STATE DEPARTMENT OF HIGHWAYS
DIVISION OF HIGHWAYS—STATE OF COLORADO
FORM FHWA-PR-113
REV DEC 1972

FEDERAL ROAD REGION NO	DISTRICT	PROJ NO.	SHEET NO	TOTAL SHEETS
XIII	COLORADO	I-70-2(52)197	76	

VOID
BY CONSTRUCTION DATE 6-24-77

	REVISIONS		
R-1	4-17-75	Rev. Quantities	CLB
R-2	5-6-75	Rev. Steel Quantity, Note	HHH

GENERAL NOTES:

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

ALL CONCRETE SURFACES AS REFERRED TO IN THE SPECIFICATIONS SHALL RECEIVE A CLASS 7 SURFACE FINISH.

ALL CONCRETE CHAMFERS SHALL BE 3/4 INCH UNLESS OTHERWISE NOTED.

EXPANSION JOINT MATERIAL SHALL MEET A.A.S.H.O. SPECIFICATION M 213-65 AND SHALL BE INCLUDED IN THE PAYMENT FOR ITEM NO. 601.

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

WHEN EXCAVATING FOR FOOTINGS, THE FINAL SIX INCHES IN DEPTH SHALL BE DONE BY HAND LABOR METHODS.

FOOTINGS IN ROCK SHALL NOT BE FORMED BUT SHALL BE PLACED AGAINST UNDISTURBED ROCK.

FOR DETAILS OF STRUCTURE EXCAVATION AND STRUCTURE BACKFILL, SEE STANDARD M-206-AA.

ALL STRUCTURAL STEEL NOT OTHERWISE NOTED SHALL BE A.A.S.H.O. SPECIFICATION M-183. (ASTM A36)

ALL STRUCTURAL STEEL NOT OTHERWISE NOTED SHALL BE PAINTED IN ACCORDANCE WITH SECTION 509 FOR ( ) PAINT.

GRADE 60 REINFORCING STEEL REQUIRED FOR #5 BARS AND LARGER GRADE 40 OR GRADE 60 MAY BE FURNISHED FOR #4 BARS.

FORM, CONSTRUCTION EQUIPMENT, AND ADDITIONAL CONSTRUCTION LOADS WERE NOT CONSIDERED IN ANALYZING THIS STRUCTURE.

DESIGN PROVISIONS WERE MADE FOR A ONE SEGMENT UNBALANCED CANTILEVER MOMENT AT THE END OF THE CANTILEVER DURING CONSTRUCTION STAGES. FOR THE UNBALANCED MOMENT VALUES, SEE DWG. NO. B-9. THIS APPLIES TO THE FOOTINGS ONLY.

APPLIED WIND LOADS AND EARTHQUAKE LOADS WERE NOT CONSIDERED IN ANALYZING THE STRUCTURE FOR STABILITY DURING THE CONSTRUCTION STAGES.

THE SEQUENCE OF CONSTRUCTION SHALL BE AS SHOWN ON DWG. NO. B-11. ANY CHANGE IN THIS CONSTRUCTION SEQUENCE SHALL BE WITH THE APPROVAL OF THE ENGINEER.

APPLY EPOXY JOINT SEALER TO ALL MATCHING SURFACES OF PRECAST SEGMENTS IN ACCORDANCE WITH THE SPECIFICATIONS.

GROUT ALL ANCHORAGE BLOCKOUTS AND MATCH EXPOSED SURFACES TO PRECAST SEGMENTS.

BEFORE ANY FORMS ARE REMOVED FROM THE PRECAST SEGMENTS, F'_c SHALL OBTAIN A COMPRESSIVE STRENGTH OF 3000 P.S.I.

THE FOLLOWING TABLE SHOWS THE MINIMUM LAP FOR COMMON BAR SIZES.

BAR SIZE NUMBER		4	5	6	7	8	9	10	11
SPLICE LENGTH	GRADE 40	1'-0"	1'-3"	1'-6"	1'-9"	2'-2"	2'-8"	3'-5"	4'-3"
	GRADE 60	1'-6"	1'-11"	2'-3"	2'-8"	3'-6"	3'-5"	4'-2"	5'-0"

E.F. = EACH FACE
N.F. = NEAR FACE
F.F. = FAR FACE

CROSS REFERENCE DRAWING NUMBER
9
1
SECTION OR DETAIL IDENTIFICATION

INITIAL	DATE	CHECKED BY
DESIGNED BY	6-23-74	JSK
CHECKED BY	8-28-74	JSK
QUANTITIES BY	7-1-74	PLS
DETAILED BY	7-1-74	PLS
	12-10-74	JSK
	12-10-74	JSK

Summary of Quantities

	Item	Description	Unit	Structure No. F-12-AN Super-Structure	Abut. 1	Pier 2	Pier 3	Abut. 4	Total	
	206	Structure Excavation	Cu.Yd.		175	89	268	135	667	
	206	Structure Backfill (Class 2)	Cu.Yd.		96	42	182	87	407	
(4)	403	Hot Bituminous Pavement (Grading)	Ton	178					178	
(4)	411	Asphalt Cement (AC-57)	Ton	13					13	
(3)	502	Steel Piling (HP 10X42)	Lin.Ft.		80				80	
	502	Steel Piling (HP 12 X 74)	Lin.Ft.		105				105	
	509	Structural Steel	Lbs.	700	70			70	840	
	512	Bearing Device (0 to 250 Tons)	Lin.Ft.		2			2	4	
	512	Bearing Device (501 to 750 Tons)	Lin.Ft.			2	2		4	
(4)	515	Waterproofing (Membrane)	Sq.Yd.	1634					1634	
	518	Bridge Expansion Devise (Type I)	Lin.Ft.	76					76	(R-1)
	601	Concrete Class A (Bridge)	Cu.Yd.		22	40	40	19	121	
	601	Concrete Class A (Bridge)(Colored)	Cu.Yd.		39			35	74	
	601	Concrete Class D (Bridge)(Colored)	Cu.Yd.	97	18			15	130	
	602	Reinforcing Steel	Lbs.	8205	11,530	3330	3330	10,300	36,695	
(1)	618	Conc. Segmental Superstr. (F-12-AN)	L.S.	1					1	
(2)	618	Conc. Segmental Pier (F-12-AN)	L.S.						1	
	626	Mobilization	L.S.						0.2	

(1) Concrete Class S (Precast)(Colored) 830 Cu.Yd. (R-2) (1)(2) Approximate Quantities for Information only.
(R-1) Reinforcing Steel 138,446 Lbs.
Prestressing Strands 28,960 Lbs.

(2) Concrete Class S (Colored) 139 Cu.Yd. (R-2)
Reinforcing Steel 14,100 Lbs.
Prestressing Strands 970 Lbs.

(3) W 10X45 or HPS 10X42 May be used in Lieu of the HP 10X42

(4) Future Item

LOADING DATA

LIVELOAD: A.A.S.H.O. HS-20-44 OR INTERSTATE ALTERNATE
DEADLOAD: ASSUMES 25 LBS. PER SQ. FT. FOR BITUMINOUS PAVEMENT

DESIGN DATA:

A.A.S.H.T.O. 1973 UNIT STRESSES, AND 1974 INTERIM SPECIFICATIONS, EXCEPT AS NOTED.

REINFORCING STEEL:	GRADE 60 -	FY = 60,000 LBS. PER SQ. IN. FS = 24,000 LBS. PER SQ. IN.
	GRADE 40 -	FY = 40,000 LBS. PER SQ. IN. FS = 20,000 LBS. PER SQ. IN.
STRUCTURAL STEEL:	A36, GRADE 36 -	FY = 36,000 LBS. PER SQ. IN.
	A588, GRADE 50 -	FY = 50,000 LBS. PER SQ. IN.
CONCRETE:	CLASS A & D -	F'_C = 3000 LBS. PER SQ. IN. N = 9
	CLASS S - (FOR LIMITS SEE PLANS.)	F'_C = 5000 LBS. PER SQ. IN.
		F'_C = 5500 LBS. PER SQ. IN.

DESIGN FOUNDATION PRESSURES

Description	Allowable Pile Load	Computed Pile Load	Allowable Ftg. Pressure	Computed Ftg. Pressure
Abutment 1	78 Tons	96.7 Tons	.....	.....
Abutment 1 Wingwall	55 Tons	54.9 Tons	.....	.....
Pier 2	.....	.....	6 Tons per sq. ft.	5.9 Tons per sq. ft.
Pier 3	.....	.....	6 Tons per sq. ft.	5.9 Tons per sq. ft.
Abutment 4	.....	.....	6 Tons per sq. ft.	4 Tons per sq. ft.
Abutment 4 Wingwall	.....	.....	6 Tons per sq. ft.	4.2 Tons per sq. ft.

INDEX OF DRAWINGS

BRIDGE DESCRIPTION

3 Span (100'-0", 150'-0", 100'-0")
Continuous Post Tensioned Prestressed Segmental Concrete Box Girder Bridge.

Over Stafford Gulch
38'-0" Roadway Curb to Curb, 90° Skew
Type 4 Bridge Rail

Details Reviewed
Bridge Engineer Date 3/26/75

DIVISION OF HIGHWAYS

GENERAL INFORMATION
SUMMARY OF QUANTITIES

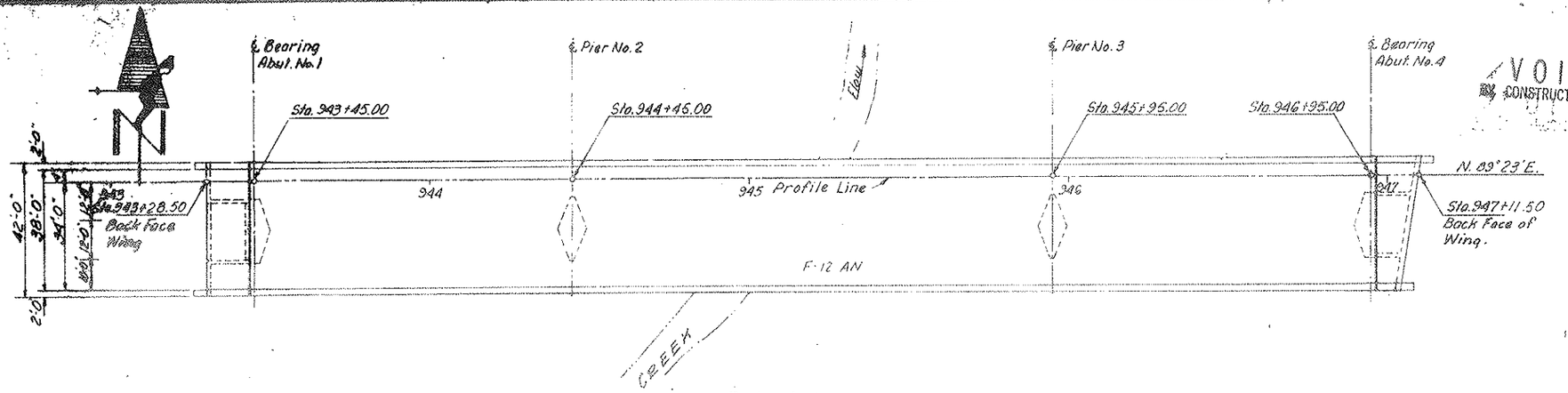
Station 943+28.500
Station 947+11.500
Near Vail Sec. T. R.
Designer J. Kellar Structure Numbers F-12-AN
Detailer P.S.
Drawing Number B-1 of 17 Drawings

O(10-19-73)

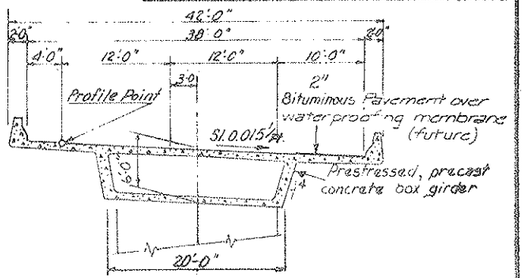
FEDERAL ROAD REGION NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-2(52)197	77	

REVISIONS		

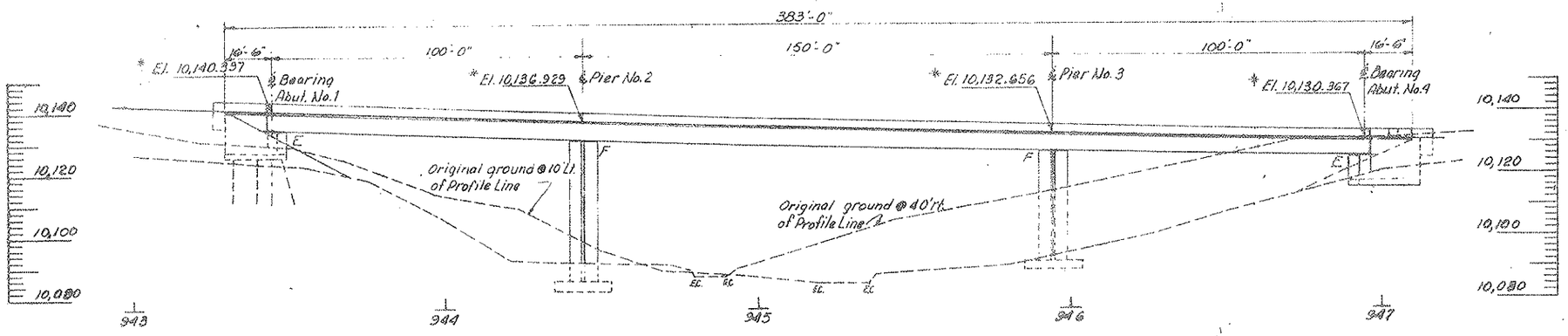
VOID
CONSTRUCTION DATE 6-24-77



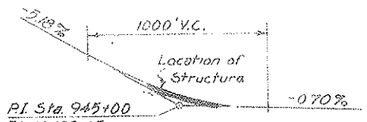
PLAN
Orig. Scale: 1" = 20'



TYPICAL SECTION
Orig. Scale: 1/8" = 1'-0"



ELEVATION
Taken along ℄ of Roadway
Orig. Scale: 1" = 20'
* Finished roadway elevations and Horizontal dimensions are along profile lines



VERTICAL CURVE DIAGRAM
No Scale

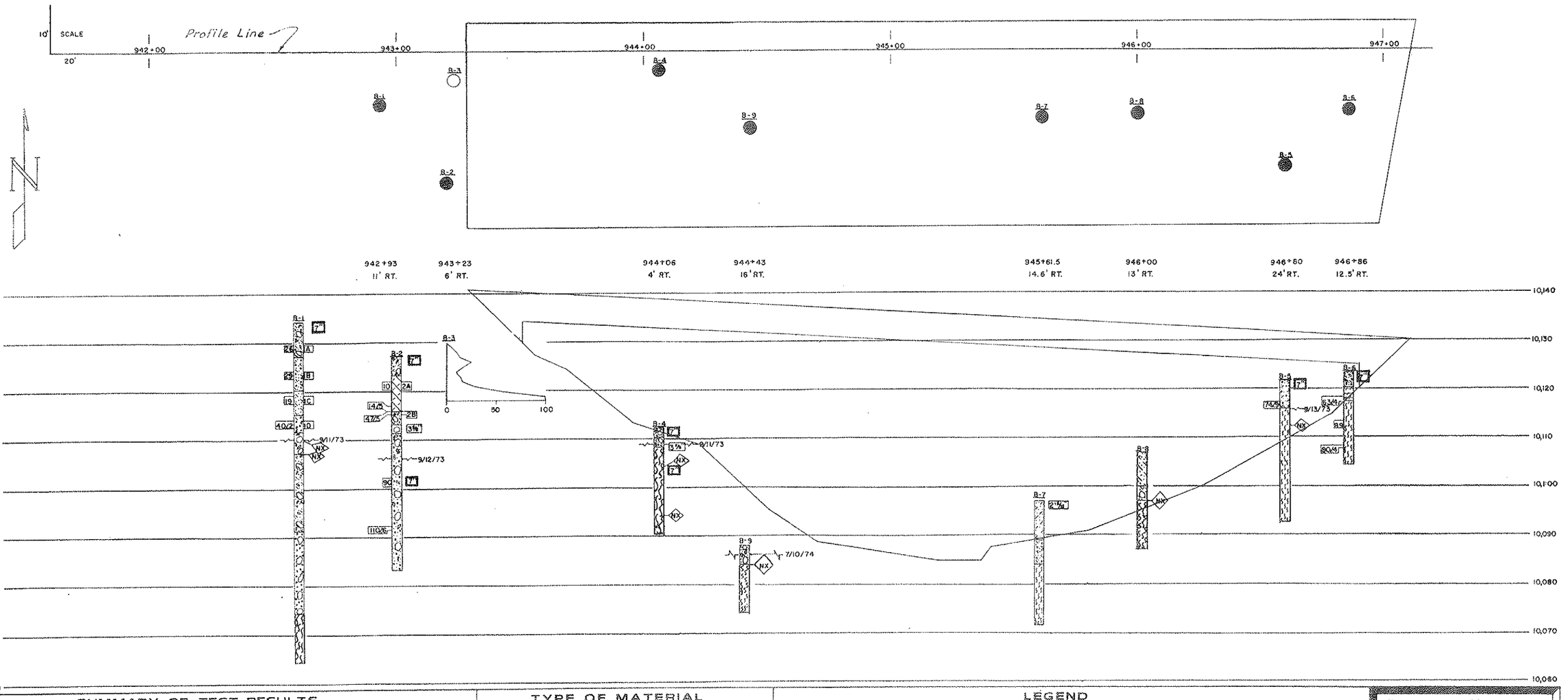
DIVISION OF HIGHWAYS

GENERAL LAYOUT

Designed	J. KELLER	Structure Numbers	F-12-AN
Detailed	P. H. S.		
Drawing Number 8 - 2		of 17	Drawings

FED. ROAD REG. NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
VIII	COLO.	I 70-2( )197	78	

VOID
BY CONSTRUCTION DATE 6-24-77



SUMMARY OF TEST RESULTS

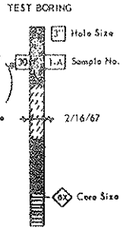
Sample No.	Depth	Classification: Corps of Engrs. or Visual	Classification: AASHO	Grading Analysis: Percent Gravel	Coarse Sand	Fine Sand	Silt and Clay	Atterberg Limits: Liquid Limit Lw	Plastic Limit Pw	Plasticity Index Iw	Water Cont. w %	Dry Unit Weight γ P.C.F.	Unconfined Strength Qu T.S.F.	Triaxial Shear Strength: Unconsolidated β	C T.S.F.	Consolidated β	C T.S.F.	Time hrs.	Press P.S.I.	Dia. Of Sample (Inches)
1A	4.5-6.0	SILTY GRAVELLY SAND	A-2-4(0)	31	20	22	27	22	16	6	6.5									
1B	10.0-11.5	SILTY GRAVELLY SAND	A-1-b(0)	39	23	27	11	NV	NP	NP	3.9									
1C	15.0-16.5	SANDY SILT	A-4(0)	2	1	37	60	NV	NP	NP	18.2									
1D	20.0-21.2	SILTY SANDY GRAVEL	A-1-a(0)	63	11	11	15	NV	NP	NP	5.4									
2A	5.3-6.8	SANDY CLAY	A-4(5)	5	3	16	76	30	22	8	16.8									
2B	11.3-11.8	SILTY SANDY GRAVEL	A-2-4(0)	52	8	11	29	22	20	2	9.1									
5A	4.5-5.9	SILTY SAND	A-1-b(0)	10	46	32	12	NV	NP	NP	5.3									

TYPE OF MATERIAL

- SILTY, GRAVELLY SAND W/COBBLES & BOULDERS
- SILTY, GRAVELLY SAND
- COBBLES & BOULDERS
- SILTY SAND W/COBBLES & BOULDERS
- CLAYEY SILT
- GRAVELLY SILT W/COBBLES & BOULDERS
- SANDY SILT
- SILTY SAND
- SANDY, GRAVELLY SILT W/COBBLES & BOULDERS
- SILTY GRAVEL
- GRAVEL & BOULDERS
- SANDY GRAVEL W/COBBLES & BOULDERS
- SANDY, GRAVELLY SILT
- SANDY, GRAVELLY SILT W/COBBLES
- BOULDER
- SANDSTONE
- SILTSTONE

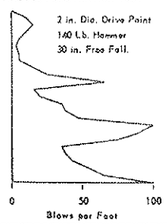
LEGEND

TEST BORING



2 in. O.D. Split-Tube Sampler
140 Lb. Hammer
30 in. Free Fall

CONTINUOUS PENETRATION TEST



2 in. Dia. Drive Point
140 Lb. Hammer
30 in. Free Fall.

- Location of Test Boring
- Location of Continuous Penetration Test
- Rotary Boring
- Auger Boring
- Core Boring

DIVISION OF HIGHWAYS
STATE OF COLORADO

ENGINEERING GEOLOGY

Across STAFFORD GULCH
Sta. 945+
Near VAIL PASS Sec. T. R.

Geologist A.C.E. | Approved by
Made by D.L.S. | Bridge Engineer
Checked by D.L.S. | Date: 19

STRUCTURE NO. E-12-AN
DWG. NO. 8-B OF 17

STATE DEPARTMENT OF HIGHWAYS
DIVISION OF HIGHWAYS - STATE OF COLORADO
STANDARD PLAN NO.
REV. OCTOBER 1972

DIVISION OF HIGHWAYS — DATE OF DATA : 10/11/74
STATE OF COLORADO — DESIGNER : JOE KELLER
BRIDGE GEOMETRICS — CHECKER : J.K.
DATE OF RUN : 74/10/23. — JOB DESCRIPTION : STAFFORD GULCH STA 945 CONC. BOX

INPUT DATA

HORIZONTAL ALIGNMENT DATA.....

DEGREE OF CURVATURE : ~0 ~0 ~.0

VERTICAL ALIGNMENT DATA.....

VERTICAL CURVE NO. 1 : PT STATION 945+ .00 PI ELEV 10129.543 VC LENGTH 1000.000 G1 ~5.176100 G2 ~.700000

SUPERELEVATION DATA.....

SUPERELEVATION NO. 1 : STATION 942+63.44 RATE LEFT .0000 RATE RIGHT ~.0000
SUPERELEVATION NO. 2 : STATION 943+63.44 RATE LEFT .0150 RATE RIGHT ~.0150
SUPERELEVATION NO. 3 : STATION 949+ .00 RATE LEFT .0150 RATE RIGHT ~.0150

BENT LINE INPUT: DISTANCE FROM REFERENCE LINE(TYPE)	DESCRIPTION OF BENT LINE	DESCRIPTION OF LINE	SKEW ANGLE OF BENT LINE REFERENCED TO CHORD OR TANGENT	STATION OF INTERSECTION OF LINE AND BENT LINE	ROADWAY ELEVATION AT INTERSECTION OF LINE AND BENT LINE
.000000 REFERENCE LINE		CONSTR. CL	0 0 .0 ZERO SKEW	943+28.500	10140.7961
		NO. OUT		943+28.500	10140.8547
		PRO. LINE		943+28.500	10140.7961
		CL BRIDGE		943+28.500	10140.6497
		SO. OUT		943+28.500	10140.4448
.000000 BF ABUT. 1 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	943+28.500	10140.7961
		NO. OUT		943+28.500	10140.8547
		PRO. LINE		943+28.500	10140.7961
		CL BRIDGE		943+28.500	10140.6497
		SO. OUT		943+28.500	10140.4448
4.125000 1/ 4 PT.= 1 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	943+32.625	10140.6612
		NO. OUT		943+32.625	10140.7034
		PRO. LINE		943+32.625	10140.6412
		CL BRIDGE		943+32.625	10140.4855
		SO. OUT		943+32.625	10140.2676
8.250000 2/ 4 PT.= 1 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	943+36.750	10140.4870
		NO. OUT		943+36.750	10140.5529
		PRO. LINE		943+36.750	10140.4870
		CL BRIDGE		943+36.750	10140.3220
		SO. OUT		943+36.750	10140.0911
12.375000 3/ 4 PT.= 1 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	943+40.875	10140.3335
		NO. OUT		943+40.875	10140.4032
		PRO. LINE		943+40.875	10140.3335
		CL BRIDGE		943+40.875	10140.1593
		SO. OUT		943+40.875	10139.9154
16.500000 CL BRG ABUT 1 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	943+45.000	10140.1809
		NO. OUT		943+45.000	10140.2563
		PRO. LINE		943+45.000	10140.1809
		CL BRIDGE		943+45.000	10139.9973
		SO. OUT		943+45.000	10139.7404
21.500000 1/ 20 PT.= 2 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	943+50.000	10139.9968
		NO. OUT		943+50.000	10140.0747
		PRO. LINE		943+50.000	10139.9968
		CL BRIDGE		943+50.000	10139.8021
		SO. OUT		943+50.000	10139.5294
26.500000 2/ 20 PT.= 2 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	943+55.000	10139.8139
		NO. OUT		943+55.000	10139.8963
		PRO. LINE		943+55.000	10139.8139
		CL BRIDGE		943+55.000	10139.6079
		SO. OUT		943+55.000	10139.3195
31.500000 3/ 20 PT.= 2 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	943+60.000	10139.6321
		NO. OUT		943+60.000	10139.7190
		PRO. LINE		943+60.000	10139.6321
		CL BRIDGE		943+60.000	10139.4149
		SO. OUT		943+60.000	10139.1107
36.500000 4/ 20 PT.= 2 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	943+65.000	10139.4524
		NO. OUT		943+65.000	10139.5424
		PRO. LINE		943+65.000	10139.4524
		CL BRIDGE		943+65.000	10139.2274
		SO. OUT		943+65.000	10138.9124
41.500000 5/ 20 PT.= 2 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	943+70.000	10139.2758
		NO. OUT		943+70.000	10139.3658
		PRO. LINE		943+70.000	10139.2758
		CL BRIDGE		943+70.000	10139.0508
		SO. OUT		943+70.000	10138.7358
46.500000 6/ 20 PT.= 2 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	943+75.000	10139.1004
		NO. OUT		943+75.000	10139.1904
		PRO. LINE		943+75.000	10139.1004
		CL BRIDGE		943+75.000	10138.8754
		SO. OUT		943+75.000	10138.5604
51.500000 7/ 20 PT.= 2 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	943+80.000	10138.9261
		NO. OUT		943+80.000	10139.0161
		PRO. LINE		943+80.000	10138.9261
		CL BRIDGE		943+80.000	10138.7011
		SO. OUT		943+80.000	10138.3861
56.500000 8/ 20 PT.= 2 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	943+85.000	10138.7529
		NO. OUT		943+85.000	10138.8429
		PRO. LINE		943+85.000	10138.7529
		CL BRIDGE		943+85.000	10138.5279
		SO. OUT		943+85.000	10138.2129
61.500000 9/ 20 PT.= 2 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	943+90.000	10138.5808
		NO. OUT		943+90.000	10138.6708
		PRO. LINE		943+90.000	10138.5808
		CL BRIDGE		943+90.000	10138.3558
		SO. OUT		943+90.000	10138.0408
66.500000 10/ 20 PT.= 2 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	943+95.000	10138.4098
		NO. OUT		943+95.000	10138.4998
		PRO. LINE		943+95.000	10138.4098
		CL BRIDGE		943+95.000	10138.1848
		SO. OUT		943+95.000	10137.8698
71.500000 11/ 20 PT.= 2 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	944+ .000	10138.2400
		NO. OUT		944+ .000	10138.3300
		PRO. LINE		944+ .000	10138.2400
		CL BRIDGE		944+ .000	10138.0150
		SO. OUT		944+ .000	10137.7000
76.500000 12/ 20 PT.= 2 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	944+ 5.000	10138.0713
		NO. OUT		944+ 5.000	10138.1613
		PRO. LINE		944+ 5.000	10138.0713
		CL BRIDGE		944+ 5.000	10137.8463
		SO. OUT		944+ 5.000	10137.5313
81.500000 13/ 20 PT.= 2 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	944+10.000	10137.9037
		NO. OUT		944+10.000	10137.9937
		PRO. LINE		944+10.000	10137.9037
		CL BRIDGE		944+10.000	10137.6787
		SO. OUT		944+10.000	10137.3637
86.500000 14/ 20 PT.= 2 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	944+15.000	10137.7372
		NO. OUT		944+15.000	10137.8272
		PRO. LINE		944+15.000	10137.7372
		CL BRIDGE		944+15.000	10137.5122
		SO. OUT		944+15.000	10137.1972
91.500000 15/ 20 PT.= 2 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	944+20.000	10137.5718
		NO. OUT		944+20.000	10137.6618
		PRO. LINE		944+20.000	10137.5718
		CL BRIDGE		944+20.000	10137.3468
		SO. OUT		944+20.000	10137.0318
96.500000 16/ 20 PT.= 2 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	944+25.000	10137.4076
		NO. OUT		944+25.000	10137.4976
		PRO. LINE		944+25.000	10137.4076
		CL BRIDGE		944+25.000	10137.1826
		SO. OUT		944+25.000	10136.8676
101.500000 17/ 20 PT.= 2 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	944+30.000	10137.2444
		NO. OUT		944+30.000	10137.3344
		PRO. LINE		944+30.000	10137.2444
		CL BRIDGE		944+30.000	10137.0194
		SO. OUT		944+30.000	10136.7044
106.500000 18/ 20 PT.= 2 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	944+35.000	10137.0824
		NO. OUT		944+35.000	10137.1724
		PRO. LINE		944+35.000	10137.0824
		CL BRIDGE		944+35.000	10136.8574
		SO. OUT		944+35.000	10136.5424
111.500000 19/ 20 PT.= 2 BACK TANGENT		CONSTR. CL	0 0 .0	944+40.000	10136.9215
		NO. OUT		944+40.000	10137.0115
		PRO. LINE		944+40.000	10136.9215
		CL BRIDGE		944+40.000	10136.6965
		SO. OUT		944+40.000	10136.3815
116.500000 CL PIER 2 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	944+45.000	10136.7618
		NO. OUT		944+45.000	10136.8518
		PRO. LINE		944+45.000	10136.7618
		CL BRIDGE		944+45.000	10136.5368
		SO. OUT		944+45.000	10136.2218
126.000000 1/ 20 PT.= 3 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	944+52.500	10136.5242
		NO. OUT		944+52.500	10136.6142
		PRO. LINE		944+52.500	10136.5242
		CL BRIDGE		944+52.500	10136.2992
		SO. OUT		944+52.500	10135.9842
131.500000 2/ 20 PT.= 3 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	944+60.000	10136.2892
		NO. OUT		944+60.000	10136.3792
		PRO. LINE		944+60.000	10136.2892
		CL BRIDGE		944+60.000	10136.0642
		SO. OUT		944+60.000	10135.7492
139.000000 3/ 20 PT.= 3 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	944+67.500	10136.0566
		NO. OUT		944+67.500	10136.1466
		PRO. LINE		944+67.500	10136.0566
		CL BRIDGE		944+67.500	10135.8316
		SO. OUT		944+67.500	10135.5166
146.500000 4/ 20 PT.= 3 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	944+75.000	10135.8266
		NO. OUT		944+75.000	10135.9166
		PRO. LINE		944+75.000	10135.8266
		CL BRIDGE		944+75.000	10135.6016
		SO. OUT		944+75.000	10135.2866
154.000000 5/ 20 PT.= 3 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	944+82.500	10135.5991
		NO. OUT		944+82.500	10135.6891
		PRO. LINE		944+82.500	10135.5991
		CL BRIDGE		944+82.500	10135.3741
		SO. OUT		944+82.500	10135.0591
161.500000 6/ 20 PT.= 3 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	944+90.000	10135.3742
		NO. OUT		944+90.000	10135.4642
		PRO. LINE		944+90.000	10135.3742
		CL BRIDGE		944+90.000	10135.1492
		SO. OUT		944+90.000	10134.8342
169.000000 7/ 20 PT.= 3 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	944+97.500	10135.1517
		NO. OUT		944+97.500	10135.2417
		PRO. LINE		944+97.500	10135.1517
		CL BRIDGE		944+97.500	10134.9267
		SO. OUT		944+97.500	10134.6117
176.500000 8/ 20 PT.= 3 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	945+ 5.000	10134.9318
		NO. OUT		945+ 5.000	10135.0218
		PRO. LINE		945+ 5.000	10134.9318
		CL BRIDGE		945+ 5.000	10134.7068
		SO. OUT		945+ 5.000	10134.3918
184.000000 9/ 20 PT.= 3 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	945+12.500	10134.7144
		NO. OUT		945+12.500	10134.8044
		PRO. LINE		945+12.500	10134.7144
		CL BRIDGE		945+12.500	10134.4894
		SO. OUT		945+12.500	10134.1744
191.500000 10/ 20 PT.= 3 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	945+20.000	10134.4995
		NO. OUT		945+20.000	10134.5895
		PRO. LINE		945+20.000	10134.4995
		CL BRIDGE		945+20.000	10134.2745
		SO. OUT		945+20.000	10133.9595
199.000000 11/ 20 PT.= 3 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	945+27.500	10134.2871
		NO. OUT		945+27.500	10134.3771
		PRO. LINE		945+27.500	10134.2871
		CL BRIDGE		945+27.500	10134.0621
		SO. OUT		945+27.500	10133.7471
206.500000 12/ 20 PT.= 3 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	945+35.000	10134.0772
		NO. OUT		945+35.000	10134.1672
		PRO. LINE		945+35.000	10134.0772
		CL BRIDGE		945+35.000	10133.8522
		SO. OUT		945+35.000	10133.5372
214.000000 13/ 20 PT.= 3 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	945+42.500	10133.8699
		NO. OUT		945+42.500	10133.9599
		PRO. LINE		945+42.500	10133.8699
		CL BRIDGE		945+42.500	10133.6449
		SO. OUT		945+42.500	10133.3299
221.500000 14/ 20 PT.= 3 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	945+50.000	10133.6851
		NO. OUT		945+50.000	10133.7551
		PRO. LINE		945+50.000	10133.6651
		CL BRIDGE		945+50.000	10133.4401
		SO. OUT		945+50.000	10133.1251
229.000000 15/ 20 PT.= 3 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	945+57.500	10133.4627
		NO. OUT		945+57.500	10133.5527
		PRO. LINE		945+57.500	10133.4627
		CL BRIDGE		945+57.500	10133.2377
		SO. OUT		945+57.500	10132.9227
236.500000 16/ 20 PT.= 3 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	945+65.000	10133.2630
		NO. OUT		945+65.000	10133.3530
		PRO. LINE		945+65.000	10133.2630
		CL BRIDGE		945+65.000	10133.0380
		SO. OUT		945+65.000	10132.7230
244.000000 17/ 20 PT.= 3 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	945+72.500	10133.0657
		NO. OUT		945+72.500	10133.1557
		PRO. LINE		945+72.500	10133.0657
		CL BRIDGE		945+72.500	10132.8407
		SO. OUT		945+72.500	10132.5257
251.500000 18/ 20 PT.= 3 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	945+80.000	10132.8709
		NO. OUT		945+80.000	10132.9609
		PRO. LINE		945+80.000	10132.8709
		CL BRIDGE		945+80.000	10132.6459
		SO. OUT		945+80.000	10132.3309
259.000000 19/ 20 PT.= 3 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	945+87.500	10132.6787
		NO. OUT		945+87.500	10132.7687
		PRO. LINE		945+87.500	10132.6787
		CL BRIDGE		945+87.500	10132.4537
		SO. OUT		945+87.500	10132.1387
266.500000 CL PIER 3 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	945+95.000	10132.4890
		NO. OUT		945+95.000	10132.5790
		PRO. LINE		945+95.000	10132.4890
		CL BRIDGE		945+95.000	10132.2640
		SO. OUT		945+95.000	10131.9490
271.500000 1/ 20 PT.= 4 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	946+ .000	10132.3639
		NO. OUT		946+ .000	10132.4539
		PRO. LINE		946+ .000	10132.3639
		CL BRIDGE		946+ .000	10132.1389
		SO. OUT		946+ .000	10131.8239
276.500000 2/ 20 PT.= 4 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	946+ 5.000	10132.2399
		NO. OUT		946+ 5.000	10132.3299
		PRO. LINE		946+ 5.000	10132.2399
		CL BRIDGE		946+ 5.000	10132.0149
		SO. OUT		946+ 5.000	10131.6999
281.500000 3/ 20 PT.= 4 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	946+10.000	10132.1171
		NO. OUT		946+10.000	10132.2071
		PRO. LINE		946+10.000	10132.1171
		CL BRIDGE		946+10.000	10131.8921
		SO. OUT		946+10.000	10131.5771
286.500000 4/ 20 PT.= 4 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	946+15.000	10131.9953
		NO. OUT		946+15.000	10132.0853
		PRO. LINE		946+15.000	10131.9953
		CL BRIDGE		946+15.000	10131.7703
		SO. OUT		946+15.000	10131.4553
291.500000 5/ 20 PT.= 4 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	946+20.000	10131.8767
		NO. OUT		946+20.000	10131.9647
		PRO. LINE		946+20.000	10131.8767
		CL BRIDGE		946+20.000	10131.6497
		SO. OUT		946+20.000	10131.3347
296.500000 6/ 20 PT.= 4 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	946+25.000	10131.7553
		NO. OUT		946+25.000	10131.8453
		PRO. LINE		946+25.000	10131.7553
		CL BRIDGE		946+25.000	10131.5303
		SO. OUT		946+25.000	10131.2153

FEDERAL ROAD REGION NO.	DISTRICT	PROJ NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	; 70-2(5..)197	79	

VOID BY CONSTRUCTION DATE 6-24-77

REVISIONS		

INITIAL | DATE | DESIGNED BY | CHECKED BY | DETAILED BY | QUANTITIES BY | CHECKED BY | CHECKED BY

DIVISION OF HIGHWAYS

ELEVATIONS

Designer J. Keller | Structure Numbers F-12-AN
Detailer P.H.S.
Drawing Number B 4 of 17 Drawings

Revision Dates (Preliminary Stage Only)

