

AS CONSTRUCTED		
NO REVISIONS	REVISED 9/30/87	VOID

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	IR25-2(187)	142	170/177

**GENERAL NOTES**

All work shall be done according to the Standard Specifications of the Division of Highways, State of Colorado, applicable to the project.

Structure excavation and backfill shall be in accordance with standard M-206-2. Adequate shoring protection for track and embankment adjacent to pier construction shall be provided during all phases of construction. The method of shoring shall be approved by B.N.R.R. Payment for shoring to be included in item 206, Structure Excavation

Expansion joint material shall meet A.A.S.H.T.O. Specification M-213.

All structural steel shall be AASHTO M-183 (ASTM A-36)

All AASHTO M183 (ASTM A-36) steel not otherwise noted shall be painted in accordance with section 509 of the Standard Specifications. The color shall match the tight-tone concrete coating on Superstructure and Bridge Rail.

All bolts shall be 3/8" diameter, high strength, ASTM A-325, unless otherwise noted.

No welding of any kind shall be permitted on the flanges of steel girders unless specifically called for on the plans.

(R-1) Grade 60 reinforcing steel is required for #4 bars and larger. All reinforcing steel shown and detailed within this set of drawings, whether noted with the symbol (E.C.) or not, shall be epoxy coated. The following table gives the minimum lap splice length for reinforcing bars:

Bar Size	#4	#5	#6	#7	#8	#9	#10	#11
Splice length for Class A Concrete	1'-0"	1'-3"	1'-8"	2'-3"	3'-0"	3'-10"	4'-10"	5'-11"
Splice length for Class D Concrete	1'-0"	1'-3"	1'-6"	2'-0"	2'-7"	3'-4"	4'-2"	5'-1"

All concrete chamfers shall be 3/4 inch unless otherwise noted.

Applied wind loads and earthquake loads were not considered in analyzing the structure for stability during the construction stages.

For structure number installation, see Standard S-614-12.

Steel deck forms will be required over B.N. Railroad. Steel deck forms may be used in other areas at the contractor's option, at no additional cost to the State of Colorado. No steel deck forms will be allowed on the cantilever portion of the deck.

Stations, elevations, and dimensions contained in these plans are calculated from the "as constructed plans" and recent field survey. These stations, elevations and dimensions may be adjusted to meet the exist. structure. The Contractor shall verify all dependent dimensions in the field before ordering or fabricating any material.

Abbreviations: E.F. = Each Face F.F. = Far Face E.C. = Epoxy Coated  
N.F. = Near Face B.F. = Back Face

Class I finish, followed by application of a colored acrylic coating will be required on all exposed concrete and down to 1'-0" below ground line. Requirements for coating are given in revision of section 601, Structural Concrete Coating.

**DESIGN DATA:**

Current AASHTO Specifications:

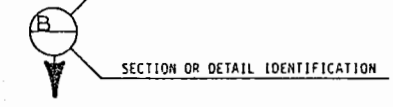
Live Load: AASHTO HS-20-44 and Interstate Alternate.  
Dead Load: Assumes 48 lbs per sq. ft. for bituminous pavement  
Design Method: Service load design.

Reinforced Concrete:  
Class A Concrete:  $f_c = 1,200$  psi  $n = 9$   
Class D Concrete:  $f_c = 1,800$  psi  $n = 8$

Reinforcing Steel: #4 bars and larger:  $f_s = 24,000$  psi

Structural Steel: AASHTO M-183 (ASTM A-36)  $f_s = 20,000$  psi.

CROSS REFERENCE DRAWING NUMBER



**SUMMARY OF QUANTITIES**

Item	Description	Unit	Structure No. F-16-EG					AS CONSTRUCTED Total
			Super-structure	Abut. 1	Pier 2	Pier 3	Abut. 4	
202	Removal Portions of Present Structure	L.S.						1
206	Structure Excavation	Cu.Yd.			600	600		1200
206	Structure Backfill (Class 1)	Cu.Yd.		151	505	505	151	1312
403	Hot Bituminous Pavement (Grade EX)(Haul & Asphalt)	Ton	88					88
③ 502	Steel Piling (HP 12x53)	L.F.		334			357	691
② 509	Structural Steel	Lb.	151,107					151,107
515	Waterproofing Membrane	Sq.Yd.	814					814
601	Concrete Class A (bridge)	Cu.Yd.		25	154	154	25	358
601	Concrete Class D (bridge)	Cu.Yd.	228					228
(R-1)								
(R-1)	602 Reinforcing Steel (Epoxy Coated)	Lb.	74,706	2165	25,000	25,000	2067	128,938
	606 Bridge Rail Type 4 (Special)	L.F.	143					143
	606 Bridge Rail Type 4	L.F.	305					305
	613 2" Electrical Conduit	L.F.	166					166
①	1/2" Expansion Material	Sq.Ft.		6			6	12
	1" Expansion Material	Sq.Ft.	213	23	7	7	23	273
	2 1/2" Expansion Material	Sq.Ft.			7	7		14

- ① Will not be paid for separately, but will be included in the work under pay item 601 Class A concrete.
- ② Includes: 2990 lbs. shear studs  
1817 lbs. A 325 splice & diaphragm connection bolts and Anchor bolts.  
6527 lbs. splice, diaphragm and bearing plates
- ③ HPS 10x57 may be used in lieu of HP 12x53 at the original bid price.

DWG. NO.	TITLE
B-1	General Information/Summary of Quantities
B-2	General Layout
B-3	Engineering Geology
B-4	Construction Layout
B-5	Footing and Pile Layout
B-6	Abutment 1 Details
B-7	Abutment 4 Details
B-8	Wingwall Details
B-9	Pier Column and Crash Wall Details
B-10	Piers 2 & 3 Details
B-11	Girder Elevation
B-12	Diaphragm Layout
B-13	Superstructure Details
B-14	Bearing Details
B-15	Bridge Rail Type 4
B-16	Bridge Deck Elevations
B-17	Bridge Deck Elevations
B-18	Bridge Deck Elevations
B-19	Bridge Deck Elevations
B-20	Roadway Approaches

BRIDGE STANDARD 0

**INDEX OF DRAWINGS**

**BRIDGE DESCRIPTION**

Bridge at Ramp F and I-25  
3 span (42'-11 5/8", 53'-8 1/2", 42'-11 5/8") multiple wide flange beam with 7 3/4" composite slab.

Over Burlington Northern Railroad  
50'-0" (min), 51'-5 5/8" (max.) curb to curb  
Skew - 16° 29' 19"

Reviewed  
J. McHenry  
2-29-86  
BRIDGE ENGINEER DATE

**DIVISION OF HIGHWAYS**

GENERAL INFORMATION  
SUMMARY OF QUANTITIES

Station 722+84.56  
Station 724+28.23

Near Denver Sec 9 T4S R68W

Designer J. Cornejo Structure F-16-EG  
Detailer J. McHenry Numbers  
Drawing Number B-1 of 20 Drawings

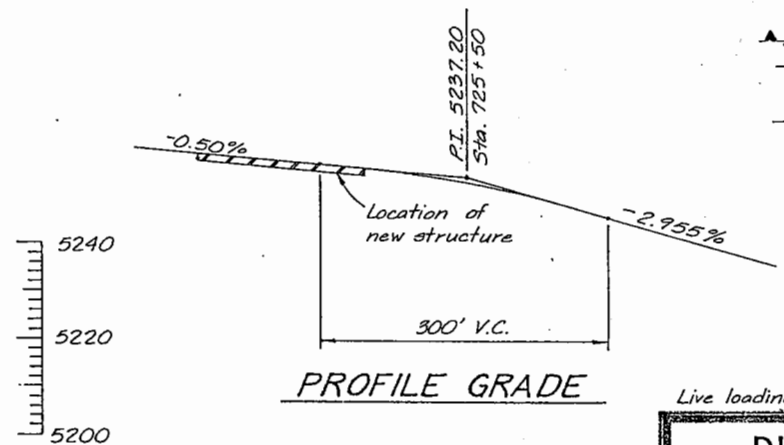
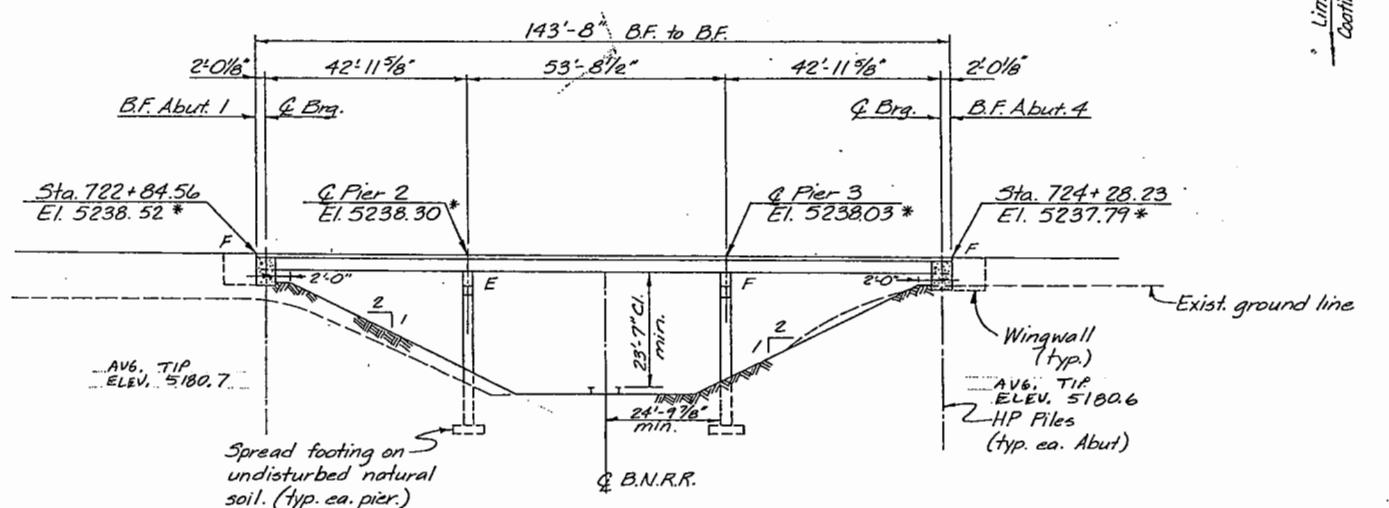
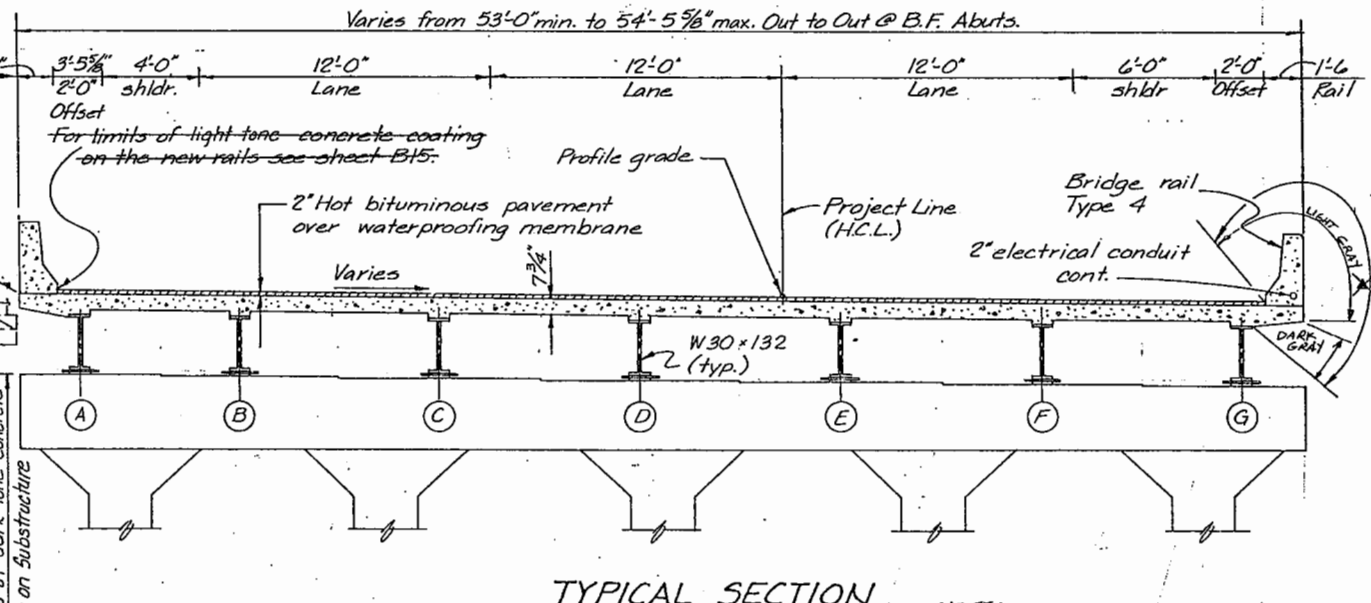
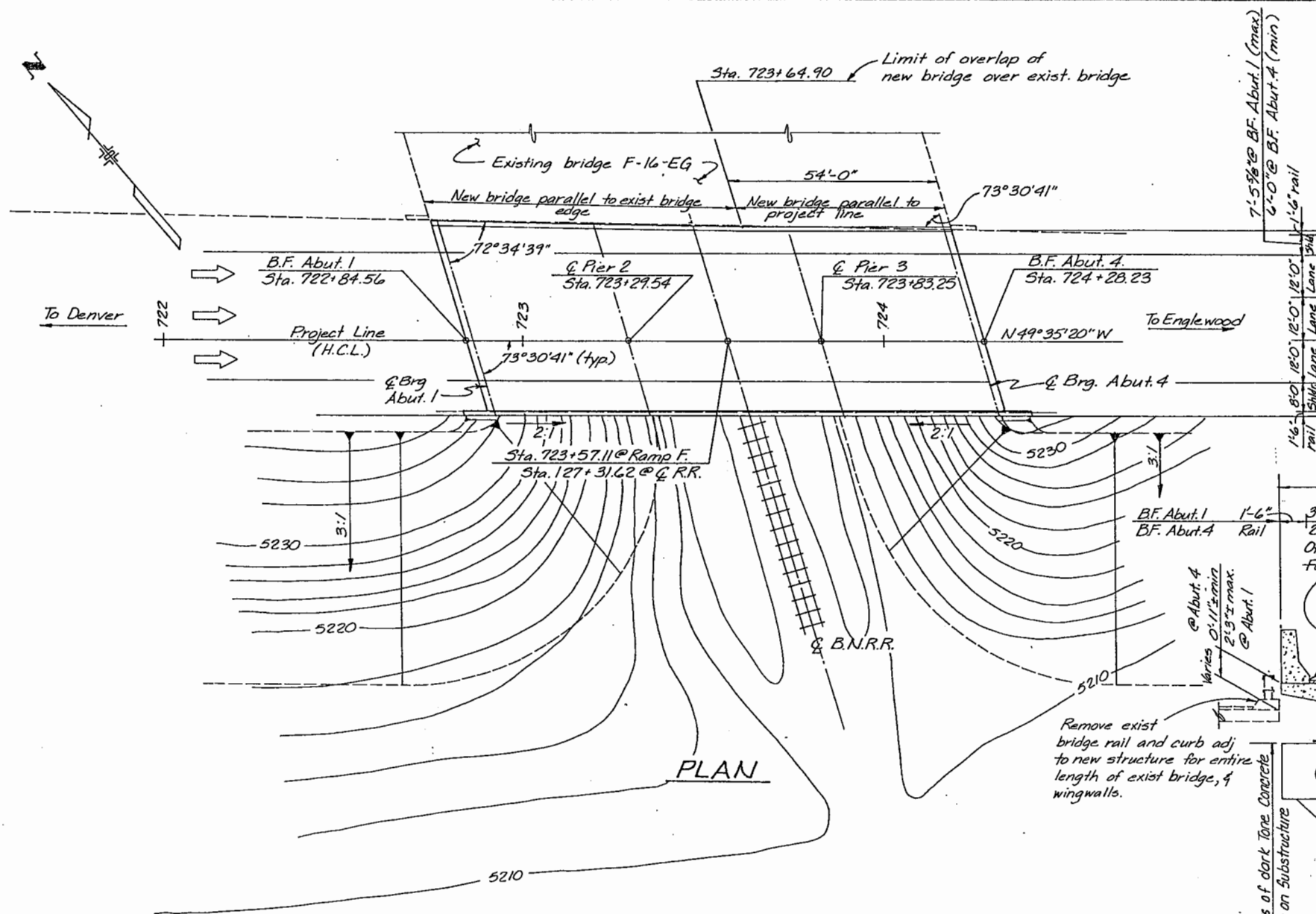
De Leuw, Cather & Company

J.F. SATO & ASSOCIATES

AS CONSTRUCTED		
NO REVISIONS	REVISED 9/30/87	VOID

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	IR25-2 (187)	143	170/177

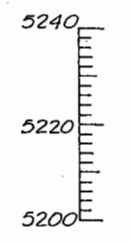
REVISIONS				



NOTE: GIRDERS ARE DARK GRAY (TYP)

▲ Limits of tight tone concrete coating on superstructure and bridge rail.

