FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.
9	COLORADO	F 025-2(7)	1

RIGHT OF WAY LA JARA, ROMEO

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO

PLAN AND PROFILE OF PROPOSED

FEDERAL AID PROJECT NO. F 025-2 (7)

STATE HIGHWAY NO. 17

CONEJOS COUNTY

RIGHT OF WAY

INFORMATION OBTAINED FROM AVAILABLE COUNTY RECORDS

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

NET LENGTH OF PROJECT

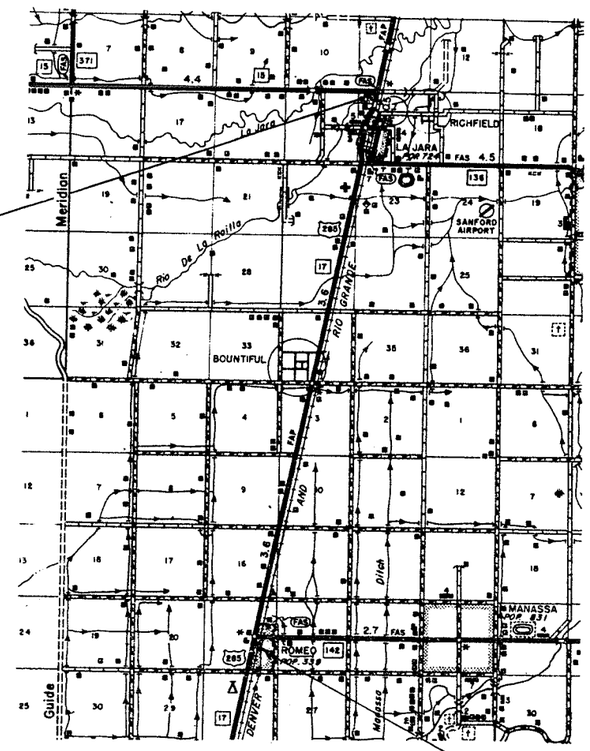
INDEX OF SHEETS

SHEET NO. 1 TITLE SHEET
2 TABULATION OF PROPERTIES
3-17 PLAN & PROFILE SHEETS SHOWING RIGHT OF WAY
18-21 OWNERSHIP PLAT

REVISIONS		
12-1-64	Relocated Begin Sta.	MC

CONVENTIONAL SIGNS

CENTER LINE (PLAN SHEET; BEGIN PROJ., TITLE SHEET, END PROJ.)
COUNTY LINE
TOWNSHIP OR RANGE LINE
LAND LINES (SECTION LINE; 1/4 SECTION LINE; 1/16 SECTION LINE)
CITY LIMITS
RAILROAD (PLAN SHEET; TITLE SHEET)
BARBED WIRE FENCE
WOVEN WIRE - COMBINATION FENCE
TELE. & TELEG. LINE
POWER LINE
PRESENT ROAD (PLAN SHEETS)
RIGHT OF WAY LINE (R.O.W. MARKER)
ACCESS POINTS (FREEWAYS)
C. OF A. LINE (CONTROL OF ACCESS) (24' OP.; OPENING; 16' OP.)
ACCESS DENIED BY DEED
TOP OF CUTS
TOE OF FILLS
DETOUR



STA. -24+79.8 BEGIN F025-2(7)
STA. 25+00 PROJECT F025-2(1)

STA. 400+00 END PROJ. F025-2(7)
BEGIN PROJ. F025-2(6)

Durango
Office Set

A.H.T.

R. O. W. TABULATION OF PROPERTIES IN CONEJOS COUNTY S.H. No. 17 PROJ. F025-2(7)

FEDERAL ROAD DIVISION NO.	DISTRICT	PROJECT NO.	SHEET NO.
9	COLORADO	F025-2 (7)	2

RIGHT OF WAY LA JARA-ROMEO

PARCEL NO.	OWNER	ADDRESS	LOCATION	AREA IN ACRES			PURCHASE DATA					REMARKS	NO.
				PARCEL	TO BE ACQUIRED	REMAINDER	LAND	IMPROV'M'TS	DAMAGE	MISC.	TOTAL		
			T. 35 N. R. 9 E. N.M.P.M.										
1	CLARENCE R. & DEE HOYLE	LA JARA, COLO	TR. 1 LA JARA ACR.	0.414	0.414		400.00		125.00		525.00	Sp.Wy Dd 3/12/65 Bk. 223, Pg 446 REVISIONS 1-21-65	
2	~~GRACE A. PHILLIP~~ Max & Patricia Gumper	LA JARA, COLO	TR. 15 & 16 LA JARA ACR.	0.144	0.144		175.00	250.00	70.00		495.00	Philip's Ex. Dd. Bk. 223, Pg 410 1-21-65 Deed - 3/3/65 - Bk 223, Pg. 407	
3	LEOLA OLIVER McPEAK & AZILEE McPEAK SCHULER	LA JARA, COLO.	TR. 50 LA JARA ACR.	0.043	0.043		100.00	—	—		100.00	3-23-65 Spec. W. Bk - 225 Pg 224	
4	BONIFACIO & OLIVE S. VALDEZ	LA JARA, COLO.	NW 1/4 SEC. 23	0.052	0.028		35.00	—	—	—	35.00	1-21-65 Quit Cl Dd 3/12/65, Bk 223, Pg 443	
5	JOSE EDONIL RUYBAL	LA JARA, COLO.	NE 1/4 SEC. 34	0.063	0.013		50.00	—	—	—	50.00	Quit Claim Deed - 3/12/65 1-20-65 Bk. 223, Pg. 436	
6	JOSE EDONIL RUYBAL	LA JARA, COLO	NE 1/4 SEC. 34	0.022	0.022								
7	~~CLYDE E. & EDITH C. WOODARD~~ William Jasper Woodward, Jr.	LA JARA, COLO.	Portion SE 1/4, SEC. 34	0.104	0.022		35.00	—	150.00		185.00	1-19-65 Sp.Wr. 4/30/65 Bk. 225, Pg 22-23	
8	HARRIS & BESSIE SORENSON	ROMEO, COLO.	S 1/2 SW 1/4 SEC. 3	0.063	0.022		35.00	—	—	—	35.00	1-20-65 Sp Wr. Dd 3/12/65 Bk. 223 Pg. 439	
9	~~CLETUS M. & BARBARA J. GILLELAND~~ Horace & Afton Huffaker	ROMEO, COLO.	Portion NW 1/4 SEC. 10	0.063	0.024		35.00	—	—	—	35.00	1-20-65 Sp Wr Dd 3/12/65 Bk. 223, Pg. 450	
10	J. G. & ELIZABETH H. CARWIN	LA JARA, COLO.	Portion SW 1/4 SEC. 10	0.063	0.028		35.00	—	—	—	35.00	3-8-65	
11	FRED & JOSEPHINE ECHOLS	ROMEO, COLO.	Portion NW 1/4, NW 1/4 SEC. 15	0.063	0.035		50.00	—	—	—	50.00	Sp. Wr. Dd 3/12/65 1-19-65 Bk. 223, Pg 448 Real Est Mtg, 4/5/65, Bk 218, Pg. 191-19	
12	STATE OF COLO.	DENVER, COLO.	SE 1/4 SEC. 16	0.063	0.018								
13	EVELYN CARR	ROMEO, COLO.	Portion NE 1/4 SEC. 21	0.063	0.024		35.00	—	—	—	35.00	1-29-65 Sp. Wr. Dd 3/12/65 Bk. 223, Pg. 441	

DEPARTMENT OF HIGHWAYS

REVISIONS		
12-1-64	Relocated Begin Sta.	MC

FED. ROAD REG. NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	[illegible]	F 025-2(7)	3	

RIGHT OF WAY LA JARA-ROMEO

STA. -24 + 79.8 Begin
Proj. F 025-2 (7)

High Pressured Gas Line Incased under Highway

Denver & Rio Grande Western Railroad

To Alamosa
Bearing Equa. S12°33'W
← N11°53'E
F 025-2(11)

S12°33'W

90'

60'

20

15

840.3'

327.0'

7"x5"x47' Multiplate Mitered Ends

411.2'

446.8'

Δ = 22°37' Lt.
D = 4°20'
T = 264.4'
L = 521.9'
R = 1322.4'

PI - 8+55.3

PT - 5+60.6

PC - 0+38.7

0+00 = Sta 0+00 F.A.R. 295-B

115'

305'

Sign

840.3'

790.3'

218.3'

20.4'

187.2'

51.2'

N37°56'W

Pt. of Beg. 1

29"x18"x50' C.M.A.P. Sd. Dr.

Sta 2.5+00 Project F025-2(11)

-24+79.8 = Equation

Begin Project F025-2 (7)

N 88°25'W - 15'6.0" to NE Cor. Sec. 15

Tract 1

(1) CLARENCE R. & DEE HOYLE

N 88°25'W

PT - 11+12.8

15"x26' C.M.P. Sd. Dr.

Tract 15

(2) GRACE A. PHILLPS

Tract 16

Tract 17

Tract 2

N77°27'W
10.0'

Arc = 306.3'

Arc = 501.6'

N23°45'E - 498.4'

S35°10'W

S38°10'W - 21.4'

Δ = 22°37' Lt.
D = 4°20'
T = 264.4'
L = 521.9'
R = 1322.4'

PC - 5+80.9

Pt. of Beg. 2

M. 12.2 ± S

PI - 3+03.1

Tie 176.3' S77°27'E

Highway Tavern

Service Station Conc. Slab Gas Pumps

Service Station Conc. Slab Gas Pumps

Store Bldg.

4

9

5

8

Spruce St.

S12°33'W

16" Wd. Gate 6'± W. of Centr. Line 1+48

La Jara City Limits

1st Street

7610

7600

7590

-24+79.8 Bk = 25+00 Ahd.

-20 -15 -10 -5 -0

PLOTTED	CHECKED
CARDS	CHECKED
B.M.'S	NOTED
STRUCTURE NOTATIONS	CARDED
NOTE BOOK	
BY	

COLORADO DEPARTMENT OF HIGHWAYS
Form C.D. - 134
Rev 1964

FED. ROAD REG. NO	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	F025-2(7)	4	

RIGHT OF WAY LA JARA-ROMEO

N

LA JARA

Denver & Rio Grande Western Railroad

Limits — 1448 — City

Spruce Street

S 12° 33' W

50' 115' 305' 115' 305' 50'

P.C. 20+13.1

Limits — COLO. MILL & ELEV. CO. — 215' — 100'

Project Marker
F.A.P. 295-B(2)

City 20+72

LA JARA

| | | |

REVISIONS		
12-1-64	Removed Begin Sta. from sheet 5	MC

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	F025-2(7)	5	

RIGHT OF WAY LA JARA-ROMEO

PLAN: SURVEYED / PLOTTED / NOTE BOOK / ALIGNMENT CHECKED / R/W CHECKED / NO.

PROFILE: SURVEYED / PLOTTED / NOTE BOOK / GRADES CHECKED / B.M.'S NOTED / STRUCTURE NOTES CHKD. / NO.

D. & R.G.W. RAILROAD (STANDARD & NARROW GAUGE)

℄ Narrow Gauge

P.O.S.T. 32+64.5

P.I. 33+55.9

S.D.> 1000 Ft
Δ = 11°50'L.
D = 2°00'
T = 296.9'
L = 591.7'
R = 2865.0'

MILL

Shed

Canning Factory

House

P.C. 20+18.1

P.T. 26+09.8

S 0°43' W.

454.2'

363.8'

SPRUCE ST.
S. 12°33'W.

S. 12°33'W.

1933.0'

ROW Along Present Fence

*Helen Hunt
Recorded Book 173 Page 57

N6°38'E-206.2'

62.9'

N6°38'E
12.9'

Pt. of Beg. 3

70.6'

374.1'

S 6°38'W

N41°09'W-67.2'

20.6'

Pt. of Beg. 4

P.C. 30+59.0

Δ = 11°50' R.
D = 2°00'
T = 296.9'
L = 591.7'
R = 2865.0'
S.D.> 1000 Ft.

P.T. 36+50.7 BACK =
37+01.2 AHEAD

EQUATION:

P.I. 23+10.0

STA. 20+72 BEGINNING OF F.A.P. 295-B (2)

TOWN OF LA JARA

③ LEOLA OLIVER McPEAK & AZILEE McPEAK SCHULER

④ BONIFACIO & OLIVE S. VALDEZ

NW¼ Sec. 23
T. 35 N, R. 9 E.

Tie S 87°19'W 448.8'

Tie 1414.4'
S 88°56'E.

No Stone Found

Tract #50
La Jara Acreage Tract
S.W. ¼ Sec. 14
T. 35 N, R. 9 E.

* R.O.W. Purchased from 1940

400' V.C.

200' V.C.

200' V.C.

200' V.C.
NPSD IN EXCESS OF 1900 Ft.

-0.12%

+0.153%

0.00%

+0.19%

7610
7600
7590

20 25 30 35 40 45 50

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	F025-2(7)	6	

RIGHT OF WAY LA JARA - ROMEO

NW ¼ Sec. 23
T. 35 N, R. 9 E.

SW ¼ Sec. 23
T. 35 N., R. 9 E.

State Fish Hatchery

To Fish Hatchery

514.59+76.8

S 81° 32' E

D & R. G. W. RAILROAD (3-RAILS)

MP ◇ D-267

℄ Narrow Gauge

2355.3' from pt of begin. to SW corner of Sec. 23

64+13.6

S 1° 18' W

Present Road

S 12° 33' W

1953.0'

2553.3'

333.0

306.1

* Mrs. J.T. Eskridge
Recorded Bk. 173 Pg. 34

S 81° 32' E

1/4 Corner Not Found

Recorded Book 173 Pg. 40-41

ROW Along Present Fence

* Helen Hunt
Recorded Book 173 Page 57

* Mrs. J.T. Eskridge
Recorded Book 173 Pg. 34

NE ¼ Sec. 22
T. 35 N, R. 9 E.

Irrigation Canal

* R.O.W Purchased from, 1940

SE ¼ Sec 22
T. 35 N, R9E.

400' V.C.

+0.13%

+0.05%

+0.50%

+0.16%

7691.36 P.I.

7688.46 P.I.

7611.82 P.I.

200' V.C.
NPSD IN EXCESS OF 1300 FT.

400' V.C.
NPSD IN EXCESS OF 1300 FT.

7610
7600
7590

50 55 60 65 70 75 80

FED. ROAD DIST. NO.	STATE	F.A. PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	F025-2(7)	7	

RIGHT OF WAY LA JARA-ROMEO

PLAN — SURVEYED — PLOTTED — NOTE BOOK — NO — ALIGNMENT CHECKED — BY OFFICE CHECKED

PROFILE — SURVEYED — PLOTTED — NOTE BOOK — NO — GRADES CHECKED — BY OFFICE CHECKED — STRUCTURE NO (AT 'AS CH'ED)

Sec. Cor. Stone in place

N 89°34' W

N 89°35' W

Drainage Canal

D. & R.G.W. RAILROAD (NARROW & STANDARD GAUGES)

M.P. D-268

℄ Narrow Gauge

Present Road

S. 12° 33' W.

1357.4'

1353.9'

ROW Along Present Fence

* Mrs. J. T. Eskridge
Recorded Book 173 Pg. 34

* San Luis Valley Drainage Dist.
Recorded Book 140 Pg. 362

* T. M. Ormond
Recorded Book 173 Pg. 35

Sta. 87+04.7

Sta. 100+62.1

SE ¼ Sec. 22
T 35 N, R 9 E

NE ¼ Sec. 27
T 35 N, R 9 E

R.O.W. Purchased from in 1940

200' V.C.

200' V.C.

200' V.C.

12.74

12.92

13.13

12.98 P.I.

14.65

14.92

15.22

14.80 P.I.

13.54

13.91

14.25

13.88 P.I.

+0.16 %

+0.25 %

+0.32 %

+0.35 %

7620

7610

7600

80 85 90 95 100 105 110

PLATE 1 PLAN-PROFILE OF R.O.W. STANDARD

FED. ROAD DIST. NO.	STATE	F.A. PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	F025-2(7)	8	

RIGHT OF WAY LA JARA-ROMEO

PLAN — PLOTTED, PLOTTED, NOTE BOOK, ALIGNMENT CHECKED, NO., R/W CHECKED

N

N. 88°E

D. & R.G.W. RAILROAD (3-RAIL)

& NARROW GAUGE

COUNTY ROAD

60'

40'

30'

90'

40'

S. 12°33' W

Present Road

78°52'

2697.1'

ROW Along Present Fence

Sta. 114+16.0

Sta. 141+12.7 — S. 88°38' E

* T. M. Ormond
Recorded Book 173 Pg. 35

* R. C. Deweese
Recorded Book 173 Pg. 44

* R.O.W. Purchased from in 1940

S.E. ¼ Sec. 27
T 35 N, R 9 E

PROFILE — PLOTTED, GRADES CHECKED, NOTED, STRUCTURE NOTES CHKD., DATE, BY

7630
7620
7610

+0.35%
+0.15%
+0.35%
+0.25%

200' V.C.
200' V.C.
200' V.C.

Al. 7622.75
2365
2385
24.15
Al. 22.88
Al. 29.38

22.40
22.70
22.90
29.40
29.72
30.00

110
115
120
125
130
135
140

REVISIONS				

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	F025-2(7)	9	

RIGHT OF WAY LA JARA-ROMEO

PLAN	SURVEYED	BY	DATE
	PLOTTED		
	NOTE BOOK GRADES CHECKED		
	NO. B #3 NOTED. ALIGNMENT CHECKED.		
	STRUCTURE NO. RT. OF WAY CHECKED.		

PROFILE	SURVEYED	BY	DATE
	PLOTTED		
	NOTE BOOK GRADES CHECKED		
	NO. STRUCTURE NO. RT. OF WAY CHECKED.		

Littleman Ditch

County Road

D. & R. G. W. RAILROAD (STANDARD & NARROW GAUGE)

M.P. ◇ D-269

℄ Narrow Gauge

Present Road

S. 12° 33' W.

Sta. 168+25.2
S 68° 33' E

Sta. 141+12.7
N 88° 48' W 968.4

Pt. of Beg. 5

75.0'
S 12° 33' W
50' Rt. 141+97.7
N 38° 13' W
94.9'

150.0'

27/2.4'

ROW Along Present Fence

50' Rt. 167+90.9'

44.4'

105.6'

50' Rt. 169+40.9'

N 51° 50' E
68.7'

44.4'

47.4'

Pt. of Beg. 6 & 7

House

N 38° 10' W
95.0'

Garage

Tie to Center Sec. 34 464.4

Derby County

(5) JOSE EDONIL RUYBAL

(6) JOSE EDONIL RUYBAL

(7) CLYDE E. & EDITH C. WOODARD

N.E. ¼ Sec. 34
T 35 N, R 9 E

300' V.C.

33.88

34.34

35.00

36.75

37.17

37.45

+0.35%

+0.25%

+0.50%

+0.20%

7640

7630

7620

29.40

29.72

30.00

200' V.C.
NPSD IN EXCESS OF 1500 FT.

200' V.C.
NPSD IN EXCESS OF 1300 FT.

140

145

150

155

160

165

170

REVISIONS		

FED. ROAD DIST. NO.	STATE	F.A. PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	F025-2(7)	10	

RIGHT OF WAY LA JARA-ROMEO

N.E¼ Sec.3
T.34N., R9E.

N

* Melvin Jackson
Recorded Book 173 Pg. 27

D. & R.G.W. RAILROAD (3-RAILS)

E. Narrow Gage

Present Road

S. 12°33'W.

N. 37° E.

Beet Loader

Beet Dump

Scales House

90'

40'

30'

105.4'

50' Rt. 169+40 ℄

95° N38°10'W

House

Garage

47' N51°50'E

POB

Tie to Center Sec.34 14' S 38°55' W

County Road

Sta. 173+33.1
N 88°34' W

1342'

5937'

2939.7

No Stone Found

ROW Along Present Fence

* Yvonne Sanders
Recorded Book 172 Pgs. 271-275

215' Planing Mill Conc. Joists

Shed

House

Ice House

N 88°34' W

S 1° 26' W.

* Walter R. Gibson
Recorded Book 173 Pg. 25

* Clifford Gibson
Recorded Book 173 Pg. 26

Clyde E. Woodard
Edith C. Woodard

SE¼ Sec. 34
T35N, R9E

WEST FIRST STREET

TOWN OF BOUNTIFUL

50.3 RD ST.

SOUTH 4TH STREET

* M.J.A. Ross
Recorded Book 173 Pg. 36

E½ NW¼ Sec. 3
T34N, R9E.

* R.O.W Purchased from in 1940

PROFILE
SURVEYED
PLOTTED
NOTE BOOK
NO
GRADES CHECKED
BY
STRUCTURE SHEET NO.
CHKD

200' V.C.

38.05 | 39.10 | 39.43

PI 7639.05

+0.20%

+0.39%

PI 42.85

42.47 | 42.84 | 43.21

200' V.C.

+0.36%

PI 48.25

47.89 | 48.25 | 48.60

200' V.C.

+0.35%

7650
7640
7630

170 | 175 | 180 | 185 | 190 | 195 | 200

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	F025-2(7)	11	

RIGHT OF WAY LA JARA-ROMEO

PLAN — SURVEYED / PLOTTED / ALIGNMENT CHECKED / RT. OF WAY CHECKED / NOTE BOOK / NO.

PROFILE — SURVEYED / PLOTTED / GRADES CHECKED / B.M.'S NOTED / STRUCTURE NOTES AS CH. NO. / NO. / BY / DATE

D. & R.G.W. RAILROAD (STANDARD & NARROW GAUGE)

℄ Narrow Gauge

Present Road

S. 12°33' W

2937.7'

224.1 25.7

House

ROW Along Present Fence

N 87°31' W

* M.J.A. Ross
Recorded Book 173 Pg. 36

E½ NW¼ Sec. 3
T 34 N, R 9 E.

* R.O.W. Purchased from in 1940

+0.35%

+0.30%

+0.14%

+0.40%

200' V.C.

NPSD IN EXCESS OF 1300 FT.

7660

7650

7640

200 205 210 215 220 225 230

FED. ROAD DIST. NO.	STATE	F.A. PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	F025-2(7)	12	

RIGHT OF WAY LA JARA-ROMEO

D.&R.G.W. RAILROAD (3-RAILS)

Present Road

S.12°33'W.

1427.0

1430.8

ROW Along Presnt Fence 116.1' N51°27'E

50' Rt. 252+21.3

50' Rt. 253+71.3

75°

75°

2943 N38°33'W

1351.9'

252+85.4

P.O.B.

*John W. Shawcroft
Recorded Book 172 Pg. 271-275

*J.M. Carr
Recorded Book 172 Pg. 271-275

*John S. Knight
E½ NW¼ Sec. 10
T34N, R9E.
Recorded Book 172 Pg. 271-275

(8) Harris Sorenson
Bessie Sorenson

(9) Cletus M. Gilleland
Barbara J. Gilleland

Tie to SW Cor. Sec. 3 1543.8' S.12°33'E.

N½ S.W¼ Sec. 3
T34N, R9E

S½ S.W¼ Sec. 3
T34N, R9E

*R.O.W. Purchased from in 1940

REVISIONS			

PLAN
SURVEYED
PLOTTED
NOTE BOOK
NO.
ALIGNMENT CHECKED
R.O.W. CHECKED

PROFILE
SURVEYED
PLOTTED
NOTE BOOK
NO.
GRADES CHECKED
R.O.W. CHECKED
STRUCTURES NOTED

DATE
BY

PI 7650.30

+0.40%

+0.50%

+0.95%

200' V.C.

35.49

35.90

67.90

68.33

68.80

PI 68.33

71.30

71.76

72.15

PI 71.80

7670

7660

7650

7680

230

235

240

245

250

255

260

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	F025-2(7)	13	

RIGHT OF WAY LA JARA-ROMEO

E½ N.W. ¼ Sec. 10
T. 34 N., R. 9 E.

