MAR 2 2 1978

SEE STANDARD M-100-A FOR STANDARD SYMBOLS

TITLE SHEET

STATE DEPARTMENT OF HIGHWAYS
DIVISION OF HIGHWAYS — STATE OF COLORADO

FEDERAL ROAD REGION NO	DIVISION	PROJECT NO	SHEET NO
VIII	COLORADO	I 70-2(57)197	1

AS CONSTRUCTED

NO REVISIONS ☐ REVISED 1-31-78 VOID ☐

P.E., R.O.W. and Utilities under Project No. I 70-2(38)

(R-1) 5-24-76, Pits on Sketch & Index, W.C.B

PLAN AND PROFILE OF PROPOSED
FEDERAL AID PROJECT NO. I 70-2(57)197
STATE HIGHWAY NO. 70
SUMMIT COUNTY

SCALES OF ORIGINAL DRAWINGS

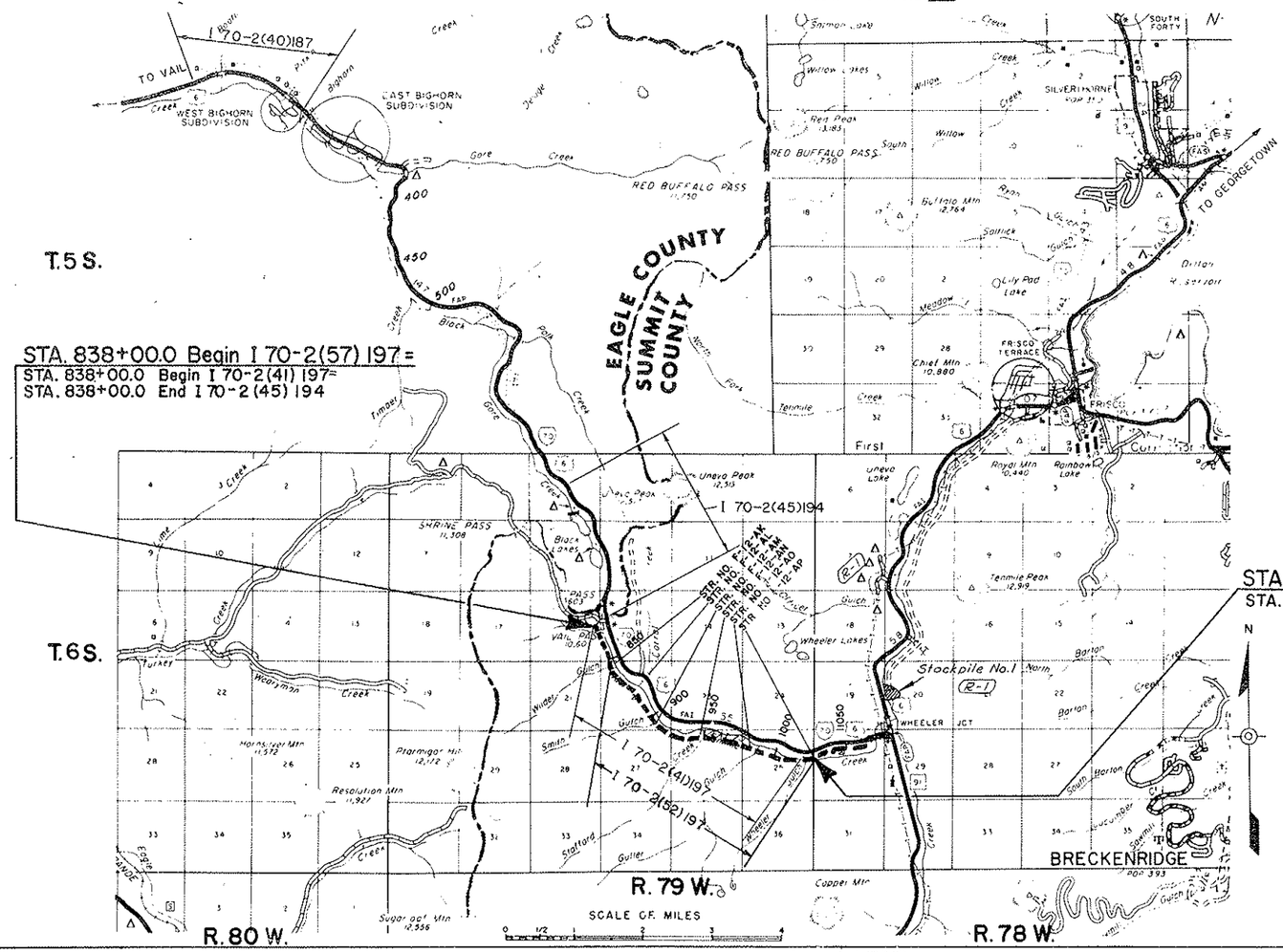
ON PLAN 1 IN. = 100 FT.

ON PROFILE { 1 IN. = 100 FT. HORIZONTAL; 1 IN. = 10 FT. VERTICAL

GRADE LINE ON PROFILE IS SHOWN AS GRADE OF FINISHED ROAD

GROSS LENGTH OF PROJECT — 17,724.18 LIN. FT. = 3.357 MILES

NET LENGTH OF PROJECT



STA. 1015+58.14 End I 70-2(57) 197 =
STA. 1015+58.14 End I 70-2(52) 197

INDEX OF SHEETS

"No. Revisions" Sheets No 2, 12-16, 18-20, 22, 24, 26, 28, 29

"S" STANDARDS

S-612-51A TYPICAL DELINEATOR INSTALLATIONS (2 SHEETS)	10-26-72
S-614-52A BARRICADES, DRUMS AND VERTICAL PANEL CHANNELIZING DEVICES	12-4-74

DIVISION OF HIGHWAYS

APPROVED E.N. Haase by Jon M. Cox 5/6/76
CHIEF ENGINEER DATE

AS CONSTRUCTED INFORMATION

CONTRACTOR Avery Construction Co.

Project ENGINEER (Project or Resident) Rick Yowell

PROJECT STARTED 8-23-76

PROJECT COMPLETED 9-1-77

AS CONSTRUCTED PLANS APPROVED R.A. Frankson by Gary A. Diessing

Const. Engr. TITLE 2-21-78 DATE

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED _____ DATE

DIVISION ADMINISTRATOR

W.C.B.

DIVISION OF HIGHWAYS, STATE OF COLORADO
D O H FORM NO. 126
Rev. October, 1972

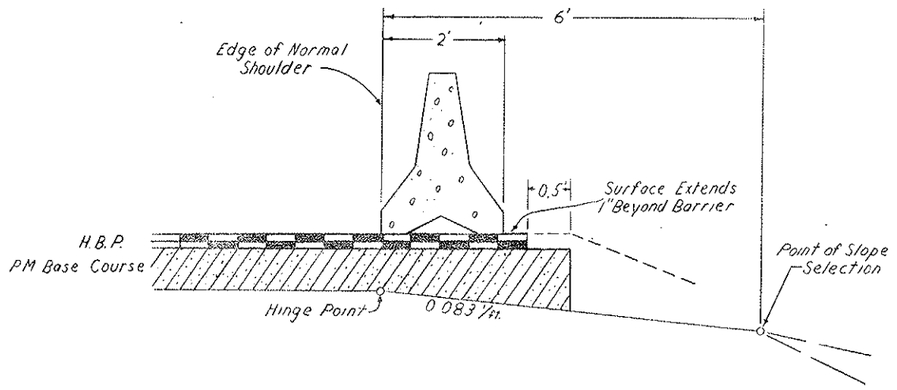
(R-1) 5-24-76, Surfacing Rates, WCB

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-2(57)197	2	33

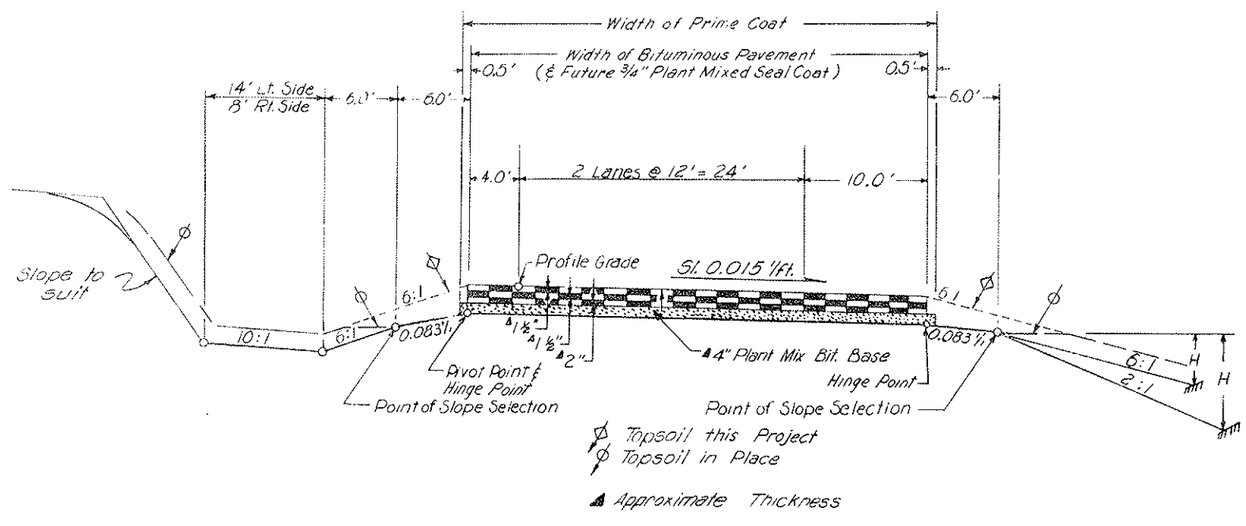
AS CONSTRUCTED
NO REVISION 1-31 76 REVISED VOID

TYPICAL SECTION

(EAST BOUND ONLY)



WIDENING FOR GUARD RAIL



Material shall be placed in separate courses at the following approximate rate per 100 lin. ft. of roadway:

Bituminous Pavement —	Top Layer	34	Tons
	Middle Layer	34	Tons
	Bottom Layer	45	Tons
Plant Mix Bituminous Base		92	Tons

(R-1)

The rates shown have been determined from information available at the time of design. Rates should be adjusted during construction to obtain the required approximate thickness.

Hot Bituminous Pavement may be placed in two lifts when approved by the Engineer.

THE STATE DEPARTMENT OF HIGHWAYS
DIVISION OF HIGHWAYS — STATE OF COLORADO
DOH Form No. 113 (Mylar)
REV. SEPT. 1972

(R-1) 5-24-76, Quantities, WCB

SUMMARY OF APPROXIMATE QUANTITIES

AS CONSTRUCTED — NO REVISION [ ] REVISED [1-31-78] VOID [ ]

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-2(57)197	3	33

	INDEX BOOK	INDEX PAGE	INDEX SHEET	CONTRACT ITEM NO.	CONTRACT ITEM	UNIT		ROADWAY			MAJOR STR. NO. F-12-AK	MAJOR STR. NO. F-12-AM	MAJOR STR. NO. F-12-AN	MAJOR STR. NO. F-12-AO	MAJOR STR. NO. F-12-AP			PROJECT TOTALS	Final Total	+-	%
(R-1)				202	Removal of Structure (CMO 4563)	Each		1										1	0	-1	0
(R-1)	Form 7			203	Truck (CMO-1058)														45½	+45½	91
	Form 7			203	Blading	Hour		50										50	70½	+20½	141
	Form 7			203	Combination Loader	Hour		50										50	47	-3	94
	Form 7			203	Roller (CMO-1058)	Hour													35½	+35½	89
(R-1)	computation sheets			204	Haul	Ton Mi.		161,654			545	495	610	784	612			164,700	145,294	-19,406	88
(R-1)	1	31	6	206	Structure Excavation	Cu. Yd.		240										240	193	-47	80
(R-1)	1	31	6	206	Structure Backfill (Class 1)	Cu. Yd.		240										240	152	-88	63
	1	43		207	Topsoil (Haul)	Cu. Yd.		4900									Final Quantity Paid	4,900	~~4015~~ ~~3866~~	-885 ~~-1034~~	~~82~~ ~~79~~
	Form 7			209	Water (Landscaping)	M. Gal.		250										250	105	-145	42
	Form 7			209	Water (CMO-1058)	M. Gal													123	+123	62
	2	17		212	Seeding (Native)	Lb.		400										400	374	-26	94
	2	17		212	Fertilizer	Lb.		5,000										5,000	4671	-329	93
	2	17		212	Soil Preparation (Native) (CMO 4563)	Acre		10										10	Deleted	-10	0
	2	17		212	Soil Preparation (Sod)	Sq. Ft.		9000										9,000	9,327	+327	104
	2	17		212	Sod	Sq. Ft.		9000										9,000	9,327	+327	104
	2	17		213	Mulching	Ton		20										20	19	-1	95
(R-1)	3	12		301	Plant Mix Bituminous Base (Class 6)	Ton		17,300										17,300	18,198.70	+898.70	105
(R-1)	3	13		403	Hot Bituminous Pavement (Grading E)	Ton		18,430			102	122	172	185	289			19,300	21,334.40	+2,034.40	111
(R-1)	Asph. Tab			411	Asphalt Cement (AC-~~10~~ 5) (CMO 1054)	Ton		2,020										2,020	2,064.16	+44.16	102
	Asph Tab			411	Emulsified Asphalt (CSS-1h (CMO 1057)	Gal.		8,500										8,500	3,975	-4,525	47
(R-1) (R-1)				411	Liquid Asphaltic Material (MC-70)	Gal.		30,800										30,800	12,581	-18,219	41
(R-1) (R-1)	3	8		515	Waterproofing (Membrane)	Sq. Yd.					931 ~~950~~	1044 ~~1147~~	1634	1801 ~~1819~~	2711			8.261	8,121	-140	98
(R-1)	1	31	6	603	18 Inch Corrugated Steel Pipe	Lin. Ft.		308										308	429	+121	139
(R-1)			6	603	72 Inch Corrugated Steel Pipe (CMO 4563)	Lin. Ft.		148										148	Deleted	-148	
(R-1)	1	31	6	603	18 Inch Steel End Section	Each		8										8	10	+2	125
	1	31	6	604	Inlet Type 13 (5 Foot)	Each		3										3	5	+2	167
	1	31	6	604	18 Inch Slotted Pipe Inlet	Lin. Ft.		50										50	50	C	100
	3	11	7	606	Guard Rail Type 4 (Precast-Portable) (Colored)	Lin. Ft.		1,616										1,616	1,616	C	100
	3	11		606	SandBlast GuardRail (CMO 1052)	Lin. Ft.													1,616	+1616	100