NOTE: Limits of superelevation variation.  
 @ Sta. 721+75.42 se = 0.06 1/1  
 @ Sta. 723+00.00 se = 0.02 1/1



1/ 722

1/ 723

1/ 724

1/ 725

\*Elevations are at top of finished grade.

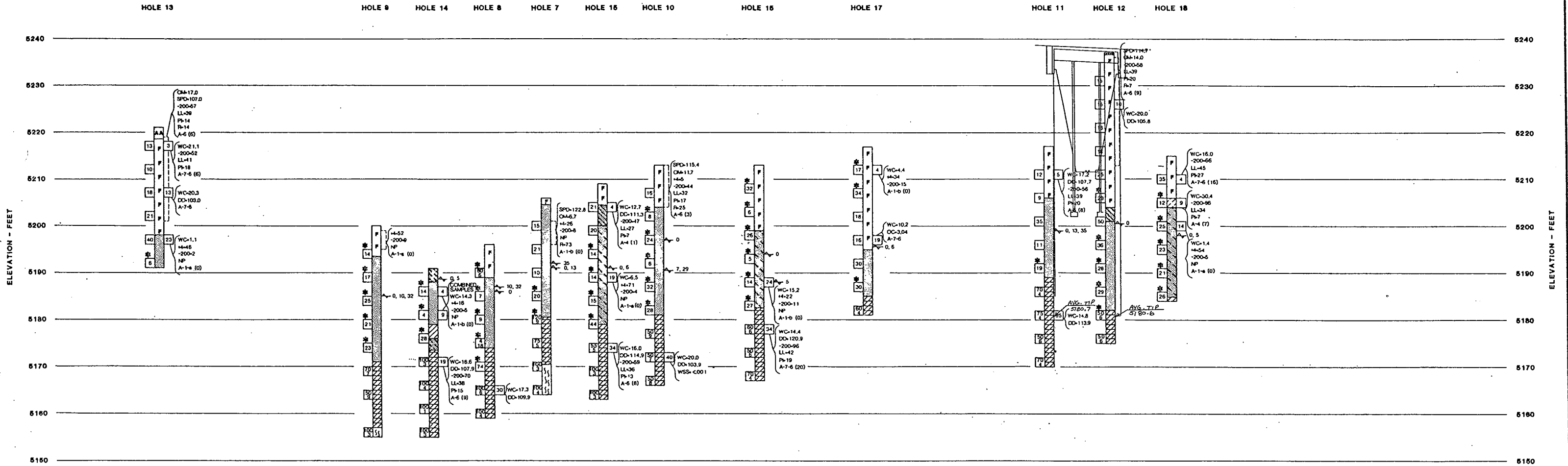
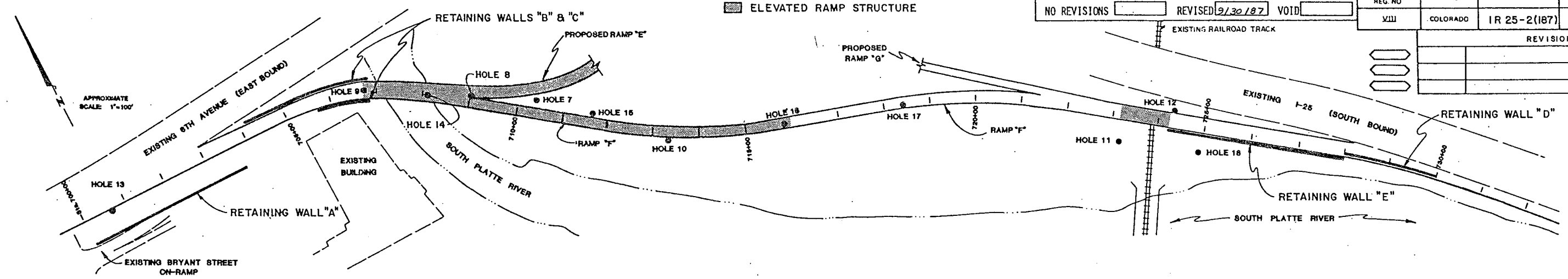
Live loading: HS-20-44 Interstate Alternate

DIVISION OF HIGHWAYS		
I-25 & 6 AVE. INTERCHANGE - RAMP 'F' OVER B.N.R.R.		
GENERAL LAYOUT		
Designer J. Cornejo	Structure Numbers	F-16-EG
Detailer J. McHenry	Numbers	
Drawing Number B-2	of	20 Drawings

AS CONSTRUCTED  
NO REVISIONS [ ] REVISED 9/30/87 VOID [ ]

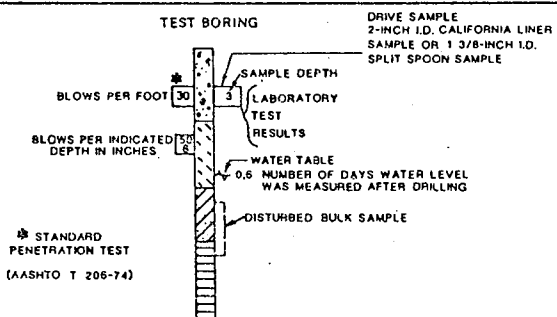
FED ROAD REG. NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	IR 25-2(187)	144	170/177

REVISIONS	



LEGEND:

- [Hatched Box] CONCRETE
- [Hatched Box] ASPHALT AND BASE COURSE
- [Hatched Box] FILL, SANDY CLAY TO CLAYEY SAND AND SILTY SAND, SCATTERED GRAVEL, UP TO 80% TRASH BY VOLUME IN HOLES 16 AND 17 CONSISTING OF CINDERS, BRICK, CONCRETE, WOOD, PAPER AND RAGS, SLIGHTLY MOIST TO MOIST, BROWN TO BLACK.
- [Hatched Box] CLAY (CL), SANDY, VERY STIFF, VERY MOIST TO WET, GRAY TO BROWN.
- [Hatched Box] SILT (ML), SLIGHTLY SANDY TO SANDY, STIFF, MOIST TO VERY MOIST, BROWN.
- [Hatched Box] SAND (SC), FINE TO COARSE GRAINED, CLAYEY TO VERY CLAYEY, DENSE, SLIGHTLY MOIST TO MOIST, BROWN.
- [Hatched Box] SAND (SM), FINE TO COARSE GRAINED, SILTY, SCATTERED GRAVEL, MEDIUM DENSE, WET, BROWN.
- [Hatched Box] SAND (SP-SM), FINE TO COARSE GRAINED, GRAVELLY, LOOSE TO DENSE, MOIST TO WET, BROWN.
- [Hatched Box] SAND (SP), FINE TO COARSE GRAINED, GRAVELLY, CLEAN TO SLIGHTLY SILTY, LOOSE TO DENSE, MOIST TO WET, BROWN.
- [Hatched Box] CLAYSTONE BEDROCK, SANDY TO VERY SANDY, MEDIUM HARD TO VERY HARD, SLIGHTLY MOIST TO VERY MOIST, BROWN TO GRAY-BLUE, BLOCKY, OCCASIONAL SANDSTONE LENSES.
- [Hatched Box] SANDSTONE BEDROCK, FINE TO MEDIUM GRAINED, VERY HARD, SLIGHTLY MOIST, BLUE, MODERATELY CEMENTED.



LABORATORY TEST RESULTS:

WC-WATER CONTENT (%)  
 DD-DRY DENSITY (pcf)  
 +4-PERCENTAGE RETAINED ON #4 SIEVE  
 -200-PERCENTAGE PASSING NO. 200 SIEVE  
 LL-LIQUID LIMIT (%)  
 PI-PLASTICITY INDEX (%)  
 NP-NON-PLASTIC  
 OC-ORGANIC CONTENT (%)  
 SPD-MAXIMUM STANDARD PROCTOR DENSITY (pcf)  
 OM-OPTIMUM MOISTURE CONTENT (%)  
 R-HYVEM STABILOMETER RESISTANCE VALUE  
 A-1-b (0)-AASHTO CLASSIFICATION AND GROUP INDEX.

LOCATION OF EXPLORATORY BORING

EXPLORATORY HOLE	DATE OF DRILLING
7	3-8-85
8	3-11-85
9	3-11-85
10	3-14-85
11	3-8-85
12	3-14-85
13	7-18-85
14	7-19-85
15	7-18-85
16	7-18-85
17	7-18-85
18	7-19-85

**DIVISION OF HIGHWAYS**

**ENGINEERING GEOLOGY**

CHEN & ASSOCIATES, INC.

PROJECT NO. 1 501 84

Geologist  
 Drawn by A.S.  
 Checked by G.T.J.