STATE DEPARTMENT OF HIGHWAYS
DIVISION OF HIGHWAYS - STATE OF COLORADO
DOH FORM NO 117
REV OCTOBER 1973

***** BENT LINE INPUT ***** DISTANCE FROM REFERENCE LINE(TYPE)	DESCRIPTION OF BENT LINE	DESCRIPTION OF LINE	SKEW ANGLE OF BENT LINE REFERENCED TO CHORD OR TANGENT	STATION OF INTERSECTION OF LINE AND BENT LINE	ROADWAY ELEVATION AT INTERSECTION OF LINE AND BENT LINE
301.500000 7/ 20 PT.= 4 BACK TANGENT		CONSTR. CL	9 0 ,0 ZERO SKEW	946+30.000	10131.6369
		NO. OUT		946+30.000	10131.7269
		PRO. LINE		946+30.000	10131.6369
		CL BRIDGE		946+30.000	10131.4119
		SO. OUT		946+30.000	10131.0969
306.500000 8/ 20 PT.= 4 BACK TANGENT		CONSTR. CL	0 0 ,0 ZERO SKEW	946+35.000	10131.5196
		NO. OUT		946+35.000	10131.6096
		PRO. LINE		946+35.000	10131.5196
		CL BRIDGE		946+35.000	10131.2946
		SO. OUT		946+35.000	10130.9796
311.500000 9/ 20 PT.= 4 BACK TANGENT		CONSTR. CL	0 0 ,0 ZERO SKEW	946+40.000	10131.4035
		NO. OUT		946+40.000	10131.4935
		PRO. LINE		946+40.000	10131.4035
		CL BRIDGE		946+40.000	10131.1785
		SO. OUT		946+40.000	10130.8635
316.500000 10/ 20 PT.= 4 BACK TANGENT		CONSTR. CL	0 0 ,0 ZERO SKEW	946+45.000	10131.2885
		NO. OUT		946+45.000	10131.3785
		PRO. LINE		946+45.000	10131.2885
		CL BRIDGE		946+45.000	10131.0635
		SO. OUT		946+45.000	10130.7485
321.500000 11/ 20 PT.= 4 BACK TANGENT		CONSTR. CL	0 0 ,0 ZERO SKEW	946+50.000	10131.1746
		NO. OUT		946+50.000	10131.2646
		PRO. LINE		946+50.000	10131.1746
		CL BRIDGE		946+50.000	10130.9496
		SO. OUT		946+50.000	10130.6346
326.500000 12/ 20 PT.= 4 BACK TANGENT		CONSTR. CL	0 0 ,0 ZERO SKEW	946+55.000	10131.0618
		NO. OUT		946+55.000	10131.1518
		PRO. LINE		946+55.000	10131.0618
		CL BRIDGE		946+55.000	10130.8368
		SO. OUT		946+55.000	10130.5218
331.500000 13/ 20 PT.= 4 BACK TANGENT		CONSTR. CL	0 0 ,0 ZERO SKEW	946+60.000	10130.9502
		NO. OUT		946+60.000	10131.0402
		PRO. LINE		946+60.000	10130.9502
		CL BRIDGE		946+60.000	10130.7252
		SO. OUT		946+60.000	10130.4102
336.500000 14/ 20 PT.= 4 BACK TANGENT		CONSTR. CL	0 0 ,0 ZERO SKEW	946+65.000	10130.8397
		NO. OUT		946+65.000	10130.9297
		PRO. LINE		946+65.000	10130.8397
		CL BRIDGE		946+65.000	10130.6147
		SO. OUT		946+65.000	10130.2997
341.500000 15/ 20 PT.= 4 BACK TANGENT		CONSTR. CL	0 0 ,0 ZERO SKEW	946+70.000	10130.7302
		NO. OUT		946+70.000	10130.8202
		PRO. LINE		946+70.000	10130.7302
		CL BRIDGE		946+70.000	10130.5052
		SO. OUT		946+70.000	10130.1902
346.500000 16/ 20 PT.= 4 BACK TANGENT		CONSTR. CL	0 0 ,0 ZERO SKEW	946+75.000	10130.6219
		NO. OUT		946+75.000	10130.7119
		PRO. LINE		946+75.000	10130.6219
		CL BRIDGE		946+75.000	10130.3969
		SO. OUT		946+75.000	10130.0819
351.500000 17/ 20 PT.= 4 BACK TANGENT		CONSTR. CL	0 0 ,0 ZERO SKEW	946+80.000	10130.5148
		NO. OUT		946+80.000	10130.6048
		PRO. LINE		946+80.000	10130.5148
		CL BRIDGE		946+80.000	10130.2898
		SO. OUT		946+80.000	10129.9748
356.500000 18/ 20 PT.= 4 BACK TANGENT		CONSTR. CL	0 0 ,0 ZERO SKEW	946+85.000	10130.4087
		NO. OUT		946+85.000	10130.4987
		PRO. LINE		946+85.000	10130.4087
		CL BRIDGE		946+85.000	10130.1837
		SO. OUT		946+85.000	10129.8687
361.500000 19/ 20 PT.= 4 BACK TANGENT		CONSTR. CL	0 0 ,0 ZERO SKEW	946+90.000	10130.3038
		NO. OUT		946+90.000	10130.3938
		PRO. LINE		946+90.000	10130.3038
		CL BRIDGE		946+90.000	10130.0788
		SO. OUT		946+90.000	10129.7638
366.500000 CL BRG ABUT 4 BACK TANGENT		CONSTR. CL	0 0 ,0 ZERO SKEW	946+95.000	10130.1999
		NO. OUT		946+95.000	10130.2899
		PRO. LINE		946+95.000	10130.1999
		CL BRIDGE		946+95.000	10129.9749
		SO. OUT		946+95.000	10129.6599
370.625000 1/ 4 PT.= 1 BACK TANGENT		CONSTR. CL	2 31 26.6 RIGHT SKEW	946+99.125	10130.1151
		NO. OUT		946+99.389	10130.1997
		PRO. LINE		946+99.125	10130.1151
		CL BRIDGE		946+98.466	10129.9037
		SO. OUT		946+97.538	10129.6077
374.750000 2/ 4 PT.= 1 BACK TANGENT		CONSTR. CL	5 2 18.1 RIGHT SKEW	947+ 3.280	10130.0311
		NO. OUT		947+ 3.779	10130.1104
		PRO. LINE		947+ 3.250	10130.0311
		CL BRIDGE		947+ 1.928	10129.8338
		SO. OUT		947+ .076	10129.5557

***** BENT LINE INPUT ***** DISTANCE FROM REFERENCE LINE(TYPE)	DESCRIPTION OF BENT LINE	DESCRIPTION OF LINE	SKEW ANGLE OF BENT LINE REFERENCED TO CHORD OR TANGENT	STATION OF INTERSECTION OF LINE AND BENT LINE	ROADWAY ELEVATION AT INTERSECTION OF LINE AND BENT LINE
378.875000 3/ 4 PT.= 1 BACK TANGENT		CONSTR. CL	7 32 ,2 RIGHT SKEW	947+ 7.375	10129.9478
		NO. OUT		947+ 8.168	10130.0219
		PRO. LINE		947+ 7.375	10129.9478
		CL BRIDGE		947+ 5.391	10129.7628
		SO. OUT		947+ 2.614	10129.5048
383.000000 BF ABUT 4 BACK TANGENT		CONSTR. CL	10 0 ,0 RIGHT SKEW	947+11.500	10129.8653
		NO. OUT		947+12.558	10129.9342
		PRO. LINE		947+11.500	10129.8653
		CL BRIDGE		947+ 8.855	10129.6931
		SO. OUT		947+ 5.152	10129.4526

VOID
BY CONSTRUCTION DATE 6-24-77

FEDERAL ROAD REGION NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-2(52)197	80	

REVISIONS		

DESIGNED BY
DRAWN BY
DETAILED BY
CHECKED BY
QUANTITIES BY
CHECKED BY
INITIAL
DATE

DIVISION OF HIGHWAYS

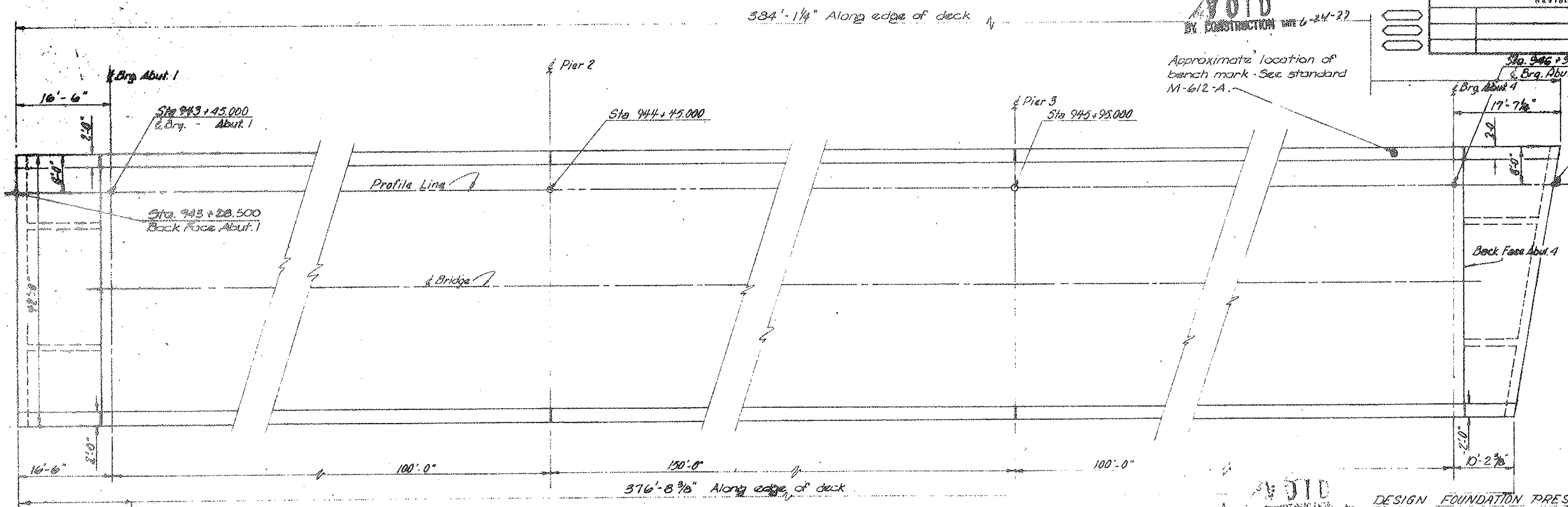
ELEVATIONS

Designer J. Keller | Structure Numbers F-12-AN
Detailer P.H.S.
Drawing Number B-5 of 17 Drawings

Revision Dates (Preliminary Stage Only)

FEDERAL ROAD REGION NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I-70-2(82)197	81	

VOID BY CONSTRUCTION DATE 6-24-77



CONSTRUCTION LAYOUT

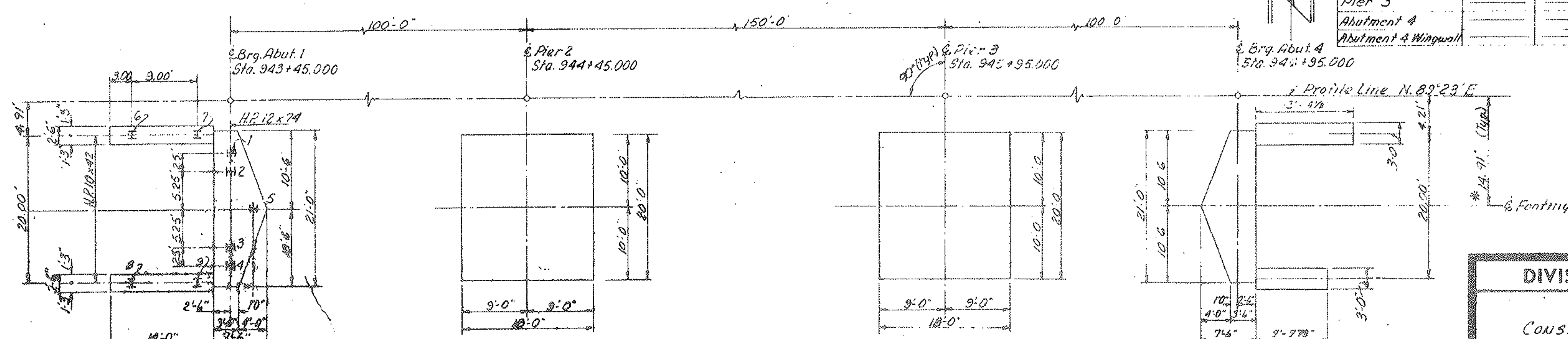
Orig. Scale: 1/8" = 1'-0"

* Location of Abutment and Pier footings is offset by a distance equal to a rate of cross slope times depth of Superstructure (6'-0").

VOID BY CONSTRUCTION

DESIGN FOUNDATION PRESSURE

Description	Allowable Pile Load (Tons)	Computed Pile Load (Tons)	Allowable Ftg. Pressure Tons Per sq. ft.	Computed Ftg. Pressure Tons Per sq. ft.	
Abutment 1	98	96.7	—	—	HP 12x74
Abutment 1 Wingwall	55	54.9	—	—	HP12x53
Pier 2	—	—	6	5.9	
Pier 3	—	—	6	5.9	
Abutment 4	—	—	6	4	
Abutment 4 Wingwall	—	—	6	4.2	



CUTOFF ELEVATIONS OF PILING

Pile No.	Elevation
1	10,126.000
2	10,126.000
3	10,126.000
4	10,126.000
5	10,126.000
6	10,126.000
7	10,126.000
8	10,126.000
9	10,126.000

NOTE: All footing dimensions are at bottom of footing.

FOOTING & PILING LAYOUT

Orig. Scale: 1/8" = 1'-0"

Pile No. 5 Shall be battered 6 to 1

DIVISION OF HIGHWAYS

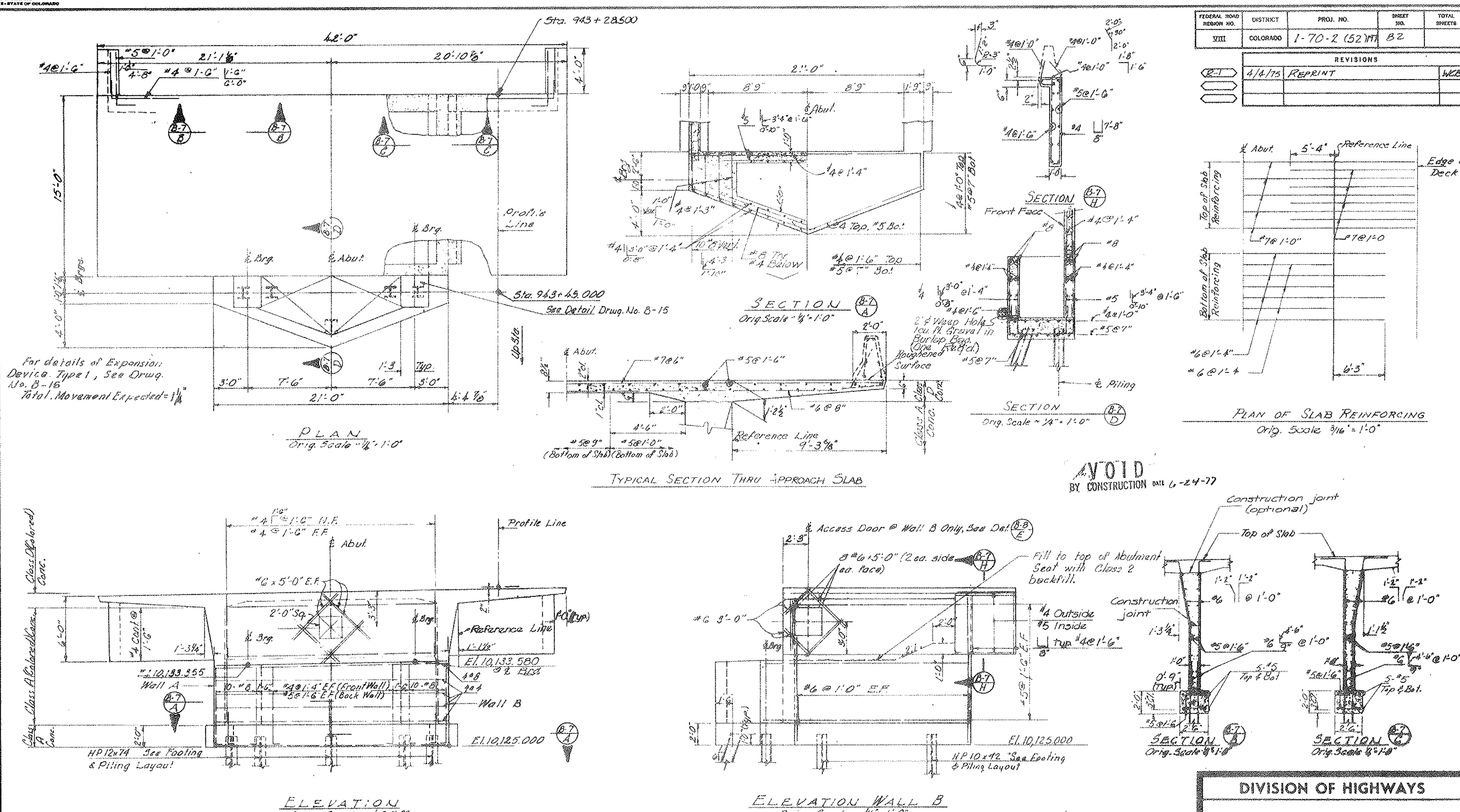
CONSTRUCTION LAYOUT AND FOOTING & PILING LAYOUT

Designer J. Keller		Structure Numbers	F-12-AN
Detailer P.S.			
Drawing Number B 6	of 17	Drawings	

STATE DEPARTMENT OF HIGHWAYS
DIVISION OF HIGHWAYS - STATE OF COLORADO
DOH FORM NO. 117
REV. OCTOBER 1970

FEDERAL ROAD REGION NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I-70-2 (52) 117	82	

REVISIONS			
R-1	4/4/75	REPRINT	WCB



NOTE:
Footing Concrete shall be Class A (Bridge)
Abutment Cap & Wingwall concrete shall be Class A (Bridge) (Colored)
Approach Slab concrete shall be Class D (Bridge), (Colored).
Reinforcing at opening shall be field cut.

DIVISION OF HIGHWAYS

ABUTMENT 1 DETAILS

Designer	J. Keller	Structure Numbers	F-12-AN
Detailer	D. Lindley		
Drawing Number B-7		of 17	Drawings

Revision Dates (Preliminary Stage Only)

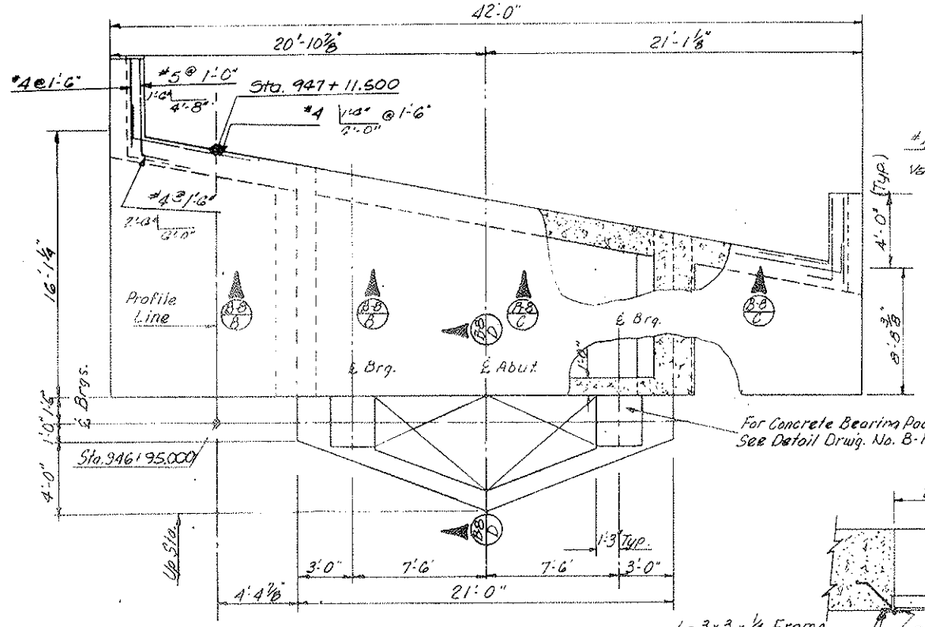
STATE DEPARTMENT OF HIGHWAYS
DIVISION OF HIGHWAYS - STATE OF COLORADO
DOH FORM NO. 112
REV. OCTOBER 1970

FEDERAL ROAD REGION NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I-70-2(52)197	83	

REVISIONS			
R-1	4/4/75	REPRINT	WCB

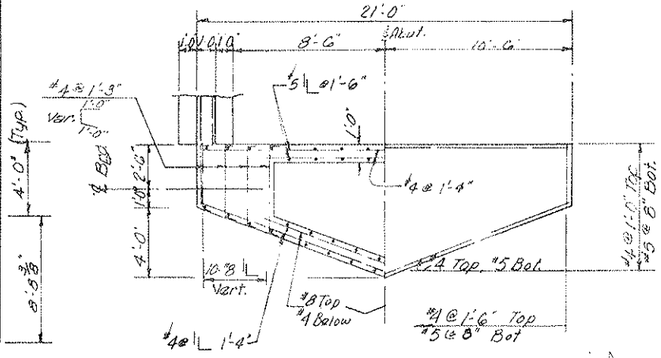
VOID
BY CONSTRUCTION DATE 6-24-77

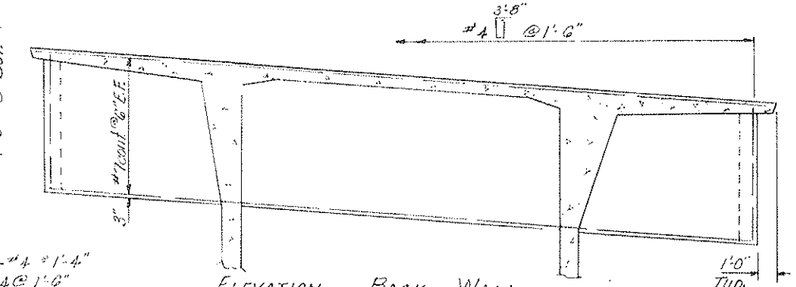
DESIGNED BY	W.C.K.	7-2-74
DETAILED BY	R.N.P.	6-28-74
CHECKED BY	W.C.K.	7-2-74
QUANTITIES BY	R.N.P.	6-28-74
CHECKED BY	W.C.K.	10-2-74



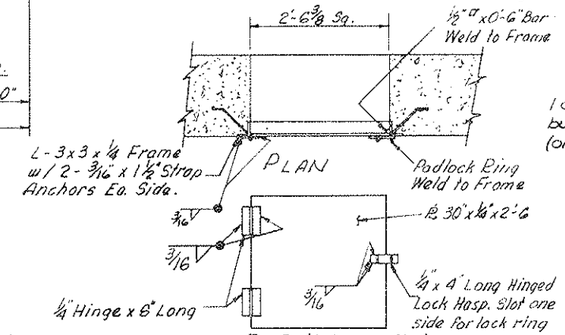
For Details of Expansion Device type 1, See Drwg No. B-16
Total movement Expected. = 1⅛"

PLAN
Orig Scale: ¼" = 1'-0"



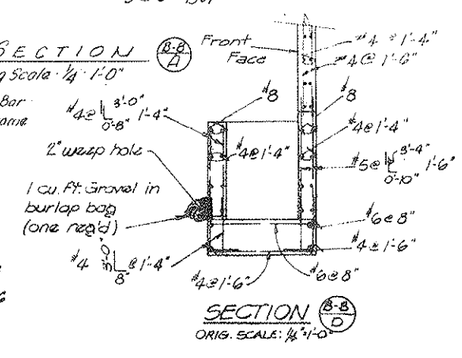


ELEVATION BACK WALL



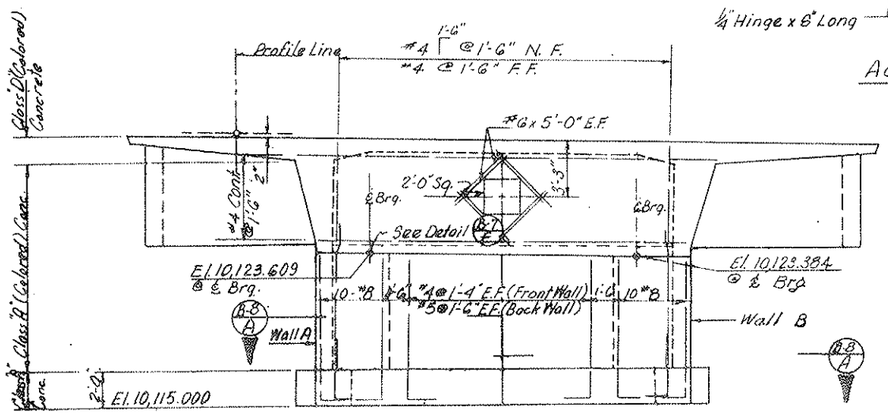
Two Req'd. One ea. Abut.

ACCESS DOOR DETAIL
Orig. Scale: ¾" = 1'-0"

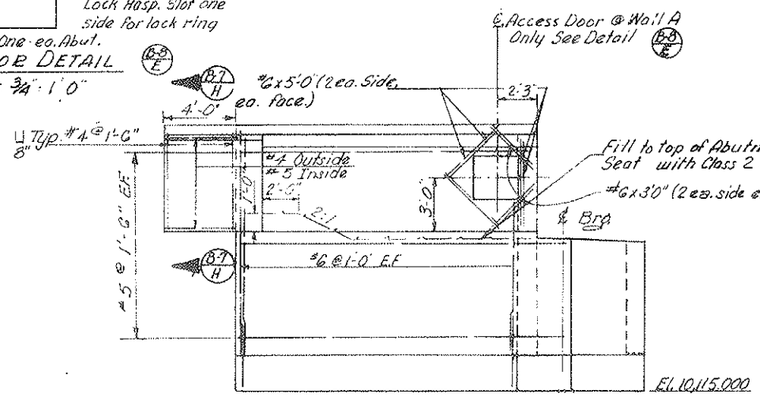


SECTION B-8 D
Orig Scale: ¼" = 1'-0"

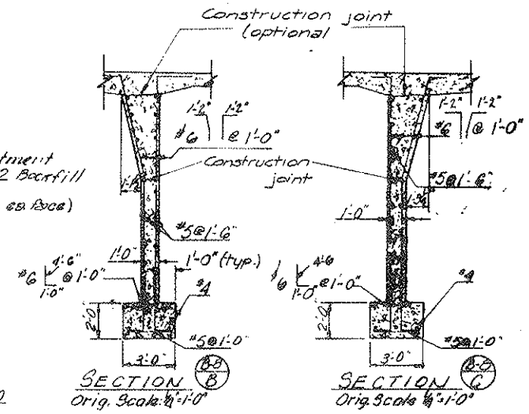
SECTION B-8 D
ORIG. SCALE: ¼" = 1'-0"



ELEVATION
Orig. Scale: ¼" = 1'-0"



ELEVATION WALL A
Orig. Scale: ¼" = 1'-0"



SECTION
Orig. Scale: ¼" = 1'-0"

SECTION
Orig. Scale ¼" = 1'-0"

NOTE:
Footing Concrete shall be Class A (Bridge)
Abutment Cap & Wingwall concrete shall be Class A (Bridge), (Colored).
Approach Slab concrete shall be Class D (Bridge), (Colored).

NOTE: Allowable soil pressure for Abutment and wingwalls is 6 T.S.F.
Reinforcing at opening shall be Field Cut

DIVISION OF HIGHWAYS

ABUTMENT 4 DETAILS

Designer	J. Keller	Structure Numbers	F-12-AN
Detailer	D. Lindley		
Drawing Number	B-8	of 17	Drawings

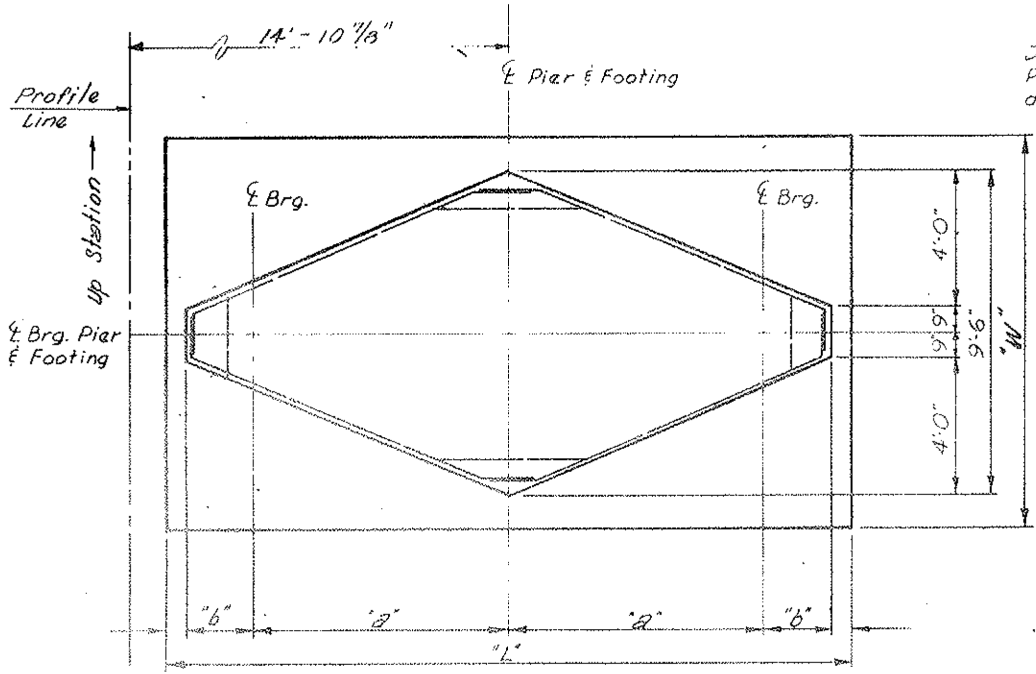
Revision Dates (Preliminary Stage Only)

STATE DEPARTMENT OF HIGHWAYS
DIVISION OF HIGHWAYS—STATE OF COLORADO
DOH FORM NO. 117
REV. DEC. 1972

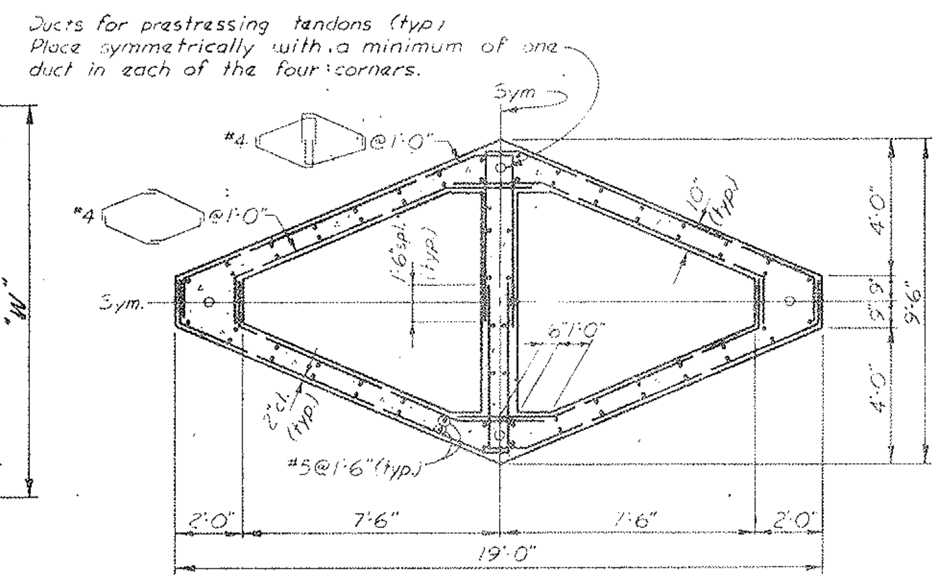
FEDERAL ROAD REGION NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I-70-2(5.)197	84	

REVISIONS			
R1	4-29-75	Addition To Note	B.O.E

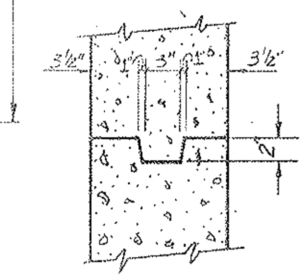
VOID BY CONSTRUCTION 6-24-77



PLAN



SECTION (8-9/A)

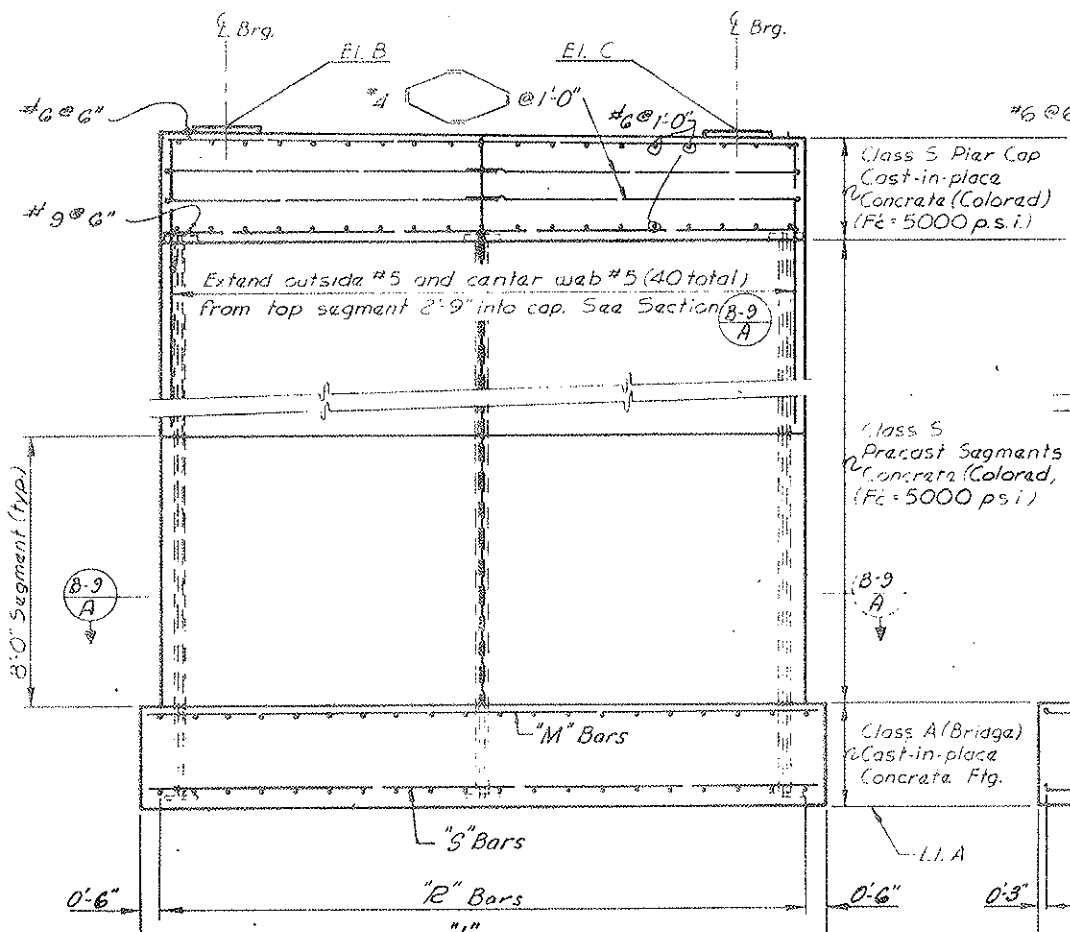


CONSTR. JOINT
(CENTER WALL)

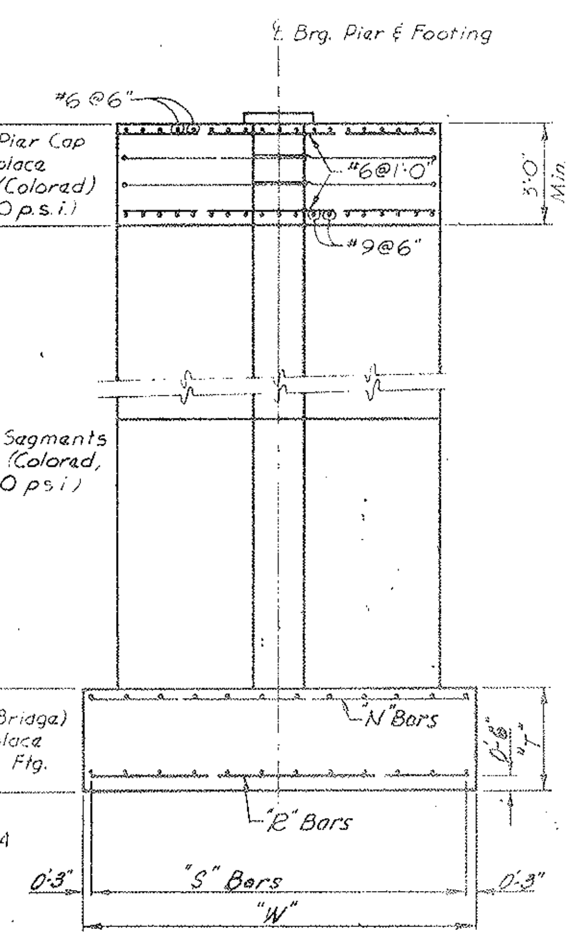
	PIER 2	PIER 3
El. A	10,083.000	10,083.000
El. B	10,130.160	10,125.887
El. C	10,129.935	10,125.662
Dim. "a"	7'-6"	7'-6"
Dim. "b"	2'-0"	2'-0"
Dim. "T"	3'-0"	3'-0"
Dim. "W"	18'-0"	18'-0"
Dim. "L"	20'-0"	20'-0"
M-Bars	#6 @ 7"	#6 @ 7"
N-Bars	#6 @ 7"	#6 @ 7"
R-Bars	#9 @ 8"	#9 @ 8"
S-Bars	#6 @ 7"	#6 @ 7"
Force F	2695 Kips	2240 Kips

(1) FORCE F IS THE POST-TENSIONING FORCE REQUIRED IN THE PIERS AFTER ALL LOSSES INCLUDING CREEP, SHRINKAGE, FRICTION, AND ELASTIC SHORTENING FROM THE SUPERSTRUCTURE LOADS. POST-TENSIONING FORCE F IS TO BE THE SUM OF FOUR EQUAL FORCES, ONE AT EACH CORNER OF THE PIER AS SHOWN IN SECTION.

(1) FORCE F IS THE POST-TENSIONING FORCE REQUIRED FOR SERVICE LOADS. IF THE PIER IS TO BE SUBJECT TO THE ONE SEGMENT, UNBALANCED MOMENT THAT THE FOOTINGS ARE DESIGNED FOR, CALCULATIONS MUST BE SUBMITTED FOR THE ADDITIONAL POST-TENSIONING FORCE NEEDED.