THE STATE DEPARTMENT OF HIGHWAYS
DIVISION OF HIGHWAYS – STATE OF COLORADO
DOH Form No. 113 (Mylar)
REV. SEPT. 1972

(R-1) 5-24-76, Quantities, WCB

SUMMARY OF APPROXIMATE QUANTITIES

AS CONSTRUCTED					
NO REVISIONS		REVISED 1-31-78	VOID		

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-2(57)197	4	33

INDEX BOOK	INDEX PAGE	INDEX SHEET	CONTRACT ITEM NO.	CONTRACT ITEM	UNIT		ROADWAY			MAJOR STR. NO. F-12-AK	MAJOR STR. NO. F-12-AM	MAJOR STR. NO. F-12-AN	MAJOR STR. NO. F-12-AO	MAJOR STR. NO. F-12-AP			PROJECT TOTALS	Final Total	+ –	%
1	34	7	612	Delineator (Type I)	Each		169										169	134	-35	79
1	34	7	612	Delineator (Type II)	Each		8										8	8	0	100
		7	612	Delineator (Type I) (Barrier) (CMO 4563)	Each		7										7	Deleted	-7	0
1	34	7	612	Delineator (Type III) (Barrier)	Each		10										10	10	0	100
Form 7			614	Flagging	Hour		3,000										3,000	1,369	-1,631	46
(R-1)																				
3	15		620	Field Laboratory	Each		1										1	1		100
3	15		620	Sanitary Facility	Each		1										1	1		100
(R-1)																				
3	15		626	Mobilization	L. S.		1										1	1		100
				FORCE ACCOUNT											ESTIMATED AMOUNT	FINAL TOTAL				
cmo 1058			F/A 01	Minor Contract Revisions (35½ hr x 47.95)+(45½ x 47)+(123 m x 1 x 45)	L. S.		1								$5,000	$1,394.23	1		-605.77	86
Cont'r Billing			F/A 02	On-The-Job Trainee	Each		2								$1,600	$387.20	2		-1212.80	24
			F/A 03	Obliterate Existing Haul Roads	L. S.		1								$10,000	—	1		0	0
			F/A 04	Erosion Control	L. S.		1								$5,000	—	1			
(R-1)																				
Contr Billing			CMO 1060	STABILIZING SOFT SPOT											$3008.55	$2952.15			-56.40	98

DIVISION OF HIGHWAYS, STATE OF COLORADO
D.O.H. FORM NO. 126
REV. MARCH, 1974

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-2(57)197	5	33

AS CONSTRUCTED

NO REVISIONS ☐ REVISED Jan. 31 1974 VOID ☐

TABULATION OF LENGTH & DESIGN DATA

STATION		ROADWAY LIN. FT.	MAJOR STRUCTURES LIN. FT.
838+00.0 BEGIN I 70-2(57)197 = 838+00.0 END I 70-2(45)194 = 838+00.0 BEGIN I 70-2(41)197			
		2,226.50	
860+26.50	STR. NO. F-12-AK		227.00
862+53.50		1,569.12	
878+22.62 BK. =	EQUATION		
878+34.33 AH.		3,474.42	
913+08.75	STR. NO. F-12-AM		272.50
915+81.25		2,682.19	
942+63.44 BK. =	EQUATION		
942+73.35 AH.		56.15	
943+28.50	STR. NO. F-12-AN		383.00
947+11.50		1,883.26	
965+94.76 BK. =	EQUATION		
966+07.10 AH.		2,314.90	
989+22.0	STR. NO. F-12-AO		411.00
993+33.0		1,583.14	
1009+16.14	STR. NO. F-12-AP		642.00
1015+58.14			
1015+58.14 END I 70-2(57)197 = 1015+58.14 END I 70-2(52)197			
TOTALS		15,789.68	1,935.5

SUMMARY

	LIN. FT.	MILES
ROADWAY	15,789.68	2.990
MAJOR STRUCTURES	1,935.5	.367
TOTAL (NET AND GROSS)	17,725.18	3.357

DESIGN DATA

MAXIMUM DEGREE OF CURVE	3°30'
MAXIMUM GRADE	6.26%
MINIMUM SSD HORIZONTAL	>600'
MINIMUM SSD VERTICAL	600'
MAXIMUM DESIGN SPEED	70 MPH
1995 DESIGN TRAFFIC A.D.T.	12,000
D.H.V.	2,400

GENERAL NOTES

ALL SIGNING FOR THIS PROJECT WILL BE ACCOMPLISHED ON FUTURE PROJECTS.

DEPTH OF MOISTURE-DENSITY CONTROL FOR THIS PROJECT SHALL BE AS FOLLOWS:

FULL DEPTH OF ALL EMBANKMENTS

COMPACTION FOR THIS PROJECT SHALL BE AASHTO T 180.

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

PRIME COAT MC-70 @ ~~0.40~~ 20 GALS. PER SQ. YD.

TACK COAT CCS-1 @ 0.05 GALS. PER SQ. YD.

DILUTED EMULSIFIED ASPHALT FOR TACK COAT SHALL CONSIST OF ONE PART EMULSIFIED ASPHALT AND ONE PART WATER.

RATES OF APPLICATION SHALL BE AS DETERMINED BY THE ENGINEER AT THE TIME OF APPLICATION.

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

THE FOLLOWING SHALL BE FURNISHED WITH EACH BITUMINOUS PAVER:

1. A SKI TYPE DEVICE AT LEAST 30 FEET IN LENGTH.
2. AT LEAST 5,000 FEET OF CONTROL LINE AND STAKES.

THE MINIMUM THICKNESS OF TOPSOIL SHALL BE FOUR INCHES. IT IS ESTIMATED 4,900 CU. YDS. WILL BE REQUIRED AND WILL BE OBTAINED FROM STOCKPILES LEFT OF STATION 949+ & 843+.

SEEDING, SOIL PREPARATION, FERTILIZING WITH COMMERCIAL FERTILIZER, AND MULCHING FOR APPROXIMATELY 10 ACRES WILL BE REQUIRED WITHIN RIGHT OF WAY LIMITS ON ALL AREAS NOT SURFACED. THE FOLLOWING TYPES AND RATES SHALL BE USED:

COMMON NAME	BOTANICAL NAME	PER CENT PURITY	PER CENT GERMINATION	RATE PLS/ACRE
STREAMBANK WHEATGRASS	AGROPYRON RIPARIUM	97	92	7
WESTERN WHEATGRASS	AGROPYRON SMITHII	85	70	4
KENTUCKY BLUEGRASS	POA PRATENSIS	85	75	3
SMOOTH BROME (MANCHAR)	BROMUS INERMIS	85	80	5
TIMOTHY	PHLEUM PRATENSE	99	90	4
RED FESCUE	FESTUCA RUBRA	98	85	3
MEADOW FOXTAIL	ALOPECURUS PRATENSIS	95	80	4
SLENDER WHEATGRASS	AGROPYRON PAUCIFLORUM	90	85	5
WHITE DUTCH CLOVER	TRIFOLIUM REPENS	98-1/2	90	2
ALSIKE CLOVER	TRIFOLIUM HYBRIDUM	98-1/2	90	3
	TOTAL PLS/ACRE SEEDING			40

COMMERCIAL FERTILIZER (FOR SEEDING)	PER CENT AVAILABLE	LBS/ACRE AVAILABLE NITROGEN	LBS/ACRE AVAILABLE SUPERPHOSPHATE	RATE LBS/ACRE
AVAILABLE NITROGEN (18-0-0)	18	50		278
AVAILABLE SUPERPHOSPHATE (0-45-0)	45		100	222
TOTAL LBS/ACRE FERTILIZER				500

MULCHING (STRAW) 2 TONS PER ACRE

CLASS "AX" CONCRETE WILL BE PERMITTED ON THIS PROJECT IN LIEU OF CLASS "A".

IT IS ESTIMATED THAT ~~3,000~~ 1369 HOURS OF FLAGGING FOR CONTROLLING TRAFFIC WILL BE REQUIRED FOR THIS PROJECT.

FLEXIBLE CONDUITS ON THIS PROJECT WITH HELICAL CORRUGATIONS, JOINED BY DIMPLED CONNECTING BANDS, SHALL USE A SEALING COMPOUND OR GASKET MEETING FEDERAL SPECIFICATIONS SS-S-00210 WITH THE CONNECTING BAND.

SOD WILL BE REQUIRED ON ALL SLOPES 2:1 OR STEEPER OR AS DESIGNATED BY THE ENGINEER. IT IS ESTIMATED THAT ~~5,000~~ 9,327 SQ. FT. OF SOD WILL BE REQUIRED.

IT IS ESTIMATED THAT THE FOLLOWING WILL BE REQUIRED FOR SHAPING EXISTING ROADBED AND EROSION CONTROL.

ITEM	HOURS
BLADING	~~50~~ 70.5
COMBINATION LOADER	~~50~~ 47

THE STATE DEPARTMENT OF HIGHWAYS
DIVISION OF HIGHWAYS--STATE OF COLORADO
DOH FORM NO. 125 (MYLAR)
REV. MARCH, 1975

(R-1) 5-24-76, Quantities, WCB

STRUCTURE QUANTITIES

AS CONSTRUCTED			
NO REVISIONS [ ]	REVISED [1-31-78]	VOID [ ]	

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.
VIII	COLORADO	I 70-2(57)197	6

INDEX BOOK	INDEX PAGE	INDEX SHEET	LOCATION	UNCLASSIFIED EXCAVATION CUBIC YARD EXCAV.	UNCLASSIFIED EXCAVATION CUBIC YARD EMB.	UNCLASSIFIED EXCAVATION CUBIC YARD DITCH	STRUCTURE EXCAVATION CUBIC YARD	STRUCTURE BACKFILL CUBIC YARD CL I	REMOVAL OF STRUCTURE EACH	AGGREGATE BASE COURSE SURFACING (CLASS) TON	HOT BITUMINOUS PAVEMENT (GRADING) TON	INLET TYPE 13 (5 FOOT) EACH	INLET TYPE 13 (5 FOOT) "H"	18 SLOTTED PIPE INLET LIN. FT.	(R-1) CONCRETE MISC. CL "A"	(R-1) RIPRAP CU. YD.	CORRUGATED STEEL PIPE LINEAR FEET 18"	CORRUGATED STEEL PIPE LINEAR FEET 72"	"H" OVER CULV. FT.	(R-1) GROUTED RUBBLE SLOPE AND DITCH PAVING CUBIC YARD	STEEL END SECTIONS EACH 18"	MISCELLANEOUS
1	8		850+18.50				3	4						10			8		1		1	
1	10		862+62				18	15				1	30'				42*		2		1	
1	12		863+90.42				5	6						10			22*		1		1	
1	14		907+14.48				4	4						10			8		1		1	
1	16		912+9a				39	32				1					90				1	
1	18		915+87				37	31				1	30'				86* 87		2		1	
1	20		927+82.33				5	6						10			18*		1		1	
1	24		986+48.10				5	6						10			20*		1		1	
1	26		989+13				13	11				1					30				1	
1	28		1015+82				64	37				1	30'				104*		2		1	
(R-1)			Pit Structure Requirements	Deleted			~~90~~	~~130~~										~~74~~ 74	1			1 - Removal of Structure
(R-1)			TOTALS				~~231~~ 193	~~239~~ 152				~~2~~ 5		50			~~308~~ 429	~~148~~ DUKTILE			~~8~~ 10	

(R-1) * Includes Elbow
(R-1)

DIVISION OF HIGHWAYS, STATE OF COLORADO
D. O. H. FORM NO. 126
REV. MARCH, 1974

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-2(57)197	7	33

AS CONSTRUCTED
NO REVISIONS ☐ REVISED 1-31-78 VOID ☐

Book No 1 Page 34

DELINEATORS

STATION	SIDE	SPACING	TYPE I EACH		TYPE II EACH		TYPE I BARRIER EACH		TYPE III BARRIER EACH	
Main Line (E.B.)										
838+00 – 845+50	Rt.	Accel.			8					
838+00 – 845+50	Lt.	1°15'	6							
845+50 – 858+44.17	Both	1°00'	~~14~~	10						
860+26.5	Both	Bridge							2	2
862+99.42 – 880+80.00	Both	2°00'	~~26~~	14						
880+80.00 – 895+81.21	Both	3°00'	~~18~~	10						
895+81.21 – 907+70.48	Both	Tangent	~~3~~	4			1	0		
907+70.48 – 926+45.00	Both	3°30'	~~18~~	10			6	0		
913+14.48	Both	Bridge							2	2
926+45.00 – 941+45.97	Both	1°30'	~~20~~	30						
943+28.5	Both	Bridge							2	2
947+95.00 – 972+50.40	Both	1°00'	~~30~~	20						
972+50.40 – 986+56.24	Both	1°00'	14							
989+22.00	Both	Bridge							2	2
994+06.55 – 1007+75.43	Both	1°00'	20	16						
1009+16.14	Both	Bridge							2	2
TOTALS			169*	134	8	8	7▲		10●	10

* Includes 84 Amber Type I for Median Side.
▲ Includes 7 Amber Type I Barrier for Median Side. (Future Const.)
● Includes 5 Amber Type III Barrier for Median Side.

