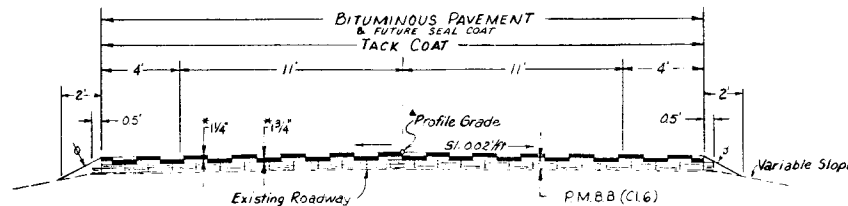


AS CONSTRUCTED		
NO REVISIONS	REVISED 7-29-80	VOID

FEDERAL ROAD PROJECT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	RS 0009 (15)	2	17

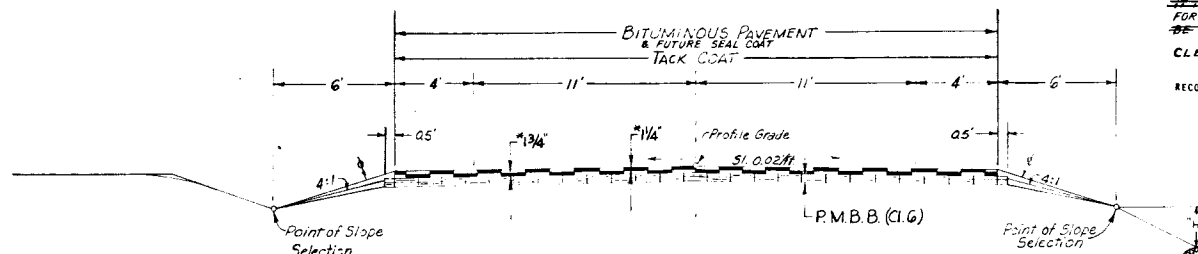
TYPICAL SECTIONS

RECONDITIONING



*Approximate Thickness
*Profile Grade Shall be the thickness of PM.B.B.
and H.B.P. above the existing road
*P.M.B.B. Rates per 100'
3" 56 Tons
3 1/2" 64 Tons

GRADING



TYPICAL SECTION NOTES

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

MATERIAL ~~WAS~~ PLACED IN SEPARATE COURSES AT THE FOLLOWING APPROXIMATE RATES PER 100 LIN. FT. OF ROADWAY:

BITUMINOUS PAVEMENT TOP LAYER 23 TONS
90% "M" LAYER 32 TONS
* PLANT MIX BITUMINOUS BASE ~~WAS~~ PLACED IN ONE LIFT ~~AS~~ AS APPROVED BY THE ENGINEER.
THE RATES SHOWN HAVE BEEN DETERMINED FROM INFORMATION AVAILABLE AT THE TIME OF DESIGN. RATES ~~WAS~~ ADJUSTED DURING CONSTRUCTION TO OBTAIN THE REQUIRED APPROXIMATE THICKNESS.

* THE CONTRACTOR ~~WAS~~ REQUIRED TO PLACE SUITABLE MATERIAL TO THIS LINE AFTER COMPLETION OF PAVING OPERATION. THIS ~~WAS~~ NOT ~~BE~~ PAID FOR SEPARATELY, BUT INCLUDED IN THE WORK.

FILL SLOPES:
SLOPE 4:1 WHERE "M" IS 4' OR LESS
SLOPE 3:1 WHERE "M" IS 4' TO 15'
SLOPE 2:1 WHERE "M" IS OVER 15'

IN SPECIAL CASES, SLOPE MAY BE STEEPENED.

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

GENERAL NOTES

FOR PRELIMINARY PLAN QUANTITIES OF BITUMINOUS MATERIALS AND COVER COAT MATERIALS, THE FOLLOWING RATES OF APPLICATION WERE USED:

TACK COAT DILUTED EMUL. ASPH. (CSS-1H) @ 0.1 GALS. PER SQ. YD.

DILUTED EMULSIFIED ASPHALT FOR TACK COAT ~~WAS~~ CONSIST OF 1 PART EMULSIFIED ASPHALT AND 1 PART/5 WATER.

RATES OF APPLICATION ~~WAS~~ AS DETERMINED BY THE ENGINEER AT THE TIME OF APPLICATION.

DILUTED EMULSIFIED ASPHALT SHALL BE USED AS A DUST PALLIATIVE WHERE REQUIRED AND SHALL CONSIST OF A DILUTED EMULSIFIED ASPHALT AND WATER. THE PORTIONS OF WHICH SHALL BE 9 PARTS ASPHALT AND 1 PART EMULSIFIED ASPHALT, BASED ON VOLUME MEASUREMENT. LOCATIONS SHALL BE AS ORDERED.

THE FOLLOWING ~~WAS~~ FURNISHED WITH EACH BITUMINOUS PAYER.

A SKI TYPE DEVICE AT LEAST 30 FEET IN LENGTH AND A SHORT SKI OR SHOE.

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

FOR ROAD APPROACHES WHICH REQUIRE BITUMINOUS PAVEMENT A 3" THICKNESS OF PM.B AND A 2" THICKNESS OF PM.B.B. ~~WAS~~ PAVED 50 FT. OUT FROM EDGE OF SHOULDER OR TO THE RIGHT OF ANY LINE WHEREVER IS LESS. OTHER APPROACHES ~~WERE~~ PAVED 4 FT. OUT FROM EDGE OF SHOULDER.

DEPTH OF MOISTURE-DENSITY CONTROL FOR THIS PROJECT ~~WAS~~ AS FOLLOWS:

FULL DEPTH OF ALL EMBANKMENTS.

BASES OF CUTS AND FILLS .5 FOOT.

EXCAVATION REQUIRED FOR COMPACTION OF BASES OF CUTS AND FILLS ~~WAS~~ ~~BE~~ CONSIDERED AS SUBSIDIARY TO THAT OPERATION AND ~~WAS~~ NOT ~~BE~~ PAID FOR SEPARATELY.

~~12-13~~ IS ESTIMATED THAT ~~12-13~~ HOURS OF FLAGGING FOR CONTROLLING TRAFFIC ~~WAS~~ REQUIRED FOR THIS PROJECT.

~~12-13~~ IS ESTIMATED THAT ~~12-13~~ HOURS OF BLADING, WITH A MOTOR GRADER IN THE 125 TO 200 FLYWHEEL HORSEPOWER RANGE, ~~WAS~~ REQUIRED FOR THIS PROJECT.

GUARD POSTS, DELINEATORS, SIGNS AND SNOW FENCE ~~WERE~~ REMOVED BY STATE FORCES.

FLEXIBLE CONDUITS ON THIS PROJECT WITH HELICAL CORRUGATIONS, JOINED BY DIMPLED CONNECTING BANDS. ~~WAS~~ A SEALING COMPOUND OR GASKET WITH THE CONNECTING BAND.

~~12-13~~ IS ESTIMATED THAT 3.1 MILES OF RECONDITIONING ~~WAS~~ REQUIRED FOR THIS PROJECT. THE TYPE OF COMPACTION FOR RECONDITIONING ~~WAS~~ ~~BE~~ AASHTO 139.

CLEARING AND GRUBBING ~~WAS~~ SUBSIDIARY TO COST OF PROJECT.

RECONDITIONED ROADWAY ~~WAS~~ SUPERELEVATED IN ACCORDANCE WITH STANDARD M-203-5C.

TABULATION OF WORK

TABLE OF STATION			
STATION		GRADING	RECONDITIONING
STATION		LIN. FT.	LIN. FT.
845+49	to 880+00		3,455.41
880+00	to 892+00	1,200.00	
892+00	to 903+00		1,700.00
903+00	to 920+00	1,100.00	
920+00	to 970+00		5,000.00
970+00	to 983+00	1,316.78	
983+00	to 989+00		600.00
989+00	to 998+00	900.00	
998+00	to 1024+00		2,600.00
1024+00	to 1038+00	1,401.02	
1038+00	to 1053+50		1,561.23
1053+50	to 1071+00	1,753.24	
1071+00	to 1085+00		1,400.00
TOTALS		7,671.04	16,316.64

AS CONSTRUCTED				FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS		
NO REVISIONS	☐	REVISED	☒ 2-29-80	VOID	☐	VIII	COLORADO	RS 0009 (15)	4	17

INDEX			CONTRACT ITEM NO.	CONTRACT ITEM	UNIT					C-54-0009(20) <i>Plan</i>	CMAA #7757 C-54-0009(20) <i>N</i> <i>Project Totals</i>					R/S 0009(15) <i>Project Total</i>	PROJECT TOTALS	COMBINED FINAL TOTALS		
BOOK	PAGE	SHEET																		
6	36		607	Fence Barbed Wire with Metal Posts	Lin. Ft.											20,091	19,880	20,091		
6	37		607	20 Foot Gate Twin Driveway	Each											1	1	1		
6	38		611	16 Foot Cattle Guard	Each											2	2	2		
		7	612	Delineator (Type I)	Each											179	188	179		
8			614	Flagging	Hr.											1,091	1,500	1,091		
			614	" (CMAA #7757)						100	77					0	0	77		
6	42		614	Construction Traffic Sign (Panel Size A)	Each											4	3	4		
6	43		614	Construction Traffic Sign (Panel Size B)	Each											12	10	12		
6	44									4	4					0	0	4		
6	45		614	Vertical Panel	Each											50	50	50		
6	46		620	Field Office	Each											1	1	1		
6	47		620	Field Laboratory	Each											1	1	1		
6	48		620	Sanitary Facility	Each											1	1	1		
6	49		626	Mobilization	Lump Sum											1	1	1		
			F/A 01	<u>FORCE ACCOUNT</u> Minor Contract Revisions	F.A.											1	1	1		
			F/A 02	<u>STATE FORCES (Federal Aid)</u> Signing and Striping	F.A.											1	1	1		

STRUCTURE QUANTITIES

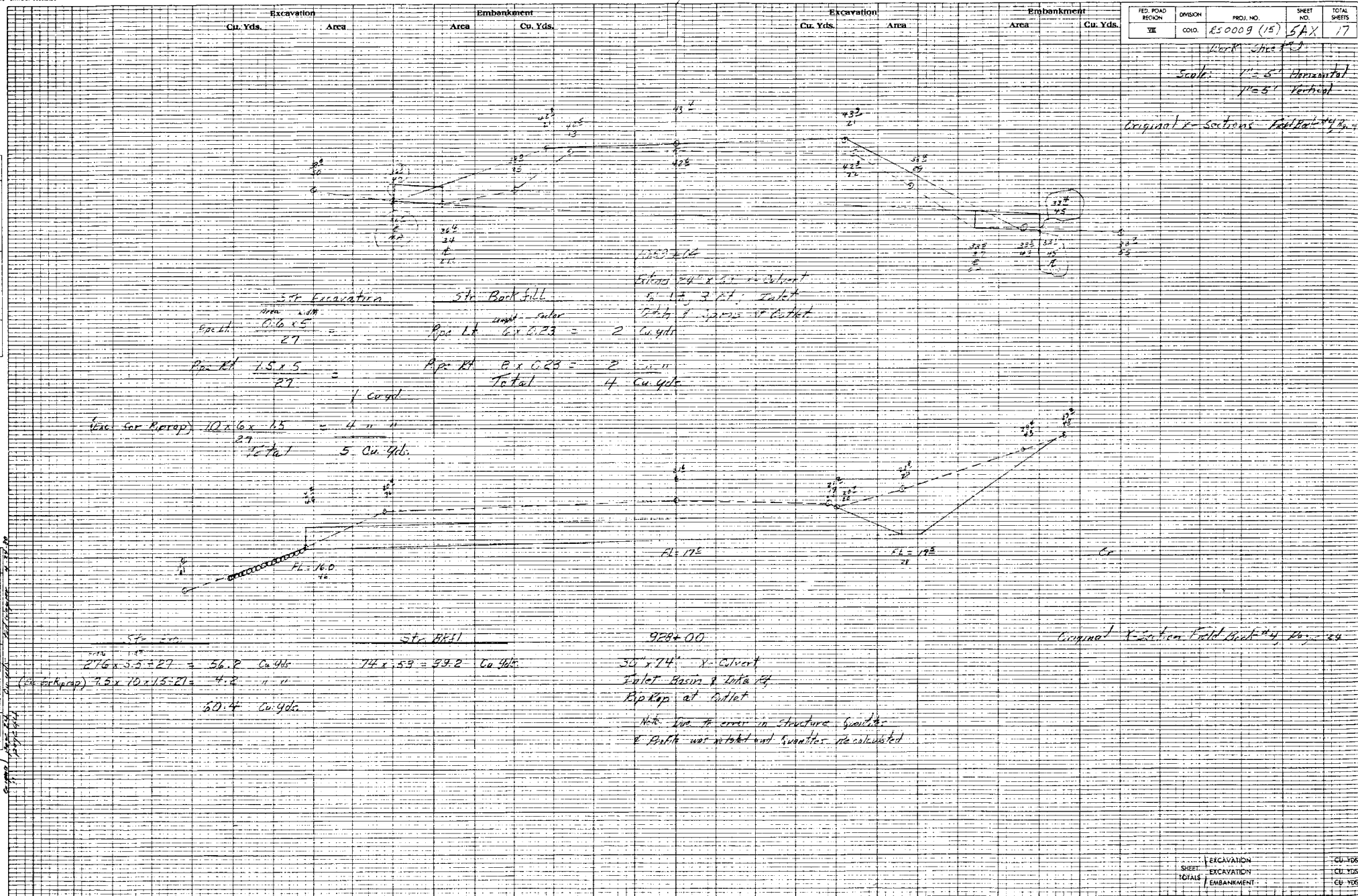
AS CONSTRUCTED		FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.
NO REVISIONS	REVISED 7-29-80	VCID	VIII	COLORADO	PS 0009 (15)

INDEX			LOCATION	UNCLASSIFIED EXCAVATION			STRUCTURE EXCAVATION		STRUCTURE BACKFILL		REMOVAL OF STRUCTURE	P.M.B.B. (MISC.)	HOT BITUMINOUS PAVEMENT (MISC.)	RIPRAP CU. YD.	CONCRETE		REINFORCING STEEL	CORRUGATED STEEL PIPE								*H" OVER CULV.	SLOPE AND DITCH PAVING	END SECTION		MISCELLANEOUS
				CUBIC YARD			CUBIC YARD		CUBIC YARD						CUBIC YARD			CL. A		CL. B		LINEAR FEET								
BOOK	PAGE	SHEET	EXCAV.	EMB.	DITCH			CL. 2	CL. 1	EACH	TON	TON			CL. A	CL. B		24"	24"	30"	36"	42"	48"	60"	FT.	CUBIC YARD				
BOOK 6																														

Ø 18" Thick - 9" Stone Size * PMEB (misc.) to be (Cl. C) Aggregate
* For Information Only * H.B.P. (misc.) to be (Gr. E) Aggregate

FINAL SURVEY	DATE	BY
DESIGNED		
CHECKED		
APPROVED		

ORIGINAL SURVEY	DATE	BY
DESIGNED		
CHECKED		
APPROVED		



FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	RS 0009 (15)	6	17
AS CONSTRUCTED				
NO REVISIONS		REVISED	2-29-60	VOID

BASE COURSE AND SURFACING PLAN

STATION TO STATION	PLANT MIX BITUMINOUS BASE (CLASS C)			HOT BITUMINOUS PAVEMENT			
	THICKNESS	TONS USED	HAUL - TON MILE	TONS USED		HAUL - TON MILE	
				BOTTOM LAYER	TOP LAYER	BOTTOM LAYER	TOP LAYER
845+49 to 1027+00	3"	10,138	171,893	5,793	4,164	98,222	70,602
1027+00 to 1080+00	3.5" 3"	3,455	50,920	1,701	1,223	25,069	18,025
1080+00 to 1085+00	3"	280	3,973	160	115	2,270	1,632
From Structure Quantities	40*		651		30*		492
Correcting Irregularities		1,388	22,679				
TOTAL		40*	0.00*		30*	24.35*	
TOTALS		1,5261	142,975	250,116	237,854	7,654	77,700

Stabilization based on the following:

18" EDLA 12
Regional Factor 2.5
Serviceability Index 2.0

Strength Coefficients:

Plant Mix Bituminous Base (Class C) 0.34
Hot Bituminous Pavement (Grading E) 0.44
W.S.N. 0.30 - 2.48
"R" Value 15 - 82

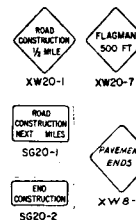
* Source - Badger Basin Pit

* To be paid for under PMBB. (Misc.)

• To be paid for under H.B.P. (Misc.)

SCHEDULE OF CONSTRUCTION TRAFFIC SIGNS

SIGN CODE OR LEGEND	DIMENSIONS	PANEL SIZE			QUANTITY REQUIRED
		A	B	C	
XW 20-1	48" x 48"	X			4 4
SG 20-1	60" x 36"	X			2 2
SG 20-2	60" x 24"	X			2 2
XW 20-7	48" x 48"	X			2 4
"Be Prepared/To Stop"	36" x 36"	X			2 4
XW 8-3	36" x 36"	X			1 0
VERTICAL PANEL					50 50



SUMMARY OF EARTHWORK QUANTITIES

INDEX	BOOM	PAGE	SHEET	CU YD
UNCLASSIFIED EXCAVATION				
ROADWAY (FROM CROSS SECTIONS)				19,198
STRUCTURE QUANTITIES AS DITCH				51
EST. FOR CUT SLOPE TREATMENT				96
STRUCTURE QUANTITIES AS EMBANKMENT				229
TOTAL				19,574
COMPACTION (AASHTO T99)				
EMBANKMENT (NET)				15,454
BASE OF CUTS AND FILLS				6,791
TOTAL				22,155
HAUL				YD. MI.
FROM MASS DIAGRAM (TOTAL)				11,786
ROADWAY QUANTITIES BALANCE (FOR INFORMATION ONLY)				CU YD.
EXCAVATION UNCLASSIFIED (TOTAL)				19,198
EMBANKMENT NET ROADWAY (FROM CROSS SECTIONS) (TOTAL)				15,454
EMBANKMENT x FACTOR (1.2) ROADWAY (FROM CROSS SECTIONS)				18,553
EXCESS EXCAVATION				645
TOTAL				19,198

Refer To Book #9

* To Be Used for Slope Flattening as Directed by the Engineer.

INDEX	BOOM	PAGE	SHEET	WETTING	MGAL.
				EMBANKMENT	435
				BASE OF CUTS & FILLS	55
				RECONDITIONING	110
				TOTAL	600

Refer To Book #8

SEEDING REQUIREMENTS

Seeding, Soil Preparation, Fertilizing with Commercial Fertilizer, and Mulching ^{WIS} ~~will be~~ required for approximately 15.9 Acres for Roadway within Right of Way limits on all disturbed areas not surfaced and 23.1 Acres for Pit on all disturbed areas except for 18.8 Acres of Future Stock pond area which will not be fertilized. The following types and approximate rates shall be used:

COMMON NAME	BOTANICAL NAME	PERCENT PURITY	PERCENT GERMINATION	RATE PLS/ACRE
Slender Wheatgrass(Primar)	Agropyron Trachycaulum	95	85	8
Chewing Fescue	Festuca Rubra Commutata	95	80	4
Madison Vetch	Vicia Sativa Madison	98	85	4
Intermediate Wheatgrass	Agropyron Intermedium	90	85	5
Alsike Clover	Trifolium Hybridum	97	90	3
Red Top	Agrostis Alba	92	90	3
Canada Bluegrass	Poa Compressa	80	90	3
Total PLS/Acre Seeding				30
Mulching Material 2 Ton per acre Native Hay or 1.5 Ton per acre Straw				
COMMERCIAL FERTILIZER	PERCENT AVAILABLE	LBS/ACRE AVAILABLE	TOTAL RATE LBS/ACRE	
Diammonium Phosphate (18-46-0) Nitrogen Superphosphate	18 46	54 138	300	

DELINEATORS

STATION TO STATION	SIDE	SPACING	DELINEATOR TYPE I EACH	Final ELEGH
899+28 to 856+18	LT. & RT.	7" 30' Curve	12	13
858+03 to 878+89	LT. & RT.	2" Curve	16	14
880+98.5 to 838+70	LT. & RT.	3" 15' Curve	16	16
901+70 to 946+49	LT. & RT.	Tangent	26	25
949+49 to 963+67	LT. & RT.	3" 15' Curve	12	10
962+85 963+00	LT. RT.	Co. Rd. Co. Rd.	6 6	6 6
966+67 to 986+23	LT. & RT.	2" 45' Curve	14	13
989+91 to 1001+23	LT. & RT.	4" 00' Curve	8	9
1001+23 to 1004+53	LT. & RT.	Tangent	2	2
1007+53 to 1023+96	LT. & RT.	5" 30' Curve	20	13
1025+98 to 1038+50	LT. & RT.	4" 15' Curve	14	15
1041+18.6 to 1054+58	LT. & RT.	6" 45' Curve	14	13
1057+58 to 1060+10	LT. & RT.	Tangent	2	7
1060+10 to 1070+73	LT. & RT.	6" 30' Curve	10	8
1070+73 to 1085+00	LT. & RT.	Tangent	10	9
Total			188	179
Reference	Book			6
	Page			76

FENCING

STATION	SIDE	FENCE BARBED WIRE WITH METAL POSTS	20' GATE TWIN DRIVEWAY	GATE BARBED WIRE
929+38 to 1029+67 929+67 to 1029+67 929+50 to 1029+50 1028+98	LT. RT.	13,880	20,091	
977+50	LT.		1	1
962+85	LT.			1
963+00	RT.			1
Totals		13,880	20,091	2

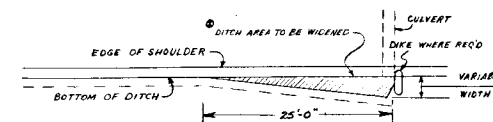
- * Fence ~~will be~~ placed 50' left and 50' right of centerline ~~as directed~~ ^{WIS} as directed.
- † Alternate Panel Gate ~~will not be~~ ^{WIS} allowed.
- ‡ It is estimated that the following ~~will be~~ ^{WIS} required:
29 Corner and Line Brace Posts
16 End Posts See Book #7, 374-74A
- For Information Only

SEEDING TABULATION

PROJECT NO.	STATION	ACRES	SEEDING LBS.	MULCHING TONS	FERTILIZER LBS.	SOIL PREPARATION ACRES	Mulch Tons/acre*
RS 0009 (13)	1320+ to M37+	15.0	458.97 450	23.285 30.0	4569.7 4,500	15.0/15.051	0.248
RS 0009 (14)	1085+ to 1320+	30.2	914.97 966	46.49 60.4	9149.7 9,060	30.2/27.598	2.901
RS 0009 (15)	846+ to 1085+	30.7	931.14 921	47.540 61.4	9311.4 9,210	30.7/29.107	1.851
BALSER BASIN PIT		23.1	394.92 693	20.038 46.2	3949.2 3,990	23.1/13.164	
TOTALS			2,699 2,976	136.98 198.0	27,660 26,860	99.0/65.0	5
Book			6	6	6	6	6
Page			13	16	14	15	50

* Information Only - Seeding, Mulch and Fertilizer Quantities included in tabulation totals

DETAIL OF INLET BASIN

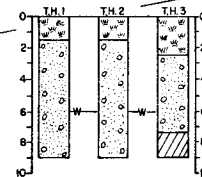


• To be paid for as unclassified excavation.

