

AS CONST. COLORADO
DEPARTMENT OF HIGHWAYS

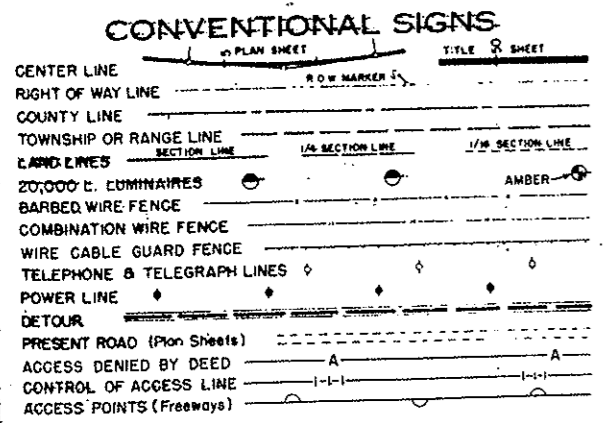
R.O.W. Purchased under
 Project No. I 70-3(7)240

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I-70-3(28)242	1	

PLAN AND PROFILE OF PROPOSED
FEDERAL AID PROJECT NO. I 70-3(28)242
STATE HIGHWAY NO. 2
CLEAR CREEK COUNTY

INDEX OF SHEETS

- SHEET NO. 1. SKETCH MAP, TITLE PAGE, AND TABULATION OF LENGTH AND DESIGN DATA.
- TYPICAL SECTIONS.
 - SUMMARY OF APPROXIMATE QUANTITIES.
 - GENERAL NOTES, SUMMARY OF EARTHWORK QUANTITIES AND DETAILS OF TRANSITION FROM RAISED TO DEPRESSED MEDIAN.
 - TYPICAL SECTION OF TRENCH FOR PIPE UNDERDRAIN & ACCEPT. ALT. PIPE UNDERDRAIN.
 - SURFACING AND SUB-BASE MATERIAL, PLAN, PIT LOCATIONS, AND TABULATIONS OF PLANT MIXED ASPHALTIC SHOULDER ROLL AND DITCH PAVING.
 - FENCING REQUIREMENTS, RIGHT OF WAY MARKERS, GUARD FENCE, DE-LINEATORS, AND DETAILS AND TABULATION OF SIGN ISLANDS.
 - LIST OF STRUCTURE QUANTITIES.
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 - DETAILS OF TWIN BRIDGES STA. 202+.
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 - DETAILS OF BRIDGE RT. OF STA. 308+.
 - DETAILS OF APPROACH SLAB.
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 - CONCRETE MEDIAN INLETS.
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 - 41-A CULVERT PIPE H-20 LOADING
 10. DETAILS OF PIPE CROSSING STA. 225+ AND CONCRETE CURTAIN WALL FOR MINE TUNNEL STA. 278+.

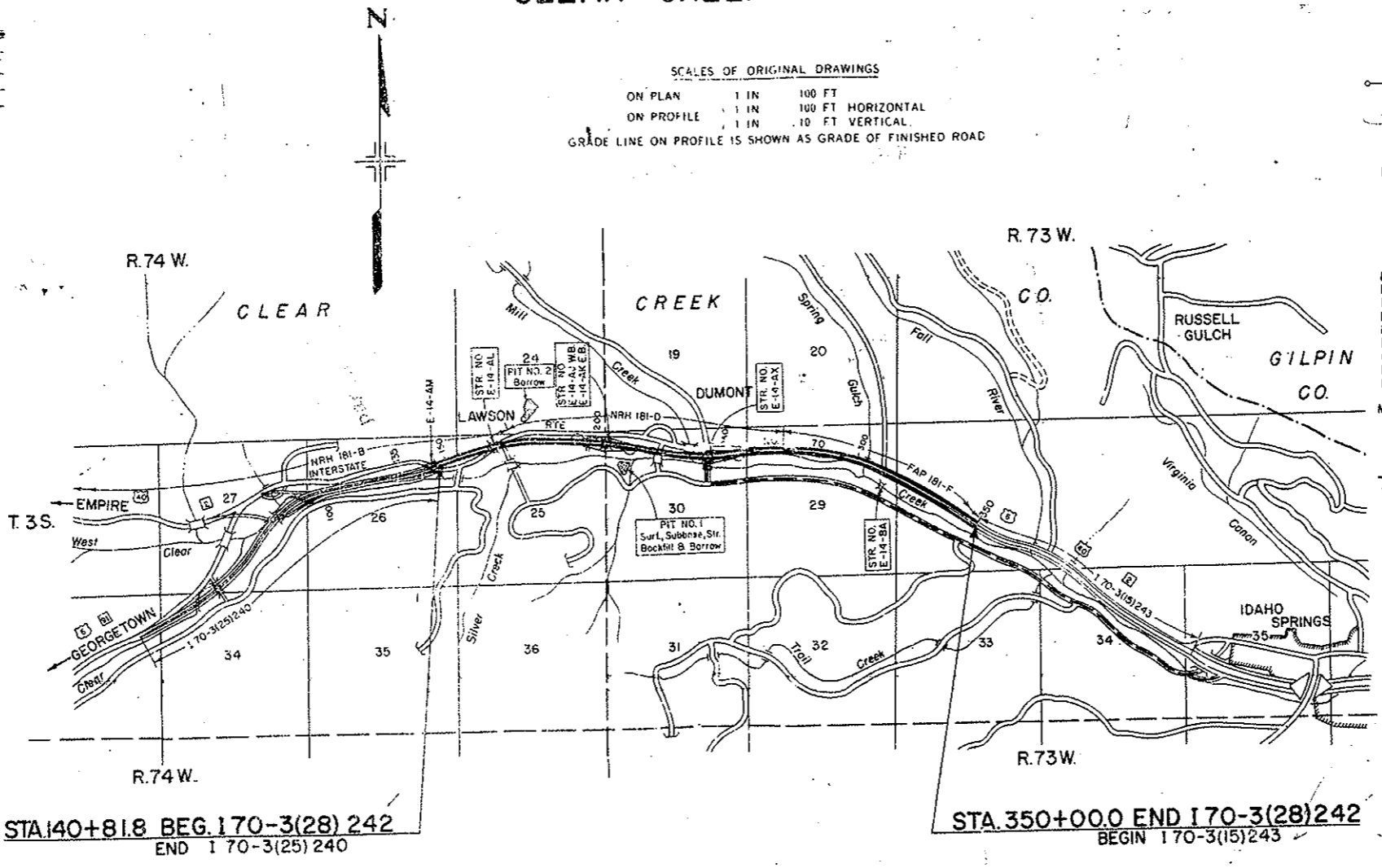


TABULATION OF LENGTH & DESIGN DATA

STATION	ROADWAY	MAJOR STRUCTURES
	LIN. FT.	LIN. FT.
140+81.8 BEG. I 70-3(28)242 END I 70-3(25)240	2,376.2	
164+58.0 } STR. NO. E-14-AL 166+17.8 }	3,550.8	159.8'
201+68.6 } STR. NO. E-14-AJ W.B. 202+87.6 }	4,627.5	119.0'
249+15.1 BK. EQUATION 249+31.8 AH. EQUATION	6,286.1	
312+17.9 BK. EQUATION 312+24.7 AH. EQUATION	3,775.3	
350+00 END I 70-3(28)242 BEG I 70-3(15)243		
TOTALS	20,615.9	278.8'

SUMMARY	LIN. FT.	MILES
	ROADWAY	20,615.9
MAJOR STRUCTURES	278.8	0.053
TOTAL GROSS LENGTH	20,894.7	3.957

DESIGN DATA	
MAXIMUM DEGREE OF CURVE	2°00'
MAXIMUM GRADE	3.92%
MINIMUM S.S.D. HORIZONTAL	765'
MINIMUM S.S.D. VERTICAL	570'
MAXIMUM DESIGN SPEED	60 M.P.H.



SEE SPECIAL PROVISIONS FOR NOTICE TO BIDDERS

COLORADO
 DEPARTMENT OF HIGHWAYS

APPROVED: *[Signature]* 12-30-63
 CHIEF ENGINEER DATE

DEPARTMENT OF COMMERCE
 BUREAU OF PUBLIC ROADS

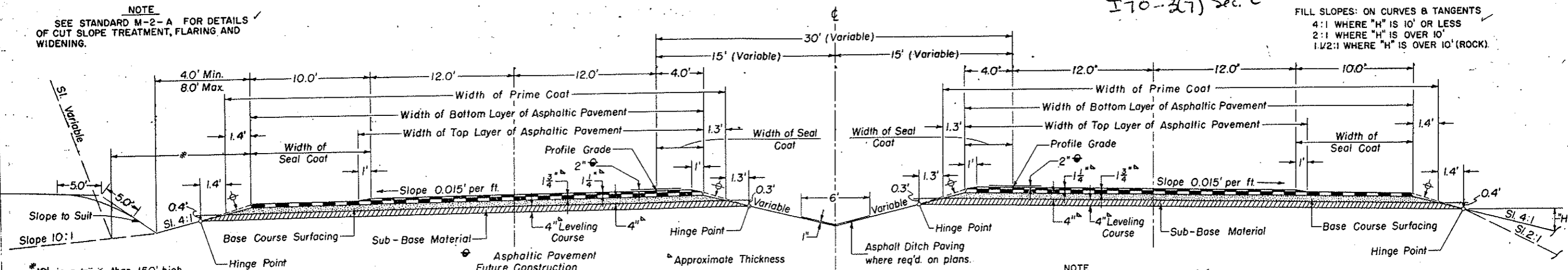
APPROVED: _____ DATE _____
 DIVISION ENGINEER

TYPICAL CROSS SECTIONS OF IMPROVEMENT *ROW under I70-3(7) Sec. 2*

FEDERAL ROAD DIVISION NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I 70-3(28)242	2	

NOTE
SEE STANDARD M-2-A FOR DETAILS OF CUT SLOPE TREATMENT, FLARING AND WIDENING.

FILL SLOPES: ON CURVES & TANGENTS
4:1 WHERE "H" IS 10' OR LESS
2:1 WHERE "H" IS OVER 10'
1.2:1 WHERE "H" IS OVER 10' (ROCK).



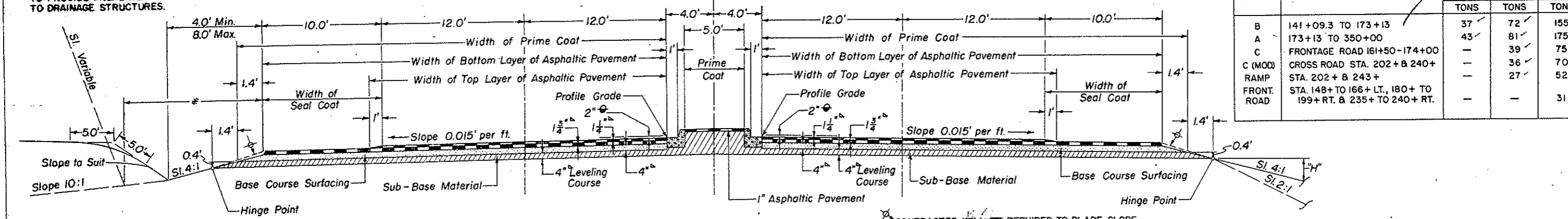
* 12' in cuts < than 150' high.
15' in cuts > 150' high.
EXCAVATION BELOW 4:1 SLOPE AND/OR 10:1 SLOPE WILL NOT BE PERMITTED.
THE DEPTH AND WIDTH OF THE SIDE DITCH SHALL BE VARIED WHERE NECESSARY IN ORDER TO PROVIDE PROPER DRAINAGE AND/OR ENTRANCE TO DRAINAGE STRUCTURES.

MATERIAL ABOVE THE SUBGRADE IS TO BE CONSTRUCTED OF SUB-BASE MATERIAL AT LOCATIONS DESIGNATED IN SUB-BASE MATERIAL TABULATION. ESTIMATED QUANTITIES INVOLVED IN THIS OPERATION AND THICKNESS OF MATERIAL REQUIRED ARE TABULATED IN THE SUB-BASE MATERIAL PLAN.

NOTE
BOTTOM LAYER OF BITUMINOUS SURFACING SHALL BE COMPLETED FOR FULL WIDTH BEFORE TOP LAYER OF BITUMINOUS SURFACING IS PLACED. PAVING JOINTS IN TOP LAYER WILL OVERLAP MIN. 1 FT. OVER JOINTS IN BOTTOM LAYER.

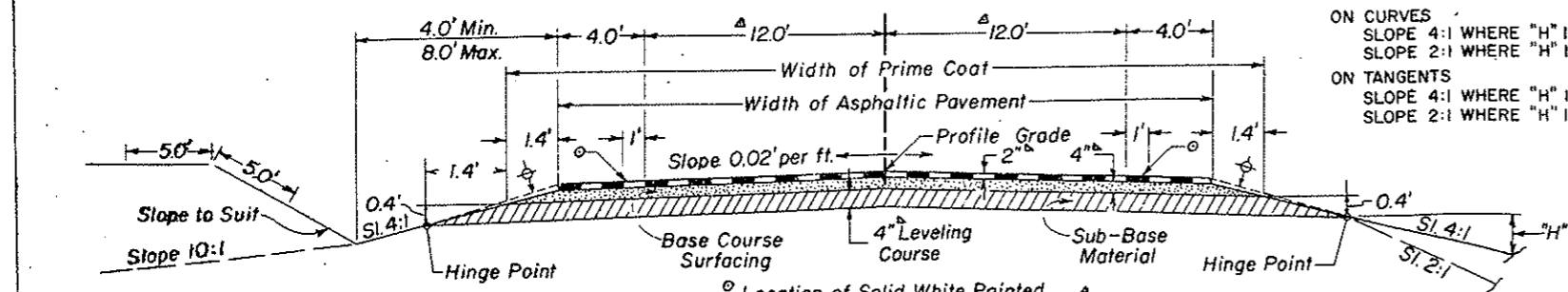
APPROXIMATE 7" COMPACTED THICKNESS OF GRAVEL OR CRUSHED ROCK SURFACING SHALL BE PLACED IN SEPARATE COURSES AT THE FOLLOWING RATES PER 100 LIN. FT. OF ROADWAY:

SECTION	LOCATION	ASPH. SURF.		BASE COURSE
		T. LAYER TONS	B. LAYER TONS	TONS
B	141+09.3 TO 173+13	37	72	155
A	173+13 TO 350+00	43	81	175
C	FRONTAGE ROAD 161+50-174+00	-	39	75
C (MOD)	CROSS ROAD STA. 202 + & 240 +	-	36	70
RAMP	STA. 202 + & 243 +	-	27	52
FRONT. ROAD	STA. 148+ TO 166+ LT., 180+ TO 199+ RT. & 235+ TO 240+ RT.	-	-	31



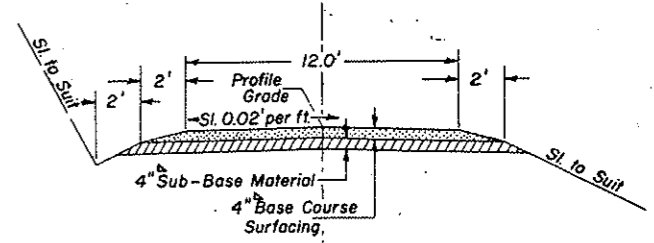
CONTRACTOR WILL BE REQUIRED TO BLADE SLOPE MATERIAL TO THIS LINE AFTER COMPLETION OF PAVING OPERATION.

FILL SLOPES:
ON CURVES
SLOPE 4:1 WHERE "H" IS 5' OR LESS
SLOPE 2:1 WHERE "H" IS OVER 5'
ON TANGENTS
SLOPE 4:1 WHERE "H" IS 3' OR LESS
SLOPE 2:1 WHERE "H" IS OVER 3'

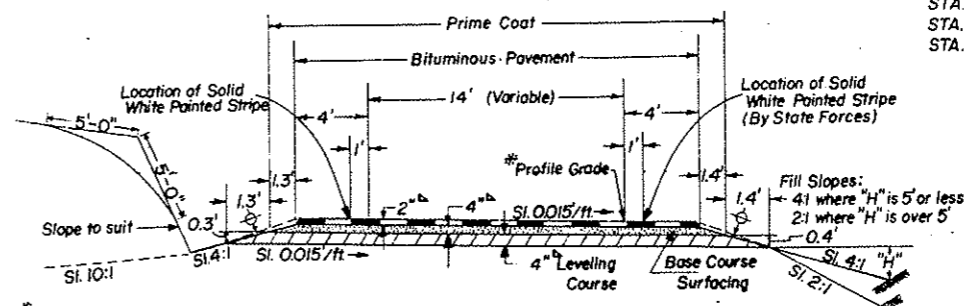


Location of Solid White Painted Stripe (By State Forces).
To be 11.0' for Cross Road Sta. 202 + & 240 +.

SECTION C
Frontage Road Sta. 161+50-174+00



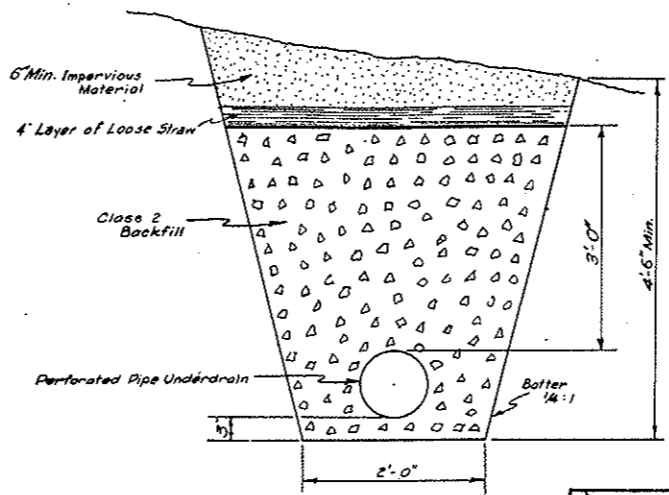
STA. 148+ TO 166+ LT.
STA. 180+ TO 199+ RT.
STA. 235+ TO 240+ RT.



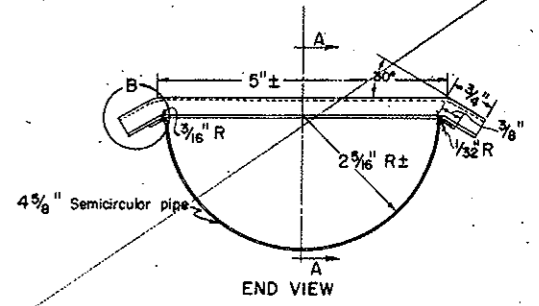
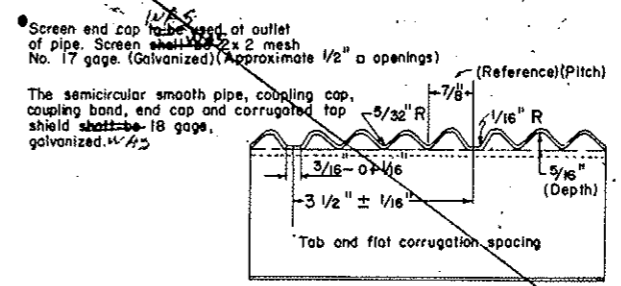
* This section for Ramps on Rt. side of Project. This section shall be opposite hand for Ramps on Lt.

FEDERAL ROAD DIVISION NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	170-3(28)242	5A	

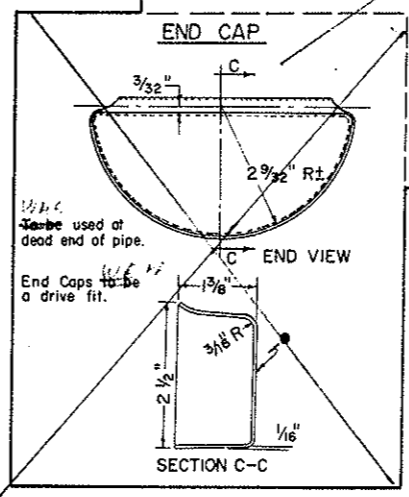
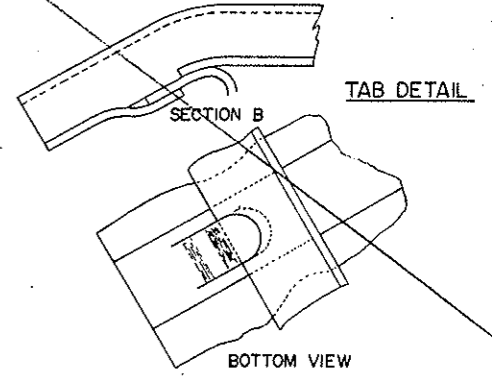
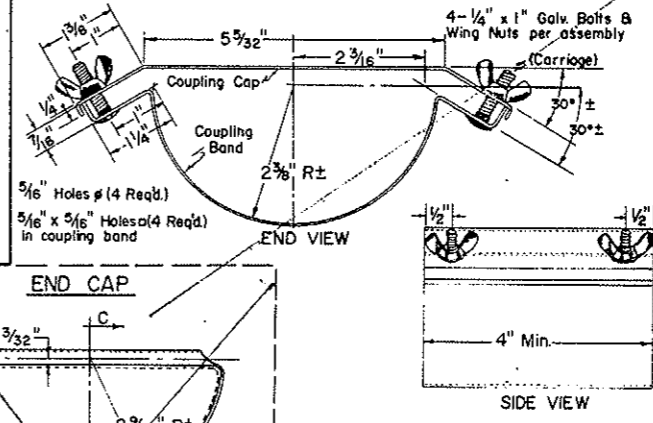
TYPICAL SECTION OF TRENCH FOR PIPE UNDERDRAIN



ACCEPTABLE ALTERNATE PIPE UNDERDRAIN

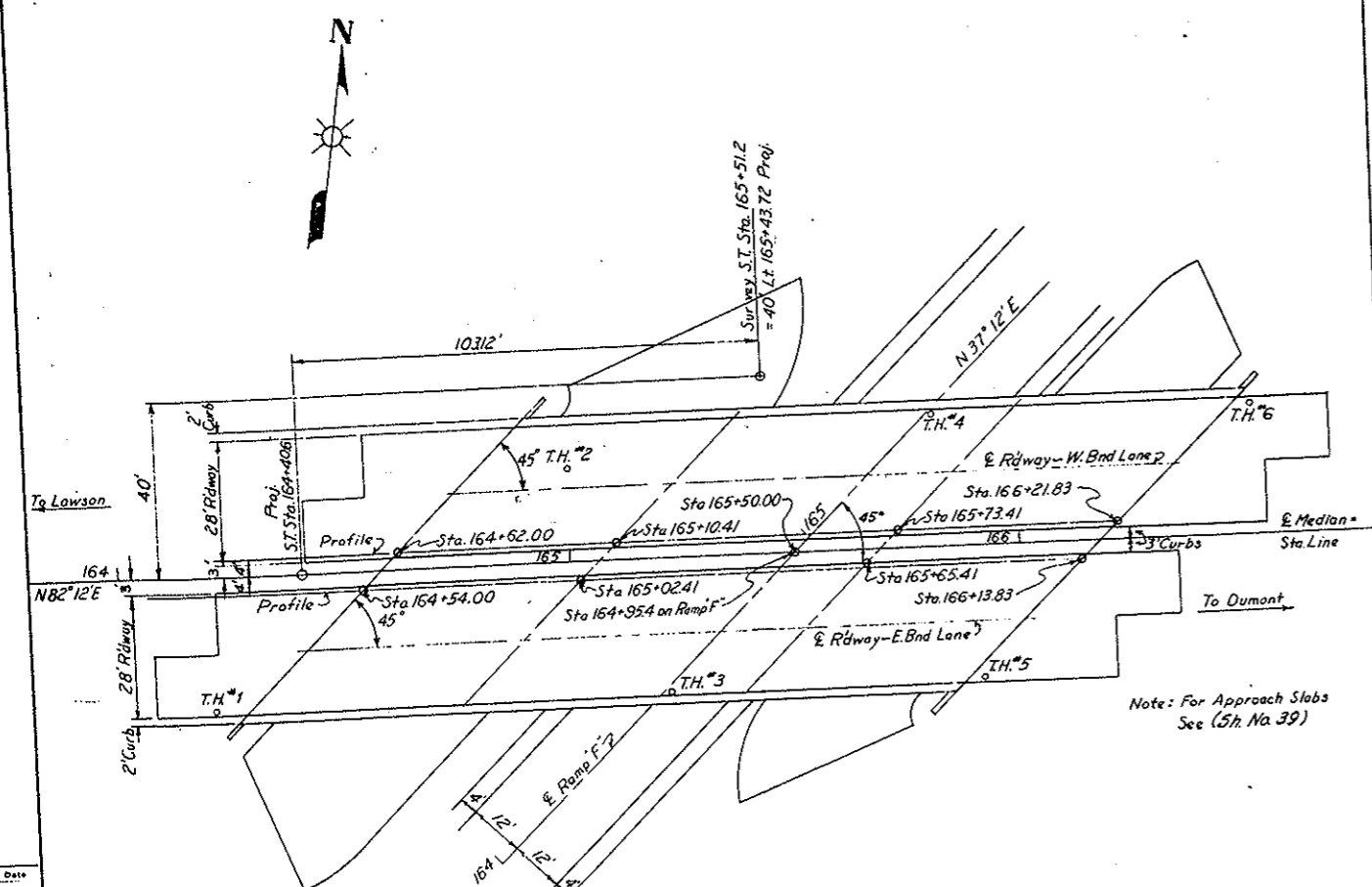


COUPLING ASSEMBLY



REVISIONS

FED. ROAD REG. NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	I 70-328242	11	

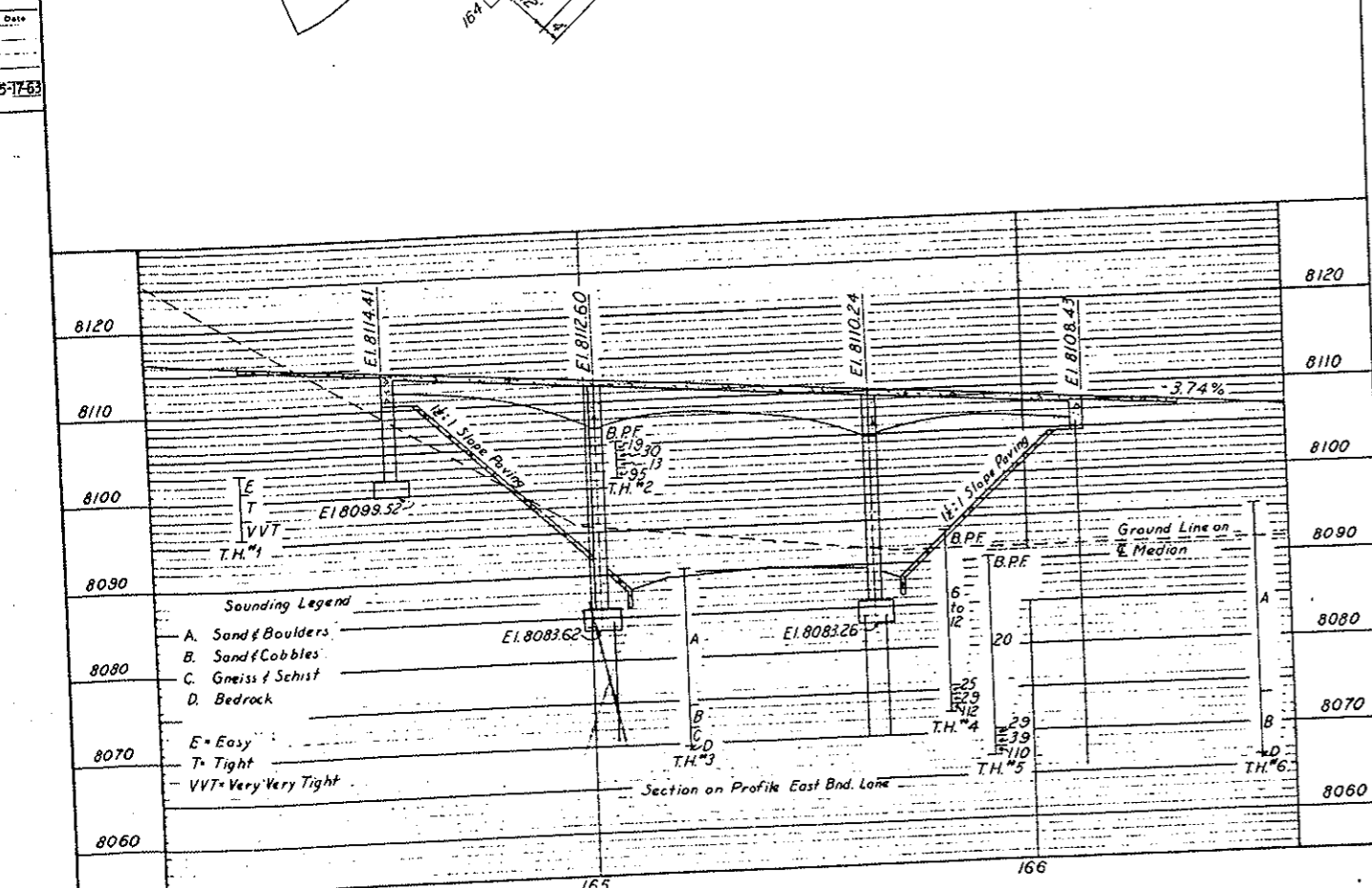


SUMMARY OF QUANTITIES

Item	Description	Unit	Super structure	Abut. No 1	Pier No 2	Pier No 3	Abut. No 4	Totals
14	Unclassified Structural Excavation (Bridge)	Cu.Yd.		189	155	123	8	475
16	Structure Backfill (Class 1)	Cu.Yd.		180	118	92	30	420
18	Station Yard Overhaul	Yd.Mi.						310
18	Yard Mile Overhaul	Yd.Mi.						310
46	Class A Concrete	Cu.Yd.	507.7	59.2	51.6	49.2	27.3	695
47	Reinforcing Steel (Includes 1% for overrun)	Lb.	168,100	5,205	8,560	8,140	1,825	191,830
48	Structural Steel (Galvanized)	Lb.	11,375					11,375
47					448	448		896
61	Steel Piling 10" BP @ 42"	Lin. Ft.					320	320
61	Steel Piling 12" BP @ 53"	Lin. Ft.					60	140
65	Concrete Slope & Ditch Paving With Wire Mesh	Cu.Yd.		80				140
①	1/2" Exp'n Joint Material - AASHO M 153-54 Type III	Sq. Ft.	160					160

W.C. 2456

① To be included in Bid Price for Item 46.



