

OF HIGHWAYS  
SHEET

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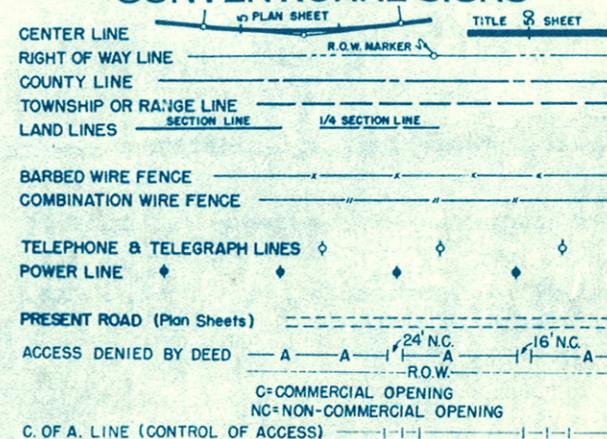
# COLORADO DEPARTMENT OF HIGHWAYS

## PLAN AND PROFILE OF PROPOSED FEDERAL AID PROJECT NO. I-70-3(4)250 STATE HIGHWAY NO. 2 CLEAR CREEK COUNTY

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I-70-3(4)250	1	

R.O.W. PURCHASED UNDER I-70-3(1)250  
Rev. 1-27-60 H.E.P. - Index of Sheets

CONVENTIONAL SIGNS



SCALES OF ORIGINAL DRAWINGS

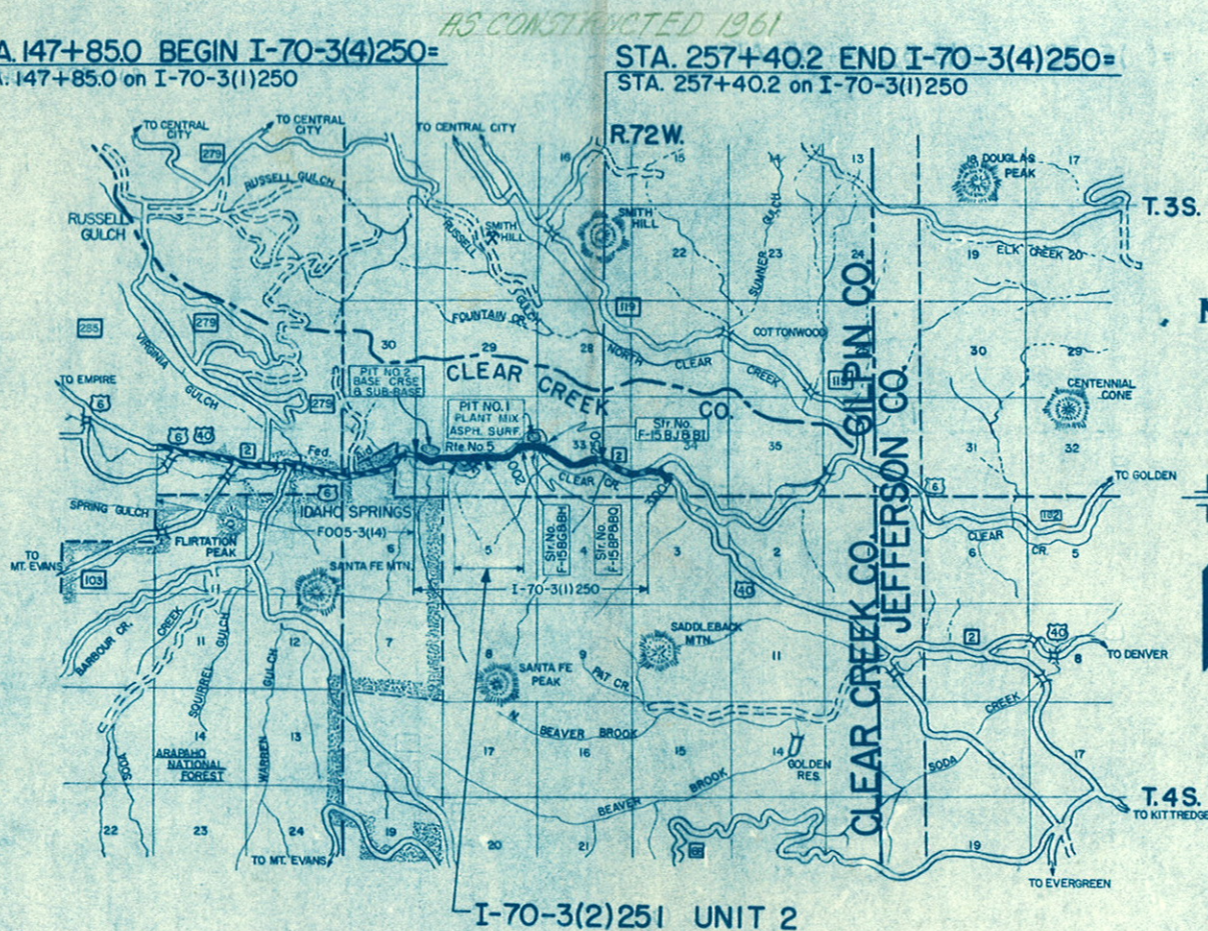
ON PLAN, 1 IN. = 100 FT.  
ON PROFILE, 1 IN. = 100 FT. HORIZONTAL  
1 IN. = 10 FT. VERTICAL

GRADE LINE ON PROFILE IS SHOWN AS GRADE OF FINISHED ROAD  
GROSS LENGTH OF PROJECT 10,731.3 FT. = 2.032 MI.  
NET LENGTH OF PROJECT 10,036.3 FT. = 1.901 MI.

TABULATION OF LENGTH & DESIGN DATA

STATION #	ROADWAY		I-70-3(2)251 UNIT 2	
	LIN. FT.	MAJOR STRUCTURES LIN. FT.	LIN. FT.	LIN. FT.
147+85.0 BEGIN I-70-3(4)250 = Beginning of I-70-3(1)250	2,520.0			
173+05 } TWIN TUNNELS 180+00 }	1,201.3		695.0	
192+01.3 Bk. = } EQUATION 194+10.1 Ah. }	1,335.0			
207+45.1 } TWIN BRIDGES 209+48.0 } F-15 BG & BH	1,101.3	202.9		
220+49.3 } TWIN BRIDGES 221+42.8 } F-15 BP & BQ	182.7	93.5		
223+25.5 } TWIN BRIDGES 225+42.1 } F-15 BJ & BI	2,791.4	216.6		
253+33.5 Bk. = } EQUATION 253+48.6 Ah. }	391.6			
257+40.2 END I-70-3(4)250 = 257+40.2 on I-70-3(1)250				
<b>TOTAL</b>	<b>9,523.3</b>	<b>513.0</b>	<b>695.0</b>	
<b>SUMMARY</b>				
ROADWAY	9,523.3	1.804		
MAJOR STRUCTURES	513.0	0.097		
NET LENGTH (CONSTRUCTION)	10,036.3	1.901		
I-70-3(2)251 UNIT 2	695.0	0.131		
GROSS LENGTH	10,731.3	2.032		
<b>DESIGN DATA</b>				
MAXIMUM DEGREE OF CURVE		8°00'		
MAXIMUM GRADE		3.40%		
MINIMUM N.P.S.D.-HORIZONTAL		370'		
MINIMUM N.P.S.D.-VERTICAL		535'		
MAXIMUM DESIGN SPEED		50 M.P.H.		

\*Based on Average Stations.



SEE SPECIAL PROVISIONS FOR NOTICE TO BIDDERS.