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	RS 0009 (15)	8	17
AS CONSTRUCTED				
NO REVISIONS		REVISED	7-24-80	VOID

LOG OF PIT

Sample No. 1323



LEGEND

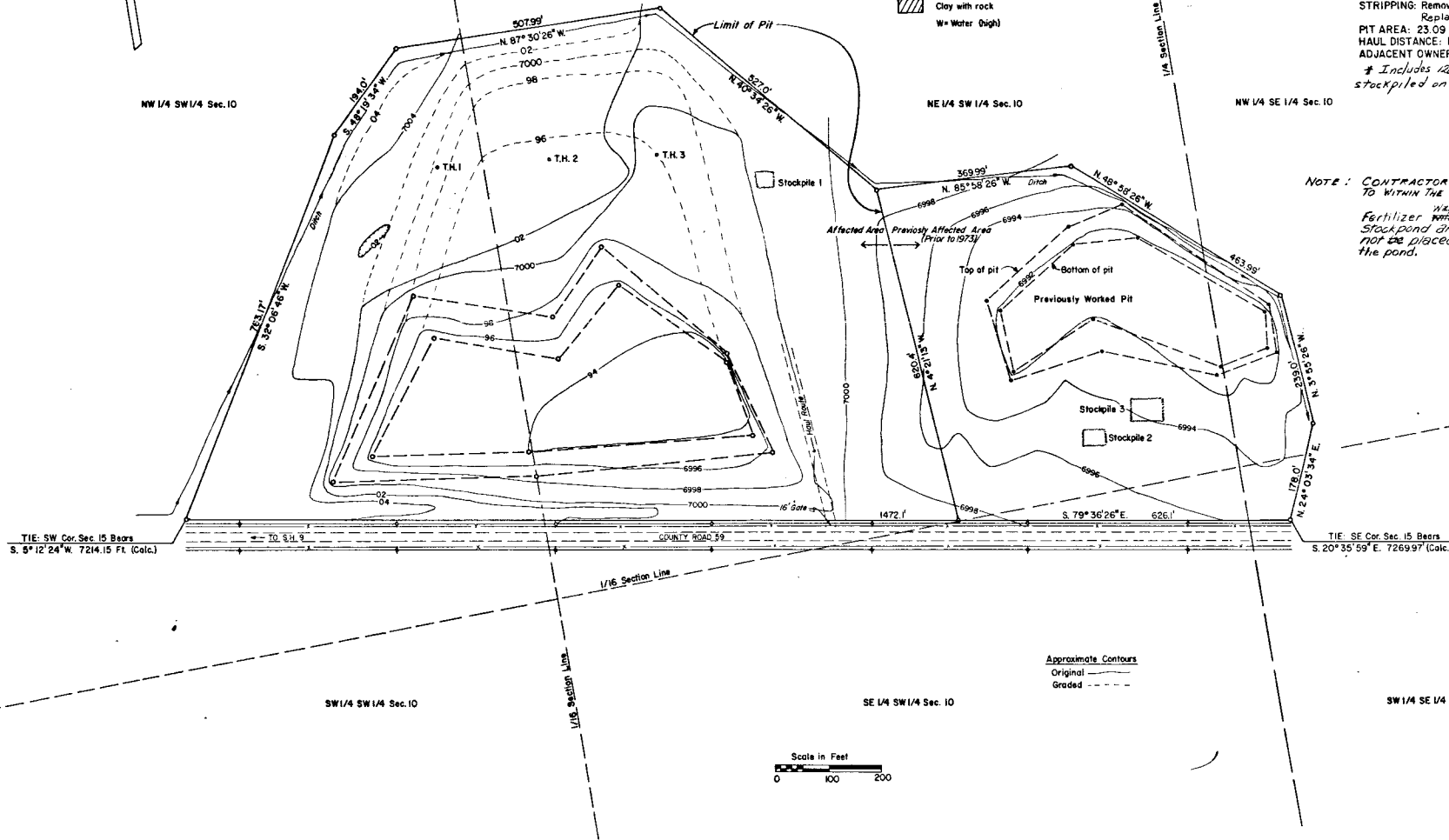
- Overburden
- Sand & Gravel
- Clay with rock
- W=Water (high)

BADGER BASIN PIT

OWNER: BADGER BASIN GRAZING ASSOC.
HARTSEL, COLORADO
LOCATION: Part of the W1/2 Sec. 10, T.12 S., R. 75 W., 6th P.M.
USE: AGGREGATE FOR BITUMINOUS BASE AND HOT BITUMINOUS PAVEMENT.
QUANTITY AVAILABLE: AMPLE
STRIPPING: Remove Overburden 250 Cu.Yds.
Replace Overburden 250 Cu.Yds.
PIT AREA: 23.09 Acres
HAUL DISTANCE: 14.14 Mi. to Sta. 1085+00
ADJACENT OWNERS: BADGER BASIN GRAZING ASSOC. ONLY
* Includes 1225 Cu.Yd. removed and stockpiled on RS 0009 (14)

NOTE: ^{Restricted} CONTRACTOR WILL RESTRICT HIS OPERATIONS TO WITHIN THE PIT LIMITS AND HAUL ROAD.

Fertilizer ^{was} not to be placed in the future stockpiled area of the pit. Fertilizer with was not to be placed below elevation 6995 in the pond.



PLAN	DATE	BY	CHECKED
NOTE BOOK			

PROFILE	DATE	BY	CHECKED
NOTE BOOK			

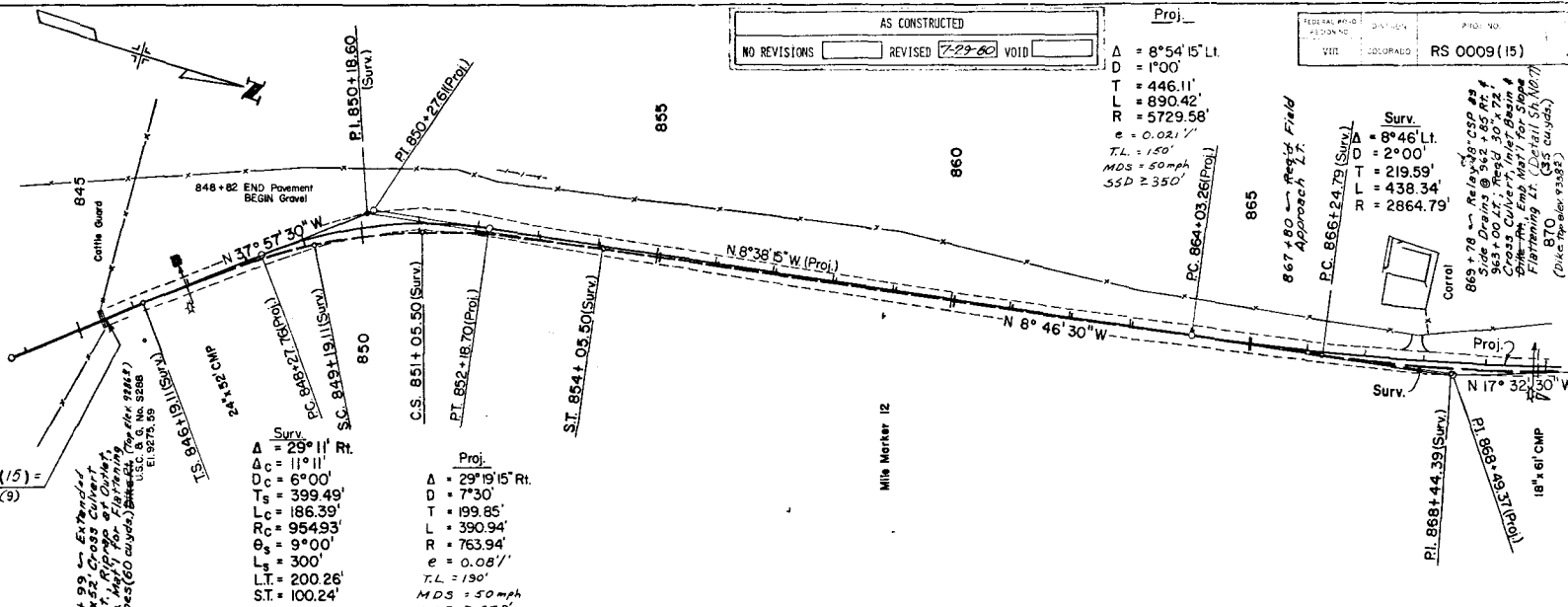
AS CONSTRUCTED		
NO REVISIONS	REVISED 7-29-60	VOID

Proj.	FED. ROAD DIST. NO.	SECTION NO.	PROJECT NO.
	VIII	COLORADO	RS 0009 (15)
			9 / 17

Δ = 8°54'15" Lt.
D = 1°00'
T = 446.11'
L = 890.42'
R = 5729.58'
e = 0.0211'
T.L. = 150'
MDS = 50 mph
SSD ≥ 350'

Surv.
Δ = 8°46' Lt.
D = 2°00'
T = 219.59'
L = 438.34'
R = 2864.79'
869 + 78 ~ Reloc. CSP 23
Side Drains @ 362 + 85 ft. f
963 + 00 Lt. Right 30' x 22"
963 + 00 Rt. Left 30' x 22"
963 + 00 ~ 10' wide
Flattening Lt. (Detail SA 107)
870 (35 cu yds.)
(Dike for elev 9355)

(6) 600' Pion Pol on Proj RS 0009 (15)



Sta. 845+49 ~ Beg. Proj RS 0009 (15) =
Sta. 849 + 49 ON PROJ. RS 0009 (9)

Surv.
Δ = 29° 11' Rt.
D.C. = 11° 11'
T.S. = 399.49'
L.C. = 186.39'
R.C. = 954.93'
θs = 9° 00'
Ls = 300'
L.T. = 200.26'
S.T. = 100.24'

Proj.
Δ = 29° 19' 15" Rt.
D = 7° 30'
T = 199.85'
L = 390.94'
R = 763.94'
e = 0.0811'
T.L. = 190'
MDS = 50 mph
SSD ≥ 350'

B.M. No. 1 El. 9288.65
H & G 55' Rt. 846+00

B.M. No. 2 El. 9302.01
H & G 105' Lt. 852+25

B.M. No. 3 El. 9315.23
Det. post 12' high 80' Lt. 855+00

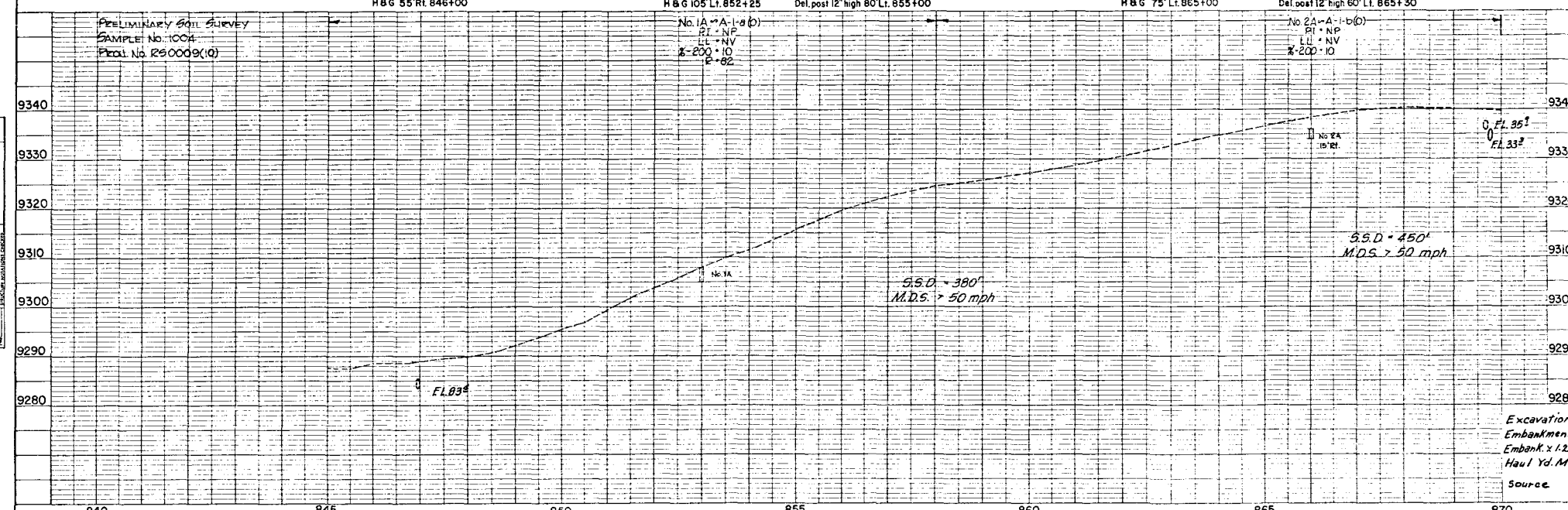
B.M. No. 4 El. 9326.04
H & G 75' Lt. 865+00

B.M. No. 5 El. 9325.99
Det. post 12' high 60' Lt. 865+30

PRELIMINARY SOIL SURVEY
SAMPLE No. 1004
Proj. No. RS 0009 (10)

No. 1A ~ A-1-a (D)
PI ~ NP
LI ~ NV
X-200-10
P-62

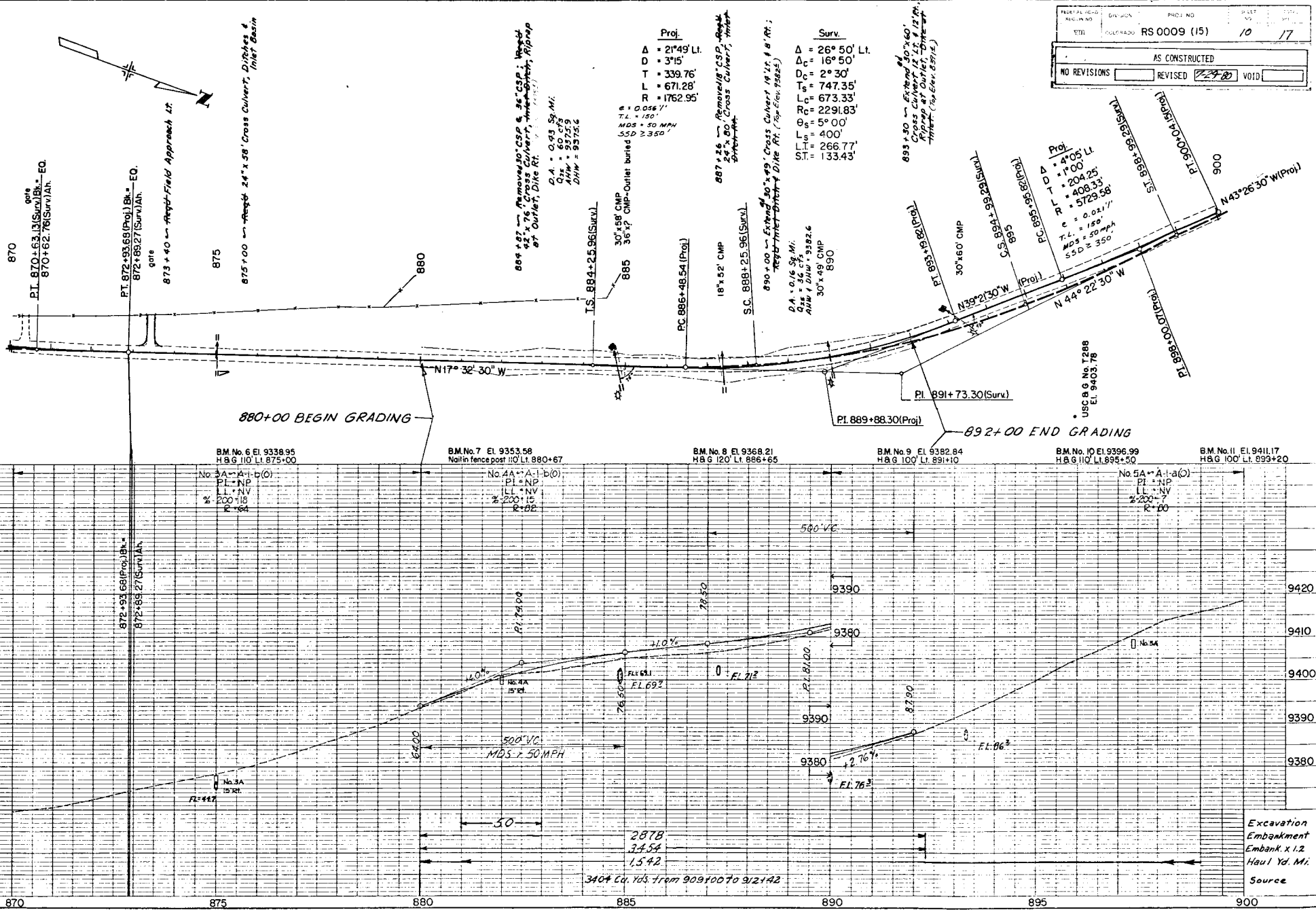
No. 2A ~ A-1-a (D)
PI ~ NP
LI ~ NV
X-200-10



Excavation
Embankment
Haul Yd. M.
Source

PLAN
PROJECT NO.
DATE
BY
CHECKED
APPROVED
NOTE BOOK
NO.

PROFILE
PROJECT NO.
DATE
BY
CHECKED
APPROVED
NOTE BOOK
NO.

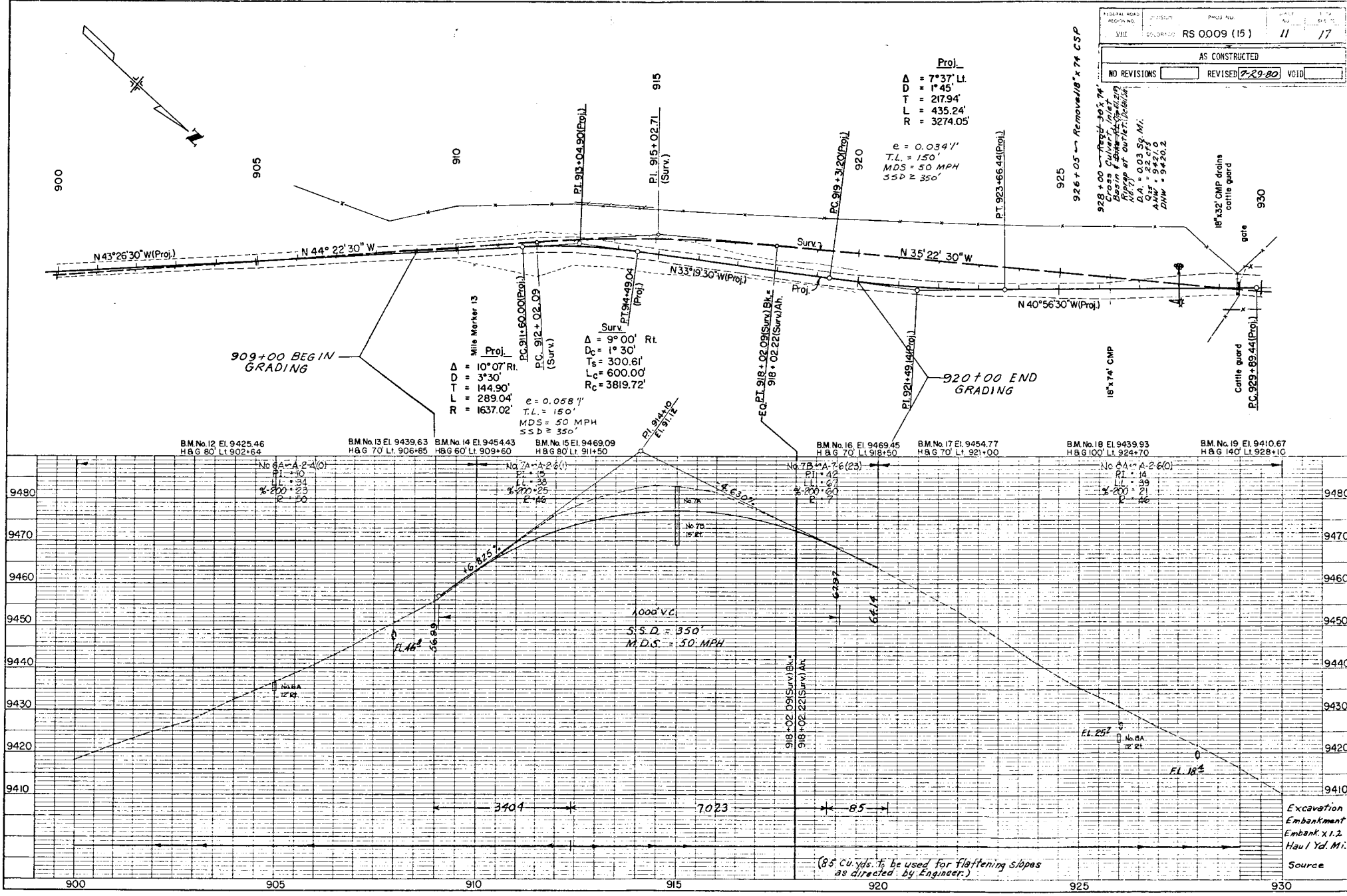


PROJECT NO.	DIVISION	PROJECT NO.	SHEET	DATE
101	COLORADO	RS 0009 (15)	10	17
AS CONSTRUCTED				
NO REVISIONS				
REVISED 2-29-80				
VOID				

PLAN	DATE
NO. 1	11/17/80
NO. 2	
NO. 3	
NO. 4	
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PROFILE	DATE
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NO. 100	

FEDERAL ROAD DISTRICT NO.	PROJECT NO.	DATE	BY
REGION NO.	NO.	11	17
STATE	COLORADO	RS 0009 (15)	
AS CONSTRUCTED			
NO REVISIONS	REVISED 7-29-80	VOID	



PLAN
NOTE BOOK
DATE
BY
CHECKED
APPROVED

PROFILE
NOTE BOOK
DATE
BY
CHECKED
APPROVED

AS CONSTRUCTED		DIVISION		PROJECT NO.		SHEET NO.		TOTAL SHEETS	
NO REVISIONS	REVISED 7-29-80	VOID		COLORADO	RS 0009 (15)	12	17		

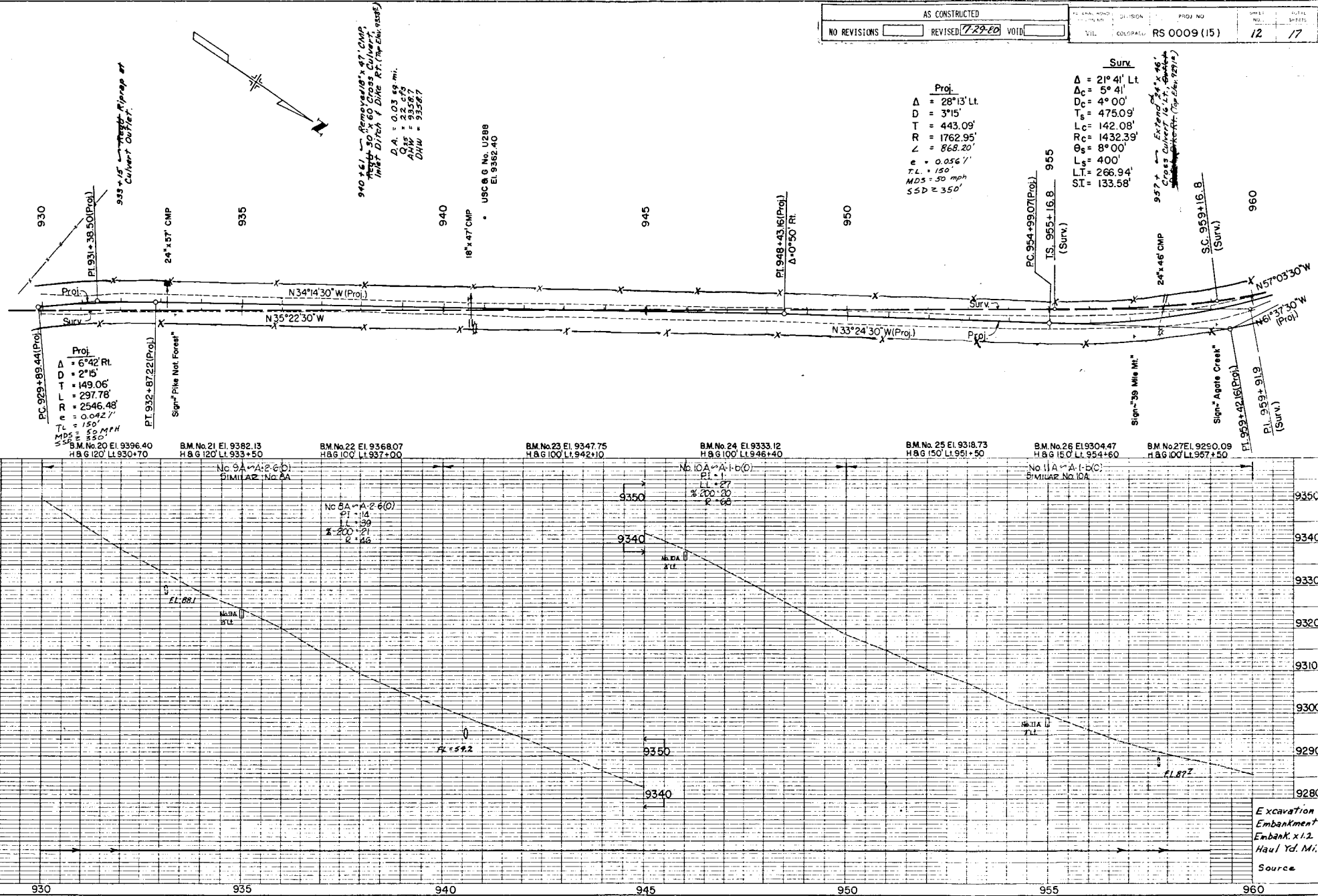
Proj.
 $\Delta = 28^{\circ}13'$ Lt.
 $D = 3^{\circ}15'$
 $T = 443.09'$
 $R = 1762.95'$
 $L = 868.20'$
 $e = 0.056'$
 $T.L. = 150'$
 $MDS = 50$ mph
 $SSD = 350'$