PLATE I  
 Date AUG. 1985

STRUCTURE NO. F-16-EG  
 DWG. NO. B-3 OF 20

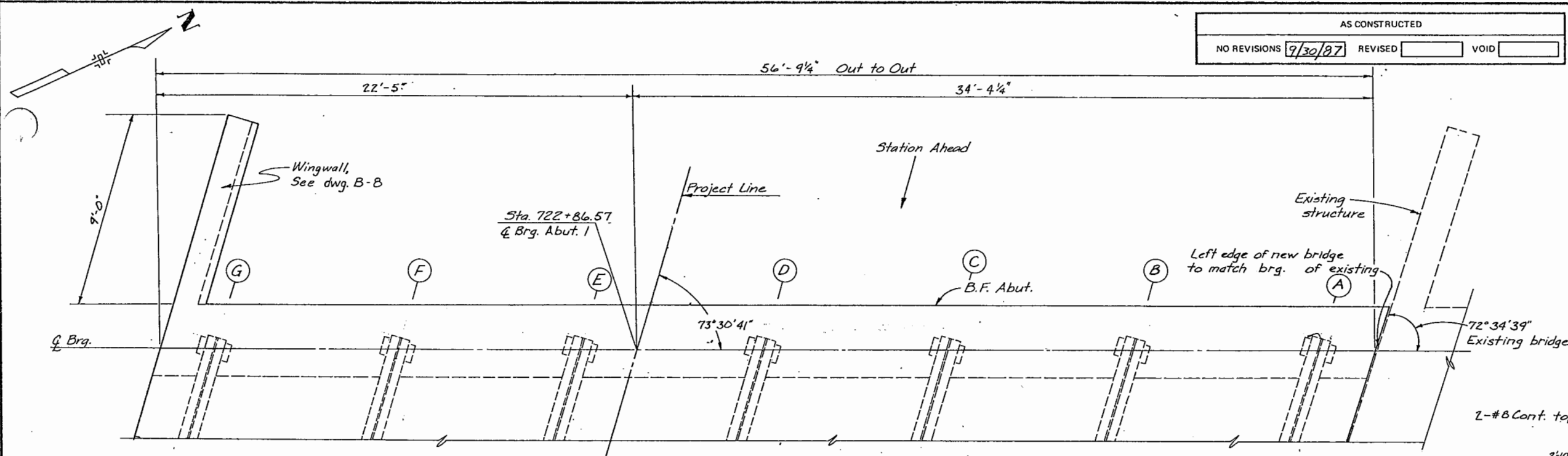




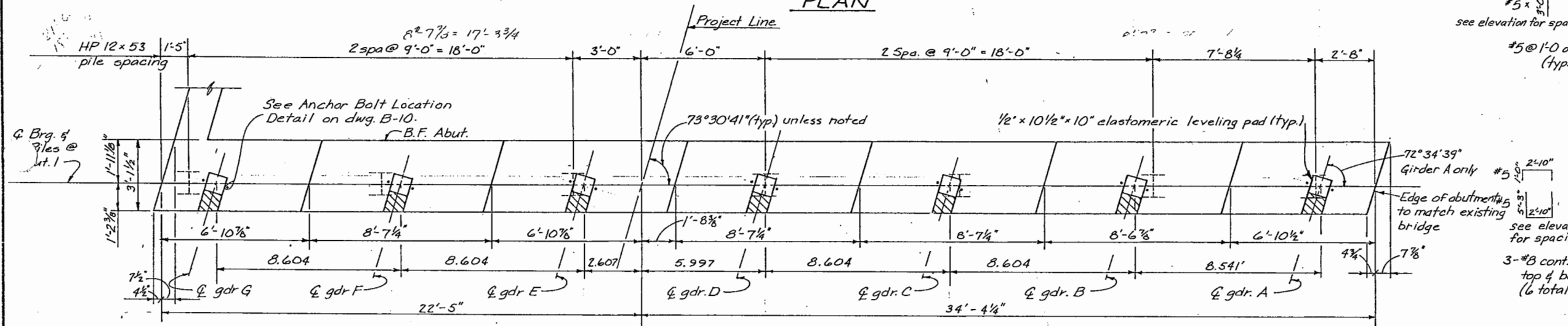
AS CONSTRUCTED		
NO REVISIONS	9/30/97	REVISED
		VOID

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	IR25-2(187)	147	F78/177

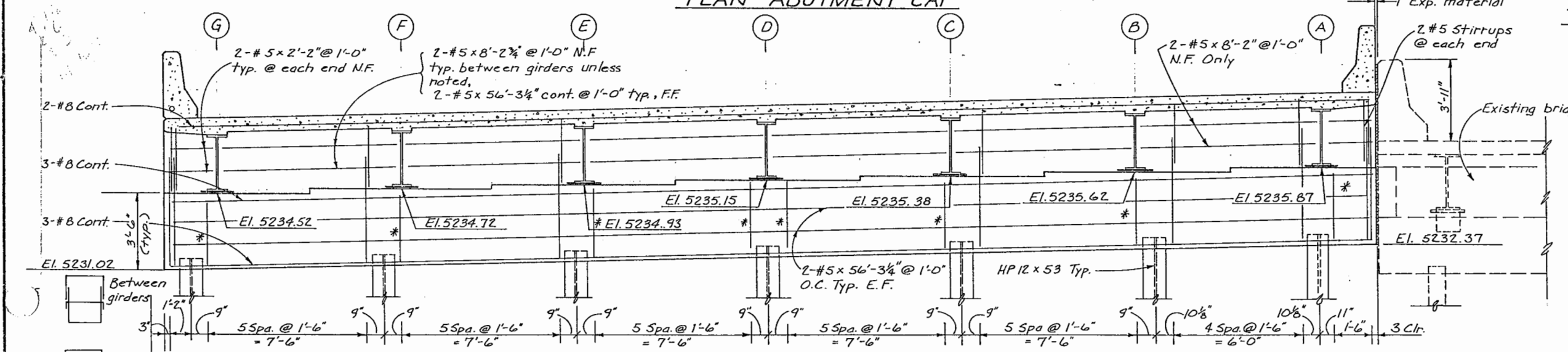
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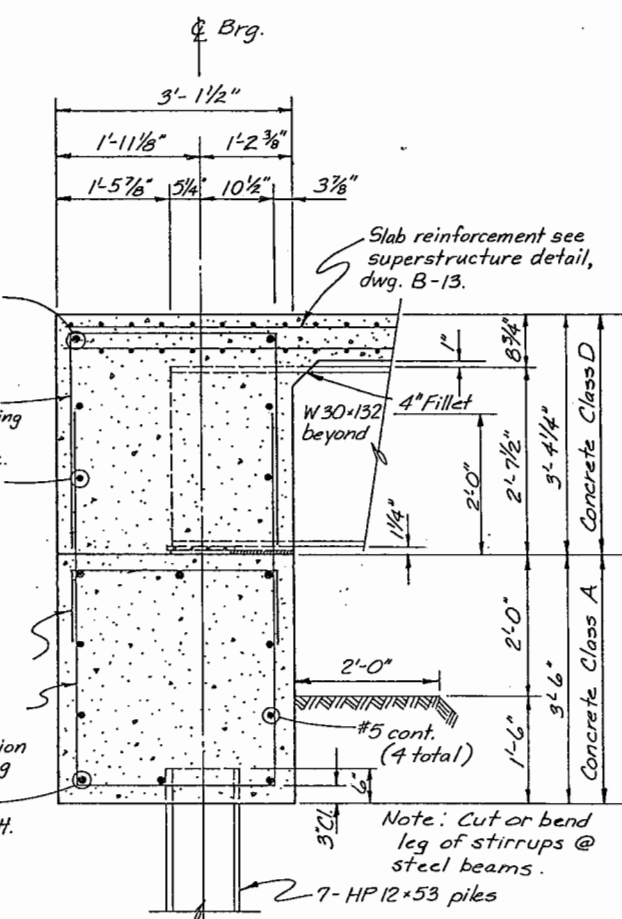
PLAN



PLAN - ABUTMENT CAP



ELEVATION



TYPICAL SECTION BETWEEN GIRDERS

NOTE:  
1. Abutment diaphragms concrete shall be poured monolithically with slab concrete.

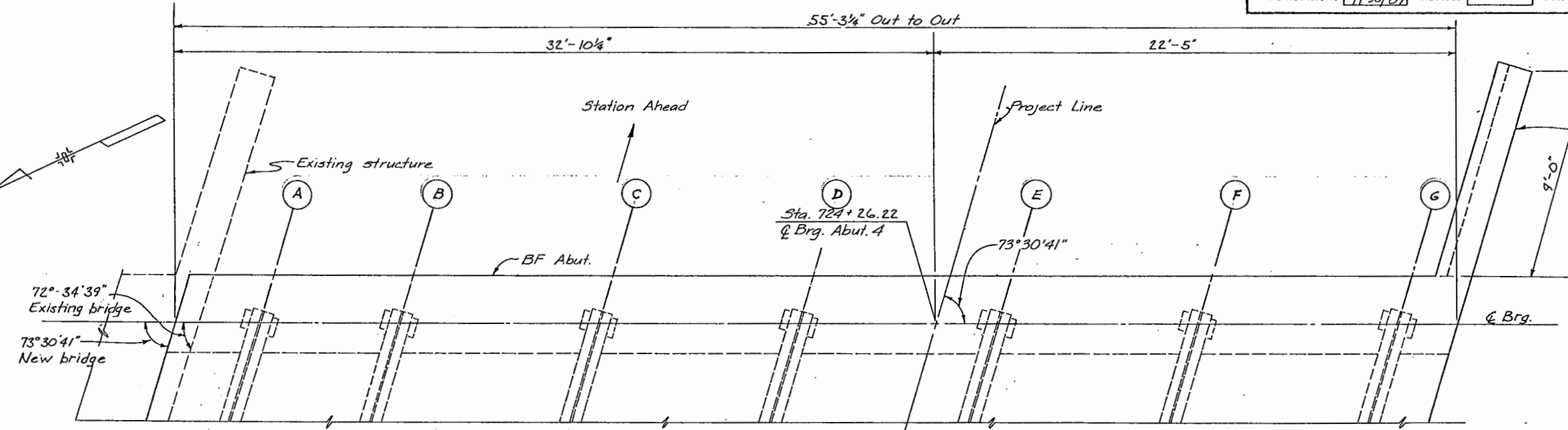
<b>DIVISION OF HIGHWAYS</b>	
I-25 & 6 AVE. INTERCHANGE-RAMP F OVER BNRR	
<b>ABUTMENT I DETAILS</b>	
Designer <b>J. Cornejo</b>	Structure Numbers <b>F-16-EG</b>
Detailer <b>J. McHenry</b>	of <b>20</b> Drawings
Drawing Number <b>B-6</b>	

# 5

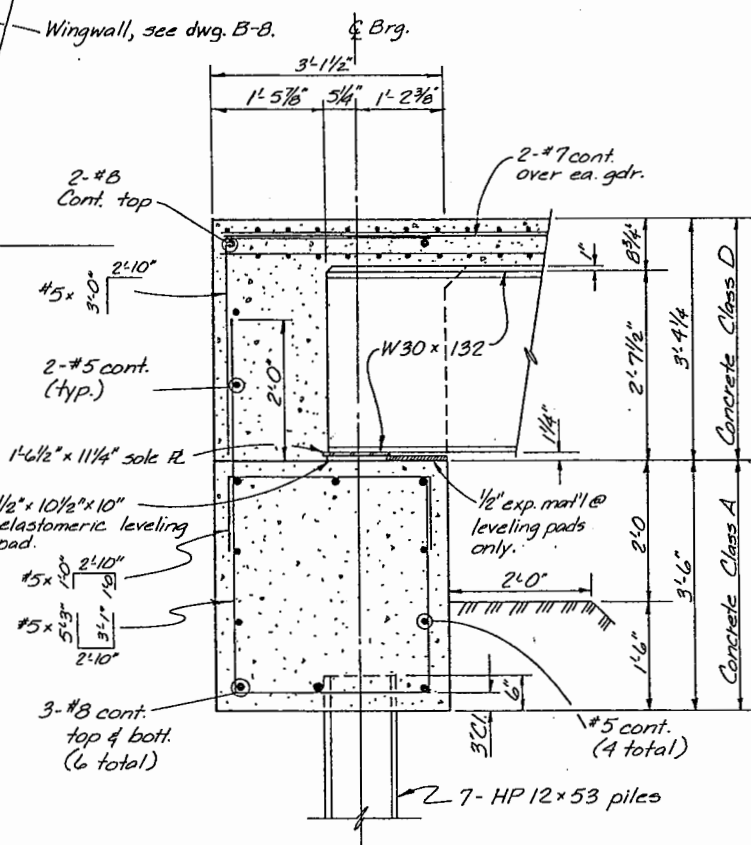
AS CONSTRUCTED		
NO REVISIONS	9/30/87	REVISED
		VOID

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VIII	COLORADO	IR25-2(187)	148	170/77

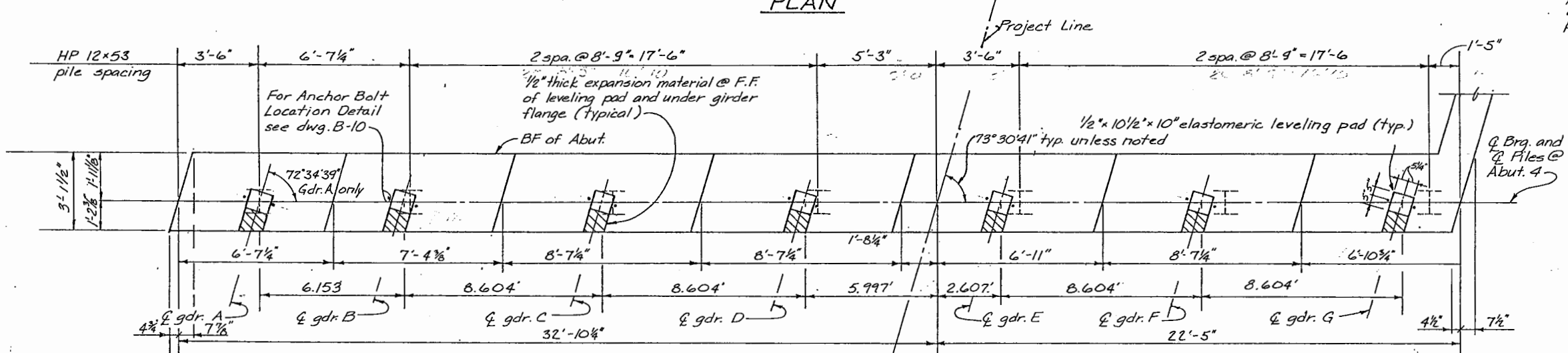
REVISIONS	



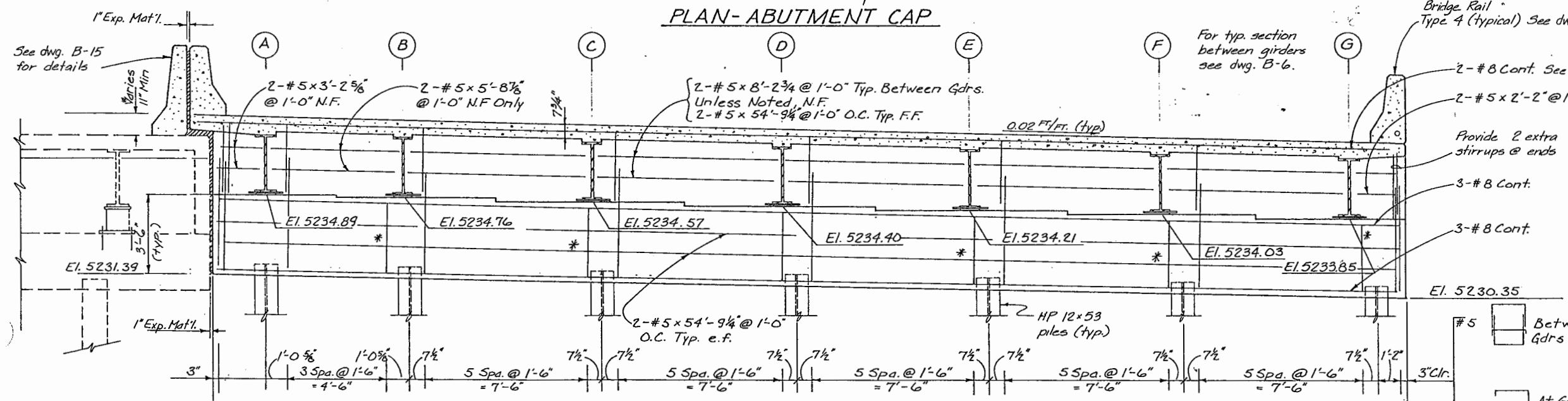
PLAN



TYPICAL SECTION AT GIRDER



PLAN-ABUTMENT CAP



ELEVATION

**DIVISION OF HIGHWAYS**

I-25 & 6 AVE INTERCHANGE - RAMP F  
OVER BNRR

**ABUTMENT 4 DETAILS**

Designer	J. Cornejo	Structure Numbers	F-16-EG
Detailer	J. McHenry		
Drawing Number	B - 7	of	20 Drawings

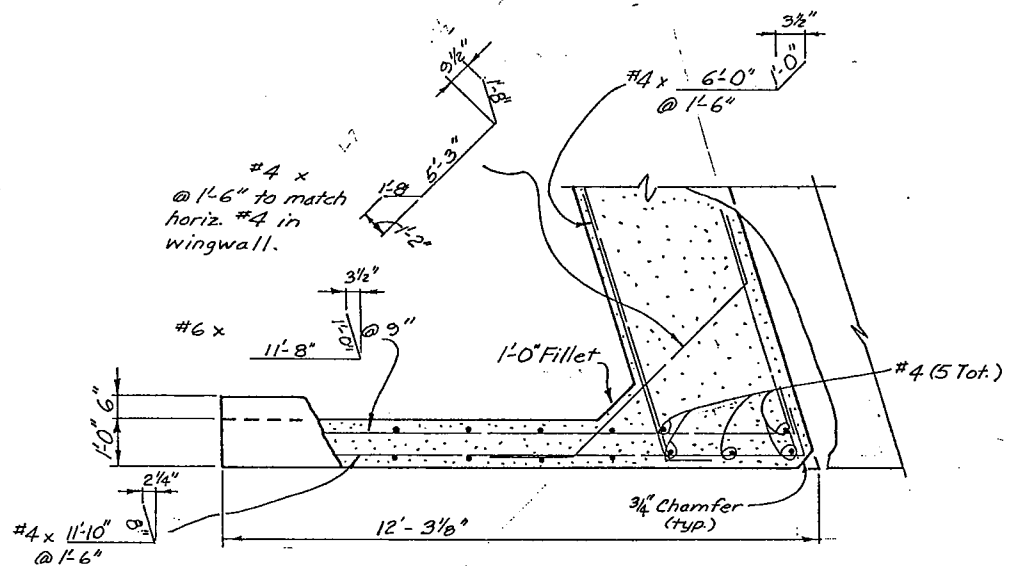
Revision Dates: (Preliminary Stage Only)

- #5  Between Gdrs
- #5  At Gdrs. As Shown \*

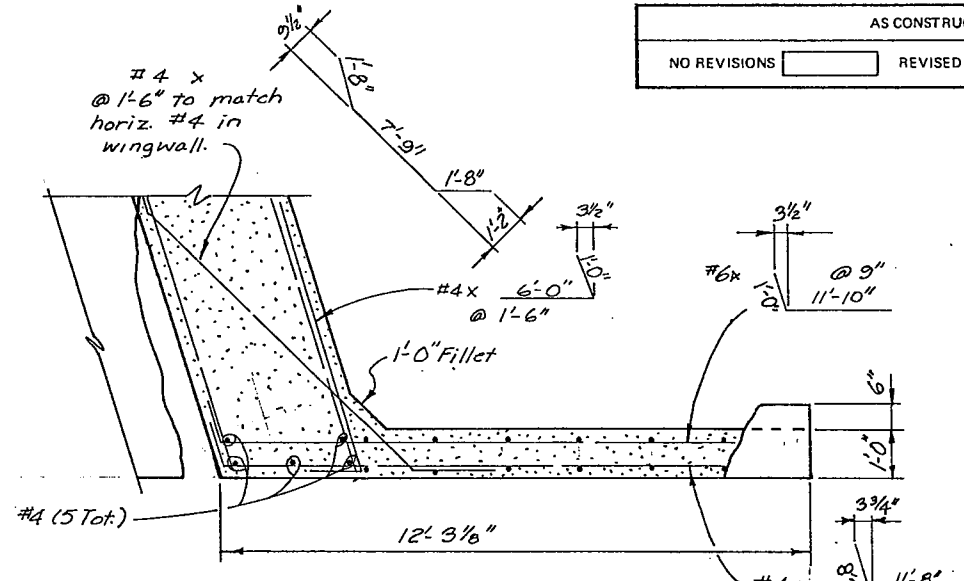
AS CONSTRUCTED  
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VIII	COLORADO	IR25-2(187)	149	170/177