Delineators to be placed 6' from shoulder.

Book No 2 Page F

WATERPROOFING (MEMBRANE)

STATION	STR No.	WATERPROOFING (MEMBRANE) SQ YD	Final
860+26.5	F-12-AK	~~950~~	931
913+08.75	F-12-AM	~~1147~~	1645
943+28.5	F-12-AN	1639	1634
989+22	F-12-AO	1819	1811
1009+16.19	F-12-AP	2711	2711
TOTAL		8261	8121

Book 3 page 11

GUARD RAIL

STATION			SIDE	GUARD RAIL TYPE 4 ● LIN FT	Final	"W" ■ FEET
*858+68.5	to	860+20.5△	Lt & Rt	304	304	4
△862+59.5	to	862+71.5*	Lt & Rt	24	24	
*876+50	to	899+54*	Lt.	(Future)		
*897+26	to	901+50*	Lt.	(Future)		
*911+46.75	to	912+98.75△	Lt	152	152	4
*911+42.75	to	912+94.75△	Rt	152	152	4
△915+85.25	to	921+47.25*	Lt	12	12	
△915+90.25	to	916+02.25*	Rt	12	12	
*941+63.6	to	943+24.5△	Lt. & Rt.	304	304	4
△947+09.2	to	947+21.2*	Rt	12	12	
△947+16.6	to	947+28.6*	Lt	12	12	
*955+50	to	967+56*	Lt	(Future)		
*987+66	to	989+18△	Lt & Rt	304	304	4
△993+306	to	993+426*	Rt	12	12	
△993+381	to	993+501*	Lt	12	12	
*1007+48.0	to	1009+00.0△	Lt	152	152	4
*1007+56.0	to	1009+08.0△	Rt	152	152	4
TOTAL				1,616	1616	

* Includes 12' Transition Section
△ Connect to Bridge Rail
■ 72 Foot Flare on Approach End
● (Precast-Portable) (Colored)

DIVISION OF HIGHWAYS, STATE OF COLORADO
D. O. H. FORM NO. 126
REV. MARCH, 1974

(R-1) 5-24-76, Quantities & Source, W C B

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-2(57)197	8	33

AS CONSTRUCTED
NO REVISIONS ☐ REVISED 1-31-78 VOID ☐

(R-1)

SURFACING PLAN

STATION	SOURCE	QUANTITY - TONS				HAUL - TON MILE			
		BASE COURSE	SURFACE COURSE HOT BITUMINOUS PAVEMENT			BASE COURSE	SURFACE COURSE HOT BITUMINOUS PAVEMENT		
		PLANT MIX BIT BASE CL 6	BOTTOM LAYER GR E	MIDDLE LAYER GR E	TOP LAYER GR E	CL 6	BOTTOM LAYER	MIDDLE LAYER	TOP LAYER
*838+00 to 845+50		803	397	299	294	4,438	2,192	1,625	1,625
845+50 to 860+26.50		1,359	665	502	502	7,795	3,814	2,879	2,879
STR NO F-12-AK			102				595		
862+53.50 to 878+22.62		1,443	706	533	533	7,973	3,657	2,760	2,760
878+34.33 to 913+08.75		3,196	1,564	1,182	1,182	17,179	8,382	6,335	6,335
STR NO F-12-AM			122				495		
915+81.25 to 942+63.44	US FOREST SERVICE PIT - STOCKPILE NO.1	2,467	1,207	912	912	9,306	4,553	3,441	3,441
942+72.35 to 943+28.50		52	25	19	19	183	88	67	67
STR NO. F-12-AN			172				610		
947+11.50 to 959+00		1,094	535	409	404	9,089	2,000	1,510	1,510
959+00 to 965+94.76		639	313	237	237	2,359	1,155	875	875
966+07.10 to 989+22.0		2,130	1,092	787	787	8,989	4,143	3,129	3,129
STR NO. F-12-AO			185				784		
993+33.0 to 1009+16.19		1,457	713	539	539	6,709	3,282	2,482	2,482
STR NO. F-12-AP			289				612		
1015+58.14 (End Project)									
▲Widening for Guard Rail		353	177	118	118				
Est for Irregularities		2,248				10,193			
ROADWAY TOTALS		17,241	7,344	5,527	5,527	78,193	33,267	25,103	25,103
PROJECT TOTALS		17,241	8,219	5,527	5,527	78,143	36,313	25,103	25,103

*Includes "A" Lane
▲See Guard Rail Tabulation for Locations

Note: Stabilization Based On:
1. E.D.L.A 18Kip : 185
2. Regional Factor : 3.0
3. Serviceability Index: 2.5
4. Subgrade R Value : 51 to 76

Strength Coefficients:
5. Hot Bituminous Pavement : 0.44
6. Plant Mix Bituminous Base : 0.34
7. Future Seal Coat : 0.25

Project Totals	Plan	Final
Base Course, Plant Mix Bit Base Cl 6 =	17,300	18,198.70
Hot Bituminous Pavement, Gr. E =	19,300	21,334.40
Haul, Ton Mile =	164,700	145,294

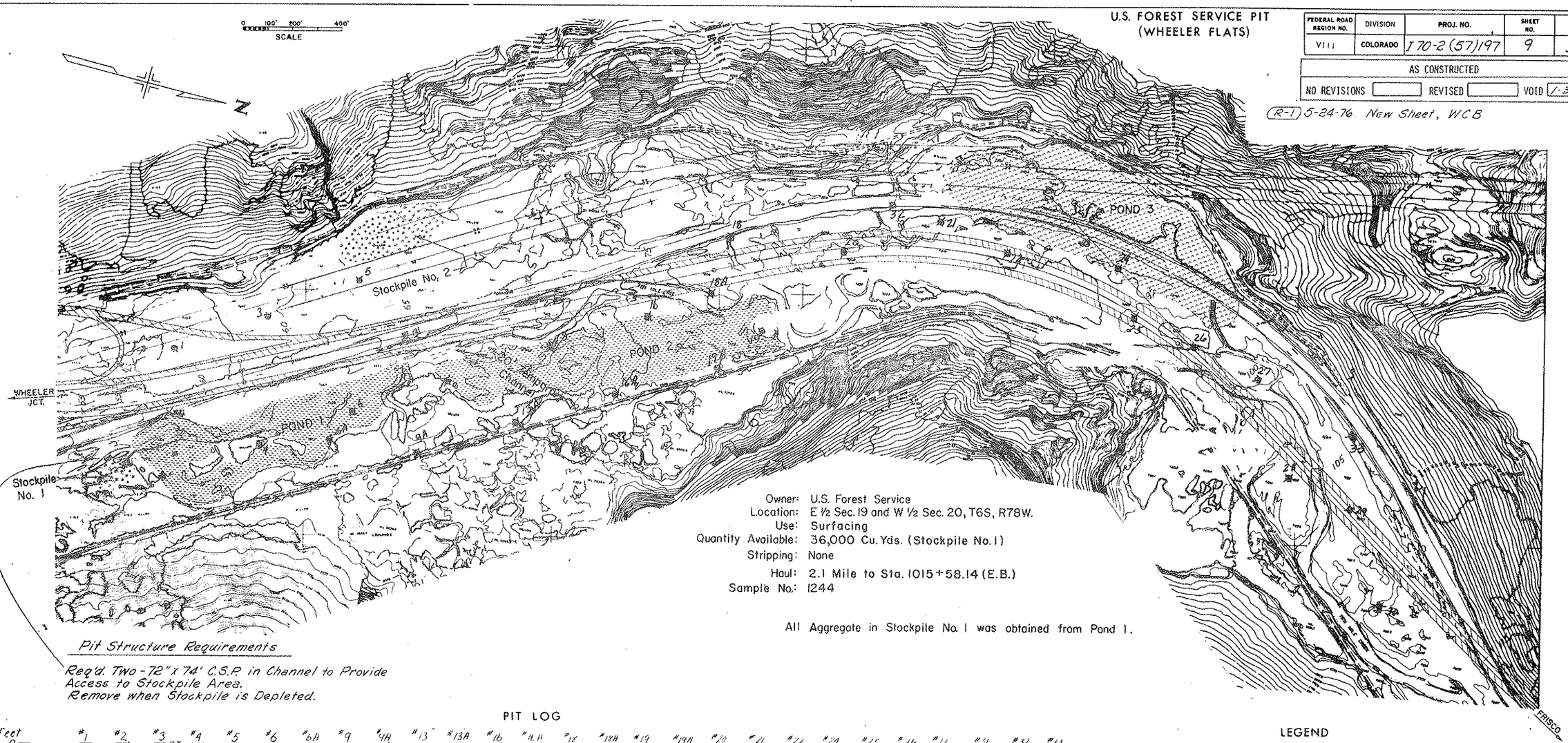
DIVISION OF HIGHWAYS, STATE OF COLORADO
D. O. H. FORM NO. 126
JUNE 1969

U.S. FOREST SERVICE PIT
(WHEELER FLATS)

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-2 (57)197	9	33

AS CONSTRUCTED
NO REVISIONS [ ] REVISED [ ] VOID [1-31-76]

(R-1) 5-24-76 New Sheet, WCB



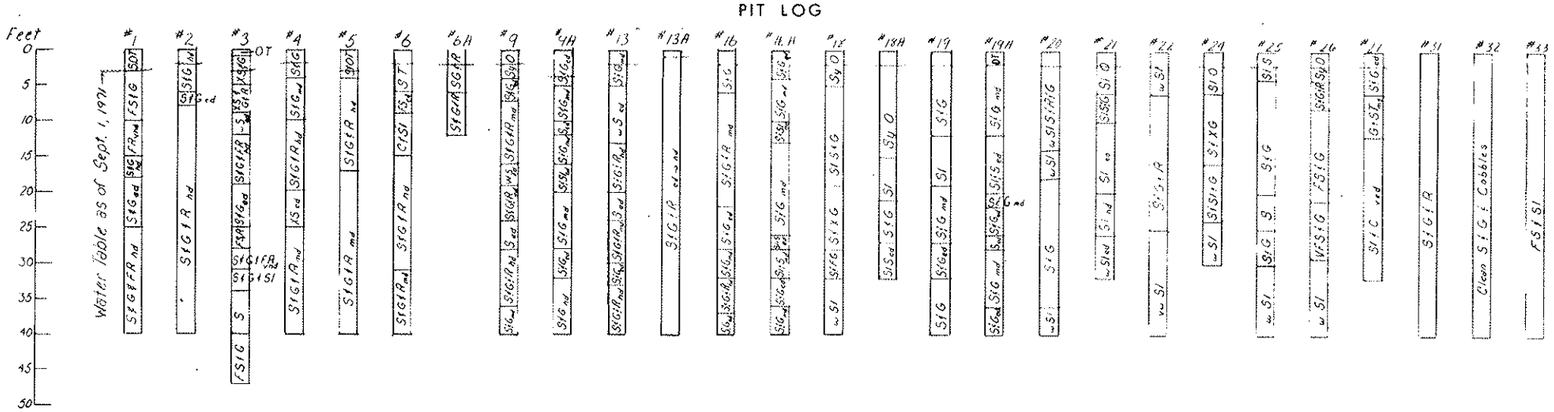
Owner: U.S. Forest Service
Location: E ½ Sec. 19 and W ½ Sec. 20, T6S, R78W.
Use: Surfacing
Quantity Available: 36,000 Cu. Yds. (Stockpile No. 1)
Stripping: None
Haul: 2.1 Mile to Sta. 1015+58.14 (E.B.)
Sample No.: 1244

All Aggregate in Stockpile No. 1 was obtained from Pond 1.

Pit Structure Requirements

Req'd. Two - 72" x 74' C.S.P. in Channel to Provide Access to Stockpile Area.
Remove when Stockpile is Depleted.