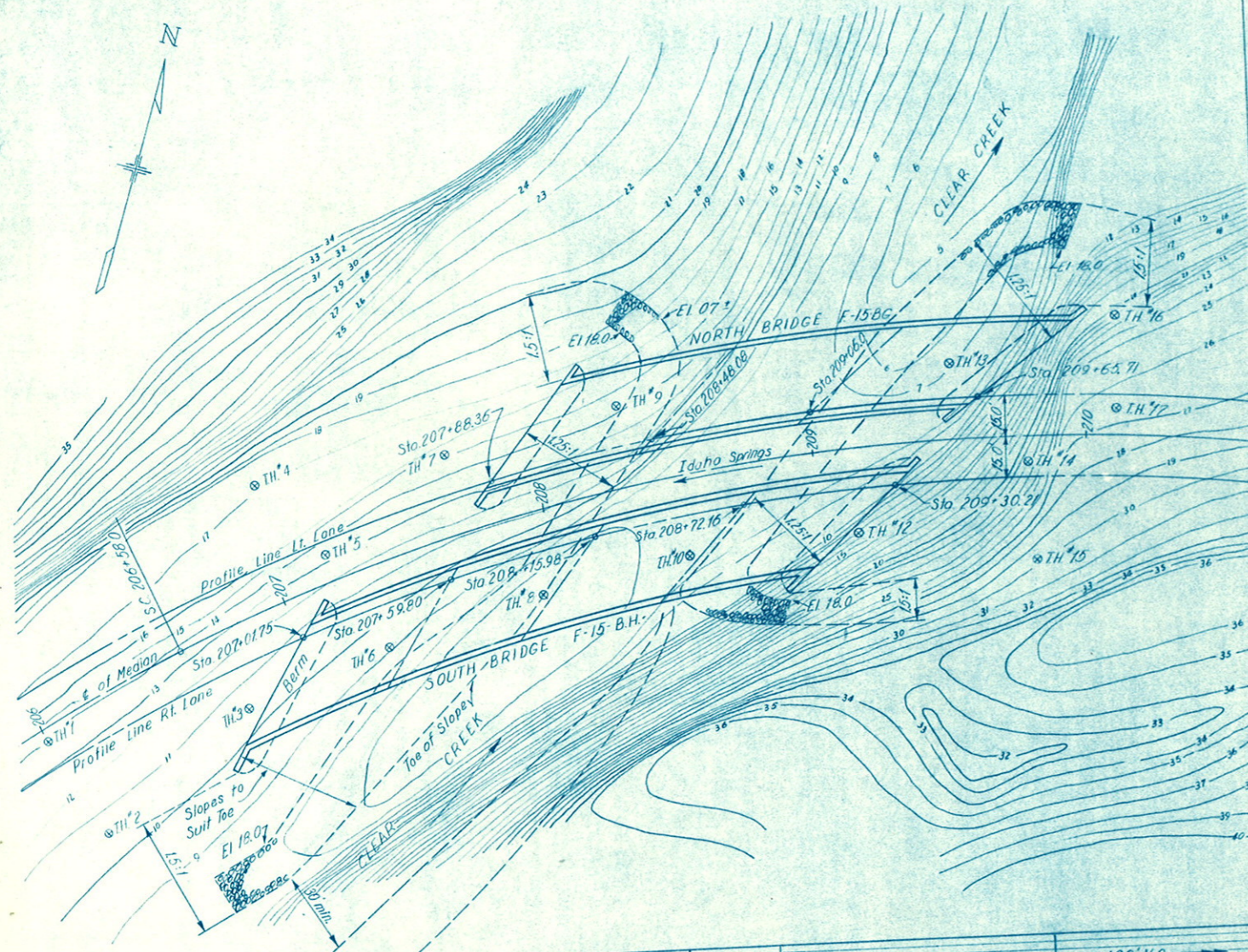
COLORADO  
DEPARTMENT OF HIGHWAYS

APPROVED: *Mark A. Williams* 11-13-59  
CHIEF ENGINEER DATE

DEPARTMENT OF COMMERCE  
BUREAU OF PUBLIC ROADS

APPROVED: \_\_\_\_\_ DATE \_\_\_\_\_  
DIVISION ENGINEER

Revised 1-27-60 by T.G.B. Item 46, 47, 48

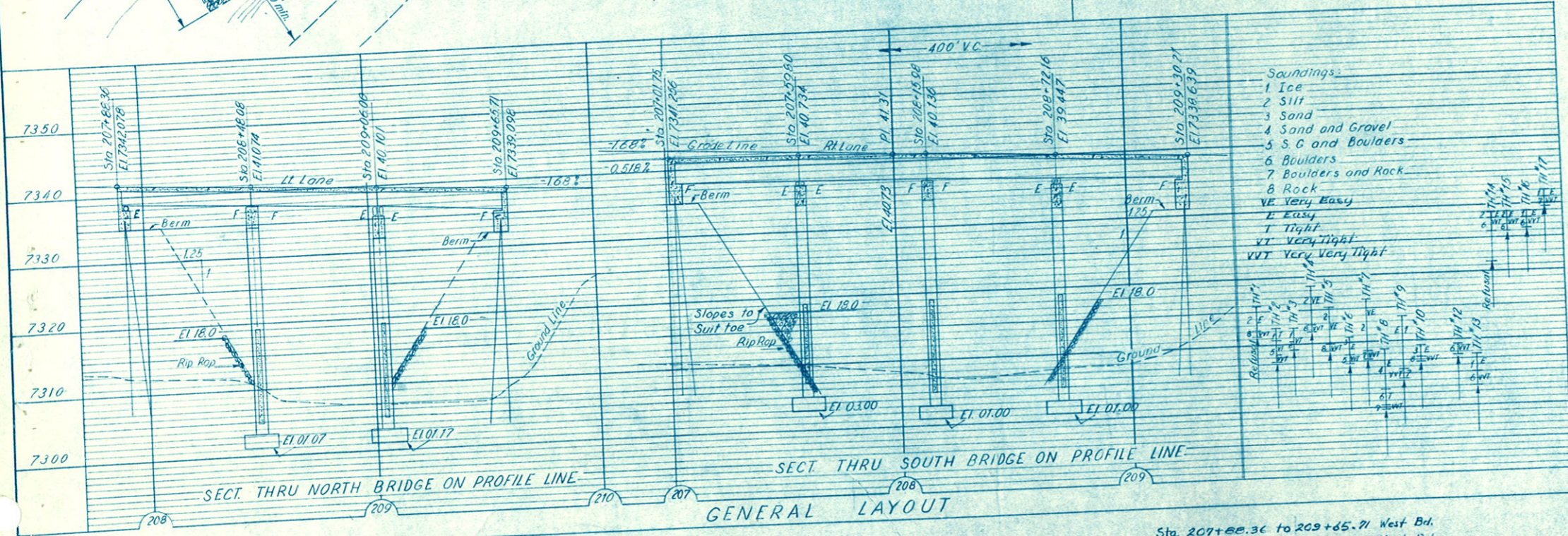


### SUMMARY of QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	SUPERSTRUCTURE		ABUT NO 1		PIER NO 2		PIER NO 3		ABUT 4		ABUT 5		TOTALS		
			BG	BH	BG	BH	BG	BH	BG	BH	BG	BH	BG	BH			
14	Unclassified Structural Excavation (Bridge)	Cu Yd			21	45	130	159	96	85	98	33	23			280	410
16	Structure Backfill (Class 1)	Cu Yd					100	124	73	61	75					173	260
18	Station Yard Overhaul	Sta Yd														1,903	2,860
18	Yard Mile Overhaul	Yd. Mi.														126	189
42	Treated Bridge Timber	M ft bm					0.278	0.289				0.277	0.287			0.555	0.576
46	Class "A" Concrete	Cu Yd	165.0	200.9	28.6	27.9	70.7	59.5	62.9	68.4	63.5	278	26.8			355	447
47	Reinforcing Steel (Includes 1% for Overrun)	Lbs	40,610	48,950	3,615	3,255	10,965	8,965	9,990	10,565	9,470	3,305	3,060			68,485	84,285
48	Structural Steel (Includes 1% for Paint)	Lbs	168,810	188,735	1345	900	925	1785	1810	925	1785	920	915			173,810	195,045
61	Steel Piling - 12" BP @ 53"	Lin. Ft					203	182								210	182
67	Riprap (1'-6" thick)	Cu Yd					120	265								185	115
80	Sheet Copper (32 oz)	Lbs	11	11												11	11
89	Drain Pipe (Concrete Floor 4'0" x 2'-0")	Eq	3	4												3	4
16 Ga Galvanized Sheet Metal	Sq Ft	125	125													125	125
3" Expansion Joint Material (Type III) AASHTO M-153-54	Sq Ft	73	125													73	125
3" Expansion Joint Material (Type I)	"	48														48	

① Includes 15,320 lbs of Handrail Steel for Str No F-15 BG & 18,045 lbs. for F-15-BH.  
 ② To be included in the Bid Price for Item 46.

NO CHANGE FROM PLANS



**Soundings:**

- 1 Ice
- 2 Silt
- 3 Sand
- 4 Sand and Gravel
- 5 S.G. and Boulders
- 6 Boulders
- 7 Boulders and Rock
- 8 Rock
- VE Very Easy
- E Easy
- T Tight
- VT Very Tight
- VVT Very Very Tight

**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" AND AIR ENTRAINMENT AS SPECIFIED.

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

CONCRETE GIRDERS AND FLOOR SLABS SHALL BE CONSTRUCTED OF FORMS FOR CONCRETE SURFACES EXPOSED IN THE FINISHED WORK SHALL BE CONSTRUCTED OF SHIP LAP OR TONGUE AND GROOVE LUMBER 3" S UNLESS FACED WITH PANEL BOARD.

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

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

ALL REINFORCING STEEL SHALL CONFORM TO ASTM SPECIFICATION A 305-50T OR THE LATEST REVISION THEREOF, AND SHALL BE INTERMEDIATE GRADE STEEL OF A GIVEN NUMBER OF THE PROJECT SHALL BE TAGGED WITH THE NUMBER DESIGNATION AND THE STATION NUMBER OF THE SECONDARY BARS WHEN SPLICED SHALL BE NOTED.

DIAMETERS OF THE BAR, DIMENSIONS FOR REINFORCING STEEL NOT SHOWN AS CLEAR SHALL BE TO THE CENTER LINE OF THE BAR.

TWO TO THE CENTER LINE OF THE BAR.

ALL STRUCTURAL STEEL SHALL BE PAINTED ONE SHOP COAT OF ZINC CHROMATE AND TWO FIELD COATS OF ALUMINUM UNLESS OTHERWISE NOTED, EXCEPT THE UNEXPOSED PORTION OF STEEL PILING NEED NOT BE PAINTED.

HANDRAIL BOLTS SHALL HAVE HEX HEADS, NUTS, AND LOCK WASHERS UNLESS OTHERWISE SPECIFIED AND ALL RIVETS, EXCEPT AS NOTED ARE 1/2" DIA. AND SHALL BE POWER DRIVEN.

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

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-60-B.

IF BY PERMISSION OF THE ENGINEER PRIMARY BARS ARE SPLICED THEY SHALL LAB A MIN OF 28 DIAM FOR BARS NEAR TOP OF BEAMS AND IF HAVING MORE THAN 12 INCHES OF CONCRETE UNDER THE BARS AND IF DIAM FOR BARS NEAR BOTTOM OF MEMBERS.

HIGH TENSILE STRENGTH BOLTS MAY BE SUBSTITUTED FOR FIELD RIVETS, BUT AT NO ADDITIONAL EXPENSE TO THE STATE, APPROVED BY THE RESEARCH COUNCIL ON RIVETS AND BOLTED STRUCTURAL JOINTS OF THE ENGINEERING FOUNDATION DATED JAN. 31, 1951.

**LOADING DATA** Interstate Alternate  
 LIVE LOAD - A.A.S.H.O. (HPD: 5.16-44)  
 DEAD LOAD ASSUMES 15 LBS. PER SQ. FT. ADDITIONAL WEARING SURFACE WHICH INCLUDES THE 1 1/2 INCH CONCRETE MONOLITH WEARING SURFACE SHOWN.

**DESIGNING DATA**  
 A.A.S.H.O. 1953 UNIT STRESSES, EXCEPT AS NOTED.  
 Reinforcing Steel fs = 20,000 lbs. per sq. in.  
 Structural Steel fs = 18,000 lbs. per sq. in.  
 fc = 1200 lbs. per sq. in.  
 n = 10

**COLORADO**  
 DEPARTMENT OF HIGHWAYS

2 Bridges 4 Spans @ 55' Composite  
 I Beams  
 30' Rdwy 2' Curbs Skew 30° to Rd  
 General Layout, Notes and Summary of Quantities

Across Clear Creek  
 Sta. 207+00.00 to 209+65.71  
 Near Idaho Spgs Sec. 33 T. 35 R. 22