D. & R. G. W. RAILROAD (STANDARD & NARROW GAUGE)

℄ Narrow Gauge

Present Road

S. 12°33' W.

1351.7'

1316.0'

2771.536'

ROW Along Present Fence

House

Garage

50'

* Federal Land Bank
Recorded Book 172 Pg. 271-275

* James Carwin
Recorded Book 172 Pg. 271-275

2669.7'

S. 20° E. 1141.1' from West ¼ Cor. to Beginning of Curve

W½ N.W. ¼ Sec. 10
T. 34 N., R. 9 E.

S.W. ¼ Sec. 10
T. 34 N., R. 9 E.

* R.O.W. Purchased from in 1940

PLAN
SURVEYED
PLOTTED
NOTE BOOK ALIGNMENT CHECKED
NO. PI. OF MAP CHECKED
DATE
BY

PROFILE
SURVEYED
PLOTTED
NOTE BOOK GRADES CHECKED
B.M.'S NOTED
NO. STRUCTURE NOTED ON PLAN & CHKD.
DATE
BY

200' V.C.

+0.35%

+0.48%

+0.40%

+0.50%

7690
7680
7670

73.55
73.99
74.88
72.15
76.90 P.I.
80.62
81.08
81.50
768.44 P.I.
83.90
84.33
84.80
768.80 P.I.

200' V.C.
NPSD IN EXCESS OF 1300 FT.

260 265 270 275 280 285 290

REVISIONS					

FED. ROAD DIST. NO.	STATE	F.A. PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	F 025-2(7)	14	

RIGHT OF WAY LA JARA-ROMEO

FILE | SURVEYED | PLOTTED | NOTE BOOK | NO. | DATE | BY | E-W | E-W | ALIGNMENT CHECKED | RT. OF WAY CHECKED

SURVEYED | PLOTTED | GRADES CHECKED | B.M.'S NOTED | STRUCTURE NOTATIONS CHKD.

N

℄ NARROW GAUGE TRACK

D. & R. G. W. RAILROAD (3-RAILS)

Sta 306+24.0

S 12°33'W

2269.7

50' Rt. 305+58.8

50' Rt. 307+08.8

75'

75'

115.8' N 52°00' E

95.3' N 38°00' W

P.O.B.

Present Road

ROW Along Present Fence

134.1

S 88°33' E

395.4

Tie

HOUSE

* James Carwin
Recorded Book 172 Pg. 271-275

(10) J. G. Carwin
Elizabeth H. Carwin

(11) Fred Echols
Josephine Echols

N.W¼ of N.W¼ Sec. 15
T 34 N., R 9 E

* W.A. Braiden
Recorded Book 173 Pg. 41

SW¼ Sec. 10
T 34 N., R 9 E.

* R.O.W. Purchased from in 1940

Stone in Place

10

15

16

7700

7690

7680

+0.30%

+0.34%

+0.60%

+0.47%

P.I. 7690.80

P.I. 94.30

P.I. 97.80

200' V.C.

90.30

90.76

91.14

93.86

94.27

94.80

97.20

97.77

98.27

290

295

300

305

310

315

320

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	F025-2(7)	15	

RIGHT OF WAY
LA JARA - ROMEO

* W. J. Hunnicutt
S.W¼ of N.W¼ Sec. 15
T34 N., R9E.
Recorded Book 173 Pg. 38

D. & R.G.W. RAILROAD (STANDARD & NARROW GAUGE)

℄ NARROW GAUGE

Present Road

S.12°33'W

2676.0'

2675.1

1115.6

S4°58'E

78°5'

N80°33'W

N80°34'W

332.52.2

8/2.9'

1965

ROW Along Present Fence

* Colo. State Land Board
Recorded Book 172 Page 360

* Colo. State Land Board
Recorded Book 172 Page 360

* R.O.W. Purchased from in 1940

NE¼ of Sec. 16
T34N., R9E.

SE¼ Sec. 16
T34N., R9E

STA. 349+71.9 BACK
STA. 350+00.0 AHEAD

EQUATION
END OF F.A.P.-295-B(2)
BEGIN F.A.P.-295-C(2)

PROFILE
SURVEYED
PLOTTED
NOTE BOOK
NO.
GRADES CHECKED
ALIGNMENT CHECKED
R/W OR MAP CHECKED
STRUCTURE NOTES CHKD.
DATE

PLAN
SURVEYED
PLOTTED
NOTE BOOK
NO.
ALIGNMENT CHECKED
R/W OR MAP CHECKED
DATE

7710
7700
7690

+0.47%
+0.428%
+0.45%
+0.548%

P.I. 7706.85

04.32
04.84
05.28

200' V.C.

09.77
10.21
10.65

P.I. 7712.46

12.55 @ +71.9
13.09
12.57

200' V.C.

320
325
330
335
340
345
350

REVISIONS

RIGHT OF WAY LA JARA-ROMEO

FED. ROAD DIST. NO.	STATE	F.A. PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	F025-2(7)	16	

PLAN — SURVEYED, PLOTTED, NOTE BOOK, NO., ALIGNMENT CHECKED, RIGHT OF WAY CHECKED, BY, DATE

PROFILE — SURVEYED, PLOTTED, GRADES CHECKED, NOTE BOOK, NO., STRUCTURE NO'S & TYPES CHECKED, BY, DATE

POT. 349+71.9 BACK
POT. 350+00.0 AHEAD

Tie to 21 22 1135.4' 598°08'E 3971.05'

RAILROAD R.O.W.

D & R.G.W. RAILROAD (3-RAILS)

℄ NARROW GAUGE

Cellar

ALAMOSA ST.

PUEBLO ST.

TOWN OF ROMEO

100'

90'

40'

30'

350 Alt.

355

360

365

370

375

380

2626.0

2625.1

Present Road

S12°33'W

50' Rt. 358+40.2 — 75° — 50' Rt. 359+90.3

115.9' N52°16'E

99.8' N37°45'W

270.7'

P.O.B.

ROW Along Present Fence

EQUATION — END OF F.A.P.-295-B(2) BEGIN. F.A.P.-295-C(2)

House

(12) Colo State Land Board

(13) Evelyn Carr

County Road

SE¼ Sec. 16 T34N, R9E

NE¼ Sec. 21 T34N, R9E

349+71.9 Back
350+00.0 AHEAD

7730
7720
7710

200' V.C.

+0.25%

+0.56%

+0.48%

+0.54%

PI 7710.08

PI 18.40

PI 22.00

13.03
13.57
17.43
18.38
18.88
21.52
22.02
22.54

350 355 360 365 370 375 380

RIGHT OF WAY LA JARA-ROMEO

FED. ROAD DIST. NO.	STATE	F.A. PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	F025-2(7)	17	

TOWN OF ROMEO

DURANGO STREET · MAIN ST. · ANTONITO ST. · CONEJOS ST. · BLANCA ST. · EL PASO ST. · LA VETA ST.

Cellar · DEPOT · HOUSE

RAILROAD R.O.W. · ROMERO CANAL R.O.W. 20' · D. & R.G.W. RAILROAD (STANDARD & NARROW GAUGE)

Present Road

S12°33'W 2701.7

S11°56'W 2688.8

ROW Along Present Fence

STA. 400+00 END PROJ. F025-2(7)

N 38°20' W

F025-2(7) F025-2(6)
Bearing Equation
S12°33'W BK =
S11°56'W Ah

S.E.¼ Sec. 21
T34N., R9E.

PLAN — SURVEYED · PLOTTED · GRADE CHECKED · NOTE BOOK · NO. · STRUCTURE NO. & TYPE CHKD.

PROFILE — SURVEYED · PLOTTED · GRADE CHECKED · NOTE BOOK · NO. · STRUCTURE NO. & TYPE CHKD. · BY · DATE

7740 · 7730 · 7720

+0.54% · +0.50%

El. 7735.50

34.96 · 35.48 · 36.00

200' V.C.

380 · 385 · 390 · 395 · 400 · 405 · 410

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	F025-2(7)	18	

RIGHT OF WAY LA JARA - ROMEO

OWNERSHIP MAP

PLAT

SHOWING CLAIMANTS WITH REGARD TO RIGHT OF WAY FOR PROJECT F 025-2(7)

REVISIONS		
12-1-64	Relocated Begin Sta.	MC

All streets are 80 ft. wide except Main and Broadway which are 100 ft. Alleys are 20 ft. wide. Blocks are: 300 ft. square except 4, 9, 16, 21, 28 and 33 which are 150 ft. X 300 ft. and Blocks 3 and 4 of Braiden's Sub-division which are as shown on plat.

STA. -24 + 79.8 BEGIN PROJ. F025-2(7)

LA JARA

Braiden's Sub-division

POPLAR · WALNUT · BROADWAY · SPRUCE · MULBERRY · MAIN · 1ST · 2ND · 3RD · 4TH · 5TH · 6TH

N¼ Corner Sec. 23 Not Found

S88°56'E

P.O.S.T. 32+44.5

33+53.9 P.I.

NW ¼ Sec. 23 T. 35 N., R. 9 E.

SW ¼ Sec. 23 T. 35 N., R. 9 E.

SCALE 1" = 400'

Fence

Stone in Place Marked 11 on South " 11 - East

Δ = 11°30'
L = 591.7'
T = 296.9'
D = 2°00'

30+57.3 P.I.

23+10.8 P.I.

36+58.2 P.T. Back

37+01.2 Ahead

NW ¼ Sec 23 West of Railroad

No Corner Found

S 12° 33' W 75

R.O.W. Line along present fence N

87+04.7 POT

Stone NE Corner Sec. 15

Stone Marked T.S. on SE

Stone Marked T.S. on E.

Stone Center of Sec. 15

¼ Corner Stone

Found Stone Marked ¼

Found Stone Marked + SW Corner of La Jara Acreage Tract.

Fence Intersection No Stone Found

MATCH MARK 2192.1

① Clarence R. Hoyle, Dee Hoyle

② Grace A. Phillips

③ Leola Oliver McPeak, Agilee Mc Peak Schuler

④ Bonifacio Valdez, Olive S. Valdez

5.21 Acres Mrs. J. T. Eskridge

No. Fence in Place

NE ¼ Sec. 22 T 35 N., R. 9 E.

SE ¼ Sec. 22 T. 35 N., R. 9 E.

N ½ NE ¼ Sec. 27 T. 35 N. R. 9 E.

NE ¼ Sec. 27 T. 35 N., R. 9 E.

* Distances Taken From La Jara Acreage Plat

La Jara Townsite and La Jara Acreage Tract Plats were traced from the maps on file in County Clerk's Office in Conejos County.

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	F025-2(7)	19	

RIGHT OF WAY LA JARA-ROMEO

OWNERSHIP MAP

PLAT

SHOWING CLAIMANTS WITH REGARD TO RIGHT OF WAY FOR PROJECT F 025-2(7)

REVISIONS		

N

Scale : 1" = 400'

Stone in Place. Marked 11 on South 11 - East

Fence Intersection No Stone Found

SE¼ Sec. 27 T.35N., R.9E.

Intersection of fence with E. of county road. Stone dug for but not found.

NE¼ Sec. 34 T.35N., R.9E.

SE¼ Sec. 34 T.35N., R.9E.

NE¼ Sec. 3 T.34N., R.9E.

Dug For Stone at County Rd. Intersection Not Found

1029.4'

Stovall Canal

S68°58'E

Fence

168.2'±

S80°53'E

194.4'±

1 D.R.G. Narrow Gauge

R.R. R.O.W.

S12°33'W

R.O.W. along present Fence

87.2'±

114.6'±

N.½ NE.¼ Sec. 27 T.35N. R.9E.

S.½ NE.¼ Sec. 27 T.35N. R.9E.

S.E.¼ Sec. 27 West of Railroad

NE'¼ Sec. 27 T.35N., R.9E.

2792.1

MATCH MARK

Fence

COUNTY ROAD

Jose Edonil Ruybal NE¼ Sec. 34 West of Railroad

Fence corner. No stone found.

Clyde E. Woodard
Edith C. Woodard

Dug for stone. Not found

Intersection of fence with E. of county road. Stone dug for but not found.

Fence Intersection No Stone Found

NW¼ Sec 3 T34N. R9E.

Dug for stone at county road intersection. Not found.

BOUNTIFUL
IN
SW¼ Sec. 34
T.35N, R.9E.

FIRST WEST ST.
SECOND WEST ST.
THIRD WEST ST.
FOURTH WEST ST.
FIFTH WEST ST.
FIRST SOUTH ST.
SECOND SOUTH ST.
THIRD SOUTH ST.
FOURTH SOUTH ST.
COUNTY ROAD
MATCH MARK
S89°40'E
Fence
A B C D E F G H I J K L M N O P

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	F 025-2(7)	20	

RIGHT OF WAY LA JARA-ROMEO

OWNERSHIP MAP

PLAT

SHOWING CLAIMANTS WITH REGARD TO RIGHT OF WAY FOR PROJECT F 025-2(7)

REVISIONS		

Scale : 1" = 400'

Dug for stone at county road intersection. Not found.

NE¼ Sec. 3 T.34 N., R. 9 E.

Dug for stone in center of road opposite fence line. Stone not found.

NW¼ Sec. 15 T. 34 N., R. 9 E.

Small Cang.

MATCH MARK

S 88°33' E

306 ± 24½

Melvin Jackson
E½ E½ N.E. ¼ Sec. 3

Fence corner. No stone found.

Fence built off line to avoid willows along ditch bank.

Fence corner. No stone found.

Irrig. Ditch

194 ± 87½

S 88°45' E

Fence

503 ± 6½ Fence

252 ± 85½ Fence

279 ± 53½ Fence

D & R G. Narrow Guage

R.R. R.O.W.

S 12° 33' W 265

R.O.W along present fence

18.01'

1091.8'

Fence

Dug for stone. Not found.

E.½ NW.¼ Sec. 3

N½ SW.¼ Sec. 3 West of Railroad

Harris Sorenson
Bessie Sorenson
S½ SW¼ Sec. 3 West of Railroad

Cletus M. Gilleland
Barbara J. Gilleland
Portion N.W.¼ Sec. 10 West of Railroad

J.G. Carwin
Elizabeth H. Carwin
S.W.¼ Sec. 10 West of Railroad

Fred Echols & Josephine Echols
NW 1/4 NW 1/4 Sec 15
West of S.H. 17

SW¼ Sec. 10 T. 34 N., R. 9 E.

Found 10" x 8" x 6" unmarked stone in center of lane opposite no. & so. fence. Local residents say same is corner

S 89°48' E

MATCH MARK

NW¼ Sec. 3 T 34 N., R. 9 E.

Dug for stone at county road intersection. Not found.

Stone dug for but not found.

S 89°39' E

NW¼ Sec. 10 T. 34 N., R. 9 E.

Fence corner. No stone found.

Found cedar post surrounded by large stones buried in center of county road.

SW¼ Sec. 3 T. 34 N., R. 9 E.

P

O

N

M

33' min.

FED. ROAD DIST. NO	STATE	FEDERAL AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	F025-2(7)	21	

RIGHT OF WAY LA JARA-ROMEO

OWNERSHIP MAP

PLAT

SHOWING CLAIMANTS WITH REGARD TO RIGHT OF WAY FOR PROJECT F 025-2 (7)

REVISIONS		

Scale 1" = 400'

Dug for stone. Not found.

Small Canal

NW¼ Sec. 15 T. 34 N., R. 9 E.

MATCH MARK

S 88°53' E

S.W¼ N.W¼ Sec. 15 W.J. Hunnicutt

No corner found.

Fence

Found stone in place. Marked III on east and III on south.

Equation 349+719 Bk. End of F.A.P. 275-B (2) = 350+00 Ahd. Begin of F.A.P. 295-C (2)

S 88°02' E 1084.7

R.O.W.

F.D.&R.G.R.R. R. of W.

E. D&R.G. Narrow Gauge

Present R. of W

N.W¼ N.W¼ Sec. 15

Found 10"x8"x6" unmarked stone.

Sec. 16 T. 34 N. R. 9 E.

332±523

(10) (11) (12) (13)

(11) Fred Echols
Josephine Echols
NW¼ NW¼, Sec. 15 West of S.H. 17

(12) State of Colorado

(13) Evelyn Carr
NE ¼ Sec 21
West of Railroad

NE¼ Sec. 21 T. 34 N. R. 9 E.

SE¼ Sec 16

NE¼ Sec. 16 T. 34 N., R. 9 E.

Dug for corner stone at fence intersection. Not found.

S.H. #142

ROMEO

Corner not found

FOURTH ST. THIRD ST. SECOND ST. MAIN ST. FIRST ST. ILLINOIS PUEBLO WARING ANTONITO CONEJOS BLANCH EL PASO LA VETA SAN JUAN

AVE.

STA. 400+00 END PROJ. F025-2(7)

ROMERO CANAL R.O.W.

MATCH MARK

Dug for stone. Not found

NE¼ Sec. 28 T. 34 N., R. 9 E

412+96

1003.55 * 78°50'

1003.55 * 78°50'

4578 * 78°01'

SE¼ Sec. 21 T. 34 N., R. 9 E. (West of Railroad)

Dug for stone. Not found

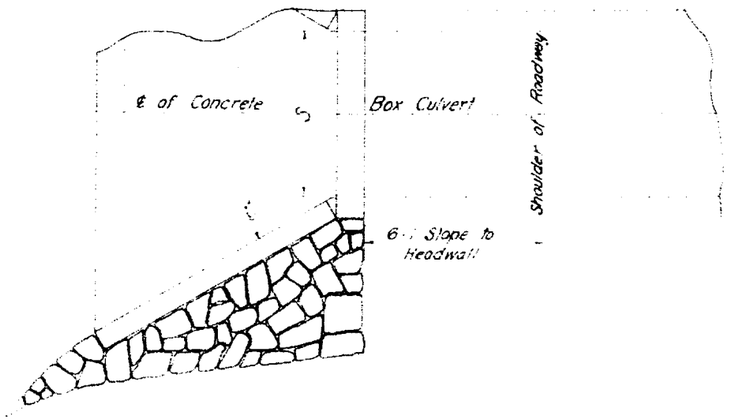
COUNTY ROAD

* Distances calculated from ~~those~~ on Romeo Townsite plats.

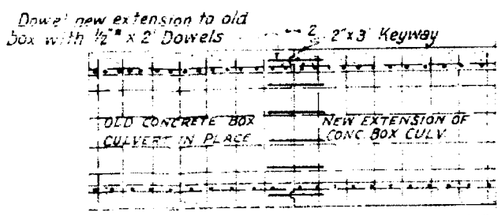
NOTE: Sta. 359+059 to 467+864 - Railroad right of way is 100ft. wide on west. The west 50ft. of this right of way is used for highway purposes in accordance with railroad agreement #4896 - 1930

FED. ROAD DIST. NO.	STATE	F.A. PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	COLO.	295 B-2 & C-2	5	

DETAIL OF DRY RUBBLE SLOPE & DITCH PAVING (12" THICK) FOR ONE WINGWALL OF A CONC. BOX CULVERT STA. 60+01



DETAIL OF JOINT FOR CONCRETE BOX CULVERT EXTENSION STA. 60+01 AND STA. 88+05



NOTE
The cost of removing headwall and cutting keyway is to be paid for at the contract unit price each.

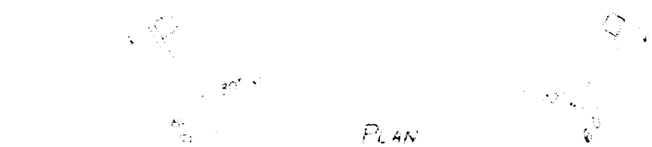
Place one Dowel to each U bar shown on Standard Concrete Box Culvert Sheet M-103-E
Dowel bars are to be grouted in place with a cement grout composed of one part cement and two parts of clean, well graded sand. The cost of drilling holes, grouting and placing dowels is to be included in payment for Reinforcing Steel.

RIGHT OF WAY MARKERS

STATION	SIDE LEFT	SIDE RIGHT
20 + 72	1	1
24 + 72	1	
29 + 00	1	
30 + 59		1
32 + 65	1	1
36 + 50.7 Bk.		1
59 + 97	1	1
61 + 60		1
66 + 10	1	
87 + 05	1	1
114 + 16		1
141 + 60		1
168 + 35	1	1
195 + 30	1	1
199 + 80	1	
224 + 26		1
252 + 65		1
252 + 85	1	
279 + 54		1
280 + 00	1	
306 + 60		1
321 + 45		1
324 + 35	1	
332 + 52		1
349 + 71 Bk.		
TOTAL FAP 295 B (2)		37

STATION	SIDE LEFT	SIDE RIGHT
359 + 40	1	1
386 + 07	1	1
386 + 75	1	
412 + 70	1	1
435 + 18	1	1
439 + 95	1	
440 + 42	1	1
461 + 00	1	1
TOTAL FAP 295 C (2)		12

DETAIL OF TIMBER HEADGATE, RIGHT OF STA. 195 + 09



LIST OF MATERIAL

ITEM	NO.	SIZE & LENGTH	FT. B.M.
Posts	6	6 x 6 - 9.0	162.0
	4	6 x 6 - 7.0	84.0
Stringers	1	2 x 12 - 20	38.0
Bracing	3	2 x 8 - 9.0	28.0
Floor	4	2 x 6 - 3.3	5.0
	9	2 x 6 - 6.4	100.0
Sills	3	7 x 8 - 7.3	92.7
	4	4 x 6 - 7.9	31.0
Wings 30°	3	3 x 8 - 5.0	60.0
	4	2 x 6 - 6.0	24.0
Cut-offs	2	2 x 8 - 7.0	18.7
Wings 60°	3	2 x 8 - 5.0	40.0
	2	2 x 8 - 5.0	26.0
	4	2 x 6 - 5.0	20.0
Gate	1	2 x 6 - 6.0	12.0
Gate Guides	2	2 x 4 - 3.6	2.4
Bolts 4 Nuts 10 Nails Treated Timber			86.6

Wiring Directions
2 pcs. @ 2" pcs. - 6.4 cons. @ 3.5 cts.
2 pcs. @ 6" pcs. - 20.8 cons. @ 3.5 cts.
2 pcs. @ Tally No. 16 Drives 0.3 cons. @ 3.5 cts.
Hardware to be included for payment in the unit price bid for Miscellaneous Treated Timber.