PIT LOG



LEGEND

Surfacing Pit
Borrow Pit

SyO	Sandy Overburden
SiO	Silty Overburden
OT	Organic Topsoil
ST	Sand Tailings
S†G	Sand & Gravel
R	Rock
FR	Fractured Rock
S	Sand
Si	Silt
FS	Fine Sand
XS	Course Sand
C	Clay
SiS	Silty Sand
ed	Easy Drill
md	Medium Drill
hd	Hard Drill
vhd	Very Hard Drill
w	Wet
vw	Very Wet
——	Water Table

STATE DEPARTMENT OF HIGHWAYS
DIVISION OF HIGHWAYS STATE OF COLORADO
DEPT. FORM 191
ALT. 1958

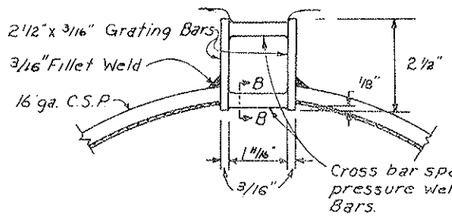
FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-2(57)197	12	33

AS CONSTRUCTED

NO REVISIONS 1-31-78 REVISED [ ] VOID [ ]

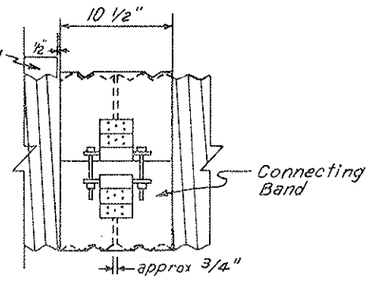
DETAILS OF SLOTTED PIPE INLET

SECTION A-A
Slot Detail

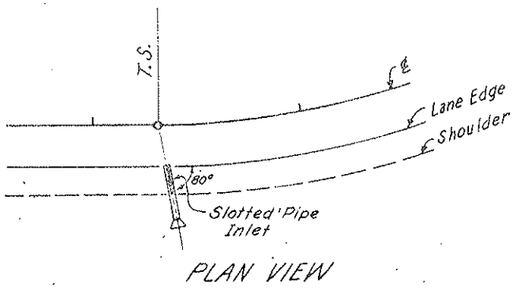


TYPICAL, COUPLING BAND

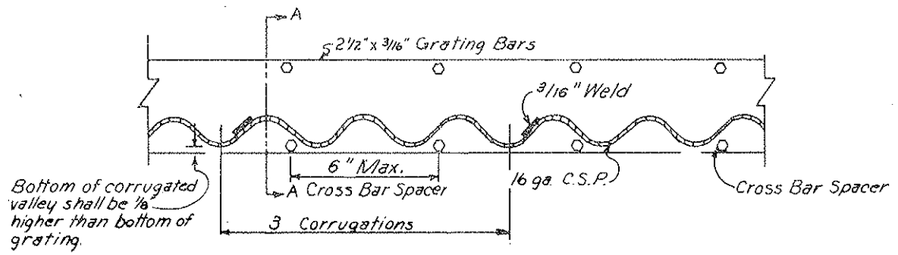
SECTION B-B

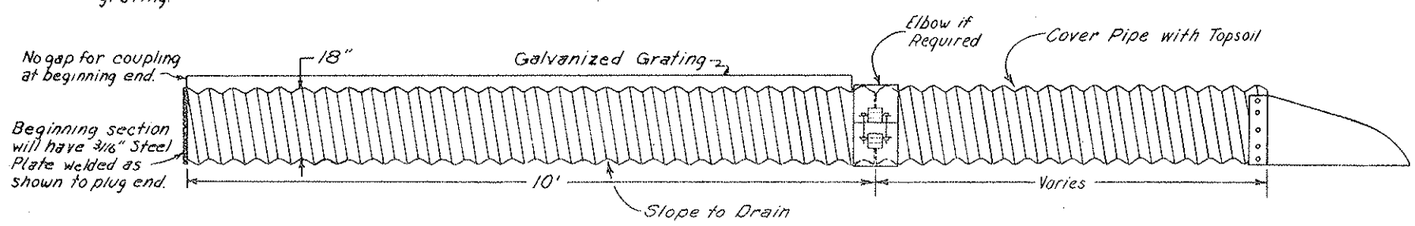


Slotted Pipe Inlet to be Covered During Construction Operations as Directed.



PLAN VIEW





DIVISION OF HIGHWAYS, STATE OF COLORADO
D. O. H. FORM NO. 126
REV. MARCH, 1974

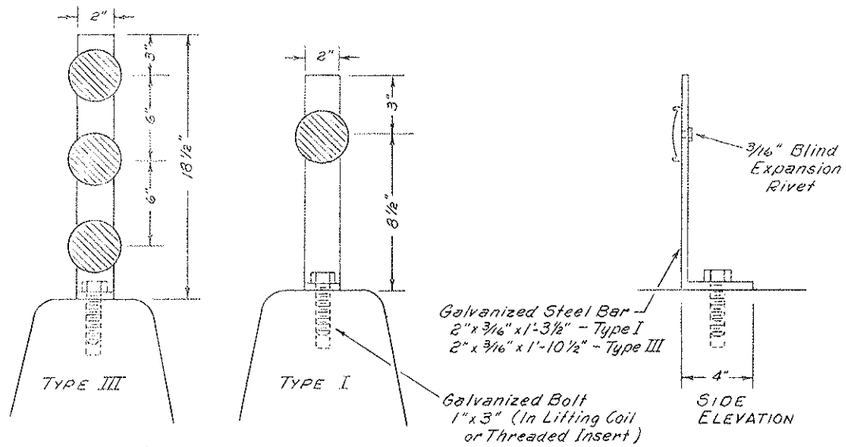
FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-2(57)197	13	33

AS CONSTRUCTED

NO REVISIONS 1-31-78 REVISED [ ] VOID [ ]

(R-1) 5-24-76, Deleted Officer Gulch Dam, WCB

DETAIL OF CONCRETE BARRIER DELINEATOR



For further information see Standard S-612-51A and Guard Rail Details

DIVISION OF HIGHWAYS, STATE OF COLORADO
D.O.H. FORM NO. 126
REV. MARCH, 1974

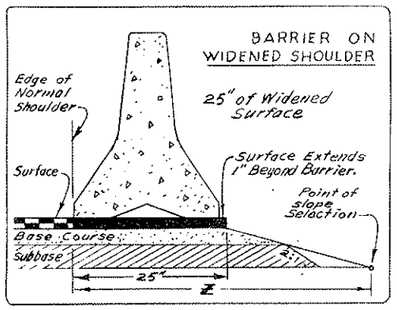
STANDARD M-606-EA

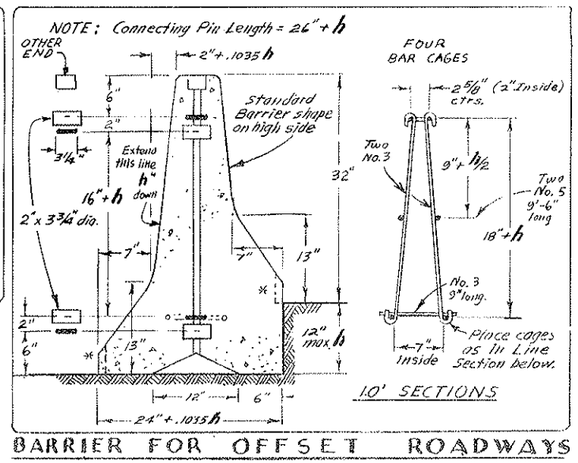
(PROPOSED APRIL, 1976) (SPECIAL THIS PROJECT)

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-2(57)197	14	33

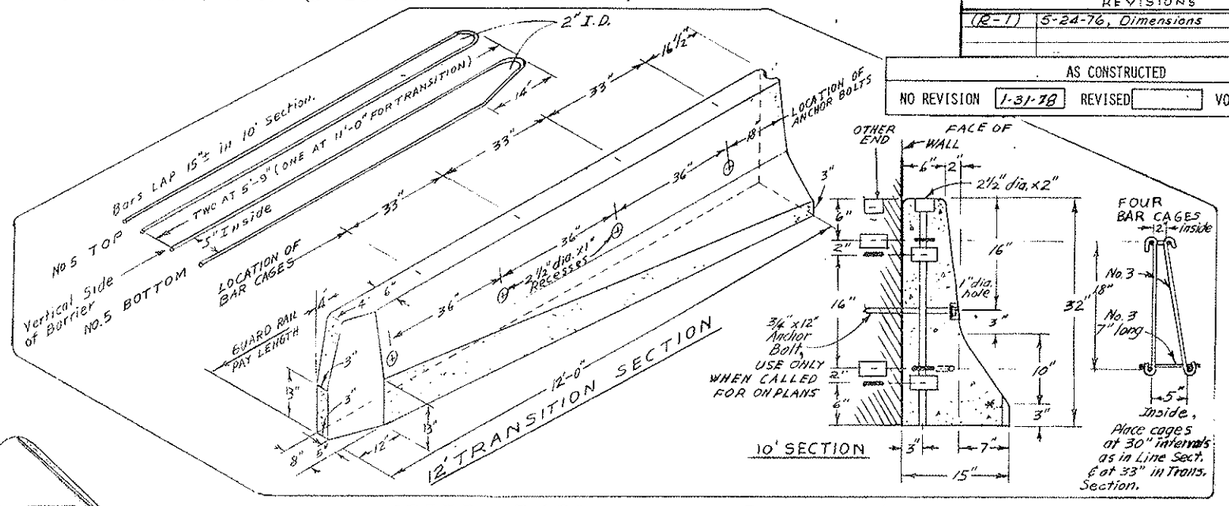
REVISIONS		
(R-1)	5-24-76, Dimensions	WCB

AS CONSTRUCTED — NO REVISION 1-31-78 — REVISED ____ — VOID ____

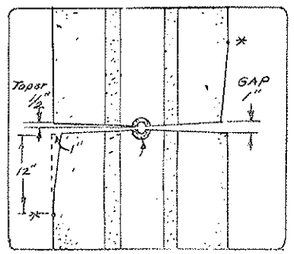




BARRIER FOR OFFSET ROADWAYS

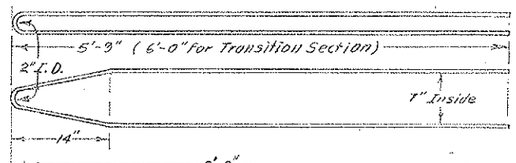


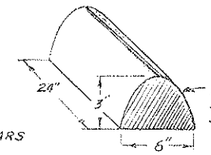
CONCRETE BARRIER - TYPE 4A (WALL TYPE)



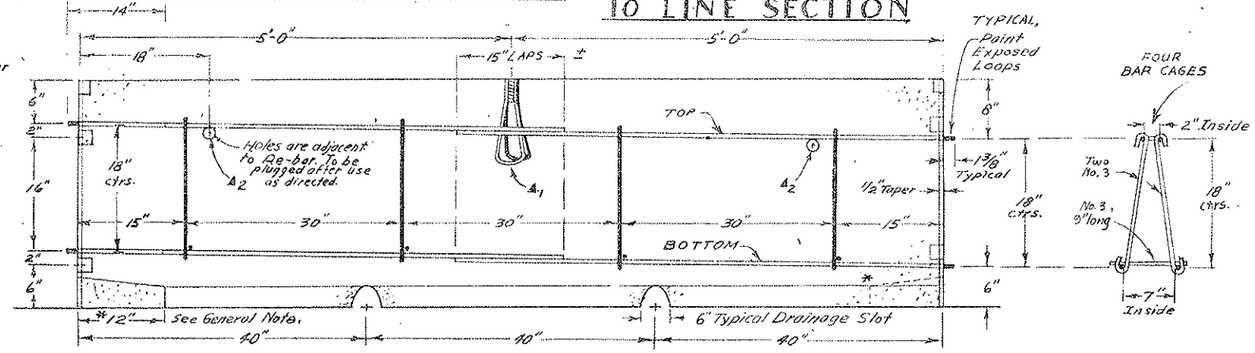
TOP VIEW OF JOINT

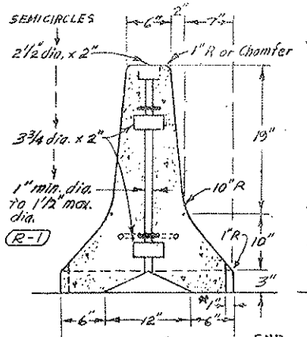
(REVERSE LOCATION OF TAPER FOR A JOINT IN SHOULDER BARRIER)





10' LINE SECTION





GENERAL NOTES

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

Concrete shall be Class A, B or D.

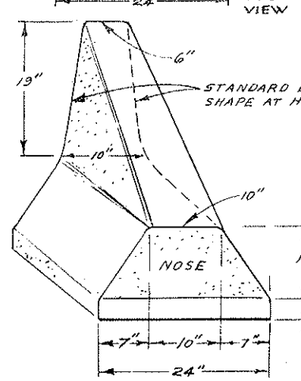
All exposed loops shall be thoroughly cleaned and painted in accordance with Section 509.

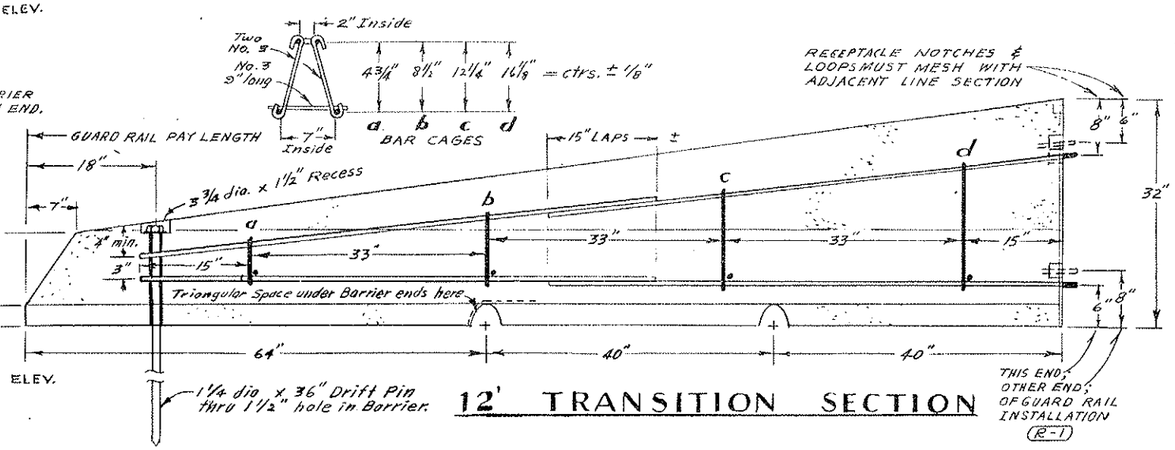
Drainage Slots may be omitted on: median installations with inlet drainage; shoulder barrier on high outside superelevated shoulders; and median barrier on curves except on vertical sag.