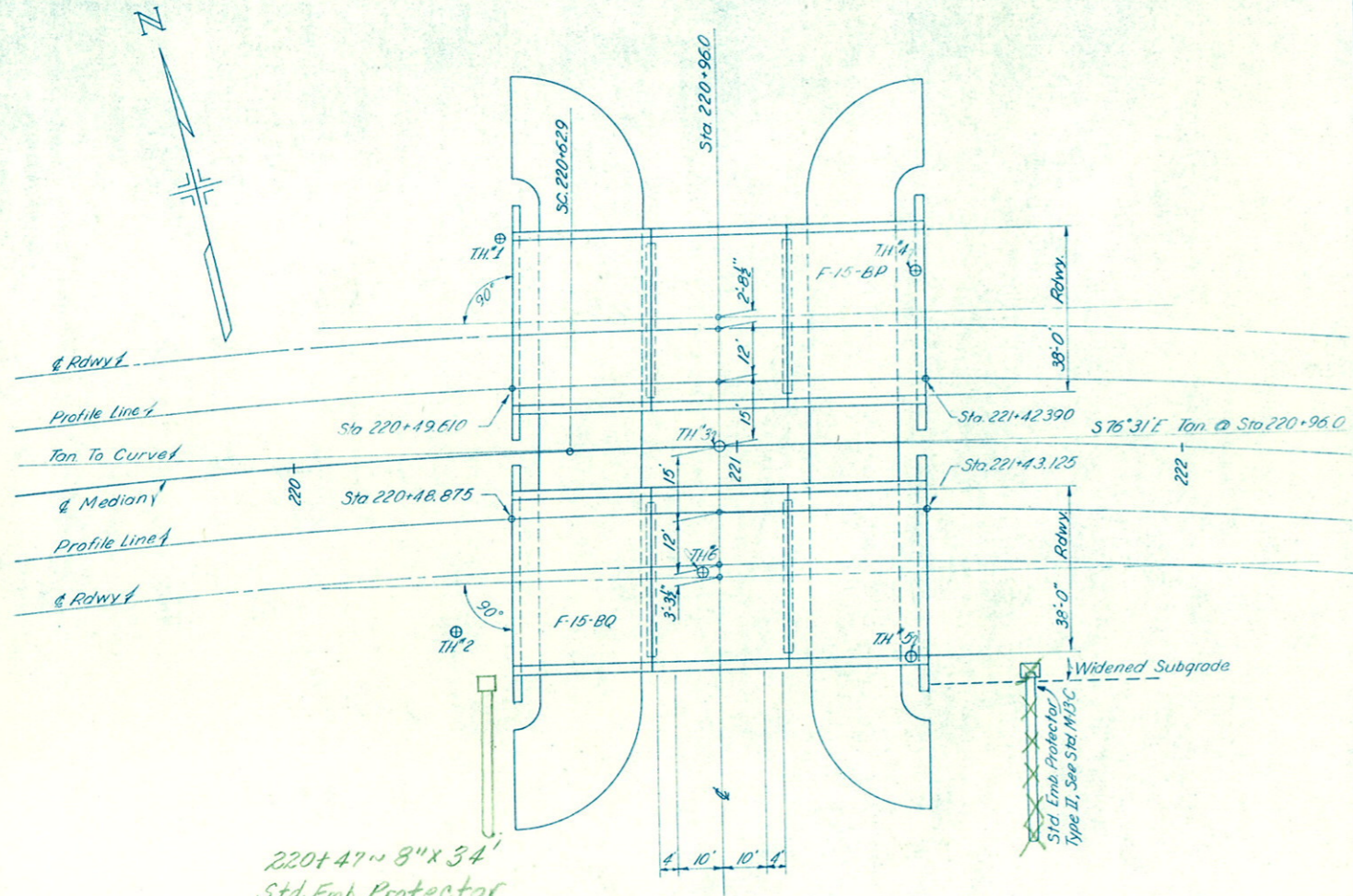
Designed by: [Signature]  
 Made by: [Signature]  
 Checked by: [Signature]

Approved by: [Signature] Bridge Engineer  
 Date: Oct 1, 1959

Sta. 207+00.36 to 209+65.71 West Bnd.  
 Sta. 267+01.75 to 209+30.21 East Bnd.

STRUCTURE NO. F-15-BG West Bound  
 F-15-BH East Bound

FED. ROAD REG. NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
	COLO.	E-70-3(4)250	25	

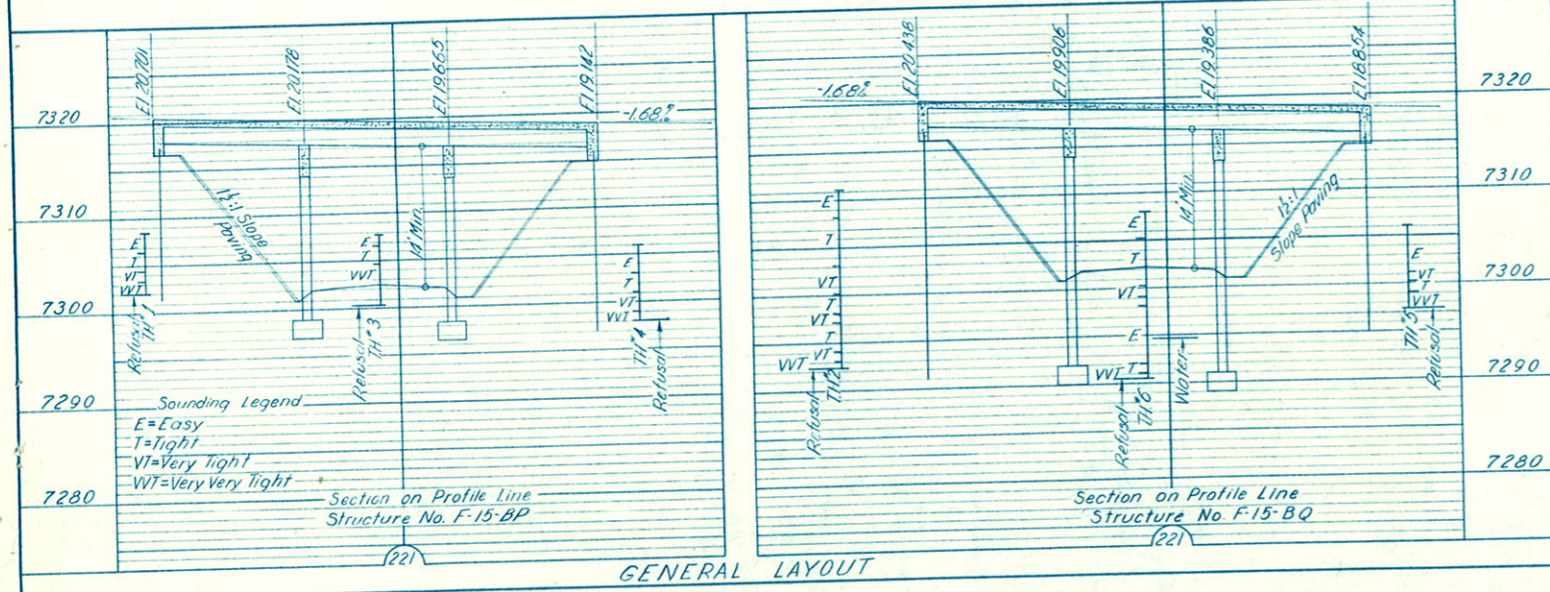


### SUMMARY OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	SUPERSTRUCT		ABUT NO 1		PIER NO 2		PIER NO 3		ABUT NO 4		TOTAL	
			F-15-BP	F-15-BQ	F-15-BP	F-15-BQ	F-15-BP	F-15-BQ	F-15-BP	F-15-BQ	F-15-BP	F-15-BQ		
14	Unclassified Structural Excavation - Bridge	Cu Yd			5	5	21	52	24	57	5	5	55	119
16	Structure Backfill - Class I	Cu Yd					15	44	18	49			33	93
18	Station Yard Overhaul	Sta Yd											363	1023
18	Yard Mile Overhaul	Yd Mi											32	90
42	Treated Bridge Timber	M/11bm			0.152	0.152					0.152	0.152	0.304	0.304
46	Class A Concrete	Cu Yd	151.0	151.0	16.1	16.1	20.9	23.0	20.9	23.0	16.1	16.9	225	230
47	Reinforcing Steel - Includes 1\"/>													

- ① Includes 0.54 cu yd. for Emb. Protector at Abut. 4, Struct No. F-15-BQ.
- ② For Embankment Protector

220+47 ~ 8" x 34'  
Std. Emb. Protector  
Type II.



#### 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" AND AIR ENTRAINMENT AS SPECIFIED.

ALL CONCRETE SURFACES MARKED WITH THE SYMBOL F AS SHOWN ON SHEET NO. 32 SHALL RECEIVE CLASS I SURFACE FINISH.

CONCRETE GIRDERS AND FLOOR SLABS MAY BE TIED MONOLITHICALLY.

FORMS FOR CONCRETE SURFACES EXPOSED IN THE FINISHED WORK SHALL BE CONSTRUCTED OF SHIP LAP OR TONGUE AND GROOVE LUMBER 3" S UNLESS FACED WITH PANEL BOARD.

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

SOUNDINGS AND DEPTH OF FOOTING SHOWN 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.

ALL REINFORCING STEEL SHALL CONFORM TO ASTM SPECIFICATION A 305-50T OR THE LATEST REVISION THEREOF, AND SHALL BE INTERMEDIATE GRADE STEEL OF A DEFORMED TYPE. EACH BAR SHALL BE TAGGED WITH THE NUMBER DESIGNATION AND THE STATION NUMBER OF THE PROJECT. SECONDARY BARS WHEN SPICED SHALL LAP 17 DIAMETERS OF THE BAR. DIMENSIONS FOR REINFORCING STEEL NOT SHOWN AS CLEAR SHALL BE TO THE CENTER LINE OF THE BAR.

ALL STRUCTURAL STEEL SHALL BE PAINTED ONE SHOP COAT OF ZINC CHROMATE AND TWO FIELD COATS OF ALUMINUM, UNLESS OTHERWISE NOTED. EXCEPT THE UNEXPOSED PORTION OF STEEL PILING NEED NOT BE PAINTED.

HANDRAIL BOLTS SHALL HAVE HEX HEADS, NUTS, AND LOCK WASHERS UNLESS OTHERWISE SPECIFIED AND ALL RIVETS, EXCEPT AS NOTED ARE 1/2" DIA. AND SHALL BE POWER DRIVEN.

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

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.R.D.'S.

IF BY PERMISSION OF THE ENGINEER, PRIMARY BARS ARE SPICED THEY SHALL LAP A MIN OF 28 DIAM. FOR BARS NEAR TOP OF BEAMS HAVING MORE THAN 12 INCHES OF CONCRETE UNDER THE BARS AND 17 DIAM. FOR BARS NEAR BOTTOM OF MEMBERS.

GRAVITY SOUNDINGS SHALL REMAIN IN PLACE FULL LENGTH UNTIL ALL GIRDER AND SLAB REINFS. HAVE REACHED A MINIMUM STRENGTH OF 2500 PSI.

\* Sta. 220+49.610 to 221+42.390 (F-15-BP)  
\* Sta. 220+48.875 to 221+43.125 (F-15-BQ)

STRUCTURE NO. F-15-BQ East Bound  
F-15-BP West Bound

#### LOADING DATA

LIVE LOAD - A.A.S.H.O. (1470-5564)  
DEAD LOAD ASSUMES 15 LBS. PER SQ. FT. ADDITIONAL W. SURFACE WHICH INCLUDES THE 1/2" CONCRETE MONOLITHIC WEARING SURFACE SHOWN.

#### DESIGNING DATA

A.A.S.H.O. 1953 UNIT STRESSES, EXCEPT AS NOTED.