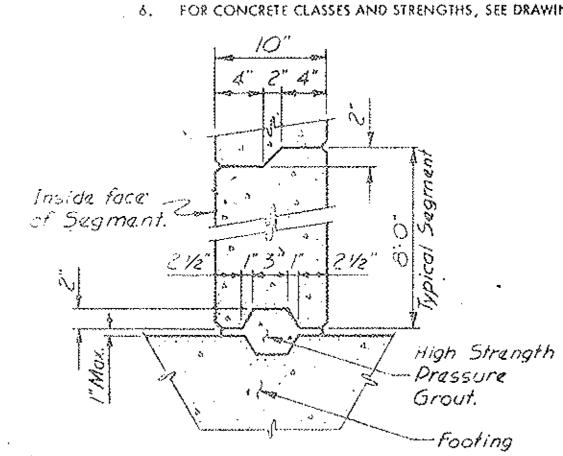
ELEVATION
Looking Ahead Station



END ELEVATION

PIER NOTES:

1. DESIGN PROVISIONS WERE MADE FOR A ONE SEGMENT, UNBALANCED CANTILEVER MOMENT AT THE END OF THE CANTILEVER DURING THE CONSTRUCTION STAGE. THE PIER COLUMNS ARE NOT DESIGNED FOR SUCH UNBALANCED MOMENTS, BUT ALL PIER FOOTINGS ARE DESIGN FOR AN UNBALANCED MOMENT OF 5313 FOOT KIPS WITH COMBINED AXIAL LOAD OF 1356 KIPS (EXCLUDING FOOTING WEIGHT.)
2. POST-TENSIONING TENDON ANCHORAGES IN PIER FOOTINGS AND PIER CAPS SHALL BE DETERMINED BY THE MANUFACTURER AND SUBMITTED FOR APPROVAL.
3. END BLOCKS SHALL BE USED TO DISTRIBUTE THE CONCENTRATED POST-TENSIONING FORCES AT THE ANCHORAGE. CLOSELY SPACED REINFORCEMENT SHALL BE PLACED BOTH VERTICALLY AND HORIZONTALLY THROUGHOUT THE LENGTH OF THE END BLOCK IN ACCORDANCE WITH ACCEPTED METHODS OF END BLOCK ANALYSIS.
4. (R1) ALL SEGMENTS SHALL BE MATCH-CAST TO ENSURE PROPER FIT DURING THE ERECTION STAGE. PRECAST SEGMENT HEIGHT PER BRIDGE MAY BE REVISED IN ORDER TO MINIMIZE THE CAST-IN-PLACE PORTION
5. CARE SHALL BE EXERCISED IN JOINING THE SEGMENTS WITH EPOXY TO ENSURE THAT COMPRESSION IS MAINTAINED OVER THE ENTIRE JOINT AREA UNTIL THE PERMANENT POST-TENSIONED TENDONS ARE STRESSED.
6. FOR CONCRETE CLASSES AND STRENGTHS, SEE DRAWINGS, THIS SHEET.



CONSTR. JOINT

Designed by	C.L.B.	Date 8-74	Checked by	
Checked by	R.A.		Quantities by	
Detailed by			Checked by	

IECO INTERNATIONAL ENGINEERING COMPANY, INC
Barton, Stoddard, Milhollin and Higgins Division
1777 S Bellaire St Denver, Colorado 80222

DIVISION OF HIGHWAYS

PIER DETAILS

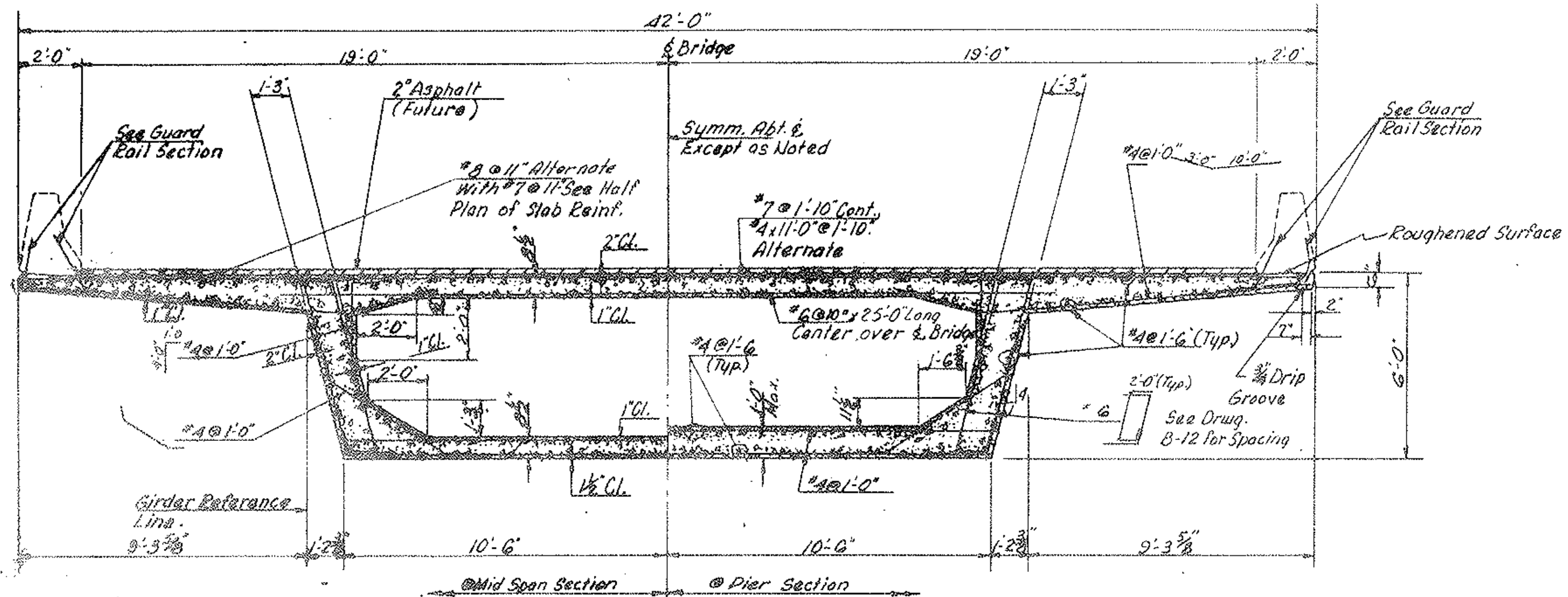
Designer J. Keller
Detailer R.H.S.
Structure Numbers F-12-AN
Drawing Number 8 9 of 17 Drawings

STATE DEPARTMENT OF HIGHWAYS
DIVISION OF HIGHWAYS - STATE OF COLORADO
DOH FORM NO. 117
REV. OCTOBER 1975

FEDERAL ROAD REGION NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I-70-2 (52)197	85	

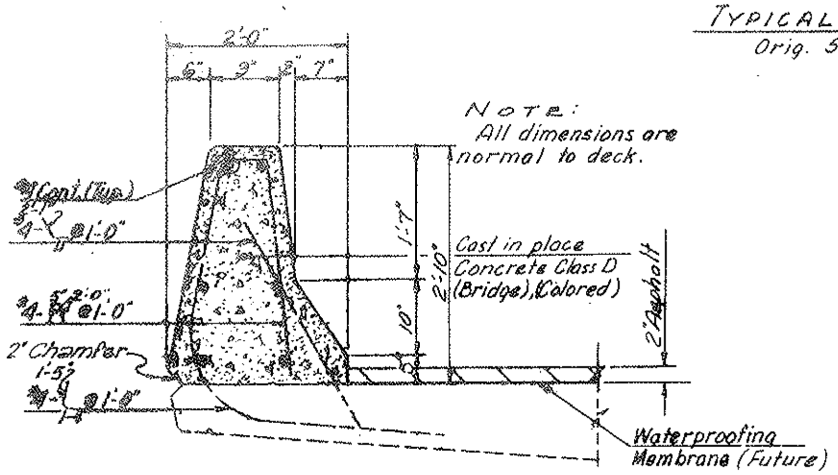
		REVISIONS	
R-1	4/4/75	REPRINT	WCB
R-2	4/17/75	Changed bar size	CLB

VOID BY CONSTRUCTION DATE 6-24-77



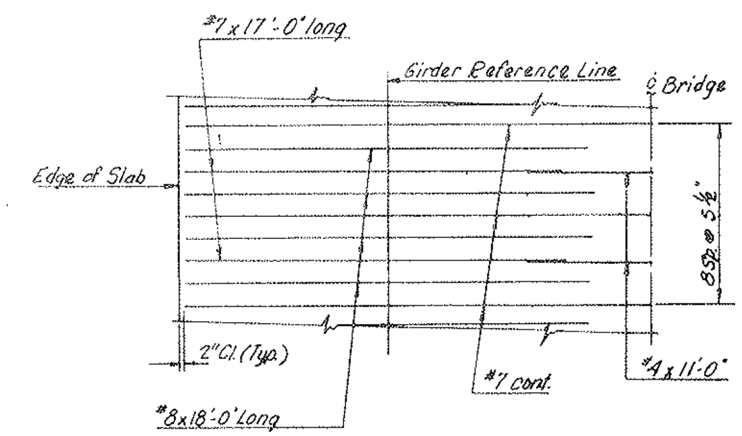
TYPICAL SECTION
Orig. Scale: 3/8" = 1'-0"

NOTE: Concrete shall be class 5 (Bridge) (Colored) unless otherwise noted.
For prestressing notes see Drawing No. B-12



Note: All dimensions are normal to deck.

TYPICAL GUARD RAIL SECTION
Orig. Scale: 1" = 1'-0"



HALF PLAN
TOP SLAB REINFORCING

DESIGNED BY	J.C.K.	CHECKED BY	J.C.K.
CHECKED BY	W.G.K.	QUANTITIES BY	P.H.S.
DETAILED BY	P.H.S.	CHECKED BY	W.G.K.

DIVISION OF HIGHWAYS

SUPERSTRUCTURE DETAILS

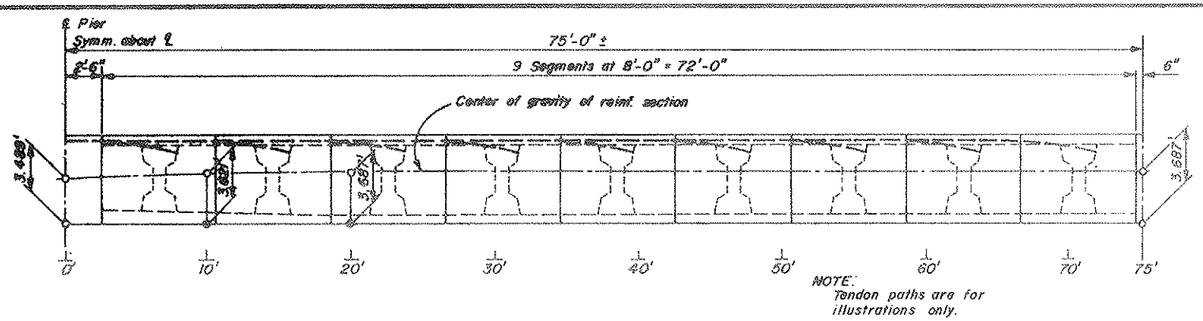
Designer J. Keller		Structure Numbers	F-12-AN
Detailer PHS			
Drawing Number B-10	of 17	Drawings	

Revision Dates (Preliminary Stage Only)

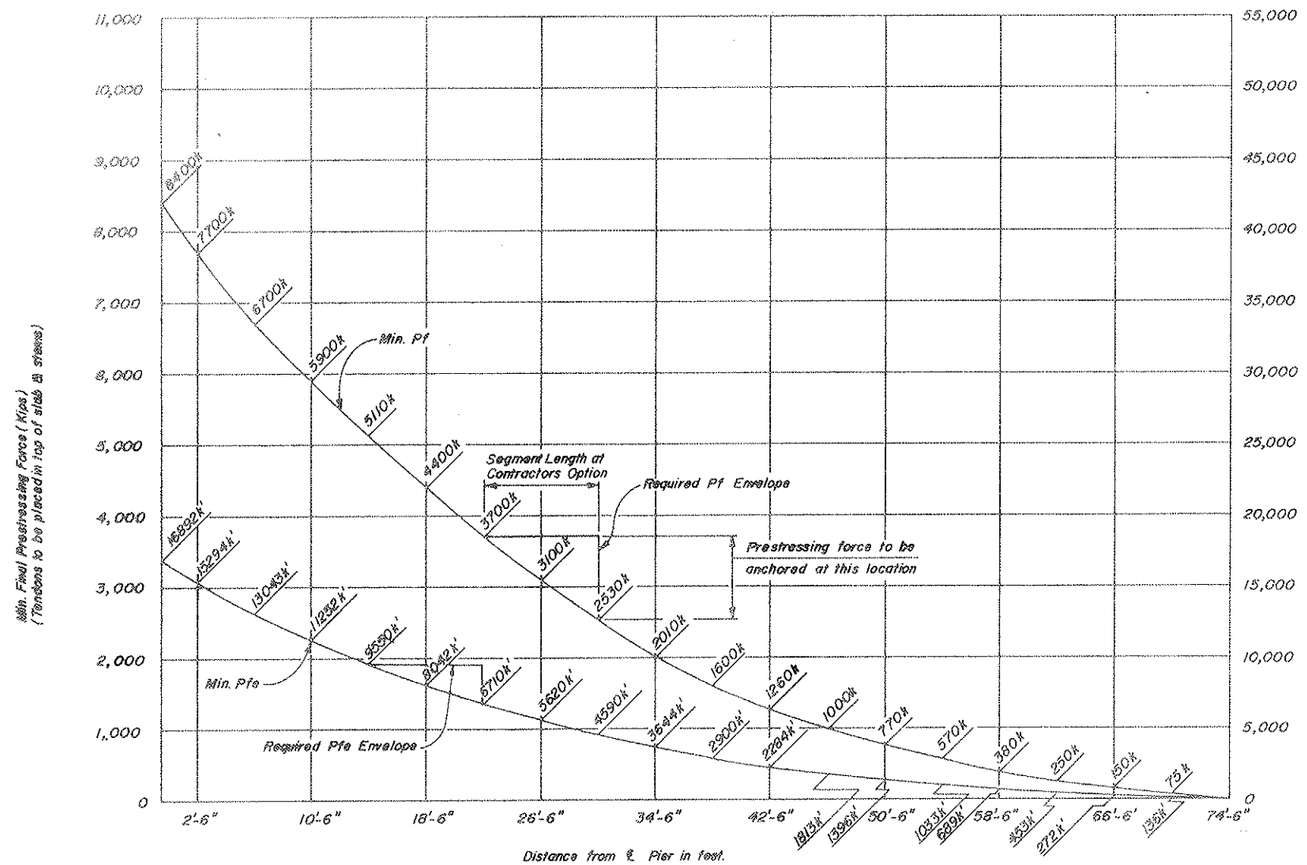
FEDERAL ROAD PROJECT NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
XXII	COLORADO	I-70-2-(52)197	86	

REVISIONS		

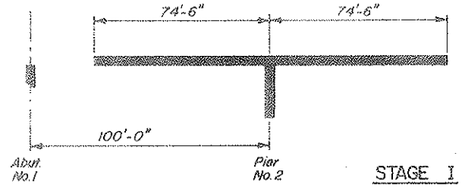
AVOID
BY CONSTRUCTION DATE 6-24-77



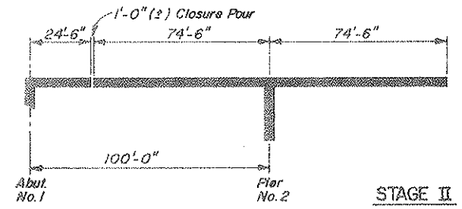
NOTE:
Tendon paths are for illustrations only.



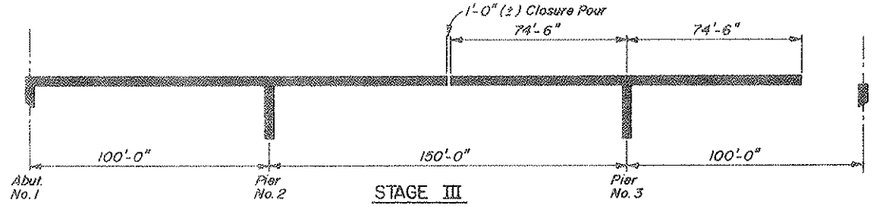
For Prestressing notes see drawing No. B-12



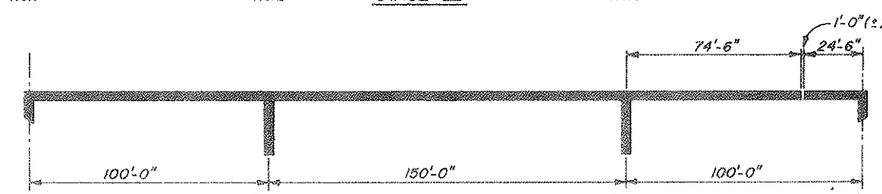
STAGE I



STAGE II



STAGE III



STAGE IV

NOTE:
Stages II, III & IV include the pouring of the closure and Post-Tensioning of Continuity Steel.
All Longitudinal Dimensions shall be along ℄ of girder.

SEQUENCE OF CONSTRUCTION
(Assumed in Design)

DIVISION OF HIGHWAYS

74'-6" FOOT CANTILEVER AND CONSTRUCTION SEQUENCE DIAGRAM

Designer	J. KELLER	Structure Numbers	F-12-AN
Detailer	D.A.H.		
Drawing Number	B-11	of 17	Drawings

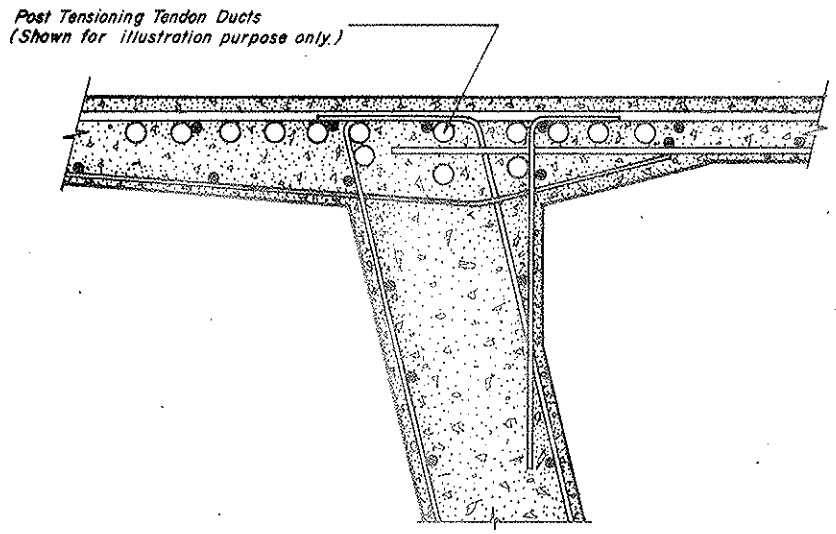
DESIGNED BY	J.W.P.	9-3-76	QUANTITIES BY
CHECKED BY	J.C.K.	9-28-76	CHECKED BY
DETAILED BY	D.H.S.	11-1-76	CHECKED BY

STATE DEPARTMENT OF HIGHWAYS
DIVISION OF HIGHWAYS—STATE OF COLORADO

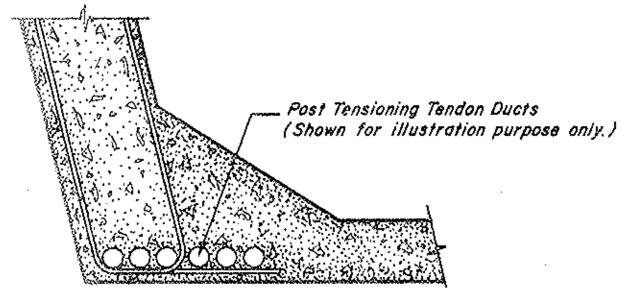
FEDERAL ROAD REGION NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I-70-2(52)197	87	

	REVISIONS		
R-1	5-14-75	Added Note	CLB

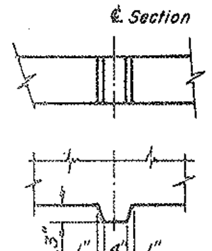
VOID
BY CONSTRUCTION DATE 6-24-77



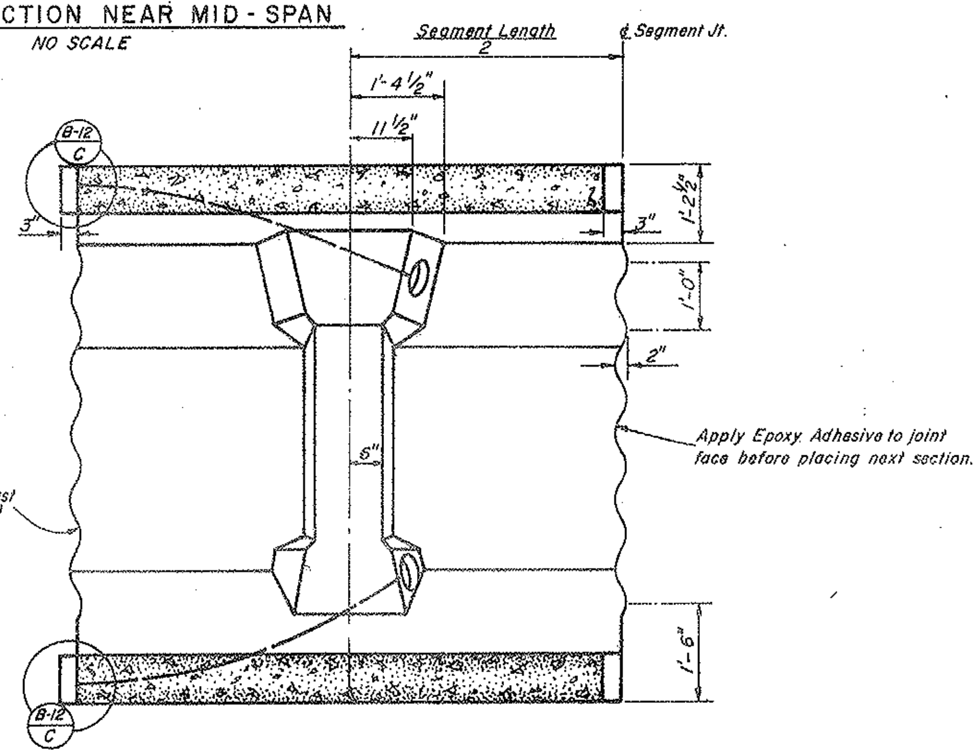
PART SECTION NEAR PIER
NO SCALE



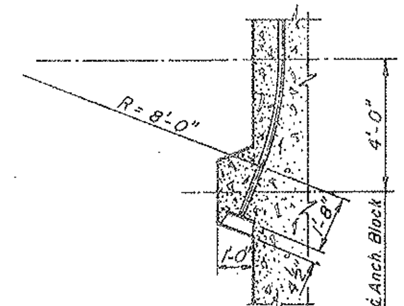
PART SECTION NEAR MID-SPAN
NO SCALE



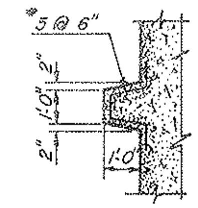
DETAIL B-12/C



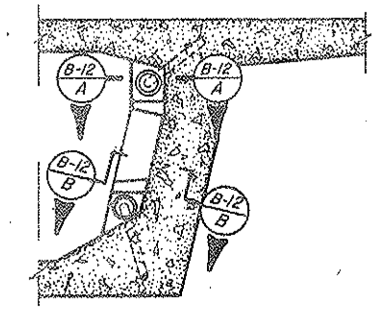
TYPICAL SEGMENT ELEVATION
NO SCALE



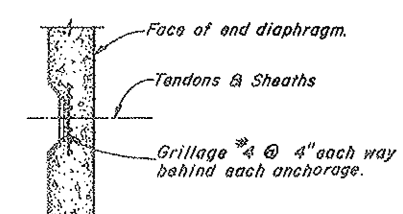
SECTION B-12/A



SECTION B-12/B



ANCHOR BLOCK DETAIL



PART PLAN ANCHORAGE AT ABUTMENTS
NO SCALE

PRESTRESSING NOTES:

1. "P_f" IS THE TOTAL PRESTRESSING FORCE REMAINING AT A SPECIFIC POINT AFTER ALL LOSSES INCLUDING CREEP, SHRINKAGE AND ELASTIC SHORTENING OF CONCRETE, CREEP AND ELONGATION OF STEEL TENDONS AND FRICTION.
2. THE VALUE OF P_f SHALL BE FURNISHED AT THE MIDDLE OF LENGTH FOR WHICH IT IS GIVEN IN THE CASE OF BOTTOM PRESTRESSING THROUGH THE CLOSURE POURS. P_f FOR ALL OTHER BOTTOM PRESTRESSING SHALL BE FURNISHED AT THE END NEAREST MID-SPAN OF THE LENGTH FOR WHICH IT IS GIVEN. P_f FOR TOP PRESTRESSING SHALL BE FURNISHED AT END NEAREST THE SUPPORT OF THE LENGTH FOR WHICH IT IS GIVEN.
3. "e" IS THE ECCENTRICITY OF THE PRESTRESSING FORCE ABOVE OR BELOW THE CENTER OF GRAVITY OF THE CONCRETE BOX CROSS-SECTION.
4. PRESTRESSING OF THE STRUCTURES SHALL BE DONE IN A MANNER SUCH THAT NO TENSILE STRESSES ARE CREATED IN THE CONCRETE.
5. ALL SEGMENTS SHALL BE MATCH CAST TO ENSURE PROPER FIT DURING THE ERECTION STAGES. DURING CASTING, SEGMENTS MUST BE ALIGNED TO ACHIEVE FINAL STRUCTURE GEOMETRY. AT THIS TIME, ALL CORRECTIONS FOR DEFLECTIONS, CAMBER, AND DEFORMATIONS DUE TO CREEP, ELASTIC SHORTENING, ETC. MUST BE COMPENSATED FOR IN THE FORM.
6. PRESTRESSING STEEL PROPERTIES USED IN THE DESIGN CALCULATIONS ARE FOR SEVEN-WIRE, 1/2" Ø STRANDS WITH AN ULTIMATE STRENGTH OF 270 K.S.I. CALCULATIONS MUST BE SUBMITTED FOR DEPARTMENT APPROVAL IF ANOTHER TYPE OF PRESTRESSING STEEL IS SUBSTITUTED. TENDONS SHALL BE SHIPPED IN MOISTURE-PROOF CONTAINERS THAT CAN BE STORED AT THE JOB SITE FOR AN EXTENDED PERIOD OF TIME WITHOUT CORRODING FROM ATMOSPHERIC CONDITIONS.
7. REQUIRED PRESTRESSING FORCES (P_f) AND MOMENTS ($P_f \times e$) ARE BASED ON A SEGMENT LENGTH OF 8'-0" AND ON THE CONSTRUCTION SEQUENCE SHOWN ON DRAWING NUMBER B-13. DESIGN CALCULATIONS FOR ALTERNATIVE CONSTRUCTION SCHEMES MUST BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
8. PROVISIONAL PRESTRESSING USED DURING CONSTRUCTION MUST HAVE ENGINEERS APPROVAL.
9. IF ONE END STRESSING IS USED, ALTERNATE TENDONS SHALL BE STRESSED FROM OPPOSITE ENDS. LONGITUDINAL TENDONS LOCATED IN BOTTOM SLAB SHALL BE STRESSED AFTER CLOSURE POUR IS MADE AND TOP SLAB TENDONS ARE STRESSED.
10. RECTANGULAR ANCHOR PLATES SHALL BE USED TO MINIMIZE FLARES. ALTERNATE ANCHORAGE AND CONSTRUCTION JOINT DETAILS, TO FIT THE PRESTRESSING SYSTEM USED, SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
11. GIRDER WEBS SHALL BE FLARED AS NECESSARY NEAR ANCHORAGE TO PROVIDE A 2" MINIMUM OF CONCRETE COVERING THE DUCTS: THE FLARE SHALL BE ON INSIDE OF THE GIRDER ONLY.
12. BAR REINFORCING INTERFACING WITH THE PRESTRESSING TENDON ALIGNMENT SHALL BE ADJUSTED AS DIRECTED BY ENGINEER.
13. TENDON DUCTS MUST BE PRECISELY ALIGNED DURING PRODUCTION INFLATABLE RUBBER OR SUITABLY RIGID MATERIAL SHALL BE USED TO PREVENT ANY INDENTATIONS OR COLLAPSE OF DUCTS
14. PROVIDE ADEQUATE SUPPORT FOR TENDON DUCTS TO PREVENT ALIGNMENT CHANGES DURING CONCRETE PLACEMENT.
15. A MAXIMUM OF 3 DUCTS MAY BE BUNDLED INTO VERTICAL UNITS. MINIMUM HORIZONTAL CLEARANCE BETWEEN DUCT UNITS SHALL BE 2-1/2 IN. MINIMUM VERTICAL CLEARANCE BETWEEN DUCT UNITS SHALL BE 3 IN.
16. GROUTING IS TO BE DONE AFTER PRESTRESSING IS COMPLETED IN ANY ONE SPAN IN SUCH A WAY THAT GROUTING CANNOT INTERFERE WITH THREADING AND STRESSING OF TENDONS.
17. CARE SHALL BE EXERCISED IN JOINING THE SEGMENTS WITH EPOXY TO ENSURE THAT COMPRESSION IS MAINTAINED OVER THE ENTIRE JOINT AREA UNTIL THE PERMANENT POST-TENSIONED TENDONS ARE STRESSED.
18. SEGMENT JOINTS SHALL HAVE A THOROUGH COATING OF EPOXY TO ELIMINATE VOIDS BETWEEN TENDON DUCTS.
19. A COMPLETE SET OF DEFLECTION CALCULATIONS SHALL BE SUBMITTED TO ENGINEER FOR APPROVAL 60 DAYS PRIOR TO STARTING SUPERSTRUCTURE CONSTRUCTION.
20. THE CAMBER TO BE USED WILL DEPEND ON SEGMENT LENGTH, STRENGTH, WEIGHT AND CREEP OF CONCRETE, PRESTRESSING, WEIGHT OF FALSE-WORK, AND INCIDENTAL CONSTRUCTION LOADS.
21. CONTRACTOR WILL BE REQUIRED TO CHECK CAMBER AT INTERMEDIATE ERECTION STEPS AND PROVIDE CAMBER ADJUSTMENTS WITH SUPPORTING CALCULATIONS.
22. FALSEWORK AT CLOSURE POURS SHALL BE SUPPORTED SUCH THAT APPLIED LOADS WILL RESULT IN EQUAL DEFLECTIONS OF EACH CANTILEVER.
23. TYPICAL SECTION REINFORCING (SEE DWG. NO. B-10) SHALL EXTEND INTO CLOSURE POURS.
24. A MINIMUM OF 30 P.S.I. COMPRESSION SHALL BE REQUIRED DURING AND AFTER INITIAL PRESTRESSING.
25. MINIMUM RESIDUAL COMPRESSIVE STRESS OF 30 psi SHALL BE MAINTAINED AT SEGMENT JOINTS DURING CONSTRUCTION ONCE EPOXY AND PROVISIONAL OR FINAL POST TENSIONING HAVE BEEN PROVIDED.
26. WEB STIFFENERS AS SHOWN ON THE PLANS ARE FOR ILLUSTRATION ONLY. THE CONTRACTOR MUST SUBMIT CALCULATIONS FOR APPROVAL IF OTHER TYPES OF ANCHORAGE DETAILS ARE TO BE USED.
27. WEB STIFFENER REINFORCING DETAILS SHALL BE SUBMITTED FOR THE ANCHORAGE SYSTEM USED. (R-1)

DIVISION OF HIGHWAYS

PRESTRESSING DETAILS

Designer J. KELLER		Structure Numbers	F-12-AN
Detailer PHS			
Drawing Number B-12		of 17	Drawings

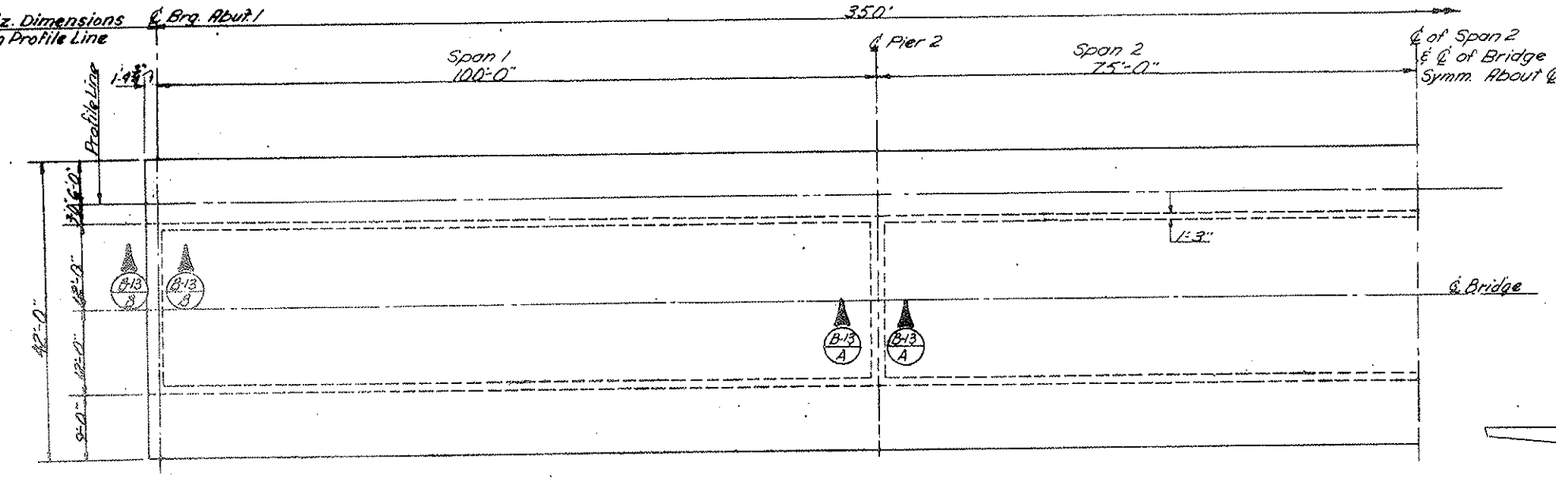
STATE DEPARTMENT OF HIGHWAYS
DIVISION OF HIGHWAYS — STATE OF COLORADO
FORM NO. 177
JULY 1946

FEDERAL ROAD REGION NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I-70-2(52)97	88	

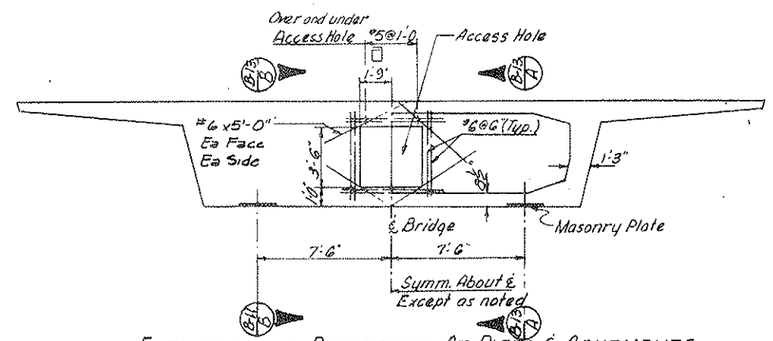
REVISIONS			
R-1	4/4/75	REPRINT	WCB

VOID
BY CONSTRUCTION DATE 6-24-77

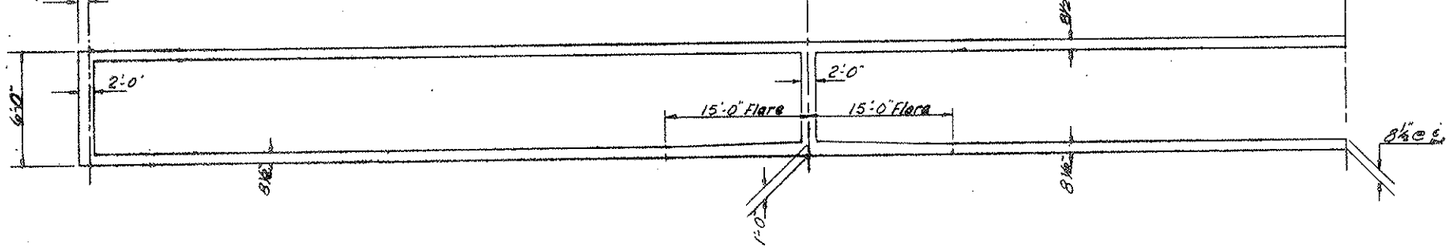
Horiz. Dimensions ℄ Brg. Abut 1 Along Profile Line



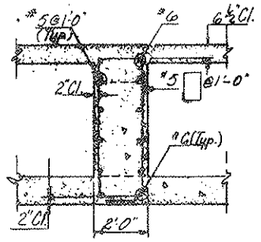
PLAN
Orig. Scale: 1" = 10'-0"



ELEVATION OF DIAPHRAGM AT PIERS & ABUTMENTS

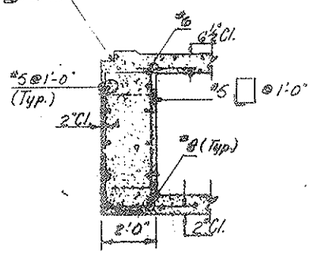


GIRDER ELEVATION
Orig. Scale: Horiz. 1"=10'



SECTION B-13 A
Orig. Scale 3/8"=1'

For Details of Expansion in Deck Overhang See Drwg B-16



SECTION B-13 B
Orig. Scale 3/8"=1'

DESIGNED BY	K.W.P.	6-3-74	
CHECKED BY	J.C.K.	6-26-74	
DETAILED BY	P.H.S.	7-7-74	
CHECKED BY	J.C.K.	10-10-74	
QUANTITIES BY	P.H.S.	10-10-74	
CHECKED BY	J.C.K.	10-30-74	

DIVISION OF HIGHWAYS

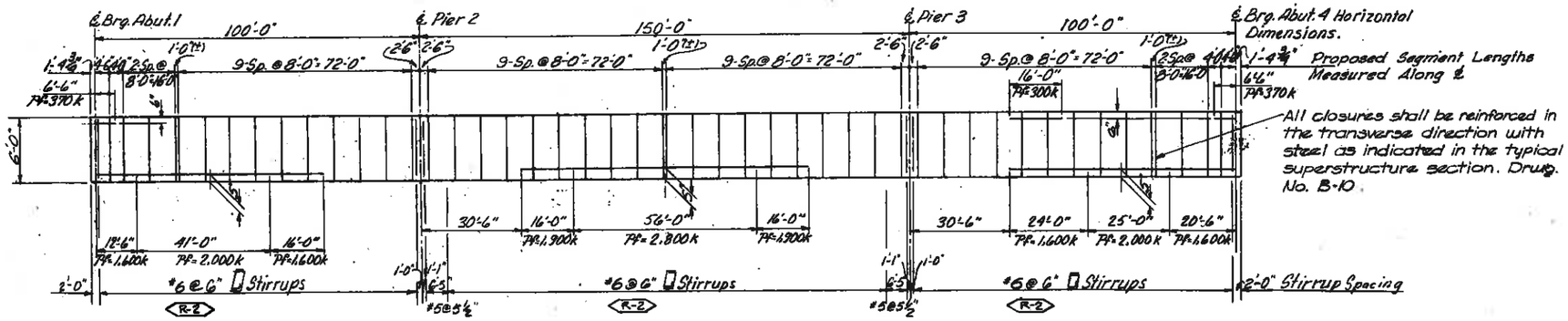
GIRDER DETAILS

Designed J. Keller		Structure Numbers	F-12-AN
Detailed P.S.			
Drawing Number B-13	of 17		Drawings

STATE DEPARTMENT OF HIGHWAYS
DIVISION OF HIGHWAYS — STATE OF COLORADO
FORM NO. 117
JULY 1959

FEDERAL ROAD REGION NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I-70-2(52)197	89	

REVISIONS			
R-1	4/14/75	REPRINT	WEB
R-2	4/17/75	Changed bar size.	CLB



Orig. Scale: Horiz. - 1"=20' Vert. 1"=6'

	INITIAL	DATE	
DESIGNED BY	A.W.P.	10-8-74	CHECKED BY
CHECKED BY	U.C.K.	10-24-74	QUANTITIES BY
DETAILED BY	P.H.S.	11-1-74	CHECKED BY

NOTES:

1. For prestressing notes refer to Drawing No. B-12.
2. (R-2) #6 stirrups to be included in closure pours also.

DIVISION OF HIGHWAYS

GIRDER ELEVATIONS AND CONTINUITY PRESTRESSING

Designer	J. Keller	Structure Numbers	F-12-AN
Detailer	P.S.		
Drawing Number	B-14	of 17	Drawings

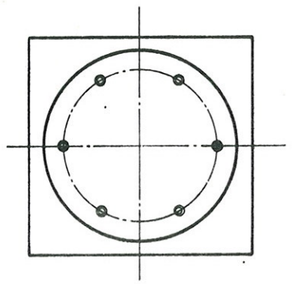
STATE DEPARTMENT OF HIGHWAYS
DIVISION OF HIGHWAYS - STATE OF COLORADO
FORM NO. 117
REV. DEC 1972

JUN 16 1978

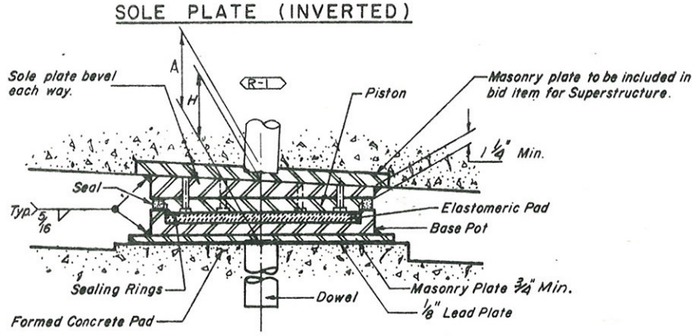
FEDERAL ROAD REGION NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-2(52)197	90	

VOID
BY CONSTRUCTION DATE 6-24-77

REVISIONS		
R-1	8-17-75	Rev Brg. Press., Added Movement & Notes;
	Changed Anchorage, Add dimen. A	CLB



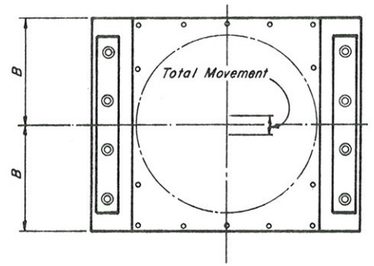
SOLE PLATE (INVERTED)



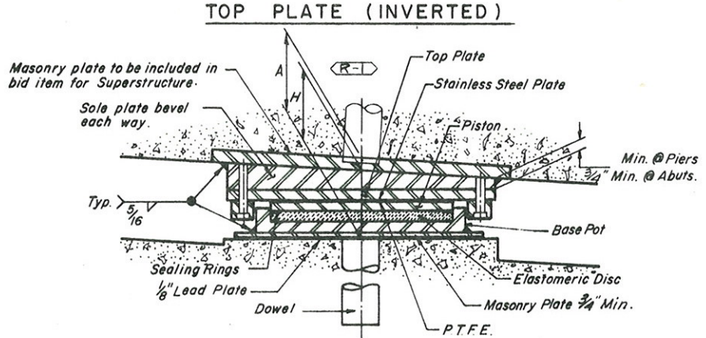
SECTION THRU ASSEMBLED BEARING

FIXED FLOATING BEARING

No Scale



TOP PLATE (INVERTED)



SECTION THRU ASSEMBLED BEARING

GUIDED EXPANSION BEARING

No Scale

BEARING NOTES: R-1

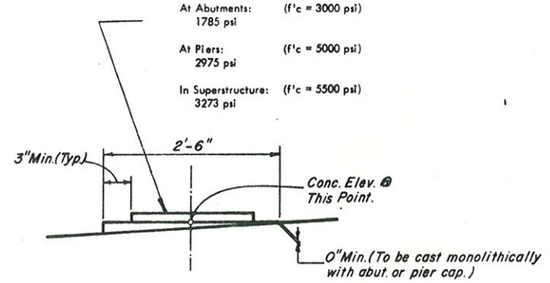
1. STEEL FOR THE BEARING DEVICES, MASONRY PLATES, AND SOLE PLATES SHALL BE A.A.S.H.T.O. SPECIFICATION M-183 (A.S.T.M. A36).
2. THE TYPE OF ANCHORAGE FOR BEARING DEVICES SHALL BE DETERMINED BY THE CONTRACTOR AND SUBMITTED ON SHOP DRAWINGS FOR APPROVAL.
3. FOR ALLOWABLE BEARING PRESSURE ON CONCRETE, SEE DRAWINGS.
4. THE SOLE PLATES SHALL BE SUPPLIED WITH BEVELS AND CROSSFALLS AS REQUIRED FOR GRADE AND SUPERELEVATION.
5. DIMENSION "A" IS THE LIMIT REQUIRED FOR BID ITEM NO. 512, "BEARING DEVICES".
6. THE SIZES OF MASONRY PLATES SHALL BE DETERMINED BY THE BEARING MANUFACTURER. THE ALLOWABLE ULTIMATE BEARING PRESSURES AND THE ULTIMATE LOADS SHALL BE USED TO DETERMINE THE MASONRY PLATE SIZES.
7. ALL BEARING DETAILS, INCLUDING WELDS, ARE SHOWN FOR ILLUSTRATION PURPOSES ONLY. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS SHOWING DETAILS OF THE SPECIFIC BEARING DEVICE TO BE USED.