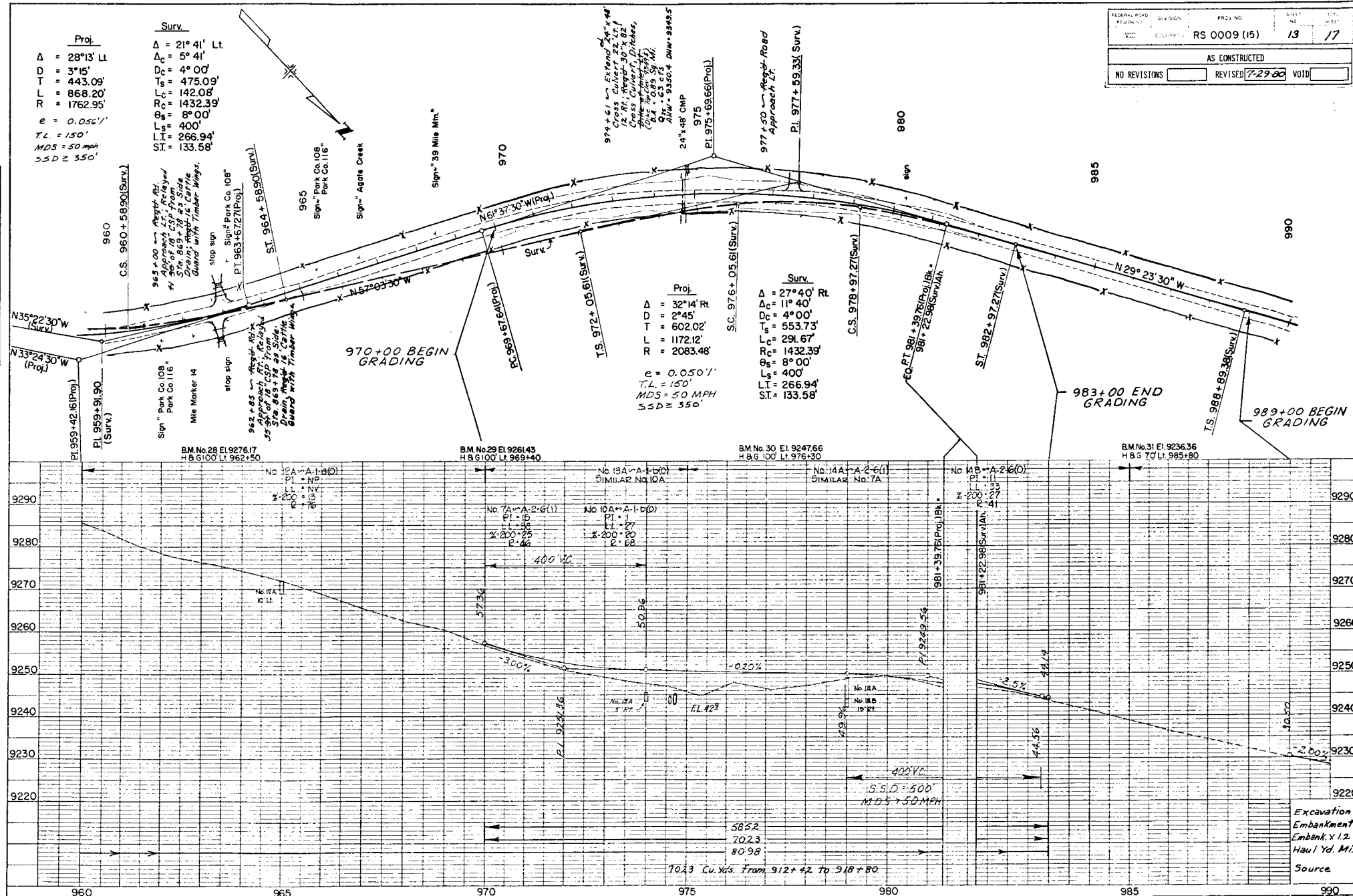
Surv.
 $\Delta = 21^{\circ}41'$ Lt.
 $D_c = 5^{\circ}41'$
 $D_s = 4^{\circ}00'$
 $T_s = 475.09'$
 $L_c = 142.08'$
 $R_c = 1432.39'$
 $\theta_s = 8^{\circ}00'$
 $L_s = 400'$
 $L.T. = 266.94'$
 $ST = 133.58'$

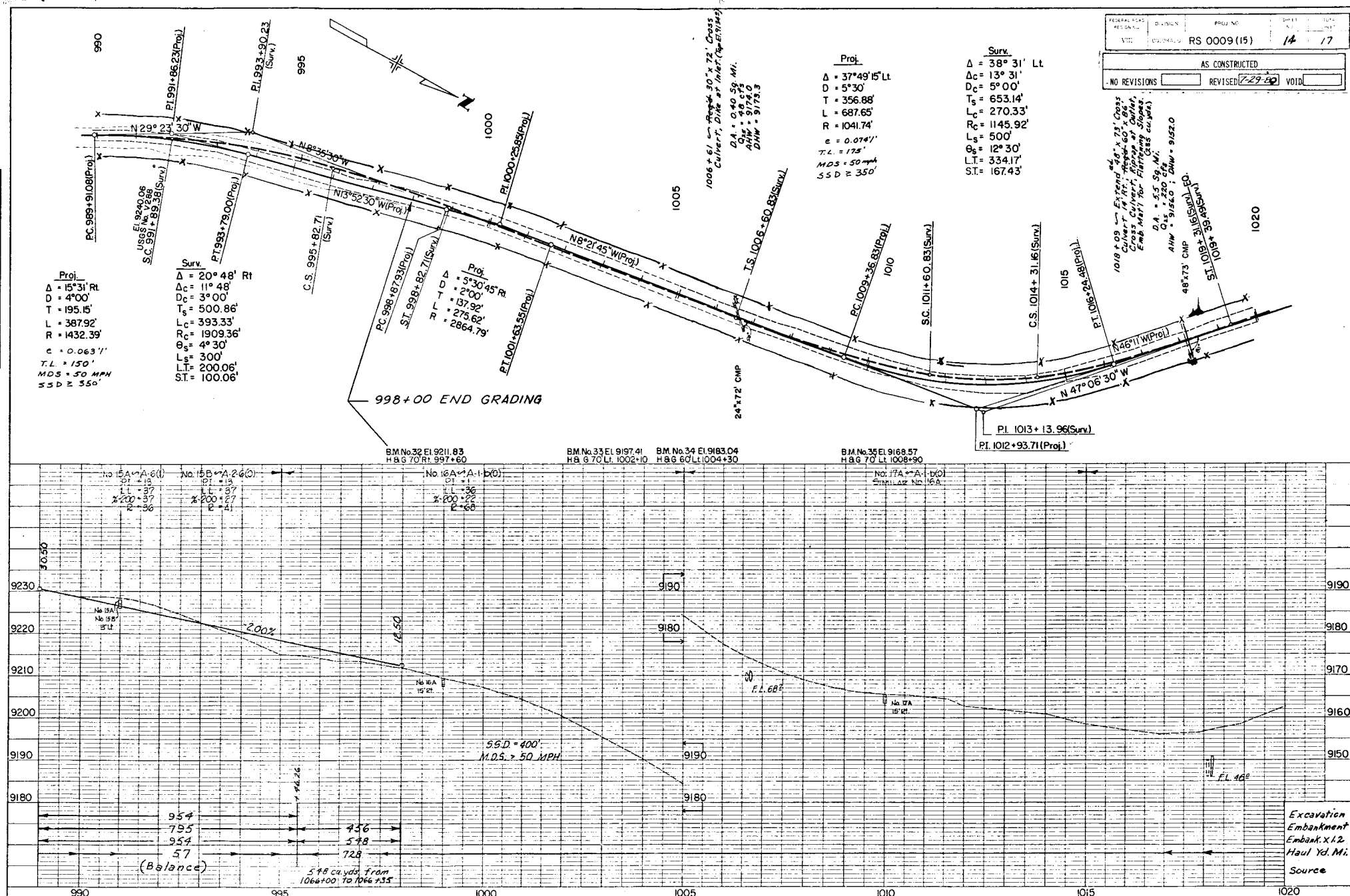
940 + 61 - Removal of 18" x 47" CMP
 30' x 60' Cross Culvert
 Inlet Ditch & Dike Rt. (Top Elev. 9358)
 $D.A. = 0.03$ sq mi.
 $Q_{15} = 22$ cfs
 $AMV = 9356.7$
 $DMW = 9356.7$

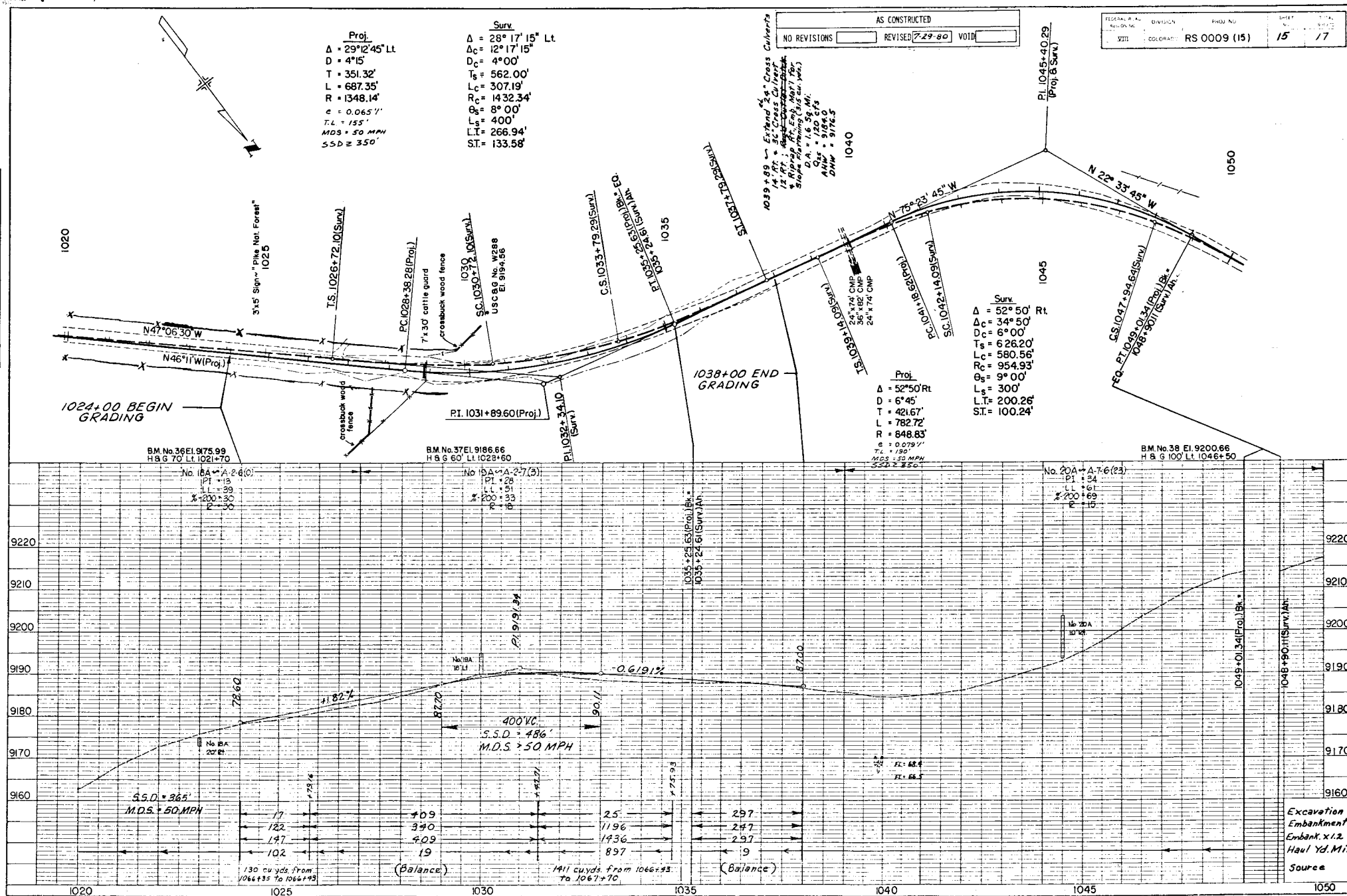
USC 6 No. U288
 EL 9362.40

957 + 1 - Extension of 24" x 46" CMP
 30' x 60' Cross Culvert (Top Elev. 9358)



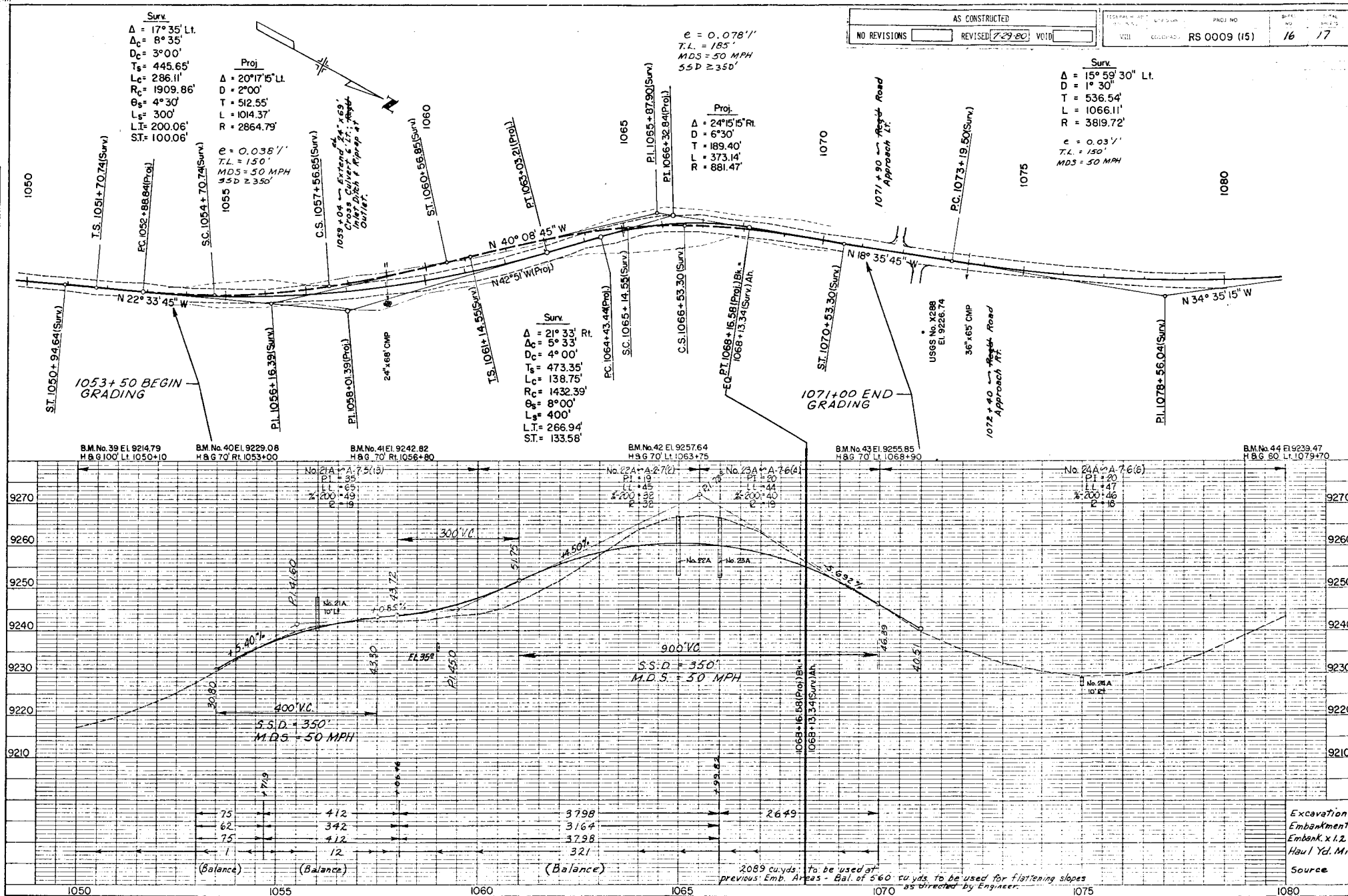






PLAN
NOTE BOOK
DATE
BY
CHECKED
APPROVED
SCALE

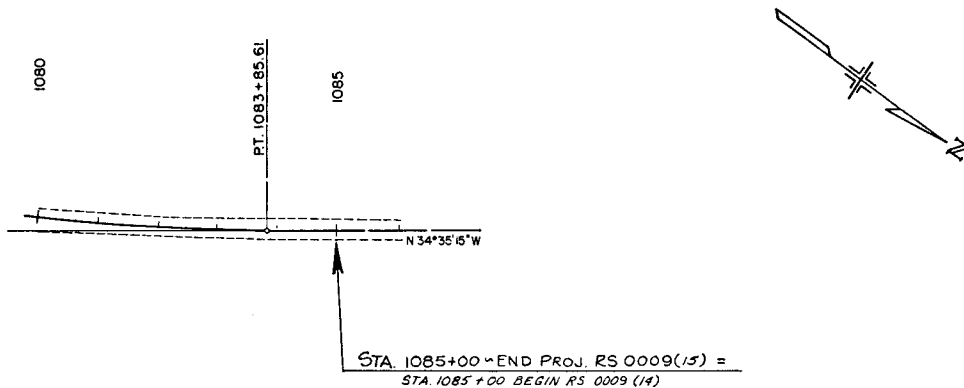
PROFILE
NOTE BOOK
DATE
BY
CHECKED
APPROVED
SCALE



AS CONSTRUCTED		
NO REVISIONS	7-29-80	REVISED
		VOID

PROJECT NO.	SHEET NO.	TOTAL SHEETS
RS 0009(15)	17	17

PLAN
NOTE BOOK



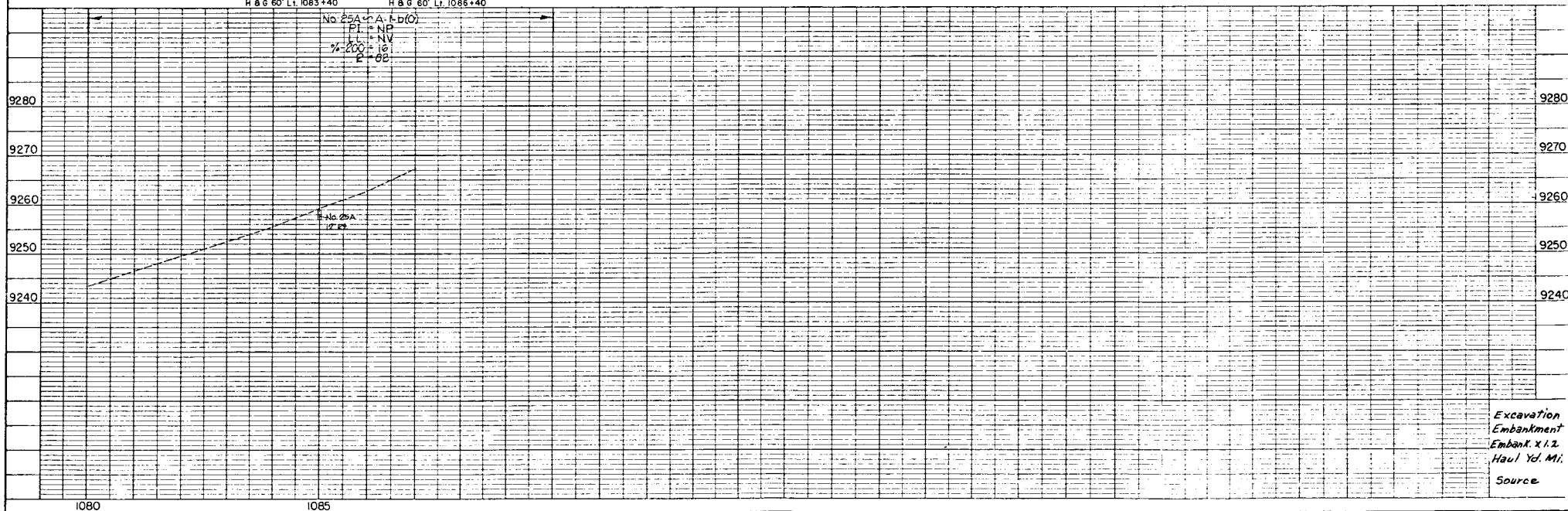
B.M. No. 45 E1 9253.61
H & G 60' L1 1083+40

B.M. No. 46 E1 9268.02
H & G 60' L1 1086+40

No. 25A A.L.D.(O)
PT. = NP
LI = NV
1/4-200 = 10
2-00

No. 25A
12-83

PROFILE
NOTE BOOK



Excavation
Embankment x 1.2
Haul Yd. M.
Source

STANDARD M-100-A

(MAY 11, 1973)

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
XII	COLORADO			

REVISIONS	

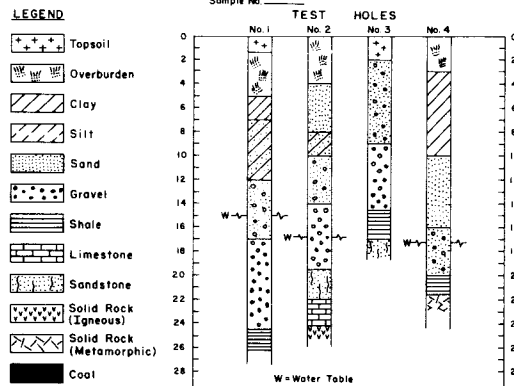
GENERAL NOTES

THESE SYMBOLS ARE INTENDED TO EXPLAIN THE VARIOUS TOPOGRAPHIC FEATURES INVOLVED ON THE ROADWAY PLAN SHEETS WHICH ARE PREPARED AT SCALES OF 1 INCH = 50 FEET OR 1 INCH = 100 FEET. NOTES ARE ADDED WHERE NECESSARY TO CLARIFY THE SYMBOL. IF THESE SYMBOLS ARE NOT APPROPRIATE FOR USE WITH OTHER SCALES, A LEGEND IS PROVIDED IN THE PLANS TO EXPLAIN THE SYMBOLS THAT ARE USED.

GUARD RAIL, CURB & GUTTER, ETC., ARE REPRESENTED BY A SYMBOL WITH TYPE GIVEN BY NOTE. SEE THE APPROPRIATE DIVISION M-STANDARD FOR EXPLANATION OF THE VARIOUS TYPES.

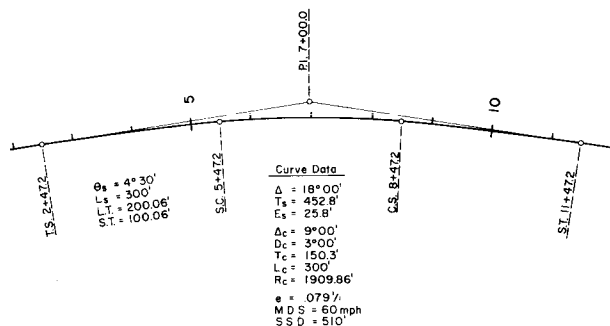
EXISTING BUILDINGS AND OTHER MAN MADE TOPOGRAPHICAL FEATURES NOT SYMBOLIZED HERE ARE SHOWN BY DASHED LINES WITH EXPLANATORY NOTES AS NECESSARY. NEW FEATURES TO BE CONSTRUCTED ARE SHOWN BY SOLID LINES.