FENCING REQUIREMENT

STA.	TO STA.	USE	BARBED WIRE FENCE B.W.	WOVEN WIRE FENCE W.W.
FAP 295 (B-2)				
32 + 65		R	1795	
36 + 50		R	385	
36 + 50		F	70	
36 + 50		R	30	
102 + 00		R	20	
114 + 20		R	30	
140 + 65		R	30	
141 + 60		R	30	
141 + 60	168 + 35	R		2675
168 + 35		R	30	
168 + 90		R	25	
168 + 90	173 + 40	R		450
173 + 40		R	30	
173 + 60		R	30	
173 + 60	193 + 80	R		2020
174 + 40		R	30	
186 + 80		R	30	
188 + 95		R	30	
190 + 13		R	30	
195 + 30		R	30	
195 + 30	252 + 65	R		5735
209 + 60		R	35	
210 + 40		R	30	
211 + 05		R	30	
211 + 75		R	30	
224 + 25		R	30	
238 + 60		R	30	
252 + 65		R	30	
253 + 65	306 + 15	R		5250
266 + 20		R	35	
277 + 55		R	35	
278 + 48		R	35	
279 + 60		R	35	
288 + 90		R	35	
306 + 15		R	35	
306 + 60		R	35	
* No Federal Aid				

STA.	TO STA.	USE	BARBED WIRE FENCE B.W.	WOVEN WIRE FENCE W.W.
306 + 60	307 + 45	R		85
307 + 45		R	35	
307 + 60	348 + 30	R		4086
308 + 00		R	35	
318 + 45		R	35	
332 + 52		R	30	
348 + 32		R	25	
348 + 65		R	15	
348 + 65	349 + 30			65
349 + 30		R	15	
TOTALS FAP 295 B (2)			1125	32160
0	0			

It is estimated that 350 New Line Posts (Treated Timber) will be required for FAP 295 B (2)

STA.	TO STA.	USE	BARBED WIRE FENCE B.W.	WOVEN WIRE FENCE W.W.
FAP 295 (C-2)				
350 + 55		R	30	
350 + 55	358 + 80	R		825
358 + 80		R	30	
359 + 40		R	30	
359 + 40	383 + 40	R		2400
379 + 30		R	30	
383 + 25		R	30	
383 + 40		R	30	
383 + 55	383 + 65	R		210
387 + 10	412 + 70	R		2560
400 + 85		R	30	
412 + 70		R	30	
417 + 05		R	30	
417 + 05	440 + 80	R		2345
420 + 40		R	30	
425 + 45		R	30	
440 + 50	461 + 00	R	2090	2050 *
440 + 60		R		
TOTALS FAP 295 (C-2)			2420	8340 * 2050 *

* It is estimated that 125 New Line Posts (Treated Timber) will be required for FAP 295 (C-2)

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	295-B(2)&295-C(2)	1	

295.0202

COLORADO
STATE HIGHWAY DEPARTMENT

PLAN AND PROFILE OF PROPOSED
FEDERAL AID PROJECT NO. F.A.P.-295-B(2)
FEDERAL AID PROJECT NO. F.A.P.-295-C(2)
STATE HIGHWAY NO. 17
CONEJOS COUNTY

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.-295-B(2)	F.A.P.-295-C(2)
GROSS LENGTH OF PROJECT	32,849.4 FT.= 6.221 MI.	11,100.0 FT.= 2.102 MI.
NET LENGTH OF PROJECT		

INDEX OF SHEETS

F.A.P. 295-B(2)

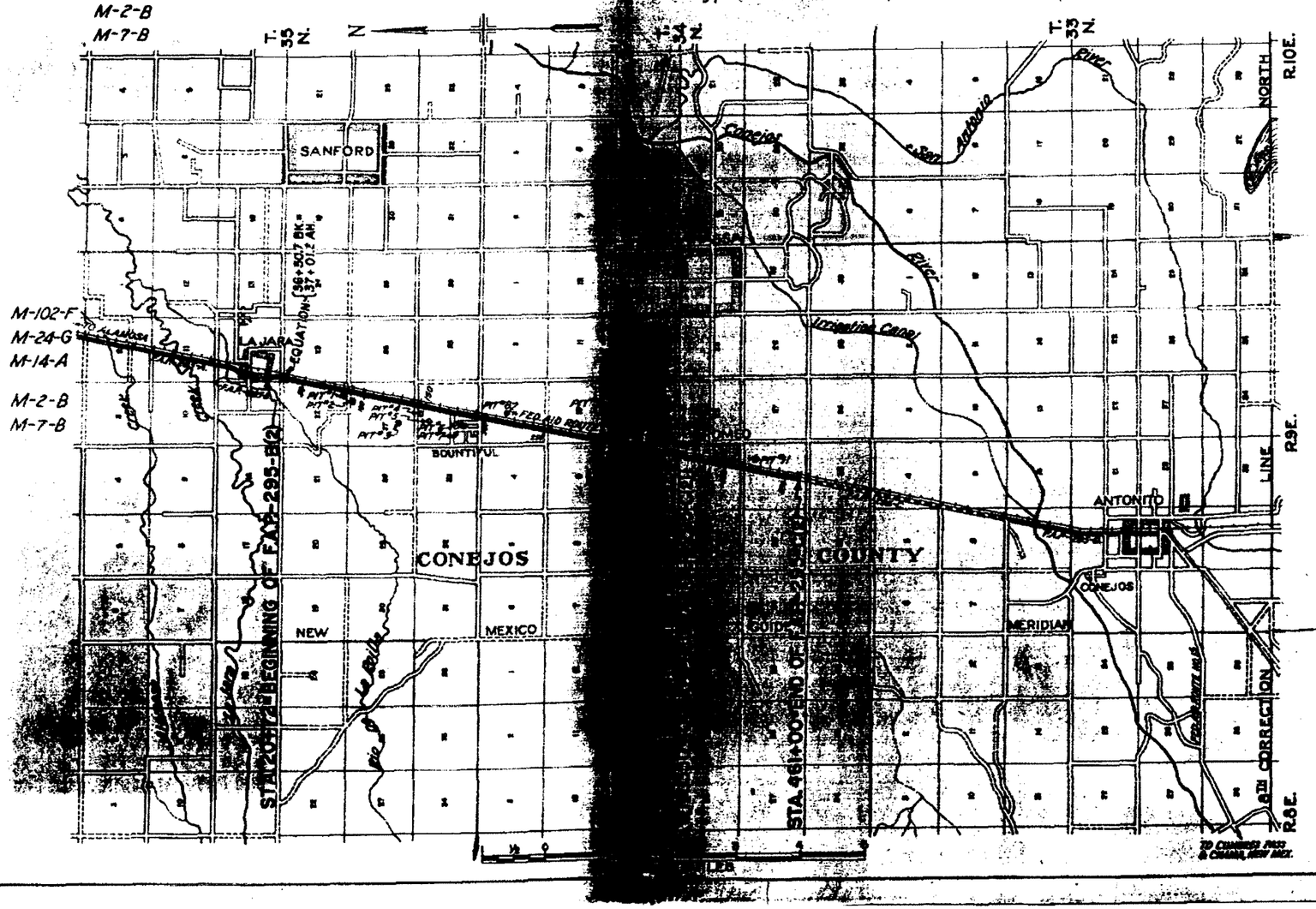
1.	Title Sheet	
2.	Typical Section, Summary of Quantities and Selected Material Plan.	
3.	List of Structures, CMP Culverts to be Relayed.	
4.	List of Structures and Surfacing Plan.	
5.	Roadway Details, Fencing, Markers.	
6.	Standard Headwall for CMP Culverts	M-102-F
7.	Standard Concrete Box Culverts	M-103-E
8.	Standard Wire Fences (Tr. Wood Posts)	M-24-G
9	Standard Structure Year Number Marking	M-14-A
10.	Standard Methods for Superelevation and Widening of Curves	M-1-B
11.	Typical Side Approach Roads - Roadway Construction Traffic Signs	M-2-B
12.	Standard Marker Posts	M-7-B
13-23.	Plan and Profile Sheets.	
28-142	Cross Sections	

F.A.P. 295-C(2)

1.	Title Sheet	
2.	Typical Section, Summary of Quantities	
3.	List of Structures, CMP Culverts to be Relayed	
4.	List of Structures	
5.	Roadway Details, Fencing, ROW Markers	
6.	Standard Headwalls for CMP Culverts	M-102-F
8	Standard Wire Fences (Tr. Wood Posts)	M-24-G
9.	Standard Structure Year Number Marking	M-14-A
11.	Typical Side Approach Roads - Roadway Construction Traffic Signs	M-2-B
12.	Standard Marker Posts	M-7-B
24-27.	Plan and Profile Sheets	
31-176.	Cross Sections	

CONVENTIONAL SIGNS

- CENTER LINE OF SURVEY 350
- RIGHT OF WAY LINES
- COUNTY LINE
- TOWNSHIP OR RANGE LINES
- SECTION LINES
- ONE QUARTER SECTION LINES
- BARBED WIRE FENCES
- COMBINATION WIRE FENCES
- TELEGRAPH LINES
- POWER LINES
- TELEPHONE LINES
- PRESENT ROAD
- RAILROAD TRACKS

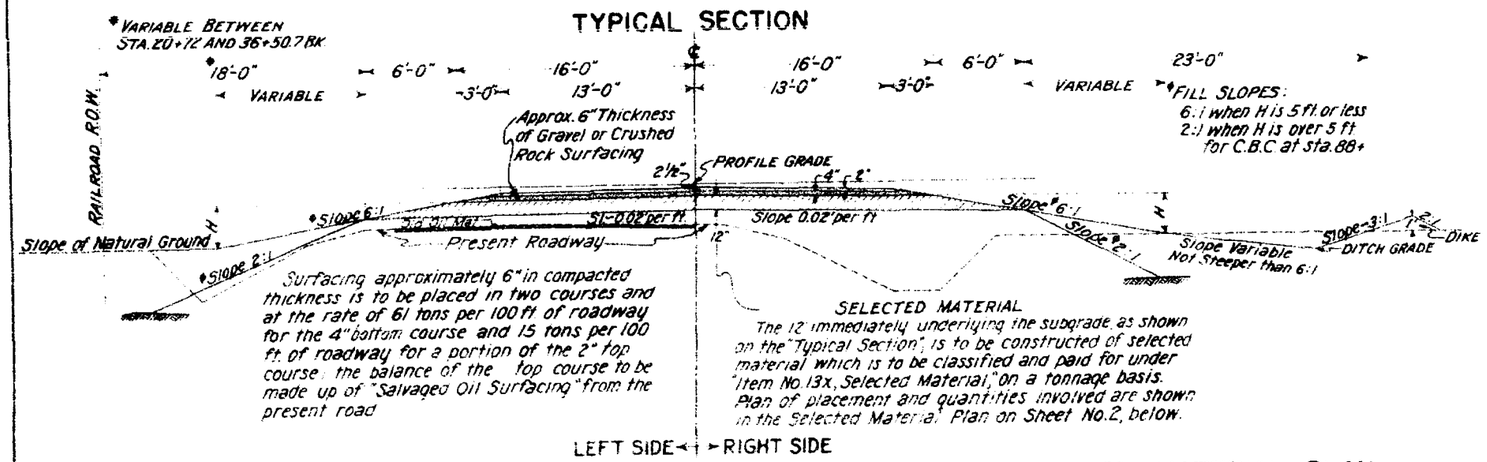

T. 35 N.
T. 34 N.
T. 33 N.
SANFORD
LAJARA
BOUNTIFUL
CONEJOS
COUNTY
NEW
MEXICO
ANTONITO
CONEJOS
MERIDIAN
Conejos River
San Antonio River
Irrigation Canal
NORTH
R.10E.
R.9E.
R.8E.
LINE
CORRECTION
STA. 20+72 BEGINNING OF FAS-295-B(2)
STA. 461+00 END OF FAS-295-B(2)
EQUATION 36+50.7 BK. = 37+01.2 AH.
STA. 20+72 BEGINNING OF FAS-295-C(2)
STA. 131+72 END OF FAS-295-C(2)
Cook Creek
La Jara Creek
La Jara Canal
Rio de los Pinos
Rio de los Pinos Canal
Rio de los Pinos Ditch
Rio de los Pinos Lateral
Rio de los Pinos Lateral
Rio de los Pinos Lateral

STATE	FED AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
COLO	295-B(2) & C(2)	2	

Revised Summary - 11-20-40 - H.R.H.

TYPICAL CROSS SECTION OF IMPROVEMENT AND SUMMARY OF QUANTITIES

TYPICAL SECTION



Surfacing approximately 6" in compacted thickness is to be placed in two courses and at the rate of 61 tons per 100 ft of roadway for the 4" bottom course and 15 tons per 100 ft. of roadway for a portion of the 2" top course; the balance of the top course to be made up of "Salvaged Oil Surfacing" from the present road

SELECTED MATERIAL

The 12" immediately underlying the subgrade as shown on the "Typical Section" is to be constructed of selected material which is to be classified and paid for under "Item No. 13x, Selected Material," on a tonnage basis. Plan of placement and quantities involved are shown in the "Selected Material" Plan on Sheet No. 2, below.

GENERAL NOTES

This Project is to be constructed in conformity with the Standard Specifications of the Colorado State Highway Department, adopted June 1, 1940.

All quantities on preliminary plans are to be considered as 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 Profile 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 locations indicated on the Plans. Slope stakes beyond the limits of the Typical Section are subject to change by the Engineer to fit Embankment requirements actually encountered during construction.

All curves are to be superelevated as provided for by the Standard Superelevation Sheet included with plans.

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

All side approach roads to the project shall be gravel surfaced with a 4 inch thickness of "Gravel or Crushed Rock Surfacing" extending approximately 30 ft. from edge of highway. Estimated tonnage of surfacing material required in this operation is shown in List of Structures.

Overhaul will be paid for as measured along center line of project, unless otherwise noted on the plans.

Headwalls for C.M.P. Culverts shall be placed only where specifically called for by notes on the plans. The ends of Corrugated Metal Pipes which are not provided with headwalls, shall be covered with approximately six inches of embankment material in such manner that a minimum of metal shall be exposed in the completed work. This shall be accomplished by working embankment slopes around and adjacent to the Culvert.

Right-of-Way fences for this project are to be constructed entirely within the right of way as shown on the plans.

Work on this project will be on the present traveled roadway and the contractor shall, at his own expense, adequately provide for traffic and maintain in safe condition and at his own expense all temporary approaches and crossings of intersecting roads.

SELECTED MATERIAL PLAN

It is estimated that selected material for the project is available in the vicinity of the pits indicated in the following tabulation. Estimated quantities involved in the operation are shown below. No alteration of the selected material plan as here outlined will be allowed without written authorization from the Department.

MATERIAL TO BE PLACED	SOURCE	QUANTITY TONS AVAIL.	QUANTITY TONS USED	OVERHAUL TON MILES
20+72 – 36+20 93+20 – 116+31	Pit No. 3 – 1800 ft. of 128+00	22,294	16,770 5,524	11,431 Free Haul
116+31 – 123+30 179+30 – 212+50	Pit No. 4 – 450 ft. of 141+00	21,920	14,537 7,736	Free Haul 2,433
212+50 – 245+70 245+70 – 343+30 343+30 – 349+71.9	Pit No. 3 – 450 ft. of 196+50	51,360	7,736 22,741 1,496	2,433 Free Haul 91
TOTALS FOR F.A.P. 295-B(2)		95,774	76,540	16,388
350+00 – 360+89	Pit No. 9 – 400 ft. of 394+50	2,585	2,538	571
360+89 – 378+20 378+20 – 461+00	Pit No. 1 – 800 ft. of 423+00	23,904	4,033 19,292	661 Free Haul
TOTALS FOR F.A.P. 295-C(2)		26,489	25,863	1,232

SUMMARY OF APPROXIMATE QUANTITIES

NO.	ITEM	UNIT	ROADWAY F.A.P. 295-B(2) FED. AID	ROADWAY F.A.P. 295-B(2) NON FED. AID	ROADWAY F.A.P. 295-C(2) FED. AID	ROADWAY F.A.P. 295-C(2) NON FED. AID	TOTALS
10a+b	Clearing and Grubbing Entire Project	Lump Sum	*(a)		*(b)		*(a+b)
11 b	Removal of 15 Structures	" "	*				*
11 c	Removal of 3 Structures	" "			*		*
11d+e	Removing Signs	Each	5 (d)		3 (e)		8 (d+e)
11 f	Remove House, Sta 189+	Lump Sum	*				*
11 g	Remove Concrete Sidewalk	Sq Ft	110				110
11 h	Remove Store Building and Garage Sta 193+	Lump Sum	*				*
11 i	Remove Store Building, Sta 386+	" "			*		*
11j+k	Remove Gas Pumps, Sta 193+, Sta 386+	" "	*(j)		*(k)		*(j+k)
11 l	Remove and Reset Headgate, Sta 168+	" "	*				*
15 a	Rolling Fills	Hr.	800		200		1,000
15 b	Furnishing Roller	Roller Units	2		2		4
11m+p	Remove and Reset Mail Boxes	Lump Sum	*(m)		*(p)		*(m+p)
11 q	Remove Headwall and Cut Keyway	Each	3				3
11 r	Remove and Reset Project Marker	"					2
11 s	Move Filling Station, Sta 386+	Lump Sum				*	*
12 a	Removing Fence	Lin. Ft.	1,200		2,500		3,700
12 b	Removing and Rebuilding Fence	" "	32,200		8,400		40,600
12 c	Line Posts (Treated Wood)	Each	550		125		675
13 c	Unclassified Excavation	Cu. Yd.	123,000		33,000		156,000
13 d	Unclassified Ditch Excavation	" "	2,500		200		2,700
13 x	Selected Material	Ton	76,600		25,900		102,500
14 a	Dry Rock Excavation (Structural)	Cu Yd	20		10		30
14 b	" Common Excavation (Structural)	" "	165		55		220
14 c	Wet Rock Excavation (Structural)	" "	20		10		30
14 d	" Common Excavation (Structural)	" "	165		55		220
14 e	Mechanical Tamping	Hr	90		30		120
18 a	Station Yard Overhaul	Sta Yd	1109,000		285,000		1,394,000
18 b	Yard Mile Overhaul	Yd M	27,300		8,800		36,100
26 a	Gravel or Crushed Rock Surfacing	Ton	26,100		9,100		35,200
26 c	Overhaul of Surfacing & Select Material	Ton M	22,200		1,700		23,900
44 b	Miscellaneous Treated Timber	M Ft bm	0.9				0.9
46 a	Class 'A' Concrete	Cu Yd	41				41
46 b	Class 'B' Concrete	" "	19		2		21
47	Reinforcing Steel	Lb	3,900				3,900
51	Relaying Pipe	Lin Ft	71.2		390		1,102
53 b	18" Corrugated Metal Culvert Pipe	" "	150		120		270
53 c	24" " " " "	" "	368		134		502
53 d	30" " " " "	" "	72				72
53 e	36" " " " "	" "	44				44
64	Dry Rubble Slope and Ditch Paving (12" Thick)	Sq Yd	20				20
76 a	Barbed Wire Fence with Treated Wood Posts	Lin Ft				2,100	2,100
76 g	Barbed Wire Gates	Each				1	1
81 a	Project Markers	"	1		1		2
81 b	Right of Way Markers	"	37		12		49
102	Salvage, Stockpile & Replace Oil Proc. Surfacg.	Ton	5,600		1,900		7,500
	FORCE ACCOUNT ITEMS						
	Remove Pedestal and Basin, Pipe Well off R.O.W. Sta 194+	Lp.Sum	*				*
	Obliterating Old Road	Lump Sum	*				*
	Remove and Reset U.S. Bench Marks (State Forces)	Lp.Sum	*				*

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	295-B(2) & C(2)	3	

SPL 582 SHTS 3, 5436, 6878 & 7354 — 11-20-40 — H.R.H.

LIST OF STRUCTURES

STATION	DESCRIPTION	REMOVALS NO. STRS.	REMOVALS NO. SIGNS	EXCAVATION CU.YDS. UNCL.	EXCAVATION CU.YDS. EMB.	EXCAVATION CU.YDS. UNCL. DITCH	STRUCT. EXCAV. CU.YDS. *	GRAV OR CR. ROCK SURF. TONS	CONCRETE CU.YDS. CL "A"	CONCRETE CU.YDS. CL "B"	REINF. STEEL LBS.	CORR. METAL CULV. PIPE LIN.FT. 18"	24"	30"	36"	RELAY PIPE LIN. FT. ◆	CONN. BANDS NO. ◆	MISCELLANEOUS
20+72	Approach to Project & Project Marker				25			10										1-Project Marker
22+30 — 30+80	Ditch Change on Rt					70												
23+00	Road Approach on Lt				315			70										
29+75	Road Approach on Lt				80			20										
32+55	Major Road Approach on Lt				1095			320										
32+64	Road Approach on Rt				80			20										
33+00	C.M.P. Cross Culv under R.R. & Ditches					25	20					46						
33+50	C.M.P. Cross Culvert with 2-Hdwls.						15			3.30		60						
40+75	Remove Sign on Rt		1															
48+50	Remove Sign on Rt		1															
55+50	Remove Sign on Rt		1															
56+60	Road Appr on Rt. Relay Side Drain on Rt.				60		5	10								30		
56+70 — 59+90	Ditch Change on Rt.					30												(Rem. Hdwl. & Cut Keyway
60+01	Extend 6'x3' C.B.C. 19 on Rt., Dr. Rub. St. Pav. L & R						20		1.89		1730							20 Sq. Yds. Dry Rub. St. Pav. (2 Th.
60+16	Road Approach on Rt				45			10										
60+40	C.M.P. Cross Culvert and Outlet Ditch					5	25					82						
60+40 — 63+20	Ditch Change on Rt					25												
65+00	Road Approach on Lt				30			20										
87+00	Remove & Reset U.S.G.S. Bench Mark on Rt						(FORCE ACCOUNT BY STATE FORCES)											
93+60	Road Approach on Rt				5			10										
88+05	Extend 2'x3' C.B.C. & Apron L & R on Rt						30		2.20		2090							
88+30	Remove Wooden Flume on Rt		1-Flume															(Remove 2-Headwalls &
88+45	Road Appr. & Side Drain on Rt. Rem. 25'x16" W.B.C. & Hdwl. on Rt				20		10	0		1.10		50						Cut 2-Keyways
88+75	Road Approach on Lt				40			0										
88+80 — 97+60	Ditch Change on Rt					360												
100+79	Rem. Hdwl. & 3'x3' Wood Box Culv. on Rt & C.M.P.																	
100+80	Rd. Appr. L & R, C.M.P. Side Drain on Rt, Relay C.M.P.				20		0	20				30				30		
114+10	Road Approach on Lt				55			10										
127+50	Road Appr. & Side Drain on Rt				85		0	20				30						
139+50	Remove Sign on Rt		1															
150+50	Road Approach on Rt				30			10										
140+75	Remove 30'-0" C.M.P. Culv. & 2'-0" W.B.C. on Rt & Extend & Relay (2-Hdwls) and Ditches					25	35			6.10		44			30	30	1-36"	
161+85	Ditch Change on Rt					215												
162+15	Road Approach on Lt				90			30								30	1-15"	
162+19	Road Appr. Rt. Relay C.M.P. Side Drain on Rt				30		5	20								30	2-15"	
162+20 — 168+90	Ditch Change on Rt															30		
165+62	Road Appr. Rt. Relay C.M.P. Side Drains on Rt				60		10	10								30		
166+15	Road Approach on Lt				40			10										
168+53	Road Appr. on Rt. Rem. 16'x16' C.M.P. on Rt	1-C.M.P.			90			20								30	1-15"	
	Relay Side Drain on Rt, C.M.P. Sd. Dr. in Irrig. Ditch Rt						30					40						
187+00	Remove 3-Conc. Joists on Rt	1-Str.																
168+40 — 186+70	Ditch Change on Rt					370												Remove & Reset Headgate
168+93	Remove and Reset Wood Headgate Rt															30		
173+48	Road Appr. Rt. Relay C.M.P. Side Drain on Rt				30		5	10										
	Rem. 25'x16" W.B.C. Rt., C.M.P. Sd. Dr. in Irrig. Ditch Rt.	1-W.B.C.										50				30		
187+10	Road Appr. Rt. Relay C.M.P. Side Drain on Rt				50		5	10										
189+00	Road Approach on Lt				65			20										
189+40	Road Approach on Rt				40			10										Remove Adobe House
189+65	Remove Adobe House on Rt																	Rem. 110 Sq. Ft. Conc. Sidewalk
	Remove Concrete Sidewalk on Rt																	
190+70	Road Approach on Lt				70			20										
191+05 — 193+00	Road Approach on Rt				185			70										
192+64	Remove Sign on Rt		1															
193+40	Remove Adobe Store on Rt																	Remove Adobe Store Bldg
193+42	Move 2-Gas Pumps on Rt																	Move 2-Gas Pumps
193+87	Remove Adobe Garage on Rt																	Remove Adobe Garage
194+58	Rem. Pedestal & Basin, Pipe Art. Well on Rt off ROW						(FORCE ACCOUNT)											
194+75	Road Approach on Lt				80			20										
194+90	Road Appr. & Side Drn. Rt., Rem. 25'x16' W.B.C.	1-W.B.C.			50		10	20				40						
195+08	Rem. 2-Hdwls. & Extend Dble. 30" C.M.P. Culv. (2-Hdwl. 10° on Lt. & 26 on Rt (Sk. 79'R), 2-Hdwls. & Ditches					25	15			6.10				10 10 26 26		4-30"		
195+09	Rem. 8'x7' Timb. Headgate & Wings Rt. 1-Headgate Rt.	1-Hdgate					5											862 Bd. Ft. Misc. Treat. Timber
195+23	C.M.P. Cross Culv. with 1-Hdwl. Outlet Ditch					10	10			1.65		60						
195+25 — 224+30	Ditch Change on Rt					540										50		
210+95	Road Appr. on Rt. Relay 15'x50' C.M.P. Sd. Dr. Rt.				80		10	15										