GENERAL NOTES

ALL WORK SHALL BE DONE ACCORDING TO THE STANDARD SPECIFICATIONS OF THE COLORADO DEPARTMENT OF HIGHWAYS APPLICABLE TO THE PROJECT.

ALL CONCRETE SHALL BE CLASS "A".

ALL REINFORCING STEEL SHALL BE INTERMEDIATE GRADE STEEL OF A DEFORMED TYPE. EACH BAR SHALL BE TAGGED WITH THE BAR DESIGNATION AND STATION NUMBER OF THE PROJECT.

SMALLER BE TAGGED WITH THE BAR DESIGNATION AND STATION NUMBER OF THE PROJECT.

IF BY PERMISSION OF THE ENGINEER PRIMARY BARS ARE SPICED THEY SHALL LAP A MINIMUM OF 2 DIAMETERS FOR BARS NEAR TOPS OF BEAMS HAVING MORE THAN 12 INCHES OF CONCRETE UNDER THE BARS, AND 17 DIAMETERS FOR BARS NEAR BOTTOMS OF MEMBERS. SECONDARY BARS WHEN SPICED SHALL LAP 17 DIAMETERS OF THE BAR.

THE BAR SOUNDINGS AND DEPTH OF FOOTINGS ARE IN ACCORDANCE WITH THE BEST AVAILABLE DATA AND WHEN DIFFERENT CONDITIONS ARE ENCOUNTERED THE BRIDGE ENGINEER WILL INSPECT AND DETERMINE IF REDESIGN IS NECESSARY.

FOOTINGS IN ROCK SHALL BE POURED OUT TO ROCK AND NOT FORMED.

WHEN EXCAVATING FOR FOOTINGS THE FINAL ONE FOOT IN DEPTH SHALL BE DONE BY HAND-LABOR METHODS.

FOR DETAILS OF STRUCTURAL EXCAVATION AND STRUCTURE BACKFILL SEE STANDARD M.B.A. ALL CONCRETE SURFACES MARKED WITH THE SYMBOL I AS SHOWN ON SHEET NO. 28.

RECEIVE CLASS "1" SURFACE FINISH.

FIELD COATS OF ALUMINUM PAINT UNLESS OTHERWISE NOTED.

ALL RIVETS SHALL BE 1/2" HIGH DIAMETER FOR FIELD RIVETS AT THE CONTRACTORS OPTION HIGH TENSILE BOLTS MAY BE SUBSTITUTED FOR FIELD RIVETS AT THE CONTRACTORS OPTION NUMBER REQUIRED FOR EACH SIZE AND LENGTH.

WELDING SHALL CONFORM TO THE LATEST EDITION OF THE A.W.S. STANDARD SPECIFICATIONS FOR WELDING HIGHWAY BRIDGES.

FOR WELDED GIRDERS ALL SHOP BUTT WELDS IN FLANGES AND WEBS SHALL BE MADE BEFORE WELDING INTO GIRDERS.

WHEN CALLED FOR IN THE SPECIAL PROVISIONS, SHOP WELDS SHALL BE INSPECTED RADIO GRAPHICALLY AND BY THE PENETRANT DYE METHOD.

WHEN TREATED THREE PILING IS SHOWN ON THE PLANS, THE PRESERVATIVE FOR TREATMENT SHALL BE CROTONOL OIL.

ALL STRUCTURAL STEEL UNLESS OTHERWISE NOTED SHALL BE ASTM A36-62T.

*** WAS OR WE'RE**

LOADING DATA (INTERSTATE ALTERNATE)

LIVE LOAD A, A, S, H, O. H20-518-44
DEAD LOAD- ASSUMES 18 LBS. PER SQ. FT. ADDITION
AL WEARING SURFACE WHICH INCLUDES THE 1/2 INCH
CONC. 'X' MONOLITHIC WEARING SURFACE SHOWN.

DESIGNING DATA.

A. A. H. O. UNIT STRESSES.
fc = 1,200 Lbs. per Sq. In.
fs = 20,000 Lbs. per Sq. In. (Reinf. & A36 Struct Steel)
n = 10
fs = 18,000 Lbs. per Sq. In. (A-7 Struct Steel)

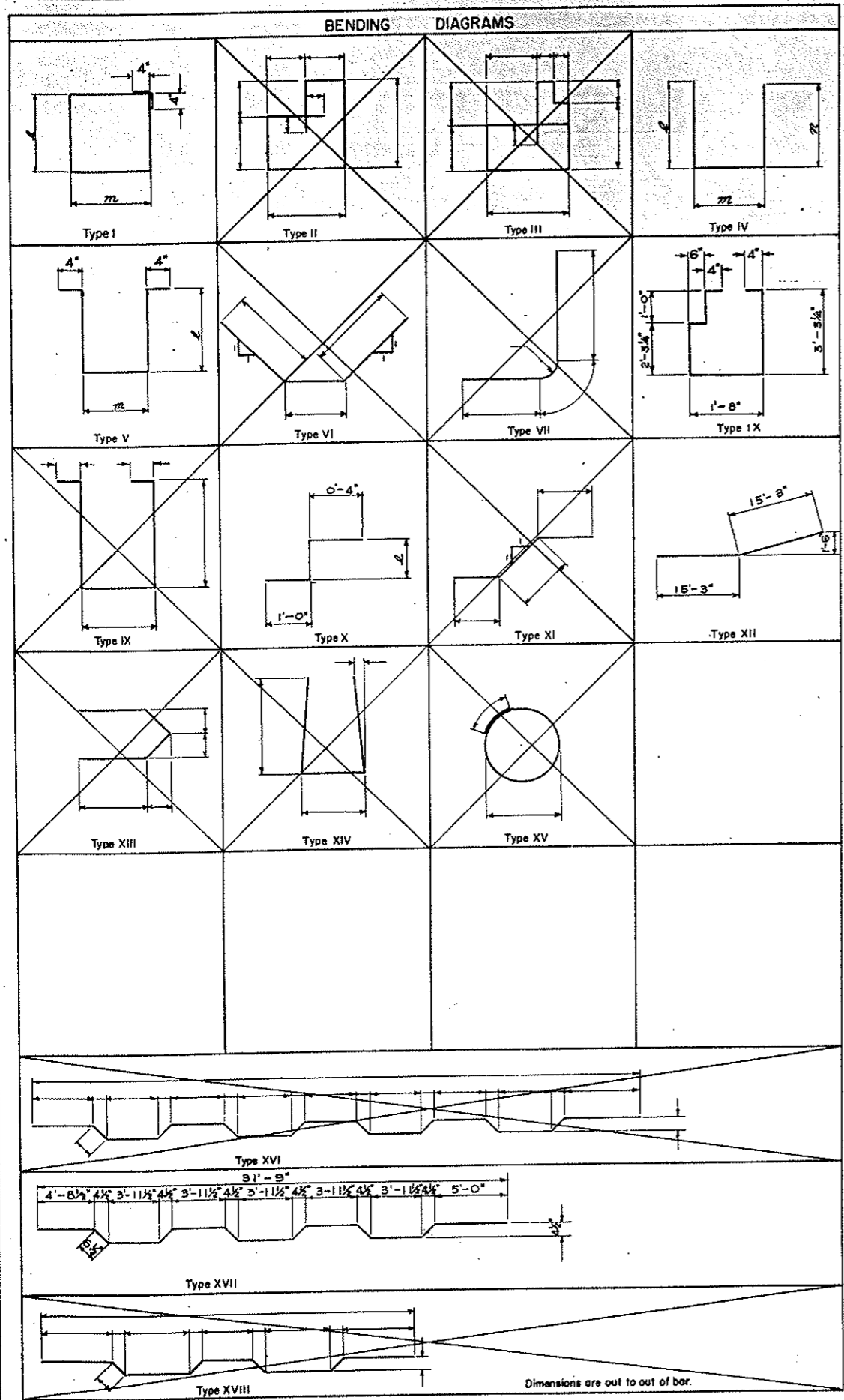
COLORADO DEPARTMENT OF HIGHWAYS

3 Spans (47'-63'-47') Conc. Slab Girders
2-28' Rdways with 6' Median Curb
2' Outside Curbs 45° Skew
Gen'l Layout, Notes & Summary of Quantities

Across Ramp "F"
Sta. 165+50.00
Near Lawson Soc. T. 35 R. 73W

Designed by [Signature]
Made by [Signature] Bridge Engineer
Checked by [Signature] Date: Nov 1, 1963

FED. ROAD REG. NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	1-70-308(2)42	12	



BAR-LIST SUPERSTRUCTURE						
MARK	SIZE	NO. REQ'D	LENGTH	TYPE	DIMENSIONS	
					ℓ	m
401	1/2"	96	5'-0"	I	1'-3"	0'-11"
402		316	4'-2"	IV	1'-3"	1'-8"
403		314	4'-10"	IV	1'-6"	2'-8"
404		314	3'-6"	STR		0'-8"
409		456	6'-6"	V	2'-4"	1'-1"
410		32	6'-7"		2'-5"	
411		32	6'-7"		2'-5"	
412		32	6'-8"		2'-5"	
413		32	6'-9"		2'-6"	
414		32	6'-9"		2'-6"	
415		16	6'-11"		2'-7"	
416			6'-11"		2'-7"	
417			7'-1"		2'-8"	
418			7'-2"		2'-8"	
419			7'-4"		2'-9"	
420			7'-5"		2'-10"	
421			7'-6"		2'-10"	
422			7'-7"		2'-10"	
423			7'-9"		3'-0"	
424			7'-11"		3'-1"	
425			8'-0"		3'-1"	
426			8'-1"		3'-2"	
427			8'-3"		3'-3"	
428			8'-5"		3'-4"	
429			8'-7"		3'-5"	
430			8'-9"		3'-6"	
431			8'-11"		3'-7"	
432			9'-1"		3'-8"	
433			9'-3"		3'-9"	
434			9'-5"		3'-10"	
435			9'-8"		3'-11"	
436			9'-10"		4'-0"	
437			10'-0"		4'-1"	
438			10'-3"		4'-3"	
439			10'-6"		4'-4"	
440			10'-8"		4'-5"	
441			10'-11"		4'-7"	
442			11'-2"	V	4'-8"	1'-1"
443			6'-2"	X	4'-10"	
444		16	6'-3"	X	4'-11"	
445		32	3'-8"	X	2'-4"	
446		16	6'-10"	V	2'-6"	1'-1"
447			6'-10"		2'-6"	
448			6'-11"		2'-7"	
449			7'-0"		2'-7"	
450			7'-1"		2'-8"	
451			7'-2"		2'-8"	
452			7'-3"		2'-9"	
453			7'-3"		2'-9"	
454			7'-5"		2'-10"	
455			7'-6"		2'-10"	
456			7'-7"		2'-11"	
457			7'-8"		2'-11"	
458			7'-9"		3'-0"	
459			7'-11"		3'-1"	
460			8'-0"		3'-1"	
461			8'-2"		3'-2"	
462			8'-3"		3'-3"	
463			8'-5"		3'-4"	
464			8'-6"		3'-4"	
465			8'-8"		3'-5"	
466			8'-10"		3'-6"	
467			9'-0"		3'-7"	
468			9'-1"		3'-8"	
469			9'-3"		3'-9"	
470			9'-5"		3'-10"	
471			9'-7"		3'-11"	
472			9'-8"		4'-0"	
473			10'-0"		4'-1"	
474			10'-2"		4'-2"	
475			10'-4"		4'-3"	
476			10'-6"		4'-4"	
477	1/2"	16	10'-9"	V	4'-6"	1'-1"

SUPERSTRUCT. CONT.						
MARK	SIZE	NO. REQ'D	LENGTH	TYPE	DIMENSIONS	
					ℓ	m
478	1/2"	16	10'-11"	V	4'-7"	1'-1"
479			11'-2"	V	4'-8"	1'-1"
480			6'-1"	X	4'-9"	
481			6'-3"	X	4'-11"	
482		16	37'-6"	STR		
483		32	25'-9"			
484		32	40'-0"			
485		32	23'-0"	STR		
486		66	5'-2"	V	2'-0"	0'-6"
487		132	5'-7"	V	2'-2"	0'-6"
4110		124	12'-5"	V	5'-0"	1'-9"
4112	1/2"	24	38'-4"	STR		
501	5/8"	304	32'-9"	XVII		
502		612	30'-9"	STR		
503			1'-1"			
TO		8EA.	BY 5"	STR		
573			30'-3"			
574		32	10'-0"	STR		
581		32	38'-4"			
582		288	53'-4"			
583		48	35'-0"			
584		32	27'-7"			
585		16	22'-10"			
586	5/8"	12	10'-0"	STR		
601	1/2"	740	4'-9"	STR		
701	3/8"	157	3'-0"	STR		
702	1/2"	24	38'-4"	STR		
801	1"	32	28'-0"	STR		
901	1 1/2"	64	30'-6"	XII		
1101	1 1/2"	48	27'-6"	STR		
1102		32	42'-0"			
1103		32	29'-0"			
1104		32	15'-0"			
1105		48	57'-0"			
1107		64	35'-0"			
1108		32	37'-0"			
1109		32	25'-6"			
1110		32	26'-0"			
1111		32	16'-0"			
1112		32	30'-0"			
1113	1 1/2"	16	16'-0"	STR		

SUMMARY

24505 LIN. FT. 1/2" @ 0.668' / FT. = 16369
57628 LIN. FT. 3/8" @ 1.043' / FT. = 60106
3515 LIN. FT. 1/2" @ 1.502' / FT. = 5280
1391 LIN. FT. 7/8" @ 2.044' / FT. = 2843
896 LIN. FT. 1" @ 2.670' / FT. = 2392
1952 LIN. FT. 1 1/4" @ 3.400' / FT. = 6637
13704 LIN. FT. 1 1/2" @ 5.313' / FT. = 72809
PLUS 1% FOR OVERRUN = 1664
TOTAL = 168100LB.

BAR-LIST ABUT. No. 1						
MARK	SIZE	NO. REQ'D	LENGTH	TYPE	DIMENSIONS	
					ℓ	m
488	1/2"	16	23'-6"	STR		
489		72	7'-4"	I	1'-8"	1'-8"
490		90	9'-4 1/2"	IX		
491		2	3'-10"	STR		
492		2	4'-6"			
493		4	6'-0"			
494			4'-8"			
TO		2EA.	BY 1/2"			
4100			4'-11"			
4101		2	6'-6"			
4102		2	5'-8"			
4103		11	4'-5"			
4104	1/2"	4	8'-0"	STR		
575	5/8"	16	46'-3 1/2"	STR		
576	5/8"	96	5'-6"	STR		
602	3/4"	4	5'-0"	STR		
603	3/4"	4	8'-0"	STR		
802	1"	64	10'-7"	STR		
1002	1 1/2"	40	3'-8"	STR		

SUMMARY

1961 LIN. FT. 1/2" @ 0.668' / FT. = 1310
1269 LIN. FT. 3/8" @ 1.043' / FT. = 1324
52 LIN. FT. 1/2" @ 1.502' / FT. = 78
677 LIN. FT. 1" @ 2.670' / FT. = 1808
147 LIN. FT. 1 1/4" @ 4.303' / FT. = 633
PLUS 1% FOR OVERRUN = 52
TOTAL = 5205LB.

BAR-LIST PIER No. 2						
MARK	SIZE	NO. REQ'D	LENGTH	TYPE	DIMENSIONS	
					ℓ	m
4111	1/2"	168	7'-4"	I	1'-8"	1'-8"
703	3/8"	32	6'-9"	STR		
704		32	6'-3"			
705		32	5'-9"			
706		32	5'-3"			
707		32	4'-9"			
708		32	4'-3"			
709	3/8"	32	5'-6"	STR		
803	1"	64	20'-9"	STR		
804	1"	64	3'-8"	STR		
1001	1 1/2"	56	4'-0"	STR		
1 1/2"	32	1'-6"				
1 1/2"	32	2'-0"				
1 1/2"	32	2'-6"				

SUMMARY

1232 LIN. FT. 1/2" @ 0.668' / FT. = 823
1232 LIN. FT. 3/8" @ 1.043' / FT. = 2518
1563 LIN. FT. 1" @ 2.670' / FT. = 4175
224 LIN. FT. 1 1/4" @ 4.303' / FT. = 964
PLUS 1% FOR OVERRUN = 82
TOTAL = 8560LB.

W.O. 2456 = 128 lbs. = 192 LIN. FT.
Plus 1%
129 lbs.
STRUCTURE NO. E-14-AL

BAR-LIST PIER No. 3						
MARK	SIZE	NO. REQ'D	LENGTH	TYPE	DIMENSIONS	
					ℓ	m
4111	1/2"	152	7'-4"	I	1'-8"	1'-8"
703	3/8"	32	6'-9"	STR		
704		32	6'-3"			
705		32	5'-9"			
706		32	5'-3"			
707		32	4'-9"			
708		32	4'-3"			
709	3/8"	32	5'-6"	STR		
804	1"	64	3'-8"	STR		
805	1 1/2"	64	18'-9"	STR		
1001	1 1/2"	56	4'-0"	STR		
1 1/2"	32	1'-6"				
1 1/2"	32	2'-0"				
1 1/2"	32	2'-6"				

SUMMARY

1115 LIN. FT. 1/2" @ 0.668' / FT. = 745
1232 LIN. FT. 3/8" @ 1.043' / FT. = 2518
1435 LIN. FT. 1" @ 2.670' / FT. = 3831
224 LIN. FT. 1 1/4" @ 4.303' / FT. = 964
PLUS 1% FOR OVERRUN = 82
TOTAL = 8140LB.

W.O. 2456 = 128 lbs. = 192 LIN. FT.
+ 1%
129 lbs.

BAR-LIST ABUT. No. 4						
MARK	SIZE	NO. REQ'D	LENGTH	TYPE	DIMENSIONS	
					ℓ	m
488	1/2"	16	23'-6"	STR		
490		90	9'-4 1/2"	IX		
491		2	3'-10"	STR		
492		2	4'-6"			
493		4	6'-0"			
4101		2	6'-6"			
4102		2	5'-8"			
4103		14	4'-5"			
4104		4	8'-0"			
4105	1/2"	11	4'-7"	STR		
575	5/8"	16	46'-3 1/2"	STR		
602	3/4"	4	5'-0"	STR		
603	3/4"	4	8'-0"	STR		

SUMMARY

1429 LIN. FT. 1/2" @ 0.668' / FT. = 955
741 LIN. FT. 3/8" @ 1.043' / FT. = 773
52 LIN. FT. 1" @ 1.502' / FT. = 78
PLUS 1% FOR OVERRUN = 19
TOTAL = 1825LB.

COLORADO
DEPARTMENT OF HIGHWAYS

BENDING DIAGRAMS & BAR LIST

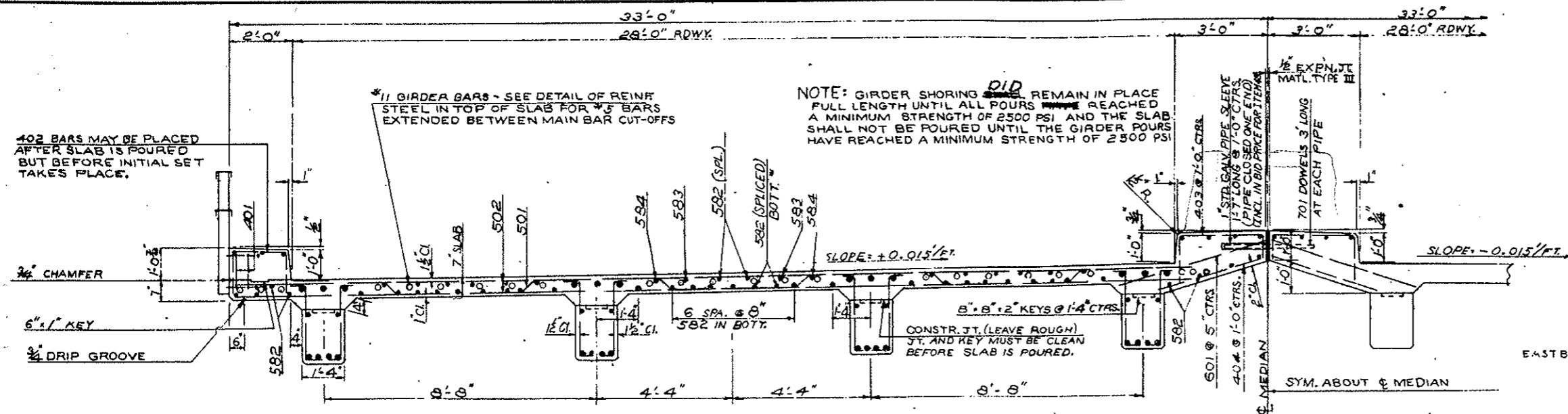
Across RAMP * F
Sta. 164+5800 to 166+1783

Near LAWSON Sec. T. 3 S. R. 73W.

Designed by _____
Made by J.B. _____
Checked by _____

Approved by _____
Bridge Engineer
Date: Nov. 1, 1963

REV. NO.	DESCRIPTION	DATE	BY	CHECKED
1				



NOTE: GIRDER SHORING DID REMAIN IN PLACE FULL LENGTH UNTIL ALL POURS REACHED A MINIMUM STRENGTH OF 2500 PSI AND THE SLAB SHALL NOT BE POURED UNTIL THE GIRDER POURS HAVE REACHED A MINIMUM STRENGTH OF 2500 PSI

402 BARS MAY BE PLACED AFTER SLAB IS POURED BUT BEFORE INITIAL SET TAKES PLACE.

SECTION A-A
(SEE SUPERSTR. PLAN)

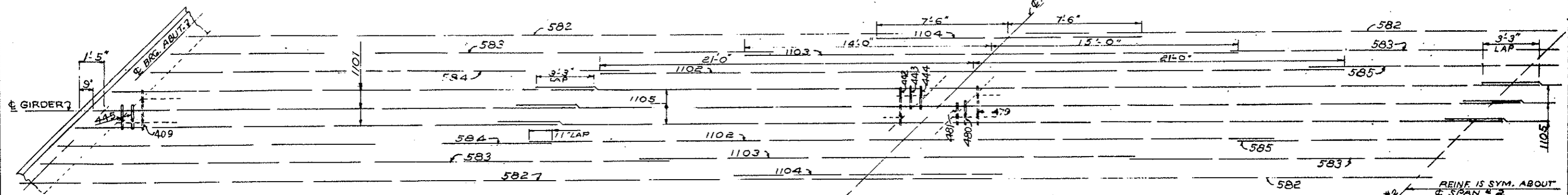
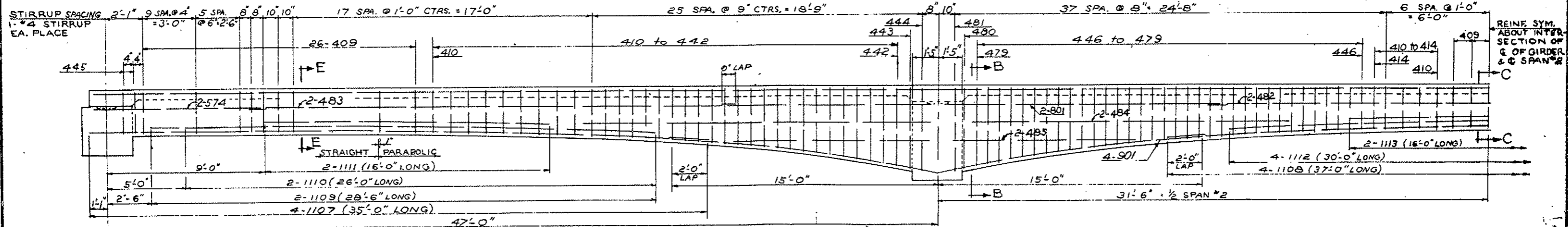
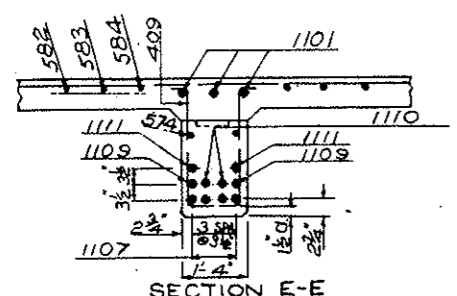


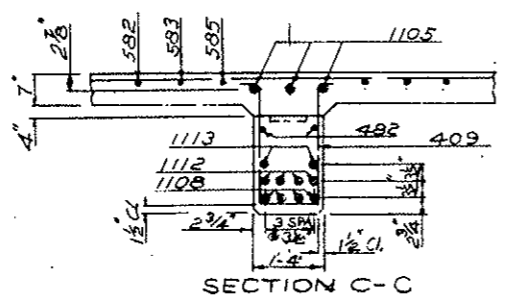
DIAGRAM OF REINF. STEEL IN TOP OF GIRDER (HALF PLAN TYPICAL GIRDER)
FOR #5 BARS UNDER CURB SEE SEC. A-A



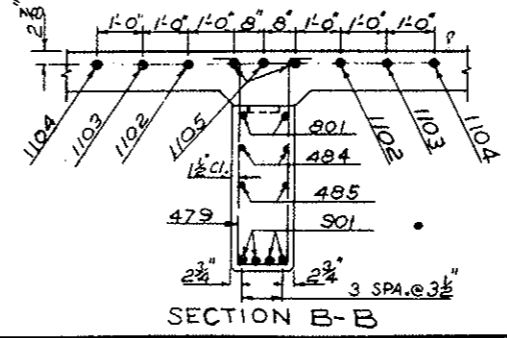
ELEVATION - TYPICAL GIRDER REINFORCING



SECTION E-E



SECTION C-C



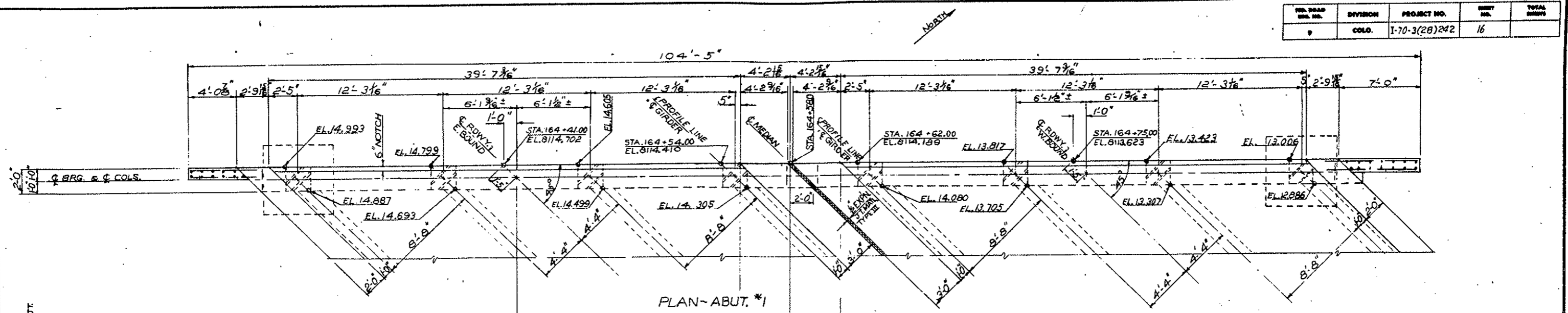
SECTION B-B

COLORADO
DEPARTMENT OF HIGHWAYS
DETAILS OF SUPERSTRUCTURE
SLAB & GIRDER REINFORCING

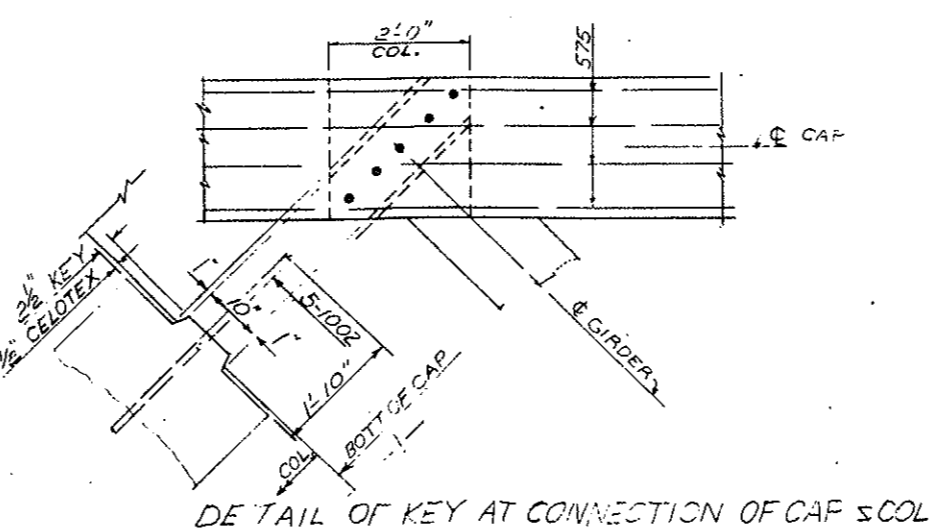
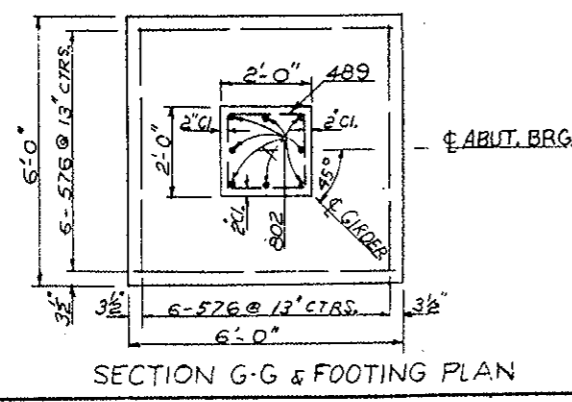
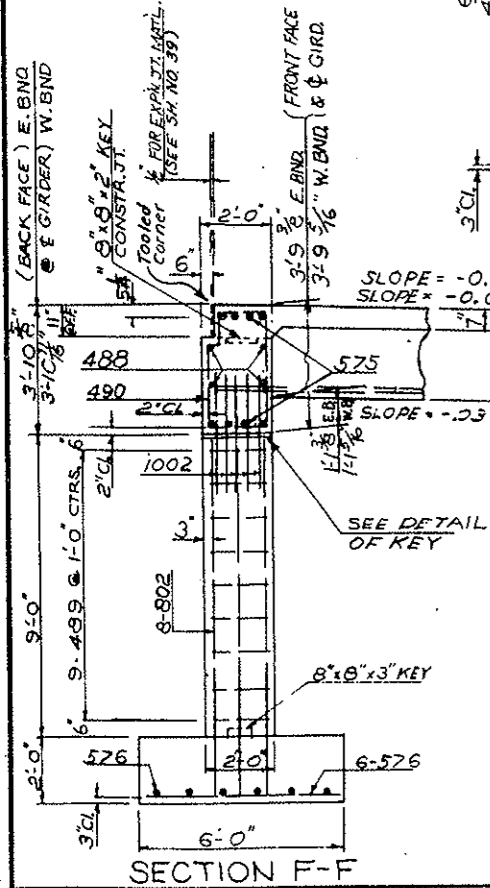
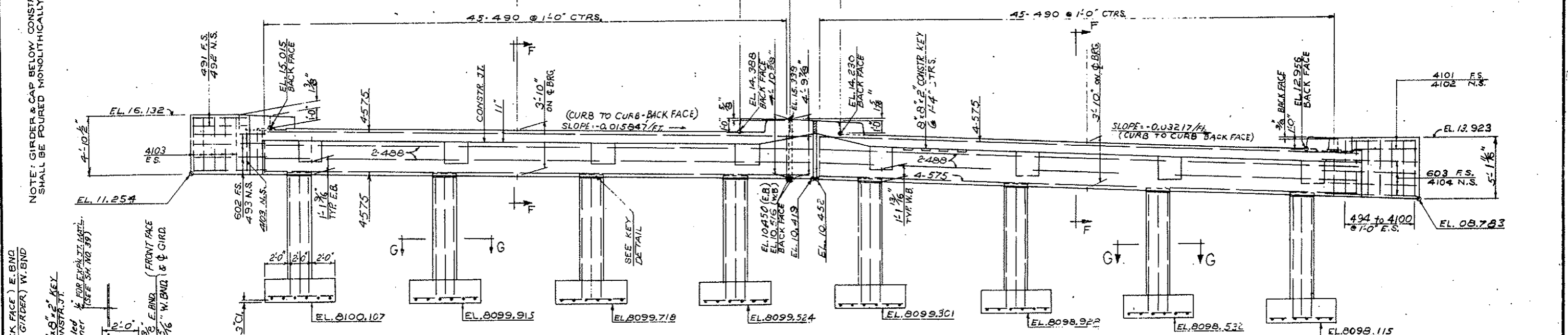
Across RAMP 'E'
 Sta. 164+58.00 to 166+17.00
 Near LAWSON Box 733 R777