TYPICAL LOG OF PIT

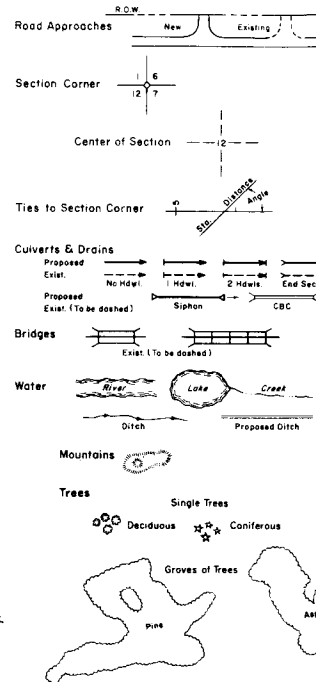
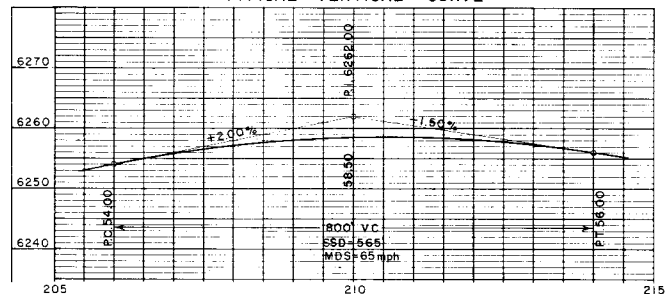


Composite materials are represented by combinations of the above symbols such as:
Sandy Clay

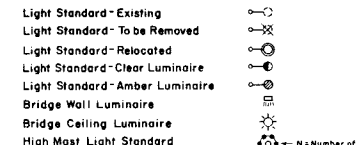
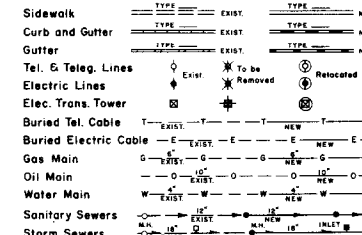
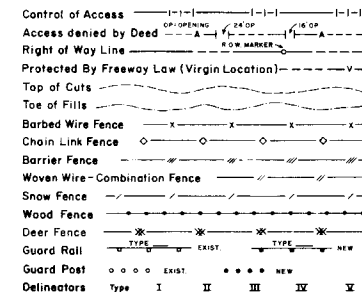
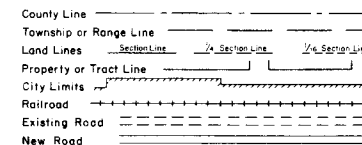
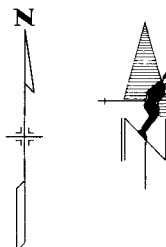
TYPICAL HORIZONTAL CURVE



TYPICAL VERTICAL CURVE



NORTH ARROWS



DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
DIVISION OF HIGHWAYS

STANDARD SYMBOLS

Designed by RLM
Made by HPS
Checked by DWD

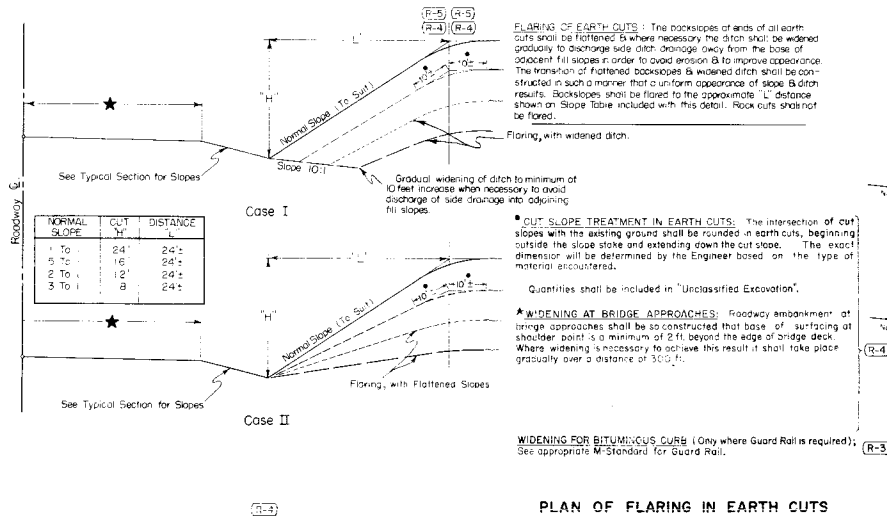
Approved by *[Signature]*
Staff Design Engr.
Date: May 11, 1973

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

STANDARD M-203-B
(JULY 1, 1965)

FED. ROAD DIST. NO.	DIVISION	PROJECT NO.	SHEET NO.
8	COLO.		

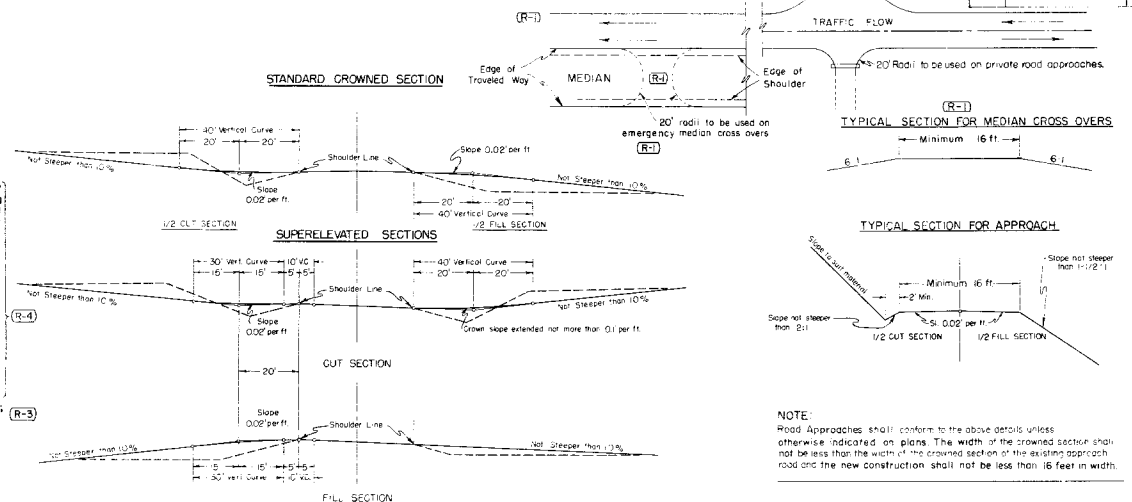
GENERAL DETAILS FOR FLARING OF EARTH CUTS, CUT SLOPE TREATMENT & WIDENING AT BRIDGES



PLAN OF FLARING IN EARTH CUTS

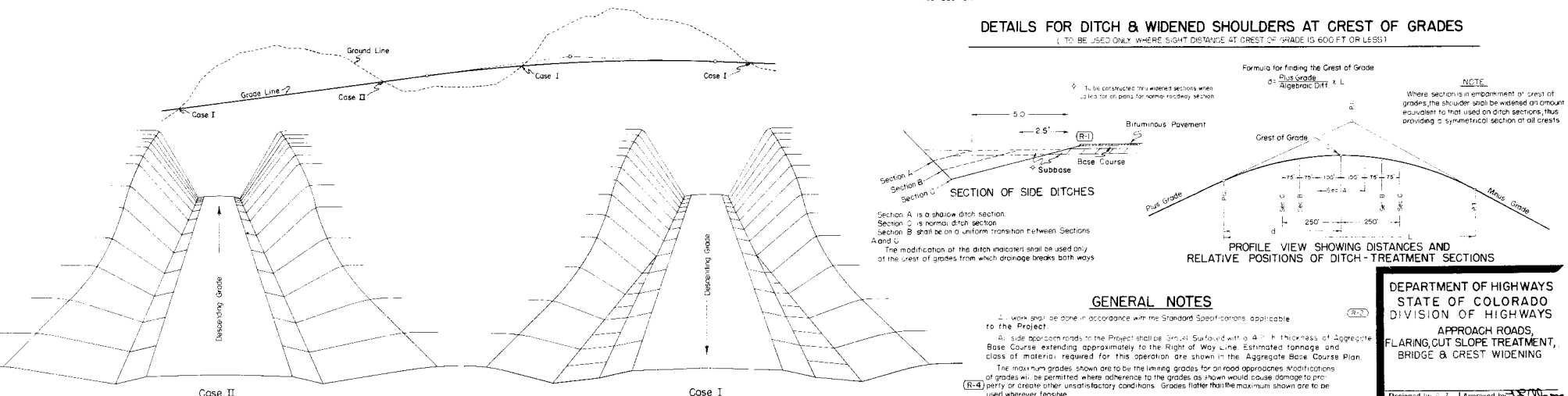
TYPICAL PLANS FOR SIDE APPROACH ROADS AND EMERGENCY MEDIAN CROSS OVERS

Where practical Side Drains are to be placed in line with the roadway ditches. 50' Radii to be used on all intersecting roads except private approaches. Radii may be varied to suit field conditions.



DETAILS FOR DITCH & WIDENED SHOULDERS AT CREST OF GRADES

(TO BE USED ONLY WHERE SIGHT DISTANCE AT CREST OF GRADE IS 600 FT OR LESS)



GENERAL NOTES

- Work shall be done in accordance with the Standard Specifications applicable to the Project.
- Side approach roads to the Project shall be 30 feet wide with a 4:1 thickness of Aggregate Base Course extending approximately to the Right of Way Line. Estimated drainage and class of material required for this operation are shown in the Aggregate Base Course Plan.
- The maximum grades shown are to be the limiting grades for all road approaches. Modifications of grades will be permitted where adherence to the grades as shown would cause damage to property or create other unsatisfactory conditions. Grades flatter than the maximum shown are to be used wherever feasible.

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
DIVISION OF HIGHWAYS

APPROACH ROADS,
FLARING, CUT SLOPE TREATMENT,
BRIDGE & CREST WIDENING

Designed by J. J. [Signature]
Made by J. J. [Signature]
Checked by C. S. [Signature]
Date: 3-14-1965

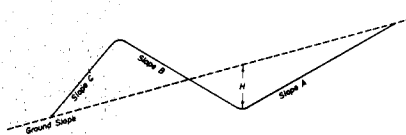
STANDARD TYPES *of* DITCHES *and* CONSTRUCTION METHODS

STANDARD M-203-C
(JULY 1, 1965)

FEED ROAD R.E. & W.D.	DIVISION	PROJECT NO.	SHEET NO.
S.	COLO.		

DETAILS *for* CONTOUR INTERCEPTING DITCHES

Typical Section for Contour Intercepting Ditches



PURPOSE & USE OF THE TABLE

The primary purpose of the information for Contour and Intercepting Ditches shown on this sheet is to serve as a guide in construction and to readily arrive at yardages of excavation involved.
Foremost consideration in constructing these ditches is given first to the natural ground line slope confronted in construction, thence to the other values shown on the Typical Section.
By properly arriving at the combination of values shown on the Typical Section and in the Table for a specified condition, the number of cubic yards of excavation per 100 lin. ft. of ditch may be read under the appropriate column for this item.

Typical Construction Layouts

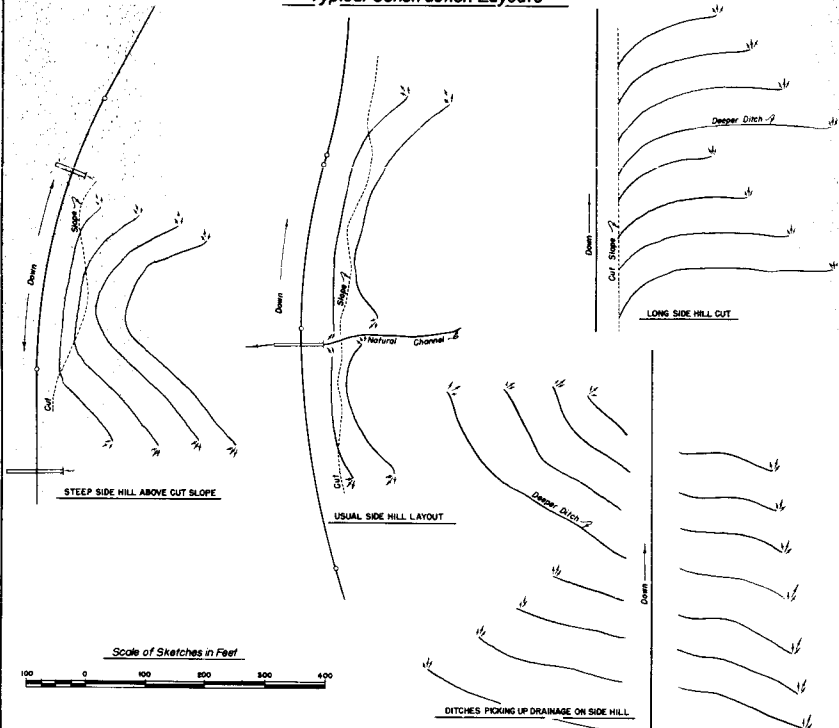
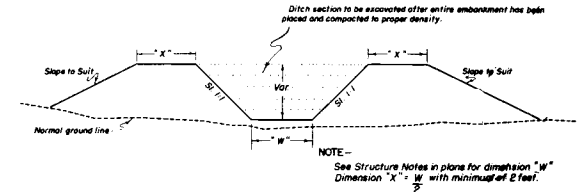


Table of Slopes and Yardages

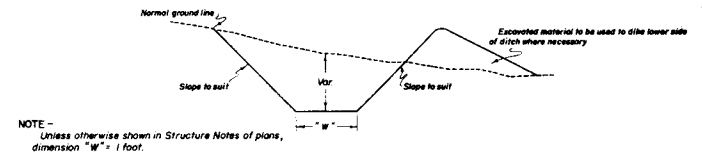
▲ SLOPES				H	Cubic Yards per 100 lin. ft. of Ditch	
Ground or Flatter	A	B	C			
5:1 Or Flatter	2:1	4:1	2:1	15"	16	
				18"	23	
				21"	32	
				3:1	15"	15
					18"	22
					21"	30
		2:1	15"		14	
			18"		20	
			21"		27	
			1-1/2:1	15"	13	
				18"	19	
				21"	25	
	1-1/2:1	4:1		1-1/2:1	15"	12
					18"	18
					21"	25
			3:1		15"	12
					18"	17
					21"	23
	2:1	15"		10		
		18"		15		
		21"		20		
		1-1/2:1	15"	10		
			18"	14		
			21"	19		
4:1	2:1		4:1	2:1	15"	17
					18"	25
					21"	34
		3:1			15"	17
					18"	24
					21"	32
	2:1		15"	15		
			18"	22		
			21"	30		
		1-1/2:1	15"	15		
			18"	21		
			21"	29		
1-1/2:1	4:1		1-1/2:1	15"	13	
				18"	19	
				21"	25	
		3:1		15"	18	
				18"	17	
				21"	23	
2:1	15"		11			
	18"		16			
	21"		21			
	1-1/2:1	15"	10			
		18"	14			
		21"	20			
3:1		2:1	3:1	2:1	15"	22
					18"	31
					21"	43
	15"				21	
	18"				30	
	21"				41	
	1-1/2:1	15"	20			
		18"	29			
		21"	40			
		1-1/2:1	3:1	1-1/2:1	15"	13
					18"	19
					21"	26
2:1	15"				12	
	18"				17	
	21"				24	
	1-1/2:1	15"	12			
		18"	17			
		21"	23			
2:1		1-1/2:1	2:1	1-1/2:1	15"	20
					18"	29
					21"	40
	1-1/2:1				15"	20
					18"	28
					21"	39
		1:1	2:1	1:1	15"	9
					18"	13
					21"	17
	1-1/2:1				15"	8
					18"	12
					21"	16
1-1/2:1		1:1	1-1/2:1	1:1	15"	11
					18"	16
					21"	21

▲ Slopes are approximate and may be varied to suit conditions encountered during construction.

TYPICAL SECTIONS *for* DRAINAGE, IRRIGATION DITCHES *and* CHANNEL CHANGES



For Embankment Sections (Generally for use in Irrigation Ditches & Channel Changes)



NOTE -
Unless otherwise shown in Structure Notes of plans,
dimension "W" = 1 foot.

For Cut Sections

GENERAL NOTES

All work shall be done in accordance with the Standard Specifications applicable to the Project.

All ditches are to be constructed to lines and grades as staked by the Engineer using the ditch section shown on plans or as ordered by the Engineer.

CONTOUR INTERCEPTING DITCHES: Ditches are to be laid out along the ground contour on a grade of not over 1% (Type of soil shall govern the grade).

Ends of ditches are to be lined up so that concentration of flow from a higher contour ditch into one of lower contour is, as far as possible avoided. The use of a deeper ditch is recommended where this condition is encountered.

The following horizontal spacing of ditches is recommended:
4% to 6% Approximately 70' Centers
8% to 10% Approximately 60' Centers
20% to 4:1 Slope Approximately 55' Centers
30% to 1-1/2:1 Slope Approximately 50' Centers

Where ditch checks are required the intervening ditch between one set of ditch checks shall not exceed a grade of 1.0%. Details of checks will be shown on plans when required.

REVISIONS

REVISION	7-23-68	Dept. Name	M.R.H.

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
DIVISION OF HIGHWAYS

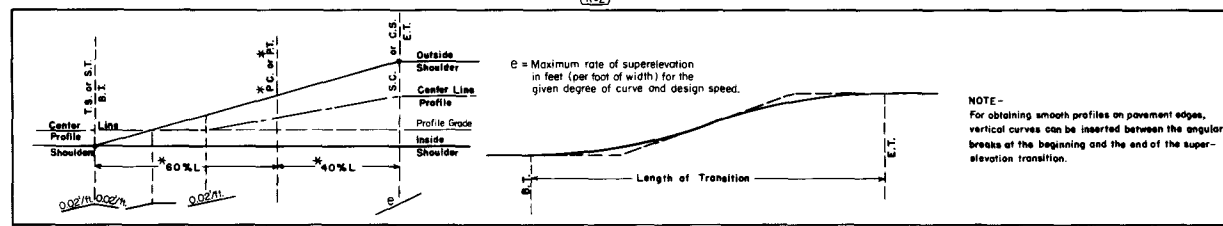
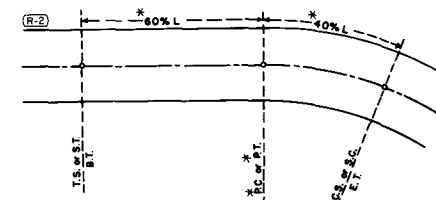
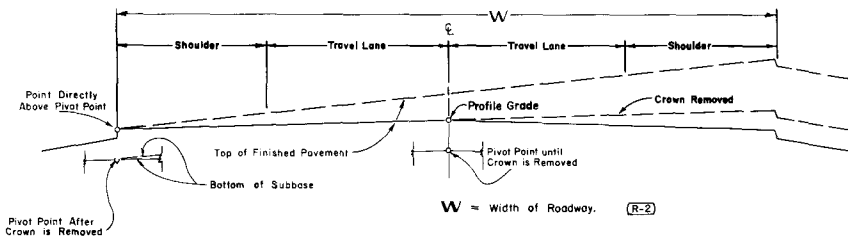
DITCH TYPES

Designed by C.G.M. Approved by C.G.M.
Made by C.G.M. Staff Design Engr.
Checked by Date: July 1, 1965

STANDARD M-203-SC

(OCTOBER 22, 1971)

FEDERAL ROAD BOARD	DIVISION	PROJECT NO.	SHEET NO.
VIII	COLORADO		



NOTE—
For obtaining smooth profiles on pavement edges, vertical curves can be inserted between the angular breaks at the beginning and the end of the superelevation transition.

REVISIONS		
R-1	3-24-75	Revised "L"
R-2	1-6-77	Clarify definitions

SUPERELEVATION RATES

VALUES FOR DESIGN ELEMENTS RELATED TO DESIGN SPEED AND HORIZONTAL CURVATURE

Use in Mountainous Areas and Areas where Icing Conditions Frequently Exist

D	R	V=30 MPH L=FEET	V=40 MPH L=FEET	V=50 MPH L=FEET	V=60 MPH L=FEET	V=70 MPH L=FEET	V=80 MPH L=FEET	V=90 MPH L=FEET	V=100 MPH L=FEET
0° 15'	22914'	NC	0	NC	0	NC	0	NC	0
0° 30'	11457'	NC	0	NC	0	NC	173	NC	190
0° 45'	7638'	NC	0	NC	0	173	173	190	216
1° 00'	5729'	NC	0	NC	123	173	173	190	216
1° 15'	4820'	NC	0	NC	123	173	173	190	216
1° 30'	3911'	NC	0	NC	123	173	173	190	216
1° 45'	3002'	NC	0	NC	123	173	173	190	216
2° 00'	2093'	NC	0	NC	123	173	173	190	216
2° 15'	1784'	NC	0	NC	123	173	173	190	216
2° 30'	1475'	NC	0	NC	123	173	173	190	216
2° 45'	1166'	NC	0	NC	123	173	173	190	216
3° 00'	857'	NC	0	NC	123	173	173	190	216
3° 15'	726'	NC	0	NC	123	173	173	190	216
3° 30'	595'	NC	0	NC	123	173	173	190	216
3° 45'	464'	NC	0	NC	123	173	173	190	216
4° 00'	333'	NC	0	NC	123	173	173	190	216
4° 15'	242'	NC	0	NC	123	173	173	190	216
4° 30'	151'	NC	0	NC	123	173	173	190	216
4° 45'	60'	NC	0	NC	123	173	173	190	216
5° 00'	0'	NC	0	NC	123	173	173	190	216
5° 15'	0'	NC	0	NC	123	173	173	190	216
5° 30'	0'	NC	0	NC	123	173	173	190	216
5° 45'	0'	NC	0	NC	123	173	173	190	216
6° 00'	0'	NC	0	NC	123	173	173	190	216
6° 15'	0'	NC	0	NC	123	173	173	190	216
6° 30'	0'	NC	0	NC	123	173	173	190	216
6° 45'	0'	NC	0	NC	123	173	173	190	216
7° 00'	0'	NC	0	NC	123	173	173	190	216
7° 15'	0'	NC	0	NC	123	173	173	190	216
7° 30'	0'	NC	0	NC	123	173	173	190	216
7° 45'	0'	NC	0	NC	123	173	173	190	216
8° 00'	0'	NC	0	NC	123	173	173	190	216
8° 15'	0'	NC	0	NC	123	173	173	190	216
8° 30'	0'	NC	0	NC	123	173	173	190	216
8° 45'	0'	NC	0	NC	123	173	173	190	216
9° 00'	0'	NC	0	NC	123	173	173	190	216
9° 15'	0'	NC	0	NC	123	173	173	190	216
9° 30'	0'	NC	0	NC	123	173	173	190	216
9° 45'	0'	NC	0	NC	123	173	173	190	216
10° 00'	0'	NC	0	NC	123	173	173	190	216
10° 15'	0'	NC	0	NC	123	173	173	190	216
10° 30'	0'	NC	0	NC	123	173	173	190	216
10° 45'	0'	NC	0	NC	123	173	173	190	216
11° 00'	0'	NC	0	NC	123	173	173	190	216
11° 15'	0'	NC	0	NC	123	173	173	190	216
11° 30'	0'	NC	0	NC	123	173	173	190	216
11° 45'	0'	NC	0	NC	123	173	173	190	216
12° 00'	0'	NC	0	NC	123	173	173	190	216
12° 15'	0'	NC	0	NC	123	173	173	190	216
12° 30'	0'	NC	0	NC	123	173	173	190	216
12° 45'	0'	NC	0	NC	123	173	173	190	216
13° 00'	0'	NC	0	NC	123	173	173	190	216
13° 15'	0'	NC	0	NC	123	173	173	190	216
13° 30'	0'	NC	0	NC	123	173	173	190	216
13° 45'	0'	NC	0	NC	123	173	173	190	216
14° 00'	0'	NC	0	NC	123	173	173	190	216
14° 15'	0'	NC	0	NC	123	173	173	190	216
14° 30'	0'	NC	0	NC	123	173	173	190	216
14° 45'	0'	NC	0	NC	123	173	173	190	216
15° 00'	0'	NC	0	NC	123	173	173	190	216
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39° 0									

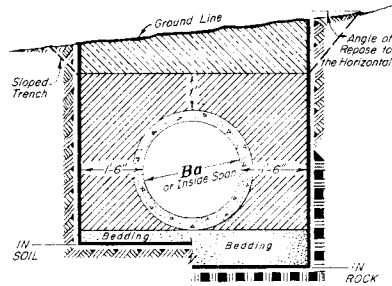
STANDARD M-206-AB

(MARCH 4, 1976)
(SHEET 1 OF 3)

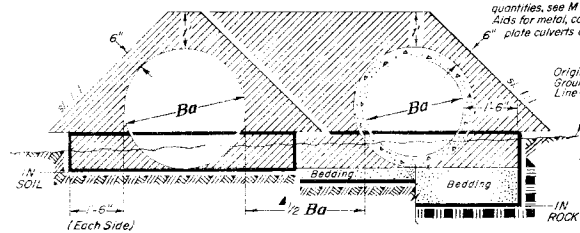
FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO			

REVISIONS				
NO.	DATE	DESCRIPTION	BY	CHK.
R-1	3-26-76	Gen. Note, footing in rock	T.A.L.	
R-2	4-16-76	Limit of Str. Excav. in Box Culv. detail.	T.A.L.	
R-3	5-8-78	Backfill for Wingwall.	T.A.L.	
R-4	4-30-79	Revision date only.	T.A.L.	