Reinforcing Steel  $f_s$  = 20000 lbs. per sq. in.  
Structural Steel  $f_c$  = 18000 lbs. per sq. in.  
 $f_c$  = 1200 lbs. per sq. in.  
n = 10

**COLORADO**  
DEPARTMENT OF HIGHWAY

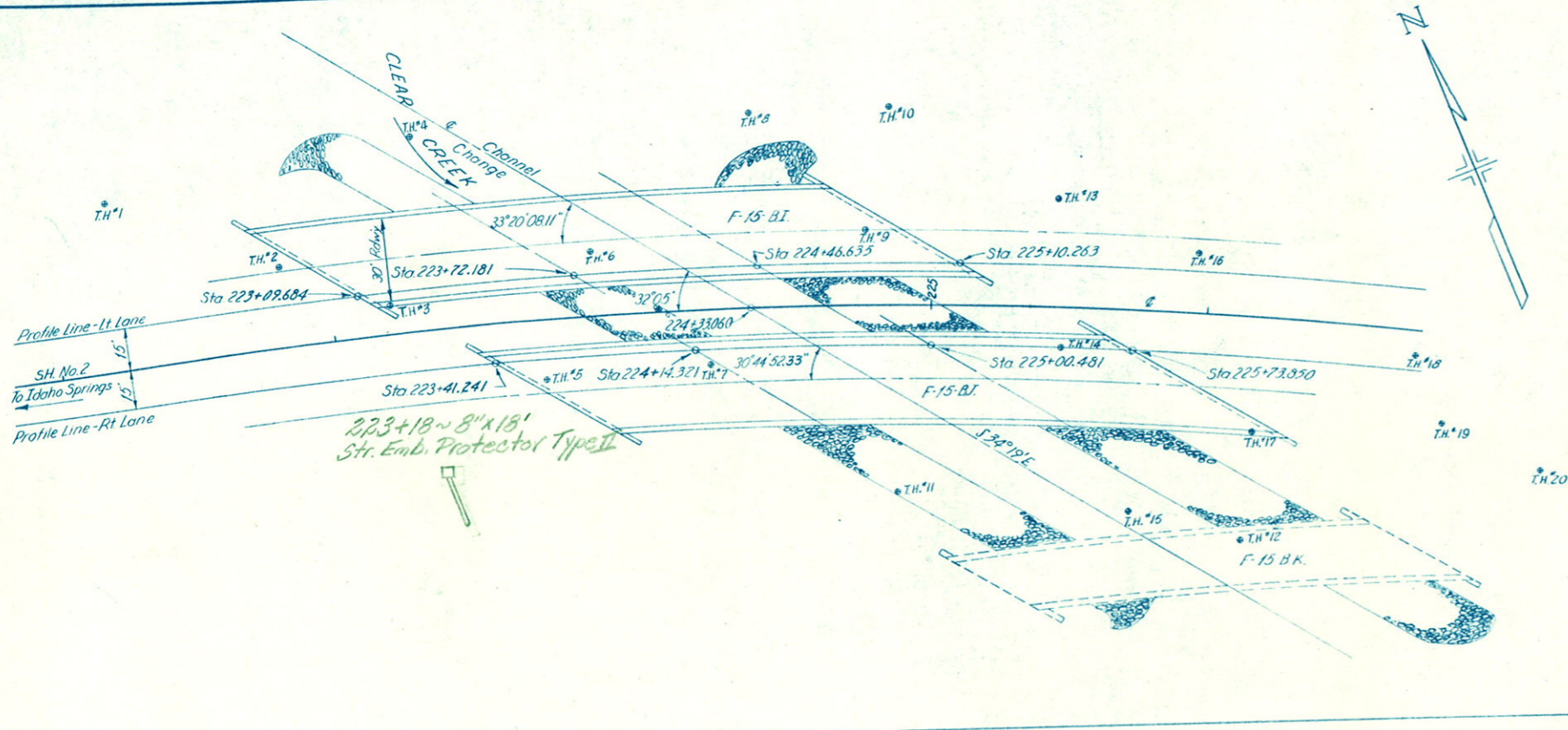
TWO-3 SPANS @ 30' - CONCRETE  
SLAB and GIRDER BRIDGES

38' ROADWAY 2' CURBS NO SKEW  
GENERAL LAYOUT, NOTES &  
SUMMARY OF QUANTITIES  
Across Service Road

Sta. \*  
Near Idaho Springs Sec. 32/33 T. 35. R. 19

Designed by	Approved by
Made by	Bridge Engineer
Checked by	Date: Sept 1, 1960

FED. ROAD REG. NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
	COLO.	I-70-3(4)250	33	



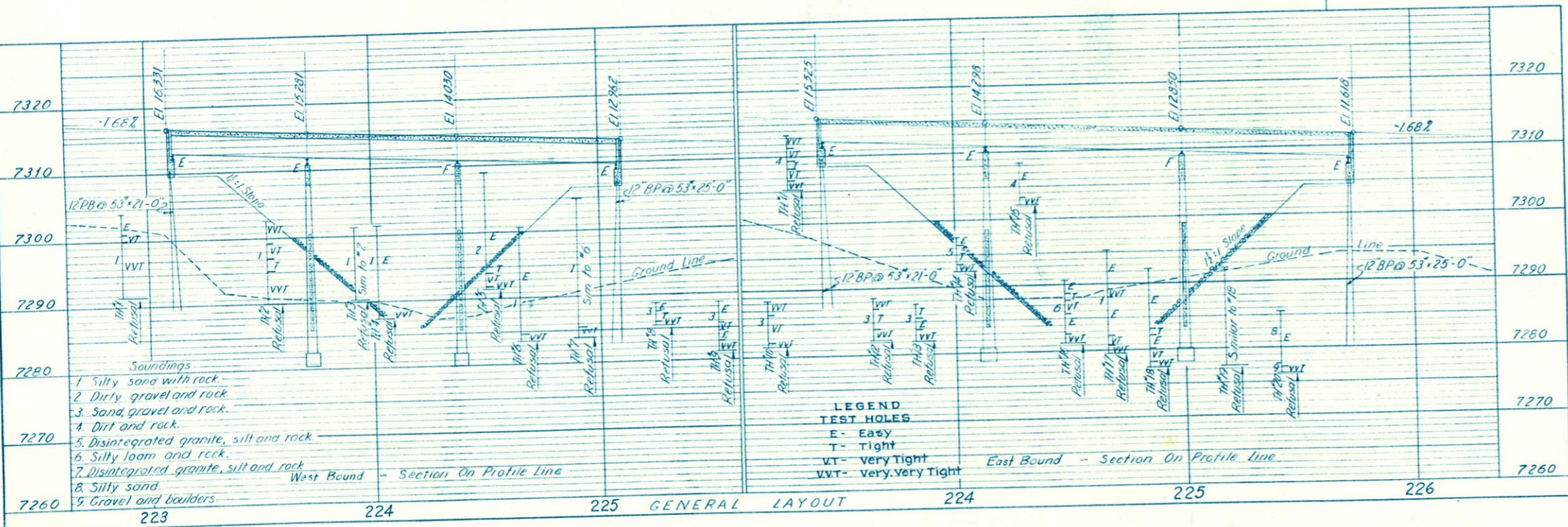
SUMMARY OF QUANTITIES - STRUCTURE F-15-BI

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.		37	58	56	24	175
16	Structure Backfill (Class I)	Cu. Yd.			43	42		85
18	Station Yard Overhaul	Sta. Yd.						935
18	Yard Mile Overhaul	Yd. Mi.						87
42	Treated Bridge Timber	Mft. bm.						0.237
46	Class "A" Concrete	Cu. Yd.	178.3	33.6	63.5	64.3	35.3	375
47	Reinforcing Steel (Incl. 1% for Overrun)	Lb.	45,610	4,645	8,660	8,740	4,770	72,425
48	Structural Steel (Incl. 1/2% for Paint)	Lb.	170,030	1,380	1,520	990	13,800	175,300
61	Steel Piling (12" BP @ 53")	Lin. Ft.		126			150	276
67	Riprap (1' 6" Thick)	Cu. Yd.		220			155	375
89	Drain Pipe (Conc. Floor 4" x 2'-0")	Ea.	9					9

SUMMARY OF QUANTITIES - STRUCTURE F-15-BJ

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.		50	83	131	61	325
16	Structure Backfill (Class I)	Cu. Yd.			63	102		165
18	Station Yard Overhaul	Sta. Yd.						1815
18	Yard Mile Overhaul	Yd. Mi.						170
42	Treated Bridge Timber	Mft. bm.		0.213			0.263	0.476
46	Class "A" Concrete	Cu. Yd.	223.7	38.6	70.3	71.5	41.9	446
47	Reinforcing Steel (Incl. 1% for Overrun)	Lb.	51,195	5,705	9,930	10,020	5,950	82,800
48	Structural Steel (Incl. 1/2% for Paint)	Lb.	259,255	1,400	1,565	1,310	1,400	264,930
61	Steel Piling (12" BP @ 53")	Lin. Ft.		126			150	276
67	Riprap (1' 6" Thick)	Cu. Yd.		370			420	790
89	Drain Pipe (Conc. Floor 4" x 2'-0")	Ea.	11					11

- ① Includes 15,980 of Handrail Steel.
- ② Includes 18,435 of Handrail Steel.
- ③ Includes Riprap Quantities for Structure No. F-15-BK.



**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" AND AIR ENTRAINMENT AS SPECIFIED.

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

CONCRETE CURBS AND FLOOR SLABS MAY BE FORMED MONOLITHICALLY.

FORMS FOR CONCRETE SURFACES EXPOSED IN THE FINISHED WORK SHALL BE CONSTRUCTED OF SHIP LAP OR TONGUE AND GROOVE LUMBER 3/4" UNLESS FACED WITH PANEL BOARD.

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

SOUNDINGS AND DEPTH OF FOOTING SHOWN 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.

ALL REINFORCING STEEL SHALL CONFORM TO ASTM SPECIFICATION A 305-50T OR THE LATEST REVISION THEREOF, AND SHALL BE INTERMEDIATE GRADE STEEL OF A DEFORMED TYPE. EACH BAR SHALL BE TAGGED WITH THE NUMBER DESIGNATION AND THE STATION NUMBER OF THE PROJECT. SECONDARY BARS WHEN SPLICED SHALL LAP 12" DIAMETERS OF THE BAR. DIMENSIONS FOR REINFORCING STEEL NOT SHOWN AS CLEAR SHALL BE TO THE CENTER LINE OF THE BAR.

ALL STRUCTURAL STEEL SHALL BE PAINTED ONE SHOP COAT OF ZINC CHROMATE AND TWO FIELD COATS OF ALUMINUM, UNLESS OTHERWISE NOTED, EXCEPT THE UNEXPOSED PORTION OF STEEL PILING NEED NOT BE PAINTED.

HANDRAIL BOLTS SHALL HAVE HEX HEADS, NUTS, AND LOCK WASHERS UNLESS OTHERWISE SPECIFIED AND ALL RIVETS, EXCEPT AS NOTED ARE 1/2" DIA. AND SHALL BE POWER DRIVEN.

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

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-60-B.

IF BY PERMISSION OF THE ENGINEER PRIMARY BARS ARE SPLICED, THEY SHALL LAP A MIN. OF 28" DIAM. FOR BARS NEAR TOP OF BEAMS HAVING MORE THAN 12 INCHES OF CONCRETE UNDER THE BARS AND 17" DIAM. FOR BARS NEAR BOTTOM OF MEMBERS.

