIDE APPROACH ROADS, FLARING, CUT SLOPE TREATMENT, AND WIDENING AT BRIDGES AND AT CREST OF GRADES
Designed by J. J. M. 6/2/54 Approved by A. J. J. 6/2/54
Checked by C.R.S. Date: November 1, 1953