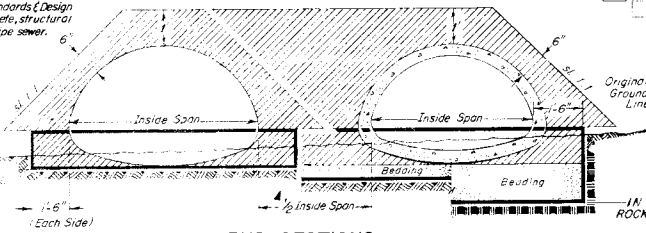
SIPHON OR CONDUIT IN TRENCH



CIRCULAR CONDUIT



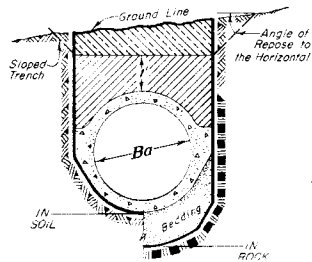
ELLIPTICAL OR ARCH CONDUIT



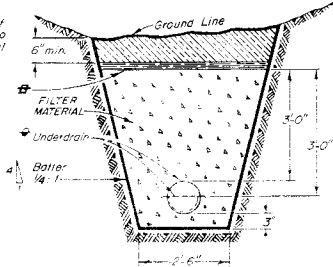
LEGEND

	STRUCTURE EXCAVATION
	STRUCTURE BACKFILL
	EARTH
	ROCK
	EMBANKMENT MATERIAL
	CONCRETE
	INSIDE DIAMETER

CAST IN PLACE CONDUIT

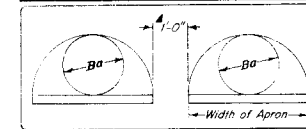


TRENCH FOR PIPE UNDERDRAIN

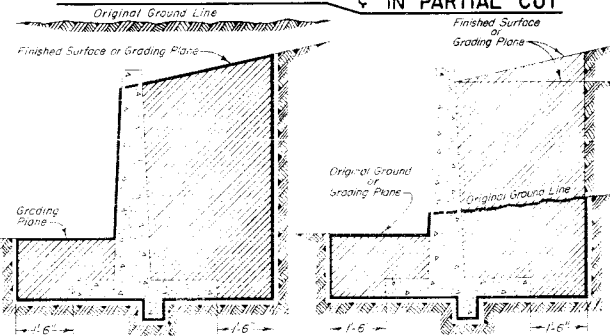


When 2 or more conduits are laid side by side they shall be placed so that the adjacent pipes will be $\frac{1}{2}$ Inside Diameter or $\frac{1}{2}$ Inside Span or 3 feet apart (including wall thickness) whichever is less. Minimum spacing shall be not less than one foot between outside walls of pipe or End Section.

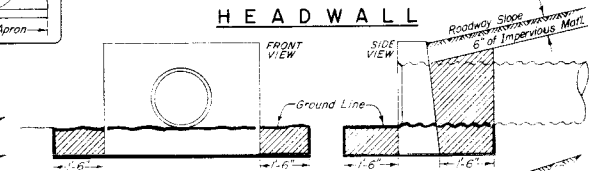
CONDUIT WITH END SECTIONS



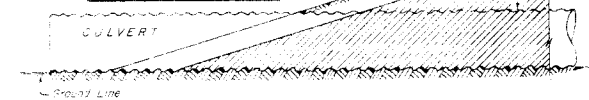
RETAINING WALL IN CUT & IN PARTIAL CUT



HEADWALL



END OF CULVERT



GENERAL NOTES (R-1)

- All work shall be done in accordance with the Standard Specifications applicable to the project.
- Where the roadway cross section is in FILL, excavation for box culverts shall be done as follows:
- Embankment shall be built up to one foot above the bottom of the box culvert.
 - The trench shall then be excavated to accommodate construction of the box culvert. Excavation and Backfill patterns different from those indicated on these sheets will be shown elsewhere on the Plans.
- Excavation for structure installation shall be classified as "Structure Excavation" unless otherwise shown on the Plans.
- Structure footings which are located in rock shall be poured out to undisturbed rock without forming.

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
DIVISION OF HIGHWAYS

EXCAVATION & BACKFILL
FOR STRUCTURES

Designed by M.P.H. Approved by B.L.H.
Made by J.H.B. Staff Design Engineer
Checked by C.L.S. Date: March 4, 1976

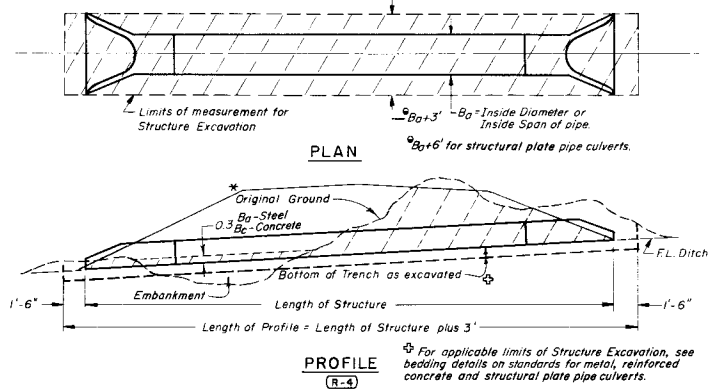
STANDARD M-206-AB

(MARCH 4, 1976)
(SHEET 2)

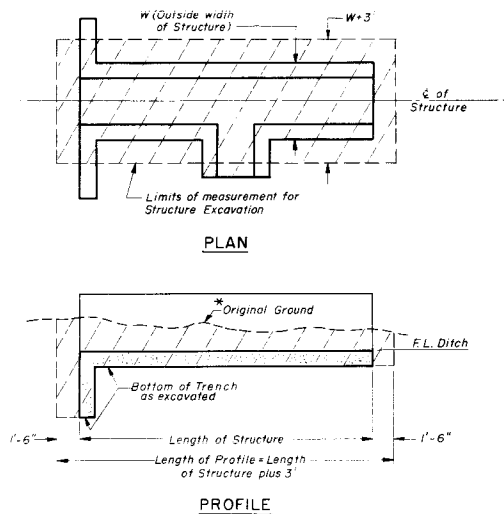
FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO			

REVISIONS:				
(R-1)	3-26-76	Revision date only.		T.A.L.
(R-2)	4-16-76	" " "		T.A.L.
(R-3)	5-8-76	" " "		T.A.L.
(R-4)	4-30-79	Revise Pipe Culvert Profile.		T.A.L.

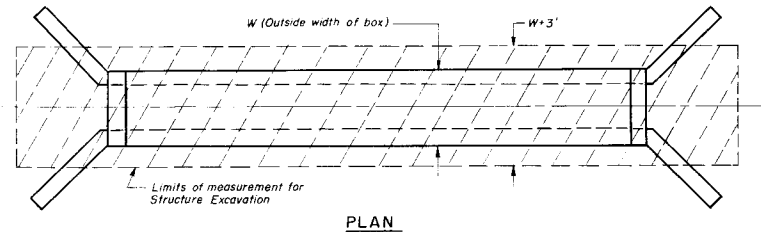
STRUCTURE EXCAVATION MEASUREMENT FOR PIPE CULVERTS



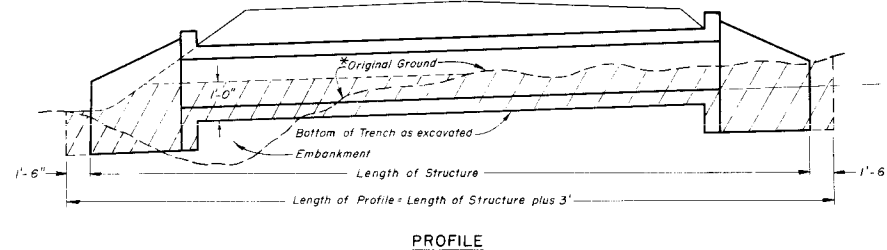
STRUCTURE EXCAVATION MEASUREMENT FOR DIVERSION OR DIVISION BOXES



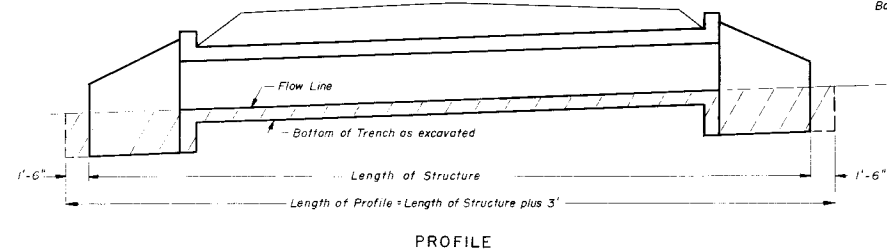
STRUCTURE EXCAVATION MEASUREMENT FOR CONCRETE BOX CULVERTS



Without Channel Change or Channel Improvement



With Channel Change or Channel Improvement



GENERAL NOTES (Continued)

TRENCH INSTALLATION:
Trenches over 5 feet in depth shall be either shored or the trench walls shall be sloped to the angle of repose. If sloped, the bottom of the slope shall be a minimum of 1 foot above the top of the pipe.

Shoring will be required when the bottom of the slope is more than 3 feet above the bottom of the trench. Shoring shall extend a minimum of one foot above the bottom of the slope.

Timber sheeting or shoring may be cut off 1 foot above the top of the pipe after backfilling is complete.

NOTE:
See Sheet 1 for General Notes and Backfilling Details.

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
DIVISION OF HIGHWAYS
EXCAVATION AND
BACKFILL
FOR STRUCTURES

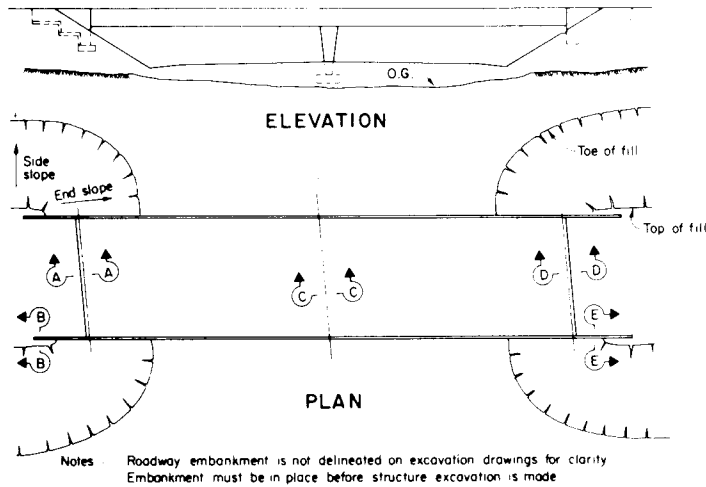
Designed by M.R.H. Approved by J.L. Jaramila
Made by H.P.B. Staff Design Eng.
Checked by Date March 4, 1976

STANDARD M-206-AB

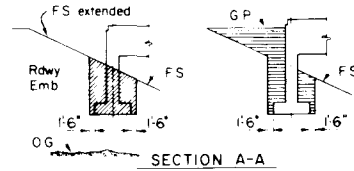
(MARCH 4, 1976)
(SHEET 3)

REVISION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VII	COLORADO			
REVISIONS				
(R-1)	3-26-76	Revision date only.		T.A.L.
(R-2)	4-15-76	" " "		T.A.L.
(R-3)	5-8-79	" " "		T.A.L.
(R-4)	4-30-79	Delete note, bottom left corner.		T.A.L.

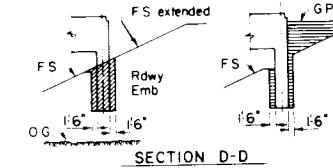
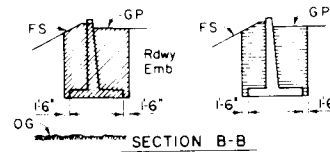
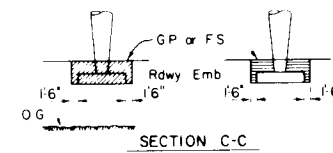
IN FILL



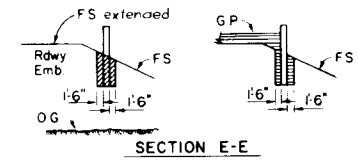
EXCAVATION — BACKFILL



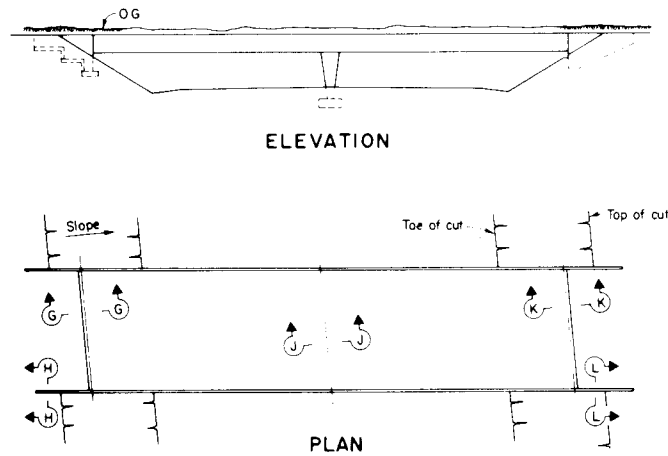
EXCAVATION — BACKFILL



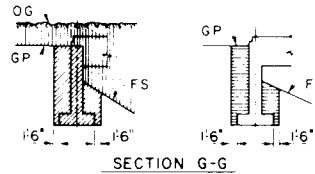
EXCAVATION — BACKFILL



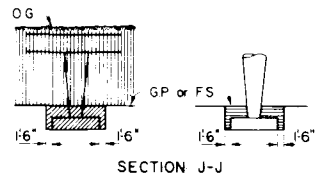
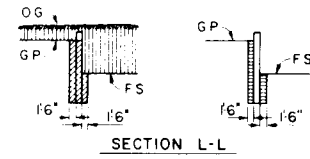
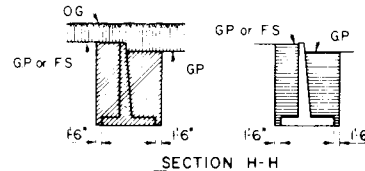
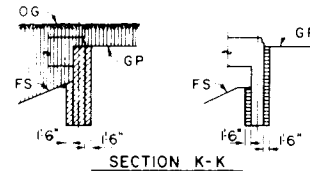
IN CUT



EXCAVATION — BACKFILL



EXCAVATION — BACKFILL



ABBREVIATIONS

OG. Original Ground
FS. Planned Finished Surface
GP. Planned Grading Plane

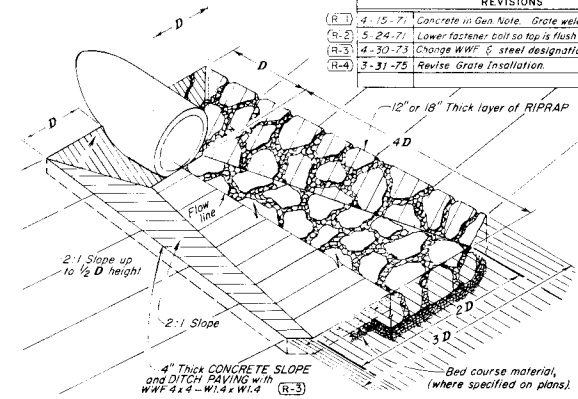
LEGEND

- Structure Excavation
- Structure Backfill
- Roadway Excavation

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
DIVISION OF HIGHWAYS
**EXCAVATION & BACKFILL
FOR STRUCTURES
(BRIDGE)**

Designed by M.R.H. Accepted by J.R.B.
Made by J.R.B. Staff Design Engineer
Checked by G.L.S. Date: March 4, 1976

REVISIONS			
(R-1)	4-15-71	Concrete in Gen Note. Grate welds.	M.R.H.
(R-2)	5-24-71	Lower fastener bolt so top is flush w conc	M.R.H.
(R-3)	4-30-73	Change WWF & steel designations.	M.R.H.
(R-4)	3-31-75	Revise Grate Installation.	M.R.H.



STEEL FOR ONE GRATE (2 required)				
NO PIECES	DESCRIPTION	LENGTH	LB./FT.	WEIGHT (LB.)
4	54" x 7.7"	40'	7.70	103
2	3 1/2" x 1/4" Flat	26 5/8"	2.98	13
2	3" x 1/4" Flat	26 5/8"	2.55	12
			TOTAL = 128 lbs. e	

STANDARD M-601-L

(JANUARY 11, 1974)

TABLE I CORRUGATED STEEL PIPE
22²/₃-inch by 1/2-inch Corrugations
Riveted, Welded or Helical Fabrication

TABLE II CORRUGATED STEEL PIPE ARCH
2 $\frac{2}{3}$ -inch by $\frac{1}{2}$ -inch Corrugations
Riveted, Welded or Helical Fabrication

METAL CULVERT WITHOUT END SECTIONS

Diagram illustrating the cross-section of a metal culvert without end sections. The top width is labeled L_1 or L_2 . The left slope is labeled "Slope 4:1 or flatter". The right slope is labeled "Slope steeper than 4:1". The vertical height is labeled H . The bottom width is labeled $2'$ Minimum.

Values for elongated pipe are shown in parentheses.

TABLE IV CORRUGATED STEEL PIPE ARCH
3-inch by 1-inch Corrugations
Riveted, Welded or Helical Fabrication

Pipe Dimensions Span x Rise (inches)	Equiv. Diameter (inches)	Min. Corner Radius (inches)	Minimum Cover, Top of Pipe to Top of Subgrade for 2 Tons per sq. ft. (inches)	Minimum Thickness Required (Decimal inches)	Maximum Fill Height above Top of Pipe in Feet Corner Bearing Pressure in Tons per Square Foot	
					2 Tons	3 Tons*
40 x 31	36	5	18	0.064	12	15+
46 x 36	42	6	18	0.064	12	15+
53 x 41	48	7	18	0.064	12	15+
60 x 46	54	8	18	0.064	12	15+
66 x 51	60	9	18	0.064	12	15+
73 x 55	66	12	18	0.064	15+	-----
81 x 59	72	14	18	0.079	15	-----
87 x 63	78	14	18	0.079	14	15+
95 x 67	84	16	18	0.109	13	15+
103 x 71	90	16	24	0.109	12	15+
112 x 75	96	18	24	0.109	11	15+
119 x 79	102	18	24	0.109	10	15
128 x 83	108	18	24	0.138	9	14

INSTALLATION OF METAL CULVERT PIPE



TABLE VI CORRUGATED ALUMINUM PIPE ARCH
22 $\frac{3}{8}$ -inch by $\frac{1}{2}$ -inch Corrugations
Riveted, Welded or Helical Fabrication

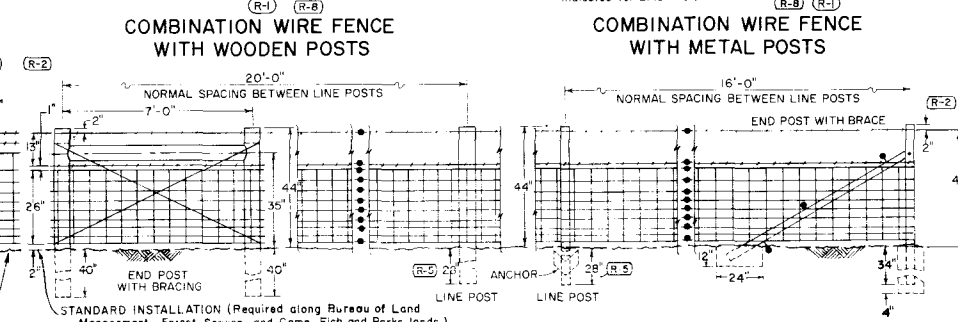
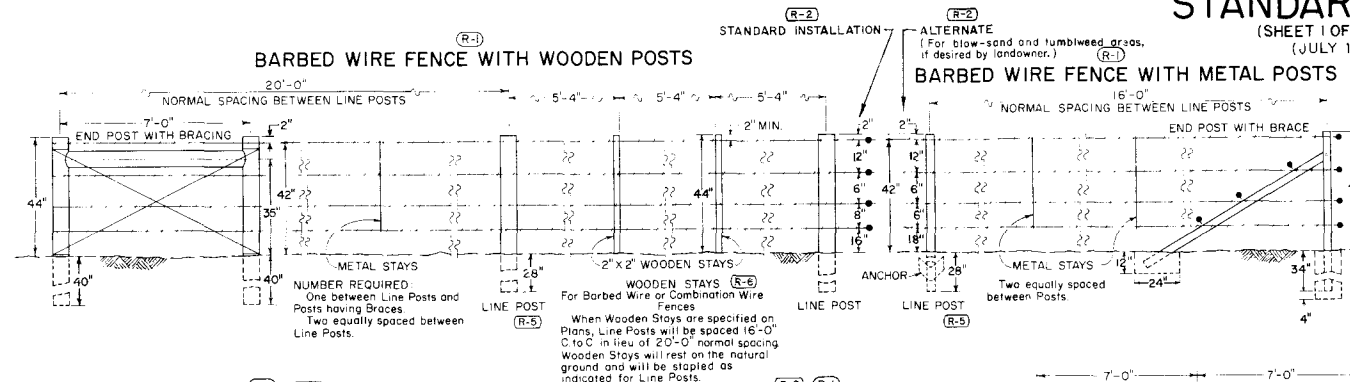
Pipe Dimensions (Inches Spans)	Equiv. Diameter (Inches)	Corner Radius (Inches)	Minimum Cover, Top of Pipe to Top of Subgrade (for 2 Tons per sq. ft.) (Inches)	Minimum Thickness Required (Inches)	Maximum Heights of Fill above Top of Pipe in Feet Corr Bearing Pressure in Tons per Square Foot
					#2 Tons 3 Tons
18 x 11	13	4	18	0.060	15
22 x 13	18	4	18	0.060	14
25 x 16	21	4	18	0.060	12
24 x 16	24	4 1/2	18	0.060	15 +
36 x 22	30	5	18	0.060	10
43 x 27	36	5 1/2	18	0.075	9
50 x 31	42	6	18	0.105	8
58 x 36	48	7	18	0.135	8
65 x 40	54	8	18	0.135	8
72 x 44	60	9	18	0.164	8
					12
					12

Designed by	M. R. H.	Approved by	Tom M. Cox
Made by	J. R. B.	Staff Design Engineer	
Checked by	O. L. S.	Date:	January 11, 1974

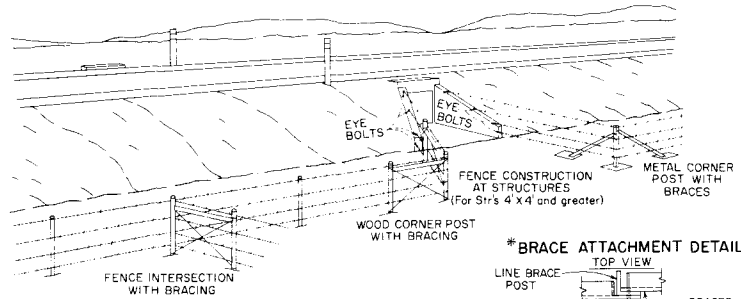
STANDARD M-607-A

(SHEET 1 OF 2 SHEETS)
(JULY 1, 1965)

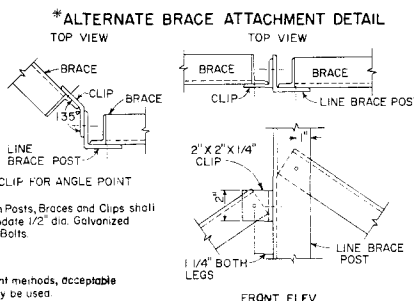
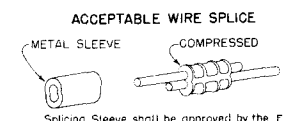
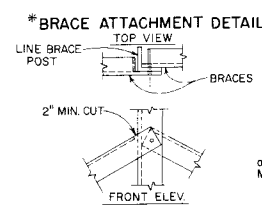
FED. ROAD REG. NO.	DIVISION	PROJECT NO.	SHEET NO.
VIII	COLORADO		



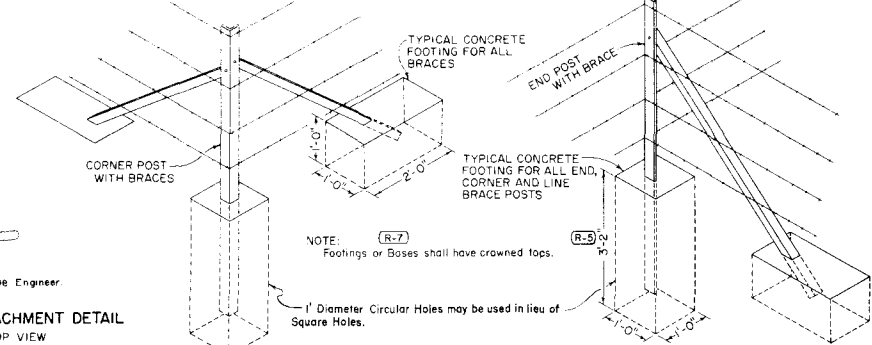
ILLUSTRATIVE SKETCH SHOWING TYPICAL EXAMPLES FOR CONSTRUCTING FENCES



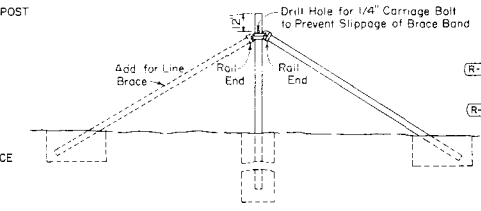
NOTE:
At all structures of 4' x 4' and over, the fence shall be ended at eye-bolts in the wings of the structure. Where the type of structure prohibits the use of eye-bolts, an end post with brace shall be used. Eye-bolts shall be made of 1/2" round bars with a minimum of six (6) inches of body length embedded in the concrete (hooked or bent) and a minimum of 1" inside eye diameter. Eye-bolts shall be furnished and installed by the Contractor. Cost of eye-bolts will be included in the contract price for fencing.