Designed by WWD Approved by [Signature]
 Made by FL Checked by [Signature]
 Date: Nov. 1, 1963

NO. ROAD DIST. NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	C.O.D.	I-70-3(28)242	16	



NOTE: GIRDER & CAP BELOW CONSTR. JT. SHALL BE POURED MONOLITHICALLY



E.S. = EACH SIDE
F.S. = FAR SIDE
N.S. = NEAR SIDE

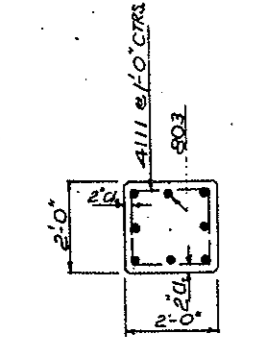
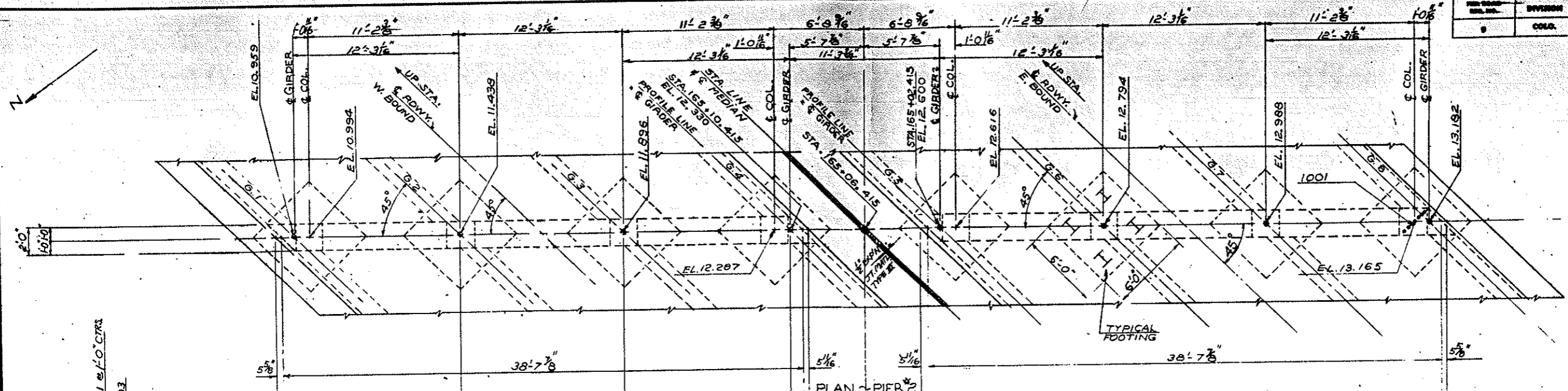
COLORADO DEPARTMENT OF HIGHWAYS
DETAILS ABUT. N° 1

Address: RAMP "F"
 Sta. 164+58.00 to 166+783
 Near LAWSON, Sec. 7.3.5 R.737

Designed by WWD Approved by [Signature]
 Made by FL Checked by [Signature]
 Date: Nov. 1, 1963

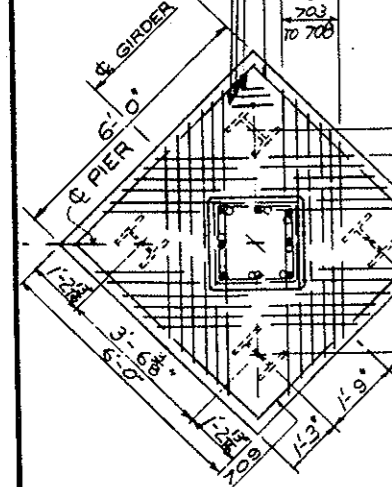
REVISIONS

PROJECT NO.	DIVISION	PROJECT NO.	DATE
1-70-3(28)242	COL.	17	

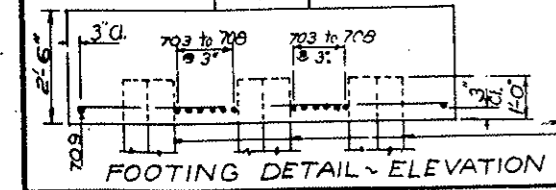


SECTION K-K

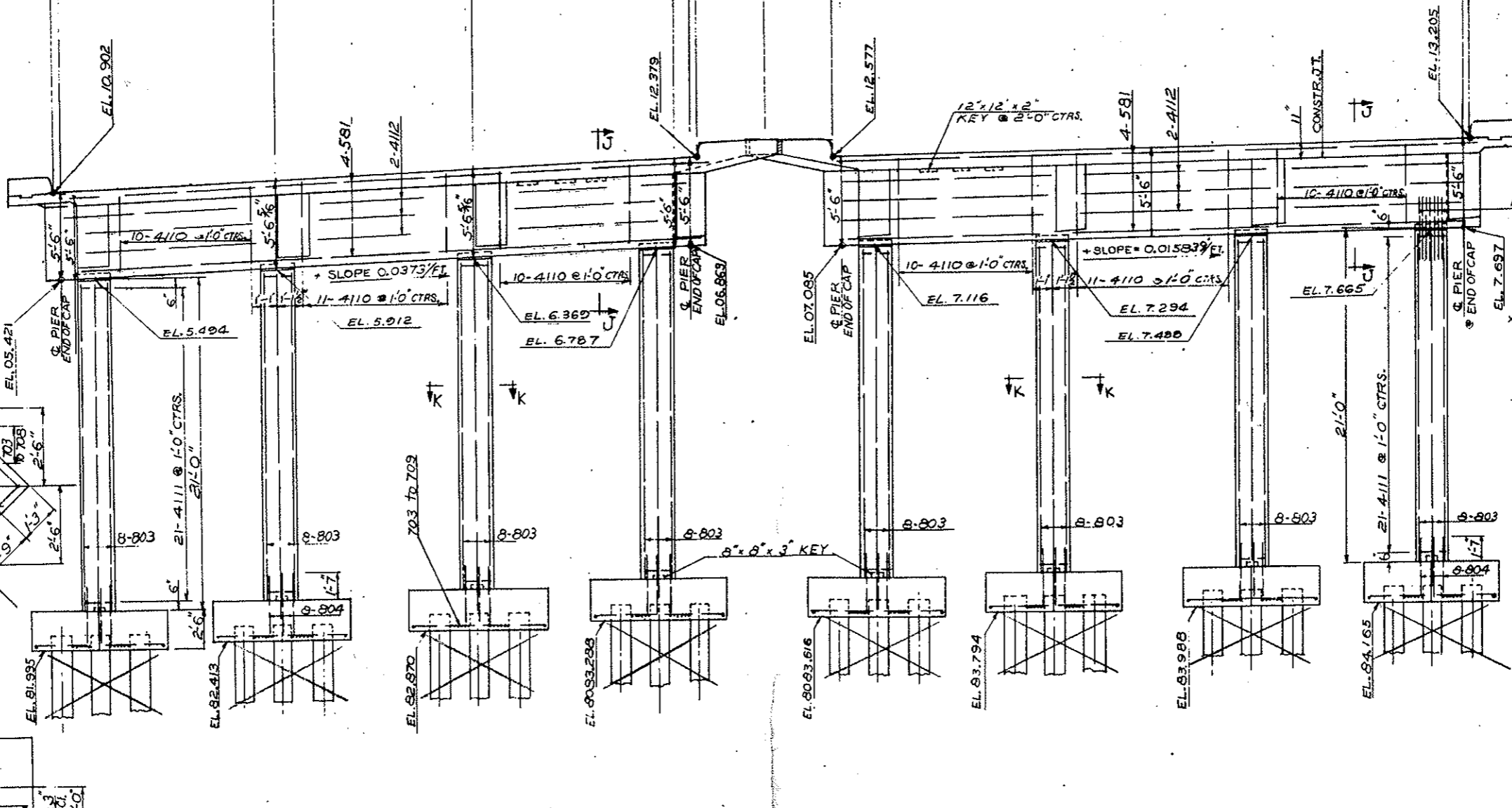
THIS IS TYPICAL OF EACH CORNER OF EACH FOOTER OF BOTH PIERS #2 AND #3



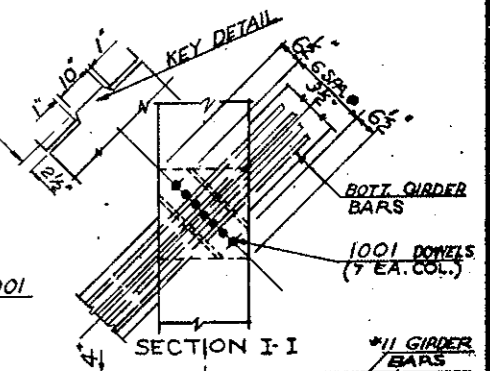
PLAN OF FOOTING



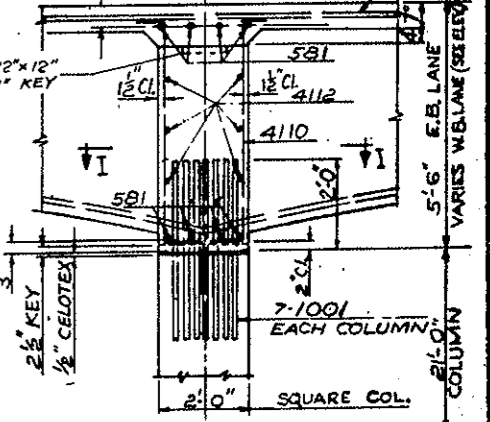
FOOTING DETAIL - ELEVATION



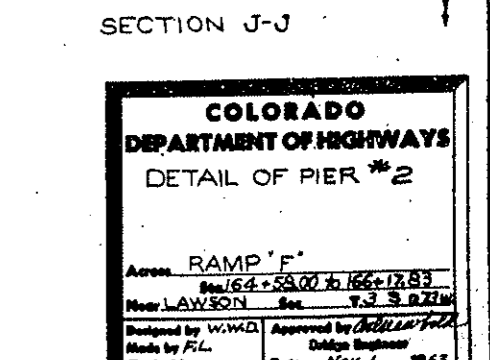
ELEVATION PIER #2



KEY DETAIL



SECTION I-I



SECTION J-J

COLORADO DEPARTMENT OF HIGHWAYS
DETAIL OF PIER #2

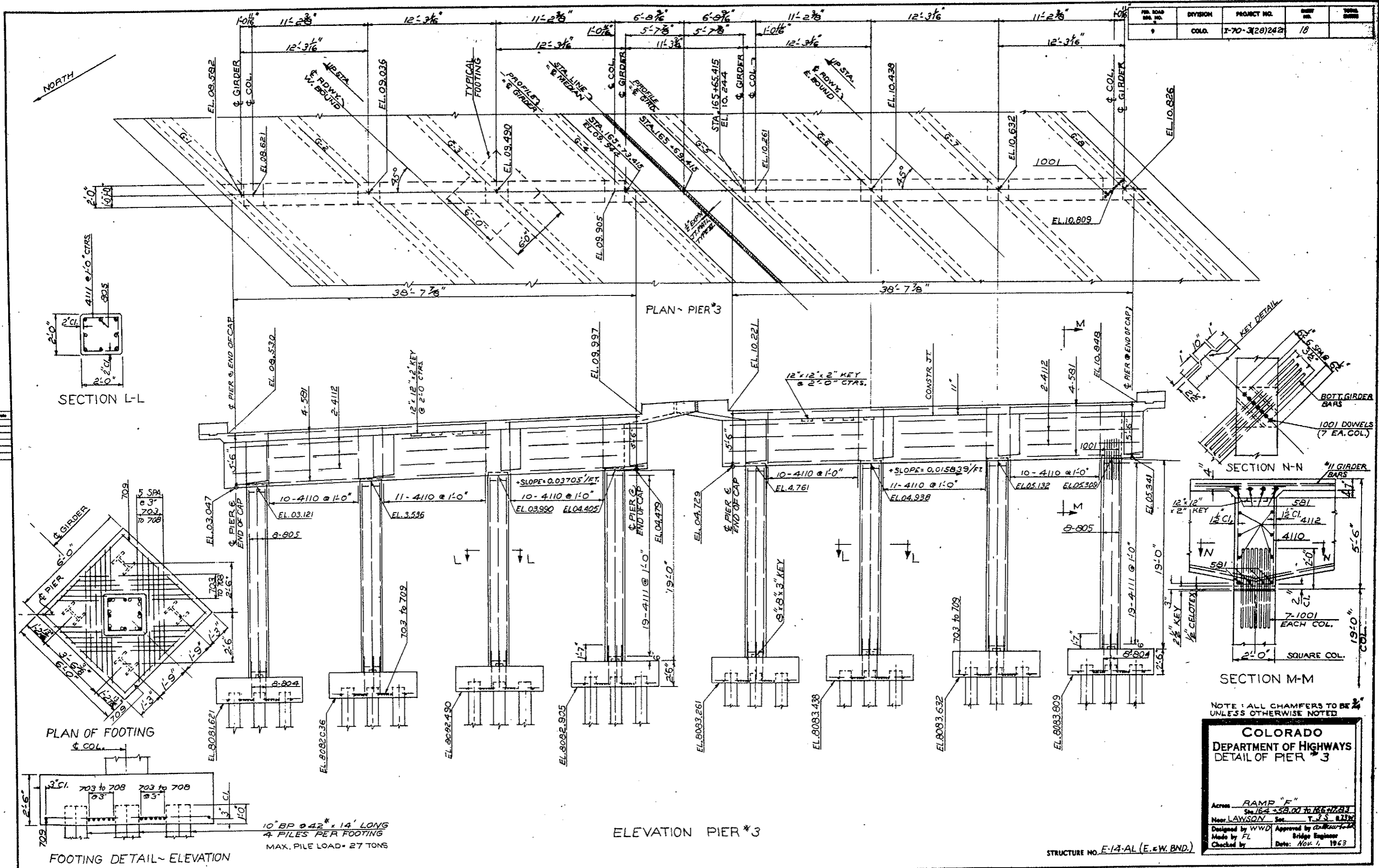
Across RAMP 'F'
 Sta. 164+58.00 to 166+17.83
 Near LAWSON Sec. 7, S. 27N.W.

Designed by W.W.D. Approved by *William F. ...*
 Made by F.L. Checked by *...*
 Date: Nov. 1, 1963

STRUCTURE NO. E-14-A1 (E.S.W. BOUND)

MAX. PILE LOAD - 27 TONS/PILE

REV. NO.	DATE	DESCRIPTION
1		



COLORADO
DEPARTMENT OF HIGHWAYS
DETAIL OF PIER #3

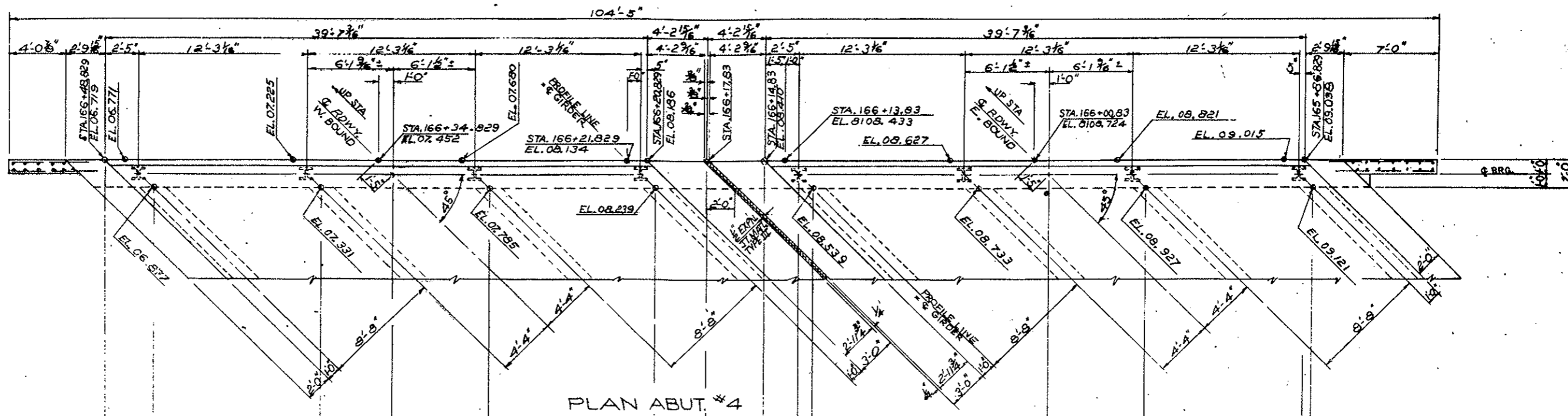
Across **RAMP "F"**
 Sta 164+58.00 to 165+77.91
 Near **LAWSON** See T-33 8.17M
 Designed by **WWD** Approved by **WWD**
 Made by **FL** Bridge Engineer
 Checked by _____ Date: **Nov. 1, 1963**

STRUCTURE NO. **E-14-AL (E. & W. BND.)**

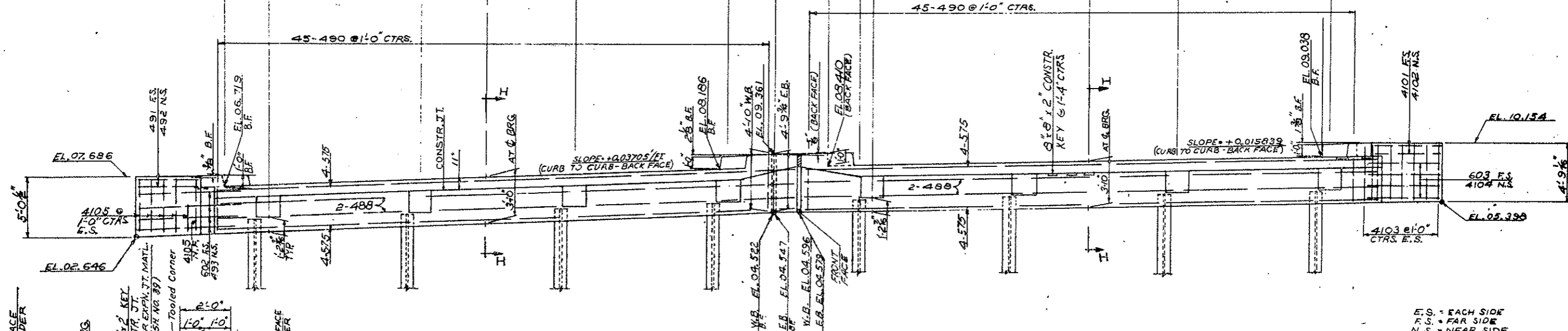
10" BP ϕ 42" x 14' LONG
 4 PILES PER FOOTING
 MAX. PILE LOAD = 27 TONS

FILE NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	I-70-3(28)24B	19	

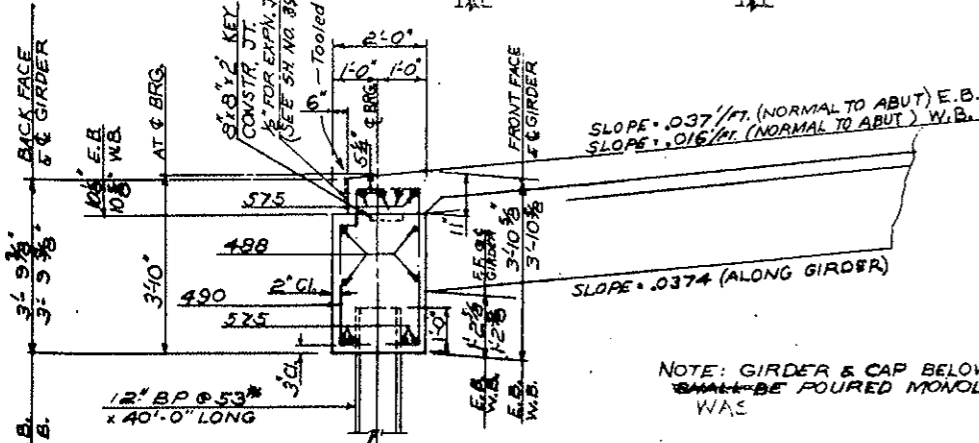
NORTH



PLAN ABUT. #4



ELEVATION ABUT. #4



MAX. FILE LOAD = 46 TONS
SECTION H-H

NOTE: GIRDER & CAP BELOW CONSTR. JT. SHALL BE POURED MONOLITHICALLY WAS

E.S. = EACH SIDE
F.S. = FAR SIDE
N.S. = NEAR SIDE

COLORADO DEPARTMENT OF HIGHWAYS
DETAILS ABUT. #4

Across RAMP "F"
Sta. 164+58 to 166+178
Near LAWSON Sta. T.S.S. R.W.

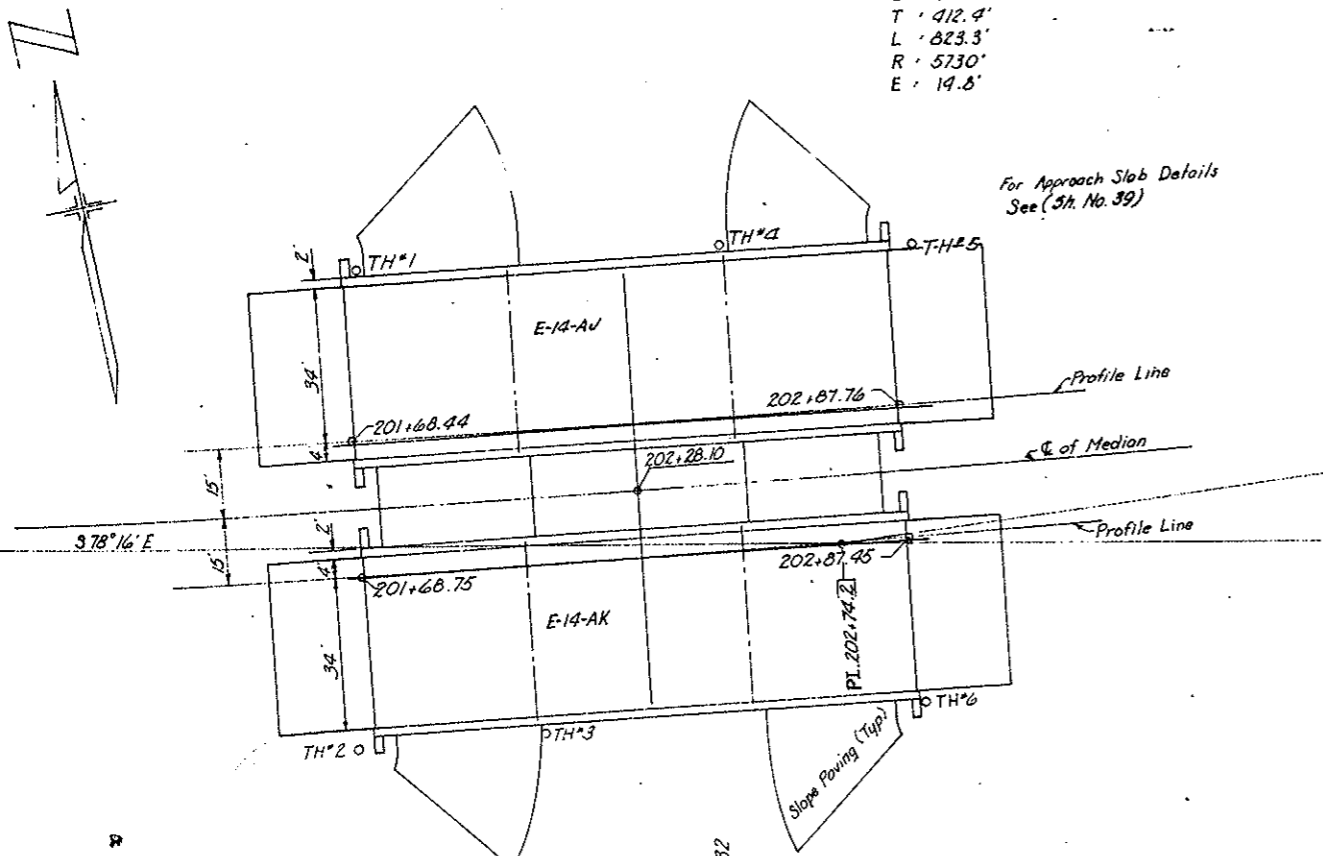
Designed by WWD Approved by [Signature]
Made by FL Bridge Engineer
Checked by [Signature] Date: NOV. 1, 1963

STRUCTURE NO. E-14-AL(E&W,BND)

REVISIONS

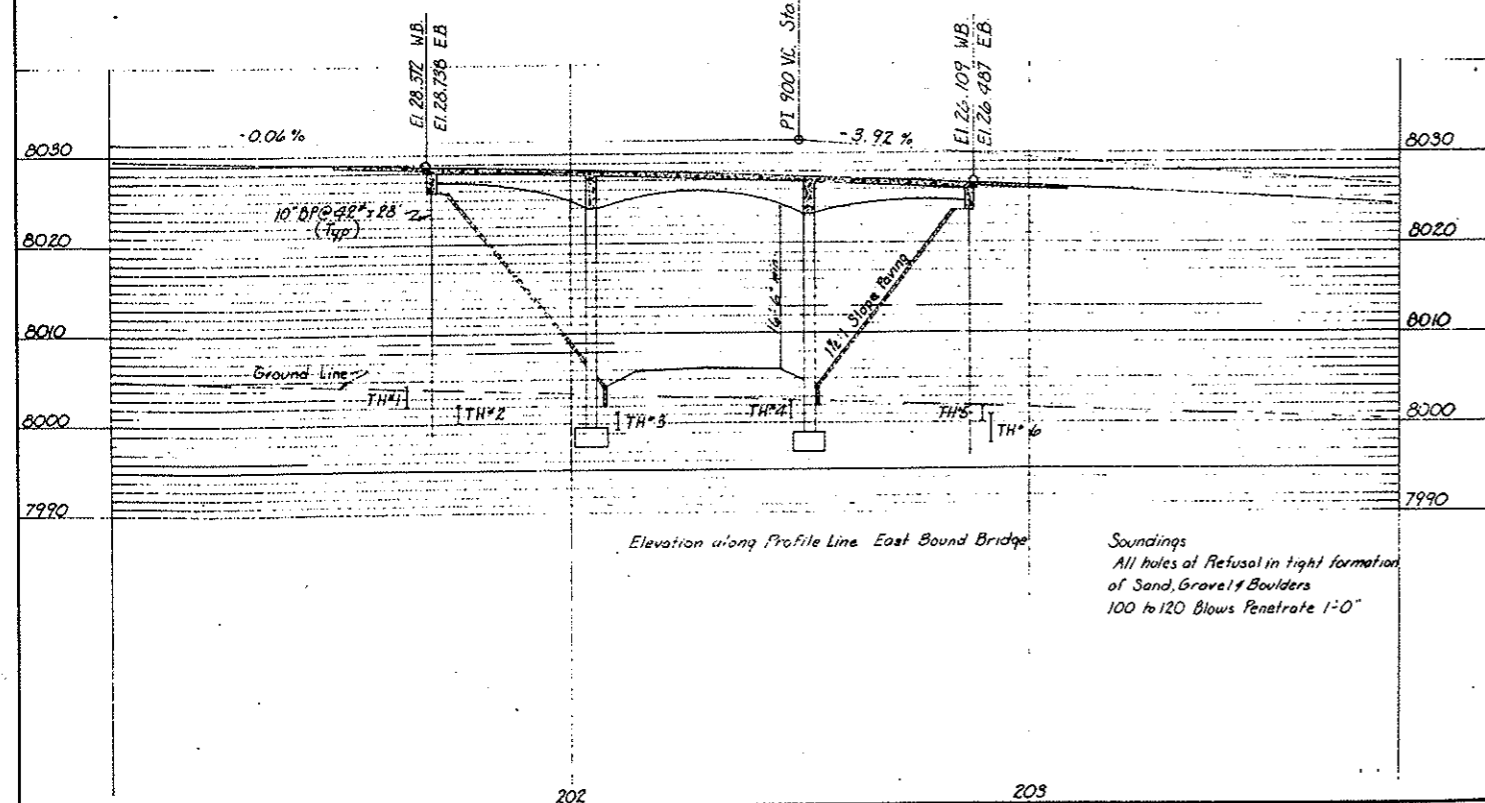
FED. ROAD RES. NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	I70-3(28)242	21	

Δ = 8° 14'
 D = 1° 00'
 T = 412.4'
 L = 823.3'
 R = 5730'
 E = 19.8'



SUMMARY OF QUANTITIES (For Structures E-17-AU & E-17-AK)

Item No.	Description	Unit	Super struct.	Abut. No.1	Pier No.2	Pier No.3	Abut. No.4	E-17-AU Total	E-17-AK Total
14	Unclass. Struct. Excav. - Bridge	Cu. Yd.		4	49	51	4	108	108
16	Structure Backfill (Class I)	Cu. Yd.		10	35	40	10	95	95
18	Station Yard Overhaul	Sta. Yd.						1045	1,045
18	Yard Mile Overhaul	Yd. Mi.						5	5
46	Class "A" Concrete	Cu. Yd.	196.8	10.6	24	24	10.6	266	266
47	Reinforcing Steel (Incl. 1% for overrun)	Lb.	66,130	780	3,885	3,885	780	75,460	75,460
48	Structural Steel (Galvanized)	Lb.	8,160					8,160	8,160
61	Steel Piling (10 BP42)	Lin. Ft.		140			140	280	280
65	Conc. Slope & Ditch Paving (w/wire mesh)	Cu. Yd.		37			33	70	70



GENERAL NOTES

ALL WORK SHALL BE DONE ACCORDING TO THE STANDARD SPECIFICATIONS OF THE COLORADO DEPARTMENT OF HIGHWAYS APPLICABLE TO THE PROJECT.