(CONT'D. ON SHEET NO. 4)

C.M.P. CULVERTS TO BE RELAYED

STATION	REQUIRED	TO BE RELAYED LIN. FT. 15"	18"	24"	36"	FROM STATION	HDWLS. TO BE REMOVED ◆
56+60	Side Drain on Rt	30				Rt. of 54+10	
100+80	Irrig. Ditch on Rt	30				Lt. of 97+15	2
120+75	Cross Culvert			30		Cross Culv. 120+73	2
120+85	Side Drain on Rt	20				Lt. of 114+10	2
141+19	Side Drain on Rt	30				Rt. of 141+19	2
						Rt. of 173+48	
173+60	Side Drain on Rt	30				Lt. of 255+52	3
						Rt. of 279+50	
279+60	Side Drain on Rt	30				Rt. of 279+50	3
						Rt. of 290+00	
168+63	Side Drain on Rt	50				Rt. of 68+53	4
						Rt. of 224+39	
173+48	Side Drain on Rt	30				Lt. of 168+15	
187+10	Side Drain on Rt	30				Lt. of 194+75	2
210+95	Side Drain on Rt	50				Rt. of 210+95	2
211+10	Irrig. Ditch on Rt		20			Rt. of 306+23	
224+39	Side Drain on Rt	30				Lt. of 224+39	
225+86	Side Drain on Rt	30				Cross Culv. 225+23	2
252+60	Side Drain on Rt	50				Rt. of 252+89	2
279+50	Side Drain on Rt	30				Lt. of 279+50	
290+00	Side Drain on Rt	30				Lt. of 290+23	
306+10	Side Drain on Rt	30				Lt. of 307+20	
						Rt. of 320+00	3
319+70	Side Drain on Rt	30				Rt. of 307+45	
						Rt. of 320+00	3
320+00	Side Drain on Rt	30				Lt. of 334+18	
336+57	Irrig. Ditch on Rt	20				Rt. of 348+57	2
342+57	Side Drain on Rt	30				Lt. of 349+04	
TOTALS F.A.P. 295-B(2)		660	20		30		31
350+44	Side Drain on Rt	30				Rt. of 350+44	
						Rt. of 440+63	3
350+42	Irrig. Ditch on Rt		20			Rt. of 350+42	
358+92	Side Drain on Rt			30		Rt. of 358+94	2
383+46	Side Drain on Rt	50				Rt. of 383+46	3
						Rt. of 440+63	
386+03	Side Drain on Rt	80				Rt. of 386+03	3
387+72	Side Drain on Rt	30				Cross Culv. 387+72	3
412+97	Side Drain on Rt	34				Rt. of 412+97	2
414+73	Side Drain on Rt	30				Rt. of 414+73	2
393+72	Side Drain on Rt	40				Lt. of 393+72	4
400+91	Side Drain on Rt	30				Rt. of 400+91	
426+51	Side Drain on Rt	30				Cross Culv. 426+51	2
TOTALS F.A.P. 295-C(2)		308	20	30			22

◆ To be included in bid price for "Relaying Pipe"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	295-B(2) & C(2)	4	

Revised Str. Removals Sta. 238+ & 252+ — 11-20-30-HRH

LIST OF STRUCTURES
(CONT'D. FROM SHEET NO. 3)

F.A.P.-295-B(2)

STATION	DESCRIPTION	REMOVALS NO. STRS	REMOVALS NO. SIGNS	EXCAVATION CU.YDS. UNCL. EMB	EXCAVATION CU.YDS. UNCL. DITCH	STRUCT. EXCAV. CU.YDS. •	GRAV. OR CR. ROCK SURF. TONS	CONCRETE CU.YDS. CL. 'A'	CONCRETE CU.YDS. CL. 'B'	REINF. STEEL LBS	CORR. METAL CULV. PIPE LIN.FT. 18"	24"	30"	36"	RELAY PIPE LIN.FT. Φ	CONN. BANDS NO. ⊕	MISCELLANEOUS
211 + 10	Road Appr on Lt.; Relay C.M.P. Side Drain Rt																
	Remove 18"x12' C.M.P. on Rt		1-C.M.P.	50			10								22		
224+39	Road Apprs. L & R.; Relay C.M.P. Side Drain Rt			120		5	20								30		
224+60–238+60	Ditch Change on Rt				150												
238 + 59	Road Approach on Lt., Rem. 15"x20' C.M.P. on Lt		1-C.M.P.	40			10										
238 + 68	Road Appr on Rt.; Remove 15"x14'-7" W.B.C. on Rt		1-W.B.C.	40		10	10										
	Relay C.M.P. Side Drain on Rt														30		
239+00–252+60	Ditch Change on Rt				140												
252 + 49	Remove & Reset U.S.G.S. Bench Mark on Rt.					(FORCE ACCOUNT, BY STATE FORCES)											
252 + 62	Road Approach on Lt., Rem. 15"x20' C.M.P. on Lt.		1-C.M.P.	70			10										
252 + 89	Road Appr Rt. Relay C.M.P. Side Drain Rt			80		10	20								50		
255 + 52	Road Approach on Lt			50			10										
279 + 50	Road Apprs. L & R.; Relay C.M.P. Side Drain Rt			110		5	20								30		
279+60–288+85	Ditch Change on Rt				110												
290 + 00	Road Appr Rt.; Relay C.M.P. Side Drain on Rt			40		5	10								30		
290 + 23	Road Approach on Lt			60			10										
290+50–306+15	Ditch Change on Rt				175												
306 + 17	Road Appr on Lt., Remove 2'-1"x16' W.B.C. on Lt		1-W.B.C.	110			20										
306 + 23	Road Appr on Rt. Relay C.M.P. Side Drain on Rt			65		10	10								20	1-15"	
307 + 20	Road Approach on Lt			40			10								10		
307 + 45	Road Appr on Rt., Relay C.M.P. Side Drain on Rt			25		10	10								20	1-15"	
320 + 00	Road Appr on Rt.; Relay C.M.P. Side Drain on Rt			45		5	10								20		
330+00–332+30	Ditch Change on Rt				25												
332+70–348+30	Ditch Change on Rt				160												
334 + 18	Road Approach on Lt			65			10										
348+30–349+00	Ditch Change on Rt				70												
348 + 50	Road Appr Rt. Relay C.M.P. Side Drain Rt			50		5	20								20		
349 + 04	Road Approach on Lt			25			10								30		
349 + 71.9	Remove and Reset Project Marker Rt																Remove & Reset 1-Proj. Marker
	TOTALS FOR F.A.P.-295-B(2)	15	5	4310	2475	360	1065	419	814	3822	150	366	77	44	712		
350+00–358+70	Ditch Change on Rt				95												
350 + 44	Road Appr Rt. Relay 2-C.M.P. Side Drains on Rt			20		10	10								16	1-15"	
356 + 30	Remove Sign on Rt		1												12		
356 + 79	Remove 1-Howl & Extend 20' 18"x32' C.M.P. Cross Culv. 20' on Rt., 1-Howl on Rt	1-Howl				5			50		120					2-18"	
356 + 94	Rd Appr Rt. Rem & Relay C.M.P. Side Drain Rt			80		15	20				120				30		
359 + 06	Road Approach on Lt			80			20										
383 + 46	Rd Appr Rt. Rem & Relay C.M.P. Side Drain Rt			40		5	10								20	1-15"	
385 + 63	Remove and Reset Project Marker on Lt														10		Remove & Reset 1-Proj. Marker
386 + 00	Main Road Approach St. Lt.			310			310										
386 + 03	Rd Appr Rt. Rem & Relay C.M.P. Side Drain Rt			135		15	30								80		
386 + 09	Move Filling Station on Rt																Move 1-Building
	Move 2-Gas Pumps on Rt																Move 2-Gas Pumps
386 + 40	Remove Sign on Rt		1														
386 + 56	Remove Sign on Rt		1														
386 + 63	Remove Store on Rt																Remove 1 Stucco Building
387 + 00	Road Appr on Rt. Rem 4-8"x69' Iron Pipes 30 Drn. on Rt.; Relay C.M.P. Side Drain on Rt	4-30 Drn.		50		5	10								30		
387 + 72	C.M.P. Cross Culvert and Inlet Ditch				20	5							32				
393 + 72	Road Approach & C.M.P. Side Drain on Lt			40		10	10				30						
400 + 91	Road Appr Rt. Relay C.M.P. Side Drain Rt			25		10	10								34		
412 + 97	Road Apprs L & R. C.M.P. Side Drain Rt			135		10	40				50						
414 + 73	Rd Appr Rt. Rem & Relay C.M.P. Side Drain Rt			30		10	10								30		
415 + 40	Road Appr on Rt., Remove 6'x14'-2" Wd Box Culv. on Rt.; Relay C.M.P. Side Drain on Rt	1-W.B.C.		45		10	10								20	1-15"	
426 + 51	C.M.P. Cross Culvert					5							62				
440 + 63	Road Appr Rt.; Relay C.M.P. Side Drain on Rt			35		5	10								30		
461 + 00	Approach to Project & Project Marker			*500			150										1-Project Marker
	TOTALS FOR F.A.P.-295-C(2)	5	3	*500	150	120	660		50		120	134			390		

F.A.P.-295-C(2)

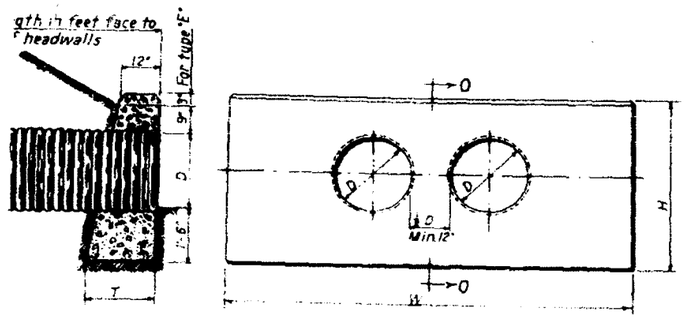
• Structural Excavation is estimated to be 90% Common and 10% Rock, each of which is estimated to be 50% Dry and 50% Wet
* All Embankment quantities, with the exception of 500 cu yds for Appr to Proj. as shown are included for payment in Profile Quantities
Φ See Sheet No 3 for Tabulation of Removing and Relaying Pipe
⊕ Connecting Bands to be included in the bid price for Corrugated Metal Culvert Pipe.

SURFACING PLAN

It is estimated that material for gravel or crushed rock surfacing for this project is available in the vicinity of the pits indicated in the following tabulation. Estimated quantities involved in the operation are shown below.

No alteration of the surfacing plan as here outlined will be allowed without written permission from the Department

MATERIAL TO BE PLACED	SOURCE	QUANTITY TONS AVAIL.	QUANTITY TONS USED	OVERHAUL TON MILES
20+72 – 93+20			5,470	3,728
Road Approaches	Pit No 3	9,056	510	348
93+20 – 116+91	(800 ft. Rt. of Sta. 128+00		1,802	Free Haul
Road Approaches			30	Free Haul
116+91 – 179+30			4,742	Free Haul
Road Approaches	Pit No 4		120	Free Haul
179+30 – 212+50	(450 ft. Rt. of Sta. 141+00	12,630	2,523	793
Road Approaches			195	62
212+50 – 245+70			2,523	793
Road Approaches			40	13
245+70 – 343+30	Pit No 9	10,655	7,416	Free Haul
Road Approaches	(400 ft. Lt. of Sta. 294+50		150	Free Haul
343+30 – 349+71.3			488	30
Road Approaches			20	2
TOTALS FOR F.A.P.-295-B(2)		34,341	26,031	5,769
350+00 – 360+89	Pit No 9	940	828	196
Road Approaches	(400 ft. Lt. of Sta. 294+50		50	12
360+89 – 378+20	Pit No 11		1,316	216
378+20 – 416+30		[illegible]	[illegible]	[illegible]
Road Approaches	(800 ft. Lt. of Sta. 420+00		610	Free Haul
TOTALS FOR F.A.P.-295-C(2)		10,631	9,097	414



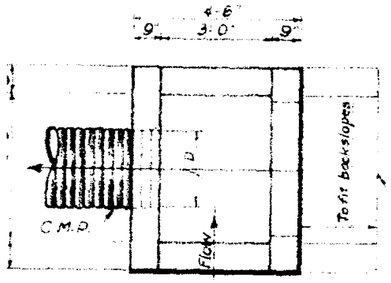
TIONAL ELEV. O-O

FRONT ELEVATION

E OF DIMENSIONS & QUANTITIES FOR DOUBLE CORRUGATED METAL PIPE CULVERT & HEADWALLS

D	W	H	T	CL 'B' CONCRETE FOR 2 HDWALLS	CORRUGATED METAL PIPE	CEMENT RUBBLE MASONRY
5'	7'-6"	5'-6"	1'-6"	24 C.Y. YDS.	16 GAGE L = LIN. FT.	
6'	8'-6"	6'-6"	1'-9"	30 00	16 00 L = 00	
7'	10'-0"	7'-6"	1'-10"	44 00	14 00 2 x L = 00	
8'	11'-6"	8'-6"	2'-0"	61 00	14 00 2 x L = 00	
9'	13'-0"	9'-6"	2'-3"	81 00	12 00 2 x L = 00	
10'	14'-6"	10'-6"	2'-6"	104 00	12 00 2 x L = 00	

TD HEADWALLS FOR DOUBLE CORR METAL PIPE CULV'S

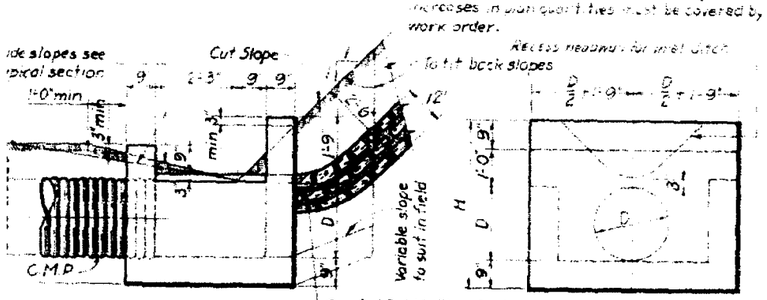


PLAN

QUANTITIES OF CLASS "B" CONCRETE OR CEMENT RUBBLE MASONRY

SIZE OF PIPE D	WIDTH OF WALL W	HEIGHT OF WALL H	QUANTITIES IN ONE HEADWALL CU YDS
2'	4'-6"	3'-6"	1.33
3'	5'-6"	3'-6"	1.78
4'	5'-0"	4'-0"	1.64
24"	5'-6"	4'-6"	1.90
30"	6'-0"	5'-0"	2.34
36"	6'-6"	5'-6"	2.72

NOTE Backwall to be eliminated and end walls connected to back slope where ordered by the Engineer. Floor slab is to be extended with side walls of common material and is to be omitted when inlet is in rock. Actual quantities involved in such operation shall be allowed and paid for. Increases in unit quantities must be covered by work order.

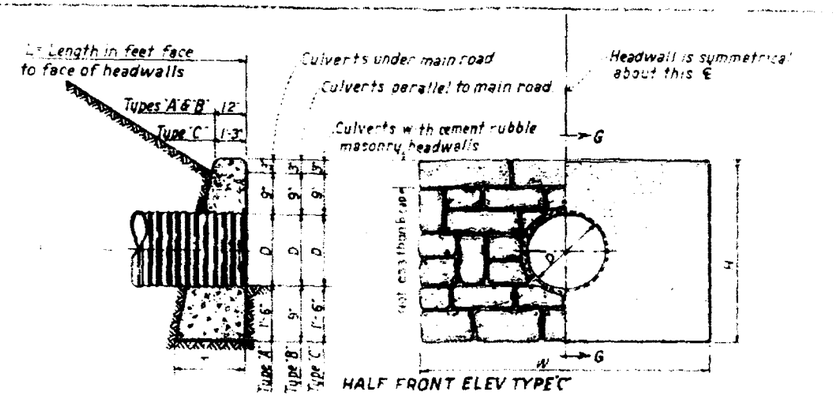


ELEVATION

Grouted Rubble Slope Paving for inlet ditch where noted on plans or directed by Engineer

END VIEW

INTERCEPTING HEADWALLS



SECTIONAL ELEV. G-G

HALF FRONT ELEV TYPE 'C'

HALF FRONT ELEV TYPE 'A' & 'B'

TABLE OF DIMENSIONS & QUANTITIES FOR CORRUGATED METAL PIPE CULVERTS & HEADWALLS

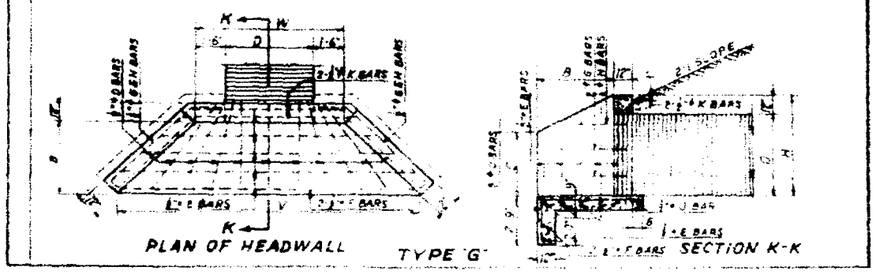
	D	W	H	T	CL 'B' CONCRETE FOR 2 HEADWALLS	CORRUGATED METAL PIPE	CEMENT RUBBLE MASONRY
TYPE A	12"	4'-6"	3'-6"	5"	1.4 CU YDS	16 GAGE L = LIN. FT.	
	15"	5'-3"	3'-9"	6"	1.8 00	16 00 L = 00	
	18"	6'-0"	4'-0"	7"	2.2 00	16 00 L = 00	
	21"	6'-9"	4'-3"	7"	2.6 00	16 00 L = 00	
	24"	7'-6"	4'-6"	8"	3.0 00	16 00 L = 00	
	30"	9'-0"	5'-0"	9"	3.8 00	16 00 L = 00	
	36"	10'-6"	5'-6"	10"	4.6 00	16 00 L = 00	
	42"	12'-0"	6'-0"	11"	5.5 00	16 00 L = 00	
	48"	13'-6"	6'-6"	12"	6.5 00	16 00 L = 00	
TYPE B	12"	4'-6"	3'-6"	5"	0.8 CU YDS	16 GAGE L = LIN. FT.	
	15"	5'-3"	3'-9"	6"	0.9 00	16 00 L = 00	
	18"	6'-0"	4'-0"	7"	1.1 00	16 00 L = 00	
	21"	6'-9"	4'-3"	7"	1.2 00	16 00 L = 00	
	24"	7'-6"	4'-6"	8"	1.4 00	16 00 L = 00	
	30"	9'-0"	5'-0"	9"	1.8 00	16 00 L = 00	

TYPE C	D	W	H	V	B	C	UNIT CONCRETE CLASS 'A'	CORRUGATED METAL PIPE	UNIT REINFORCING STEEL
	54"	10'-6"	6'-6"	2'-6"	5'-6"	5'-6"	12.5 CU YDS	16 GAGE L = LIN. FT.	LBS
	60"	12'-0"	7'-0"	2'-6"	6'-0"	6'-0"	14.3 00	16 00 L = 00	
	66"	13'-6"	7'-6"	2'-6"	6'-6"	6'-6"	16.2 00	16 00 L = 00	
	72"	15'-0"	8'-0"	2'-6"	7'-0"	7'-0"	18.2 00	16 00 L = 00	
	78"	16'-6"	8'-6"	2'-6"	7'-6"	7'-6"	20.3 00	16 00 L = 00	
	84"	18'-0"	9'-0"	2'-6"	8'-0"	8'-0"	22.5 00	16 00 L = 00	

ALL QUANTITIES ARE FOR TWO HEADWALLS & CONCRETE QUANTITIES ARE FOR TWO HEADWALLS

BAR LIST FOR TYPE 'G'

DIAMETER OF PIPE	54"	60"	66"	72"	78"	84"	BENDING DIAGRAM
D BARS ⅝ ϕ	SPACING 8 NUMBER 11 LENGTH	8 11	8 11	8 12	8 12	8 13	
B BARS ⅝ ϕ	SPACING 2 NUMBER EACH LENGTH EACH	12 EACH 10'-6"	EACH 11'-0"	EACH 11'-6"	EACH 12'-0"	EACH 12'-6"	
F BARS ½ ϕ	INCREASE SPACING NUMBER LENGTH	2" 7 6'-0"	2" 7 6'-6"	2" 7 7'-0"	2" 7 7'-6"	2" 7 8'-0"	
G BARS ½ ϕ	SPACING NUMBER LENGTH	18 6 6'-0"	18 6 6'-6"	18 6 7'-0"	18 6 7'-6"	18 6 8'-0"	
H BARS ½ ϕ	SPACING NUMBER ENDS	12 2 2	12 2 2	12 2 2	12 2 2	12 2 2	
J BARS ½ ϕ	SPACING NUMBER LENGTH	12 12 8'-6"	12 12 9'-0"	12 12 9'-6"	12 12 10'-0"	12 12 10'-6"	
K BARS ½ ϕ	SPACING NUMBER LENGTH SPACING NUMBER ENDS	6 8'-6" 6 2	6 9'-0" 6 2	6 9'-6" 6 2	6 10'-0" 6 2	6 10'-6" 6 2	



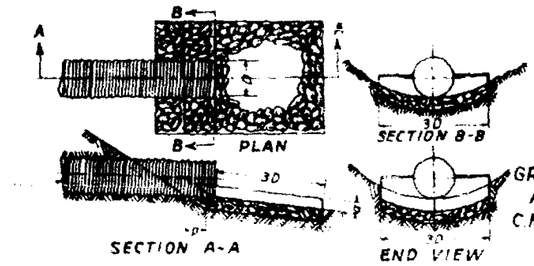
PLAN OF HEADWALL TYPE 'G'

SECTION K-K

STD. HEADWALLS FOR CORRUGATED METAL PIPE CULVERTS

STANDARD M-102-F

FED. ROAD DIST. NO.	STATE	SHEET NO.	TOTAL SHEETS
3	COLO.	F.A.P. 295 BIJ (4) 6	



STANDARD GROUTED RUBBLE APRON FOR C.M.P. CULVERTS

SQUARE YARDS GROUTED RUBBLE SLOPE & DITCH PAVING 1 FOOT THICK

FILL SLOPE	D	15"	18"	24"	30"	36"	42"	48"	54"	60"	66"	72"	78"	84"
1½:1	8'-9"	9"	9"	12"	12"	12"	12"	12"	12"	12"	12"	12"	12"	12"
	8'-0"	3	4	5	6	7	8	9	10	11	12	13	14	15
2:1	7'-0"	3	4	5	6	7	8	9	10	11	12	13	14	15
	6'-0"	3	4	5	6	7	8	9	10	11	12	13	14	15
3:1	5'-0"	3	4	5	6	7	8	9	10	11	12	13	14	15
	4'-0"	3	4	5	6	7	8	9	10	11	12	13	14	15

NOTE: Material for Tamping as produced under Item 14 of the specifications shall be applied over such areas as shown on the plans or as ordered by the Engineer.