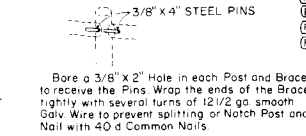
TYPICAL CORNER POST INSTALLATION



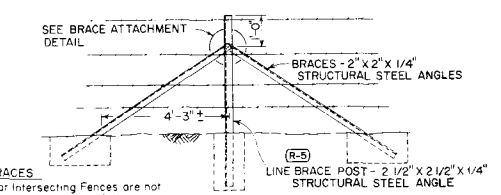
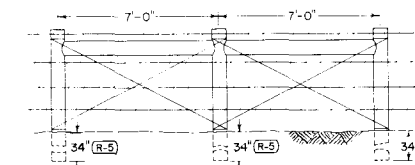
ALTERNATE POST



CROSS BRACE DOWELING DETAIL



LINE BRACES



TYPICAL INSTALLATION AT FENCE INTERSECTIONS

REVISIONS		
NO.	DESCRIPTION	DATE
(R-1)	8-2-66 Vertical Dimensions and Note	M.R.H.
(R-2)	12-8-66 Vert. Dims., Std. and Alternate	M.R.H.
(R-3)	5-6-68 Eyebolt Note and Title Block	M.R.H.
(R-4)	7-25-69 Revise post lengths	M.R.H.
(R-5)	9-15-69 Stays	M.R.H.
(R-6)	8-19-71 Delete corner post concrete note	M.R.H.
(R-8)	10-15-75 Change wire mesh.	M.R.H.

NOTE:
See Sheet 2 for General Notes.

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
DIVISION OF HIGHWAYS

WIRE FENCES AND GATES

Designed by L.E.O. Approved by J.E. Olsen
Made by T.E.F. Staff Des. Eng.
Checked by E.E.O. Date: July 1, 1965

STANDARD M-607-A

(SHEET 2)

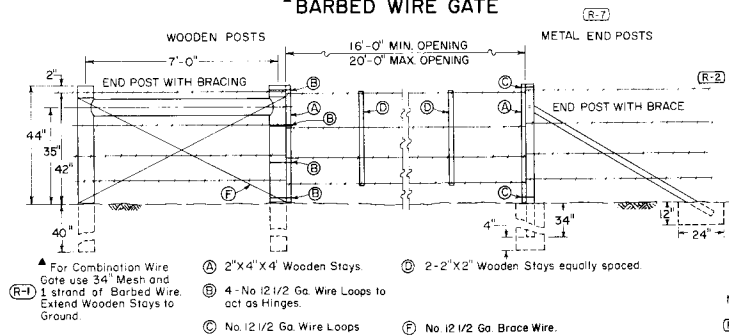
(JULY 1, 1965)

FED. ROAD REG. NO.	DIVISION	PROJECT NO.	SHEET NO.
VIII	COLO.		

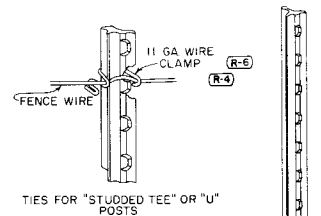
REVISIONS

REV.	DATE	DESCRIPTION	BY
R-1	8-2-66	Vert. Dims. & Gen'l. Notes	M.R.H.
R-2	12-8-66	Vert. Dims., Std and Alternate	M.R.H.
R-3	2-6-67	Gate and General Notes	M.R.H.
R-4	5-6-68	General Notes and Title Block	M.R.H.
R-5	7-25-69	Revise post lengths, Gen. notes	M.R.H.
R-6	9-15-69	General Notes	M.R.H.
R-7	8-19-71	Gen. Note, Panel Drwy Gate & Post	M.R.H.
R-8	10-15-75	Wire mesh, in details & Gen. Note	M.R.H.

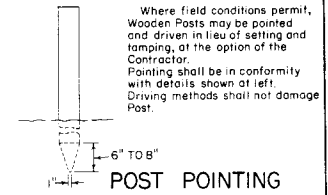
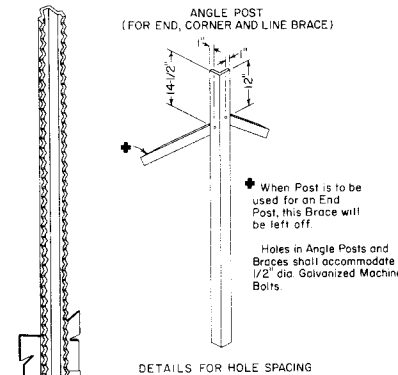
BARBED WIRE GATE



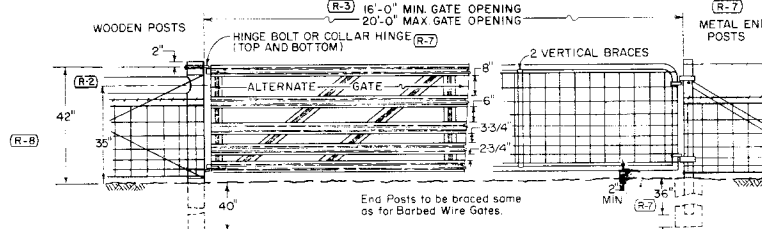
FENCE WIRE TIES



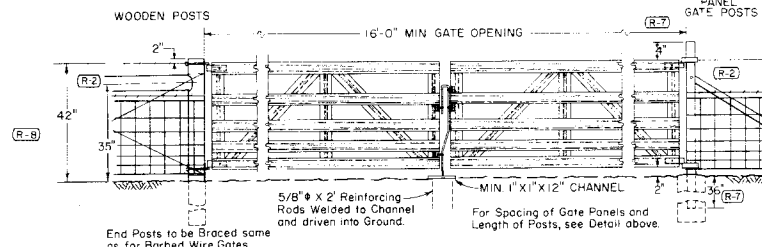
TYPICAL METAL POSTS



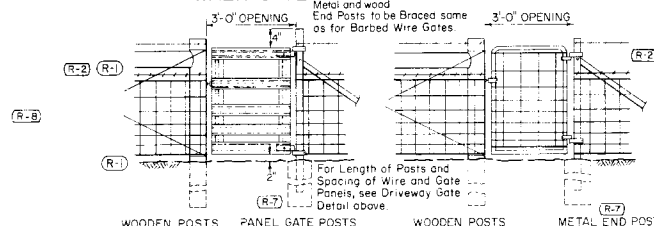
DRIVEWAY GATES



TWIN DRIVEWAY GATES



WALK GATE ALTERNATE WALK GATE



GENERAL NOTES

All work shall be done in accordance with the Standard Specifications applicable to the Project. All material dimensions and weights on this standard are nominal unless otherwise indicated.
At each location where an electric transmission, distribution or secondary line crosses a wood post fence the Contractor shall furnish and install a ground conforming to Section 9, Rule 93 of the National Electrical Safety Code.
Dimensions shown for "Standard" and "Alternate" apply for both wooden and metal post fence.
Fence wire shall be ended, double wrapped and tied off at end posts, angle posts and line brace posts. Fence to be continued shall then be repaired in the manner.
Fence wire to be placed on either road or field side of posts depending on local conditions, i.e. on curves the wire should be placed on the side of the post which would prevent tension on fence ties. This will also apply where wind drift, tumble weeds or other conditions would exert unusual pressure against the wire.

WOOD POSTS
All line posts shall have a min. dia. of four (4) inches & be 6'-0" long. Min. All end, corner, intersection and brace posts shall have a minimum diameter of five (5) inches and be 7'-0" long.
Fence wire will be stapled to wooden posts or tied to metal posts as shown marked on barbed wire or combination wire fence details.
Staples shall be No. 9 wire min. at least 1/2 inches long.
METAL POSTS
All posts and braces shall be of the types and weights shown or acceptable equivalents.
Holes to be provided in end, corner and gate posts as detailed.

CORNER AND LINE BRACE POSTS:
Type - 2 1/2" X 2 1/2" X 1/4" Structural Steel Angles
Weight - 3.81 lbs./lin. ft.
Length - 6'-6" Min.
No. of Braces - 2
LINE POSTS:
Type - "Studded Tee" or "U"
Weight - 2.81 lbs./lin. ft. (without Anchor)
Length - 6'-0" Min.
Anchor - Securely fastened with bearing surface sufficient to resist movement of post. Weight - 0.57 lb. Min.
METAL END POSTS AND GATE POSTS:
Type - 2 1/2" X 2 1/2" X 1/4" Structural Steel Angles.
Weight - 3.81 lbs./lin. ft.
Length - 6'-6" Min.; Panel Gate, 7'-0" Min.
No. of Braces - 1
BRACES (For Corner, End or Line Brace Posts):
Type - 2 X 2 X 1/4" Structural Steel Angles.
Weight - 1.08 lbs./lin. ft.
Length - Same as corner and end posts used.
Posts shall meet requirements of Part 4.5 of U.S. Dept. of Commerce Commercial Standard B84-B. Acceptable material includes re-rolled railroad rails.

FOOTINGS OR BASES
Concrete shall be Class A, B or D. Concrete with light weight aggregates conforming to ASTM C 330 will be permitted.

ALTERNATES
END, CORNER AND LINE BRACE POSTS
Type - 2 1/2" Std. Galvanized Pipe
Weight - 5.79 lbs./lin. ft. ± 5%
BRACES
Type - 1 3/8" O.D. Tubular Steel with 1 1/2" Brace Band, Hinge Bolt and 1 3/8" I.D. Rail End, all Galvanized.
Weight - 1.6 lbs./lin. ft. ± 5%
Length - 6'-6" Min.

BARBED WIRE
Steel barbed wire shall conform to ASTM Designation A 121, 12 1/2 Gauge with Class 1 coating.
Aluminum barbed wire shall conform to ASTM Designation B 211, with alloy 5052-H38 for the line wire and alloy 5052-H38 for the bristles.

WIRE MESH:
Wire mesh used in combination wire fence shall be galvanized and conform to the following:
STANDARD Woven Wire Field Fence, Style or Design No.
832-6-11 (32" width) 65 lbs./lin. ft.
726-6-11 (26" width) 55 lbs./lin. ft.
ALTERNATE 4'x4' Wire "V" Mesh
34" width - 75 lbs./lin. ft.
26" width - 54 lbs./lin. ft.
Cross wires - 1 strand - 11/16" gage min.
Horizontal - 2 strand - 12" gage

GATES
DRIVEWAY GATES (PANEL) (ALTERNATE)
Height - approximately 42" (15 panels) --- Width of gate opening - 16'-0" Min.
Weight - Galvanized Steel, 75 lbs.
Gates to be of Riveted construction as follows: Min. 4 No. 10 rivets at each right angle connection and where diagonal braces connect to horizontal panels, Min. 3 No. 10 rivets where diagonal braces connect to top and bottom panels.
DRIVEWAY GATES:
Height - 42"
Weight - Not less than 90 lbs. complete with latch and hinges
Width of gate opening - 16'-0"
Gate Frame - 1" I.D. Standard Galvanized Pipe or acceptable equivalent and shall be of all welded construction.
Mesh shall enclose the gate frame as shown and shall be the same mesh design as the fence, or as approved by the Engineer.

WALK GATES:
Height - 42"
Weight - Not less than 90 lbs. complete with latch and hinges
Width of gate opening - 16'-0"
Gate Frame - 1" I.D. Standard Galvanized Pipe or acceptable equivalent and shall be of all welded construction.
Mesh shall enclose the gate frame as shown and shall be the same mesh design as the fence, or as approved by the Engineer.

WOODEN STAYS
Wooden stays shall be untreated native timber. Stay dimensions, including length, shall have a tolerance of ± 1/4".

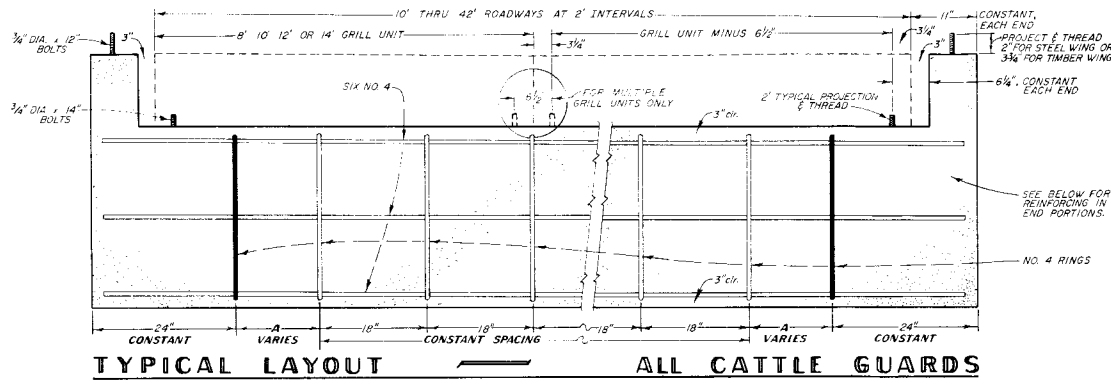
DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
DIVISION OF HIGHWAYS

WIRE FENCES AND GATES

Designed by L.E.O. Approved by E.E. Olson
Made by T.E.F. Staff Des. Eng.
Checked by E.E.O. Date: July 1, 1965

STANDARD M-611-D (FEBRUARY 9, 1978) (SHEET 2)

FEDERAL ROAD DISTRICT NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO			



FOUNDATION QUANTITIES

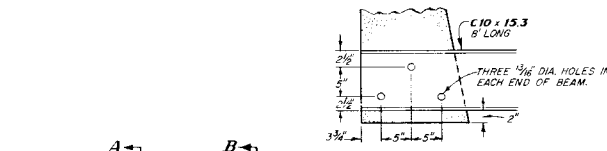
ROADWAY WIDTH (ft.)	USE GRILL UNITS (ft.)	PRECAST		CAST IN PLACE		TOTAL GRILL WEIGHT (lbs.)
		CONCRETE (cu. yd.)	REIN. STEEL (lbs.)	CONCRETE (cu. yd.)	REIN. STEEL (lbs.)	
10	10	2.9	205	3.8	298	11 1098
12	12	3.2	230	4.3	323	14 1481
14	14	3.8	255	4.8	348	17 1915
16	8 8	4.3	288	5.2	382	11 1482
18	8 10			5.7	407	14 1830
20	10 10			6.2	432	17 2178
22	10 12			6.6	456	11 2070
24	12 12			7.1	491	14 2962
26	12 14			7.5	515	17 3366
28	14 14			8.0	550	11 3830
30	10 10 10			8.5	575	14 3267
32	10 12 10			9.0	600	17 3659
34	12 10 12			9.4	634	11 4051
36	12 12 12			9.9	659	14 4443
38	12 14 12			10.4	684	17 4877
40	14 12 14			10.9	719	11 5311
42	14 14 14			11.3	743	14 5745

WELDED GRILL UNITS

SIZE	WEIGHT (lbs.)
8'	741
10'	1089
12'	1481
14'	1915

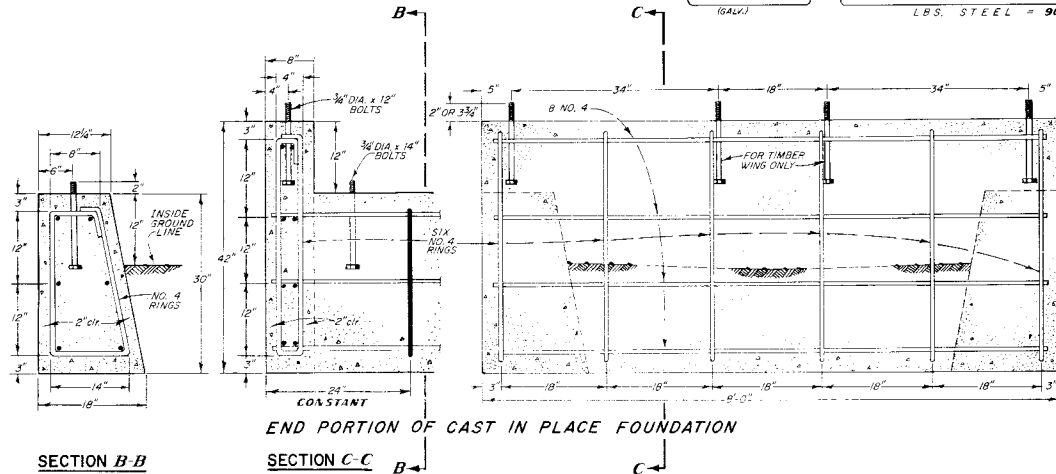
WING QUANTITIES

ONE TIMBER WING	ONE STEEL WING
a 6" x 8" x 7'-4"	a 2" x 2" x 1/4" x 76"
b 4" x 8" x 8'-0"	b 2" x 2" x 1/4" x 76"
c 2" x 6" x 7'-0"	c 2" x 2" x 1/4" x 71"
d 2" x 6" x 5'-8"	d 1 1/2" x 1 1/2" x 1/4" x 56"
e 2" x 6" x 7'-0"	e 1 1/2" x 1 1/2" x 1/4" x 41"
f 2" x 6" x 2'-10"	f 1 1/2" x 1 1/2" x 1/4" x 26"
g 2" x 6" x 4'-8"	g 5" x 6" x 1/4" BAR
h 2" x 6" x 6'-8"	h TWO 3" x 10" x 1/4" BARS
16# NAILS - 2 lb (GALV.)	6" x 8" x 7'-8" TIMBER POST
	LBS. STEEL = 90



END PORTION OF ONE SIDE OF PRECAST PORTABLE FOUNDATION

PRECAST TYPE



END PORTION OF CAST IN PLACE FOUNDATION

CAST IN PLACE TYPE

HS 20-44 LOADING

DEPARTMENT OF HIGHWAYS
 STATE OF COLORADO
 DIVISION OF HIGHWAYS

CATTLE GUARD
 WELDED GRILL UNITS

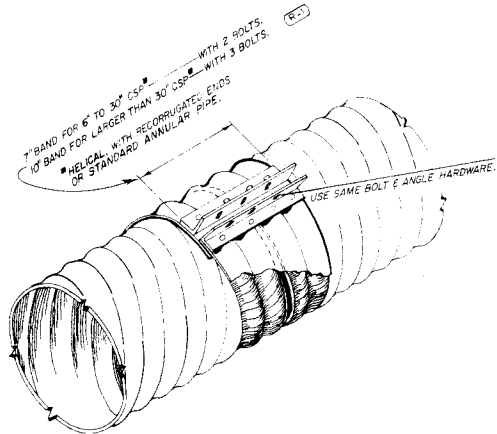
10' Thru 42' Roadways

Designed by J. R. B. (JRB)
 Made by J. R. B.
 Checked by T. A. L. (TAL)
 Approved by J. R. B. (JRB)
 STAFF DESIGN ENGINEER
 Date: Feb. 7, 1978

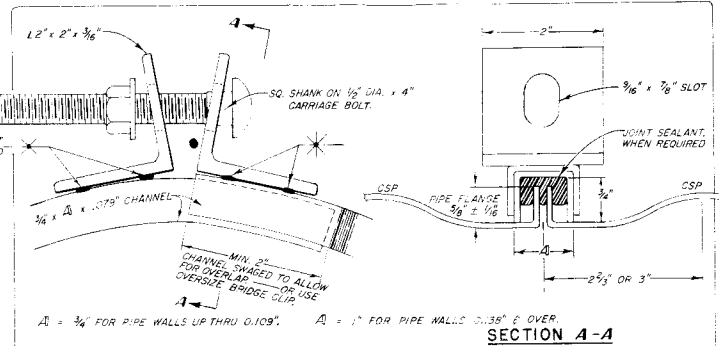
STANDARD M-707-CB (JANUARY 25, 1978)

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VII	COLORADO			

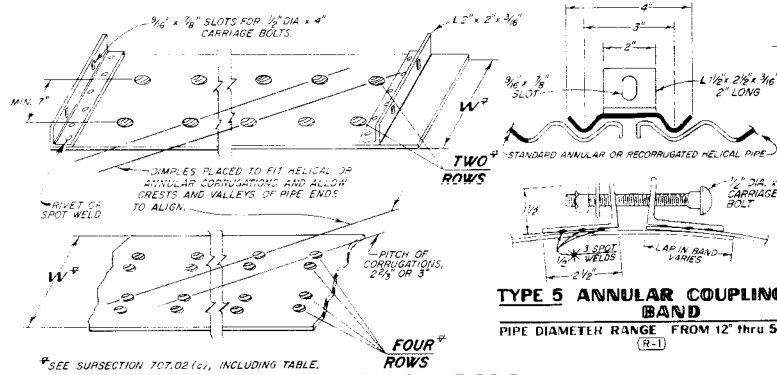
REVISIONS			
(R-1)	11-3-78	All types. 2nd Gen. note. Add Type 5.	T.A.L.



(R-1) **TYPE 1 ANNULAR BAND FOR HELICAL PIPE WITH RECORRUGATED ENDS & STANDARD ANNULAR PIPE**

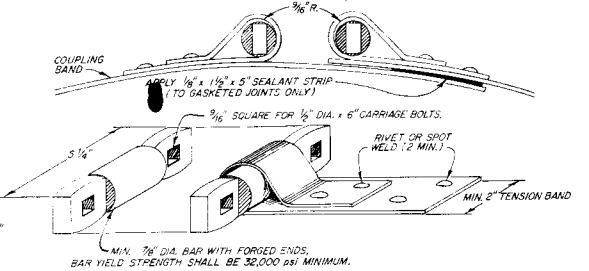
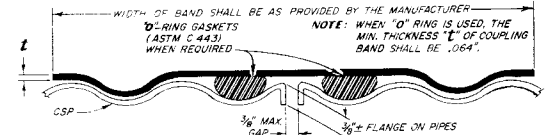


(R-1) **TYPE 3 CHANNEL COUPLING BAND**
PIPE DIAMETER RANGE FROM 12" THRU 54"

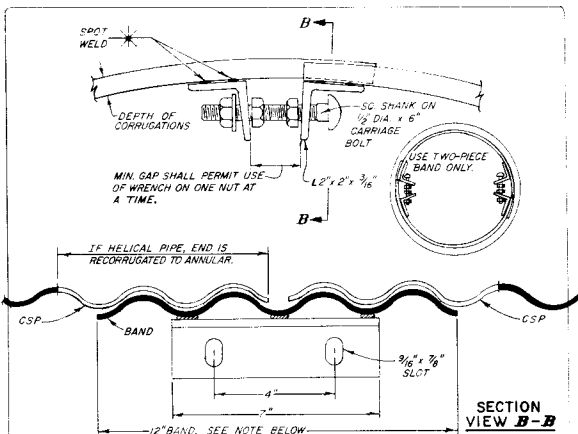


(R-1) **TYPE 2 DIMPLED COUPLING BAND**

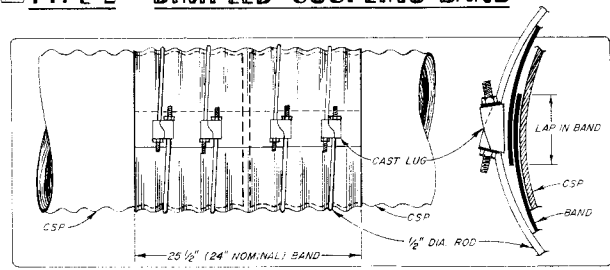
PIPE DIAM.	CULVERT WALL	CORRUGATION	t
THRU 72"	.064" TO .168"	2 1/2" x 1/8"	.052"
78" THRU 84"	.168"	2 1/2" x 1/8"	.064"
48" THRU 64"	.064" TO .109"	3" x 1"	.054"
80" THRU 120"	.079" TO .109"	3" x 1"	.064"



(R-1) **TYPE 4 ANNULAR COUPLING BAND**



(R-1) **TYPE 6 INTERNAL ANNULAR COUPLING BAND**



(R-1) **TYPE 7 SIPHON COUPLING BAND**

GENERAL NOTES (R-1)

- All work shall be done in accordance with the Standard Specifications & AASHTO M 36 except as shown herein.
- All Coupling Band connection hardware shall be galvanized or coated in accordance with the applicable specifications for this project.
- For Pipe Arches use the same width band as for round pipe of equal periphery. Dimensions and thicknesses are minimum.
- TOLERANCE:** Inside pipe diameters shall not vary more than 1/2" for all sizes of pipes.
- Spot welds shall develop minimum required strength of strap or angle.
- DISCLAIMER:** Infringement on patented couplings shall be the Contractor's responsibility in accordance with Subsection 107.03.

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
DIVISION OF HIGHWAYS

TYPICAL ALTERNATE COUPLING BANDS FOR CORRUGATED CULVERT PIPE

Designed by ABCREOLS
Made by JRB
Checked by T.A.L.