ALL CONCRETE SHALL BE CLASS "A".

ALL REINFORCING STEEL SHALL BE INTERMEDIATE GRADE STEEL OF A DEFORMED TYPE. EACH BAR SHALL BE TAGGED WITH THE BAR DESIGNATION AND STATION NUMBER OF THE PROJECT.

IF BY PERMISSION OF THE ENGINEER PRIMARY BARS ARE SPICED, THEY SHALL LAP A MINIMUM OF 36 DIAMETERS FOR BARS NEAR TOPS OF BEAMS HAVING MORE THAN 12 INCHES OF CONCRETE UNDER THE BARS, AND 17 DIAMETERS FOR BARS NEAR BOTTOM OF MEMBERS. SECONDARY BARS WHICH SPICED SHALL LAP 17 DIAMETERS OF THE BAR.

DIMENSIONS FOR REINFORCING STEEL NOT SHOWN AS CLEAR SHALL BE TO THE CENTERLINE OF THE BAR.

SOUNDINGS AND BIRTH OF FOOTINGS ARE IN ACCORDANCE WITH THE BEST AVAILABLE DATA, AND WHEN DIFFERENT CONDITIONS ARE ENCOUNTERED THE BRIDGE ENGINEER WILL INSPECT AND DETERMINE IF REDESIGN IS NECESSARY.

FOOTINGS IN ROCK SHALL BE POURED OUT TO ROCK AND NOT FORMED.

WHEN EXCAVATING FOR FOOTINGS THE FINAL ONE FOOT IN DEPTH SHALL BE DONE BY HAND-LABOR METHODS.

FOR DETAILS OF STRUCTURAL EXCAVATION AND STRUCTURE BACKFILL SEE STANDARD M.I.S.-A.

ALL CONCRETE SURFACES MARKED WITH THE STAMPS 1 AS SHOWN ON SHEET NO. 22, SHALL RECEIVE CLASS "7" SURFACE FINISH.

ALL STRUCTURAL STEEL SHALL BE PAINTED WITH ONE SHOP COAT OF ZINC CHROMATE AND TWO FIELD COATS OF ALUMINUM PAINT UNLESS OTHERWISE NOTED.

ALL RIVETS SHALL BE 4 INCH DIAMETER UNLESS OTHERWISE NOTED.

HIGH TENSILE BOLTS MAY BE SUBSTITUTED FOR FIELD RIVETS AT THE CONTRACTORS OPTION. BOLTS SHALL BE FURNISHED IN THE AMOUNT OF FIVE PERCENT IN EXCESS OF THE NOMINAL NUMBER REQUIRED FOR EACH SIZE AND LENGTH.

WELDING SHALL CONFORM TO THE LATEST EDITION OF THE A.W.S. STANDARD SPECIFICATIONS FOR WELDING HIGHWAY BRIDGES.

FOR WELDED GIRDERS ALL SHOP BUTT WELDS IN FLANGES AND WEBS SHALL BE MADE BEFORE WELDING INTO GIRDERS.

WHEN CALLED FOR IN THE SPECIAL PROVISIONS, SHOP WELDS SHALL BE INSPECTED RADIOGRAPHICALLY AND BY THE PENETRANT DYE METHOD.

WHEN TREATED TIMBER PILING IS SHOWN ON THE PLANS, THE PRESERVATIVE FOR TREATMENT SHALL BE CREOSOTE OIL.

LOADING DATA. INTERSTATE ALTERNATE LIVE LOAD - A. S. H. O. H20-S16-44

DEAD LOAD - ASSUMED 15 LBS. PER SQ. FT. ADDITIONAL WEARING SURFACE WHICH INCLUDES THE 1/2 INCH CONCRETE MONOLITHIC WEARING SURFACE SHOWN.

DESIGNING DATA.

A. S. H. O. UNIT STRESSSES.

$f_c = 12000$ Lbs. per Sq. In.

$f_s = 20,000$ Lbs. per Sq. In. (Reinforcing Steel)

$n = 10$

$f_w = 18000$ Lbs. per Sq. In. (A7 Struct. Steel)

COLORADO DEPARTMENT OF HIGHWAYS

3 Continuous Spans 35'-47'-35'
 Conc Slab & Girder
 38' Rdwy 2 Curbs

Across Crossroad
 Sta. 25+73.8
 Near Dumont Sec. 25 T. 38 R. 24W

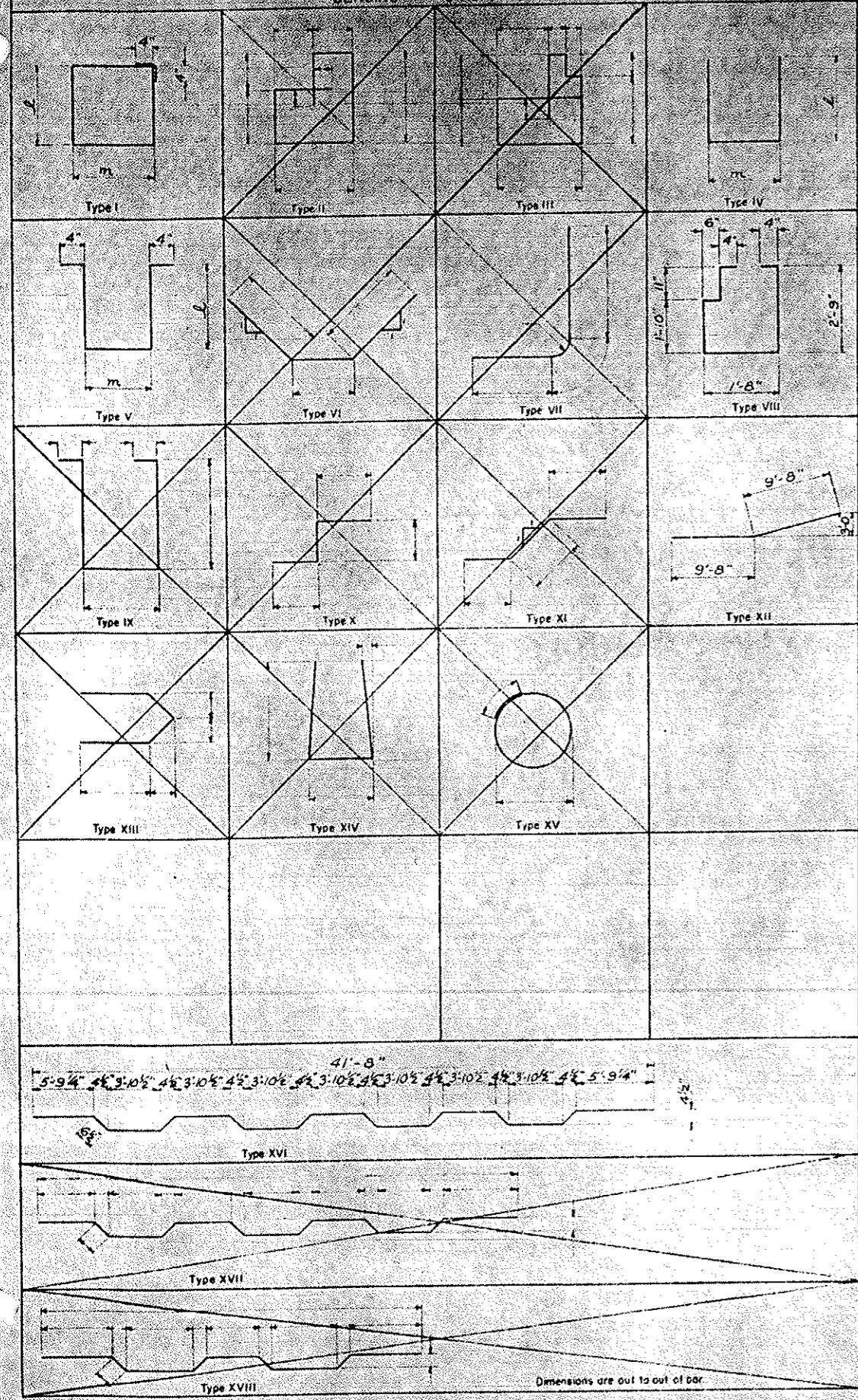
Designed by Arthur L. ...
 Made by Bridge Engineer
 Checked by ... Date: Nov. 1, 1963

* Str. E-14AU WB Sta. 201+68.44 to 202+87.76
 * Str. E-14AK EB Sta. 201+68.75 to 202+87.95

STRUCTURE NO. _____

PROJECT NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
170-3(28)442	COLO.	170-3(28)442	22	

BENDING DIAGRAMS



BAR LIST - SUPERSTRUCTURE

Mark	Size	No. Req'd.	Length	Type	Dimensions
401	1/2" φ	238	4'-4"	IV	1'-4" 1'-8"
402		72	5'-0"	I	1'-3" 0'-11"
403		20	16'-0"	Str.	
412		8	35'-0"	Str.	
413		56	10'-1"	V	3'-10" 1'-9"
414		32	4'-6"	V	1'-8" 0'-6"
418		180	5'-3"	V	1'-9" 1'-1"
419		20	5'-3 1/2"		1'-9"
420			5'-4 1/2"		1'-9"
421			5'-5 1/2"		1'-10"
422			5'-7"		1'-11"
423			5'-8 1/2"		1'-11 1/2"
424			5'-9 1/2"		2'-0"
425			5'-11"		2'-1"
426			6'-1"		2'-2"
427			6'-2 1/2"		2'-2 1/2"
428		20	6'-4"		2'-3 1/2"
429			6'-5 1/2"		2'-4"
to	20 ea.	py 2'	to	py 1'	to
435			7'-5 1/2"		2'-10"
436		20	7'-8"		2'-11 1/2"
437			7'-10 1/2"		3'-0"
438			8'-1"		3'-2"
439			8'-3 1/2"		3'-3 1/2"
440			8'-6"		3'-4 1/2"
441	1/2" φ	20	8'-9"	V	3'-6" 1'-1"
501	3/8" φ	268	41'-8"	Str.	
502	3/8" φ	131	43'-0"	XVII	
503		112	60'-0"	Str.	
504		20	10'-8"		
505		20	16'-2"		
506		20	23'-8"		
507		20	31'-2"		
508		10	9'-8"		
509		10	19'-8"		
510		10	30'-8"		
511	3/8" φ	10	38'-8"	Str.	
601	3/4" φ	3	35'-0"	Str.	
601	1" φ	20	60'-0"	Str.	
901	1 1/8" φ	20	60'-0"	Str.	
902		20	45'-0"		
903		20	34'-6"		
904		20	21'-6"		
905	1 1/8" φ	20	10'-0"	Str.	
1001	1 1/4" φ	18	35'-0"	Str.	
1002	1 1/4" φ	4	41'-8"	Str.	
1101	1 1/8" φ	20	19'-4"	XII	
1102		30	28'-0"	Str.	
1103		20	27'-0"		
1104		20	21'-0"		
1105		10	13'-0"		
1106		10	32'-0"		
1107		10	20'-0"		
1108	1 1/8" φ	5	8'-0"	Str.	

SUMMARY

6758 Lin.Ft. 1/2" φ @ 0.6687/Ft. = 4514 Lb.
 26140 Lin.Ft. 3/8" φ @ 1.0437/Ft. = 27264 Lb.
 105 Lin.Ft. 3/4" φ @ 1.5027/Ft. = 158 Lb.
 1200 Lin.Ft. 1" φ @ 2.6707/Ft. = 3204 Lb.
 3420 Lin.Ft. 1 1/8" φ @ 3.4007/Ft. = 11628 Lb.
 796 Lin.Ft. 1 1/4" φ @ 4.3037/Ft. = 3425 Lb.
 2676 Lin.Ft. 1 1/2" φ @ 5.3137/Ft. = 15280 Lb.
 1% for overrun = 657 Lb.
 Total = 66,130 Lb.

BAR LIST - ABUT. NO. 1 (NO.4 Sim)

Mark	Size	No. Req'd.	Length	Type	Dimensions
451	1/2" φ	36	8'-4"	VIII	2' m
452		8	21'-3"	Str.	
453		20	5'-0"		
454		8	3'-9"		
455	1/2" φ	8	4'-1"		
515	3/8" φ	8	41'-8"	Str.	

SUMMARY

633 Lin.Ft. 1/2" φ @ 0.6687/Ft. = 423 Lb.
 333 Lin.Ft. 3/8" φ @ 1.0437/Ft. = 347 Lb.
 1% for overrun = 10 Lb.
 Total = 780 Lb.

BAR LIST - PIER NO. 2 (NO.3 Sim)

Mark	Size	No. Req'd.	Length	Type	Dimensions
461			7'-4"		1'-8" m
to	1/2" φ	3 ea.	py 1'	to	py 1'
484			9'-3"		2'-7 1/2"
602	3/8" φ	27	5'-6"	Str.	
603	3/4" φ	27	7'-6"		
811	1" φ	36	3'-3"		
812	1" φ	36	23'-9"		
911	1 1/8" φ	24	4'-0"	Str.	

SUMMARY

597 Lin.Ft. 3/8" φ @ 0.6687/Ft. = 399 Lb.
 351 Lin.Ft. 3/4" φ @ 1.5027/Ft. = 527 Lb.
 972 Lin.Ft. 1" φ @ 2.6707/Ft. = 2595 Lb.
 96 Lin.Ft. 1 1/8" φ @ 3.4007/Ft. = 326 Lb.
 1% for overrun = 38 Lb.
 Total = 3885 Lb.

← A432 Steel.

COLORADO
 DEPARTMENT OF HIGHWAYS

BENDING DIAGRAMS & BAR LIST

Across Crossroad Sta. 4

near Dumont Sec. 25 T. 35 R. 74 W.

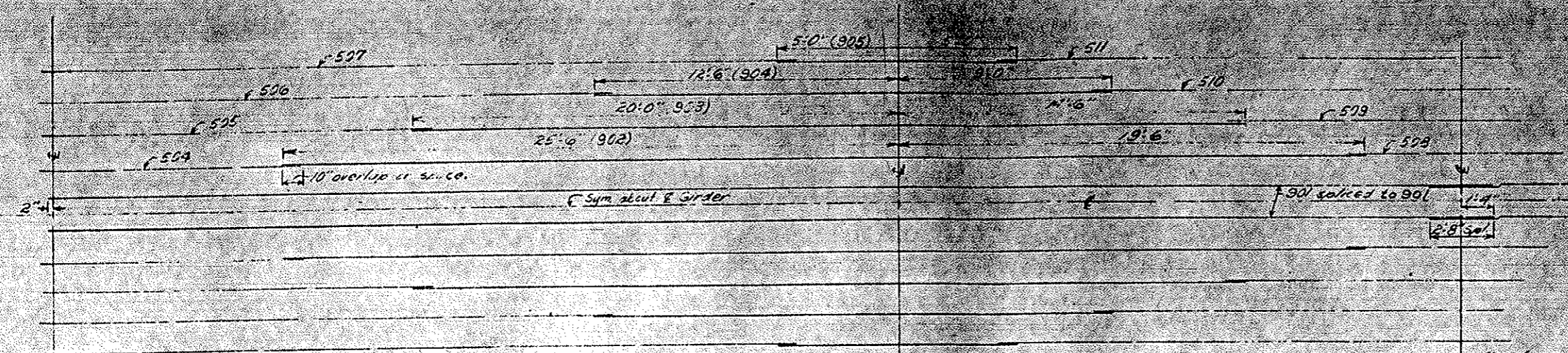
Designed by E-H-AJ Westbound
 Sta. 201+68.44 to 202+87.76

Made by J.B. Checked by J.B.

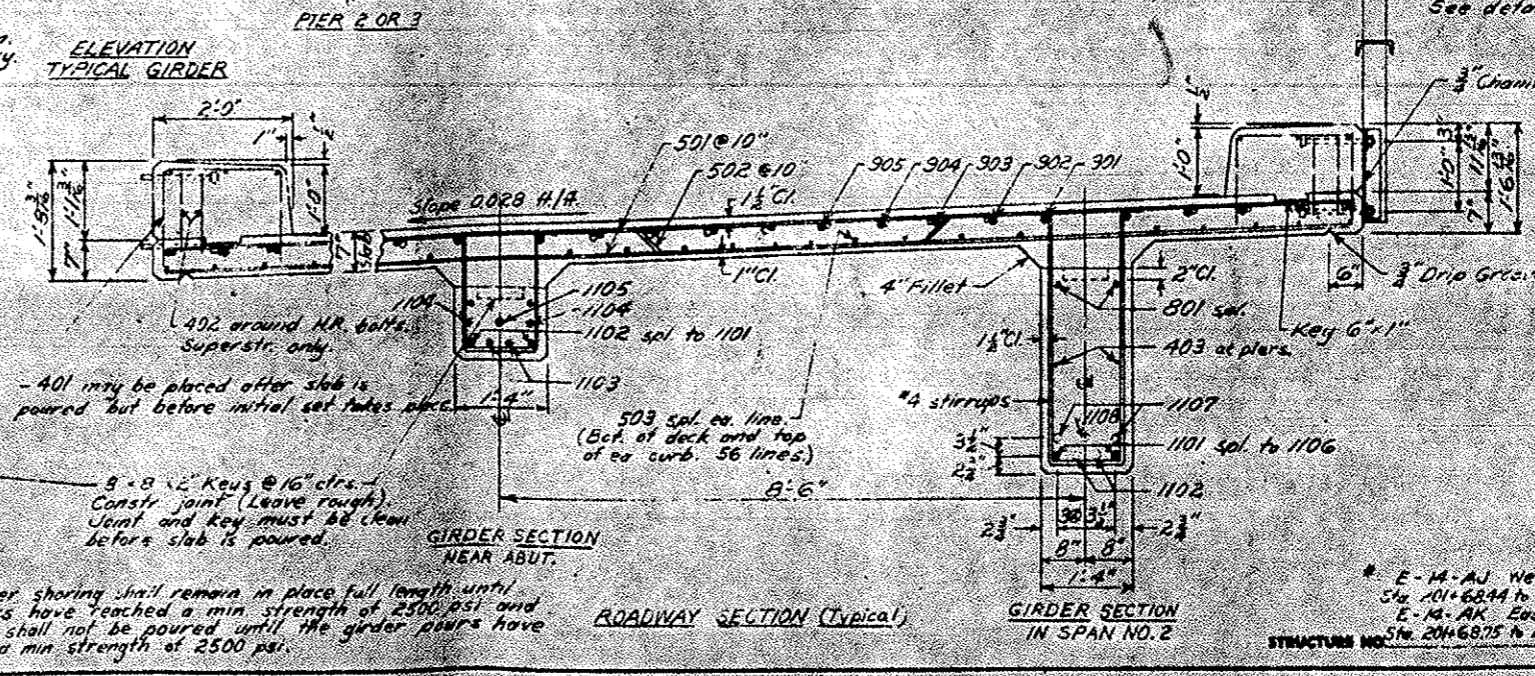
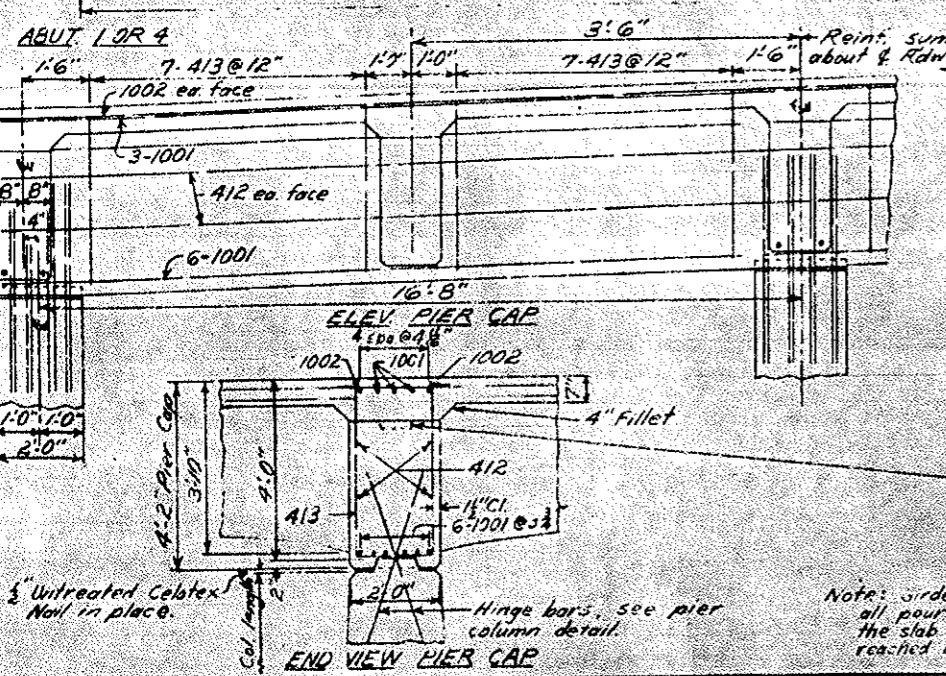
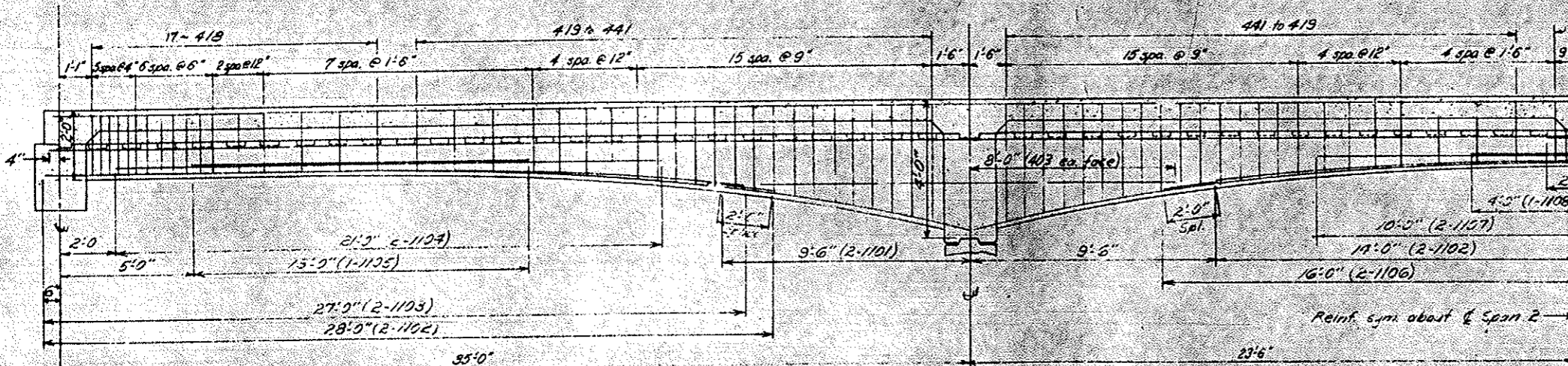
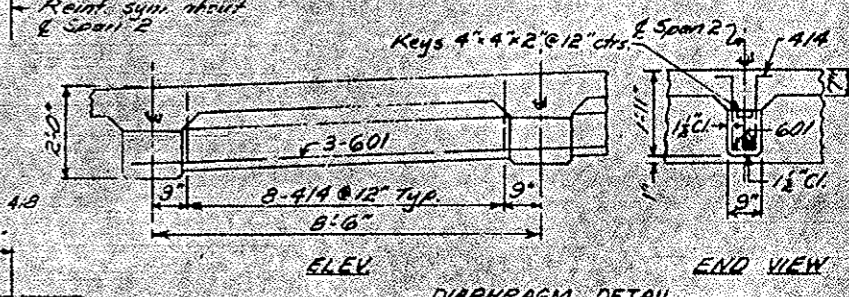
Approved by Bridge Engineer
 Date Nov. 1, 1943

STRUCTURE NO.