R-1
ALLOWABLE ULTIMATE BEARING PRESSURES:

At Abutments: (f'c = 3000 psi)
1785 psi

At Piers: (f'c = 5000 psi)
2975 psi

In Superstructure: (f'c = 5500 psi)
3273 psi



CONCRETE BEARING PAD DETAIL

No Scale

FIXED FLOATING BEARING

	LOCATION	PIER 2	PIER 3
	Capacity	550 Tons	550 Tons
	Min. Horiz. Capacity	60 Tons	60 Tons
*	Computed Reaction-DL+LL+I	528.5 Tons	528.5 Tons
	Ultimate Reaction	768.1 Tons	768.1 Tons
	H	5 1/8 in.	5 1/8 in.
R-1	Max Movement (in.)	0	0

R-1
* Computed reactions shall be used to determine bearing capacity.

NOTE:
Capacity includes dead load plus live load plus impact.

GUIDED EXPANSION BEARING

	LOCATION	ABUT. 1	ABUT. 4
	Capacity	175 Tons	175 Tons
	Min. Horiz. Capacity	15 Tons	15 Tons
*	Computed Reaction-DL+LL+I	152.5 Tons	152.5 Tons
	Ultimate Reaction	243.8 Tons	243.8 Tons
	H	5 in.	5 in.
R-1	Max. Movement (in.)	1 1/4	1 1/4

	INITIAL	DATE	
DESIGNED BY	J.W.P.	6-8-76	CHECKED BY
CHECKED BY	J.C.K.	6-28-76	QUANTITIES BY
DETAILED BY	P.H.S.	7-1-76	CHECKED BY

DIVISION OF HIGHWAYS

BEARING DETAILS

Designer	J. Keller	Structure Numbers	F-12-AN
Detailer	PHS		

Drawing Number B-15 of 17 Drawings

STATE DEPARTMENT OF HIGHWAYS
DIVISION OF HIGHWAYS—STATE OF COLORADO
DOH FORM NO. 117
REV. DEC. 1973

INITIAL		DATE			
DESIGNED BY	R.W.P.	6-8-74	CHECKED BY	J.C.K.	7-16-74
CHECKED BY	J.C.K.	8-29-74	QUANTITIES BY	P.H.S.	10-10-74
DETAILED BY	P.H.S.	7-1-74	CHECKED BY	J.C.K.	10-10-74

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-3(12)197	91	

VOID BY CONSTRUCTION DATE 6-24-77

REVISIONS		

NOTES

THE EXPANSION DEVICE SHALL BE INSTALLED ON GRADE, PARALLEL TO THE SLOPE AND GRADE OF THE DECK.

AFTER THE CONCRETE HAS ATTAINED INITIAL SET, THE ATTACHMENTS USED TO HOLD THE ANGLE ASSEMBLY IN ITS PROPER POSITION SHALL BE REMOVED.

DO NOT PAINT STEEL SURFACES IN CONTACT WITH CONCRETE AND PREMOLDED EXPANSION DEVICE.

"W", "T", "⊕", AND "△" DIMENSIONS ARE DEPENDENT UPON THE PARTICULAR PREMOLDED DEVICE SUPPLIED, AND SHALL BE SHOWN ON THE SHOP DRAWINGS.

THE SHOP DRAWINGS SHALL INDICATE THE "W" DIMENSION AT A RANGE OF TEMPERATURES FROM 30° TO 100° ASSUMING A MID-POINT TEMPERATURE OF 40°.

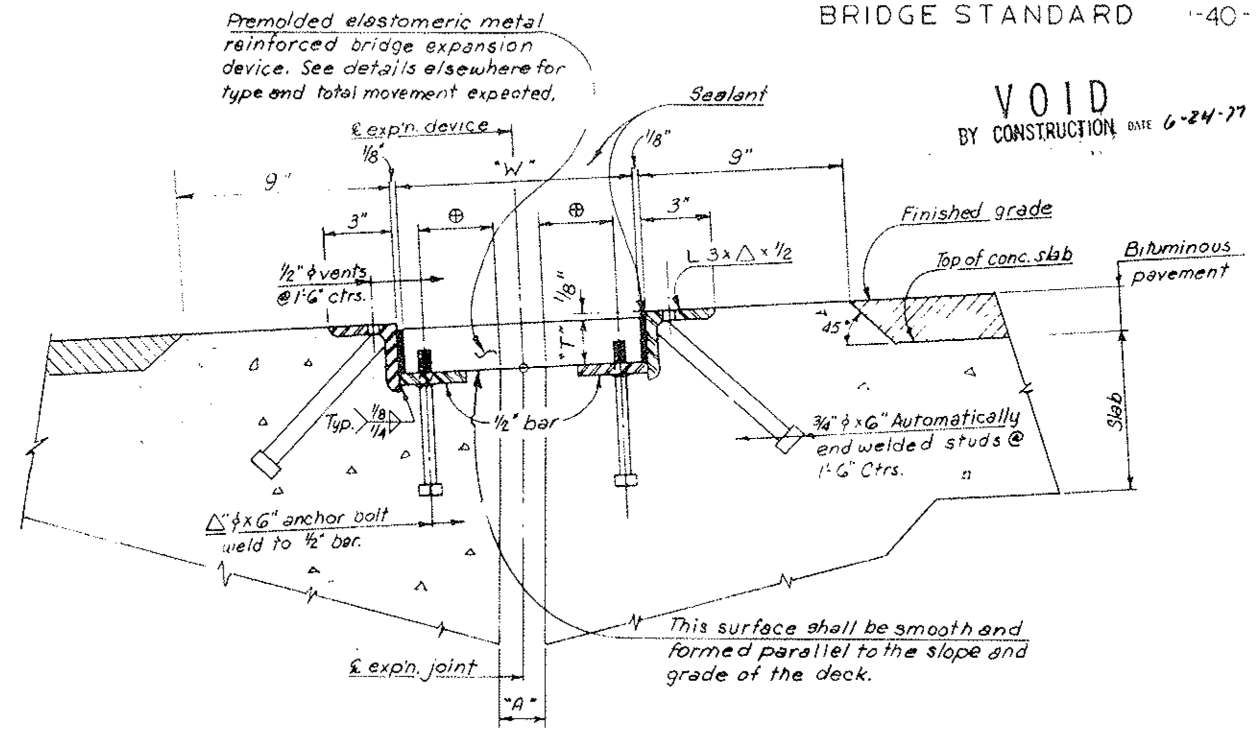
ANGLE AND PLATE ASSEMBLIES TO EXTEND GUTTER TO GUTTER ONLY.

ALL SECTIONS OF THE PREMOLDED EXPANSION DEVICE SHALL BE JOINED BY USING THE MANUFACTURER'S STANDARD WATERPROOF JOINT.

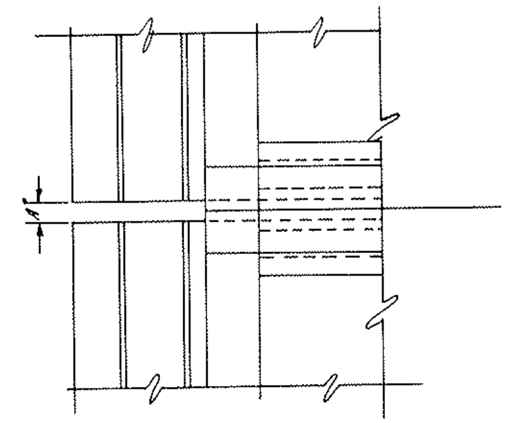
ALL CURB UNITS SHALL BE FULL WIDTH, ON GUTTER LINE, FOR SKEW ANGLES AS SPECIFIED ON THE PLANS.

ALL ANCHORS SHALL BE CAST IN PLACE BOLTS OR THREADED CAST IN PLACE CONCRETE INSERTS EXCEPT FOR CURB AND WALK UNITS WHICH MAY BE INSTALLED BY THE USE OF APPROVED DRILLED IN PLACE ANCHOR UNITS.

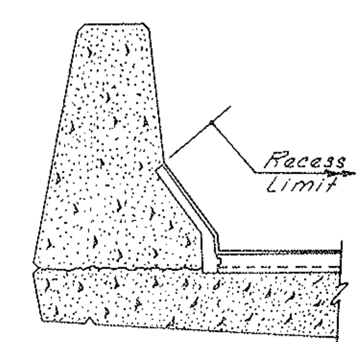
OPENING IN CURB AND SIDEWALK TO BE CONSTRUCTED TO THE EXACT WIDTH OF THE EXISTING DECK OPENING.



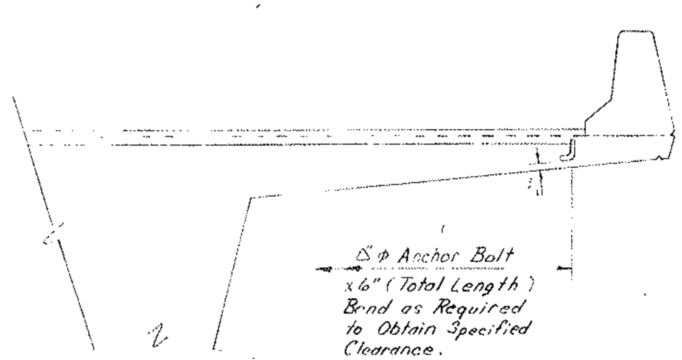
SECTION THRU EXP'N. DEVICE



PLAN



ELEVATION



DETAILS OF EXPANSION JOINT AT GUARDRAIL

Premolded Bridge Expansion Device			
Outside Temp.	(Type 1)	(Type 2)	(Type 3)
	Dim. "A" (Min.)	Dim. "A" (Min.)	Dim. "A" (Min.)
30°	1⅝"	2¼"	2¾"
40°	1½"	2⅛"	2⅝"
50°	1⅜"	2"	2½"
60°	1¼"	1⅞"	2⅜"
70°	1⅛"	1¾"	2⅛"
80°	1"	1½"	2"
90°	⅞"	1⅜"	1¾"
100°	¾"	1¼"	1⅝"

Premolded Bridge Expansion Device			
Outside Temp.	(Type 4)	(Type 6)	(Type)
	Dim. "A" (Min.)	Dim. "A" (Min.)	Dim. "A" (Min.)
30°	4⅜"	5⅜"	
40°	4⅛"	4⅞"	
50°	3⅞"	4½"	
60°	3⅝"	4"	
70°	3¼"	3⅝"	
80°	3"	3¼"	
90°	2¾"	2¾"	
100°	2½"	2⅜"	

DIVISION OF HIGHWAYS

BRIDGE EXPANSION DEVICE
PREMOLDED ARMORED

Designer		Structure Numbers	F-12-AN
Detailer	J.R. EWERT		
Drawing Number B-16		of 17	Drawings

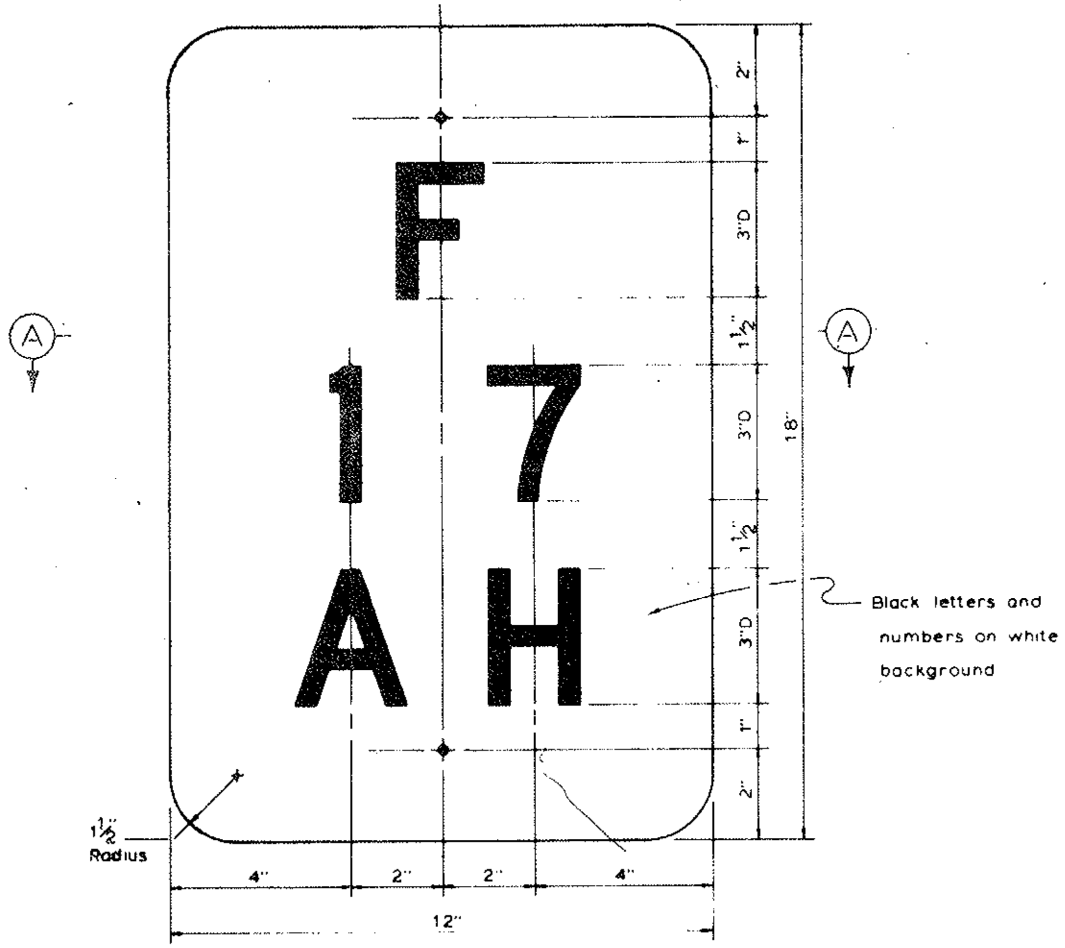
(7-1-74)

Revision Dates (Preliminary Stage Only)

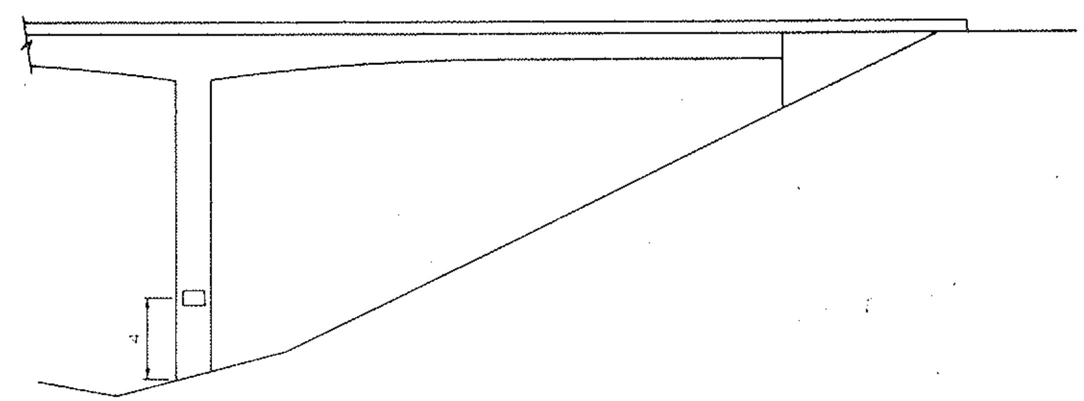
FEDERAL ROAD REGION NO	DIVISION	PROJ. NO.	SHEET NO	TOTAL SHEETS
VIII	COLORADO	I 70-2(52)197	92	

REVISIONS		

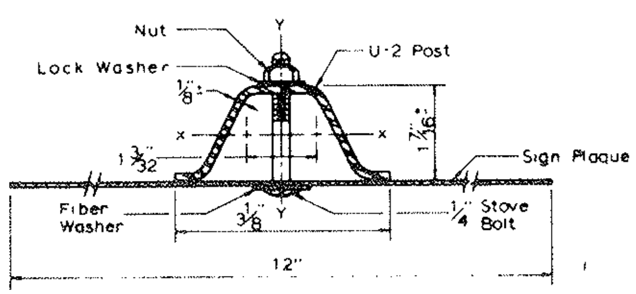
VOID BY CONSTRUCTION DATE 6-24-77



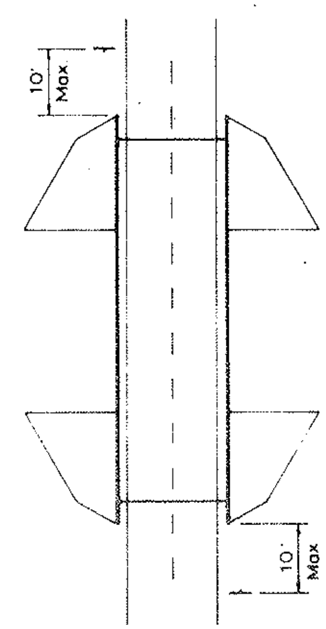
STRUCTURE IDENTIFICATION PANEL
(SAMPLE NUMBERS & LETTERS)



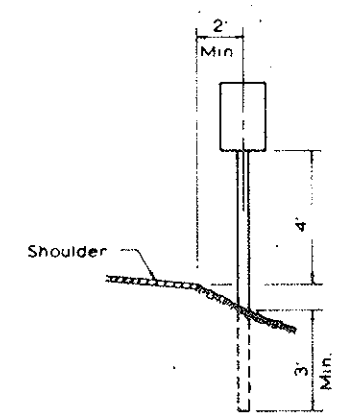
STRUCTURE NUMBER LOCATION ON PIERS



SECTION (A)



(1) STANDARD LOCATION DETAIL



U-2 POST IN GROUND

ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS APPLICABLE TO THE PROJECT.

SIGN PANEL SHALL BE FABRICATED FROM EITHER SHEET STEEL 0.0598 MIN. THICKNESS OR SHEET ALUMINUM 0.060 MIN. THICKNESS.

SIGN PANEL SHALL BE GROUND MOUNTED.

U-2 POST SHALL MEET REQUIREMENTS OF PAR. 4.3 U.S. DEPT. OF COMMERCE, COMMERCIAL STANDARD 134 S.. ACCEPTABLE MATERIAL INCLUDES REROLLED RAILROAD RAILS. U-2 POST SHALL WEIGH 2 LBS. PER FT. EXCEPT THAT A MILL TOLERANCE OF MINUS 3-1/2% OF THE WEIGHT OF ANY ONE POST WILL BE ALLOWED. ALTERNATE METAL POST WILL BE ACCEPTABLE IF SECTION MODULUS IS AT LEAST 0.200 IN.^{3} ABOUT THE X-X AXIS AND AT LEAST 0.250 IN.^{3} ABOUT THE Y-Y AXIS.

SIGN PANEL SHALL BE FASTENED DIRECTLY TO THE POST WITH TWO 1/4" GALVANIZED OR CADMIUM PLATED STOVE BOLTS. A PLASTIC FIBER WASHER SHALL BE PLACED BETWEEN THE BOLTS HEAD AND THE FACE OF THE PANEL. A GALVANIZED OR CADMIUM PLATED LOCK WASHER SHALL BE PLACED UNDER THE NUT ON THE BACK OF THE POST. EXPOSED BOLT HEADS AND FIBER WASHERS ON THE FACE OF THE SIGN PANEL SHALL BE PAINTED TO MATCH THE SURROUNDING COLOR.

LETTERS AND NUMBERS SHALL BE SERIES "C". THEY SHALL BE [illegible].

THE CORRECT STRUCTURE NUMBER IS SHOWN ON THE PLANS.

(1) OMIT STRUCTURE NUMBER STANDARDS WHERE A RAILROAD TRACK CROSSES OVER THE ROADWAY.

STRUCTURE NUMBER STANDARD SHALL NOT BE PAID FOR SEPARATELY BUT INCLUDED IN THE WORK.

IN ADDITION TO THE REQUIREMENTS STATED ABOVE, STRUCTURE NUMBERS FOR HIGHWAYS PASSING UNDER CROSSROADS ARE TO BE PLACED AT THE FOLLOWING POINTS:

(A) FOR STRUCTURES OF THREE OR MORE SPANS, THE STRUCTURE NUMBER SHALL BE STENCILED, FACING TRAFFIC, ON THE OUTSIDE FACE OF THE END COLUMN OF THE RIGHT HAND PIER.

(B) FOR TWO SPAN STRUCTURES, THE STRUCTURE NUMBER SHALL BE STENCILED, FACING TRAFFIC, ON THE OUTSIDE FACE OF EACH END COLUMN OF THE CENTER PIER.

	INITIAL	DATE		
DESIGNED BY	R.H.L.P.	6-28-74	CHECKED BY	V.C.K. 7-16-74
CHECKED BY	V.C.K.	6-28-74	QUANTITIES BY	P.H.S. 10-0-74
DETAILED BY	P.H.S.	7-1-74	CHECKED BY	V.C.K. 10-0-74

DIVISION OF HIGHWAYS

STRUCTURE NUMBER STANDARD

Designer		Structure Numbers	F-12-AN
Detailer	B.E. LEGE		
Drawing Number B-17		of 17	Drawings

(7-1-74)

Revision Dates (Preliminary Stage Only)

STATE DEPARTMENT OF HIGHWAYS
DIVISION OF HIGHWAYS—STATE OF COLORADO
DOH FORM NO. 112
REV. DEC. 1972

FEDERAL ROAD REGION NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-2(52)197	93	

	REVISIONS		
R-1	4/17/75	Changed Exp'n. Device Type	CLB
R2	4-29-75	Removed "D2" from note	B.D.E.
R-3	~~5-6-75~~	~~Note~~	~~WEB~~

GENERAL NOTES:

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

ALL CONCRETE SURFACES AS REFERRED TO IN THE SPECIFICATIONS SHALL RECEIVE A CLASS 7 SURFACE FINISH.

ALL CONCRETE CHAMFERS SHALL BE 3/4 INCH UNLESS OTHERWISE NOTED.

EXPANSION JOINT MATERIAL SHALL MEET A.A.S.H.T.O. SPECIFICATION M 213-65 AND SHALL BE INCLUDED IN THE PAYMENT FOR ITEM NO. 601.

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

WHEN EXCAVATING FOR FOOTINGS, THE FINAL SIX INCHES IN DEPTH SHALL BE DONE BY HAND LABOR METHODS.

FOOTINGS IN ROCK SHALL NOT BE FORMED BUT SHALL BE PLACED AGAINST UNDISTURBED ROCK.

FOR DETAILS OF STRUCTURE EXCAVATION AND STRUCTURE BACKFILL, SEE STANDARD M-206-AA.

ALL STRUCTURAL STEEL NOT OTHERWISE NOTED SHALL BE A.A.S.H.T.O. SPECIFICATION M-222 (A.S.T.M. A 588).

STRUCTURAL STEEL FOR ALL SECONDARY MEMBERS WITH THE EXCEPTION OF BEARING STIFFENERS AND LONGITUDINAL STIFFENERS IN THE BOTTOM FLANGE MAY BE AASHTO SPECIFICATION M-183 (A.S.T.M. A36).

IF A.S.T.M. A 36 STRUCTURAL STEEL IS USED FOR SECONDARY MEMBERS, ALL SUCH MEMBERS SHALL BE PAINTED WITH 2 COATS SHOP PAINT EXCEPT FOR EXTERIOR DIAPHRAGMS (D2) EXTERIOR DIAPHRAGMS SHALL BE LEFT UNPAINTED.

ALL STRUCTURAL STEEL NOT OTHERWISE NOTED SHALL BE PAINTED IN ACCORDANCE WITH SECTION 509 FOR ( ) PAINT.

NO WELDING OF ANY KIND SHALL BE PERMITTED ON THE FLANGES OF STEEL GIRDERS UNLESS SPECIFICALLY CALLED FOR IN THE PLANS.

BOLTS SHALL BE FURNISHED IN THE AMOUNT OF TWO PERCENT IN EXCESS OF THE NOMINAL NUMBER REQUIRED.

STRUCTURE WAS ANALYZED USING LOAD FACTOR DESIGN EXCEPT TRANSVERSE DECK SLAB WHICH WAS ANALYZED USING SERVICE LOAD DESIGN.

GRADE 60 REINFORCING STEEL REQUIRED FOR [illegible] BARS AND LARGER. GRADE 40 OR GRADE 60 [illegible] BE FURNISHED FOR [illegible] BARS.

THE EXTERIOR FACE OF THE OUTSIDE WEB OF EACH STEEL BOX GIRDER SHALL BE SAND BLAST CLEANED IN ACCORDANCE WITH SUBSECTION 509.33 (b) 2 OF THE STANDARD SPECIFICATIONS. ALL OTHER EXPOSED SURFACES SHALL BE CLEANED AS OUTLINED IN SECTION 509.33 (b) 1.

W[illegible] WHICH ARE EXPOSED TO VIEW WILL REQUIRE WELD METAL WITH COLORING CHARACTERISTICS SIMILAR TO THAT OF THE BASE METAL.

THE FOLLOWING TABLE SHOWS THE MINIMUM LAP FOR COMMON BAR SIZES.

BAR SIZE NUMBER		4	5	6	7	8	9	10	11
SPLICE	GRADE 40	1'-0"	1'-3"	1'-6"	1'-9"	2'-2"	2'-8"	3'-5"	4'-3"
LENGTH	GRADE 60	1'-6"	1'-11"	2'-3"	2'-8"	3'-0"	3'-5"	4'-2"	5'-0"

E.F. = EACH FACE
N.F. = NEAR FACE
F.F. = FAR FACE

(B) CROSS REFERENCE DRAWING NUMBER / SECTION OR DETAIL IDENTIFICATION

Summary of Quantities

	Item	Description	Unit	Structure No. F-12-AN Super-Structure	Abut. 1 (118)	Pier (~~Abut.~~) 2 (239)	Pier 3 (374)	Abut. (~~Pier~~) 4 (274)	Total 945
	206	Structure Excavation	Cu.Yd.		~~135~~	~~110~~	~~320~~	170	~~435~~
	206	Structure Backfill (Class 2)	Cu.Yd.		~~65~~ 55	~~50~~ 145	~~210~~ 205	~~100~~ 67	~~425~~ 475
③	203	Hot Bituminous Pavement (Grading)	Ton	178					178
③	411	Asphalt Cement (AC-5)	Ton	13					13
②	502	Steel Piling (HP 10x42)	Lin.Ft.		86.7 ~~92~~			18.1 ~~30~~	104.6 ~~122~~ 122.2
	502	Steel Piling (HP 12x74)	Lin.Ft.		~~125~~ 122.2				~~125~~
⑤	509	Structural Steel	Lbs.	415,000	70			70	415,140
④	512	Bearing Devices (0 to 250 Tons)	Ea.		2			2	4
④	512	Bearing Devices (251 to 500 Tons)	Ea.			2	2		4
③	515	Waterproofing (Membrane)	Sq.Yds.	1634					1634
R-1	518	Bridge Expansion Device (Type 2)	Lin.Ft.	76					76
	601	Concrete Class A (Bridge)	Cu.Yd.		13.46	64.40 ~~48~~	57.04 ~~48~~	13.46	~~122~~ 144.52
	601	Concrete Class A (Bridge)(Colored)	Cu.Yd.		30 25.78			24.84 ~~30~~	~~60~~ 50.62
	601	Concrete Class D (Bridge)	Cu.Yd.	~~310~~ 296.76					~~310~~ 296.76
	601	Concrete Class D (Bridge)(Colored)	Cu.Yd.	~~264~~ 207.76	58.10 ~~52~~			52.53 ~~45~~	~~298~~ 317.89
	602	Reinforcing Steel	Lbs.	127,483	10,177	4830	4830	9,669	~~157,000~~ 156,989
①	618	Concrete Segmental Pier	L.S.						1
	626	Mobilization	L.S.						0.2

① ~~Concrete Class S (Colored) 163 Cu.Yd.~~
~~Reinforcing Steel 12,610 Lbs.~~
~~Prestressing Strands 6,620 Lbs.~~

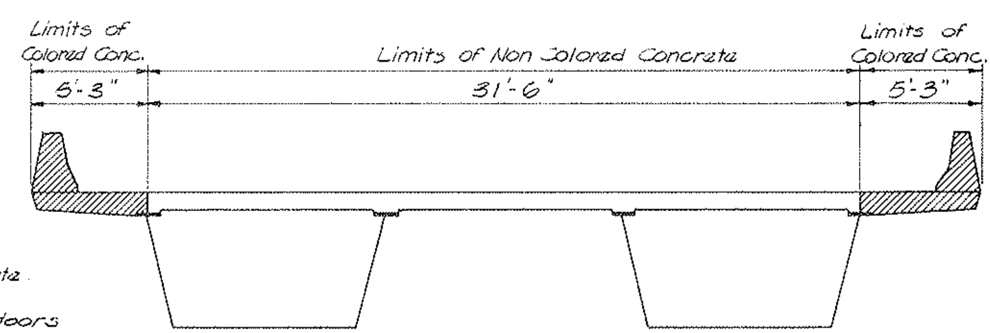
② HPS 10x42 May be used in Lieu of the HP 10x42

③ Future Items

④ Includes the wedged sole plate and the masonry plate.

⑤ Item 509 includes 140 # A36 for access doors

R-3 ① ~~Approximate Quantities for Information only.~~



PORTIONS OF DECK TO BE POURED WITH COLORED CONCETE

INDEX OF DRAWINGS

AS CONSTRUCTED
REVISED DATE: 6-24-79

BRIDGE EXPANSION DEVICES
TRANSFLEX TYPES 150C, (200A, 2) 400A, 650

LOADING DATA

LIVELOAD: A.A.S.H.O. HS 20-44 OR INTERSTATE ALTERNATE
DEADLOAD: ASSUMES 25 LBS. PER SQ. FT. FOR BITUMINOUS PAVEMENT

DESIGN DATA:

A.A.S.H.T.O. 1973 UNIT STRESSES, AND 1974 INTERIM SPECIFICATIONS, EXCEPT AS NOTED.

REINFORCING STEEL:	GRADE 60 -	FY = 60,000 LBS. PER SQ. IN. FS = 24,000 LBS. PER SQ. IN.
	GRADE 40 -	FY = 40,000 LBS. PER SQ. IN. FS = 20,000 LBS. PER SQ. IN.
STRUCTURAL STEEL:	A36, GRADE 36 -	FY = 36,000 LBS. PER SQ. IN.
	A588, GRADE 50 -	FY = 50,000 LBS. PER SQ. IN.
CONCRETE:	CLASS A & D -	F'_C = 3000 LBS. PER SQ. IN. N = 9
	CLASS S - (FOR LIMITS SEE PLANS.)	F'_C = 5000 LBS. PER SQ. IN.

DESIGN FOUNDATION PRESSURES

Description	Allowable Pile Load	Computed Pile Load	Allowable Ftg. Pressure	Computed Ftg. Pressure
Abutment 1	98 Tons	80 Tons	—	—
Abutment 1 Backwall	55 Tons	36 Tons	—	—
Pier 2	—	—	6 Tons per sq. ft.	5.8 Tons per sq. ft.
Pier 3	—	—	6 Tons per sq. ft.	5.8 Tons per sq. ft.
Abutment 4	—	—	6 Tons per sq. ft.	2.5 Tons per sq. ft.
Abutment 4 Backwall	55 Tons	36 Tons	—	—

BRIDGE DESCRIPTION

3 Span (100'-0", 150'-0", 100'-0")
Continuous Composite Concrete Slab and welded Steel box Girder Bridge.

Over Stafford Gulch
38'-0" Roadway, Curb to Curb. 90° Skew
Type 4 Bridge Rail.