Approved by J.T. Ummer
Staff Design Engineer
Date: January 25, 1978

STANDARD S-612-1A

(SHEET 1 OF 4 SHEETS)

OCTOBER 28, 1977

FEDERAL ROAD DISTRICT NO.	SECTION NO.	PROJECT NO.	SHEET NO.	TOTAL SHEETS
001	001	001	001	001

REVISIONS	
NO.	DESCRIPTION

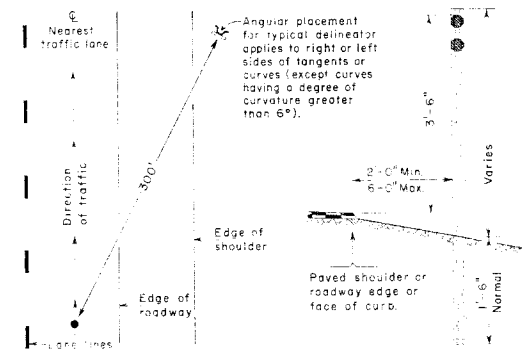
SPACING FOR DELINEATOR POSTS ON HORIZONTAL CURVES				
D ¹ DEGREE OF CURVE	R ¹ RADIUS (FEET)	* SPACING ON CURVE (FEET)	* SPACING IN ADVANCE AND BEYOND CURVE (FEET)	
0° 30'	14600	300	300	300
1° 00'	57300	226	300	300
1° 30'	39200	164	300	300
2° 00'	28650	130	300	300
2° 30'	22920	142	284	300
3° 00'	9100	129	259	300
3° 30'	6371	120	239	300
4° 00'	4326	112	223	300
4° 30'	2733	105	210	300
5° 00'	1460	99	199	298
5° 30'	10418	94	189	283
6° 00'	9550	90	81	271
6° 30'	8815	87	173	260
7° 00'	8186	83	166	250
7° 30'	7640	80	160	240
8° 00'	7163	77	155	232
8° 30'	6741	75	150	225
9° 00'	6367	73	145	218
9° 30'	6032	71	141	212
10° 00'	5730	69	137	206
10° 30'	5457	67	134	200
11° 00'	5209	65	130	195
11° 30'	4993	64	127	191
12° 00'	4775	62	124	186
12° 30'	4570	61	121	182
13° 00'	4380	60	119	179
13° 30'	4196	59	117	176
14° 00'	4028	58	115	173
14° 30'	3875	57	113	170
15° 00'	3736	56	111	167
15° 30'	3601	55	109	164
16° 00'	3479	54	107	161
16° 30'	3361	53	105	158
17° 00'	3247	52	103	155
17° 30'	3137	51	101	152
18° 00'	3031	50	99	149
18° 30'	2929	49	97	146
19° 00'	2831	48	95	143
19° 30'	2737	47	93	140
20° 00'	2647	46	91	137
20° 30'	2561	45	89	134
21° 00'	2479	44	87	131
21° 30'	2400	43	85	128
22° 00'	2324	42	83	125
22° 30'	2251	41	81	122
23° 00'	2181	40	79	119
23° 30'	2113	39	77	116
24° 00'	2047	38	75	113
24° 30'	1983	37	73	110
25° 00'	1921	36	71	107
25° 30'	1861	35	69	104
26° 00'	1803	34	67	101
26° 30'	1746	33	65	98
27° 00'	1691	32	63	95
27° 30'	1638	31	61	92
28° 00'	1586	30	59	89
28° 30'	1536	29	57	86
29° 00'	1486	28	55	83
29° 30'	1438	27	53	80
30° 00'	1390	26	51	77
30° 30'	1344	25	49	74
31° 00'	1298	24	47	71
31° 30'	1253	23	45	68
32° 00'	1209	22	43	65
32° 30'	1166	21	41	62
33° 00'	1124	20	39	59
33° 30'	1082	19	37	56
34° 00'	1041	18	35	53
34° 30'	1000	17	33	50
35° 00'	960	16	31	47
35° 30'	921	15	29	44
36° 00'	882	14	27	41
36° 30'	844	13	25	38
37° 00'	806	12	23	35
37° 30'	769	11	21	32
38° 00'	732	10	19	29
38° 30'	696	9	17	26
39° 00'	660	8	15	23
39° 30'	625	7	13	20
40° 00'	590	6	11	17
40° 30'	556	5	9	14
41° 00'	522	4	7	11
41° 30'	489	3	5	8
42° 00'	456	2	3	5
42° 30'	424	1	1	2

* ON CONVENTIONAL ROADWAYS OMIT THE THIRD SPACE AND DOUBLE THE SPACING IN THE CURVE AND IN ADVANCE OF AND BEYOND THE CURVE (500' MAX).
 R = 5730
 * SPACING FOR CURVES NOT SHOWN MAY BE COMPUTED FROM THE FORMULA: $S = \sqrt{R \cdot \Delta}$
 SPACING IN ADVANCE OF AND BEYOND CURVE: $S = \sqrt{R \cdot \Delta}$
 FIRST SPACE: $S = \sqrt{R \cdot \Delta}$
 SECOND SPACE: $S = \sqrt{R \cdot \Delta}$
 THIRD SPACE: $S = \sqrt{R \cdot \Delta}$
 SPACES SHOULD NOT BE LESS THAN 20 FEET NOR MORE THAN 300 FEET.

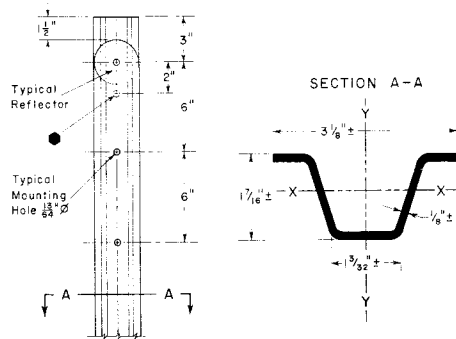
GENERAL NOTES

- All work shall be done in accordance with the Standard Specifications applicable to the Project.
- See the tabulation of Quantities included in the Plans for the numbers and locations of delineators required.
- The color of delineators shall, in all cases, conform to the color of Edge Lines stipulated in the latest edition of the Manual on Uniform Traffic Control Devices and the Colorado Supplement thereto, except:
 - Red delineators.
 - Type III delineators (Yellow Hazard Marker).
- The color of delineator posts and all special mounting brackets shall be Interstate Green.
- Type I (Crystal) delineators are optional for all conventional roadways.
- Type I (Crystal) delineators shall be installed on the right side of expressway roadways (Except Note No. 9).
- Type I (Yellow) delineators are optional on the left side of expressway roadways. They may be placed in the median or attached to median barriers.
- Red delineators may be installed on the reverse side of any delineator and/or a separate post on one-way roadways or ramps where investigation shows a need for wrong-way movement protection.
- Delineation shall be optional on sections of roadway between interchanges where fixed-source lighting is in operation.
- Interchange ramps shall be delineated on the right side, the left side, or both sides with Type I (Crystal or Yellow) delineators of the appropriate color as illustrated on sheet number 3.
- Frontage road delineators are not to be installed where they might be misleading to mainline traffic.
- Spacing of delineators for tunnels and snow sheds shall be as directed by the Engineer.
- Normal spacing will be 528 feet for tangent sections and a 200 foot minimum will apply to a "last space". (Maximum spacing is also 528 feet.) At all other locations, such as A B D lanes, Ramps, Width Transitions and Turn Lanes a "last space" should not be less than 50% of the spacing shown for that location.
- Type I delineators shall be installed at 100 foot spaces on all acceleration lanes, deceleration lanes, and lane transitions involving pavement width changes.
- Type I delineators shall be installed at 100 foot spaces on interchange ramp tangent sections and by the spacing table on ramp curves. Spacing "in advance of and beyond curve" does not apply to ramp curves.
- For spacing on a curve that follows a tangent section with spacing shorter than those shown in the curve table, modify the table so that the curve spacing is no greater than the tangent spacing.
- Where guard rail intrudes into the space between the pavement edge and the line of delineators, place the delineators immediately above or behind the rail face.
- When normal spacing falls on an intersecting roadway, driveway, etc. the delineator may be moved either direction a distance not exceeding one-quarter of the normal spacing.
- The angular placement for all delineators should be by the traffic engineering method, with the face of the delineator at the centerline of the nearest lane of approaching traffic at a point 300 feet away for as directed by the Engineer for special or hazard/dout locations, and curves having a degree of curvature greater than 6°.
- Where practicable the approach ends of islands and medians should be delineated.

TYPICAL DELINEATOR PLACEMENT



TYPICAL U-2 DELINEATOR POST



POST NOTES

Steel posts shall be hot-rolled steel or re-rolled rail steel.

Posts are to weigh 2 lbs./ft. with a mill tolerance of minus 3 1/2% of the weight of any one post being allowed.

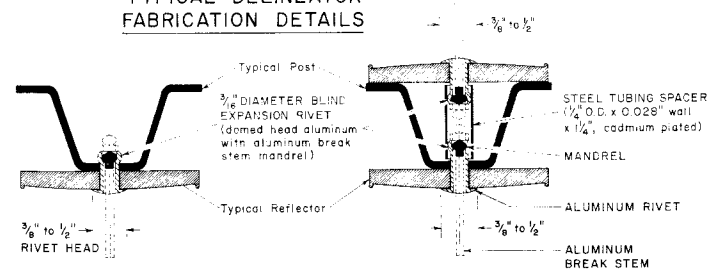
Alternate post is acceptable if section modulus is at least 0.200 in.³ about the X-X axis and at least 0.250 in.³ about the Y-Y axis.

Posts shall be set in drilled or excavated holes, placed plumb and firmly tamped in place, or may be driven plumb.

A minimum of 3 holes of 1 3/16" diameter, spaced as shown, are required for all delineator posts.

- An additional hole is required when the Adjustable Reflector Bracket is used.

TYPICAL DELINEATOR FABRICATION DETAILS



TYPICAL INSTALLATION
 SINGLE DIRECTION

TYPICAL INSTALLATION
 BACK-TO-BACK

DEPARTMENT OF HIGHWAYS
 STATE OF COLORADO
 DIVISION OF HIGHWAYS
TYPICAL DELINEATOR INSTALLATIONS

Designed By: P. J. B. Approved By: J. B. B.
 Made By: J. B. B. Draft Traffic Engineer
 Checked By: J. B. B. Date: OCT 28, 1977

STANDARD S-612-1A

(SHEET 2 OF 4 SHEETS)
OCTOBER 28, 1977

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
III	COLORADO			

REVISIONS

DELINEATOR SYMBOLS

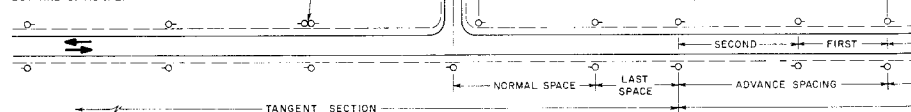
- TYPE I (CRYSTAL)
- TYPE I (YELLOW)
- TYPE I (RED)
- ⊗ TYPE II (2 CRYSTAL)
- ⊗ TYPE II (2 YELLOW)
- ⊗ TYPE II (CRYSTAL-CRYSTAL, BACK-TO-BACK)
- ⊗ TYPE II (YELLOW-YELLOW, BACK-TO-BACK)
- ⊗ TYPE II (CRYSTAL-RED, BACK-TO-BACK)
- ⊗ TYPE II (YELLOW-RED, BACK-TO-BACK)
- ⊗ TYPE III (3 YELLOW, HAZARD MARKER)
- ⊗ TYPE III (2 CRYSTAL-RED, BACK-TO-BACK)
- ⊗ TYPE III (2 YELLOW-RED, BACK-TO-BACK)

TYPICAL INSTALLATION FOR TANGENT SECTION AND CURVES

NOTE: ϕ IS THE DISTANCE LEFT OVER AFTER CURVE SPACING AND IS TO BE PRORATED AMONG ALL CURVE SPACINGS SO THAT THE LAST DELINEATOR FALLS AT THE END OF THE CURVE.

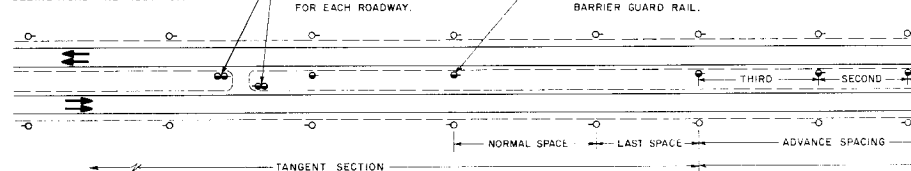
CONVENTIONAL ROADWAY

DELINEATORS ARE NOT REQUIRED BUT ARE OPTIONAL.



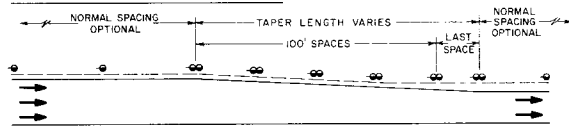
EXPRESSWAY ROADWAYS

DELINEATORS ARE REQUIRED.

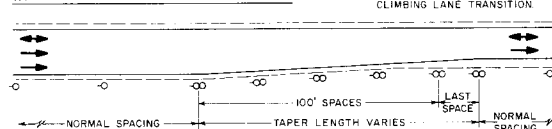


TYPICAL INSTALLATION FOR LANE TRANSITION

WIDTH REDUCTION ON LEFT SIDE



WIDTH REDUCTION ON RIGHT SIDE

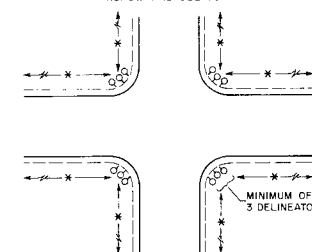


NOTE: THIS DELINEATOR TREATMENT IS ALSO REQUIRED FOR PAVEMENT WIDTH INCREASE.

DETAIL ALSO APPLIES TO HILL CLIMBING LANE TRANSITION

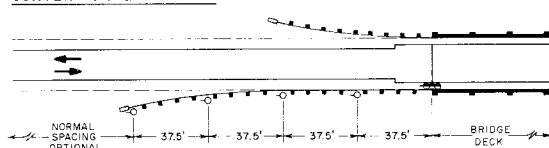
TYPICAL INSTALLATION FOR MINOR INTERSECTION

* = NORMAL SPACING IF THIS ROADWAY IS DELINEATED.

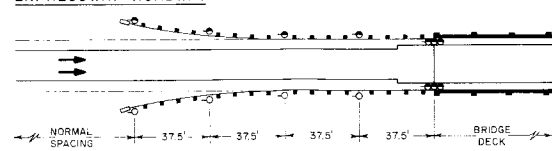


TYPICAL INSTALLATION FOR BRIDGE APPROACHES

CONVENTIONAL ROADWAY



EXPRESSWAY ROADWAY



BRIDGE NOTES

WHERE CURB TO CURB WIDTH OF BRIDGE IS EQUAL TO OR GREATER THAN ROADWAY WIDTH PLUS USABLE SHOULDER WIDTH, USE THE TYPE III DELINEATOR HAZARD MARKER ONLY AND OMIT ALL THE TYPE I DELINEATORS.

FOR GUARD RAIL INSTALLATIONS WHERE APPROACH END IS NOT FLARED, PLACE A TYPE III DELINEATOR HAZARD MARKER IMMEDIATELY IN ADVANCE OF APPROACH END.

ALL TYPE I DELINEATORS ARE TO BE MOUNTED ABOVE OR IMMEDIATELY BEHIND GUARD RAIL AND ARE NOT A CONSTANT DISTANCE FROM THE ROADWAY.

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
DIVISION OF HIGHWAYS
**TYPICAL
DELINEATOR
INSTALLATIONS**

Designed By: J. B. G. Approved By: J. B. G.
Checked By: J. B. G. Date: OCT 28, 1977

STANDARD S-612-1A

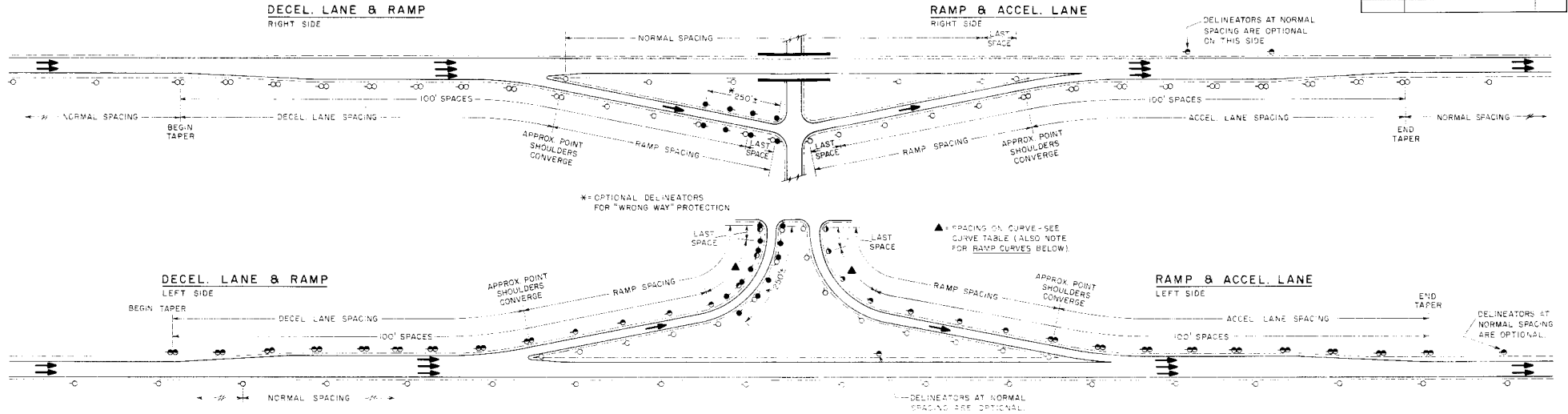
(SHEET 3 OF 4 SHEETS)

OCTOBER 28, 1977

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VII	COLORADO			

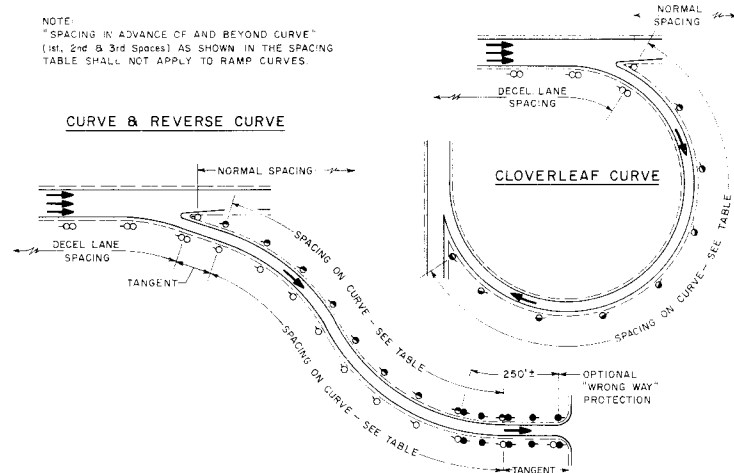
REVISIONS	

TYPICAL INSTALLATION FOR INTERCHANGES

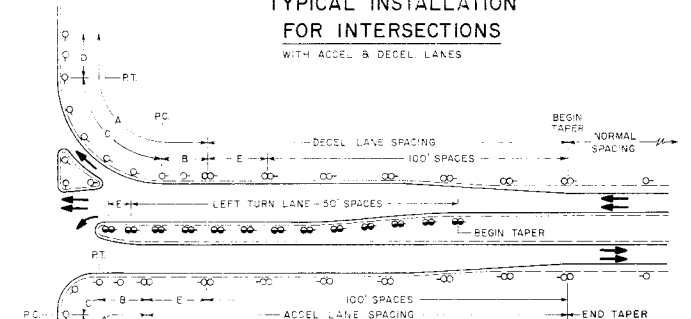


TYPICAL INSTALLATION FOR RAMP CURVES

NOTE:
"SPACING IN ADVANCE OF AND BEYOND CURVE"
(IM. 2nd & 3rd Spaces) AS SHOWN IN THE SPACING
TABLE SHALL NOT APPLY TO RAMP CURVES.



TYPICAL INSTALLATION FOR INTERSECTIONS WITH ACCEL & DECEL LANES



LEGEND:
A = SEE CURVE SPACING TABLE
B = ADVANCE SPACES (FIRST & SECOND)
C = SPACING ON CURVE
D = BEYOND SPACES (FIRST & SECOND)
E = LAST SPACE

NOTE:
DELINTEATORS MAY BE INSTALLED IF
NECESSARY FOR "WRONG WAY" PROTECTION.
SEE OTHER TYPICAL INSTALLATIONS.

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
DIVISION OF HIGHWAYS
**TYPICAL
DELINTEATOR
INSTALLATIONS**

Designed By: F. J. B. Approved By: J. J. B.
Made By: F. J. B. Staff Traffic Engineer
Checked By: J. J. B. Date: OCT 28, 1977

NOTE: See sheet No. 4 for typical Construction Traffic Sign and Channelizing Device requirements for each case.

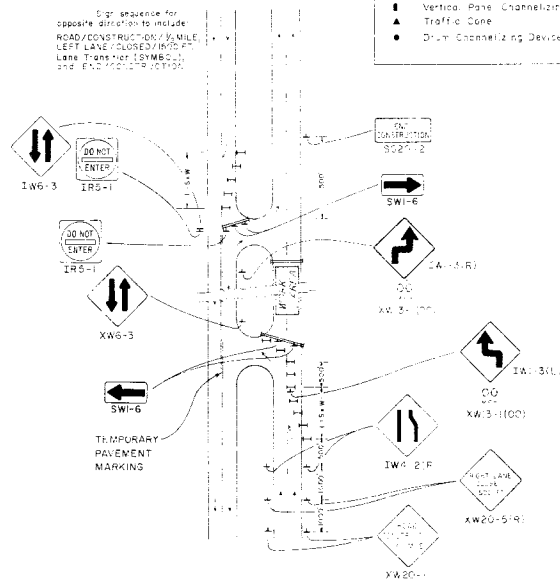
STANDARD S-614-39A

SHEET 1 OF 4 SHEETS
MAY 17, 1977

REVISIONS		
REV.	DATE	REVISIONS
1	5-8-78	Rev. Date Only
2		
3		
4		
5		
6		
7		
8		
9		
10		

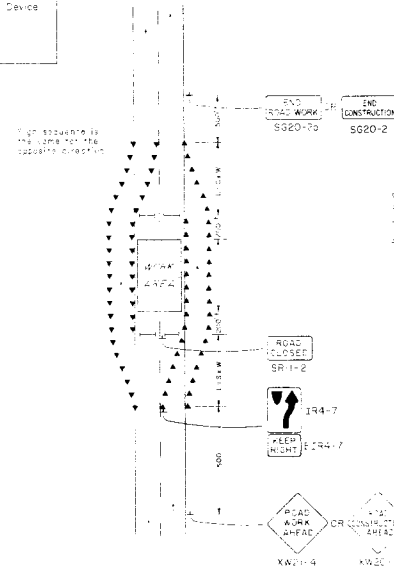
LEGEND	
	Type 3 Barricade
	Type 1 or 2 Barricade
	Concrete Barrier (Temporary)
	Flagman
	Vertical Panel Channelizing Device
	Traffic Cone
	Drum Channelizing Device