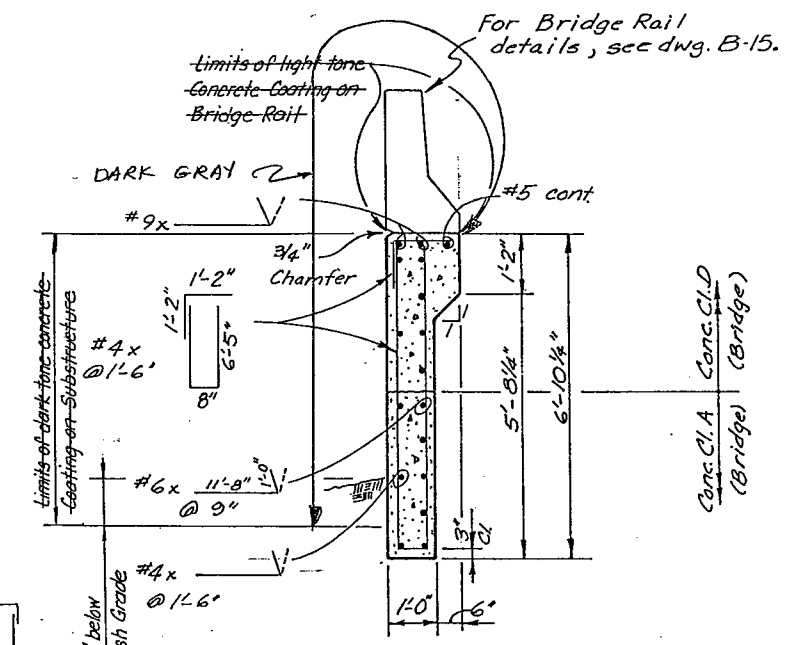
REVISIONS	



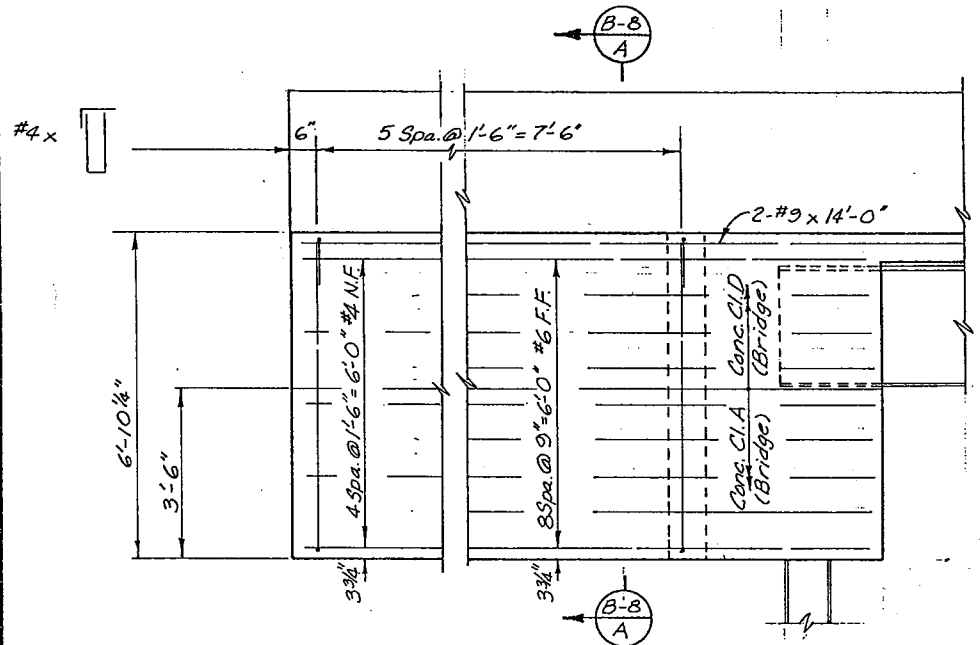
PLAN-ABUT. 1  
(Right Wingwall)



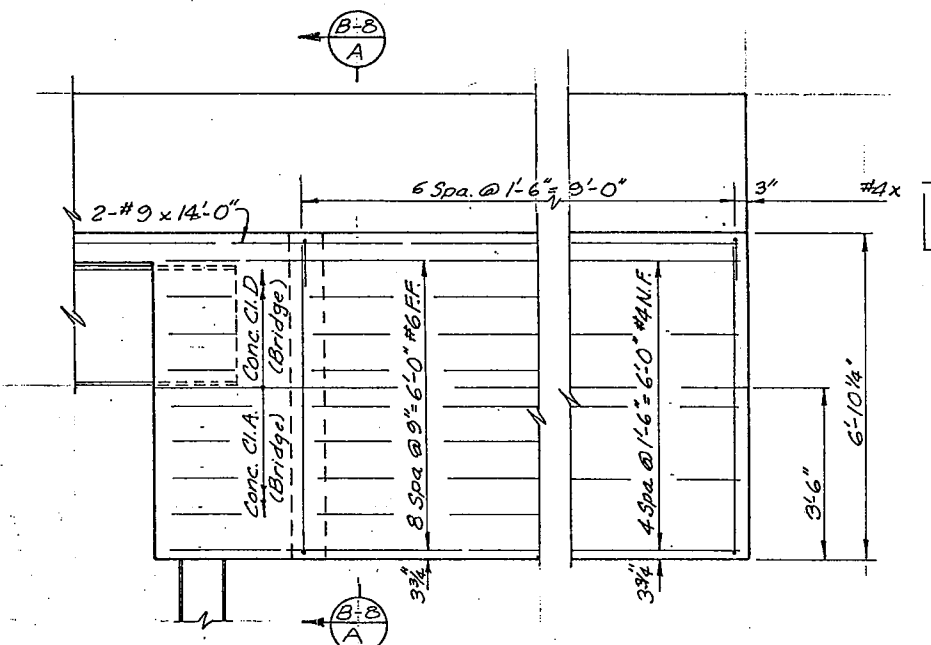
PLAN-ABUT. 4  
(Right Wingwall)



SECTION B-B



ELEVATION-ABUT. 1  
(Right Wingwall)



ELEVATION-ABUT. 4  
(Right Wingwall)

**DIVISION OF HIGHWAYS**  
 I-25 & 6 AVE. INTERCHANGE - RAMP F OVER B.N.R.R.

**WINGWALL DETAILS**

Designer	J. Cornejo	Structure	F-16-EG
Detailer	S. Kobayashi	Numbers	
Drawing Number B-8		of 20 Drawings	

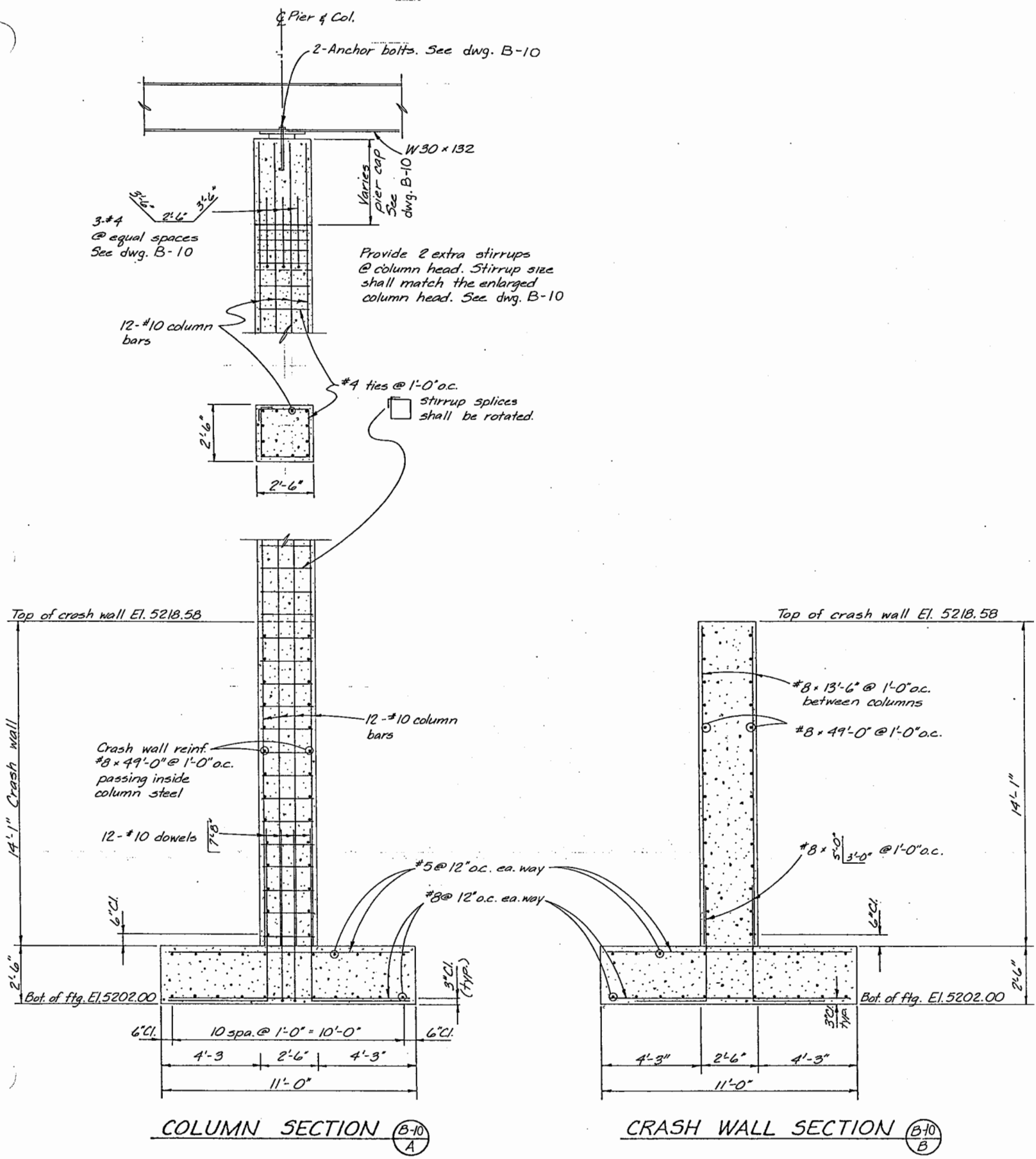
Revision Dates (Preliminary Stage Only)



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FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	IR25-2(187)	150	170/177

REVISIONS	

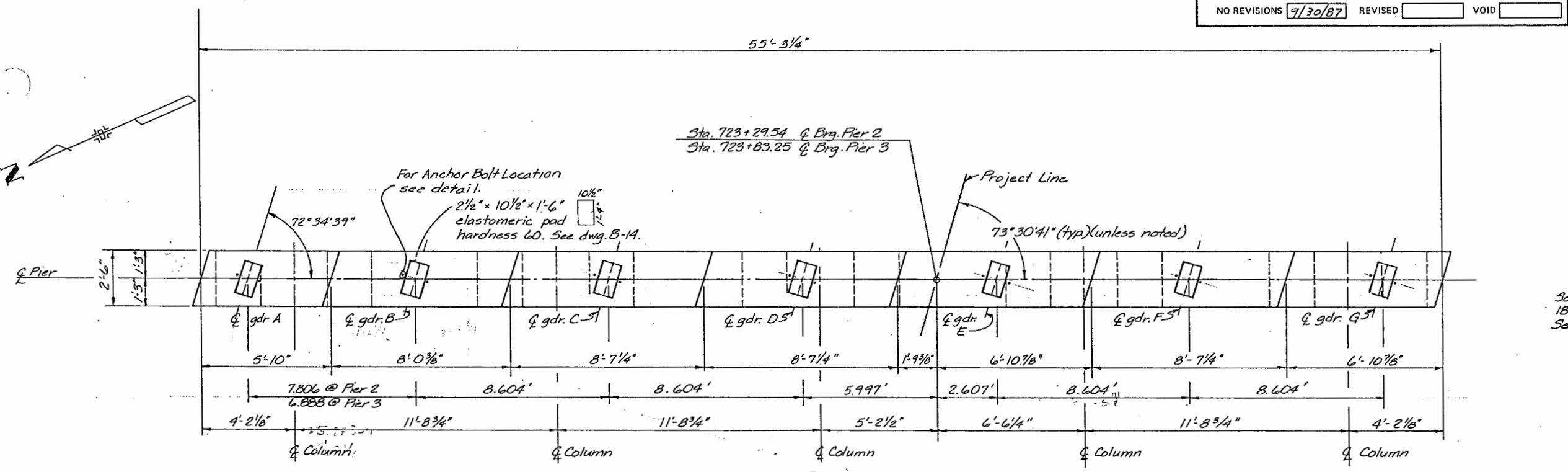


<b>DIVISION OF HIGHWAYS</b>	
I-25 & 6 AVE. INTERCHANGE - RAMP F OVER BNRR.	
<b>PIER COLUMN AND CRASH WALL DETAILS</b>	
Designer <i>J. Cornejo</i>	Structure Numbers <i>F-16-EG</i>
Detailer <i>J. McHenry</i>	of <i>20</i> Drawings
Drawing Number <i>B-9</i>	
Revision Dates	(Preliminary Stage Only)

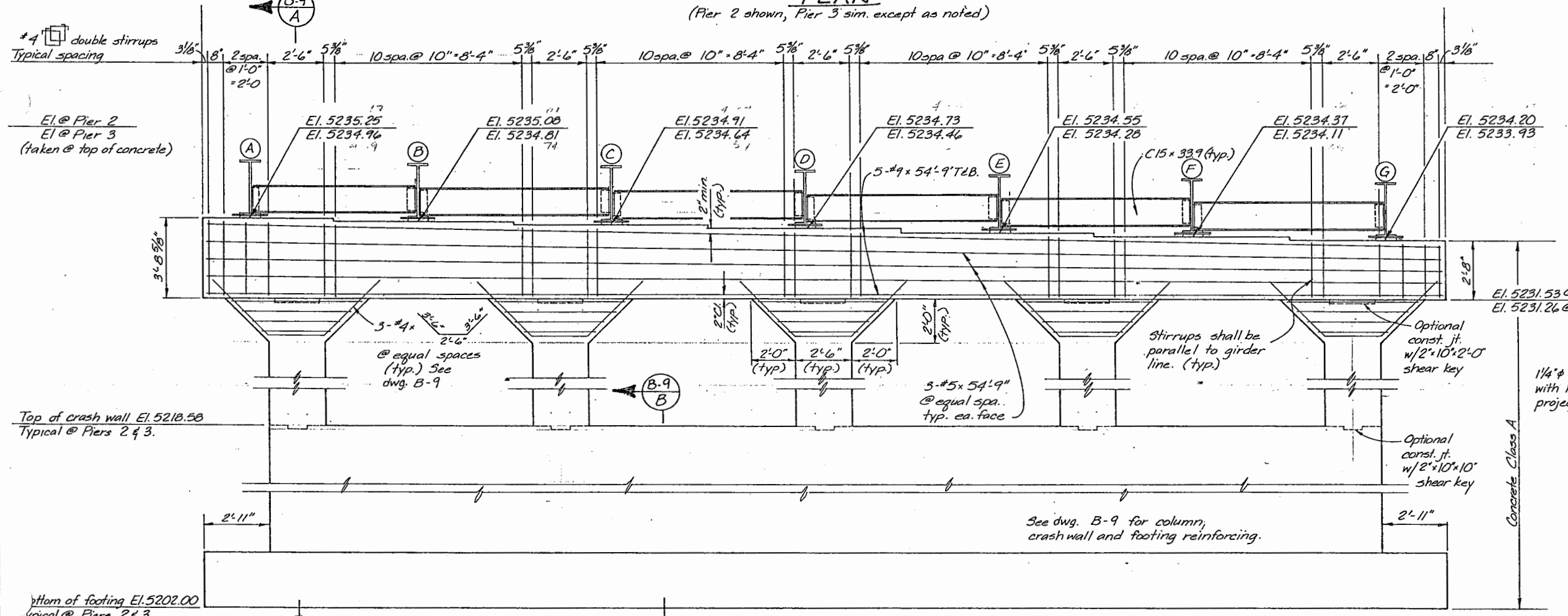
AS CONSTRUCTED		
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		VOID