HIGH TENSILE STRENGTH BOLTS MAY BE SUBSTITUTED FOR FIELD RIVETS, BUT ANY ADDITIONAL EXPENSE TO THE STATE, THE BOLTS SHALL BE ASSEMBLED IN ACCORDANCE WITH SPECS. APPROVED BY THE RESEARCH COUNCIL ON RIVETED AND BOLTED STRUCTURAL JOINTS OF THE ENGINEERING FOUNDATION DATED JAN 31, 1951.

**LOADING DATA INTERSTATE ALTERNATE**

LIVE LOAD - A.A.S.H.O. (H20-S16-44)

DEAD LOAD ASSUMES 15 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. 1953 UNIT STRESSES, EXCEPT AS NOTED.

Reinforcing Steel  $f_s = 20,000$  lbs. per sq. in.

Structural Steel  $f_s = 18,000$  lbs. per sq. in.

$f_c = 12,000$  lbs. per sq. in.

$n = 10$

**COLORADO DEPARTMENT OF HIGHWAYS**

2 Conc Slab and I Beam Bridges

3 Spans (59' 74' 59') North and

3 Spans (70' 87' 70') South

30 Rdwy 2' Curbs

General Layout, Notes and Summary of Quantities

Across Clear Creek

Sta. \* 223+09.68 to 225+73.85

Near Idaho Springs Sec. 33 T. 3 S. R. 27 W

Designed by *[Signature]* Approved by *[Signature]*

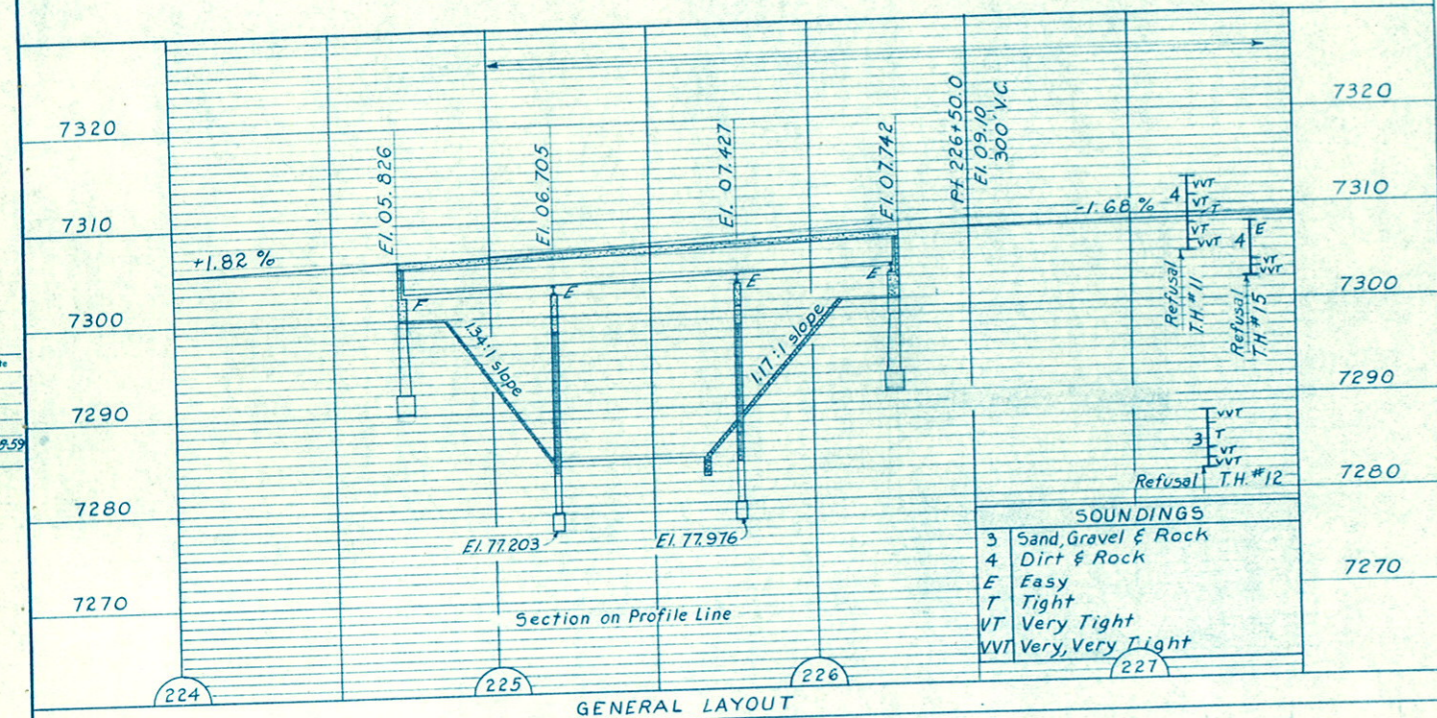
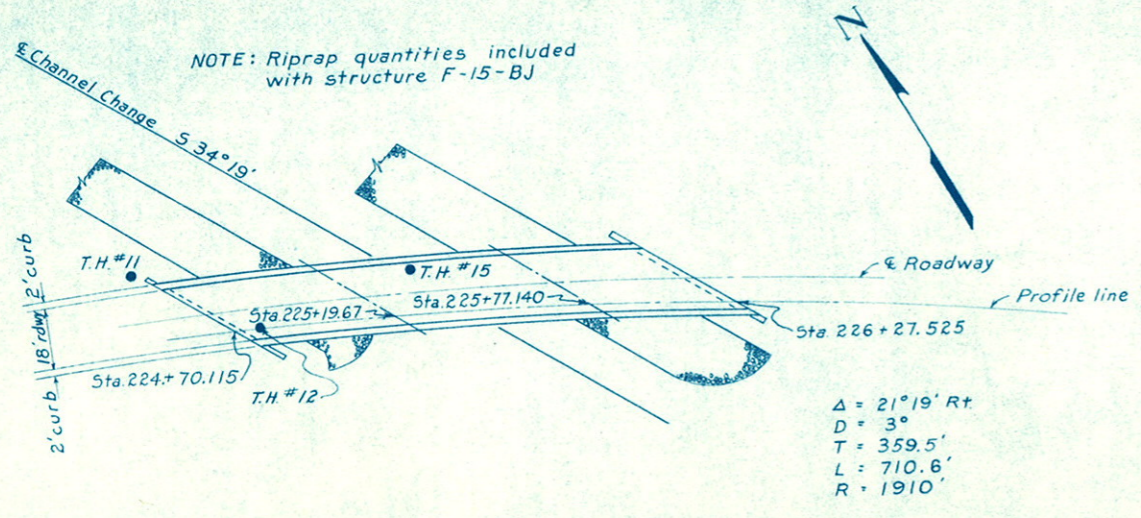
Made by *[Signature]* Bridge Engineer

Checked by *[Signature]* Date: *Apr. 1, 1959*

\* Sta. 223+09.68 to 225+10.26 West Bound  
Sta. 223+41.24 to 225+73.85 East Bound

STRUCTURE NO. F-15-BI West Bound  
F-15-BJ East Bound

Revised: Items 14, 16, 18, 46, 47, 48, Delete 61, Abutments 1-27-60 M.E.P. & T.G.B.



NO CHANGE FROM PLANS

SUMMARY OF QUANTITIES

Item	Description	Unit	Super-Structure	Abut. No. 1	Pier No. 2	Pier No. 3	Abut. No. 4	Total
14	Unclassified Structural Excavation - Bridges	Cu. Yd.		149	33	38	175	395
16	Structure Backfill (Class 1)	Cu. Yd.		81	26	31	87	225
18	Station Yard Overhaul	Sta. Yd.						2475
18	Yard Mile Overhaul	Yd. Mi.						236
42	Treated Bridge Timber	Mft. Bm.		0.188			0.142	0.330
46	Class "A" Concrete	Cu. Yd.	93.1	33.2	26.9	27.0	38.8	219
47	Reinforcing Steel (Inc. 1% ± Overrun)	Lb.	17,835	3335	3570	3570	3745	32055
48	Structural Steel (Inc. 1/2% ± for Paint)	Lb.	84,380	885	1025	1025	1145	88,460
89	Drain Pipe (Conc. Floor, 4" φ x 2'-0")	Each	6					6
2	16 Ga. Galv. Sheet Metal	Sq. Ft.	60					60
3	1/2" Exp'n. Jt. Mat'l (Type III)	Sq. Ft.	6					6

- NOTES:
- Includes 12,875 lb. handrail steel
  - To be included in the Bid Price for item 46.
  - Exp'n. joint material shall be in accordance to AASHO specs. M-153-54 and of the type shown and shall be included in the 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" AND AIR ENTRAINMENT AS SPECIFIED.

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

CONCRETE GIRDERS, FLOOR SLABS, AND CURBS SHALL BE CONSTRUCTED OF FORMS FOR CONCRETE SURFACES EXPOSED IN THE FINISHED WORK SHALL BE CONSTRUCTED OF SHIP LAP OR TONGUE AND GROOVE LUMBER 3" S UNLESS FACED WITH PANEL BOARD.

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

SOUNDINGS AND DEPTH OF FOOTING SHOWN 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.

ALL REINFORCING STEEL SHALL CONFORM TO ASTM SPECIFICATION A 305-50T OR THE LATEST REVISION THEREOF, AND SHALL BE INTERMEDIATE GRADE STEEL OF A DEFORMED TYPE. EACH BAR SHALL BE TAGGED WITH THE NUMBER DESIGNATION AND THE STATION NUMBER OF THE PROJECT. SECONDARY BARS WHEN SPLICED SHALL LAP 17 DIAMETERS OF THE BAR. DIMENSIONS FOR REINFORCING STEEL NOT SHOWN AS CLEAR SHALL BE TO THE CENTER LINE OF THE BAR.

ALL STRUCTURAL STEEL SHALL BE PAINTED ONE SHOP COAT OF ZINC CHROMATE AND TWO FIELD COATS OF ALUMINUM, UNLESS OTHERWISE NOTED, EXCEPT THE UNEXPOSED PORTION OF STEEL PILING NEED NOT BE PAINTED.

HANDRAIL BOLTS SHALL HAVE HEX HEADS, NUTS, AND LOCK WASHERS UNLESS OTHERWISE SPECIFIED AND ALL RIVETS, EXCEPT AS NOTED ARE 1/2" DIA. AND SHALL BE POWER DRIVEN.

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

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 STD. M-60-B.

IF BY PERMISSION OF THE ENGINEER PRIMARY BARS ARE SPLICED THEY SHALL LAP A MIN. OF 28 DIA. FOR BARS NEAR TOP OF BEAMS HAVING MORE THAN 12 IN. OF CONC. UNDER THE BARS & 17 DIA. FOR BARS NEAR BOTTOM OF MEMBERS.

HIGH TENSILE STRENGTH BOLTS MAY BE SUBSTITUTED FOR FIELD RIVETS BUT AT NO ADDITIONAL EXPENSE TO THE STATE. THE BOLTS SHALL BE ASSEMBLED IN ACCORDANCE WITH SPECS. APPROVED BY THE RESEARCH COUNCIL ON RIVETED AND BOLTED STRUCTURAL JOINTS OF THE ENGINEERING FOUNDATION DATED JAN. 31, 1951.