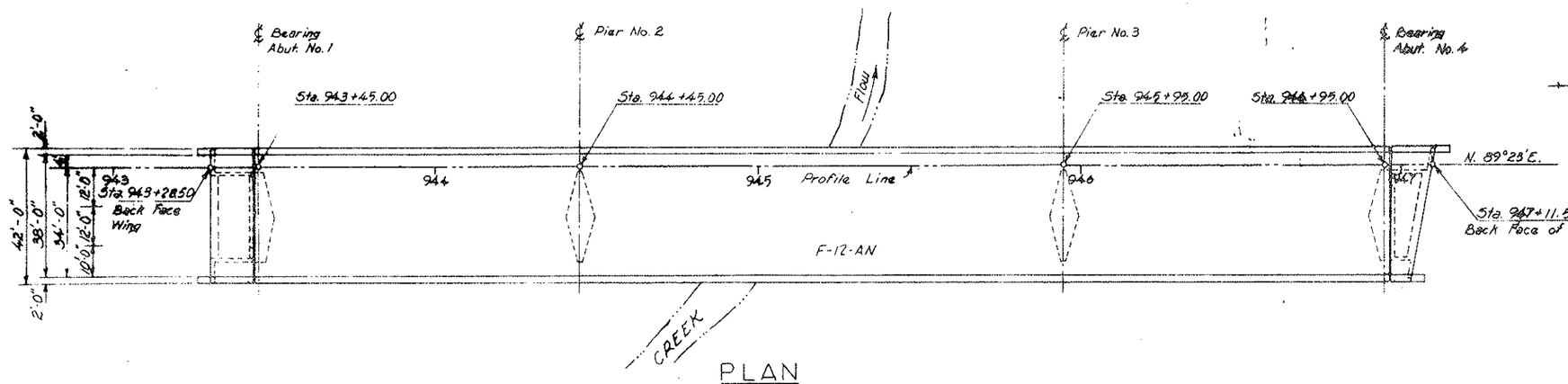
Details Reviewed
[signature] P.E.
Bridge Engineer Date 3/26/75

DIVISION OF HIGHWAYS

GENERAL INFORMATION
SUMMARY OF QUANTITIES

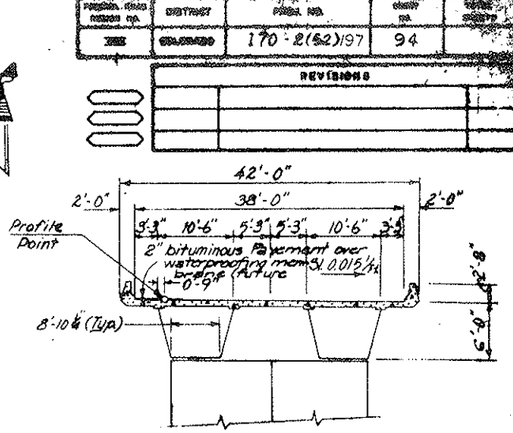
Station 943+28.500 to
Station 947+11.500
Near Vail Sec. T. 5 S. R. 79 W.
Designer RWP — Structure Numbers F-12-AN
Detailer DDL
Drawing Number B-1 of 16 Drawings

C (10-19-73)



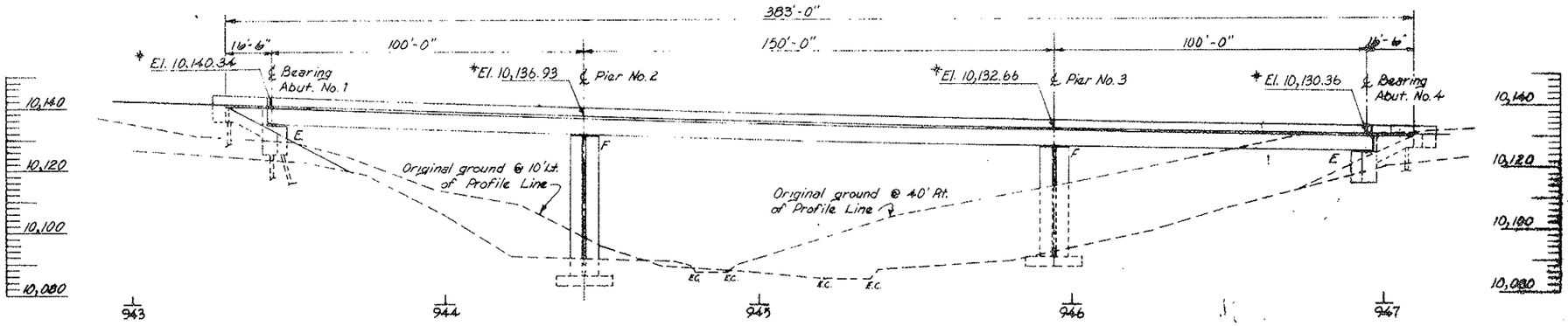
PLAN

Orig. Scale: 1" = 20'



TYPICAL SECTION

Orig. Scale: 1" = 10'

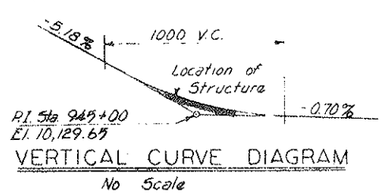


ELEVATION

Taken along ℄ Roadway

Orig. Scale: 1" = 20'

* Finished roadway elevations and horizontal dimensions are along profile lines



VERTICAL CURVE DIAGRAM

No Scale

AS CONSTRUCTED
NO REVISIONS DATE: 6-24-77

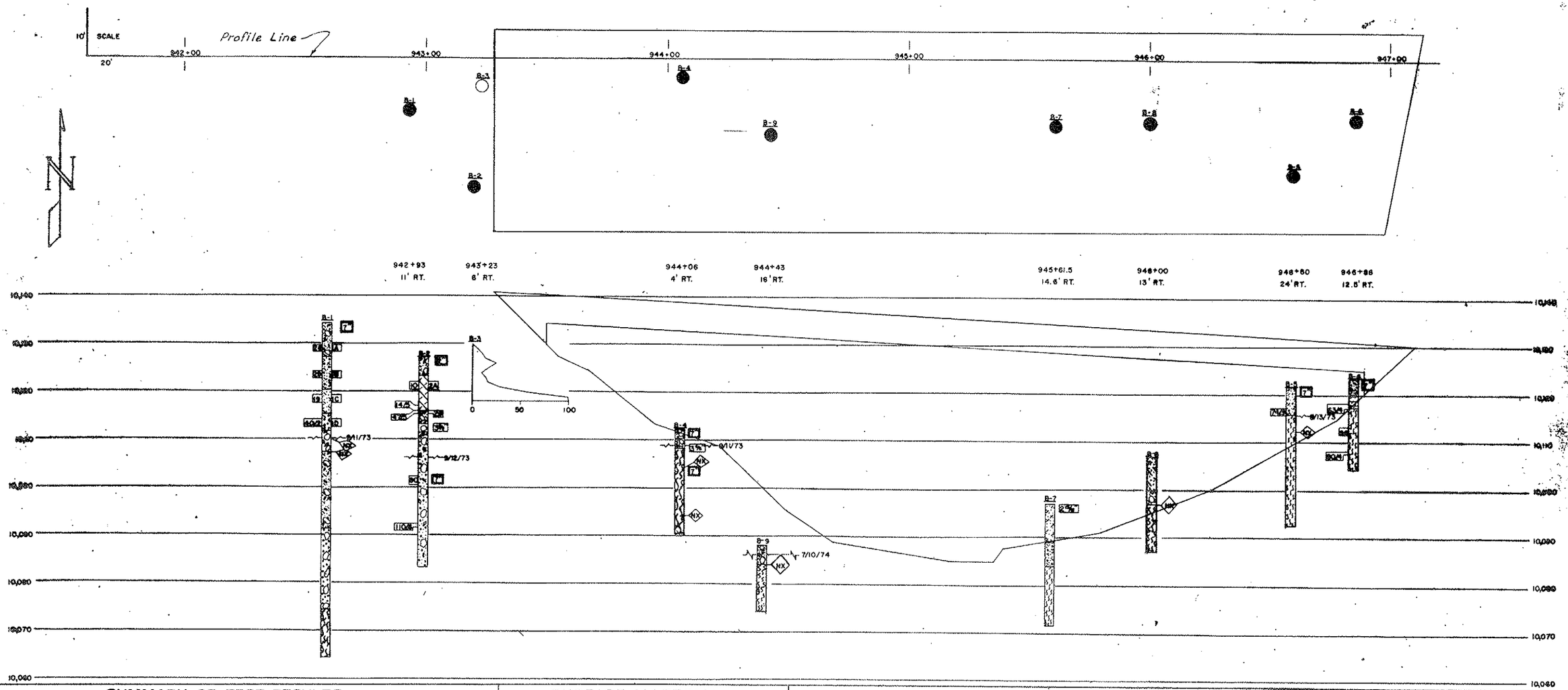
DIVISION OF HIGHWAYS

GENERAL LAYOUT

FORM NO. 100
OCTOBER, 1956

FED. ROAD REG. NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
VIII	COLO.	I 70-2( )197	95	

AS CONSTRUCTED
NO REVISIONS DATE: 6-24-77



SUMMARY OF TEST RESULTS

Sample No.	Depth	Classification: Corps of Engrs. or Visual	Classification: AASHO	Grading Analysis (Percent): Gravel	Coarse Sand	Fine Sand	Silt and Clay	Atterberg Limits: Liquid Limit L_w	Plastic Limit P_w	Plastic Index I_w	Water Cont. W %	Wet Unit Weight γ P.C.F.	Unconfined Strength Q_u T.S.F.	Triaxial Shear Strength: Unconsolidated ϕ	Unconsolidated C T.S.F.	Consolidated ϕ'	Consolidated C' T.S.F.	Consolidated Time hrs.	Consolidated Press P.S.I.	Dia. Of Sample (inches)
1A	4.5-6.0	SILTY GRAVELLY SAND	A-2-4(0)	31	20	22	27	22	16	6	6.5									
1B	10.0-11.5	SILTY GRAVELLY SAND	A-1-b(0)	39	23	27	11	NV	NP	NP	3.9									
1C	15.0-16.5	SANDY SILT	A-4(0)	2	1	37	60	NV	NP	NP	38.2									
1D	20.0-21.2	SILTY SANDY GRAVEL	A-1-a(0)	63	11	11	15	NV	NP	NP	5.4									
2A	5.3-6.8	SANDY CLAY	A-4(5)	5	3	16	76	30	22	8	16.8									
2B	11.3-11.8	SILTY SANDY GRAVEL	A-2-4(0)	52	8	11	29	22	20	2	9.1									
3A	4.5-5.9	SILTY SAND	A-1-b(0)	10	46	32	12	NV	NP	NP	5.3									

TYPE OF MATERIAL

- SILTY, GRAVELLY SAND W/COBBLES & BOULDERS
- SILTY, GRAVELLY SAND
- COBBLES & BOULDERS
- SILTY SAND W/COBBLES & BOULDERS
- CLAYEY SILT
- GRAVELLY SILT W/COBBLES & BOULDERS
- SANDY SILT
- SILTY SAND
- SANDY, GRAVELLY SILT W/COBBLES & BOULDERS
- SILTY GRAVEL
- GRAVEL & BOULDERS
- SANDY GRAVEL W/COBBLES & BOULDERS
- SANDY, GRAVELLY SILT
- SANDY, GRAVELLY SILT W/COBBLES
- BOULDER

LEGEND

- SANDSTONE
- SILTSTONE

TEST BORING

Blows Per Foot (Standard Penetration Test)

2 in. O.D. Split-Tube Sampler, 140 Lb. Hammer, 30 in. Free Fall

3" Hole Size; 1-A Sample No.; Water Table 2/16/67; NX Core Size

CONTINUOUS PENETRATION TEST

2 in. Dia. Drive Point, 140 Lb. Hammer, 30 in. Free Fall.

0 50 100 Blows per Foot

- Location of Test Boring
- Location of Continuous Penetration Test
- Rotary Boring
- Auger Boring
- Core Boring

DIVISION OF HIGHWAYS
STATE OF COLORADO

ENGINEERING GEOLOGY

Across STAFFORD GULCH
Site 96+

Near VAIL PASS Sec. T. R.

Geologist A.C.E.
Made by O.L.S.
Checked by O.L.S.
Approved by
Bridge Engineer
Date: 19

STRUCTURE NO. F 18-AN
DWG. NO. B-3 OF 16

FEDERAL ROAD REGION NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-2(52)197	96	

REVISIONS			
R-1	4-4-75	Reprint	

DIVISION OF HIGHWAYS
STATE OF COLORADO
BRIDGE GEOMETRICS
DATE OF RUN : 75/04/04.

DATE OF DATA : 10/11/74
DESIGNER : JOE KELLER
CHECKER : J.K.
JOB DESCRIPTION : STAFFORD GULCH STA 945 STEEL BOX

AS CONSTRUCTED
NO REVISIONS DATE: 6-24-77

* * * * * * * * * * * * * * * INPUT DATA * * * * * * * * * * * * * * * * * *

HORIZONTAL ALIGNMENT DATA.....

DEGREE OF CURVATURE : -0 -0 -.0

VERTICAL ALIGNMENT DATA....... *ELEVATIONS ARE 0.1667 FT. BELOW FINISHED GRADE.

VERTICAL CURVE NO. 1 : PI STATION 945+ .00 PI ELEV 10129.843 VC LENGTH 1000.000 G1 -5.176100 G2 -.700000

SUPERELEVATION DATA...........

SUPERELEVATION NO. 1 : STATION 942+63.44 RATE LEFT .0000 RATE RIGHT -.0000
SUPERELEVATION NO. 2 : STATION 943+63.44 RATE LEFT .0150 RATE RIGHT -.0150
SUPERELEVATION NO. 3 : STATION 949+ .00 RATE LEFT .0150 RATE RIGHT -.0150

* * * * * BENT LINE INPUT * * * * *

DISTANCE FROM REFERENCE LINE (TYPE)	DESCRIPTION OF BENT LINE	DESCRIPTION OF LINE	SKEW ANGLE OF BENT LINE REFERENCED TO CHORD OR TANGENT	STATION OF INTERSECTION OF LINE AND BENT LINE	ELEVATION AT INTERSECTION OF LINE AND BENT LINE
.000000	REFERENCE LINE	CONSTR. CL	0 0 .0	943+28.500	10140.7961
			ZERO SKEW		
		NO. OUT		943+28.500	10140.8547
		CL GIR.1		943+28.500	10140.8034
		PRO. LINE		943+28.500	10140.7961
		CL NO. BOX		943+28.500	10140.7522
		CL GIR.2		943+28.500	10140.7010
		CL BRIDGE		943+28.500	10140.6497
		CL GIR.3		943+28.500	10140.5985
		CL SO. BOX		943+28.500	10140.5473
		CL GIR.4		943+28.500	10140.4960
		SO. OUT		943+28.500	10140.4448
.000000	BF ABUT. 1	CONSTR. CL	0 0 .0	943+28.500	10140.7961
BACK TANGENT			ZERO SKEW		
		NO. OUT		943+28.500	10140.8547
		CL GIR.1		943+28.500	10140.8034
		PRO. LINE		943+28.500	10140.7961
		CL NO. BOX		943+28.500	10140.7522
		CL GIR.2		943+28.500	10140.7010
		CL BRIDGE		943+28.500	10140.6497
		CL GIR.3		943+28.500	10140.5985
		CL SO. BOX		943+28.500	10140.5473
		CL GIR.4		943+28.500	10140.4960
		SO. OUT		943+28.500	10140.4448
4.125000	1/ 4 PT.= 1	CONSTR. CL	0 0 .0	943+32.625	10140.6412
BACK TANGENT			ZERO SKEW		
		NO. OUT		943+32.625	10140.7034
		CL GIR.1		943+32.625	10140.6489
		PRO. LINE		943+32.625	10140.6412
		CL NO. BOX		943+32.625	10140.5945
		CL GIR.2		943+32.625	10140.5400
		CL BRIDGE		943+32.625	10140.4855
		CL GIR.3		943+32.625	10140.4310
		CL SO. BOX		943+32.625	10140.3765
		CL GIR.4		943+32.625	10140.3220
		SO. OUT		943+32.625	10140.2676
8.250000	2/ 4 PT.= 1	CONSTR. CL	0 0 .0	943+36.750	10140.4870
BACK TANGENT			ZERO SKEW		
		NO. OUT		943+36.750	10140.5529
		CL GIR.1		943+36.750	10140.4952
		PRO. LINE		943+36.750	10140.4870
		CL NO. BOX		943+36.750	10140.4375
		CL GIR.2		943+36.750	10140.3797
		CL BRIDGE		943+36.750	10140.3220
		CL GIR.3		943+36.750	10140.2643
		CL SO. BOX		943+36.750	10140.2065
		CL GIR.4		943+36.750	10140.1488
		SO. OUT		943+36.750	10140.0911
12.375000	3/ 4 PT.= 1	CONSTR. CL	0 0 .0	943+40.875	10140.3335
BACK TANGENT			ZERO SKEW		
		NO. OUT		943+40.875	10140.4032
		CL GIR.1		943+40.875	10140.3422
		PRO. LINE		943+40.875	10140.3335
		CL NO. BOX		943+40.875	10140.2813
		CL GIR.2		943+40.875	10140.2203
		CL BRIDGE		943+40.875	10140.1593
		CL GIR.3		943+40.875	10140.0983
		CL SO. BOX		943+40.875	10140.0373
		CL GIR.4		943+40.875	10139.9764
		SO. OUT		943+40.875	10139.9154
16.500000	CL BRG ABUT 1	CONSTR. CL	0 0 .0	943+45.000	10140.1809
BACK TANGENT			ZERO SKEW		
		NO. OUT		943+45.000	10140.2543
		CL GIR.1		943+45.000	10140.1900
		PRO. LINE		943+45.000	10140.1809
		CL NO. BOX		943+45.000	10140.1258
		CL GIR.2		943+45.000	10140.0616
		CL BRIDGE		943+45.000	10139.9973
		CL GIR.3		943+45.000	10139.9331
		CL SO. BOX		943+45.000	10139.8689
		CL GIR.4		943+45.000	10139.8047
		SO. OUT		943+45.000	10139.7404
21.500000	1/ 20 PT.= 2	CONSTR. CL	0 0 .0	943+50.000	10139.9968
BACK TANGENT			ZERO SKEW		
		NO. OUT		943+50.000	10140.0787
		CL GIR.1		943+50.000	10140.0066
		PRO. LINE		943+50.000	10139.9968
		CL NO. BOX		943+50.000	10139.9384
		CL GIR.2		943+50.000	10139.8702
		CL BRIDGE		943+50.000	10139.8021
		CL GIR.3		943+50.000	10139.7339
		CL SO. BOX		943+50.000	10139.6657
		CL GIR.4		943+50.000	10139.5976
		SO. OUT		943+50.000	10139.5296
26.500000	2/ 20 PT.= 2	CONSTR. CL	0 0 .0	943+55.000	10139.8139
BACK TANGENT			ZERO SKEW		
		NO. OUT		943+55.000	10139.8963
		CL GIR.1		943+55.000	10139.8242
		PRO. LINE		943+55.000	10139.8139
		CL NO. BOX		943+55.000	10139.7521
		CL GIR.2		943+55.000	10139.6800
		CL BRIDGE		943+55.000	10139.6079
		CL GIR.3		943+55.000	10139.5358
		CL SO. BOX		943+55.000	10139.4637
		CL GIR.4		943+55.000	10139.3916
		SO. OUT		943+55.000	10139.3195
31.500000	3/ 20 PT.= 2	CONSTR. CL	0 0 .0	943+60.000	10139.6321
BACK TANGENT			ZERO SKEW		
		NO. OUT		943+60.000	10139.7190
		CL GIR.1		943+60.000	10139.6430
		PRO. LINE		943+60.000	10139.6321
		CL NO. BOX		943+60.000	10139.5669
		CL GIR.2		943+60.000	10139.4909
		CL BRIDGE		943+60.000	10139.4149
		CL GIR.3		943+60.000	10139.3388
		CL SO. BOX		943+60.000	10139.2628
		CL GIR.4		943+60.000	10139.1867
		SO. OUT		943+60.000	10139.1107
36.500000	4/ 20 PT.= 2	CONSTR. CL	0 0 .0	943+65.000	10139.4524
BACK TANGENT			ZERO SKEW		
		NO. OUT		943+65.000	10139.5424
		CL GIR.1		943+65.000	10139.4636
		PRO. LINE		943+65.000	10139.4524
		CL NO. BOX		943+65.000	10139.3849
		CL GIR.2		943+65.000	10139.3061
		CL BRIDGE		943+65.000	10139.2274
		CL GIR.3		943+65.000	10139.1486
		CL SO. BOX		943+65.000	10139.0699
		CL GIR.4		943+65.000	10138.9911
		SO. OUT		943+65.000	10138.9124
41.500000	5/ 20 PT.= 2	CONSTR. CL	0 0 .0	943+70.000	10139.2750
BACK TANGENT			ZERO SKEW		
		NO. OUT		943+70.000	10139.3650
		CL GIR.1		943+70.000	10139.2862
		PRO. LINE		943+70.000	10139.2750
		CL NO. BOX		943+70.000	10139.2083
		CL GIR.2		943+70.000	10139.1296
		CL BRIDGE		943+70.000	10139.0508
		CL GIR.3		943+70.000	10138.9721
		CL SO. BOX		943+70.000	10138.8933
		CL GIR.4		943+70.000	10138.8146
		SO. OUT		943+70.000	10138.7358
46.500000	6/ 20 PT.= 2	CONSTR. CL	0 0 .0	943+75.000	10139.1004
BACK TANGENT			ZERO SKEW		
		NO. OUT		943+75.000	10139.1904
		CL GIR.1		943+75.000	10139.1116
		PRO. LINE		943+75.000	10139.1004
		CL NO. BOX		943+75.000	10139.0329
		CL GIR.2		943+75.000	10138.9541
		CL BRIDGE		943+75.000	10138.8754
		CL GIR.3		943+75.000	10138.7966
		CL SO. BOX		943+75.000	10138.7179
		CL GIR.4		943+75.000	10138.6391
		SO. OUT		943+75.000	10138.5604
51.500000	7/ 20 PT.= 2	CONSTR. CL	0 0 .0	943+80.000	10138.9261
BACK TANGENT			ZERO SKEW		
		NO. OUT		943+80.000	10139.0161
		CL GIR.1		943+80.000	10138.9373
		PRO. LINE		943+80.000	10138.9261
		CL NO. BOX		943+80.000	10138.8586
		CL GIR.2		943+80.000	10138.7798
		CL BRIDGE		943+80.000	10138.7011
		CL GIR.3		943+80.000	10138.6223
		CL SO. BOX		943+80.000	10138.5436
		CL GIR.4		943+80.000	10138.4649
		SO. OUT		943+80.000	10138.3861
56.500000	8/ 20 PT.= 2	CONSTR. CL	0 0 .0	943+85.000	10138.7529
BACK TANGENT			ZERO SKEW		
		NO. OUT		943+85.000	10138.8429
		CL GIR.1		943+85.000	10138.7641
		PRO. LINE		943+85.000	10138.7529
		CL NO. BOX		943+85.000	10138.6854
		CL GIR.2		943+85.000	10138.6066
		CL BRIDGE		943+85.000	10138.5279
		CL GIR.3		943+85.000	10138.4491
		CL SO. BOX		943+85.000	10138.3704
		CL GIR.4		943+85.000	10138.2916
		SO. OUT		943+85.000	10138.2129
61.500000	9/ 20 PT.= 2	CONSTR. CL	0 0 .0	943+90.000	10138.5808
BACK TANGENT			ZERO SKEW		
		NO. OUT		943+90.000	10138.6708
		CL GIR.1		943+90.000	10138.5920
		PRO. LINE		943+90.000	10138.5808
		CL NO. BOX		943+90.000	10138.5133
		CL GIR.2		943+90.000	10138.4345
		CL BRIDGE		943+90.000	10138.3558
		CL GIR.3		943+90.000	10138.2770
		CL SO. BOX		943+90.000	10138.1983
		CL GIR.4		943+90.000	10138.1195
		SO. OUT		943+90.000	10138.0408
66.500000	10/ 20 PT.= 2	CONSTR. CL	0 0 .0	943+95.000	10138.4098
BACK TANGENT			ZERO SKEW		
		NO. OUT		943+95.000	10138.4998
		CL GIR.1		943+95.000	10138.4211
		PRO. LINE		943+95.000	10138.4098
		CL NO. BOX		943+95.000	10138.3423
		CL GIR.2		943+95.000	10138.2636
		CL BRIDGE		943+95.000	10138.1848
		CL GIR.3		943+95.000	10138.1061
		CL SO. BOX		943+95.000	10138.0273
		CL GIR.4		943+95.000	10137.9486
		SO. OUT		943+95.000	10137.8698
71.500000	11/ 20 PT.= 2	CONSTR. CL	0 0 .0	944+ .000	10138.2400
BACK TANGENT			ZERO SKEW		
		NO. OUT		944+ .000	10138.3300
		CL GIR.1		944+ .000	10138.2512
		PRO. LINE		944+ .000	10138.2400
		CL NO. BOX		944+ .000	10138.1725
		CL GIR.2		944+ .000	10138.0937
		CL BRIDGE		944+ .000	10138.0150
		CL GIR.3		944+ .000	10137.9362
		CL SO. BOX		944+ .000	10137.8575
		CL GIR.4		944+ .000	10137.7787
		SO. OUT		944+ .000	10137.7000
76.500000	12/ 20 PT.= 2	CONSTR. CL	0 0 .0	944+ 5.000	10138.0713
BACK TANGENT			ZERO SKEW		
		NO. OUT		944+ 5.000	10138.1613
		CL GIR.1		944+ 5.000	10138.0825
		PRO. LINE		944+ 5.000	10138.0713
		CL NO. BOX		944+ 5.000	10138.0038
		CL GIR.2		944+ 5.000	10137.9250
		CL BRIDGE		944+ 5.000	10137.8463
		CL GIR.3		944+ 5.000	10137.7675
		CL SO. BOX		944+ 5.000	10137.6888
		CL GIR.4		944+ 5.000	10137.6100
		SO. OUT		944+ 5.000	10137.5313
81.500000	13/ 20 PT.= 2	CONSTR. CL	0 0 .0	944+10.000	10137.9037
BACK TANGENT			ZERO SKEW		
		NO. OUT		944+10.000	10137.9937
		CL GIR.1		944+10.000	10137.9149
		PRO. LINE		944+10.000	10137.9037
		CL NO. BOX		944+10.000	10137.8362
		CL GIR.2		944+10.000	10137.7574
		CL BRIDGE		944+10.000	10137.6787
		CL GIR.3		944+10.000	10137.5999
		CL SO. BOX		944+10.000	10137.5212
		CL GIR.4		944+10.000	10137.4424
		SO. OUT		944+10.000	10137.3637
86.500000	14/ 20 PT.= 2	CONSTR. CL	0 0 .0	944+15.000	10137.7372
BACK TANGENT			ZERO SKEW		
		NO. OUT		944+15.000	10137.8272
		CL GIR.1		944+15.000	10137.7484
		PRO. LINE		944+15.000	10137.7372
		CL NO. BOX		944+15.000	10137.6697
		CL GIR.2		944+15.000	10137.5909
		CL BRIDGE		944+15.000	10137.5122
		CL GIR.3		944+15.000	10137.4334
		CL SO. BOX		944+15.000	10137.3547
		CL GIR.4		944+15.000	10137.2759
		SO. OUT		944+15.000	10137.1972
91.500000	15/ 20 PT.= 2	CONSTR. CL	0 0 .0	944+20.000	10137.5718
BACK TANGENT			ZERO SKEW		
		NO. OUT		944+20.000	10137.6618
		CL GIR.1		944+20.000	10137.5831
		PRO. LINE		944+20.000	10137.5718
		CL NO. BOX		944+20.000	10137.5043
		CL GIR.2		944+20.000	10137.4256
		CL BRIDGE		944+20.000	10137.3468
		CL GIR.3		944+20.000	10137.2681
		CL SO. BOX		944+20.000	10137.1893
		CL GIR.4		944+20.000	10137.1106
		SO. OUT		944+20.000	10137.0318
96.500000	16/ 20 PT.= 2	CONSTR. CL	0 0 .0	944+25.000	10137.4076
BACK TANGENT			ZERO SKEW		
		NO. OUT		944+25.000	10137.4976
		CL GIR.1		944+25.000	10137.4188
		PRO. LINE		944+25.000	10137.4076
		CL NO. BOX		944+25.000	10137.3401
		CL GIR.2		944+25.000	10137.2613
		CL BRIDGE		944+25.000	10137.1826
		CL GIR.3		944+25.000	10137.1038
		CL SO. BOX		944+25.000	10137.0251
		CL GIR.4		944+25.000	10136.9463
		SO. OUT		944+25.000	10136.8676
101.500000	17/ 20 PT.= 2	CONSTR. CL	0 0 .0	944+30.000	10137.2444
BACK TANGENT			ZERO SKEW		
		NO. OUT		944+30.000	10137.3344
		CL GIR.1		944+30.000	10137.2557
		PRO. LINE		944+30.000	10137.2444
		CL NO. BOX		944+30.000	10137.1769
		CL GIR.2		944+30.000	10137.0982
		CL BRIDGE		944+30.000	10137.0194
		CL GIR.3		944+30.000	10136.9407
		CL SO. BOX		944+30.000	10136.8619
		CL GIR.4		944+30.000	10136.7832
		SO. OUT		944+30.000	10136.7044
106.500000	18/ 20 PT.= 2	CONSTR. CL	0 0 .0	944+35.000	10137.0824
BACK TANGENT			ZERO SKEW		
		NO. OUT		944+35.000	10137.1724
		CL GIR.1		944+35.000	10137.0937
		PRO. LINE		944+35.000	10137.0824
		CL NO. BOX		944+35.000	10137.0149
		CL GIR.2		944+35.000	10136.9362
		CL BRIDGE		944+35.000	10136.8574
		CL GIR.3		944+35.000	10136.7787
		CL SO. BOX		944+35.000	10136.6999
		CL GIR.4		944+35.000	10136.6212
		SO. OUT		944+35.000	10136.5424
111.500000	19/ 20 PT.= 2	CONSTR. CL	0 0 .0	944+40.000	10136.9215
BACK TANGENT			ZERO SKEW		
		NO. OUT		944+40.000	10137.0115
		CL GIR.1		944+40.000	10136.9328
		PRO. LINE		944+40.000	10136.9215
		CL NO. BOX		944+40.000	10136.8540
		CL GIR.2		944+40.000	10136.7753
		CL BRIDGE		944+40.000	10136.6965
		CL GIR.3		944+40.000	10136.6178
		CL SO. BOX		944+40.000	10136.5390
		CL GIR.4		944+40.000	10136.4603
		SO. OUT		944+40.000	10136.3815
116.500000	CL PIER 2	CONSTR. CL	0 0 .0	944+45.000	10136.7618
BACK TANGENT			ZERO SKEW		
		NO. OUT		944+45.000	10136.8518
		CL GIR.1		944+45.000	10136.7730
		PRO. LINE		944+45.000	10136.7618
		CL NO. BOX		944+45.000	10136.6943
		CL GIR.2		944+45.000	10136.6155
		CL BRIDGE		944+45.000	10136.5368
		CL GIR.3		944+45.000	10136.4580
		CL SO. BOX		944+45.000	10136.3793
		CL GIR.4		944+45.000	10136.3005
		SO. OUT		944+45.000	10136.2218
124.000000	1/ 20 PT.= 3	CONSTR. CL	0 0 .0	944+52.500	10136.5242
BACK TANGENT			ZERO SKEW		
		NO. OUT		944+52.500	10136.6142
		CL GIR.1		944+52.500	10136.5354
		PRO. LINE		944+52.500	10136.5242
		CL NO. BOX		944+52.500	10136.4567
		CL GIR.2		944+52.500	10136.3779
		CL BRIDGE		944+52.500	10136.2992
		CL GIR.3		944+52.500	10136.2204
		CL SO. BOX		944+52.500	10136.1417
		CL GIR.4		944+52.500	10136.0629
		SO. OUT		944+52.500	10135.9842
131.500000	2/ 20 PT.= 3	CONSTR. CL	0 0 .0	944+60.000	10136.2892
BACK TANGENT			ZERO SKEW		
		NO. OUT		944+60.000	10136.3792
		CL GIR.1		944+60.000	10136.3004
		PRO. LINE		944+60.000	10136.2892
		CL NO. BOX		944+60.000	10136.2217
		CL GIR.2		944+60.000	10136.1429
		CL BRIDGE		944+60.000	10136.0642
		CL GIR.3		944+60.000	10135.9854
		CL SO. BOX		944+60.000	10135.9067
		CL GIR.4		944+60.000	10135.8279
		SO. OUT		944+60.000	10135.7492
139.000000	3/ 20 PT.= 3	CONSTR. CL	0 0 .0	944+67.500	10136.0566
BACK TANGENT			ZERO SKEW		
		NO. OUT		944+67.500	10136.1466
		CL GIR.1		944+67.500	10136.0679
		PRO. LINE		944+67.500	10136.0566
		CL NO. BOX		944+67.500	10135.9891
		CL GIR.2		944+67.500	10135.9104
		CL BRIDGE		944+67.500	10135.8316
		CL GIR.3		944+67.500	10135.7529
		CL SO. BOX		944+67.500	10135.6741
		CL GIR.4		944+67.500	10135.5954
		SO. OUT		944+67.500	10135.5166

DESIGNED BY	CHECKED BY	DETAILED BY	INITIAL	DATE	CHECKED BY	QUANTITIES BY	CHECKED BY

DIVISION OF HIGHWAYS

ELEVATIONS

Designer	J. Keller	Structure Numbers	F-12-AN
Detailer			
Drawing Number B 4		of 12	Drawings

STATE DEPARTMENT OF HIGHWAYS
DIVISION OF HIGHWAYS—STATE OF COLORADO
DOH FORM No. 117
FEB DEC 1972

FEDERAL ROAD REGION NO	DISTRICT	PROJ. NO.	SHEET NO	TOTAL SHEETS
VIII	COLORADO	I 70-2(52)197	97	

REVISIONS			
R1	4-4-75	Reprint	W.C.B.