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	1R25-2(187)	151	170/177

REVISIONS	

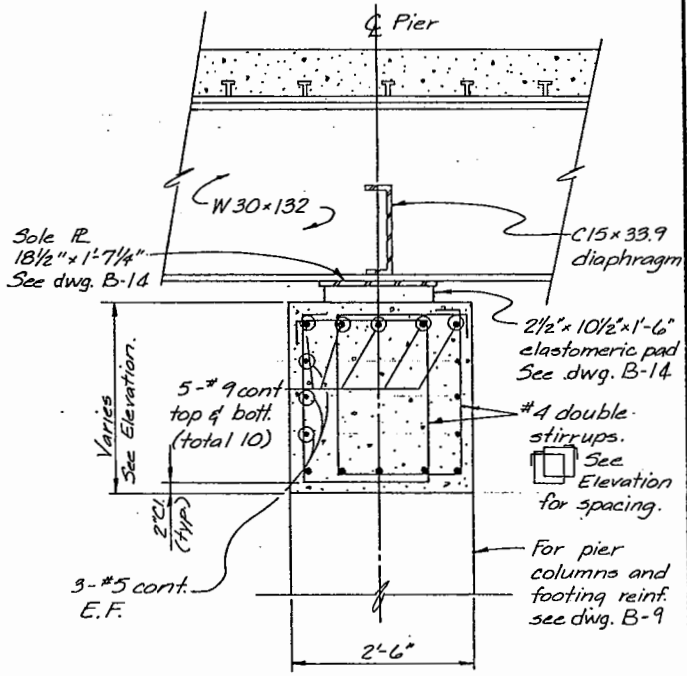


**PLAN**  
(Pier 2 shown, Pier 3 sim. except as noted)

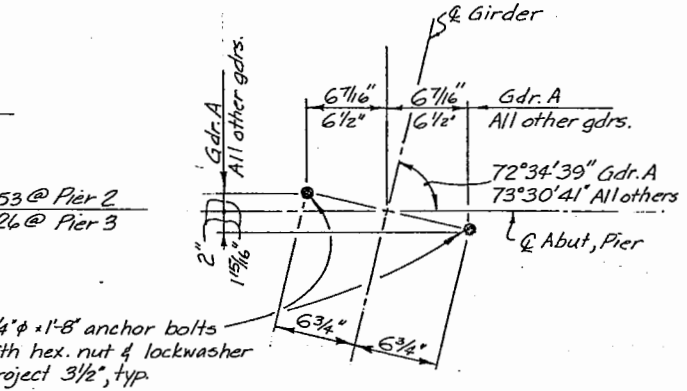


**ELEVATION**

(Pier 2 shown, pier 3 sim. except as noted)



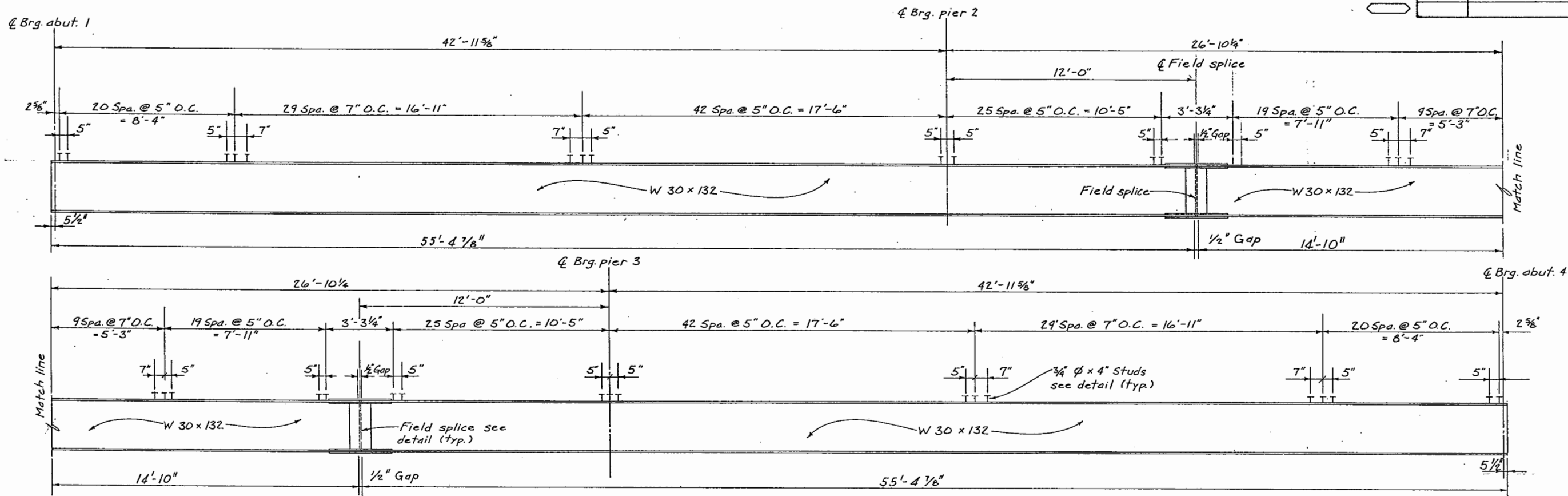
**TYPICAL SECTION**



**ANCHOR BOLT LOCATION DETAIL**

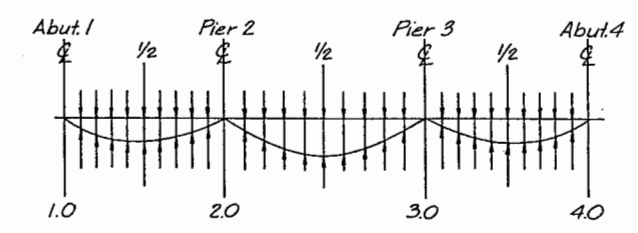
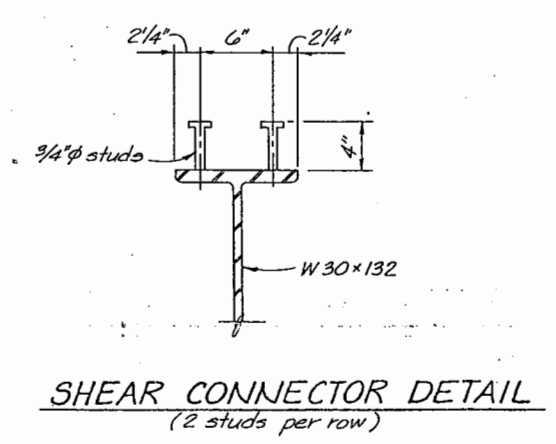
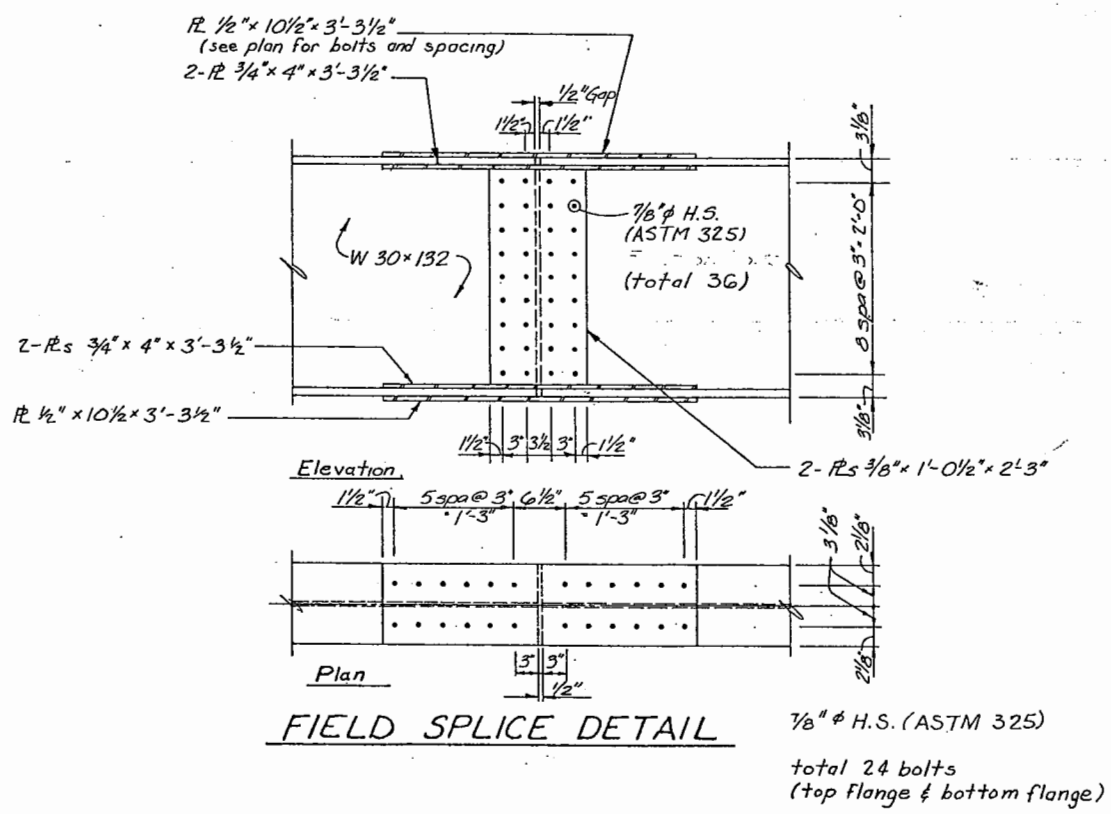
<b>DIVISION OF HIGHWAYS</b>			
I-25 & G AVE. INTERCHANGE - RAMP F OVER BNRR.			
<b>PIERS 2 &amp; 3 DETAILS</b>			
Designer	J. Cornejo	Structure	F-16-EG
Detailer	J. McHenry	Numbers	
Drawing Number	B-10	of	20 Drawings
Revision Dates		(Preliminary Stage Only)	

REVISIONS	



**GIRDER ELEVATION**

S. PT	BEAM	PN	MN	MPN	TOT. NC	TOT. C	TOT. DL	S. PT	BEAM	PN	MN	MPN	TOT. NC	TOT. C	TOT. DL
1.05	.005	0.000	.030	0.000	.035	.008	.043	3.05	.000	0.000	.003	0.000	.003	.001	.004
1.10	.009	0.000	.058	0.000	.068	.016	.084	3.10	.002	0.000	.013	0.000	.015	.004	.018
1.15	.014	0.000	.085	0.000	.098	.024	.122	3.15	.004	0.000	.028	0.000	.032	.008	.040
1.20	.017	0.000	.107	0.000	.125	.030	.155	3.20	.007	0.000	.047	0.000	.054	.013	.067
1.25	.020	0.000	.126	0.000	.147	.036	.182	3.25	.011	0.000	.067	0.000	.078	.019	.096
1.30	.023	0.000	.141	0.000	.163	.040	.203	3.30	.014	0.000	.087	0.000	.101	.025	.126
1.35	.024	0.000	.150	0.000	.174	.042	.217	3.35	.017	0.000	.107	0.000	.124	.030	.154
1.40	.025	0.000	.154	0.000	.179	.044	.223	3.40	.020	0.000	.124	0.000	.144	.035	.179
1.45	.025	0.000	.154	0.000	.178	.043	.222	3.45	.022	0.000	.138	0.000	.160	.039	.199
1.50	.024	0.000	.148	0.000	.172	.042	.214	3.50	.024	0.000	.148	0.000	.172	.042	.214
1.55	.022	0.000	.138	0.000	.160	.039	.199	3.55	.025	0.000	.154	0.000	.178	.043	.222
1.60	.020	0.000	.124	0.000	.144	.035	.179	3.60	.025	0.000	.154	0.000	.179	.044	.223
1.65	.017	0.000	.107	0.000	.124	.030	.154	3.65	.024	0.000	.150	0.000	.174	.042	.217
1.70	.014	0.000	.087	0.000	.101	.025	.126	3.70	.023	0.000	.141	0.000	.163	.040	.203
1.75	.011	0.000	.067	0.000	.078	.019	.096	3.75	.020	0.000	.126	0.000	.147	.036	.182
1.80	.007	0.000	.047	0.000	.054	.013	.067	3.80	.017	0.000	.107	0.000	.125	.030	.155
1.85	.004	0.000	.028	0.000	.032	.008	.040	3.85	.014	0.000	.085	0.000	.098	.024	.122
1.90	.002	0.000	.013	0.000	.015	.004	.018	3.90	.009	0.000	.058	0.000	.068	.016	.084
1.95	.000	0.000	.003	0.000	.003	.001	.004	3.95	.005	0.000	.030	0.000	.035	.008	.043
2.05	.001	0.000	.009	0.000	.010	.002	.013								
2.10	.005	0.000	.028	0.000	.033	.008	.041								
2.15	.009	0.000	.054	0.000	.063	.015	.078								
2.20	.013	0.000	.084	0.000	.097	.024	.121								
2.25	.018	0.000	.114	0.000	.132	.032	.164								
2.30	.023	0.000	.142	0.000	.165	.040	.205								
2.35	.027	0.000	.166	0.000	.192	.047	.239								
2.40	.029	0.000	.184	0.000	.213	.052	.265								
2.45	.031	0.000	.195	0.000	.227	.055	.282								
2.50	.032	0.000	.199	0.000	.231	.056	.287								
2.55	.031	0.000	.195	0.000	.227	.055	.282								
2.60	.029	0.000	.184	0.000	.213	.052	.265								
2.65	.027	0.000	.166	0.000	.192	.047	.239								
2.70	.023	0.000	.142	0.000	.165	.040	.205								
2.75	.018	0.000	.114	0.000	.132	.032	.164								
2.80	.013	0.000	.084	0.000	.097	.024	.121								
2.85	.009	0.000	.054	0.000	.063	.015	.078								
2.90	.005	0.000	.028	0.000	.033	.008	.041								
2.95	.001	0.000	.009	0.000	.010	.002	.013								