STRUCTURE NO. F-15-BK (Ramp)

**LOADING DATA**

LIVE LOAD - A.A.S.H.O. (40-56-44)

DEAD LOAD ASSUMES 15 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. 1953 UNIT STRESSES, EXCEPT AS NOTED.

Reinforcing Steel  $f_s = 20000$  lbs. per sq. in.

Structural Steel  $f_c = 18000$  lbs. per sq. in.

$f_c = 12000$  lbs. per sq. in.

$n = 10$

**COLORADO DEPARTMENT OF HIGHWAYS**

3 SPAN (46-57-46) CONCRETE SLAB & CONT. I BEAM BRIDGE, 18<sup>RD</sup> W. LAYOUT & QUANTITIES

Across CLEAR CREEK

Sta. 224+70.115 to 226+27.525

Near Idaho Springs Sec. 33 T. 35 R. 7

Designed by *[Signature]* Approved by *[Signature]*

Made by *[Signature]* Bridge Engineer

Checked by *[Signature]* Date: *[Signature]*, 1955

# DETAILS OF INTERCHANGE STA. 220+

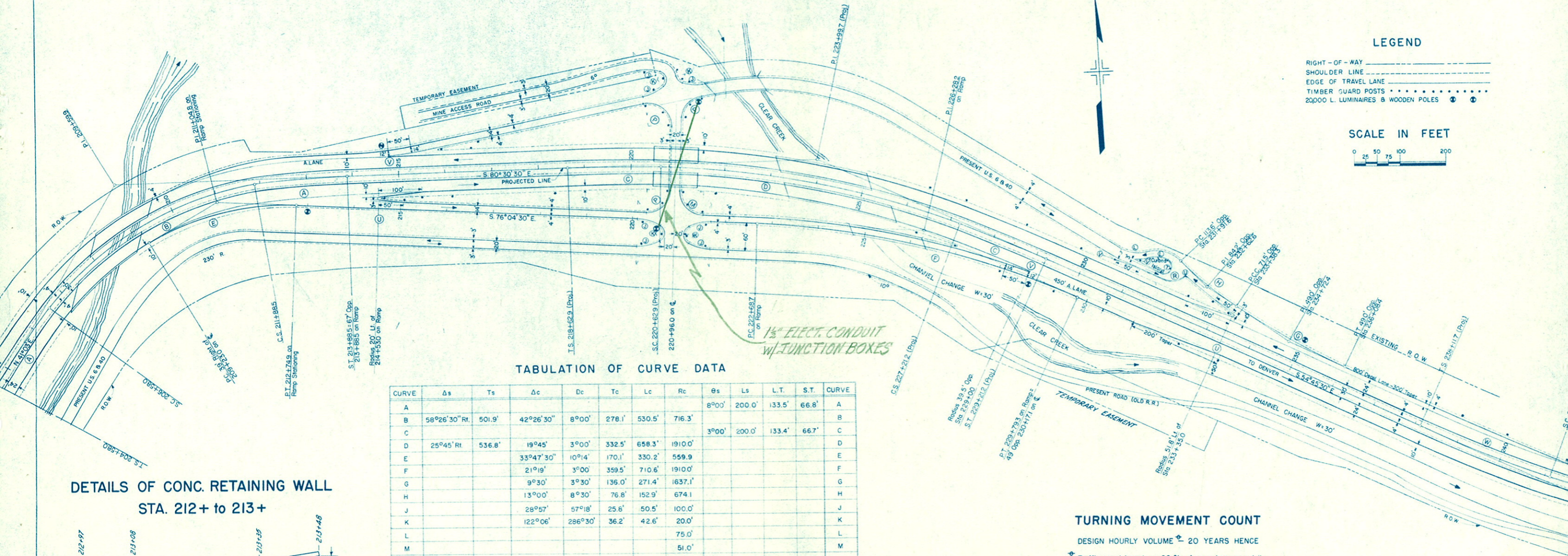
FEDERAL ROAD DIVISION NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	I-70-3(4)250	82	

Rev. 1-27-60-R.O.W.-H.E.P.

## LEGEND

- RIGHT-OF-WAY ————
- SHOULDER LINE - - - - -
- EDGE OF TRAVEL LANE ————
- TIMBER GUARD POSTS ······
- 20000 L. LUMINAIRES & WOODEN POLES ● ●

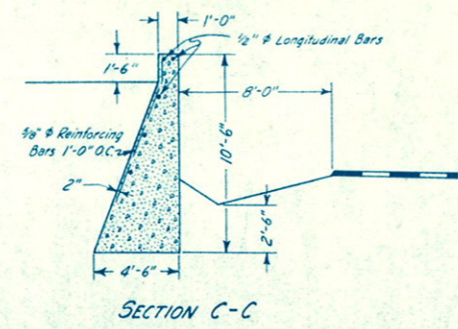
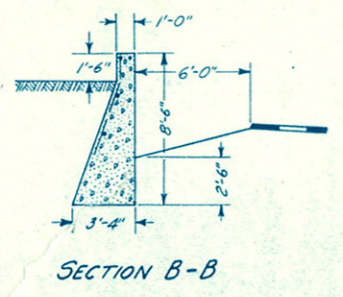
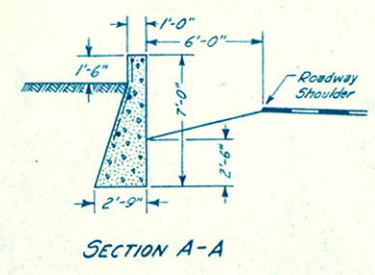
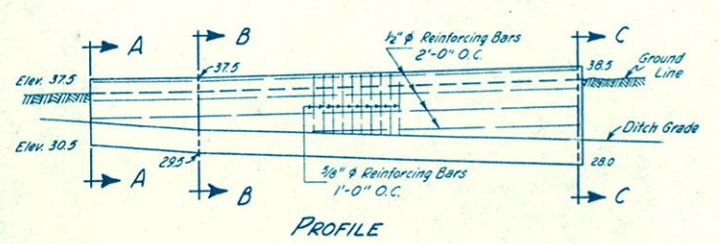
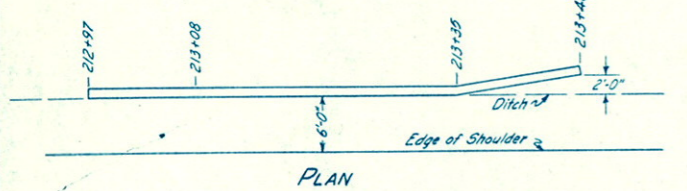
## SCALE IN FEET



### TABULATION OF CURVE DATA

CURVE	Δs	Ts	Δc	Dc	Tc	Lc	Rc	θs	Ls	L.T.	S.T.	CURVE
A								8°00'	200.0'	133.5'	66.8'	A
B	58°26'30" Rt.	501.9'	42°26'30"	8°00'	278.1'	530.5'	716.3'					B
C								3°00'	200.0'	133.4'	66.7'	C
D	25°45' Rt.	536.8'	19°45'	3°00'	332.5'	658.3'	1910.0'					D
E			33°47'30"	10°14'	170.1'	330.2'	559.9'					E
F			21°19'	3°00'	359.5'	710.6'	1910.0'					F
G			9°30'	3°30'	136.0'	271.4'	1637.1'					G
H			13°00'	8°30'	76.8'	152.9'	674.1'					H
J			28°57'	57°18'	25.8'	50.5'	100.0'					J
K			122°06'	286°30'	36.2'	42.6'	20.0'					K
L							75.0'					L
M							51.0'					M
P							50.0'					P
R							40.0'					R
T							15.5'					T
U							3.0'					U
V							1.0'					V
W								7°30'	300.0'	200.2'	100.2'	W
X	61°05'30" Lt.	828.1'	46°05'30"	5°00'	487.5'	921.8'	1146.0'					X

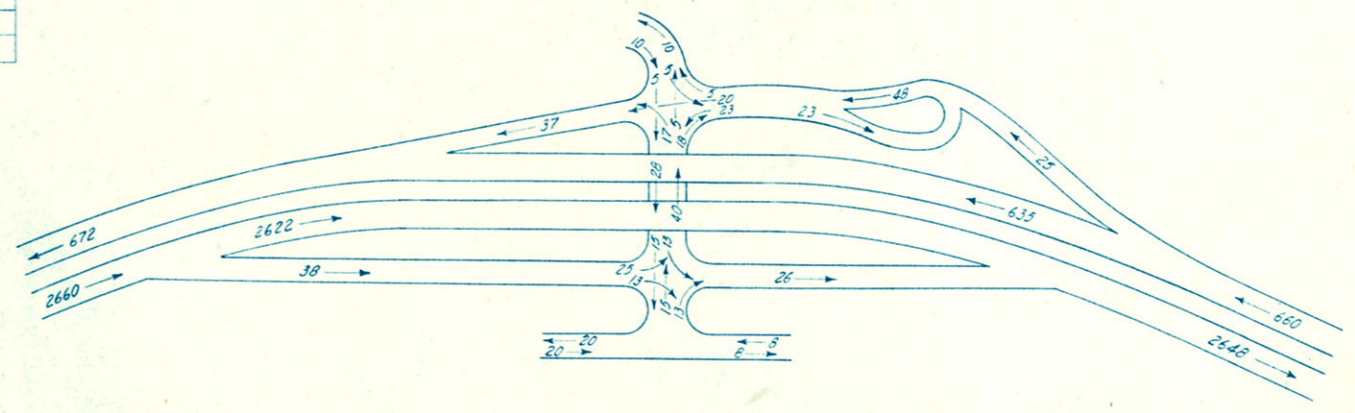
### DETAILS OF CONC. RETAINING WALL STA. 212+ to 213+