Existing asphaltic surface shall be patched along the barrier foundation.

Nuts, washers, lifting hardware, connecting pins, drift pins and anchor bolts shall be galvanized.

Where transition is required (see "h" in offset roadways), cast-in-place barrier shall be constructed, complete with matching reinforcement and hardware, to abut precast barrier.



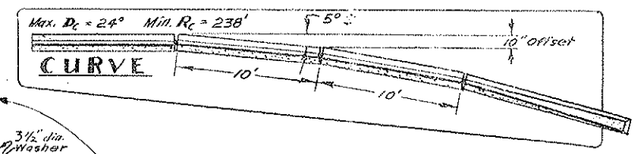


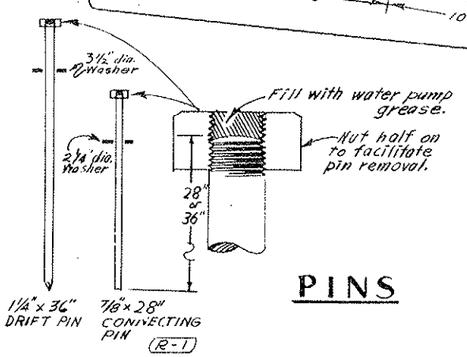
12' TRANSITION SECTION

* —— Taper shall be 1"x12" at traffic approach corners of section to eliminate snagging of plow blade.

Δ_1 —— OPTIONAL: 1" x 12" Lifting Coil with double flared loops. (Safe working load, 8000 lbs.)

Δ_2 —— OPTIONAL: Holes through Barrier for lifting by Rods and Yoke.





PINS

DEPARTMENT OF HIGHWAYS
STATE OF COLORADO
DIVISION OF HIGHWAYS

GUARD RAIL — TYPE 4
PRECAST — PORTABLE CONCRETE

Designed by TAL	Approved by
Made by JRB	Staff Design Engineer
Checked by RJH	Date:

DIVISION OF HIGHWAYS, STATE OF COLORADO
D. O. H. FORM NO. 126
JUNE 1969

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-2(57)197	15	33

AS CONSTRUCTED
NO REVISIONS 1-31-78 REVISED ____ VOID ____

LEGEND

Topsoil Stockpile T

Construction Equipment Area CE

E.B.
Δs 28°59'00" Lt.
Ts 1334.91'

W.B.
Δs 34°09'00" Lt.
Ts1 833.22' Ts2 767.36'

Δc 25°14'
Dc 1°15'
Tc 1025.97'
Lc 2018.67'
Rc 4583.662'
S = 0.056'/ft
MDS 60 mph
HSD

Δc 21°24'
Dc 3°00'
Tc 360.87'
Lc 713.33'
Rc 1909.859
S 0.078'/ft
MDS 70 mph
HSD

Θs 7°30'
Ls1 500'
LT1 333.63'
ST1 166.94'

Θs2 5°15'
Ls2 350'
LT2 233.44'
ST2 116.76'

Θs 1°52'30"
Ls 300'
LT 200.01'
ST 100.01'

Utility Owners:
Public Service Co. of Colorado

HAAS ROAD

TO VAIL

P.I. 809+50.41

S 09°22'W

821+30.00 (CW B)
20+00 (Cr Rd)

820+87.41 (E B)
20+62.04 (Cr Rd)

STR. NO. F-12-AJ

P.I. 821+70.60

P.I. 820+90.60

S.C. 823+60

S.C. 822+70

S 24°40'E

S 19°30'E

S 09°29'W

P.I. 834+15.61

REST AREA

STA. 838+00.0 Begin I 70-2(57)197 =
STA. 838+00.0 Begin I 70-2(41)197
STA. 838+00.0 End I 70-2(45)194

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-2(57)197	16	33

AS CONSTRUCTED

NO REVISIONS 1-31-78 REVISED ____ VOID ____

FINAL SURVEY — NOTE DISCREPANCIES — NO. — BY — DATE
SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED

ORIGINAL SURVEY — NOTE DISCREPANCIES — NO. — BY — DATE
SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED

SOIL SURVEY OF THE COMPLETED ROADBED
SAMPLE NOS. C1873, C1935, C1936 & C1961
PROJECT NO. I 70-2(41)197 DATE 10-6-75

STA. 838+00 BEGIN I 70-2(57)197
STA. 838+00 Begin I 70-2(41)197
STA. 838+00 End I 70-2(45)194

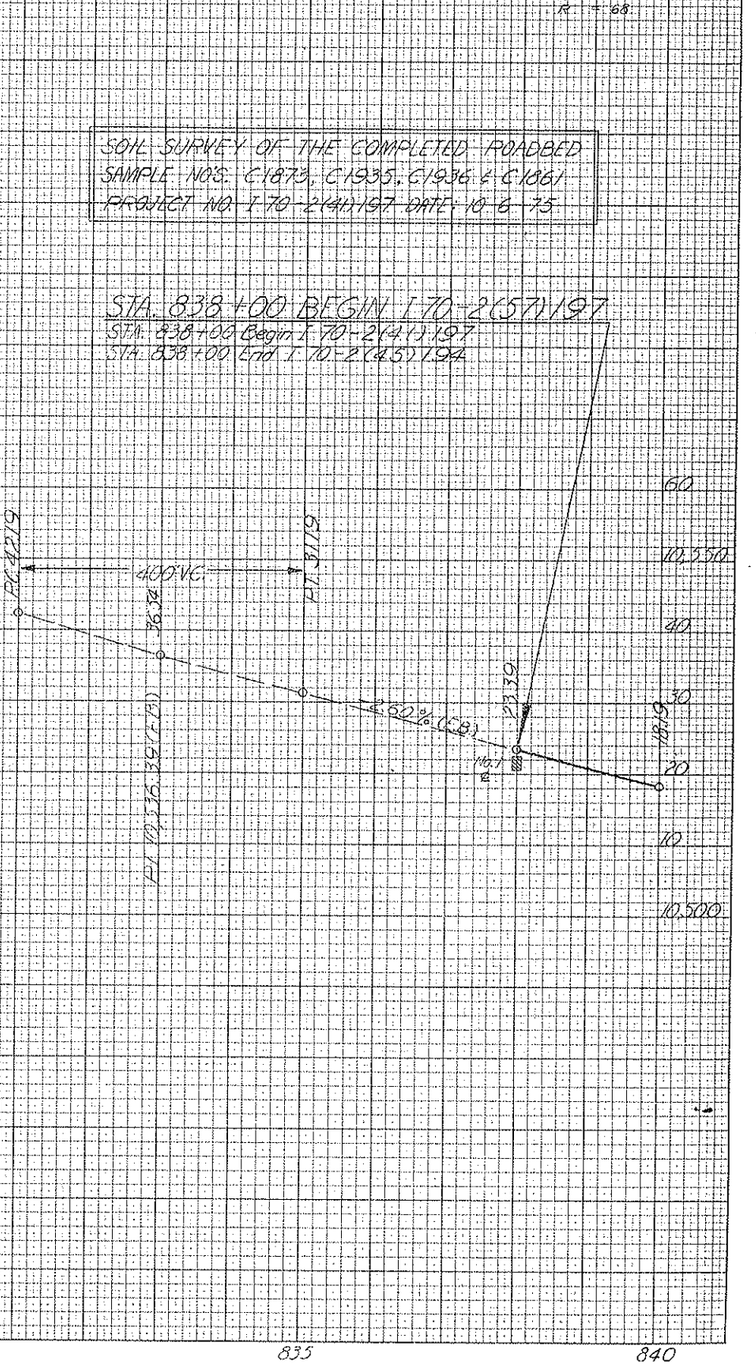


PLATE 3. CROSS SECTION
KEUFFEL & ESSER CO

DIVISION OF HIGHWAYS, STATE OF COLORADO
D. O. H. FORM NO. 126
JUNE 1969

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-2(57)197	17	33

AS CONSTRUCTED

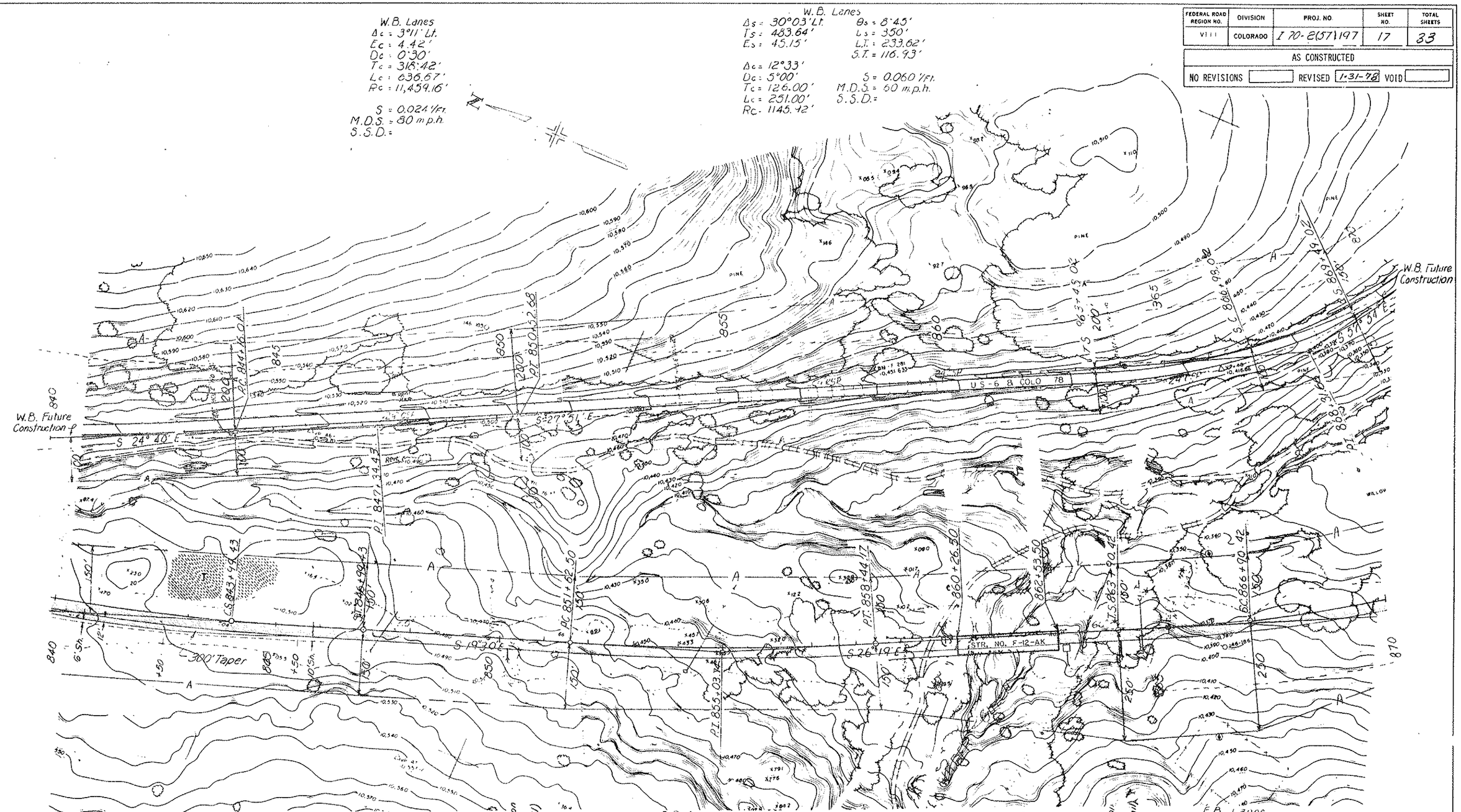
NO REVISIONS ☐ REVISED 1-31-78 VOID ☐

W.B. Lanes
Δc = 3°11' Lt.
Ec = 4.42'
Dc = 0°30'
Tc = 316.42'
Lc = 636.67'
Rc = 11,459.16'

S = 0.024 ft/ft.
M.D.S. = 80 m.p.h.
S.S.D. =

W.B. Lanes
Δs = 30°03' Lt. θs = 8°45'
Ts = 483.64' Ls = 350'
Es = 45.15' L.T. = 233.62'
S.T. = 116.93'

Δc = 12°33'
Dc = 5°00' S = 0.060 ft/ft.
Tc = 126.00' M.D.S. = 60 m.p.h.
Lc = 251.00' S.S.D. =
Rc = 1145.92'



E.B. Lanes
Δs = 28°59' Lt. θs = 1°52'30"
Ts = 1314.91' Ls = 300'
Es = 150.60' L.T. = 200.01'
S.T. = 100.01'

Δc = 25°14'
Dc = 1°15' S = 0.056 ft/ft.
Tc = 1025.97' M.D.S. = 80 m.p.h.
Lc = 2013.67' S.S.D. = >600'
Rc = 4583.66'