**DIVISION OF HIGHWAYS**  
 I25 & 6 AVE. INTERCHANGE - RAMP 'F'  
 OVER BNRR

**GIRDER ELEVATION**

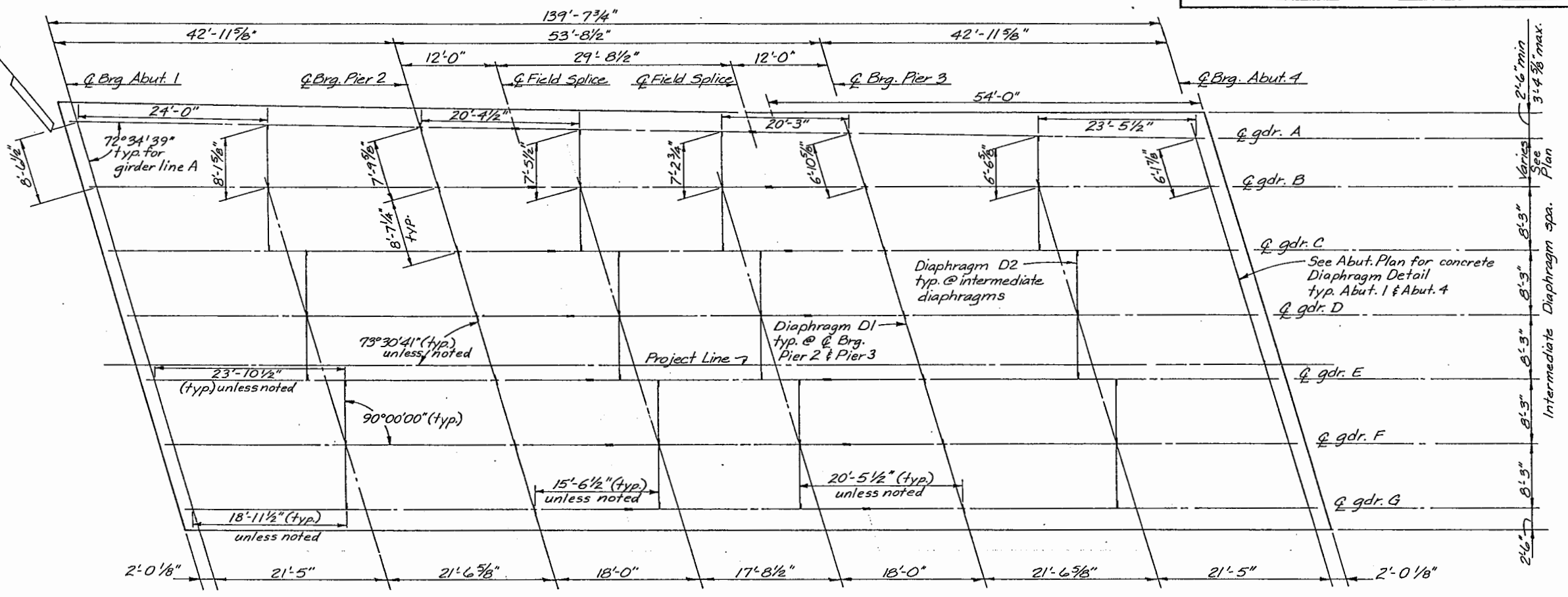
Designer <i>J. Cornejo</i>	Structure Numbers	F-16-EG
Detailer <i>J. McHenry</i>	of	20 Drawings

Revision Dates (Preliminary Stage Only)

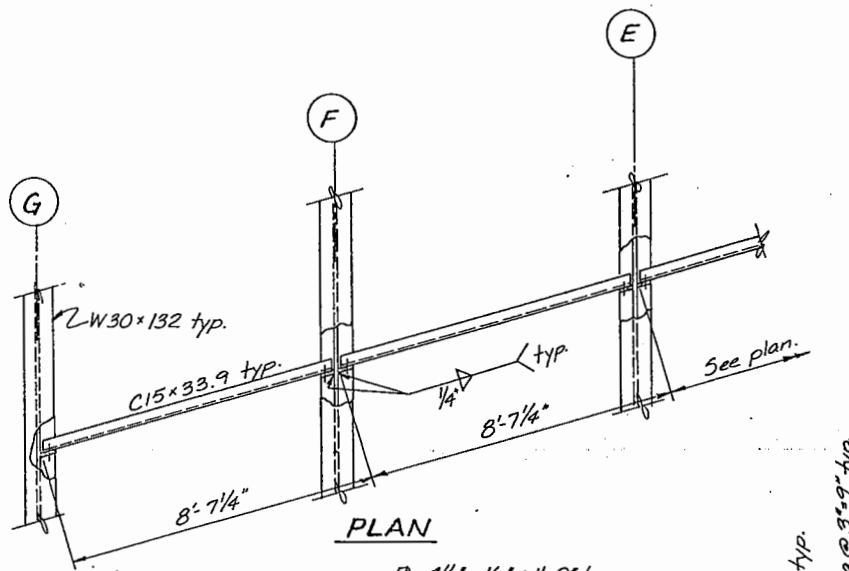
AS CONSTRUCTED  
 NO REVISIONS 7/30/87 REVISED  VOID

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	IR25-2(187)	153	#2077

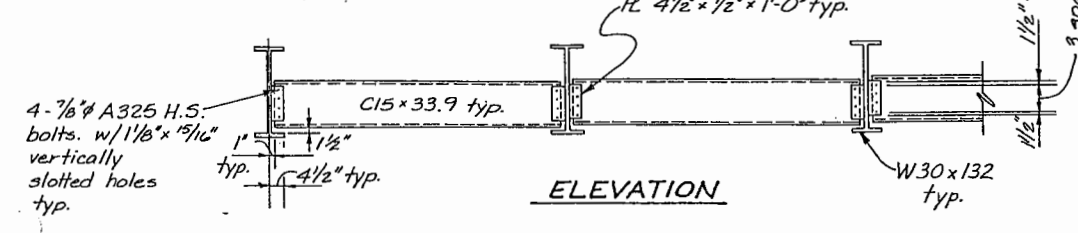
REVISIONS	



DIAPHRAGM AND SPLICE PLAN

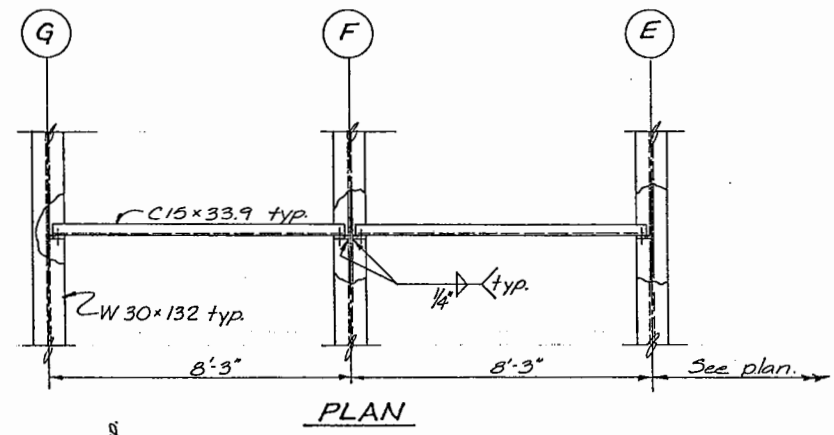


PLAN

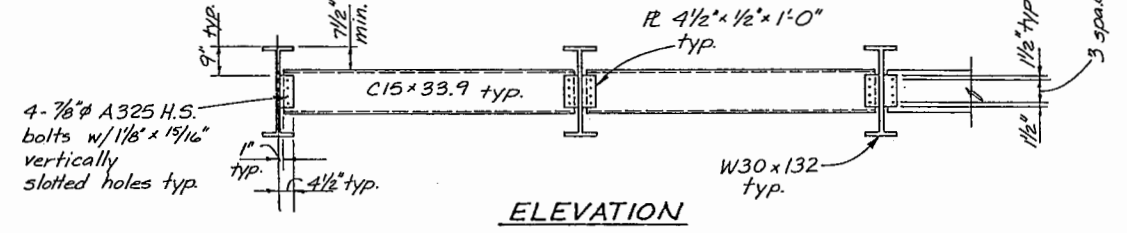


ELEVATION

DIAPHRAGM D1  
(@ Brg. Piers)



PLAN



ELEVATION

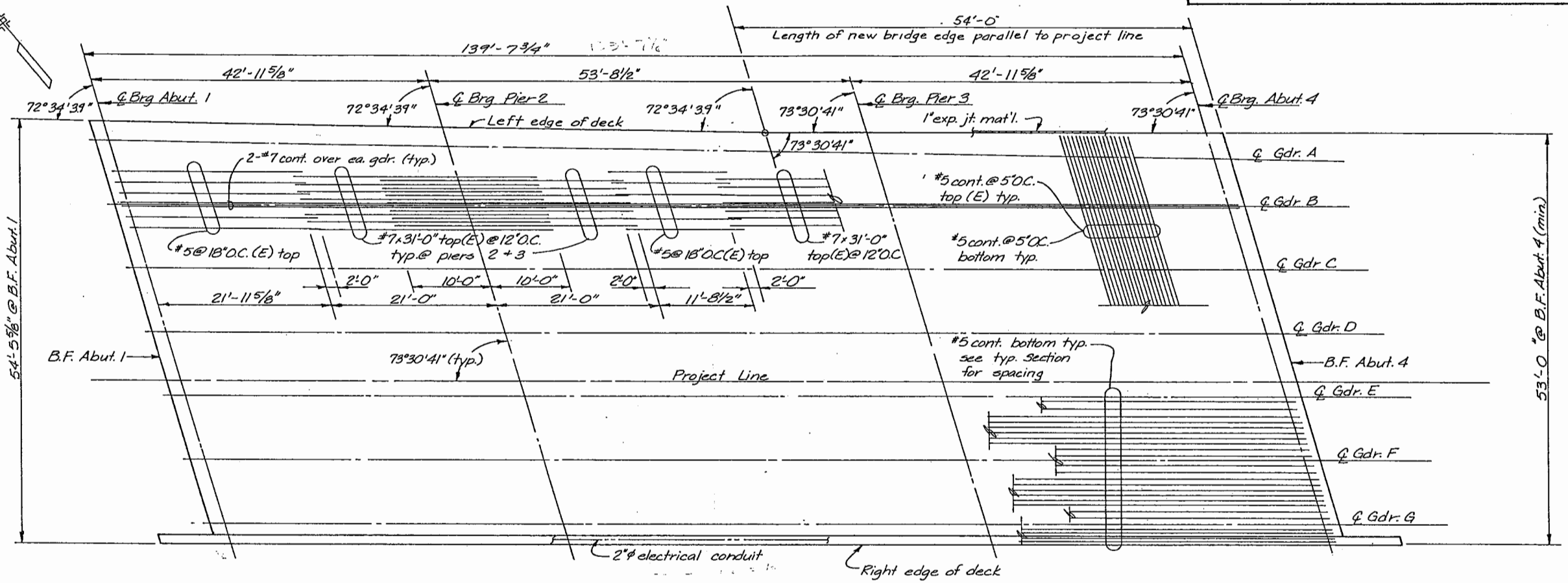
INTERMEDIATE DIAPHRAGM D2

<b>DIVISION OF HIGHWAYS</b>	
1-25 & 6 AVE. INTERCHANGE - RAMP 'F' OVER B.M.R.R.	
<b>DIAPHRAGM LAYOUT</b>	
Designer <u>J. Cornejo</u>	Structure Numbers <u>F-16-EG</u>
Detailer <u>J. McHenry</u>	of <u>20</u> Drawings
Drawing Number <u>B-12</u>	
Revision Dates	(Preliminary Stage Only)

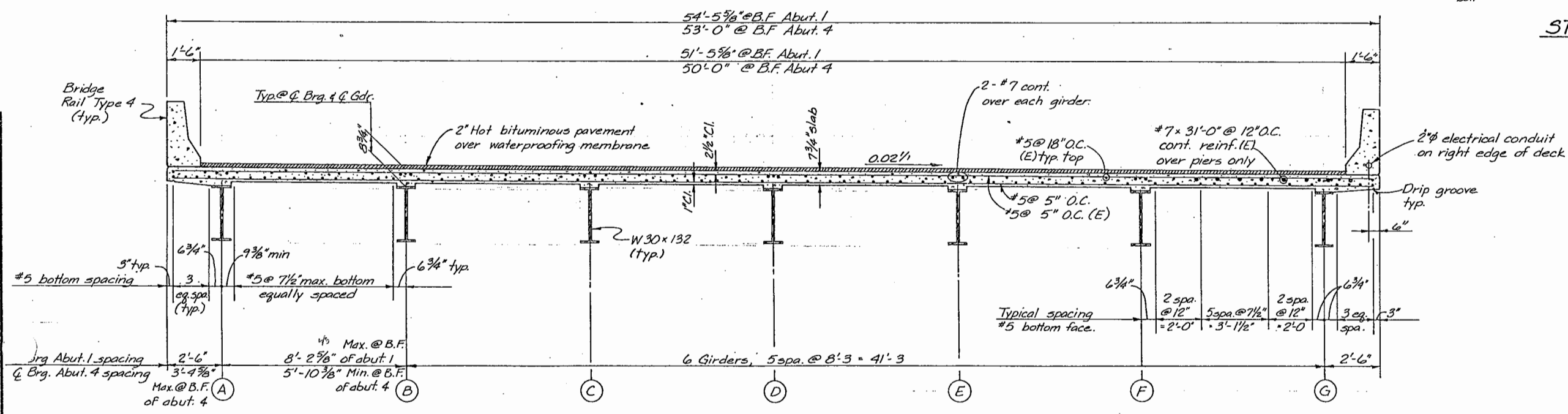
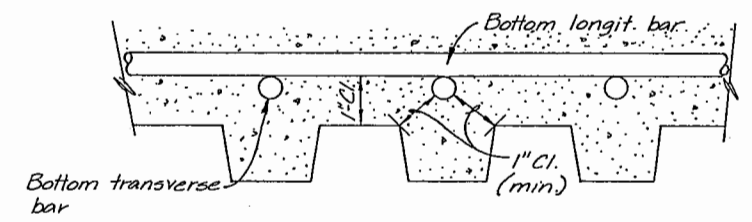
AS CONSTRUCTED		
NO REVISIONS	9/30/87	REVISED
		VOID

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	IR25-2(187)	154	F7077

REVISIONS	



Notes:  
 1. (E) indicates epoxy coated reinf. bars; included in bid item 602, Reinforcing Steel (Epoxy Coated).