### TURNING MOVEMENT COUNT

DESIGN HOURLY VOLUME @ 20 YEARS HENCE

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

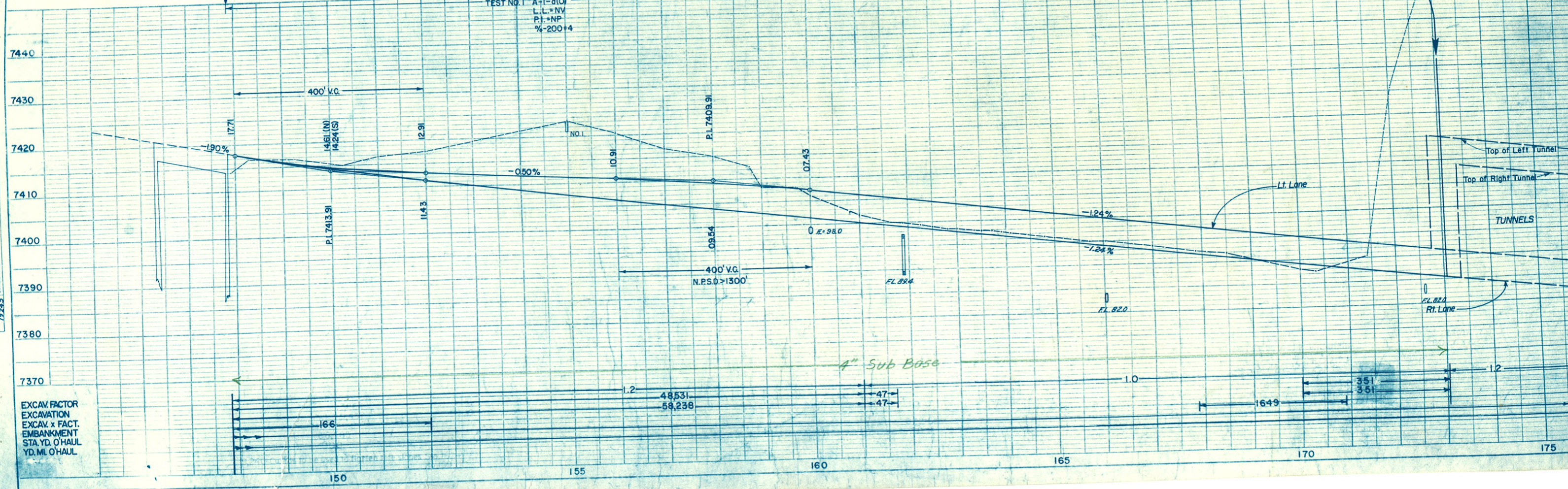
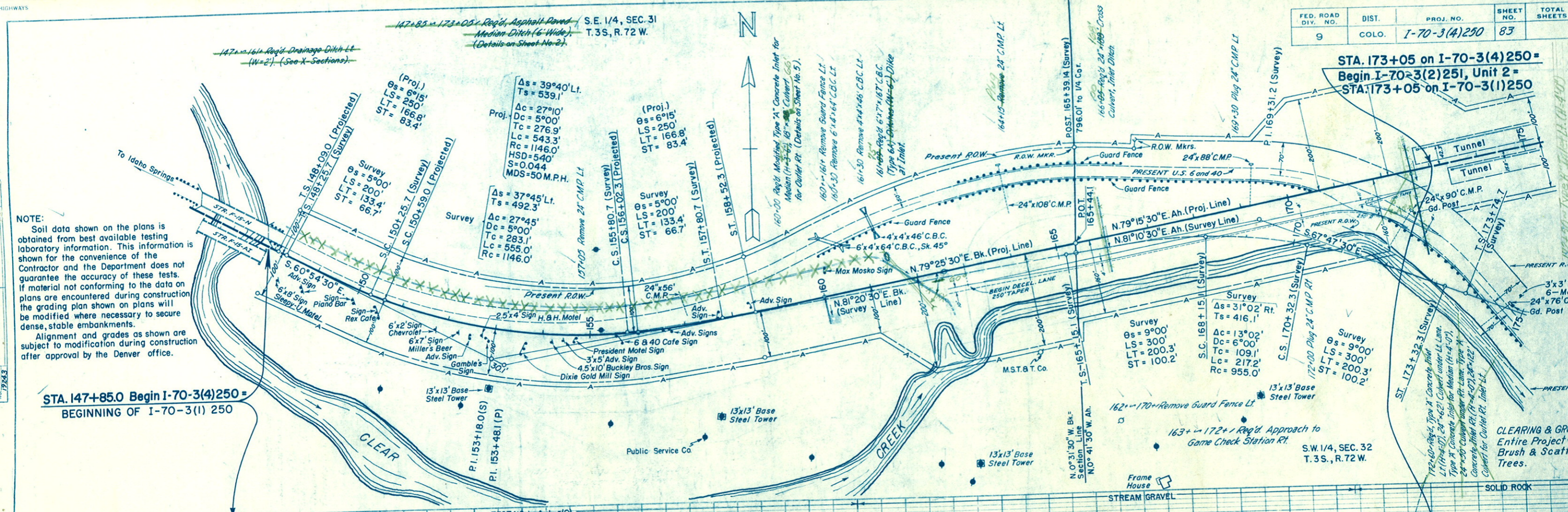


FED. ROAD DIV. NO.	DIST.	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	I-70-3(4)250	83	

STA. 173+05 on I-70-3(4)250 =  
Begin I-70-3(2)251, Unit 2 =  
STA. 173+05 on I-70-3(1)250

**NOTE:**  
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 material not conforming to the data on plans are encountered during construction the grading plan shown on plans will be modified where necessary to secure dense, stable embankments.  
Alignment and grades as shown are subject to modification during construction after approval by the Denver office.

STA. 147+85.0 Begin I-70-3(4)250 =  
BEGINNING OF I-70-3(1) 250



NOTE: BOOK ALIGNMENT CHECKED NO. 7242 RT. OF WAY CHECKED NO. 7243

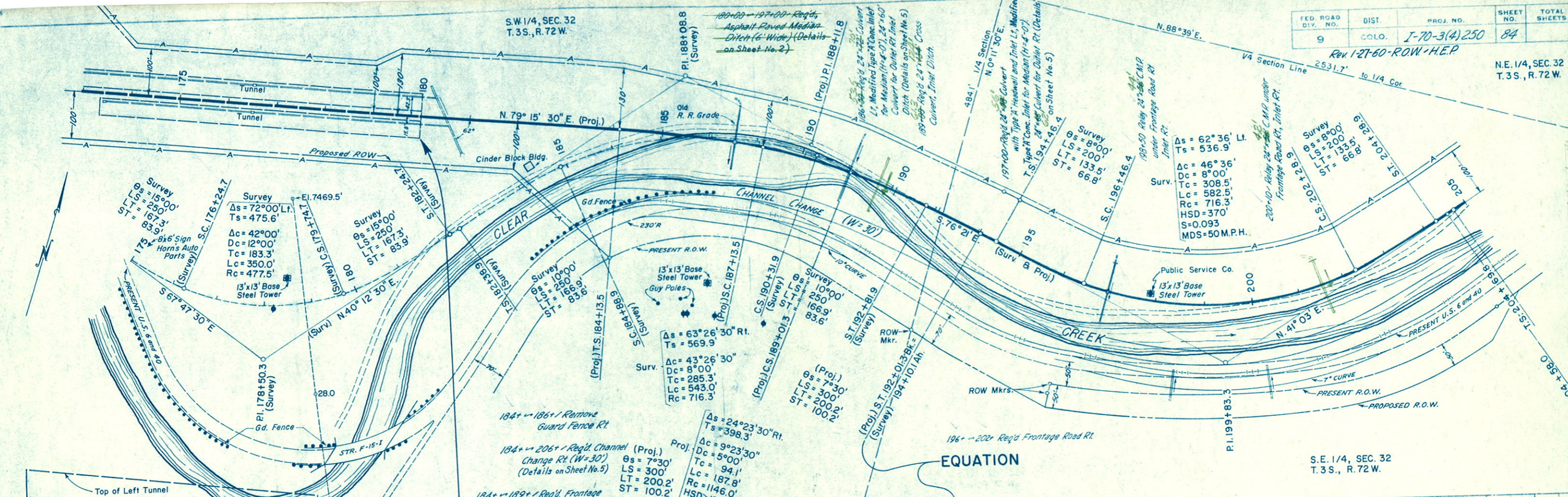
PROFILE SURVEYED BY: DATE: 12/24/54 STRUCTURE NOTATION: C.P.K.O. 12/25/54

PLAN  
 SURVEYED  
 PLOTTED  
 NOTE: BOOK ALIGNMENT CHECKED  
 NO. 19244  
 19244  
 19244

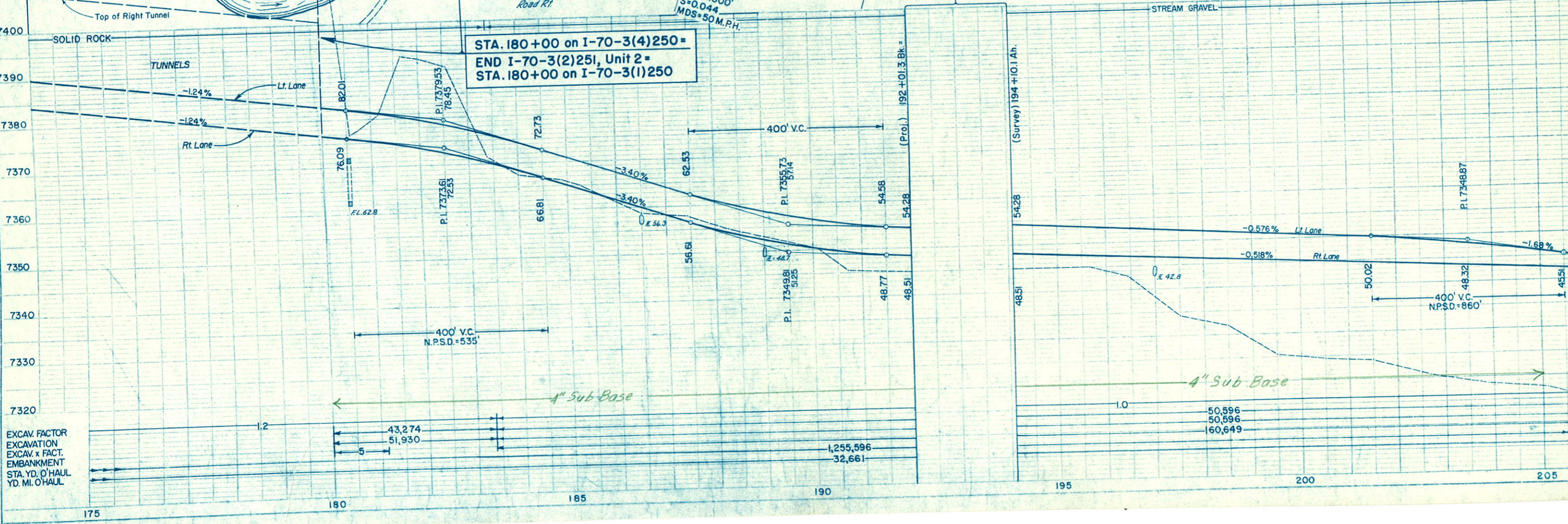
FED. ROAD DIV. NO.	DIST.	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	I-70-3(4)250	84	

REV. 1-27-60 - ROW - H.E.P.

N.E. 1/4, SEC. 32  
 T. 35 S., R. 72 W.