GENERAL NOTES FOR ALL STRUCTURES

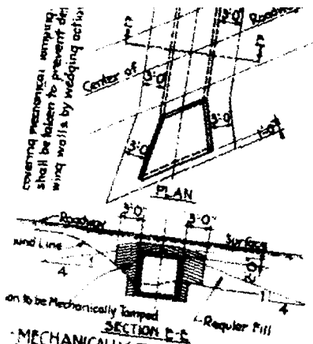
All work shall be done according to the standard specifications of the Colorado State Highway Department adopted June 1940.
All concrete shall be class 'A' except Types 'A' & 'B' which shall be class 'B'.
All exposed surfaces shall be finished free of form marks.
All exposed corners shall be beveled 1" x 2" face.
All construction joints shall be thoroughly cleaned before fresh concrete is poured.
All walls shall have forms on both sides.
All reinforcing bars shall be deformed.
All reinforcing bars shall be tagged with the mark number & erection mark.
Secondary bars when spliced shall lap for a distance of 30 diameters.
Main bars shall not be spliced.
Minimum fill over top of culverts shall be 1'-0".
Where culvert is skewed headwalls shall be placed parallel to ℄ of roadway.
Maximum grade of D or shall be 7%.
For standard quantities of culverts see sheet No. 2.
Footings in rock shall be poured out to the rock and not formed.

COLORADO
STATE HIGHWAY DEPARTMENT
STANDARD HEADWALLS
INTERCEPTING HEADWALLS
GROUTED RUBBLE APRONS
FOR C.M.P. CULVERTS

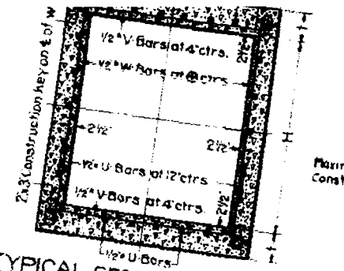
Chief Engineer: [illegible] Bridge Engineer: [illegible]
Materials Engineer: [illegible] Engineer of Maintenance: [illegible]
Approved: [illegible] 1941

STANDARD M-103-E

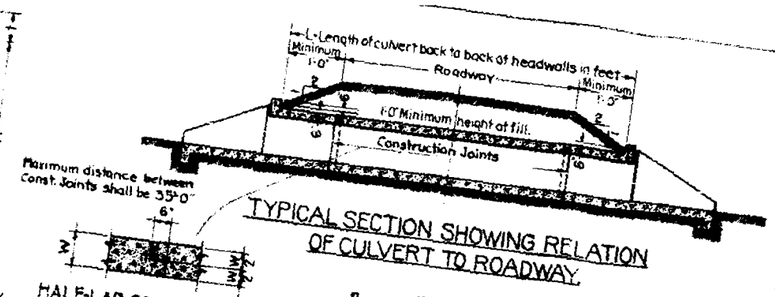
FED. ROAD DIST. NO.	STATE	SHEET NO.	TOTAL SHEETS
3	COLO.	F.A.P. 295 B(2) 7	



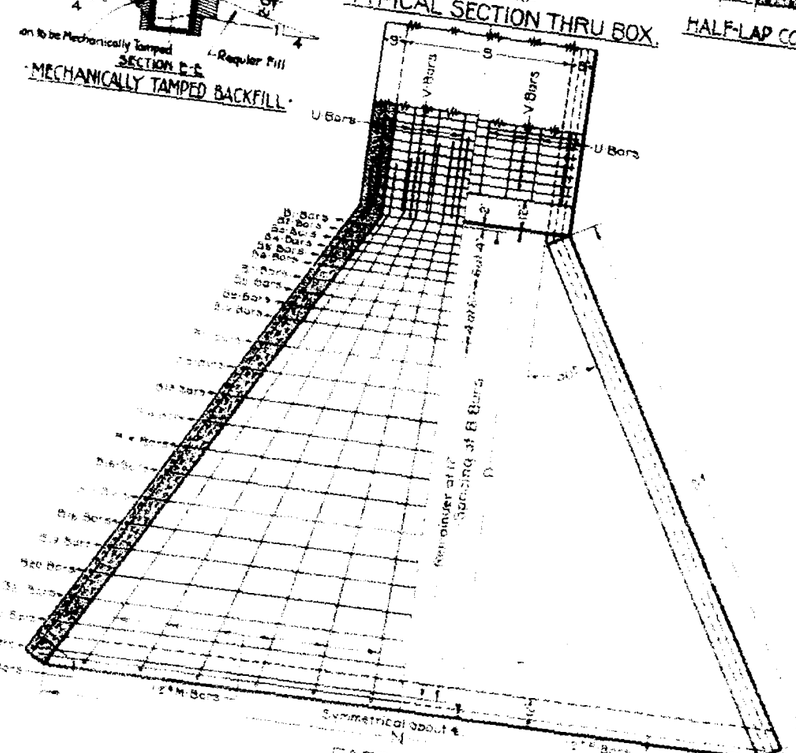
MECHANICALLY TAMPED BACKFILL

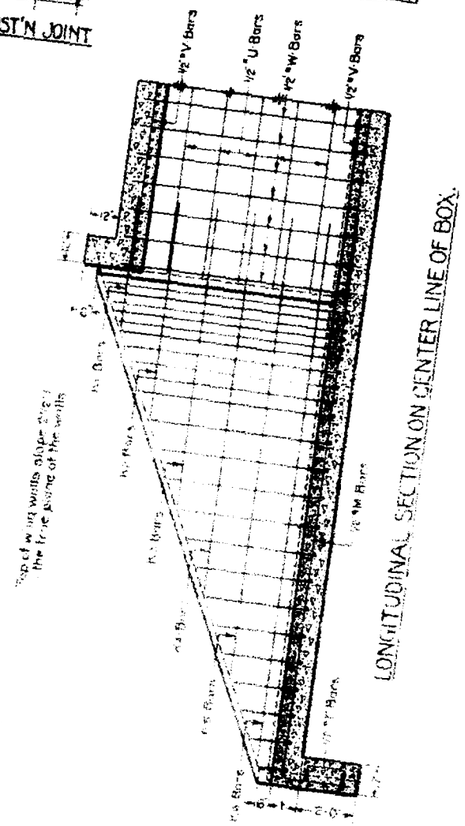


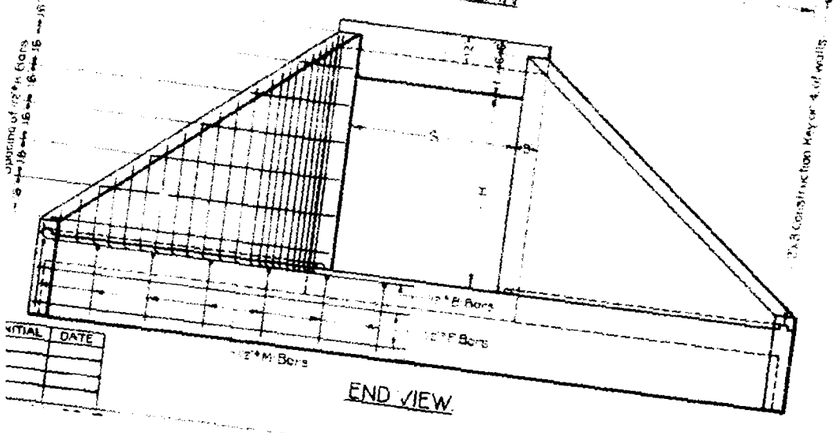
TYPICAL SECTION THRU BOX.

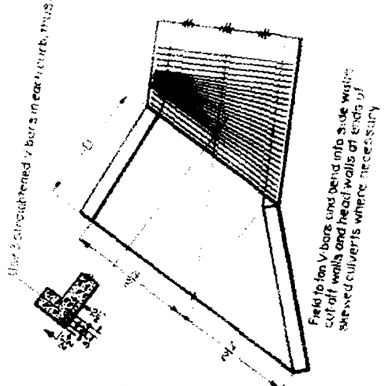


TYPICAL SECTION SHOWING RELATION OF CULVERT TO ROADWAY.









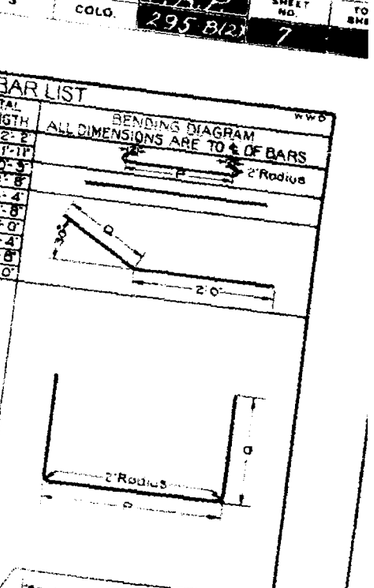
PART PLAN FOR SKEWED HEADWALLS.

REINFORCEMENT BAR LIST

W BARS	SPACING	NUMBER
H = 1'-0" TO 5'-0" INCL.	12"	3L + 6
H = 6'-0"	8½"	2.82L + 6
H = 7'-0"	8"	4L + 6

USE BARS FOR	MARK	SIZE	NUMBER	DIMENSION P	DIMENSION Q	TOTAL LENGTH
All Sizes	V	½" ℄	8L + 14	5'-10"		5'-2"
" "	W	½" ℄	8	H + 1'-1"		H + 1'-1"
" "	F	½" ℄	4			N + 0'-3"
" "	U	½" ℄	4			L + 1'-8"
H=2'-0" or more	K 1	½" ℄	4			
H=3'-0" "	K 2	½" ℄	4		3'-4"	5'-4"
H=5'-0" "	K 3	½" ℄	4		6'-8"	8'-8"
H=6'-0" "	K 4	½" ℄	4		10'-0"	12'-0"
H=7'-0" "	K 5	½" ℄	4		13'-4"	15'-4"
All Sizes	K 6	½" ℄	4		16'-8"	18'-8"
" "	B 1	½" ℄	2		20'-0"	22'-0"
" "	B 2	½" ℄	2	5'-6"	H + 1'-0"	
" "	B 3	½" ℄	2	5'-11"	H + 0'-11"	
" "	B 4	½" ℄	2	5'-2" 5"	H + 0'-9"	
" "	B 5	½" ℄	2	5'-2" 8"	H + 0'-9"	
" "	B 6	½" ℄	2	5'-3" 0"	H + 0'-7"	
" "	B 7	½" ℄	2	5'-3" 5"	H + 0'-5"	
" "	B 8	½" ℄	2	5'-4" 0"	H + 0'-5"	
H=6'-0" or more	B 9	½" ℄	2	5'-4" 7"	H + 0'-7"	
H=2'-0" "	B 10	½" ℄	2	5'-5" 2"	H - 0'-5"	
H=3'-0" "	B 11	½" ℄	2	5'-5" 8"	H - 0'-6"	
H=3'-0" "	B 12	½" ℄	2	5'-6" 0"	H - 0'-11"	
H=4'-0" "	B 13	½" ℄	2	5'-7" 6"	H - 1'-5"	
H=4'-0" "	B 14	½" ℄	2	5'-8" 8"	H - 1'-10"	
H=5'-0" "	B 15	½" ℄	2	5'-9" 10"	H - 2'-4"	
H=5'-0" "	B 16	½" ℄	2	5'-11" 0"	H - 2'-9"	
H=6'-0" "	B 17	½" ℄	2	5'-12" 2"	H - 3'-2"	
H=6'-0" "	B 18	½" ℄	2	5'-13" 4"	H - 3'-7"	
H=6'-0" "	B 19	½" ℄	2	5'-14" 6"	H - 4'-0"	
H=7'-0" "	B 20	½" ℄	2	5'-15" 8"	H - 4'-5"	
H=7'-0" "	C 1	½" ℄	2	5'-16" 10"	H - 4'-11"	
H=7'-0" "	C 2	½" ℄	2	5'-18" 0"	H - 5'-4"	
All Sizes	M	½" ℄	(3+1.4 D + 3.5)	5'-19" 2"	H - 5'-10"	
				5'-20" 4"	H - 6'-3"	

BENDING DIAGRAM
ALL DIMENSIONS ARE TO ℄ OF BARS



* See Table of Dimensions and Quantities

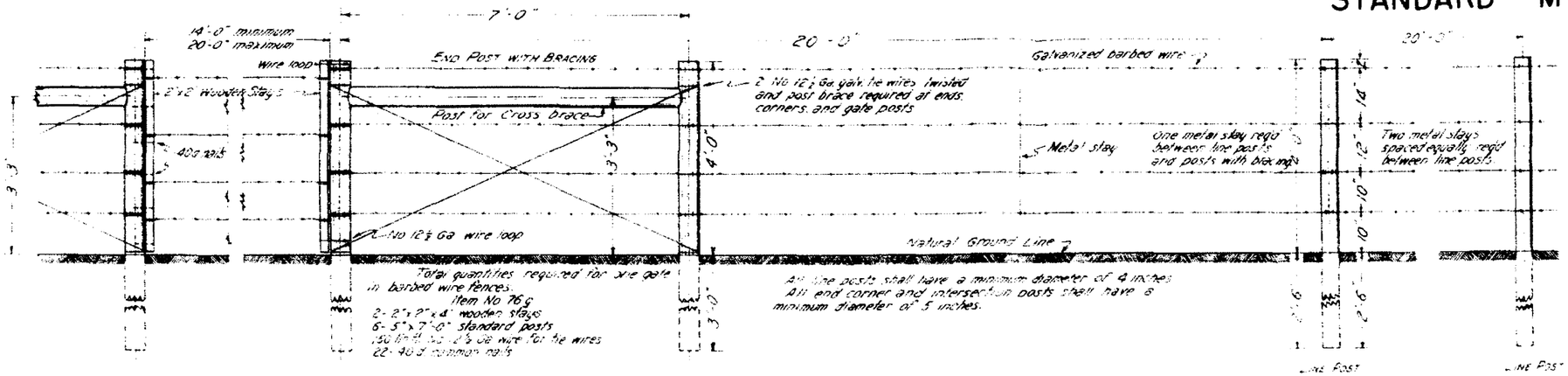
TABLE OF DIMENSIONS AND QUANTITIES

| DIMENSIONS | | | |

STANDARD M-24-G

FED. ROAD DIST. NO.	STATE	SHEET NO.	TOTAL SHEETS
3	COLO.	F.A.P. 295-B(2),(4)	8

Rules of 1940 A.A.S.H.T.O. Specs.



BARBED WIRE FENCE WITH WOODEN POSTS

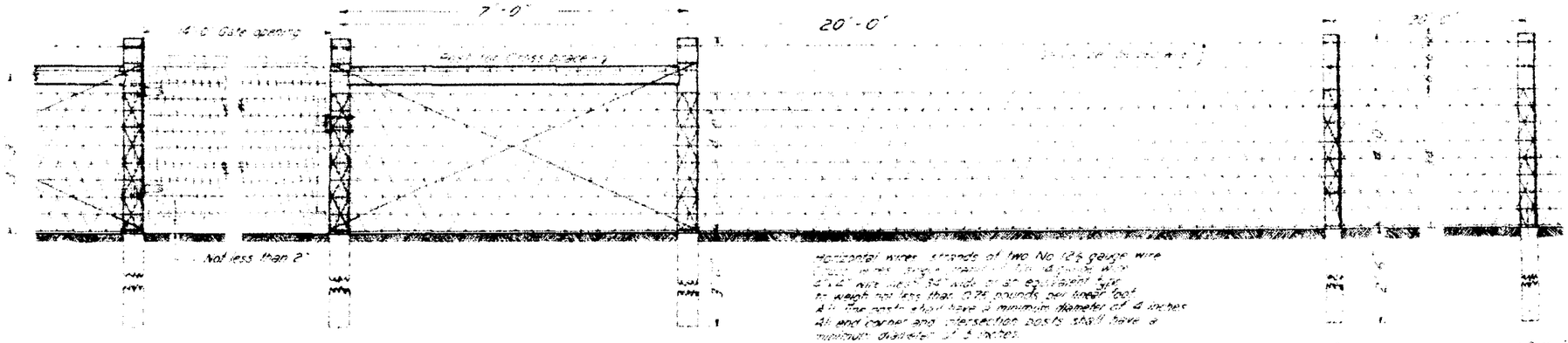
Item No 76 a

Total quantities required for one gate in barbed wire fences.
Item No 76 g
2- 2"x 7"x 4' wooden stays
6- 5"x 7'-0" standard posts
150 lin ft No 12½ Ga wire for tie wires
22- 40 d common nails

All line posts shall have a minimum diameter of 4 inches
All end corner and intersection posts shall have a minimum diameter of 5 inches.

CORNER POST WITH BRACING

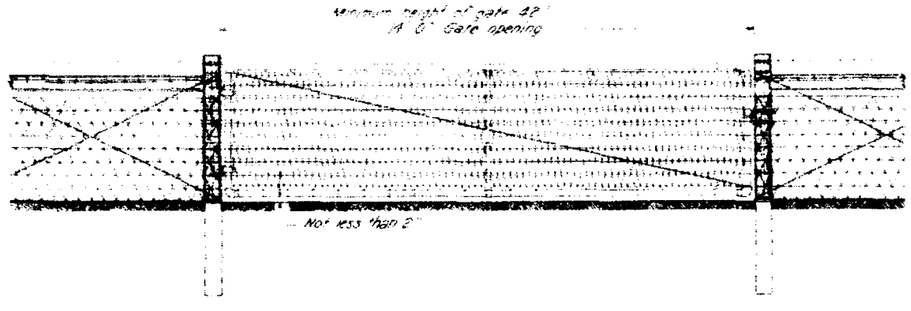
FENCE INTERSECTION WITH BRACING



Horizontal wires consists of two No 12½ gauge wire
[illegible]
2"x 2" wire mesh 32 inch or 6" equivalent type
to weigh not less than 275 pounds per linear foot
All line posts shall have a minimum diameter of 4 inches
All end corner and intersection posts shall have a minimum diameter of 5 inches

COMBINATION WIRE FENCE WITH WOODEN POSTS

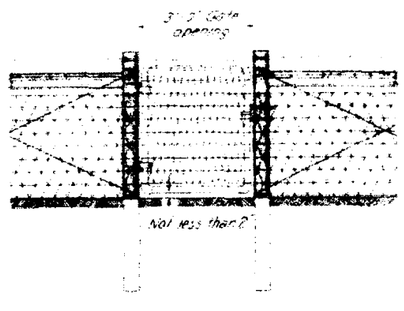
Item No 76 c



DRIVEWAY GATE

Item No 76 h

Gate complete with hinges and latch to weigh not less than 70 lbs
2"x 4" single strand wire mesh filler or an equivalent type
Width of mesh approximately 40 inches
Horizontal wires No 10 gauge
Cross wires No 12½ gauge
Galvanized metal latch and hinges
Minimum 1" dia galv pipe frame or an equivalent



WALK GATE

Item No 76 i

Gate complete with hinges and latch to weigh not less than 19 pounds.
2"x 4" single strand wire mesh filler or an equivalent
Width of mesh approximately 40 inches
Horizontal wires No. 10 gauge
Cross wires No 12½ gauge
Galvanized metal latch and hinges
Minimum ¾" dia galv pipe frame or an equivalent

FENCE TREATMENT AT STRUCTURES
TO BE USED ON STRUCTURES 4'x4' AND OVER

GENERAL NOTES

All work shall be done in accordance with the Standard Specifications of the Colorado State Highway Department adopted June 1, 1940.

Barbed wire shall be of standard make not lighter than No 12½ gauge, galvanized with two point barbs spaced not more than five inches apart.

All metal parts shall be galvanized and not lighter than shown and noted on this plan.

Wire mesh used in driveway gates shall be painted with an approved water-proof asphalt or mineral paint.

Staples shall be at least 1½" long made of No 9 ga wire base galvanized 5 staples required per post for barbed wire fence and 14 staples per post for combination wire fence

Cross braces to be securely nailed with four 40d nails at each post

End post with bracing to be used at all gates and fence ends

Corner post with bracing to be used at all corners and angles in fences

Fence intersection with bracing to be used at all intersecting fences.

At all structures of 4'x 4' or over the fence shall be ended at eye-bolts in the wings of the structure. Where the type of construction prohibits the use of eye-bolts, an end post with bracing shall be used.

Eye bolts are to be made from ½" round iron bars with a minimum of 6" of body length embedded in the concrete and a minimum of 1" inside eye diameter.

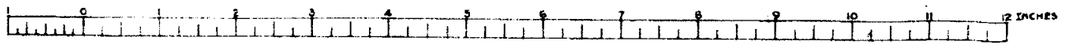
All wooden posts shall be made from seasoned, straight, sound Lodgepole Pine or Southern Yellow Pine, to be peeled and tops to be sawed off square before pressure treatment.

All posts shall be pressure treated with creosote in conformity with requirements given in the Specifications.

[illegible]

[illegible]

[illegible]



SCALE OF LETTERING

STANDARD M-14-A

FED. ROAD DIST. NO.	STATE	F.A.P. PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	295 B(2), C(2)	9	

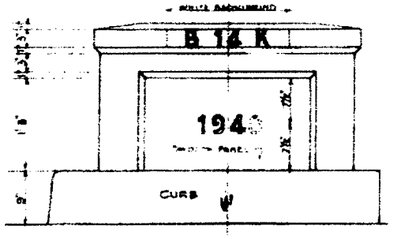
A B C D E F G H I J

K L M N O P Q R S T

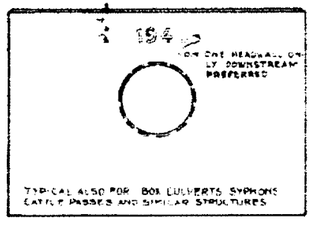
U V W X Y Z 1 9 4 0

SAMPLE YEAR NUMBER

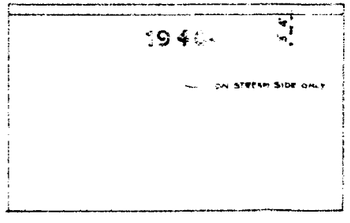
1 2 3 4 5 6 7 8 9 0 .



·TYPICAL CONCRETE ENDPOST·



·TYPICAL CULVERT HEADWALL·



·TYPICAL RETAINING WALL·

GENERAL NOTES

ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS OF THE COLORADO STATE HIGHWAY DEPARTMENT, ADOPTED JUNE 1, 1940.

THE SIZE, SHAPE AND SPACING OF THE NUMBERS SHALL BE IDENTICAL WITH THE FULL SIZE SHOWN ON THIS SHEET. ADDITIONAL COPIES OF THIS FULL SIZE SHEET CAN BE OBTAINED FROM THE DEPARTMENT WITHOUT CHARGE.

THIS WORK WILL NOT BE PAID FOR AS A SEPARATE ITEM. COMPENSATION SHALL BE INCLUDED IN THE ORIGINAL CONTRACT ITEMS.

THE YEAR NUMBER SHALL BE RECESSED INTO THE PANEL OF THE ENDPOST AT THE RIGHT HAND SIDE OF EACH BRIDGE END AND INTO THE FACE OF THE DOWNSTREAM HEADWALL OF CULVERTS, SYPHONS, RETAINING WALLS ETC. A MINIMUM OF 3/8" AS SHOWN.

THE YEAR NUMBER FOR EACH STRUCTURE SHALL CORRESPOND WITH THE PARTICULAR YEAR IN WHICH THE CONCRETE IS POURED.

NUMBERS TO BE MADE OF WOOD, METAL OR ANY OTHER SUITABLE MATERIAL AND ATTACHED TO THE FORMS BEFORE CONCRETE IS POURED.

COLORADO
STATE HIGHWAY DEPARTMENT

STANDARD STRUCTURE YEAR NUMBER MARKING.

Designed by O.M.D.
Made by O.M.D.
Check Design
Check Detail

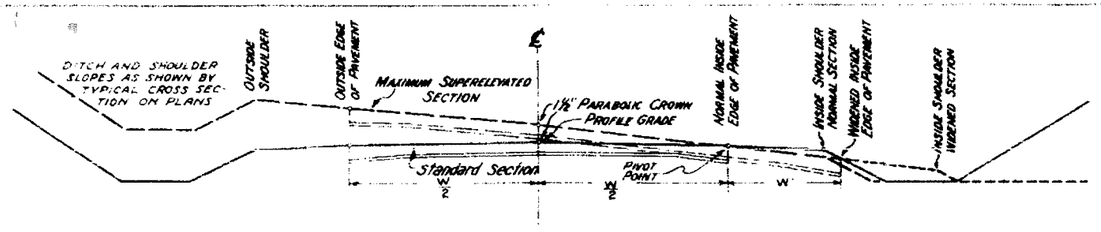
Approved by P.C. Bailey
Bridge Engineer
Date: June 1st, 1940.