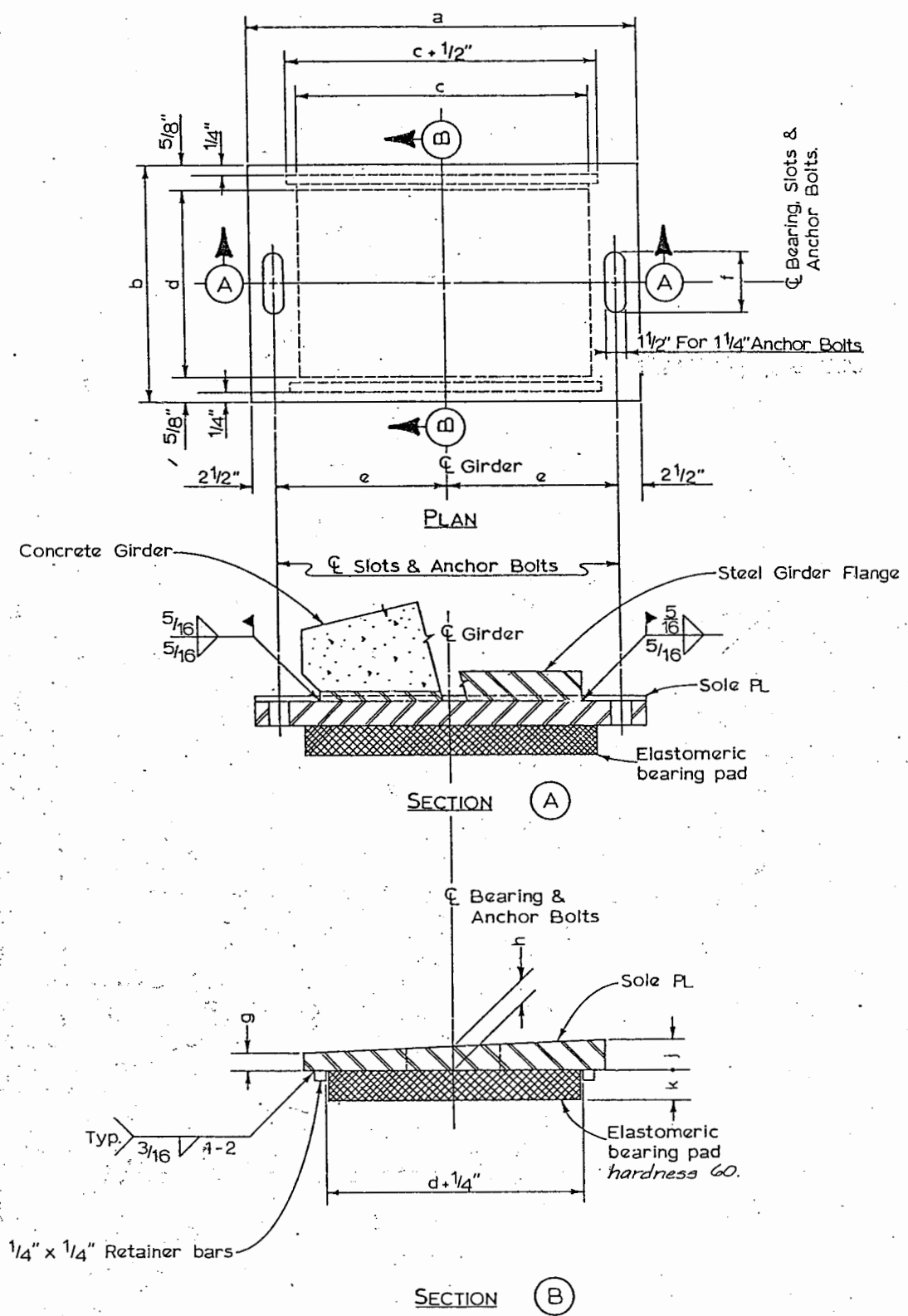
<b>DIVISION OF HIGHWAYS</b>	
I-25 & G AVE, INTERCHANGE - RAMP F OVER BNRR	
<b>SUPERSTRUCTURE DETAILS</b>	
Designer J. Cornejo	Structure F-16-EG
Detailer J. McHenry	Numbers
Drawing Number B-13	of 20 Drawings
Revision Dates	(Preliminary Stage Only)

AS CONSTRUCTED  
NO REVISIONS 9/30/87 REVISED  VOID

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	IR25-2(187)	155	170

REVISIONS	

BRIDGE STANDARD 32



		Dimensions (Inches)									
Location	No. Req'd	a	b	c	d	e	f	g	h	j	k
Abut. 1	7	1'-6 1/2"	11 1/4"	10 1/2"	10"	6 3/4"	3"	3/4"		13 1/16"	1/2"
Pier 2	7	1'-6 1/2"	1'-7 1/4"	10 1/2"	1'-6"	6 3/4"	3"	3/4"		7/8"	2 1/2"
Pier 3	7	1'-6 1/2"	1'-7 1/4"	10 1/2"	1'-6"	6 3/4"	2"	3/4"		7/8"	2 1/2"
Abut. 4	7	1'-6 1/2"	11 1/4"	10 1/2"	10"	6 3/4"	3"	3/4"		13 1/16"	1/2"

NOTES:  
ANCHOR BOLT NUTS SHALL BE SNUGGED AND JAMMED WITH JAM NUTS AT FIXED BEARINGS. AT EXPANSION BEARINGS, PROVIDE 1/4" CLEARANCE BETWEEN JAM NUT AND SOLE PLATE UNDER ALL TEMPERATURE CONDITIONS PRIOR TO JAMMING.  
DO NOT PAINT STEEL SURFACES IN CONTACT WITH ELASTOMERIC PAD.  
ELASTOMERIC BEARING PADS SHALL NOT BE PAID FOR SEPARATELY, BUT WILL BE INCLUDED IN THE WORK.  
STRUCTURAL STEEL FOR BEARINGS WILL BE MEASURED AND PAID FOR IN ACCORDANCE WITH ITEM 509, STRUCTURAL STEEL.

**DIVISION OF HIGHWAYS**

I-25 & GAVE. INTERCHANGE - RAMP 'F' OVER BNRR.

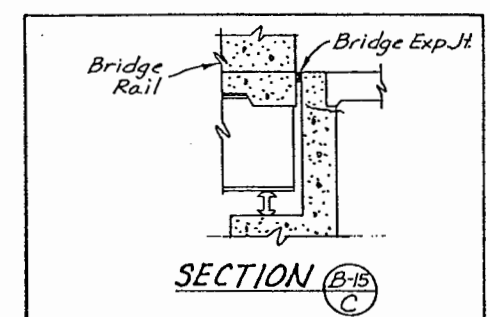
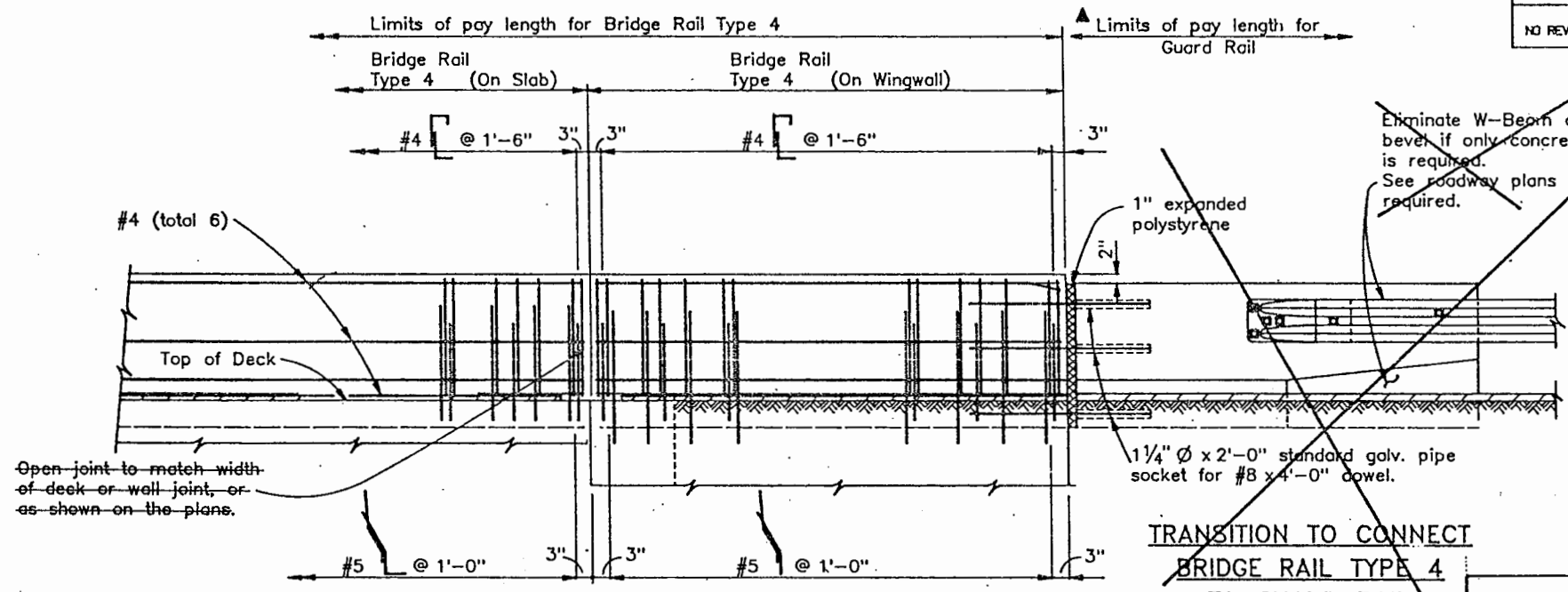
BEARING DETAIL

Designer <u>J. Cornejo</u>	Structure Numbers <u>F-16-EG</u>
Detailer <u>S. HILL</u>	
Drawing Number <u>B-14</u> of <u>20</u> Drawings	

AS CONSTRUCTED	
NO REVISIONS	7/30/87 REVISED
VOID	

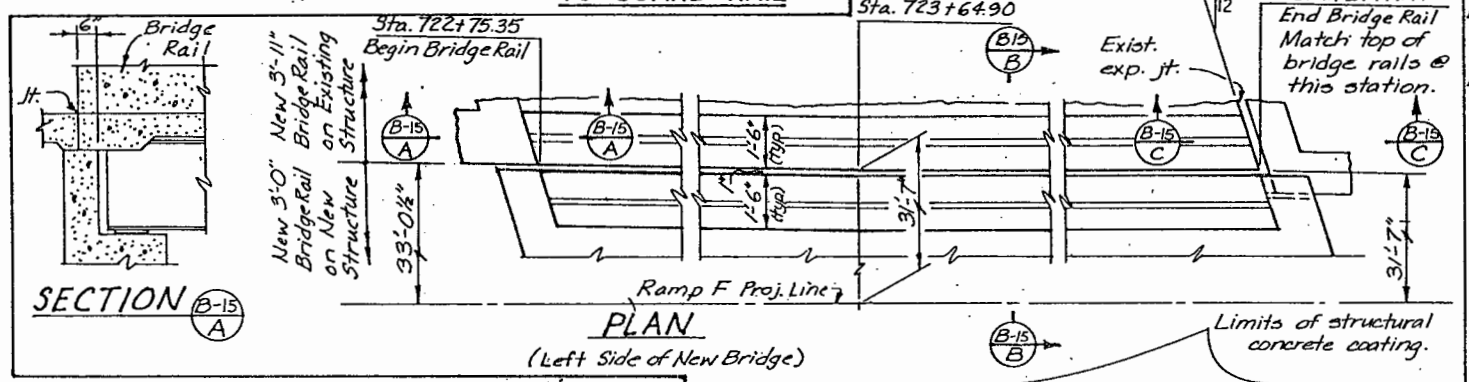
FED. ROAD REGION	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
XIII	COLO.	1R25-2(187)	156	170/177

REVISIONS	



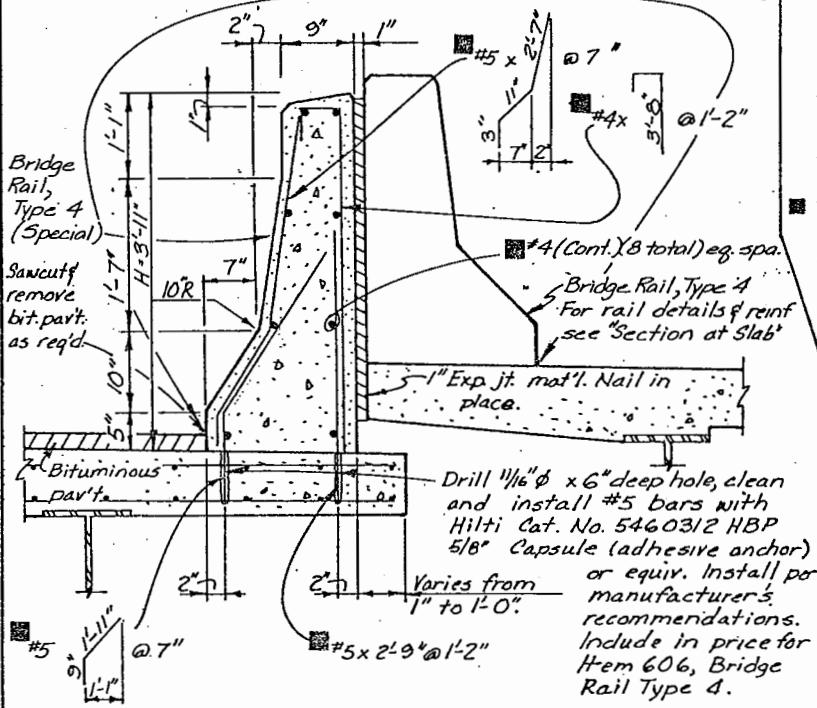
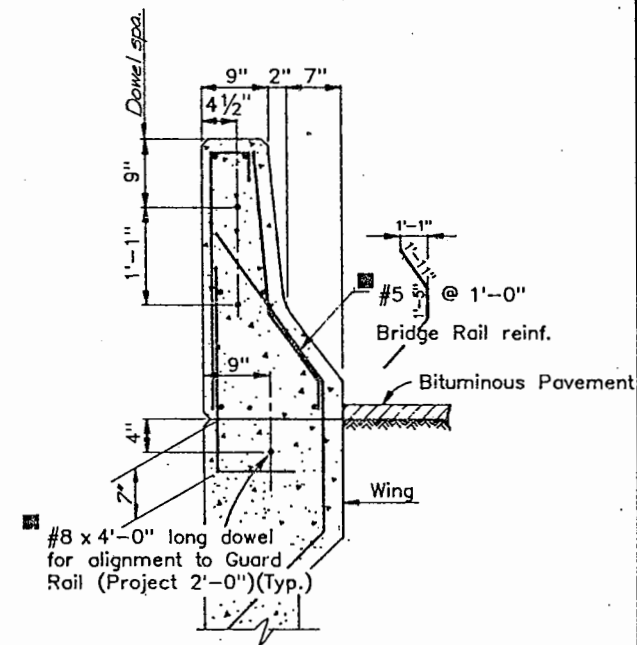
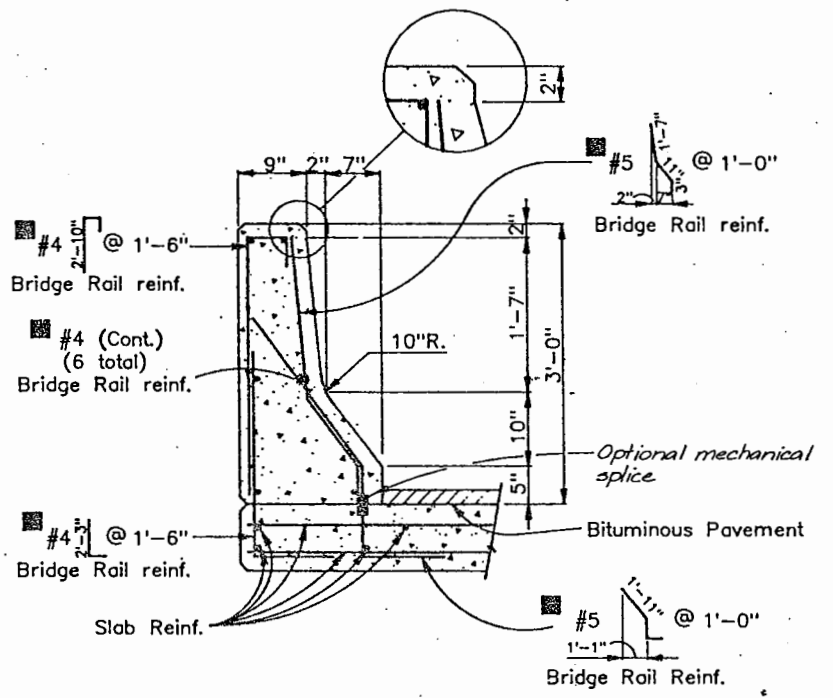
TRANSITION TO CONNECT  
 BRIDGE RAIL TYPE 4  
 TO GUARD RAIL

ELEVATION  
 (RIGHT SIDE OF BRIDGE SHOWN, LEFT SIDE SIMILAR EXCEPT AS NOTED.)