CASE I



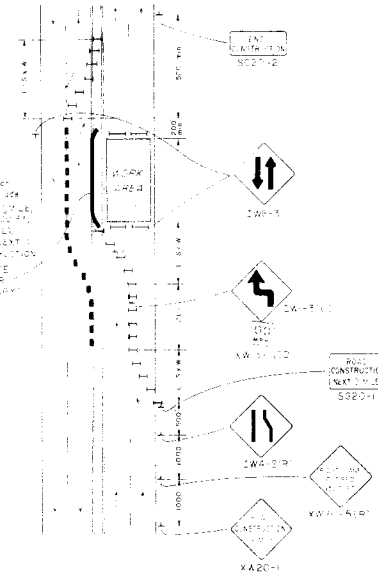
TYPICAL APPLICATION
CLOSURE OF ONE ROADWAY,
4-LANE DIVIDED HIGHWAY

CASE II



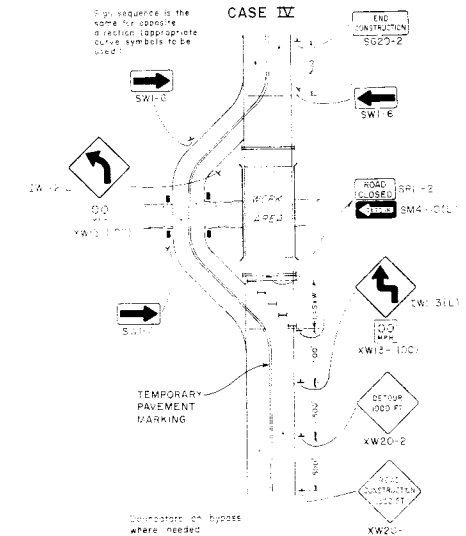
TYPICAL APPLICATION
ROAD CLOSURE, USE OF
ADJACENT SHOULDERS

CASE III



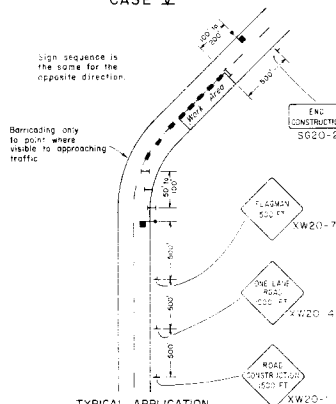
TYPICAL APPLICATION
CLOSURE OF HALF OF 4-LANE
HIGHWAY, NOT PHYSICALLY DIVIDED

CASE IV



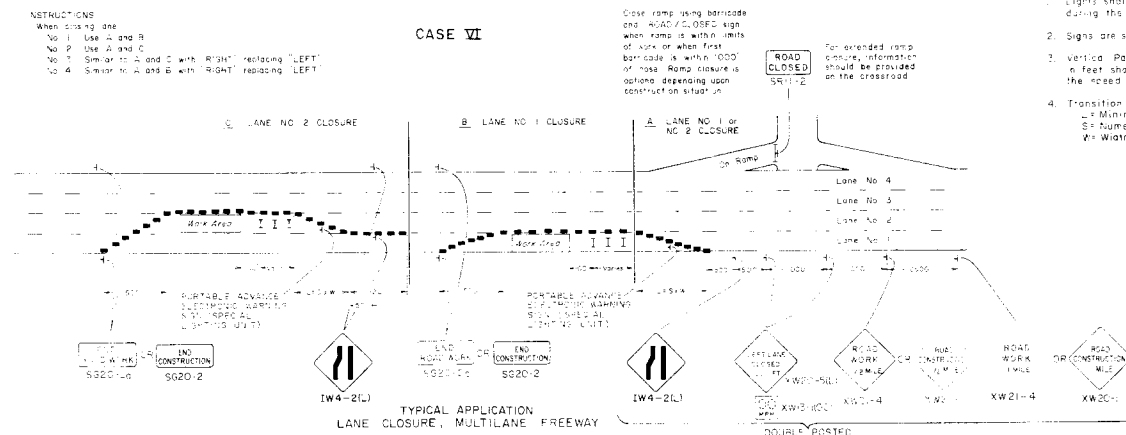
TYPICAL APPLICATION
ROAD CLOSURE, BYPASS
DETOUR PROVIDED

CASE V



TYPICAL APPLICATION
LANE CLOSURE, 2-LANE
HIGHWAY, AT CURVE

CASE VI



TYPICAL APPLICATION
LANE CLOSURE, MULTILANE
FREEWAY

NOTES

1. Lights shall be used to mark flagman stations during the hours of darkness.
2. Signs are shown for one direction of travel, only.
3. Vertical Panel, Traffic Cone, and Drum spacing in feet shall equal the numerical value of the speed limit (e.g. 45 mph = 45 ft spacing).
4. Transition Taper: L = S x W.
L = Minimum length of taper
S = Numerical value of speed limit or 85 percentile speed
W = Width of offset

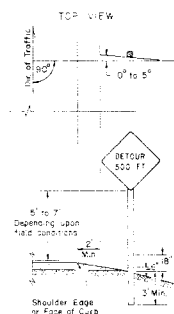
DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
DIVISION OF HIGHWAYS
TRAFFIC SIGNING
FOR HIGHWAY
CONSTRUCTION

[illegible]

100-443887-100

[illegible]

(Advance signing not shown, see sheet No. 1 for typical applications)



(Advance signing not shown, see sheet No 1 for typical applications)



Designed By: J. H. M.	Approved By: <i>W. B. Tuck</i>
Issued By: J. H. M.	Staff: T. G. H. Engineer
Checked By: J. H. S.	Date: Mar. 7, 1977

STANDARD S-614-39A

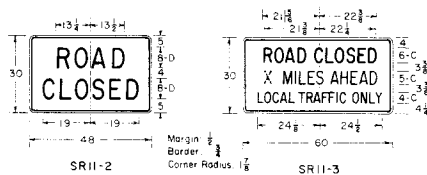
SHEET 3 OF 4 SHEETS
MAY 17, 1977

FEDERAL AID REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO			

REVISIONS		
NO.	Rev. Date Only	J.D.S.
(R-1)	5-8-78	

REGULATORY SIGNS

See Note No. 9



WARNING SIGNS

See Note No. 10

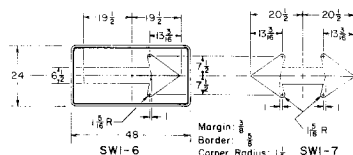
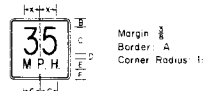
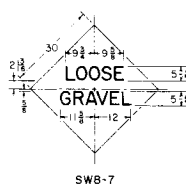
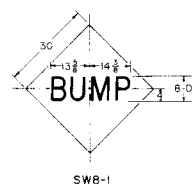


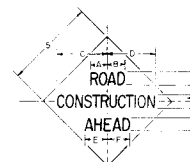
PLATE DETAILS

S	M	B	R
30	1/2	1/2	1/2
36	1/2	1/2	1/2
48	1/2	1/2	1/2

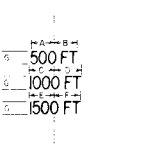


Panel	A	B	C	D	E	F	G
SW13-1(100)	18	18	2	2	3	3	6
SW13-1(100)	24	24	2	2	3	3	6

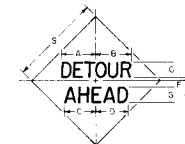
* Req'd. digits to be visually centered



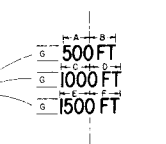
S	A	B	C	D	E	F	G	H	I	J
XW20-1	48	9	3	26	25	12	12	4	3	7
SW20-1	36	6	7	20	20	9	9	3	2	5



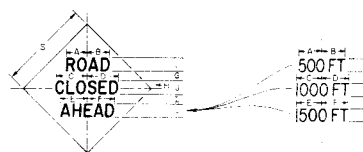
S	A	B	C	D	E	F	G
XW20-2	48	12	12	3	14	13	4
SW20-2	36	9	9	2	10	10	5



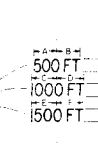
S	A	B	C	D	E	F	G
XW20-3	48	18	18	17	17	12	3
SW20-3	36	13	13	12	12	8	6



S	A	B	C	D	E	F	G
XW20-4	48	16	17	17	17	12	3
SW20-4	36	12	12	12	12	13	6



S	A	B	C	D	E	F	G	H	I	J
XW20-5	48	12	12	12	12	12	4	3	7	0
SW20-5	36	9	9	9	9	9	3	2	5	0



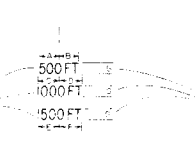
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XW20-6	48	14	14	14	14	14	7
SW20-6	36	10	10	10	10	10	5



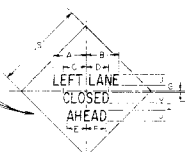
S	A	B	C	D	E	F	G	H	I	J
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SW20-7	36	10	12	12	12	12	3	2	5	0



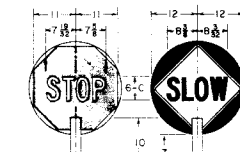
S	A	B	C	D	E	F	G	H	I	J
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SW20-8	36	10	12	12	12	12	3	2	5	0



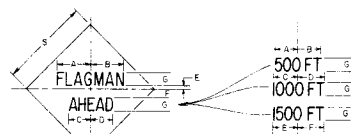
S	A	B	C	D	E	F	G
XW20-9	48	12	12	12	12	12	4
SW20-9	36	9	9	9	9	9	5



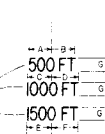
S	A	B	C	D	E	F	G	H	I	J
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SW20-10	36	12	12	12	12	12	3	2	5	0



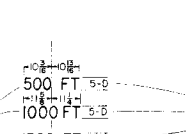
See Notes No. 21 and No. 23



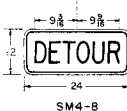
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XW20-11	48	17	17	17	17	12	3
SW20-11	36	12	12	12	12	12	5



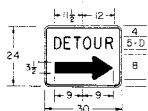
S	A	B	C	D	E	F	G
XW20-12	48	12	12	12	12	12	4
SW20-12	36	9	9	9	9	9	5



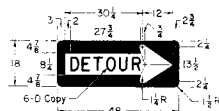
S	A	B	C	D	E	F	G	H	I	J
SW21-4	36	14	14	14	14	14	3	3	3	5



Margin: 1/2
Border: 1/2
Corner Radius: 1/2



Margin: 1/2
Border: 1/2
Corner Radius: 1/2



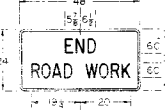
Reverse dimensions for Left designation



Margin: 1/2
Border: 1/2
Corner Radius: 2 1/2



Margin: 1/2
Border: 1/2
Corner Radius: 1/2



Margin: 1/2
Border: 1/2
Corner Radius: 1/2



Margin: 1/2
Border: 1/2
Corner Radius: 1/2

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
DIVISION OF HIGHWAYS
TRAFFIC SIGNALING
FOR HIGHWAY
CONSTRUCTION

Designed By: J.E.M. Approved By: H.D. Fisher
Made By: J.E.M. Staff Traffic Engineer
Checked By: J.D.S. Date: May 17, 1977

STANDARD S-614-39A

SHEET 4 OF 4 SHEETS
MAY 17, 1977

DESIGN NUMBER	REVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	ILLUSTRATION			

REVISIONS		
(R-1)	5-8-78 Rev. Note No. 7	J.D.S.

GENERAL NOTES

- All work shall be done in accordance with the "Standard Specifications" applicable to the Project and the "Manual on Uniform Traffic Control Devices for Streets and Highways" (adopted by the Federal Highway Administration) and the related "Colorado Supplement".
- Where traffic is maintained through or over any part of the Project the Contractor will be required to mark all hazards within the limits of the Project (including connecting roads) with well-maintained Barricades, Warning, Regulatory, and Guide signs. All barricades and signs shall be moved, added to, changed or removed as required during the progress of construction and removed entirely when the Project is completed.
- Where traffic must be diverted from the Project by road closure, the Detour will be marked by the Division except that the Contractor shall provide, erect and maintain Barricades (when required) at the ends of the Project, ends of the Detour and connecting roads. All U.S. or State Route Markers required for the Project will be furnished and installed by the Division. The location and positioning of Barricades, Warning and Regulatory signs shall be as recommended by the Engineer.
- Work on the Project shall not be started until all required signs are in place and approved by the Engineer. Where speed limit reduction appears necessary such speed limit reduction shall be requested from the Engineer by the Contractor. Advisory Speed plates may be used in conjunction with Warning Signs (SW13-1 for use with 30" Diamond signs and XW13-1 for use with 36" and 48" Diamond signs), where the safe speed is lower than the imposed Regulatory speed limit.
- All Barricades and Signs shall be placed for best visibility and legibility, maintained in good condition, and kept clean and free of dirt at all times. Contractor's and Engineer's vehicles and equipment must be parked so that barricades and signs are visible to approaching traffic at all times.
- Where two identical signs are used for dual posting they are to be staggered on the two sides of the roadway for a minimum distance of 75' to avoid a tunneling effect.
- Examples for signing Projects, as illustrated on Sheets 1 and 2, are typical of signs required and are subject to alteration to fit actual conditions encountered in the field. In all cases Warning signs are to be placed well in advance of the hazard, the distance depending on topography and existing approach speeds.
- Desirable sizes for signs are shown on Sheets 1 and 2 of this Standard. Larger or smaller signs shall be used where warranted. Detailed dimensions for signs normally used in connection with construction are shown on Sheet 3 of this Standard. For information on standard roadway signs not detailed on this Standard see the "Manual on Uniform Traffic Control Devices for Streets and Highways" (adopted by the Federal Highway Administration) and the related "Colorado Supplement". Detailed layouts for these signs will be furnished in the plans or on request.
- Signs with the prefix "R" in the sign code are Regulatory signs, and as such they impose legal restrictions on drivers and shall only be used as authorized by the Engineer.
- Signs with the prefix "W" in the sign code are Warning signs, and are used to alert traffic to existing or potentially hazardous conditions.
- Signs with the prefix "D", "G" or "M" in the sign code are Guide signs. Those with the prefix "D" or "G" convey general information and those with the prefix "M" are used to mark the traffic route.
- All Warning and Regulatory signs shall be posted on both sides of the roadway on divided highways. Dual posting is required where warranted on two-lane, two-way highways.
- Guide sign SG20-1 shall be placed to mark the beginning of all Projects more than 2 miles in extent, where traffic is maintained through the project. It shall be placed singly and near the beginning of construction. Guide sign SG20-2 shall be placed to mark the end of the Project. It shall be placed singly and may be placed opposite barricade if desirable.
- Inapplicable pavement markings that could be confusing to motorists shall be removed by a method approved by the Engineer. Temporary markings shall be used as necessary to define vehicle paths. Refer to the appropriate Division Standard (Typical Pavement Markings) for marking details. Adhesive pavement marking tape and raised pavement markers may be used with the approval of the Engineer.
- Lanterns and Torches: Lanterns shall be used only in low speed urban areas and Open-Flame Torches shall not be used under any circumstances.
- Barricades, Flashing Beacons and Flashers: refer to appropriate Division Standard for details.
- Traffic Cones shall be orange, at least 18" in height, and not weighted to an extent that would be hazardous to traffic. They shall not be used during the hours of darkness.
- If closure is for extended period, including nighttime operations, barricade warning lights and temporary pavement markings are to be installed through-out the construction zone and inapplicable pavement markings are to be removed.
- Sign panels furnished by the Contractor for use only during construction may be fabricated from plywood, aluminum, steel or other suitable material but shall be stable and durable enough to meet other requirements of this Standard.
- All signs shall be reflectorized unless otherwise specified on plans. All reflective sheeting shall be non-exposed lens type.
- When Flags are used in lieu of the Flagman Sign, they shall be a minimum of 24"x24", made of a good grade of bright red material, and fastened securely to a staff of approximately 3 feet in length. The free edge should be weighted to insure that the flag will hang vertically, even in heavy winds.
- All material shall be sound and durable. Barricades, signs, symbols and lettering shall be of good workmanship. Uneven lettering will not be accepted.
- Flagman Sign: The background of the STOP face shall be reflectorized red with white reflectorized letters and border. The background of the SLOW face shall be reflectorized orange with black letters and border.
- Painting for all wood surfaces shall conform with the "Standard Specifications".
- Alternate methods of processing signs or the substitution of symbols or other reflecting elements for painted symbols will be permitted only after approval by the Division.
- Posts for regulatory, warning and guide signs shall conform with the "Standard Specifications" for Timber Sign Posts.
- Diamond warning signs shall have a standard size of 48"x48". Where speeds and volumes are relatively low, a minimum size of 36"x36" may be used for Construction Approach Warning Signs, provided that a minimum letter size of 5" can be accommodated on this size with the appropriate legend.

TYPICAL CONSTRUCTION TRAFFIC SIGN AND CHANNELIZING DEVICE REQUIREMENTS

CASE	Construction Traffic Signs Each			Channelizing Devices per 100'			
	Panel Size ▲			Barricades	Cones	Vertical Panels	Drums
I	11	11	*	2	3	2	2
II	6	4	*	2	3	2	2
III	4	9	*	2	3	2	2
IV	16	8	*	2	3	2	2
V	0	8	*	2	3	2	2
VI	6	11-13	*	2	3	2	2

* As directed by the Engineer

▲ PANEL SIZE	A	6'0" to 9'00 sq ft. including Type 1 and Type 2 Barricades
	B	9'0" to 16'00 sq ft.
	C	16'0" sq. ft. and over

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
DIVISION OF HIGHWAYS
TRAFFIC SIGNING
FOR HIGHWAY
CONSTRUCTION

Designed By: F.J.B. Approved By: J.D.S.
Made By: F.J.B. Staff Traffic Engineer
Checked By: J.D.S. Date: May 17, 1977

TYPICAL TYPE 1 BARRICADE

TYPICAL TYPE 2 BARRICADE

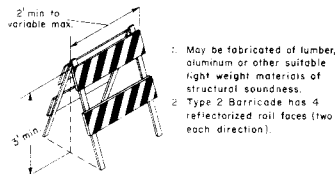
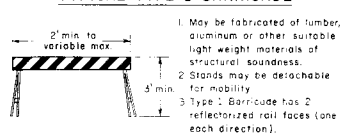
STANDARD S-614-52B

JANUARY 10, 1979

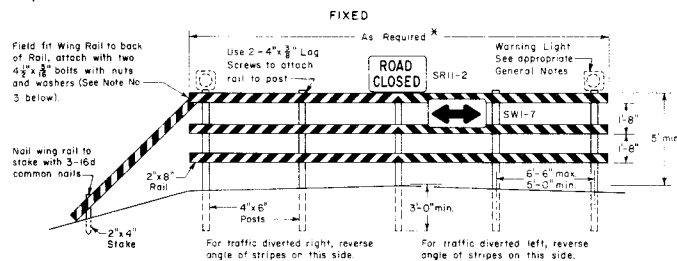
FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO			

REVISIONS

NO.	DESCRIPTION

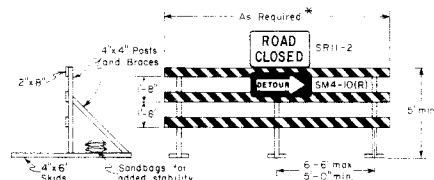


TYPICAL TYPE 3 BARRICADES (Timber)

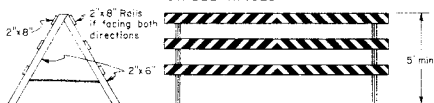


RAIL LENGTH TABLE *		
TYPE 3 BARRICADE	FIXED	MOVABLE
F - A	M - A	6' - 14'
F - B	M - B	15' - 24'
F - C	M - C	25' - 35'
F - D	M - D	> 35'

MOVABLE - RIGID



MOVABLE - HINGED

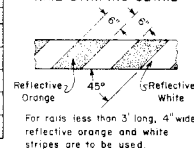


- Type 3 Barricades have 3 reflectorized rail faces if facing traffic in one direction and 6 if facing traffic in two directions.
- When fixed barricades are designated on the plans, the portion of the posts below the ground line shall be dipped in hot creosote oil. The portion of the post above the ground line shall be painted in accordance with the appropriate General Note.
- Detachable extension wing rails for bypassing of construction equipment are permitted, when necessary, on Fixed or Movable Type 3 Barricades. The length shall be adequate to close the borrow pit and/or shoulder as required.

TYPICAL BARRICADE CHARACTERISTICS

	BARRICADE DESIGNATIONS		
	TYPE 1	TYPE 2	TYPE 3
Rail Width	8" min. - 12" max.	8" min. - 12" max.	8" min. - 12" max.
Rail Length	2' min. to variable max.	2' min. to variable max.	As required, See Table *
Height	3' min.	3' min.	5' min.
Stripes	See Detail of Barricade Striping and appropriate General Notes.		
Use	Temporary	Temporary	Temporary or Permanent

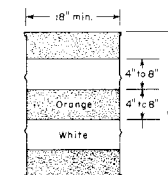
RAIL STRIPING DETAIL



GENERAL NOTES

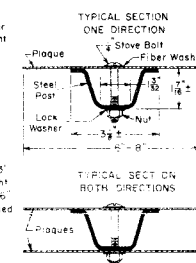
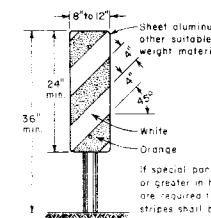
- All work shall be done in accordance with the Standard Specifications applicable to the Project.
- All signs, sign materials, beacons and barricade warning lights shall conform to the standards set forth in the latest edition of the Manual on Uniform Traffic Control Devices for Streets and Highways and the Colorado Supplement thereto.
- The various types, combinations and applications of signs and beacons for barricades required for each project shall be:
 - governed by field conditions.
 - as shown in appropriate typical illustrations or specified or detailed in the plans.
 - when called for by, and subject to approval by the Engineer.
- Alternate materials or other reflective elements on signs or barricades will be permitted only after approval of such material by the Division in writing.
- All painting shall conform with:
 - the applicable Subsections of 508 and 614 of the Standard Specifications.
 - all skids, braces and posts shall be painted with 2 coats of "Exterior White Paint".
 - the backside of rails and vertical panel channelizing devices facing one direction of traffic only shall be painted with "Exterior White Paint".
- All striped surfaces, except on concrete, shall conform with:
 - the entire area of orange and white stripes shall be reflectorized.
 - all reflective surfaces shall be "Smooth Surface Type Reflective Sheeting".
 - horizontal rails, wing rails and vertical panel channelizing devices shall have orange and white stripes on the face side(s) slanting downward at a 45° angle toward the side(s) to which traffic is to pass or turn.
 - permanent barricades shall be reflectorized red and white stripes. They may be used at locations to mark the end of a road, street or highway where there is no crossroad or outlet.
- For all wooden barricade components:
 - nominal lumber dimensions are satisfactory.
- all skids, braces, rails and posts shall be nailed together with No. 20d nails.
- all timber shall be Grade No. 2 or better, S4S, Douglas Fir or Larch, as described in the current Standard Grading Rules published by the Western Wood Products Association, and shall conform to applicable paragraphs for the rails and posts.
- All screws, bolts, nuts and washers shall be galvanized or cadmium plated.
- Stability of barricades and channelizing devices shall conform with:
 - skids (bases) of movable barricades shall be weighted with sandbags only where necessary to provide stability.
 - no movable or portable device shall be weighted by any method or material to the extent that would make them hazardous to motorists.
- Flashing beacons or warning lights used with barricades, drums and vertical panels shall conform with:
 - use flashing warning lights when devices are used singly and steady burn lights when they are used in a series for channelization.
 - they shall be positioned above the top rail of barricades or on top of drums and vertical panels.

TYPICAL DRUM



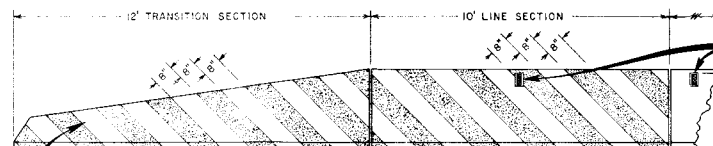
- Drums shall never be placed in the roadway without appropriate advance warning signs.
- There shall be at least two orange and two white horizontal, circumferential, reflective stripes on each drum.

TYPICAL VERTICAL PANEL



- For permanent installation only:
- Steel posts shall be hot-rolled steel or re-rolled rail steel.
 - Posts are to weigh 2 lbs./ft. with a mill tolerance of minus 3 1/2 % of the weight of any one post being allowed.
 - Reflectorized Yellow shall replace Orange and Black shall replace White.
 - Panel shall conform to "Class I Signs".

TYPICAL CONCRETE BARRIER (TEMPORARY)



ORANGE AND WHITE REFLECTORIZED STRIPES SHALL BE 8" WIDE AT 45° ON SIDE OF BARRIER FACING APPROACHING TRAFFIC, AND SLOPING DOWNWARD IN THE SAME DIRECTION TRAFFIC IS TO PASS. (APPLY FOR 32' - TRANSITION SECTION AND FIRST TWO LINE SECTIONS.)

CONCRETE BARRIER (TEMPORARY) SHALL CONFORM TO "GUARD RAIL TYPE A (PRECAST-PORTABLE)" DESCRIBED IN THE "STANDARD SPECIFICATIONS" AND SHOWN ON THE APPROPRIATE "M-STANDARD". REFLECTORS ARE INCLUDED IN THE COST OF CONCRETE BARRIER (TEMPORARY).

TYPICAL ACRYLIC CUBE TYPE REFLECTOR (Capable of clearly reflecting light under normal atmospheric condition from a distance of 500 feet when illuminated by the upper beam of approaching standard automobile headlights). THE TYPICAL ACRYLIC CUBE TYPE REFLECTORS SHALL BE MOUNTED ON THE FIRST LINE SECTION AND THEN AT 50 FOOT INTERVALS FACING TRAFFIC. APPLY ON SIDE(S) OF BARRIER ADJACENT TO TRAFFIC LANE. THEY SHALL BE YELLOW FOR BARRIER REQUIRED ON THE LEFT SIDE OF THE ROAD AND CRYSTAL FOR BARRIER REQUIRED ON THE RIGHT SIDE.

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
DIVISION OF HIGHWAYS
BARRICADES, DRUMS,
CONCRETE BARRIER (TEMP)
& VERTICAL PANELS

Designed By: F. J. B. Staff Traffic Engineer
Made By: J. B. Safety Projects Engineer
Checked By: J. D. S. Date: January 10, 1979