850+19.9
Sta ~~860+19.9~~ Equ'd
18"x10' Slotted Pipe
Inlet with 18"x 8'
C.S.P. with End Section
Rt, Cover Pipe with
Topsoil Rt. (See Detail)

E.B Lanes
Δc = 6°49 Lt.
Dc = 1°00'
Tc = 341.24'
Ec = 10.15'

Rc = 5729.58'

S = 0.047 ft/ft.
M.D.S. = 80 m.p.h.
S.S.D. = >600'

862+65
Sta ~~862+65~~ Equ'd
Type 13 Inlet (14'-30')
& 18" x 42' C.S.P.
with End Section, Rt

Sta 863+90.42 Req'd
18"x10' Slotted Pipe
Inlet with 18"x 22'
C.S.P. with End Section
Rt. Cover Pipe with
Topsoil Rt. (See Detail)

E.B Lanes
Δs = 21°41 Lt. θs = 3°00'
Ts = 698.88' Ls = 300'
Es = 53.45' L.T. = 200.03'
S.T. = 100.03'

Δc = 15°41'
Dc = 2°00' S = 0.065 ft/ft.
Tc = 394.55' M.D.S. = 70 m.p.h.
Lc = 784.17' S.S.D. = >600'
Rc = 2864.79'

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-2(57)197	18	33

AS CONSTRUCTED

NO REVISIONS 1-31-78 REVISED ____ VOID ____

FINAL SURVEY — SURVEYED ____ PLOTTED ____ NOTE BOOK ____ AREAS ____ AREAS CHECKED ____ BY ____ DATE ____

ORIGINAL SURVEY — SURVEYED ____ PLOTTED ____ NOTE BOOK ____ AREAS ____ AREAS CHECKED ____ BY ____ DATE ____

Test No. 2
A-2-4(0)
LL = 26
PI = 5
%200 = 26
R = 61

Test No. 3
A-1-b(0)
LL = 19.3
PI = 3.1
%200 = 12.6
R = 68

Test No. 4
A-1-b(0)
LL = 21.7
PI = 5.5
%200 = 14
R = 69

Test No. 5
A-2-4(0)
LL = 22
PI = 4
%200 = 28
R = 51

EASTBOUND

20+00 ℄

No. 2 ℄

PI 10502.59

2802

No. 3 ℄

PC 7517.59

1000' V.C.

PI 7129

No. 4 ℄

STA. 860+26.50 BEGIN BRIDGE

STA. 862+53.50 END BRIDGE

STA. 860+40 E.P. AK

Grate E = 98.1

10.5

EP 3867

5262

5235

20+00 10,500 20 10 10,400 90 80 70 60 10,350 40 30 20 10 10,400 90 80 70 60 10,350

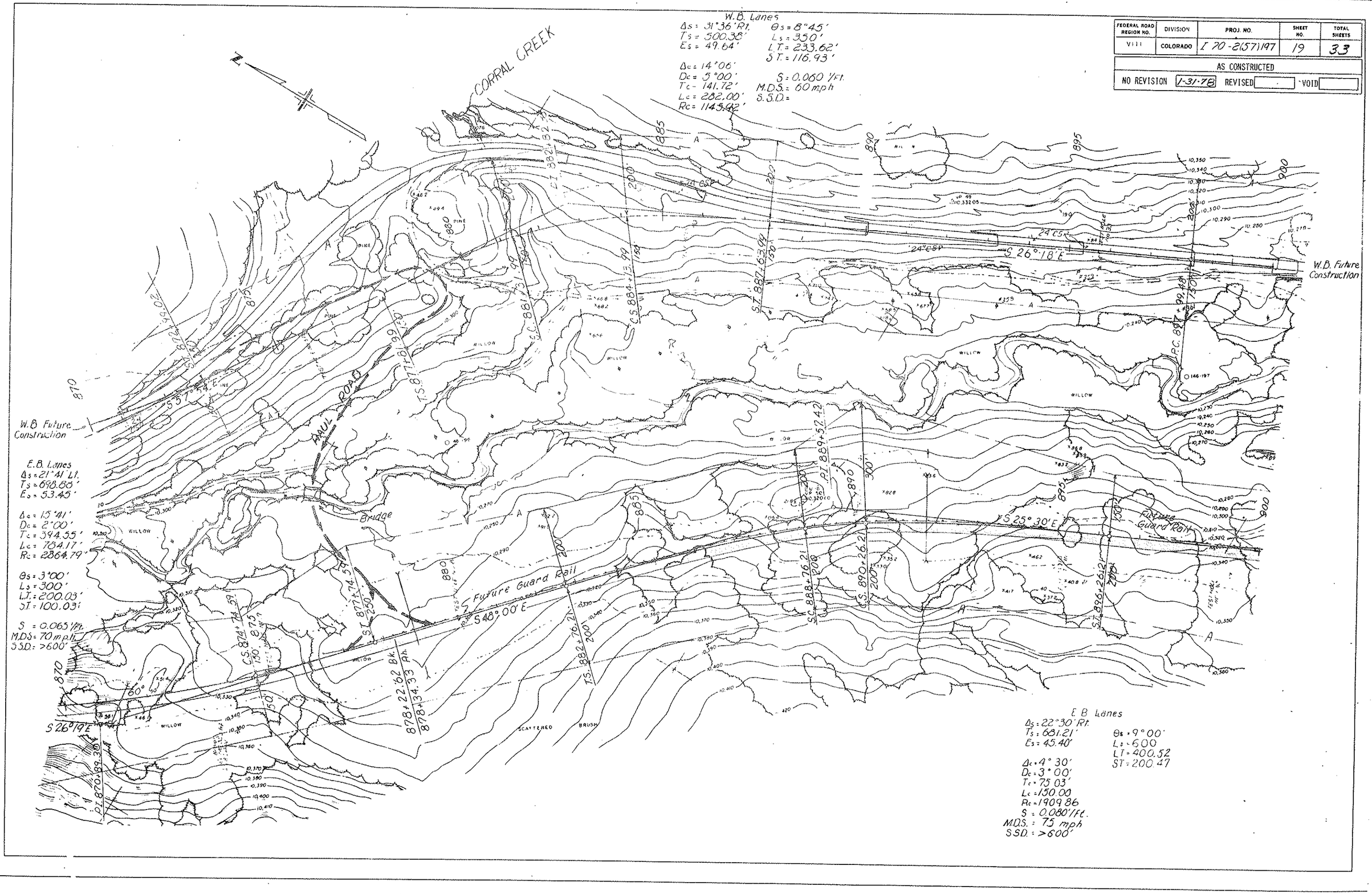
840 845 850 855 860 865 870

K&E PLATE 3. CROSS SECTION KEUFFEL & ESSER CO

DIVISION OF HIGHWAYS, STATE OF COLORADO
D. O. H. FORM NO. 126
JUNE 1969

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-2(57)197	19	33

AS CONSTRUCTED
NO REVISION 1-31-78 REVISED [ ] VOID [ ]



AS CONSTRUCTED			
NO REVISION	1-31-78	REVISED	VOID

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-2 (57) 197	20	33

FINAL SURVEY — DATE — BY — SURVEYED — PLOTTED — TEMPLATE — NOTE BOOK — AREAS — AREAS CHECKED — NO.

ORIGINAL SURVEY — DATE — BY — SURVEYED — PLOTTED — TEMPLATE — NOTE BOOK — AREAS — AREAS CHECKED — NO.

Test No. 6
R-1 = 5 (10)
L.L. = 20
P.I. = 1.3
%200 = 17.8
R = 69

Test No. 7
R-2 = 4 (10)
L.L. = 26
P.I. = 4
%200 = 27
R = 161

Test No. 8
R-1 = 5 (8)
L.L. = 20
P.I. = 1.6
%200 = 17
R = 68

EASTBOUND

900'HC

PI 29+54

5268

10,350

No.5

5235

40

30

20

10

10,300

3725

2949

2949

PI 10+30.44

No.7

-0.2001 %

No.8

2527

2347

PC 25+76

EQUATION 878+2242 Bk. = 878+34.33 Ah.

870 875 880 885 890 895 900

K&E PLATE 3. CROSS SECTION KEUFFEL & ESSER CO

DIVISION OF HIGHWAYS, STATE OF COLORADO
D. O. H. FORM NO. 106
JUNE 1969

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-2(57)197	21	33

AS CONSTRUCTED

NO REVISIONS | REVISED 1-31-78 | VOID

W.B. Lanes
Δc = 1°55' Rt.
Ec = 3.20'
Dc = 0°15'
Tc = 383.37'
Lc = 766.67'
Rc = 22,918.31'

S = 0.015 ft/ft.
M.D.S. = 80 m.p.h.
S.S.D. =

W.B. Lanes
Δs = 40°13' Lt. Θs = 8°45' Θs2 = 10°00'
Ts = 598.14' Ts2 = 619.35' Ls = 350' Ls2 = 400'
Es = 79.86' L.T. = 233.62' L.T.2 = 267.09'
S.T. = 116.93' S.T.2 = 133.72'

Δc = 21°28'
Dc = 5°00'
Tc = 217.21'
Lc = 429.33'
Rc = 1145.92'

S = 0.060 ft/ft
M.D.S. = 60 m.p.h.
S.S.D. =

W.B. Future Construction

Note: E.B. Projected line to be constructed.

W.B. Future Construction

STR. NO. F-12-AM

Future Guard Rail

Future Guard Rail

Future Guard Rail

Sta 907+15
18"x10" Slotted Pipe Inlet
With 18"x8' C.S.P. With
End Section Rt. Cover
Pipe with Topsoil Rt.
(See Detail)

912+94
18"x90' C.S.P.
End Section (Lt.
13 Inlet (H=3.0)

915+98
13 Inlet (H=3.0)
& 18"x86' C.S.P.
with End Section, Lt.

905+50
6" x 300' C.S.P.
Perforated

927+83
Sta 927+82.33 Reqd 18"x10'
Slotted Pipe Inlet with 18"x8'
C.S.P. with End Section Rt.
Cover Pipe with Topsoil Rt.
(See Detail)

E.B. Lanes (Survey)
Δs 49°15' Lt
Ts 1026.28
Es 160.80'

Δc 40° 15'
Dc 3°00'
Tc 699.85
Lc 1341.67
Rc 1909.86
S 0.078 ft/ft.
M.D.S. 70 m.p.h.
S.S.D.

Θs 4° 30'
Ls 300'
L.T. 200.06
S.T. 100.06

E.B. Lanes (Projected)
Δs = 47°24' Lt.
Ts = 1022.28'
Es = 160.80'

Δc = 26°24' Lt.
Dc = 3°30'
Tc = 383.96'
Lc = 754.29'
Rc = 1637.02'

Θs = 10°30'
Ls = 600'
L.T. = 400.71'
S.T. = 200.64'

S = 0.080 ft/ft
M.D.S. = 70 mph
S.S.D. >600'

AS CONSTRUCTED

NO REVISIONS 1-31-78 REVISED VOID

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-2 (57) 197	22	33

Test No. 9
A = 1 - 5.00
L.L. = NV.
P.I. = NV.
%200 = 10.4
R = 68

Test No. 10
A = 1 - 0.00
L.L. = NV.
P.I. = NV.
%200 = 10
R = 76

Test No. 11
A = 2 - 4.00
L.L. = 28.9
P.I. = 38
%200 = 22.7
R = 60

Test No. 12
A = 4.00
L.L. = 24
P.I. = 20
%200 = 38
R = 63

EASTBOUND

0.2001 %

PI 10+24.16

PI 14+33

PI 23+37

PI 28+14

1600' V.C.
SSD = 610'
MDS = 70 mph

600' V.C.