STRUCTURE NO.

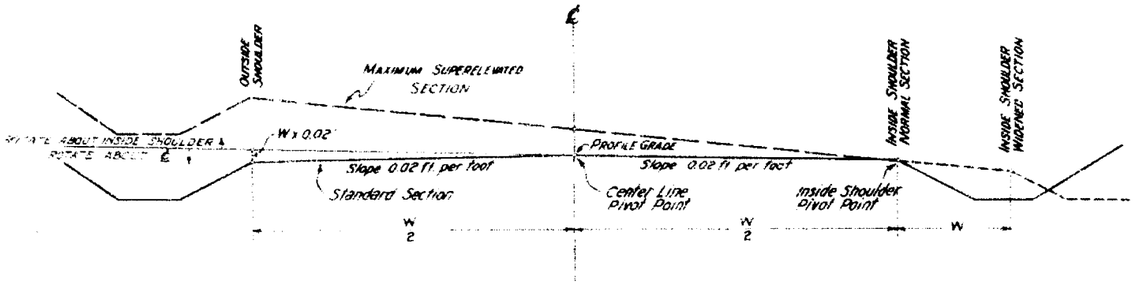
STANDARD M-I-B

FED. ROAD DIST. NO.	STATE	PROJ. NO.	TOTAL SHEETS
3	COLO.	F.A.P. 295-B(12)	10

Rev. 11-2-38 P.B.B. Widening Transition.



PAVEMENT SECTION



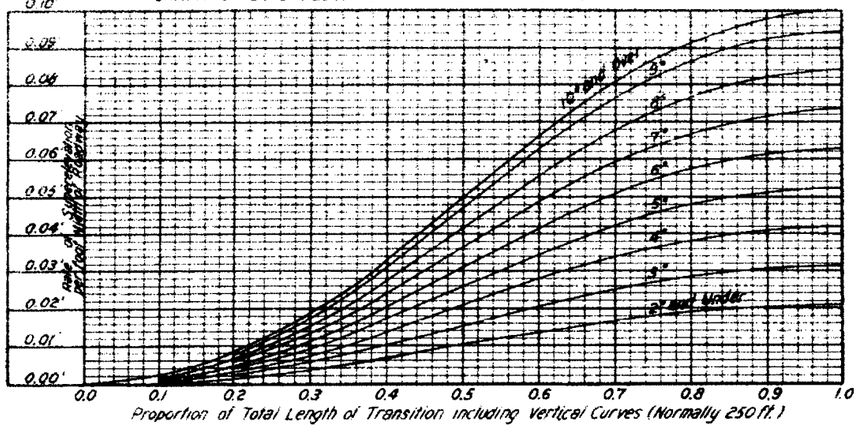
GRADED OR SURFACED SECTION

SUPERELEVATION AND WIDENING TABLES

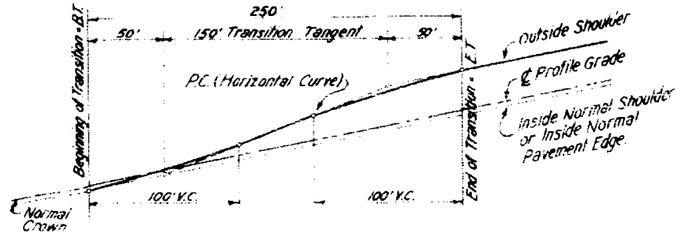
DISTANCE FROM P.R.C. OR P.T.	0'	0.2'	0.4'	0.6'	0.8'	1.0'	1.2'	1.4'	Max. 1.5'
Degree of Curvature	RATE OF SUPERELEVATION IN FEET PER FOOT WIDTH OF ROADWAY								
2° and Under	0.00044	0.00175	0.00394	0.00700	0.01050	0.01400	0.01706	0.01925	0.02055	0.02100
3°	0.00066	0.00263	0.00591	0.01050	0.01575	0.02100	0.02559	0.02888	0.03084	0.03150
4°	0.00088	0.00350	0.00788	0.01400	0.02100	0.02800	0.03413	0.03850	0.04113	0.04200
5°	0.00109	0.00438	0.00984	0.01750	0.02625	0.03500	0.04266	0.04813	0.05141	0.05250
6°	0.00131	0.00525	0.01181	0.02100	0.03150	0.04200	0.05119	0.05775	0.06169	0.06300
7°	0.00153	0.00613	0.01378	0.02450	0.03675	0.04900	0.05972	0.06738	0.07197	0.07350
8°	0.00175	0.00700	0.01575	0.02800	0.04200	0.05600	0.06825	0.07700	0.08225	0.08400
9°	0.00197	0.00788	0.01772	0.03150	0.04725	0.06300	0.07678	0.08663	0.09253	0.09450
10° and Over	0.00208	0.00833	0.01875	0.03333	0.05000	0.06667	0.08125	0.09166	0.09792	0.10000

	OFFSETS FOR WIDENING W - IN FEET								
Over 10° Under 12°	0.03	0.12	0.27	0.48	0.75	1.08	1.47	1.92	2.43	3.00
12° " 15°	0.04	0.16	0.36	0.64	1.00	1.44	1.96	2.56	3.24	4.00
13° " 20°	0.05	0.20	0.45	0.80	1.25	1.80	2.45	3.20	4.05	5.00
20° and Over	0.06	0.24	0.54	0.96	1.50	2.16	2.94	3.84	4.86	6.00

GRAPH OF SUPERELEVATION TRANSITION FIGURES



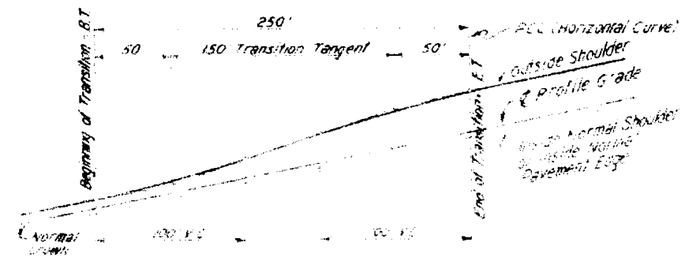
Proportion of Total Length of Transition including Vertical Curves (Normally 250 ft.)



CASE I SIMPLE CURVE WITH UNLIMITED TANGENT APPROACH

NOTE CASE I

The transition in this case, from crowned section to superelevated section, shall proceed uniformly by raising the outside shoulder, over a distance of 250 ft. as shown, beginning at a point on the tangent 150 ft. from the end of the curve and acquiring full superelevation at a point 100 ft. inside the curve.



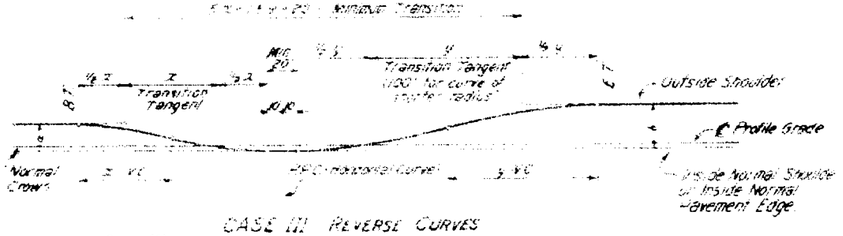
CASE II COMPOUND CURVE

NOTE CASE II

Superelevation transitions at the outside ends of compound curves shall be accomplished in accordance with rules given under CASE I.

Superelevation transition between the arcs of different radii shall be made as in CASE I, except that the entire transition shall lie within the limits of the curve of the longer radius.

In cases where curves in the same direction have a tangent distance of less than 300 ft. between points of curve, the intervening tangent shall be superelevated an amount equal to that of the curve of greater radius and the transition shall be made as in the case of a true compound curve.



CASE III REVERSE CURVES

NOTE CASE III

Transitions between true reverse curves shall be accomplished as shown on the above diagram.

Transition tangents shall be directly proportional to the amount of superelevation of the respective curves.

EXAMPLE: Let a represent the amount of superelevation on 1st. curve
" b " " " " 2nd "
" x " " " transition tangent on 1st
" y " " " 2nd "
then, $a : b = x : y$.

The transition tangent of the curve having the shorter radius shall be set at 100 ft.

A normal crowned section 20 ft. long, 10 ft. on each side of the P.R.C. shall be used.

In cases where curves in opposite directions are in such proximity that a standard transition can not be had, the practice outlined for true reversing curves shall be used.

The total distance between the P.T. of the first curve and the P.C. of the succeeding curve shall be prorated into the transition distance of the respective curves until a maximum of 150 ft. of transition tangent for each curve is achieved.

GENERAL NOTES

Curves on projects using the Sections shown are to be superelevated and widened as indicated in the accompanying drawings and tables.

The normal inside edge of the Pavement slab is to remain at the standard elevation of 0.125 ft. below the profile grade, and the outside edge of the slab is to be superelevated at the rate per foot width of roadway given in the table. The Section is to be rotated about the normal inside edge of the Pavement, with a 1½" parabolic crown for curves of 10° and under, and a flat crown for widened Sections.

The normal inside edge of the Graded or Surfaced Section is to remain at the standard elevation of 0.02 ft. per foot width of roadway below the profile grade, or as shown on the Typical Section for the Project. Also, the centerline pivot point is to be used until the superelevation equals 0.02 ft. per foot width of roadway, but when this elevation is exceeded the normal inside shoulder pivot point is to be used.

When the degree of curvature exceeds 10°, inside edge of the Pavement slab or the inside shoulder of the Graded or Surfaced Section is to be widened from the normal inside edge or shoulder respectively, as shown by the table and plan or by cross sections. Curves of 10° or less are not to be widened.

The slope of the shoulders and widened sections shall conform to the rate per foot width of roadway required, except that the inside shoulder of paved sections shall maintain the Typical Section slope until this slope is exceeded by the required superelevation slope.

The outside ditch of superelevated Sections is to be modified, where necessary, to provide drainage. Otherwise this ditch shall conform to normal ditch section shown for Project.

The rate of superelevation per foot width of roadway to be applied at the outside shoulder of the roadway is computed as follows:

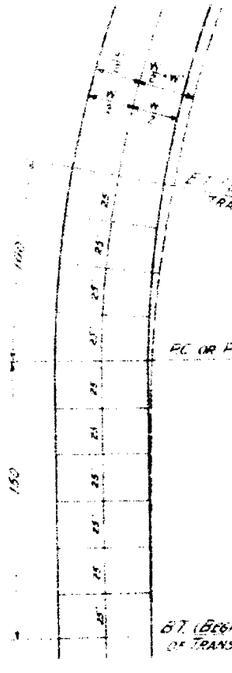
The full superelevation per foot width of roadway rate for a given degree of curvature is

0.02 ft. + Degree of Curvature

The maximum superelevation of 0.10 ft. per foot width of roadway is not to be exceeded.

The superelevation of any point on this transition shall be proportional to distances measured from the beginning of transition.

Curves of over 10° are to have the inside portion of the pavement slab and shoulder or the inside portion and shoulder in a graded or surfaced section widened in accordance with the plan, offsets for widening and cross sections.



GENERAL PLAN OF WIDENING

COLORADO
STATE HIGHWAY DEPARTMENT
STANDARD METHODS FOR SUPERELEVATION & WIDENING OF CURVES

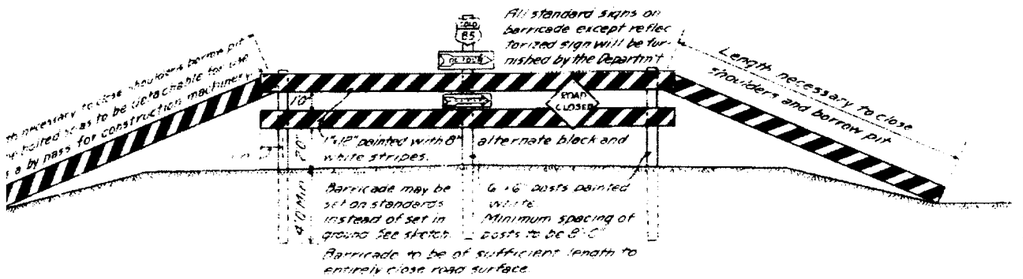
Designed by R.E.L.
Made by P.B.B.
Checked by [illegible]
Approved by L. Marshall
Date FEB. 23RD 1937

STANDARD M-2-B

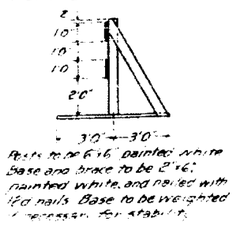
FED ROAD DIST NO	STATE	A.P. PROJ NO	SHEET NO	TOTAL SHEETS
3	COLO	[redacted]	11	[redacted]

Revised 6-37 A.S.H.O. Changes to 1937 Specifications
Revised 3-38 A.S. changed side drain note
Revised 11-39 A.S. changed typical plans for side approach roads
Revised 3-40 A.S. changed grades for side approach roads
Revised 6-40 A.S. changed width of crowned section
Rev. 6-28-40 A.S. - 1941 Specs

DETAILS OF PERMANENT BARRICADE



END VIEW OF PORTABLE BARRICADE

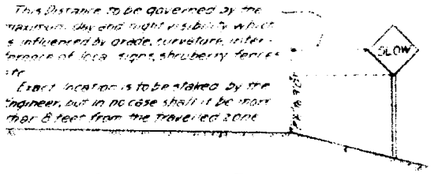


Posts to be 6"x6" painted white Base and brace to be 2"x6" painted white, and nailed with 12d nails. Base to be weighted if necessary for stability.

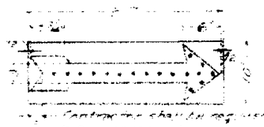
POSITION OF SIGNS RELATIVE TO ROADBED

This Distance to be governed by the curvature, slope and sight visibility which is influenced by grade, curvature, intervening of trees, signs, shrubbery, fences or

Exact location is to be staked by the Engineer, but in no case shall it be more than 8 feet from the traveled zone



SUGGESTED DETAIL OF REFLECTORIZED ARROW

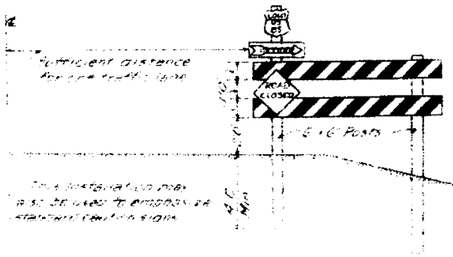


Contractor shall furnish and have in readiness to install such arrows for use on barricades at the ends of each project.

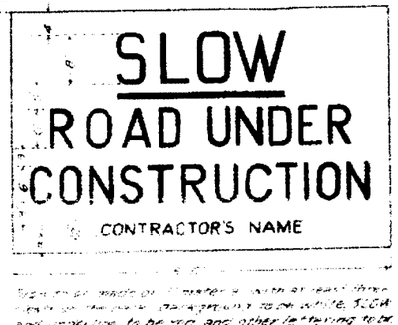
Reflectors, Buttons and Signs to be subject to Department approval. Reflector Buttons shall be Signal Service A.L.A. Illinois municipal or approved equivalent.

Barricades to be placed as construction conditions require

DETAILS OF PARTIAL BARRICADE



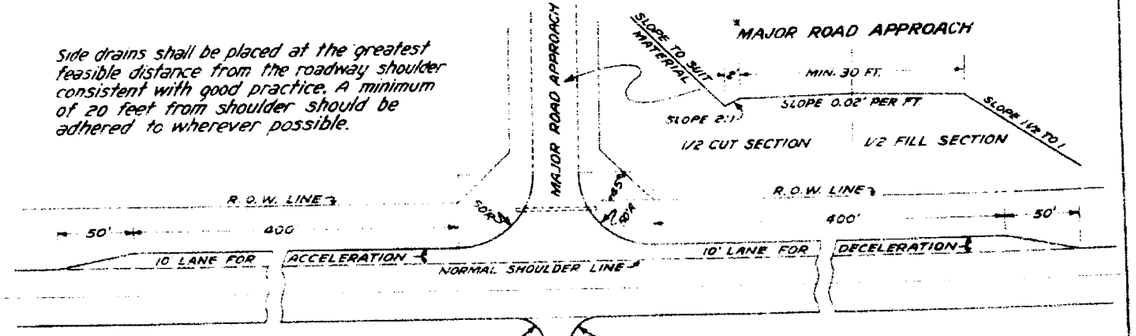
DETAILS OF ROAD UNDER CONSTRUCTION SIGN



Signs to be made of metal with at least three sides of the same dimensions, to be white, SLOW and road line to be red and other lettering to be black. Signs to be set on 2"x4" posts 4 ft. in the ground.

TYPICAL PLANS FOR SIDE APPROACH ROADS

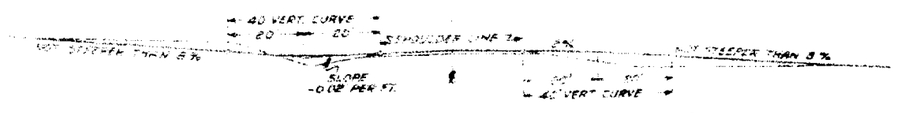
Side drains shall be placed at the greatest feasible distance from the roadway shoulder consistent with good practice. A minimum of 20 feet from shoulder should be adhered to wherever possible.



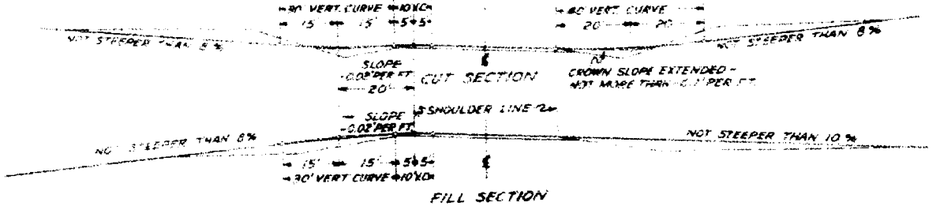
*Major Road Approaches shall be used only where indicated in structure notes on plans.

⊕Minor Road Approaches shall be used at all places which are not indicated as "Major Road Approaches." The width of crowned section shall not be less than the existing crowned width of the approaching road, but in no case shall it be less than 16 feet.

STANDARD CROWNED SECTION

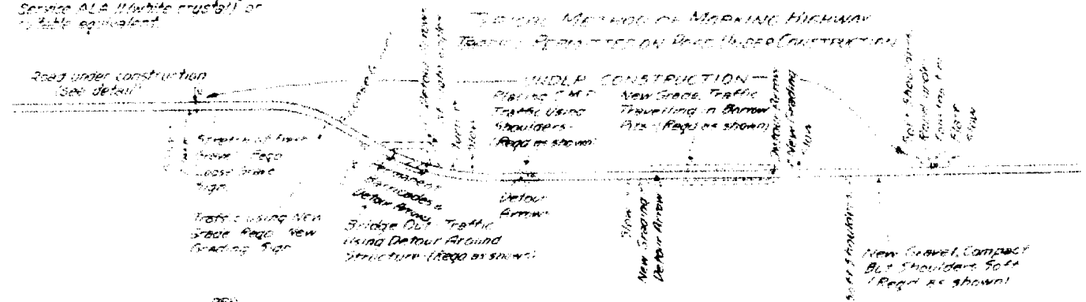


SUPERELEVATED SECTION



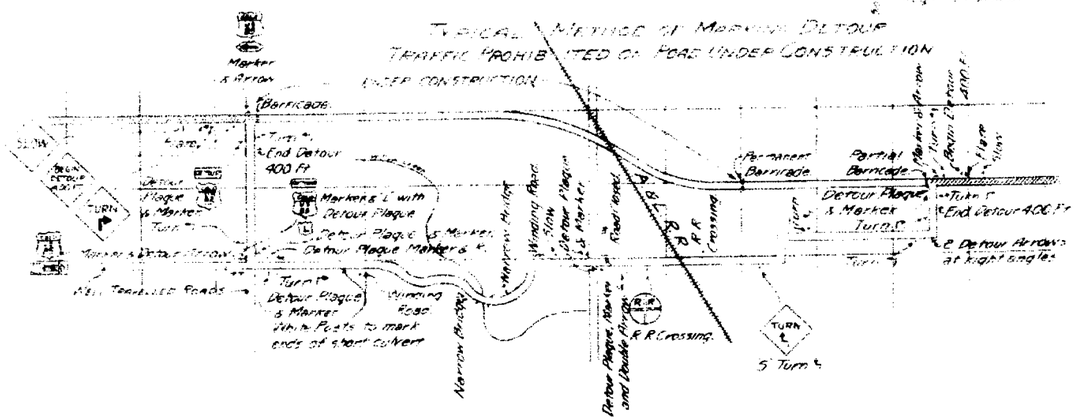
TYPICAL METHOD OF MARKING DETOUR

TRAFFIC PROHIBITED ON ROAD UNDER CONSTRUCTION



TYPICAL METHOD OF MARKING DETOUR

TRAFFIC PROHIBITED ON ROAD UNDER CONSTRUCTION

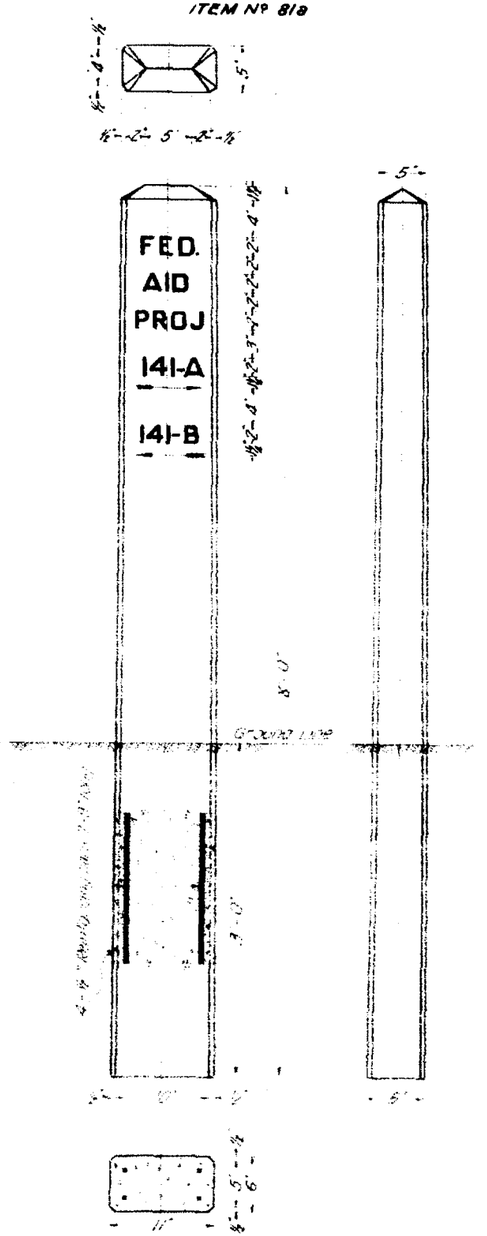

Marker & Arrow
Barricade
Slow
Turn
End Detour 400 ft
Detour Plaque & Marker
Detour Plaque & Marker with Turn
Detour Plaque & Marker & Arrow
Detour Plaque & Marker
Detour Plaque & Marker & Arrow
Detour Plaque & Marker & Arrow
Detour Plaque & Marker & Arrow

STANDARD M-7-B

FED. ROAD DIST. NO.	STATE	F.A.P.	SHEET NO.	TOTAL SHEETS
3	COLO.	295 B(1),C(1)	12	

PROJECT MARKER POST

ITEM Nº 818



NOTES FOR PROJECT MARKER POSTS

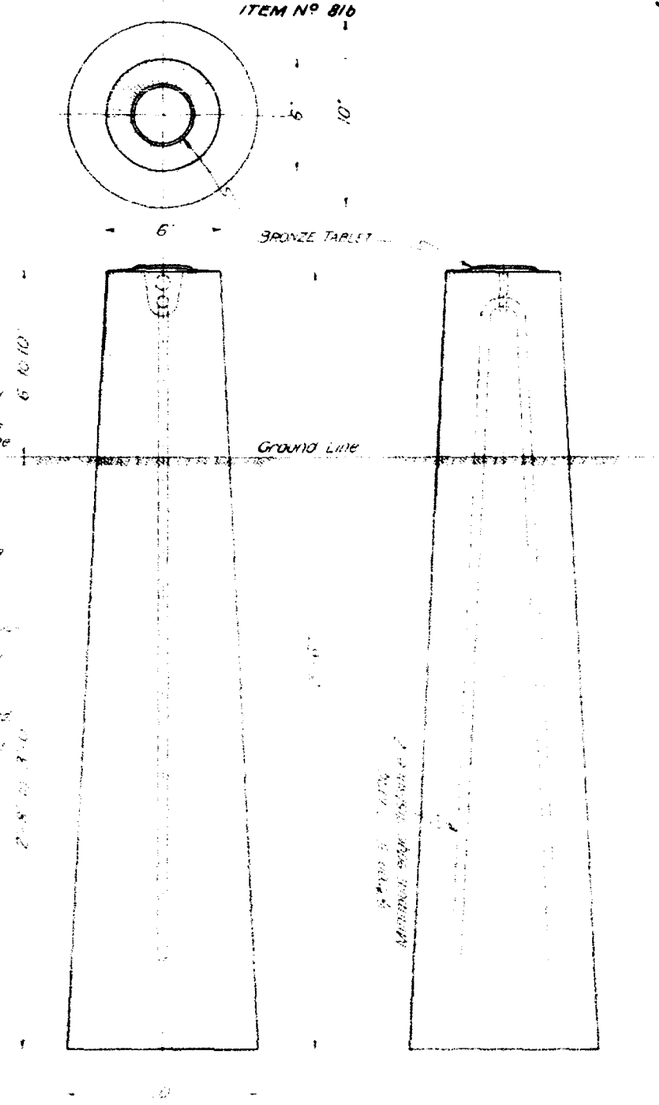
All work shall be done in accordance with the Standard Specifications of the Colorado State Highway Department adopted June 1, 1940.
Posts shall be made of Class 'A' Concrete, except use White Portland Cement.
All exposed surfaces shall be rubbed free of form marks.
All letters and numbers shall be 2" plain upright black, painted or stenciled on the concrete with a good quality of black paint. See Item No 4, "Second Field Coat" Paint.
Numbers and arrows shall show the proper numbers and directions of the projects each way from where the post is placed.
Post to be set with sign facing the road at the end of the project two feet inside the R.O.W. line, or at a point amply protected from traffic in such a position that the sign will indicate properly the projects to which it refers.