AS CONSTRUCTED
NO REVISIONS DATE: 6-24-77

INITIAL	DATE	
DESIGNED BY		CHECKED BY
CHECKED BY		QUANTITIES BY
DETAILED BY		CHECKED BY

* * * * * BENT LINE INPUT * * * * *

DISTANCE FROM REFERENCE LINE (TYPE)	DESCRIPTION OF BENT LINE	DESCRIPTION OF LINE	SKEW ANGLE OF BENT LINE REFERENCED TO CHORD OR TANGENT	STATION OF INTERSECTION OF LINE AND BENT LINE	ELEVATION AT INTERSECTION OF LINE AND BENT LINE
146.500000 4/ 20 PT.= 3 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	944+75.000	10135.0266
		NO. OUT		944+75.000	10135.0166
		CL GIR.1		944+75.000	10135.0379
		PRO. LINE		944+75.000	10135.0266
		CL NO. BOX		944+75.000	10135.7591
		CL GIR.2		944+75.000	10135.6804
		CL BRIDGE		944+75.000	10135.6016
		CL GIR.3		944+75.000	10135.5229
		CL SO. BOX		944+75.000	10135.4441
		CL GIR.4		944+75.000	10135.3654
		SO. OUT		944+75.000	10135.2866
154.000000 5/ 20 PT.= 3 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	944+82.500	10135.5991
		NO. OUT		944+82.500	10135.6081
		CL GIR.1		944+82.500	10135.6104
		PRO. LINE		944+82.500	10135.5991
		CL NO. BOX		944+82.500	10135.5316
		CL GIR.2		944+82.500	10135.4529
		CL BRIDGE		944+82.500	10135.3741
		CL GIR.3		944+82.500	10135.2954
		CL SO. BOX		944+82.500	10135.2166
		CL GIR.4		944+82.500	10135.1379
		SO. OUT		944+82.500	10135.0591
161.500000 6/ 20 PT.= 3 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	944+90.000	10135.3742
		NO. OUT		944+90.000	10135.4642
		CL GIR.1		944+90.000	10135.3854
		PRO. LINE		944+90.000	10135.3742
		CL NO. BOX		944+90.000	10135.3667
		CL GIR.2		944+90.000	10135.2279
		CL BRIDGE		944+90.000	10135.1492
		CL GIR.3		944+90.000	10135.0704
		CL SO. BOX		944+90.000	10134.9917
		CL GIR.4		944+90.000	10134.9129
		SO. OUT		944+90.000	10134.8342
169.000000 7/ 20 PT.= 3 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	944+97.500	10135.1517
		NO. OUT		944+97.500	10135.2617
		CL GIR.1		944+97.500	10135.1630
		PRO. LINE		944+97.500	10135.1517
		CL NO. BOX		944+97.500	10135.0842
		CL GIR.2		944+97.500	10135.0055
		CL BRIDGE		944+97.500	10134.9267
		CL GIR.3		944+97.500	10134.8480
		CL SO. BOX		944+97.500	10134.7692
		CL GIR.4		944+97.500	10134.6905
		SO. OUT		944+97.500	10134.6117
176.500000 8/ 20 PT.= 3 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	945+ 5.000	10134.9318
		NO. OUT		945+ 5.000	10135.0218
		CL GIR.1		945+ 5.000	10134.9430
		PRO. LINE		945+ 5.000	10134.9318
		CL NO. BOX		945+ 5.000	10134.8643
		CL GIR.2		945+ 5.000	10134.7855
		CL BRIDGE		945+ 5.000	10134.7068
		CL GIR.3		945+ 5.000	10134.6280
		CL SO. BOX		945+ 5.000	10134.5493
		CL GIR.4		945+ 5.000	10134.4705
		SO. OUT		945+ 5.000	10134.3918
184.000000 9/ 20 PT.= 3 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	945+12.500	10134.7144
		NO. OUT		945+12.500	10134.8044
		CL GIR.1		945+12.500	10134.7256
		PRO. LINE		945+12.500	10134.7144
		CL NO. BOX		945+12.500	10134.6469
		CL GIR.2		945+12.500	10134.5681
		CL BRIDGE		945+12.500	10134.4894
		CL GIR.3		945+12.500	10134.4106
		CL SO. BOX		945+12.500	10134.3319
		CL GIR.4		945+12.500	10134.2531
		SO. OUT		945+12.500	10134.1744
191.500000 10/ 20 PT.= 3 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	945+20.000	10134.4995
		NO. OUT		945+20.000	10134.5895
		CL GIR.1		945+20.000	10134.5107
		PRO. LINE		945+20.000	10134.4995
		CL NO. BOX		945+20.000	10134.4320
		CL GIR.2		945+20.000	10134.3532
		CL BRIDGE		945+20.000	10134.2745
		CL GIR.3		945+20.000	10134.1957
		CL SO. BOX		945+20.000	10134.1170
		CL GIR.4		945+20.000	10134.0382
		SO. OUT		945+20.000	10133.9595
199.000000 11/ 20 PT.= 3 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	945+27.500	10134.2871
		NO. OUT		945+27.500	10134.3771
		CL GIR.1		945+27.500	10134.2983
		PRO. LINE		945+27.500	10134.2871
		CL NO. BOX		945+27.500	10134.2196
		CL GIR.2		945+27.500	10134.1408
		CL BRIDGE		945+27.500	10134.0621
		CL GIR.3		945+27.500	10133.9833
		CL SO. BOX		945+27.500	10133.9046
		CL GIR.4		945+27.500	10133.8258
		SO. OUT		945+27.500	10133.7471
206.500000 12/ 20 PT.= 3 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	945+35.000	10134.0772
		NO. OUT		945+35.000	10134.1672
		CL GIR.1		945+35.000	10134.0885
		PRO. LINE		945+35.000	10134.0772
		CL NO. BOX		945+35.000	10134.0097
		CL GIR.2		945+35.000	10133.9310
		CL BRIDGE		945+35.000	10133.8522
		CL GIR.3		945+35.000	10133.7735
		CL SO. BOX		945+35.000	10133.6947
		CL GIR.4		945+35.000	10133.6160
		SO. OUT		945+35.000	10133.5372
214.000000 13/ 20 PT.= 3 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	945+42.500	10133.8699
		NO. OUT		945+42.500	10133.9599
		CL GIR.1		945+42.500	10133.8811
		PRO. LINE		945+42.500	10133.8699
		CL NO. BOX		945+42.500	10133.8024
		CL GIR.2		945+42.500	10133.7236
		CL BRIDGE		945+42.500	10133.6449
		CL GIR.3		945+42.500	10133.5661
		CL SO. BOX		945+42.500	10133.4874
		CL GIR.4		945+42.500	10133.4086
		SO. OUT		945+42.500	10133.3299
221.500000 14/ 20 PT.= 3 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	945+50.000	10133.6651
		NO. OUT		945+50.000	10133.7551
		CL GIR.1		945+50.000	10133.6763
		PRO. LINE		945+50.000	10133.6651
		CL NO. BOX		945+50.000	10133.5976
		CL GIR.2		945+50.000	10133.5188
		CL BRIDGE		945+50.000	10133.4401
		CL GIR.3		945+50.000	10133.3613
		CL SO. BOX		945+50.000	10133.2826
		CL GIR.4		945+50.000	10133.2038
		SO. OUT		945+50.000	10133.1251
229.000000 15/ 20 PT.= 3 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	945+57.500	10133.4627
		NO. OUT		945+57.500	10133.5527
		CL GIR.1		945+57.500	10133.4740
		PRO. LINE		945+57.500	10133.4627
		CL NO. BOX		945+57.500	10133.3952
		CL GIR.2		945+57.500	10133.3165
		CL BRIDGE		945+57.500	10133.2377
		CL GIR.3		945+57.500	10133.1590
		CL SO. BOX		945+57.500	10133.0802
		CL GIR.4		945+57.500	10133.0015
		SO. OUT		945+57.500	10132.9227
236.500000 16/ 20 PT.= 3 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	945+65.000	10133.2630
		NO. OUT		945+65.000	10133.3530
		CL GIR.1		945+65.000	10133.2742
		PRO. LINE		945+65.000	10133.2630
		CL NO. BOX		945+65.000	10133.1955
		CL GIR.2		945+65.000	10133.1167
		CL BRIDGE		945+65.000	10133.0380
		CL GIR.3		945+65.000	10132.9592
		CL SO. BOX		945+65.000	10132.8805
		CL GIR.4		945+65.000	10132.8017
		SO. OUT		945+65.000	10132.7230
244.000000 17/ 20 PT.= 3 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	945+72.500	10133.0657
		NO. OUT		945+72.500	10133.1557
		CL GIR.1		945+72.500	10133.0769
		PRO. LINE		945+72.500	10133.0657
		CL NO. BOX		945+72.500	10132.9982
		CL GIR.2		945+72.500	10132.9194
		CL BRIDGE		945+72.500	10132.8407
		CL GIR.3		945+72.500	10132.7619
		CL SO. BOX		945+72.500	10132.6832
		CL GIR.4		945+72.500	10132.6044
		SO. OUT		945+72.500	10132.5257
251.500000 18/ 20 PT.= 3 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	945+80.000	10132.8709
		NO. OUT		945+80.000	10132.9609
		CL GIR.1		945+80.000	10132.8822
		PRO. LINE		945+80.000	10132.8709
		CL NO. BOX		945+80.000	10132.8034
		CL GIR.2		945+80.000	10132.7247
		CL BRIDGE		945+80.000	10132.6459
		CL GIR.3		945+80.000	10132.5672
		CL SO. BOX		945+80.000	10132.4884
		CL GIR.4		945+80.000	10132.4097
		SO. OUT		945+80.000	10132.3309
259.000000 19/ 20 PT.= 3 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	945+87.500	10132.6787
		NO. OUT		945+87.500	10132.7687
		CL GIR.1		945+87.500	10132.6899
		PRO. LINE		945+87.500	10132.6787
		CL NO. BOX		945+87.500	10132.6112
		CL GIR.2		945+87.500	10132.5324
		CL BRIDGE		945+87.500	10132.4537
		CL GIR.3		945+87.500	10132.3749
		CL SO. BOX		945+87.500	10132.2962
		CL GIR.4		945+87.500	10132.2174
		SO. OUT		945+87.500	10132.1387
266.500000 CL PIER 3 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	945+95.000	10132.4890
		NO. OUT		945+95.000	10132.5790
		CL GIR.1		945+95.000	10132.5002
		PRO. LINE		945+95.000	10132.4890
		CL NO. BOX		945+95.000	10132.4215
		CL GIR.2		945+95.000	10132.3427
		CL BRIDGE		945+95.000	10132.2640
		CL GIR.3		945+95.000	10132.1852
		CL SO. BOX		945+95.000	10132.1065
		CL GIR.4		945+95.000	10132.0277
		SO. OUT		945+95.000	10131.9490
271.500000 1/ 20 PT.= 4 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	946+ .000	10132.3639
		NO. OUT		946+ .000	10132.4539
		CL GIR.1		946+ .000	10132.3751
		PRO. LINE		946+ .000	10132.3639
		CL NO. BOX		946+ .000	10132.2964
		CL GIR.2		946+ .000	10132.2176
		CL BRIDGE		946+ .000	10132.1389
		CL GIR.3		946+ .000	10132.0601
		CL SO. BOX		946+ .000	10131.9814
		CL GIR.4		946+ .000	10131.9026
		SO. OUT		946+ .000	10131.8239
276.500000 2/ 20 PT.= 4 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	946+ 5.000	10132.2399
		NO. OUT		946+ 5.000	10132.3299
		CL GIR.1		946+ 5.000	10132.2512
		PRO. LINE		946+ 5.000	10132.2399
		CL NO. BOX		946+ 5.000	10132.1724
		CL GIR.2		946+ 5.000	10132.0937
		CL BRIDGE		946+ 5.000	10132.0149
		CL GIR.3		946+ 5.000	10131.9362
		CL SO. BOX		946+ 5.000	10131.8574
		CL GIR.4		946+ 5.000	10131.7787
		SO. OUT		946+ 5.000	10131.6999
281.500000 3/ 20 PT.= 4 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	946+10.000	10132.1171
		NO. OUT		946+10.000	10132.2071
		CL GIR.1		946+10.000	10132.1283
		PRO. LINE		946+10.000	10132.1171
		CL NO. BOX		946+10.000	10132.0496
		CL GIR.2		946+10.000	10131.9708
		CL BRIDGE		946+10.000	10131.8921
		CL GIR.3		946+10.000	10131.8133
		CL SO. BOX		946+10.000	10131.7346
		CL GIR.4		946+10.000	10131.6558
		SO. OUT		946+10.000	10131.5771
286.500000 4/ 20 PT.= 4 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	946+15.000	10131.9953
		NO. OUT		946+15.000	10132.0853
		CL GIR.1		946+15.000	10132.0066
		PRO. LINE		946+15.000	10131.9953
		CL NO. BOX		946+15.000	10131.9278
		CL GIR.2		946+15.000	10131.8491
		CL BRIDGE		946+15.000	10131.7703
		CL GIR.3		946+15.000	10131.6916
		CL SO. BOX		946+15.000	10131.6128
		CL GIR.4		946+15.000	10131.5341
		SO. OUT		946+15.000	10131.4553
291.500000 5/ 20 PT.= 4 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	946+20.000	10131.8747
		NO. OUT		946+20.000	10131.9647
		CL GIR.1		946+20.000	10131.8860
		PRO. LINE		946+20.000	10131.8747
		CL NO. BOX		946+20.000	10131.8072
		CL GIR.2		946+20.000	10131.7285
		CL BRIDGE		946+20.000	10131.6497
		CL GIR.3		946+20.000	10131.5710
		CL SO. BOX		946+20.000	10131.4922
		CL GIR.4		946+20.000	10131.4135
		SO. OUT		946+20.000	10131.3347
296.500000 6/ 20 PT.= 4 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	946+25.000	10131.7553
		NO. OUT		946+25.000	10131.8453
		CL GIR.1		946+25.000	10131.7665
		PRO. LINE		946+25.000	10131.7553
		CL NO. BOX		946+25.000	10131.6878
		CL GIR.2		946+25.000	10131.6091
		CL BRIDGE		946+25.000	10131.5303
		CL GIR.3		946+25.000	10131.4515
		CL SO. BOX		946+25.000	10131.3728
		CL GIR.4		946+25.000	10131.2940
		SO. OUT		946+25.000	10131.2153
301.500000 7/ 20 PT.= 4 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	946+30.000	10131.6369
		NO. OUT		946+30.000	10131.7269
		CL GIR.1		946+30.000	10131.6481
		PRO. LINE		946+30.000	10131.6369
		CL NO. BOX		946+30.000	10131.5694
		CL GIR.2		946+30.000	10131.4906
		CL BRIDGE		946+30.000	10131.4119
		CL GIR.3		946+30.000	10131.3331
		CL SO. BOX		946+30.000	10131.2544
		CL GIR.4		946+30.000	10131.1756
		SO. OUT		946+30.000	10131.0969
306.500000 8/ 20 PT.= 4 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	946+35.000	10131.5196
		NO. OUT		946+35.000	10131.6096
		CL GIR.1		946+35.000	10131.5309
		PRO. LINE		946+35.000	10131.5196
		CL NO. BOX		946+35.000	10131.4521
		CL GIR.2		946+35.000	10131.3734
		CL BRIDGE		946+35.000	10131.2946
		CL GIR.3		946+35.000	10131.2159
		CL SO. BOX		946+35.000	10131.1371
		CL GIR.4		946+35.000	10131.0584
		SO. OUT		946+35.000	10130.9796
311.500000 9/ 20 PT.= 4 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	946+40.000	10131.4035
		NO. OUT		946+40.000	10131.4935
		CL GIR.1		946+40.000	10131.4148
		PRO. LINE		946+40.000	10131.4035
		CL NO. BOX		946+40.000	10131.3360
		CL GIR.2		946+40.000	10131.2573
		CL BRIDGE		946+40.000	10131.1785
		CL GIR.3		946+40.000	10131.0998
		CL SO. BOX		946+40.000	10131.0210
		CL GIR.4		946+40.000	10130.9423
		SO. OUT		946+40.000	10130.8635
316.500000 10/ 20 PT.= 4 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	946+45.000	10131.2888
		NO. OUT		946+45.000	10131.3788
		CL GIR.1		946+45.000	10131.2998
		PRO. LINE		946+45.000	10131.2885
		CL NO. BOX		946+45.000	10131.2210
		CL GIR.2		946+45.000	10131.1423
		CL BRIDGE		946+45.000	10131.0635
		CL GIR.3		946+45.000	10130.9848
		CL SO. BOX		946+45.000	10130.9060
		CL GIR.4		946+45.000	10130.8273
		SO. OUT		946+45.000	10130.7485
321.500000 11/ 20 PT.= 4 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	946+50.000	10131.1746
		NO. OUT		946+50.000	10131.2646
		CL GIR.1		946+50.000	10131.1858
		PRO. LINE		946+50.000	10131.1746
		CL NO. BOX		946+50.000	10131.1071
		CL GIR.2		946+50.000	10131.0284
		CL BRIDGE		946+50.000	10130.9496
		CL GIR.3		946+50.000	10130.8709
		CL SO. BOX		946+50.000	10130.7921
		CL GIR.4		946+50.000	10130.7134
		SO. OUT		946+50.000	10130.6346
326.500000 12/ 20 PT.= 4 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	946+55.000	10131.0618
		NO. OUT		946+55.000	10131.1518
		CL GIR.1		946+55.000	10131.0731
		PRO. LINE		946+55.000	10131.0618
		CL NO. BOX		946+55.000	10130.9943
		CL GIR.2		946+55.000	10130.9156
		CL BRIDGE		946+55.000	10130.8368
		GL GIR.3		946+55.000	10130.7581
		CL SO. BOX		946+55.000	10130.6793
		CL GIR.4		946+55.000	10130.6006
		SO. OUT		946+55.000	10130.5218
331.500000 13/ 20 PT.= 4 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	946+60.000	10130.9582
		NO. OUT		946+60.000	10131.0482
		CL GIR.1		946+60.000	10130.9694
		PRO. LINE		946+60.000	10130.9582
		CL NO. BOX		946+60.000	10130.8827
		CL GIR.2		946+60.000	10130.8039
		CL BRIDGE		946+60.000	10130.7252
		CL GIR.3		946+60.000	10130.6464
		CL SO. BOX		946+60.000	10130.5677
		CL GIR.4		946+60.000	10130.4889
		SO. OUT		946+60.000	10130.4102
336.500000 14/ 20 PT.= 4 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	946+65.000	10130.8397
		NO. OUT		946+65.000	10130.9297
		CL GIR.1		946+65.000	10130.8509
		PRO. LINE		946+65.000	10130.8397
		CL NO. BOX		946+65.000	10130.7722
		CL GIR.2		946+65.000	10130.6934
		CL BRIDGE		946+65.000	10130.6147
		CL GIR.3		946+65.000	10130.5359
		CL SO. BOX		946+65.000	10130.4572
		CL GIR.4		946+65.000	10130.3784
		SO. OUT		946+65.000	10130.2997
341.500000 15/ 20 PT.= 4 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	946+70.000	10130.7382
		NO. OUT		946+70.000	10130.8282
		CL GIR.1		946+70.000	10130.7415
		PRO. LINE		946+70.000	10130.7302
		CL NO. BOX		946+70.000	10130.6627
		CL GIR.2		946+70.000	10130.5840
		CL BRIDGE		946+70.000	10130.5052
		CL GIR.3		946+70.000	10130.4265
		CL SO. BOX		946+70.000	10130.3477
		CL GIR.4		946+70.000	10130.2690
		SO. OUT		946+70.000	10130.1902
346.500000 16/ 20 PT.= 4 BACK TANGENT		CONSTR. CL	0 0 .0 ZERO SKEW	946+75.000	10130.6219
		NO. OUT		946+75.000	10130.7119
		CL GIR.1		946+75.000	10130.6332
		PRO. LINE		946+75.000	10130.6219
		CL NO. BOX		946+75.000	10130.5544
		CL GIR.2		946+75.000	10130.4757
		CL BRIDGE		946+75.000	10130.3969
		CL GIR.3		946+75.000	10130.3182
		CL SO. BOX		946+75.000	10130.2394
		CL GIR.4		946+75.000	10130.1607
		SO. OUT		946+75.000	10130.0819

DIVISION OF HIGHWAYS

ELEVATIONS

Designer	J. Keller	Structure Numbers	F 12-AN
Detailer			
Drawing Number	8 5	of	16 Drawings

STATE DEPARTMENT OF HIGHWAYS
DIVISION OF HIGHWAYS - STATE OF COLORADO

◆ ◆ ◆ ◆ ◆ BENT LINE INPUT ◆ ◆ ◆ ◆ ◆ DISTANCE FROM REFERENCE LINE(TYPE)	DESCRIPTION OF BENT LINE	DESCRIPTION OF LINE	SKEW ANGLE OF BENT LINE REFERENCED TO CHORD OR TANGENT	STATION OF INTERSECTION OF LINE AND BENT LINE	ROADWAY ELEVATION AT INTERSECTION OF LINE AND BENT LINE
351.500000	17/ 20 PT.= 4	CONSTR. CL	0 0 .0	946+80.000	10130.5148
BACK TANGENT			ZERO SKEW		
		NO. OUT		946+80.000	10130.6048
		CL GIR.1		946+80.000	10130.5260
		PRO. LINE		946+80.000	10130.5148
		CL NO. BOX		946+80.000	10130.4473
		CL GIR.2		946+80.000	10130.3685
		CL BRIDGE		946+80.000	10130.2898
		CL GIR.3		946+80.000	10130.2110
		CL SO. BOX		946+80.000	10130.1323
		CL GIR.4		946+80.000	10130.0535
		SO. OUT		946+80.000	10129.9748
356.500000	18/ 20 PT.= 4	CONSTR. CL	0 0 .0	946+85.000	10130.4087
BACK TANGENT			ZERO SKEW		
		NO. OUT		946+85.000	10130.4987
		CL GIR.1		946+85.000	10130.4200
		PRO. LINE		946+85.000	10130.4087
		CL NO. BOX		946+85.000	10130.3412
		CL GIR.2		946+85.000	10130.2625
		CL BRIDGE		946+85.000	10130.1837
		CL GIR.3		946+85.000	10130.1050
		CL SO. BOX		946+85.000	10130.0262
		CL GIR.4		946+85.000	10129.9475
		SO. OUT		946+85.000	10129.8687
361.500000	19/ 20 PT.= 4	CONSTR. CL	0 0 .0	946+90.000	10130.3038
BACK TANGENT			ZERO SKEW		
		NO. OUT		946+90.000	10130.3938
		CL GIR.1		946+90.000	10130.3150
		PRO. LINE		946+90.000	10130.3038
		CL NO. BOX		946+90.000	10130.2363
		CL GIR.2		946+90.000	10130.1575
		CL BRIDGE		946+90.000	10130.0788
		CL GIR.3		946+90.000	10130.0000
		CL SO. BOX		946+90.000	10129.9213
		CL GIR.4		946+90.000	10129.8425
		SO. OUT		946+90.000	10129.7638
366.500000	CL BRG ABUT 4	CONSTR. CL	0 0 .0	946+95.000	10130.1999
BACK TANGENT			ZERO SKEW		
		NO. OUT		946+95.000	10130.2899
		CL GIR.1		946+95.000	10130.2112
		PRO. LINE		946+95.000	10130.1999
		CL NO. BOX		946+95.000	10130.1324
		CL GIR.2		946+95.000	10130.0537
		CL BRIDGE		946+95.000	10129.9749
		CL GIR.3		946+95.000	10129.8962
		CL SO. BOX		946+95.000	10129.8174
		CL GIR.4		946+95.000	10129.7387
		SO. OUT		946+95.000	10129.6599
370.625000	1/ 4 PT.= 1	CONSTR. CL	2 31 26.6	946+99.125	10130.1151
BACK TANGENT			RIGHT SKEW		
		NO. OUT		946+99.389	10130.1997
		CL GIR.1		946+99.158	10130.1257
		PRO. LINE		946+99.125	10130.1151
		CL NO. BOX		946+98.927	10130.0517
		CL GIR.2		946+98.695	10129.9777
		CL BRIDGE		946+98.464	10129.9037
		CL GIR.3		946+98.232	10129.8297
		CL SO. BOX		946+98.001	10129.7557
		CL GIR.4		946+97.769	10129.6817
		SO. OUT		946+97.538	10129.6077
374.750000	2/ 4 PT.= 1	CONSTR. CL	5 2 18.1	947+ 3.250	10130.0311
BACK TANGENT			RIGHT SKEW		
		NO. OUT		947+ 3.779	10130.1104
		CL GIR.1		947+ 3.316	10130.0410
		PRO. LINE		947+ 3.250	10130.0311
		CL NO. BOX		947+ 2.853	10129.9716
		CL GIR.2		947+ 2.390	10129.9023
		CL BRIDGE		947+ 1.928	10129.8330
		CL GIR.3		947+ 1.465	10129.7636
		CL SO. BOX		947+ 1.002	10129.6943
		CL GIR.4		947+ .539	10129.6250
		SO. OUT		947+ .076	10129.5557
378.875000	3/ 4 PT.= 1	CONSTR. CL	7 32 .2	947+ 7.375	10129.9478
BACK TANGENT			RIGHT SKEW		
		NO. OUT		947+ 8.168	10130.0219
		CL GIR.1		947+ 7.474	10129.9571
		PRO. LINE		947+ 7.375	10129.9478
		CL NO. BOX		947+ 6.780	10129.8923
		CL GIR.2		947+ 6.086	10129.8275
		CL BRIDGE		947+ 5.391	10129.7628
		CL GIR.3		947+ 4.697	10129.6980
		CL SO. BOX		947+ 4.003	10129.6333
		CL GIR.4		947+ 3.308	10129.5687
		SO. OUT		947+ 2.614	10129.5040
383.000000	BF ABUT 4	CONSTR. CL	10 0 .0	947+11.500	10129.8653
BACK TANGENT			RIGHT SKEW		
		NO. OUT		947+12.558	10129.9342
		CL GIR.1		947+11.632	10129.8739
		PRO. LINE		947+11.500	10129.8653
		CL NO. BOX		947+10.707	10129.8136
		CL GIR.2		947+ 9.781	10129.7533
		CL BRIDGE		947+ 8.855	10129.6931
		CL GIR.3		947+ 7.929	10129.6329
		CL SO. BOX		947+ 7.004	10129.5728
		CL GIR.4		947+ 6.078	10129.5127
		SO. OUT		947+ 5.152	10129.4526

FEDERAL ROAD REGION NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-2(52)197	98	

REVISIONS

AS CONSTRUCTED
NO REVISIONS DATE: 6-24-77

DIVISION OF HIGHWAYS

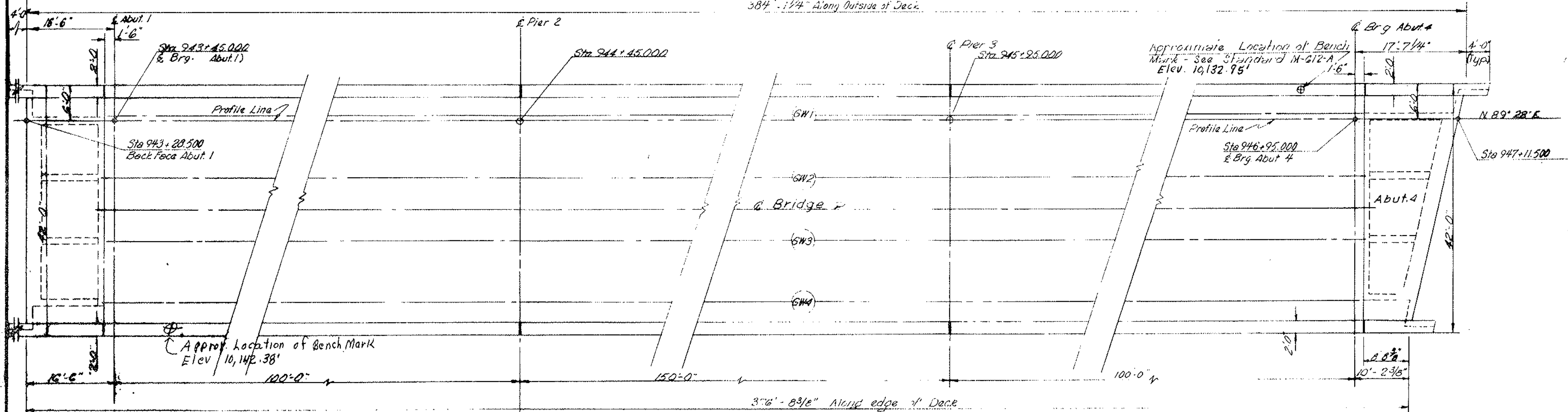
ELEVATIONS

Designer J. Keller
Detailer P. S.
Structure Numbers F-12-AN
Drawing Number B-6 of 16 Drawings

Revision Dates (Preliminary Stage Only)

FEDERAL ROAD REGION NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I-70-2(52)197	99	

REVISIONS



CONSTRUCTION LAYOUT

Orig. Scale: 1/8" = 1'-0"

* Location of Abutment and Pier Footings is offset by a distance equal to a rate of cross slope times depth of superstructure (6'0").

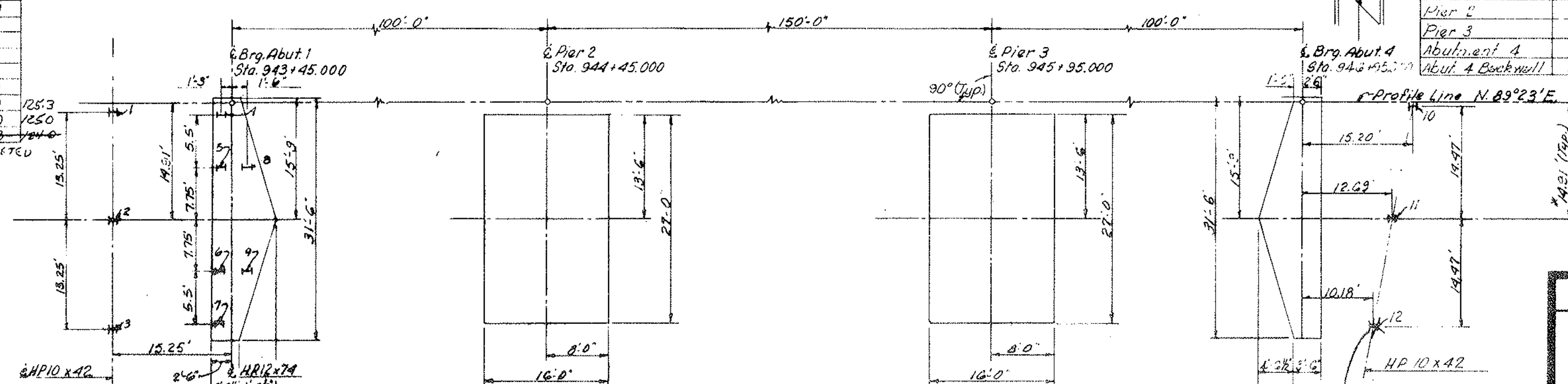
CUTOFF ELEVATIONS OF PILING

No.	Elevation	
1	10,135.8	
2	10,135.6	
3	10,135.3	
4	10,126.0	
5	10,126.0	
6	10,126.0	
7	10,126.0	
8	10,126.0	
9	10,126.0	
10	10,124.0	125.3
11	10,124.0	125.0
12	~~10,123.8~~	~~124.0~~

(12) DELETED

DESIGN FOUNDATION PRESSURE

Description	Allowable Pile Load (Tons)	Computed Pile Load (Tons)	Allowable Footing Tons/Sq.Ft.	Computed Footing Tons/Sq.Ft.	
Abutment 1	38	36.5		—	HP12x74
Abut. 1 Backwall	55	36		—	HP10x42
Pier 2	—		6	5.8	
Pier 3			6	5.8	
Abutment 4			6	2.5	
Abut. 4 Backwall	55	36	—	—	



FOOTING & PILING LAYOUT

Orig. Scale: 1/8" = 1'-0"

All Footing dimensions are at bottom of concrete.

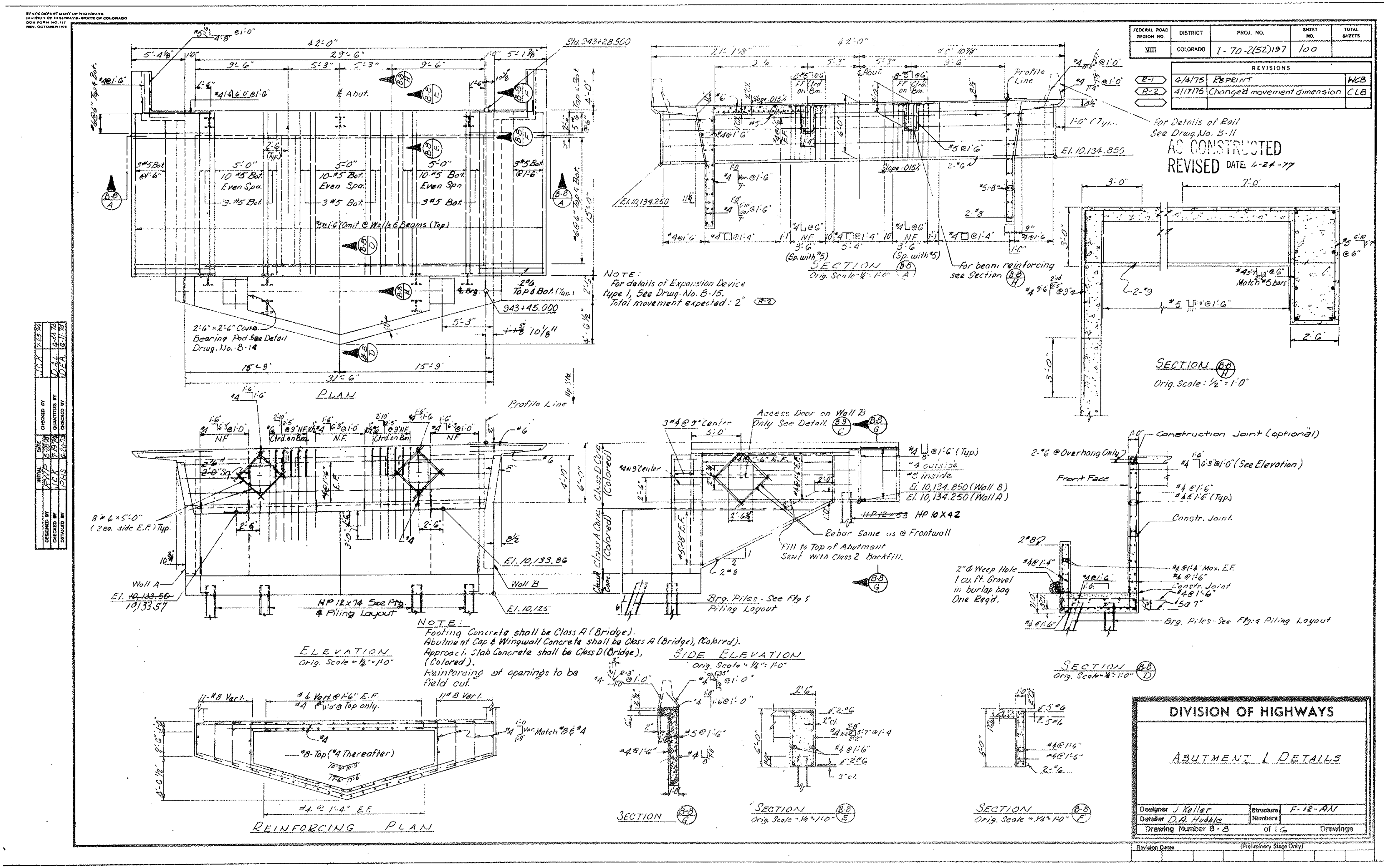
Piles No. 8 & 9 Shall be battered 6 to 1

AS CONSTRUCTED
REVISED DATE: 6-24-77

DIVISION OF HIGHWAYS

CONSTRUCTION LAYOUT
FOOTING AND
PILING LAYOUT

Designer R.W.P.
Detailer P.S.
Structure Numbers F-12-AX
Drawing Number B-7 of 16

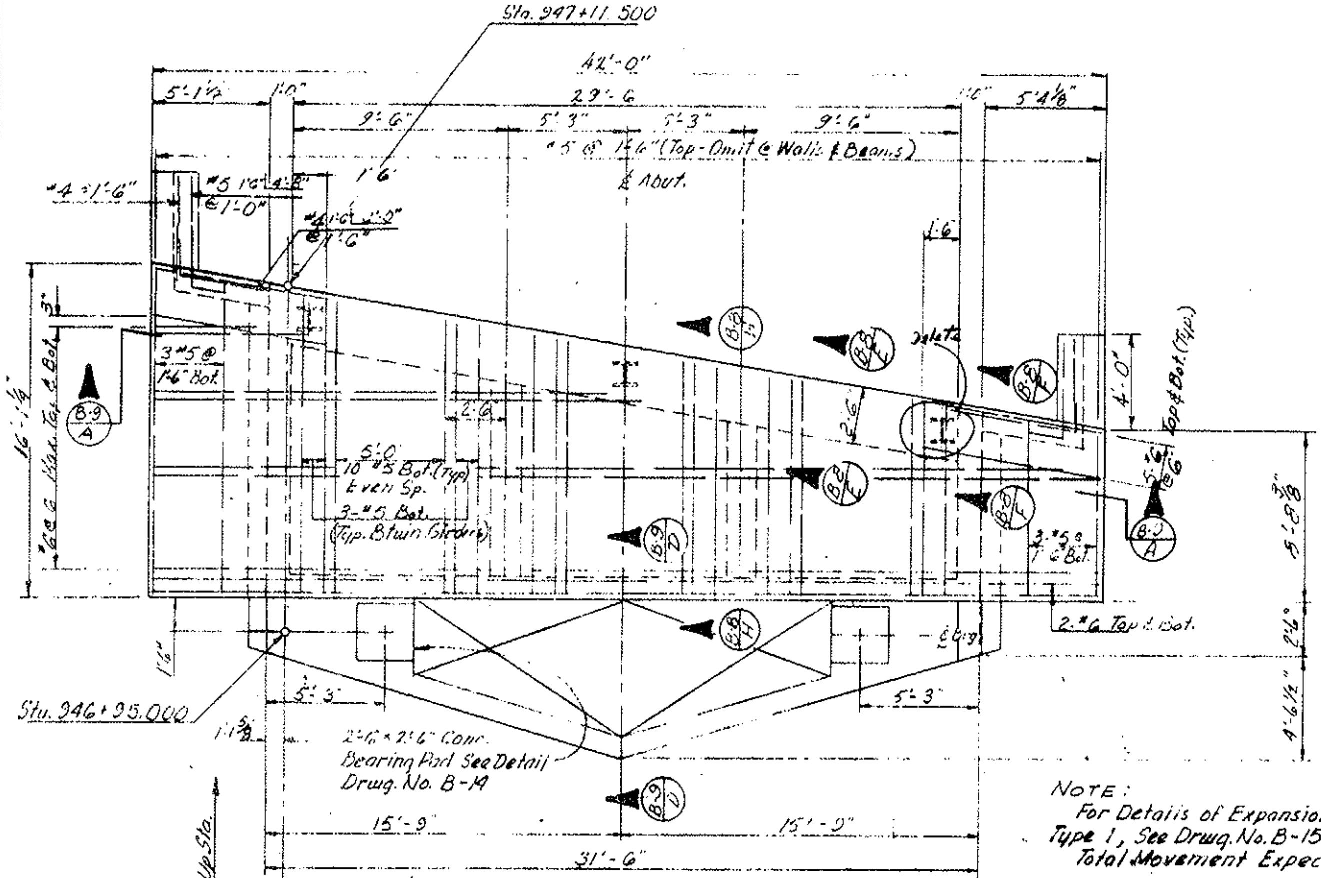

STATE DEPARTMENT OF HIGHWAYS
DIVISION OF HIGHWAYS • STATE OF COLORADO
FEDERAL ROAD REGION NO. VIII
DISTRICT COLORADO
PROJ. NO. I-70-2(52)197
SHEET NO. 100
REVISIONS
R-1 4/4/75 REPRINT WCB
R-2 4/17/75 Changed movement dimension CLB
AS CONSTRUCTED
REVISED DATE 6-24-77
For Details of Rail See Drwg. No. B-11
PLAN
Sta. 943+28.500
943+45.000
2'-6" × 2'-6" Comp. Bearing Pad See Detail Drwg. No. B-14
NOTE:
For details of Expansion Device type 1, See Drwg. No. B-15.
Total movement expected: 2" (R-2)
SECTION B-8 A
Orig. Scale ¼" = 1'-0"
For beam reinforcing see Section B-8 H
El. 10,134.850
El. 10,134.250
SECTION B-8 H
Orig. Scale: ½" = 1'-0"
ELEVATION
Orig. Scale = ¼" = 1'-0"
Profile Line
Wall A
Wall B
El. 10,133.86
El. 10,125
HP 12×74 See Ftg. & Piling Layout
SIDE ELEVATION
Orig. Scale = ¼" = 1'-0"
Access Door on Wall B Only See Detail B-9 C
El. 10,134.850 (Wall B)
El. 10,134.250 (Wall A)
HP 10X42
Rebar Same as @ Frontwall
Fill to Top of Abutment Seat with Class 2 Backfill.
Brg. Piles - See Ftg & Piling Layout
Class D Conc. (Colored)
Class A Conc. (Colored)
Construction Joint (optional)
2-#6 @ Overhang Only
Front Face
Constr. Joint
2" Ø Weep Hole 1 cu. ft. Gravel in burlap bag One Req'd.
Brg. Piles - See Ftg. & Piling Layout
SECTION B-8 D
Orig. Scale = ¼" = 1'-0"
NOTE:
Footing Concrete shall be Class A (Bridge).
Abutment Cap & Wingwall Concrete shall be Class A (Bridge), (Colored).
Approach Slab Concrete shall be Class D (Bridge), (Colored).
Reinforcing at openings to be field cut.
REINFORCING PLAN
SECTION B-8 G
SECTION B-8 E
Orig. Scale = ¼" = 1'-0"
SECTION B-8 F
Orig. Scale = ¼" = 1'-0"
DIVISION OF HIGHWAYS
ABUTMENT 1 DETAILS
Designer J. Keller
Detailer D.A. Hubble
Structure Numbers F-12-AN
Drawing Number B-8 of 16 Drawings
Revision Dates (Preliminary Stage Only)

STATE DEPARTMENT OF HIGHWAYS
DIVISION OF HIGHWAYS - STATE OF COLORADO

FEDERAL ROAD REGION NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-2(52)197	101	

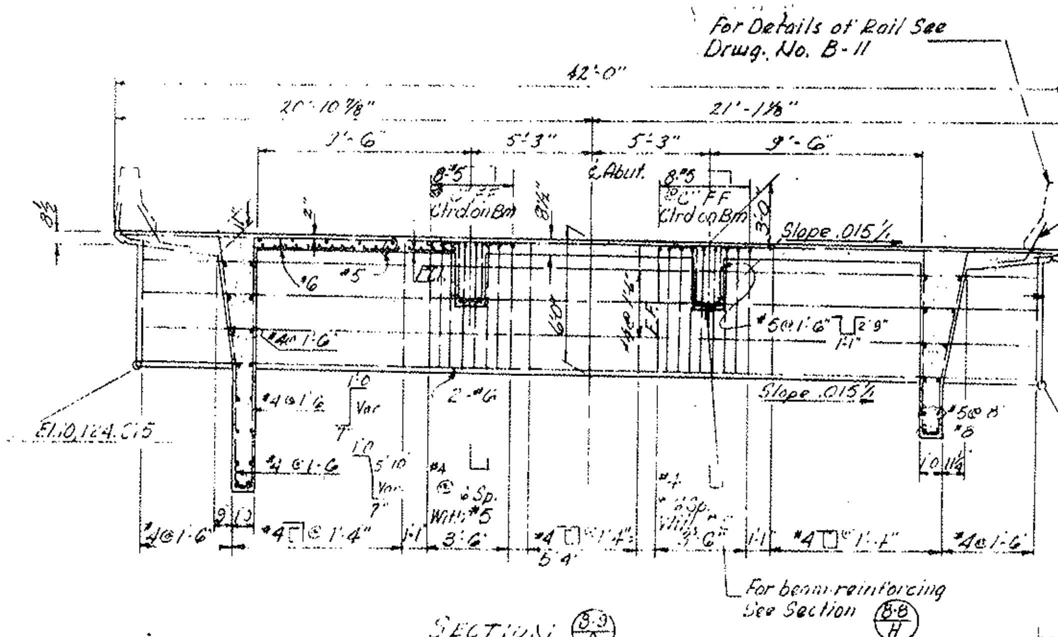
REVISIONS		
4/17/75	Changed movement dimension	CLB

AS CONSTRUCTED
REVISED DATE: 6-24-77

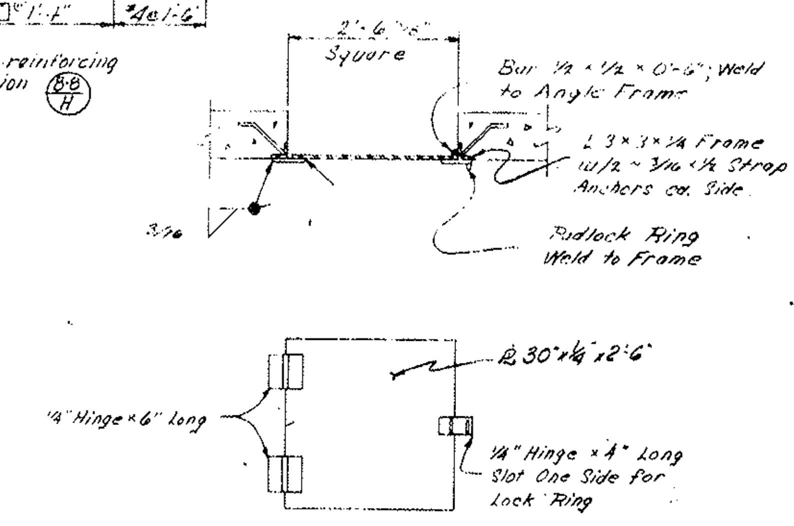


PLAN
Orig. Scale = 1/4" = 1'-0"

NOTE:
For Details of Expansion Device Type 1, See Drwg. No. B-15
Total Movement Expected: 2" (R-1)

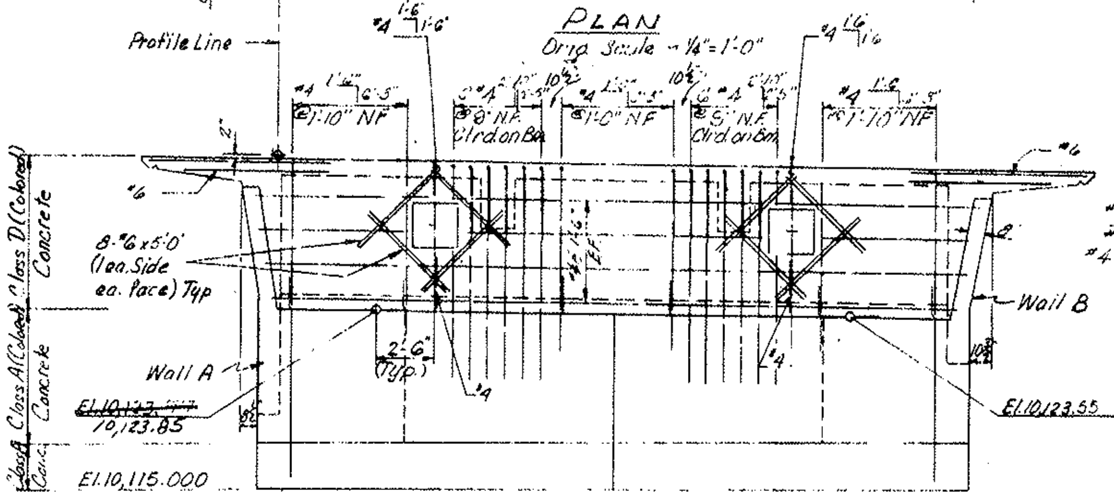


SECTION (B-9 A)
Orig. Scale 1/4" = 1'-0"

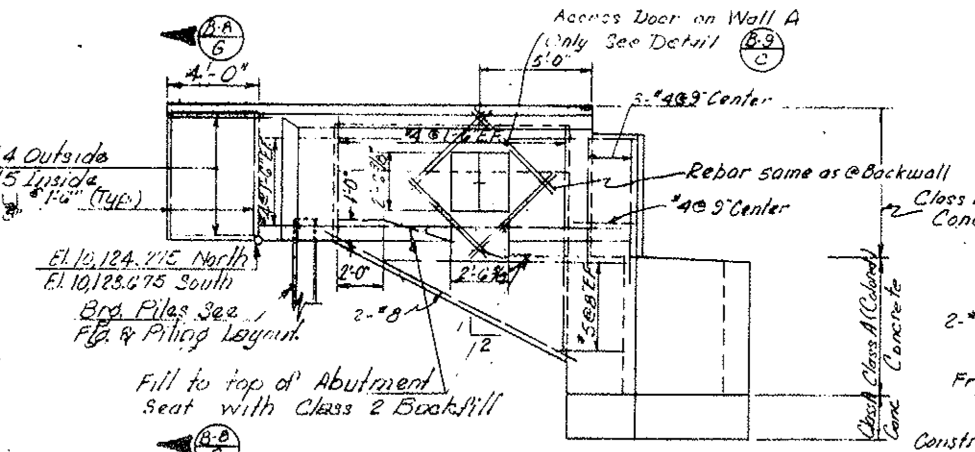


Req'd. : 2 (1 Ea. Abut.)