NO. SHEET	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
1	COLO.	170-3(0)242	24	



REINFORCEMENT
Top of girder and deck. See Pdw. Sec. below



Note: All exposed edges are chamfered 3/4\"/>

COLORADO DEPARTMENT OF HIGHWAYS
DETAILS OF SUPERSTRUCTURE

Location: Crossroad

Drawn by: JLB Checked by: JLB

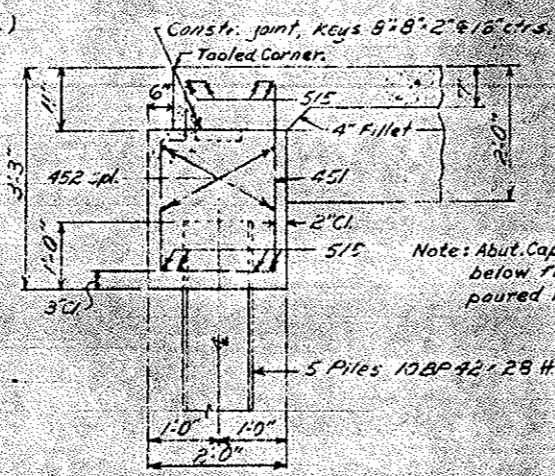
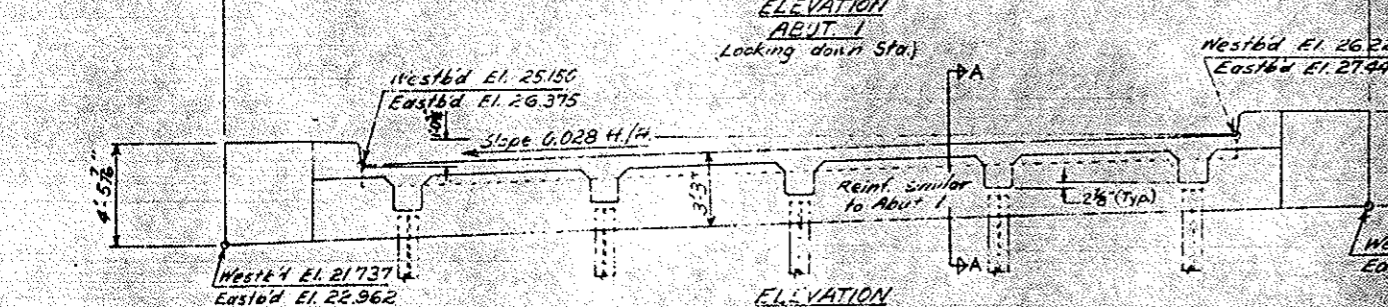
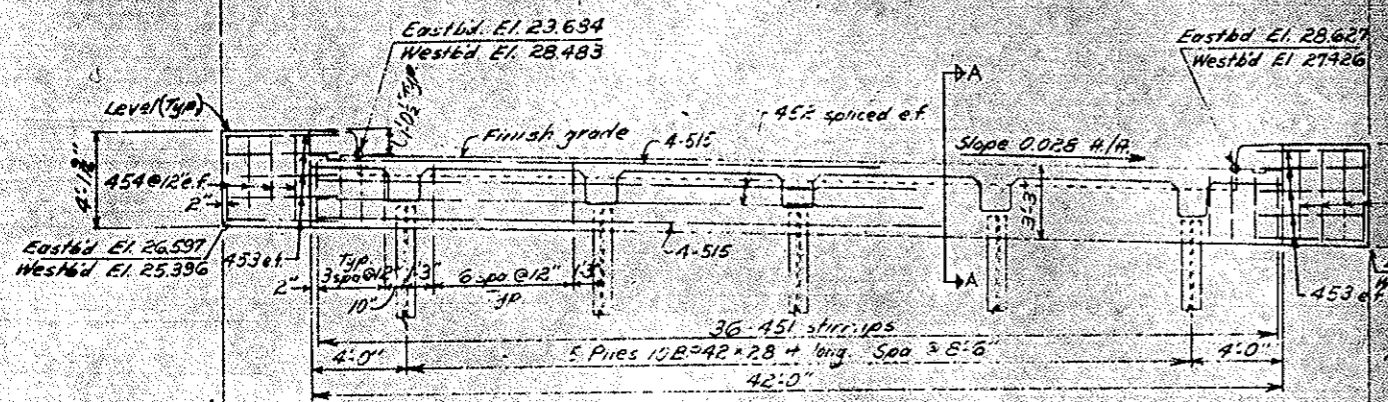
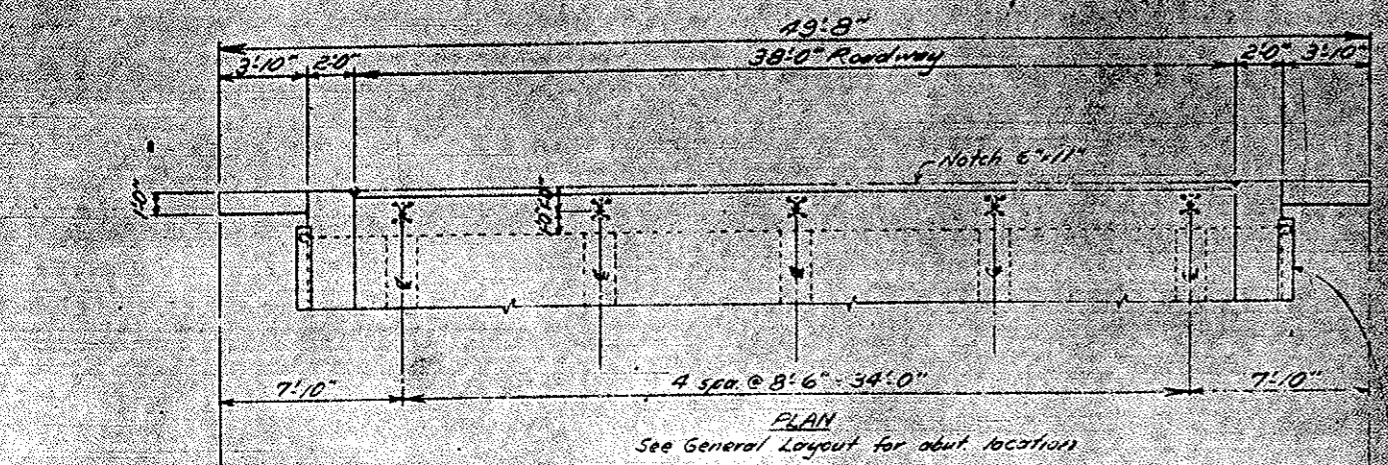
Approved by: JLB Date: Nov. 1, 1963

Scale: 1/4\"/>

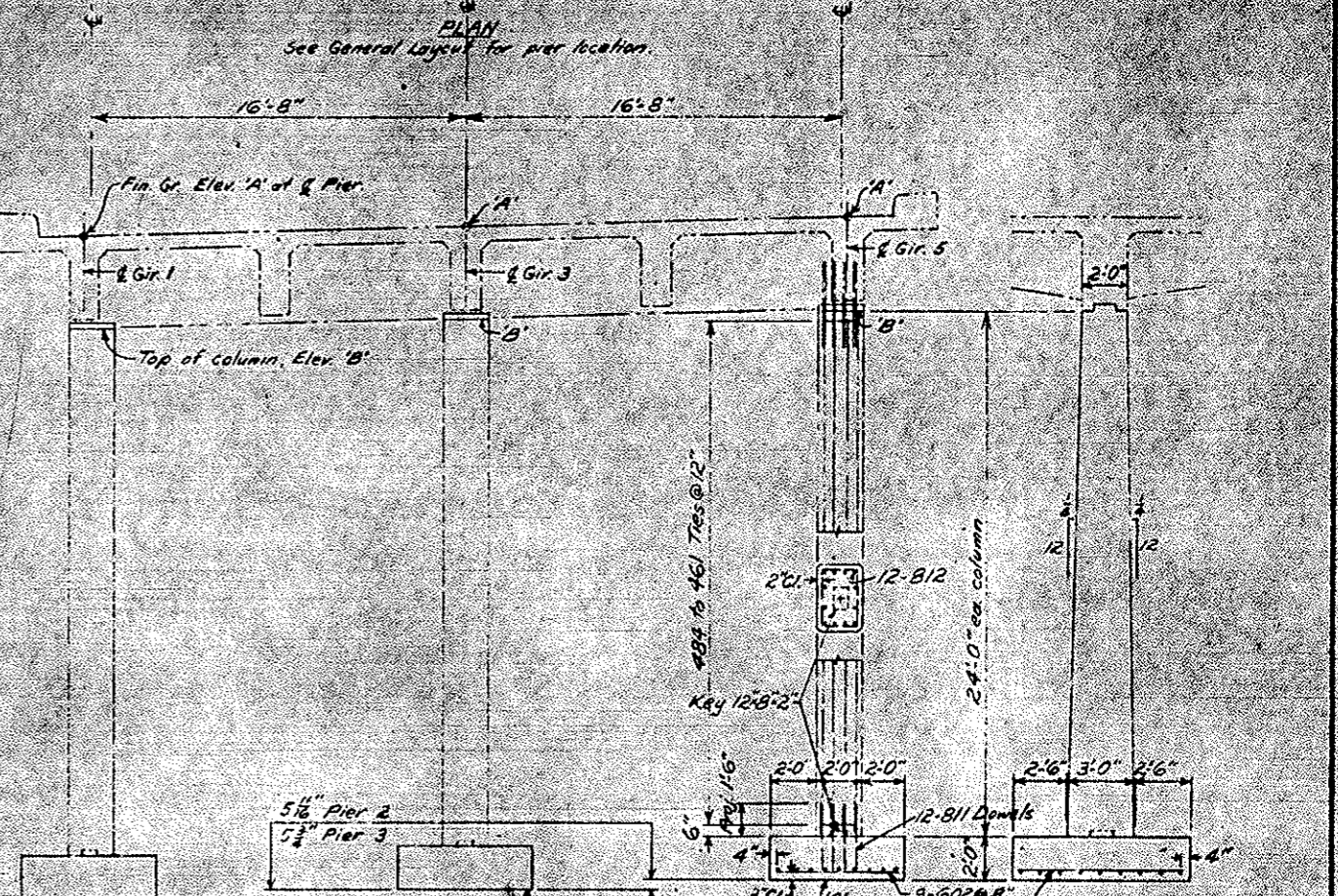
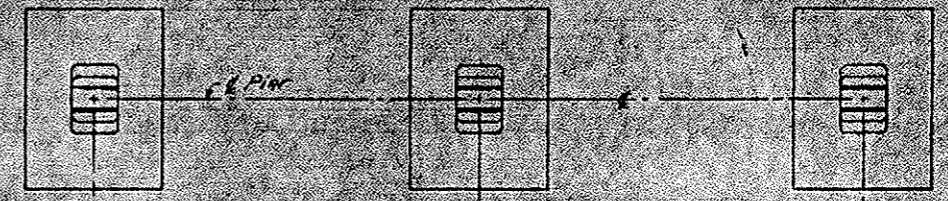
Note: Girder shoring shall remain in place full length until all pours have reached a min. strength of 2500 psi and the slab shall not be poured until the girder pours have reached a min. strength of 2500 psi.

* E-14-AJ West Bound Sta. 201+68.44 to 202+87.76
 * E-14-AK East Bound Sta. 201+68.75 to 202+87.75

PROJECT NO.	DATE	BY	CHKD.
170-370242	25		



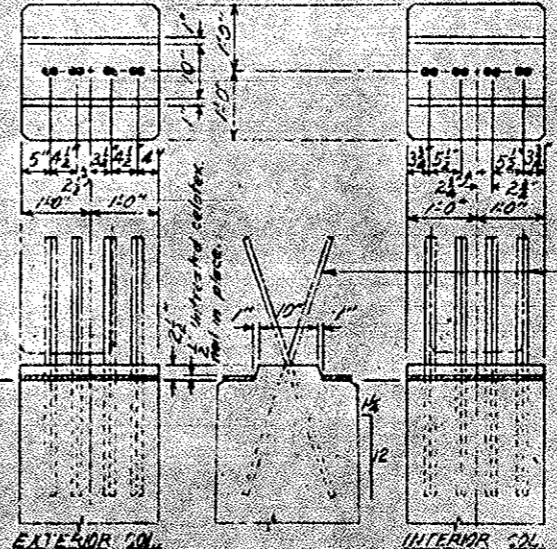
SEC. A-A
Max. Pile Load - 30.3 Tons



ELEVATION C
PIER 2 OR 3

END VIEW (Gr. II Loading)
Max. Fly Press. = 4.6 Tons/sq. ft.

Elev.	E-14-AJ Westbound			E-14-AK Eastbound		
	5/8" Gir. 1	5/8" Gir. 3	5/8" Gir. 5	5/8" Gir. 1	5/8" Gir. 3	5/8" Gir. 5
Pier 2 Elev. 'A'	26.851	27.326	27.800	28.058	28.532	29.007
Pier 2 Elev. 'B'	22.643	23.118	23.592	23.850	24.324	24.799
Pier 2 Elev. 'C'	96.64	97.12	97.59	97.85	98.32	98.80
Pier 3 Elev. 'A'	25.952	26.430	26.907	27.168	27.646	28.123
Pier 3 Elev. 'B'	21.744	22.222	22.699	22.960	23.438	23.915
Pier 3 Elev. 'C'	95.74	96.22	96.70	96.96	97.44	97.91



EXTERIOR COL. INTERIOR COL.

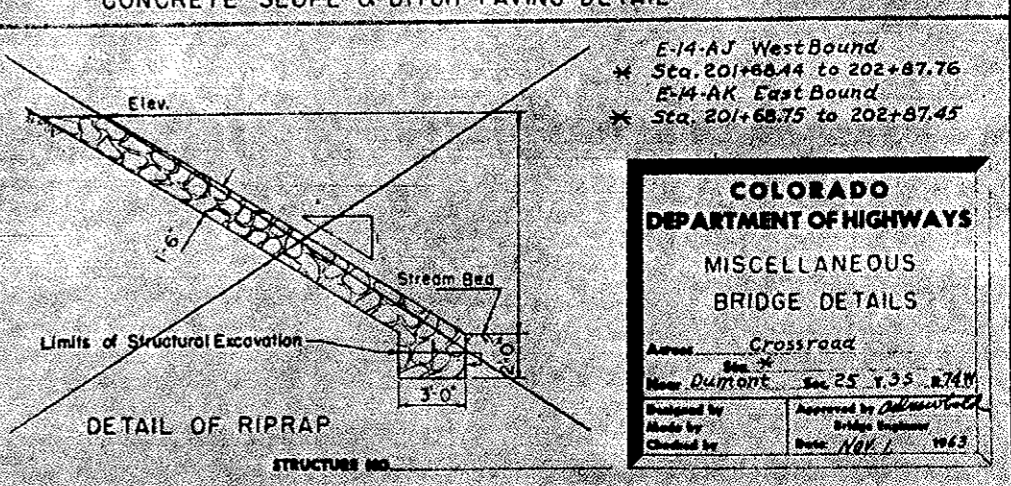
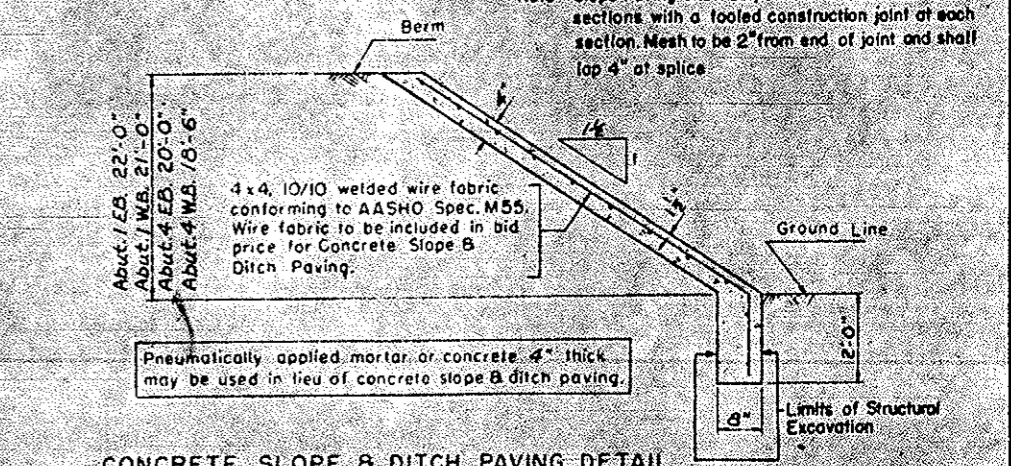
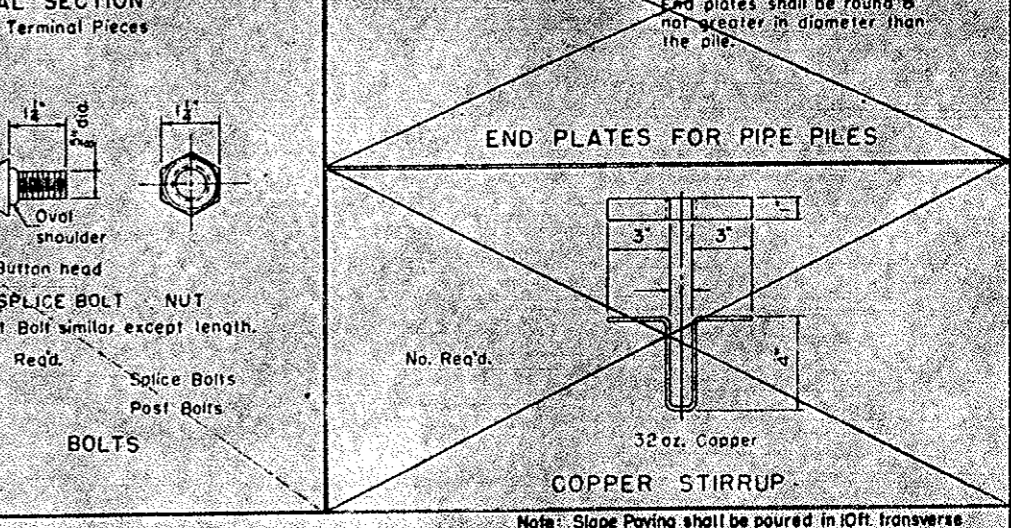
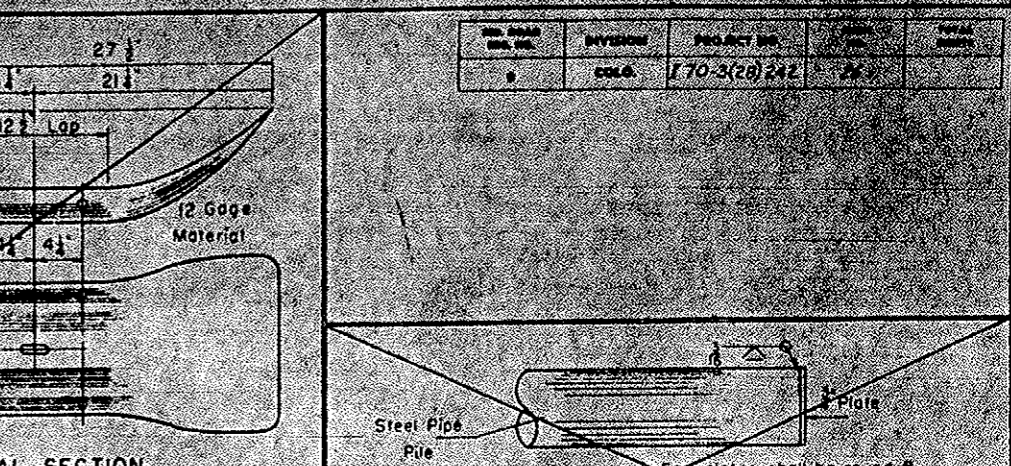
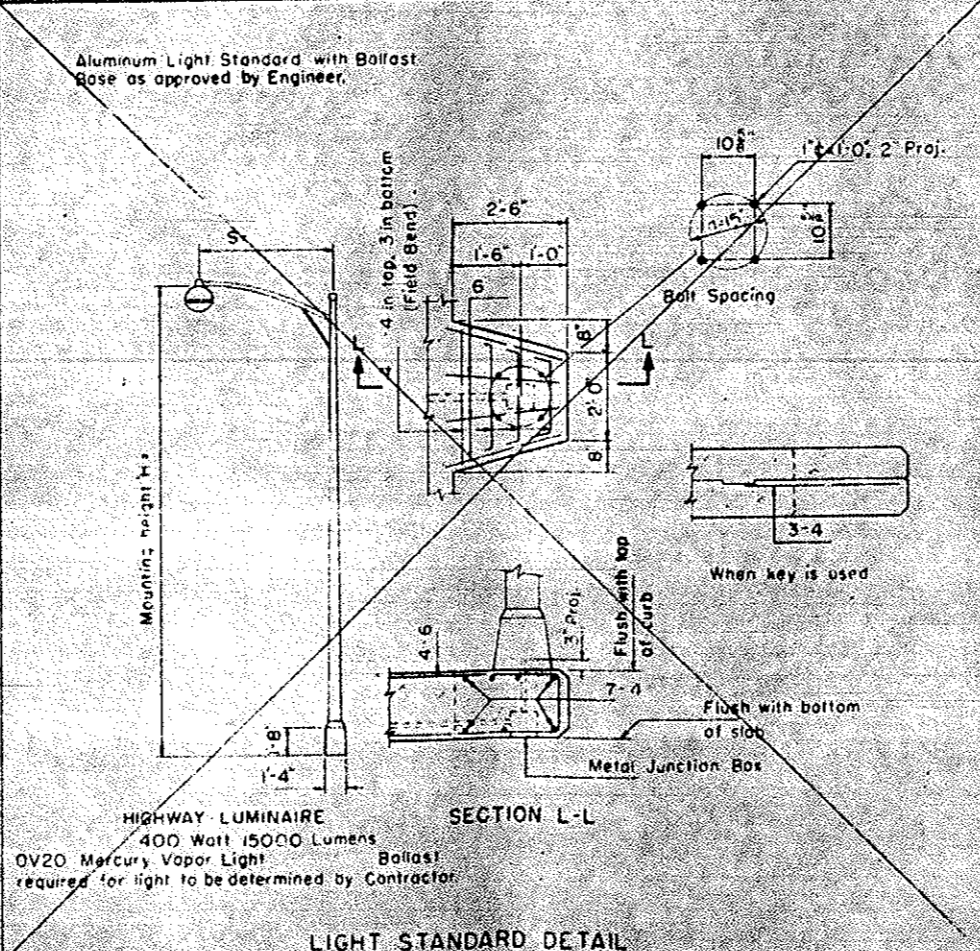
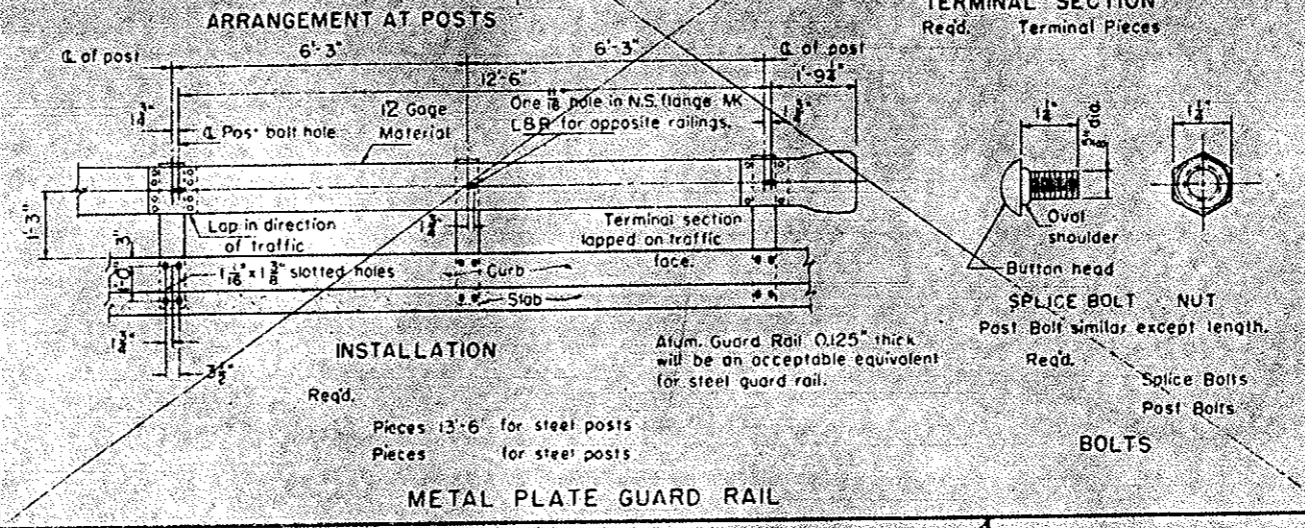
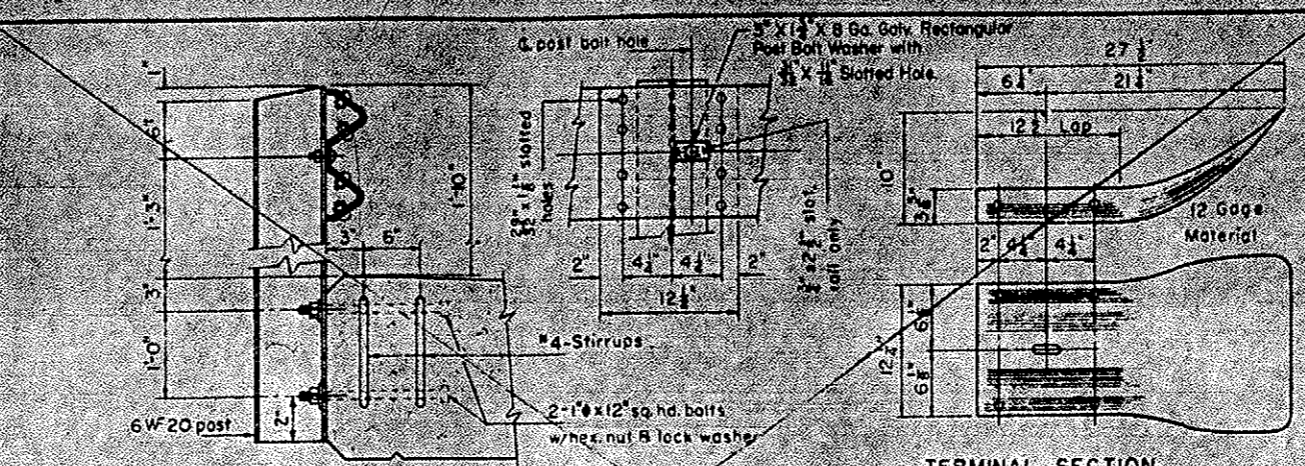
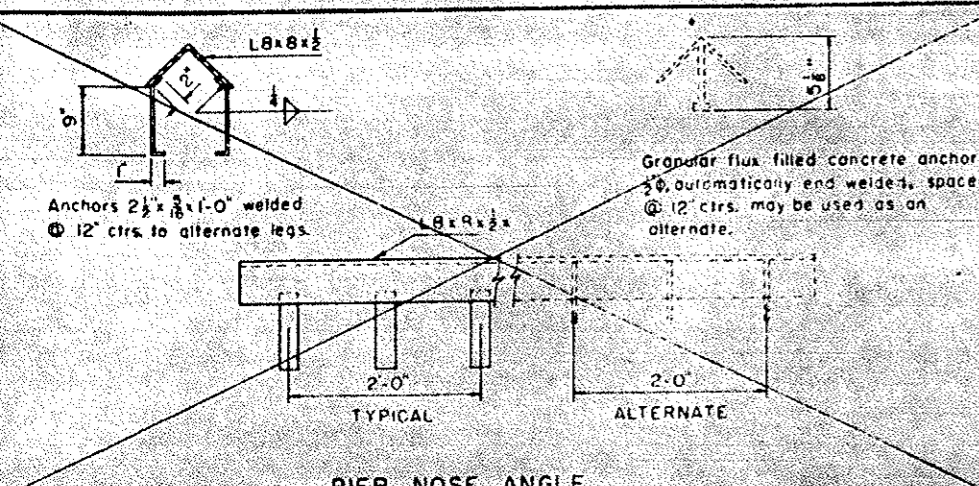
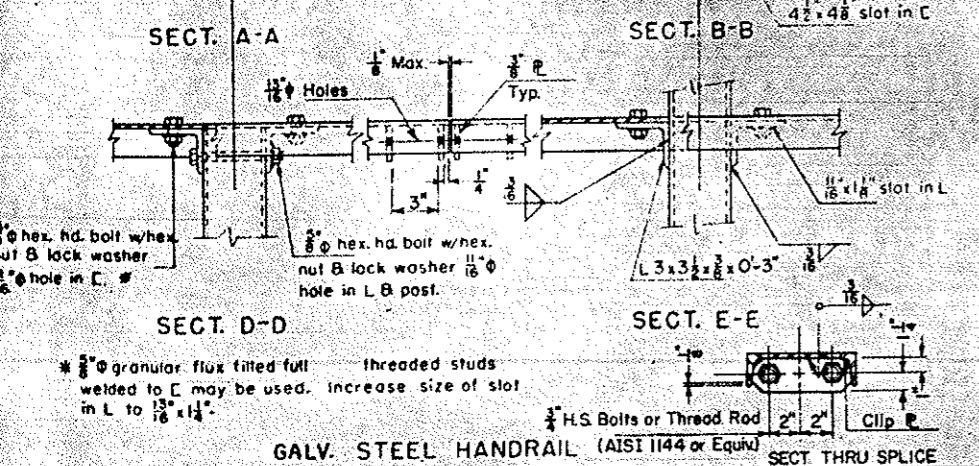
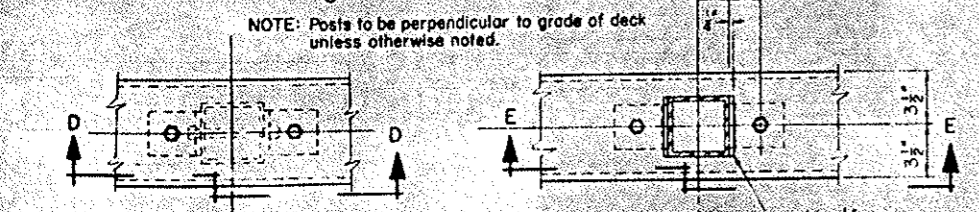
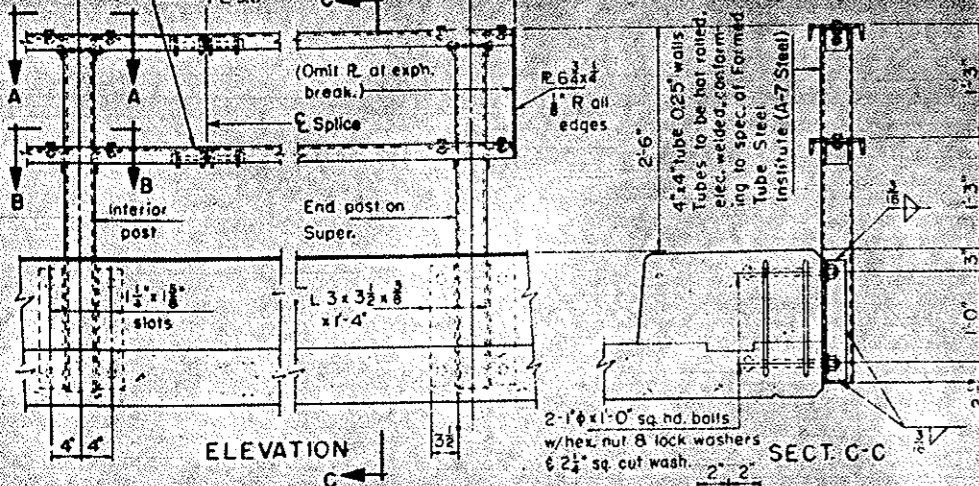
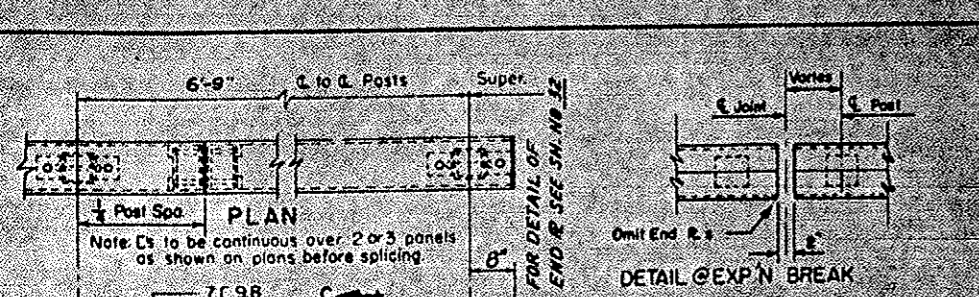
STRUCTURE No. Sta. 201+68.75 to 202+87.45

COLORADO DEPARTMENT OF HIGHWAYS
 ABUTS 1 AND 4
 PIERS 2 AND 3

Crossroad

Station: 201+68.75 to 202+87.45

Designed by J.L.B. Checked by J.L.B.
 Drawn by J.L.B. Date: Nov. 1, 1963



E-14-AJ West Bound
Sta. 201+68.44 to 202+87.76
E-14-AK East Bound
Sta. 201+68.75 to 202+87.45

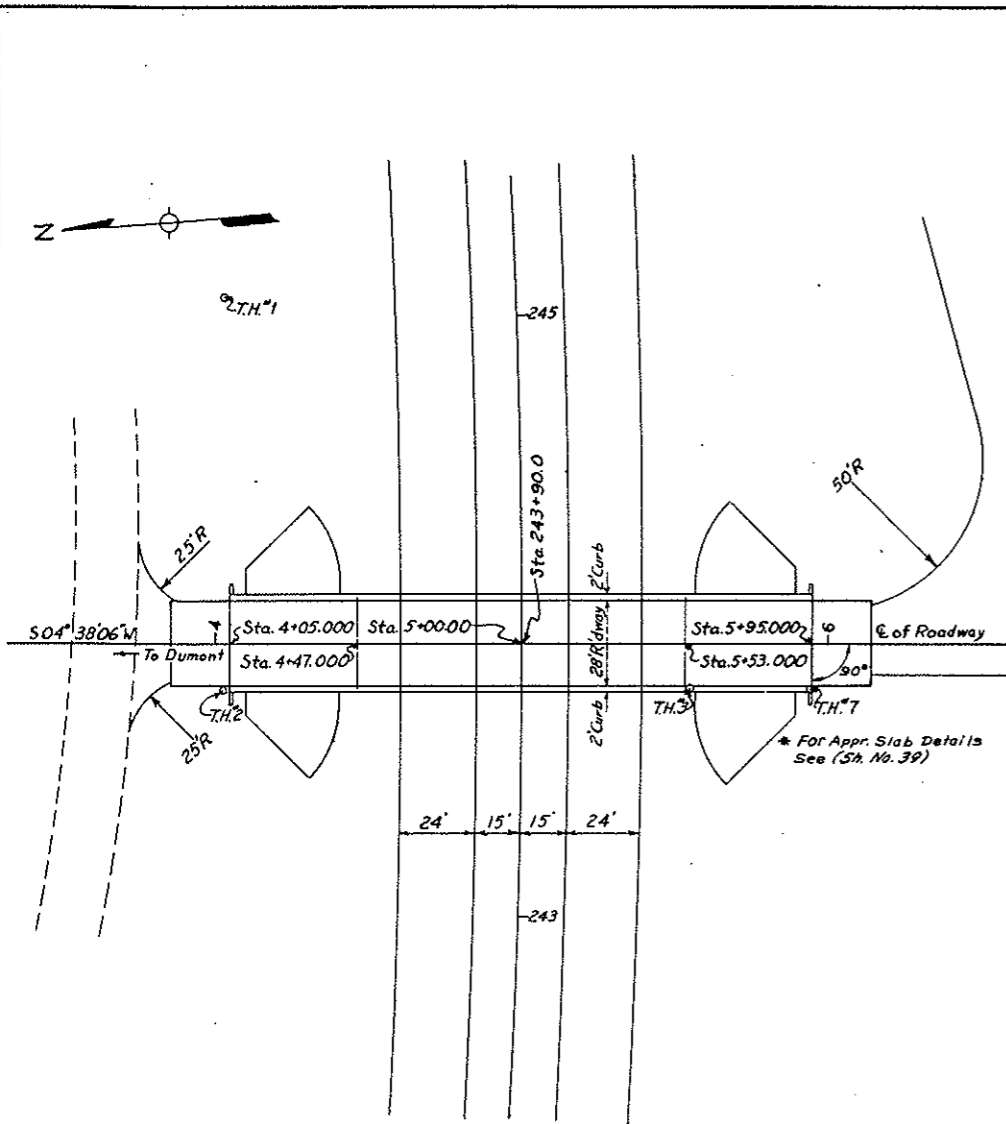
COLORADO DEPARTMENT OF HIGHWAYS
MISCELLANEOUS BRIDGE DETAILS

Across Crossroad
Near Dumont, Sec. 25 T.35 R.74N
Designed by [Signature]
Checked by [Signature]
Approved by [Signature]
Date: 10/1/1963

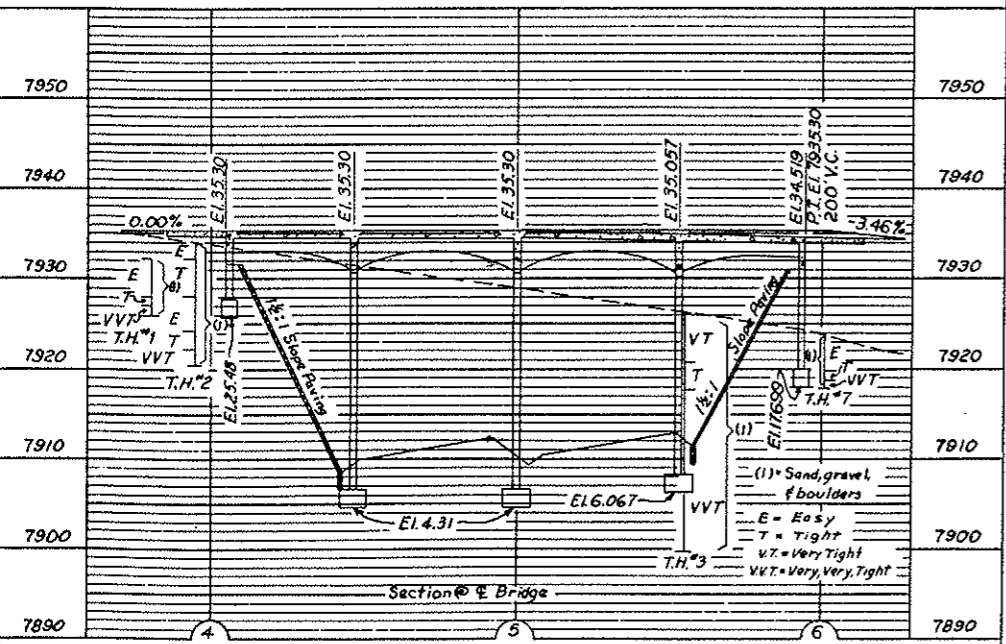
STRUCTURE NO.