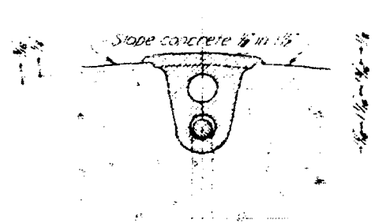
NOTES FOR R.O.W. MARKER POSTS

All work shall be done in accordance with the Standard Specifications of the Colorado State Highway Department, adopted June 1, 1940.
Posts shall be made of Class "A" Concrete.
The upper 12 inches of marker posts shall be rubbed free of form marks, and the top surface of the post must be constructed [illegible]
[illegible] surface of the bronze tablet shall be [illegible]
[illegible] be set
[illegible] are to be depressed a minimum of ¼ inch
[illegible] in the bronze tablet, indicated by [illegible]
[illegible] in the field by the engineering party after post is placed
[illegible]
[illegible] as shown or directed.
[illegible] Department of Public Works, State Highway
[illegible] Denver, Colorado.

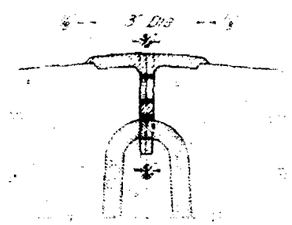
RIGHT OF WAY MARKER POST

ITEM Nº 816





SECTION B-B



SECTION A-A

DETAIL OF BRONZE TABLET
FOR RIGHT OF WAY MARKER POST

COLORADO
STATE HIGHWAY DEPARTMENT
STANDARD
MARKER POSTS

Designed by REL	Approved by
Made by FES	
Checked by REL	Date Apr. 1939

NOTE: All poles encroaching on Right of Way are to be moved by Owner.

Right of Way Markers are tabulated on sheet No. 5.

Fencing Requirements are tabulated on sheet No. 5.

Grades and Alignment as shown hereon are subject to modification during construction only after approval by the Denver Office.

23+00 Req'd: 315 cu.yds. Embt. for Road Approach Lt.

29+75 Req'd: 80 cu.yds. Embt. for Road Approach Lt.

32+55 Req'd: 1095 cu.yds. Embt. for Major Road Appr. Lt.

33+00 Req'd: 24"x46' CMP Culvert under Railroad & 25 cu.yds. Excav. for Ditches.

33+50 Req'd: 24"x60' CMP Culvert & 2 Headwalls.

STATE	F.A. PROJ. NO.	SHEET NO.	TOTAL SHEETS
COLO.	295-B(2)	13	

D. & R.G.W. RAILROAD (STANDARD & NARROW GAUGE)

P.I. 33+55.9

P.O.T. 50+00.0

Telegraph Line

Transformers

Power Line

Present Road

S. 12°33' W.

Telephone Line

Sign

40+75 Remove Sign Rt.

48+50 Remove Sign Rt.

MILL

P.C. 22+13.1

S.D. > 1000 Ft.
Δ = 11°50' L
D = 2°00'
T = 296.9'
L = 591.7'
R = 2865.0'

Shed

P.T. 26+04.8

House

Canning Factory

Pole 390

Gates

Pole 385

SPRUCE ST.

S. 12°33' W.

Pole 380

S. 0°43' W.

20+72 Req'd: Project Marker & 25 cu.yds. Embt. for Approach to Project

22+30 to 30+80 Req'd: 70 cu.yds. Excav. for Ditch Change Rt. See Typical Section on this sheet W=1'

℄ 1. 23+10.0

P.C. 30+59.0

Δ = 11°50' R
D = 2°00'
T = 296.9'
L = 591.7'
R = 2865.0'
S.D. > 1000 Ft.

32+64 Req'd: 80 cu.yds. Embt. for Road Approach Rt.

P.T. 36+50.7 BACK = 37+01.2 AHEAD

EQUATION:

GENERAL TYPICAL SECTION FOR DITCH CHANGES

In Excavation:

Variable

W

Excavated Material to be used to dike lower side of ditch.

In Embankment:

TOWN OF LA JARA

STA. 20+72 BEGINNING OF F.A.P. 295-B (2)

P.I. 76+25.90

04.94

04.84

05.01

05.20

05.22

05.21

05.18

P.I. 04.72

+0.65%

-0.12%

+0.153%

400' V.C.

200' V.C.

Pt. 04.09 Ditch Grade

P.I. 06.00

05.85

05.96

06.00

06.03

06.13

P.I. 06.03

P.I. 01.99 Ditch Grade

0.00%

+0.13%

200' V.C.

Pt. No. 1 - 400 Ft. from Sta. 87+50

1.25
23.996
23.000
2.93000
13.082

7610

7600

7590

20

25

30

35

40

45

50

600

FED. ROAD DIST. NO.	STATE	F.A. NO.	SHEET NO.	TOTAL SHEETS
3	COLO	295-B(2)	14	

60+01 Remove Headwall, Cut Keyway & Extend 6'×3'×28' Conc. Box Culvert 19 Rt. also 20 sq.yds. Dry Rubble Slope Paving, 12" thick, on side slopes to wings. See Two Details on Sheet 5

65+00 Req'd: 30 cu.yds. Embt. for Road Appr. Lt.

POT. 50+000

POT. 64+15.5

POT. 80+50.0

To Fish Hatchery

Telegraph Line

MP 50-867

1-2' Wood Box Culvert

D. & R. G. W. RAILROAD (3-RAILS)

6'×3'×28' CBC

Drainage Canal

Pole #540

Power Line

Present Road

Telephone Line

Pole #430

Pole #410

Sign

Wd. Gate

T.P. #420

S 12°33' W

55+50 Remove Sign Rt.

60+16 Req'd: 45 cu.yds. Embt. for Road Appr. Rt.

56+60 Req'd: 60 cu.yds. Embt. for Road Appr. Rt. Relay 45"×30" CMP Side Drain from Lt. of Sta. 114+10

60+40 to 63+20 Req'd: 25 cu.yds. Excav. for Ditch Change Rt. Typical Section on sheet 13. W=1'

56+70 to 59+30 Req'd: 30 cu.yds. Excav. for Ditch Change Rt. Typical Section on Sheet 13 W=1'

60+40 Req'd: 24"×82' CMP Culvert & 5 cu.yds. Excav. for Outlet.

Irrigation Canal

PI 7607.95

+0.13%

+0.05%

+0.50%

+0.16%

400' VC

500' VC

NPSD IN EXCESS OF 1300 FT.

400' VC

NPSD IN EXCESS OF 1800 FT.

PI 08.45

PI 11.70

D. 34.35°

Ditch Grade

D. 26.7°

Ditch Grade

07.82

07.93

08.00

08.35

08.64

08.45

10.70

11.55

12.02

76.0

76.00

75.90

11

349

50

55

60

65

70

75

80

FED. ROAD DIV. NO.	STATE	F.A. PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	COLO.	295-B(2)	15	

FORCE ACCOUNT
(Work to be done by State Forces.)
87+00 Remove & Reset U.S.G.S. Bench Mark Rt.

88+75 Req'd: 40 cu.yds. Embt. for Road Approach Lt.

P.O.T. 80+50.0

P.O.T. 88+49.4

P.O.T. 101+00.0

Drainage Canal

Telegraph Line

4'x3'x25' CBC

D & R G W RAILROAD (NARROW & STANDARD GAUGES)

M.P. D-288

Power Pole #560

4'x3'x40' CBC

Present Road

Pole #430

USGS-BM

Gates

3'x2'x37' Wood Drift Debris Way Pile

Irrigation Ditch

S.12°33'W.

Gate

Pole #450

Telephone Line

97+60 Req'd: 15 cu.yds. Embt. for Road Approach Rt.

86+05 Remove Headwalls, Cut Keyways & Extend 4'x3'x40' Conc. Box Culvert 4' Lt. & 2' Rt. (see detail on sheet 5.)

86+30 Remove Wood Flume Rt.

88+45 Req'd: 20 cu.yds. Embt. for Road Approach & 18"x50' CMP Side Drain Rt.
Outlet of pipe to be placed 1' above bottom of Canal. Headwall on Inlet end.

88+80 to 127+20 Req'd: 360 cu.yds. Excav. for Ditch Change Rt. See Typical Section on Sheet 13. W=2'

100+79 Remove 1'x1'x14' Wood Box & 3'x1'x16' Wood Box Rt.

100+80 Req'd: 120 cu.yds. Embt. for Road Approaches Lt. & Rt., 18"x30' CMP Side Drain Rt. Rem. 15"x30' CMP Side Drain from Lt. of Sta 141+15 & Relay in Irrig. Ditch Rt.

200' V.C.

12.74 12.99 3.15

200' V.C.

4.65 14.98 5.32

200' V.C.

18.38 18.91 19.25

7620

7610

7600

+0.16 %

+0.25 %

+0.32 %

+0.35 %

+0.16 % Ditch Grade

+0.25 % Ditch Grade

+0.32 % Ditch Grade

+0.16 % Ditch Grade

+0.25 % Ditch Grade

+0.35 % Ditch Grade

P.I. 76+12.92

P.I. 14.98

P.I. 18.90

| | | |

	STATE	F.A. PROJ. NO.	SHEET NO.
	COLO.	295-B(2)	16

114 + 10 Reg'd. 55 cu.yds. Embt. for Road Appr. Lt. Remove 15"x30' CMP Side Drain & Relay Rt. of Sta. 56 + 60.

P.O.T. 119+66.8

P.O.T. 132+50.0

COUNTY ROAD

Telegraph Line

D & R G W RAILROAD (3-RAILS)

Pole #570

Power Line

Pole #460

Irrigation Ditch

S 12°33' W

Present Road

Tree

Gate

Telephone Line

Pole #585

Pole #475

Sign

127 + 70 Reg'd. 85 cu.yds. Embt. for Road Appros' Lt. & Rt.; 18"x30" CMP Side Drain Rt.

139 + 70 Remove Sign Rt.

+0.35 %

+0.15 %

+0.35 %

+0.35 %

200' V.C.

PVI 7622.75

PI 18.9 Ditch Grade

PI 16.97 Ditch Grade

PI 21.21 Ditch Grade

PI 25.75 Ditch Grade

PI 123.80

PI 129.75

22.40

22.20

22.90

23.63

23.65

24.15

29.40

29.72

30.00

200' V.C. NPSD IN EXCESS OF 1300 FT

200' V.C. NPSD IN EXCESS OF 1300 FT

7630

7620

7610

| | | |

STATE	F.A. PROJ. NO.	SHEET NO.	TOTAL SHEETS
COLO.	295-B(2)	17	

Rev. for Side Drain. Sta 168+-1/Yellow-HRT

140+73 Remove 36"x30' CMP Culvert with 2 Headwalls, Extend 44' and Relay, build 2 Headwalls. 25cu.yds Excav. from Ditches.

Irrigation Ditch

County Road

POT 149+550

POT 162+50.0

168+13 Req'd 40 cu.yds Embt for Road Appr. Lt. Remove 15"x30" CMP Side Drain Lt. & Relay Rt. of Sta. 173+48.

℄ of Narrow Gauge

Telegraph Line

Double 18" Conc Pipe

36"x30' CMP

15"x30' CMP

Pole #590

D. & R. G. W. RAILROAD (STANDARD & NARROW GAUGE)

269

Power Line

Present Road

Irrigation Ditch

Telephone Line

Pole #605

15"x30' CMP

Headgate

Irrig. Ditch

House

Garage

County Road

140+50 Req'd 50 cu.yds Embt. for Road Appr. Rt.

140+85 Relay 15"x20' CMP Side Drain on Rt from Lt. of Sta. 211+10.

141+10 Req'd 90 cu.yds Embt. for Road Appr. Lt. Remove 15"x30" CMP Side Drain with 2 Headwalls & Relay CMP in Irrig. Ditch Rt of Sta 100-80.

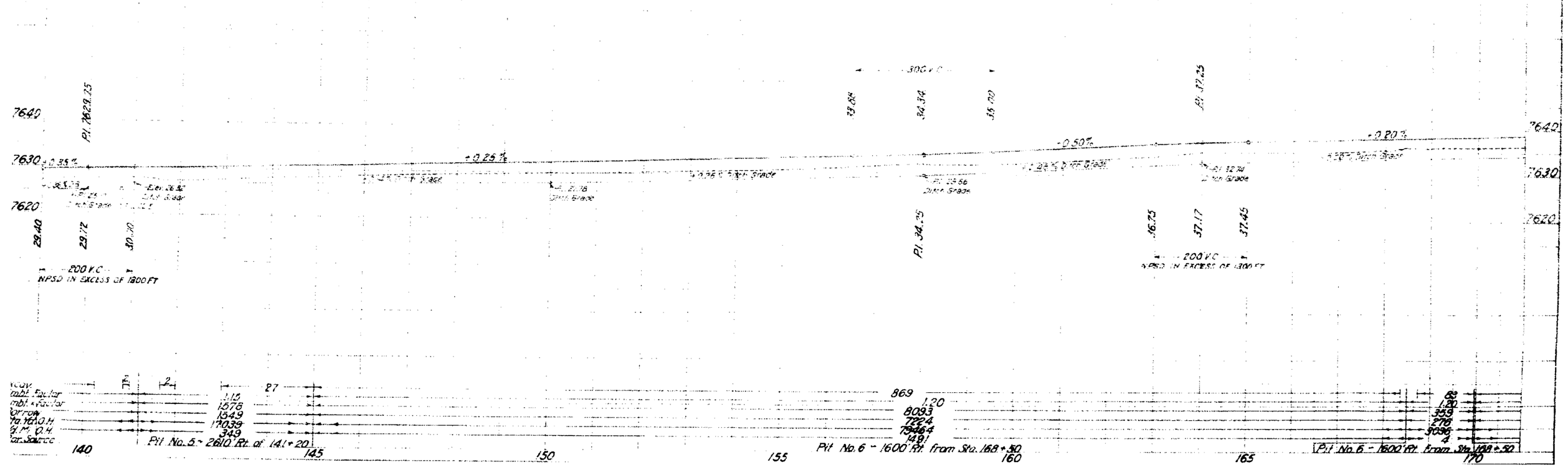
141+19 Req'd 130 cu.yds. Embt. for Road Appr. Rt. Remove 15"x30" CMP Side Drain with 2 Headwalls & Relay CMP with 15"x20' CMP Side Drain from Sta 172-48.

141+80 to 168+30 Req'd 215 cu.yds. Excav. for Ditch Change Rt. see Typical Section on sheet 13. W-2

143+62 Req'd 60 cu.yds. Embt. for Road Appr Rt. Relay 15"x20' CMP Side Drain from Lt. of Sta 255+52 with 10' of pipe from Rt of Sta. 279+50. Relay 15"x20' CMP Side Drain from Rt of Sta 290+00 in Irrig. Ditch Rt with 10 of pipe from Sta 279+50.

168+53 Req'd 90 cu.yds Embt for Road Appr. Rt. Remove 18"x16' CMP Side Drain on Rt. Remove 15"x30' CMP Side Drain with 2 Headwalls & Relay CMP with 20' of pipe from Sta 172+39. Req'd 32+20' CMP Side Drain in Irrigation Ditch on Rt

168+83 Remove & Reset Appr. Rt.



STATE COLO | F.A. NO. 295-B(2) | SHEET NO. 18 | TOTAL SHEETS

Rev for Side Drain, Sta 175+-17'-20'-40°-RRH

189+00 Reqd: 65 cu yds. Embt for Road Approach Lt

190+70 Reqd: 70 cu yds Embt for Road Approach Lt

193+57 Remove Adobe Garage on Rt.

194+58 Remove Pedestal & Basin Pipe Artesian Well off Right of Way on Rt. (Force Account)

194+76 Reqd 80 cu yds Embt for Road Appr. Lt. Remove 15'x 30' CMP Side Drain with 2 Headwalls Relay CMP Rt of sta. 187+10.

195+08 Remove Headwalls & Extend Dbl. 30" CMP Culvert (skew 79°RH) 10' Lt & 26' Rt. build Headwalls. 25 cu yds Excav for Ditches.

P.O.T. 175+59.7

P.O.T. 190+00.0

County Road

Irrigation Ditch

Telegraph Line

D & R G W RAILROAD (3 RAILS)

Power Line

Present Road

Telephone Line

Irrigation Ditch

Pole "610"

Pole "605"

Mail Box

House

Garage

Shed

Beet Loader

Beet Dump

Scales House

Dbl. 30"x46" C.M.P.

U.S.G.S. B.M.

Tomb. Bridge

15"x30" C.M.P.

Dbl. 30"x36" C.M.P.

Pump

Gas Pump

State Hwy Shed

Hunt Bros

Artesian Wells

Wood Box

Headgate

2-Mail Boxes

15"x20" C.M.P.

S.12°33'W.

15 Conc Joists

Planing Mill

House

Ice House

Gate

168+40 to 186+75 Reqd: 370 cu yds Excav for Ditch Change Rt see Typical Section on Sheet 5 W-2

173+48 Reqd: 30 cu yds Embt for Road Appr. Rt. Relay 15"x 30" CMP Side Drain from Lt of sta 168+15. Remove 15"x 20" CMP Side Drain & Relay Rt of sta 141+19.

173+48 Remove 2.5'x1'x16' Wood Box Culv on Rt. Reqd 32" x 80' CMP Side Drain in Irrigation Ditch on Rt

187+10 Reqd 60 cu yds Embt for Road Appr. Rt. Relay 15"x 30" CMP Side Drain Rt From Lt of sta 193+75

187+00 Remove 3-Concrete Joists on Rt

189+40 Reqd 40 cu yds Embt for Road Approach Rt

193+65 Remove Adobe House Rt

193+65 Remove Wood Conc. Sidewalk Rt

193+70 to 193+90 Reqd 195 cu yds Embt for Road Approach Rt

Remove Sign Rt

Remove Adobe Store Rt

193+92 Move Gas & Pump Rt

194+92 Reqd 50 cu yds Embt for Road Appr & 18"x 40' CMP Side Drain Rt Remove 2.5'x 1'x 16' W.B Culv

195+09 Reqd Headgate Rt see Detail on sheet 5 Remove 8"x 7" Timber Headgate & Wings Rt

195+23 Reqd [illegible] & 10 cu yds Excav. for Ditch Remove 15"x 30' CMP Culv with 2 Headwalls. Relay CMP Rt of sta. 138+68.

195+76 to 196+30 Reqd 340 cu yds Excav for Ditch Change Rt see Typical Section on Sheet 5 W-2

TOWN OF BOUNTIFUL

WEST FIRST STREET

SOUTH 3RD ST

SOUTH 4TH STREET

Pl. 42.85

Pl. 48.25

Pl. 7638.03

+0.20%

+0.38%

+0.36%

+0.35%

Ditch Grade

38.85 39.10 39.41 42.47 42.84 43.21 47.89 48.25 48.60

200' V.C.

NPSD IN EXCESS OF 1300 FT.

Excav	170	294	127	57	125
Embt Factor		1.20	1.20		3445
Embt x Factor		4464	2260		3001
Borrow		4000	2076		818B9
Sta Yd 0.4		44000	22836		1886
Yd. Mi 0.4		1172	708		
Bor Source		Pit No. 7 - 2300' Rt. from Sta. 168+50	Pit No. 7 - 2500' Rt. from Sta. 195+00		Pit No. 8 - 850' Lt from Sta. 212+00

170 175 180 185 190 195 200

STATE	F.A. PROJ. NO.	SHEET NO.	TOTAL SHEETS
COLO.	295-B(2)	19	

POT. 204+11.5

POT. 220+00.0

POT. 230+70.9

211+10 Req'd: 50 cu.yds. Embt. for Road Appr. Lt. Remove 15"x20' CMP Side Drain with 2 Headwalls Relay CMP Rt. of sta. 140+85. Remove 18"x12' CMP Side Drain Rt. Relay 18"x22' CMP in Irrig. Ditch Rt. from Rt. of Sta. 306+23.

224+39 Req'd: 120 cu.yds. Embt. for Road Appr's. Lt. & Rt. Remove 15"x20' CMP Side Drain with 2 Headwalls Rt.; Relay CMP Rt. of sta. 168+53. Remove 15"x30' CMP Side Drain Lt. & Relay on Rt.

Telegraph Line

D. & R. G. W. RAILROAD (STANDARD & NARROW GAUGE)

Power Line

Present Road

Telephone Line

15"x20' CMP

15"x30" CMP

Gate

18"x12" CMP

House

Irrigation Ditch

S. 12°33' W.

210+95 Req'd: 80 cu.yds. Embt. for Road Approach Rt. Remove 15"x50' CMP Side Drain with 2 Headwalls; Relay CMP on Rt.

224+60 to 238+60 Req'd: 150 cu.yds. Excav. for Ditch Change Rt. See Typical Section on sheet 13 W-1

7660

7650

7640

-0.35%

-0.34% Ditch Grade

+0.30%

+0.44%

+0.39% Ditch Grade

Pt. 7652.10

Pt. 50.60 Ditch Grade

Pt. 55.10

Pt. 59.50

51.75

52.09

52.40

54.80

55.14

55.54

59.06

59.49

59.90

200' V.C.