STA. 913+28.75 BEGIN BRIDGE

STA. 915+36.25 END BRIDGE

5.2036 %

3.5625 %

STR. No. 1-V

AM

Grate Elev. = 368

No. 9

No. 10

No. 11

No. 12

23.16

23.41

12.15

9.36

10,300

10,250

10,200

90

80

70

60

40

30

20

10

900

905

910

915

920

925

930

ORIGINAL SURVEY
SURVEYED
PLOTTED
TEMPLATE
NOTE BOOK
AREAS
AREAS CHECKED
NO.
BY
DATE

K·E PLATE 3, CROSS SECTION
KEUFFEL & ESSER CO

DIVISION OF HIGHWAYS, STATE OF COLORADO
D. O. H. FORM NO. 126
JUNE 1969

AS CONSTRUCTED						
NO REVISIONS		REVISED 1-31-78	VOID	FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
				VIII	COLORADO	I 70-2(57)197	23	33

W.B. Lanes

$\Delta s = 34°21'Lt$
$Ts = 553.35'$ $Ts_2 = 532.82'$
$Es = 58.86$

$\Delta c = 15°36'$
$Dc = 500'$
$Tc = 156.97'$
$Lc = 312.00'$
$Rc = 1145.92'$

$\theta s_1 = 10°00'$ $\theta s_2 = 8°45'$
$Ls_1 = 400'$ $Ls_2 = 350'$
$LT_1 = 267.09'$ $LT_2 = 233.62'$
$ST_1 = 133.72'$ $ST_2 = 116.75$

$S = 0.060\ ''/Ft.$
$M.D.S. = 60\ m.p.h$
$S.S.D. =$

E.B. Lanes (Survey)

$\Delta s = 15°52'Lt$
$Ts = 682.42'$

$\theta s = 2°15'$
$Ls = 300'$
$L.T. = 200.02$
$S.T. = 100.01$

$\Delta c = 11°22'Lt.$
$Dc = 1°30'$
$Tc = 380.14'$
$Lc = 757.78$
$Rc = 3819.72'$
$S = .060''/ft.$
$M.D.S. = 75\ mph$
$S.S.D.$

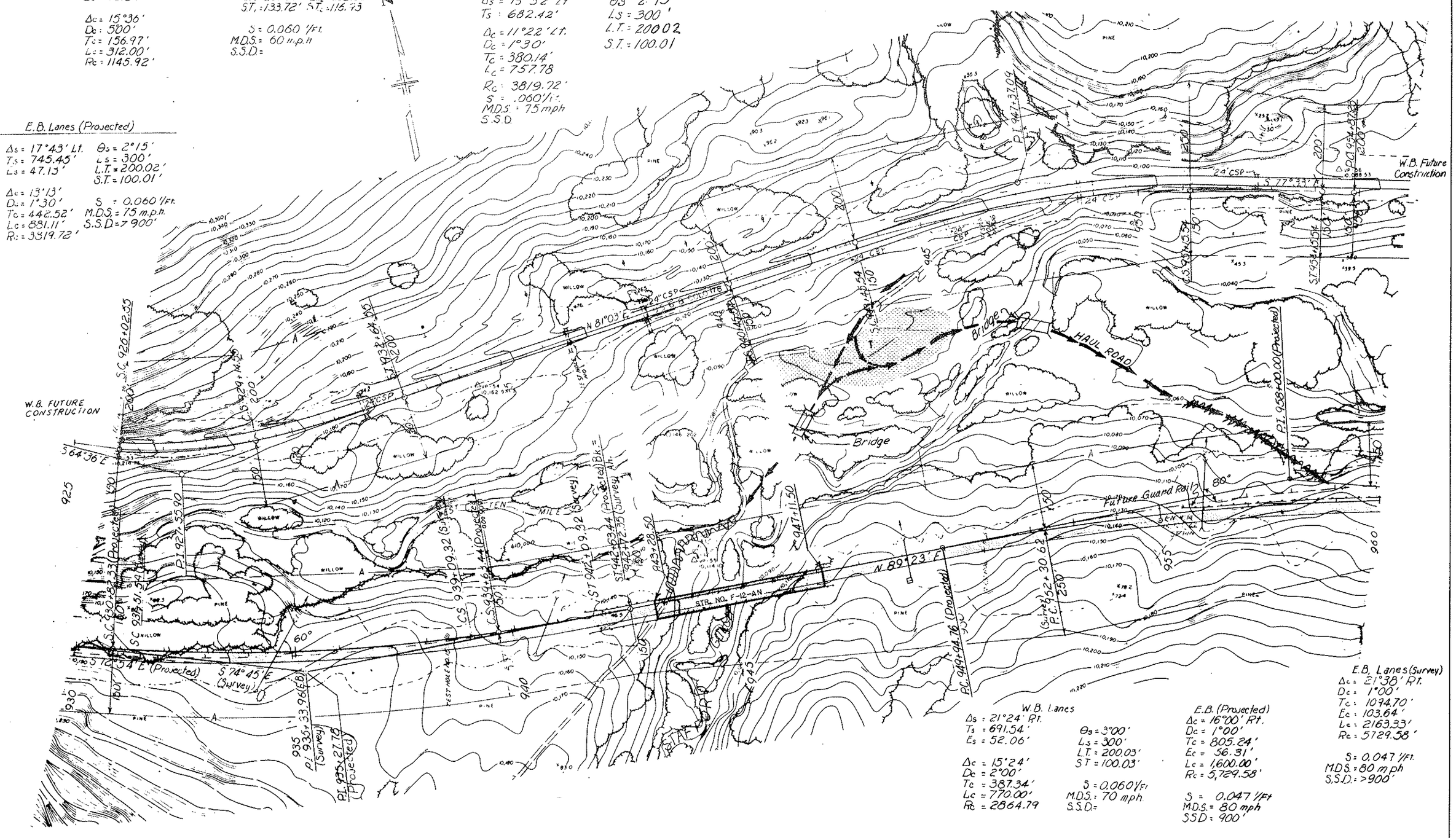
E.B. Lanes (Projected)

$\Delta s = 17°43'Lt.$
$Ts = 745.45'$
$Ls = 47.13'$

$\theta s = 2°15'$
$Ls = 300'$
$L.T. = 200.02'$
$S.T. = 100.01'$

$\Delta c = 13°13'$
$Dc = 1°30'$
$Tc = 442.52'$
$Lc = 881.11'$
$Rc = 3819.72'$

$S = 0.060\ ''/Ft.$
$M.D.S. = 75\ m.p.h.$
$S.S.D. = 7900'$



Note: Projected line to be constructed.

W.B. Lanes

$\Delta s = 21°24'$ Rt.
$Ts = 691.54'$
$Es = 52.06'$

$\Delta c = 15°24'$
$Dc = 2°00'$
$Tc = 387.34'$
$Lc = 770.00'$
$Rc = 2864.79$

$\theta s = 3°00'$
$Ls = 300'$
$LT = 200.03'$
$ST = 100.03'$

$S = 0.060\ ''/Ft.$
$M.D.S. = 70\ mph.$
$S.S.D. =$

E.B. (Projected)

$\Delta c = 16°00'$ Rt.
$Dc = 1°00'$
$Tc = 805.24'$
$Ec = 56.31'$
$Lc = 1,600.00'$
$Rc = 5,729.58'$

$S = 0.047\ ''/Ft$
$M.D.S. = 80\ mph$
$SSD = 900'$

E.B. Lanes (Survey)

$\Delta c = 21°38'$ Rt.
$Dc = 1°00'$
$Tc = 1094.70'$
$Ec = 103.64'$
$Lc = 2163.33'$
$Rc = 5729.58'$

$S = 0.047\ ''/Ft.$
$M.D.S. = 80\ mph$
$S.S.D. = >900'$

AS CONSTRUCTED
NO REVISIONS 1-31-78 REVISED VOID

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-2 (57) 197	24	33

Test No. 13
A-1-b (0)
L.L. = 25.1
P.I. = 3.6
%200 = 23.6
R = 68

Test No. 14
A-1-b (0)
L.L. = 22.0
P.I. = 1.9
%200 = 20.7
R = 68

Test No. 15
A-1-b (0)
L.L. = N.V.
P.I. = N.V.
%200 = 20
R = 76

Test No. 16
A-1-b (0)
L.L. = 20.1
P.I. = 1.2
%200 = 17.2
R = 68

Test No. 17
A-2-4 (0)
L.L. = N.V.
P.I. = N.V.
%200 = 31
R = 69

EASTBOUND

PC 95.04
800' V.C.
SSD = 822
VADS = 80 mph
PI 60.25
PI 101.80.95
PC 95.53 @ 9109
PI 102.25.80 NO VC
PI 26.75
1000' V.C.
STATION 943+38.50 BEGIN BRIDGE
STATION 947+11.50 END BRIDGE
EQUATION 942+63.44 BK = 4163 AHD
942+72.35 AH = 4143.44
STR NO. F-12-AN
-3.7225 %
-0.7000 %
-0.5993 %
No. 13. ℄
No. 14. ℄
No. 16. ℄
No. 17. ℄
110.14
98.56
79.30
43.09
35.25
20.11

ORIGINAL SURVEY
SURVEYED
PLOTTED
TRACED
NOTE BOOK
AREAS
NO. AREAS CHECKED
BY
DATE

K+E PLATE 3. CROSS SECTION KEUFFEL & ESSER CO

DIVISION OF HIGHWAYS, STATE OF COLORADO
D. O. H. FORM NO. 126
JUNE 1969

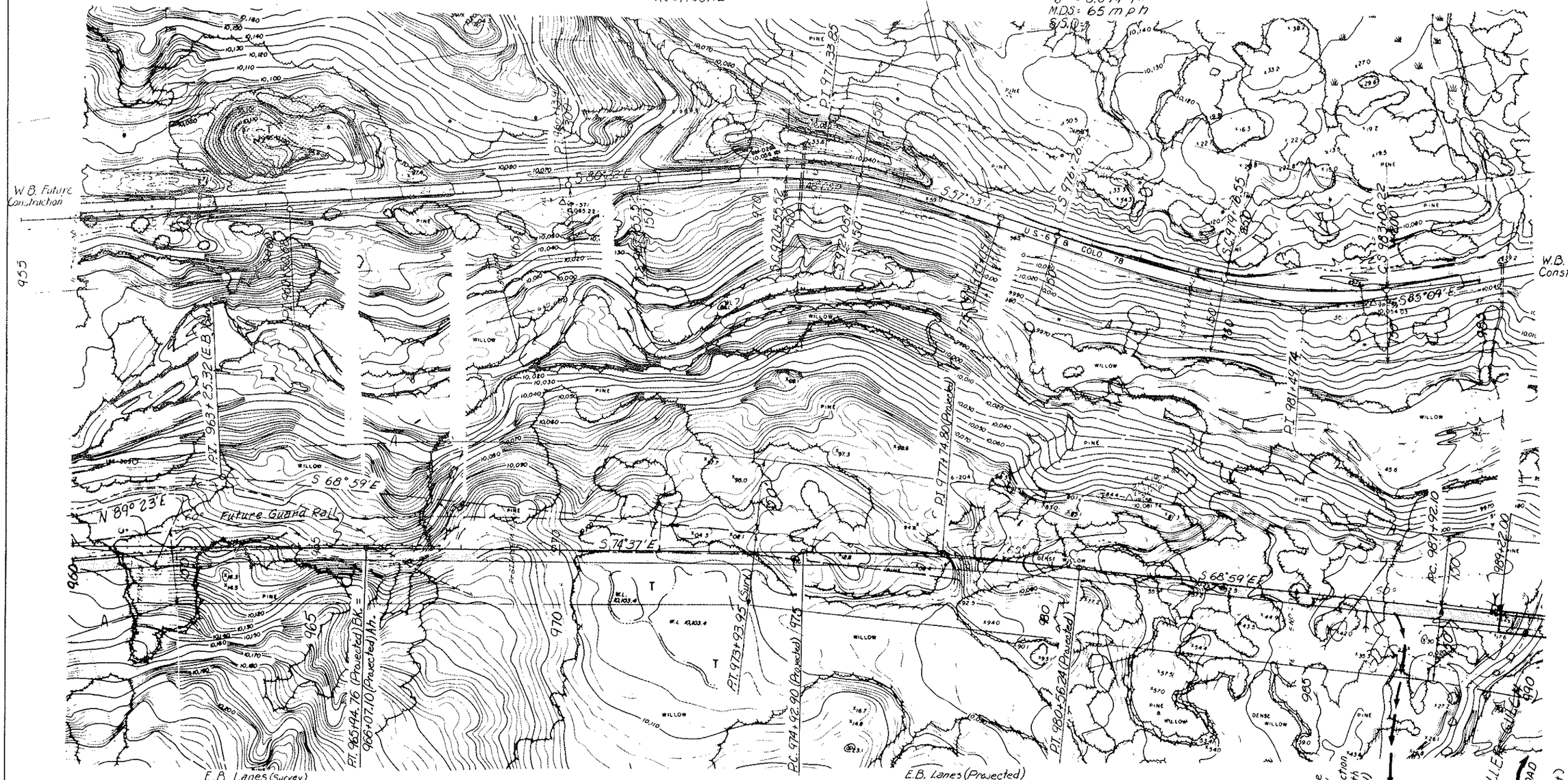
FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-2(57)197	25	33

AS CONSTRUCTED
NO REVISIONS ☐ REVISED 1-31-78 VOID ☐

W.B. Lanes
$\Delta c = 2°49'Lt$ S = 0.015 ft/ft.
Ec 6.92'. M.D.S. = 80 m.p.h.
$Dc = 0°15'$ S.S.D. =
$Tc = 563.45'$
$Lc = 1126.67'$
$Rc = 22,918.31'$

W.B. Lanes
$\Delta s = 22°29'Rt$ θs 7°30'
$Ts = 378.33'$ $Ls = 300'$
$Es = 25.77'$ $LT = 200.18'$
$ST = 100.16'$
$\Delta c = 7°29'$
$Dc = 5°00'$ S = 0.080 ft/ft.
$Tc = 74.94'$ M.D.S. = 60 m.p.h.
$Lc = 149.67'$ S.S.D. =
$Rc = 1145.92'$

W.B. LANES
$\Delta s = 27°16'Lt.$ $\theta s = 7°00'$
$Ts = 523.19'$ $Ls = 350'$
$Es = 45.23'$ $LT = 233.52'$
$ST = 116.83'$
$\Delta c = 13°16'Lt.$
$Dc = 4°00'$
$Tc = 166.57'$
$Lc = 331.67'$
$Rc = 1432.39'$
S = 0.079 ft/ft.
M.D.S. = 65 m.p.h.
S.S.D. =



E.B. Lanes (Survey)
$\Delta c = 21°38'Rt$
$Dc = 1°00'$
$Tc = 1094.70'$
$Ec = 103.64'$
$Lc = 2163.33'$
$Rc = 5729.58'$
S = 0.047 ft/ft.
M.D.S. = 80 m.p.h.
S.S.D. = 900'

E.B. Lanes (Projected)
$\Delta c = 5°38'Rt.$
$Dc = 1°00$
$Tc = 281.89$
$Ec = 6.93'$
$Lc = 563.34'$
$Rc = 5,729.58'$
S = 0.047 ft/ft.
M.D.S. = 80 mph
S.S.D. = 900'

~~984+88~~ Sta 984+92 Reqd
18"x10' Slotted Pipe Inlet with 18"x 20' C.S.P. with End Section At, Cover Pipe with Topsoil (See Detail)

989+13
18" X 30' C.S.P. (H)
13 Inlt (H:30)

AS CONSTRUCTED									
NO REVISIONS 1-31-78	REVISED		VOID		FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
					XIII	COLORADO	I 70-2(57) 197	26	33

ORIGINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
NOTE BOOK	AREAS	
	AREAS CHECKED	
NO.		