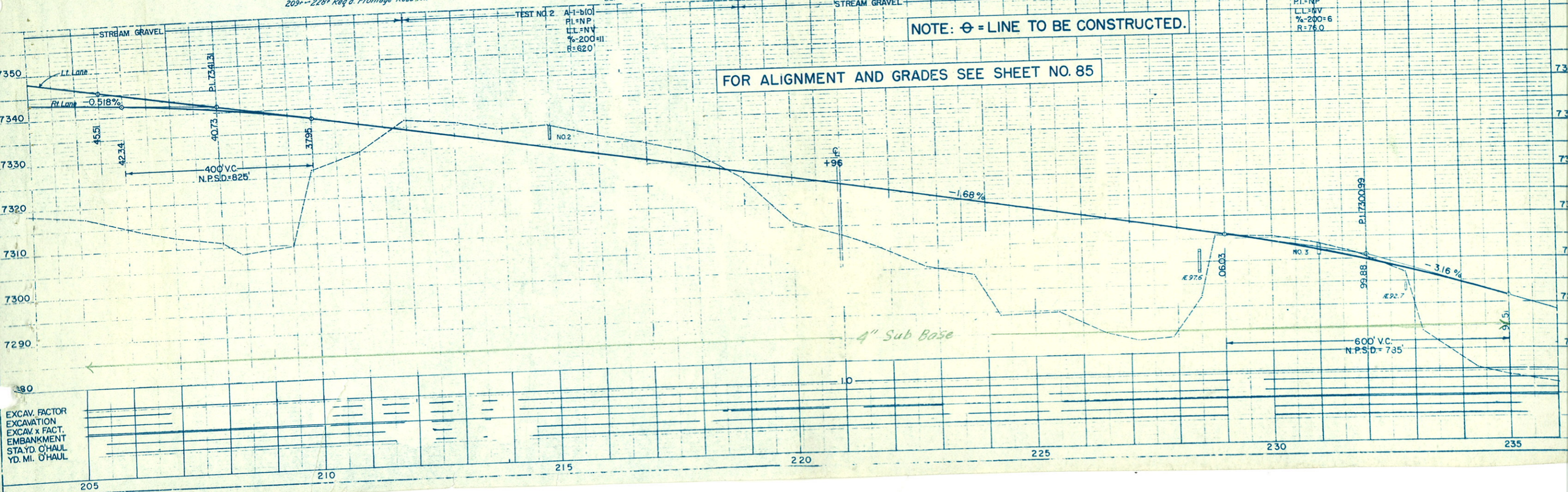
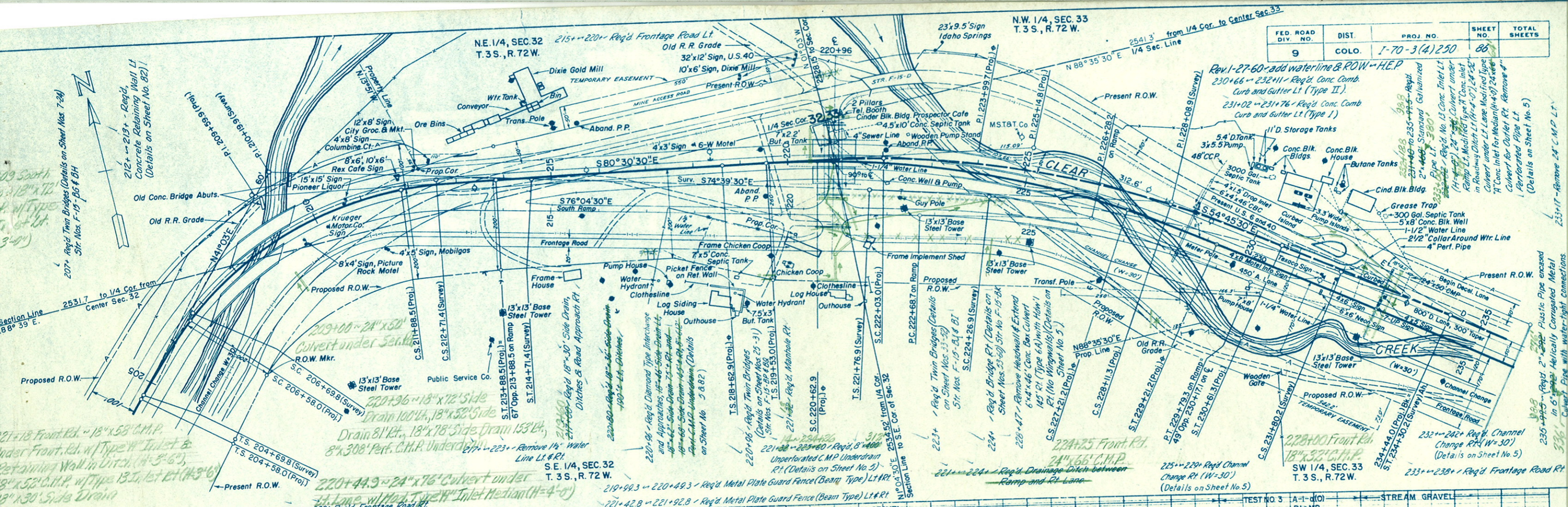
STA. 180+00 on I-70-3(4)250 =  
 END I-70-3(2)251, Unit 2 =  
 STA. 180+00 on I-70-3(1)250



PROFILE  
 SURVEYED  
 PLOTTED  
 NOTE: BOOK CROSS CHECKED  
 NO. 19244  
 19244  
 19244



FED. ROAD DIV. NO.	DIST.	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	I-70-3(4)250	86	



NOTE:  $\emptyset$  = LINE TO BE CONSTRUCTED.

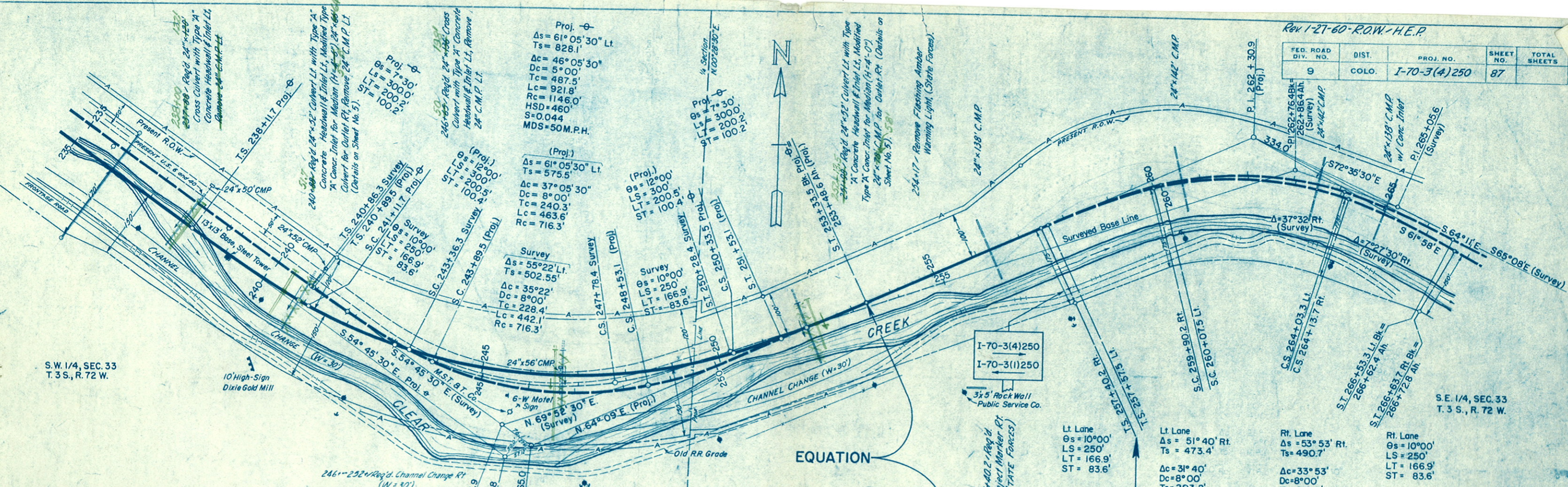
FOR ALIGNMENT AND GRADES SEE SHEET NO. 85

EXCAV. FACTOR  
EXCAVATION  
EXCAV. x FACT.  
EMBANKMENT  
STAYD. O'HAUL  
YD. MI. O'HAUL

TEST NO. 3  
A-1-b(0)  
PI=NP  
LL=NV  
%200=6  
R=76.0

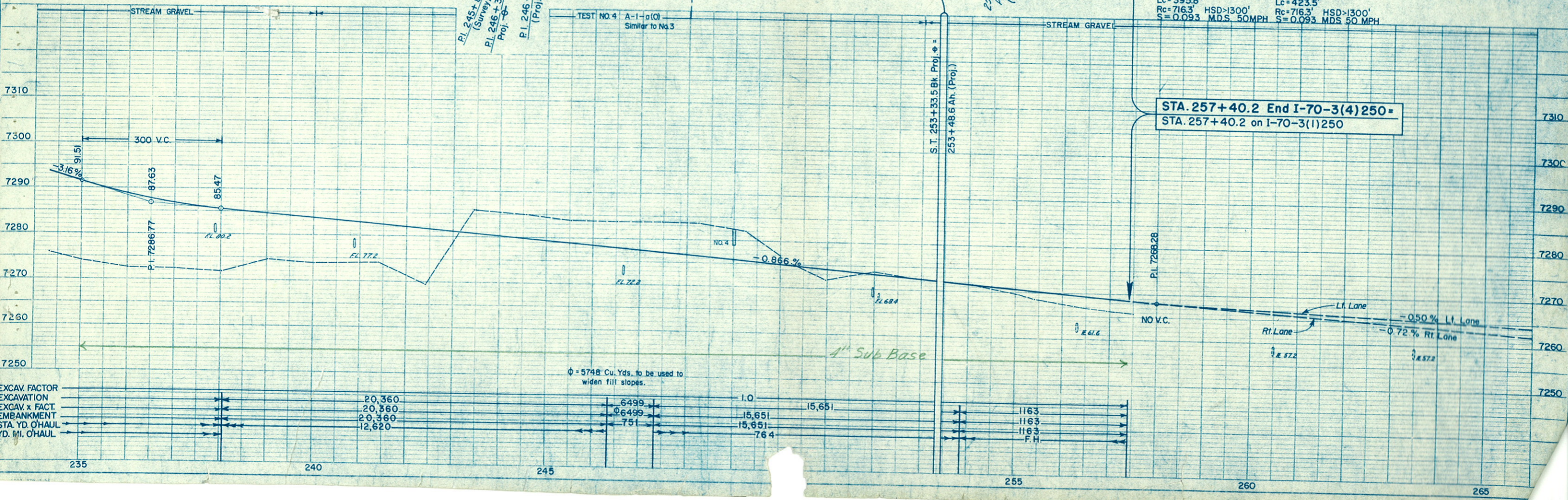
4" Sub Base

FED. ROAD DIV. NO.	DIST.	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	I-70-3(4)250	87	



S.W. 1/4, SEC. 33  
T. 3 S., R. 72 W.

S.E. 1/4, SEC. 33  
T. 3 S., R. 72 W.



STA. 257+40.2 End I-70-3(4)250 =  
STA. 257+40.2 on I-70-3(1)250

φ = 5748 Cu. Yds. to be used to  
widen fill slopes.

EXCAV. FACTOR  
EXCAV. x FACT.  
EMBANKMENT  
STA. YD. OHAUL  
YD. MI. OHAUL

20,360	6499	1.0	15,651	1163
20,360	6499		15,651	1163
20,360	751		15,651	1163
12,620			764	F.H.

235 240 245 255 260 265