FED. ROAD DIV. NO.	DISTRICT	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	I-70-3(26)242	27	

Sheets 28 thru 32



Item	Description	Unit	Super-structure	Abut. N#1	Pier N#2	Pier N#3	Pier N#4	Abut. N#5	Totals
14	Unclassified Structural Excavation-(Bridgel)	Cu. Yd.		55	45	55	60	45	260
16	Structure Backfill (Class 1)	Cu. Yd.		45	35	40	45	35	200
18	Station Yard Overhaul	Sq. Yd.							2,200
18	Yard Mile Overhaul	Yd. Mi.							64
46	Class A Concrete	Cu. Yd.	273.6	16.3	23.3	23.3	22.0	18.5	377
47	Reinforcing Steel (Includes 1% for overrun)	Lb.	86,970	1725	5145	5145	4735	2065	105,785
48	Structural Steel (Galvanized)	Lb.	13,205						13,205
65	Concrete Slope & Ditch Paving (With Wire Mesh)	Cu. Yd.		42				38	80



GENERAL NOTES

ALL WORK SHALL BE DONE ACCORDING TO THE STANDARD SPECIFICATIONS OF THE COLORADO DEPARTMENT OF HIGHWAYS APPLICABLE TO THE PROJECT.

ALL CONCRETE SHALL BE CLASS "A".

ALL REINFORCING STEEL SHALL BE INTERMEDIATE GRADE STEEL OF A DEFORMED TYPE. EACH BAR SHALL BE TAGGED WITH THE BAR DESIGNATION AND STATION NUMBER OF THE PROJECT.

IF BY PERMISSION OF THE ENGINEER PRIMARY BARS ARE SPICED, THEY SHALL LAP A MINIMUM OF 30 DIAMETERS FOR BARS NEAR TOP OF BEAMS HAVING MORE THAN 12 INCHES OF CONCRETE UNDER THE BARS, AND 37 DIAMETERS FOR BARS NEAR BOTTOM OF MEMBERS. SECONDARY BARS WHEN SPICED SHALL LAP 37 DIAMETERS OF THE BAR.

DIMENSIONS FOR REINFORCING STEEL NOT SHOWN AS CLEAR SHALL BE TO THE CENTERLINE OF THE BAR.

SOUNDINGS AND DEPTH OF FOOTINGS ARE IN ACCORDANCE WITH THE BEST AVAILABLE DATA, AND WHEN DIFFERENT CONDITIONS ARE ENCOUNTERED THE BRIDGE ENGINEER WILL INSPECT AND DETERMINE IF REVISION IS NECESSARY.

FOOTINGS IN ROCK SHALL BE POURED OUT TO ROCK AND NOT FORMED.

WHEN EXCAVATING FOR FOOTINGS THE FINAL ONE FOOT IN DEPTH SHALL BE DONE BY HAND-LABOR METHODS.

FOR DETAILS OF STRUCTURAL EXCAVATION AND STRUCTURE BACKFILL SEE STANDARD M-16-A.

ALL CONCRETE SURFACES MARKED WITH THE SYMBOL F AS SHOWN ON SHEET NO. 28 SHALL RECEIVE CLASS "1" SURFACE FINISH.

ALL STRUCTURAL STEEL SHALL BE PAINTED WITH ONE SHOP COAT OF ZINC CHROMATE AND TWO FIELD COATS OF ALUMINUM PAINT UNLESS OTHERWISE NOTED.

ALL RIVETS SHALL BE 1/2" INCH DIAMETER UNLESS OTHERWISE NOTED.

HIGH TENSILE BOLTS MAY BE SUBSTITUTED FOR FIELD RIVETS AT THE CONTRACTOR'S OPTION. BOLTS SHALL BE FURNISHED IN THE AMOUNT OF FIVE PERCENT IN EXCESS OF THE NOMINAL NUMBER REQUIRED FOR EACH SIZE AND LENGTH.

WELDING SHALL CONFORM TO THE LATEST EDITION OF THE A.W.S. STANDARD SPECIFICATIONS FOR WELDING HIGHWAY BRIDGES.

FOR WELDED GIRDERS ALL SHOP BUTT WELDS IN FLANGES AND WEBS SHALL BE MADE BEFORE WELDING INTO GIRDER.

WHEN CALLED FOR IN THE SPECIAL PROVISIONS, SHOP WELDS SHALL BE INSPECTED RADIOGRAPHICALLY AND BY THE PENETRANT DYE METHOD.

WHEN TREATED TIMBER PILING IS SHOWN ON THE PLANS, THE PRESERVATIVE FOR TREATMENT SHALL BE CREOSOTE OIL.

ALL STRUCTURAL STEEL NOT OTHERWISE NOTED SHALL BE ASTM A50-B2.

LOADING DATA.
LIVE LOAD-A. A. S. H. O. H20-S16-44
DEAD LOAD-ASSUMED 15 LBS. PER SQ. FT. ADDITIONAL WEARING SURFACE WHICH INCLUDES THE 1/4 INCH CONCRETE MONOLITHIC WEARING SURFACE SHOWN.

DESIGNING DATA.
A. A. S. H. O. UNIT STRESSES.
fs = 20,000 Lbs. per Sq. In. (Rein. / Struct. Add. Steel)
ft = 10.
fs = 18,000 p.s.i. (A7 STRUCT. STEEL)

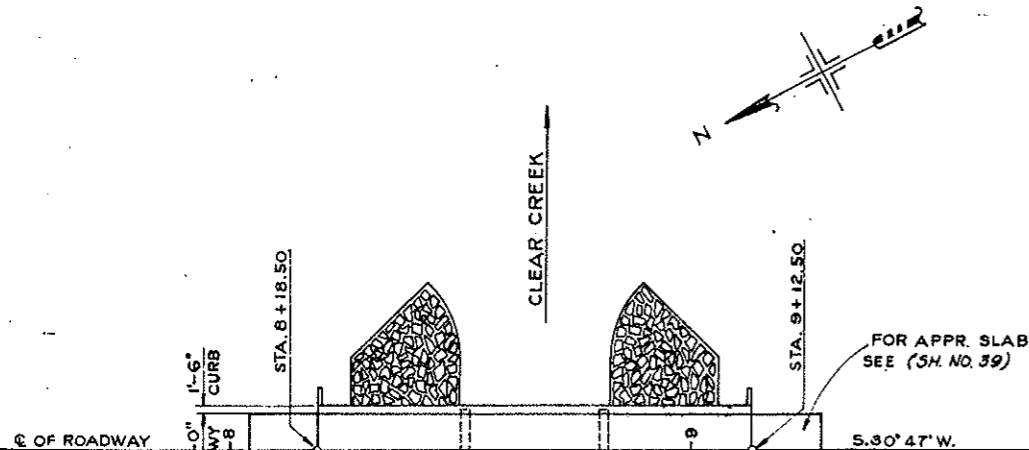
COLORADO DEPARTMENT OF HIGHWAYS
4 Cont. Spans (41'-53'-53'-41')
Conc. Slab Girders
90° Skew 28' Rdway 2' Curbs
Summary of Quantities

Across Interstate 70
Sta. 243+90.0
Near Dumont Sec. 30 T. 35 R. 73W

Designed by _____
Made by _____
Checked by _____

Approved by _____
Bridge Engineer
Date: Nov. 1, 1963

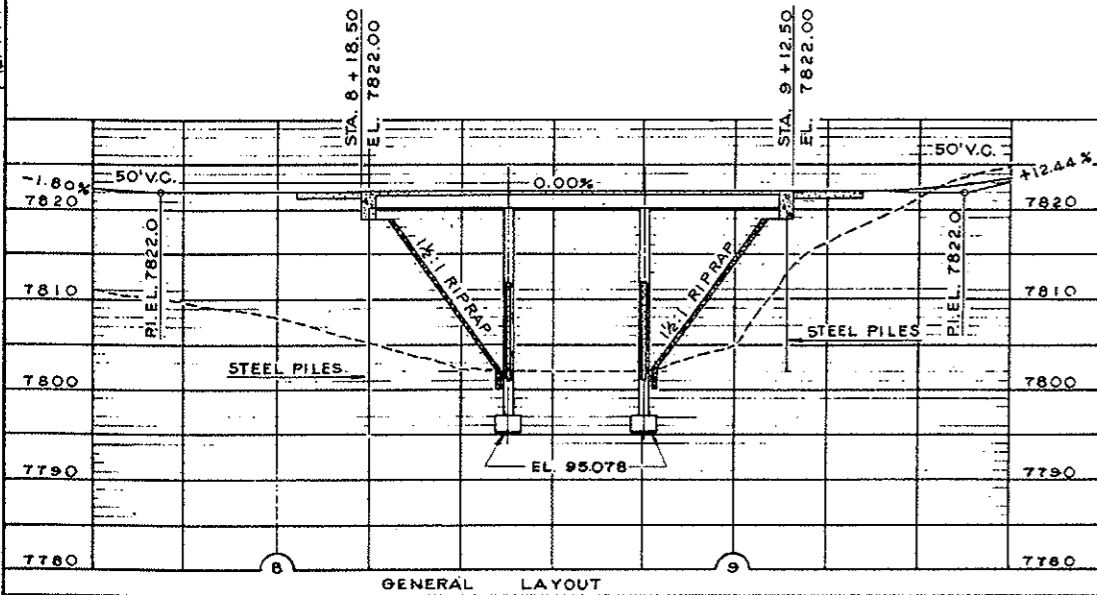
FED. ROAD RES. NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	170-3(28)242	35	



SUMMARY of QUANTITIES

Item	Description	Unit	Super-structure	Abut. No. 1	Pier No. 2	Pier No. 3	Abut. No. 4	Total
14	Unclass. Struct. Excav. (Bridge)	Cu.Yd.		17	26	26	17	86
16	Struct. Backfill (Class 1)	Cu.Yd.		5	20	20	5	50
18	Station Yard Overhaul	Sq.Yd.						550
18	Yard Mile Overhaul	Yd.Mi.						77
46	Class 'A' Conc.	Cu.Yd.	61.0	4.7	16.8	16.8	4.7	104
47	Reinf. Steel (Incl. 1% for overrun)	Lbs.	20,540	440	2,470	2,470	440	26,360
48	Struct. Steel (Incl. 1/2% for paint)	Lbs.			445	445		890
48	Struct. Steel (Galvanized)	Lbs.	2,500					2,500
67	Steel Piling 10 BP@42	Lin.Ft.		50			36	86
67	Rip Rap (1'-6" thick)	Cu.Yd.		120			120	240
75	Metal Plate Guard Rail (Beam Type)	Lin.Ft.		182				182
89	Drain Pipe (4" x 1'-6" Conc. Floor)	Ft.		6				6

Initial	Date



GENERAL NOTES

ALL WORK SHALL BE DONE ACCORDING TO THE STANDARD SPECIFICATIONS OF THE COLORADO DEPARTMENT OF HIGHWAYS APPLICABLE TO THE PROJECT.

ALL CONCRETE SHALL BE CLASS "A".

ALL REINFORCING STEEL SHALL BE INTERMEDIATE GRADE STEEL OF A DEFORMED TYPE. EACH BAR SHALL BE TAGGED WITH THE BAR DESIGNATION AND STATION NUMBER OF THE PROJECT.

IF BY PERMISSION OF THE ENGINEER PRIMARY BARS ARE SPICED, THEY SHALL LAP A MINIMUM OF 28 DIAMETERS FOR BARS NEAR TOPS OF BEAMS HAVING MORE THAN 13 INCHES OF CONCRETE UNDER THE BARS, AND 17 DIAMETERS FOR BARS NEAR BOTTOM OF MEMBERS. SECONDARY BARS WHEN SPICED SHALL LAP 17 DIAMETERS OF THE BAR.

DIMENSIONS FOR REINFORCING STEEL NOT SHOWN AS CLEAR SHALL BE TO THE CENTERLINE OF THE BAR.

SOUNDINGS AND DEPTH OF FOOTINGS ARE IN ACCORDANCE WITH THE BEST AVAILABLE DATA, AND WHEN DIFFERENT CONDITIONS ARE ENCOUNTERED THE BRIDGE ENGINEER WILL INSPECT AND DETERMINE IF REDSIGN IS NECESSARY.

FOOTINGS IN ROCK SHALL BE POURED OUT TO ROCK AND NOT FORMED.

WHEN EXCAVATING FOR FOOTINGS THE FINAL ONE FOOT IN DEPTH SHALL BE DONE BY HAND-LABOR METHODS.

FOR DETAILS OF STRUCTURAL EXCAVATION AND STRUCTURE BACKFILL, SEE STANDARD MISC-A.

ALL CONCRETE SURFACES MARKED WITH THE SYMBOL 1 AS SHOWN ON SHEET NO. 32, SHALL RECEIVE CLASS "1" SURFACE FINISH.

ALL STRUCTURAL STEEL SHALL BE PAINTED WITH ONE SHOP COAT OF ZINC CHROMATE AND TWO FIELD COATS OF ALUMINUM PAINT UNLESS OTHERWISE NOTED.

ALL RIVETS SHALL BE 3/4 INCH DIAMETER UNLESS OTHERWISE NOTED.

HIGH TENSILE BOLTS MAY BE SUBSTITUTED FOR FIELD RIVETS AT THE CONTRACTOR'S OPTION. BOLTS SHALL BE FURNISHED IN THE AMOUNT OF FIVE PERCENT IN EXCESS OF THE NOMINAL NUMBER REQUIRED FOR EACH SIZE AND LENGTH.

WELDING SHALL CONFORM TO THE LATEST EDITION OF THE A.W.S. STANDARD SPECIFICATIONS FOR WELDING HIGHWAY BRIDGES.

FOR WELDED GIRDERS ALL SHOP BUTT WELDS IN FLANGES AND WEBS SHALL BE MADE BEFORE WELDING INTO GIRDER.

WHEN CALLED FOR IN THE SPECIAL PROVISIONS, SHOP WELDS SHALL BE INSPECTED RADIOGRAPHICALLY AND BY THE PENETRANT DYE METHOD.

WHEN TREATED TIMBER PILING IS SHOWN ON THE PLANS, THE PRESERVATIVE FOR TREATMENT SHALL BE CREOSOTE OIL.

All Structural Steel Not Otherwise Noted Shall be ASTM A36-62T

LOADING DATA.
LIVE LOAD - A. A. S. H. O. H20-44
DEAD LOAD - ASSUMES 10 LBS. PER SQ. FT. ADDITIONAL WEARING SURFACE WHICH INCLUDES THE 1/2 INCH CONCRETE MONOLITHIC WEARING SURFACE SHOWN.

DESIGNING DATA.
A. A. S. H. O. UNIT STRESSES.
fc = 1,800 Lbs. per Sq. In. (Reinforcing Steel)
fs = 20,000 Lbs. per Sq. In. (Structural Steel (A 36))
n = 10.
R = 18,000 Lbs. per Sq. In. (A 7 3/4 Steel)

COLORADO DEPARTMENT OF HIGHWAYS

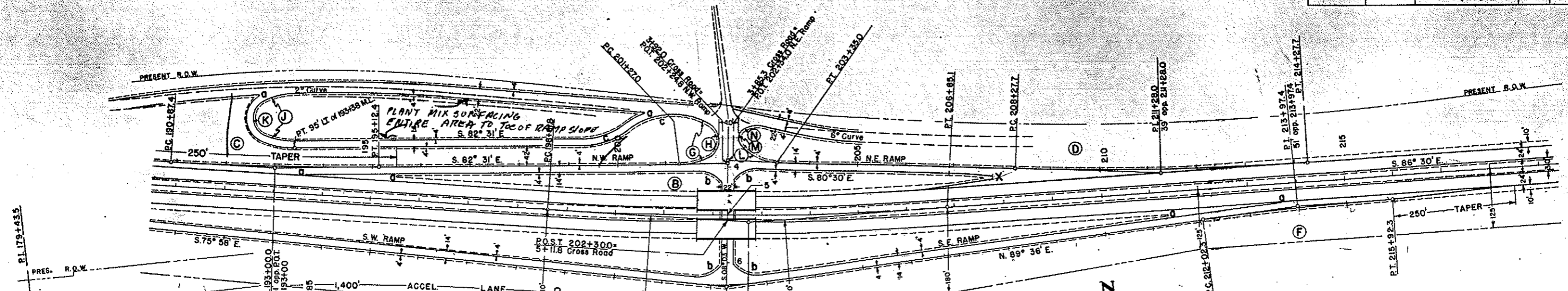
Across CLEAR CREEK
Sta. 8+18.5 TO 9+12.5
Near DUMONT Sec. 29 T. 3 S. R. 77 W.

Designed by _____
Made by _____
Checked by _____

Approved by _____
Bridge Engineer
Date: Nov. 1, 1963

DETAILS OF DOWNEYVILLE INTERCHANGE STA. 180 + TO 218 +

FED. ROAD DIST. NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	170-3 (28) 242	42	42



TABULATION OF CURVE DATA

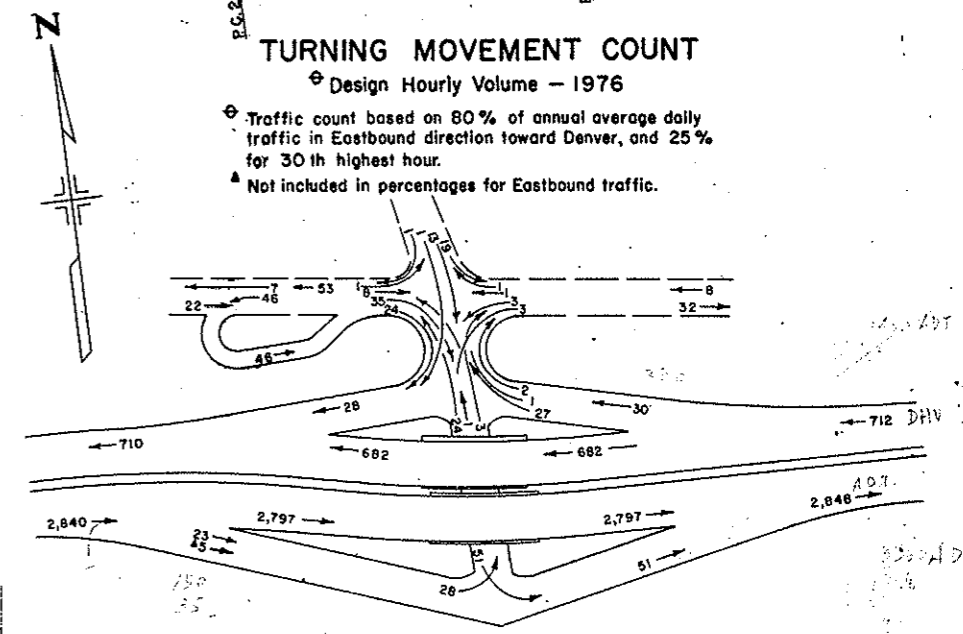
	Δc	Dc	Tc	Lc	Rc
A	19°32' Rt.	1°00'	988.3	1953.3	57300
B	8°14' Lt.	1°00'	412.4	823.3	57300
C	4°15' Lt.	1°00'	212.6	425.0	57300
D	6°00' Lt.	1°00'	300.3	600.0	57300
E	10°30' Rt.	2°00'	263.3	525.0	28650
F	3°54' Rt.	1°00'	195.1	390.0	57300
G	24°37'	38°12'	32.7	64.4	150.0
H	12°16'	143°15'	75.7	86.7	40.0
J	24°37'	38°12'	32.7	64.4	150.0
K	130°46'	143°15'	87.3	91.3	40.0
L	50°23'	57°18'	47.0	87.9	100.0
M	89°14'	288°50'	19.7	31.1	200.0
N	50°23'	114°58'	23.5	44.0	500.0
a					1.0
b					60.0
c					150.0

TURNING MOVEMENT COUNT

⊕ Design Hourly Volume - 1976

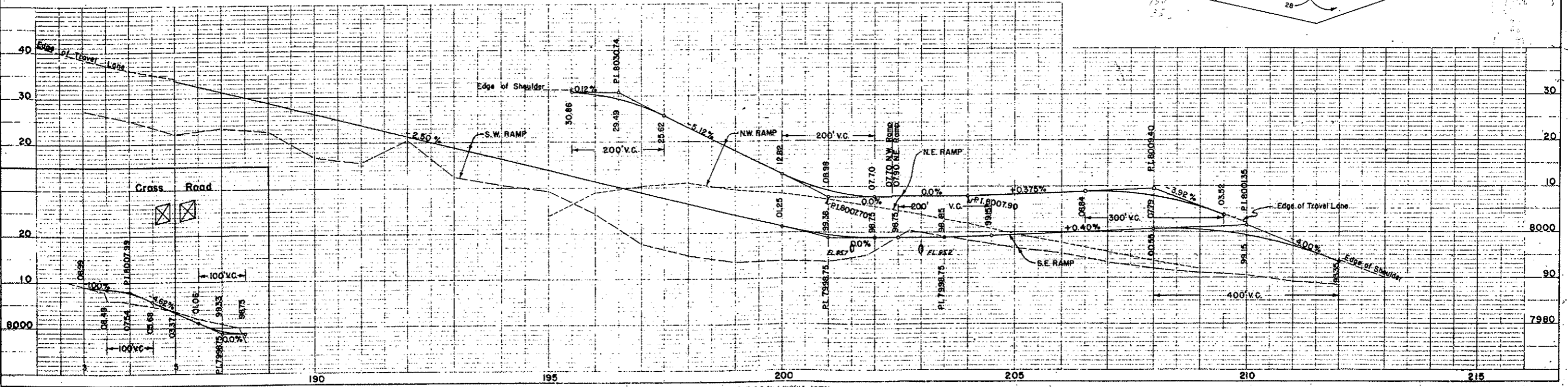
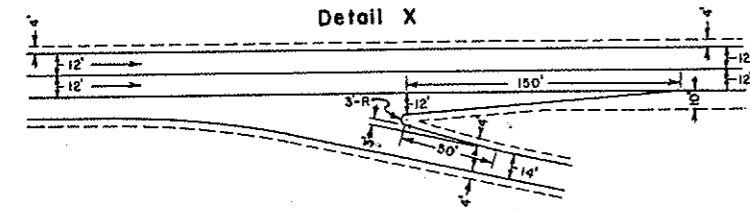
⊕ Traffic count based on 80% of annual average daily traffic in Eastbound direction toward Denver, and 25% for 30th highest hour.

⊕ Not included in percentages for Eastbound traffic.