NPSD IN EXCESS OF 1300 FT

| | | |

F.A.
295-B(2) 20

Pct. for Side Drain Removals Sta 238+18.50 = 50.0% Ave

236+53 Reqd: 40 cu yds. Embt. for Road Appr. Lt. Remove 15"x20" CMP Side Drain Lt

POT 230+70.9

POT 243+00.0

252+62 Reqd: 70 cu yds Embt. for Road Appr. Lt. Remove 15"x20" CMP Side Drain Lt

POT 257+40.3

255+50 Reqd: 60 cu yds. Embt. for Road Appr. Lt. Remove 15"x20" CMP Side Drain with 2 Headwalls. Relay CMP Rt. at Sta 413+62.

Gate

Telegraph Line

D & R G W RAILROAD (3-RAILS)

Gate

Mail Box

15"x20" CMP

Power Line

Present Road

S.12°33'W.

Irrigation Ditch

Irrigation Ditch

USGS-BM

18"x30" CMP

Telephone Line

Pole 650

Pole 650

236+68 Reqd: 40 cu yds. Embt. for Road Appr. Rt. Remove 15"x30" CMP Wood Box Out. Relay 15"x30" CMP Side Drain Rt from Sta 196+83

239+00 to 252+60 Reqd: 140 cu yds Excav. for Ditch Change Rt. see Typical Section on Sheet 13 M-F

FORCE ACCOUNT
Work to be done by State Forces
Remove & Reset 3.5 G.S. Fence Mark Rt

252+89 Reqd: 80 cu yds Embt. for Road Appr. Rt. Remove 15"x50" CMP Side Drain with 2 Headwalls. Relay CMP on Rt

County Road

7670
7660
7650

Pt. 7859.10

Pt. 68.30

Pt. 71.80

-1.50%

+0.50%

+0.49% 2 vpc Grade

+0.55%

200' V.C.

200' V.C.
Req'd. in Excess of 1300 Ft.

Excav. 488 669 245
Embt. Factor 1.25
Embt. Factor
Borrow Pt. 395
Sta Yd's Ob't 8973
Yd's Ob't 8877
Bor. Source 1814

Pit No. 8 - 800' Lt. from Sta. 224+00

240 245 250 255 260

STATE	F.A. PROJ. NO.	SHEET NO.
COLO.	295-B(2)	21

279+50 Reqd: 110 cu yds. Embt. for Road Approx. Lt. & Rt. Remove 15"x30' CMP Side Drain Lt. & Relay on Rt. Remove 15"x20' CMP Side Drain Rt. Cut in two 10 pieces & Relay Rt. of sta. 149+62.

P.O.T. 270+00.0

P.O.T. 285+15.5

Telegraph Line

D & R G.W. RAILROAD (STANDARD & NARROW GAUGE)

M.P. 271

Pole #670

Pole #675

Power Line

Telephone Line

S 12°37 W.

15"x30" CMP

15"x20" CMP

Mail Box

HOUSE

GARAGE

Gate

Present Road

Irrigation Ditch

Gate

279+60 to 288+35 Reqd: 110 cu yds Excav. for Ditch Change Rt. See Typical Section on sheet 13 W-2

260 265 270 275 280 285 290

72.15 73.55 73.93 74.38 81.10 83.90 84.33 84.80

200' V.C. 200' V.C. 200' V.C. 300' V.C.

+0.35% +0.38% Ditch Grade +0.48% +0.28% Ditch Grade +0.40% +0.40% Ditch Grade +0.50% +0.57% Ditch Grade

P.I. 73.90 P.I. 76.57 P.I. 84.30

80.62 81.06 81.50

NPSD IN EXCESS OF 1300 FT.

7690 7680 7670

90' 403'

1.15
11.037
9931
852363
1937

Pit No. 9 - 400' Lt. from Sta. 294+50

F A
295-B(2) 22

290+23 Req'd 60 cu yds Embt for Road Approach Lt. Remove 15"x30" CMP Side Drain & Relay Rt. of sta 290+00.

290+00 Req'd 40 cu yds. Embt for Road Appr. Rt. Remove 15"x20" CMP Side Drain with 2 Headwalls. Relay CMP Rt of sta 149+62. Relay 15"x30" CMP Side Drain Rt. from Lt. of sta 290+23.

290+50 to 306+15 Req'd 175 cu yds. Excav. for Ditch Change Rt "see Typical Section on sheet 13 - W-1"

306+23 Req'd 65 cu yds Embt for Road Appr. Rt. Remove 18"x22" CMP Side Drain & Relay in Irrig. Ditch Rt. of Sta 271+15. Relay 15"x20" CMP Side Drain Rt from Lt of sta 307+20 with 10'-0" pipe from Rt of sta 320+00.

306+17 Req'd 30 cu yds Embt for Road Appr. Lt. Remove 2'-1"x16 Wood Box Culvert.

307+20 Req'd 40 cu yds Embt for Road Approach Lt. Remove 15"x20" CMP Side Drain with 2 Headwalls. Relay CMP Rt of sta 306+23.

307+45 Req'd 25 cu yds Embt for Road Appr. Rt. Remove 15"x20 CMP Side Drain with 2 Headwalls. Relay CMP with 10' of pipe from Rt. of Sta 320+00.

320+00 Req'd 45 cu yds for Road Appr. Rt. Remove 15"x20 CMP Side Drain with 2 Headwalls. Used in two (2) Places & Relay CMP Rt. of Sta's 306+23 & 307+45. Relay 15"x20 CMP Side Drain Rt. from Lt. of Sta 35+18.

Telegraph Line
NARROW GAUGE TRACK
D. & R. G. W. RAILROAD (3-RAILS)
P.O.T. 300+00
Sta 306+24.0
P.O.T. 309+19.1
15"x30 CMP
Pole #690
Power Line
Pole #600
Irrigation Ditch
S. 12°33' W.
18"x22 CMP
15"x20 CMP
U.S.C.&G. Tri Point
Mail Box
Mail Box
15"x20 CMP
U.S.C.&G. Tri Point
M.P. 272
U.S.C.&G. B.M.
Present Road
Telephone Line
Gate
15"x20 CMP
County Road
78°54'
S19.3' To Cor.
HOUSE
15
16
10
90
40
290
295
300
305
310
315
320

7700
7690
7680

+0.50%
+0.34%
+0.80%
+0.42%
-0.42% Ditch Grade
+0.34% Ditch Grade
+0.80% Ditch Grade
+0.42% Ditch Grade

P.I. 7690.80
P.I. 94.20
P.I. 97.80
P.I. 92.88 Ditch Grade

90.30
90.76
91.14
93.86
94.27
94.00
97.20
97.77
98.27

200' V.C.
N.P.S.D. IN EXCESS OF 1380 FT.
200' V.C.
N.P.S.D. IN EXCESS OF 1300 FT.

Excav.	202	131	347	63	722
Embt. Factor		1.15			1.13
Embt. + Factor		1300			11011
Borrow		869			9490
Sta Yd O.H.		691			69286
Yd Mi O.H.					1406
Bor Source		Pit No. 9 - 400' Lt. from 294+30			Pit No. 10 - 400' Lt. from Sta 331+00

STATE	F.A. PROJ. NO.	SHEET NO.	TOTAL SHEETS
COLO	295-B(2) & C(2)	23	

334+18 Req'd. 65 cu.yds. Embt. for Road Appr. Lt. Remove 15"x30' CMP Side Drain & Relay Rt. of sta. 320+00.

349+04 Req'd. 75 cu.yds. Embt. for Road Appr. Lt. Remove 15"x30' CMP Side Drain & Relay Rt. of sta. 348+57.

P.O.T. 325+00.0

P.O.T. 336+25.7

P.O.T. 349+71.9 BACK
P.O.T. 350+00.0 AHEAD

END OF F.A.P. 295-B(2)
BEGIN F.A.P. 295-C(2)

Gate — Telegraph Line — D & R G W RAILROAD (STANDARD & NARROW GAUGE) — Gate

U.S.L.&G. Tri Point — Pole 710 — Power Line — 15"x30" CMP — Present Road — 15"x20" CMP — Proj. Mon. — Irrig. Ditch

Gate — 15"x20" CMP — Pole 620 — Telephone Line — S 12°33'W — Irrigation Ditch — House — Garden

320 — 325 — 330 — 335 — 340 — 345 — 350

GENERAL TYPICAL SECTION FOR DITCH CHANGES

In Excavation:

Variable

W

Excavated Material to be used to dike lower side of ditch.

In Embankment.

330+00 to 332+50 Req'd. 25 cu.yds. Excav. for Ditch Change Rt. see Typical Section on this Sheet W-1

332+70 to 348+30 Req'd. 160 cu.yds. Excav. for Ditch Change Rt. see Typical Section on this Sheet W-1

348+40 to 349+71.9 Req'd. 15 cu.yds. Excav. for Ditch Change Rt. see Typical Section on this Sheet W-1

348+57 Req'd. 50 cu.yds. Embt. for Road Appr. Rt. Remove 15"x20' CMP Side Drain with 2 Headwalls. Relay CMP in Irrig. Ditch Rt. Relay 15"x30' CMP Side Drain Rt. from Lt. of sta. 349+04.

349+71.9 Remove & Reset Project Marker Rt.

Irrigation Ditch

Pl. 7704.85

+0.47%

-0.47% Ditch Grade

+0.428%

+0.43% Ditch Grade

Pl. 99.38 Ditch Grade

04.38 — 04.84 — 05.28

200' V.C.

NPSD. IN EXCESS OF 300 FT.

Pl. 03.76 Ditch Grade

09.77 — 10.21 — 10.65

200' V.C.

Pl. 10.80

+0.45%

-0.54% Ditch Grade

Pl. 09.01 Ditch Grade

12.55 @ 71.9

Pl. 18.01 Ditch Grade

Pl. 7713.00

13.57

-0.58%

7710

7700

7690

7210

7700

7690

| | | |

STATE F.A. 295-B(2)& C(2) 24

TOWN OF ROMEO

ALAMOSA STREET

PUEBLO STREET

(P.O.T. 349+71.9 BACK
P.O.T. 350+00.0 AHEAD

P.O.T. 362+53.0

P.O.T. 375+00.0

RAILROAD R.O.W.

Irrig. Ditch

Telegraph Line

Power Line

Pole #790

Pole #645

Irrigation Ditch

U.S.C.&G. Tri Sta & Refer. Points

D.&R.G.W. RAILROAD (3-RAILS)

MP 273

Present Road

S 12°33' W

Telephone Line

Power Sub Station

Cellar

15"x20" CMP

24"x12" CMP

32" 61.32° CMP

18"x70" CMP

Sign

100'

350+00 AH

355

360

365

370

375

380

385

390

359+06, Reqd: 80 Cu. Yds. Embkt. for Road Approach Lt.

350+00 to 358+70, Reqd: 130 Cu. Yds. Excav. for Ditch Change Rt. See Typical Section on Sheet 23 W+

350+44 Reqd: 20 Cu. Yds. Embkt. for Road Approach Rt. Remove 15"x20" CMP Side Drain with 2 Headwalls, extend with new pipe from Sta 4+40+63, and Relay. Remove 24"x12" CMP Side Drain and Relay in Irrigation Ditch Rt.

358+30. Remove Sign Rt.

358+79. Remove Headwall and extend Double 18" CMP Culvt. 20' on Rt. Build Headwall.

358+94 Reqd: 80 Cu. Yds. Embkt. for Road Approach Rt. Remove 18"x70" CMP Side Drain & Headwalls. Relay CMP on Rt.

END OF F.A.P.-295-B(2)
BEGIN F.A.P.-295-C(2)
EQUATION
349+71.9 Back =
350+00.0 AHEAD
Proj. Mile
House

County Road

7730
7720
7710

200' V.C.

+0.45%
+0.56.9%
+0.48%
+0.54%

P.I. 7713.02
P.I. 18.40
P.I. 22.00

41.03
13.57
17.83
18.38
18.88
21.52
22.02
22.54

Ditch Grade
Ditch Slope
Ditch Grade 1.65
Ditch Grade 1.88

NPSD IN EXCESS OF 1300 FT.

Excav
Embk. Factor
Embk. Factor
Borrow
Sta. Yds. O.H
Yds. Mi. O.H
Bor. Source

364
735
LIS
94.28
8.317
914.87
4045

Pit No. 10 - 700' Lt. Sta. 33+00

355
360
370
375
380

TOWN OF ROMEO

DURANGO STREET | MAIN STREET | ANTONITO STREET | CONEJOS STREET | BLANCA STREET | EL PASO STREET | LA VETA STREET

P.O.T. 389+56.1 | P.O.T. 405+00.0

STATE COLO | F.A.P. 295-C(2) | 25

Cellar | Telegraph Line | DEPOT | RAILROAD R.O.W. | ROMERO CANAL R.O.W. 20' | D & R G W RAILROAD (STANDARD & NARROW GAUGE)

NPS-358 Proj Mrkr | Pole 750 | 15"x20" CMP | 15"x30" CMP | Power Line | 15"x20" CMP | Present Road | S. 12°33' W | Pole 580 | Gate | 15"x20" CMP | Telephone Line

15"x20" CMP | 15"x84" CMP | Fill Sta | Pump | 4-8"x29" Iron Pipes | Store | HOUSE

383+46, Reqd: 40 Cu. Yds. Embkt. for Road Approach Rt. Remove 15"x20" CMP Side Drain with 2 Hdwlls., extend with 10' of pipe from Sta. 440+63 and Relay.

Approximate new location for filling station.

385+63, Remove and Reset Project Marker Lt.

386+00, Reqd: 910 Cu. Yds. Embkt. for Major Road Approach Lt.

386+03, Reqd: 135 Cu. Yds. Embkt. for Road Appr. Rt. Remove 15"x84" CMP Side Drain with 2 Headwalls. Relay CMP on Rt.

386+09, Move Filling Station to approximate location shown

386+09, Move Gas Pumps Rt. (2 Pumps)

386+40, Remove Sign Rt.

386+58, Remove Sign Rt.

386+63, Remove Stucco Store Rt.

387+00, Reqd: 50 Cu. Yds. Embkt. for Road Appr. Rt. Remove 4-8"x29' Iron Pipes. Relay 15"x30" CMP Side Drain Rt. from Sta 387+72.

387+72, Remove 15"x30" CMP Culvt. with 2 Headwalls. Relay CMP Rt. of Sta. 387+00.

387+72, Reqd: 24"x72" CMP Culvt. and 20 Cu. Yds. Excav. for Inlet.

393+72, Reqd: 40 Cu. Yds. Embkt. for Road Appr. Lt. 18"x30" CMP Side Drain. Remove 15"x20" CMP Side Drain with 2 Headwalls. Relay CMP Rt. of Sta. 415+40.

400+91, Reqd: 25 Cu. Yds. Embkt. for Road Appr. Rt. Remove 15"x20" CMP Side Drain with 2 Headwalls. Relay CMP Rt. of Sta 415+40. Relay 15"x34" CMP Side Drain Rt. from Rt. of Sta 412+97.

7740 | 7730 | 7720

P.I. 7735.50

+0.54 % | +0.50 % | +0.50 % 2 Inch Grade

Elev 24.00 Ditch Grade | Elev 21.50 Ditch Grade | Elev 40.50 Ditch Grade

20.48 | 46.00

34.98 | 35.49 | 36.00

200' V.C.

NPSD IN EXCESS OF 1900 FT.

Excav	16.6	96	14	685	648	
Embt. Tectol				115		
Embt. Factor				12331		
Borrow				10272		
Sta Yd. O.H.				104515		
Yd. Mi. O.H.				2990		
Bor. Source				Plt. No. 11-c 800' Lt. Sta 423+00		

380 | 385 | 390 | 395 | 400 | 405 | 410

STATE F.A.
CO. 295-C(2) 26

PALOMA STREET

ROMERO CANAL R.O.W

POT 423+25.1

RAILROAD R.O.W

POT 438+00.0

Telegraph Line

D. & R.G.W. RAILROAD (3-RAILS)
MP 274

USGS-BM Pole "770"

15"x30" CMP

Power Line

Present Road

Telephone Line

Pole "690"

S 12°33 W.

Milk Depot

Shed

Well

Cottage Camp

412+97, Reqd. 135 Cu. Yds. Embkt. for Road Appr's. Rt. and Lt., 18"x50' CMP Side Drain Rt. Remove 15"x34' CMP Side Drain Rt. 2 Headwalls. Relay CMP Rt. of Sta 400+91.

414+73, Reqd. 30 Cu. Yds Embkt. Road Approach Rt. Remove 15"x30' CMP Side Drain with 2 Headwalls Rt. Relay CMP Rt.

415+40, Reqd. 45 Cu. Yds. Embkt. for Road Appr. Rt. Remove 6'-1"x4'-2" Wood Box Culv't. Relay 15" CMP Side Drain Rt., 20' of pipe from Lt. of Sta. 393+72 and 20' of pipe from Rt. of Sta. 400+91.

426+51, Reqd. 24"x62' CMP Culv't. Remove 15"x30' CMP Culv't. with 2 Headwalls. Relay Same Rt. of Sta. 440+63.

Ditch Bottom Width 2'-0"

7760
7750
7740

P.I. 7747.00
P.I. 50.50
P.I. 52.25
P.I. 57.50

+0.50%
+0.438%
+0.25%
+0.75%
+0.50%

Ditch Grade

46.50 46.98 47.44
50.00 50.45 50.75
52.00 52.38 53.00
56.75 57.44 58.00

200' V.C.

NPSD IN EXCESS OF 1300 FT.

Excav.		79	16		377		63		418
Embt. Factor				115				115	
Embt. x Factor									
Borrow									
Sta. Yds. O. H.									
Yd. Mi. O. H.									
Borrow Source									

P.I. No. 1 = 800 Lt. Sta. 423+00

410 415 420 425 430 435 440

STATE COLO | F.A.P. 295-C(2) | SHEETS 27

POT 449+97.1

POT 464+00.0

℄ OF NARROW GAUGE

Telegraph Line

RAILROAD R.O.W.

D & R.G.W. RAILROAD (STANDARD & NARROW GAUGE)

Pole #90

Power Line

Present Road

S. 12° 33' W.

Pole #80

Telephone Line

15"x 20' CMP

15"x 50' CMP

15"x 50' CMP

Pole #12

Snow Fence in place

440+63. Reqd: 35 Cu. Yds. Embkt. for Road Appr: Rt.
Remove 15"x 20' CMP Side Drain Rt. with 2 Headwalls. Cut pipe in two 10' pieces.
Relay: CMP Rt. of Stations 350+44 and 383+46.
Relay 15"x 30' CMP Side Drain Rt. from Sta. 426+51

461+00. Reqd: 500 Cu. Yds. Embkt. for Approach to Project end Project Marker.

STA. 461+00 END OF F.A.P. 295-C (2)

7770.00

200' V.C.

61.75 61.29 61.30 P.I. 65.60 P.I. 74.35

7770

7760

7750

+0.50% +0.65% +0.45%

P.I. 67.00 Ditch Grade

P.I. 61.50 Ditch Grade

Ext. 68.0 Ditch Grade

Ext. 68.0 Ditch Grade

P.I. 776/1.25

65.15 65.75 66.25

200' V.C.

V.P.I. IN EXCESS OF 1200 ft.

Excav			687			
Embk. Factor			115			
Embk x Factor			0196			
Borrow			8928			
Sta. Yds. O.H.			884.86			
Yd. Mi. O.H.			1719			
Bor. Source			Pit No. 11- 600' Lt. from 423+00			

440 445 450 455 460 465 470

COLORADO DEPARTMENT OF HIGHWAYS
[illegible]
[illegible]

FEDERAL ROAD REGION NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	F 025-2(7)	4	

SURFACING PLAN

It is estimated that Surfacing for this project is available in the vicinity of the pit, as indicated in the following tabulation. Estimated quantities involved in these operations are shown below.

Alteration of the plan, as here outlined, will be allowed only upon written permission from the department.

MATERIAL TO BE PLACED	SOURCE	TONS USED: P.M. ASPHALTIC SURFACING TOP LAYER	TONS USED: P.M. ASPHALTIC SURFACING BOTTOM LAYER	TONS USED: BASE COURSE GRADING "A"	TON MILE OVERHAUL: P.M. ASPHALTIC SURFACING TOP LAYER	TON MILE OVERHAUL: P.M. ASPHALTIC SURFACING BOTTOM LAYER	TON MILE OVERHAUL: BASE COURSE
-24+79.8 to 0+00	Echols Pit	372	1,314	1,413	2,300	8,123	8,735
0+00 to 36+50.7 Bk		548	1,935	2,081	3,069	10,838	11,656
37+01.2 Ah. to 307+50		4,057	14,336	15,418	10,930	38,621	41,536
307+50 to 349+71.9 Bk		633	2,238	2,406	337	1,191	1,281
350+00 Ah. to 375+00	Haul Distance 700' to Sta. 307+50	375	1,325	1,425	438	1,549	1,666
375+00 to 392+85 (Intersection)		438	1,228	---	690	1,934	---
392+85 to 400+00		107	379	408	194	687	739
Estimate for Accel. & Decel. Lanes	"A" = 78	612	300	546	1,904	946	1,719
Estimate for Correcting Irregularities in Subgrade		---	---	2,370	---	---	6,733
Est for Leveling Course		---	4,000	---	---	11,002	---
Additional Material for Shoulder Finishing		---	---	660	---	---	1,860
From List of Structures		---	093	2,297	---	3,023	6,510
Add 15' Width for Rt. Shoulder Sta 0+ to 21+		---	---	714	---	---	4104
Add 5' Width for Lt. Shoulder Sta 0+ to 28+		---	---	952	---	---	5,409
Add Material for Superelevated Secs.		---	---	1,003	---	---	5,730
PROJECT TOTALS		1,142*	28,148	31,693	19,862	77,914	97,678

* GRADING "C"
@ GRADING "A"

TABULATION OF DELINEATORS

STATION	SIDE	SPACING	TYPE I	TYPE II	TYPE III
-22+30	Rt. & Lt.	Accel. & Decel. Lanes		10	2
-13+68		Transition	2		
-11+12 to -0+39		4° 20' Curves	18		
-10+30		Culvert			2
20+13 to 26+05		2° Curve	10		
32±		Accel. & Decel. Lanes		10	2
33+50		Culvert			2
40+83 to 44+83	Rt. & Lt.	Transition	4		
53±	Rt.	Decel. Lane		3	
57±	Rt.	Accel. Lane		1	1
60+01	Rt. & Lt.	Culvert			2
88+06	Rt & Lt	Culvert			2
112±	Rt.	Decel. Lane		3	
114±	Rt.	Accel. Lane		2	1
141±	Rt & Lt	Accel. & Decel. Lanes		9	1
140+73		Culvert			2
168±		Accel. & Decel. Lanes		10	2
194±		Accel. & Decel. Lanes		8	2
195+10		Culvert			2
195+49	Rt & Lt.	Culvert			2
252±	Rt.	Accel. & Decel. Lanes		5	1
306±	Rt & Lt	Accel. & Decel. Lanes		10	2
307+00		Culvert			2
359±		Accel. & Decel. Lanes		6	2
358+73		Culvert			2
360+00		Culvert			2
386±	Rt. & Lt.	Intersection	6	5	3
Project TOTALS			40	84	39

*Estimated 60 Timber Guard Posts to be removed. (Work by State Maintenance Forces)

TABULATION OF RIGHT OF WAY MARKERS

STATION	SIDE	NUMBER
-11+12.8	Rt.	1
-5+90.9	Rt.	1
PROJECT TOTALS		2

FENCING TABULATION

STATION	SIDE	REMOVE FENCE LIN. FT.	REMOVE AND REBUILD FENCE LIN. FT.	COMB. WIRE FENCE LIN. FT.	DRIVEWAY GATES EACH
-21+88 to -11+64	Rt	1,100			
-11+64 to -10+35			130		
-10+35 to -6+68		370			
-21+88 to -11+64				1,040	
-10+35 to -6+68				370	
-1+80					1
20+00					1
-10+00					1
31+ to 33+			165		2
141+			45		
167+ to 169+			70		
252+ to 253+			125		
318+00					1
305+ to 307+			120		
358+ to 359+	Rt				
TOTALS		1,470'	815'	1,410'	7+

It is estimated that 22 corner and line brace posts and 12 end posts will be required