Test No. 18
A-1-a (0)
LL = 21.6
PI = 3.2
%200 = 21.9
R = 60

Test No. 19
A-1-b (0)
LL = 27
PI = 3
%200 = 21
R = 72

Test No. 20
A-1-b (0)
LL = 19.8
PI = 0.9
%200 = 14.7
R = 68

Test No. 21
A-1-b (0)
LL = 24
PI = 8
%200 = 18
R = 72

EASTBOUND

-0.59% Gr.

No. 18 ℄

No. 19 ℄

No. 20 ℄

No. 21 ℄

+3.39% Gr.

16.54

16.54

EQUATION 965+94.76 BK = 966+07.10 AH

16.29

77.33

PI 10+12.50

1300' V.C.
SSD = 616'
MDS = 70 mph

STATION 980+22.00 BEGIN BRIDGE

20.68

10100

10000

2011

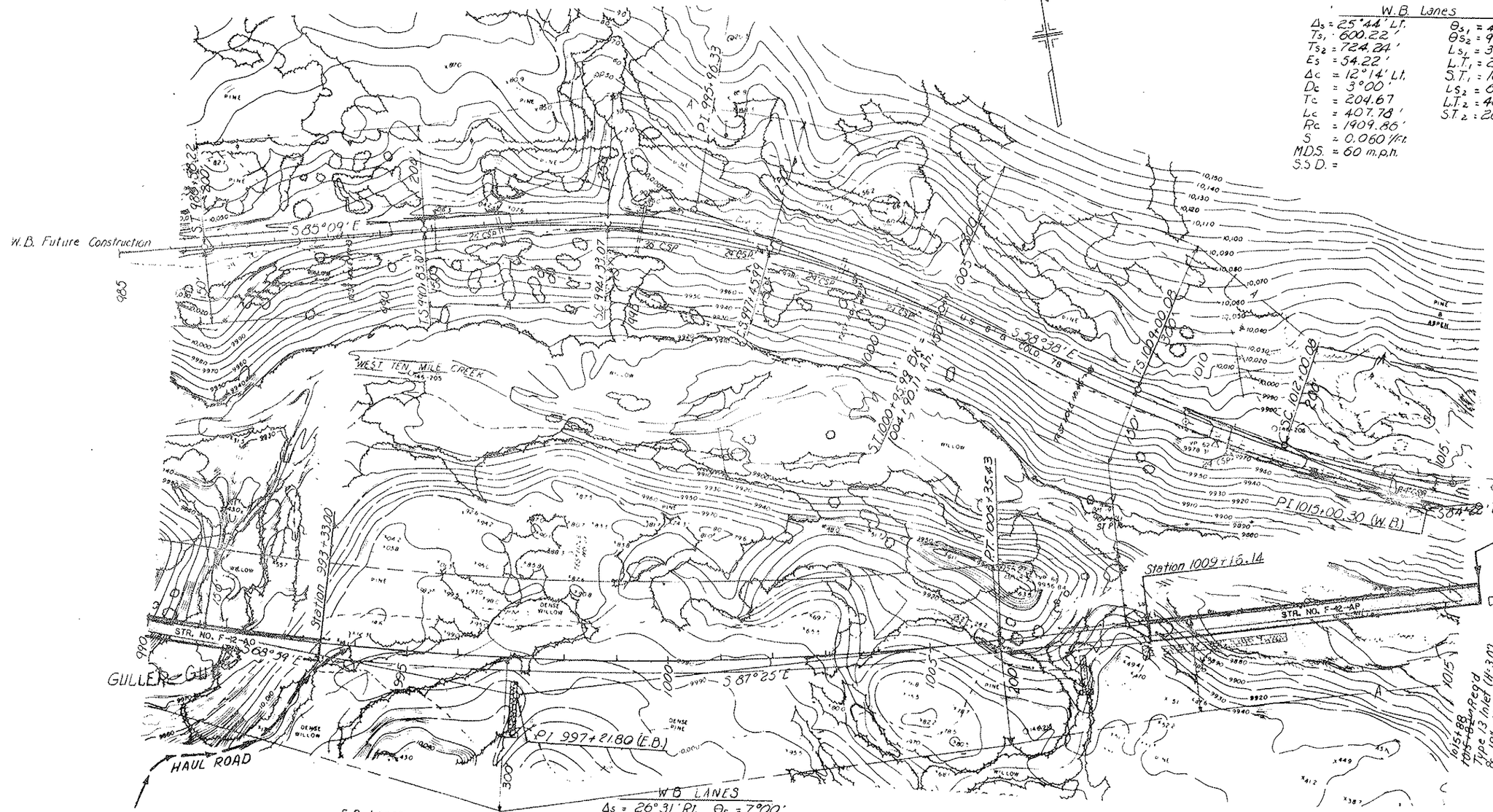
04+60

1/

DIVISION OF HIGHWAYS, STATE OF COLORADO
D. O. H. FORM NO. 126
JUNE 1969

AS CONSTRUCTED					
NO REVISIONS ☐	REVISED 1-31-78	VOID ☐			

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-2(57)197	27	33



FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-2(57)197	28	33

AS CONSTRUCTED

NO REVISIONS 1-31-78 REVISED VOID

DATE

ORIGINAL SURVEY
SURVEYED BY
PLOTTED DATE
TEMPLATE
NOTE BOOK NO. & PG.
AREAS CHECKED
NO.

Test No. 22
A-1-b (0)
L.L. = NV.
P.I. = NV.
% 200 = 15.3
R = 62

Test No. 23
A-1-b (0)
L.L. = 26
P.I. = 3
% 200 = 20
R = 68

Test No. 24
A-1-b (0)
L.L. = NV.
P.I. = NV.
% 200 = 19
R = 68

STATION 9+13+33.00 END BRIDGE

STR. NO. F-12-AQ

No. 22 ℄

-5.393.9 %

No. 23 ℄

EASTBOUND

PC 29.00

800' V.C.

STATION 1011+13.14 BEGIN BRIDGE

No. 24 ℄

STR NO. F-12-AP

-0.20 %

Grate 4: 05.7

STATION 1015+58.14 END BRIDGE

STATION 1015+58.14 END I 70-2(57)197

PI 10662

PI 9907.42

1261

0582

2290.06

PC 0622

990 995 1000 1010 1015 1020

9900 10000

K+E PLATE 3. CROSS SECTION/1005 KEUFFEL & ESSER CO.

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-2(57)197	29	33

AS CONSTRUCTED

NO REVISIONS 7-31-78 REVISED ☐ VOID ☐

NOTE : Projected line to be constructed.

W.B LANES (SURV.)

Δ_s = 27°42' Lt
T_{s_1} = 640.5'
T_{s_2} = 543.8'

Δ_c = 8°42' Lt.
D_c = 4°00'
T_c = 109.0'
L_c = 217.5'
R_c = 1432.4'
S = 0.079
M.D.S. = 65 mph
S.S.D. =

θ_{s_1} = 12°00'
L_{s_1} = 600'
L.T. = 400.9'
S.T. = 200.8'
θ_{s_2} = 7°00'
L_{s_2} = 350'
$L.T._2$ = 233.5'
$S.T._2$ = 116.8'

W.B. PROJ.

Δ_s = 31°30' Lt.
T_{s_1} = 671.1
T_{s_2} = 589.9'

Δ_c = 13°30' Lt
D_c = 4°00'
T_c = 169.5'
L_c = 337.5'
R_c = 1,432.4'
e = .060 ft/ft
M.D.S. = 65 m.p.h.
S.S.D. = 844'

θ_{s_1} = 11°00'
L_{s_1} = 550
L.T.$_1$ = 367.4
S.T.$_1$ = 184.0'

θ_{s_2} = 7°00'
L_{s_2} = 350'
$L.T._2$ = 233.5
$S.T._2$ = 116.8

E.B. PROJ.

Δ_s = 26°51' Lt
T_s = 541.3'
E_s = 48.4
Δ_c = 16°21' Lt
D_c = 3°30'
T_c = 235.2
L_c = 467.1'
R_c = 1,637.0'
e = .073 ft/ft
M.D.S. = 70 mph
S.S.D. = 657'

θ_s = 5°15' Lt.
L_s = 300'
L.T. = 200.1
S.T. = 100.1

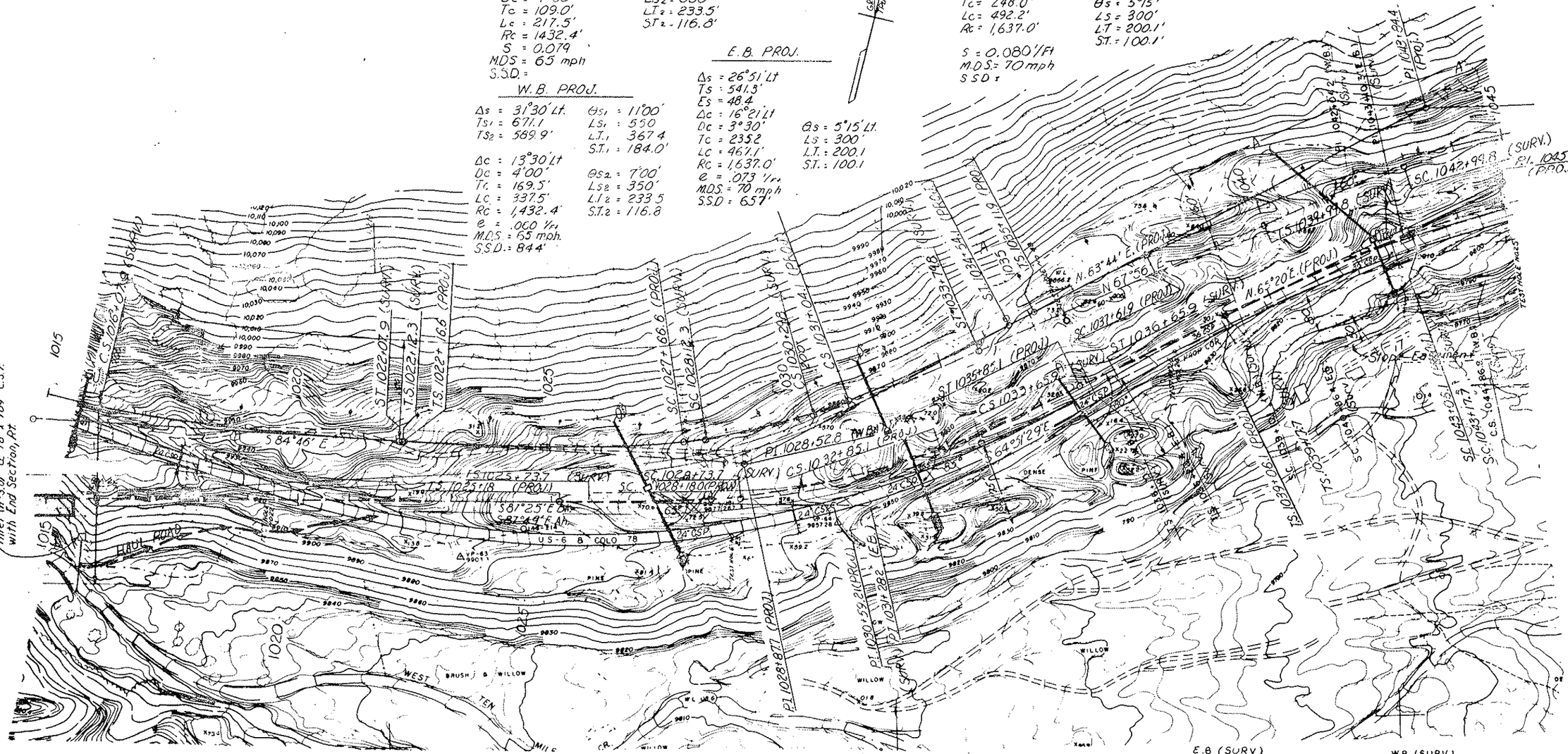
E.B. LANE (SURV.)

Δ = 27°43'31" Lt.
T_s = 554.5'

Δ_c = 17°13'31" Lt.
D_c = 3°30'
T_c = 248.0'
L_c = 492.2'
R_c = 1,637.0'

S = 0.080'/Ft
M.D.S. = 70 mph
S.S.D. =

θ_s = 5°15'
L_s = 300'
L.T. = 200.1'
S.T. = 100.1'



E.B (SURV)

Δ = 24°59'31"
T_s = 624.0

Δ_c = 12°59'31"
D_c = 3° 00'
T_c = 216.9'
L_c = 433.1'
R_c = 1909.9'

S = 0.077
M.D.S. = 70 MPH

θ_s = 6°00'
L_s = 400'
LT = 266.8'
S.T. = 133.5'

WB (SURV)

Δ = 21°55'
T_s = 594.1'

Δ_c = 14° 25'
D_c = 2° 30'
T_c = 289.9'
L_c = 576.7'
R_c = 2291.8'

S = 0.069
M.D.S. = 70 MPH
S.S.D. =

θ_s = 3°45'
L_s = 300'
L.T. = 200.0
S.T. = 100.0'