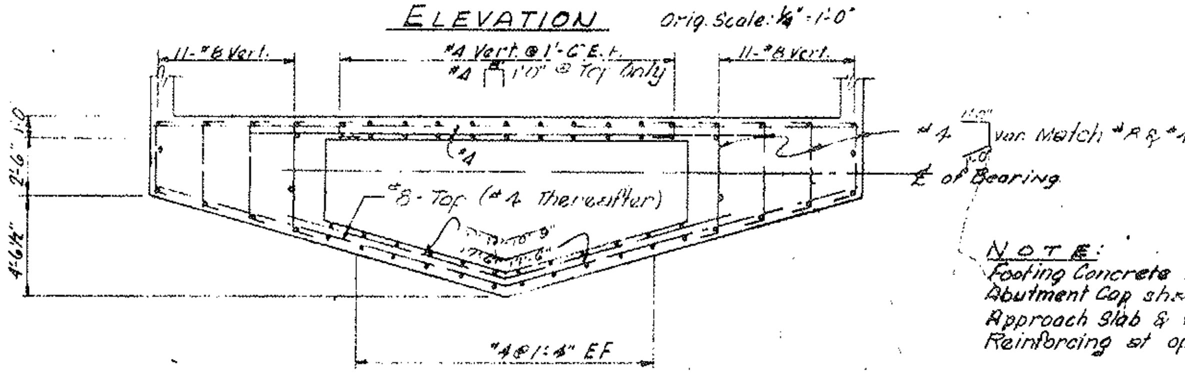
METAL ACCESS DOOR DETAIL (B-9 C)
Orig. Scale = 3/4" = 1'-0"



ELEVATION Orig. Scale: 1/4" = 1'-0"

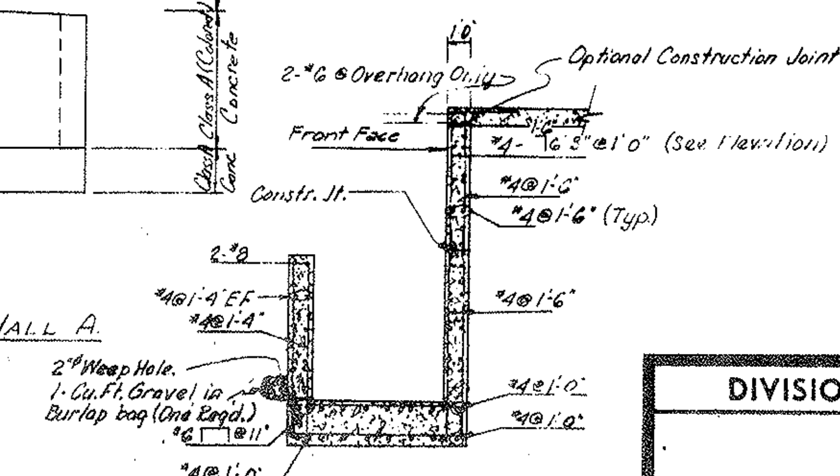


SIDE ELEVATION - WALL A.
Orig. Scale = 1/4" = 1'-0"



REINFORCING PLAN
Orig. Scale = 1/4" = 1'-0"

NOTE:
Footing Concrete shall be Class A (Bridge).
Abutment Cap shall be Class A (Bridge), (Colored).
Approach Slab & Wingwall Concrete shall be Class D (Bridge), (Colored).
Reinforcing at opening to be field cut.



SECTION (B-9 D)
Orig. Scale 1/4" = 1'-0"

DIVISION OF HIGHWAYS	
ABUTMENT 4 DETAILS	
Designer J. Keller	Structure Numbers F-12-AN
Detailer D.A. Hubble	
Drawing Number B-9 of 16 Drawings	

Revision Dates (Preliminary Stage Only)

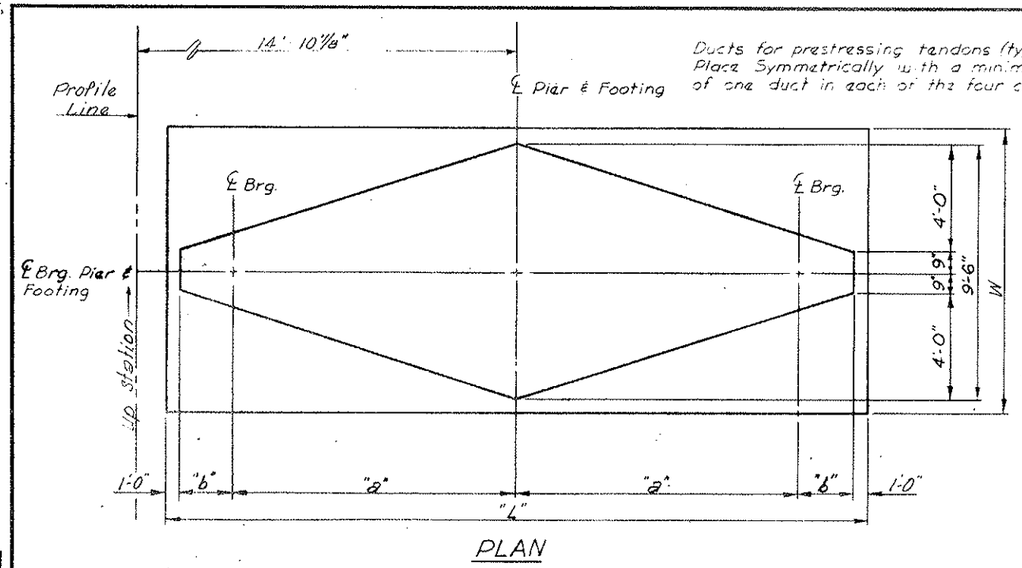
STAFFORD BULON — STEEL

STATE DEPARTMENT OF HIGHWAYS
DIVISION OF HIGHWAYS - STATE OF COLORADO
CONFORM NO. ----
REV. BY NUMBER ----

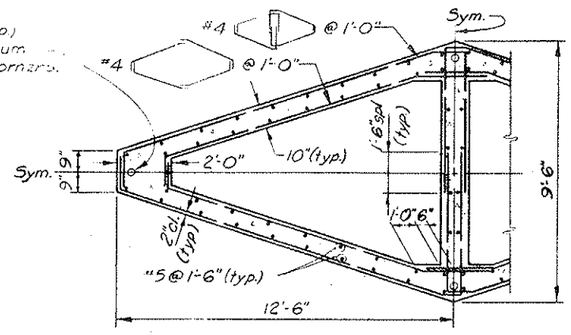
FEDERAL ROAD REGION NO	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I-70-2(52)197	102	

REVISIONS			
R1	4-29-75	Addition to Note 3	BDE

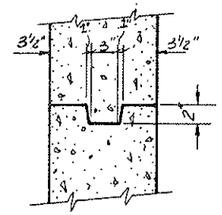
VOID
BY CONSTRUCTION DATE 6-24-77



PLAN

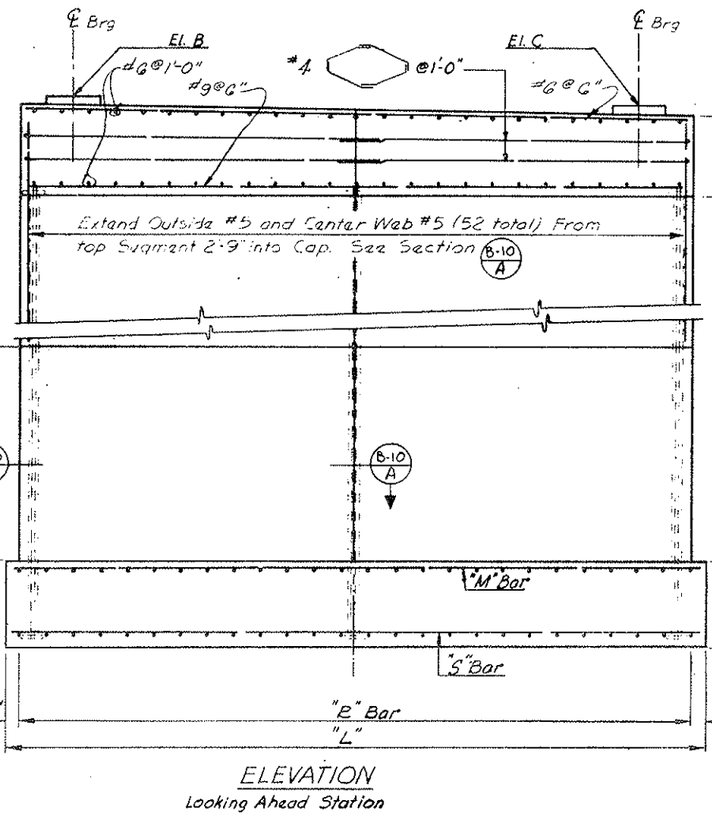


SECTION (B-10 / A)

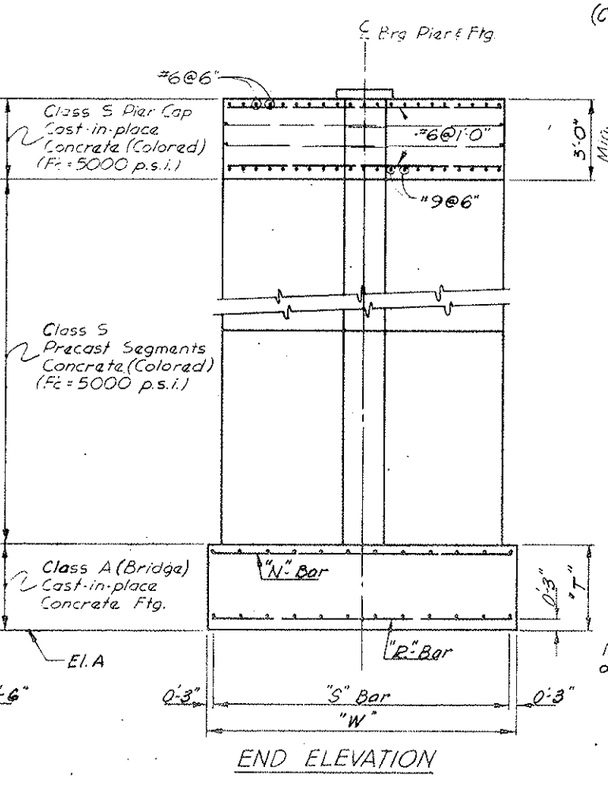


CONSTR. JOINT
(CENTER WALL)

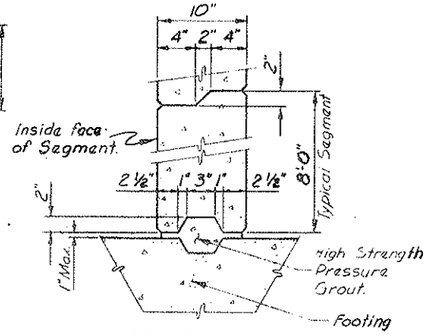
	PIER 2	PIER 3	
	El. A	10,083.000	10,089.000	
10,130.26	El. B	~~10,130.218~~	~~10,125.945~~	10,125.99
10,129.95	El. C	~~10,129.903~~	~~10,125.630~~	10,125.68
	Dim. "a"	10'-6"	10'-6"	
	Dim. "b"	2'-0"	2'-0"	
	Dim. "T"	3'-0"	3'-0"	
	Dim. "W"	16'-0"	16'-0"	
	Dim. "L"	27'-0"	27'-0"	
	"M" Bars	#6@7"	#6@7"	
	"N" Bars	#6@7"	#6@7"	
	"E" Bars	#8@7"	#8@7"	
	"S" Bars	#6@7"	#6@7"	
	Force "F"	5435 Kips	5435 Kips	



ELEVATION
Looking Ahead Station



END ELEVATION



CONSTR. JOINT

(1) FORCE F IS THE POST-TENSIONING FORCE REQUIRED IN THE PIERS AFTER ALL LOSSES INCLUDING CREEP, SHRINKAGE, FRICTION, AND ELASTIC SHORTENING FROM THE SUPERSTRUCTURE LOADS. POST-TENSIONING FORCE F IS TO BE THE SUM OF FOUR EQUAL FORCES, ONE AT EACH CORNER OF THE PIER AS SHOWN IN SECTION .

PIER NOTES:

1. POST-TENSIONING TENDON ANCHORAGES IN PIER FOOTINGS AND PIER CAPS SHALL BE DETERMINED BY THE MANUFACTURER AND SUBMITTED FOR APPROVAL.
2. END BLOCKS SHALL BE USED TO DISTRIBUTE THE CONCENTRATED POST-TENSIONING FORCES AT THE ANCHORAGE. CLOSELY SPACED REINFORCEMENT SHALL BE PLACED BOTH VERTICALLY AND HORIZONTALLY THROUGHOUT THE LENGTH OF THE END BLOCK IN ACCORDANCE WITH ACCEPTED METHODS OF END BLOCK ANALYSIS.
3. (R1) ALL SEGMENTS SHALL BE MATCH-CAST TO ENSURE PROPER FIT DURING THE ERECTION STAGE. PRECAST SEGMENT HEIGHT PER BRIDGE MAY BE REVISED IN ORDER TO MINIMIZE THE CAST-IN-PLACE PORTION.
4. CARE SHALL BE EXERCISED IN JOINING THE SEGMENTS WITH EPOXY TO ENSURE THAT COMPRESSION IS MAINTAINED OVER THE ENTIRE JOINT AREA UNTIL THE PERMANENT POST-TENSIONED TENDONS ARE STRESSED.
5. FOR CONCRETE CLASSES AND STRENGTHS, SEE DRAWINGS, THIS SHEET.

	INITIAL	DATE	CHECKED BY	DATE
DESIGNED BY:	S.W.P.	5-74	J.C.K.	7-74
CHECKED BY:	J.C.K.	7-74	D.E.A.	12-74
DETAILED BY:	P.H.S.	8-74	D.E.A.	6-75

IECO — INTERNATIONAL ENGINEERING COMPANY, INC
Barton, Stoddard, Millington and Higgins Division
1777 S Bellaire St Denver, Colorado 80222

DIVISION OF HIGHWAYS

PIER DETAILS

Designer	J. Keller	Structure Numbers	F-12-AN
Detailer	P.S.		
Drawing Number B-10		of 16	Drawings

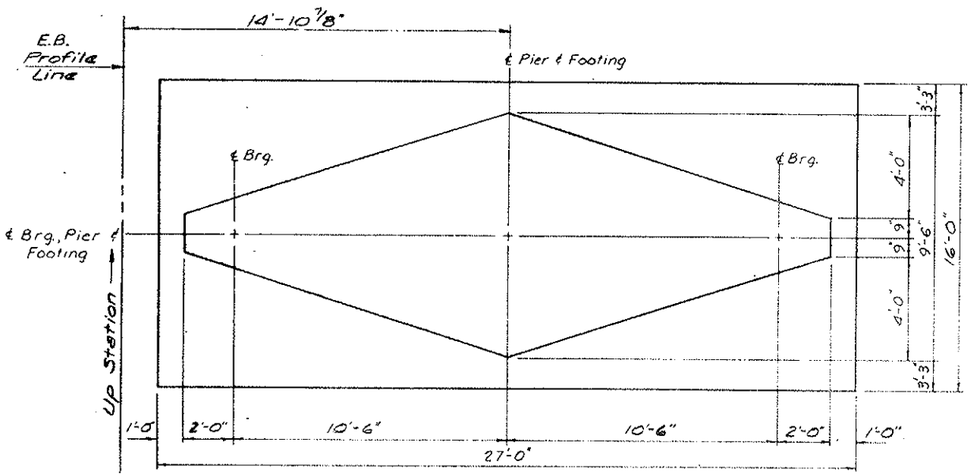
Revision Dates (Preliminary Stage Only)

10ZAX

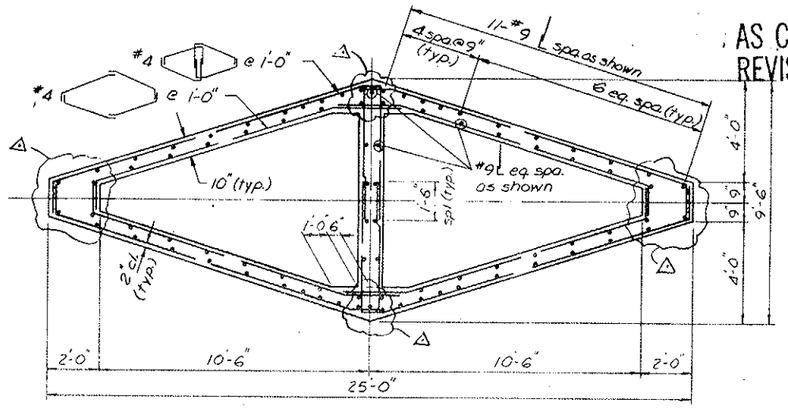
AS CONSTRUCTED
REVISED DATE:

6-24-77

REVISED FOR CHANGE ORDER NO. 07253



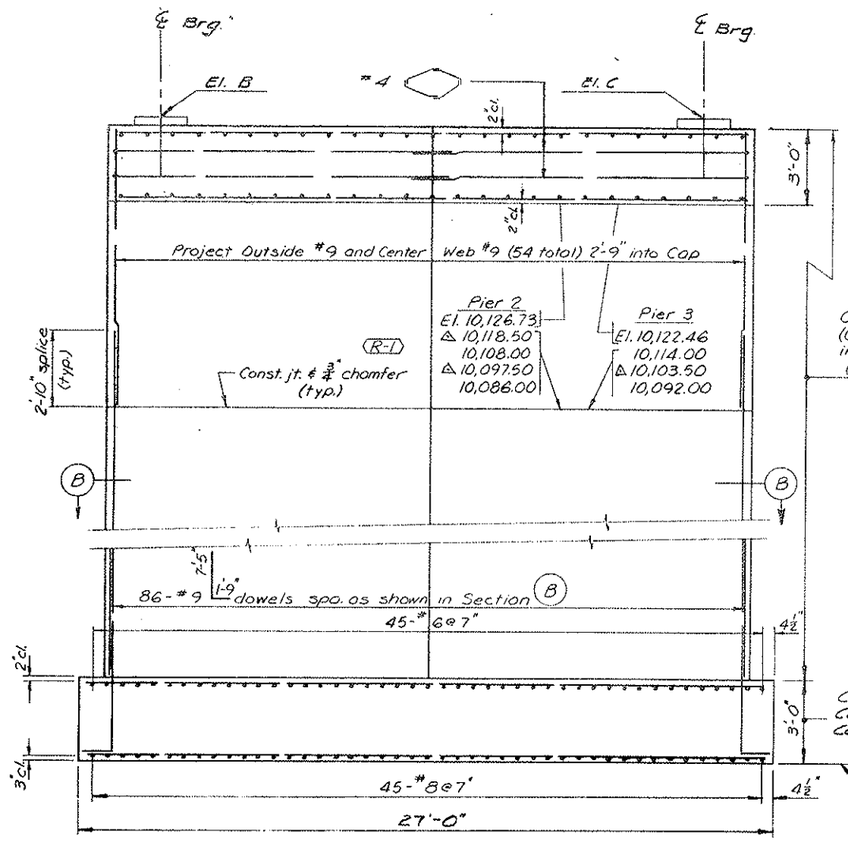
PLAN



SECTION (B)

△ Do not lap bars at designated elevations (R-2)

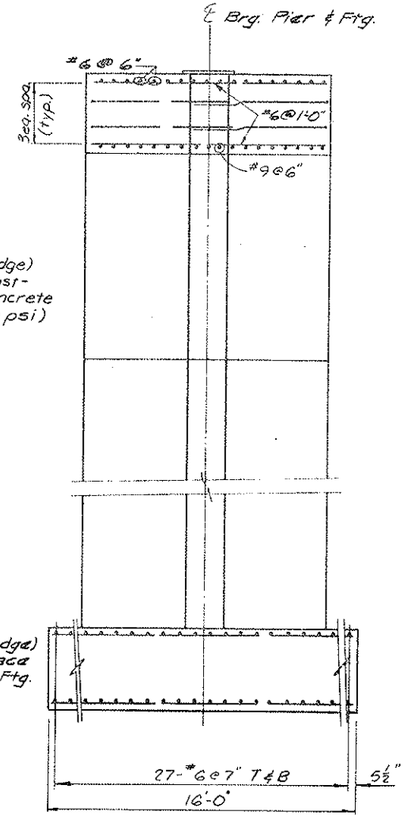
		PIER 2	PIER 3
	El. A	10,083.0	10,089.0
(R-1)	El. B	10,130.26	10,125.99
(R-1)	El. C	10,129.95	10,125.68



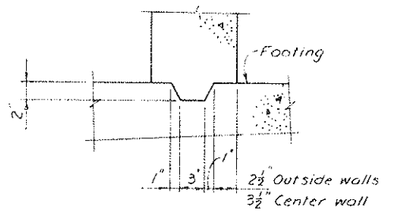
ELEVATION
Looking Ahead Station

Class S (Bridge) (Colored) Cast-in-place concrete (F'_c = 5000 psi)

Class A (Bridge) Cast-in-Place Concrete Ftg.



END ELEVATION



CONST. JOINT

QUANTITIES

ITEM	DESCRIPTION	UNIT	PIER 2	PIER 3	
601	Concrete Class A (Bridge)	Cu.Yd.	48.0	48.0	
601	Concrete Class S (Bridge) (Colored)	Cu.Yd.	97.8	77.4	
602	Reinforcing Steel (Gr. 60)	Lb.	28607	24038	(R-2) (R-1)
(1)					
	(1) Former Reinf. Steel Quantity =	Lb.	14,366	12,524	
	Additional Reinf. Steel =	Lb.	14,238	11,512	(R-1)
			Total =	25,750 Lbs.	(R-1) (R-2)

REVISIONS			
R-1	6-19-75	Rev elevs., quant; add const. jt.	CLB
R-2	6-25-75	Rev lops & quant.	HHH

CARL L. BENSON REGISTERED PROFESSIONAL ENGINEER 12611 STATE OF COLORADO

I 70-2(52)197 VAIL PASS STR. F-12-AN

CONVENTIONAL REINFORCING FOR PIERS

INTERNATIONAL ENGINEERING COMPANY, INC.

Designed JK | Chkd RAH | Submitted
Drawn BE | Insp | Recommended | Approved

DENVER, COLORADO
DATE June 6, 1975

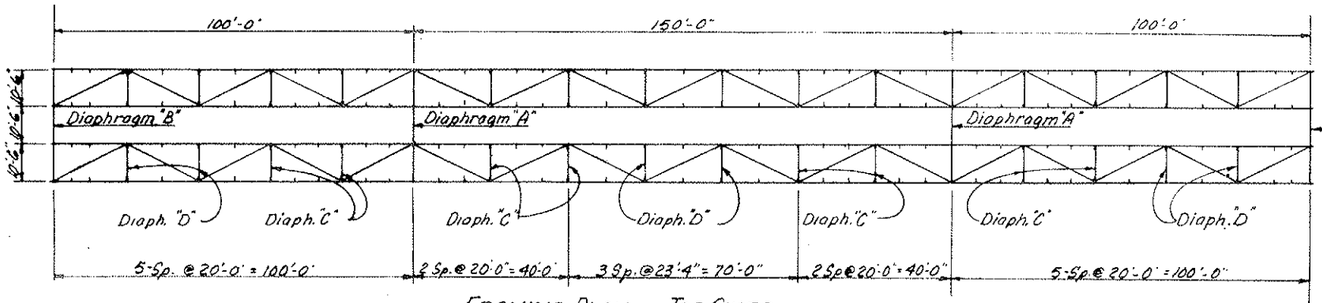
SHEET NO. 2

FEDERAL ROAD REGION NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-2(52)97	103	

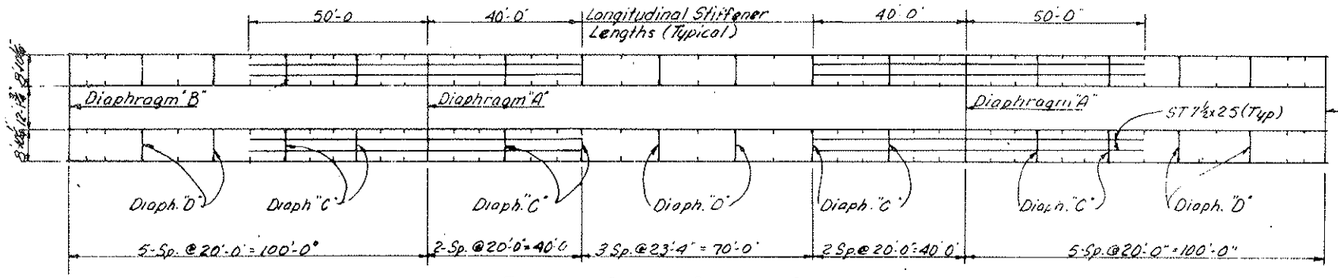
REVISIONS			
R-1	4/4/75	REPRINT	WCB

DESIGNED BY	CHECKED BY	DATE
CHECKED BY	QUANTITIES BY	CHECKED BY
DETAILED BY		

INITIAL	DATE	CHECKED BY
RWP	2-25-74	JOK 2-25-74
WCB	6-24-74	DAL 6-24-74
DHS	8-20-74	DEA 8-11-74



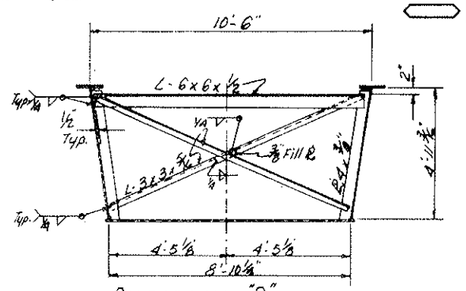
FRAMING PLAN — TOP CHORD



FRAMING PLAN — BOTTOM CHORD

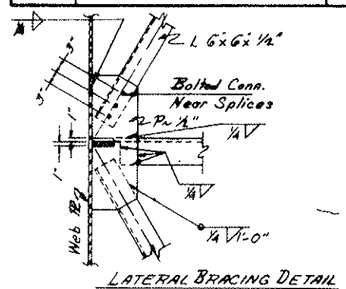
Note: All 10'-6" dim. are to outside of girder webs at intersection of webs and top flanges.

NOTE:
Bearing Stiffeners - grind to bear on bottom flange - tight fit on top flange.



DIAPHRAGM "D"

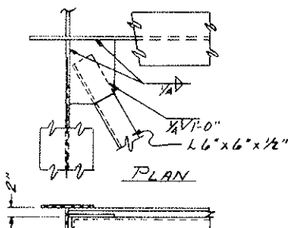
Orig. Scale: ⅜" = 1'-0"



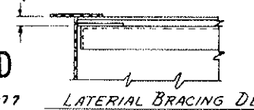
LATERAL BRACING DETAIL
SCALE: ¾" = 1'-0"

WELD LENGTHS REQ'D.	
Member	Length of ¼" Fillet Weld
L 3x3x 5/16	6" & 14"
L 5x5x 5/16	12"
L 6x6x ½"	9"
ST 7½ x 25	Continuous

NOTE: These are minimum lengths of ¼" fillet welds to secure members to gusset plates and other members.



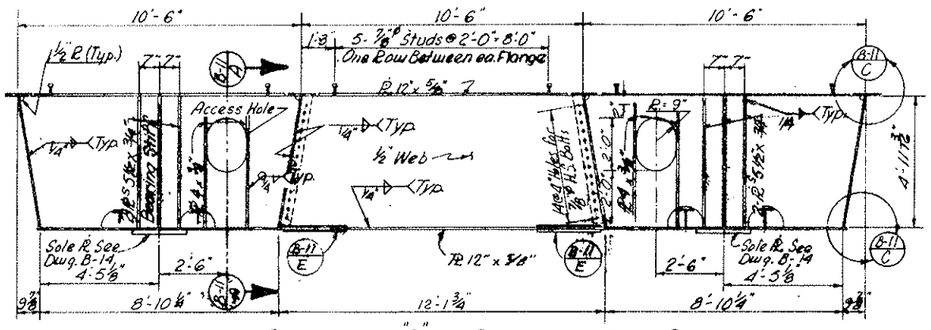
PLAN



LATERAL BRACING DETAIL @ DIAPHRAM "A"
ORIG. SCALE: ¾" = 1'-0"

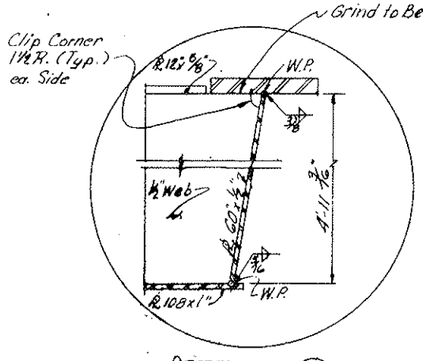
AS CONSTRUCTED
REVISED DATE: 6-24-77

Note:
All bolts shall be ⅞"ø ASTM A 325 Type 3 weathering steel. No substitutions will be allowed.



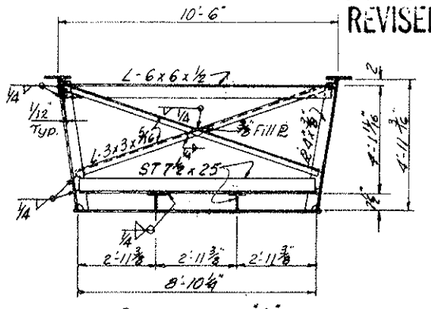
DIAPHRAGM "A" AT PIER: CENTERLINE BEARING

Orig. Scale: ⅜" = 1'-0"



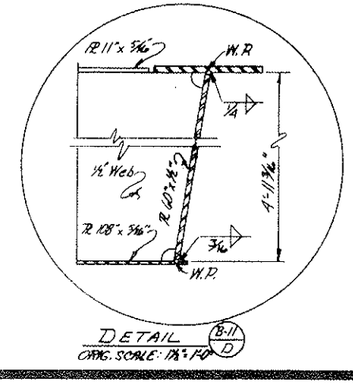
DETAIL B-11 C

Orig. Scale: 1½" = 1'-0"

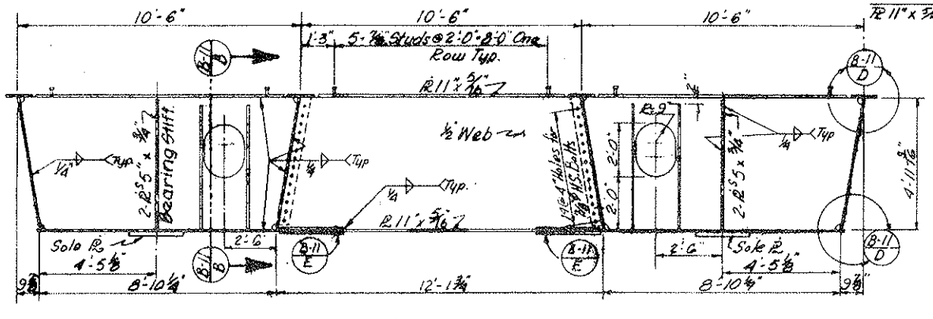


DIAPHRAGM "C"

Orig. Scale: ⅜" = 1'-0"

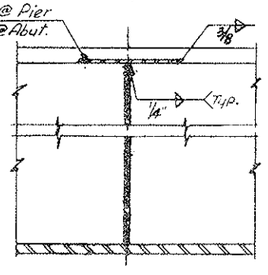


DETAIL B-11 D
ORIG. SCALE: 1½" = 1'-0"



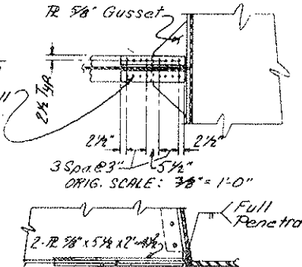
DIAPHRAGM "B" AT ABUTMENT BEARING

Orig. Scale: ⅜" = 1'-0"



SECTION B-11 A B-11 B

Orig. Scale: 1½" = 1'-0"



ORIG. SCALE: ¾" = 1'-0"

DETAIL B-11 E

DIVISION OF HIGHWAYS

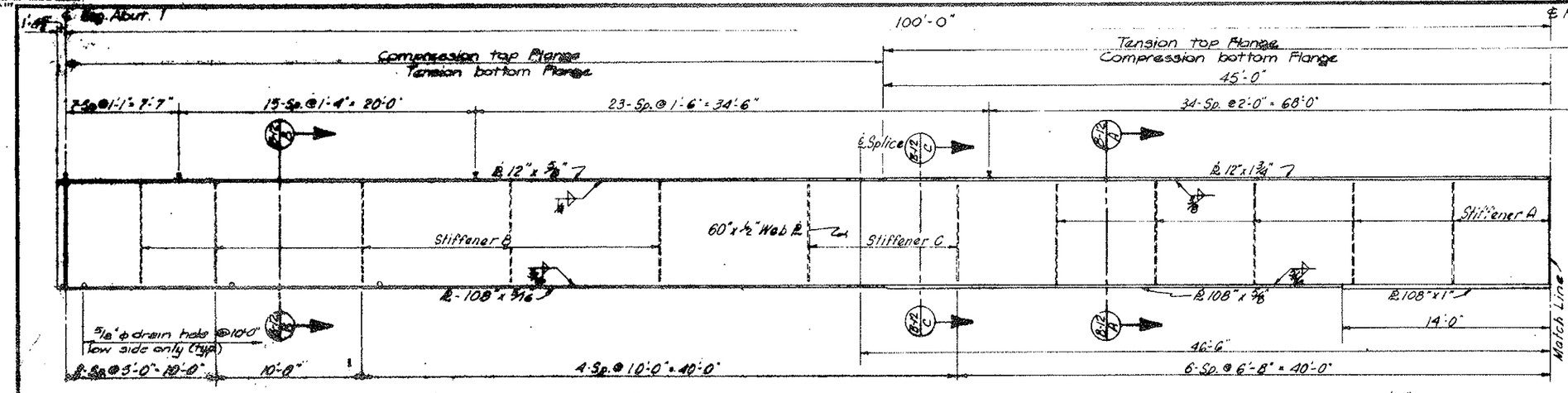
FRAMING PLAN

Designer	R.W.P.	Structure Numbers	E-12-AN
Detailer	P.S.		
Drawing Number	B-11	of 16	Drawings

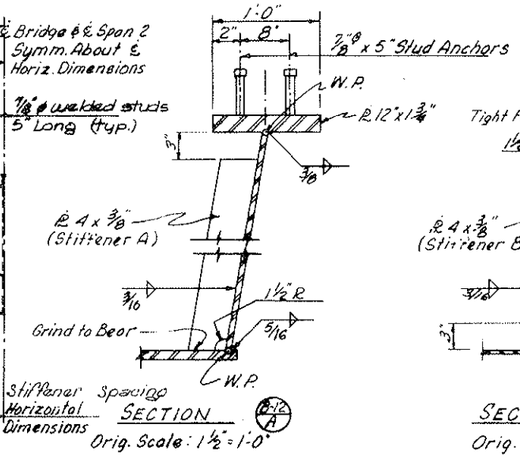
FEDERAL ROAD REGION NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I-70-2(52)197	104	

REVISIONS			

AS CONSTRUCTED
REVISED DATE 6-24-77



Girder Elevation
Orig. Scale: 1/4" = 1'-0"

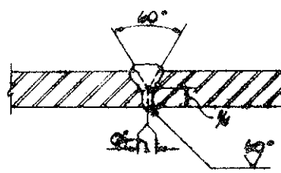


Location	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0
Girder & Slab & Girder	0	0	-.01	-.01	-.02	-.03	-.02	-.01	0	-.01	0	-.01	-.03	-.04	-.03	-.04	-.03	-.03	-.02	-.01	0	-.01	0	0	-.01	-.01	-.01	-.01	-.01	-.01	0
	0	-.03	-.02	-.03	-.05	-.03	-.03	-.01	-0	-.01	0	-.05	-.12	-.18	-.25	-.27	-.26	-.16	-.12	-.06	0	.01	-.0	.01	.03	.04	.05	.06	.04	.03	0
Vert. Curves	0	-.04	-.05	-.06	-.09	-.08	-.08	-.08	-.08	0	-.06	-.08	-.11	-.12	-.13	-.12	-.11	-.08	-.05	0	-.02	-.04	-.05	-.05	-.06	-.05	-.05	-.04	-.02	0	
Total																															

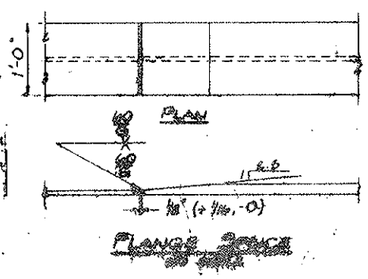
Dead Load Deflections (Tenth Points)
(Units in Feet)

NOTES:

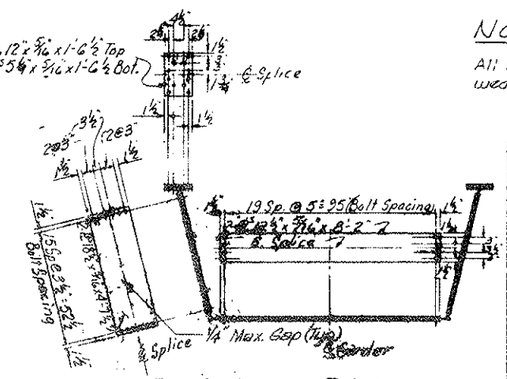
1. ALTERNATE GIRDER SPLICES WILL BE PERMITTED SUBJECT TO APPROVAL OF THE ENGINEER.
2. COMPLETE WELD TO FLANGE FILLET WELDS AFTER WELDING FLANGE AND WEB BUTT WELDS.
3. GRINDING IS NOT REQUIRED FOR SHOP BUTT WELDS IN TOP FLANGES WHICH ARE IN COMPRESSION, EXCEPT THE EDGES OF ALL FLANGE BUTT WELDS SHALL BE GROUND. OTHER AREAS SHALL BE GROUND AS DIRECTED BY THE ENGINEER.
4. WEB BUTT JOINTS SHALL BE FULL PENETRATION GROOVE WELDS. IF FIELD SPLICES ARE WELDED, WEB WELDS SHALL BE GROUND FLUSH.
5. STIFFENERS NEAR A FIELD SPLICE MAY BE FIELD WELDED.
6. GIRDER ENDS AND BEARING STIFFENERS SHALL BE VERTICAL EXCEPT THAT THEY MAY BE NORMAL TO GRADE FOR GRADES LESS THAN 2%.
7. AT THE CONTRACTORS OPTION, WELDED GIRDER SPLICES MAY BE USED WHEN BOLTED SPLICES ARE SHOWN ON THE PLANS.
8. METHOD OF SUPPORTING GIRDERS WHILE GIRDER FIELD WELDED SPLICES ARE BEING MADE SHALL BE SHOWN ON THE SHOP DRAWINGS.