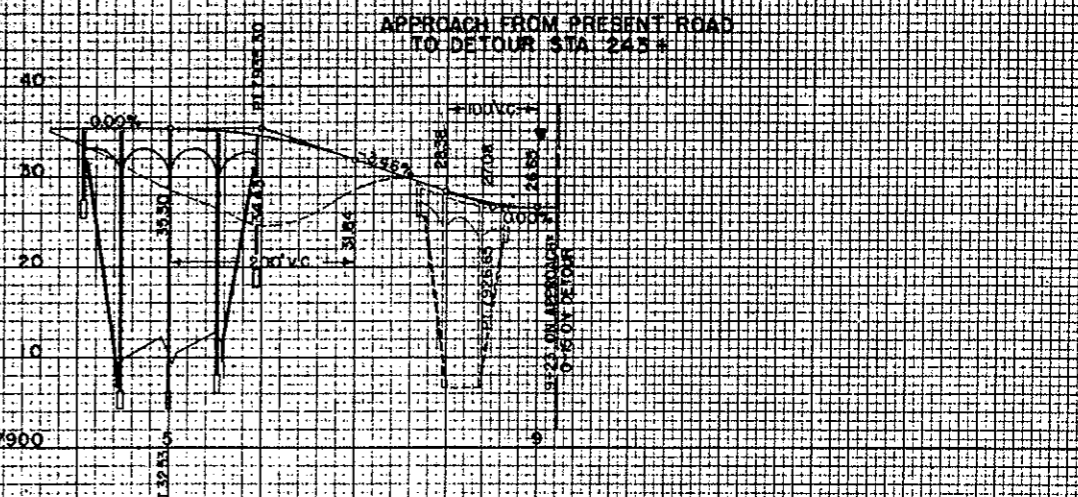
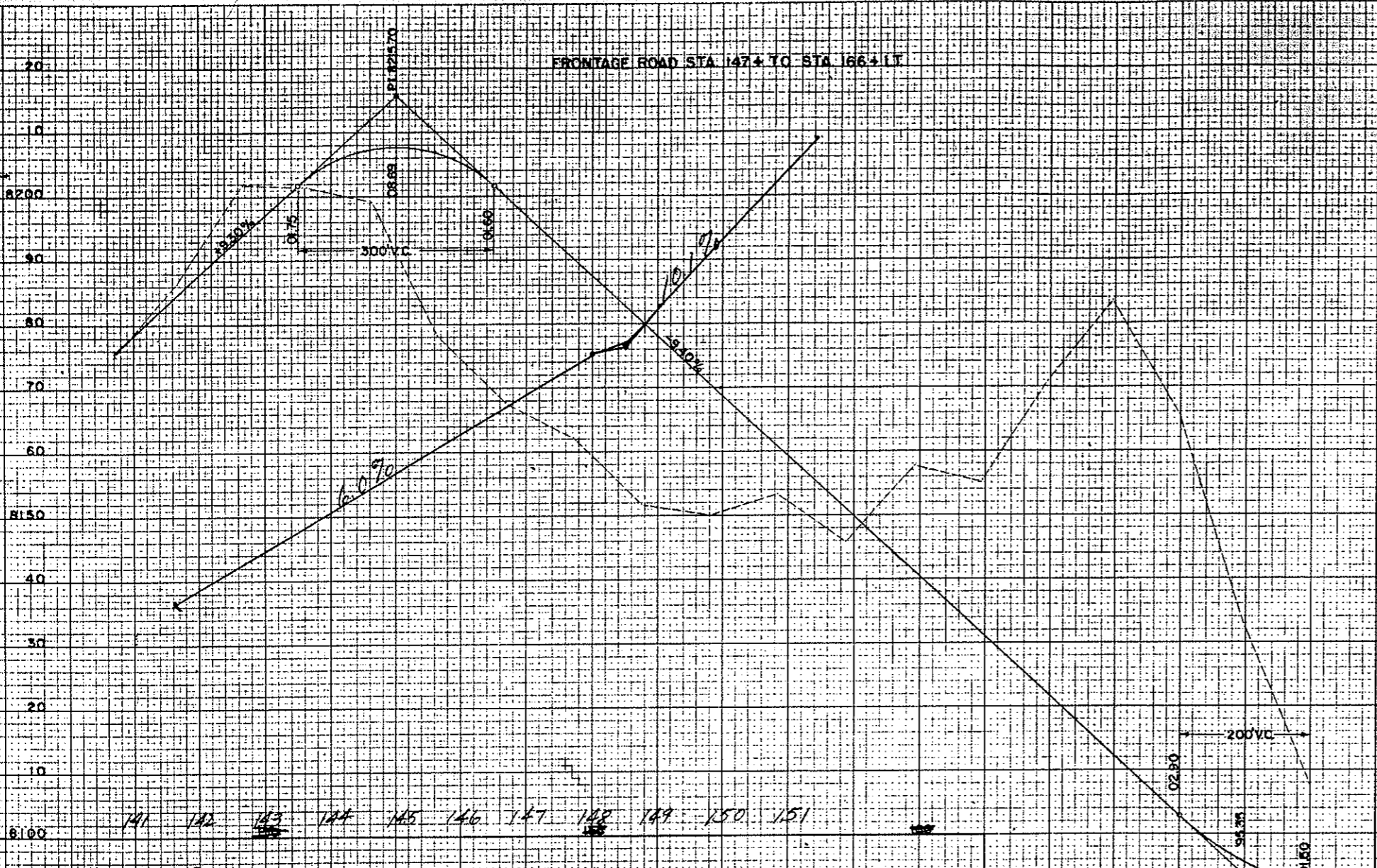
Uniform median transition from 8 ft. raised median at sta. 169+57.2 to 30 ft. depressed median at sta. 189+10.5

Detail X

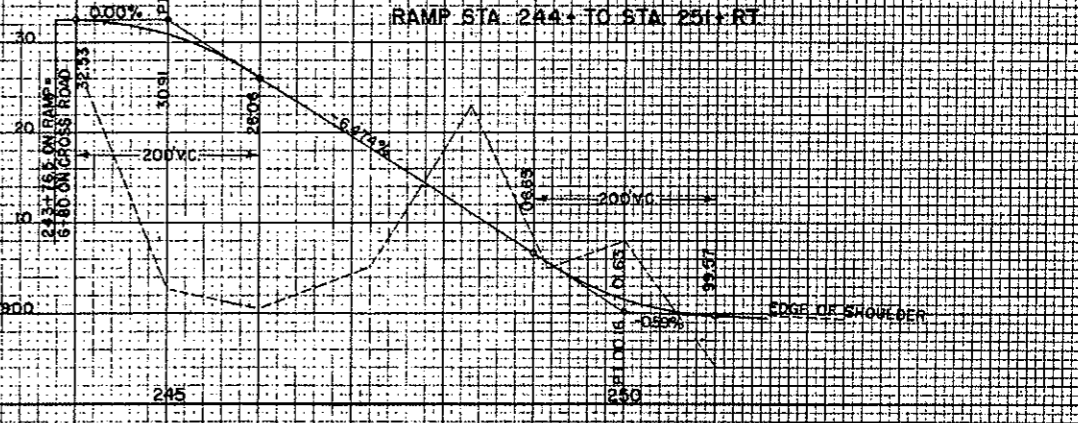


FRONTAGE ROAD STA 147+ TO STA 166+ LT

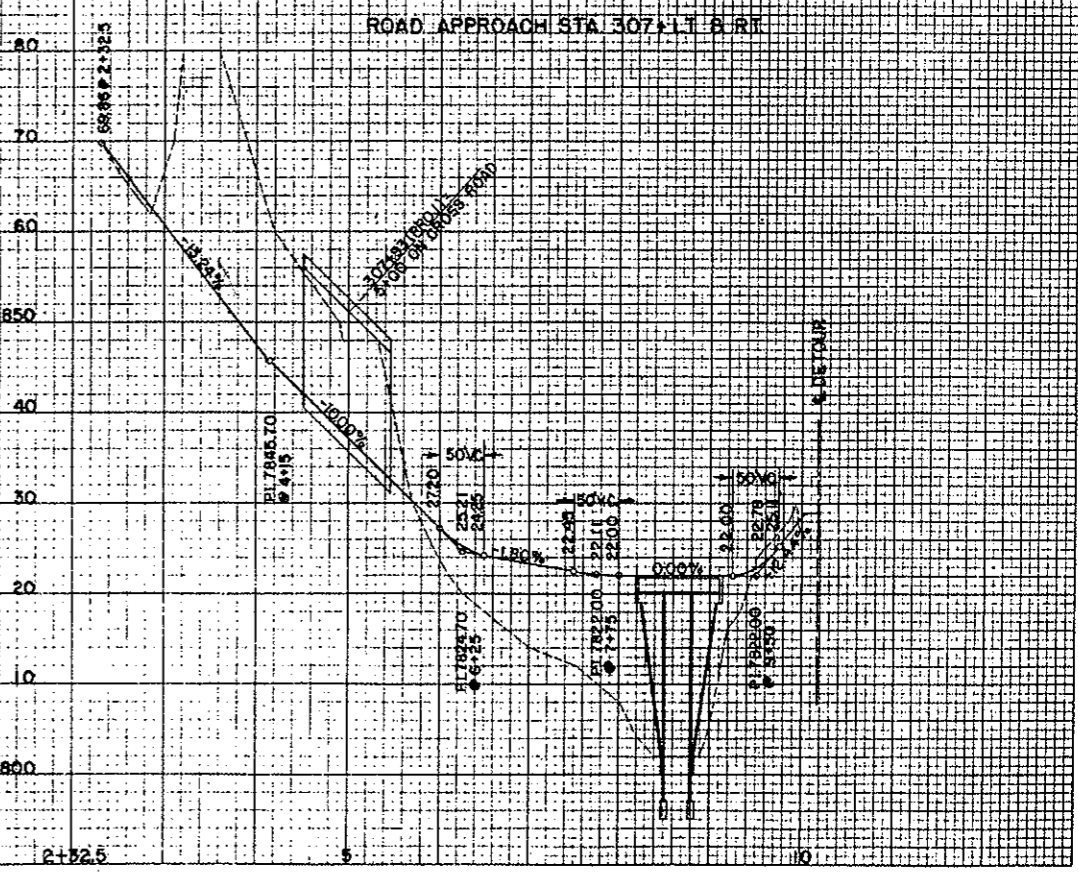
APPROACH FROM PRESENT ROAD TO DETOUR STA 245 *



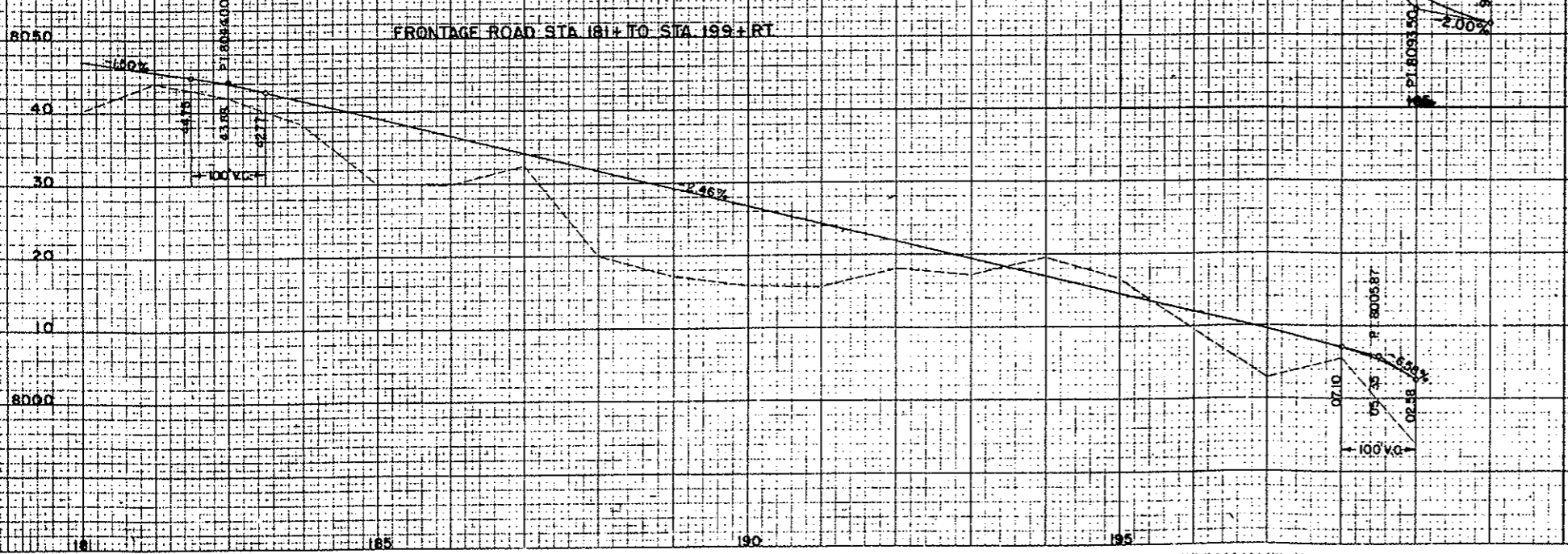
RAMP STA 244+ TO STA 251+ RT



ROAD APPROACH STA 307+ LT B RT



FRONTAGE ROAD STA 181+ TO STA 199+ RT



SURVEY PLANS
 DATE: 11/11/11
 DRAWN BY: J.A.P.
 CHECKED BY: J.A.P.
 NO. 170-3 (28) 242

SURVEY PLANS
 DATE: 11/11/11
 DRAWN BY: J.A.P.
 CHECKED BY: J.A.P.
 NO. 170-3 (28) 242

N.E. 1/4 Sec. 26
T. 3 S., R. 74 W.

NOTE:
ALIGNMENT AND GRADES, AS SHOWN, ARE SUBJECT TO MODIFICATIONS DURING CONSTRUCTION AFTER APPROVAL BY THE DENVER OFFICE.

SOIL DATA, SHOWN ON THE PLANS, IS OBTAINED FROM BEST AVAILABLE TESTING LABORATORY INFORMATION. THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR AND THE DEPARTMENT DOES NOT GUARANTEE THE ACCURACY OF THESE TESTS. IF MATERIALS, NOT CONFORMING TO THE DATA ON THE PLANS, ARE ENCOUNTERED DURING CONSTRUCTION, THE GRADING PLAN, SHOWN ON THE PLANS, WILL BE MODIFIED, WHERE NECESSARY, TO SECURE DENSE, STABLE EMBANKMENTS.

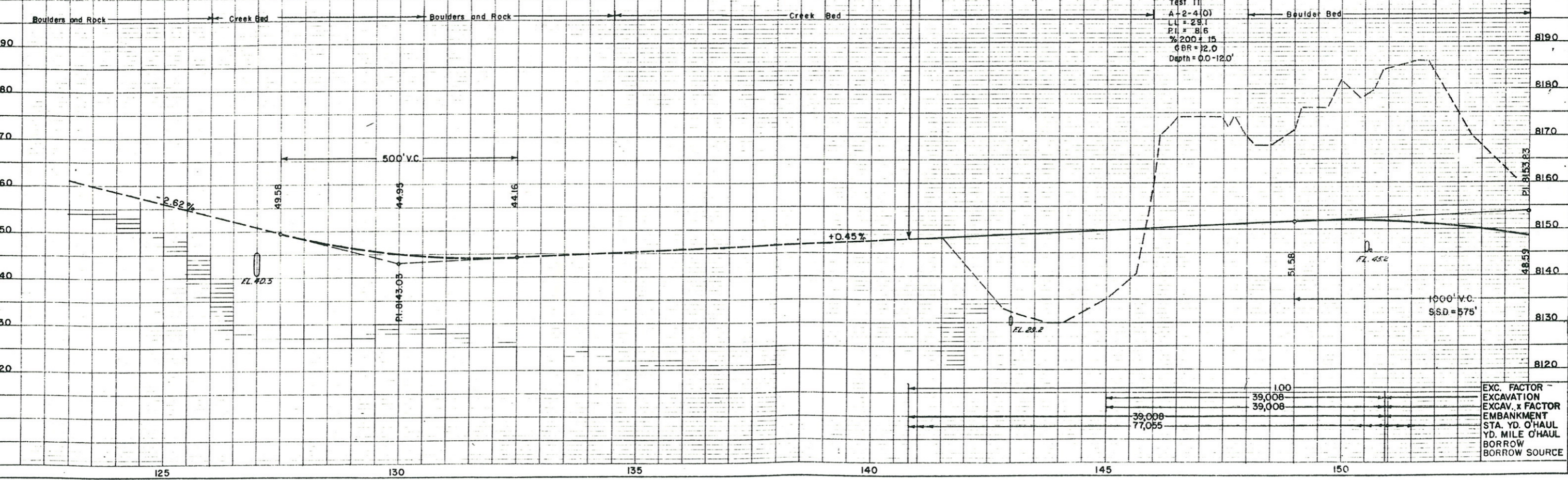
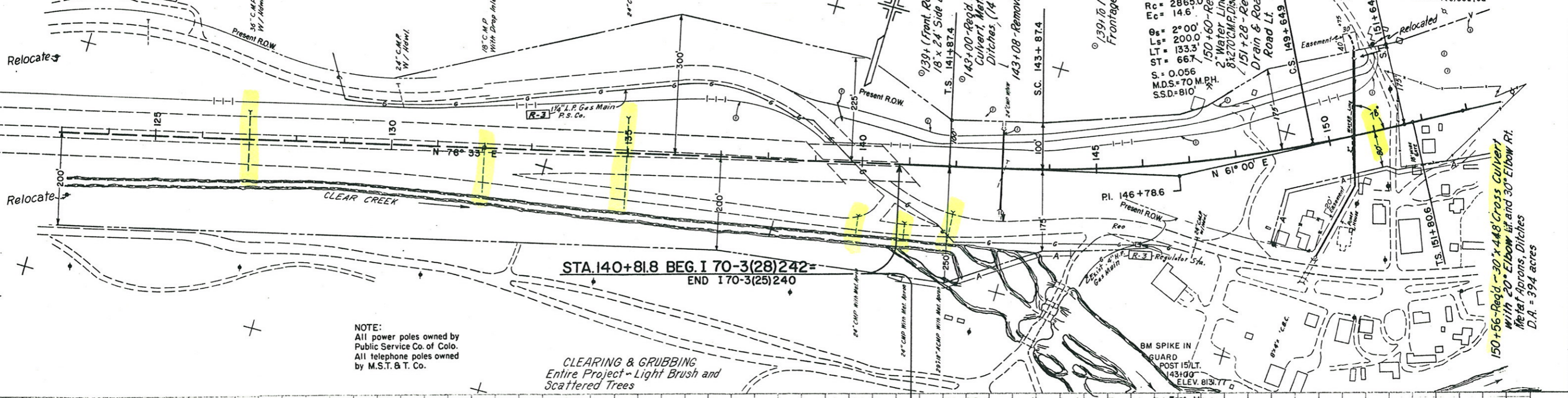
140+ - Req'd. Identification Sign Rt.
140+ to 141+ Fill Low Area Lt. of Cross Rd.
141+09.3 to 164+31.0 - Req'd. Concrete Combination Curb and Gutter (Type I)

[R-3] Added Gas Main 7-11-72 R.L.M.

Δs = 15° 33'
Ts = 491.2'
Es = 272.2'
Δc = 11° 33'
Dc = 2° 00'
Tc = 289.8'
Lc = 577.5'
Rc = 2865.0'
Ec = 146.6'
θs = 2° 00'
Ls = 200.0'
LT = 133.3'
ST = 66.7'
S = 0.056
M.D.S. = 70 MPH
SSD = 810'

FED. ROAD REL. NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	170-3(28)242	44	

Rev. 2-26-64, Access & Poles in H.E.P.
Rev. 4-1-65, Front Rd. Side and Cross Drains, and Access and V Lines. - C.K.M.



DATE	DESCRIPTION
	PLAN
	REVISED
	PLOTTED
	ALIGNED CHECKED
	INT. OF WAY CHECKED
	NOTE BOOK NO. 202/16

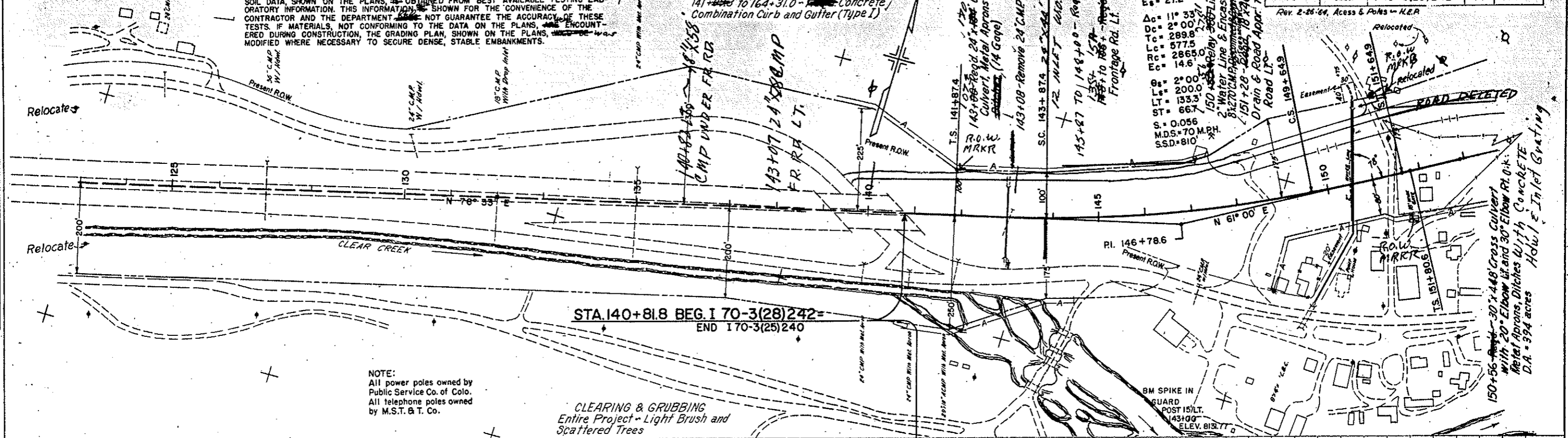
DATE	DESCRIPTION
	PROFILE
	REVISED
	PLOTTED
	GRADES CHECKED
	VERTICAL CURVES CHECKED
	NOTE BOOK NO. 202/16

N.E. 1/4 Sec. 26
T. 3 S., R. 74 W.

NOTE:
ALIGNMENT AND GRADES, AS SHOWN, ARE SUBJECT TO MODIFICATIONS DURING CONSTRUCTION AFTER APPROVAL BY THE DENVER OFFICE.
SOIL DATA, SHOWN ON THE PLANS, IS OBTAINED FROM BEST AVAILABLE TESTING LABORATORY INFORMATION. THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR AND THE DEPARTMENT. WE DO NOT GUARANTEE THE ACCURACY OF THESE TESTS. IF MATERIALS, NOT CONFORMING TO THE DATA ON THE PLANS, ARE ENCOUNTERED DURING CONSTRUCTION, THE GRADING PLAN, SHOWN ON THE PLANS, SHOULD BE MODIFIED WHERE NECESSARY TO SECURE DENSE, STABLE EMBANKMENTS.

P.O. ROAD REC. NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	COLO.	170-3(28)242	44	

Rev. 2-26-64, Access & Poles - H.E.A.



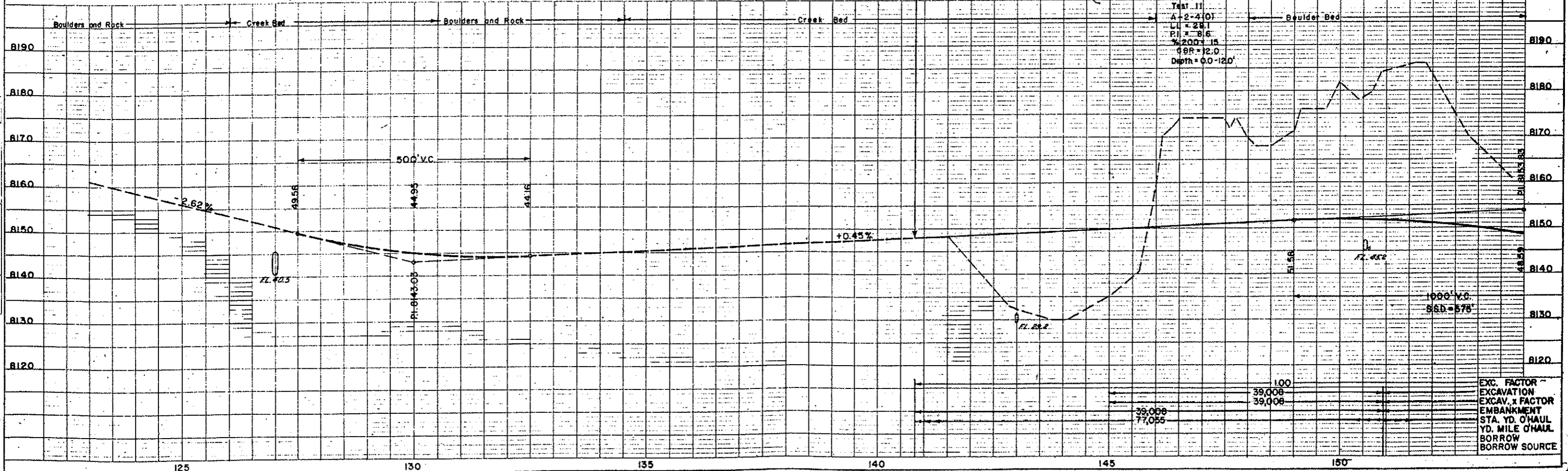
NOTE:
All power poles owned by Public Service Co. of Colo.
All telephone poles owned by M.S.T. & T. Co.

CLEARING & GRUBBING
Entire Project - Light Brush and Scattered Trees

$\Delta_a = 15^\circ 35'$
 $T_a = 491.2'$
 $E_a = 272'$
 $\Delta_c = 11^\circ 33'$
 $D_c = 2^\circ 00'$
 $T_c = 289.8'$
 $E_c = 577.5'$
 $\Delta_e = 2868.0'$
 $E_e = 146.67'$
 $L = 2^\circ 00'$
 $LT = 200.0'$
 $ST = 133.3'$
 $S = 0.056$
 $M.D.S. = 70 \text{ MPH}$
 $SSD = 810'$

PLAN	SURVEYED	DATE
NOTE BOOK	CHECKED	
NO. 202/16	BY	

PROFILE	SURVEYED	DATE
NOTE BOOK	CHECKED	
NO. 202/16	BY	



EXC. FACTOR -
 EXCAVATION
 EXCAV. x FACTOR
 EMBANKMENT
 STA. YD. O'HAUL
 YD. MILE O'HAUL
 BORROW
 BORROW SOURCE

N.W. 1/4 Sec. 25
 T. 3 S., R. 74 W.
 $\Delta_s = 21^\circ 12'$
 $T_s = 636.2'$
 $E_s = 50.4'$
 $S = 0.056$
 M.D.S. = 70 M.P.H.
 S.S.D. = 1150'

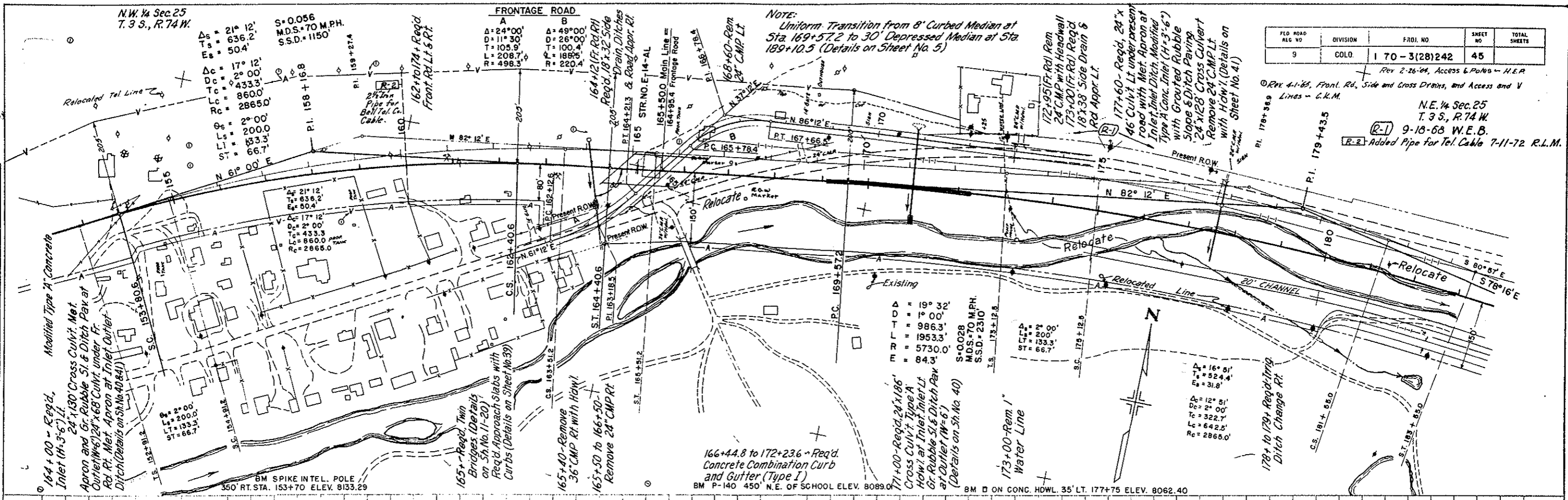
FRONTAGE ROAD
 A $\Delta = 24^\circ 00'$
 $D = 11^\circ 30'$
 $T = 105.9'$
 $L = 208.7'$
 $R = 498.5'$
 B $\Delta = 49^\circ 00'$
 $D = 26^\circ 00'$
 $T = 100.4'$
 $L = 188.8'$
 $R = 220.4'$

NOTE:
 Uniform Transition from 8' Curbed Median at
 Sta 169+57.2 to 30' Depressed Median at Sta
 189+10.5 (Details on Sheet No. 5)

FED. ROAD AEG. NO.	DIVISION	FROI. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	170-3(28)242	45	

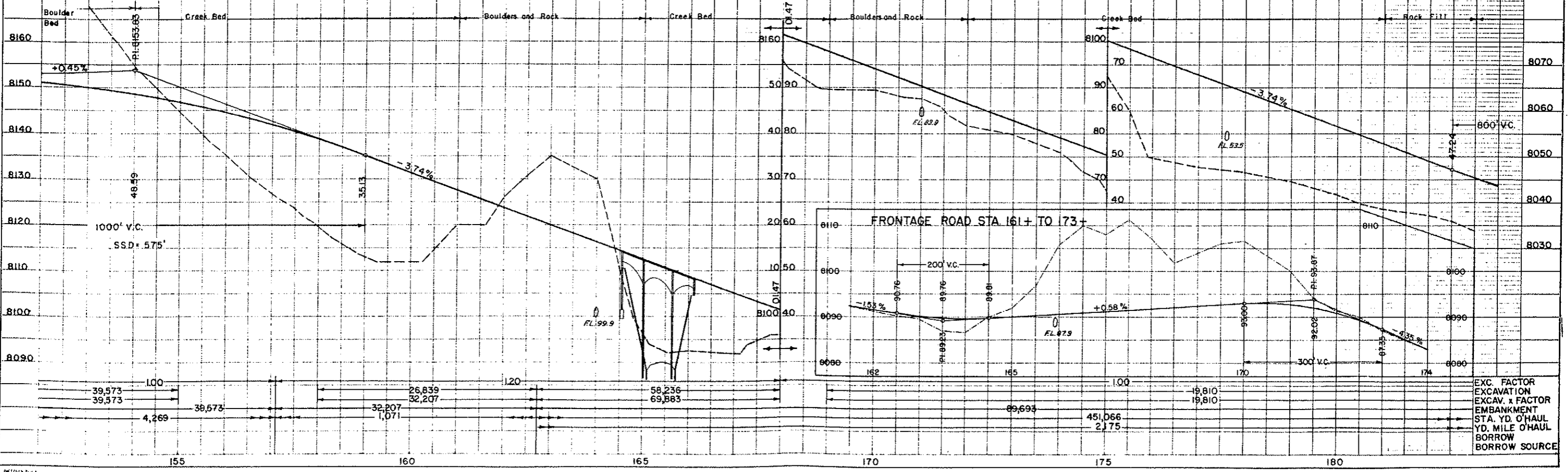
Rev 2-26-64, Access & Poles - H.E.P.
 Rev 4-1-65, Front. Rd., Side and Cross Drains, and Access and V Lines - C.L.M.

N.E. 1/4 Sec. 25
 T. 3 S., R. 74 W.
 9-10-68 W.E.B.
 R-2 Added Pipe for Tel. Cable 7-11-72 R.L.M.



DATE	BY	REVISION

DATE	BY	REVISION



EXC. FACTOR
 EXCAVATION
 EXCAV. x FACTOR
 EMBANKMENT
 STA. YD. O'HAUL
 YD. MILE O'HAUL
 BORROW
 BORROW SOURCE

N.E. 1/4 Sec. 25
 T. 3 S., R. 74 W.