SECTION B-15 A

SECTION B-15 B



Note: Existing deck reinf. to remain.

BRIDGE STANDARD 16  
 (MODIFIED, SPECIAL THIS PROJECT)

- NOTES
- BACKFILL WINGWALLS AND RETAINING WALLS BEFORE BARRIER IS PLACED.
  - ALL BRIDGE RAIL CONCRETE SHALL BE CLASS D.
  - LONGITUDINAL REINFORCEMENT SHALL STOP AT ALL EXPANSION JOINTS.
  - BRIDGE RAIL SHALL BE CONSTRUCTED PLUMB.
  - BRIDGE RAIL CONCRETE (CLASS D) AND BRIDGE RAIL REINFORCEMENT SHALL BE INCLUDED IN ITEM 606 - BRIDGE RAIL TYPE 4.
  - FOR GUARD RAIL TYPE 4, SEE STD. M-606-12 FOR DETAILS.
  - FOR GUARD RAIL TYPE 3, SEE STD. M-606-12 FOR DETAILS OF TRANSITION AND ATTACHMENT TO CONCRETE BARRIER. SEE STD. M-606-1 FOR DETAILS OF GUARD RAIL.

DESIGN DATA

REINFORCED CONCRETE:

CLASS D CONCRETE:  $f_c = 1,800$  psi,  $n = 8$

REINFORCING STEEL:  $f_s = 24,000$  psi

INFORMATION ONLY

Description	Unit	Per Lin.Ft.
Concrete Class D (in non-modified region.)	Cu. Yd.	0.11
Reinforcing Steel	Lb.	13.8

Epoxy coated. Only when Item 602, Reinforcing Steel (Epoxy Coated) is shown on the Summary of Quantities.

DIVISION OF HIGHWAYS

125 & 6TH AVE. INTERCHANGE-RAMP F OVER BNRR

BRIDGE RAIL TYPE 4  
 BRIDGE RAIL TYPE 4 (SPECIAL)

DESIGNER J. Cornejo	STRUCTURE NUMBERS	F-16-EG
DETAILER S. Kobayashi		
DRAWING NUMBER B-15	OF 20	DRAWINGS

INITIAL	DATE	CHECKED BY	QUANTITIES BY
JMC	11/85	JMC	JMC
DESIGNED BY		CHECKED BY	QUANTITIES BY
SHK	11/85	JMC	JMC
DETAILED BY			

NO NUMBER 06. 19145:33 DUAL 1 (DRAW. STDS. MSTD5)

REVISION DATES	(PRELIMINARY STAGE ONLY)
6/85	

Main table with columns: BENT LINE DESCRIPTION OR FRACTIONAL POINT DESIGNATION, STATION, OFFSET, ELEVATION, COORDINATES FROM LAYOUT LINE (OFFSET X, ORDINATE Y), BENT LINE LENGTH FROM Y-AXIS OR OFFSET FROM EXTERIOR GIRDER, GIRDER LINE LENGTH, BENT LINE DESCRIPTION OR FRACTIONAL POINT DESIGNATION, STATION, OFFSET, ELEVATION, COORDINATES FROM LAYOUT LINE (OFFSET X, ORDINATE Y), BENT LINE LENGTH FROM Y-AXIS OR OFFSET FROM EXTERIOR GIRDER, GIRDER LINE LENGTH.

Main table with columns: BENT LINE DESCRIPTION OR FRACTIONAL POINT DESIGNATION, STATION, OFFSET, ELEVATION, COORDINATES FROM LAYOUT LINE (OFFSET X, ORDINATE Y), BENT LINE LENGTH FROM Y-AXIS OR OFFSET FROM EXTERIOR GIRDER, GIRDER LINE LENGTH, BENT LINE DESCRIPTION OR FRACTIONAL POINT DESIGNATION, STATION, OFFSET, ELEVATION, COORDINATES FROM LAYOUT LINE (OFFSET X, ORDINATE Y), BENT LINE LENGTH FROM Y-AXIS OR OFFSET FROM EXTERIOR GIRDER, GIRDER LINE LENGTH.

PROJ. NO. DIVISION COLORADO IR25-2(187) SHEET NO. 157 TOTAL SHEETS 170/177

AS CONSTRUCTED NO REVISIONS 7/30/07 REVISED VOID

NOTE: ELEVATIONS ARE AT TOP OF CONCRETE DECK .1667 FEET BELOW FINISHED GRADE.

DIVISION OF HIGHWAYS I-25 & 6 AVE. INTERCHANGE - RAMP 'F' OVER B.N.R.R.

REVISIONS table with columns for revision number, description, and date.

BRIDGE DECK ELEVATIONS. Designer: J. Cornejo, Detailer: J. McHenry, Drawing Number: B-16 of 20.



Table with columns: BENT LINE DESCRIPTION OR FRACTIONAL POINT DESIGNATION, STATION, OFFSET, ELEVATION, COORDINATES FROM LAYOUT LINE (OFFSET X, ORDINATE Y), BENT LINE LENGTH FROM Y-AXIS OR OFFSET FROM EXTERIOR GIRDER, GIRDER LINE LENGTH.

Table with columns: FEDERAL ROAD DISTRICT NO., DIVISION, PROJ. NO., SHEET NO., TOTAL SHEETS.

LONGITUDINAL LINE: CL GIRDER B

LONGITUDINAL LINE: CL GIRDER C

Main data table for CL GIRDER B, listing bent line descriptions (F-1 to F-19), stations, offsets, elevations, and coordinates.

AS CONSTRUCTED

Table with columns: BENT LINE DESCRIPTION OR FRACTIONAL POINT DESIGNATION, STATION, OFFSET, ELEVATION, COORDINATES FROM LAYOUT LINE (OFFSET X, ORDINATE Y), BENT LINE LENGTH FROM Y-AXIS OR OFFSET FROM EXTERIOR GIRDER, GIRDER LINE LENGTH.

LONGITUDINAL LINE: CL GIRDER D

Main data table for CL GIRDER D, listing bent line descriptions (F-1 to F-19), stations, offsets, elevations, and coordinates.

Main data table for CL GIRDER B (continued), listing bent line descriptions (F-6 to F-19), stations, offsets, elevations, and coordinates.

NOTE: ELEVATIONS ARE AT TOP OF CONCRETE DECK .1667 FEET BELOW FINISHED GRADE.

BRIDGE STANDARD 3, BRIDGE DECK ELEVATIONS, DIVISION OF HIGHWAYS, I-25 & 6 AVE. INTERCHANGE - RAMP 'F' OVER B.N.R.R., Designer J. Cornejo, Detailer J. McHenry, Drawing Number B-17 of 20.





AS CONSTRUCTED  
NO REVISIONS 9/30/87 REVISED  VOID

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	1R25-2(187)	161	170/177

REVISIONS		

# ROADWAY APPROACHES

ELEVATIONS ARE AT FINISHED GRADE

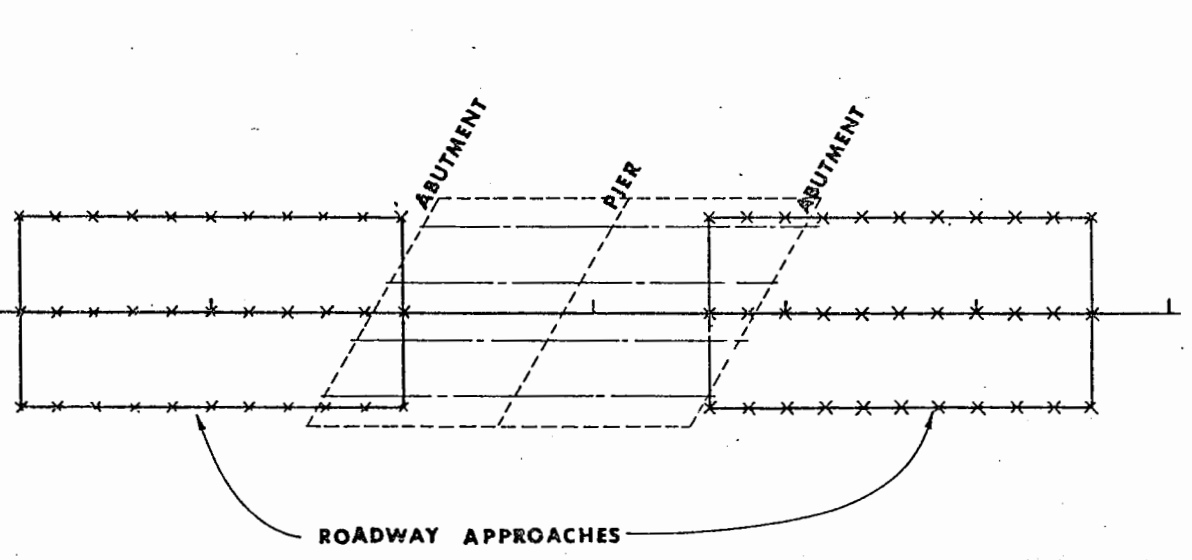
BRIDGE STANDARD 1

ELEVATIONS ON ROADWAY APPROACHES (AT FINISHED GRADE)

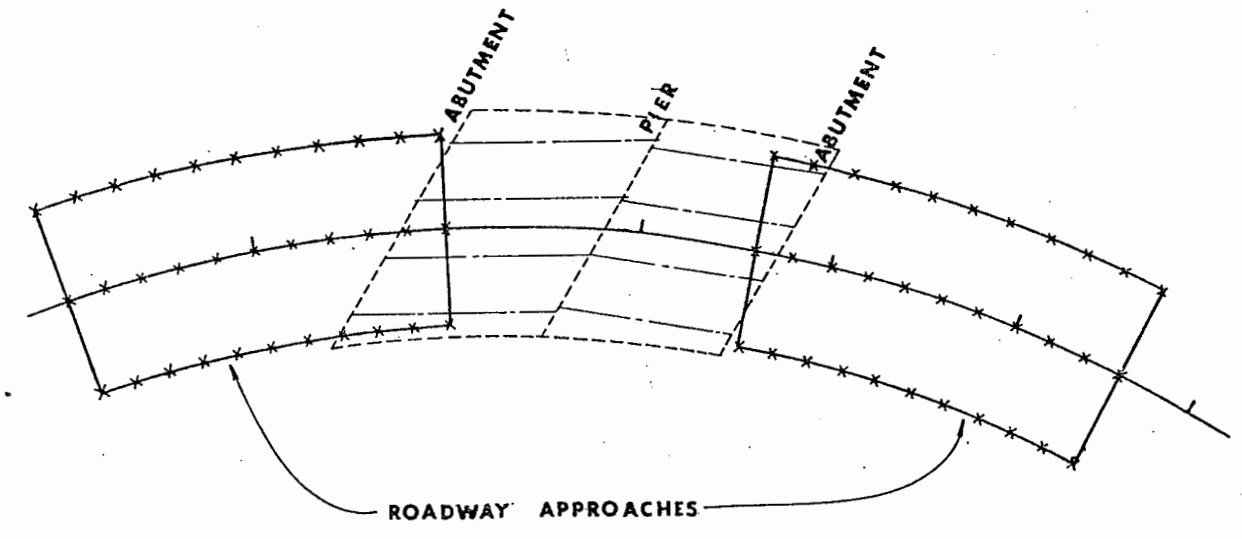
STATION	OFFSETS					
	24.0000	-12.0000	0.0000	12.0000	16.0000	17.5000
721+40.0	5240.69	5239.97	5239.25	5238.53	5238.29	5238.28
+50.0	40.64	39.92	39.20	38.48	38.24	38.15
+60.0	40.58	39.87	39.15	38.43	38.19	38.11
+70.0	40.51	39.81	39.10	38.39	38.16	38.07
721+80.0	5240.42	5239.74	5239.05	5238.36	5238.13	5238.05
+90.0	40.32	39.66	39.00	38.34	38.12	38.04
722+00.0	40.20	39.58	38.95	38.32	38.12	38.04
+10.0	40.07	39.49	38.90	38.31	38.12	38.04
722+20.0	5239.95	5239.40	5238.95	5238.39	5238.12	5238.05
+30.0	39.82	39.31	38.80	38.29	38.12	38.06
+40.0	39.69	39.22	38.75	38.28	38.12	38.06
+50.0	39.57	39.13	38.70	38.27	38.12	38.07
722+60.0	5239.44	5239.05	5238.65	5238.25	5238.12	5238.07
+70.0	39.31	38.96	38.60	38.24	38.12	38.08
+80.0	39.19	38.87	38.55	38.23	38.12	38.08
+90.0	39.08	38.79	38.50	38.21	38.12	38.08

ELEVATIONS ON ROADWAY APPROACHES (AT FINISHED GRADE)

STATION	OFFSETS					
	-24.0000	-12.0000	0.0000	12.0000	16.0000	17.5000
724+20.0	5238.31	5238.07	5237.83	5237.59	5237.51	5237.48
+30.0	38.24	38.00	37.76	37.52	37.44	37.41
+40.0	38.16	37.92	37.68	37.44	37.36	37.33
+50.0	38.08	37.84	37.60	37.36	37.28	37.25
724+60.0	5237.98	5237.74	5237.50	5237.26	5237.18	5237.15
+70.0	37.88	37.64	37.40	37.16	37.08	37.05
+80.0	37.77	37.53	37.29	37.05	36.97	36.94
+90.0	37.65	37.41	37.17	36.93	36.85	36.82
725+00.0	5237.52	5237.28	5237.04	5236.80	5236.72	5236.69
+10.0	37.53	37.14	36.90	36.66	36.58	36.55
+20.0	37.24	37.00	36.76	36.52	36.44	36.41
+30.0	37.09	36.85	36.61	36.37	36.29	36.26
725+40.0	5236.93	5236.69	5236.45	5236.21	5236.13	5236.10
+50.0	36.76	36.52	36.28	36.04	35.96	35.93
+60.0	36.58	36.34	36.10	35.86	35.78	35.75
+70.0	36.40	36.16	35.92	35.68	35.60	35.57



\* TANGENT ALIGNMENT



\* HORIZONTAL CURVE ALIGNMENT

\* THESE DRAWINGS ARE SCHEMATICS ONLY AND DO NOT NECESSARILY REFLECT THE ACTUAL BRIDGE LAYOUT.

**DIVISION OF HIGHWAYS**  
I-25 & G AVE. INTERCHANGE- RAMP F OVER BNRR.

**ROADWAY APPROACHES**

Designer <i>J. Cornejo</i>	Structures Number <i>F-16-EG</i>
Dataller <i>J. McHenry</i>	Number <i> </i>
Drawing Number <i>B-20</i>	of <i>20</i> Drawings