Shop Web Splice
Detail B-12-S



Flange Shop Splice



Field Splice Detail

NOTE:
All bolts shall be 7/8" ϕ ASTM A 325 Type 3 weathering steel. No substitutions will be allowed.

DIVISION OF HIGHWAYS

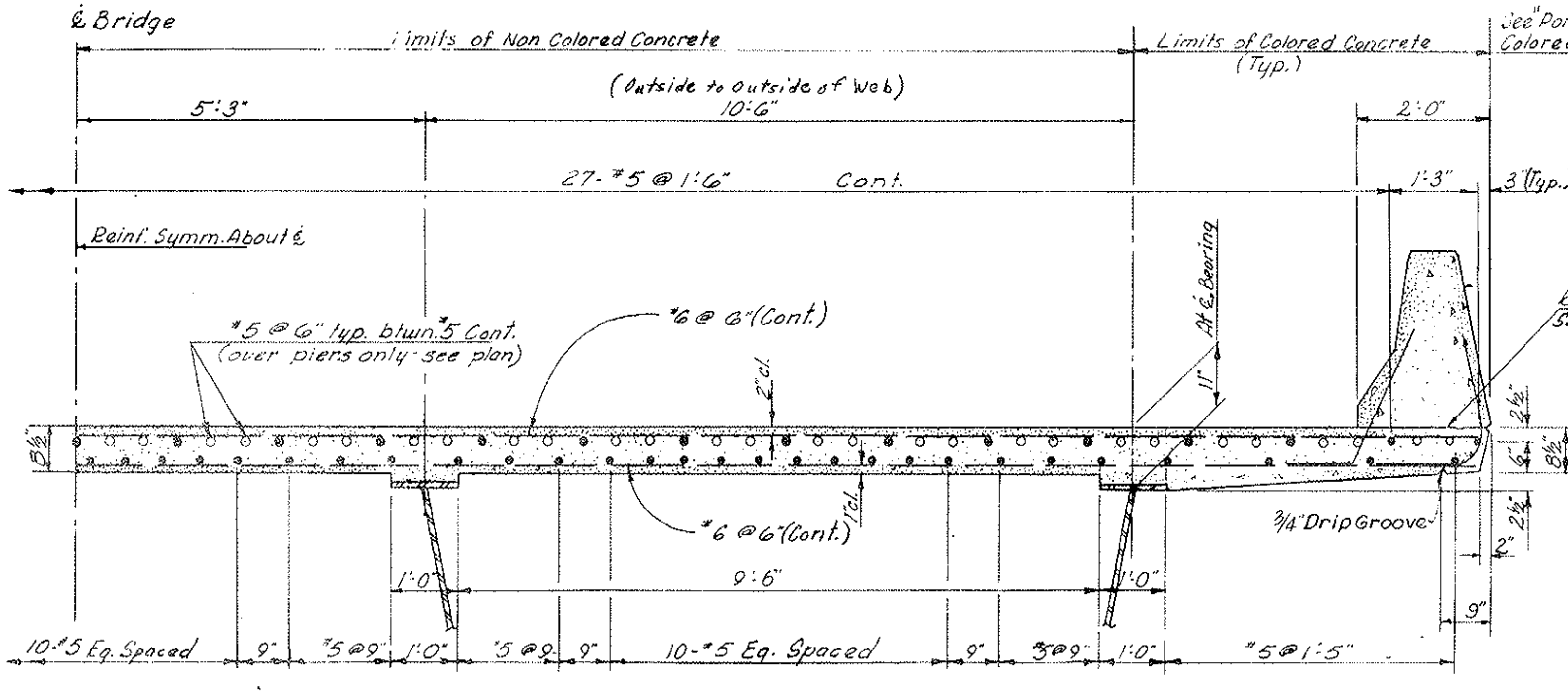
Girder Details

Designed	E.W.P.	Structure Numbers	F-12-AN
Detailed	P.S.		
Drawing Number	B-12	of 16	Drawings

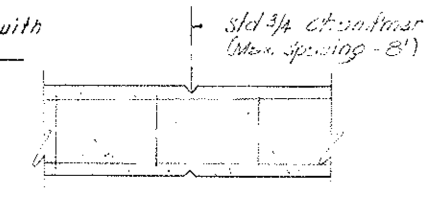
STATE DEPARTMENT OF HIGHWAYS
DIVISION OF HIGHWAYS – STATE OF COLORADO

FEDERAL ROAD REGION NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-2(56)197	105	

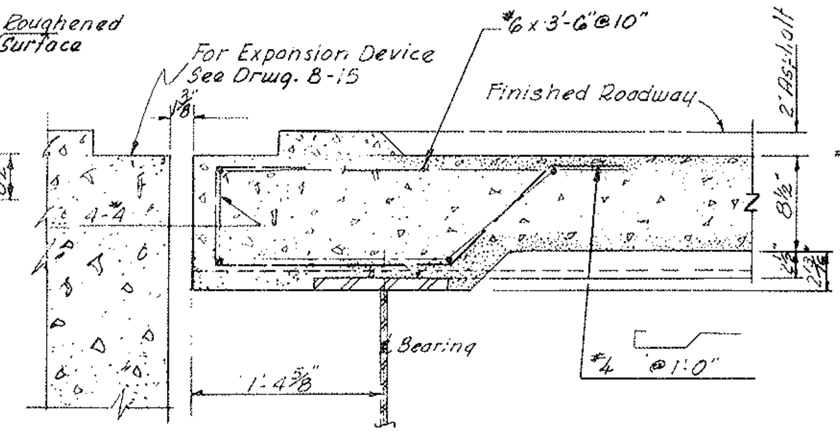
REVISIONS



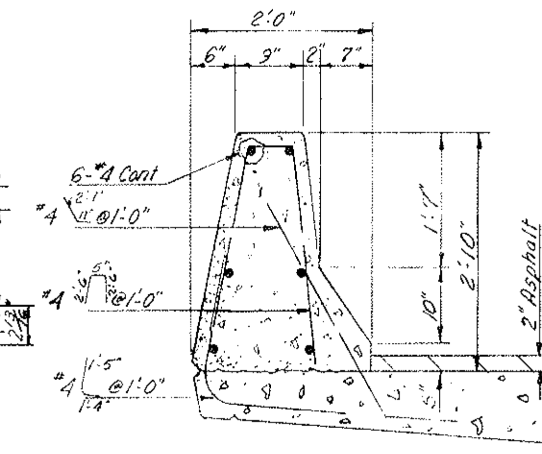
TYPICAL DECK HALF SECTION
Orig. Scale: 3/4" = 1'-0"



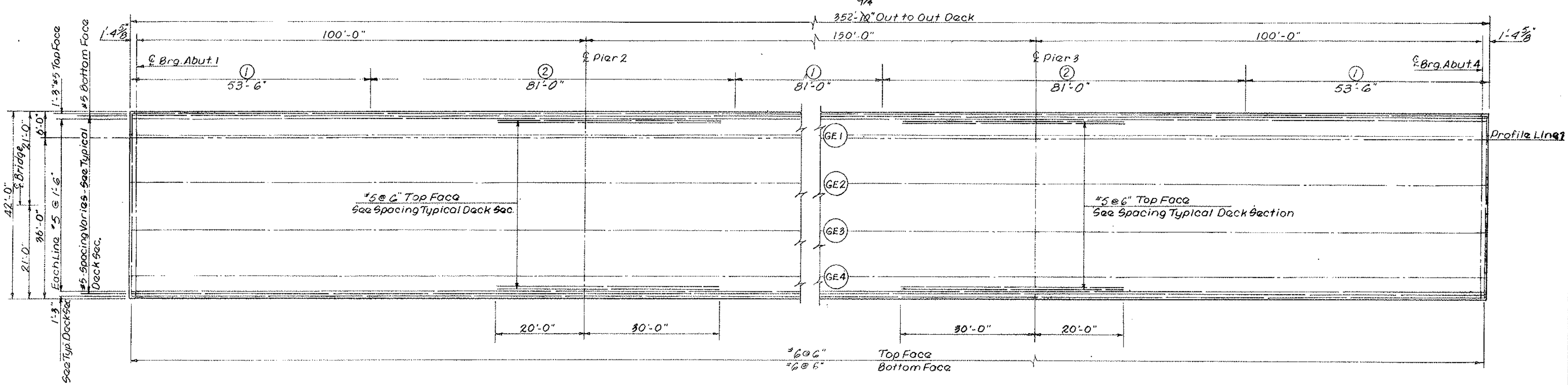
TYPICAL RAIL CHAMFER DETAIL



SECTION THRU END OF DECK
Orig. Scale: 1½" = 1'-0"



TYPICAL GUARD RAIL SECTION
Orig. Scale: 1" = 1'-0"



DECK PLAN
Orig. Scale: 3/32" = 1'-0"

All Dimensions shown in Plan are Horizontal

NOTE:
Slab pour sequence shall be as shown. Areas marked (1) shall be poured before areas marked (2), but areas of the same number need not be poured simultaneously.

AS CONSTRUCTED
REVISED DATE: 6-24-77

	INITIAL	DATE				
DESIGNED BY	RWP	3-28-74	CHECKED BY	JCK	7-23-74
CHECKED BY	JCK	7-19-74	QUANTITIES BY	DAL	6-4-74
DETAILED BY	PHS	6-20-74	CHECKED BY	DEA	6-11-74

DIVISION OF HIGHWAYS

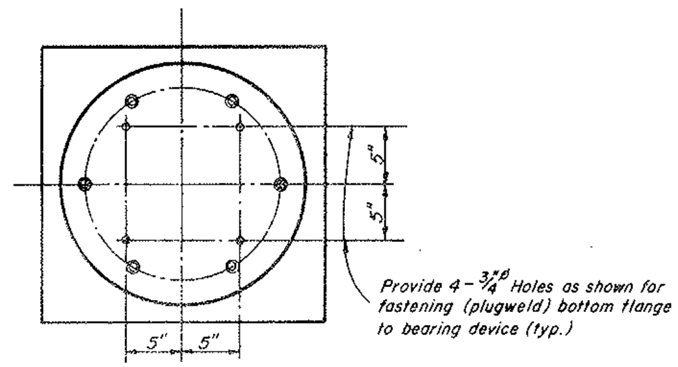
HALF DECK SECTION
DECK PLAN

Designer RWP		Structure Numbers	F-12-AN
Detailer S.S.			
Drawing Number B-13		of 16	Drawings

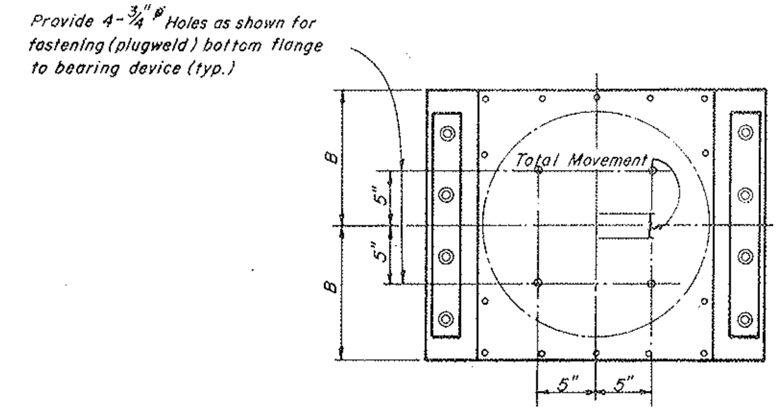
FEDERAL ROAD REGION NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70-2(52)197	106	

AS CONSTRUCTED
NO REVISIONS DATE 6-27-77

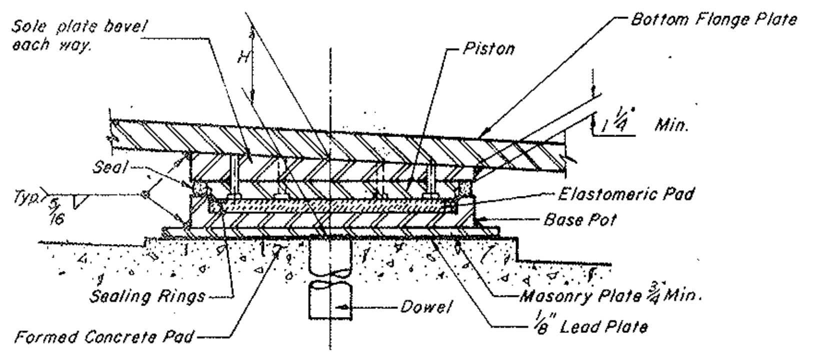
REVISIONS		
4-17-75	Rev Brg Press Added Movement & Notes	CLB



SOLE PLATE (INVERTED)



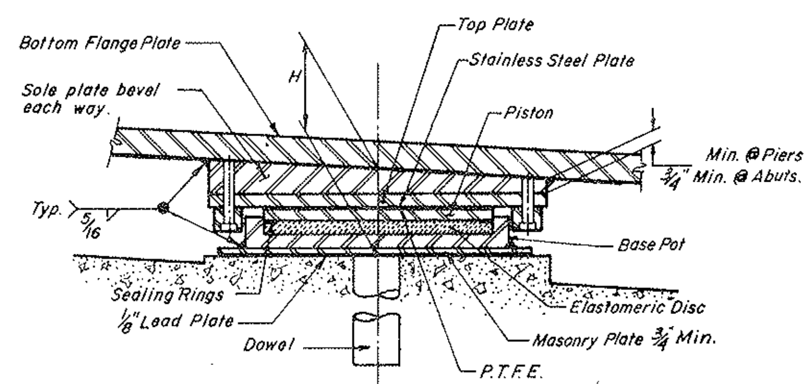
TOP PLATE (INVERTED)



SECTION THRU ASSEMBLED BEARING

FIXED FLOATING BEARING

No Scale



SECTION THRU ASSEMBLED BEARING

GUIDED EXPANSION BEARING

No Scale

BEARING NOTES: (R-1)

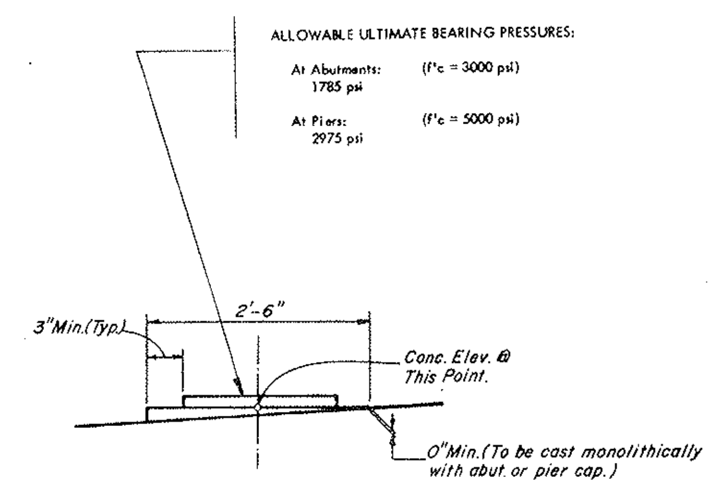
1. STEEL FOR ... BEARING DEVICES, MASONRY PLATES, AND SOLE PLATES SHALL BE A.A.S.H.T.O. SPECIFICATION M-183 (A.S.T.M. A36).
2. THE TYPE OF ANCHORAGE FOR BEARING DEVICES SHALL BE DETERMINED BY THE CONTRACTOR AND SUBMITTED ON SHOP DRAWINGS FOR APPROVAL.
3. FOR ALLOWABLE BEARING PRESSURE ON CONCRETE, SEE DRAWINGS.
4. THE SOLE PLATES SHALL BE SUPPLIED WITH BEVELS AND CROSSFALLS AS REQUIRED FOR GRADE AND SUPERELEVATION.
5. DIMENSION "H" IS THE LIMIT REQUIRED FOR BID ITEM NO. 512, "BEARING DEVICES".
6. THE SIZES OF MASONRY PLATES SHALL BE DETERMINED BY THE BEARING MANUFACTURER. THE ALLOWABLE ULTIMATE BEARING PRESSURES AND THE ULTIMATE LOADS SHALL BE USED TO DETERMINE THE MASONRY PLATE SIZES.
7. ALL BEARING DETAILS, INCLUDING WELDS, ARE SHOWN FOR ILLUSTRATION PURPOSES ONLY. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS SHOWING DETAIL OF THE SPECIFIC BEARING DEVICE TO BE USED.

(R-1)

ALLOWABLE ULTIMATE BEARING PRESSURES:

At Abutments: 1785 psi (f'c = 3000 psi)

At Piers: 2975 psi (f'c = 5000 psi)



CONCRETE BEARING PAD DETAIL

No Scale

FIXED FLOATING BEARING (R-1)

LOCATION	PIER 2	PIER 3
Capacity	400 Tons	400 Tons
Min. Horiz. Capacity	40 Tons	40 Tons
* Computed Reaction · DL + LL + I	387 Tons	387 Tons
Ultimate Reaction	600 Tons	600 Tons
H	5 3/8 in.	5 3/8 in.
(R-1) Max. Movement (in)	0	0

* Computed reactions shall be used to determine bearing capacity.

GUIDED EXPANSION BEARING

LOCATION	ABUT. 1	ABUT. 4
Capacity	125 Tons	125 Tons
Min. Horiz. Capacity	12 Tons	12 Tons
* Computed Reaction - DL + LL + I	121 Tons	121 Tons
Ultimate Reaction	121 Tons	121 Tons
H	4 3/8 in.	4 3/8 in.
(R-1) Max. Movement (in.)	1 3/8	1 3/8

NOTE:
Capacity includes dead load plus live load plus impact.

	INITIAL	DATE			
DESIGNED BY	RWP	5-28-74	CHECKED BY	JCK	7-23-74
CHECKED BY	JCK	7-19-74	QUANTITIES BY	DAL	6-4-74
DETAILED BY	PHS	6-20-74	CHECKED BY	DEA	6-11-74

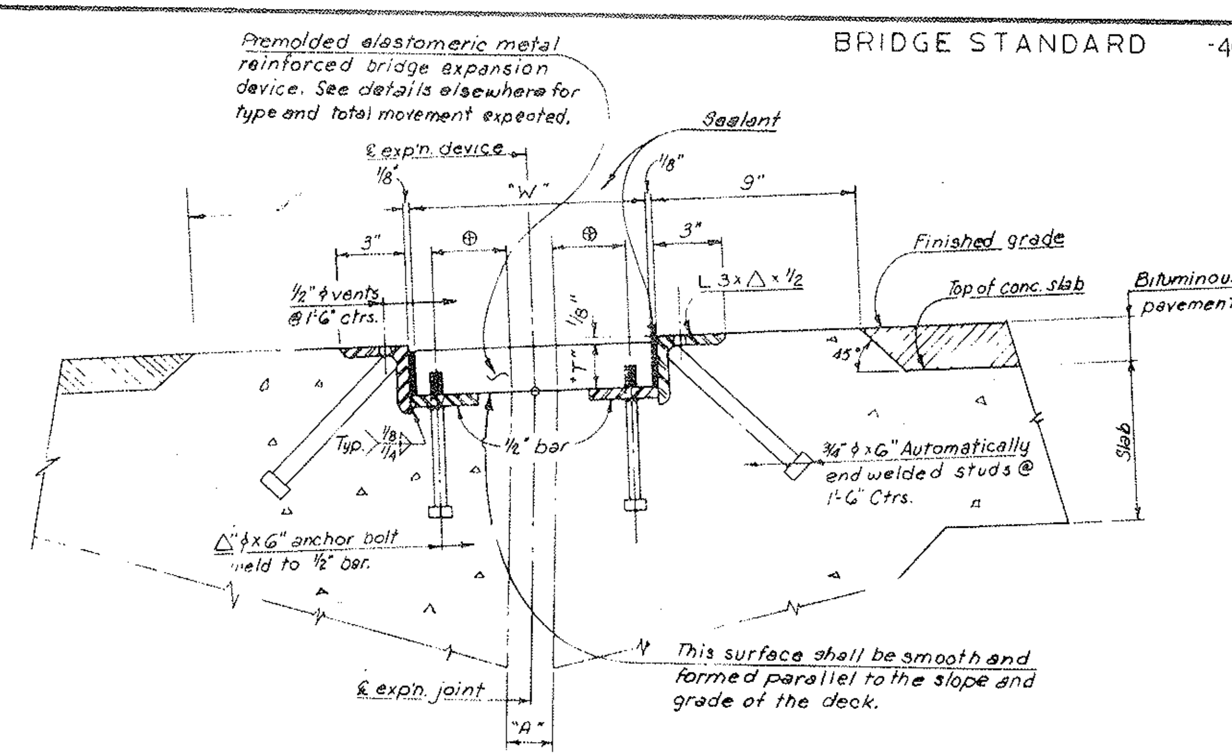
DIVISION OF HIGHWAYS

BEARING DETAILS

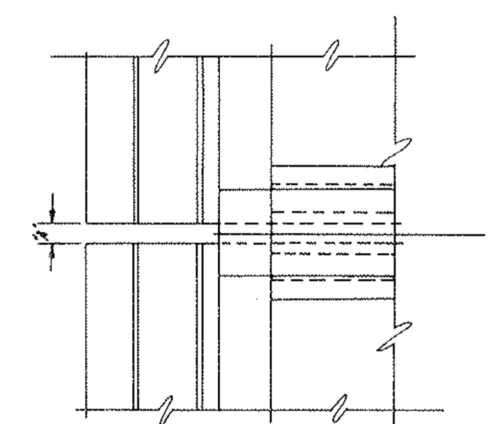
Designer RWP | Structure Numbers F-12-AN
Detailer PHS
Drawing Number B-14 of 16 Drawings

FEDERAL ROAD REGION NO	DIVISION	PROJ. NO.	SHEET NO	TOTAL SHEETS
VIII	COLORADO	I 70 2 (52)197	107	

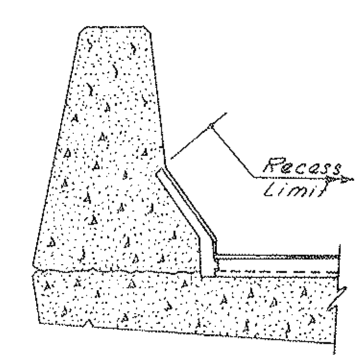
REVISIONS



SECTION THRU EXP'N. DEVICE



PLAN



ELEVATION

DETAILS OF EXPANSION JOINT AT GUARDRAIL

NOTES

THE EXPANSION DEVICE SHALL BE INSTALLED ON GRADE, PARALLEL TO THE SLOPE AND GRADE OF THE DECK.

AFTER THE CONCRETE HAS ATTAINED INITIAL SET, THE ATTACHMENTS USED TO HOLD THE ANGLE ASSEMBLY IN ITS PROPER POSITION SHALL BE REMOVED.

DO NOT PAINT STEEL SURFACES IN CONTACT WITH CONCRETE AND PREMOLDED EXPANSION DEVICE.

"W", "T", "⊕", AND "△" DIMENSIONS ARE DEPENDENT UPON THE PARTICULAR PREMOLDED DEVICE SUPPLIED, AND SHALL BE SHOWN ON THE SHOP DRAWINGS.

THE SHOP DRAWINGS SHALL INDICATE THE "W" DIMENSION AT A RANGE OF TEMPERATURES FROM 30° TO 100° ASSUMING A MID-POINT TEMPERATURE OF 40°.

ANGLE AND PLATE ASSEMBLIES TO EXTEND GUTTER TO GUTTER ONLY.

ALL SECTIONS OF THE PREMOLDED EXPANSION DEVICE SHALL BE JOINED BY USING THE MANUFACTURER'S STANDARD WATERPROOF JOINT.

ALL CURB UNITS SHALL BE FULL WIDTH, ON GUTTER LINE, FOR SKEW ANGLES AS SPECIFIED ON THE PLANS.

ALL ANCHORS SHALL BE CAST IN PLACE BOLTS OR THREADED CAST IN PLACE CONCRETE INSERTS EXCEPT FOR CURB AND WALK UNITS WHICH MAY BE INSTALLED BY THE USE OF APPROVED DRILLED IN PLACE ANCHOR UNITS.

OPENING IN CURB AND SIDEWALK TO BE CONSTRUCTED TO THE EXACT WIDTH OF THE EXISTING DECK OPENING.

AS CONSTRUCTED
NO REVISIONS DATE: 6-24-77

Outside Temp	Premolded Bridge Expansion Device (Type 1) Dim. "A" (Min.)	(Type 2) Dim. "A" (Min.)	(Type 3) Dim. "A" (Min.)
30°	1 5/8"	2 1/4"	2 3/4"
40°	1 1/2"	2 1/8"	2 5/8"
50°	1 3/8"	2"	2 1/2"
60°	1 1/4"	1 7/8"	2 3/8"
70°	1 1/8"	1 3/4"	2 1/8"
80°	1"	1 1/2"	2"
90°	7/8"	1 3/8"	1 3/4"
100°	3/4"	1 1/4"	1 5/8"

Outside Temp.	Premolded Bridge Expansion Device (Type 4) Dim. "A" (Min.)	(Type 6) Dim. "A" (Min.)	(Type) Dim. "A" (Min.)
30°	4 3/8"	5 3/8"	
40°	4 1/8"	4 7/8"	
50°	3 7/8"	4 1/2"	
60°	3 5/8"	4"	
70°	3 1/4"	3 5/8"	
80°	3"	3 1/4"	
90°	2 3/4"	2 3/4"	
100°.	2 1/2"	2 3/8"	

DIVISION OF HIGHWAYS

BRIDGE EXPANSION DEVICE
PREMOLDED ARMORED

Designer
Detailer J.R. EWERT
Structure Numbers F-12-AN
Drawing Number 8 15 of 16 Drawings

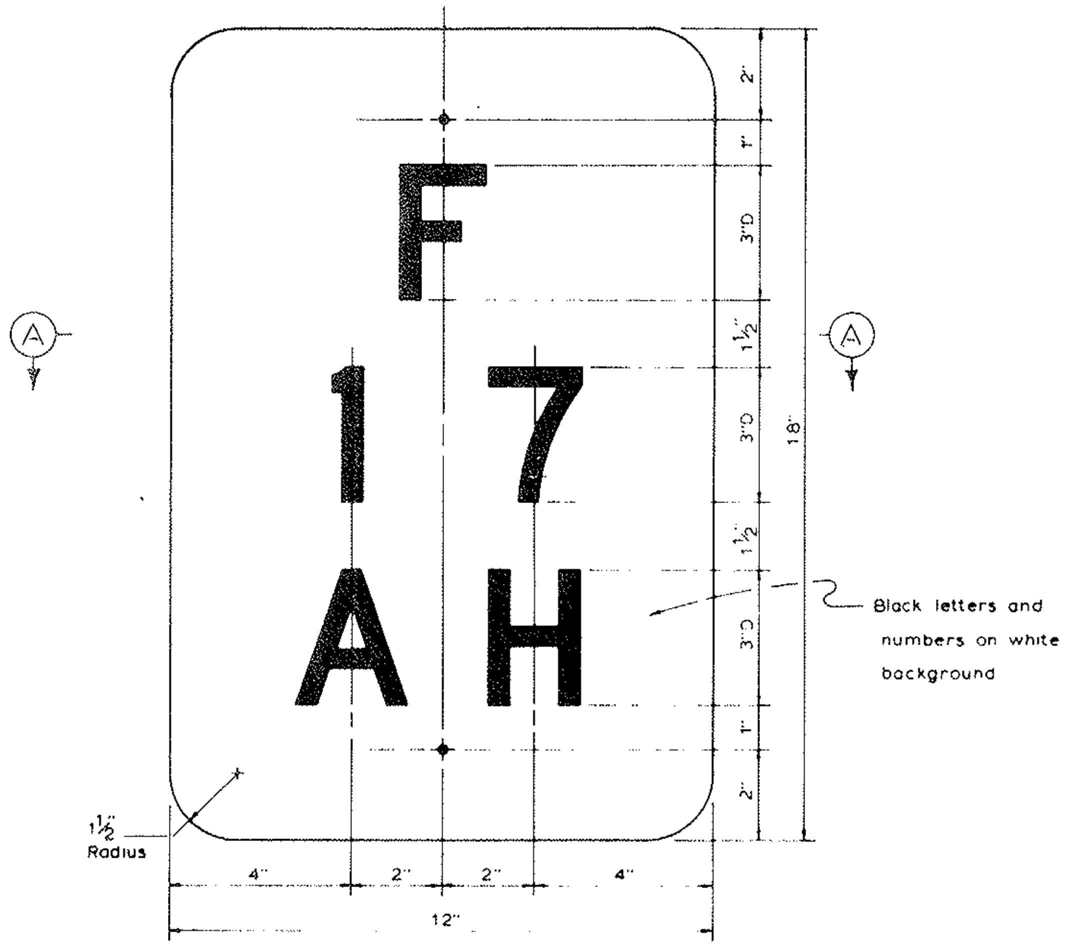
Revision Dates (Preliminary Stage Only)

	INITIAL	DATE			
DESIGNED BY	ZWP	5-28-74	CHECKED BY	JCK	7-2?-?
CHECKED BY	JCK	7-19-74	QUANTITIES BY	EAL	6-4-74
DETAILED BY	JRE	10-73	CHECKED BY	DEA	6-11-74

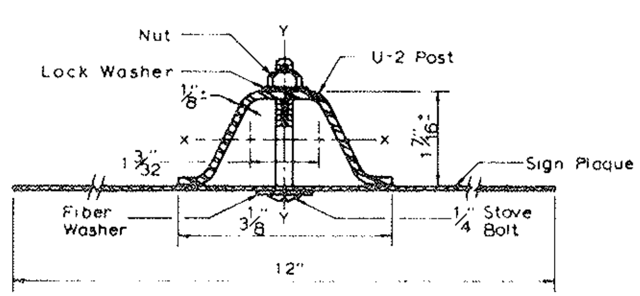
(7-1-74)

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
VIII	COLORADO	I 70 2 (52)197	108	

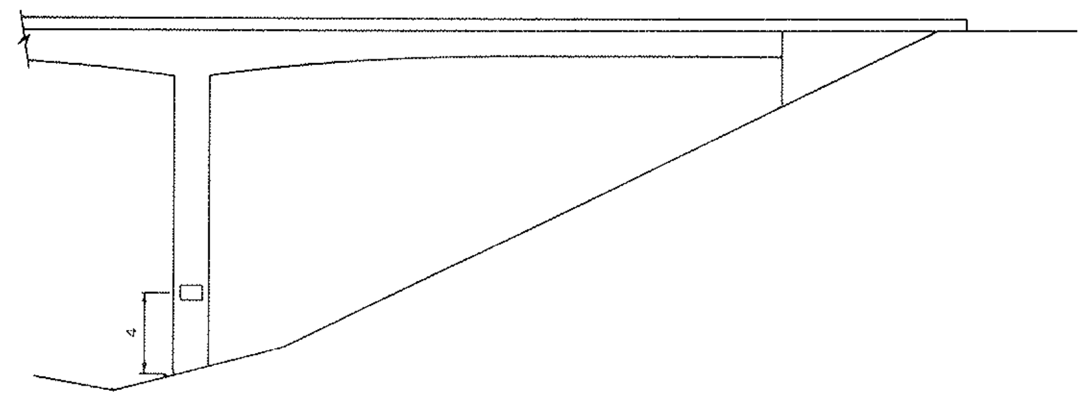
REVISIONS



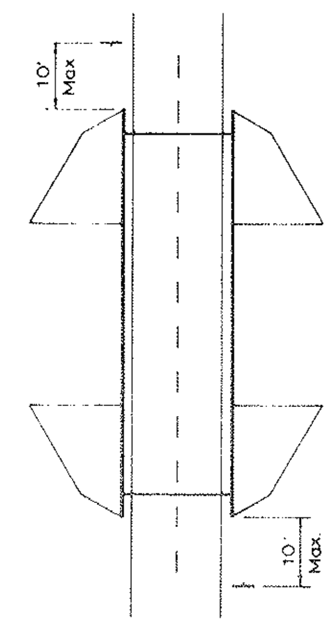
STRUCTURE IDENTIFICATION PANEL
(SAMPLE NUMBERS & LETTERS)



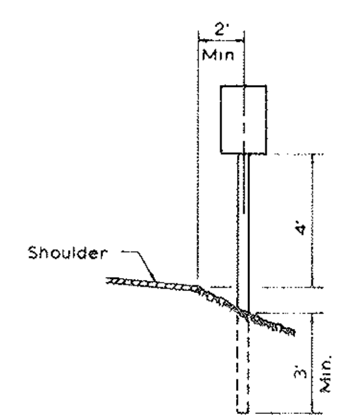
SECTION (A)



STRUCTURE NUMBER LOCATION ON PIERS



(1) STANDARD LOCATION DETAIL



U-2 POST IN GROUND

ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS APPLICABLE TO THE PROJECT.

SIGN PANEL SHALL BE FABRICATED FROM EITHER SHEET STEEL 0.0598 MIN. THICKNESS OR SHEET ALUMINUM 0.080 MIN. THICKNESS.

SIGN PANEL SHALL BE GROUND MOUNTED.

U-2 POST SHALL MEET REQUIREMENTS OF PAR. 4.3 U.S. DEPT. OF COMMERCE, COMMERCIAL STANDARD 184 51. ACCEPTABLE MATERIAL INCLUDES REROLLED RAILROAD RAILS. U-2 POST SHALL WEIGH 2 LBS. PER FT. EXCEPT THAT A MILL TOLERANCE OF MINUS 3 1/2% OF THE WEIGHT OF ANY ONE POST WILL BE ALLOWED. ALTERNATE METAL POST WILL BE ACCEPTABLE IF SECTION MODULUS IS AT LEAST 0.200 IN.³ ABOUT THE X-X AXIS AND AT LEAST 0.250 IN.³ ABOUT THE Y-Y AXIS.

SIGN PANEL SHALL BE FASTENED DIRECTLY TO THE POST WITH TWO 1/4" GALVANIZED OR CADMIUM PLATED STOVE BOLTS. A PLASTIC FIBER WASHER SHALL BE PLACED BETWEEN THE BOLTS HEAD AND THE FACE OF THE PANEL. A GALVANIZED OR CADMIUM PLATED LOCK WASHER SHALL BE PLACED UNDER THE NUT ON THE BACK OF THE POST. EXPOSED BOLT HEADS AND FIBER WASHERS ON THE FACE OF THE SIGN PANEL SHALL BE PAINTED TO MATCH THE SURROUNDING COLOR.

LETTERS AND NUMBERS SHALL BE SERIES "D". THEY SHALL BE 3" HIGH.

THE CORRECT STRUCTURE NUMBER IS SHOWN ON THE PLANS.

(1) OMIT STRUCTURE NUMBER STANDARDS WHERE A RAILROAD TRACK CROSSES OVER THE ROADWAY.

STRUCTURE NUMBER STANDARD SHALL NOT BE PAID FOR SEPARATELY BUT INCLUDED IN THE WORK.

IN ADDITION TO THE REQUIREMENTS STATED ABOVE, STRUCTURE NUMBERS FOR HIGHWAYS PASSING UNDER CROSSROADS ARE TO BE PLACED AT THE FOLLOWING POINTS:

(A) FOR STRUCTURES OF THREE OR MORE SPANS, THE STRUCTURE NUMBER SHALL BE STENCILED, FACING TRAFFIC, ON THE OUTSIDE FACE OF THE END COLUMN OF THE RIGHT HAND PIER.

(B) FOR TWO SPAN STRUCTURES, THE STRUCTURE NUMBER SHALL BE STENCILED, FACING TRAFFIC, ON THE OUT SIDE FACE OF EACH END COLUMN OF THE CENTER PIER.

AS CONSTRUCTED
NO REVISIONS DATE: 6-24-77

	INITIAL	DATE			
DESIGNED BY	DWS	5-28-74	CHECKED BY	JCK	7-23-74
CHECKED BY	JCK	7-1-74	QUANTITIES BY	DAL	6-4-74
DETAILED BY	BRL	1-72	CHECKED BY	DCH	6-11-74

DIVISION OF HIGHWAYS

STRUCTURE NUMBER STANDARD

Designer
Detailer B.R. LEDE
Structure Numbers F-12-AN
Drawing Number B-16 of 16 Drawings

(7-1-74)

Revision Dates (Preliminary Stage Only)