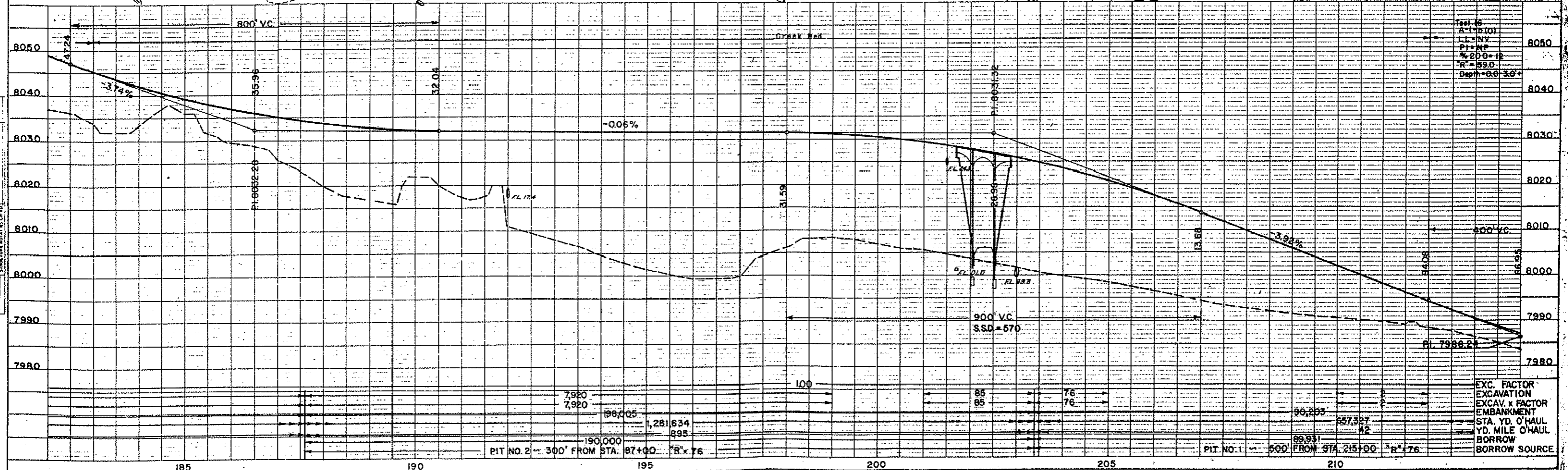
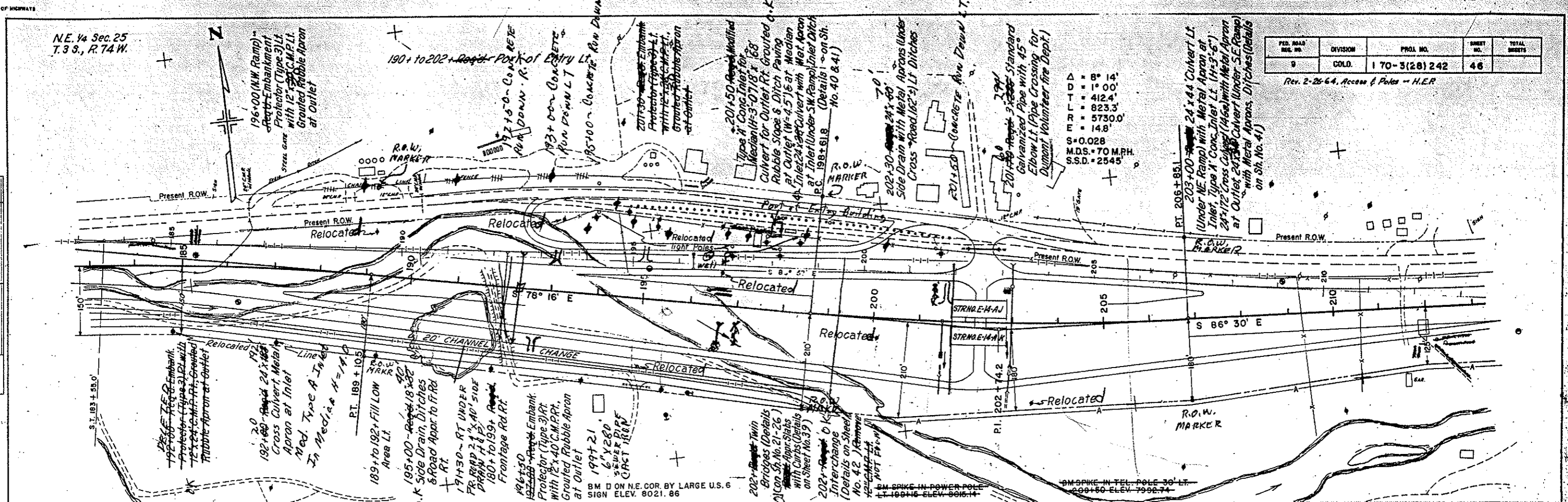
PLAN	DATE
DESIGNED	
PLOTTED	
ALLOWED	
NO. 20216	

PROFILE	DATE
DESIGNED	
PLOTTED	
ALLOWED	
NO. 20216	

FED. ROAD DIST. NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLD.	170-3(28)242	46	

Rev. 2-26-64, Access of Poles - H.E.P.

$\Delta = 8' 14"$
 $D = 1' 00"$
 $T = 412.4'$
 $R = 823.3'$
 $E = 573.00'$
 $F = 14.8'$
 $S = 0.028$
 $M.D.S. = 70 M.P.H.$
 $S.S.D. = 2545'$



EXC. FACTOR
 EXCAV. x FACTOR
 EMBANKMENT
 STA. YD. O'HAUL
 YD. MILE O'HAUL
 BORROW
 BORROW SOURCE

Phone Cable See New Sh # A-7

PROJ. ROAD	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	170-3(26) 242	47	

N.W. 1/4 Sec. 30
T. 3 S., R. 73 W.

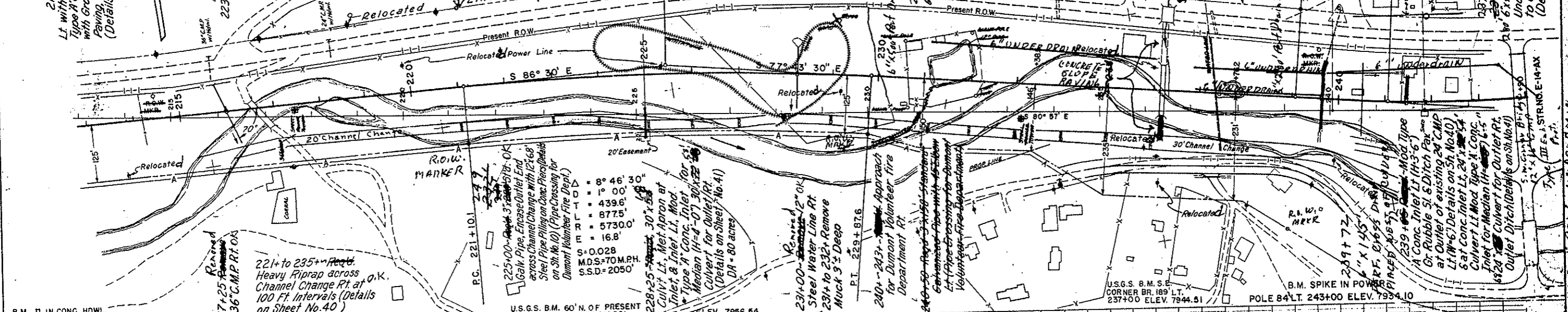
216+00-~~216+00~~ 24' x 6' Culvert
Lt. with Metal Apron at Inlet Mod.
Type A Conc. Inlet for Median (H-7-6)
with Grouted Rubble Slope & Ditch
Paving, 24' x 76' Culvert for Outlet Rt.
(Details on Sheet No. 41)

216+60-Remove Bridge OK

223+00 to 226+50 Low Area Lt.
Filled

DATE	BY	REVISION

PLAN	DATE	BY

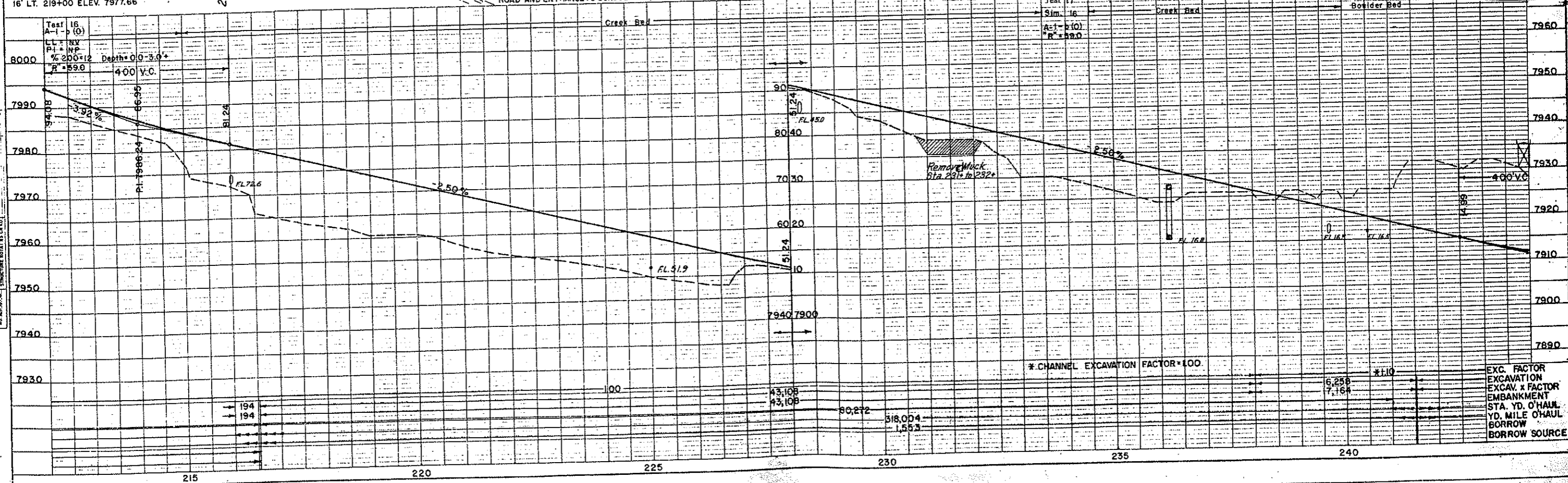


B.M. D IN CONC. HDWL.
16' LT. 219+00 ELEV. 7977.66

U.S.G.S. B.M. 60' N. OF PRESENT
ROAD AND ENTRANCE TO SCHOOL
ELEV. 7956.54

U.S.G.S. B.M. S.E.
CORNER BR. 189' LT.
237+00 ELEV. 7944.51

B.M. SPIKE IN POWER
POLE 84' LT. 243+00 ELEV. 7934.10



* CHANNEL EXCAVATION FACTOR = 100

EXC. FACTOR
EXCAVATION
EXCAV. x FACTOR
EMBANKMENT
STA. YD. O'HALL
YD. MILE O'HALL
BORROW
BORROW SOURCE

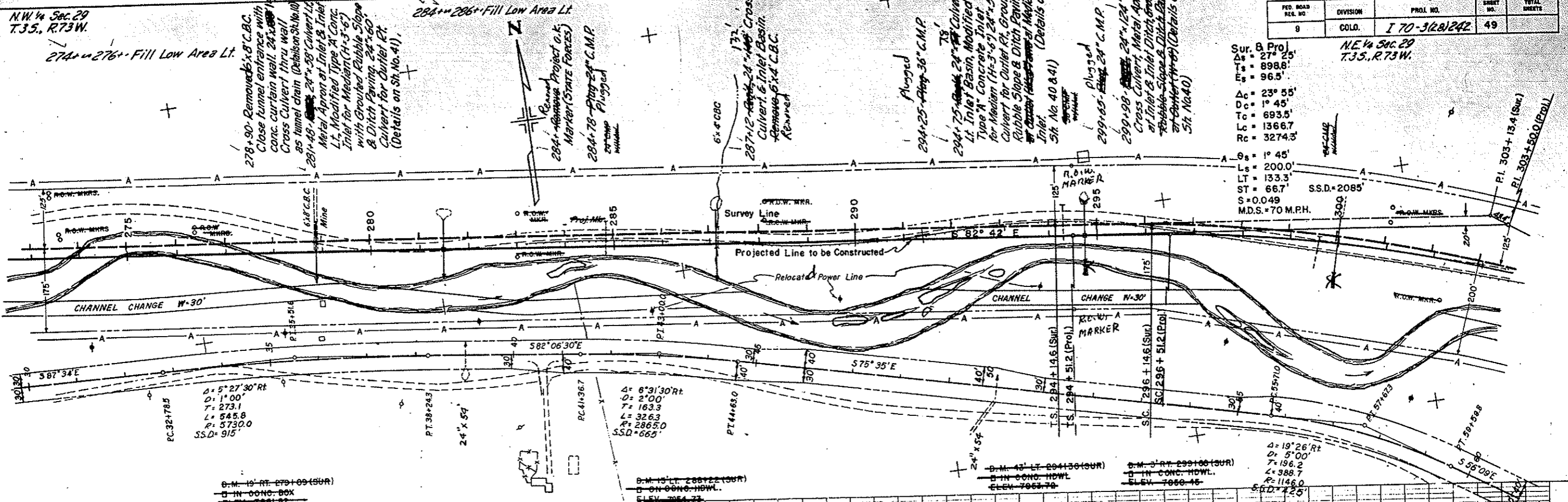
Place d. west of Cross Culvert

N.W. 1/4 Sec. 29
 T.35., R.73W.

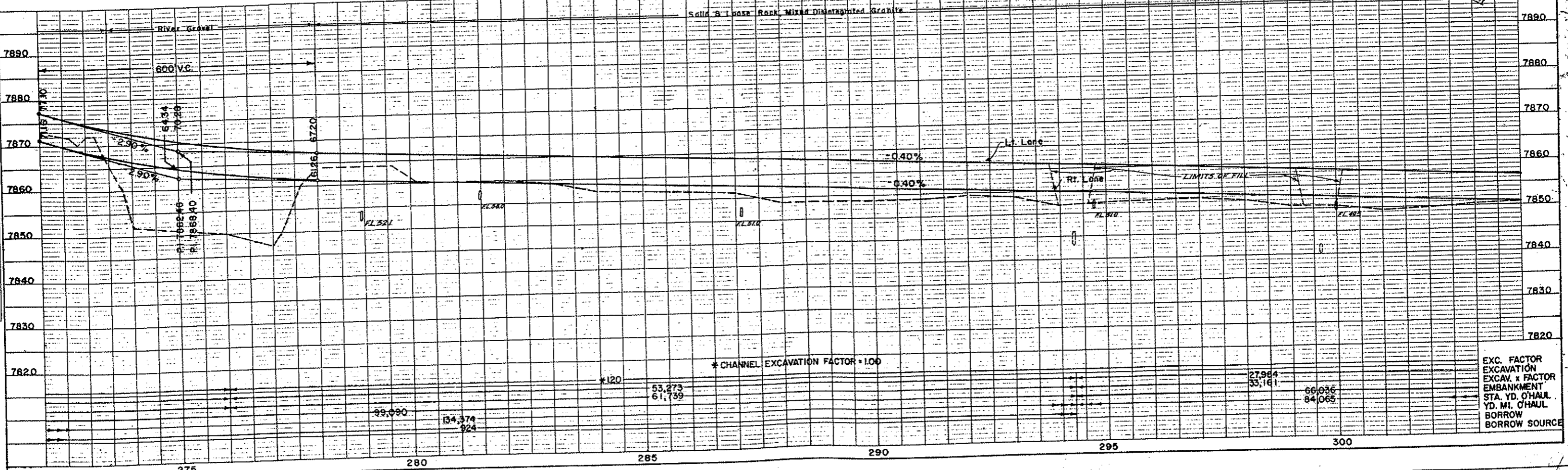
FED. ROAD DIST. NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLD.	I 70-3281242	49	

Sur. B Proj
 I_s = 27° 25'
 I_c = 898.8'
 I_e = 96.5'
 Δ = 23° 55'
 D_c = 1° 45'
 T_c = 693.5'
 L_c = 1366.7'
 R_c = 3274.3'
 L_s = 1° 45'
 L_s = 200.0'
 LT = 133.3'
 ST = 66.7'
 S = 0.049
 M.D.S. = 70 M.P.H.

N.E. 1/4 Sec. 29
 T.35., R.73W.



DATE	BY



EXC. FACTOR
 EXCAV. x FACTOR
 EMBANKMENT
 STA. YD. CHAUL.
 BORROW SOURCE

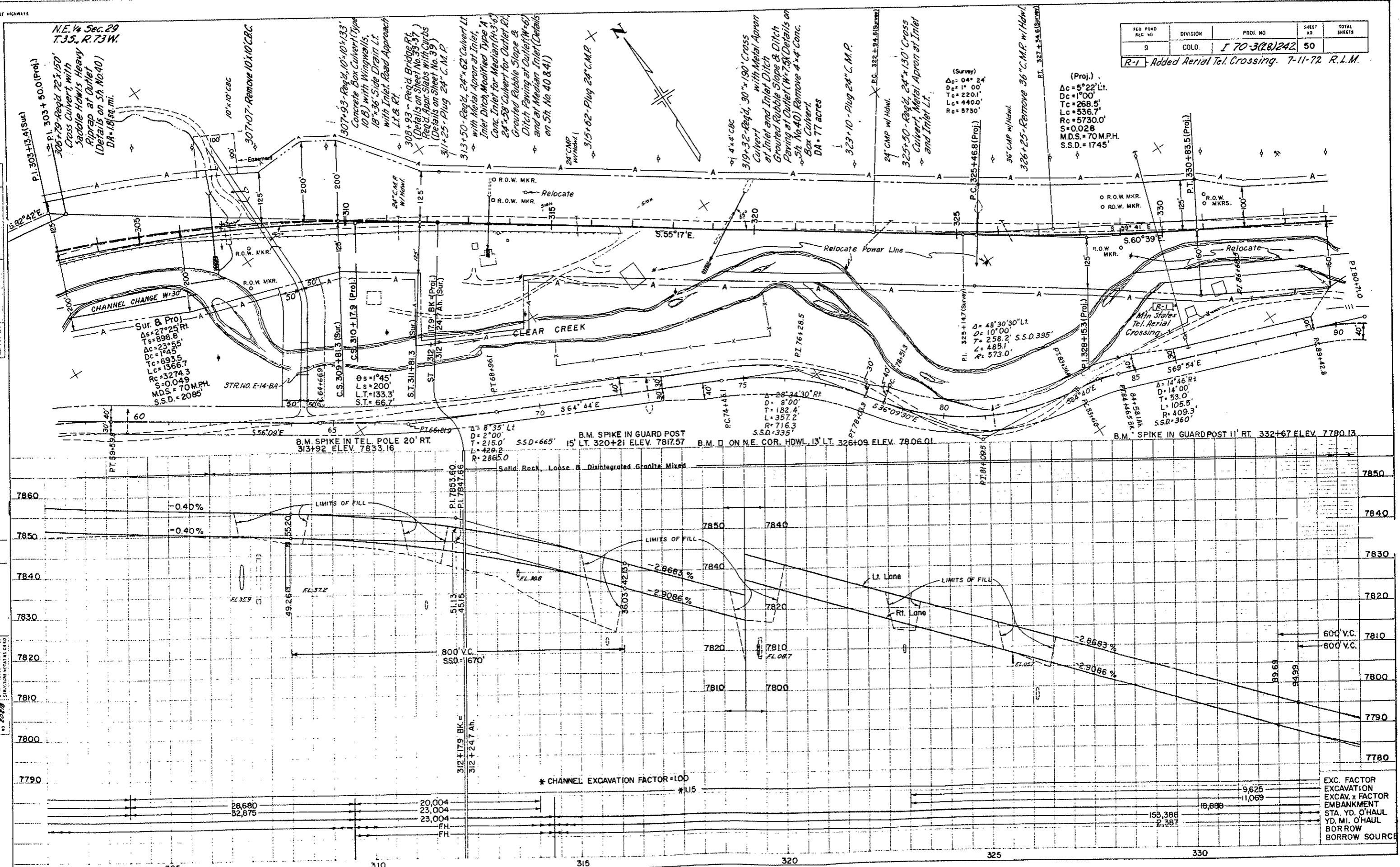
N.E. 1/4 Sec. 29
T.35, R.73W.

FED. ROAD DIST. NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	I 70-3(28)242	50	

R-1 - Added Aerial Tel. Crossing. 7-11-72. R.L.M.

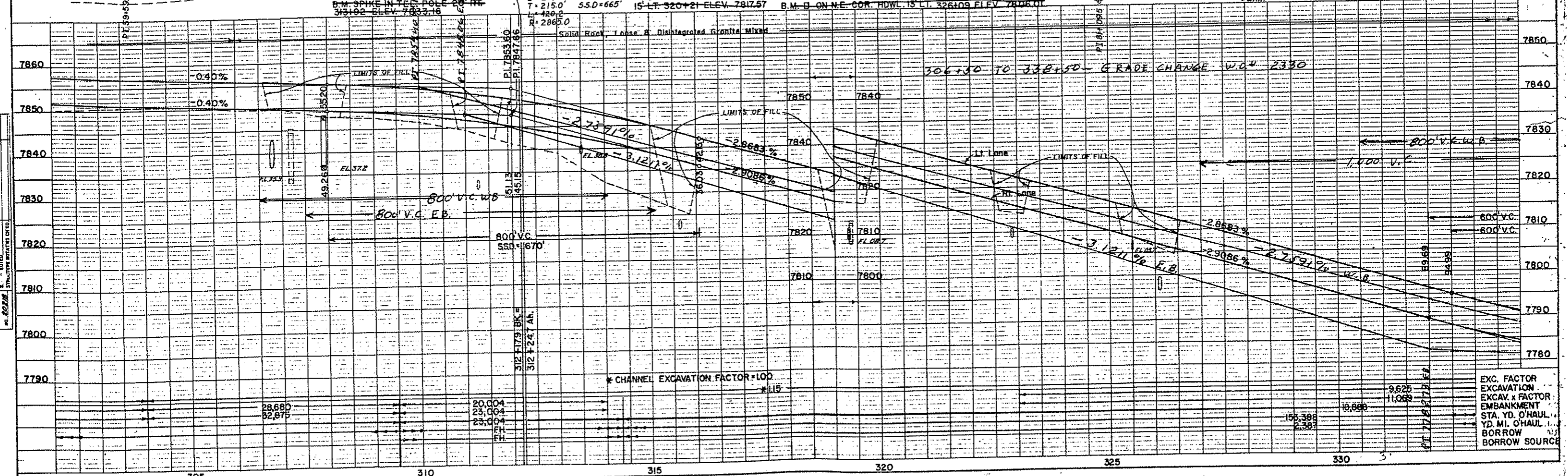
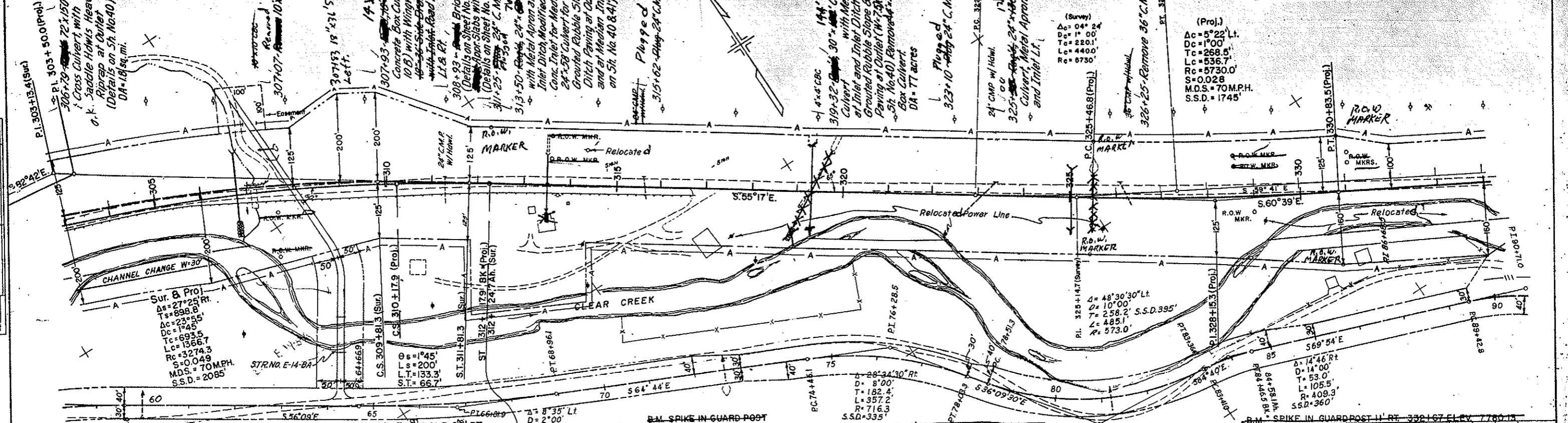
PLAN	DATE
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PLOTTED	
ALIGNED	
CHECKED	
NO. OF WAY CHECKED	

PROFILE	DATE
SURVEYED	
PLOTTED	
ALIGNED	
CHECKED	
NO. OF WAY CHECKED	



NE 1/4 Sec. 29
T.35, R.73W.

FED. ROAD DIST. NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLD.	I 70-3(28)242	50	

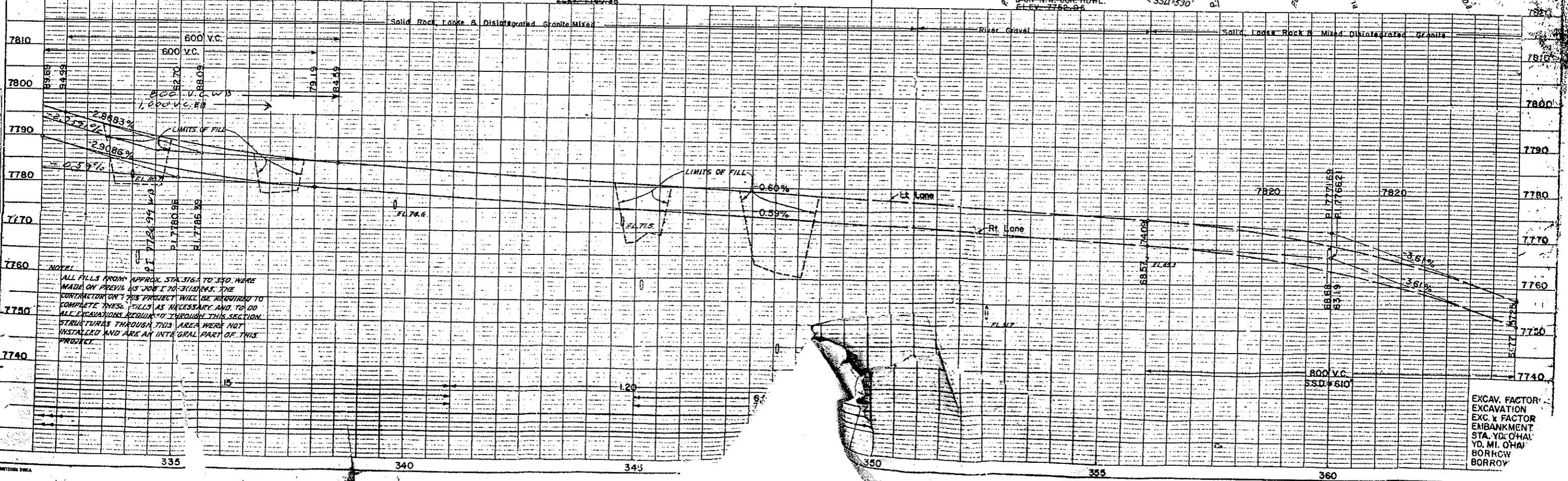
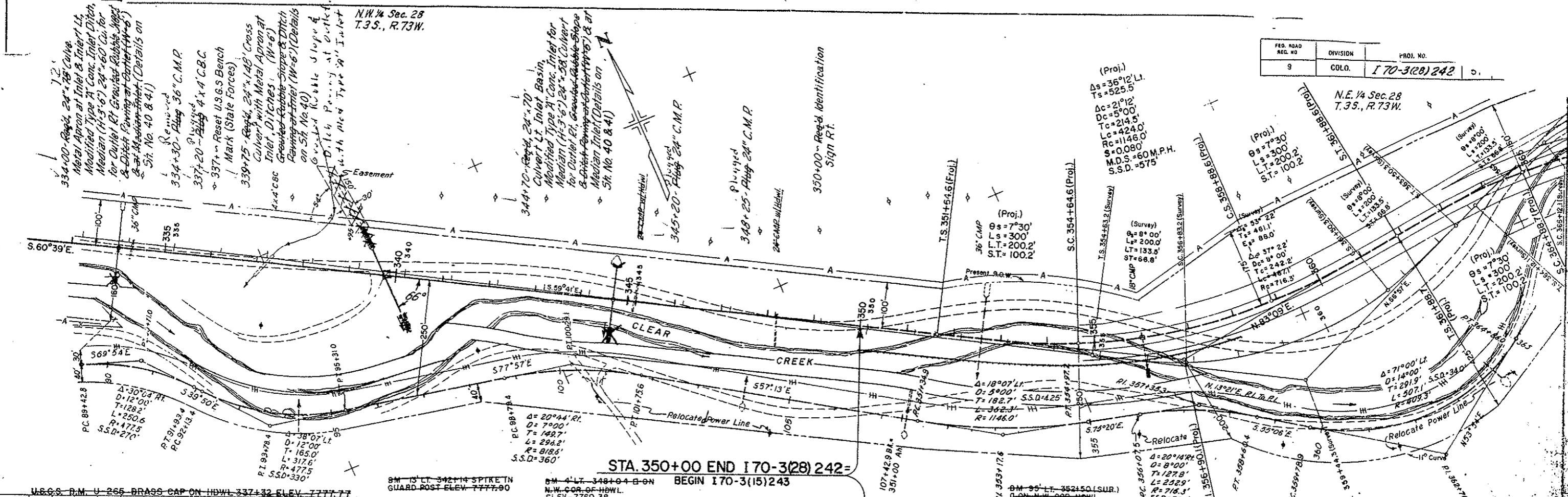


PLAN
SURVEYED
PLATTED
ALIGNED CHECKED
DATE: 10/22/78
BY: [Signature]

PROFILE
SURVEYED
PLATTED
GRADES CHECKED
DATE: 10/22/78
BY: [Signature]

EXC. FACTOR
EXCAV. x FACTOR
EMBANKMENT
STA. YD. O'HAUL
YD. MI. O'HAUL
BORROW
BORROW SOURCE

FED. ROAD REG. NO.	DIVISION	PROJ. NO.
9	COLO.	I 70-3(28) 242



EXCAV. FACTOR
 EXC. V. FACTOR
 EMBANKMENT
 STA. YD. CHAL
 YD. MI. CHAL
 BORROW
 BORROW